ADVISORY PLAN COMMISSION AGENDA

Brownsburg Advisory Plan Commission Meetings are live-streamed and archived.

FEBRUARY 23, 2026

6:00 PM

TOWN COUNCIL MEETING ROOM 61 N. GREEN ST., BROWNSBURG, INDIANA 46112

A. **CALL TO ORDER BY PRESIDING OFFICER**

B. **MOMENT OF SILENCE & PLEDGE OF ALLEGIANCE**

C. **ELECTION OF OFFICERS**

1. **2026 PRESIDENT (PRESIDED BY PREVIOUS YEAR PRESIDENT)**
2. **2026 VICE PRESIDENT (PRESIDED BY 2026 PRESIDENT)**
3. **2026 RECORDING SECRETARY**
4. **MEMBER APPOINTMENT TO THE BZA**

D. **APPROVAL OF PREVIOUS MEETING(S) MINUTES**

1. **DECEMBER 17, 2025 - REGULAR MEETING**

   Documents:

   APC_MINUTES_12-17-25.PDF

E. **APPROVAL OF FINDINGS OF FACT AND REPORTS OF DETERMINATION**

1. **PCPP-25-4 KARAM CONVENIENCE CENTER PRIMARY PLAT**

   Documents:

   FOF_PCPP-25-4.PDF

2. **PSDP-25-9 PROJECT FALCON DEVELOPMENT PLAN REVIEW**

   Documents:

   FOF_PSDP-25-9.PDF

3. **CASES WITH A '*' NEXT TO THE CASE NUMBER HAVE BEEN ADDED FROM THE CANCELLED JANUARY 26TH MEETING**

F. **HEARING OF REQUESTS FOR CONTINUANCES**

1. **PSDP-25-12* KARAM CONVENIENCE CENTER DEVELOPMENT PLAN REVIEW**

A request to approve a Development Plan Review for Karam Convenience Center (Lot 1). The site is located at the southeast corner of the intersection of Northfield Drive and N CR 625 E.

Parcel(s): 32-07-03-300-022.000-016

Represented by: Donald Fisher, Insight Engineering

CONTINUANCE REQUESTED BY THE PETITIONER

G. DEVELOPMENT PLAN APPROVAL REQUESTS

1. **PSDP-23-21* LION'S TRANS INC. DEVELOPMENT PLAN REVIEW**

A request to approve a Development Plan Review for construction of a 2,860 sq. ft. over the road truck maintenance building and a 900 sq. ft. office building to serve Lions Trans Inc. with associated parking and utilities. The project is located at 4005 N CR 1000 E.

Parcel(s): 32-08-17-365-002.000-016

Represented by: Brian Moench, Moench Engineering

THIS CASE WAS CONTINUED BY THE APC AT THE DECEMBER 17, 2025 MEETING

Documents:

G.1.A NEWEST CIVIL LANDSCAPE LIGHTING PLAN.PDF
G.1.B STAFF REPORT_PSDP-23-21.PDF
G.1.C ARCHITECTURAL DETAILS.PDF
G.1.D TECH_REVIEW_PSDP-23-21.PDF
G.1.E LIONS_TRUCKING_CONSENT_FORM.PDF
G.1.F TECH RESPONSE LETTER.PDF
G.1.G DRAINAGE REPORT.PDF
G.1.H CIVIL, LIGHTING, LANDSCAPE PLAN SET (BEFORE CONTINUANCE).PDF
G.1.I_OM_MANUAL_12.19.25_.PDF
G.1.J DRAINAGE TECHNICAL REPORT.PDF
G.1.K NEWEST OM MANUAL FEB 4 26.PDF

2. **PSDP-25-11* QUIKTRIP LANDSCAPE PLAN DEVELOPMENT PLAN REVIEW**

A request to approve a Development Plan Review change for the QuikTrip landscape plan to allow the 2025 Unified Development Ordinance standards to apply instead of the previous ordinance when the Development Plan Review was originally approved in 2024.

Parcel(s): 32-08-18-115-006.000-016

Represented by: Dillon Reynolds, SpaceCo Engineering

Documents:

G.2.A PSDP-25-11 STAFF REPORT.PDF
G.2.B REVISED LANDSCAPE PLAN_REV1.PDF
G.2.C ORIGINAL LANDSCAPE PLAN.PDF
G.2.D TECH REVIEW COMMENTS.PDF
G.2.E TECH COMMENT RESPONSE LETTER.PDF
G.2.F QT 7263 PROPERTY OWNER CONSENT 12.05.2025.PDF
G.2.G REVISED LANDSCAPE PLAN_OLD.PDF

3. PSDP-25-10* MCDONALD'S DEVELOPMENT PLAN REVIEW

A request to approve a Development Plan Review for construction of a 4,590 sq. ft. McDonald's building with a drive-thru and associated parking and utilities. The project is located in the southeast corner of the intersection of Northfield Drive and N SR 267.

Parcel(s): 32-07-26-154-001.000-016

Represented by: Cathy Stevens, Permit Solutions Ohio

Documents:

G.3.A STAFF REPORT_PSDP-25-10 REVISED.PDF
G.3.B CIVIL PLANS (REVISED).PDF
G.3.C LANDSCAPE PLAN (REVISED).PDF
G.3.D LIGHTING PLAN.PDF
G.3.E BUILDING ELEVATIONS (REVISED).PDF
G.3.F STORMWATER O M MANUAL.PDF
G.3.G DRAINAGE REPORT (REVISED).PDF
G.3.H TRAFFIC IMPACT STUDY.PDF
G.3.I WEST WYNNE FARMS PUD ORDINANCE.PDF
G.3.J WEST WYNNE FARMS PUD ORDINANCE AMENDMENT.PDF
G.3.K TECH REVIEW_PSDP-25-10.PDF
G.3.L TECH REVIEW RESPONSE LETTER (REVISED).PDF
G.3.M ARCHITECTURAL DETAILS.PDF
G.3.N LOI - OWNERS CONSENT.PDF
G.3.O MCD BROWNSBURG - SIGNAGE RENDERINGS.PDF
G.3.P TECH RESPONSE LETTER (ARCHITECTURE).PDF

4. PSDP-26-1 HEARTLAND DENTAL DEVELOPMENT PLAN REVIEW

A request to approve a Development Plan Review for the construction of a ~4,285 sq. ft. Heartland Dental office with associated sidewalks, parking area, landscaping, and utilities. The project is in Outlot A of the new Meijer development along E. 56th St.

Parcel(s): 32-08-06-311-006.000-016

Represented by: Jillian Richardson, Woolpert Inc.

Documents:

G.4.A STAFF REPORT_PSDP-26-1.PDF
G.4.B TECH_REVIEW_PSDP-26-1.PDF
G.4.CTECH RESPONSE LETTER.PDF
G.4.D STORMWATER MANAGEMENT SUMMARY.PDF
G.4.E PROPERTY OWNER CONSENT FORM.PDF
G.4.F O M MANUAL.PDF

G.4.G HEARTLAND DENTAL CIVIL- LIGHTING -LANDSCAPE PLANS.PDF
G.4.H ARCHITECTURAL DETAILS.PDF

H. OLD BUSINESS

1. NONE

I. CONTINUED PUBLIC HEARINGS

1. PCPP-25-3* HAWK'S LANDING PRIMARY PLAT

A request to approve a primary plat for Hawk's Landing subdivision. The site includes 105 single-family units with their associated roadways and is located along N SR 267 and E 800 N behind Connection Pointe Christian Church.

Parcel(s): 32-02-34-275-002.000-026, 32-02-34-100-012.000-001, 32-02-34-100-013.000-001

Represented by: Lindsey Phipps, David Weekley Homes

ADVERTISED PUBLIC HEARING

Documents:

I.1.A FINAL_TRAFFIC_STUDY_NOVEMBER_2025.PDF
I.1.B UPDATED PLAT.PDF
I.1.C HAWKS LANDING TIS CROSSROAD REVIEW.PDF
I.1.D UPDATED LETTER_OF_INTENT.PDF
I.1.E TRAFFIC STUDY JULY 2024.PDF
I.1.F TECH_REVIEW_PCPP-25-3.PDF
I.1.G EXECUTED MOU_COUNTY COMMISSIONERS - WEEKLEY HOMES LLC.PDF
I.1.H LOT WIDTH EXHIBIT.PDF
I.1.I ORDINANCE NO. 2021-30.PDF
I.1.J STAFF REPORT_PCPP-25-3 REV. 1-20-26.PDF

J. NEW PUBLIC HEARINGS

1. PCPP-25-5* PROMENADE, SECTION 3 PRIMARY PLAT

A request to approve a primary plat for Promenade, Section 3. The 7.99-acre parcel will add 20 single-family homes to the existing PUD. The site is located just west of and adjoins the existing Promenade subdivision.

Parcel(s): 32-07-24-300-001.000-016

Represented by: Melissa Garrard, Pulte Homes

ADVERTISED PUBLIC HEARING

Documents:

J.1.A PRIMARY PLAT.PDF
J.1.B RECORDED-COMMITMENTS-DANIELS (PROMENADE EXT)-EXECUTED1.PDF
J.1.C OWNER-CONSENT-FORM-DANIELS (2).PDF

J.1.D TECH_REVIEW_PCPP-25-5.PDF
J.1.E TECH RESPONSE LETTER.PDF
J.1.F DRAINAGE REPORT 12.08.25.PDF
J.1.G STAFF REPORT_PCPP-25-5.PDF

2. **PCZT-25-5* WESTBRANCH PUD (SIGNAGE) ZONING TEXT AMENDMENT**

A request to amend a section of the Westbranch Planned Unit Development Ordinance to allow a permanent sign on the leasing clubhouse.

Represented by: Justin Mitchell, Buckingham Companies

ADVERTISED PUBLIC HEARING

Documents:

J.2.A PCZT-25-5 WESTBRANCH PUD TEXT AMENDMENT.PDF
J.2.B OWNER CONSENT FORM.PDF
J.2.C LEGAL DESCRIPTION.PDF
J.2.E PROPOSED AMENDED TEXT.PDF
J.2.F UDO SECTION 5.66 AND 5.69.PDF
J.2.G LOCATION MAP.PDF
J.2.H MICROSOFT WORD - EX. D TA STATEMENT O F INTENT AND PROJECT DESCRIPTION 08.29.23.PDF

K. COMMUNICATIONS AND COMMITTEE REPORTS

1. **NONE**

L. MISCELLANEOUS BUSINESS

1. **NONE**

M. ADMINISTRATIVE FILINGS

1. **APLA-25-3 OI LAND VENTURES ADMINISTRATIVE PLAT***
2. **CPSP-24-7 CENTENNIAL, SECTION 1 LOT ADJUSTMENT***
3. **APLA-26-1 HEARTLAND DENTAL LOT SPLIT**

N. CASES FILED FOR FUTURE MEETINGS

1. **PSDP-26-2 Reserve At Ronald Reagan Infrastructure DPR**
2. **CPSP-26-1 Reserve At Ronald Regan, Lot 1 Secondary Plat**
3. **CPSP-26-2 Promenade, Sec. 3 Secondary Plat**
4. **PSDP-26-3 Compass & Key Industrial Park DPR**
5. **PSDP-26-4 Dutch Bro's Coffee DPR**
6. **PCMA-26-1 Auburn Ridge West Rezone (AG To R1&R2)**
7. **PCMA-26-2 Brownsburg Street & Police Dept. Rezone (Bowman Property Annexation)**

O. ADJOURNMENT

Advisory Plan Commission

- Brett Scowden, President
  Term: 2023-2026
  Appointed by: Town Council President
- Cindy Hohman
  Term: 2026-2029
  Appointed by: Town Council
- Thomas Kleyle
  Term: 2026-2029
  Appointed by: Town Council President
- Richard Miller
  Term: 2023-2026
  Appointed by: Town Council President
- Shawn Pabst
  Term: 2026-2029
  Appointed by: Town Council
- Scott Doehrman
  Term: 2025-2028
  Appointed by: Town Council
- Jeff Humphreys
  Term: 2024-2027
  Appointed by: Town Council President

The Town of Brownsburg acknowledges its responsibility to comply with the Americans With Disabilities Act of 1990. In order to assist individuals with disabilities who require special services (i.e. sign interpretive services, alternative audio/visual devices, and amanuenses) for participation in or access to town sponsored public programs, services, and/or meetings, the town requests that individuals makes requests for these services two business days ahead of the scheduled program, service, and/or meeting. To make arrangements, contact the Development Services Department at (317) 852-1128.

TOWN OF Brownsburg

ADVISORY PLAN COMMISSION
Minutes

Brownsburg Town Hall
61 North Green Street
Brownsburg, Indiana 46112

December 17, 2025

The Brownsburg Advisory Plan Commission was convened at 6:00 PM with a moment of silence and the Pledge of Allegiance. A determination of quorum was found.

Members Present:	Scott Doehrman, Kent Fillinger, Jeff Humphreys, Richard Miller, Shawn Pabst, Brett Scowden- Board President and Matt Simpson.
Members Absent:	None
Also Present:	Steven Fletcher- Development Service Director, Kevin Tolloty -Senior Planner, Lauren Bouslog -Associate Planner, Elizabeth Bentz-Williams – AICP Consultant and Paola Ranney, Administrative Assistant.

C. APPROVAL OF PREVIOUS MEETING MINUTES

1. November 24, 2025 - Regular Meeting

   Motion: Jeff Humphreys made a motion to **APPROVE** the November 24, 2025, regular meeting minutes, seconded by Matt Simpson, motion carried 7 In Favor/ 0 Opposed/ 0 Abstained.

D. APPROVAL OF FINDINGS OF FACT AND REPORTS OF DETERMINATION

1. PSDP-25-8 BROWNSBURG HIGH SCHOOL EAST ATHLETIC EXPANSION DEVELOPMENT PLAN REVIEW

2. PCVA-25-1 PROJECT TAHOE STREET VACATION PLAT VACATION

   Motion: Jeff Humphreys made a motion to **APPROVE** the Findings of Fact and Reports of Determination FOR the above cases, seconded by Shawn Pabst, motion carried 7 (In Favor/ 0 Opposed/ 0 Abstained.

   Motion: Brett Scowden made a motion to **APPROVE** the amending of the agenda to move the 2026 APC Meetings and PCZT-25-4 to immediately follow before any other business, seconded by Jeff Humphreys, motion carried 7 In Favor/ 0 Opposed/ 0 Abstained.

E. COMMUNICATIONS AND COMMITTEE REPORTS

Report from Director of Development Services

Proposed 2026 APC Meeting Dates

Motion: Jeff Humphreys made a motion to **APPROVE** 2026 proposed APC Meeting Dates, seconded by Matt Simpson, motion carried 7 In Favor/ 0 Opposed / 0 Abstained.

F. PCZT-25-4 BRENTWOOD PUD (LOT COVERAGE) ZONING TEXT AMENDMENT

A request to amend a section of the Brentwood Planned Unit Development Ordinance to allow 55% lot coverage instead of the current 45% maximum.

ADVERTISED PUBLIC HEARING OPENED AT 6:04PM

Applicant stepped up to the stand and stated they wish to withdraw their case.

ADVERTISED PUBLIC HEARING CLOSED AT 6:05PM

G. HEARING OF REQUESTS FOR CONTINUANCES

1. PCPP-25-3 HAWK'S LANDING PRIMARY PLAT

A request to approve a primary plat for Hawk's Landing subdivision. The site includes 105 single-family units with their associated roadways and is located along N SR 267 and E 800 N behind Connection Pointe Christian Church.

PARCEL(S): 32-02-34-275-002.000-026, 32-02-34-100-012.000-001, 32-02-34-100-013.000-001

Applicant, Lindsay Phipps, would like to request a continuance.

ADVERTISED PUBLIC HEARING OPENED AT 6:07PM

At the time this case will recess and continue on January 26. 2026

F. DEVELOPMENT PLAN APPROVAL REQUESTS

1. PSDP-25-9 PROJECT FALCON DEVELOPMENT PLAN REVIEW

A request to approve a Development Plan Review for construction of a two story, 371,724 sq. ft. headquarters facility that will include office space, lab space, and production with associated parking and utilities. The project is located in the Ronald Reagan Logistics Park – Phase 2.

Parcel(s): 32-08-07-305-002.000-016

Lauren Bouslog presented. She discussed reasoning and logistics for the request.

Lauren and the Board discussed storm water approval.

Applicant, Dillon Reynolds, stepped up to the stand.

Motion: Jeff Humphreys made a motion to **APPROVE** CASE PSDP-25-9 with staff recommendations, seconded by Richard Miller, motion carried 7 In Favor/ 0 Opposed/ 0 Abstained.

2. PSDP-23-21 LION'S TRANS INC. DEVELOPMENT PLAN REVIEW

A request to approve a Development Plan Review for construction of a 2,860 sq. ft. over the road truck maintenance building and a 900 sq. ft. office building to serve Lions Trans Inc. with associated parking and utilities. The project is located at 4005 N CR 1000 E.

Parcel(s): 32-08-17-365-002.000-016

Lauren Bouslog presented. She discussed reasoning and logistics for the request.

Applicant was a "No Show".

Motion: Shawn Pabst made a motion to continue CASE PSDP-23-21 until January 26, 2026, seconded by Jeff Humphreys, motion carried 7 In Favor/ 0 Opposed/ 0 Abstained.

G. OLD BUSINESS

1. None

H. CONTINUED PUBLIC HEARINGS

1. None

J. NEW PUBLIC HEARINGS

2. PCPP-25-4 KARAM CONVENIENCE CENTER PRIMARY PLAT

A request to approve a primary plat for Karam Convenience Center. The 11.28-acre parcel would be separated into two lots. The site is located at the southeast corner of the intersection of Northfield Drive and N CR 625 E.
Parcel(s): 32-07-03-300-022.000-016

ADVERTISED PUBLIC HEARING OPENED AT 6:18PM

Lauren Bouslog presented. She discussed reasoning and logistics for the request.
Lauren and the Board discussed entrances.
Mr. Don Fisher, applicant, stepped up to the stand. Mr. Fisher and the Board discussed design criteria, slow down lanes, light pollution, CR 625 and detention area.

ADVERTISED PUBLIC HEARING CLOSED AT 6:30PM

Motion: Jeff Humphreys made a motion to **APPROVE** PCPP-25-4, with staff conditions, seconded by Kent Fillinger, motion carried 7 In Favor/ 0 Opposed / 0 Abstained.

K. MISCELLANEOUS BUSINESS

1. None

L. ADMINISTRATIVE FILINGS

1. PSDP-22-29 WESTWIND APARTMENTS DPR

N. CASES FILED FOR FUTURE MEETINGS

1. PSDP-25-10 McDonald's Restaurant DPR
2. PSDP-25-11 QuikTrip Landscape Plan DPR
3. PSDP-25-12 Karam Convenience Center DPR
4. PCPP-25-5 Promenade, Sec. 3 Primary Plat
5. PCZT-25-5 Westbranch PUD (Sign Standards) Zoning Text Amendment
6. APLA-25-3 OI Land Ventures Administrative Plat

O. ADJOURNMENT

Motion: Matt Simpson made a motion to **ADJOURN**. Meeting adjourned at **6:34PM**.

_____

Brett Scowden, President

ATTEST: _____

Steven Fletcher, Development Services Director

TOWN OF Brownsburg

ADVISORY PLAN COMMISSION

DOCKET NO.
PCPP-25-4
IN THE MATTER OF:
KARAM CONVENIENCE CENTER

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

In compliance with the Unified Development Ordinance of the Town of Brownsburg (the "Ordinance"), the Advisory Plan Commission (the "Commission") held a public hearing pursuant to notice at 6:00 p.m. on December 17, 2025, to hear Docket No. PCPP-25-4, an application for Primary Plat approval dividing 11.28 acres into 2 lots to be known as KARAM CONVENIENCE & RETAIL CENTER. Applicant Donald Fisher, Insight Engineering, appeared and presented testimony and evidence in support of the application.

FINDINGS OF FACT

The Commission, having this matter presented at a public hearing on December 17, 2025, having considered the arguments of the applicant, and being duly advised in the premises, now finds and makes the following Findings of Fact:

(1) The real estate subject to the application is identified as part of Indiana Parcel Number(s), 32-07-03-300-022.000-016.

(2) The real estate to which the application is addressed is within the Town of Brownsburg, Hendricks County, Indiana, and is subject to the terms and provisions of the Town of Brownsburg Municipal Code and the Unified Development Ordinance.

(3) That KARAM PROPERTIES LLC is/are the owner(s) of the real estate subject to the application.

(4) The real estate to which the application is addressed is currently zoned C3.

(5) The Applicant has requested Primary Plat approval dividing 11.28 acres into 2 lots to be known as KARAM CONVENIENCE & RETAIL CENTER.

(6) The Department of Development Services submitted a Project Synopsis to the Commission, dated December 3, 2025, which included the following recommendations:

1. All remaining technical review comments will be addressed prior to stamping the Primary Plat.

2. The final plat shall be recorded in the Office of the Recorder of Hendricks County prior to issuance of any building permits.

3. The approval of the Findings of Fact and Report of Determination by the Plan Commission.

4. The addition of a sidewalk along the northern end of the parcel along Northfield Drive that is required per the Brownsburg Transportation Plan.

CONCLUSIONS OF LAW

Based upon the above Findings of Fact, the Commission does now conclude:

(1) The subdivision is consistent with the *Brownsburg Comprehensive Plan.*

(2) The subdivision satisfies the prerequisites, minimum development requirements and design standards for the applicable subdivision type in *Article 6: Subdivision Types*.

(3) The subdivision satisfies the applicable design standards in *Article 7: Design Standards*.

(4) The subdivision satisfies all other applicable provisions of the Unified Development Ordinance.

(5) The subdivision satisfies the construction requirements of the *Brownsburg Construction Standards*.

ORDER

Based upon the foregoing Findings of Fact and Conclusions of Law, the Commission does now **APPROVE** the Primary Plat requested by Donald Fisher, Insight Engineering, known as Docket No. PCPP-25-4.

_____
Brett Scowden, President

ATTEST:

_____
Steve Fletcher- Development Services Director

TOWN OF Brownsburg

ADVISORY PLAN COMMISSION

DOCKET NO.
PSDP-25-9
IN THE MATTER OF:
PROJECT FALCON

FINDINGS OF FACT & REPORT OF DETERMINATION

The Brownsburg Advisory Plan Commission held a hearing for docket PSDP-25-9 Project Falcon located on Parcel No(s): 32-08-07-305-002.000-016 on December 17, 2025.

This Report of Determination is based, in whole or in part, on the Applicant's Development Plan Review Application, submitted on October 28, 2025 and the same is hereby incorporated herein, by reference.

Staff prepared a Project Synopsis, dated December 02, 2025, and the same is incorporated herein, by reference.

After hearing a presentation from the Applicant the Commission voted 7 in favor, 0 against and 0 abstained, on a motion to **APPROVE** the Development Plan Review subject to the following:

1. The approval of Findings of Fact and Report of Determination.
2. The stamping of the construction plans by the Director.
3. The completion of any outstanding TECH comments.

The Commission took the following into consideration when making their decision on this above referenced proposal:

(1) The development plan is consistent with the Brownsburg Comprehensive Plan.

(2) The development plan satisfies the development requirements of Article 2: Zoning Districts.

(3) The development plan satisfies the standards of Article 5: Development Standards.

(4) The development plan satisfies any other applicable provisions of the Unified Development Ordinance.

(5) The development plan satisfies any provision related to a development's design, especially street layout, street features, pedestrian facilities, drainage, and utility installation as outlined in the Unified Development Ordinance.

(6) The development plan satisfies the construction requirements of the Brownsburg Standard Details.

(7) The development plan satisfies the intent of the architectural guidelines.

_____
Brett Scowden, President

ATTEST:

_____
Steve Fletcher- Development Services Director

Lions Trans Inc. Maintenance Building
4005 N. County Road 1000E
Brownsburg, Indiana 46112

Owner:

Malhi Kulwinder & Jigna Shah Jtsur
7631 E. US Hwy 36
Avon, Indiana 46123
Phone: 317-989-1580

Civil Engineer:

Moench Engineering, P.C.
4000 Clarks Creek Road
Plainfield, Indiana 46168
Phone: (317) 837-2767
Fax: (317) 837-7266

Jurisdictional Contact:

Town of Brownsburg Development Services
61 N. Green St.
Brownsburg, Indiana 46112
Phone: (317) 852-1128

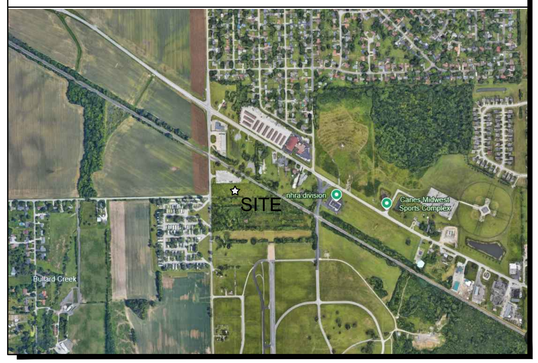
INDEX OF DRAWINGS	
SHT.	TITLE
	CIVIL DRAWINGS
C000	COVER SHEET
D101	OFFSITE DEMOLITION PLAN
C101	OVERALL SITE PLAN
C201	SITE PLAN
C301A	GRADING PLAN (EAST)
C301B	GRADING PLAN (WEST)
C301C	PIPE PROFILE PLAN (WEST)
C301D	PIPE PROFILE PLAN (EAST)
C302	EROSION CONTROL PLAN
C303	STORM WATER POLLUTION PREVENTION PLAN
C401	UTILITY PLAN
C402	SANITARY FORCE MAIN PLAN & PROFILE
C501-502	SECTIONS AND DETAILS
L101	LANDSCAPE PLAN
LT101	SITE LIGHTING PLAN

SITE ANALYSIS TABLE	
ZONING	MS
BUILDING TYPE	(1) OFFICE, (2) SHOP/GARAGE
NUMBER OF BUILDINGS	2
BUILDING HEIGHT	30'-9"
TOTAL PARCEL	3.07 Acres
TOTAL DISTURBED AREA	2.60 Acres
TOTAL PARKING REQUIRED	N/A
PARKING RATIO	1.1 space / employee & 1 visitor space / 10 employee spaces
TRUCK PARKING SPACES PROVIDED (10.5'x70')	31
STANDARD (9.5' x 18') SPACES	4
HANDICAPPED SPACES	1
TOTAL SPACES PROVIDED	36
TOTAL BUILDING SQUARE FOOTAGE	3760 s.f.

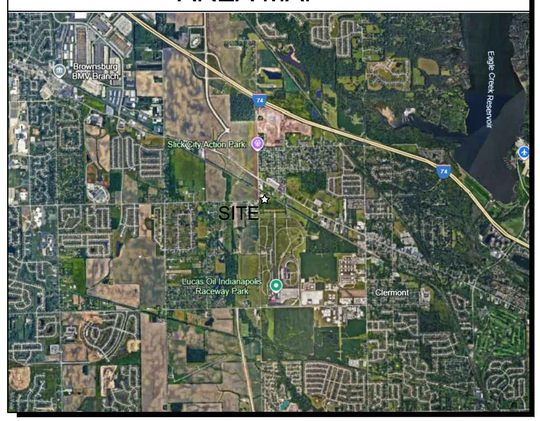
LOT COVERAGE			
	AREA (ft²)	ACRES	PERCENT
ASPHALT	83,071	1.907	62%
BUILDINGS	3,760	0.086	2.8%
SIDEWALK	716	0.016	0.5%
IMPERV. (TOTAL)	87,547	2.01	65.4%
PERVIOUS	46,327	1.06	34.6%
LOT TOTAL	133,874	3.07	100%

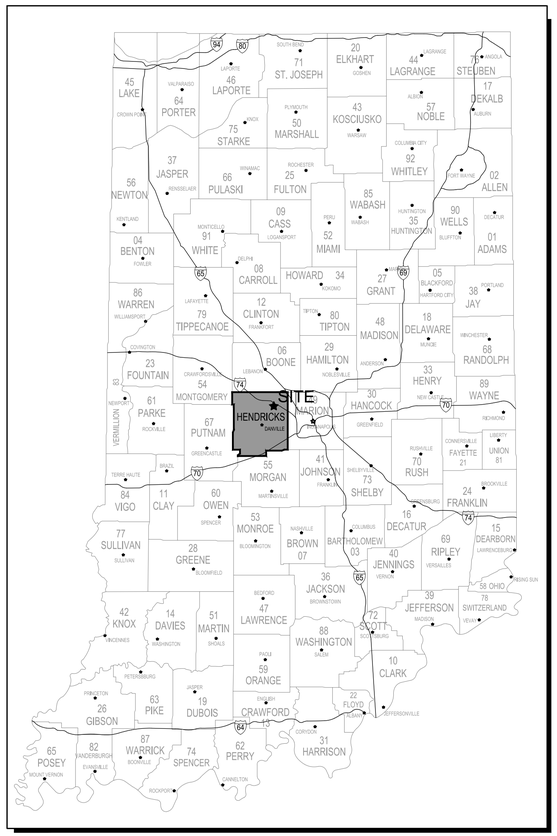
SUBJECT SITE:
SITE LOCATED IN LINCOLN TOWNSHIP
HENDRICKS COUNTY, INDIANA
(39°49'21" N and 86°20'42" W)

VICINITY MAP



AREA MAP





Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH
MOENCH ENGINEERING, P.C.
NO OTHER USE OR DUPLICATION MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF
MOENCH ENGINEERING, P.C.
ALL OTHER COPYRIGHT AND COMMON LAW RIGHTS ARE HEREBY SPECIFICALLY RESERVED.

LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

COVER SHEET

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C000

PROTECTION AND DEMOLITION NOTES:

TREE REMOVAL AND PROTECTION:

1. TREES SHALL BE REMOVED FROM THE PROJECT ONLY WHERE THE AREA IS TO BE OCCUPIED BY ROAD, SURFACED AREAS, OR DRAINAGE SWALES.

2. TREES SHALL BE REMOVED FROM THE PROJECT SITE WHERE THEY INTERFERE DIRECTLY WITH THE PLACEMENT OF STORM OR SANITARY SEWERS AND THAT SUCH EXCAVATION WILL BE FATAL TO TREES.

3. THE CONTRACTOR SHALL ENDEAVOR TO SAVE AND PROTECT TREES OF VALUE AND WORTH WHICH DO NOT IMPAIR CONSTRUCTION OF IMPROVEMENTS AS DESIGNATED. IN THE EVENT CUT OR FILL EXCEEDS 0.5 FEET OVER THE ROOT AREA, THE DEVELOPER SHALL BE CONSULTED WITH RESPECT TO PROTECTIVE MEASURES TO BE TAKEN, IF ANY, TO PRESERVE SUCH TREES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE METHOD FOR PROTECTION OF TOPS, TRUNKS AND ROOTS OF EXISTING TREES ON THE PROJECT SITE THAT ARE TO REMAIN. EXISTING TREES SUBJECT TO CONSTRUCTION DAMAGE SHALL BE BOXED, FENCED OR OTHER MATERIAL AND EQUIPMENT SHALL NOT BE STOCKPILED OR STORED WITHIN THE SPREAD OF BRANCHES. BRANCHES WHICH NEED TO BE REMOVED OR ARE BROKEN SHALL BE NEATLY TRIMMED AND SCARS SHALL BE COVERED WITH TREE PAINT.

CLEARING AND GRUBBING:

1. CLEARING AND GRUBBING SHALL CONSIST OF CUTTING, REMOVING AND SATISFACTORY DISPOSING OF ALL TREES, BRUSH, PROJECTING ROOTS, STUMPS, RUBBISH, BROKEN PAVEMENT, BROKEN CONCRETE, FENCING (AS DESIGNATED) AND OTHER MATERIALS ON THE PROJECT SITE AND WITHIN THE BOUNDARY AS SHOWN ON THE CONSTRUCTION DOCUMENTS AND / OR DESIGNATED BY THE CONSTRUCTION LIMITS.

2. ALL "UNSUITABLE MATERIAL" FROM CLEARING OPERATIONS SHALL BE REMOVED TO DISPOSAL AREAS AS DIRECTED BY GENERAL CONTRACTOR.

STRIPPING OF TOPSOIL:

1. THE CONTRACTOR SHALL VERIFY THAT ALL TOPSOIL HAS BEEN REMOVED IN THE AREAS TO BE OCCUPIED BY ROADS, WALKS AND DESIGNATED BUILDING AREAS. TOPSOIL SHALL BE REMOVED TO A DEPTH OF SIX (6) INCHES OR DEEPER, IF NECESSARY, TO REMOVE ORGANIC MATTER WHERE REQUIRED.

2. TOPSOIL SHALL BE KEPT SEPARATED FROM SUITABLE FILL MATERIALS AND SHALL NOT BE USED AS FILL UNDER PAVEMENT, BUILDING AREAS AND / OR FUTURE STRUCTURAL AREAS.

3. TOPSOIL SHALL BE STORED AT A LOCATION WHERE IT DOES NOT INTERFERE WITH CONSTRUCTION OPERATIONS AS DIRECTED BY THE GENERAL CONTRACTOR.

4. TOPSOIL SHALL BE REASONABLY FREE FROM SUBSOIL DEBRIS AND STONES.

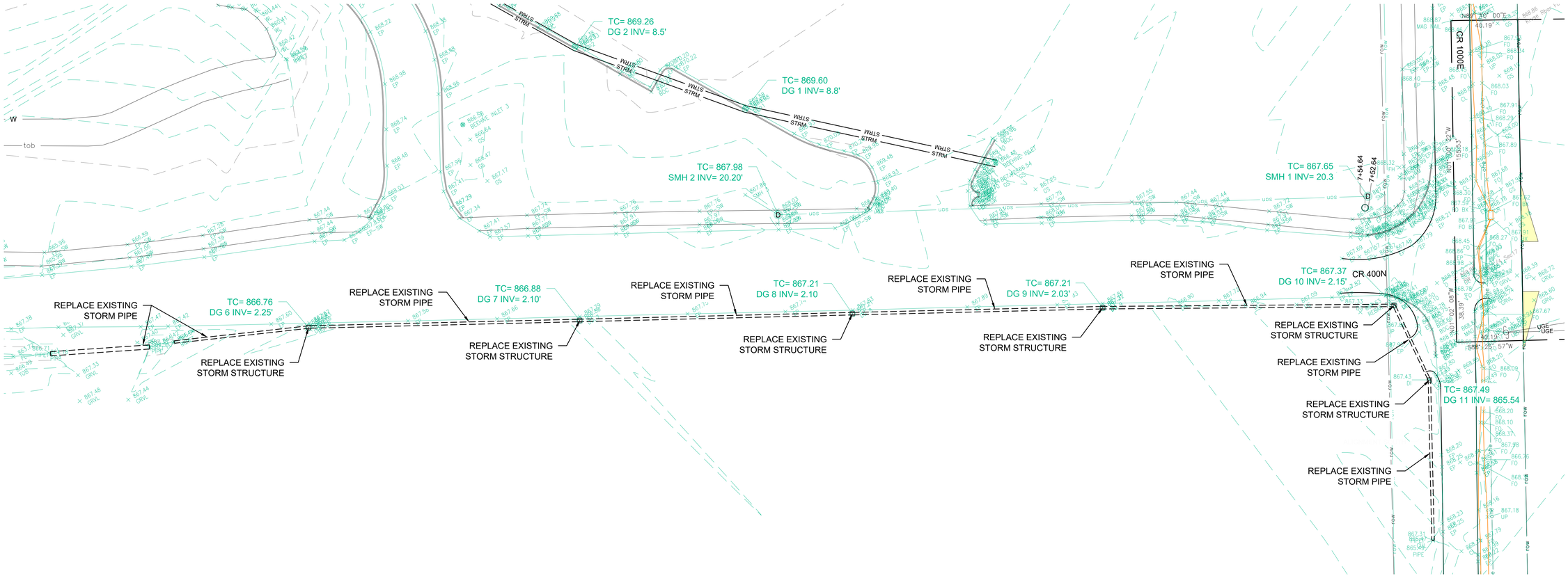
DEMOLITION:

1. ALL MATERIAL AS A RESULT OF THE GENERAL DEMOLITION SHALL BE THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR'S LUMP SUM BID PRICE FOR THE DEMOLITION SHALL TAKE INTO ACCOUNT THE SALVAGEABLE VALUE OF MATERIALS AND SAID BID PRICE SHALL REFLECT SAID DRAWINGS.

2. THE CONTRACTOR SHALL OBTAIN FROM ALL APPLICABLE GOVERNMENT AUTHORITIES NECESSARY PERMITS REQUIRED. A COPY OF SUCH PERMITS TO BE FURNISHED TO THE OWNER PRIOR TO COMMENCEMENT OF ANY WORK HEREIN.

STONE REMOVAL:

1. EXISTING STONE SURFACE TO BE REMOVED, STOCKPILED AND REDISTRIBUTED AFTER NEW GRADES ARE COMPLETED.



OFFSITE DEMOLITION PLAN

SCALE: 1" = 30'

Indiana 811
Know what's below. Call before you dig.

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH
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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

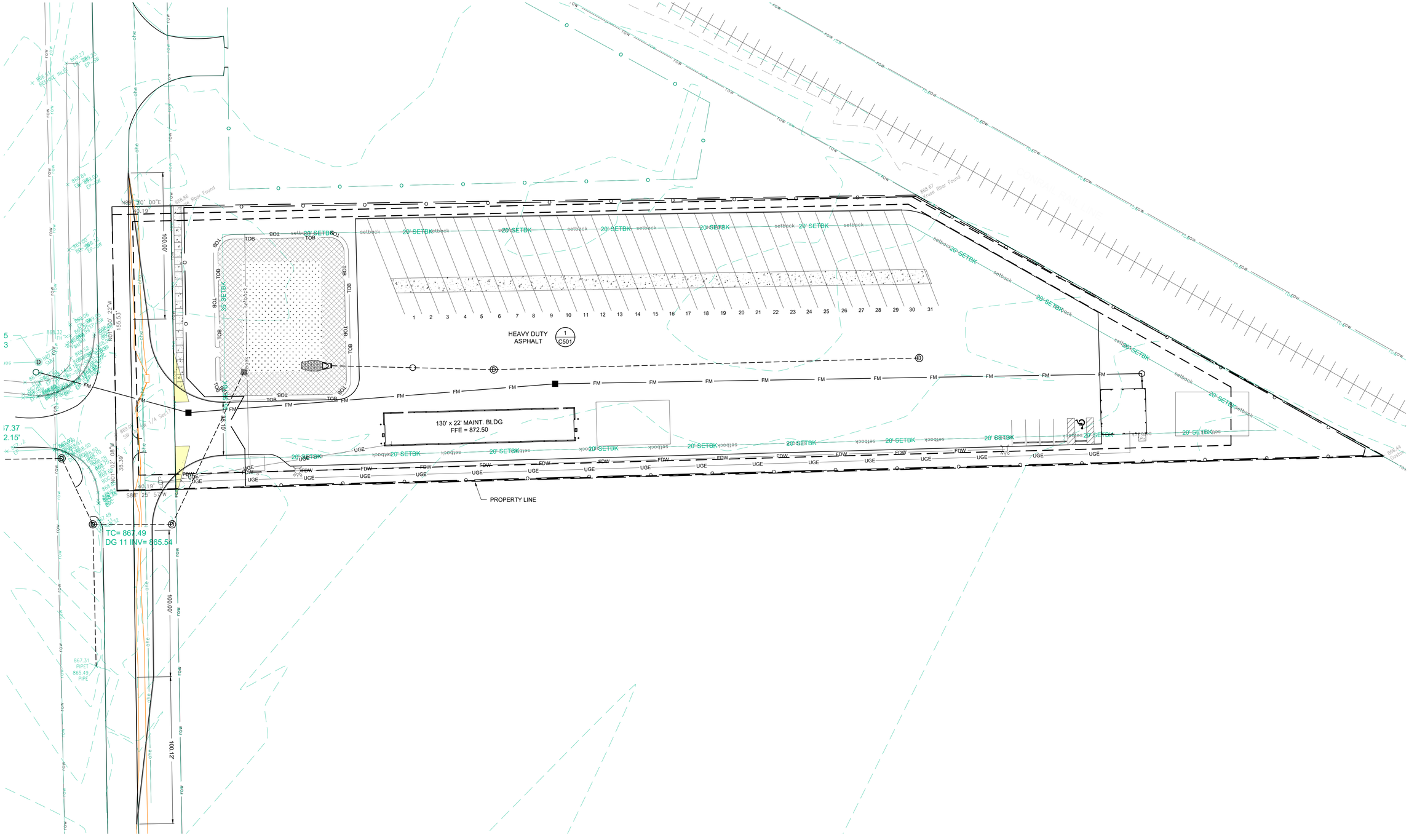
OFFSITE DEMOLITION PLAN

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	D101



OVERALL SITE PLAN

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

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PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C101

LEGAL DESCRIPTION

LEGAL DESCRIPTION:
Per Instrument No. 202121241 SUR filed in the Office of the Recorder in Hendricks County, Indiana, and described as follows:

Addresses and Parcel Numbers:
4005 N C.R. 1000 E., Brownsburg, IN 46112
#32-08-17-365-002.000-016

The following represents a modernized legal description of a tract of land, as described in Instrument #1998-04591 in the Office of the Recorder of Hendricks County, Indiana and being located in the Southwest Quarter of Section 17 and the Northwest Quarter of Section 20 both in Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana. Said tract being more particularly bound and described as follows, to-Wit:

East line of the Southwest quarter of Section 17 as being North 01 degrees 22 minutes 53 seconds West, deed, measured North 01 degrees 00 minutes 22 seconds West and all other bearings being relative thereto.

Beginning at a Hendricks County Aluminum monument found marking the Southwest corner of the Southwest quarter Section 17, Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana; thence running North on and along the West line of the Southwest quarter of Section 17 bearing North 01° 22' 53" West 155.58 feet, deed, and measured North 01° 00' 22" West 155.53 feet to a point on said West line, marking the Northeast corner of the National Hot Rod Association tract as referenced in the caption; thence running East on and along the North line of the National Hot Rod Association bearing North 88° 42' 57" East 546.58 feet, deed, and measured North 89° 10' 00" East a distance of 40.19 feet to a found 5/8" rebar with Kruse Consulting cap affixed and the *Point of Beginning* of this description; thence continuing North 89° 10' 00" East a distance of 508.15 feet to a found 5/8" rebar with Kruse Consulting cap affixed marking the intersection with the Southwesterly Right-of-Way of the CSX Railroad; thence running Southeasterly on and along the CSX Railroad Right-of-Way and traveling into the Northwest quarter of Section 20 bearing South 61° 12' 10" East 366.62 feet, deed, and measured South 60° 46' 15" East a distance of 365.01 feet to a found 5/8" rebar with Gaston cap marking the Northeast corner of Lot 1 in Villa Farms Subdivision, as per plat thereof recorded in Plat Book 3, page 134 in the Office of the Recorder of Hendricks County, Indiana; thence running West on and along the North line of said Lot 1 in Villa Farms Subdivision bearing South 88° 25' 57" West 863.49 feet (plat for Villa Farms shows this line to be 860.54 feet), calculated to be 823.52 feet to a point marking the intersection with the East right-of-way of N. CR. 1000 E; thence North 01° 02' 08" East, on and along said right-of-way, 38.39 feet; thence North 01° 00' 22" East 155.02 feet to the *Point of Beginning*. Containing 2.895 acres, more or less, subject to all easements and rights-of-way of record.

Dedicated Right-of-Way:
Beginning at a Hendricks County Aluminum monument found marking the Southwest corner of the Southwest quarter Section 17, Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana, and the *Point of Beginning* of this description; thence running North on and along the West line of the Southwest quarter of Section 17 bearing North 01° 22' 53" West 155.58 feet, deed, and measured North 01° 00' 22" West 155.53 feet to a point on said West line, marking the Northeast corner of the National Hot Rod Association tract as referenced in the caption; thence running East on and along the North line of the National Hot Rod Association bearing North 88° 42' 57" East, deed, and measured North 89° 10' 00" East a distance of 40,19 feet to a found 5/8" rebar with Kruse Consulting cap affixed, marking the intersection with the east right-of-way line of N. CR 1000 E.; thence South 01° 00' 22" East 155.02 feet on and along said right-of-way; thence South 01° 02' 08" East 38.39 feet on and along said right-of-way, traveling into the Northwest quarter of Section 20; thence South 88° 25' 57" West 40,19 feet to a point on the West line of the Northwest quarter of Section 20; thence North 01° 02' 08" West on and along aforementioned West line, 38.39 feet to the *Point of Beginning* of this Dedicated Right-of-Way description. Containing 0.179 acres, more or less.

LINETYPE LEGEND:

- (SF) = SILT FENCE
- x x x = BARB WIRE FENCE
- o o o = CHAIN-LINK FENCE
- H H H = WOOD FENCE
- W = WATER LINE
- STRM = STORM SEWER LINE
- SAN = SANITARY SEWER LINE
- GAS = GAS LINE
- UGE = UNDERGROUND ELECTRIC LINE
- OHE = OVERHEAD ELECTRIC LINE
- COMM = COMMUNICATION LINE
- T = TELEPHONE LINE
- UTELE = UNDERGROUND TELEPHONE LINE
- FO = FIBER OPTIC LINE
- W = FIRE DEPARTMENT WATER SUPPLY
- 35' ESMT = 35' EASEMENT LINE
- 30' ESMT = 30' EASEMENT LINE
- 25' ESMT = 25' EASEMENT LINE
- 20' ESMT = 20' EASEMENT LINE
- 15' ESMT = 15' EASEMENT LINE
- 10' ESMT = 10' EASEMENT LINE
- 5' ESMT = 5' EASEMENT LINE
- ESMT = EASEMENT LINE
- SWALE = SWALE LINE
- EOW = EDGE OF WATER
- 35' SETBK = 35' SETBACK LINE
- 30' SETBK = 30' SETBACK LINE
- 25' SETBK = 25' SETBACK LINE
- 20' SETBK = 20' SETBACK LINE
- 15' SETBK = 15' SETBACK LINE
- 10' SETBK = 10' SETBACK LINE
- 5' SETBK = 5' SETBACK LINE
- SETBACK = SETBACK LINE
- ROW = RIGHT-OF-WAY LINE
- = PROPERTY BOUNDARY
- UD = SWALE UNDERDRAIN
- CABLE = CABLE TV LINE
- FL> = FLOW LINE

SYMBOL LEGEND:

- = STORM SEWER END SECTION
- = SANITARY SEWER CLEANOUT
- C.O. = CLEANOUT
- = MANHOLE
- = CATCH BASIN
- = CATCH BASIN
- = CURB INLET
- = FIRE HYDRANT
- = PRESSURE RELIEF VALVE
- WV = WATER VALVE
- W = WATER WELL
- GV = GAS VALVE
- = LIGHT POLE
- = UTILITY POLE
- IRF = PROPERTY CORNER IRF = IRON ROD FOUND RBF = REBAR FOUND
- RBF
- = SURVEY POINT (SECTION CORNER)
- BM = BENCHMARK
- = SOIL BORING
- 741.25 = NEW GRADE ELEVATION
- x741.25 = EXISTING GRADE ELEVATION
- = STRAW BALE DAM
- = ROCK DAM
- = SIGN
- STOP = STOP SIGN
- = HANDICAP SIGN
- ENTER ONLY = ENTER ONLY SIGN
- EXIT ONLY = EXIT ONLY SIGN
- DO NOT ENTER = DO NOT ENTER SIGN
- = EVERGREEN TREE
- = DECIDUOUS TREE
- = BUSH
- = TEMPORARY CONSTRUCTION ENTRNACE
- = GRASS PERMANENT SEEDING
- = EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR GREATER

SITE NOTES:

HANDICAP RAMP CONSTRUCTION NOTES:

1. ALL HANDICAP RAMPS SHALL MEET THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT. THE MOST RECENT INDOT STANDARD SPECIFICATIONS AND THE GOVERNING JURISDICTIONS MOST RECENT STANDARDS. CURB SWIPES REQUIRED FOR HANDICAP RAMPS SHALL BE PROVIDED AT TIME OF INITIAL CONSTRUCTION.

2. MINIMUM WIDTH OF CURB RAMP SHALL BE 4 FEET NOT INCLUDING FLARES. MAXIMUM SLOPE OF RAMPS SHALL BE 12:1

3. HANDICAP RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS.

4. TYPE 'E' RAMPS SHALL BE PROVIDED AT THE CENTERLINE OF RADIUS AT ALL CORNERS OF EVERY STREET INTERSECTION WHERE THERE IS AN EXISTING OR PROPOSED SIDEWALK AND CURB. IN CASE OF "T"-INTERSECTION, A TYPE 'C' RAMP SHALL BE PROVIDED ADJACENT TO EACH CORNER RAMP. TYPE 'C' RAMPS ALSO SHALL BE PROVIDED AT WALK LOCATIONS AT MID-BLOCK IN VICINITY OF HOSPITALS, MEDICAL CENTERS OR ATHLETIC STADIUMS. THE USE OF DETAILS CONTRARY TO THOSE SHOWN HEREIN SHALL REQUIRE THE PRIOR WRITTEN APPROVAL OF THE GOVERNING JURISDICTION.

5. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

6. RAMPS SHALL BE PROVIDED WHERE THE DRIVEWAY CURB EXTENDS ACROSS THE SIDEWALK.

7. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON ALL RAMPS WITH NO BREAKS IN GRADE.

8. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH THE RAMPS EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION. LOCATION OF THE RAMPS SHALL TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURES.

9. THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.

10. EXPANSION JOINTS FOR THE RAMP SHALL BE A MAXIMUM 1/2" WIDE. THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

11. CROSSWALK AND STOP LINE MARKING, IF USED, SHALL BE LOCATED TO STOP TRAFFIC SHORT OF ALL RAMP CROSSINGS.

12. SLOPE OF RAMP MAY BE WARPED WHEN FILED CONDITIONS WARRANT AND WHEN APPROVED BY THE GOVERNING JURISDICTION.

LOT COVERAGE

	ACRES	PERCENT
ASPHALT	1.845	60%
BUILDINGS	0.086	2.8%
SIDEWALK	0.016	0.5%
PERVIOUS	1.123	36.6%
TOTAL LOT	3.07	100%

SITE NOTES:

GENERAL NOTES:

1. REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTIONS BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT. PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.

2. ALL RADII SHELL BE 5 FOOT UNLESS NOTED OTHERWISE ON PLANS.

3. CONTRACTOR TO VERIFY EXACT LOCATION AND INVERT OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

4. STORM SEWER PIPE OF OTHER MATERIAL OR MATERIAL NOT MEETING THESE SPECIFICATIONS SHALL REQUIRE THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

5. THE CONTRACTOR SHALL SUBMIT INFORMATION TO THE APPROPRIATE JURISDICTIONAL CONTACT SHOWING CONFORMANCE WITH THESE SPECIFICATIONS UPON REQUEST.

6. NOTICE SHALL BE POSTED NEAR THE MAIN ENTRANCE OF THE PROJECT SITE CONTAINING ALL DOCUMENTATION LISTED IN IDEM CSGP SECTION 3.3(a)(13)(A).

PAVEMENT CONSTRUCTION:

1. THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION, SHALL APPLY TO WORKMANSHIP AND MATERIALS IN CONSTRUCTION OF SUBGRADE, PAVEMENT, CURBS AND WALKS.

A) PREPARE THE SUBGRADE IN ACCORDANCE WITH INDOT SECTION 207. NO TRAFFIC WILL BE PERMITTED ON THE PREPARED SUBGRADE PRIOR TO PAVING.

B) BITUMINOUS PAVEMENT IN ACCORDANCE WITH INDOT SECTION 403.

C) FINISHING EARTH GRADED SHOULDERS, DITCHES AND SLOPES IN ACCORDANCE WITH INDOT SECTION 208.

CONCRETE PAVEMENT AND WALKS:

1. SEE DETAIL FOR TYPE AND DETAILS.

2. CONCRETE SHALL BE READY MIXED PORTLAND CEMENT AND WATER CONFORMING TO ASTM C-150. AGGREGATES SHALL CONFORM TO ASTM C-33. COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 4000 P.S.I. WHERE REQUIRED, REINFORCEMENT SHALL BE WELDED STEEL WIRE FABRIC CONFORMING TO ASTM A-185.

3. ALL EXTERIOR CONCRETE SHALL CONTAIN 6% ± 1% AIR ENTRAINMENT.

APPLICATION:

A) PLACE CONCRETE ONLY ON A MOIST, COMPACT SUBGRADE OR BASE FREE FROM LOOSE MATERIAL. PLACE NO CONCRETE ON MUDDY OR FROZEN SUBGRADE IN ACCORDANCE WITH INDOT SECTION 604 AND 605.

B) CONCRETE SHALL BE DEPOSITED SO AS TO REQUIRE AS LITTLE REHANDLING AS PRACTICAL. WHEN CONCRETE IS TO BE PLACED AT AN ATMOSPHERIC TEMPERATURE OF 35 DEGREES OR LESS, PARAGRAPH 702.10 OF THE INDOT SPECIFICATIONS SHALL APPLY.

C) EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE BY ONE OF THE METHODS DESCRIBED IN INDOT SECTION 501.17.

PARKING LOT STRIPING:

1. PAINT MATERIAL SHALL COMPLY WITH FEDERAL SPECIFICATION TT-P-115A FOR TRAFFIC PAINT WITHOUT GLASS SPHERES. (COLOR BY OWNER SELECTION).

2. SUBCONTRACTOR TO PERFORM ALL FIELD LAYOUT WORK NECESSARY TO ACHIEVE STRAIGHT AND TRUE LINES. ASPHALT MUST BE CLEANED WITH POWER BROOM AND HAND BROOM TO REMOVE LOOSE MATERIAL BEFORE STRIPING. THE SUBCONTRACTOR IS TO PROVIDE BARRIERS TO PREVENT MARRING OF LINES BY VEHICLES UNTIL PAINT HAS DRIED. STRIPING PAINT SHALL BE APPLIED AT THE MINIMUM RATE OF ONE GALLON PER 100 SQUARE FEET OF PAINT (BASED ON 39% SOLIDS) AT A WIDTH OF 4 INCHES.

STREET PAVEMENT NOTES:

1. MATERIALS AND CONSTRUCTION FOR STREETS, WALKS, CURBS AND STORM WATER SEWERS SHALL CONFORM TO THE REQUIREMENTS OF THE INDIANA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS" LATEST PRINTED EDITION UNLESS SHOWN OR NOTED OTHERWISE.

2. PAVEMENT COMPOSITION NOTED ON DETAIL IS THE MINIMUM REQUIREMENT FOR STREET CLASSES 1, 2, 3, 4 AND 5, WITH A GOOD SUB-GRADE SOIL CLASSIFICATION. PAVEMENT COMPOSITION FOR OTHER CLASSES OF STREET SHALL BE DESIGNED WITH CONSIDERATION GIVEN TO THE TRAFFIC VOLUME, SUB-GRADE SOIL EVALUATION AND TYPE OF PAVEMENT MATERIAL TO BE USED.

3. THE SUB-GRADE MUST BE PROOF ROLLED BY THE CONTRACTOR USING A FULLY LOADED TRI-AXLE DUMP TRUCK, MINIMUM LOAD OF 20 TONS

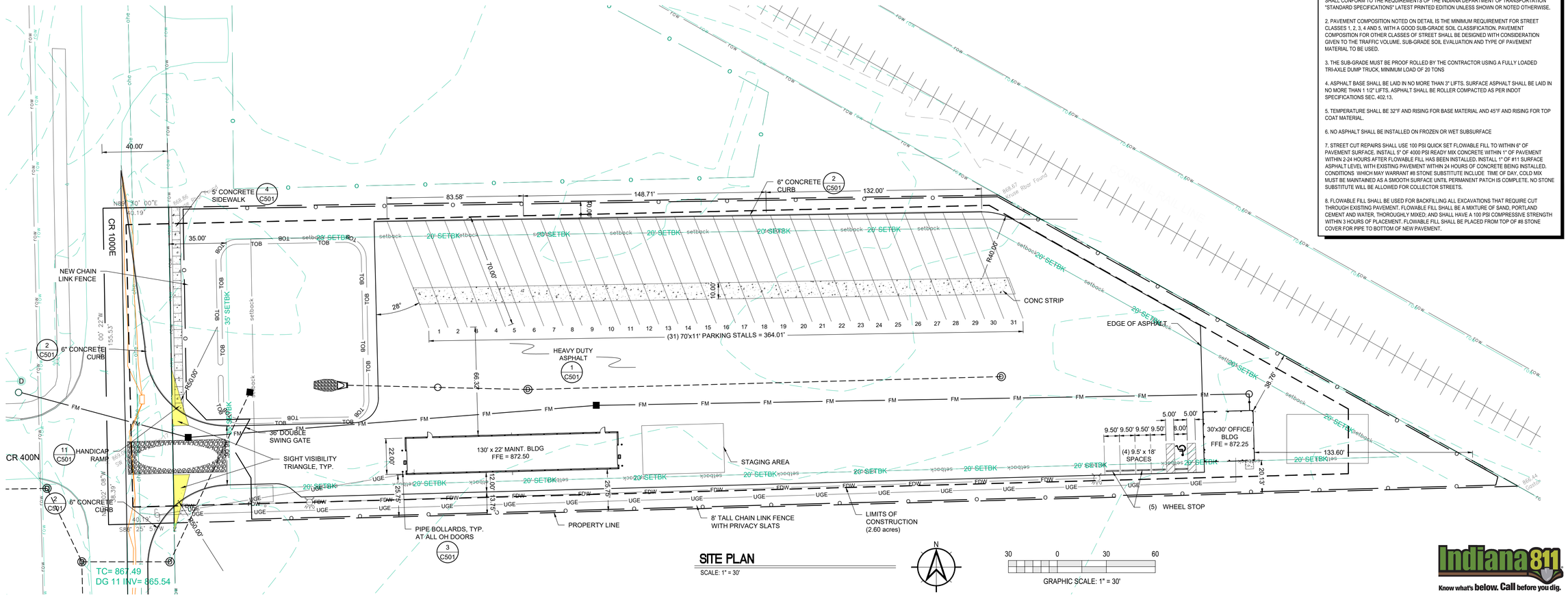
4. ASPHALT BASE SHALL BE LAID IN NO MORE THAN 3" LIFTS. SURFACE ASPHALT SHALL BE LAID IN NO MORE THAN 1 1/2" LIFTS. ASPHALT SHALL BE ROLLER COMPACTED AS PER INDOT SPECIFICATIONS SEC. 402.13.

5. TEMPERATURE SHALL BE 32°F AND RISING FOR BASE MATERIAL AND 45°F AND RISING FOR TOP COAT MATERIAL.

6. NO ASPHALT SHALL BE INSTALLED ON FROZEN OR WET SUBSURFACE

7. STREET CUT REPAIRS SHALL USE 100 PSI QUICK SET FLOWABLE FILL TO WITHIN 6" OF PAVEMENT SURFACE. INSTALL 5" OF 4000 PSI READY MIX CONCRETE WITHIN 1" OF PAVEMENT WITHIN 2-24 HOURS AFTER FLOWABLE FILL HAS BEEN INSTALLED. INSTALL 1" OF #11 SURFACE ASPHALT LEVEL WITH EXISTING PAVEMENT WITH 24 HOURS OF CONCRETE BEING INSTALLED. CONDITIONS WHICH MAY WARRANT #8 STONE SUBSTITUTE INCLUDE TIME OF DAY, COLD MIX MUST BE MAINTAINED AS A SMOOTH SURFACE UNTIL PERMANENT PATCH IS COMPLETE. NO STONE SUBSTITUTE WILL BE ALLOWED FOR COLLECTOR STREETS.

8. FLOWABLE FILL SHALL BE USED FOR BACKFILLING ALL EXCAVATIONS THAT REQUIRE CUT THROUGH EXISTING PAVEMENT. FLOWABLE FILL SHALL BE A MIXTURE OF SAND, PORTLAND CEMENT AND WATER, THOROUGHLY MIXED, AND SHALL HAVE A 100 PSI COMPRESSIVE STRENGTH WITHIN 3 HOURS OF PLACEMENT. FLOWABLE FILL SHALL BE PLACED FROM TOP OF #8 STONE COVER FOR PIPE TO BOTTOM OF NEW PAVEMENT.



SITE PLAN

SCALE: 1" = 30'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

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4005 N CR 1000 E
BROWNSBURG, IN 46122

SITE PLAN

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Brian E. Moench

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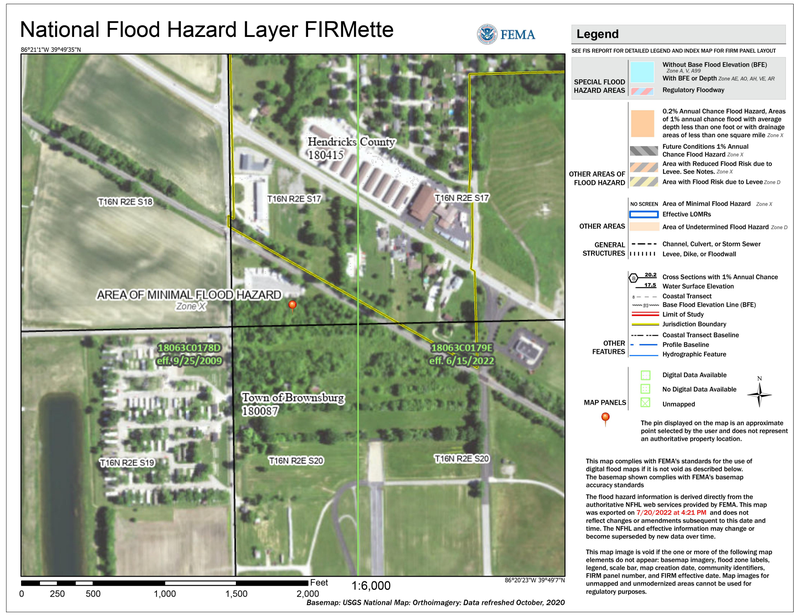




Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	1.8	53.2%
YcIA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	1.5	46.8%
Totals for Area of Interest		**3.3**	**100.0%**

FLOOD ZONE DESIGNATION:

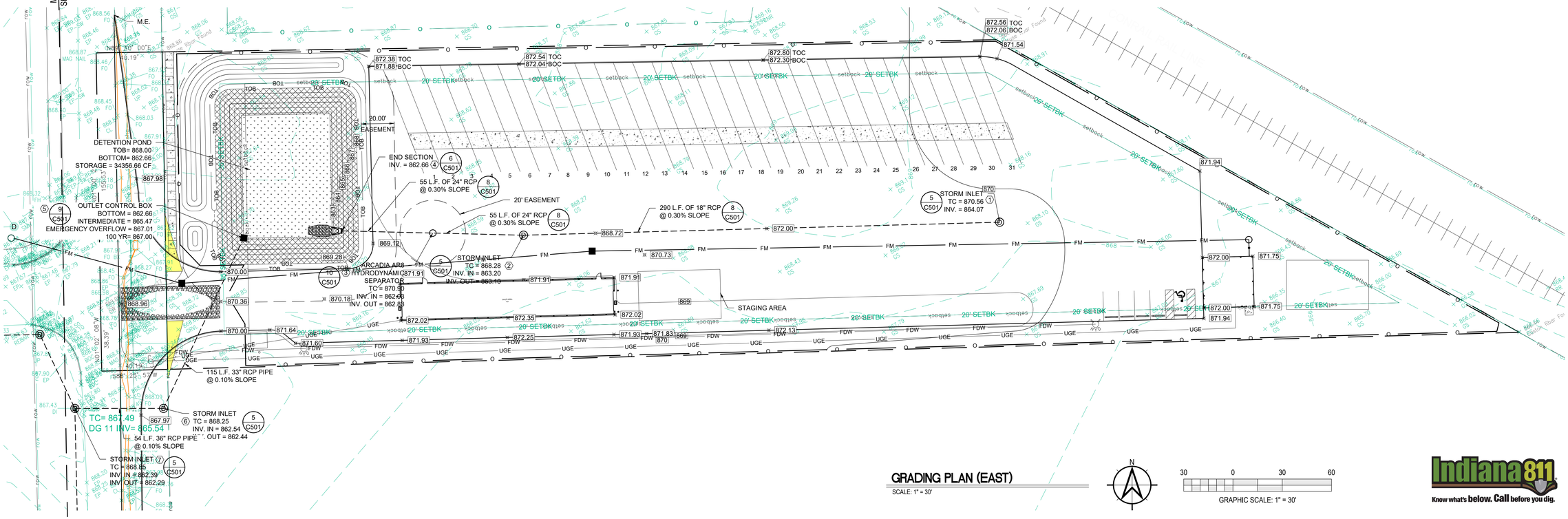
THIS LOT LIES ENTIRELY IN FLOOD HAZARD ZONE "X" AS SCALES FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR:

HENDRICKS COUNTY, INDIANA

COMMUNITY NAME:	TOWN OF BROWNSBURG
COMMUNITY NUMBER:	180087
PANEL NUMBER:	C0179E
DATED:	JUNE 15, 2022

STAGE STORAGE TABLE

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
862.660	4,044.91	N/A	N/A	0.00	N/A	0.00
863.000	4,312.07	0.340	1420.69	1420.69	1420.44	1420.44
864.000	5,146.08	1.000	4729.07	6149.76	4722.93	6143.37
865.000	6,051.22	1.000	5598.65	11748.41	5592.54	11735.92
866.000	7,016.36	1.000	6533.79	18282.20	6527.84	18263.76
867.000	8,038.03	1.000	7527.19	25809.39	7521.41	25785.17
868.000	9,116.26	1.000	8577.15	34386.54	8571.50	34356.66



GRADING PLAN (EAST)

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

GRADING NOTES:

GENERAL GRADE NOTES:

1. REFER TO THE INDIANA DEPARTMENT OF TRANSPORATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTION BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT, PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.

2. FILL MATERIAL SHALL CONSIST OF EARTH OBTAINED FROM CUT AREAS, BORROW PITS OR OTHER APPROVED SOURCES. EARTH SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES AND LARGE ROCKS. THE FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED SIX INCHES FOLLOWING COMPACTION. PROPER MOISTURE CONTENT OF FILL MATERICAL WILL BE SUCH TO ACHIEVE SPECIFIED COMPACTION DENSITY. ALL FILL BENEATH PAVED AREAS, FLOOR SLABS AND FURTURE BUILDINGS SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY PER ASTM D-1557. FIELD COMPACTING TEST SHALL BE RUN ON EACH LIFT, IN FILL SECTIONS, AND THE REQUIRED COMPACTION ON EACH LIFT SHALL BE IN ACCORDANCE WITH INDOT SECTION 211.

3. MAXIMUM LAWN SLOPE IS 3:1.

4. THE CONTRATOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC. IN THE AFFECTED CONSTRUCTION AREA EXISTING UTILITY STRUCTURES ARE SHOWN HERE IN ACCORDANCE WITH AVAILABLE INFORMATION. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.

5. ALL SPOT ELEVATIONS ARE TO FINISHED GRADE.

6. ALL EXISTING MANHOLE CASTINGS TO BE ADJUSTED TO FINISH GRADE.

7. COMPACT "B" BORROW BACK FILL REQ'D. OVER ALL UTILITIES IN PAVED AREAS.

8. DISTURBED AREAS TO BE GRADED TO FINAL GRADE AND RECEIVE A MIN OF 4" TOPSOIL

9. STABILIZATION MUST BE INITIATED BY END OF THE 7TH DAY THE AREA IS LEFT IDLE AND STABILIZATION SHALL BE COMPLETED WITHIN 14 DAYS AFTER INITIATION.

10. FINAL STABILIZATION IS ACHIEVED WHEN ALL LAND DISTURBING ACTIVITIES HAVE BEEN COMPLETED AND A UNIFORM PERENNIAL VEGATATIVE COVER WITH DENSITY OF 70% ON ALL UNPAVED SURFACES.

11. WATER SHOULD BE PUMPED THROUGH BMP AND INTO THE DETENTION POND.

REINFORCED CONCRETE PIPE:

1. REINFORCED CONCRETE PIPE SHALL BE CLASS III, IV OR V AS SPECIFIED IN ASTM C-76.

2. REINFORCED ELLIPTICAL CONCRETE PIPE SHALL BE CLASS HE-III OR HE-IV AS SPECIFIED IN ASTM C-507.

3. LIFT HOLES ARE NOT ALLOWED FOR PIPE LESS THAN 24 INCHES IN DIAMETER. A MAXIMUM OF TWO LIFT HOLES ARE ALLOWED FOR PIPE 24 INCHES IN DIAMETER OR LARGER. LIFT HOLES SHALL BE REPAIRED ACCORDING TO MOST RECENT INDOT STANDARD SPECIFICATIONS.

4. FITTINGS AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE TYPE OF PIPE BEING USED.

5. EACH PIPE SECTION SHALL BE MARKED WITH DATE OF MANUFACTURE, SIZE AND CLASS OF PIPE, SPECIFICATION DESIGNATION, MANUFACTURER AND PLANT IDENTIFICATION.

6. PIPE SHALL BE FURNISHED WITH A BELL OR GROOVE ON ONE END OF A UNIT OF PIPE AND A SPIGOT OR TONGUE ON THE ADJACENT END OF THE ADJOINING PIPE. ALL JOINTS SHALL HAVE A GROOVE ON THE SPIGOT FOR PLACEMENT OF A RUBBER "O-RING" OR PROFILE GASKET IN ACCORDANCE WITH ASTM C-443. THE GASKET SHALL BE A CONTINUOUS RING WHICH FITS SNUGLY INTO THE ANNULAR SPACE BETWEEN THE OVERLAPPING SURFACES OF THE ASSEMBLED PIPE JOINT.

EMERGENCY SPILLWAY DETAIL

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

GRADING PLAN (EAST)

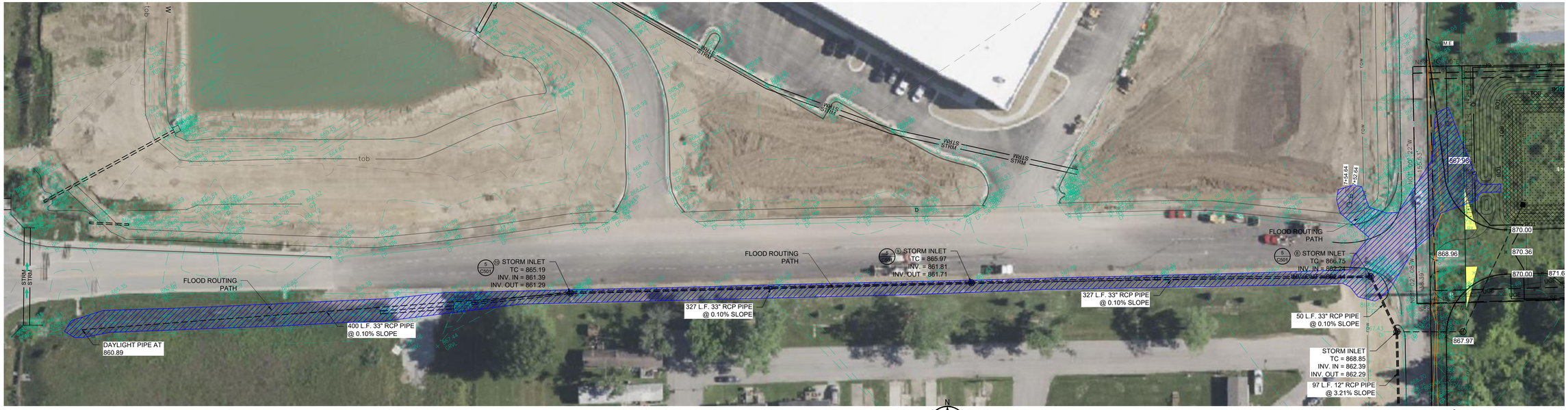
BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER
Susan E. Neal

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C301A

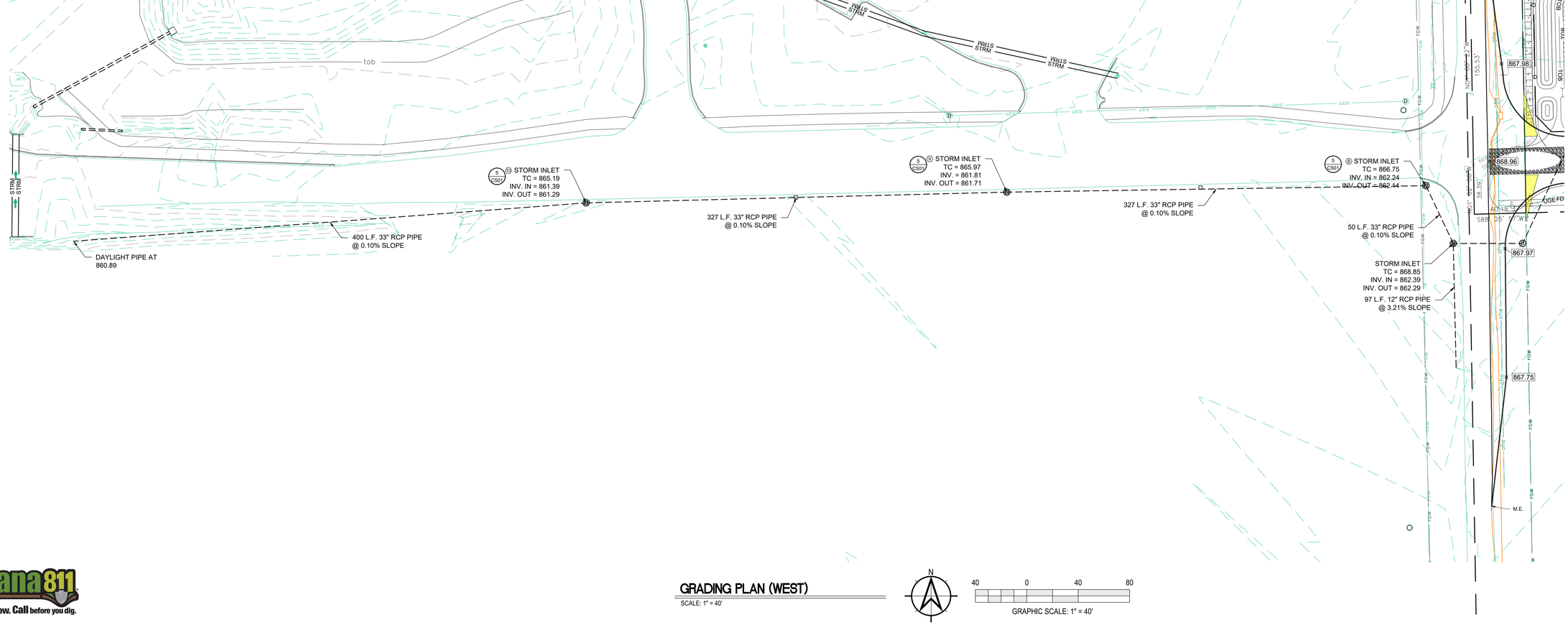
Indiana 811
Know what's below. Call before you dig.



FLOOD ROUTING PATH

SCALE: 1" = 40'

GRAPHIC SCALE: 1" = 40'



GRADING PLAN (WEST)

SCALE: 1" = 40'

GRAPHIC SCALE: 1" = 40'

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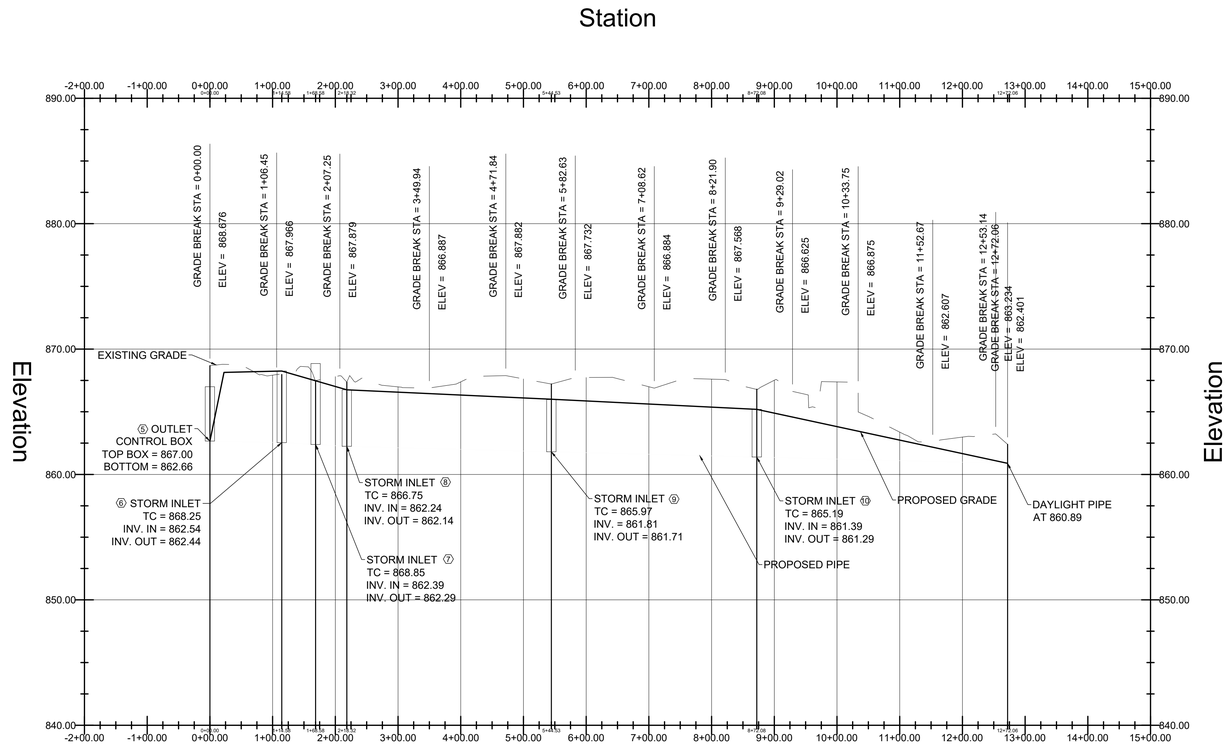
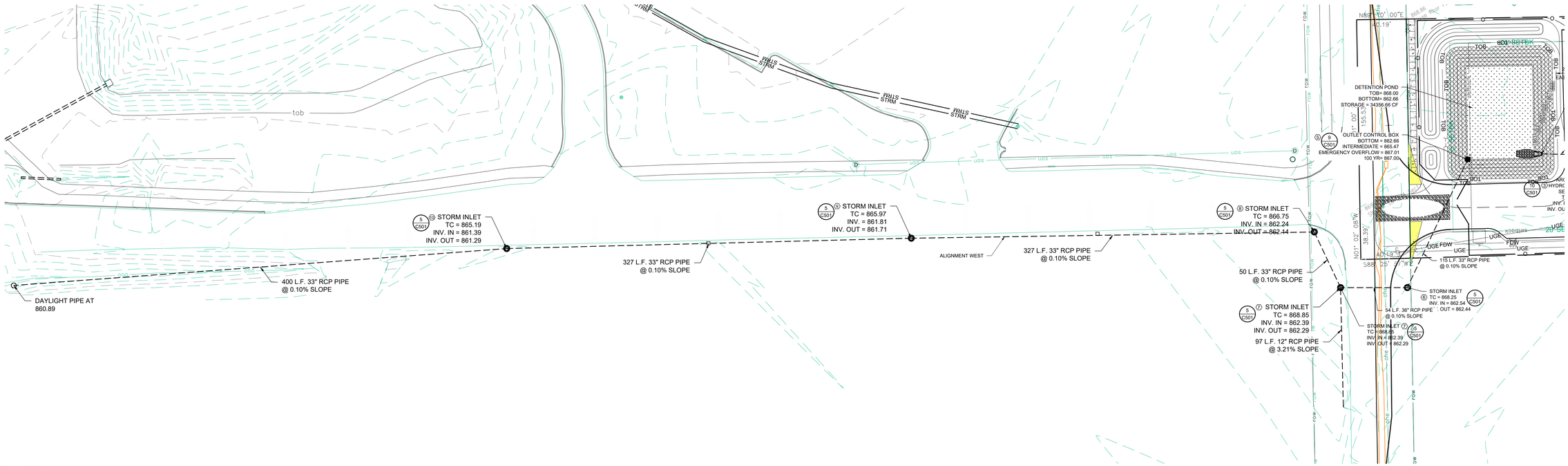


PIPE PROFILE VIEW
ALIGHTNMENT WEST

NOT TO SCALE



ALIGHTNMENT WEST

SCALE: 1" = 40'

GRAPHIC SCALE: 1" = 40'

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REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER
Brian E. Moench

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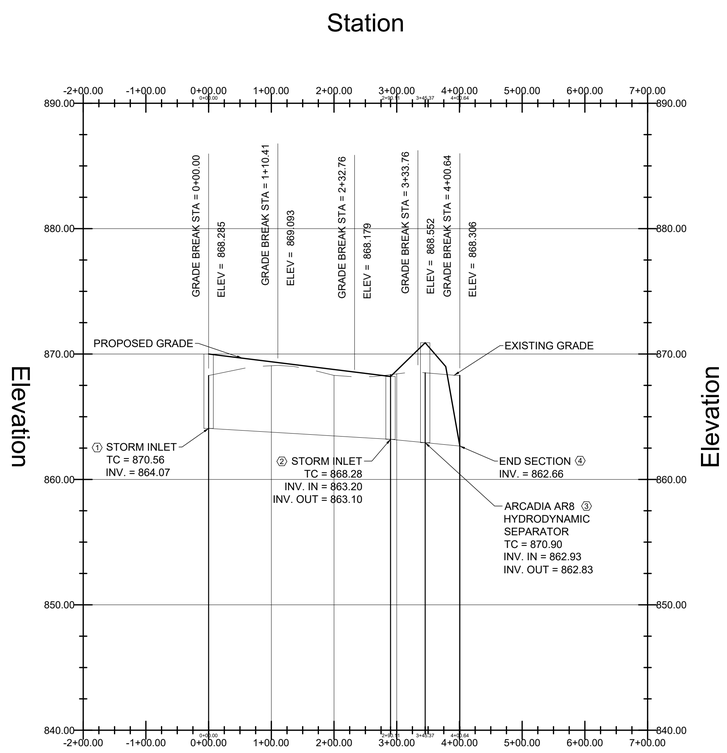
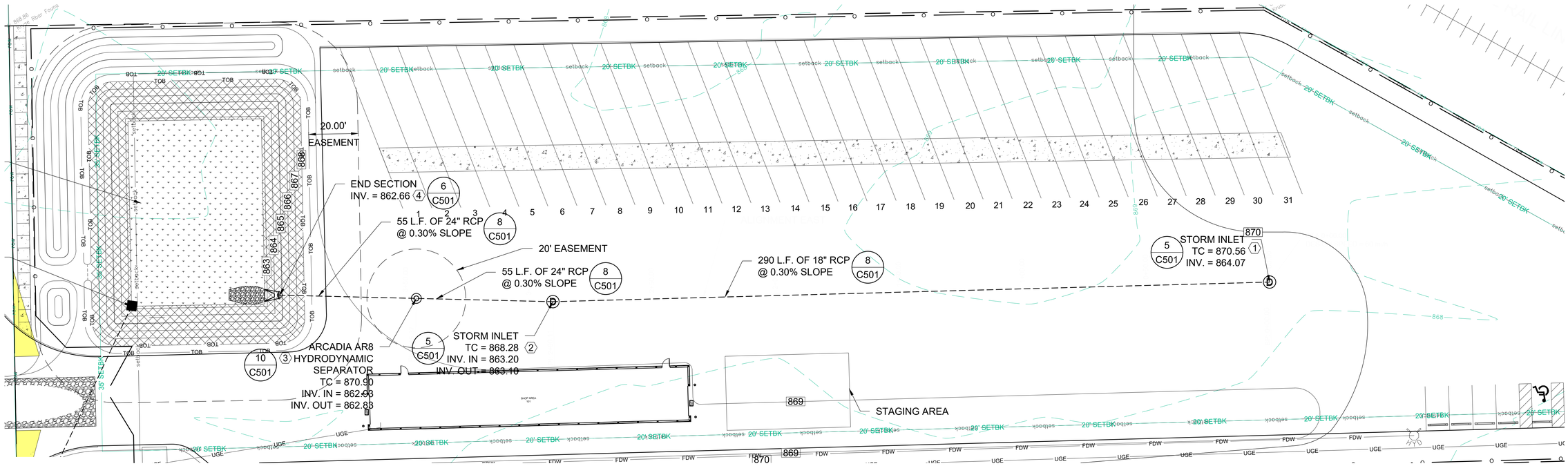


PIPE PROFILE VIEW
ALIGHTNMENT EAST

NOT TO SCALE



ALIGHTNMENT EAST

SCALE: 1" = 20'

N

40 0 40 80

GRAPHIC SCALE: 1" = 40'

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SHEET NUMBER:	C301D

SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING		A			*	///	///	///	*//			
DORMANT SEEDING	B										B	
TEMPORARY SEEDING		C	E		*	///	///	///	*D			
SODDING		F**			*	///	///	///	*			
MULCHING	G											

A = KENTUCKY BLUEGRASS 100 LBS/ACRE; CREEPING RED FESCUE 100 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 20 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

B = KENTUCKY BLUEGRASS 120 LBS/ACRE; CREEPING RED FESCUE 120 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 30 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

C = SPRING OATS 3 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

D = WHEAT OR RYE 2 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

E = ANNUAL RYEGRASS 40 LBS/ACRE (1 LB/1000 SQ. FT.)
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE. APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

F = SOD

G = STRAW MULCH 2 TONS/ACRE

* / I / * = IRRIGATION NEEDED DURING JUNE, JULY, AUGUST AND/OR SEPTEMBER ** = IRRIGATION NEEDED FOR 2 WEEKS AFTER SUPPLYING SOD

INSTALLATION SCHEDULE:

CONSTRUCTION PHASE:	CONSTRUCTION SCHEDULE:
PRE-CONSTRUCTION ACTIONS (EVALUATION/PROTECTION OF IMPORTANT SITE CHARACTERISTICS)	BEFORE CONSTRUCTION, EVALUATE, MARK AND PROTECT IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, UNIQUE AREAS (e.g., WETLANDS) TO BE PRESERVED, ON SITE SEPTIC SYSTEM ABSORPTION FIELDS IF APPLICABLE, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS.
CONSTRUCTION ACCESS (CONSTRUCTION ENTRANCES, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS)	STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS WORK TAKES PLACE.
SEDIMENT BARRIERS AND TRAPS (BASIN TRAPS, SILT FENCES, OUTLET PROTECTION)	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ASSESSED. INSTALL ADDITIONAL RUNOFF CONTROL MEASURES DURING GRADING AS NEEDED.
RUNOFF CONVEYANCE SYSTEM (STABILIZED STREAM-BANKS, STORM DRAINS, INLET AND OUTLET PROTECTIONS, WATER QUALITY STRUCTURES)	WHERE NECESSARY, STABILIZE STREAMBANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPLE CONVEYANCE SYSTEM WITH RUNOFF CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
LAND CLEARING AND GRADING (CUTTING/FILLING/GRADING, DRAINS, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, SURFACE ROUGHENING)	BEGIN MAJOR CLEARING AND GRADING AFTER INSTALLING THE KEY SEDIMENT AND RUNOFF MEASURES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES.
SURFACE STABILIZATION (TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETED.
BUILDING CONSTRUCTION (BUILDINGS, UTILITIES, PAVING)	INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES AS WORK TAKES PLACE.
LANDSCAPING & FINAL STABILIZATION (TOP SOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE TEMPORARY CONTROL MEASURES AND STABILIZE.

RESPONSIBLE PARTY FOR EROSION CONTROL

COMPANY: LIONS TRAN INC.
NAME: MALHI KULWINDER
ADDRESS: 7655 E. US HWY 36
AVON, INDIANA 46123
PHONE: 317-989-1580

EROSION CONTROL NOTES:

SOIL EROSION CONTROL SUMMARY:

1. CONTRACTOR SHALL INSTALL SODDING, INLET PROTECTION, AND FILTERS AS SHOWN.

2. MASS GRADE THE SITE (SIDES OF SWALES, MOUNDS AND PONDS TO BE SODDED OR SEEDED AND MULCHED IMMEDIATELY UPON COMPLETION). TEMPORARY SEEDING SHALL BE RECOMMENDED FOR ALL SWALES AND DISTURBED AREAS THAT CANNOT BE FINAL SEEDED WITHIN A TIME PERIOD THAT WILL PREVENT SOIL EROSION, FOR TEMPORARY SEEDING THE CONTRACTOR SHALL UTILIZE A FAST GROWING SEED OF EITHER OATS, ANNUAL RYE GRASS, WHEAT OR RYE DEPENDING UPON TIME OF YEAR. DISTURBED AREAS SHOULD BE KEPT TO A MINIMUM AT ALL TIMES.

3. CONTRACTOR SHALL CONTROL MUD ACCUMULATION ON ALL STREETS SURROUNDING THE PROJECT BY INSTALLING STONE SURFACE AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC LEAVES THE SITE. DUST SHALL BE KEPT TO A MINIMUM BY UTILIZING SPRINKLING, CALCIUM CHLORIDE, VEGETATIVE COVER, SPRAY ON ADDITIVES OR OTHER APPROVED METHODS.

4. MAINTAIN ALL FILTERS DURING CONSTRUCTION TO PREVENT ANY BLOCKAGES FROM ACCUMULATED SEDIMENT. ADDITIONAL SEEDING MAY BE REQUIRED DURING CONSTRUCTION AS SPECIFIED BY ENGINEER OR SOIL CONSERVATION SERVICE, RIPRAP SHALL BE PLACED IN AREAS OF HIGH VELOCITY STREAM FLOW (MINIMUM SIZE 1/3 CU.FT.). PAYMENT FOR ADDITIONAL RIPRAP NOT SHOWN ON PLANS AND SEEDING SHALL BE ON A UNIT BASIS.

5. CONTRACTOR SHALL INSTALL ALL STORM SEWER INLET FILTERS AS STORM SEWER SYSTEM IS INSTALLED.

6. ALL PROPOSED STREET AREAS TO BE PAVED AS SOON AS POSSIBLE AFTER SUBGRADE IS PREPARED.

7. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS ONLY WHEN THERE IS SUFFICIENT GROWTH OF GROUND COVER TO PREVENT FURTHER EROSION.

8. ALL SWALES SHALL BE SEEDED AND SODDED (AS INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN) IMMEDIATELY AFTER FINAL GRADING.

9. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE INDIANA HANDBOOK FOR EROSION CONTROL IN DEVELOPING AREAS, MOST RECENT EDITION.

MAINTENANCE:

INSPECT PERIODICALLY, ESPECIALLY AFTER STORM EVENTS, UNTIL THE STAND IS SUCCESSFULLY ESTABLISHED. (CHARACTERISTICS OF A SUCCESSFUL STAND INCLUDE: VIGOROUS DARK GREEN OR BLUISH-GREEN SEEDLINGS; UNIFORM DENSITY WITH NURSE PLANTS, LEGUMES, AND GRASSES WELL INTER-MIXED; GREEN LEAVES; AND THE PERENNIALS REMAINING GREEN THROUGHOUT THE SUMMER, AT LEAST AT THE PLANT BASE.)

PLAN TO ADD FERTILIZER THE FOLLOWING GROWING SEASON ACCORDING TO SOIL TEST RECOMMENDATIONS.

REPAIR DAMAGED, BARE, OR SPARSE AREAS BY FILLING ANY GULLIES, RE-FERTILINZING, OVER- OR RE-SEEDING, AND MULCHING.

IF PLANT COVER IS SPARSE OR PATCHY, REVIEW THE PLANT MATERIALS CHOSEN, SOIL FERTILITY, MOISTURE CONDITION, AND MULCHING AFTER RE-PREPARING THE SEEDBED.

IF VEGETATION FAILS TO GROW, CONSIDER SOIL TESTING TO DETERMINE ACIDITY OR NUTRIENT DEFICIENCY PROBLEMS. (CONTACT YOUR SWCD OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE.)

IF ADDITIONAL FERTILIZATION IS NEEDED TO GET A SATISFACTORY STAND, DO SO ACCORDING TO SOIL TEST RECOMMENDATIONS.

EROSION CONTROL NOTES:

PRIOR TO ANY WORK BEING DONE, A TEMPORARY CONSTRUCTION ENTRANCE AND SILT FENCING SHALL BE INSTALLED.

AFTER COMPLETION OF A STORM STRUCTURE, THE CURB INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY.

UPON COMPLETION OF SWALES AND SIDE SLOPES, CONTRACTOR SHALL INSTALL THE EROSION CONTROL BLANKETS.

ALL AREAS NOT DENOTING PERMANENT SEEDING OR FIBER BLANKETS SHALL BE TEMPORARILY SEEDED.

THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR KEEPING THE EXISTING ROADWAYS CLEAR OF DIRT AND DEBRIS.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AS CONDITIONS WARRANT.

EROSION PROTECTION DURING CONSTRUCTION AND SEEDING:

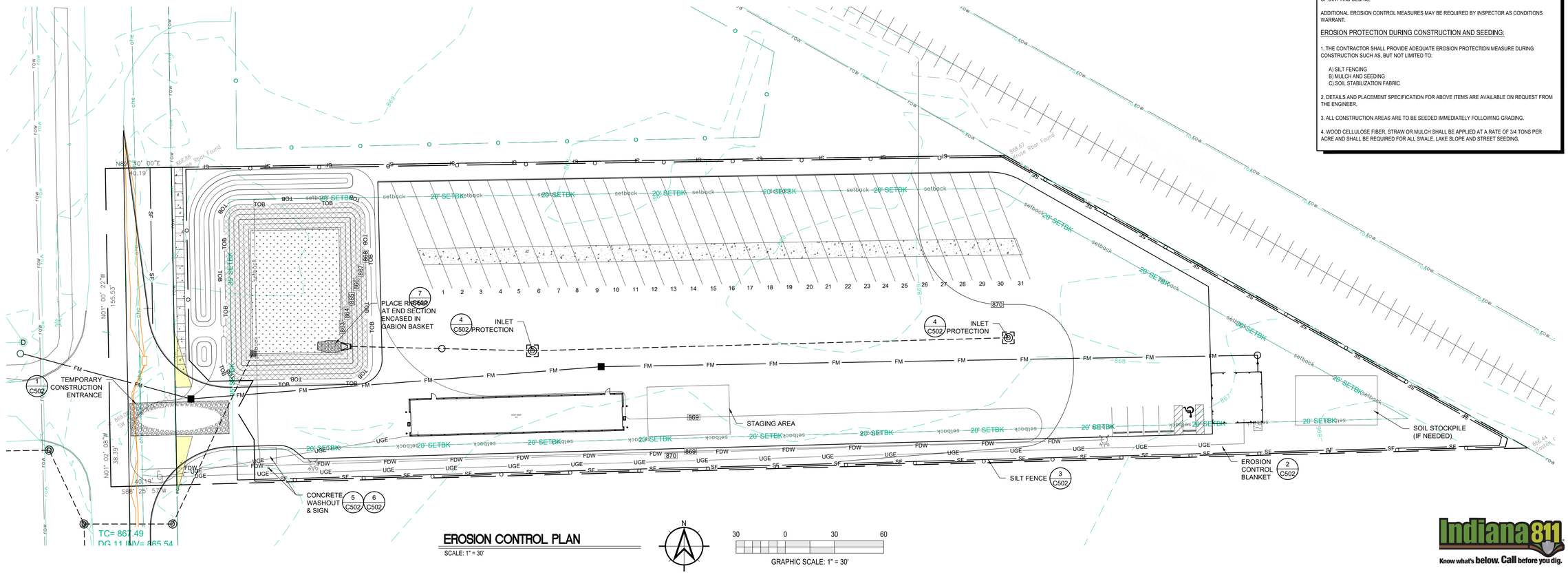
1. THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION PROTECTION MEASURE DURING CONSTRUCTION SUCH AS, BUT NOT LIMITED TO:

A) SILT FENCING
B) MULCH AND SEEDING
C) SOIL STABILIZATION FABRIC

2. DETAILS AND PLACEMENT SPECIFICATION FOR ABOVE ITEMS ARE AVAILABLE ON REQUEST FROM THE ENGINEER.

3. ALL CONSTRUCTION AREAS ARE TO BE SEEDED IMMEDIATELY FOLLOWING GRADING.

4. WOOD CELLULOSE FIBER, STRAW OR MULCH SHALL BE APPLIED AT A RATE OF 3/4 TONS PER ACRE AND SHALL BE REQUIRED FOR ALL SWALE, LAKE SLOPE AND STREET SEEDING.



EROSION CONTROL PLAN

SCALE: 1" = 30'

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DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C302

Construction Storm Water General Permit Index Sheet

SECTION	TITLE	SHEET
A1	Index of the location of required plan elements in the construction plan	C000
A2	A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads	C000
A3	Narrative of the nature and purpose of the project	C303
A4	Latitude and longitude to the nearest fifteen (15) seconds	C000
A5	Legal description of the project site	C201
A6	11x17-inch plat showing building lot numbers/ boundaries and road layout/names	C303
A7	Boundaries of the one hundred (100) year flood plains, floodway fringes, and floodways	C301
A8	Land use of all adjacent properties	C303
A9	Identification of a U.S. EPA approved or established TMDL	C303
A10	Name(s) of the receiving water(s)	C303
A11	Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired	C303
A12	Soils map of the predominate soil types	C301
A13	Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)	C303
A14	Identification of any other state or federal water quality permits or authorizations that are required for construction activities	C303
A15	Identification and delineation of existing cover, including natural buffers	C301
A16	Existing site topography at an interval appropriate to indicate drainage patterns	C301
A17	Location(s) where run-off enters the project site	C301
A18	Location(s) where run-off discharges from the project site prior to land disturbance	C301
A19	Location of all existing structures on the project site	N/A
A20	Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of storm water management	N/A
A21	Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features	C303
A22	Size of the project area expressed in acres	C000
A23	Total expected land disturbance expressed in acres	C000
A24	Proposed final topography	C301
A25	Locations and approximate boundaries of all disturbed areas	C201
A26	Locations, size, and dimensions of all storm water drainage system such as culverts, storm water sewer, and conveyance channels	C301
A27	Locations of specific points where storm water and non-storm water discharges will leave the project site	C301
A28	Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas	C201
A29	Location of all on-site and off-site soil stockpiles and borrow areas	C302
A30	Construction support activities that are expected to be part of the project	N/A
A31	Location of any in-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds	N/A
B1	Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges	C303
B2	Stable construction entrance locations and specifications	C302
B3	Specifications for temporary and permanent stabilization	C302
B4	Sediment control measures for concentrated flow areas	C301
B5	Sediment control measures for sheet flow areas	C302
B6	Run off control measures	C302
B7	Storm water outlet protection location and specifications	C302/501
B8	Grade stabilization structure locations and specifications	N/A
B9	De-watering applications and management methods	C303
B10	Measures utilized for work within water bodies	N/A
B11	Maintenance guidelines for each proposed storm water quality measure	C303
B12	Planned construction sequence that describes the implementation of storm water quality measures in relation to land disturbance	C303
B13	Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project	N/A
B14	Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1	C303
B15	Material handling and storage procedures associated with construction activity	C303
C1	Description of pollutants and their sources associated with the proposed land use	C303
C2	Description of proposed post-construction storm water measures	C303
C3	Plan details for each storm water measures	C301/501
C4	Sequence describing storm water measure implementation	C303
C5	Maintenance guidelines for proposed post-construction storm water measures	C303
C6	Entity that will be responsible for operation and maintenance of the post-construction storm water measures	C302

NOTES:
"NA" - NON APPLICABLE

Construction Storm Water General Permit Notes Section A

A1 - Index of the location of required plan elements in the construction plan:

An index addressing the required elements within the drawing set is on C000 - Cover Sheet.

A2 - A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads:

A map showing the project in relationship to other areas of the county is on C000 - Cover Sheet.

A3 - Narrative of the nature and purpose of the project:

The project consists of the development of a new heavy duty asphalt parking lot with 36 truck and trailer stalls, a 2860 sq. ft. maintenance building, and 900 sq. ft. office building w/ employee parking. The site is located at 4005 North County Road 1000E in Brownsburg, Indiana 46112. Associated with the new improvements will be storm water management system consisting of overland flow, storm inlets, and retention/percolation basin with outlet control. (Shown on C303 - Construction Storm Water General Permit Notes).

A4 - Latitude and Longitude:

The latitude is 39°49'21"N and longitude is 86°20'42.19"W. (Shown on C000 - Cover Sheet)

A5 - Legal description of the project site:

A legal description of the overall parcel is on C201 - Site Plan

A6 - 11 x 17-inch plat showing building lot numbers/boundaries and road layout/names:

An 11x17 in. plan showing the overall property and new improvements is attached to this narrative.

A7 - Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways:

The 100 year floodway and floodway fringe is on C301 - Grading Plan and is based on best available information from the Indiana Department of Natural Resources.

A8 - Land use of all adjacent properties:

North - Commercial
South - Undeveloped/Woods
East - Railroad/Commercial
West - Residential/Agricultural
(Shown on C303 - Stormwater Pollution Prevention Plan)

A9 - Identification of a U.S. EPA approved or established TMDL:

Site to discharge stormwater into ground via percolation basin or through evaporation. Any dicharge via the emergency spillway will likely evaporate/percolate prior to being received by White Lick Creek (INW01D2_05) which is EPA 303d listed, but has no established TMDL (Shown on C304 - Construction Storm Water General Permit Notes)

A10 - Name(s) of the receiving water(s):

Receiving water is White Lick Creek (INW01D2_05) - (Shown on C303 - Stormwater Pollution Prevention Plan)

A11 - Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired:

The impaired condition of White Lick Creek is due to presence of Escherichia Coli (E. coli) (Noted on C304 - Construction Storm Water General Permit Notes)

A12 - Soils map of the predominate soil types:

The soils on this property are predominantly Brookston Silty Clay Loam-Urban Land Complex and Crosby Silt Loam.
Brookston Silty Clay Loam features wetness as the main limitation affecting use and management of this soil type. Crosby Silt Loam features slow permeability and available water capacity is high with moderate content of organic matter.

Both soils are fair to poor for use as subgrade material as well as shear strength, compaction, and stability, medium to high compressibility, moderate to low shrink-swell potential, subject to frost heave, and seasonal high water table. A soils map is on C301 - Grading Plan.

A13 - Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)

There are no known water courses on or adjacent to this site.

A14 - Identification on any other state or federal water quality permits or authorizations that are required for construction activities:

This phase of the project scope will not require any additional federal or state water permits as noted on C304 - Construction Storm Water General Permit Notes.

Construction Storm Water General Permit Notes Section A (cont'd)

A15 - Identification and delineation of existing cover, including natural buffers:

The site is almost entirely covered with thick/heavy vegetation and trees with partial remnants of an existing gravel drive. The delineation of the various surface coverage is on C301 - Grading Plan.

A16 - Existing site topography at interval appropriate to indicate drainage patterns:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing and proposed contours are on C301 - Grading Plan.

A17 - Location(s) where run-off enters the project site:

As referenced above, the topography in this area is largely flat resulting in little to no potential for run-off entering the site from adjacent property. The existing contours are on C301 - Grading Plan.

A18 - Location(s) where run-off discharges from the project site prior to land disturbances:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing contours are on C301 - Grading Plan.

A19 - Location(s) of all existing structures on the project site:

The existing site is a vacant lot with no existing structures as depicted on C301 - Grading Plan.

A20 - Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management:

There are no existing retention facilities on site as depicted on C301 - Grading Plan.

A21 - Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features:

There are no locations on property where storm water may directly discharge into the groundwater as illustrated on C301 - Grading Plan.

A22 - Size of the project expressed in acres:

The total project are if 3.07 acres as noted on C000 - Cover Sheet.

A23 - Total expected land disturbance expressed in acres:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet.

A24 - Proposed final topography:

The final topography is on C301 - Grading Plan and is illustrated as spot elevations and contours.

A25 - Locations and approximate boundaries of all disturbed areas:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet and shown as the Limits of Construction on C201 - Site Plan.

A26 - Locations, size and dimensions of all stormwater drainage systems such as culverts, stormwater sewer, and conveyance channels:

The stormwater is conveyed by overland flow, underground storm pipes, and retention pond. These are shown on C301 - Grading Plan.

A27 - Locations of specific points where stormwater and non-stormwater discharges will leave the project site:

Stormwater discharge from the site will be via an emergency spillway from the retention pond at the east end of the site and sanitary discharge will be via a pump and force main at the west end of the site.(Shown on C301 - Grading Plan & C402 Sanitary Force Main Plan & Profile.

A28 - Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas:

All the surface improvements including buildings, impervious areas, new surface finishes, etc. are on C201 - Site Plan for horizontal notations and C301 - Grading Plan for elevations.

A29- Location of all on-site and off-site soil stockpiles and borrow areas:

The soil storage area will be on site located at the east end of the site (west of the pond). All soil will be placed in the final location or hauled off upon completion of construction as shown on C302 - Erosion Control Plan.

A30- Construction support activities that are expected to be part of the project

Any construction support area will be within the limits of disturbance and used as directed by the contractor. Since they are within the limits of disturbance, there will be no impact sensitive areas.

A31- Location of any on-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds:

There are no in stream activities associated with this project.

Construction Storm Water General Permit Notes Section B

B1- Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges:

1. Concrete Washout Area: Specific concrete washout area shall be established and labeled.
   a) The specific concrete wash out will be in a provided lined roll off box at a specific location near the entrance to the job site.
   b) The lined roll off box will be placed on stable soil with a stone approach.
   c) Once the lined roll off box is full, it will be removed from the site and discarded as clean fill once solid. A new lined roll off box will replace the one removed.
2. Construction Mobile Equipment Fluid
   a) All fueling of equipment will be managed and completed on a stone surface.
   b) Daily observation of all equipment for inspection of leaks or potential leaks of any fluids.
   c) Any observed fluid leaks are to be handled immediately with the equipment being moved to a stable stone surface and placed out of operation until maintenance is completed.
   d) Spill kits are to be utilized once the equipment is moved to the stable stone surface to prevent leakage from penetrating the ground or impacting storm water runoff.
3. Construction Material Waste
   a) All material waste is to be placed in provided roll off boxes as it is generated.
   b) Full roll off boxes are to be removed and properly disposed of in a licensed facility.
   c) No debris is to be stored on the ground surface at any time.
   These items are noted on C303 - Stormwater Pollution Prevention Plan.

B2- Stable construction entrance locations and specifications:

A stable construction entrance consisting of compacted subgrade, filter fabric and #2 stone is to be used for all construction traffic entering / exiting the site. The stone surface is to be maintained with new stone as necessary to maintain a solid drive surface. The location of the temporary construction entrance is shown on C302 for plan view and Sheet C502 for detail.

B3- Specifications for temporary and permanent stabilization:

The provisions for temporary stabilization during construction as well as permanent stabilization are included in the drawing set. The information contains specific stabilization techniques for the conditions of the site as well as timing of installation.

For temporary construction stabilization, it is the Contractor responsibility to maintain the stabilization during the construction duration and until permanent stabilization is installed.

For permanent stabilization, it is expected installation to occur immediately after final grading of the soil surface. Permanent stabilization is to be maintained by the Owner until 75% effective cover is established on the soil surface.

The stabilization is noted on C302 - Erosion Control Plan.

B4- Sediment control measures for concentrated flow areas:

The concentrated flow is protected at the pond inlet with riprap of minimum size being 6 inches and at the emergency spillway with stone dam as shown on C301 - Grading Plan and details on C501 & C502 - Sections and Details.

B5- Sediment control measures for sheet flow areas:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B6- Run-off control measures:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B7- Stormwater outlet protection location and specifications:

The concentrated flow is protected at the pond outlet with the previously mentioned rock dam as shown on C302 - Erosion Control Plan.

B8- Grade stabilization structure locations and specifications:

The grade on the site is largely flat and remain so post construction. There are no stabilization structures planned for this project as illustrated on C301 - Grading Plan.

B9- Dewatering applications and management methods:

Any dewatering required will be directed to the low area of the site (east) where it can percolate into existing soil. The use of sump pumps can be used to dewater where necessary. (Noted C303 - Stormwater Pollution Prevention Plan)

B10- Measures utilized for work within waterbodies:

This is not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B11- Maintenance guidelines for each proposed stormwater quality measure:

Silt fence both surrounding the site and at each protected inlet is to be inspected weekly and after storm events. Breaks, tears, or damaged silt fence is to be replaced immediately. Erosion control blankets are to be inspected weekly and after storm events. Damaged areas are to be repaired by re-securing displaced matting, replacing torn areas, and or removing debris to ensure vegetation growth. Concrete washouts are to be inspected daily to ensure there are no tears, structural damage, or leaks. Damaged concrete washouts are to be repaired.

B12- Planned construction sequence that describes the implementation of stormwater quality measures in relation to land disturbance:

The construction sequence for installation of the erosion control measures and stormwater pollution prevention devices are detailed on C302 - Erosion Control Plan. A pre-construction meeting is to be scheduled with the Town of Brownsburg a minimum of 48 hours prior to the start of construction. Per the IDEM CSGP Section 6.4(a)(9)(B) a notice of termination shall be verified by the local MS4 before submittal to IDEM. The town of Brownsburg shall be contacted prior to filing of the Notice of Termination to verify eligibility, for termination of permit coverage.

B13- Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project:

Not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B14- Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1:

The potential materials on site that could cause a spill response include fuels, petroleum fluids or other liquids as part of the construction equipment on site. If a spill occurs, immediate determination of the extent and emergency response requirements should be determined. Immediate containment of the spill with onsite spill kits should be completed. Once the spill is contained, contact is to be made to the Indiana Dept. of Environmental Mgmt., Office of Land Quality, Emergency Response Section: 1-888-233-7745 for in-state calls (toll free) within two hours of the spill. The contact should include the likelihood of damage to the waterways of the State of Indiana. This information is noted on C303 - Stormwater Pollution Prevention Plan.

B15- Material handling and storage procedures associated with construction activity:

All construction debris and wastes are to be loaded directly into provided roll off boxes for proper disposal off site. In no terms is debris or waste to be stored on site awaiting disposal or burned on property. Liquid wastes such as concrete wash out is to be disposed in the appropriate concrete wash out lined roll off boxes as provided. This includes any mortar/masonry/concrete grout material. Once these containers are full, they are to be removed from the site and disposed of in a licensed facility. Roll off boxes are to be rotated empty for full boxes for the entire project duration.

Construction Storm Water General Permit Notes Section C

C1- Description of pollutants and their sources associated with the proposed land use:

The post construction land use will have potential contaminants such as fuels, oils, grease, tires and other mobile equipment fluids. All materials, including mobile equipment will be stored on impervious surfaces during non-use or operation. (Noted on C303 - Stormwater Pollution Prevention Plan)

C2- Description of proposed post-construction stormwater measures:

The post construction contaminants are minimized by impervious surfaces being directed to a hydrodynamic separator designed to collect sediment and pollutants prior to entering the bioretention pond. This helps alleviate any debris that may overtop the emergency spillway. (Noted C303 - Stormwater Pollution Prevention Plan)

C3- Plan details for each stormwater measure:

The post construction stormwater measures is primarily a hydrodynamic separator and bioretention pond as shown on C301 - Grading Plan and L101 - Landscape Plan.

C4- Sequence describing stormwater measure implementation:

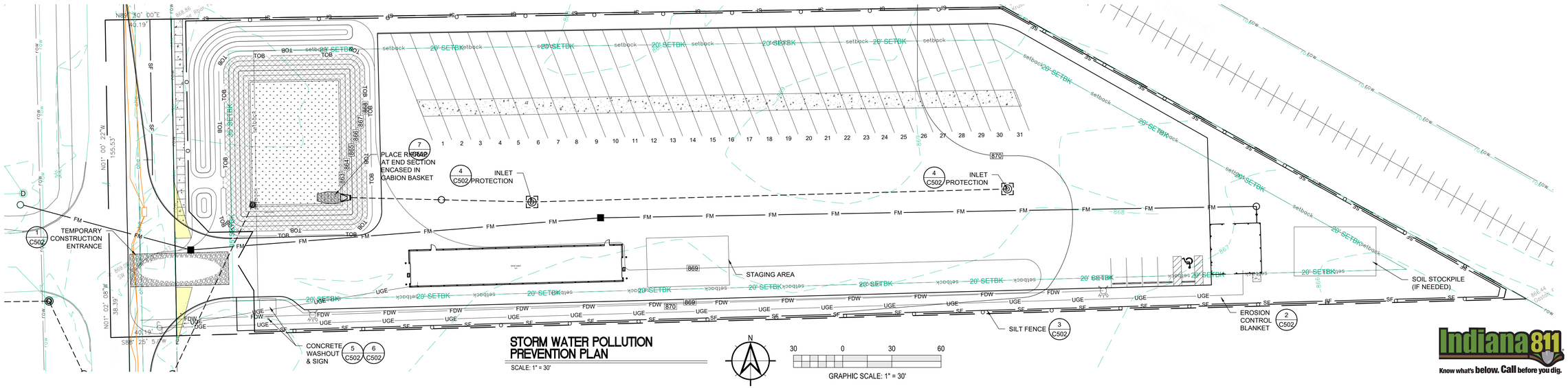
The sequence of installation for the post construction stormwater measure is part of construction sequencing shown C302 - Erosion Control Plan.

C5- Maintenance guidelines for proposed post-construction stormwater measures:

An operations and maintenance manual are part of the submittal information under separate documentation.

C6- Entity that will be responsible for operation and maintenance of the post-construction stormwater measures:

The responsible person for the post construction stormwater measures is the property owner as noted on C302 - Erosion Control Plan.



STORM WATER POLLUTION PREVENTION PLAN

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

Indiana 811 Know what's below. Call before you dig.

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

STORM WATER POLLUTION PREVENTION PLAN

BRYAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Bryan E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C303

SYMBOL LEGEND:

- = STORM SEWER END SECTION
- = SANITARY SEWER CLEANOUT
- C.O. = CLEANOUT
- = MANHOLE
- = CATCH BASIN
- = CATCH BASIN
- = CURB INLET
- = FIRE HYDRANT
- = PRESSURE RELIEF VALVE
- WV = WATER VALVE
- W = WATER WELL
- GV = GAS VALVE
- = LIGHT POLE
- = UTILITY POLE
- IRF = IRON ROD FOUND
- RBF = REBAR FOUND
- = PROPERTY CORNER
- = SURVEY POINT (SECTION CORNER)
- BM = BENCHMARK
- = SOIL BORING
- D = STORM INLET

- 741.25 = NEW GRADE ELEVATION
- x 741.25 = EXISTING GRADE ELEVATION
- = STRAW BALE DAM
- = ROCK DAM
- = SIGN
- STOP = STOP SIGN
- = HANDICAP SIGN
- ENTER ONLY = ENTER ONLY SIGN
- EXIT ONLY = EXIT ONLY SIGN
- DO NOT ENTER = DO NOT ENTER SIGN
- = EVERGREEN TREE
- = DECIDUOUS TREE
- = BUSH
- = TEMPORARY CONSTRUCTION ENTRNACE
- = GRASS PERMANENT SEEDING
- = EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR GREATER

LINETYPE LEGEND:

- (SF) = SILT FENCE
- x x x = BARB WIRE FENCE
- o o o = CHAIN-LINK FENCE
- H H H = WOOD FENCE
- W = WATER LINE
- STRM = STORM SEWER LINE
- SAN = SANITARY SEWER LINE
- GAS = GAS LINE
- UGE = UNDERGROUND ELECTRIC LINE
- OHE = OVERHEAD ELECTRIC LINE
- COMM = COMMUNICATION LINE
- T = TELEPHONE LINE
- UTELE = UNDERGROUND TELEPHONE LINE
- FO = FIBER OPTIC LINE
- W = FIRE DEPARTMENT WATER SUPPLY
- 35' ESMT = 35' EASEMENT LINE
- 30' ESMT = 30' EASEMENT LINE
- 25' ESMT = 25' EASEMENT LINE
- 20' ESMT = 20' EASEMENT LINE
- 15' ESMT = 15' EASEMENT LINE
- 10' ESMT = 10' EASEMENT LINE
- 5' ESMT = 5' EASEMENT LINE
- ESMT = EASEMENT LINE
- 0000 = SWALE LINE
- ○○○ = EDGE OF WATER
- 35' SETBK = 35' SETBACK LINE
- 30' SETBK = 30' SETBACK LINE
- 25' SETBK = 25' SETBACK LINE
- 20' SETBK = 20' SETBACK LINE
- 15' SETBK = 15' SETBACK LINE
- 10' SETBK = 10' SETBACK LINE
- 5' SETBK = 5' SETBACK LINE
- SETBACK = SETBACK LINE
- ROW = RIGHT-OF-WAY LINE
- = PROPERTY BOUNDARY
- UD = SWALE UNDERDRAIN
- CABLE = CABLE TV LINE
- FL> = FLOW LINE
- TOB TOB = TOP OF BANK

UTILITY CONTACT INFORMATION

WATER COMPANY:	
NAME:	CITIZENS ENERGY
CONTACT NAME:	---
PHONE NUMBER:	(317) 924-3311
E-MAIL:	---
SANITARY SEWER COMPANY:	
NAME:	HENDRICKS CO. REGIONAL SEWER DIST.
CONTACT NAME:	---
PHONE NUMBER:	(317) 745-4928
E-MAIL:	---
ELECTRIC COMPANY:	
NAME:	DUKE ENERGY
CONTACT NAME:	---
PHONE NUMBER:	(317) 745-5473
E-MAIL:	---
GAS COMPANY:	
NAME:	VECTREN
CONTACT NAME:	---
PHONE NUMBER:	(800) 227-1376
E-MAIL:	---
TELEPHONE COMPANY:	
NAME:	AT&T
CONTACT NAME:	---
PHONE NUMBER:	(317) 272-6450
E-MAIL:	---

UTILITY NOTES:

SANITARY GENERAL SPECIFICATIONS:

1. (A) 100 PSI FLOWABLE FILL SHALL BE REQUIRED FOR ROAD CROSSINGS UNDER EXISTING PAVEMENT AND WITHIN FIVE (5) FEET OF THE PAVEMENT EDGE. STREET CUT REPAIRS SHALL USE 100 PSI FLOWABLE FILL TO WITHIN 6" OF PAVEMENT SURFACE. INSTALL 5" OF 4000 PSI READY MIX CONCRETE WITHIN 1" OF PAVEMENT 2-24 HOURS AFTER FLOWABLE FILL HAS BEEN INSTALLED. INSTALL 1" OF #11 SURFACE ASPHALT LEVEL WITH EXISTING PAVEMENT WITHIN 24 HOURS ON CONCRETE INSTALLATION.

(B) FLOWABLE FILL SHALL BE A MIXTURE OF SAND, PORTLAND CEMENT AND WATER, THOROUGHLY MIXED, AND SHALL HAVE 100 PSI COMPRESSIVE STRENGTH WITHIN 3 HOURS OF PLACEMENT. FLOWABLE FILL SHALL BE PLACED FROM TOP OF #8 STONE PIPE COVER TO BOTTOM OF NEW PAVEMENT.

(C) IN LOCATIONS OF NEW DEVELOPMENT, WHERE UTILITIES ARE INSTALLED PRIOR TO ROAD CONSTRUCTION, TRENCH BACKFILL UNDER FUTURE ROAD SHALL BE ENTIRELY #8 CRUSHED STONE FROM MANHOLES.

2. ALL OSHA SAFETY STANDARDS SHALL BE STRICTLY ENFORCED FOR PROTECTION OF WORKERS.

3. NO SEWER SYSTEM CONSTRUCTION MAY BEGIN UNTIL APPROVAL FROM I.D.E.M.

4. ONE SET OF I.D.E.M. APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES

POLYVINYL CHLORIDE (P.V.C.) PIPE:

1. PIPE DIAMETERS OF 10 INCHES THROUGH 15 INCHES SHALL MEET OR EXCEED ALL THE REQUIREMENTS OF ASTM D-3034, AND SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-C, REFERENCE SHOULD BE MADE TO ASTM D-1784 FOR A SUMMARIZATION OF CELL CLASS PROPERTIES. PIPE DIAMETERS GREATER THAN 15 INCHES SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM F-679, AND SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-C, P.V.C. RIBBED SEWER PIPE SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM F-794 AND SHALL HAVE A MINIMUM CELLL CLASSIFICATION OF 12454.

2. THE MINIMUM WALL THICKNESS FOR PIPES OF 10 INCHES THROUGH 15 INCHES IN DIAMETER SHALL CONFORM TO SDR-35, TYPE PSM, AS SPECIFIED IN ASTM D-3034. THE MINIMUM WALL THICKNESS FOR PIPE DIAMETERS GREATER THAN 15 INCHES SHALL CONFORM TO T-1 AS SPECIFIED IN ASTM F-679. P.V.C. PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 46 POUNDS PER SQUARE INCH FOR EACH DIAMETER WHEN MEASURED AT FIVE PERCENT DEFLECTION AND TESTED IN ACCORDANCE WITH ASTM D-2412.

3. PIPE JOINTS SHALL HAVE A BELL WALL, GASKET GROOVE AND SPIGOT WHICH IS INTERGRAL WITH THE PIPE. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS' RECOMMENDATIONS AND ASTM D-3212. NO SOLVENT CEMENT JOINTS SHALL BE ALLOWED. GASKET MATERIAL SHALL BE CONSTRUCTED OF STYRENE BUTADIENE OR BUTYL RUBBER AND MEET THE REQUIREMENTS OF ASTM F-477.

4. EACH PIPE SECTION SHALL BE MARKED WITH THE NAME OF THE MANUFACTURER, TRADEMARK OR TRADEMANE, NOMINAL PIPE SIZE, PRODUCTION / EXTRUSION CODE, MATERIAL AND CELL CLASS DESIGNATION AND ASTM NUMBER.

5. INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM RECOMMENDED PRACTICE D-2321.

SANITARY SEWER NOTES:

1. 10 STATES STANDARDS AND INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT REQUIREMENTS SHALL BE MET OR EXCEEDED FOR ALL DESIGN, MATERIALS AND CONSTRUCTION METHODS.

2. SANITARY SEWER MANHOLES SHALL BE MONOLITHIC PRECAST SECTIONS, INCLUDING THE BOTTOM SECTION. ALL SECTIONS SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH ASTM C-478. ALL MANHOLE INLET CONNECTIONS SHALL BE LOCK JOINT FLEXIBLE SLEEVES CONFORMING TO ASTM C-923. ONLY PRECAST CONCRETE RINGS SHALL BE ALLOWED FOR CASTING RISERS. ALL MANHOLES, GRADE RINGS AND CASTING SHALL BE SEALED TO PREVENT INFILTRATION.

3. MANHOLE INVERTS SHALL BE SHAPED FOR FLOW CHANNELS WITH CONCRETE AND SMOOTHLY FINISHED BY A SEMI CIRCULAR SECTION CONFORMING TO THE INSIDE DIAMETER OF THE CONNECTING SEWERS. NO BRICK, ROCK OR SAND FILLERS WILL BE ALLOWED.

4. ALL MANHOLE COVERS SHALL BE TRAFFIC BEARING, NON-ROCKING DESIGN WITH NON-PENETRATING PICK HOLES.

5. SANITARY SEWERS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 MEETING ASTM D3034 SPECIFICATIONS. ALL SEWER MAINS SHALL HAVE A MINIMUM DIAMETER OF 8", ALL PIPE SPECIFIED SHALL SUPPORT ANTICIPATED LOADS.

6. ALL JOINTS SHALL BE PUSH-ON TYPE (SLIP SEAL) OR SOLVENT WELD.

7. BEDDING FOR PVC PIPE SHALL CONFORM TO BEDDING CLASSES I, II OF III, AS DESCRIBED IN ASTM D2321, FLEXIBLE SEWER PIPE INSTALLATION REQUIREMENTS.

UTILITY NOTES (cont'd):

8. ALL SEWER PIPE SHALL BE LAID USING PIPE LASER EQUIPMENT FOR BOTH VERTICAL AND HORIZONTAL ALIGNMENT.

9. MINIMUM ALLOWABLE COVER SHALL BE 5'-0" OVER TOP OF PIPE.

10. ALL SEWER MAINS SHALL BE DEFLECTION TESTED WITH AN 11 POINT, 5% MANDREL AFTER COMPACTED AGGREGATE IS IN PLACE FOR ALL STREETS. FLEXIBLE PIPE WILL BE TESTED AFTER BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. ALL PVC PIPE FAILING THE MANDREL TEST SHALL BE REROUNDED IN PLACE OR AN ALTERNATE METHOD APPROVED BY THE GOVERNING JURISDICTION IF REPAIR REQUIRED, SEWER SHALL BE RETESTED 30 DAYS AFTER REPAIR IS COMPLETE.

11. ALL SEWER MAINS SHALL BE LAMPED AT THE TIME THE MANDREL TEST IS CONDUCTED, ALL MAINS SHALL BE TRUE TO ALIGNMENT AND GRADE.

12. ALL SEWER MAINS AND LATERAL CONNECTIONS SHALL BE AIR TESTED IN ACCORDANCE WITH UNI-BELL UNI-B-6-85, MINIMUM TIME FOR THE AIR TEST SHALL BE FOR A 1.0 PSIG PRESSURE DROP. ALL SECTIONS FAILING AIR TEST SHALL BE REPAIRED AND RETESTED.

13. ALL SERVICE WYE BRANCHES SHALL BE INSTALLED AT THE TIME OF THE SEWER MAIN INSTALLATION. NO DIRECT TAPS WILL BE ALLOWED ON NEW MAIN CONSTRUCTION. NO VERTICAL CONNECTIONS WILL BE ALLOWED.

14. A SEPARATE (6" MINIMUM) SERVICE SHALL BE PROVIDED FOR EACH UNIT SERVED APPROXIMATELY SIX (6) FEET TO THE RIGHT OF THE LOT CENTERLINE, NO WYE'S SHALL BE ALLOWED, INCLUDING CONDOMINIUMS.

15. THE MAXIMUM ALLOWABLE VERTICAL DISTANCE BETWEEN ANY INFLUENT LINE AND THE EFFLUENT MAIN SHALL BE 6' FOR TYPE 'A' AND 'C' MANHOLES. ANY DISTANCE GREATER THAN 6" SHALL REQUIRE A TYPE 'B' MANHOLE.

16. WHERE A SEWER EXTENSION OR IMPROVEMENT CONNECTS TO A EXISTING SEWER OR MANHOLE, IT MUST BE LOCATED IN A STREET, ROAD OR HIGHWAY R/W AND NOT LOCATED IN SUCH A MANNER WHERE IT WILL CUT THROUGH LOTS OR DEVELOPMENTS.

17. ALL EXTENSIONS SHALL BE INSTALLED AT MINIMUM GRADES.

CONCRETE MANHOLE NOTES:

1. ALL MANHOLES SHALL BE NEGATIVE AIRE PRESSURE (VACUUM) TESTED AS PER ASTM C1244-93 STANDARD METHOD.

2. NO MANHOLES SHALL BE MORE THAN 14' FROM BACK OF CURB.

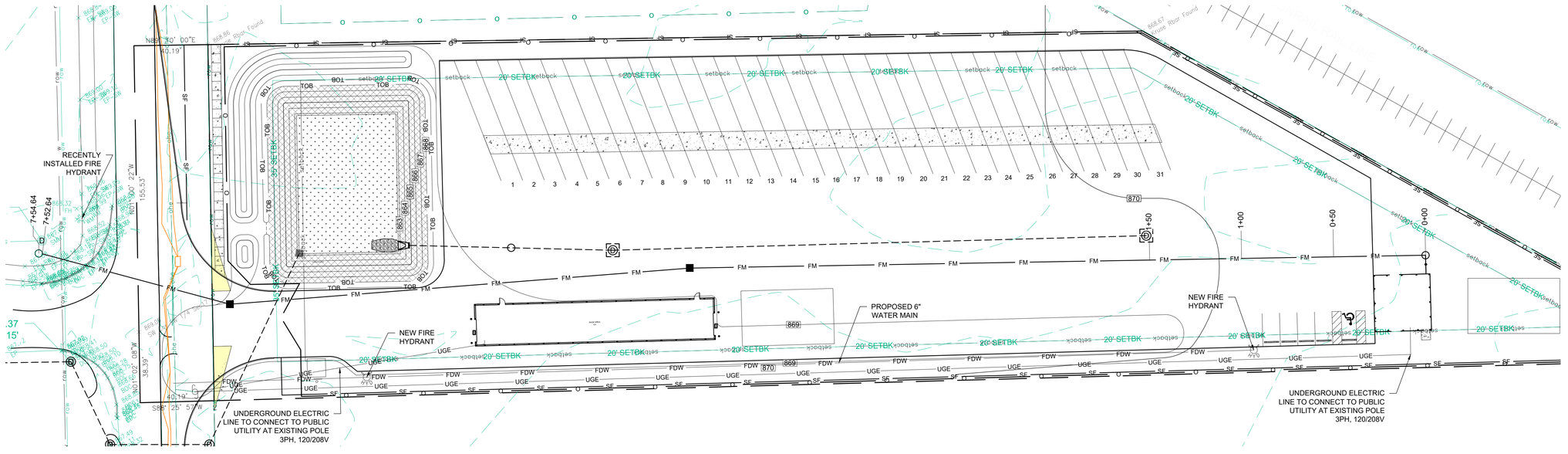
3. NO MANHOLE SHALL BE LOCATED IN ANY BACKYARD OR SIDE YARD. THEY MUST BE LOCATED IN THE FRONT YARD OR FRONT LOT THAT IS FRONTING A STREET.

4. ALL JOINTS IN MANHOLES SHALL BE SEALED TO PREVENT INFILTRATION BY USING A RUBBER 'O-RING' GASKET AND A 1/2" EXTRUDABLE PERFORMED GASKET BETWEEN ALL PRECAST SECTIONS.

5. ANNULAR SPACE AROUND SANITARY SEWER AT POINT OF ENTRANCE INTO THE MANHOLE SHALL BE GROUTED COMPLETELY AROUND SANITARY SEWER, INSIDE AND OUTSIDE TO INSURE SMOOTH TRANSITION.

6. WHEN CONNECTING A NEW SEWER INTO AN EXISTING MANHOLE, THE EXISTING MANHOLE SHALL BE BROUGHT UP TO MEET PRESENT STANDARDS.

7. SECTION JOINTS ON PRECAST CONCRETE MANHOLES SHALL BE SEALED WITH BLACK TAR MASTIC 6" ABOVE AND 6" BELOW JOINT, ON MANHOLE EXTERIOR.



UTILITY PLAN

SCALE: 1" = 30'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

UTILITY PLAN

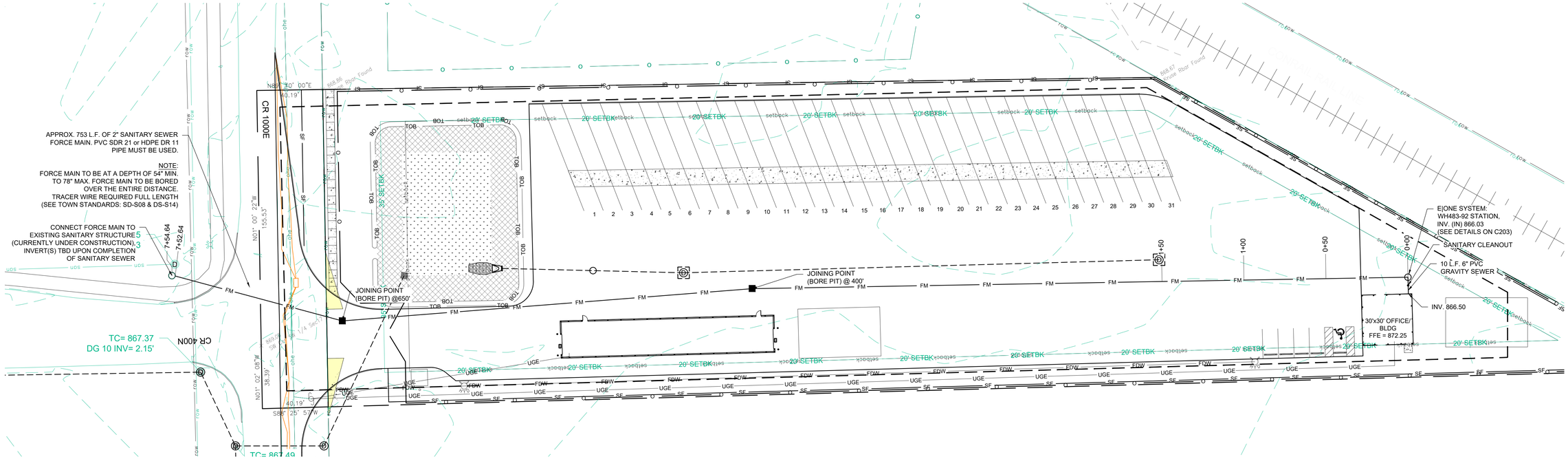
BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

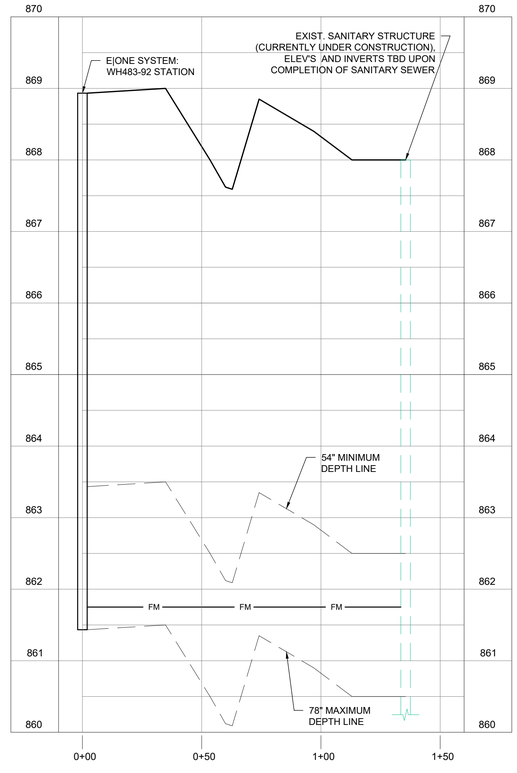
Brian E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C401





FORCE MAIN PLAN + PROFILE

SCALE: Horz.: 1" = 30', Vert.: 1" = 10'

GRAPHIC SCALE: 1" = 30'

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4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

SANITARY FORCE MAIN PLAN & PROFILE

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Brian E. Moench

REVISIONS:

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3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C402

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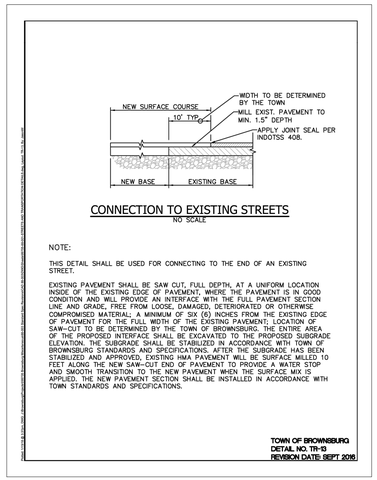


CONNECTION TO EXISTING STREETS
NO SCALE

NOTE:

THIS DETAIL SHALL BE USED FOR CONNECTING TO THE END OF AN EXISTING STREET.

EXISTING PAVEMENT SHALL BE SAW CUT, FULL DEPTH, AT A UNIFORM LOCATION INSIDE OF THE EXISTING EDGE OF PAVEMENT, WHERE THE PAVEMENT IS IN GOOD CONDITION AND WILL PROVIDE AN INTERFACE WITH THE FULL PAVEMENT SECTION LINE AND GRADE, FREE FROM LOOSE, DAMAGED, DETERIORATED OR OTHERWISE COMPROMISED MATERIAL. A MINIMUM OF SIX (6) INCHES FROM THE EXISTING EDGE OF PAVEMENT FOR THE FULL WIDTH OF THE EXISTING PAVEMENT; LOCATION OF SAW-CUT TO BE DETERMINED BY THE TOWN OF BROWNSBURG. THE ENTIRE AREA OF THE PROPOSED INTERFACE SHALL BE EXCAVATED TO THE PROPOSED SUBGRADE ELEVATION. THE SUBGRADE SHALL BE STABILIZED IN ACCORDANCE WITH TOWN OF BROWNSBURG STANDARDS AND SPECIFICATIONS. AFTER THE SUBGRADE HAS BEEN STABILIZED AND APPROVED, EXISTING HMA PAVEMENT WILL BE SURFACE MILLED 10 FEET ALONG THE NEW SAW-CUT END OF PAVEMENT TO PROVIDE A MATER STOP AND SMOOTH TRANSITION TO THE NEW PAVEMENT WHEN THE SURFACE MIX IS APPLIED. THE NEW PAVEMENT SECTION SHALL BE INSTALLED IN ACCORDANCE WITH TOWN STANDARDS AND SPECIFICATIONS.

TOWN OF BROWNSBURG
DETAIL NO. TR-13
REVISION DATE: SEPT 2016

HANDICAP RAMP
NOT TO SCALE — 11 / C501

SECTION 02504 – ADJACENT ROADWAY IMPROVEMENTS

PART 1 - GENERAL

1.01 Roadways adjacent to proposed developments shall conform to the following requirements and standards.

A. Adjacent Roadway Improvements

1. Developers shall be responsible for improvements to the existing roadway(s) that front their property. These improvements shall include, but are not limited to, the following items:
   a. Construction of acceleration lanes, deceleration lanes, and passing blisters for each entrance or street intersection as indicated in the Standard Details.
   b. In order to construct adequate acceleration lanes, deceleration lanes, and passing blisters, right-of-way shall be obtained which has a width consistent with the most current accepted Thoroughfare Plan.
   c. The existing roadway along the development frontage shall be widened to match the width requirements based on the functional classification of the roadway as defined by the Thoroughfare Plan. Once widened, the entire roadway fronting the development shall be resurfaced for consistency.
2. Additional improvements may be required depending on field conditions and as determined by the Town of Brownsburg.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

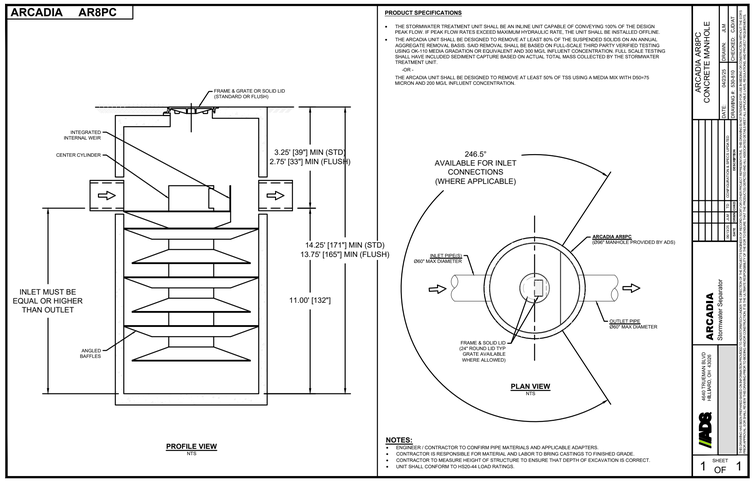
PART 4 - FIGURES

4.01 Associated Standard Details

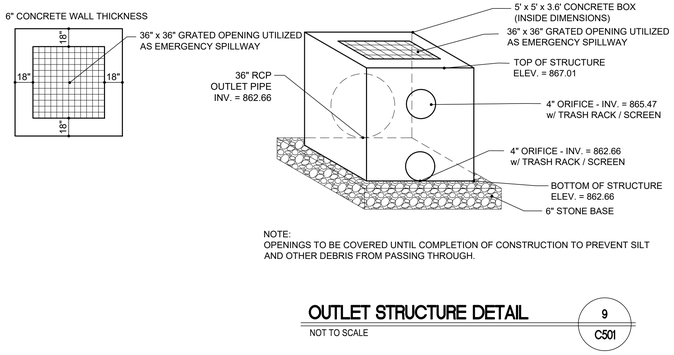
Detail No.	Description
TR-01	Concrete Chair Back Curb & Gutter
TR-02	Concrete Roll Curb & Gutter
TR-03	Driveway Curb Cut
TR-04	Curb Inlet Detail
TR-05	Concrete Center Curb
TR-09	Concrete Driveway
TR-13	Connection to Existing Streets
TR-14	Widening Detail
TR-16	Minimum Entrance Requirements

TR-17	Roadway Improvements at New Development Entrances
RS-01	Typical Cross Sections – Primary Arterials A1 and A2
RS-02	Typical Cross Sections – Primary Arterials B1 and B2
RS-03	Typical Cross Sections – Primary Arterials C1 and C2
RS-04	Typical Cross Sections – Secondary Arterials 1 and 2
RS-05	Typical Cross Sections – Collectors 1 and 2
RS-06	Typical Cross Sections – Neighbor Collectors 1 and 2
RS-07	Typical Cross Sections – Local 1 (No Parking), Local 2 (Parking Both Sides) and Local 3 (Parking One Side)
RS-08	Typical Trail Cross Section
RS-09	Typical Cross Section – Local Street with Roadside Ditch
RS-10	Typical Cross Sections – Local Alternatives

END OF SECTION 02504

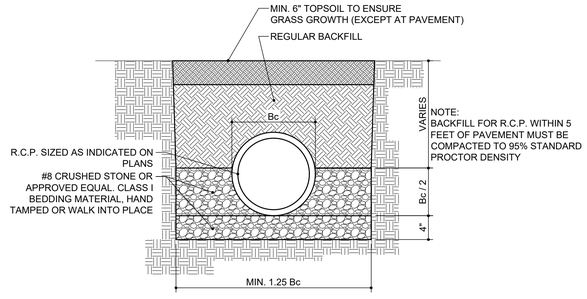


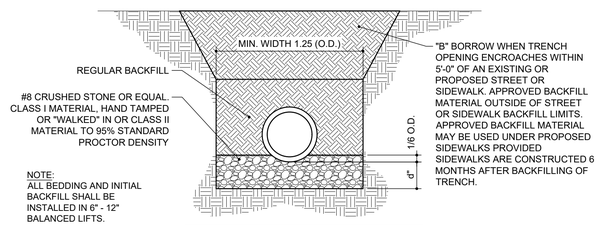
ARCADIA AR8 HYDRODYNAMIC SEPARATOR DETAIL
NOT TO SCALE — 10 / C501



NOTE:
OPENINGS TO BE COVERED UNTIL COMPLETION OF CONSTRUCTION TO PREVENT SILT AND OTHER DEBRIS FROM PASSING THROUGH.

OUTLET STRUCTURE DETAIL
NOT TO SCALE — 9 / C501





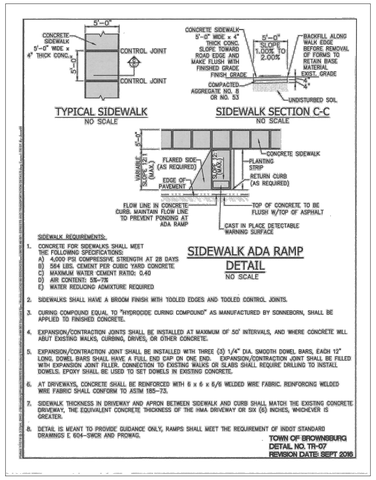
NOTE:
ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 6" - 12" BALANCED LIFTS.

Bc = OUTSIDE DIAMETER
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

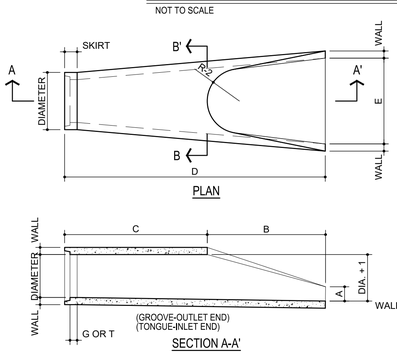
A MIN. 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

PIPE SIZE (D)	27" OR LESS	30" TO 60"	66" AND UP
BEDDING BELOW THE PIPE BARREL 6" MINIMUM	3"	4"	6"

R.C.P. PIPE TRENCH DETAIL
NOT TO SCALE — 8 / C501



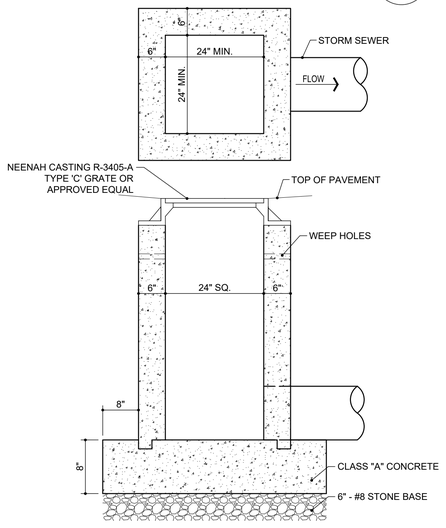
HANDICAP RAMP
NOT TO SCALE — 7 / C501



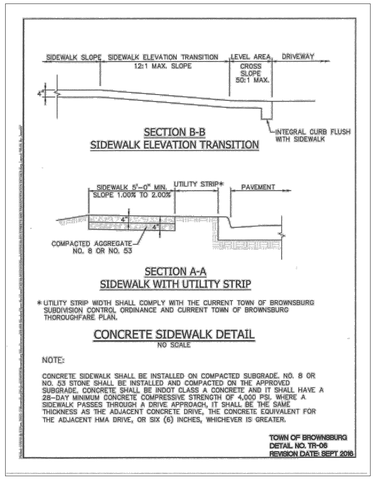
SIZE SCHEDULE											
DIA.	WALL	G or T	WT. SEC	A	B	C	D	E	DIA.+1	R-1	R-2	SKIRT
12	2	1~8	530	4	24	48~1	72~1	24	13	10~1	9	3~8
15	2~4	2	740	6	27	46	73	30	16	12~8	11	3~8
18	2~8	2~8	990	9	27	46	73	36	19	15~8	12	4
21	2~∞	2~4	1280	9	35	38	73	42	22	16~2	13	4
24	3	2~8	1520	9~8	43~8	30	73~8	48	25	16~q	14	4~8

NOTE: MANUFACTURER OF END SECTION IS IN ACCORDANCE WITH APPLICABLE PORTIONS OF A.S.T.M. SPECIFICATION C76.

CONCRETE END SECTION
NOT TO SCALE — 6 / C501



TYPA 'E' MODIFIED STORM CATCHBASIN
3/4" = 1'-0" — 5 / C501



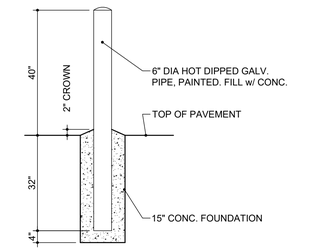
CONCRETE SIDEWALK DETAIL
NO SCALE

NOTE:

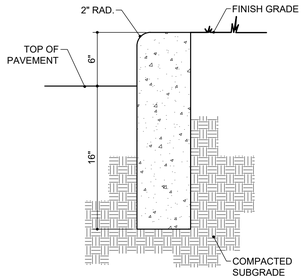
CONCRETE SIDEWALK SHALL BE INSTALLED ON COMPACTED SUBGRADE. NO. 8 OR NO. 53 STONE SHALL BE INSTALLED AND COMPACTED ON THE APPROVED SUBGRADE. CONCRETE SHALL BE INDOT CLASS A CONCRETE AND IT SHALL HAVE A 28-DAY MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4,000 PSI. WHERE A SIDEWALK PASSES THROUGH A DRIVE APPROACH, IT SHALL BE THE SAME THICKNESS AS THE ADJACENT CONCRETE DRIVE. THE CONCRETE EQUIVALENT FOR THE ADJACENT HMA DRIVE, OR SIX (6) INCHES, WHICHEVER IS GREATER.

TOWN OF BROWNSBURG
DETAIL NO. TR-06
REVISION DATE: SEPT 2016

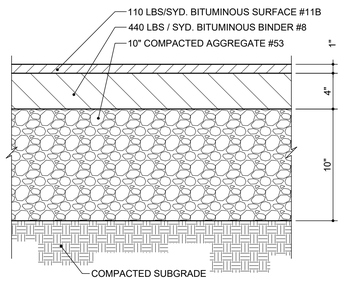
CONCRETE SIDEWALK
NOT TO SCALE — 4 / C501



PIPE BOLLARD
1/2" = 1'-0" — 3 / C501



STRAIGHT CURB
1 1/2" = 1'-0" — 2 / C501



HEAVY DUTY ASPHALT
1 1/2" = 1'-0" — 1 / C501

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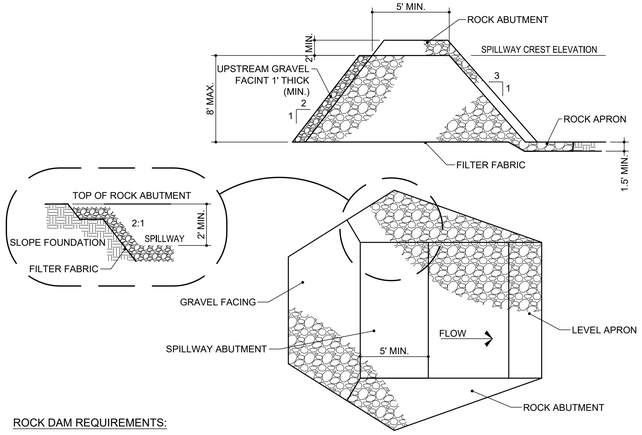
4005 N CR 1000 E
BROWNSBURG, IN 46122

SECTIONS AND DETAILS

BRIAN EDWARD MOENCH — REGISTERED — No. PE9500048 — STATE OF INDIANA — PROFESSIONAL ENGINEER

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C501



ROCK DAM REQUIREMENTS:

1. CONTRIBUTING DRAINAGE AREA: 50 ACRES MAXIMUM

2. DESIGN LIFE: LIMITED TO 3 YRS.

3. SEDIMENT STORAGE: 1,800 CU.FT./ACRE DISTURBED (MINUMUM) MEASURED 1 FT. BELOW SPILLWAY CREST.

4. BASIN SHAPE: MINIMUM 2:1 LENGTH-TO-WIDTH RATIO.

5. BASIN AREA: VARIABLE; THE LARGER THE SURFACE AREA THE GREATER THE TRAPPING EFFICIENCY.

6. DAM CREST HEIGHT: LIMITED TO 8 FT.

7. SPILLWAY CAPACITY: PEAK RUNOFF FROM A 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT, A MAXIMUM FLOW DEPTH OF 1 FT. AND MINIMUM FREEBOARD OF 1 FT. (ENTIRE LENGTH OF DAM BETWEEN ROCK ABUTMENTS MAY SERVE AS SPILLWAY.)

8. DAM DIMENSIONS: TOP WIDTH, 5 FT. MINIMUM; SIDE SLOPES, 2:1 OR FLATTER UPSTREAM, 3:1 OR FLATTER DOWNSTREAM.

9. EARTH ABUTMENTS: SMOOTH, STABLE, 2:1 OR FLATTER SLOPES.

10. ROCK ABUTMENTS (TO PROTECT EARTH ABUTMENTS): EXTENDED ALONG DOWNSTREAM FACE TO TOE OF DAM AND AT LEAST 1 FT. HIGHER THAN SPILLWAY FACE AT ALL POINTS, 2 FT. ABOVE SPILLWAY CREST, AND 1 FT. THICK, WITH 2:1 OR FLATTER SIDE SLOPES.
11. OUTLET PROTECTION: ROCK APRON, 1-1/2 FT. THICK (MINIMUM), ZERO GRADE, WITH LENGTH EQUAL TO HEIGHT OF DAM OR EXTENDED TO STABLE GRADE, WHICHEVER IS GREATER.

12. ROCK MATERIAL: INDOT REVETMENT RIPRAP.

13. PROTECTION FROM PIPING: GEOTEXTILE FABRIC FOR SEPARATION AND FILTRATION COVERING ENTIRE FOUNDATION, INCLUDING EARTH ABUTMENTS AND APRON.

14. BASIN DE-WATERING: THROUGH A 1 FT. THICK LAYER OF INDOT CA NO. 5 STONE ON UPSTREAM FACE OF THE DAM.

INSTALLATION

SITE PREPARATION:

1. DIVERT RUNOFF FROM UNDISTURBED AREAS AWAY FROM THE ROCK DAM AND BASIN AREA.

2. EXCAVATE THE FOUNDATION FOR THE APRON, USING IT AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION OF THE DAM.

3. CLEAR AND GRUB THE AREA UNDER THE DAM, REMOVING AND PROPERLY DISPOSING OF ALL ROOT MAT, BRUSH, AND OTHER DEBRIS.

4. GRADE THE EARTH ABUTMENTS NO STEEPER THAN 2:1.

DAM AND BASIN CONSTRUCTION

1. EXCAVATE A CUTOFF TRENCH AT THE CENTER LINE OF THE DAM, EXTENDING ALL THE WAY UP THE EARTH ABUTMENTS, AND BACKFILL WITH COMPACTED EARTH FILL.

2. SMOOTH THE DAM FOUNDATION.

3. COVER THE ENTIRE FOUNDATION, INCLUDING BOTH EARTH ABUTMENTS, WITH GEOTEXTILE FABRIC, MAKING SURE THE UPSTREAM STRIPS OVERLAP THE DOWNSTREAM STRIPS AT LEAST 1 FT.

4. CONSTRUCT THE DAM TO PLANNED DIMENSIONS.

5. ONCE THE DAM IS IN PLACE, CLEAR THE SEDIMENT BASIN AREA, PROPERLY DISPOSING OF THE CLEARED MATERIAL.

6. SET A MARKER STAKE TO INDICATE THE CLEANOUT ELEVATION (I.E., POINT AT WHICH THE BASIN IS 50% FULL OF SEDIMENT).

7. DIVERT CONSTRUCTION SITE RUNOFF FLOW INTO THE UPPER END OF THE BASIN USING TEMPORARY DIVERSIONS.

8. STABILIZE ALL DISTURBED AREAS EXCEPT THE LOWER HALF OF THE BASIN.

SAFETY PRECAUTIONS:

1. BECAUSE SEDIMENT BASINS THAT IMPOUND WATER ARE HAZARDOUS, (A) BE SURE SIDE SLOPES ARE 2:1 OR FLATTER, (B) FENCE WITH WARNING SIGNS IF TRESPASSING IS LIKELY, (C) DE-WATER THE BASIN BETWEEN STORM EVENTS, AND (D) FOLLOW ALL STATE AND LOCAL IMPOUNDMENT SITE REQUIREMENTS.

MAINTENANCE

1. INSPECT THE ROCK DAM AND BASIN AFTER EACH STORM EVENT.

2. REMOVE SEDIMENT WHEN IT ACCUMULATES TO HALF THE DESIGN VOLUME (MARKED BY A STAKE).

3. CHECK THE DAM AND ABUTMENTS FOR EROSION, PIPING, OR ROCK DISPLACEMENT, AND REPAIR IMMEDIATELY.

4. IF THE BASIN DOES NOT DRAIN BETWEEN STORMS, REPLACE THE STONE ON THE UPSTREAM FACE OF THE DAM.

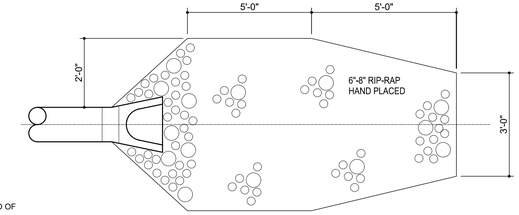
5. IF THE BASIN DRAINS TOO RAPIDLY FOLLOWING A STORM (I.E., LESS THAN 6 HRS.), ADD INDOT CA NO. 5 GRAVEL ON THE UPSTREAM FACE OF THE DAM.

6. ONCE THE CONTRIBUTING ŷŷŷŷŷŷŷŷDRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, (A) REMOVE WATER AND SEDIMENT FROM THE BASIN;

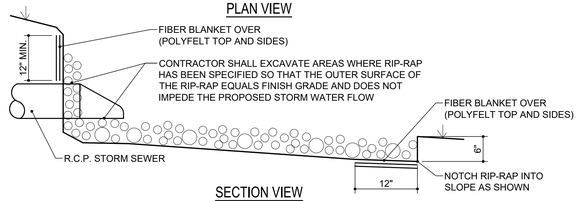
(B) REMOVE THE DAM, DISPOSING OF THE ROCK IN DESIGNATED DISPOSAL AREAS; (C) SMOOTH THE SITE TO BLEND WITH THE SURROUNDING AREA; AND (D) STABILIZE.

COMMON CONCERNS:
FAILURE FROM PIPING ALONG ABUTMENTS-BECAUSE THE FILTER MATERIAL WAS NOT PROPERLY INSTALLED OR THE EARTH ABUTMENTS ARE TOO STEEP. STONE DISPLACEMENT FROM FACE OF DAM-BECAUSE STONE SIZE IS TOO SMALL OR THE FACE IS TOO STEEP. EROSION BELOW DAM BECAUSE THE APRON WAS NOT EXTENDED TO STABLE GRADE. EROSION OF ABUTMENTS DURING SPILLWAY FLOW-BECAUSE THE ROCK ABUTMENT IS NOT HIGH ENOUGH. SEDIMENT CARRIED THROUGH SPILLWAY-BECAUSE THE DRAINAGE AREA IS TOO LARGE; TO SOLVE, DIVERT RUNOFF FROM THE UNDISTURBED AREA AWAY FROM THE BASIN. SEDIMENT LOSS THROUGH DAM-BECAUSE THE LAYER OF AGGREGATE ON THE UPSTREAM FACE IS NOT THICK ENOUGH OR IS TOO COARSE TO RESTRICT FLOW THROUGH THE DAM.

ROCK DAM
NOT TO SCALE — 8 — C502



PLAN VIEW



SECTION VIEW

RIP-RAP REQUIREMENTS:

CONTRIBUTING DRAINAGE AREA: 100 ACRES MAXIMUM.

CAPACITY: PEAK RUNOFF FROM 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT.

APRON: DESIGN DEPENDS ON CHANNEL DEFINITION, BUT IS LONG ENOUGH TO DISSIPATE RUNOFF ENERGY, SET ON ZERO GRADE, STRAIGHT AND ALIGNED WITH THE RECEIVING STREAM. (IF SITE CONDITIONS REQUIRE A CURVE, SET IT NEAR THE UPSTREAM END.)

FOUNDATION: GEOTEXTILE FABRIC FOR STABILIZATION AND FILTRATION OR WELL-GRADED GRAVEL FILTER LAYER AT LEAST 6 IN. THICK.

MATERIAL: HARD, ANGULAR, AND HIGHLY WEATHER-RESISTANT RIPRAP STONE OF 6 - 8 INCHES IN SIZE.

THICKNESS: 12 IN. MINIMUM OR TWO TIMES THE D 50 STONE DIAMETER,wHICHEVER IS GREATER.

INSTALLATION:

1. EXCAVATE THE APRON AREA SUBGRADE BELOW DESIGN ELEVATION TO ALLOW FOR THICKNESS OF THE FILTER (OR GRAVEL LAYER) AND THE RIPRAP. (THIS OVER-EXCAVATION GREATLY INCREASES THE AMOUNT OF SPOIL.)

2. COMPACT ANY FILL USED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL, AND SMOOTH ENOUGH TO PROTECT FABRIC FROM TEARING.

3. PLACE THE GEOTEXTILE FABRIC (OR GRAVEL LAYER) ON THE COMPACTED AND SMOOTHED FOUNDATION. IF MORE THAN ONE FABRIC PIECE IS NEEDED, THE UPSTREAM PIECE SHOULD OVERLAP THE DOWNSTREAM PIECE BY AT LEAST 1 FT.

4. INSTALL THE RIPRAP TO THE LINES AND ELEVATIONS SHOWN IN THE DESIGN. IF THE CHANNEL IS POORLY DEFINED, THE FINAL CROSS-SECTION SHOULD BE LEVEL OR SLIGHTLY DEPRESSED IN THE MIDDLE; IF WELL DEFINED, THE FILTER (OR GROUND LAYER) AND RIPRAP SHOULD EXTEND TO THE TOP OF THE BANK.

5. IF THE GEOTEXTILE FABRIC TEARS WHEN PLACING TH RIPRAP, REPAIR IMMEDIATELY BY LAYING AND STAPLING A PIECE OF FABRIC OVER THE DAMAGE AREA, OVERLAPPING THE UNDAMAGED AREAS BY AT LEAST 12 INCHES.

6. MAKE SURE THE TOP OF THE RIPRAP APRON IS LEVEL WITH OR SLIGHTLY BELOW THE RECEIVING STREAM. (RIPRAP SHOULD NOT RESTRICT THE CHANNEL OR PRODUCE AN OVERFALL.)

7. BLEND THE RIPRAP SMOOTHLY TO THE SURROUNDING GRADE.

8. STABILIZE ALL DISTURBED AREAS IMMEDIATELY FOLLOWING INSTALLATION.

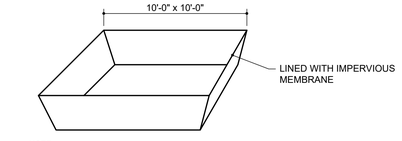
MAINTENANCE:

* INSPECT ROCK CHUTES AFTER STORM EVENTS FOR STONE DISPLACEMENT AND FOR EROSION AT THE SIDES AND ENDS OF THE APRON.
* MAKE NEEDED REPAIRS IMMEDIATELY; USE APPROPRIATE SIZE STONE; AND DO NOT PLACE THEM ABOVE FINISHED GRADE.

COMMON CONCERNS:

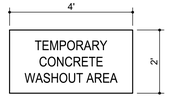
FOUNDATION NOT EXCAVATED DEEP ENOUGH OR WIDE ENOUGH--RIPRAP RESTRICTS THE FLOW CROSS SECTION, RESULTING IN EROSION AROUND THE APRON AND SCOUR HOLES AT THE OUTLET.
RIPRAP APRON ON ZERO GRADE--

RIP-RAP DETAIL
NOT TO SCALE — 7 — C502



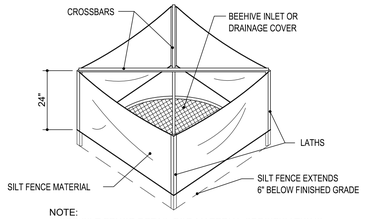
NOTE:
1. A LINED ROLLOFF DUMPSTER OR CONTAINER TO BE USED IN LIEU OF A CONSTRUCTED WASHOUT BASIN.

CONCRETE WASHOUT BASIN
NOT TO SCALE — 6 — C502



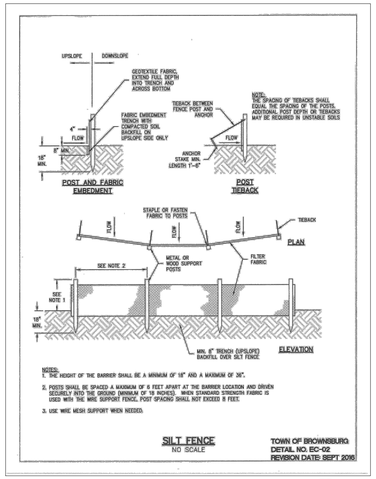
NOTES:
1. SIGN TO BE POSTED THROUGHOUT CONSTRUCTION ACTIVITY.
2. SIGN TO BE MADE OF SEMI-PERMANENT MATERIAL, i.e. WOOD.

CONCRETE WASHOUT SIGN
NOT TO SCALE — 5 — C502

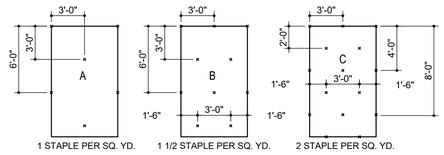


NOTE:
1. SEE SILT FENCE DETAIL FOR MATERIAL SPECIFICATIONS.
2. SILT FENCE SHALL BE PREASSEMBLED BY SUPPLIER.

SILT FENCE INLET PROTECTION DETAIL
NOT TO SCALE — 4 — C502

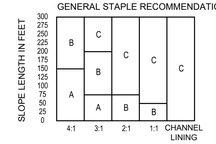


SILT FENCE DETAIL
NOT TO SCALE — 3 — C502

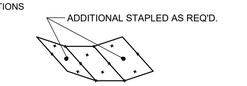


1 STAPLE PER SQ. YD. | 1 1/2 STAPLE PER SQ. YD. | 2 STAPLE PER SQ. YD.

GENERAL STAPLE RECOMMENDATIONS



SLOPE GRADIENT



CHANNEL LININGS UTILIZE STAPLE PATTERN "C" WITH ADDITIONAL STAPLES ON SIDE SLOPES.

NOTES:
1. STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION BLANKETS.

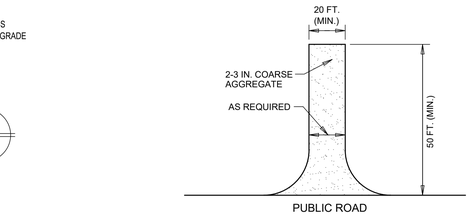
2. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE ANNUAL RAINFALL.

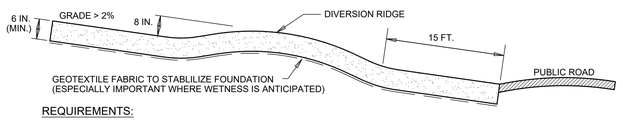
3. AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO BLANKETS, STAPLE PATTERN "C" SHOULD BE UTILIZED.

4. CHANNEL LININGS REQUIRE A 2' (MIN.) OVERLAP AT LONGITUDINAL JOINTS AND SIDE SLOPES REQUIRE A 6" (MIN.) OVERLAP. WHERE OVERLAPS OCCUR, THE UPSTREAM BLANKET SHALL OVERLAP THE DOWNSTREAM.

5. NORTH AMERICAN GREEN S150BN TO BE USED FOR EROSION CONTROL BLANKETS.

EROSION CONTROL BLANKET STAPLE PATTERN
NOT TO SCALE — 2 — C502





REQUIREMENTS:

Material: 2-3 in. washed stone (INDOT CA No.2) over a stable foundation.

Thickness: 6 in. minimum

Width: 12 ft. minimum or full width of entrance/exit roadway, whichever is greater.

Length: 50 ft. minimum. The length can be shorter for small sites such as for an individual home.

Washing facility (optional): Level area with 3 in washed stone minimum or a commercial rack, and waste water diverted to a sediment trap or basin.

Geotextile fabric underliner: May be used under wet conditions or for soils within a high seasonal water table to provide greater bearing strength.

INSTALLATION:

1. Avoid locating on steep slopes or at curves in public roads.

2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.

3. If slope towards the road exceeds 2%, construct a 6-8 in.-high water bar (ridge) with 3:1 side slopes across the foundation area about 15 ft. from the entrance to divert runoff away from the road.

4. Install pipe under the pad if needed to maintain proper public road drainage.

5. If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.

6. Place stone to dimensions and grade shown in the erosion control plan, leaving the surface smooth and sloped for drainage.

7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

MAINTENANCE:

* Inspect entrance drive and sediment disposal area weekly and after storm events or heavy use.
* Reshape pad as needed for drainage and runoff control.
* Topdress with clean stone as needed.
* Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin.
* Repair any broken road pavement immediately.

COMMON CONCERNS:

Inadequate runoff control--results in sediment washing onto road.
Stone too small, pad too thin, or geotextile fabric absent--results in ruts and a muddy condition as stone is pressed into the soil: add more stone.
Pad too short for heavy construction traffic--extend the pad beyond the 50-ft. length as needed.
Pad not flared sufficiently at road entrance--results in mud being tracked onto the road and possible damage to the road edge: widen stone entrance and repair road damage.
Unstable foundation--use geotextile fabric under th pad and/or improve foundation drainage.

TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE — 1 — C502

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

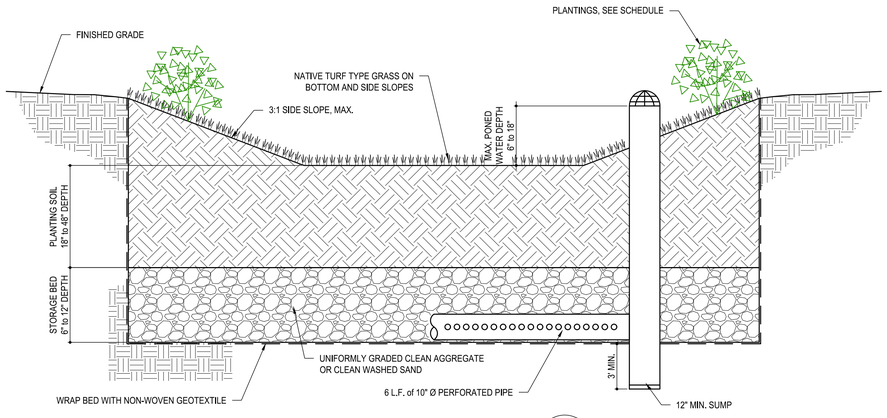
SECTIONS AND DETAILS

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER
Susan E. Neal

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C502



BIORETENTION AREA

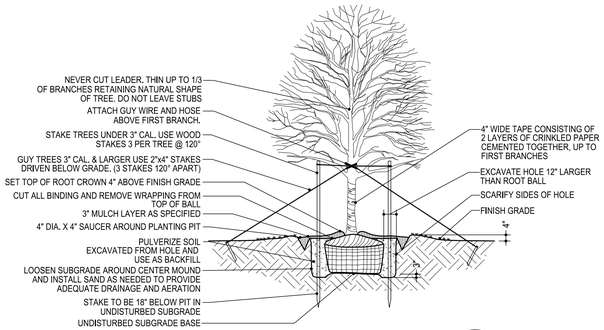
NOT TO SCALE

4
L101

SHRUB AND SMALL TREE PLANTING DETAIL

NOT TO SCALE

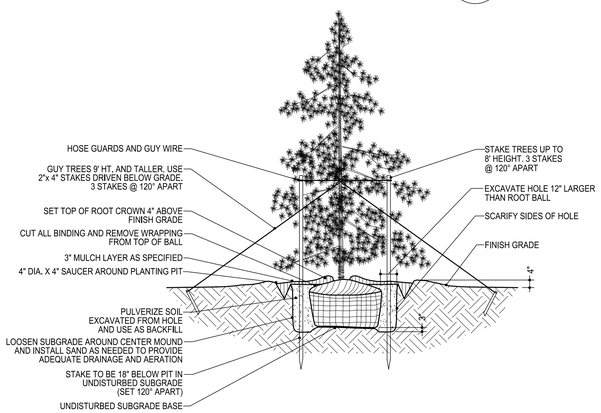
3
L101



SHADE TREE PLANTING DETAIL

NOT TO SCALE

2
L101



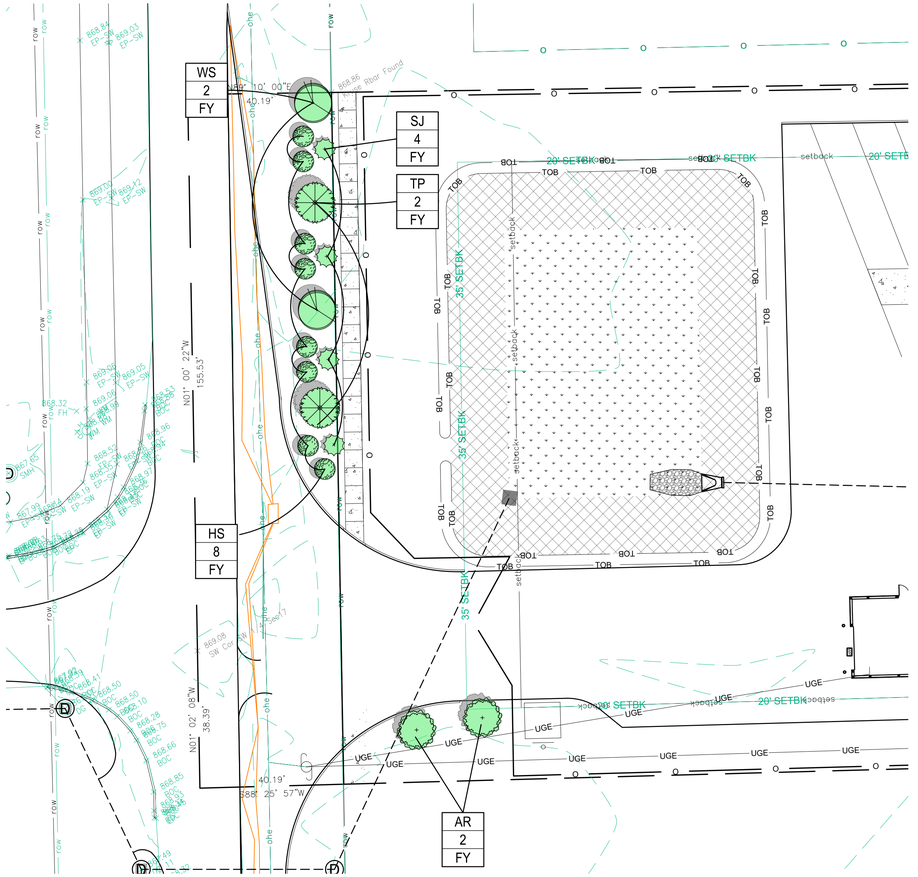
EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

1
L101

PLANTING SCHEDULE

LEGEND	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE / COND	REMARKS	HEIGHT / SPREAD	QTY REQ'D
	WS	2	Wisteria sinensis	Blue Chinese Wisteria Tree	#1 Container / ---	Ornamental Deciduous	10-15 ft / 10-12 ft	1.25
	AR	2	Acer Rubrum	Red / Sugar Maple	#5 Container / ---	Canopy Deciduous	40-50 ft / 30-40 ft	2
	TP	2	Thuja plicata x standishii	Thuja Green Giant	24" height / ---	EVERGREEN	30-40 ft / 8-10 ft	1.5
	HS	8	Hibiscus syriacus ' Red Heart' Hibiscus syriacus 'Notwoodone' Hibiscus syriacus 'JWNWOOD4'	Red Heart Rose of Sharon Lavender Chiffon Rose of Sharon Pink Chiffon Rose of Sharon	#3 Container / ---	DECIDUOUS SHRUB	8-12 ft / 6-10 ft	10
	NOTE: Assorted mix of Hibiscus Plants in each grouping.							
	SJ	4	Spiraea nipponica 'Snowmound' Spiraea Japonica 'Neon Flash' Spiraea Japonica 'Matgold'	Snowmound Spirea Neon Flash Spirea Rainbow Fizz Spirea	#1 container / ---	DECIDUOUS SHRUB	2-7 ft / 3-7 ft	
	NOTE: Assorted mix of Spirea Plants in each grouping.							



LANDSCAPE PLAN

SCALE: 1" = 20'

N

20 0 20 40

GRAPHIC SCALE: 1" = 20'

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

LANDSCAPE PLAN

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	L101

LITHONIA LIGHTING

Catalog Number:
Notes:
Type:

FEATURES & SPECIFICATIONS

INTENDED USE — Provides a maintenance-free emergency illumination for the rated wattage upon loss of AC power to meet code-required emergency lighting. Ideal for applications requiring low profile, emergency code for fewer mounting heights.

CONSTRUCTION — The housing is standard white, or optional black, thermoplastic with a compact and low profile design with all-inclusive lamp, reflector and lens assembly. It is 30% flame rated and impact-resistant.

OPTICS — The typical life of the LED is 10 years. One, 0.37W white LED per lamp head.

ELECTRICAL — Dual-voltage 120/277 standard.

Bi-color LED status indicator for battery condition. (Green-normal, Red-check battery).

One and a half watts of remote capacity available with REM option.

BATTERY: 3.6V maintenance-free, rechargeable, nickel-cadmium.

INSTALLATION — Wall mount and ceiling mount. Surface mount back plate fits most industry-standard size junction boxes and snaps into place.

LISTINGS — UL Listed. Meets all applicable requirements for: UL 924, NFPA 101 (Lumen Life Safety Code), NFPA 70 — NEC (National Electrical Code) Article 700.12F and/or 1600.9 (2012), CEC Title 24, Part 12, Subpart B and 2016 Federal Energy Standard 10FR Pa 1064 P. (50°C to 40°C) listed standard.

WARRANTY — 5 year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty-terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

† Small Battery Chargers Certified in the US Title 20 Appliance Efficiency Database.

Lithonia Lighting Basics™

Low Profile Emergency Light

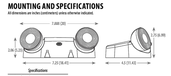
EU2L





MOUNTING AND SPECIFICATIONS

All dimensions are in inches (centimeters) unless otherwise indicated.



Specifications

Length: 7.38 (19)
Depth: 2.75 (6.99)
Height: 4.5 (11.43)
Weight: 0.7 lbs. (.32 kg)

EU2L Low Profile Emergency Light

CS CONTRACTOR SELECT — Looking for Contractor Select readily available configurations? Check out the Contractor Select product guide at www.lithonia.acuitybrands.com

MATERIAL INFORMATION — **Example:** EU2L B

Series		Housing Color		Options	
EU2L	Emergency Light	(Blank)	White	(Blank)	Not Required
		B	Black	REM	Remote Capacity

BATTERY CAPACITY AND LOADING

Battery	Total Capacity	Maximum# Remote Lamp Heads*
3.6V	2W	2 - (RE 90 SQ, RD RQ) R
		1 - (RE 91 RQ) R
		1 - (RE 07 SQ, RP 07 SQ) R2
		2 - (RE 07 SQ, RP 90 RQ)
		1 - (RE 07 T RP 90 RQ)

* These are in addition to the lamp heads on the product.
** See spec sheet for alternate side options

ELECTRICAL SPECIFICATIONS

Description	Supply Voltage	Input Wattage			Input Amps		
		120	208	277	120	208	277
Standard (No options)	120/277	.55	N/A	.57	.45	N/A	.05
Remote Capacity Option (REM)	120/277	.52	N/A	.60	.07	N/A	.07

Accessories: Order as separate catalog number.

EBU W SQ, RD	Single, indoor remote head, round, ivory white, .75W, 3.6V voltage input.*
EBU W T RD	Twin, indoor remote head, round, ivory white, 1.5W, 3.6V voltage input.*
EBU QT SQ, WP SQ	Single, weather-proof remote head, square, gray, 1W, 3.6V (3V voltage sensing.*
EBU QT SQ, WP RD W E2	Single, LED weather-proof head, round, gray, 0.75W, 3.6V input.*
EBU QT T WP RD W E2	Twin, LED weather-proof head, round, gray, 1.5W, 3.6V input.*
ELA W E2	Wiregaurd 35 1/8" W x 5 3/4" H x 9" D (back mount only). Easy specification! ELA WEL

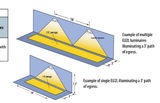
Accessories Notes:
1. See spec sheet EBU remote head for additional ordering options

SPACING GUIDELINES

Maximum Spacing Guidelines - EU2L†

Mounting Height	Illumination Level	Single Luminaire		Multiple Luminaires		Application Notes
		1 Path of Egress	4 Path of Egress	1 Path of Egress	4 Path of Egress	
73"	91 Avg	14'	18'	18'	14'	"180° Corridor 9' wide, and 9' high with 90° Corner reflectors"

Notes:
1. Also meets the additional illumination requirements of NFPA 101 1/4 C minimum and maximum ratio of 40:1



LITHONIA LIGHTING

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CS CONTRACTOR SELECT — LITHONIA LIGHTING

Catalog Number:
Notes:
Type:

Contractor Select™

OLWP

LED Wall Pack

Customize the color temperature and of effortlessly automate your wall pack for dusk-to-dawn operation with the CLWP Wall Pack. Featuring switchable CCT (3000/4000K/5000K) and a selectable photocell, the CLWP Wall Pack is designed to deliver years of maintenance-free general illumination for residential outdoor applications such as driveways, entryways, patios, and other outdoor areas that require consistent and reliable lighting performance.



FEATURES:
- Switchable CCT(3000/4000K)
- Selectable ON/OFF photocell for dusk-to-dawn or switched operation
- Cast aluminum construction for durability
- Impact-resistant polycarbonate diffuser

Catalog Number	UPC	Description	Lumens	Input Watts	CCT	CRI	Voltage	Back-Up Alone Operation	Finish
OLWP LED 5WW2 120 PE DDB	0197128372252	OLWP LED Wall Pack	1,430	18.3	3000K/4000K/5000K	80	120	Included Dusk-to-Dawn, Selectable On/Off	Dark Bronze

CS CONTRACTOR SELECT — LITHONIA LIGHTING

Specifications

INTENDED USE:
The CLWP provides years of maintenance-free general illumination for commercial or residential outdoor applications such as driveways, patios, loading areas and warehouses.

CONSTRUCTION:
Rugged cast aluminum, corrosion-resistant rear housing. Impact resistant polycarbonate front cover/diffuser resists fading and cracking. Driver operates at 120V. Operating temperature -40°C to 40°C.

OPTICS:
High-performance LEDs maintain 70% of light output at 50,000 hours of service. (LED lifespan based on IESNA LM-80-08 results and calculated per IESNA TM-21-11 methodology.). Lenses are engineered for superior lighting distribution, uniformity and fixture spacing. See Lighting Performance Table for specific fixture performance.

INSTALLATION:
Designed for wall mounting more than 4' above the ground. Mounts to a recessed junction box (by others).

LISTINGS:
UL Listed for U.S. and Canadian safety standards for wet locations.

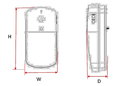
WARRANTY:
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty-terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Dimensions

Specifications

Width: 5.35" (13.6 cm)
Height: 10.5" (26.4 cm)
Depth: 3" (7.7 cm)
Weight: 1.54 lbs (0.70 kg)



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LUMINAIRE SCHEDULE

SYMBOL	QTY.	LABEL	ARRANGEMENT	DESCRIPTION	MOUNTING HEIGHT	LUX	WATTS
	3	A	SINGLE	LITHONIA RADB LED - P1	41.50 INCHES	34.5	5
WP	2	B	SINGLE	LITHONIA OLWP LED SWW2 120 PE DDB	16 FEET	160	18.5
	2	B	SINGLE	LITHONIA EU2L	7.5 FEET	10.76	.33 (LED)

LIGHTING LEGEND

- 60 LUX
- 30 LUX
- 20 LUX
- 5 LUX
- 1 LUX

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

SITE LIGHTING PLAN

BRIAN EDWARD MOENCH — REGISTERED — No. PE9500048 — STATE OF INDIANA — PROFESSIONAL ENGINEER

Susan E. Moench

REVISIONS:

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3	REVISED per TOWN COMMENTS	9/09/24
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DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	LT101

SITE LIGHTING PLAN

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

Indiana 811 — Know what's below. Call before you dig.

Advisory Plan Commission

Town of Brownsburg

Assigned Staff: Lauren Bouslog, Planner I

Report Date: 12/2/2025

Request Type: Development Plan Review

General Information

CASE NUMBER	PSDP-23-21
APPLICANT	Brian Moench, Moench Engineering
LOCATION	4005 N CR 1000 E, 32-08-17-365-002.000-016
PARCEL SIZE	2.96 acres

Cross References

Previous APC Cases	N/A
Relevant BZA Cases	N/A
Other	The site was annexed into the Town of Brownsburg under Ord. No. 2011-07 in 2011.

Attachments

☒	Tech Review
☒	Site Plan/Civil
☒	Landscape Plan
☒	Architectural Plans
☒	Other: Lighting Plan

Site and Zoning Map:





Project and Site Background:

This development plan review is for a 2,860 sq.ft. over the road truck maintenance building and a 900 sq. ft. office building to serve Lion's Trans Inc. The use would fall under Vehicle/Equipment Services – Heavy. The site has one access point off of N CR 1000 E. The proposed access drive lines up across from E CR 400 N. The site does not have any previous variances. The initial application for this project was uploaded on April 24, 2023, but never went before the Advisory Plan Commission.

Technical Review:

The TECH review for this project took place on November 6, 2025. Development Services commented that a lighting spec sheet needs added for the outdoor lighting and the light output needs shown in lux on the lighting plan. Pole, wall, or ground mounted fixtures must be full-cutoff fixtures. Landscape tables need to be provided that show the calculations of required versus provided landscaping (onsite landscaping requirements, any applicable buffer planting requirement, etc.) A sidewalk needs added to side of CR 1000 E and material percentages for each façade need added to the architectural detail submittal with details for the office on the site, not just the maintenance building. The Wastewater Department commented that the site is outside of Brownsburg's sanitary service area. The Stormwater O & M appears to be the drainage report. A Stormwater O & M will need to be provided indicating the property owner is responsible for stormwater system maintenance. The Street Department commented that radiuses need to be shown at entrances and a TR-13 connection to the existing street needs to be added as well. The Fire Territory commented that the utility plan does not show any fire hydrants. The east end of the maintenance building is approximately 300 feet from the front of the property. IN Fire Code 675 IAC 22-2.5 states that where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided. The applicant's revised plan uploaded on 10/7/25 includes an office building at the east end of the property that was not included in the original submission. The new building is more than 700 feet from the hydrant shown on CR 1000 E. A private fire main and hydrant will be required within 400 feet of all points on the exterior of buildings per IFC 507.5.1.

Traffic Study:

A traffic study was not required for this project.

Criteria:

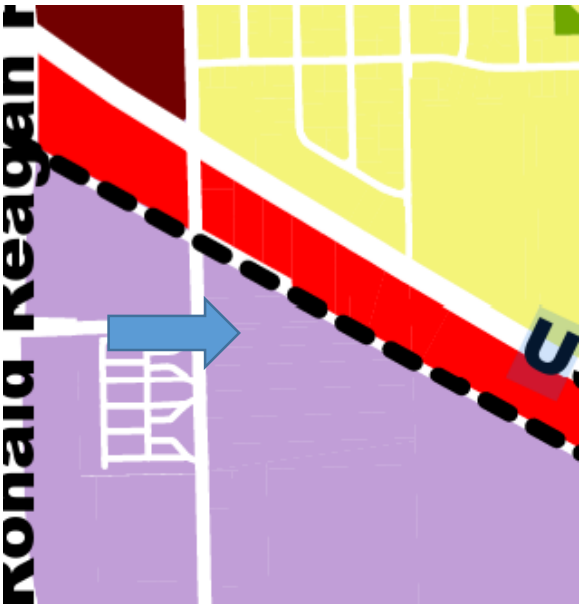
Pursuant to Chapter 8 of the Brownsburg Unified Development Ordinance the Advisory Plan Commission shall make findings of fact on the following criteria:

1) The Development Plan is consistent with the **Comprehensive Plan**.

   Future Land Use Map Link: https://www.brownsburg.org/DocumentCenter/View/1068/2021-Future-Land-Use-Map-PDF

   a) The Future Land Use Map notes the site as being used for flex/ light industrial. Flex space is a permitted use in an MS district as well as light manufacturing. The Comprehensive Plan notes that motorsport related development may be suited to a commercial retail space, an office, or require large flex spaces that may feature loading docks or vehicle bays. These may be suited in

either commercial or industrial employment areas. This project's proposed use is in line with the Future Land Use Map and the MS district.



Based on the above information, staff believes this criterion has been met.

2) The Development Plan complies with applicable development requirements and standards of **CHAPTER 2 – ZONING DISTRICTS, CHAPTER 3 – PERMITTED USES,** and/or the PUD Ordinance.

https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=14

a) The project meets the minimum front setback of 35', the minimum side setback of 20', and the minimum rear setback of 20'. Maximum lot coverage is 80% in an MS district, this project is only 65.4%. The maintenance building on the site is 30'-9" tall, which is under the maximum height allowed for a primary structure (65'). However, to date no elevations of the office building have been submitted, to review for compliance.

Based on the above information, staff believes this criterion has not been met.

3) The Development Plan complies with applicable standards found in **CHAPTER 5: SITE DEVELOPMENT** and/or the PUD Ordinance.

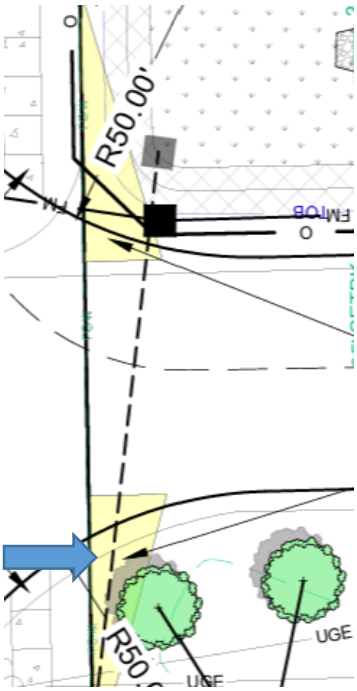
https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=101

a) *Landscaping*: The applicant has added the planting quantity that was required along with the provided landscaping amounts to their planting schedule per Development Services TECH review comments. This standard has been met.

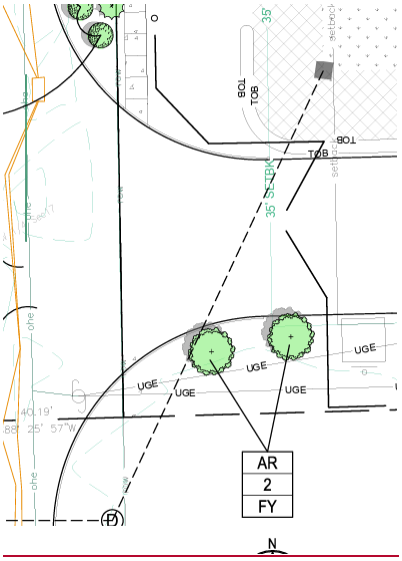
b) *Lighting*: The maximum light trespass allowed for an MS zoned district is 30 lux, the proposal does not exceed this by the property line.

c) *Parking*: The applicant provided 36 truck parking spaces, 4 standard spaces, and 1 ADA handicap space for a total of 40 spaces that meets the parking standards.

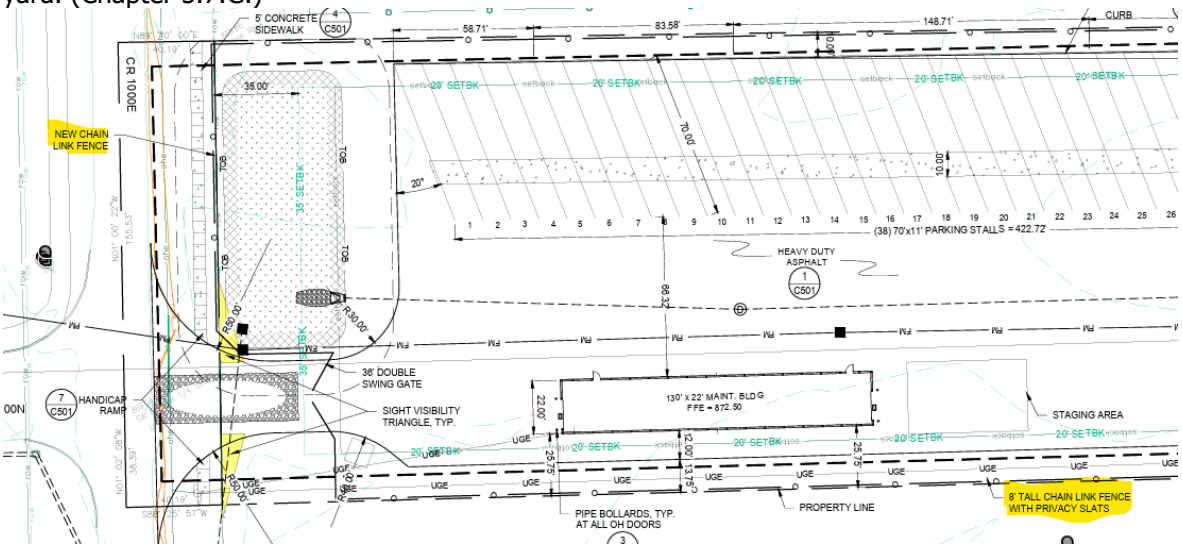
d) *Vision Clearance Triangle*: The VCT's are labeled on their Civil and Landscape Plan submittal. There is a red/ sugar maple (canopy, deciduous tree) that has a listed height on the planting schedule of 40-50 ft and a spread of 30-40 ft that is in violation of Chapter 5.16.B. Vertical Area on page 142 of the UDO. 'Landscaping shall be permitted to be placed or to project into the vision clearance triangle between the heights of two feet and nine feet above the crown of the adjacent roadway.' The proposed tree would exceed this requirement and therefore need to be moved back to the east out of the VCT. The proposed fence on the north side of the access drive (shown below) is within the applicant's vision clearance triangle.



Since the continuance on December 17th, 2025, the applicant has resubmitted the landscape plans. This led to a deletion of the vision clearance triangles from the new landscape plan shown below). The triangles will need added to the new landscape plan.



e) *Other*: The applicant has marked an 8' tall chain link fence with privacy slats around the perimeter of the property and a chain link fence in the front yard. There is a 36' double swing gate that leads into the property off the access point from CR 1000 E. Chain link is a prohibited material for a vehicle/ equipment services – heavy use. Permitted materials consist of wood, brick, masonry, or other similar durable materials. The fence or wall must be constructed high enough to conceal vehicles, equipment, or parts located on the lot. (Chapter 3.5.P. of the UDO) Non-residential fences and walls are also not permitted in front yards, only in the side or rear yard. (Chapter 5.7.G.)



Based on the above information, staff believes this criterion has not been met.

4) <u>The Development Plan complies with any **other applicable provisions** of this Ordinance or **Overlay Standards.**</u>

a) No special provisions that relate to the plat are noted for this site.

b) Overlay districts are not applicable to this project.

Based on the above information, staff believes this criterion has been met.

5) Satisfies any provision related to a development's design as found in **CHAPTER 7 – SUBDIVISION REGULATIONS** and/or the PUD Ordinance.

https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=168

a) The project meets the standards for setbacks, lot coverage, and height. Easements are shown and labeled on the plat. A sidewalk has been added along the west side of the property that fronts CR 1000 E to satisfy the Brownsburg Transportation Plan requirements.

Based on the above information, staff believes this criterion has been met.

6) The Development Plan satisfies the construction requirements of the **Brownsburg Construction Standards and Specifications.**

a) The applicant has been coordinating with Wessler Engineering and the Wastewater Department to find a solution for the discharge from the post developed property since it is limited by the receiving conveyance (detention on-site or increasing capacity downstream were mentioned as being appropriate solutions). The design requirements in Chapter 151 (Stormwater Management) must be met. No waivers have been requested. If the applicant can meet the design requirements, then no waiver is needed. TECH review comments will need to be completed before permitting and the completion of the comments will be added as a condition for approval.

Based on the above information, staff believes this criterion has not been met.

Recommendations:

The Advisory Plan Commission may request conditions and commitments related to the project and criteria. Conditions or commitments must be made as part of the motion.

Based on the information provided and the criteria responses, staff recommends a motion to

☐	Approve PSDP-23-21 as presented.
☒	Approve PSDP-23-21 with the following staff conditions: 1. The approval of Findings of Fact and Report of Determination. 2. The stamping of the construction plans by the Director. 3. The completion of any outstanding TECH comments. 4. The removal of the fence from the front yard and change the material from chain link to a permitted material. (Options listed in Chapter 3.5.P.4.d. of the UDO) 5. The removal of the red/sugar maple tree from the vision clearance triangle on the south side of the access road.
☐	Deny PSDP-23-21 based on the following criteria:

Moench
Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH
MOENCH ENGINEERING, P.C.
NO OTHER USE OR DUPLICATION MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF
MOENCH ENGINEERING, P.C.
ALL OTHER COPYRIGHT AND COMMON LAW RIGHTS ARE HEREBY SPECIFICALLY RESERVED.

LIONS TRAN INC. (Brownsburg)

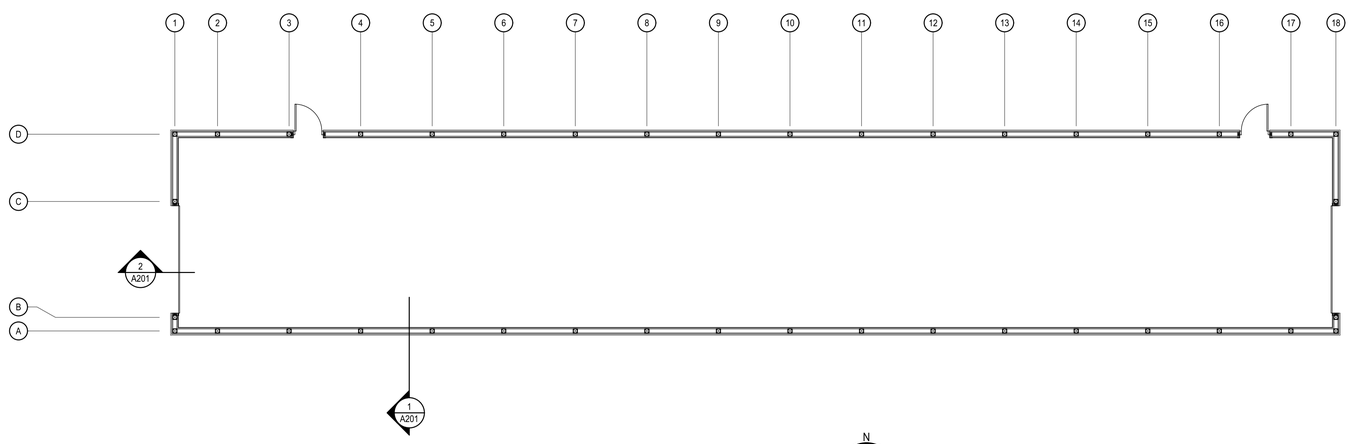
4005 N. CR. 1000 E.
BROWNSBURG, INDIANA 46122

ARCHITECTURAL SITE PLAN and FLOOR PLAN

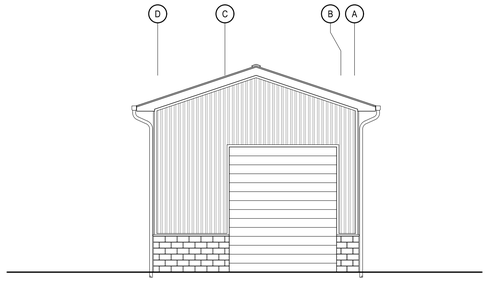
PRELIMINARY SET

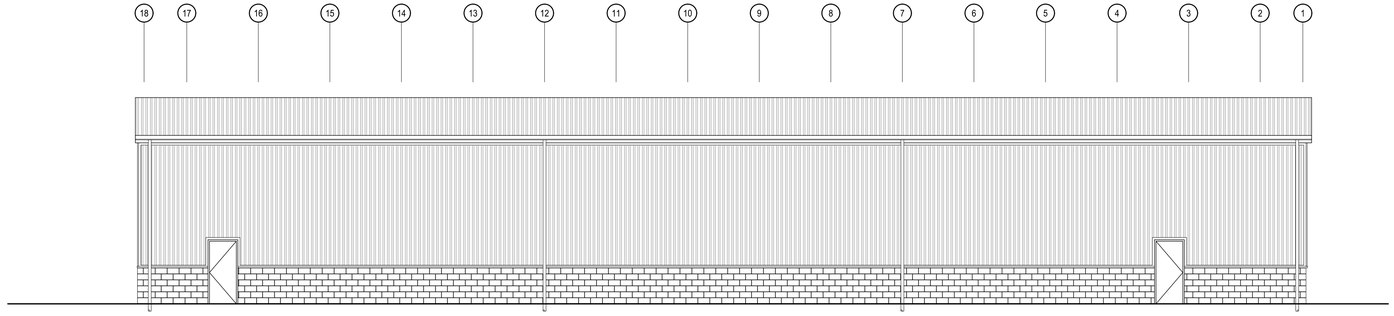
REVISIONS:

DRAWN BY:	SRJ
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	05/22/2023
SHEET NUMBER:	A100



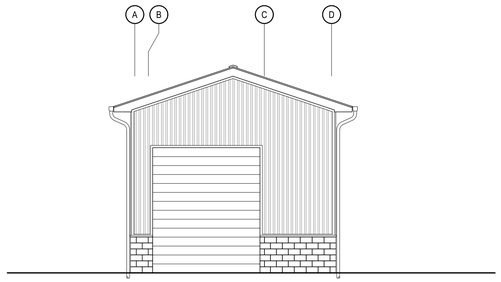
FLOOR PLAN
1/8" = 1'-0"

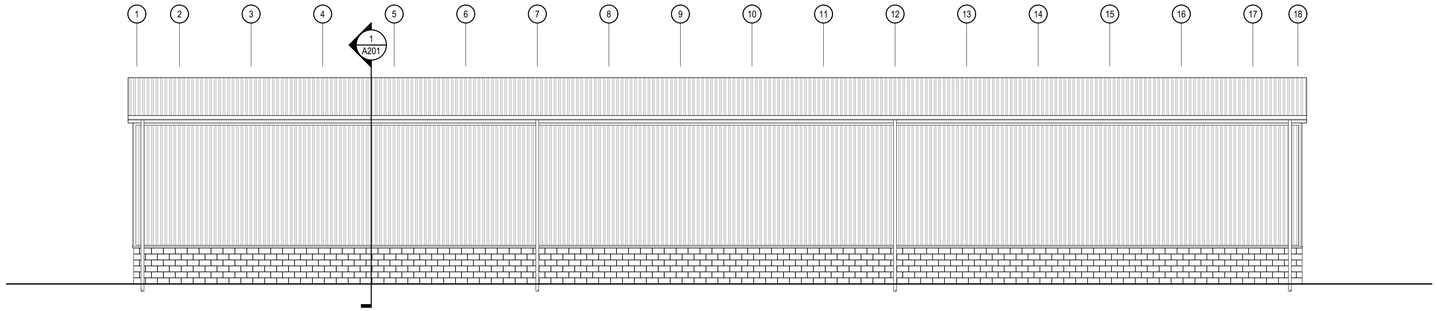




WEST ELEVATION
1/8" = 1'-0"
4
A101

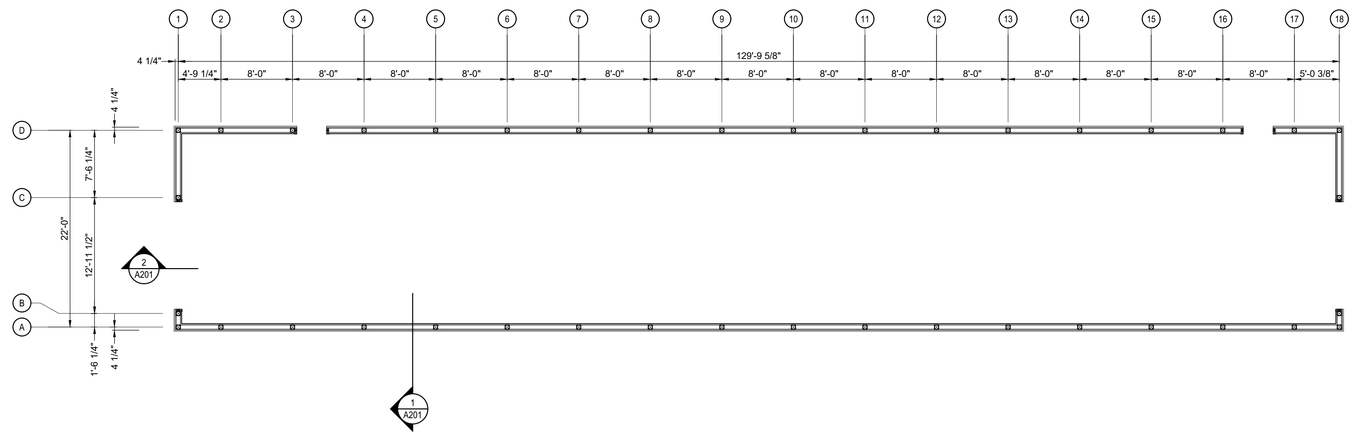
NORTH ELEVATION
1/8" = 1'-0"
3
A101





EAST ELEVATION
1/8" = 1'-0"
5
A101

SOUTH ELEVATION
1/8" = 1'-0"
2
A101



ROOF FRAMING PLAN
1/8" = 1'-0"



Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRAN INC. (Brownsburg)
4005 N. CR. 1000 E.
BROWNSBURG, INDIANA 46122

BUILDING ELEVATIONS AND ROOF FRAMING PLAN

PRELIMINARY SET

REVISIONS:

DRAWN BY:	SRJ
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	05/22/2023
SHEET NUMBER:	A101

Advisory Plan Commission
TECHNICAL REVIEW COMMITTEE

TOWN OF Brownsburg
61 North Green Street | Brownsburg, Indiana 46112
Tel 317.852.1128 | Fax 317.852.1134

Project Name: Lions Trucking DPR
Record Number: PSDP-23-21
TECH Meeting Date: November 6, 2025

The following Technical Review Committee ("TECH") members provided comments for the project as detailed below:

Development Services
- ☐ Jenna Wertman, AICP, Director
- ☒ Lauren Bouslog, Associate Planner
- ☐ Steve Fletcher, Building Commissioner
- ☐ Frank Wise, Senior Building Inspector

Town Administration
- ☐ Debbie Cook, Town Manager
- ☐ Aaron Kaytar, Capital Projects & Procurement Manager
- ☐ Ethan Pierce, Economic Development Manager

Water Department
- ☐ Frank Monts, Superintendent

Wastewater Department
- ☒ Kathy Dillon, Water Utilities Director
- ☐

Street Department
- ☒ Aaron Love, Superintendent
- ☐ Matt Griner, Asst. Superintendent

Parks Department
- ☐ Amber Lane, Director
- ☐

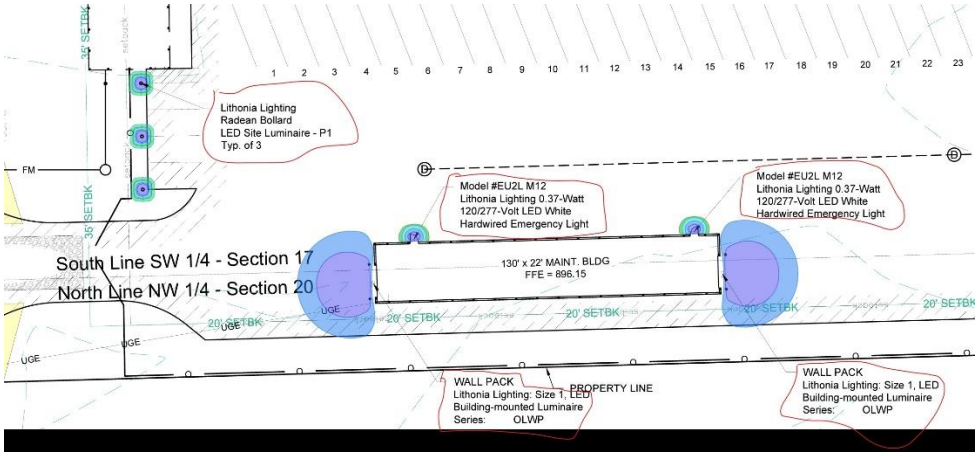
Fire Territory
- ☒ Paul Hudson, Fire Marshal
- ☐ Jeff Schlageter, Deputy Fire Marshal

Police Department
- ☐ Joe Grimes, Chief
- ☐ Pat Bullock, Captain
- ☐ Bryan Fultz, Major

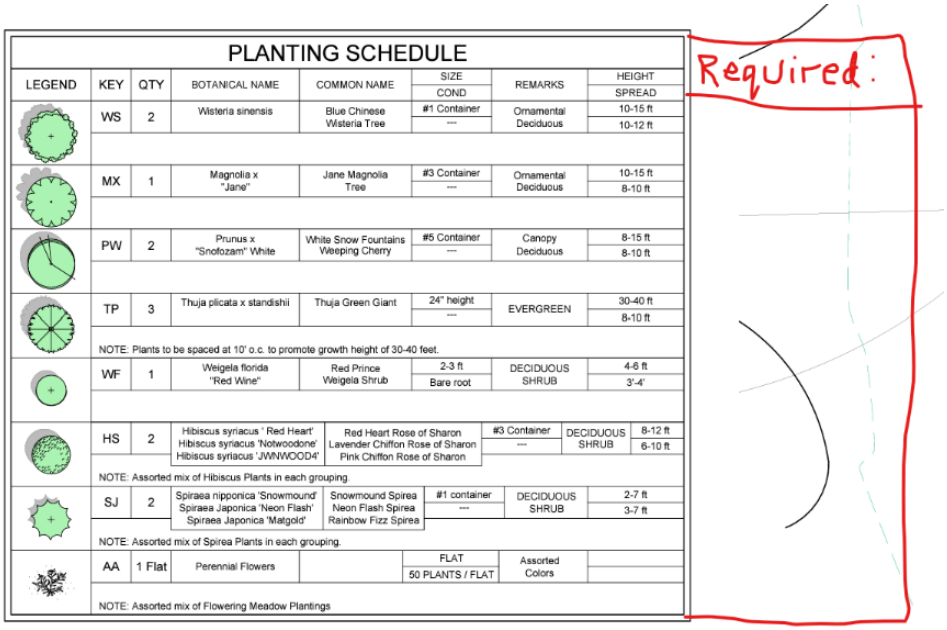
External Agencies
- ☐ Regan Huff, BCSC
- ☐ Dave Gaston, P.S., Hend. Co. Surveyor
- ☐ John Ayers, Hendricks Co. Engineer
- ☐ Mary Atkins, Wessler Engineering
- ☐ Angie DeKemper, CountryMark
- ☐ Gerry Jones, Vectren

1) DEVELOPMENT SERVICES

a) Add a lighting spec sheet for your outdoor lighting. We also need the light output shown in lux. Since this is an MS zoned district, the allowable light at the property line is 30 lux. Pole, wall, or ground mounted fixtures must be full-cutoff fixtures.



b) Provide landscape tables that show the calculations of required versus provided landscaping (onsite landscaping requirements, any applicable buffer planting requirement, etc.) You only have provided currently, see pic below.



PLANTING SCHEDULE

LEGEND	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE / COND	REMARKS	HEIGHT / SPREAD
	WS	2	Wisteria sinensis	Blue Chinese Wisteria Tree	#1 Container / ---	Ornamental Deciduous	10-15 ft / 10-12 ft
	MX	1	Magnolia x "Jane"	Jane Magnolia Tree	#3 Container / ---	Ornamental Deciduous	10-15 ft / 8-10 ft
	PW	2	Prunus x "Snofozam" White	White Snow Fountains Weeping Cherry	#5 Container / ---	Canopy Deciduous	8-15 ft / 8-10 ft
	TP	3	Thuja plicata x standishii	Thuja Green Giant	24" height / ---	EVERGREEN	30-40 ft / 8-10 ft
NOTE: Plants to be spaced at 10' o.c. to promote growth height of 30-40 feet.							
	WF	1	Weigela florida "Red Wine"	Red Prince Weigela Shrub	2-3 ft / Bare root	DECIDUOUS SHRUB	4-6 ft / 3'-4'
	HS	2	Hibiscus syriacus ' Red Heart' / Hibiscus syriacus 'Notwoodone' / Hibiscus syriacus 'JWNWOOD4'	Red Heart Rose of Sharon / Lavender Chiffon Rose of Sharon / Pink Chiffon Rose of Sharon	#3 Container / ---	DECIDUOUS SHRUB	8-12 ft / 6-10 ft
NOTE: Assorted mix of Hibiscus Plants in each grouping.							
	SJ	2	Spiraea nipponica 'Snowmound' / Spiraea Japonica 'Neon Flash' / Spiraea Japonica 'Matgold'	Snowmound Spirea / Neon Flash Spirea / Rainbow Fizz Spirea	#1 container / ---	DECIDUOUS SHRUB	2-7 ft / 3-7 ft
NOTE: Assorted mix of Spirea Plants in each grouping.							
	AA	1 Flat	Perennial Flowers		FLAT / 50 PLANTS / FLAT	Assorted Colors	
NOTE: Assorted mix of Flowering Meadow Plantings							

Required:

d) Do you plan on putting a dumpster that would require a trash receptacle screen on all sides (wall or fence) by the new truck maintenance building? If so, it would need to be a similar material that complements the new building's facade, be placed on a paved surface and be accessible by gates.

e) A sidewalk is required on this side of CR 1000 E.

f) Add material percentages for each facade to your architectural detail submittal and include architectural details for the office on the site, not just the maintenance building.

2) BUILDING

a) None

3) CAPITAL PROJECTS

a) None

4) ECONOMIC DEVELOPMENT

a) None

5) WATER

a) None

6) WASTEWATER

a) This is outside of Brownsburg's Sanitary service area.

b) The Stormwater O&M appears to be the drainage report. A Stormwater O&M will need to be provided indicating the Property owner is responsible for the Stormwater system maintenance.

7) STREET/PUBLIC WORKS

a) Show radiuses at the entrance

b) TR-13 connection to existing street as well as add 02504

c) Check on transportation plan for sidewalks needed and add as necessary.

8) PARKS

a) None

9) FIRE TERRITORY

a) Utility plan does not show any fire hydrants. East end of maintenance building is approximately 300 feet from the front of the property.
IN Fire Code 675 IAC 22-2.5

507.5 Fire hydrant systems.

507.5.1 Where required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an *approved* route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided.

ACTION REQUIRED: Produce exhibit showing compliance with IFC 507.5.1. A private hydrant may be required.

b) Site analysis table on sheet C000 lists 1 building with a square footage of 2080 ft^2. Following sheets show 2 buildings with a total square footage of 3760 ft^2.
675 IAC 12-6-7 (b) (1) Plans shall be sufficiently clear and complete to show in detail that the proposed work will comply with the rules of the commission.

ACTION REQUIRED: Submit corrected sheets

c) Revised plan uploaded on 10/7/25 includes a building at the east end of the property that was not included in the original submission. New building is more than 700 feet from the hydrant shown on CR 1000 E. Please note my previous comment re: private fire main and hydrant. A private hydrant will be required within 400 feet of all points on the exterior of buildings per IFC 507.5.1.

10) POLICE

a) None

11) STORMWATER

a) See attached

12) BROWNSBURG COMMUNITY SCHOOL CORPORATION

a) None

13) HENDRICKS COUNTY SURVEYOR

a) None

14) HENDRICKS COUNTY ENGINEER

a) None

15) COUNTRYMARK

a) None

Please provide a written response to this report addressing each issue and, if necessary, indicate where on the revised plans the modification has been made.

16) VECTREN

a) None

TOWN OF Brownsburg

Construction/ Stormwater Pollution Prevention Plan Technical Review
Town of Brownsburg Stormwater Management Ordinance
https://codelibrary.amlegal.com/codes/brownsburg/latest/brownsburg_in/0-0-0-26557
IDEM Construction Stormwater General Permit:
https://www.in.gov/idem/stormwater/construction-land-disturbance-permitting/
(INRA00000 effective 12/18/2021)

Construction/Stormwater Pollution Prevention Plan Technical Review and Comment

Project Name: Lion Trans Inc. Maintenance Building
Scope of Project: Parking Lot and Maintenance Building
Location of Project: 4005 N. County Road 1000E
County(ies): Hendricks
Latitude: 39°49'20.98" N **Longitude:** 86°20'42.20" W

Plan Submittal Date: **October 7, 2025**
Plan Review Date: **November 4, 2025**

Plan Preparer: Brian Moench **Affiliation:** Moench Engineering, P.C.
Address: 4000 Clarks Creek Road
City: Plainfield **State:** IN **Zip:** 46168
Phone: (317) 837-2767 **Cell Phone:** NA **Email:**

Project Site Owner: Malhi Kulwinder & Jigna Shah Jtsur **Company Name (if applicable):**
Address: 7631 E. US Hwy 36
City: Avon **State:** IN **Zip:** 46123
Phone: 317-989-1580 **Cell Phone:** **Email:**

Plan Reviewer: Mary Atkins, PE, CPESC **Affiliation:** Wessler Engineering **On behalf of:** Town of Brownsburg
Assisted By: Michaela Tauil, CPESC
Address: 6219 South East Street
City: Indianapolis, IN **State:** IN **Zip:** 46227
Phone: 317-788-4551 **Cell Phone:** **Email:** MaryA@wesslerengineering.com

Plan Review Status:		
☐	**Plan is Adequate**	A comprehensive plan review has been completed and it has been determined that the plan satisfies the minimum requirements of the Town of Brownsburg Stormwater Management Ordinance and Construction Standards, and the Construction Stormwater General Permit INRA00000 (Effective 12-18-2021).
☐	**Preliminary Review**	A comprehensive review will not be completed at this time. The plan review authority reserves the right to perform a comprehensive review at a later date, and revisions may be required at that time.
☐	**Conditional Acceptance**	Acceptance of the plan is conditional. The conditional acceptance is contingent upon addressing the issues identified in the comment sections.
☒	**Plan is Deficient**	Significant deficiencies were identified and must be addressed. Refer to the comment sections.

Action:	
☐	**Submit a Notice of Intent:** Submit the Notice of Intent (NOI) online through the IDEM Regulatory ePortal. It is required to upload a copy of this review form when submitting the NOI through the IDEM Regulatory ePortal: (https://stormwater.idem.in.gov/ncore/external/home)
☒	**Do not file a Notice of Intent or commence land-disturbing activities:** Deficiencies must be adequately addressed and an acceptable plan review completed.
☒	**Comments:** Refer to Plan Review Comments Sections of this document.
☒	**Revisions:** Update and submit the revised Construction/Stormwater Pollution Prevention Plan as indicated below.
	☒ Update and submit a complete plan set that addresses plan deficiencies.
	☒ Update and submit a document (narrative and/or plan sheets) that address plan deficiencies.
	☐ Update and submit a complete plan set that addresses plan deficiencies. A comprehensive plan review will not be completed.

Plan Review Information

- *The technical review and comment is intended to evaluate the completeness of the Construction/Stormwater Pollution Prevention Plan for the project. The Plan submitted was not reviewed for the adequacy of engineering design. All measures included in the plan, as well as those recommended in the comments should be evaluated as to their feasibility by a qualified individual with structural measures designed by a qualified engineer. The Plan has not been reviewed for other local, state, or federal permits that may be required to proceed with this project.*
- *Construction activities and unforeseen weather conditions may affect the performance of the erosion and sediment control system, individual measures, or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute measures as necessary to ensure compliance.*

Priority Site Information:

☐	**Nature and Extent of Construction**	☐	**Close Proximity to Wetlands**
☐	**Close Proximity to Sensitive Area**	☐	**Potential for Direct Runoff to Receiving Waters**
☐	**Steep Topography on Proposed Construction Site**	☒	**Not a Priority Site**

Section A: Construction Plan Elements

Adequate	Deficient	NA	A	*The construction plan elements include general information associated with the project site that are critical for the evaluation of the stormwater pollution prevention plan component. This information includes, but is not limited to an index, resource information, reference maps, grading information, project layout and design, and drainage plan*
☒	☐	☐	**1**	Index of the location of required plan elements in the construction plan
☒	☐	☐	**2**	A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads
☒	☐	☐	**3**	Narrative of the nature and purpose of the project
☒	☐	☐	**4**	Latitude and longitude to the nearest fifteen (15) seconds
☒	☐	☐	**5**	Legal description of the project site
☒	☐	☐	**6**	11 X 17-inch plat showing building lot numbers/boundaries and road layout/names
☒	☐	☐	**7**	Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways
☒	☐	☐	**8**	Land use of all adjacent properties
☒	☐	☐	**9**	Identification of a U.S. EPA approved or established TMDL
☒	☐	☐	**10**	Name(s) of the receiving water(s)
☒	☐	☐	**11**	Identification of discharges to a water on the current 303d list of impaired waters and the pollutant(s) for which it is impaired
☒	☐	☐	**12**	Soil map of the predominant soil types
☒	☐	☐	**13**	Identification and location of all known wetlands, lakes and water courses on or adjacent to the project site (construction plan, existing site layout)
☒	☐	☐	**14**	Identification of any other state or federal water quality permits or authorizations that are required for construction activities– required 50-foot natural buffer
☒	☐	☐	**15**	Identification and delineation of existing cover, including natural buffers
☒	☐	☐	**16**	Existing topography at a contour interval appropriate to indicate drainage patterns
☒	☐	☐	**17**	Location(s) of where run-off enters the project site
☒	☐	☐	**18**	Location(s) of where run-off discharges from the project site prior to land disturbance. Erosion measures required at the discharge point.
☒	☐	☐	**19**	Location of all existing structures on the project site
☒	☐	☐	**20**	Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management

☒	☐	☐	**21**	Locations where stormwater may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features
☒	☐	☐	**22**	Size of the project area expressed in acres
☒	☐	☐	**23**	Total expected land disturbance expressed in acres
☒	☐	☐	**24**	Proposed final topography
☒	☐	☐	**25**	Locations and approximate boundaries of all disturbed areas
☒	☐	☐	**26**	Location, size, and dimensions of all stormwater drainage systems, such as culverts, storm sewers, and conveyance channels
☒	☐	☐	**27**	Locations of specific points where stormwater and non-stormwater discharges will leave the project site
☒	☐	☐	**28**	Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas
☒	☐	☐	**29**	Location of all on-site soil stockpiles and borrow areas
☒	☐	☐	**30**	Construction support activities that are expected to be part of the project
☒	☐	☐	**31**	Location of any in-stream activities that are planned for the project including, but not limited to stream crossings and pump arounds

Section A – Comments:

-

Section B: Stormwater Pollution Prevention Plan – Erosion and Sediment Control/Project Site Management				
Adequate	**Deficient**	**NA**	**B**	*The construction component of the Stormwater Pollution Prevention Plan includes stormwater quality measures to address erosion, sedimentation, and other pollutants associated with land disturbance and construction activities. Proper implementation of the plan, maintenance of measures, and administering a self-monitoring program is required to manage the project site to minimize the discharge of sediment and other pollutants. Construction activities and unforeseen weather conditions may affect the performance of the erosion and sediment control system, individual measures, or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute measures as necessary to ensure compliance.*
☒	☐	☐	**1**	Description of the potential pollutant generating sources and pollutants, including all potential non-stormwater discharges
☒	☐	☐	**2**	Stable construction entrance locations and specifications. Plan to clear tracking of sediments on road. Dust suppression plan.
☐	☒	☐	**3**	Specifications for temporary and permanent stabilization. Include seeding and mulching plan and 70% coverage requirement for final stabilization. Include 7-day stabilization requirement.
☒	☐	☐	**4**	Sediment control measures for concentrated flow areas (sediment basins if used have specific requirements)
☒	☐	☐	**5**	Sediment control measures for sheet flow areas
☐	☐	☒	**6**	Run-off control measures
☐	☒	☐	**7**	Stormwater outlet protection locations and specifications
☐	☐	☒	**8**	Grade stabilization structure locations and specifications
☐	☒	☐	**9**	Dewatering applications and management methods
☐	☐	☒	**10**	Measures utilized for work within waterbodies
☐	☒	☐	**11**	Maintenance guidelines for each proposed temporary stormwater quality measure
☐	☒	☐	**12**	Planned construction sequence describing the relationship between implementation of stormwater quality measures in relation to land disturbance
☐	☐	☒	**13**	Provisions for erosion and sediment control on individual building lots regulated under the proposed project
☒	☐	☐	**14**	Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1

☒	☐	☐	**15**	Material handling and storage procedures associated with construction activity. Management of waste materials and dumpsters for runoff and wind. Concrete washout management. Fueling areas. Equipment washing. Application of pesticides, herbicides, insecticides and fertilizers. Disposal of hazardous waste. Washing of paint or grout applicators.

Section B – Comments:

- General: Per Section 3.3(a)(13), notice shall be posted near the main entrance of the project site containing all documentation listed in Section 3.3(a)(13)(A). Include a note in the plans specifying this requirement.
- B3: Per Town of Brownsburg Construction Standards 02101, prior to seeding, disturbed areas must be graded to final grade and receive a minimum of four (4) inches of topsoil. A note should be added to the Plan Sheets specifying this requirement.
- B3: Include a note that stabilization must be initiated by the end of the seventh day the area is left idle and stabilization shall be completed within 14 days after initiation per the requirements of the Construction Stormwater General Permit.
- B3: Per the CSGP Section 3.4(b), final stabilization of a project site is achieved when all land disturbing activities have been completed and a uniform perennial vegetative cover with a density of seventy percent has been established on all unpaved disturbed areas.
- B7: Per the Town of Brownsburg Construction Standards 02101, Section 2.01(F) Riprap placed for pipe and outfall protection shall be contained in a gabion basket. Please update plans to include gabion baskets for rip rap outlet protection.
- B9: Include a detail and/or specifications for dewatering in the event that it becomes necessary during construction activities It is recommended that a dewatering bag detail be provided, or otherwise note that sediment laden water shall be directed to an appropriate sediment control measure or a series of control measures that minimizes the discharge of the sediment.
- B11: Section B11 of the SWPPP should be in reference to erosion and sediment control measures proposed for use during construction. Provide specific maintenance guidelines in the SWPPP or with the construction details for the erosion control blanket, inlet protection, concrete washout and silt fence.
- B12: Per Town of Brownsburg Construction Standards 01010, a pre-construction meeting must be scheduled with the Town a minimum of 48-hours prior to the start of construction. A note should be added to the plan sheets specifying this requirement.
- B12: Include a note on the plans stating the following: per the IDEM CSGP Section 6.4(a)(9)(B) a notice of termination shall be verified by the local MS4 before submittal to IDEM. The Town of Brownsburg shall be contacted prior to filing of the NOT to verify eligibility for termination of permit coverage.

Section C: Stormwater Pollution Prevention Plan – Post-Construction

Adequate	Deficient	NA	C	*The post-construction component of the Stormwater Pollution Prevention Plan includes the implementation of stormwater quality measures to address pollutants that will be associated with the final project land use. Post-construction stormwater measures should be functional upon completion of the project. Long term functionality of the measures is critical to their performance and should be monitored and maintained.*
☒	☐	☐	**1**	Description of pollutants and their sources associated with the proposed land use
☒	☐	☐	**2**	Description of proposed post-construction stormwater measures including stormwater detention and water quality treatment according to the local ordinance (refer also to separate technical review comments)
☒	☐	☐	**3**	Plan details for each stormwater measure
☒	☐	☐	**4**	Sequence describing stormwater measure implementation
☐	☒	☐	**5**	Maintenance guidelines for proposed post-construction stormwater measures. Operation and Maintenance (O&M) Manual.
☒	☐	☐	**6**	Entity that will be responsible for operation and maintenance of the post-construction stormwater measures

Section C – Comments:

- General: Ensure stormwater measures meet all of the Town of Brownsburg ordinances and standards. Refer to the Stormwater Review Comments.
- O&M Manual: The O&M Manual refers to Hendrick's County and County review officials however the Town of Brownsburg is the regualtory authority. Update throughout.
- O&M Manual: Per the Town of Brownsburg Stormwater Management Ordinance, the O&M manual shall include a site plan that depicts the stormwater runoff flow direction, drainage patterns and the flood routing path of the project site. This information was not provided in the site map; provide accordingly.
- O&M Manual: In one of the site maps provided, clearly callout the location of the bioretention area to be inspected by the owner.
- O&M Manual: The Operation, Maintenance and Inspection checklist provided is for a swale and not a biortention area. Provide a checklist that is applicable to the practice used on this project.
- O&M Manual: The function of a bioretention basin is impacted by the vegetation. Include guidance in the manual on dealing with invasives and how to reseed properly if areas become bare or vegetation needs replaced.

TOWN OF BROWNSBURG STORMWATER/DRAINAGE PLAN REVIEW

CO Comment Originator
CR Comment Respondee

NAME OF PROJECT: Lion's Trucking
DESIGN PACKAGE: Development
DESIGNER: Moench Engineering

		Wessler - Reviewer to complete		Designer to complete	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
1	Forebay	RS	Per Ch 151.21 C.1.h. The Town does not allow the use of forebays. Refer to Ch 151.23 for WQ guidance.		
2	Easements	RS	The drainage easement around the retention pond appears to overlap into the ROW.		
3	Flood Routing	RS	Evaluate stormwater ponding and overflow path routing for Ch. 151.21 I. Show the ponded areas as hatched on the construction plans with peak elevation listed. Indicate the overland flow path. The flood route conditions assume the storm network is full/clogged and flow must travel overland.		
4	Pipe Cover	RS	Minimum 2 feet cover is required.		
5	Emergency Spillway	RS	The report states that the crest for ES is 867.89 (0.11 ft below TOB). However, the plans show ES crest at 866.58 and TOB at 867.58. Where is the E.S. located - show on the plans.		
6	Inlets	RS	The inlet calcs under 50% clogged conditions do not show depth of ponding at the inlets. Max allowed is 6 inches.		
7	Pond	RS	Will this function as a dry pond? Dry ponds require an underdrain. Refer to the Town's construction detail EW-04 for applicable items to show on the plans for ponds.		
8	Force Main	RS	A new force main appears to be planned along the edge of the pond. Verify that all local and state setback requirements are met.		
9	Concrete Apron	RS	Is this designed to convey stormwater?		
10	Impervious Surface Area	RS	Provide the total amount of impervious surface area in square feet for the completed project on the title sheet of the construction plans. In addition to the total, provide a breakdown of total compacted gravel, total concrete/asphalt and total building footprint (in square feet). This is used for stormwater utility billing.		
11	Adequate outlet	RS	Include analysis of the downstream receiving storm pipe to show it has adequate capacity for the release from the pond.		
12	PreCast Message	RS	All storm grate castings shall be pre-cast with a pollution prevention message.		
13	HGL	RS	Include 10 year HGL calcs in the drainage report showing that the HGL remains below the crown of the pipe.		

TOWN OF BROWNSBURG STORMWATER/DRAINAGE PLAN REVIEW

CO Comment Originator
CR Comment Respondee

NAME OF PROJECT: Lion's Trucking
DESIGN PACKAGE: Development
DESIGNER: **Moench Engineering**

		Wessler - Reviewer to complete		Designer to complete	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
14	Construction Details	RS	If not using the Town's standard details, verify that all applicable requirements from the Town's standard details are reflected in the details used on the plans. e.g. Missing toewall on the outlet end section detail (minimum 36" for incoming to ponds), missing details required by EW-04, etc.		
15	Report	RS	Must be prepared by licensed P.E. or P.L.S. List who prepared the report.		
16	Detention Sizing	RS	Use the TR-55 method. CN for proposed conditions shall be the next less infiltrating class for soils. e.g. HSG C soil must be HSG D soil in the calculation. Minimum Tc to be used for detention sizing is 30 minutes.		
17	Downspouts/ Sumps	RS	Verify that downspouts (and sumps if applicable) tie directly into the storm sewer system and do not allow overland flow.		
18	Pipe Profile	RS	Include pipe profile on the construction plans. A minimum one tenth drop is required in structures.		

These comments should not be construed as a comprehensive list of comments, and the reviewer may make additional comments based on subsequent submittals

ADVISORY PLAN COMMISSION

DEVELOPMENT PLAN REVIEW

AFFIDAVIT & CONSENT OF PROPERTY OWNER

That I/we Malhi Kulwinder & Jigna Shah after first being duly sworn, depose and say:

That I am/we are the owner(s) of the Real Estate located at: (Legal and/or common address)
4005 N County Road 1000 E, Brownsburg IN 46112

Parcel Number(s): 32-08-17-365-002.000-016

That I/we have read and examined the application for Development Plan Review, and I/we are familiar with its contents.

That I/we have no objections to, and consent to such request as set forth in the application.

Signature of Affiant

Jigna Shah
Print Name

STATE OF Indiana)
) SS:
COUNTY OF Hendricks)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared Jigna Shah, who acknowledged the execution of the above and foregoing instrument to its voluntary act and deed on the 15th day of March, 2023.

January 19, 2031
Commission Expiration Date

Notary

Morgan
County of Residence

Lindsay E. Moore
Printed Name

LINDSAY E. MOORE
Notary Public - Seal
Morgan County - State of Indiana
Commission Number NP0746207
My Commission Expires Jan 19, 2031

MOENCH ENGINEERING, P.C.
A Professional Corporation

4000 Clarks Creek Road, Plainfield, IN 46168, Telephone: 317-837-2767, Fax: 317-837-7266

17 December 2025

The Town of Brownsburg
Attn: Technical Review Committee
Advisory Plan Commission
61 North Green Street
Brownsburg, IN 46112

Re: Lions Trucking DPR
4005 N County Road E, Brownsburg, IN 46122
PSDP-23-21

Dear Technical Review Committee,

We are pleased to provide you with our responses to your Vendor Comments sent in an email dated November 6, 2025. The responses provided will follow the same numbering scheme found in the comment email.

1) **Development Services**
   a. A lighting spec sheet can be found on Sheet LT101. A lighting legend in lux can be found here.
   b. The planting schedule found on Sheet L101 shows the required landscaping quantity.
   c. A dumpster is not planned next to the new truck maintenance building.
   d. A sidewalk is shown on sheet C201.
2) **Wastewater**
   a. Noted
   b. O&M Manual has been updated and attached.
3) **Street Department**
   a. Radii have been labeled at entrances per sheet C201.
   b. The plans have been revised to include an acceleration lane and entrance lane. A passing blister was not reasonable due to the intersection west of the entrance to the property.
   c. See Section 1 response d.

4) **Fire Territory**
   a. The drawings have been revised to show a private fire main and hydrant within 400 feet of the building at the east end of the property as per IFC 507.5.1
   b. The site analysis table and following sheets fixed to match.
   c. A private hydrant is shown on sheet C401.
5) **Section A Comments**
   a. No Comments
6) **Section B Comments**
   a. This requirement has been noted in the plans.
   b. A note specifying this requirement has been added.
   c. Stabilization note made.
   d. Noted
   e. Gabion baskets have been added for riprap outlet protection.
   f. Dewatering details have been added.

g. Section B 11 has been updated to be more specific.
h. A note about the pre-construction meeting has been added.
i. The note has been added.

7) <u>Section C Comments</u>

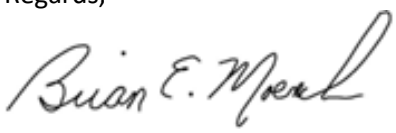
a. See next section.
b. The O&M Manual has been updated accordingly.
c. The noted items have been provided in the O&M Manual.
d. Noted
e. The inspection checklist has been updated.
f. Guidance added.

8) <u>Town of Brownsburg Stormwater/Drainage Plan Review</u>

a. The Water Quality items have been updated. An ADS Arcadia AR8 hydrodynamic separator has been included for water quality measures.
b. This has been addressed in the pond design.
c. Emergency Overflow information can be found in section **<u>4.1 Detention Pond and Outlet Structure</u>** of the TIR.
d. Pipe cover requirement of 2 feet has been met, see **APPENDIX B** for pipe cover calculations.
e. The emergency spillway has been updated. The outlet structure has an opening on the top that conveys 125% of the 100-year storm.
f. All inlets were calculated for 6" of ponding. The calculations can be found in **APPENDIX B**.
g. The pond is a dry pond. An underdrain will be utilized.
h. Verified.
i. No, this is used to support semi-trucks.
j. This has been added to the title sheet.
k. The downstream pipe system has been redesigned to handle on site drainage.
l. Noted
m. Pipe Calculations can be found in **APPENDIX B**.
n. Details have been updated and addressed.
o. Noted
p. Detention sizing method is described in the **Proposed Conditions** section of the Technical Information Report. Hydrographs can be seen in **APPENDIX A** for the relevant storm.
q. Verified
r. A pipe profile has been added.

Please let us know if you have any questions.

Regards,



Brian E. Moench
Moench Engineering P.C.
317.837.2767

MOENCH ENGINEERING, P.C.
A Professional Corporation
4000 Clarks Creek Road, Plainfield, IN 46168, Telephone: 317-837-2767, Fax: 317-837-7266

Lions Trans INC.
4005 N CR 1000 E
Brownsburg, Indiana 46112

Drainage Narrative and Calculations

October 3, 2025

Revision 0

Moench Engineering, P.C.
4000 Clarks Creek Road
Plainfield, Indiana 46168

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Drainage Narrative

1.0 Project Scope

The proposed project involves the development of a truck maintenance facility that will include 42 stalls for truck and trailer parking, a 900 square foot office building (30 ft × 30 ft), and a 2,860 square foot maintenance building (130 ft × 22 ft) located along the southern boundary of the property. In addition, a detention pond will be constructed to manage and control stormwater runoff generated by the site improvements.

The project site is located at 4005 N CR 1000 E, Brownsburg, Indiana 46112. The parcel is not currently subject to zoning restrictions. The proposed development will result in approximately 2 acres of land disturbance. Stormwater from the site will discharge to the existing offsite storm sewer network located along CR 400 N, which ultimately conveys flow to a tributary downstream of the property.

2.0 Rainfall Information

Table 1. Rainfall Intensities (Hendricks County 2016)

Rainfall Intensities for Various Return Periods and Storm Durations						
Duration	*Intensity (Inches/Hour)*					
	Return Period (Years)					
	2	5	10	25	50	100
5 min	5.57	6.7	7.58	8.76	9.68	10.6
10 min	4.35	5.2	5.85	6.7	7.34	7.98
15 min	3.54	4.26	4.8	5.52	6.06	6.61
30 min	2.37	2.92	3.33	3.89	4.33	4.77
1 hr	1.46	1.83	2.12	2.53	2.85	3.19
2 hr	0.851	1.08	1.25	1.51	1.72	1.95
3 hr	0.603	0.762	0.893	1.08	1.24	1.41
6 hr	0.359	0.455	0.535	0.65	0.747	0.853
12 hr	0.211	0.263	0.306	0.368	0.418	0.473
24 hr	0.126	0.155	0.178	0.21	0.236	0.262

Table 2. Rainfall Depths (Hendricks County 2016)

Rainfall Depths for Various Return Periods							
Duration	*Depth (Inches)*						
	Return Period (Years)						
	1	2	5	10	25	50	100
24 Hrs.	2.51	3.02	3.72	4.28	5.04	5.66	6.3

The resulting intensity is then used in the Rational Method equation to determine peak runoff:

$$Q = CiA$$

Rainfall intensity and depth data used in the hydrologic analyses were obtained from the Hendricks County Stormwater Technical Standards Manual (2016). These values form the basis for both Rational Method peak runoff calculations and hydrograph development for the project's watershed, ensuring consistency with county stormwater design requirements.

3.0 Existing Conditions

The project site is currently an undeveloped grassy area with scattered overgrowth. Land use surrounding the parcel includes residential properties to the south, agricultural land and manufactured homes to the west, minor commercial development to the north beyond the highway, and railroad tracks to the east.

The existing watershed area encompasses approximately 3.02 acres, consisting entirely of pervious cover. Under current conditions, stormwater runoff generally drains to the east and south.

Runoff coefficients (C values) were assigned based on land cover characteristics in accordance with the *Hendricks County Stormwater Technical Standards Manual* (Hendricks County 2016). A value of C = 0.20 was applied for pervious land cover. Using the Rational Method, the time of concentration (tc) was calculated to be 52.0 minutes for the site. The corresponding peak flow rates for existing conditions are summarized below:

Table 3. Existing Conditions

Return Period	2-year	5-year	10-year	25-year	50-year	100-year
Runoff	0.979 cfs	1.223 cfs	1.411 cfs	1.676 cfs	1.882 cfs	2.099 cfs

4.0 Proposed Conditions

As outlined in the project scope, the proposed development consists of a truck maintenance facility including 42 stalls for truck and trailer parking, a 900 square foot office building (30 ft × 30 ft), and a 2,860 square foot maintenance building (130 ft × 22 ft).

Under proposed conditions, the total site area remains 3.02 acres, consisting of approximately 1.02 acres of pervious surface, 1.91 acres of impervious asphalt pavement, and 0.09 acres of roof area.

Hydrologic analysis was performed using the Rational Method. The time of concentration (tc) was calculated to be 9 minutes. Runoff coefficients (C values) were assigned based on land cover characteristics consistent with the *Hendricks County Stormwater Technical Standards Manual* (Hendricks County 2016). Values applied include C = 0.20 for pervious surfaces, C = 0.93 for asphalt pavement, and C = 0.95 for roof areas. The weighted C value was calculated as follows:

$$\frac{(1.02\ acres\ \times 0.20) + (1.91\ acres\ \times 0.93) + (0.09\ acres\ \times 0.95)}{3.02\ acres} = 0.68$$

The resulting peak runoff flow rates for the proposed site conditions are summarized below:

Table 4. Proposed Conditions

Return Period	2-year	5-year	10-year	25-year	50-year	100-year
Watershed A	9.293 cfs	11.23 cfs	12.69 cfs	14.63 cfs	16.13 cfs	17.61 cfs

The runoff flowrates increased due to the addition of pervious surface and removal of impervious surface. The percentage increase is as follows:

Table 5. Percentage Increase in Runoff

Return Period	2-year	5-year	10-year	25-year	50-year	100-year
% Increase	849%	818%	799%	773%	757%	739%

Stormwater runoff from the proposed improvements will be conveyed to the northwest corner of the site, where a retention pond will be constructed to provide the required storage volume. The post-development peak discharge was limited by restricting the 0-10 year storms to 0.2 cfs per acre of the site (0.604 cfs) and the 11–100-year storms to 0.4 cfs per acres of the site (1.208 cfs). These values produced more restrictive conditions compared to the proposed 100-year peak flow to the existing 10-year peak flow. This analysis determined a required detention volume of 8,826 cubic feet. To meet this requirement, a 9,522 cubic foot retention pond will be installed in the northeast corner of the site.

4.1 Stormwater Conveyance

Stormwater runoff generated from the proposed improvements will be collected and conveyed to the site's retention facility. The grading plan directs surface runoff by sheet flow and shallow swales to a series of inlets along the eastern and central portions of the property. These inlets are connected by a storm sewer system that conveys flow westward to the retention pond located in the northwest corner of the site.

- Inlet 1: Connects to 290 linear feet (LF) of 18-inch RCP at a 0.37% slope, discharging into Inlet 2.
- Inlet 2: Connects to 165 LF of 24-inch RCP at a 0.50% slope, discharging directly into the retention pond.

Inlet capacity was then checked using the orifice flow equation, incorporating the reduced effective open area (50% of manufacturer-provided open area). This ensures the inlet can maintain adequate capacity under both design flow and partial clogging conditions, in compliance with the requirements of the Manual. The discharge coefficient, C, will be 0.60, gravity acceleration, g, is 32.2 ft/sec2, and ponding height, h is 0.5 ft, and the 10-year flow will be used. The orifice equation is as follows:

Inlet Structure 1:

$$Q = CA\sqrt{2gh}$$

$$5.08\ cfs = (0.6)A\sqrt{2(32.2\ ft/\sec^2)\ 0.5\ ft}$$

$$A = 1.49\ ft^2$$

$$2A = 3.0\ ft^2\ (Clogging\ Condition)$$

Inlet Structure 2 :

$$Q = CA\sqrt{2gh}$$

$$5.69\ cfs = (0.6)A\sqrt{2(32.2\ ft/\sec^2)\ 0.5\ ft}$$

$$A = 1.67\ ft^2$$

$$2A = 3.3\ ft^2\ (Clogging\ Condition)$$

To capture and convey runoff from the site into Inlet Structure 1, a square Neenah Grate Inlet 3287-5 (3.2 square feet of opening area) or equivalent will be installed. To capture and convey runoff from the site into Inlet Structure 2, a square Neenah Grate Inlet 3808-1 (5.2 square feet of opening area) or inlet with 3.3 square foot or greater opening should be installed. Calculations verifying pipe capacity and inlet capture are provided in Appendix B.

A forebay should be installed at the pond inlet for water quality treatment, capturing sediment and floatables before flows enter the main basin. The required volume is 726 cubic feet, with supporting calculations in Appendix B.

4.2 Detention Pond and Outlet Structure

The detention pond is equipped with a multi-stage outlet box designed to restrict discharge per Hendricks County release requirements:

- Low-flow outlet: 4-inch diameter orifice at pond bottom, sized for the 2-year storm (0.604 cfs).
- Intermediate outlet: 5-inch diameter orifice at Elev. 867.00 ft, passing flows up to the 100-year storm (1.208 cfs).
- Overflow weir: Crest at Elev. 867.89 ft (0.11 ft below TOB), conveying emergency flows ≥100-year (17.61 cfs). The required outlet area calculations are as follows:

$$Q = CA\sqrt{2gh}$$

$$17.61\ cfs\ (100\ year\ peak\ flow) = (0.6)A\sqrt{2(32.2\ ft/\sec^2)\ 0.5\ ft}$$

$$A = 10.67\ ft^2$$

The pipe leaving the detention pond is sized to handle this 100-year flow, assuming a slope of 0.30%, a Manning's n of 0.013, the minimum diameter will be determined using Manning's Equation as follows:

$$Q\ (Volumetric\ Flow) = \frac{1.49}{Manning's\ n} * (Area) * (Hydraulic\ Radius)^{2/3}\sqrt{Slope}$$

$$17.61\ cfs = \frac{1.49}{0.013} * \left(\frac{\pi D^2}{4}\right) * (D/4)^{2/3}\sqrt{0.0030}$$

$$D = 27\ inches$$

Under the assumed conditions, the minimum discharge pipe diameter is 27 inches. The outlet pipe network extends west from the detention pond and connects to the existing storm sewer system along CR 400 N. This existing network serves as the only feasible drainage outlet from the property and conveys stormwater offsite toward the unnamed tributary downstream.

The stormwater management system—including inlets, storm sewers, forebay, detention pond, multi-stage outlet structure, and downstream piping—is designed to control post-development flows in compliance with Hendricks County Stormwater Standards.

5.0 Summary

The proposed development at 4005 N CR 1000 E, Brownsburg, Indiana will consist of a truck maintenance facility including 42 truck/trailer parking stalls, a 900 square foot office building, and a 2,860 square foot maintenance building. The project will disturb approximately 2 acres and convert a predominantly pervious 3.02-acre parcel into a mix of impervious asphalt, building roof, and limited vegetated cover. Hydrologic analysis using rainfall data from the Hendricks County Stormwater Technical Standards Manual (2016) indicates a significant increase in runoff under proposed conditions, with the 100-year peak flow rising from 2.10 cfs to 17.61 cfs.

To mitigate this increase, a comprehensive stormwater management system has been designed. Runoff will be collected by inlets and storm sewers, routed through a forebay for pretreatment, and detained within a pond sized to provide 9,522 cubic feet of storage volume. A multi-stage outlet structure will restrict discharges to 0.604 cfs for the 2- through 10-year storms and 1.208 cfs for the 11- through 100-year storms, meeting Hendricks County release rate requirements. The system reduces post-development peak discharge to below pre-development rates, providing both quantity control and water quality treatment.

Appendix A – Rational Equation Hydrographs

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	0.979	1	52	3,056	------	------	------	Existing
2	Rational	9.293	1	9	5,018	------	------	------	Proposed

Hydrograph Report

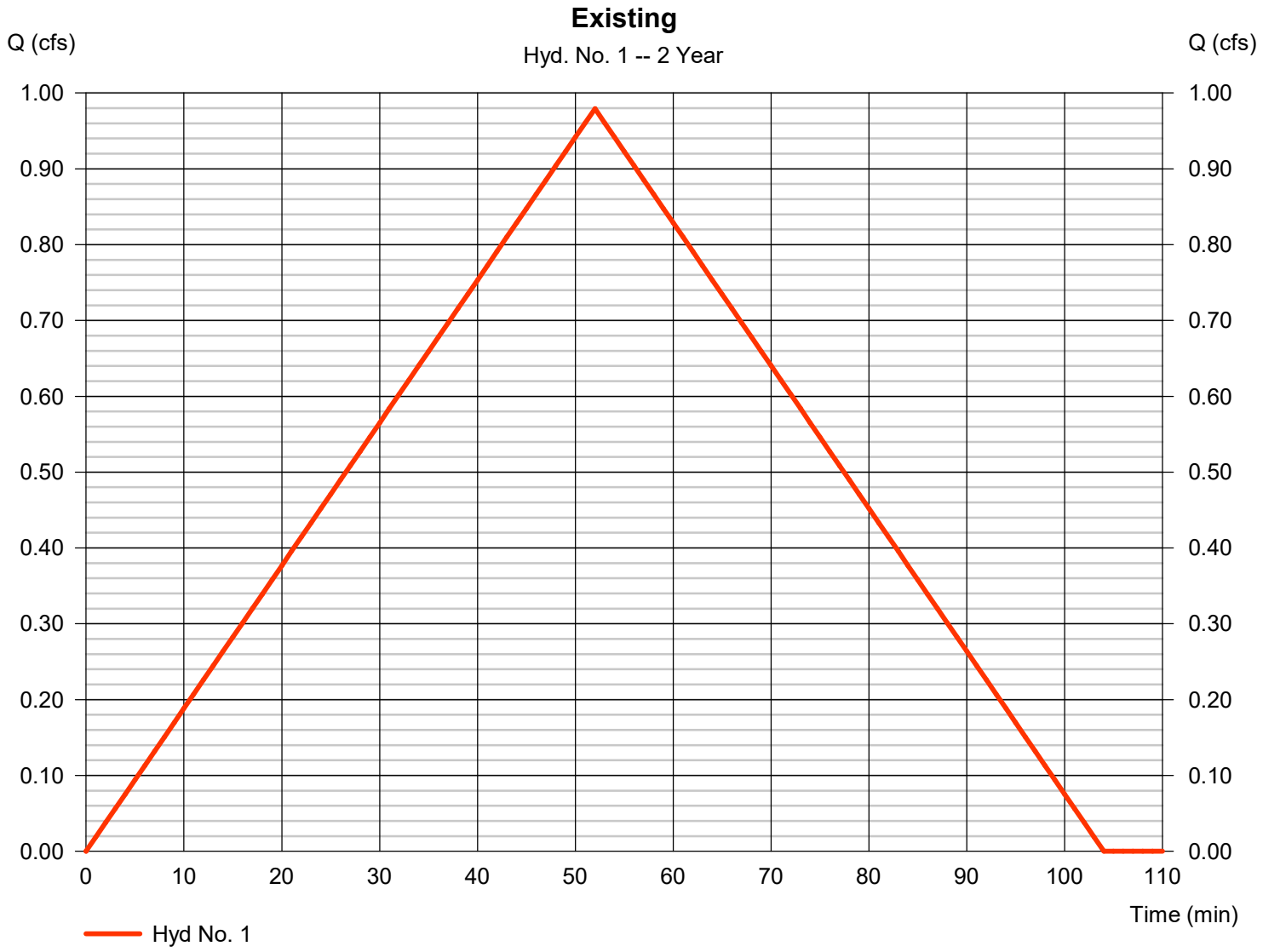
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	Rational	Peak discharge	=	0.979 cfs
Storm frequency	=	2 yrs	Time to peak	=	52 min
Time interval	=	1 min	Hyd. volume	=	3,056 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.2*
Intensity	=	1.622 in/hr	Tc by TR55	=	52.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(3.020 x 0.20)] / 3.020



TR55 Tc Worksheet

Hyd. No. 1

Existing

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.170		0.011		0.011		
Flow length (ft)	= 300.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.02		0.00		0.00		
Land slope (%)	= 0.41		0.00		0.00		
Travel Time (min)	**= 50.60**	**+**	**0.00**	**+**	**0.00**	**=**	**50.60**
Shallow Concentrated Flow							
Flow length (ft)	= 70.00		0.00		0.00		
Watercourse slope (%)	= 0.41		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.03		0.00		0.00		
Travel Time (min)	**= 1.13**	**+**	**0.00**	**+**	**0.00**	**=**	**1.13**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 52.00 min

Hydrograph Report

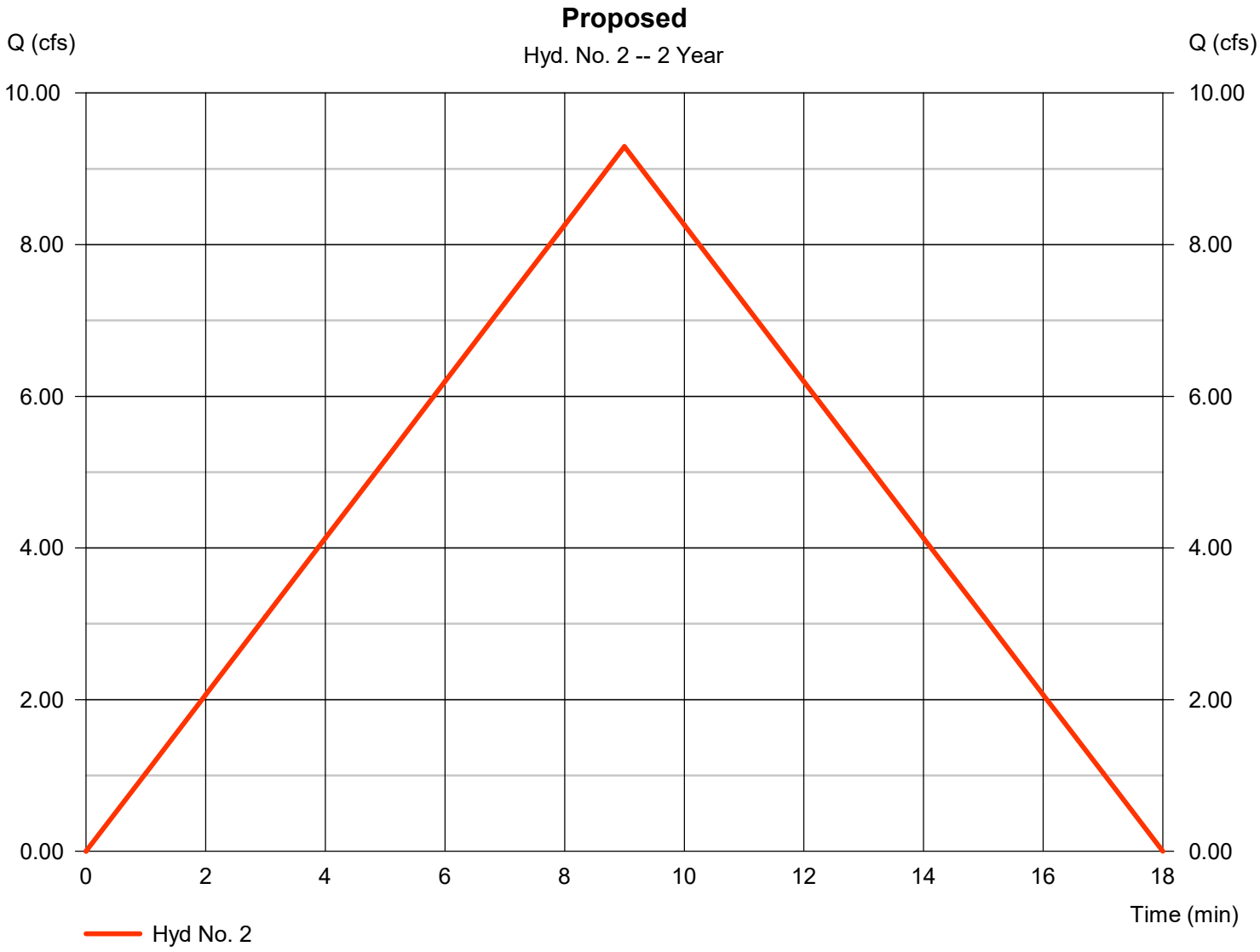
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	Rational	Peak discharge	=	9.293 cfs
Storm frequency	=	2 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	5,018 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.68*
Intensity	=	4.525 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(1.020 x 0.20) + (1.910 x 0.93) + (0.090 x 0.95)] / 3.020



TR55 Tc Worksheet

Hyd. No. 2

Proposed

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.011		0.011		0.011		
Flow length (ft)	= 300.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.02		0.00		0.00		
Land slope (%)	= 0.37		0.00		0.00		
Travel Time (min)	**= 5.90**	**+**	**0.00**	**+**	**0.00**	**=**	**5.90**
Shallow Concentrated Flow							
Flow length (ft)	= 242.00		0.00		0.00		
Watercourse slope (%)	= 0.37		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=1.24		0.00		0.00		
Travel Time (min)	**= 3.26**	**+**	**0.00**	**+**	**0.00**	**=**	**3.26**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 9.00 min

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.223	1	52	3,816	------	------	------	Existing
2	Rational	11.23	1	9	6,063	------	------	------	Proposed

Hydrograph Report

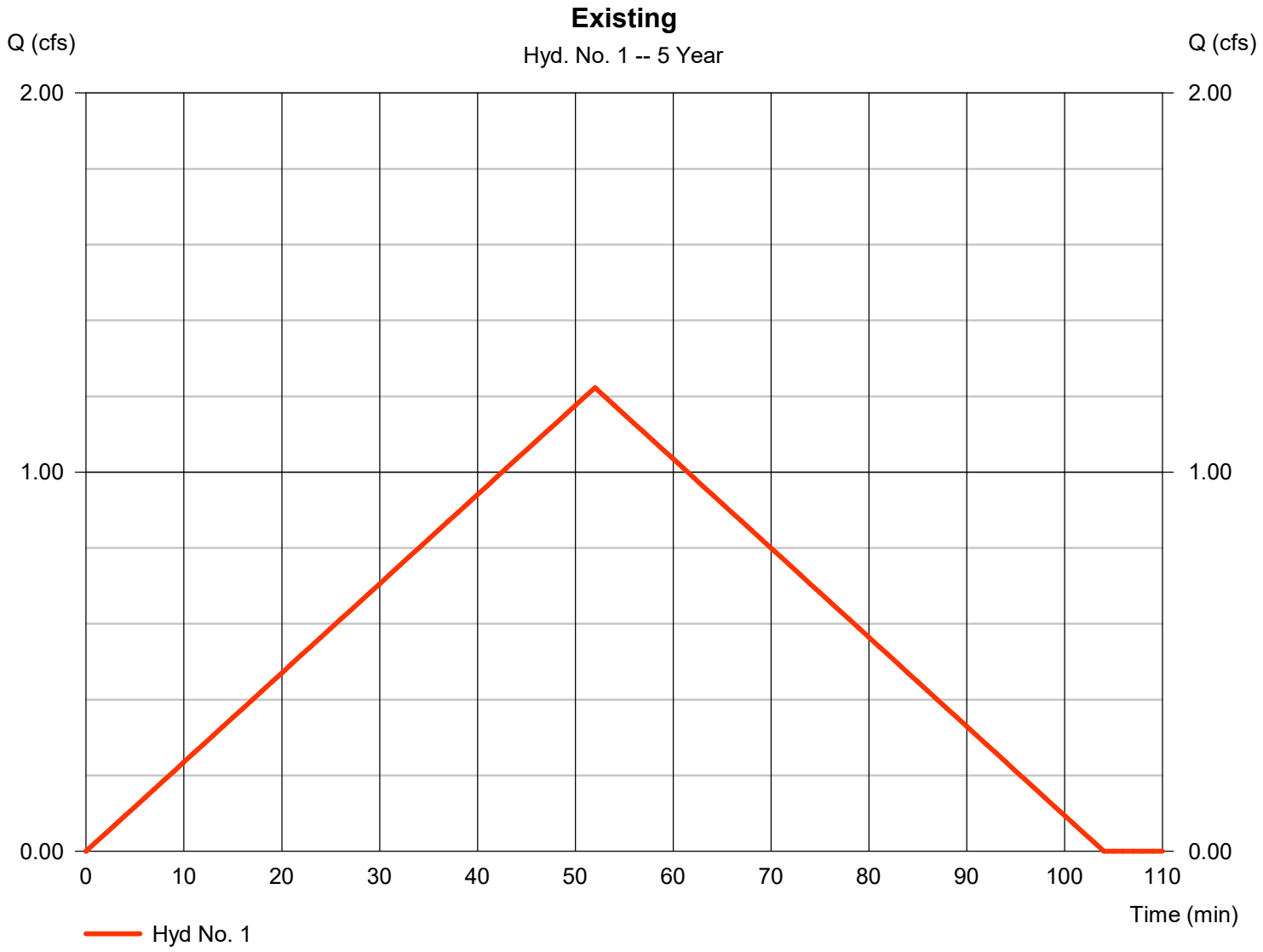
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	Rational	Peak discharge	=	1.223 cfs
Storm frequency	=	5 yrs	Time to peak	=	52 min
Time interval	=	1 min	Hyd. volume	=	3,816 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.2*
Intensity	=	2.025 in/hr	Tc by TR55	=	52.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(3.020 x 0.20)] / 3.020



Hydrograph Report

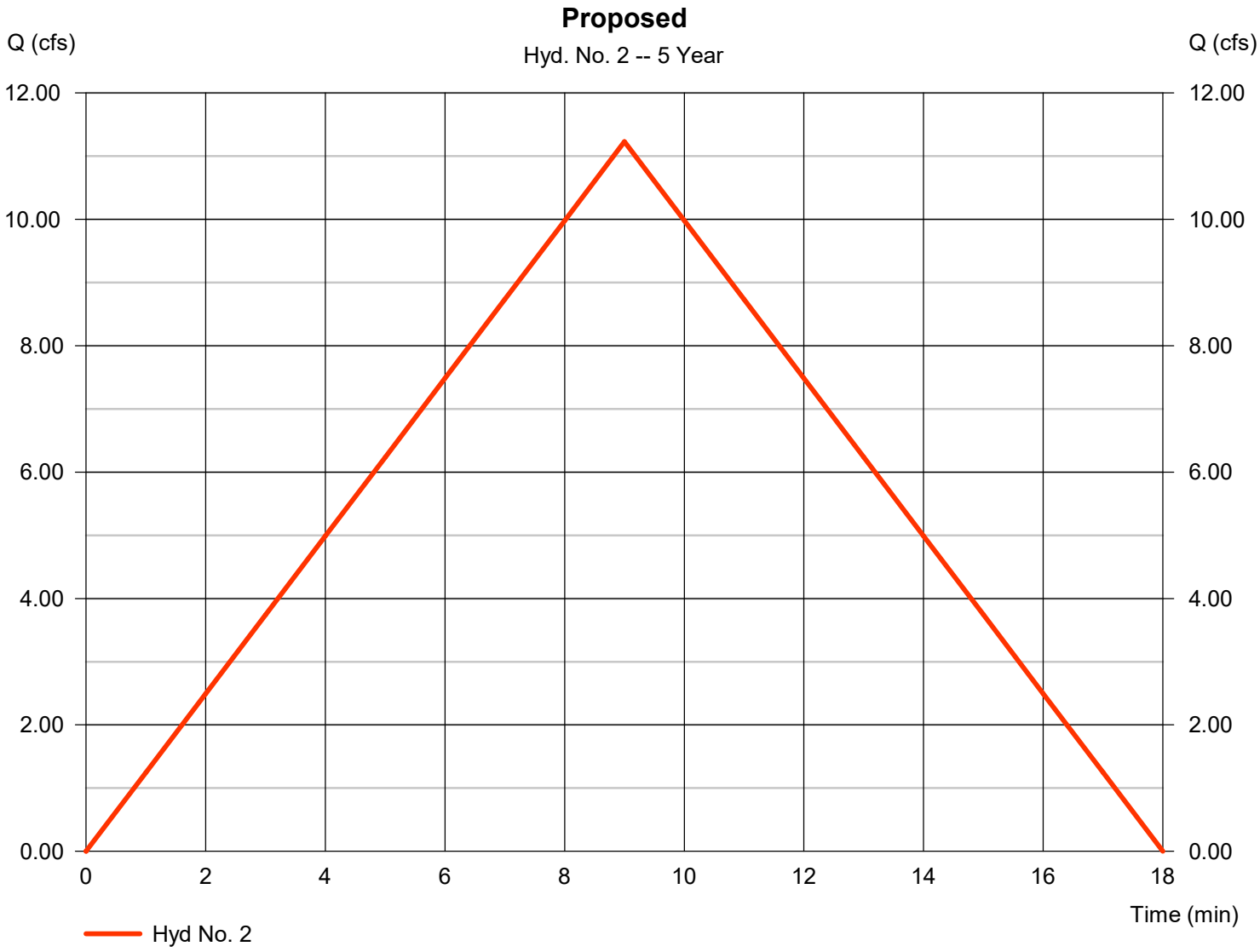
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	Rational	Peak discharge	=	11.23 cfs
Storm frequency	=	5 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	6,063 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.68*
Intensity	=	5.468 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(1.020 x 0.20) + (1.910 x 0.93) + (0.090 x 0.95)] / 3.020



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.411	1	52	4,403	------	------	------	Existing
2	Rational	12.69	1	9	6,850	------	------	------	Proposed

Hydrograph Report

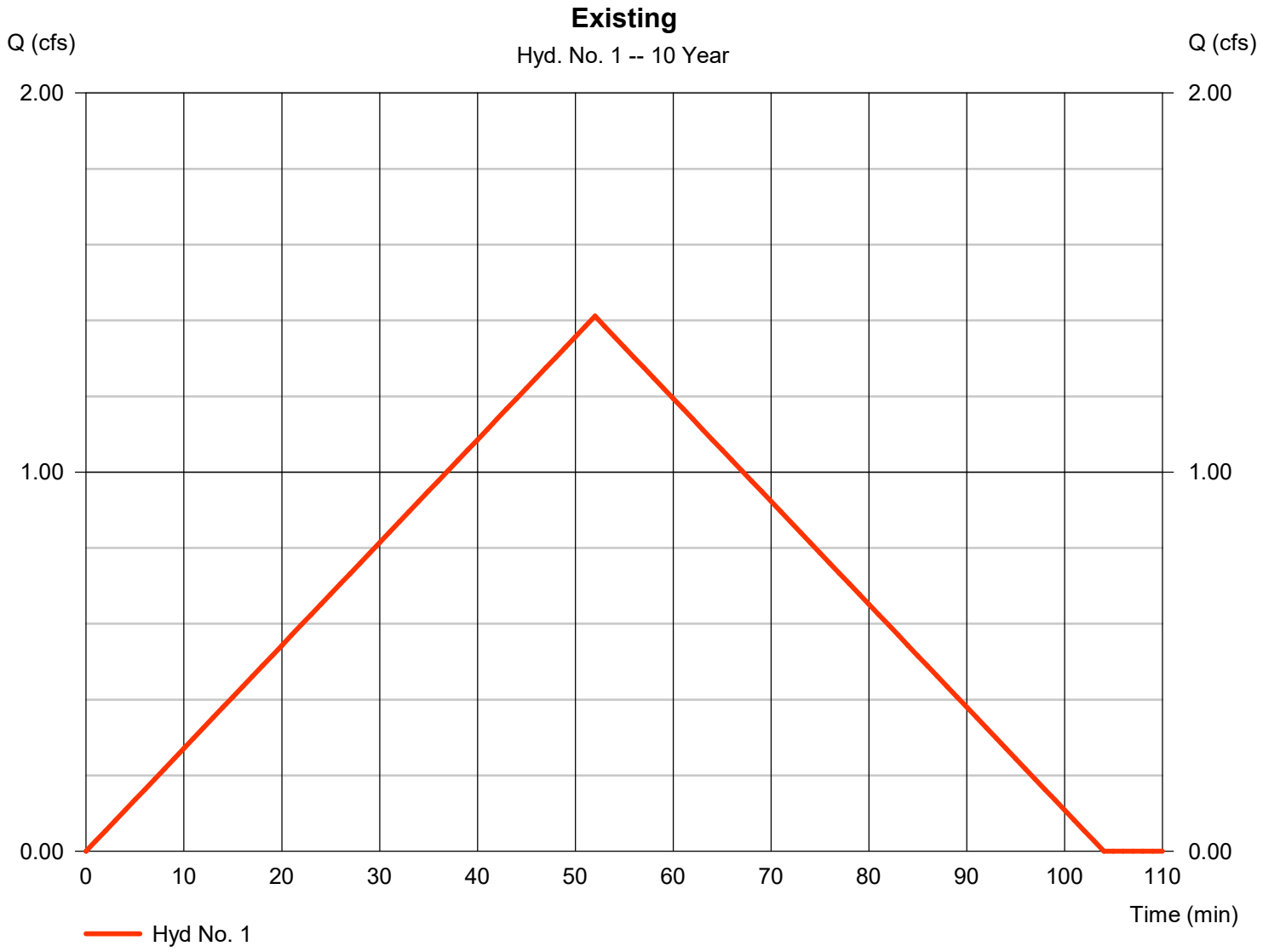
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	Rational	Peak discharge	=	1.411 cfs
Storm frequency	=	10 yrs	Time to peak	=	52 min
Time interval	=	1 min	Hyd. volume	=	4,403 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.2*
Intensity	=	2.337 in/hr	Tc by TR55	=	52.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(3.020 x 0.20)] / 3.020



Hydrograph Report

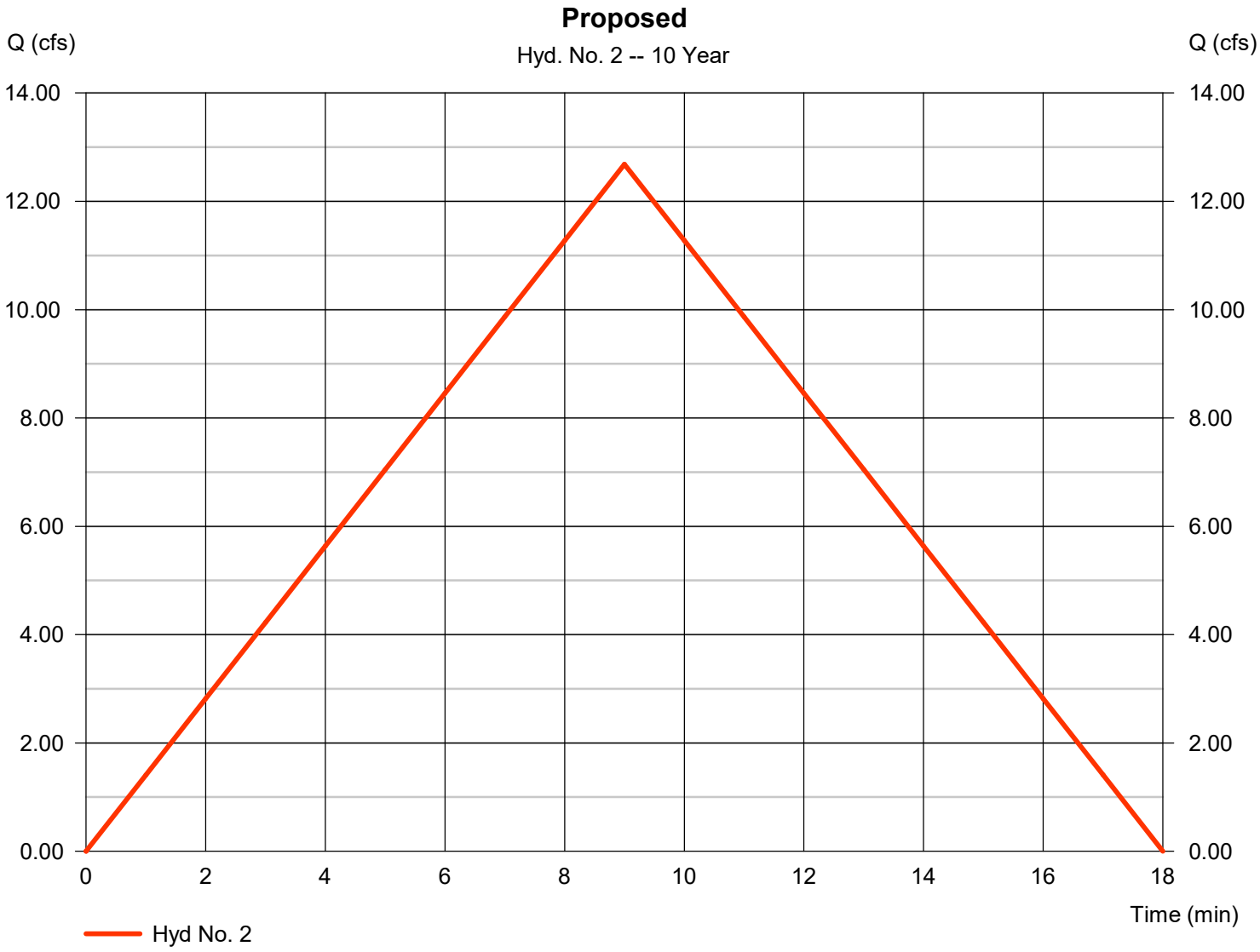
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	Rational	Peak discharge	=	12.69 cfs
Storm frequency	=	10 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	6,850 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.68*
Intensity	=	6.177 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(1.020 x 0.20) + (1.910 x 0.93) + (0.090 x 0.95)] / 3.020



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.676	1	52	5,228	------	------	------	Existing
2	Rational	14.63	1	9	7,898	------	------	------	Proposed

Hydrograph Report

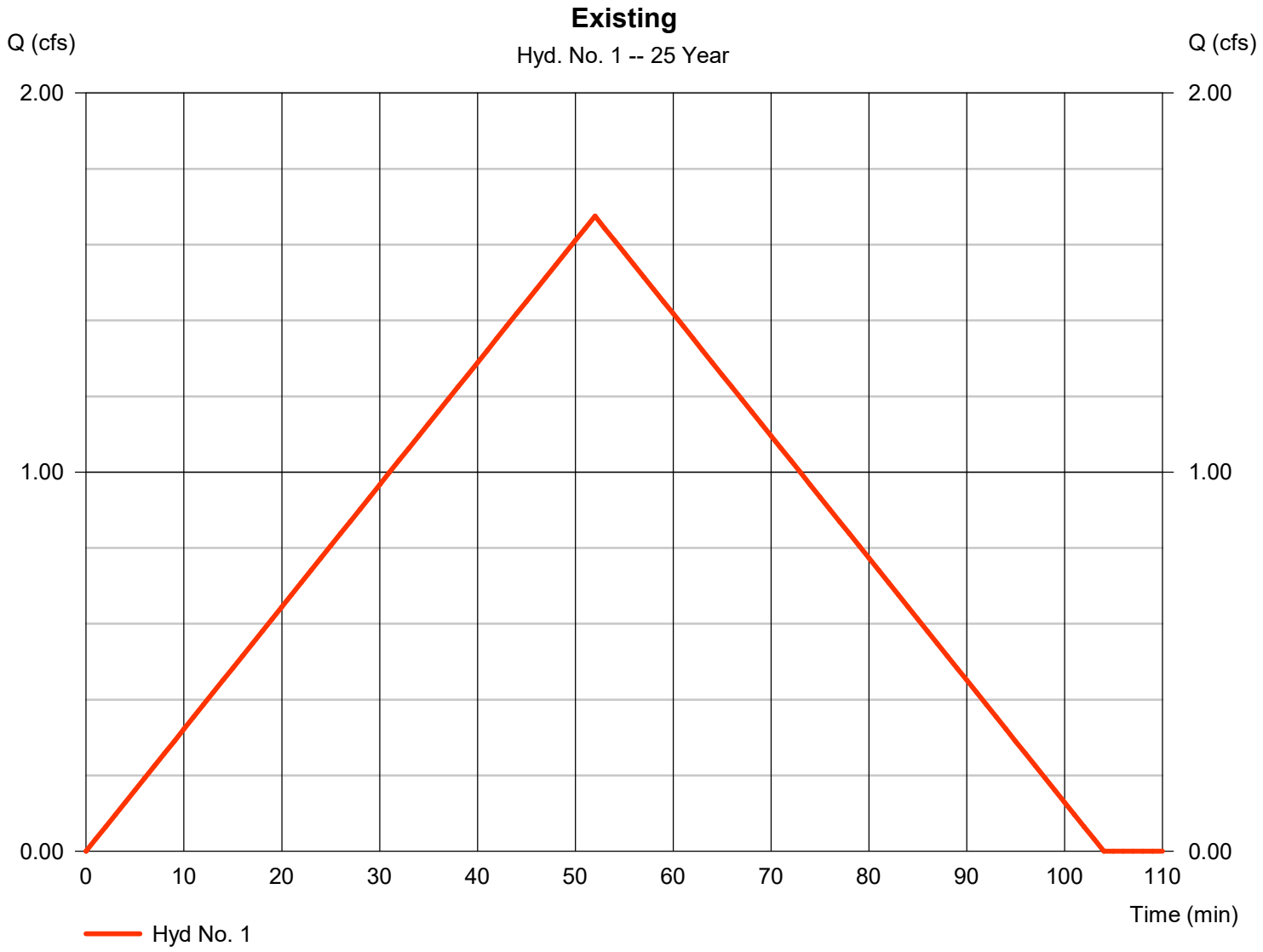
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	Rational	Peak discharge	=	1.676 cfs
Storm frequency	=	25 yrs	Time to peak	=	52 min
Time interval	=	1 min	Hyd. volume	=	5,228 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.2*
Intensity	=	2.774 in/hr	Tc by TR55	=	52.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(3.020 x 0.20)] / 3.020



Hydrograph Report

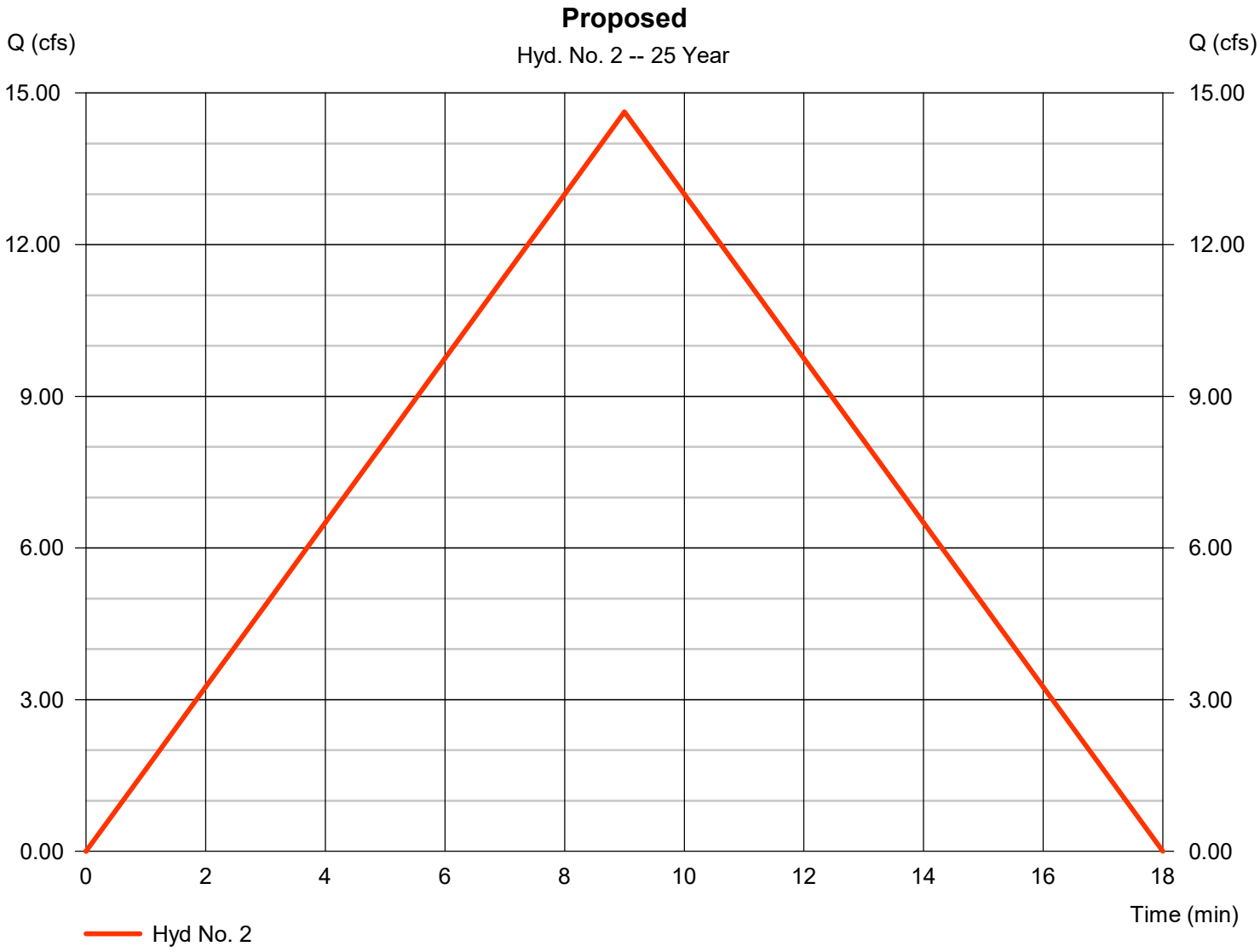
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	Rational	Peak discharge	=	14.63 cfs
Storm frequency	=	25 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	7,898 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.68*
Intensity	=	7.122 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(1.020 x 0.20) + (1.910 x 0.93) + (0.090 x 0.95)] / 3.020



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.882	1	52	5,873	------	------	------	Existing
2	Rational	16.13	1	9	8,713	------	------	------	Proposed

Hydrograph Report

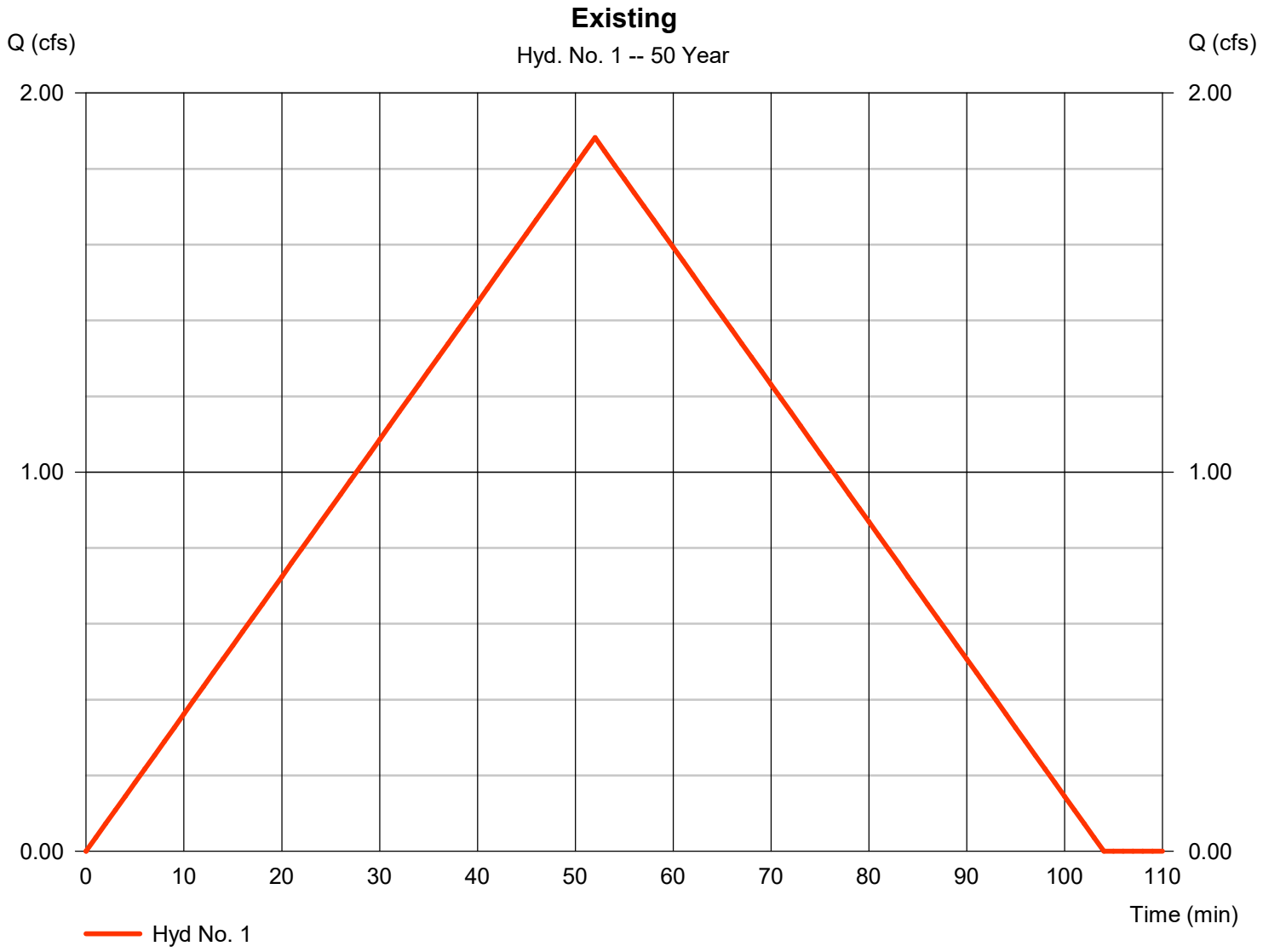
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	Rational	Peak discharge	=	1.882 cfs
Storm frequency	=	50 yrs	Time to peak	=	52 min
Time interval	=	1 min	Hyd. volume	=	5,873 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.2*
Intensity	=	3.117 in/hr	Tc by TR55	=	52.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(3.020 x 0.20)] / 3.020



Hydrograph Report

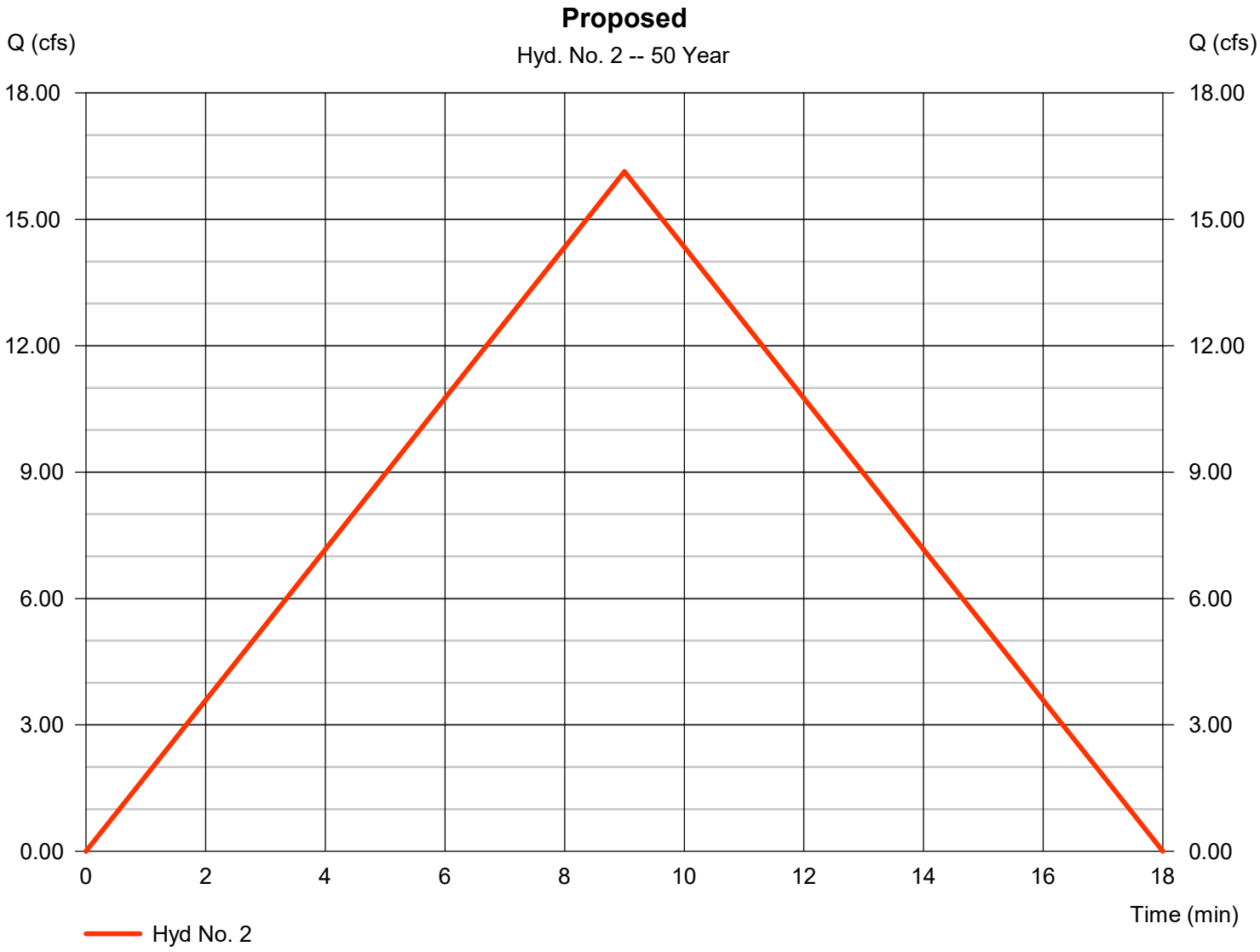
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	Rational	Peak discharge	=	16.13 cfs
Storm frequency	=	50 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	8,713 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.68*
Intensity	=	7.857 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(1.020 x 0.20) + (1.910 x 0.93) + (0.090 x 0.95)] / 3.020



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	2.099	1	52	6,549	------	------	------	Existing
2	Rational	17.61	1	9	9,511	------	------	------	Proposed

Hydrograph Report

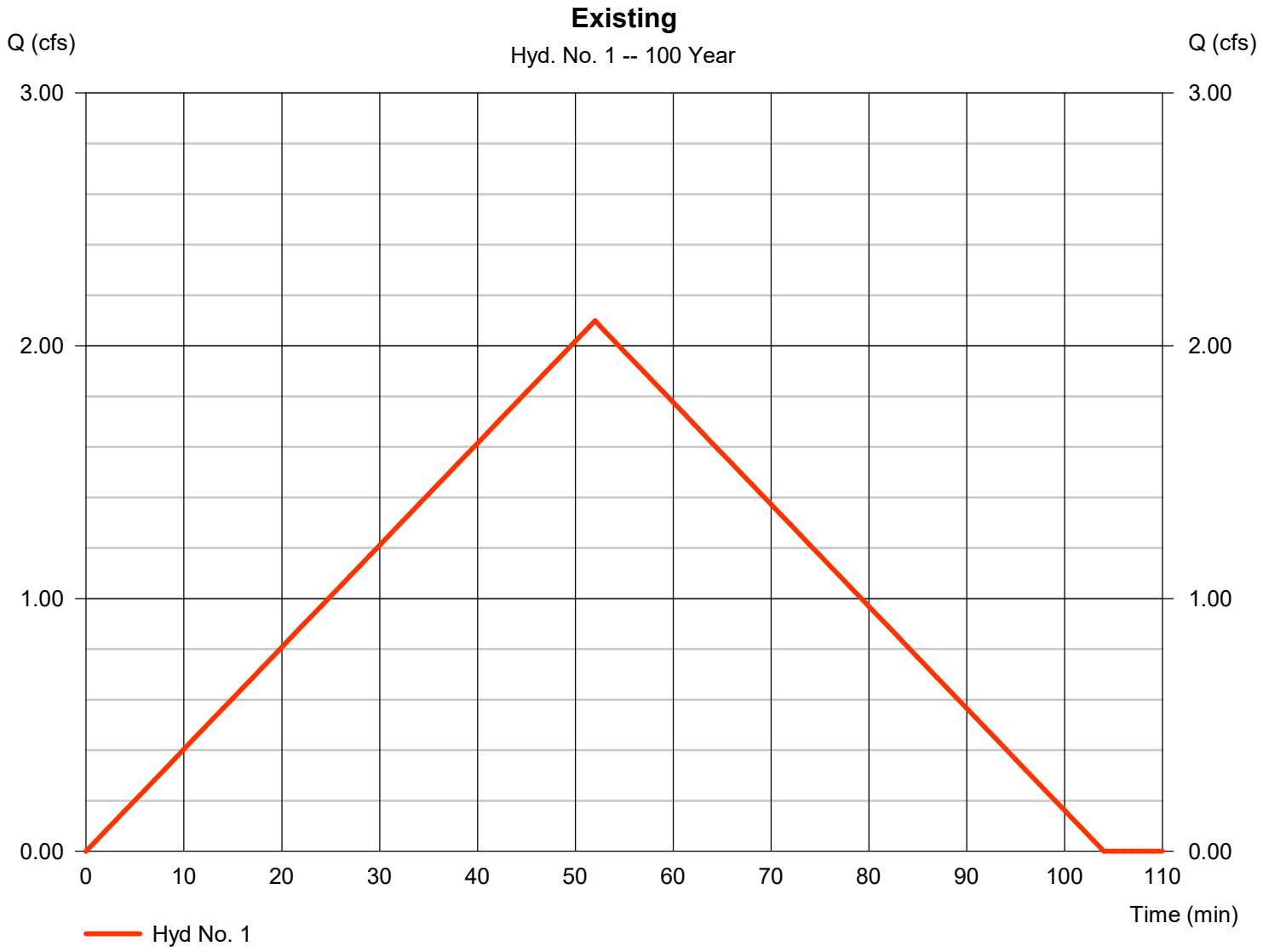
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	Rational	Peak discharge	=	2.099 cfs
Storm frequency	=	100 yrs	Time to peak	=	52 min
Time interval	=	1 min	Hyd. volume	=	6,549 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.2*
Intensity	=	3.475 in/hr	Tc by TR55	=	52.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(3.020 x 0.20)] / 3.020



Hydrograph Report

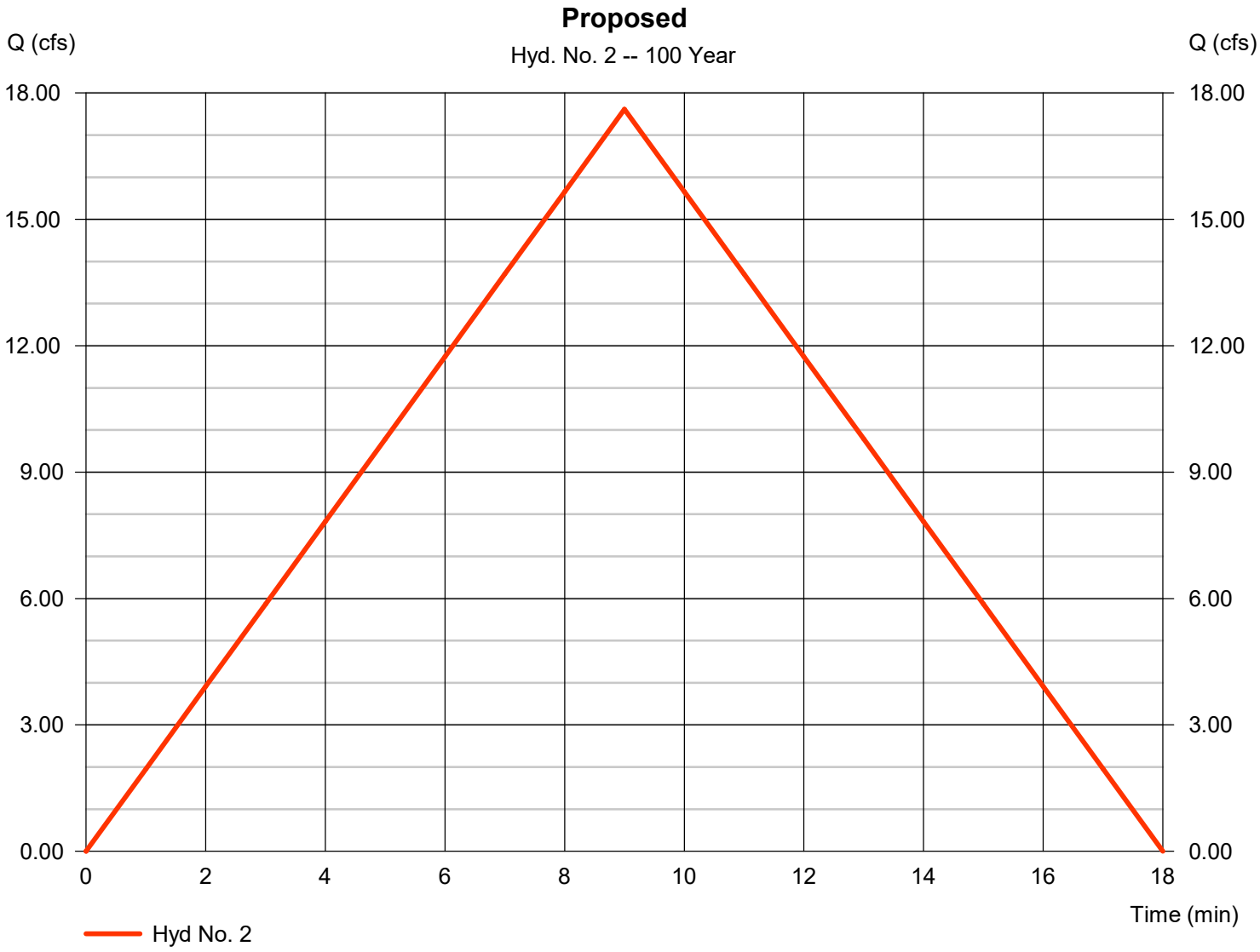
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	Rational	Peak discharge	=	17.61 cfs
Storm frequency	=	100 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	9,511 cuft
Drainage area	=	3.020 ac	Runoff coeff.	=	0.68*
Intensity	=	8.577 in/hr	Tc by TR55	=	9.00 min
IDF Curve	=	Lions Trucking IDF.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(1.020 x 0.20) + (1.910 x 0.93) + (0.090 x 0.95)] / 3.020



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	56.8128	9.8000	0.8624	--------
3	0.0000	0.0000	0.0000	--------
5	61.0581	9.5000	0.8270	--------
10	58.2090	8.5000	0.7837	--------
25	54.0065	7.2000	0.7275	--------
50	53.5558	6.6000	0.6986	--------
100	50.0862	5.6000	0.6582	--------

File name: Lions Trucking IDF.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.56	4.33	3.56	3.04	2.66	2.37	2.14	1.95	1.80	1.67	1.56	1.46
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.69	5.23	4.33	3.72	3.27	2.92	2.65	2.42	2.24	2.08	1.95	1.83
10	7.57	5.91	4.90	4.22	3.71	3.33	3.03	2.78	2.57	2.40	2.25	2.12
25	8.75	6.82	5.66	4.88	4.32	3.89	3.55	3.27	3.04	2.84	2.68	2.53
50	9.66	7.52	6.26	5.41	4.80	4.33	3.96	3.66	3.41	3.19	3.01	2.85
100	10.59	8.21	6.84	5.93	5.27	4.77	4.37	4.05	3.78	3.56	3.36	3.19

Tc = time in minutes. Values may exceed 60.

Precip. file name: Z:\21346 - Lions Tran Inc (Bburg) Maintenance Building\Design\Drainage\Lions Trucking Precip.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.51	3.02	0.00	3.72	4.28	5.04	5.66	6.30
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix B – Pipe and Orifice Calculations

MOENCH ENGINEERING, P.C.

STORM SEWER DESIGN - RATIONAL METHOD

10-YEAR RAINFALL INTENSITY:HENDRICKS CNTY DCAM EQUATION MANNING ROUGHNESS COEFFICIENT = 0.013 RCP

PROJ.: 21346 **DATE:** 9/30/2025

DESC: Lion Trans Inc. **ENGR:** C. Brown

LINE DESIG.	FROM STR. NO.	TO STR. NO.	PIPE LENGTH (FT)	C	A (ACRE)	C x A	SUM OF CA	Tc (MIN)	Tcum (MIN)	I (IN/HR)	Q (CFS)	PIPE DIA. (IN)	PIPE GRADE (%)	PIPE CAP. (CFS)	FULL VEL. (FPS)	TRAV. TIME (MIN)	RIM ELEV. UPSTM.	RIM ELEV. DNSTM.	INVERT ELEV. UPSTM.	INVERT ELEV. DNSTM.	PIPE COVER UPSTM.	PIPE COVER DNSTM.
New Line	INLET1	INLET2	290	0.72	1.27	0.91	0.91	5.0	5.00	5.57	5.081	18	0.37	6.390	3.62	1.3	870.56	869.99	868.06	866.99	0.79	1.29
	INLET2	END3	165	0.67	1.75	1.17	2.08	5.0	6.34	5.17	10.770	24	0.50	15.996	5.09	0.5	869.99		866.99	866.16	0.75	

Calculations for Outlet Orifice Size

Q=Cd*Ao*SQRT(2*g*h)

Ao = Area of Orifice, Cd = Coefficient of Orifice, Q = Flow, g = gravity constant, h = height of water abov

We know Q, and need to solve for Ao

Ao = Q/(Cd*SQRT(2*g*h))

INLET 1			INLET 2		
Q =	5.081		Q =	5.689	
Cd =	0.6		Cd =	0.6	
g =	32.2		g =	32.2	
h =	0.5		h =	0.5	
Ao =	1.49	Square Feet	Ao =	1.67	Square Feet

solving for d in circular pipe: d=SQRT(4*Ao/*pie)*

d =	1.38	feet
d =	**16.55**	**inches (Pipe diameter in inches)**

Calculations for Outlet Orifice Size

Q=Cd*Ao*SQRT(2*g*h)

Ao = Area of Orifice, Cd = Coefficient of Orifice, Q = Flow, g = gravity constant, h = height of water abov

We know Q, and need to solve for Ao

Ao = Q/(Cd*SQRT(2*g*h))

Q =	17.61	
Cd =	0.62	
g =	32.2	
h =	0.11	
Ao =	10.67	Square Feet

solving for d in circular pipe: d=SQRT(4*Ao/*pie)*

d =	3.69	feet
d =	**44.24**	**inches (Pipe diameter in inches)**

Appendix C – Water Quality Calculations

Water Quality Calculations

Project Name: Lion's Trucking
Project Job #: 21346

Water Quality Volume

WQv = ((P)(Rv)(A))/12

P= 1" of Rainfall
Rv = Volumetric Flow Rate = 0.05 + 0.009 (I)
I = percent of impervious area
A = Area in acres

Total Site (acres)	3.02	Percent -Impervious Area (%)	66.23
Total Impervious Area (acres)	2	Volumetric Flow Rate	0.65
Prop. Time of Conc. (min)	9.00	Water Quality Volume (ac-ft)	0.16
		Water Quality Volume (ft3)	**7082.13**
*Forebay Volume is included in overall req. volume		Forebay (ac-ft)	0.02
		Forebay (ft3)	**726.00**

Water Quality Curve Number

$$\text{WQ Curve Number} = \frac{1000}{[10+5P+10Qa- 10*(\text{sqrt}(Qa^2+1.25*Qa*P))]}$$

P = 1" (rainfall for water quality storm event)
Qa = runoff volume, in inches = 1" * Rv = Rv (inches)
Rv = volumetric runoff coefficient

WQ Curve Number = 96.22 * Check with CBBEL WQ-CN Graph

Water Quality Runoff Rate TR-20 Method * Design Criteria different for City of Indianapolis

	Input Data	* Indy
Dimensionless Hydrograph:	SCS Type II Distribution	Huff 1st quartile
Curve Number:	96.22	98
Area:	3.02	3.02
Rainfall:	1.00	0.30
Time of Concentration:	9.00	9.00

Area for TR-20 calculated runoff * Utilize Peak Discharge for WQ Structure BMP

SCS Method

Given Input Data:

- Description ..... Water Quality
- Drainage area ..... 1.5540 ac
- Runoff curve number, CN 97
- Time of concentration, Tc ..... 5.0000 min
- Dimensionless Hydrograph ..... scsdim
- Rainfall ..... 1.0000 in
- Distribution Curve ..... tr20t2: Type 2, 24 hrs

Computed Results:

- **Peak discharge, qp ..... 1.5871 cfs**
- Peak Time, Tp ..... 717.5407 min
- Peak rate factor 484
- Constant, K 0.7500
- Runoff Volume ..... 0.6923 in
- ..... 1.0849 cfs-hrs
- ..... 0.0897 acft

Req. AquaShield Aqua-Swirl (per City of Indy WQ Flowrate Standards in Stormwater Manual) **AS-10**

Appendix D – Stage Storage/Discharge Table

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 10 / 3 / 2025

Pond No. 1 - Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 866.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	866.00	3,900	0	0
1.00	867.00	4,754	4,320	4,320
2.00	868.00	5,664	5,202	9,522

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 5.00	4.00	Inactive	Inactive
Span (in)	= 5.00	4.00	24.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 866.00	867.00	867.89	0.00
Length (ft)	= 2.00	2.00	2.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

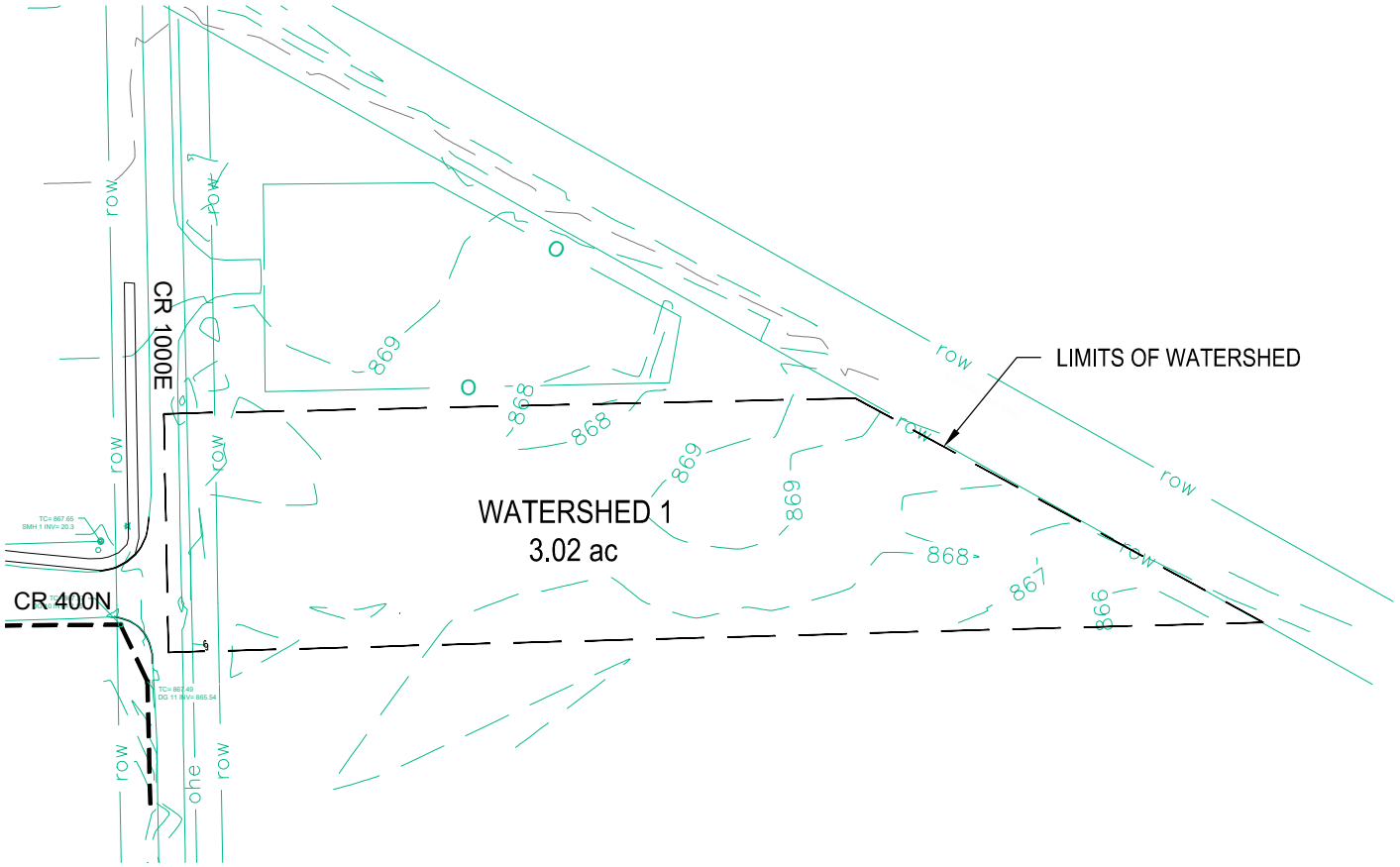
	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	Inactive	Inactive	0.00
Crest El. (ft)	= 867.89	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	866.00	0.00	0.00	0.00	---	0.00	---	---	---	---	---	0.000
1.00	4,320	867.00	0.58 ic	0.00	0.00	---	0.00	---	---	---	---	---	0.584
2.00	9,522	868.00	0.88 ic	0.38 ic	0.00	---	0.00	---	---	---	---	---	1.262

Appendix E – Existing Watershed



N

150 0 150 300

GRAPHIC SCALE: 1" = 150'

NOTE
PERVIOUS SURFACE = 2.97 ac (131,401 sf)
IMPERVIOUS SURFACE = 0.05 ac (2,144 sf)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH MOENCH ENGINEERING, P.C. NO OTHER USE OR DUPLICATION MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF MOENCH ENGINEERING, P.C. ALL OTHER COPYRIGHT AND COMMON LAW RIGHTS ARE HEREBY SPECIFICALLY RESERVED.

Lion Transfer Inc.
4005 N. County Road 1000 E
Brownsbburg, Indiana 46122
Hendricks County, Lincoln Township

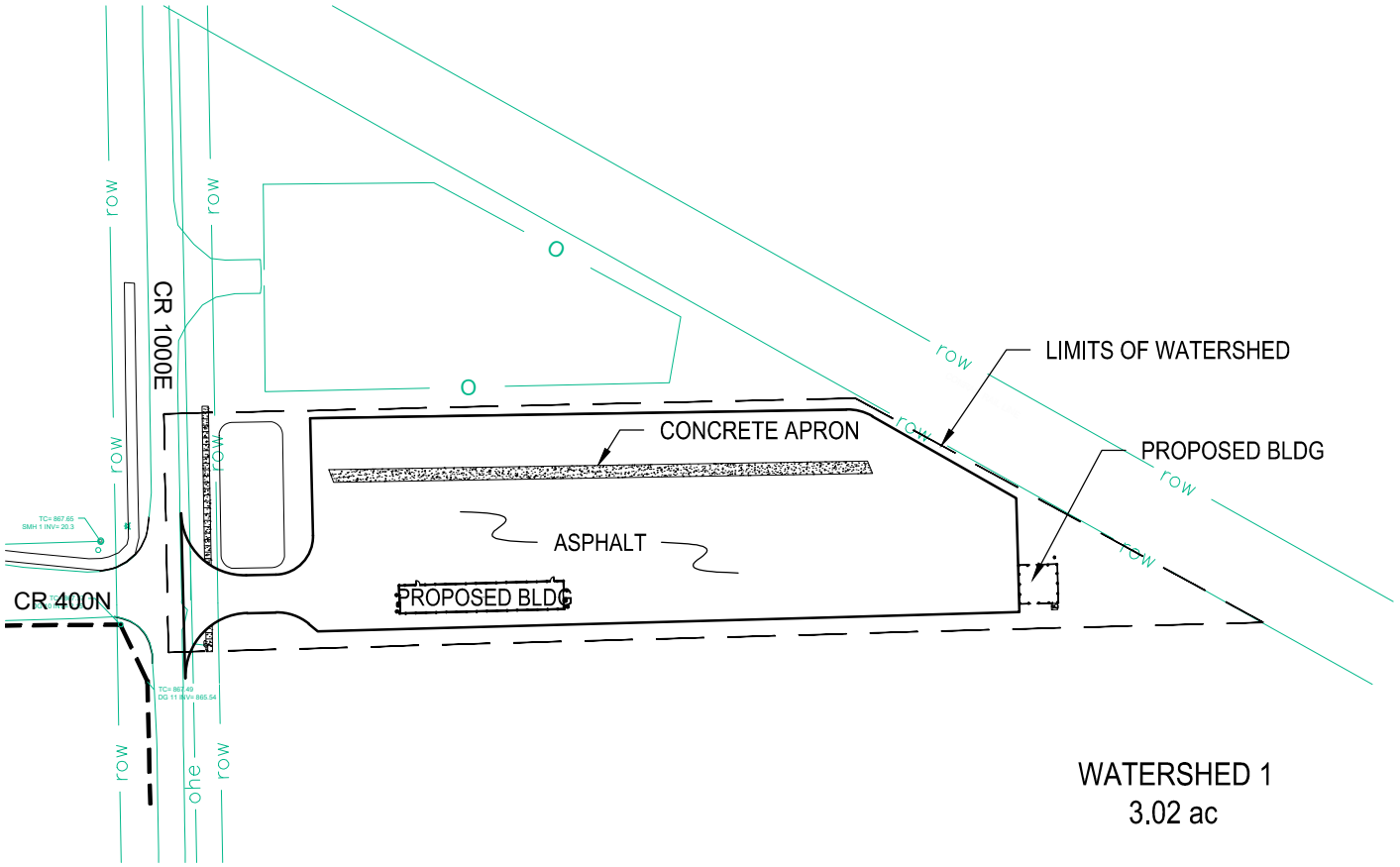
EXISTING WATERSHED MAP

Drawn By: JBF
Checked By: BEM
Project No. 21346
Date: 6/20/24

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
Phone (317) 837-2767

Sheet Number:
WSE

Appendix F – Proposed Watershed



N

150 0 150 300

GRAPHIC SCALE: 1" = 150'

NOTE
PERVIOUS SURFACE = 0.77 ac (33,488 sf)
IMPERVIOUS SURFACE = 2.17 ac (94,492 sf)
IMPERVIOUS ROOF AREA = 0.08 ac (3,760 sf)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH MOENCH ENGINEERING, P.C. NO OTHER USE OR DUPLICATION MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF MOENCH ENGINEERING, P.C. ALL OTHER COPYRIGHT AND COMMON LAW RIGHTS ARE HEREBY SPECIFICALLY RESERVED.

Lion Transfer Inc.
4005 N. County Road 1000 E
Brownsbburg, Indiana 46122
Hendricks County, Lincoln Township

PROPOSED WATERSHED MAP

Drawn By: JBF
Checked By: BEM
Project No. 21346
Date: 6/20/24

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
Phone (317) 837-2767

Sheet Number:
WSP

Lions Trans Inc. Maintenance Building
4005 N. County Road 1000E
Brownsburg, Indiana 46112

Owner:

Malhi Kulwinder & Jigna Shah Jtsur
7631 E. US Hwy 36
Avon, Indiana 46123
Phone: 317-989-1580

Civil Engineer:

Moench Engineering, P.C.
4000 Clarks Creek Road
Plainfield, Indiana 46168
Phone: (317) 837-2767
Fax: (317) 837-7266

Jurisdictional Contact:

Town of Brownsburg Development Services
61 N. Green St.
Brownsburg, Indiana 46112
Phone: (317) 852-1128

INDEX OF DRAWINGS

SHT.	TITLE
	CIVIL DRAWINGS
C000	COVER SHEET
C201	SITE PLAN
C301	GRADING PLAN
C302	EROSION CONTROL PLAN
C303	STORM WATER POLLUTION PREVENTION PLAN
C401	UTILITY PLAN
C402	SANITARY FORCE MAIN PLAN & PROFILE
C501-502	SECTIONS AND DETAILS
L101	LANDSCAPE PLAN
LT101	SITE LIGHTING PLAN

SITE ANALYSIS TABLE	
ZONING	MS
BUILDING TYPE	(1) OFFICE, (2) SHOP/GARAGE
NUMBER OF BUILDINGS	2
BUILDING HEIGHT	30'-9"
TOTAL PARCEL	3.07 Acres
TOTAL DISTURBED AREA	2.60 Acres
TOTAL PARKING REQUIRED	N/A
PARKING RATIO	1.1 space / employee & 1 visitor space / 10 employee spaces
TRUCK PARKING SPACES PROVIDED (10.5'x70')	36
STANDARD (9.5' x 18') SPACES	4
HANDICAPPED SPACES	1
TOTAL SPACES PROVIDED	40
TOTAL BUILDING SQUARE FOOTAGE	3760 s.f.

LOT COVERAGE

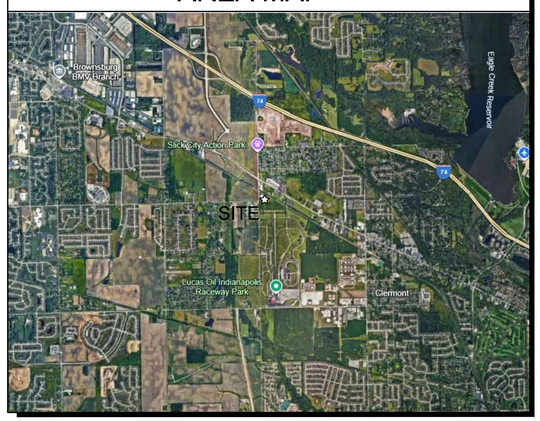
	AREA (ft²)	ACRES	PERCENT
ASPHALT	83,071	1.907	62%
BUILDINGS	3,760	0.086	2.8%
SIDEWALK	716	0.016	0.5%
IMPERV. (TOTAL)	87,547	2.01	65.4%
PERVIOUS	46,327	1.06	34.6%
LOT TOTAL	133,874	3.07	100%

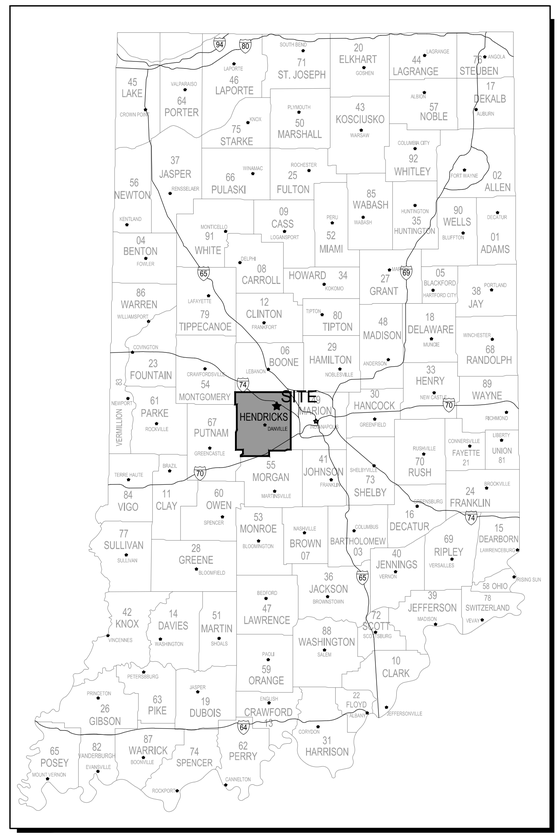
SUBJECT SITE:
SITE LOCATED IN LINCOLN TOWNSHIP
HENDRICKS COUNTY, INDIANA
(39°49'21" N and 86°20'42" W)

VICINITY MAP



AREA MAP





Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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MOENCH ENGINEERING, P.C.
NO OTHER USE OR DUPLICATION MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF
MOENCH ENGINEERING, P.C.
ALL OTHER COPYRIGHT AND COMMON LAW RIGHTS ARE HEREBY SPECIFICALLY RESERVED.

LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

COVER SHEET

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER
Susan E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C000

LEGAL DESCRIPTION

LEGAL DESCRIPTION:
Per Instrument No. 202121241 SUR filed in the Office of the Recorder in Hendricks County, Indiana, and described as follows:

Addresses and Parcel Numbers:
4005 N C.R. 1000 E., Brownsburg, IN 46112
#32-08-17-365-002.000-016

The following represents a modernized legal description of a tract of land, as described in Instrument #1998-04591 in the Office of the Recorder of Hendricks County, Indiana and being located in the Southwest Quarter of Section 17 and the Northwest Quarter of Section 20 both in Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana. Said tract being more particularly bound and described as follows, to-Wit:

East line of the Southwest quarter of Section 17 as being North 01 degrees 22 minutes 53 seconds West, deed, measured North 01 degrees 00 minutes 22 seconds West and all other bearings being relative thereto.

Beginning at a Hendricks County Aluminum monument found marking the Southwest corner of the Southwest quarter Section 17, Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana; thence running North on and along the West line of the Southwest quarter of Section 17 bearing North 01° 22' 53" West 155.58 feet, deed, and measured North 01° 00' 22" West 155.53 feet to a point on said West line, marking the Northeast corner of the National Hot Rod Association tract as referenced in the caption; thence running East on and along the North line of the National Hot Rod Association bearing North 88° 42' 57" East 546.58 feet, deed, and measured North 89° 10' 00" East a distance of 40.19 feet to a found 5/8" rebar with Kruse Consulting cap affixed and the *Point of Beginning* of this description; thence continuing North 89° 10' 00" East a distance of 508.15 feet to a found 5/8" rebar with Kruse Consulting cap affixed marking the intersection with the Southwesterly Right-of-Way of the CSX Railroad; thence running Southeasterly on and along the CSX Railroad Right-of-Way and traveling into the Northwest quarter of Section 20 bearing South 61° 12' 10" East 366.62 feet, deed, and measured South 60° 46' 15" East a distance of 365.01 feet to a found 5/8" rebar with Gaston cap marking the Northeast corner of Lot 1 in Villa Farms Subdivision, as per plat thereof recorded in Plat Book 3, page 134 in the Office of the Recorder of Hendricks County, Indiana; thence running West on and along the North line of said Lot 1 in Villa Farms Subdivision bearing South 88° 25' 57" West 863.49 feet (plat for Villa Farms shows this line to be 860.54 feet), calculated to be 823.52 feet to a point marking the intersection with the East right-of-way of N. CR. 1000 E; thence North 01° 02' 08" East, on and along said right-of-way, 38.39 feet; thence North 01° 00' 22" East 155.02 feet to the *Point of Beginning*. Containing 2.895 acres, more or less, subject to all easements and rights-of-way of record.

Dedicated Right-of-Way:
Beginning at a Hendricks County Aluminum monument found marking the Southwest corner of the Southwest quarter Section 17, Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana, and the *Point of Beginning* of this description; thence running North on and along the West line of the Southwest quarter of Section 17 bearing North 01° 22' 53" West 155.58 feet, deed, and measured North 01° 00' 22" West 155.53 feet to a point on said West line, marking the Northeast corner of the National Hot Rod Association tract as referenced in the caption; thence running East on and along the North line of the National Hot Rod Association bearing North 88° 42' 57" East, deed, and measured North 89° 10' 00" East a distance of 40,19 feet to a found 5/8" rebar with Kruse Consulting cap affixed, marking the intersection with the east right-of-way line of N. CR 1000 E.; thence South 01° 00' 22" East 155,02 feet on and along said right-of-way; thence South 01° 02' 08" East 38.39 feet on and along said right-of-way, traveling into the Northwest quarter of Section 20; thence South 88° 25' 57" West 40.19 feet to a point on the West line of the Northwest quarter of Section 20; thence North 01° 02' 08" West on and along aforementioned West line, 38.39 feet to the *Point of Beginning* of this Dedicated Right-of-Way description. Containing 0.179 acres, more or less.

LINETYPE LEGEND:

(SF)	= SILT FENCE
X	= BARB WIRE FENCE
o	= CHAIN-LINK FENCE
H	= WOOD FENCE
W	= WATER LINE
STRM	= STORM SEWER LINE
SAN	= SANITARY SEWER LINE
GAS	= GAS LINE
UGE	= UNDERGROUND ELECTRIC LINE
OHE	= OVERHEAD ELECTRIC LINE
COMM	= COMMUNICATION LINE
T	= TELEPHONE LINE
UTELE	= UNDERGROUND TELEPHONE LINE
FO	= FIBER OPTIC LINE
W	= FIRE DEPARTMENT WATER SUPPLY
35' ESMT	= 35' EASEMENT LINE
30' ESMT	= 30' EASEMENT LINE
25' ESMT	= 25' EASEMENT LINE
20' ESMT	= 20' EASEMENT LINE
15' ESMT	= 15' EASEMENT LINE
10' ESMT	= 10' EASEMENT LINE
5' ESMT	= 5' EASEMENT LINE
ESMT	= EASEMENT LINE
OOO	= SWALE LINE
ooo	= EDGE OF WATER
35' SETBK	= 35' SETBACK LINE
30' SETBK	= 30' SETBACK LINE
25' SETBK	= 25' SETBACK LINE
20' SETBK	= 20' SETBACK LINE
15' SETBK	= 15' SETBACK LINE
10' SETBK	= 10' SETBACK LINE
5' SETBK	= 5' SETBACK LINE
SETBACK	= SETBACK LINE
ROW	= RIGHT-OF-WAY LINE
— — —	= PROPERTY BOUNDARY
UD	= SWALE UNDERDRAIN
CABLE	= CABLE TV LINE
FL>	= FLOW LINE

SYMBOL LEGEND:

= STORM SEWER END SECTION
= SANITARY SEWER CLEANOUT
C.O. = CLEANOUT
= MANHOLE
= CATCH BASIN
= CATCH BASIN
= CURB INLET
= FIRE HYDRANT
= PRESSURE RELIEF VALVE
WV = WATER VALVE
W = WATER WELL
GV = GAS VALVE
= LIGHT POLE
= UTILITY POLE
IRF
RBF
= PROPERTY CORNER
IRF = IRON ROD FOUND
RBF = REBAR FOUND
= SURVEY POINT
(SECTION CORNER)
BM = BENCHMARK
= SOIL BORING

741.25 = NEW GRADE ELEVATION
×741.25 = EXISTING GRADE ELEVATION
= STRAW BALE DAM
= ROCK DAM
= SIGN
STOP = STOP SIGN
= HANDICAP SIGN
ENTER ONLY = ENTER ONLY SIGN
EXIT ONLY = EXIT ONLY SIGN
DO NOT ENTER = DO NOT ENTER SIGN
= EVERGREEN TREE
= DECIDUOUS TREE
= BUSH
= TEMPORARY CONSTRUCTION ENTRNACE
= GRASS PERMANENT SEEDING
= EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR GREATER

SITE NOTES:

HANDICAP RAMP CONSTRUCTION NOTES:

1. ALL HANDICAP RAMPS SHALL MEET THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT. THE MOST RECENT INDOT STANDARD SPECIFICATIONS AND THE GOVERNING JURISDICTIONS MOST RECENT STANDARDS. CURB SWIPES REQUIRED FOR HANDICAP RAMPS SHALL BE PROVIDED AT TIME OF INITIAL CONSTRUCTION.

2. MINIMUM WIDTH OF CURB RAMP SHALL BE 4 FEET NOT INCLUDING FLARES. MAXIMUM SLOPE OF RAMPS SHALL BE 12:1

3. HANDICAP RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS.

4. TYPE 'E' RAMPS SHALL BE PROVIDED AT THE CENTERLINE OF RADIUS AT ALL CORNERS OF EVERY STREET INTERSECTION WHERE THERE IS AN EXISTING OR PROPOSED SIDEWALK AND CURB. IN CASE OF "T"-INTERSECTION, A TYPE 'C' RAMP SHALL BE PROVIDED ADJACENT TO EACH CORNER RAMP. TYPE 'C' RAMPS ALSO SHALL BE PROVIDED AT WALK LOCATIONS AT MID-BLOCK IN VICINITY OF HOSPITALS, MEDICAL CENTERS OR ATHLETIC STADIUMS. THE USE OF DETAILS CONTRARY TO THOSE SHOWN HEREIN SHALL REQUIRE THE PRIOR WRITTEN APPROVAL OF THE GOVERNING JURISDICTION.

5. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

6. RAMPS SHALL BE PROVIDED WHERE THE DRIVEWAY CURB EXTENDS ACROSS THE SIDEWALK.

7. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON ALL RAMPS WITH NO BREAKS IN GRADE.

8. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH THE RAMPS EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION. LOCATION OF THE RAMPS SHALL TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURES.

9. THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.

10. EXPANSION JOINTS FOR THE RAMP SHALL BE A MAXIMUM 1/2" WIDE. THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

11. CROSSWALK AND STOP LINE MARKING, IF USED, SHALL BE LOCATED TO STOP TRAFFIC SHORT OF ALL RAMP CROSSINGS.

12. SLOPE OF RAMP MAY BE WARPED WHEN FILED CONDITIONS WARRANT AND WHEN APPROVED BY THE GOVERNING JURISDICTION.

LOT COVERAGE

	ACRES	PERCENT
ASPHALT	1.845	60%
BUILDINGS	0.086	2.8%
SIDEWALK	0.016	0.5%
PERVIOUS	1.123	36.6%
TOTAL LOT	3.07	100%

SITE NOTES:

GENERAL NOTES:

1. REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTIONS BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT. PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE;

2. ALL RADII SHELL BE 5 FOOT UNLESS NOTED OTHERWISE ON PLANS.

3. CONTRACTOR TO VERIFY EXACT LOCATION AND INVERT OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

4. STORM SEWER PIPE OF OTHER MATERIAL OR MATERIAL NOT MEETING THESE SPECIFICATIONS SHALL REQUIRE THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

5. THE CONTRACTOR SHALL SUBMIT INFORMATION TO THE APPROPRIATE JURISDICTIONAL CONTACT SHOWING CONFORMANCE WITH THESE SPECIFICATIONS UPON REQUEST.

PAVEMENT CONSTRUCTION:

1. THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION, SHALL APPLY TO WORKMANSHIP AND MATERIALS IN CONSTRUCTION OF SUBGRADE, PAVEMENT, CURBS AND WALKS.

A) PREPARE THE SUBGRADE IN ACCORDANCE WITH INDOT SECTION 207. NO TRAFFIC WILL BE PERMITTED ON THE PREPARED SUBGRADE PRIOR TO PAVING.

B) BITUMINOUS PAVEMENT IN ACCORDANCE WITH INDOT SECTION 403.

C) FINISHING EARTH GRADED SHOULDERS, DITCHES AND SLOPES IN ACCORDANCE WITH INDOT SECTION 208.

CONCRETE PAVEMENT AND WALKS:

1. SEE DETAIL FOR TYPE AND DETAILS.

2. CONCRETE SHALL BE READY MIXED PORTLAND CEMENT AND WATER CONFORMING TO ASTM C-150. AGGREGATES SHALL CONFORM TO ASTM C-33. COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 4000 P.S.I. WHERE REQUIRED, REINFORCEMENT SHALL BE WELDED STEEL WIRE FABRIC CONFORMING TO ASTM A-185,

3. ALL EXTERIOR CONCRETE SHALL CONTAIN 6% ± 1% AIR ENTRAINMENT.

APPLICATION:

A) PLACE CONCRETE ONLY ON A MOIST, COMPACT SUBGRADE OR BASE FREE FROM LOOSE MATERIAL. PLACE NO CONCRETE ON MUDDY OR FROZEN SUBGRADE IN ACCORDANCE WITH INDOT SECTION 604 AND 605.

B) CONCRETE SHALL BE DEPOSITED SO AS TO REQUIRE AS LITTLE REHANDLING AS PRACTICAL. WHEN CONCRETE IS TO BE PLACED AT AN ATMOSPHERIC TEMPERATURE OF 35 DEGREES OR LESS, PARAGRAPH 702.10 OF THE INDOT SPECIFICATIONS SHALL APPLY.

C) EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE BY ONE OF THE METHODS DESCRIBED IN INDOT SECTION 501.17.

PARKING LOT STRIPING:

1. PAINT MATERIAL SHALL COMPLY WITH FEDERAL SPECIFICATION TT-P-115A FOR TRAFFIC PAINT WITHOUT GLASS SPHERES. (COLOR BY OWNER SELECTION).

2. SUBCONTRACTOR TO PERFORM ALL FIELD LAYOUT WORK NECESSARY TO ACHIEVE STRAIGHT AND TRUE LINES. ASPHALT MUST BE CLEANED WITH POWER BROOM AND HAND BROOM TO REMOVE LOOSE MATERIAL BEFORE STRIPING. THE SUBCONTRACTOR IS TO PROVIDE BARRIERS TO PREVENT MARRING OF LINES BY VEHICLES UNTIL PAINT HAS DRIED. STRIPING PAINT SHALL BE APPLIED AT THE MINIMUM RATE OF ONE GALLON PER 100 SQUARE FEET OF PAINT (BASED ON 39% SOLIDS) AT A WIDTH OF FOUR INCHES.

STREET PAVEMENT NOTES:

1. MATERIALS AND CONSTRUCTION FOR STREETS, WALKS, CURBS AND STORM WATER SEWERS SHALL CONFORM TO THE REQUIREMENTS OF THE INDIANA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS" LATEST PRINTED EDITION UNLESS SHOWN OR NOTED OTHERWISE.

2. PAVEMENT COMPOSITION NOTED ON DETAIL IS THE MINIMUM REQUIREMENT FOR STREET CLASSES 1, 2, 3, 4 AND 5, WITH A GOOD SUB-GRADE SOIL CLASSIFICATION. PAVEMENT COMPOSITION FOR OTHER CLASSES OF STREET SHALL BE DESIGNED WITH CONSIDERATION GIVEN TO THE TRAFFIC VOLUME, SUB-GRADE SOIL EVALUATION AND TYPE OF PAVEMENT MATERIAL TO BE USED.

3. THE SUB-GRADE MUST BE PROOF ROLLED BY THE CONTRACTOR USING A FULLY LOADED TRI-AXLE DUMP TRUCK, MINIMUM LOAD OF 20 TONS

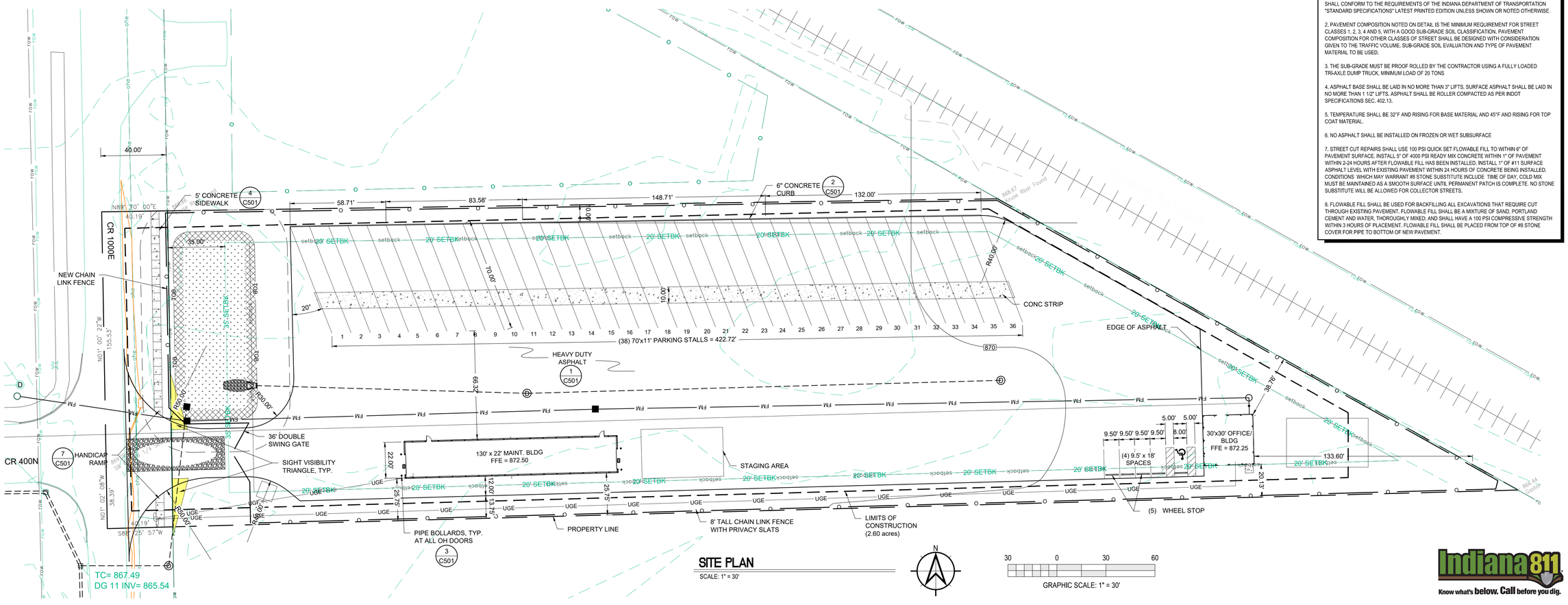
4. ASPHALT BASE SHALL BE LAID IN NO MORE THAN 3" LIFTS. SURFACE ASPHALT SHALL BE LAID IN NO MORE THAN 1 1/2" LIFTS, ASPHALT SHALL BE ROLLER COMPACTED AS PER INDOT SPECIFICATIONS SEC. 402.13.

5. TEMPERATURE SHALL BE 32°F AND RISING FOR BASE MATERIAL AND 45°F AND RISING FOR TOP COAT MATERIAL.

6. NO ASPHALT SHALL BE INSTALLED ON FROZEN OR WET SUBSURFACE

7. STREET CUT REPAIRS SHALL USE 100 PSI QUICK SET FLOWABLE FILL TO WITHIN 6" OF PAVEMENT SURFACE. INSTALL 5" OF 4000 PSI READY MIX CONCRETE WITHIN 1" OF PAVEMENT WITHIN 2-24 HOURS AFTER FLOWABLE FILL HAS BEEN INSTALLED. INSTALL 1" OF #11 SURFACE ASPHALT LEVEL WITH EXISTING PAVEMENT WITHIN 24 HOURS OF CONCRETE BEING INSTALLED. CONDITIONS WHICH MAY WARRANT #8 STONE SUBSTITUTE INCLUDE TIME OF DAY, COLD MIX MUST BE MAINTAINED AS A SMOOTH SURFACE UNTIL PERMANENT PATCH IS COMPLETE. NO STONE SUBSTITUTE WILL BE ALLOWED FOR COLLECTOR STREETS.

8. FLOWABLE FILL SHALL BE USED FOR BACKFILLING ALL EXCAVATIONS THAT REQUIRE CUT THROUGH EXISTING PAVEMENT. FLOWABLE FILL SHALL BE A MIXTURE OF SAND, PORTLAND CEMENT AND WATER, THOROUGHLY MIXED; AND SHALL HAVE A 100 PSI COMPRESSIVE STRENGTH WITHIN 3 HOURS OF PLACEMENT. FLOWABLE FILL SHALL BE PLACED FROM TOP OF #8 STONE COVER FOR PIPE TO BOTTOM OF NEW PAVEMENT.



SITE PLAN

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

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Plainfield, Indiana 46168
(317) 837-2767
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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

SITE PLAN

BRIAN EDWARD MOENCH — REGISTERED — No. PE9500048 — STATE OF INDIANA — PROFESSIONAL ENGINEER
Brian E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C201

National Flood Hazard Layer FIRMette



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS: Without Base Flood Elevation (BFE) — Zone A, V, A99; With BFE or Depth — Zone AE, AO, AH, VE, AR; Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD: 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile — Zone X; Future Conditions 1% Annual Chance Flood Hazard — Zone X; Area with Reduced Flood Risk due to Levee. See Notes. — Zone X; Area with Flood Risk due to Levee — Zone D
- OTHER AREAS: NO SCREEN — Area of Minimal Flood Hazard — Zone X; Effective LOMRs; Area of Undetermined Flood Hazard — Zone D
- GENERAL STRUCTURES: Channel, Culvert, or Storm Sewer; Levee, Dike, or Floodwall
- OTHER FEATURES: 20.2 Cross Sections with 1% Annual Chance; 17.5 Water Surface Elevation; Coastal Transect; Base Flood Elevation Line (BFE); Limit of Study; Jurisdiction Boundary; Coastal Transect Baseline; Profile Baseline; Hydrographic Feature
- MAP PANELS: Digital Data Available; No Digital Data Available; Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/20/2022 at 4:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

FLOOD ZONE DESIGNATION:

THIS LOT LIES ENTIRELY IN FLOOD HAZARD ZONE "X" AS SCALES FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR:

HENDRICKS COUNTY, INDIANA

COMMUNITY NAME:	TOWN OF BROWNSBURG
COMMUNITY NUMBER:	180087
PANEL NUMBER:	C0179E
DATED:	JUNE 15, 2022

Soil Map—Hendricks County, Indiana



Natural Resources Conservation Service — Web Soil Survey, National Cooperative Soil Survey — 5/12/2023 Page 1 of 3

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	1.8	53.2%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	1.5	46.8%
Totals for Area of Interest		**3.3**	**100.0%**

GRADING NOTES:

GENERAL GRADE NOTES:

1. REFER TO THE INDIANA DEPARTMENT OF TRANSPORATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTION BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT, PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.

2. FILL MATERIAL SHALL CONSIST OF EARTH OBTAINED FROM CUT AREAS, BORROW PITS OR OTHER APPROVED SOURCES. EARTH SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES AND LARGE ROCKS. THE FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED SIX INCHES FOLLOWING COMPACTION. PROPER MOISTURE CONTENT OF FILL MATERICAL WILL BE SUCH TO ACHIEVE SPECIFIED COMPACTION DENSITY. ALL FILL BENEATH PAVED AREAS, FLOOR SLABS AND FURTURE BUILDINGS SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY PER ASTM D-1557, FIELD COMPACTING TEST SHALL BE RUN ON EACH LIFT, IN FILL SECTIONS, AND THE REQUIRED COMPACTION ON EACH LIFT SHALL BE IN ACCORDANCE WITH INDOT SECTION 211.

3. MAXIMUM LAWN SLOPE IS 3:1.

4. THE CONTRATOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC, IN THE AFFECTED CONSTRUCTION AREA EXISTING UTILITY STRUCTURES ARE SHOWN HERE IN ACCORDANCE WITH AVAILABLE INFORMATION. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.

5. ALL SPOT ELEVATIONS ARE TO FINISHED GRADE.

6. ALL EXISTING MANHOLE CASTINGS TO BE ADJUSTED TO FINISH GRADE.

7. COMPACT "B" BORROW BACK FILL REQ'D. OVER ALL UTILITIES IN PAVED AREAS.

REINFORCED CONCRETE PIPE:

1. REINFORCED CONCRETE PIPE SHALL BE CLASS III, IV OR V AS SPECIFIED IN ASTM C-76,

2. REINFORCED ELLIPTICAL CONCRETE PIPE SHALL BE CLASS HE-III OR HE-IV AS SPECIFIED IN ASTM C-507,

3. LIFT HOLES ARE NOT ALLOWED FOR PIPE LESS THAN 24 INCHES IN DIAMETER, A MAXIMUM OF TWO LIFT HOLES ARE ALLOWED FOR PIPE 24 INCHES IN DIAMETER OR LARGER. LIFT HOLES SHALL BE REPAIRED ACCORDING TO MOST RECENT INDOT STANDARD SPECIFICATIONS.

4. FITTINGS AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE TYPE OF PIPE BEING USED.

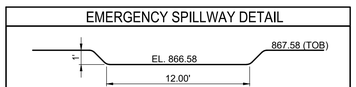
5. EACH PIPE SECTION SHALL BE MARKED WITH DATE OF MANUFACTURE, SIZE AND CLASS OF PIPE, SPECIFICATION DESIGNATION, MANUFACTURER AND PLANT IDENTIFICATION.

6. PIPE SHALL BE FURNISHED WITH A BELL OR GROOVE ON ONE END OF A UNIT OF PIPE AND A SPIGOT OR TONGUE ON THE ADJACENT END OF THE ADJOINING PIPE. ALL JOINTS SHALL HAVE A GROOVE ON THE SPIGOT FOR PLACEMENT OF A RUBBER "O-RING" OR PROFILE GASKET IN ACCORDANCE WITH ASTM C-443. THE GASKET SHALL BE A CONTINUOUS RING WHICH FITS SNUGLY INTO THE ANNULAR SPACE BETWEEN THE OVERLAPPING SURFACES OF THE ASSEMBLED PIPE JOINT.

STAGE STORAGE TABLE

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
866.000	3,900.27	N/A	N/A	0.00	N/A	0.00
867.000	4,753.94	1.000	4327.10	4327.10	4320.07	4320.07
868.000	5,664.16	1.000	5209.05	9536.15	5202.41	9522.48

EMERGENCY SPILLWAY DETAIL



(NOT TO SCALE)

GRADING PLAN

SCALE: 1" = 30'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

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4005 N CR 1000 E
BROWNSBURG, IN 46122

GRADING PLAN

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Brian E. Moench

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DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C301

SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING		A			*	///	///	///	*//			
DORMANT SEEDING	B										B	
TEMPORARY SEEDING		C	E		*	///	///	///	* D			
SODDING		F**			*	///	///	///	*			
MULCHING	G											

A = KENTUCKY BLUEGRASS 100 LBS/ACRE; CREEPING RED FESCUE 100 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 20 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

B = KENTUCKY BLUEGRASS 120 LBS/ACRE; CREEPING RED FESCUE 120 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 30 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

C = SPRING OATS 3 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

D = WHEAT OR RYE 2 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

E = ANNUAL RYEGRASS 40 LBS/ACRE (1 LB/1000 SQ. FT.)
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE. APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

F = SOD

G = STRAW MULCH 2 TONS/ACRE

* / / / * = IRRIGATION NEEDED DURING JUNE, JULY, AUGUST AND/OR SEPTEMBER ** = IRRIGATION NEEDED FOR 2 WEEKS AFTER SUPPLYING SOD

INSTALLATION SCHEDULE:

CONSTRUCTION PHASE:	CONSTRUCTION SCHEDULE:
PRE-CONSTRUCTION ACTIONS (EVALUATION/PROTECTION OF IMPORTANT SITE CHARACTERISTICS)	BEFORE CONSTRUCTION, EVALUATE, MARK AND PROTECT IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, UNIQUE AREAS (e.g., WETLANDS) TO BE PRESERVED, ON SITE SEPTIC SYSTEM ABSORPTION FIELDS IF APPLICABLE, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS.
CONSTRUCTION ACCESS (CONSTRUCTION ENTRANCES, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS)	STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS WORK TAKES PLACE.
SEDIMENT BARRIERS AND TRAPS (BASIN TRAPS, SILT FENCES, OUTLET PROTECTION)	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ASSESSED. INSTALL ADDITIONAL RUNOFF CONTROL MEASURES DURING GRADING AS NEEDED.
RUNOFF CONVEYANCE SYSTEM (STABILIZED STREAM-BANKS, STORM DRAINS, INLET AND OUTLET PROTECTIONS, WATER QUALITY STRUCTURES)	WHERE NECESSARY, STABILIZE STREAMBANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPLE CONVEYANCE SYSTEM WITH RUNOFF CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
LAND CLEARING AND GRADING (CUTTING/FILLING/GRADING, DRAINS, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, SURFACE ROUGHENING)	BEGIN MAJOR CLEARING AND GRADING AFTER INSTALLING THE KEY SEDIMENT AND RUNOFF MEASURES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES.
SURFACE STABILIZATION (TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETED.
BUILDING CONSTRUCTION (BUILDINGS, UTILITIES, PAVING)	INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES AS WORK TAKES PLACE.
LANDSCAPING & FINAL STABILIZATION (TOP SOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE TEMPORARY CONTROL MEASURES AND STABILIZE.

RESPONSIBLE PARTY FOR EROSION CONTROL

COMPANY: LIONS TRAN INC.
NAME: MALHI KULWINDER
ADDRESS: 7655 E. US HWY 36
AVON, INDIANA 46123
PHONE: 317-989-1580

EROSION CONTROL NOTES:

SOIL EROSION CONTROL SUMMARY:

1. CONTRACTOR SHALL INSTALL SODDING, INLET PROTECTION, AND FILTERS AS SHOWN.

2. MASS GRADE THE SITE (SIDES OF SWALES, MOUNDS AND PONDS TO BE SODDED OR SEEDED AND MULCHED IMMEDIATELY UPON COMPLETION). TEMPORARY SEEDING SHALL BE RECOMMENDED FOR ALL SWALES AND DISTURBED AREAS THAT CANNOT BE FINAL SEEDED WITHIN A TIME PERIOD THAT WILL PREVENT SOIL EROSION. FOR TEMPORARY SEEDING THE CONTRACTOR SHALL UTILIZE A FAST GROWING SEED OF EITHER OATS, ANNUAL RYE GRASS, WHEAT OR RYE DEPENDING UPON TIME OF YEAR. DISTURBED AREAS SHOULD BE KEPT TO A MINIMUM AT ALL TIMES.

3. CONTRACTOR SHALL CONTROL MUD ACCUMULATION ON ALL STREETS SURROUNDING THE PROJECT BY INSTALLING STONE SURFACE AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC LEAVES THE SITE. DUST SHALL BE KEPT TO A MINIMUM BY UTILIZING SPRINKLING, CALCIUM CHLORIDE, VEGETATIVE COVER, SPRAY ON ADDITIVES OR OTHER APPROVED METHODS.

4. MAINTAIN ALL FILTERS DURING CONSTRUCTION TO PREVENT ANY BLOCKAGES FROM ACCUMULATED SEDIMENT. ADDITIONAL SEEDING MAY BE REQUIRED DURING CONSTRUCTION AS SPECIFIED BY ENGINEER OR SOIL CONSERVATION SERVICE. RIPRAP SHALL BE PLACED IN AREAS OF HIGH VELOCITY STREAM FLOW (MINIMUM SIZE 1/3 CU.FT.). PAYMENT FOR ADDITIONAL RIPRAP NOT SHOWN ON PLANS AND SEEDING SHALL BE ON A UNIT BASIS.

5. CONTRACTOR SHALL INSTALL ALL STORM SEWER INLET FILTERS AS STORM SEWER SYSTEM IS INSTALLED.

6. ALL PROPOSED STREET AREAS TO BE PAVED AS SOON AS POSSIBLE AFTER SUBGRADE IS PREPARED.

7. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS ONLY WHEN THERE IS SUFFICIENT GROWTH OF GROUND COVER TO PREVENT FURTHER EROSION.

8. ALL SWALES SHALL BE SEEDED AND SODDED (AS INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN) IMMEDIATELY AFTER FINAL GRADING.

9. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE INDIANA HANDBOOK FOR EROSION CONTROL IN DEVELOPING AREAS, MOST RECENT EDITION.

MAINTENANCE:

INSPECT PERIODICALLY, ESPECIALLY AFTER STORM EVENTS, UNTIL THE STAND IS SUCCESSFULLY ESTABLISHED. (CHARACTERISTICS OF A SUCCESSFUL STAND INCLUDE: VIGOROUS DARK GREEN OR BLUISH-GREEN SEEDLINGS; UNIFORM DENSITY WITH NURSE PLANTS, LEGUMES, AND GRASSES WELL INTER-MIXED; GREEN LEAVES; AND THE PERENNIALS REMAINING GREEN THROUGHOUT THE SUMMER, AT LEAST AT THE PLANT BASE.)

PLAN TO ADD FERTILIZER THE FOLLOWING GROWING SEASON ACCORDING TO SOIL TEST RECOMMENDATIONS.

REPAIR DAMAGED, BARE, OR SPARSE AREAS BY FILLING ANY GULLIES, RE-FERTILINZING, OVER- OR RE-SEEDING, AND MULCHING.

IF PLANT COVER IS SPARSE OR PATCHY, REVIEW THE PLANT MATERIALS CHOSEN, SOIL FERTILITY, MOISTURE CONDITION, AND MULCHING AFTER RE-PREPARING THE SEEDBED.

IF VEGETATION FAILS TO GROW, CONSIDER SOIL TESTING TO DETERMINE ACIDITY OR NUTRIENT DEFICIENCY PROBLEMS. (CONTACT YOUR SWCD OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE.)

IF ADDITIONAL FERTILIZATION IS NEEDED TO GET A SATISFACTORY STAND, DO SO ACCORDING TO SOIL TEST RECOMMENDATIONS.

EROSION CONTROL NOTES:

PRIOR TO ANY WORK BEING DONE, A TEMPORARY CONSTRUCTION ENTRANCE AND SILT FENCING SHALL BE INSTALLED.

AFTER COMPLETION OF A STORM STRUCTURE, THE CURB INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY.

UPON COMPLETION OF SWALES AND SIDE SLOPES, CONTRACTOR SHALL INSTALL THE EROSION CONTROL BLANKETS.

ALL AREAS NOT DENOTING PERMANENT SEEDING OR FIBER BLANKETS SHALL BE TEMPORARILY SEEDED.

THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR KEEPING THE EXISTING ROADWAYS CLEAR OF DIRT AND DEBRIS.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AS CONDITIONS WARRANT.

EROSION PROTECTION DURING CONSTRUCTION AND SEEDING:

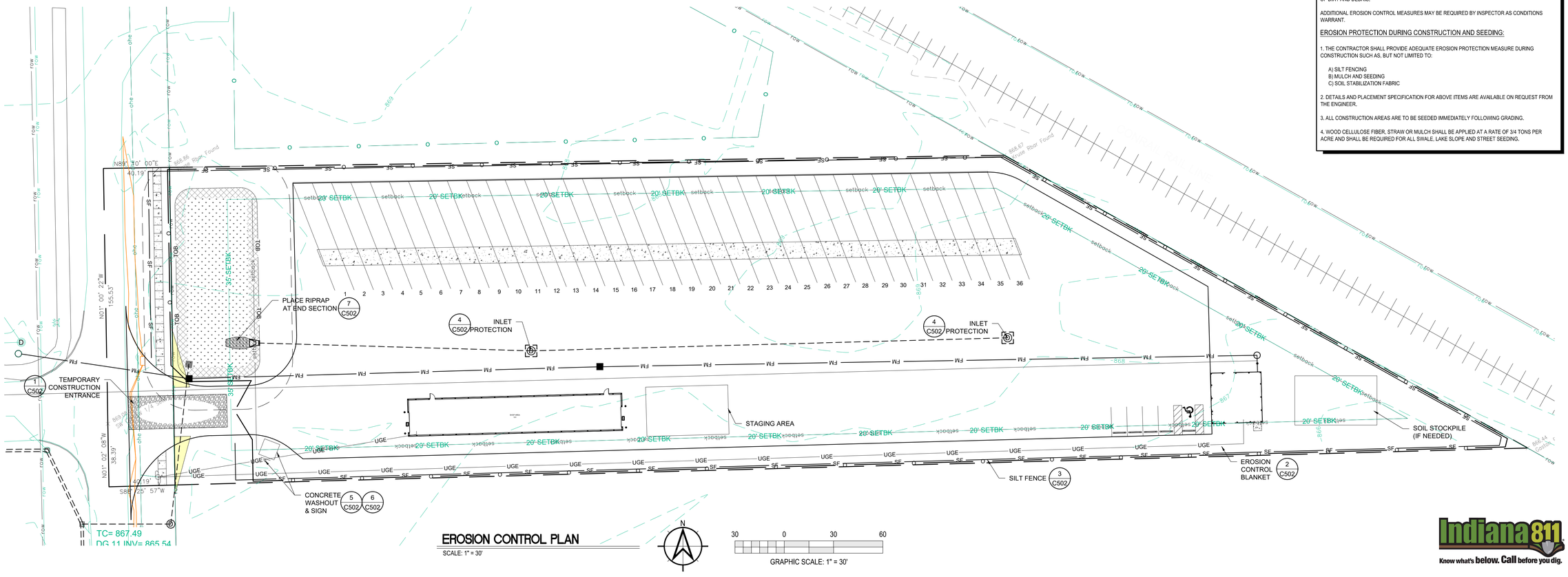
1. THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION PROTECTION MEASURE DURING CONSTRUCTION SUCH AS, BUT NOT LIMITED TO:

A) SILT FENCING
B) MULCH AND SEEDING
C) SOIL STABILIZATION FABRIC

2. DETAILS AND PLACEMENT SPECIFICATION FOR ABOVE ITEMS ARE AVAILABLE ON REQUEST FROM THE ENGINEER.

3. ALL CONSTRUCTION AREAS ARE TO BE SEEDED IMMEDIATELY FOLLOWING GRADING.

4. WOOD CELLULOSE FIBER, STRAW OR MULCH SHALL BE APPLIED AT A RATE OF 3/4 TONS PER ACRE AND SHALL BE REQUIRED FOR ALL SWALE, LAKE SLOPE AND STREET SEEDING.



EROSION CONTROL PLAN

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

30 0 30 60

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4005 N CR 1000 E
BROWNSBURG, IN 46122

EROSION CONTROL PLAN

BRYAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

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5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C302

Construction Storm Water General Permit Index Sheet

SECTION	TITLE	SHEET
A1	Index of the location of required plan elements in the construction plan	C000
A2	A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads	C000
A3	Narrative of the nature and purpose of the project	C303
A4	Latitude and longitude to the nearest fifteen (15) seconds	C000
A5	Legal description of the project site	C201
A6	11x17-inch plat showing building lot numbers/ boundaries and road layout/names	C303
A7	Boundaries of the one hundred (100) year flood plains, floodway fringes, and floodways	C301
A8	Land use of all adjacent properties	C303
A9	Identification of a U.S. EPA approved or established TMDL	C303
A10	Name(s) of the receiving water(s).	C303
A11	Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired	C303
A12	Soils map of the predominate soil types	C301
A13	Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)	C303
A14	Identification of any other state or federal water quality permits or authorizations that are required for construction activities	C303
A15	Identification and delineation of existing cover, including natural buffers	C301
A16	Existing site topography at an interval appropriate to indicate drainage patterns	C301
A17	Location(s) where run-off enters the project site	C301
A18	Location(s) where run-off discharges from the project site prior to land disturbance	C301
A19	Location of all existing structures on the project site	N/A
A20	Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of storm water management	N/A
A21	Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features	C303
A22	Size of the project area expressed in acres	C000
A23	Total expected land disturbance expressed in acres	C000
A24	Proposed final topography	C301
A25	Locations and approximate boundaries of all disturbed areas	C201
A26	Locations, size, and dimensions of all storm water drainage system such as culverts, storm water sewer, and conveyance channels	C301
A27	Locations of specific points where storm water and non-storm water discharges will leave the project site	C301
A28	Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas	C201
A29	Location of all on-site and off-site soil stockpiles and borrow areas	C302
A30	Construction support activities that are expected to be part of the project	N/A
A31	Location of any in-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds	N/A
B1	Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges	C303
B2	Stable construction entrance locations and specifications	C302
B3	Specifications for temporary and permanent stabilization	C302
B4	Sediment control measures for concentrated flow areas	C301
B5	Sediment control measures for sheet flow areas	C302
B6	Run off control measures	C302
B7	Storm water outlet protection location and specifications	C302/501
B8	Grade stabilization structure locations and specifications	N/A
B9	De-watering applications and management methods	C303
B10	Measures utilized for work within water bodies	N/A
B11	Maintenance guidelines for each proposed storm water quality measure	C303
B12	Planned construction sequence that describes the implementation of storm water quality measures in relation to land disturbance	C303
B13	Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project	N/A
B14	Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1	C303
B15	Material handling and storage procedures associated with construction activity	C303
C1	Description of pollutants and their sources associated with the proposed land use	C303
C2	Description of proposed post-construction storm water measures	C303
C3	Plan details for each storm water measures	C301/501
C4	Sequence describing storm water measure implementation	C303
C5	Maintenance guidelines for proposed post-construction storm water measures	C303
C6	Entity that will be responsible for operation and maintenance of the post-construction storm water measures	C302

NOTES:
"NA" - NON APPLICABLE

Construction Storm Water General Permit Notes Section A

A1 - Index of the location of required plan elements in the construction plan:

An index addressing the required elements within the drawing set is on C000 - Cover Sheet.

A2 - A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads:

A map showing the project in relationship to other areas of the county is on C000 - Cover Sheet.

A3 - Narrative of the nature and purpose of the project:

The project consists of the development of a new heavy duty asphalt parking lot with 36 truck and trailer stalls, a 2860 sq. ft. maintenance building, and 900 sq. ft. office building w/ employee parking. The site is located at 4005 North County Road 1000E in Brownsburg, Indiana 46112. Associated with the new improvements will be storm water management system consisting of overland flow, storm inlets, and retention/percolation basin with outlet control. (Shown on C303 - Construction Storm Water General Permit Notes).

A4 - Latitude and Longitude:

The latitude is 39°49'21"N and longitude is 86°20'42.19"W. (Shown on C000 - Cover Sheet)

A5 - Legal description of the project site:

A legal description of the overall parcel is on C201 - Site Plan

A6 - 11 x 17-inch plat showing building lot numbers/boundaries and road layout/names:

An 11x17 in. plan showing the overall property and new improvements is attached to this narrative.

A7 - Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways:

The 100 year floodway and floodway fringe is on C301 - Grading Plan and is based on best available information from the Indiana Department of Natural Resources.

A8 - Land use of all adjacent properties:

North - Commercial
South - Undeveloped/Woods
East - Railroad/Commercial
West - Residential/Agricultural
(Shown on C303 - Stormwater Pollution Prevention Plan)

A9 - Identification of a U.S. EPA approved or established TMDL:

Site to discharge stormwater into ground via percolation basin or through evaporation. Any dicharge via the emergency spillway will likely evaporate/percolate prior to being received by White Lick Creek (INW01D2_05) which is EPA 303d listed, but has no established TMDL (Shown on C304 - Construction Storm Water General Permit Notes)

A10 - Name(s) of the receiving water(s):

Receiving water is White Lick Creek (INW01D2_05) - (Shown on C303 - Stormwater Pollution Prevention Plan)

A11 - Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which is it impaired:

The impaired condition of White Lick Creek is due to presence of Escherichia Coli (E. coli)
(Noted on C304 - Construction Storm Water General Permit Notes)

A12 - Soils map of the predominate soil types:

The soils on this property are predominantly Brookston Silty Clay Loam-Urban Land Complex and Crosby Silt Loam.
Brookston Silty Clay Loam features wetness as the main limitation affecting use and management of this soil type. Crosby Silt Loam features slow permeability and available water capacity is high with moderate content of organic matter.

Both soils are fair to poor for use as subgrade material as well as shear strength, compaction, and stability, medium to high compressibility, moderate to low shrink-swell potential, subject to frost heave, and seasonal high water table. A soils map is on C301 - Grading Plan.

A13 - Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)

There are no known water courses on or adjacent to this site.

A14 - Identification on any other state or federal water quality permits or authorizations that are required for construction activities:

This phase of the project scope will not require any additional federal or state water permits as noted on C304 - Construction Storm Water General Permit Notes.

Construction Storm Water General Permit Notes Section A (cont'd)

A15 - Identification and delineation of existing cover, including natural buffers:

The site is almost entirely covered with thick/heavy vegetation and trees with partial remnants of an existing gravel drive. The delineation of the various surface coverage is on C301 - Grading Plan.

A16 - Existing site topography at interval appropriate to indicate drainage patterns:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing and proposed contours are on C301 - Grading Plan.

A17 - Location(s) where run-off enters the project site:

As referenced above, the topography in this area is largely flat resulting in little to no potential for run-off entering the site from adjacent property. The existing contours are on C301 - Grading Plan.

A18 - Location(s) where run-off discharges from the project site prior to land disturbances:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing contours are on C301 - Grading Plan.

A19 - Location(s) of all existing structures on the project site:

The existing site is a vacant lot with no existing structures as depicted on C301 - Grading Plan.

A20 - Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management:

There are no existing retention facilities on site as depicted on C301 - Grading Plan.

A21 - Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features:

There are no locations on property where storm water may directly discharge into the groundwater as illustrated on C301 - Grading Plan.

A22 - Size of the project expressed in acres:

The total project are if 3.07 acres as noted on C000 - Cover Sheet.

A23 - Total expected land disturbance expressed in acres:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet.

A24 - Proposed final topography:

The final topography is on C301 - Grading Plan and is illustrated as spot elevations and contours.

A25 - Locations and approximate boundaries of all disturbed areas:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet and shown as the Limits of Construction on C201 - Site Plan.

A26 - Locations, size and dimensions of all stormwater drainage systems such as culverts, stormwater sewer, and conveyance channels:

The stormwater is conveyed by overland flow, underground storm pipes, and retention pond. These are shown on C301 - Grading Plan.

A27 - Locations of specific points where stormwater and non-stormwater discharges will leave the project site:

Stormwater discharge from the site will be via an emergency spillway from the retention pond at the east end of the site and sanitary discharge will be via a pump and force main at the west end of the site.(Shown on C301 - Grading Plan & C402 Sanitary Force Main Plan & Profile.

A28 - Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas:

All the surface improvements including buildings, impervious areas, new surface finishes, etc. are on C201 - Site Plan for horizontal notations and C301 - Grading Plan for elevations.

A29- Location of all on-site and off-site soil stockpiles and borrow areas:

The soil storage area will be on site located at the east end of the site (west of the pond). All soil will be placed in the final location or hauled off upon completion of construction as shown on C302 - Erosion Control Plan.

A30- Construction support activities that are expected to be part of the project

Any construction support area will be within the limits of disturbance and used as directed by the contractor. Since they are within the limits of disturbance, there will be no impact sensitive areas.

A31- Location of any on-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds:

There are no in stream activities associated with this project.

Construction Storm Water General Permit Notes Section B

B1- Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges:

1. Concrete Washout Area: Specific concrete washout area shall be established and labeled.
   a) The specific concrete wash out will be in a provided lined roll off box at a specific location near the entrance to the job site.
   b) The lined roll off box will be placed on stable soil with a stone approach.
   c) Once the lined roll off box is full, it will be removed from the site and discarded as clean fill once solid. A new lined roll off box will replace the one removed.
2. Construction Mobile Equipment Fluid
   a) All fueling of equipment will be managed and completed on a stone surface.
   b) Daily observation of all equipment for inspection of leaks or potential leaks of any fluids.
   c) Any observed fluid leaks are to be handled immediately with the equipment being moved to a stable stone surface and placed out of operation until maintenance is completed.
   d) Spill kits are to be utilized once the equipment is moved to the stable stone surface to prevent leakage from penetrating the ground or impacting storm water runoff.
3. Construction Material Waste
   a) All material waste is to be placed in provided roll off boxes as it is generated.
   b) Full roll off boxes are to be removed and properly disposed of in a licensed facility.
   c) No debris is to be stored on the ground surface at any time.
   These items are noted on C303 - Stormwater Pollution Prevention Plan.

B2- Stable construction entrance locations and specifications:

A stable construction entrance consisting of compacted subgrade, filter fabric and #2 stone is to be used for all construction traffic entering / exiting the site. The stone surface is to be maintained with new stone as necessary to maintain a solid drive surface. The location of the temporary construction entrance is shown on C302 for plan view and Sheet C502 for detail.

B3- Specifications for temporary and permanent stabilization:

The provisions for temporary stabilization during construction as well as permanent stabilization are included in the drawing set. The information contains specific stabilization techniques for the conditions of the site as well as timing of installation.

For temporary construction stabilization, it is the Contractor responsibility to maintain the stabilization during the construction duration and until permanent stabilization is installed.

For permanent stabilization, it is expected installation to occur immediately after final grading of the soil surface. Permanent stabilization is to be maintained by the Owner until 75% effective cover is established on the soil surface.
The stabilization is noted on C302 - Erosion Control Plan.

B4- Sediment control measures for concentrated flow areas:

The concentrated flow is protected at the pond inlet with riprap of minimum size being 6 inches and at the emergency spillway with stone dam as shown on C301 - Grading Plan and details on C501 & C502 - Sections and Details.

B5- Sediment control measures for sheet flow areas:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B6- Run-off control measures:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B7- Stormwater outlet protection location and specifications:

The concentrated flow is protected at the pond outlet with the previously mentioned rock dam as shown on C302 - Erosion Control Plan.

B8- Grade stabilization structure locations and specifications:

The grade on the site is largely flat and remain so post construction. There are no stabilization structures planned for this project as illustrated on C301 - Grading Plan.

B9- Dewatering applications and management methods:

Any dewatering required will be directed to the low area of the site (east) where it can percolate into existing soil. (Noted C303 - Stormwater Pollution Prevention Plan)

B10- Measures utilized for work within waterbodies:

This is not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B11- Maintenance guidelines for each proposed stormwater quality measure:

The stormwater quality is by a bioretention pond that is to be cleaned of trash, mowed, trimmed and monitored regularly to maintain proper function of the pond. (C301 - Grading Plan)

B12- Planned construction sequence that describes the implementation of stormwater quality measures in relation to land disturbance:

The construction sequence for installation of the erosion control measures and stormwater pollution prevention devices are detailed on C302 - Erosion Control Plan.

B13- Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project:

Not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B14- Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1:

The potential materials on site that could cause a spill response include fuels, petroleum fluids or other liquids as part of the construction equipment on site. If a spill occurs, immediate determination of the extent and emergency response requirements should be determined. Immediate containment of the spill with onsite spill kits should be completed. Once the spill is contained, contact is to be made to the Indiana Dept. of Environmental Mgmt., Office of Land Quality, Emergency Response Section: 1-888-233-7745 for in-state calls (toll free) within two hours of the spill. The contact should include the likelihood of damage to the waterways of the State of Indiana. This information is noted on C303 - Stormwater Pollution Prevention Plan.

B15- Material handling and storage procedures associated with construction activity:

All construction debris and wastes are to be loaded directly into provided roll off boxes for proper disposal off site. In no terms is debris or waste to be stored on site awaiting disposal or burned on property. Liquid wastes such as concrete wash out is to be disposed in the appropriate concrete wash out lined roll off boxes as provided. This includes any mortar/masonry/concrete grout material. Once these containers are full, they are to be removed from the site and disposed of in a licensed facility. Roll off boxes are to be rotated empty for full boxes for the entire project duration.

Construction Storm Water General Permit Notes Section B

C1- Description of pollutants and their sources associated with the proposed land use:

The post construction land use will have potential contaminants such as fuels, oils, grease, tires and other mobile equipment fluids. All materials, including mobile equipment will be stored on impervious surfaces during non-use or operation. (Noted on C303 - Stormwater Pollution Prevention Plan)

C2- Description of proposed post-construction stormwater measures:

The post construction contaminants are minimized by impervious surfaces being directed to a bioretention pond designed to collect sediment and pollutants prior to any discharge that may overtop the emergency spillway. (Noted C303 - Stormwater Pollution Prevention Plan)

C3- Plan details for each stormwater measure:

The post construction stormwater measures is primarily a bioretention pond as shown on C301 - Grading Plan and L101 - Landscape Plan.

C4- Sequence describing stormwater measure implementation:

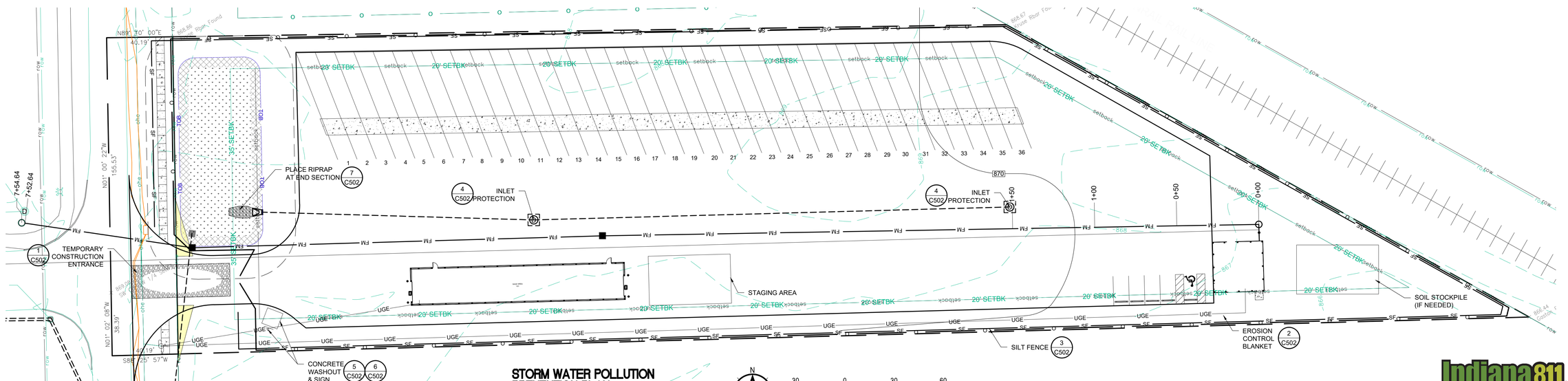
The sequence of installation for the post construction stormwater measure is part of construction sequencing shown C302 - Erosion Control Plan.

C5- Maintenance guidelines for proposed post-construction stormwater measures:

An operations and maintenance manual are part of the submittal information under separate documentation.

C6- Entity that will be responsible for operation and maintenance of the post-construction stormwater measures:

The responsible person for the post construction stormwater measures is the property owner as noted on C302 - Erosion Control Plan.



STORM WATER POLLUTION PREVENTION PLAN

SCALE: 1" = 30'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

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Plainfield, Indiana 46168
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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

STORM WATER POLLUTION PREVENTION PLAN

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER
Brian E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C303

UTILITY CONTACT INFORMATION

WATER COMPANY:	
NAME:	CITIZENS ENERGY
CONTACT NAME:	---
PHONE NUMBER:	(317) 924-3311
E-MAIL:	---

SANITARY SEWER COMPANY:	
NAME:	HENDRICKS CO. REGIONAL SEWER DIST.
CONTACT NAME:	---
PHONE NUMBER:	(317) 745-4928
E-MAIL:	---

ELECTRIC COMPANY:	
NAME:	DUKE ENERGY
CONTACT NAME:	---
PHONE NUMBER:	(317) 745-5473
E-MAIL:	---

GAS COMPANY:	
NAME:	VECTREN
CONTACT NAME:	---
PHONE NUMBER:	(800) 227-1376
E-MAIL:	---

TELEPHONE COMPANY:	
NAME:	AT&T
CONTACT NAME:	---
PHONE NUMBER:	(317) 272-6450
E-MAIL:	---

UTILITY NOTES:

SANITARY GENERAL SPECIFICATIONS:

1. (A) 100 PSI FLOWABLE FILL SHALL BE REQUIRED FOR ROAD CROSSINGS UNDER EXISTING PAVEMENT AND WITHIN FIVE (5) FEET OF THE PAVEMENT EDGE. STREET CUT REPAIRS SHALL USE 100 PSI FLOWABLE FILL TO WITHIN 6" OF PAVEMENT SURFACE. INSTALL 5" OF 4000 PSI READY MIX CONCRETE WITHIN 1" OF PAVEMENT 2-24 HOURS AFTER FLOWABLE FILL HAS BEEN INSTALLED. INSTALL 1" OF #11 SURFACE ASPHALT LEVEL WITH EXISTING PAVEMENT WITHIN 24 HOURS ON CONCRETE INSTALLATION.

(B) FLOWABLE FILL SHALL BE A MIXTURE OF SAND, PORTLAND CEMENT AND WATER, THOROUGHLY MIXED, AND SHALL HAVE 100 PSI COMPRESSIVE STRENGTH WITHIN 3 HOURS OF PLACEMENT. FLOWABLE FILL SHALL BE PLACED FROM TOP OF #8 STONE PIPE COVER TO BOTTOM OF NEW PAVEMENT.

(C) IN LOCATIONS OF NEW DEVELOPMENT, WHERE UTILITIES ARE INSTALLED PRIOR TO ROAD CONSTRUCTION, TRENCH BACKFILL UNDER FUTURE ROAD SHALL BE ENTIRELY #8 CRUSHED STONE FROM MANHOLES.

2. ALL OSHA SAFETY STANDARDS SHALL BE STRICTLY ENFORCED FOR PROTECTION OF WORKERS.

3. NO SEWER SYSTEM CONSTRUCTION MAY BEGIN UNTIL APPROVAL FROM I.D.E.M.

4. ONE SET OF I.D.E.M. APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES

POLYVINYL CHLORIDE (P.V.C.) PIPE:

1. PIPE DIAMETERS OF 10 INCHES THROUGH 15 INCHES SHALL MEET OR EXCEED ALL THE REQUIREMENTS OF ASTM D-3034, AND SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-C, REFERENCE SHOULD BE MADE TO ASTM D-1784 FOR A SUMMARIZATION OF CELL CLASS PROPERTIES. PIPE DIAMETERS GREATER THAN 15 INCHES SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM F-679, AND SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-C, P.V.C. RIBBED SEWER PIPE SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM F-794 AND SHALL HAVE A MINIMUM CELLL CLASSIFICATION OF 12454.

2. THE MINIMUM WALL THICKNESS FOR PIPES OF 10 INCHES THROUGH 15 INCHES IN DIAMETER SHALL CONFORM TO SDR-35, TYPE PSM, AS SPECIFIED IN ASTM D-3034. THE MINIMUM WALL THICKNESS FOR PIPE DIAMETERS GREATER THAN 15 INCHES SHALL CONFORM TO T-1 AS SPECIFIED IN ASTM F-679. P.V.C. PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 46 POUNDS PER SQUARE INCH FOR EACH DIAMETER WHEN MEASURED AT FIVE PERCENT DEFLECTION AND TESTED IN ACCORDANCE WITH ASTM D-2412.

3. PIPE JOINTS SHALL HAVE A BELL WALL, GASKET GROOVE AND SPIGOT WHICH IS INTERGRAL WITH THE PIPE. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS' RECOMMENDATIONS AND ASTM D-3212. NO SOLVENT CEMENT JOINTS SHALL BE ALLOWED. GASKET MATERIAL SHALL BE CONSTRUCTED OF STYRENE BUTADIENE OR BUTYL RUBBER AND MEET THE REQUIREMENTS OF ASTM F-477.

4. EACH PIPE SECTION SHALL BE MARKED WITH THE NAME OF THE MANUFACTURER, TRADEMARK OR TRADEMANE, NOMINAL PIPE SIZE, PRODUCTION / EXTRUSION CODE, MATERIAL AND CELL CLASS DESIGNATION AND ASTM NUMBER.

5. INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM RECOMMENDED PRACTICE D-2321.

SANITARY SEWER NOTES:

1. 10 STATES STANDARDS AND INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT REQUIREMENTS SHALL BE MET OR EXCEEDED FOR ALL DESIGN, MATERIALS AND CONSTRUCTION METHODS.

2. SANITARY SEWER MANHOLES SHALL BE MONOLITHIC PRECAST SECTIONS, INCLUDING THE BOTTOM SECTION. ALL SECTIONS SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH ASTM C-478. ALL MANHOLE INLET CONNECTIONS SHALL BE LOCK JOINT FLEXIBLE SLEEVES CONFORMING TO ASTM C-923. ONLY PRECAST CONCRETE RINGS SHALL BE ALLOWED FOR CASTING RISERS. ALL MANHOLES, GRADE RINGS AND CASTING SHALL BE SEALED TO PREVENT INFILTRATION.

3. MANHOLE INVERTS SHALL BE SHAPED FOR FLOW CHANNELS WITH CONCRETE AND SMOOTHLY FINISHED BY A SEMI CIRCULAR SECTION CONFORMING TO THE INSIDE DIAMETER OF THE CONNECTING SEWERS. NO BRICK, ROCK OR SAND FILLERS WILL BE ALLOWED.

4. ALL MANHOLE COVERS SHALL BE TRAFFIC BEARING, NON-ROCKING DESIGN WITH NON-PENETRATING PICK HOLES.

5. SANITARY SEWERS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 MEETING ASTM D3034 SPECIFICATIONS. ALL SEWER MAINS SHALL HAVE A MINIMUM DIAMETER OF 8", ALL PIPE SPECIFIED SHALL SUPPORT ANTICIPATED LOADS.

6. ALL JOINTS SHALL BE PUSH-ON TYPE (SLIP SEAL) OR SOLVENT WELD.

7. BEDDING FOR PVC PIPE SHALL CONFORM TO BEDDING CLASSES I, II OF III, AS DESCRIBED IN ASTM D2321, FLEXIBLE SEWER PIPE INSTALLATION REQUIREMENTS.

UTILITY NOTES (cont'd):

8. ALL SEWER PIPE SHALL BE LAID USING PIPE LASER EQUIPMENT FOR BOTH VERTICAL AND HORIZONTAL ALIGNMENT.

9. MINIMUM ALLOWABLE COVER SHALL BE 5'-0" OVER TOP OF PIPE.

10. ALL SEWER MAINS SHALL BE DEFLECTION TESTED WITH AN 11 POINT, 5% MANDREL AFTER COMPACTED AGGREGATE IS IN PLACE FOR ALL STREETS. FLEXIBLE PIPE WILL BE TESTED AFTER BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. ALL PVC PIPE FAILING THE MANDREL TEST SHALL BE REROUNDED IN PLACE OR AN ALTERNATE METHOD APPROVED BY THE GOVERNING JURISDICTION IF REPAIR REQUIRED, SEWER SHALL BE RETESTED 30 DAYS AFTER REPAIR IS COMPLETE.

11. ALL SEWER MAINS SHALL BE LAMPED AT THE TIME THE MANDREL TEST IS CONDUCTED. ALL MAINS SHALL BE TRUE TO ALIGNMENT AND GRADE.

12. ALL SEWER MAINS AND LATERAL CONNECTIONS SHALL BE AIR TESTED IN ACCORDANCE WITH UNI-BELL UNI-B-6-85. MINIMUM TIME FOR THE AIR TEST SHALL BE FOR A 1.0 PSIG PRESSURE DROP. ALL SECTIONS FAILING AIR TEST SHALL BE REPAIRED AND RETESTED.

13. ALL SERVICE WYE BRANCHES SHALL BE INSTALLED AT THE TIME OF THE SEWER MAIN INSTALLATION. NO DIRECT TAPS WILL BE ALLOWED ON NEW MAIN CONSTRUCTION. NO VERTICAL CONNECTIONS WILL BE ALLOWED.

14. A SEPARATE (6" MINIMUM) SERVICE SHALL BE PROVIDED FOR EACH UNIT SERVED APPROXIMATELY SIX (6) FEET TO THE RIGHT OF THE LOT CENTERLINE. NO WYE'S SHALL BE ALLOWED, INCLUDING CONDOMINIUMS.

15. THE MAXIMUM ALLOWABLE VERTICAL DISTANCE BETWEEN ANY INFLUENT LINE AND THE EFFLUENT MAIN SHALL BE 6' FOR TYPE 'A' AND 'C' MANHOLES. ANY DISTANCE GREATER THAN 6" SHALL REQUIRE A TYPE 'B' MANHOLE.

16. WHERE A SEWER EXTENSION OR IMPROVEMENT CONNECTS TO A EXISTING SEWER OR MANHOLE, IT MUST BE LOCATED IN A STREET, ROAD OR HIGHWAY R/W AND NOT LOCATED IN SUCH A MANNER WHERE IT WILL CUT THROUGH LOTS OR DEVELOPMENTS.

17. ALL EXTENSIONS SHALL BE INSTALLED AT MINIMUM GRADES.

CONCRETE MANHOLE NOTES:

1. ALL MANHOLES SHALL BE NEGATIVE AIRE PRESSURE (VACUUM) TESTED AS PER ASTM C1244-93 STANDARD METHOD.

2. NO MANHOLES SHALL BE MORE THAN 14' FROM BACK OF CURB.

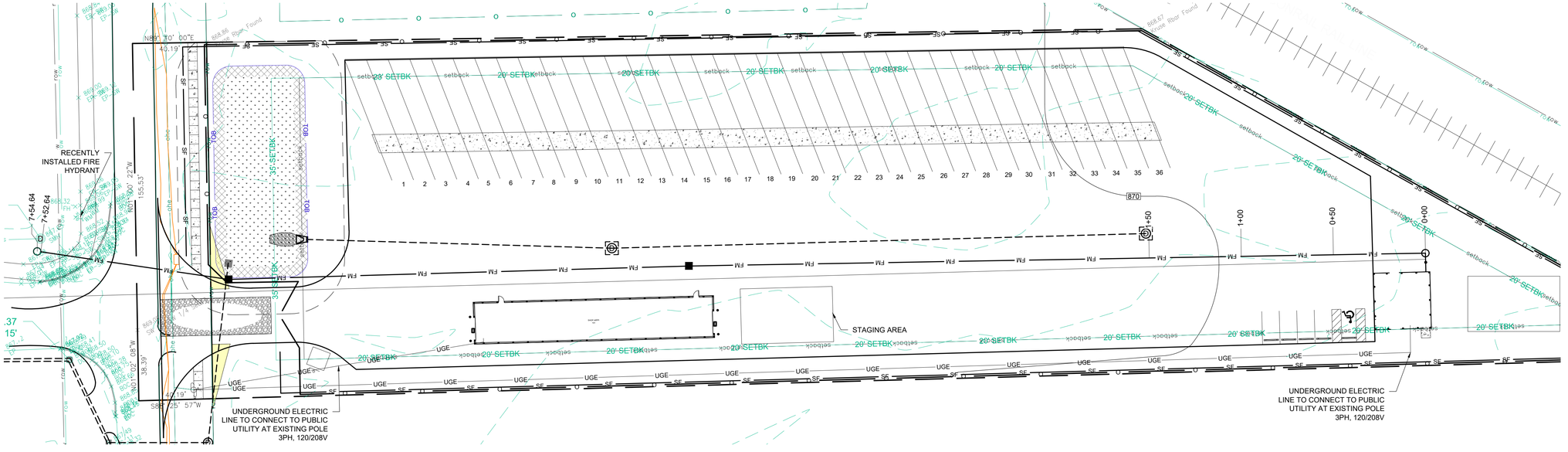
3. NO MANHOLE SHALL BE LOCATED IN ANY BACKYARD OR SIDE YARD. THEY MUST BE LOCATED IN THE FRONT YARD OR FRONT LOT THAT IS FRONTING A STREET.

4. ALL JOINTS IN MANHOLES SHALL BE SEALED TO PREVENT INFILTRATION BY USING A RUBBER 'O-RING' GASKET AND A 1/2" EXTRUDABLE PERFORMED GASKET BETWEEN ALL PRECAST SECTIONS.

5. ANNULAR SPACE AROUND SANITARY SEWER AT POINT OF ENTRANCE INTO THE MANHOLE SHALL BE GROUTED COMPLETELY AROUND SANITARY SEWER, INSIDE AND OUTSIDE TO INSURE SMOOTH TRANSITION.

6. WHEN CONNECTING A NEW SEWER INTO AN EXISTING MANHOLE, THE EXISTING MANHOLE SHALL BE BROUGHT UP TO MEET PRESENT STANDARDS.

7. SECTION JOINTS ON PRECAST CONCRETE MANHOLES SHALL BE SEALED WITH BLACK TAR MASTIC 6" ABOVE AND 6" BELOW JOINT, ON MANHOLE EXTERIOR.



UTILITY PLAN

SCALE: 1" = 30'

N

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GRAPHIC SCALE: 1" = 30'

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

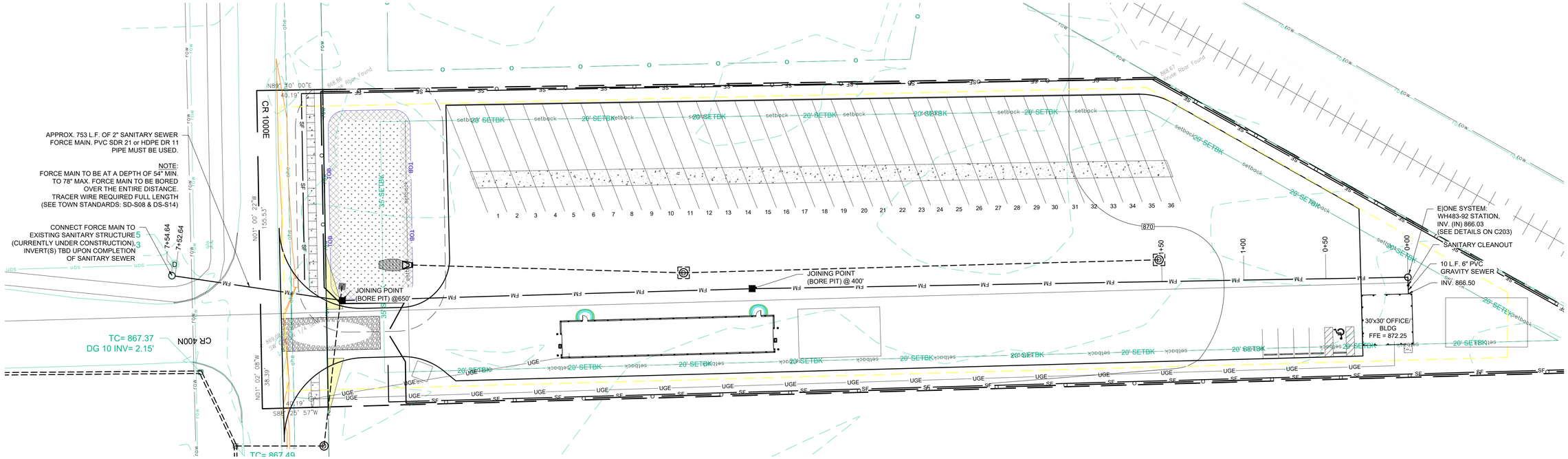
UTILITY PLAN

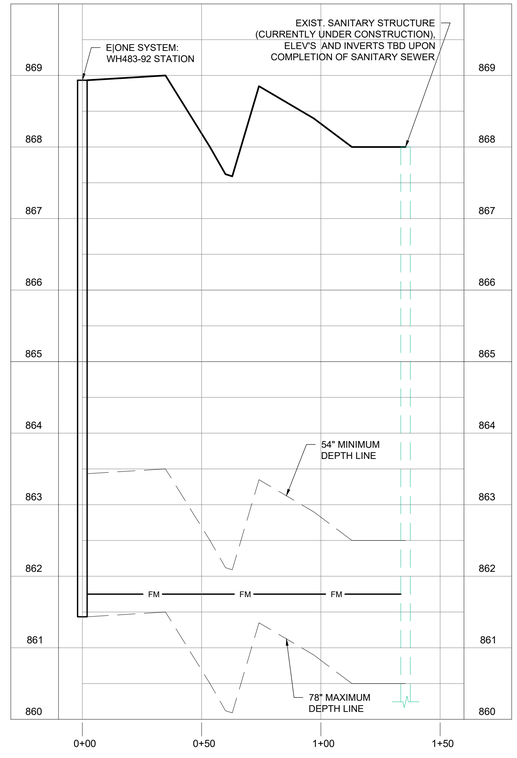
BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Brian E. Moench

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C401





FORCE MAIN PLAN + PROFILE

SCALE: Horz.: 1" = 30', Vert.: 1" = 10'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

Indiana 811 Know what's below. Call before you dig.

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

SANITARY FORCE MAIN PLAN & PROFILE

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DRAWN BY:	JBF
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PROJECT NUMBER:	21346
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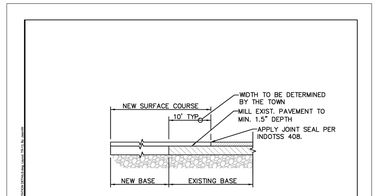


CONNECTION TO EXISTING STREETS
NO SCALE

NOTE:

THIS DETAIL SHALL BE USED FOR CONNECTING TO THE END OF AN EXISTING STREET.

EXISTING PAVEMENT SHALL BE SAW CUT, FULL DEPTH, AT A UNIFORM LOCATION INSIDE OF THE EXISTING EDGE OF PAVEMENT, WHERE THE PAVEMENT IS IN GOOD CONDITION AND WILL PROVIDE AN INTERFACE WITH THE FULL PAVEMENT SECTION LINE AND GRADE, FREE FROM LOOSE, DAMAGED, DETERIORATED OR OTHERWISE COMPROMISED MATERIAL. A MINIMUM OF SIX (6) INCHES FROM THE EXISTING EDGE OF PAVEMENT FOR THE FULL WIDTH OF THE EXISTING PAVEMENT; LOCATION OF SAW-CUT TO BE DETERMINED BY THE TOWN OF BROWNSBURG. THE ENTIRE AREA OF THE PROPOSED INTERFACE SHALL BE EXCAVATED TO THE PROPOSED SUBGRADE ELEVATION. THE SUBGRADE SHALL BE STABILIZED IN ACCORDANCE WITH TOWN OF BROWNSBURG STANDARDS AND SPECIFICATIONS. AFTER THE SUBGRADE HAS BEEN STABILIZED AND APPROVED, EXISTING HMA PAVEMENT WILL BE SURFACE MILLED 10 FEET ALONG THE NEW SAW-CUT END OF PAVEMENT TO PROVIDE A WATER STOP AND SMOOTH TRANSITION TO THE NEW PAVEMENT WHEN THE SURFACE MIX IS APPLIED. THE NEW PAVEMENT SECTION SHALL BE INSTALLED IN ACCORDANCE WITH TOWN STANDARDS AND SPECIFICATIONS.

TOWN OF BROWNSBURG
DETAIL NO. TR-13
REVISION DATE: SEPT 2016

HANDICAP RAMP
NOT TO SCALE

9 / C501

SECTION 02504 – ADJACENT ROADWAY IMPROVEMENTS

PART 1 - GENERAL

1.01 Roadways adjacent to proposed developments shall conform to the following requirements and standards.

A. Adjacent Roadway Improvements

1. Developers shall be responsible for improvements to the existing roadway(s) that front their property. These improvements shall include, but are not limited to, the following items:
   a. Construction of acceleration lanes, deceleration lanes, and passing blisters for each entrance or street intersection as indicated in the Standard Details.
   b. In order to construct adequate acceleration lanes, deceleration lanes, and passing blisters, right-of-way shall be obtained which has a width consistent with the most current accepted Thoroughfare Plan.
   c. The existing roadway along the development frontage shall be widened to match the width requirements based on the functional classification of the roadway as defined by the Thoroughfare Plan. Once widened, the entire roadway fronting the development shall be resurfaced for consistency.
2. Additional improvements may be required depending on field conditions and as determined by the Town of Brownsburg.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

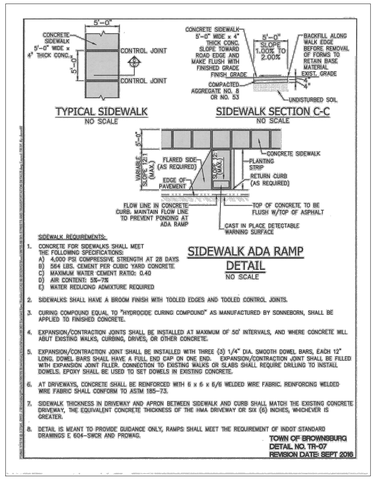
PART 4 - FIGURES

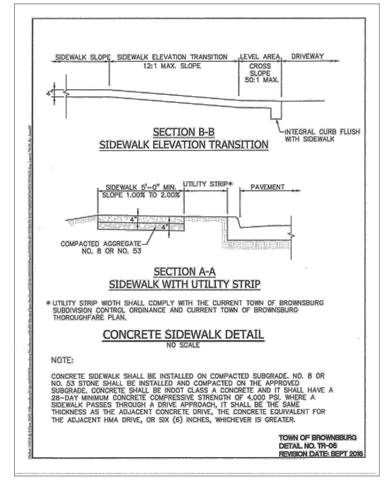
4.01 Associated Standard Details

Detail No.	Description
TR-01	Concrete Chair Back Curb & Gutter
TR-02	Concrete Roll Curb & Gutter
TR-03	Driveway Curb Cut
TR-04	Curb Inlet Detail
TR-05	Concrete Center Curb
TR-09	Concrete Driveway
TR-13	Connection to Existing Streets
TR-14	Widening Detail
TR-16	Minimum Entrance Requirements

TR-17	Roadway Improvements at New Development Entrances
RS-01	Typical Cross Sections – Primary Arterials A1 and A2
RS-02	Typical Cross Sections – Primary Arterials B1 and B2
RS-03	Typical Cross Sections – Primary Arterials C1 and C2
RS-04	Typical Cross Sections – Secondary Arterials 1 and 2
RS-05	Typical Cross Sections – Collectors 1 and 2
RS-06	Typical Cross Sections – Neighbor Collectors 1 and 2
RS-07	Typical Cross Sections – Local 1 (No Parking), Local 2 (Parking Both Sides) and Local 3 (Parking One Side)
RS-08	Typical Trail Cross Section
RS-09	Typical Cross Section – Local Street with Roadside Ditch
RS-10	Typical Cross Sections – Local Alternatives

END OF SECTION 02504





HANDICAP RAMP
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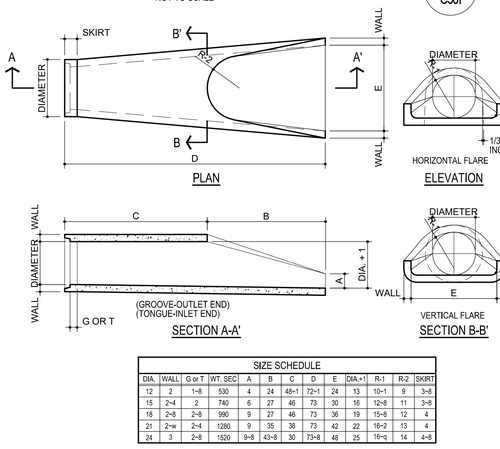
7 / C501

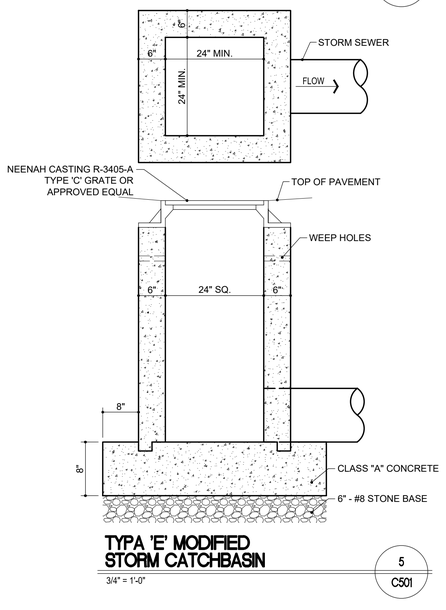


SIZE SCHEDULE												
DIA.	WALL	G or T	WT. SEC	A	B	C	D	E	DIA.+1	R-1	R-2	SKIRT
12	2	1~8	530	4	24	48~1	72~1	24	13	10~1	9	3~8
15	2~4	2	740	6	27	46	73	30	16	12~8	11	3~8
18	2~8	2~8	990	9	27	46	73	36	19	15~8	12	4
21	2~w	2~4	1280	9	35	38	73	42	22	16~2	13	4
24	3	2~8	1520	9~8	43~8	30	73~8	48	25	16~q	14	4~8

NOTE: MANUFACTURER OF END SECTION IS IN ACCORDANCE WITH APPLICABLE PORTIONS OF A.S.T.M. SPECIFICATION C76.

CONCRETE END SECTION
NOT TO SCALE

6 / C501



NOTE:
ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 6" - 12" BALANCED LIFTS.

Bc = OUTSIDE DIAMETER
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

A MIN. 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

PIPE SIZE (D)	27" OR LESS	30" TO 60"	66" AND UP
BEDDING BELOW THE PIPE BARREL 6" MINIMUM	3"	4"	6"

R.C.P. PIPE TRENCH DETAIL
NOT TO SCALE

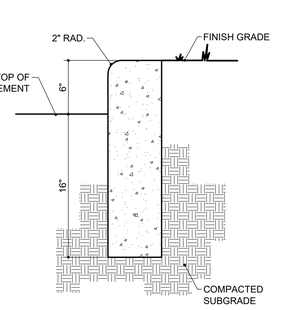
8 / C501

TYPA 'E' MODIFIED STORM CATCHBASIN
3/4" = 1'-0"

5 / C501

CONCRETE SIDEWALK
NOT TO SCALE

4 / C501



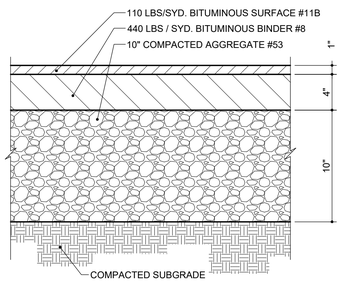
PIPE BOLLARD
1/2" = 1'-0"

3 / C501

CURB SHALL HAVE 1/2" EXPANSION JOINTS @ 48'-0" MAX. AND @ ENDS OF RADII. CONTROL JOINTS SHALL BE PLACED @ 10'-0 MAX. UNLESS OTHERWISE NOTED.

STRAIGHT CURB
1 1/2" = 1'-0"

2 / C501



HEAVY DUTY ASPHALT
1 1/2" = 1'-0"

1 / C501

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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

SECTIONS AND DETAILS

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STATE OF INDIANA
PROFESSIONAL ENGINEER
Brian E. Moench

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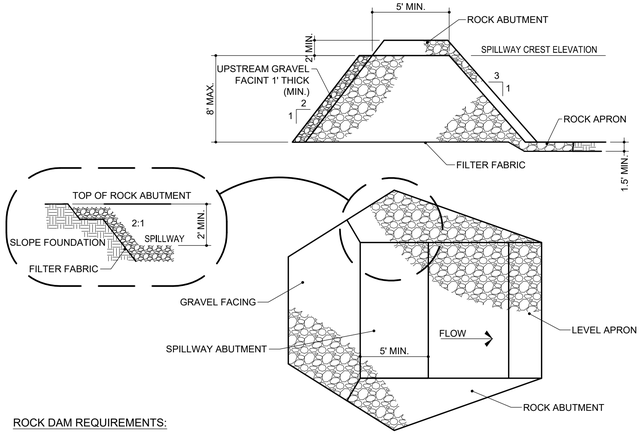


ROCK DAM REQUIREMENTS:

1. CONTRIBUTING DRAINAGE AREA: 50 ACRES MAXIMUM

2. DESIGN LIFE: LIMITED TO 3 YRS.

3. SEDIMENT STORAGE: 1,800 CU.FT./ACRE DISTURBED (MINUMUM) MEASURED 1 FT. BELOW SPILLWAY CREST.

4. BASIN SHAPE: MINIMUM 2:1 LENGTH-TO-WIDTH RATIO.

5. BASIN AREA: VARIABLE; THE LARGER THE SURFACE AREA THE GREATER THE TRAPPING EFFICIENCY.

6. DAM CREST HEIGHT: LIMITED TO 8 FT.

7. SPILLWAY CAPACITY: PEAK RUNOFF FROM A 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT, A MAXIMUM FLOW DEPTH OF 1 FT. AND MINIMUM FREEBOARD OF 1 FT. (ENTIRE LENGTH OF DAM BETWEEN ROCK ABUTMENTS MAY SERVE AS SPILLWAY.)

8. DAM DIMENSIONS: TOP WIDTH, 5 FT. MINIMUM; SIDE SLOPES, 2:1 OR FLATTER UPSTREAM, 3:1 OR FLATTER DOWNSTREAM.

9. EARTH ABUTMENTS: SMOOTH, STABLE, 2:1 OR FLATTER SLOPES.

10. ROCK ABUTMENTS (TO PROTECT EARTH ABUTMENTS): EXTENDED ALONG DOWNSTREAM FACE TO TOE OF DAM AND AT LEAST 1 FT. HIGHER THAN SPILLWAY FACE AT ALL POINTS, 2 FT. ABOVE SPILLWAY CREST, AND 1 FT. THICK, WITH 2:1 OR FLATTER SIDE SLOPES.
11. OUTLET PROTECTION: ROCK APRON, 1-1/2 FT. THICK (MINIMUM), ZERO GRADE, WITH LENGTH EQUAL TO HEIGHT OF DAM OR EXTENDED TO STABLE GRADE, WHICHEVER IS GREATER.

12. ROCK MATERIAL: INDOT REVETMENT RIPRAP.

13. PROTECTION FROM PIPING: GEOTEXTILE FABRIC FOR SEPARATION AND FILTRATION COVERING ENTIRE FOUNDATION, INCLUDING EARTH ABUTMENTS AND APRON.

14. BASIN DE-WATERING: THROUGH A 1 FT. THICK LAYER OF INDOT CA NO. 5 STONE ON UPSTREAM FACE OF THE DAM.

INSTALLATION

SITE PREPARATION:

1. DIVERT RUNOFF FROM UNDISTURBED AREAS AWAY FROM THE ROCK DAM AND BASIN AREA.

2. EXCAVATE THE FOUNDATION FOR THE APRON, USING IT AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION OF THE DAM.

3. CLEAR AND GRUB THE AREA UNDER THE DAM, REMOVING AND PROPERLY DISPOSING OF ALL ROOT MAT, BRUSH, AND OTHER DEBRIS.

4. GRADE THE EARTH ABUTMENTS NO STEEPER THAN 2:1.

DAM AND BASIN CONSTRUCTION

1. EXCAVATE A CUTOFF TRENCH AT THE CENTER LINE OF THE DAM, EXTENDING ALL THE WAY UP THE EARTH ABUTMENTS, AND BACKFILL WITH COMPACTED EARTH FILL.

2. SMOOTH THE DAM FOUNDATION.

3. COVER THE ENTIRE FOUNDATION, INCLUDING BOTH EARTH ABUTMENTS, WITH GEOTEXTILE FABRIC, MAKING SURE THE UPSTREAM STRIPS OVERLAP THE DOWNSTREAM STRIPS AT LEAST 1 FT.

4. CONSTRUCT THE DAM TO PLANNED DIMENSIONS.

5. ONCE THE DAM IS IN PLACE, CLEAR THE SEDIMENT BASIN AREA, PROPERLY DISPOSING OF THE CLEARED MATERIAL.

6. SET A MARKER STAKE TO INDICATE THE CLEANOUT ELEVATION (I.E., POINT AT WHICH THE BASIN IS 50% FULL OF SEDIMENT).

7. DIVERT CONSTRUCTION SITE RUNOFF FLOW INTO THE UPPER END OF THE BASIN USING TEMPORARY DIVERSIONS.

8. STABILIZE ALL DISTURBED AREAS EXCEPT THE LOWER HALF OF THE BASIN.

SAFETY PRECAUTIONS:

1. BECAUSE SEDIMENT BASINS THAT IMPOUND WATER ARE HAZARDOUS, (A) BE SURE SIDE SLOPES ARE 2:1 OR FLATTER, (B) FENCE WITH WARNING SIGNS IF TRESPASSING IS LIKELY, (C) DE-WATER THE BASIN BETWEEN STORM EVENTS, AND (D) FOLLOW ALL STATE AND LOCAL IMPOUNDMENT SITE REQUIREMENTS.

MAINTENANCE

1. INSPECT THE ROCK DAM AND BASIN AFTER EACH STORM EVENT.

2. REMOVE SEDIMENT WHEN IT ACCUMULATES TO HALF THE DESIGN VOLUME (MARKED BY A STAKE).

3. CHECK THE DAM AND ABUTMENTS FOR EROSION, PIPING, OR ROCK DISPLACEMENT, AND REPAIR IMMEDIATELY.

4. IF THE BASIN DOES NOT DRAIN BETWEEN STORMS, REPLACE THE STONE ON THE UPSTREAM FACE OF THE DAM.

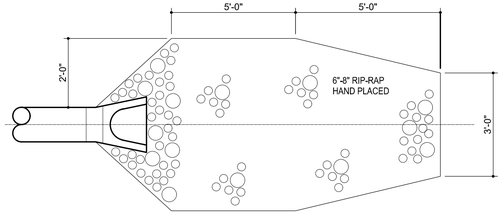
5. IF THE BASIN DRAINS TOO RAPIDLY FOLLOWING A STORM (I.E., LESS THAN 6 HRS.), ADD INDOT CA NO. 5 GRAVEL ON THE UPSTREAM FACE OF THE DAM.

6. ONCE THE CONTRIBUTING ŷŷŷŷŷŷŷŷDRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, (A) REMOVE WATER AND SEDIMENT FROM THE BASIN;

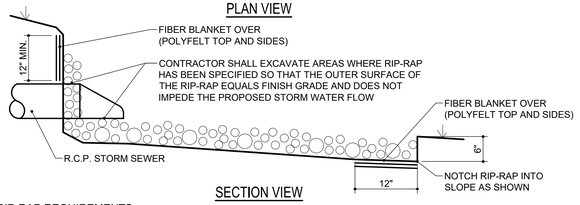
(B) REMOVE THE DAM, DISPOSING OF THE ROCK IN DESIGNATED DISPOSAL AREAS; (C) SMOOTH THE SITE TO BLEND WITH THE SURROUNDING AREA; AND (D) STABILIZE.

COMMON CONCERNS:
FAILURE FROM PIPING ALONG ABUTMENTS-BECAUSE THE FILTER MATERIAL WAS NOT PROPERLY INSTALLED OR THE EARTH ABUTMENTS ARE TOO STEEP. STONE DISPLACEMENT FROM FACE OF DAM-BECAUSE STONE SIZE IS TOO SMALL OR THE FACE IS TOO STEEP. EROSION BELOW DAM BECAUSE THE APRON WAS NOT EXTENDED TO STABLE GRADE. EROSION OF ABUTMENTS DURING SPILLWAY FLOW-BECAUSE THE ROCK ABUTMENT IS NOT HIGH ENOUGH. SEDIMENT CARRIED THROUGH SPILLWAY-BECAUSE THE DRAINAGE AREA IS TOO LARGE; TO SOLVE, DIVERT RUNOFF FROM THE UNDISTURBED AREA AWAY FROM THE BASIN. SEDIMENT LOSS THROUGH DAM-BECAUSE THE LAYER OF AGGREGATE ON THE UPSTREAM FACE IS NOT THICK ENOUGH OR IS TOO COARSE TO RESTRICT FLOW THROUGH THE DAM.

ROCK DAM 8 / C502
NOT TO SCALE



PLAN VIEW



SECTION VIEW

RIP-RAP REQUIREMENTS:

CONTRIBUTING DRAINAGE AREA: 100 ACRES MAXIMUM.

CAPACITY: PEAK RUNOFF FROM 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT.

APRON: DESIGN DEPENDS ON CHANNEL DEFINITION, BUT IS LONG ENOUGH TO DISSIPATE RUNOFF ENERGY, SET ON ZERO GRADE, STRAIGHT AND ALIGNED WITH THE RECEIVING STREAM. (IF SITE CONDITIONS REQUIRE A CURVE, SET IT NEAR THE UPSTREAM END.)

FOUNDATION: GEOTEXTILE FABRIC FOR STABILIZATION AND FILTRATION OR WELL-GRADED GRAVEL FILTER LAYER AT LEAST 6 IN. THICK.

MATERIAL: HARD, ANGULAR, AND HIGHLY WEATHER-RESISTANT RIPRAP STONE OF 6 - 8 INCHES IN SIZE.

THICKNESS: 12 IN. MINIMUM OR TWO TIMES THE D 50 STONE DIAMETER,wHICHEVER IS GREATER.

INSTALLATION:

1. EXCAVATE THE APRON AREA SUBGRADE BELOW DESIGN ELEVATION TO ALLOW FOR THICKNESS OF THE FILTER (OR GRAVEL LAYER) AND THE RIPRAP. (THIS OVER-EXCAVATION GREATLY INCREASES THE AMOUNT OF SPOIL.)

2. COMPACT ANY FILL USED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL, AND SMOOTH ENOUGH TO PROTECT FABRIC FROM TEARING.

3. PLACE THE GEOTEXTILE FABRIC (OR GRAVEL LAYER) ON THE COMPACTED AND SMOOTHED FOUNDATION. IF MORE THAN ONE FABRIC PIECE IS NEEDED, THE UPSTREAM PIECE SHOULD OVERLAP THE DOWNSTREAM PIECE BY AT LEAST 1 FT.

4. INSTALL THE RIPRAP TO THE LINES AND ELEVATIONS SHOWN IN THE DESIGN. IF THE CHANNEL IS POORLY DEFINED, THE FINAL CROSS-SECTION SHOULD BE LEVEL OR SLIGHTLY DEPRESSED IN THE MIDDLE; IF WELL DEFINED, THE FILTER (OR GROUND LAYER) AND RIPRAP SHOULD EXTEND TO THE TOP OF THE BANK.

5. IF THE GEOTEXTILE FABRIC TEARS WHEN PLACING TH RIPRAP, REPAIR IMMEDIATELY BY LAYING AND STAPLING A PIECE OF FABRIC OVER THE DAMAGE AREA, OVERLAPPING THE UNDAMAGED AREAS BY AT LEAST 12 INCHES.

6. MAKE SURE THE TOP OF THE RIPRAP APRON IS LEVEL WITH OR SLIGHTLY BELOW THE RECEIVING STREAM. (RIPRAP SHOULD NOT RESTRICT THE CHANNEL OR PRODUCE AN OVERFALL.)

7. BLEND THE RIPRAP SMOOTHLY TO THE SURROUNDING GRADE.

8. STABILIZE ALL DISTURBED AREAS IMMEDIATELY FOLLOWING INSTALLATION.

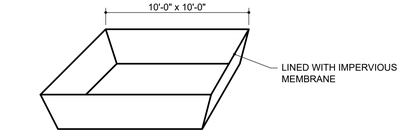
MAINTENANCE:

* INSPECT ROCK CHUTES AFTER STORM EVENTS FOR STONE DISPLACEMENT AND FOR EROSION AT THE SIDES AND ENDS OF THE APRON.
* MAKE NEEDED REPAIRS IMMEDIATELY; USE APPROPRIATE SIZE STONE; AND DO NOT PLACE THEM ABOVE FINISHED GRADE.

COMMON CONCERNS:

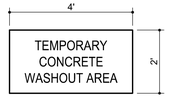
FOUNDATION NOT EXCAVATED DEEP ENOUGH OR WIDE ENOUGH--RIPRAP RESTRICTS THE FLOW CROSS SECTION, RESULTING IN EROSION AROUND THE APRON AND SCOUR HOLES AT THE OUTLET.
RIPRAP APRON ON ZERO GRADE--

RIP-RAP DETAIL 7 / C502
NOT TO SCALE



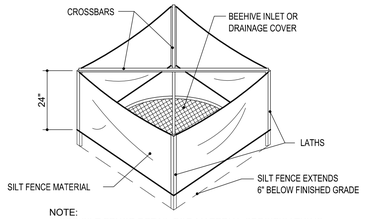
NOTE:
1. A LINED ROLLOFF DUMPSTER OR CONTAINER TO BE USED IN LIEU OF A CONSTRUCTED WASHOUT BASIN.

CONCRETE WASHOUT BASIN 6 / C502
NOT TO SCALE



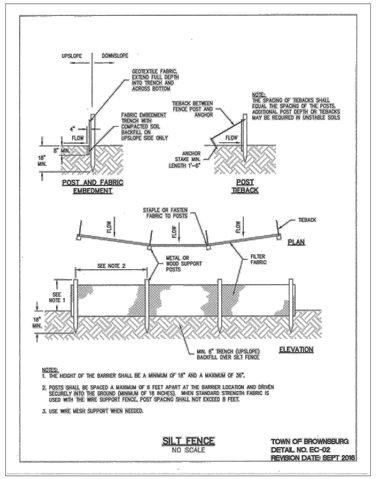
NOTES:
1, SIGN TO BE POSTED THROUGHOUT CONSTRUCTION ACTIVITY,
2. SIGN TO BE MADE OF SEMI-PERMANENT MATERIAL, i.e. WOOD.

CONCRETE WASHOUT SIGN 5 / C502
NOT TO SCALE

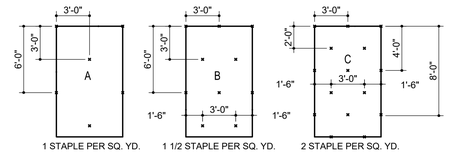


NOTE:
1. SEE SILT FENCE DETAIL FOR MATERIAL SPECIFICATIONS.
2. SILT FENCE SHALL BE PREASSEMBLED BY SUPPLIER.

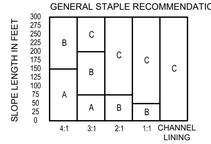
SILT FENCE INLET PROTECTION DETAIL 4 / C502
NOT TO SCALE



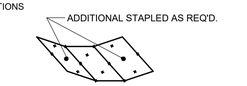
SILT FENCE DETAIL 3 / C502
NOT TO SCALE



GENERAL STAPLE RECOMMENDATIONS



SLOPE GRADIENT



CHANNEL LININGS UTILIZE STAPLE PATTERN "C" WITH ADDITIONAL STAPLES ON SIDE SLOPES.

NOTES:

1. STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION BLANKETS.

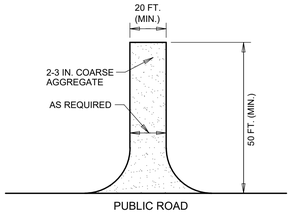
2. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE ANNUAL RAINFALL.

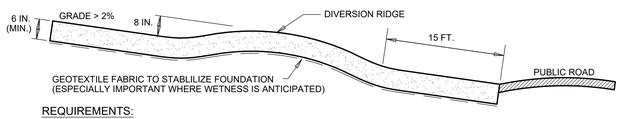
3. AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO BLANKETS, STAPLE PATTERN "C" SHOULD BE UTILIZED.

4. CHANNEL LININGS REQUIRE A 2' (MIN.) OVERLAP AT LONGITUDINAL JOINTS AND SIDE SLOPES REQUIRE A 6" (MIN.) OVERLAP. WHERE OVERLAPS OCCUR, THE UPSTREAM BLANKET SHALL OVERLAP THE DOWNSTREAM.

5. NORTH AMERICAN GREEN S150BN TO BE USED FOR EROSION CONTROL BLANKETS.

EROSION CONTROL BLANKET STAPLE PATTERN 2 / C502
NOT TO SCALE





REQUIREMENTS:

Material: 2-3 in. washed stone (INDOT CA No.2) over a stable foundation.

Thickness: 6 in. minimum

Width: 12 ft. minimum or full width of entrance/exit roadway, whichever is greater.

Length: 50 ft. minimum. The length can be shorter for small sites such as for an individual home.

Washing facility (optional): Level area with 3 in washed stone minimum or a commercial rack, and waste water diverted to a sediment trap or basin.

Geotextile fabric underliner: May be used under wet conditions or for soils within a high seasonal water table to provide greater bearing strength.

INSTALLATION:

1. Avoid locating on steep slopes or at curves in public roads.

2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.

3. If slope towards the road exceeds 2%, construct a 6-8 in.-high water bar (ridge) with 3:1 side slopes across the foundation area about 15 ft. from the entrance to divert runoff away from the road.

4. Install pipe under the pad if needed to maintain proper public road drainage.

5. If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.

6. Place stone to dimensions and grade shown in the erosion control plan, leaving the surface smooth and sloped for drainage.

7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

MAINTENANCE:

* Inspect entrance drive and sediment disposal area weekly and after storm events or heavy use.
* Reshape pad as needed for drainage and runoff control.
* Topdress with clean stone as needed.
* Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin.
* Repair any broken road pavement immediately.

COMMON CONCERNS:

Inadequate runoff control--results in sediment washing onto road.
Stone too small, pad too thin, or geotextile fabric absent--results in ruts and a muddy condition as stone is pressed into the soil: add more stone.
Pad too short for heavy construction traffic--extend the pad beyond the 50-ft. length as needed.
Pad not flared sufficiently at road entrance--results in mud being tracked onto the road and possible damage to the road edge: widen stone entrance and repair road damage.
Unstable foundation--use geotextile fabric under th pad and/or improve foundation drainage.

TEMPORARY CONSTRUCTION ENTRANCE 1 / C502
NOT TO SCALE

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

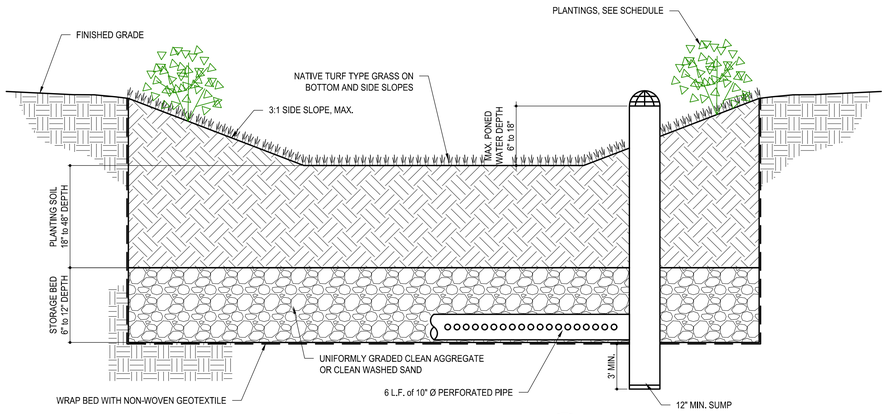
SECTIONS AND DETAILS

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER
Brian E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

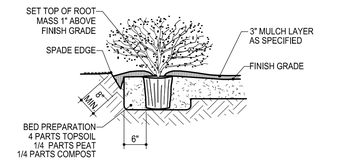
DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C502



BIORETENTION AREA

NOT TO SCALE

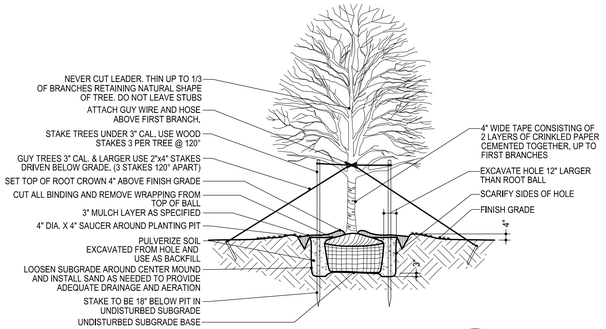
4 / L101



SHRUB AND SMALL TREE PLANTING DETAIL

NOT TO SCALE

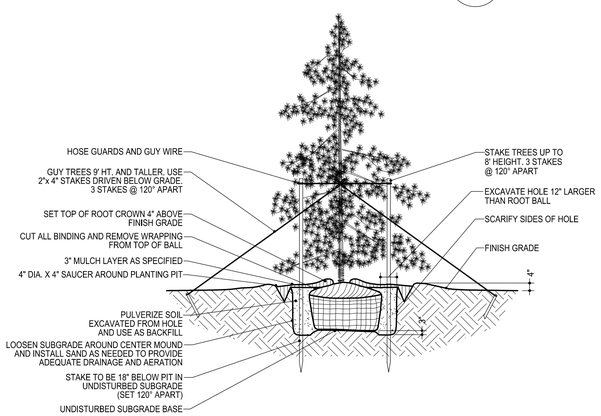
3 / L101



SHADE TREE PLANTING DETAIL

NOT TO SCALE

2 / L101



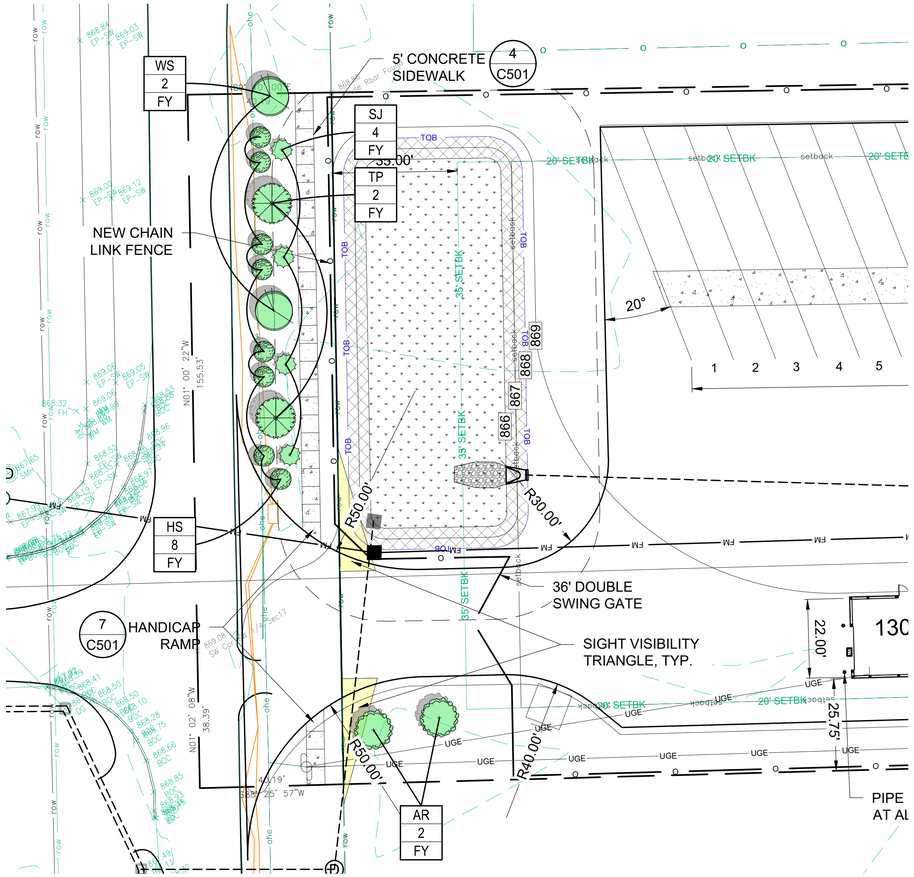
EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

1 / L101

PLANTING SCHEDULE

LEGEND	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE / COND	REMARKS	HEIGHT / SPREAD	QTY REQ'D
	WS	2	Wisteria sinensis	Blue Chinese Wisteria Tree	#1 Container / ---	Ornamental Deciduous	10-15 ft / 10-12 ft	1.25
	AR	2	Acer Rubrum	Red / Sugar Maple	#5 Container / ---	Canopy Deciduous	40-50 ft / 30-40 ft	2
	TP	2	Thuja plicata x standishii	Thuja Green Giant	24" height / ---	EVERGREEN	30-40 ft / 8-10 ft	1.5
	HS	8	Hibiscus syriacus ' Red Heart' / Hibiscus syriacus 'Notwoodone' / Hibiscus syriacus 'JWNWOOD4'	Red Heart Rose of Sharon / Lavender Chiffon Rose of Sharon / Pink Chiffon Rose of Sharon	#3 Container / ---	DECIDUOUS SHRUB	8-12 ft / 6-10 ft	10
	NOTE: Assorted mix of Hibiscus Plants in each grouping.							
	SJ	4	Spiraea nipponica 'Snowmound' / Spiraea Japonica 'Neon Flash' / Spiraea Japonica 'Matgold'	Snowmound Spirea / Neon Flash Spirea / Rainbow Fizz Spirea	#1 container / ---	DECIDUOUS SHRUB	2-7 ft / 3-7 ft	
	NOTE: Assorted mix of Spirea Plants in each grouping.							



LANDSCAPE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE: 1" = 20'

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

LANDSCAPE PLAN

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

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3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	L101

LITHONIA LIGHTING

Catalog Number	
Notes	
Type	

Lithonia Lighting Basics™

Low Profile Emergency Light

EU2L

FEATURES & SPECIFICATIONS

INTENDED USE — Provides a minimum of 90 minutes illumination for the rated wattage upon loss of AC power to meet code required emergency lighting. Ideal for applications requiring low profile, emergency unit for lower mounting heights.

CONSTRUCTION — The housing is standard white, or optional black, thermoplastic with a compact and low-profile design with all-inclusive lamp, reflector and lens assembly. It is 5VA flame rated and impact-resistant.

OPTICS — The typical life of the LED is 10 years. One, 0.75W white LED per lamp head.

ELECTRICAL — Dual-voltage 120/277 standard.

Bi-color LED status indicator for battery condition. (Green-normal, Red-check battery).

One and a half watts of remote capacity available with REM option.

BATTERY: 3.6V maintenance-free, rechargeable, nickel-cadmium.

INSTALLATION — Wall mount and ceiling mount. Surface mount back plate fits most industry standard size junction boxes and snaps into place.

LISTINGS — UL Listed. Meets all applicable requirements for UL 924, NFPA 101 (current Life Safety Code), NFPA 70 (NEC), California Energy Commission Title 20 section 1605.3 (W)(4), FCC Title 47, Part 15, Subpart B and OSHA. Indoor damp location 50°F to 104°F (10°C to 40°C) listed standard.

WARRANTY — 2-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

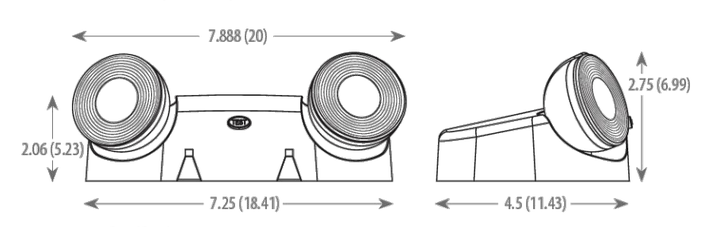
NOTE: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

† Small Battery Chargers Certified in the CA Title 20 Appliance Efficiency Database.



MOUNTING AND SPECIFICATIONS

All dimensions are inches (centimeters) unless otherwise indicated.



Specifications
Length: 7.88 (20)
Depth: 2.75 (6.99)
Height: 4.5 (11.43)
Weight: 0.7 lbs. (.32 kg)

EU2L Low Profile Emergency Light

CS — Looking for Contractor Select readily available configurations? Click here to visit Contractor Select™ spec sheet or go to www.contractorselect.com

ORDERING INFORMATION — **Example:** EU2L B

Series		Housing Color		Options	
EU2L	Emergency Light	(Blank)	White	(Blank)	Not Required
		B	Black	REM	Remote Capacity

BATTERY CAPACITY AND LOADING

Battery	Total Capacity	Maximum# Remote Lamp Heads*
3.6V	2W	2 - ERE W SGL RD M24
		1 - ERE W T RD M24
		1 - ERE GY SGL WP SQ M12
		2 - ERE GY SGL WP RD M12
		1 - ERE GY T WP RD M12

* These are in addition to the lamp heads on the product.
* See specsheet for alternate color options

ELECTRICAL SPECIFICATIONS

Description	Supply Voltage	Input Wattage 120	230	277	Input Amps 120	230	277
Standard (No options)	120/277	.33	N/A	.37	.05	N/A	.05
Remote Capacity Option (REM)	120/277	.52	N/A	.60	.07	N/A	.07

Accessories: *Order as separate catalog number.*

ERE W SGL RD	Single, indoor remote head, round, ivory white, .75W, 3.6V voltage input.[1]
ERE W T RD	Twin, indoor remote head, round, ivory white, 1.5W, 3.6V voltage input.[1]
ERE GY SGL WP SQ	Single, weather-proof remote head, square, gray, 1W, 3.6V-12V voltage sensing.[1]
ERE GY SGL WP RD M12	Single, LED weather-proof head, round, gray, 0.75W, 3.6V input[1]
ERE GY T WP RD M12	Twin, LED weather-proof head, round, gray, 1.5W, 3.6V input[1]
ELA WG1	Wireguard 15-1/4" W x 13-3/4" H x 6" D (back mount only). See specsheet ELA-WG.

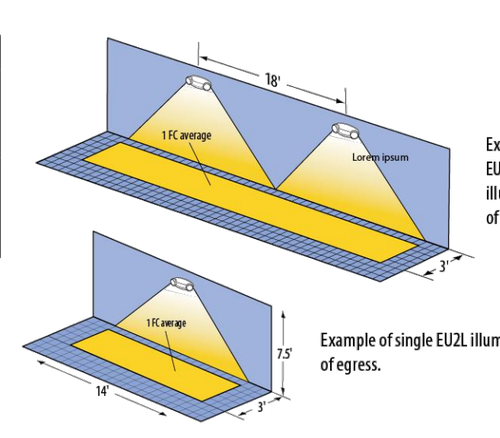
Accessories Notes:
1. See spec sheet ERE remote head for additional ordering options

SPACING GUIDELINES

Maximum Spacing Guidelines - EU2L[1]

Mounting Height	Illumination Level	Single Luminaire 3' Path of Egress	Single Luminaire 6' Path of Egress	Multiple Luminaires 3' Path of Egress	Multiple Luminaires 6' Path of Egress	Application Notes
7.5'	1FC Avg	14'	10'	18'	14'	"100' Corridor 8' wide, and 9' high with 80/50/20 reflectances"

Notes:
1. Also meets the additional illumination requirements of NFPA 101: 1FC minimum and max/min ratio of 40:1.



Example of multiple EU2L luminaires illuminating a 3' path of egress.

Example of single EU2L illuminating a 3' path of egress.

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CS CONTRACTOR SELECT™ — LITHONIA LIGHTING

Catalog Number	
Notes	
Type	

Contractor Select™
OLWP
LED Wall Pack

Customize the color temperature and effortlessly automate your wall pack for dusk-to-dawn operation with the OLWP Wall Pack. Featuring switchable CCT (3000K/4000K/5000K) and a selectable photocell, the OLWP Wall Pack is designed to deliver years of maintenance-free general illumination for residential outdoor applications such as driveways, entryways, patios, and other outdoor areas that require consistent and reliable lighting performance.



FEATURES:
- Switchable CCT (30/40/50K)
- Selectable ON/OFF photocell for dusk-to-dawn or switched operation
- Cast-aluminum construction for durability
- Impact resistant polycarbonate diffuser

Catalog Number	UPC	Description	Lumens	Input Watts	CCT	CRI	Voltage	Dusk-to-Dawn Operation	Finish
OLWP LED SWW2 120 PE DDB	00197589211252	OLWP LED Wall Pack	1,600	18.5	3000/4000/5000K	80	120	Included Standard, Selectable On*/Off	Dark Bronze

Specifications

INTENDED USE:
The OLWP provides years of maintenance-free general illumination for commercial or residential outdoor applications such as driveways, patios, loading areas and warehouses.

CONSTRUCTION:
Rugged cast-aluminum, corrosion-resistant rear housing. Impact resistant polycarbonate front cover/diffuser resists fading and cracking. Driver operates at 120V. Operating temperature -40°C to 40°C.

OPTICS:
High-performance LEDs maintain 70% of light output at 50,000 hours of service. (LED lifespan based on IESNA LM-80-08 results and calculated per IESNATM-21-11 methodology.). Lenses are engineered for superior lighting distribution, uniformity and fixture spacing. See Lighting Performance Table for specific fixture performance.

INSTALLATION:
Designed for wall mounting more than 4' above the ground. Mounts to a recessed junction box (by others).

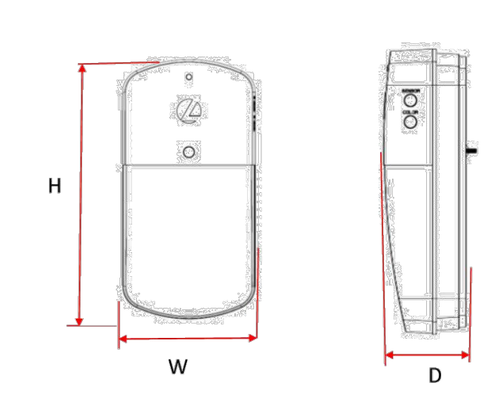
LISTINGS:
UL Listed to U.S. and Canadian safety standards for wet locations.

WARRANTY:
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Dimensions

Specifications
Width: 5.35" (13.6 cm)
Height: 10.5" (26.6 cm)
Depth: 3" (7.7 cm)
Weight: 1.54 lbs (0.70 kg)



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RADEAN Bollard
LED Site Luminaire



Catalog Number	
Notes	
Type	

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Diameter: D = 8.25" (20.96cm)
Height: H = 41.5" Standard (105.41cm)
Weight (max): 20lbs (9.07Kg)

Introduction

The Radean LED Bollard is an award-winning, energy-saving, long-life solution designed to perform the way a bollard should.

The Radean LED Bollard's rugged construction, durable finish and long-lasting LEDs will provide years of maintenance-free service.

Ordering Information

EXAMPLE: RADB LED P4 30K SYM MVOLT BTS BCCDNATXD DBLXD

RADB LED

Series	Performance Package	Color temperature	Distribution	Voltage
RADB LED	P1, P2, P3, P4, P5[1]	27K 2700 K; 30K 3000 K; 35K 3500 K; 40K 4000 K; 50K 5000 K	ASY Asymmetric[2]; SYM Symmetric[1]	MVOLT[3], 120, 208[3], 240[3], 277, 347, 480

Control options — Shipped installed: PE Photoelectric cell, button type[4,5]; DMG 0-10V dimming driver (no controls); E7WH Emergency battery backup,Certified in CA Title 20 MAEDBS[1,6,7,8]; FAO Field adjustable output[5]; PIR Motion sensor Bi-level[1,5,6,7]

Bollard top (required) — Slim Top: BTS Slim top, painted to match shaft[1,9]; BTSDWHXD Slim top, white[1,9]; BTSDBLBXD Slim top, black texture[1,9]; BTSDBLXD Slim top, black[1,9]; BTSDDBTXD Slim top, dark bronze textured[1,9]; BTSDDBXD Slim top, dark bronze[1,9]; BTSDNATXD Slim top, natural aluminum textured[1,9]; BTSDNAXD Slim top, natural aluminum[1,9]; BTSDWHGXD Slim top, white textured[9]

Tall Top: BTT Tall top painted to match shaft[9]; BTTDBLBXD Tall top, black textured[9]; BTTDBLXD Tall top, black[9]; BTTDDBTXD Tall top, dark bronze textured[9]; BTTDDBXD Tall top, dark bronze[9]; BTTDNATXD Tall top, natural aluminum textured[9]; BTTDNAXD Tall top, natural aluminum[9]; BTTDWHGXD Tall top, white textured[9]; BTTDWHXD Tall top, white[9]

Bollard crown (required) — Deep Crown: BCC Deep crown, painted to match shaft[9]; BCCDWHXD Deep crown, white[9]; BCCDBLXD Deep crown, black[9]; BCCDBLBXD Deep crown, black textured[9]; BCCDDBTXD Deep crown, dark bronze textured[9]; BCCDDBXD Deep crown, dark bronze[9]; BCCDNATXD Deep crown, natural aluminum textured[9]; BCCDNAXD Deep crown, natural aluminum[9]; BCCDWHGXD Deep crown, white textured[9]

Flat Crown: BCF Flat crown, painted to match shaft[9]; BCFDBLBXD Flat crown, black textured[9]; BCFDBLXD Flat crown, black[9]; BCFDDBTXD Flat crown, dark bronze textured[9]; BCFDDBXD Flat crown, dark bronze[9]; BCFDNATXD Flat crown, natural aluminum textured[9]; BCFDNAXD Flat crown, natural aluminum[9]; BCFDWHGXD Flat crown, white textured[9]; BCFDWHXD Flat crown, white[9]

Other options: H24[4,10] 24" overall height; H30[4,10] 30" overall height; H36[4,10] 36" overall height; L/AB Without anchor bolts

Finish (required): DDBXD Dark bronze; DBLXD Black; DNAXD Natural aluminum; DWHXD White; DDBTXD Textured dark bronze; DBLBXD Textured black; DNATXD Textured natural aluminum; DWHGXD Textured white

Accessories — Ordered and shipped separately.

RADBAB U	Anchor bolts (4)
RADBABC DDBXD U	Replacement anchor bolt covers (specify finish) (4)
RK1RADB BCKIT (FINISH) U	Base cover with bolt caps
RK1RADB EMTESTMAG U	Emergency test stylus

NOTES
1. P5 only available in SYM distribution.
2. ASY has only two illuminated quadrants driven at higher drive currents to generate similar output as the SYM 4-quadrant product.
3. PIR not available with 208V or 240V.
4. PE only available with ASY.
5. PE, PIR and FAO not available with BTS.
6. E7WH and PIR only available in full height. Not available with H24, H30 or H36.
7. PIR not available with E7WH.
8. E7WH is not available with 347V or 480V.
9. Architectural and custom colors available (additional leadtimes and cost may apply).
10. 42" Height is standard. H24, H30 and H36 have longer leadtimes.

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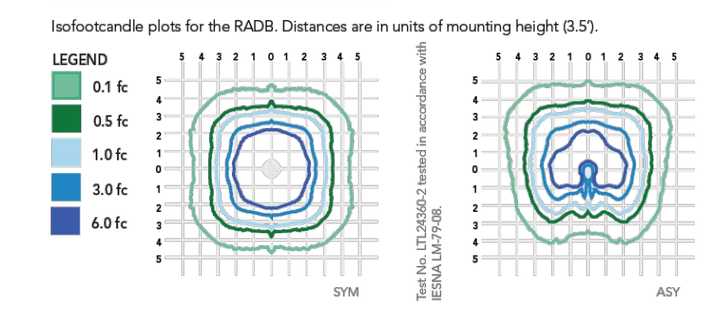
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's RADEAN Bollard homepage.

Isofootcandle plots for the RADB. Distances are in units of mounting height (3.5').



FEATURES & SPECIFICATIONS

INTENDED USE
The rugged construction and maintenance-free performance of the Radean LED Bollard is ideal for illuminating building entryways, walking paths and pedestrian plazas, as well as any other location requiring a low-mounting-height light source.

CONSTRUCTION
One-piece extruded aluminum shaft with thick side walls for extreme durability, and die-cast reflector and top cap. Four 3/8" x 7" anchor bolts with double nuts and washers and 5-2/3" max. bolt circle template ensure stability. Overall height is 42" standard.

FINISH
Exterior parts are protected by a zinc-infused super durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering for maximum retention of gloss and luster. A tightly controlled multi-stage process ensures a minimum 3-mil thickness for a finish that can withstand the elements without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Two optical distributions are available: symmetrical and asymmetrical. IP66 sealed LED light engine provides smoothly graduated illumination. Light engines are available in 2700K, 3000K, 3500K, 4000K or 5000K.

ELECTRICAL
Light engines consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (L80/100,000 hours at P5 at 25°C). Class 2 electronic drivers are designed for an expected life of 100,000 hours with < 1% failure rate. Electrical components are mounted on a removable power tray.

LISTINGS
CSA certified to U.S. and Canadian standards. Light engines are IP66 rated. Rated for -40°C minimum ambient. Emergency battery backup rated for -10°C minimum ambient. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color or less. U.S. Patent No. D912,850S

BUY AMERICAN ACT
This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY
Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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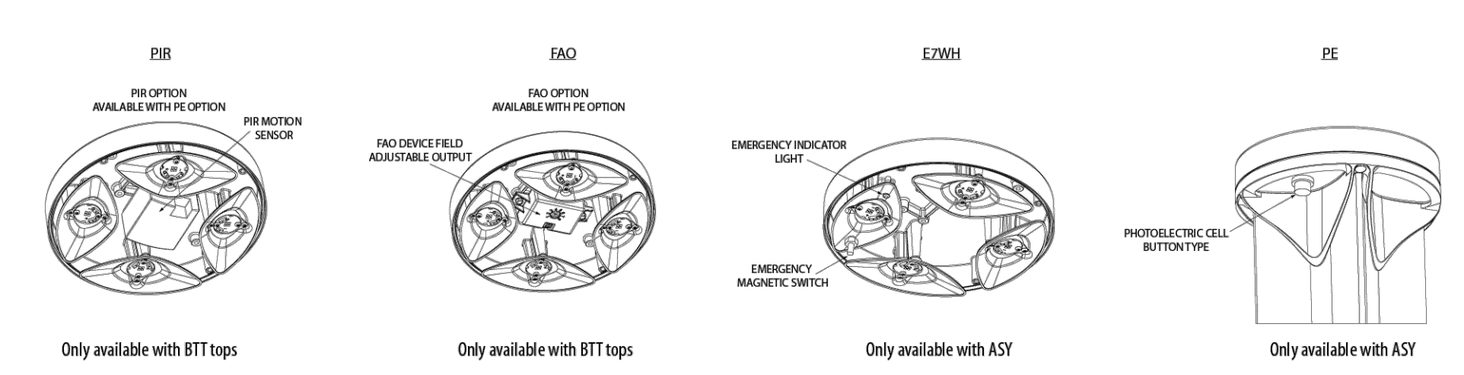
Options



Only available with BTT tops — Only available with BTT tops — Only available with ASY — Only available with ASY

Performance Data

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%.

Performance Data DNAXD Finish*

Light Engines	Performance Package	System Watts	2700K Lumens	B	U	G	LPW	3000K Lumens	B	U	G	LPW	3500K Lumens	B	U	G	LPW	4000K Lumens	B	U	G	LPW	5000K Lumens	B	U	G	LPW
"Symmetric (4 light engines)"	P1	5	345	0	1	0	66	362	0	1	0	69	370	0	1	0	71	380	0	1	0	73	382	0	1	0	73
	P2	8	644	0	1	0	81	677	0	1	0	85	692	0	1	0	87	711	0	1	0	89	713	0	1	0	89
	P3	13	1036	1	1	0	77	1088	1	1	0	81	1112	1	1	0	83	1142	1	1	0	85	1146	1	1	0	85
	P4	19	1460	1	1	0	79	1534	1	1	0	83	1568	1	1	0	84	1610	1	1	0	87	1616	1	1	0	87
	P5	32	2314	1	1	0	72	2430	1	1	0	75	2484	1	1	0	77	2551	1	1	0	79	2561	1	1	0	79
"Asymmetric (2 light engines)"	P1	5	312	0	1	0	60	328	0	1	0	63	335	0	1	0	64	344	0	1	0	66	346	0	1	0	66
	P2	8	584	0	1	0	73	613	0	1	0	77	627	0	1	0	78	644	0	1	0	81	646	0	1	0	81
	P3	13	938	0	1	0	70	985	0	1	0	73	1007	0	1	0	75	1035	0	1	0	77	1038	0	1	0	77
	P4	19	1323	0	1	0	71	1390	0	1	0	75	1420	0	1	0	76	1459	0	1	0	78	1464	0	1	0	79

*Note: Lumen output varies based on finish. Silver color shown, for black (worst) or white (best) photometry, see specific photometric files downloadable from www.acuitybrands.com

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Projected LED Lumen Maintenance	25,000	50,000	75,000	100,000
P1	0.94	0.89	0.85	0.80
P2	0.94	0.89	0.85	0.80
P3	0.94	0.89	0.85	0.80
P4	0.94	0.89	0.85	0.80
P5	0.94	0.89	0.85	0.80

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average temperatures from 0-40°C (32-104°F).

Ambient		LAT Factor
0	32°F	1.03
5	41°F	1.03
10	50°F	1.02
15	59°F	1.01
20	68°F	1.01
25	77°F	1
30	86°F	0.99
35	95°F	0.99
40	104°F	0.98

Electrical Load

	Watts @120V (W)	Watts @277V (W)	Current (Amp) @120V (A)	@208V (A)	@240V (A)	@277V (A)	Watts @347V	Watts @480V	Current (Amp) @347V (A)	@480V
P1 ASY	5	6	0.0445	0.0299	0.0276	0.0262	10	10	0.0443	0.0319
P2 ASY	9	10	0.0751	0.0471	0.0429	0.0399	14	14	0.0505	0.0364
P3 ASY	14	15	0.1147	0.0699	0.0627	0.0571	18	18	0.0611	0.0441
P4 ASY	19	19	0.1586	0.0928	0.0819	0.0735	23	23	0.0709	0.0513
P1 SYM	5	6	0.0444	0.0301	0.0279	0.0265	9	9	0.0441	0.0319
P2 SYM	9	10	0.0734	0.0461	0.0421	0.0391	13	13	0.0502	0.0363
P3 SYM	13	14	0.112	0.067	0.0598	0.0544	18	18	0.0602	0.0435
P4 SYM	18	19	0.1535	0.0902	0.0796	0.0713	22	22	0.0691	0.0499
P5 SYM	31	31	0.2597	0.1527	0.1326	0.1149	35	36	0.1079	0.079

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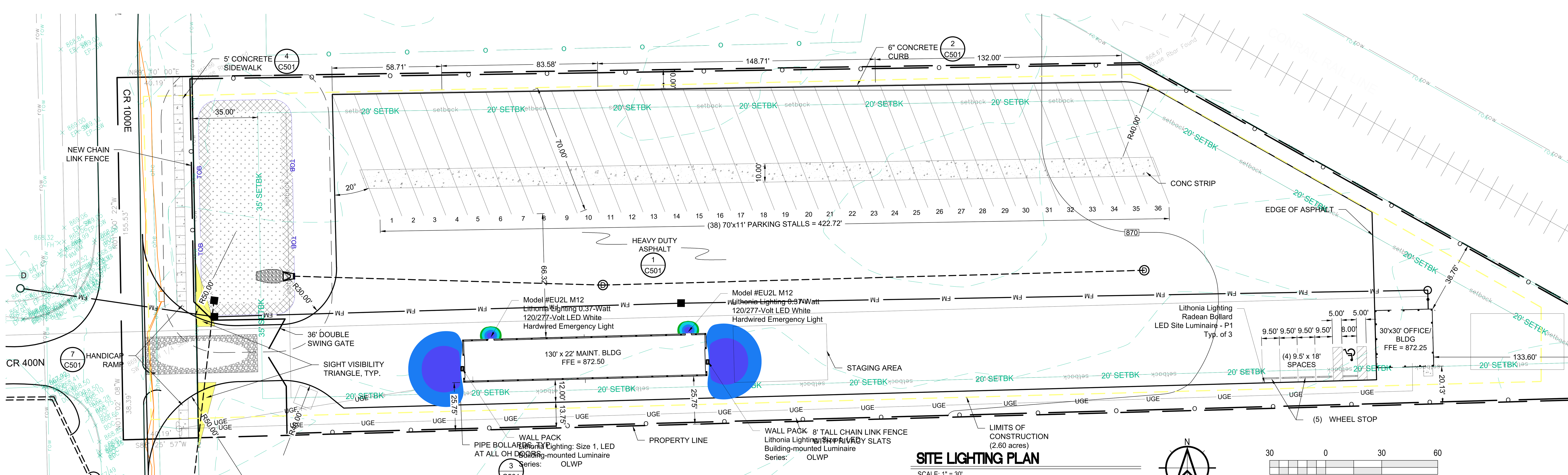
LUMINAIRE SCHEDULE

SYMBOL	QTY.	LABEL	ARRANGEMENT	DESCRIPTION	MOUNTING HEIGHT	LUX	WATTS
	3	A	SINGLE	LITHONIA RADB LED - P1	41.50 INCHES	34.5	5
WP	2	B	SINGLE	LITHONIA OLWP LED SWW2 120 PE DDB	16 FEET	160	18.5
	2	B	SINGLE	LITHONIA EU2L	7.5 FEET	10.76	.33 (LED)

LIGHTING LEGEND

- 60 LUX
- 30 LUX
- 20 LUX
- 5 LUX
- 1 LUX



SITE LIGHTING PLAN

SCALE: 1" = 30'

30 0 30 60
GRAPHIC SCALE: 1" = 30'

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Plainfield, Indiana 46168
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(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

SITE LIGHTING PLAN

BRIAN EDWARD MOENCH — REGISTERED — No. PE9500048 — STATE OF INDIANA — PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	LT101

Operations and Maintenance Manual

Lion Trans Inc.

4005 N County Road 1000 E
Brownsburg, Indiana 46112

Best Management Practices
For
Storm Water Quality

December 19th, 2025

Owner:

Malhi Kulwinder & Jigna Shah Jtsur

7631 E US Hwy 36

Avon, Indiana 46123

Owner Information:

Name:	Malhi Kulwinder & Jigna Shah Jtsur
Address:	7631 E US Hwy 36 Avon, Indiana 46123
Telephone:	(317) 989-1580
Contact Person:	Jigna Shah Jtsur
Contact Email:	janh505969@gmail.com

BMP Site Drawings:

See Appendix

Responsible Party Required Periodic Inspections: See Appendix B for Tabular Inspection Schedule

It is the responsibility of the Responsible Party to inspect the installed infrastructure to determine if it is functioning as designed quarterly and after each major rainfall event.

Town Performed Periodic Inspections:

Town officials shall inspect the storm water improvement system installed annually. Inspections shall be based on the Town of Brownsburg Ordinances. The Responsible Party shall be responsible for the annual inspection fees and subsequent money spent in maintaining the best management practices as determined by the Town's review official.

Required Perform Maintenance:

If determined by the Town's inspection, the Responsible Party must complete any maintenance of the best management practices within the given specified timeframe. If maintenance activities are not completed, then the reserves the right to complete the maintenance activity and back charge the Responsible Party accordingly.

Routine Maintenance:

It is the responsibility of the Responsible Party to maintain the on-site and adjacent offsite drainage infrastructure. The routine maintenance includes mowing the grassy areas to a height between 4 to 6 inches. It is also the responsibility of the Responsible Party to keep all shrubbery and trees from growing in the right-of-way. The area must be kept clean of all litter and debris as well. Regarding soil within the yard area, if standing water is witnessed in excess for 48 hours after a storm event, the soil must be inspected for reasons of preventing absorption and/or decreasing permeability (i.e. compaction, debris, etc.) The soil needs to be tilled and/or inspected if immediate attention doesn't rectify the situation. During tilling of the soil, mindfulness needs to be kept of the sub-surface drains to prevent damage (i.e. removal or crushing). The soil must maintain a minimum permeability value of fc > 0.50 inches per hour. The sufficient proposed replacement soil such as Urban Land Fox Complex, 0 to 2% slope has sufficient permeability qualities to meet standards, if required.

Remedial Maintenance:

The responsibility of maintaining the installed infrastructure is the responsibility of the Responsibility Party. This includes replacing any damaged pipe, concrete structure, curb/gutters, etc. to maintain the function of the infrastructure as originally designed.

Sediment Removal:

Sediment removal from gutter of adjacent curbs.

Statement of Town's Right of Access:

With the location of the access easement, Town officials have the right to enter the property and check the best management practices at their discretion.

Responsible Party for BMP Maintenance:

It is the sole responsibility of the Owner to maintain the best management practices after initial installation. This includes all costs and scheduling associated with the maintenance of BMP. The Owner is required to keep records of all inspection and maintenance activities and will self-certify that inspection and maintenance have been performed according to the Operations and Maintenance Manual, when requested by the city.

Responsible Party: _____

Printed Name of Responsible Party: _____

Date: _____

APPENDICES

APPENDIX A
BMP DRAWINGS

Lions Trans Inc. Maintenance Building
4005 N. County Road 1000E
Brownsburg, Indiana 46112

Owner:

Malhi Kulwinder & Jigna Shah Jtsur
7631 E. US Hwy 36
Avon, Indiana 46123
Phone: 317-989-1580

Civil Engineer:

Moench Engineering, P.C.
4000 Clarks Creek Road
Plainfield, Indiana 46168
Phone: (317) 837-2767
Fax: (317) 837-7266

Jurisdictional Contact:

Town of Brownsburg Development Services
61 N. Green St.
Brownsburg, Indiana 46112
Phone: (317) 852-1128

INDEX OF DRAWINGS

SHT.	TITLE
	CIVIL DRAWINGS
C000	COVER SHEET
D101	OFFSITE DEMOLITION PLAN
C101	OVERALL SITE PLAN
C201	SITE PLAN
C301A	GRADING PLAN (EAST)
C301B	GRADING PLAN (WEST)
C302	EROSION CONTROL PLAN
C303	STORM WATER POLLUTION PREVENTION PLAN
C401	UTILITY PLAN
C402	SANITARY FORCE MAIN PLAN & PROFILE
C501-502	SECTIONS AND DETAILS
L101	LANDSCAPE PLAN
LT101	SITE LIGHTING PLAN

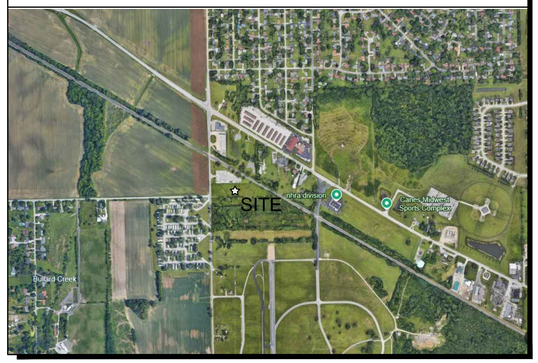
SITE ANALYSIS TABLE	
ZONING	MS
BUILDING TYPE	(1) OFFICE, (2) SHOP/GARAGE
NUMBER OF BUILDINGS	2
BUILDING HEIGHT	30'-9"
TOTAL PARCEL	3.07 Acres
TOTAL DISTURBED AREA	2.60 Acres
TOTAL PARKING REQUIRED	N/A
PARKING RATIO	1.1 space / employee & 1 visitor space / 10 employee spaces
TRUCK PARKING SPACES PROVIDED (10.5'x70')	33
STANDARD (9.5' x 18') SPACES	4
HANDICAPPED SPACES	1
TOTAL SPACES PROVIDED	38
TOTAL BUILDING SQUARE FOOTAGE	3760 s.f.

LOT COVERAGE

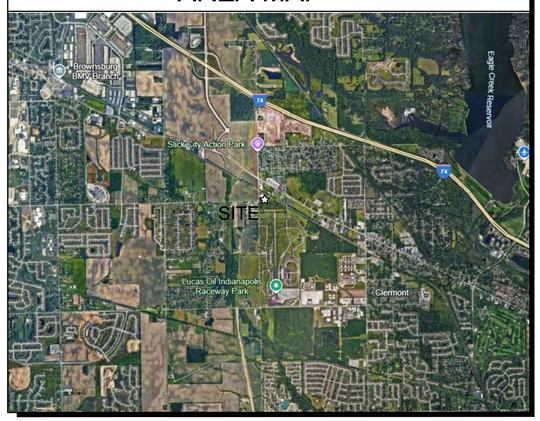
	AREA (ft^2)	ACRES	PERCENT
ASPHALT	83,071	1.907	62%
BUILDINGS	3,760	0.086	2.8%
SIDEWALK	716	0.016	0.5%
IMPERV. (TOTAL)	87,547	2.01	65.4%
PERVIOUS	46,327	1.06	34.6%
LOT TOTAL	133,874	3.07	100%

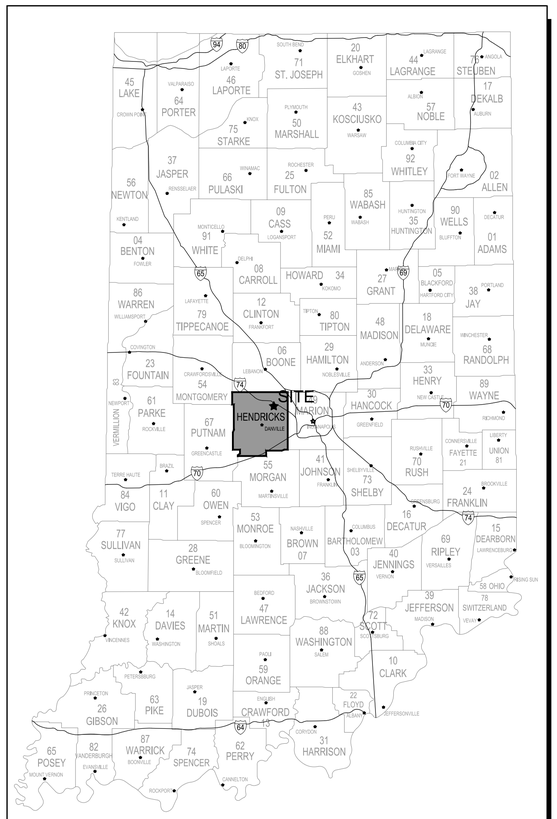
SUBJECT SITE:
SITE LOCATED IN LINCOLN TOWNSHIP
HENDRICKS COUNTY, INDIANA
(39°49'21" N and 86°20'42" W)

VICINITY MAP



AREA MAP





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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122
COVER SHEET

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
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3	REVISED per TOWN COMMENTS	9/09/24
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5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C000

PROTECTION AND DEMOLITION NOTES:

TREE REMOVAL AND PROTECTION:

1. TREES SHALL BE REMOVED FROM THE PROJECT ONLY WHERE THE AREA IS TO BE OCCUPIED BY ROAD, SURFACED AREAS, OR DRAINAGE SWALES.

2. TREES SHALL BE REMOVED FROM THE PROJECT SITE WHERE THEY INTERFERE DIRECTLY WITH THE PLACEMENT OF STORM OR SANITARY SEWERS AND THAT SUCH EXCAVATION WILL BE FATAL TO TREES.

3. THE CONTRACTOR SHALL ENDEAVOR TO SAVE AND PROTECT TREES OF VALUE AND WORTH WHICH DO NOT IMPAIR CONSTRUCTION OF IMPROVEMENTS AS DESIGNATED. IN THE EVENT CUT OR FILL EXCEEDS 0.5 FEET OVER THE ROOT AREA, THE DEVELOPER SHALL BE CONSULTED WITH RESPECT TO PROTECTIVE MEASURES TO BE TAKEN, IF ANY, TO PRESERVE SUCH TREES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE METHOD FOR PROTECTION OF TOPS, TRUNKS AND ROOTS OF EXISTING TREES ON THE PROJECT SITE THAT ARE TO REMAIN. EXISTING TREES SUBJECT TO CONSTRUCTION DAMAGE SHALL BE BOXED, FENCED OR OTHER MATERIAL AND EQUIPMENT SHALL NOT BE STOCKPILED OR STORED WITHIN THE SPREAD OF BRANCHES. BRANCHES WHICH NEED TO BE REMOVED OR ARE BROKEN SHALL BE NEATLY TRIMMED AND SCARS SHALL BE COVERED WITH TREE PAINT.

CLEARING AND GRUBBING:

1. CLEARING AND GRUBBING SHALL CONSIST OF CUTTING, REMOVING AND SATISFACTORY DISPOSING OF ALL TREES, BRUSH, PROJECTING ROOTS, STUMPS, RUBBISH, BROKEN PAVEMENT, BROKEN CONCRETE, FENCING (AS DESIGNATED) AND OTHER MATERIALS ON THE PROJECT SITE AND WITHIN THE BOUNDARY AS SHOWN ON THE CONSTRUCTION DOCUMENTS AND / OR DESIGNATED BY THE CONSTRUCTION LIMITS.

2. ALL "UNSUITABLE MATERIAL" FROM CLEARING OPERATIONS SHALL BE REMOVED TO DISPOSAL AREAS AS DIRECTED BY GENERAL CONTRACTOR.

STRIPPING OF TOPSOIL:

1. THE CONTRACTOR SHALL VERIFY THAT ALL TOPSOIL HAS BEEN REMOVED IN THE AREAS TO BE OCCUPIED BY ROADS, WALKS AND DESIGNATED BUILDING AREAS. TOPSOIL SHALL BE REMOVED TO A DEPTH OF SIX (6) INCHES OR DEEPER, IF NECESSARY, TO REMOVE ORGANIC MATTER WHERE REQUIRED.

2. TOPSOIL SHALL BE KEPT SEPARATED FROM SUITABLE FILL MATERIALS AND SHALL NOT BE USED AS FILL UNDER PAVEMENT, BUILDING AREAS AND / OR FUTURE STRUCTURAL AREAS.

3. TOPSOIL SHALL BE STORED AT A LOCATION WHERE IT DOES NOT INTERFERE WITH CONSTRUCTION OPERATIONS AS DIRECTED BY THE GENERAL CONTRACTOR.

4. TOPSOIL SHALL BE REASONABLY FREE FROM SUBSOIL DEBRIS AND STONES.

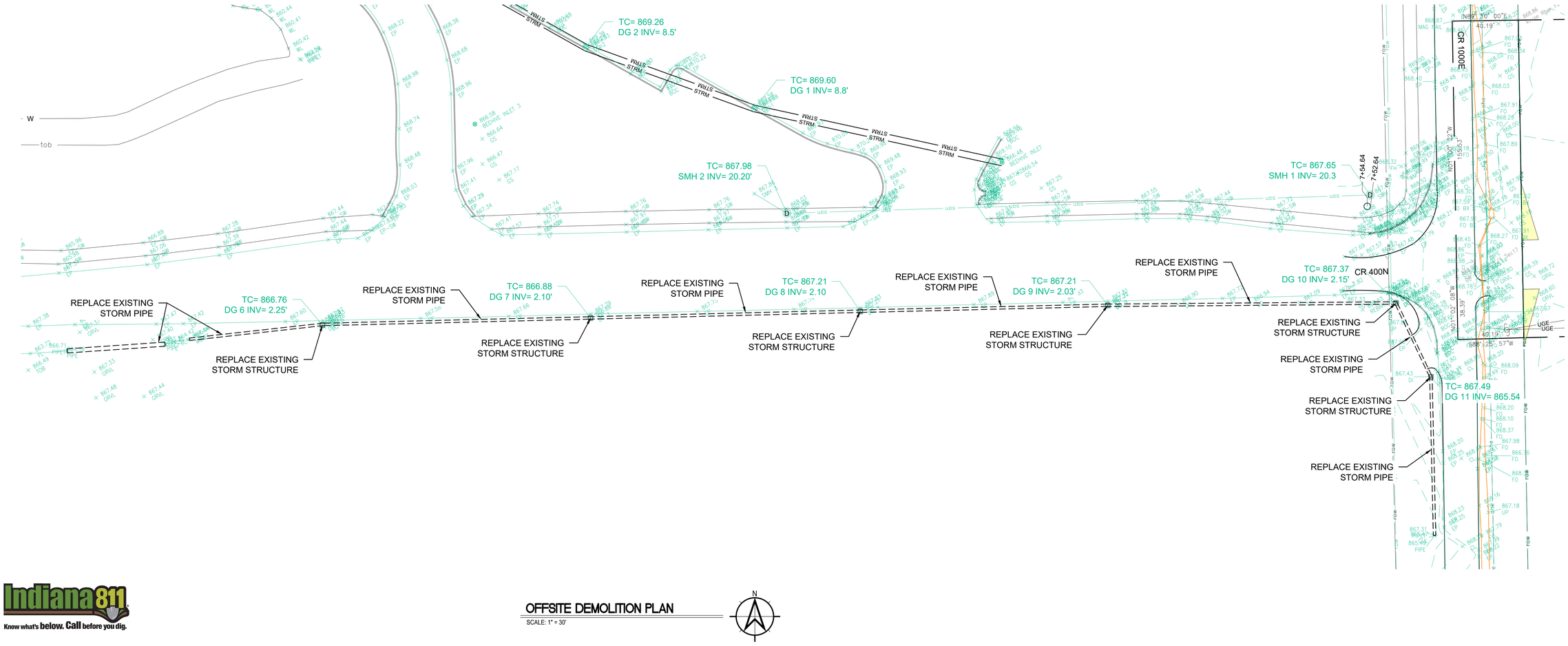
DEMOLITION:

1. ALL MATERIAL AS A RESULT OF THE GENERAL DEMOLITION SHALL BE THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR'S LUMP SUM BID PRICE FOR THE DEMOLITION SHALL TAKE INTO ACCOUNT THE SALVAGEABLE VALUE OF MATERIALS AND SAID BID PRICE SHALL REFLECT SAID DRAWINGS.

2. THE CONTRACTOR SHALL OBTAIN FROM ALL APPLICABLE GOVERNMENT AUTHORITIES NECESSARY PERMITS REQUIRED. A COPY OF SUCH PERMITS TO BE FURNISHED TO THE OWNER PRIOR TO COMMENCEMENT OF ANY WORK HEREIN.

STONE REMOVAL:

1. EXISTING STONE SURFACE TO BE REMOVED, STOCKPILED AND REDISTRIBUTED AFTER NEW GRADES ARE COMPLETED.



OFFSITE DEMOLITION PLAN

SCALE: 1" = 30'

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4005 N CR 1000 E
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OFFSITE DEMOLITION PLAN

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER

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DRAWN BY:	JBF
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PROJECT NUMBER:	21346
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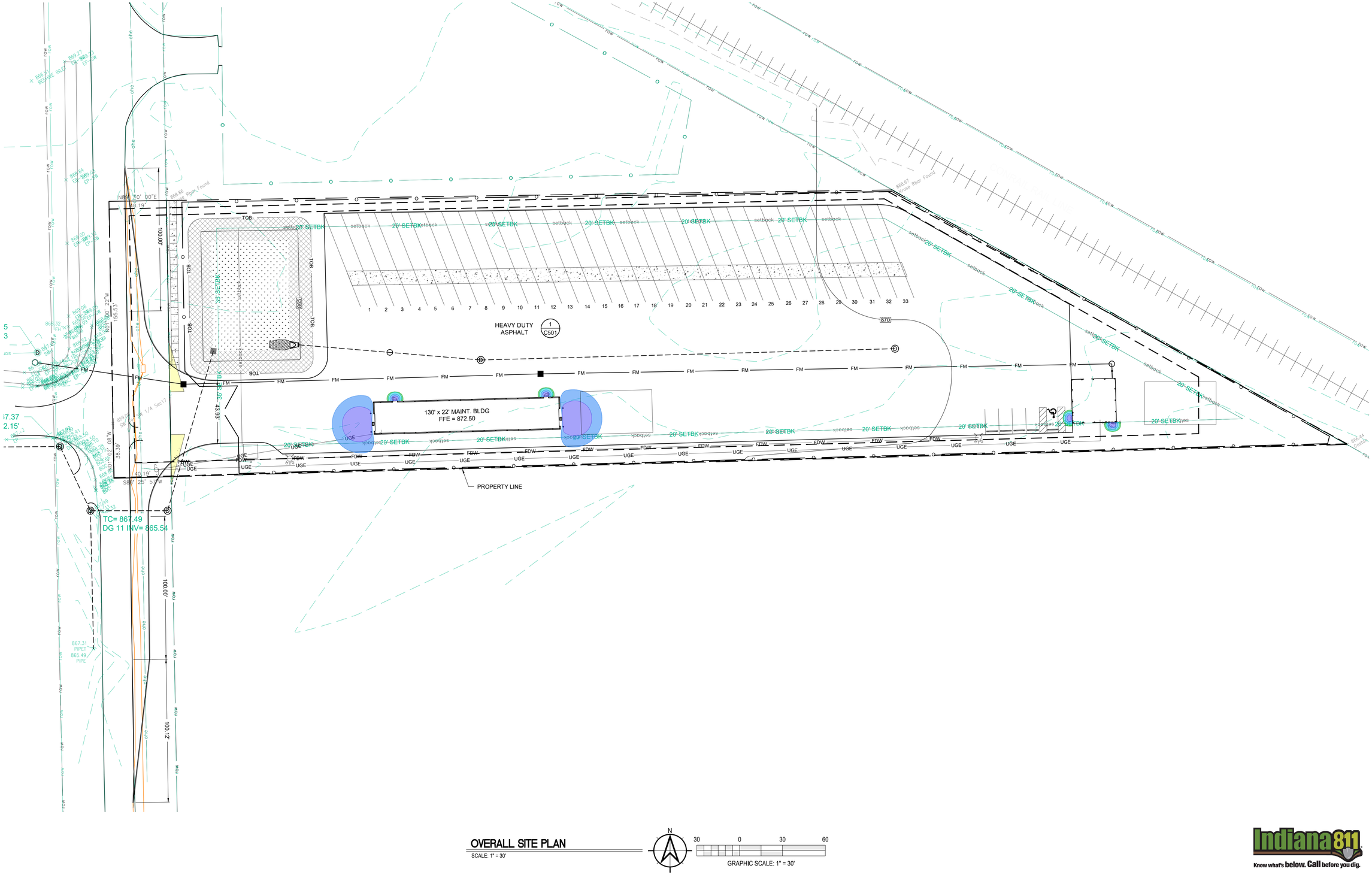

OVERALL SITE PLAN

SCALE: 1" = 30'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

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SHEET NUMBER:	C101

LEGAL DESCRIPTION

LEGAL DESCRIPTION:
Per Instrument No. 202121241 SUR filed in the Office of the Recorder in Hendricks County, Indiana, and described as follows:

Addresses and Parcel Numbers:
4005 N C.R. 1000 E., Brownsburg, IN 46112
#32-08-17-365-002.000-016

The following represents a modernized legal description of a tract of land, as described in Instrument #1998-04591 in the Office of the Recorder of Hendricks County, Indiana and being located in the Southwest Quarter of Section 17 and the Northwest Quarter of Section 20 both in Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana. Said tract being more particularly bound and described as follows, to-Wit:

East line of the Southwest quarter of Section 17 as being North 01 degrees 22 minutes 53 seconds West, deed, measured North 01 degrees 00 minutes 22 seconds West and all other bearings being relative thereto,

Beginning at a Hendricks County Aluminum monument found marking the Southwest corner of the Southwest quarter Section 17, Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana; thence running North on and along the West line of the Southwest quarter of Section 17 bearing North 01° 22' 53" West 155.58 feet, deed, and measured North 01° 00' 22" West 155.53 feet to a point on said West line, marking the Northeast corner of the National Hot Rod Association tract as referenced in the caption; thence running East on and along the North line of the National Hot Rod Association bearing North 88° 42' 57" East 546.58 feet, deed, and measured North 89° 10' 00" East a distance of 40.19 feet to a found 5/8" rebar with Kruse Consulting cap affixed and the *Point of Beginning* of this description; thence continuing North 89° 10' 00" East a distance of 508.15 feet to a found 5/8" rebar with Kruse Consulting cap affixed marking the intersection with the Southwesterly Right-of-Way of the CSX Railroad; thence running Southeasterly on and along the CSX Railroad Right-of-Way and traveling into the Northwest quarter of Section 20 bearing South 61° 12' 10" East 366.62 feet, deed, and measured South 60° 46' 15" East a distance of 365.01 feet to a found 5/8" rebar with Gaston cap marking the Northeast corner of Lot 1 in Villa Farms Subdivision, as per plat thereof recorded in Plat Book 3, page 134 in the Office of the Recorder of Hendricks County, Indiana; thence running West on and along the North line of said Lot 1 in Villa Farms Subdivision bearing South 88° 25' 57" West 863.49 feet (plat for Villa Farms shows this line to be 860.54 feet), calculated to be 823.52 feet to a point marking the intersection with the East right-of-way of N. CR. 1000 E; thence North 01° 02' 08" East, on and along said right-of-way, 38.39 feet; thence North 01° 00' 22" East 155.02 feet to the *Point of Beginning*. Containing 2.895 acres, more or less, subject to all easements and rights-of-way of record.

Dedicated Right-of-Way:
Beginning at a Hendricks County Aluminum monument found marking the Southwest corner of the Southwest quarter Section 17, Township 16 North, Range 2 East of the Second Principal Meridian, Hendricks County, Indiana, and the *Point of Beginning* of this description; thence running North on and along the West line of the Southwest quarter of Section 17 bearing North 01° 22' 53" West 155.58 feet, deed, and measured North 01° 00' 22" West 155.53 feet to a point on said West line, marking the Northeast corner of the National Hot Rod Association tract as referenced in the caption; thence running East on and along the North line of the National Hot Rod Association bearing North 88° 42' 57" East, deed, and measured North 89° 10' 00" East a distance of 40,19 feet to a found 5/8" rebar with Kruse Consulting cap affixed, marking the intersection with the east right-of-way line of N. CR 1000 E.; thence South 01° 00' 22" East 155.02 feet on and along said right-of-way; thence South 01° 02' 08" East 38.39 feet on and along said right-of-way, traveling into the Northwest quarter of Section 20; thence South 88° 25' 57" West 40,19 feet to a point on the West line of the Northwest quarter of Section 20; thence North 01° 02' 08" West on and along aforementioned West line, 38.39 feet to the *Point of Beginning* of this Dedicated Right-of-Way description. Containing 0.179 acres, more or less.

LINETYPE LEGEND:

(SF)	= SILT FENCE
x x x	= BARB WIRE FENCE
o o o	= CHAIN-LINK FENCE
H H H	= WOOD FENCE
W	= WATER LINE
STRM	= STORM SEWER LINE
SAN	= SANITARY SEWER LINE
GAS	= GAS LINE
UGE	= UNDERGROUND ELECTRIC LINE
OHE	= OVERHEAD ELECTRIC LINE
COMM	= COMMUNICATION LINE
T	= TELEPHONE LINE
UTELE	= UNDERGROUND TELEPHONE LINE
FO	= FIBER OPTIC LINE
W	= FIRE DEPARTMENT WATER SUPPLY
35' ESMT	= 35' EASEMENT LINE
30' ESMT	= 30' EASEMENT LINE
25' ESMT	= 25' EASEMENT LINE
20' ESMT	= 20' EASEMENT LINE
15' ESMT	= 15' EASEMENT LINE
10' ESMT	= 10' EASEMENT LINE
5' ESMT	= 5' EASEMENT LINE
ESMT	= EASEMENT LINE
ooo	= SWALE LINE
ooo	= EDGE OF WATER
35' SETBK	= 35' SETBACK LINE
30' SETBK	= 30' SETBACK LINE
25' SETBK	= 25' SETBACK LINE
20' SETBK	= 20' SETBACK LINE
15' SETBK	= 15' SETBACK LINE
10' SETBK	= 10' SETBACK LINE
5' SETBK	= 5' SETBACK LINE
SETBACK	= SETBACK LINE
ROW	= RIGHT-OF-WAY LINE
	= PROPERTY BOUNDARY
UD	= SWALE UNDERDRAIN
CABLE	= CABLE TV LINE
FL>	= FLOW LINE

SYMBOL LEGEND:

- = STORM SEWER END SECTION
- = SANITARY SEWER CLEANOUT
- C.O. = CLEANOUT
- = MANHOLE
- = CATCH BASIN
- = CATCH BASIN
- = CURB INLET
- = FIRE HYDRANT
- = PRESSURE RELIEF VALVE
- WV = WATER VALVE
- W = WATER WELL
- GV = GAS VALVE
- = LIGHT POLE
- = UTILITY POLE
- IRF = PROPERTY CORNER (IRF = IRON ROD FOUND, RBF = REBAR FOUND)
- RBF
- = SURVEY POINT (SECTION CORNER)
- BM = BENCHMARK
- = SOIL BORING
- 741.25 = NEW GRADE ELEVATION
- x741.25 = EXISTING GRADE ELEVATION
- = STRAW BALE DAM
- = ROCK DAM
- = SIGN
- STOP = STOP SIGN
- = HANDICAP SIGN
- ENTER ONLY = ENTER ONLY SIGN
- EXIT ONLY = EXIT ONLY SIGN
- DO NOT ENTER = DO NOT ENTER SIGN
- = EVERGREEN TREE
- = DECIDUOUS TREE
- = BUSH
- = TEMPORARY CONSTRUCTION ENTRNACE
- = GRASS PERMANENT SEEDING
- = EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR GREATER

SITE NOTES:

HANDICAP RAMP CONSTRUCTION NOTES:

1. ALL HANDICAP RAMPS SHALL MEET THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT. THE MOST RECENT INDOT STANDARD SPECIFICATIONS AND THE GOVERNING JURISDICTIONS MOST RECENT STANDARDS. CURB SWIPES REQUIRED FOR HANDICAP RAMPS SHALL BE PROVIDED AT TIME OF INITIAL CONSTRUCTION.

2. MINIMUM WIDTH OF CURB RAMP SHALL BE 4 FEET NOT INCLUDING FLARES. MAXIMUM SLOPE OF RAMPS SHALL BE 12:1

3. HANDICAP RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS.

4. TYPE 'E' RAMPS SHALL BE PROVIDED AT THE CENTERLINE OF RADIUS AT ALL CORNERS OF EVERY STREET INTERSECTION WHERE THERE IS AN EXISTING OR PROPOSED SIDEWALK AND CURB. IN CASE OF "T"-INTERSECTION, A TYPE 'C' RAMP SHALL BE PROVIDED ADJACENT TO EACH CORNER RAMP. TYPE 'C' RAMPS ALSO SHALL BE PROVIDED AT WALK LOCATIONS AT MID-BLOCK IN VICINITY OF HOSPITALS, MEDICAL CENTERS OR ATHLETIC STADIUMS. THE USE OF DETAILS CONTRARY TO THOSE SHOWN HEREIN SHALL REQUIRE THE PRIOR WRITTEN APPROVAL OF THE GOVERNING JURISDICTION.

5. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

6. RAMPS SHALL BE PROVIDED WHERE THE DRIVEWAY CURB EXTENDS ACROSS THE SIDEWALK.

7. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON ALL RAMPS WITH NO BREAKS IN GRADE.

8. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH THE RAMPS EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION. LOCATION OF THE RAMPS SHALL TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURES.

9. THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.

10. EXPANSION JOINTS FOR THE RAMP SHALL BE A MAXIMUM 1/2" WIDE. THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

11. CROSSWALK AND STOP LINE MARKING, IF USED, SHALL BE LOCATED TO STOP TRAFFIC SHORT OF ALL RAMP CROSSINGS.

12. SLOPE OF RAMP MAY BE WARPED WHEN FILED CONDITIONS WARRANT AND WHEN APPROVED BY THE GOVERNING JURISDICTION.

LOT COVERAGE

	ACRES	PERCENT
ASPHALT	1.845	60%
BUILDINGS	0.086	2.8%
SIDEWALK	0.016	0.5%
PERVIOUS	1.123	36.6%
TOTAL LOT	3.07	100%

SITE NOTES:

GENERAL NOTES:

1. REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTIONS BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT. PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE;

2. ALL RADII SHELL BE 5 FOOT UNLESS NOTED OTHERWISE ON PLANS.

3. CONTRACTOR TO VERIFY EXACT LOCATION AND INVERT OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

4. STORM SEWER PIPE OF OTHER MATERIAL OR MATERIAL NOT MEETING THESE SPECIFICATIONS SHALL REQUIRE THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

5. THE CONTRACTOR SHALL SUBMIT INFORMATION TO THE APPROPRIATE JURISDICTIONAL CONTACT SHOWING CONFORMANCE WITH THESE SPECIFICATIONS UPON REQUEST.

PAVEMENT CONSTRUCTION:

1. THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION, SHALL APPLY TO WORKMANSHIP AND MATERIALS IN CONSTRUCTION OF SUBGRADE, PAVEMENT, CURBS AND WALKS.

A) PREPARE THE SUBGRADE IN ACCORDANCE WITH INDOT SECTION 207. NO TRAFFIC WILL BE PERMITTED ON THE PREPARED SUBGRADE PRIOR TO PAVING,

B) BITUMINOUS PAVEMENT IN ACCORDANCE WITH INDOT SECTION 403,

C) FINISHING EARTH GRADED SHOULDERS, DITCHES AND SLOPES IN ACCORDANCE WITH INDOT SECTION 208.

CONCRETE PAVEMENT AND WALKS:

1. SEE DETAIL FOR TYPE AND DETAILS.

2. CONCRETE SHALL BE READY MIXED PORTLAND CEMENT AND WATER CONFORMING TO ASTM C-150. AGGREGATES SHALL CONFORM TO ASTM C-33. COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 4000 P.S.I WHERE REQUIRED, REINFORCEMENT SHALL BE WELDED STEEL WIRE FABRIC CONFORMING TO ASTM A-185.

3. ALL EXTERIOR CONCRETE SHALL CONTAIN 6% ± 1% AIR ENTRAINMENT.

APPLICATION:

A) PLACE CONCRETE ONLY ON A MOIST, COMPACT SUBGRADE OR BASE FREE FROM LOOSE MATERIAL. PLACE NO CONCRETE ON MUDDY OR FROZEN SUBGRADE IN ACCORDANCE WITH INDOT SECTION 604 AND 605.

B) CONCRETE SHALL BE DEPOSITED SO AS TO REQUIRE AS LITTLE REHANDLING AS PRACTICAL. WHEN CONCRETE IS TO BE PLACED AT AN ATMOSPHERIC TEMPERATURE OF 35 DEGREES OR LESS, PARAGRAPH 702.10 OF THE INDOT SPECIFICATIONS SHALL APPLY.

C) EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE BY ONE OF THE METHODS DESCRIBED IN INDOT SECTION 501.17.

PARKING LOT STRIPING:

1. PAINT MATERIAL SHALL COMPLY WITH FEDERAL SPECIFICATION TT-P-115A FOR TRAFFIC PAINT WITHOUT GLASS SPHERES. (COLOR BY OWNER SELECTION).

2. SUBCONTRACTOR TO PERFORM ALL FIELD LAYOUT WORK NECESSARY TO ACHIEVE STRAIGHT AND TRUE LINES. ASPHALT MUST BE CLEANED WITH POWER BROOM AND HAND BROOM TO REMOVE LOOSE MATERIAL BEFORE STRIPING. THE SUBCONTRACTOR IS TO PROVIDE BARRIERS TO PREVENT MARRING OF LINES BY VEHICLES UNTIL PAINT HAS DRIED. STRIPING PAINT SHALL BE APPLIED AT THE MINIMUM RATE OF ONE GALLON PER 100 SQUARE FEET OF PAINT (BASED ON 39% SOLIDS) AT A WIDTH OF FOUR INCHES.

STREET PAVEMENT NOTES:

1. MATERIALS AND CONSTRUCTION FOR STREETS, WALKS, CURBS AND STORM WATER SEWERS SHALL CONFORM TO THE REQUIREMENTS OF THE INDIANA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS" LATEST PRINTED EDITION UNLESS SHOWN OR NOTED OTHERWISE.

2. PAVEMENT COMPOSITION NOTED ON DETAIL IS THE MINIMUM REQUIREMENT FOR STREET CLASSES 1, 2, 3, 4 AND 5, WITH A GOOD SUB-GRADE SOIL CLASSIFICATION. PAVEMENT COMPOSITION FOR OTHER CLASSES OF STREET SHALL BE DESIGNED WITH CONSIDERATION GIVEN TO THE TRAFFIC VOLUME, SUB-GRADE SOIL EVALUATION AND TYPE OF PAVEMENT MATERIAL TO BE USED.

3. THE SUB-GRADE MUST BE PROOF ROLLED BY THE CONTRACTOR USING A FULLY LOADED TRI-AXLE DUMP TRUCK, MINIMUM LOAD OF 20 TONS

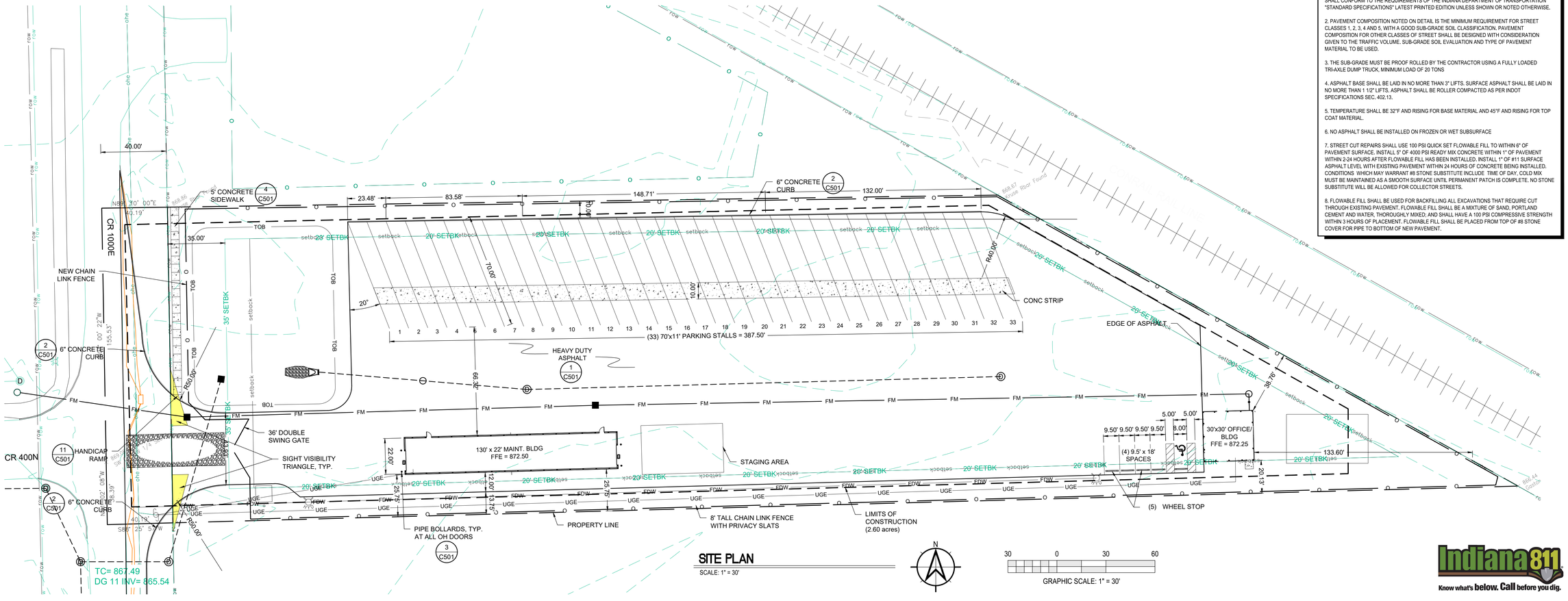
4. ASPHALT BASE SHALL BE LAID IN NO MORE THAN 3" LIFTS. SURFACE ASPHALT SHALL BE LAID IN NO MORE THAN 1 1/2" LIFTS. ASPHALT SHALL BE ROLLER COMPACTED AS PER INDOT SPECIFICATIONS SEC. 402.13..

5. TEMPERATURE SHALL BE 32°F AND RISING FOR BASE MATERIAL AND 45°F AND RISING FOR TOP COAT MATERIAL.

6. NO ASPHALT SHALL BE INSTALLED ON FROZEN OR WET SUBSURFACE

7. STREET CUT REPAIRS SHALL USE 100 PSI QUICK SET FLOWABLE FILL TO WITHIN 6" OF PAVEMENT SURFACE. INSTALL 5" OF 4000 PSI READY MIX CONCRETE WITHIN 1" OF PAVEMENT WITHIN 2-24 HOURS AFTER FLOWABLE FILL HAS BEEN INSTALLED. INSTALL 1" OF #11 SURFACE ASPHALT LEVEL WITH EXISTING PAVEMENT WITHIN 24 HOURS OF CONCRETE BEING INSTALLED. CONDITIONS WHICH MAY WARRANT #8 STONE SUBSTITUTE INCLUDE TIME OF DAY, COLD MIX MUST BE MAINTAINED AS A SMOOTH SURFACE UNTIL PERMANENT PATCH IS COMPLETE. NO STONE SUBSTITUTE WILL BE ALLOWED FOR COLLECTOR STREETS.

8. FLOWABLE FILL SHALL BE USED FOR BACKFILLING ALL EXCAVATIONS THAT REQUIRE CUT THROUGH EXISTING PAVEMENT. FLOWABLE FILL SHALL BE A MIXTURE OF SAND, PORTLAND CEMENT AND WATER, THOROUGHLY MIXED, AND SHALL HAVE A 100 PSI COMPRESSIVE STRENGTH WITHIN 3 HOURS OF PLACEMENT. FLOWABLE FILL SHALL BE PLACED FROM TOP OF #8 STONE COVER FOR PIPE TO BOTTOM OF NEW PAVEMENT.



SITE PLAN
SCALE: 1" = 30'

N

30 0 30 60
GRAPHIC SCALE: 1" = 30'

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Plainfield, Indiana 46168
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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

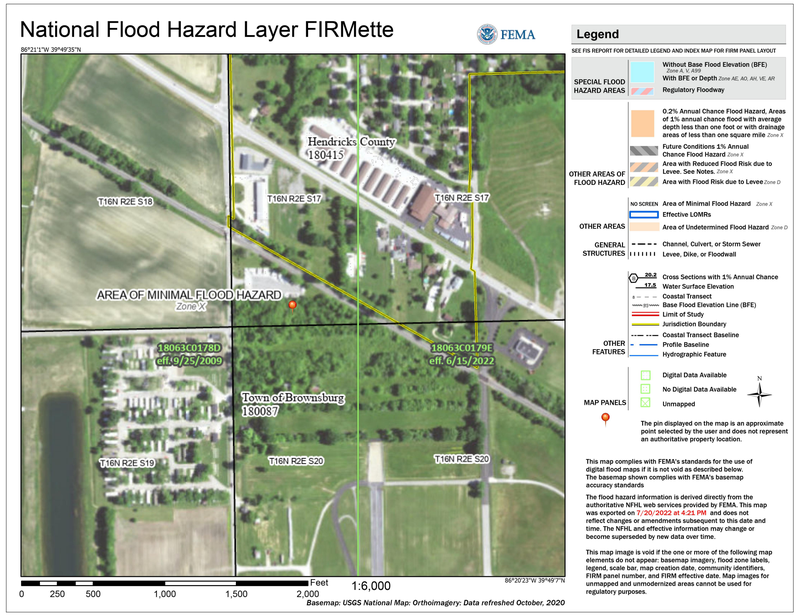
SITE PLAN

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C201





Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	1.8	53.2%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	1.5	46.8%
Totals for Area of Interest		**3.3**	**100.0%**

GRADING NOTES:

GENERAL GRADE NOTES:

1. REFER TO THE INDIANA DEPARTMENT OF TRANSPORATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTION BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT, PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.

2. FILL MATERIAL SHALL CONSIST OF EARTH OBTAINED FROM CUT AREAS, BORROW PITS OR OTHER APPROVED SOURCES. EARTH SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES AND LARGE ROCKS. THE FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED SIX INCHES FOLLOWING COMPACTION. PROPER MOISTURE CONTENT OF FILL MATERICAL WILL BE SUCH TO ACHIEVE SPECIFIED COMPACTION DENSITY. ALL FILL BENEATH PAVED AREAS, FLOOR SLABS AND FURTURE BUILDINGS SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY PER ASTM D-1557, FIELD COMPACTING TEST SHALL BE RUN ON EACH LIFT, IN FILL SECTIONS, AND THE REQUIRED COMPACTION ON EACH LIFT SHALL BE IN ACCORDANCE WITH INDOT SECTION 211.

3. MAXIMUM LAWN SLOPE IS 3:1.

4. THE CONTRATOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC, IN THE AFFECTED CONSTRUCTION AREA EXISTING UTILITY STRUCTURES ARE SHOWN HERE IN ACCORDANCE WITH AVAILABLE INFORMATION. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.

5. ALL SPOT ELEVATIONS ARE TO FINISHED GRADE.

6. ALL EXISTING MANHOLE CASTINGS TO BE ADJUSTED TO FINISH GRADE.

7. COMPACT "B" BORROW BACK FILL REQ'D. OVER ALL UTILITIES IN PAVED AREAS.

8. DISTURBED AREAS TO BE GRADED TO FINAL GRADE AND RECEIVE A MIN OF 4" TOPSOIL

9. STABILIZATION MUST BE INITIATED BY END OF THE 7TH DAY THE AREA IS LEFT IDLE AND STABILIZATION SHALL BE COMPLETED WITHIN 14 DAYS AFTER INITIATION.

10. FINAL STABILIZATION IS ACHIEVED WHEN ALL LAND DISTURBING ACTIVITIES HAVE BEEN COMPLETED AND A UNIFORM PERENNIAL VEGATATIVE COVER WITH DENSITY OF 70% ON ALL UNPAVED SURFACES.

11. WATER SHOULD BE PUMPED THROUGH BMP AND INTO THE DETENTION POND.

REINFORCED CONCRETE PIPE:

1. REINFORCED CONCRETE PIPE SHALL BE CLASS III, IV OR V AS SPECIFIED IN ASTM C-76.

2. REINFORCED ELLIPTICAL CONCRETE PIPE SHALL BE CLASS HE-III OR HE-IV AS SPECIFIED IN ASTM C-507.

3. LIFT HOLES ARE NOT ALLOWED FOR PIPE LESS THAN 24 INCHES IN DIAMETER. A MAXIMUM OF TWO LIFT HOLES ARE ALLOWED FOR PIPE 24 INCHES IN DIAMETER OR LARGER. LIFT HOLES SHALL BE REPAIRED ACCORDING TO MOST RECENT INDOT STANDARD SPECIFICATIONS.

4. FITTINGS AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE TYPE OF PIPE BEING USED.

5. EACH PIPE SECTION SHALL BE MARKED WITH DATE OF MANUFACTURE, SIZE AND CLASS OF PIPE, SPECIFICATION DESIGNATION, MANUFACTURER AND PLANT IDENTIFICATION.

6. PIPE SHALL BE FURNISHED WITH A BELL OR GROOVE ON ONE END OF A UNIT OF PIPE AND A SPIGOT OR TONGUE ON THE ADJACENT END OF THE ADJOINING PIPE. ALL JOINTS SHALL HAVE A GROOVE ON THE SPIGOT FOR PLACEMENT OF A RUBBER "O-RING" OR PROFILE GASKET IN ACCORDANCE WITH ASTM C-443. THE GASKET SHALL BE A CONTINUOUS RING WHICH FITS SNUGLY INTO THE ANNULAR SPACE BETWEEN THE OVERLAPPING SURFACES OF THE ASSEMBLED PIPE JOINT.

FLOOD ZONE DESIGNATION:

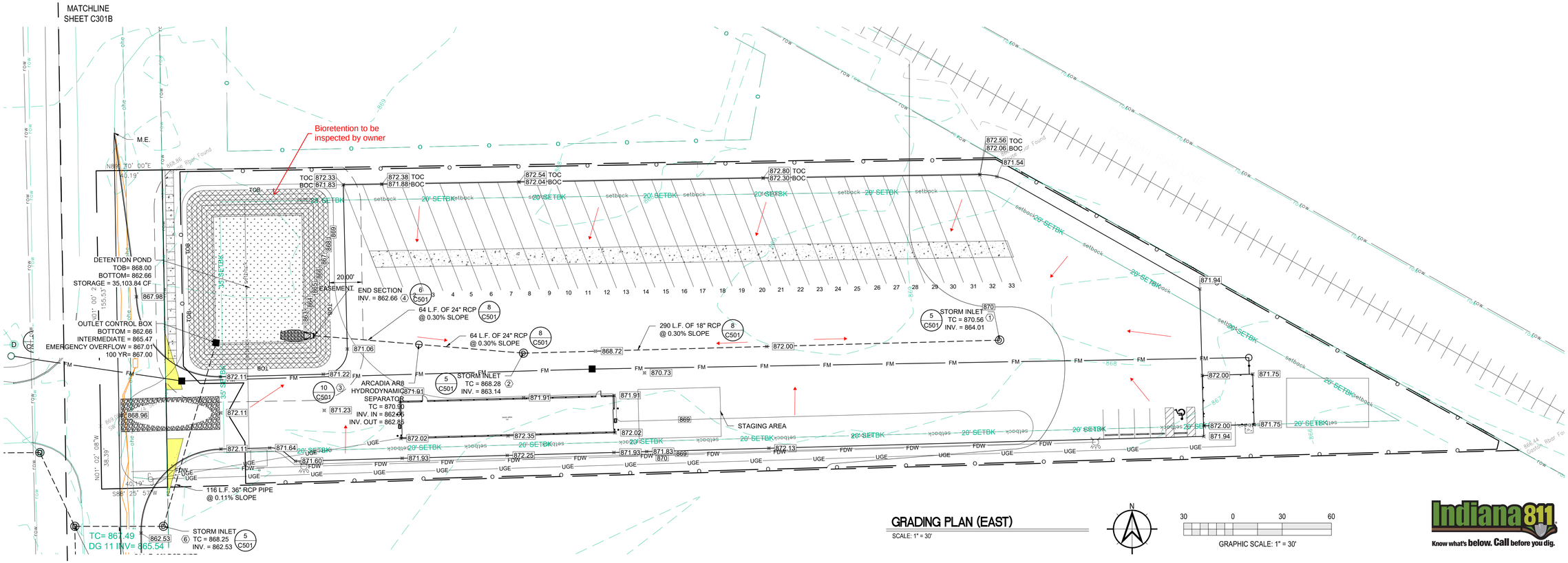
THIS LOT LIES ENTIRELY IN FLOOD HAZARD ZONE "X" AS SCALES FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR:

HENDRICKS COUNTY, INDIANA

COMMUNITY NAME:	TOWN OF BROWNSBURG
COMMUNITY NUMBER:	180087
PANEL NUMBER:	C0179E
DATED:	JUNE 15, 2022

STAGE STORAGE TABLE

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
862.660	3,978.76	N/A	N/A	0.00	N/A	0.00
863.000	4,250.00	0.340	1398.89	1398.89	1398.64	1398.64
864.000	5,096.00	1.000	4673.00	6071.89	4666.61	6065.24
865.000	6,013.14	1.000	5554.57	11626.46	5548.25	11613.49
866.000	6,990.27	1.000	6501.70	18128.16	6495.58	18109.07
867.000	8,023.94	1.000	7507.10	25635.27	7501.16	25610.23
868.000	9,114.16	1.000	8569.05	34204.31	8563.26	34173.50



GRADING PLAN (EAST)

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

GRADING PLAN (EAST)

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
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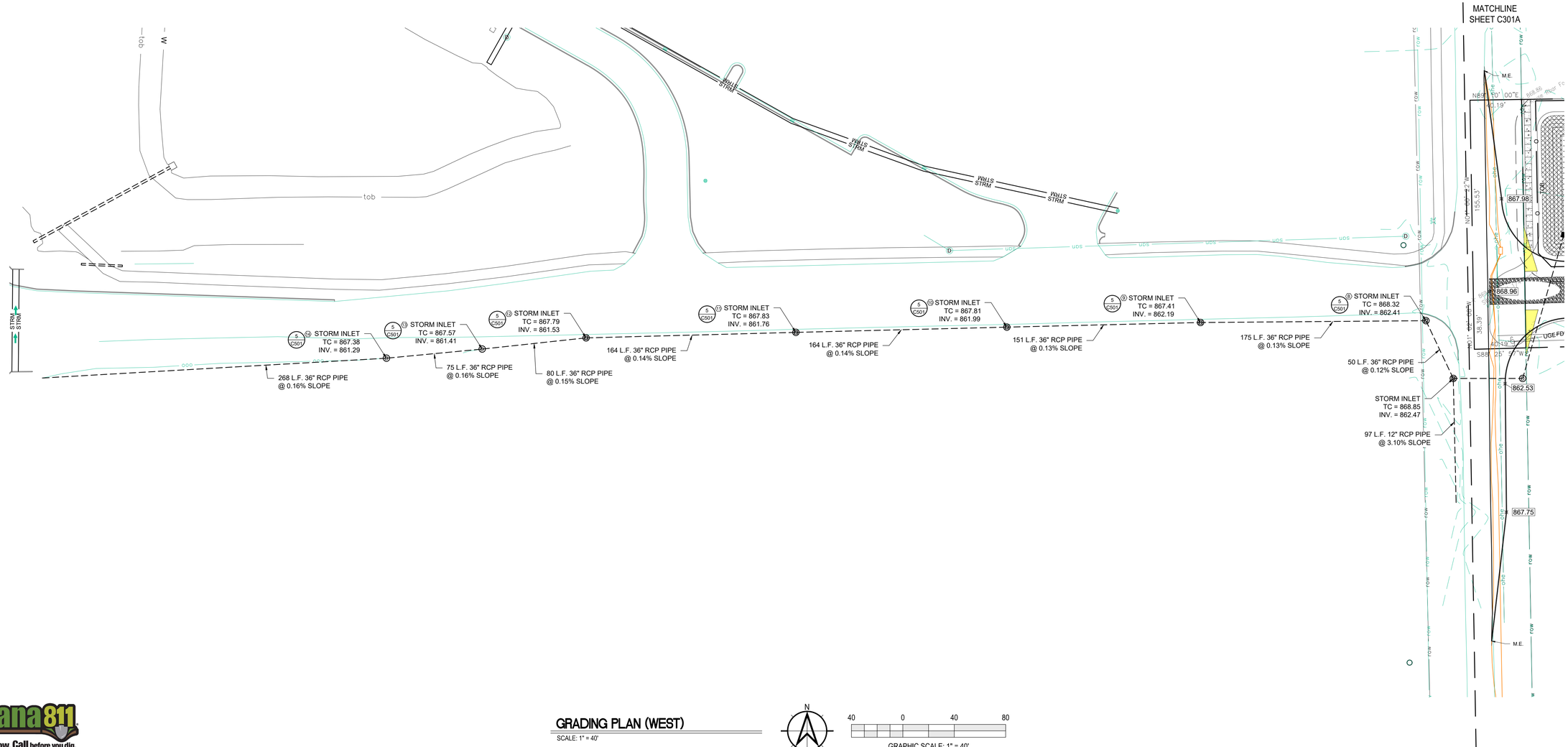
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C301A



GRADING PLAN (WEST)

SCALE: 1" = 40'

N

40 0 40 80

GRAPHIC SCALE: 1" = 40'

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

GRADING PLAN (WEST)

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER

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DRAWN BY:	JBF
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PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C301B

SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING		A			*	///	///	///	*//			
DORMANT SEEDING	B										B	
TEMPORARY SEEDING		C	E		*	///	///	///	* D			
SODDING		F**			*	///	///	///	*			
MULCHING	G											

A = KENTUCKY BLUEGRASS 100 LBS/ACRE; CREEPING RED FESCUE 100 LBS/ACRE: PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 20 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

B = KENTUCKY BLUEGRASS 120 LBS/ACRE; CREEPING RED FESCUE 120 LBS/ACRE: PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 30 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

C = SPRING OATS 3 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

D = WHEAT OR RYE 2 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

E = ANNUAL RYEGRASS 40 LBS/ACRE (1 LB/1000 SQ. FT.)
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE. APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

F = SOD

G = STRAW MULCH 2 TONS/ACRE

* / / / * = IRRIGATION NEEDED DURING JUNE, JULY, AUGUST AND/OR SEPTEMBER ** = IRRIGATION NEEDED FOR 2 WEEKS AFTER SUPPLYING SOD

INSTALLATION SCHEDULE:

CONSTRUCTION PHASE:	CONSTRUCTION SCHEDULE:
PRE-CONSTRUCTION ACTIONS (EVALUATION/PROTECTION OF IMPORTANT SITE CHARACTERISTICS)	BEFORE CONSTRUCTION, EVALUATE, MARK AND PROTECT IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, UNIQUE AREAS (e.g., WETLANDS) TO BE PRESERVED, ON SITE SEPTIC SYSTEM ABSORPTION FIELDS IF APPLICABLE, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS.
CONSTRUCTION ACCESS (CONSTRUCTION ENTRANCES, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS)	STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS WORK TAKES PLACE.
SEDIMENT BARRIERS AND TRAPS (BASIN TRAPS, SILT FENCES, OUTLET PROTECTION)	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ASSESSED. INSTALL ADDITIONAL RUNOFF CONTROL MEASURES DURING GRADING AS NEEDED.
RUNOFF CONVEYANCE SYSTEM (STABILIZED STREAM-BANKS, STORM DRAINS, INLET AND OUTLET PROTECTIONS, WATER QUALITY STRUCTURES)	WHERE NECESSARY, STABILIZE STREAMBANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPLE CONVEYANCE SYSTEM WITH RUNOFF CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
LAND CLEARING AND GRADING (CUTTING/FILLING/GRADING, DRAINS, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, SURFACE ROUGHENING)	BEGIN MAJOR CLEARING AND GRADING AFTER INSTALLING THE KEY SEDIMENT AND RUNOFF MEASURES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES.
SURFACE STABILIZATION (TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETED.
BUILDING CONSTRUCTION (BUILDINGS, UTILITIES, PAVING)	INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES AS WORK TAKES PLACE.
LANDSCAPING & FINAL STABILIZATION (TOP SOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE TEMPORARY CONTROL MEASURES AND STABILIZE.

RESPONSIBLE PARTY FOR EROSION CONTROL

COMPANY: LIONS TRAN INC.
NAME: MALHI KULWINDER
ADDRESS: 7655 E. US HWY 36
AVON, INDIANA 46123
PHONE: 317-989-1580

EROSION CONTROL NOTES:

SOIL EROSION CONTROL SUMMARY:

1. CONTRACTOR SHALL INSTALL SODDING, INLET PROTECTION, AND FILTERS AS SHOWN.

2. MASS GRADE THE SITE (SIDES OF SWALES, MOUNDS AND PONDS TO BE SODDED OR SEEDED AND MULCHED IMMEDIATELY UPON COMPLETION). TEMPORARY SEEDING SHALL BE RECOMMENDED FOR ALL SWALES AND DISTURBED AREAS THAT CANNOT BE FINAL SEEDED WITHIN A TIME PERIOD THAT WILL PREVENT SOIL EROSION, FOR TEMPORARY SEEDING THE CONTRACTOR SHALL UTILIZE A FAST GROWING SEED OF EITHER OATS, ANNUAL RYE GRASS, WHEAT OR RYE DEPENDING UPON TIME OF YEAR. DISTURBED AREAS SHOULD BE KEPT TO A MINIMUM AT ALL TIMES.

3. CONTRACTOR SHALL CONTROL MUD ACCUMULATION ON ALL STREETS SURROUNDING THE PROJECT BY INSTALLING STONE SURFACE AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC LEAVES THE SITE. DUST SHALL BE KEPT TO A MINIMUM BY UTILIZING SPRINKLING, CALCIUM CHLORIDE, VEGETATIVE COVER, SPRAY ON ADDITIVES OR OTHER APPROVED METHODS.

4. MAINTAIN ALL FILTERS DURING CONSTRUCTION TO PREVENT ANY BLOCKAGES FROM ACCUMULATED SEDIMENT. ADDITIONAL SEEDING MAY BE REQUIRED DURING CONSTRUCTION AS SPECIFIED BY ENGINEER OR SOIL CONSERVATION SERVICE. RIPRAP SHALL BE PLACED IN AREAS OF HIGH VELOCITY STREAM FLOW (MINIMUM SIZE 1/3 CU.FT.). PAYMENT FOR ADDITIONAL RIPRAP NOT SHOWN ON PLANS AND SEEDING SHALL BE ON A UNIT BASIS.

5. CONTRACTOR SHALL INSTALL ALL STORM SEWER INLET FILTERS AS STORM SEWER SYSTEM IS INSTALLED.

6. ALL PROPOSED STREET AREAS TO BE PAVED AS SOON AS POSSIBLE AFTER SUBGRADE IS PREPARED.

7. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS ONLY WHEN THERE IS SUFFICIENT GROWTH OF GROUND COVER TO PREVENT FURTHER EROSION.

8. ALL SWALES SHALL BE SEEDED AND SODDED (AS INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN) IMMEDIATELY AFTER FINAL GRADING.

9. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE INDIANA HANDBOOK FOR EROSION CONTROL IN DEVELOPING AREAS, MOST RECENT EDITION.

MAINTENANCE:

INSPECT PERIODICALLY, ESPECIALLY AFTER STORM EVENTS, UNTIL THE STAND IS SUCCESSFULLY ESTABLISHED. (CHARACTERISTICS OF A SUCCESSFUL STAND INCLUDE: VIGOROUS DARK GREEN OR BLUISH-GREEN SEEDLINGS; UNIFORM DENSITY WITH NURSE PLANTS, LEGUMES, AND GRASSES WELL INTER-MIXED; GREEN LEAVES; AND THE PERENNIALS REMAINING GREEN THROUGHOUT THE SUMMER, AT LEAST AT THE PLANT BASE.)

PLAN TO ADD FERTILIZER THE FOLLOWING GROWING SEASON ACCORDING TO SOIL TEST RECOMMENDATIONS.

REPAIR DAMAGED, BARE, OR SPARSE AREAS BY FILLING ANY GULLIES, RE-FERTILINZING, OVER- OR RE-SEEDING, AND MULCHING.

IF PLANT COVER IS SPARSE OR PATCHY, REVIEW THE PLANT MATERIALS CHOSEN, SOIL FERTILITY, MOISTURE CONDITION, AND MULCHING AFTER RE-PREPARING THE SEEDBED.

IF VEGETATION FAILS TO GROW, CONSIDER SOIL TESTING TO DETERMINE ACIDITY OR NUTRIENT DEFICIENCY PROBLEMS. (CONTACT YOUR SWCD OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE.)

IF ADDITIONAL FERTILIZATION IS NEEDED TO GET A SATISFACTORY STAND, DO SO ACCORDING TO SOIL TEST RECOMMENDATIONS.

EROSION CONTROL NOTES:

PRIOR TO ANY WORK BEING DONE, A TEMPORARY CONSTRUCTION ENTRANCE AND SILT FENCING SHALL BE INSTALLED.

AFTER COMPLETION OF A STORM STRUCTURE, THE CURB INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY.

UPON COMPLETION OF SWALES AND SIDE SLOPES, CONTRACTOR SHALL INSTALL THE EROSION CONTROL BLANKETS.

ALL AREAS NOT DENOTING PERMANENT SEEDING OR FIBER BLANKETS SHALL BE TEMPORARILY SEEDED.

THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR KEEPING THE EXISTING ROADWAYS CLEAR OF DIRT AND DEBRIS.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AS CONDITIONS WARRANT.

EROSION PROTECTION DURING CONSTRUCTION AND SEEDING:

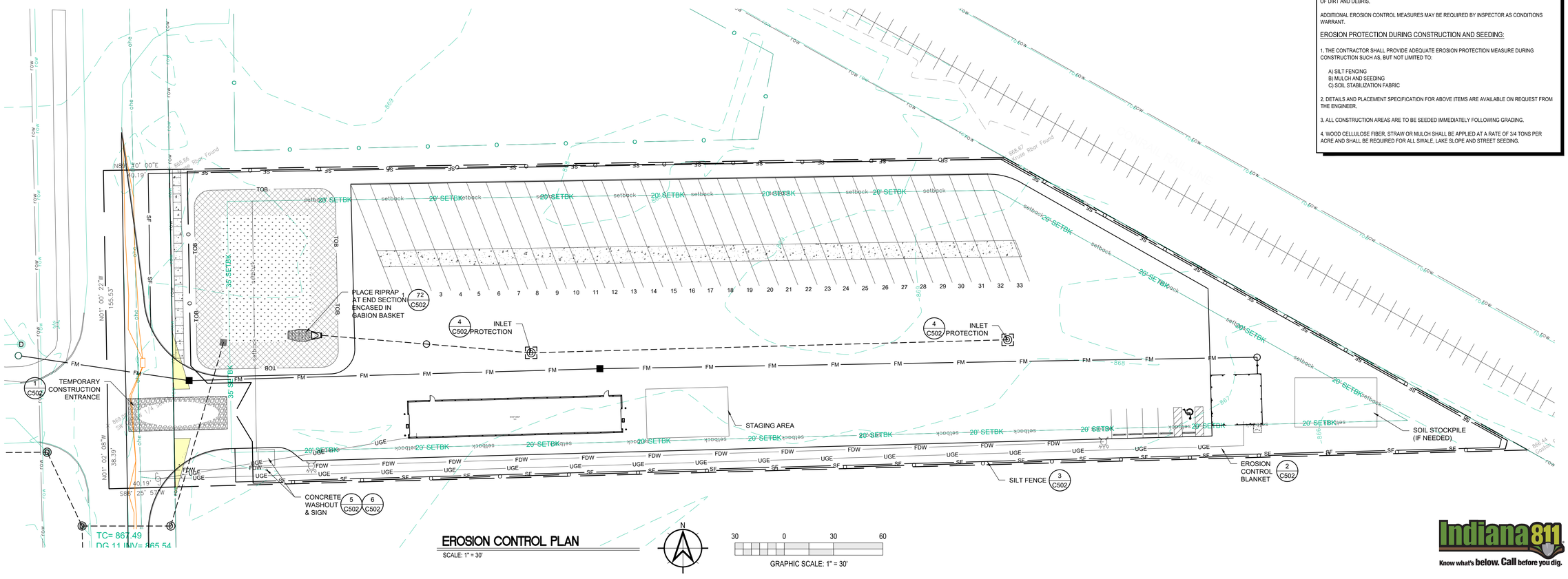
1. THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION PROTECTION MEASURE DURING CONSTRUCTION SUCH AS, BUT NOT LIMITED TO:

A) SILT FENCING
B) MULCH AND SEEDING
C) SOIL STABILIZATION FABRIC

2. DETAILS AND PLACEMENT SPECIFICATION FOR ABOVE ITEMS ARE AVAILABLE ON REQUEST FROM THE ENGINEER.

3. ALL CONSTRUCTION AREAS ARE TO BE SEEDED IMMEDIATELY FOLLOWING GRADING.

4. WOOD CELLULOSE FIBER, STRAW OR MULCH SHALL BE APPLIED AT A RATE OF 3/4 TONS PER ACRE AND SHALL BE REQUIRED FOR ALL SWALE, LAKE SLOPE AND STREET SEEDING.



EROSION CONTROL PLAN

SCALE: 1" = 30'

Indiana 811 Know what's below. Call before you dig.

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH
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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

EROSION CONTROL PLAN

BRYAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C302

Construction Storm Water General Permit Index Sheet

SECTION	TITLE	SHEET
A1	Index of the location of required plan elements in the construction plan	C000
A2	A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads	C000
A3	Narrative of the nature and purpose of the project	C303
A4	Latitude and longitude to the nearest fifteen (15) seconds	C000
A5	Legal description of the project site	C201
A6	11x17-inch plat showing building lot numbers/ boundaries and road layout/names	C303
A7	Boundaries of the one hundred (100) year flood plains, floodway fringes, and floodways	C301
A8	Land use of all adjacent properties	C303
A9	Identification of a U.S. EPA approved or established TMDL	C303
A10	Name(s) of the receiving water(s).	C303
A11	Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired	C303
A12	Soils map of the predominate soil types	C301
A13	Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)	C303
A14	Identification of any other state or federal water quality permits or authorizations that are required for construction activities	C303
A15	Identification and delineation of existing cover, including natural buffers	C301
A16	Existing site topography at an interval appropriate to indicate drainage patterns	C301
A17	Location(s) where run-off enters the project site	C301
A18	Location(s) where run-off discharges from the project site prior to land disturbance	C301
A19	Location of all existing structures on the project site	N/A
A20	Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of storm water management	N/A
A21	Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features	C303
A22	Size of the project area expressed in acres	C000
A23	Total expected land disturbance expressed in acres	C000
A24	Proposed final topography	C301
A25	Locations and approximate boundaries of all disturbed areas	C201
A26	Locations, size, and dimensions of all storm water drainage system such as culverts, storm water sewer, and conveyance channels	C301
A27	Locations of specific points where storm water and non-storm water discharges will leave the project site	C301
A28	Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas	C201
A29	Location of all on-site and off-site soil stockpiles and borrow areas	C302
A30	Construction support activities that are expected to be part of the project	N/A
A31	Location of any in-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds	N/A
B1	Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges	C303
B2	Stable construction entrance locations and specifications	C302
B3	Specifications for temporary and permanent stabilization	C302
B4	Sediment control measures for concentrated flow areas	C301
B5	Sediment control measures for sheet flow areas	C302
B6	Run off control measures	C302
B7	Storm water outlet protection location and specifications	C302/501
B8	Grade stabilization structure locations and specifications	N/A
B9	De-watering applications and management methods	C303
B10	Measures utilized for work within water bodies	N/A
B11	Maintenance guidelines for each proposed storm water quality measure	C303
B12	Planned construction sequence that describes the implementation of storm water quality measures in relation to land disturbance	C303
B13	Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project	N/A
B14	Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1	C303
B15	Material handling and storage procedures associated with construction activity	C303
C1	Description of pollutants and their sources associated with the proposed land use	C303
C2	Description of proposed post-construction storm water measures	C303
C3	Plan details for each storm water measures	C301/501
C4	Sequence describing storm water measure implementation	C303
C5	Maintenance guidelines for proposed post-construction storm water measures	C303
C6	Entity that will be responsible for operation and maintenance of the post-construction storm water measures	C302

NOTES:
"NA" - NON APPLICABLE

Construction Storm Water General Permit Notes Section A

A1 - Index of the location of required plan elements in the construction plan:

An index addressing the required elements within the drawing set is on C000 - Cover Sheet.

A2 - A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads:

A map showing the project in relationship to other areas of the county is on C000 - Cover Sheet.

A3 - Narrative of the nature and purpose of the project:

The project consists of the development of a new heavy duty asphalt parking lot with 36 truck and trailer stalls, a 2860 sq. ft. maintenance building, and 900 sq. ft. office building w/ employee parking. The site is located at 4005 North County Road 1000E in Brownsburg, Indiana 46112. Associated with the new improvements will be storm water management system consisting of overland flow, storm inlets, and retention/percolation basin with outlet control. (Shown on C303 - Construction Storm Water General Permit Notes).

A4 - Latitude and Longitude:

The latitude is 39°49'21"N and longitude is 86°20'42.19"W. (Shown on C000 - Cover Sheet)

A5 - Legal description of the project site:

A legal description of the overall parcel is on C201 - Site Plan

A6 - 11 x 17-inch plat showing building lot numbers/boundaries and road layout/names:

An 11x17 in. plan showing the overall property and new improvements is attached to this narrative.

A7 - Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways:

The 100 year floodway and floodway fringe is on C301 - Grading Plan and is based on best available information from the Indiana Department of Natural Resources.

A8 - Land use of all adjacent properties:

North - Commercial
South - Undeveloped/Woods
East - Railroad/Commercial
West - Residential/Agricultural
(Shown on C303 - Stormwater Pollution Prevention Plan)

A9 - Identification of a U.S. EPA approved or established TMDL:

Site to discharge stormwater into ground via percolation basin or through evaporation. Any dicharge via the emergency spillway will likely evaporate/percolate prior to being received by White Lick Creek (INW01D2_05) which is EPA 303d listed, but has no established TMDL (Shown on C304 - Construction Storm Water General Permit Notes)

A10 - Name(s) of the receiving water(s):

Receiving water is White Lick Creek (INW01D2_05) - (Shown on C303 - Stormwater Pollution Prevention Plan)

A11 - Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which is it impaired:

The impaired condition of White Lick Creek is due to presence of Escherichia Coli (E. coli) (Noted on C304 - Construction Storm Water General Permit Notes)

A12 - Soils map of the predominate soil types:

The soils on this property are predominantly Brookston Silty Clay Loam-Urban Land Complex and Crosby Silt Loam.
Brookston Silty Clay Loam features wetness as the main limitation affecting use and management of this soil type. Crosby Silt Loam features slow permeability and available water capacity is high with moderate content of organic matter.

Both soils are fair to poor for use as subgrade material as well as shear strength, compaction, and stability, medium to high compressibility, moderate to low shrink-swell potential, subject to frost heave, and seasonal high water table. A soils map is on C301 - Grading Plan.

A13 - Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)

There are no known water courses on or adjacent to this site.

A14 - Identification on any other state or federal water quality permits or authorizations that are required for construction activities:

This phase of the project scope will not require any additional federal or state water permits as noted on C304 - Construction Storm Water General Permit Notes.

Construction Storm Water General Permit Notes Section A (cont'd)

A15 - Identification and delineation of existing cover, including natural buffers:

The site is almost entirely covered with thick/heavy vegetation and trees with partial remnants of an existing gravel drive. The delineation of the various surface coverage is on C301 - Grading Plan.

A16 - Existing site topography at interval appropriate to indicate drainage patterns:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing and proposed contours are on C301 - Grading Plan.

A17 - Location(s) where run-off enters the project site:

As referenced above, the topography in this area is largely flat resulting in little to no potential for run-off entering the site from adjacent property. The existing contours are on C301 - Grading Plan.

A18 - Location(s) where run-off discharges from the project site prior to land disturbances:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing contours are on C301 - Grading Plan.

A19 - Location(s) of all existing structures on the project site:

The existing site is a vacant lot with no existing structures as depicted on C301 - Grading Plan.

A20 - Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management:

There are no existing retention facilities on site as depicted on C301 - Grading Plan.

A21 - Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features:

There are no locations on property where storm water may directly discharge into the groundwater as illustrated on C301 - Grading Plan.

A22 - Size of the project expressed in acres:

The total project are if 3.07 acres as noted on C000 - Cover Sheet.

A23 - Total expected land disturbance expressed in acres:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet.

A24 - Proposed final topography:

The final topography is on C301 - Grading Plan and is illustrated as spot elevations and contours.

A25 - Locations and approximate boundaries of all disturbed areas:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet and shown as the Limits of Construction on C201 - Site Plan.

A26 - Locations, size and dimensions of all stormwater drainage systems such as culverts, stormwater sewer, and conveyance channels:

The stormwater is conveyed by overland flow, underground storm pipes, and retention pond. These are shown on C301 - Grading Plan.

A27 - Locations of specific points where stormwater and non-stormwater discharges will leave the project site:

Stormwater discharge from the site will be via an emergency spillway from the retention pond at the east end of the site and sanitary discharge will be via a pump and force main at the west end of the site.(Shown on C301 - Grading Plan & C402 Sanitary Force Main Plan & Profile.

A28 - Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas:

All the surface improvements including buildings, impervious areas, new surface finishes, etc. are on C201 - Site Plan for horizontal notations and C301 - Grading Plan for elevations.

A29- Location of all on-site and off-site soil stockpiles and borrow areas:

The soil storage area will be on site located at the east end of the site (west of the pond). All soil will be placed in the final location or hauled off upon completion of construction as shown on C302 - Erosion Control Plan.

A30- Construction support activities that are expected to be part of the project

Any construction support area will be within the limits of disturbance and used as directed by the contractor. Since they are within the limits of disturbance, there will be no impact sensitive areas.

A31- Location of any on-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds:

There are no in stream activities associated with this project.

Construction Storm Water General Permit Notes Section B

B1- Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges:

1. Concrete Washout Area: Specific concrete washout area shall be established and labeled.
   a) The specific concrete wash out will be in a provided lined roll off box at a specific location near the entrance to the job site.
   b) The lined roll off box will be placed on stable soil with a stone approach.
   c) Once the lined roll off box is full, it will be removed from the site and discarded as clean fill once solid. A new lined roll off box will replace the one removed.
2. Construction Mobile Equipment Fluid
   a) All fueling of equipment will be managed and completed on a stone surface.
   b) Daily observation of all equipment for inspection of leaks or potential leaks of any fluids.
   c) Any observed fluid leaks are to be handled immediately with the equipment being moved to a stable stone surface and placed out of operation until maintenance is completed.
   d) Spill kits are to be utilized once the equipment is moved to the stable stone surface to prevent leakage from penetrating the ground or impacting storm water runoff.
3. Construction Material Waste
   a) All material waste is to be placed in provided roll off boxes as it is generated.
   b) Full roll off boxes are to be removed and properly disposed of in a licensed facility.
   c) No debris is to be stored on the ground surface at any time.
   These items are noted on C303 - Stormwater Pollution Prevention Plan.

B2- Stable construction entrance locations and specifications:

A stable construction entrance consisting of compacted subgrade, filter fabric and #2 stone is to be used for all construction traffic entering / exiting the site. The stone surface is to be maintained with new stone as necessary to maintain a solid drive surface. The location of the temporary construction entrance is shown on C302 for plan view and Sheet C502 for detail.

B3- Specifications for temporary and permanent stabilization:

The provisions for temporary stabilization during construction as well as permanent stabilization are included in the drawing set. The information contains specific stabilization techniques for the conditions of the site as well as timing of installation.

For temporary construction stabilization, it is the Contractor responsibility to maintain the stabilization during the construction duration and until permanent stabilization is installed.

For permanent stabilization, it is expected installation to occur immediately after final grading of the soil surface. Permanent stabilization is to be maintained by the Owner until 75% effective cover is established on the soil surface.
The stabilization is noted on C302 - Erosion Control Plan.

B4- Sediment control measures for concentrated flow areas:

The concentrated flow is protected at the pond inlet with riprap of minimum size being 6 inches and at the emergency spillway with stone dam as shown on C301 - Grading Plan and details on C501 & C502 - Sections and Details.

B5- Sediment control measures for sheet flow areas:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B6- Run-off control measures:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B7- Stormwater outlet protection location and specifications:

The concentrated flow is protected at the pond outlet with the previously mentioned rock dam as shown on C302 - Erosion Control Plan.

B8- Grade stabilization structure locations and specifications:

The grade on the site is largely flat and remain so post construction. There are no stabilization structures planned for this project as illustrated on C301 - Grading Plan.

B9- Dewatering applications and management methods:

Any dewatering required will be directed to the low area of the site (east) where it can percolate into existing soil. (Noted C303 - Stormwater Pollution Prevention Plan)

B10- Measures utilized for work within waterbodies:

This is not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B11- Maintenance guidelines for each proposed stormwater quality measure:

The stormwater quality is by a bioretention pond that is to be cleaned of trash, mowed, trimmed and monitored regularly to maintain proper function of the pond. (C301 - Grading Plan)

B12- Planned construction sequence that describes the implementation of stormwater quality measures in relation to land disturbance:

The construction sequence for installation of the erosion control measures and stormwater pollution prevention devices are detailed on C302 - Erosion Control Plan.

B13- Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project:

Not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B14- Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1:

The potential materials on site that could cause a spill response include fuels, petroleum fluids or other liquids as part of the construction equipment on site. If a spill occurs, immediate determination of the extent and emergency response requirements should be determined. Immediate containment of the spill with onsite spill kits should be completed. Once the spill is contained, contact is to be made to the Indiana Dept. of Environmental Mgmt., Office of Land Quality, Emergency Response Section: 1-888-233-7745 for in-state calls (toll free) within two hours of the spill. The contact should include the likelihood of damage to the waterways of the State of Indiana. This information is noted on C303 - Stormwater Pollution Prevention Plan.

B15- Material handling and storage procedures associated with construction activity:

All construction debris and wastes are to be loaded directly into provided roll off boxes for proper disposal off site. In no terms is debris or waste to be stored on site awaiting disposal or burned on property. Liquid wastes such as concrete wash out is to be disposed in the appropriate concrete wash out lined roll off boxes as provided. This includes any mortar/masonry/concrete grout material. Once these containers are full, they are to be removed from the site and disposed of in a licensed facility. Roll off boxes are to be rotated empty for full boxes for the entire project duration.

Construction Storm Water General Permit Notes Section B

C1- Description of pollutants and their sources associated with the proposed land use:

The post construction land use will have potential contaminants such as fuels, oils, grease, tires and other mobile equipment fluids. All materials, including mobile equipment will be stored on impervious surfaces during non-use or operation. (Noted on C303 - Stormwater Pollution Prevention Plan)

C2- Description of proposed post-construction stormwater measures:

The post construction contaminants are minimized by impervious surfaces being directed to a bioretention pond designed to collect sediment and pollutants prior to any discharge that may overtop the emergency spillway. (Noted C303 - Stormwater Pollution Prevention Plan)

C3- Plan details for each stormwater measure:

The post construction stormwater measures is primarily a bioretention pond as shown on C301 - Grading Plan and L101 - Landscape Plan.

C4- Sequence describing stormwater measure implementation:

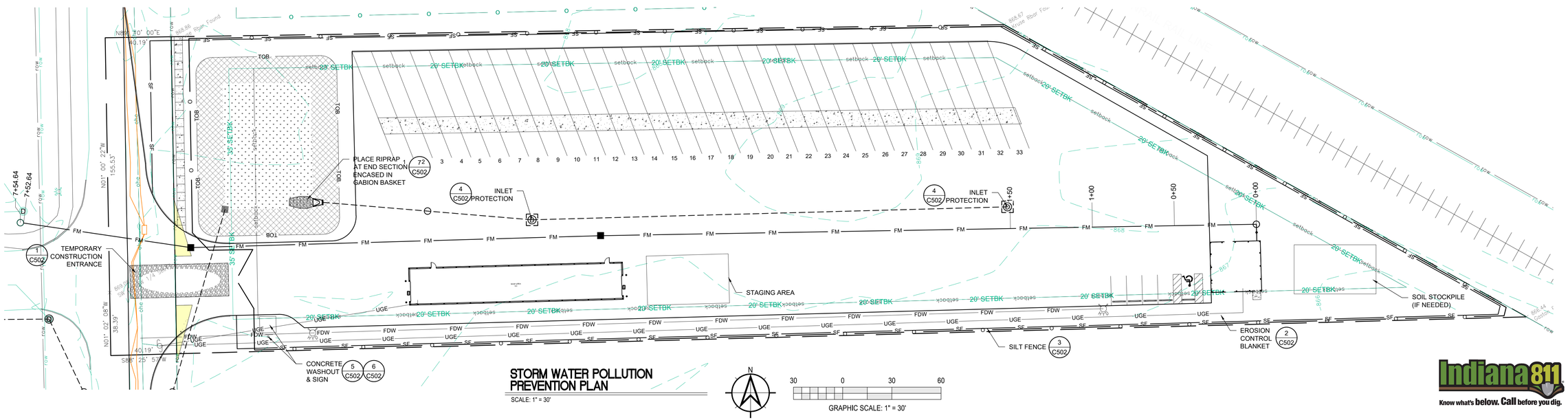
The sequence of installation for the post construction stormwater measure is part of construction sequencing shown C302 - Erosion Control Plan.

C5- Maintenance guidelines for proposed post-construction stormwater measures:

An operations and maintenance manual are part of the submittal information under separate documentation.

C6- Entity that will be responsible for operation and maintenance of the post-construction stormwater measures:

The responsible person for the post construction stormwater measures is the property owner as noted on C302 - Erosion Control Plan.



STORM WATER POLLUTION PREVENTION PLAN

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

STORM WATER POLLUTION PREVENTION PLAN

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER
Brian E. Moench

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C303

Indiana 811
Know what's below. Call before you dig.

UTILITY CONTACT INFORMATION

WATER COMPANY:	
NAME:	CITIZENS ENERGY
CONTACT NAME:	---
PHONE NUMBER:	(317) 924-3311
E-MAIL:	---

SANITARY SEWER COMPANY:	
NAME:	HENDRICKS CO. REGIONAL SEWER DIST.
CONTACT NAME:	---
PHONE NUMBER:	(317) 745-4928
E-MAIL:	---

ELECTRIC COMPANY:	
NAME:	DUKE ENERGY
CONTACT NAME:	---
PHONE NUMBER:	(317) 745-5473
E-MAIL:	---

GAS COMPANY:	
NAME:	VECTREN
CONTACT NAME:	---
PHONE NUMBER:	(800) 227-1376
E-MAIL:	---

TELEPHONE COMPANY:	
NAME:	AT&T
CONTACT NAME:	---
PHONE NUMBER:	(317) 272-6450
E-MAIL:	---

UTILITY NOTES:

SANITARY GENERAL SPECIFICATIONS:

1. (A) 100 PSI FLOWABLE FILL SHALL BE REQUIRED FOR ROAD CROSSINGS UNDER EXISTING PAVEMENT AND WITHIN FIVE (5) FEET OF THE PAVEMENT EDGE. STREET CUT REPAIRS SHALL USE 100 PSI FLOWABLE FILL TO WITHIN 6" OF PAVEMENT SURFACE. INSTALL 5" OF 4000 PSI READY MIX CONCRETE WITHIN 1" OF PAVEMENT 2-24 HOURS AFTER FLOWABLE FILL HAS BEEN INSTALLED. INSTALL 1" OF #11 SURFACE ASPHALT LEVEL WITH EXISTING PAVEMENT WITHIN 24 HOURS ON CONCRETE INSTALLATION.

(B) FLOWABLE FILL SHALL BE A MIXTURE OF SAND, PORTLAND CEMENT AND WATER, THOROUGHLY MIXED, AND SHALL HAVE 100 PSI COMPRESSIVE STRENGTH WITHIN 3 HOURS OF PLACEMENT. FLOWABLE FILL SHALL BE PLACED FROM TOP OF #8 STONE PIPE COVER TO BOTTOM OF NEW PAVEMENT.

(C) IN LOCATIONS OF NEW DEVELOPMENT, WHERE UTILITIES ARE INSTALLED PRIOR TO ROAD CONSTRUCTION, TRENCH BACKFILL UNDER FUTURE ROAD SHALL BE ENTIRELY #8 CRUSHED STONE FROM MANHOLES.

2. ALL OSHA SAFETY STANDARDS SHALL BE STRICTLY ENFORCED FOR PROTECTION OF WORKERS.

3. NO SEWER SYSTEM CONSTRUCTION MAY BEGIN UNTIL APPROVAL FROM I.D.E.M.

4. ONE SET OF I.D.E.M. APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES

POLYVINYL CHLORIDE (P.V.C.) PIPE:

1. PIPE DIAMETERS OF 10 INCHES THROUGH 15 INCHES SHALL MEET OR EXCEED ALL THE REQUIREMENTS OF ASTM D-3034, AND SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-C, REFERENCE SHOULD BE MADE TO ASTM D-1784 FOR A SUMMARIZATION OF CELL CLASS PROPERTIES. PIPE DIAMETERS GREATER THAN 15 INCHES SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM F-679, AND SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-C. P.V.C. RIBBED SEWER PIPE SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM F-794 AND SHALL HAVE A MINIMUM CELLL CLASSIFICATION OF 12454.

2. THE MINIMUM WALL THICKNESS FOR PIPES OF 10 INCHES THROUGH 15 INCHES IN DIAMETER SHALL CONFORM TO SDR-35, TYPE PSM, AS SPECIFIED IN ASTM D-3034. THE MINIMUM WALL THICKNESS FOR PIPE DIAMETERS GREATER THAN 15 INCHES SHALL CONFORM TO T-1 AS SPECIFIED IN ASTM F-679. P.V.C. PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 46 POUNDS PER SQUARE INCH FOR EACH DIAMETER WHEN MEASURED AT FIVE PERCENT DEFLECTION AND TESTED IN ACCORDANCE WITH ASTM D-2412.

3. PIPE JOINTS SHALL HAVE A BELL WALL, GASKET GROOVE AND SPIGOT WHICH IS INTERGRAL WITH THE PIPE. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS' RECOMMENDATIONS AND ASTM D-3212. NO SOLVENT CEMENT JOINTS SHALL BE ALLOWED. GASKET MATERIAL SHALL BE CONSTRUCTED OF STYRENE BUTADIENE OR BUTYL RUBBER AND MEET THE REQUIREMENTS OF ASTM F-477.

4. EACH PIPE SECTION SHALL BE MARKED WITH THE NAME OF THE MANUFACTURER, TRADEMARK OR TRADEMANK, NOMINAL PIPE SIZE, PRODUCTION / EXTRUSION CODE, MATERIAL AND CELL CLASS DESIGNATION AND ASTM NUMBER.

5. INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM RECOMMENDED PRACTICE D-2321.

SANITARY SEWER NOTES:

1. 10 STATES STANDARDS AND INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT REQUIREMENTS SHALL BE MET OR EXCEEDED FOR ALL DESIGN, MATERIALS AND CONSTRUCTION METHODS.

2. SANITARY SEWER MANHOLES SHALL BE MONOLITHIC PRECAST SECTIONS, INCLUDING THE BOTTOM SECTION. ALL SECTIONS SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH ASTM C-478. ALL MANHOLE INLET CONNECTIONS SHALL BE LOCK JOINT FLEXIBLE SLEEVES CONFORMING TO ASTM C-923. ONLY PRECAST CONCRETE RINGS SHALL BE ALLOWED FOR CASTING RISERS. ALL MANHOLES, GRADE RINGS AND CASTING SHALL BE SEALED TO PREVENT INFILTRATION.

3. MANHOLE INVERTS SHALL BE SHAPED FOR FLOW CHANNELS WITH CONCRETE AND SMOOTHLY FINISHED BY A SEMI CIRCULAR SECTION CONFORMING TO THE INSIDE DIAMETER OF THE CONNECTING SEWERS. NO BRICK, ROCK OR SAND FILLERS WILL BE ALLOWED.

4. ALL MANHOLE COVERS SHALL BE TRAFFIC BEARING, NON-ROCKING DESIGN WITH NON-PENETRATING PICK HOLES.

5. SANITARY SEWERS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 MEETING ASTM D3034 SPECIFICATIONS. ALL SEWER MAINS SHALL HAVE A MINIMUM DIAMETER OF 8", ALL PIPE SPECIFIED SHALL SUPPORT ANTICIPATED LOADS.

6. ALL JOINTS SHALL BE PUSH-ON TYPE (SLIP SEAL) OR SOLVENT WELD.

7. BEDDING FOR PVC PIPE SHALL CONFORM TO BEDDING CLASSES I, II OF III, AS DESCRIBED IN ASTM D2321, FLEXIBLE SEWER PIPE INSTALLATION REQUIREMENTS.

UTILITY NOTES (cont'd):

8. ALL SEWER PIPE SHALL BE LAID USING PIPE LASER EQUIPMENT FOR BOTH VERTICAL AND HORIZONTAL ALIGNMENT.

9. MINIMUM ALLOWABLE COVER SHALL BE 5'-0" OVER TOP OF PIPE.

10. ALL SEWER MAINS SHALL BE DEFLECTION TESTED WITH AN 11 POINT, 5% MANDREL AFTER COMPACTED AGGREGATE IS IN PLACE FOR ALL STREETS. FLEXIBLE PIPE WILL BE TESTED AFTER BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. ALL PVC PIPE FAILING THE MANDREL TEST SHALL BE REROUNDED IN PLACE OR AN ALTERNATE METHOD APPROVED BY THE GOVERNING JURISDICTION IF REPAIR REQUIRED, SEWER SHALL BE RETESTED 30 DAYS AFTER REPAIR IS COMPLETE.

11. ALL SEWER MAINS SHALL BE LAMPED AT THE TIME THE MANDREL TEST IS CONDUCTED. ALL MAINS SHALL BE TRUE TO ALIGNMENT AND GRADE.

12. ALL SEWER MAINS AND LATERAL CONNECTIONS SHALL BE AIR TESTED IN ACCORDANCE WITH UNI-BELL UNI-B-6-85. MINIMUM TIME FOR THE AIR TEST SHALL BE FOR A 1.0 PSIG PRESSURE DROP. ALL SECTIONS FAILING AIR TEST SHALL BE REPAIRED AND RETESTED.

13. ALL SERVICE WYE BRANCHES SHALL BE INSTALLED AT THE TIME OF THE SEWER MAIN INSTALLATION. NO DIRECT TAPS WILL BE ALLOWED ON NEW MAIN CONSTRUCTION. NO VERTICAL CONNECTIONS WILL BE ALLOWED.

14. A SEPARATE (6" MINIMUM) SERVICE SHALL BE PROVIDED FOR EACH UNIT SERVED APPROXIMATELY SIX (6) FEET TO THE RIGHT OF THE LOT CENTERLINE. NO WYE'S SHALL BE ALLOWED, INCLUDING CONDOMINIUMS.

15. THE MAXIMUM ALLOWABLE VERTICAL DISTANCE BETWEEN ANY INFLUENT LINE AND THE EFFLUENT MAIN SHALL BE 6' FOR TYPE 'A' AND 'C' MANHOLES. ANY DISTANCE GREATER THAN 6" SHALL REQUIRE A TYPE 'B' MANHOLE.

16. WHERE A SEWER EXTENSION OR IMPROVEMENT CONNECTS TO A EXISTING SEWER OR MANHOLE, IT MUST BE LOCATED IN A STREET, ROAD OR HIGHWAY R/W AND NOT LOCATED IN SUCH A MANNER WHERE IT WILL CUT THROUGH LOTS OR DEVELOPMENTS.

17. ALL EXTENSIONS SHALL BE INSTALLED AT MINIMUM GRADES.

CONCRETE MANHOLE NOTES:

1. ALL MANHOLES SHALL BE NEGATIVE AIRE PRESSURE (VACUUM) TESTED AS PER ASTM C1244-93 STANDARD METHOD.

2. NO MANHOLES SHALL BE MORE THAN 14' FROM BACK OF CURB.

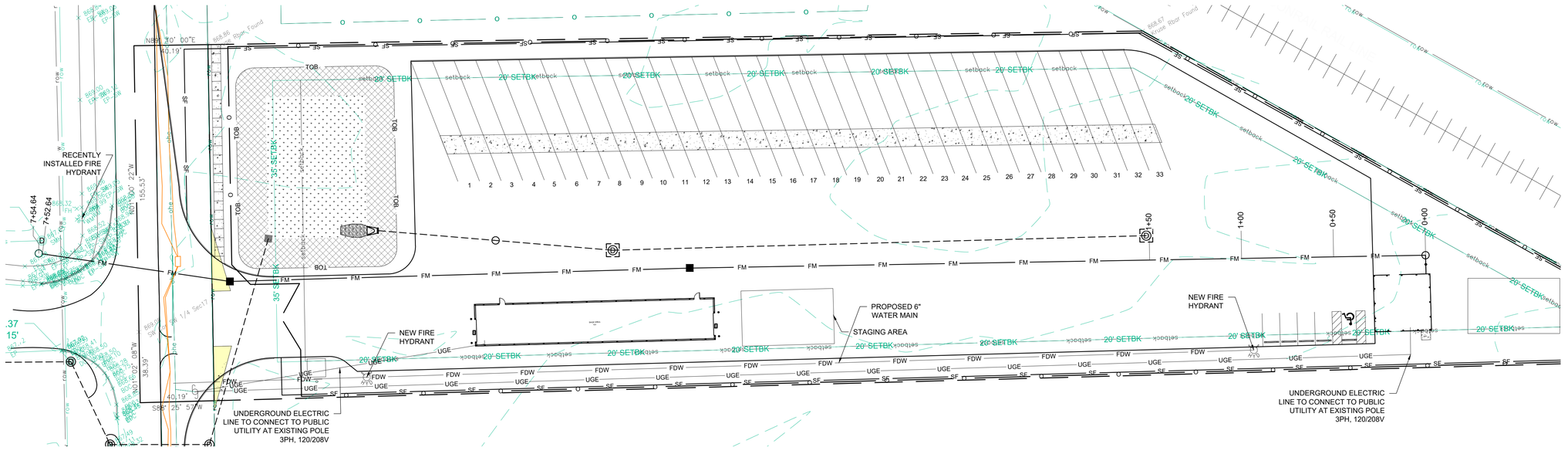
3. NO MANHOLE SHALL BE LOCATED IN ANY BACKYARD OR SIDE YARD. THEY MUST BE LOCATED IN THE FRONT YARD OR FRONT LOT THAT IS FRONTING A STREET.

4. ALL JOINTS IN MANHOLES SHALL BE SEALED TO PREVENT INFILTRATION BY USING A RUBBER 'O-RING' GASKET AND A 1/2" EXTRUDABLE PERFORMED GASKET BETWEEN ALL PRECAST SECTIONS.

5. ANNULAR SPACE AROUND SANITARY SEWER AT POINT OF ENTRANCE INTO THE MANHOLE SHALL BE GROUTED COMPLETELY AROUND SANITARY SEWER, INSIDE AND OUTSIDE TO INSURE SMOOTH TRANSITION.

6. WHEN CONNECTING A NEW SEWER INTO AN EXISTING MANHOLE, THE EXISTING MANHOLE SHALL BE BROUGHT UP TO MEET PRESENT STANDARDS.

7. SECTION JOINTS ON PRECAST CONCRETE MANHOLES SHALL BE SEALED WITH BLACK TAR MASTIC 6" ABOVE AND 6" BELOW JOINT, ON MANHOLE EXTERIOR.



UTILITY PLAN

SCALE: 1" = 30'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

UTILITY PLAN

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER
Brian E. Moench

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C401

APPROX. 753 L.F. OF 2" SANITARY SEWER FORCE MAIN. PVC SDR 21 or HDPE DR 11 PIPE MUST BE USED.

NOTE:
FORCE MAIN TO BE AT A DEPTH OF 54" MIN. TO 78" MAX. FORCE MAIN TO BE BORED OVER THE ENTIRE DISTANCE. TRACER WIRE REQUIRED FULL LENGTH (SEE TOWN STANDARDS: SD-S08 & DS-S14)

CONNECT FORCE MAIN TO EXISTING SANITARY STRUCTURE (CURRENTLY UNDER CONSTRUCTION), INVERT(S) TBD UPON COMPLETION OF SANITARY SEWER

7+54.64

7+52.64

CR 1000E

CR 400N

TC= 867.37
DG 10 INV= 2.15'

TC= 867.49

JOINING POINT (BORE PIT @ 450')

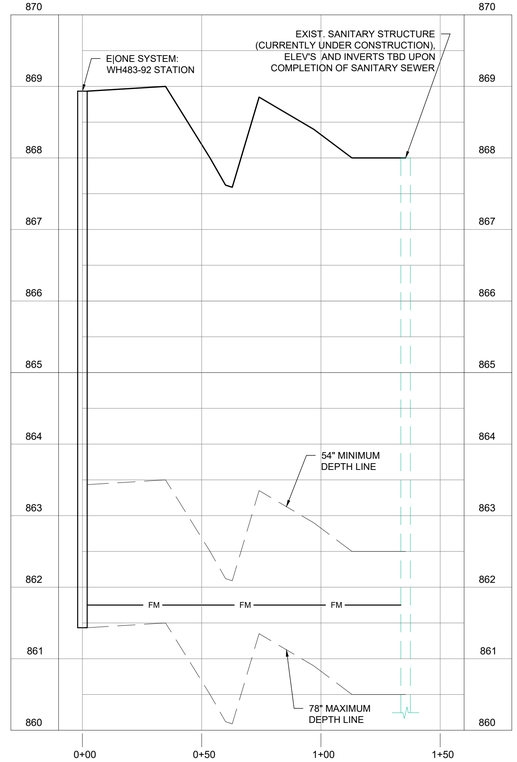
JOINING POINT (BORE PIT @ 400')

E|ONE SYSTEM: WH483-92 STATION, INV. (IN) 866.03 (SEE DETAILS ON C203)

SANITARY CLEANOUT

10 L.F. 6" PVC GRAVITY SEWER @ 2% INV. 866.50

30'x30' OFFICE/ BLDG FFE = 872.25



FORCE MAIN PLAN + PROFILE

SCALE: Horz.: 1" = 30', Vert.: 1" = 10'

N

30 0 30 60

GRAPHIC SCALE: 1" = 30'

Indiana 811 Know what's below. Call before you dig.

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

SANITARY FORCE MAIN PLAN & PROFILE

BRYAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Bryan E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
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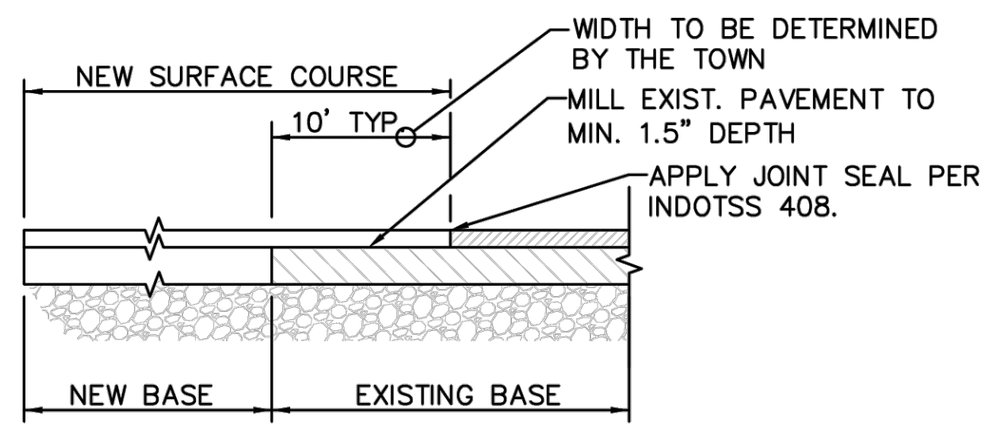
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C402



CONNECTION TO EXISTING STREETS
NO SCALE

NOTE:

THIS DETAIL SHALL BE USED FOR CONNECTING TO THE END OF AN EXISTING STREET.

EXISTING PAVEMENT SHALL BE SAW CUT, FULL DEPTH, AT A UNIFORM LOCATION INSIDE OF THE EXISTING EDGE OF PAVEMENT, WHERE THE PAVEMENT IS IN GOOD CONDITION AND WILL PROVIDE AN INTERFACE WITH THE FULL PAVEMENT SECTION LINE AND GRADE, FREE FROM LOOSE, DAMAGED, DETERIORATED OR OTHERWISE COMPROMISED MATERIAL; A MINIMUM OF SIX (6) INCHES FROM THE EXISTING EDGE OF PAVEMENT FOR THE FULL WIDTH OF THE EXISTING PAVEMENT; LOCATION OF SAW-CUT TO BE DETERMINED BY THE TOWN OF BROWNSBURG. THE ENTIRE AREA OF THE PROPOSED INTERFACE SHALL BE EXCAVATED TO THE PROPOSED SUBGRADE ELEVATION. THE SUBGRADE SHALL BE STABILIZED IN ACCORDANCE WITH TOWN OF BROWNSBURG STANDARDS AND SPECIFICATIONS. AFTER THE SUBGRADE HAS BEEN STABILIZED AND APPROVED, EXISTING HMA PAVEMENT WILL BE SURFACE MILLED 10 FEET ALONG THE NEW SAW-CUT END OF PAVEMENT TO PROVIDE A WATER STOP AND SMOOTH TRANSITION TO THE NEW PAVEMENT WHEN THE SURFACE MIX IS APPLIED. THE NEW PAVEMENT SECTION SHALL BE INSTALLED IN ACCORDANCE WITH TOWN STANDARDS AND SPECIFICATIONS.

TOWN OF BROWNSBURG
DETAIL NO. TR-13
REVISION DATE: SEPT 2016

HANDICAP RAMP
NOT TO SCALE
11 C501

SECTION 02504 – ADJACENT ROADWAY IMPROVEMENTS

PART 1 - GENERAL

1.01 Roadways adjacent to proposed developments shall conform to the following requirements and standards:

A. Adjacent Roadway Improvements

1. Developers shall be responsible for improvements to the existing roadway(s) that front their property. These improvements shall include, but are not limited to, the following items:
   a. Construction of acceleration lanes, deceleration lanes, and passing blisters for each entrance or street intersection as indicated in the Standard Details.
   b. In order to construct adequate acceleration lanes, deceleration lanes, and passing blisters, right-of-way shall be obtained which has a width consistent with the most current accepted Thoroughfare Plan.
   c. The existing roadway along the development frontage shall be widened to match the width requirements based on the functional classification of the roadway as defined by the Thoroughfare Plan. Once widened, the entire roadway fronting the development shall be resurfaced for consistency.
2. Additional improvements may be required depending on field conditions and as determined by the Town of Brownsburg.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

PART 4 - FIGURES

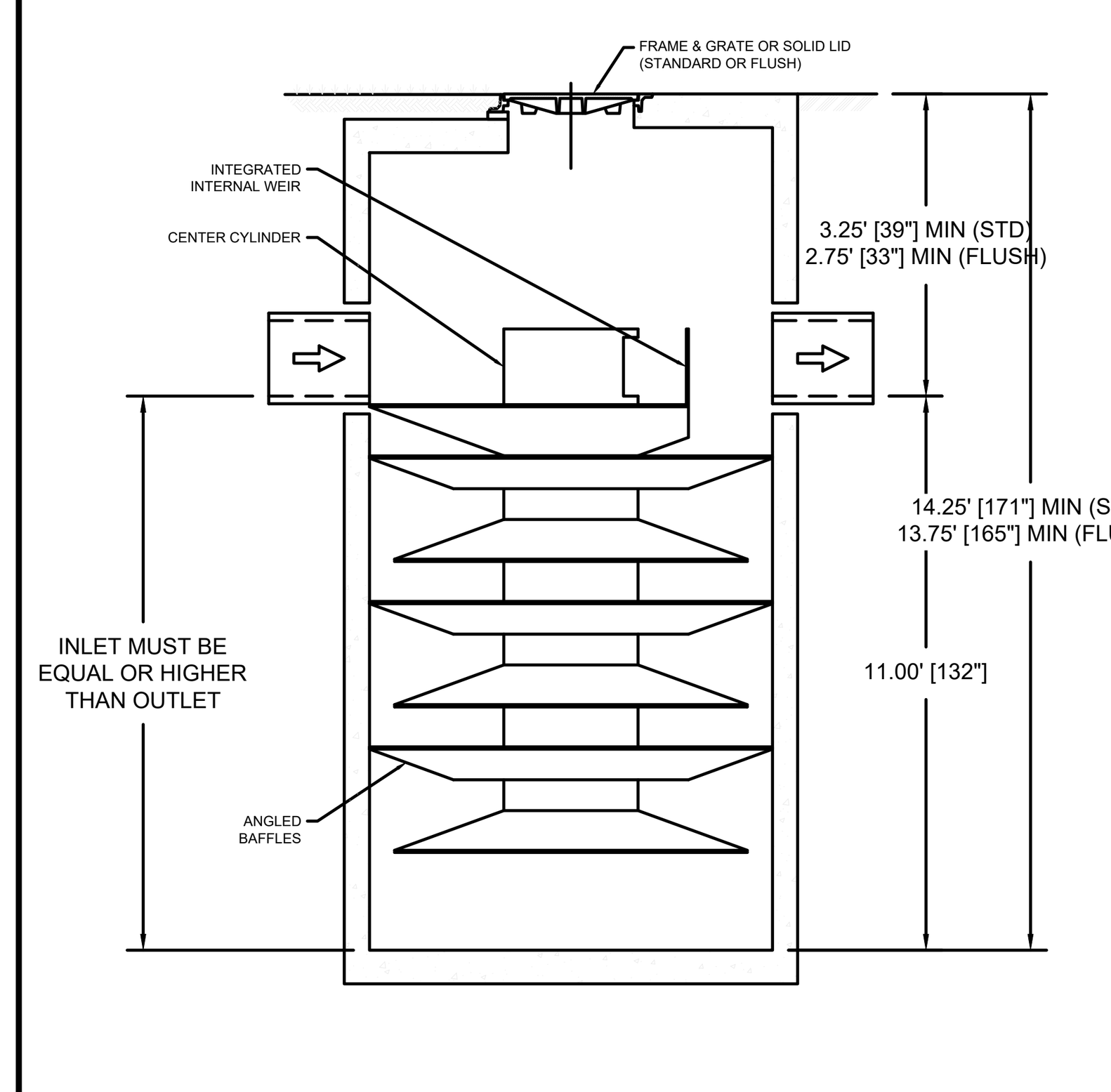
4.01 Associated Standard Details

Detail No.	Description
TR-01	Concrete Chair Back Curb & Gutter
TR-02	Concrete Roll Curb & Gutter
TR-03	Driveway Curb Cut
TR-04	Curb Inlet Detail
TR-05	Concrete Center Curb
TR-09	Concrete Driveway
TR-13	Connection to Existing Streets
TR-14	Widening Detail
TR-16	Minimum Entrance Requirements

TR-17	Roadway Improvements at New Development Entrances
RS-01	Typical Cross Sections – Primary Arterials A1 and A2
RS-02	Typical Cross Sections – Primary Arterials B1 and B2
RS-03	Typical Cross Sections – Primary Arterials C1 and C2
RS-04	Typical Cross Sections – Secondary Arterials 1 and 2
RS-05	Typical Cross Sections – Collectors 1 and 2
RS-06	Typical Cross Sections – Neighbor Collectors 1 and 2
RS-07	Typical Cross Sections – Local 1 (No Parking), Local 2 (Parking Both Sides) and Local 3 (Parking One Side)
RS-08	Typical Trail Cross Section
RS-09	Typical Cross Section – Local Street with Roadside Ditch
RS-10	Typical Cross Section – Local Alternatives

END OF SECTION 02504

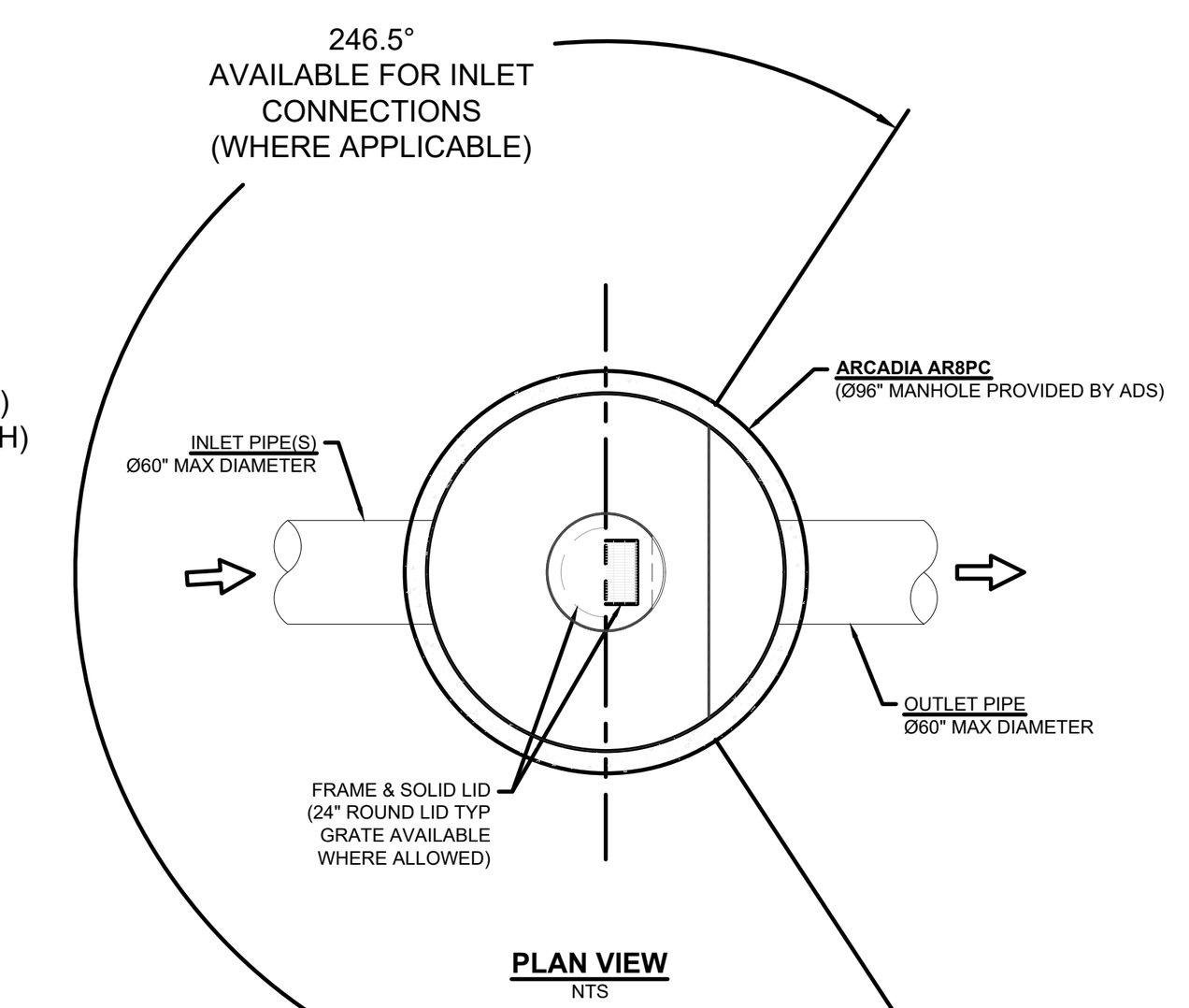
ARCADIA AR8PC



PROFILE VIEW
NTS

PRODUCT SPECIFICATIONS

- THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW. IF PEAK FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.
- THE ARCADIA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 80% OF THE SUSPENDED SOLIDS ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY VERIFIED TESTING USING OK-110 MEDIA GRADATION OR EQUIVALENT AND 300 MG/L INFLUENT CONCENTRATION. FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT.
  -OR -
  THE ARCADIA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH D50=75 MICRON AND 200 MG/L INFLUENT CONCENTRATION.



PLAN VIEW
NTS

NOTES:
- ENGINEER / CONTRACTOR TO CONFIRM PIPE MATERIALS AND APPLICABLE ADAPTERS.
- CONTRACTOR IS RESPONSIBLE FOR MATERIAL AND LABOR TO BRING CASTINGS TO FINISHED GRADE.
- CONTRACTOR TO MEASURE HEIGHT OF STRUCTURE TO ENSURE THAT DEPTH OF EXCAVATION IS CORRECT.
- UNIT SHALL CONFORM TO HS20-44 LOAD RATINGS.

ARCADIA AR8PC CONCRETE MANHOLE

DATE:	04/23/25	DRAWN:	JLM
DRAWING #:	530-810	CHECKED:	CJD/AT

DATE	DRWN	CHKD	DESCRIPTION
06/13/25	JLM	TD	CONFIGURATION & SPECS UPDATED

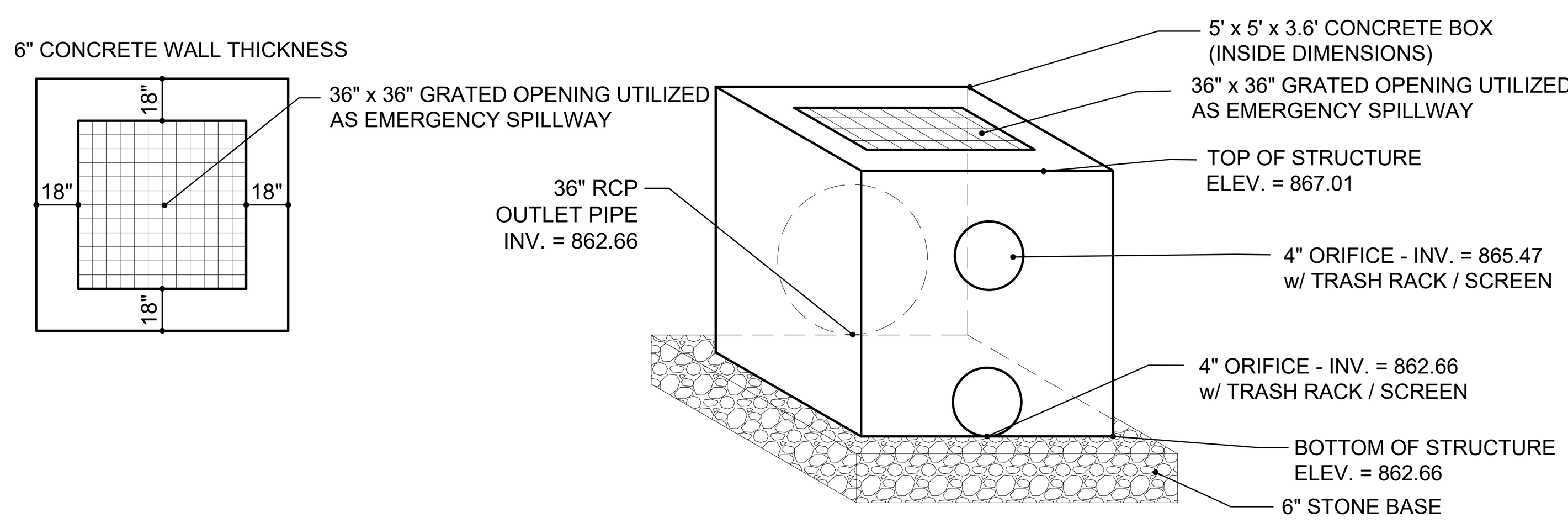
ARCADIA
Stormwater Separator

4640 TRUEMAN BLVD
HILLIARD, OH 43026

ADS

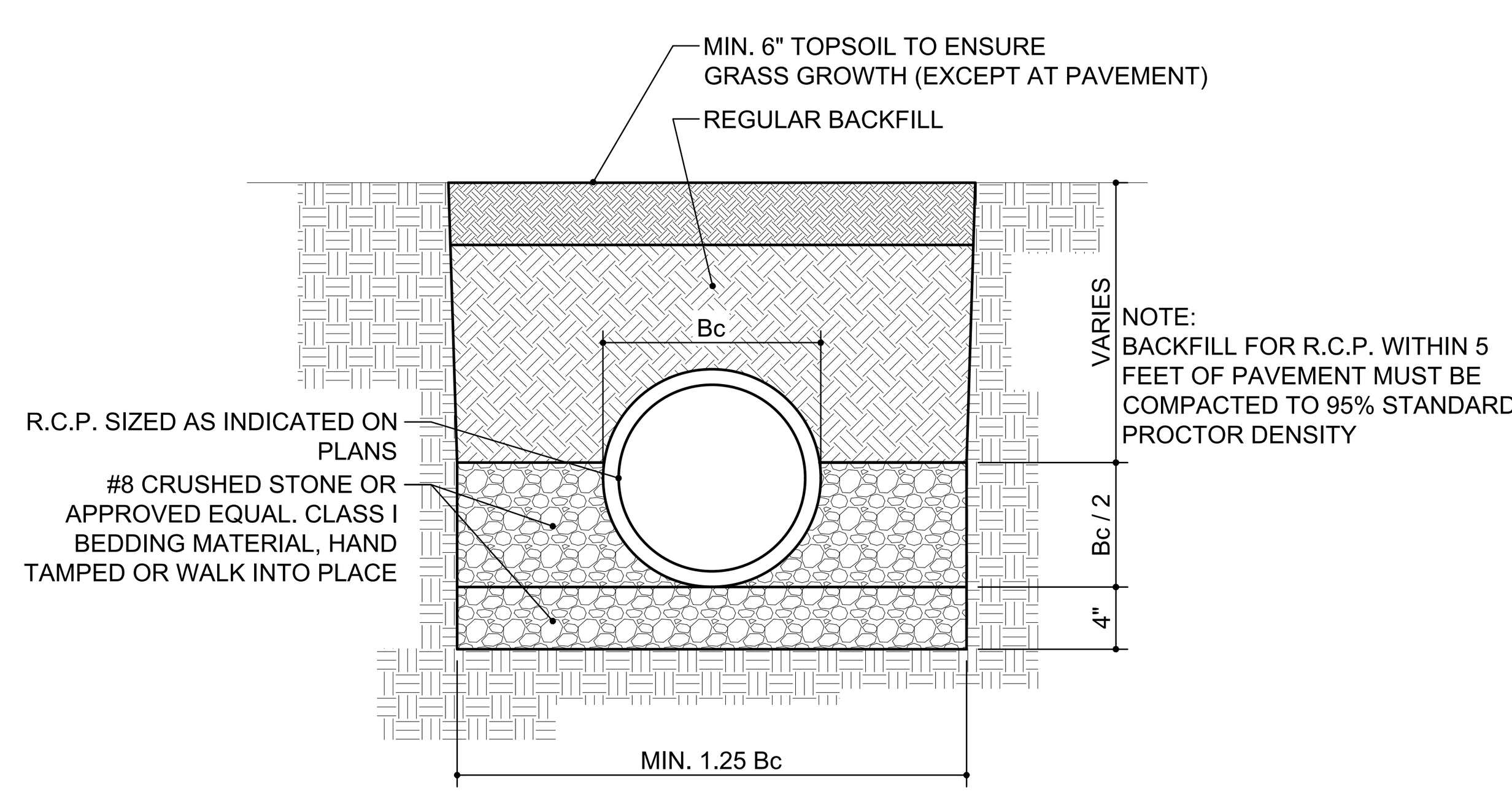
SHEET 1 OF 1

ARCADIA AR8 HYDRODYNAMIC SEPARATOR DETAIL
NOT TO SCALE
10 C501

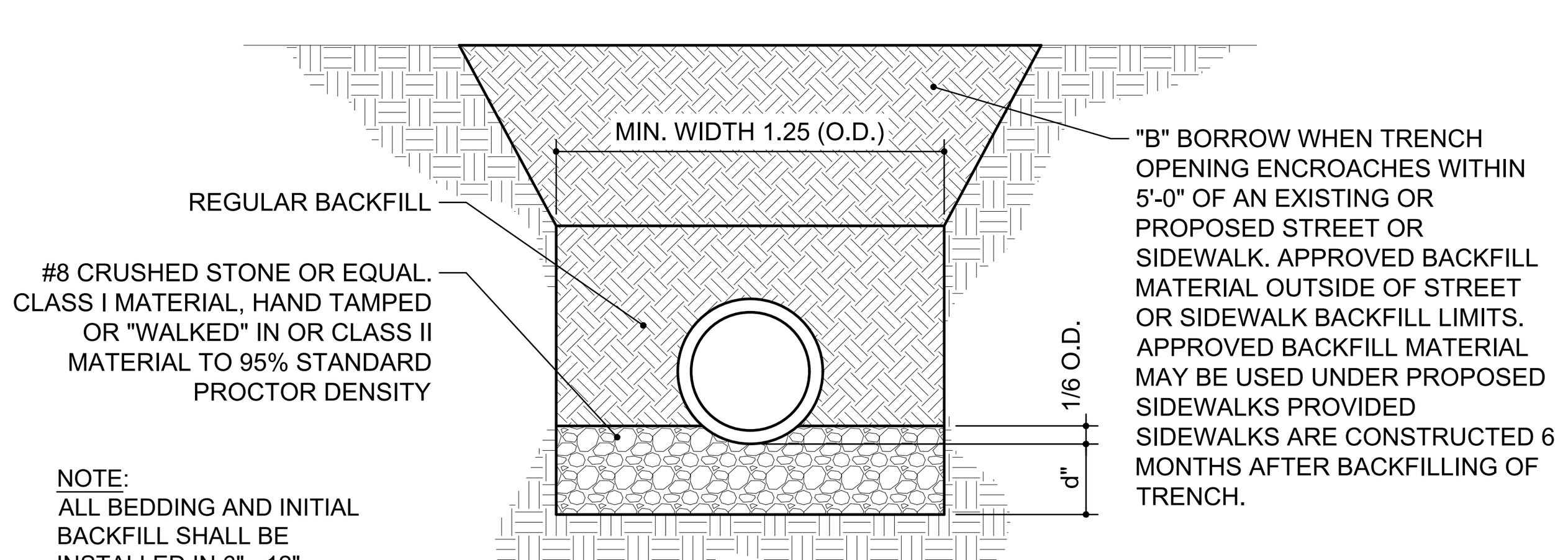


NOTE:
OPENINGS TO BE COVERED UNTIL COMPLETION OF CONSTRUCTION TO PREVENT SILT AND OTHER DEBRIS FROM PASSING THROUGH.

OUTLET STRUCTURE DETAIL
NOT TO SCALE
9 C501



NOTE:
BACKFILL FOR R.C.P. WITHIN 5 FEET OF PAVEMENT MUST BE COMPACTED TO 95% STANDARD PROCTOR DENSITY



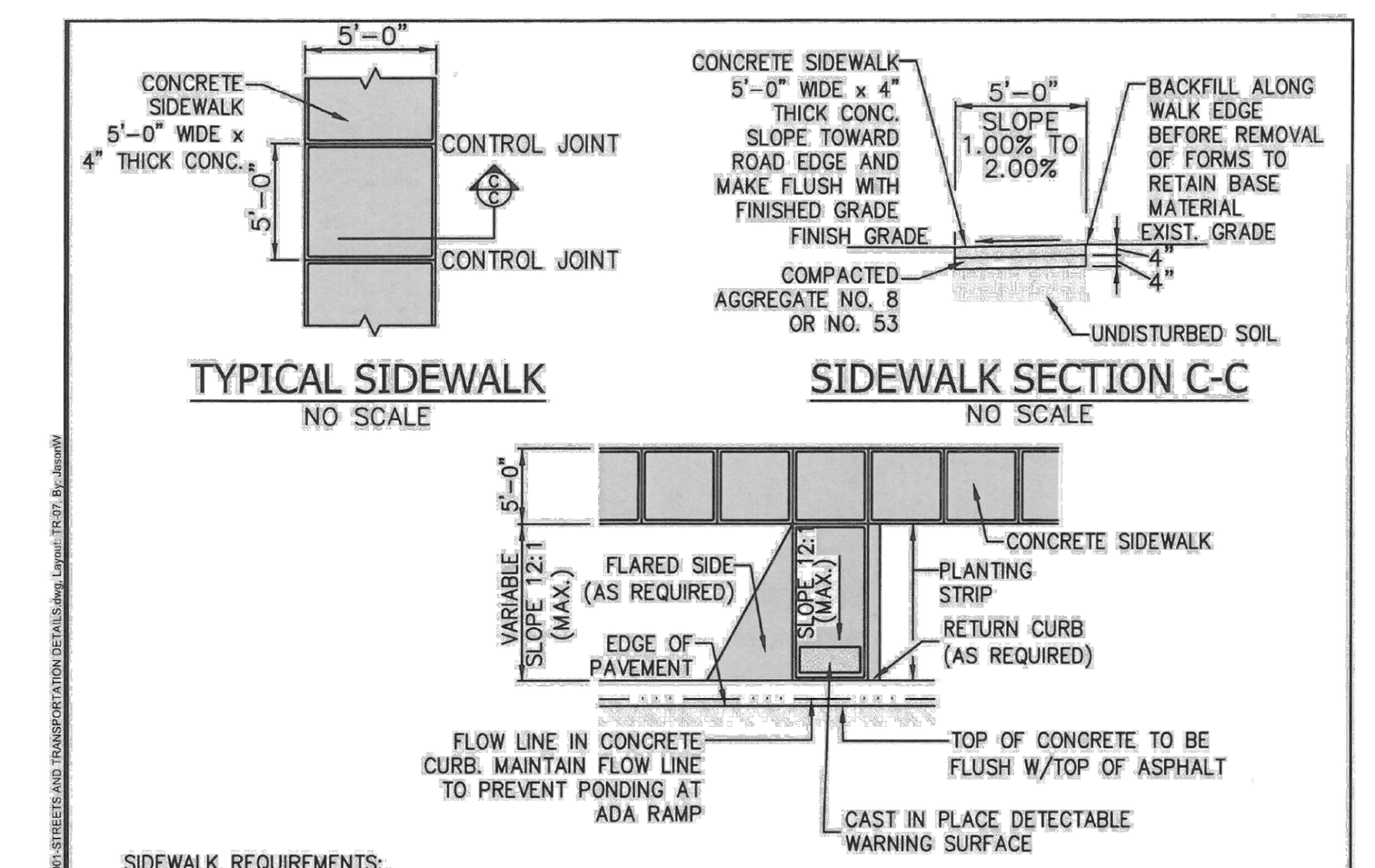
NOTE:
ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 6" - 12" BALANCED LIFTS.

Bc = OUTSIDE DIAMETER
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

A MIN. 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

PIPE SIZE (D)	27" OR LESS	30" TO 60"	66" AND UP
BEDDING BELOW THE PIPE BARREL 6" MINIMUM	3"	4"	6"

R.C.P. PIPE TRENCH DETAIL
NOT TO SCALE
8 C501

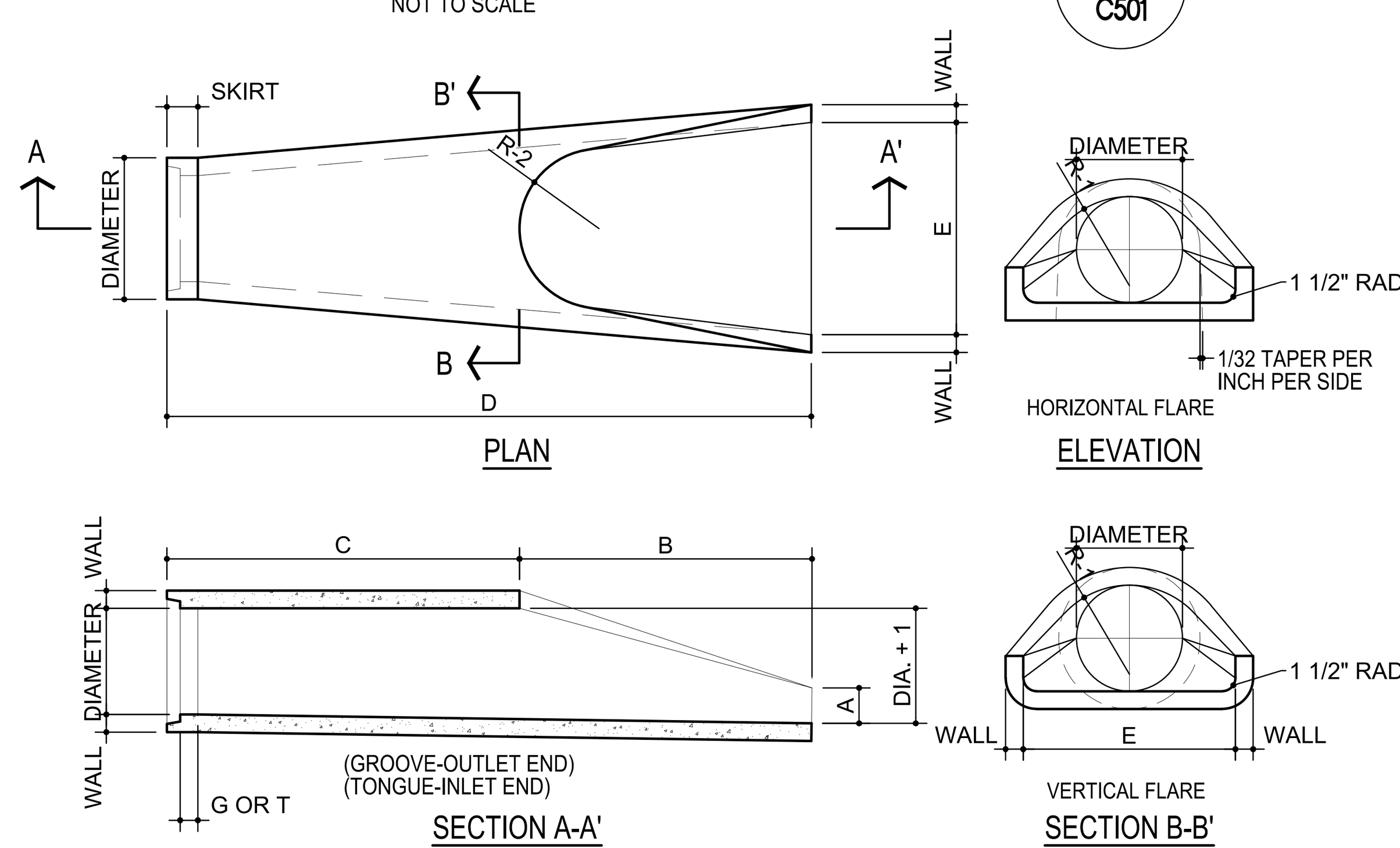


SIDEWALK ADA RAMP DETAIL
NO SCALE

SIDEWALK REQUIREMENTS:
1. CONCRETE FOR SIDEWALKS SHALL MEET THE FOLLOWING SPECIFICATIONS:
   A) 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS
   B) 564 LBS. CEMENT PER CUBIC YARD CONCRETE
   C) MAXIMUM WATER CEMENT RATIO: 0.40
   D) AIR CONTENT: 5%-7%
   E) WATER REDUCING ADMIXTURE REQUIRED
2. SIDEWALKS SHALL HAVE A BROOM FINISH WITH TOOLED EDGES AND TOOLED CONTROL JOINTS.
3. CURING COMPOUND EQUAL TO "HYDROCIDE CURING COMPOUND" AS MANUFACTURED BY SONNEBORN, SHALL BE APPLIED TO FINISHED CONCRETE.
4. EXPANSION/CONTRACTION JOINTS SHALL BE INSTALLED AT MAXIMUM OF 50' INTERVALS, AND WHERE CONCRETE WILL ABUT EXISTING WALKS, CURBING, DRIVES, OR OTHER CONCRETE.
5. EXPANSION/CONTRACTION JOINT SHALL BE INSTALLED WITH THREE (3) 1/4" DIA. SMOOTH DOWEL BARS, EACH 12" LONG. DOWEL BARS SHALL HAVE A FULL END CAP ON ONE END. EXPANSION/CONTRACTION JOINT SHALL BE FILLED WITH EXPANSION JOINT FILLER. CONNECTION TO EXISTING WALKS OR SLABS SHALL REQUIRE DRILLING TO INSTALL DOWELS. EPOXY SHALL BE USED TO SET DOWELS IN EXISTING CONCRETE.
6. AT DRIVEWAYS, CONCRETE SHALL BE REINFORCED WITH 6 x 6 x 6/6 WELDED WIRE FABRIC. REINFORCING WELDED WIRE FABRIC SHALL CONFORM TO ASTM 185-73.
7. SIDEWALK THICKNESS IN DRIVEWAY AND APRON BETWEEN SIDEWALK AND CURB SHALL MATCH THE EXISTING CONCRETE DRIVEWAY, THE EQUIVALENT CONCRETE THICKNESS OF THE HMA DRIVEWAY OR SIX (6) INCHES, WHICHEVER IS GREATER.
8. DETAIL IS MEANT TO PROVIDE GUIDANCE ONLY, RAMPS SHALL MEET THE REQUIREMENT OF INDOT STANDARD DRAWINGS E 604-SWCR AND PROWAG.

TOWN OF BROWNSBURG
DETAIL NO. TR-07
REVISION DATE: SEPT 2016

HANDICAP RAMP
NOT TO SCALE
7 C501

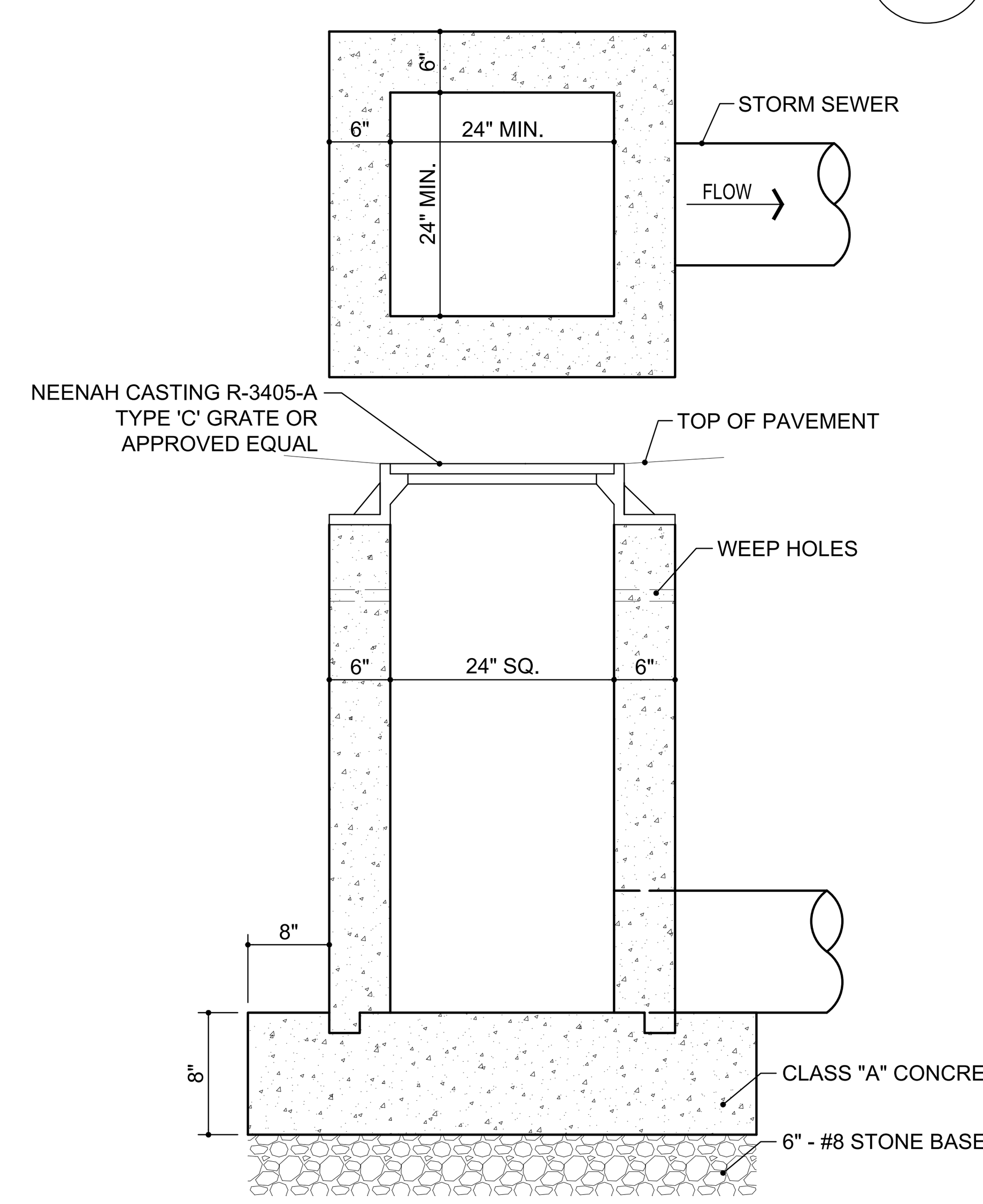


SIZE SCHEDULE

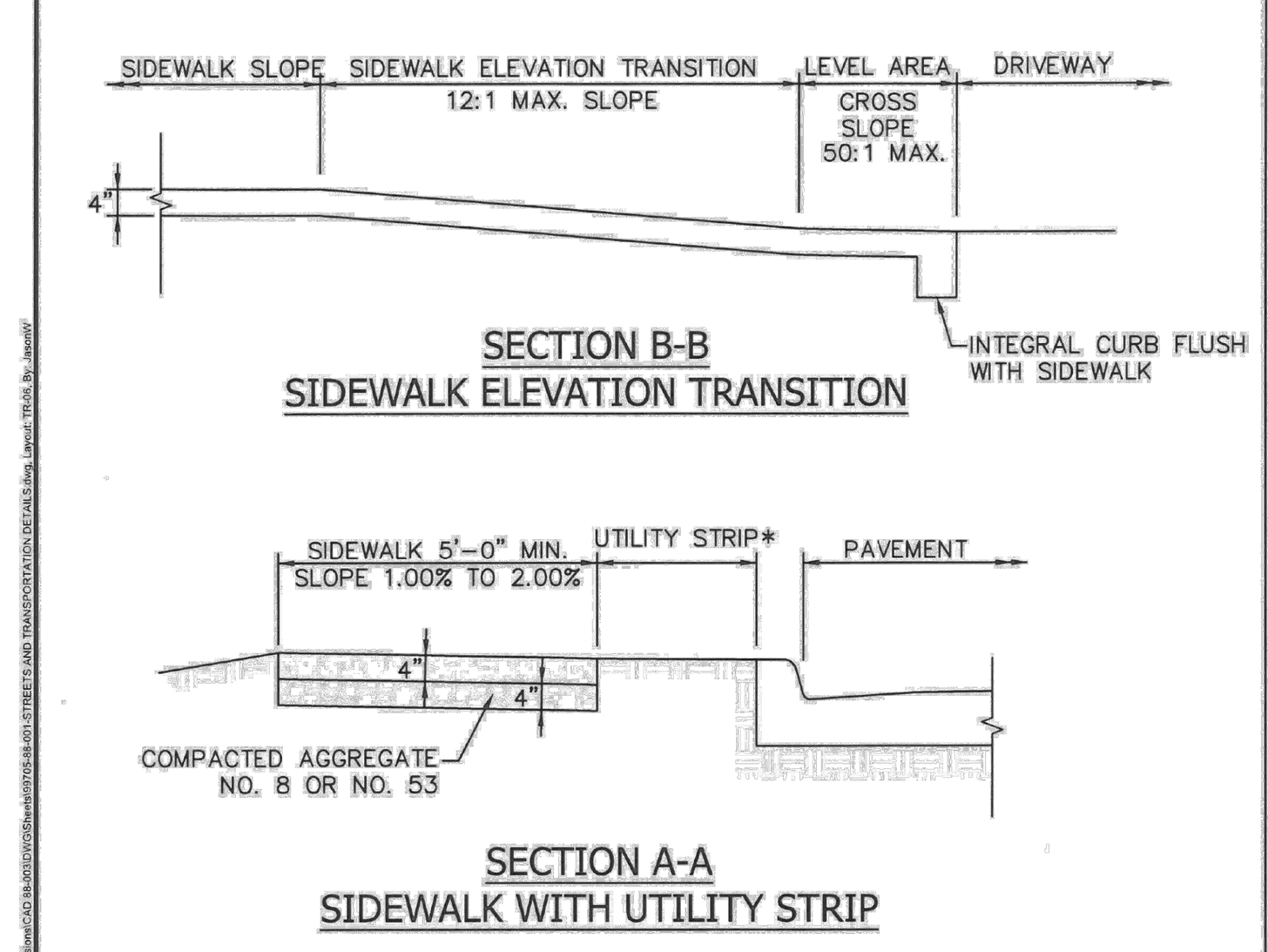
DIA.	WALL	G or T	WT. SEC	A	B	C	D	E	DIA.+1	R-1	R-2	SKIRT
12	2	1~8	530	4	24	48~1	72~1	24	13	10~1	9	3~8
15	2~4	2	740	6	27	46	73	30	16	12~8	11	3~8
18	2~8	2~8	990	9	27	46	73	36	19	15~8	12	4
21	2~w	2~4	1280	9	35	38	73	42	22	16~2	13	4
24	3	2~8	1520	9~8	43~8	30	73~8	48	25	16~q	14	4~8

NOTE: MANUFACTURER OF END SECTION IS IN ACCORDANCE WITH APPLICABLE PORTIONS OF A.S.T.M. SPECIFICATION C76.

CONCRETE END SECTION
NOT TO SCALE
6 C501



TYPA 'E' MODIFIED STORM CATCHBASIN
3/4" = 1'-0"
5 C501



* UTILITY STRIP WIDTH SHALL COMPLY WITH THE CURRENT TOWN OF BROWNSBURG SUBDIVISION CONTROL ORDINANCE AND CURRENT TOWN OF BROWNSBURG THOROUGHFARE PLAN.

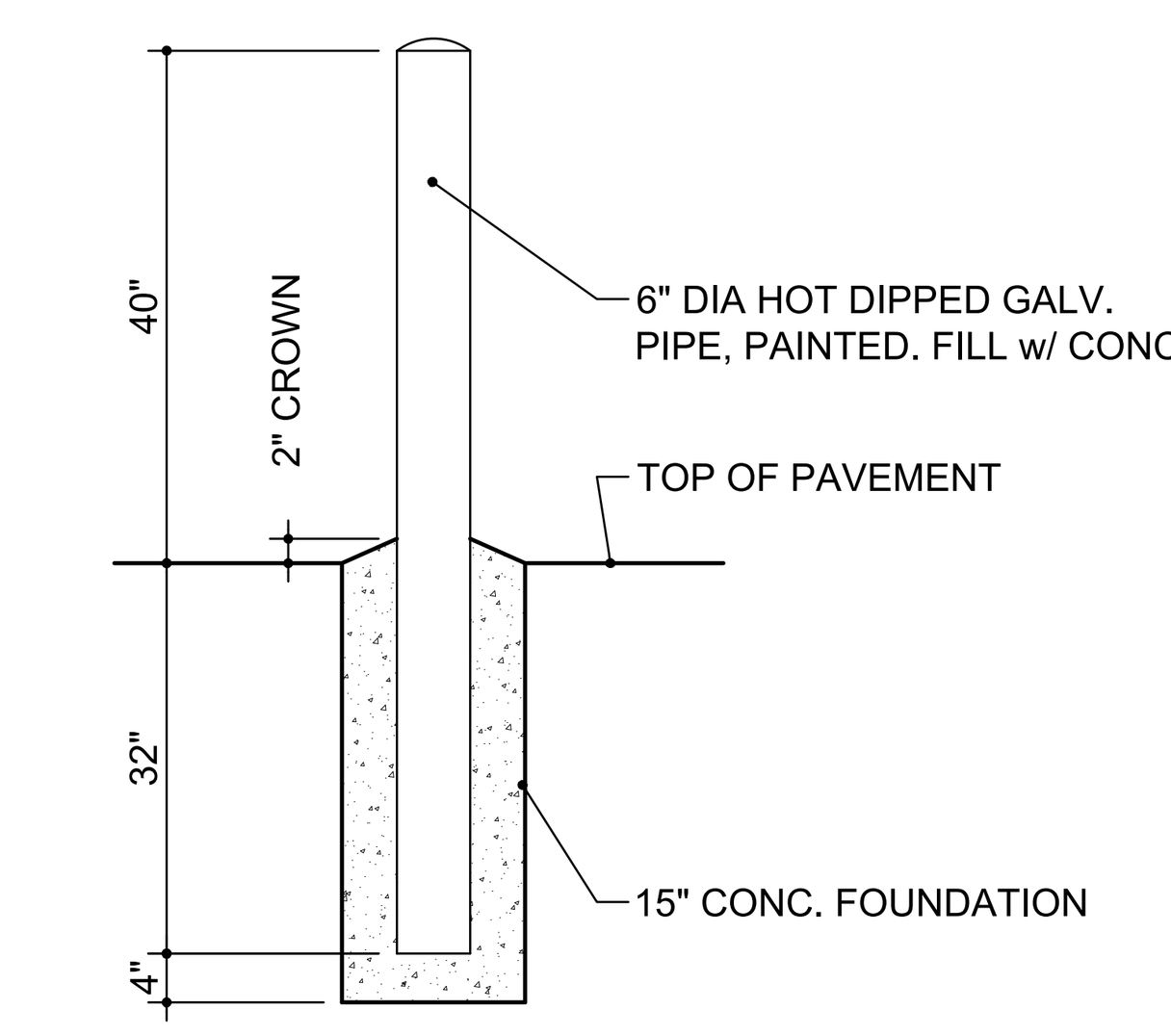
CONCRETE SIDEWALK DETAIL
NO SCALE

NOTE:

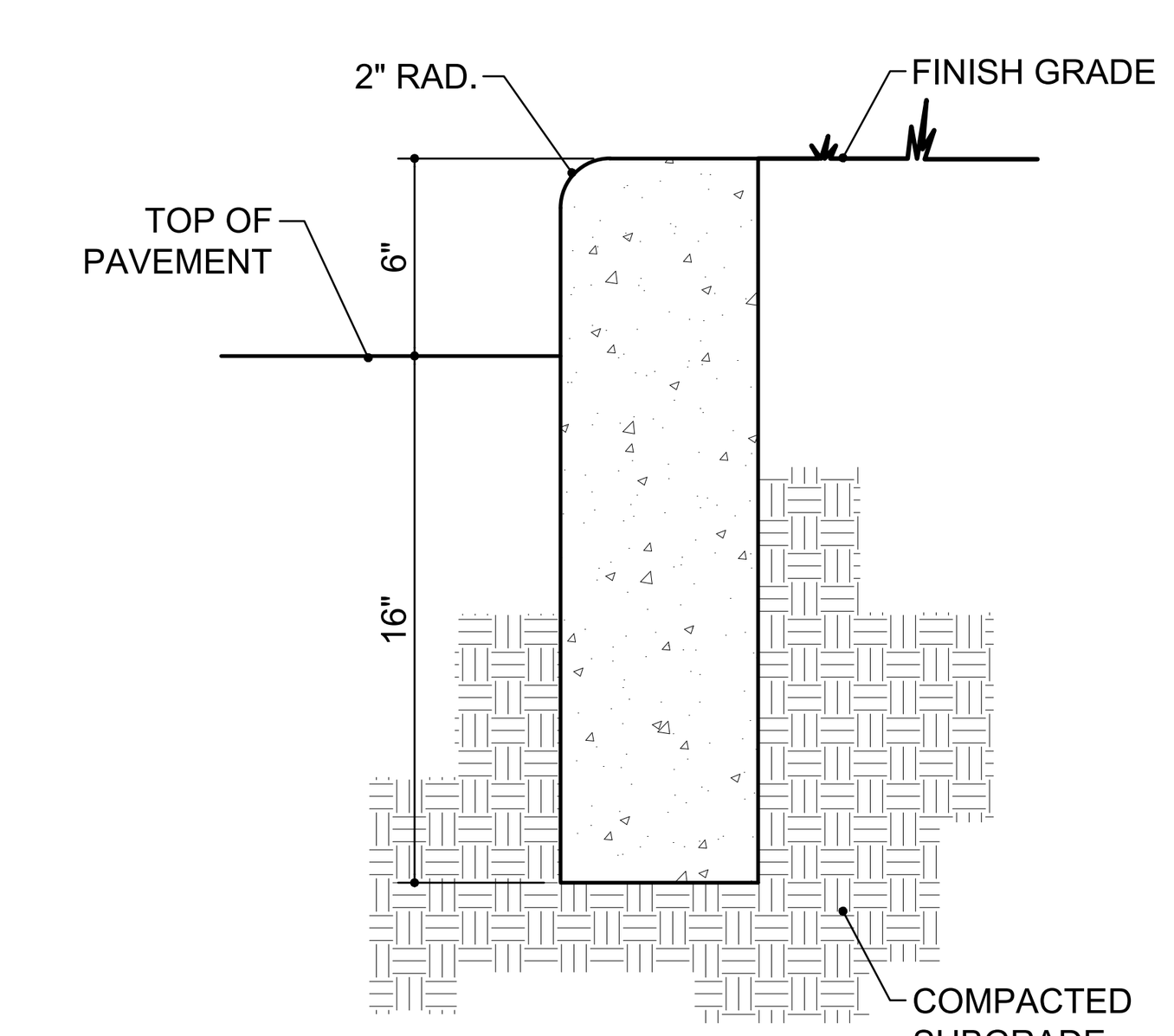
CONCRETE SIDEWALK SHALL BE INSTALLED ON COMPACTED SUBGRADE. NO. 8 OR NO. 53 STONE SHALL BE INSTALLED AND COMPACTED ON THE APPROVED SUBGRADE. CONCRETE SHALL BE INDOT CLASS A CONCRETE AND IT SHALL HAVE A 28-DAY MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4,000 PSI. WHERE A SIDEWALK PASSES THROUGH A DRIVE APPROACH, IT SHALL BE THE SAME THICKNESS AS THE ADJACENT CONCRETE DRIVE, THE CONCRETE EQUIVALENT FOR THE ADJACENT HMA DRIVE, OR SIX (6) INCHES, WHICHEVER IS GREATER.

TOWN OF BROWNSBURG
DETAIL NO. TR-06
REVISION DATE: SEPT 2016

CONCRETE SIDEWALK
NOT TO SCALE
4 C501

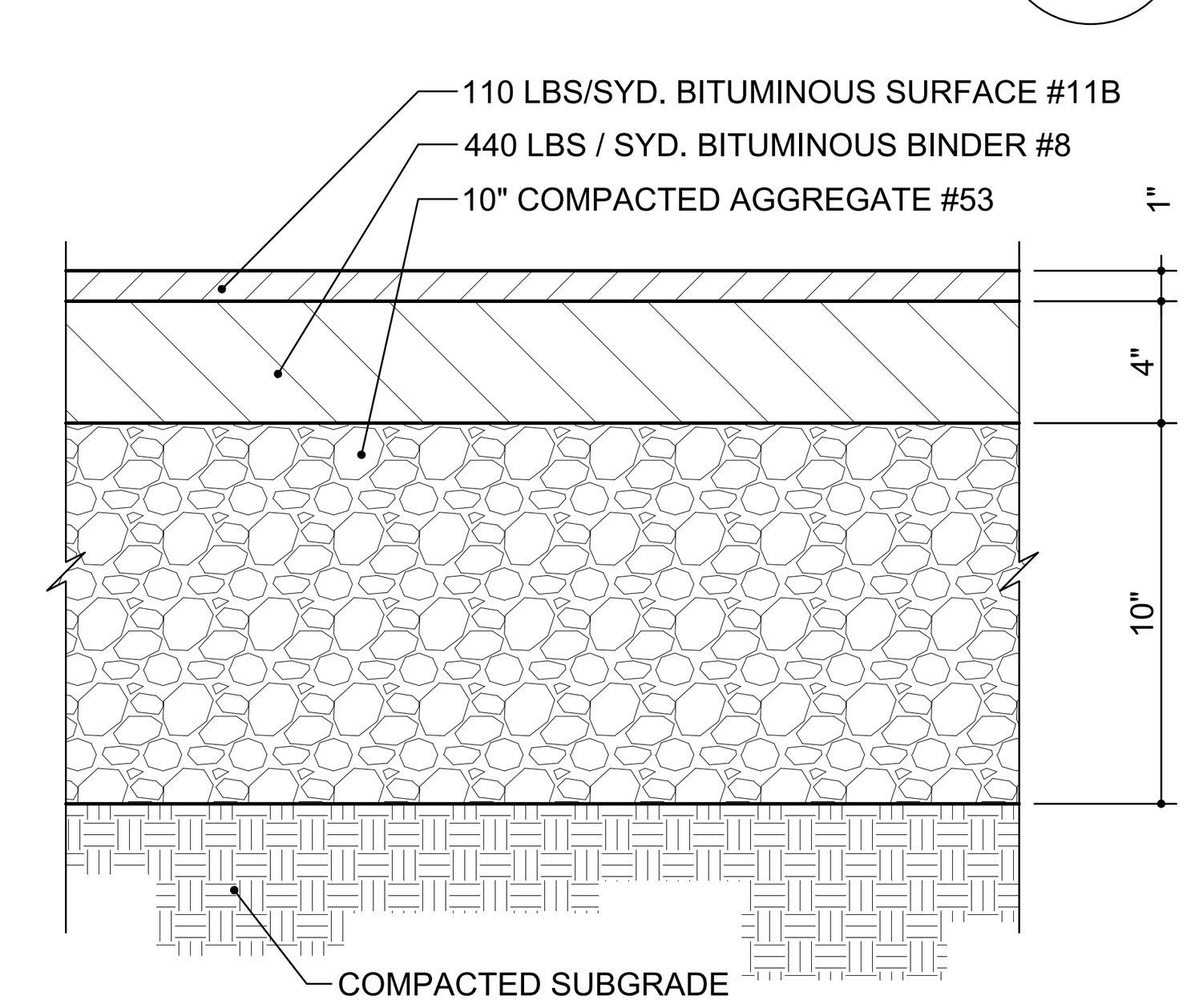


PIPE BOLLARD
1/2" = 1'-0"
3 C501



CURB SHALL HAVE 1/2" EXPANSION JOINTS @ 48'-0" MAX. AND @ ENDS OF RADII. CONTROL JOINTS SHALL BE PLACED @ 10'-0 MAX. UNLESS OTHERWISE NOTED.

STRAIGHT CURB
1 1/2" = 1'-0"
2 C501



HEAVY DUTY ASPHALT
1 1/2" = 1'-0"
1 C501

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

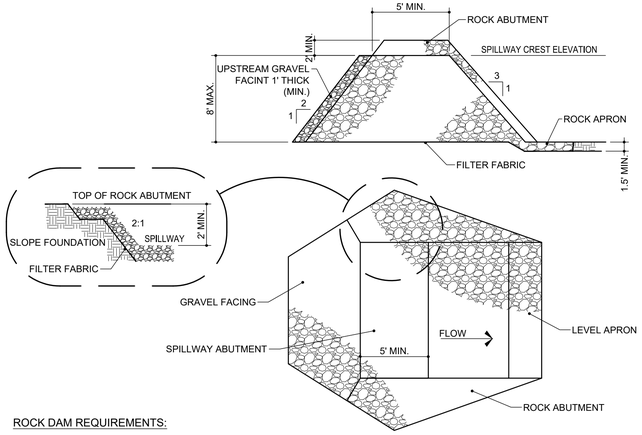
SECTIONS AND DETAILS

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C501



ROCK DAM REQUIREMENTS:

1. CONTRIBUTING DRAINAGE AREA: 50 ACRES MAXIMUM

2. DESIGN LIFE: LIMITED TO 3 YRS.

3. SEDIMENT STORAGE: 1,800 CU.FT./ACRE DISTURBED (MINUMUM) MEASURED 1 FT. BELOW SPILLWAY CREST.

4. BASIN SHAPE: MINIMUM 2:1 LENGTH-TO-WIDTH RATIO.

5. BASIN AREA: VARIABLE; THE LARGER THE SURFACE AREA THE GREATER THE TRAPPING EFFICIENCY.

6. DAM CREST HEIGHT: LIMITED TO 8 FT.

7. SPILLWAY CAPACITY: PEAK RUNOFF FROM A 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT, A MAXIMUM FLOW DEPTH OF 1 FT. AND MINIMUM FREEBOARD OF 1 FT. (ENTIRE LENGTH OF DAM BETWEEN ROCK ABUTMENTS MAY SERVE AS SPILLWAY.)

8. DAM DIMENSIONS: TOP WIDTH, 5 FT. MINIMUM; SIDE SLOPES, 2:1 OR FLATTER UPSTREAM, 3:1 OR FLATTER DOWNSTREAM.

9. EARTH ABUTMENTS: SMOOTH, STABLE, 2:1 OR FLATTER SLOPES.

10. ROCK ABUTMENTS (TO PROTECT EARTH ABUTMENTS): EXTENDED ALONG DOWNSTREAM FACE TO TOE OF DAM AND AT LEAST 1 FT. HIGHER THAN SPILLWAY FACE AT ALL POINTS, 2 FT. ABOVE SPILLWAY CREST, AND 1 FT. THICK, WITH 2:1 OR FLATTER SIDE SLOPES.
11. OUTLET PROTECTION: ROCK APRON, 1-1/2 FT. THICK (MINIMUM), ZERO GRADE, WITH LENGTH EQUAL TO HEIGHT OF DAM OR EXTENDED TO STABLE GRADE, WHICHEVER IS GREATER.

12. ROCK MATERIAL: INDOT REVETMENT RIPRAP.

13. PROTECTION FROM PIPING: GEOTEXTILE FABRIC FOR SEPARATION AND FILTRATION COVERING ENTIRE FOUNDATION, INCLUDING EARTH ABUTMENTS AND APRON.

14. BASIN DE-WATERING: THROUGH A 1 FT. THICK LAYER OF INDOT CA NO. 5 STONE ON UPSTREAM FACE OF THE DAM.

INSTALLATION

SITE PREPARATION:

1. DIVERT RUNOFF FROM UNDISTURBED AREAS AWAY FROM THE ROCK DAM AND BASIN AREA.

2. EXCAVATE THE FOUNDATION FOR THE APRON, USING IT AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION OF THE DAM.

3. CLEAR AND GRUB THE AREA UNDER THE DAM, REMOVING AND PROPERLY DISPOSING OF ALL ROOT MAT, BRUSH, AND OTHER DEBRIS.

4. GRADE THE EARTH ABUTMENTS NO STEEPER THAN 2:1.

DAM AND BASIN CONSTRUCTION

1. EXCAVATE A CUTOFF TRENCH AT THE CENTER LINE OF THE DAM, EXTENDING ALL THE WAY UP THE EARTH ABUTMENTS, AND BACKFILL WITH COMPACTED EARTH FILL.

2. SMOOTH THE DAM FOUNDATION.

3. COVER THE ENTIRE FOUNDATION, INCLUDING BOTH EARTH ABUTMENTS, WITH GEOTEXTILE FABRIC, MAKING SURE THE UPSTREAM STRIPS OVERLAP THE DOWNSTREAM STRIPS AT LEAST 1 FT.

4. CONSTRUCT THE DAM TO PLANNED DIMENSIONS.

5. ONCE THE DAM IS IN PLACE, CLEAR THE SEDIMENT BASIN AREA, PROPERLY DISPOSING OF THE CLEARED MATERIAL.

6. SET A MARKER STAKE TO INDICATE THE CLEANOUT ELEVATION (I.E., POINT AT WHICH THE BASIN IS 50% FULL OF SEDIMENT).

7. DIVERT CONSTRUCTION SITE RUNOFF FLOW INTO THE UPPER END OF THE BASIN USING TEMPORARY DIVERSIONS.

8. STABILIZE ALL DISTURBED AREAS EXCEPT THE LOWER HALF OF THE BASIN.

SAFETY PRECAUTIONS:

1. BECAUSE SEDIMENT BASINS THAT IMPOUND WATER ARE HAZARDOUS, (A) BE SURE SIDE SLOPES ARE 2:1 OR FLATTER, (B) FENCE WITH WARNING SIGNS IF TRESPASSING IS LIKELY, (C) DE-WATER THE BASIN BETWEEN STORM EVENTS, AND (D) FOLLOW ALL STATE AND LOCAL IMPOUNDMENT SITE REQUIREMENTS.

MAINTENANCE

1. INSPECT THE ROCK DAM AND BASIN AFTER EACH STORM EVENT.

2. REMOVE SEDIMENT WHEN IT ACCUMULATES TO HALF THE DESIGN VOLUME (MARKED BY A STAKE).

3. CHECK THE DAM AND ABUTMENTS FOR EROSION, PIPING, OR ROCK DISPLACEMENT, AND REPAIR IMMEDIATELY.

4. IF THE BASIN DOES NOT DRAIN BETWEEN STORMS, REPLACE THE STONE ON THE UPSTREAM FACE OF THE DAM.

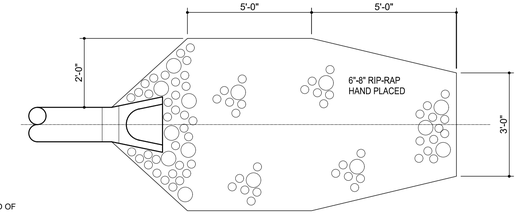
5. IF THE BASIN DRAINS TOO RAPIDLY FOLLOWING A STORM (I.E., LESS THAN 6 HRS.), ADD INDOT CA NO. 5 GRAVEL ON THE UPSTREAM FACE OF THE DAM.

6. ONCE THE CONTRIBUTING ŷŷŷŷŷŷŷŷDRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, (A) REMOVE WATER AND SEDIMENT FROM THE BASIN;

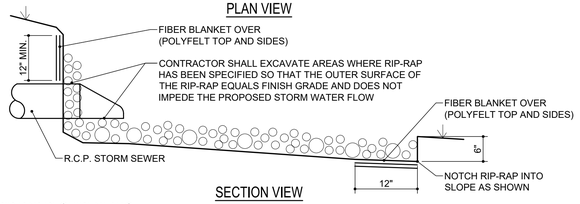
(B) REMOVE THE DAM, DISPOSING OF THE ROCK IN DESIGNATED DISPOSAL AREAS; (C) SMOOTH THE SITE TO BLEND WITH THE SURROUNDING AREA; AND (D) STABILIZE.

COMMON CONCERNS:
FAILURE FROM PIPING ALONG ABUTMENTS-BECAUSE THE FILTER MATERIAL WAS NOT PROPERLY INSTALLED OR THE EARTH ABUTMENTS ARE TOO STEEP. STONE DISPLACEMENT FROM FACE OF DAM-BECAUSE STONE SIZE IS TOO SMALL OR THE FACE IS TOO STEEP. EROSION BELOW DAM BECAUSE THE APRON WAS NOT EXTENDED TO STABLE GRADE. EROSION OF ABUTMENTS DURING SPILLWAY FLOW-BECAUSE THE ROCK ABUTMENT IS NOT HIGH ENOUGH. SEDIMENT CARRIED THROUGH SPILLWAY-BECAUSE THE DRAINAGE AREA IS TOO LARGE; TO SOLVE, DIVERT RUNOFF FROM THE UNDISTURBED AREA AWAY FROM THE BASIN. SEDIMENT LOSS THROUGH DAM-BECAUSE THE LAYER OF AGGREGATE ON THE UPSTREAM FACE IS NOT THICK ENOUGH OR IS TOO COARSE TO RESTRICT FLOW THROUGH THE DAM.

ROCK DAM
NOT TO SCALE — 8 — C502



PLAN VIEW



SECTION VIEW

RIP-RAP REQUIREMENTS:

CONTRIBUTING DRAINAGE AREA: 100 ACRES MAXIMUM.

CAPACITY: PEAK RUNOFF FROM 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT.

APRON: DESIGN DEPENDS ON CHANNEL DEFINITION, BUT IS LONG ENOUGH TO DISSIPATE RUNOFF ENERGY, SET ON ZERO GRADE, STRAIGHT AND ALIGNED WITH THE RECEIVING STREAM. (IF SITE CONDITIONS REQUIRE A CURVE, SET IT NEAR THE UPSTREAM END.)

FOUNDATION: GEOTEXTILE FABRIC FOR STABILIZATION AND FILTRATION OR WELL-GRADED GRAVEL FILTER LAYER AT LEAST 6 IN. THICK.

MATERIAL: HARD, ANGULAR, AND HIGHLY WEATHER-RESISTANT RIPRAP STONE OF 6 - 8 INCHES IN SIZE.

THICKNESS: 12 IN. MINIMUM OR TWO TIMES THE D 50 STONE DIAMETER,wHICHEVER IS GREATER.

INSTALLATION:

1. EXCAVATE THE APRON AREA SUBGRADE BELOW DESIGN ELEVATION TO ALLOW FOR THICKNESS OF THE FILTER (OR GRAVEL LAYER) AND THE RIPRAP. (THIS OVER-EXCAVATION GREATLY INCREASES THE AMOUNT OF SPOIL.)

2. COMPACT ANY FILL USED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL, AND SMOOTH ENOUGH TO PROTECT FABRIC FROM TEARING.

3. PLACE THE GEOTEXTILE FABRIC (OR GRAVEL LAYER) ON THE COMPACTED AND SMOOTHED FOUNDATION. IF MORE THAN ONE FABRIC PIECE IS NEEDED, THE UPSTREAM PIECE SHOULD OVERLAP THE DOWNSTREAM PIECE BY AT LEAST 1 FT.

4. INSTALL THE RIPRAP TO THE LINES AND ELEVATIONS SHOWN IN THE DESIGN. IF THE CHANNEL IS POORLY DEFINED, THE FINAL CROSS-SECTION SHOULD BE LEVEL OR SLIGHTLY DEPRESSED IN THE MIDDLE; IF WELL DEFINED, THE FILTER (OR GROUND LAYER) AND RIPRAP SHOULD EXTEND TO THE TOP OF THE BANK.

5. IF THE GEOTEXTILE FABRIC TEARS WHEN PLACING TH RIPRAP, REPAIR IMMEDIATELY BY LAYING AND STAPLING A PIECE OF FABRIC OVER THE DAMAGE AREA, OVERLAPPING THE UNDAMAGED AREAS BY AT LEAST 12 INCHES.

6. MAKE SURE THE TOP OF THE RIPRAP APRON IS LEVEL WITH OR SLIGHTLY BELOW THE RECEIVING STREAM. (RIPRAP SHOULD NOT RESTRICT THE CHANNEL OR PRODUCE AN OVERFALL.)

7. BLEND THE RIPRAP SMOOTHLY TO THE SURROUNDING GRADE.

8. STABILIZE ALL DISTURBED AREAS IMMEDIATELY FOLLOWING INSTALLATION.

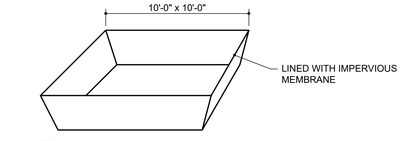
MAINTENANCE:

* INSPECT ROCK CHUTES AFTER STORM EVENTS FOR STONE DISPLACEMENT AND FOR EROSION AT THE SIDES AND ENDS OF THE APRON.
* MAKE NEEDED REPAIRS IMMEDIATELY; USE APPROPRIATE SIZE STONE; AND DO NOT PLACE THEM ABOVE FINISHED GRADE.

COMMON CONCERNS:

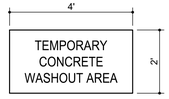
FOUNDATION NOT EXCAVATED DEEP ENOUGH OR WIDE ENOUGH--RIPRAP RESTRICTS THE FLOW CROSS SECTION, RESULTING IN EROSION AROUND THE APRON AND SCOUR HOLES AT THE OUTLET.
RIPRAP APRON ON ZERO GRADE--

RIP-RAP DETAIL
NOT TO SCALE — 7 — C502



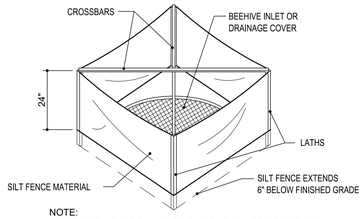
NOTE:
1. A LINED ROLLOFF DUMPSTER OR CONTAINER TO BE USED IN LIEU OF A CONSTRUCTED WASHOUT BASIN.

CONCRETE WASHOUT BASIN
NOT TO SCALE — 6 — C502



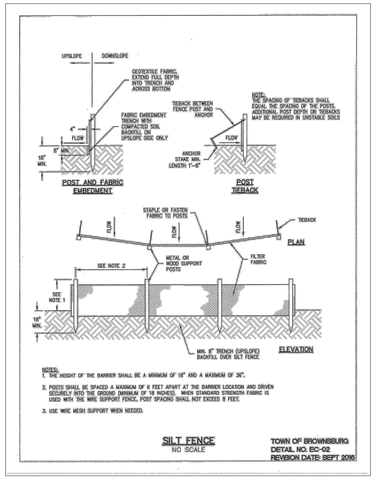
NOTES:
1. SIGN TO BE POSTED THROUGHOUT CONSTRUCTION ACTIVITY.
2. SIGN TO BE MADE OF SEMI-PERMANENT MATERIAL, i.e. WOOD.

CONCRETE WASHOUT SIGN
NOT TO SCALE — 5 — C502

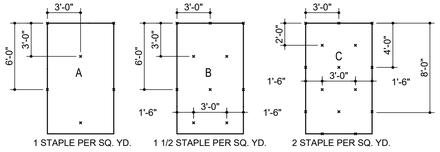


NOTE:
1. SEE SILT FENCE DETAIL FOR MATERIAL SPECIFICATIONS.
2. SILT FENCE SHALL BE PREASSEMBLED BY SUPPLIER.

SILT FENCE INLET PROTECTION DETAIL
NOT TO SCALE — 4 — C502

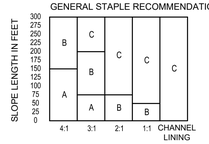


SILT FENCE DETAIL
NOT TO SCALE — 3 — C502

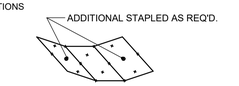


1 STAPLE PER SQ. YD. | 1 1/2 STAPLE PER SQ. YD. | 2 STAPLE PER SQ. YD.

GENERAL STAPLE RECOMMENDATIONS



SLOPE GRADIENT



CHANNEL LININGS UTILIZE STAPLE PATTERN "C" WITH ADDITIONAL STAPLES ON SIDE SLOPES.

NOTES:
1. STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION BLANKETS.

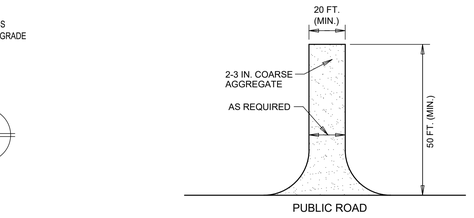
2. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE ANNUAL RAINFALL.

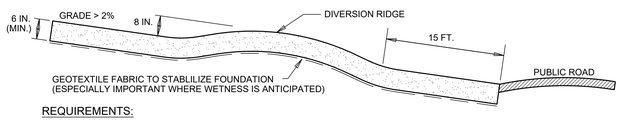
3. AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO BLANKETS, STAPLE PATTERN "C" SHOULD BE UTILIZED.

4. CHANNEL LININGS REQUIRE A 2' (MIN.) OVERLAP AT LONGITUDINAL JOINTS AND SIDE SLOPES REQUIRE A 6" (MIN.) OVERLAP. WHERE OVERLAPS OCCUR, THE UPSTREAM BLANKET SHALL OVERLAP THE DOWNSTREAM.

5. NORTH AMERICAN GREEN S150BN TO BE USED FOR EROSION CONTROL BLANKETS.

EROSION CONTROL BLANKET STAPLE PATTERN
NOT TO SCALE — 2 — C502





REQUIREMENTS:

Material: 2-3 in. washed stone (INDOT CA No.2) over a stable foundation.

Thickness: 6 in. minimum

Width: 12 ft. minimum or full width of entrance/exit roadway, whichever is greater.

Length: 50 ft. minimum. The length can be shorter for small sites such as for an individual home.

Washing facility (optional): Level area with 3 in washed stone minimum or a commercial rack, and waste water diverted to a sediment trap or basin.

Geotextile fabric underliner: May be used under wet conditions or for soils within a high seasonal water table to provide greater bearing strength.

INSTALLATION:

1. Avoid locating on steep slopes or at curves in public roads.

2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.

3. If slope towards the road exceeds 2%, construct a 6-8 in.-high water bar (ridge) with 3:1 side slopes across the foundation area about 15 ft. from the entrance to divert runoff away from the road.

4. Install pipe under the pad if needed to maintain proper public road drainage.

5. If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.

6. Place stone to dimensions and grade shown in the erosion control plan, leaving the surface smooth and sloped for drainage.

7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

MAINTENANCE:

* Inspect entrance drive and sediment disposal area weekly and after storm events or heavy use.
* Reshape pad as needed for drainage and runoff control.
* Topdress with clean stone as needed.
* Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin.
* Repair any broken road pavement immediately.

COMMON CONCERNS:

Inadequate runoff control--results in sediment washing onto road.
Stone too small, pad too thin, or geotextile fabric absent--results in ruts and a muddy condition as stone is pressed into the soil: add more stone.
Pad too short for heavy construction traffic--extend the pad beyond the 50-ft. length as needed.
Pad not flared sufficiently at road entrance--results in mud being tracked onto the road and possible damage to the road edge: widen stone entrance and repair road damage.
Unstable foundation--use geotextile fabric under th pad and/or improve foundation drainage.

TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE — 1 — C502

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

SECTIONS AND DETAILS

BRIAN EDWARD MOENCH REGISTERED No. PE9300048 STATE OF INDIANA PROFESSIONAL ENGINEER
Susan E. Neal

REVISIONS:

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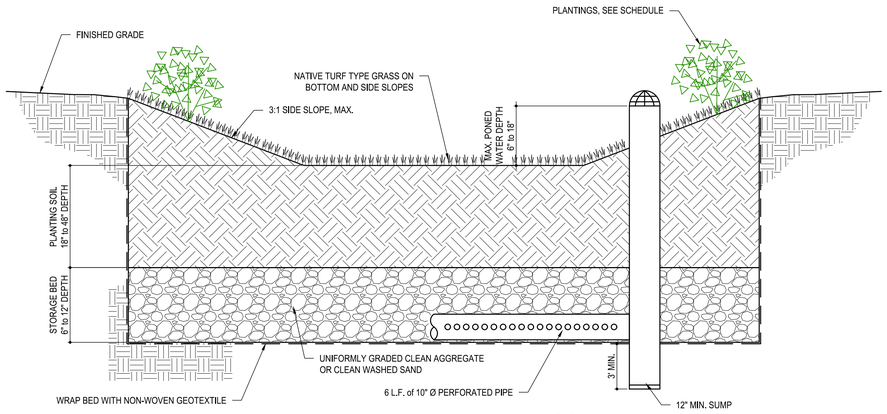
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

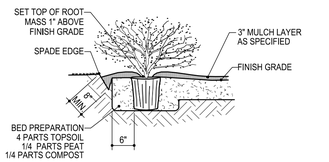
DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C502



BIORETENTION AREA

NOT TO SCALE

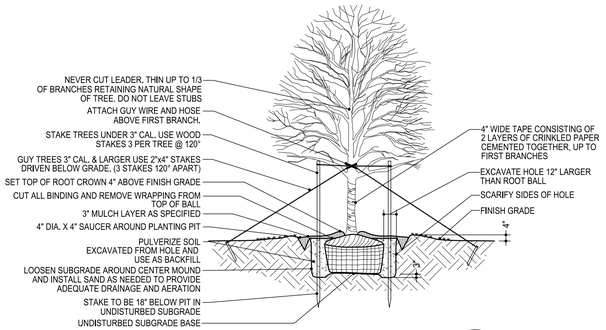
4
L101



SHRUB AND SMALL TREE PLANTING DETAIL

NOT TO SCALE

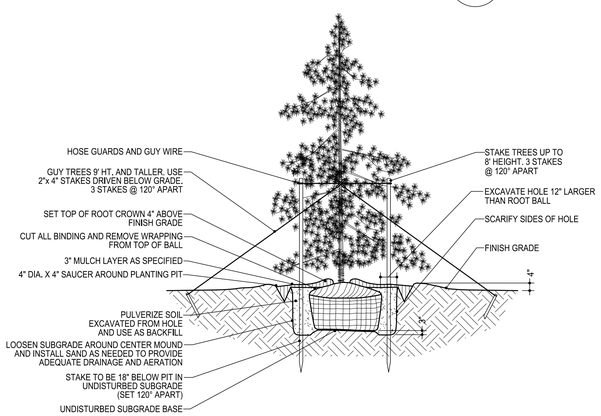
3
L101



SHADE TREE PLANTING DETAIL

NOT TO SCALE

2
L101



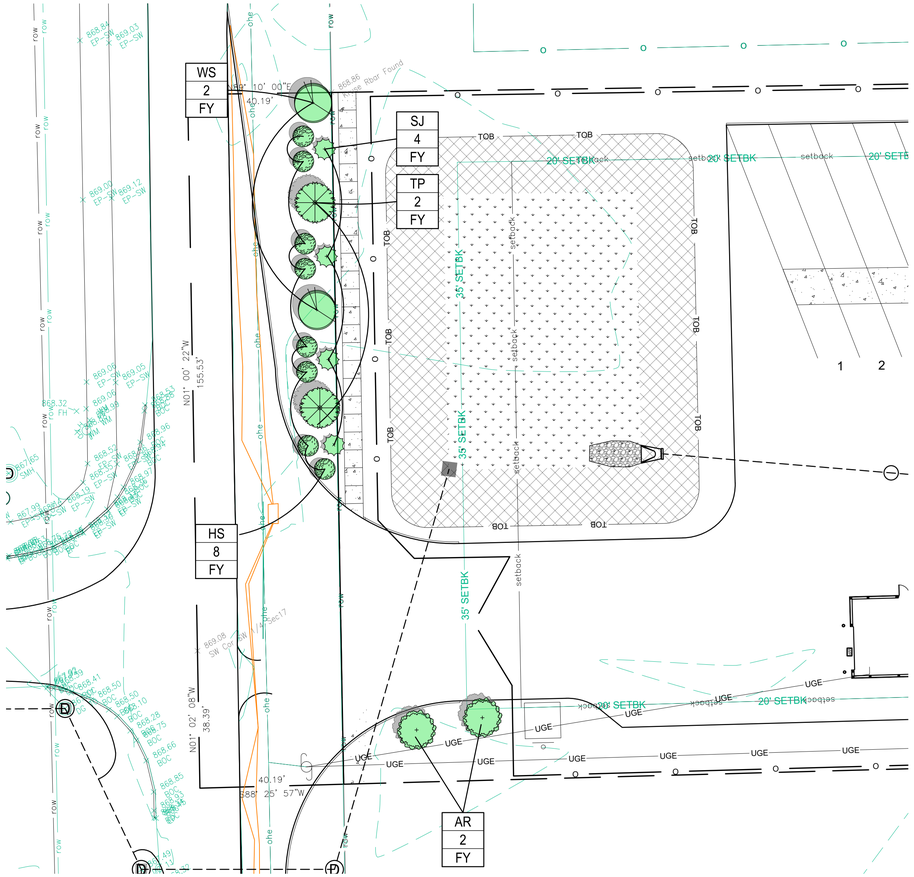
EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

1
L101

PLANTING SCHEDULE

LEGEND	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE / COND	REMARKS	HEIGHT / SPREAD	QTY REQ'D
	WS	2	Wisteria sinensis	Blue Chinese Wisteria Tree	#1 Container / ---	Ornamental Deciduous	10-15 ft / 10-12 ft	1.25
	AR	2	Acer Rubrum	Red / Sugar Maple	#5 Container / ---	Canopy Deciduous	40-50 ft / 30-40 ft	2
	TP	2	Thuja plicata x standishii	Thuja Green Giant	24" height / ---	EVERGREEN	30-40 ft / 8-10 ft	1.5
	HS	8	Hibiscus syriacus ' Red Heart' Hibiscus syriacus 'Notwoodone' Hibiscus syriacus 'JWNWOOD4'	Red Heart Rose of Sharon Lavender Chiffon Rose of Sharon Pink Chiffon Rose of Sharon	#3 Container / ---	DECIDUOUS SHRUB	8-12 ft / 6-10 ft	10
	NOTE: Assorted mix of Hibiscus Plants in each grouping.							
	SJ	4	Spiraea nipponica 'Snowmound' Spiraea Japonica 'Neon Flash' Spiraea Japonica 'Matgold'	Snowmound Spirea Neon Flash Spirea Rainbow Fizz Spirea	#1 container / ---	DECIDUOUS SHRUB	2-7 ft / 3-7 ft	
	NOTE: Assorted mix of Spirea Plants in each grouping.							



LANDSCAPE PLAN

SCALE: 1" = 20'

N

20 0 20 40

GRAPHIC SCALE: 1" = 20'

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

LANDSCAPE PLAN

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Susan E. Moench

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	L101

LITHONIA LIGHTING

Catalog Number:
Notes:
Type:

FEATURES & SPECIFICATIONS

INTENDED USE — Provides a maintenance-free emergency illumination for the rated wattage upon loss of AC power to meet code-required emergency lighting. Ideal for applications requiring low profile, emergency path for fewer mounting heights.

CONSTRUCTION — The housing is standard white, or optional black, thermoplastic with a compact and durable design with all-inclusive being reflector and lens assembly. It is 30% flame rated and impact-resistant.

OPTICS — The typical life of the LED is 10 years. One, 0.37W white LED per lamp head.

ELECTRICAL — Dual-voltage 120/277 standard.

Bi-color LED status indicator for battery condition. (Green-normal, Red-check battery).

One and a half watts of remote capacity available with REM option.

BATTERY: 3.6V maintenance-free, rechargeable, nickel-cadmium.

INSTALLATION — Wall mount and ceiling mount. Surface mount back plate fits most industry-standard size junction boxes and snaps into place.

LISTINGS — UL Listed. Meets all applicable requirements for: UL 924, NFPA 101 (Lumen Life Safety Code), NFPA 70 — NEC (National Electrical Code) Article 700.12F and/or 1600.9 (2012), CEC Title 24, Part 12, Subpart B and 2016 Federal Energy Standard 10FR Pa 1064Y. (10°C to 40°C) listed standard.

WARRANTY — 5 year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

† Small Battery Chargers Certified in the US Title 20 Appliance Efficiency Database.

Lithonia Lighting Basics™

Low Profile Emergency Light

EU2L

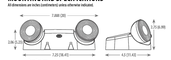






MOUNTING AND SPECIFICATIONS

All dimensions are inches (centimeters) unless otherwise indicated.



Specifications

Length: 7.38 (19)
Depth: 2.75 (6.99)
Height: 4.5 (11.43)
Weight: 0.7 lbs. (.32 kg)

CONTRACTOR SELECT

LITHONIA LIGHTING

Catalog Number:
Notes:
Type:

Contractor Select™

OLWP

LED Wall Pack

Customize the color temperature and of effortlessly automate your wall pack for dusk-to-dawn operation with the CLWP Wall Pack. Featuring LatchLight (CT,DD,DE,DDB,DDBXD) and a selectable photocell, the CLWP Wall Pack is designed to deliver years of maintenance-free general illumination for residential outdoor applications such as driveways, entryways, patios, and other outdoor areas that require consistent and reliable lighting performance.

FEATURES:

- Switchable CCT(30/40/50K)
- Selectable ON/OFF photocell for dusk-to-dawn or switched operation
- Cast aluminum construction for durability
- Impact-resistant polycarbonate diffuser



Catalog Number	UPC	Description	Lumens	Input Watts	CCT	CRI	Voltage	Back-Box Room Illumination	Finish
OLWP LED 5WW2 120 PE DDB	19397285972522	OLWP LED Wall Pack	1,400	18.3	3000/4000/5000K	80	120	Activated Standard, Selectable On/120P	Dark Bronze

CONTRACTOR SELECT

LITHONIA LIGHTING

Specifications

INTENDED USE:
The CLWP provides years of maintenance-free general illumination for commercial or residential outdoor applications such as driveways, patios, loading areas and warehouses.

CONSTRUCTION:
Rugged cast aluminum, corrosion-resistant rear housing. Impact resistant polycarbonate front cover/diffuser resists fading and cracking. Driver operates at 120V. Operating temperature -40°C to 40°C.

OPTICS:
High-performance LEDs maintain 70% of light output at 50,000 hours of service. (LED lifespan based on IESNA LM-80-08 results and calculated per IESNA TM-21-11 methodology.). Lenses are engineered for superior lighting distribution, uniformity and fixture spacing. See Lighting Performance Table for specific fixture performance.

INSTALLATION:
Designed for wall mounting more than 4' above the ground. Mounts to a recessed junction box (by others).

LISTINGS:
UL Listed for U.S. and Canadian safety standards for wet locations.

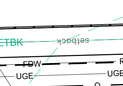
WARRANTY:
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Dimensions

Specifications

Width: 5.35" (13.6 cm)
Height: 10.5" (26.4 cm)
Depth: 3" (7.7 cm)
Weight: 1.54 lbs (0.70 kg)



EU2L Low Profile Emergency Light

CS CONTRACTOR SELECT — Looking for Contractor Select readily available configurations? Check out the Contractor Select Express™ portal. Sign in or go to www.contractorselect.com

MATERIAL INFORMATION — Example: EU2L B

Series		Housing Color		Options	
EU2L	Emergency Light	(Blank)	White	(Blank)	Not Required
		B	Black	REM	Remote Capacity

BATTERY CAPACITY AND LOADING

Battery	Total Capacity	Maximum# Remote Lamp Heads*
3.6V	2W	2 - 0W 1W SQ, RD NEMA
		1 - 0W 1W MR NEMA
		1 - 0W (0.5)SQ, MP (0.5)RD
		2 - 0W (0.5)SQ, MP RD NEMA
		1 - 0W (0.5)W MP RD NEMA

* These are in addition to the lamp heads on the product.
** See spec sheet for alternate side options

ELECTRICAL SPECIFICATIONS

Description	Supply Voltage	Input Wattage			Input Amps		
		120	208	277	120	208	277
Standard (No options)	120/277	.15	N/A	.37	.45	N/A	.05
Remote Capacity Option (REM)	120/277	.52	N/A	.60	.07	N/A	.07

Accessories: Order as separate catalog number.

EBLW SQ, RD	Single, indoor remote head, round, ivory white, .75W, 3.6V voltage input.*
EBLW TSQ	Twin, indoor remote head, round, ivory white, 1.5W, 3.6V voltage input.*
EBLW SQ, WP SQ	Single, weather-proof remote head, square, gray, 1W, 3.6V (3V voltage sensing. *
EBLW SQ, WP RD W2	Single, LED weather-proof head, round, gray, 0.75W, 3.6V input.*
EBLW SQ, WP RD W12	Twin, LED weather-proof head, round, gray, 1.5W, 3.6V input.*
ELU WH2	Wiregaurd 35 1/8" W x 5 3/4" H x 9" D (back mount only). Easy specification! ELA WH.

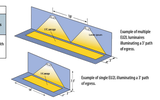
Accessories Notes:
1. See spec sheet EBL remote head for additional entering options

SPACING GUIDELINES

Maximum Spacing Guidelines - EU2L*

Mounting Height	Illumination Level	Single Luminaire		Multiple Luminaires		Application Notes:
		1' Path of Egress	4' Path of Egress	1' Path of Egress	4' Path of Egress	
7.5'	10 Avg	14'	18'	18'	14'	180° Corridor 9' wide, and 9' high with 90° Corner reflectance

Notes:
1. Also meets the additional illumination requirements of NFPA 101 5'4" minimum and maximum ratio of 40:1



Example of multiple EU2L luminaires illuminating a 2' path of egress.

Example of single EU2L illuminating a 1' path of egress.

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LUMINAIRE SCHEDULE

SYMBOL	QTY.	LABEL	ARRANGEMENT	DESCRIPTION	MOUNTING HEIGHT	LUX	WATTS
	3	A	SINGLE	LITHONIA RADB LED - P1	41.50 INCHES	34.5	5
WP	2	B	SINGLE	LITHONIA OLWP LED SWW2 120 PE DDB	16 FEET	160	18.5
	2	B	SINGLE	LITHONIA EU2L	7.5 FEET	10.76	.33 (LED)

LIGHTING LEGEND

- 60 LUX
- 30 LUX
- 20 LUX
- 5 LUX
- 1 LUX

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

SITE LIGHTING PLAN

SITE LIGHTING PLAN
SCALE: 1" = 30'

N

30 0 30 60
GRAPHIC SCALE: 1" = 30'

BRYAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25
6	REVISED per TOWN COMMENTS	11/06/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	LT101

Indiana 811 Know what's below. Call before you dig.

Appendix B

Inspection Schedule			
Inspection Frequency	**Maintenance Item**	**Maintenance Follow-up**	**Action Taken**
Annual & Post Major Storm Event		Vegetation	Routine mowing to a minimum 3 in.
		Erosion on Embankment	Erosion Control Measure will be repaired immediately
		Animal Burrows	Burrows should be removed at the time of routine mowing
		Drains Clear & Functioning	Drains shall be inspected to ensure positive drainage
		Leaks or Seeps	Leaks shall be repaired immediately to ensure positive flow
		Slope Protection Failure	Erosion Control Measure will be repaired immediately
		Obstructions	Obstructions shall be removed during routine mowing
Annual & Post Major Storm Event		Outlet Pipe Blocked	Outlet shall be cleared of debris immediately upon finding
		Debris Removed from Trash Guard	Obstructions shall be removed during routine mowing
		Sediment Build-up	Sediment shall be removed at a depth of 2 inches
		Pipe Condition	Pipes shall be inspected and repaired if needed
		Outfall Channel Function	Erosion Control Measure will be repaired immediately
Monthly		Sediment Build-up	Sediment shall be removed at a depth of 2 inches
Monthly	Miscellaneous	Erosion at Outfalls	Erosion Control Measure will be repaired immediately
		Encroachment into Easements	Encroachments shall be removed from all easements
		Complaints from Surrounding Owners	Complaints shall be heard and considered
		Public Hazards	All hazards to public safety shall be removed immediately
Quarterly / Major Storm Event	Impervious Surfaces	Drainage Flow to Collection Point	Remove obstructions
Quarterly / Major Storm Event	Swales	Drainage Flow	Remove obstructions
Quarterly / Major Storm Event	Storm Pipes / Cleanouts	Pipe Blockage	Remove obstructions / Flush

APPENDIX C
BMP CHECKLIST

Pond/Basin Slope Inspection and Maintenance

Date

Lion Trans Inc.

Time / Weather: _____

Precipitation Amount / Site Condition: _____

Inspector Name: _____

Item	Condition when Maintenance is Required	Maintenance Required? (Y/N)	Comments	Expected Maintenance Results	Initials
Trash and Debris	Trash and debris has accumulated in pond.			Trash and debris to be removed from pond.	
Erosion	Erosion of the pond's side slopes and/or scouring of the pond's bottom, that exceeds 6-inches, or where continued erosion is prevalent.			Slope Stabilized using proper erosion control measures and repair methods.	
Bank Stabilization	Bank destabilized by burrowing animal(s).			Remove burrowing animals and repair holes in embankment	
Sediment Accumulation in the Pond Bottom	Sediment accumulations in pond bottom that exceeds the depth of sediment zone.			Sediment removed from pond bottom	
Rip Rap	Vegetative growth on rip rap lined channel or missing rocks and soil is exposed			Remove vegetative growth on rip rap and replace rocks to design specifications	
End Section	End section is blocked / obstructed by trash / debris, sediment or vegetation			Trash, debris, sediment, or vegetation to be removed from end section	
Outlet Structure	Outlet structure is blocked / obstructed by trash, debris, sediment or vegetation			Trash, debris, sediment, or vegetation to be removed from outlet structure	

Additional Comments and Observations	Initials

Arcadia™
Maintenance Guide

One of Arcadia's advantages is the ease of maintenance. Like any system that collects pollutants, the Arcadia hydrodynamic separator must be regularly maintained for continued effectiveness. Maintenance is a simple procedure performed using a vacuum truck or similar equipment. The system is designed to minimize the volume of water lost during routine maintenance, reducing disposal costs.

Contractors can access the pollutants stored in the manhole through the manhole cover. This allows them to gain vacuum hose access to the bottom of the manhole to remove sediment and trash. There is no confined space entry necessary for inspection or maintenance.

The entire maintenance procedure typically takes 2 to 4 hours, depending on the system's size, the amount of captured material, and the vacuum truck's capacity.

Local regulations may apply to the maintenance procedure. Safe and legal disposal of pollutants is the responsibility of the maintenance contractor. Maintenance should be performed only by a qualified contractor.

Inspection and Cleaning Cycle

Periodic inspection is necessary to determine the need for and frequency of maintenance. Inspections should begin as soon as construction is complete and then on an annual basis ongoing. Under normal use, the system will need to be cleaned every 1-3 years.

Sites that have excessive oil, fuel or sediment runoff may shorten the maintenance cycle. Periodic inspection is important.

Determining When to Clean

To determine the sediment depth, the maintenance contractor should lower a stadia rod into the manhole until it reaches the top of the captured sediment. Mark this spot on the rod, then continue pushing the rod through the sediment until it reaches the bottom of the sump. Next, mark the second spot on the rod then compare the two markings to determine the depth of the captured sediment.

Maintenance should occur when the sediment has reached a depth of 18" (450 mm).

ADS®

adspipe.com

800-821-6710

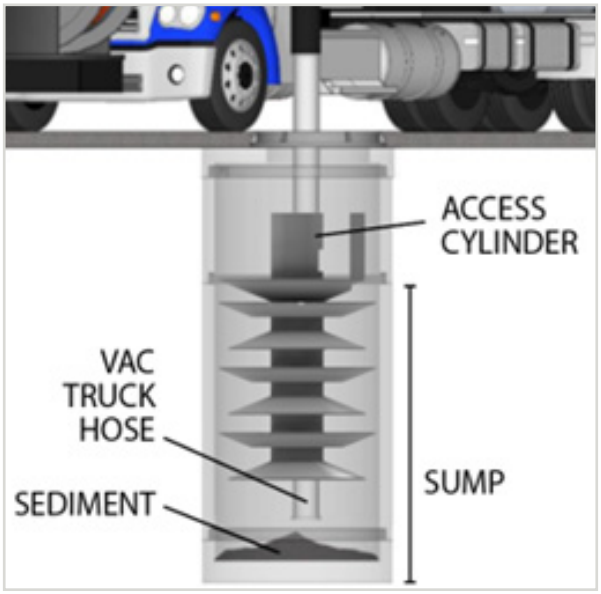
Arcadia Storage Capacities

Model	Manhole Diameter in (mm)	Total System Volume Gallons (Liters)	Treatment Chamber Capacity Gallons (Liters)	Standard Sediment Capacity (18" depth) Yards^3 (m^3)	NJDEP Sediment Capacity (50% of Standard Depth) Yards^3 (m^3)
AR3	36 (914)	242 (917)	203 (767)	0.39 (0.30)	0.19 (0.15)
AR4	48 (1219)	635 (2402)	564 (2135)	0.70 (0.53)	0.35 (0.27)
AR5	60 (1524)	991 (3753)	881 (3336)	1.09 (0.83)	0.55 (0.42)
AR6	72 (1829)	1428 (5404)	1269 (4804)	1.57 (1.20)	0.79 (0.60)
AR8	96 (2438)	4136 (15656)	3854 (14588)	2.79 (2.14)	1.40 (1.07)
AR10	120 (3048)	7931 (30022)	7490 (28354)	4.36 (3.34)	2.18 (1.67)

Maintenance Procedures

1. Remove the manhole cover to provide access to the pollutant storage. Pollutants are stored in the sump, below the unit assembly. Access this area through the access cylinder (larger than 10" (254 mm) diameter for all sizes).
2. Use a vacuum truck or other similar equipment to remove all water, debris, oil and sediment. See Figure 1.
3. Use a high pressure hose to clean the manhole of all remaining sediment and debris. Then, use the vacuum truck to remove the water.
4. Fill the clean manhole with water until the level reaches the invert of the outlet pipe.
5. Replace the manhole cover.
6. Dispose of the polluted water, oil, sediment and trash at an approved facility.
    a. Local regulations prohibit the discharge of solid material into the sanitary system. Check with the local sewer authority for authorization to discharge the liquid.
    b. Some localities treat the pollutants as leachate. Check with local regulators about disposal requirements.
    c. Additional local regulations may apply to the maintenance procedure.

Figure 1



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A Professional Corporation
4000 Clarks Creek Road, Plainfield, IN 46168, Telephone: 317-837-2767, Fax: 317-837-7266

Lions Trans INC.
4005 N CR 1000 E
Brownsburg, Indiana 46112

Drainage Narrative and Calculations

December 19, 2025

Revision 1

Moench Engineering, P.C.
4000 Clarks Creek Road
Plainfield, Indiana 46168

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Drainage Narrative

1.0 Project Scope

The proposed project involves the development of a truck maintenance facility that will include 42 stalls for truck and trailer parking, a 900 square foot office building (30 ft × 30 ft), and a 2,860 square foot maintenance building (130 ft × 22 ft) located along the southern boundary of the property. In addition, a detention pond will be constructed to manage and control stormwater runoff generated by the site improvements. The project scope will also include off site drainage improvements along County Road 400 North to accommodate discharge from our property.

The project site is located at 4005 N CR 1000 E, Brownsburg, Indiana 46112. The parcel is not currently subject to zoning restrictions. The proposed development will result in approximately 2 acres of land disturbance. Stormwater from the site will discharge to the existing offsite storm sewer network located along CR 400 N, which ultimately conveys flow to Bullard Creek west of the site.

All stormwater management facilities for the proposed development were designed in accordance with the Town of Brownsburg Stormwater Standards and the Brownsburg Stormwater Management Ordinance. The standards were used to establish allowable post-development release rates, minimum storm durations, detention storage requirements, outlet structure sizing, and downstream conveyance criteria.

2.0 Rainfall Information

Table 1. Rainfall Intensities (Hendricks County 2016)

Rainfall Intensities for Various Return Periods and Storm Durations						
Duration	*Intensity (Inches/Hour)*					
	Return Period (Years)					
	2	5	10	25	50	100
5 min	5.57	6.7	7.58	8.76	9.68	10.6
10 min	4.35	5.2	5.85	6.7	7.34	7.98
15 min	3.54	4.26	4.8	5.52	6.06	6.61
30 min	2.37	2.92	3.33	3.89	4.33	4.77
1 hr	1.46	1.83	2.12	2.53	2.85	3.19
2 hr	0.851	1.08	1.25	1.51	1.72	1.95
3 hr	0.603	0.762	0.893	1.08	1.24	1.41
6 hr	0.359	0.455	0.535	0.65	0.747	0.853
12 hr	0.211	0.263	0.306	0.368	0.418	0.473
24 hr	0.126	0.155	0.178	0.21	0.236	0.262

Table 2. Rainfall Depths (NOAA Atlas 14)

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.386** (0.348-0.428)	**0.460** (0.415-0.509)	**0.551** (0.497-0.611)	**0.623** (0.559-0.689)	**0.717** (0.640-0.794)	**0.792** (0.700-0.879)	**0.865** (0.758-0.961)	**0.941** (0.817-1.05)	**1.04** (0.892-1.18)	**1.12** (0.945-1.27)
10-min	**0.600** (0.541-0.666)	**0.718** (0.647-0.795)	**0.857** (0.773-0.950)	**0.962** (0.863-1.06)	**1.10** (0.978-1.22)	**1.20** (1.06-1.33)	**1.30** (1.14-1.45)	**1.40** (1.22-1.57)	**1.54** (1.31-1.73)	**1.63** (1.38-1.85)
15-min	**0.735** (0.664-0.816)	**0.878** (0.792-0.972)	**1.05** (0.949-1.17)	**1.18** (1.06-1.31)	**1.36** (1.21-1.50)	**1.49** (1.31-1.65)	**1.62** (1.42-1.80)	**1.75** (1.52-1.95)	**1.92** (1.64-2.16)	**2.04** (1.72-2.31)
30-min	**0.973** (0.878-1.08)	**1.17** (1.06-1.30)	**1.44** (1.30-1.60)	**1.64** (1.48-1.82)	**1.91** (1.71-2.12)	**2.12** (1.88-2.36)	**2.34** (2.05-2.60)	**2.55** (2.21-2.85)	**2.84** (2.42-3.20)	**3.06** (2.58-3.47)
60-min	**1.19** (1.07-1.32)	**1.44** (1.30-1.60)	**1.81** (1.63-2.00)	**2.09** (1.88-2.31)	**2.48** (2.21-2.75)	**2.80** (2.48-3.11)	**3.12** (2.74-3.47)	**3.46** (3.00-3.86)	**3.93** (3.35-4.42)	**4.30** (3.62-4.87)
2-hr	**1.39** (1.26-1.55)	**1.69** (1.52-1.88)	**2.12** (1.91-2.36)	**2.48** (2.22-2.75)	**2.97** (2.64-3.30)	**3.38** (2.98-3.75)	**3.82** (3.32-4.24)	**4.28** (3.66-4.76)	**4.92** (4.13-5.52)	**5.45** (4.50-6.16)
3-hr	**1.48** (1.34-1.65)	**1.79** (1.62-1.99)	**2.26** (2.04-2.51)	**2.64** (2.37-2.93)	**3.19** (2.83-3.53)	**3.64** (3.20-4.04)	**4.13** (3.59-4.58)	**4.64** (3.98-5.18)	**5.39** (4.51-6.06)	**6.00** (4.93-6.79)
6-hr	**1.76** (1.59-1.95)	**2.13** (1.93-2.36)	**2.69** (2.43-2.99)	**3.15** (2.83-3.49)	**3.82** (3.39-4.22)	**4.38** (3.84-4.84)	**4.98** (4.31-5.52)	**5.63** (4.79-6.25)	**6.57** (5.46-7.35)	**7.35** (5.97-8.28)
12-hr	**2.08** (1.89-2.30)	**2.51** (2.28-2.78)	**3.12** (2.84-3.45)	**3.63** (3.28-4.01)	**4.34** (3.88-4.79)	**4.93** (4.36-5.43)	**5.55** (4.86-6.12)	**6.20** (5.36-6.88)	**7.13** (6.03-7.97)	**7.88** (6.54-8.87)
24-hr	**2.48** (2.30-2.68)	**2.97** (2.76-3.21)	**3.65** (3.39-3.95)	**4.19** (3.88-4.52)	**4.92** (4.54-5.31)	**5.51** (5.06-5.94)	**6.11** (5.59-6.59)	**6.72** (6.12-7.26)	**7.57** (6.82-8.20)	**8.24** (7.37-8.94)
2-day	**2.89** (2.69-3.10)	**3.46** (3.22-3.72)	**4.22** (3.93-4.54)	**4.82** (4.48-5.18)	**5.63** (5.21-6.04)	**6.27** (5.78-6.74)	**6.92** (6.36-7.44)	**7.59** (6.93-8.17)	**8.50** (7.70-9.18)	**9.20** (8.27-9.97)
3-day	**3.08** (2.89-3.30)	**3.68** (3.45-3.94)	**4.48** (4.19-4.79)	**5.09** (4.76-5.44)	**5.93** (5.53-6.34)	**6.59** (6.12-7.04)	**7.26** (6.72-7.76)	**7.94** (7.32-8.50)	**8.87** (8.11-9.51)	**9.59** (8.72-10.3)
4-day	**3.28** (3.09-3.49)	**3.91** (3.69-4.17)	**4.73** (4.46-5.04)	**5.36** (5.04-5.71)	**6.23** (5.84-6.63)	**6.91** (6.46-7.35)	**7.60** (7.09-8.08)	**8.30** (7.70-8.83)	**9.24** (8.53-9.84)	**9.97** (9.17-10.6)
7-day	**3.88** (3.64-4.13)	**4.61** (4.33-4.91)	**5.53** (5.19-5.88)	**6.26** (5.87-6.65)	**7.25** (6.78-7.70)	**8.03** (7.49-8.52)	**8.82** (8.21-9.36)	**9.62** (8.92-10.2)	**10.7** (9.88-11.4)	**11.5** (10.6-12.3)
10-day	**4.42** (4.16-4.70)	**5.24** (4.94-5.58)	**6.25** (5.89-6.66)	**7.06** (6.64-7.52)	**8.15** (7.65-8.67)	**9.00** (8.43-9.58)	**9.87** (9.22-10.5)	**10.7** (10.0-11.4)	**11.9** (11.0-12.7)	**12.8** (11.8-13.7)
20-day	**6.02** (5.70-6.40)	**7.12** (6.73-7.56)	**8.39** (7.92-8.90)	**9.38** (8.84-9.94)	**10.7** (10.1-11.3)	**11.7** (11.0-12.4)	**12.7** (11.9-13.5)	**13.7** (12.8-14.5)	**15.0** (14.0-16.0)	**16.0** (14.8-17.1)
30-day	**7.43** (7.03-7.86)	**8.75** (8.28-9.26)	**10.2** (9.62-10.8)	**11.3** (10.6-11.9)	**12.7** (12.0-13.4)	**13.8** (13.0-14.6)	**14.9** (13.9-15.7)	**15.9** (14.9-16.8)	**17.3** (16.1-18.3)	**18.3** (17.0-19.4)
45-day	**9.40** (8.92-9.91)	**11.0** (10.5-11.6)	**12.7** (12.0-13.4)	**14.0** (13.2-14.7)	**15.6** (14.7-16.4)	**16.8** (15.9-17.7)	**18.0** (17.0-19.0)	**19.1** (18.0-20.2)	**20.6** (19.3-21.7)	**21.6** (20.2-22.8)
60-day	**11.3** (10.7-11.9)	**13.2** (12.5-13.9)	**15.1** (14.3-15.9)	**16.5** (15.7-17.4)	**18.4** (17.4-19.3)	**19.8** (18.7-20.8)	**21.1** (19.9-22.2)	**22.3** (21.0-23.5)	**23.9** (22.4-25.2)	**25.0** (23.5-26.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Rainfall intensity and depth data used in the hydrologic analyses were obtained from Chapter 2 of the *Hendricks County Stormwater Technical Standards Manual* (2016). These values form the basis for both Rational Method peak runoff calculations and hydrograph development for the project's watershed, ensuring consistency with county stormwater design requirements.

However, per the Brownsburg Stormwater Management Ordinance (2024), storage volumes for detention ponds shall be calculated based on NRCS TR-55 time of concentration and curve number calculation methodologies.

3.0 Existing Conditions

The project site is currently an undeveloped grassy area with scattered overgrowth. Land use surrounding the parcel includes residential properties to the south, warehouse and manufactured homes to the west, minor commercial development to the north beyond the highway, and railroad tracks to the east.

The existing watershed area encompasses 3.02 acres, consisting entirely of pervious cover. Under current conditions, stormwater runoff generally drains to the east and south.

Runoff Curve Numbers (CN) were assigned based on existing land cover conditions in accordance with the Hendricks County Stormwater Technical Standards Manual (2016) and the Brownsburg Stormwater Management Ordinance (2024). A CN value of 84 was used for areas classified as fair-condition grass on Hydrologic Soil Group D soils. For the existing conditions analysis, the critical storm event was identified as the 2-hour storm. Using the Huff First Quartile distribution for the 2-hour duration, the time of concentration (Tc) for the site was calculated to be 47.0 minutes. The corresponding peak flow rates for the existing conditions are summarized below:

Table 3. Existing Conditions

Return Period	2-year	10-year	25-year	100-year
Runoff	1.172 cfs	2.497 cfs	3.430 cfs	5.175 cfs

4.0 Proposed Conditions

As outlined in the project scope, the proposed development consists of a truck maintenance facility including 42 stalls for truck and trailer parking, a 900 square foot office building (30 ft × 30 ft), and a 2,860 square foot maintenance building (130 ft × 22 ft).

Under proposed conditions, the total site area remains 3.02 acres, consisting of approximately 1.02 acres of pervious surface, 1.91 acres of impervious asphalt pavement, and 0.09 acres of roof area.

For the proposed conditions analysis, the critical storm event was identified as the 30-minute storm. Using the Huff First Quartile distribution for the 30-minute duration, the time of concentration (tc) was calculated to be 9.2 minutes. Curve Numbers (CN) were assigned based on land cover characteristics consistent with the Hendricks County Stormwater Technical Standards Manual (2016) and the Brownsburg Stormwater Management Ordinance (2024). Values applied include CN= 84 for land classified as fair condition grass cover hydrologic soil group D, CN = 98 for asphalt pavement and roof areas. The weighted CN value was calculated as follows:

$$\frac{(1.02\ acres\ \times 84) + (1.91\ acres\ \times 98) + (0.09\ acres\ \times 98)}{3.02\ acres} = 93$$

The resulting peak runoff flow rates for the proposed site conditions are summarized below:

Table 4. Proposed Conditions

Return Period	2-year	10-year	25-year	100-year
Runoff	5.733 cfs	9.947 cfs	12.50 cfs	16.74 cfs

The runoff flowrates increased due to the addition of pervious surface and removal of impervious surface. The percentage increase is as follows:

Table 5. Percentage Increase in Runoff

Return Period	2-year	10-year	25-year	100-year
% Increase	389%	298%	264%	223%

Stormwater runoff from the proposed improvements will be conveyed into inlets and piped to the northwest corner of the site, where a retention pond will be constructed to provide the required storage volume.

4.1 Detention Pond and Outlet Structure

The post-development peak discharge was limited by restricting the 0–10-year storm events to a release rate of 0.2 cfs per acre (0.604 cfs for the site) and the 11–100-year storm events to 0.4 cfs per acre (1.208 cfs for the site). These allowable release rates are more restrictive than the proposed 100-year peak inflow when compared to the existing 10-year conditions, ensuring that post-development discharges do not exceed pre-development rates.

In accordance with the Brownsburg Stormwater Management Ordinance detention standards, “The storm duration shall be equal to or greater than the site time of concentration but shall not be less than thirty (30) minutes.” (2024). Therefore, the time of concentration for the proposed conditions was set to 30 minutes, and the maximum required storage was determined to take place during the 6-hour storm. The detention sizing analysis used the 6-hour storm to calculate the required storage volume for the site.

This analysis determined a required detention volume of 33,478 cubic feet. To meet this requirement, a 34,170-cubic-foot retention pond will be constructed in the northwest corner of the site. The detention pond will be equipped with a multi-stage outlet structure designed to limit discharge rates. A summary of the outlet structure components is provided in Table 6, with supporting calculations included in Appendix B.

Table 6. Outlet Structure Summary

Outlet	Bottom	Intermediate	Emergency Overflow
Size	$4"\ Diameter$	$4"\ Diameter$	$3'x\ 3'w/mesh$
Invert El. (ft)	862.66	865.47	867.01
Peak Outflow (cfs)	0.70	1.23	$\geq 20.93\ (125\%\ 100\ year\ peak)$

Per the Town of Brownsburg Stormwater Standards, the minimum allowable orifice diameter is 4 inches; therefore, a 4-inch orifice is utilized for the outlet structure. Due to this minimum size requirement, the resulting discharge rates from the orifice slightly exceed the calculated allowable release rates. However, the post-development discharge rates remain below the corresponding existing peak flow rates.

4.2 On-Site Stormwater Conveyance

Stormwater runoff generated from the proposed improvements will be collected and conveyed to the site's retention facility. The grading plan directs surface runoff by sheet flow and shallow swales to a series of inlets along the eastern and central portions of the property. These inlets are connected by a storm sewer system that conveys flow westward to the retention pond located in the northwest corner of the site.

- Inlet 1: Connects to 290 linear feet (LF) of 18-inch RCP at a 0.30% slope, discharging into Inlet 2.
- Inlet 2: Connects to 64 LF of 24-inch RCP at 0.30% into the Arcadia AR8, which the discharges into 64 LF of 24" RCP at 0.30% into the pond

Inlet capacity was then checked using the orifice flow equation, incorporating the reduced effective open area (50% of manufacturer-provided open area). This ensures the inlet can maintain adequate capacity under both design flow and partial clogging conditions, in compliance with the requirements of the Manual. The discharge coefficient, C, will be 0.60, gravity acceleration, g, is 32.2 ft/sec2, and ponding height, h is 0.5 ft, and the 10-year flow will be used. The orifice equation is as follows:

Inlet Structure 1:

$$Q = CA\sqrt{2gh}$$

$$5.08\ cfs = (0.6)A\sqrt{2(32.2\ ft/\sec^2)\ 0.5\ ft}$$

$$A = 1.49\ ft^2$$

$$2A = 3.0\ ft^2\ (Clogging\ Condition)$$

Inlet Structure 2 :

$$Q = CA\sqrt{2gh}$$

$$5.69\ cfs = (0.6)A\sqrt{2(32.2\ ft/\sec^2)\ 0.5\ ft}$$

$$A = 1.67\ ft^2$$

$$2A = 3.3\ ft^2\ (Clogging\ Condition)$$

To capture and convey runoff from the site into Inlet Structure 1, a square Neenah Grate Inlet 3287-5 (3.2 square feet of opening area) or equivalent will be installed. To capture and convey runoff from the site into Inlet Structure 2, a square Neenah Grate Inlet 3808-1 (5.2 square feet of opening area) or inlet with 3.3 square foot or greater opening should be installed. Calculations verifying pipe capacity and inlet capture are provided in Appendix B.

For water quality treatment, a hydrodynamic separator will be installed downstream of Inlet 2 to remove sediment and floatable pollutants prior to discharge into the detention basin. The required treatment flow rate is 10.70 cfs. An ADS Arcadia ARC8 unit is proposed, as it has a rated flow capacity of 13.48 cfs. Calculations can be found in Appendix C.

4.3 Off Site Drainage Improvements Along CR 400 N

The existing downstream pipe network is not adequate to convey the required discharge from the site and is therefore proposed to be redesigned to accommodate existing flows in addition to 125 percent of the site's 100-year peak discharge.

The pipe conveying flow from the detention pond was sized to safely pass the 100-year design flow under the assumed conditions of a 0.11 percent slope and a Manning's roughness coefficient (n) of 0.013. The minimum required pipe diameter was calculated using Manning's Equation, as shown below:

$$Q\ (Volumetric\ Flow) = \frac{1.49}{Manning's\ n} * (Area) * (Hydraulic\ Radius)^{2/3}\sqrt{Slope}$$

$$20.93\ cfs = \frac{1.49}{0.013} * \left(\frac{\pi D^2}{4}\right) * (D/4)^{2/3}\sqrt{0.0011}$$

$$D = 35.26\ inches$$

Based on this analysis, a 36-inch diameter pipe is required and will be utilized.

The outlet pipe network extends west from the detention pond and connects to the storm sewer system along CR 400 N. This existing network is made up of 18-inch pipe at various slopes. As part of the proposed improvements, the existing downstream pipes will be replaced with 36-inch RCP. Regrading will occur along the full length of the alignment, and existing drainage structures will be upsized to accommodate the larger pipe diameter. A summary of the proposed downstream pipe network is provided in Table 7. Hydraulic calculations accounting for combined offsite flows and proposed site discharge are included in Appendix B.

Table 7. Pipe Network

Location	Length (ft)	Diameter (in)	Grade (%)	Invert Upstream	Invert Downstream
South to INL7	97	12	3.10	865.49	862.47
INL7 TO INL8	50	36	0.12	862.47	862.41
INL8 TO INL9	175	36	0.13	862.41	862.19
INL9 TO INL10	151	36	0.13	862.19	861.99
INL10 TO INL11	164	36	0.14	861.99	861.76
INL11 TO INL12	164	36	0.14	861.76	861.53
INL12 TO INL13	80	36	0.15	861.53	861.41
INL13 TO INL14	75	36	0.16	861.41	861.29
INL14 to Ronald Reagan	268	36	0.16	861.29	860.86

The complete stormwater management system—including inlets, storm sewers, detention pond, multi-stage outlet structure, and downstream piping—has been designed to control post-development runoff in compliance with the Town of Brownsburg Stormwater Standards.

5.0 Summary

The proposed development at 4005 N CR 1000 E, Brownsburg, Indiana will consist of a truck maintenance facility including 42 truck/trailer parking stalls, a 900 square foot office building, and a 2,860 square foot maintenance building. The project will disturb approximately 2 acres and convert a predominantly pervious 3.02-acre parcel into a mix of impervious asphalt, building roof, and limited vegetated cover. Hydrologic analysis using rainfall data from the Hendricks County Stormwater Technical Standards Manual (2016) indicates a significant increase in runoff under proposed conditions, with the 100-year peak flow rising from 2.10 cfs to 17.61 cfs.

To mitigate this increase, a comprehensive stormwater management system has been designed. Runoff will be collected by inlets and storm sewers, routed through a hydrodynamic separator to remove sediment , and detained within a pond sized to provide 34,170 cubic feet of storage volume. A multi-stage outlet structure will restrict discharges using minimum allowable orifice sizes. The system reduces post-development peak discharge to below pre-development rates, providing both quantity control and water quality treatment.

Appendix A – Huff Distribution Hydrographs

30-minute storm

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	0.931	-------	-------	2.007	2.725	-------	3.949	Existing
2	SCS Runoff	------	-------	5.733	-------	-------	9.947	12.50	-------	16.74	Proposed

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.931	1	44	2,545	------	------	------	Existing
2	SCS Runoff	5.733	1	14	6,429	------	------	------	Proposed

Hydrograph Report

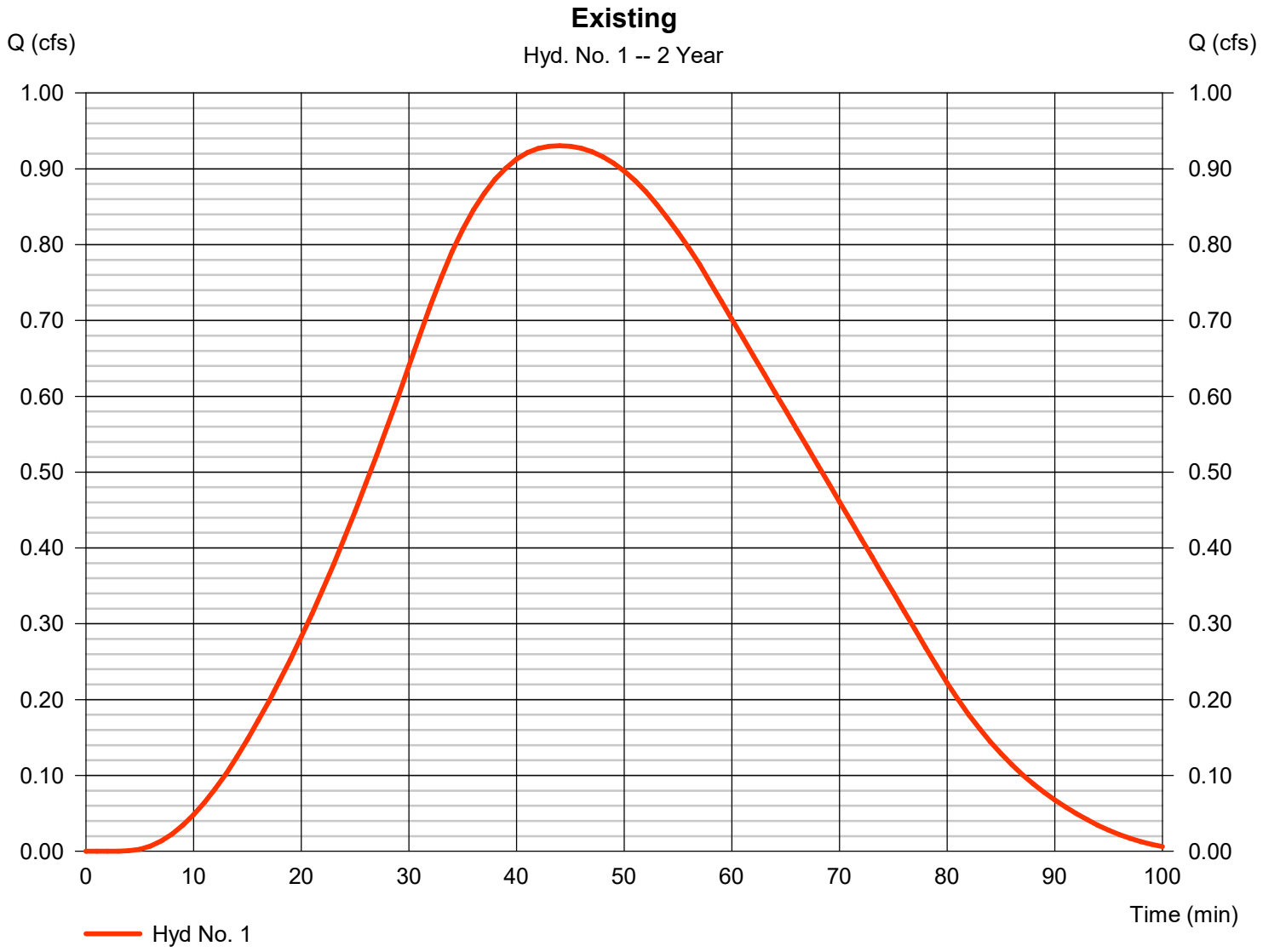
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 0.931 cfs
Storm frequency	= 2 yrs	Time to peak	= 44 min
Time interval	= 1 min	Hyd. volume	= 2,545 cuft
Drainage area	= 3.020 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 47.00 min
Total precip.	= 1.17 in	Distribution	= Huff-1st
Storm duration	= 0.50 hrs	Shape factor	= 484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



TR55 Tc Worksheet

Hyd. No. 1

Existing

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 300.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.01		0.00		0.00		
Land slope (%)	= 0.41		0.00		0.00		
Travel Time (min)	**= 45.86**	**+**	**0.00**	**+**	**0.00**	**=**	**45.86**
Shallow Concentrated Flow							
Flow length (ft)	= 70.00		0.00		0.00		
Watercourse slope (%)	= 0.41		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.03		0.00		0.00		
Travel Time (min)	**= 1.13**	**+**	**0.00**	**+**	**0.00**	**=**	**1.13**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 47.00 min

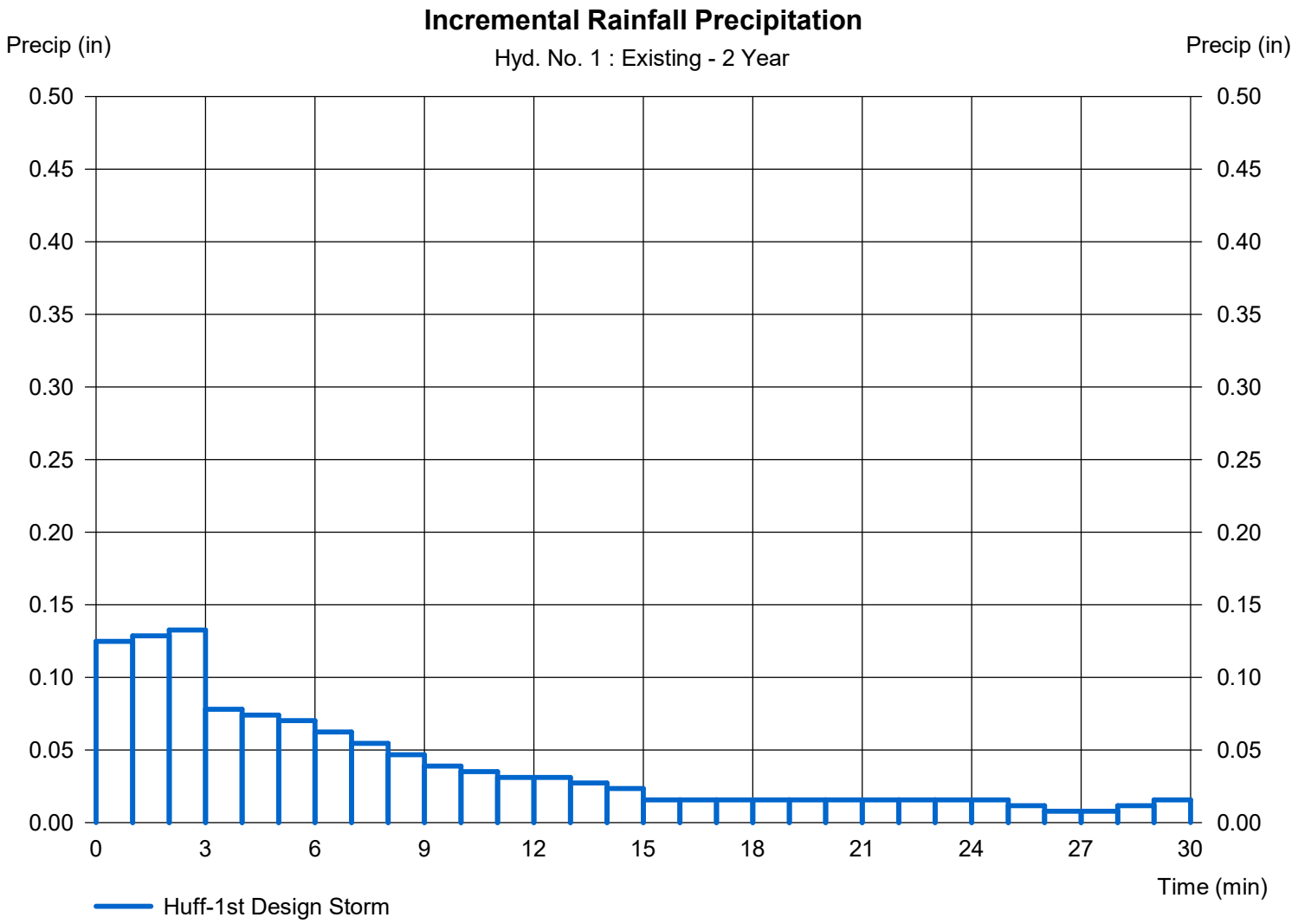
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 2 yrs	Time interval	= 1 min
Total precip.	= 1.1700 in	Distribution	= Huff-1st
Storm duration	= 0.50 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.007	1	42	5,513	------	------	------	Existing
2	SCS Runoff	9.947	1	13	10,847	------	------	------	Proposed

Hydrograph Report

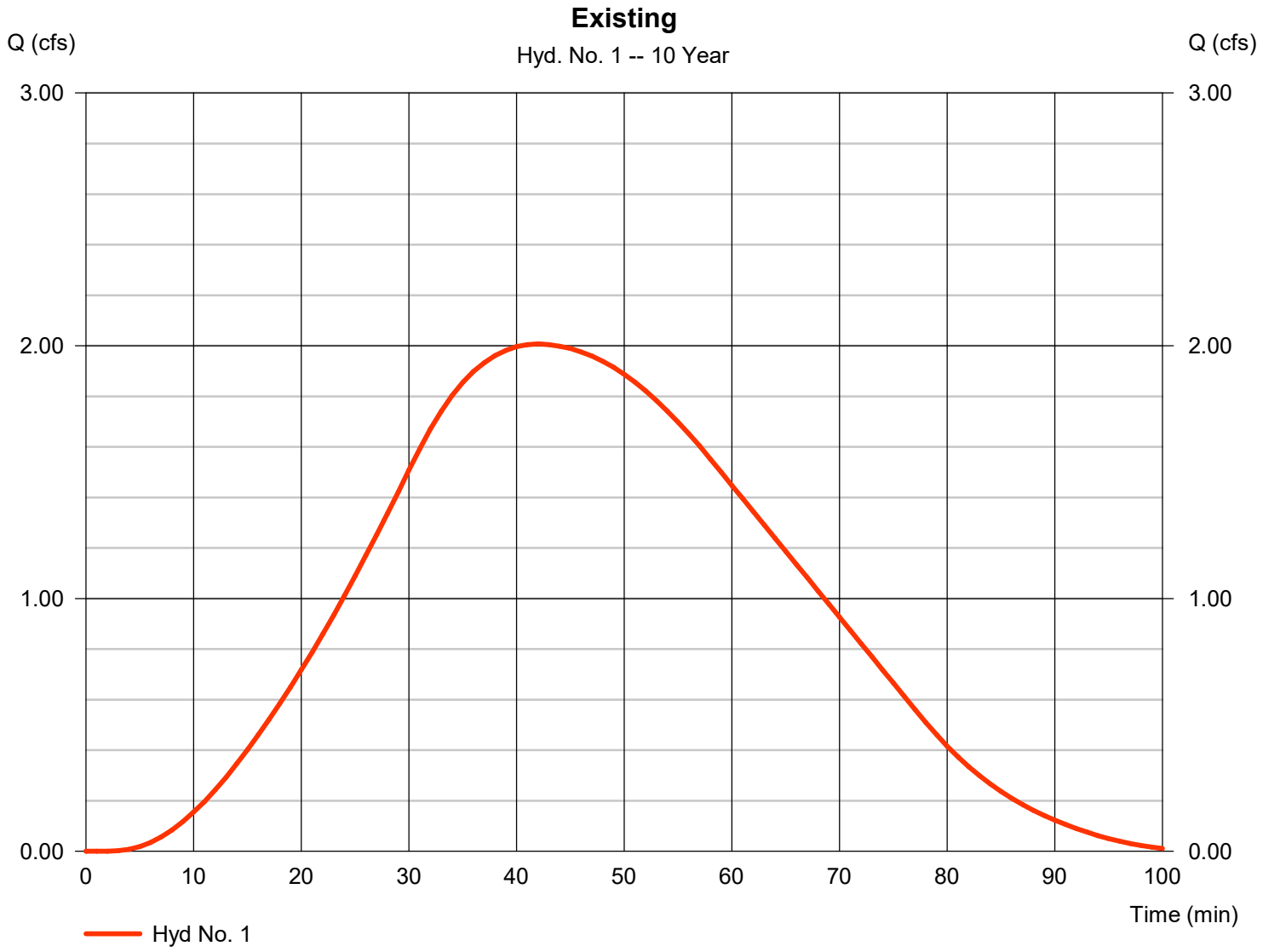
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.007 cfs
Storm frequency	=	10 yrs	Time to peak	=	42 min
Time interval	=	1 min	Hyd. volume	=	5,513 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	1.64 in	Distribution	=	Huff-1st
Storm duration	=	0.50 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



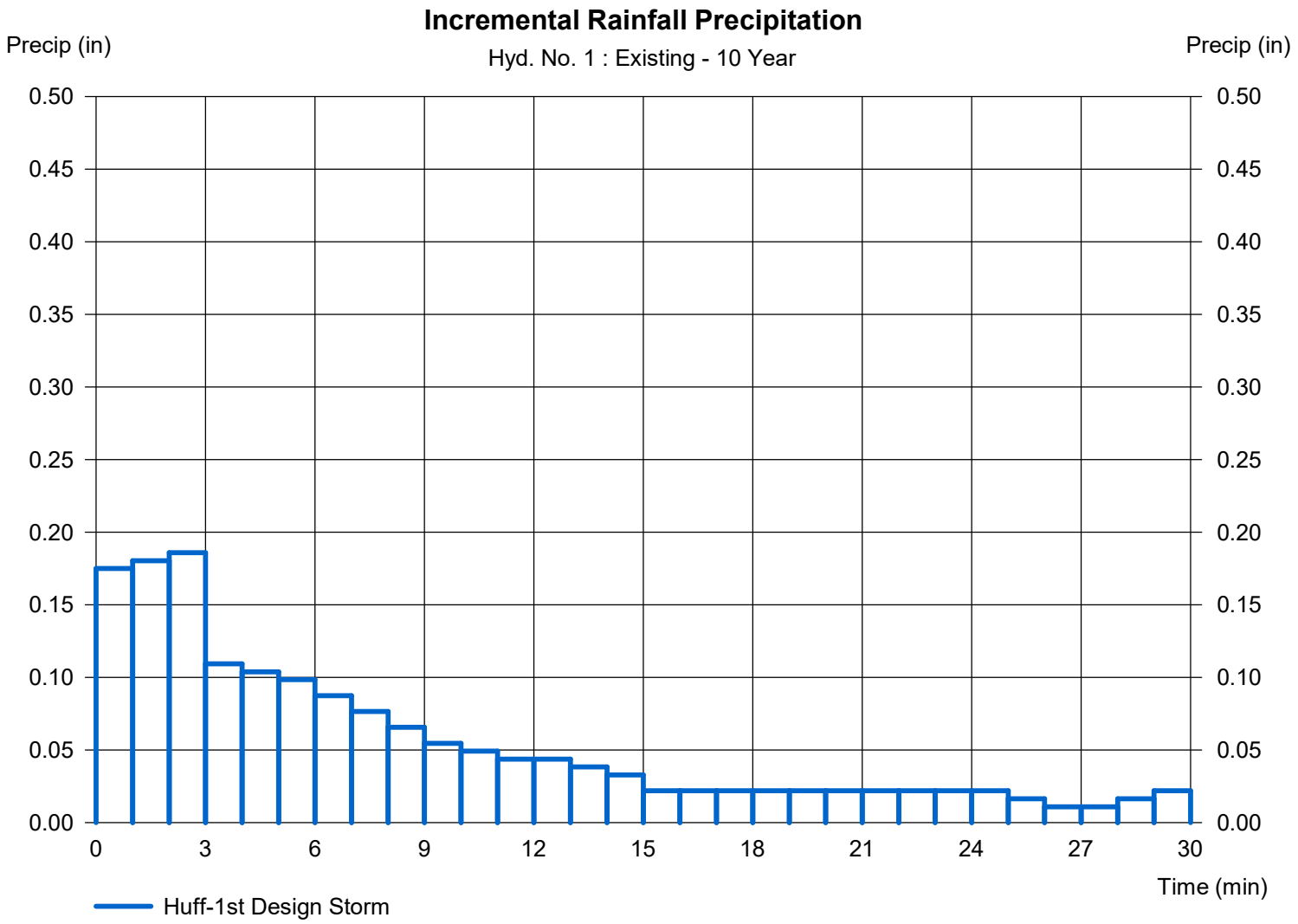
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 10 yrs	Time interval	= 1 min
Total precip.	= 1.6400 in	Distribution	= Huff-1st
Storm duration	= 0.50 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.725	1	41	7,491	------	------	------	Existing
2	SCS Runoff	12.50	1	13	13,509	------	------	------	Proposed

Hydrograph Report

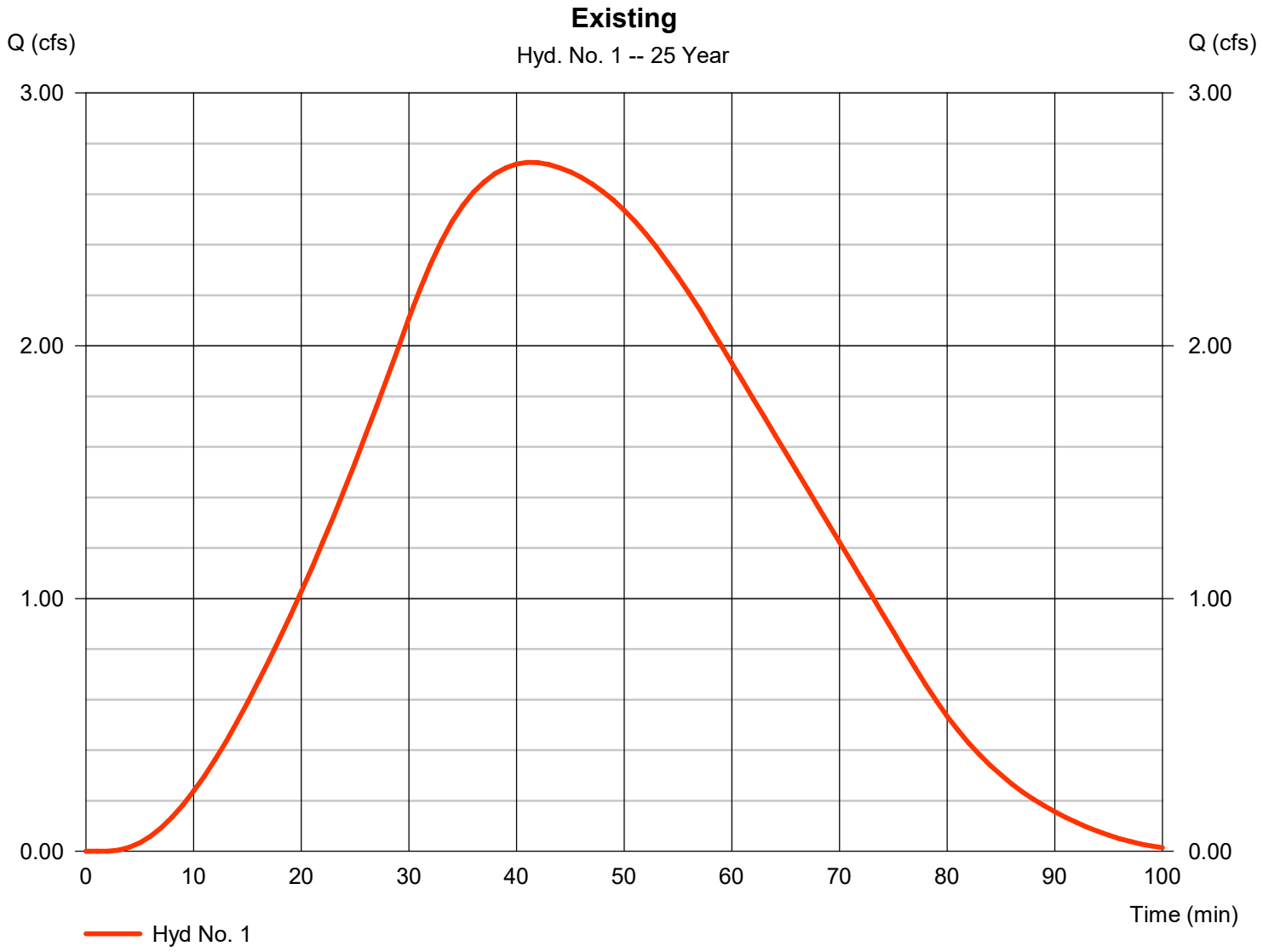
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.725 cfs
Storm frequency	=	25 yrs	Time to peak	=	41 min
Time interval	=	1 min	Hyd. volume	=	7,491 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	1.91 in	Distribution	=	Huff-1st
Storm duration	=	0.50 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



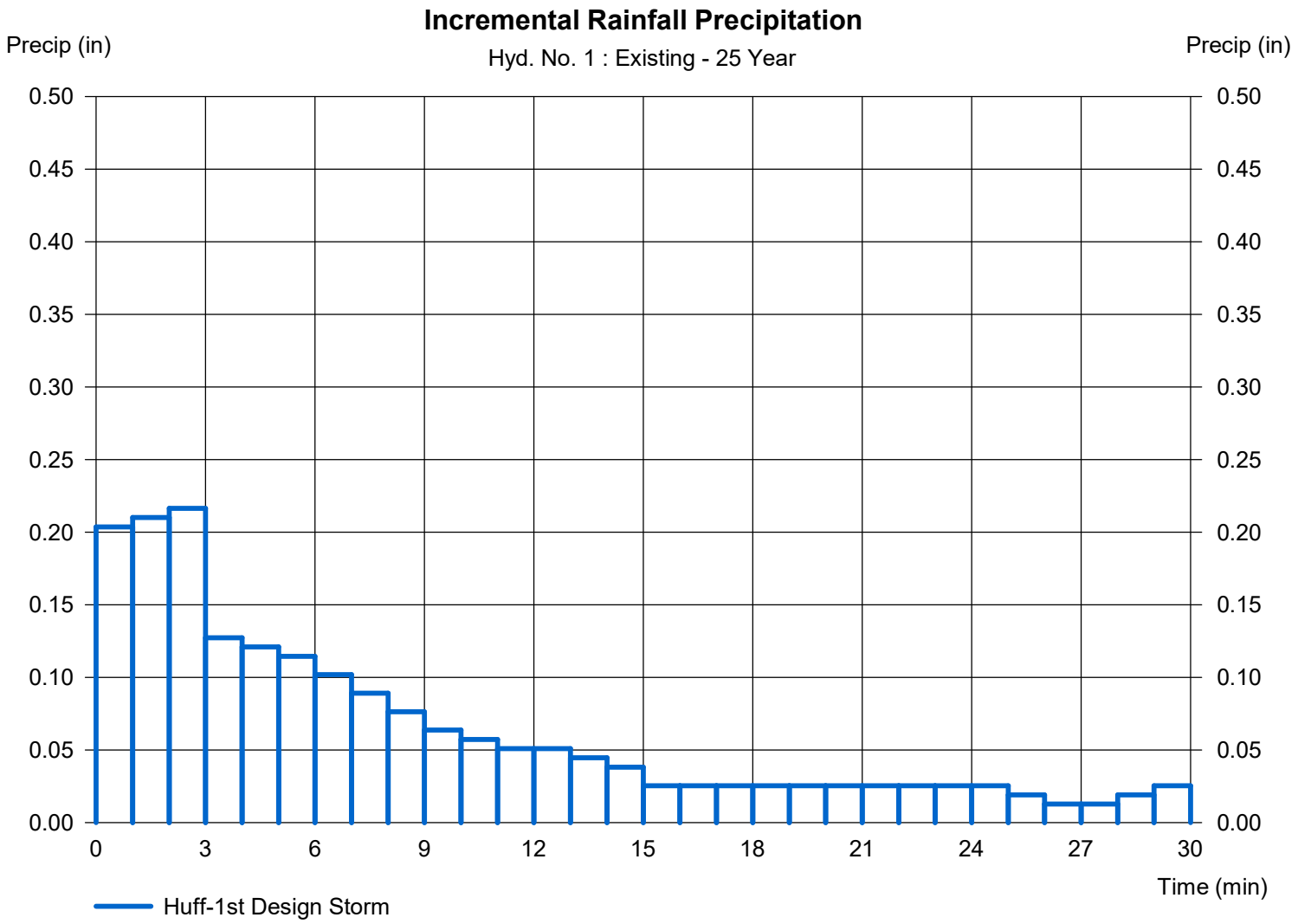
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 25 yrs	Time interval	= 1 min
Total precip.	= 1.9100 in	Distribution	= Huff-1st
Storm duration	= 0.50 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	3.949	1	41	10,851	------	------	------	Existing
2	SCS Runoff	16.74	1	12	17,862	------	------	------	Proposed

Hydrograph Report

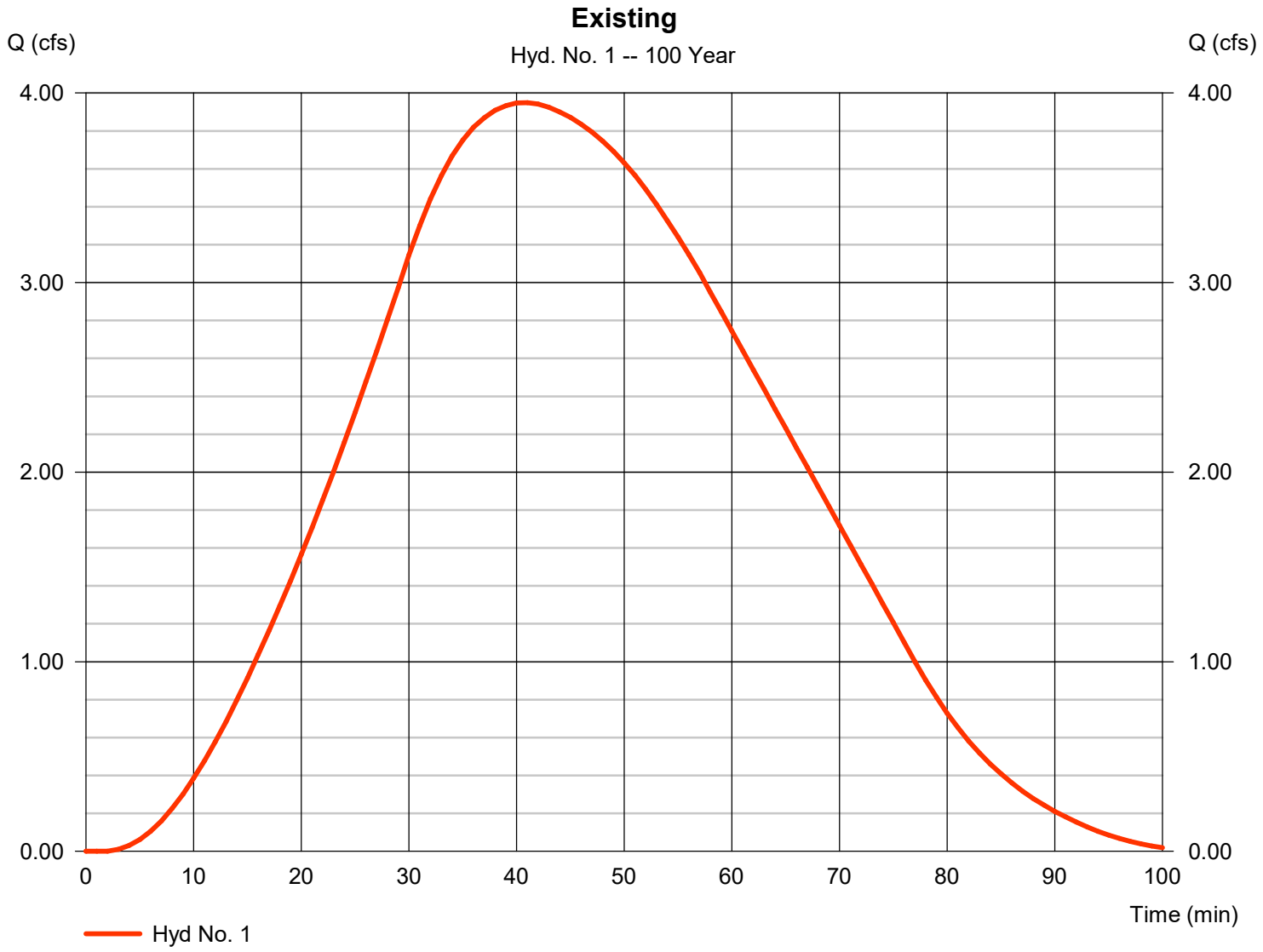
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 3.949 cfs
Storm frequency	= 100 yrs	Time to peak	= 41 min
Time interval	= 1 min	Hyd. volume	= 10,851 cuft
Drainage area	= 3.020 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 47.00 min
Total precip.	= 2.34 in	Distribution	= Huff-1st
Storm duration	= 0.50 hrs	Shape factor	= 484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



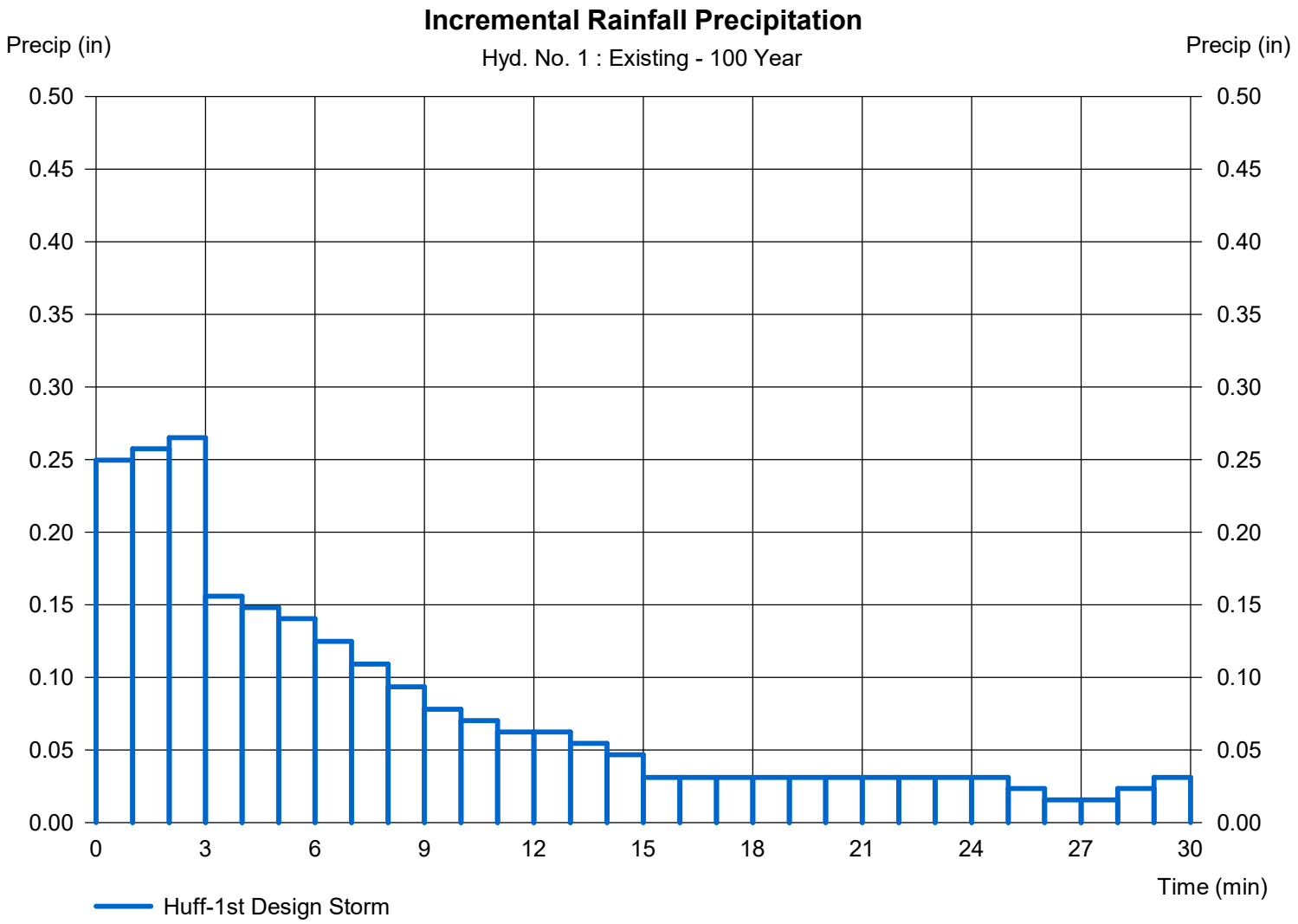
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 100 yrs	Time interval	= 1 min
Total precip.	= 2.3400 in	Distribution	= Huff-1st
Storm duration	= 0.50 hrs		



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	56.8128	9.8000	0.8624	--------
3	0.0000	0.0000	0.0000	--------
5	61.0581	9.5000	0.8270	--------
10	58.2090	8.5000	0.7837	--------
25	54.0065	7.2000	0.7275	--------
50	53.5558	6.6000	0.6986	--------
100	50.0862	5.6000	0.6582	--------

File name: Lions Trucking IDF.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.56	4.33	3.56	3.04	2.66	2.37	2.14	1.95	1.80	1.67	1.56	1.46
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.69	5.23	4.33	3.72	3.27	2.92	2.65	2.42	2.24	2.08	1.95	1.83
10	7.57	5.91	4.90	4.22	3.71	3.33	3.03	2.78	2.57	2.40	2.25	2.12
25	8.75	6.82	5.66	4.88	4.32	3.89	3.55	3.27	3.04	2.84	2.68	2.53
50	9.66	7.52	6.26	5.41	4.80	4.33	3.96	3.66	3.41	3.19	3.01	2.85
100	10.59	8.21	6.84	5.93	5.27	4.77	4.37	4.05	3.78	3.56	3.36	3.19

Tc = time in minutes. Values may exceed 60.

Precip. file name: Z:\21346 - Lions Tran Inc (Bburg) Maintenance Building\Design\Drainage\Lions_Huff30min.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	1.17	0.00	0.00	1.64	1.91	0.00	2.34
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hydrograph Return Period Recap 2-hour storm

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	1.172	-------	-------	2.497	3.430	-------	5.175	Existing
2	SCS Runoff	------	-------	2.918	-------	-------	5.120	6.552	-------	9.088	Proposed

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.172	1	68	5,870	------	------	------	Existing
2	SCS Runoff	2.918	1	44	11,331	------	------	------	Proposed

Hydrograph Report

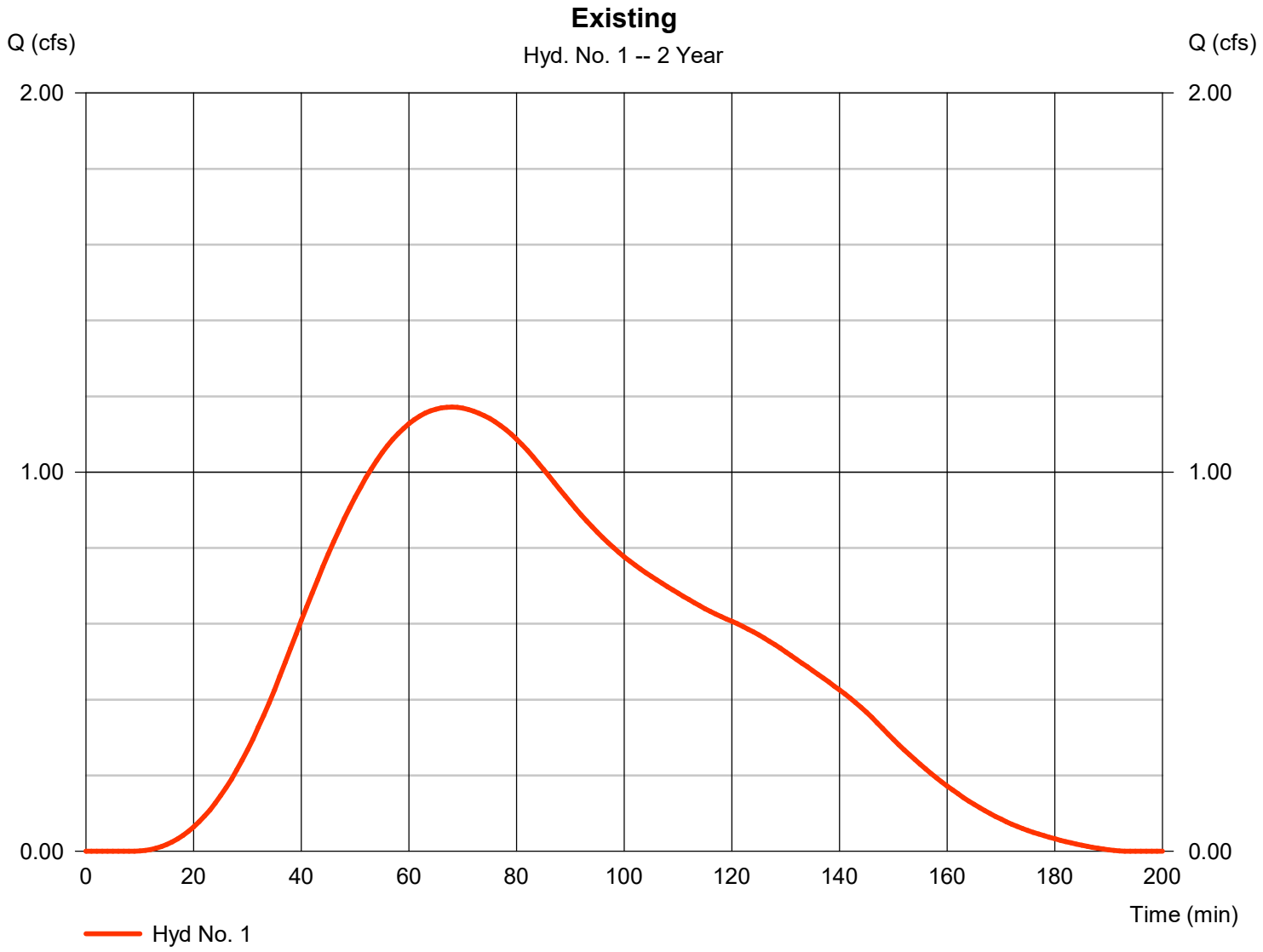
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.172 cfs
Storm frequency	=	2 yrs	Time to peak	=	68 min
Time interval	=	1 min	Hyd. volume	=	5,870 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	1.69 in	Distribution	=	Huff-1st
Storm duration	=	2.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



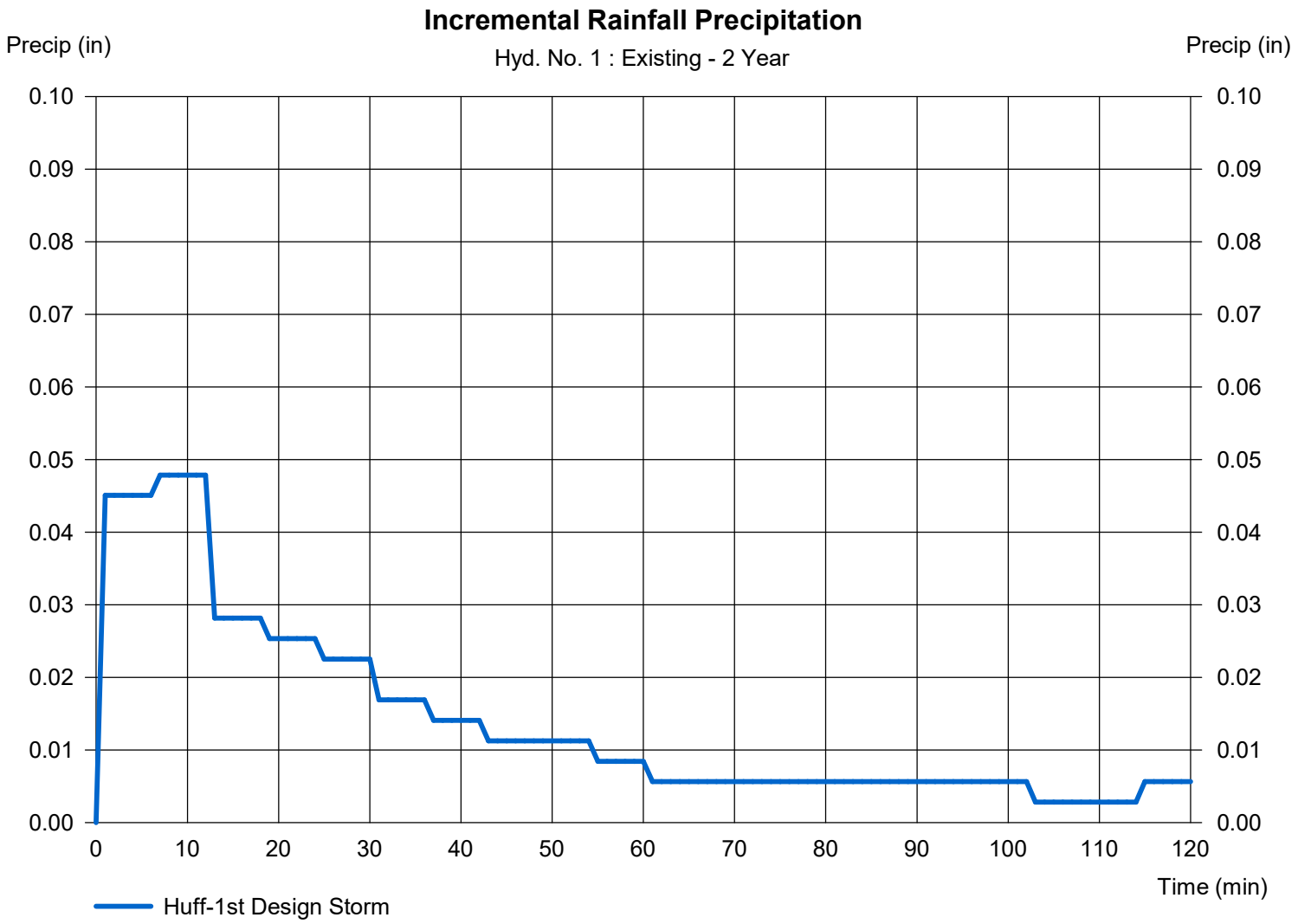
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 2 yrs	Time interval	= 1 min
Total precip.	= 1.6900 in	Distribution	= Huff-1st
Storm duration	= 2.00 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.497	1	63	12,116	------	------	------	Existing
2	SCS Runoff	5.120	1	42	19,296	------	------	------	Proposed

Hydrograph Report

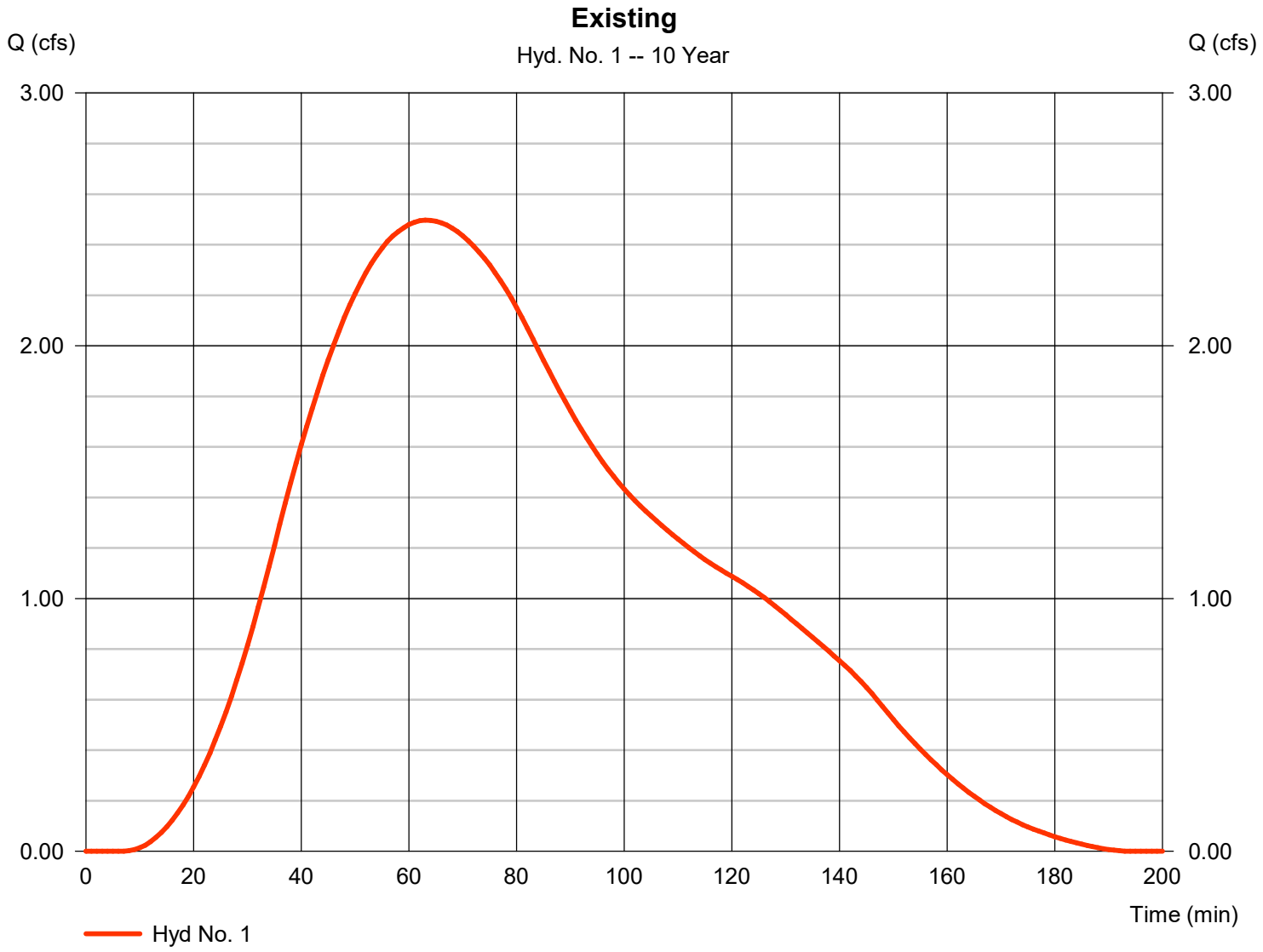
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.497 cfs
Storm frequency	=	10 yrs	Time to peak	=	63 min
Time interval	=	1 min	Hyd. volume	=	12,116 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	2.48 in	Distribution	=	Huff-1st
Storm duration	=	2.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



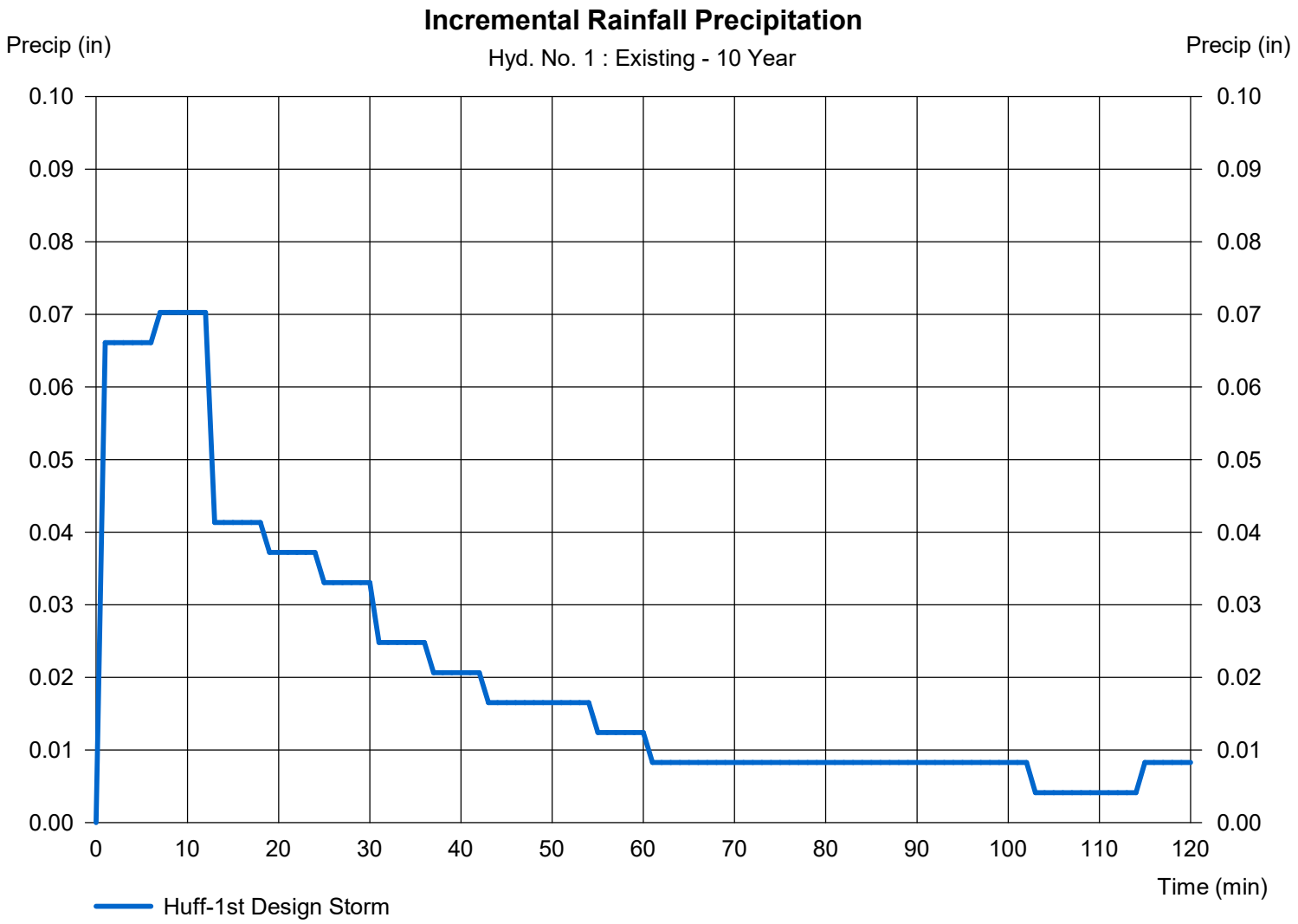
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 10 yrs	Time interval	= 1 min
Total precip.	= 2.4800 in	Distribution	= Huff-1st
Storm duration	= 2.00 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	3.430	1	62	16,424	------	------	------	Existing
2	SCS Runoff	6.552	1	41	24,395	------	------	------	Proposed

Hydrograph Report

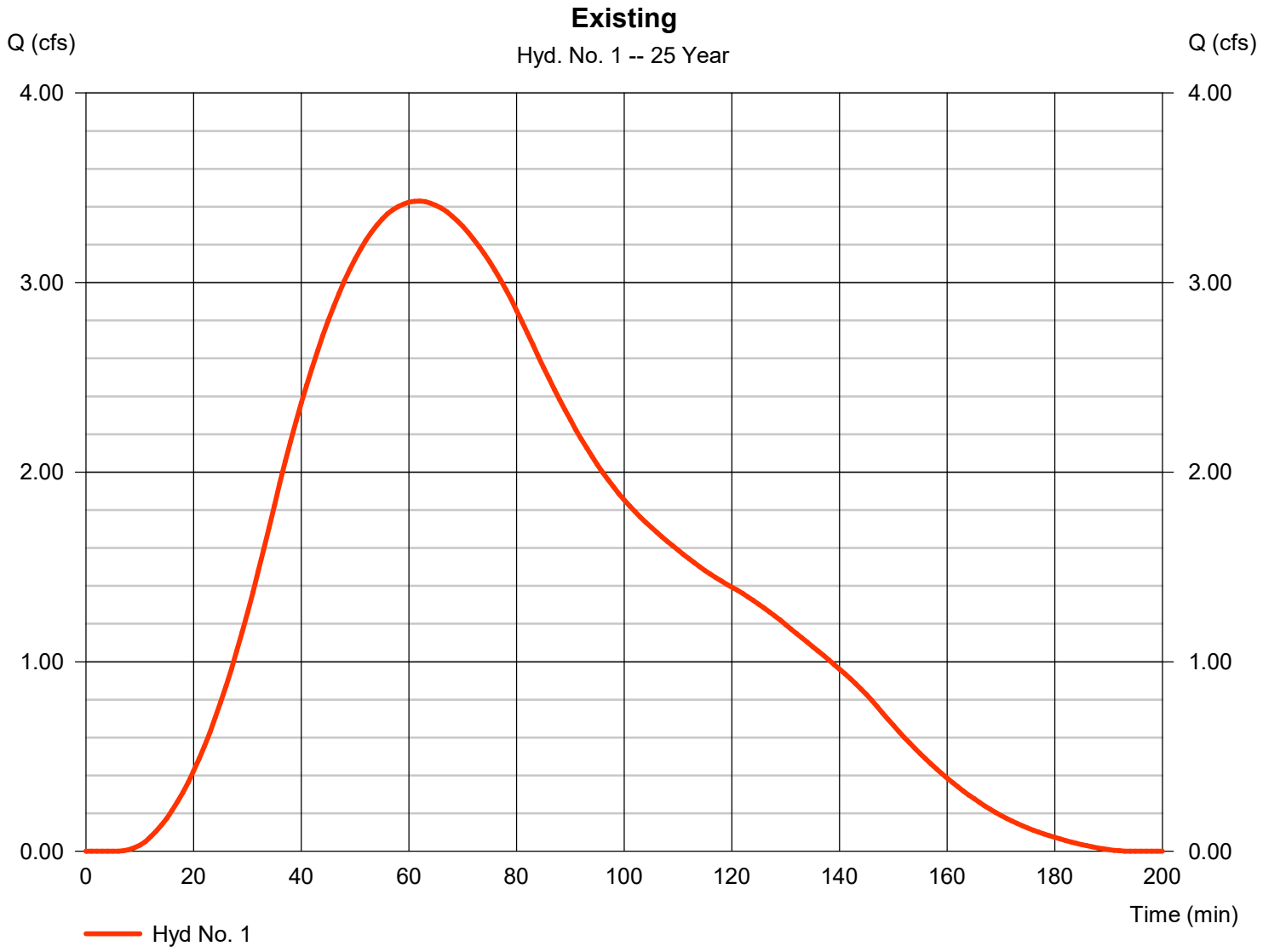
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.430 cfs
Storm frequency	=	25 yrs	Time to peak	=	62 min
Time interval	=	1 min	Hyd. volume	=	16,424 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	2.97 in	Distribution	=	Huff-1st
Storm duration	=	2.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



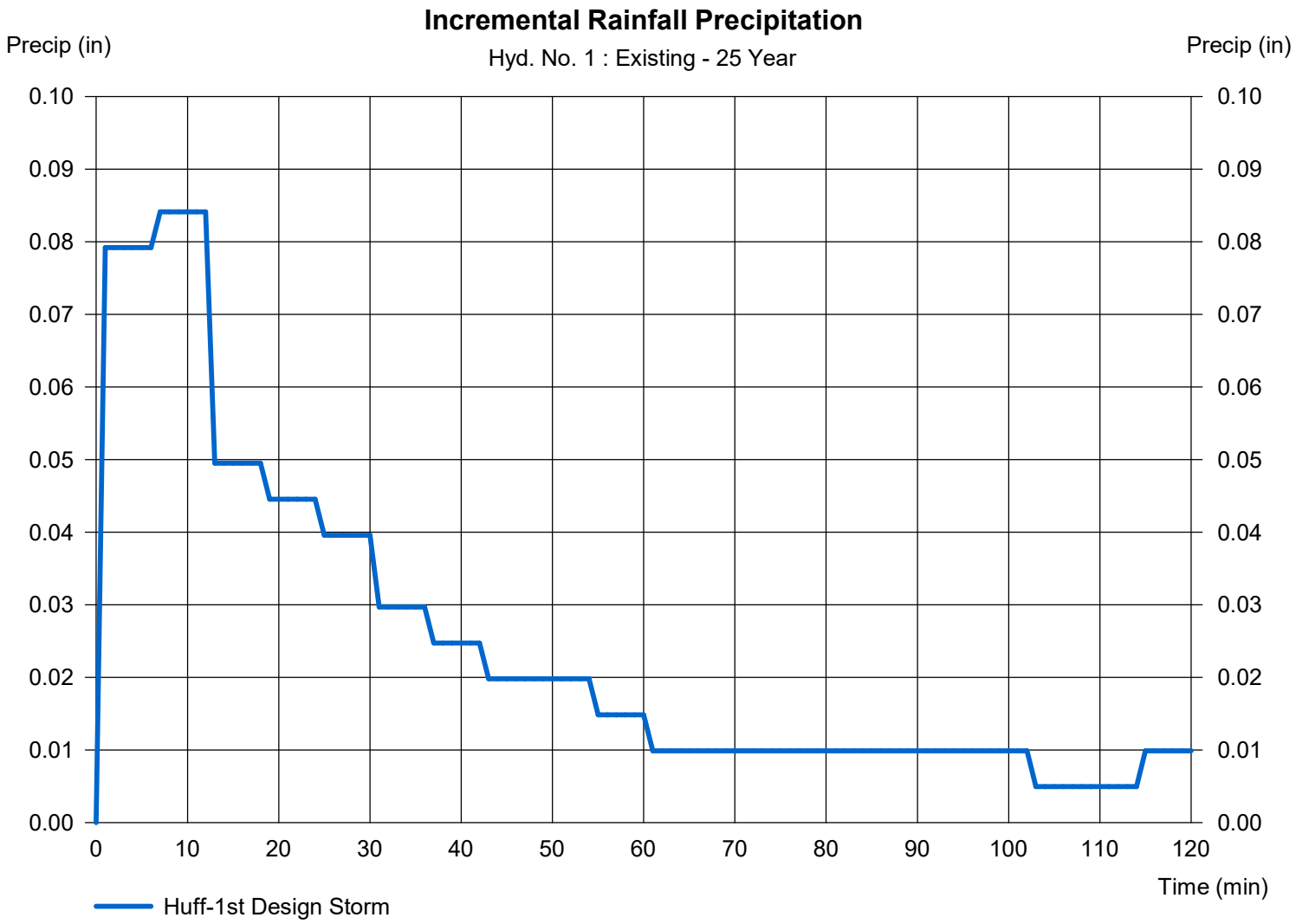
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 25 yrs	Time interval	= 1 min
Total precip.	= 2.9700 in	Distribution	= Huff-1st
Storm duration	= 2.00 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.175	1	60	24,367	------	------	------	Existing
2	SCS Runoff	9.088	1	40	33,345	------	------	------	Proposed

Hydrograph Report

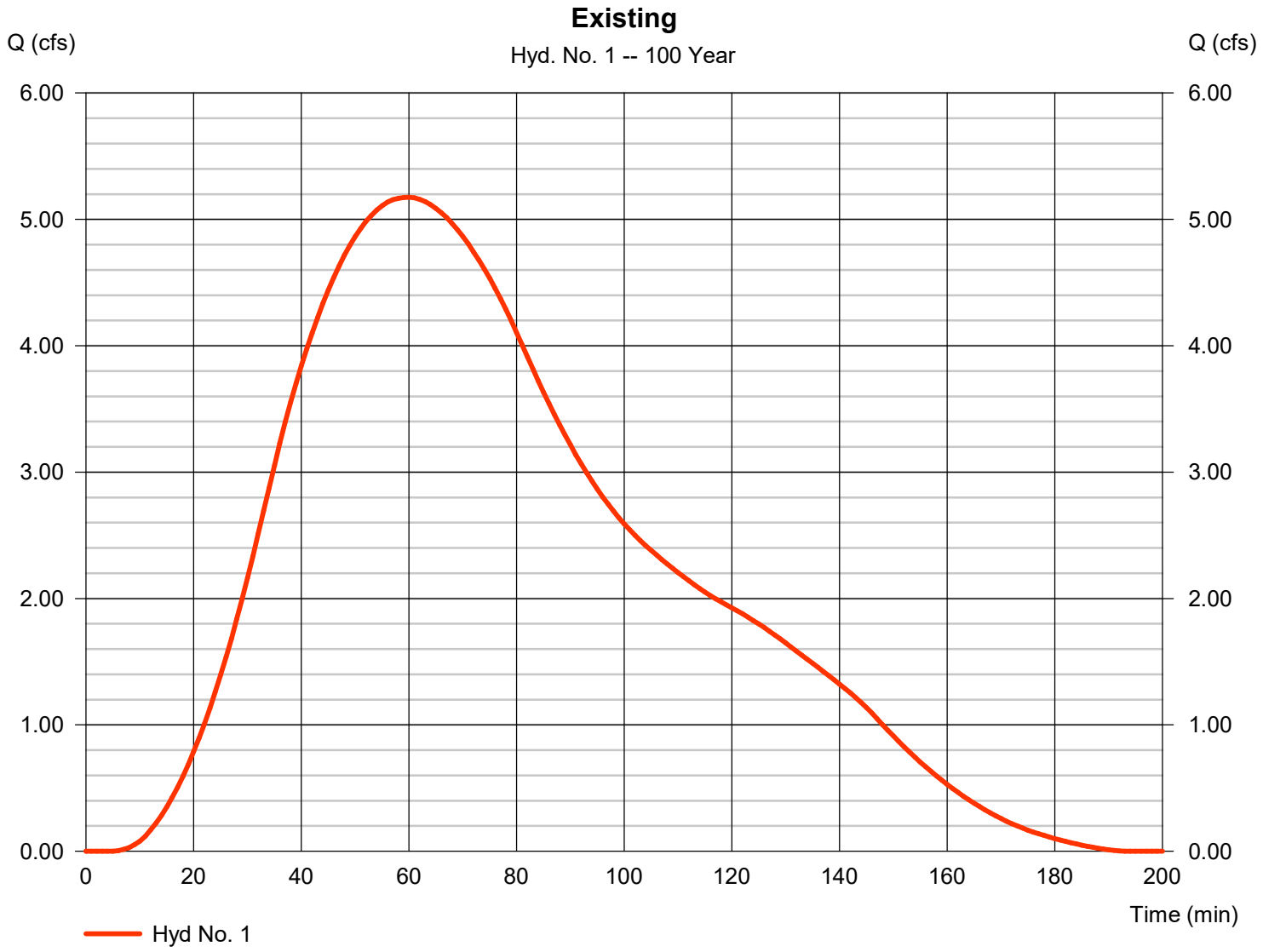
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.175 cfs
Storm frequency	=	100 yrs	Time to peak	=	60 min
Time interval	=	1 min	Hyd. volume	=	24,367 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	3.82 in	Distribution	=	Huff-1st
Storm duration	=	2.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



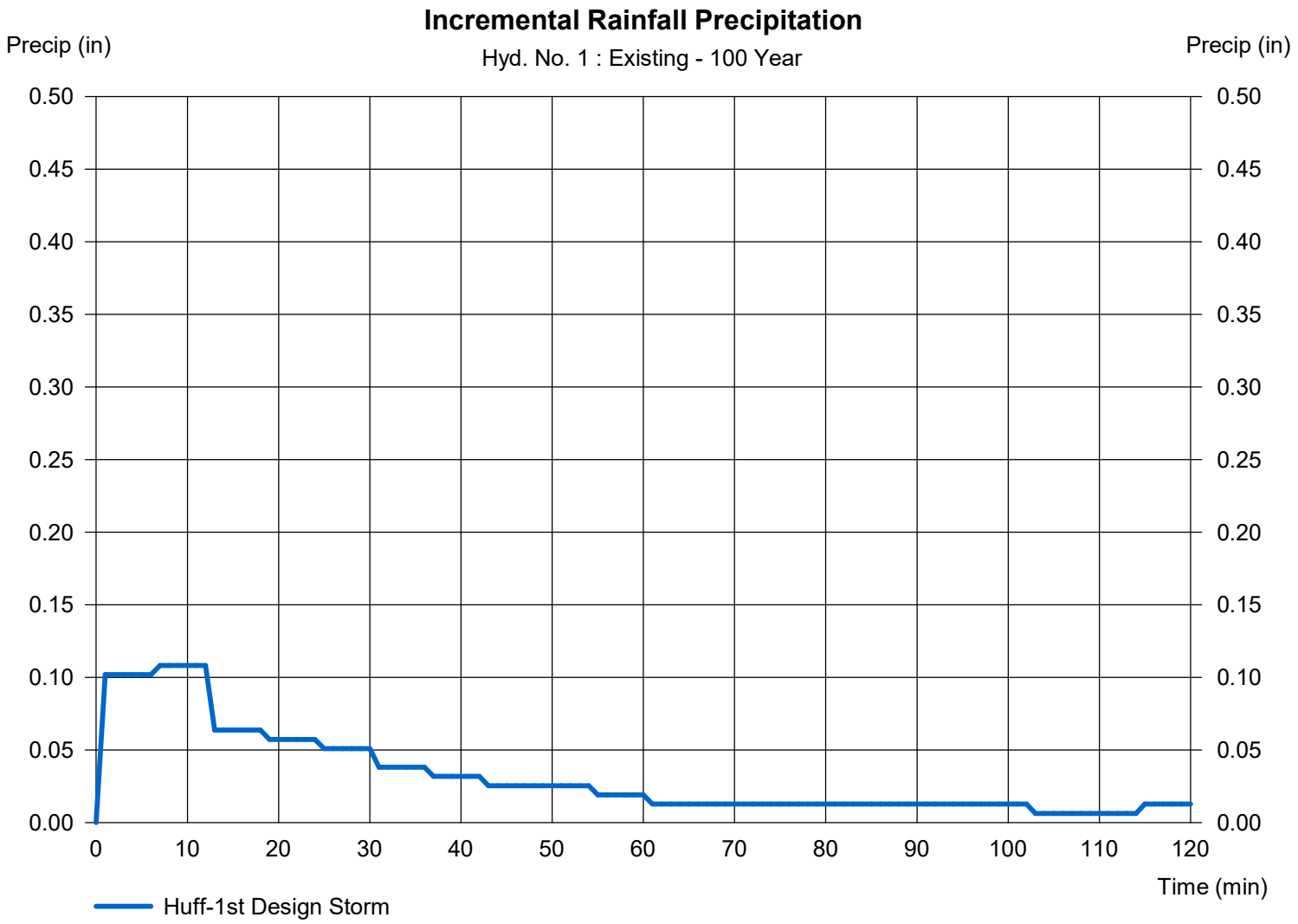
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 100 yrs	Time interval	= 1 min
Total precip.	= 3.8200 in	Distribution	= Huff-1st
Storm duration	= 2.00 hrs		



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	56.8128	9.8000	0.8624	--------
3	0.0000	0.0000	0.0000	--------
5	61.0581	9.5000	0.8270	--------
10	58.2090	8.5000	0.7837	--------
25	54.0065	7.2000	0.7275	--------
50	53.5558	6.6000	0.6986	--------
100	50.0862	5.6000	0.6582	--------

File name: Lions Trucking IDF.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.56	4.33	3.56	3.04	2.66	2.37	2.14	1.95	1.80	1.67	1.56	1.46
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.69	5.23	4.33	3.72	3.27	2.92	2.65	2.42	2.24	2.08	1.95	1.83
10	7.57	5.91	4.90	4.22	3.71	3.33	3.03	2.78	2.57	2.40	2.25	2.12
25	8.75	6.82	5.66	4.88	4.32	3.89	3.55	3.27	3.04	2.84	2.68	2.53
50	9.66	7.52	6.26	5.41	4.80	4.33	3.96	3.66	3.41	3.19	3.01	2.85
100	10.59	8.21	6.84	5.93	5.27	4.77	4.37	4.05	3.78	3.56	3.36	3.19

Tc = time in minutes. Values may exceed 60.

Precip. file name: Z:\21346 - Lions Tran Inc (Bburg) Maintenance Building\Design\Drainage\Lions_Huff2hr.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	1.69	0.00	0.00	2.48	2.97	0.00	3.82
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

6-hour storm

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	0.834	-------	-------	1.723	2.383	-------	3.633	Existing
2	SCS Runoff	------	-------	1.738	-------	-------	3.209	4.233	-------	6.057	Proposed

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.834	1	105	9,219	------	------	------	Existing
2	SCS Runoff	1.738	1	56	15,722	------	------	------	Proposed

Hydrograph Report

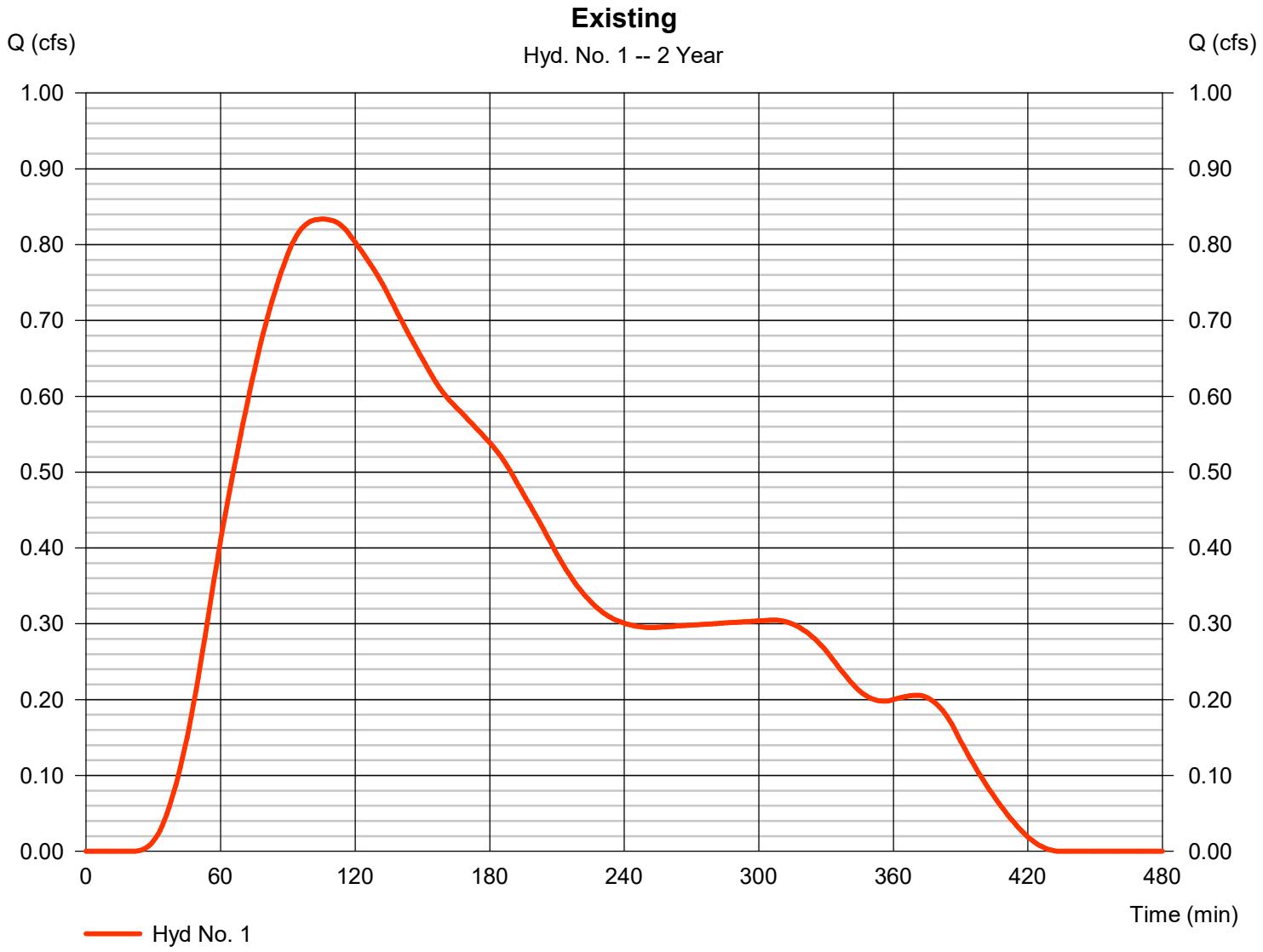
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 0.834 cfs
Storm frequency	= 2 yrs	Time to peak	= 105 min
Time interval	= 1 min	Hyd. volume	= 9,219 cuft
Drainage area	= 3.020 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 47.00 min
Total precip.	= 2.13 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs	Shape factor	= 484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



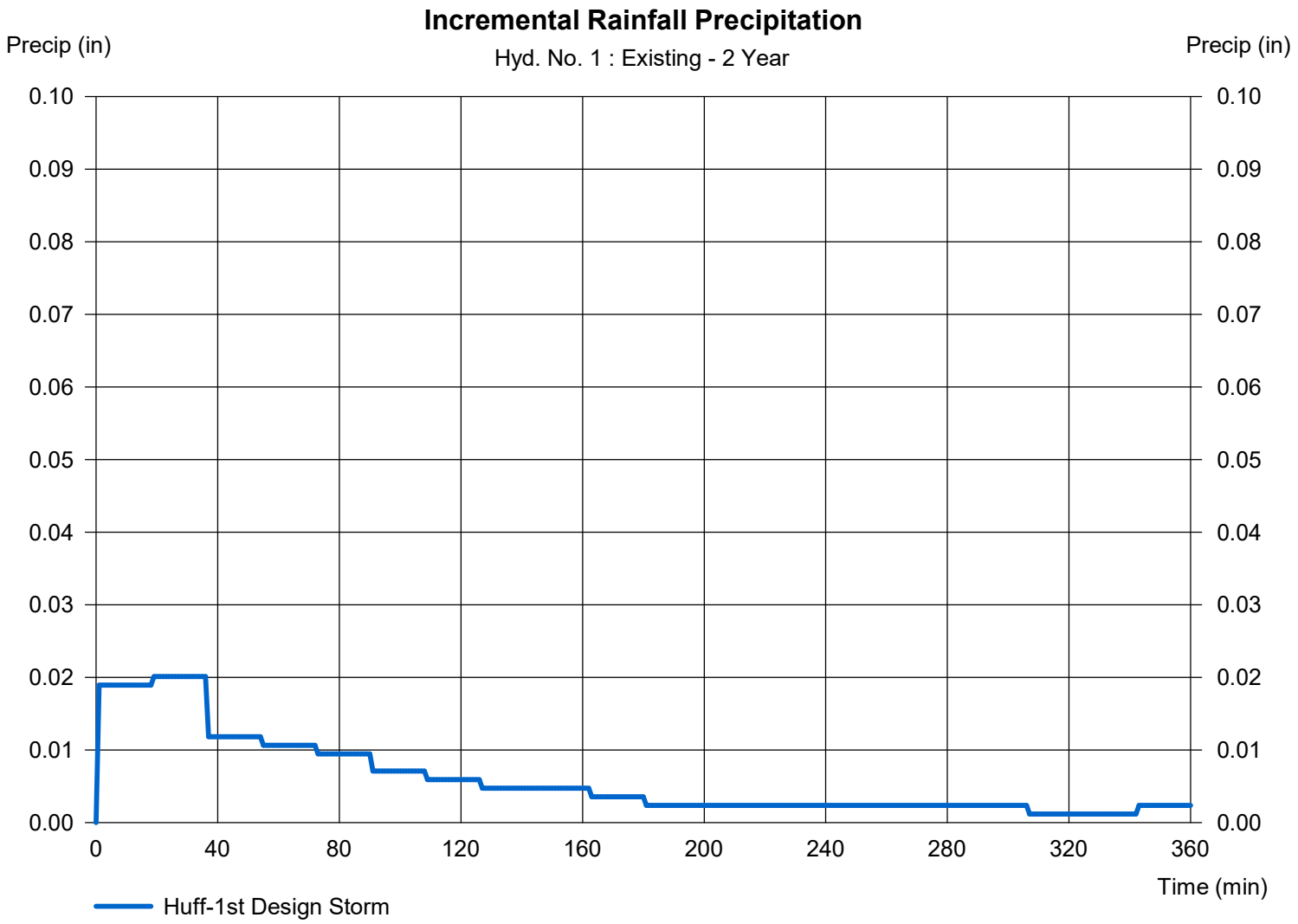
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 2 yrs	Time interval	= 1 min
Total precip.	= 2.1300 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydrograph Report

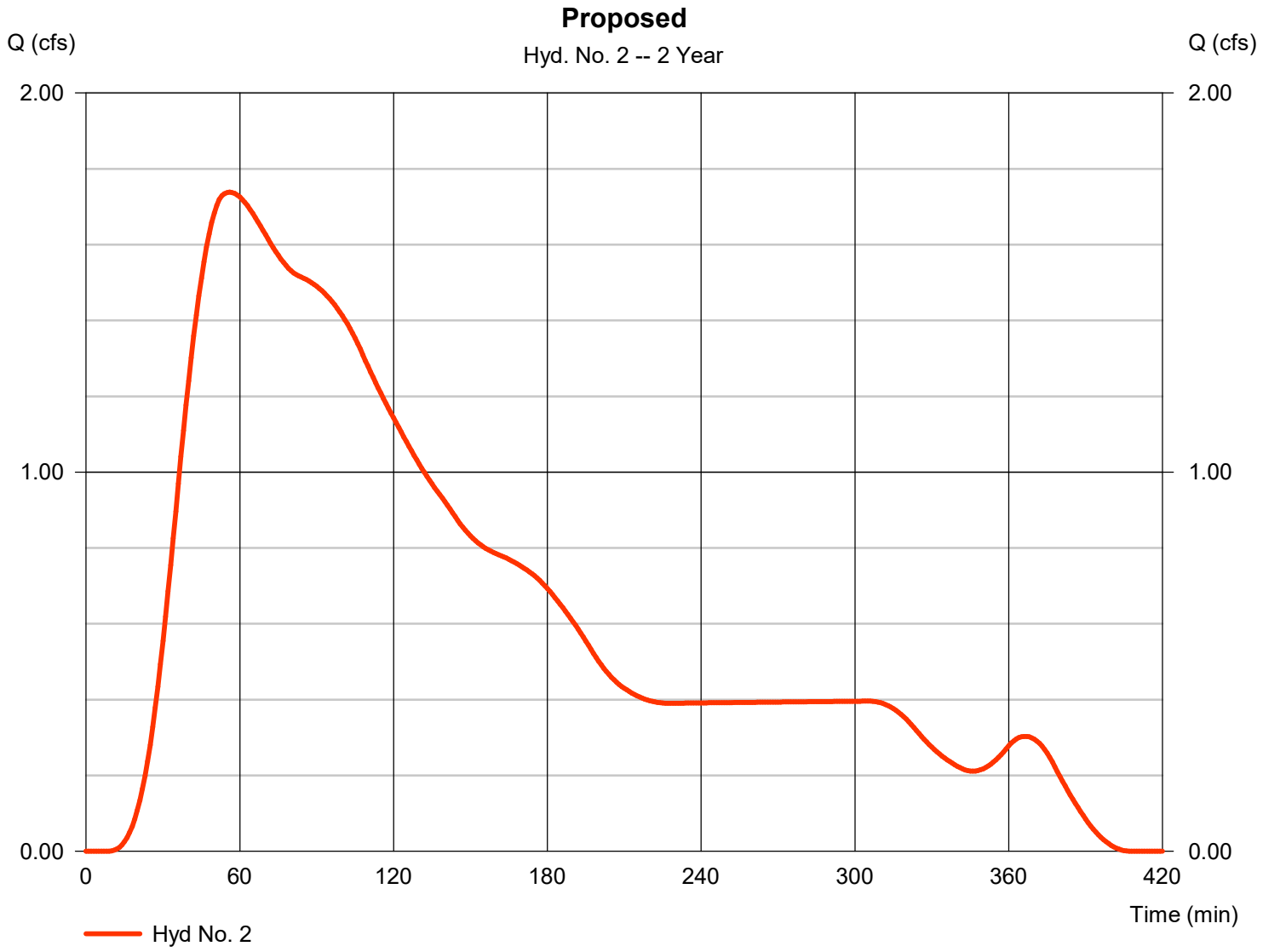
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.738 cfs
Storm frequency	=	2 yrs	Time to peak	=	56 min
Time interval	=	1 min	Hyd. volume	=	15,722 cuft
Drainage area	=	3.020 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	2.13 in	Distribution	=	Huff-1st
Storm duration	=	6.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.020 x 84) + (1.910 x 98) + (0.090 x 98)] / 3.020



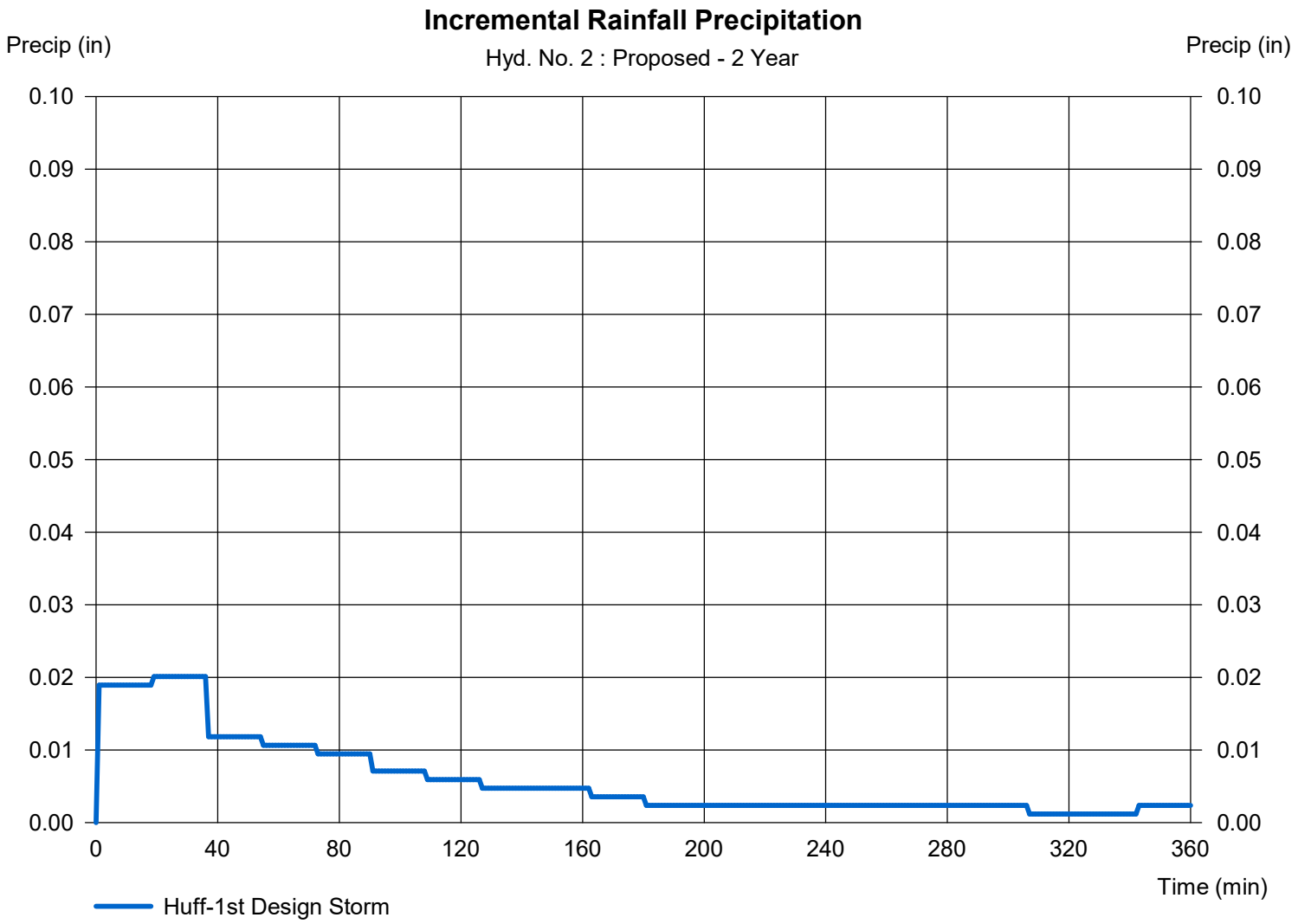
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Storm Frequency	= 2 yrs	Time interval	= 1 min
Total precip.	= 2.1300 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.723	1	93	18,064	------	------	------	Existing
2	SCS Runoff	3.209	1	52	26,284	------	------	------	Proposed

Hydrograph Report

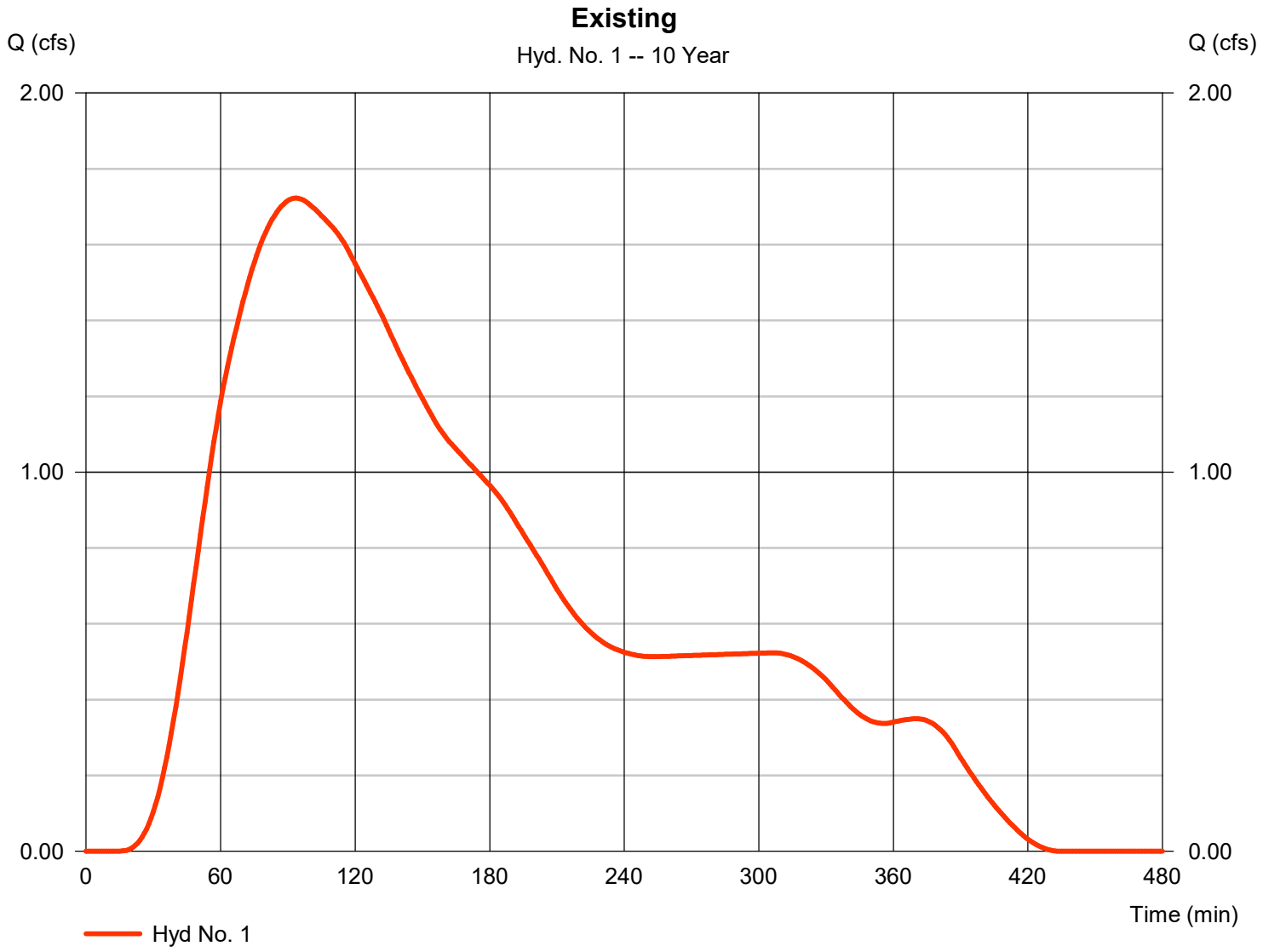
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.723 cfs
Storm frequency	=	10 yrs	Time to peak	=	93 min
Time interval	=	1 min	Hyd. volume	=	18,064 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	3.15 in	Distribution	=	Huff-1st
Storm duration	=	6.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



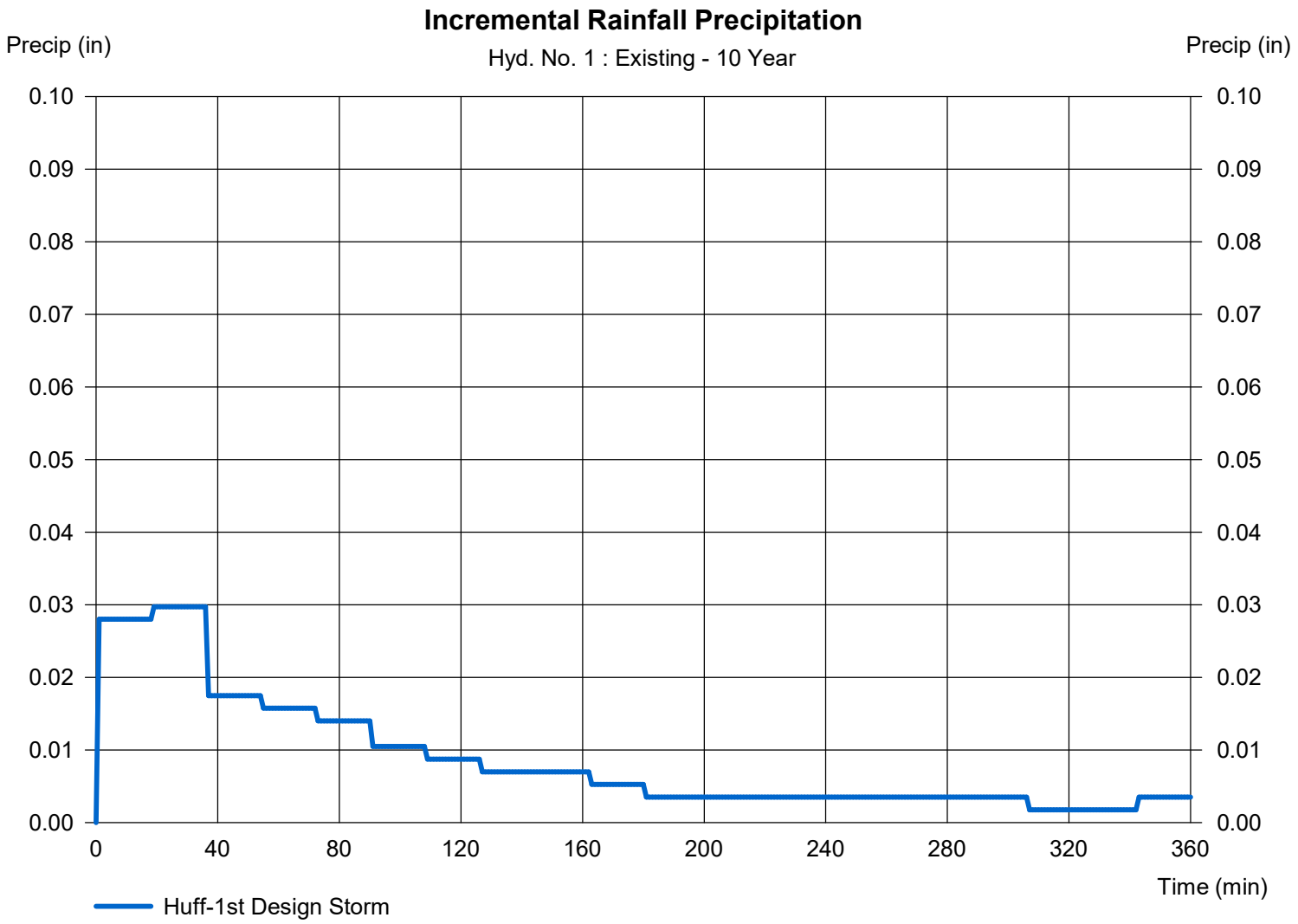
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 10 yrs	Time interval	= 1 min
Total precip.	= 3.1500 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydrograph Report

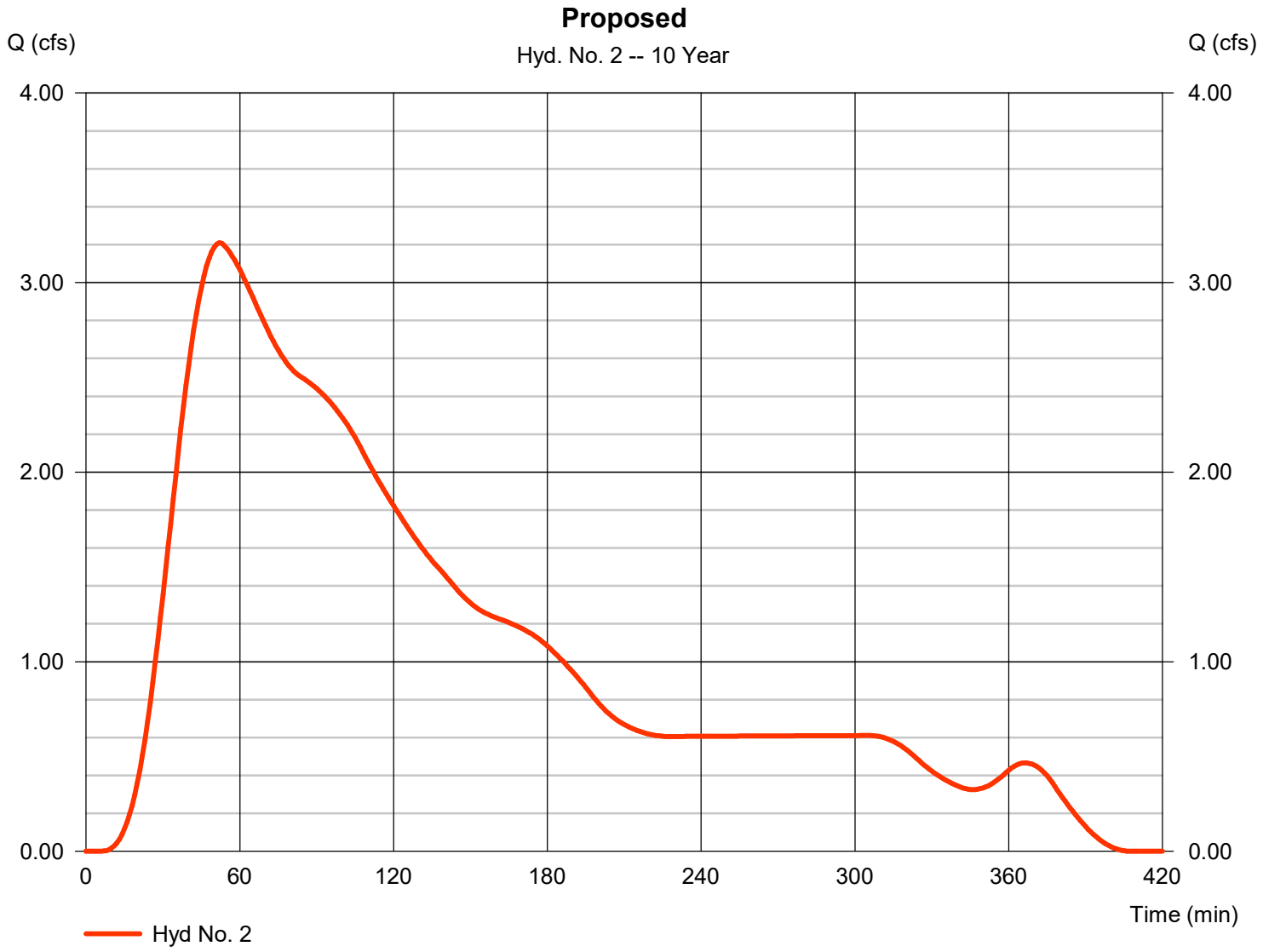
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.209 cfs
Storm frequency	=	10 yrs	Time to peak	=	52 min
Time interval	=	1 min	Hyd. volume	=	26,284 cuft
Drainage area	=	3.020 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.15 in	Distribution	=	Huff-1st
Storm duration	=	6.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.020 x 84) + (1.910 x 98) + (0.090 x 98)] / 3.020



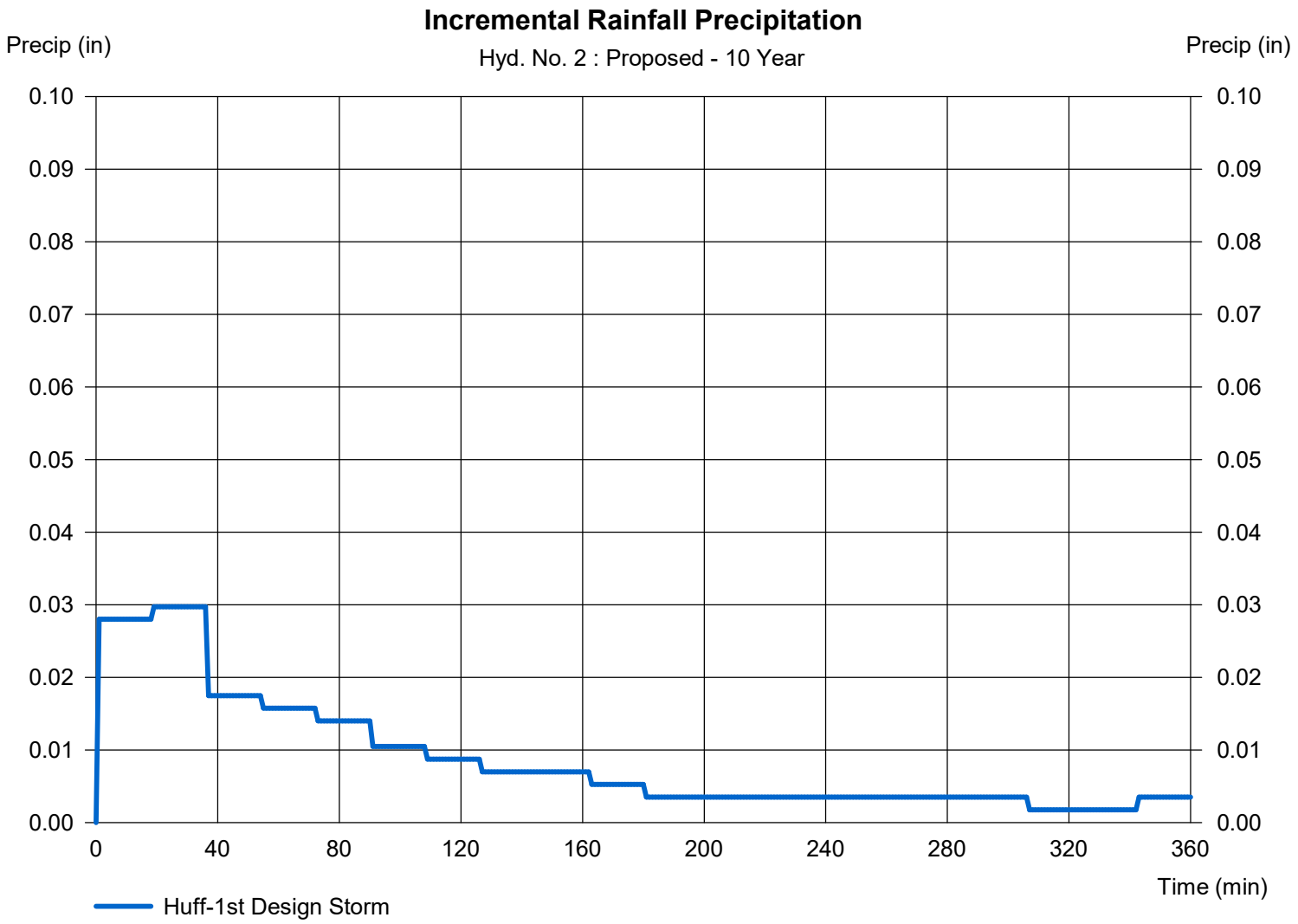
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Storm Frequency	= 10 yrs	Time interval	= 1 min
Total precip.	= 3.1500 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.383	1	90	24,371	------	------	------	Existing
2	SCS Runoff	4.233	1	51	33,377	------	------	------	Proposed

Hydrograph Report

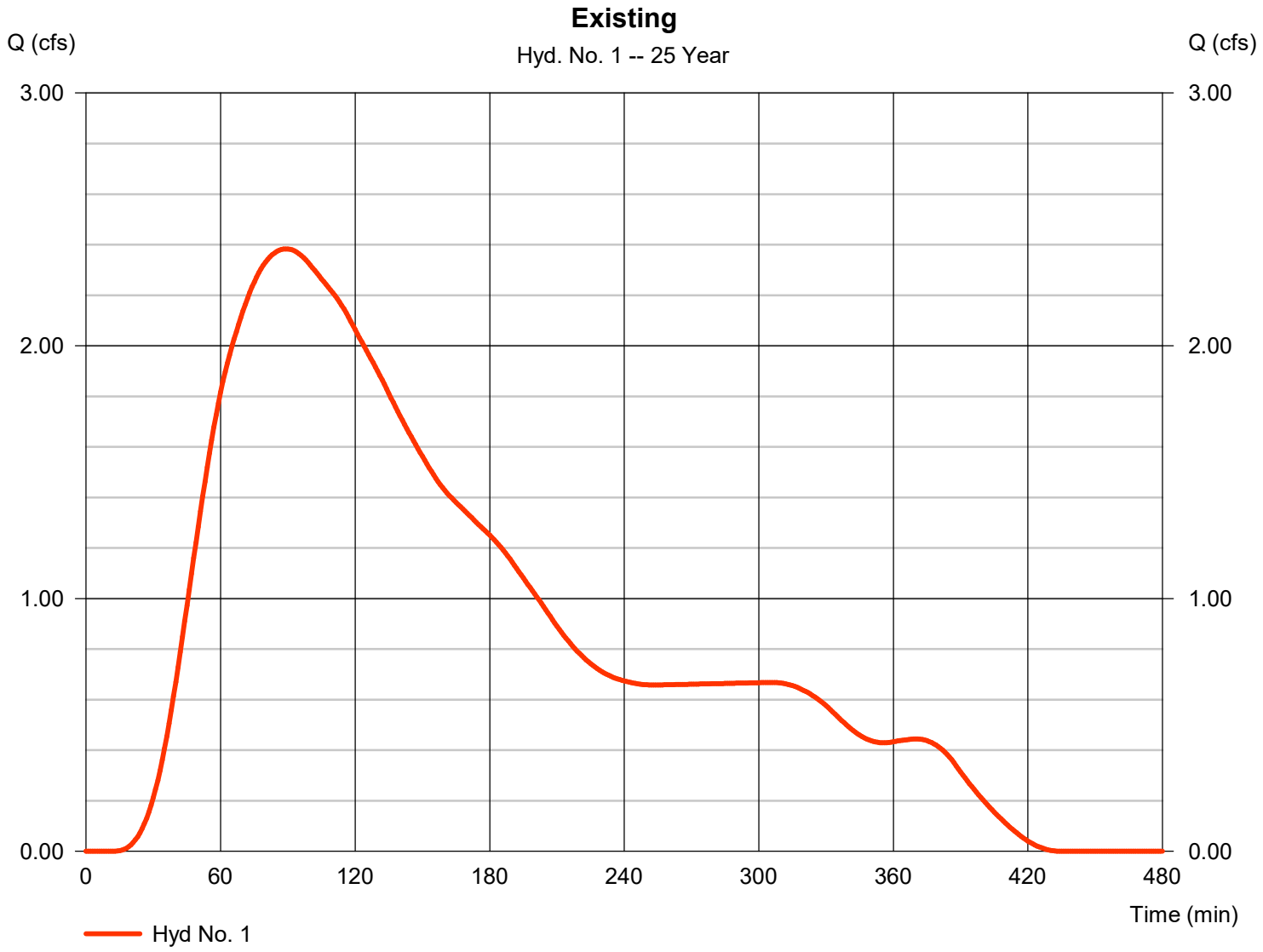
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.383 cfs
Storm frequency	=	25 yrs	Time to peak	=	90 min
Time interval	=	1 min	Hyd. volume	=	24,371 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	3.82 in	Distribution	=	Huff-1st
Storm duration	=	6.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



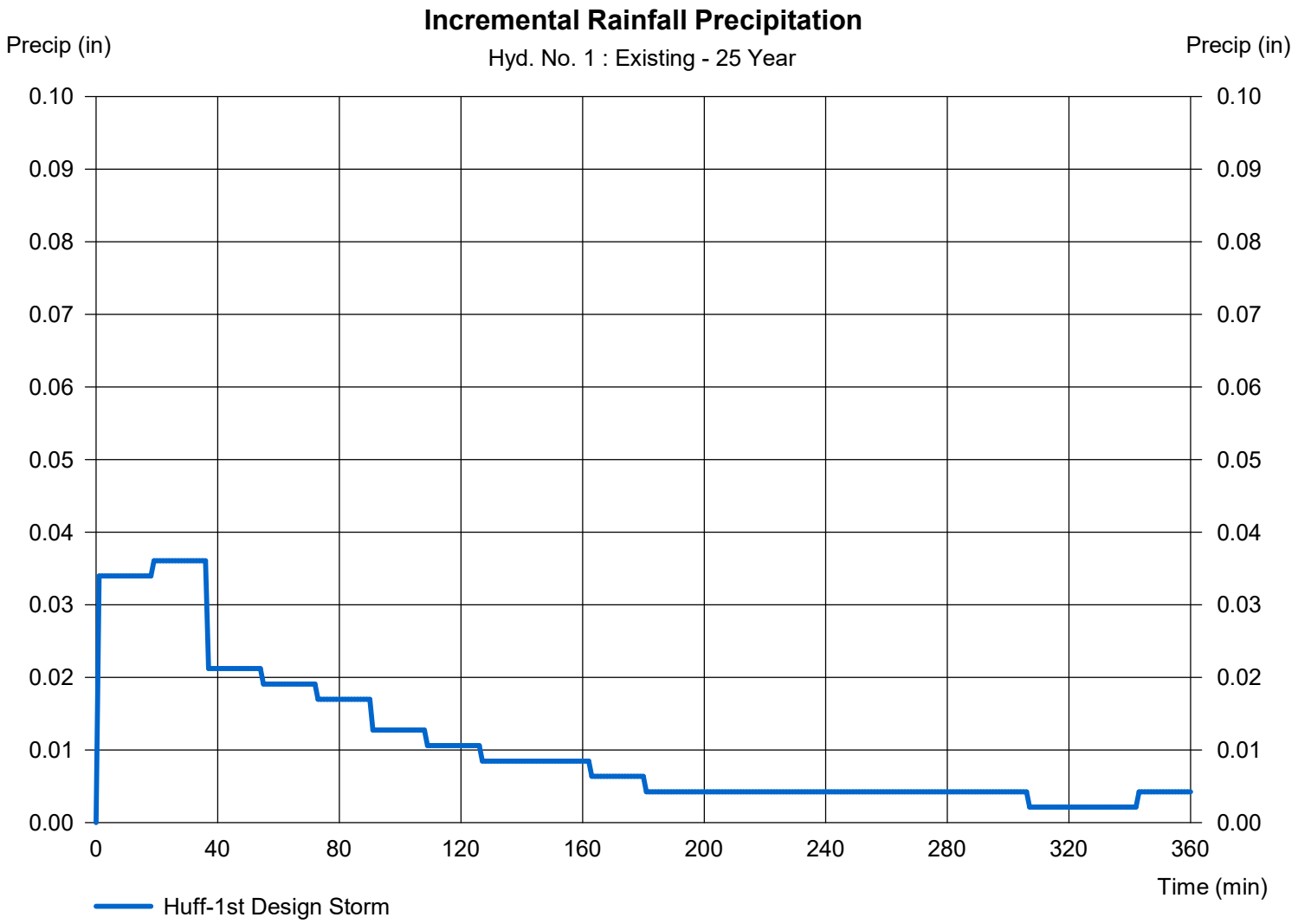
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 25 yrs	Time interval	= 1 min
Total precip.	= 3.8200 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydrograph Report

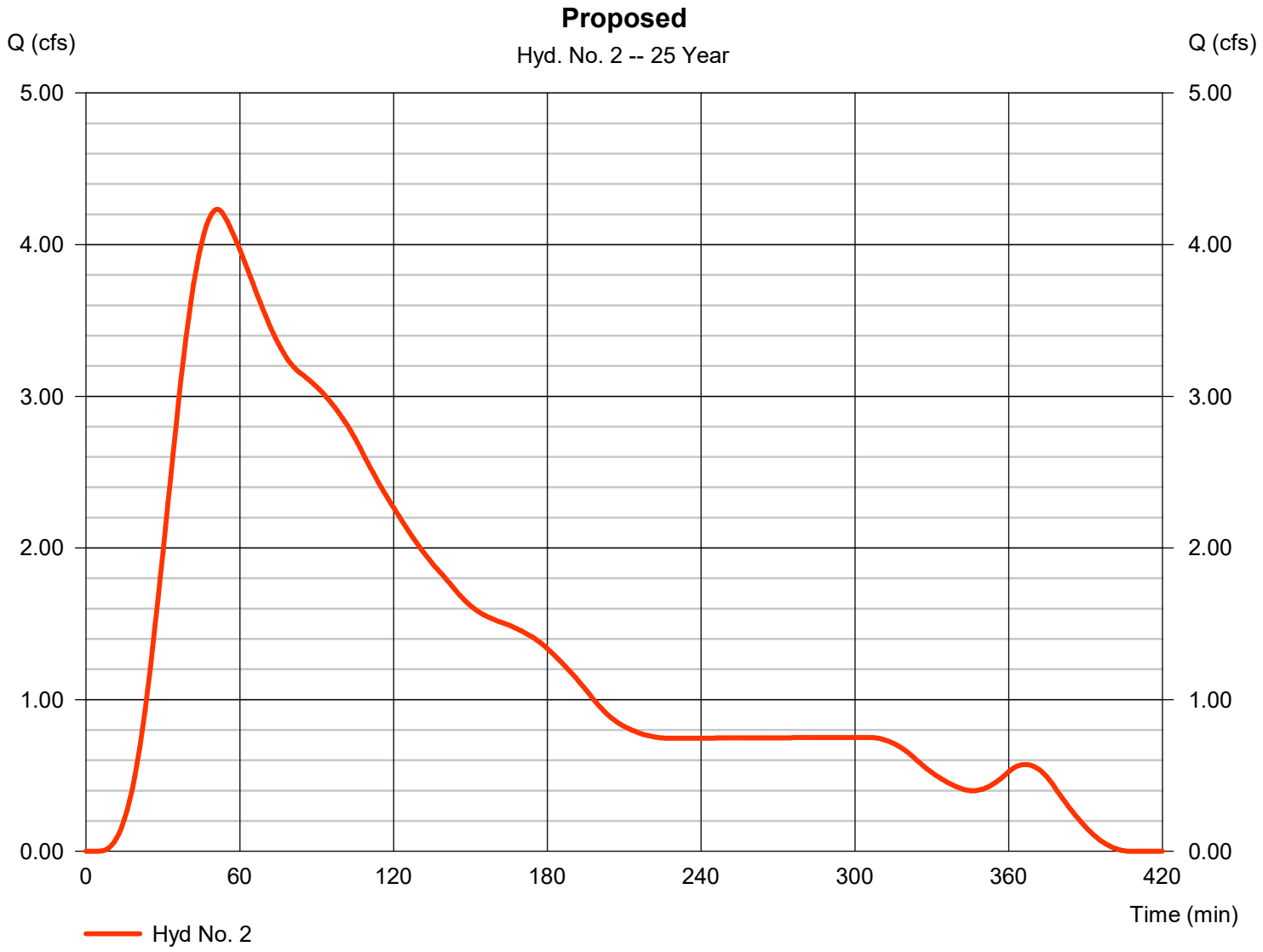
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.233 cfs
Storm frequency	=	25 yrs	Time to peak	=	51 min
Time interval	=	1 min	Hyd. volume	=	33,377 cuft
Drainage area	=	3.020 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.82 in	Distribution	=	Huff-1st
Storm duration	=	6.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.020 x 84) + (1.910 x 98) + (0.090 x 98)] / 3.020



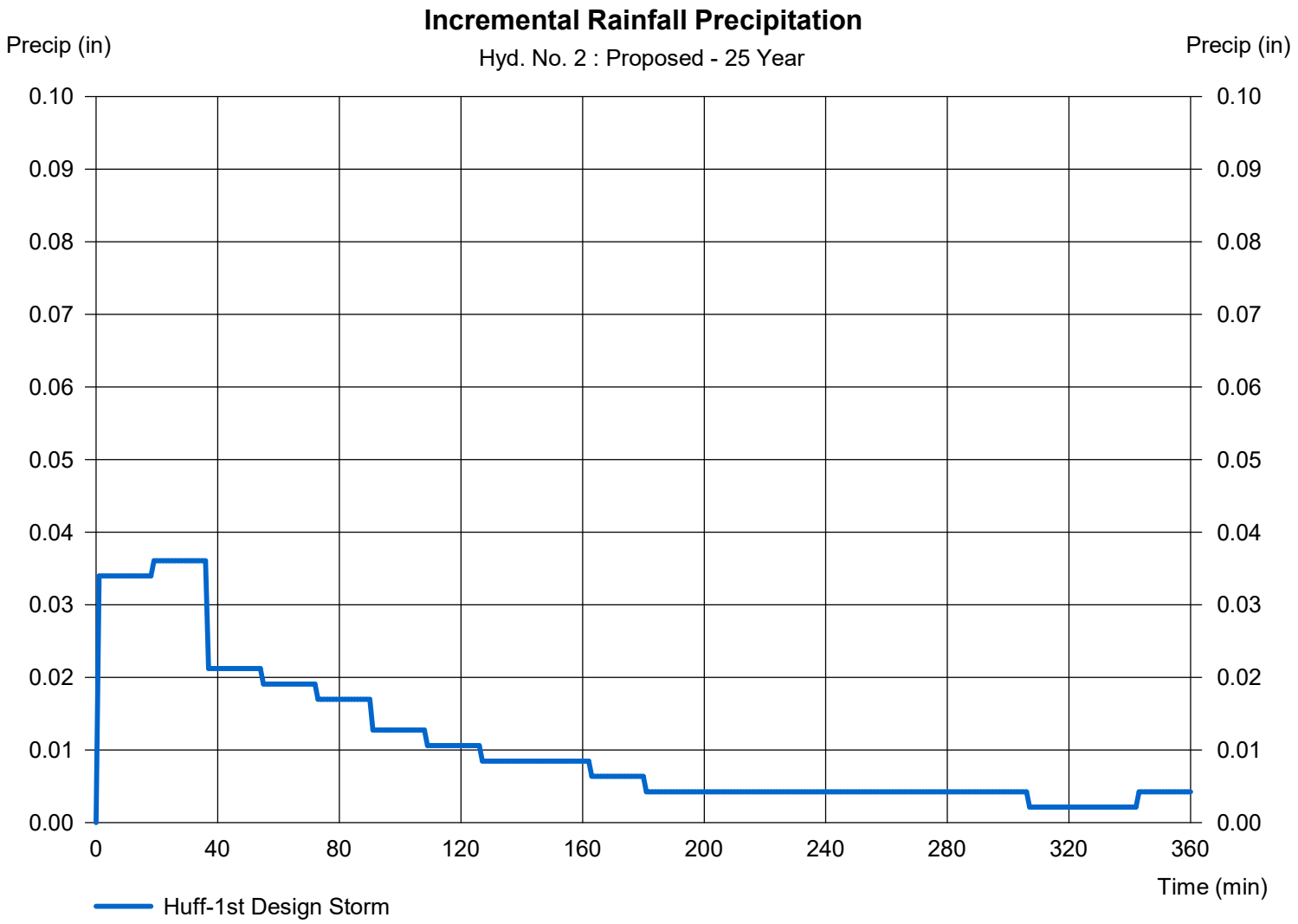
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Storm Frequency	= 25 yrs	Time interval	= 1 min
Total precip.	= 3.8200 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	3.633	1	83	35,809	------	------	------	Existing
2	SCS Runoff	6.057	1	50	45,800	------	------	------	Proposed

Hydrograph Report

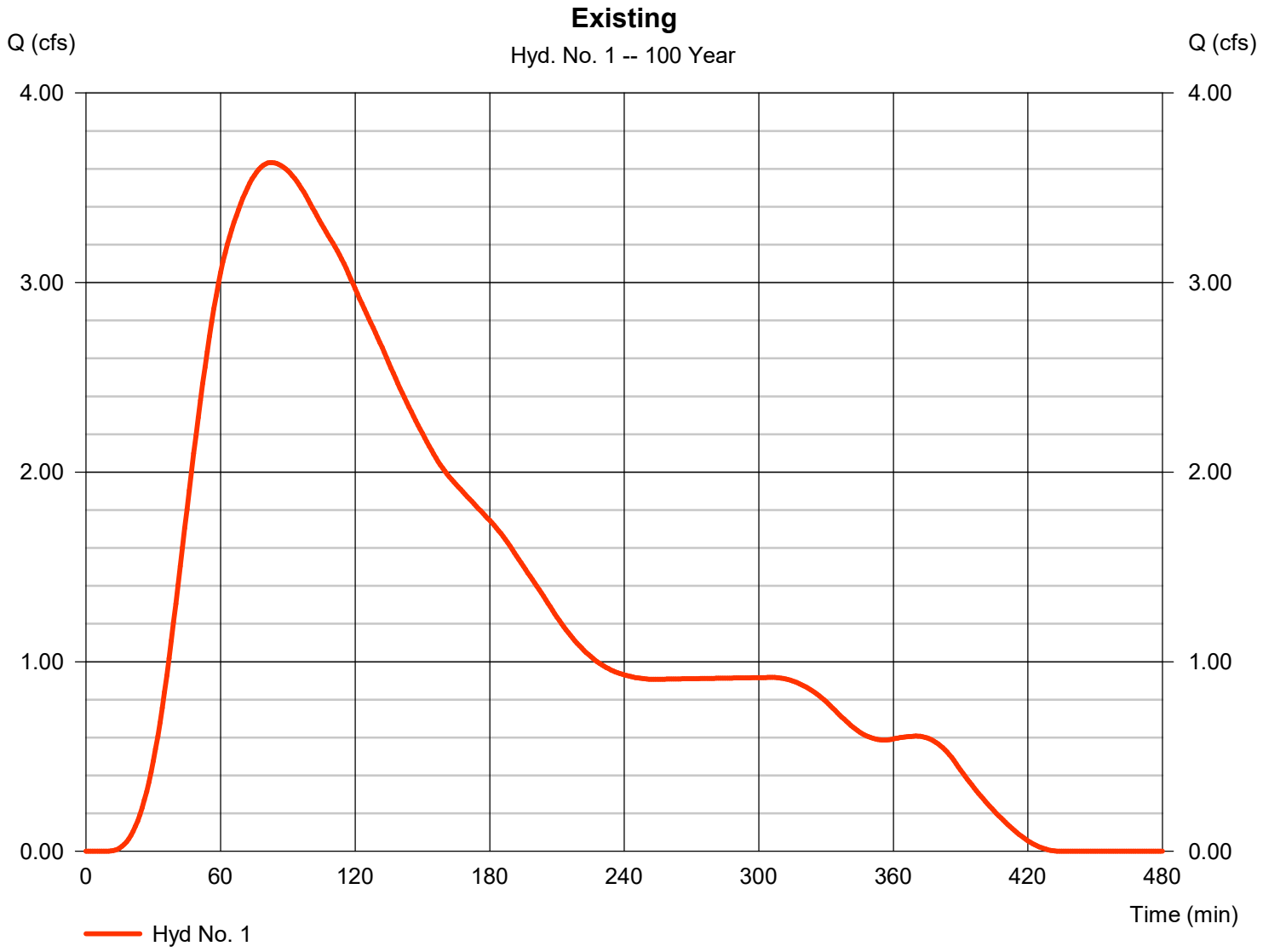
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.633 cfs
Storm frequency	=	100 yrs	Time to peak	=	83 min
Time interval	=	1 min	Hyd. volume	=	35,809 cuft
Drainage area	=	3.020 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	47.00 min
Total precip.	=	4.98 in	Distribution	=	Huff-1st
Storm duration	=	6.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.020 x 84)] / 3.020



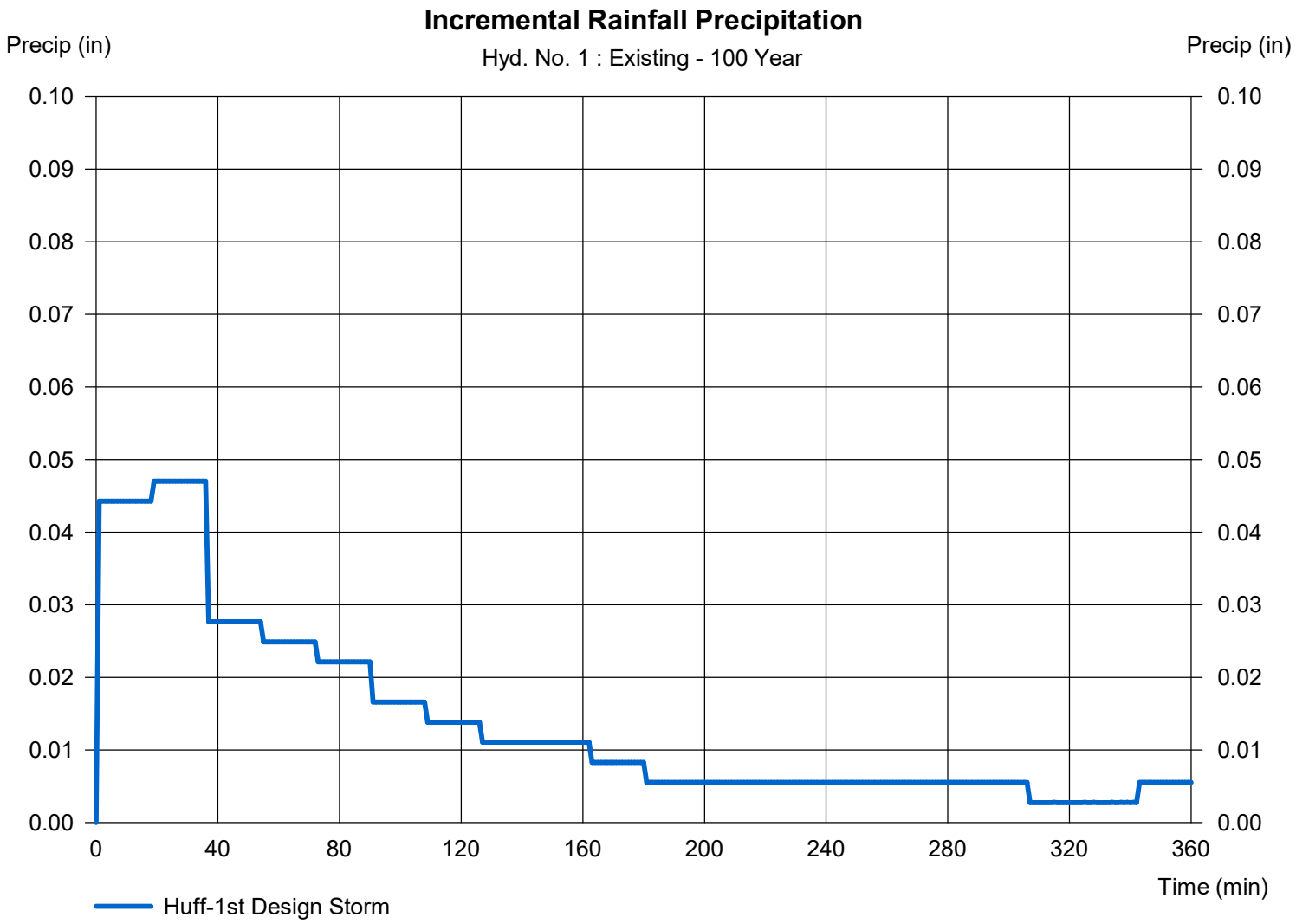
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 1

Existing

Storm Frequency	= 100 yrs	Time interval	= 1 min
Total precip.	= 4.9800 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydrograph Report

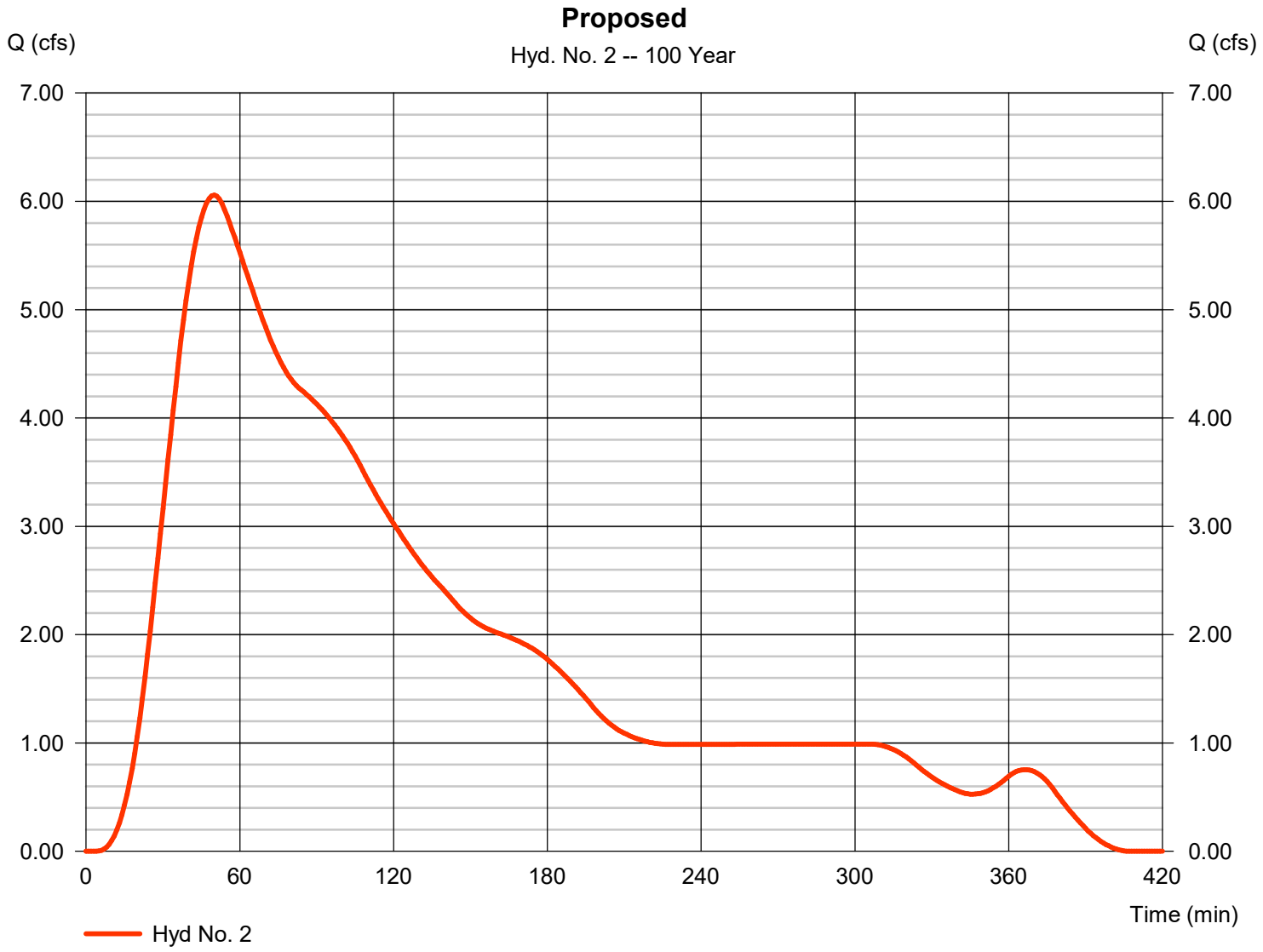
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.057 cfs
Storm frequency	=	100 yrs	Time to peak	=	50 min
Time interval	=	1 min	Hyd. volume	=	45,800 cuft
Drainage area	=	3.020 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	4.98 in	Distribution	=	Huff-1st
Storm duration	=	6.00 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.020 x 84) + (1.910 x 98) + (0.090 x 98)] / 3.020



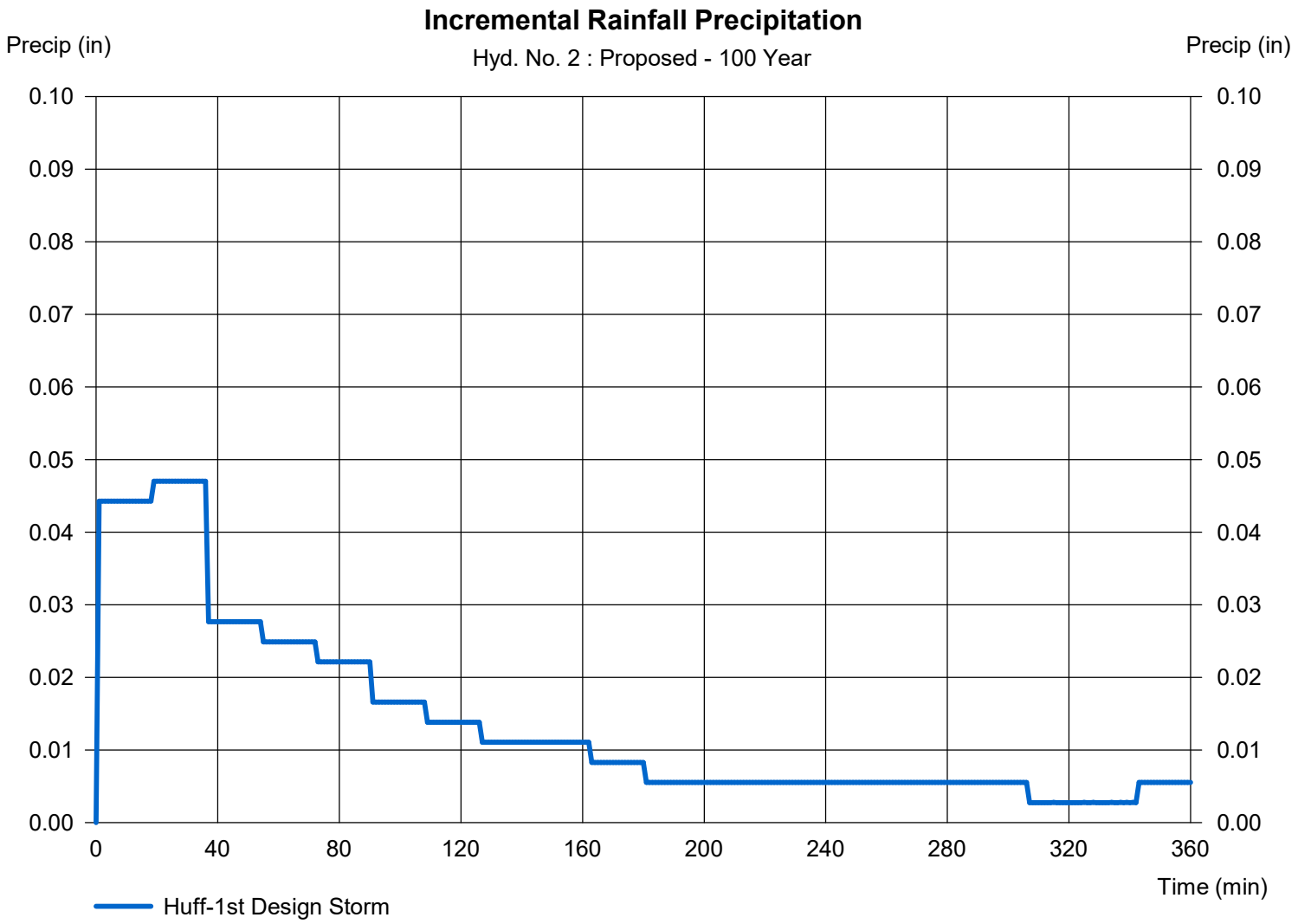
Precipitation Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Hyd. No. 2

Proposed

Storm Frequency	= 100 yrs	Time interval	= 1 min
Total precip.	= 4.9800 in	Distribution	= Huff-1st
Storm duration	= 6.00 hrs		



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	56.8128	9.8000	0.8624	--------
3	0.0000	0.0000	0.0000	--------
5	61.0581	9.5000	0.8270	--------
10	58.2090	8.5000	0.7837	--------
25	54.0065	7.2000	0.7275	--------
50	53.5558	6.6000	0.6986	--------
100	50.0862	5.6000	0.6582	--------

File name: Lions Trucking IDF.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.56	4.33	3.56	3.04	2.66	2.37	2.14	1.95	1.80	1.67	1.56	1.46
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.69	5.23	4.33	3.72	3.27	2.92	2.65	2.42	2.24	2.08	1.95	1.83
10	7.57	5.91	4.90	4.22	3.71	3.33	3.03	2.78	2.57	2.40	2.25	2.12
25	8.75	6.82	5.66	4.88	4.32	3.89	3.55	3.27	3.04	2.84	2.68	2.53
50	9.66	7.52	6.26	5.41	4.80	4.33	3.96	3.66	3.41	3.19	3.01	2.85
100	10.59	8.21	6.84	5.93	5.27	4.77	4.37	4.05	3.78	3.56	3.36	3.19

Tc = time in minutes. Values may exceed 60.

Precip. file name: Z:\21346 - Lions Tran Inc (Bburg) Maintenance Building\Design\Drainage\Lions_Huff6hr.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	2.13	0.00	0.00	3.15	3.82	0.00	4.98
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix B – Pipe, Orifice, and Inlet Calculations

MOENCH ENGINEERING, P.C.

STORM SEWER DESIGN - RATIONAL METHOD

10-YEAR RAINFALL INTENSITY:HENDRICKS CNTY DCAM EQUATION MANNING ROUGHNESS COEFFICIENT = 0.013 RCP

PROJ.: 21346 **DATE:** 12/19/2025

DESC: Lion Trans Inc. **ENGR:** **C. Brown**

LINE DESIG.	FROM STR. NO.	TO STR. NO.	PIPE LENGTH (FT)	C	A (ACRE)	C x A	SUM OF CA	Tc (MIN)	Tcum (MIN)	I (IN/HR)	Q (CFS)	PIPE DIA. (IN)	PIPE GRADE (%)	PIPE CAP. (CFS)	PIPE % FLOW	FULL VEL. (FPS)	EXTRA CAP. (CFS)	TRAV. TIME (MIN)	RIM ELEV. UPSTM.	RIM ELEV. DNSTM.	INVERT ELEV. UPSTM.	INVERT ELEV. DNSTM.	PIPE COVER UPSTM.	PIPE COVER DNSTM.
New Line	INLET1	INLET2	290	0.72	1.27	0.91	0.91	5.0	5.00	5.57	5.081	18	0.30	5.753	88.315	3.26	0.67	1.5	870.56	869.99	864.01	863.14	4.84	5.14
	INLET2	AR8	64	0.67	1.75	1.17	2.08	5.0	6.48	5.13	10.686	24	0.30	12.391	86.237	3.94	1.71	0.3	869.99	870.90	863.14	862.95	4.60	5.70
	AR8	END	64								10.686	24	0.30	12.391	86.241	3.94	1.70	0.3	870.90	NA	862.85	862.66	5.80	NA

Inlet Calculations

Calculations for Outlet Orifice Size

Q=Cd*Ao*SQRT(2*g*h)

Ao = Area of Orifice, Cd = Coefficient of Orifice, Q = Flow, g = gravity constant, h = height of water abov

We know Q, and need to solve for Ao

Ao = Q/(Cd*SQRT(2*g*h))

INLET 1			INLET 2		
Q =	5.081		Q =	5.689	
Cd =	0.6		Cd =	0.6	
g =	32.2		g =	32.2	
h =	0.5		h =	0.5	
Ao =	1.49	Square Feet	Ao =	1.67	Square Feet

Outlet Structure Calculations

Calculations for Outlet Orifice Size

Q=Cd*Ao*SQRT(2*g*h)

Ao = Area of Orifice, Cd = Coefficient of Orifice, Q = Flow, g = gravity constant, h = height of water above invert of orifice.

We know A, need to find Q

2-Year			10-Year		
A =	0.087266		A =	0.087266	
Cd =	0.6		Cd =	0.6	
g =	32.2		g =	32.2	
h =	1.65		h =	2.81	
Q =	0.54	Cubic Feet per Second	Q =	0.70	Cubic Feet per Second
solving for d in circular pipe: d=SQRT(4*Ao/*pie*)			solving for d in circular pipe: d=SQRT(4*Ao/*pie*)		
d =	0.33	feet	d =	0.33	feet
d =	**4.00**	**inches (Pipe diameter in inches)**	**d =**	**4.00**	**inches (Pipe diameter in inches)**

25-Year			100-year		
A =	0.087266		A =	0.087266	
Cd =	0.6		Cd =	0.6	
g =	32.2		g =	32.2	
h =	0.59		h =	1.54	
Q =	0.32	Cubic Feet per Second	Q =	0.52	Cubic Feet per Second
solving for d in circular pipe: d=SQRT(4*Ao/*pie*)			solving for d in circular pipe: d=SQRT(4*Ao/*pie*)		
d =	0.33	feet	d =	0.33	feet
d =	**4.00**	**inches (Pipe diameter in inches)**	**d =**	**4.00**	**inches (Pipe diameter in inches)**
Qtotal =	1.03	Cubic Feet per Second	Qtotal =	1.23	Cubic Feet per Second
	Qtotal= Q10-year+Q25-year			Qtotal= Q10-year+Q100-year	

Emergency		
Q =	20.93	
Cd =	0.6	
g =	32.2	
h =	0.99	
Ao =	4.37	Square Feet
solving for d in circular pipe: d=SQRT(4*Ao/*pie*)		
d =	1.38	feet
d =	**16.55**	**inches (Pipe diameter in inches)**

MOENCH ENGINEERING, P.C.

STORM SEWER DESIGN - RATIONAL METHOD

MANNING ROUGHNESS COEFFICIENT = 0.013 RCP

PROJ.: 21346 **DATE:** 12/19/2025

DESC: Lion Trans Inc. **ENGR:** C. Brown

LINE DESIG.	FROM STR. NO.	TO STR. NO.	PIPE LENGTH (FT)	C	A (ACRE)	C x A	SUM OF CA	Tc (MIN)	Tcum (MIN)	I (IN/HR)	Q (CFS)	PIPE DIA. (IN)	PIPE GRADE (%)	PIPE CAP. (CFS)	PIPE % FLOW	FULL VEL. (FPS)	EXTRA CAP. (CFS)	TRAV. TIME (MIN)	RIM ELEV. UPSTM.	RIM ELEV. DNSTM.	INVERT ELEV. UPSTM.	INVERT ELEV. DNSTM.	PIPE COVER UPSTM.	PIPE COVER DNSTM.
NEW LINE	INV	INL6	116								20.930	36	0.11	22.121	94.614	3.13	1.19	0.6	na	868.25	862.66	862.53	na	2.38
	INL6	INL7	54								20.930	36	0.11	22.121	94.614	3.13	1.19	0.3	868.25	868.85	862.53	862.47	2.38	3.04
	INL7	INL8	50	0.43	0.17	0.07	0.07	5.0	5.00	7.56	21.482	36	0.12	23.105	92.977	3.27	1.62	0.3	868.85	868.32	862.47	862.41	3.04	2.57
	INL8	INL9	175	0.60	0.10	0.06	0.13	5.0	5.25	7.46	21.929	36	0.13	24.048	91.185	3.40	2.12	0.9	868.32	868.41	862.41	862.19	2.57	2.89
	INL9	INL10	151	0.65	0.13	0.08	0.22	5.0	6.11	7.11	22.483	36	0.13	24.048	93.491	3.40	1.57	0.7	868.41	867.81	862.19	861.99	2.89	2.49
	INL10	INL11	164	0.71	0.14	0.10	0.32	5.0	6.85	6.84	23.105	36	0.14	24.956	92.581	3.53	1.85	0.8	867.81	867.83	861.99	861.76	2.49	2.74
	INL11	INL12	164	0.71	0.14	0.10	0.42	5.0	7.63	6.58	23.677	36	0.14	24.956	94.874	3.53	1.28	0.8	867.83	867.79	861.76	861.53	2.74	2.93
	INL12	INL13	80	0.71	0.09	0.06	0.48	5.0	8.40	6.34	23.980	36	0.15	25.832	92.832	3.65	1.85	0.4	867.79	867.57	861.53	861.41	2.93	2.83
	INL13	INL14	75	0.55	0.13	0.07	0.55	5.0	8.77	6.24	24.376	36	0.16	26.679	91.365	3.77	2.30	0.3	867.57	867.38	861.41	861.29	2.83	2.76
	INL14	END	268	0.43	0.31	0.13	0.69	5.0	9.10	6.14	25.145	36	0.16	26.679	94.249	3.77	1.53	1.2	867.38	865.35	861.29	860.86	2.76	1.16
	SOUTH	INL7	97	0.42	0.12	0.05	0.05	5.0	5.00	7.56	0.378	12	3.13	6.299	6.005	8.02	5.92	0.2	na	867.49	865.49	862.47	na	3.85

Appendix C – Water Quality Calculations

Water Quality Calculations

Project Name: Lion's Trucking
Project Job #: 21346

Water Quality Volume

WQv = ((P)(Rv)(A))/12

P= 1" of Rainfall
Rv = Volumetric Flow Rate = 0.05 + 0.009 (I)
I = percent of impervious area
A = Area in acres

Total Site (acres)	3.02	Percent -Impervious Area (%)	66.23
Total Impervious Area (acres)	2	Volumetric Flow Rate	0.65
Prop. Time of Conc. (min)	9.00	Water Quality Volume (ac-ft)	0.16
		Water Quality Volume (ft3)	**7082.13**
*Forebay Volume is included in overall req. volume		Forebay (ac-ft)	0.02
		Forebay (ft3)	**726.00**

Water Quality Curve Number

$$\text{WQ Curve Number} = \frac{1000}{[10+5P+10Qa- 10*(\text{sqrt}(Qa^2+1.25*Qa*P))]}$$

P = 1" (rainfall for water quality storm event)
Qa = runoff volume, in inches = 1" * Rv = Rv (inches)
Rv = volumetric runoff coefficient

WQ Curve Number = 96.22 * Check with CBBEL WQ-CN Graph

Water Quality Runoff Rate TR-20 Method * Design Criteria different for City of Indianapolis

	Input Data	* Indy
Dimensionless Hydrograph:	SCS Type II Distribution	Huff 1st quartile
Curve Number:	96.22	98
Area:	3.02	3.02
Rainfall:	1.00	0.30
Time of Concentration:	9.00	9.00

Area for TR-20 calculated runoff * Utilize Peak Discharge for WQ Structure BMP

SCS Method

Given Input Data:

- Description ..... Water Quality
- Drainage area ..... 1.5540 ac
- Runoff curve number, CN 97
- Time of concentration, Tc ..... 5.0000 min
- Dimensionless Hydrograph ..... scsdim
- Rainfall ..... 1.0000 in
- Distribution Curve ..... tr20t2: Type 2, 24 hrs

Computed Results:

- **Peak discharge, qp ..... 1.5871 cfs**
- Peak Time, Tp ..... 717.5407 min
- Peak rate factor 484
- Constant, K 0.7500
- Runoff Volume ..... 0.6923 in
- ..... 1.0849 cfs-hrs
- ..... 0.0897 acft

Req. AquaShield Aqua-Swirl (per City of Indy WQ Flowrate Standards in Stormwater Manual) **AS-10**

Appendix D – Stage Storage/Discharge Table

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Tuesday, 12 / 16 / 2025

Pond No. 1 - <New Pond>

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 862.66 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	862.66	3,979	0	0
0.34	863.00	4,250	1,398	1,398
1.34	864.00	5,096	4,666	6,065
2.34	865.00	6,013	5,548	11,612
3.34	866.00	6,990	6,495	18,107
4.34	867.00	8,024	7,500	25,608
5.34	868.00	9,114	8,562	34,170

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 4.00	4.00	0.00	Inactive
Span (in)	= 4.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	1
Invert El. (ft)	= 862.66	865.47	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	862.66	0.00	0.00	---	---	---	---	---	---	---	---	0.000
0.34	1,398	863.00	0.17 ic	0.00	---	---	---	---	---	---	---	---	0.175
1.34	6,065	864.00	0.46 ic	0.00	---	---	---	---	---	---	---	---	0.455
2.34	11,612	865.00	0.62 ic	0.00	---	---	---	---	---	---	---	---	0.619
3.34	18,107	866.00	0.75 ic	0.25 ic	---	---	---	---	---	---	---	---	1.002
4.34	25,608	867.00	0.86 ic	0.49 ic	---	---	---	---	---	---	---	---	1.349
5.34	34,170	868.00	0.96 ic	0.65 ic	---	---	---	---	---	---	---	---	1.601

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Pond No. 1 - <New Pond>

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 862.66 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	862.66	3,979	0	0
0.34	863.00	4,250	1,398	1,398
1.34	864.00	5,096	4,666	6,065
2.34	865.00	6,013	5,548	11,612
3.34	866.00	6,990	6,495	18,107
4.34	867.00	8,024	7,500	25,608
5.34	868.00	9,114	8,562	34,170

Culvert / Orifice Structures

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Span (in)	= 4.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	1
Invert El. (ft)	= 862.66	865.47	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

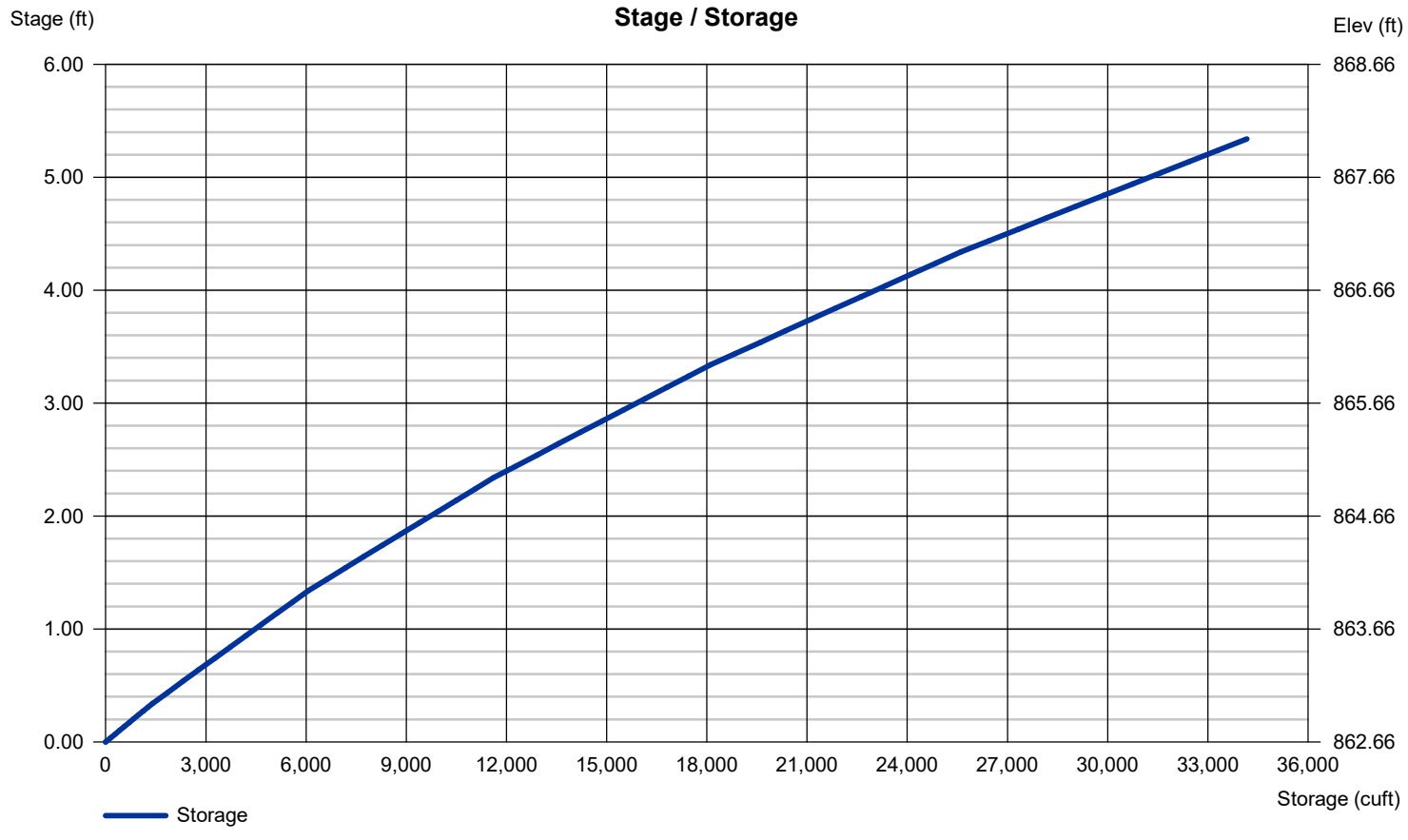
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 12 / 17 / 2025

Pond No. 1 - <New Pond>

Pond Data

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Culvert / Orifice Structures

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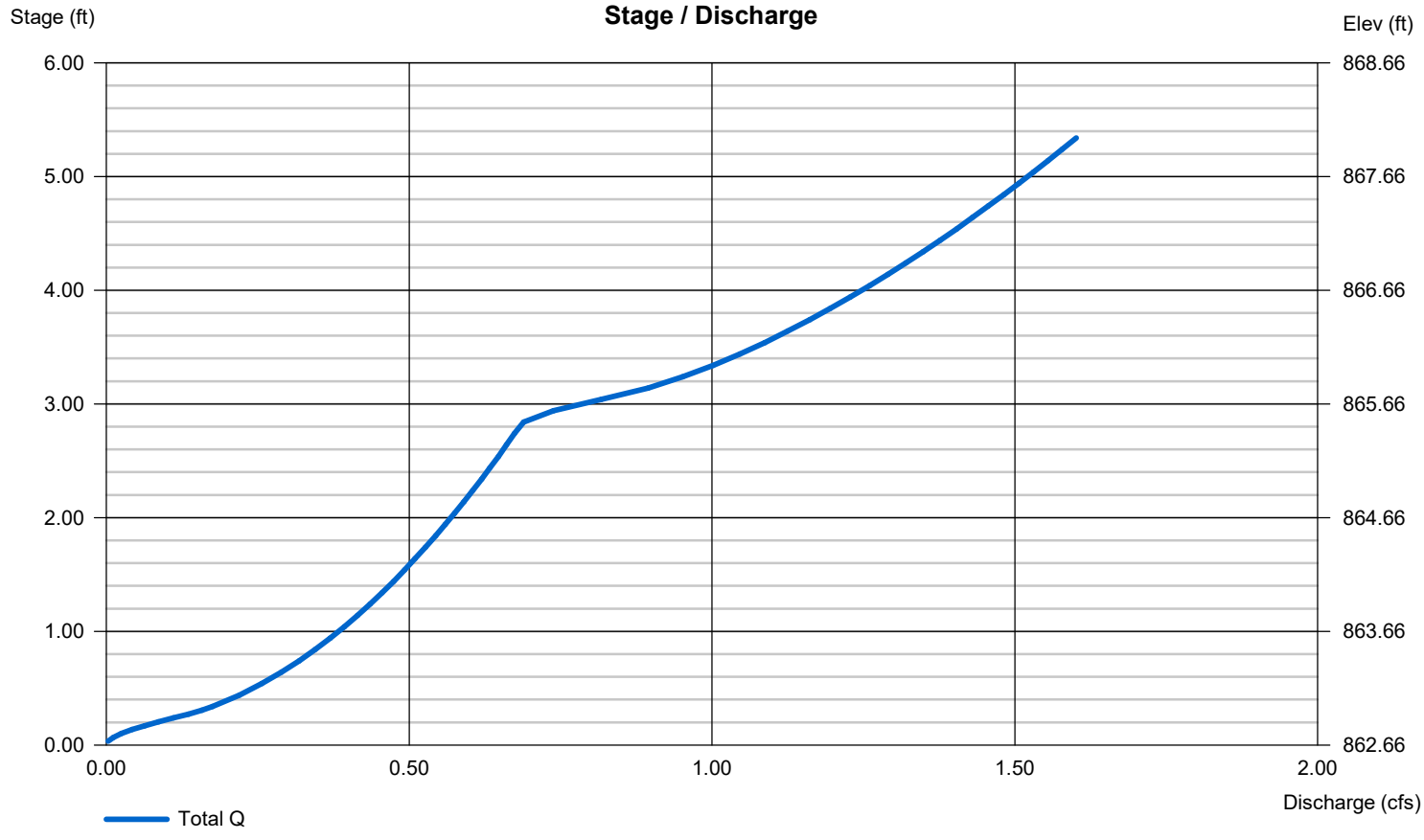
No. Barrels	= 1	1	0	1
Invert El. (ft)	= 862.66	865.47	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

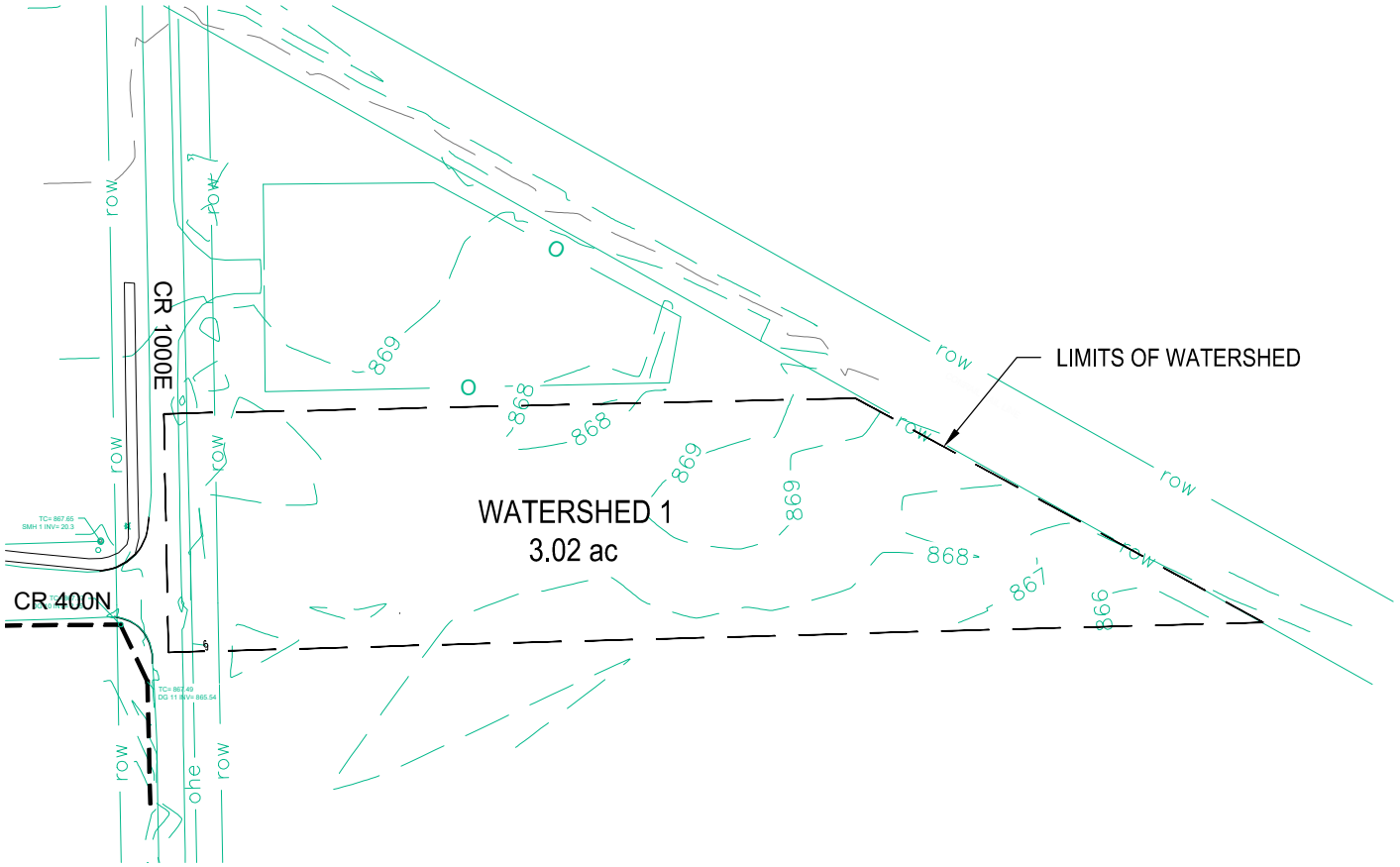
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Appendix E – Existing Watershed



N

150 0 150 300

GRAPHIC SCALE: 1" = 150'

NOTE
PERVIOUS SURFACE = 2.97 ac (131,401 sf)
IMPERVIOUS SURFACE = 0.05 ac (2,144 sf)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH MOENCH ENGINEERING, P.C. NO OTHER USE OR DUPLICATION MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF MOENCH ENGINEERING, P.C. ALL OTHER COPYRIGHT AND COMMON LAW RIGHTS ARE HEREBY SPECIFICALLY RESERVED.

Lion Transfer Inc.
4005 N. County Road 1000 E
Brownsbburg, Indiana 46122
Hendricks County, Lincoln Township

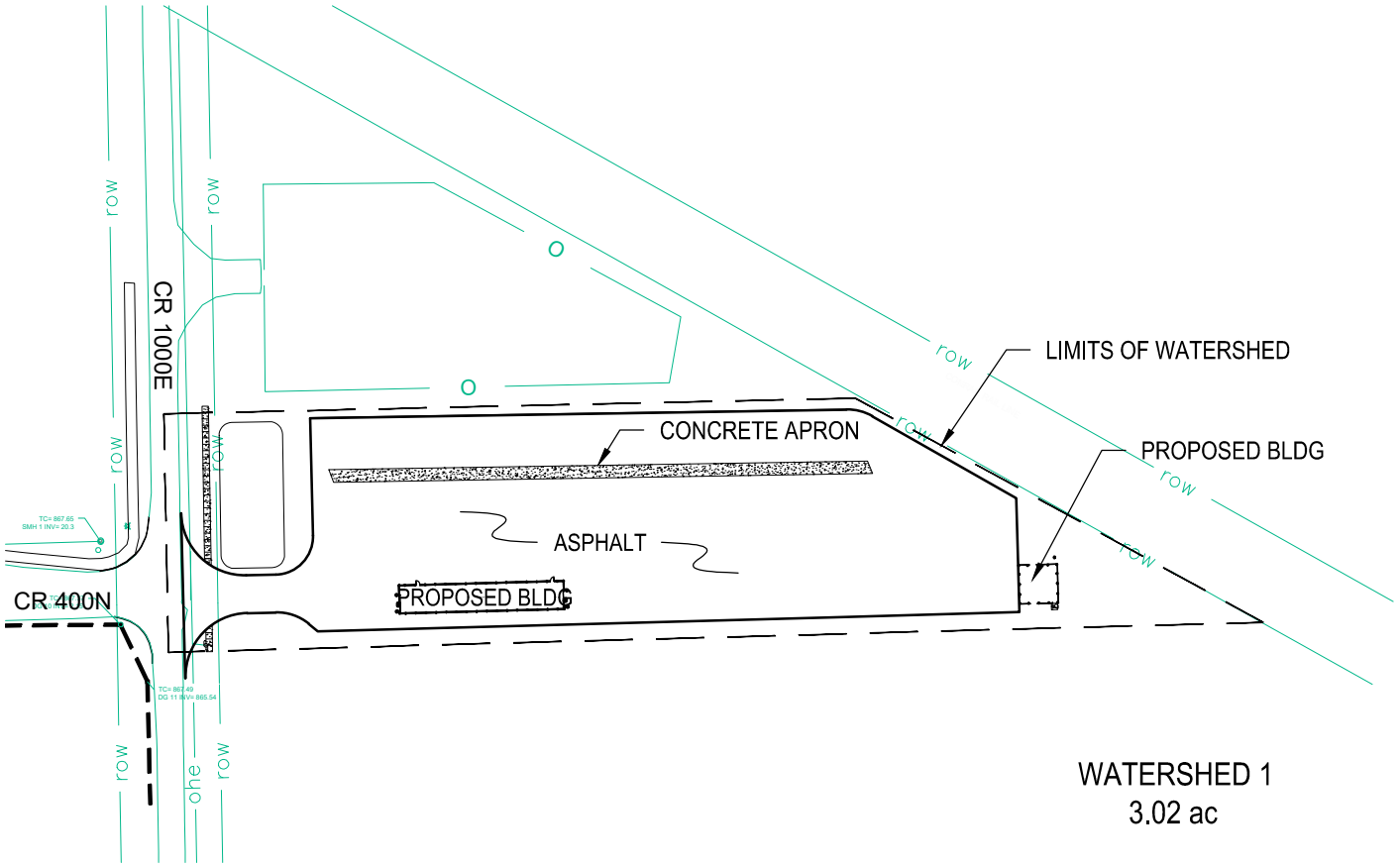
EXISTING WATERSHED MAP

Drawn By: JBF
Checked By: BEM
Project No. 21346
Date: 6/20/24

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
Phone (317) 837-2767

Sheet Number:
WSE

Appendix F – Proposed Watershed



N

150 0 150 300

GRAPHIC SCALE: 1" = 150'

NOTE
PERVIOUS SURFACE = 0.77 ac (33,488 sf)
IMPERVIOUS SURFACE = 2.17 ac (94,492 sf)
IMPERVIOUS ROOF AREA = 0.08 ac (3,760 sf)

THESE DRAWINGS ARE GIVEN IN CONFIDENCE AND SHALL BE USED ONLY IN PURSUANT TO THE AGREEMENT WITH MOENCH ENGINEERING, P.C. NO OTHER USE OR DUPLICATION MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF MOENCH ENGINEERING, P.C. ALL OTHER COPYRIGHT AND COMMON LAW RIGHTS ARE HEREBY SPECIFICALLY RESERVED.

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Hendricks County, Lincoln Township

PROPOSED WATERSHED MAP

Drawn By: JBF
Checked By: BEM
Project No. 21346
Date: 6/20/24

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
Phone (317) 837-2767

Sheet Number:
WSP

Operations and Maintenance Manual

Lion Trans Inc.

4005 N County Road 1000 E
Brownsburg, Indiana 46112

Best Management Practices
For
Storm Water Quality

February 4th, 2026

Owner:

Malhi Kulwinder & Jigna Shah Jtsur

7631 E US Hwy 36

Avon, Indiana 46123

Owner Information:

Name:	Malhi Kulwinder & Jigna Shah Jtsur
Address:	7631 E US Hwy 36 Avon, Indiana 46123
Telephone:	(317) 989-1580
Contact Person:	Jigna Shah Jtsur
Contact Email:	janh505969@gmail.com

BMP Site Drawings:

See Appendix

Responsible Party Required Periodic Inspections: See Appendix B for Tabular Inspection Schedule

It is the responsibility of the Responsible Party to inspect the installed infrastructure to determine if it is functioning as designed quarterly and after each major rainfall event.

Town Performed Periodic Inspections:

Town officials shall inspect the storm water improvement system installed annually. Inspections shall be based on the Town of Brownsburg Ordinances. The Responsible Party shall be responsible for the annual inspection fees and subsequent money spent in maintaining the best management practices as determined by the Town's review official.

Required Perform Maintenance:

If determined by the Town's inspection, the Responsible Party must complete any maintenance of the best management practices within the given specified timeframe. If maintenance activities are not completed, then the reserves the right to complete the maintenance activity and back charge the Responsible Party accordingly.

Routine Maintenance:

It is the responsibility of the Responsible Party to maintain the on-site and adjacent offsite drainage infrastructure. The routine maintenance includes mowing the grassy areas to a height between 4 to 6 inches. It is also the responsibility of the Responsible Party to keep all shrubbery and trees from growing in the right-of-way. The area must be kept clean of all litter and debris as well. Regarding soil within the yard area, if standing water is witnessed in excess for 48 hours after a storm event, the soil must be inspected for reasons of preventing absorption and/or decreasing permeability (i.e. compaction, debris, etc.) The soil needs to be tilled and/or inspected if immediate attention doesn't rectify the situation. During tilling of the soil, mindfulness needs to be kept of the sub-surface drains to prevent damage (i.e. removal or crushing). The soil must maintain a minimum permeability value of fc > 0.50 inches per hour. The sufficient proposed replacement soil such as Urban Land Fox Complex, 0 to 2% slope has sufficient permeability qualities to meet standards, if required. If re-seeding is required, stabilize existing soil and re-seed as necessary using erosion control methods such as straw mats until proper germination takes place. The hydrodynamic separator should be periodically inspected to determine the need for and frequency of maintenance, inspected as soon as construction is complete and then on an annual basis. When maintenance is required, remove all water, debris, oil and sediment using a vacuum truck. Then clean the manhole and fill with water to the invert of the outlet pipe. Volume Control Facilities and BMPs shall be inspected semi-annually and after major storm events exceeding one-half (1.5) inches.

Remedial Maintenance:

The responsibility of maintaining the installed infrastructure is the responsibility of the Responsibility Party. This includes replacing any damaged pipe, concrete structure, curb/gutters, etc. to maintain the function of the infrastructure as originally designed.

Sediment Removal:

Sediment removal from gutter of adjacent curbs.

Statement of Town's Right of Access:

With the location of the access easement, Town officials have the right to enter the property and check the best management practices at their discretion.

Responsible Party for BMP Maintenance:

It is the sole responsibility of the Owner to maintain the best management practices after initial installation. This includes all costs and scheduling associated with the maintenance of BMP. The Owner is required to keep records of all inspection and maintenance activities and will self-certify that inspection and maintenance have been performed according to the Operations and Maintenance Manual, when requested by the city.

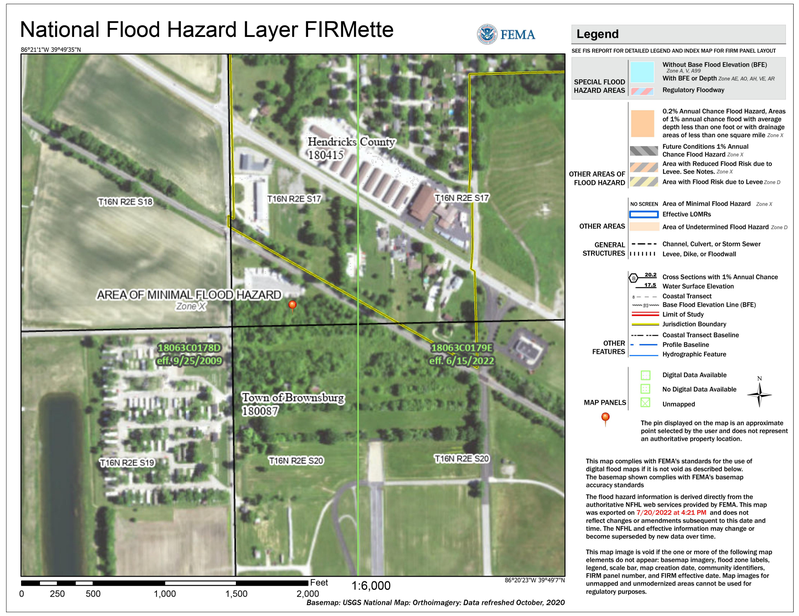
Responsible Party: _____

Printed Name of Responsible Party: _____

Date: _____

APPENDICES

APPENDIX A
BMP DRAWINGS





Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	1.8	53.2%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	1.5	46.8%
Totals for Area of Interest		**3.3**	**100.0%**

FLOOD ZONE DESIGNATION:

THIS LOT LIES ENTIRELY IN FLOOD HAZARD ZONE "X" AS SCALES FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR:

HENDRICKS COUNTY, INDIANA

COMMUNITY NAME:	TOWN OF BROWNSBURG
COMMUNITY NUMBER:	180087
PANEL NUMBER:	C0179E
DATED:	JUNE 15, 2022

STAGE STORAGE TABLE

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
862.660	4,044.91	N/A	N/A	0.00	N/A	0.00
863.000	4,312.07	0.340	1420.69	1420.69	1420.44	1420.44
864.000	5,146.08	1.000	4729.07	6149.76	4722.93	6143.37
865.000	6,051.22	1.000	5598.65	11748.41	5592.54	11735.92
866.000	7,016.36	1.000	6533.79	18282.20	6527.84	18263.76
867.000	8,038.03	1.000	7527.19	25809.39	7521.41	25785.17
868.000	9,116.26	1.000	8577.15	34386.54	8571.50	34356.66

= WQO LOCATIONS

= DRAINAGE ARROWS

GRADING NOTES:

GENERAL GRADE NOTES:

1. REFER TO THE INDIANA DEPARTMENT OF TRANSPORATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTION BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT, PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.

2. FILL MATERIAL SHALL CONSIST OF EARTH OBTAINED FROM CUT AREAS, BORROW PITS OR OTHER APPROVED SOURCES. EARTH SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES AND LARGE ROCKS. THE FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED SIX INCHES FOLLOWING COMPACTION. PROPER MOISTURE CONTENT OF FILL MATERICAL WILL BE SUCH TO ACHIEVE SPECIFIED COMPACTION DENSITY. ALL FILL BENEATH PAVED AREAS, FLOOR SLABS AND FURTURE BUILDINGS SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY PER ASTM D-1557. FIELD COMPACTING TEST SHALL BE RUN ON EACH LIFT, IN FILL SECTIONS, AND THE REQUIRED COMPACTION ON EACH LIFT SHALL BE IN ACCORDANCE WITH INDOT SECTION 211.

3. MAXIMUM LAWN SLOPE IS 3:1.

4. THE CONTRATOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC. IN THE AFFECTED CONSTRUCTION AREA EXISTING UTILITY STRUCTURES ARE SHOWN HERE IN ACCORDANCE WITH AVAILABLE INFORMATION. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.

5. ALL SPOT ELEVATIONS ARE TO FINISHED GRADE.

6. ALL EXISTING MANHOLE CASTINGS TO BE ADJUSTED TO FINISH GRADE.

7. COMPACT "B" BORROW BACK FILL REQ'D. OVER ALL UTILITIES IN PAVED AREAS.

8. DISTURBED AREAS TO BE GRADED TO FINAL GRADE AND RECEIVE A MIN OF 4" TOPSOIL

9. STABILIZATION MUST BE INITIATED BY END OF THE 7TH DAY THE AREA IS LEFT IDLE AND STABILIZATION SHALL BE COMPLETED WITHIN 14 DAYS AFTER INITIATION.

10. FINAL STABILIZATION IS ACHIEVED WHEN ALL LAND DISTURBING ACTIVITIES HAVE BEEN COMPLETED AND A UNIFORM PERENNIAL VEGATATIVE COVER WITH DENSITY OF 70% ON ALL UNPAVED SURFACES.

11. WATER SHOULD BE PUMPED THROUGH BMP AND INTO THE DETENTION POND.

REINFORCED CONCRETE PIPE:

1. REINFORCED CONCRETE PIPE SHALL BE CLASS III, IV OR V AS SPECIFIED IN ASTM C-76.

2. REINFORCED ELLIPTICAL CONCRETE PIPE SHALL BE CLASS HE-III OR HE-IV AS SPECIFIED IN ASTM C-507.

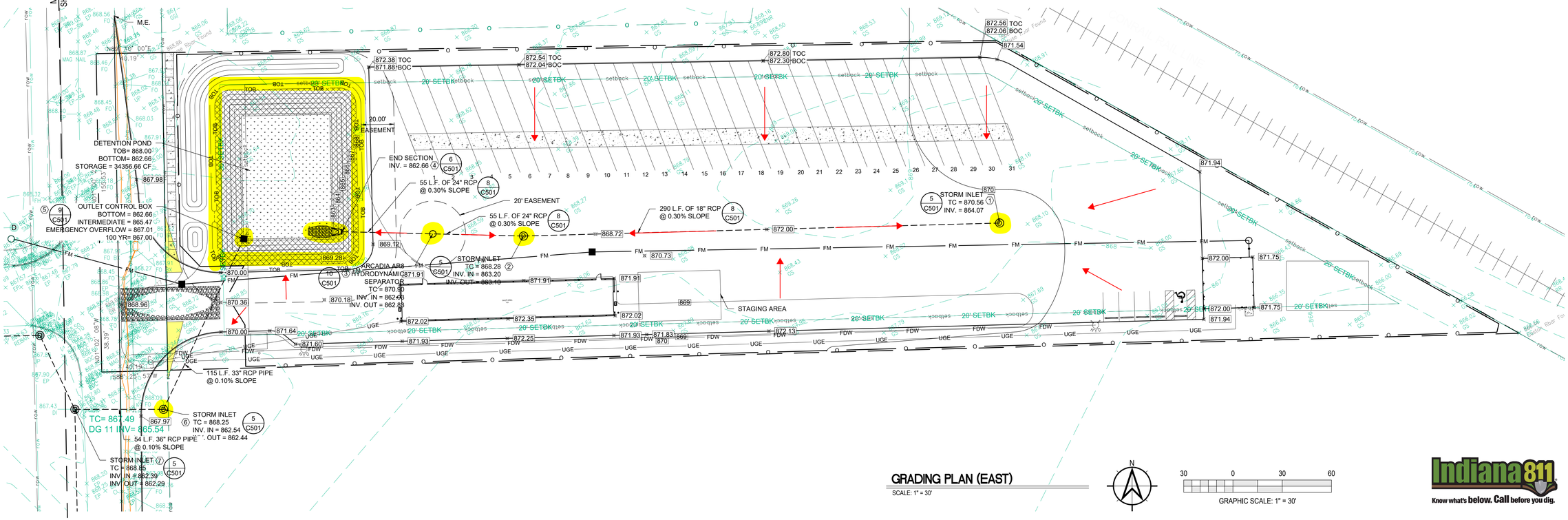
3. LIFT HOLES ARE NOT ALLOWED FOR PIPE LESS THAN 24 INCHES IN DIAMETER. A MAXIMUM OF TWO LIFT HOLES ARE ALLOWED FOR PIPE 24 INCHES IN DIAMETER OR LARGER. LIFT HOLES SHALL BE REPAIRED ACCORDING TO MOST RECENT INDOT STANDARD SPECIFICATIONS.

4. FITTINGS AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE TYPE OF PIPE BEING USED.

5. EACH PIPE SECTION SHALL BE MARKED WITH DATE OF MANUFACTURE, SIZE AND CLASS OF PIPE, SPECIFICATION DESIGNATION, MANUFACTURER AND PLANT IDENTIFICATION.

6. PIPE SHALL BE FURNISHED WITH A BELL OR GROOVE ON ONE END OF A UNIT OF PIPE AND A SPIGOT OR TONGUE ON THE ADJACENT END OF THE ADJOINING PIPE. ALL JOINTS SHALL HAVE A GROOVE ON THE SPIGOT FOR PLACEMENT OF A RUBBER "O-RING" OR PROFILE GASKET IN ACCORDANCE WITH ASTM C-443. THE GASKET SHALL BE A CONTINUOUS RING WHICH FITS SNUGLY INTO THE ANNULAR SPACE BETWEEN THE OVERLAPPING SURFACES OF THE ASSEMBLED PIPE JOINT.

EMERGENCY SPILLWAY DETAIL



GRADING PLAN (EAST)
SCALE: 1" = 30'

N

30 0 30 60
GRAPHIC SCALE: 1" = 30'

Indiana 811
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Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

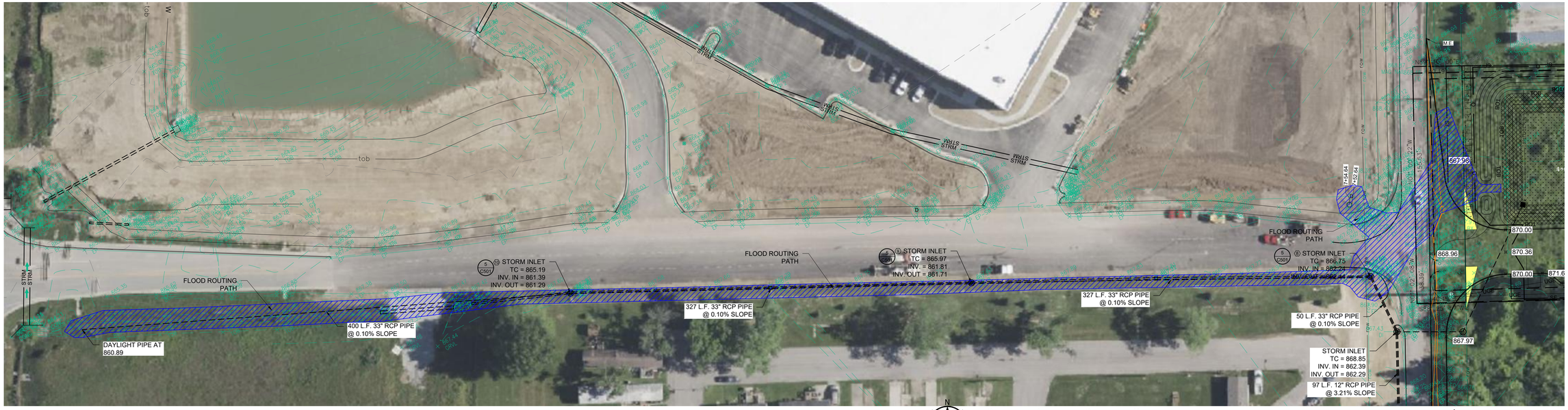
GRADING PLAN (EAST)

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER
Susan E. Neal

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

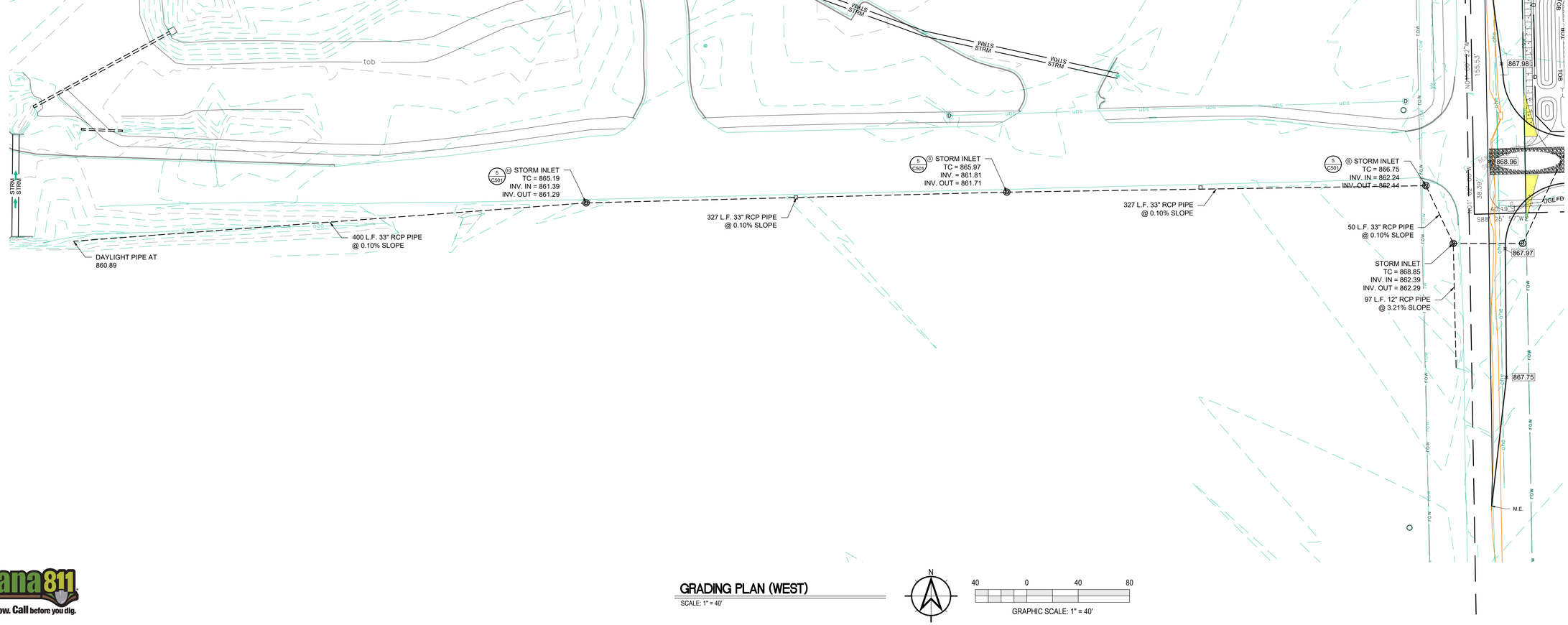
DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C301A



FLOOD ROUTING PATH

SCALE: 1" = 40'

GRAPHIC SCALE: 1" = 40'



GRADING PLAN (WEST)

SCALE: 1" = 40'

GRAPHIC SCALE: 1" = 40'

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DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
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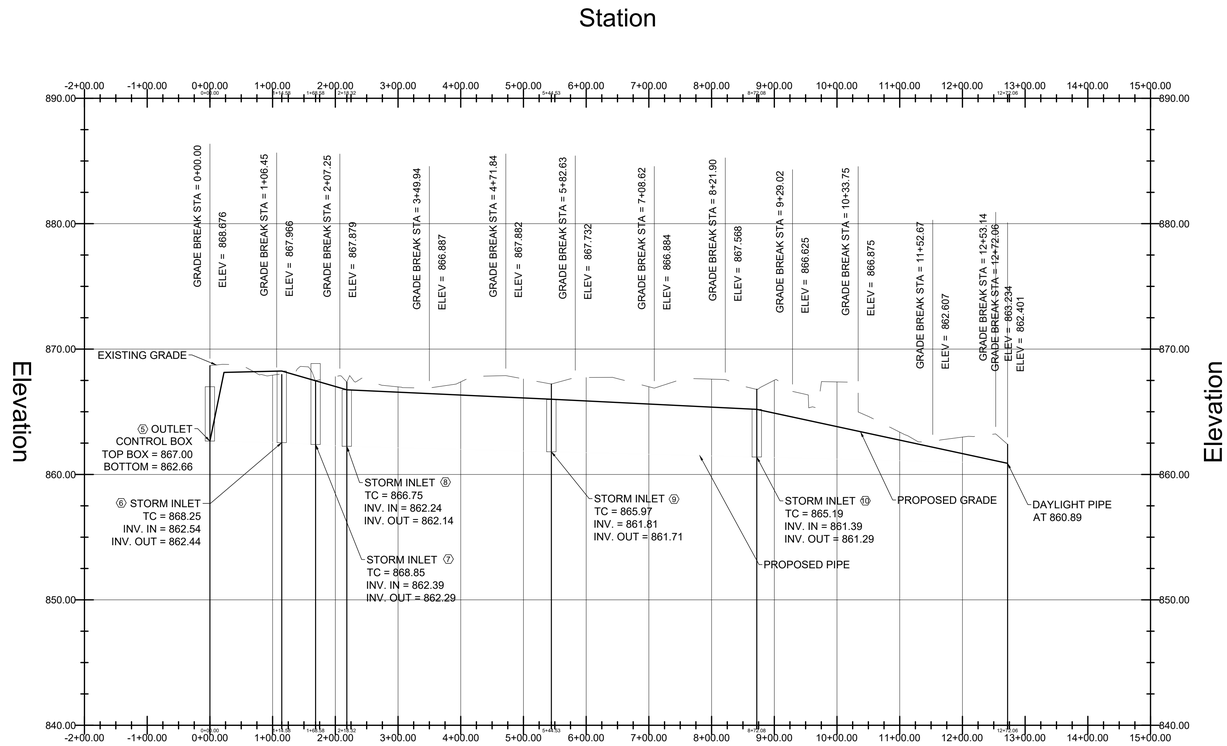
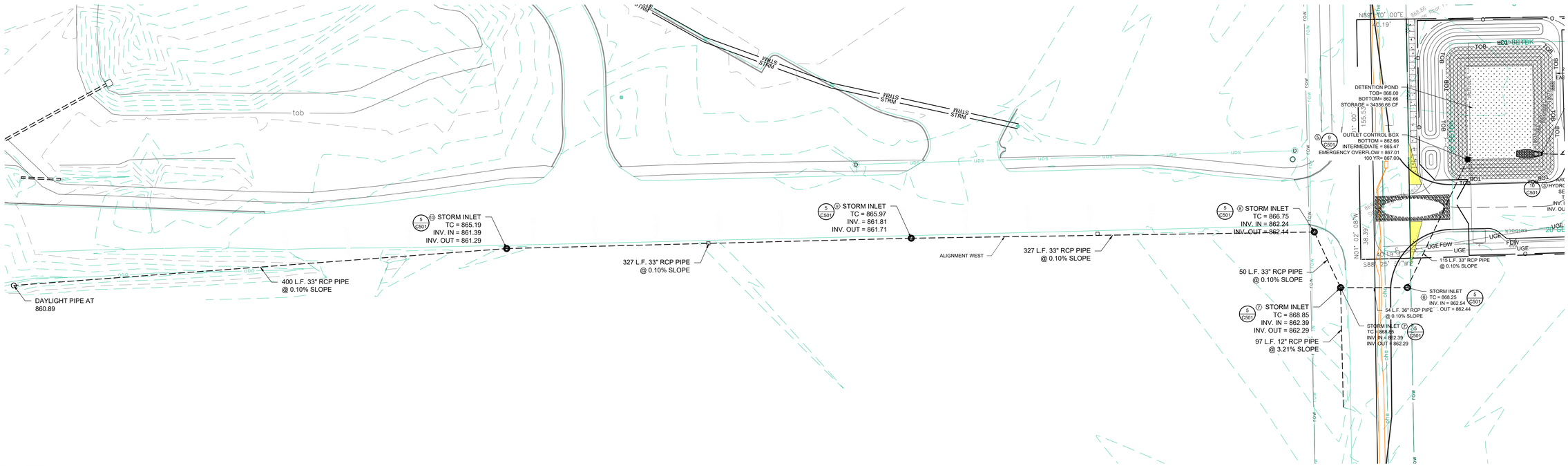
SHEET NUMBER:	C301B



PIPE PROFILE VIEW
ALIGHTNMENT WEST

NOT TO SCALE



ALIGHTNMENT WEST

SCALE: 1" = 40'

GRAPHIC SCALE: 1" = 40'

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PIPE PROFILE PLAN (WEST)

BRIAN EDWARD MOENCH
REGISTERED
No. PE9500048
STATE OF INDIANA
PROFESSIONAL ENGINEER
Brian E. Moench

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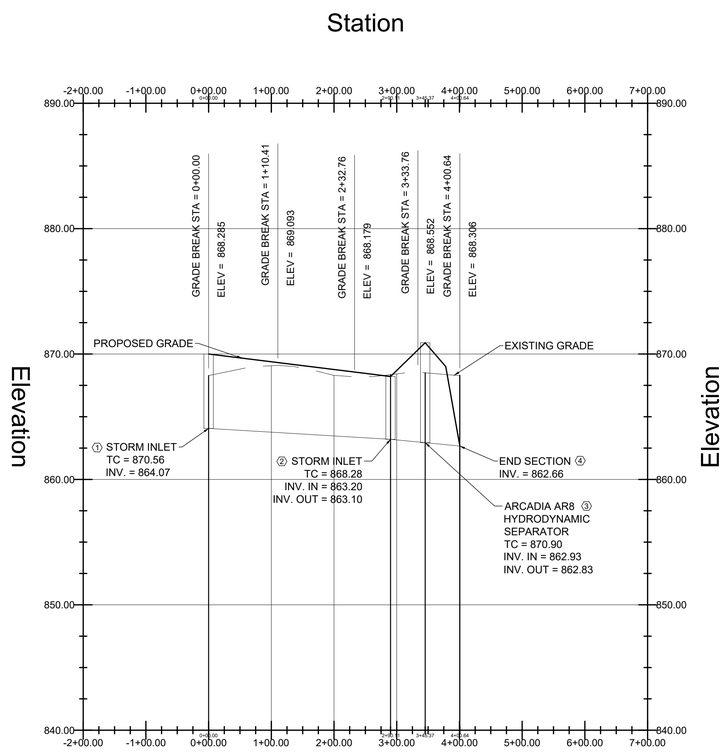
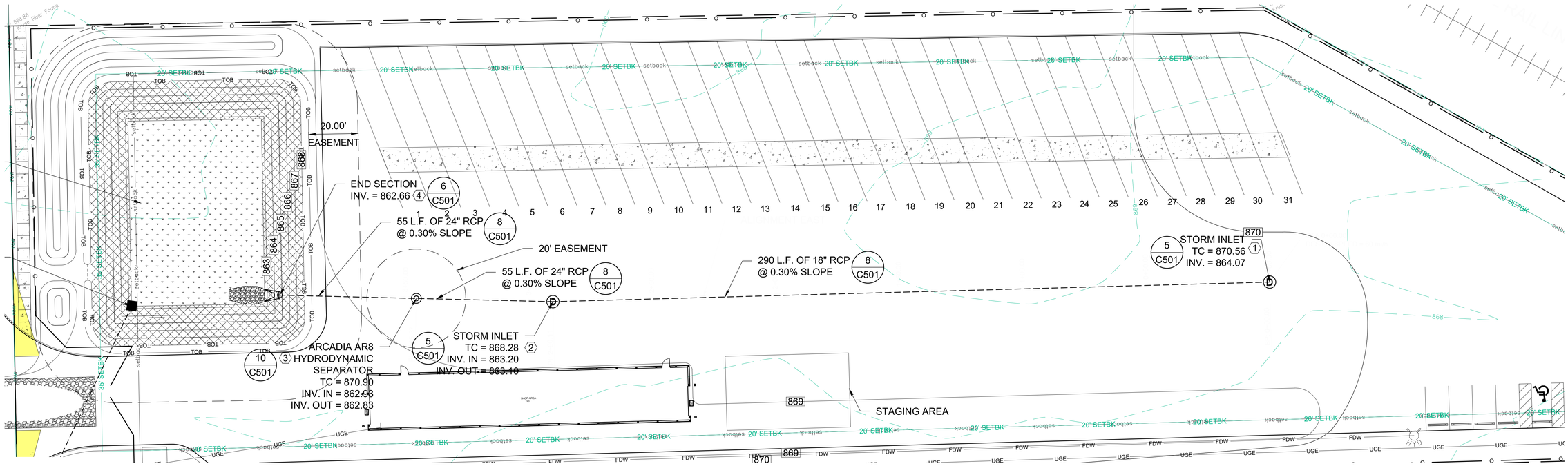
SHEET NUMBER:	C301C



PIPE PROFILE VIEW
ALIGHTNMENT EAST

NOT TO SCALE



ALIGHTNMENT EAST

SCALE: 1" = 20'

N

40 0 40 80

GRAPHIC SCALE: 1" = 40'

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DRAWN BY:	JBF
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PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C301D

SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING		A			*	///	///	///	*//			
DORMANT SEEDING	B										B	
TEMPORARY SEEDING		C	E		*	///	///	///	*D			
SODDING		F**			*	///	///	///	*			
MULCHING	G											

A = KENTUCKY BLUEGRASS 100 LBS/ACRE; CREEPING RED FESCUE 100 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 20 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

B = KENTUCKY BLUEGRASS 120 LBS/ACRE; CREEPING RED FESCUE 120 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 30 LBS/ACRE FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

C = SPRING OATS 3 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

D = WHEAT OR RYE 2 BUSHELS/ACRE
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

E = ANNUAL RYEGRASS 40 LBS/ACRE (1 LB/1000 SQ. FT.)
FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE. APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.

F = SOD

G = STRAW MULCH 2 TONS/ACRE

* / I / * = IRRIGATION NEEDED DURING JUNE, JULY, AUGUST AND/OR SEPTEMBER ** = IRRIGATION NEEDED FOR 2 WEEKS AFTER SUPPLYING SOD

INSTALLATION SCHEDULE:

CONSTRUCTION PHASE:	CONSTRUCTION SCHEDULE:
PRE-CONSTRUCTION ACTIONS (EVALUATION/PROTECTION OF IMPORTANT SITE CHARACTERISTICS)	BEFORE CONSTRUCTION, EVALUATE, MARK AND PROTECT IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, UNIQUE AREAS (e.g., WETLANDS) TO BE PRESERVED, ON SITE SEPTIC SYSTEM ABSORPTION FIELDS IF APPLICABLE, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS.
CONSTRUCTION ACCESS (CONSTRUCTION ENTRANCES, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS)	STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS WORK TAKES PLACE.
SEDIMENT BARRIERS AND TRAPS (BASIN TRAPS, SILT FENCES, OUTLET PROTECTION)	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ASSESSED. INSTALL ADDITIONAL RUNOFF CONTROL MEASURES DURING GRADING AS NEEDED.
RUNOFF CONVEYANCE SYSTEM (STABILIZED STREAM-BANKS, STORM DRAINS, INLET AND OUTLET PROTECTIONS, WATER QUALITY STRUCTURES)	WHERE NECESSARY, STABILIZE STREAMBANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPLE CONVEYANCE SYSTEM WITH RUNOFF CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
LAND CLEARING AND GRADING (CUTTING/FILLING/GRADING, DRAINS, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, SURFACE ROUGHENING)	BEGIN MAJOR CLEARING AND GRADING AFTER INSTALLING THE KEY SEDIMENT AND RUNOFF MEASURES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES.
SURFACE STABILIZATION (TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETED.
BUILDING CONSTRUCTION (BUILDINGS, UTILITIES, PAVING)	INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES AS WORK TAKES PLACE.
LANDSCAPING & FINAL STABILIZATION (TOP SOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP)	STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE TEMPORARY CONTROL MEASURES AND STABILIZE.

RESPONSIBLE PARTY FOR EROSION CONTROL

COMPANY: LIONS TRAN INC.
NAME: MALHI KULWINDER
ADDRESS: 7655 E. US HWY 36
AVON, INDIANA 46123
PHONE: 317-989-1580

EROSION CONTROL NOTES:

SOIL EROSION CONTROL SUMMARY:

1. CONTRACTOR SHALL INSTALL SODDING, INLET PROTECTION, AND FILTERS AS SHOWN.

2. MASS GRADE THE SITE (SIDES OF SWALES, MOUNDS AND PONDS TO BE SODDED OR SEEDED AND MULCHED IMMEDIATELY UPON COMPLETION). TEMPORARY SEEDING SHALL BE RECOMMENDED FOR ALL SWALES AND DISTURBED AREAS THAT CANNOT BE FINAL SEEDED WITHIN A TIME PERIOD THAT WILL PREVENT SOIL EROSION, FOR TEMPORARY SEEDING THE CONTRACTOR SHALL UTILIZE A FAST GROWING SEED OF EITHER OATS, ANNUAL RYE GRASS, WHEAT OR RYE DEPENDING UPON TIME OF YEAR. DISTURBED AREAS SHOULD BE KEPT TO A MINIMUM AT ALL TIMES.

3. CONTRACTOR SHALL CONTROL MUD ACCUMULATION ON ALL STREETS SURROUNDING THE PROJECT BY INSTALLING STONE SURFACE AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC LEAVES THE SITE. DUST SHALL BE KEPT TO A MINIMUM BY UTILIZING SPRINKLING, CALCIUM CHLORIDE, VEGETATIVE COVER, SPRAY ON ADDITIVES OR OTHER APPROVED METHODS.

4. MAINTAIN ALL FILTERS DURING CONSTRUCTION TO PREVENT ANY BLOCKAGES FROM ACCUMULATED SEDIMENT. ADDITIONAL SEEDING MAY BE REQUIRED DURING CONSTRUCTION AS SPECIFIED BY ENGINEER OR SOIL CONSERVATION SERVICE, RIPRAP SHALL BE PLACED IN AREAS OF HIGH VELOCITY STREAM FLOW (MINIMUM SIZE 1/3 CU.FT.). PAYMENT FOR ADDITIONAL RIPRAP NOT SHOWN ON PLANS AND SEEDING SHALL BE ON A UNIT BASIS.

5. CONTRACTOR SHALL INSTALL ALL STORM SEWER INLET FILTERS AS STORM SEWER SYSTEM IS INSTALLED.

6. ALL PROPOSED STREET AREAS TO BE PAVED AS SOON AS POSSIBLE AFTER SUBGRADE IS PREPARED.

7. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS ONLY WHEN THERE IS SUFFICIENT GROWTH OF GROUND COVER TO PREVENT FURTHER EROSION.

8. ALL SWALES SHALL BE SEEDED AND SODDED (AS INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN) IMMEDIATELY AFTER FINAL GRADING.

9. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE INDIANA HANDBOOK FOR EROSION CONTROL IN DEVELOPING AREAS, MOST RECENT EDITION.

MAINTENANCE:

INSPECT PERIODICALLY, ESPECIALLY AFTER STORM EVENTS, UNTIL THE STAND IS SUCCESSFULLY ESTABLISHED. (CHARACTERISTICS OF A SUCCESSFUL STAND INCLUDE: VIGOROUS DARK GREEN OR BLUISH-GREEN SEEDLINGS; UNIFORM DENSITY WITH NURSE PLANTS, LEGUMES, AND GRASSES WELL INTER-MIXED; GREEN LEAVES; AND THE PERENNIALS REMAINING GREEN THROUGHOUT THE SUMMER, AT LEAST AT THE PLANT BASE.)

PLAN TO ADD FERTILIZER THE FOLLOWING GROWING SEASON ACCORDING TO SOIL TEST RECOMMENDATIONS.

REPAIR DAMAGED, BARE, OR SPARSE AREAS BY FILLING ANY GULLIES, RE-FERTILINZING, OVER- OR RE-SEEDING, AND MULCHING.

IF PLANT COVER IS SPARSE OR PATCHY, REVIEW THE PLANT MATERIALS CHOSEN, SOIL FERTILITY, MOISTURE CONDITION, AND MULCHING AFTER RE-PREPARING THE SEEDBED.

IF VEGETATION FAILS TO GROW, CONSIDER SOIL TESTING TO DETERMINE ACIDITY OR NUTRIENT DEFICIENCY PROBLEMS. (CONTACT YOUR SWCD OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE.)

IF ADDITIONAL FERTILIZATION IS NEEDED TO GET A SATISFACTORY STAND, DO SO ACCORDING TO SOIL TEST RECOMMENDATIONS.

EROSION CONTROL NOTES:

PRIOR TO ANY WORK BEING DONE, A TEMPORARY CONSTRUCTION ENTRANCE AND SILT FENCING SHALL BE INSTALLED.

AFTER COMPLETION OF A STORM STRUCTURE, THE CURB INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY.

UPON COMPLETION OF SWALES AND SIDE SLOPES, CONTRACTOR SHALL INSTALL THE EROSION CONTROL BLANKETS.

ALL AREAS NOT DENOTING PERMANENT SEEDING OR FIBER BLANKETS SHALL BE TEMPORARILY SEEDED.

THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR KEEPING THE EXISTING ROADWAYS CLEAR OF DIRT AND DEBRIS.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AS CONDITIONS WARRANT.

EROSION PROTECTION DURING CONSTRUCTION AND SEEDING:

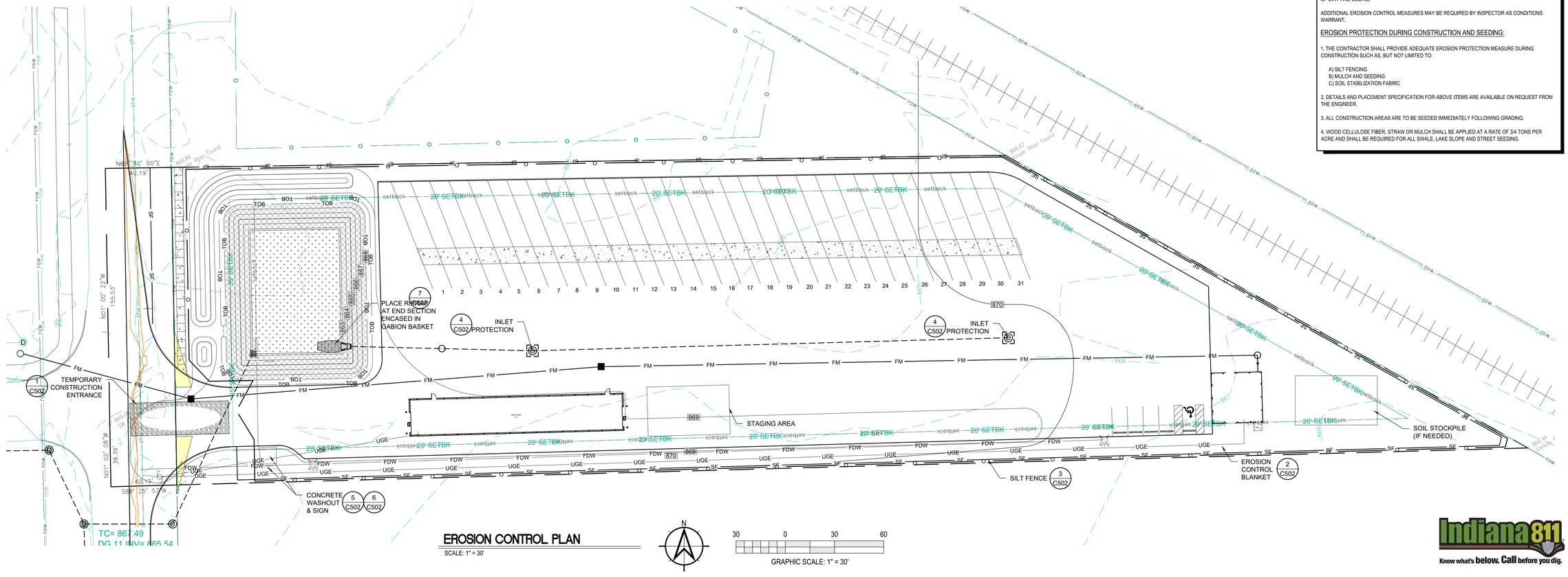
1. THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION PROTECTION MEASURE DURING CONSTRUCTION SUCH AS, BUT NOT LIMITED TO:

A) SILT FENCING
B) MULCH AND SEEDING
C) SOIL STABILIZATION FABRIC

2. DETAILS AND PLACEMENT SPECIFICATION FOR ABOVE ITEMS ARE AVAILABLE ON REQUEST FROM THE ENGINEER.

3. ALL CONSTRUCTION AREAS ARE TO BE SEEDED IMMEDIATELY FOLLOWING GRADING.

4. WOOD CELLULOSE FIBER, STRAW OR MULCH SHALL BE APPLIED AT A RATE OF 3/4 TONS PER ACRE AND SHALL BE REQUIRED FOR ALL SWALE, LAKE SLOPE AND STREET SEEDING.



EROSION CONTROL PLAN

SCALE: 1" = 30'

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EROSION CONTROL PLAN

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DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C302

Construction Storm Water General Permit Index Sheet

SECTION	TITLE	SHEET
A1	Index of the location of required plan elements in the construction plan	C000
A2	A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads	C000
A3	Narrative of the nature and purpose of the project	C303
A4	Latitude and longitude to the nearest fifteen (15) seconds	C000
A5	Legal description of the project site	C201
A6	11x17-inch plat showing building lot numbers/ boundaries and road layout/names	C303
A7	Boundaries of the one hundred (100) year flood plains, floodway fringes, and floodways	C301
A8	Land use of all adjacent properties	C303
A9	Identification of a U.S. EPA approved or established TMDL	C303
A10	Name(s) of the receiving water(s)	C303
A11	Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired	C303
A12	Soils map of the predominate soil types	C301
A13	Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)	C303
A14	Identification of any other state or federal water quality permits or authorizations that are required for construction activities	C303
A15	Identification and delineation of existing cover, including natural buffers	C301
A16	Existing site topography at an interval appropriate to indicate drainage patterns	C301
A17	Location(s) where run-off enters the project site	C301
A18	Location(s) where run-off discharges from the project site prior to land disturbance	C301
A19	Location of all existing structures on the project site	N/A
A20	Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of storm water management	N/A
A21	Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features	C303
A22	Size of the project area expressed in acres	C000
A23	Total expected land disturbance expressed in acres	C000
A24	Proposed final topography	C301
A25	Locations and approximate boundaries of all disturbed areas	C201
A26	Locations, size, and dimensions of all storm water drainage system such as culverts, storm water sewer, and conveyance channels	C301
A27	Locations of specific points where storm water and non-storm water discharges will leave the project site	C301
A28	Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas	C201
A29	Location of all on-site and off-site soil stockpiles and borrow areas	C302
A30	Construction support activities that are expected to be part of the project	N/A
A31	Location of any in-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds	N/A
B1	Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges	C303
B2	Stable construction entrance locations and specifications	C302
B3	Specifications for temporary and permanent stabilization	C302
B4	Sediment control measures for concentrated flow areas	C301
B5	Sediment control measures for sheet flow areas	C302
B6	Run off control measures	C302
B7	Storm water outlet protection location and specifications	C302/501
B8	Grade stabilization structure locations and specifications	N/A
B9	De-watering applications and management methods	C303
B10	Measures utilized for work within water bodies	N/A
B11	Maintenance guidelines for each proposed storm water quality measure	C303
B12	Planned construction sequence that describes the implementation of storm water quality measures in relation to land disturbance	C303
B13	Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project	N/A
B14	Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1	C303
B15	Material handling and storage procedures associated with construction activity	C303
C1	Description of pollutants and their sources associated with the proposed land use	C303
C2	Description of proposed post-construction storm water measures	C303
C3	Plan details for each storm water measures	C301/501
C4	Sequence describing storm water measure implementation	C303
C5	Maintenance guidelines for proposed post-construction storm water measures	C303
C6	Entity that will be responsible for operation and maintenance of the post-construction storm water measures	C302

NOTES:
"NA" - NON APPLICABLE

Construction Storm Water General Permit Notes Section A

A1 - Index of the location of required plan elements in the construction plan:

An index addressing the required elements within the drawing set is on C000 - Cover Sheet.

A2 - A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads:

A map showing the project in relationship to other areas of the county is on C000 - Cover Sheet.

A3 - Narrative of the nature and purpose of the project:

The project consists of the development of a new heavy duty asphalt parking lot with 36 truck and trailer stalls, a 2860 sq. ft. maintenance building, and 900 sq. ft. office building w/ employee parking. The site is located at 4005 North County Road 1000E in Brownsburg, Indiana 46112. Associated with the new improvements will be storm water management system consisting of overland flow, storm inlets, and retention/percolation basin with outlet control. (Shown on C303 - Construction Storm Water General Permit Notes).

A4 - Latitude and Longitude:

The latitude is 39°49'21"N and longitude is 86°20'42.19"W. (Shown on C000 - Cover Sheet)

A5 - Legal description of the project site:

A legal description of the overall parcel is on C201 - Site Plan

A6 - 11 x 17-inch plat showing building lot numbers/boundaries and road layout/names:

An 11x17 in. plan showing the overall property and new improvements is attached to this narrative.

A7 - Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways:

The 100 year floodway and floodway fringe is on C301 - Grading Plan and is based on best available information from the Indiana Department of Natural Resources.

A8 - Land use of all adjacent properties:

North - Commercial
South - Undeveloped/Woods
East - Railroad/Commercial
West - Residential/Agricultural
(Shown on C303 - Stormwater Pollution Prevention Plan)

A9 - Identification of a U.S. EPA approved or established TMDL:

Site to discharge stormwater into ground via percolation basin or through evaporation. Any dicharge via the emergency spillway will likely evaporate/percolate prior to being received by White Lick Creek (INW01D2_05) which is EPA 303d listed, but has no established TMDL (Shown on C304 - Construction Storm Water General Permit Notes)

A10 - Name(s) of the receiving water(s):

Receiving water is White Lick Creek (INW01D2_05) - (Shown on C303 - Stormwater Pollution Prevention Plan)

A11 - Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired:

The impaired condition of White Lick Creek is due to presence of Escherichia Coli (E. coli) (Noted on C304 - Construction Storm Water General Permit Notes)

A12 - Soils map of the predominate soil types:

The soils on this property are predominantly Brookston Silty Clay Loam-Urban Land Complex and Crosby Silt Loam.
Brookston Silty Clay Loam features wetness as the main limitation affecting use and management of this soil type. Crosby Silt Loam features slow permeability and available water capacity is high with moderate content of organic matter.

Both soils are fair to poor for use as subgrade material as well as shear strength, compaction, and stability, medium to high compressibility, moderate to low shrink-swell potential, subject to frost heave, and seasonal high water table. A soils map is on C301 - Grading Plan.

A13 - Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site (construction plan, existing site layout)

There are no known water courses on or adjacent to this site.

A14 - Identification on any other state or federal water quality permits or authorizations that are required for construction activities:

This phase of the project scope will not require any additional federal or state water permits as noted on C304 - Construction Storm Water General Permit Notes.

Construction Storm Water General Permit Notes Section A (cont'd)

A15 - Identification and delineation of existing cover, including natural buffers:

The site is almost entirely covered with thick/heavy vegetation and trees with partial remnants of an existing gravel drive. The delineation of the various surface coverage is on C301 - Grading Plan.

A16 - Existing site topography at interval appropriate to indicate drainage patterns:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing and proposed contours are on C301 - Grading Plan.

A17 - Location(s) where run-off enters the project site:

As referenced above, the topography in this area is largely flat resulting in little to no potential for run-off entering the site from adjacent property. The existing contours are on C301 - Grading Plan.

A18 - Location(s) where run-off discharges from the project site prior to land disturbances:

The existing site topography is largely flat with minor relief at the southeast of the site. The existing contours are on C301 - Grading Plan.

A19 - Location(s) of all existing structures on the project site:

The existing site is a vacant lot with no existing structures as depicted on C301 - Grading Plan.

A20 - Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management:

There are no existing retention facilities on site as depicted on C301 - Grading Plan.

A21 - Locations where storm water may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features:

There are no locations on property where storm water may directly discharge into the groundwater as illustrated on C301 - Grading Plan.

A22 - Size of the project expressed in acres:

The total project are if 3.07 acres as noted on C000 - Cover Sheet.

A23 - Total expected land disturbance expressed in acres:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet.

A24 - Proposed final topography:

The final topography is on C301 - Grading Plan and is illustrated as spot elevations and contours.

A25 - Locations and approximate boundaries of all disturbed areas:

The total disturbed area is 2.60 acres as noted on C000 - Cover Sheet and shown as the Limits of Construction on C201 - Site Plan.

A26 - Locations, size and dimensions of all stormwater drainage systems such as culverts, stormwater sewer, and conveyance channels:

The stormwater is conveyed by overland flow, underground storm pipes, and retention pond. These are shown on C301 - Grading Plan.

A27 - Locations of specific points where stormwater and non-stormwater discharges will leave the project site:

Stormwater discharge from the site will be via an emergency spillway from the retention pond at the east end of the site and sanitary discharge will be via a pump and force main at the west end of the site.(Shown on C301 - Grading Plan & C402 Sanitary Force Main Plan & Profile.

A28 - Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas:

All the surface improvements including buildings, impervious areas, new surface finishes, etc. are on C201 - Site Plan for horizontal notations and C301 - Grading Plan for elevations.

A29- Location of all on-site and off-site soil stockpiles and borrow areas:

The soil storage area will be on site located at the east end of the site (west of the pond). All soil will be placed in the final location or hauled off upon completion of construction as shown on C302 - Erosion Control Plan.

A30- Construction support activities that are expected to be part of the project

Any construction support area will be within the limits of disturbance and used as directed by the contractor. Since they are within the limits of disturbance, there will be no impact sensitive areas.

A31- Location of any on-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds:

There are no in stream activities associated with this project.

Construction Storm Water General Permit Notes Section B

B1- Description of the potential pollutant generating sources and pollutants, including all potential non-storm water discharges:

1. Concrete Washout Area: Specific concrete washout area shall be established and labeled.
   a) The specific concrete wash out will be in a provided lined roll off box at a specific location near the entrance to the job site.
   b) The lined roll off box will be placed on stable soil with a stone approach.
   c) Once the lined roll off box is full, it will be removed from the site and discarded as clean fill once solid. A new lined roll off box will replace the one removed.
2. Construction Mobile Equipment Fluid
   a) All fueling of equipment will be managed and completed on a stone surface.
   b) Daily observation of all equipment for inspection of leaks or potential leaks of any fluids.
   c) Any observed fluid leaks are to be handled immediately with the equipment being moved to a stable stone surface and placed out of operation until maintenance is completed.
   d) Spill kits are to be utilized once the equipment is moved to the stable stone surface to prevent leakage from penetrating the ground or impacting storm water runoff.
3. Construction Material Waste
   a) All material waste is to be placed in provided roll off boxes as it is generated.
   b) Full roll off boxes are to be removed and properly disposed of in a licensed facility.
   c) No debris is to be stored on the ground surface at any time.
   These items are noted on C303 - Stormwater Pollution Prevention Plan.

B2- Stable construction entrance locations and specifications:

A stable construction entrance consisting of compacted subgrade, filter fabric and #2 stone is to be used for all construction traffic entering / exiting the site. The stone surface is to be maintained with new stone as necessary to maintain a solid drive surface. The location of the temporary construction entrance is shown on C302 for plan view and Sheet C502 for detail.

B3- Specifications for temporary and permanent stabilization:

The provisions for temporary stabilization during construction as well as permanent stabilization are included in the drawing set. The information contains specific stabilization techniques for the conditions of the site as well as timing of installation.

For temporary construction stabilization, it is the Contractor responsibility to maintain the stabilization during the construction duration and until permanent stabilization is installed.

For permanent stabilization, it is expected installation to occur immediately after final grading of the soil surface. Permanent stabilization is to be maintained by the Owner until 75% effective cover is established on the soil surface.

The stabilization is noted on C302 - Erosion Control Plan.

B4- Sediment control measures for concentrated flow areas:

The concentrated flow is protected at the pond inlet with riprap of minimum size being 6 inches and at the emergency spillway with stone dam as shown on C301 - Grading Plan and details on C501 & C502 - Sections and Details.

B5- Sediment control measures for sheet flow areas:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B6- Run-off control measures:

Sediment control for sheet flow is handled at the project perimeter with silt fence. (Shown on C302 - Erosion Control Plan).

B7- Stormwater outlet protection location and specifications:

The concentrated flow is protected at the pond outlet with the previously mentioned rock dam as shown on C302 - Erosion Control Plan.

B8- Grade stabilization structure locations and specifications:

The grade on the site is largely flat and remain so post construction. There are no stabilization structures planned for this project as illustrated on C301 - Grading Plan.

B9- Dewatering applications and management methods:

Any dewatering required will be directed to the low area of the site (east) where it can percolate into existing soil. The use of sump pumps can be used to dewater where necessary. (Noted C303 - Stormwater Pollution Prevention Plan)

B10- Measures utilized for work within waterbodies:

This is not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B11- Maintenance guidelines for each proposed stormwater quality measure:

Silt fence both surrounding the site and at each protected inlet is to be inspected weekly and after storm events. Breaks, tears, or damaged silt fence is to be replaced immediately. Erosion control blankets are to be inspected weekly and after storm events. Damaged areas are to be repaired by re-securing displaced matting, replacing torn areas, and or removing debris to ensure vegetation growth. Concrete washouts are to be inspected daily to ensure there are no tears, structural damage, or leaks. Damaged concrete washouts are to be repaired.

B12- Planned construction sequence that describes the implementation of stormwater quality measures in relation to land disturbance:

The construction sequence for installation of the erosion control measures and stormwater pollution prevention devices are detailed on C302 - Erosion Control Plan. A pre-construction meeting is to be scheduled with the Town of Brownsburg a minimum of 48 hours prior to the start of construction. Per the IDEM CSGP Section 6.4(a)(9)(B) a notice of termination shall be verified by the local MS4 before submittal to IDEM. The town of Brownsburg shall be contacted prior to filing of the Notice of Termination to verify eligibility, for termination of permit coverage.

B13- Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project:

Not applicable to this project. (Noted C303 - Stormwater Pollution Prevention Plan)

B14- Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1:

The potential materials on site that could cause a spill response include fuels, petroleum fluids or other liquids as part of the construction equipment on site. If a spill occurs, immediate determination of the extent and emergency response requirements should be determined. Immediate containment of the spill with onsite spill kits should be completed. Once the spill is contained, contact is to be made to the Indiana Dept. of Environmental Mgmt., Office of Land Quality, Emergency Response Section: 1-888-233-7745 for in-state calls (toll free) within two hours of the spill. The contact should include the likelihood of damage to the waterways of the State of Indiana. This information is noted on C303 - Stormwater Pollution Prevention Plan.

B15- Material handling and storage procedures associated with construction activity:

All construction debris and wastes are to be loaded directly into provided roll off boxes for proper disposal off site. In no terms is debris or waste to be stored on site awaiting disposal or burned on property. Liquid wastes such as concrete wash out is to be disposed in the appropriate concrete wash out lined roll off boxes as provided. This includes any mortar/masonry/concrete grout material. Once these containers are full, they are to be removed from the site and disposed of in a licensed facility. Roll off boxes are to be rotated empty for full boxes for the entire project duration.

Construction Storm Water General Permit Notes Section C

C1- Description of pollutants and their sources associated with the proposed land use:

The post construction land use will have potential contaminants such as fuels, oils, grease, tires and other mobile equipment fluids. All materials, including mobile equipment will be stored on impervious surfaces during non-use or operation. (Noted on C303 - Stormwater Pollution Prevention Plan)

C2- Description of proposed post-construction stormwater measures:

The post construction contaminants are minimized by impervious surfaces being directed to a hydrodynamic separator designed to collect sediment and pollutants prior to entering the bioretention pond. This helps alleviate any debris that may overtop the emergency spillway. (Noted C303 - Stormwater Pollution Prevention Plan)

C3- Plan details for each stormwater measure:

The post construction stormwater measures is primarily a hydrodynamic separator and bioretention pond as shown on C301 - Grading Plan and L101 - Landscape Plan.

C4- Sequence describing stormwater measure implementation:

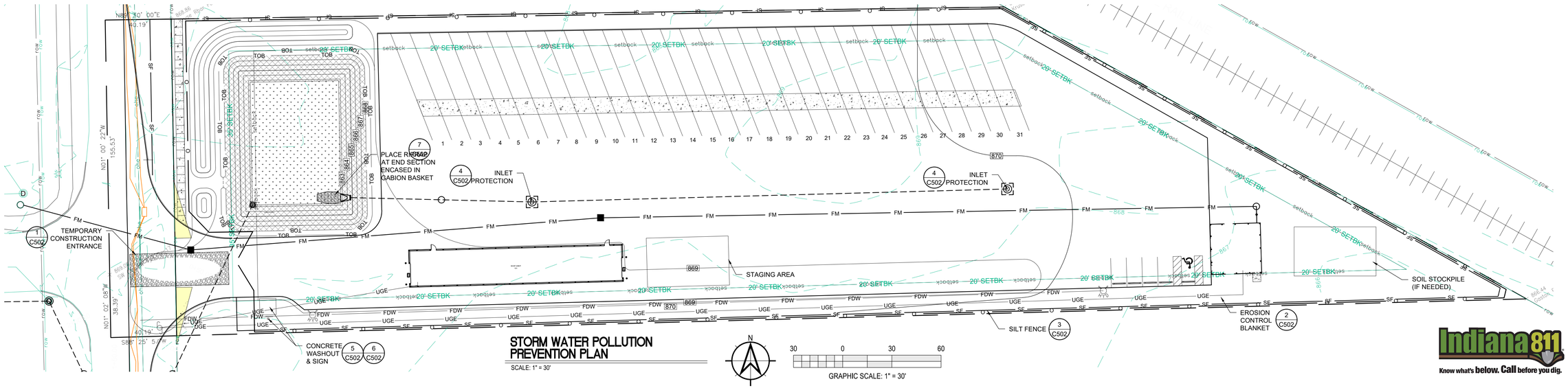
The sequence of installation for the post construction stormwater measure is part of construction sequencing shown C302 - Erosion Control Plan.

C5- Maintenance guidelines for proposed post-construction stormwater measures:

An operations and maintenance manual are part of the submittal information under separate documentation.

C6- Entity that will be responsible for operation and maintenance of the post-construction stormwater measures:

The responsible person for the post construction stormwater measures is the property owner as noted on C302 - Erosion Control Plan.



STORM WATER POLLUTION PREVENTION PLAN

SCALE: 1" = 30'

GRAPHIC SCALE: 1" = 30'

Indiana 811 Know what's below. Call before you dig.

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)

4005 N CR 1000 E
BROWNSBURG, IN 46122

STORM WATER POLLUTION PREVENTION PLAN

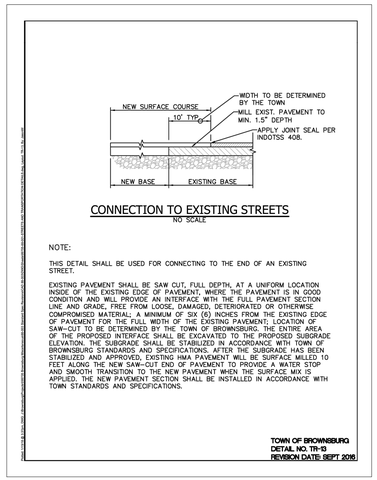
BRYAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER

Bryan E. Moench

REVISIONS:

0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C303



CONNECTION TO EXISTING STREETS
NO SCALE

NOTE:

THIS DETAIL SHALL BE USED FOR CONNECTING TO THE END OF AN EXISTING STREET.

EXISTING PAVEMENT SHALL BE SAW CUT, FULL DEPTH, AT A UNIFORM LOCATION INSIDE OF THE EXISTING EDGE OF PAVEMENT, WHERE THE PAVEMENT IS IN GOOD CONDITION AND WILL PROVIDE AN INTERFACE WITH THE FULL PAVEMENT SECTION LINE AND GRADE, FREE FROM LOOSE, DAMAGED, DETERIORATED OR OTHERWISE COMPROMISED MATERIAL. A MINIMUM OF SIX (6) INCHES FROM THE EXISTING EDGE OF PAVEMENT FOR THE FULL WIDTH OF THE EXISTING PAVEMENT; LOCATION OF SAW-CUT TO BE DETERMINED BY THE TOWN OF BROWNSBURG. THE ENTIRE AREA OF THE PROPOSED INTERFACE SHALL BE EXCAVATED TO THE PROPOSED SUBGRADE ELEVATION. THE SUBGRADE SHALL BE STABILIZED IN ACCORDANCE WITH TOWN OF BROWNSBURG STANDARDS AND SPECIFICATIONS. AFTER THE SUBGRADE HAS BEEN STABILIZED AND APPROVED, EXISTING HMA PAVEMENT WILL BE SURFACE MILLED 10 FEET ALONG THE NEW SAW-CUT END OF PAVEMENT TO PROVIDE A MATER STOP AND SMOOTH TRANSITION TO THE NEW PAVEMENT WHEN THE SURFACE MIX IS APPLIED. THE NEW PAVEMENT SECTION SHALL BE INSTALLED IN ACCORDANCE WITH TOWN STANDARDS AND SPECIFICATIONS.

TOWN OF BROWNSBURG
DETAIL NO. TR-13
REVISION DATE: SEPT 2016

HANDICAP RAMP
NOT TO SCALE — 11 / C501

SECTION 02504 – ADJACENT ROADWAY IMPROVEMENTS

PART 1 - GENERAL

1.01 Roadways adjacent to proposed developments shall conform to the following requirements and standards.

A. Adjacent Roadway Improvements

1. Developers shall be responsible for improvements to the existing roadway(s) that front their property. These improvements shall include, but are not limited to, the following items:
   a. Construction of acceleration lanes, deceleration lanes, and passing blisters for each entrance or street intersection as indicated in the Standard Details.
   b. In order to construct adequate acceleration lanes, deceleration lanes, and passing blisters, right-of-way shall be obtained which has a width consistent with the most current accepted Thoroughfare Plan.
   c. The existing roadway along the development frontage shall be widened to match the width requirements based on the functional classification of the roadway as defined by the Thoroughfare Plan. Once widened, the entire roadway fronting the development shall be resurfaced for consistency.
2. Additional improvements may be required depending on field conditions and as determined by the Town of Brownsburg.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

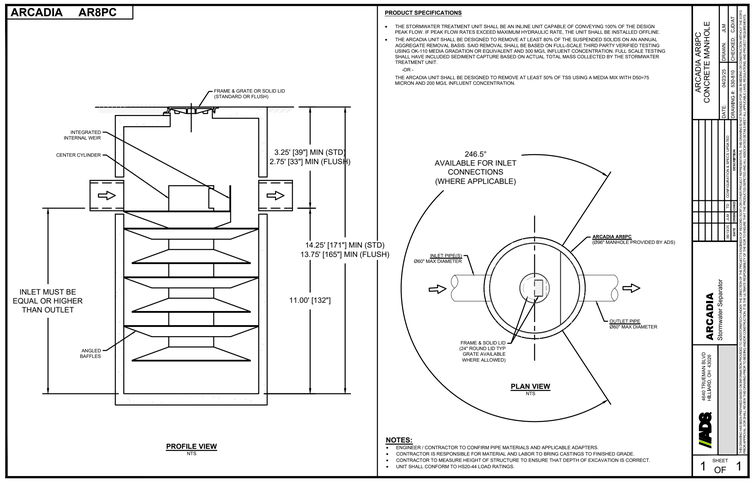
PART 4 - FIGURES

4.01 Associated Standard Details

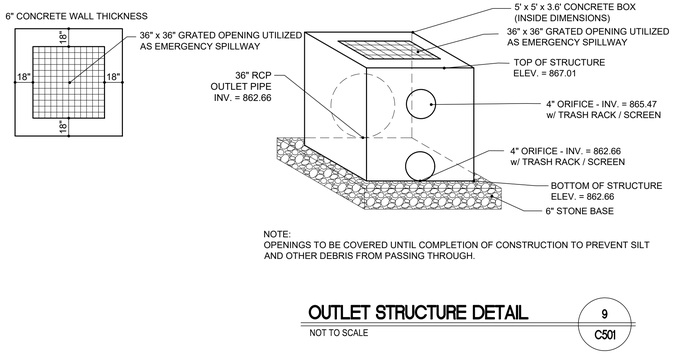
Detail No.	Description
TR-01	Concrete Chair Back Curb & Gutter
TR-02	Concrete Roll Curb & Gutter
TR-03	Driveway Curb Cut
TR-04	Curb Inlet Detail
TR-05	Concrete Center Curb
TR-09	Concrete Driveway
TR-13	Connection to Existing Streets
TR-14	Widening Detail
TR-16	Minimum Entrance Requirements

TR-17	Roadway Improvements at New Development Entrances
RS-01	Typical Cross Sections – Primary Arterials A1 and A2
RS-02	Typical Cross Sections – Primary Arterials B1 and B2
RS-03	Typical Cross Sections – Primary Arterials C1 and C2
RS-04	Typical Cross Sections – Secondary Arterials 1 and 2
RS-05	Typical Cross Sections – Collectors 1 and 2
RS-06	Typical Cross Sections – Neighbor Collectors 1 and 2
RS-07	Typical Cross Sections – Local 1 (No Parking), Local 2 (Parking Both Sides) and Local 3 (Parking One Side)
RS-08	Typical Trail Cross Section
RS-09	Typical Cross Section – Local Street with Roadside Ditch
RS-10	Typical Cross Sections – Local Alternatives

END OF SECTION 02504

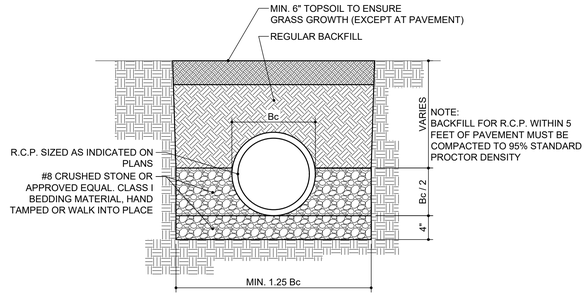


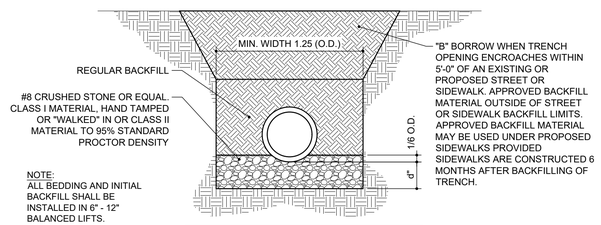
ARCADIA AR8 HYDRODYNAMIC SEPARATOR DETAIL
NOT TO SCALE — 10 / C501



NOTE:
OPENINGS TO BE COVERED UNTIL COMPLETION OF CONSTRUCTION TO PREVENT SILT AND OTHER DEBRIS FROM PASSING THROUGH.

OUTLET STRUCTURE DETAIL
NOT TO SCALE — 9 / C501





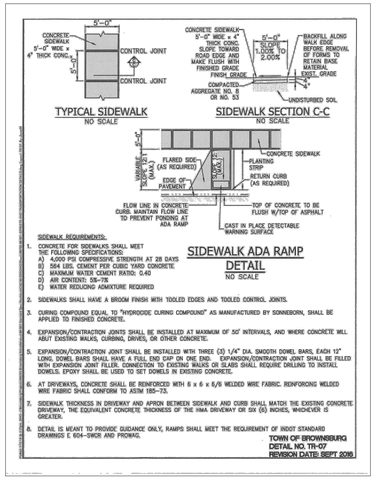
NOTE:
ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 6" - 12" BALANCED LIFTS.

Bc = OUTSIDE DIAMETER
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

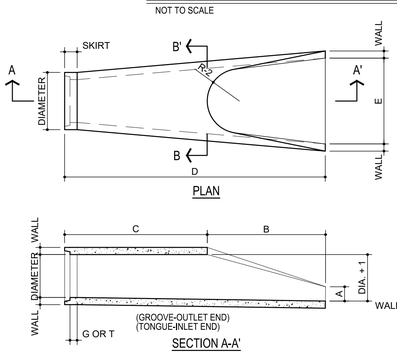
A MIN. 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

PIPE SIZE (D)	27" OR LESS	30" TO 60"	66" AND UP
BEDDING BELOW THE PIPE BARREL 6" MINIMUM	3"	4"	6"

R.C.P. PIPE TRENCH DETAIL
NOT TO SCALE — 8 / C501



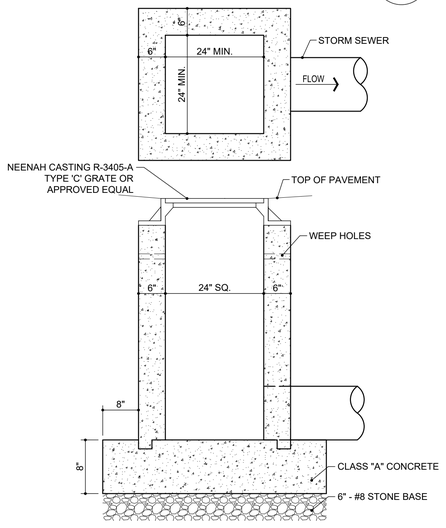
HANDICAP RAMP
NOT TO SCALE — 7 / C501



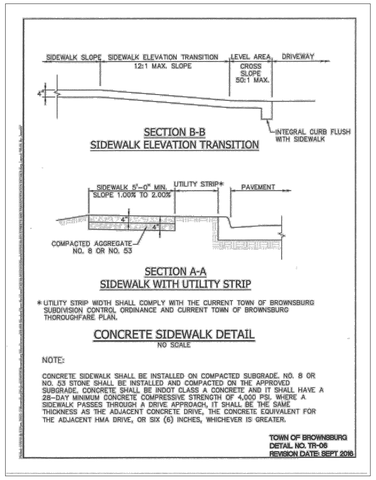
SIZE SCHEDULE											
DIA.	WALL	G or T	WT. SEC	A	B	C	D	E	DIA.+1	R-1	R-2	SKIRT
12	2	1~8	530	4	24	48~1	72~1	24	13	10~1	9	3~8
15	2~4	2	740	6	27	46	73	30	16	12~8	11	3~8
18	2~8	2~8	990	9	27	46	73	36	19	15~8	12	4
21	2~∞	2~4	1280	9	35	38	73	42	22	16~2	13	4
24	3	2~8	1520	9~8	43~8	30	73~8	48	25	16~q	14	4~8

NOTE: MANUFACTURER OF END SECTION IS IN ACCORDANCE WITH APPLICABLE PORTIONS OF A.S.T.M. SPECIFICATION C76.

CONCRETE END SECTION
NOT TO SCALE — 6 / C501



TYPA 'E' MODIFIED STORM CATCHBASIN
3/4" = 1'-0" — 5 / C501



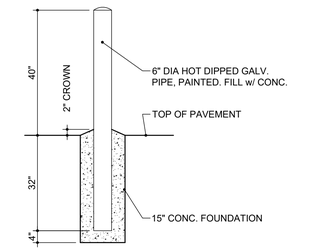
CONCRETE SIDEWALK DETAIL
NO SCALE

NOTE:

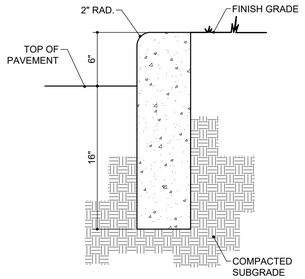
CONCRETE SIDEWALK SHALL BE INSTALLED ON COMPACTED SUBGRADE. NO. 8 OR NO. 53 STONE SHALL BE INSTALLED AND COMPACTED ON THE APPROVED SUBGRADE. CONCRETE SHALL BE INDOT CLASS A CONCRETE AND IT SHALL HAVE A 28-DAY MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4,000 PSI. WHERE A SIDEWALK PASSES THROUGH A DRIVE APPROACH, IT SHALL BE THE SAME THICKNESS AS THE ADJACENT CONCRETE DRIVE. THE CONCRETE EQUIVALENT FOR THE ADJACENT HMA DRIVE, OR SIX (6) INCHES, WHICHEVER IS GREATER.

TOWN OF BROWNSBURG
DETAIL NO. TR-06
REVISION DATE: SEPT 2016

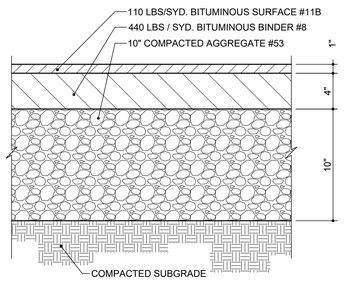
CONCRETE SIDEWALK
NOT TO SCALE — 4 / C501



PIPE BOLLARD
1/2" = 1'-0" — 3 / C501



STRAIGHT CURB
1 1/2" = 1'-0" — 2 / C501



HEAVY DUTY ASPHALT
1 1/2" = 1'-0" — 1 / C501

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4000 Clarks Creek Road
Plainfield, Indiana 46168
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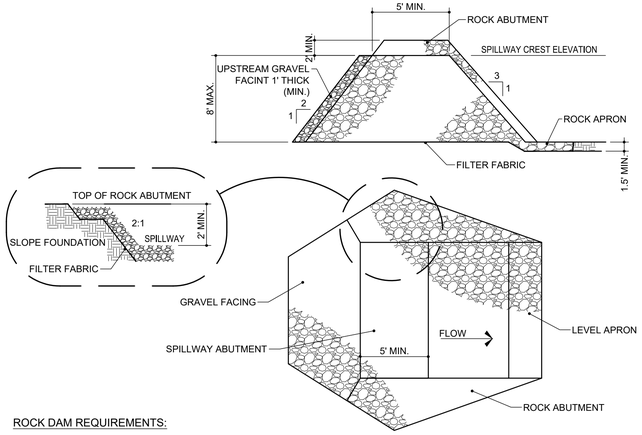
4005 N CR 1000 E
BROWNSBURG, IN 46122

SECTIONS AND DETAILS

BRIAN EDWARD MOENCH — REGISTERED — No. PE9500048 — STATE OF INDIANA — PROFESSIONAL ENGINEER

REVISIONS:		
0	SUBMITTED FOR REVIEW	11/5/21
1	REVISED PER ISDH COMMENTS	12/3/21
2	REVISED TO ABOVE GROUND STORAGE	1/12/22
3	REVISED per TOWN COMMENTS	9/09/24
4	REVISED per TOWN COMMENTS	12/11/24
5	Revised Storm Outlet	9/26/25

DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C501



ROCK DAM REQUIREMENTS:

1. CONTRIBUTING DRAINAGE AREA: 50 ACRES MAXIMUM

2. DESIGN LIFE: LIMITED TO 3 YRS.

3. SEDIMENT STORAGE: 1,800 CU.FT./ACRE DISTURBED (MINUMUM) MEASURED 1 FT. BELOW SPILLWAY CREST.

4. BASIN SHAPE: MINIMUM 2:1 LENGTH-TO-WIDTH RATIO.

5. BASIN AREA: VARIABLE; THE LARGER THE SURFACE AREA THE GREATER THE TRAPPING EFFICIENCY.

6. DAM CREST HEIGHT: LIMITED TO 8 FT.

7. SPILLWAY CAPACITY: PEAK RUNOFF FROM A 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT, A MAXIMUM FLOW DEPTH OF 1 FT. AND MINIMUM FREEBOARD OF 1 FT. (ENTIRE LENGTH OF DAM BETWEEN ROCK ABUTMENTS MAY SERVE AS SPILLWAY.)

8. DAM DIMENSIONS: TOP WIDTH, 5 FT. MINIMUM; SIDE SLOPES, 2:1 OR FLATTER UPSTREAM, 3:1 OR FLATTER DOWNSTREAM.

9. EARTH ABUTMENTS: SMOOTH, STABLE, 2:1 OR FLATTER SLOPES.

10. ROCK ABUTMENTS (TO PROTECT EARTH ABUTMENTS): EXTENDED ALONG DOWNSTREAM FACE TO TOE OF DAM AND AT LEAST 1 FT. HIGHER THAN SPILLWAY FACE AT ALL POINTS, 2 FT. ABOVE SPILLWAY CREST, AND 1 FT. THICK, WITH 2:1 OR FLATTER SIDE SLOPES.
11. OUTLET PROTECTION: ROCK APRON, 1-1/2 FT. THICK (MINIMUM), ZERO GRADE, WITH LENGTH EQUAL TO HEIGHT OF DAM OR EXTENDED TO STABLE GRADE, WHICHEVER IS GREATER.

12. ROCK MATERIAL: INDOT REVETMENT RIPRAP.

13. PROTECTION FROM PIPING: GEOTEXTILE FABRIC FOR SEPARATION AND FILTRATION COVERING ENTIRE FOUNDATION, INCLUDING EARTH ABUTMENTS AND APRON.

14. BASIN DE-WATERING: THROUGH A 1 FT. THICK LAYER OF INDOT CA NO. 5 STONE ON UPSTREAM FACE OF THE DAM.

INSTALLATION

SITE PREPARATION:

1. DIVERT RUNOFF FROM UNDISTURBED AREAS AWAY FROM THE ROCK DAM AND BASIN AREA.

2. EXCAVATE THE FOUNDATION FOR THE APRON, USING IT AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION OF THE DAM.

3. CLEAR AND GRUB THE AREA UNDER THE DAM, REMOVING AND PROPERLY DISPOSING OF ALL ROOT MAT, BRUSH, AND OTHER DEBRIS.

4. GRADE THE EARTH ABUTMENTS NO STEEPER THAN 2:1.

DAM AND BASIN CONSTRUCTION

1. EXCAVATE A CUTOFF TRENCH AT THE CENTER LINE OF THE DAM, EXTENDING ALL THE WAY UP THE EARTH ABUTMENTS, AND BACKFILL WITH COMPACTED EARTH FILL.

2. SMOOTH THE DAM FOUNDATION.

3. COVER THE ENTIRE FOUNDATION, INCLUDING BOTH EARTH ABUTMENTS, WITH GEOTEXTILE FABRIC, MAKING SURE THE UPSTREAM STRIPS OVERLAP THE DOWNSTREAM STRIPS AT LEAST 1 FT.

4. CONSTRUCT THE DAM TO PLANNED DIMENSIONS.

5. ONCE THE DAM IS IN PLACE, CLEAR THE SEDIMENT BASIN AREA, PROPERLY DISPOSING OF THE CLEARED MATERIAL.

6. SET A MARKER STAKE TO INDICATE THE CLEANOUT ELEVATION (I.E., POINT AT WHICH THE BASIN IS 50% FULL OF SEDIMENT).

7. DIVERT CONSTRUCTION SITE RUNOFF FLOW INTO THE UPPER END OF THE BASIN USING TEMPORARY DIVERSIONS.

8. STABILIZE ALL DISTURBED AREAS EXCEPT THE LOWER HALF OF THE BASIN.

SAFETY PRECAUTIONS:

1. BECAUSE SEDIMENT BASINS THAT IMPOUND WATER ARE HAZARDOUS, (A) BE SURE SIDE SLOPES ARE 2:1 OR FLATTER, (B) FENCE WITH WARNING SIGNS IF TRESPASSING IS LIKELY, (C) DE-WATER THE BASIN BETWEEN STORM EVENTS, AND (D) FOLLOW ALL STATE AND LOCAL IMPOUNDMENT SITE REQUIREMENTS.

MAINTENANCE

1. INSPECT THE ROCK DAM AND BASIN AFTER EACH STORM EVENT.

2. REMOVE SEDIMENT WHEN IT ACCUMULATES TO HALF THE DESIGN VOLUME (MARKED BY A STAKE).

3. CHECK THE DAM AND ABUTMENTS FOR EROSION, PIPING, OR ROCK DISPLACEMENT, AND REPAIR IMMEDIATELY.

4. IF THE BASIN DOES NOT DRAIN BETWEEN STORMS, REPLACE THE STONE ON THE UPSTREAM FACE OF THE DAM.

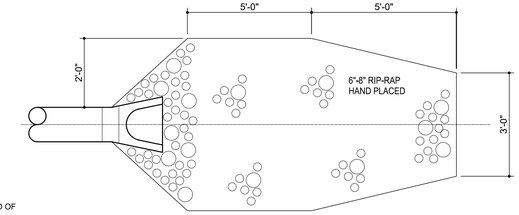
5. IF THE BASIN DRAINS TOO RAPIDLY FOLLOWING A STORM (I.E., LESS THAN 6 HRS.), ADD INDOT CA NO. 5 GRAVEL ON THE UPSTREAM FACE OF THE DAM.

6. ONCE THE CONTRIBUTING ŷŷŷŷŷŷŷŷDRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, (A) REMOVE WATER AND SEDIMENT FROM THE BASIN;

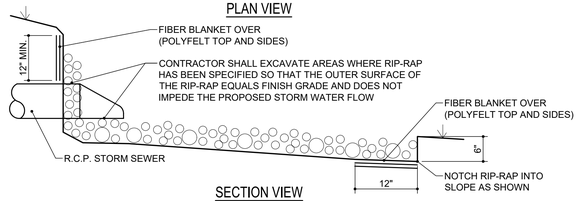
(B) REMOVE THE DAM, DISPOSING OF THE ROCK IN DESIGNATED DISPOSAL AREAS; (C) SMOOTH THE SITE TO BLEND WITH THE SURROUNDING AREA; AND (D) STABILIZE.

COMMON CONCERNS:
FAILURE FROM PIPING ALONG ABUTMENTS-BECAUSE THE FILTER MATERIAL WAS NOT PROPERLY INSTALLED OR THE EARTH ABUTMENTS ARE TOO STEEP. STONE DISPLACEMENT FROM FACE OF DAM-BECAUSE STONE SIZE IS TOO SMALL OR THE FACE IS TOO STEEP. EROSION BELOW DAM BECAUSE THE APRON WAS NOT EXTENDED TO STABLE GRADE. EROSION OF ABUTMENTS DURING SPILLWAY FLOW-BECAUSE THE ROCK ABUTMENT IS NOT HIGH ENOUGH. SEDIMENT CARRIED THROUGH SPILLWAY-BECAUSE THE DRAINAGE AREA IS TOO LARGE; TO SOLVE, DIVERT RUNOFF FROM THE UNDISTURBED AREA AWAY FROM THE BASIN. SEDIMENT LOSS THROUGH DAM-BECAUSE THE LAYER OF AGGREGATE ON THE UPSTREAM FACE IS NOT THICK ENOUGH OR IS TOO COARSE TO RESTRICT FLOW THROUGH THE DAM.

ROCK DAM
NOT TO SCALE — 8 — C502



PLAN VIEW



SECTION VIEW

RIP-RAP REQUIREMENTS:

CONTRIBUTING DRAINAGE AREA: 100 ACRES MAXIMUM.

CAPACITY: PEAK RUNOFF FROM 10-YR. FREQUENCY, 24-HR. DURATION STORM EVENT.

APRON: DESIGN DEPENDS ON CHANNEL DEFINITION, BUT IS LONG ENOUGH TO DISSIPATE RUNOFF ENERGY, SET ON ZERO GRADE, STRAIGHT AND ALIGNED WITH THE RECEIVING STREAM. (IF SITE CONDITIONS REQUIRE A CURVE, SET IT NEAR THE UPSTREAM END.)

FOUNDATION: GEOTEXTILE FABRIC FOR STABILIZATION AND FILTRATION OR WELL-GRADED GRAVEL FILTER LAYER AT LEAST 6 IN. THICK.

MATERIAL: HARD, ANGULAR, AND HIGHLY WEATHER-RESISTANT RIPRAP STONE OF 6 - 8 INCHES IN SIZE.

THICKNESS: 12 IN. MINIMUM OR TWO TIMES THE D 50 STONE DIAMETER,wHICHEVER IS GREATER.

INSTALLATION:

1. EXCAVATE THE APRON AREA SUBGRADE BELOW DESIGN ELEVATION TO ALLOW FOR THICKNESS OF THE FILTER (OR GRAVEL LAYER) AND THE RIPRAP. (THIS OVER-EXCAVATION GREATLY INCREASES THE AMOUNT OF SPOIL.)

2. COMPACT ANY FILL USED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL, AND SMOOTH ENOUGH TO PROTECT FABRIC FROM TEARING.

3. PLACE THE GEOTEXTILE FABRIC (OR GRAVEL LAYER) ON THE COMPACTED AND SMOOTHED FOUNDATION. IF MORE THAN ONE FABRIC PIECE IS NEEDED, THE UPSTREAM PIECE SHOULD OVERLAP THE DOWNSTREAM PIECE BY AT LEAST 1 FT.

4. INSTALL THE RIPRAP TO THE LINES AND ELEVATIONS SHOWN IN THE DESIGN. IF THE CHANNEL IS POORLY DEFINED, THE FINAL CROSS-SECTION SHOULD BE LEVEL OR SLIGHTLY DEPRESSED IN THE MIDDLE; IF WELL DEFINED, THE FILTER (OR GROUND LAYER) AND RIPRAP SHOULD EXTEND TO THE TOP OF THE BANK.

5. IF THE GEOTEXTILE FABRIC TEARS WHEN PLACING TH RIPRAP, REPAIR IMMEDIATELY BY LAYING AND STAPLING A PIECE OF FABRIC OVER THE DAMAGE AREA, OVERLAPPING THE UNDAMAGED AREAS BY AT LEAST 12 INCHES.

6. MAKE SURE THE TOP OF THE RIPRAP APRON IS LEVEL WITH OR SLIGHTLY BELOW THE RECEIVING STREAM. (RIPRAP SHOULD NOT RESTRICT THE CHANNEL OR PRODUCE AN OVERFALL.)

7. BLEND THE RIPRAP SMOOTHLY TO THE SURROUNDING GRADE.

8. STABILIZE ALL DISTURBED AREAS IMMEDIATELY FOLLOWING INSTALLATION.

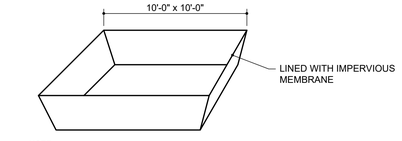
MAINTENANCE:

* INSPECT ROCK CHUTES AFTER STORM EVENTS FOR STONE DISPLACEMENT AND FOR EROSION AT THE SIDES AND ENDS OF THE APRON.
* MAKE NEEDED REPAIRS IMMEDIATELY; USE APPROPRIATE SIZE STONE; AND DO NOT PLACE THEM ABOVE FINISHED GRADE.

COMMON CONCERNS:

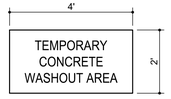
FOUNDATION NOT EXCAVATED DEEP ENOUGH OR WIDE ENOUGH--RIPRAP RESTRICTS THE FLOW CROSS SECTION, RESULTING IN EROSION AROUND THE APRON AND SCOUR HOLES AT THE OUTLET.
RIPRAP APRON ON ZERO GRADE--

RIP-RAP DETAIL
NOT TO SCALE — 7 — C502



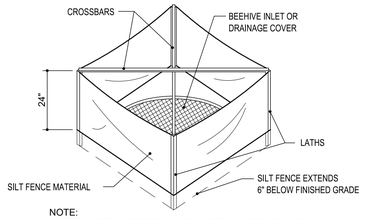
NOTE:
1. A LINED ROLLOFF DUMPSTER OR CONTAINER TO BE USED IN LIEU OF A CONSTRUCTED WASHOUT BASIN.

CONCRETE WASHOUT BASIN
NOT TO SCALE — 6 — C502



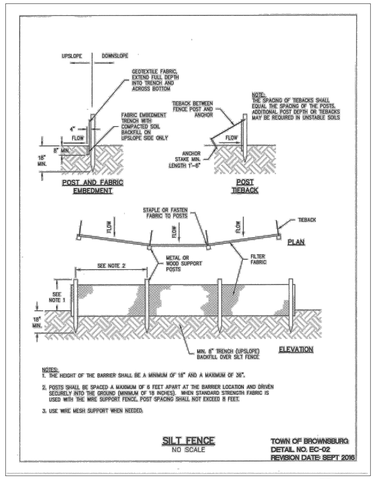
NOTES:
1. SIGN TO BE POSTED THROUGHOUT CONSTRUCTION ACTIVITY.
2. SIGN TO BE MADE OF SEMI-PERMANENT MATERIAL, i.e. WOOD.

CONCRETE WASHOUT SIGN
NOT TO SCALE — 5 — C502

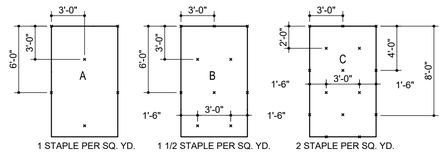


NOTE:
1. SEE SILT FENCE DETAIL FOR MATERIAL SPECIFICATIONS.
2. SILT FENCE SHALL BE PREASSEMBLED BY SUPPLIER.

SILT FENCE INLET PROTECTION DETAIL
NOT TO SCALE — 4 — C502

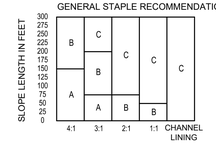


SILT FENCE DETAIL
NOT TO SCALE — 3 — C502

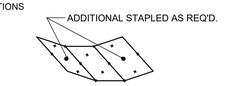


1 STAPLE PER SQ. YD. | 1 1/2 STAPLE PER SQ. YD. | 2 STAPLE PER SQ. YD.

GENERAL STAPLE RECOMMENDATIONS



SLOPE GRADIENT



CHANNEL LININGS UTILIZE STAPLE PATTERN "C" WITH ADDITIONAL STAPLES ON SIDE SLOPES.

NOTES:
1. STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION BLANKETS.

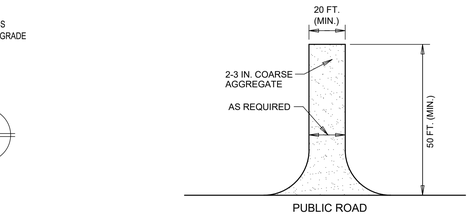
2. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE ANNUAL RAINFALL.

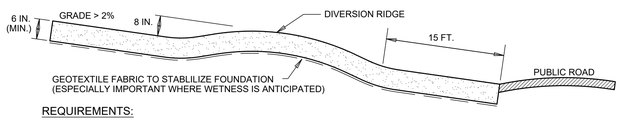
3. AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO BLANKETS, STAPLE PATTERN "C" SHOULD BE UTILIZED.

4. CHANNEL LININGS REQUIRE A 2' (MIN.) OVERLAP AT LONGITUDINAL JOINTS AND SIDE SLOPES REQUIRE A 6" (MIN.) OVERLAP. WHERE OVERLAPS OCCUR, THE UPSTREAM BLANKET SHALL OVERLAP THE DOWNSTREAM.

5. NORTH AMERICAN GREEN S150BN TO BE USED FOR EROSION CONTROL BLANKETS.

EROSION CONTROL BLANKET STAPLE PATTERN
NOT TO SCALE — 2 — C502





REQUIREMENTS:

Material: 2-3 in. washed stone (INDOT CA No.2) over a stable foundation.

Thickness: 6 in. minimum

Width: 12 ft. minimum or full width of entrance/exit roadway, whichever is greater.

Length: 50 ft. minimum. The length can be shorter for small sites such as for an individual home.

Washing facility (optional): Level area with 3 in washed stone minimum or a commercial rack, and waste water diverted to a sediment trap or basin.

Geotextile fabric underliner: May be used under wet conditions or for soils within a high seasonal water table to provide greater bearing strength.

INSTALLATION:

1. Avoid locating on steep slopes or at curves in public roads.

2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.

3. If slope towards the road exceeds 2%, construct a 6-8 in.-high water bar (ridge) with 3:1 side slopes across the foundation area about 15 ft. from the entrance to divert runoff away from the road.

4. Install pipe under the pad if needed to maintain proper public road drainage.

5. If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.

6. Place stone to dimensions and grade shown in the erosion control plan, leaving the surface smooth and sloped for drainage.

7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

MAINTENANCE:

* Inspect entrance drive and sediment disposal area weekly and after storm events or heavy use.
* Reshape pad as needed for drainage and runoff control.
* Topdress with clean stone as needed.
* Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin.
* Repair any broken road pavement immediately.

COMMON CONCERNS:

Inadequate runoff control--results in sediment washing onto road.
Stone too small, pad too thin, or geotextile fabric absent--results in ruts and a muddy condition as stone is pressed into the soil: add more stone.
Pad too short for heavy construction traffic--extend the pad beyond the 50-ft. length as needed.
Pad not flared sufficiently at road entrance--results in mud being tracked onto the road and possible damage to the road edge: widen stone entrance and repair road damage.
Unstable foundation--use geotextile fabric under th pad and/or improve foundation drainage.

TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE — 1 — C502

Moench Engineering
4000 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-2767
(317) 837-7266 (Fax)

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LIONS TRANS INC. (BROWNSBURG)
4005 N CR 1000 E
BROWNSBURG, IN 46122

SECTIONS AND DETAILS

BRIAN EDWARD MOENCH REGISTERED No. PE9500048 STATE OF INDIANA PROFESSIONAL ENGINEER
Susan E. Neal

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0	SUBMITTED FOR REVIEW	11/5/21
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DRAWN BY:	JBF
CHECKED BY:	BEM
PROJECT NUMBER:	21346
DATE:	1/13/22
SHEET NUMBER:	C502

Appendix B

Inspection Schedule			
Inspection Frequency	**Maintenance Item**	**Maintenance Follow-up**	**Action Taken**
Annual & Post Major Storm Event		Vegetation	Routine mowing to a minimum 3 in.
Semi -Annually & Post Major Storm Events	Pond Banks	Erosion on Embankment	Erosion Control Measure will be repaired immediately
Semi-Annually & Post Major Storm Events	Pond Banks	Animal Burrows	Burrows should be removed at the time of routine mowing
Annually & Post Major Storm Events	Drains	Drains Clear & Functioning	Drains shall be inspected to ensure positive drainage
		Leaks or Seeps	Leaks shall be repaired immediately to ensure positive flow
Semi-Annually & Post Major Storm Events		Slope Protection Failure	Erosion Control Measure will be repaired immediately
		Obstructions	Obstructions shall be removed during routine mowing
Annual & Post Major Storm Event		Outlet Pipe Blocked	Outlet shall be cleared of debris immediately upon finding
Semi -Annually & Post Major Storm Events		Debris Removed from Trash Guard	Obstructions shall be removed during routine mowing
		Sediment Build-up	Sediment shall be removed at a depth of 2 inches
Annually & Post Major Storm Events		Pipe Condition	Pipes shall be inspected and repaired if needed
Annually & Post Major Storm Events		Outfall Channel Function	Erosion Control Measure will be repaired immediately
Monthly & Post Major Strom Events		Sediment Build-up	Sediment shall be removed at a depth of 2 inches
Monthly & Post Major Strom Events	Miscellaneous	Erosion at Outfalls	Erosion Control Measure will be repaired immediately
		Encroachment into Easements	Encroachments shall be removed from all easements
		Complaints from Surrounding Owners	Complaints shall be heard and considered
		Public Hazards	All hazards to public safety shall be removed immediately
Quarterly / Major Storm Event	Impervious Surfaces	Drainage Flow to Collection Point	Remove obstructions
Quarterly / Major Storm Event	Swales	Drainage Flow	Remove obstructions
Quarterly / Major Storm Event	Storm Pipes / Cleanouts	Pipe Blockage	Remove obstructions / Flush
Annual	Hydrodynamic Separator	Debris, oil, sediment buildup	Remove obstructions and clean manhole. Refill manhole to invert of outlet
Semi-Annually & Post Major Storm Events	Volume Control Facilities	Debris and or sediment buildup	Remove debris and sediment to allow proper flow

APPENDIX C
BMP CHECKLIST

Arcadia™
Maintenance Guide

One of Arcadia's advantages is the ease of maintenance. Like any system that collects pollutants, the Arcadia hydrodynamic separator must be regularly maintained for continued effectiveness. Maintenance is a simple procedure performed using a vacuum truck or similar equipment. The system is designed to minimize the volume of water lost during routine maintenance, reducing disposal costs.

Contractors can access the pollutants stored in the manhole through the manhole cover. This allows them to gain vacuum hose access to the bottom of the manhole to remove sediment and trash. There is no confined space entry necessary for inspection or maintenance.

The entire maintenance procedure typically takes 2 to 4 hours, depending on the system's size, the amount of captured material, and the vacuum truck's capacity.

Local regulations may apply to the maintenance procedure. Safe and legal disposal of pollutants is the responsibility of the maintenance contractor. Maintenance should be performed only by a qualified contractor.

Inspection and Cleaning Cycle

Periodic inspection is necessary to determine the need for and frequency of maintenance. Inspections should begin as soon as construction is complete and then on an annual basis ongoing. Under normal use, the system will need to be cleaned every 1-3 years.

Sites that have excessive oil, fuel or sediment runoff may shorten the maintenance cycle. Periodic inspection is important.

Determining When to Clean

To determine the sediment depth, the maintenance contractor should lower a stadia rod into the manhole until it reaches the top of the captured sediment. Mark this spot on the rod, then continue pushing the rod through the sediment until it reaches the bottom of the sump. Next, mark the second spot on the rod then compare the two markings to determine the depth of the captured sediment.

Maintenance should occur when the sediment has reached a depth of 18" (450 mm).

ADS®

adspipe.com

800-821-6710

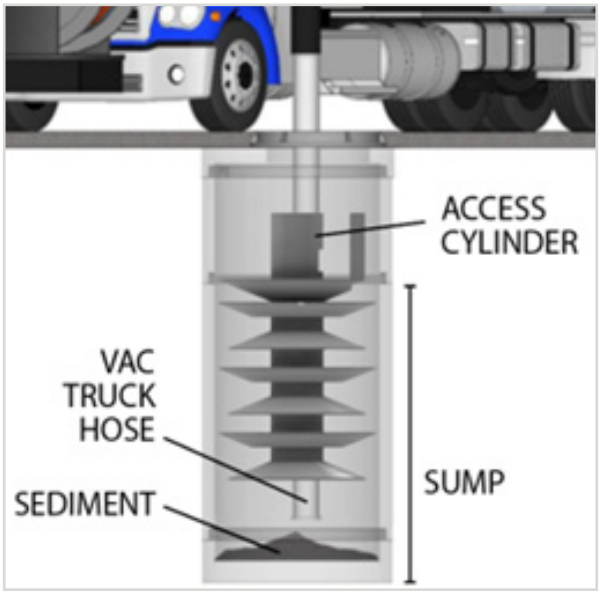
Arcadia Storage Capacities

Model	Manhole Diameter in (mm)	Total System Volume Gallons (Liters)	Treatment Chamber Capacity Gallons (Liters)	Standard Sediment Capacity (18" depth) Yards^3 (m^3)	NJDEP Sediment Capacity (50% of Standard Depth) Yards^3 (m^3)
AR3	36 (914)	242 (917)	203 (767)	0.39 (0.30)	0.19 (0.15)
AR4	48 (1219)	635 (2402)	564 (2135)	0.70 (0.53)	0.35 (0.27)
AR5	60 (1524)	991 (3753)	881 (3336)	1.09 (0.83)	0.55 (0.42)
AR6	72 (1829)	1428 (5404)	1269 (4804)	1.57 (1.20)	0.79 (0.60)
AR8	96 (2438)	4136 (15656)	3854 (14588)	2.79 (2.14)	1.40 (1.07)
AR10	120 (3048)	7931 (30022)	7490 (28354)	4.36 (3.34)	2.18 (1.67)

Maintenance Procedures

1. Remove the manhole cover to provide access to the pollutant storage. Pollutants are stored in the sump, below the unit assembly. Access this area through the access cylinder (larger than 10" (254 mm) diameter for all sizes).
2. Use a vacuum truck or other similar equipment to remove all water, debris, oil and sediment. See Figure 1.
3. Use a high pressure hose to clean the manhole of all remaining sediment and debris. Then, use the vacuum truck to remove the water.
4. Fill the clean manhole with water until the level reaches the invert of the outlet pipe.
5. Replace the manhole cover.
6. Dispose of the polluted water, oil, sediment and trash at an approved facility.
    a. Local regulations prohibit the discharge of solid material into the sanitary system. Check with the local sewer authority for authorization to discharge the liquid.
    b. Some localities treat the pollutants as leachate. Check with local regulators about disposal requirements.
    c. Additional local regulations may apply to the maintenance procedure.

Figure 1



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INDIANA DEPARTMENT OF TRANSPORTATION

INSPECTION REPORT
POST-CONSTRUCTION STORMWATER MEASURE

Structure Type	Hydrodynamic Separator	Asset ID	
Design Criteria		Location	Coordinates, Driving Directions
This hydrodynamic separator was designed to remove Total Suspended Solids (TSS) from stormwater runoff. The inspection and maintenance of this stormwater device should follow the manufacturer's guidelines and items outlined in this document.		Manufacturer, Model & Serial Number	

Information

Is a Diversion Structure present? ☐ Yes ☐ No

Is there land use upstream with high probability of pollutants? ☐ Yes ☐ No

Can the unit be accessed directly from INDOT right-of-way? ☐ Yes ☐ No

Will traffic control be required for vac truck access? ☐ Yes ☐ No

Inspection Criteria

Maintenance Issues:

Floatables – Does trash/debris buildup cover 100% of the water surface? ☐ Yes ☐ No

Sediment – Does sedimentation buildup exceed 75%? ☐ Yes ☐ No Depth:_____ inches

Visible pollution – Is there an oil sheen, etc.? ☐ Yes ☐ No Depth:_____ inches

Is there staining present on structures, pipes, or pavement? ☐ Yes ☐ No Description:_____.

Is there an odor present? ☐ Yes ☐ No Description:_____.

Is the inflow or outflow point blocked? ☐ Yes ☐ No Description:_____.

Is the Diversion structure blocked? ☐ Yes ☐ No ☐ N/A Description:_____.

Is access to the unit blocked? ☐ Yes ☐ No Description:_____.

Structural Issues:

Is there structural damage to the Manufactured Device? ☐ Yes ☐ No

Is the Manufactured Device casting broken or missing? ☐ Yes ☐ No

Is there structural damage to the Diversion Structure? ☐ Yes ☐ No

Is the Diversion Structure casting broken or missing? ☐ Yes ☐ No

Comments:

_____.

_____.

_____.

_____.

_____.

Last Inspected		Current Inspection	

INSPECTION REPORT
POST-CONSTRUCTION STORMWATER MEASURE

Structure Type	Hydrodynamic Separator	Asset ID	

Typical Corrective Actions

- **Floatables – Remove floatable trash and debris from unit**
- **Sediment buildup – Remove sediment from unit per manufacture's guidelines**
- **Visible pollution – Remove oil from unit**
- **Inflow and outflow points – Remove blockages**
- **Diversion structure – Remove any blockages, note if device has been installed inline, repair any damages**
- **Inlets and manholes – Repair damages**
- **Maintenance accessibility – Blocked or missing maintenance access**

Maintenance Recommendations

Last Inspected		Current Inspection	

INDIANA DEPARTMENT OF TRANSPORTATION

INSPECTION REPORT
POST-CONSTRUCTION STORMWATER MEASURE

Structure Type	Hydrodynamic Separator	Asset ID	
Plans and Plan Cross Section(s)			

INSPECTED BY	APPROVED BY
Printed Name/Title	Printed Name/Title

Pond/Basin Slope Inspection and Maintenance

Date

Lion Trans Inc.

Time / Weather: _____

Precipitation Amount / Site Condition: _____

Inspector Name: _____

Item	Condition when Maintenance is Required	Maintenance Required? (Y/N)	Comments	Expected Maintenance Results	Initials
Trash and Debris	Trash and debris has accumulated in pond.			Trash and debris to be removed from pond.	
Erosion	Erosion of the pond's side slopes and/or scouring of the pond's bottom, that exceeds 6-inches, or where continued erosion is prevalent.			Slope Stabilized using proper erosion control measures and repair methods.	
Bank Stabilization	Bank destabilized by burrowing animal(s).			Remove burrowing animals and repair holes in embankment	
Sediment Accumulation in the Pond Bottom	Sediment accumulations in pond bottom that exceeds the depth of sediment zone.			Sediment removed from pond bottom	
Rip Rap	Vegetative growth on rip rap lined channel or missing rocks and soil is exposed			Remove vegetative growth on rip rap and replace rocks to design specifications	
End Section	End section is blocked / obstructed by trash / debris, sediment or vegetation			Trash, debris, sediment, or vegetation to be removed from end section	
Outlet Structure	Outlet structure is blocked / obstructed by trash, debris, sediment or vegetation			Trash, debris, sediment, or vegetation to be removed from outlet structure	

Additional Comments and Observations	Initials

Advisory Plan Commission

Town of Brownsburg

Assigned Staff: Kevin Tolloty, Senior Planner

Report Date: 1/15/2026

Request Type: Development Plan Review Amendment

General Information

CASE NUMBER	PSDP-25-11
APPLICANT	Dillon Reynolds, SpaceCo Engineering, for Quik Trip
LOCATION	4713 Corrugated Avenue
ARCEL SIZE	32-08-18-115-006.000-016

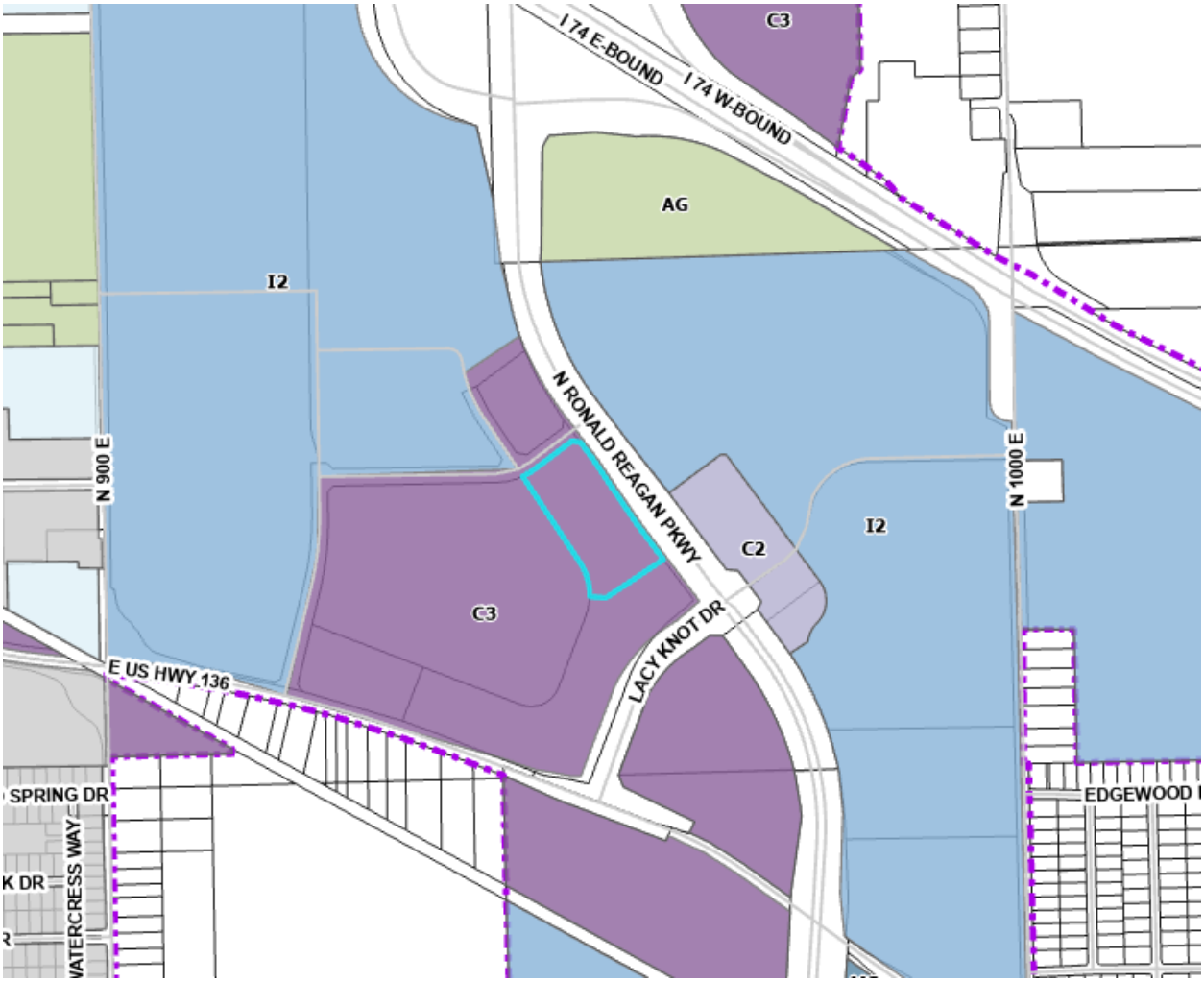
Cross References

Previous APC Cases	PSDP-24-1, Quik Trip Development Plan, CPSP-24-3, Quik Trip Secondary Plat, PCPP-23-11, Quik Trip Primary Plat, PCPP-22-5, Ronald Reagan Logistics Park Primary Plat, PCMA-09-21-1949; Lacy Farms West Rezone to C2 and I2
Relevant BZA Cases	BZDV-23-2, Canopy Height Variance
Other	Annexed in 2011, Ord. No. 2011-07

Attachments

☒	Tech Review & Response
☒	Site Plan/Civil (Landscape Plan only)
☒	Original Approved Landscape Plan
☐	Other:
☐	Other:

Zoning Map:


I 74 E-BOUND
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C2
I2
C3
LACY KNOT DR
E US HWY 136
SPRING DR
EDGEWOOD

Site Map:



Explanation of Changes from Original DPR:

This landscape plan was previously approved as part of PSDP-24-1, which approved the Quik Trip development plan. Due to changes in the 2025 UDO revision in regard to landscaping requirements, the applicant has requested to submit a revised landscape plan. The changes in the UDO allowed the applicant to modify the number and layout of the plantings, and does require a new approval for the landscape plan only.

Technical Review:

The TECH Review for this project took place on December 18, 2025. Development Services commented that the applicant needed to add an additional ornamental street tree, update the calculation for open space plantings and adjust the number of plantings accordingly, several trees need to be added to parking islands, foundation plantings must be included on the east façade or an equal amount of plantings placed elsewhere on the property, and to ensure that no one species of shrub is over 35% of the total number of shrubs. The Water Department commented that this project is in Citizens Energy Group's water service area. The Wastewater Department commented that the site is outside of Brownsburg's sanitary sewer service area. The Hendricks County Surveyor commented that this does not need Drainage Board approval.

Criteria:

Pursuant to Chapter 8 of the Brownsburg Unified Development Ordinance the Advisory Plan Commission shall make findings of fact on the following criteria:

1) The Development Plan is consistent with the **Comprehensive Plan**.

   Future Land Use Map Link: https://www.brownsburg.org/DocumentCenter/View/1068/2021-Future-Land-Use-Map-PDF

   a) For this criterion, the proposed amendment has no impact. The only change is to the previously approved plans is for landscaping.

      Based on the above information, staff believes this criterion has been met.

2) The Development Plan complies with applicable development requirements and standards of **CHAPTER 2 – ZONING DISTRICTS, CHAPTER 3 – PERMITTED USES,** and/or the PUD Ordinance.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=14

   a) For this criterion, the proposed amendment has no impact. The use of the property is not affected by the change in landscaping.

      Based on the above information, staff believes this criterion has been met.

3) The Development Plan complies with applicable standards found in **CHAPTER 5: SITE DEVELOPMENT** and/or the PUD Ordinance.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=101

   a) For this criterion, the proposed amendment does have an impact. The proposed amendment affects the landscape plan only, and the revised changes do meet Chapter 5 requirements. The changes were primarily related to the number and location of plantings.

      Based on the above information, staff believes this criterion has been met.

4) The Development Plan complies with any **other applicable provisions** of this Ordinance or **Overlay Standards.**

   a) For this criterion, the proposed amendment has no impact.

      Based on the above information, staff believes this criterion has been met.

5) Satisfies any provision related to a development's design as found in **CHAPTER 7 – SUBDIVISION REGULATIONS** and/or the PUD Ordinance.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=168

   a) For this criterion, the proposed amendment has no impact.

      Based on the above information, staff believes this criterion has been met.

6) The Development Plan satisfies the construction requirements of the **Brownsburg Construction Standards and Specifications.**

a) For this criterion, the proposed amendment has no impact. No new tech waivers were requested for this amended landscape plan.

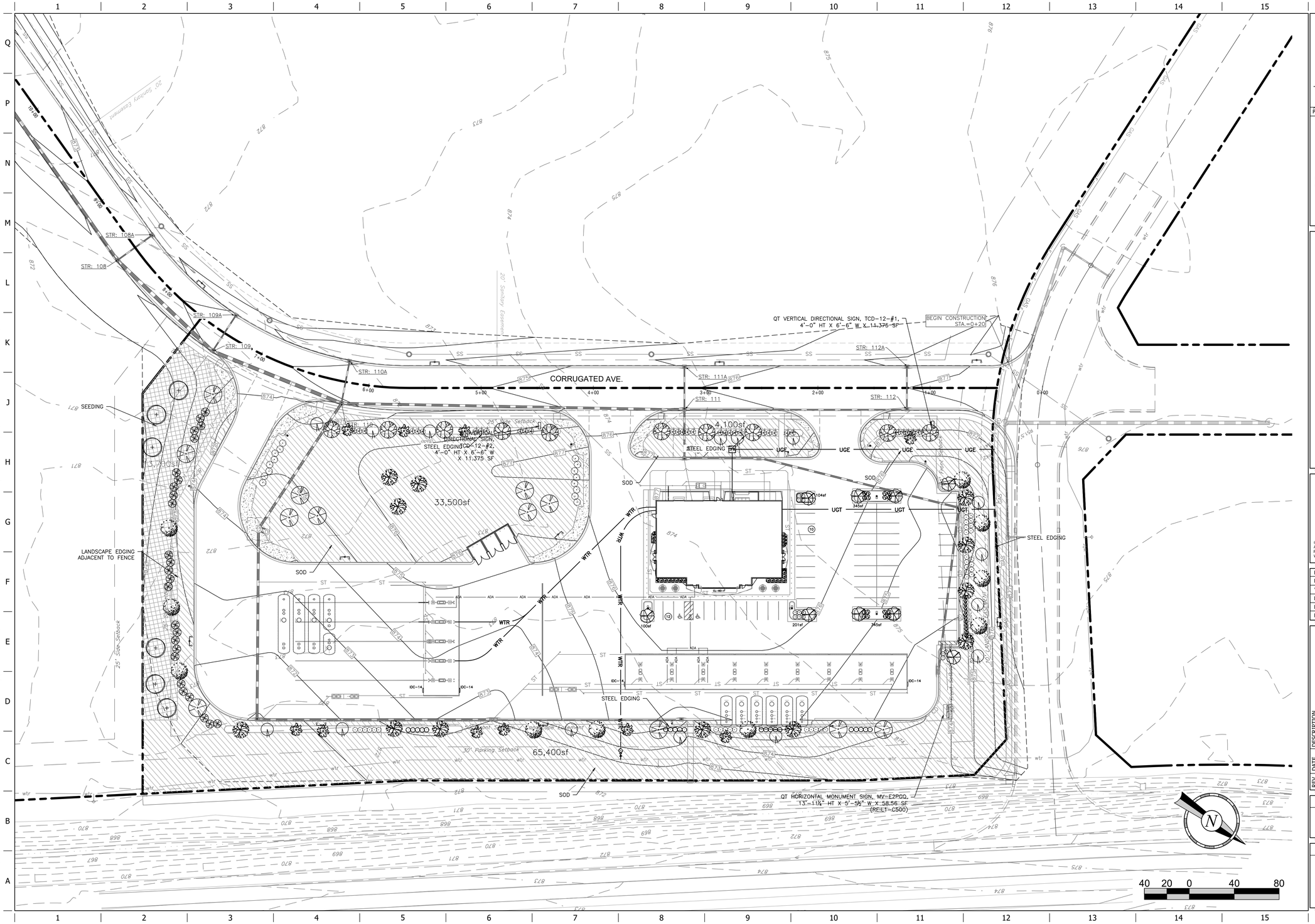
Based on the above information, staff believes this criterion has been met.

Recommendations:

The Advisory Plan Commission may request conditions and commitments related to the project and criteria. Conditions or commitments must be made as part of the motion.

Based on the information provided and the criteria responses, staff recommends a motion to

☐	Approve PSDP-25-11 as presented.
☒	Approve PSDP-25-11 with the following staff conditions: 1. Shrubs are removed from landscape islands and placed elsewhere on site 2. State quantity of foundation plantings relocated and where relocated. 3. The approval of Findings of Fact and Report of Determination. 4. The stamping of the construction plans by the Director.
☐	Deny PSDP-25-11 based on the following criteria:



REGISTERED PROFESSIONAL ENGINEER
PE12000722
STATE OF INDIANA
Dillon Reynolds

PROJECT NO.:12064.02

Spaceco
Civil Engineering & Surveying

QuikTrip No. 7263

4713 CORRUGATED AVENUE
BROWNSBURG, INDIANA 46112

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PROTOTYPE: P-120
DIVISION: REMOTE
VERSION: RTC
DESIGNED BY: ALR
DRAWN BY: ALR
REVIEWED BY: DKR

REV	DATE	DESCRIPTION
6	11/12/25	PLAN REVISIONS
5	10/14/25	PLAN REVISIONS
4	07/17/25	ISSUED FOR CONSTRUCTION
3	05/01/25	BID DOCUMENTS
2	04/07/25	FPC REVISIONS
1	02/26/25	BID DOCUMENTS

ORIGINAL ISSUE DATE: 08/29/2023

SHEET TITLE:
LANDSCAPE PLAN

SHEET NUMBER:
L100

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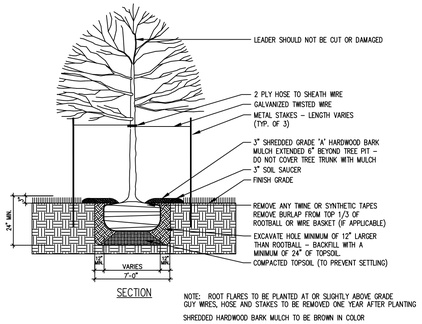
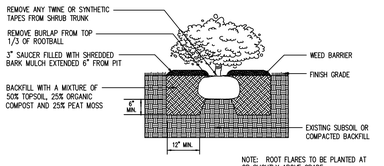


NOTE: ROOT FLARES TO BE PLANTED AT OR SLIGHTLY ABOVE GRADE
GUY WIRES, HOSE AND STAKES TO BE REMOVED ONE YEAR AFTER PLANTING
SHREDDED HARDWOOD BARK MULCH TO BE BROWN IN COLOR

DECIDUOUS TREE DETAIL

NOT TO SCALE



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SHRUB DETAIL

PLANTING NOTES:

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2. ALL SHRUB AND TREE PLANTING AREAS TO BE COVERED WITH 3" LAYER OF SHREDDED HARDWOOD BARK MULCH THAT IS BROWN IN COLOR.

3. ALL BACKFILL FOR TREE AND SHRUB PLANTINGS SHALL BE FROM EXISTING SOILS. A 5–10–5 ANALYSIS SLOW RELEASE FERTILIZER SHALL BE INCORPORATED INTO BACKFILL AT APPROVED RATES.

4. FINAL PLACEMENT OF PLANT MATERIALS, ETC. SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING OPERATIONS. ALL TREE LOCATIONS SHALL BE MARKED WITH A WOOD STAKE INDICATING VARIETY AND SIZE OF TREE. PLANTING BED LINES SHALL BE MARKED WITH HIGHLY VISIBLE PAINT LINES WITH OCCASIONAL WOOD STAKES FOR REFERENCE. ALL STAKES SHALL BE REMOVED FOLLOWING PLANTING OPERATIONS. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST PLANT LOCATIONS ON THE SITE.

5. NO SUBSTITUTIONS OF PLANT MATERIALS WILL BE ALLOWED. IF PLANTS ARE NOT AVAILABLE, THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT PRIOR TO BIDDING IN WRITING. PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOB SITE BY THE LANDSCAPE ARCHITECT.

6. ALL PLANTS SHALL MEET OR EXCEED AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1–2004.

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11. ALL INSTALLED PLANTINGS SHALL BE APPROPRIATELY WATERED FOR A MINIMUM PERIOD OF ONE YEAR TO ALLOW FOR THEIR ESTABLISHMENT

12. ALL LANDSCAPE PLANTINGS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FOLLOWING FINAL INSPECTION BY LANDSCAPE ARCHITECT. AT END OF THIS PERIOD, PLANT MATERIAL TERMED DEAD OR UNSATISFACTORY BY LANDSCAPE ARCHITECT SHALL BE REPLACED AT NO ADDITIONAL CHARGE BY THE LANDSCAPE CONTRACTOR.

Landscape Schedule

USE	SYMBOL	COMMON NAME / *Botanical Name*	MINIMUM SIZE/ HEIGHT/SPREAD	QUANTITIES	COMMENTS
SHRUBS		BLACK CHOKEBERRY *Aronia*	HEIGHT/SPREAD 18" X 12" MIN	16 EA.	SEE LANDSCAPE PLAN AND ASSOCIATED DETAILS FOR LANDSCAPE BED LOCATIONS AND SHRUB SPACING
		COMPACT INKBERRY *Ilex glabra 'Compacta'*	HEIGHT/SPREAD 24" X 30" MIN	20 EA.	
		GOLDFINGER POTENTILLA *Potentilla fruticosa 'Goldfinger'*	HEIGHT/SPREAD 18" X 12" MIN	10 EA.	
		JOSEE LILAC Syringa x 'Josee'	HEIGHT/SPREAD 30" X 20" MIN	20 EA.	
		NICK'S COMPACT JUNIPER *Juniperus chinensis 'Nick's Compact*	HEIGHT/SPREAD 24" X 18" MIN	32 EA.	
		OAKLEAF HYDRANGEA *Hydrangea quercifolia*	HEIGHT/SPREAD 30" X 20" HT MIN	16 EA.	
		MOHAWK VIBURNUM Viburnum x burkwoodii 'Mohawk'	HEIGHT/SPREAD 30" X 20" MIN	26 EA.	
		WARD'S YEW *Taxus x media "Wardii"*	HEIGHT/SPREAD 24"ø X 18" HT MIN	30 EA.	
TREES		FRONTIER ELM *Ulmus x 'Frontier'*	2.5" CALIPER 12' HT	10 EA.	SEE LANDSCAPE PLAN AND ASSOCIATED DETAILS FOR TREE PLACEMENT, AND PLANTING SPECIFICATIONS CONTRACTOR TO VERIFY TREE TYPE, LOCATION, SIZE, HEIGHT, AND SPREAD WITH QT REPRESENTATIVE PRIOR TO INSTALLATION
		GREEN MOUNTAIN SUGAR MAPLE *Acer saccharum 'Green Mountain'*	2.5" CALIPER 12' HT	12 EA.	
		PRINCESS DIANA SERVICEBERRY *Amelanchier x grandiflora' 'Princess Diana'*	2.0" CALIPER 10' HT	10 EA.	
		PRINCETON SENTRY GINKGO *Ginkgo biloba 'Princeton Sentry'*	2.5" CALIPER 12' HT	9 EA.	
		REDBUD – SINGLE STEM *Cercis x canadensis*	2.0" CALIPER 10' HT	14 EA.	
		RED OAK *Quercus rubra*	2.5" CALIPER 12' HT	12 EA.	
		SHADEMASTER HONEY LOCUST *Gleditsia triacanthos 'Shademaster'*	2.5" CALIPER 12' HT	10 EA.	
		TULIP TREE *Liriodendron tulipifera*	2.5" CALIPER 12' HT	6 EA.	
ORNAMENTAL GRASS		DWARF FOUNTAIN GRASS *Pennisetum alopecuroides 'Hameln'*	12" – 18" MIN.	12 EA.	
MISC.		RTF – RHIZOMATOUS TALL FESCUE SOD		103,080 S.F.	
		RTF – RHIZOMATOUS TALL FESCUE SEED		13,700 S.F.	

LANDSCAPE REQUIREMENTS - UPDATED ORDINANCE

	REQUIRED ORDINANCE	PROVIDED
ON-SITE REQUIREMENTS	5.11A COMMERCIAL DEVELOPMENT 4 SHADE TREES AND 8 LARGE SHRUBS PER HALF ACRE OF OPEN SPACE OPEN SPACE AREA: 2.67 AC/.5 =(5.3) 4 = 21.2 2.67 AC/.5 =(5.3) 8 = 42.4 SHADE TREES = 21 LARGE SHRUBS = 42	 SHADE TREES = 21 LARGE SHRUBS = 42
STREET FRONTAGE REQUIREMENTS	5.10 D LANDSCAPING IS REQUIRED ALONG PERIMETER ROADS OF A SUBDIVISION AND ALONG ALL STREET FRONTAGES (PUBLIC OR PRIVATE STREETS, NOT INCLUDING SHARED ACCESS DRIVES OR DRIVEWAYS. COMMERCIAL USE PER 100LF: 1.5 SHADE OR EVERGREEN TREES 1.5 ORNAMENTAL TREES 5 SHRUBS RONALD REAGAN PKWY 720LF 720/100 = 7.2 (1.5) = 10.8 SHADE OR EVERGREEN TREES = 11 ORNAMENTAL TREES =11 7.2 (5) = 36.0 SHRUBS = 36 GENERATIONS STREET 275 LF 275/100 = 2.75 (1.5) = 4.12 SHADE OR EVERGREEN TREES = 4 ORNAMENTAL TREES = 4 2.75 (5) = 13.75 SHRUBS = 14 CORRUGATED AVENUE 650 LF 650/100 = 6.5 (1.5) = 9.75 SHADE OR EVERGREEN TREES = 10 ORNAMENTAL TREES = 10 6.5 (5) = 32.5 SHRUBS = 33	

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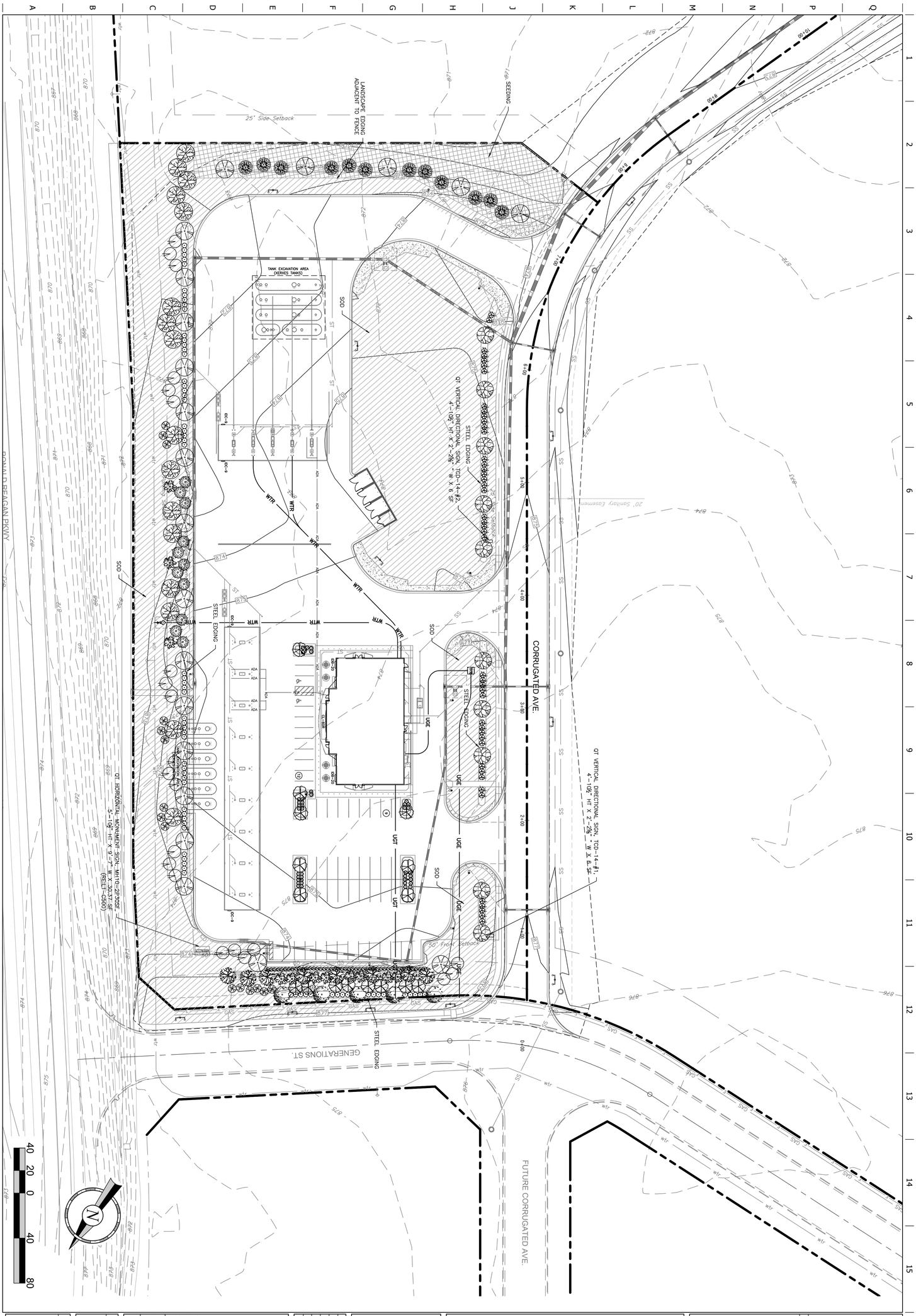

REV	DATE	DESCRIPTION
4	09/18/24	DRAINAGE COMMENTS
3	06/27/24	SWPPP/DRN/PLANNING COMMENTS
2	02/01/24	BROWNSBURG COMMENTS
1	01/08/24	INITIAL BROWNSBURG SUBMITTAL

ORIGINAL ISSUE DATE: 01/05/2024

PROTOTYPE: P-114
DIVISION: --
VERSION: 001
DESIGNED BY: AJR
DRAWN BY: AJR
REVIEWED BY: DRK

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QuikTrip No. 7263

US HWY 136 & RONALD REAGAN PARKWAY
BROWNSBURG, INDIANA

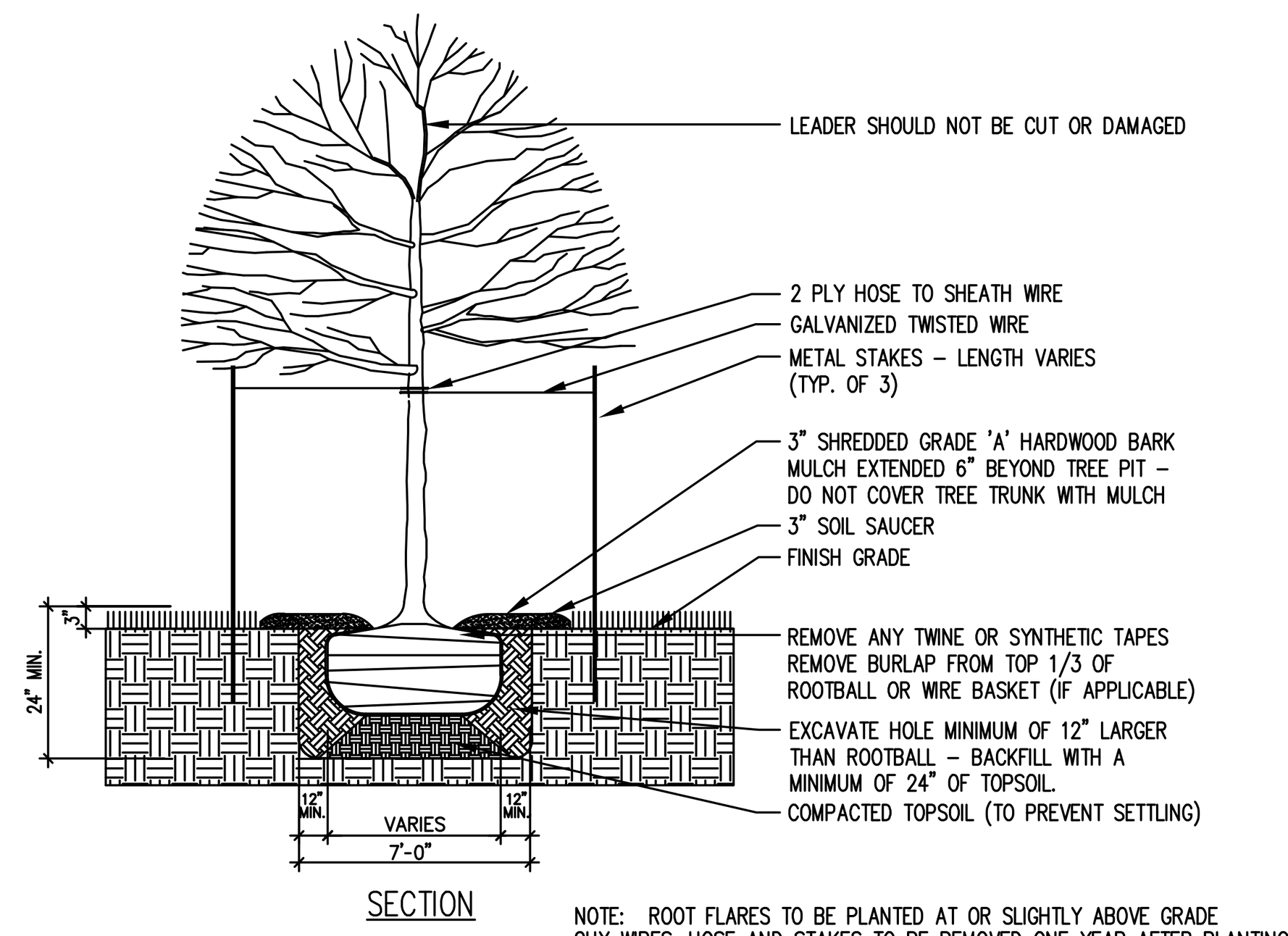
Spaceco Development & Surveying
8425 Woodfield Crossing Blvd., Suite 100
Indianapolis, IN 46240
317.580.7000
www.spaceco-inc.com

DILLON K. REYNOLDS
REGISTERED
PE12000722
STATE OF
INDIANA
PROFESSIONAL ENGINEER

PROJECT NO.: 12064.02

SHEET TITLE: LANDSCAPE PLAN

SHEET NUMBER: L100



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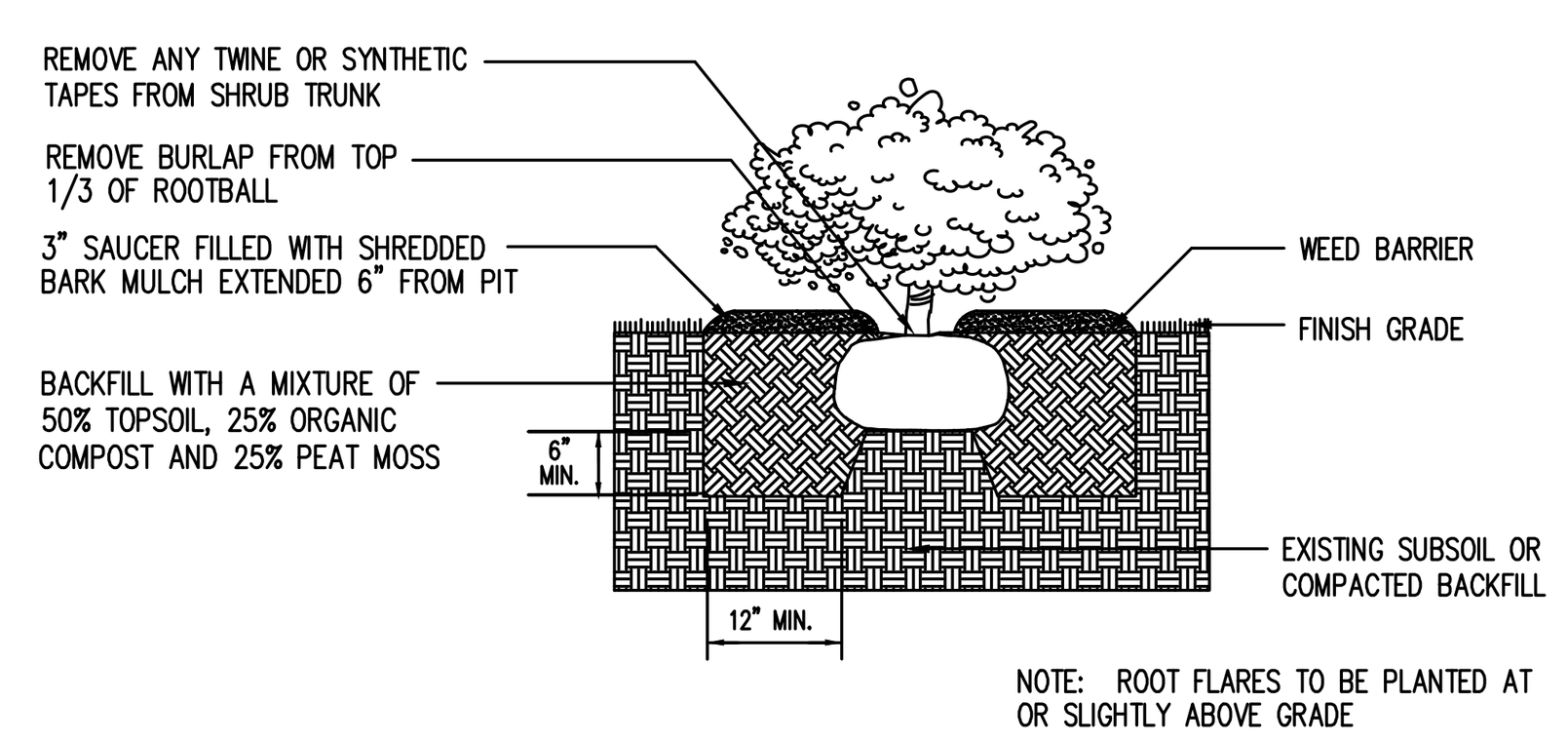

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6. ALL PLANTS SHALL MEET OR EXCEED AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1–2004.

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		COMPACT INKBERRY / *Ilex glabra 'Compacta'*	HEIGHT/SPREAD 24" X 18" MIN	40 EA.	
		NICK'S COMPACT JUNIPER / *Juniperus chinensis 'Nick's Compact*	HEIGHT/SPREAD 24" X 18" MIN	45 EA.	
		MOHAWK VIBURNUM / Viburnum x burkwoodii 'Mohawk'	HEIGHT/SPREAD 30" X 20" MIN	12 EA.	
		WARD'S YEW / *Taxus x media "Wardii"*	HEIGHT/SPREAD 24"ø X 18" HT MIN	68 EA.	
TREES		FRONTIER ELM / *Ulmus x 'Frontier'*	2.5" CALIPER 12' HT	11 EA.	SEE LANDSCAPE PLAN AND ASSOCIATED DETAILS FOR TREE PLACEMENT, AND PLANTING SPECIFICATIONS CONTRACTOR TO VERIFY TREE TYPE, LOCATION, SIZE, HEIGHT, AND SPREAD WITH QT REPRESENTATIVE PRIOR TO INSTALLATION
		GREEN MOUNTAIN SUGAR MAPLE / *Acer saccharum 'Green Mountain'*	2.5" CALIPER 12' HT	8 EA.	
		IMPCOLE HONEYLOCUST / *Gleditsia triacanthos inermis 'Impcole*	2.5" CALIPER 12' HT	20 EA.	
		NORWAY SPRUCE / *Picea abies*	6' HT	12 EA.	
		PRINCESS DIANA SERVICEBERRY / *Amelanchier x grandiflora' 'Princess Diana'*	2.0" CALIPER 10' HT	11 EA.	
		PRINCETON SENTRY GINKGO / *Ginkgo biloba 'Princeton Sentry'*	2.5" CALIPER 12' HT	16 EA.	
		REDBUD – SINGLE STEM / *Cercis x canadensis*	2.0" CALIPER 10' HT	21 EA.	
		RED OAK / *Quercus rubra*	2.5" CALIPER 12' HT	21 EA.	
		SERBIAN SPRUCE / *Picea omorika*	6' HT	11 EA.	
		SHADEMASTER HONEY LOCUST / *Gleditsia triacanthos 'Shademaster'*	2.5" CALIPER 12' HT	5 EA.	
MISC.		RTF – RHIZOMATOUS TALL FESCUE SOD		106,200 S.F.	
		RTF – RHIZOMATOUS TALL FESCUE SEED		13,700 S.F.	

A LANDSCAPE BUFFER EQUALING A LEVEL 2 WILL BE INSTALLED ON THE SOUTHEAST PROPERTY LINE AS NOTED IN THE STAFF REPORT. PER THE UDO, TO QUALIFY FOR LEVEL 2 THE LANDSCAPING MUST EQUAL OR EXCEED 3 UNIT VALUE EQUIVALENTS OF PLANTS PER 100 LINEAR FEET, WITH 40% BEING DERIVED FROM EVERGREEN TREES, EVERGREEN SHRUBS, EVERGREEN HEDGES AND/OR EARTHEN MOUNDS.

LANDSCAPE REQUIREMENTS

	REQUIRED ORDINANCE	PROVIDED
ON-SITE REQUIREMENTS	5.38.F.1 2 SHADE TREES PER 5,000 SF OF GROSS BUILDING AREA (GBA) 2 EVERGREEN TREES PER 5,000 SF OF GBA 3 ORNAMENTAL TREES PER 5,000 SF OF GBA 16 LARGE SHRUBS PER 5,000 SF OF GBA REQUIRED PLANTS GBA = 7,318 SF. / 5,000 SF = 1.46 1.46(2) = 2.92 : 3 SHADE TREES 1.46(2) = 2.92 : 3 EVERGREEN TREES 1.46(3) = 4.38 : 4 ORNAMENTAL TREES 1.46(16) = 23.36 : 23 LARGE SHRUBS	3 SHADE TREES 3 EVERGREEN TREES 4 ORNAMENTAL TREES 25 LARGE SHRUBS
STREET FRONTAGE REQUIREMENTS	5.38.F.2 TREES SHALL BE PLANTED 30 FEET APART ON CENTER AND ADJACENT TO THE PUBLIC RIGHT OF WAY OR GROUPED TOGETHER TO FORM A NATURAL LOOKING AREA WHERE FEASIBLE. LEVEL 2 REQUIRED LANDSCAPING REQUIRED AT A RATE OF 3 PLANT UNITS PER 100 LF RONALD REAGAN PKWY 450LF 765/100 = 7.65 (3) = 22.95 UNITS 14 SHADE TREES = 10.5 50 EVERGREEN SHRUBS = 12.5 TOTAL UNITS = 23.0 GENERATIONS STREET 275 LF 275/100 = 2.75 (3) = 8.25 UNITS 5 SHADE TREES = 3.75 18 EVERGREEN SHRUBS = 4.5 TOTAL UNITS = 8.25 CORRUGATED AVENUE 650/100 = 6.5 (3) = 19.5 UNITS 11 SHADE TREES = 8.25 45 EVERGREEN SHRUBS = 11.25 TOTAL UNITS = 19.5	RONALD REAGAN PKWY 14 SHADE TREES 50 EVERGREEN SHRUBS GENERATIONS STREET 5 SHADE TREES 18 EVERGREEN SHRUBS CORRUGATED AVENUE 11 SHADE TREES 45 EVERGREEN SHRUBS
INTERIOR PARKING LOT REQUIREMENTS	5.39.A.1 MINIMUM OF 1 TREE PER PARKING ISLAND OR PER 180 SF OF PARKING ISLAND AREA MUST BE PROVIDED. A MINIMUM OF 5 SHRUBS PER PARKING ISLAND OR PER 180 SQUARE FEET OF PARKING ISLAND MUST BE PROVIDED. 100% OF PARKING ISLANDS SHALL BE LANDSCAPED WITH PLANT MATERIAL, TURF OR ORGANIC MULCH. EACH ISLAND SHALL HAVE A MINIMUM OF 1 SHADE TREE OR 1 EVERGREEN TREE.	8 PARKING ISLANDS = 1,440sf 8 SHADE TREES 40 SHRUBS
PERIMETER PARKING LOT REQUIREMENTS	5.39.A.2 ONE TREE PER 30 LF OF YARD LENGTH. ONE MEDIUM SHRUB PER 3 LF OF YARD LENGTH EITHER CLUSTERED OR SPACED LINEARLY. GRASS OR GROUND COVER SHALL BE PLANTED ON ALL PORTIONS OF THE LANDSCAPED AREAS NOT OCCUPIED BY OTHER LANDSCAPED MATERIAL, EXCLUDING ORGANIC MULCH AROUND PLANTINGS OF LANDSCAPE MATERIAL. YARD LENGTH 100 LF 140/30 = 4.6 : 5 SHADE TREES 140/3 = 46.7 : 47 MEDIUM SHRUBS REQUIRED	5 SHADE TREES 47 MEDIUM SHRUBS
FOUNDATION PLANTINGS	NONE REQUIRED PER ORDINANCE	
SOUTH PROPERTY LINE	LEVEL 2 REQUIRED YARD LENGTH 345 LF 345/100 = 3.45 (3) = 10.35 6 SHADE TREES = 4.5 12 EVERGREEN TREES = 6.0 TOTAL UNITS = 10.50	6 SHADE TREES 12 EVERGREEN TREES
PERIMETER LANDSCAPING REQUIREMENTS	7.30 D.2 TREES (I.E. CANOPY, ORNAMENTAL, UNDERSTORY OR EVERGREEN) SHALL BE PROVIDED AT A COMBINED RATE OF TEN (10) PER 100 LINEAL FEET OF PERIMETER PLANTING. SHRUBS SHALL BE PROVIDED AT A RATE OF TWO (2) PER 100 LINEAL FEET OF PERIMETER PLANTING.	6 SHADE TREES 12 EVERGREEN TREES
RONALD REAGAN PKWY.	YARD LENGTH 450 LF 450/100 = 4.50 (10) = 45 TREES REQUIRED 450/100 = 4.5 (2) = 9 SHRUBS REQUIRED	16 SHADE TREES 18 UNDERSTORY TREES 11 EVERGREEN TREES 45 TREES 9 SHURBS
GENERATIONS ST.	YARD LENGTH 275 LF 275/100 = 2.75 (10) = 28 TREES REQUIRED 275/100 = 2.75 (2) = 6 SHRUBS REQUIRED	13 SHADE TREES 15 UNDERSTORY TREES 28 TREES 6 SHRUBS

DILLON K. REYNOLDS
REGISTERED
No. PE12000722
STATE OF INDIANA
PROFESSIONAL ENGINEER

PROJECT NO.:12064.02

Spaceco
Civil Engineering & Surveying
3850 Priority Way South Drive
Suite 110
Indianapolis, Indiana 46240
Phone: (317) 779-2194
spacecoinc.com

QuikTrip No. 7263
US HWY 136 & RONALD REAGAN PARKWAY
BROWNSBURG, INDIANA

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PROTOTYPE: P-114
DIVISION: --
VERSION: 001
DESIGNED BY: ALR
DRAWN BY: ALR
REVIEWED BY: DKR

REV	DATE	DESCRIPTION
4	09/18/24	DRAINAGE COMMENTS
3	06/27/24	SWPPP/DRN/PLANNING COMMENTS
2	02/01/24	BROWNSBURG COMMENTS
1	01/08/24	INITIAL BROWNSBURG SUBMITTAL

ORIGINAL ISSUE DATE: 01/05/2024

SHEET TITLE: LANDSCAPE TABLES

SHEET NUMBER: L101

FILE LOCATION:N:\Projects 2022\12064 – INDY\12064.02 – QuickTrip Brownsburg\12064.02_Civil (P–114).dwg TAB NAME:Landscape Tables USER:arench SAVED:9/18/2024 1:11 PM PLOTTED:9/18/2024 1:22 PM

Advisory Plan Commission
TECHNICAL REVIEW COMMITTEE

TOWN OF Brownsburg
61 North Green Street | Brownsburg, Indiana 46112
Tel 317.852.1128 | Fax 317.852.1134

Project Name: Quik Trip Landscape Plan
Record Number: PSDP-25-11
TECH Meeting Date: 12/18/25

The following Technical Review Committee ("TECH") members provided comments for the project as detailed below:

Development Services
- [x] Kevin Tolloty, Senior Planner
- [ ] Lauren Bouslog, Planner I
- [ ] Steve Fletcher, Building Commissioner/Director
- [ ] Frank Wise, Senior Building Inspector

Town Administration
- [ ] Debbie Cook, Town Manager
- [ ]
- [ ] Ethan Pierce, Economic Development Manager

Water Department
- [x] Frank Monts, Superintendent

Wastewater Department
- [x] Kathy Dillon, Water Utilities Director
- [ ]

Street Department
- [ ] Aaron Love, Superintendent
- [ ] Matt Griner, Asst. Superintendent

Parks Department
- [ ] Amber Lane, Director
- [ ]

Fire Territory
- [ ] Paul Hudson, Fire Marshal
- [ ] Jeff Schlageter, Deputy Fire Marshal

Police Department
- [ ] Joe Grimes, Chief
- [ ] Pat Bullock, Captain
- [ ] Bryan Fultz, Major

External Agencies
- [ ] Regan Huff, BCSC
- [x] Dave Gaston, P.S., Hend. Co. Surveyor
- [ ] John Ayers, Hendricks Co. Engineer
- [x] Mary Atkins, Wessler Engineering
- [ ] Angie DeKemper, CountryMark
- [ ] Gerry Jones, Vectren

1) DEVELOPMENT SERVICES

5.10 (D) Street Frontage Landscaping

a) One (1) additional ornamental tree should be shown along Generations Street (four calculated, only three shown on plan).

5.11 (A) On-Site Landscaping

b) Please recalculate the area of open space. Current calculation appears to be from the previous plan for building area. Calculation now refers to total open space instead of building area. Additional plantings will be required.

5.11 (C) Parking Lot Landscaping

c) Please ensure all landscape islands are a minimum of 160 square feet. Label square footage of each island.

d) There should be a total of ten (10) parking lot island trees - one (1) at the end of each row of parking.

5.11 (D) Foundation Plantings

e) There should be a total of 58 foundations plantings - 22 each on the east and west sides, 7 each on the north and south. The north, east, and west sides all have street frontage and would be considered fronts, south is considered a side.

f) A max. of 20% of the 58 plantings may be ornamental grasses (max. of 12). Currently 16 are shown in the plans.

Other Landscape Comments

g) 12 Chokeberry plants are indicated in the landscape schedule but not shown on the plan.

h) No more than one species of shrub may make up over 35% of the total. Currently the number of yew plants is over 35% of the shrubs.

2) BUILDING

a) None

3) CAPITAL PROJECTS

a) None

4) ECONOMIC DEVELOPMENT

a) None

5) WATER

a) None - This is in Citizens Energy Group's water service area

6) WASTEWATER

a) None - Sanitary is outside of Brownsburg service area

7) STREET/PUBLIC WORKS

a) None

8) PARKS

a) None

9) FIRE TERRITORY

a) None

10) POLICE

a) None

11) STORMWATER

a) See attached

12) BROWNSBURG COMMUNITY SCHOOL CORPORATION

a) None

13) **HENDRICKS COUNTY SURVEYOR**

a) This project is not required to receive Drainage Board approval.

14) **HENDRICKS COUNTY ENGINEER**

a) None

15) **COUNTRYMARK**

a) None

16) **VECTREN**

a) None

Please provide a written response to this report addressing each issue and, if necessary, indicate where on the revised plans the modification has been made.

TOWN OF BROWNSBURG STORMWATER/DRAINAGE PLAN REVIEW

CO Comment Originator
CR Comment Respondee

NAME OF PROJECT: QuikTrip 7263
DESIGN PACKAGE: Development Plan
DESIGNER: Spaceco

		Wessler - Reviewer to complete		Designer to complete	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
	General	RS	The following comments are for information and planning purposes when preparing development plans. Note that Chapter 151 was updated April 25, 2024.		
1	Storm sewer design	RS	For the future development plan submittal, refer to Ch. 151.21 D. for storm sewer design standards and drainage report requirements.		
2	Flood routing	RS	For development plans, evaluate stormwater ponding and overflow path routing for Ch. 151.21 I.		
3	Drainage Report	RS	Refer to Ch. 151.20.B (2)(f) for drainage report guidelines. Include runoff, storm sewer sizing calculations, etc. when preparing the drainage report.		
4	Post-construction stormwater quality	RS	Refer to Ch. 151.23 for post-construction water quality volume and flow rate requirements. Upstream BMPs are required for ponds/underground detention. An Operation and Maintenance Manual and easements are required for BMPs. (Note: 30 minute minimum Tc for water quality flow rate calculations). For gas stations, additional treatment is required to remove zinc, copper, lead and polyaromatic hydrocarbons.		
5	County approval	RS	Coordinate with the Hendricks County Surveyor to determine if Drainage Board approval is necessary.		
6	Details and specifications	RS	Refer to the Town's Standard Details and Specifications when developing Construction Plans.		
7	Stormwater detention	RS	Detention design requirements follow Chapter 151.21 and Detail EW-04 "Detention/Retention Ponds" in the Town's Standard Details and Specifications. Ordinance revised in April 2024.		
8	Adequate outlet	RS	Ensure that there is an adequate outlet for drainage of stormwater.		
9	Impervious Surface Area	RS	For projects that are not single family homes, please provide the total amount of impervious surface area in square feet for the completed project. In addition to the total, provide a breakdown of total compacted gravel, total concrete/asphalt and total building footprint (in square feet). This is used for stormwater utility billing.		
10	Erosion control and SWPPP	MMT	If the project will disturb 1 acre or more of land then a SWPPP and Construction Stormwater General Permit will be required for the development plan submittal. Refer also to Chapter 151.22 for SWPPP requirements.		

These comments should not be construed as a comprehensive list of comments, and the reviewer may make additional comments based on subsequent submittals

Spaceco
Civil Engineering & Surveying

3850 Priority Way S. Dr., Suite 110, Indianapolis, IN 46240 | spacecoinc.com

December 31, 2025

Technical Review Committee
Town of Brownsburg
61 North Green Street
Brownsburg, Indiana 46112

RE: PDSP-25-11 – QuikTrip Landscape Plan

Dear Technical Advisory Committee:

The following is our response to your initial comments from the Technical Review Committee meeting on December 18th, 2025.

DEVELOPMENT SERVICES

5.10 (D) Street Frontage Landscaping
- 1 redbud tree was added along Generations drive.

5.11 (A) On-Site Landscaping
- On site open space area was recalculated and updated accordingly on the chart
- 9 shade trees were added - 3 Green Mountain Sugar Maple and 6 Tulip Tree
- 19 large shrubs were added - 3 Mohawk Viburnum and 16 Oakleaf Hydrangea

5.11 (C) Parking Lot Landscaping
- The square footage of parking lot islands has been added to the plan. There are two under 160 square feet, but the required plantings still fit within this space. These islands have already been constructed in the field and were previously approved.
- There appear to be 9 parking lot islands on the plan. 4 Ginko trees have been added for a total 9 parking lot island trees

5.11 (D) Foundation Plantings
- 26 additional foundation plantings have been added
- 32 plants are shown around the building. The additional 26 have been added to the parking lot islands. The UDO allows flexibility for location depending on the entrances and access requirements around the building.
- 4 ornamental grasses were removed to meet the 20% requirement

Other Landscape comments.

- The chokeberry plants have been updated accordingly
- The amount of yews have been reduced and replaced with lilacs

STORMWATER

The stormwater design was approved under DPR-24-1 that satisfy all these requirements. No changes are proposed to the stormwater system.

Please contact me with any questions or concerns you may have regarding the attached submittal.
Sincerely,



Dillon Reynolds, PE
Senior Project Manager
dreynolds@spacecoinc.com
(317) 779-2194

TOWN OF Brownsburg

AFFIDAVIT & CONSENT OF PROPERTY OWNER

That I/We QuikTrip Corporation after first being duly sworn, depose and say:

That I am/we are the owner(s) of Real Estate located at: (Legal and/or common address)
4713 Corrugated Avenue, Brownsburg, IN 46112

Parcel Number(s): 32-08-18-115-006.000-016

That we have examined the application for a/an DPR (revised landscape plan) on this property, and I/we are familiar with its contents.
(application type)

That I/we have no objections to, and consent to such request as set forth in the application.

Signature of Affiant

Gwen Keen, QuikTrip Corporatio
Printed Name

State of Missouri)
) SS:
County of St. Charles)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared Gwen Keen, who acknowledged the execution of the above and foregoing instrument to its voluntary act and deed on the 5th day of Dec, 2026

4.27.26
Commission Expiration Date

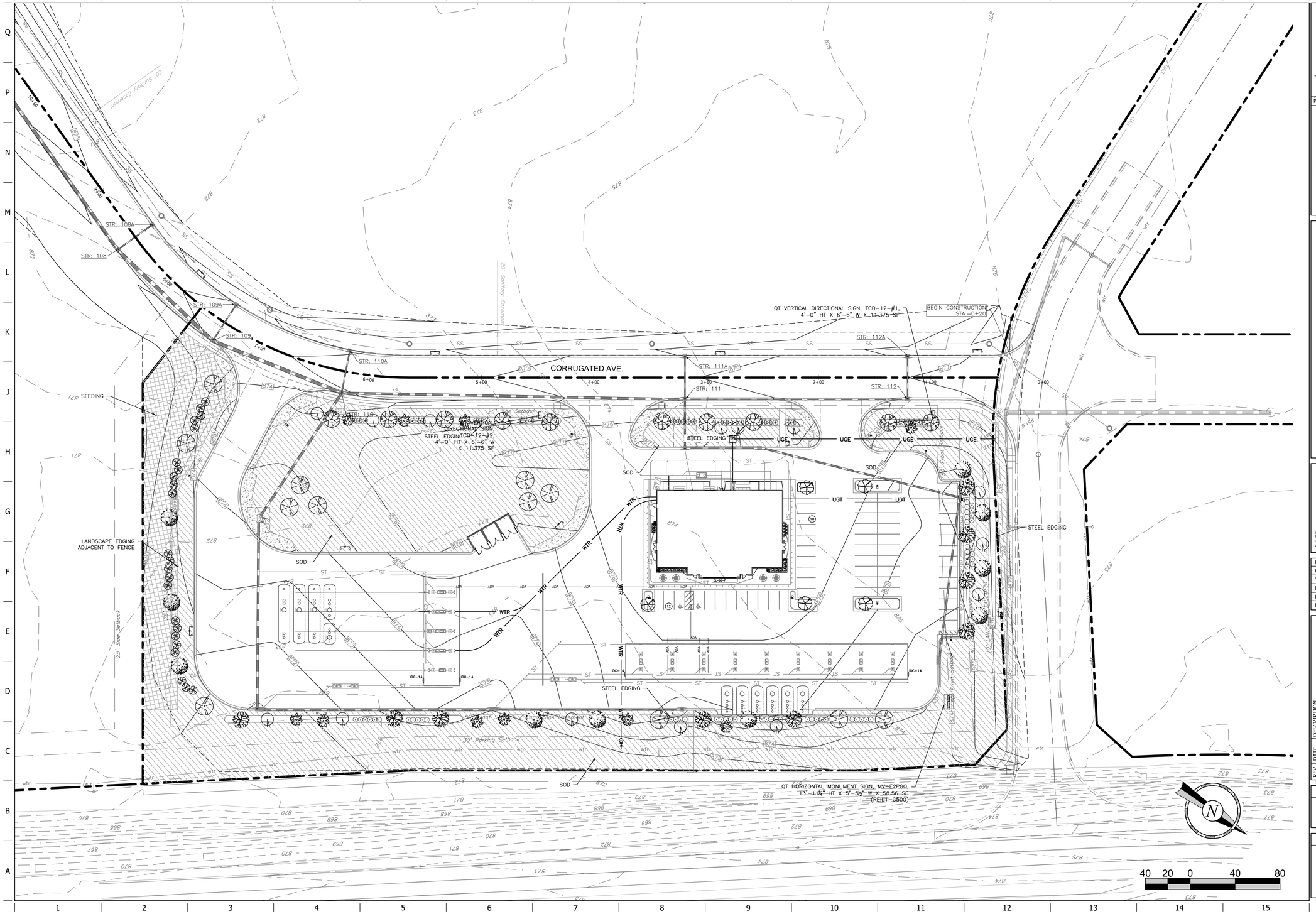
St. Charles
County of Residence

Anne M. Adams
Notary

Anne M. Adams
Printed Name

ANNE M. ADAMS
Notary Public - Notary Seal
St Charles County - State of Missouri
Commission Number 14434098
My Commission Expires Apr 27, 2026

ANNE M. ADAMS
Notary Public - Notary Seal
St Charles County - State of Missouri
Commission Number 14434098
My Commission Expires Apr 27, 2026



DILLON K. REYNOLDS
REGISTERED
No. PE12000722
STATE OF INDIANA
PROFESSIONAL ENGINEER

Dillon Reynolds

PROJECT NO.:12064.02

Spaceco
Civil Engineering & Surveying

QuikTrip No. 7263

4713 CORRUGATED AVENUE
BROWNSBURG, INDIANA 46112

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PROTOTYPE: P-120
DIVISION: REMOTE
VERSION: RTC
DESIGNED BY: ALR
DRAWN BY: ALR
REVIEWED BY: DKR

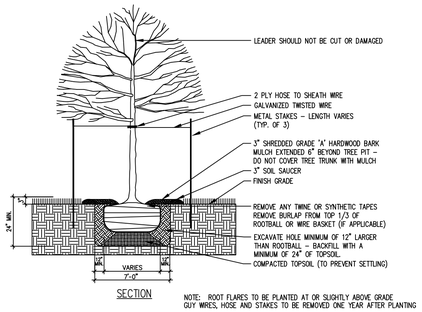
REV	DATE	DESCRIPTION
6	11/12/25	PLAN REVISIONS
5	10/14/25	PLAN REVISIONS
4	07/17/25	ISSUED FOR CONSTRUCTION
3	05/01/25	BID DOCUMENTS
2	04/07/25	FPC REVISIONS
1	02/26/25	BID DOCUMENTS

ORIGINAL ISSUE DATE: 08/29/2023

SHEET TITLE:
LANDSCAPE PLAN

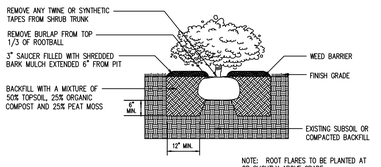
SHEET NUMBER:
L100

FILE LOCATION:N:\Projects 2022\12064 - INDY\12064.02 - QuickTrip Brownsburg\12064.02_Civil (P-120 Re-roll).dwg TAB NAME:Landscape USER:bgoss SAVED:11/26/2025 10:12 AM PLOTTED:11/26/2025 10:44 AM



DECIDUOUS TREE DETAIL

NOT TO SCALE



SHRUB DETAIL

PLANTING NOTES:

1. IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE

2. ALL SHRUB AND TREE PLANTING AREAS TO BE COVERED WITH 3" LAYER OF SHREDDED HARDWOOD BARK MULCH THAT IS BROWN IN COLOR.

3. ALL BACKFILL FOR TREE AND SHRUB PLANTINGS SHALL BE FROM EXISTING SOILS. A 5–10–5 ANALYSIS SLOW RELEASE FERTILIZER SHALL BE INCORPORATED INTO BACKFILL AT APPROVED RATES.

4. FINAL PLACEMENT OF PLANT MATERIALS, ETC. SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING OPERATIONS. ALL TREE LOCATIONS SHALL BE MARKED WITH A WOOD STAKE INDICATING VARIETY AND SIZE OF TREE. PLANTING BED LINES SHALL BE MARKED WITH HIGHLY VISIBLE PAINT LINES WITH OCCASIONAL WOOD STAKES FOR REFERENCE. ALL STAKES SHALL BE REMOVED FOLLOWING PLANTING OPERATIONS. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST PLANT LOCATIONS ON THE SITE.

5. NO SUBSTITUTIONS OF PLANT MATERIALS WILL BE ALLOWED. IF PLANTS ARE NOT AVAILABLE, THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT PRIOR TO BIDDING IN WRITING. PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOB SITE BY THE LANDSCAPE ARCHITECT.

6. ALL PLANTS SHALL MEET OR EXCEED AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1–2004.

7. PLANTS AND ALL OTHER MATERIALS TO BE STORED ON SITE WILL BE PLACED WHERE THEY WILL NOT CONFLICT WITH CONSTRUCTION OPERATIONS.

8. CONTRACTOR TO OBTAIN AND PAY FOR ALL PERMITS AND FEES THAT MAY BE REQUIRED FOR HIS PORTION OF THE WORK.

9. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IN WRITING PRIOR TO BID DATE OF ANY PLANTS THEY FEEL MAY NOT SURVIVE IN LOCATIONS AS NOTED ON THE PLANS.

10. ALL LANDSCAPE PLANTINGS TO BE MAINTAINED BY CONTRACTOR FOR 60 DAYS FOLLOWING PLANTING.. GUY WIRES, HOSE AND STAKES TO BE REMOVED ONE YEAR AFTER PLANTING.. MAINTENANCE TO INCLUDE WATERING, WEEDING, CULTIVATING, MULCHING, MOWING, AND ALL OTHER NECESSARY OPERATIONS REQUIRED FOR PROPER ESTABLISHMENT OF PLANTINGS.

11. ALL INSTALLED PLANTINGS SHALL BE APPROPRIATELY WATERED FOR A MINIMUM PERIOD OF ONE YEAR TO ALLOW FOR THEIR ESTABLISHMENT

12. ALL LANDSCAPE PLANTINGS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FOLLOWING FINAL INSPECTION BY LANDSCAPE ARCHITECT. AT END OF THIS PERIOD, PLANT MATERIAL TERMED DEAD OR UNSATISFACTORY BY LANDSCAPE ARCHITECT SHALL BE REPLACED AT NO ADDITIONAL CHARGE BY THE LANDSCAPE CONTRACTOR.

Landscape Schedule

USE	SYMBOL	COMMON NAME / *Botanical Name*	MINIMUM SIZE/ HEIGHT/SPREAD	QUANTITIES	COMMENTS
SHRUBS		BLACK CHOKEBERRY *Taxus x media 'Wardii"*	HEIGHT/SPREAD 18" X 12" MIN	12 EA.	SEE LANDSCAPE PLAN AND ASSOCIATED DETAILS FOR LANDSCAPE BED LOCATIONS AND SHRUB SPACING
		COMPACT INKBERRY *Ilex glabra 'Compacta'*	HEIGHT/SPREAD 24" X 30" MIN	19 EA.	
		NICK'S COMPACT JUNIPER *Juniperus chinensis 'Nick's Compact*	HEIGHT/SPREAD 24" X 18" MIN	32 EA.	
		MOHAWK VIBURNUM Viburnum x burkwoodii 'Mohawk'	HEIGHT/SPREAD 30" X 20" MIN	23 EA.	
		WARD'S YEW *Taxus x media "Wardii"*	HEIGHT/SPREAD 24"ø X 18" HT MIN	54 EA.	
TREES		FRONTIER ELM *Ulmus x 'Frontier'*	2.5" CALIPER 12' HT	10 EA.	SEE LANDSCAPE PLAN AND ASSOCIATED DETAILS FOR TREE PLACEMENT, AND PLANTING SPECIFICATIONS CONTRACTOR TO VERIFY TREE TYPE, LOCATION, SIZE, HEIGHT, AND SPREAD WITH QT REPRESENTATIVE PRIOR TO INSTALLATION
		GREEN MOUNTAIN SUGAR MAPLE *Acer saccharum 'Green Mountain'*	2.5" CALIPER 12' HT	9 EA.	
		PRINCESS DIANA SERVICEBERRY *Amelanchier x grandiflora' 'Princess Diana'*	2.0" CALIPER 10' HT	10 EA.	
		PRINCETON SENTRY GINKGO *Ginkgo biloba 'Princeton Sentry'*	2.5" CALIPER 12' HT	5 EA.	
		REDBUD – SINGLE STEM *Cercis x canadensis*	2.0" CALIPER 10' HT	14 EA.	
		RED OAK *Quercus rubra*	2.5" CALIPER 12' HT	12 EA.	
		SHADEMASTER HONEY LOCUST *Gleditsia triacanthos 'Shademaster'*	2.5" CALIPER 12' HT	10 EA.	
ORNAMENTAL GRASS		DWARF FOUNTAIN GRASS *Pennisetum alopecuroides 'Hameln'*	12" – 18" MIN.	16 EA.	
MISC.		RTF – RHIZOMATOUS TALL FESCUE SOD		106,200 S.F.	
		RTF – RHIZOMATOUS TALL FESCUE SEED		13,700 S.F.	

LANDSCAPE REQUIREMENTS - UPDATED ORDINANCE

	REQUIRED ORDINANCE	PROVIDED
ON-SITE REQUIREMENTS	5.11A COMMERCIAL DEVELOPMENT 4 SHADE TREES AND 8 LARGE SHRUBS PER HALF ACRE OF OPEN SPACE OPEN SPACE AREA: 1.46AC/.5 =(2.92) 4 = 11.7 1.46AC/.5 =(2.92) 8 = 23.4 SHADE TREES = 12 LARGE SHRUBS = 23	 SHADE TREES = 12 LARGE SHRUBS = 23
STREET FRONTAGE REQUIREMENTS	5.10 D LANDSCAPING IS REQUIRED ALONG PERIMETER ROADS OF A SUBDIVISION AND ALONG ALL STREET FRONTAGES (PUBLIC OR PRIVATE STREETS, NOT INCLUDING SHARED ACCESS DRIVES OR DRIVEWAYS. COMMERCIAL USE PER 100LF: 1.5 SHADE OR EVERGREEN TREES 1.5 ORNAMENTAL TREES 5 SHRUBS RONALD REAGAN PKWY 720LF 720/100 = 7.2 (1.5) = 10.8 SHADE OR EVERGREEN TREES = 11 ORNAMENTAL TREES =11 7.2 (5) = 36.0 SHRUBS = 36 GENERATIONS STREET 275 LF 275/100 = 2.75 (1.5) = 4.12 SHADE OR EVERGREEN TREES = 4 ORNAMENTAL TREES = 4 2.75 (5) = 13.75 SHRUBS = 14 CORRUGATED AVENUE 650 LF 650/100 = 6.5 (1.5) = 9.75 SHADE OR EVERGREEN TREES = 10 ORNAMENTAL TREES = 10 6.5 (5) = 32.5 SHRUBS = 33	 SHADE OR EVERGREEN TREES = 11 ORNAMENTAL TREES =11 SHRUBS = 36 SHADE OR EVERGREEN TREES = 4 ORNAMENTAL TREES = 4 SHRUBS = 14 SHADE OR EVERGREEN TREES = 10 ORNAMENTAL TREES = 10 SHRUBS = 33
INTERIOR PARKING LOT REQUIREMENTS	5.11 C LANDSCAPE ISLANDS MUST BE A MINIMUM AREA OF 160 SF. 1 TREE PER INDIVIDUAL ISLAND OR PER 160 SF. LANDSCAPE ISLANDS ARE REQUIRED AT THE ENDS OF ALL ROWS OF PARKING. SHRUBS ARE BROADLY DISCOURAGED FOR ISLANDS TO AVOID FUTURE GROWTH THAT BLOCKS VISIBILITY. SHORT GRASSES OR FLOWERS MAY BE INCLUDED IN ISLANDS AS DESIRED. TREES = 6	 TREES = 6
PERIMETER PARKING LOT REQUIREMENTS	5.11 C ONE SHADE TREE AT 35 FEET ON CENTER FOUR EVERGREEN SHRUBS PER 35 LF. YARD LENGTH 100 LF 140/35 = 4.0 (4) = 4 SHADE TREES 140/35 = 4.0 (4) = 16 EVERGREEN SHRUBS SHADE TREES = 4 EVERGREEN SHRUBS = 16	 SHADE TREES = 4 EVERGREEN SHRUBS = 16
FOUNDATION PLANTINGS	5.11 D FOUNDATION PLANTINGS SHALL BE PROVIDED TO HELP SOFTEN LONG EXPANSES OF WALLS AND CREATE ATTRACTIVE BUILDING FACADES. AMOUNT FACADES UNDER 100' IN LENGTH. ANY FRONT OR SIDE FACADE SHALL INCLUDE FOUNDATION PLANTINGS AT A RATE OF 1 SHRUB OR ORNAMENTAL TREE PER 10 FEET OF FACADE LENGTH. FACADES 100' IN LENGTH OR MORE. ANY FRONT OR SIDE FACADE SHALL INCLUDE PLANTINGS AT A RATE OF 2 SHRUBS OR ORNAMENTAL TREES PER 10' OF FACADE LENGTH FRONT/REAR = 112LF 112/10 = 11.2 (2) = 22.4 SHRUBS OR ORNAMENTAL TREES = 22 PER FACADE SIDES = 70LF 70/10 = 7 (1) = 7 SHRUBS OR ORNAMENTAL TREES = 7 PER SIDE ORNAMENTAL GRASSES AND PERENNIAL FLOWERS MAY BE PLACED IN LIEU OF REQUIRED SHRUBS OR TREES AT THE RATES LISTED BELOW a. NO MORE THAN 20% OF THE REQUIRED PLANT MATERIAL MAY BE ORNAMENTAL GRASS. b. NO MORE THAN 10% OF THE REQUIRED MATERIAL MAY BE PERENNIAL FLOWER BEDS.	
REQUIRED BUFFERS AND PERIMETER PLANTINGS	5.10 A–C NONE REQUIRED PER ORDINANCE	

DILLON K. REYNOLDS
REGISTERED
No. PE12000722
STATE OF INDIANA
PROFESSIONAL ENGINEER
Dillon Reynolds

PROJECT NO.:12064.02

Spaceco
Civil Engineering & Surveying
3050 Priority Way South Drive Suite 110
Indianapolis, Indiana 46240
(317) 580-2964
spacecoinc.com

QuikTrip No. 7263
4713 CORRUGATED AVENUE
BROWNSBURG, INDIANA 46112

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PROTOTYPE:	P-120
DIVISION:	REMOTE
VERSION:	RTC
DESIGNED BY:	ALR
DRAWN BY:	ALR
REVIEWED BY:	DKR

REV	DATE	DESCRIPTION
6	11/12/25	PLAN REVISIONS
5	10/14/25	PLAN REVISIONS
4	07/17/25	ISSUED FOR CONSTRUCTION
3	05/01/25	BID DOCUMENTS
2	04/07/25	PPC REVISIONS
1	02/26/25	BID DOCUMENTS

ORIGINAL ISSUE DATE: 08/29/2023

SHEET TITLE:
LANDSCAPE TABLES

SHEET NUMBER:
L101

FILE LOCATION:N:\Projects 2022\12064 – INDY\12064.02 – QuikTrip Brownsburg\12064.02_Civil (P-120 Re-roll).dwg TAB NAME:Landscape Tables USER:mromeo SAVED:11/12/2025 10:47 AM PLOTTED:11/26/2025 9:54 AM

Advisory Plan Commission

Town of Brownsburg

Assigned Staff: Kevin Tolloty, Senior Planner

Report Date: 2/17/2026

Request Type: Development Plan Review

General Information

CASE NUMBER	PSDP-25-10
APPLICANT	Cody Nicholson & Caleah Brown, Permit Solutions, for McDonald's
LOCATION	SE Corner S. Green St. and Northfield Dr., Parcel 32-07-26-154-001.000-016
PARCEL SIZE	1.56 acres

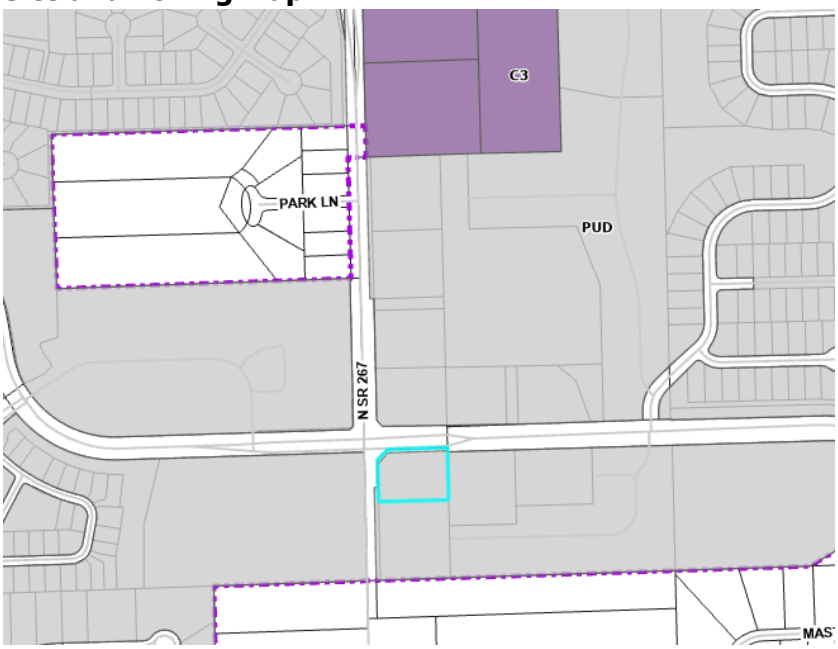
Cross References

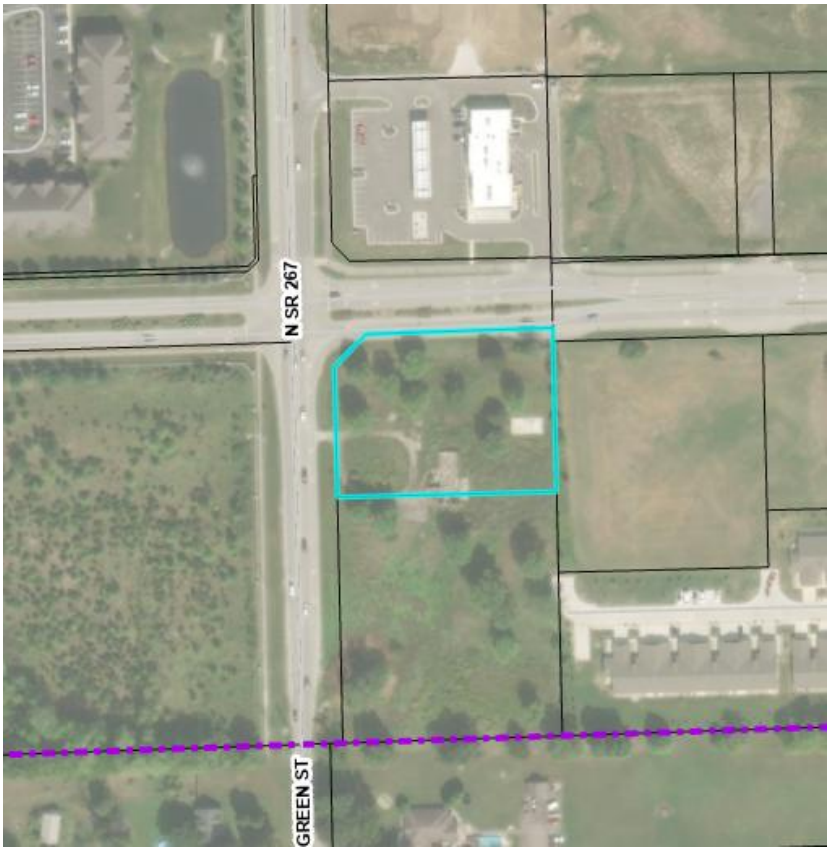
Previous APC Cases	PCPP-23-9, Christian Brothers Primary Plat, CPSP-23-15, Christian Brothers Secondary Plat, PCMA-01-15-1271, West Wynne Farms PUD Amendment, PCMA-03-13-1136, West Wynne Farms PUD
Relevant BZA Cases	N/A
Other	Annexed in 2008, Ord. No. 2008-25

Attachments

☒	Tech Review & Response
☒	Site Plan/Civil
☒	Landscape Plan
☒	Architectural Plans
☒	Lighting Plan, O&M Manual, Traffic Impact Study, West Wynne Farms PUD and Amendment

Site and Zoning Map:





Project and Site Background:

This project is a new McDonald's, with drive-thru, to be located at the southeast corner of S. Green Street and Northfield Drive. The restaurant will be accessed from Northfield Drive to the north and from a shared access with Christian Bros. to the south, from S. Green Street. The access point from S. Green Street will be moved to the north, straddling the property line between Christian Bros. and the proposed McDonald's.

The parcel is part of the West Wynne Farms PUD, specifically part of Parcel R. The lot was created as part of the Christian Bros. subdivision. No variances or waivers have been filed for this project.

Technical Review:

The TECH review for this project took place on December 18, 2025. Development Services commented that vision clearance triangles need added to the site and landscape plans, the lighting plan needs to be in lux, parking calculations needed to be revised to cite the correct code, building architecture shall be a minimum of 75% masonry or architectural block on each side, there shall be a minimum of 30% fenestration per side, facades over 75 feet must recess or project for a portion of their length, number of landscaping plantings shall be calculated in accordance with the PUD, perimeter parking screening shall include shrubs at a minimum of three feet in height, dumpster enclosure details should be provided, and a multi-use trail shall be included along S. Green Street. Building Services commented that a power line and conduit running through their easement which powers Town of Brownsburg signage. The Water Department commented that the water service provider for this property is Citizens Energy. The Wastewater Department commented Drawing C001 number 22 under utilities section should reference sanitary conforming to west central conservancy requirements and not Town of Brownsburg, and an updated O&M manual should be provided. The Fire Territory commented where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided and increases to 600 feet for R-3 and Group U occupancies. The Hendricks County Surveyor noted that this will need to go through the Hendricks County Drainage Board for approval. All stormwater comments submitted by Wessler will need to be addressed as well.

Traffic Study:

A traffic study was completed in conjunction with this and neighboring development. These are the recommendations from CEC (Traffic engineering firm):

- Construct a right-in/right-out only access road connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center). One (1) lane for ingress and one (1) lane for egress should be provided. The access road should be controlled by a Stop sign on the northbound approach to Northfield Drive.
- Construct an entrance only site access driveway from the Access Road which provides one lane for ingress traffic.

- Construct an exit only site access driveway to the Access Road which provides one (1) lane for egress traffic. The driveway should be controlled by a Stop sign on the site driveway egress approach to the Access Road.
- Construct a full access driveway connecting the proposed McDonald's restaurant to the proposed Christian Brothers Automotive Service Center. The drive should provide one (1) lane for ingress traffic and one (1) lane for egress traffic.
- The proposed site driveways and access roads should be constructed to provide sight triangles that are free of sight obstructions, such as parked vehicles, buildings, walls, hedges, bushes, low growing trees, etc. to maintain a clear line of sight to potential conflicting vehicles.

Criteria:

Pursuant to Chapter 8 of the Brownsburg Unified Development Ordinance the Advisory Plan Commission shall make findings of fact on the following criteria:

1) The Development Plan is consistent with the **Comprehensive Plan**.

   Future Land Use Map Link: https://www.brownsburg.org/DocumentCenter/View/1068/2021-Future-Land-Use-Map-PDF

   a) The Future Land Use Map notes this area as being used for Local Commercial uses. The areas shaded in brown to the east are designated multi-family residential areas, with the yellow areas as single-family residential. Local commercial areas are those envisioned for uses that serve the surrounding neighborhood and Town and of a smaller scale. The existing commercial tenants in this corridor are a little higher intensity than what would be expected of local commercial, and the addition of a fast food restaurant will fit well among those uses.

      It should be noted that this PUD has been in effect since annexation in Brownsburg in 2011, and was found at that time to be in compliance with the comprehensive plan. The proposed use of this property for a fast food restaurant is a permitted use in the West Wynne Farms PUD.

      Based on the above information, staff believes this criterion has been met.

LOCAL COMMERCIAL (From Comprehensive Plan)
Areas designated as local commercial are envisioned for uses that serve the surrounding neighborhood and Town. Uses should be of a scale and intensity considered generally compatible with adjacent and nearby residential. Primary uses for this area include small markets and specialty food shops; dentists and small medical offices; boutique shopping and personal services like salons, barbers, and the like; and small businesses and professional services. Additional uses such as banks or others that provide a service to the neighborhood but may generate more traffic or require accommodations to drive-up services may be a reasonable fit with additional review.



Local Commercial

Corridor Commercial

2) The Development Plan complies with applicable development requirements and standards of **CHAPTER 2 – ZONING DISTRICTS, CHAPTER 3 – PERMITTED USES,** and/or the PUD Ordinance.

   a) The project is part of the West Wynne Farms PUD and a fast food restaurant is permitted by right in the section of the PUD. Proposed building setbacks are over 90 feet for each side, well exceeding the minimum 30' front setback, minimum 10' side setback, and minimum 15' rear setback. The maximum building height is 50 feet, and the proposed building will be just under 19 feet in height. The PUD maximum lot coverage is 50% for structures and 90% for all impervious surfaces. As measured, the proposed project structures are 6.5% lot coverage and 69.2% impervious surfaces.

   Based on the above information, staff believes this criterion has been met.

3) The Development Plan complies with applicable standards found in **CHAPTER 5: SITE DEVELOPMENT** and/or the PUD Ordinance.

   a) *Landscaping*: The total number of plantings did not meet the minimum required calculation from section 9.03 of the PUD ordinance. Additionally, wintercreeper has been flagged as an invasive species and will need replaced. Landscape comments have been received although as of the time of this report, a revised landscape plan has yet to be submitted.

   b) *Lighting*: There is a maximum of 20 lux along the south side, and 5 lux on the east side. Measurements were given in foot candles, and an estimated conversion of numbers to lux did not clearly show this requirement has been met.

c) *Parking*: One parking space is required per two seats. Forty-eight seats are proposed which result in a minimum of 24 spaces. Forty-seven parking spaces are provided.

d) *Vision Clearance Triangle*: Vision Clearance Triangles have will be included on the landscape plans.

e) *Architecture:* A minimum of 75% of the façade (all sides) shall be masonry or architectural block. Revised plans show this has been achieved. There is only a comment regarding fenestration that is currently being resolved.

Comments have been received addressing all Tech Review comments, however, several revised plans are outstanding as of the date of this report. Based on the above information, staff believes this criterion will be met.

4) The Development Plan complies with any **other applicable provisions** of this Ordinance or **Overlay Standards.**

a) No special provisions that relate to the plat are noted for this site.

b) Overlay districts are not applicable to this project.

Based on the above information, staff believes this criterion has been met.

5) Satisfies any provision related to a development's design as found in **CHAPTER 7 – SUBDIVISION REGULATIONS** and/or the PUD Ordinance.

a) The project is primarily subject to the West Wynne Farms PUD, which heavily references the 2013 Zoning Ordinance. Landscape and architectural items have been addressed.

Based on the above information, staff believes this criterion has been met.

6) The Development Plan satisfies the construction requirements of the **Brownsburg Construction Standards and Specifications.**

a) The entrance drive has been moved northward, to the north/south property line between McDonald's and Christian Brothers.

b) The project's stormwater review is still ongoing. Revised plans addressing Tech Review comments have been received and are under review. A waiver for vertical separation has been discussed, but unclear if one has been officially requested.

Based on the above information, staff believes this criterion will be met.

Recommendations:

The Advisory Plan Commission may request conditions and commitments related to the project and criteria. Conditions or commitments must be made as part of the motion.

Based on the information provided and the criteria responses, staff recommends a motion to

☐	Approve PSDP-25-10 as presented.
☒	Approve PSDP-25-10 with the following staff conditions: 1. The approval of Findings of Fact and Report of Determination. 2. The stamping of the construction plans by the Director. 3. The completion of any outstanding TECH comments. 4. The existing access to Christian Brothers from S. Green Street shall be closed upon completion of new Green Street access drive as shown in plans. 5. Approval of stormwater waiver.
☐	Deny PSDP-25-10 based on the following criteria:
☐	Continue PSDP-25-10 to the March 23, 2026 meeting.

SITE PLAN FOR A PROPOSED

McDONALD'S RESTAURANT

NSN45201 (013-1263)

7030 NORTHFIELD DRIVE
BROWNSBURG, INDIANA 46112

DEVELOPMENT NOTES:

1. SITE AREA: 1.56 ACRES
2. SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, INDIANA 46112
3. PROPERTY ID 14-2-26-61E 154-001
4. EXISTING ZONING: SINGLE FAMILY RESIDENTIAL
   PROPOSED ZONING: PLANNED UNIT DEVELOPMENT (PUD)*
   * NOTE: A) NO DESIGN STANDARDS LISTED FOR "PUD". STANDARDS FOR ZONE C3 COMMERCIAL ARE SUBSTITUTED BELOW.
   B) RECORDED PLAT PC9/52/3ABC SETBACKS DO NOT MATCH/ALIGN WITH ANY COMMERCIAL ZONE LISTED FOR BROWNSBURG.
5. USE: EXISTING USE: VACANT
   PROPOSED USE: RESTAURANT, McDONALD'S
6. BUILDING: 4590 BUILDING
   GROSS BUILDING AREA: 4,180 SQ.FT.
   NET FLOOR AREA: 3,985 SQ.FT.

PROPERTY OWNER: CBH PROPERTIES BROWNSBURG LLC
17725 KATY FREEWAY
HOUSTON, TX, 77094

7. SETBACKS (C-3): FRONT BUILDING SETBACK: 30'
   SIDE BUILDING SETBACK: 0'
   REAR BUILDING SETBACK: 15'
8. MAXIMUM BUILDING HEIGHT: 50'
9. ALL NEW UTILITIES SHALL BE LOCATED UNDERGROUND.
10. ALL NECESSARY UTILITIES (PUBLIC AND PRIVATE) WILL BE AVAILABLE, FUNCTIONING, AND USABLE AT THE TIME ANY STAGE OF THE PROJECT OR THE TOTAL PROJECT IS READY FOR OCCUPANCY.
11. FLOOD ZONE INFORMATION: ACCORDING TO THE FLOOD INSURANCE RATE MAP NO. 18063C0167D, WITH AN EFFECTIVE DATE OF SEPTEMBER 25, 2009, THE INTENDED SUBJECT AREA LIES WITHIN FLOOD ZONE X (UNSHADED), AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.
12. ANY SIGNAGE SHALL BE BY SEPARATE PERMIT.

IMPERVIOUS COVER CALCULATIONS			
SITE AREA			
	AREA (SF)	AREA (AC)	
TOTAL SITE AREA	68,091	1.56	
EXISTING SITE COVER			
	AREA (SF)	AREA (AC)	
BUILDING/ROOF	0	0	
PVMT/CONC/MISC	10,969	0.25	
TOTAL IMPERVIOUS AREA	10,969	0.25	**16.03%**
TOTAL PERVIOUS AREA	57,122	1.31	**83.97%**
PROPOSED SITE COVER			
	AREA (SF)	AREA (AC)	
BUILDING/ROOF	4,398	0.1	
PVMT/CONC/MISC	42,539	0.98	
TOTAL IMPERVIOUS AREA	46,937	1.13	**67.66%**
TOTAL PERVIOUS AREA	21,154	0.54	**32.33%**

OWNER/TEAM INFORMATION

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
10300 ALLIANCE ROAD, SUITE 300
CINCINNATI, OH 45242
PH: 513-483-3519
CONTACT: TYLER AMICON

LAND SURVEYOR

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
530 E. OHIO STREET, SUITE G
INDIANAPOLIS, IN 46204
PH: 317-655-7777
CONTACT: TYLER J. THOMPSON

LANDSCAPE ARCHITECT

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
777 LOWNDES HILL ROAD, B2, SUITE 100
GREENVILLE, SC 29607
PH: 864-626-3140
CONTACT: RYAN HERTZFELD

DEVELOPER

MCDONALD'S USA, LLC
110 N. CARPENTER STREET
CHICAGO, IL 60607
PH: 913-660-2205
CONTACT: AMY SWITZER

ARCHITECT

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST STREET
INDIANAPOLIS, IN 46204
PH: 317-797-6595
CONTACT: CHELSEA MEADOWS

UTILITY COMPANIES

SANITARY SEWER

WEST CENTRAL CONSERVATORY DISTRICT
243 S. COUNTY ROAD 625 E
AVON, IN 46123
PH: 317-340-0183
EMAIL: SPALEDINO@WCCDIN.ORG
CONTACT: DEREK WILLIAMS / SAM PALEDINO

STORM WATER FACILITIES

TOWN OF BROWNSBURG
61 N. GREEN STREET
BROWNSBURG, IN 46112
PH: 317-852-1114
EMAIL: KDILLON@BROWNSBURG,ORG
CONTACT: KATHY DILLION

ELECTRIC SERVICE

DUKE ENERGY
1200 MADISON AVENUE, SUITE 100
INDIANAPOLIS, IN 46225
PH: 317-327-4952
EMAIL: JEFFREYL@INDY.GOV
CONTACT: JEFF MEID

GAS SERVICE

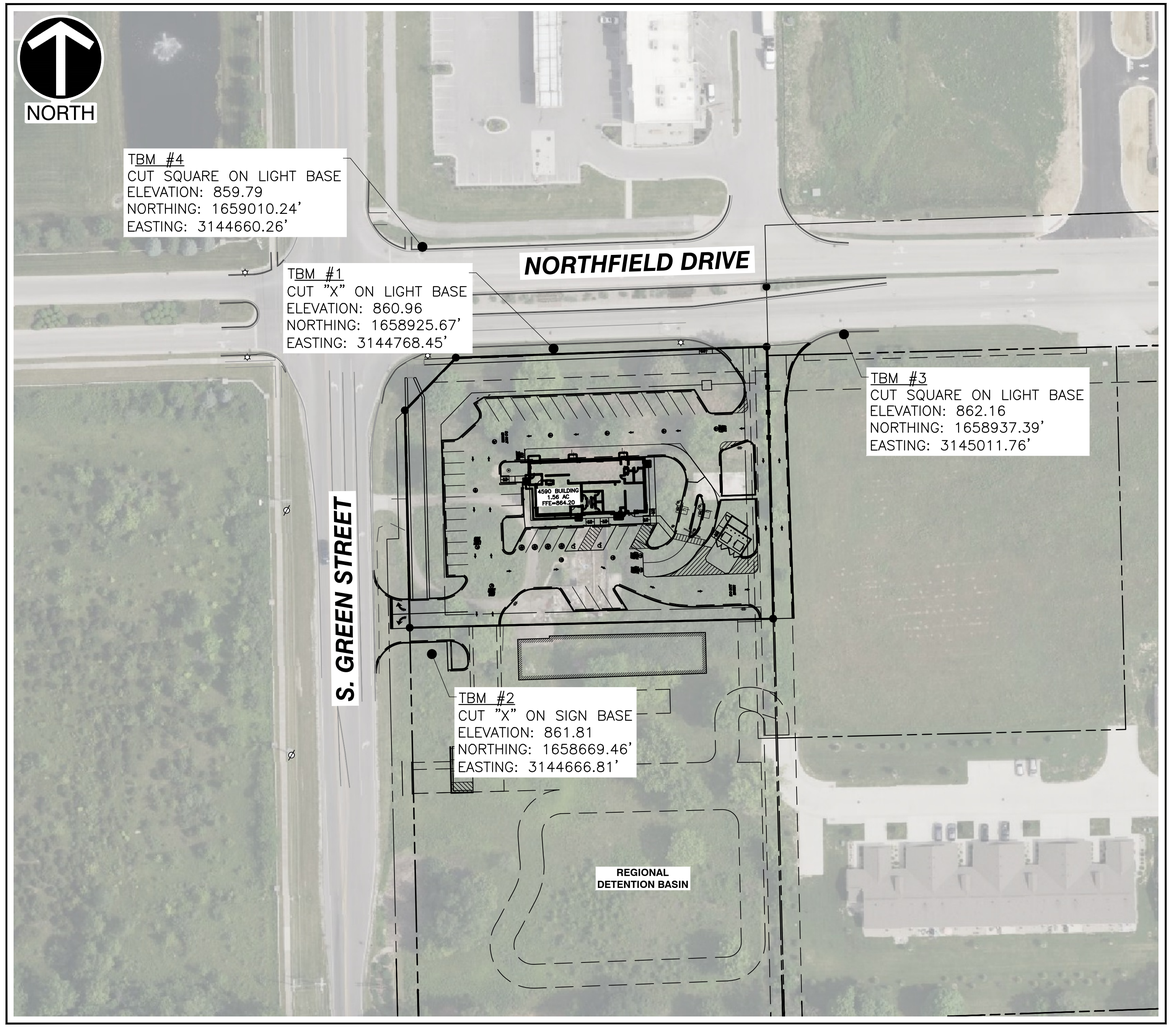
CENTERPOINT ENERGY (SOUTH)
1800 W. 26TH STREET
MUNCIE, IN 47302
PH:
EMAIL: CANDICE.MUNOZ@CENTERPOINTENERGY.COM
CONTACT: CANDICE MUNOZ-ROUTH

WATER SERVICE

CITIZENS ENERGY GROUP
2150 DR. MARTIN LUTHER KING JR STREET
INDIANAPOLIS, IN 46200
UTILITYCOORDINATION@CITIZENSENERGYGROUP.COM
PH: 317-927-6038

TELEPHONE/FIBER SERVICE

AT&T
EMAIL: G09871@ATT.COM
PH: 877-951-1668
CONTACT: GEORGE PARKER



SITE MAP
SCALE IN FEET
0 60 120



VICINITY MAP
SCALE:1"=1000'

SHEET INDEX		
SHEET NUMBER	**DRAWING NUMBER**	**SHEET TITLE**
1	C000	COVER SHEET
2	C001	GENERAL NOTES
3	C100	EXISTING CONDITIONS & DEMOLITION PLAN
4	C200	LAYOUT PLAN
5	C201	ENLARGED LAYOUT PLAN
6	C300	GRADING PLAN
7	C400	DRAINAGE PLAN
8	C401	DRAINAGE PROFILES
9	C402	SOIL SURVEY MAP
10	C500	UTILITY PLAN
11	C700	LANDSCAPE PLAN
12	C701	LANDSCAPE DETAILS
13	C800	SITE DETAILS
14	C801	SITE DETAILS
15	C802	SITE DETAILS
16	C900	EROSION & SEDIMENT CONTROL PLAN
17	C901	EROSION DETAILS
18	LIGHTING	PHOTOMETRIC PLAN
19	S100	STRUCTURAL GENERAL NOTES
20	S200	STRUCTURAL FOUNDATION DETAILS
21	S201	STRUCTURAL FOUNDATION DETAILS

PARKING INFORMATION	
TOTAL SPACES REQUIRED **24**	1 SPACE / 2 SEATS 48 SEATS / 2 SEATS * 1 SPACE = 24 SPACES
TOTAL SPACES PROVIDED **47**	30 PROPOSED SPACES: 9.5' X 18' STANDARD @ 60° 15 PROPOSED SPACES: 9.5' X 18' STANDARD @ 90° 2 PROPOSED SPACES: 9.5' X 18' ADA @ 60°

LEGAL DESCRIPTION (COMMITMENT NO. CTIN2503326)

PARCEL 1:

LOTS 1 AND 2 IN CHRISTIAN BROTHERS AUTOMOTIVE, A REPLAT OF LOT 4, OF MINOR PLAT NO. 4, BEING A SUBDIVISION IN LINCOLN TOWNSHIP, BROWNSBURG, HENDRICKS COUNTY, INDIANA, AS PER PLAT THEREOF RECORDED APRIL 2, 2024, IN PLAT BOOK 9, PAGE 52 AS INSTRUMENT NO. 202405573 IN THE OFFICE OF THE RECORDER OF HENDRICKS COUNTY, INDIANA.

PARCEL 2:

EASEMENT FOR PEDESTRIAN AND VEHICULAR INGRESS AND EGRESS AS GRANTED IN EASEMENT AGREEMENT BY AND BETWEEN GEMINI267 LLC AND SITE SOLUTIONS PROPERTY GROUP, LLC, DATED MARCH 7, 2024, RECORDED MARCH 8, 2024, AS INSTRUMENT NO. 202404131, AND RE-RECORDED AUGUST 2, 2024, AS INSTRUMENT NO. 202413575.

NOTE: PARCEL 1 IN THIS COMMITMENT INCLUDES LOTS 1 AND 2. HOWEVER, THIS SURVEY WAS CONTRACTED FOR ONLY LOT 1.

NOTE: THE FOLLOWING AS-SURVEYED LEGAL DESCRIPTION DESCRIBES THE SAME LAND AS LOT 1 ABOVE.

LOT 1 IN THE PLAT OF CHRISTIAN BROTHERS AUTOMOTIVE AS RECORDED IN INSTRUMENT NUMBER 202405573 IN THE OFFICE OF THE RECORDER OF HENDRICKS COUNTY, INDIANA, BEING A REPLAT OF LOT 4 OF MINOR PLAT NO. 4 AS RECORDED IN PLAT BOOK 9, PAGE 111 IN SAID RECORDER'S OFFICE, AND BEING LOCATED IN THE NORTHWEST QUARTER OF SECTION 26, TOWNSHIP 16 NORTH, RANGE 1 EAST IN LINCOLN TOWNSHIP, TOWN OF BROWNSBURG, HENDRICKS COUNTY, INDIANA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 1 THENCE; ALONG THE PERIMETER OF SAID LOT 1 FOR THE FOLLOWING FIVE (5) COURSES: THENCE (1) SOUTH 01 DEGREES 22 MINUTES 23 SECONDS EAST A DISTANCE OF 228.16 FEET; (2) THENCE SOUTH 88 DEGREES 34 MINUTES 01 SECONDS WEST A DISTANCE OF 304.82 FEET; (3) THENCE NORTH 01 DEGREES 17 MINUTES 11 SECONDS WEST A DISTANCE OF 182.33 FEET; (4) THENCE NORTH 44 DEGREES 03 MINUTES 48 SECONDS EAST A DISTANCE OF 61.51 FEET; (5) THENCE NORTH 87 DEGREES 58 MINUTES 06 SECONDS EAST A DISTANCE OF 260.74 FEET TO THE POINT OF BEGINNING, CONTAINING 1.56 ACRES OF LAND, MORE OR LESS.

Indiana811
811 OR 800-382-5544
https://indiana811.org

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

PATRICK TODD BENNETT
REGISTERED
10400009
STATE OF INDIANA
PROFESSIONAL ENGINEER
02/14/26

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUED FOR PERMIT SET
2	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF INDIANA SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF AN INDIANA REGISTERED PROFESSIONAL PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF PA WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC

10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

Civil & Environmental Consultants, Inc.

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

COVER SHEET

DATE:	DECEMBER 5, 2025	DRAWN BY:	AWM
DWG SCALE:	AS SHOWN	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			PTB

DRAWING NO.: **C000**
SHEET 1 OF 20

A:\355-081\355-081\-CAD\Dwg\C001\355081-Civil-C000.dwg(C000 - COVER SHEET) LS(2/13/2026 - awelch-murata) - LP, 2/13/2026 7:52 PM

SURVEY NOTES

1. EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
2. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
3. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER, OWNER, AND OWNER'S REPRESENTATIVE FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES OCCURRING IN THE COURSE OF THE DEMOLITION AND CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL CODES, OBTAIN ALL APPLICABLE PERMITS, AND PAY ALL REQUIRED FEES PRIOR TO BEGINNING WORK.
5. ALL WORK PERFORMED BY THE CONTRACTOR SHALL CONFORM TO THE LATEST REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT. IF DEVIATION FROM THE REQUIREMENTS ARE PROPOSED THE ENGINEER SHALL BE CONTACTED IMMEDIATELY.
6. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICTS ALL WORK ASSOCIATED WITH THE PROJECT.
8. BEFORE INSTALLATION OF STORM OR SANITARY SEWER, OR OTHER UTILITY, THE CONTRACTOR SHALL VERIFY ALL CROSSINGS, BY EXCAVATION WHERE NECESSARY, AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT HE IS NOT NOTIFIED OF DESIGN CONFLICTS PRIOR TO CONSTRUCTION.
9. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

DEMOLITION NOTES

1. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD.
2. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. REPAIR DAMAGE ACCORDING TO THE APPROPRIATE UTILITY COMPANY STANDARDS AND AT THE CONTRACTOR'S EXPENSE.
3. ALL UTILITY DISCONNECTION, REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY / AGENCY. UTILITY CONTACTS ARE LISTED ON THE COVERSHEET.
4. THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR OBTAINS PRIOR WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
5. EROSION AND SEDIMENTATION CONTROL MEASURES AROUND AREAS OF DEMOLITION SHALL BE PROPERLY INSTALLED AND SHALL FUNCTION PROPERLY PRIOR TO INITIALIZATION OF DEMOLITION ACTIVITIES.
6. ASBESTOS OR HAZARDOUS MATERIALS ARE NOT EXPECTED, IF FOUND ON SITE, SUCH MATERIALS SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF HAZARDOUS MATERIALS ARE ENCOUNTERED.
7. CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL AND OSHA REGULATIONS DURING ALL DEMOLITION ACTIVITIES.
8. CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
9. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION REGULATIONS AND AS REQUIRED BY LOCAL AGENCIES WHEN WORKING IN AND/OR ALONG STREETS, ROADS, HIGHWAYS, ETC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVAL AND COORDINATE WITH LOCAL AND/OR STATE AGENCIES REGARDING THE NEED, EXTENT AND LIMITATIONS ASSOCIATED WITH INSTALLING AND MAINTAINING TRAFFIC CONTROL MEASURES.
11. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAW CUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT DEMOLITION.
12. ALL UTILITY AND STRUCTURE REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED AND PROPERLY DOCUMENTED BY A CERTIFIED PROFESSIONAL, WHEN APPLICABLE, WITH THE APPROPRIATE UTILITY COMPANY, MUNICIPALITY AND/OR AGENCY. DEMOLITION CONTRACTOR SHALL REFER TO ANY ENVIRONMENTAL STUDIES FOR DEMOLITION RECOMMENDATIONS AND GUIDANCE. AVAILABLE ENVIRONMENTAL STUDIES MAY INCLUDE, BUT ARE NOT LIMITED TO: PHASE I ESA, PHASE II, WETLAND AND STREAM DELINEATION AND ASBESTOS SURVEY. ALL APPLICABLE ENVIRONMENTAL STUDIES SHALL BE MADE AVAILABLE UPON REQUEST.
14. NO TREES SHALL BE REMOVED, NOR VEGETATION DISTURBED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
16. ALL PAVEMENT, BASE COURSES, SIDEWALKS, CURBS, BUILDINGS, FOUNDATIONS, ETC., WITHIN THE AREA TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT OR BUILDING SUBGRADE PROVIDED THAT THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC., ARE IN ACCORDANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS OF THE REPORT OF GEOTECHNICAL INVESTIGATION. BASE COURSE MATERIALS SHALL NOT BE WORKED INTO THE SUBGRADE AREAS TO RECEIVE LANDSCAPING.
17. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITIES.

LAYOUT NOTES

1. THE CONTRACTOR SHALL CHECK EXISTING GRADES, DIMENSIONS, AND INVERTS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, INCLUDING IRRIGATION LINES. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. RELOCATE EXISTING UTILITIES AS INDICATED, OR AS NECESSARY FOR CONSTRUCTION.
3. PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND NEW PAVEMENT. FIELD ADJUSTMENT OF FINAL GRADES MAY BE NECESSARY. INSTALL ALL UTILITIES, INCLUDING IRRIGATION SLEEVING, PRIOR TO INSTALLATION OF PAVED SURFACES.
4. THE CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN.
5. SITE WORK CONCRETE WALKS AND PADS SHALL HAVE A BROOM FINISH TO ALL SURFACES. SITE WORK CONCRETE SHALL BE CLASS "A" (4,000 PSI @ 28 DAYS) UNLESS OTHERWISE NOTED.
6. ALL DAMAGE TO EXISTING PAVEMENT TO REMAIN WHICH RESULTS FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH LIKE MATERIALS AT THE CONTRACTOR'S EXPENSE.
7. SITE DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL MAINTAIN ONE SET OF AS-BUILT / RECORD DRAWINGS ON THE JOB SITE DURING CONSTRUCTION FOR DISTRIBUTION TO THE OWNER AND/OR OWNER'S REPRESENTATIVE UPON COMPLETION.
9. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS OF UTILITY SERVICE ENTRY LOCATIONS AND PRECISE BUILDING DIMENSIONS. SHOULD SIGNIFICANT DEVIATION EXIST BETWEEN WHAT IS SHOWN HEREIN THE CONTRACTOR SHALL CONTACT THE ENGINEER.
10. THIS SITE LAYOUT IS SPECIFIC TO THE APPROVALS NECESSARY FOR THE CONSTRUCTION IN ACCORDANCE WITH TOWN OF BROWNSBURG STANDARDS. NO CHANGES TO THE SITE LAYOUT ARE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. CHANGES MADE TO THE SITE LAYOUT WITHOUT APPROVAL IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. CHANGES INCLUDE BUT ARE NOT LIMITED TO, INCREASED IMPERVIOUS PAVEMENT, ADDITION / DELETION OF PARKING SPACES, MOVEMENT OF CURB LINES, CHANGES TO DRAINAGE STRUCTURES AND PATTERNS, LANDSCAPING, ETC.

DRAINAGE NOTES

1. DISTANCES SHOWN ON PIPING ARE HORIZONTAL DISTANCES FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE INSTALLATION, INSPECTION, TESTING AND FINAL ACCEPTANCE OF ALL NEW STORMWATER MANAGEMENT FACILITIES CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH ALL APPLICABLE REGULATING AGENCIES CONCERNING INSTALLATION, INSPECTION AND APPROVAL OF THE STORM DRAINAGE SYSTEM CONSTRUCTION.
3. ALL STORMWATER MANAGEMENT FACILITIES, INCLUDING COLLECTION AND CONVEYANCE STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES AND REGULATIONS.
4. ANY WORK PERFORMED IN THE LOCAL OR STATE RIGHT OF WAYS SHALL BE IN ACCORDANCE WITH THE APPLICABLE LOCAL OR STATE REQUIREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE NECESSARY PERMITS FOR THE WORK, SCHEDULE NECESSARY INSPECTIONS, AND PROVIDE THE NECESSARY TRAFFIC CONTROL MEASURES AND DEVICES, ETC., FOR WORK PERFORMED IN THE RIGHT OF WAYS.

GRADING NOTES

1. CONTRACTOR SHALL ADHERE TO THE EROSION CONTROL PLAN PREPARED FOR THIS PROJECT.
2. REFER TO AND FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY OTHERS.
3. EARTHWORK SHALL INCLUDE CLEARING AND GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, MASS GRADING, EXCAVATION, FILLING, UNDER CUT AND REPLACEMENT, IF REQUIRED, AND COMPACTION.
4. CONTRACTOR TO REFILL UNDERCUT AREAS WITH SUITABLE MATERIAL AND COMPACT AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
5. PLACE TOPSOIL OVER THE SUBGRADE OF UNPAVED, DISTURBED AREAS TO A DEPTH INDICATED ON THE LANDSCAPE PLANS.
6. PAVEMENT SLOPES ACROSS ACCESSIBLE PARKING STALLS AND ADJOINING ACCESS AISLES SHALL BE MAXIMUM 2%.
7. NO SLOPE SHALL EXCEED 3:1 (HORIZONTAL:VERTICAL) UNLESS NOTED OTHERWISE.
8. ALL AREAS NOT PAVED SHALL BE STABILIZED IN ACCORDANCE WITH THE EROSION CONTROL PLAN, UNLESS NOTED OTHERWISE.
9. ALL EXCESS SOIL MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
10. ALL EVACUATED AREAS BENEATH AND WITHIN TWO FEET OF THE PAVEMENT SHALL BE BACKFILLED WITH GRANULAR MATERIAL AND COMPACTED TO 90% MAXIMUM DENSITY AS DETERMINED BY THE "STANDARD AASHO T-180 COMPACTION TEST" (ASTM D-1557-70). ALL OTHER AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL PLACED IN THE 8" MAXIMUM THICKNESS LIFTS, FREE OF FROZEN PARTICLES, AND COMPACTED TO 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557-70 OR AS OTHERWISE DETERMINED BY THE GEOTECHNICAL ENGINEER.
11. ALL SOILS TEST SHALL BE VERIFIED BY A GEOTECHNICAL ENGINEER CONCURRENT WITH THE GRADING AND BACKFILLING OPERATIONS.
12. A GEOTECHNICAL ENGINEER SHALL BE EMPLOYED BY THE OWNER AND BE ON SITE DURING GRADING OPERATIONS. ALL SOILS TESTS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER CONCURRENT WITH THE GRADING AND BACK FILLING OPERATIONS.
13. THE GRADING CONTRACTOR SHALL PERFORM A COMPLETE GRADING AND COMPACTION OPERATION AS SHOWN ON THE PLANS, STATED IN THESE NOTES, OR REASONABLY IMPLIED THERE FROM, ALL IN ACCORDANCE WITH THE PLANS AND NOTES AS INTERPRETED BY THE GEOTECHNICAL ENGINEER.
14. ALL AREAS SHALL BE ALLOWED TO DRAIN. ALL LOW POINTS SHALL BE PROVIDED WITH TEMPORARY DITCHES.
15. ANY EXISTING TRASH AND DEBRIS CURRENTLY ON THIS PROPERTY MUST BE REMOVED AND DISPOSED OF OFF-SITE IN AN APPROVED MANNER.
16. SITE PREPARATION INCLUDES THE CLEARANCE OF ALL STUMPS, TREES, BUSHES, SHRUBS, AND WEEDS; THE GRUBBING AND REMOVAL OF ROOTS AND OTHER SURFACE OBSTRUCTIONS FROM THE SITE; AND THE DEMOLITION AND REMOVAL OF ANY MAN-MADE STRUCTURES. THE UNSUITABLE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE. TOPSOIL AND GRASS IN THE FILL AREAS SHALL BE THOROUGHLY DISCED PRIOR TO THE PLACEMENT OF ANY FILL. THE GEOTECHNICAL ENGINEER SHALL APPROVE THE DISCING OPERATION.
17. TREE CLEARING WILL BE PERFORMED BY THE OWNER IN ADVANCE OF FULL SITE WORK (NOT INCLUDING STUMP GRINDING).
18. COMPACTION EQUIPMENT SHALL CONSIST OF TAMPING ROLLERS, PNEUMATIC-TIRED ROLLERS, VIBRATORY ROLLER, OR HIGH SPEED IMPACT TYPE DRUM ROLLERS ACCEPTABLE TO THE GEOTECHNICAL ENGINEER. THE ROLLER SHALL BE DESIGNED SO AS TO AVOID THE CREATION OF A LAYERED FILL WITHOUT PROPER BLENDING OF SUCCESSIVE FILL LAYERS.
19. THE GEOTECHNICAL ENGINEER SHALL OBSERVE AND TEST THE PLACEMENT OF THE FILL TO VERIFY THAT SPECIFICATIONS ARE MET. A SERIES OF FILL DENSITY TESTS WILL BE DETERMINED ON EACH LIFT OF FILL. INTERIM REPORTS SHOWING FILL QUALITY WILL BE MADE TO THE OWNER AT REGULAR INTERVALS.
20. THE GEOTECHNICAL ENGINEER SHALL NOTIFY THE CONTRACTOR OF REJECTION OF A LIFT OF FILL OR PORTION THEREOF. THE CONTRACTOR SHALL REWORK THE REJECTED PORTION OF FILL AND OBTAIN NOTIFICATION FROM THE GEOTECHNICAL ENGINEER OF ITS ACCEPTANCE PRIOR TO THE PLACEMENT OF ADDITIONAL FILL.
21. ALL AREAS TO RECEIVE FILL SHALL BE SCARIFIED TO A DEPTH OF NOT LESS THAN 6 INCHES AND THEN COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. THE GEOTECHNICAL ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE ACCEPTABILITY OF SOILS PLACED. ANY UNACCEPTABLE SOILS PLACED SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE.
22. THE SEQUENCE OF OPERATION IN THE FILL AREAS WILL BE FILL, COMPACT, VERIFY ACCEPTABLE SOIL DENSITY, AND REPETITION OF THE SEQUENCE. THE ACCEPTABLE MOISTURE CONTENTS DURING THE FILLING OPERATION ARE THOSE AT WHICH SATISFACTORY DRY DENSITIES CAN BE OBTAINED. THE ACCEPTABLE MOISTURE CONTENTS DURING THE FILLING OPERATION IN THE REMAINING AREAS ARE FROM -2 TO +2 PERCENT ABOVE THE OPTIMUM MOISTURE VALUE.
23. THE SURFACE OF THE FILL SHALL BE FINISHED SO THAT IT WILL NOT IMPOUND WATER. IF AT THE END OF A DAYS WORK IT WOULD APPEAR THAT THERE MAY BE RAIN PRIOR TO THE NEXT WORKING DAY, THE SURFACE SHALL BE FINISHED SMOOTH. IF THE SURFACE HAS BEEN FINISHED SMOOTH FOR ANY REASON, IT SHALL BE SCARIFIED BEFORE PROCEEDING WITH THE PLACEMENT OF SUCCEEDING LIFTS. FILL SHALL NOT BE PLACED ON FROZEN GROUND, NOR SHALL FILLING OPERATIONS CONTINUE WHEN THE TEMPERATURE IS SUCH AS TO PERMIT THE LAYER UNDER PLACEMENT TO FREEZE.
24. ALL FILLED PLACES, INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, PROPOSED STORM & SANITARY SEWER LINES, ETC. SHALL BE COMPACTED TO THE CRITERIA AS SPECIFIED BY THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT OR BE EQUAL TO THE REQUIREMENTS OF THE CITY OF HUXLEY IF SO ESTABLISHED.
25. ANY CONTAMINATED SOIL ENCOUNTERED DURING EXCAVATION SHALL BE HAULED AND PLACED AS DIRECTED BY THE OWNERS ENVIRONMENTAL ENGINEERING REPRESENTATIVE.

UTILITY NOTES

1. ALL PROPOSED UTILITY LINES AND EXTENSIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CORRESPONDING UTILITY'S SPECIFICATIONS. CONTRACTOR SHALL COORDINATE UTILITY DISCONNECTIONS WITH THE APPROPRIATE AGENCY.
2. THE CONTRACTOR IS PARTICULARLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON TOPOGRAPHIC SURVEYS AND RECORD DRAWINGS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. SHOULD UNCHARTED UTILITIES BE ENCOUNTERED DURING EXCAVATION OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE FOR INSTRUCTIONS. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION AND REQUEST FIELD VERIFICATION OF UTILITY LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE EXISTING UTILITIES CONFLICTING WITH IMPROVEMENTS SHOWN HEREON IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES SO THAT WATER LINES, GAS LINES, AND UNDERGROUND ELECTRIC DO NOT CONFLICT WITH SANITARY SEWERS OR STORM SEWERS. INSTALL UTILITIES PRIOR TO PAVEMENT CONSTRUCTION.
5. ALL TRENCH SPOILS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED. SPOILS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
6. ADJUST ALL EXISTING UTILITY SURFACE FEATURES INCLUDING BUT NOT LIMITED TO CASTINGS, VALVE BOXES, PEDESTALS, CLEANOUTS, ETC. TO MATCH PROPOSED FINISHED GRADES, UNLESS OTHERWISE INDICATED.
7. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF ALL IMPROVEMENTS. INCLUDE AT LEAST TWO DIMENSIONS TO EACH VALVE AND MANHOLE FROM KNOWN SITE FEATURES. DRAWINGS SHALL INCLUDE HORIZONTAL AND VERTICAL INFORMATION ON ALL NEW UTILITIES AS WELL AS EXISTING UTILITIES ENCOUNTERED.
8. CONTRACTOR SHALL COORDINATE WITH EACH UTILITY PROVIDER THE INSTALLATION OF UTILITY CONDUITS FOR TELEPHONE, ELECTRIC, GAS, IRRIGATION, AND ETC.. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR FOR THE TRENCHING AND CONDUIT INSTALLATION. COST FOR INSTALLATION AND MATERIALS SHALL BE INCLUDED IN VARIOUS BID ITEMS.
9. ALL DOWNSPOUT COLLECTORS TO BE CONSTRUCTED OF PVC SDR-35 OR SIMILAR, OR AS REQUIRED BY CODE.
10. THE SITE LIGHTING LAYOUT SHOWN HEREON IS BY OTHERS AND IS FOR COORDINATION PURPOSES ONLY. CIVIL & ENVIRONMENTAL CONSULTANTS, INC. HAS NOT PERFORMED A SITE LIGHTING DESIGN FOR THIS PROJECT AND SUCH SHALL NOT BE INFERRED DUE THE ILLUSTRATION OF FIXTURE DESIGNATIONS AND LOCATIONS SHOWN HEREON. PLEASE REFER TO SEPARATE PLANS BY OTHERS FOR DETAILED FIXTURE AND POLE SPECIFICATIONS, ELECTRICAL LAYOUT AND CONTROL SYSTEM DESIGNS AND ANY OTHER SITE LIGHTING ELEMENTS.
11. ALL TRENCH BACKFILLS UNDER PAVED AREAS SHALL BE GRANULAR BACKFILL AND SHALL BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AS DETERMINED BY THE "STANDARD AASHTO T-180 COMPACTION TEST," (A.S.T.M.-D-1557) OR PER GEOTECHNICAL REPORT. ALL OTHER TRENCH BACKFILLS MAY BE EARTH MATERIAL (FREE OF LARGE CLODS OR STONES). ALL TRENCHES ARE TO BE BACK-FILLED ACCORDING TO THE TOWN OF BROWNSBURG STANDARD CONSTRUCTION SPECIFICATIONS.
12. ALL P.V.C. SANITARY SEWER IS TO BE SDR-26 WITH CLEAN 1/2" TO 1" GRANULAR STONE BEDDING UNIFORMLY GRADED. THIS BEDDING SHALL EXTEND FROM 4" BELOW THE PIPE TO THE SPRINGLINE OF THE PIPE. IMMEDIATE BACKFILL OVER PIPE SHALL CONSIST OF SAME SIZE "CLEAN" OR MINUS STONE FROM SPRINGLINE OF PIPE TO 12" ABOVE THE TOP OF PIPE.
13. ALL WATER LINES SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY, FROM ANY SANITARY SEWER, STORM SEWER, OR MANHOLE. 18" VERTICAL CLEARANCE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE SHALL BE MAINTAINED WHEREVER WATER LINES MUST CROSS SANITARY SEWERS, LATERALS, OR STORM DRAINS. THE WATER LINE SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER LINE IS ABOVE THE TOP OF THE DRAIN OR SEWER. A FULL LENGTH OF WATER PIPE SHALL BE CENTERED OVER THE SEWER LINE TO BE CROSSED SO THAT THE JOINTS WILL BE EQUALLY DISTANT FROM THE SEWER AND AS REMOTE THEREFROM AS POSSIBLE. THIS VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER LINE LOCATED WITHIN 10 FEET HORIZONTALLY, OF ANY SEWER OR DRAIN IT CROSSES.
14. ALL WATER PIPE SHALL CONFORM TO TOWN OF BROWNSBURG SPECIFICATIONS AND C-900 STANDARD SPECIFICATION FOR SEAMLESS COPPER WATER TUBE.
15. WATER LINES, VALVES, SLEEVES, METERS, AND FITTINGS SHALL MEET ALL SPECIFICATIONS AND INSTALLATION REQUIREMENTS OF CITY OF SOUTHAVEN WATER DEPARTMENT. CONTRACTOR TO NOTIFY ALL AFFECTED PROPERTY OWNERS. ANY SHUTTING DOWN OF THE PUBLIC WATER SUPPLY SHALL BE COORDINATED WITH THE WATER COMPANY.
16. BRICK WILL NOT BE USED IN THE CONSTRUCTION OF SANITARY SEWER MANHOLES.
17. GAS, WATER AND OTHER UNDERGROUND UTILITIES SHALL NOT CONFLICT WITH THE DEPTH OR HORIZONTAL LOCATION OF EXISTING OR PROPOSED SANITARY OR STORM SEWERS, INCLUDING HOUSE LATERALS.
18. ALL EXISTING SITE IMPROVEMENTS DISTURBED, DAMAGED OR DESTROYED SHALL BE REPAIRED OR REPLACED TO MATCH PRE-CONSTRUCTION CONDITIONS.
19. HIGH DENSITY POLYETHYLENE PIPE (HDPE) FOR STORM SEWERS SHALL MEET ASHTO M294 OR ASTM F2306.
20. TRACER WIRE IS REQUIRED ON ALL WATER LINES.
21. WATER LINES, VALVES, FITTINGS, AND HYDRANTS SHALL BE INSTALLED, DISINFECTED, PRESSURE TESTED, AND LEAKAGE TESTED IN ACCORDANCE WITH ALL STATE AND LOCAL REQUIREMENTS.
22. CONSTRUCTION AND MATERIALS FOR THE SANITARY SYSTEM SHALL CONFORM TO THE SPECIFICATIONS OF THE INDIANA DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE WEST CENTRAL CONSERVANCY.

ABBREVIATIONS

AC	ACRES
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
AI; A.I.	AREA INLET
ATG	ADJUST TO GRADE
BC	BASE OF CURB AT FLOWLINE
BFP	BACK FLOW PREVENTION
BLDG	BUILDING
C.O.	CLEANOUT
CI; C.I.	CURB INLET
COMM	U/G COMMUNICATION LINE
CONC	CONCRETE
CU.YD.	CUBIC YARD
DI	DUCTILE IRON
DIA	DIAMETER
DB	DRAIN BASIN
DS	DOWNSPOUT
DNR	DEPARTMENT OF NATURAL RESOURCES
ELEV	ELEVATION
EX	EXISTING
E.O.P.	END OF PIPE
FEMA	FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION
FF	FINISHED FLOOR ELEVATION
FL	FLOW LINE
FND	FOUNDATION
G	U/G GAS LINE
GI; G.I.	GRATED INLET
G.I. W/S.I.	GRATE INLET WITH SIDE INTAKE
HDPE	HIGH DENSITY POLYETHYLENE
HGT	HEIGHT
IDEM	INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
IMP	IMPERVIOUS
INDOT	INDIANA DEPARTMENT OF TRANSPORTATION
INV	INVERT
IRRIG	U/G IRRIGATION LINE
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
DOT	DEPARTMENT OF TRANSPORTATION
N.T.S; NTS	NOT TO SCALE
OAH	OVERALL HEIGHT
PP	POLY PROPYLENE
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RD	ROOF DRAIN
SAN; SS	SANITARY SEWER
SQ.FT.	SQUARE FEET
ST; STM	STORM
T/C	U/G PHONE AND/OR DATA LINE
TBR	TO BE REMOVED
TBR&R	TO BE REMOVED & RELOCATED
TC	TOP OF CURB
TD	TRENCH DRAIN
TS	TOP OF SURFACE
TW	TOP OF WALL ELEVATION
TYP	TYPICAL
UG; U/G	UNDERGROUND
UG-E	U/G ELECTRIC LINE
USGS	UNITED STATES GEOLOGICAL SURVEY
UST	U/G PETROLEUM STORAGE TANK
W	WATER
XFRMR	TRANSFORMER

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NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

PATRICK TODD BENNETT REGISTERED No. 10505027 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	12/5/2025	ISSUE FOR PERMIT SET
2	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC SURVEYING AND LANDSCAPE ARCHITECTS OF NC, PLLC. SERVICES IN PUERTO RICO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

GENERAL NOTES

DATE:	DECEMBER 5, 2025	DRAWN BY:	AWM
DWG SCALE:	NOT TO SCALE	CHECKED BY:	THA
PROJECT NO:	355-081	APPROVED BY:	PTB

DRAWING NO.: C001
SHEET 2 OF 20

NORTH

PROPOSED LIMITS OF DISTURBANCE = 1.866 AC

CURB INLET
TOR= 858.81
INV.(E)= 855.11 (6" CPP)
INV.(W)= 855.11 (6" CPP)
INV.(S)= 854.91 (12" RCP)
INV.(N)= 854.91 (12" RCP)

1' PLATTED NO-ACCESS EASEMENT

56.24'

PLATTED 30' BUILDING SETBACK LINE

20' DRAINAGE & UTILITY EASEMENT INSTR. 200300035929

SOUTH R/W NORTHFIELD DR.

ACCESS

78.2'

26.7'

PLATTED NO ACCESS EASEMENT INSTR. #201404722

PLATTED DRAINAGE & UTILITY EASEMENT INSTR. #201404722

POSSIBLE 1.0' GAP

12" RCP
INV.= 857.00

1' PLATTED NO-ACCESS EASEMENT

1.5" UNDERGROUND ELECTRIC CONDUIT

S. GREEN STREET
(PUBLIC RIGHT-OF-WAY)
(S.R. 267)

12" CMP
INV.= 857.32

12" CMP
INV.= 857.32

CONSTRUCTION ALONG THE RIGHT-OF-WAY ALONG GREEN STREET AND NORTHFIELD DRIVE IS TO BE DONE WITH CARE. PROTECT THE EXISTING POWER LINE AND 1.5 INCH CONDUIT RUNNING THROUGH THE EXISTING EASEMENT.

EAST R/W S. GREEN ST.

SUBJECT PARCEL 1
CBH PROPERTIES BROWNSBURG LLC
INSTR. #202413611
PARCEL ID: 32-07-26-154-001.000-016
LOT 1
PLAT OF CHRISTIAN BROTHERS AUTOMOTIVE
INSTR. #202405573
1.56± ACRES
68,095.49± SQ. FT.

SITE SOLUTIONS PROPERTY GROUP LLC
PARCEL ID:
32-07-26-151-001.000-016
WEST WYNNE FARMS
SECTION 2
INSTR. #201404722
LOT 7

WEST LINE OF WEST WYNNE FARMS SECTION 2

PROPOSED LIMITS OF DISTURBANCE = 1.866 AC

PLATTED 15' INGRESS/EGRESS EASEMENT INSTR. #202018567

SUBJECT PARCEL 2
15' WIDE INGRESS/EGRESS EASEMENT
INSTR. #202413575

PLATTED 10' UTILITY EASEMENT & 10' ELECTRIC UNDERGROUND LINE EASEMENT D.B. 257, PG. 289

PLATTED 20' PARKING SETBACK LINE

PLATTED 30' BUILDING SETBACK LINE

45.6'

PLATTED 10' BUILDING SETBACK LINE

STORM INLET (BEEHIVE)
TOR= 862.62
INV.(W)= 858.73 (12" CPP)
INV.(E)= 858.47 (18" CPP)
INV.(N)= 858.45 (18" CPP)
INV.(S)= 858.37 (24" CPP)
(PER AS-BUILT DATED 11-12-25)

BUILDING (UNDER CONSTRUCTION)

STORM MANHOLE
TOR= 862.71
INV.(N)= 859.50 (6" CPP)
INV.(E)= 859.02 (12" CPP)
INV.(W)= 858.79 (18" CPP)
(PER AS-BUILT DATED 11-12-25)

STORM INLET
TOR= 862.43
INV.(N)= 859.44 (6" CPP)
INV.(W)= 859.14 (12" CPP)

F.F.E. = 863.29

CURB INLET
TOR= 861.99INV.(E)= 859.00 (12" CPP)
(PER AS-BUILT DATED 11-12-25)

SANITARY MANHOLE
RIM= 863.95
INV.(N)= 857.44 (8" PVC)
INV.(S)= 857.34 (8" PVC)
NORTH PIPE STUBBED ±16' AT 857.52)
(PER AS-BUILT DATED 11-12-25)

PLATTED BMP ACCESS EASEMENT

PLATTED 20' SANITARY SEWER EASEMENT EXTENDS NORTH TO LOT 1

PLATTED 26' CROSS ACCESS EASEMENT EXTENDS 113' SOUTH OF THE SUBJECT PARCEL THEN TURNS WEST TO ADJOINS. GREEN STREET

CBH PROPERTIES BROWNSBURG LLC
INSTR. #202413611
PARCEL ID: 32-07-26-154-002.000-016
LOT 2

SANITARY MANHOLE
RIM= 862.68
INV.(N)= 857.14 (8" PVC)
INV.(E)= 857.05 (8" PVC)
(PER AS-BUILT DATED 11-12-25)

CULVERT-Z1 (4' DIA.)
RIM = 859.97
IE. 12" S=858.30

CULVERT-Z2 (4' DIA.)
RIM = 859.67
IE. 12" N=858.00

S. GREEN STREET
(PUBLIC RIGHT-OF-WAY)
(S.R. 267)

CONSTRUCTION ALONG THE RIGHT-OF-WAY ALONG GREEN STREET AND NORTHFIELD DRIVE IS TO BE DONE WITH CARE. PROTECT THE EXISTING CULVERT DURING CONSTRUCTION

N: 1658805.55
E: 1314991.15
861.88
CP MAG SPIKE FOUND

SCALE IN FEET
0 20 40

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.
4. CONTRACTOR TO VERIFY IF ANY EXISTING FOUNDATIONS FROM EXISTING USE REMAIN AND TO REMOVE AS NEEDED.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING SETBACK
- EXISTING STORM PIPE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING FIBER OPTIC LINE
- EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY UTILITIES
- EXISTING SILT FENCE TO BE REMOVED
- EXISTING GRAVEL DRIVE TO BE REMOVED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING PAVEMENT TO BE REMOVED
- EXISTING TREE TO BE REMOVED
- PROPOSED PAVEMENT SAWCUT
- PROPOSED LIMITS OF DISTURBANCE

KEY NOTES

1. EXISTING CONCRETE TO BE REMOVED.
2. EXISTING GRAVEL TO BE REMOVED.
3. EXISTING PAVEMENT TO BE REMOVED.
4. EXISTING TREE TO BE REMOVED.
5. EXISTING STORM STRUCTURE TO BE MODIFIED TO NEW RIM ELEVATION = 861.62.
6. APPROXIMATE LOCATION OF EXISTING UNDERGROUND ELECTRIC TO BE RELOCATED PER THE TOWN OF BROWNSBURG STANDARDS. COORDINATE RELOCATION WITH DUKE ENERGY.
7. SAW CUT EXISTING PAVEMENT/CURB & GUTTERS TO CREATE CLEAN BUTT JOINT.
8. REMOVE EXISTING CURB AND GUTTER.

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

Indiana811
811 OR 800-382-5544
https://indiana811.org

PATRICK TODD BENNETT REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	10/17/2025	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE IN THE STATE OF INDIANA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTURE, LLC.

10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

Civil & Environmental Consultants, Inc.

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

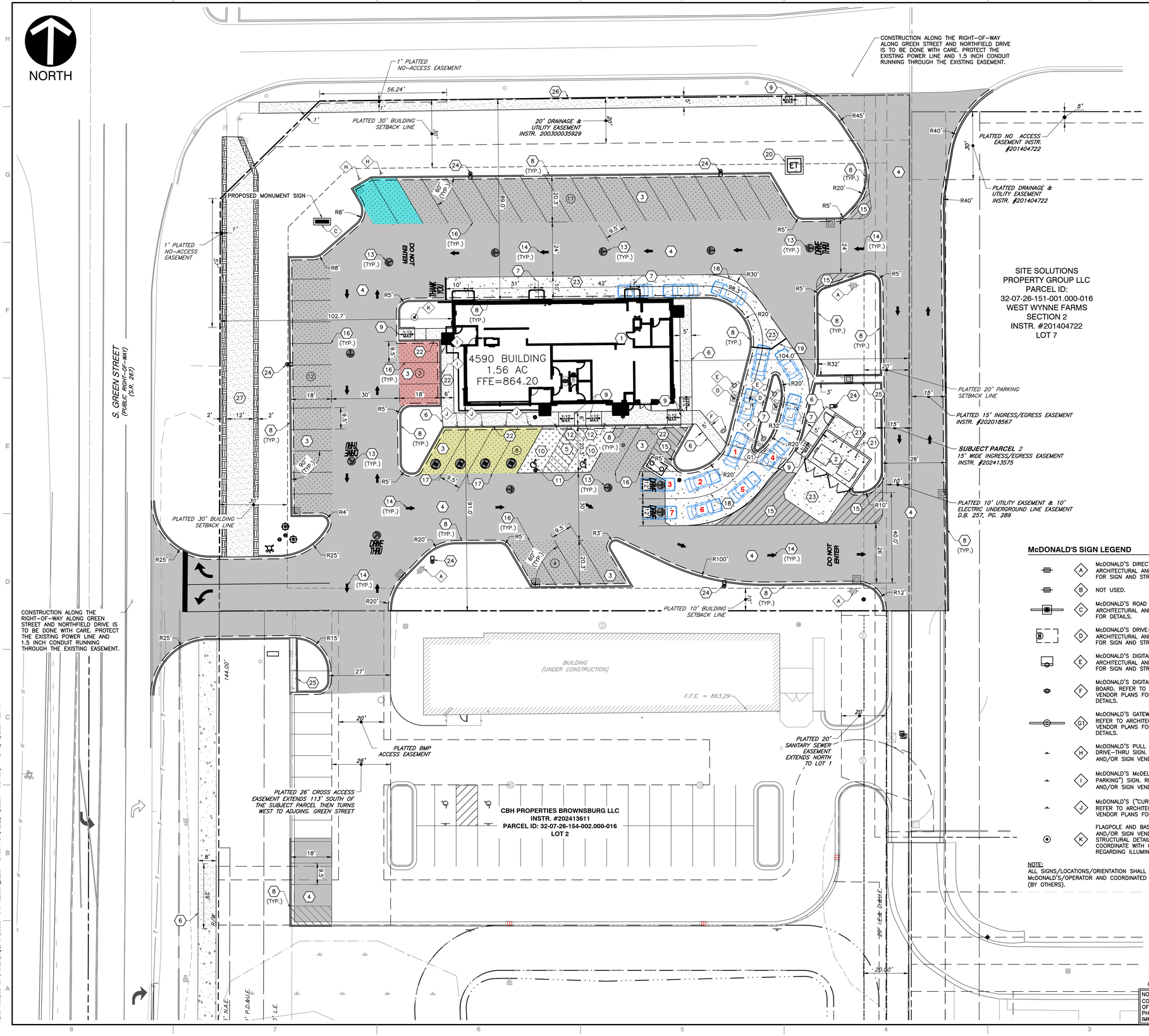
EXISITNG CONDITIONS & DEMOLITION PLAN

DATE:	DECEMBER 5, 2025
DRAWN BY:	AWM
DWG SCALE:	1" = 20'
CHECKED BY:	THA
PROJECT NO:	355-081
APPROVED BY:	PTB

DRAWING NO.:
C100
SHEET 3 OF 20

P:\355-081\355-081_0401\dwg\civil\355081-civil-c100.dwg[c100 - EXISTING CONDITIONS & DEMOLITION PLAN LS(2/13/2026 - thomason) - LP: 2/13/2026 7:53 PM

NORTH



NOTES

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2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY UTILITIES
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED STANDARD CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED PAVEMENT STRIPING
- PROPOSED DRIVE-THRU PARKING
- PROPOSED MCDELIVERY PARKING
- PROPOSED CURB SIDE PICK-UP PARKING
- PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER
- PROPOSED CONCRETE LANDING

KEY NOTES

1. PROPOSED BUILDING. REFER TO ARCHIECTURAL PLANS.
2. PROPOSED TRASH ENCLOSURE WITH STORAGE. REFER TO ARCHITECTURAL PLANS
3. PROPOSED LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL 1/C800.
4. PROPOSED HEAVY DUTY ASPHALT PAVEMENT. SEE DETAIL 1/C800.
5. PROPOSED STANDARD CONCRETE PAVEMENT. SEE DETAIL 2/C800.
6. PROPOSED ADA COMPLIANT CONCRETE SIDEWALK. SEE DETAIL 3/C800.
7. PROPOSED DETECTOR LOOP. REFER TO ELECTRICAL PLANS.
8. PROPOSED CONCRETE CURB AND GUTTER. SEE DETAIL 5/C800.
9. PROPOSED ADA ACCESSIBLE DEPRESSED CURB RAMP. SEE DETAIL 4/C800.
10. PROPOSED ADA ACCESSIBLE PARKING SPACES AND PAVEMENT STRIPING. SEE DETAIL 9/C800.
11. PROPOSED PAINTED ADA ACCESSIBLE PARKING SYMBOL. SEE DETAIL 10/C800.
12. PROPOSED ADA ACCESSIBLE PARKING SIGN(S). SEE DETAIL 9/C800.
13. PROPOSED BRANDED PAVEMENT STRIPING TO MCDONALD'S STANDARDS. SEE DETAIL 11/C800.
14. PROPOSED PAINTED DIRECTIONAL ARROWS. SEE DETAIL 12/C800.
15. PROPOSED PAVEMENT STRIPING. SEE DETAIL 6/C800.
16. PROPOSED PARKING STRIPING (WHITE).
17. PROPOSED PARKING STRIPING (YELLOW).
18. PROPOSED DRIVE THRU LANE STRIPING (6" WIDE). REFER TO MCDONALD'S STANDARDS.
19. PROPOSED MERGE STRIPING (6" WIDE). REFER TO MCDONALD'S STANDARDS.
20. PROPOSED CONCRETE TRANSFORMER PAD PER DUKE ENERGY SPECIFICATIONS.
21. PROPOSED BOLLARD. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
22. PROPOSED ADA COMPLIANT COMBINATION CONCRETE CURB/SIDEWALK. SEE DETAIL 7/C800.
23. PROPOSED HEAVY DUTY CONCRETE PAVEMENT. SEE DETAIL 2/C800.
24. PROPOSED LIGHT POLE. SEE PHOTOMETRIC PLAN BY OTHERS.
25. PROPOSED 3' CONCRETE FLUME
26. PROPOSED 5' SIDEWALK TO BE CONSTRUCTED PER TOWN OF BROWNSBURG STANDARDS.
27. PROPOSED 12' MULTI-USE TRAIL WITH 2' EARTH SHOULDER TO BE CONSTRUCTED PER TOWN OF BROWNSBURG STANDARDS. SEE DETAIL 05/C802

McDONALD'S SIGN LEGEND

- A — McDONALD'S DIRECTIONAL SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- B — NOT USED.
- C — McDONALD'S ROAD SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- D — McDONALD'S DRIVE-THRU CANOPY. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- E — McDONALD'S DIGITAL MENU BOARD. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- F — McDONALD'S DIGITAL PRE-BROWSE MENU BOARD. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- G1 — McDONALD'S GATEWAY SIGN (DOUBLE ARM). REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- H — McDONALD'S PULL FORWARD – ("RESERVED") DRIVE-THRU SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- I — McDONALD'S McDELIVERY – ("COURIER PARKING") SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- J — McDONALD'S ("CURBSIDE PICK UP") SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- K — FLAGPOLE AND BASE. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS. GENERAL CONTRACTOR TO COORDINATE WITH CONSTRUCTION MANAGER REGARDING ILLUMINATION OF FLAG.

NOTE:
ALL SIGNS/LOCATIONS/ORIENTATION SHALL BE CONFIRMED BY McDONALD'S/OPERATOR AND COORDINATED WITH SIGNAGE BRAND BOOK (BY OTHERS).

SCALE IN FEET
0 20 40

Indiana811
811 OR 800-382-5544
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PATRICK TODD LENNET — REGISTERED — No. 10000697 — STATE OF INDIANA — PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
-	10/3/2025	ISSUE FOR PERMIT SET
1	10/15/2025	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF INDIANA SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF PERSONNEL AUTHORIZED TO PRACTICE AS PROVIDED BY IC 25 ENGINEERS & SURVEYORS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF INDIANA SHALL BE PERFORMED BY LICENSED ARCHITECTS.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

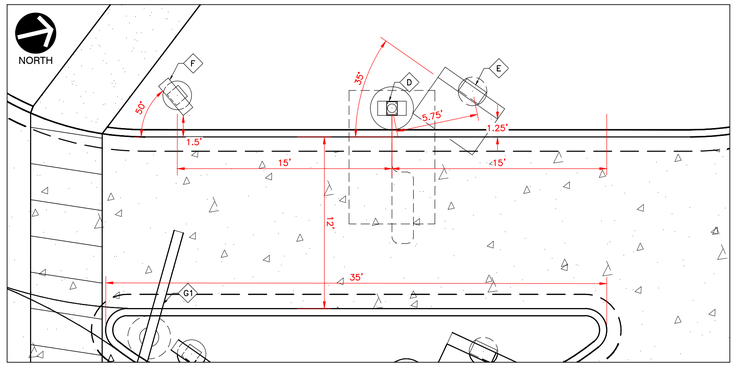
MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

LAYOUT PLAN

DATE:	DECEMBER 5, 2025
DWG SCALE:	1" = 20'
PROJECT NO:	355-081
DRAWN BY:	AWM
CHECKED BY:	THA
APPROVED BY:	PTB

DRAWING NO.: C200
SHEET 4 OF 20

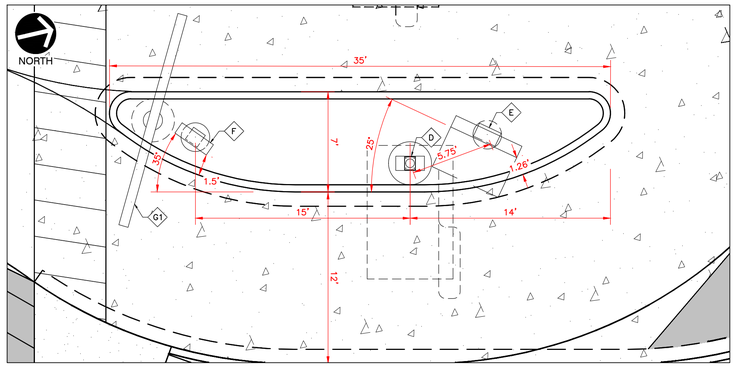
P:\350-099\355-081\-CAD\Dwg\C101\355081-C101-C200.dwg[C200 - LAYOUT PLAN] (5/2/2025 - thomison) - LP: 2/13/2026 7:55 PM



PRIMARY LANE DETAILED VIEW

SCALE IN FEET

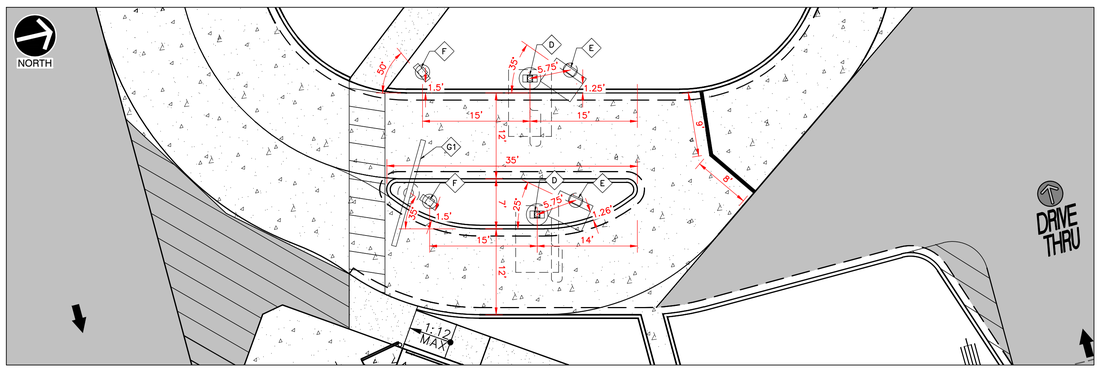
0 5 10



SECONDARY LANE DETAILED VIEW

SCALE IN FEET

0 5 10



DRIVE THRU DETAILED VIEW

SCALE IN FEET

0 10 20

McDONALD'S SIGN LEGEND

- A — McDONALD'S DIRECTIONAL SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- B — NOT USED.
- C — McDONALD'S ROAD SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- D — McDONALD'S DRIVE-THRU CANOPY. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- E — McDONALD'S DIGITAL MENU BOARD. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- F — McDONALD'S DIGITAL PRE-BROWSE MENU BOARD. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- G1 — McDONALD'S GATEWAY SIGN (DOUBLE ARM). REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS.
- H — McDONALD'S PULL FORWARD – ("RESERVED") DRIVE-THRU SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- I — McDONALD'S McDELIVERY – ("COURIER PARKING") SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- J — McDONALD'S ("CURBSIDE PICK UP") SIGN. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR DETAILS.
- K — FLAGPOLE AND BASE. REFER TO ARCHITECTURAL AND/OR SIGN VENDOR PLANS FOR SIGN AND STRUCTURAL DETAILS. GENERAL CONTRACTOR TO COORDINATE WITH CONSTRUCTION MANAGER REGARDING ILLUMINATION OF FLAG.

NOTE:
ALL SIGNS/LOCATIONS/ORIENTATION SHALL BE CONFIRMED BY McDONALD'S/OPERATOR AND COORDINATED WITH SIGNAGE BRAND BOOK (BY OTHERS).

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY UTILITIES
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED STANDARD CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED PAVEMENT STRIPING
- PROPOSED DRIVE-THRU PARKING
- PROPOSED MCDELIVERY PARKING
- PROPOSED CURB SIDE PICK-UP PARKING
- PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- ET — PROPOSED TRANSFORMER
- PROPOSED CONCRETE LANDING

Indiana 811
811 OR 800-382-5544
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PATRICK TODD BENNETT — REGISTERED — No. 29900018 — STATE OF INDIANA — PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTURE.

10300 Alliance Road
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Ph: 513.985.0226
www.cecinc.com

Civil & Environmental Consultants, Inc.

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

ENLARGED LAYOUT PLAN

DATE:	DECEMBER 5, 2025
DRAWN BY:	AWM
CHECKED BY:	THA
DWG SCALE:	AS SHWON
PROJECT NO:	355-081
APPROVED BY:	PTB

DRAWING NO.:
C201

SHEET 5 OF 20

P:\355-001\355-0811-0401\Dwg\CV01\355811-C201-ENLARGED LAYOUT PLAN LS(2/13/2026 - tmonson) - LP: 2/13/2026 7:55 PM

NORTH

NORTHFIELD DRIVE
(PUBLIC RIGHT-OF-WAY)

PROPOSED LIMITS OF DISTURBANCE = 1.866 AC

S. GREEN STREET
(PUBLIC RIGHT-OF-WAY)
(S.R. 257)

1.5" UNDERGROUND ELECTRIC CONDUIT

4590 BUILDING
1.56 AC
FFE=864.20

SEE ENLARGED GRADING VIEW

BUILDING
(UNDER CONSTRUCTION)
F.F.E. = 863.29

SITE SOLUTIONS
PROPERTY GROUP LLC
PARCEL ID:
32-07-26-151-001.000-016
WEST WYNNE FARMS
SECTION 2
INSTR. #201404722
LOT 7

CBH PROPERTIES BROWNSBURG LLC
INSTR. #202413611
PARCEL ID: 32-07-26-154-002.000-016
LOT 2

PROPOSED LIMITS OF DISTURBANCE = 1.866 AC

CULVERT-Z1 (4' DIA.)
RIM = 859.97
IE. 12" S=858.30

CULVERT-Z2 (4' DIA.)
RIM = 859.67
IE. 12" N=858.00

ENLARGED GRADING VIEW

SCALE IN FEET
0 10 20

SCALE IN FEET
0 20 40

NOTES

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3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- ST — EXISTING STORM PIPE
- W — EXISTING WATER LINE
- SAN — EXISTING SANITARY SEWER LINE
- G — EXISTING GAS LINE
- OH-E — EXISTING OVERHEAD WIRE
- UG-E — EXISTING UNDERGROUND ELECTRIC LINE
- FO — EXISTING FIBER OPTIC LINE
- C — EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY STRUCTURES
- PROPOSED STORM PIPE
- RD — RD — PROPOSED ROOF DRAIN
- 3/4"W — PROPOSED ¾" WATER LINE
- 2"W — PROPOSED 2" WATER LINE
- SAN — PROPOSED SANITARY SEWER LINE
- E — PROPOSED UNDERGROUND ELECTRIC LINE
- FO — PROPOSED FIBER OPTIC LINE
- D — PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- ET — PROPOSED TRANSFORMER
- 860 — PROPOSED INDEX (MAJOR) CONTOUR
- 861 — PROPOSED INTERMEDIATE (MINOR) CONTOUR
- PROPOSED LIMITS OF DISTURBANCE
- 861.93 — EXISTING SPOT ELEVATION
- TC=863.43 BC=862.93 — PROPOSED SPOT OR CURB ELEVATION

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

Indiana811
811 OR 800-382-5544
https://indiana811.org

PATRICK TODD BENNETT
REGISTERED
No. 29000062
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE IN THE STATE OF OHIO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF INDIANA WILL BE PROVIDED BY CONSOLIDATED ARCHITECTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

GRADING PLAN

DATE:	DECEMBER 5, 2025
DWG SCALE:	1" = 20'
PROJECT NO:	355-081
DRAWN BY:	AWM
CHECKED BY:	THA
APPROVED BY:	PTB

DRAWING NO.:
C300
SHEET 6 OF 20

P:\355-001\355-081\-CADD\Dwg\C01\355081-C101-C300.dwg(C300 - GRADING PLAN) (2/13/2026 - jamurphy) - LP: 2/13/2026 7:51 PM

NORTH

NORTHFIELD DRIVE
(PUBLIC RIGHT-OF-WAY)

S. GREEN STREET
(PUBLIC RIGHT-OF-WAY)
(S.R. 257)

1' PLATTED NO-ACCESS EASEMENT

56.24'

20' DRAINAGE & UTILITY EASEMENT INSTR. 200300035929

PROPOSED MONUMENT SIGN

1.5" UNDERGROUND ELECTRIC CONDUIT

CURB INLET
TOP= 858.81
INV.(E)= 855.11 (6" CPP)
INV.(W)= 855.11 (6" CPP)
INV.(S)= 854.91 (12" RCP)
INV.(N)= 854.91 (12" RCP)

12" RCP INV.= 857.00

12" CMP INV.= 857.32

12" CMP INV.= 857.36

145 LF 12" RCP @ 0.25%

4590 BUILDING
1.56 AC
FFE=864.20

200 INDOT INLET TYPE-C
RIM=862.25
INV. IN (12"N)=858.85
INV. OUT (15"SE)=858.75

54 LF 15" RCP @ 0.25%

FLOOD ELEVATION: 862.32

CONTRACTOR TO DIRECTIONALLY BORE WATER LINE UNDER S. GREEN STREET. COORDINATE WITH INDOT AND OWN OF BROWNSBURG.

EXISTING 20" WATER LINE BASED ON AVAILABLE MAPPING. CONTRACTOR TO FIELD LOCATE.

201 INDOT INLET TYPE-C
RIM=862.17
INV. OUT (12"S)=859.21

FLOOD ELEVATION: 862.26

71 LF OF 6" PVC @ 1% MIN

FLOOD ELEVATION: 862.03

60 LF 18" RCP @ 0.11%

142 LF 15" RCP @ 0.14%

100 INDOT INLET TYPE C
RIM=861.98
INV. IN (15"NW)=858.62
INV. IN (18"E)=858.62
INV. OUT (18"S)=858.52

8 LF 18" CPP @ 0.25%

101 INDOT INLET TYPE-C
RIM=862.39
INV. IN (15"E)=858.79
INV. OUT (18"W)=858.69
INV. IN (6"N)=858.75

STORM INLET (BEEHIVE)
TOP= 862.62
INV.(W)= 858.73 (12" CPP)
INV.(E)= 858.47 (18" CPP)
INV.(N)= 858.45 (18" CPP)
INV.(S)= 858.37 (24" CPP)
(PER AS-BUILT DATED 11-12-25)

BUILDING (UNDER CONSTRUCTION)

STORM MANHOLE
TOP= 862.71
INV.(N)= 859.50 (6" CPP)
INV.(E)= 859.02 (12" CPP)
INV.(W)= 858.79 (18" CPP)
(PER AS-BUILT DATED 11-12-25)

STORM INLET
TOP= 862.43
INV.(N)= 859.44 (6" CPP)
INV.(W)= 859.14 (12" CPP)

F.F.E. = 863.29

SURB INLET
PROP RIM = 861.62 INV.(E)= 859.00 (12" CPP)
(PER AS-BUILT DATED 11-12-25)

20'

PLATTED BMP ACCESS EASEMENT

26'

PLATTED 26' CROSS ACCESS EASEMENT EXTENDS 113' SOUTH OF THE SUBJECT PARCEL THEN TURNS WEST TO ADJOINS. GREEN STREET

CBH PROPERTIES BROWNSBURG LLC
INSTR. #202413611
PARCEL ID: 32-07-26-154-002.000-016
LOT 2

105 INDOT INLET TYPE-C
RIM=862.39
INV. OUT (12"S)=859.75

FLOOD ELEVATION: 862.50

70 LF 12" RCP @ 0.25%

PLATTED NO ACCESS EASEMENT INSTR. #201404722

PLATTED DRAINAGE & UTILITY EASEMENT INSTR. #201404722

104 INDOT INLET TYPE-C
RIM=862.45
INV. IN (12"N)=859.58
INV. OUT (12"SE)=859.48

FLOOD ELEVATION: 862.50

PLATTED 15' INGRESS/EGRESS EASEMENT INSTR. #202018567

SUBJECT PARCEL 2
15' WIDE INGRESS/EGRESS EASEMENT INSTR. #202413575

65 LF 12" RCP @ 0.25%

PLATTED 10' UTILITY EASEMENT & 10' ELECTRIC UNDERGROUND LINE EASEMENT D.B. 257, PG. 289

103 INDOT INLET TYPE-C
RIM=862.01
INV. IN (12"NW)=859.32
INV. OUT (12"SW)=859.22

54 LF 12" RCP @ 0.25%

102 INDOT INLET TYPE-C
RIM=861.77
INV. IN (12"NE)=859.09
INV. OUT (15"W)=858.99

SANITARY MANHOLE
RIM= 863.95
INV.(N)= 857.44 (8" PVC)
INV.(S)= 857.34 (8" PVC)
NORTH PIPE STUBBED ±16' AT 857.52)
(PER AS-BUILT DATED 11-12-25)

PLATTED 20' SANITARY SEWER EASEMENT. EXTENDS NORTH TO LOT 1

SANITARY MANHOLE
RIM= 862.68
INV.(N)= 857.14 (8" PVC)
INV.(E)= 857.05 (8" PVC)
(PER AS-BUILT DATED 11-12-25)

15' INGRESS EGRESS EASEMENT

15' C.A.T.V. EASEMENT

24' P.S.&U.E.

TOP= 862.65
E: 1567899.55
N: 514499.15
861.88
CP MAG SPIKE FOUND

SITE SOLUTIONS
PROPERTY GROUP LLC
PARCEL ID:
32-07-26-151-001.000-016
WEST WYNNE FARMS
SECTION 2
INSTR. #201404722
LOT 7

SCALE IN FEET
0 20 40

Indiana 811
811 OR 800-382-5544
https://indiana811.org

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.
4. ALL NEW STORM STRUCTURES ARE TO DISPLAY A PRECAST POLLUTION PREVENTION MESSAGE.
5. ALL DOWNSPOUTS WILL BE DIRECTLY CONNECTED TO THE PROPOSED STORM CONVEYANCE SYSTEM. SEE ARCHITECTURAL PLANS BY OTHERS FOR MORE INFORMATION.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- 860 EXISTING INDEX (MAJOR) CONTOUR
- 861 EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING SETBACK
- ST EXISTING STORM PIPE
- W EXISTING WATER LINE
- SAN EXISTING SANITARY SEWER LINE
- G EXISTING GAS LINE
- OH-E EXISTING OVERHEAD WIRE
- UG-E EXISTING UNDERGROUND ELECTRIC LINE
- FO EXISTING FIBER OPTIC LINE
- C EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY STRUCTURES
- PROPOSED STORM PIPE
- RD PROPOSED ROOF DRAIN
- ¾"W PROPOSED ¾" WATER LINE
- 2"W PROPOSED 2" WATER LINE
- SAN PROPOSED SANITARY SEWER LINE
- E PROPOSED UNDERGROUND ELECTRIC LINE
- FO PROPOSED FIBER OPTIC LINE
- D PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- ET PROPOSED TRANSFORMER
- 860 PROPOSED INDEX (MAJOR) CONTOUR
- 861 PROPOSED INTERMEDIATE (MINOR) CONTOUR

KEY NOTES

1. PROPOSED 6" PVC SDR-35 ROOF DRAIN @ MIN. 1% SLOPE. CONTRACTOR TO COORDINATE ROOF DRAIN CONNECTION TYPE WITH OWNER/OPERATOR.
2. PROPOSED STORM CROSSING WITH EXISTING UTILITY. DEPTH OF EXISTING UNDERGROUND ELECTRIC ASSUMED 36", CONTRACTOR TO VERIFY.
3. PROPOSED STORM SEWER AND SANITARY SEWER CROSSING TO BE CONCRETE ENCASED 10' FROM EACH SIDE OF CROSSING OR TO STRUCTURE.
4. CONTRACTOR TO CONNECT STORM SEWER TO EXISTING STUB. INVERT OF STUB ASSUMED TO BE 858.29 (CONTRACTOR TO FIELD VERIFY). CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF VERIFIED INVERT IS HIGHER THAN ASSUMED.
5. ASSUMED CONFLICT BETWEEN PROPOSED STORM AND EXISTING UNDERGROUND ELECTRIC. UNDERGROUND ELECTRIC LINE IS TO BE RELOCATED TO A DEPTH AT LEAST 18" BELOW THE PROPOSED STORM PIPE. COORDINATE RELOCATION WITH DUKE ENERGY.
6. ADJUST RIM OF EXISTING STORM INLET TO PROPOSED GRADE.

STORM CROSSINGS

1. GRADE=862.33 STORM INV.=858.87 FIBER INV.=856.62
2. GRADE=862.85 STORM INV.=858.72 WATER INV.=856.47
3. GRADE=863.07 STORM INV.=859.73 FIBER INV.=857.48
4. GRADE=862.87 STORM INV.=859.53 WATER INV.=857.28
5. GRADE=861.89 STORM INV.=858.98 SANITARY INV.=857.69
6. GRADE=861.72 STORM INV.=859.16 ELECTRIC INV.=857.50
7. GRADE=862.46 STORM INV.=859.38 ELECTRIC INV.=857.72

PATRICK TODD BENNETT REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	10/15/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE IN THE STATE OF OHIO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF INDIANA WILL BE PROVIDED BY CONSOLIDATED ARCHITECTS.

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10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

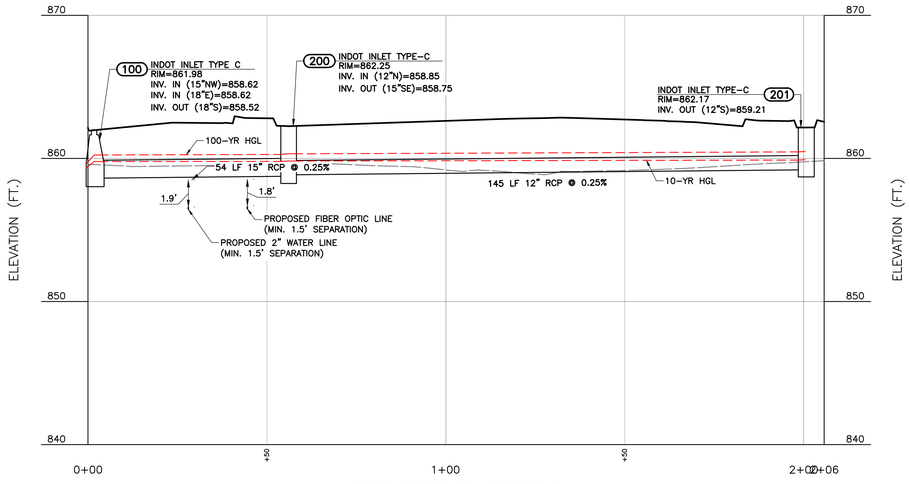
MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

DRAINAGE PLAN

DATE:	DECEMBER 5, 2025
DRAWN BY:	AWM
CHECKED BY:	THA
DWG SCALE:	1" = 20'
PROJECT NO.	355-081
APPROVED BY:	PTB

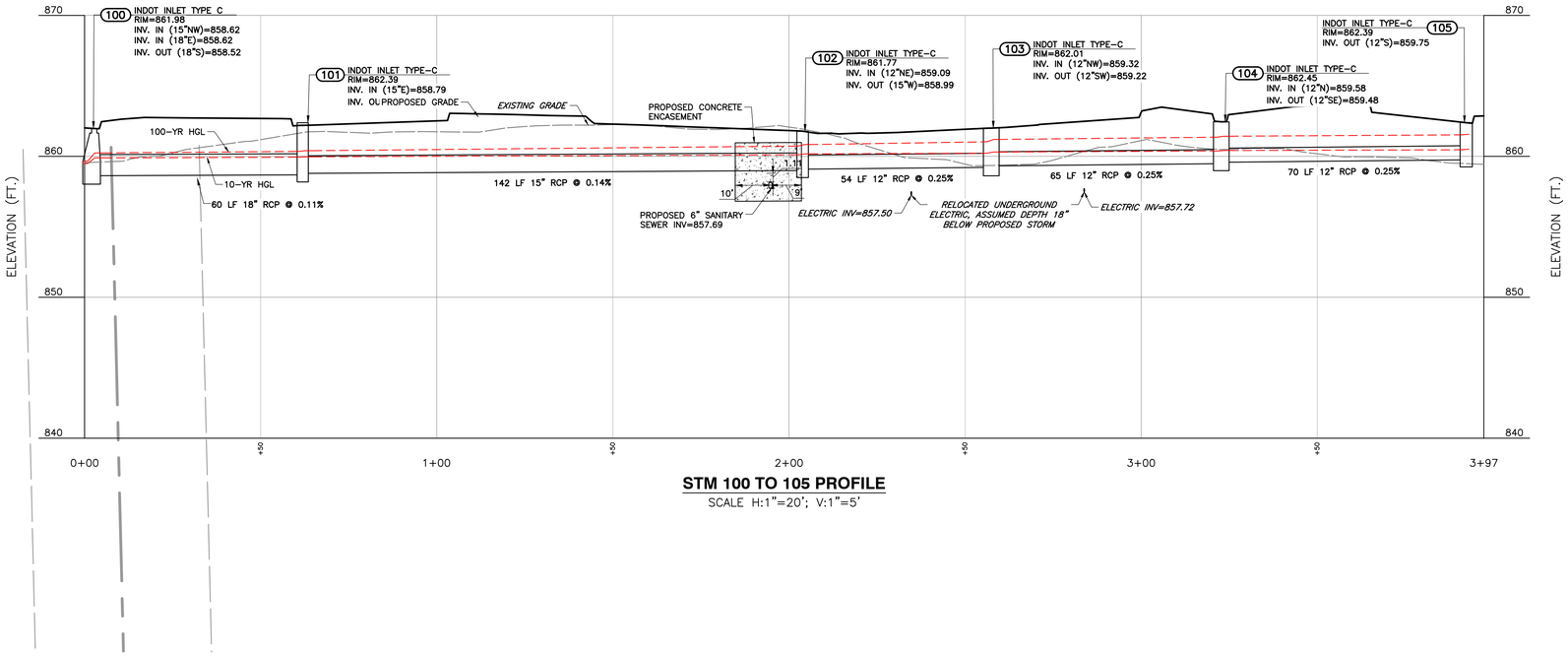
DRAWING NO.:
C400
SHEET 7 OF 20

P:\355-001\355-081\400\Dwg\CIVIL\355081-CV01-C400.dwg[C400-DRAINAGE PLAN] LS(2/13/2026 - swelch-murasko) - LP: 2/13/2026 7:56 PM



STM 100 TO 201 PROFILE

SCALE H:1"=20'; V:1"=5'



STM 100 TO 105 PROFILE

SCALE H:1"=20'; V:1"=5'

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS AND ELEVATIONS (VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE, TELEPHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES.

Indiana811 811 OR 800-382-5544 https://indiana811.org

SCALE: 1" = 20' FEET 0 20 40

PATRICK TODD BENNETT REGISTERED No. LA20800004 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	10/15/2025	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF INDIANA SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF AN INDIANA REGISTERED PROFESSIONAL PROVIDED BY FEC ENGINEERS & CONSULTANTS, LLC, LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY FEC LANDSCAPE ARCHITECTS, LLC

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

DRAINAGE PROFILES

DATE:	DECEMBER 5, 2025	DRAWN BY:	AWM
DWG SCALE:	1" = 20'	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			PTB

DRAWING NO.:

C401

SHEET 8 OF 20

P:\355-001\355-081\-DATA\Dwg\C101\355081-C401-C405.dwg[C401-DRAINAGE PROFILES] LS(2/13/2026 - sweich-murrell) - LP, 2/13/2026 7:57 PM

Custom Soil Resource Report
Soil Map



Map Scale: 1:809 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

9

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hendricks County, Indiana
Survey Area Data: Version 29, Sep 3, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

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https://indiana811.org

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PATRICK TODD BENNETT REGISTERED No. 11505027 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	12/5/2025	ISSUE FOR PERMIT SET
2	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC SURVEYING AND LANDSCAPE ARCHITECTS OF NC, PLLC. SERVICES IN PUERTO RICO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

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www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

SOIL SURVEY MAP

DATE:	DECEMBER 5, 2025	DRAWN BY:	AWM
DWG SCALE:	1" = 20'	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			PTB

DRAWING NO.: C402

SHEET 9 OF 20

NORTH

1' PLATTED NO-ACCESS EASEMENT

20' DRAINAGE & UTILITY EASEMENT INSTR. 200300035929

1' PLATTED NO-ACCESS EASEMENT

1' PLATTED NO-ACCESS EASEMENT

1.5" UNDERGROUND ELECTRIC CONDUIT

S. GREEN STREET (PUBLIC RIGHT-OF-WAY) (S.R. 267)

4590 BUILDING
1.56 AC
FFE=864.20

4590 BUILDING
1.56 AC
FFE=864.20

CONTRACTOR TO DIRECTIONALLY BORE WATER LINE UNDER S. GREEN STREET. COORDINATE WITH INDOT AND OWN OF BROWNSBURG.

EXISTING 20" WATER LINE BASED ON AVAILABLE MAPPING. CONTRACTOR TO FIELD LOCATE.

PLATTED NO ACCESS EASEMENT INSTR. #201404722

PLATTED DRAINAGE & UTILITY EASEMENT INSTR. #201404722

PLATTED 15' INGRESS/EGRESS EASEMENT INSTR. #202018567

SUBJECT PARCEL 2
15' WIDE INGRESS/EGRESS EASEMENT INSTR. #202413575

PLATTED 10' UTILITY EASEMENT & 10' ELECTRIC UNDERGROUND LINE EASEMENT D.B. 257, PG. 289

SITE SOLUTIONS
PROPERTY GROUP LLC
PARCEL ID:
32-07-26-151-001.000-016
WEST WYNNE FARMS
SECTION 2
INSTR. #201404722
LOT 7

BUILDING
(UNDER CONSTRUCTION)

F.F.E. = 863.29

PLATTED BMP ACCESS EASEMENT

PLATTED 26' CROSS ACCESS EASEMENT EXTENDS 113' SOUTH OF THE SUBJECT PARCEL THEN TURNS WEST TO ADJOINS. GREEN STREET

PLATTED 20' SANITARY SEWER EASEMENT EXTENDS NORTH TO LOT 1

CBH PROPERTIES BROWNSBURG LLC
INSTR. #202413611
PARCEL ID: 32-07-26-154-002.000-016
LOT 2

CULVERT-Z1 (4' DIA.)
RIM = 859.97
IE. 12" S=858.30

CULVERT-Z2 (4' DIA.)
RIM = 859.67
IE. 12" N=858.00

RIM=864.10
INV=859.13

RIM=864.10
INV=859.46

RIM=863.41
INV=858.94

RIM=863.21
INV=859.21

RIM=863.28
INV=858.75

RIM=863.21
INV=858.64

RIM=863.13
INV=858.53

RIM=861.82
INV=857.52

POB
N:1568655.66
E:3144991.15
861.88
CP MAG SPIKE FOUND

UTILITY CROSSINGS*
(STORM CROSSINGS SHOWN ON C400)

1. GRADE=860.66
   FIBER INV.=856.16
   WATER INV.=858.41
2. GRADE=863.51
   2"WATER INV.=859.01
   ¾"WATER INV.=861.26
3. GRADE=863.51
   SANITARY INV.=859.04
   WATER INV.=861.24
4. GRADE=863.14
   WATER INV.=856.65
   SANITARY INV.=858.90
5. GRADE=864.15
   FIBER INV.=857.63
   WATER INV.=859.88
6. GRADE=863.06
   FIBER INV.=855.98
   SANITARY INV.=858.48

*CONTRACTOR TO FIELD VERIFY EXISTING UTILITY CROSSINGS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED BETWEEN FIELD VERIFIED ELEVATIONS.

SCALE IN FEET
0 20 40

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING SETBACK
- EXISTING STORM PIPE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING FIBER OPTIC LINE
- EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY STRUCTURES
- PROPOSED STORM PIPE
- PROPOSED ROOF DRAIN
- PROPOSED ¾" WATER LINE
- PROPOSED 2" WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER
- PROPOSED INDEX (MAJOR) CONTOUR
- PROPOSED INTERMEDIATE (MINOR) CONTOUR

KEY NOTES

1. PROPOSED UNDERGROUND ELECTRIC SERVICE. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
2. PROPOSED UNDERGROUND FIBER OPTIC SERVICE. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
3. PROPOSED TRANSFORMER AND CONCRETE PAD PER UTILITY COMPANY SPECIFICATIONS.
4. PROPOSED 6" PVC SDR-36 SANITARY SEWER LATERAL AT MINIMUM 1.04% SLOPE PER WEST CENTRAL CONSERVANCY REQUIREMENTS.
5. PROPOSED SANITARY SEWER CLEANOUT. SEE DETAIL 3/C802.
6. CONTRACTOR TO CONNECT SANITARY LATERAL TO EXISTING SANITARY STUB. INVERT OF STUB ASSUMED TO BE 857.15 (CONTRACTOR TO FIELD VERIFY). CRITICAL CROSSING IMMEDIATELY UPSTREAM, CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF VERIFIED INVERT IS HIGHER THAN ASSUMED.
7. PROPOSED GREASE TRAP. CONTRACTOR TO COORDINATE WITH PLUMBING PLAN.
8. PROPOSED 2" C-900 DOMESTIC WATER SERVICE.
9. PROPOSED WATER SERVICE CONNECTION, TO BE DIRECTIONALLY BORED UNDER S. GREEN STREET. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
10. PROPOSED UTILITY BUILDING CONNECTION. REFER TO MEP PLANS FOR EXACT SIZE AND LOCATION.
11. PROPOSED 3/4" PE DOMESTIC WATER SERVICE TO HOSE BIB.
12. PROPOSED 45 DEGREE BEND AND BLOCK.
13. PROPOSED UTILITY CROSSING WITH EXISTING UTILITY. DEPTHS OF EXISTING UTILITIES UNKNOWN, CONTRACTOR TO VERIFY.*
14. CONTRACTOR TO CONNECT WITH TAPPING SLEEVE AND VALVE PER CITIZEN ENERGY GROUP SPECIFICATIONS.
15. PROPOSED DOMESTIC METER FOR 2" WATER SERVICE PER TOWN OF BROWNSBURG SPECIFICATIONS.
16. PROPOSED DOMESTIC METER FOR 1" IRRIGATION SERVICE PER TOWN OF BROWNSBURG SPECIFICATIONS.
17. PROPOSED WATER TEE PER TOWN OF BROWNSBURG STANDARDS.
18. PROPOSED FIRE HYDRANT PER TOWN OF BROWNSBURG STANDARDS AND PER THE REQUIREMENTS OF INDIANA FIRE CODE 507.5.1.
19. ASSUMED CONFLICT BETWEEN PROPOSED STORM AND EXISTING UNDERGROUND ELECTRIC. UNDERGROUND ELECTRIC LINE IS TO BE RELOCATED TO A DEPTH AT LEAST 18" BELOW THE PROPOSED STORM PIPE. COORDINATE RELOCATION WITH DUKE ENERGY.

Indiana811
811 OR 800-382-5544
https://indiana811.org

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO CABLE, FIBER, STORM SEWER, SANITARY SEWER, WATER MAIN, GAS MAIN, PHONE, SANITARY AND STORM SEWER SERVICES. CONTRACTOR SHALL BE RESPONSIBLE TO IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES IF ANY DISCREPANCIES ARE DISCOVERED.

PATRICK TODD LENNETT
REGISTERED
LICENSED PROFESSIONAL ENGINEER
STATE OF INDIANA

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	10/15/2025	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PERFORMED BY PEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY PEC LANDSCAPE ARCHITECTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

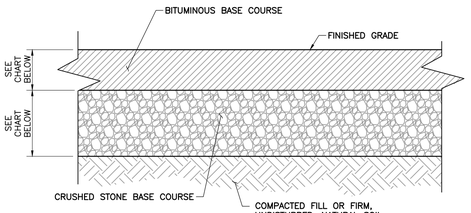
MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

UTILITY PLAN

DATE: DECEMBER 5, 2025
DWG SCALE: 1" = 20'
PROJECT NO: 355-081
APPROVED BY: PTB
DRAWN BY: AWM
CHECKED BY: THA

DRAWING NO.: C500
SHEET 9 OF 20

P:_500-999\355-081\-CAD\Dwg\C501\355081-CV01-C500.dwg(C500 - UTILITY PLAN) (5/2/13/2026 - awelch-mussab) - LP: 2/13/2026 7:58 PM

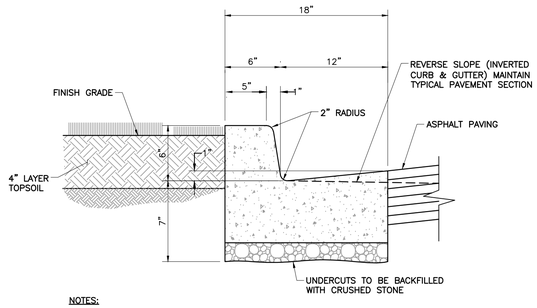


PAVEMENT TYPE	SUFACE COURSE	BINDER COURSE	AGGREGATE BASE	TOTAL THICKNESS
1–LIGHT DUTY (CAR PARKING AREAS)	1.5 IN.	2.50 IN.	6 IN.	10 IN.
2–HEAVY DUTY (DRIVES AND LOADING AREAS)	1.50 IN.	3 IN.	8 IN.	12.50 IN.

NOTES:

1. PAVEMENT THICKNESS SHALL BE PER GEOTECHNICAL REPORT. REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS.

1 C800 ASPHALT PAVEMENT
NOT TO SCALE



NOTES:

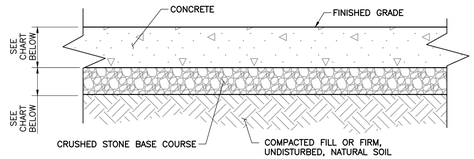
1. SEE PAVEMENT SECTION DETAILS FOR PAVEMENT SPECIFICATIONS
2. REFER TO GEOTECHNICAL REPORT FOR FURTHER SPECIFICATIONS AND/OR RECOMMONDATIONS.

5 C800 CONCRETE CURB AND GUTTER
NOT TO SCALE

NOTES:

1. ACCESSIBLE PARKING SPACE AND ACCESSIBLE ISLE: MAXIMUM 2.0% SLOPE IN ANY DIRECTION.
2. ASPHALT TO CONCRETE BLENDED TRANSITION TO BE COMPLETELY FLUSH, NO LIP.
3. PLACEMENT AND STRIPING SHOWN IN DETAIL IS SCHEMATIC, SEE SITE PLAN FOR CONFIGURATION.
4. ACCESSIBLE AISLE SHALL BE PAINT STRIPED AT 45° ANGLE, EACH 6" WIDE STRIPE AT 24" ON CENTER.

9 C800 ADA ACCESSIBLE PARKING SPACES
NOT TO SCALE

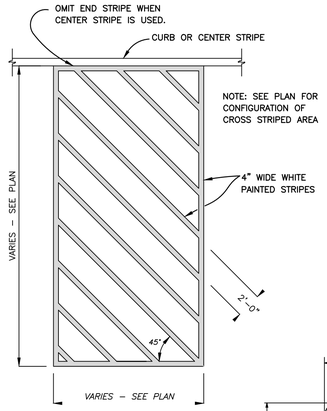


PAVEMENT TYPE	PORTLAND CEMENT CONCRETE	AGGREGATE BASE	TOTAL THICKNESS
1–STANDARD (CAR PARKING AREAS)	5 IN.	6 IN.	11 IN.
2–HEAVY DUTY (DRIVES AND LOADING AREAS)	6 IN.	6 IN.	12 IN.

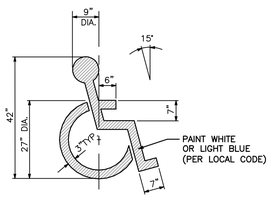
NOTES:

1. PAVEMENT THICKNESS SHALL BE PER GEOTECHNICAL REPORT. REFER TO THIS DOCUMENT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS.
2. CONCRETE TO HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 POUNDS PER SQUARE INCH (PSI) AND AIR ENTRAINMENT OF 4 TO 6 PERCENT BY VOLUME.

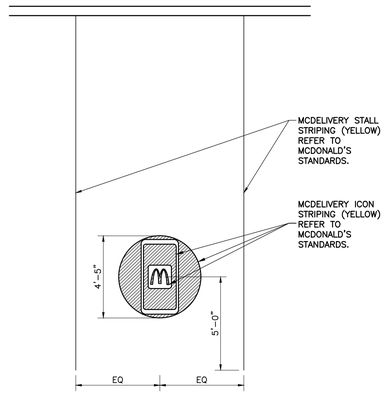
2 C800 CONCRETE PAVEMENT
NOT TO SCALE



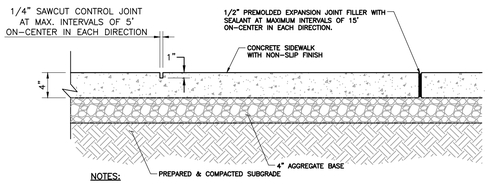
6 C800 PAVEMENT STRIPING
NOT TO SCALE



10 C800 ADA ACCESSIBLE PARKING SYMBOL
NOT TO SCALE



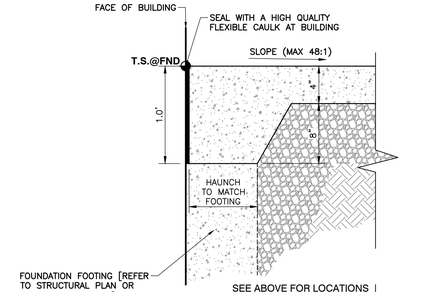
13 C800 CURBSIDE PAVEMENT MARKING DETAIL
NOT TO SCALE



NOTES:

1. PROVIDE MEDIUM BROOM FINISH.
2. SEE PLAN FOR SIDEWALK WIDTHS
3. WHEN CONNECTING TO EXISTING SIDEWALK, SAWCUT AT NEAREST JOINT.
4. CROSS–SLOPE SHALL BE MAXIMUM 48:1.
5. REFER TO GEOTECHNICAL REPORT FOR FURTHER SPECIFICATIONS AND/OR RECOMMENDATIONS (SEE GRADING NOTES ON C001).

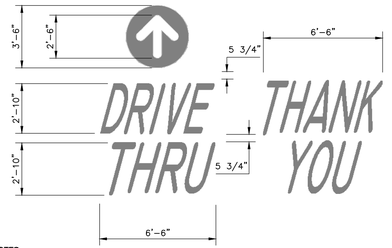
3 C800 CONCRETE SIDEWALK
NOT TO SCALE



NOTES:

1. PROVIDE 1/2" PREMOLDED EXPANSION JOINT @ 25' ON CENTER.
2. PROVIDE TOOLED CONTRACTION JOINTS AT 5' ON CENTER.

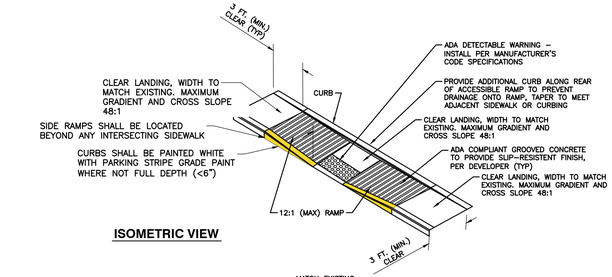
7 C800 COMBINATION CONCRETE CURB/SIDEWALK
NOT TO SCALE



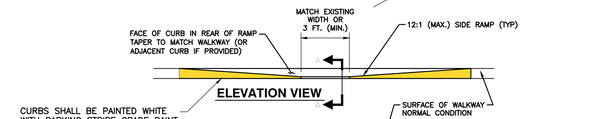
NOTES:

1. YELLOW PAINT (PMS123) IS USED FOR ALL DRIVE–THRU MARKINGS.
2. THE WORDS 'DRIVE–THRU' AND THE CIRCLE ARROW ARE PLACED AT ALL ENTRANCES TO THE LOT APPROX. 25' TO 30' FROM THE CURB OR SIDEWALK.
3. THE WORDS 'DRIVE–THRU' SHOULD BE CENTERED IN THE DRIVEWAY FOR ONE WAY TRAFFIC (ON THE INGRESS SIDE OF THE DRIVE AISLE IF THERE IS TWO WAY TRAFFIC).
4. THE CIRCLE DIRECTIONAL ARROW SHOULD BE CENTERED ABOVE THE WORD 'DRIVE' APPROX. 5' IN TO THE PARKING LOT.
5. IF FIVE OR MORE ARROWS ARE NEEDED TO DIRECT CARS TO THE DRIVE–THRU, PLAN THE CORRECT PLACEMENT OF THE ARROWS TO INCLUDE THE APPLICATION OF THE WORDS 'DRIVE–THRU' WITH AN ARROW CENTERED ABOVE THE WORD 'DRIVE,' ORIENTED TO THE DECISION POINT.
6. THE ARROW ART KNOCKS OUT SO THAT THE ARROW IS THE COLOR OF THE UNDERLYING PAVEMENT.

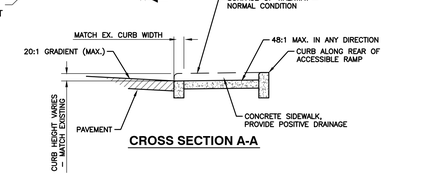
11 C800 PAVEMENT BRANDING DETAIL
NOT TO SCALE



ISOMETRIC VIEW



ELEVATION VIEW

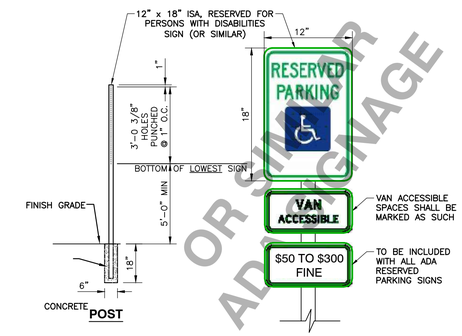


CROSS SECTION A-A

NOTES:

1. ACCESSIBLE SPACE / LOADING AREA: MAXIMUM 48:1 SLOPE IN ANY DIRECTION.
2. RAMP & PAVEMENT TRANSITION TO BE COMPLETELY FLUSH, NO LIP.
3. WHEN RAMP OCCURS ON RADII, MINIMUM CLEAR LANDING WIDTH MUST BE MAINTAINED ON SHORTEST SIDE ALONG CURVE.
4. CONSTRUCT PER A.D.A. & LOCAL STANDARDS.

4 C800 ADA DEPRESSED CURB ACCESSIBLE RAMP
NOT TO SCALE

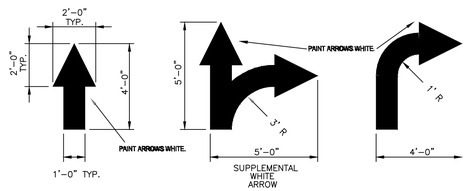


PARTIAL ELEVATION

NOTE:

1. ISA – INTERNATIONAL SYMBOL OF ACCESSIBILITY
2. SIGN MAY BE AFFIXED TO WALL SURFACE
3. SIGN MUST NOT PROTRUDE MORE THAN 4" (IF WALL MOUNTED) OR 12" IF POST MOUNTED HORIZONTALLY INTO PEDESTRIAN PATH.
4. SIGN POST MAY ALTERNATELY BE INSERTED INTO STEEL BOLLARD, ALL REQUIRED DIMENSIONS SHALL BE MAINTAINED

8 C800 ADA ACCESSIBLE PARKING SIGN
NOT TO SCALE



12 C800 DIRECTIONAL
NOT TO SC

Indiana 811
811 OR 800–382–5544
https://indiana811.org

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

PATRICK TODD EGNATZ REGISTERED No. 29000012 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	10/15/2025	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC ENTERPRISES, LLC. ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF SOUTH CAROLINA WILL BE PROVIDED BY CEC ENTERPRISES, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CORRIDOR ARCHITECTS, LLC.

CEC
Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

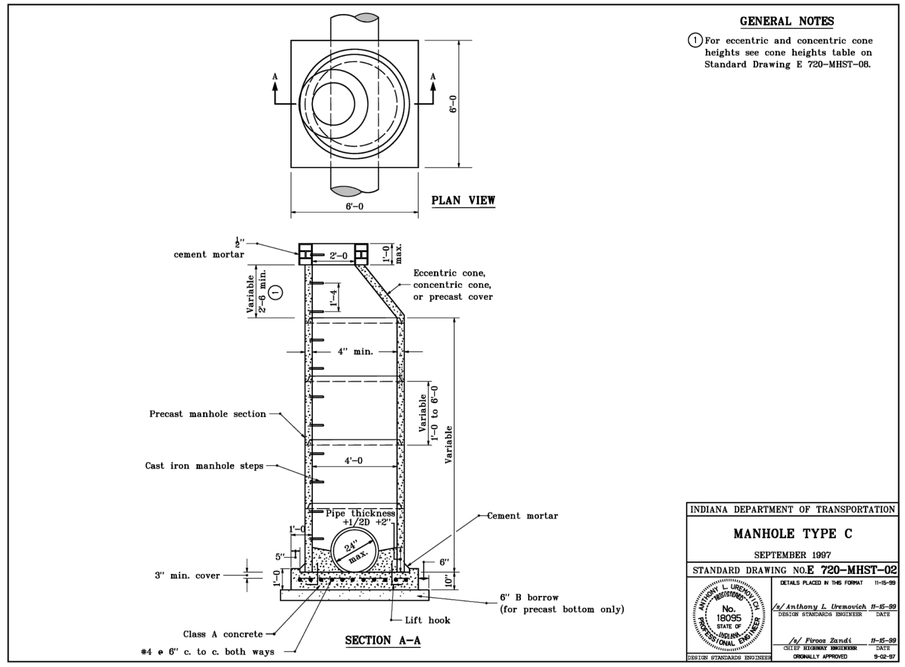
SITE DETAILS

DRAWN BY:	AWM
CHECKED BY:	THA
1" = 20'	
DECEMBER 5, 2025	
DWG SCALE:	
PROJECT NO:	355-081
APPROVED BY:	PTB

DRAWING NO.: C800
SHEET 12 OF 20

OR SIMILAR ADA SIGNAGE

P:\355-001\355-081\--CAD\Dwg\C101\355081-C101-C800.dwg(C800 - SITE DETAILS) LS(1/27/2026 - awelch-murray) - LP: 2/13/2026 7:58 PM



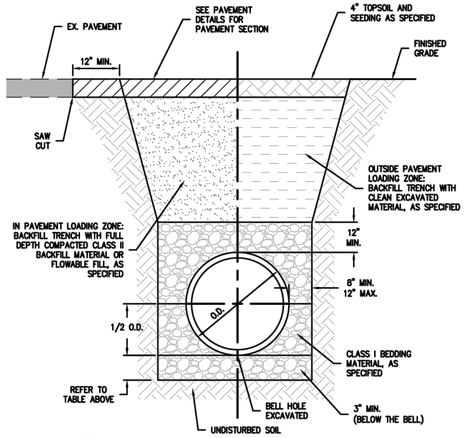
GENERAL NOTES

1. For eccentric and concentric cone heights see cone heights table on Standard Drawing E 720-MHST-08.

INDIANA DEPARTMENT OF TRANSPORTATION	
MANHOLE TYPE C	
SEPTEMBER 1997	
STANDARD DRAWING NO. E 720-MHST-02	
DESIGN STANDARDS ENGINEER	DETAILS PLACED IN THIS FORMAT 11-15-99
	/s/ Anthony L. Uremovich 11-15-99 DESIGN STANDARDS ENGINEER DATE
DESIGN STANDARDS ENGINEER	/s/ Firooz Zandi 11-15-99 CHIEF HIGHWAY ENGINEER DATE ORIGINALLY APPROVED 9-02-97

1 C801 **INDOT MANHOLE TYPE C**
NOT TO SCALE

PIPE SIZE	12" TO 15"	18" TO 30"	36" & OVER
BEDDING BELOW THE PIPE BARREL	4"	O.D. / 4	8"



NOTES:
1. INSTALLATION OF FLEXIBLE PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321.
2. FLEXIBLE PIPE MATERIALS FOR STORM SEWERS INCLUDE HIGH DENSITY POLYETHYLENE (HDPE), POLYPROPYLENE, AND POLYVINYL CHLORIDE (PVC) PIPE.
3. FLEXIBLE PIPE MATERIALS FOR SANITARY SEWERS INCLUDE POLYVINYL CHLORIDE (PVC) PIPE.
4. PAVEMENT LOADING ZONE IS THE AREA WITHIN 5 FEET OF ANY EDGE OF PAVEMENT, CURB, GUTTER, SIDEWALK OR SIMILAR STRUCTURE.

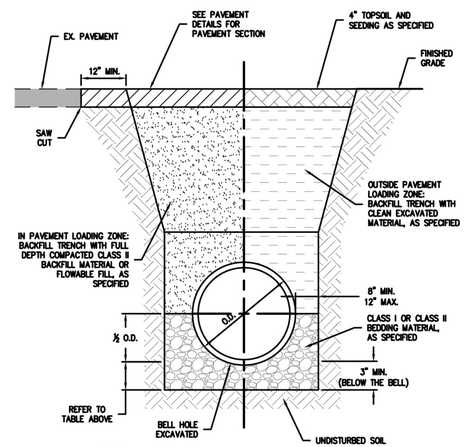
FLEXIBLE GRAVITY PIPE TRENCH
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. OT-04
REVISION DATE: FEBRUARY 2024

REFER TO SPEC SECTION 02220
Town standards can be found at www.brownsburg.org

2 C801 **FLEXIBLE UTILITY TRENCH**
NOT TO SCALE

PIPE SIZE	12" TO 15"	18" TO 30"	36" & OVER
BEDDING BELOW THE PIPE BARREL	4"	O.D. / 4	8"



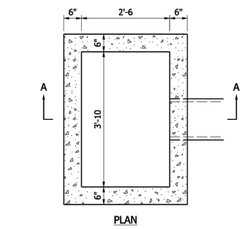
NOTES:
1. RIGID PIPE MATERIALS FOR STORM SEWERS INCLUDE DUCTILE IRON AND REINFORCED CONCRETE PIPE (RCP).
2. RIGID PIPE MATERIALS FOR SANITARY SEWERS INCLUDE DUCTILE IRON PIPE.
3. PAVEMENT LOADING ZONE IS THE AREA WITHIN 5 FEET OF ANY EDGE OF PAVEMENT, CURB, GUTTER, SIDEWALK OR SIMILAR STRUCTURE.

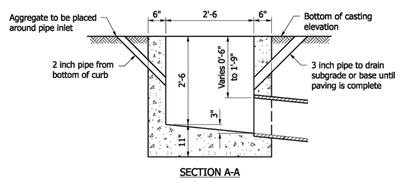
RIGID GRAVITY PIPE TRENCH
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. OT-02
REVISION DATE: FEBRUARY 2024

REFER TO SPEC SECTION 02220
Town standards can be found at www.brownsburg.org

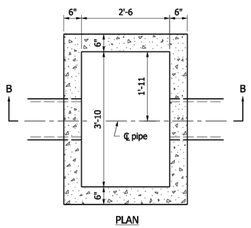
3 C801 **RIGID UTILITY TRENCH**
NOT TO SCALE

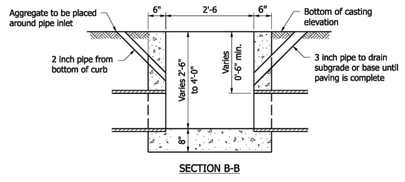




SECTION A-A

INLET-TYPE B





SECTION B-B

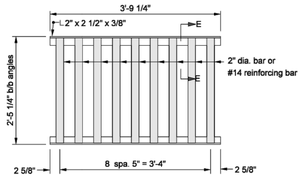
INLET-TYPE C

INDIANA DEPARTMENT OF TRANSPORTATION	
INLET TYPE B AND C	
SEPTEMBER 2008	
STANDARD DRAWING NO. E 720- INST-02	
DESIGN STANDARDS ENGINEER	/s/ Richard L. VanCleave 09/02/08 DESIGN STANDARDS ENGINEER DATE
	/s/ Mark A. Miller 09/02/08 CHIEF HIGHWAY ENGINEER DATE

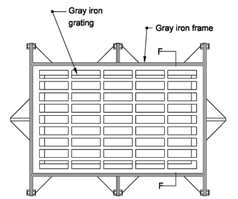
4 C801 **INDOT INLET TYPE C**
NOT TO SCALE

GENERAL NOTES

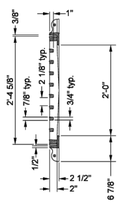
1. Spacing shall be 1 7/8" c. to c. min., and 2 3/8" c. to c. max.
2. The dimensions of the angle iron frame shall be as shown except that the A dimension may vary according to type of grating used.



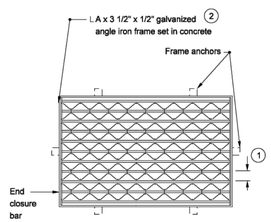
ALTERNATE STEEL GRATING
(To be used with steel frame type 12A)



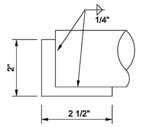
GRATE AND FRAME CASTING
ALTERNATE TYPE 12A



SECTION F-F



STEEL GRATING AND FRAME
TYPE 12A



SECTION E-E

INDIANA DEPARTMENT OF TRANSPORTATION	
STEEL GRATING TYPE 12A FRAME AND GRATE	
SEPTEMBER 2005	
STANDARD DRAWING NO. E 720-ICCA-12	
DESIGN STANDARDS ENGINEER	/s/ Richard L VanCleave 9-01-05 DESIGN STANDARDS ENGINEER DATE
	/s/ Richard K Smutzer CHIEF HIGHWAY ENGINEER

5 C801 **INDOT STEEL GRATING TYPE 12 A**
NOT TO SCALE

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES.

Indiana 811
811 OR 800-382-5544
https://indiana811.org

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	10/15/2025	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF INDIANA SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF PERSONNEL AUTHORIZED TO PRACTICE AS PROVIDED BY IC 25-21-1, IC 25-31-1, OR IC 25-4 AS APPLICABLE. ENGINEERING SERVICES PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF A LANDSCAPE ARCHITECT REGISTERED IN THE STATE OF OHIO.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

SITE DETAILS

DATE:	DECEMBER 5, 2025
DRAWN BY:	AWM
CHECKED BY:	THA
DWG SCALE:	NOT TO SCALE
PROJECT NO:	355-081
APPROVED BY:	PTB

DRAWING NO.: C801

SHEET 13 OF 20

P:\350-0081\355-081\-CADD\Dwg\C801\355081-CV01-C800.dwg[C801 - SITE DETAILS] 10/17/2025 - awelch-mussell - LP: 2/13/2025 7:58 PM

COPPER METER YOKES WITH HORIZONTAL INLET& OUTLET (FOR 1-1/2" & 2" FLANGED METERS) AND BY-PASS

Mueller Co. **8A.35**

Shaded area indicates change | Rev 1-15

8A - COPPER YOKES



B-2423N — FIP end inlets and outlets

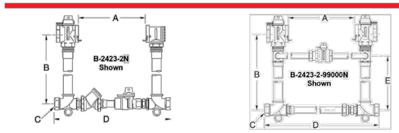
B-2423-2N — FIP end inlets and outlets

B-2423-2-99000N — FIP end inlets and outlets; Valve with meter flange, shown with check valve in optional location

1-1/2" and 2" Copper meter setters (with by-pass)

Catalog number	B-2423N	B-2423-2N/B-2423-2-01N*	B2423-99000N/B-2423-2-99000N
Description	With lock MUELLER® 300™ Ball Angle Meter Valve with meter flange x lock wing ball angle meter valve with meter flange. By-pass with lock wing Mueller® Ball Valve	With lock MUELLER® 300™ Ball Angle Meter Valve with meter flange x angle dual check valve with meter flange. By-pass with lock wing Mueller® Ball Valve and check valve (without by-pass check valve: B-1423-2-01).	With lock MUELLER® 300™ Ball Angle Meter Valve with meter flange x lock wing ball valve with meter flange. Elevated by-pass with Mueller® Ball Valve with locking device (with check valve: B-1423-2-99000).

*For ASSE Approved canister dual check - add 6A for regular or 6D for drain



Dimensions

Meter Sizes	1-1/2" B-2423N, B-2423-2N, and B-2423-2-01N	2" B-2423N, B-2423-2N, and B-2423-2-01N	1-1/2" B-2423-99000N and B-2423-2-99000N	2" B-2423-99000N and B-2423-2-99000N
A*	13.25"	17.25"	13.25"	17.25"
B – riser height	12", 15", 18", 21", 24", and 27"	12", 15", 18", 21", 24", and 27"	18", 21", 24", and 27"	18", 21", 24", and 27"
C – nominal pipe size of inlet and outlet	1-1/2"	2"	1-1/2"	2"
D*	21.00"	26.63"	21.50"	26.63"
E	-	-	7.25"	7.25"

*Adjustable dimension. Copper tubing in the tie bar can be cut to accomodate shorter meters. Adjustment affects both A and D dimensions.

See section 6 for end connections that can be used with these yokes.

SPECIFY METER SIZE, RISER HEIGHT AND CATALOG NUMBER.

MUELLER Copper Meter Yokes are manufactured and tested in accordance with ANSI/AWWA C800. Components in contact with potable water will also comply with latest requirements of the Federal Safe Drinking Water Act.

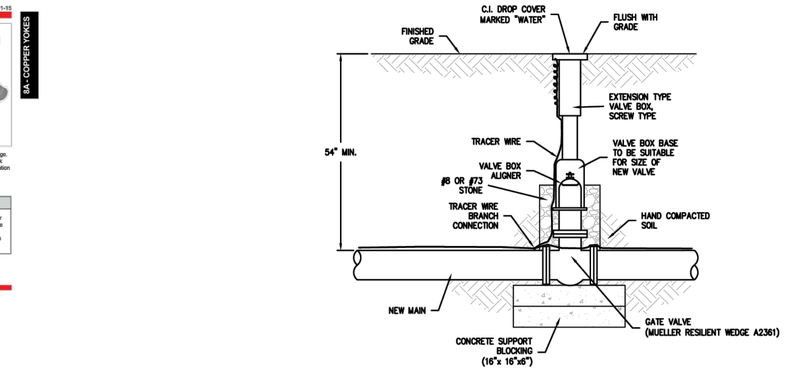
NOTE: SEE DETAIL NO. DW-14 FOR WATER TAP AND METER SET INSTALLATION SPECIFICATIONS

1-1/2" AND 2" METER SETS (HORIZONTAL INLET AND OUTLET)
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. DW-14
REVISION DATE: FEBRUARY 2024

REFER TO SPEC SECTION 02661
Town standards can be found at www.brownsburg.org

1 C802 **WATER METER DETAIL**
NOT TO SCALE

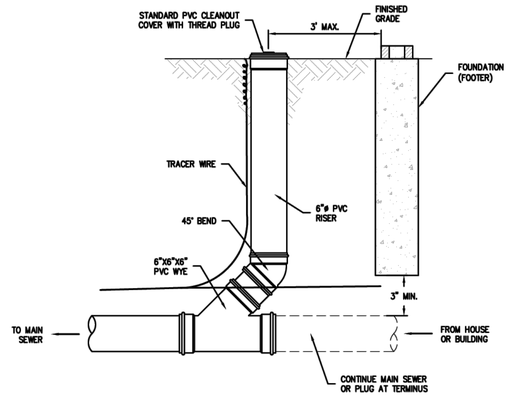


GATE VALVE
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. DW-02
REVISION DATE: FEBRUARY 2024

REFER TO SPEC SECTION 02660
Town standards can be found at www.brownsburg.org

2 C802 **GATE VALVE DETAIL**
NOT TO SCALE



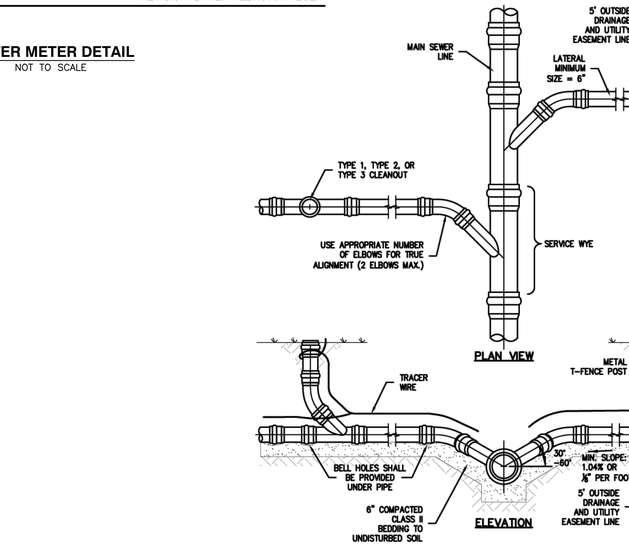
NOTES.
1. FOR USE IN LAWN OR LANDSCAPED SURFACES (LESS THAN 3' FROM HOUSE OR BUILDING).

TYPE 1 CLEANOUT
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. SS-03
REVISION DATE: FEBRUARY 2024

REFER TO SPEC SECTION 02730
Town standards can be found at www.brownsburg.org

3 C802 **SANITARY CLEANOUT**
NOT TO SCALE



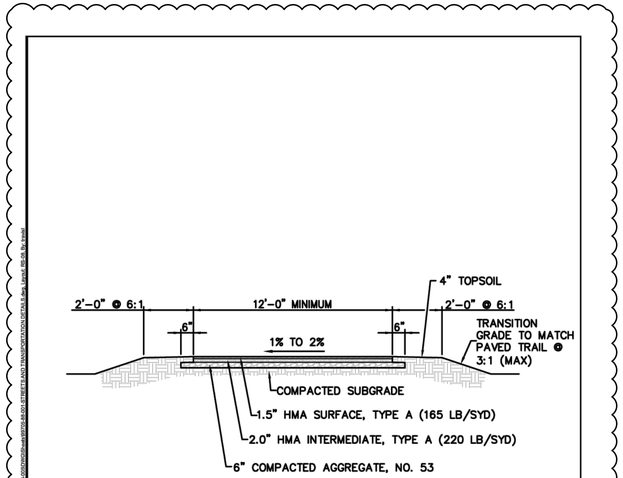
NOTES:
1. WYE BRANCHES SHALL BE INSTALLED WHERE INDICATED. THEY SHALL BE EXTENDED TO PROPERTY LINES OR TO DISTANCES AS SHOWN ON THE DRAWINGS, AND SHALL BE OF 6" PIPE UNLESS OTHERWISE SHOWN.
2. THE DEPTH OF THE LATERAL SHALL BE APPROXIMATELY 5'-0" UNLESS SEWER DEPTH IS LESS, IN WHICH EVENT A MINIMUM SLOPE OF 1/8" PER 1'-0" SHALL BE USED. THE DEPTH OF THE LATERAL SHALL BE NO LESS THAN 5'-0".
3. COMPACTION OF BEDDING AND BACKFILL IS CRITICAL UNDER WYE AND BEND. IF PROPER COMPACTION CANNOT BE ACHIEVED, PLACE A MIN. OF 6" OF CLASS B CONCRETE AROUND BEND.

SANITARY LATERAL FOR SHALLOW SEWERS (LESS THAN 15' DEEP)
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. SS-01
REVISION DATE: FEBRUARY 2024

REFER TO SPEC SECTION 02730
Town standards can be found at www.brownsburg.org

4 C802 **SANITARY LATERAL**
NOT TO SCALE



TYPICAL TRAIL CROSS SECTION
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. RS-08
REVISION DATE: FEBRUARY 2024

REFER TO SPEC SECTION 02501, 02502, 02504
Town standards can be found at www.brownsburg.org

5 C802 **MULTI-USE TRAIL DETAIL**
NOT TO SCALE

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Indiana811
811 OR 800-382-5544
https://indiana811.org

PATRICK TODD BENNETT REGISTERED PE 10000900 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	10/3/2025	ISSUE FOR PERMIT SET
2	10/15/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC, ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF INDIANA WILL BE PROVIDED BY CONSOLE ASSOCIATES, LLC.

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MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

SITE DETAILS

DATE:	DECEMBER 5, 2025	DRAWN BY:	AWM
DWG SCALE:	NOT TO SCALE	CHECKED BY:	THA
PROJECT NO:		355-081	
APPROVED BY:			PTB

DRAWING NO.: **C802**

SHEET 14 OF 20

P:\355-001\355-081\1-CAD\1Dwg\CIVIL\355081-CIV01-C800.dwg(C802 - SITE DETAILS) LS(1/27/2026 - awelch-murrell) - LP: 2/13/2026 7:59 PM

NORTH

PROPOSED LIMITS OF DISTURBANCE = 1.866 AC

1.5" UNDERGROUND ELECTRIC CONDUIT

S. GREEN STREET
(PUBLIC RIGHT-OF-WAY)
(S.R. 257)

4590 BUILDING
1.56 AC
FFE=864.20

SITE SOLUTIONS
PROPERTY GROUP LLC
PARCEL ID:
32-07-26-151-001.000-016
WEST WYNNE FARMS
SECTION 2
INSTR. #201404722
LOT 7

PROPOSED LIMITS OF DISTURBANCE = 1.866 AC

BUILDING
(UNDER CONSTRUCTION)

F.F.E. = 863.29

CBH PROPERTIES BROWNSBURG LLC
INSTR. #202413611
PARCEL ID: 32-07-26-154-002.000-016
LOT 2

CULVERT-Z1 (4' DIA.)
RIM = 859.97
IE: 12" S=858.30

CULVERT-Z2 (4' DIA.)
RIM = 859.67
IE: 12" N=858.00

14.00'

20.20'

SCALE IN FEET
0 20 40

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING SETBACK
- EXISTING STORM PIPE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING FIBER OPTIC LINE
- EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY STRUCTURES
- PROPOSED STORM PIPE
- PROPOSED ROOF DRAIN
- PROPOSED ¾" WATER LINE
- PROPOSED 2" WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER
- PROPOSED INDEX (MAJOR) CONTOUR
- PROPOSED INTERMEDIATE (MINOR) CONTOUR
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED CONSTRUCTION EXIT
- PROPOSED COMPOST FILTER SOCK
- PROPOSED SILT FENCE
- PROPOSED CURB INLET PROTECTION
- PROPOSED STANDARD INLET PROTECTION
- PROPOSED MATERIAL STORAGE AREA

KEY NOTES

1. PROPOSED SILT FENCE. SEE DETAIL 5/C901.
2. PROPOSED TEMPORARY CONSTRUCTION ENTRANCE. SEE DETAIL 3/C901.
3. PROPOSED COMPOST FILTER SOCK. SEE DETAIL 4/901.
4. PROPOSED CURB INLET PROTECTION. SEE DETAIL 2/C901.
5. PROPOSED STANDARD INLET PROTECTION. SEE DETAIL 1/C901.
6. PROPOSED MATERIAL STORAGE AREA.

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PATRICK TODD LENNETT — REGISTERED — 11400997 — STATE OF INDIANA — PROFESSIONAL ENGINEER

REVISION RECORD

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MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

EROSION & SEDIMENT CONTROL PLAN

DATE:	DECEMBER 5, 2025
DWG SCALE:	1" = 20'
PROJECT NO:	355-081
APPROVED BY:	PTB
DRAWN BY:	AWM
CHECKED BY:	THA

DRAWING NO.: C900
SHEET 15 OF 20

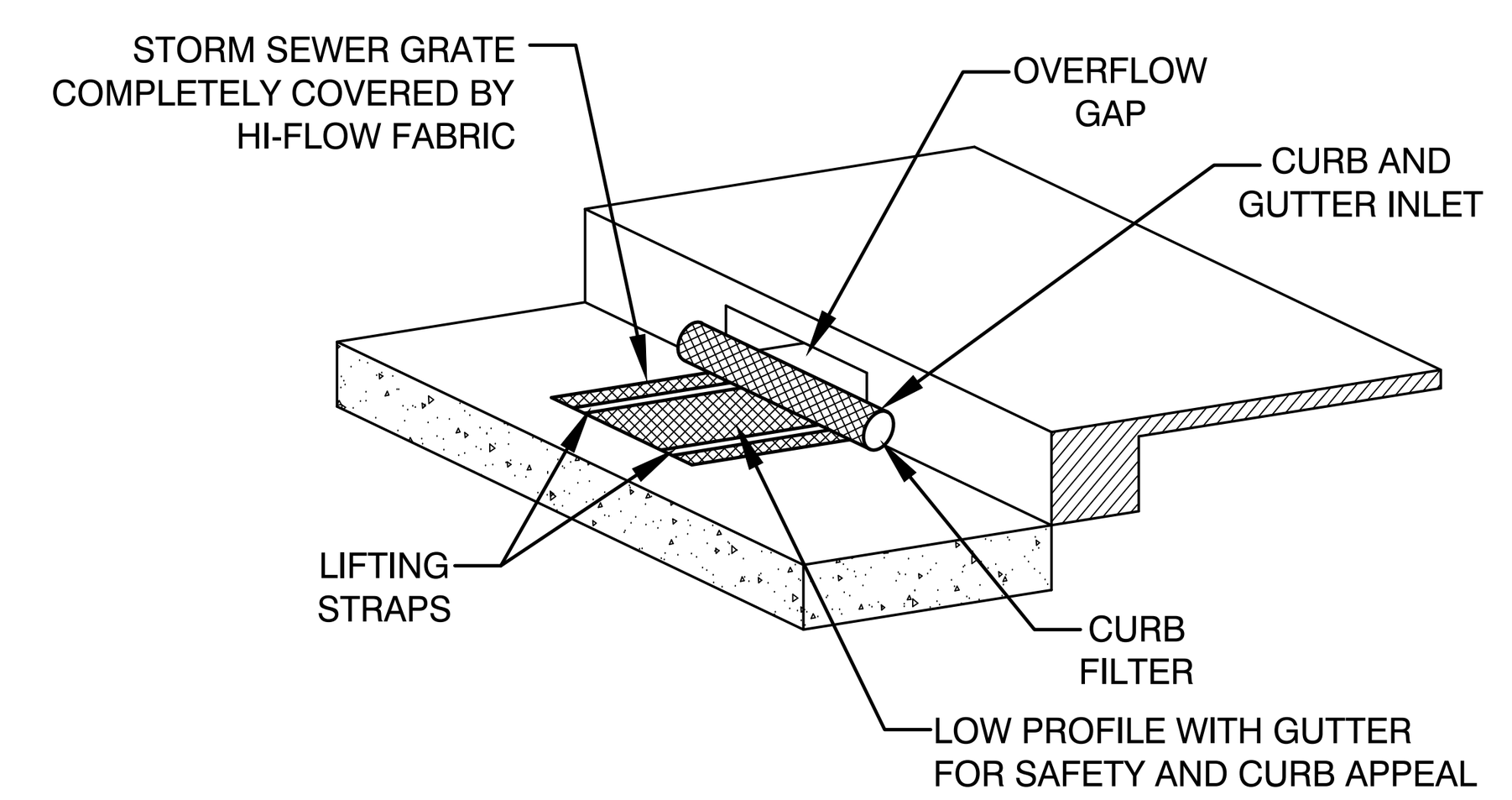
P:\350-0001\355-081\-CADD\Dwg\CIVIL\355081-CIVIL-C900.dwg[C900 - EROSION & SEDIMENT CONTROL PLAN] 10/2/2025 - Thomisee) - LP, 2/13/2026 8:00 PM

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) GENERAL NOTES

1. WORK ON THIS SITE INCLUDES THE COMPLETE CONSTRUCTION OF A PROPOSED MCDONALD'S RESTAURANT BUILDING.
2. PROPOSED SITE IMPROVEMENTS INCLUDE EARTHWORK, CURBS, SIDEWALKS, PAVING, UNDERGROUND UTILITIES, SITE LIGHTING, AND LANDSCAPING FOR A MCDONALD'S RESTAURANT. THE PROPOSED DISTURBED AREA IS 1.655 ACRES.
3. THE SITE IS LOCATED AT 7030 NORTHFIELD DRIVE, PROPERTY ID 14-2-26-61E 154-001. EXISTING SOILS ARE CLASSIFIED AS SILTY CLAY LOAM, CLAY LOAM, AND LOAM. ACCORDING TO FEMA FIRM PANEL, MAP NUMBER 18063C0167D, EFFECTIVE DATE SEPTEMBER 25, 2009, THE SITE IS LOCATED IN FLOOD ZONE X, WHICH IS OUTSIDE THE 0.2-1% ANNUAL FLOOD RISK ZONE.
4. THE SITE IS BOUNDED BY NORTHFIELD DRIVE TO THE NORTH, S. GREEN STREET TO THE WEST, TWO PROPERTIES ZONED AS PUD TO THE SOUTH, AND EAST.
5. ON BEHALF OF THE OWNER/PERMITTEE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
6. SOIL RELEASED OR LOST DUE TO CONTAINMENT FAILURE SHALL BE IMMEDIATELY CLEANED UP AND DISPOSED OF IN AN APPROVED MANNER. DAMAGED BEST MANAGEMENT PRACTICES (BMPS) SHALL BE REPLACED AND BMP DEFICIENCIES SHALL BE REPAIRED UPON INSPECTION.
7. THE CONTRACTOR SHALL MODIFY THE SWPPP AS REQUIRED TO INCLUDE PERMIT COVERAGE DOCUMENTATION FOR OFF-SITE BORROW, FILL, MATERIAL STORAGE SITES, OR INFORMATION RELATIVE TO HAUL ROUTES, TRUCKS AND EQUIPMENT OR DEWATERING METHODS WHICH ARE USED FOR THIS PROJECT IN ACCORDANCE WITH STATE AND/OR LOCAL JURISDICTIONAL ENTITY REGULATIONS.
8. SOIL SEDIMENT AND EROSION BMPS SHALL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED AT ALL TIMES UNTIL CONSTRUCTION HAS BEEN COMPLETED. ALL GRASS SHALL BE WELL ESTABLISHED AND/OR PERMANENT EROSION AND SEDIMENTATION BMP MEASURES SHALL BE IN PLACE PRIOR TO THE REMOVAL OF ANY TEMPORARY BMPS. ALL BMP MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR IS TO DESIGNATE A SITE DUMP/WASH AREA PRIOR TO STARTING CONSTRUCTION FOR SUCH PURPOSES AS WASHING OUT CONCRETE TRUCKS AND DUMPING NON-HAZARDOUS WASTE MATERIALS. DUMPING OR DISCHARGE OF ANY WASTE MATERIALS TO ANY SEWERS IS PROHIBITED. HAZARDOUS WASTES ARE TO BE REMOVED OFF SITE AND PROPERLY DISPOSED OF CONSISTENT WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.
10. LIMITS OF EARTH DISTURBANCE ARE INDICATED ON THE PLANS AND SHALL BE MINIMIZED ON THE SITE. IF REQUIRED, THE CONTRACTOR SHALL LOCATE VEHICLE FUELING AREAS AWAY FROM STORM WATER DRAINAGE FEATURES AND MARK THOSE AREAS ON THE SITE MAP. LEGALLY DISPOSE OF ALL CONSTRUCTION DEBRIS OFF SITE. MINIMIZE DUST ON SITE BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF PETROLEUM-BASED OR OTHER TOXIC LIQUIDS FOR DUST SUPPRESSION IS PROHIBITED.
11. THE CONTRACTOR SHALL POST AND MAINTAIN SIGN(S) AT A MINIMUM OF ONE (1) CONSTRUCTION ENTRANCE/EXIT LOCATION DESIGNATED BY THE CONTRACTOR, WHERE PROJECT MEETS PAVED COUNTY, STATE, OR FEDERAL HIGHWAYS/ROADS, AND/OR AT OTHER EASILY ACCESSIBLE LOCATION(S) TO ADEQUATELY IDENTIFY THE SITE PRIOR TO COMMENCEMENT OF AND DURING CONSTRUCTION UNTIL REGISTRATION IS PROPERLY TERMINATED. SUCH SIGN SHALL DISPLAY A COPY(IES) OF A COMPLETED APPLICATION(S) FOR PERMIT COVERAGE, NOTICE(S) OF COVERAGE NOTIFYING THE APPLICANT THAT COVERAGE UNDER THE APPLICABLE PERMIT(S) HAS BEEN OBTAINED, THE LOCATION OF THE SWPPP, THE NAME AND PHONE NUMBER OF A CONTACT PERSON RESPONSIBLE FOR SCHEDULING SWPPP VIEWING TIMES AND ANY OTHER STATE OR LOCAL REQUIREMENTS.
12. THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITATION FACILITIES FOR WORKERS AND MAINTAIN FACILITIES DAILY. TRASH CONTAINERS SHALL BE EMPTIED DAILY, OR WHEN FULL. STORE CHEMICALS, PAINTS, SOLVENTS, LUBRICANTS, FERTILIZERS AND OTHER TOXIC MATERIALS IN WEATHERPROOF CONTAINERS. DUMPING OR DISCHARGE OF ANY WASTE MATERIALS TO ANY SEWERS IS PROHIBITED. HAZARDOUS WASTES ARE TO BE REMOVED OFF SITE AND PROPERLY DISPOSED OF CONSISTENT WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.
13. THE CONTRACTOR SHALL PREPARE, IMPLEMENT, AND MAINTAIN A SPILL PREVENTION, CONTROL AND COUNTERMEASURES (SPCC) PLAN, AS A SEPARATE DOCUMENT OR AS A COMPONENT OF THE SWPPP, FOR ALL TANKS/CONTAINERS STORING ONSITE FUEL, CHEMICALS, OR OTHER POLLUTANTS CONSISTENT WITH THE REQUIREMENTS OF STATE ENVIRONMENTAL PROTECTION AGENCY NPDES RULES. EFFECTIVE MEASURES NECESSARY TO PREVENT SPILLS AND TO CLEAN UP SPILLS OF ANY TOXIC POLLUTANT, AS DOCUMENTED IN THE FACILITY'S SPCC PLAN, SHALL BE FULLY IMPLEMENTED. SOIL CONTAMINATED BY HAZARDOUS SUBSTANCES, PAINTS, FUEL, OR CHEMICAL SPILLS, SHALL BE IMMEDIATELY CLEANED-UP, MANAGED, AND DISPOSED OF IN AN APPROVED MANNER. WHERE POTENTIAL SPILLS CAN OCCUR, MATERIALS HANDLING PROCEDURES SHALL BE SPECIFIED AND PROCEDURES FOR IMMEDIATE CLEANUP/REMEDIATION OF SPILLS SHALL BE DESCRIBED IN THE SPCC PLAN OR EMPLOYEE TRAINING PLANS. THE EQUIPMENT NECESSARY TO IMPLEMENT A CLEANUP SHALL BE MADE AVAILABLE TO FACILITY PERSONNEL. THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DESIGNATED STATE AND LOCAL GOVERNMENT AGENCIES AFTER BECOMING AWARE OF VISIBLE OIL SEEN IN STORM WATER RUNOFF FROM ITS FACILITY OR IN A WATER OF THE STATE IN THE PROJECT VICINITY AS A RESULT OF ACTIVITIES AT THE SITE. THE CALLER SHOULD BE PREPARED TO REPORT THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PERSON REPORTING SPILL, THE EXACT LOCATION OF THE SPILL, COMPANY NAME AND LOCATION, THE MATERIAL SPILLED, THE ESTIMATED QUANTITY, THE SOURCE OF SPILL, THE CAUSE OF THE SPILL, THE NEAREST DOWNSTREAM WATER WITH THE POTENTIAL TO RECEIVE THE SPILL, AND THE ACTIONS BEING TAKEN FOR CONTAINMENT AND CLEANUP. ALL SPILLS SHALL BE REPORTED TO THE HENDRICKS COUNTY EMERGENCY MANAGEMENT GROUP (317-745-9229). PETROLEUM PRODUCT SPILLS OF 25 GALLONS OR MORE SHALL BE IMMEDIATELY REPORTED TO THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM) (1-800-457-8283), OR CALL 911. ALL RELEASES OF HAZARDOUS SUBSTANCES TO THE ENVIRONMENT MUST BE HANDLED PURSUANT TO APPLICABLE LAWS. ALL SPILLS THAT RESULT IN CONTACT WITH WATER OF THE STATE MUST BE REPORTED TO IDEM. ENVIRONMENTAL REGULATIONS REQUIRE THAT ALL RELEASES OF HAZARDOUS SUBSTANCES EXCEEDING REPORTABLE QUANTITIES BE REPORTED TO THE NATIONAL RESPONSE CENTER (800-424-8802). MAKE SURE TO REPORT THESE ITEMS WITHIN 15 MINUTES OF IDENTIFICATION.
14. PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, THE CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, AND SANITARY SEWER. ANY CONFLICTS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND THE APPROPRIATE AUTHORITIES.
15. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.
16. ALL EXPOSED AREAS SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS OF FINAL GRADING. SHOULD SOIL DISTURBING ACTIVITIES CEASE IN AN AREA FOR 14 CALENDAR DAYS OR MORE, CONTRACTOR SHALL TEMPORARILY SEED THE AREA OR IMPLEMENT OTHER BEST MANAGEMENT PRACTICES TO ESTABLISH INTERIM STABILIZATION. FOR AREAS EXPECTED TO REMAIN DORMANT FOR 14 DAYS OR MORE, INCLUDING OVER WINTER, APPLY TEMPORARY SEEDING AND MULCHING TO EXPOSED SOIL WITHIN 7 DAYS AFTER END OF WORK IN THE AREA.
17. STORM WATER FROM THIS SITE DISCHARGES TO THROUGH THE EXISTING STORM SEWER SYSTEM INTO THE REGIONAL DETENTION BASIN TO THE SOUTH OF THE PROPERTY.
18. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS,
19. ALL CONTAMINATED SOIL MUST BE TREATED AND/OR DISPOSED IN IDEM APPROVED SOLID WASTE MANAGEMENT.

CONSTRUCTION SITE INSPECTION AND MAINTENANCE NOTES

1. ALL SEDIMENT CONTROLS MUST BE INSTALLED PRIOR TO GRADING. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS (WEEKLY), AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.50 INCHES OR GREATER (A RAIN GAUGE MUST BE MAINTAINED ON SITE).
2. ALL MEASURES NEED TO BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT SHOULD BE INITIATED WITHIN 24 HOURS OF THE INSPECTION REPORT.
3. SILT FENCE AD STRAW BALES NEED TO BE INSPECTED WEEKLY FOR PROPER ANCHORAGE AND LEAKAGE UNDERNEATH. SILT FENCING SHOULD ALSO BE INSPECTED FOR TEARS.
4. BUILT-UP SEDIMENT NEEDS TO BE REMOVED FROM SILT BARRIERS WHEN IT HAS REACHED ½ OF THE HEIGHT OF THE BARRIER. SEDIMENT NEEDS TO BE PLACED IN A STABILIZED SITE TO PREVENT RE-ENTRY INTO THE SAME SITE OR ANOTHER ENTRAPMENT AREA.
5. TEMPORARY AND PERMANENT SEEDING AND PLANTINGS NEED TO BE INSPECTED FOR BARE SPOTS, WASHOUTS AND HEALTHY GROWTH. A PERSON SHOULD BE DESIGNATED TO BE RESPONSIBLE FOR MAINTAINING PLANTED GRASS AREAS UNTIL GROWTH HAS REACHED 1" IN HEIGHT AND THE AREA PLANTED HAS 70% GROUND COVER.
6. CONSTRUCTION ENTRANCE(S): REMOVE LARGE CHUNKS OF MUD-OR CAKED-SOIL FROM CONSTRUCTION-EXIT PAD DAILY TO MINIMIZE SEDIMENT BUILD UP. INSPECT STONE PAD AND SEDIMENT-DISPOSAL AREA WEEKLY AND AFTER STORM EVENTS OR HEAVY USE. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL. TOP-DRESS WITH CLEAN-SPECIFIED STONE AS NEEDED TO MAINTAIN EFFECTIVENESS OF THE PRACTICE. IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROAD. REPAIR ANY BROKEN-ROAD PAVEMENT IMMEDIATELY. REMOVE UNNEEDED EXIT-PAD MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED. ANY OTHER CONSTRUCTION INGRESS OR EGRESS TO THE SITE NOT PROPOSED IN THIS PLAN IS PROHIBITED.
7. FABRIC DROP INLET PROTECTION: INSPECT FABRIC AFTER EACH RAINFALL EVENT AND MAKE NEEDED REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE POOL AREA WHEN SEDIMENT HAS REACHED ½ THE FABRIC HEIGHT. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE FABRIC DURING THE SEDIMENT REMOVAL. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND UNSTABLE SEDIMENT AND DISPOSE OF PROPERLY. FILL THE DISTURBED AREA TO THE GRADE OF THE DROP INLET. STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PLANS.
8. SILT FENCES: PERIODICALLY CHECK ALL GRADED AREAS AND THE RELATED EROSION AND SEDIMENT-CONTROL PRACTICES FOR DAMAGE BY EQUIPMENT AND ESPECIALLY AFTER HEAVY RAINFALLS FOR DAMAGE BY RUNOFF. REPAIR SILT FENCES AND OTHER TEMPORARY SEDIMENT CONTROL MEASURES. CLEAN SEDIMENT OUT OF ADJACENT DIVERSIONS AND OTHER STRUCTURES AS NEEDED. REPAIR ANY FAILURES THAT OCCUR IN SURFACE STABILIZATION MEASURES, SUCH AS PLANTINGS.
9. STORM SEWER SYSTEM: INSPECT THE STORM SEWER SYSTEM AFTER EACH STORM EVENT AND AT LEAST ONCE WEEKLY. REMOVE AND PROPERLY DISPOSE OF SEDIMENT TO MAINTAIN FULL FLOW IN STORM SEWER PIPING.
10. ALL SITE INSPECTIONS SHALL BE PERFORMED BY QUALIFIED INSPECTOR, THE INSPECTOR SHALL PROVIDE DOCUMENTATION AFTER EACH INSPECTION TO INCLUDE, AT A MINIMUM, THE FOLLOWING: INSPECTION DATE AND TIME; NAMES, TITLES AND QUALIFICATIONS OF THE INSPECTOR; WEATHER FOR THE PERIOD SINCE THE LAST INSPECTION; WEATHER AND DISCHARGES AT THE TIME OF THE INSPECTION; LOCATIONS OF DISCHARGES AND SEDIMENT OR OTHER POLLUTANTS FROM THE SITE; LOCATIONS OF BMPS THAT NEED TO BE MAINTAINED, THAT FAILED TO OPERATE AS DESIGNED OR FAILED TO PROVIDE ADEQUATE PROTECTION, ADDITIONAL WHERE BMPS AREA NEEDED, AND THE CORRECTIVE ACTIONS TO BE IMPLEMENTED INCLUDING ANY NECESSARY PLAN CHANGES AND IMPLEMENTATION DATES. INSPECTION REPORTS SHALL BE SIGNED AND DATED BY THE INSPECTOR AND KEPT ON FILE AT THE SITE. INSPECTION RECORDS SHALL BE KEPT ON FILE FOR A MINIMUM OF THREE (3) YEARS AFTER NOTICE OF TERMINATION.
11. BMPS THAT REQUIRE REPAIR OR MAINTENANCE SHALL BE REPAIRED PRIOR TO THE NEXT STORM EVENT, OR NO LATER THAN THREE (3) DAYS OF INSPECTION. SEDIMENT PONDS REQUIRING REPAIR OR MAINTENANCE SHALL BE REPAIRED OR CLEANED OUT WITHIN TEN (10) DAYS OF THE INSPECTION.
12. BMPS NOT MEETING THE INTENDED FUNCTION SHALL BE REPLACED WITH A SUITABLE BMP WITHIN THREE (3) DAYS OF THE INSPECTION.
13. MISSING BMPS SHALL BE INSTALLED WITHIN THREE (3) DAYS OF INSPECTION.



DANDY CURB BAG™
SPECIFICATIONS

NOTE: THE DANDY CURB BAG™ WILL BE MANUFACTURED IN THE U.S.A FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

DANDY CURB BAG™ (SAFETY ORANGE)

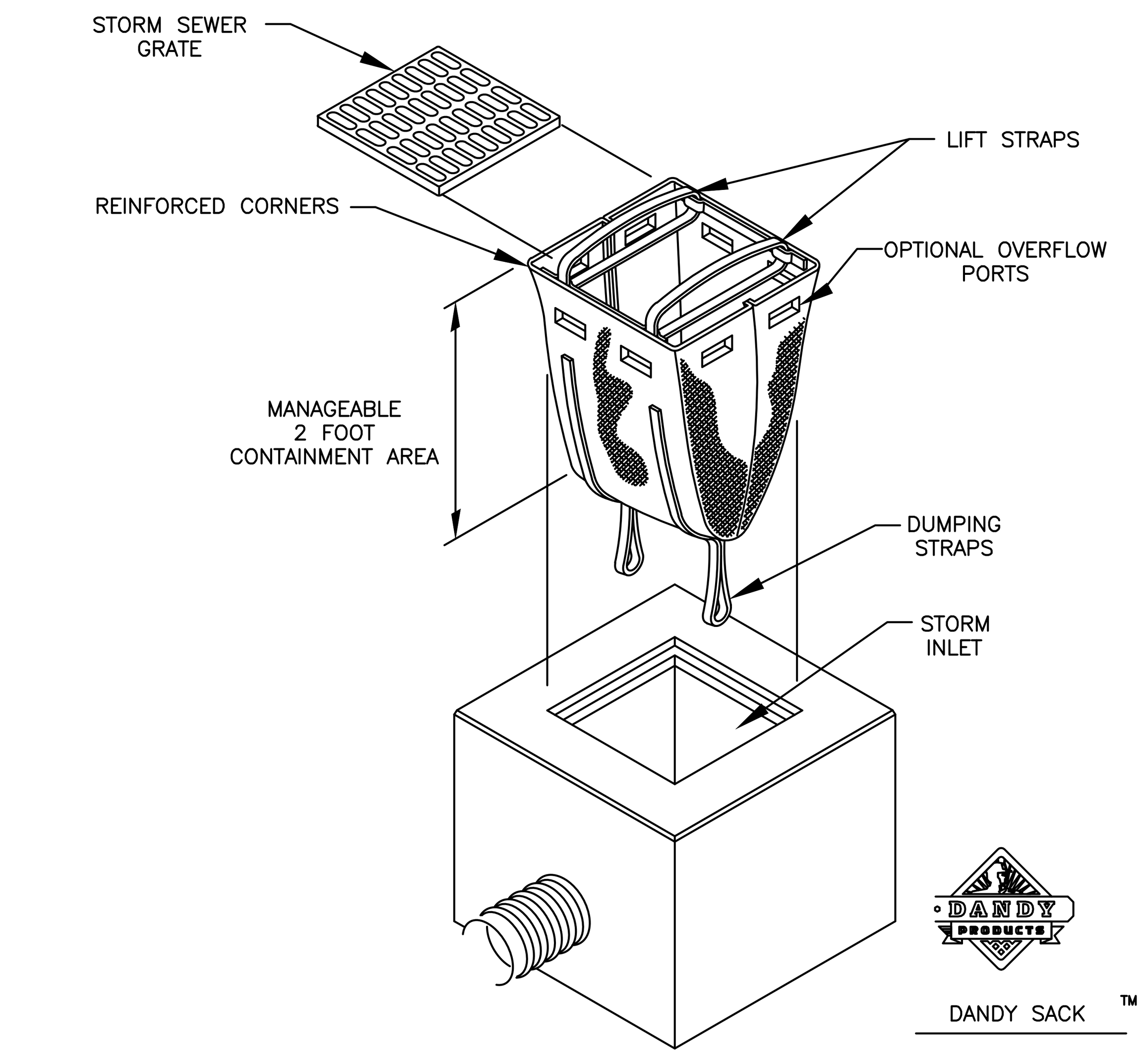
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m² (gal/min/ft²)	5907 (145)
Permittivity	ASTM D 4491	Sec^{-1}	2.1

*Note: All Dandy Curb Bags™ can be ordered with our optional oil absorbents

CURB INLET

2 / C901 INLET PROTECTION DETAILS

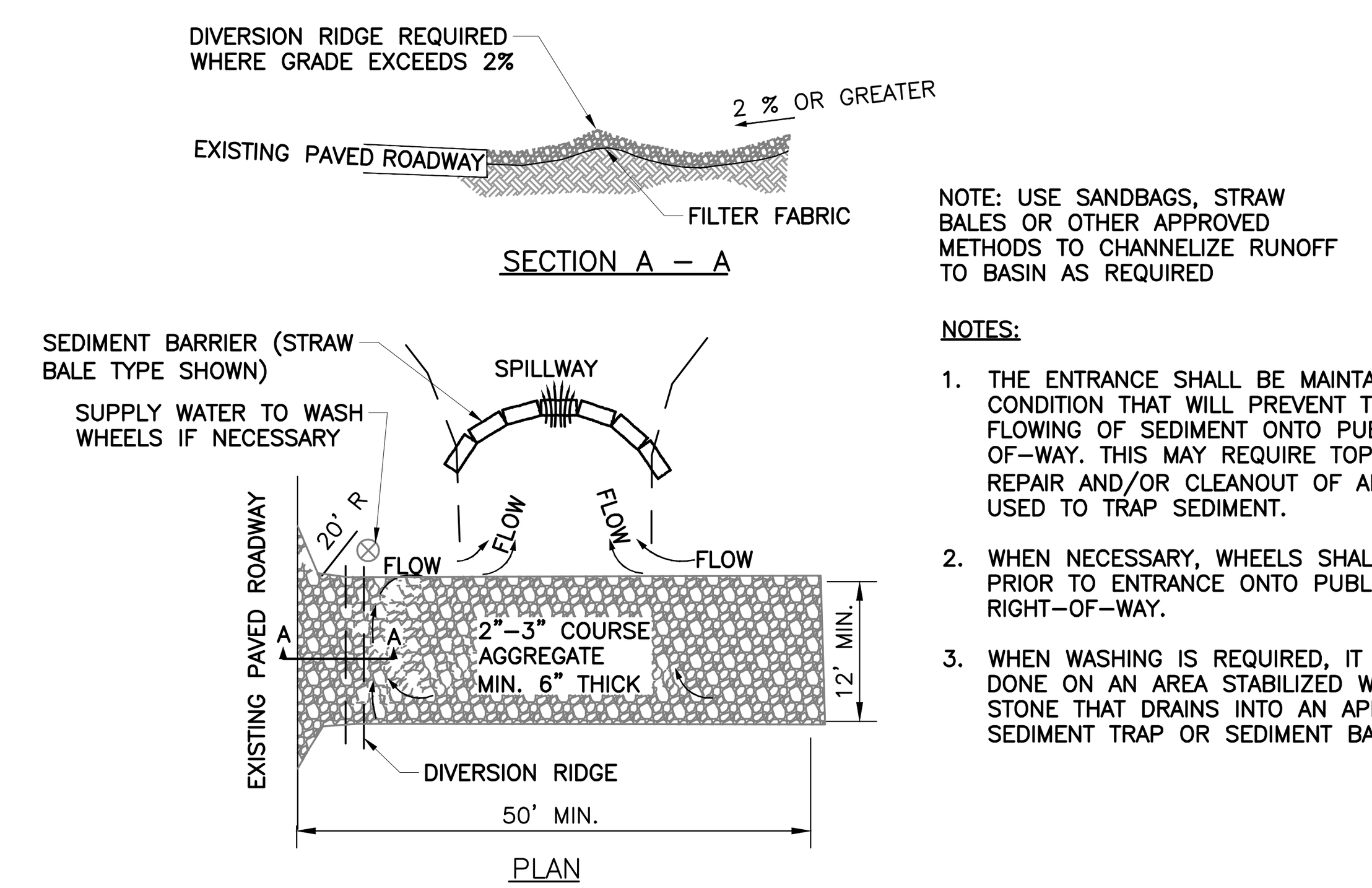
NOT TO SCALE



STANDARD INLET

1 / C901 INLET PROTECTION DETAILS

NOT TO SCALE

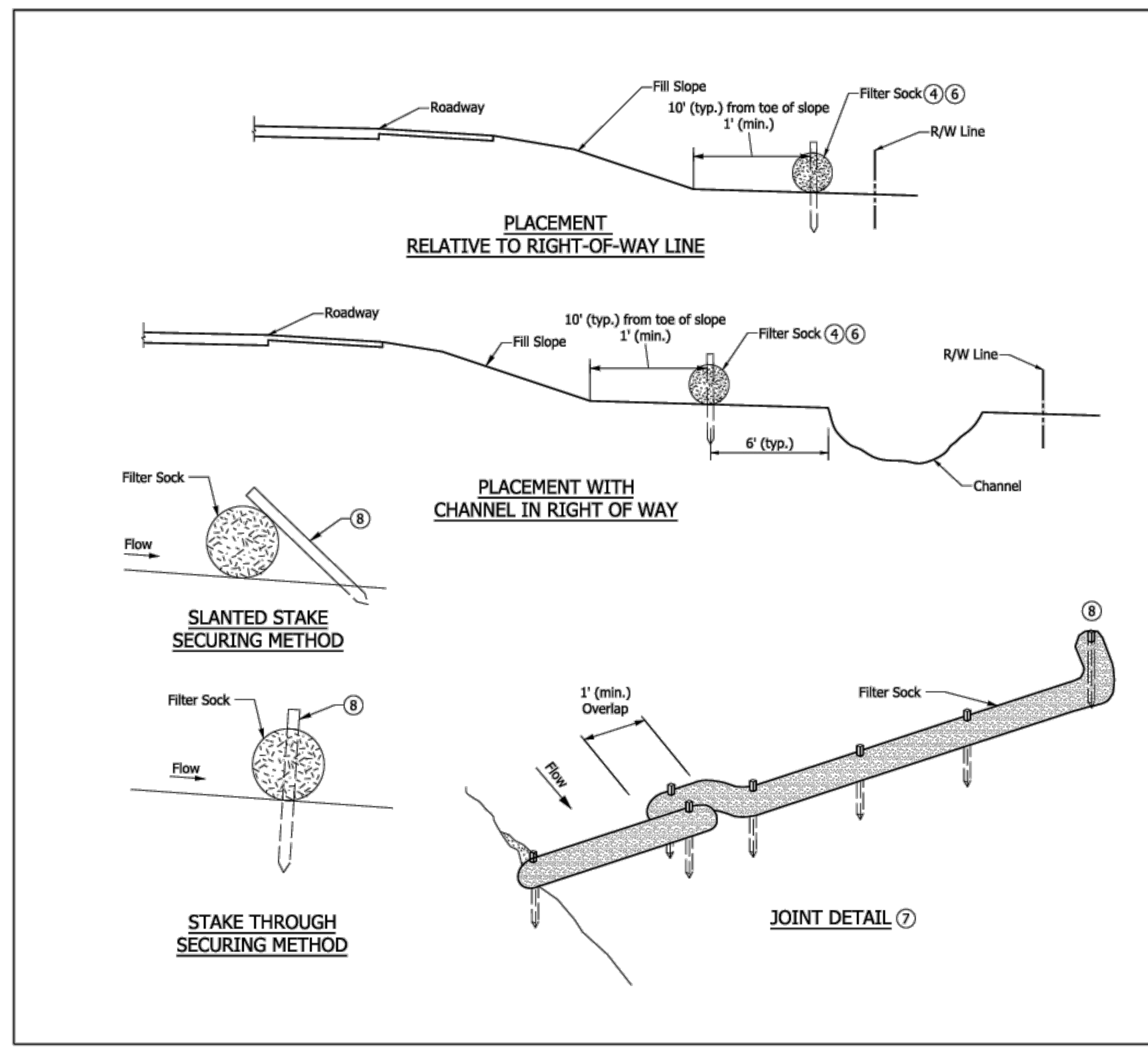


NOTE: USE SANDBAGS, STRAW BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

3 / C901 CONSTRUCTION ENTRANCE DETAIL



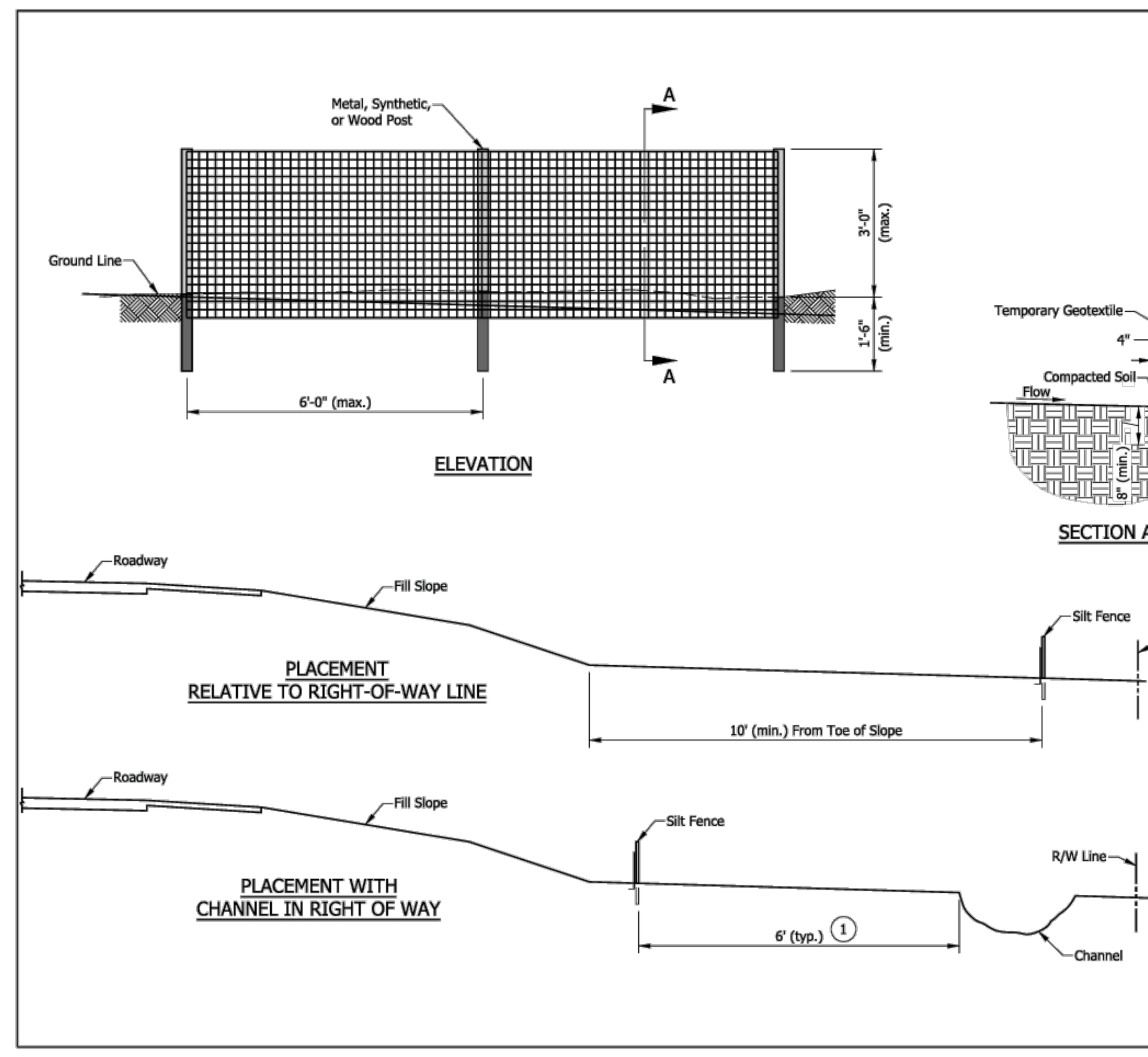
NOTES:

1. Fiber roll may be substituted for filter sock.
2. Filter sock shall be installed as shown or in accordance with manufacturer's recommendations.
3. Filter sock diameter shall be as required by design based on watershed area.
4. Filter sock shall be placed perpendicular to the flow of water.
5. Filter sock shall be secured as shown or in accordance with the manufacturer's instructions.
6. Filter sock does not require staking when fill slope is less than or equal to 12%, except when fill slope is below the Q_{100} water surface elevation and flood prone area.
7. Filter socks shall be secured in locations below the Q_{100} water surface elevation and flood prone location. Filter sock end shall be secured using the stake through method. Intermediate points may be secured using either the stake through or slanted stake method.
8. Stake angle and length shall be sufficient to wedge filter sock to the ground to prevent movement and undercutting.

INDIANA DEPARTMENT OF TRANSPORTATION	
PERIMETER PROTECTION, FILTER SOCK	
SEPTEMBER 2019	
STANDARD DRAWING NO.	E 205-TECD-10
DESIGN STANDARDS ENGINEER	5/2/2019
CHIEF ENGINEER	5/31/2019

ELIZABETH W. PHILLIPS, REGISTERED No. 10200124, STATE OF INDIANA, PROFESSIONAL ENGINEER

4 / C901 COMPOSITE FILTER SOCK DETAIL



NOTES:

1. Dimensions will vary based on right-of-way availability. Silt fence shall be placed as close as possible to the edge of construction limits.
2. The spacing of the tiebacks shall equal the spacing of the posts. Additional post depth or tiebacks may be required in unstable soils
3. Filter Sock shall be used instead of silt fence at or below Q_{100}.

INDIANA DEPARTMENT OF TRANSPORTATION	
PERIMETER PROTECTION, SILT FENCE	
SEPTEMBER 2019	
STANDARD DRAWING NO.	E 205-TECD-11
DESIGN STANDARDS ENGINEER	5/2/2019
CHIEF ENGINEER	5/31/2019

ELIZABETH W. PHILLIPS, REGISTERED No. 10200124, STATE OF INDIANA, PROFESSIONAL ENGINEER

5 / C901 SILT FENCE DETAIL

Indiana811
811 OR 800-382-5544
https://indiana811.org

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

PATRICK TODD BENNETT, REGISTERED No. 19505027, STATE OF INDIANA, PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	12/5/2025	ISSUE FOR PERMIT SET
2	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC SURVEYING AND LANDSCAPE ARCHITECTS OF NC, PLLC. SERVICES IN PUERTO RICO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

CEC
Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

EROSION DETAILS

DATE:	DECEMBER 5, 2025	DRAWN BY:	AWM
DWG SCALE:	1" = 20'	CHECKED BY:	THA
PROJECT NO:	355-081	APPROVED BY:	PTB

DRAWING NO.: **C901**

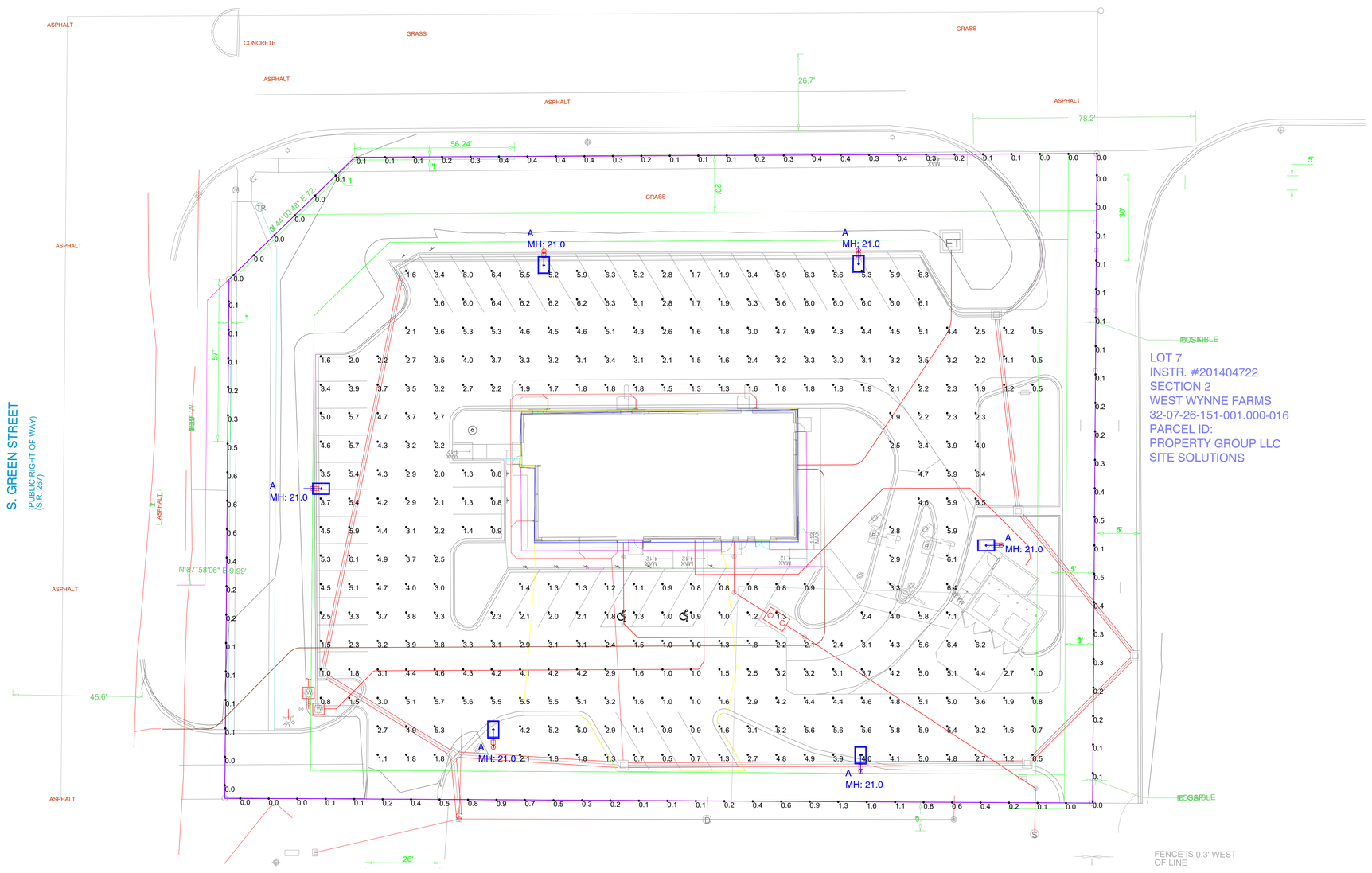
SHEET 16 OF 20

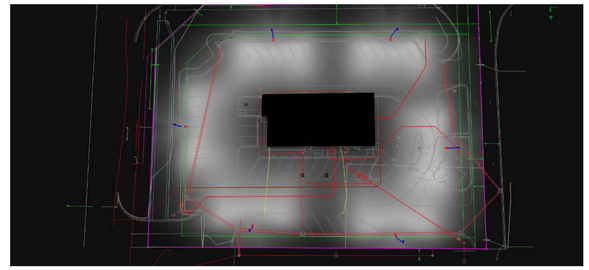
P:\350-000\355-081\-CADD\Dwg\CV01\355081-CV01-C900.dwg{C901 - EROSION DETAILS} LS:(2/13/2026 - thamicon) - LP: 2/13/2026 8:00 PM

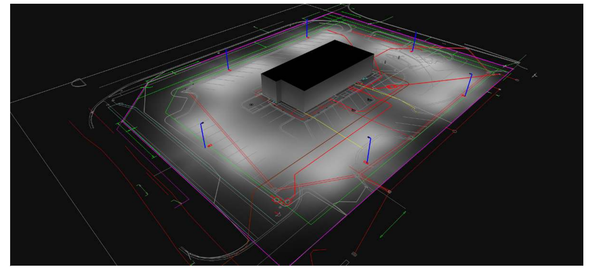
NOTES:

1. THE FOOTCANDLE LEVELS AS SHOWN ARE BASED ON THE FOLLOWING CRITERIA. ANY SUBSTITUTIONS IN SPECIFIED FIXTURES OR CHANGES TO LAYOUT WILL AFFECT LIGHTING LEVELS SHOWN AND WILL NOT BE THE RESPONSIBILITY OF SECURITY LIGHTING.

2. DISTANCE BETWEEN READINGS 10'







LOT 7
INSTR. #201404722
SECTION 2
WEST WYNNE FARMS
32-07-26-151-001.000-016
PARCEL ID:
PROPERTY GROUP LLC
SITE SOLUTIONS

Pole Fixtures Are Full Cutoff
Tilt=0
Calculation Grids Are At Grade
Pole Light Mounting Height=21ft
(18' Pole + 3' Base)

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PAVED SURFACE READINGS	Illuminance	Fc	3.31	7.1	0.5	6.62	14.20
Propertyline	Illuminance	Fc	0.27	1.6	0.0	N.A.	N.A.

Luminaire Schedule								
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	EPA	Mtg Height	Pole Type
	6	A	Single	0.850	VP-2-320L-210-5K7-4W-UNV-A-PSS	213.9	0.607	21	SES-18-40-1-TA-GL-xx (4")

PROJECT WIND LOAD CRITERIA BASED ON:
ASCE 7-10 WIND SPEEDS (3-SEC PEAK GUST MPH)
50 YEAR MEAN RECURRENCE INTERVAL
ALLOWED EPA 13.6 @ WIND LOAD 90 MPH

Regional Drawing
013-1263

1. THIS LIGHTING DESIGN IS BASED ON INFORMATION SUPPLIED BY OTHERS TO SECURITY LIGHTING SYSTEMS. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

4. THIS LAYOUT MAY NOT MEET TITLE 24 OR LOCAL ENERGY REQUIREMENTS. IF THIS LAYOUT NEEDS TO E COMPLIANT WITH TITLE 24 OR OTHER ENERGY REQUIREMENTS, PLEASE CONSULT FACTORY WITH SPECIFIC DETAILS REGARDING PROJECT REQUIREMENTS SO THAT REVISIONS MAY BE MADE TO THE DRAWING.

THIS DRAWING MEETS OR EXCEEDS McDONALDS CURRENT ILLUMINATION SPECIFICATIONS OF A 3-4 FOOTCANDLE AVERAGE, UNLESS SUPERSEDED BY OTHER REQUIREMENTS.

SECURITY LIGHTING™

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

SCALE 1"=20' 0"

DRAWN BY CLB

POINT-BY-POINT FOOTCANDLE PLOT FOR
MCDONALDS
7030 Northfield Drive
BROWNSBURG, IN 46112

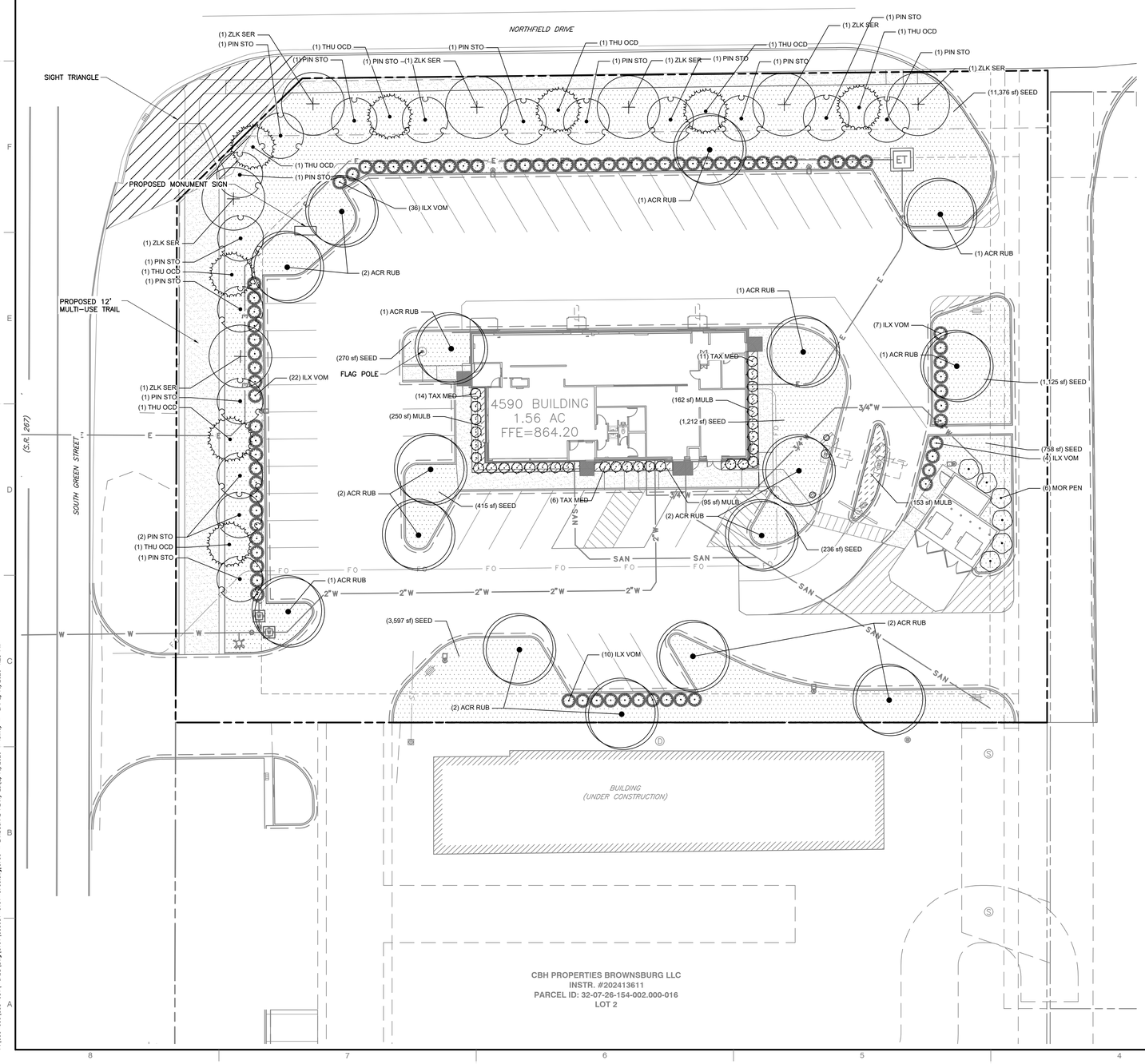
NATIONAL STORE NUMBER
45201

DATE 2/13/2026

DRAWING NUMBER A252046B.AGI

NORTH

NORTHFIELD DRIVE
(PUBLIC RIGHT-OF-WAY)



NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY UTILITIES
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED STANDARD CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED PAVEMENT STRIPING
- PROPOSED DRIVE-THRU PARKING
- PROPOSED MCDELIVERY PARKING
- PROPOSED CURB SIDE PICK-UP PARKING
- PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES

PLANT SCHEDULE						
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER	CALIPER	SIZE
DECIDUOUS TREES						
•	ACR RUB	16	ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE SINGLE LEADER; MATCH SPECIMEN	B&B	2.5" CAL.	10'-12' HT.
+	ZLK SER	7	ZELKOVA SERRATA 'GREEN VASE' / GREEN VASE JAPANESE ZELKOVA SINGLE LEADER; MATCH SPECIMEN	B&B	1.5" CAL.	8'-10' HT.
EVERGREEN TREES						
•	PIN STO	16	PINUS STROBUS / WHITE PINE	B&B	9' HT.	6' - 8' HT
•	THU OCD	8	THUJA OCCIDENTALIS 'SMARAGD' / EMERALD GREEN ARBORVITAE	B&B	6' HT.	
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER	HEIGHT	SPACING
SHRUBS						
•	ILX VOM	79	ILEX VOMITORIA 'DWARF' / DWARF YAUPON HOLLY FULL GROUND; MATCH SPECIMEN	NO. 5 CONT.	36" HT. MIN.	AS SHOWN
•	MOR PEN	6	MORELLA PENSYLVANICA / NORTHERN BAYBERRY FULL GROUND; MATCH SPECIMEN	NO. 5 CONT.	36" MIN.	AS SHOWN
•	TAX MED	31	TAXUS X MEDIA 'DENSIFORMIS' / DENSE SPREADING YEW FULL GROUND; MATCH SPECIMEN	NO. 5 CONT.	36" MIN.	AS SHOWN
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING	
GROUND COVERS						
	SEED	18,989 SF	FESTUCA ARUNDINACEA / TALL FESCUE	SEED		
	MULB	660 SF	MULCH BED / MULCH	MULCH		

PROPERTY LANDSCAPING				
COMBINATION OF MATERIALS EQUALING OR EXCEEDING A UNIT VALUE OF 50, FOR ALL LANDSCAPING ON SITE. AT LEAST 10% OF THE UNIT VALUE SHALL BE DECIDUOUS SHADE TREES & AT LEAST 75% OF THE UNIT VALUE SHALL BE EVERGREEN TRRES, EVERGREEN SHRUBS, OR EARTHEN MOUNDS.				
Percent Required	Plant Type	Value Per Unit	Quantity	Total
10%	Deciduous Shade/Overstory Tree (2.5 cal)	0.75	23	17.25
75%	Evergreen Tree 9' Tall	0.75	24	18
	Evergreen Tree 6' Tall	0.5	37	18.5
	Evergreen Shrub 4' Tall	0.25	79	19.75
	Total Provided Unit Value			**73.5**
	Required Unit Value			50

PARKING LOT LANDSCAPE ISLANDS		
LANDSCAPE ISLAND EVERY 30 PARKING SPACES, MINIMUM 10 FT IN WIDTH & THE LENGTH OF A PARKING SPACE, ALL LANES SHALL BEGIN & END WITH AN ISLAND THE LENGTH OF 2 SPACES END TO END, & A WIDTH OF 10' FT, SHALL INCLUDE A MINIMUM OF TWO 2-1/2" CALIPER SHADE TREE WITH TURF OR MULCH		
	Required	Provided
Landscape Islands	8	8
Shade Trees	16	16

PERIMETER PARKING SCREENING		
4 EVERGREEN SHRUBS PER 35 LINEAR FEET OF PARKING LOT PERIMETER. SHRUBS TO BE A MINIMUM OF 3 FT IN HEIGHT.		
	Required	Provided
347 LF	40	79

NOTE: ALL DISTURBED AREAS TO BE REPAIRED & SEEDED

SCALE IN FEET
0 20 40

Indiana811
811 OR 800-382-5544
https://indiana811.org

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES.

REVISION RECORD

NO	DATE	DESCRIPTION
-	10/3/2025	ISSUE FOR PERMIT SET
1	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF INDIANA SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER, LICENSED LANDSCAPE ARCHITECT OR PROFESSIONAL SURVEYOR PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC CONSULTANTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

LANDSCAPE PLAN

DATE:	DECEMBER 5, 2025
DWG SCALE:	1" = 20'
PROJECT NO:	355-081
DRAWN BY:	AWM
CHECKED BY:	THA
APPROVED BY:	PTB

DRAWING NO.:
C700
SHEET OF 20

P:\350-000\355-081\-CAD\Dwg\CIVIL\355081-CIV01-C700.dwg[C700 - LANDSCAPE PLAN] 02/16/2026 - 4:38 PM

PLANTING NOTES

1. THE QUANTITIES INDICATED ON THE PLANT MATERIALS SCHEDULE ARE PROVIDED FOR THE BENEFIT OF THE LANDSCAPE CONTRACTOR BUT SHOULD NOT BE ASSUMED TO BE CORRECT. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES INDICATED. ANY DISCREPANCIES NOTED SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION. IN THE EVENT OF A DISCREPANCY, THE DRAWINGS SHALL GOVERN.
2. NO SUBSTITUTIONS AS TO SIZE, TYPE, SPACING, QUANTITY OR QUALITY OF PLANT MATERIAL SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT. CHANGES IN PLANT MATERIAL MAY REQUIRE RE-APPROVAL BY LOCAL AUTHORITIES. CONTRACTOR IS NOT TO SEEK RE-APPROVAL WITHOUT EXPRESS WRITTEN CONSENT OF THE LANDSCAPE ARCHITECT.
3. ALL PLANTS MUST BE NURSERY GROWN, HEALTHY, VIGOROUS, AND FREE FROM ALL PESTS AND DISEASE, BALL AND BURLAP (B&B) OR CONTAINER GROWN AS SPECIFIED IN THE MATERIALS SCHEDULE. ALL PLANTS SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z-60, LATEST EDITION FOR SIZE AND QUALITY.
4. ALL TREES MUST BE STRAIGHT TRUNKED, FULL HEADED, WITH A SINGLE DOMINANT LEADER, AND MEET THE MINIMUM REQUIREMENTS. TREES WITH A "Y" SHAPE ARE NOT ACCEPTABLE.
5. ALL PLANTS ARE SUBJECT TO REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND OR OWNERS REPRESENTATIVE AT ANY TIME PRIOR TO FINAL ACCEPTANCE.
6. THE DIMENSIONS FOR HEIGHT, SPREAD, AND CALIPER AS SPECIFIED IN THE PLANT MATERIALS SCHEDULE ARE THE MINIMUM DESIRED FOR EACH PLANT. EACH PLANT SHALL BE UNIFORM AND CONSISTENT AS IT PERTAINS TO THE SPECIFICATIONS AND THE INDIVIDUAL SPECIES. ANY PLANT MATERIAL WHICH FAILS THESES SPECIFICATIONS WILL BE REJECTED. THE CONTRACTOR SHALL PROVIDE ACCEPTABLE MATERIAL AT NO ADDITIONAL COST TO THE OWNER. CALIPER SIZE IS NOT TO BE REDUCED. TREES THAT FAIL MINIMUM CALIPER SIZE AS MEASURED IN THE FIELD WILL BE REJECTED AND REPLACEMENTS SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST. CALIPER MEASUREMENTS SHALL BE MADE IN ACCORDANCE WITH ANSI STANDARDS.
7. PRIOR TO COMMENCEMENT OF INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES AND SHALL AVOID DAMAGING UTILITIES DURING INSTALLATION. ANY UTILITIES DAMAGED DURING INSTALLATION SHALL BE REPAIRED BY THE LANDSCAPE CONTRACTOR TO THE SATISFACTION OF THE APPROPRIATE UTILITY COMPANY. ALL REPAIRS SHALL BE AT NO COST TO THE OWNER. NO TREES SHALL BE PLANTED WITHIN 10' OF SITE UTILITY LINES. FIELD ADJUST AS NECESSARY AFTER LANDSCAPE ARCHITECT'S APPROVAL.
8. THE LANDSCAPE CONTRACTOR SHALL FIELD STAKE ALL PLANT LOCATIONS PRIOR TO INSTALLATION. THE LANDSCAPE ARCHITECT SHALL APPROVE ALL STAKED LOCATIONS PRIOR TO INSTALLATION. PLANTS INSTALLED PRIOR TO APPROVAL BY THE LANDSCAPE ARCHITECT ARE SUBJECT TO REJECTION AND/ OR REPLACEMENT AT NO ADDITIONAL COST TO THE OWNER.
9. PRE-EMERGENT HERBICIDES, TREFLAN OR EPTAM, SHALL BE APPLIED TO ALL PLANTING BEDS. APPLY AT MANUFACTURERS RECOMMENDATIONS. HERBICIDES SHALL BE INCORPORATED INTO THE SOIL MIXES.
10. APPLY ROOT STIMULATOR, CONTAINING MICRORHIZZA, TO ALL PLANTS PRIOR TO BACK FILLING. APPLY AT MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUBMIT SAMPLES OF ROOT STIMULATOR TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO USE.
11. ALL DISTURBED AREAS NOT RECEIVING MULCH OR OTHER SPECIFIED IMPROVEMENTS ARE TO BE FINE GRADED TO TRANSITION SMOOTHLY INTO ADJACENT GRADES AND RECEIVE BERMUDA SOD. SEE SOD NOTES BELOW.
12. THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANTINGS FOR A PERIOD OF ONE YEAR BEGINNING UPON THE WRITTEN DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT. ANY PLANTS SUBJECT TO REPLACEMENT SHALL BE MADE AT THE END OF THE WARRANTY PERIOD OR AT TIME AS DETERMINED BY THE OWNERS REPRESENTATIVE. ALL PLANTS MUST BE ALIVE AND HEALTHY FOR REVIEW AND APPROVAL BY LOCAL AUTHORITIES AS APPROPRIATE FOR OCCUPANCY PERMIT.
13. THE LANDSCAPE CONTRACTOR SHALL UTILIZE ON-SITE TOPSOIL AS AVAILABLE FROM THE CONTRACTOR. ALL IMPORTED TOPSOIL SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO PLACEMENT.
14. EXISTING GRASS TO BE REMOVED, IF PRESENT, AND TOPSOIL TO BE SPREAD SMOOTH AND HAND-RAKED TO REMOVE ALL ROCKS AND DEBRIS LARGER THAT 1 INCH IN DIAMETER PRIOR TO LAYING SOD OR TO BE MULCHED WITH A MINIMUM OF 3 INCHES OF AGED, BROWN HARDWOOD BARK, SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL. ALL PLANTING AREAS MUST BE COMPLETELY MULCHED.
15. THE TYPICAL PLANTING SOIL BACKFILL MIX FOR BEDS AND PLANT BACKFILL SHALL CONSIST OF THE FOLLOWING:
    - 2/3 SITE SOIL
    - 1/3 SOIL AMENDMENTS (BY VOLUME AS FOLLOWS)
    - 2 PARTS HUMUS AND OR PEAT
    - 1 PART COARSE RIVER SAND
    - 1 PART STERILIZED COMPOSTED COW MANURE
    - COMMERCIAL FERTILIZER AND LIME AS RECOMMENDED BY THE SOILS TEST REPORT.
    - COMPLETELY BLEND BACKFILL SOIL MIX PRIOR TO PLACEMENT.

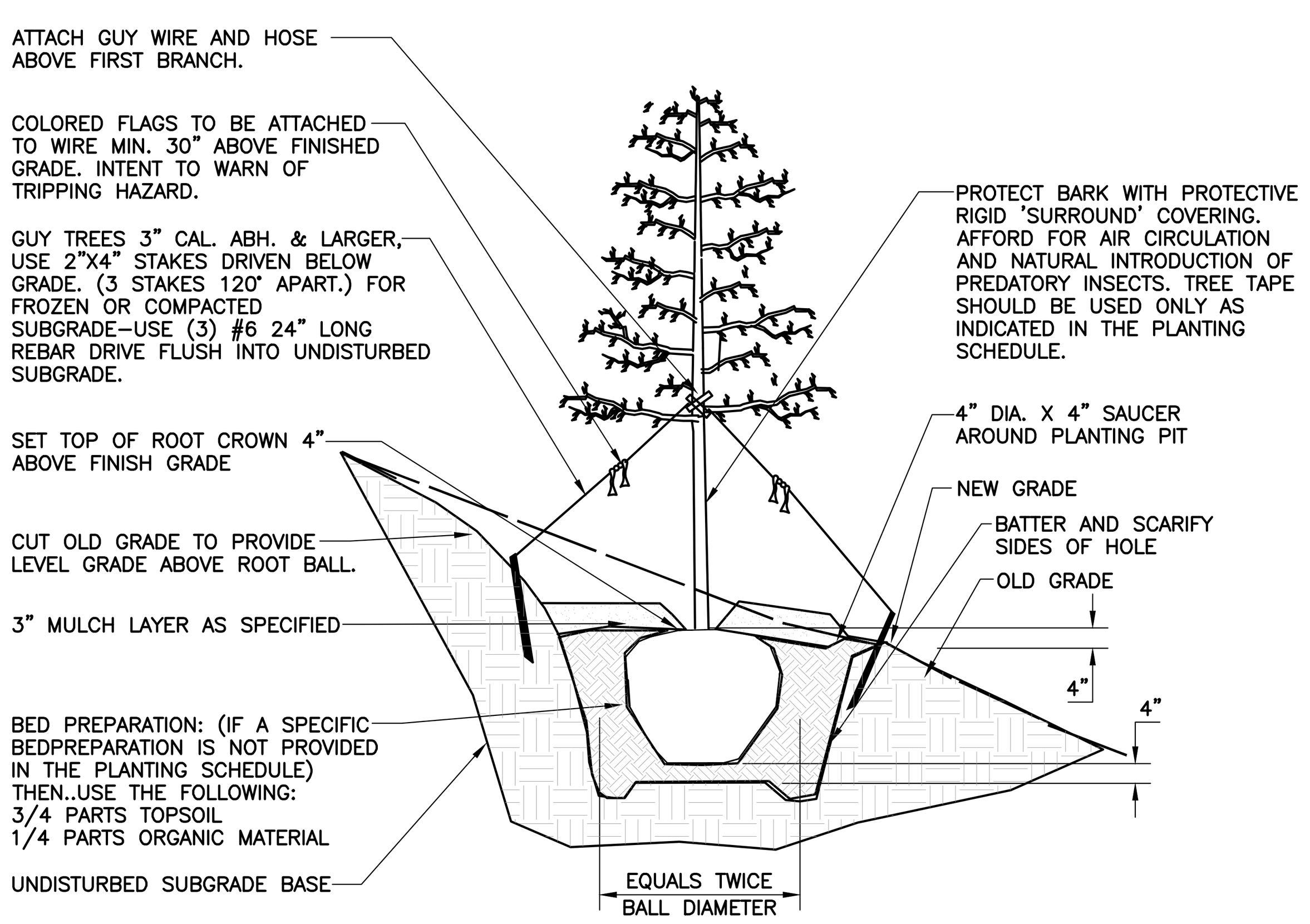
18. MULCH SHALL BE BROWN HARDWOOD MULCH WITH NO WEED OR OTHER UNPROCESSED ORGANICS.

LANDSCAPE MAINTENANCE

THE DEVELOPER, ITS SUCCESSOR AND/OR SUBSEQUENT OWNERS AND THEIR AGENTS, SHALL MAINTAIN LANDSCAPING ON THE PROPERTY ON A CONTINUING BASIS FOR THE LIFE OF THE DEVELOPMENT.

1. ALL LANDSCAPING IS SUBJECT TO PERIODIC INSPECTION BY THE PLANNING DIRECTOR OR DESIGNEE. THE CITY MAY CAUSE REMOVAL OF ANY DEAD OR DISEASED TREES, PLANTS AND SHRUBS ON PRIVATE PROPERTY WITHIN THE CITY, WHEN THOSE TREES, PLANTS AND SHRUBS CONSTITUTE A HAZARD TO LIFE AND/OR PROPERTY OR HARBOR INSECTS OR DISEASE WHICH CONSTITUTES A POTENTIAL THREAT TO OTHER TREES, PLANTS OR SHRUBS WITHIN THE CITY. IF THE PLANNING DIRECTOR DETERMINES THAT REMOVAL OF ANY DISEASED TREE, PLANTS OR SHRUBS ARE NECESSARY; THE PLANNING OFFICIAL SHALL PROVIDE THE PROPERTY OWNER WRITTEN NOTICE OF THE REQUIRED MAINTENANCE OR REMOVAL.
2. ALL REQUIRED LANDSCAPING SHALL BE PROVIDED WITH A READILY AVAILABLE AND ACCEPTABLE WATER SUPPLY. UNDERGROUND SPRINKLER SYSTEMS ARE ENCOURAGED FOR ALL REQUIRED STREET YARD LANDSCAPING, PARKING LOT LANDSCAPING, LANDSCAPE BUFFER YARDS, AND LANDSCAPE SCREENING.
3. WARRANTY PERIOD – COMPLETED LANDSCAPING SHALL COMPLY WITH THE APPROVED LANDSCAPE PLAN, INCLUDING THE QUANTITIES, LOCATION, SPECIES, AND SIZE OF PLANTS AND OTHER LANDSCAPE MATERIALS, AND THAT SUCH LANDSCAPING WILL REMAIN IN GOOD CONDITION FREE FROM DEFECTS IN MATERIAL AND/OR WORKMANSHIP DURING THE WARRANTY PERIOD.

3.1. FOR THE PURPOSE OF THIS SUBSECTION, "WARRANTY PERIOD," MEANS A PERIOD OF ONE YEAR BEGINNING WHEN THE CITY ACCEPTS THE LANDSCAPING AS COMPLETE.
3.2. DURING THE WARRANTY PERIOD, DEFECTIVE MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL BE REPAIRED, CORRECTED, OR REPLACED WITHOUT CHARGE OR COST TO THE OWNER. THE CITY MAY AT ANY TIME DURING THE WARRANTY PERIOD INSPECT, PHOTOGRAPH, OR TELEVISE SUCH LANDSCAPING AND SHALL NOTIFY THE DEVELOPER OF ANY NECESSARY REPAIR, CORRECTION, OR REPLACEMENT.

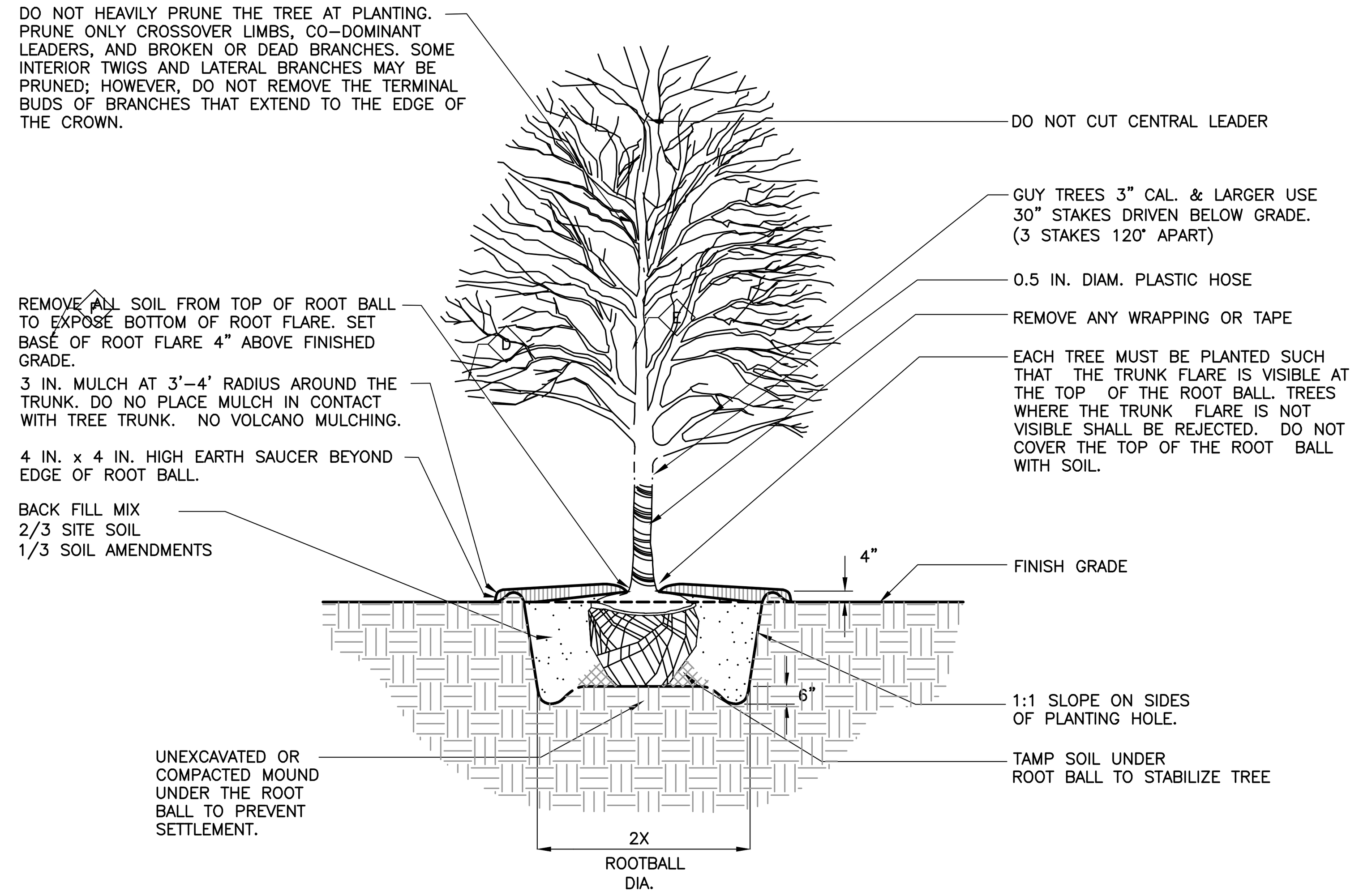


NOTES:

1. PROVIDE POSITIVE DRAINAGE UNDER ALL CIRCUMSTANCES. DRAINAGE SHOULD BE FROM CENTER OF ROOT BALL TO PERIMETER OF ROOT BALL. DO NOT ALLOW PONDING OF WATER UNDER ROOTBALL.
2. IF PLANT IS IN A LARGE PLANT BED MULCH ENTIRE BED. IF PLANT IS A SINGLE PLANTING MULCH TO DRIP LINE OF TREE. MULCH DEPTH TO BE 3".
3. IF PLANT IS CONTAINER GROWN, REMOVE CONTAINER AND USING A SHARP KNIFE MAKE 3 VERTICAL CUTS 1/4" DEEP ON OPPOSITE SIDES OF THE ROOT MASS. IF PLANT IS IN A WIRE BASKET REMOVE PRIOR TO PLANTING.
4. IF ROOTS ARE WRAPPED IN BURLAP, 1ST. PLACE BURLAPPED ROOT BALL INTO THE HOLE. THEN REMOVE BURLAP CAREFUL NOT TO DISTURB OR BREAK THE ROOT BALL.
5. SEE PLANTING SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL INFORMATION/REQUIREMENTS.

DETAIL 1 : TREE ON SLOPE

N.T.S.

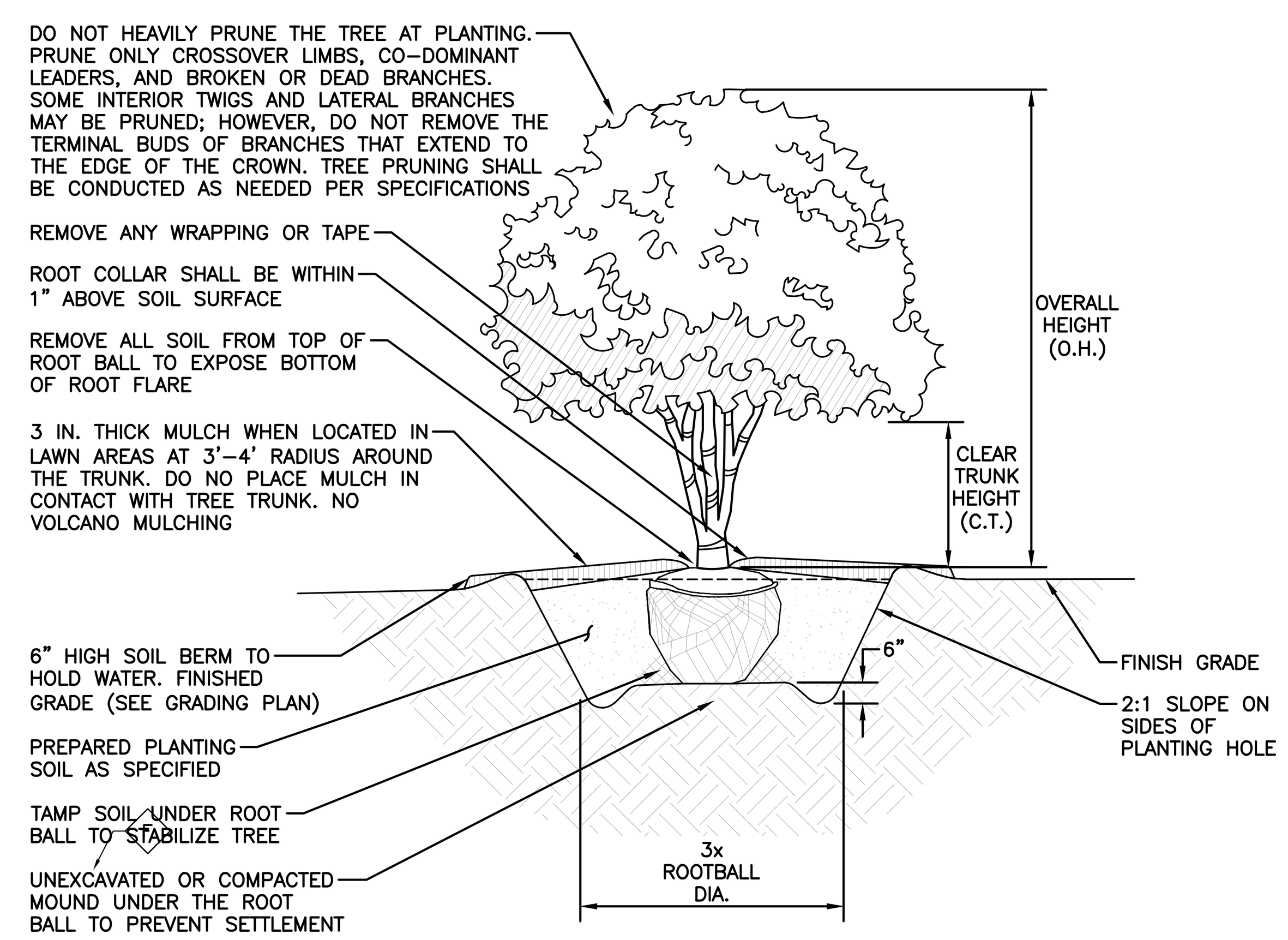


NOTES:

1. TREES ARE NOT TO BE STAKED.
2. PROVIDE POSITIVE DRAINAGE UNDER ALL CIRCUMSTANCES. DRAINAGE SHOULD BE FROM CENTER OF ROOT BALL TO PERIMETER OF ROOT BALL. DO NOT ALLOW PONDING OF WATER UNDER ROOTBALL.
3. REMOVE TOP HALF OF WIRE BASKET AFTER PLACING ROOTBALL IN PLANT PIT.
4. REMOVE ROPE TIES & TOP 1/3 OF BURLAP FROM ROOT BALL AFTER PLANTING.
5. POLYPROPYLENE STRAPS MAY BE SUBSTITUTED IN LIEU OF WIRES, ARBORTIE OR EQUIVALENT.
6. SEE PLANTING SCHEDULE AND PLANTING NOTES FOR ADDITIONAL INFORMATION/REQUIREMENTS.

DETAIL 2 : DECIDUOUS TREE PLANTING DETAIL

N.T.S.

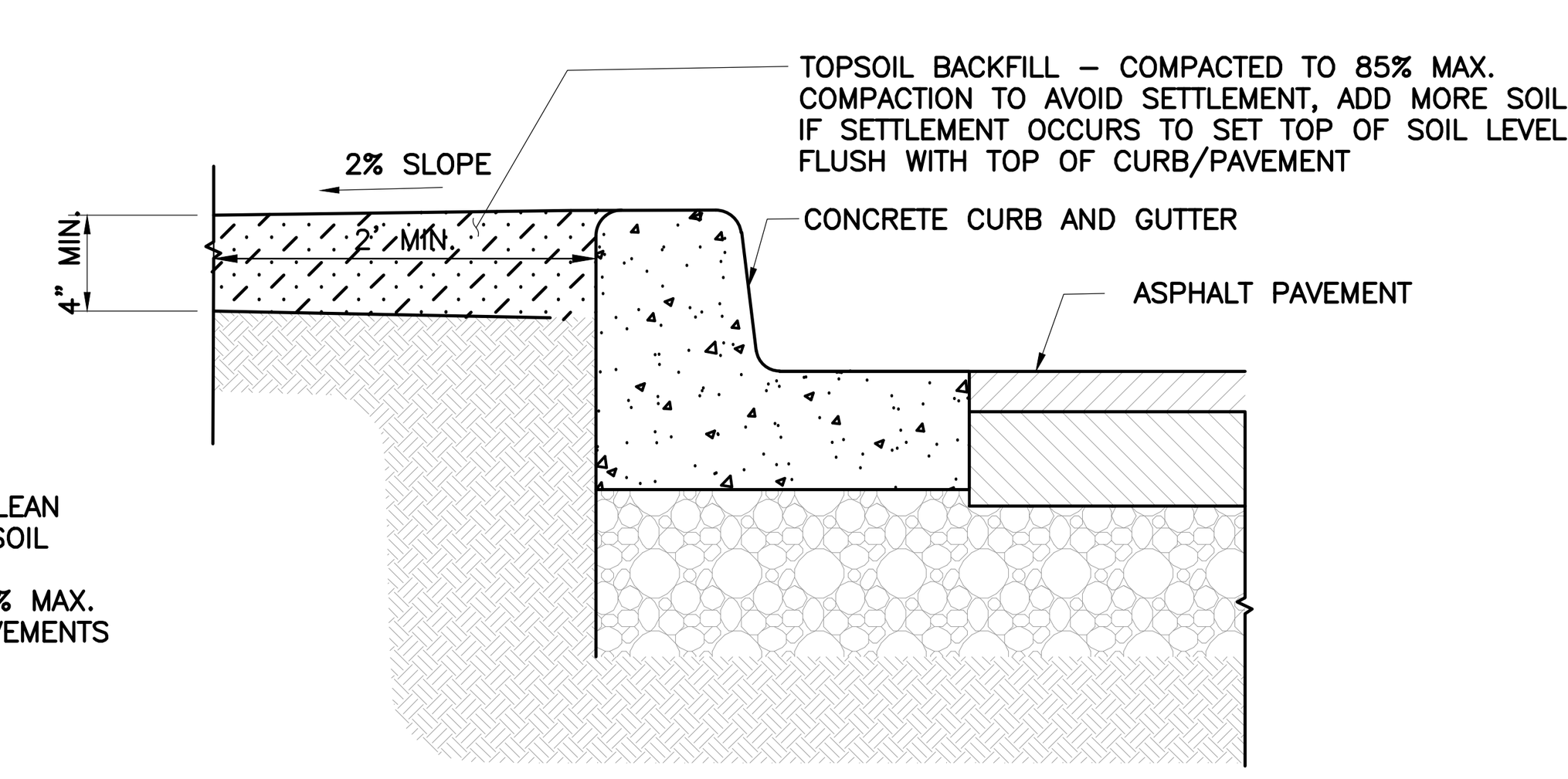


NOTES:

1. TREES SHALL BE STAKED AND GUYED AS DETAILED AND SPECIFIED ONLY IF THE TREE CANNOT STAND ON ITS OWN.
2. PROVIDE POSITIVE DRAINAGE UNDER ALL CIRCUMSTANCES. DRAINAGE SHOULD BE FROM CENTER OF ROOT BALL TO PERIMETER OF ROOT BALL. DO NOT ALLOW PONDING OF WATER UNDER ROOTBALL.
3. SET TREE AT ORIGINAL DEPTH, REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.
4. SEE LANDSCAPE PLANTING NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
5. BRANCHING HEIGHT PER PLANTING NOTES AND SPECIFICATIONS.
6. SEE PLANTING SCHEDULE AND PLANTING NOTES FOR ADDITIONAL INFORMATION/REQUIREMENTS.

DETAIL 3 : MULTI-TRUNK TREE PLANTING DETAIL

N.T.S.

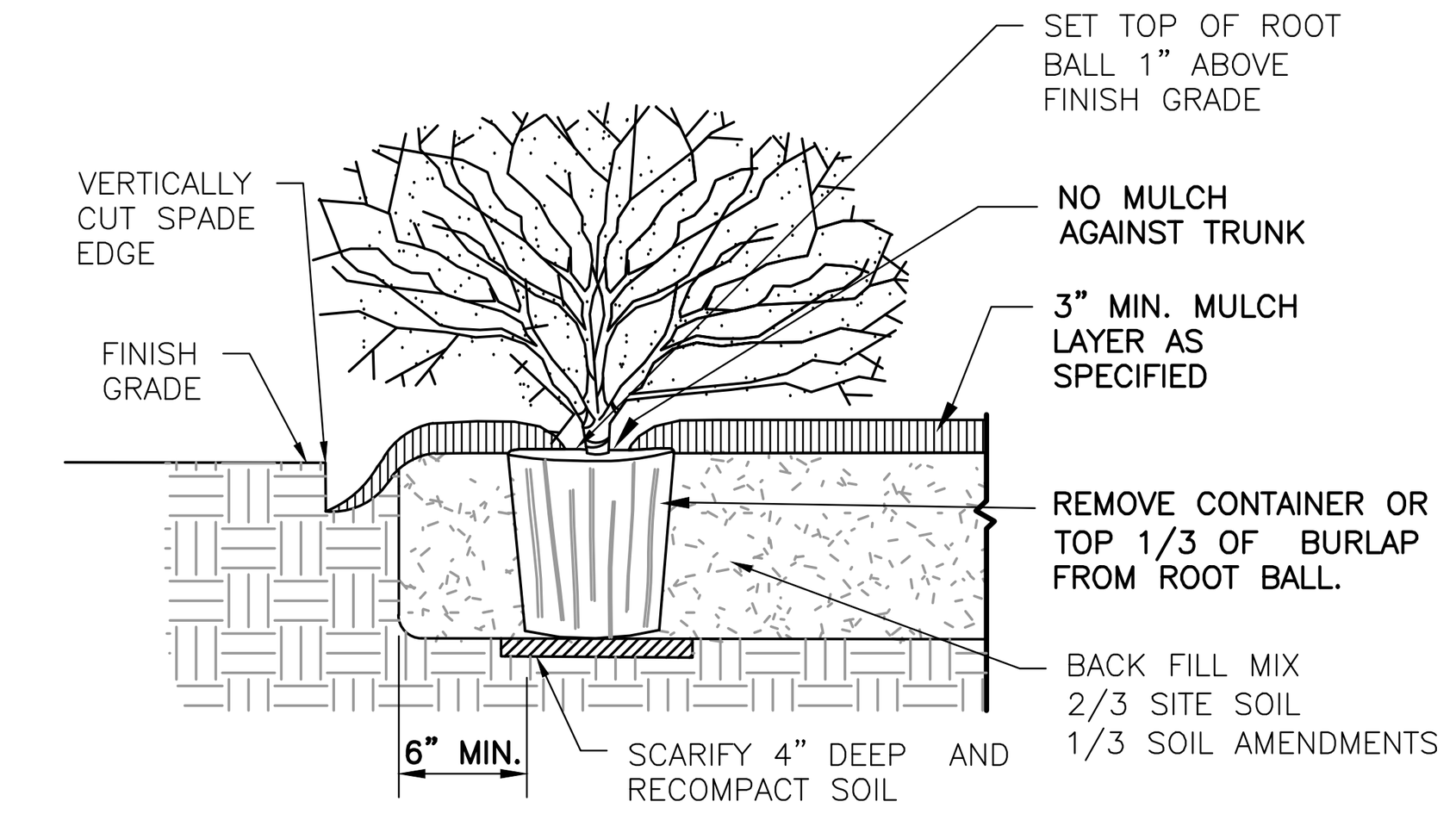


NOTES:

1. SUBGRADE SURFACE TO FREE OF ALL DEBRIS AND CLEAN SOIL FILL. LANDSCAPE ARCHITECT TO APPROVE SUBSOIL CONDITIONS PRIOR TO TOPSOIL PLACEMENT.
2. COMPACT PLANTING SOIL AND SUBSOIL AREAS TO 85% MAX. COMPACTION TO AVOID SETTLEMENT ADJACENT TO PAVEMENTS

DETAIL 4 : TOPSOIL BACKFILL DETAIL

N.T.S.

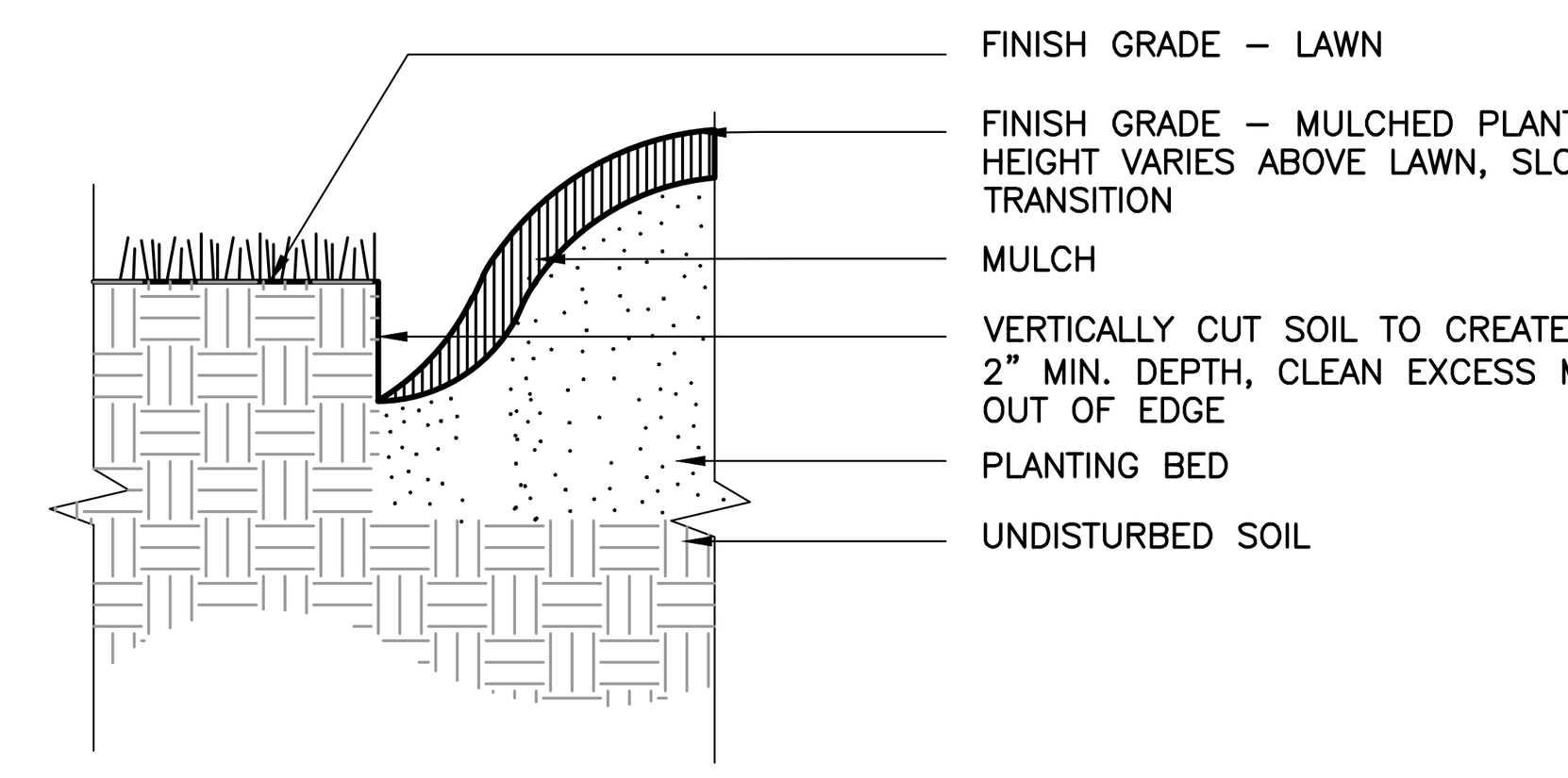


NOTES

1. SEE PLANTING SCHEDULE AND PLANTING NOTES FOR ADDITIONAL INFORMATION/REQUIREMENTS.
2. LIMIT AMOUNT OF PRUNING TO ONLY DEAD OR DAMAGED LIMBS. RETAIN THE NATURAL SHAPE OF SHRUB. IF MORE THAN 1/5 OF TOTAL SHRUB FOLIAGE IS PRUNED, PLANT MAYBE REJECTED.

DETAIL 5 : SHRUB PLANTING DETAIL

N.T.S.



NOTES

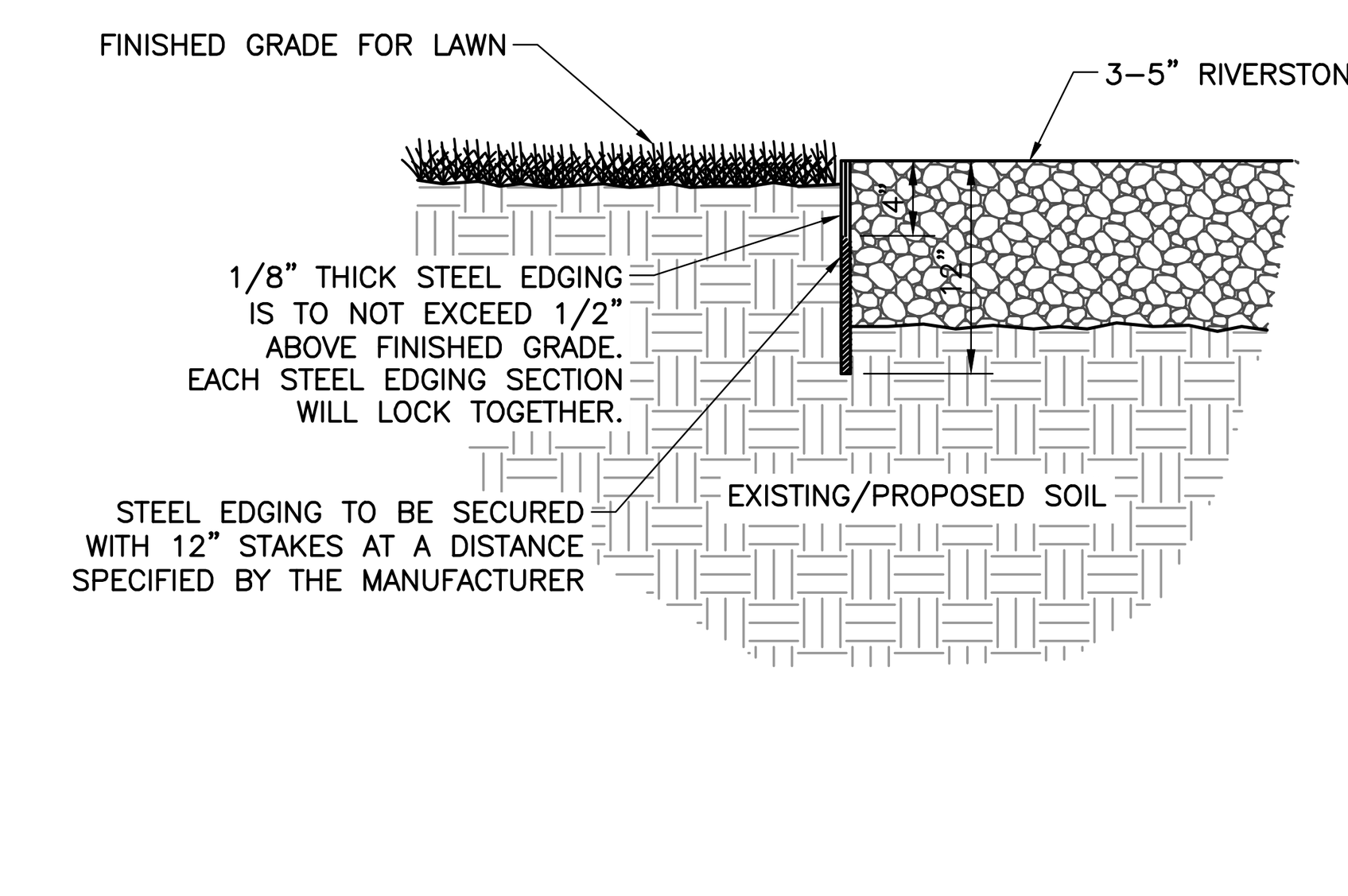
1. INSTALL BED EDGE WHEN MULCHED AREAS ABUT LAWN AREAS UNLESS SPECIFIED FOR STEEL EDGING. DO NOT INSTALL UNTIL LAWN IS ESTABLISHED AND SOIL IS FIRM. RE-MULCH EDGE IF SOIL GETS ON PREVIOUSLY INSTALLED MULCH DURING EDGE INSTALLATION.

DETAIL 6 : PLANTING BED EDGE DETAIL

N.T.S.

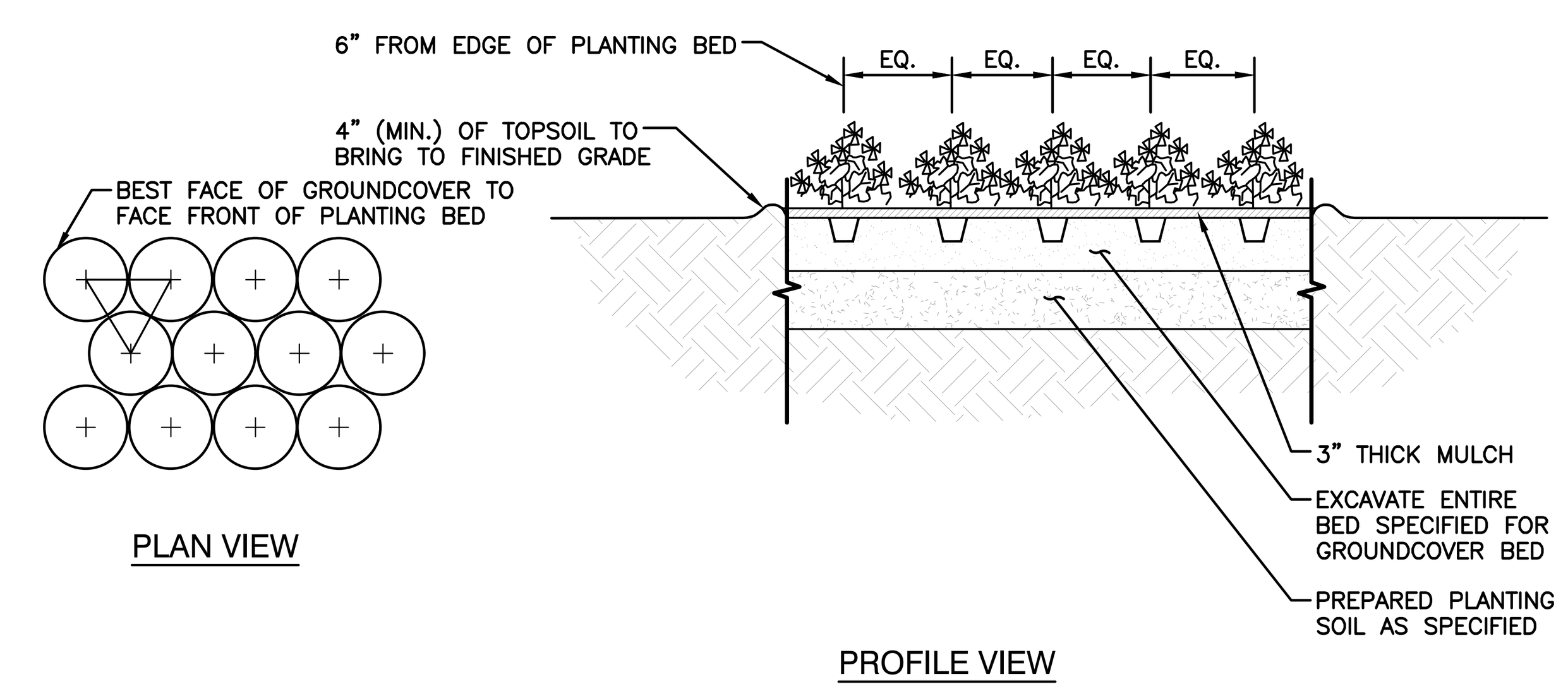
NOTES:

1. STEEL EDGING IS TO BE USED IN ALL AREAS WHERE A STONE IS ADJACENT TO A LAWN AREA, OR WHERE A PLANTING BED ABUTS LAWN AREA.
2. ENSURE THAT ALL UNDERGROUND UTILITIES ARE INSTALLED BELOW THE MAXIMUM DEPTH OF EDGING.
3. TRENCH ALONG DEFINED BED EDGES TO DEPTH SO THAT TOP OF EDGING WILL NOT EXCEED 1/2" ABOVE FINISHED GRADE.
4. INSTALL EDGING WITH STAKE POCKETS ON INSIDE OF BED.
5. A MINIMUM OF 5 STAKES ARE TO BE USED WITH EACH SECTION OF EDGING.
6. BACKFILL BOTH SIDES OF EDGING DURING INSTALLATION LEAVING NO MORE THAN TWO SECTIONS UNSUPPORTED AT ONE TIME. COMPACT BACK FILL ALONG EDGING.
7. SURE-LOC STEEL EDGING OR APPROVED EQUAL.



DETAIL 7 : STEEL EDGING

N.T.S.



NOTES:

1. WHEN GROUNDCOVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
2. SEE PLANT SCHEDULE FOR SPACING.

DETAIL 8 : GROUNDCOVER DETAIL

N.T.S.

811 OR 800-382-5544
https://indiana811.org

NOTE TO CONTRACTOR: PRIOR TO ANY EXCAVATION FOR UNDERGROUND UTILITIES, CONTRACTOR SHALL EXPOSE AND VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, BROADBAND, PHONE, SANITARY AND STORM SEWERS. ANY CONFLICT SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND APPROPRIATE AUTHORITIES

REVISION RECORD

NO	DATE	DESCRIPTION
1	12/5/2025	ISSUE FOR PERMIT SET
2	02/13/2026	RESUBMITTAL SET

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC SURVEYING AND LANDSCAPE ARCHITECTS OF NC, PLLC. SERVICES IN PUERTO RICO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

Civil & Environmental Consultants, Inc.
10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

LANDSCAPE DETAILS

DATE:	DECEMBER 5, 2025	DRAWN BY:	AWM
DWG SCALE:	AS SHOWN	CHECKED BY:	THA
PROJECT NO:	355-081		
APPROVED BY:	PTB		

DRAWING NO.: **C701**

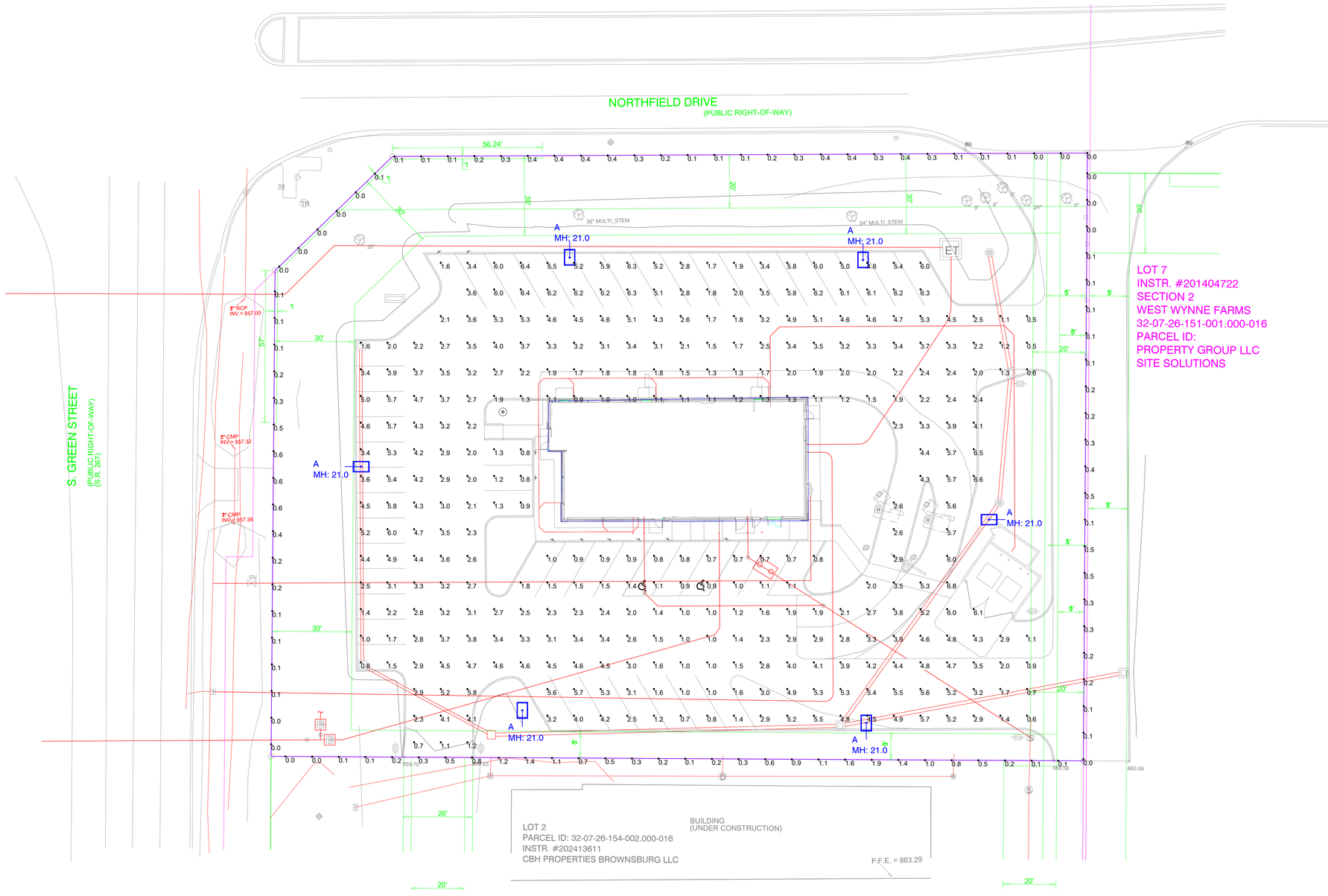
SHEET OF 20

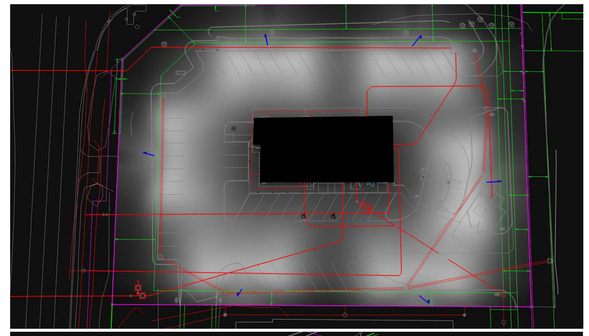
P:\350-000\355-081\-CADD\Dwg\CV01\355081-CV01-C700.dwg{C701 – LANDSCAPE DETAILS} LS:(2/16/2026 – icline) – LP: 2/16/2026 4:28 PM

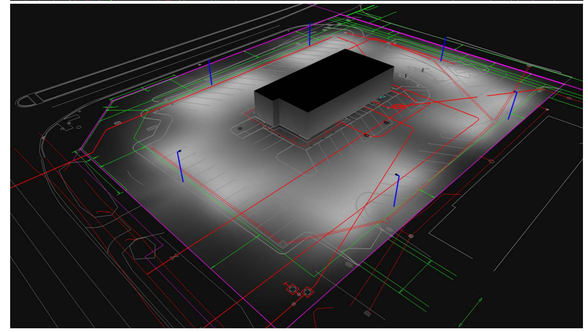
NOTES:

1. THE FOOTCANDLE LEVELS AS SHOWN ARE BASED ON THE FOLLOWING CRITERIA. ANY SUBSTITUTIONS IN SPECIFIED FIXTURES OR CHANGES TO LAYOUT WILL AFFECT LIGHTING LEVELS SHOWN AND WILL NOT BE THE RESPONSIBILITY OF SECURITY LIGHTING.

2. DISTANCE BETWEEN READINGS 10'







Pole Fixtures Are Full Cutoff
Tilt=0
Calculation Grids Are At Grade
Pole Light Mounting Height=21ft
(18' Pole + 3' Base)

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PAVED SURFACE READINGS	Illuminance	Fc	3.14	6.8	0.5	6.28	13.60
Propertyline	Illuminance	Fc	0.32	1.9	0.0	N.A.	N.A.

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	EPA	Mtg Height	Pole Type
	6	A	Single	0.850	VP-2-320L-210-5K7-4W-UNV-A-PSS	213.9	0.607	21	SES-18-40-1-TA-GL-xx (4")

THIS DRAWING MEETS OR EXCEEDS McDONALDS CURRENT ILLUMINATION SPECIFICATIONS OF A 3-4 FOOTCANDLE AVERAGE, UNLESS SUPERSEDED BY OTHER REQUIREMENTS.

PROJECT WIND LOAD CRITERIA BASED ON:
ASCE 7-10 WIND SPEEDS (3-SEC PEAK GUST MPH)
50 YEAR MEAN RECURRENCE INTERVAL
ALLOWED EPA 13.6 @ WIND LOAD 90 MPH

Regional Drawing
013-1263

1. THIS LIGHTING DESIGN IS BASED ON INFORMATION SUPPLIED BY OTHERS TO SECURITY LIGHTING SYSTEMS. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

4. THIS LAYOUT MAY NOT MEET TITLE 24 OR LOCAL ENERGY REQUIREMENTS. IF THIS LAYOUT NEEDS TO E COMPLIANT WITH TITLE 24 OR OTHER ENERGY REQUIREMENTS, PLEASE CONSULT FACTORY WITH SPECIFIC DETAILS REGARDING PROJECT REQUIREMENTS SO THAT REVISIONS MAY BE MADE TO THE DRAWING.

SECURITY LIGHTING™

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

SCALE 1"=20' 0"

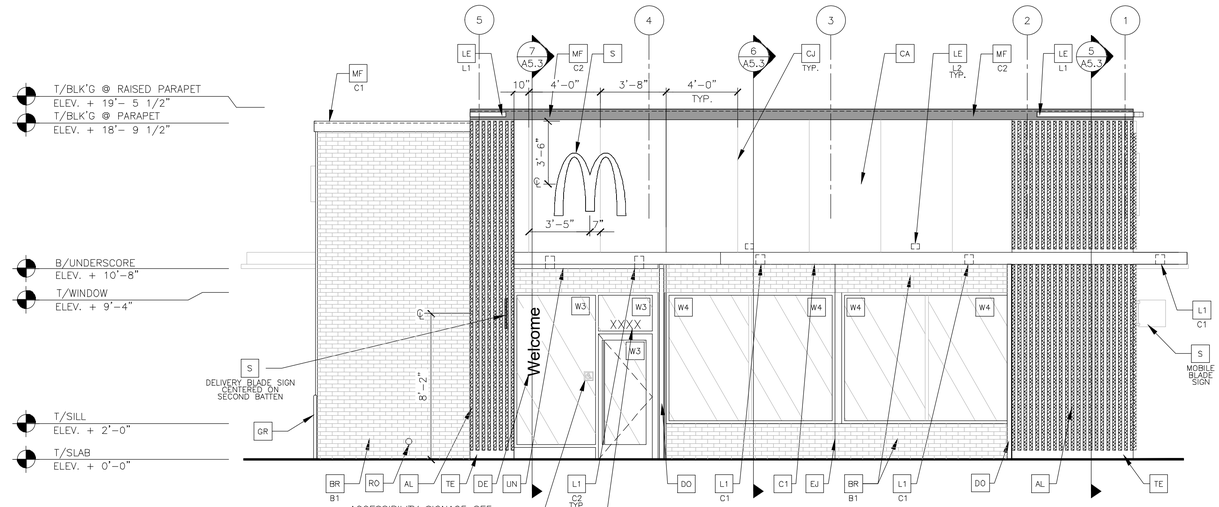
DRAWN BY CLB

POINT-BY-POINT FOOTCANDLE PLOT FOR
MCDONALDS
7030 Northfield Drive
BROWNSBURG, IN 46112

NATIONAL STORE NUMBER
45201

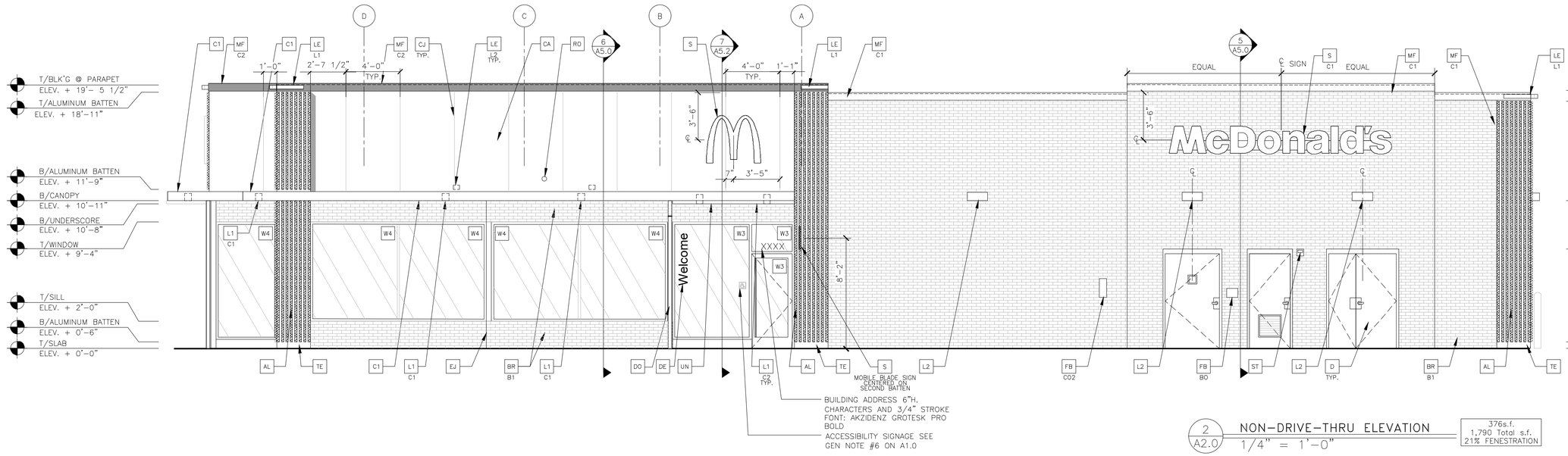
DATE 10/30/2025

DRAWING NUMBER A251046A.AGI



1 A2.0 FRONT ELEVATION
1/4" = 1'-0"

263 s.f.
982 Total s.f.
27% FENESTRATION



2 A2.0 NON-DRIVE-THRU ELEVATION
1/4" = 1'-0"

376s.f.
1,790 Total s.f.
21% FENESTRATION

KEY NOTES:

- AL — ALUMINUM BATTEN SYSTEM
  SIZE: 2"x2" PROFILE
  COLOR: WOOD GRAIN, BACKRAIL UNFINISHED, ENDCAP PAINTED TO MATCH
  SUBSTRATE: 1/2" EXTERIOR HIGH DENSITY OVERLAY (HDO) PLYWOOD, BB, GROUP 1, HDO BOTH FACES, APA TRADEMARKED.
  COURSE GRIT SAND SURFACES PRIOR TO PRIMING. PRIME AND PAINT BOTH SIDES AND ALL EDGES PRIOR TO INSTALLATION.
  SUBSTRATE COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- CA — CITADEL ACM WALL PANELS
  COLOR: UMBRA GRAY
- BR — MODULAR FACE BRICK
  B1 — COLOR:
  B1 = "SLATE GRAY" SMOOTH BY HEBRON BRICK COMPANY
- C1 — ALUMINUM CANOPY SYSTEM
  COLOR: WHITE
- C2 — ALUMINUM CANOPY SYSTEM
  COLOR: RAL 7022
- CJ — CONTROL JOINT
- CM — 7" REVEAL PAC-CLAD METAL WALL PANEL SYSTEM BY METAL ERA
  C1 — COLOR:
  C1 = WEATHERED ZINC
- D — HOLLOW METAL DOOR
  PAINT: "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS
- DE — DECAL BY GRAPHICS SUPPLIER
  SURFACE APPLIED, FIELD INSTALLED, PRE CUT, PRE SPACED.
  SUPPLIERS:
  VOMELA (865) 330-7337, ann.bawen@vomela.com
  GFX INTERNATIONAL (847) 543-4600, mcdonaldsdecor@gfxi.com
- DO — DOWNSPOUT
  3" DOWNSPOUT BY CANOPY SYSTEM MANUFACTURER
  COLOR: RAL 7022
  COORDINATE WITH CIVIL TO TIE INTO STORM DRAINAGE
- EJ — EXPANSION JOINT, SEE DETAIL 7/A4.1
- FB — C02 — C02 = BULK C02 FILL BOX (EQPM SCHEDULE ITEM 49.00)
  BO = BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18)
- GR — GUARD RAIL -SEE SITE PLAN FOR EXACT LOCATION AND LENGTH
  PAINT: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- L1 — RECESSED DOWN LIGHT FIXTURE - SEE ELECTRICAL
  C1 — COLOR:
  C1= WHITE
  C2= GOLD
- L2 — RADIAL SCONCE LIGHT FIXTURE - SEE ELECTRICAL
  COLOR: PLATINUM SILVER
- LE — ACCENT LIGHTING - SEE ELECTRICAL
  L1 — LED LIGHT:
  L1 = SLIM LED (DOWN ONLY)
  L2 = UP ONLY FLOOD FIXTURE
- MF — METAL FASCIA
  1 — TYPE:
  C1 — 1 = PRE-FAB ANCHOR-TITE FASCIA
  2 = BOTTOM TRIM AT METAL REVEAL PANEL
  3 = VERTICAL TRIM AT METAL REVEAL PANEL CORNERS, CLOSURES
  COLOR:
  C1= WEATHERED ZINC
  C2= RAL 7022
- PB — PIPE BOLLARD - USA 310-SD BASTION
  PAINT RAL 7022
- RO — ROOF DRAIN OVERFLOW PIPE PAINT TO MATCH SURROUNDING MATERIAL
- S — McDONALD'S SIGNAGE BY OTHERS - UNDER SEPARATE PERMIT.
  C1 — COLOR:
  C1= WEATHERED ZINC RACEWAY
  C2= RAL 7022 RACEWAY
- ST — C02 STROBE/ALARM. SEE MECHANICAL DRAWINGS FOR SPECIFICATION.
- TE — TRU EXTERIOR 1"X6" TRIM, PAINTED ON SITE
  COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- UN — METAL UNDERSCORE
  COLOR: GOLD
- W1 — EXTERIOR WINDOW ASSEMBLY - TEMPERED GLASS
  COLOR: DARK BRONZE
- W2 — DRIVE-THRU WINDOW BY READY ACCESS
  MODEL: 600 SERIES, 36" SERVICE HEIGHT WITH TRANSOM, MANUAL OPEN: ELECTRONIC RELEASE
  XX — COLOR: DEEP BRONZE
  SLIDE DIRECTION: RL = RIGHT TO LEFT
  LR = LEFT TO RIGHT

REV	DATE	DESCRIPTION	BY

WILLIAM STAMBAUGH REGISTERED LANDSCAPE ARCHITECT NO. 860037 STATE OF INDIANA

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR:
McDonald's USA, LLC
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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED
--	2025 10	CJM	02.16.2026

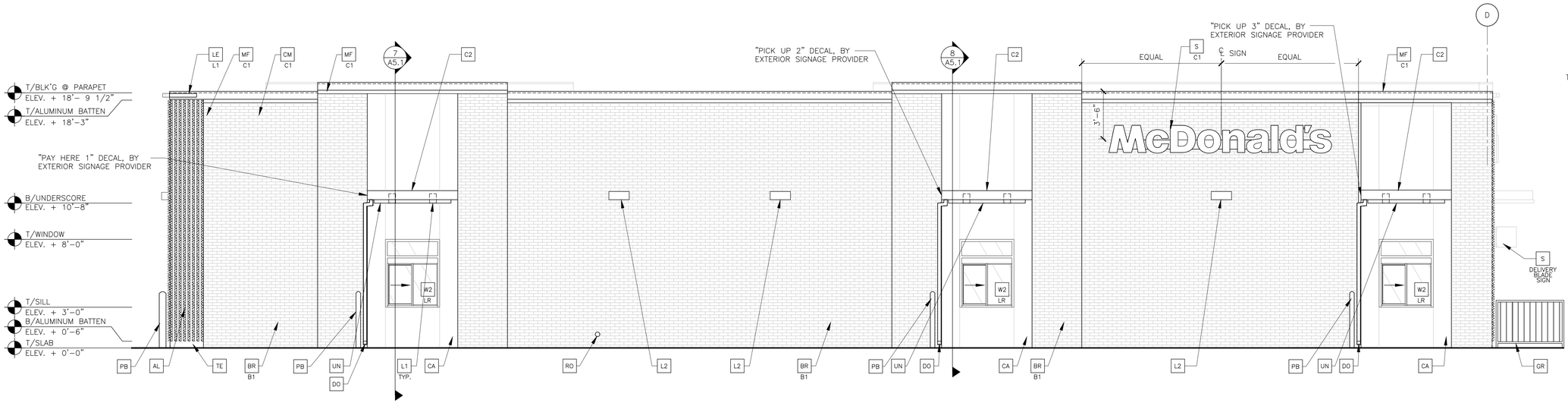
TITLE
2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 452101
L/C: 13263

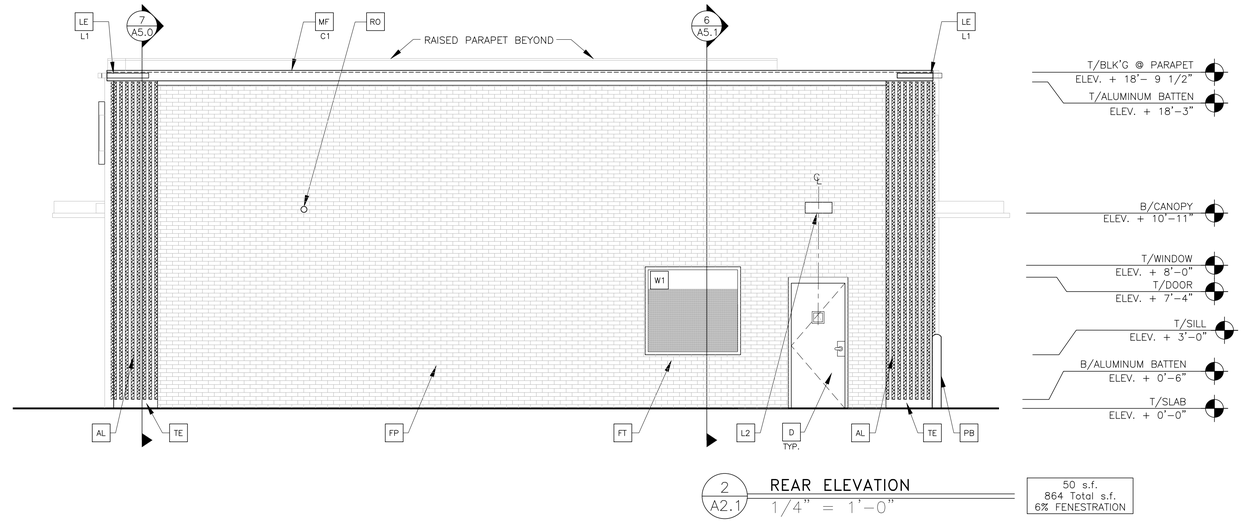
SITE ADDRESS
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO.
013.1263.00.0
A2.0
ELEVATIONS



1 A2.1 **DRIVE THRU ELEVATION** 1/4" = 1'-0"

60 s.f.
1860 Total s.f.
3% FENESTRATION



2 A2.1 **REAR ELEVATION** 1/4" = 1'-0"

50 s.f.
864 Total s.f.
6% FENESTRATION

KEY NOTES:

- AL — ALUMINUM BATTEN SYSTEM
  SIZE: 2"X2" PROFILE
  COLOR: WOOD GRAIN, BACKRAIL UNFINISHED, ENDCAP PAINTED TO MATCH
  SUBSTRATE: 1/2" EXTERIOR HIGH DENSITY OVERLAY (HDO) PLYWOOD, BB, GROUP 1, HDO BOTH FACES, APA TRADEMARKED.
  COURSE GRIT SAND SURFACES PRIOR TO PRIMING. PRIME AND PAINT BOTH SIDES AND ALL EDGES PRIOR TO INSTALLATION.
  SUBSTRATE COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- CA — CITADEL ACM WALL PANELS
  COLOR: UMBRA GRAY
- BR — MODULAR FACE BRICK
  B1 — COLOR:
  B1 = "SLATE GRAY" SMOOTH BY HEBRON BRICK COMPANY
- C1 — ALUMINUM CANOPY SYSTEM
  COLOR: WHITE
- C2 — ALUMINUM CANOPY SYSTEM
  COLOR: RAL 7022
- CJ — CONTROL JOINT
- CM — 7" REVEAL PAC-CLAD METAL WALL PANEL SYSTEM BY METAL ERA
  C1 — COLOR:
  C1 = WEATHERED ZINC
- D — HOLLOW METAL DOOR
  PAINT: "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS
- DE — DECAL BY GRAPHICS SUPPLIER
  SURFACE APPLIED, FIELD INSTALLED, PRE CUT, PRE SPACED.
  SUPPLIERS:
  VOMELA (865) 330-7337, ann.bowen@vomela.com
  GFX INTERNATIONAL (847) 543-4600, mcdonaldsdecor@gfxi.com
- DO — DOWNSPOUT
  3" DOWNSPOUT BY CANOPY SYSTEM MANUFACTURER
  COLOR: RAL 7022
  COORDINATE WITH CIVIL TO TIE INTO STORM DRAINAGE
- EJ — EXPANSION JOINT, SEE DETAIL 7/A4.1
- FB — C02 — C02 = BULK C02 FILL BOX (EQPM SCHEDULE ITEM 49.00)
  BO = BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18)
- GR — GUARD RAIL -SEE SITE PLAN FOR EXACT LOCATION AND LENGTH
  PAINT: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- L1 — RECESSED DOWN LIGHT FIXTURE - SEE ELECTRICAL
  C1 — COLOR:
  C1= WHITE
  C2= GOLD
- L2 — RADIAL SCONCE LIGHT FIXTURE - SEE ELECTRICAL
  COLOR: PLATINUM SILVER
- LE — ACCENT LIGHTING - SEE ELECTRICAL
  L1 — LED LIGHT:
  L1 = SLIM LED (DOWN ONLY)
  L2 = UP ONLY FLOOD FIXTURE
- MF — METAL FASCIA
  1 — TYPE:
  C1 — 1 = PRE-FAB ANCHOR-TITE FASCIA
  2 = BOTTOM TRIM AT METAL REVEAL PANEL
  3 = VERTICAL TRIM AT METAL REVEAL PANEL CORNERS, CLOSURES
  COLOR:
  C1= WEATHERED ZINC
  C2= RAL 7022
- PB — PIPE BOLLARD - USA 310-SD BASTION
  PAINT RAL 7022
- RO — ROOF DRAIN OVERFLOW PIPE PAINT TO MATCH SURROUNDING MATERIAL
- S — McDONALD'S SIGNAGE BY OTHERS - UNDER SEPARATE PERMIT.
  C1 — COLOR:
  C1= WEATHERED ZINC RACEWAY
  C2= RAL 7022 RACEWAY
- ST — C02 STROBE/ALARM. SEE MECHANICAL DRAWINGS FOR SPECIFICATION.
- TE — TRU EXTERIOR 1"X6" TRIM, PAINTED ON SITE
  COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- UN — METAL UNDERSCORE
  COLOR: GOLD
- W1 — EXTERIOR WINDOW ASSEMBLY - TEMPERED GLASS
  COLOR: DARK BRONZE
- W2 — DRIVE-THRU WINDOW BY READY ACCESS
  MODEL: 600 SERIES, 36" SERVICE HEIGHT WITH TRANSOM, MANUAL OPEN; ELECTRONIC RELEASE
  XX — COLOR: DEEP BRONZE
  SLIDE DIRECTION: RL = RIGHT TO LEFT
  LR = LEFT TO RIGHT

NO.	DESCRIPTION	DATE	BY
REV			

WILLIAM STAMBAUGH REGISTERED ARCHITECT STATE OF INDIANA NO. 860037

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE

145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR:
McDonald's USA, LLC

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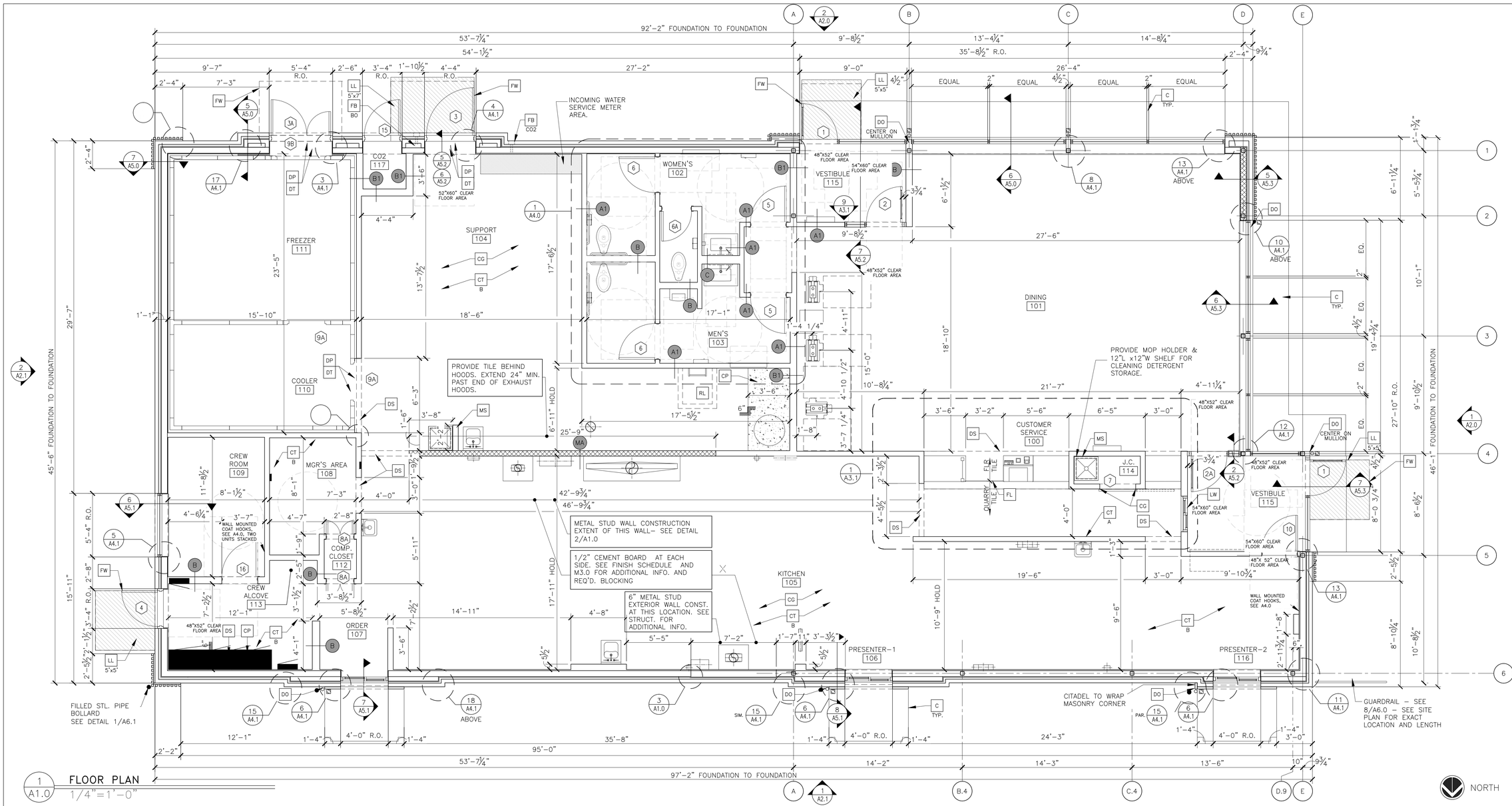
DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED
--	2025 10	CJM	02.16.2026

TITLE
2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

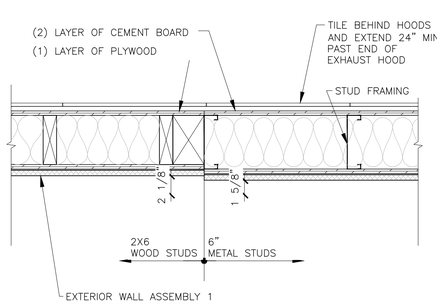
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

SITE ADDRESS:	NSN: 45201
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112	L/C: 13263

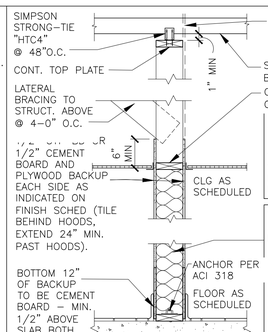
SHEET NO.
013.1263.00.0
A2.1
ELEVATIONS



1 A1.0 **FLOOR PLAN**
1/4"=1'-0"



3 A1.0 **TRANSITON DETAIL**
1 1/2"=1'-0"



EXTEND GYP. BOARD ON ONE SIDE TO UNDERSIDE OF ROOF FOR DRAFTSTOP WHERE SHOWN ON A1.2 PLAN BY ——
STRUCT. MEMBER OR STUD SPANNING BOTTOM CHORD @ 4'-0" O.C.
CONT. 2X FIRESTOPPING AT EXTENT OF BACKUP (TYP)

METAL STUD PARTITION TYPE:
"MA" = 3 5/8"

SPACING: 16" O.C.
STUD GUAGE:
LOAD BEARING: 18
NON-LOAD BEARING: 20

WOOD STUD PARTITION TYPE:
ALL PARTITIONS TYPE 'A' UNLESS NOTED OTHERWISE

"A" = 2x4
"A1"= 2x4 W/ SOUND BATT INS.
"B" = 2x6
"B1"= 2x6 W/ SOUND BATT INS.
"C" = 2x8
"C1"= 2x8 W/ SOUND BATT INS.

*EQUIVALENT LIGHT GAUGE METAL STUDS ALSO ACCEPTABLE

STUD SPACING: 16" O.C.

2 A1.0 **INTERIOR PARTITION**
3/4"=1'-0"

KEY NOTES

- C ALUMINUM CANOPY SYSTEM ABOVE – SEE 4/A5.0 FOR NOTES – SEE ROOF PLAN FOR DIMENSIONS, SEE ELEVATION FOR COLORS
- CG G.C. TO PROVIDE 4"x4"x5'–0" HIGH STAINLESS STEEL CORNER GUARDS AT ALL EXPOSED LOCATIONS IN KITCHEN/SUPPORT AREA. CORNER GUARDS TO START AT FINISH FLOOR. ATTACH WITH SPECIALTY SCREW AND ANCHORS INTO TILE. BULLNOSE COVE BASE WHERE TILE MEETS STAINLESS STEEL CORNER.
- CP CONCRETE EQMT PAD – SEE STRUCTURAL
- CT A WALL FINISH: PER DECOR PORTFOLIO SEE A3.1 AND A6.1 FOR FINISH INFORMATION
- CT B WALL TILE: CROSSVILLE – COLOR BY NUMBERS COLOR: AFTERNOON SPRAY, SIZE: 4"x12", PATTERN: STACKED BOND GROUT: MAPEI SILVER 27 – JOINT TO BE ⅛" MAX. USE THIS TILE WHEN HIGH LRV IS REQUIRED COORDINATE WITH McDONALD'S AREA CONSTRUCTION MANAGER
- DO DOWNSPOUT CONNECTED TO CANOPY SYSTEM. SEE ELEVATIONS. COORDINATE CONNECTION WITH CIVIL.
- DP 48"Hx1/8" THICK DIAMOND PLATE WALL AND DOOR PROTECTION BY DIAMOND PLATE CONTRACTOR. COVER AREA SHOWN ON PLAN.
- DT 3/16" THICK DIAMOND PLATE THRESHOLD BY DIAMOND PLATE CONTRACTOR. DOOR 3: 12"x48" DOOR 3A/9B: 24"x60" DOOR 9A COOLER ENTRANCE: 12"x36"
- DS DROPPED SOFFIT ABOVE – SEE REFLECTED CEILING PLAN
- FB CO2 FILL BOX (EQUIPMENT SCHEDULE ITEM 49.00)
- FB BO OPTIONAL BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18) CONFIRM USE WITH MCDONALD'S AREA CONSTRUCTION MANAGER
- FL FLOOR LINE – CHANGE IN MATERIAL – SEE FINISH SCHEDULE
- FW LINE OF FROST WALL; SEE SECTIONS AND STRUCTURAL DRAWINGS FOR MORE INFORMATION
- LL 5'x5' LEVEL LANDING @ EXT. DOOR W/ MAX. 2% RUNNING/CROSS SLOPE AWAY FROM BUILDING — SIZE OF LANDING
- LW LATE–NIGHT WINDOW (OPTIONAL) BY READYACCESS, MANUAL OPEN/SELF CLOSE. SEE SHEET A3.1 FOR NOTES.
- MS MOP SINK – SEE DETAIL 8/A6.1 AND PLUMBING DRAWINGS.
- RL ROOF ACCESS LADDER W/HATCH ABOVE SEE STRUCTURAL FRAMING PLAN FOR LOCATING DIMENSIONS

SYMBOL LEGEND

- (A) PARTITION TYPE TAG SEE 2/A1.0
- DIAMOND PLATE PROTECTION
- 7 DOOR TAG – SEE DOOR SCHEDULE ON A6.0
- X KEY NOTE

GENERAL NOTES

1. EXTERIOR DIMENSIONS ARE TO COLUMN REFERENCE LINES AND EXTERIOR FACE OF MASONRY UNLESS OTHERWISE NOTED. INTERIOR DIMENSIONS ARE TO FACE OF INTERIOR WALL BOARD
2. SEE 4/A5.0 FOR EXTERIOR WALL ASSEMBLY TYPES. SEE 2/A1.0 FOR INTERIOR PARTITION TYPES. INTERIOR PARTITIONS ARE TYPE 'A' UNLESS NOTED OTHERWISE.
3. SEE EXTERIOR ELEVATIONS FOR WINDOW TYPES
4. SEE SHEET A6.0 FOR DOOR AND ROOM FINISH SCHEDULES
5. SEE SITE PLAN FOR SIDEWALKS, RAMPS, ETC.
6. GC TO PROVIDE MAXIMUM OCCUPANCY SIGN AND ADA SIGNAGE PACKAGE AND INSTALL SIGNS AT LOCATIONS AND POSITIONS INDICATED IN PACKAGE OR AS REQUIRED BY LOCAL CODES. SIGNAGE PACKAGE SUPPLIED BY: FRANKE/S2K 1–800–423–5247 www.frankesupply.com email: fs–frankesupply.us@franke.com
7. ALL HANDSINK LOCATIONS SHALL HAVE CEMENT BOARD BACKING 48" IN HEIGHT A.F.F.
8. GC TO COORDINATE ALL REQUIRED BLOCKING FOR WALL HUNG EQUIPMENT, SHELVES, ETC. FOR PROPER INSTALLATION HEIGHTS.
9. KNOX BOX TO BE INSTALLED PER LOCAL CODE AS REQUIRED. MODEL AND LOCATION TO BE COORDINATED WITH FIRE MARSHALL.

BY	DESCRIPTION	DATE	REV
-			-

STAMBAUGH WILLIAM REGISTERED NO. 86037 STATE OF INDIANA ARCHITECT

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR: McDonald's USA, LLC
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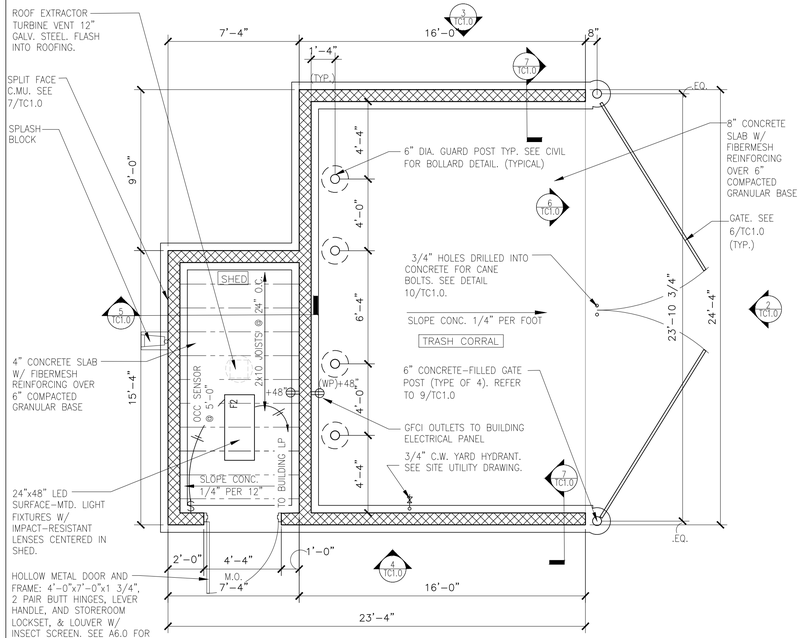
DRAWN BY	STD ISSUE DATE
– –	2025 10
REVIEWED BY:	DATE ISSUED
CJM	02.16.2026

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

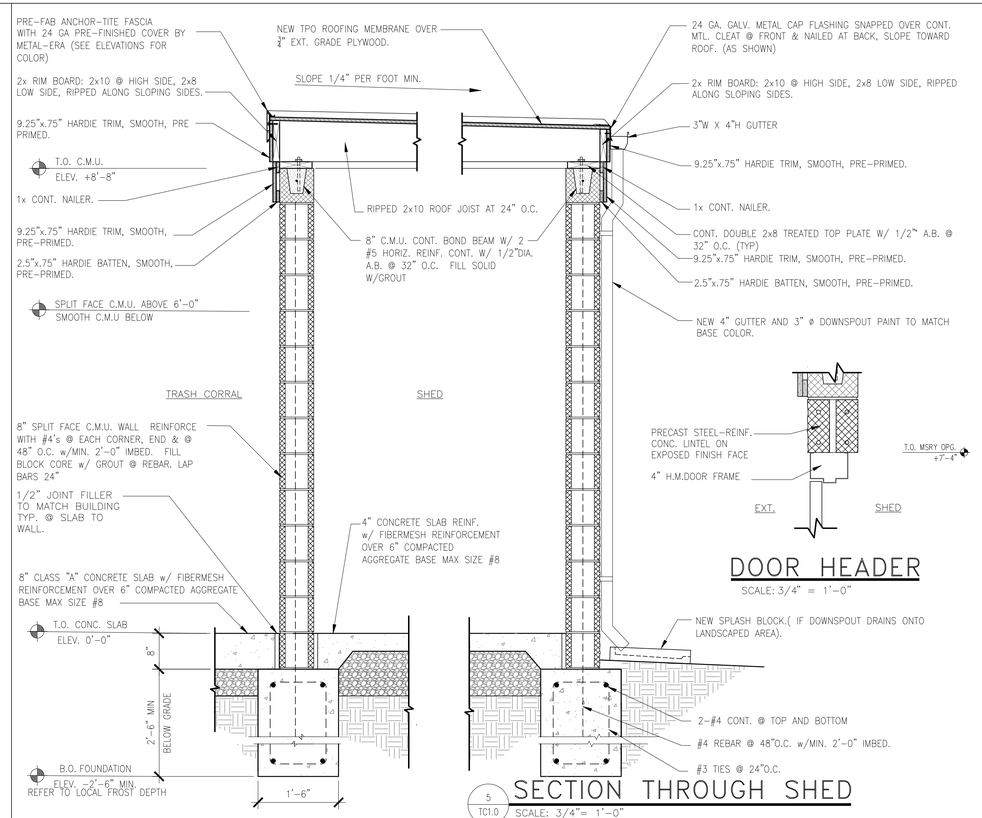
DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI	
WOOD TRUSS ROOF FRAMING	
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH	7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
NSN:452021 L/C: 13263	

013.1263.00.0

SHEET NO. A1.0
FLOOR PLAN

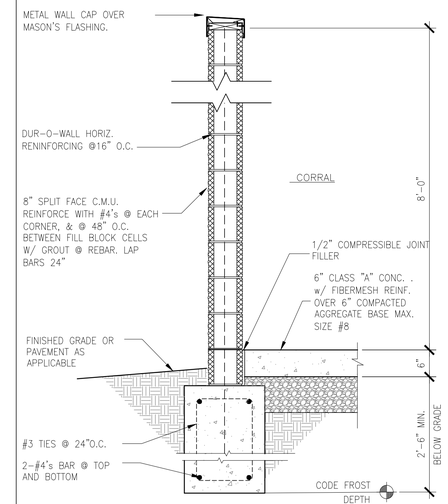


1 TC1.0 **TRASH ENCLOSURE PLAN W/ SHED**
SCALE: 1/4" = 1'-0"



5 TC1.0 **SECTION THROUGH SHED**
SCALE: 3/4"= 1'-0"

DOOR HEADER
SCALE: 3/4" = 1'-0"



7 TC1.0 **TYPICAL WALL SECTION**
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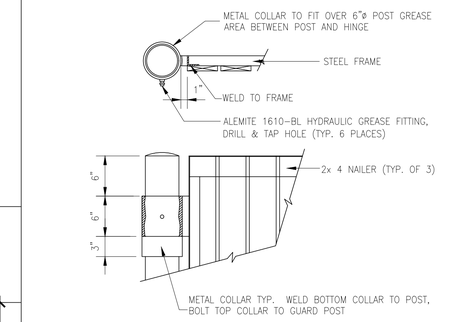
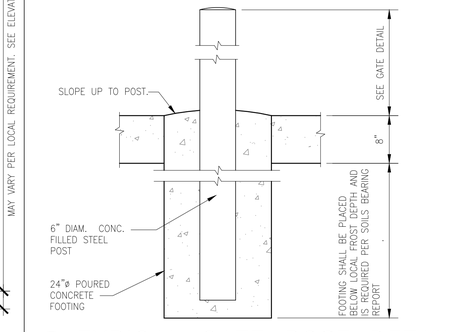
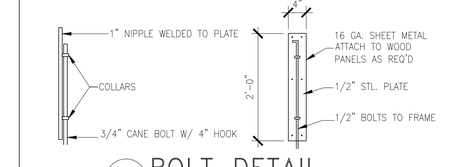


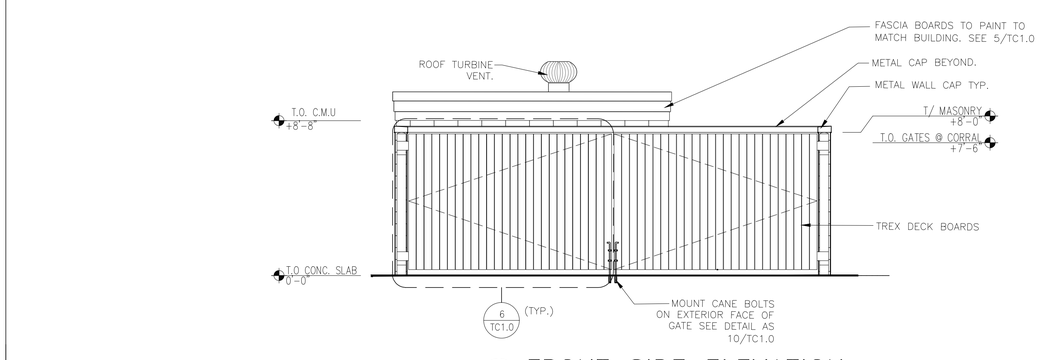
8 TC1.0 **HINGE DETAIL**
SCALE: 1"= 1'-0"



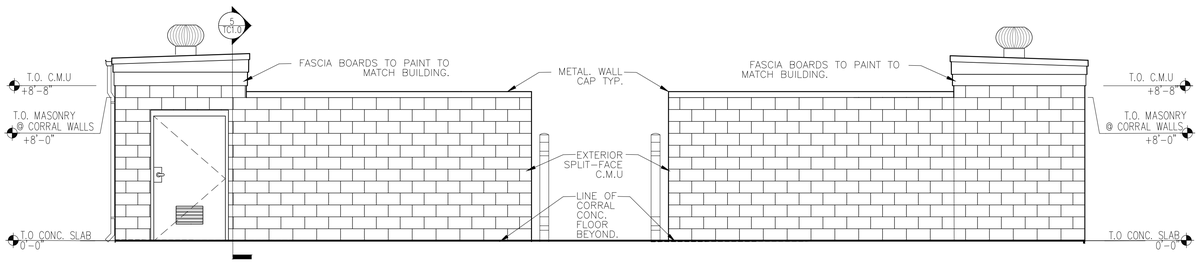
9 TC1.0 **TYPICAL GATE POST DETAIL**
SCALE: 1"= 1'-0"



10 TC1.0 **BOLT DETAIL**
SCALE: 3/4" = 1'-0"

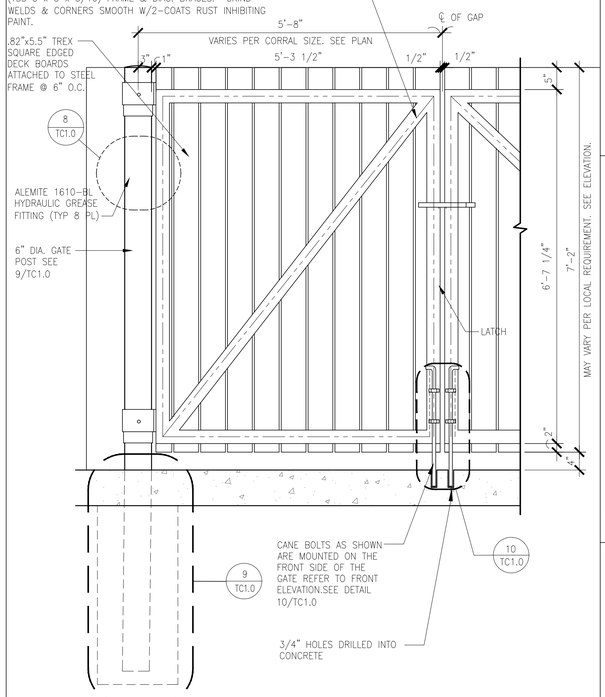


2 TC1.0 **FRONT SIDE ELEVATION**
SCALE: 1/4" = 1'-0"



4 TC1.0 **LEFT SIDE ELEVATION**
SCALE: 1/4" = 1'-0"

3 TC1.0 **RIGHT SIDE ELEVATION**
SCALE: 1/4" = 1'-0"



6 TC1.0 **TYPICAL GATE DETAIL**
SCALE: 3/4" = 1'-0"

NO.	REV	DATE	DESCRIPTION	BY

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR:
McDonald's USA, LLC
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DRAWN BY	STD ISSUE DATE	DATE ISSUED
ab	2025 10	11.24.2025
REVIEWED BY		
CJM		

TITLE
2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH
NSN:45201 | SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
L/C: 13263

013.1263.00.0

SHEET NO.
TC1.0
TRASH ENCLOSURE

REPORT OF
STORMWATER MANAGEMENT

MCDONALD'S RESTAURANT
NSN45201 (013-1263)

7030 NORTHFIELD DRIVE
TOWN OF BROWNSBURG
HENDRICKS COUNTY, INDIANA

PREPARED FOR:

MCDONALD'S USA LLC
110 N. CARPENTER STREET
CHICAGO, IL 60607
CONTACT: AMY SWITZER

PREPARED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
10300 ALLIANCE ROAD, SUITE 300
CINCINNATI, OHIO 45242
CONTACT: TYLER AMICON, P.E.

CEC PROJECT 355-081

DECEMBER 4, 2025

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1.0 INTRODUCTION..... 1
2.0 PRE-DEVELOPED CONDITIONS..... 2
3.0 POST-DEVELOPED CONDITIONS..... 3
4.0 STORMWATER CONVEYANCE ANALYSIS..... 3
4.1 STORMWATER CONVEYANCE DESIGN 4

LIST OF FIGURES

Figure

PRE-DEVELOPMENT DRAINAGE MAP 1
POST-DEVELOPMENT DRAINAGE MAP.....2
VICINITY MAP.....3
STORM INLET DRAINAGE AREAS 4

LIST OF APPENDICES

Appendix

10-YEAR DESIGN STORM CALCULATIONS.....1
100- YEAR DESIGN STORM CALCULATIONS.....2



1.0 INTRODUCTION

This drainage report was prepared to document the analysis of the pre- and post-developed drainage conditions for the proposed McDonald's drive-through restaurant development to be located in Brownsburg, Hendricks County, Indiana.

Current Owner Information (as of 12/04/2025)
Company: Christian Brothers Automotive Corporation
Address: 17725 Katy Freeway, Suite 200, Houston, TX 77094
Contact: Billy Green Jr, Director of Land Acquisition & Permitting
Email: billy.green@cbac.com
Phone: (281) 675-6192

New Owner Information
Company: McDonald's USA, LLC
Address: 110 N Carpenter Street, Chicago, IL 60607
Contact: Amy Switzer, Area Construction Manager
Email: amy.switzer@us.mcd.com
Phone: (913) 660-2205

The Subject Property consist of a 1.56-acre tract of land that is currently vacant and is part of the West Wynne Farms Planned Development. It is bounded to the north by Northfield Drive and to the west by S. Green Street. To the south exists property zoned commercial, and to the east property that is zoned residential. The Christian Brothers Development to the South of the Subject Property includes a regional detention basin as part of the overall development. This regional basin was designed to treat the storm water quality and quantity for the McDonald's property as outlined in the *Stormwater Narrative For: Christian Brothers Automotive* prepared by Progressive AE dated August 7, 2023, (revised November 2, 2023). See **Figure 3** – Vicinity Map.

The calculations in this report provide an analysis of the pre-developed site conditions, post-developed site conditions, storm sewer drainage areas, and storm sewer calculations for the McDonald's Restaurant development. The post-development stormwater conveyance design shall be in accordance with the *Town of Brownsburg Stormwater Management Ordinance*. For detention storage volume and release rates, refer to *Stormwater Narrative for Christian Brothers Automotive,* prepared by Progressive AE, dated August 7, 2023, (revised November 2, 2023).

2.0 PRE-DEVELOPED CONDITIONS

The subject property is an unoccupied lot consisting of slabs of both asphalt and concrete pavement, a gravel drive, silt fence, and trees. The subject property has minimal topography with a slope averaging ~1%, which slopes from the southeast corner of the property to the northeast and northwest corners. The property does not have an on-site detention system; however, it does have access to the regional detention system located on the Christian Brothers development directly south of the subject property.

The pre-development drainage area used for the stormwater analysis includes 1.563 acres, made up of 0.251 acres of impervious areas and 1.311 acres of pervious open space. See the Pre-Development Drainage Map provided in **Figure 1** for reference.

3.0 POST-DEVELOPED CONDITIONS

The proposed improvements include the demolition of the existing pavement slabs on site and the construction of a new 4,398-square-foot McDonald's restaurant and drive-through, asphalt parking lot and drives, a dumpster pad and enclosure, landscaping, sidewalks, curbs, and gutters. There is a detention system on the property south of the McDonald's site that was designed to encompass the stormwater detention of the subject site as well as the site on which it is located. Based on the *Stormwater Narrative for Christian Brothers Automotive*, prepared by Progressive AE, dated August 7, 2023 (revised November 2, 2023), the existing detention pond on the Christian Brothers Automotive property was designed to treat the McDonald's outparcel for stormwater quality and quantity. The detention basin accounted for the McDonald's outparcel to be 80% impervious, see the *Proposed Stormwater Management Plan* in the *Stormwater Narrative for Christian Brothers Automotive*, prepared by Progressive AE. The proposed McDonald's development has 69.23% impervious area, which is less than the 80% impervious area allocated for the outparcel. Therefore, the proposed McDonald's development meets the allotted detention pond design parameters and will not require any additional stormwater management elements. See the Post-Development Drainage Map provided in **Figure 2** for reference.

4.0 STORMWATER CONVEYANCE ANALYSIS

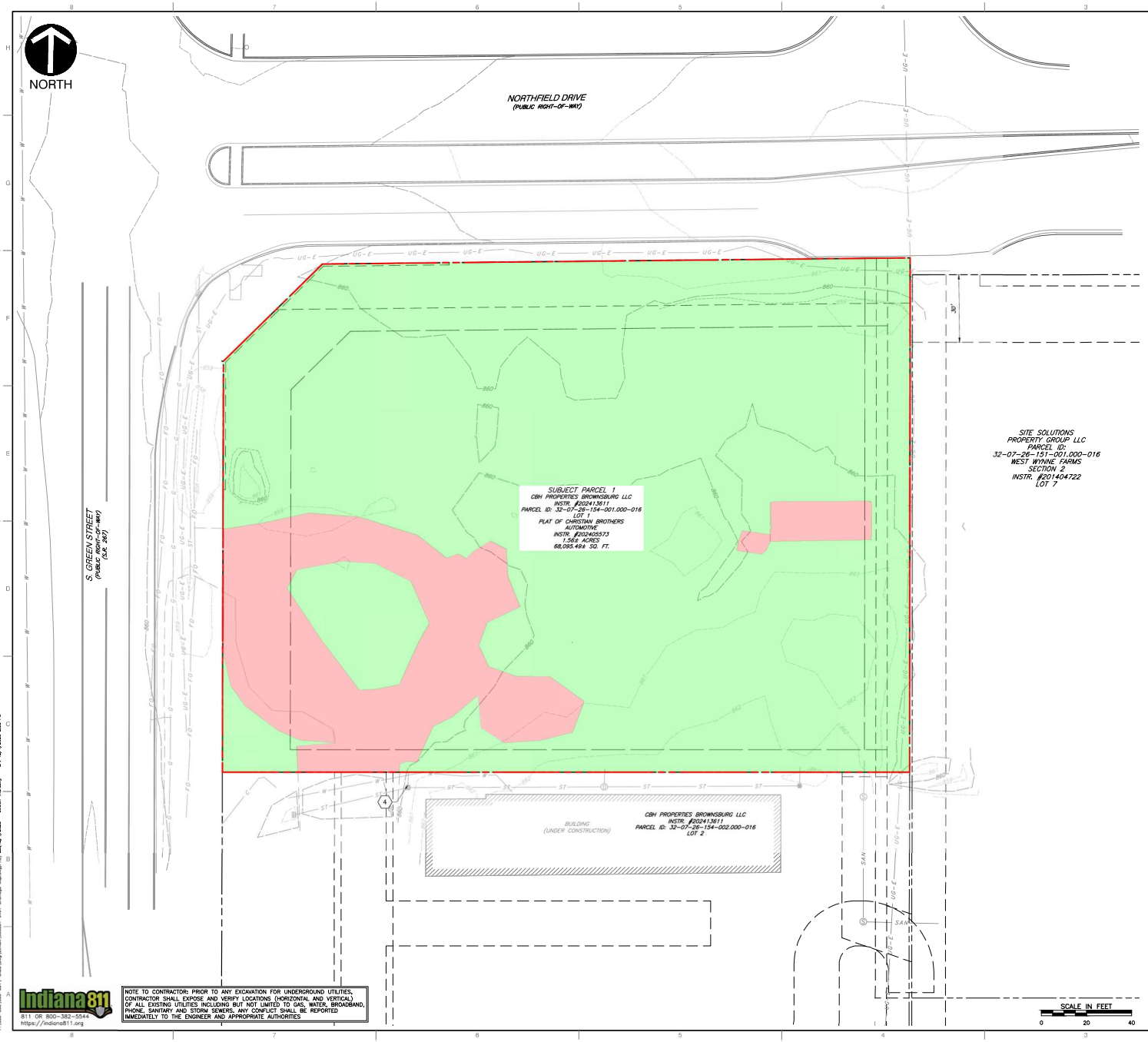
The methods used for the design and analysis of the proposed stormwater conveyance and management system follow the Town of Brownsburg Stormwater Management Ordinance. The design for the storm sewer conveyance system was modeled using Hydraflow Storm Sewers Extension for AutoCAD Civil 3D Version 2020 (by Autodesk Inc.). The analysis of the storm sewer is provided below in **Section 4.1.** CEC is not proposing any new stormwater management facilities because the subject site does not exceed the design limits of the existing detention basin. For the stormwater quality and quantity analysis of the detention basin on the site south of the subject property, see the *Stormwater Narrative for Christian Brothers Automotive* prepared by Progressive AE, dated August 7, 2023, (revised November 2, 2023).

4.1 STORMWATER CONVEYANCE DESIGN

The proposed stormwater conveyance system for the subject site was designed to meet the *Town of Brownsburg Stormwater Management Ordinance* and the *Hendricks County Stormwater Technical Standards Manual*. The system was designed to convey the 10-year storm so that the Hydraulic Grade Line is below the crowns of the pipe system and to contain up to the 100-year storm within the system. The system will be connected to an existing system on the property to the south, upstream of the outlet control structure for the existing detention basin. The time of concentration (Tc) used for the design was 10 minutes, which is based on an industry standard for developed land. The sewer pipes were assigned a Manning's "n" value of 0.012 as per the minimum value stated in the *Town of Brownsburg Stormwater Management Ordinance*. See the Storm Sewer Calculations provided in **Appendices 1 and 2**.

FIGURE 1

PRE-DEVELOPMENT DRAINAGE MAP



NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- 860 EXISTING INDEX (MAJOR) CONTOUR
- 861 EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING SETBACK
- ST EXISTING STORM PIPE
- W EXISTING WATER LINE
- SAN EXISTING SANITARY SEWER LINE
- G EXISTING GAS LINE
- OH-E EXISTING OVERHEAD WIRE
- UG-E EXISTING UNDERGROUND ELECTRIC LINE
- FO EXISTING FIBER OPTIC LINE
- C EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY STRUCTURES
- 1.31 ACRES EXISTING PERVIOUS
- 0.25 ACRES EXISTING IMPERVIOUS

TOTAL PRE-DEVELOPMENT AREA
1.56 AC
COMPOSITE CN =
TIME OF CONCENTRATION = 10 MINS

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Civil & Environmental Consultants, Inc.

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

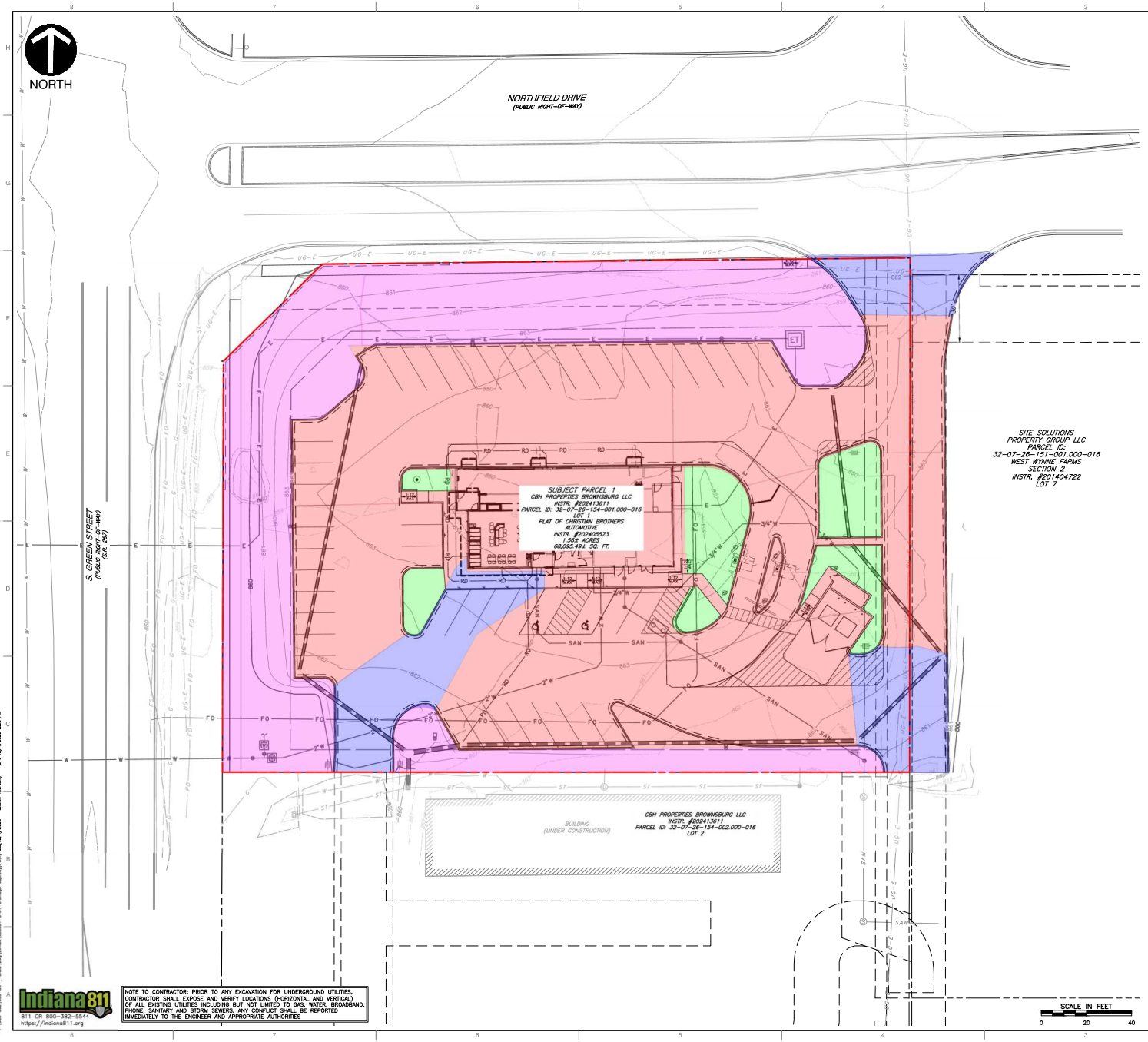
PRE-DEVELOPMENT DRAINAGE MAP

DATE: DECEMBER 4, 2025 DRAWN BY: AWM
DWG SCALE: 1"=20' CHECKED BY: THA
PROJECT NO: 355-081
APPROVED BY: DRAFT

DRAWING NO. DM-1
SHEET 1 OF 3

FIGURE 2

POST-DEVELOPMENT DRAINAGE MAP



NOTES

1. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

	EXISTING PROPERTY LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
860	EXISTING INDEX (MAJOR) CONTOUR
861	EXISTING INTERMEDIATE (MINOR) CONTOUR
	EXISTING SETBACK
ST	EXISTING STORM PIPE
W	EXISTING WATER LINE
SAN	EXISTING SANITARY SEWER LINE
G	EXISTING GAS LINE
OH-E	EXISTING OVERHEAD WIRE
UG-E	EXISTING UNDERGROUND ELECTRIC LINE
FO	EXISTING FIBER OPTIC LINE
C	EXISTING UNDERGROUND CABLE LINE
	EXISTING ELECTRIC UTILITIES
	EXISTING WATER UTILITIES
	EXISTING TRAFFIC UTILITIES
	EXISTING STORM STRUCTURES
	EXISTING SANITARY STRUCTURES
	PROPOSED STORM PIPE
RD	PROPOSED ROOF DRAIN
3/4"W	PROPOSED ¾" WATER LINE
2"W	PROPOSED 2" WATER LINE
SAN	PROPOSED SANITARY SEWER LINE
E	PROPOSED UNDERGROUND ELECTRIC LINE
FO	PROPOSED FIBER OPTIC LINE
	PROPOSED STORM STRUCTURES
	PROPOSED WATER UTILITIES
	PROPOSED SANITARY CLEANOUT
	PROPOSED GREASE TRAP
	PROPOSED LIGHT POLE
ET	PROPOSED TRANSFORMER
860	PROPOSED INDEX (MAJOR) CONTOUR
861	PROPOSED INTERMEDIATE (MINOR) CONTOUR
0.09 ACRES	DETAINED PERVIOUS
0.95 ACRES	DETAINED IMPERVIOUS
0.46 ACRES	UNDETAINED PERVIOUS
0.16 ACRES	UNDETAINED IMPERVIOUS

DETAINED POST-DEVELOPMENT AREA
1.04 AC
COMPOSITE CN = 0.82
TIME OF CONCENTRATION = 10 MINS

UNDETAINED POST-DEVELOPMENT AREA
0.62 AC
COMPOSITE CN = XX
TIME OF CONCENTRATION = 10 MINS

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7030 NORTHFIELD DRIVE
BROWNSBURG, IN

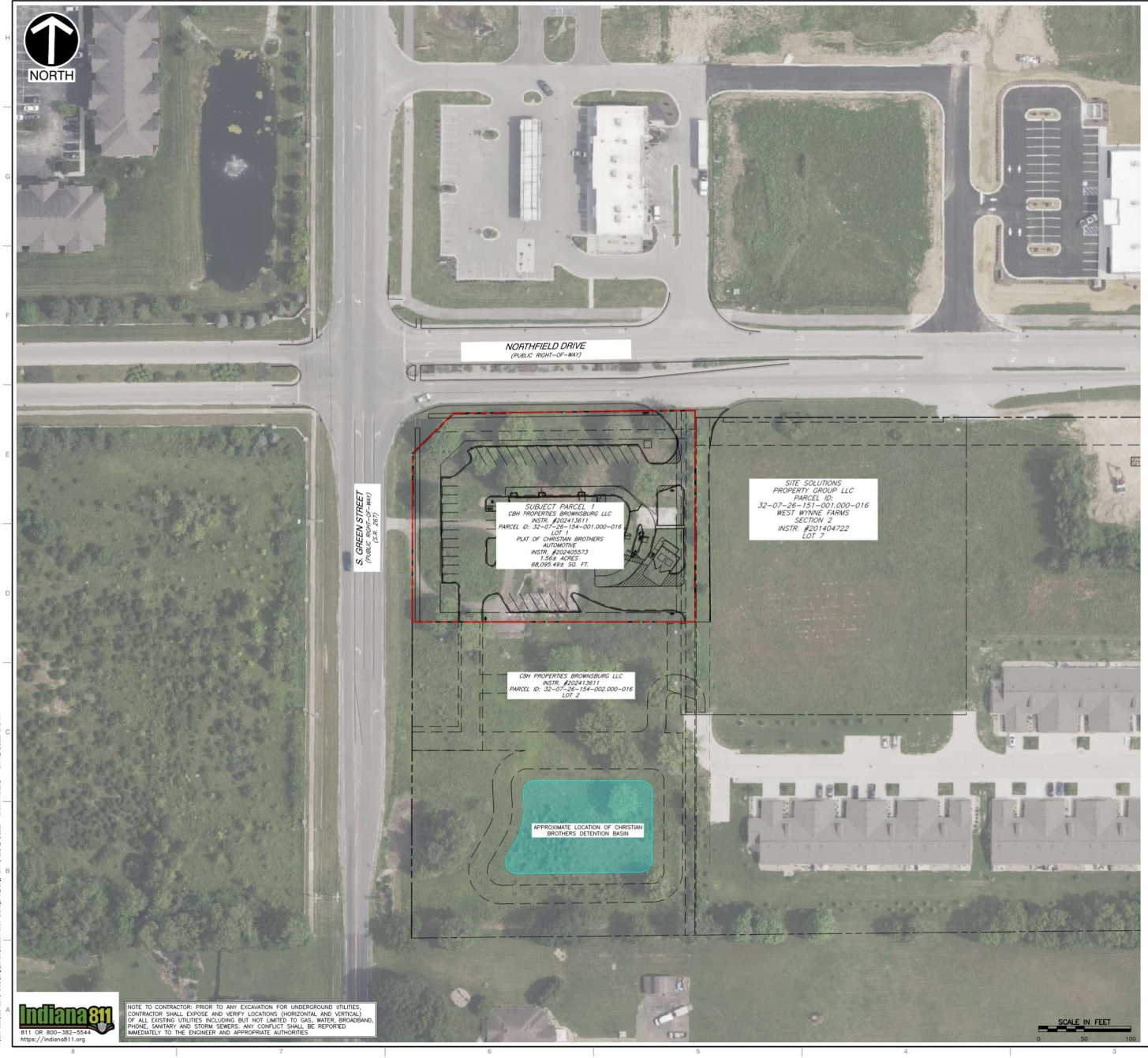
POST-DEVELOPMENT DRAINAGE MAP

DATE:	DECEMBER 4, 2025	DRAWN BY:	AWM
DWG SCALE:	1"=20'	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			DRAFT

DRAWING NO.
DM-2
SHEET 2 OF 3

FIGURE 3

VICINITY MAP



1. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

EXISTING PROPERTY LINE

DETENTION BASIN

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MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

VICINITY MAP

DATE:	DECEMBER 4, 2025
DWG SCALE:	1"=50'
PROJECT NO:	
APPROVED BY:	
DRAWN BY:	AWM
CHECKED BY:	THA
	355-081
	DRAFT

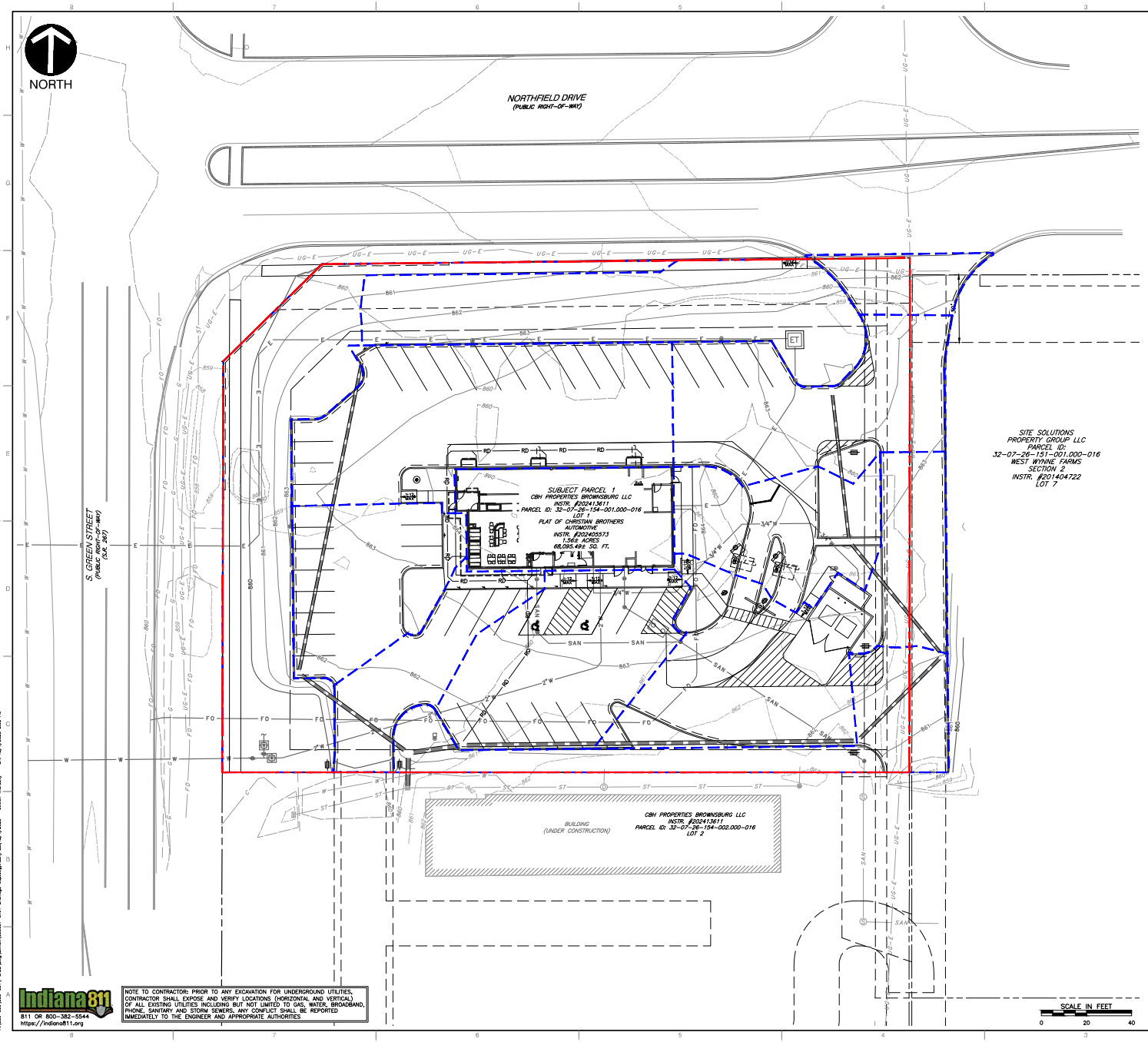
DRAWING NO.:
VM-1

SHEET 1 OF 1

P:\355\-\355-081\-\-CAD\Dwg\Exhibit\355081-CIVIL-Drawings Map.dwg[LAYOUT] | 12/4/2025 - aweich-mcarroll | LP: 12/4/2025 3:42 PM

FIGURE 4

STORM INLET DRAINAGE AREAS



NOTES

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING SETBACK
- EXISTING STORM PIPE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING FIBER OPTIC LINE
- EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY STRUCTURES
- PROPOSED STORM PIPE
- PROPOSED ROOF DRAIN
- PROPOSED ¾" WATER LINE
- PROPOSED 2" WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER
- PROPOSED INDEX (MAJOR) CONTOUR
- PROPOSED INTERMEDIATE (MINOR) CONTOUR
- DRAINAGE AREA

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NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

STORM INLET
DRAINAGE MAP

DATE: DECEMBER 4, 2025
DWG SCALE: 1"=20'
PROJECT NO: 335-081
APPROVED BY: DRAFT
DRAWN BY: AWM
CHECKED BY: THA

DRAWING NO. DM-3
SHEET 3 OF 3

APPENDIX 1

10-YEAR DESIGN STORM CALCULATIONS

10-Year Storm Sewer Summary Table																			
Structure (Upstream)	Structure (Downstream)	Runoff Coefficient, C	Intensity (in/hr)	Drainage Area (AC)	Time of Concentration (min)	Peak Flow, Q (cfs)	Cumulative Peak Flow (cfs)	Pipe Material	Roughness Coefficient, n	Pipe Slope (ft/ft)	Pipe Size (in)	Pipe Velocity, V (ft/s)	Pipe Length (ft)	Invert Elevation Upstream (ft)	Invert Elevation Downstream (ft)	Rim Elevation Upstream (ft)	Hydraulic Grade Eleavtion Upstream (ft)	Rim Elevation Downstream (ft)	Hydraulic Grade Eleavtion Downstream (ft)
200	100	0.79	4.90	0.11	11.90	0.43	1.39	RCP	0.012	0.0025	15	1.57	60	858.73	858.58	861.84	859.49	861.25	859.47
201	200	0.84	5.20	0.22	10.00	0.96	0.96	HDPE	0.012	0.0025	12	1.75	142	859.09	858.73	862.26	859.66	861.84	859.54
101	100	0.85	4.50	0.24	15.00	0.92	2.61	RCP	0.012	0.0024	18	1.84	25	858.39	858.33	861.96	859.43	861.25	859.42
102	101	0.80	4.80	0.15	13.00	0.58	1.69	RCP	0.012	0.0025	15	1.84	175	858.83	858.39	861.77	859.56	861.96	859.44
103	102	0.79	4.90	0.06	12.30	0.23	1.12	RCP	0.012	0.0024	12	1.73	54	858.96	858.83	862.01	859.66	861.77	859.62
104	103	0.49	5.00	0.10	11.40	0.25	0.88	RCP	0.012	0.0024	12	1.52	65	859.12	858.96	862.45	859.75	862.01	859.71
105	104	0.82	5.20	0.15	10.00	0.64	0.64	HDPE	0.012	0.0025	12	1.38	67	859.29	859.12	862.47	859.81	862.45	859.77

APPENDIX 2

100-YEAR DESIGN STORM CALCULATIONS

100-Year Storm Sewer Summary Table																		
Structure (Upstream)	Structure (Downstream)	Runoff Coefficient, C	Intensity (in/hr)	Drainage Area (AC)	Time of Concentration (min)	Peak Flow, Q (cfs)	Cumulative Peak Flow (cfs)	Pipe Material	Roughness Coefficient, n	Pipe Slope (ft/ft)	Pipe Size (in)	Pipe Velocity, V (ft/s)	Pipe Length (ft)	Invert Elevation Upstream (ft)	Invert Elevation Downstream (ft)	Rim Elevation Upstream (ft)	Hydraulic Grade Eleavtion Upstream (ft)	Rim Elevation Downstream (ft)	Hydraulic Grade Eleavtion Downstream (ft)
200	100	0.79	7.50	0.11	11.30	0.65	2.09	RCP	0.012	0.0025	15	2.32	60	858.73	858.58	861.84	859.53	861.25	859.47
201	200	0.84	7.80	0.22	10.00	1.44	1.44	HDPE	0.012	0.0025	12	2.17	142	859.09	858.73	862.26	859.81	861.84	859.62
101	100	0.85	7.10	0.24	13.40	1.45	4.02	RCP	0.012	0.0024	18	2.83	25	858.39	858.33	861.96	859.45	861.25	859.42
102	101	0.8	7.40	0.15	12.00	0.89	2.57	RCP	0.012	0.0025	15	2.48	175	858.83	858.39	861.77	859.7	861.96	859.47
103	102	0.79	7.40	0.06	11.60	0.35	1.68	RCP	0.012	0.0024	12	2.15	54	858.96	858.83	862.01	859.86	861.77	859.78
104	103	0.49	7.60	0.10	10.90	0.37	1.33	RCP	0.012	0.0024	12	1.73	65	859.12	858.96	862.45	860	862.01	859.94
105	104	0.82	7.80	0.15	10.00	0.96	0.96	HDPE	0.012	0.0025	12	1.38	67	859.29	859.12	862.47	860.06	862.45	860.03

REPORT OF
STORMWATER MANAGEMENT

MCDONALD'S RESTAURANT
NSN45201 (013-1263)

7030 NORTHFIELD DRIVE
TOWN OF BROWNSBURG
HENDRICKS COUNTY, INDIANA

PREPARED FOR:

MCDONALD'S USA LLC
110 N. CARPENTER STREET
CHICAGO, IL 60607
CONTACT: AMY SWITZER

PREPARED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
10300 ALLIANCE ROAD, SUITE 300
CINCINNATI, OHIO 45242
CONTACT: TYLER AMICON, P.E.

CEC PROJECT 355-081

DECEMBER 4, 2025
REVISED FEBRUARY 13, 2026

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2.0 PRE-DEVELOPED CONDITIONS 2
3.0 POST-DEVELOPED CONDITIONS 3
4.0 STORMWATER CONVEYANCE ANALYSIS 3
4.1 STORMWATER CONVEYANCE DESIGN 3-4
4.2 INLET ANALYSIS 4

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POST-DEVELOPMENT DRAINAGE MAP 2
VICINITY MAP 3
STORM INLET DRAINAGE AREAS 4

LIST OF APPENDICES

Appendix

10-YEAR DESIGN STORM CALCULATIONS 1
100-YEAR DESIGN STORM CALCULATIONS 2
10-YEAR 0% CLOGGED INLETS CALCULATIONS 3
10-YEAR 50% CLOGGED INLETS CALCULATIONS 4



1.0 INTRODUCTION

This drainage report was prepared to document the analysis of the pre- and post-developed drainage conditions for the proposed McDonald's drive-through restaurant development to be located in Brownsburg, Hendricks County, Indiana.

Current Owner Information (as of 12/04/2025)
Company: Christian Brothers Automotive Corporation
Address: 17725 Katy Freeway, Suite 200, Houston, TX 77094
Contact: Billy Green Jr, Director of Land Acquisition & Permitting
Email: billy.green@cbac.com
Phone: (281) 675-6192

New Owner Information
Company: McDonald's USA, LLC
Address: 110 N Carpenter Street, Chicago, IL 60607
Contact: Amy Switzer, Area Construction Manager
Email: amy.switzer@us.mcd.com
Phone: (913) 660-2205

The Subject Property consist of a 1.56-acre tract of land that is currently vacant and is part of the West Wynne Farms Planned Development. It is bounded to the north by Northfield Drive and to the west by S. Green Street. To the south exists property zoned commercial, and to the east property that is zoned residential. The Christian Brothers Development to the South of the Subject Property includes a regional detention basin as part of the overall development. This regional basin was designed to treat the storm water quality and quantity for the McDonald's property as outlined in the *Stormwater Narrative For: Christian Brothers Automotive* prepared by Progressive AE dated August 7, 2023, (revised November 2, 2023). See **Figure 3** – Vicinity Map.

The calculations in this report provide an analysis of the pre-developed site conditions, post-developed site conditions, storm sewer drainage areas, and storm sewer calculations for the

McDonald's Restaurant development. The post-development stormwater conveyance design shall be in accordance with the *Town of Brownsburg Stormwater Management Ordinance*. For detention storage volume and release rates, refer to *Stormwater Narrative for Christian Brothers Automotive,* prepared by Progressive AE, dated August 7, 2023, (revised November 2, 2023).

2.0 PRE-DEVELOPED CONDITIONS

The subject property is an unoccupied lot consisting of slabs of both asphalt and concrete pavement, a gravel drive, silt fence, and trees. The subject property has minimal topography with a slope averaging ~1%, which slopes from the southeast corner of the property to the northeast and northwest corners. The property does not have an on-site detention system; however, it does have access to the regional detention system located on the Christian Brothers development directly south of the subject property.

The pre-development drainage area used for the stormwater analysis includes 1.563 acres, made up of 0.251 acres of impervious areas and 1.311 acres of pervious open space. See the Pre-Development Drainage Map provided in **Figure 1** for reference.

3.0 POST-DEVELOPED CONDITIONS

The proposed improvements include the demolition of the existing pavement slabs on site and the construction of a new 4,398-square-foot McDonald's restaurant and drive-through, asphalt parking lot and drives, a dumpster pad and enclosure, landscaping, sidewalks, curbs, and gutters. There is a detention system on the property south of the McDonald's site that was designed to encompass the stormwater detention of the subject site as well as the site on which it is located. Based on the *Stormwater Narrative for Christian Brothers Automotive*, prepared by Progressive AE, dated August 7, 2023 (revised November 2, 2023), the existing detention pond on the Christian Brothers Automotive property was designed to treat the McDonald's outparcel for stormwater quality and quantity. The detention basin accounted for the McDonald's outparcel to be 80% impervious, see the *Proposed Stormwater Management Plan* in the *Stormwater Narrative for Christian Brothers Automotive*, prepared by Progressive AE. The proposed McDonald's development has 69.23% impervious area, which is less than the 80% impervious area allocated for the outparcel. Therefore, the proposed McDonald's development meets the allotted detention pond design parameters and will not require any additional stormwater management elements. See the Post-Development Drainage Map provided in **Figure 2** for reference.

4.0 STORMWATER CONVEYANCE ANALYSIS

The methods used for the design and analysis of the proposed stormwater conveyance and management system follow the Town of Brownsburg Stormwater Management Ordinance. The design for the storm sewer conveyance system was modeled using Hydraflow Storm Sewers Extension for AutoCAD Civil 3D Version 2020 (by Autodesk Inc.). The analysis of the storm sewer is provided below in **Section 4.1.** CEC is not proposing any new stormwater management facilities because the subject site does not exceed the design limits of the existing detention basin. For the stormwater quality and quantity analysis of the detention basin on the site south of the subject property, see the *Stormwater Narrative for Christian Brothers Automotive* prepared by Progressive AE, dated August 7, 2023, (revised November 2, 2023).

4.1 STORMWATER CONVEYANCE DESIGN

The proposed stormwater conveyance system for the subject site was designed to meet the *Town of Brownsburg Stormwater Management Ordinance* and the *Hendricks County Stormwater Technical Standards Manual*. The system was designed to convey the 10-year storm so that the

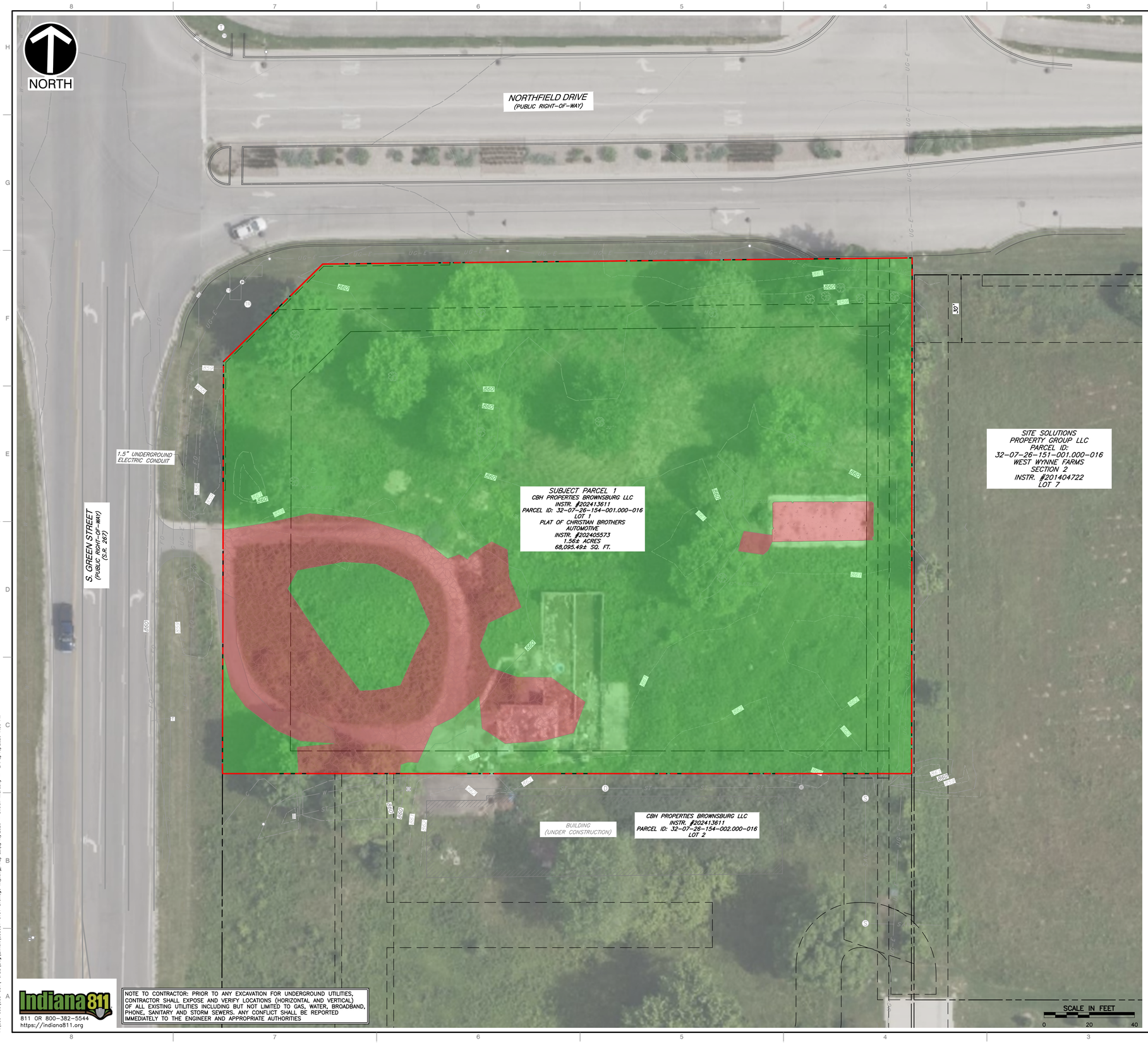
Hydraulic Grade Line is below the crowns of the pipe system and to contain up to the 100-year storm within the system. The system will be connected to an existing system on the property to the south, upstream of the outlet control structure for the existing detention basin. The time of concentration (Tc) used for the design was 10 minutes, which is based on an industry standard for developed land. The sewer pipes were assigned a Manning's "n" value of 0.012 as per the minimum value stated in the *Town of Brownsburg Stormwater Management Ordinance*. See the Storm Sewer Calculations provided in **Appendices 1 and 2**.

4.2 INLET ANALYSIS

The placement and sizing of the proposed inlets, within the proposed storm system, were determined based off the design requirements of the Brownsburg, Indiana Code of Ordinances, Title XV: Land Usage, Chapter 151.21, D3. According to the Code, inlet grate openings shall be designed to pass the 10-year peak flow with 50% of the inlet area clogged and result in a maximum 6-inch ponding depth. The storm conveyance system meets these requirements. Results were recorded for the 10-year event with the full inlet area open, and for the 10-year event with half the inlet length and width used to simulate the 50% clogged inlet area. See **Appendix 3** for the 10-year 0% clogged inlet calculation results and **Appendix 4** for the 10-year 50% clogged inlet calculation results.

FIGURE 1

PRE-DEVELOPMENT DRAINAGE MAP



NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
3. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.
4. ALL NEW STORM STRUCTURES ARE TO DISPLAY A PRECAST POLLUTION PREVENTION MESSAGE.
5. ALL DOWNSPOUTS WILL BE DIRECTLY CONNECTED TO THE PROPOSED STORM CONVEYANCE SYSTEM. SEE ARCHITECTURAL PLANS BY OTHERS FOR MORE INFORMATION.

LEGEND

	EXISTING PROPERTY LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
	EXISTING INDEX (MAJOR) CONTOUR
	EXISTING INTERMEDIATE (MINOR) CONTOUR
	EXISTING SETBACK
ST	EXISTING STORM PIPE
W	EXISTING WATER LINE
SAN	EXISTING SANITARY SEWER LINE
G	EXISTING GAS LINE
OH-E	EXISTING OVERHEAD WIRE
UG-E	EXISTING UNDERGROUND ELECTRIC LINE
FO	EXISTING FIBER OPTIC LINE
C	EXISTING UNDERGROUND CABLE LINE
	EXISTING ELECTRIC UTILITIES
	EXISTING WATER UTILITIES
1.31 ACRES	EXISTING PERVIOUS
0.25 ACRES	EXISTING IMPERVIOUS

TOTAL PRE-DEVELOPMENT AREA
1.56 AC
COMPOSITE CN =
TIME OF CONCENTRATION = 10 MINS

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DRAFT

REVISION RECORD

NO	DATE	DESCRIPTION

ENGINEERING, SURVEYING AND LANDSCAPE ARCHITECTURE IN THE STATE OF NORTH CAROLINA WILL BE PROVIDED BY CEC SURVEYING AND LANDSCAPE ARCHITECTS OF NC, PLLC. SERVICES IN PUERTO RICO WILL BE PROVIDED BY CEC ENGINEERS & CONSULTANTS, LLC. LANDSCAPE ARCHITECTURE SERVICES IN THE STATE OF OHIO WILL BE PROVIDED BY CEC LANDSCAPE ARCHITECTS, LLC.

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10300 Alliance Road
Suite 300
Cincinnati, OH 45242
Ph: 513.985.0226
www.cecinc.com

MCDONALD'S RESTAURANT
NSN 45201 (013-1263)
7030 NORTHFIELD DRIVE
BROWNSBURG, IN

PRE-DEVELOPMENT DRAINAGE MAP

DATE:	FEBRUARY 13, 2026	DRAWN BY:	AWM
DWG SCALE:	1"=20'	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			DRAFT

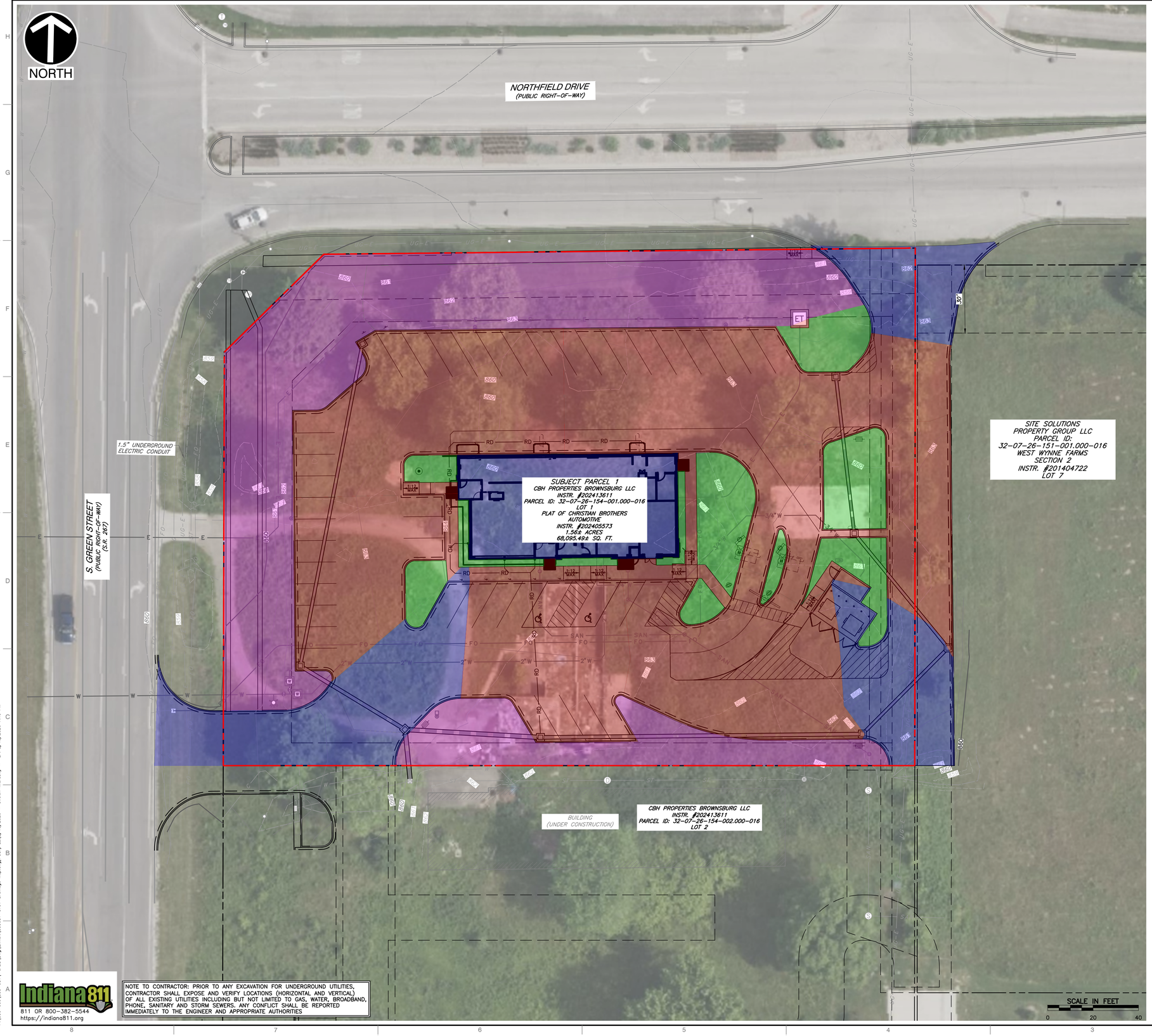
DRAWING NO.: DM-1

SHEET 1 OF 3

P:\350-000\355-081\-CADD\Dwg\Exhibit\355081-CV01-Drainage Map.dwg[PRE] LS:(2/13/2026 - awelch-muraski) - LP: 2/13/2026 7:36 PM

FIGURE 2

POST-DEVELOPMENT DRAINAGE MAP



1. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

	EXISTING PROPERTY LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
	EXISTING INDEX (MAJOR) CONTOUR
	EXISTING INTERMEDIATE (MINOR) CONTOUR
	EXISTING SETBACK
ST	EXISTING STORM PIPE
W	EXISTING WATER LINE
SAN	EXISTING SANITARY SEWER LINE
G	EXISTING GAS LINE
OH-E	EXISTING OVERHEAD WIRE
UG-E	EXISTING UNDERGROUND ELECTRIC LINE
FO	EXISTING FIBER OPTIC LINE
C	EXISTING UNDERGROUND CABLE LINE
	EXISTING ELECTRIC UTILITIES
	EXISTING WATER UTILITIES
TR	EXISTING TRAFFIC UTILITIES
D	EXISTING STORM STRUCTURES
S	EXISTING SANITARY STRUCTURES
	PROPOSED STORM PIPE
RD	PROPOSED ROOF DRAIN
3/4"W	PROPOSED ¾" WATER LINE
2"W	PROPOSED 2" WATER LINE
SAN	PROPOSED SANITARY SEWER LINE
E	PROPOSED UNDERGROUND ELECTRIC LINE
FO	PROPOSED FIBER OPTIC LINE
D	PROPOSED STORM STRUCTURES
W	PROPOSED WATER UTILITIES
	PROPOSED SANITARY CLEANOUT
	PROPOSED GREASE TRAP
	PROPOSED LIGHT POLE
ET	PROPOSED TRANSFORMER
860	PROPOSED INDEX (MAJOR) CONTOUR
861	PROPOSED INTERMEDIATE (MINOR) CONTOUR
0.13 ACRES	DETAINED PERVIOUS
0.80 ACRES	DETAINED IMPERVIOUS
0.41 ACRES	UNDETAINED PERVIOUS
0.33 ACRES	UNDETAINED IMPERVIOUS

DETAINED POST-DEVELOPMENT AREA
0.93 AC
COMPOSITE CN = 0.68
TIME OF CONCENTRATION = 10 MINS

UNDETAINED POST-DEVELOPMENT AREA
0.74 AC
COMPOSITE CN = 0.47
TIME OF CONCENTRATION = 10 MINS

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POST-DEVELOPMENT DRAINAGE MAP

DATE:	FEBRUARY 13, 2026	DRAWN BY:	AWM
DWG SCALE:	1"=20'	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			DRAFT

DRAWING NO.: DM-2

SHEET 2 OF 3

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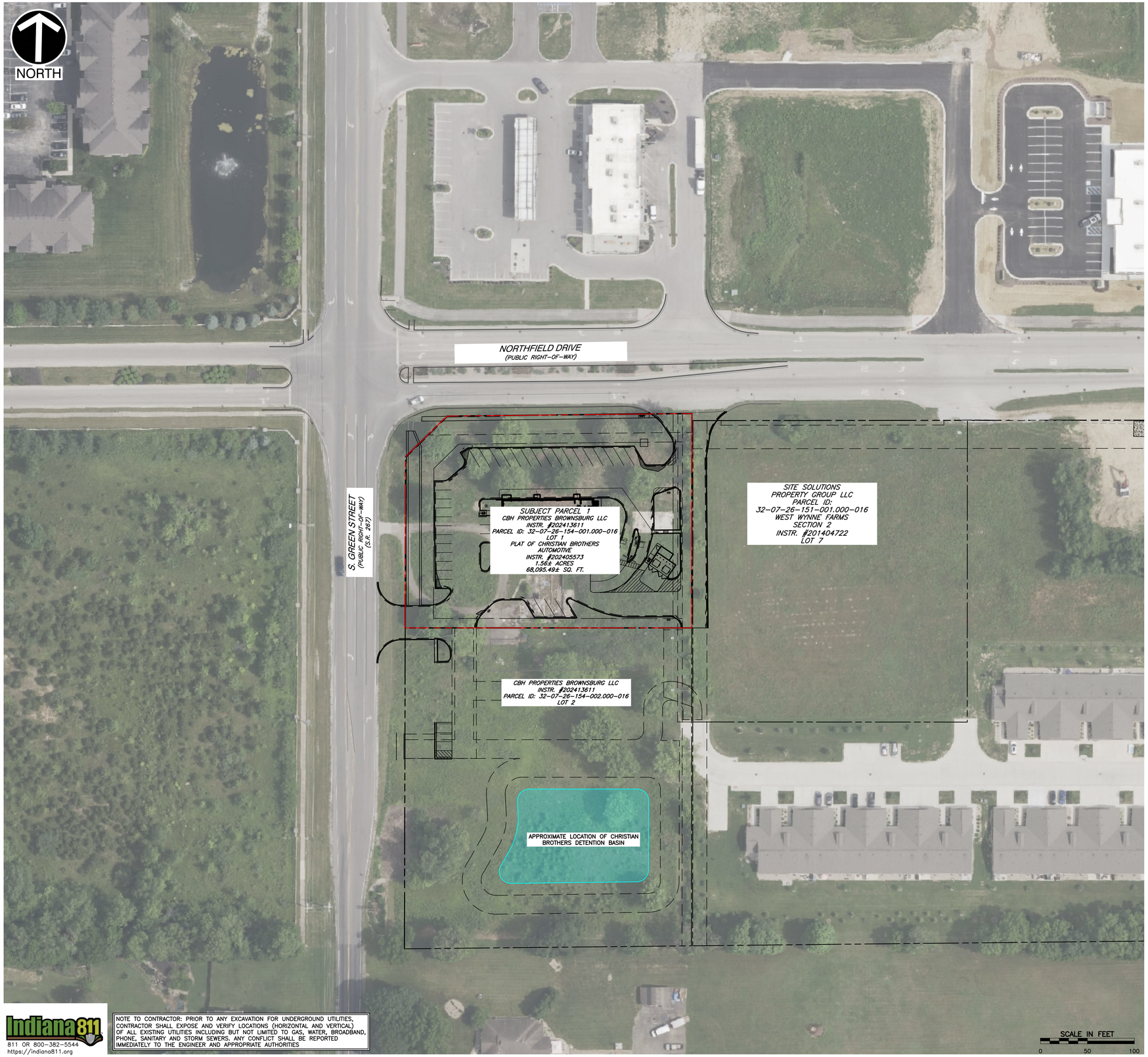
FIGURE 3

VICINITY MAP



NOTES

1. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

EXISTING PROPERTY LINE
DETENTION BASIN

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BROWNSBURG, IN

VICINITY MAP

DATE:	FEBRUARY 13, 2026	DRAWN BY:	AWM
DWG SCALE:	1"=50'	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			DRAFT

DRAWING NO.: VM-1

SHEET 1 OF 1

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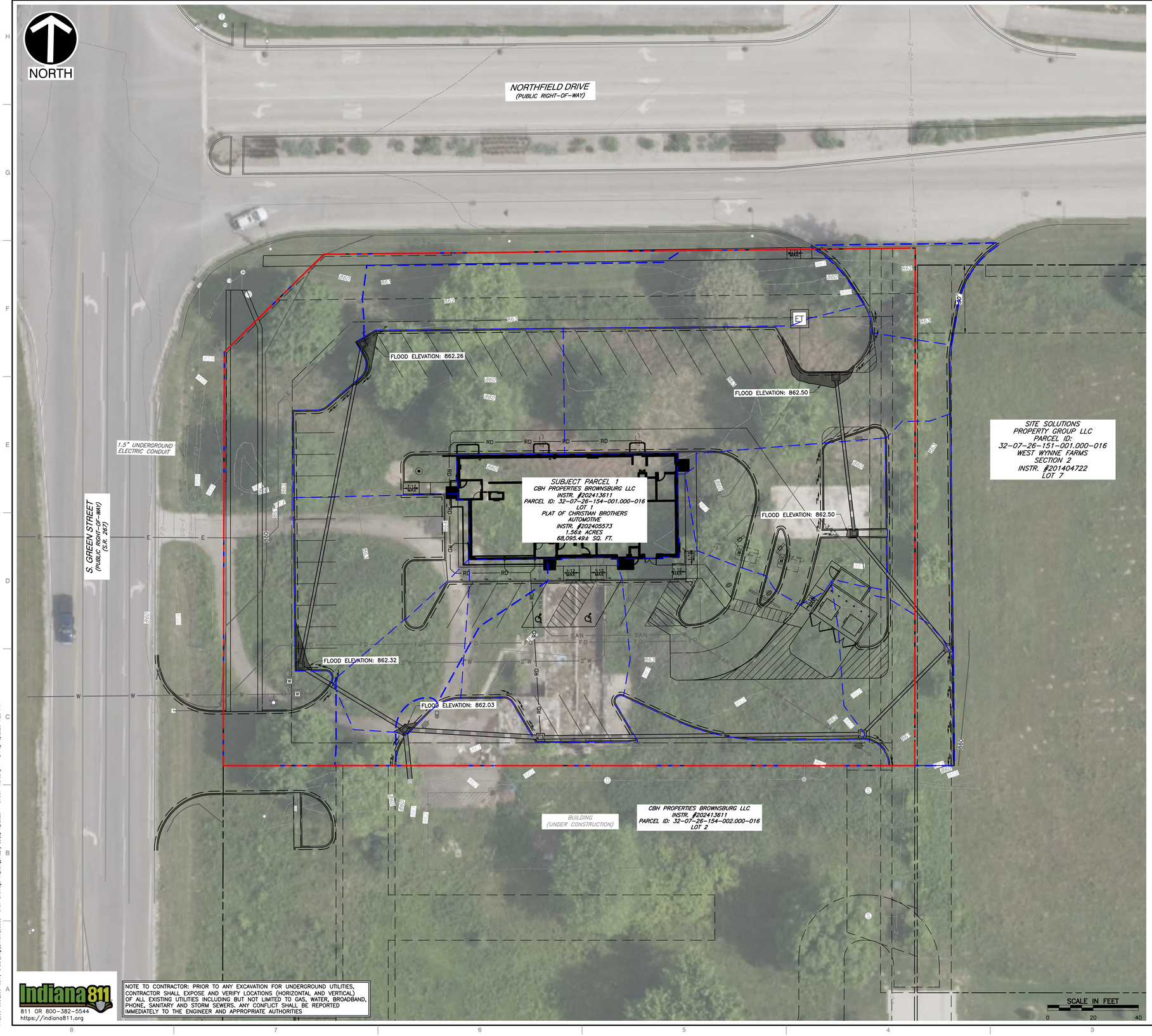
FIGURE 4

STORM INLET DRAINAGE AREAS



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NOTES

1. EXISTING SITE INFORMATION/TOPOGRAPHY PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED SEPTEMBER 23, 2025.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING SETBACK
- ST — EXISTING STORM PIPE
- W — EXISTING WATER LINE
- SAN — EXISTING SANITARY SEWER LINE
- G — EXISTING GAS LINE
- OH-E — EXISTING OVERHEAD WIRE
- UG-E — EXISTING UNDERGROUND ELECTRIC LINE
- FO — EXISTING FIBER OPTIC LINE
- C — EXISTING UNDERGROUND CABLE LINE
- EXISTING ELECTRIC UTILITIES
- EXISTING WATER UTILITIES
- EXISTING TRAFFIC UTILITIES
- EXISTING STORM STRUCTURES
- EXISTING SANITARY STRUCTURES
- PROPOSED STORM PIPE
- RD — RD — PROPOSED ROOF DRAIN
- ¾"W — PROPOSED ¾" WATER LINE
- 2"W — PROPOSED 2" WATER LINE
- SAN — PROPOSED SANITARY SEWER LINE
- E — PROPOSED UNDERGROUND ELECTRIC LINE
- FO — PROPOSED FIBER OPTIC LINE
- PROPOSED STORM STRUCTURES
- PROPOSED WATER UTILITIES
- PROPOSED SANITARY CLEANOUT
- PROPOSED GREASE TRAP
- PROPOSED LIGHT POLE
- ET — PROPOSED TRANSFORMER
- 860 — PROPOSED INDEX (MAJOR) CONTOUR
- 861 — PROPOSED INTERMEDIATE (MINOR) CONTOUR
- DRAINAGE AREA

REVISION RECORD

NO	DATE	DESCRIPTION

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BROWNSBURG, IN

STORM INLET DRAINAGE MAP

DATE:	FEBRUARY 13, 2026	DRAWN BY:	AWM
DWG SCALE:	1" = 20'	CHECKED BY:	THA
PROJECT NO:			355-081
APPROVED BY:			DRAFT

DRAFT

DRAWING NO.: **DM-3**

SHEET 3 OF 3

P:\350-080\355-081\-CAD\Dwg\Exhibit\355081-CV01-Drainage Map.dwg[INLET] LS:[2/13/2026 - swelch-murcek] - LO: 2/13/2026 1:25 PM

APPENDIX 1

10-YEAR DESIGN STORM CALCULATIONS

10-Year Storm Sewer Summary Table																			
Structure (Upstream)	Structure (Downstream)	Runoff Coefficient, C	Intensity (in/hr)	Drainage Area (AC)	Time of Concentration (min)	Peak Flow, Q (cfs)	Cumulative Peak Flow (cfs)	Pipe Material	Roughness Coefficient, n	Pipe Slope (ft/ft)	Pipe Size (in)	Pipe Velocity, V (ft/s)	Pipe Length (ft)	Invert Elevation Upstream (ft)	Invert Elevation Downstream (ft)	Rim Elevation Upstream (ft)	Hydraulic Grade Eleavtion Upstream (ft)	Rim Elevation Downstream (ft)	Hydraulic Grade Eleavtion Downstream (ft)
200	100	0.78	5.60	0.11	12.40	0.48	1.27	RCP	0.012	0.0025	15	1.00	54	858.75	858.62	862.25	859.91	861.98	859.89
201	200	0.82	6.00	0.16	10.00	0.79	0.79	RCP	0.012	0.0025	12	1.10	145	859.21	858.85	862.17	860.00	862.25	859.93
100	MH	0.82	5.40	0.06	13.90	0.27	3.56	RCP	0.012	0.0033	18	3.67	22	858.52	858.45	861.98	859.49	860.25	859.43
101	100	0.84	5.50	0.22	13.40	1.02	3.29	RCP	0.012	0.0011	18	1.97	60	858.69	858.62	862.39	859.94	861.98	859.89
102	101	0.79	5.70	0.16	12.10	0.72	2.28	RCP	0.012	0.0014	15	1.87	142	858.99	858.79	861.77	860.11	862.39	859.97
103	102	0.84	5.70	0.06	11.60	0.29	1.56	RCP	0.012	0.0025	12	1.93	54	859.22	859.09	862.01	860.22	861.77	860.17
104	103	0.47	5.90	0.12	11.00	0.33	1.27	RCP	0.012	0.0025	12	1.65	65	859.48	859.32	862.45	860.38	862.01	860.31
105	104	0.78	6.00	0.20	10.00	0.94	0.94	RCP	0.012	0.0025	12	1.49	70	859.75	859.58	862.39	860.47	862.45	860.42

APPENDIX 2

100-YEAR DESIGN STORM CALCULATIONS

100-Year Storm Sewer Summary Table																			
Structure (Upstream)	Structure (Downstream)	Runoff Coefficient, C	Intensity (in/hr)	Drainage Area (AC)	Time of Concentration (min)	Peak Flow, Q (cfs)	Cumulative Peak Flow (cfs)	Pipe Material	Roughness Coefficient, n	Pipe Slope (ft/ft)	Pipe Size (in)	Pipe Velocity, V (ft/s)	Pipe Length (ft)	Invert Elevation Upstream (ft)	Invert Elevation Downstream (ft)	Rim Elevation Upstream (ft)	Hydraulic Grade Eleavtion Upstream (ft)	Rim Elevation Downstream (ft)	Hydraulic Grade Eleavtion Downstream (ft)
200	100	0.78	8.00	0.11	11.80	0.69	1.79	RCP	0.012	0.0025	15	1.39	54	858.75	858.62	862.25	860.28	861.98	860.24
201	200	0.82	8.40	0.16	10.00	1.10	1.10	RCP	0.012	0.0025	12	1.39	145	859.21	858.85	862.17	860.46	862.25	860.32
100	MH	0.82	7.70	0.06	12.80	0.38	5.01	RCP	0.012	0.0033	18	4.84	22	858.52	858.45	861.98	859.67	860.25	859.43
101	100	0.84	7.80	0.22	12.40	1.44	4.63	RCP	0.012	0.0011	18	2.53	60	858.69	858.62	862.39	860.35	861.98	860.24
102	101	0.79	8.00	0.16	11.50	1.01	3.19	RCP	0.012	0.0014	15	2.53	142	858.99	858.79	861.77	860.73	862.39	860.40
103	102	0.84	8.10	0.06	11.20	0.41	2.18	RCP	0.012	0.0025	12	2.71	54	859.22	859.09	862.01	861.03	861.77	860.84
104	103	0.47	8.20	0.12	10.70	0.46	1.77	RCP	0.012	0.0025	12	2.23	65	859.48	859.32	862.45	861.36	862.01	861.2
105	104	0.78	8.40	0.20	10.00	1.31	1.31	RCP	0.012	0.0025	12	1.7	70	859.75	859.58	862.39	861.53	862.45	861.43

APPENDIX 3

10-YEAR 0% CLOGGED INLETS CALCULATIONS

10-Year, 0% Clogged Stormwater Results																	
Structure (Upstream)	Structure (Downstream)	Location	Runoff Coefficient, C	Intensity (in/hr)	Drainage Area (AC)	Inlet Time (min)	Peak Flow, Q (cfs)	Flow Bypassed (cfs)	Flow Captured (cfs)	Junction Type	Grate Width (ft)	Grate Length (ft)	Grate Area (sqft)	Gutter Slope	Inlet Depth (ft)	Gutter Depth (ft)	Gutter Spread (ft)
200	100	Sag	0.78	5.60	0.11	10.00	0.48	0.00	0.50	Drop Grate	2.50	3.84	9.60	0.08	0.06	0.06	8.09
201	200	Sag	0.82	6.00	0.16	10.00	0.79	0.00	0.79	Drop Grate	2.50	3.84	9.60	0.08	0.08	0.08	10.05
100	MH	Sag	0.82	5.40	0.06	10.00	0.27	0.00	0.28	Drop Grate	2.50	3.84	9.60	0.08	0.04	0.04	6.26
101	100	Sag	0.84	5.50	0.22	10.00	1.02	0.00	1.27	Drop Grate	2.50	3.84	9.60	0.08	0.10	0.10	12.88
102	101	On Grade	0.79	5.70	0.16	10.00	0.72	0.16	0.62	Drop Grate	2.50	3.84	9.60	0.08	0.10	0.10	11.10
103	102	On Grade	0.84	5.70	0.06	10.00	0.29	0.03	0.27	Drop Grate	2.50	3.84	9.60	0.08	0.07	0.07	8.10
104	103	Sag	0.47	5.90	0.12	10.00	0.33	0.00	0.33	Drop Grate	2.50	3.84	9.60	0.08	0.04	0.04	6.72
105	104	Sag	0.78	6.00	0.20	10.00	0.94	0.00	0.96	Drop Grate	2.50	3.84	9.60	0.08	0.09	0.09	11.12

APPENDIX 4

10-YEAR 50% CLOGGED INLETS CALCULATIONS

10-Year, 50% Clogged Stormwater Results																	
Structure (Upstream)	Structure (Downstream)	Location	Runoff Coefficient, C	Intensity (in/hr)	Drainage Area (AC)	Inlet Time (min)	Peak Flow, Q (cfs)	Flow Bypassed (cfs)	Flow Captured (cfs)	Junction Type	Grate Width (ft)	Grate Length (ft)	Grate Area (sqft)	Gutter Slope	Inlet Depth (ft)	Gutter Depth (ft)	Gutter Spread (ft)
200	100	Sag	0.78	5.60	0.11	10.00	0.48	0.00	0.50	Drop Grate	1.25	1.92	2.40	0.08	0.07	0.09	10.11
201	200	Sag	0.82	6.00	0.16	10.00	0.79	0.00	0.79	Drop Grate	1.25	1.92	2.40	0.08	0.11	0.12	13.23
100	MH	Sag	0.82	5.40	0.06	10.00	0.27	0.00	0.28	Drop Grate	1.25	1.92	2.40	0.08	0.05	0.06	7.22
101	100	Sag	0.84	5.50	0.22	10.00	1.02	0.00	1.65	Drop Grate	1.25	1.92	2.40	0.08	0.18	0.20	20.8
102	101	On Grade	0.79	5.70	0.16	10.00	0.72	0.53	0.35	Drop Grate	1.25	1.92	2.40	0.08	0.09	0.10	11.10
103	102	On Grade	0.84	5.70	0.06	10.00	0.29	0.13	0.17	Drop Grate	1.25	1.92	2.40	0.08	0.05	0.07	8.10
104	103	Sag	0.47	5.90	0.12	10.00	0.33	0.00	0.33	Drop Grate	1.25	1.92	2.40	0.08	0.06	0.07	7.94
105	104	Sag	0.78	6.00	0.20	10.00	0.94	0.00	0.96	Drop Grate	1.25	1.92	2.40	0.08	0.12	0.14	14.93

TRAFFIC IMPACT STUDY

FOR THE PROPOSED
MCDONALD'S RESTAURANT

NSN 45201 (013-1263)

TOWN OF BROWNSBURG
HENDRICKS COUNTY, INDIANA

Prepared For:
McDonald's USA, LLC
Ms. Amy Switzer
110 N Carpenter Street
Chicago, Illinois 60607
(913) 660-2205
Amy.Switzer@us.mcd.com

Prepared By:
Civil & Environmental Consultants, Inc.
Mr. Chris A. Droznek, P.E., PTP
700 Cherrington Parkway
Moon Township, Pennsylvania 15108
(412) 429-2324
cdroznek@cecinc.com

October 2025

CEC PROJECT # 355-081

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APPENDIX E – TRIP GENERATION CALCULATIONS

APPENDIX F –OPENING YEAR 2026 BUILD CAPACITY ANALYSIS

TRAFFIC IMPACT ASSESSMENT
FOR THE PROPOSED
MCDONALD'S RESTAURANT
TOWN OF BROWNSBURG, HENDRICKS, INDIANA

EXECUTIVE SUMMARY

General Overview of the Development

- Development is to occur at southeast corner of the intersection S Green Street and Northfield Dr, in the Town of Brownsburg, Hendricks County, Indiana.
- Development to consist of the construction of the following:
  - 4,300 s.f. fast food restaurant with drive-through.
- Access to the development proposed via the following:
  - A right-in/right-out only access road is to be constructed connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center).
  - A enter only site access driveway to the proposed access road, approximately 115' south of Northfield Drive (measured center-to-center).
  - An exit only site access driveway to the proposed access road, approximately 250' south Northfield Drive (measured center-to-center).
  - A full access site driveway connecting the proposed McDonald's restaurant to the under construction Christian Brothers Automotive Service Center. A full movement sit driveway to the automotive center is under construction and can be utilized by the proposed McDonald's restaurant.

List of Study Intersections

- S Green Street and Northfield Drive

Trip Generation and Distribution

- Trip generation of the proposed McDonald's Restaurant was determined using rates and equations contained in the Institute of Transportation Engineers (ITE) publication *Trip Generation*, 12th Edition, 2025:
  - Land Use Code 934, *fast-food restaurant with drive-through*, was used to determine the trip generation of the proposed 4,300 s.f. development.
- Anticipated Peak Hour Trip Generation:
  - AM Peak Hour
    - 71 New Primary Trips (36 entering and 35 exiting)
    - 72 Pass-by Trips (37 entering and 35 exiting)
    - 143 total trips (73 entering and 70 existing)

    - PM Peak Hour
        - 61 New Primary Trips (32 entering and 29 exiting)
        - 75 Pass-by Trips (39 entering and 36 exiting)
        - 136 total trips (71 entering and 65 existing)
- Trip distribution for the proposed development was developed based on the existing traffic patterns observed at the intersection of S Green Street and Northfield Drive.

Conclusions/Recommendations

This study has concluded that the construction of the proposed McDonald's Restaurant will have no significant impact on the operation of the adjacent study intersection. Therefore, CEC recommends the following:

- Construct a right-in/right-out only access road connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center). One (1) lane for ingress and one (1) lane for egress should be provided. The access road should be controlled by a Stop sign on the northbound approach to Northfield Drive.
- Construct a entrance only site access driveway from the Access Road which provides one (1) lane for ingress traffic.
- Construct a exit only site access driveway to the Access Road which provides one (1) lane for egress traffic. The driveway should be controlled by a Stop sign on the site driveway egress approach to the Access Road.
- Construct a full access driveway connecting the proposed McDonald's restaurant to the proposed Christian Brothers Automotive Service Center. The drive should provide one (1) lane for ingress traffic and one (1) lane for egress traffic.
- The proposed site driveways and access roads should be constructed to provide sight triangles that are free of sight obstructions, such as parked vehicles, buildings, walls, hedges, bushes, low growing trees, etc. to maintain a clear line of sight to potential conflicting vehicles.

TRAFFIC IMPACT STUDY
FOR THE PROPOSED
MCDONALD'S RESTAURANT
TOWN OF BROWNSBURG, HENDRICKS COUNTY, INDIANA

Civil & Environmental Consultants, Inc. (CEC) has completed this Traffic Impact Study for the proposed McDonald's Restaurant Development to be located at the southeast corner of the intersection of S Green Street and Northfield Dr, in the Town of Brownsburg, Hendricks County Indiana.

PROJECT DESCRIPTION/DATA COLLECTION/EXISTING ROADWAY DESCRIPTION

PROJECT DESCRIPTION

As shown in Figure 1, the proposed McDonald's Restaurant Development is located at the southeast corner of the intersection of S Green Street and Northfield Drive, on the Town of Brownsburg, Hendricks County, Indiana.

Development to consist of the construction of the following:

- 4,300 s.f. McDonald's Restaurant with drive-through

Access to the development proposed via the following:

- A right-in/right-out only access road is to be constructed connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center).
- A enter only site access driveway to the proposed access road, approximately 115' south of Northfield Drive (measured center-to-center).
- An exit only site access driveway to the proposed access road, approximately 250' south Northfield Drive (measured center-to-center).
- A full access site driveway connecting the proposed McDonald's restaurant to the under construction Christian Brothers Automotive Service Center. A full movement sit driveway to the automotive center is under construction and can be utilized by the proposed McDonald's restaurant.

A copy of the site plan for the proposed McDonald's Restaurant Development has been included with this report as Figure 2. The following intersection was selected for study:

- S Green Street and Northfield Drive.

DATA COLLECTION

Turning movement counts were performed at the existing study intersection on Wednesday, September 3, 2025, a typical midweek day. - These turning movement counts were performed from 7:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 6:00 P.M., as these time periods were assumed to include the weekday A.M. and weekday P.M. peak hours of traffic within the study area.

The overall peak hours determined from these turning movement count calculations are as follows:

- A.M. Peak Hour – 7:00 A.M. – 8:00 A.M.
- P.M. Peak Hour – 4:15 P.M. – 5:15 P.M.

The existing 2025 peak hour traffic volumes are summarized in Figure 3. Summaries of the traffic volume data collected at each of the existing study intersection has been included in Appendix A to this report.

EXISTING CONDITIONS

A field reconnaissance of the study area was conducted by CEC to obtain information such as roadway widths, roadway grades, and posted speed limits within the environs of the study intersection. A description of the study roadways is as follows:

EXISTING ROADWAYS

S Green Street – At its intersection with Northfield Drive, S Green Street is a state-owned, other principal arterial according to the INDOT roadway functional classification maps. S Green Street is a 2-lane roadway providing one lane of travel in each direction. At its intersection with Northfield Drive, northbound/southbound exclusive left turn lanes and exclusive right turn lanes are provided. The posted speed limit within the study area is 40 miles per hour. Sidewalks and pedestrian accommodations are provided for each approach.

Northfield Drive – At its intersection with S Green Street, Northfield Drive is a median separated local road. Generally, Northfield Drive provides two lanes of travel on the eastern side and one lane of travel on the western side of the intersection in the study area. At its intersection with S Green Street, Northfield Drive provides eastbound/westbound exclusive left turn lanes and an exclusive right turn lane for the westbound approach. The posted speed limit of Northfield Drive is 30 miles per hour to the east and 25 miles per hour to the west. Sidewalks and pedestrian accommodations are provided for each approach.

EXISTING STUDY INTERSECTION

S Green Street and Northfield Drive – The intersection of S Green Street with Northfield Drive is controlled by a fully actuated traffic signal. The northbound/southbound left turn movements have protected/permitted phasing. The eastbound left turn movement provides protected phasing and westbound left turn movement provides protected/permitted phasing. The northbound, southbound, and westbound approaches also provide protected overlap right turn phases.

Signalized pedestrian crossing equipment, crosswalks, and curb ramps are provided for each approach.

EXISTING YEAR 2025 CONDITION CAPACITY CALCULATIONS

Capacity calculations were performed for the study intersection using existing 2025 weekday A.M. and weekday P.M. peak hour volumes and conditions and the methodologies published in the *Highway Capacity Manual*, Seventh Edition, by the Transportation Research Board. This methodology determines how well an intersection, approach to an intersection, or movement at an intersection operates, and assigns to it a Level of Service (LOS) A through F, with LOS A representing the best operating conditions and LOS F, the worst. Detailed definitions of LOS have been included in Appendix B to this report. The study intersection was evaluated using HCS 7th Edition criteria

Synchro version 12 was used for the capacity analysis. Signal timings were determined based on the traffic count video files.

The results of the capacity calculations performed using existing year 2025 weekday A.M. and weekday P.M. peak hour traffic volumes and conditions are presented in Table 1 and Table 2 for the weekday A.M. peak hour and the weekday P.M. peak hour, respectively.

Copies of the capacity calculations are included in Appendix C to this report.

ADDITIONAL TRAFFIC FROM ADJACENT DEVELOPMENTS

To the south of the proposed McDonalds an Automobile Parts and Service Center is currently being constructed with a full movement site access driveway connecting to S Green Street. As part of this develomenbt, a southbound left turn lane is to be provided on S Green Street entering the driveway. As a result, the northbound left turn lane on S Green Street at Northfield Drive will be modified to accommodate this new southbound left turn lane at the driveway. In order to account for trips associated with the auto service center, site trips were projected based upon data published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, Twelfth Edition, 2025. Land Use Code 943, *Automobile Parts and Service Center*, was used.

The proposed trips for the development have been included in Figure 4 and added to the opening year 2026 no-build and build traffic volumes.

The trip generation for the proposed site is included in Table 4.

OPENING YEAR 2026 NO-BUILD TRAFFIC VOLUMES

Opening year for the proposed development is estimated to be 2026. Therefore, existing 2025 volumes have been projected to year 2026 conditions. An assumed 1.0% linear growth rate was applied. The resultant opening year 2026 peak hour traffic volumes, which include the trips associated with the adjacent auto service center, are summarized in Figure 5.

OPENING YEAR 2026 NO-BUILD CONDITION CAPACITY CALCULATIONS

The results of the capacity calculations performed using Opening Year 2026 No-Build (without development) weekday A.M. and weekday P.M. peak hour traffic volumes and conditions are presented in Table 1 and Table 2 for the weekday A.M. peak hour and the weekday P.M. peak hour, respectively. For analysis purposes, the existing traffic signal observed cycle length was held constant while the phase splits were optimized in the Synchro software.

Copies of the capacity calculations performed using Opening Year 2026 No-Build (without development) weekday A.M. and weekday P.M. peak hour traffic volumes are included in Appendix D to this report.

SITE TRAFFIC GENERATION AND DISTRIBUTION

VEHICULAR TRIP GENERATION

Vehicular trip generation for the proposed McDonald's Restaurant Development was projected based upon data published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, Twelfth Edition, 2025.

Land Use Code 934, *fast-food restaurant with drive thru*, was used to estimate the trip generation of the proposed 4,300 s.f. development. It should also be noted that not all traffic entering or exiting a site is not necessarily new traffic added to the street system. The actual amount of new traffic is dependent upon the purpose of the trip and the route used from its origin to its destination. Developments such as the proposed restaurant attract a portion of their trips from traffic passing the site on the way from an origin to an ultimate destination. These trip types are classified as pass-by trips which do not add new traffic to the adjacent street system and may be reduced from the total external trips generated by a study site.

Using this methodology, the development can be anticipated to generate the following trips:

- Anticipated Peak Hour Trip Generation:
  - AM Peak Hour
    - 71 New Primary Trips (36 entering and 35 exiting)
    - 72 Pass-by Trips (37 entering and 35 exiting)
    - 143 total trips (73 entering and 70 existing)
  - PM Peak Hour
    - 61 New Primary Trips (32 entering and 29 exiting)
    - 75 Pass-by Trips (39 entering and 36 exiting)
    - 136 total trips (71 entering and 65 existing)

The total site-generated trips for the proposed McDonald's Restaurant Development are summarized in Table 3. Copies of the trip generation calculations are included in Appendix E to this report.

SITE TRAFFIC DISTRIBUTION

Trip distribution for the proposed development was developed based on the existing roadway patterns. Using this methodology, the estimated trip distribution includes approximately 10% of new trips destined to/from the east via the Northfield with S Green Street intersection, 10% of new trips destined to/from the west via the Northfield Drive with S Green Street intersection 40% of the new trips destined to/from the north via the S Green Street with Northfield Drive intersection and 40% of the new trips destined to/from the south via the S Green Street with Northfield Drive.

Pass-by trips were calculated based on the individual peak hour movements past each proposed site access driveway as well as the intersection of S Green Street and Northfield Drive.

The anticipated distribution of new and pass-by trips to be generated by the proposed McDonald's Restaurant Development is presented in Figures 6 & 7.

The forecasted trips to be added to each of the study intersections by the proposed McDonald's Restaurant Development are presented in Figure 8, 9, and 10.

FORECASTED OPENING YEAR 2026 BUILD (WITH DEVELOPMENT) PEAK HOUR TRAFFIC VOLUMES

Opening year 2026 build (with development) traffic volumes at the study intersections were determined by adding the forecasted trips to be added to each of the study intersections by the proposed McDonald's Restaurant Development to the existing year 2026 no-build traffic volumes at each of the study intersections. The resultant forecasted opening year 2026 build (with development) traffic volumes at each of the study intersection are presented in Figure 11.

2026 BUILD CONDITIONS (WITH DEVELOPMENT) CAPACITY CALCULATIONS

The results of the capacity calculations performed using forecasted opening year 2026 build (with development) weekday A.M. and weekday P.M. peak hour volumes and conditions are summarized in Table 1 and Table 2 for the weekday A.M. peak hour and the weekday P.M. peak hour, respectively. The proposed site driveway intersections (build conditions) were analyzed assuming an intersection peak hour factor of .92 and a heavy vehicle percentage of two (2) for new movements. For analysis purposes, the existing traffic signal observed cycle length was held constant while the phase splits were optimized in the Synchro software.

The results of the capacity calculations performed for each of the existing study intersections using forecasted opening year 2026 build (with development) peak hour volumes revealed no significant changes in Level of Service or queue at any of the intersections.

All projected 95th percentile queues are expected to be contained within the existing storage lengths provided. The need for additional auxiliary left turn lanes were not evaluated since a southbound left turn lane on S Green Street will be provided at the access drive.

Copies of the capacity calculations performed using forecasted opening year 2026 build (with development) weekday A.M. and weekday P.M. peak hour traffic volumes are included in Appendix F to this report.

CONCLUSIONS/RECOMMENDATIONS

This study has concluded that the construction of the proposed McDonald's Restaurant Development will have no significant impact on the operation of the adjacent study intersections.

The results of the capacity calculations performed for each of the existing study intersections revealed no decreases in movement/approach Level of Service at any of the existing intersections.

Therefore, CEC recommends the following:

- Construct a right-in/right-out only access road connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center). One (1) lane for ingress and one (1) lane for egress should be provided. The access road should be controlled by a Stop sign on the northbound approach to Northfield Drive.
- Construct a entrance only site access driveway from the Access Road which provides one (1) lane for ingress traffic.
- Construct a exit only site access driveway to the Access Road which provides one (1) lane for egress traffic. The driveway should be controlled by a Stop sign on the site driveway egress approach to the Access Road.
- Construct a full access driveway connecting the proposed McDonald's restaurant to the proposed Christian Brothers Automotive Service Center. The drive should provide one (1) lane for ingress traffic and one (1) lane for egress traffic.
- The proposed site driveways and access roads should be constructed to provide sight triangles that are free of sight obstructions, such as parked vehicles, buildings, walls, hedges, bushes, low growing trees, etc. to maintain a clear line of sight to potential conflicting vehicles.

A Technical Appendix containing summaries of all counts, analyses and calculations has been included with this report.

TABLES

TABLE 1

LEVEL OF SERVICE - WEEKDAY A.M. PEAK HOUR CONDITIONS [(1)]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

Intersection / Direction	Approach / Movement	2025 Existing					2026 Opening Year No Build					2026 Opening Year Build (With Development)				
		LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	Storage Length	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)
INTERSECTION	**S Green Street and Northfield Drive**															
NORTHFIELD DRIVE EASTBOUND	**Left Turn**	B	(14.6)	0.14	43	340	B	(14.6)	0.14	44	340	B	(15.0)	0.14	45	340
	Through/Right	B	(17.1)	0.41	70	--	B	(17.2)	0.41	71	--	B	(18.0)	0.44	77	--
	Approach	B	(16.1)	--	--	--	B	(16.2)	--	--	--	B	(16.9)	--	--	--
NORTHFIELD DRIVE WESTBOUND	**Left Turn**	C	(25.4)	0.50	36	300	C	(25.5)	0.50	36	300	C	(25.6)	0.51	41	300
	Through	B	(16.2)	0.07	21	--	B	(16.3)	0.07	21	--	B	(16.7)	0.07	21	--
	Right Turn	B	(15.0)	0.17	6	--	B	(15.1)	0.17	6	--	B	(15.2)	0.16	5	--
	Approach	B	(18.8)	--	--	--	B	(18.9)	--	--	--	B	(19.4)	--	--	--
S GREEN STREET NORTHBOUND	**Left Turn**	B	(10.4)	0.02	7	275	B	(10.4)	0.02	7	200	B	(10.4)	0.03	9	200
	Through	B	(14.5)	0.71	222	--	B	(14.6)	0.71	225	--	B	(14.8)	0.72	238	--
	Right Turn	A	(9.6)	0.11	9	380	A	(9.6)	0.12	9	380	A	(9.6)	0.11	9	380
	Approach	B	(13.8)	--	--	--	B	(13.9)	--	--	--	B	(14.1)	--	--	--
S GREEN STREET SOUTHBOUND	**Left Turn**	A	(9.9)	0.12	23	415	A	(9.9)	0.12	23	415	A	(10.0)	0.14	26	415
	Through	B	(12.6)	0.64	221	--	B	(12.7)	0.65	226	--	B	(12.7)	0.65	235	--
	Right Turn	A	(7.8)	0.05	0	585	A	(7.7)	0.05	0	585	A	(7.7)	0.05	0	585
	Approach	B	(12.0)	--	--	--	B	(12.1)	--	--	--	B	(12.1)	--	--	--
OVERALL INTERSECTION		B	(13.8)	--	--	--	B	(13.8)	--	--	--	B	(14.1)	--	--	--
INTERSECTION	**S Green Street and Driveway**															
DRIVEWAY WESTBOUND	**Approach**	--	--	--	--	--	B	(12.7)	0.01	0	--	C	(15.5)	0.17	15	--
S GREEN STREET SOUTHBOUND	**Left Turn**	--	--	--	--	--	A	(8.2)	0.01	0	--	A	(8.3)	0.04	3	--
INTERSECTION	**Northfield Drive and Access Road**															
ACCESS ROAD NORTHBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.8)	0.01	0	--
INTERSECTION	**Access Road and Site Driveway 2**															
SITE DRIVEWAY 2 WESTBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.6)	0.01	0	--

(1) Level of Service and vehicular delay calculated using methodologies published by the Transportation Research Board in their Highway Capacity Manual. Synchro software was utilized for the calculations.

TABLE 2

LEVEL OF SERVICE - WEEKDAY P.M. PEAK HOUR CONDITIONS [(1)]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

Intersection / Direction	Approach / Movement	2025 Existing					2026 Opening Year No Build					2026 Opening Year Build (With Development)				
		LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	Storage Length	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)
INTERSECTION	**S Green Street and Northfield Drive**															
NORTHFIELD DRIVE EASTBOUND	**Left Turn**	B	(16.3)	0.12	37	340	B	(16.5)	0.12	37	340	B	(16.7)	0.13	37	340
	Through/Right	B	(19.2)	0.34	49	--	B	(19.4)	0.34	50	--	B	(19.9)	0.36	53	--
	Approach	B	(18.0)	--	--	--	B	(18.2)	--	--	--	B	(18.6)	--	--	--
NORTHFIELD DRIVE WESTBOUND	**Left Turn**	C	(24.6)	0.56	60	300	C	(24.7)	0.56	61	300	C	(25.1)	0.57	64	300
	Through	B	(18.2)	0.24	54	--	B	(18.3)	0.24	54	--	B	(18.5)	0.24	54	--
	Right Turn	B	(15.8)	0.18	10	--	B	(15.9)	0.18	10	--	B	(15.9)	0.17	10	--
	Approach	B	(19.8)	--	--	--	B	(20.0)	--	--	--	C	(20.3)	--	--	--
S GREEN STREET NORTHBOUND	**Left Turn**	B	(10.3)	0.09	16	275	B	(10.4)	0.09	16	200	B	(10.5)	0.10	17	200
	Through	B	(14.3)	0.69	248	--	B	(14.3)	0.70	251	--	B	(14.7)	0.71	260	--
	Right Turn	A	(8.8)	0.11	10	380	A	(8.7)	0.11	11	380	A	(8.8)	0.11	11	380
	Approach	B	(13.4)	--	--	--	B	(13.4)	--	--	--	B	(13.7)	--	--	--
S GREEN STREET SOUTHBOUND	**Left Turn**	A	(9.8)	0.14	26	415	A	(9.8)	0.15	27	415	A	(9.9)	0.16	29	415
	Through	B	(14.5)	0.76	297	--	B	(14.6)	0.76	302	--	B	(14.8)	0.77	310	--
	Right Turn	A	(8.4)	0.11	11	585	A	(8.4)	0.11	11	585	A	(8.5)	0.11	11	585
	Approach	B	(13.5)	--	--	--	B	(13.5)	--	--	--	B	(13.6)	--	--	--
OVERALL INTERSECTION		B	(14.5)	--	--	--	B	(14.6)	--	--	--	B	(14.8)	--	--	--
INTERSECTION	**S Green Street and Driveway**															
DRIVEWAY WESTBOUND	**Approach**	--	--	--	--	--	C	(15.8)	0.02	3	--	C	(20.2)	0.23	23	--
S GREEN STREET SOUTHBOUND	**Left Turn**	--	--	--	--	--	A	(8.5)	0.01	0	--	A	(8.6)	0.03	3	--
INTERSECTION	**Northfield Drive and Access Road**															
ACCESS ROAD NORTHBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.8)	0.00	0	--
INTERSECTION	**Access Road and Site Driveway 2**															
SITE DRIVEWAY 2 WESTBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.6)	0.01	0	--

(1) Level of Service and vehicular delay calculated using methodologies published by the Transportation Research Board in their Highway Capacity Manual. Synchro software was utilized for the calculations.

TABLE 3

ANTICIPATED TRIP GENERATION SUMMARY [1]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

ITE Land Use Code	Description	Size	Time Period	New Trips			Pass-by Trips			Total Trips		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
934	Fast Food Restaurant with Drive Through	4,300 sf	Weekday 24 Hour	--	--	--	--	--	--	963	964	1,927
			Weekday A.M. Peak Hour	36	35	71	37	35	72	73	70	143
			Weekday P.M. Peak Hour	32	29	61	39	36	75	71	65	136

(1) Anticipated trip generation calculated based on the rates published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, 12th Edition, 2025.

TABLE 4

ANTICIPATED TRIP GENERATION SUMMARY FROM PROPOSED ADJACENT DEVELOPEMENT[(1)]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

ITE Land Use Code	Description	Size	Time Period	New Trips			Pass-by Trips			Total Trips		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
943	Automobile Parts and Service Center	5,361 sf	Weekday 24 Hour	--	--	--	--	--	--	44	45	89
			Weekday A.M. Peak Hour	7	3	10	0	0	0	7	3	10
			Weekday P.M. Peak Hour	4	7	11	0	0	0	4	7	11

(1) Anticipated trip generation calculated based on the rates published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, 12th Edition, 2025.

FIGURES



- COUNT LOCATIONS

NORTH

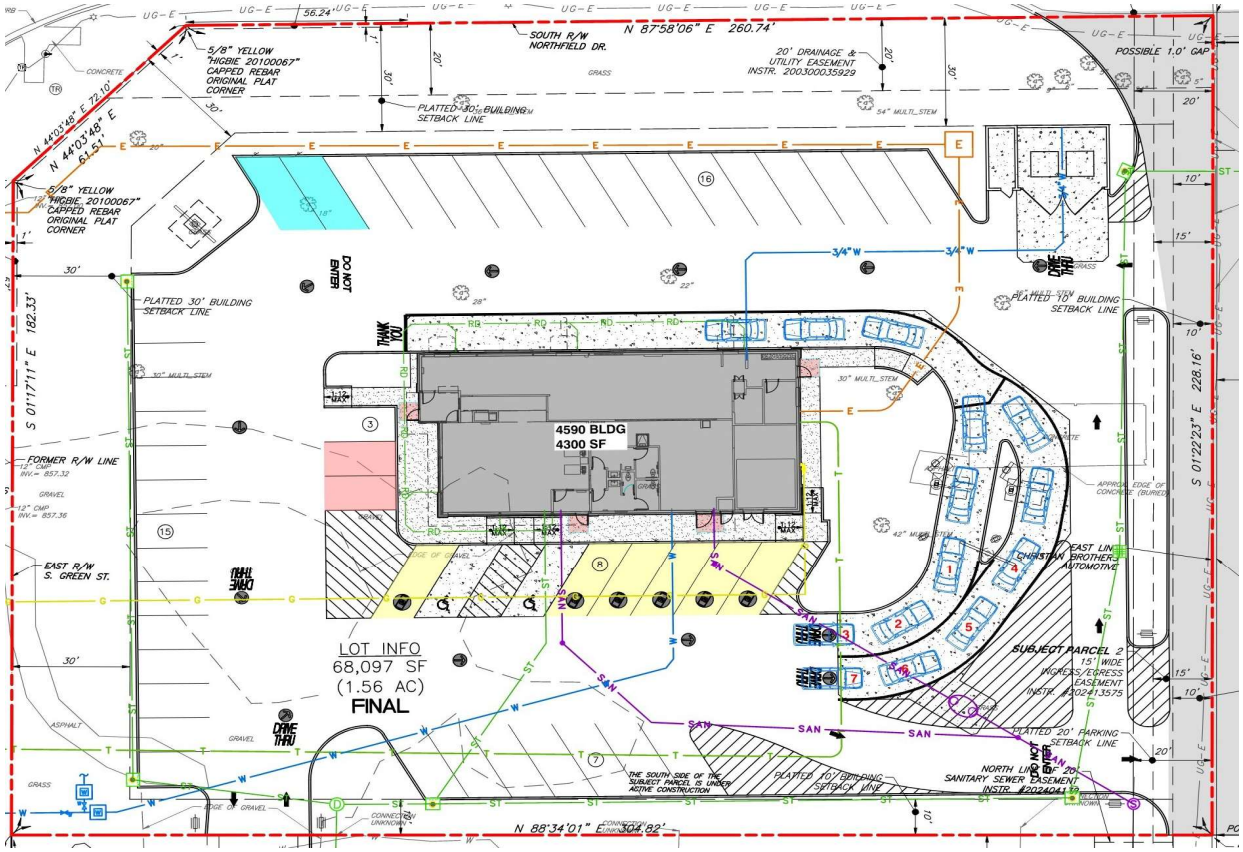
Civil & Environmental Consultants, Inc.

700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

Site Location

DRAWN BY:	tpz	CHECKED BY:	cad	APPROVED BY:	cad	FIGURE NO.:	1
DATE:	October 2025	DWG SCALE:	nts	PROJECT NO:	355-081		



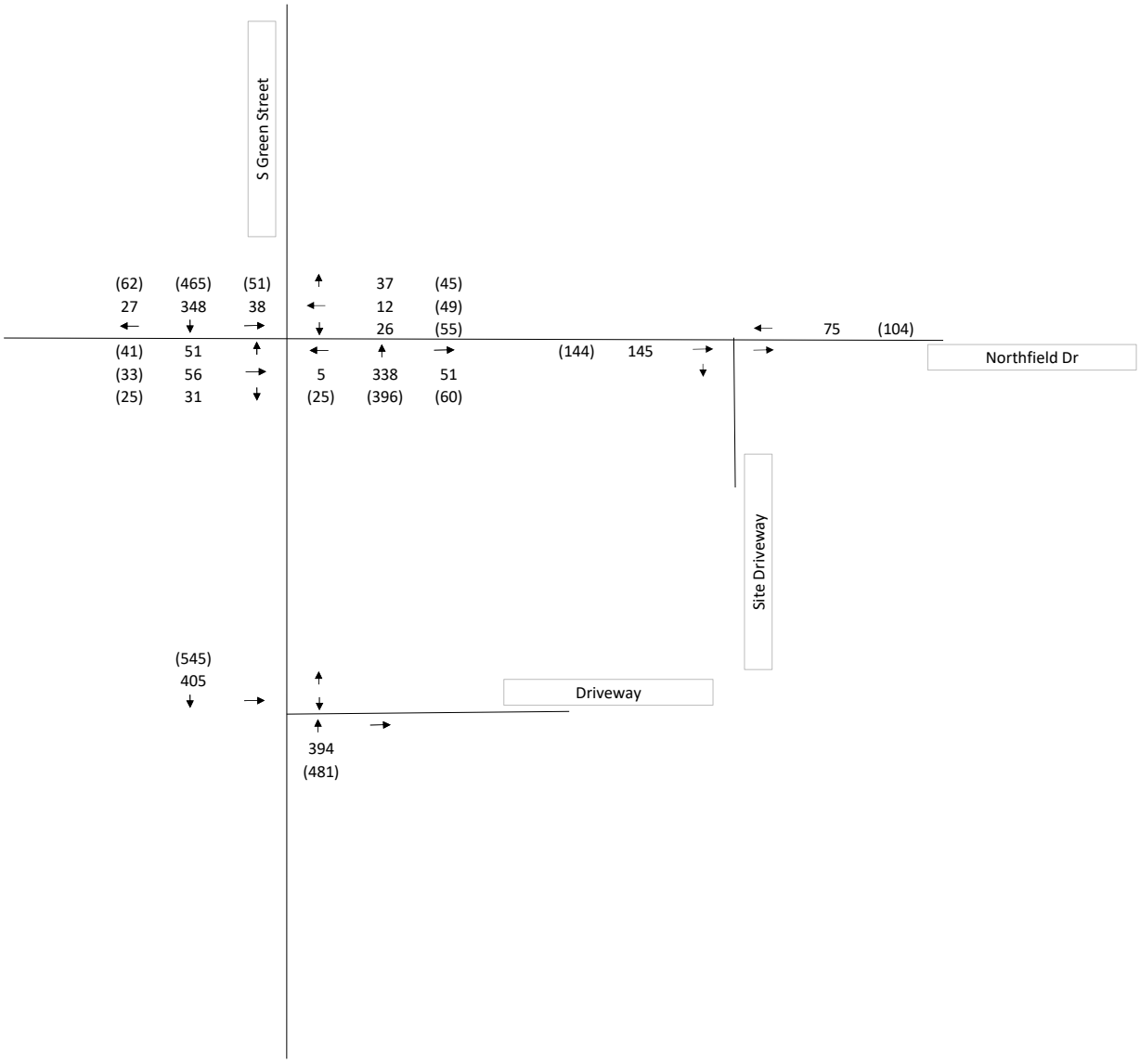
NORTH

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

Site Plan

DRAWN BY:	tpz	CHECKED BY:	cad	APPROVED BY:	cad	FIGURE NO.:	2
DATE:	October 2025	DWG SCALE:	nts	PROJECT NO:	355-081		



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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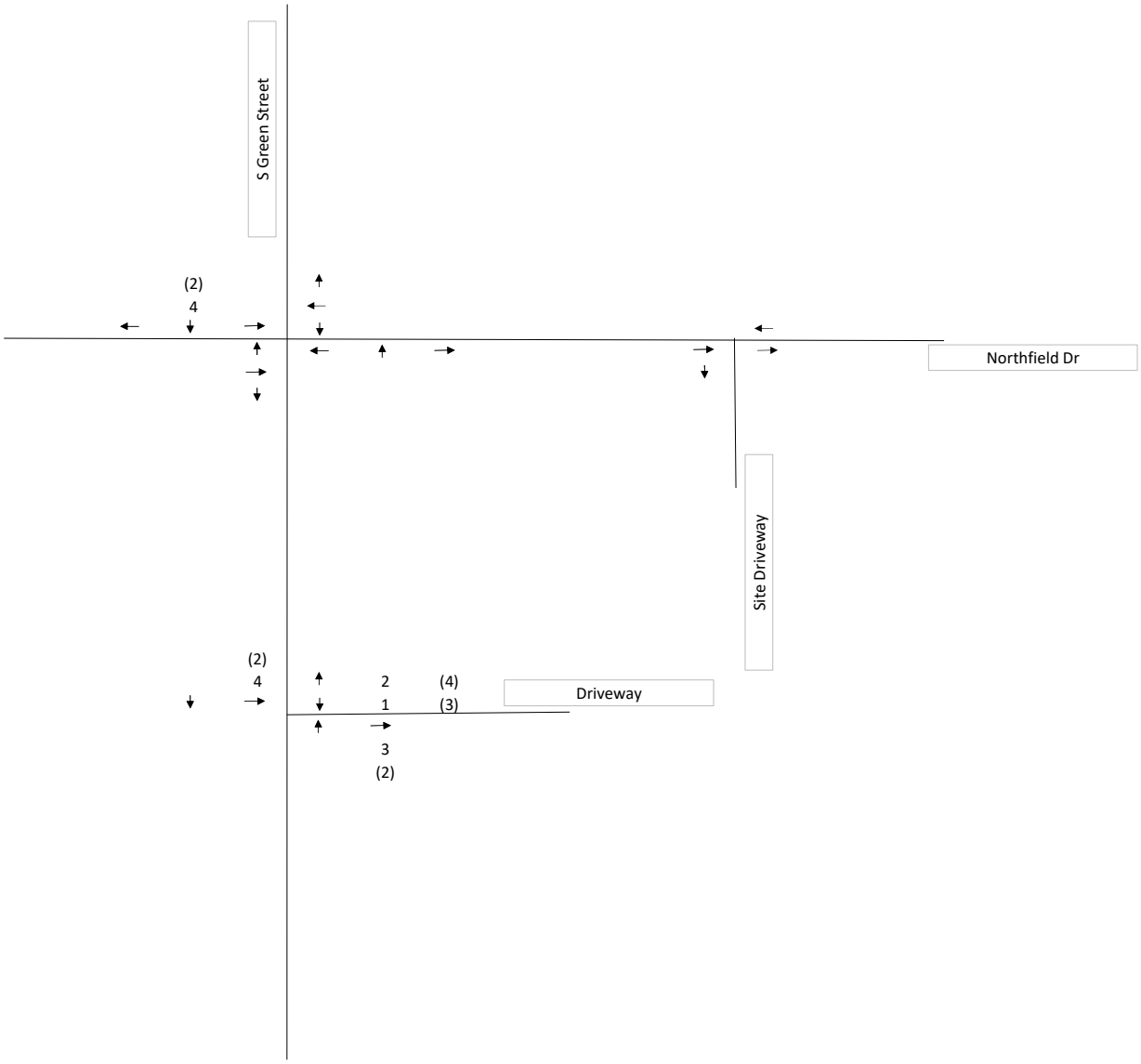
www.cecinc.com

Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

2025 Existing Conditions
Peak Hour Traffic Volumes

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 3
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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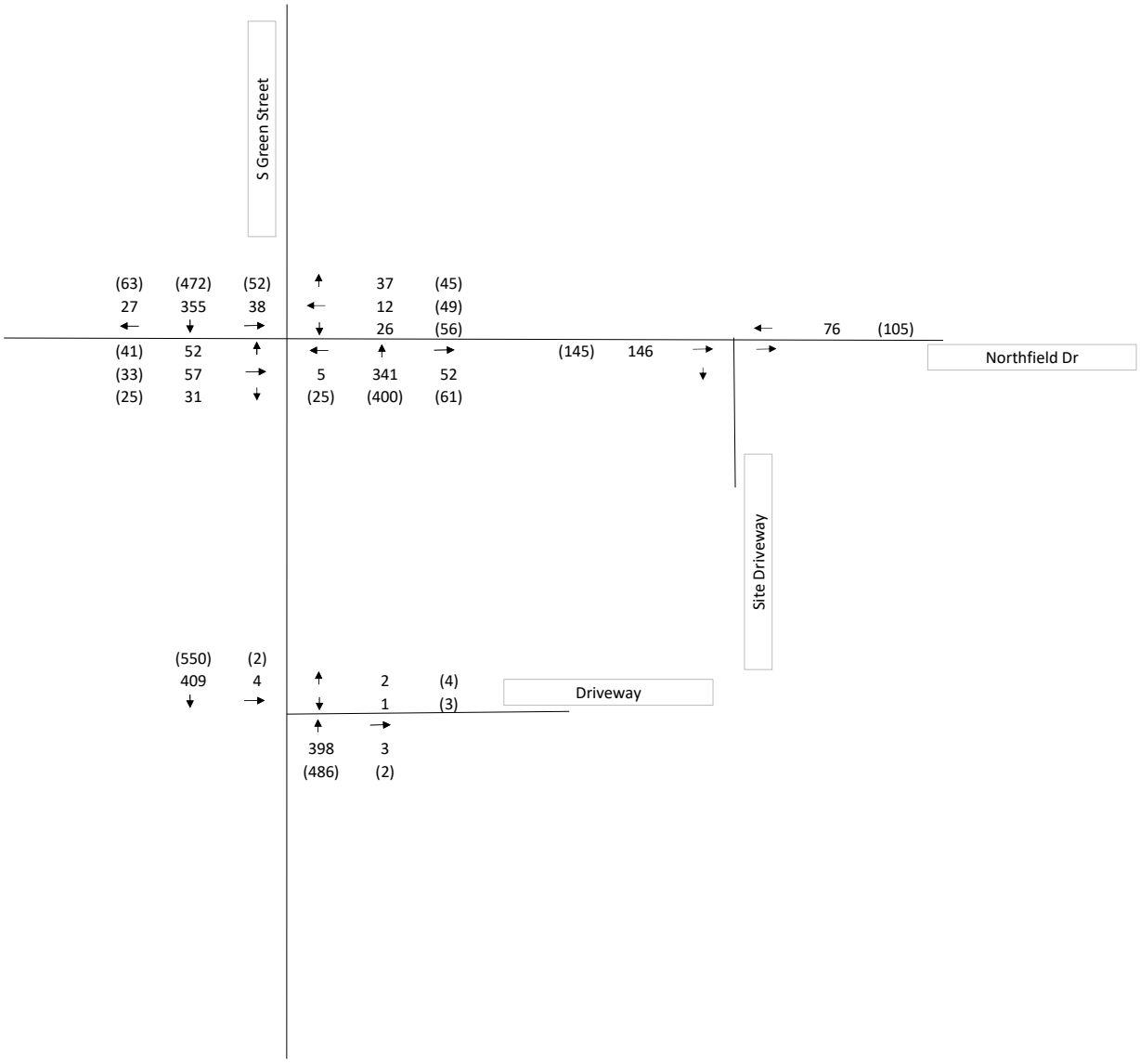
Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

Additional Traffic From Adjacent Auto Repair Under Construction

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 4
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

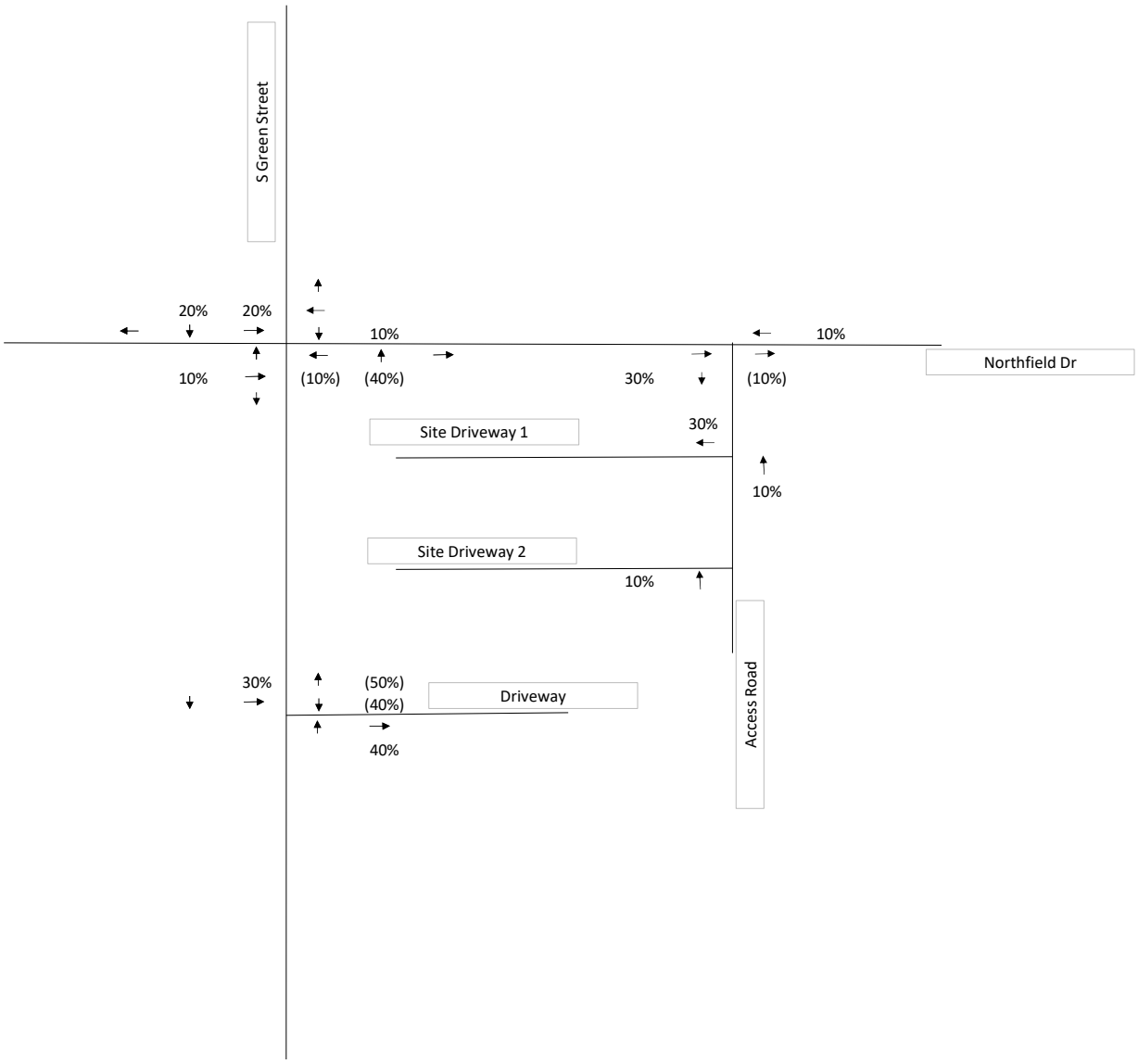
Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

2026 Opening Year No Build
Peak Hour Traffic Volumes

tpz
October 2025

cad
nts

cad
355-081



NORTH

Legend:

12% - Arrival Trip Distribution

(12%) - Departure Trip Distribution

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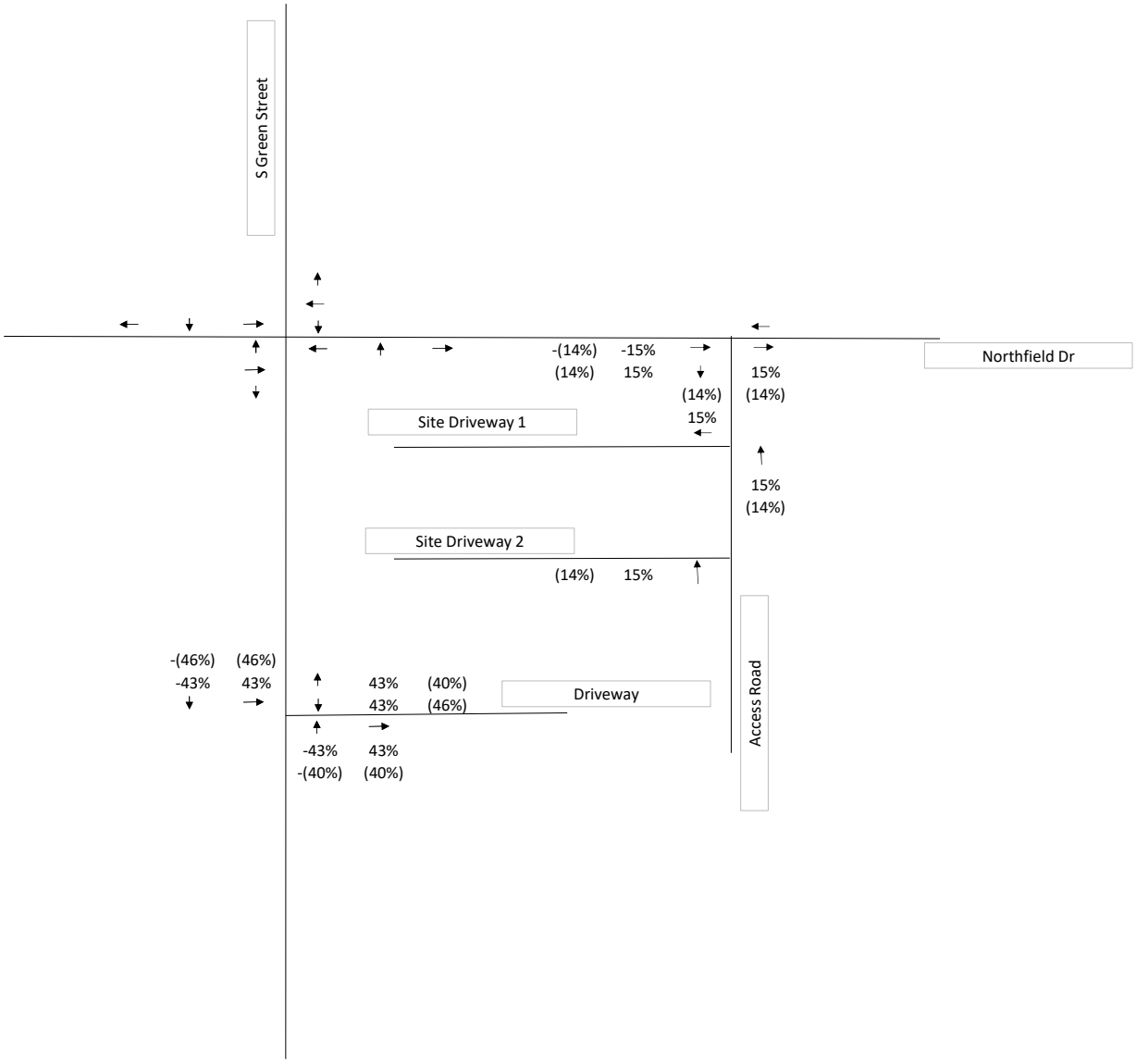
Trip Distribution

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 6
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



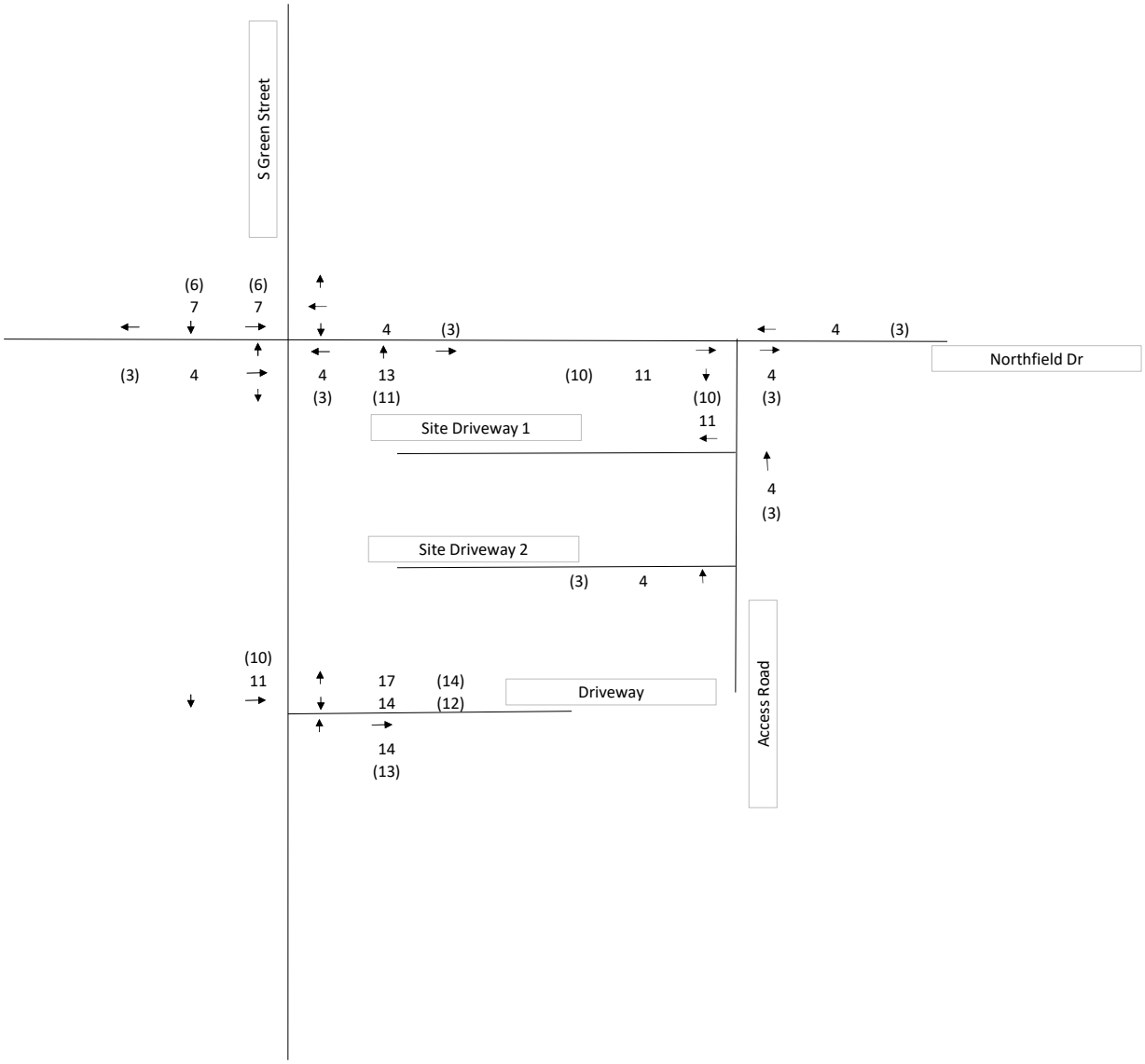
NORTH

Legend:
12% - AM Pass-By Distribution
(12%) - PM Pass-By Distribution

Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

Pass-By Trip Distribution

tpz | cad | cad
October 2025 | nts | 355-081



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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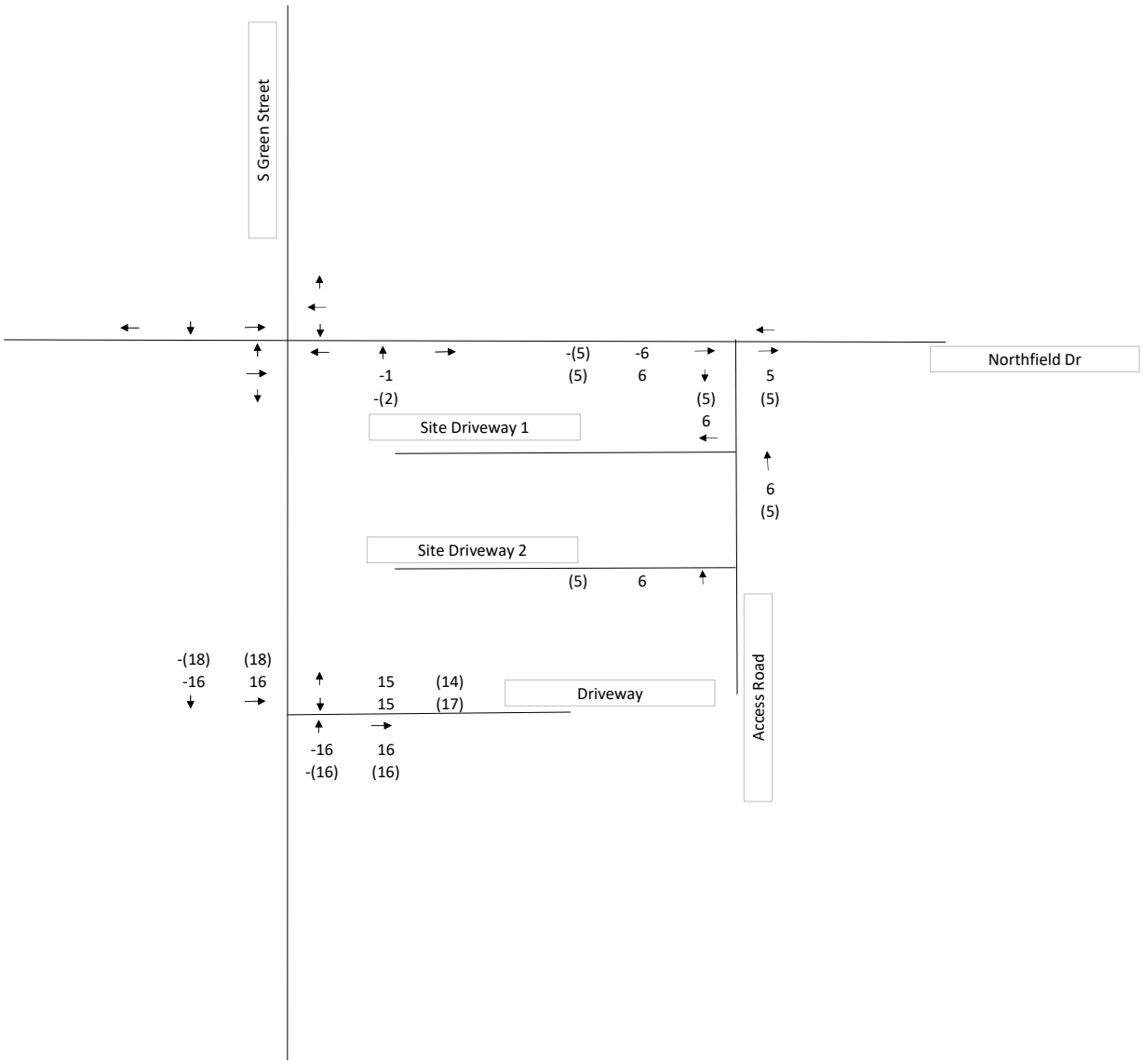
New Trips

DRAWN BY:	tpz	CHECKED BY:	cad	APPROVED BY:	cad	FIGURE NO.:	8
DATE:	October 2025	DWG SCALE:	nts	PROJECT NO:	355-081		



NORTH

Legend:

12 - AM Peak Hour Traffic Volume

(12) - PM Peak Hour Traffic Volume

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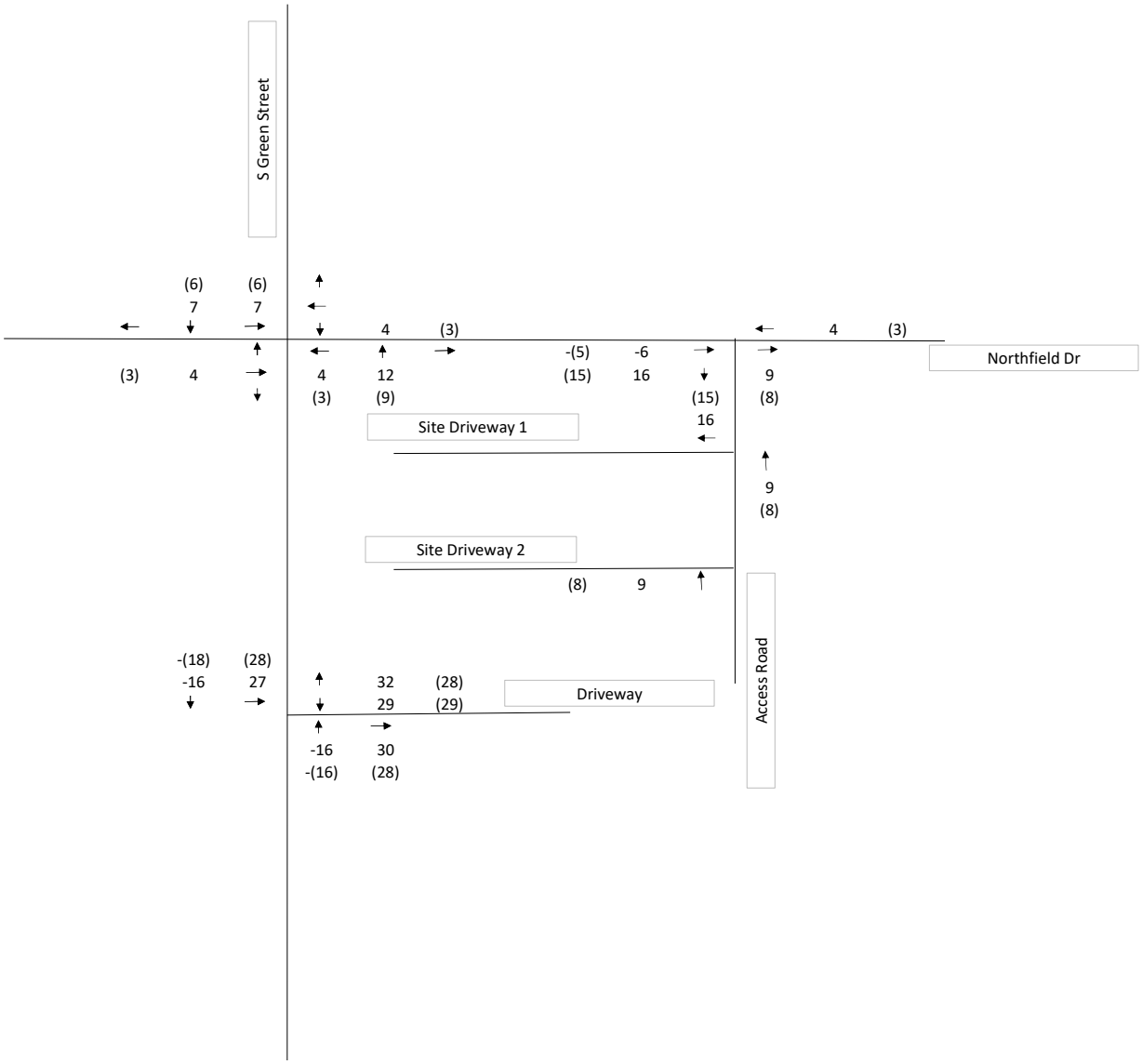
Pass-By Trips

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 9
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:

12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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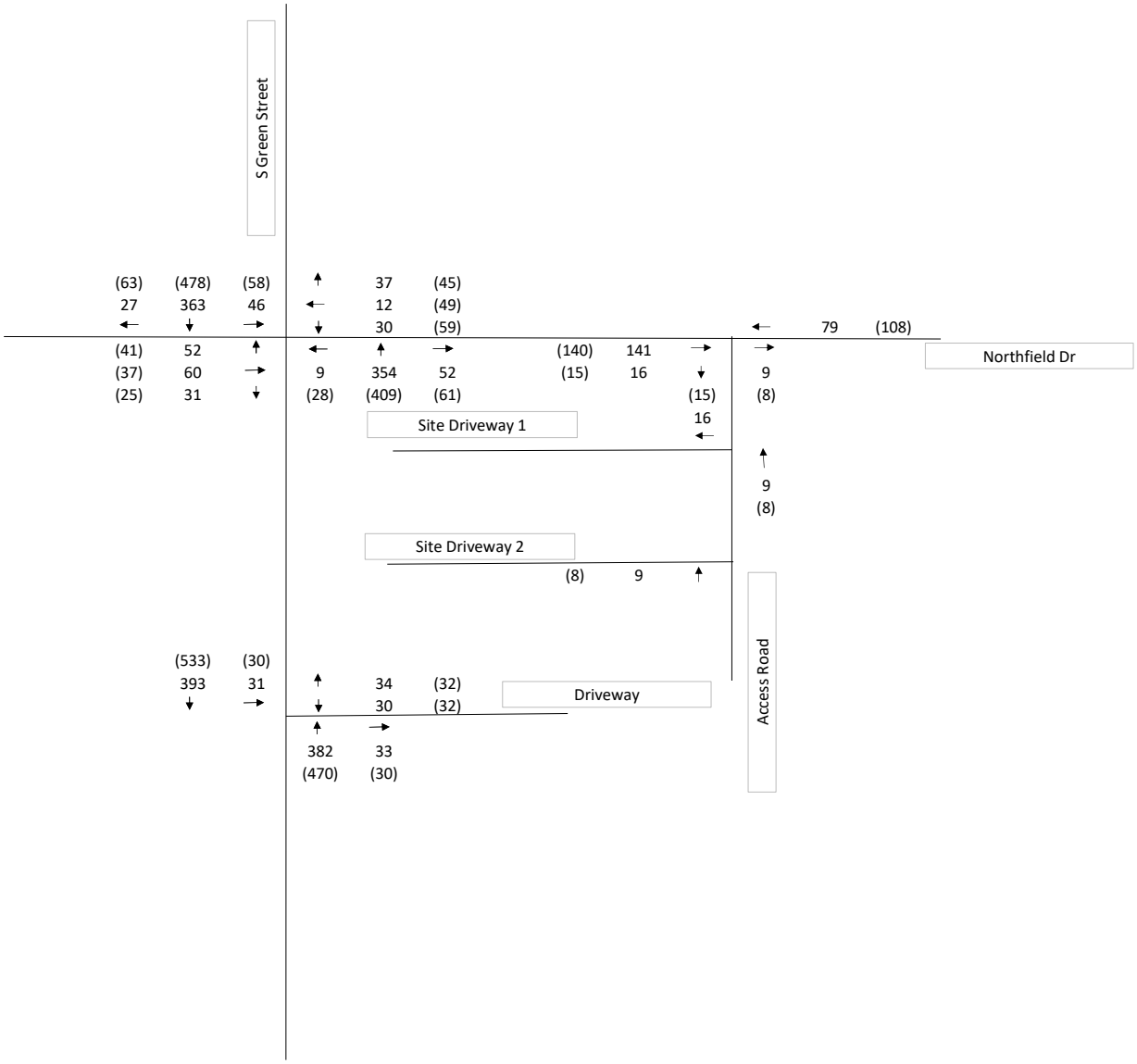
Total Trips

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 10
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

2026 Opening Year Build Conditions Peak Hour Volumes

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 11
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	

APPENDIX A

TURNING MOVEMENT T COUNT SUMMARIES

Count Date: Wednesday September 3rd, 2025

Intersection: S Green Street and Northfield Drive

All Vehicles	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	14	19	9	4	1	4	0	69	9	10	61	5	205
7:15 AM	15	15	4	8	2	9	0	88	14	10	83	3	251
7:30 AM	13	11	12	7	1	11	3	97	10	9	101	8	283
7:45 AM	9	11	6	7	8	13	2	84	18	9	103	11	281
8:00 AM	15	16	6	11	7	5	1	76	10	8	59	8	222
8:15 AM	23	7	6	7	4	5	0	79	15	12	69	2	229
8:30 AM	12	9	7	8	2	6	5	75	10	10	77	6	227
8:45 AM	4	9	3	9	7	3	10	82	11	9	85	13	245
TOTAL	105	97	53	61	32	56	21	650	97	77	638	56	
PH Vol	51	56	31	26	12	37	5	338	51	38	348	27	PHF
PH HV	3	0	0	2	1	1	1	12	2	2	12	3	0.9
HV%	6%	0%	0%	8%	8%	3%	20%	4%	4%	5%	3%	11%	

HV	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	2	0	0	1	0	0	0	0	1	2	2	2	10
7:15 AM	1	0	0	0	0	1	0	3	0	0	1	0	6
7:30 AM	0	0	0	0	0	0	1	2	0	0	2	0	5
7:45 AM	0	0	0	1	1	0	0	7	1	0	7	1	18
8:00 AM	1	1	0	1	1	0	0	1	0	0	1	2	8
8:15 AM	3	0	0	0	0	0	0	4	2	1	3	0	13
8:30 AM	0	0	0	0	0	1	0	4	0	0	5	0	10
8:45 AM	0	1	0	2	0	0	1	4	3	0	3	1	15
TOTAL	7	2	0	5	2	2	2	25	7	3	24	6	
PH Vol	3	0	0	2	1	1	1	12	2	2	12	3	

Count Date: Wednesday September 3rd, 2025
Intersection: S Green Street and Northfield Drive

All Vehicles	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	10	5	5	10	5	21	3	92	11	12	126	11	311
4:15 PM	10	14	9	15	16	12	6	101	14	12	122	18	349
4:30 PM	12	5	4	9	12	14	8	86	20	12	122	12	316
4:45 PM	6	9	11	16	11	10	7	108	9	13	105	16	321
5:00 PM	13	5	1	15	10	9	4	101	17	14	116	16	321
5:15 PM	12	10	8	13	5	11	7	112	18	5	97	29	327
5:30 PM	17	13	7	9	18	17	11	101	12	5	105	21	336
5:45 PM	15	7	9	13	11	12	10	81	16	6	99	13	292
TOTAL	95	68	54	100	88	106	56	782	117	79	892	136	
PH Vol	41	33	25	55	49	45	25	396	60	51	465	62	PHF
PH HV	4	0	1	0	1	1	2	7	1	1	11	2	0.94
HV%	10%	0%	4%	0%	2%	2%	8%	2%	2%	2%	2%	3%	

HV	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	2	1	0	0	1	1	0	2	1	0	1	0	9
4:15 PM	3	0	1	0	1	0	1	2	0	0	0	1	9
4:30 PM	1	0	0	0	0	0	1	3	1	0	5	0	11
4:45 PM	0	0	0	0	0	1	0	1	0	1	2	0	5
5:00 PM	0	0	0	0	0	0	0	1	0	0	4	1	6
5:15 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
5:30 PM	0	0	0	1	0	0	0	3	1	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	2	0	0	3	0	5
TOTAL	6	1	1	1	2	2	2	16	3	1	17	2	
PH Vol	4	0	1	0	1	1	2	7	1	1	11	2	

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVELS OF SERVICE

Intersection levels of service (LOS) were determined through implementation of the methodology presented in the *Highway Capacity Manual 7th Edition*, published by the Transportation Research Board.

i. Signalized Intersections

An explanation of level of service at signalized intersections is as follows:

This subsection describes the LOS criteria for the motorized vehicle mode. The criteria for the motorized vehicle mode are different from those for other modes. Specifically, the motorized vehicle mode criteria are based on performance measures that are field measurable and perceivable by travelers. The criteria for other modes are based on scores reported by travelers indicating their perception of service quality.

LOS can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection of an approach. Control delay and volume-to-capacity ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phases's capacity is utilized by a lane group. The following paragraphs describe each LOS.

LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

A lane group can incur a delay less than 80 s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

LOS Criteria: Signalized Intersection

Control Delay (s/veh)	**LOS by Volume-to-Capacity (v/c) Ratio[1]**	
	v/c ≤ 1.0	**v/c > 1.0**
≤ 10	A	F
> 10 – 20	B	F
> 20 – 35	C	F
> 35 – 55	D	F
> 55 – 80	E	F
> 80	F	F

(1) For approach-based and intersectionwide assessments, LOS is defined solely by control delay.

ii. Unsignalized Intersections

The following level-of-service criteria for two-way stop-controlled and all-way stop-controlled intersections differ from the criteria for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from various kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Thus, a higher level of control delay is acceptable at a signalized intersection for the same level of service.

Level of service for two-way stop-controlled (TWSC) intersections and an all-way stop control intersections is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement), as well as the major-street left turns. For TWSC intersections, LOS is not defined for the intersection as a whole or for major –street approaches for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask LOS deficiencies for minor movements.

Level of service for two-way stop control is not defined for the intersection as a whole, while level of service for all-way stop control is defined for the intersection as a whole.

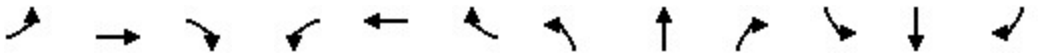
LOS Criteria: Two-Way and All-Way Stop Controlled Intersections

Control Delay (s/veh)	**LOS by Volume-to-Capacity (v/c) Ratio (1)(2)**	
	v/c ≤ 1.0	**v/c > 1.0**
0 – 10	A	F
> 10 – 15	B	F
> 15 – 25	C	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

(1) TWSC: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.
(2) AWSC: For approaches and intersection wide assessment, LOS is defined solely by control delay.

APPENDIX C

EXISTING 2025 PEAK HOUR CAPACITY ANALYSIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	56	31	26	12	37	5	338	51	38	348	27
Future Volume (veh/h)	51	56	31	26	12	37	5	338	51	38	348	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1900	1900	1781	1781	1856	1604	1841	1841	1826	1856	1737
Adj Flow Rate, veh/h	57	62	34	29	13	41	6	376	57	42	387	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	0	0	8	8	3	20	4	4	5	3	11
Cap, veh/h	413	152	83	58	192	243	316	530	503	359	606	567
Arrive On Green	0.06	0.13	0.13	0.03	0.11	0.11	0.01	0.29	0.29	0.05	0.33	0.33
Sat Flow, veh/h	1725	1154	633	1697	1781	1572	1527	1841	1560	1739	1856	1472
Grp Volume(v), veh/h	57	0	96	29	13	41	6	376	57	42	387	30
Grp Sat Flow(s),veh/h/ln	1725	0	1786	1697	1781	1572	1527	1841	1560	1739	1856	1472
Q Serve(g_s), s	1.1	0.0	2.0	0.7	0.3	0.9	0.1	7.3	1.0	0.7	7.1	0.5
Cycle Q Clear(g_c), s	1.1	0.0	2.0	0.7	0.3	0.9	0.1	7.3	1.0	0.7	7.1	0.5
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	413	0	236	58	192	243	316	530	503	359	606	567
V/C Ratio(X)	0.14	0.00	0.41	0.50	0.07	0.17	0.02	0.71	0.11	0.12	0.64	0.05
Avail Cap(c_a), veh/h	742	0	891	423	889	858	685	1377	1221	712	1389	1188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	16.0	19.0	16.1	14.7	10.4	12.8	9.5	9.8	11.5	7.7
Incr Delay (d2), s/veh	0.2	0.0	1.1	6.4	0.1	0.3	0.0	1.8	0.1	0.1	1.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.8	0.3	0.1	0.3	0.0	2.4	0.3	0.2	2.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.6	0.0	17.1	25.4	16.2	15.0	10.4	14.5	9.6	9.9	12.6	7.8
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		153			83			439			459	
Approach Delay, s/veh		16.1			18.8			13.8			12.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	16.6	6.4	10.3	5.3	18.1	7.3	9.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.7	9.3	2.7	4.0	2.1	9.1	3.1	2.9
Green Ext Time (p_c), s	0.0	2.2	0.0	0.4	0.0	2.2	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	13.8
HCM 7th LOS	B

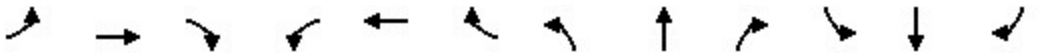
3: S Green Street & Northfield Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	96	29	13	41	6	376	57	42	387	30
v/c Ratio	0.12	0.29	0.11	0.04	0.08	0.01	0.42	0.05	0.07	0.36	0.02
Control Delay (s/veh)	16.1	21.6	28.6	27.1	1.3	8.4	17.5	1.2	8.4	12.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.1	21.6	28.6	27.1	1.3	8.4	17.5	1.2	8.4	12.6	0.0
Queue Length 50th (ft)	13	21	9	4	0	1	113	0	7	79	0
Queue Length 95th (ft)	43	70	36	21	6	7	222	9	23	221	0
Internal Link Dist (ft)		525		948			865			655	
Turn Bay Length (ft)	340		300		300	275		415	415		585
Base Capacity (vph)	540	854	389	820	606	596	1232	1150	639	1257	1327
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.07	0.02	0.07	0.01	0.31	0.05	0.07	0.31	0.02

Intersection Summary

3: S Green Street & Northfield Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	33	25	55	49	45	25	396	60	51	465	62
Future Volume (veh/h)	41	33	25	55	49	45	25	396	60	51	465	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1900	1841	1900	1870	1870	1781	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	44	35	27	59	52	48	27	421	64	54	495	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	0	4	0	2	2	8	2	2	2	2	3
Cap, veh/h	354	104	80	106	217	271	310	607	607	379	650	621
Arrive On Green	0.05	0.10	0.10	0.06	0.12	0.12	0.03	0.32	0.32	0.05	0.35	0.35
Sat Flow, veh/h	1668	995	767	1810	1870	1585	1697	1870	1585	1781	1870	1572
Grp Volume(v), veh/h	44	0	62	59	52	48	27	421	64	54	495	66
Grp Sat Flow(s),veh/h/ln	1668	0	1762	1810	1870	1585	1697	1870	1585	1781	1870	1572
Q Serve(g_s), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.6	1.1	0.8	10.3	1.2
Cycle Q Clear(g_c), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.6	1.1	0.8	10.3	1.2
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	0	185	106	217	271	310	607	607	379	650	621
V/C Ratio(X)	0.12	0.00	0.34	0.56	0.24	0.18	0.09	0.69	0.11	0.14	0.76	0.11
Avail Cap(c_a), veh/h	656	0	805	413	855	812	643	1282	1179	689	1282	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	18.2	20.1	17.6	15.5	10.2	12.9	8.7	9.6	12.7	8.4
Incr Delay (d2), s/veh	0.2	0.0	1.1	4.5	0.6	0.3	0.1	1.4	0.1	0.2	1.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	0.7	0.5	0.4	0.1	2.9	0.3	0.2	3.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	0.0	19.2	24.6	18.2	15.8	10.3	14.3	8.8	9.8	14.5	8.4
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		106			159			512			615	
Approach Delay, s/veh		18.0			19.8			13.4			13.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	19.2	7.6	9.6	6.4	20.2	7.1	10.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.8	10.6	3.4	3.4	2.5	12.3	3.0	3.1
Green Ext Time (p_c), s	0.0	2.5	0.0	0.2	0.0	2.9	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	14.5
HCM 7th LOS	B

3: S Green Street & Northfield Drive

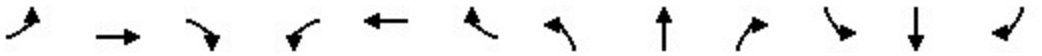


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	62	59	52	48	27	421	64	54	495	66
v/c Ratio	0.12	0.23	0.22	0.18	0.10	0.05	0.46	0.05	0.09	0.45	0.05
Control Delay (s/veh)	18.5	21.5	29.8	28.9	2.2	8.1	18.1	1.3	8.0	15.2	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.5	21.5	29.8	28.9	2.2	8.1	18.1	1.3	8.0	15.2	1.4
Queue Length 50th (ft)	11	12	19	17	0	4	131	0	9	109	0
Queue Length 95th (ft)	37	49	60	54	10	16	248	10	26	297	11
Internal Link Dist (ft)		525		948			865			655	
Turn Bay Length (ft)	340		300		300	275		415	415		585
Base Capacity (vph)	459	735	371	767	577	619	1124	1118	635	1128	1247
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.08	0.16	0.07	0.08	0.04	0.37	0.06	0.09	0.44	0.05

Intersection Summary

APPENDIX D

OPENING YEAR NO BUILD 2026 PEAK HOUR CAPACITY ANALYSIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	57	31	26	12	37	5	341	52	38	355	27
Future Volume (veh/h)	52	57	31	26	12	37	5	341	52	38	355	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1900	1900	1781	1781	1856	1604	1841	1841	1826	1856	1737
Adj Flow Rate, veh/h	58	63	34	29	13	41	6	379	58	42	394	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	0	0	8	8	3	20	4	4	5	3	11
Cap, veh/h	413	154	83	58	192	242	313	533	506	358	609	570
Arrive On Green	0.06	0.13	0.13	0.03	0.11	0.11	0.01	0.29	0.29	0.05	0.33	0.33
Sat Flow, veh/h	1725	1161	626	1697	1781	1572	1527	1841	1560	1739	1856	1472
Grp Volume(v), veh/h	58	0	97	29	13	41	6	379	58	42	394	30
Grp Sat Flow(s),veh/h/ln	1725	0	1787	1697	1781	1572	1527	1841	1560	1739	1856	1472
Q Serve(g_s), s	1.2	0.0	2.0	0.7	0.3	0.9	0.1	7.4	1.1	0.7	7.3	0.5
Cycle Q Clear(g_c), s	1.2	0.0	2.0	0.7	0.3	0.9	0.1	7.4	1.1	0.7	7.3	0.5
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	413	0	237	58	192	242	313	533	506	358	609	570
V/C Ratio(X)	0.14	0.00	0.41	0.50	0.07	0.17	0.02	0.71	0.11	0.12	0.65	0.05
Avail Cap(c_a), veh/h	739	0	888	421	885	854	680	1372	1216	709	1383	1184
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	0.0	16.0	19.1	16.1	14.8	10.4	12.8	9.5	9.8	11.5	7.7
Incr Delay (d2), s/veh	0.2	0.0	1.1	6.4	0.1	0.3	0.0	1.8	0.1	0.1	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.8	0.3	0.1	0.3	0.0	2.5	0.3	0.2	2.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.6	0.0	17.2	25.5	16.3	15.1	10.4	14.6	9.6	9.9	12.7	7.7
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		155			83			443			466	
Approach Delay, s/veh		16.2			18.9			13.9			12.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	16.7	6.4	10.3	5.3	18.2	7.4	9.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.7	9.4	2.7	4.0	2.1	9.3	3.2	2.9
Green Ext Time (p_c), s	0.0	2.2	0.0	0.4	0.0	2.3	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	13.8
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	2	398	3	4	409
Future Vol, veh/h	1	2	398	3	4	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	433	3	4	445

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	886	433	0	0	436	0
Stage 1	433	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	315	623	-	-	1124	-
Stage 1	654	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	314	623	-	-	1124	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.73	0	0.08
HCM LOS	B		

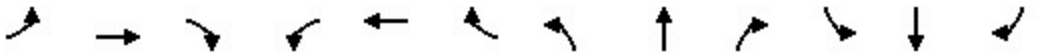
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	469	1124	-
HCM Lane V/C Ratio	-	-	0.007	0.004	-
HCM Control Delay (s/veh)	-	-	12.7	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

3: S Green Street & Northfield Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	58	97	29	13	41	6	379	58	42	394	30
v/c Ratio	0.13	0.29	0.11	0.04	0.08	0.01	0.42	0.05	0.07	0.37	0.02
Control Delay (s/veh)	16.2	21.7	28.7	27.3	1.4	8.4	17.6	1.2	8.5	12.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.2	21.7	28.7	27.3	1.4	8.4	17.6	1.2	8.5	12.7	0.0
Queue Length 50th (ft)	14	22	9	4	0	1	115	0	7	81	0
Queue Length 95th (ft)	44	71	36	21	6	7	225	9	23	226	0
Internal Link Dist (ft)		525		948			318			655	
Turn Bay Length (ft)	340		300		300	200			415		585
Base Capacity (vph)	539	851	388	817	603	592	1228	1151	636	1254	1327
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.07	0.02	0.07	0.01	0.31	0.05	0.07	0.31	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	33	25	56	49	45	25	400	61	52	472	63
Future Volume (veh/h)	41	33	25	56	49	45	25	400	61	52	472	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1900	1841	1900	1870	1870	1781	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	44	35	27	60	52	48	27	426	65	55	502	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	0	4	0	2	2	8	2	2	2	2	3
Cap, veh/h	352	104	80	107	217	272	308	612	612	379	657	626
Arrive On Green	0.05	0.10	0.10	0.06	0.12	0.12	0.03	0.33	0.33	0.06	0.35	0.35
Sat Flow, veh/h	1668	995	767	1810	1870	1585	1697	1870	1585	1781	1870	1572
Grp Volume(v), veh/h	44	0	62	60	52	48	27	426	65	55	502	67
Grp Sat Flow(s),veh/h/ln	1668	0	1762	1810	1870	1585	1697	1870	1585	1781	1870	1572
Q Serve(g_s), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.7	1.2	0.9	10.5	1.2
Cycle Q Clear(g_c), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.7	1.2	0.9	10.5	1.2
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	0	184	107	217	272	308	612	612	379	657	626
V/C Ratio(X)	0.12	0.00	0.34	0.56	0.24	0.18	0.09	0.70	0.11	0.15	0.76	0.11
Avail Cap(c_a), veh/h	652	0	799	410	849	807	639	1273	1172	684	1273	1144
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	18.3	20.2	17.7	15.6	10.2	12.9	8.7	9.6	12.7	8.3
Incr Delay (d2), s/veh	0.2	0.0	1.1	4.6	0.6	0.3	0.1	1.4	0.1	0.2	1.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	0.7	0.5	0.4	0.1	3.0	0.3	0.3	3.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.5	0.0	19.4	24.7	18.3	15.9	10.4	14.3	8.7	9.8	14.6	8.4
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		106			160			518			624	
Approach Delay, s/veh		18.2			20.0			13.4			13.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	19.4	7.6	9.6	6.4	20.5	7.1	10.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.9	10.7	3.4	3.4	2.5	12.5	3.0	3.1
Green Ext Time (p_c), s	0.0	2.5	0.0	0.2	0.0	3.0	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	14.6
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	486	2	2	550
Future Vol, veh/h	3	4	486	2	2	550
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	528	2	2	598

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1130	528	0	0	530	0
Stage 1	528	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	225	550	-	-	1037	-
Stage 1	591	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	225	550	-	-	1037	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.85	0	0.03
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	339	1037	-
HCM Lane V/C Ratio	-	-	0.022	0.002	-
HCM Control Delay (s/veh)	-	-	15.8	8.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

3: S Green Street & Northfield Drive

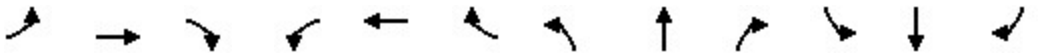


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	62	60	52	48	27	426	65	55	502	67
v/c Ratio	0.12	0.23	0.22	0.18	0.10	0.05	0.46	0.06	0.10	0.46	0.05
Control Delay (s/veh)	18.6	21.6	30.0	29.0	2.2	8.0	18.1	1.4	8.0	15.2	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.6	21.6	30.0	29.0	2.2	8.0	18.1	1.4	8.0	15.2	1.4
Queue Length 50th (ft)	11	12	20	17	0	4	133	0	9	111	0
Queue Length 95th (ft)	37	50	61	54	10	16	251	11	27	302	11
Internal Link Dist (ft)		525		948			318			655	
Turn Bay Length (ft)	340		300		300	200			415		585
Base Capacity (vph)	457	732	370	764	575	616	1122	1120	633	1127	1248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.08	0.16	0.07	0.08	0.04	0.38	0.06	0.09	0.45	0.05

Intersection Summary

APPENDIX F

FORECASTED 2026 BUILD (WITH DEVELOPMENT) CAPACITY CALCULATIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	60	31	30	12	37	9	354	52	46	363	27
Future Volume (veh/h)	52	60	31	30	12	37	9	354	52	46	363	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1900	1900	1781	1781	1856	1604	1841	1841	1826	1856	1737
Adj Flow Rate, veh/h	58	67	34	33	13	41	10	393	58	51	403	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	0	0	8	8	3	20	4	4	5	3	11
Cap, veh/h	407	152	77	65	191	253	319	545	521	364	624	582
Arrive On Green	0.06	0.13	0.13	0.04	0.11	0.11	0.01	0.30	0.30	0.05	0.34	0.34
Sat Flow, veh/h	1725	1188	603	1697	1781	1572	1527	1841	1560	1739	1856	1472
Grp Volume(v), veh/h	58	0	101	33	13	41	10	393	58	51	403	30
Grp Sat Flow(s),veh/h/ln	1725	0	1791	1697	1781	1572	1527	1841	1560	1739	1856	1472
Q Serve(g_s), s	1.2	0.0	2.2	0.8	0.3	0.9	0.2	7.9	1.1	0.8	7.6	0.5
Cycle Q Clear(g_c), s	1.2	0.0	2.2	0.8	0.3	0.9	0.2	7.9	1.1	0.8	7.6	0.5
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	407	0	229	65	191	253	319	545	521	364	624	582
V/C Ratio(X)	0.14	0.00	0.44	0.51	0.07	0.16	0.03	0.72	0.11	0.14	0.65	0.05
Avail Cap(c_a), veh/h	724	0	868	411	863	846	669	1338	1193	692	1348	1156
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	16.6	19.5	16.6	14.9	10.3	13.0	9.5	9.8	11.6	7.7
Incr Delay (d2), s/veh	0.2	0.0	1.3	6.1	0.1	0.3	0.0	1.8	0.1	0.2	1.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.8	0.4	0.1	0.3	0.0	2.6	0.3	0.2	2.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.0	0.0	18.0	25.6	16.7	15.2	10.4	14.8	9.6	10.0	12.7	7.7
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		159			87			461			484	
Approach Delay, s/veh		16.9			19.4			14.1			12.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	17.2	6.6	10.3	5.5	18.9	7.4	9.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.8	9.9	2.8	4.2	2.2	9.6	3.2	2.9
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	2.3	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	14.1
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	34	382	33	31	393
Future Vol, veh/h	30	34	382	33	31	393
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	37	415	36	34	427

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	910	415	0	0	451	0
Stage 1	415	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	305	637	-	-	1109	-
Stage 1	666	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	296	637	-	-	1109	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	594	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.46	0	0.61
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	413	1109	-
HCM Lane V/C Ratio	-	-	0.168	0.03	-
HCM Control Delay (s/veh)	-	-	15.5	8.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	16	0	79	0	9
Future Vol, veh/h	130	16	0	79	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	141	17	0	86	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	79
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	965
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	965
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.77
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	965	-	-	-
HCM Lane V/C Ratio	0.01	-	-	-
HCM Control Delay (s/veh)	8.8	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	0	0	0	0	0
Future Vol, veh/h	9	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	-	-	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	-	-
Pot Cap-1 Maneuver	1022	0	0	-	-	0
Stage 1	1022	0	0	-	-	0
Stage 2	-	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.56	0	0
HCM LOS	A		

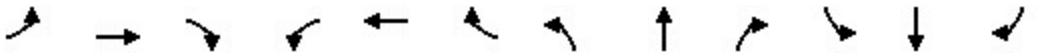
Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	1022	-
HCM Lane V/C Ratio	-	0.01	-
HCM Control Delay (s/veh)	-	8.6	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-

3: S Green Street & Northfield Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	58	101	33	13	41	10	393	58	51	403	30
v/c Ratio	0.13	0.33	0.14	0.04	0.08	0.02	0.47	0.05	0.10	0.37	0.02
Control Delay (s/veh)	16.8	24.1	29.9	28.0	1.3	8.5	20.1	1.2	8.8	13.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.8	24.1	29.9	28.0	1.3	8.5	20.1	1.2	8.8	13.3	0.0
Queue Length 50th (ft)	14	24	11	4	0	2	122	0	9	85	0
Queue Length 95th (ft)	45	77	41	21	5	9	238	9	26	235	0
Internal Link Dist (ft)		525		267			318			655	
Turn Bay Length (ft)	340		300			200			415		585
Base Capacity (vph)	508	745	337	711	574	575	1063	1034	581	1099	1276
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.14	0.10	0.02	0.07	0.02	0.37	0.06	0.09	0.37	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	37	25	59	49	45	28	409	61	58	478	63
Future Volume (veh/h)	41	37	25	59	49	45	28	409	61	58	478	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1900	1841	1900	1870	1870	1781	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	44	39	27	63	52	48	30	435	65	62	509	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	0	4	0	2	2	8	2	2	2	2	3
Cap, veh/h	351	108	75	110	219	281	309	614	617	380	662	630
Arrive On Green	0.05	0.10	0.10	0.06	0.12	0.12	0.03	0.33	0.33	0.06	0.35	0.35
Sat Flow, veh/h	1668	1046	724	1810	1870	1585	1697	1870	1585	1781	1870	1572
Grp Volume(v), veh/h	44	0	66	63	52	48	30	435	65	62	509	67
Grp Sat Flow(s),veh/h/ln	1668	0	1770	1810	1870	1585	1697	1870	1585	1781	1870	1572
Q Serve(g_s), s	1.0	0.0	1.6	1.5	1.1	1.1	0.5	9.1	1.2	1.0	10.8	1.2
Cycle Q Clear(g_c), s	1.0	0.0	1.6	1.5	1.1	1.1	0.5	9.1	1.2	1.0	10.8	1.2
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	351	0	183	110	219	281	309	614	617	380	662	630
V/C Ratio(X)	0.13	0.00	0.36	0.57	0.24	0.17	0.10	0.71	0.11	0.16	0.77	0.11
Avail Cap(c_a), veh/h	646	0	792	405	837	804	630	1255	1160	672	1255	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	18.7	20.4	17.9	15.6	10.3	13.1	8.7	9.7	12.8	8.4
Incr Delay (d2), s/veh	0.2	0.0	1.2	4.7	0.6	0.3	0.1	1.5	0.1	0.2	1.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	0.7	0.5	0.4	0.1	3.1	0.3	0.3	3.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.7	0.0	19.9	25.1	18.5	15.9	10.5	14.7	8.8	9.9	14.8	8.5
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		110			163			530			638	
Approach Delay, s/veh		18.6			20.3			13.7			13.6	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	19.7	7.7	9.6	6.6	20.8	7.1	10.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	3.0	11.1	3.5	3.6	2.5	12.8	3.0	3.1
Green Ext Time (p_c), s	0.1	2.6	0.1	0.2	0.0	3.0	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	14.8
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	32	470	30	30	533
Future Vol, veh/h	32	32	470	30	30	533
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	35	511	33	33	579

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1155	511	0	0	543	0
Stage 1	511	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	218	563	-	-	1025	-
Stage 1	602	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	211	563	-	-	1025	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	506	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	20.16	0	0.46
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	306	1025	-
HCM Lane V/C Ratio	-	-	0.227	0.032	-
HCM Control Delay (s/veh)	-	-	20.2	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	140	15	0	108	0	8
Future Vol, veh/h	140	15	0	108	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	16	0	117	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	84
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	958
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	958
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.79
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	958	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-
HCM Control Delay (s/veh)	8.8	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	0	0	0	0	0
Future Vol, veh/h	8	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	-	-	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	-	-
Pot Cap-1 Maneuver	1022	0	0	-	-	0
Stage 1	1022	0	0	-	-	0
Stage 2	-	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.55	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	1022	-
HCM Lane V/C Ratio	-	0.009	-
HCM Control Delay (s/veh)	-	8.6	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	66	63	52	48	30	435	65	62	509	67
v/c Ratio	0.12	0.25	0.24	0.18	0.10	0.06	0.47	0.06	0.11	0.46	0.05
Control Delay (s/veh)	18.8	22.2	30.5	29.2	2.2	8.1	18.4	1.4	8.1	15.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.8	22.2	30.5	29.2	2.2	8.1	18.4	1.4	8.1	15.4	1.5
Queue Length 50th (ft)	11	13	21	17	0	5	139	0	11	115	0
Queue Length 95th (ft)	37	53	64	54	10	17	260	11	29	310	11
Internal Link Dist (ft)		525		267			318			655	
Turn Bay Length (ft)	340		300			200			415		585
Base Capacity (vph)	452	728	365	755	573	607	1111	1118	626	1121	1246
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.09	0.17	0.07	0.08	0.05	0.39	0.06	0.10	0.45	0.05

Intersection Summary

Ordinance #2013-26
Brownsburg, Indiana
Sept 26, 2013

AN ORDINANCE TO AMEND THE OFFICIAL ZONING MAP OF THE TOWN OF BROWNSBURG FOR PROPERTY LOCATED WITH THE PROPOSED WEST WYNNE FARMS DEVELOPMENT

WHEREAS, Site Solutions Group, LLC. ("Petitioner") of approximately 220 acres of real estate west of South Green Street / SR 267 on the north and south side of CR 300 North and on the north and south side of the proposed Northfield Drive alignment, in the Town of Brownsburg, Lincoln Township, Hendricks County, Indiana, Parcel Numbers 32-07-26-100-007.000-016, 32-07-26-100-006.000-016, 32-07-23-300-015.000-016, 32-07-26-150-002.000-016, 32-07-26-150-003.000-016, 32-07-26-150-004.000-016, 32-07-26-100-003.000-016, 32-07-26-100-004.000-016, 32-07-23-300-014.000-016, 32-07-23-300-013.000-016 ("Property") which real estate is more particularly described on Exhibit 'A' and generally depicted on Exhibit 'B', has filed a petition with the Town to amend the zoning of said real estate to Planned Development (PD) as described in Exhibit 'C'; and

WHEREAS, the Advisory Plan Commission for the Town of Brownsburg ("Commission") has considered said Zoning Map Amendment at public meetings, May 28, 2013, June 24, 2013, July 15, 2013 and on July 22, 2013 and by a vote of its members has made a FAVORABLE RECOMMENDATION that the zoning on the above-described Property be amended, subject to and conditioned upon the following:

1. Pursuant to the petitioner's West Wynne Farms Planned Development (PD) date July 23, 2013 as described in Exhibit 'C'.
2. That the commitments identified in Exhibit 'D' be executed by the owner on the Town's standard written commitment form, and recorded in the Office of the Recorder of Hendricks County, and the same be binding upon the owner and all subsequent owners of the real estate subject to this petition.
3. The recommendations within the Project Synopsis dated June 18, 2013.
4. The recommendations within the Road Improvement Summary date July 18, 2013
5. Site Development Plan Approval will be required pursuant to the applicable Zoning Ordinance regulations in place at the time an application is submitted.
6. Primary and Secondary Plat(s) will be required to subdivide the property pursuant to the Subdivision Control Ordinance of the Town.
7. The approval of the Report of Determination by the Plan Commission.

WHEREAS, the Commission has further found that the amendment does not adversely affect the Comprehensive Plan of the Town of Brownsburg but rather satisfies the current standards, and has been favorably recommended by the Commission to the Town Council;

NOW, THEREFORE, BE IT ORDAINED by the Town Council as follows:

1. The petitioner shall assume and be responsible for payment of all costs incurred in the preparation and filing of all changes in this ordinance which are satisfactory to the Town of Brownsburg;

2. The zoning on the Property, as shown on the Official Zoning Map, shall be amended pursuant to the petitioner's West Wynne Farms Planned Development (PD) date July 23, 2013 as described in Exhibit 'C'.
3. That the commitments identified in Exhibit 'D' be executed by the owner on the Town's standard written commitment form, and recorded in the Office of the Recorder of Hendricks County, and the same be binding upon the owner and all subsequent owners of the real estate subject to this petition.
4. The recommendations within the Project Synopsis dated June 18, 2013.
5. The recommendations within the Road Improvement Summary date July 18, 2013.
6. Site Development Plan Approval will be required pursuant to the applicable Zoning Ordinance regulations in place at the time an application is submitted.
7. Primary and Secondary Plat(s) will be required to subdivide the property pursuant to the Subdivision Control Ordinance of the Town.

PASSED by the Town Council of the Town of Brownsburg, Indiana, this 26th day of September, 2013, by a vote of Five (5) ayes, and Zero (0) nayes.

TOWN OF BROWNSBURG
HENDRICKS COUNTY, INDIANA

By: _____
Gary Hood, President

ATTESTED BY:

_____
Jeanette Brickler, Clerk-Treasurer

This instrument was prepared by Todd A. Barker, AICP, Town of Brownsburg, 61 North Green Street, Brownsburg, Indiana. I affirm, under the penalties for perjury, that I have taken reasonable care to redact each Social Security Number in this document, unless required by law (Jonathan K. Blake).

EXHIBIT 'A'

LEGAL DESCRIPTION

All of the Northeast Quarter and a fractional part of the Southeast Quarter of the Northwest Quarter of Section 26, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Beginning at a R.R. Spike found marking the Northeast Corner of the Northwest Quarter of Section 26; thence South 00 degrees 00 minutes 00 seconds East (assumed bearing) along the East line of said Northwest Quarter, a distance of 1445.60 feet to an Iron Pipe with I.D. Cap found on the Westerly line of a parcel conveyed to the Indianapolis Water Company as described in Instrument No. 9800003900 of the records on file in the Office of the Hendricks County Recorder, said Westerly line also being the Easterly line of a 75' wide legal drain easement as per a survey by CrossRoad Engineers dated September 15, 1997; thence along said lines for the following six (6) courses: 1) South 55 degrees 36 minutes 57 seconds West a distance of 170.61 feet to an Iron Pipe with I.D. Cap found; 2) South 06 degrees 37 minutes 22 seconds West a distance of 617.30 feet to an Iron Pipe with I.D. Cap found; 3) South 25 degrees 20 minutes 06 seconds West a distance of 191.76 feet to an Iron Pipe with I.D. Cap Found; 4) South 35 degrees 48 minutes 46 seconds West a distance of 210.69 feet to an Iron Pipe with I.D. Cap found; 5) South 47 degrees 52 minutes 57 seconds West a distance of 89.78 feet to an Iron Pipe with I.D. Cap found; 6) South 65 degrees 34 minutes 36 seconds West a distance of 284.88 feet to an Iron Pipe with I.D. Cap found on the South line of the aforesaid Northwest Quarter; thence South 89 degrees 29 minutes 23 seconds West, along said South line, a distance of 598.85 feet to a 3/4" Iron Pipe with I.D. Cap set at the computed Southwest corner of the Southeast Quarter of said Northwest Quarter; Thence North 00 degrees 07 minutes 20 seconds East, along the West line of the East Half of said Northwest Quarter, a distance of 2669.38 feet to a P.K. Nail with I.D. Washer set marking the Northwest corner of the Northeast Quarter of said Northwest Quarter; thence North 89 degrees 25 minutes 51 seconds East, along the North line of said Northwest Quarter and along County Road 300 North, a distance of 1336.52 feet to the place of beginning, containing 74.826 acres, more or less and subject to all highways, rights-of-way and easements. And being subject to a 60' wide utility easement (as recorded in Inst. #9800003901), a 50' wide easement for ingress and egress (as recorded in Inst. #9800003902), a Highway Right-of-Way Agreement (as recorded in Inst. #2003-44818), a 30' wide storm sewer easement (as recorded in Inst. #2003-54107) and being subject to any other easements, rights-of-way or restrictions of record observable.

EXHIBIT 'A' continued

ALSO:

A fractional part of the Southwest Quarter of Section 23, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Commencing at a R.R. Spike found marking the Southeast corner of the Southwest Quarter of Section 23; thence South 89 degrees 25 minutes 51 seconds West along the South line of said Quarter and along County Road 300 North, a distance of 870.47 feet to a P.K. Nail with I.D. Washer set and the place of beginning; thence continuing South 89 degrees 25 minutes 51 seconds West, along said South line and along said County Road, a distance of 866.60 feet to a P.K. Nail with I.D. Washer set at the Southeast corner of a parcel conveyed to Light Development Corporation as described in Deed Record 328, page 591 of the records on file in the Office of the Hendricks County Recorder; thence North 00 degrees 03 minutes 37 seconds East, along the East line of said parcel and parallel to the West line of the aforesaid Southwest Quarter, a distance of 2308.51 feet to the South line of a parcel conveyed to Terry Tate as described in Deed Record 344, page 767 of the records on file in the Office of the Hendricks County Recorder, said line also being the former Southerly right-of-way line of the CSX Transportation Railroad (for reference, an iron pin was found North 03 degrees 45 minutes 25 seconds West a distance of 0.59 feet); thence South 74 degrees 00 minutes 33 seconds East, along the South line of said parcel a distance of 526.72 feet to a 3/4" Iron Pipe with I.D. Cap set at the Southeast corner of said parcel; thence North 00 degrees 03 minute 37 seconds East, along the East line of said parcel and parallel to the aforesaid West line of the Southwest Quarter, a distance of 103.99 feet to a 3/4" Iron Pipe with I.D. Cap set on the Southerly right-of-way line of the CSX Transportation Railroad; thence South 74 degrees 00 minutes 33 seconds East, along said Southerly right-of-way line, a distance of 369.09 feet to a 3/4" Iron Pipe with I.D. Cap set; thence South 00 degrees 04 minutes 36 seconds East, parallel to the East line of said Southwest Quarter, a distance of 2157.12 feet to the place of beginning, containing 44.101 acres, more or less and subject to all highways, rights-of-way and easements of record.

ALSO:
A fractional part of the Southwest Quarter of Section 23, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Commencing at a Railroad spike found marking the Southeast corner of the Southwest Quarter of Section 23; thence South 89 degrees 25 minutes 51 seconds West, along the South line of said Quarter and along County Road 300 North a distance of 870.47 feet to a P.K. Nail with I.D.

EXHIBIT 'A' continued

Washer set; thence North 00 degrees 04 minutes 36 seconds West, parallel to the East line of said Quarter a distance of 2261.19 feet to a 3/4" iron pipe with I.D. Cap set on the Northerly right-of-way line of the CSX Transportation Railroad and the place of beginning; thence North 74 degrees 00 minutes 33 seconds West, along said Northerly right-of-way line and the extension thereof (now being the Northerly line of a parcel conveyed to Terry Tate as described in Deed Record 344, page 767 of the records on file in the Office of the Hendricks County Recorder), a distance of 895.54 feet to a 3/4" Iron Pipe with I.D. Cap set; thence North 00 degrees 03 minutes 37 seconds East, parallel to the West line of the Southwest Quarter, a distance of 159.60 feet to a 3/4" Iron Pipe with I.D. Cap set on the North line of the Northwest Quarter of the Southwest Quarter of Section 23 (as established in a survey by MSE Surveying dated December 11, 1991-Jeffrey A. Meyerrose R.L.S. #890003-IN); thence North 89 degrees 16 minutes 50 seconds East, along said North line, a distance of 377.90 feet to the Northwest corner of the Northeast Quarter of said Southwest Quarter (as established in said survey); thence North 89 degrees 30 minutes 26 seconds East, along the North line of the Northeast Quarter of said Southwest Quarter, a distance of 482.32 feet (for reference, an Iron Pin was found North 65 degrees 46 minutes 45 seconds West a distance of 0.54 feet); thence South 00 degrees 04 minutes 36 seconds East, parallel to the aforesaid East line of the Southwest Quarter of Section 23, a distance of 415.20 feet to the place of beginning, containing 5.685 acres, more or less and subject to all highways, rights-of-way and easements of record.

ALSO:
Part of the Northwest quarter of the Northwest quarter of Section 26, Township 16 North, Range 1 East of the Second Principal Meridian in Lincoln Township, Hendricks County, Indiana, more particularly described as follows, to-wit:
Beginning at the Northeast corner of said quarter quarter section; thence South 89 degrees 12 minutes 36 seconds West (assumed bearing) on and along the North line of said quarter quarter section 450.00 feet; thence South 00 degrees 05 minutes 03 seconds East parallel to the East line of said quarter quarter section 817.78 feet; thence South 89 degrees 12 minutes 36 seconds West parallel to the aforesaid North line of said quarter quarter section 527.70 feet; thence South 00 degrees 05 minutes 03 seconds East parallel to the East line of said quarter quarter section 1850.46 feet to a point on the South line of said quarter quarter section; thence North 89 degrees 20 minutes 16 seconds East on and along said South line 977.68 feet to the Southeast corner of said quarter quarter section; thence North 00 degrees 05 minutes 03 seconds West on and along the East line of said quarter quarter section 2670.42 feet to the Point of Beginning. Containing 50.00 acres, more or less.

EXHIBIT 'A' continued

ALSO:
A part of the West half of the Southwest quarter of Section 23, Township 16 North, Range 1 East of the Second Principal Meridian in Hendricks County, Indiana, more particularly described as follows, to-wit:
Beginning at a stone at the Southwest corner of said Section 23; thence South 89 degrees 57 minutes 36 seconds East on and along the South line of said section 935.96 feet; thence North 00 degrees 37 minutes 26 seconds East 1375.48 feet; thence North 88 degrees 41 minutes 54 seconds West 602.89 feet; thence South 01 degree 13 minutes 58 seconds West 211.07 feet; thence North 88 degrees 47 minutes 11 seconds West 330.84 feet to a point on the West line of said Section; thence South 00 degrees 37 minutes 26 seconds West on and along the West line of said section 1184.50 feet to the Point of Beginning. Containing 28.16 acres, more or less.

ALSO:
Lots numbered 2, 3, and 4 in Minor Plat Numbered Four (4) in Lincoln Township, Hendricks County, Indiana, as per plat thereof recorded April 7, 1978, in Plat Book 9, page 111, in the Office of the Recorder of Hendricks County, Indiana.

EXHIBIT 'B'

GENERAL DEPICTION

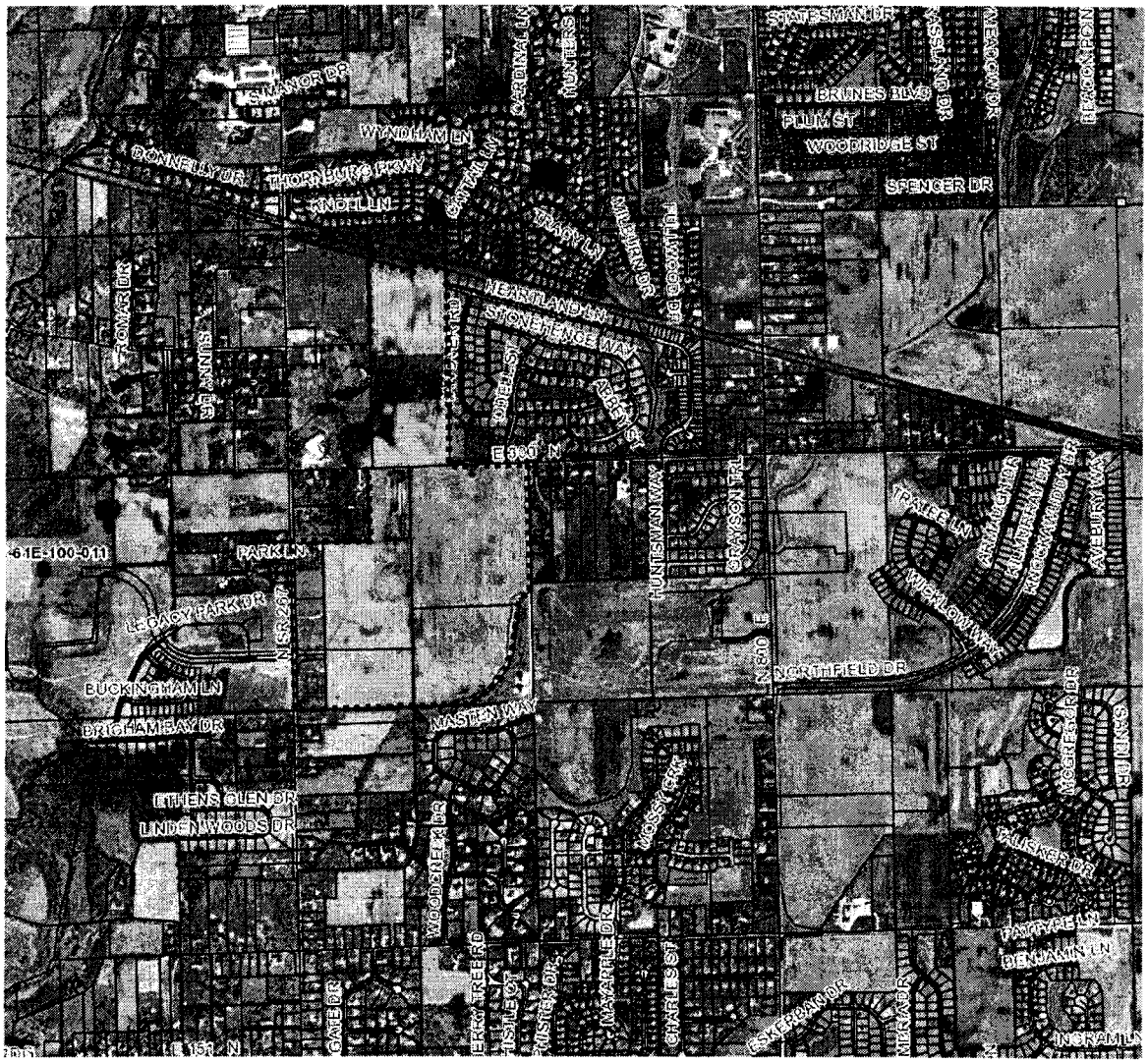


EXHIBIT 'C'

PROPOSED ZONING ORDINANCE

See

WEST WYNNE FARMS

(PD – Planned Development)
Zoning Ordinance and Subdivision Controls
Amended July 23, 2013

WEST WYNNE FARMS

(PD - Planned Development)

Zoning Ordinance and Subdivision Controls
Amended July 23, 2013

Petitioner/Developer:
Chris R. White
Site Solutions Group, LLC
15658 Bridgewater Club Boulevard
Carmel, IN 46033
(317) 523-6116
cwhite@sitesolutionsgroupllc.com

Legal Counsel:
Amy Comer Elliott
Comer Law Office
71 West Marion Street
Danville, IN 46122
(317) 745-4300
aelliott@comerlaw.com

Engineering Consultant:
Jerry W. Kittle
Innovative Engineering & Consulting, Inc.
755 W. Carmel Drive
Suite 207
Carmel, IN 46032
(317) 660-4236
jkittle@innovativeeci.com

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PD Ordinance Purpose and Intent:

West Wynne Farms was originally zoned through Hendricks County in 2007. Since that time, the housing market has changed remarkably. Prior to 2007, Hendricks County experienced rapid growth for approximately twenty (20) years making it the second fastest growing county in the State of Indiana. The rapid decline of the national and local housing market and the economy in general in the years following 2007 are now stabilizing. Not surprisingly, based on its prior success, Hendricks County is one of the first counties to recover economically and begin to develop again.

Since 2007, land use conditions surrounding West Wynne Farms have changed, demanding more appropriate uses within West Wynne Farms than originally planned. Northfield Drive has been constructed west of the development through The Village of Heritage Hill. It has been constructed east of the development, as well. The development of West Wynne Farms will connect Northfield Drive from the southeastern side of Brownsburg through to the west end of Heritage Hill. The completion of Northfield Drive through the southern end of Brownsburg creates greater economic opportunities for Brownsburg with the development of larger scale commercial uses, apartments and empty nester rental villas. The use of the land within West Wynne Farms for these new uses allows for development on smaller parcels of ground, reducing urban sprawl and allowing greater open space and park lands.

Upon completion, the "West Wynne Farms" development shall comprise the following land-uses:

✓ Commercial/Retail/Office	51 acres *
✓ Empty Nester Rental Villas	33 acres *
✓ Apartments	26 acres *
✓ Single Family	63 acres *
✓ Northfield Drive (R.O.W.)	6 acres *
✓ Open Space	46 acres **

* Above acreages are approximate.

** A portion of the open space acreage shall be incorporated within the above described land-uses.

Commercial/Retail/Office

Such uses are designated for development upon "Parcels R and S". It is anticipated that the subject parcels shall evolve and develop as the remainder of the project progresses. Being

situated along the Northfield Drive and State Road 267 corridors, "Parcels R and S" represent effective land use practices when considering the anticipated future urbanization and development of the surrounding area. Providing for such uses within the "West Wynne Farms" development shall allow for the residents within and around West Wynne Farms to shop, conduct business, and to seek various professional services without traveling beyond the immediate area, and thus become less impacting upon infrastructure situated beyond the immediate area.

Apartments

Apartments are a designated to be developed and constructed upon "Parcel Q". The development of apartments reduces urban sprawl and creates greater fiscal opportunities for the Town of Brownsburg.

Empty Nester Villa Rentals

The need for various housing options for empty nesters and senior citizens continues to increase as baby boomers age. The villas are designated to be developed and constructed upon "Parcels O and P".

Single-Family

The single-family district, designated as "Parcel N" shall provide for housing types and market values for the "traditionally" defined or "nuclear" family.

Northfield Drive Right-of-Way

Tracts of land shall be reserved for the extension and construction of Northfield Drive. In consideration of current and future traffic demands, such improvement is essential for the implementation of the "Town of Brownsburg Thoroughfare Plan".

Open Space

Open space situated with-in individual neighborhoods and throughout the overall development shall provide passive and recreational amenities inclusive of pedestrian trails, bike paths, playgrounds within the single family district, and a pool and clubhouse within the apartment complex. Individual associations for the various uses within West Wynne Farms shall manage these amenities. Approximately twelve (12) acres of open space on the south side of the Northfield Drive extension shall be passive recreation. Approximately thirty-four (34) acres of passive and active recreational amenities shall be provided north of County Road 300 North and extending to the B&O Rails to Trails.

Comprehensive Plan

The 2012 Comprehensive Plan contains the following objectives which the amendment of West Wynne Farms will help achieve:

1. "Promote the flexible application of Land Use Plan, accommodating a variety of residential development that is consistent with the Plan but mindful of housing market demands, existing inventory and larger residential trends."

2. "Continue to encourage a mix of housing including owner- and renter- occupied single family detached homes, single family attached homes and multi-family development."

3. "Promote the development of senior housing to expand housing options and encourage older Brownsburg residents to age in place." The subject development will also allow Brownsburg residents to bring their aging parents to the community. Typically, retired senior citizens who are still living independently are a great asset to communities, being active in charitable and civic organizations and programs."

4. "Continue to promote office and employment uses in areas along Northfield Drive and the Ronald Reagan corridors."

5. "Determine the preferred route for the remaining segments of Northfield Drive and take steps necessary, including securing right-of-way, to complete the route encircling the core of Brownsburg."

The proposed changes to West Wynne Farms meets the intent of the PD district in that the development is a medium to large scale development providing for a wide range of uses, including three separate and distinct residential uses which provide a greater tax base to the Town than the mostly single family owner-occupied lots and homes currently permitted. In addition, the proposed changes include a greater amount of commercial development, including a large scale grocery store or similar use. Lastly, due to the decrease in urban sprawl, the amount of open space has nearly doubled providing the opportunity for the Town of Brownsburg to utilize a large portion of the open space for park lands. Because of these proposed changes, West Wynne mitigates monotony.

Lastly, the proposed PD amendment meets the requirements of *IC 36-7-4-1500* et seq. for the reason that the Developer has initiated the text amendment in the proper format and expresses in detailed terms the requirements that apply to each Parcel within the PD; has notified surrounding landowners and published notice of the public hearing according to Indiana law and the procedures adopted by the Brownsburg Plan Commision; the application has been considered by and received a recommendation from the Brownsburg Plan Commission as delegated to said Plan Commission by the Brownsburg Town Council; and thereafter been considered and adopted by the Brownsburg Town Council.

District Intent	Permitted Uses	Special Exception Uses
The purpose of Parcel N is to permit moderate density single-family detached homes on medium sized lots for new development with water and sewer connections	Farm Dwelling (pre-existing structures) Single-Family Dwellings Passive/Active Recreation Areas Day Care in Home Home Occupations as permitted by the Brownsburg Zoning Ordinance (2/1/13)	Assisted Living Facility Education Institution, excluding K-12 Educational Institution, K-12 Religious Places of Worship Non-commercial Recreation Publicly Owned Buildings and Facilities

District Development Standards

1.	Minimum Lot Area:	10,000 square feet
2.	Minimum Lot Width:	70 feet, measured at the building setback.
3.	Minimum Lot Frontage:	40 feet
4.	Maximum Lot Coverage:	40%
5.	Minimum Floor Living Area:	1,500 square feet, single story
		2000 square feet, multi-story
6.	Maximum Height:	
	Primary Structure:	40 feet
	Accessory Structure:	18 feet
7.	Minimum Front Yard Setback:	30 feet (primary and accessory structures)
8.	Minimum Side Yard Setback:	10 feet minimum (primary and accessory structures)
9.	Minimum Rear Yard Setback:	
	Primary Structure:	15 feet
	Accessory Structure:	10 feet
10.	Minimum Distance Between Buildings:	20 feet
11.	Maximum Number of Primary Structures	1

12. Additional Standards

A. Minimum Off-Street Parking and Loading Requirements

Minimum off-street parking and loading requirements shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for the R3 District.

B. Sign Requirements

Sign requirements shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for the R3 District.

C. Landscaping Requirements

Landscaping shall be as regulated in this Ordinance Section 8.

D. Architectural Standards

Architectural requirements shall be as regulated in this Ordinance Section 5.

13. Development standards not specifically addressed herein shall comply with the development standards required in District R3 of the Brownsburg Zoning Ordinance adopted February 1, 2013, including, but not limited to, environmental, fences and walls, and lighting.

District Intent	Permitted Uses	Special Exception Uses
The purpose of Parcels O and P is to permit moderate density multi-family buildings in the form of one story senior/ empty nester apartments with water and sewer connections	Farm Dwelling (pre-existing structures) Multi-Family apartments Passive/Active Recreation Areas Day Care in Home Home Occupations as permitted by the Brownsburg Zoning Ordinance (2/1/13)	Assisted Living Facility Education Institution, excluding K-12 Educational Institution, K-12 Non-commercial Recreation Publicly Owned Buildings and Facilities Group Home Hospital/Emergency Care Facility Nursing Home Religious Places of Worship

District Development Standards

1. Density: 6 dwelling units per acre
2. Maximum Lot Coverage: 60 percent
3. Minimum Living Area: 1200 square feet
4. Maximum Height: 35 feet
5. Minimum Front Yard Setback: 20 feet the edge of pavement on private streets
6. Minimum Rear Yard Setback:

   All Structures: 15 feet
7. Minimum Distance Between Principal Buildings: 20 feet
8. Maximum Number of Buildings Per Lot:

   Parcel O: 20
   Parcel P: 10
9. Additional Standards

   A. Minimum Off-Street Parking and Loading Requirements

      Minimum off-street parking and loading requirements shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for the M2 District.

   B. Sign Requirements

      Sign requirements shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for the M2 District.

   C. Landscaping Requirements

      Landscaping shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for the M2 District.

   D. Architectural Requirements

      Architectural requirements shall be regulated in this Ordinance Chapter 6.

   E. In "Parcel P", no dwelling shall be built east of a parallel line that is 1,295 feet from the west property line (centerline of SR 267) of West Wynne Farms.

10. Development standards not specifically addressed herein shall comply with the development standards required in District M2 of the Brownsburg Zoning Ordinance adopted February 1, 2013, including, but not limited to, environmental, fences and walls, and lighting.

District Intent	Permitted Uses	Special Exception Uses
The purpose of Parcel Q is to permit moderate to high density multi-family buildings with water and sewer connections	Farm Dwelling (pre-existing structures)	Assisted Living Facility
	Multi-Family apartments	Education Institution, excluding K-12
	Garages and carports, detached	Educational Institution , K-12
	Passive/Active Recreation Areas	Religious Places of Worship
	Day Care in Home	Non-commercial Recreation
	Signs, as regulated within this Ordinance	Publicly Owned Buildings and Facilities
	Home Occupations as permitted by the Brownsburg Zoning Ordinance (2/1/13)	

District Development Standards

1. Density — 12 dwelling units per acre
2. Maximum Lot Coverage: — 60 percent
3. Minimum Living Area:
   - One Bedroom: 700 square feet
   - Two Bedroom: 900
   - Average: 1000 square feet
4. Maximum Height:
   - Primary Structures: 50 feet to peak
   - Accessory Structures: 20 feet
5. Minimum Front Yard Setback: — 20 feet from the edge of pavement on private streets
6. Minimum Side Yar Setback: — 15 feet
7. Minimum Rear Yard Setback:
   - Primary Structures: 15 feet
   - Accessory Structures (incl. garages and Carports): 0 feet
8. Minimum Distance Between Principal Buildings: — 20 feet
9. Maximum Number of Buildings Per Lot: — 25 (including primary and accessory structures)
10. *Additional Standards*

F. Minimum Off-Street Parking and Loading Requirements

Minimum off-street parking and loading requirements shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for the M3 District.

G. Sign Requirements

Sign requirements shall be as regulated in this Ordinance Section 12.

H. Landscaping and Buffer Requirements

Landscaping shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for the M3 District and by Commitments recorded _____, 2013 in the Office of the Recorder of Hendricks County, Indiana as Instrument Number _____ and attached to this Ordinance as Exhibit D.

I. Architectural Requirements

Architectural requirements shall be as regulated in this Ordinance Section 6.

11. Development standards not specifically addressed herein shall comply with the development standards required in District M3 of the Brownsburg Zoning Ordinance adopted February 1, 2013, including, but not limited to, environmental, fences and walls, and lighting.

District Intent	Permitted Uses	Special Exception Uses
The purpose of Parcels R and S is to permit low, medium and high intensity commercial uses for new development with more than one principal use or building permitted per lot with water and sewer connections	Farm Dwelling (pre-existing structures) Wind turbine, small Agricultural Roadside Stands Educational Institution Passive/Active Recreation Areas Religious Places of Worship Animal grooming Auction (indoor) Automotive (Type 1) Bakery Bank, ATM, Drive-up Banquet Hall Bar, Tavern, Brew Pub Barber/Beauty Shop Broadcast Studio Car rental Catering service Club or Lodge Coffee shop Coin laundry Computer service Copy center, Printing Delicatessen Design services Donation collection point Dry cleaning, processing Dry cleaning, pick up/drop off Express shipping center Exterminator Funeral home Gas station Hospice care facility Hotel, motel Ice cream shop Media rental Medical clinic Mobile device dealer Nail salon	Wind turbine, large Automotive (Types 2 and 3) Crematory Recycling collection point Transit station (local hub) Contractor Services (Parcel R) Research & Testing Laboratories

Permitted Uses (continued)

Nursing Home
Office, general
Office, medical
Party facility
Pharmacy
Photography studio
Printing, commercial
Recreation center (indoor)
Recreation center (outdoor)
Repair shop, electronics
Repair shop, equipment
Restaurant, all
Retail, all
Seamstress/tailor
spa
studio arts
tanning salon
theater,movie (indoor)
trade or business school
veterinary clinic
wellness facility
Day care center
Assisted Living Facility
Financial Institution
Fitness Center & Gym
Grocery Store
Contractor Services (Parcel S)
Warehouses (Parcel S)
Self Storage (Parcel S)
Publicly Owned Buildings

District Development Standards

1. Minimum Lot Area: None

2. Minimum Lot Width: 50 feet, measured at the building setback.

3. Maximum Lot Coverage:

   All Structures: 50%

   Impervious Surface: 90%

4. Maximum Height:

   Primary Structures: 50 feet

   Accessory Structure: 20 feet

5. Minimum Front Yard Setback:

   From Subdivision Street: 0 feet (primary and accessory structures)
   From External Street: 30 feet

6. Minimum Side Yard Setback: 10 feet minimum along perimeter
   0 feet along internal property lines

7. Minimum Rear Yard Setback:

   Primary Structure: 15 feet
   Accessory Structure: 10 feet

8. Minimum Distance Between Buildings: 10 feet

9. Maximum Number of Buildings Per Lot: 5

10. Additional Standards

A. Minimum Off-Street Parking and Loading Requirements

Minimum off-street parking and loading requirements shall be as regulated by the Brownsburg Zoning Ordinance adopted February 1, 2013 for District C2.

B. Sign Requirements

Sign requirements shall be as regulated in this Ordinance Section 12.

C. Landscaping Requirements

Landscaping shall be as regulated in this Ordinance Section 9.

D. Architectural Requirements

Architectural requirements shall be as regulated in this Ordinance Section 7.

E. CONTRACTORS SERVICES, WAREHOUSES AND SELF STORAGE

1. Contractor Services, warehouses and self-storage uses shall be permitted in Parcel S only and only as designated on the Land Use Map attached as Exhibit "C".

2. Contractors Services shall be permitted only within the Flex Space, allowing for offices in the front of the unit and warehousing in the rear of the unit

10. Development standards not specifically addressed herein shall comply with the development standards required in District C2 of the Brownsburg Zoning Ordinance adopted February 1, 2013, including, but not limited to, environmental, fences and walls, and lighting.

5.01 PURPOSE

The purpose of the Residential Architectural Commitments is to establish the character, value, look, and style of the single-family detached dwellings for Parcel N.

5.02 GENERAL REQUIREMENTS

Any building, structure or use of land, when erected or expanded upon, shall provide architectural elements within the following provisions of this Section. Builders shall submit for the Developer's review all proposed building elevations with all exterior materials specified.

5.03 DESIGN STANDARDS

All single-family dwellings shall be in accordance with the following standards and specifications:

A. Front elevations shall consist of one of the following:
   1. 100% brick, stone, or cultured stone, excluding windows and doors, up to eight (8') feet in height or equivalent square footage coverage. This requirement may also be met by utilizing a Masonite or wood and/or cement based siding product in lieu of vinyl on 100% of all elevations of the home or building.
   2. 80% brick, stone or cultured stone, excluding windows and doors, up to eight feet (8') in height or equivalent square footage, provided a minimum twenty-four inch (24") wainscot of brick, stone or cultured stone is utilized on the side and rear elevations.
   3. Homes on corner lots shall be considered to have two front elevations.

B. Window grids on all operable non-casement windows on all elevations.

C. Chimney chases must be enclosed.

D. Lighting fixtures required on both sides of garage door.

E. All roof pitches should be 6/12 minimums, exclusive of porches, bump-outs, or dormers.

F. All vinyl siding shall be a minimum 0.044.

G. No homes shall have the same front elevation or exact color scheme within a 3-lot "snapshot" on the same side of the street, or of the home immediately across the street from the center of the 3-lot "snapshot".

H. Minimum two (2)-car garage.

I. All front entry doors must include sidelights or transoms.

J. All operable windows on the front of the home shall have shutters.

K. A concrete patio (80 sq. ft. min.) must be provided at the rear elevation.

L. Asphalt/Fiberglass shingles.

M. Roofs shall extend with "overhangs" a minimum of twelve (12") inches on all sides of the home, except where brick extends to the eave in which there will be an eight (8) inch overhang.

N. In addition, at least three (3) of the items below:
1. Dormers on front elevation roof;
2. Reverse gable or hip roof on front elevation roof;
3. Covered front porch (minimum 16 square feet);
4. Decorative front door surround, trim molding or header;
5. Garage bump-out (minimum 2 feet) with minimum 2 foot setback from garage plane where plane is closer to street than that of the front door;
6. Dimensional "shaped" shingle for entire roof;
7. Accent siding, decorative vents, or accents in gable peak or face on front elevation;
8. Shutters on all windows (on side and rear elevations [in addition to those already required at front elevations]);
9. Keystone or decorative brick or wood surround on one or more windows or doors on front elevation;
10. Bay or "boxed-out" window on front elevation;
11. Decorative trim molding at gutter height on front elevation;
12. Brick full height of front façade including gables;
13. Brick wainscot around sides and rear elevations;
14. Additional wall mounted exterior lights, or post mounted decorative yard lights as approved by covenants.

O. Furthermore, homes with rear and side elevations facing parks, trails, community open space, exterior Town/County/State roadways, or Northfield Drive shall comply with the following (with credit given here only if option not chosen from "additional requirements" above:
1. If at least a four (4') foot Wainscot of brick on rear elevation and a minimum eighty (80 SF) square foot covered or screened porch is provided, pick at least one (1) item as specified below:
a. Finished space "pop-out";
b. Bay Window;
c. Reverse Gable;
d. Dormer;
e. Dormer;
f. Hip Roof;
g. Accent Siding;
h. Shutters on all appropriate windows;
i. Dimensional (shaped) Shingles;
j. Decorative Trim Molding at gutter height;
k. Window Grids;
l. Raised Wood Deck (8' x 10' minimum); deck may be constructed in lieu of required concrete patio.
m. Additional Landscaping of either one (1) 2" caliper shade or ornamental tree, or one four-six (4'-6') tall evergreen tree.

2. If no brick on rear elevation, then a minimum eighty (80 SF) square foot covered or screened porch is required, and pick at least two (2) items as specified below:

   a. Finished space "pop-out";
   b. Bay Window;
   c. Reverse Gable;
   d. Dormer;
   e. Dormer;
   f. Hip Roof;
   g. Accent Siding;
   h. Shutters on all appropriate windows;
   i. Dimensional (shaped) Shingles;
   j. Decorative Trim Molding at gutter height;
   k. Window Grids;
   l. Raised Wood Deck (8' x 10' minimum); deck may be constructed in lieu of required concrete patio.
   m. Additional Landscaping of either one (1) 2" caliper shade or ornamental tree, or one four-six (4'-6') tall evergreen tree.

6.01 PURPOSE

The purpose of the following Architectural Commitments is to establish the character, value, look, and style of the multi-family buildings for Parcels O, P and Q.

6.02 GENERAL REQUIREMENTS

Any building, structure or use of land, when erected or expanded upon, shall provide architectural elements within the following provisions of this Section. The Builders shall submit for the Developers review all proposed building elevations with all exterior materials specified.

6.03 DESIGN STANDARDS

All multi-family buildings shall be in accordance with the following standards and specifications:

A. For Parcel O only the front elevations shall consist of the following:
   i. Front
      1. Minimum 80% brick, stone or cultured stone, excluding windows and doors, up to eight feet (8') in height or equivalent square footage.
   ii. Side
      1. Minimum twenty-four inch (24") wainscot of brick, stone or cultured stone is utilized.
   iii. Rear
      1. Minimum twenty-four inch (24") wainscot of brick, stone or cultured stone is utilized.
   iv. Concrete block is not a permitted exterior finish material.

B. For Parcel P elevations shall consist of the following:
   i. Front
      1. Minimum 80% brick, stone or cultured stone, excluding windows and doors, up to eight feet (8') in height or equivalent square footage,
   ii. Rear
      1. Minimum 80% brick, stone or cultured stone, excluding windows and doors, up to eight feet (8') in height or equivalent square footage is utilized on the rear for elevations for buildings abutting and facing the south property line of Parcel P.
   iii. Southern Façade of the southernmost building along the east property line
      1. Minimum 80% brick, stone or cultured stone, excluding windows and doors, up to eight feet (8') in height or equivalent square footage is utilized on the southernmost elevation of the building abutting and facing the south property line of Parcel P.

iv. All other Side and Rear elevations of other buildings shall not be required to have a brick or stone elevation on the side or rear.

C. Concrete block is not a permitted exterior finish material.

B. For Parcel Q only, the front, side and rear of any building elevation shall consist of the following:

iv. 50% brick, stone, or cultured stone, excluding windows and doors, up to sixteen feet (16') in height or equivalent square footage coverage.

v. Concrete block is not a permitted exterior finish material.

C. Buildings in Parcels O and P shall be limited to one story.

D. Asphalt/Fiberglass shingles or Standing Seam metal roof.

E. Rooftop canopy and telecommunication equipment shall be fully screened on all sides using parapets, penthouse screens or other similar methods, which are integrated into the overall building design.

F. Window grids on all operable non-casement windows on all elevations.

G. Chimney chases must be enclosed.

H. Roof pitches shall be 5/12 minimums, exclusive of porches, bump-outs, and dormers.

I. All vinyl siding shall be a minimum of 0.046 in Parcels O, P and 0.44 in parcel Q.

J. All front entry doors must include sidelights or transoms or a window in the door in Parcels O and P.

K. Windows on the front of the home in Parcels O and P shall have shutters, where applicable.

L. A keystone or decorative brick surround shall be provided on one or more windows or doors on the front elevation when brick is used.

M. All side elevation windows shall be treated by shutters or decorative headers.

N. All utility panels shall be screened or located in an area not visible from a public roadside.

O. Roofs shall extend with "overhangs" a minimum of twelve (12") inches on all sides of the buildings except where brick extends to the eave in which there will be an eight (8) inch overhang.

P. There shall be no accessory structures in Parcels O and P. Accessory structures are permitted in Parcel Q. Accessory structures shall not include mailboxes and trash compactor structures.

7.01 PURPOSE

The purpose of the Commercial/Retail/Office Architectural Commitments is to establish the character, value, look, and style of the Commercial/Retail buildings.

7.02 GENERAL REQUIREMENTS

Any building, structure or use of land, when erected or enlarged upon, shall provide architectural elements within the following provisions of section. Builders and/or developers of individual parcel(s) shall submit for the review and approval by the developer of the overall West Wynne Farms project all proposed building elevations with all exterior materials specified.

7.03 DESIGN STANDARDS

All Commercial/Retail/Office buildings shall be in accordance with the following standards and specifications:

A. The buildings will be a combination of masonry, glass, decorative architectural block and dryvit. Split face Block shall not comprise more than 30% of any façade. Plain concrete block is not a permitted exterior finish material (with exception of loading areas not directly visible from a public street). Highly reflective materials shall be prohibited.

B. Front and side facades for all corner lots shall be of the same materials and similarly detailed.

C. All entrances shall be defined by architectural elements such as pediments, plasters, columns, awnings and other design elements appropriate to the architectural style and details of the building as a whole, or shall project or be recessed by not less than four (4) feet. All entrances shall be covered.

D. The roofs shall be gabled or hip, full or parapet, and shall be clad in wood shingles, slate, asphalt/fiberglass shingles or standing seam metal.

E. Dormers shall be designed with the correct details, proportion and style consistent with the overall building composition and roofed with symmetrical gable, hip or barrel roofs. Belvederes, cupolas, and pergolas are permitted if appropriate to the style, well proportioned, and fully detailed.

F. All vents, attic ventilators, turbines, flues and other roof penetrations shall be *painted* to match the color of the roof or flat black.

G. Rooftop canopy and telecommunication equipment shall be fully screened on all sides using parapets, penthouse screens, or other similar methods, which are integrated into the overall building design.

H. Gutters and downspouts shall be appropriate to, or visually integrated with, the architectural style of the structure.

I. All trash collection facilities shall be masonry enclosed with decorative gates located in discrete but accessible areas.

J. All proposed storage and loading areas shall be screened or hidden. No storage or loading area shall be parallel to State Road #267, County Road 300N or the proposed Northfield Drive.

K. All exterior mechanical equipment shall be screened or hidden. No mechanical equipment shall be permitted parallel to State Road 267, County Road 300S or the proposed Northfield Drive (unless contained in an underground vault, flush with the ground. Said vault shall be screened with landscaping).

L. Exterior sidewalks, steps, and ramps shall be masonry, stone, brick pavers, poured or pre-cast concrete.

M. Parking lots shall be concrete, asphalt paving or brick pavers or any combination thereof with the exception of the warehouses/self storage area. Tempory Stone parking shall be permitted in the warehouse/ self storage area for a period not to exceed two years for phasing purposes only.

N. All proposed plans for the Commercial/Retail/Office parcels shall comply with all current Town, County, and State regulations and approvals, which are de-signed and intended to safeguard the quality of storm water runoff.

O. Height and width ratio requirements shall be as follows:

Width:

1. Facades less than twelve (12) lineal feet long, shall not require any fenestration.
2. Facades greater than twelve (12) lineal feet shall require thirty (30) percent fenestration.
3. Facades greater than seventy-five (75) lineal feet shall incorporate wall plane projections or recesses having a depth of at least three (3) percent of the length of the façade and extending at least twenty (20) percent of the length of the façade. No uninterrupted length of any façade shall exceed seventy-five (75) lineal feet.
4. Facades shall include a repeating pattern with no less than three (3) of the following elements: color change, texture change, material change, fenestration change (windows, doors, openings, etc.), or profile change (turns & projections, etc.).

Height:

1. The height of a building shall not exceed three (3) stories. This measurement shall be from the exterior grade of the building to the mean ridgeline on hip or gabled rooflines.
2. The maximum height of a story shall be thirteen (13) feet clear.
3. The height limit shall not apply to masts, belfries, clock towers, cupolas, chimneys, machine rooms, or similar structures.

8.01 PURPOSE

The purpose of the residential landscape commitments is to establish the character, value, look, and to buffer the single-family attached and detached and multi-family areas from other land uses within the development.

8.02 GENERAL REQUIRMENTS

Any building, structure or use of land, when erected or expanded upon, shall provide landscape design elements within the following provisions of this section. Builders shall submit for the Developer's review all proposed site and development plans having all plant materials and specifications listed

8.03 DESIGN STANDARDS

A. All single-family detached structures and lots shall be in accordance with the following standards and specifications:

1. Where rear lot lines of residential districts abut State Road #267, Northfield Drive, County Road 300 North, a minimum forty (40) foot landscape buffer shall be provided. Said buffer shall include four (4) to six (6) feet high undulating mounds, having 1 of the following type of tree for every 20 lineal feet of buffer area; shade trees measuring a minimum 2-1/2" caliper, ornamental trees measuring a minimum 1-1/2" caliper, and 6-8 feet tall conifers.
2. Where rear lot lines of residential districts abut Open Space(s) and Amenity area(s) measuring a minimum of five (5) acres (excluding Open Space[s] containing retention pond facilities), shade trees measuring a minimum 2-1/2" caliper shall be planted so that a minimum of six (6) trees occur every one hundred (100) lineal feet.
3. Where residential lots that are developed along the perimeter of the development, however do not abut any of the aforementioned roadways, a landscape buffer zone, measuring a minimum ten (10) feet wide, shall be made a part of the residential lot. Such landscape buffers and lots shall be encumbered by a landscape easement, to be made a part of and pursuant to the recording of the final plat and "Covenants and Restrictions". Lots adjoining Wynne Farms along eastern boundary of West Wynne Farms are exempt from this requirement.
4. All residential lots that are developed along the perimeter of the development *shall install* either a shade tree measuring a minimum 2-1/2 inch caliper, or a six (6) foot high conifer in the rear yard. Said plantings shall be installed within the 10' landscape buffer easement, by the builder, with the homeowner/ or HOA assuming responsibility for maintenance after the initial warranty period depending on if it is located on a common area or on a lot.
5. Existing tree(s) to remain, having a caliper of four (4) inches or greater on any lot, shall have snow fencing, or like material, installed at the drip line of the existing tree(s) by the builder for protection during building construction. Maintenance of

tree protection practices shall be the sole responsibility of the builder until ownership of the lot is conveyed to the homeowner.

6. All lots shall be finished graded pursuant to the elevations provided upon the approved plot plan. All front and side yards shall be sodded to the rear side corners of the house.
7. All rear yards shall be finished graded for proper drainage, seeded and hydro-mulched as a minimum.
8. A minimum of two (2) of any combination of the following 2-1/2" caliper shade tree, or 1-1/2" caliper ornamental tree, or evergreen tree, measuring a minimum of six (6) feet in height, shall be planted in the front yard.
9. Foundation landscaping in front yards shall include a minimum of ten (10) deciduous and/or evergreen shrubs at twenty-four (24) inches high. All foundation landscaping shall be placed within a natural mulch bed.
10. All mailboxes shall be of common post design, box size, and color, as approved by the Developer.

B. All single-family attached homes shall be in accordance with the following standards and specifications:

1. Landscaping shall be installed when the parcel is being developed with for sale units.
2. All lots shall be finished graded pursuant to the elevations provided upon the approved plot plan. All front and side yards shall be sodded to the rear side corners of the structure.
3. All rear yards shall be finished graded for proper drainage, seeded and hydro mulched as a minimum.
4. A minimum of one (1) 2-1/2" caliper shade tree, or one (1) 1-1/2" caliper ornamental tree, or one (1) evergreen tree, measuring a minimum of six (6) feet in height, shall be planted in the front yard of each building.
5. Foundation landscaping in front yards shall include a minimum of ten (10) deciduous and/or evergreen shrubs at twenty-four (24) inches high. All foundation landscaping shall be placed within a natural mulch bed.
6. All mailboxes shall be of common post design, box size, color, and location, as approved by the Developer.

Where rear yards meet between internal neighborhoods (parcels), a minimum of one (1) 2-1/2" caliper shade tree or one (1) 6' tall conifer shall be planted by the builder within ten (10') feet of the rear property line. Such landscape buffers and lots shall be encumbered by a landscape easement, to be made a part of and pursuant to the recording of the final plat and "Declaration of Covenants, Conditions, and Restrictions". The homeowner and or the HOA in the event it is common area or in a buffer landscaped easement shall be responsible for maintaining said tree(s) after the initial warranty period.

9.01 PURPOSE

The purpose of the commercial/retail/office landscape commitments is to establish the character, value, look, and to buffer of the commercial/retail/office parcels from other land uses within the development.

9.02 GENERAL REQUIRMENTS

Any building, structure or use of land, when erected or enlarged upon, shall provide landscape design elements within the following provisions of this section. Builders shall submit for the Developer's review all proposed site and development plans having all plant materials and specifications listed.

9.03 DESIGN STANDARDS

A. All commercial/retail/office development shall be in accordance with the following standards and specifications except for parking:

1. Landscaping shall have any combination of materials selected from Section 9.03.B. which equals or exceeds a Unit Value of 5.0 for each one-hundred (100) lineal feet of property along the external limits of the real estate contained within this ordinance, provided that at least 10% of the Unit Value shall be derived from deciduous shade trees ("overstory"), or deciduous ornamental trees ("understory"), and at least 75% of the Unit Value shall be derived from evergreen trees, evergreen shrubs – narrow spread, or earthen mounds.
2. Parking lots shall include landscape islands every thirty (30) parking spaces, a minimum of ten (10') feet in width and the length of a parking space. If parking spaces are nose to nose, the island shall be the length of two spaces.
3. All parking lanes shall begin and end with a landscape island the length of two (2) spaces end-to-end, and a measuring a minimum of ten (10') feet in width.
4. Parking islands shall include a minimum of two (2) 2-1/2" caliper shade tree with turf or a mulch material that is complimentary to the building(s) color scheme.
5. Perimeter parking screening will be provided and shall include shrubs at a minimum of 3 feet in height that forms an opaque screen and visual barrier within 2 years of planting. The unit value for perimeter parking screening may count toward the overall unit value required in 9.03.A.1.

B. Unit Values (minimum sizes at time of planting)

1.	Deciduous Shade/Overstory Tree – 2 ½" Caliper	0.75
2.	Evergreen Tree – 9' Tall	0.75
3.	Deciduous Ornamental/Understory Tree – 1 ½" Caliper	0.50
4.	Evergreen Tree – 6' Tall	0.50
5.	Evergreen Shrub with Narrow Spread – 4' Tall	0.25
6.	Hedge Plant – 24" to 30" Spread	0.05
7.	Earthen Mound – 3' Tall	0.50
8.	Earthen Mound – 6' Tall	1.00
9.	Earthen Mound – 9' Tall	1.50

10.01 PURPOSE

The purpose of this section is to provide standards and specifications applicable to the construction of streets, alleyways, sidewalks, and pedestrian walkways within West Wynne Farms.

10.02 DESIGN STANDARDS

All streets internal to West Wynne Farms shall be designed and constructed pursuant to the standards and specifications contained in the Brownsburg Subdivision Control Ordinance effective 1/01/2004. Additionally, the following standards are permitted:

A. Stamped or colored asphalt and/or concrete shall be allowed at intersections, entries, and pedestrian crosswalks. All maintenance of streets involving colored asphalt or concrete, which are dedicated to the public, shall remain with the public entity accepting the subject improvement. The public entity accepting and maintaining those streets, which have been approved and containing decorative paving materials, shall have the inherent right to remove and replace such areas with non-decorative materials.

B. Subsurface drains (SSD) shall be installed under concrete curbs pursuant to the standards and specifications of the governing jurisdiction at the time of platting. All residential lots shall be permitted to receive a lateral from the SSD to allow for sump pump and downspout connection discharge. Private streets with an inverted crown section shall have sub-surface drains located in the low areas of the street along the centerline or low spot and not beneath the curbs or a continuous sub-surface line.

C. Developer has the option to delay placing the surface coat of asphalt streets with-in each phase until an eighty (80) percent build-out is achieved, or within three (3) years following the recording date of the final plat, whichever occurs sooner, provided that an acceptable surety is posted to guaranty such improvement and an acceptable binder course with adequate sealer is utilized and approved by the Town of Brownsburg Street Department.

D. Reverse curves with less than one-hundred (100) feet of tangency shall be permitted.

E. Roadways shall be permitted to intersect along horizontal curves provided that the intersecting roadway centerline is external and radial to the opposing curve.

F. The developer has the option of posting Performance Bonds and Maintenance Bonds, or other forms of sureties, in accordance with the standards established in the Town of Brownsburg Subdivision Control Ordinance.

G. Roadways within Parcels O, P and Q shall be private roads constructed to the thickness standards of the Town of Brownsburg or equivalent structural strength, and a width of twenty-four feet (24').

H. The streets and public rights-of-way within Parcels O, P and Q shall be privately owned and maintained by the property owner. The streets and rights-of-way may become publicly owned and maintained only upon the express written consent of the governmental body having jurisdiction.

I. Five (5) foot wide concrete sidewalks shall be installed along interior and exterior roads. In some locations, an eight (8) foot wide asphalt trail may be constructed in lieu of the aforementioned concrete sidewalk.

10.03 STREET SIGNS.

At the Developer's discretion, custom signage may be substituted for standard street signage as specified in the "Brownsburg Sub-division Control Ordinance"; provided, that such custom signage is approved by the Street Department and Planning and Building Department of the Town of Brownsburg, shall be installed at the Developer's expense, and maintained by the owner of or an authorized management organization for the parcel(s) in which such signage is placed.

11.01 PURPOSE

The purpose of the open space and amenities within the development is to enhance the overall preservation of native grounds, create active and passive areas for recreational enjoyment, and to serve as buffers between various land use types.

11.02 PARCEL M

The purpose of "Parcel M" is to create passive and/or active open space and parklands which the Developer shall have the option of donating/dedicating to the Town of Brownsburg for public use.

11.03 GENERAL COMMITMENTS

A. All playground equipment shall meet International Play Equipment Manufacturers Association (IPEMA) certification and the U.S. Consumer Product Safety Performance Specifications. In addition, all structures shall meet ADA (American Disabilities Act) guidelines.
B. Playground surfacing materials shall comport to the cushioning standards of the Consumer Product Safety Commission.
C. All parks, trails, and open space shall be maintained and insured by a Homeowners Association, to be established through the establishment of appropriate covenants and restrictions.
D. All multi-use paths shall either be asphalt or concrete constructed to a minimum width of eight (8) feet.
E. Multi-use paths along State Road 267 and Northfield Drive shall conform to the standards of the Town of Brownsburg's adopted Greenways Plan.
F. Total area designated for open space shall not be less than 25% of the total West Wynne Farms acreage.

11.04 DESIGN STANDARDS FOR PARCEL N.

In its sole discretion, the Developer may choose to incorporate relatively small amenities to serve the recreational needs of residents which shall be owned and maintained by the Homeowners Association. These areas shall contain a minimum of three (3) of the following options:

1. Pavilion;
2. "Tot-lot" consisting of a multi-use play structure(s);
3. Bench seating;
4. Bicycle rack(s);
5. Water feature (e.g. fountain, reflecting pool);
6. Shuffleboard court(s);
7. Quarter- to half-scale basketball court (court size determined by overall parklet design area and layout);

8. Landscaping within parklets shall consist of no fewer than twelve (12) shade trees at 1-1/2" caliper and nine (9) conifers at 5 feet minimum height.

The amenities shall be completed within six (6) months of the issuance of a building permit for fifty (50) houses.

11.05 DESIGN STANDARDS FOR PARCEL Q:

Within six (6) months of the issuance of a building permit for the sixth building , the Developer, or the Builder, shall have completed the development of five (5) of the following:

A Minimum 2,000 SF pool and bathhouse facility;
B. Parking lot;
C. Tennis court(s);
D. Quarter- to full-scale basketball court(s);
E. Neighborhood-scale pavilion;
F. Bicycle rack(s);
G. Neighborhood-scale playground with multi-use structure(s);
H. Picnic tables;
I. Grilling station;
J. Landscaping, consisting of no fewer than twenty-four (24) shade trees at 1-1/2" caliper and twenty-four (24) evergreen trees at 5' minimum height.

11.06 ADDITIONAL OPEN SPACE: Approximately twelve (12) acres on the south side of Northfield Drive, as designate on the site map, shall remain as passive open/green space and Developer shall have the option to deed it to an entity for public use.

12.01 PURPOSE

The purpose of the signage regulations is to encourage the effective use of signs as a means of communication within the development; to maintain and enhance the aesthetic environment, and to enhance the development's ability to attract sources of economic development and growth; to improve pedestrian and traffic safety; to minimize the possible adverse effect of signs on nearby public and private property; and to enable fair and consistent enforcement of the restrictions contained herein.

12.02 APPLICABILITY EFFECT

A sign may be erected, placed, established, painted, created, or maintained within the development provided such facility is in strict conformance with the standards, procedures, exemptions, and other requirements of this contained herein.

12.03 PERMITS REQUIRED

A. Signs requiring a permit under the provisions of this Ordinance shall secure such approval prior to the construction, placement, erection, or modification of an existing sign, pursuant to, and in accordance with, the requirements of the Brownsburg Zoning Ordinance.

B. No sign permit of any kind shall be issued for an existing or proposed sign unless such sign is consistent with the requirements of all applicable ordinances.

12.04 EXEMPT SIGNS

A. Signs designated as "exempt" within the Brownsburg Zoning Ordinance shall be relieved from any obligation to obtain an Improvement Location Permit (ILP), provided said signs comply with all applicable provisions contained here-in.

12.05 ON-PREMISE SIGNS: COMMERCIAL/RETAIL

The following signage is permitted within Parcels R and S:

A. Permitted Commercial/Retail/Office signs: No single business establishment or tenant shall be permitted to have more than three (3) of the signs identified in paragraphs numbered 1,3,4,5,6,10, and 11 of this section.

1. Wall-mounted or Painted Signs:
   a. External streets (C.R. 300 North, State Road #267, and Northfield Drive), the area of the signboard shall not exceed a maximum size of one (1) square foot

per two (2) lineal feet of building frontage, nor exceed a maximum of one hundred (100) square feet.

b. Internal streets (i.e. all streets and parking areas not defined as "external streets"), the area of the signboard shall be calculated using the same 1:2 ratio, provided that any business with less than fifty (50) feet of frontage shall be permitted up to twenty-five (25) square feet of signboard.
c. Limited to two (2) signs per business establishment and no more than one (1) sign per façade.
d. Wall signs may be illuminated only during operating hours of business.
e. Wall-mounted signs along the external streets and adjacent residential areas shall not be internally illuminated, except where those external streets abut or front along other commercial parcels.
f. Applied letters may be substituted for wall-mounted signs, if constructed of wood, metal, or stone. Applied plastic letters shall not be permitted; however, translucent inserts may be used as an accent material.

2. Building Directory Signs:
   a. Such sign(s) shall be mounted on the wall adjacent to the entrance.
   b. Such signage shall project outward from the wall to which it is attached; however, such projection shall not exceed six (6) inches.
   c. The area of the signboard shall not exceed twelve (12) square feet.

3. Projecting Signs:
   a. The signboard shall not exceed an area of eight (8) square feet unless a corner sign, which shall not exceed an area of nine (9) square feet.
   b. The height of the top edge of the signboard shall not exceed (i) the height of the wall from which the sign projects, if attached to a single story building, (ii) the height of the sill or bottom of any second story window, if attached to a multi-story building and not a corner sign, or (iii) 50% of the distance between the building cornice or roof line and the sill or bottom of any second-story window if a corner sign located on a multi-story building.
   c. The distance from the building wall to the signboard shall not exceed six (6) inches.
   d. The width of the signboard shall not exceed four (4) feet.
   e. Limited to one sign for each ground floor business establishment.

4. Window and/or door signs shall not exceed 30% of the window or door area.
5. Awning signs shall not exceed twelve (12) square feet in area
6. Freestanding Signs: provided that the following standards are met:
   a. Signs shall be set back a minimum of ten (10) feet from the property line.
   b. The area of the signboard shall not exceed thirty (30) square feet.
   c. The height of the top of the signboard, or of any posts, brackets, or other supporting elements shall not exceed six (6) feet from the ground.

d. The signboard shall be architecturally compatible with the style, composition, materials, colors, and details of the building.

e. The signboard may be illuminated, but not after 11.00 PM, unless the business establishment is open later than 11:00 PM, at which time it shall not be illuminated after closing.

f. Limited to two (2) signs per building, and no more than one (1) sign per façade.

7. Incidental Signs shall be allowed for each entrance, shall not be illuminated, and shall not exceed four (4) square feet.
8. Directional Signs: may be either freestanding or wall-mounted on the rear façade or barrier (wall or fence), but shall be unlit and limited to four (4) square feet in area.
9. Eatery Signs: restaurants and cafes shall be allowed one (1) of the following additional signs:
   a. A wall-mounted display featuring the actual menu as used at the dining table, to be contained within a shallow wood or metal case, and clearly visible trough a glass front. The display case shall be attached to the building wall, next to the main entrance, at a height of approximately five (5) feet, shall not exceed a total area of two (2) square feet, and may be illuminated.

   b. Sandwich board signs, as follows:

      i) The area of the signboard, single-sided, shall not exceed five (5) square feet.
      ii) The signboard shall be constructed of wood, chalkboard, and/or finished metal.
      iii) Letters can be painted or handwritten.
      iv) The sign shall be located within four (4) feet of the main entrance to the business and its location shall not interfere with pedestrian and/or vehicular circulation.
      v) The information displayed shall be limited to daily specials and hours of operation.
      vi) The sign shall be removed at the end of the business day.
10. Historically Appropriate Illuminated Signs: (to the type of business conducted) sign area shall not exceed six (6) square feet.
11. Pylon Monument Signs:
   a. Size:
      i. Commercial/office centers less than 25,000 building square feet in size shall be permitted one pylon monument sign per center, which shall be no greater than nine (9) feet in height and have no more than sixty (60) square feet of sign area per face;
      ii. Commercial/office center which range in size from 25,000 building square feet to less than sixty thousand (60,000) building square feet shall be permitted one pylon monument sign per center, which shall be no greater than fifteen (15) feet in height and have no more than one hundred and twenty (120) square feet of sign area per face;
      iii. Commercial/office centers greater than sixty thousand (60,000) building square feet shall be permitted one pylon monument sign per center,

which shall be no greater than twenty-five (25) feet in height and have no more than two hundred and fifty (250) square feet of sign area per face;

iv. Commercial/office monument signs shall have a minimum base height of six (6) inches and a minimum cap height of two (2) inches. Total aggregate sign cap and base height shall not exceed six (6) feet; and

v. Sign caps and bases shall not be used for display or advertising purposes

b. Entrance Signs:

i. In addition to a pylon monument sign, a commercial/office center shall be permitted one (1) entrance sign per point of ingress; and

ii. Commercial/office center entrance signs shall be limited to a maximum of six (6) feet in height, a sign area of thirty (30) square feet per sign face, and shall not contain tenant information.

c. Setbacks:

i. All signs shall conform to the side and rear yard setback requirements for structures as set forth in this PD Ordinance; and

ii. Signs shall have a minimum front yard or right-of-way setback requirement of five (5) feet from a property line or right-of-way.

B. Permitted Other Temporary Signs for a period of not more than two years:

1. Project Identification Signs:

d. The design of the sign shall be consistent with the development's architectural character.

b. The maximum area per sign shall not exceed seventy-five (75) square feet.

c. The area surrounding the sign shall be appropriately landscaped.

d. The sign may be externally illuminated.

e. The sign shall not exceed fifteen (15) feet in height.

f. Matching signs, which border either side of one entrance, shall be treated as one sign, but both sign faces shall be used to calculate the total sign area.

2. Construction Signs for each street frontage of a lot, upon which construction of any structure is in progress, shall be permitted provided the following standards are met:

a. The maximum sign area shall be thirty-two (32) square feet.

b. The maximum height of each sign shall be eight (8) feet.

c. The sign shall not be illuminated.

d. The sign shall be removed within seven (7) days after occupancy occurs for the intended use of the building.

e. Sign copy shall be limited to identification of the building, architects, engineers, contractors, and other persons involved with the construction, but shall not include any advertising or product other than a rendering of the building being constructed.

3. Promotional Signs:

a. Signs depicting the site plan of a district, parcel, or sub-parcel assuming completion of development in accordance with the development plan, and indicating the location within the real estate of the person viewing the sign, provided the following standards are met:

i) The maximum size for each subject area sign shall be thirty-two (32) square feet.

ii) The maximum height shall be eight (8) feet.

iii) The sign may be externally illuminated until 11:00 PM each night.

iv) Promotional Signs shall be removed from a subject area when 95% of the lots or commercial space in that subject area has been sold.

b. Signs containing a rendering of one or more buildings expected to be constructed on a lot or portion of the real estate, provided the following standards are met:
   i) The maximum size for each subject area sign shall be forty (40) square feet.
   ii) The maximum height shall be eight (8) feet.
   iii) The sign may be externally illuminated until 11:00 PM each night.
   iv) One sign shall be permitted for each street frontage of the lot or portion of real estate upon which construction of the depicted building is contemplated.
   v) The sign shall be removed not later than thirty-six (36) months following installation thereof unless construction of the building has commenced prior to that date and, if construction commences, the sign shall be removed within seven (7) days after occupancy occurs for the intended use of the building.

4. Real Estate Sales and Leasing Signs: provided the following standards are met:
   a. Maximum sign area shall be twenty (20) square feet.
   b. The height of the sign shall not exceed eight (8) feet.
   c. Limited to one sign for each street frontage of the lot, with no more than two (2) sign faces per sign.
   d. The sign shall not be illuminated.
   e. Signs shall be removed within seven (7) days after the date the unit is leased, sold, or occupied.
   f. When 80% of the Commercial Center is sold or occupied, real estate signs are limited to a ground sign, a wall sign, or a window sign of six (6) square feet or less.

12.06 SIGNS: SINGLE FAMILY FOR PARCEL N

The following signage is permitted in the Single Family parcels of the Development:

All signage as permitted under the Brownsburg Zoning Ordinance for District R3.

12.07 SIGNS: MULTI- FAMILY FOR PARCELS O, P and Q

The following signage is permitted in the Multi-Family parcels of the Development:

All signage as permitted under the Brownsburg Zoning Ordinance for District M2 for Parcels O and P.

All signage as permitted under the Brownsburg Zoning Ordinance for District M3 for Parcels Q.

12.08 GENERAL REGULATIONS

A. Design Standards: signs affixed to the exterior of a building shall be architecturally compatible with the style, composition, materials, colors, and details of the building, as well as with other signs used on the building.

B. Premises identification:

1. The assigned premises identification of a building shall be displayed in such a manner so that the numeral can readily be seen from the street. Identification shall be displayed on the building, on or near the main entrance door, or displayed on a mailbox near the street in such a manner as they identify its corresponding building. If the mailboxes for several different buildings are grouped together, or if the location of individual mailboxes are not clearly associated with their respective buildings, then identification shall also be displayed on the building.
2. Any dwelling or commercial building that abuts an alley or secondary access that could be uses by motor vehicles must not only display the premises identification on the front, but shall also display its premises identification visible from the alternate access to the property.
3. When numeral representing premises identification are removed or become illegible, such numeral shall be renewed or replaced by the owner or occupant of the building.

C. Sign Maintenance: all signs and sign structures shall be kept and maintained in good repair and in a safe condition.

D. Sign Proximity: no sign shall be permitted to be placed on any wall, fence, or standard unless fronting a thoroughfare, alley, or rear lane, or unless located in a side yard that fronts a thoroughfare, alley, or rear lane.

12.09 GENERAL PERMIT PROCEDURES

General permit procedures shall comply with the current Brownsburg Zoning Ordinance.

13.01 INTERPRETATION OF TERMS OR WORDS

For purposes of this Ordinance, certain terms or words are defined, and the words or terms used shall be interpreted as follows:

The word "person" includes a firm, association, organization, partnership, trust, company, corporation or other legal entity, as well as an individual;

The present tense includes the future tense, the singular number includes the plural, and the plural number includes the singular;

The word "shall" is a mandatory requirement, the word "may" is a permissive requirement, and the word "should" is a preferred requirement;

The words "used" or "occupied" include the words "intended, designed, constructed, converted, altered or arranged to be used or occupied"; and

The word "lot" includes the words "plot, tract or parcel."

13.02 DEFINITIONS

All definitions within this PD shall comply with the Brownsburg Zoning Ordinance adopted February 1, 2013.

13.03 ENFORCEMENT

Enforcement of this Ordinance shall comply with the terms of enforcement contained within the Brownsburg Zoning Ordinance adopted February 1, 2013.

All of the Northeast Quarter and a fractional part of the Southeast Quarter of the Northwest Quarter of Section 26, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Beginning at a R.R. Spike found marking the Northeast Corner of the Northwest Quarter of Section 26; thence South 00 degrees 00 minutes 00 seconds East (assumed bearing) along the East line of said Northwest Quarter, a distance of 1445.60 feet to an Iron Pipe with I.D. Cap found on the Westerly line of a parcel conveyed to the Indianapolis Water Company as described in Instrument No. 9800003900 of the records on file in the Office of the Hendricks County Recorder, said Westerly line also being the Easterly line of a 75' wide legal drain easement as per a survey by CrossRoad Engineers dated September 15, 1997; thence along said lines for the following six (6) courses: 1) South 55 degrees 36 minutes 57 seconds West a distance of 170.61 feet to an Iron Pipe with I.D. Cap found; 2) South 06 degrees 37 minutes 22 seconds West a distance of 617.30 feet to an Iron Pipe with I.D. Cap found; 3) South 25 degrees 20 minutes 06 seconds West a distance of 191.76 feet to an Iron Pipe with I.D. Cap Found; 4) South 35 degrees 48 minutes 46 seconds West a distance of 210.69 feet to an Iron Pipe with I.D. Cap found; 5) South 47 degrees 52 minutes 57 seconds West a distance of 89.78 feet to an Iron Pipe with I.D. Cap found; 6) South 65 degrees 34 minutes 36 seconds West a distance of 284.88 feet to an Iron Pipe with I.D. Cap found on the South line of the aforesaid Northwest Quarter; thence South 89 degrees 29 minutes 23 seconds West, along said South line, a distance of 598.85 feet to a 3/4" Iron Pipe with I.D. Cap set at the computed Southwest corner of the Southeast Quarter of said Northwest Quarter; Thence North 00 degrees 07 minutes 20 seconds East, along the West line of the East Half of said Northwest Quarter, a distance of 2669.38 feet to a P.K. Nail with I.D. Washer set marking the Northwest corner of the Northeast Quarter of said Northwest Quarter; thence North 89 degrees 25 minutes 51 seconds East, along the North line of said Northwest Quarter and along County Road 300 North, a distance of 1336.52 feet to the place of beginning, containing 74.826 acres, more or less and subject to all highways, rights-of-way and easements. And being subject to a 60' wide utility easement (as recorded in Inst. #9800003901), a 50' wide easement for ingress and egress (as recorded in Inst. #9800003902), a Highway Right-of-Way Agreement (as recorded in Inst. #2003-44818), a 30' wide storm sewer easement (as recorded in Inst. #2003-54107) and being subject to any other easements, rights-of-way or restrictions of record observable.

ALSO:

A fractional part of the Southwest Quarter of Section 23, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Commencing at a R.R. Spike found marking the Southeast corner of the Southwest Quarter of Section 23; thence South 89 degrees 25 minutes 51 seconds West along the South line of said Quarter and along County Road 300 North, a distance of 870.47 feet to a P.K. Nail with I.D. Washer set and the place of

beginning; thence continuing South 89 degrees 25 minutes 51 seconds West, along said South line and along said County Road, a distance of 866.60 feet to a P.K. Nail with I.D. Washer set at the Southeast corner of a parcel conveyed to Light Development Corporation as described in Deed Record 328, page 591 of the records on file in the Office of the Hendricks County Recorder; thence North 00 degrees 03 minutes 37 seconds East, along the East line of said parcel and parallel to the West line of the aforesaid Southwest Quarter, a distance of 2308.51 feet to the South line of a parcel conveyed to Terry Tate as described in Deed Record 344, page 767 of the records on file in the Office of the Hendricks County Recorder, said line also being the former Southerly right-of-way line of the CSX Transportation Railroad (for reference, an iron pin was found North 03 degrees 45 minutes 25 seconds West a distance of 0.59 feet); thence South 74 degrees 00 minutes 33 seconds East, along the South line of said parcel a distance of 526.72 feet to a 3/4" Iron Pipe with I.D. Cap set at the Southeast corner of said parcel; thence North 00 degrees 03 minute 37 seconds East, along the East line of said parcel and parallel to the aforesaid West line of the Southwest Quarter, a distance of 103.99 feet to a 3/4" Iron Pipe with I.D. Cap set on the Southerly right-of-way line of the CSX Transportation Railroad; thence South 74 degrees 00 minutes 33 seconds East, along said Southerly right-of-way line, a distance of 369.09 feet to a 3/4" Iron Pipe with I.D. Cap set; thence South 00 degrees 04 minutes 36 seconds East, parallel to the East line of said Southwest Quarter, a distance of 2157.12 feet to the place of beginning, containing 44.101 acres, more or less and subject to all highways, rights-of-way and easements of record.

ALSO:

A fractional part of the Southwest Quarter of Section 23, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Commencing at a Railroad spike found marking the Southeast corner of the Southwest Quarter of Section 23; thence South 89 degrees 25 minutes 51 seconds West, along the South line of said Quarter and along County Road 300 North a distance of 870.47 feet to a P.K. Nail with I.D. Washer set; thence North 00 degrees 04 minutes 36 seconds West, parallel to the East line of said Quarter a distance of 2261.19 feet to a 3/4" iron pipe with I.D. Cap set on the Northerly right-of-way line of the CSX Transportation Railroad and the place of beginning; thence North 74 degrees 00 minutes 33 seconds West, along said Northerly right-of-way line and the extension thereof (now being the Northerly line of a parcel conveyed to Terry Tate as described in Deed Record 344, page 767 of the records on file in the Office of the Hendricks County Recorder), a distance of 895.54 feet to a 3/4" Iron Pipe with I.D. Cap set; thence North 00 degrees 03 minutes 37 seconds East, parallel to the West line of the Southwest Quarter, a distance of 159.60 feet to a 3/4" Iron Pipe with I.D. Cap set on the North line of the Northwest Quarter of the Southwest Quarter of Section 23 (as established in a survey by MSE Surveying dated December 11, 1991-Jeffrey A. Meyerrose R.L.S. #890003-IN); thence North 89 degrees 16 minutes 50 seconds East, along said North line, a distance of 377.90 feet to the Northwest corner of the Northeast Quarter of said Southwest Quarter (as established in said survey); thence North 89 degrees 30 minutes 26 seconds East, along the North line of the Northeast

Quarter of said Southwest Quarter, a distance of 482.32 feet (for reference, an Iron Pin was found North 65 degrees 46 minutes 45 seconds West a distance of 0.54 feet); thence South 00 degrees 04 minutes 36 seconds East, parallel to the aforesaid East line of the Southwest Quarter of Section 23, a distance of 415.20 feet to the place of beginning, containing 5.685 acres, more or less and subject to all highways, rights-of-way and easements of record.

ALSO:

Part of the Northwest quarter of the Northwest quarter of Section 26, Township 16 North, Range 1 East of the Second Principal Meridian in Lincoln Township, Hendricks County, Indiana, more particularly described as follows, to-wit:

Beginning at the Northeast corner of said quarter quarter section; thence South 89 degrees 12 minutes 36 seconds West (assumed bearing) on and along the North line of said quarter quarter section 450.00 feet; thence South 00 degrees 05 minutes 03 seconds East parallel to the East line of said quarter quarter section 817.78 feet; thence South 89 degrees 12 minutes 36 seconds West parallel to the aforesaid North line of said quarter quarter section 527.70 feet; thence South 00 degrees 05 minutes 03 seconds East parallel to the East line of said quarter quarter section 1850.46 feet to a point on the South line of said quarter quarter section; thence North 89 degrees 20 minutes 16 seconds East on and along said South line 977.68 feet to the Southeast corner of said quarter quarter section; thence North 00 degrees 05 minutes 03 seconds West on and along the East line of said quarter quarter section 2670.42 feet to the Point of Beginning. Containing 50.00 acres, more or less.

ALSO:

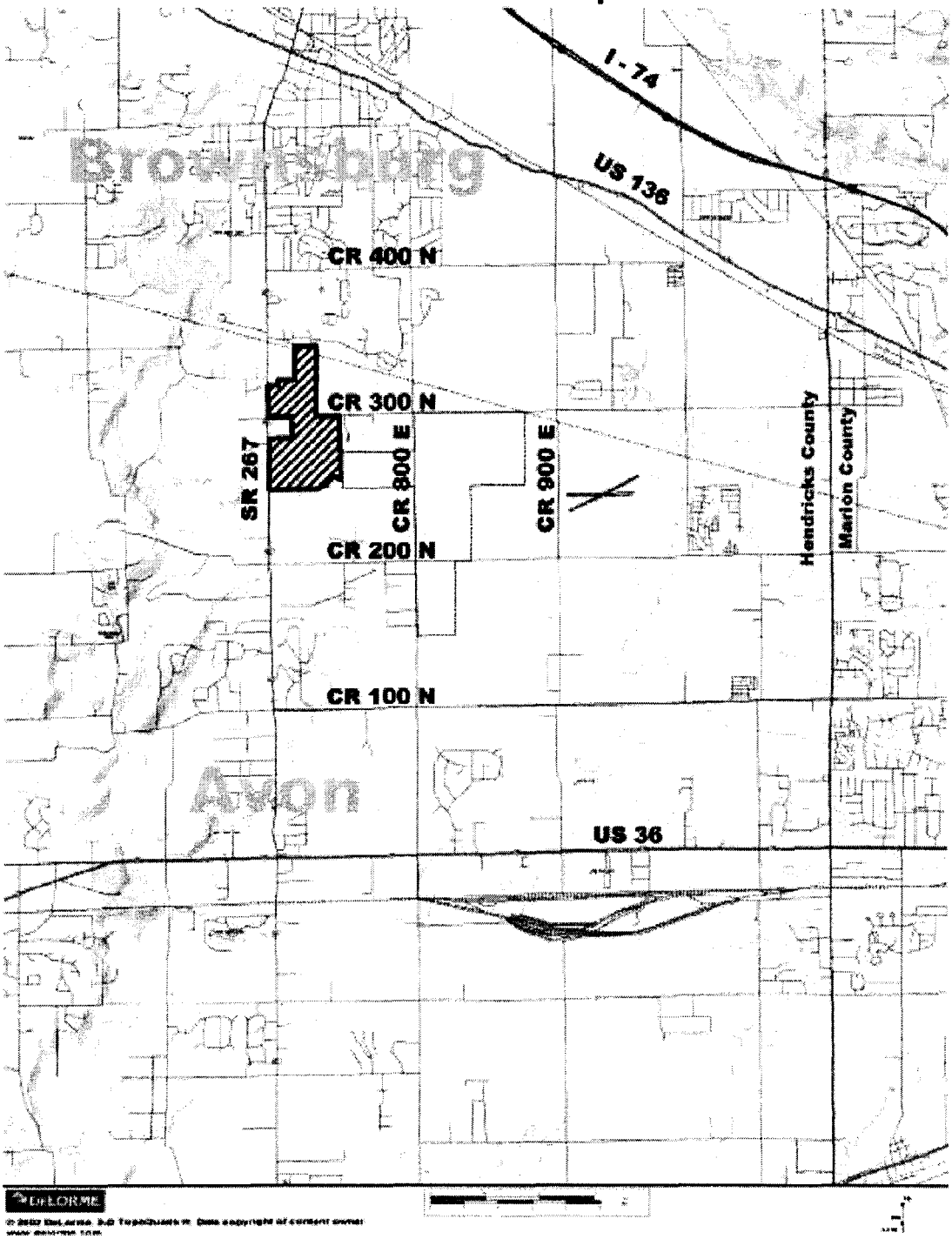
A part of the West half of the Southwest quarter of Section 23, Township 16 North, Range 1 East of the Second Principal Meridian in Hendricks County, Indiana, more particularly described as follows, to-wit:

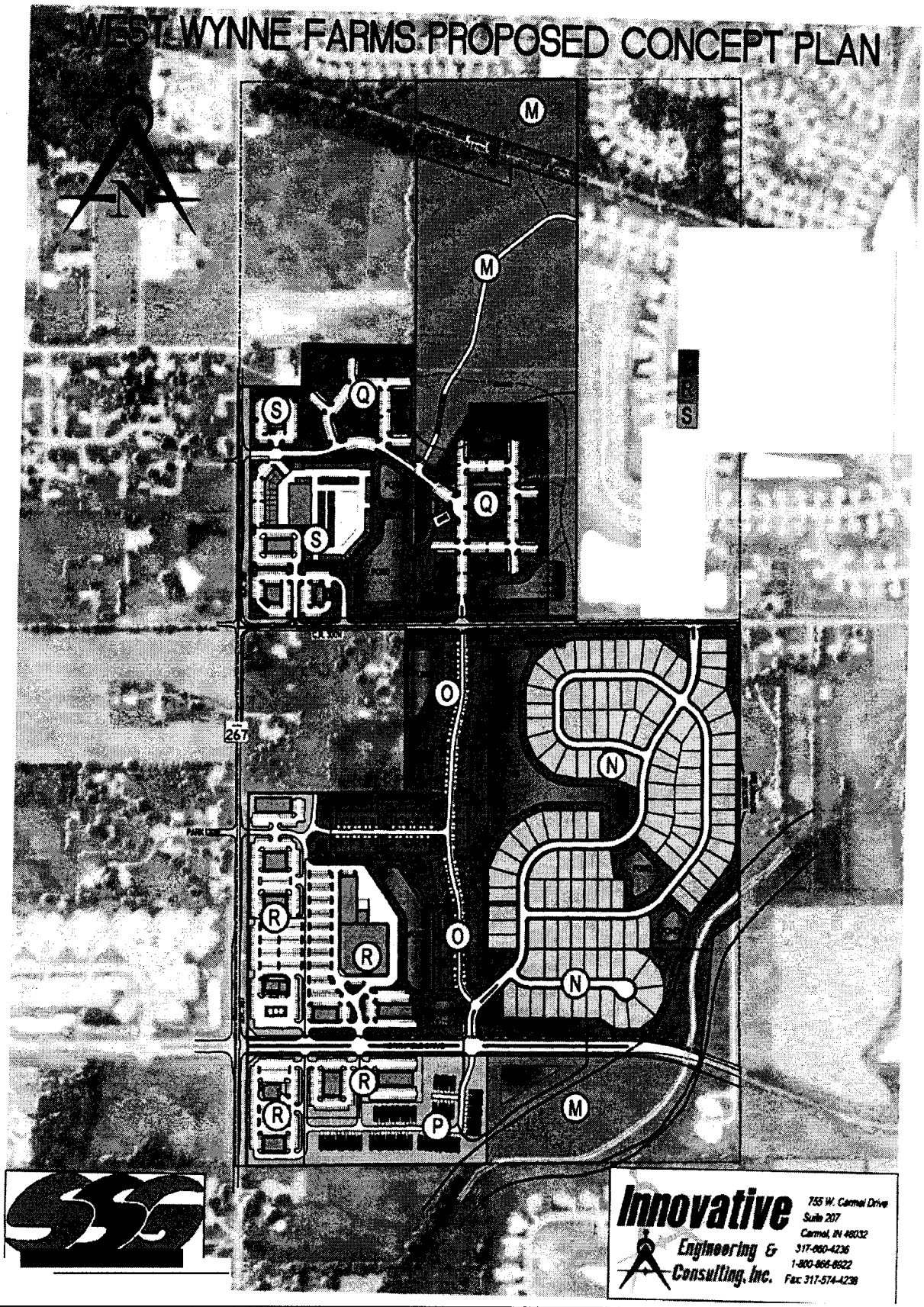
Beginning at a stone at the Southwest corner of said Section 23; thence South 89 degrees 57 minutes 36 seconds East on and along the South line of said section 935.96 feet; thence North 00 degrees 37 minutes 26 seconds East 1375.48 feet; thence North 88 degrees 41 minutes 54 seconds West 602.89 feet; thence South 01 degree 13 minutes 58 seconds West 211.07 feet; thence North 88 degrees 47 minutes 11 seconds West 330.84 feet to a point on the West line of said Section; thence South 00 degrees 37 minutes 26 seconds West on and along the West line of said section 1184.50 feet to the Point of Beginning. Containing 28.16 acres, more or less.

ALSO:

Lots numbered 2, 3, and 4 in Minor Plat Numbered Four (4) in Lincoln Township, Hendricks County, Indiana, as per plat thereof recorded April 7, 1978, in Plat Book 9, page 111, in the Office of the Recorder of Hendricks County, Indiana.

Site Location Map




WEST WYNNE FARMS PROPOSED CONCEPT PLAN
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Engineering &
Consulting, Inc.
755 W. Carmel Drive
Suite 207
Carmel, IN 46032
317-660-4236
1-800-868-6922
Fax: 317-574-4238

DEVELOPER COMMITMENTS

COMMITMENTS CONCERNING THE USE OR DEVELOPMENT OF REAL ESTATE

TOWN OF BROWNSBURG, INDIANA

Pursuant to Ind. Code 36-7-4-1015, the Owner of the real estate located in the Town of Brownsburg, Hendricks County, Indiana, which is described below, makes the following COMMITMENTS concerning the use and development of that parcel of real estate:

Owner of Record/Representative: Site Solutions Group, LLC, Developer

Parcel/Deed Information: 1993-16265
201305908
199921842
197812781
200538775
201123379
200707410
200810712

Legal Description: *See Exhibit "A"*

Statement of COMMITMENTS:

1. "Guerrettaz Buffer"(see exhibit "B" of previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana): the developer shall maintain a minimum seventy (70) foot wide landscaped buffer yard consisting of a three (3) rail white PVC fence with a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) foot of buffer yard length along the boundary of Parcel O adjacent to the former Guerrettaz, now Weaver, property. The foregoing shall be installed prior to the paving of streets in Parcel O.

2. "Musselman Buffer"(see exhibit "C" of previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana): the developer shall maintain a minimum fifty (50) feet wide landscaped buffer yard consisting of a four (4) foot high mound with a minimum of Seven (7) Evergreen Plantings at least six (6) feet in height per every one

hundred (100) feet of buffer yard along the boundary of Parcels Q and S which are adjacent to the Scutt and Musselman properties. In addition, a six (6) foot high wooden shadow box privacy fence shall be installed along the top of the four (4) foot mound continuously along the entire length of the buffer yard. The foregoing shall be installed prior to the paving of streets in Parcels Q and S as each Q and S develop. The developer shall also install and maintain a minimum twenty (20) feet wide landscaped buffer yard consisting of a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard along the boundary of Parcel M adjacent to the Musselman property. In addition, a six (6) feet high wooden shadow box privacy fence shall be installed along the entire length of the buffer yard adjacent to the Musselman property. The foregoing shall be installed prior to the paving of streets in M.

3. "Altmeyer Buffer" (see previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana) shall be installed between the commercially zoned land in Parcel R and the Altmeyer property line with a Unit Value of 5. The buffer yard shall be twenty-five (25) feet in width and shall be installed prior to the paving of streets in Parcel R. In addition, the developer shall maintain a minimum twenty-five (25) feet wide landscaped buffer yard consisting of a three (3) to four (4) feet high undulating mound with a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard along the northern boundary of Parcel R and adjacent to the property now owned by Gray. In addition, the developer shall maintain a minimum twenty-five (25) feet wide landscaped buffer yard consisting a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard along the southern and eastern boundary of Parcel P and adjacent to the property now owned by Altmeyer.

4. Parcel Q: In the area along the east property line and adjacent to the existing Bersot Subdivision, the developer shall maintain a minimum of fifty (50) feet wide Tree preservation area within the existing wooded area of the site, and south of the woods for a distance of two hundred (200) feet, the developer shall maintain a minimum thirty (30) feet wide landscaped buffer yard consisting of a four (4) feet high mound with a minimum of Seven (7) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard length. In addition, a six (6) feet high wooden shadow box privacy fence shall be installed along the top of the four (4) feet mound continuously along the entire two hundred (200) feet length of the buffer yard.

5. Traffic Impact Agreement: The developer and future owners of the various parcels within the proposed development agree to construct, at their cost, the acceleration and deceleration lanes and road widening along State Road 267 and/or County Road 300 North along the frontage of their respective parcels at the time of the development of each parcel, excluding Northfield Drive, as recommended in the Traffic impact report from VS Engineering

dated June 19, 2013. In addition, to fund other intersection improvements in the immediate vicinity if West Wynne Farms, additional widening of State Road 267/Green Street and constructing additional turn lanes (5 lanes total) on Northfield Drive, the future developer and future owners of Parcels O, P, R and S agree to contribute a total amount of, and not to exceed, Three Hundred Twenty-four Thousand and no/100 dollars ($324,000.00) to the Town of Brownsburg, calculated as follows. A total of One Hundred Fifty Thousand and no/100 dollars ($150,000.00) (as previously agreed to be paid as cited in exhibit "D" of previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana) of the contribution shall be collected from the outlot commercial owners in Parcel R consisting of 12.5 acres (4 acres currently owned by Jim White; 4 acres currently owned by Chester Blake; 4.5 acres currently owned by Burton). The contribution shall be paid at the time of application for a building permit fee for the respective acreages on a per acre basis of property of $12,000 per acre. Additionally, One Hundred Seventy-Four Thousand and no/100 dollars ($174,000.00) shall be contributed by the developer(s) of parcels O and P at a rate of One Thousand and no/100 dollars ($1,000) per unit at time of applying for a building permit for each building. These funds will be utilized by the Town of Brownsburg for intersection improvements in the immediate vicinity of West Wynne Farms, the widening of State Road 267/Green Street and construction the five (5) lanes of Northfield Drive to be constructed south of Parcels R, O and N and north of Parcel P including the acceleration and deceleration lanes for intersections G and H as recommended in the Traffic Impact study by VS Engineering dated June 19, 2013. If a signal is determined to be required at a future date at Intersection H as recommended in the VS Engineering report, the cost of this signal shall be the responsibility of the owner of the large retail parcel located in Parcel R on the north side of Northfield Drive.

6. The developer commits to obtain a building permit for the development of a Commercial use in either Parcel R or S before fifty percent (50%) of the residential developments, Parcels N, O, P and Q, (as measured by number of permits issued) occurs.

7. The 5.7 acres located in Parcel M north of the B and O Trail; 27.5 acres located in Parcel M south of the B and O Trail; and approximately 12 acres located south of Parcel N and south of Future Northfield Drive shall remain as passive and/or active open/green space and the Developer shall have the option to deed it to an entity for public use.

8. In the area south of Northfield Drive, no dwelling shall be built east of a parallel line that is 1,295 feet from the west property line (centerline of SR 267) of West Wynne Farms. The existing north/south tree line in Parcel P will remain. The common east /west tree line between Woodcreek , Altmeyer and West Wynne Farms will remain in Parcels R, P and M.

9. A prohibition against storage sheds and out-buildings will be added to Declaration of Covenants, Conditions, and Restrictions.

10. Drainage: The Developers of each subject parcel shall be required to comply with all local Town of Brownsburg and applicable County drainage requirements. The Developer shall agree to work with the Town of Brownsburg to design specific parcels within the overall project to comply with "Building Green" development standards.

The foregoing Commitments are in addition to the previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana. In the event of any conflict between these commitments dated _____, 2013 and recorded _____, 2013 and the commitments recorded April 24, 2007, the Commitments recorded April 24, 2007 shall prevail.

These COMMITMENTS shall run with the land, be binding on the Owner, subsequent owners of the real estate and other persons acquiring interest therein. These COMMITMENTS may be modified or terminated by a decision of the Advisory Plan Commission, made at a public hearing after notice has been given pursuant to the Advisory Plan Commission Rules of Procedure.

COMMITMENTS contained in this instrument shall be effective upon the approval of the petition PCMA-3-13-1136 West Wynne Farms and shall continue in effect until modified or terminated by the Advisory Plan Commission.

These COMMITMENTS may be enforced jointly or severally by:

(1) The Town of Brownsburg, Advisory Plan Commission

(2) Owners of all parcels of ground adjoining the real estate to a depth of two (2) ownerships, but not exceeding six-hundred-sixty (660) feet from the perimeter of the real estate, and all owners of real estate within the area included in the petition who were not petitioners for approval; and

(3) Owners of homes within Woodcreek Commons, Woodcreek Farms, and the Reserve at Woodcreek.

The Undersigned hereby authorizes the Advisory Plan Commission to record this COMMITMENT form in the Office of the Recorder of Hendricks County, Indiana, upon final approval of petition PCMA-3-13-1136 West Wynne Farms.

IN WITNESS WHEREOF, owner has executed this instrument this _____ day of _____, 2013.

Site Solutions Property Group, LLC

_____
Christopher R. White, Member

STATE OF INDIANA)
) SS:
COUNTY OF HENDRICKS)

Before me, a Notary Public in and for said County and State personally appeared Christopher R. White, Member of Site Solutions Property Group, LLC,,who acknowledged the execution of the above and foregoing instrument to be a voluntary act and deed and for the purposes stated therein.



_____
Notary Public *(Signature)*

_____
Notary Public *(Printed Name)*

My Commission expires: _____ Resident of _____ County, IN

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law, Amy Comer Elliott.

This instrument was prepared by Amy Comer Elliott, Attorney-at-Law, COMER LAW OFFICE, LLC, P.O. Box 207, Danville, IN 46122, (317-745-4300).

EXHIBIT 'D'

DEVELOPER COMMITMENTS

COMMITMENTS CONCERNING THE USE OR DEVELOPMENT OF REAL ESTATE
TOWN OF BROWNSBURG, INDIANA

Pursuant to Ind. Code 36-7-4-1015, the Owner of the real estate located in the Town of Brownsburg, Hendricks County, Indiana, which is described below, makes the following COMMITMENTS concerning the use and development of that parcel of real estate:

Owner of Record/Representative: Site Solutions Group, LLC, Developer

Parcel/Deed Information: 1993-16265
201305908
199921842
197812781
200538775
201123379
200707410
200810712

Legal Description: *See Exhibit "A"*

Statement of COMMITMENTS:

1. "Guerrettaz Buffer"(see exhibit "B" of previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana): the developer shall maintain a minimum seventy (70) foot wide landscaped buffer yard consisting of a three (3) rail white PVC fence with a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) foot of buffer yard length along the boundary of Parcel O adjacent to the former Guerrettaz, now Weaver, property. The foregoing shall be installed prior to the paving of streets in Parcel O.

2. "Musselman Buffer"(see exhibit "C" of previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana): the developer shall maintain a minimum fifty (50) feet wide landscaped buffer yard consisting of a four (4) foot high mound with a minimum of Seven (7) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard along the boundary of Parcels Q and S which are adjacent to the Scutt and Musselman properties. In addition, a six (6) foot high wooden shadow box privacy fence shall be installed along the top of the four (4) foot mound continuously along the entire length of the buffer yard. The foregoing shall be installed prior to the paving of streets in Parcels Q and S as each Q and S develop. The developer shall also install and

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EXHIBIT 'D' continued

DEVELOPER COMMITMENTS

maintain a minimum twenty (20) feet wide landscaped buffer yard consisting of a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard along the boundary of Parcel M adjacent to the Musselman property. In addition, a six (6) feet high wooden shadow box privacy fence shall be installed along the entire length of the buffer yard adjacent to the Musselman property. The foregoing shall be installed prior to the paving of streets in M.

3. "Altmeyer Buffer" (see previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana) shall be installed between the commercially zoned land in Parcel R and the Altmeyer property line with a Unit Value of 5. The buffer yard shall be twenty-five (25) feet in width and shall be installed prior to the paving of streets in Parcel R. In addition, the developer shall maintain a minimum twenty-five (25) feet wide landscaped buffer yard consisting of a three (3) to four (4) feet high undulating mound with a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard along the northern boundary of Parcel R and adjacent to the property now owned by Gray. In addition, the developer shall maintain a minimum twenty-five (25) feet wide landscaped buffer yard consisting a minimum of Five (5) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard along the southern and eastern boundary of Parcel P and adjacent to the property now owned by Altmeyer.

4. Parcel Q: In the area along the east property line and adjacent to the existing Bersot Subdivision, the developer shall maintain a minimum of fifty (50) feet wide Tree preservation area within the existing wooded area of the site, and south of the woods for a distance of two hundred (200) feet, the developer shall maintain a minimum thirty (30) feet wide landscaped buffer yard consisting of a four (4) feet high mound with a minimum of Seven (7) Evergreen Plantings at least six (6) feet in height per every one hundred (100) feet of buffer yard length. In addition, a six (6) feet high wooden shadow box privacy fence shall be installed along the top of the four (4) feet mound continuously along the entire two hundred (200) feet length of the buffer yard.

5. Traffic Impact Agreement: The developer and future owners of the various parcels within the proposed development agree to construct, at their cost, the acceleration and deceleration lanes and road widening along State Road 267 and/or County Road 300 North along the frontage of their respective parcels at the time of the development of each parcel, excluding Northfield Drive, as recommended in the Traffic impact report from VS Engineering dated June 19, 2013. In addition, to fund other intersection improvements in the immediate vicinity if West Wynne Farms, additional widening of State Road 267/Green Street and

EXHIBIT 'D' continued

DEVELOPER COMMITMENTS

constructing additional turn lanes (5 lanes total) on Northfield Drive, the future developer and future owners of Parcels O, P, R and S agree to contribute a total amount of, and not to exceed, Three Hundred Twenty-four Thousand and no/100 dollars ($324,000.00) to the Town of Brownsburg, calculated as follows. A total of One Hundred Fifty Thousand and no/100 dollars ($150,000.00) (as previously agreed to be paid as cited in exhibit "D" of previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana) of the contribution shall be collected from the outlot commercial owners in Parcel R consisting of 12.5 acres (4 acres currently owned by Jim White; 4 acres currently owned by Chester Blake; 4.5 acres currently owned by Burton). The contribution shall be paid at the time of application for a building permit fee for the respective acreages on a per acre basis of property of $12,000 per acre. Additionally, One Hundred Seventy-Four Thousand and no/100 dollars ($174,000.00) shall be contributed by the developer(s) of parcels O and P at a rate of One Thousand and no/100 dollars ($1,000) per unit at time of applying for a building permit for each building. These funds will be utilized by the Town of Brownsburg for intersection improvements in the immediate vicinity of West Wynne Farms, the widening of State Road 267/Green Street and construction the five (5) lanes of Northfield Drive to be constructed south of Parcels R, O and N and north of Parcel P including the acceleration and deceleration lanes for intersections G and H as recommended in the Traffic Impact study by VS Engineering dated June 19, 2013. If a signal is determined to be required at a future date at Intersection H as recommended in the VS Engineering report, the cost of this signal shall be the responsibility of the owner of the large retail parcel located in Parcel R on the north side of Northfield Drive.

6. The developer commits to obtain a building permit for the development of a Commercial use in either Parcel R or S before fifty percent (50%) of the residential developments, Parcels N, O, P and Q, (as measured by number of permits issued) occurs.

7. The 5.7 acres located in Parcel M north of the B and O Trail; 27.5 acres located in Parcel M south of the B and O Trail; and approximately 12 acres located south of Parcel N and south of Future Northfield Drive shall remain as passive and/or active open/green space and the Developer shall have the option to deed it to an entity for public use.

8. In the area south of Northfield Drive, no dwelling shall be built east of a parallel line that is 1,295 feet from the west property line (centerline of SR 267) of West Wynne Farms. The existing north/south tree line in Parcel P will remain. The common east /west tree line between Woodcreek , Altmeyer and West Wynne Farms will remain in Parcels R, P and M.

EXHIBIT 'D' continued

DEVELOPER COMMITMENTS

9. A prohibition against storage sheds and out-buildings will be added to Declaration of Covenants, Conditions, and Restrictions.

10. Drainage: The Developers of each subject parcel shall be required to comply with all local Town of Brownsburg and applicable County drainage requirements. The Developer shall agree to work with the Town of Brownsburg to design specific parcels within the overall project to comply with "Building Green" development standards.

The foregoing Commitments are in addition to the previous Commitments in the Development Commitment Recording Form recorded April 24, 2007 as Instrument Number 200700010243 in the office of the Recorder of Hendricks County, Indiana. In the event of any conflict between these commitments dated _____, 2013 and recorded _____, 2013 and the commitments recorded April 24, 2007, the Commitments recorded April 24, 2007 shall prevail.

These COMMITMENTS shall run with the land, be binding on the Owner, subsequent owners of the real estate and other persons acquiring interest therein. These COMMITMENTS may be modified or terminated by a decision of the Advisory Plan Commission, made at a public hearing after notice has been given pursuant to the Advisory Plan Commission Rules of Procedure.

COMMITMENTS contained in this instrument shall be effective upon the approval of the petition PCMA-3-13-1136 West Wynne Farms and shall continue in effect until modified or terminated by the Advisory Plan Commission.

These COMMITMENTS may be enforced jointly or severally by:

(1) The Town of Brownsburg, Advisory Plan Commission

(2) Owners of all parcels of ground adjoining the real estate to a depth of two (2) ownerships, but not exceeding six-hundred-sixty (660) feet from the perimeter of the real estate, and all owners of real estate within the area included in the petition who were not petitioners for approval; and

(3) Owners of homes within Woodcreek Commons, Woodcreek Farms, and the Reserve at Woodcreek.

The Undersigned hereby authorizes the Advisory Plan Commission to record this COMMITMENT form in the Office of the Recorder of Hendricks County, Indiana, upon final approval of petition PCMA-3-13-1136 West Wynne Farms.

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EXHIBIT 'D' continued

DEVELOPER COMMITMENTS

IN WITNESS WHEREOF, owner has executed this instrument this _____ day of _____, 2013.

Site Solutions Property Group, LLC

_____

Christopher R. White, Member

STATE OF INDIANA)
) SS:
COUNTY OF HENDRICKS)

Before me, a Notary Public in and for said County and State personally appeared Christopher R. White, Member of Site Solutions Property Group, L.L.C., who acknowledged the execution of the above and foregoing instrument to be a voluntary act and deed and for the purposes stated therein.

NOTARY PUBLIC SEAL INDIANA

_____

Notary Public *(Signature)*

_____

Notary Public *(Printed Name)*

My Commission expires: _____ Resident of _____ County, IN

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law, Amy Comer Elliott.

This instrument was prepared by Amy Comer Elliott, Attorney-at-Law, COMER LAW OFFICE, LLC, P.O. Box 207, Danville, IN 46122, (317-745-4300).

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EXHIBIT 'D' continued

DEVELOPER COMMITMENTS

EXHIBIT "A"
Legal Description

All of the Northeast Quarter and a fractional part of the Southeast Quarter of the Northwest Quarter of Section 26, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Beginning at a R.R. Spike found marking the Northeast Corner of the Northwest Quarter of Section 26; thence South 00 degrees 00 minutes 00 seconds East (assumed bearing) along the East line of said Northwest Quarter, a distance of 1445.60 feet to an Iron Pipe with I.D. Cap found on the Westerly line of a parcel conveyed to the Indianapolis Water Company as described in Instrument No. 9800003900 of the records on file in the Office of the Hendricks County Recorder, said Westerly line also being the Easterly line of a 75' wide legal drain easement as per a survey by CrossRoad Engineers dated September 15, 1997; thence along said lines for the following six (6) courses: 1) South 55 degrees 36 minutes 57 seconds West a distance of 170.61 feet to an Iron Pipe with I.D. Cap found; 2) South 06 degrees 37 minutes 22 seconds West a distance of 617.30 feet to an Iron Pipe with I.D. Cap found; 3) South 25 degrees 20 minutes 06 seconds West a distance of 191.76 feet to an Iron Pipe with I.D. Cap Found; 4) South 35 degrees 48 minutes 46 seconds West a distance of 210.69 feet to an Iron Pipe with I.D. Cap found; 5) South 47 degrees 52 minutes 57 seconds West a distance of 89.78 feet to an Iron Pipe with I.D. Cap found; 6) South 65 degrees 34 minutes 36 seconds West a distance of 284.88 feet to an Iron Pipe with I.D. Cap found on the South line of the aforesaid Northwest Quarter; thence South 89 degrees 29 minutes 23 seconds West, along said South line, a distance of 598.85 feet to a 3/4" Iron Pipe with I.D. Cap set at the computed Southwest corner of the Southeast Quarter of said Northwest Quarter; Thence North 00 degrees 07 minutes 20 seconds East, along the West line of the East Half of said Northwest Quarter, a distance of 2669.38 feet to a P.K. Nail with I.D. Washer set marking the Northwest corner of the Northeast Quarter of said Northwest Quarter; thence North 89 degrees 25 minutes 51 seconds East, along the North line of said Northwest Quarter and along County Road 300 North, a distance of 1336.52 feet to the place of beginning, containing 74.826 acres, more or less and subject to all highways, rights-of-way and easements. And being subject to a 60' wide utility easement (as recorded in Inst. #9800003901), a 50' wide easement for ingress and egress (as recorded in Inst. #9800003902), a Highway Right-of-Way Agreement (as recorded in Inst. #2003-44818), a 30' wide storm sewer easement (as recorded in Inst. #2003-54107) and being subject to any other easements, rights-of-way or restrictions of record observable.

ALSO:
A fractional part of the Southwest Quarter of Section 23, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Commencing at a R.R. Spike found marking the Southeast corner of the Southwest Quarter of Section 23; thence South 89 degrees 25 minutes 51 seconds West along the South line of said Quarter and along County Road 300 North, a distance of 870.47 feet to a P.K. Nail with I.D. Washer set and the place of beginning; thence continuing South 89 degrees 25 minutes 51 seconds West, along said South line and along said County Road, a distance of 866.60 feet to a P.K. Nail with I.D. Washer set at the Southeast corner of a parcel conveyed to Light Development Corporation as described in Deed Record 328, page 591

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EXHIBIT 'D' continued

DEVELOPER COMMITMENTS

of the records on file in the Office of the Hendricks County Recorder; thence North 00 degrees 03 minutes 37 seconds East, along the East line of said parcel and parallel to the West line of the aforesaid Southwest Quarter, a distance of 2308.51 feet to the South line of a parcel conveyed to Terry Tate as described in Deed Record 344, page 767 of the records on file in the Office of the Hendricks County Recorder, said line also being the former Southerly right-of-way line of the CSX Transportation Railroad (for reference, an iron pin was found North 03 degrees 45 minutes 25 seconds West a distance of 0.59 feet); thence South 74 degrees 00 minutes 33 seconds East, along the South line of said parcel a distance of 526.72 feet to a 3/4" Iron Pipe with I.D. Cap set at the Southeast corner of said parcel; thence North 00 degrees 03 minute 37 seconds East, along the East line of said parcel and parallel to the aforesaid West line of the Southwest Quarter, a distance of 103.99 feet to a 3/4" Iron Pipe with I.D. Cap set on the Southerly right-of-way line of the CSX Transportation Railroad; thence South 74 degrees 00 minutes 33 seconds East, along said Southerly right-of-way line, a distance of 369.09 feet to a 3/4" Iron Pipe with I.D. Cap set; thence South 00 degrees 04 minutes 36 seconds East, parallel to the East line of said Southwest Quarter, a distance of 2157.12 feet to the place of beginning, containing 44.101 acres, more or less and subject to all highways, rights-of-way and easements of record.

ALSO:
A fractional part of the Southwest Quarter of Section 23, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, more fully described as follows:

Commencing at a Railroad spike found marking the Southeast corner of the Southwest Quarter of Section 23; thence South 89 degrees 25 minutes 51 seconds West, along the South line of said Quarter and along County Road 300 North a distance of 870.47 feet to a P.K. Nail with I.D. Washer set; thence North 00 degrees 04 minutes 36 seconds West, parallel to the East line of said Quarter a distance of 2261.19 feet to a 3/4" iron pipe with I.D. Cap set on the Northerly right-of-way line of the CSX Transportation Railroad and the place of beginning; thence North 74 degrees 00 minutes 33 seconds West, along said Northerly right-of-way line and the extension thereof (now being the Northerly line of a parcel conveyed to Terry Tate as described in Deed Record 344, page 767 of the records on file in the Office of the Hendricks County Recorder), a distance of 895.54 feet to a 3/4" Iron Pipe with I.D. Cap set; thence North 00 degrees 03 minutes 37 seconds East, parallel to the West line of the Southwest Quarter, a distance of 159.60 feet to a 3/4" Iron Pipe with I.D. Cap set on the North line of the Northwest Quarter of the Southwest Quarter of Section 23 (as established in a survey by MSE Surveying dated December 11, 1991-Jeffrey A. Meyerrose R.L.S. #890003-IN); thence North 89 degrees 16 minutes 50 seconds East, along said North line, a distance of 377.90 feet to the Northwest corner of the Northeast Quarter of said Southwest Quarter (as established in said survey); thence North 89 degrees 30 minutes 26 seconds East, along the North line of the Northeast Quarter of said Southwest Quarter, a distance of 482.32 feet (for reference, an Iron Pin was found North 65 degrees 46 minutes 45 seconds West a distance of 0.54 feet); thence South 00 degrees 04 minutes 36 seconds East, parallel to the aforesaid East line of the Southwest Quarter of Section 23, a distance of 415.20 feet to the place of beginning, containing 5.685 acres, more or less and subject to all highways, rights-of-way and easements of record.

EXHIBIT 'D' continued

DEVELOPER COMMITMENTS

ALSO:
Part of the Northwest quarter of the Northwest quarter of Section 26, Township 16 North, Range 1 East of the Second Principal Meridian in Lincoln Township, Hendricks County, Indiana, more particularly described as follows, to-wit:
Beginning at the Northeast corner of said quarter quarter section; thence South 89 degrees 12 minutes 36 seconds West (assumed bearing) on and along the North line of said quarter quarter section 450.00 feet; thence South 00 degrees 05 minutes 03 seconds East parallel to the East line of said quarter quarter section 817.78 feet; thence South 89 degrees 12 minutes 36 seconds West parallel to the aforesaid North line of said quarter quarter section 527.70 feet; thence South 00 degrees 05 minutes 03 seconds East parallel to the East line of said quarter quarter section 1850.46 feet to a point on the South line of said quarter quarter section; thence North 89 degrees 20 minutes 16 seconds East on and along said South line 977.68 feet to the Southeast corner of said quarter quarter section; thence North 00 degrees 05 minutes 03 seconds West on and along the East line of said quarter quarter section 2670.42 feet to the Point of Beginning. Containing 50.00 acres, more or less.

ALSO:
A part of the West half of the Southwest quarter of Section 23, Township 16 North, Range 1 East of the Second Principal Meridian in Hendricks County, Indiana, more particularly described as follows, to-wit:
Beginning at a stone at the Southwest corner of said Section 23; thence South 89 degrees 57 minutes 36 seconds East on and along the South line of said section 935.96 feet; thence North 00 degrees 37 minutes 26 seconds East 1375.48 feet; thence North 88 degrees 41 minutes 54 seconds West 602.89 feet; thence South 01 degree 13 minutes 58 seconds West 211.07 feet; thence North 88 degrees 47 minutes 11 seconds West 330.84 feet to a point on the West line of said Section; thence South 00 degrees 37 minutes 26 seconds West on and along the West line of said section 1184.50 feet to the Point of Beginning. Containing 28.16 acres, more or less.

ALSO:
Lots numbered 2, 3, and 4 in Minor Plat Numbered Four (4) in Lincoln Township, Hendricks County, Indiana, as per plat thereof recorded April 7, 1978, in Plat Book 9, page 111, in the Office of the Recorder of Hendricks County, Indiana.

Ordinance 2015-08
Brownsburg, Indiana
Apr. 9, 2015

AN ORDINANCE TO AMEND THE WEST WYNNE FARMS DEVELOPMENT COMMITMENTS IN ORDINANCE 2013-26; AND MORE SPECIFICALLY WITH REGARD TO MODIFICATIONS TO ARCHITECTURAL COMMITMENTS FOR PARCELS R & S

WHEREAS, Site Solutions Group, LLC (the "Developer") previously filed an amendment to the West Wynne Farms Planned Development (PD), for approximately 220 acres of real estate east of South Green Street (State Road 267) on the north and south side of County Road 300 North and on the north and south side of South Northfield Drive, in the Town of Brownsburg, Lincoln Township, Hendricks County, Indiana, inclusive of Parcel Numbers 32-07-23-306-004.000-016; 32-07-23-306-005.000-016; 32-07-23-306-003.000-016; 32-07-26-105-002.000-016; 32-07-26-1 05-003.000-016; 32-07-26-1 05-004.000-016; 32-07-26-1 05-005.000-016; 32-07-26-105-006.000-016; 32-07-26-151-001.000-016; 32-07-26-150-002.000-016; 32-07-26-152-001.000-016; 32-07-26-105-004.000-016; and 32-07-26-151-002.000-016 (the "Real Estate") more particularly described on Exhibit 'A' and generally depicted on Exhibit 'B'; and

WHEREAS, the Town Council did approve Ordinance 2013-26, the West Wynne Farms Zoning Map Amendment, on September 26, 2013; and

WHEREAS, the Town Council did amend Ordinance 2013-26, the West Wynne Farms Zoning Map Amendment, by Ordinance 2014-11 on August 28, 2014; and

WHEREAS, on January 15, 2015 the Developer did file a Commitment Amendment Application with the Advisory Plan Commission to amend Section 7.03 A. "Architectural Commitments: Design Standards" of the West Wynne Farms Planned Development as adopted by Ordinance 2013-26; and

WHEREAS, the Development Services Staff prepared a Project Synopsis regarding Case # PCMA-01-15-1271 | West Wynne Farms Architecture Commit. Amendment - Parcels R and S dated February 17, 2015; and

WHEREAS, the Advisory Plan Commission for the Town of Brownsburg (the "Commission") has considered the proposed commitment amendments at a public meeting on February 23, 2015; and by a

vote of its members has made a FAVORABLE RECOMMENDATION that the 7.03 A. "Architectural Commitments: Design Standards" of the West Wynne Farms Plan Development Ordinance be revised as follows:

All Commercial/Retail/Office buildings shall be in accordance with the following standards and specifications:

A1. All structures within Parcels R & S excluding self-storage structures in Parcel-S.

1. Acceptable exterior façade materials shall include masonry, glass, architectural block, decorative metal, Exterior Insulation Finishing System (EIFS), concrete or other similar materials. However, a minimum of seventy-five percent (75%) of the structure's exterior façade, excluding doors and windows, shall be comprised of masonry or architectural block.
   a. Integrally colored, smooth faced, concrete block or other similar materials shall be a permitted exterior façade material in loading areas not directly or indirectly visible from public view or internal streets.

   b. Non-Integrally colored, smooth faced, concrete block or other similar materials shall not be a permitted exterior façade material.

A2. Self-Storage structures within Parcel-S

1. Acceptable façade materials shall include masonry, architectural block, decorative metal (e.g. with a finish appearance of stucco), Exterior Insulation Finishing System (EIFS), concrete or other similar materials.

   a. Decorative metal or Exterior Insulation Façade System (EIFS) shall not comprise more than seventy-one percent (71%) of any façade except as follows:

      i. Self-storage structure façades, interior to the self-storage facility may be comprised of one hundred percent (100%) decorative metal or Exterior Insulation Finishing System (EIFS) in areas not directly or indirectly visible from public view or internal streets.

   b. Split faced block shall not comprise more than thirty-one percent (31%) of any façade.

WHEREAS, the Commission has found that the amendments do not adversely affect the Comprehensive Plan of the Town of Brownsburg but rather satisfies the current standards, and has been favorably recommended by the Commission to the Town Council;

NOW, THEREFORE, BE IT ORDAINED by the Town Council as follows:

(1) The above recitals are incorporated herein, by reference, as though set forth fully herein below.

(2) The Developer shall assume and be responsible for payment of all costs incurred in the preparation and filing of all changes in this ordinance which are satisfactory to the Town of Brownsburg.

(3) This amendment shall be subject to the Advisory Plan Commission Report of Determination as depicted on Exhibit 'C'.

PASSED, by the Town Council of the Town of Brownsburg, Indiana, this 9th day of April, 2015, by a vote of four (4) ayes, and ZERO (0) nays.

TOWN OF BROWNSBURG
HENDRICKS COUNTY, INDIANA

By: _____
Don Spencer, President

ATTEST:

_____
Jeanette Brickler, Clerk-Treasurer

Exhibit – A
Legal Description

32-07-23-306-004.000-016: Amazon Brownsburg, LLC:

Lot 2 in West Wynne Farms Section 4, as per plat thereof recorded June 26, 2014 in Plat Cabinet 8, slide 16, pages 1 A- H, Instrument Number 201412625, in the Office of the Recorder of Hendricks County, Indiana.

32-07-23-306-005 .000-016: Light Development Corp.:

Block A in West Wynne Farms Section 4, as per plat thereof recorded June 26, 2014 in Plat Cabinet 8, slide 16, pages 1 A- H, Instrument Number 201412625, in the Office of the Recorder of Hendricks County, Indiana.

32-07-23-306-003 .000-016: Site Solutions Property Group LLC:

Lot 3 in West Wynne Farms Section 4, as per plat thereof recorded June 26, 2014 in Plat Cabinet 8, slide 16, pages 1 A- H, Instrument Number 201412625, in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-150-002.000-016: Burton E & Kathleen Rossiter, H/W:

Lot numbered 2 in Minor Plat Numbered Four (4) in Lincoln Township, Hendricks County, Indiana, as per plat thereof recorded April 7, 1978, in Plat Book 9, page Ill, in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-152-001.000-016: James B. White:

Lot Numbered 3 in the Replat of Lot 3 of Minor Plat No.4 in Lincoln Township, Hendricks County, Indiana, as per plat thereof recorded March 13, 2014 in Plat Cabinet 8, Slide 7, pages 2 A, B, C, D, Instrument Number 201404723, in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-105-002.000-016: Site Solutions Property Group LLC:

Block Bin West Wynne Farms, Section 1, Secondary Plat, an addition to the Town of Brownsburg, Hendricks County, Indiana, as per plat thereof recorded March 13, 2014 in Plat Cabinet 8, Slide 6, pages 2 A, B, C, D as Instrument Number 201404721 in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-105-003.000-016: Site Solutions Property Group LLC:

Lot 4 in West Wynne Farms, Section 1, Secondary Plat, an addition to the Town of Brownsburg, Hendricks County, Indiana, as per plat thereof recorded March 13, 2014 in Plat Cabinet 8, Slide 6, pages 2 A, B, C, D as Instrument Number 201404721 in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-105-004.000-016: Site Solutions Property Group LLC:

Block C in West Wynne Farms, Section 1, Secondary Plat, an addition to the Town of Brownsburg, Hendricks County, Indiana, as per plat thereof recorded March 13, 2014 in Plat Cabinet 8, Slide 6, pages 2 A, B, C, D as Instrument Number 201404 721 in the Office of the Recorder of Hendricks County, Indiana.

Exhibit – A
Legal Description - *continued*

32-07-26-105-005.000-016: Site Solutions Property Group LLC:

Lot 5 in West Wynne Farms, Section 1, Secondary Plat, an addition to the Town of Brownsburg, Hendricks County, Indiana, as per plat thereof recorded March 13, 2014 in Plat Cabinet 8, Slide 6, pages 2 A, B, C, D as Instrument Number 201404721 in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-105-006.000-016: Site Solutions Property Group, LLC:

Block Din West Wynne Farms, Section 1, Secondary Plat, an addition to the Town of Brownsburg, Hendricks County, Indiana, as per plat thereof recorded March 13,2014 in Plat Cabinet 8, Slide 6, pages 2 A, B, C, D as Instrument Number 201404721 in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-150-004.000-016: Chester A & Norma J Blake:

Lot Numbered 4 in Minor Plat Numbered Four (4) in Lincoln Township, Hendricks County, Indiana, as per plat thereof recorded April 7, 1978, in Plat Book 9, page 111, in the Office of the Recorder of Hendricks County, Indiana.

32-07-26-151-001.000-016: Site Solutions Property Group LLC:

Lot 7 in West Wynne Farms, Section 2, a subdivision of the Town of Brownsburg, Hendricks County, Indiana, as per plat thereof, recorded march 13, 2014 as Instrument No. 201404722, Plat Cabinet 8, Slide 7, pages 1 A, B, C, D, in the Office of the Recorder of Hendricks County, Indiana. Together with a right-of-way to accommodate vehicular access over Block "F" (Northfield Drive) of the aforementioned West Wynne Farms, Section 2, as set forth therein, and the right of access as contained in Temporary Ingress-Egress Easement Agreement recorded March 7, 2014 as Instrument No. 201404259, as amended by scrivener's error affidavit recorded March 7, 2014 as Instrument No. 201404392, in said Recorder's Office.

32-07-26-151-002.000-016: NJ Holdings LLC:

Lot 6 in West Wynne Farms, Section 2, a subdivision of the Town of Brownsburg, Hendricks County, Indiana, as per plat thereof, recorded March 13, 2014 as Instrument No. 201404722, Plat Cabinet 8, Slide 7, pages 1 A, B, C, D, in the Office of the Recorder of Hendricks County, Indiana. Together with a right-of-way to accommodate vehicular access over Block "F" (Northfield Drive) of the aforementioned West Wynne Farms, Section 2, as set forth therein, and the right of access as contained in Temporary Ingress-Egress Easement Agreement recorded March 7, 2014 as Instrument No. 201404259, as amended by scrivener's error affidavit recorded March 7, 2014 as Instrument No. 201404392, in said Recorder's Office.

Exhibit – B
General Depiction

Amazon Brownsburg LLC

Date Created: 1/15/2015

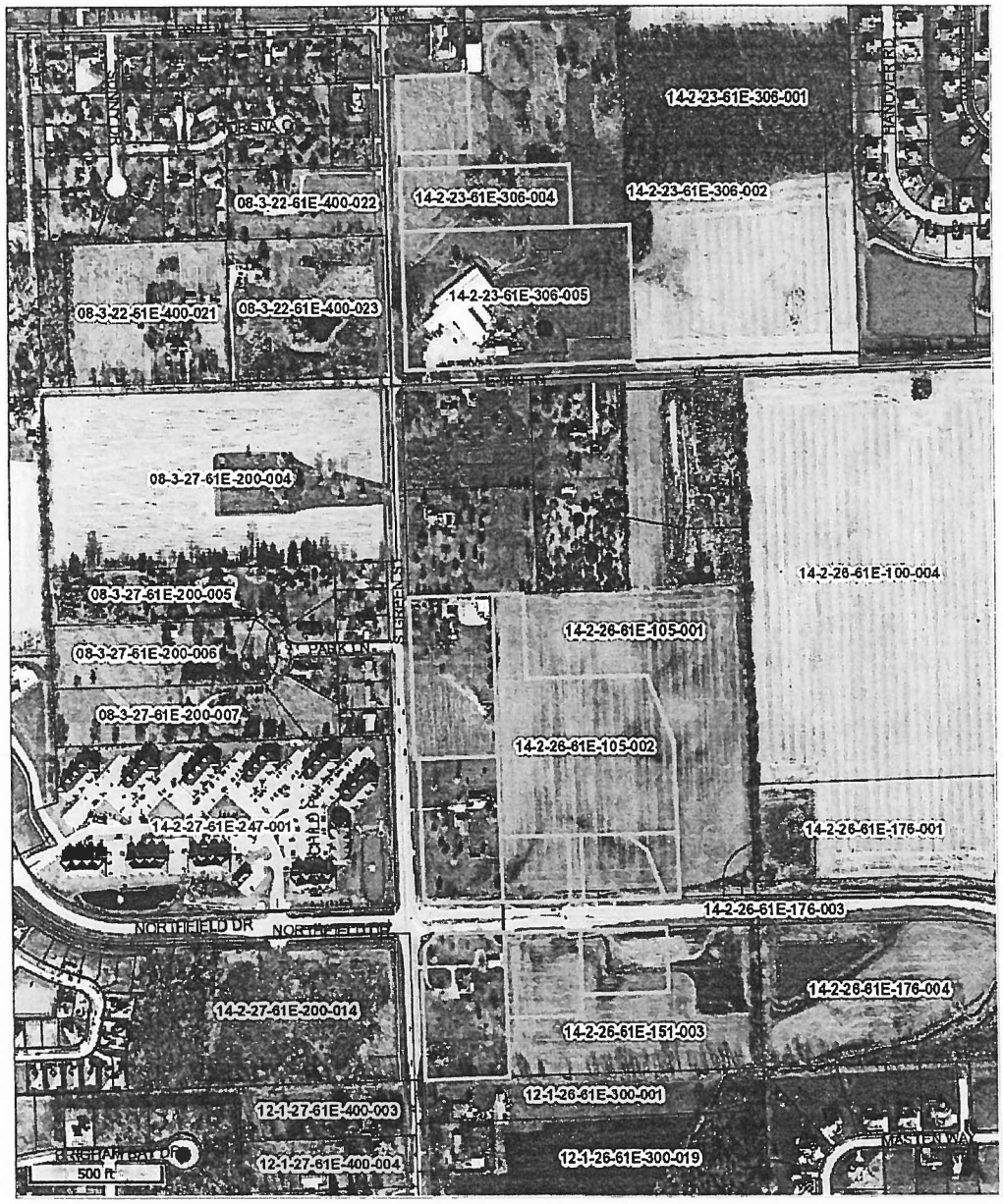


Exhibit – C
Advisory Plan Commission's Report of Determination

TOWN OF
Brownsburg
ADVISORY PLAN COMMISSION

DOCKET NO.
PCMA-01-15-1271
IN THE MATTER OF:
West Wynne Farms Architecture Commit. Amendment - Parcels R and S

REPORT OF DETERMINATION

The Advisory Plan Commission (the "Commission") received a request, pursuant to I.C. 36-7-4-602(c), to amend to amend the Official Zoning Map of the Town of Brownsburg for the property located in West Wynne Farms- Parcels R and S, Parcel No(s) 32-07-23-306-004.000-016; 32-07-23-306-005.000-016; 32-07-23-306-003.000-016; 32-07-26-105-002.000-016; 32-07-26-1 05-003.000-016; 32-07-26-1 05-004.000-016; 32-07-26-1 05-005.000-016; 32-07-26-105-006.000-016; 32-07-26-151-001.000-016; 32-07-26-150-002.000-016; 32-07-26-152-001.000-016; 32-07-26-105-004.000-016; and 32-07-26-151-002.000-016 This petition is a request to amend the text of the Planned Development (PD) ordinance as it relates to the architectural commitments of the Amazon Storage Facility and future projects located in parcels "R & S". Thereafter, the Commission held a public hearing on February 23, 2015 for Docket No. PCMA-01-15-1271, West Wynne Farms Architecture Commit. Amendment - Parcels R and S.

This Report of Determination is based, in whole or in part, on the Applicant's Commitment Amendment Application, submitted on January 15, 2015, and the same is hereby incorporated herein, by reference.

Staff prepared a Project Synopsis, dated February 17, 2015, and the same is hereby incorporated herein, by reference.

After hearing a presentation from Town Staff, the Commission voted 7 In-Favor/ 0 Opposed / 0 Abstained to forward a **FAVORABLE RECOMMENDATION** to the Town Council to amend the Official Zoning Map of the Town of Brownsburg, pursuant to the request, subject to and conditioned upon the following:

(1) That the proposed language read as follows:

§7.03 Design Standards

All Commercial/Retail/Office buildings shall be in accordance with the following standards and specifications:

A1. All structures within Parcels R & S excluding self-storage structures in Parcel-S.

1. Acceptable exterior façade materials shall include masonry, glass, architectural block, decorative metal, Exterior Insulation Finishing System (EIFS), concrete or other similar materials. However, a minimum of seventy-five percent (75%) of the structure's exterior façade, excluding doors and windows, shall be comprised of masonry or architectural block.
    a. Integrally colored, smooth faced, concrete block or other similar materials shall be a permitted exterior façade material in loading areas not directly or indirectly visible from public view or internal streets.
    b. Non-Integrally colored, smooth faced, concrete block or other similar materials shall not be a permitted exterior façade material.

A2. Self-Storage structures within Parcel-S

1. Acceptable façade materials shall include masonry, architectural block, decorative metal (e.g. with a finish appearance of stucco), Exterior Insulation Finishing System (EIFS), concrete or other similar materials.

Exhibit – C
Advisory Plan Commission's
Report of Determination – *continued*

DOCKET NO.
PCMA-01-15-1271
IN THE MATTER OF:
West Wynne Farms Architecture Commit.
Amendment - Parcels R and S

a. Decorative metal or Exterior Insulation Façade System (EIFS) shall not comprise more than seventy-one percent (71%) of any façade except as follows:
    i. Self-storage structure façades, interior to the self-storage facility may be comprised of one hundred percent (100%) decorative metal or Exterior Insulation Finishing System (EIFS) in areas not directly or indirectly visible from public view or internal streets.
b. Split faced block shall not comprise more than thirty-one percent (31%) of any façade.

(2) The approval of the Report of Determination by the Plan Commission.

The Commission took the following into consideration when making their recommendation on this above referenced proposal:

(1) The Brownsburg Comprehensive Plan;
(2) Current conditions and the character of current structures and uses in each district;
(3) The most desirable use for which the land in each district is adapted;
(4) The conservation of property values throughout the jurisdiction; and
(5) Responsible development and growth.

_____
Glenn Nulty, President

ATTEST:

_____
Todd A. Barker, AICP, Administrator

Advisory Plan Commission
TECHNICAL REVIEW COMMITTEE

TOWN OF Brownsburg
61 North Green Street | Brownsburg, Indiana 46112
Tel 317.852.1128 | Fax 317.852.1134

Project Name: McDonald's
Record Number: PSDP-25-10
TECH Meeting Date: 12/18/25

The following Technical Review Committee ("TECH") members provided comments for the project as detailed below:

Development Services
☒ Kevin Tolloty, Senior Planner
☐ Lauren Bouslog, Planner I
☐ Steve Fletcher, Building Commissioner/Director
☒ Frank Wise, Senior Building Inspector

Town Administration
☐ Debbie Cook, Town Manager
☐
☐ Ethan Pierce, Economic Development Manager

Water Department
☒ Frank Monts, Superintendent

Wastewater Department
☒ Kathy Dillon, Water Utilities Director
☐

Street Department
☐ Aaron Love, Superintendent
☐ Matt Griner, Asst. Superintendent

Parks Department
☐ Amber Lane, Director
☐

Fire Territory
☒ Paul Hudson, Fire Marshal
☐ Jeff Schlageter, Deputy Fire Marshal

Police Department
☐ Joe Grimes, Chief
☐ Pat Bullock, Captain
☐ Bryan Fultz, Major

External Agencies
☐ Regan Huff, BCSC
☒ Dave Gaston, P.S., Hend. Co. Surveyor
☐ John Ayers, Hendricks Co. Engineer
☒ Mary Atkins, Wessler Engineering
☐ Angie DeKemper, CountryMark
☐ Gerry Jones, Vectren

1) DEVELOPMENT SERVICES

Lighting

a) Please convert the measurements from foot candles to lux

   i) 5 lux maximum along east side, 20 lux maximum along south

Parking

b) Parking calculation is based on the 2013 UDO, 1 parking space per 2 seats, please revise

c) Will there be bicycle parking/racks? If so, please show on plans

Architecture

d) Exterior façade shall be a minimum of 75% masonry or architectural block

e) Please indicate the percentage of fenestration on each façade (minimum 30%)

f) Facades shall project/recess a minimum of 3% of the length of the façade, extending at least 20% of the length of the façade, for facades over 75 feet in length

g) Facades shall include a repeating pattern with no less than 3 of the following elements: color change, texture change, material change, fenestration change, or profile change

Landscaping

h) Wintercreeper is considered an invasive species and will need replaced

i) Please show vision triangle on plan

j) In accordance with the chart in Section 9.03 (B), there shall be a value equivalent or greater than 50, for all landscaping on site

i) At least 10% of the unit value shall be deciduous shade trees

ii) At least 75% of the unit value shall be evergreen trees, evergreen shrubs, or earthen mounds

B.	Unit Values (minimum sizes at time of planting)	
1.	Deciduous Shade/Overstory Tree – 2 ½" Caliper	0.75
2.	Evergreen Tree – 9' Tall	0.75
3.	Deciduous Ornamental/Understory Tree – 1 ½" Caliper	0.50
4.	Evergreen Tree – 6' Tall	0.50
5.	Evergreen Shrub with Narrow Spread – 4' Tall	0.25
6.	Hedge Plant – 24" to 30" Spread	0.05
7.	Earthen Mound – 3' Tall	0.50
8.	Earthen Mound – 6' Tall	1.00
9.	Earthen Mound – 9' Tall	1.50

k) Parking islands shall contain a minimum of two 2½ -inch caliper shade trees, with turf or mulch complimentary to the building color scheme

l) Perimeter parking screening shall include shrubs at a minimum of 3 feet in height

i) Unit value for perimeter shrubs may be counted toward overall unit value

Fencing/Screening

m) Please provide details on the dumpster enclosure

n) Will there be any visible mechanical units/coolers (ground or roof)?

General

o) A multi-use trail should be shown along S. Green Street instead of a sidewalk

2) BUILDING

a) Care should be taken working anywhere in the right way on Green Street and Northfield Drive. A powerline and conduit running through that easement powers Town of Brownsburg signage on Green Street to the south. Power line is in one and a half inch conduit. Please note this on site plans.

3) CAPITAL PROJECTS

a) None

4) ECONOMIC DEVELOPMENT

a) None

5) WATER

a) None - This is in Citizens Energy Group's water service area

6) WASTEWATER

a) Drawing C001 number 22 under utilities section should reference sanitary conforming to west central conservancy requirements and not Town of Brownsburg.

b) Clarify who is responsible for the private stormwater infrastructure operation and maintenance. Property owner? Possibly an updated stormwater operation and maintenance manual is needed. The uploaded document for this item seems to be more of a drainage system study/report

7) STREET/PUBLIC WORKS

a) None

8) PARKS

a) None

9) FIRE TERRITORY

a) This site will require installation of a fire hydrant to meet the requirements of IN Fire Code 507.5.1

507.5.1 Where required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided.

i) For Group R-3 and Group U occupancies, the distance requirement shall be 600 feet (183 m).

ii) For buildings equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement shall be 600 feet (183 m).

10) POLICE

a) None

11) STORMWATER

a) See attached

12) BROWNSBURG COMMUNITY SCHOOL CORPORATION

a) None

13) **HENDRICKS COUNTY SURVEYOR**

a) This project will need to go through the Hendricks County Drainage Board approval process.

14) **HENDRICKS COUNTY ENGINEER**

a) None

15) **COUNTRYMARK**

a) None

16) **VECTREN**

a) None

Please provide a written response to this report addressing each issue and, if necessary, indicate where on the revised plans the modification has been made.

TOWN OF BROWNSBURG STORMWATER/DRAINAGE PLAN REVIEW

CO Comment Originator
CR Comment Respondee

NAME OF PROJECT: McDonalds
DESIGN PACKAGE: Development
DESIGNER: Civil & Environmental Consultants

		Wessler - Reviewer to complete		Designer to complete	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
1	Storm Structures	RS	A one tenth drop is required in all storm structures		
2	Flood Routing	RS	Refer to Ch. 151.21 I. for flood routing requirements. Show hatching, peak elevations, and flow path on plans. MFPG for structures is to be at least one foot above the localized peak ponding elevation.		
3	Inlet Grates	RS	The Town requires a precast pollution prevention message.		
4	Pipe Cover	RS	Pipe cover is to be a minimum of 2 feet. If this cannot be met, provide engineering justification, including protections for loading and frost heave, in the drainage report.		
5	Soil Survey Map	RS	This is required to be shown on the construction plans.		
6	Inlet Calcs	RS	Refer to Ch 151.21 D.3. for inlet calculation requirements. Include calculations for 50% clogged conditions in the report.		
7	Vertical Separation	RS	18" vertical separation is required between storm infrastructure and other utilities. The proposed sanitary line at catch basin 102 appears to only have 1.27 feet of separation according to the label in the profile.		
8	Downspouts/ Sumps	RS	Verify that downspouts (and sumps if applicable) will be directly connected to the storm pipe, no overland flow.		
9	Materials Staging	RS	Show on the plans where materials storage/staging will occur.		

These comments should not be construed as a comprehensive list of comments, and the reviewer may make additional comments based on subsequent submittals

TOWN OF Brownsburg

Construction/ Stormwater Pollution Prevention Plan Technical Review
Town of Brownsburg Stormwater Management Ordinance
https://codelibrary.amlegal.com/codes/brownsburg/latest/brownsburg_in/0-0-0-26557
IDEM Construction Stormwater General Permit:
https://www.in.gov/idem/stormwater/construction-land-disturbance-permitting/
(INRA00000 effective 12/18/2021)

Construction/Stormwater Pollution Prevention Plan Technical Review and Comment

Project Name: McDonald's Restaurant
Scope of Project:
Location of Project: 7030 Northfield Drive, Brownsburg, IN 46112
County(ies): Henrdicks
Latitude: **Longitude:**

Plan Submittal Date: **December 8, 2025**
Plan Review Date: **December 9, 2025**

Plan Preparer: Tyler Amicon **Affiliation:** Civil & Environmental Consultants, Inc.
Address: 10300 Alliance Road, Suite 300
City: Cincinnati **State:** OH **Zip:** 45242
Phone: 513-483-3519 **Cell Phone:** **Email:**

Project Site Owner: Amy Switzer **Company Name (if applicable):** McDonald's USA, LLC
Address: 110 N Carpenter Street
City: Chicago **State:** IL **Zip:** 60607
Phone: 913-660-2205 **Cell Phone:** **Email:**

Plan Reviewer: Mary Atkins, PE, CPESC **Affiliation:** Wessler Engineering **On behalf of:** Town of Brownsburg
Assisted By: Natalie Maag, Wessler Engineering
Address: 6219 South East Street
City: Indianapolis, IN **State:** IN **Zip:** 46227
Phone: 317-788-4551 **Cell Phone:** **Email:** MaryA@wesslerengineering.com

Plan Review Status:		
☐	**Plan is Adequate**	A comprehensive plan review has been completed and it has been determined that the plan satisfies the minimum requirements of the Town of Brownsburg Stormwater Management Ordinance and Construction Standards, and the Construction Stormwater General Permit INRA00000 (Effective 12-18-2021).
☐	**Preliminary Review**	A comprehensive review will not be completed at this time. The plan review authority reserves the right to perform a comprehensive review at a later date, and revisions may be required at that time.
☐	**Conditional Acceptance**	Acceptance of the plan is conditional. The conditional acceptance is contingent upon addressing the issues identified in the comment sections.
☒	**Plan is Deficient**	Significant deficiencies were identified and must be addressed. Refer to the comment sections.

Action:	
☐	**Submit a Notice of Intent:** Submit the Notice of Intent (NOI) online through the IDEM Regulatory ePortal. It is required to upload a copy of this review form when submitting the NOI through the IDEM Regulatory ePortal: (https://stormwater.idem.in.gov/ncore/external/home)
☒	**Do not file a Notice of Intent or commence land-disturbing activities:** Deficiencies must be adequately addressed and an acceptable plan review completed.
☒	**Comments:** Refer to Plan Review Comments Sections of this document.
☒	**Revisions:** Update and submit the revised Construction/Stormwater Pollution Prevention Plan as indicated below.
	☒ Update and submit a complete plan set that addresses plan deficiencies.
	☐ Update and submit a document (narrative and/or plan sheets) that address plan deficiencies.
	☐ Update and submit a complete plan set that addresses plan deficiencies. A comprehensive plan review will not be completed.

Plan Review Information

- *The technical review and comment is intended to evaluate the completeness of the Construction/Stormwater Pollution Prevention Plan for the project. The Plan submitted was not reviewed for the adequacy of engineering design. All measures included in the plan, as well as those recommended in the comments should be evaluated as to their feasibility by a qualified individual with structural measures designed by a qualified engineer. The Plan has not been reviewed for other local, state, or federal permits that may be required to proceed with this project.*
- *Construction activities and unforeseen weather conditions may affect the performance of the erosion and sediment control system, individual measures, or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute measures as necessary to ensure compliance.*

Priority Site Information:

☐	**Nature and Extent of Construction**	☐	**Close Proximity to Wetlands**
☐	**Close Proximity to Sensitive Area**	☐	**Potential for Direct Runoff to Receiving Waters**
☐	**Steep Topography on Proposed Construction Site**	☐	**Not a Priority Site**

Section A: Construction Plan Elements

Adequate	Deficient	NA	A	*The construction plan elements include general information associated with the project site that are critical for the evaluation of the stormwater pollution prevention plan component. This information includes, but is not limited to an index, resource information, reference maps, grading information, project layout and design, and drainage plan*
☐	☒	☐	**1**	Index of the location of required plan elements in the construction plan
☐	☒	☐	**2**	A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads
☐	☒	☐	**3**	Narrative of the nature and purpose of the project
☐	☒	☐	**4**	Latitude and longitude to the nearest fifteen (15) seconds
☐	☒	☐	**5**	Legal description of the project site
☐	☒	☐	**6**	11 X 17-inch plat showing building lot numbers/boundaries and road layout/names
☐	☒	☐	**7**	Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways
☐	☒	☐	**8**	Land use of all adjacent properties
☐	☒	☐	**9**	Identification of a U.S. EPA approved or established TMDL
☐	☒	☐	**10**	Name(s) of the receiving water(s)
☐	☒	☐	**11**	Identification of discharges to a water on the current 303d list of impaired waters and the pollutant(s) for which it is impaired
☐	☒	☐	**12**	Soil map of the predominant soil types
☐	☒	☐	**13**	Identification and location of all known wetlands, lakes and water courses on or adjacent to the project site (construction plan, existing site layout)
☐	☒	☐	**14**	Identification of any other state or federal water quality permits or authorizations that are required for construction activities– required 50-foot natural buffer
☐	☒	☐	**15**	Identification and delineation of existing cover, including natural buffers
☐	☒	☐	**16**	Existing topography at a contour interval appropriate to indicate drainage patterns
☐	☒	☐	**17**	Location(s) of where run-off enters the project site
☐	☒	☐	**18**	Location(s) of where run-off discharges from the project site prior to land disturbance. Erosion measures required at the discharge point.
☐	☒	☐	**19**	Location of all existing structures on the project site
☐	☒	☐	**20**	Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management

☐	☒	☐	**21**	Locations where stormwater may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features
☐	☒	☐	**22**	Size of the project area expressed in acres
☐	☒	☐	**23**	Total expected land disturbance expressed in acres
☐	☒	☐	**24**	Proposed final topography
☐	☒	☐	**25**	Locations and approximate boundaries of all disturbed areas
☐	☒	☐	**26**	Location, size, and dimensions of all stormwater drainage systems, such as culverts, storm sewers, and conveyance channels
☐	☒	☐	**27**	Locations of specific points where stormwater and non-stormwater discharges will leave the project site
☐	☒	☐	**28**	Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas
☐	☒	☐	**29**	Location of all on-site soil stockpiles and borrow areas
☐	☒	☐	**30**	Construction support activities that are expected to be part of the project
☐	☒	☐	**31**	Location of any in-stream activities that are planned for the project including, but not limited to stream crossings and pump arounds

Section A – Comments:

- Please include a completed Stormwater Pollution Prevention Plan (SWPPP) and Operations and Maintenance (O&M) Manual with plan submittal.

Section B: Stormwater Pollution Prevention Plan – Erosion and Sediment Control/Project Site Management				
Adequate	**Deficient**	**NA**	**B**	*The construction component of the Stormwater Pollution Prevention Plan includes stormwater quality measures to address erosion, sedimentation, and other pollutants associated with land disturbance and construction activities. Proper implementation of the plan, maintenance of measures, and administering a self-monitoring program is required to manage the project site to minimize the discharge of sediment and other pollutants. Construction activities and unforeseen weather conditions may affect the performance of the erosion and sediment control system, individual measures, or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute measures as necessary to ensure compliance.*
☐	☒	☐	**1**	Description of the potential pollutant generating sources and pollutants, including all potential non-stormwater discharges
☐	☒	☐	**2**	Stable construction entrance locations and specifications. Plan to clear tracking of sediments on road. Dust suppression plan.
☐	☒	☐	**3**	Specifications for temporary and permanent stabilization. Include seeding and mulching plan and 70% coverage requirement for final stabilization. Include 7-day stabilization requirement.
☐	☒	☐	**4**	Sediment control measures for concentrated flow areas (sediment basins if used have specific requirements)
☐	☒	☐	**5**	Sediment control measures for sheet flow areas
☐	☒	☐	**6**	Run-off control measures
☐	☒	☐	**7**	Stormwater outlet protection locations and specifications
☐	☒	☐	**8**	Grade stabilization structure locations and specifications
☐	☒	☐	**9**	Dewatering applications and management methods
☐	☒	☐	**10**	Measures utilized for work within waterbodies
☐	☒	☐	**11**	Maintenance guidelines for each proposed temporary stormwater quality measure
☐	☒	☐	**12**	Planned construction sequence describing the relationship between implementation of stormwater quality measures in relation to land disturbance
☐	☒	☐	**13**	Provisions for erosion and sediment control on individual building lots regulated under the proposed project
☐	☒	☐	**14**	Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1

☐	☒	☐	**15**	Material handling and storage procedures associated with construction activity. Management of waste materials and dumpsters for runoff and wind. Concrete washout management. Fueling areas. Equipment washing. Application of pesticides, herbicides, insecticides and fertilizers. Disposal of hazardous waste. Washing of paint or grout applicators.

Section B – Comments:

-

Section C: Stormwater Pollution Prevention Plan – Post-Construction

Adequate	Deficient	NA	C	
				The post-construction component of the Stormwater Pollution Prevention Plan includes the implementation of stormwater quality measures to address pollutants that will be associated with the final project land use. Post-construction stormwater measures should be functional upon completion of the project. Long term functionality of the measures is critical to their performance and should be monitored and maintained.
☐	☒	☐	**1**	Description of pollutants and their sources associated with the proposed land use
☐	☒	☐	**2**	Description of proposed post-construction stormwater measures including stormwater detention and water quality treatment according to the local ordinance (refer also to separate technical review comments)
☐	☒	☐	**3**	Plan details for each stormwater measure
☐	☒	☐	**4**	Sequence describing stormwater measure implementation
☐	☒	☐	**5**	Maintenance guidelines for proposed post-construction stormwater measures. Operation and Maintenance (O&M) Manual.
☐	☒	☐	**6**	Entity that will be responsible for operation and maintenance of the post-construction stormwater measures

Section C – Comments:

-

February 13, 2026

Town of Brownsburg
Planning Commission Office
61 North Green Street
Brownsburg, Indiana 46112
Attn: Technical Review Committee
PH: (317) 852-1128

To whom it may concern:

Subject: REV1 Town of Brownsburg Comments
013-1263 Brownsburg, IN McDonalds Restaurant (NSN 45201)
7030 Northfield Drive, Brownsburg, IN 46112
CEC Project 355-081

CEC is pleased to provide a response to the items noted in the first review provided by the Town of Brownsburg, Indiana's Technical Review Committee in December 2025.Written response as follows:

Developed Services: Parking

1. *Note 1b: Parking calculation is based on the 2013 UDO, 1 parking space per 2 seats, please revise.*

   CEC Response: Parking space count has been revised per information provided by the Town of Brownsburg. Revision is reflected on sheet C000.

2. *Note 1c: Will there be bicycle parking/racks? If so, please show on plans.*

   CEC Response: Bike parking/racks are not included in the proposed work.

Developed Services: Fencing/Screening

3. *Note 1n: Will there be any visible mechanical units/coolers (ground or roof)?*

   CEC Response: Mechanical equipment will be screened.

Developed Services: General

4. *Note 1o: A multi-use trail should be shown along S. Green Street instead of a sidewalk.*

   CEC Response: The sidewalk along S Green Street has been changed to meet the standards of a multi-use trail.

Building

5. *Note 2a: Care should be taken working anywhere in the right way on Green Street and Northfield Drive. A powerline and conduit running through that easement powers Town of Brownsburg signage on Green Street to the south. Power line is in one and a half inch conduit. Please note this on site plans.*

   CEC Response: A note has been added to sheet C200 "Construction along the right-of-way along Green Street and Northfield Drive is to be done with care. Protect the existing powerline and 1.5 inch conduit running through the existing easement."

Wastewater

6. *Note 6a: Drawing C001 number 22 under utilities section should reference sanitary conforming to west central conservancy requirements and not Town of Brownsburg.*

   CEC Response: Sheet C001, note 22 has been revised to reference West Central Conservancy requirements instead of the Town of Brownsburg's.

7. *Note 6b: Clarify who is responsible for the private stormwater infrastructure operation and maintenance. Property owner? Possibly an updated stormwater operation and maintenance manual is needed. The uploaded document for this item seems to be more of a drainage system study/report.*

   CEC Response: The property owner will be responsible for the on-site storm water infrastructure. An Operations and Maintenance Manual has been included with this resubmittal.

Fire Territory

8. *Note 9a: This site will require installation of a fire hydrant to meet the requirements of IN Fire Code 507.5.1 507.5.1 Where required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided.*

   CEC Response: A new fire hydrant has been added to the site. See sheet C500 for location and more information.

Stormwater

9. *Note 11a: See attached.*

a. *A one-tenth drop is required in all storm structures.*

CEC Response: One-tenth drop incorporated within pipe network.

b. *Refer to Ch. 151.21 I. for flood routing requirements. Show hatching, peak elevations, and flow path on plans. MFPG for structures is to be at least one foot above the localized peak ponding elevation.*

CEC Response: Flood routing has been added to the plan set on sheet C400.

c. *The Town requires a precast pollution prevention message.*

CEC Response: A note has been added to the plans to include a precast pollution prevention message.

d. *Pipe cover is to be a minimum of 2 feet. If this cannot be met, provide engineering justification, including protections for loading and frost heave, in the drainage report.*

CEC Response: 2 feet of cover has been provided where possible. The grade to tie into the existing development to the south and the sanitary lateral connection are constraints that limit the amount of cover over a portion of the pipe. To mitigate the limited cover, the pipe material has been changed to reinforced concrete pipe in areas where cover is < 2 feet.

e. *This is required to be shown on the construction plans (referencing the Soil Survey Map).*

A Soil Survey Map of the subject site has been added to the plan set on sheet C403-Soil Survey Map.

f. *Refer to Ch 151.21 D.3. for inlet calculation requirements. Include calculations for 50% clogged conditions in the report.*

CEC Response: The Stormwater Management Report has been updated to include the required inlet calculations.

g. *18" vertical separation is required between storm infrastructure and other utilities. The proposed sanitary line at catch basin 102 appears to only have 1.27 feet of separation according to the label in the profile.*

CEC Response: The maximum separation achievable, due to site constraints for the sanitary/storm crossing, is 1.27 feet. To mitigate the < 18 inch

separation, we are proposing concrete encasement of both the sanitary and storm lines as shown on the plans.

h. *Verify that downspouts (and sumps if applicable) will be directly connected to the storm pipe, no overland flow.*

CEC Response: It's confirmed that the downspouts on site will be directly connected to the storm pipe, and there will not be overland flow. A note has been added to sheet C400.

i. *Show on the plans where materials storage/staging will occur.*

Sheet C900 has been edited to show the materials storage/staging for the project.

Landscaping

1. *Wintercreeper is considered an invasive species and will need replaced*

   CEC Response: Wintercreeper has been removed and replaced.

2. *Please show vision triangle on plan.*

   CEC Response: Vision triangles have been included.

3. *In accordance with the chart in Section 9.03 (B), there shall be a value equivalent or greater than 50, for all landscaping on site*

   a. *At least 10% of the unit value shall be deciduous shade trees*

      CEC Response: Landscape plan has been updated accordingly.

   b. *At least 75% of the unit value shall be evergreen trees, evergreen shrubs, or earthen mounds.*

      CEC Response: Landscape plan has been updated accordingly.

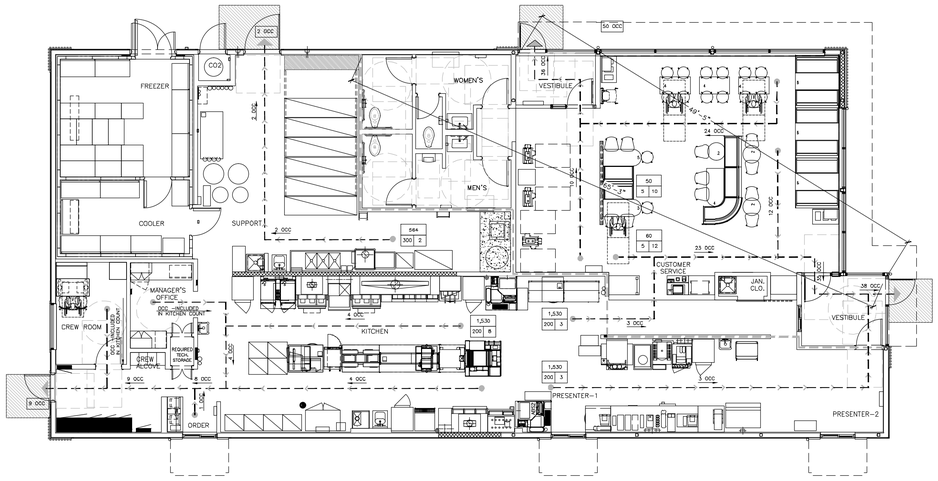
4. *Parking islands shall contain a minimum of two 2-1/2 inch caliper shade trees, with turf or mulch complimentary to the building color scheme.*

   CEC Response: Landscape plan has been updated accordingly.

5. *Perimeter parking shall include shrubs at a minimum of 3 feet in height.*

a. *Unit value for perimeter shrubs may be counted toward overall unit value.*

CEC Response: Landscape plan has been updated accordingly.



NORTH

4590–WW PLAN

50 SEATS (3 ACCESSIBLE SEATS)

THIS DRAWING IS
FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

VICINITY MAP:

NORTH

OCCUPANCY ALLOWANCE:

INTERNATIONAL BUILDING CODE 2021

TABLE 1004.5
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	ALLOWANCE	AREA	OCCUPANTS
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 GROSS	564 SF	2
ASSEMBLY WITH FIXED SEATS	SEE PLAN	–	50
ASSEMBLY W/OUT FIXED SEATS STANDING SPACE	5 NET	110 SF	22
BUSINESS AREAS	150 GROSS	65 SF	1
KITCHEN, COMMERCIAL (OCCUPANT LOAD FOR FULL STAFF)	200 GROSS	–	14
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
		TOTAL OCCUPANCY ALLOWANCE	89

2025 4590–WW BUILDING BB20
CHICAGO FIELD OFFICE

BUILDING INFORMATION:

ADDRESS:

STATE SITE CODE: 012–1263
STREET ADDRESS: 7030 NORTHFIELD DRIVE
CITY: BROWNSBURG
COUNTY: HENDRICKS
STATE: INDIANA

STRUCTURE:

WOOD LOAD BEARING WALLS, WOOD ROOF FRAMING

UTILITIES:

ELECTRIC GRILLS & ELECTRIC FRYERS
ELECTRIC HVAC & ELECTRIC WATER HEATER

BUILDING CODE:

BUILDING CODE EDITION:	2014 INDIANA BUILDING CODE
MECHANICAL CODE EDITION:	2014 INDIANA MECHANICAL CODE
ELECTRICAL CODE EDITION:	2008 INDIANA ELECTRICAL CODE
PLUMBING CODE EDITION:	2012 INDIANA PLUMBING CODE
ENERGY CODE EDITION:	2010 IINDIANA ENERGY CONSERVATION CODE
FIRE/LIFE SAFETY CODE EDITION:	2021 NFPA 101 LIFE SAFETY CODE
HEALTH CODE EDITION:	HENDRICKS COUNTY FOOD ORDINANCE
ACCESSIBILITY CODE EDITION:	2017 ICC A117.1 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

BUILDING DATA:

OCCUPANCY: USE GROUP A2
CONSTRUCTION TYPE: VB
NUMBER OF STORIES: 1
BUILDING HEIGHT: 18'–9 1/2" (MAIN BLDG. PARAPET)

GROSS BUILDING AREA:	4,180 S.F.
FLOOR AREA, GROSS:	3,985 S.F.

DESIGN LOADS:

GROUND SNOW LOAD:	XX PSF
WIND SPEED:	XXX MPH (EXPOSURE A–D)
SEISMIC DESIGN CATEGORY:	A–E
SOIL BEARING CAPACITIES:	XXXX PSF (ASSUMED)

LIFE SAFETY SYSTEM:

EMERGENCY LIGHTING:	X YES	___ NO
EXIT SIGNS:	X YES	___ NO
FIRE ALARM:	___ YES	X NO
DUCT SMOKE DETECTORS W/ AUDIBLE/VISIBLE DEVICE:	X YES	___ NO
FIRE SPRINKLERS:	___ YES	X NO
SPRINKLER FLOW/TAMPER SWITCH W/ AUDIBLE/VISIBLE DEVICE:	___ YES	X NO
CO2 DETECTION SYSTEM W/ AUDIBLE/VISIBLE DEVICE:	X YES	___ NO
PANIC HARDWARE:	X YES	___ NO

DESIGNER OF RECORD:

DISCIPLINE:	NAME:	ADDRESS:	LICENSE #:
ARCHITECT:	William T Stambaugh	145 N, Est St. Indianapolis, IN 46204	860037
STRUCTURAL:	Tom Miltner	450 Est 96th St. Suite 175 Indianapolis, IN 46240	PE 60910397
MECHANICAL:	David Leifer	212 SE 34th St. Bentonville, AR 72712	11600507
PLUMBING:	David Leifer	212 SE 34th St. Bentonville, AR 72712	11600507
ELECTRICAL:	John Ferguson	212 SE 34th St. Bentonville, AR 72712	10839546

CONSTRUCTION PROJECT MANAGER:

	NAME:	EMAIL:	PHONE #:
MANAGER:	Joe Coconato	Joe.Coconato@us.mcd.com	

REVISIONS

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E4.1 Lighting Controls
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K2.0 Kitchen Equipment Plan
K2.1 Kitchen Equipment Schedule

NO.	DESCRIPTION	DATE	BY
–	–	–	–

WILLIAM T. STAMBAUGH REGISTERED No. 860037 STATE OF INDIANA PROFESSIONAL ENGINEER

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	mbh
STD ISSUE DATE	2025 10
REVIEWED BY	WTS
DATE ISSUED	11.24.2025

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 452001
L/C: 13263

SITE ADDRESS
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

013.1263.00.0

SHEET NO. GN1.0
COVER

U.S. Restaurant Development Supplier Directory

Product Category	Supplier	Order Placement	Technical Assistance	Supplier Liaison	Direct Phone	Email	Geography	GSSS Purchase	O/O Purchase	GC Purchase
Aluminum Composite Material Panels	Alpolic	757-286-1005		Dave Kearney		dave_kearney@m-chem.com				
Artwork & Graphics	Vomela	865-330-7337	865-330-7337	Ann Bowen	865-330-7337	ann.bowen@vomela.com				X
	GFX	847-543-4600				mcdonaldsdecor@gfxi.com				
Battens	B + N	jkatterhagen@bnind.com plucchesi@bnind.com	253-709-1508	Joel Katterhagen Pirkko Lucchesi	253-709-1508	jkatterhagen@bnind.com plucchesi@bnind.com	Atlanta, Bethesda, Chicago, Columbus, Stamford	X		
	Tubelite	kbaumann@tubeliteinc.com;	214-399-5910	Kent Baumann	(214) 399-5910	kbaumann@tubeliteinc.com	Dallas, Denver, Long Beach, Nashville, Walnut Creek	X		
Building Automation Systems	Carrier		McD@CCBAC.com							
	Trane		McDcontrols@Trane.com							
Ceiling Tile / Grid	Acoustical Surfaces Inc.	mike@acousticalsurfaces.com	800-913-9395	Mike Mohs	612-719-7920	mike@acousticalsurfaces.com				X
	USG	Jon Funes	jfunes@usg.com	Jon Funes	312-436-5841	jfunes@usg.com				X
Door Hardware	Universal Manufacturing Co.	hal@umco.net		Hal Lawrence						
Drive-Thru Windows	Ready Access	800-621-5045	630-876-7766	Anna Ellis	800-621-5045 x120	anna@ready-access.com		X (Kitchen & Exterior)		X (Dining)
Electrical Distribution (Switchgear)	Schneider Electric-Square D Compa	630-671-6304 (Graybar)	630-671-6304 (Graybar)	Marc DiCicco	615-594-8647	marc.dicicco@schneider-electric.com				X
Exhaust Fans	Greenheck (also dba Accurex)	888-325-6529	888-325-6529	Brian Rivet	715-571-6462	brian.rivet@accurex.com		X		
FRP	Panolam	866-925-4377		Kim Lawson		Kimberly_Lawson@panolam.com				
Grease Interceptors	Green Turtle	407-244-7918	407-244-7918	Lee Flasher	407-509-7626	lee.flasher@hughessupply.com		X		
	Schier Products							X		
HVAC Units	Lennox Industries	800-367-6285 x5491	800-367-6285	Razi Dole	614-886-0719	Razi.dole@lennoxind.com	Atlanta, Chicago, Columbus, Dallas, Nashville			X
	Trane	630-734-3200 x6057	630-734-3200	Lauri Frankowski	630-400-4285	lfrankowski@trane.com	Bethesda, Denver, Long Beach, Stamford, Walnut Cre			X
	Carrier									
Kitchen Equipment Supplier (KES)	HKI									
	FRANKE									
Laminates	Decotone	908-301-0600	908-301-0600	Drew Diamond	908-301-0600	drew@decotonesurfaces.com				X
	Formica	773-209-6400	773-209-6400	Mindy Sinzheimer	773-209-6400	mindy.sinzheimer@formica.com				X
	Wilsonart	720-346-4538	720-346-4538	Brynn Bishop	720-346-4538	brynn.bishop@wilsonart.com				X
Lighting	CS Illumination	mcd@csillumination.com	760-477-1244 Ext. 1157	Julie Glesne	206-455-5666	jglesne@csillumination.com				x
	Security Lighting	slorders@securitylighting.com	customerservice@securitylighting.co	Dave Levinson	847-274-5812	dlevinson@securitylighting.com		X		X
Metal Packaging (Coping & Metal Reveal Panels)	Metal-Era	800-558-2162	800-558-2162	Brad Van Dam	800-558-2162	brad.vandam@metalera.com		X		
ODMB Distribution	Suddath	904-858-1234 x7558	904-858-1234 x7558	Tom Ruede	904-229-5234	truede@suddath.com				X
Pedimats	Construction Specialties	888-424-6287				nationalaccounts@c-sgroup.com				
Playplace Equipment	Kidzpace	855-509-9990	800-668-0206 x231	Derik Stockdale	705-441-6942	derik@kidzpace.com			X	
	Nunoerin	601-944-0023	601-944-0023	Erin Hayne	601-540-5513	erin@nunoerin.com			X	
	Playtime	303-962-7606	303-962-7606	Jennifer Dallmann	720-299-8705	Jennifer@playtime.com			X	
	Soft Play, LLC	800-782-7529 (New Unit) 800-782-293	704-948-3430	Brock Hodge	704-948-3430	brock.hodge@softplay.com			X	
Plumbing & Restroom Fixtures and Accessories	Hughes Supply	407-244-7918	407-244-7918	Lee Flasher	407-509-7626	lee.flasher@hughessupply.com		X		X
RMHC Pass-Thru Coin Collector	888-743-7435									
Roofing	DuroLast									
	Johns Manville	866-235-6838	866-235-6838	Joe Dugo	904-495-1649	Joe.DugoJr@jm.com				X
Seating & Décor (Interior & Exterior)	Elkay	800-337-8373	800-337-8373	Taylor Johnson	414-208-8681	taylor.johnson@elkay.com	Atlanta, Bethesda, Chicago, Columbus, Nashville		X	
	JBI	310-667-5600	267-278-3762	Joseph R. Parisi	267-278-3762	jrparisi@jbi-interiors.com	Denver, Dallas, Long Beach, Stamford, Walnut Creek		X	
Signage, White Fascia & LED Lighting	Everbrite	888-857-4078	888-857-4078	Christine Schoenike	414-768-5474	cschoenike@everbrite.com	Atlanta, Bethesda, Chicago, Columbus, Nashville	X		
	Persona	605-882-2244	605-878-2430	Mike Peterson	605-868-2356	mpeterson@personasigns.com	Denver, Dallas, Long Beach, Stamford, Walnut Creek		X	
Signage, ADA Package	FRANKE/S2K	800-423-5247		www.frankesupply.com		fs-frankesupply.us@franke.com				
Solid Surfaces	Dupont Surfaces	847-910-8546	612-819-8751	Erin Fairfield	612-499-4875	erin.michelle.fairfield@dupont.com			X	
Tile	Crossville Tile	thale@crossville.com	931-456-3997	Dennis Hopkins	704-576-4953	dhopkins@crossvilleinc.com				X
	Eurowest	mcd@eurowest.com	714-224-5810	Jan Deter	714-309-9551	jdeter@eurowest.com				X
Trellis/ Louvers	All-Lite	817-509-2300				www.alllite.com				
	AWNEX, Inc.	770-704-7140 x119	770-704-7140 x119	Trey Herndon	770-704-7140 x113	trey@awnexinc.com	Atlanta, Bethesda, Denver, Nashville	X		
	Greenheck	715-355-6677	715-355-6677	Gary W. Macdonald	715-841-8523	gary.macdonald@greenheck.com	Chicago, Stamford, Walnut Creek	X		
	PCI Industries	mcd.orders@pci-industries.com	817-509-2300	Alexa Roden	817-509-1085	aroden@pottorff.com	Columbus, Dallas, Long Beach	X		
Wood Trusses& Joists	RedBuilt, LLC	East: 614-270-6919 West: 310-995-405	208-272-0494	David Thompson	614-264-0712	dthompson@redbuilt.com		X		

SYMBOL LEGEND:

- 6 / A4.0 — SECTION TAG
- 5 / A6.0 — DETAIL TAG
- T/ SLAB ELEV. 0'-0" — ELEVATION TAG
- 6 / A4.0 DETAIL 1 1/2"=1'-0" DETAIL NUMBER — DRAWING TITLE
- 7 — DOOR TAG
- DINING ROOM 103 — ROOM NAME & NUMBER
- A — PARTITION TAG

GENERAL NOTES

1. ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL BUILDING CODES, REGULATIONS, ORDINANCES AND STANDARDS INCLUDING ADA AND OR OTHER HANDICAP ACCESSIBILITY CODES.
2. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OWNER'S VENDORS REGARDING SCHEDULING ON SITE DURING CONSTRUCTION AND SEQUENCING OF THE WORK.
3. THE CONSTRUCTION NOTES AND DRAWINGS ARE SUPPLIED TO ILLUSTRATE THE DESIGN INTENT AND GENERAL TYPE OF CONSTRUCTION DESIRED AND ARE INTENDED TO IMPLY THE FINEST QUALITY OF CONSTRUCTION, MATERIAL AND WORKMANSHIP THROUGHOUT.
4. THE DRAWINGS ARE NOT TO BE SCALED. FOR INFORMATION CONCERNING EXISTING CONDITIONS, ETC., VERIFICATION MUST BE DONE IN THE FIELD. LARGE SCALE DRAWINGS HAVE PRECEDENCE OVER SMALL SCALE DRAWINGS.
5. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTENCE AND LOCATION OF ALL EXISTING ABOVE AND BELOW GRADE, UTILITIES, INCLUDING SANITARY SEWER, STORM SEWER, WATER, GAS, ELECTRICAL, TELEPHONE, ETC. ANY DISCREPANCIES IN UTILITY LOCATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
6. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL BUILDING DIMENSIONS PRIOR TO BEGINNING CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY VARIANCE OR DISCREPANCY AFFECTING NEW CONSTRUCTION PRIOR TO PROCEEDING WITH WORK.
7. CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING IN WALLS FOR SUPPORT OF ALL EQUIPMENT, SHELVING, ACCESSORIES, SIGNAGE, AND OTHER DEVICES REQUIRED.
8. ALL PENETRATIONS SHALL RECEIVE CAULKING TO SEAL ANY TYPE OF ENERGY LOSS.
9. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL APPLICABLE DIMENSIONS OF FIXTURES AND EQUIPMENT SUPPLIED AND/OR INSTALLED BY OTHERS.
10. UPON COMPLETION OF PROJECT, G.C. TO OBTAIN ALL FINAL INSPECTIONS AS REQUIRED BY LOCAL JURISDICTIONS AND FURNISH OWNER WITH EVIDENCE OF ALL SUCH INSPECTIONS AND CERTIFICATES OF OCCUPANCY.
11. SIGNS, UNLESS NOTED OTHERWISE, ARE PROVIDED BY OWNER'S SIGN CONTRACTOR. OWNER'S SIGN VENDOR WILL PROVIDE MONUMENT SIGN BASE (CONCRETE, STONE, BRICK, ETC.) IF PROJECT REQUIRES DECORATIVE BASE. SEE SHEET L-1 TO VERIFY IF REQUIRED. GENERAL CONTRACTOR TO PROVIDE ROUGH-IN & FINAL CONNECTION AND BRAILLE EXIT SIGN.
12. GENERAL CONTRACTOR TO PROVIDE FOUR (4) 30 YARD DUMPSTERS DURING McDONALD RETAIL MOVE-IN.
13. GENERAL CONTRACTOR SHALL PROVIDE ONE SKILLED LABORER FOR ONE WEEK DURING McDONALD RETAIL MOVE-IN. (40 HOURS)
14. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SET-UP AND COORDINATION OF ALL THE UTILITY SERVICES FOR THE PROJECT.
15. ALL EXTERIOR FLOOR PLAN DIMENSIONS ARE TO EXTERIOR FACE OF MASONRY UNLESS OTHERWISE NOTED. ALL INTERIOR FLOOR PLAN DIMENSIONS ARE TO FACE OF INTERIOR WALL BOARD UNLESS OTHERWISE NOTED.
16. FINAL KEYING TO BE COORDINATED WITH McDONALD FACILITY MANAGER AND PAID FOR BY McDONALD.
17. REFER TO "PROJECT MANUAL" FOR ALL OTHER INSTRUCTIONS & DIRECTIVES NOT SHOWN IN DRAWINGS. IF THERE IS A CONFLICT BETWEEN THE DRAWINGS AND PROJECT MANUAL, NOTIFY THE AREA CONSTRUCTION MANAGER FOR RESOLUTION.

ABBREVIATIONS

GENERAL ABBREVIATIONS

A	ANNEALED	INSUL	INSULATION
AC	AIR CONDITIONING	MAX	MAXIMUM
ACT	ACOUSTIC CEILING TILE	MECH	MECHANICAL
AFF	ABOVE FINISH FLOOR	MFR	MANUFACTURER
AHU	AIR HANDLING UNIT	MIN	MINIMUM
AL	ALUMINUM	MO	MASONRY OPENING
ASPH	ASPHALT	MR	MOISTURE RESISTANT
CJ	CONTROL JOINT	MTL	METAL
CLNG	CEILING	NA	NOT APPLICABLE
CMU	CONCRETE MASONRY UNIT	NIC	NOT IN CONTRACT
COL	COLUMN	NOM	NOMINAL
CONC	CONCRETE	NTS	NOT TO SCALE
CONT	CONTINUOUS	OC	ON CENTER
CP	CONCRETE PAD	OPP	OPPOSITE
CT	CERAMIC TILE	OPT	OPTIONAL
CL	CENTERLINE	PAR	PARTIAL
DBL	DOUBLE	PF	PRE-FABRICATED
DF	DRINKING FOUNTAIN	PSF	POUNDS PER SQUARE FOOT
DIA	DIAMETER	PT	PRESSURE TREATED
DIM	DIMENSION	PTD	PAINTED
DN	DOWN	QT	QUARRY TILE
DO	DOWNSPOUT	R	RADIUS
EA	EACH	REBAR	REINFORCING BAR
EJ	EXPANSION JOINT	REF	REFERENCE
ELEC	ELECTRICAL	REQD.	REQUIRED
ELEV	ELEVATION	RO	ROUGH OPENING
EQ	EQUAL	SB	SPLASHBLOCK
EXIST	EXISTING	SIM	SIMILAR
FD	FLOOR DRAIN	SPEC	SPECIFICATION
FE	FIRE EXTINGUISHER	SS	STAINLESS STEEL
FEC	FIRE EXTINGUISHER CABINET	STL	STEEL
FF	FINISH FLOOR	STOR	STORAGE
FR	FIRE RATED	SUSP	SUSPENDED
FRP	FIBERGLASS REINFORCED PLASTIC	T	TEMPERED
GALV	GALVANIZED	TYP	TYPICAL
GYP BD	GYPSUM BOARD	UNO	UNLESS NOTED OTHERWISE
HC	HANDICAP	VCT	VINYL COMPOSITION TILE
HDW	HARDWARE	VERT	VERTICAL
HM	HOLLOW METAL	WD	WOOD
HT	HEIGHT	WP	WATERPROOF
HVAC	HEATING, VENTILATION, AIR CONDITIONING	WWF	WELDED WIRE FABRIC

McDONALD'S ABBREVIATIONS

BM	BRAKE METAL	L	LIGHT FIXTURE
C	ALUMINUM CANOPY	LAM	LAMINATE
CA	CITADEL PANEL	LE	ACCENT LIGHTING
CG	CORNER GUARD	LP	LOW POINT
CP	CENTRAL PURCHASING	LL	LEVEL LANDING
CT	WALL TILE	MACHINE	
D#	DECOR ELEMENT OR FINISH	MANAGER	
DEVICE		MF	METAL FASCIA
DMB	DIGITAL MENU BOARD	MS	MOP SINK
DS	DROP SOFFIT	PB	PIPE BOLLARD
D/T	DRIVE-THRU	PT	RMHC COIN COLLECTOR
FB	FILL BOX	RL	ROOF LADDER
F/C	FREEZER/COOLER	ROOM	
GC	GENERAL CONTRACTOR	S	McDONALD'S SIGNAGE
HP	HIGH POINT	SCH	SCHLUTER
KIOSK		UN	ALUMINUM CANOPY UNDERSCORE

REV	DATE	DESCRIPTION	BY

WILLIAM T. STAMBAUGH REGISTERED ARCHITECT NO. 860037 STATE OF INDIANA

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR: McDonald's USA, LLC

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DRAWN BY mbh | STD ISSUE DATE 2025 10 | REVIEWED BY WTS | DATE ISSUED 11.24.2025

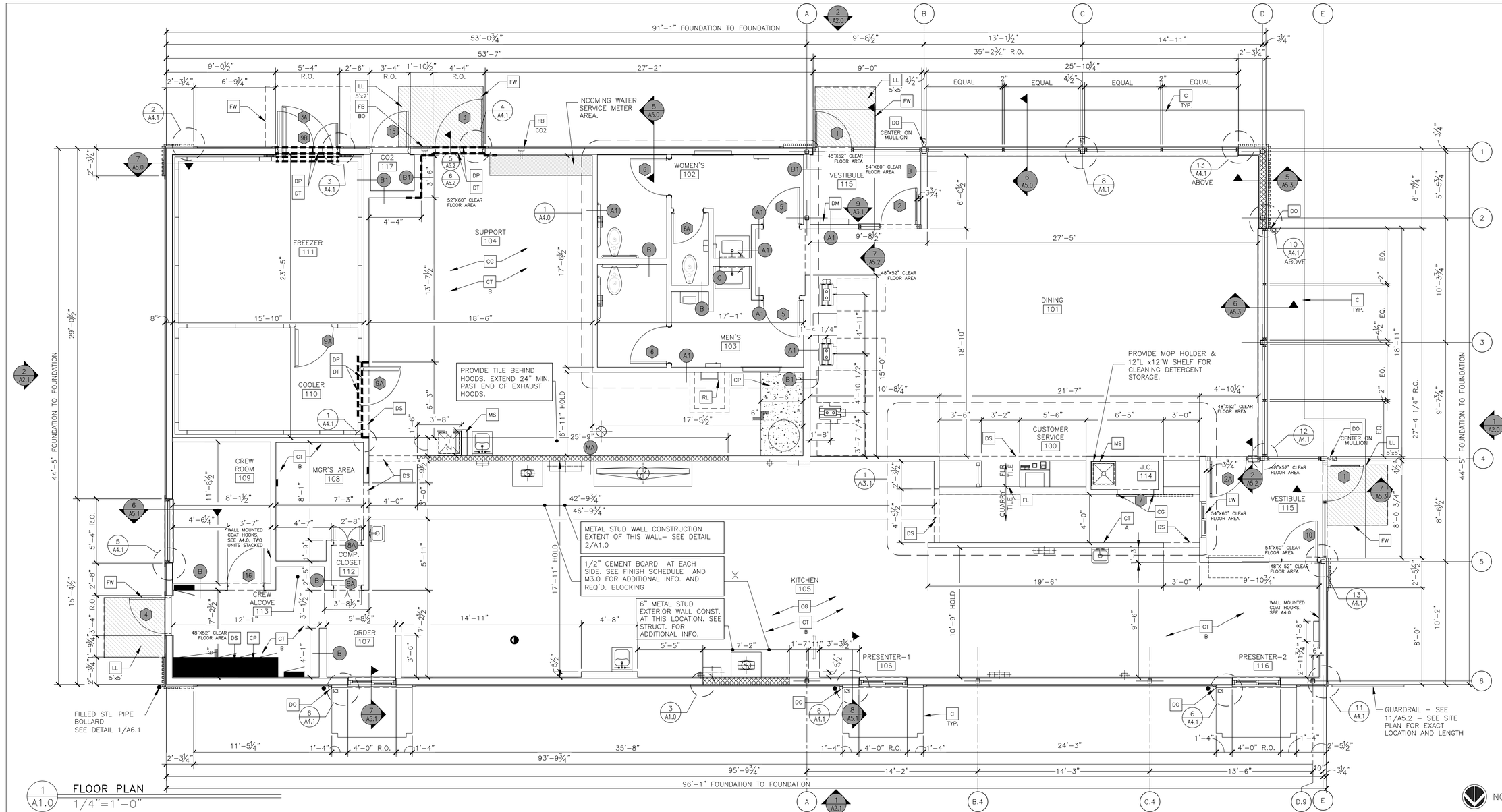
TITLE: 2025 OPTIMIZED BUILDING – BB20 4590-WOOD/WOOD

DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci; WOOD TRUSS ROOF FRAMING; CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

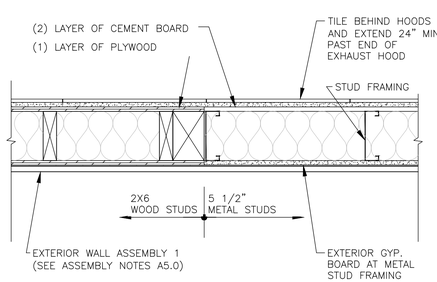
NSN: 45201 L/C: 13263 | SITE ADDRESS 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

013.1263.00.0

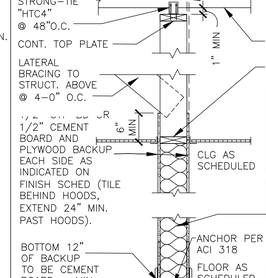
SHEET NO. GN1.1 GENERAL NOTES



1 A1.0 FLOOR PLAN
1/4"=1'-0"



3 A1.0 TRANSITON DETAIL
1 1/2"=1'-0"



2 A1.0 INTERIOR PARTITION
3/4"=1'-0"

KEY NOTES

- C ALUMINUM CANOPY SYSTEM ABOVE – SEE 4/A5.0 FOR NOTES – SEE ROOF PLAN FOR DIMENSIONS, SEE ELEVATION FOR COLORS
- CG G.C. TO PROVIDE 4"x4"x5'-0" HIGH STAINLESS STEEL CORNER GUARDS AT ALL EXPOSED LOCATIONS IN KITCHEN/SUPPORT AREA. CORNER GUARDS TO START AT FINISH FLOOR. ATTACH WITH SPECIALTY SCREW AND ANCHORS INTO TILE. BULLNOSE COVE BASE WHERE TILE MEETS STAINLESS STEEL CORNER.
- CP CONCRETE EQMT PAD – SEE STRUCTURAL
- CT A WALL FINISH: PER DECOR PORTFOLIO SEE A3.1 AND A6.1 FOR FINISH INFORMATION
- CT B WALL TILE: CROSSVILLE – COLOR BY NUMBERS COLOR: AFTERNOON SPRAY, SIZE: 4"x12", PATTERN: STACKED BOND GROUT: MAPEI SILVER 27 – JOINT TO BE 3/16" MAX. USE THIS TILE WHEN HIGH LRV IS REQUIRED COORDINATE WITH McDONALD'S AREA CONSTRUCTION MANAGER
- DO DOWNSPOUT CONNECTED TO CANOPY SYSTEM. SEE ELEVATIONS. COORDINATE CONNECTION WITH CIVIL.
- DP 48"Hx1/8" THICK DIAMOND PLATE WALL AND DOOR PROTECTION BY DIAMOND PLATE CONTRACTOR. COVER AREA SHOWN ON PLAN.
- DT 3/16" THICK DIAMOND PLATE THRESHOLD BY DIAMOND PLATE CONTRACTOR. DOOR 3: 12"x48" DOOR 3A/9B: 24"x60" DOOR 9A COOLER ENTRANCE: 12"x36"
- DS DROPPED SOFFIT ABOVE – SEE REFLECTED CEILING PLAN
- FB CO2 CO2 FILL BOX (EQUIPMENT SCHEDULE ITEM 49.00)
- FB BO OPTIONAL BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18) CONFIRM USE WITH MCDONALD'S AREA CONSTRUCTION MANAGER
- FL FLOOR LINE – CHANGE IN MATERIAL – SEE FINISH SCHEDULE
- FW LINE OF FROST WALL; SEE SECTIONS AND STRUCTURAL DRAWINGS FOR MORE INFORMATION
- LL 5'x5' LEVEL LANDING @ EXT. DOOR W/ MAX. 2% RUNNING/CROSS SLOPE AWAY FROM BUILDING SIZE OF LANDING
- LW LATE–NIGHT WINDOW (OPTIONAL) BY READYACCESS, MANUAL OPEN/SELF CLOSE. SEE SHEET A3.1 FOR NOTES.
- MS MOP SINK – SEE DETAIL 8/A6.1 AND PLUMBING DRAWINGS.
- RL ROOF ACCESS LADDER W/HATCH ABOVE SEE STRUCTURAL FRAMING PLAN FOR LOCATING DIMENSIONS
- DM DIGITAL MERCHANDISER

SYMBOL LEGEND

- A PARTITION TYPE TAG SEE 2/A1.0
- DIAMOND PLATE PROTECTION
- 7 DOOR TAG – SEE DOOR SCHEDULE ON A6.0
- X KEY NOTE

GENERAL NOTES

1. EXTERIOR DIMENSIONS ARE TO COLUMN REFERENCE LINES AND EXTERIOR FACE OF MASONRY UNLESS OTHERWISE NOTED. INTERIOR DIMENSIONS ARE TO FACE OF INTERIOR WALL BOARD
2. SEE A/A5.0 FOR EXTERIOR WALL ASSEMBLY TYPES. SEE 2/A1.0 FOR INTERIOR PARTITION TYPES. INTERIOR PARTITIONS ARE TYPE 'A' UNLESS NOTED OTHERWISE.
3. SEE EXTERIOR ELEVATIONS FOR WINDOW TYPES
4. SEE SHEET A6.0 FOR DOOR AND ROOM FINISH SCHEDULES
5. SEE SITE PLAN FOR SIDEWALKS, RAMPS, ETC.
6. GC TO PROVIDE MAXIMUM OCCUPANCY SIGN AND ADA SIGNAGE PACKAGE AND INSTALL SIGNS AT LOCATIONS AND POSITIONS INDICATED IN PACKAGE OR AS REQUIRED BY LOCAL CODES. SIGNAGE PACKAGE SUPPLIED BY: FRANKE/S2K 1–800–423–5247 www.frankesupply.com email: fs–frankesupply.us@franke.com
7. ALL HANDSINK LOCATIONS SHALL HAVE CEMENT BOARD BACKING 48" IN HEIGHT A.F.F.
8. GC TO COORDINATE ALL REQUIRED BLOCKING FOR WALL HUNG EQUIPMENT, SHELVES, ETC. FOR PROPER INSTALLATION HEIGHTS.
9. KNOX BOX TO BE INSTALLED PER LOCAL CODE AS REQUIRED. MODEL AND LOCATION TO BE COORDINATED WITH FIRE MARSHALL.

REV	DATE	DESCRIPTION	BY
–	–	–	–

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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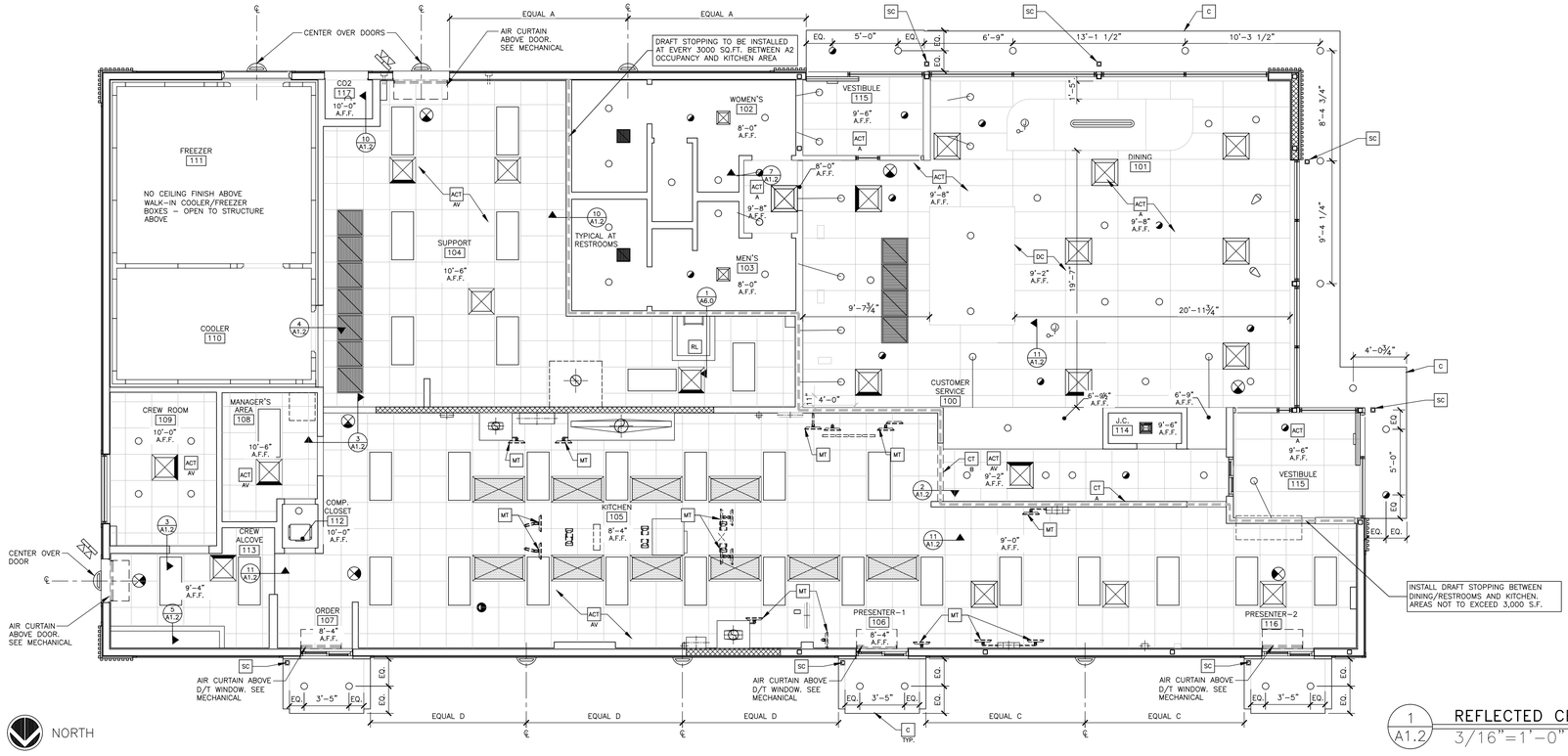
DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED
mbh	2025 10	WTS	11.24.2025

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci	7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
WOOD TRUSS ROOF FRAMING	
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH	
NSN: 452011	L/C: 13263

SHEET NO. A1.0 FLOOR PLAN
013.1263.00.0



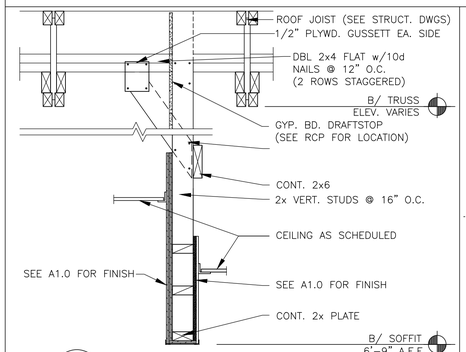
1 A1.2 REFLECTED CEILING PLAN
3/16"=1'-0"

KEY NOTES

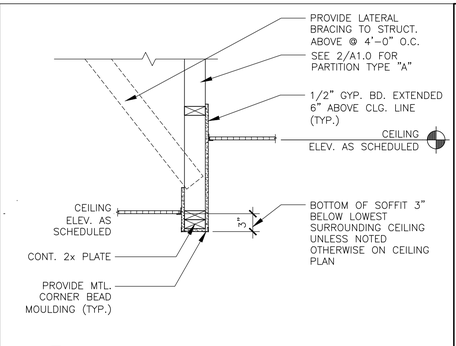
- ACT A — ACOUSTICAL CEILING TILE – 24"X48". SEE FINISH SCHEDULE
- ACT AV — ACOUSTICAL CEILING TILE: VINYL FACED USG 24"X24" CLEAN ROOM CLIMA-PLUS. UNPERFORATED. SMOOTH TEXTURE
  COLOR: WHITE
  GRID:USG 15/16" DX/DXL COLOR: WHITE
- C — ALUMINUM CANOPY WITH INTEGRAL GUTTER AND SCUPPER – SEE 4/A5.0 FOR NOTES – SEE ROOF PLAN FOR DIMENSIONS – SEE ELEVATION FOR COLOR
- CT A — WALL FINISH: PER DECOR PORTFOLIO. SEE A3.1 AND A6.1 FOR FINISH INFORMATION.
- CT B — WALL TILE: CROSSVILLE – COLOR BY NUMBERS
  COLOR: AFTERNOON SPRAY, SIZE: 4"x12", PATTERN: STACKED BOND
  GROUT: MAPEI SILVER 27 – JOINT TO BE 1/16" MAX.
  USE THIS TILE WHEN HIGH LRV IS REQUIRED
  COORDINATE WITH McDONALD'S AREA CONSTRUCTION MANAGER
- DC — SUSPENDED DECORATIVE CEILING TREATMENT – SEE FINISH SCHEDULE
- DS — DROPPED SOFFIT
  DC-WH — BOTTOM TO ALIGN WITH GYP BD AT EXTERIOR WINDOW HEAD
  MAY BE REPLACED BY ELEMENT BY DECOR SUPPLIER – CONFIRM WITH AREA CONSTRUCTION MANAGER
- MT — CEILING MOUNTED MONITOR: A) VERIFY MONITOR LOCATIONS WITH McDONALD'S PROJECT MANAGER PRIOR TO INSTALLATION. B) SEE DETAIL 6/A1.2 FOR INSTALLATION METHOD
- RL — ROOF LADDER OPENING
- SC — INTERGRAL GUTTER SCUPPER

GENERAL NOTES

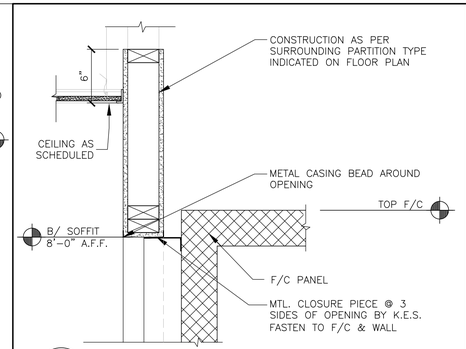
1. SEE SHT A6.1 FOR CEILING FINISHES.
2. SEE SHT A1.0 FOR MENU BOARD DROPPED SOFFIT LOCATION DIMENSIONS
3. GENERAL CONTRACTOR SHALL COORDINATE HVAC DIFFUSER LOCATION WITH DECOR & MECHANICAL PLANS AND REPORT ANY DISCREPANCIES TO ARCHITECT.
4. REFERENCE MECHANICAL AND ELECTRICAL DRAWINGS FOR DIFFUSER AND LIGHTING INFORMATION.
5. PROVIDE USG V15 CEILING TILE RETENTION CLIPS IN ALL VESTIBULE AREAS



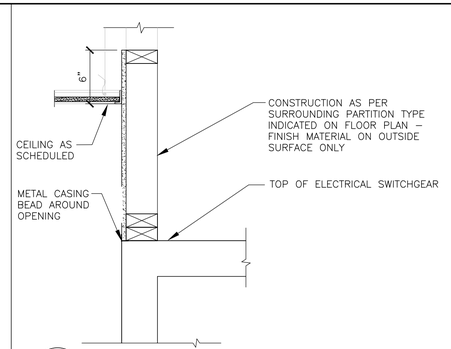
2 A1.2 VALANCE SECTION
1"=1'-0"



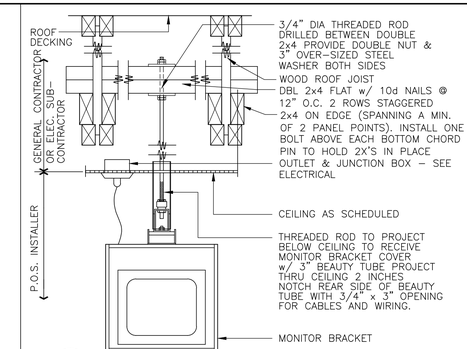
3 A1.2 CEILING TRANSITION w/ SOFFIT
1"=1'-0"



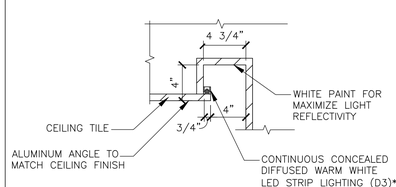
4 A1.2 CEILING DETAIL AT COOLER
1 1/2"=1'-0"



5 A1.2 CEILING DETAIL AT SWITCHGEAR
1 1/2"=1'-0"



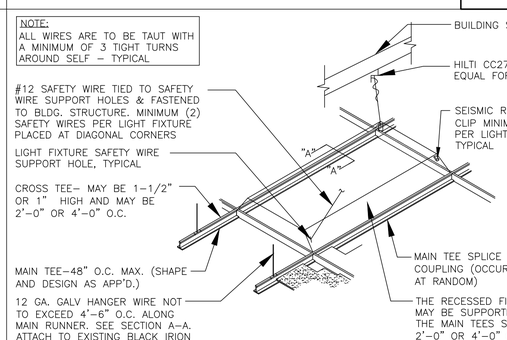
6 A1.2 MONITOR INSTALLATION DETAIL
N.T.S.

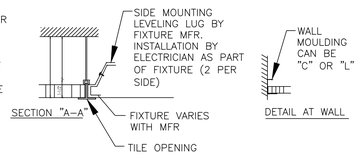


NOTES:
CONTRACTOR TO ENSURE EVEN DISTRIBUTION OF LIGHT WITH NO HOT SPOTS OR SHADOWING.

7 A1.2 COVE LIGHTING DETAIL
N.T.S.

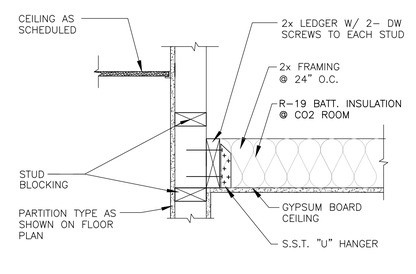
NOTE:
ALL WIRES ARE TO BE TAUT WITH A MINIMUM OF 3 TIGHT TURNS AROUND SELF – TYPICAL



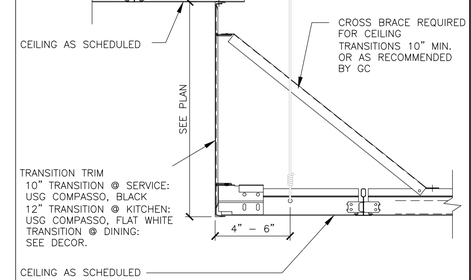


NOTES:
1. AT EACH END OF LIGHT FIXTURE AN INTERLOCKING CROSS TEE OR LOCKING BAR MUST BE USED
2. THE TOTAL WEIGHT OF A LIGHT FIXTURE AND OTHER EQUIPMENT (AIR BOXES, ETC.) AND CEILING MATERIAL SUPPORTED BY THE MAIN BEAM MUST NOT EXCEED THE ALLOWABLE DEFLECTION OF 1/360 OF IT'S SPAN. DEFLECTION DATA MUST BE FURNISHED AND CERTIFIED BY THE MANUFACTURER.
3. SURFACE OR PENDENT FIXTURES MUST BE INDEPENDENTLY SUPPORTED FROM FLOOR OR ROOF CONSTRUCTION.

8 A1.2 CEILING GRID & LIGHT SUPPORT DETAIL
N.T.S.



10 A1.2 GYP BD CEILING DETAIL
1 1/2"=1'-0"
A0610WB1



11 A1.2 ACOUSTIC CEILING TRANSITION
N.T.S.
COORDINATE w/ DECOR

NO.	DESCRIPTION	DATE	BY
1			

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

WILLIAM STAMBAUGH REGISTERED NO. 860037 STATE OF INDIANA LICENSED ARCHITECT

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McDonald's USA, LLC

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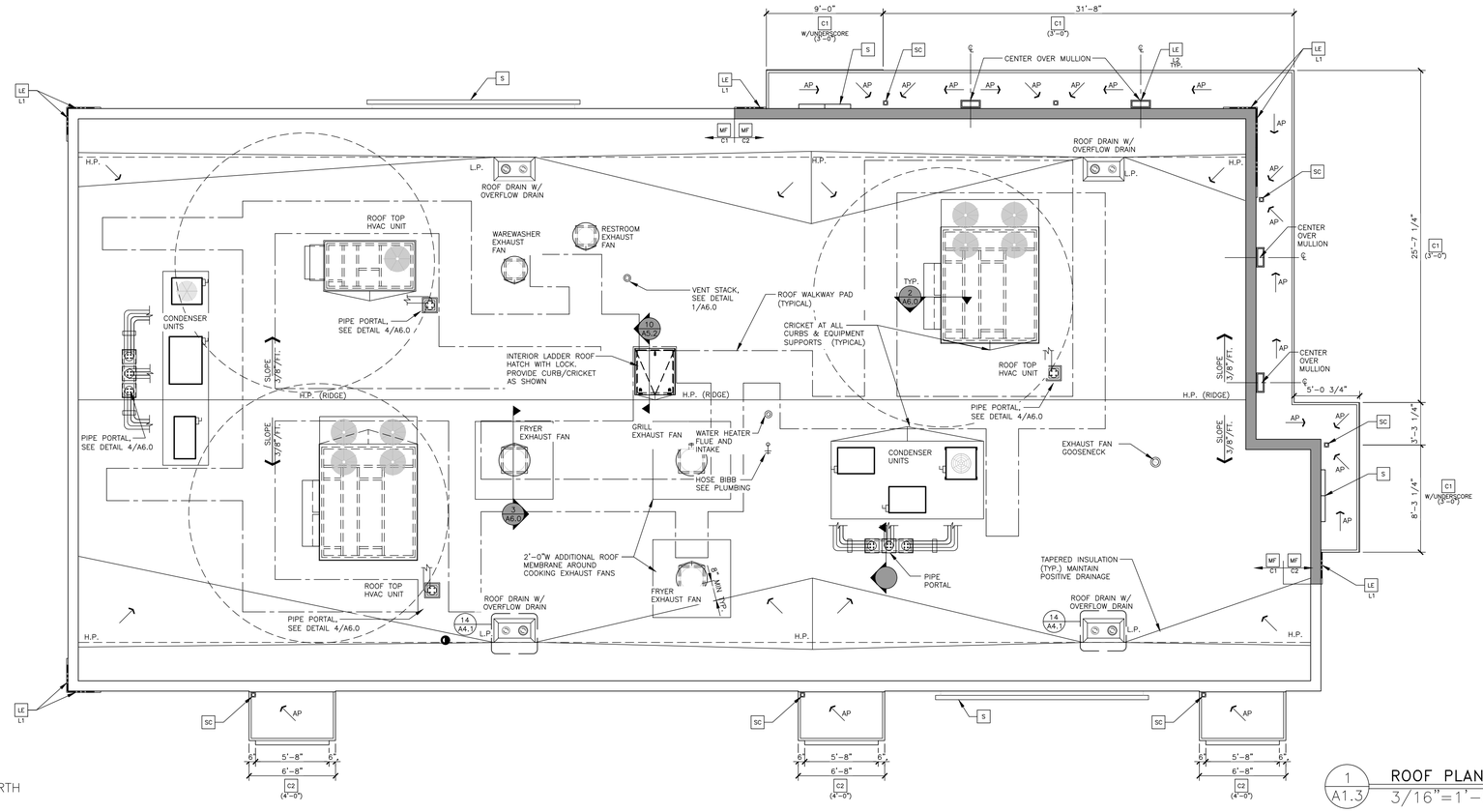
DRAWN BY	mbh
STD ISSUE DATE	2025 10
REVIEWED BY	WTS
DATE ISSUED	11.24.2025

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 45201	SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN. 46112
L/C: 13263	

SHEET NO.
013.1263.00.0
A1.2
REFLECTED CLG. PLAN



1 A1.3 ROOF PLAN
3/16"=1'-0"

LEGEND

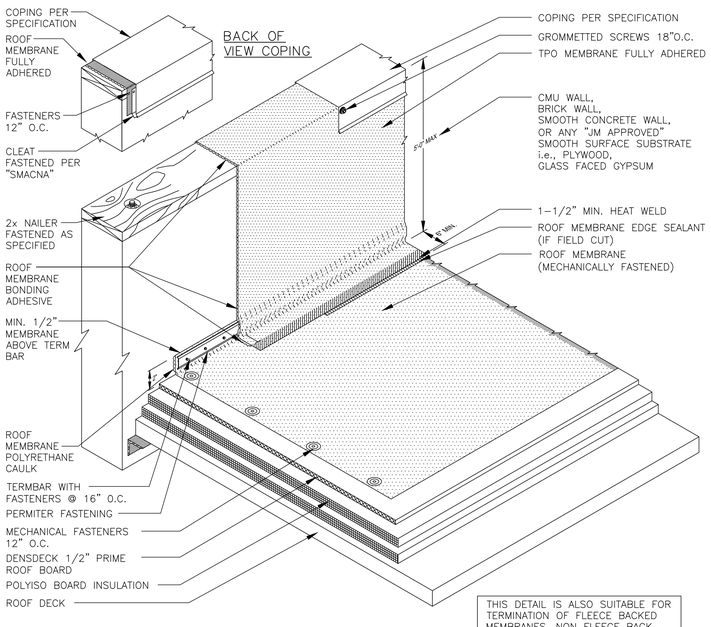
L.P.	LOW POINT
H.P.	HIGH POINT
←	DIRECTION OF DRAINAGE
←AP	TRELLIS SYSTEM WITH ALUMINUM INFILL PANELS. SLOPE TO EDGE @1/4"PER FT.

KEY NOTES

- C1 ALUMINUM CANOPY SYSTEM (COLOR: SEE ELEVATIONS)
- C2 ALUMINUM CANOPY SYSTEM (COLOR: SEE ELEVATIONS)
- LE ACCENT LIGHTING – SEE ELEVATIONS & ELECTRICAL
  - L1 LED LIGHT:
    - L1 = SLIM LED (DOWN ONLY)
    - L2 = UP ONLY FLOOD FIXTURE
- MF METAL FASCIA
  - C1 COLOR:
    - C1 = SEE ELEVATIONS FOR COLOR
    - C2 = SEE ELEVATIONS FOR COLOR
- S McDONALD'S SIGNAGE BY OTHERS UNDER SEPARATE PERMIT (SEE ELEVATIONS)
- SC INTERGRAL GUTTER SCUPPER

ROOFING NOTES

1. SINGLE–PLY ROOFING SYSTEM WITH BASE FLASHING SHEET EXTENDING UP PARAPET AND TERMINATED UNDER COPING HOT WELDED TO SEALING STRIP SECURED TO WOOD BLOCKING
2. INSTALLATION OF ROOFING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND PER DETAIL 2 OF THIS SHEET.
3. PROVIDE PREFABRICATED METAL CURBS. COORDINATE SIZE, LOCATION AND INSTALLATION REQUIREMENTS W/ M, E, P & S SHEETS. PROVIDE SHIMS TO LEVEL CURB AREAS WHERE ROOF DECK IS PITCHED.
4. FOR EXACT LOCATION OF EXHAUST FANS, HVAC UNITS, AND ROOF HATCH. REFER TO STRUCTURAL DRAWINGS.
5. CRICKETS MUST BE INSTALLED AT ALL ROOF CURBS & EQUIPMENT PLATFORMS BY GENERALCONTRACTOR.



2 A1.3 ROOFING SYSTEM
N.T.S.

THIS DETAIL IS ALSO SUITABLE FOR TERMINATION OF FLEECE BACKED MEMBRANES. NON FLEECE BACK MEMBRANE IS REQUIRED FOR WALL FLASHINGS.

ROOFING SYSTEM

1. MANUFACTURERS AND PRODUCTS:
   - A. DURO–LAST PVC ROOFING SYSTEM
   - B. JM–PVC. REFER TO JOHNS MANVILLE WEBSITE (www.jm.com) FOR MOST UP–TO–DATE INFORMATION.

   NO SUBSTITUTIONS ALLOWED
2. SPECIFIED ROOFING SYSTEMS (AS SHOWN):
   HEAT–WELDABLE SINGLE–PLY 50 MIL PVC ROOFING SYSTEM, INSTALLED OVER RIGID INSULATION ON WOOD ROOF DECK HAVING A SLOPE OF 3/8"/FT. MATERIALS SHALL BE AS FOLLOWS:
   - A. SINGLE–PLY ROOFING SYSTEM AS MANUFACTURED BY MANUFACTURER LISTED ABOVE TO COMPLY WITH ASTM E 108 OR UL 790, ASTM D–6878, AND FMG I–90 FOR WIND UPLIFT.
   - B. FASTENERS: METAL FASTENERS AND PLATES AS PER MANUFACTURER.
   - C. ACCESSORIES: PRE–FABRICATED CURBS, FLASHING, CORNERS, TERMINATION BARS, PIPE FLASHING, VENT FLASHING ETC. AS PER MANUFACTURER.
   - D. PLEASE SEE SINGLE–PLY FLASHING SPECIFICATIONS FOR A FULL DESCRIPTION OF INSTALLATION INSTRUCTIONS AND REQUIREMENTS WHICH ARE CONSIDERED A PART OF THIS DETAIL.
   - E. ANY CARPENTRY OR METAL WORK SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS AND/OR PROJECT SPECIFICATIONS. THESE COMPONENTS SHOULD BE REVIEWED AND APPROVED BY A LICENSED DESIGN PROFESSIONAL. CONTACT MANUFACTURER FOR METAL OPTIONS TO BE INCLUDED WITHIN THE MANUFACTURER'S GUARANTEE.
   - F. ROOF MEMBRANE EDGE SEALANT IS REQUIRED ON ALL CUT OR NON–ENCAPSULATED EDGES OF REINFORCED MEMBRANE. THIS INCLUDES FACTORY CUT MEMBRANE
3. WALKWAYS:
   - A. 30" WIDE WALKWAY ROLL, HOT AIR WELDED TO MEMBRANE.
   - B. PROVIDE WALKWAY FROM ROOF LADDER EXIT TO ALL ROOF TOP EQUIPMENT AS PER ROOF PLAN ABOVE.
   - C. INSTALL WALKWAY ACCORDING TO WALKWAY PAD MANUFACTURER'S WRITTEN INSTRUCTION.
4. RIGID INSULATION:
   PROVIDE REQUIRED LAYERS OF POLYISOCYANURATE INSULATION W/ 1/2" "DENSDECK" COVER BOARD TO MEET A MINIMUM CONTINUOUS R–30 VALUE – THICKNESS AS REQUIRED. PROVIDE POSITIVE SLOPE TO ALL ROOF DRAINS. SEE ROOF PLAN. PROVIDE TOP LAYER PROTECTION MATERIAL AS PER MANUFACTURERS RECOMMENDATIONS. BOTTOM LAYER OF INSULATION TO HAVE INTEGRAL THERMAL BARRIER OR APPROVED ROOFING MANUFACTURER'S THERMAL UNDERLAYMENT SHEET. ASSEMBLY SHALL COMPLY WITH UL 1256 OR FMG 4450 AND ASTM C 1289, TYPE I OR II.
5. TAPERED INSULATION:
   PROVIDE TAPERED INSULATION AS REQUIRED FOR POSITIVE DRAINAGE TO ROOF DRAINS AS INDICATED PER ROOF PLAN ABOVE. ¼" PER FOOT MIN. REQUIRED.
6. EXHAUST FANS:
   PROVIDE ADDITIONAL LAYER OF ROOF MEMBRANE AROUND EXHAUST FANS AS INDICATED PER ROOF PLAN ABOVE.

NO.	DESCRIPTION	DATE	BY
–			–

WILLIAM STAMBAUGH REGISTERED NO. 860037 STATE OF INDIANA LICENSED ARCHITECT

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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DRAWN BY	STD ISSUE DATE
mbh	2025 10
REVIEWED BY	DATE ISSUED
WTS	11.24.2025

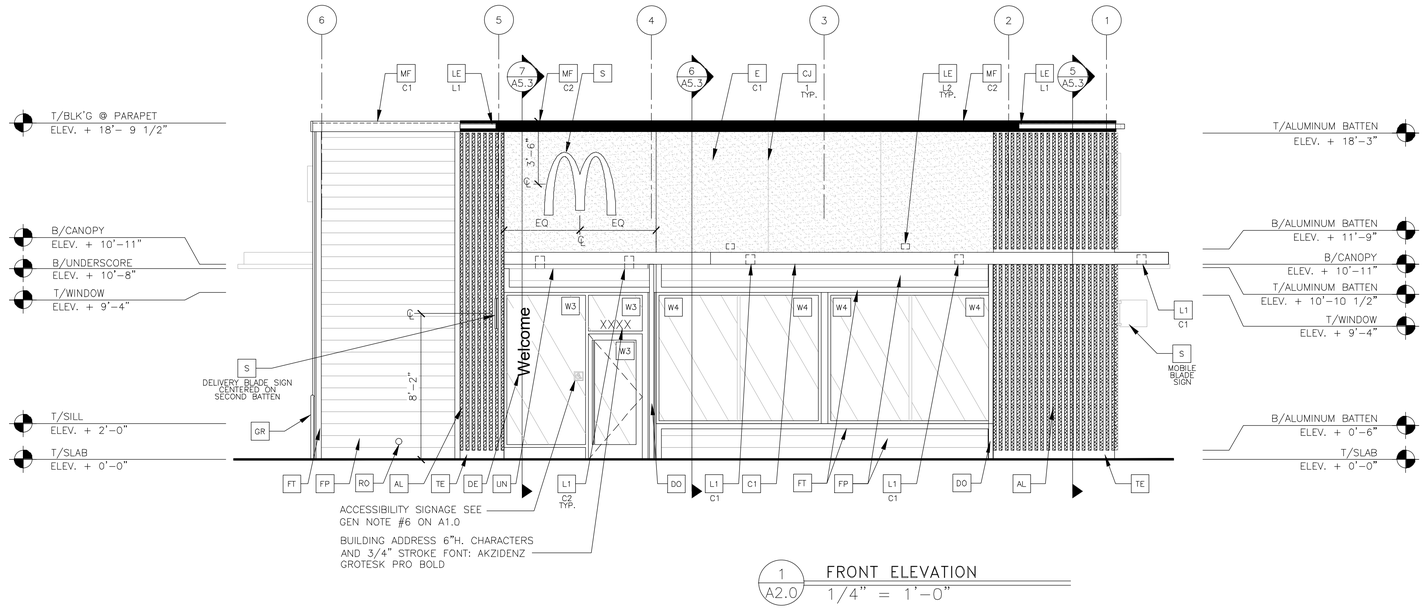
TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

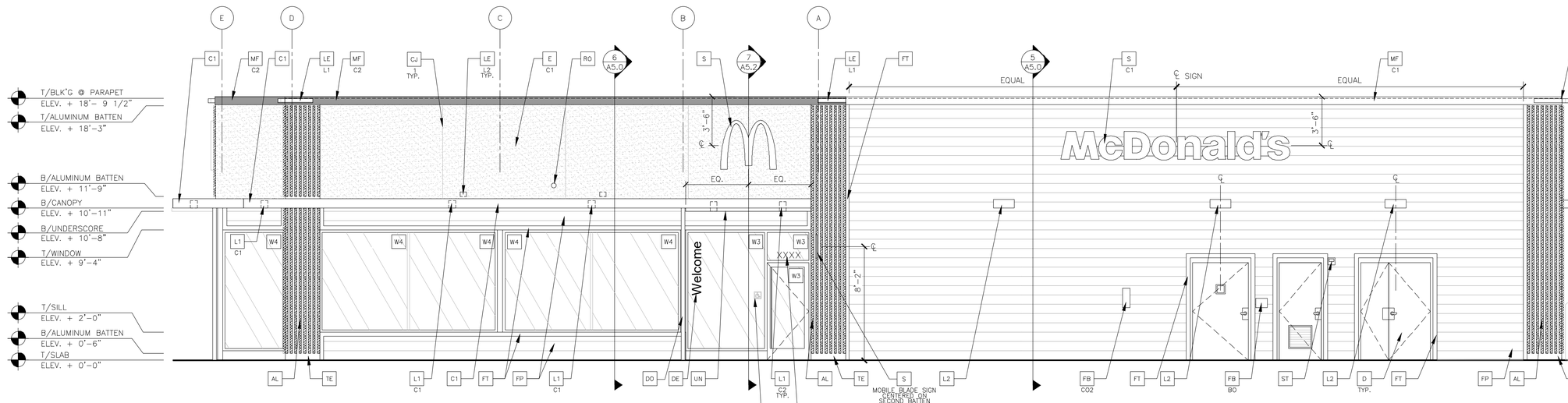
NSN: 45201
L/C: 13263

SITE ADDRESS:
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO.: A1.3
013.1263.00.0
ROOF PLAN



1 A2.0 FRONT ELEVATION
1/4" = 1'-0"



2 A2.0 NON-DRIVE-THRU ELEVATION
1/4" = 1'-0"

KEY NOTES:

- AL — ALUMINUM BATTEN SYSTEM
  SIZE: 2"x2" PROFILE
  COLOR: WOOD GRAIN, BACKRAIL UNFINISHED, ENDCAP PAINTED TO MATCH
  SUBSTRATE: 1/2" EXTERIOR HIGH DENSITY OVERLAY (HDO) PLYWOOD, BB, GROUP 1, HDO BOTH FACES, APA TRADEMARKED.
  COURSE GRIT SAND SURFACES PRIOR TO PRIMING. PRIME AND PAINT BOTH SIDES AND ALL EDGES PRIOR TO INSTALLATION.
  SUBSTRATE COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- CA — CITADEL ACM WALL PANELS
  COLOR: UMBRA GRAY
- C1 — ALUMINUM CANOPY SYSTEM
  COLOR: WHITE
- C2 — ALUMINUM CANOPY SYSTEM
  COLOR: RAL 7022
- CJ — CONTROL JOINT
  1 —TYPE: 1 = EIFS
- D — HOLLOW METAL DOOR
  PAINT: "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS
- DE — DECAL BY GRAPHICS SUPPLIER
  SURFACE APPLIED, FIELD INSTALLED, PRE CUT, PRE SPACED.
  SUPPLIERS:
  VOMELA (865) 330-7337, ann.bowen@vomela.com
  GFX INTERNATIONAL (847) 543-4600, mcdonaldsdecor@gfxi.com
- DO — DOWNSPOUT
  3" DOWNSPOUT BY CANOPY SYSTEM MANUFACTURER
  COLOR: RAL 7022
  COORDINATE WITH CIVIL TO TIE INTO STORM DRAINAGE
- E — EXTERIOR INSULATION FINISH SYSTEM (E.I.F.S.)
  C1—COLOR:
  C1 = "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- EJ — EXPANSION JOINT, SEE DETAIL 7/A4.1
- FB — CO2 — CO2 = BULK CO2 FILL BOX (EQPM SCHEDULE ITEM 49.00)
  BO = BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18)
- FP — FIBER CEMENT LAP SIDING: SMOOTH HARDI-BOARD PLANK BY JAMES HARDIE, 8-1/4" WIDTH, 7" EXPOSURE, HZ5
  PAINT: "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS
- FT — FIBER CEMENT TRIM: HARDIE TRIM BOARDS 4/4 SMOOTH, 3 1/2" WIDTH, 3/4" THICK, HZ5
  PAINT: "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS
- GR — GUARD RAIL -SEE SITE PLAN FOR EXACT LOCATION AND LENGTH
  PAINT: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- L1 — RECESSED DOWN LIGHT FIXTURE - SEE ELECTRICAL
  C1—COLOR:
  C1= WHITE
  C2= GOLD
- L2 — RADIAL SCONCE LIGHT FIXTURE - SEE ELECTRICAL
  COLOR: PLATINUM SILVER
- LE — ACCENT LIGHTING - SEE ELECTRICAL
  L1—LED LIGHT:
  L1 = SLIM LED (DOWN ONLY)
  L2 = UP ONLY FLOOD FIXTURE
- MF — PRE-FAB ANCHOR-TITE METAL FASCIA
  C1— COLOR:
  C1= WEATHERED ZINC
  C2= RAL 7022
- PB — PIPE BOLLARD - USA 310-SD BASTION
  PAINT RAL 7022
- RO — ROOF DRAIN OVERFLOW PIPE PAINT TO MATCH SURROUNDING MATERIAL
- S — McDONALD'S SIGNAGE BY OTHERS - UNDER SEPARATE PERMIT.
  C1— COLOR:
  C1= WEATHERED ZINC RACEWAY
  C2= RAL 7022 RACEWAY
- ST — CO2 STROBE/ALARM. SEE MECHANICAL DRAWINGS FOR SPECIFICATION.
- TE — TRU EXTERIOR 1"X6" TRIM, PAINTED ON SITE
  COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- UN — METAL UNDERSCORE
  COLOR: GOLD
- W# — EXTERIOR WINDOW ASSEMBLY - TEMPERED GLASS
  COLOR: DARK BRONZE
  SEE SHEET A6.0
- W2 XX — DRIVE-THRU WINDOW BY READY ACCESS
  MODEL: 600 SERIES, 36" SERVICE HEIGHT WITH TRANSOM, MANUAL OPEN; ELECTRONIC RELEASE
  COLOR: DEEP BRONZE
  SLIDE DIRECTION: RL = RIGHT TO LEFT
  LR = LEFT TO RIGHT

REV	DATE	DESCRIPTION	BY

WILLIAM R. STAMBAUGH — REGISTERED — NO. 86003 — STATE OF INDIANA — LICENSED ARCHITECT

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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McDonald's USA, LLC
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DRAWN BY	STD ISSUE DATE
mbh	2025 10
REVIEWED BY	DATE ISSUED
WTS	11.24.2025

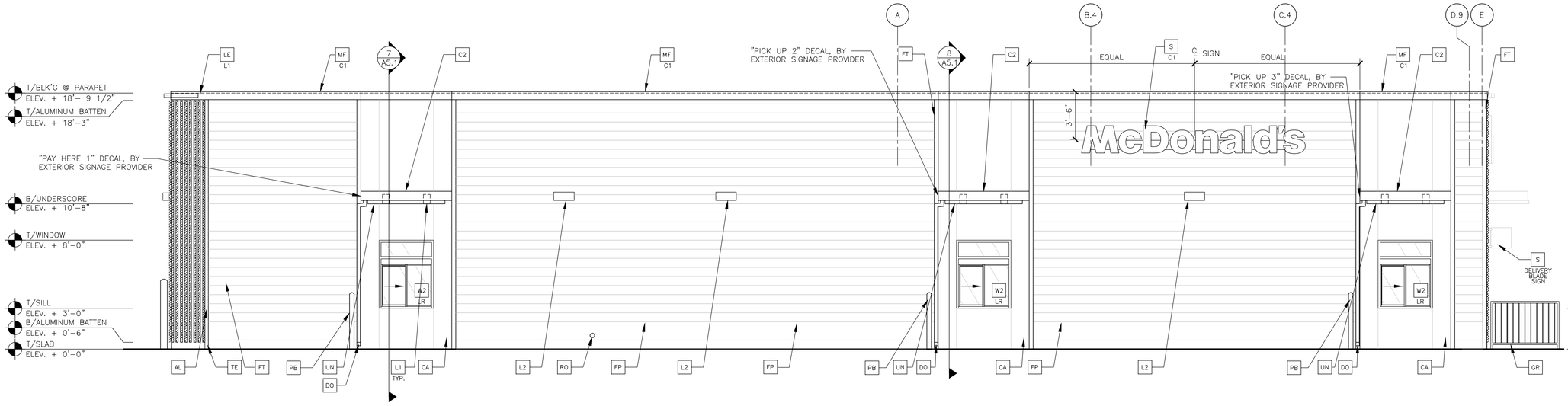
TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

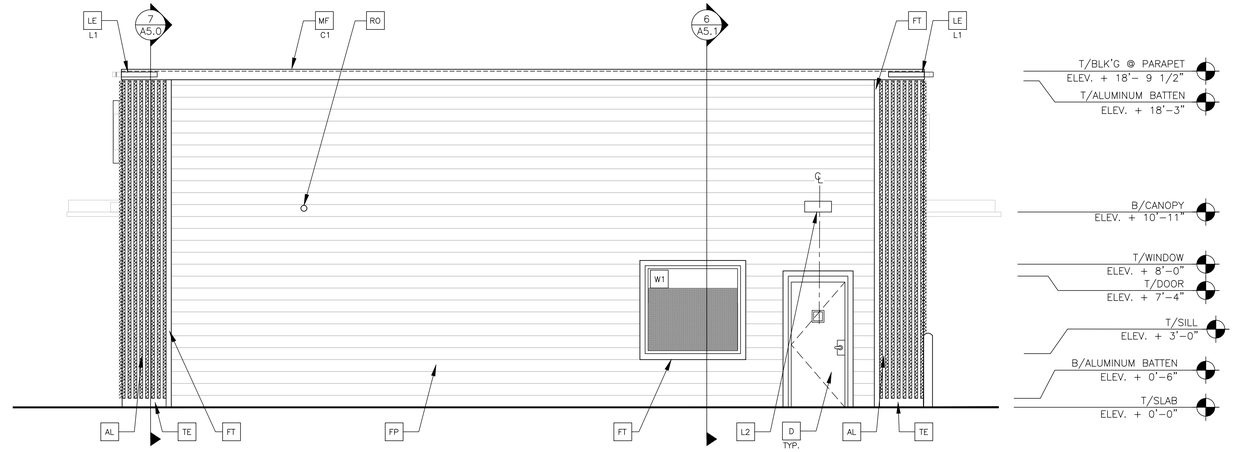
SITE ADDRESS:
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

NSN-45201
L/C- 13263

SHEET NO. 013.1263.00.0
A2.0
ELEVATIONS



1 A2.1 DRIVE THRU ELEVATION
1/4" = 1'-0"



2 A2.1 REAR ELEVATION
1/4" = 1'-0"

KEY NOTES:

- AL — ALUMINUM BATTEN SYSTEM
  SIZE: 2"X2" PROFILE
  COLOR: WOOD GRAIN, BACKRAIL UNFINISHED, ENDCAP PAINTED TO MATCH
  SUBSTRATE: 1/2" EXTERIOR HIGH DENSITY OVERLAY (HDO) PLYWOOD, BB, GROUP 1, HDO BOTH FACES, APA TRADEMARKED.
  COURSE GRIT SAND SURFACES PRIOR TO PRIMING. PRIME AND PAINT BOTH SIDES AND ALL EDGES PRIOR TO INSTALLATION.
  SUBSTRATE COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- CA — CITADEL ACM WALL PANELS
  COLOR: UMBRA GRAY
- C1 — ALUMINUM CANOPY SYSTEM
  COLOR: WHITE
- C2 — ALUMINUM CANOPY SYSTEM
  COLOR: RAL 7022
- CJ — CONTROL JOINT
  1 — TYPE: 1 = EIFS
- D — HOLLOW METAL DOOR
  PAINT: "GAUNTLET GREY" SW7019 BY SHERWIN WILLIAMS
- DE — DECAL BY GRAPHICS SUPPLIER
  SURFACE APPLIED, FIELD INSTALLED, PRE CUT, PRE SPACED.
  SUPPLIERS:
  VOMELA (865) 330-7337, ann.bowen@vomela.com
  GFX INTERNATIONAL (847) 543-4600, mcdonaldsdecor@gfxi.com
- DO — DOWNSPOUT
  3" DOWNSPOUT BY CANOPY SYSTEM MANUFACTURER
  COLOR: RAL 7022
  COORDINATE WITH CIVIL TO TIE INTO STORM DRAINAGE
- E — EXTERIOR INSULATION FINISH SYSTEM (E.I.F.S.)
  C1 — COLOR:
  C1 = "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- EJ — EXPANSION JOINT, SEE DETAIL 7/A4.1
- FB — C02 — C02 = BULK C02 FILL BOX (EQPM SCHEDULE ITEM 49.00)
  BO = BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18)
- FP — FIBER CEMENT LAP SIDING: SMOOTH HARDI-BOARD PLANK BY JAMES HARDIE, 8-1/4" WIDTH, 7" EXPOSURE, HZ5
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  PAINT: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
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  C1 — COLOR:
  C1= WHITE
  C2= GOLD
- L2 — RADIAL SCONCE LIGHT FIXTURE - SEE ELECTRICAL
  COLOR: PLATINUM SILVER
- LE — ACCENT LIGHTING - SEE ELECTRICAL
  L1 — LED LIGHT:
  L1 = SLIM LED (DOWN ONLY)
  L2 = UP ONLY FLOOD FIXTURE
- MF — PRE-FAB ANCHOR-TITE METAL FASCIA
  C1 — COLOR:
  C1= WEATHERED ZINC
  C2= RAL 7022
- PB — PIPE BOLLARD - USA 310-SD BASTION
  PAINT RAL 7022
- RO — ROOF DRAIN OVERFLOW PIPE PAINT TO MATCH SURROUNDING MATERIAL
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  C1 — COLOR:
  C1= WEATHERED ZINC RACEWAY
  C2= RAL 7022 RACEWAY
- ST — CO2 STROBE/ALARM. SEE MECHANICAL DRAWINGS FOR SPECIFICATION.
- TE — TRU EXTERIOR 1"X6" TRIM, PAINTED ON SITE
  COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- UN — METAL UNDERSCORE
  COLOR: GOLD
- W# — EXTERIOR WINDOW ASSEMBLY - TEMPERED GLASS
  COLOR: DARK BRONZE
  SEE SHEET A6.0
- W2 — DRIVE-THRU WINDOW BY READY ACCESS
  XX — MODEL: 600 SERIES, 36" SERVICE HEIGHT WITH TRANSOM, MANUAL OPEN; ELECTRONIC RELEASE
  COLOR: DEEP BRONZE
  SLIDE DIRECTION: RL = RIGHT TO LEFT
  LR = LEFT TO RIGHT

NO.	DESCRIPTION	DATE	BY

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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STAMBAUGH REGISTERED NO. 86037 STATE OF INDIANA ARCHITECT WILLIAM T. STAMBAUGH

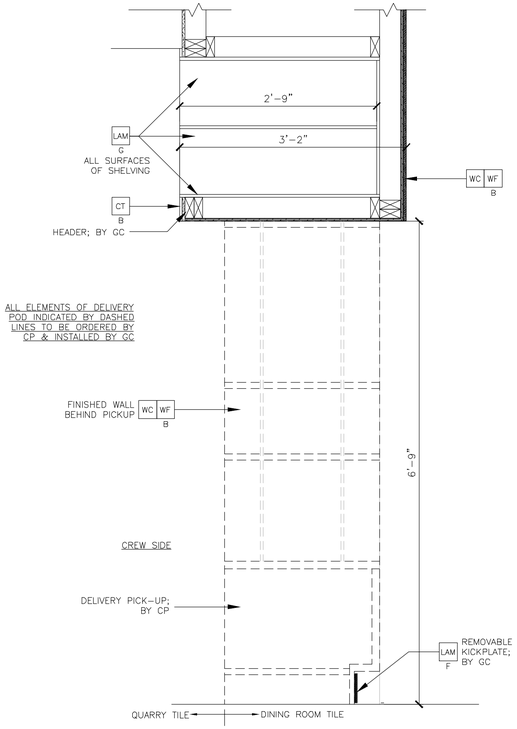
DRAWN BY	REVIEWED BY	DATE ISSUED
mbh	WTS	11.24.2025
STD ISSUE DATE 2025 10		

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD
DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

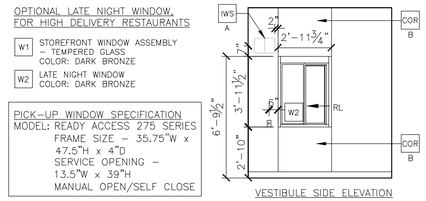
NSN: 45201
L/C: 13263

SITE ADDRESS:
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

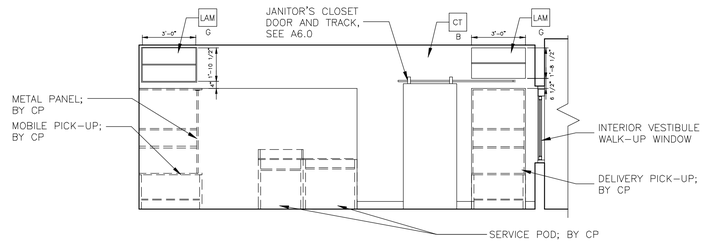
SHEET NO.: A2.1
ELEVATIONS
013.1263.00.0



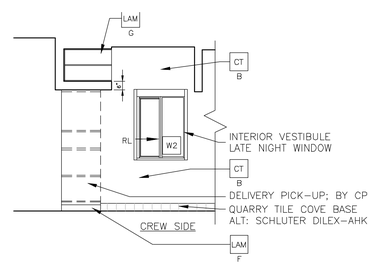
8 A3.1 SECTION @ DELIVERY POD
1" = 1'-0"



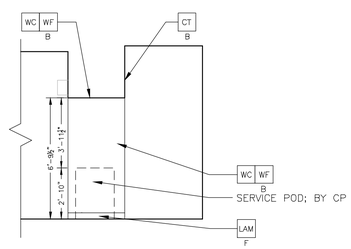
7 A3.1 LATE NIGHT WINDOW – VESTIBULE SIDE
1/4" = 1'-0"



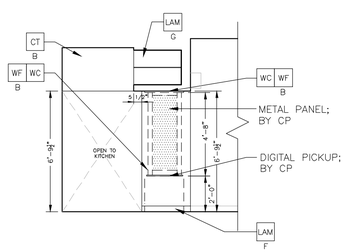
6 A3.1 SERVICE AREA ELEVATION – CREW SIDE
1/4" = 1'-0"



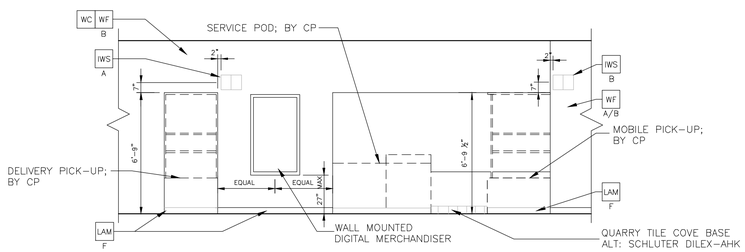
5 A3.1 LATE NIGHT WINDOW – CREW SIDE
1/4" = 1'-0"



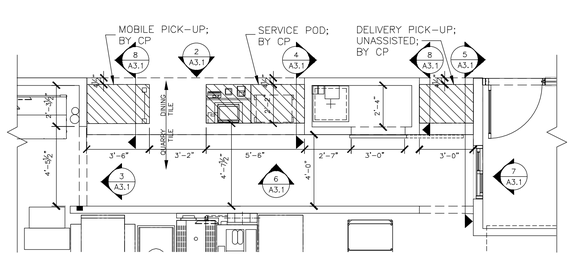
4 A3.1 SERVICE AREA ELEVATION
1/4" = 1'-0"



3 A3.1 SERVICE AREA ELEVATION
1/4" = 1'-0"



2 A3.1 SERVICE AREA ELEVATION – CUSTOMER SIDE
1/4" = 1'-0"



1 A3.1 SERVICE AREA PLAN
1/4" = 1'-0"

KEY NOTES

CG CORNER GUARD: 3/4" ANGLE BY DECOR
COLOR: BLACK

COR CORIAN:
X–
A = 1/2" CORIAN CAMEO WHITE
B = 1/2" CORIAN DEEP TITANIUM

CT WALL TILE: CROSSVILLE – COLOR BY NUMBERS
B COLOR: AFTERNOON SPRAY, SIZE: 4"x12", PATTERN: STACKED BOND
GROUT: MAPEI SILVER 27 – JOINT TO BE 1/16" MAX.

IWS INTERIOR WAYFINDING SIGNAGE
X–
A = McDELIVERY INTERIOR TRIANGULAR SIGN
B = MOBILE ORDER INTERIOR TRIANGULAR SIGN
C = ADA ASSISTANCE SIGNAGE

LAM LAMINATE:
X–
COLOR:
F = BASE BOARD, FORMICA COMPACT LAMINATE MATTE BLACK BY GC
G = OVERHEAD SHELVING, WILSONART DOVE GREY D92-60 BY GC

MP METAL INFILL PANEL. MATCH DARK BRONZE WINDOW ASSEMBLY

WC WALL COVERING
PER DECOR PORTFOLIO:
LUNA = MOMENTUM – NA-5C-MC439 LUNA WOODGRAIN
ROUTE 66 = MOMENTUM – NA-5C-MC500 ROUTE 66 WOODGRAIN
MOMENTUM – NA-5C-MC502 BLUE BURGER MURAL
COORDINATE WITH DECOR DRAWINGS

WF WALL FINISH
X–
A = TILE PER DECOR PORTFOLIO.
ROUTE 66: EUROWEST – WHITE GLOSSY CHEVRON
GROUT: MAPEI CHARCOAL 47 – JOINT TO BE 1/16" MAX.
LUNA: CROSSVILLE – MOONLIGHT GREY, 12"X24", STACKED BOND.
GROUT: MAPEI GRAY 09 – JOINT TO BE 1/16" MAX.
B = WALL PANEL (RAY ONLY)
RAY: LAMITECH – D-3127 TX INDUSTRIAL CONCRETE

GENERAL NOTES

- ALL ELEMENTS 'BY CP' TO BE ORDERED BY CENTRAL PURCHASING AND INSTALLED BY GC, UNO.

REV	DATE	DESCRIPTION	BY

STAMBAUGH
REGISTERED
NO. 86037
STATE OF
INDIANA
ARCHITECT
WILLIAM F.

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR:
McDonald's USA, LLC

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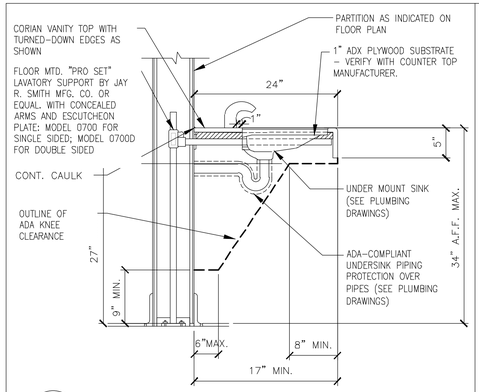
mbh	WTS	11.24.2025
STD ISSUE DATE 2025 10		

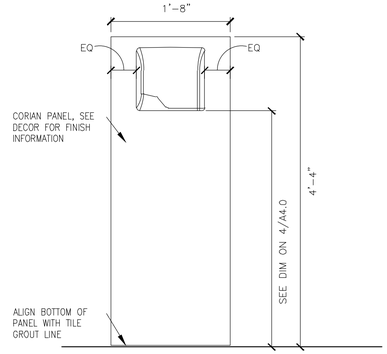
TITLE
2025 OPTIMIZED BUILDING – BB20
4590-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI	
WOOD TRUSS ROOF FRAMING	
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH	
NSN: 452011	7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
L/C: 13263	

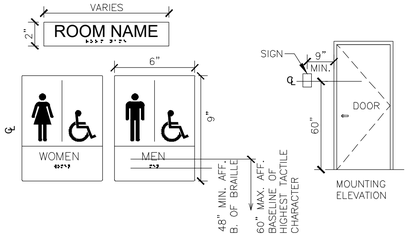
SHEET NO.
013.1263.00.0
A3.1
SERVICE AREA DETAILS



2 / A4.0 SECTION @ LAVATORY
1"=1'-0"



6 / A4.0 ELEVATION @ HAND DRYER
1"=1'-0"



GRAPHICS SHOWN ARE FOR REFERENCE ONLY.

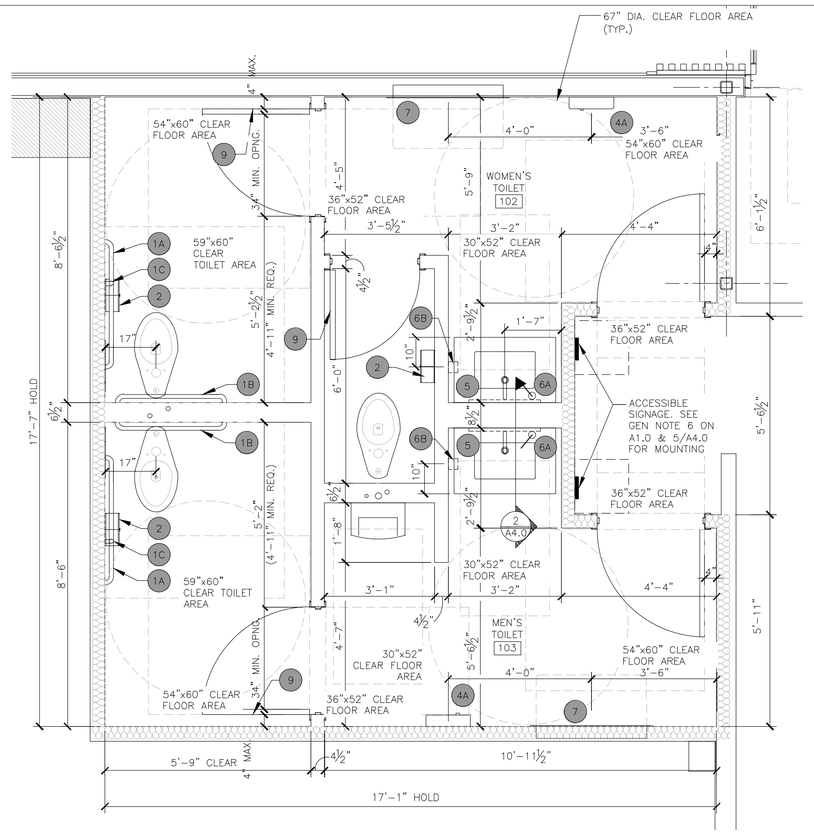
GC TO PROVIDE ADA SIGNAGE PACKAGE AND INSTALL SIGNS AT LOCATIONS AND POSITIONS INDICATED IN PACKAGE OR AS REQUIRED BY LOCAL CODES. SIGNAGE PACKAGE SUPPLIED BY:

FRANKE/S2K
1-800-423-5247
www.frankesupply.com
email: fs-frankesupply.us@franke.com

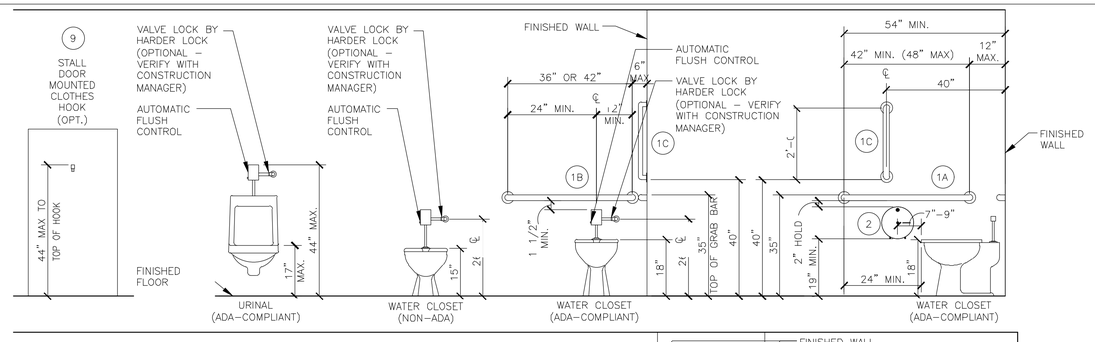
SIGNAGE NOTES:

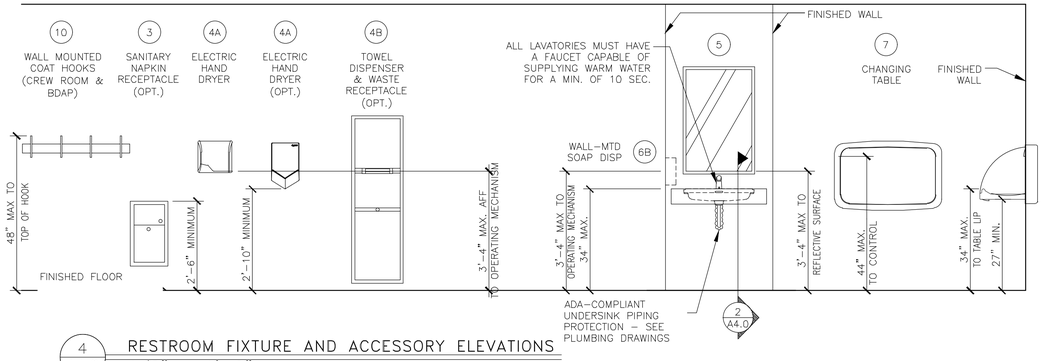
1. EACH EXIT DOOR SHALL HAVE A TACTILE SIGN, INCLUDING RAISED LETTERS AND BRAILLE, STATING "EXIT" AND SHALL COMPLY WITH CHAPTER 7. ALL SIGNAGE SHALL CONFORM WITH ACCESSIBILITY GUIDELINES AND LOCAL GUIDELINES INCLUDING BUT NOT LIMITED TO PROPORTION, COLOR CONTRAST AND RELIEF AND GRADE 2 BRAILLE REQUIREMENTS.
2. WHEN PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, RAISED LETTERS SHALL BE PROVIDED AND SHALL BE ACCOMPANIED BY BRAILLE IN CONFORMANCE WITH CHAPTER 7. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT. MOUNTING HEIGHT SHALL BE 60" ABOVE THE FINISHED FLOOR TO THE CENTERLINE OF THE SIGN. MOUNTING LOCATION SHALL BE DETERMINED SO THAT A PERSON MAY APPROACH WITHIN 3" OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF A DOOR.

5 / A4.0 ACCESSIBLE SIGNAGE
N.T.S.



1 / A4.0 ENLARGED RESTROOM PLAN
1/2" = 1'-0"





4 / A4.0 RESTROOM FIXTURE AND ACCESSORY ELEVATIONS
1/2" = 1'-0"

NOTES
1. ALL DIMENSIONS SHOWN ARE TAKEN TO CEMENT BD.
2. SEE SHEET A1.0 FOR PARTITION TYPES
3. SEE SHEETS A6.0 & A6.1 FOR DOOR AND FINISH SCHEDULES.
4. SEE 4/A4.0 FOR FIXTURE MOUNTING HEIGHTS
(X) = RESTROOM ACCESSORY – SEE 3/A4.0

	ITEM (SEE NOTE 2)	MFR MODEL #	SUPPLIER	BACKUP SUPPORT (SEE NOTE 3)
1A	GRAB BAR 42" OR 48"	BOBRICK B-6806X42 OR X48	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	(1)2x6 4'-0" LONG CENTER MOUNTED
1B	GRAB BAR 36" OR 42"	B-6806X36 OR X42		
1C	GRAB BAR 24"	B-6806X24		
2	TOILET TISSUE DISPENSER, JUMBO, SURFACE MOUNTED	BRADLEY 5424	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	FRAME WALL OPENING PER MANUFACTURER'S RECOMMENDATIONS
3	SANITARY NAPKIN RECEPTACLE, RECESSED (OPTIONAL)	BOBRICK B-353	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
4A	HAND DRYER, ENERGY EFFICIENT MODEL, ADA, ALUMINUM BRUSHED	WORLD DRYER Q-973A2 VerdeDri	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	FRAME WALL OPENING PER MANUFACTURER'S RECOMMENDATIONS
4A OPTION	HAND DRYER, ENERGY EFFICIENT MODEL ADA, SPRAYED NICKEL	DYSON AIRBLADE V	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
4B OPTION	TOWEL DISPENSER & WASTE RECEPTACLE, COMBINATION, RECESSED (OPTIONAL)	BOBRICK B-3974	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
5	MIRROR, CHANNEL FRAME	BOBRICK B-165 2436	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
6A	SOAP DISPENSER, COUNTER MOUNTED, 6" SPOUT (OPTIONAL)	BOBRICK B-82216	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
6B	SOAP DISPENSER, WALL-MOUNTED	BOBRICK B-2112	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
7	BABY CHANGING TABLE, HORIZONTAL, RECESSED, ADA COMPLIANT, STAINLESS STEEL	KOALA KARE KB310-SSRE	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
7 OPTION *	BABY CHANGING TABLE, HORIZONTAL, SURFACE MOUNT, ADA COMPLIANT, STAINLESS STEEL	KOALA KARE KB310-SSWM	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
8	DIAPER CONTAINER (OPTIONAL)	–	BY OWNER	
9	CLOTHES HOOK	BRADLEY 917	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
10	COAT RACK (CREW ROOM & BDAP)	BRADLEY 9944	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	

NOTES:
1) SEE 4/A4.0 FOR ACCESSORY MOUNTING HEIGHTS
2) SELECT ONE ITEM FROM ITEM GROUPS 4 & 6, VERIFY WITH AREA CONSTRUCTION MANAGER.
3) CUT BACK-UP SUPPORTS BETWEEN STUDS SO FACE OF SUPPORT IS FLUSH W/WALL STUD

3 / A4.0 RESTROOM ACCESSORY SCHEDULE

BY	DESCRIPTION	DATE	REV

WILLIAM R. STAMBAUGH REGISTERED NO. 86037 STATE OF INDIANA ARCHITECT

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR:
McDonald's USA, LLC
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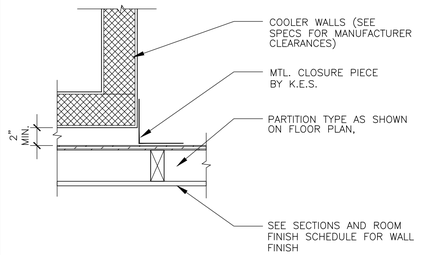
DRAWN BY	STD ISSUE DATE
mbh	2025 10
REVIEWED BY	DATE ISSUED
WTS	11.24.2025

TITLE
2025 OPTIMIZED BUILDING – BB20
4590-WOOD/WOOD

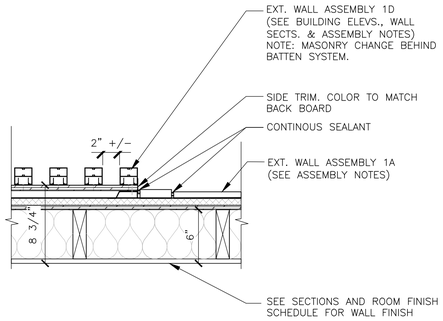
DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI	
WOOD TRUSS ROOF FRAMING	
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH	
NSN: 452011	7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
L/C: 13263	

013.1263.00.0

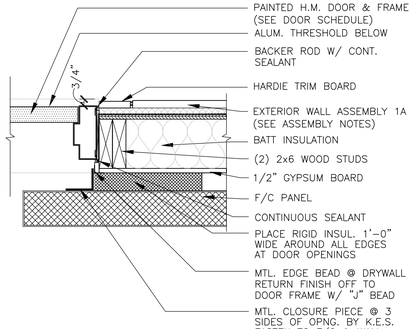
SHEET NO. A4.0
RESTROOM PLAN



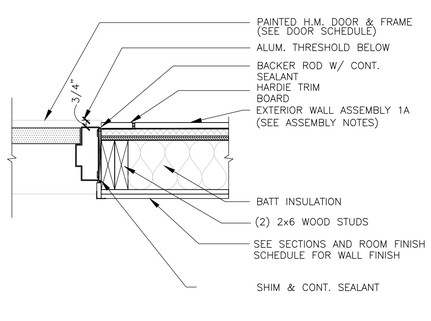
1 A4.1 CLOSURE DETAIL @ COOLER
1 1/2"=1'-0"



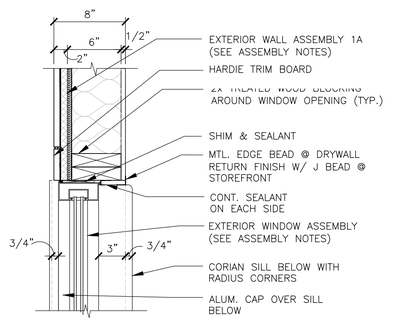
2 A4.1 BATTEN TO HARDIE PLANK TRANSITION
1 1/2"=1'-0"



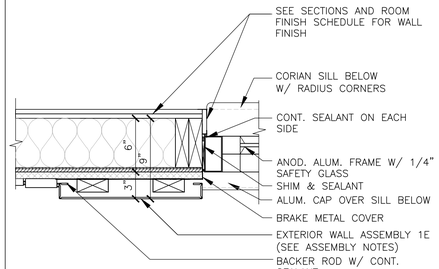
3 A4.1 DOOR JAMB @ F/C DOOR
1 1/2"=1'-0"



4 A4.1 EXT.DOOR JAMB DETAIL
1 1/2"=1'-0"

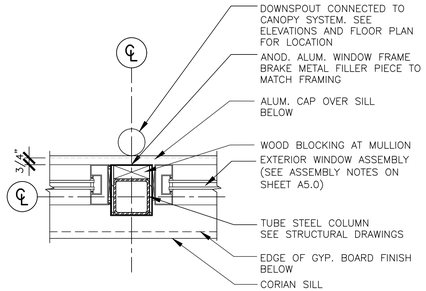


5 A4.1 CREW WINDOW JAMB DETAIL
1 1/2"=1'-0"



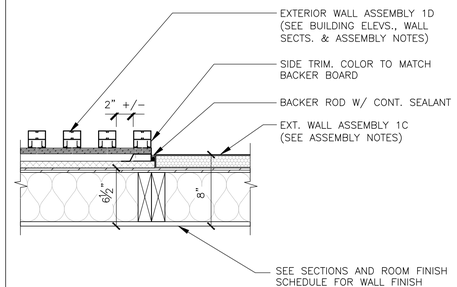
6 A4.1 ORDER WINDOW JAMB DETAIL
1 1/2"=1'-0"

7 A4.1 –
–

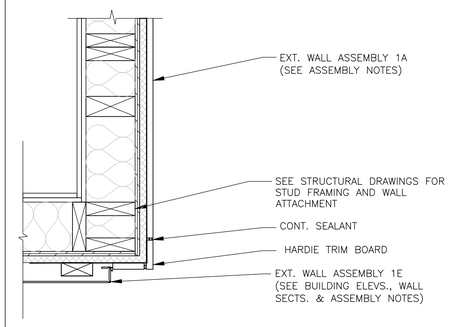


8 A4.1 DETAIL @ COLUMN
1 1/2"=1'-0"

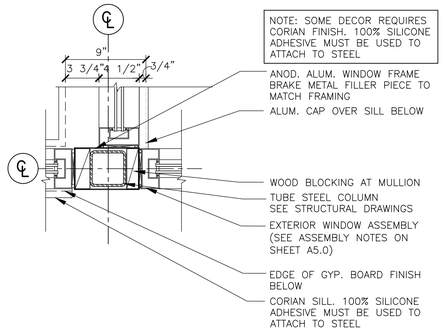
9 A4.1 –
–



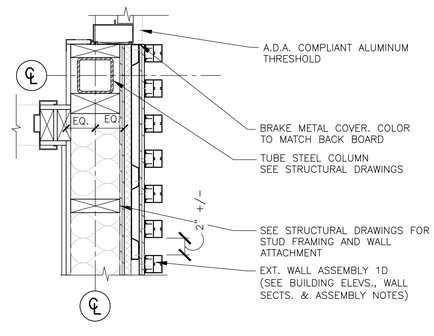
10 A4.1 BATTEN TO EIFS TRANSITION
1 1/2"=1'-0"



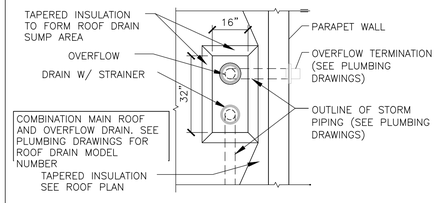
11 A4.1 CORNER DETAIL @ DT SURROUND
1 1/2"=1'-0"



12 A4.1 DETAIL @ COLUMN
1 1/2"=1'-0"

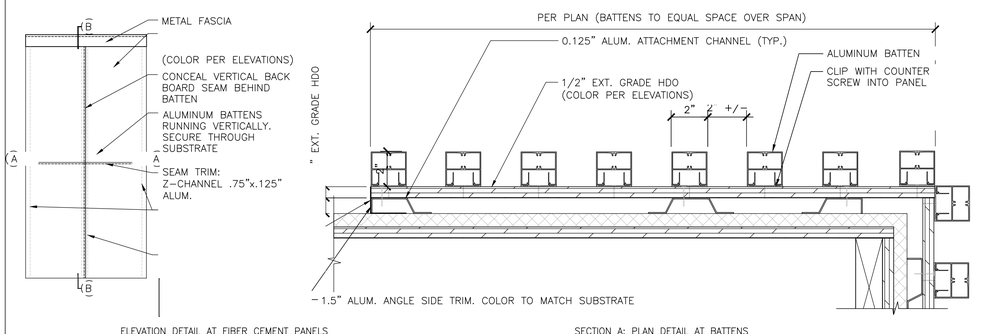


13 A4.1 DETAIL @ COLUMN
1 1/2"=1'-0"



14 A4.1 ROOF DRAIN DETAIL
1/4"=1'-0"

15 A4.1 –
–



ELEVATION DETAIL AT FIBER CEMENT PANELS

SECTION A: PLAN DETAIL AT BATTENS
SCALE: 3"=1'-0"
ALL SUBSTRATE, HAT CHANNELS AND TRIM BY GC. PRIME AND PAINT ALL SIDES AND EDGES PRIOR TO INSTALLING

ELEVATION DETAIL AT BATTEN JOINTS
SCALE: 1 ½"=1'-0"

16 A4.1 ALUMINUM BATTEN DETAIL
1/4"=1'-0"

17 A4.1 –
–

18 A4.1 –
–

REV	DATE	DESCRIPTION	BY

WILLIAM T. STAMBAUGH REGISTERED LICENSED ARCHITECT NO. 86037 STATE OF INDIANA

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR:
McDonald's USA, LLC

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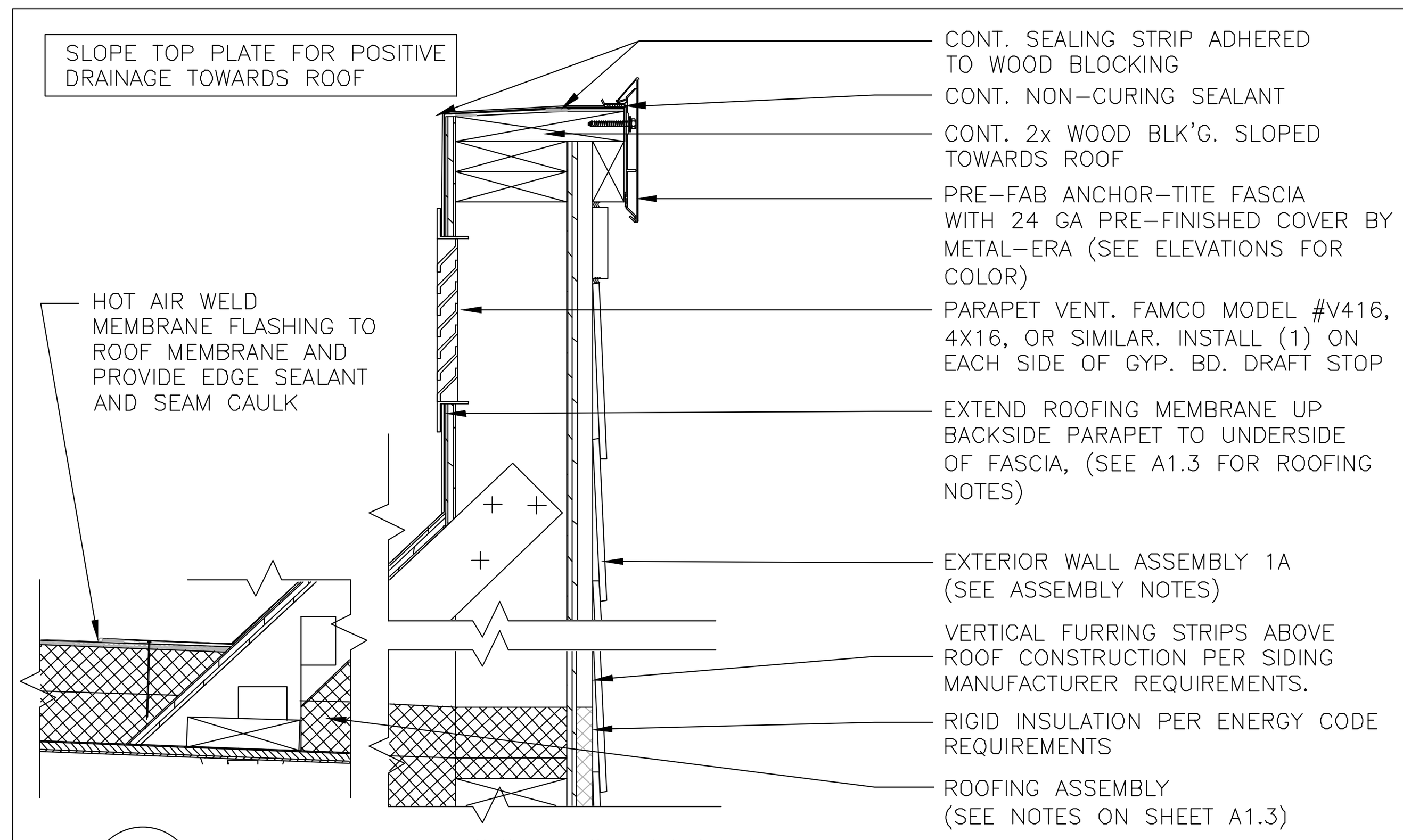
DRAWN BY	mbh
STD ISSUE DATE	2025 10
REVIEWED BY	WTS
DATE ISSUED	11.24.2025

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590-WOOD/WOOD

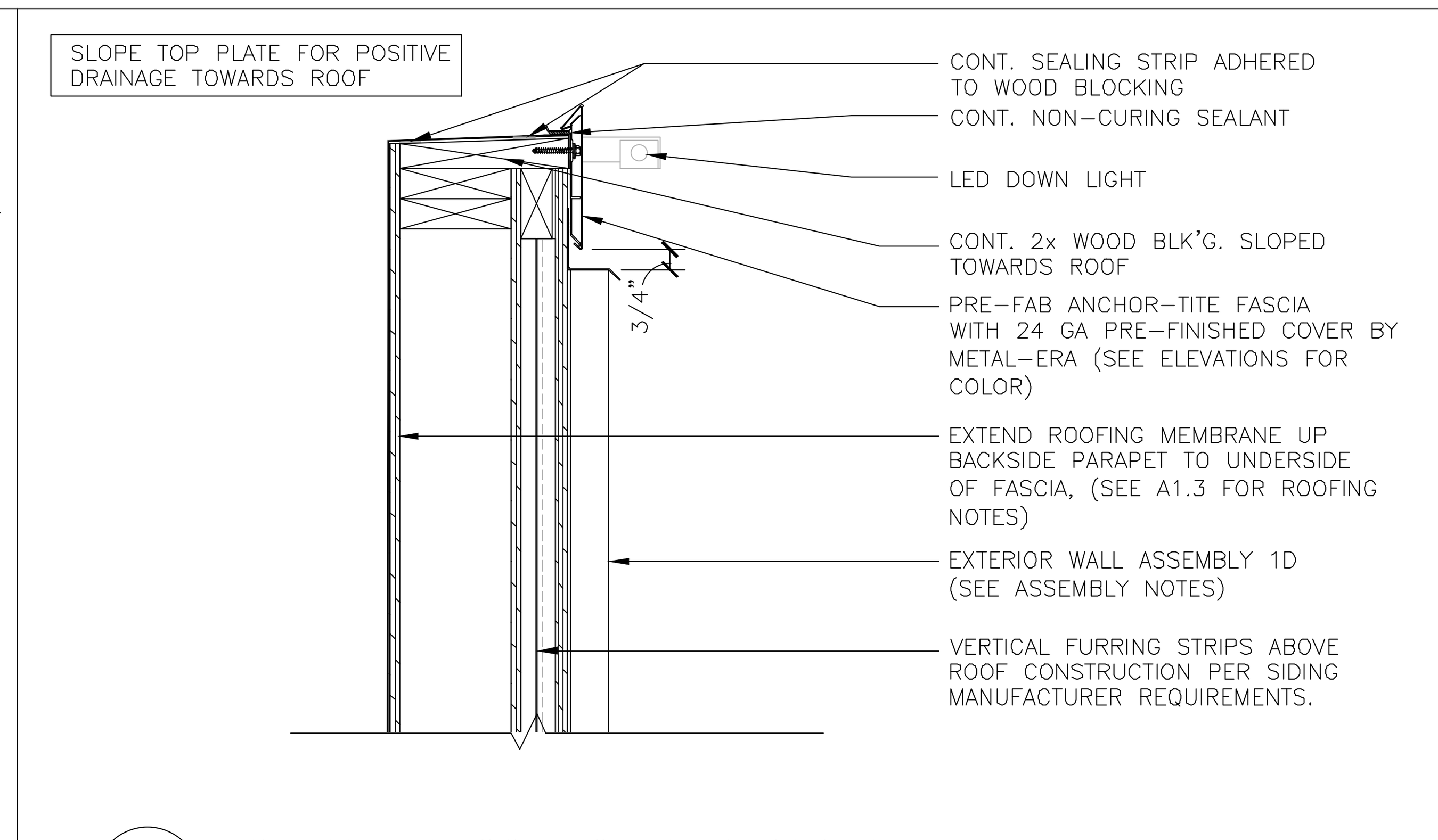
DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

MSN:	45201
SITE ADDRESS	7030 NORTHFIELD DRIVE, BROWNSBURG, IN. 46112
L/C:	13263

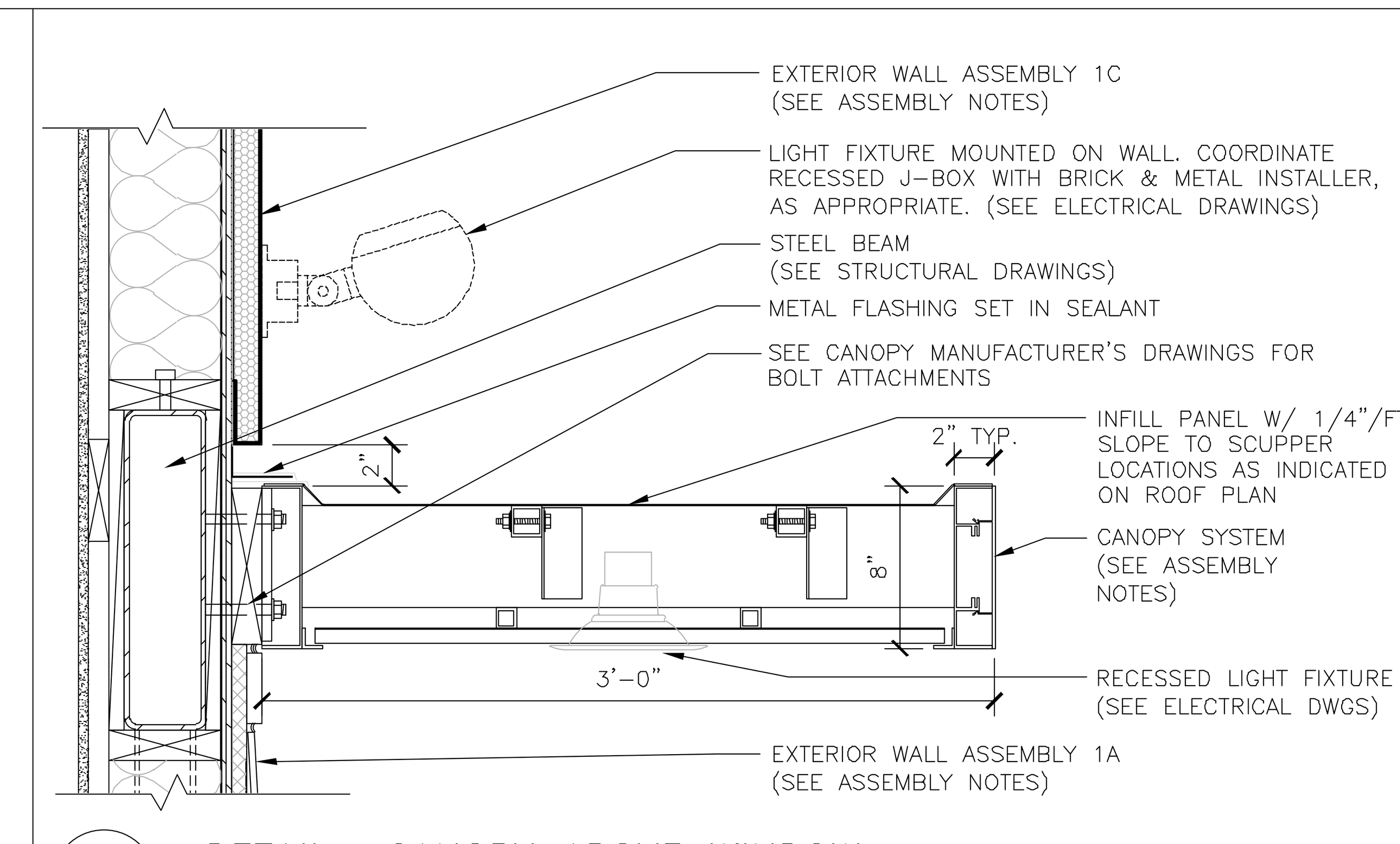
SHEET NO. 013.1263.00.0
A4.1
PLAN DETAILS



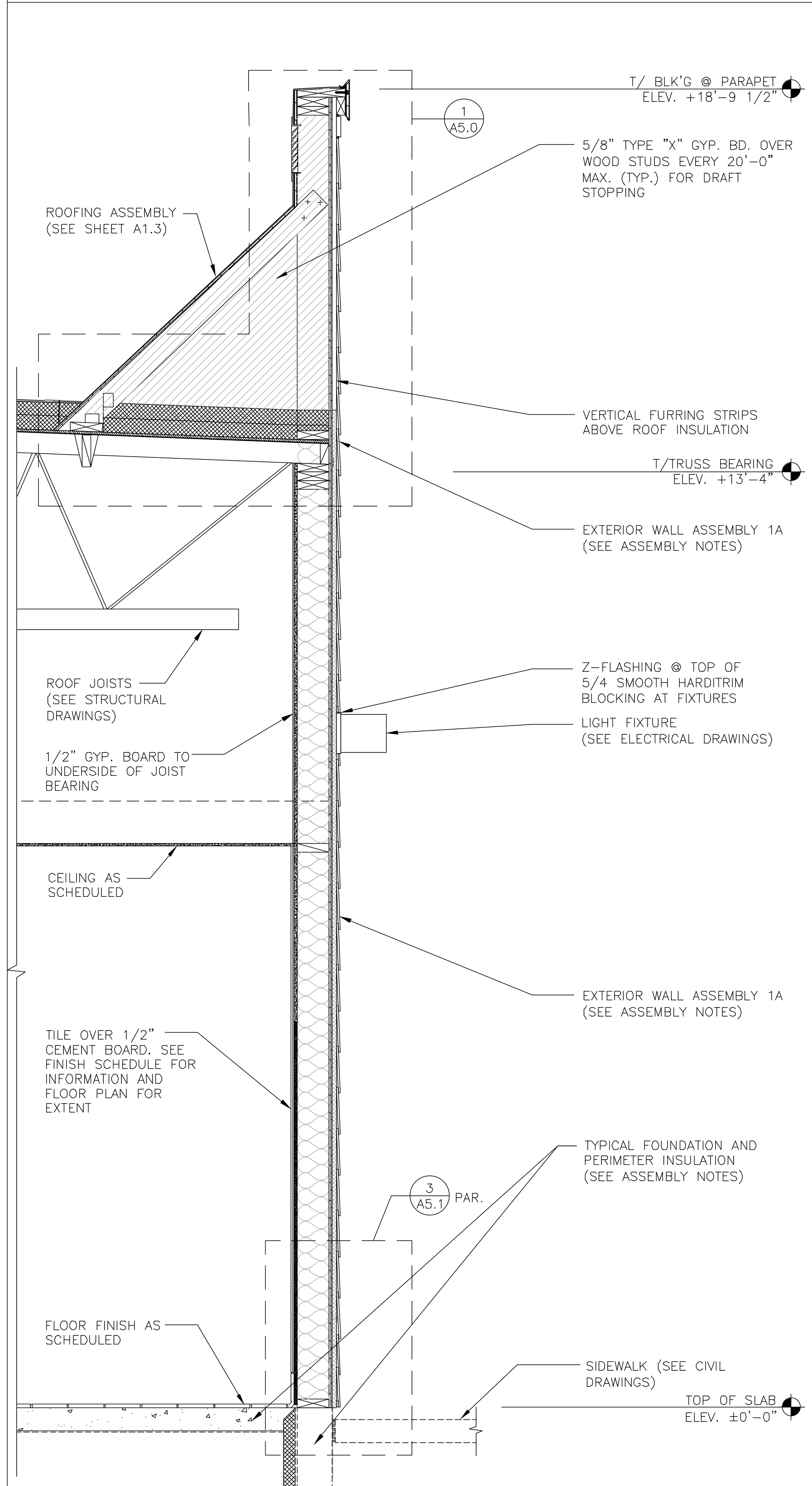
1 / A5.0 DETAIL- FASCIA @ PARAPET
1 1/2" = 1'-0"



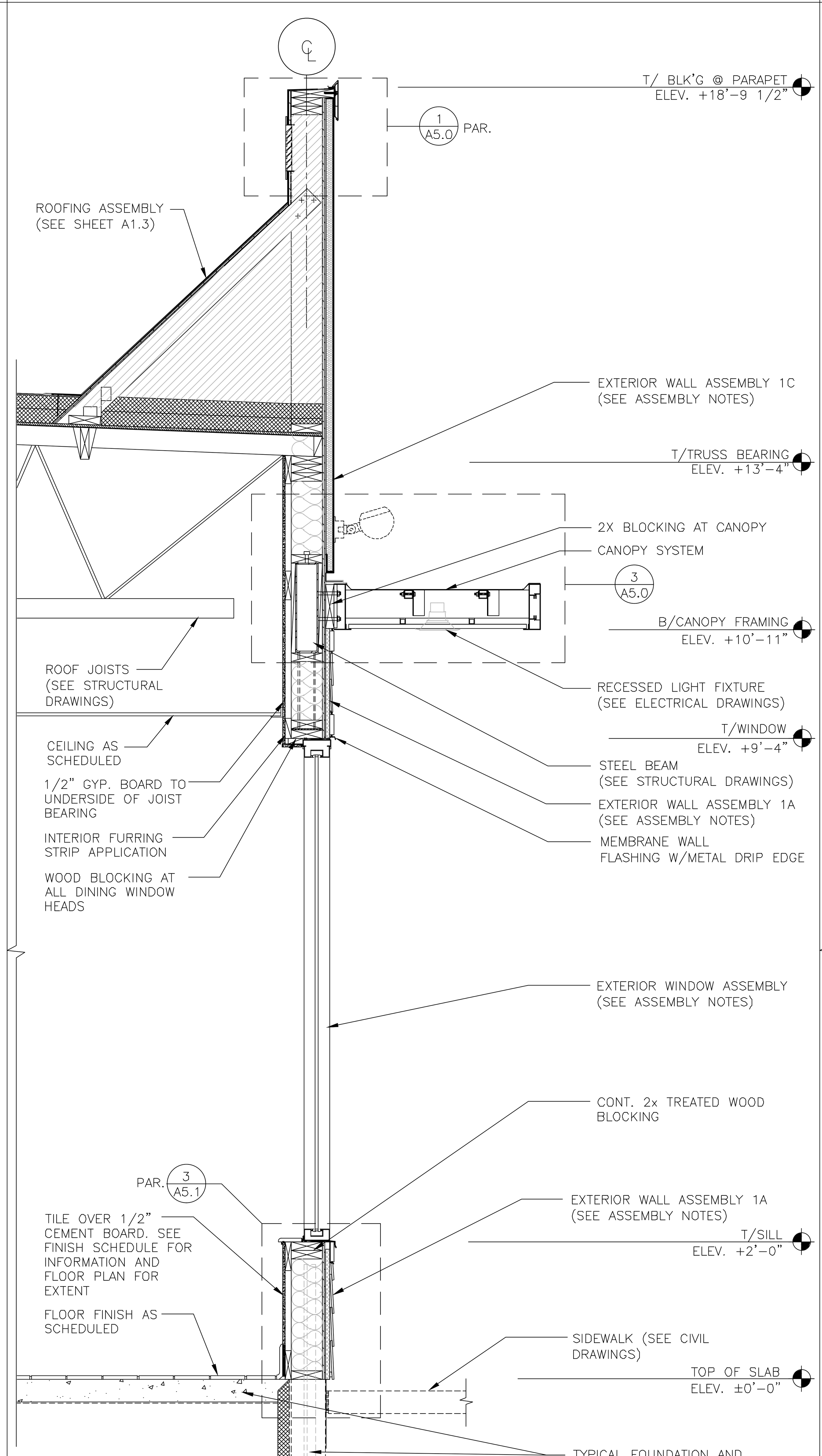
2 / A5.0 DETAIL- FASCIA @ AL PARAPET
1 1/2" = 1'-0"



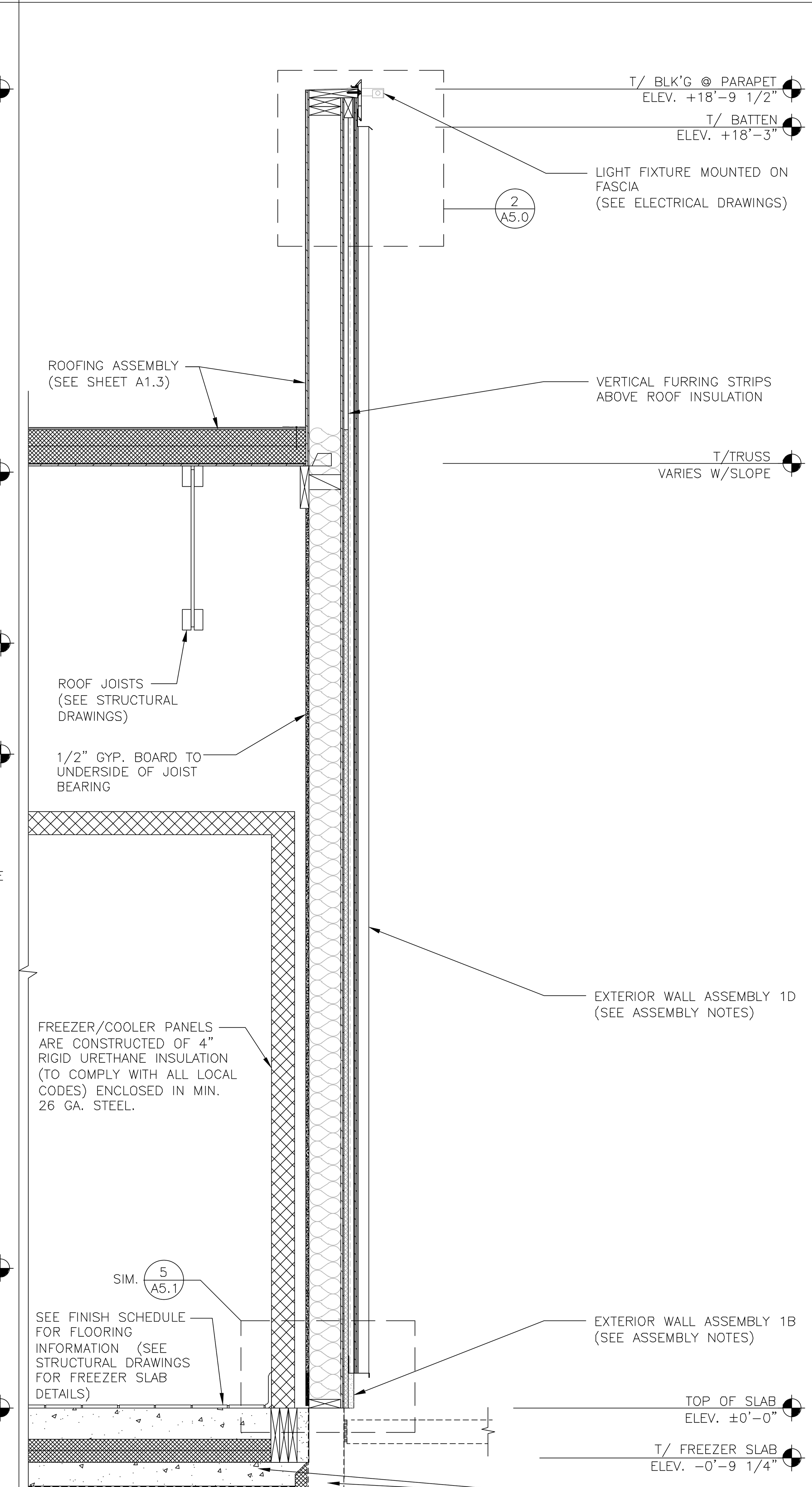
3 / A5.0 DETAIL- CANOPY ABOVE WINDOW
1 1/2" = 1'-0"



5 / A5.0 WALL SECTION - RESTROOM
3/4" = 1'-0"



6 / A5.0 WALL SECTION - DINING ROOM
3/4" = 1'-0"



7 / A5.0 WALL SECTION - FREEZER/COOLER
3/4" = 1'-0"

EXTERIOR WALL ASSEMBLIES

FROM EXTERIOR TO INTERIOR

1A. FIBER CEMENT HORIZONTAL LAP SIDING
1. JAMES HARDIE, HARDIEPLANK LAP SIDING, SMOOTH, 8 1/4" WIDTH, 7" EXPOSURE, HZ5, COLOR: SEE ELEVATIONS.
   a. COORDINATE FIBER CEMENT PANELS WITH FLASHING, TRIM, PARAPET WALLS AND OTHER ADJOINING WORK TO PROVIDE A LEAKPROOF, SECURE AND NONCORROSIVE INSTALLATION. INSTALL A 2" STARTER STRIP TO ENSURE A CONSISTENT PLANK ANGLE. OVERLAP PANELS 1 1/4" MIN. PROVIDE 7" EXPOSURE. SEE EXTERIOR ELEVATIONS.
   b. USE A POLYCRYSTALLINE DIAMOND-TIPPED FIBER CEMENT BLADE FOR CIRCULAR, MITER, AND TABLE SAWS.

1B. TRU EXTERIOR
1. 1"X6" PRE-PRIMED TRIM. COLOR: SEE ELEVATIONS. NAIL TRIM PIECES IN PLACE WITHIN 2" OF THE EDGE OF THE TRIM PIECE AND EVERY 16" ALONG THE LENGTH OF THE TRIM, USING MANUFACTURER APPROVED NAILS. INSTALL PER LOCAL CODES AND MANUFACTURERS SPECIFICATIONS.

1C. E.I.F.S. SYSTEM
1. "OUTSULATION PLUS MD" BY DRYVIT SYSTEMS. DRAINAGE E.I.F.S. SYSTEM (NOT BARRIER) CONSISTING OF 1 1/2" INSULATION WITH FIBER REINFORCING MESH MECHANICALLY FASTENED. USE "PANZER 20 ULTRA-HIGH IMPACT MESH" IN AREAS BELOW 8'-0" IF APPLICABLE. FINISH: HYDROPHOBIC. TEXTURE: FINESSE. INSTALL PER LOCAL CODES AND MANUFACTURERS SPECIFICATIONS ON TERMINATION AND INSTALLATION DETAILS.
2. OVER WALL ASSEMBLY 1A

1D. VERTICAL BATTEN SYSTEM
1. ALUMINUM BATTEN W/MOUNTING BACK RAIL. SIZE: 2" WIDE x 2" DEEP. REFER TO EXTERIOR ELEVATIONS FOR COLOR. INSTALL PER LOCAL CODES AND MANUFACTURERS SPECIFICATIONS ON TERMINATION AND INSTALLATION DETAILS. BY SUPPLIER. GC INSTALL
2. 1/2" EXTERIOR HIGH DENSITY OVERLAY (HDO) PLYWOOD, BB, GROUP 1. HDO BOTH FACES. APA TRADEMARKED. SAND WITH COURSE GRIT ALL SURFACES PRIOR TO PRIMING. PRIME AND PAINT BOTH SIDES AND ALL EDGES. BY GC, INSTALL BY GC. ALUM EDGE TRIM BY GC. COLOR TO MATCH SUBSTRATE.
3. 1" 0.125 ALUMINUM CHANNEL BY GC, INSTALL BY GC
4. OVER WALL ASSEMBLY 1A

VERTICAL BATTEN SYSTEM BY:

B+N INDUSTRIES (650) 393-2347	TUBELITE (214) 288-5801
TALENE KAPEGHIAN	CHASITY DICKINSON
tkapeghian@bnind.com	mcdonalds@tubeliteinc.com

1E. CITADEL ACM PANEL
1. 4MM CITADEL E2000 METAL PANEL KIT. SEE ELEVATIONS FOR COLOR. PROVIDE MFG. SHOP DRAWINGS TO ARCHITECT FOR REVIEW. Mcdonalds@metalera.com

2. 3/4" RIGID INSULATION, R-3.8 VALUE
3. PERMEABLE BUILDING WRAP OVER 1/2" EXTERIOR GRADE PLYWOOD. INSTALL PER LOCAL CODES AND MFR'S SPEC'S.
4. 2x6 WOOD STUD FRAMING @ 16" O.C. (WITH CONTINUOUS DRAFTSTOP/FIRESTOP BLOCKING AT FINISH CEILING LEVEL).
5. 5 1/2" THICK UNFACED BATT INSULATION (R VALUE = 20 MIN.).
6. "CERTAINTEED MEMBRAIN" SMART VAPOR RETARDER (SEMI-VAPOR PERMEABLE) BY CERTAINTEED OR EQUAL.
7. 1X6 HORIZONTAL WOOD FURRING STRIPS @ 24" O.C. FOR ALL DINING ROOM EXTERIOR WALLS HOUSING STOREFRONT WINDOW ASSEMBLY.
8. 1/2" CEMENT BOARD OVER 1/2" PLYWOOD SUBSTRATE FOR ALL TILE LOCATIONS. (TYP.)
   NON TILE LOCATIONS: 1/2" GYPSUM BOARD TO EXTEND TO DECK ABOVE. UNLESS NOTED OTHERWISE.
   ALL GYP. BOARD MUST SCORE 10 PER ASTM D3273, REFERENCE CURRENT PROJECT MANUAL.
9. SEE A1.0 & ROOM FINISH SCHEDULE FOR ADDITIONAL SUBSTRATE INFORMATION.

EXTERIOR WINDOW ASSEMBLY

(STOREFRONT & ENTRANCE SYSTEM)

GLAZING REQ'S: U VALUE = 0.36 U VALUE "DOOR"= 0.63 SHGC = 0.40
1. DARK BRONZE ANODIZED ALUMINUM FRAME, THERMALLY BROKEN WITH HEAD RECEIVER CHANNEL.
2. 1" TEMPERED INSULATED GLAZING
3. PROVIDE FLASHING AT HEAD & SILL - CONTINUOUS SEALANT.
4. PROVIDE METAL SILL CAP AS SHOWN IN DETAILS
5. 1/2" CORIAN SILL AT INTERIOR

CANOPY SYSTEM

CANOPY INFORMATION SHOWN IN CONSTRUCTION DOCUMENTS IS FOR DESIGN INTENT ONLY. APPROVED MANUFACTURERS SHALL PROVIDE A COMPLETE AND CODE COMPLIANT FINAL DESIGN. REFER TO ELEVATIONS FOR COLOR OF ELEMENTS
1. CANOPY STRUCTURE/OUTRIGGERS: CONT. 2" x 8" PAINTED ALUM. TUBE. PROVIDE CLOSURE PIECE WHERE TUBE ENDS ARE EXPOSED.
2. WHERE INDICATED ON ROOF PLAN, PROVIDE PAINTED ALUM. PANEL INFILL WITH INTEGRAL SCUPPER TO MATCH OUTRIGGERS. PANEL TO PROVIDE POSITIVE SLOPE FOR DRAINAGE.
3. SYSTEM SHALL ALLOW FOR MOVEMENT AT EXPANSION JOINTS AND FOR MOVEMENT OF EXTERIOR WALL SYSTEM ON WHICH THE CANOPY IS MOUNTED.
4. STRUCTURAL ATTACHMENTS & LOAD CALCULATIONS SHALL BE FURNISHED BY CANOPY SYSTEM DESIGNER OF RECORD. SUPPLIER'S DESIGNER OF RECORD SHALL DESIGN PER PREVAILING CODES.
5. CANOPY SYSTEM SHALL BE SELECTED FROM ONE OF THE SUPPLIERS LISTED BELOW.
6. MANUFACTURER SHALL PROVIDE INSTALLER WITH INSTALLATION INSTRUCTIONS. MANUFACTURER SHALL DESIGN CANOPY IN ACCORDANCE WITH THE WALL SYSTEM AND BLOCKING AS INDICATED IN THE CONSTRUCTION DOCUMENTS.
7. INSTALLER SHALL NOTIFY CANOPY DESIGNER OF RECORD, McDONALD'S ACM, G.C. AND ARCHITECT OF ANY DEFICIENCIES THAT WOULD NOT ALLOW FOR THE PROPER INSTALLATION OF THE CANOPY. CANOPY SHALL NOT BE INSTALLED UNTIL DEFICIENCIES HAVE BEEN CORRECTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND THE CANOPY MANUFACTURER'S INSTALLATION INSTRUCTIONS.

CANOPY SYSTEM BY:

AWNEX (770) 704-7140
www.awnexinc.com

ALL-LITE (817) 509-2300
www.alllite.com

GREENHECK (715) 355-3942
www.greenheck.com

FOUNDATION AND PERIMETER INSULATION

1. SEE STRUCTURAL DRAWINGS FOR FOUNDATION AND SLAB DETAILS
2. PROVIDE RIGID UNDERSLAB INSULATION AS FOLLOWS:
   - VERTICALLY FROM TOP OF FOOTING TO TOP OF SLAB:
   - 2'-0" MIN. R-VALUE: R-15

4 / A5.0 ASSEMBLY NOTES

REV	DATE	DESCRIPTION	BY

WILLIAM T. STAMBAUGH REGISTERED NO. 860037 STATE OF INDIANA ARCHITECT

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR:
McDonald's USA, LLC

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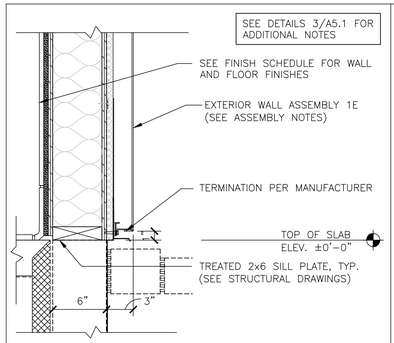
DRAWN BY: mbh
STD ISSUE DATE: 2025 10
REVIEWED BY: WTS
DATE ISSUED: 11.24.2025

TITLE: 2025 OPTIMIZED BUILDING - BB20 4590-WOOD/WOOD

DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci; WOOD TRUSS ROOF FRAMING; CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

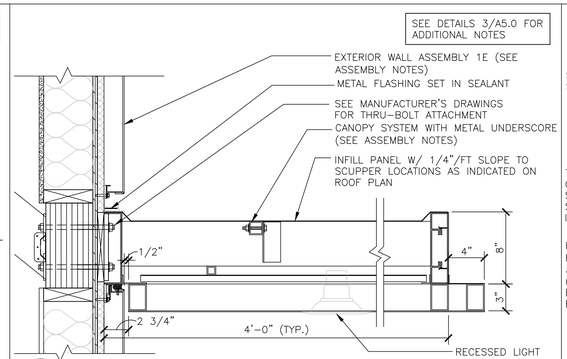
NSN: 45201
L/C: 13263
SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO. 013.1263.00.0
A5.0
WALL SECTIONS



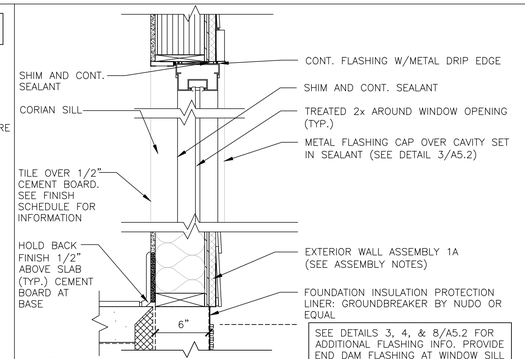
1 A5.1 DETAIL– ALPOLIC TERMINATION

1 1/2" = 1'-0"



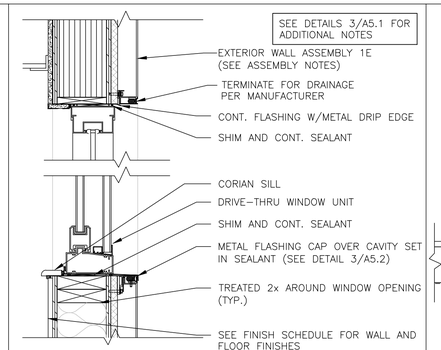
2 A5.1 DETAIL– DRIVE THRU CANOPY SYSTEM

1 1/2" = 1'-0"



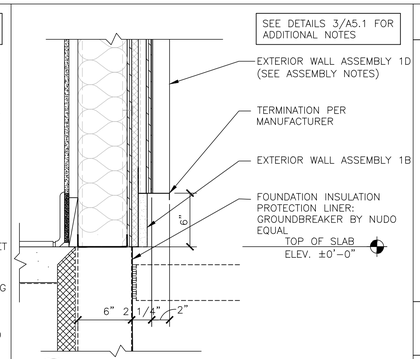
3 A5.1 SECTION @ WINDOW

1 1/2" = 1'-0"



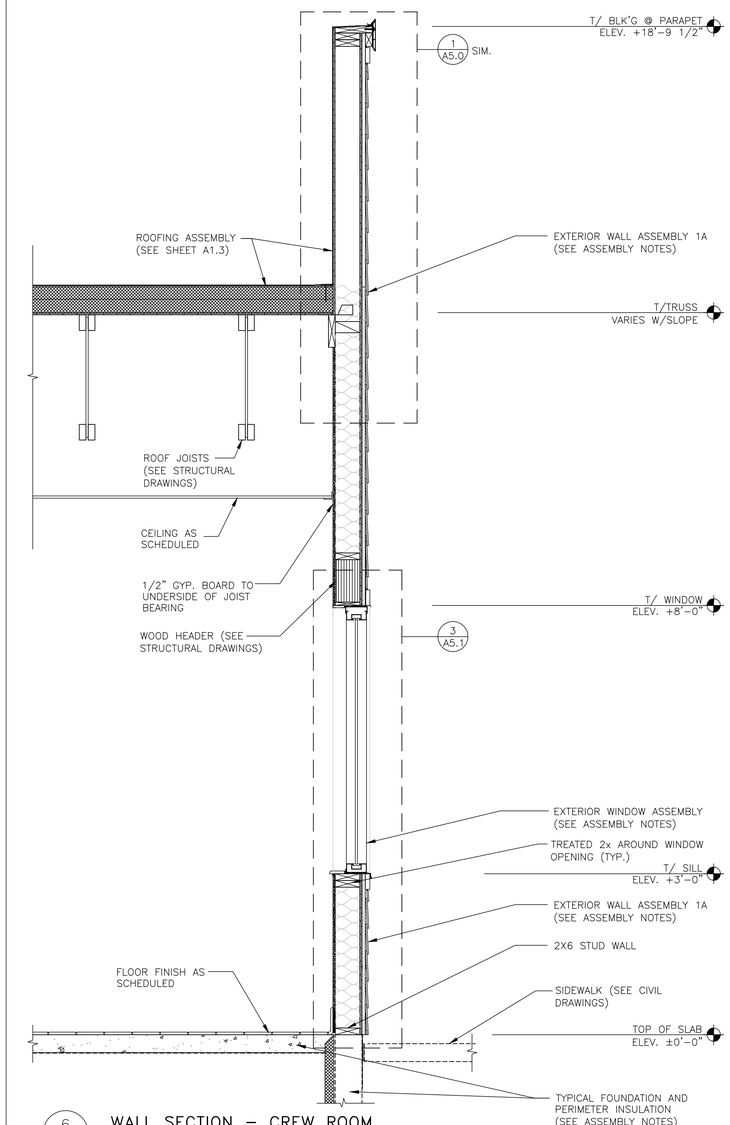
4 A5.1 SECTION @ DRIVE-THRU WINDOW

1 1/2" = 1'-0"



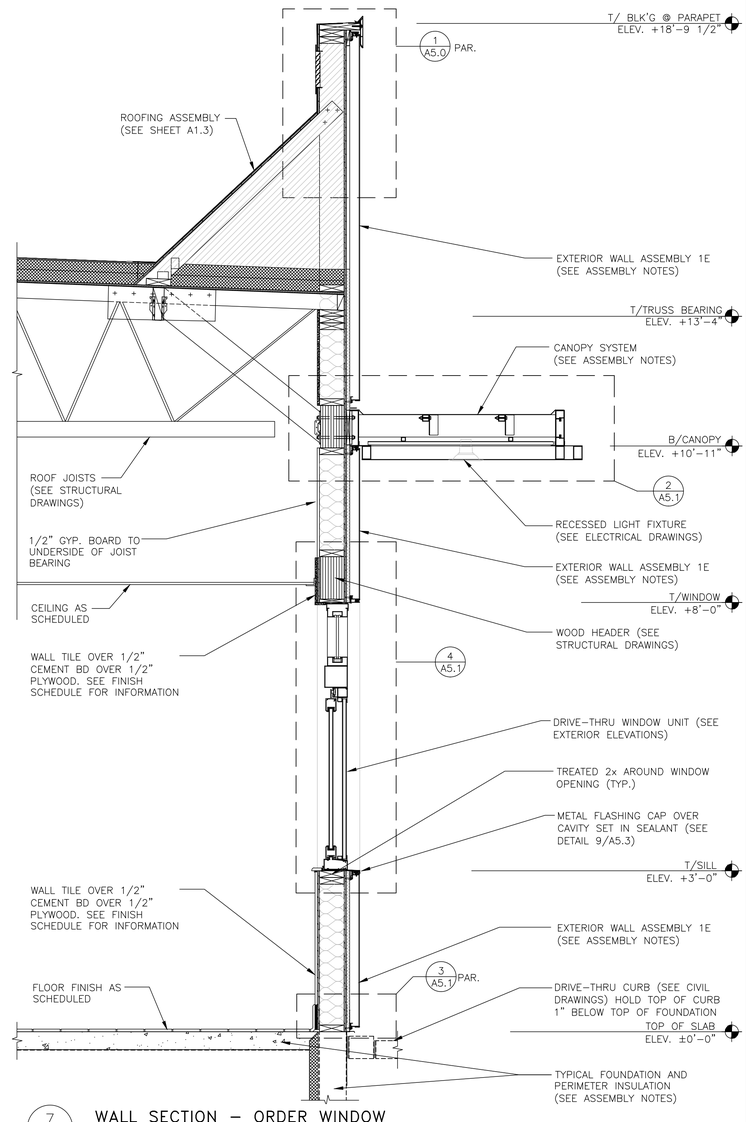
5 A5.1 DETAIL– BATTEN TERMINATION

1 1/2" = 1'-0"



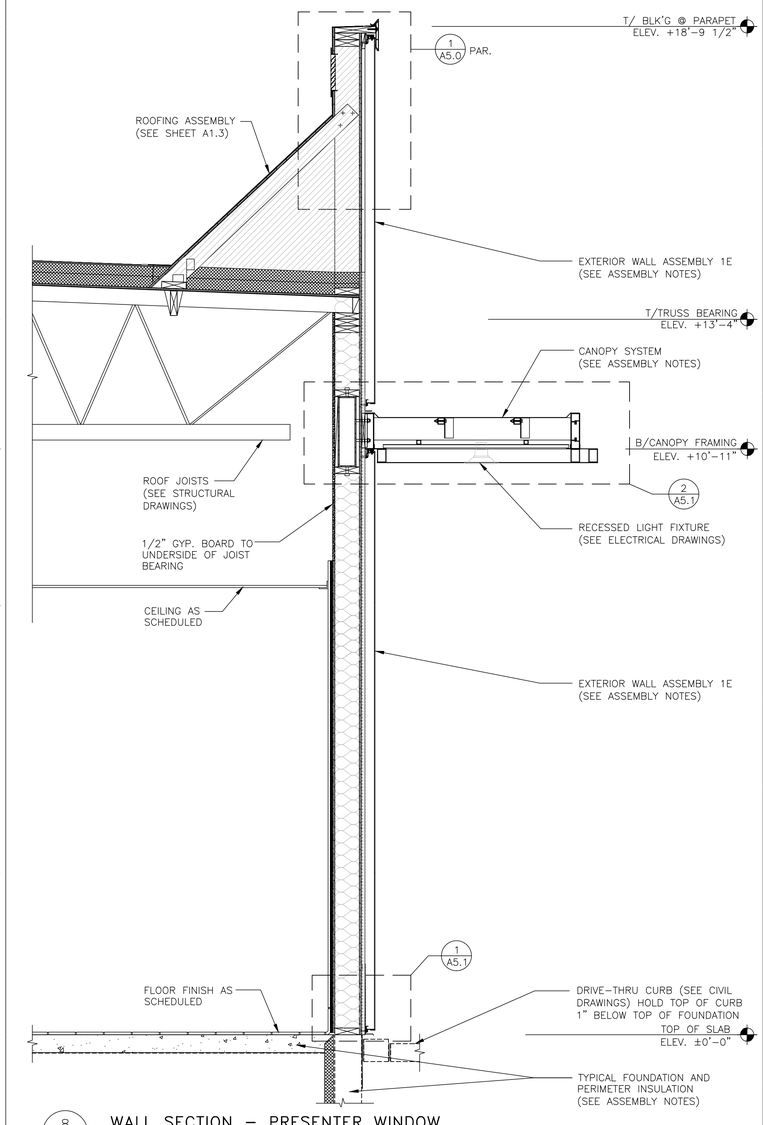
6 A5.1 WALL SECTION – CREW ROOM

3/4" = 1'-0"



7 A5.1 WALL SECTION – ORDER WINDOW

3/4" = 1'-0"



8 A5.1 WALL SECTION – PRESENTER WINDOW

3/4" = 1'-0"

REV	DATE	DESCRIPTION	BY

STAMBAUGH WILLIAM REGISTERED NO. 860037 STATE OF INDIANA LICENSED ARCHITECT

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED
mbh	WTS	11.24.2025
STD ISSUE DATE 2025 10		

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD

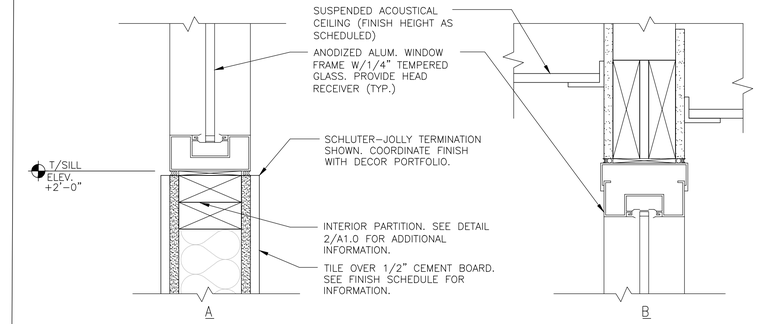
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 45201 L/C: 13263

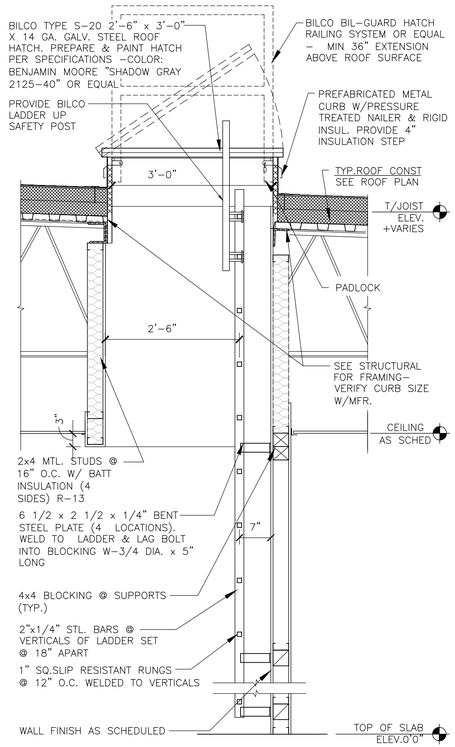
SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN. 46112

SHEET NO. 013.1263.00.0

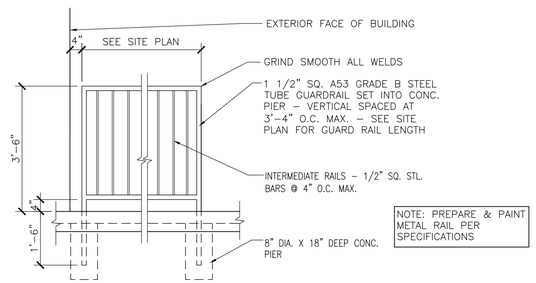
A5.1 WALL SECTIONS



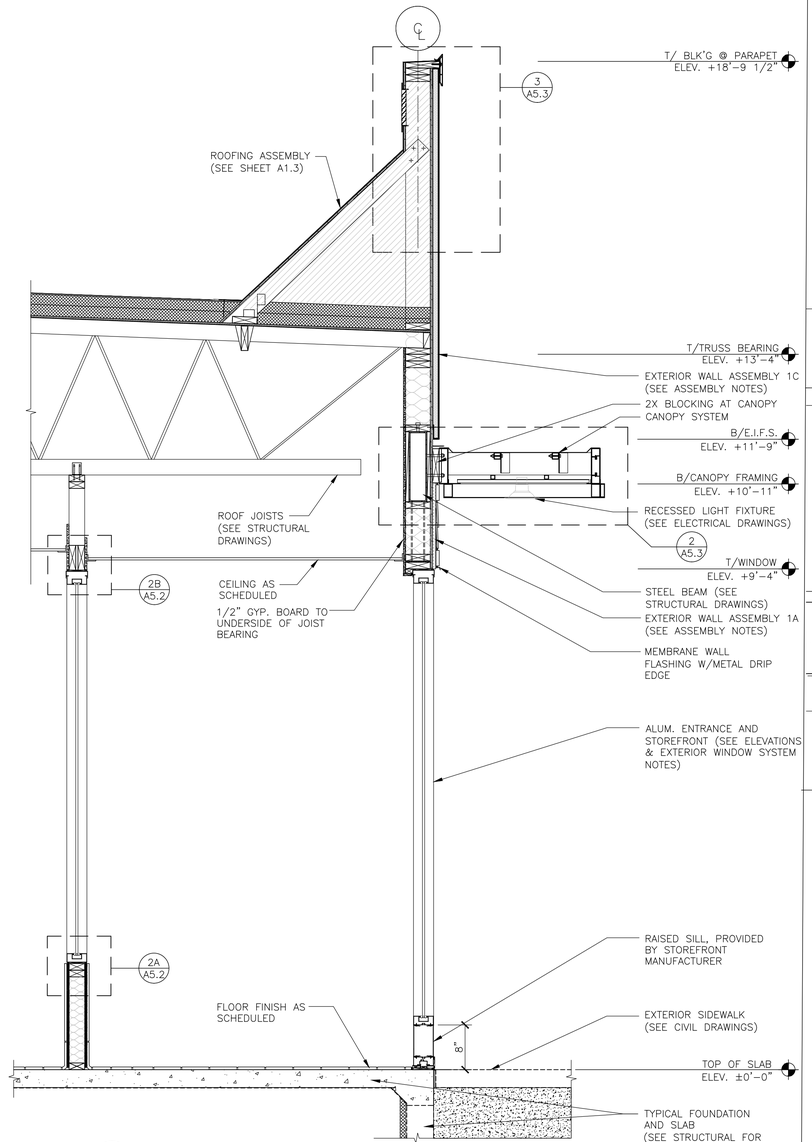
2 / A5.2 HEAD & SILL INTERIOR VESTIBULE WALL
3" = 1'-0"



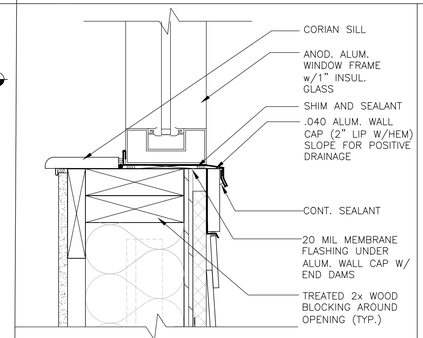
10 / A5.2 SECTION @ INTERIOR LADDER
3/4" = 1'-0"



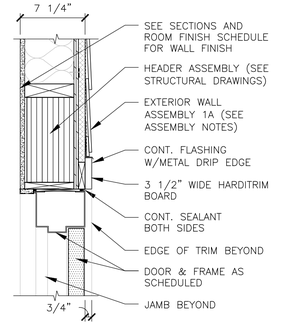
11 / A5.2 GUARD RAIL DETAIL
1/2" = 1'-0"



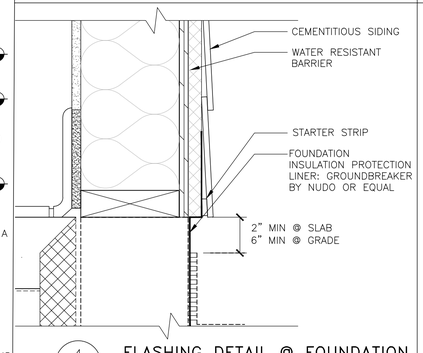
7 / A5.2 WALL SECTION - VESTIBULE/ENTRY
-



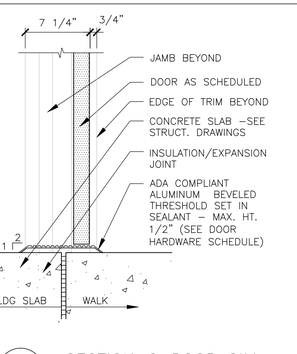
3 / A5.2 WINDOW SILL FLASHING
3" = 1'-0"



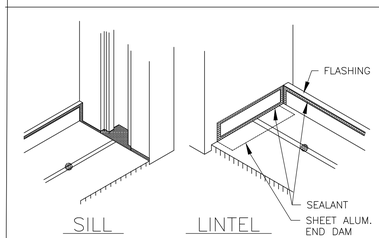
5 / A5.2 SECTION @ DOOR HEAD
1 1/2" = 1'-0"



4 / A5.2 FLASHING DETAIL @ FOUNDATION
3" = 1'-0"



6 / A5.2 SECTION @ DOOR SILL
1 1/2" = 1'-0"



8 / A5.2 FLASHING DETAIL @ JAMB
N.T.S.

NO.	DESCRIPTION	DATE	BY

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR: McDonald's USA, LLC

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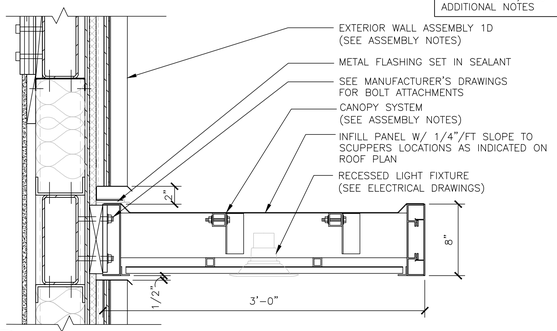
DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED
mbh	2025 10	WTS	11.24.2025

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

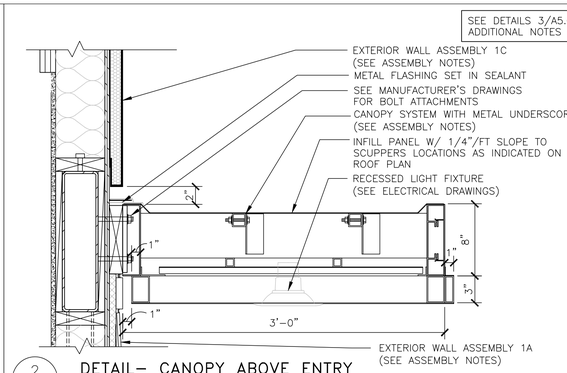
DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI	
WOOD TRUSS ROOF FRAMING	
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH	7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
NSN:45201 L/C: 13263	

SHEET NO. A5.2
013.1263.00.0
WALL SECTIONS



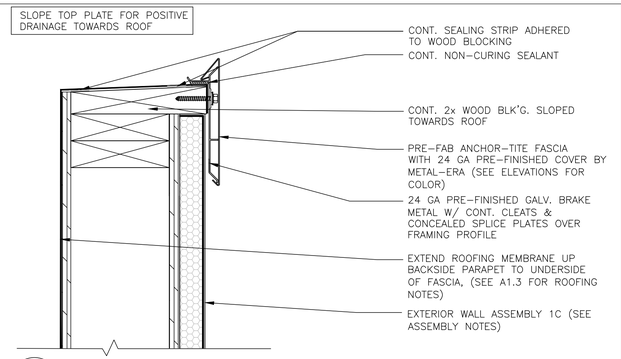
1 A5.3 DETAIL– CANOPY @ BATTENS

1 1/2" = 1'–0"



2 A5.3 DETAIL– CANOPY ABOVE ENTRY

1 1/2" = 1'–0"

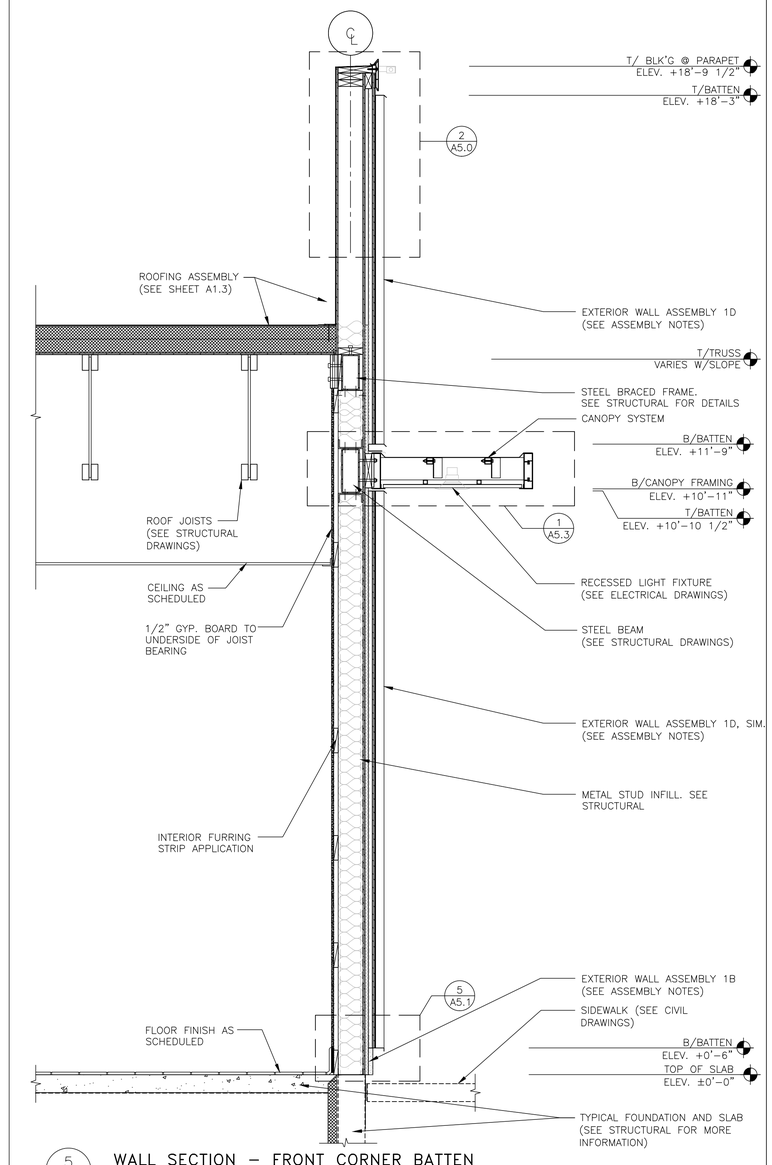


3 A5.3 DETAIL– FASCIA @ E.I.F.S. PARAPET

3" = 1'–0"

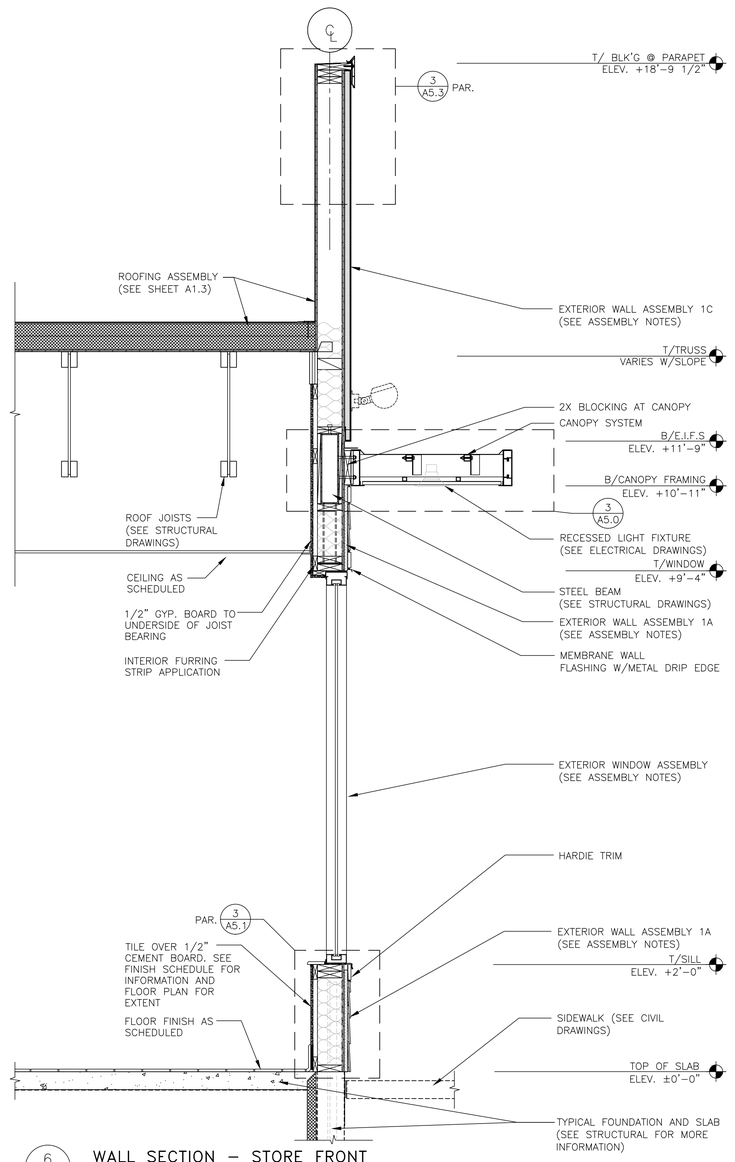
4 A5.3 NOT USED

–



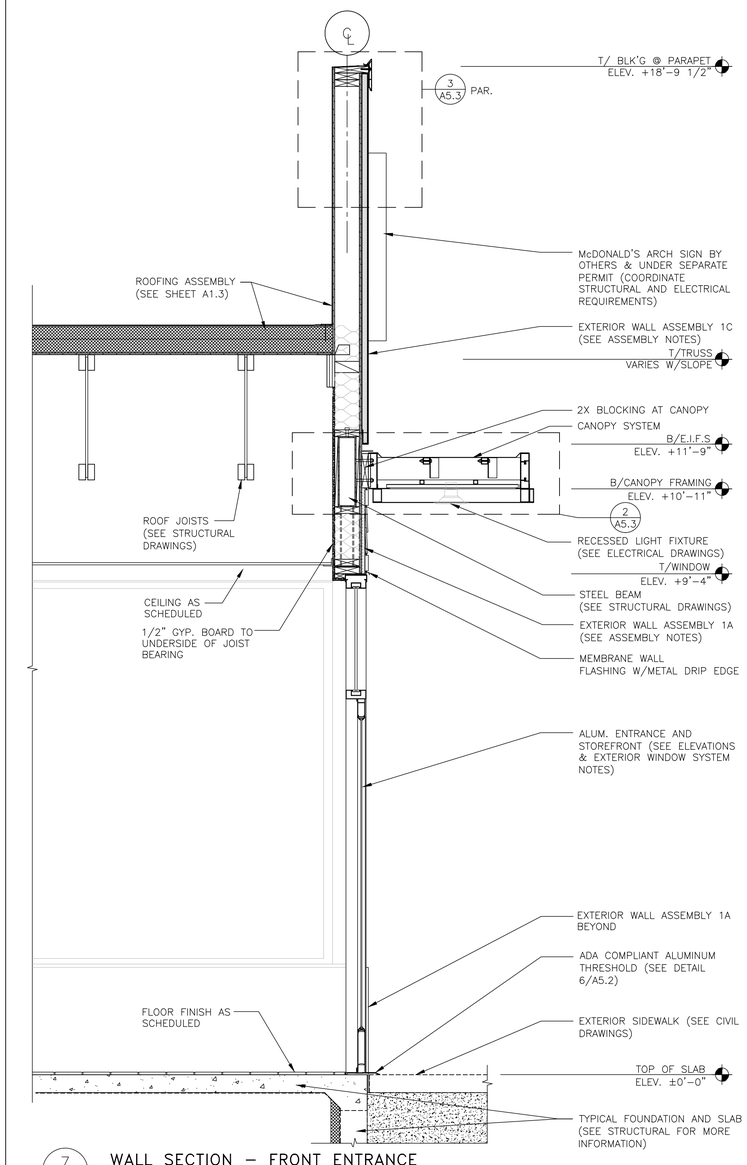
5 A5.3 WALL SECTION – FRONT CORNER BATTEN

3/4" = 1'–0"



6 A5.3 WALL SECTION – STORE FRONT

3/4" = 1'–0"



7 A5.3 WALL SECTION – FRONT ENTRANCE

3/4" = 1'–0"

REV	DATE	DESCRIPTION	BY

WILLIAM T. STAMBAUGH REGISTERED NO. 86037 STATE OF INDIANA LICENSED ARCHITECT

LANCER ASSOCIATES ARCHITECTURE

145 N EAST STREET
INDIANAPOLIS, IN 46204

PREPARED BY:

PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE
mbh	2025 10
REVIEWED BY	DATE ISSUED
WTS	11.24.2025

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 45201
SITE ADDRESS
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

L/C: 13263

013.1263.00.0

SHEET NO. A5.3

WALL SECTIONS

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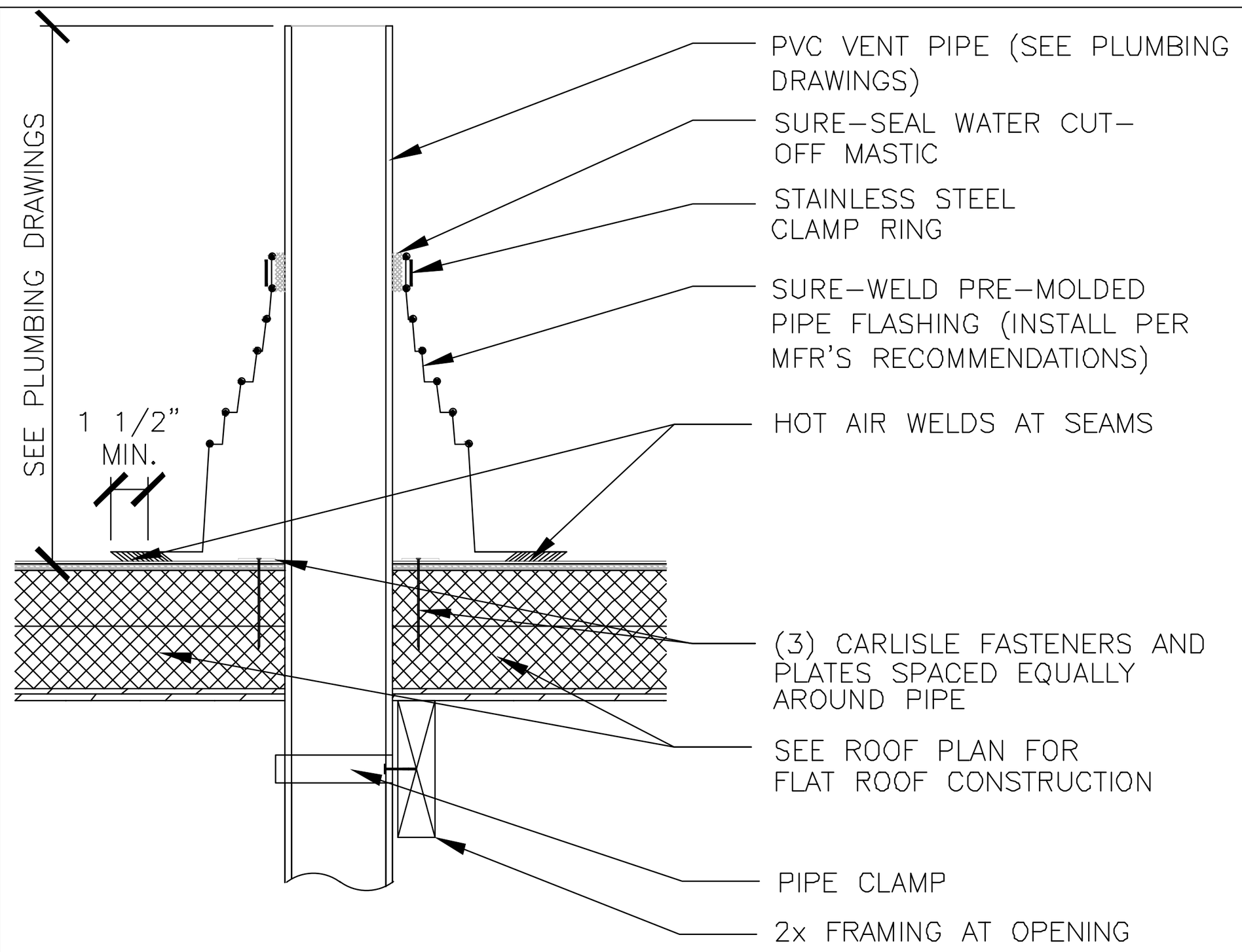
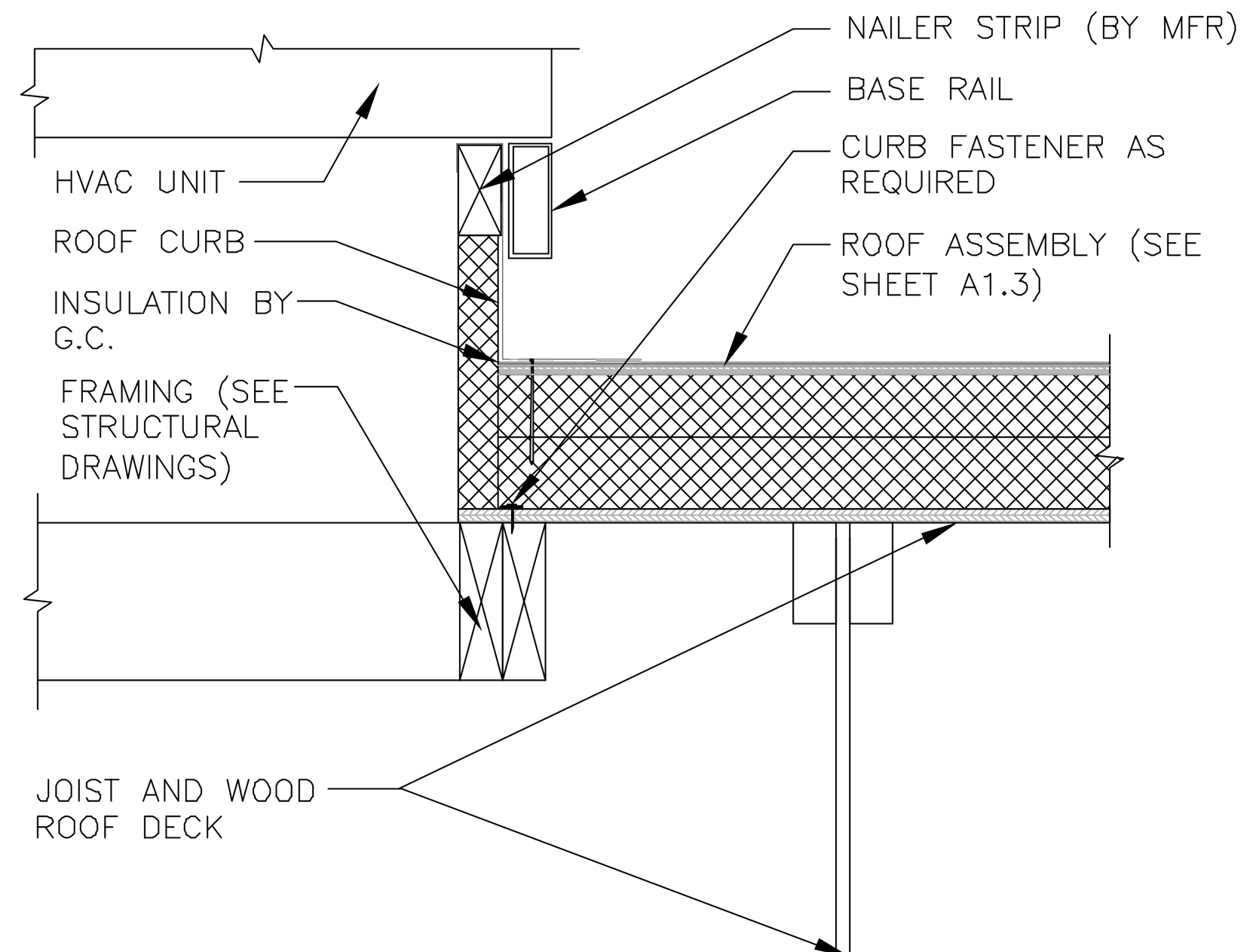
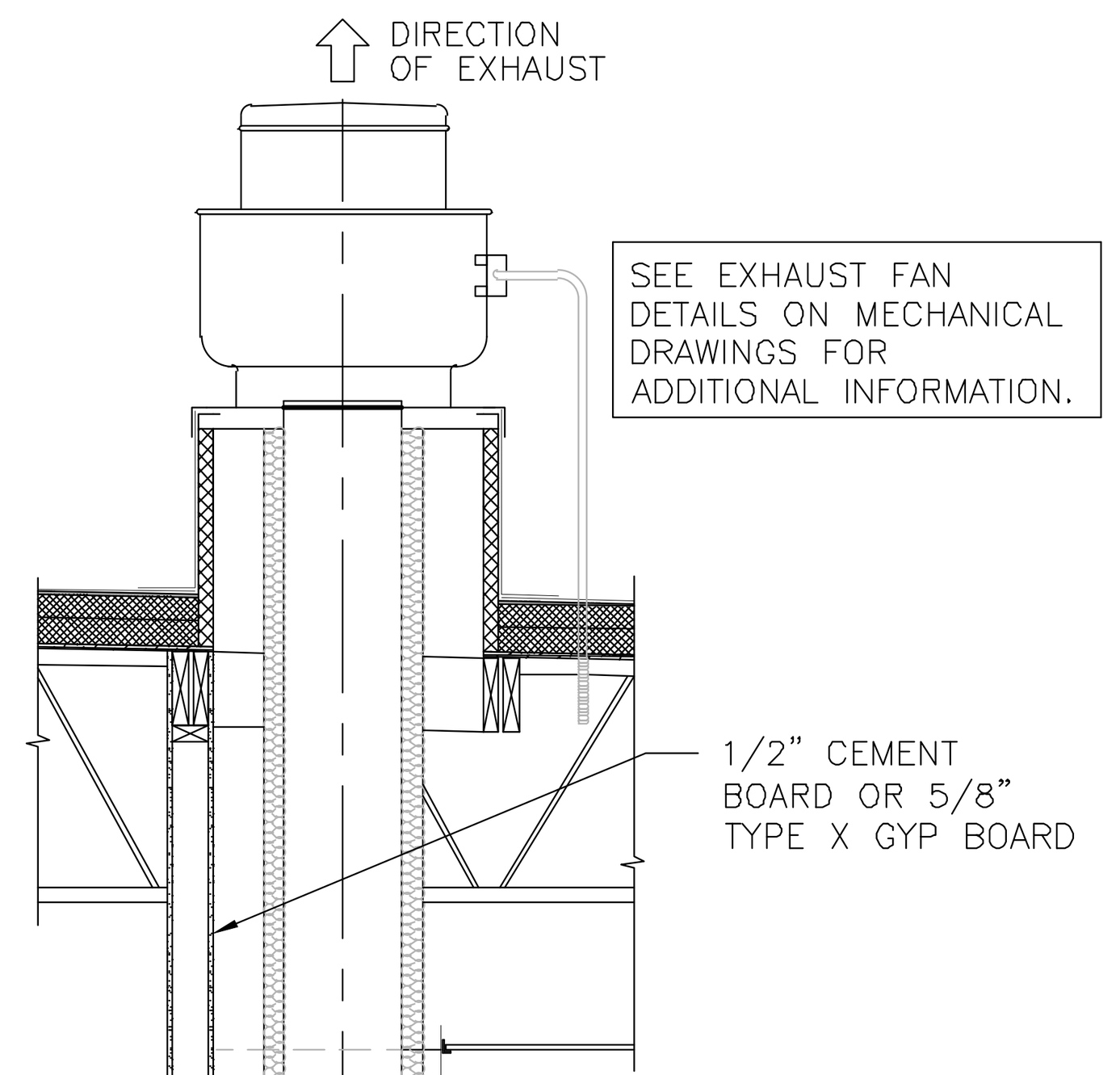


1 / A6.0 TYPICAL VENT PENETRATION
1 1/2"=1'-0"

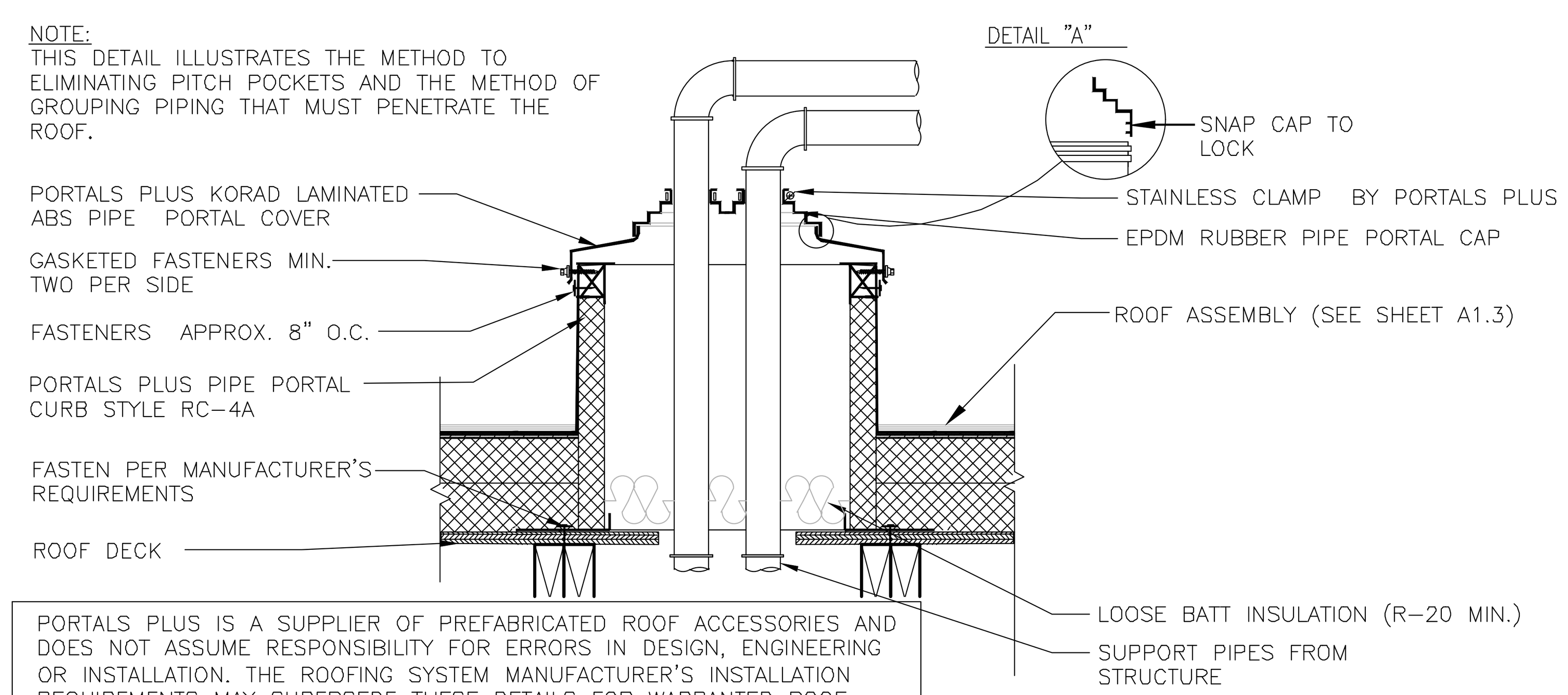


2 / A6.0 HVAC UNIT ROOF CURB DETAIL
1 1/2"=1'-0"



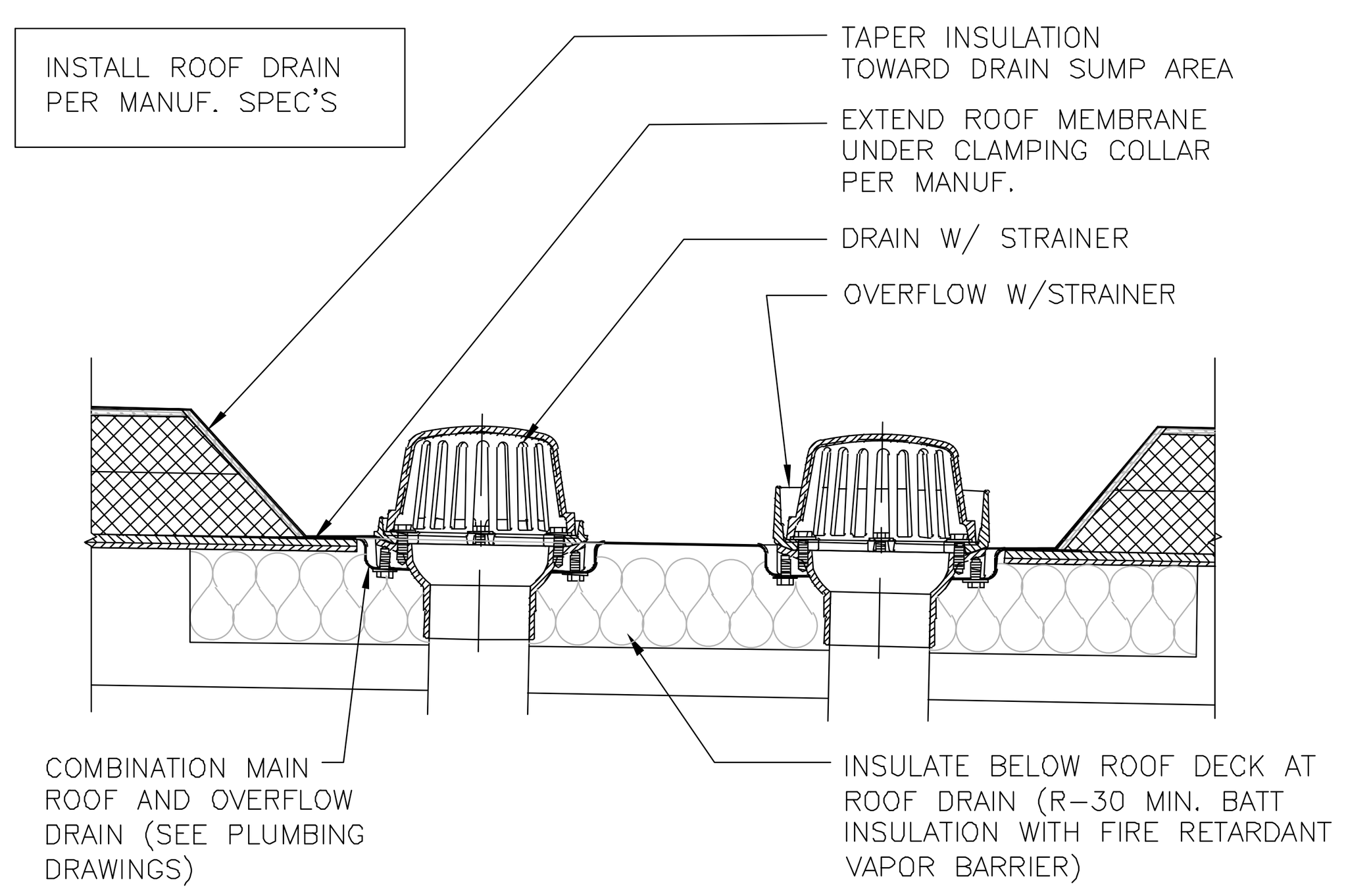
3 / A6.0 DETAIL @ EXHAUST FAN
1/2"=1'-0"

NOTE:
THIS DETAIL ILLUSTRATES THE METHOD TO ELIMINATING PITCH POCKETS AND THE METHOD OF GROUPING PIPING THAT MUST PENETRATE THE ROOF.

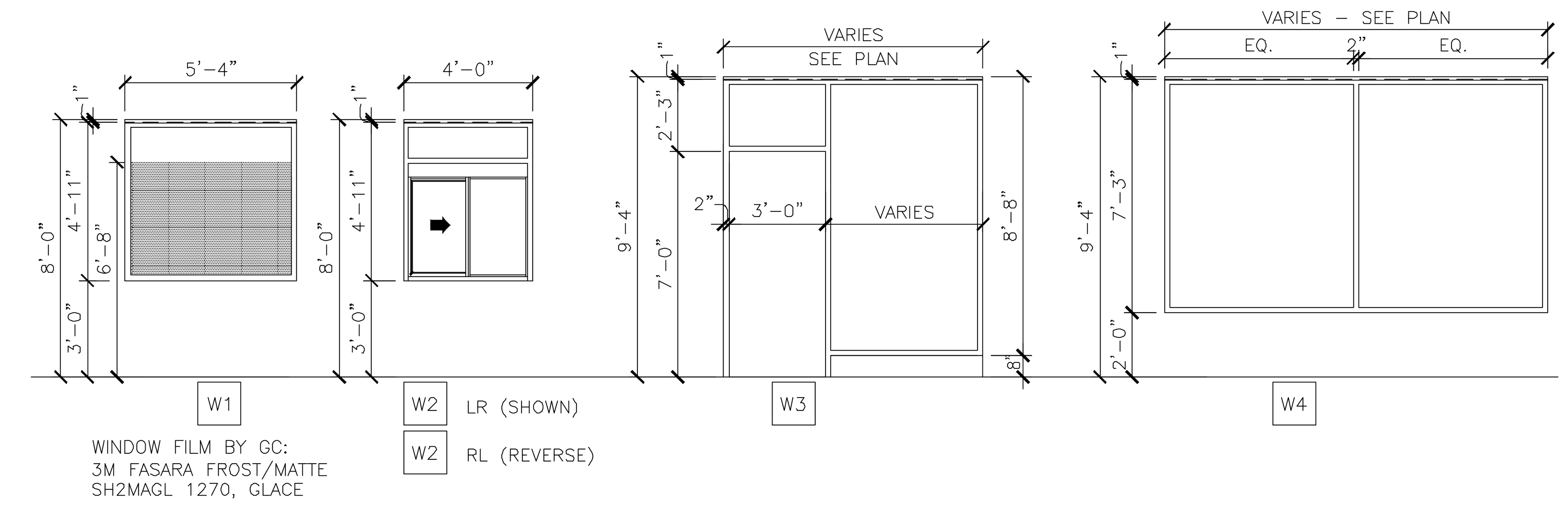


PORTALS PLUS IS A SUPPLIER OF PREFABRICATED ROOF ACCESSORIES AND DOES NOT ASSUME RESPONSIBILITY FOR ERRORS IN DESIGN, ENGINEERING OR INSTALLATION. THE ROOFING SYSTEM MANUFACTURER'S INSTALLATION REQUIREMENTS MAY SUPERSEDE THESE DETAILS FOR WARRANTED ROOF SYSTEMS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION

4 / A6.0 PIPE PORTAL DETAIL
1 1/2"=1'-0"



5 / A6.0 SECTION @ ROOF DRAIN
1 1/2"=1'-0"



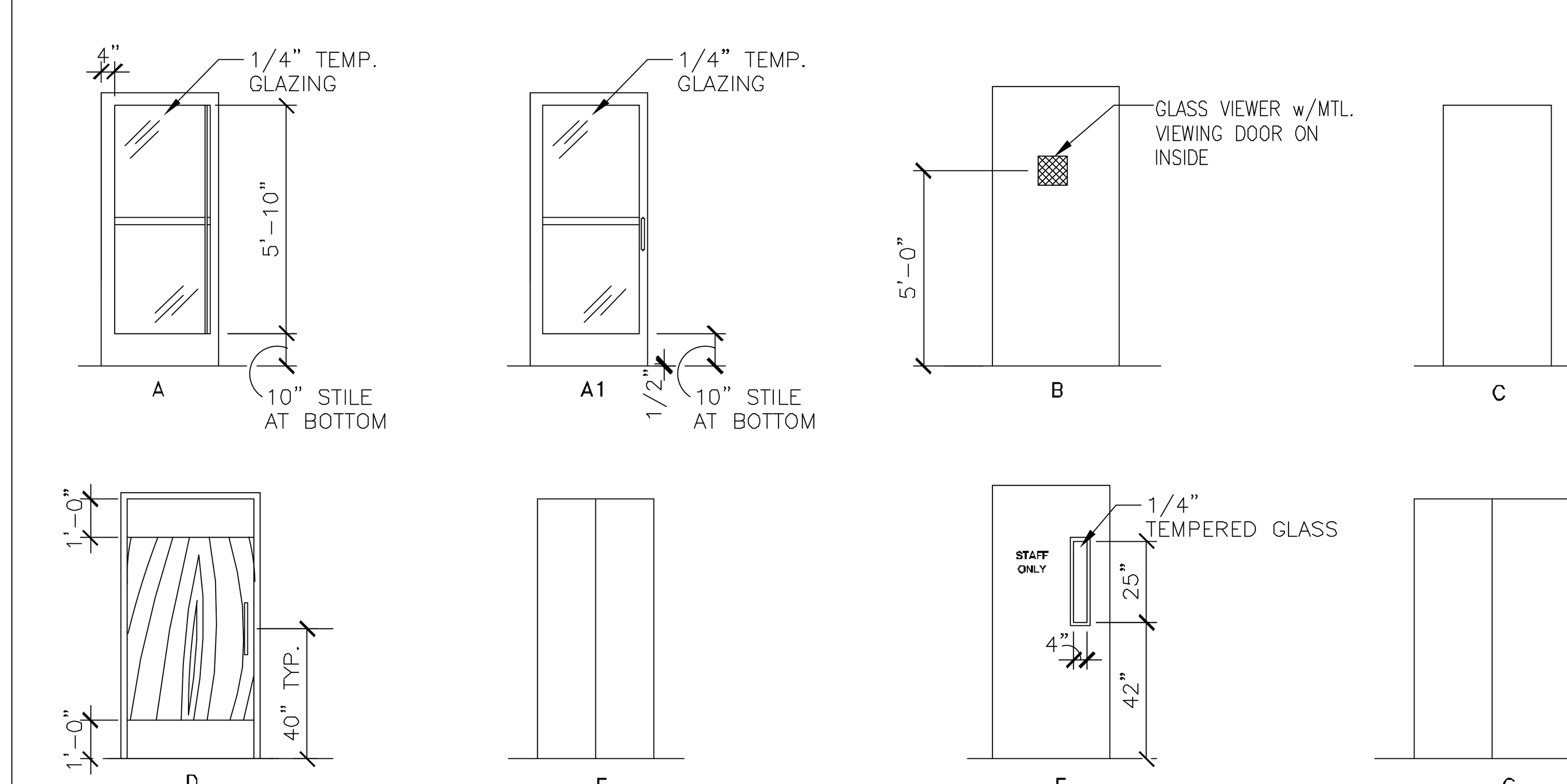
INTERIOR WINDOW ASSEMBLY
(STOREFRONT & ENTRANCE SYSTEM)
1. EXTRA DARK BRONZE ALUMINUM FRAME, THERMALLY BROKEN WITH HEAD RECEIVER CHANNEL.
2. 1/4" CLEAR TEMPERED GLAZING
3. 1/2" CORIAN SILL EACH SIDE

EXTERIOR WINDOW ASSEMBLY
(STOREFRONT & ENTRANCE SYSTEM)
FOR GLAZING & FRAME REQUIREMENTS: SEE EXTERIOR WINDOW ASSEMBLY, 4/A5.0

DOOR SCHEDULE

MARK	DOOR MATERIAL	DOOR SIZE	TYPE	DOOR FINISH	FRAME MATL	FRAME SIZE	FRAME FINISH
1	ALUM.	3'-0"x7'-0"x1 3/4"	A		ALUM.	(NOTE 5)	
2	ALUM.	3'-0"x7'-0"x1 3/4"	A1		ALUM.	(NOTE 5)	
2A	ALUM.	3'-0"x7'-0"x1 3/4"	A1		ALUM.	(NOTE 5)	
3	H.M.	4'-0"x7'-0"x1 3/4"	B	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY	H.M.	2"JAMB 4"HD	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY
3A	H.M.	5'-0"x7'-0"x1 3/4"	G	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY	H.M.	2"JAMB 4"HD	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY
4	H.M.	3'-0"x7'-0"x1 3/4"	B	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY	H.M.	2"JAMB 4"HD	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY
5	S.C. WOOD W/ LAM.	3'-0"x6'-8"x1 3/4"	C	PER DECOR PORTFOLIO, SEE BELOW	H.M.	2"JAMB & HD	PER DECOR PORTFOLIO, SEE BELOW
				LUNA: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: LAMITECH 1467 MT LINEAL OAK			LUNA: INT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN EXT PAINT: BENJAMIN MOORE 2121-10 GRAY
				RT 66: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: WILSONART D90-60 NORTH SEA			RT 66: INT PAINT: BENJAMIN MOORE 2121-10 GRAY EXT PAINT: BENJAMIN MOORE 2134-40 WHALE GRAY
				RAY: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: LAMITECH 2255 MT IRON			RAY: INT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN EXT PAINT: BENJAMIN MOORE 1631 MIDNIGHT OIL
6	S.C. WOOD W/ LAM.	3'-0"x4'-8"x1 3/4"	D	PER DECOR PORTFOLIO, SEE BELOW	H.M.	2"JAMB & HD	PER DECOR PORTFOLIO, SEE BELOW
6A	S.C. WOOD W/ LAM.	2'-6"x4'-8"x1 3/4"	D	PER DECOR PORTFOLIO, SEE BELOW	H.M.	2"JAMB & HD	PER DECOR PORTFOLIO, SEE BELOW
				LUNA: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: LAMITECH 1467 MT LINEAL OAK			LUNA: INT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN EXT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN
				RT 66: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: LAMITECH 1540 PR ONTARIO OAK			RT 66: INT PAINT: BENJAMIN MOORE 2121-10 GRAY EXT PAINT: BENJAMIN MOORE 2121-10 GRAY
				RAY: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: LAMITECH 1540 PR ONTARIO OAK			RAY: INT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN EXT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN
7	S.C. WOOD W/ LAM.	3'-2"x6'-8"x1 3/4"	C	LAMINATE: WILSONART D92-60 DOVE GREY	N/A	N/A	
8A	S.C. WOOD W/ LAM.	(2)1'-2"x8'-0"x1 3/4"	E	LAMINATE: WILSONART D92-60 DOVE GREY	H.M.	2"JAMB & HD	PAINT: BENJAMIN MOORE 2121-10 GRAY
9A	INSULATED METAL	3'-0"x6'-6"x4"	C		N/A	N/A	
9B	INSULATED METAL	4'-0"x6'-6"x4"	C		N/A	N/A	
10	H.M.	3'-0"x7'-0"x1 3/4"	F	PER DECOR PORTFOLIO, SEE BELOW	H.M.	2"JAMB & HD	PAINT FRAME TO MATCH DOOR
				LUNA: INT PAINT: BENJAMIN MOORE 2121-10 GRAY EXT PAINT: BENJAMIN MOORE 2121-10 GRAY			
				RT 66: INT PAINT: BENJAMIN MOORE 2121-10 GRAY EXT PAINT: BENJAMIN MOORE 2134-40 WHALE GRAY			
				RAY: INT PAINT: BENJAMIN MOORE 2121-10 GRAY EXT PAINT: BENJAMIN MOORE 1117 GUESTHOUSE			
15	H.M.	3'-0"x7'-0"x1 3/4"	C	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY	H.M.	2"JAMB 4" HD	INT: PAINT: BENJAMIN MOORE 2121-10 GRAY
16	S.C. WOOD W/ LAM.	3'-0"x7'-0"x1 3/4"	C	PER DECOR PORTFOLIO, SEE BELOW	H.M.	2"JAMB & HD	PER DECOR PORTFOLIO, SEE BELOW
				LUNA: INT LAMINATE: LAMITECH 1557 PR SEASON ASH EXT LAMINATE: WILSONART D92-60 DOVE GREY			LUNA: INT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN EXT PAINT: BENJAMIN MOORE 2121-20 GRAY
				RT 66: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: LAMITECH 1540 PR ONTARIO OAK			RT 66: INT PAINT: BENJAMIN MOORE 2121-10 GRAY EXT PAINT: BENJAMIN MOORE 2121-10 GRAY
				RAY: INT LAMINATE: LAMITECH 1540 PR ONTARIO OAK EXT LAMINATE: LAMITECH 1540 PR ONTARIO OAK			RAY: INT PAINT: BENJAMIN MOORE 2134-30 IRON MOUNTAIN EXT PAINT: BENJAMIN MOORE 2121-10 GRAY

GENERAL DOOR NOTES:
1. GC TO INSTALL ACCESSIBILITY DOOR SIGNS WHERE REQ'D BY LOCAL CODES – SEE GENERAL NOTE 6, SHEET A1.0.
2. ALARM CONTACT SWITCHES SHALL BE RECESSED INTO THE TOP OF THE DOOR & HOLLOW METAL FRAME ABOVE.
3. DOORS, DOOR FRAMES, & HARDWARE FOR DOORS 3, 3A, 4, 5, 6, 6A, 7, 8A, 10, 15, 16 SUPPLIED BY: UNIVERSAL MANUFACTURING 1-800-821-1414.
4. DOOR 9 SUPPLIED BY FREEZER/COOLER MANUFACTURER.
5. SEE ELEVATIONS AND WALL SECTIONS.
6. ALL INTERIOR SOLID CORE WOOD DOORS TO HAVE A LAMINATED FINISH.
7. DOOR 8A – 1" UNDERCUT FOR MAKE UP AIR.
8. DOOR 3, 3A, 4 & 15 TO HAVE MAXIMUM U VALUE = 0.61



DOOR TYPES

DOOR HARDWARE

GENERAL NOTES:
1. ALL EXIT DOORS SHALL BE KEYLESS IN THE DIRECTION OF EGRESS.
2. THE OPENING FORCE OF ALL EXT. PUSH/PULL DOORS SHALL NOT EXCEED 8 1/2 LBS.
3. THE OPENING FORCE OF ALL INTERIOR PUSH/PULL DOORS SHALL NOT EXCEED 5 LBS.
4. PROVIDE PANIC HARDWARE FOR ALL EXTERIOR DOORS AS NOTED ON THE DOOR SCHEDULE.
5. ALL DOOR HARDWARE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.

DOOR #1 – ENTRY DOOR/EMERGENCY EXIT
1. 1 EA CLOSER LCN 4021 x 18
2. 3 EA HINGES OFFSET PIVOT ANSI -A-156.4 GRADE 1; PROVIDE EXPOSED PARTS OF CAST ALUMINUM ALLOY, AS SUPPLIED BY DOOR MANUFACTURER.
3. 1 EA PULL HANDLE ROCKWOOD MFG. MODEL: RM3311. SIZE: 1-1/4" DIA. CTC: 5'-10". FINISH: TO MATCH STOREFRONT DOOR. OFFSET MOUNTING: TYPE 1XHD – THRU BOLT HEAVY DUTY
4. 1 EA PANIC HARDWARE ADAMS RITE MFG. CO. 8800 SERIES WITH OUTSIDE CYLINDER (FINISH TO MATCH STOREFRONT DOOR)
5. 1 EA THRESHOLD NATIONAL GUARD PRODUCTS, INC. SADDLE TYPE THRESHOLD 325, 36" WIDE x 1/2" RISE (ADA ACCESSIBLE).
6. 1 EA WEATHER STRIPPING: PROVIDE COMPRESSION WEATHER STRIPPING AGAINST FIXED STOPS. AT OTHER EDGES PROVIDE SLIDING WEATHER STRIPPING RETAINED IN ADJUSTABLE STRIP MORTISED INTO DOOR EDGE. PROVIDE EPDM OR VINYL GASKET WEATHER STRIPPING IN BOTTOM DOOR RAIL ADJUSTABLE FOR CONTACT W/ THRESHOLD.
7. 1 EA SIGN MOUNT ONTO DOOR, TO READ "THIS DOOR MUST REMAIN UNLOCKED WHENEVER THE BUILDING IS OCCUPIED/DURING BUSINESS HOURS."

DOOR #2 & #2A– VESTIBULE
1. 1 EA CLOSER LCN 4041 x 18
2. 3 EA HINGES OFFSET PIVOT ANSI -A-156.4 GRADE 1; BY DOOR MANUFACTURER.
3. 1 EA PUSH/PULL HANDLE HAGER PUSH/PULL SET 164D/V/B.
4. 1 EA (DOOR #2A) PANIC HARDWARE ADAMS RITE MFG. CO. 8800 SERIES WITH OUTSIDE CYLINDER (FINISH TO MATCH STOREFRONT DOOR)

DOOR #3 – STORAGE DELIVERY
1. 1 EA HINGE 780-112HD 83" ALUM HAGER
2. 1 EA CLOSER 4111 H-CUSH ALUM LCN
3. 1 EA PANIC 9975EO-LD 48" SP28 V.DUPRIN
4. 1 EA TRIM 990DT US26D V.DUPRIN
5. 1 EA ALARM LOCK PG21MSS ALARM
6. 1 EA LOCKGUARD CLP110 US32D DON-JO
7. 1 EA WTH/STP160V 48 X 84 N.GUARD
8. 1 EA SWEEP 101VA 48" N.GUARD
9. 1 EA VIEW FRAME LVGLFMD 9 X 9 DKB W/FLAP ON INSIDE N.GUARD
10. 1 EA MORTISE CYL HOUSING 7PIN SFIC 626
11. 1 EA 7 PIN CONSTRUCTION CORE FOR ABOVE 626
12. 1 EA CONTROL KEY FOR ABOVE
13. SEE A1.0 FOR 3/16" DIAMOND PLATE THRESHOLD BY DIAMOND PLATE PROTECTION CONTRACTOR
14. SEE A1.0 FOR 1/8" DIAMOND KICK PLATE SCOPE BY DIAMOND PLATE PROTECTION CONTRACTOR
15. (OPTIONAL) 1 EA THRESHOLD 325HD 48" N.GUARD

DOOR #3A – FREEZER DELIVERY (DOUBLE DOOR)
1. 2 EA CONTINUOUS HINGE A210HDC 83
2. 1 EA DEADBOLT B661P 626 SCHLAGE
3. 1 EA LATCH PROTECTOR CLP-110 630
4. 1 EA PULL H3E US28 HAGER
5. 1 EA GASKETING 160V 1 x 60" 2 x 84" SMS-TEKS 6 x 3/4"
6. 1 EA DRIP CAP 16 A 64" SMS-TEKS 6 x 3/4"
7. 2 EA SURFACE BOLT 275D 8" US26D
8. 1 EA SWEEP 101VA 24" N.GUARD
9. 1 EA SWEEP 101VA 36" N.GUARD
10. 1 EA OVERHEAD DOOR HOLDER 60-17-CON-SZ1-US32D-SX1N HAGER
11. 1 EA OVERHEAD DOOR HOLDER 60-17-CON-SZ2-US32D-SX1N HAGER
12. SEE A1.0 FOR 3/16" DIAMOND PLATE THRESHOLD BY DIAMOND PLATE PROTECTION CONTRACTOR
13. SEE A1.0 FOR 1/8" DIAMOND KICK PLATE SCOPE BY DIAMOND PLATE PROTECTION CONTRACTOR
14. (OPTIONAL) 1 EA THRESHOLD 325HD 60" N.GUARD

DOOR #4 – REAR EXIT
1. 1 EA HINGE 780-112HD 83" ALUM HAGER
2. 1 EA CLOSER 4111 H-CUSH ALUM LCN
3. 1 EA PANIC 9975EO-LD 36" SP28 V.DUPRIN
4. 1 EA TRIM 990DT US26D V.DUPRIN
5. 1 EA ALARM LOCK PG21MSS ALARM
6. 1 EA LOCKGUARD CLP110 US32D DON-JO
7. 1 EA TREADPLATE 24 X 34 UMCO
8. 1 EA WTH/STP160V 36 X 84 N.GUARD
9. 1 EA THRESHOLD 325HD 36" N.GUARD
10. 1 EA SWEEP 101VA 36" N.GUARD
11. 1 EA VIEW FRAME LVGLFMD 9 X 9 DKB W/FLAP ON INSIDE N.GUARD
12. 1 EA MORTISE CYL HOUSING 7PIN SFIC 626
13. 1 EA 7 PIN CONSTRUCTION CORE FOR ABOVE 626
14. 1 EA CONTROL KEY FOR ABOVE

DOOR #5 – RESTROOM ENTRY
1. 3 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
2. 1 EA CLOSER LDPA4031 SNB ALUM LCN
3. 1 EA PUSH PLATE 30S 4 X 32 US32D 40"AFF MOUNTED TO CENTER OF PLATE
4. 1 EA PULL PLATE LADDER PULL HANDLE WITH DECORATIVE FIXING, 32"L 1"DIA #S-32-1000 – UMCO 32D. 40" AFF MOUNTED CENTER OF PULL
   ALT. OPTION: 1 EA PULLPLATE SANITGRASP
   ALT. OPTION: 1 EA PULL-PUSH BUTTON CYLINDRICAL LOCK – TRILOGY DL2700 US26D CHROME
5. 2 EA KICKPLATE 190S 8 X 34 US32D HAGER
6. 1 EA DOOR STOP 236W US32D HAGER
7. 1 EA FINGER GRD MKIA PUSH SIDE BRN F.SAFE
8. 1 EA FINGER GRD MKIB PULL SIDE BRN F.SAFE
9. 1 EA STEPNPULL PULL SIDE (OPTIONAL)

DOOR #6 – ADA STALL
1. 2 EA HINGE 1250 4 ½ X 4 ½ US26D HAGER
2. 1 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
3. 1 EA DEADBOLT B571 X 10-087 214EE X 12 X 291 X 626 SCHLAGE
4. 2 EA BACK TO BACK LADDER PULL HANDLE, 16"L, 1"DIA #S-16-1000 BTB-UMCO 32D MOUNTED 6" FROM EDGE OF DOOR TO CENTER OF SCREWS – 28½" MOUNTED 28½" FROM TOP OF DOOR TO C/L OF PULL
5. 1 EA ROBE HOOK 917 BRADLEY
6. 1 EA DOOR STOP 236W US32D HAGER

DOOR #6A – STANDARD STALL
1. 2 EA HINGE 1250 4 ½ X 4 ½ US26D HAGER
2. 1 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
3. 1 EA DEADBOLT B571 X 10-087 214EE X 12 X 291 X 626 SCHLAGE
4. 2 EA BACK TO BACK LADDER PULL HANDLE, 16"L, 1"DIA #S-16-1000 BTB-UMCO 32D MOUNTED 6" FROM EDGE OF DOOR TO CENTER OF SCREWS – 28½" MOUNTED 28½" FROM TOP OF DOOR TO C/L OF PULL
5. 1 EA ROBE HOOK 917 BRADLEY
6. 1 EA DOOR STOP 236W US32D HAGER

DOOR #7 – DINING ROOM JANITORS CLOSET
1. 1 EA NGP SLSS1 TOP MOUNT BARN DOOR TRACK, STAINLESS STEEL – 78-3/4", SOFT CLOSE
2. 1 EA ROCKWOOD 872 CAST FLUSH PULL 1-5/16 X 3-1/8", SATIN CHROMIUM PLATED 626/US26D

DOOR #8A – COMPUTER CLOSET
1. 8 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
2. 1 EA LOCK ND80PD RHO 626 SCHLAGE
3. 2 EA FLUSH BOLT 283D US26D HAGER
4. 2 EA LOUVER L-700-RX, AFDL 6 X 18 N.GUARD

DOOR #9A & #9B – COOLER
1. ALL DOOR HARDWARE FOR THE REFRIGERATED COOLER / FREEZER SHALL BE PROVIDED BY THE MANUFACTURER.
   MANUFACTURER: KOLPAK @ HY 641 N. McCORKLE PARK ROAD PARSONS, TN 38363 PHONE: 800-344-4675
   HARDWARE PROVIDED:
   1. MAGNETIC PERIMETER DOOR GASKET
   2. THRESHOLD REINFORCED PLASTIC (FRP)
   3. POSI-SEAL DOOR CLOSURE
   4. STATIONARY CHROME DOOR PULL HANDLE
   5. INTERIOR SAFETY RELEASE HANDLE
   6. HINGES – BRUSHED CHROME CAST ALLOY

DOOR #10
1. 1 EA HINGE 780-112HD 83" ALUM HAGER
2. 1 EA CLOSER 1461 RW/PA ALUM LCN
3. 1 EA LOCK ND80PD RHO 626 SCHLAGE
   OPTIONAL – FOR OUTSWING DOOR REPLACE WITH 3A&B:
   3A. 1 EA PANIC 9975EO-LD 36" SP28 V.DUPRIN
   3B. 1 EA TRIM 990DT US26D V.DUPRIN
4. 1 EA ELEC STRIKE 6211 24V DC FSE US32D SCHLAGE
5. 1 EA PWR SUPPLY PS902 SCHLAGE
6. 1 EA ANNUNCIATOR BSV-24P SURFACE MOUNTED
7. 3 EA PUSH BUTTON 621-BK-DA HDP 626 SCHLAGE
8. 1 EA PUSH BUTTON 621-RD-DA HDP 626 SCHLAGE
9. 1 EA HORN WITH STROBE 1910S SCHLAGE
10. 1 EA GLASS 5 X 26 X ¼ UMCO
11. 1 EA VIEW FRAME LFRA100 6 X 27 DKB N.GUARD

DOOR #15 CO2
1. 1 EA HINGE 780-112HD 83" ALUM HAGER
2. 1 EA LOCK ND80PD RHO 626 SCHLAGE
3. 1 EA LOCK GUARD CLP110 US32D DON JO
4. 1 EA WTH/STP 160V 36 X 84 N.GUARD
5. 1 EA THRESHOLD 425E 36" N.GUARD
6. 1 EA SWEEP 101VA 36" N.GUARD
7. 1 EA SEC. LOUVER LVRSG-3 DKB 18 X 18 N.GUARD

DOOR #16 CREW ROOM
1. 3 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
2. 1 EA ND60PD RHO VESTIBULE LEVER LOCK SCHLAGE

DOOR #17 DUMPSTER
1. 1 EA HINGE 780-112HD 83" ALUM HAGER
2. 1 EA DEADBOLT B661P 626 SCHLAGE
3. 1 EA PULL H3E US28 HAGER
4. 1 EA LOCKGUARD CLP110 US32D DON-JO
5. 1 EA TREADPLATE 24 X 46 UMCO
6. 1 EA WTH/STOP 160V 48 X 84 N.GUARD
7. 1 EA THRESHOLD 32HD 48" N.GUARD
8. 1 EA SWEEP 101VA 48" N.GUARD
9. 1 EA SEC. LOUVER LVRSG-3 DKB 12 X 12 N.GUARD

REV	DATE	DESCRIPTION	BY

WILLIAM T. STAMBAUGH REGISTERED NO. 860037 STATE OF INDIANA ARCHITECT

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR:
McDonald's USA, LLC
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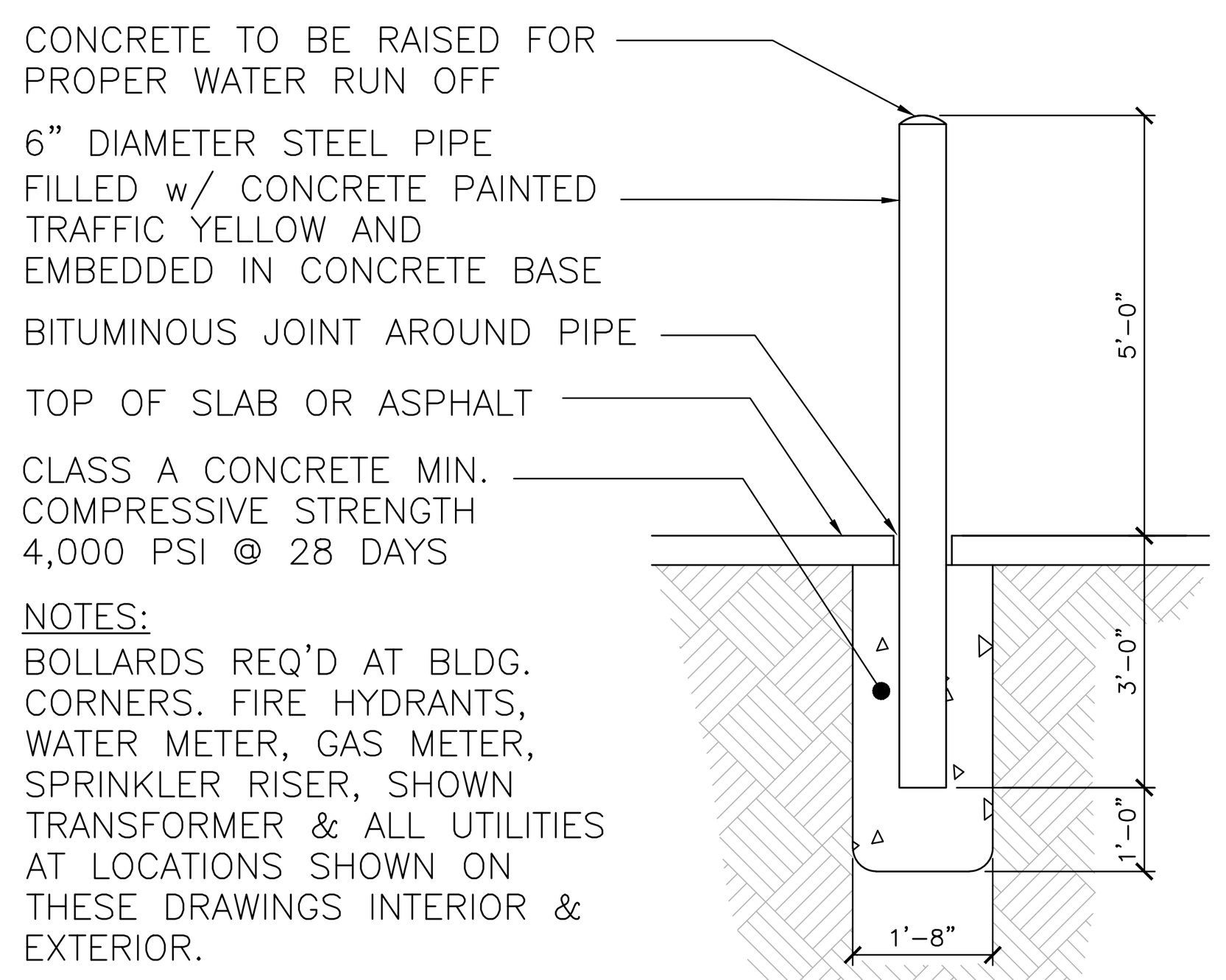
DRAWN BY: mbh
STD ISSUE DATE: 2025 10
REVIEWED BY: WTS
DATE ISSUED: 11.24.2025

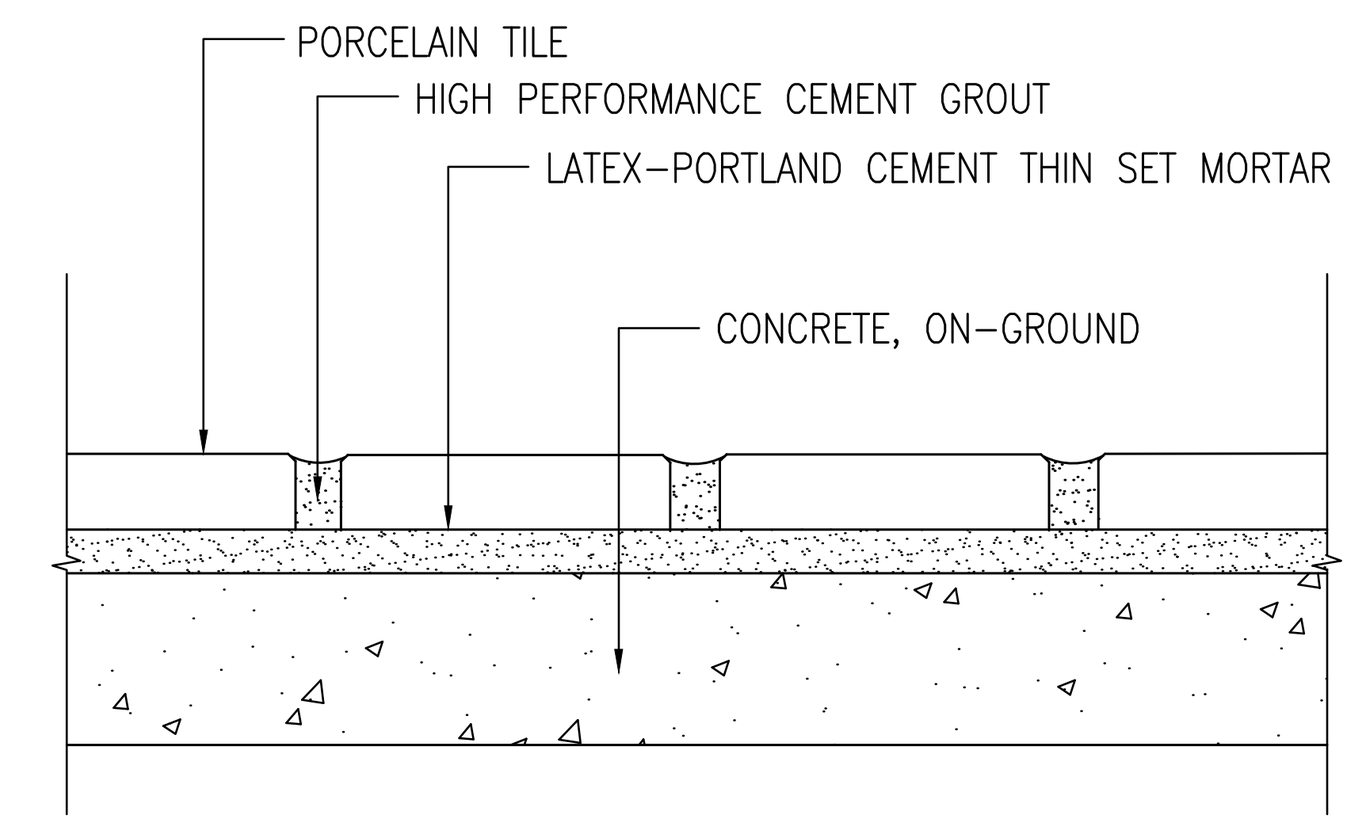
TITLE: 2025 OPTIMIZED BUILDING – BB20 4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 45201 | SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
L/C: 13263

013.1263.00.0
SHEET NO. A6.0
DOOR & HARDWARE

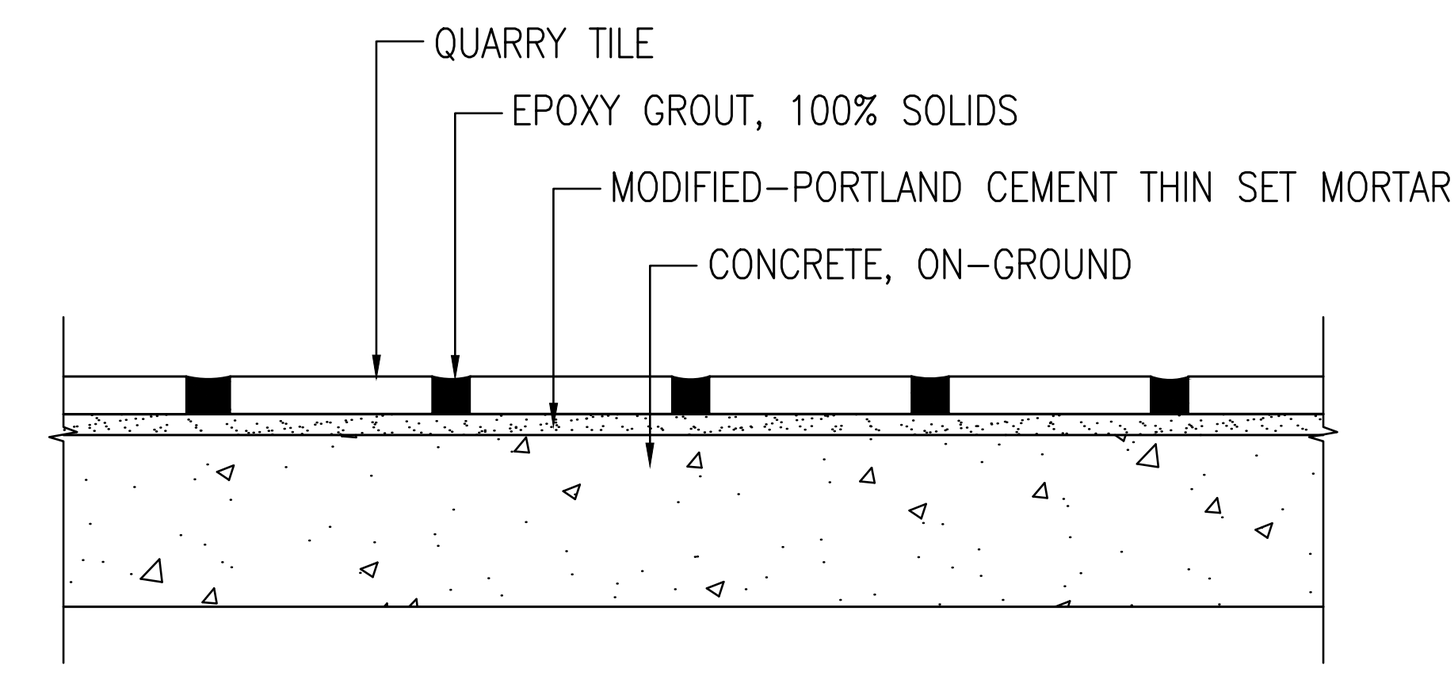


NOTES:
BOLLARDS REQ'D AT BLDG. CORNERS. FIRE HYDRANTS, WATER METER, GAS METER, SPRINKLER RISER, SHOWN TRANSFORMER & ALL UTILITIES AT LOCATIONS SHOWN ON THESE DRAWINGS INTERIOR & EXTERIOR.

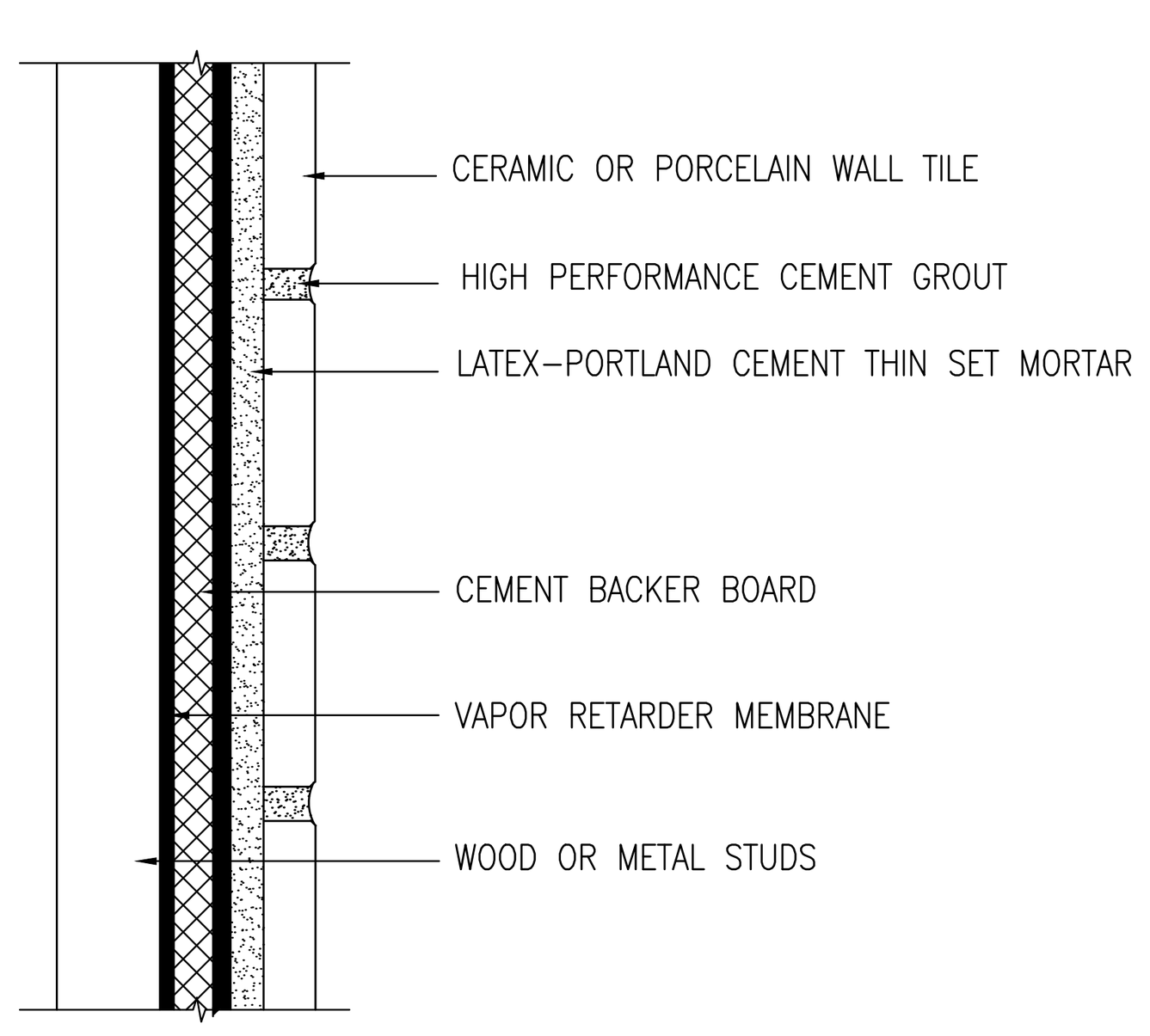
1 / A6.1 BOLLARD DETAIL
N.T.S.



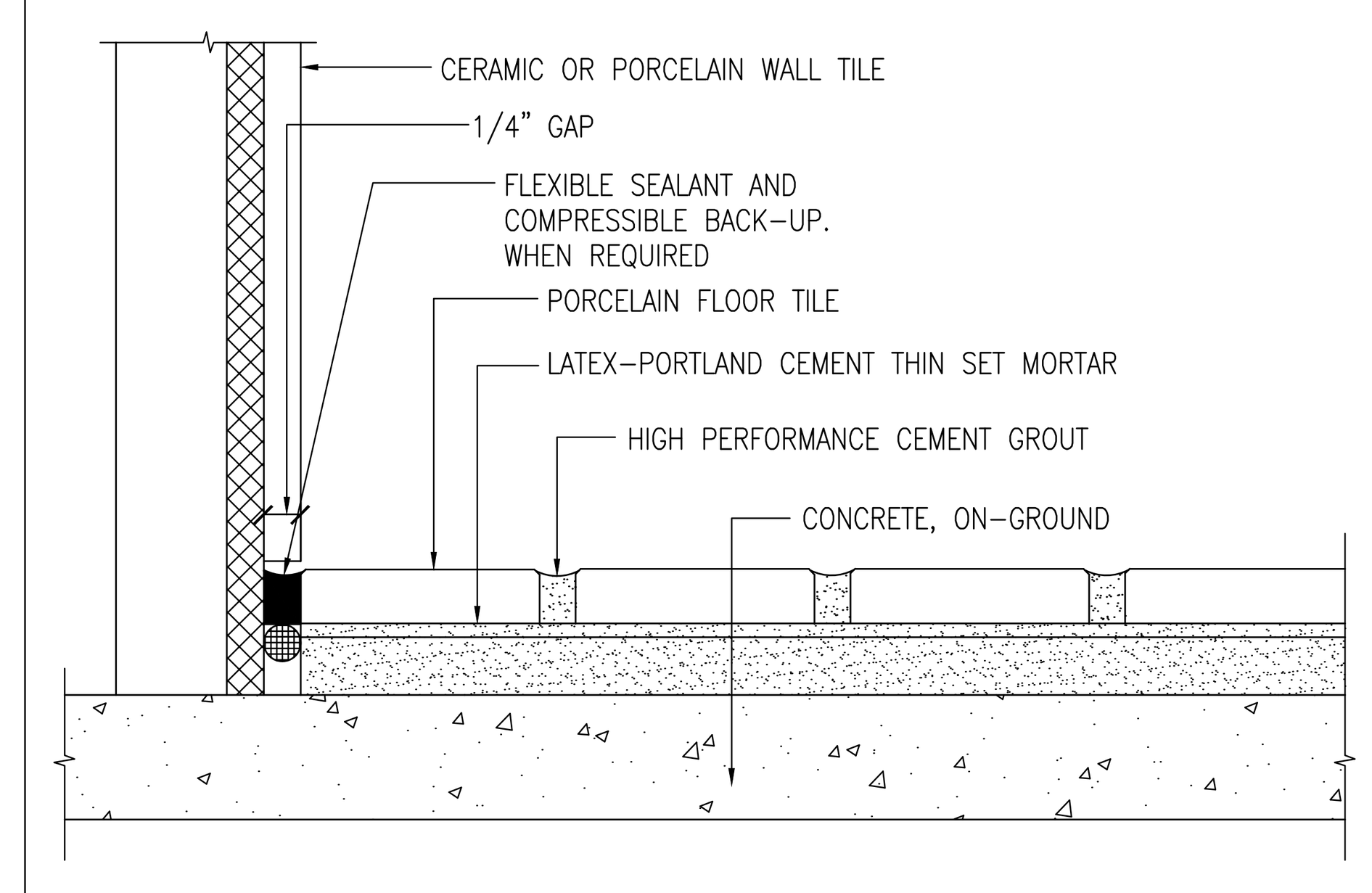
2 / A6.1 RESTROOM AND DINING ROOM FLOORS OVER CONCRETE
N.T.S.



3 / A6.1 KITCHEN/SUPPORT FLOORS OVER CONCRETE
N.T.S.



4 / A6.1 DINING ROOM INTERIOR WALLS OVER WOOD OR METAL STUDS
N.T.S.



5 / A6.1 DINING ROOM PERIMETER JOINT
N.T.S.

WALL TILE SCHEDULE - ROUTE 66

MARK	ROOM NAME	WALL		MORTAR SETTING BED	GROUT
100	CUSTOMER SERVICE	CERAMIC OR PORCELAIN WALL TILE	(NOTE 5C)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
101	DINING	SEE DINING ROOM FINISH SCHEDULE	(NOTE 5B & 5C)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
102	WOMEN'S TOILET	CERAMIC OR PORCELAIN WALL TILE	(NOTE 4)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT (NOTE 4)
103	MEN'S TOILET	CERAMIC OR PORCELAIN WALL TILE	(NOTE 4)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT (NOTE 4)
104	SUPPORT	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
105	KITCHEN	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
106	PRESENTER-1	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
107	ORDER	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
108	MANAGER'S OFFICE	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
109	CREW ROOM	SEE ROOM FINISH SCHEDULE	(NOTE 5B)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
110	COOLER	N/A - SEE ROOM FINISH SCHEDULE		----	----
111	FREEZER	N/A - SEE ROOM FINISH SCHEDULE		----	----
112	COMPUTER CLOSET	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
113	CREW ALCOVE	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
114	JANITOR'S CLOSET	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
115	VESTIBULE	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
116	PRESENTER-2	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
117	CO2	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT

FLOOR TILE SCHEDULE - ROUTE 66

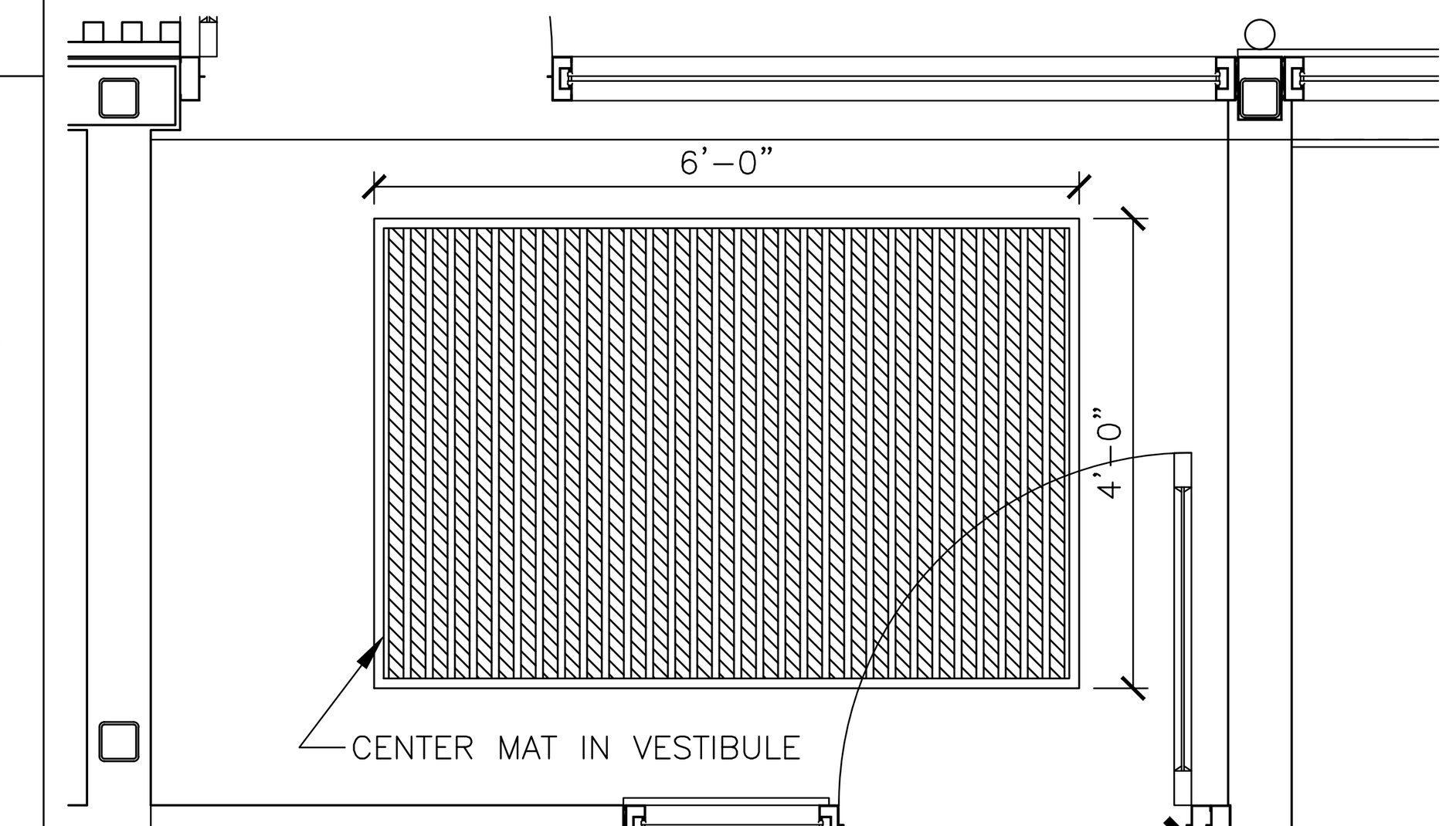
MARK	ROOM NAME	FLOOR	BASE	MORTAR SETTING BED	GROUT
100	CUSTOMER SERVICE	PORCELAIN FLOOR TILE (NOTE 3)	NONE - WALL TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
101	DINING	PORCELAIN FLOOR TILE (NOTE 3)	NONE - WALL TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
102	WOMEN'S TOILET	PORCELAIN FLOOR TILE (NOTE 4)	NONE - WALL TILE (NOTE 5A)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
103	MEN'S TOILET	PORCELAIN FLOOR TILE (NOTE 4)	NONE - WALL TILE (NOTE 5A)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
104	SUPPORT	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
105	KITCHEN	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
106	PRESENTER-1	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
107	ORDER	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
108	MANAGER'S OFFICE	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
109	CREW ROOM	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
110	COOLER	QUARRY TILE (NOTE 2)	4" ALUM. COVED BASE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
111	FREEZER	QUARRY TILE (NOTE 2)	4" ALUM. COVED BASE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
112	COMPUTER CLOSET	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
113	CREW ALCOVE	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
114	JANITOR'S CLOSET	PORCELAIN FLOOR TILE	COVED QUARRY TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
115	VESTIBULE	PORCELAIN FLOOR TILE	NONE - WALL TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
116	PRESENTER-2	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY - 100% SOLIDS, INDUSTRIAL-GRADE
117	CO2	N/A - SEE ROOM FINISH SCHEDULE	----	----	----

GENERAL FINISH NOTES:

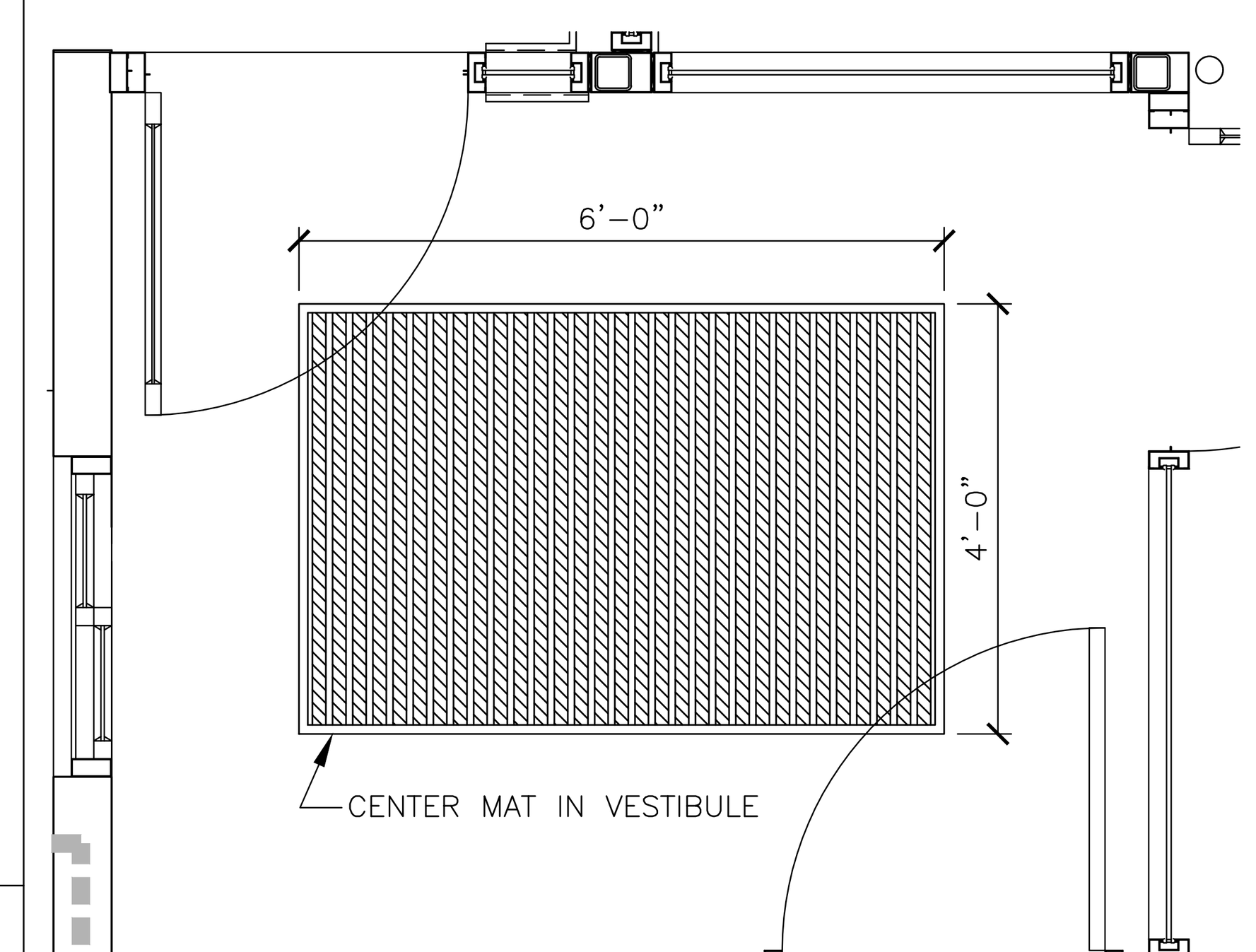
1. REFERENCE: McDONALD'S PROJECT MANUAL - SECTION 093000
2. KITCHEN FLOOR TILE:
   TILE: CROSSVILLE 6"x6" 'METROPOLITAN QUARRY BASICS ABRASIVE'
   GROUT: CHARCOAL #47 BY MAPEI
   KERAPOXY IEG BLACK #10 BY MAPEI (FOR OPTIONAL GREY TILE)
   COLOR: PURITAN GRAY EXTRA ABRASIVE 57XA (STANDARD)
3. DINING ROOM FLOOR TILE:
   TILE: CROSSVILLE 24"x24" 'CLOUD NINE'
   GROUT: MAPEI ULTRACOLOR IRON 107 - JOINT 1/8" MAX.
4. RESTROOM TILE:
   MAIN WALL TILE: ICG ITALIA - ARCHITECT 12"x24" 'FACTORY'
   ACCENT WALL TILE: ICG ITALIA - SHELTER 4"x12" 'BIANCO MATTE'
   RESTROOM SINK & HAND DRYER PANEL: CORIAN - CAMEO WHITE
   FLOOR TILE: ICG ITALIA - NEW GROUND 12"x24" 'ANTHRACITE'
   GROUT: MAPEI ULTRACOLOR CHARCOAL 47 - JOINT 1/8" MAX
5. TILE TRANSITION AND EDGE PROTECTION:
   A) TILE BASE (RESTROOM ONLY): SCHLUTER DILEX-AHK SERIES, BRUSHED STAINLESS STEEL.
   B) TILE EDGE PROTECTION (WALL TRANSITION): SCHLUTER-RONDEC-DB, SATIN ANODIZED ALUMINUM.
   C) TILE CORNER PROTECTION (OUTSIDE CORNER): SCHLUTER-RONDEC-AE, SATIN ANODIZED ALUMINUM.

   BEFORE FINAL INSPECTION, REMOVE PROTECTIVE COVERINGS AND PERFORM FINAL CLEANING.
6. TILE CLEANER: DETERDEK, BY FILA SURFACE CARE PRODUCTS - NO SUBSTITUTIONS ALLOWED
   CAN BE ORDERED BY ICG ITALIA, CROSSVILLE, OR DIRECT FROM MANUFACTURER: FILA/DETEREK
   POST INSTALLATION CLEANING REQUIRED ON ALL FLOOR TILE INSTALLTIONS PRIOR TO RESTAURANT TURN OVER.

   APPLY CLEANER PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
   REFERENCE: McDONDALD'S PROJECT MANUAL - SECTION 09300 TILING INTERIOR.
7. GROUT COLOR AND MANUFACTURER AS INDICATED ON SHEET A1.0 AND INTERIOR DECOR DRAWINGS.



NON-DRIVE THRU - PEDI MAT



PEDIMAT BY CONSTRUCTION SPECIALITIES
- RAIL/FRAME FINISH: CLEAR ANODIZED
- CARPET INSERT: #7325 WROUGHT IRON
CONTACT: NATIONAL ACCOUNTS DIVISION
PHONE: (888) 424-6287
FAX: (908) 849-4295
NATIONALACCOUNTS@C-SGROUP.COM

OPTIONAL: VERIFY WITH MCDONALD'S CONSTRUCTION MANAGER

DRIVE THRU - PEDI MAT

7 / A6.1 PEDIMAT (OPTIONAL)
1/2" =1'-0"

ROOM FINISH SCHEDULE - ROUTE 66

MARK	ROOM NAME	WALLS			CEILING *	REMARKS
		SUBSTRATE	FINISH			
100	CUSTOMER SERVICE	CEMENT BOARD	TILE **	TILE AS NOTED ON A1.0 AND A3.1	2'x2' VINYL-FACED LAY-IN	
101	DINING	CEM BD/GYP BD	TILE/V.W.C. **	SEE DINING ROOM FINISH SCHEDULE	SEE DINING ROOM FINISH SCHEDULE	
102	WOMEN'S TOILET	CEMENT BOARD	TILE		PAINTED GYP. BD.	BENJAMIN MOORE - "OC-17 WHITE DOVE"
103	MEN'S TOILET	CEMENT BOARD	TILE		PAINTED GYP. BD.	BENJAMIN MOORE - "OC-17 WHITE DOVE"
104	SUPPORT	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	SEE NOTE 5 FOR WALL FINISH EXCEPTIONS
105	KITCHEN	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	SEE SHEET A1.0 FOR EXTENT OF CEMENT BOARD, SS OR CT
106	PRESENTER -1	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	
107	ORDER	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	
108	MANAGER'S AREA	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	
109	CREW ROOM	CEM BD/GYP BD	TILE/V.W.C. **	SEE NOTE 8	2'x2' ACOUST. LAY-IN	
110	COOLER	N/A	PREFAB METAL SKIN PANEL		PRE-FAB METAL SKIN PANEL	BASE SUPPLIED BY KES
111	FREEZER	N/A	PREFAB METAL SKIN PANEL		PRE-FAB METAL SKIN PANEL	BASE SUPPLIED BY KES
112	COMPUTER CLOSET	CEMENT BOARD	TILE		PAINTED GYP. BD.	
113	CREW ALCOVE	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	SEE SHEET A1.0 FOR EXTENT OF CEMENT BOARD, SS OR CT
114	JANITOR'S CLOSET	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	PAINTED GYP. BD.	EXT GRADE PLYWOOD (NOTE 4)
115	VESTIBULE	CEM BD/GYP BD	TILE/V.W.C.	SEE DINING ROOM FINISH SCHEDULE	SEE DINING ROOM FINISH SCHEDULE	OPTIONAL PEDIMAT. SEE DETAIL 7/A6.1. VERIFY WITH MCD CONSTRUCTION MANGER
116	PRESENTER -2	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	
117	CO2	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	PAINTED GYP. BD.	SEE NOTE 7

DINING ROOM FINISH SCHEDULE - ROUTE 66

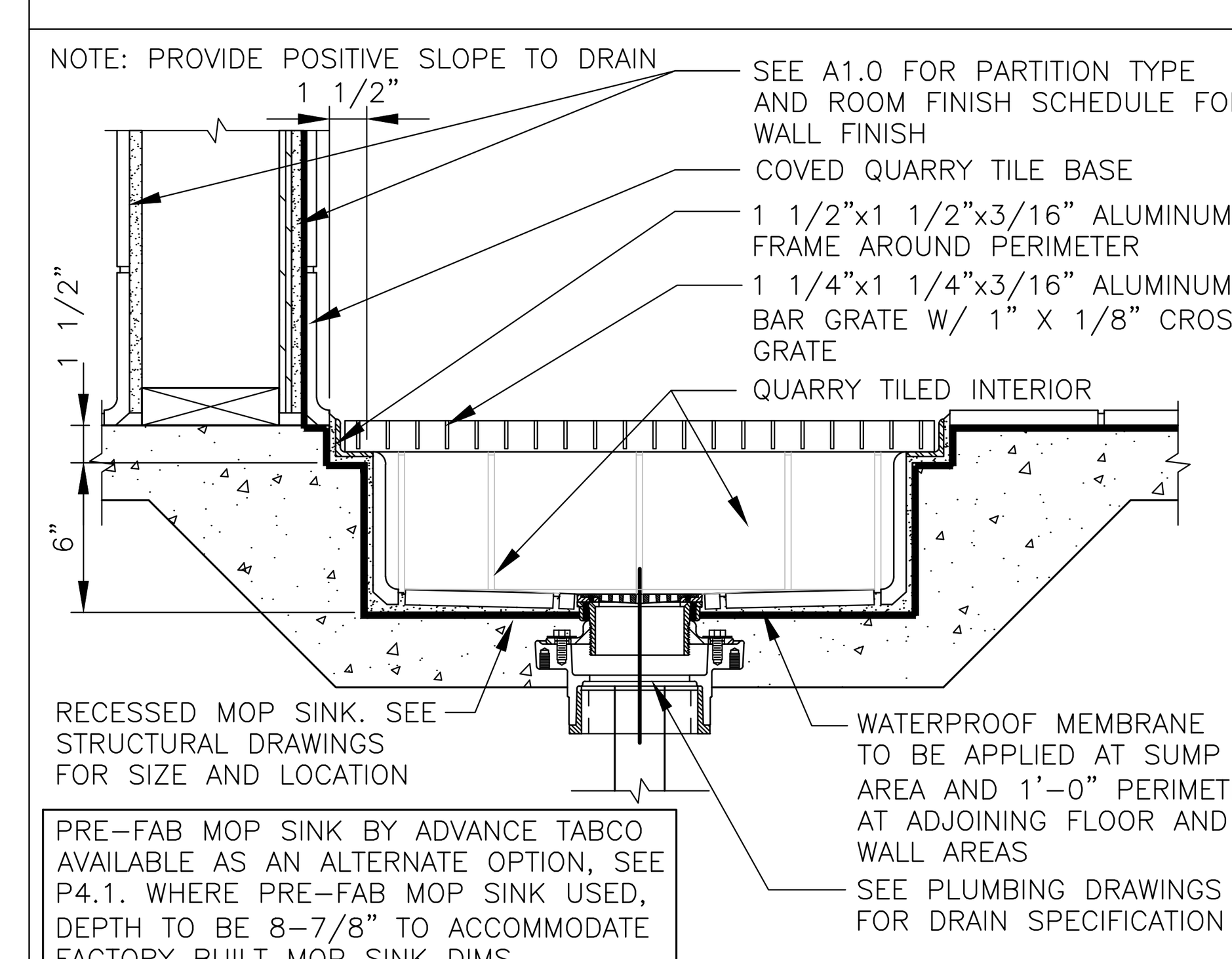
QUANTITY	TYPE	PRODUCT, FINISH & COLOR	REMARKS
N/A	WAINSCOT TILE	CROSSVILLE - CLOUD NINE 24"x24"	GROUT: MAPEI ULTRACOLOR IRON 107 - JOINT 1/8" MAX
N/A	WALL TILE	ICG ITALIA - WHITE GLOSSY CHEVRON	GROUT: MAPEI ULTRACOLOR CHARCOAL 47 - JOINT 1/16" MAX
N/A	WALLCOVERING	MOMENTUM - NA-5C-MC503 GREY STRIPE	
N/A	WALLCOVERING	MOMENTUM - NA-5C-MC501 SEED + FRY WOOD	
N/A	WALLCOVERING	MOMENTUM - NA-5C-MC500 ROUTE 66 WOODGRAIN	
N/A	WALLCOVERING	MOMENTUM - NA-5C-MC506 MDP-1776-12-2 US MAP MURAL	
N/A	WALLCOVERING	MOMENTUM - NA-5C-MC502 BLUE BURGER MURAL	
N/A	SERVICE AREA TRIM	SCHLUTER - RONDEC - SATIN ANODIZED ALUMINUM	
N/A	WINDOW SILLS AND CASEMENT	DUPONT - CORIAN "DEEP TITANIUM"	
N/A	MAIN CEILING TILE	USG - FROST 450 "MANILA 246" 24"X48"	
N/A	MAIN CEILING GRID	USG - DX/DXL INTERMEDIATE DUTY GRID "MANILA 246"	VENT PAINT: BENJAMIN MOORE - AF-15 STEAM
N/A	CEILING SOFFIT	ACOUSTICAL SURFACES INC. - CHEESY SOFFIT MOLDED PANEL SYSTEM 47"x170"	
SEE PLAN	PENDANT LIGHTING	CS ILLUMINATION - PENDANT MOUNT SESAME SEED CHROME FIXTURE	SEE ELECTRICAL
SEE PLAN	PENDANT LIGHTING	CS ILLUMINATION - PENDANT MOUNT 5' CHROME BOAT FIXTURE	SEE ELECTRICAL

GENERAL FINISH NOTES:

1. ALL FINISH SURFACES OF WALL AND CEILING MATERIALS SHALL BE CLASS B AND SHALL HAVE A FLAME SPREAD RATING OF 26 TO 75 AND A SMOKE DENSITY OF 450 MAX. (PER IBC TABLE 803.9).
2. DECORATIVE MATERIALS SHALL BE FLAME RETARDANT AND MEET THE CRITERIA OF NFPA 701.
3. DECORATIVE MATERIAL SHALL NOT CONCEAL EXITS, EXIT LIGHTS, ALARM STATIONS, HOSE CABINETS, AND EXTINGUISHER LOCATIONS
4. WHEN BUILDING TYPE IS A NON-COMBUSTIBLE CATEGORY, ALL PLYWOOD SHALL BE FIRE RETARDANT TREATED.
6. PROVIDE CEMENT BOARD BACKER OR EQUIVALENT AT ALL TILE LOCATIONS.
7. PROVIDE VAPOR BARRIER BEHIND PLYWOOD AT WALLS AND BEHIND GYP. AT CEILING
8. CREW ROOM FINISHES:
   NORTH WALL: MOMENTUM WALL GRAPHIC - VIS703.
   EAST/WEST/SOUTH WALLS: TILE WAINSCOT TO 3' A.F.F. - ICG ITALIA ARCHITECT FACTORY 12"x24". TILE COVE BASE - ICG ITALIA ARCHITECT FACTORY 6"x12". ROUTE 66 WOOD WALL COVERING - MOMENTUM NA-5C-MC500 - ROUTE 66 WOODGRAIN.

   *TILE OPTION FOR HEALTH CODE: WAINSCOT - ICG ITALIA MA.DE UNI GRIGIO 12"x24". TILE COVE BASE - ICG ITALIA UNI GRIGIO 6"x12".
9. ALL DECOR ELEMENTS MANUFACTURED BY DECOR TO BE PURCHASED AND INSTALLED BY GC, UNO.

* SEE CEILING PLAN FOR HEIGHTS & LAYOUTS
** VWC ON EXTERIOR WALL ASSEMBLIES TO BE PERFORATED



PRE-FAB MOP SINK BY ADVANCE TABCO AVAILABLE AS AN ALTERNATE OPTION, SEE P4.1. WHERE PRE-FAB MOP SINK USED, DEPTH TO BE 8-7/8" TO ACCOMMODATE FACTORY BUILT MOP SINK DIMS.

8 / A6.1 MOP SINK
1 1/2"=1'-0"

REV	DATE	DESCRIPTION	BY

WILLIAM T. STAMBAUGH REGISTERED NO. 860037 STATE OF INDIANA ARCHITECT

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR: McDonald's USA, LLC
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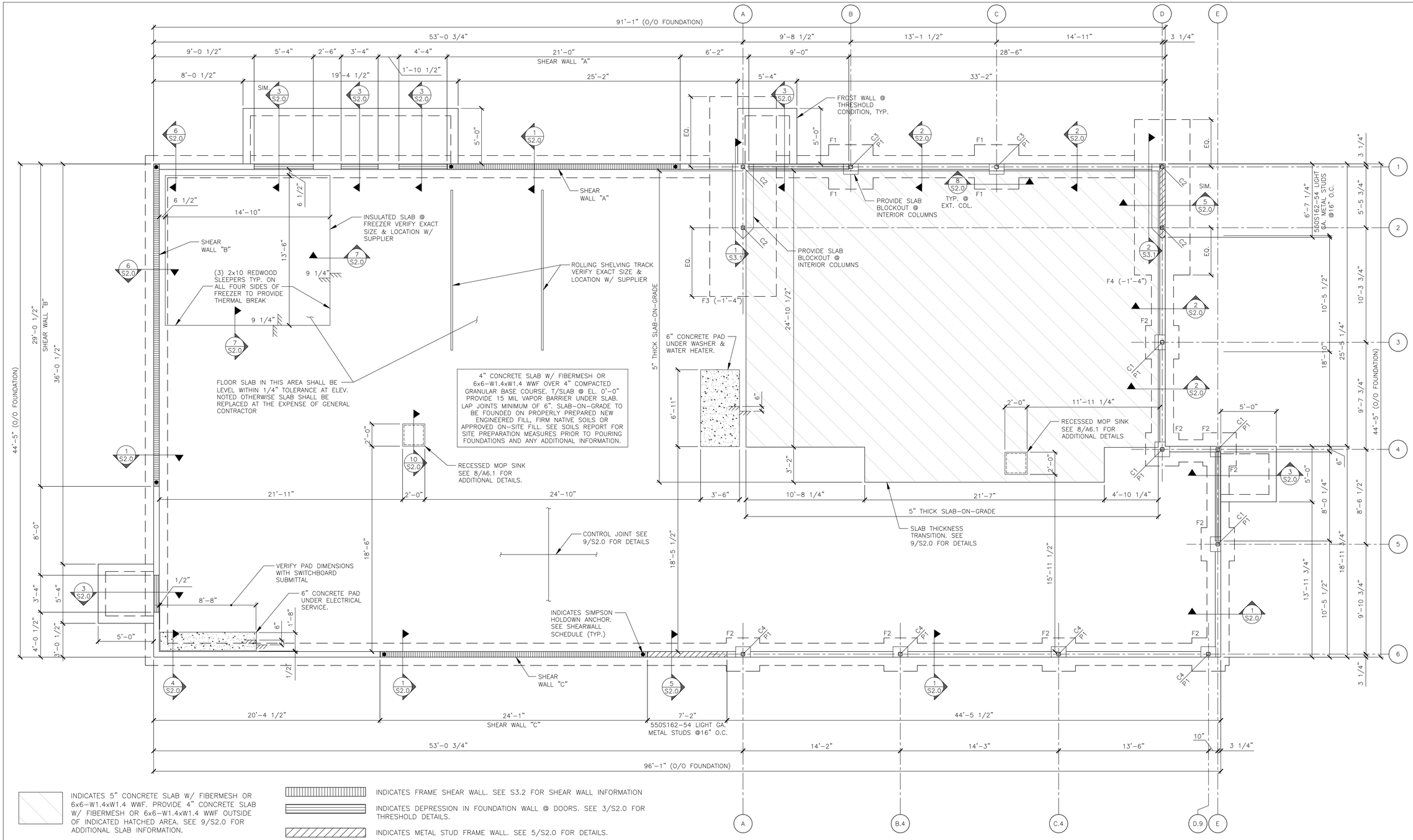
DRAWN BY: mbh
STD ISSUE DATE: 2025 10
REVIEWED BY: WTS
DATE ISSUED: 11.24.2025

TITLE: 2025 OPTIMIZED BUILDING - BB20 4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci; WOOD TRUSS ROOF FRAMING; CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 45201 | L/C: 13263
SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO. 013.1263.00.0
A6.1
FINISH SCHEDULES



INDICATES 5" CONCRETE SLAB W/ FIBERMESH OR 6x6-W1.4xW1.4 WWF. PROVIDE 4" CONCRETE SLAB W/ FIBERMESH OR 6x6-W1.4xW1.4 WWF OUTSIDE OF INDICATED HATCHED AREA. SEE 9/S2.0 FOR ADDITIONAL SLAB INFORMATION.

INDICATES FRAME SHEAR WALL. SEE S3.2 FOR SHEAR WALL INFORMATION

INDICATES DEPRESSION IN FOUNDATION WALL @ DOORS. SEE 3/S2.0 FOR THRESHOLD DETAILS.

INDICATES METAL STUD FRAME WALL. SEE 5/S2.0 FOR DETAILS.

1 S1.0 FOUNDATION PLAN

1/4"=1'-0"

NOTES:
1. TOP OF FOOTING @ EL. (-2'-8") UNLESS NOTED OTHERWISE.
2. TOP OF PIER @ EL. (-0'-8") UNLESS NOTED OTHERWISE.
3. SEE SHEET S4.0 FOR GENERAL STRUCTURAL NOTES.
4. PROVIDE POSITIVE DRAINAGE TO ALL FLOOR DRAINS/SINKS (MIN 6") BEYOND DRAIN) SEE PLUMBING DRAWINGS FOR EXACT LOCATIONS
5. SEE SHEET S2.0 FOR TYPICAL CORNER BAR DETAILS.
6. MINIMUM REQUIREMENTS FOR SILL PLATE CONNECTION TO FOUNDATION:
   MINIMUM # OF BOLTS = 2 PER PIECE OF SILL
   MAXIMUM DISTANCE FROM END OF SILL TO ANCHOR = 12"
   MINIMUM DISTANCE FROM END OF SILL TO ANCHOR = 4"
7. WHERE SILL PLATES ARE NOT CONTINUOUS AT ALL LOCATIONS EXCEPT SHEAR WALLS, USE SIMPSON "RPS22Z" TIE FOR NOTCH < 5 1/2", USE SIMPSON "RPS28Z" FOR NOTCH < 12", W/ 16d NAILS INTO SILL PLATE ENDS. (MAX. SPACING BETWEEN STUDS = 16" O.C.)
8. WHERE SILL PLATES ARE NOT CONTINUOUS AT SHEAR WALLS, CONTACT ENGINEER OF RECORD FOR RESPONSE.

FOOTING SCHEDULE

MARK	SIZE	REINFORCING
F1	4'-0"x4'-0"x1'-0"	5-#5 E.W.-B.
F2	3'-0"x3'-0"x1'-0"	4-#5 E.W.-B.
F3	6'-0"x18'-0"x3'-0"	14-#7 L.W.-T&B #6 @ 12" O.C. S.W.-T&B
F4	5'-0"x14'-0"x3'-0"	11-#7 L.W.-T&B #6 @ 12" O.C. S.W.-T&B

PIER SCHEDULE

MARK	SIZE	REINFORCING	REMARKS
P1	1'-4"x1'-4"	4-#6 VERT. #4 TIES @ 12" O.C.	SEE DETAIL 8/S2.0

COLUMN & BASE PLATE SCHEDULE

MARK	MEMBER	SHAPE	BASE PLATE	REMARKS
C1	HSS4x4x1/4	⊕	A	EXTEND TO ROOF
C2	HSS4x4x5/16	⊕	B	BRACED FRAME
C3	HSS4x4x5/16	⊕	A	EXTEND TO ROOF
C4	HSS4x4x1/4	⊕	A	EXTEND TO ROOF

NOTE: SEE DETAIL 3/S3.1 FOR BASE PLATE AND ANCHOR ROD DETAILS

REV	DATE	DESCRIPTION	BY

THOMAS M. MILLER
REGISTERED
No. PE60910397
STATE OF INDIANA
PROFESSIONAL ENGINEER

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR:
McDonald's USA, LLC

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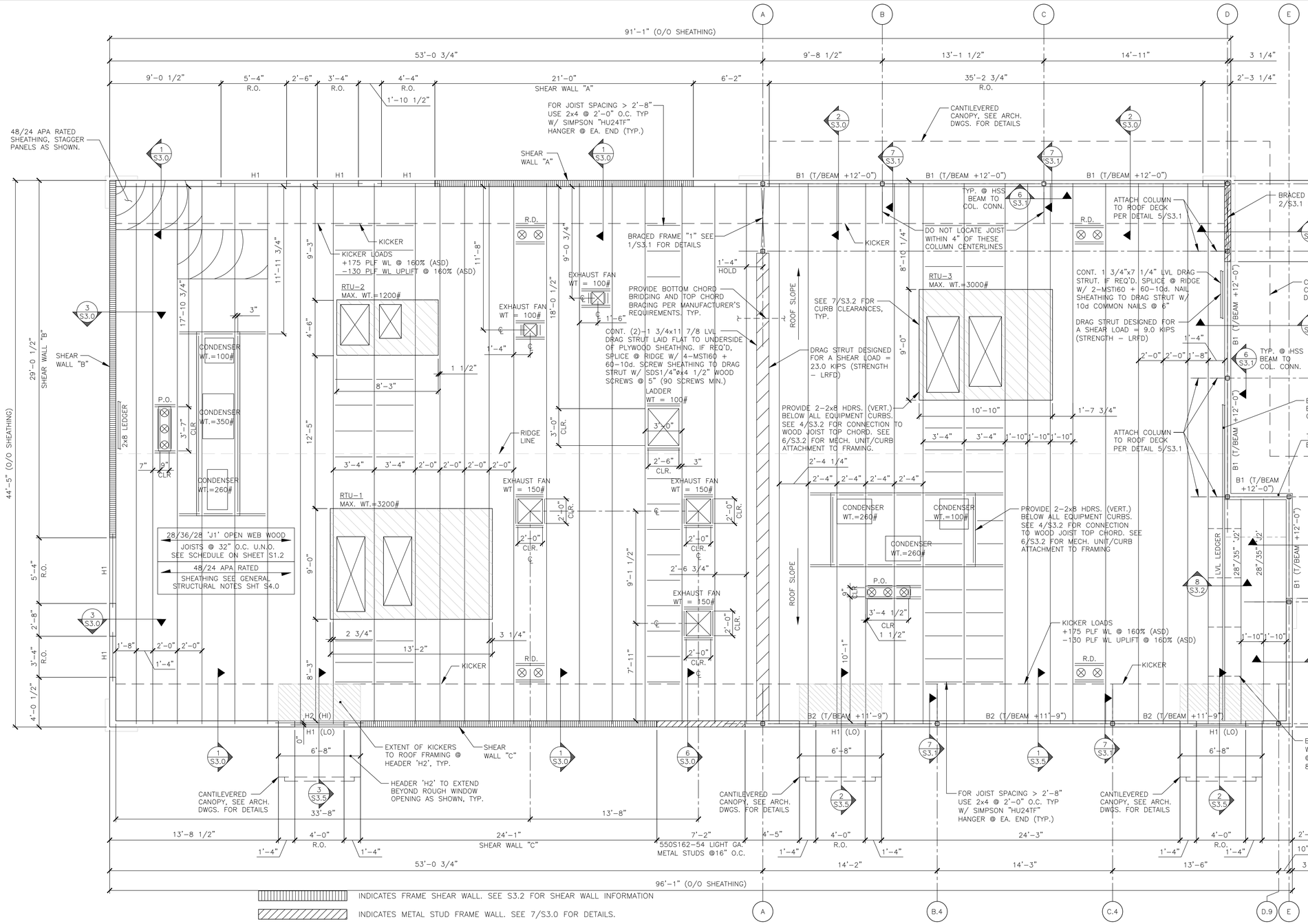
DRAWN BY: –
STD ISSUE DATE: 2025 10
REVIEWED BY:
DATE ISSUED: 10.22.2025

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 44862
SITE ADDRESS
13263
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO.
013.1263.00.0
S1.0
FOUNDATION PLAN



INDICATES FRAME SHEAR WALL. SEE S3.2 FOR SHEAR WALL INFORMATION

INDICATES METAL STUD FRAME WALL. SEE 7/S3.0 FOR DETAILS.

INDICATES ALLOWABLE RTU PLACEMENT ZONE. RTU VENDOR/SUPPLIER, MODEL AND WEIGHTS SHALL BE VERIFIED PRIOR TO INSTALLATION FOR COORDINATION AND FINAL TRUSS DESIGN VERIFICATION. G.C. TO PROVIDE (2)–2x8 HDRS. BELOW RTU CURBS PER DETAIL 4/S3.2 AND COORDINATE LOCATIONS WITH MANUFACTURER CURB SPECIFICATIONS.

INDICATES RTU SUPPLY/RETURN ROOF DECK PENETRATIONS. G.C. TO PROVIDE (2)–2x8 HDRS. AT PERIMETER OF ALL PENETRATIONS/OPENINGS PER DETAIL 4/S3.2 AND COORDINATE EXTENT WITH MANUFACTURER SPECIFICATIONS.

1 S1.2 FRAMING PLAN

1/4"=1'-0"

NOTE TO CONTRACTOR:
ANY SPRINKLER LINES GREATER THAN 3" DIAMETER SHALL BE VERIFIED BY THE SPRINKLER CONTRACTOR PRIOR TO TRUSS FABRICATION.

NOTES:
1. SEE SHEET S4.0 FOR GENERAL STRUCTURAL NOTES.
2. R.D.: ROOF DRAINS
3. P.O.: ROOF CURB PORTAL OPENING – COORDINATE WITH MECHANICAL DRAWINGS.
4. WHEN TOP PLATES ARE NOT CONTINUOUS, USE SIMPSON "RPS22" TIE FOR NOTCH < 5 1/2", USE SIMPSON "RPS28" TIES FOR NOTCH < 12", W/ 16d NAILS INTO TOP PLATE ENDS. (MAX. SPACING BETWEEN STUDS = 16" O.C.)
5. TOP PLATE SPLICE SHALL BE MINIMUM LENGTH OF 48" WITH 2 ROWS (2 1/2" APART) OF 22–16d COMMON NAILS SPACED @ 2" ON CENTER (44 TOTAL).
6. SEE 5/S3.2 FOR SNOW DRIFT DIAGRAM.

BEAM SCHEDULE

MARK	MEMBER	SHAPE	SUPPORT	REMARKS
B1	HSS16x4x1/4 LLV	▯	1/2" END PLATE	SEE DETAIL 6/S3.1
B2	HSS12x4x1/4 (LLV)	▯	1/2" END PLATE	SEE DETAIL 8/S3.21

HEADER SCHEDULE

MARK	MEMBER	SHAPE	BEARING
H1	5 1/4"x9 1/2" LVL	▯	SEE DETAIL 2/S3.2
H2	5 1/4"x16" LVL	▯	SEE DETAIL 3/S3.5 & 2/S3.2

JOIST SCHEDULE

MARK	LIVE/ROOF SNOW LOAD	DEPTH	MANUFACTURER & SERIES
J1	20/21	28"/36"/28"	REDBUILT "RED–S"
J2	20/21	28"/35"	REDBUILT "RED–S"

NOTE: SEE DETAIL 4/S3.2 FOR JOIST DETAILS AND SUPPLIER INFORMATION

REV	DATE	DESCRIPTION	BY

THOMAS M. MINTNER REGISTERED No. PE60910397 STATE OF INDIANA PROFESSIONAL ENGINEER

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR: McDonald's USA, LLC

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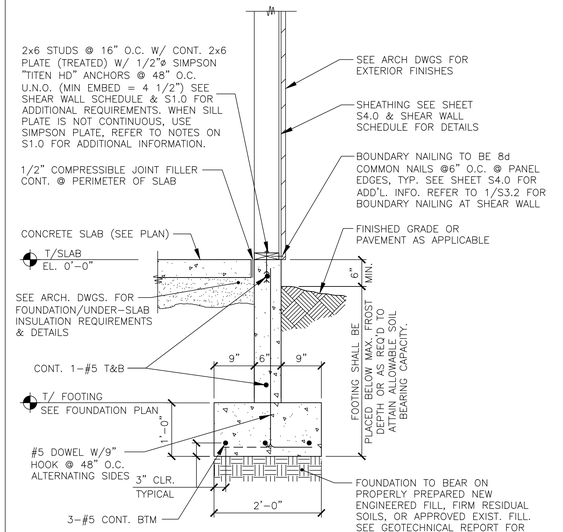
DRAWN BY: –
STD. ISSUE DATE: 2025 10
REVIEWED BY:
DATE ISSUED: 10.22.2025

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

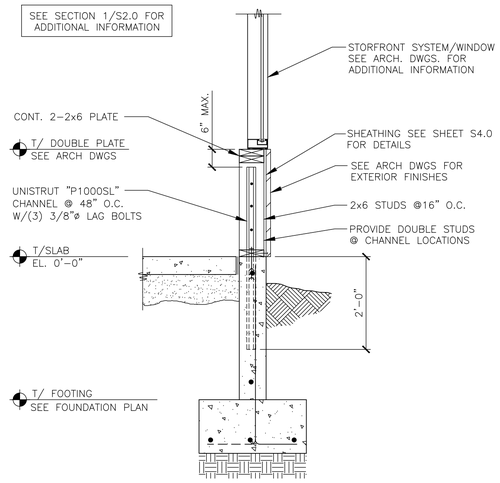
NSN: 44464 SITE ADDRESS: 13263 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO. 013.1263.00.0
S1.2
ROOF FRAMING PLAN



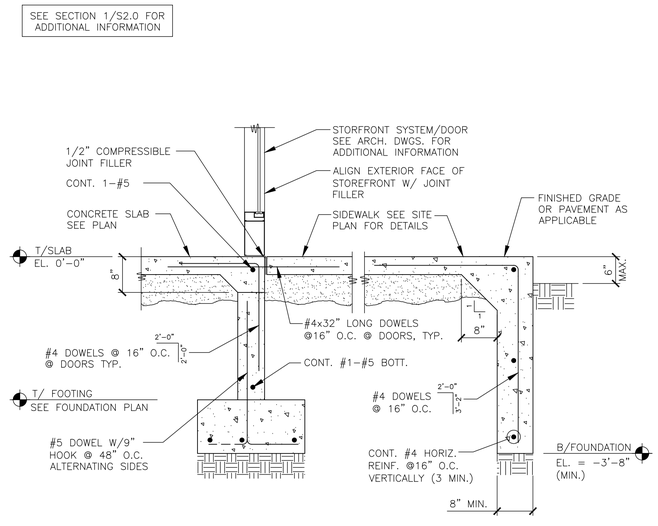
1 S2.0 SECTION 3/4" = 1'-0"

SEE SECTION 1/S2.0 FOR ADDITIONAL INFORMATION



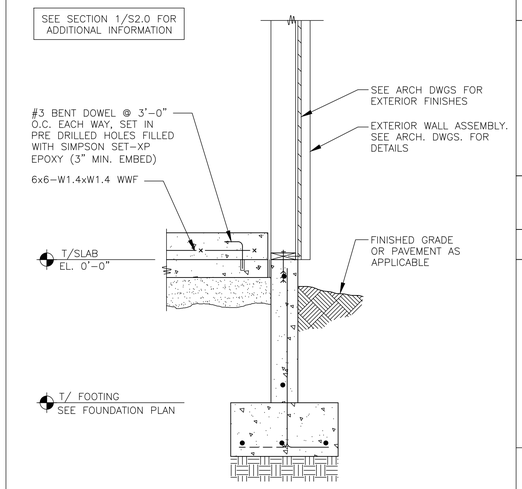
2 S2.0 SECTION 3/4" = 1'-0"

SEE SECTION 1/S2.0 FOR ADDITIONAL INFORMATION



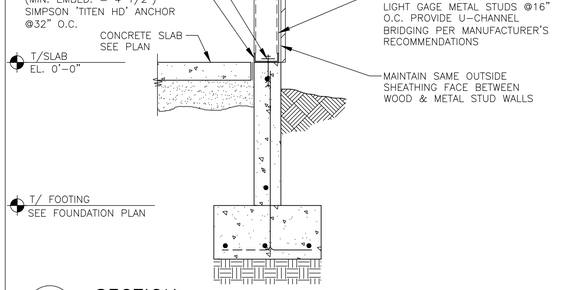
3 S2.0 SECTION 3/4" = 1'-0"

SEE SECTION 1/S2.0 FOR ADDITIONAL INFORMATION



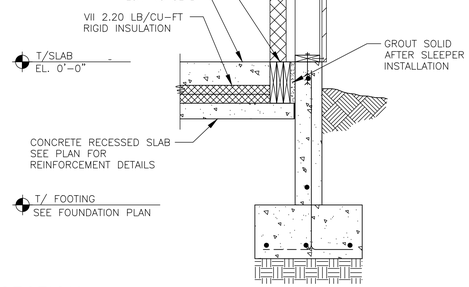
4 S2.0 SECTION 3/4" = 1'-0"

SEE SECTION 1/S2.0 FOR ADDITIONAL INFORMATION

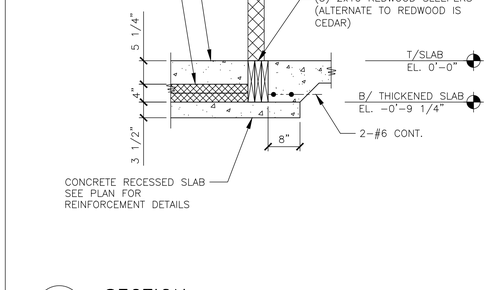


5 S2.0 SECTION 3/4" = 1'-0"

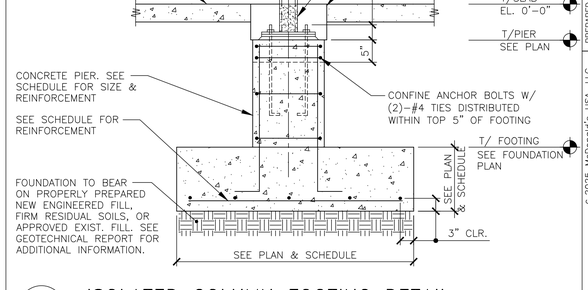
SEE SECTION 1/S2.0 & 7/S2.0 FOR ADDITIONAL INFORMATION



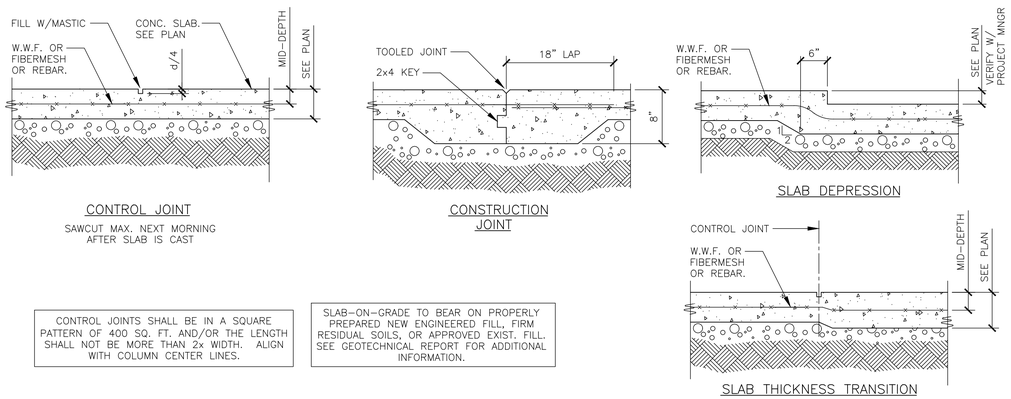
6 S2.0 SECTION 3/4" = 1'-0"



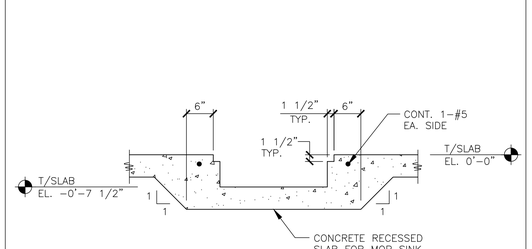
7 S2.0 SECTION 3/4" = 1'-0"



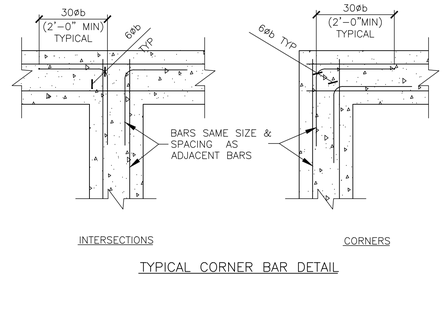
8 S2.0 ISOLATED COLUMN FOOTING DETAIL 3/4" = 1'-0"



9 S2.0 SLAB ON GRADE DETAILS N.T.S.



10 S2.0 RECESSED SLAB DETAIL 3/4" = 1'-0"



TYPICAL CORNER BAR DETAIL

11 S2.0 CORNER BAR DETAILS N.T.S.

LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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THOMAS M. MILNER REGISTERED No. PE60910397 STATE OF INDIANA PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	BY

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE

PREPARED FOR: McDonald's USA, LLC

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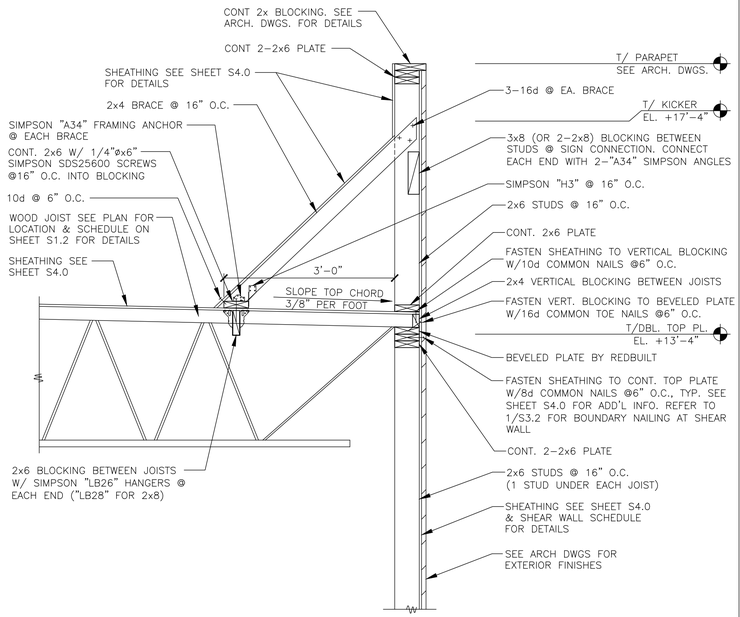
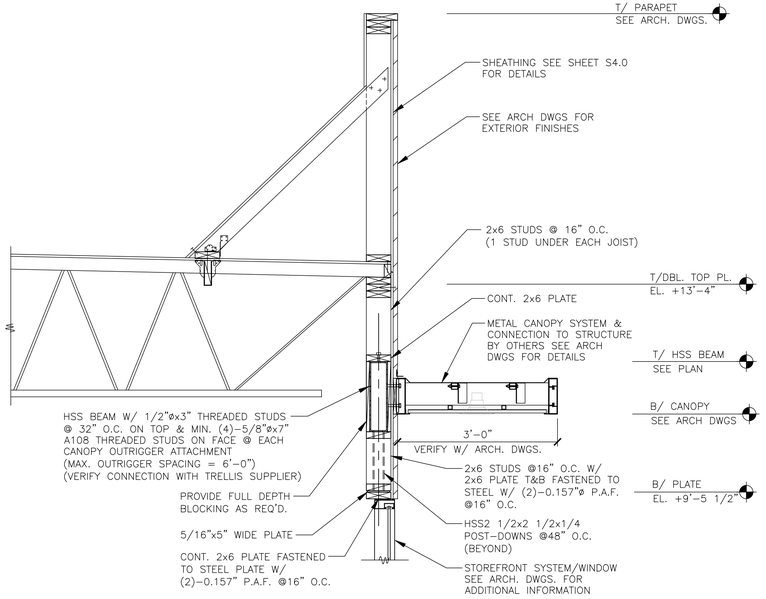


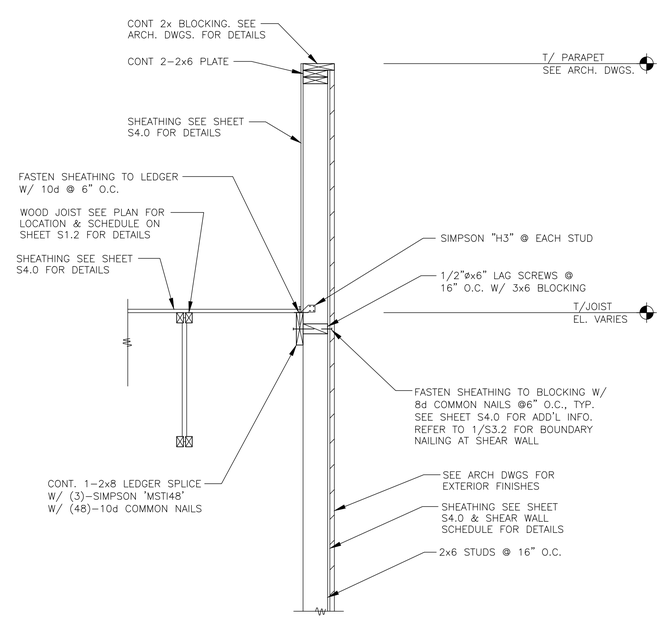
1 S3.0 SECTION
3/4" = 1'–0"

SEE SECTION 1/S3.0 FOR ADDITIONAL INFORMATION



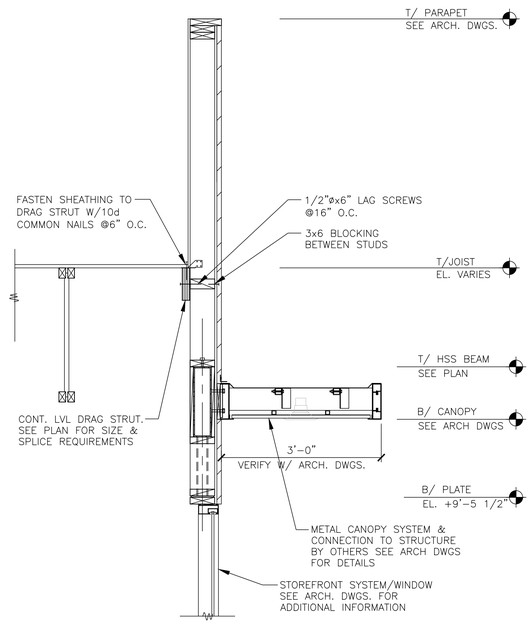
2 S3.0 SECTION
3/4" = 1'–0"

SEE SECTION 1/S3.0 FOR ADDITIONAL INFORMATION



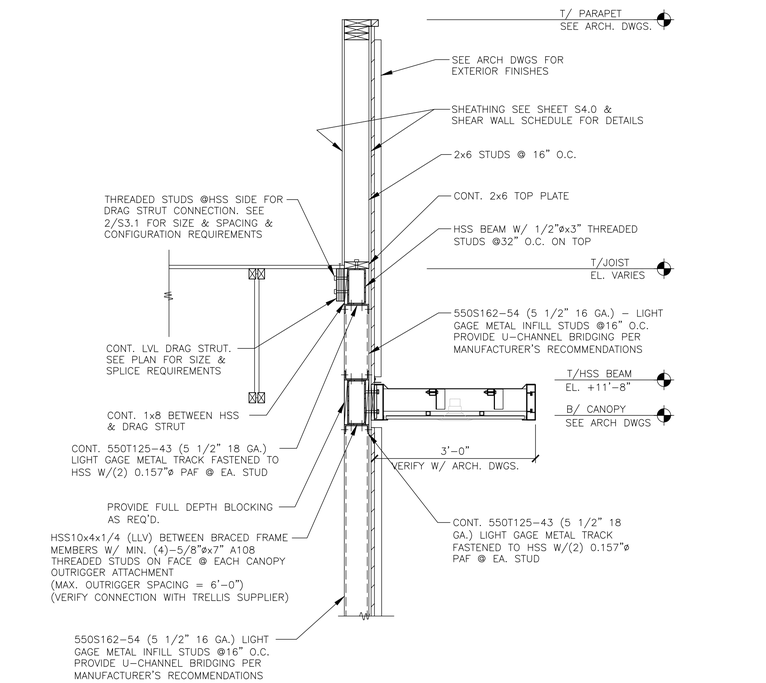
3 S3.0 SECTION
3/4" = 1'–0"

SEE SECTION 2/S3.0 & 3/S3.0 FOR ADDITIONAL INFORMATION



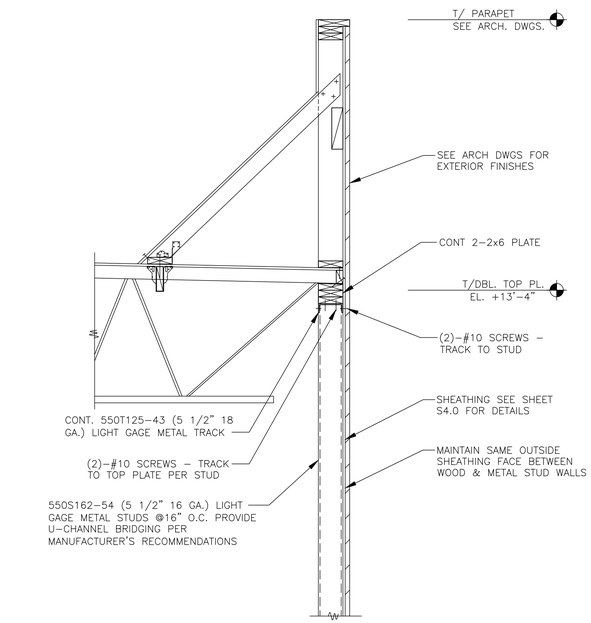
4 S3.0 SECTION
3/4" = 1'–0"

SEE SECTION 4/S3.0 FOR ADDITIONAL INFORMATION



5 S3.0 SECTION
3/4" = 1'–0"

SEE SECTION 1/S3.0 FOR ADDITIONAL INFORMATION



6 S3.0 SECTION
3/4" = 1'–0"

REV	DATE	DESCRIPTION	BY

THOMAS M. MILLIMAN
REGISTERED
No. PE60910397
STATE OF INDIANA
PROFESSIONAL ENGINEER

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR:
McDonald's USA, LLC

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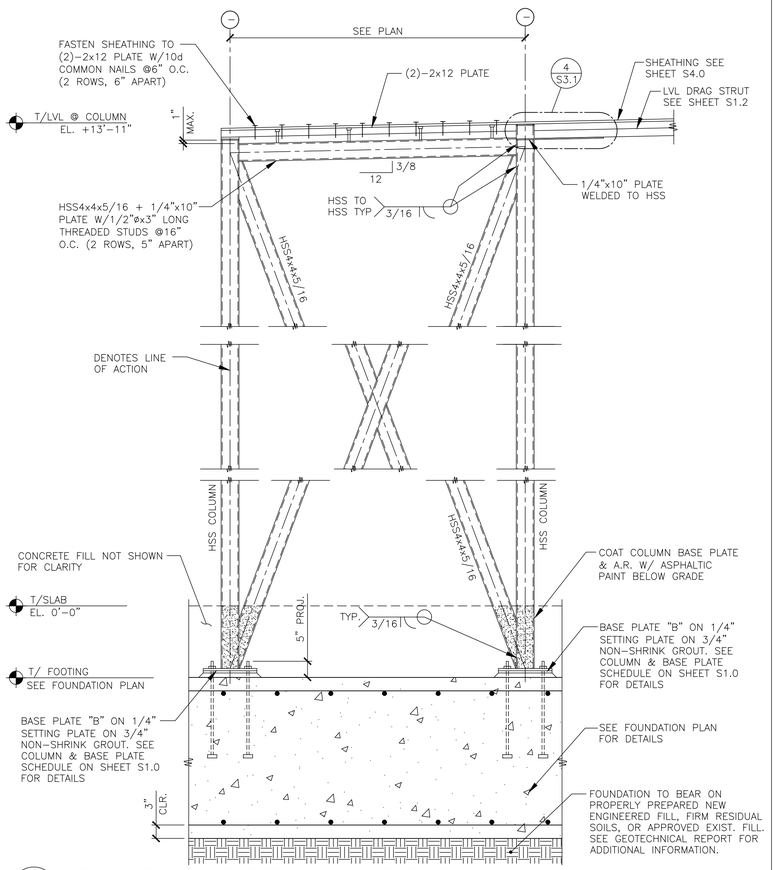
DRAWN BY	DATE ISSUED
–	10.22.2025
STD ISSUE DATE 2025 10	
REVIEWED BY	

TITLE
2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

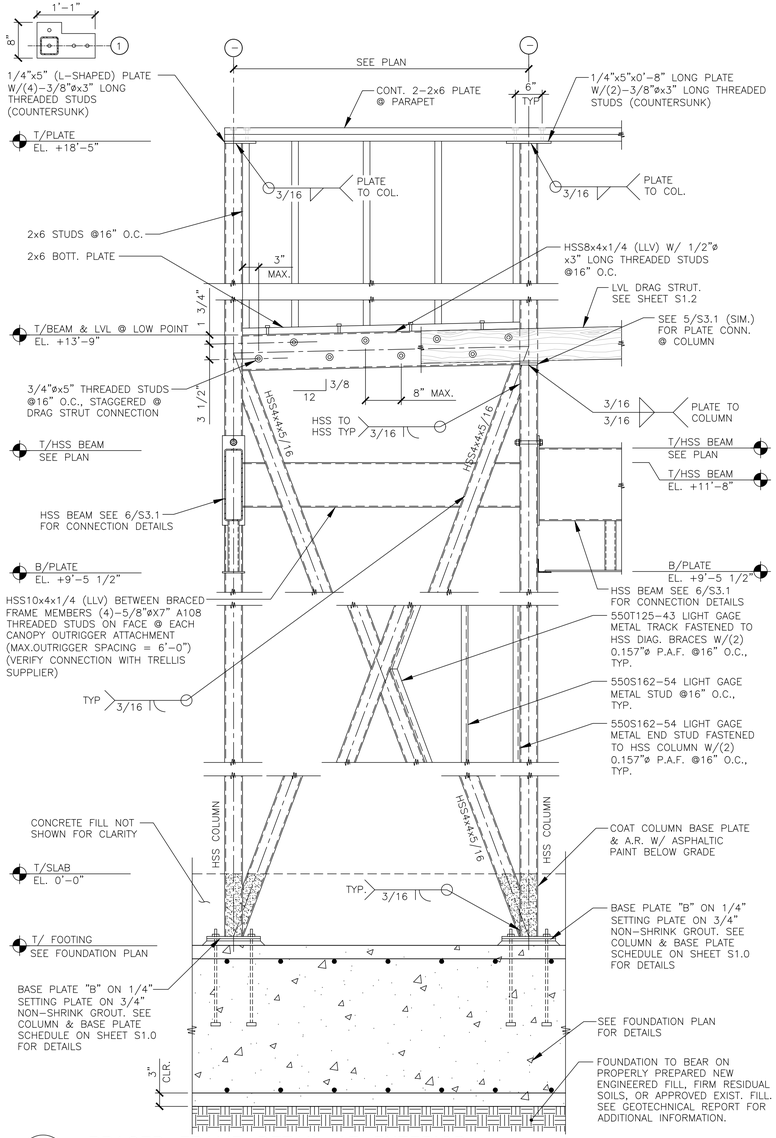
SITE ADDRESS
NSN: 44860
13126/3
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO.
013.1263.00.0
S3.0
FRAMING SECTIONS



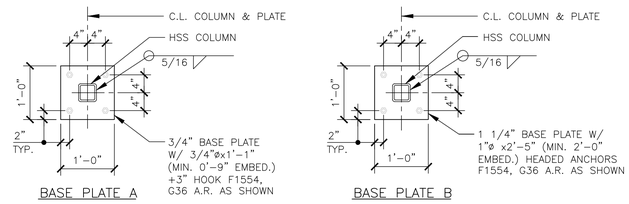
1 S3.1 BRACED FRAME DETAIL AT INTERIOR

3/4" = 1'–0"



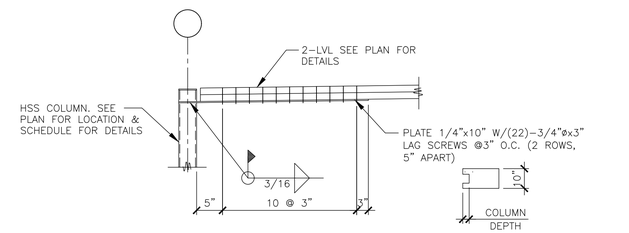
2 S3.1 BRACED FRAME DETAIL AT EXTERIOR

3/4" = 1'–0"



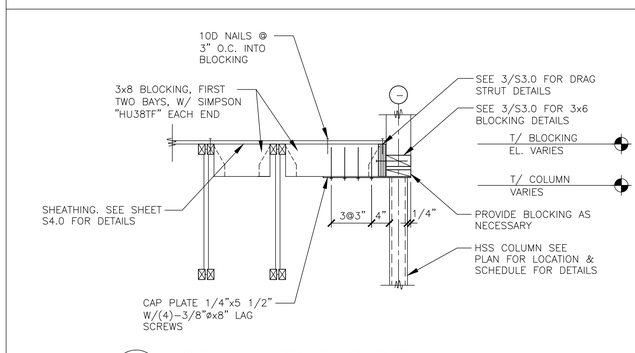
3 S3.1 BASE PLATE DETAILS

N.T.S.



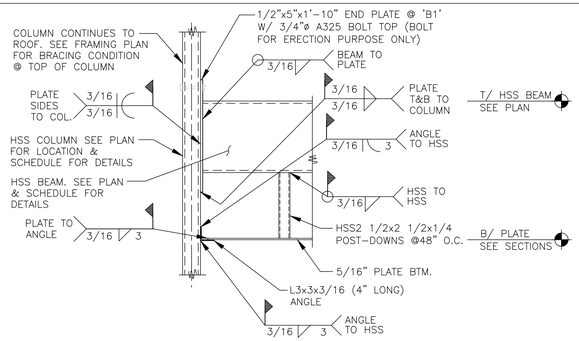
4 S3.1 DRAG STRUT CONNECTION DETAIL

3/4" = 1'–0"



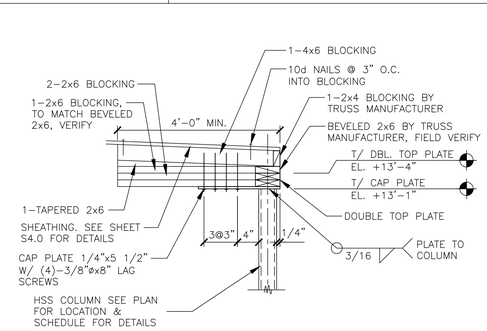
5 S3.1 COLUMN BRACING DETAIL

3/4" = 1'–0"



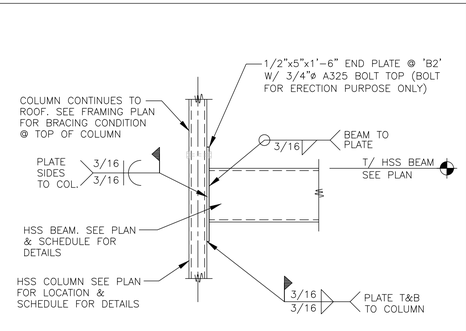
6 S3.1 HSS BEAM CONNECTION DETAIL

3/4" = 1'–0"



7 S3.1 COLUMN BRACING DETAIL

3/4" = 1'–0"



8 S3.1 HSS BEAM CONNECTION DETAIL

3/4" = 1'–0"

9 S3.1 NOT USED

3/4" = 1'–0"

NO.	DESCRIPTION	DATE	BY
1			

THOMAS M. MILLER REGISTERED No. PE60910397 STATE OF INDIANA PROFESSIONAL ENGINEER

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR:
McDonald's USA, LLC

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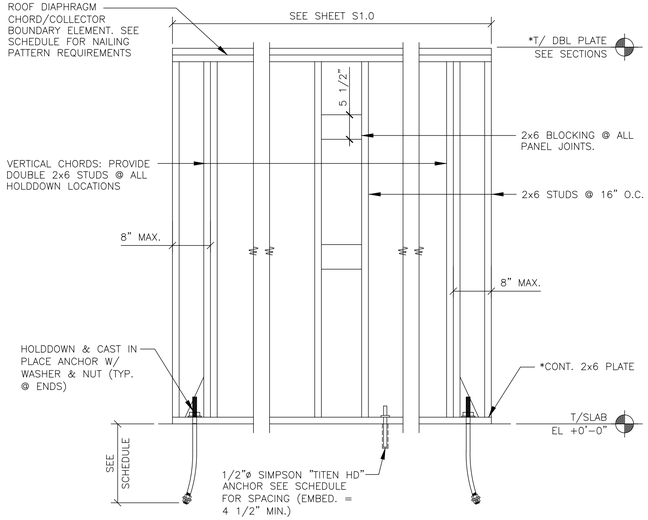
DRAWN BY	REVIEWED BY	DATE ISSUED
–	STD ISSUE DATE 2025 10	10.22.2025

TITLE
2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 44868
SITE ADDRESS
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO.
013.1263.00.0
S3.1
STEEL DETAILS



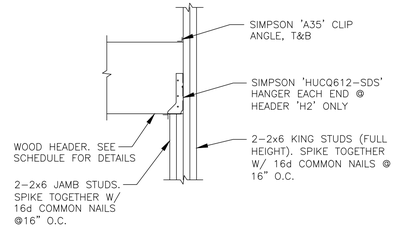
SHEAR WALL SCHEDULE

WIND: 115 MPH (EXPOSURE C) SEISMIC: Sds = 26.7%, Sd1 = 16.0%

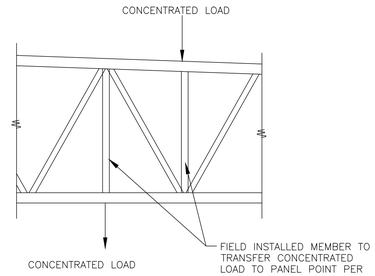
MARK	SHEATHING	SHEATHING NAIL SIZE	SHEATHING NAIL** SPACING @ PANEL EDGES	HOLDDOWN*** ANCHORS	ANCHOR BOLT SPACING	REMARKS
A	1-15/32"	8d	6"	1-HDU5-SDS2.5 W/(1) SB5/8x24" PRECAST ANCHOR	32"	18" MIN. EMBED. ON HOLDDOWN ANCHORS.
B	1-15/32"	8d	6"	1-HDU5-SDS2.5 W/(1) SB5/8x24" PRECAST ANCHOR	32"	18" MIN. EMBED. ON HOLDDOWN ANCHORS.
C	1-15/32"	8d	6"	1-HDU5-SDS2.5 W/(1) SB5/8x24" PRECAST ANCHOR	40"	18" MIN. EMBED. ON HOLDDOWN ANCHORS.

NOTES:
1. SHEATHING PANELS MAY BE LAID UP HORIZONTALLY OR VERTICALLY. NO VERTICAL PANEL EDGES ON VERTICAL CHORDS (HOLDDOWN LOCATION).
2. WIND LOADS GOVERN OVER SEISMIC LOADS UNLESS AS NOTED IN THE REMARKS COLUMN.
3. NAIL ALL SHEATHING TO INTERMEDIATE SUPPORTS @ 12" O.C.
4. SCREW HOLDOWN ANCHORS TO VERTICAL MEMBER W/ 14-"SDS1/4"øx2 1/2" SCREWS EACH.
* IF SILL PLATE OR TOP PLATES ARE NOT CONTINUOUS, CONTACT THE ENGINEER OF RECORD FOR SOLUTION.
** NAIL WALL SHEATHING TO ROOF DIAPHRAGM CHORD & TO EACH MEMBER/WALL VERTICAL CHORD W/ 10d COMMON NAILS @ 6" O.C., UNO.
*** HOLD DOWNS AND HOLD DOWN ANCHOR SYSTEMS PER SIMPSON STRONG TIE & SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS.

1 S3.2 SHEAR WALL SCHEDULE
N.T.S.



2 S3.2 HEADER SUPPORT DETAIL
N.T.S.



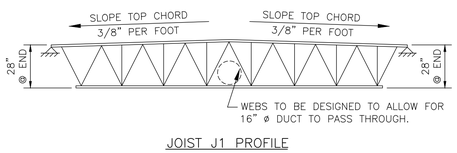
3 S3.2 JOIST DETAIL @ POINT LOADS
N.T.S.

1. FOR NATIONAL ACCOUNT PACKAGE & PRICING CONTACT REDBUILT @ 1-866-859-6757
2. JOIST MFGR. TO VERIFY SIZE AT HVAC ROOF TOP UNITS.

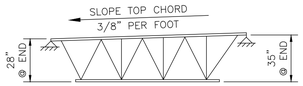
HEADER	HANGER
2x6	LUS26
2-2x6	LUS26-2
2x8	LUS28
2-2x8	LUS28-2
2x10	LUS210
2-2x10	LUS210-2

FOR OPENINGS < 1'-4" USE 1-2x6
FOR OPENINGS > 1'-4" AND < 4'-0" USE 2-2x8
FOR OPENINGS > 4'-0" AND < 6'-0" USE 2-2x10

3. ALL JOISTS SHALL BE DESIGNED FOR THE FOLLOWING NET UPLIFT. 115 MPH (BASIC) - 8 PSF SERVICE (ASD: 0.6D + 0.6W)

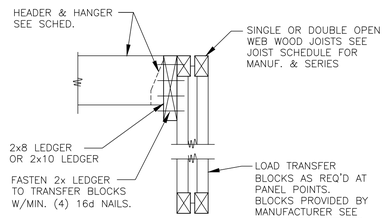


JOIST J1 PROFILE

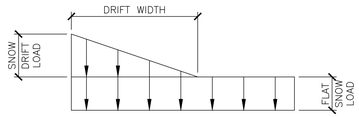


JOIST J2 PROFILE

4 S3.2 JOIST NOTES
N.T.S.



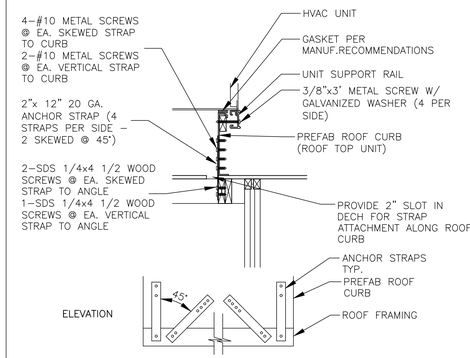
LOAD TRANSFER BLOCKS CONCENTRATED LOADS



DRIFT	SNOW DRIFT LOAD (PSF)	WIDTH (FT)
SHORT DIRECTION	31.0	7'-0"
LONG DIRECTION	44.0	9'-8"

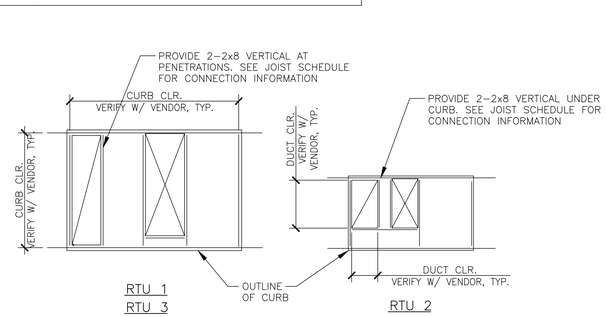
NOTE: SNOW DRIFT LOADS BASED ON NOMINAL, UNFACTORED GROUND SNOW LOADS. SEE SHEET S4.0 FOR ADDITIONAL INFORMATION.

5 S3.2 SNOW DRIFT DIAGRAM/SCHEDULE
N.T.S



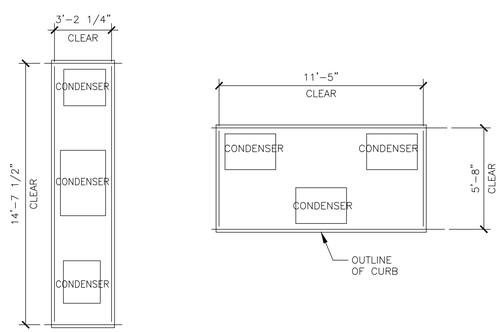
6 S3.2 SECTION
3/4" = 1'-0"

NOTE: RTU VENDOR/SUPPLIER AND MODEL SHALL BE VERIFIED PRIOR TO INSTALLATION. G.C. TO PROVIDE (2)-2x8 HDRS. BELOW RTU CURBS AND AT PERIMETER OF ALL PENETRATIONS/OPENINGS PER DETAIL 4/S3.2. COORDINATE LOCATIONS AND EXTENT WITH MANUFACTURER CURB SPECIFICATIONS.

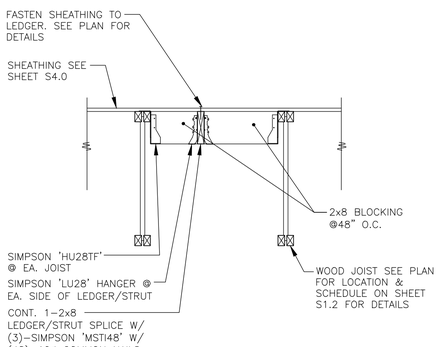


RTU 1
RTU 3

RTU 2



7 S3.2 ROOF TOP UNIT CLEARANCES
1/4" = 1'-0"



8 S3.2 SECTION
3/4" = 1'-0"

9 S3.2 NOT USED
N.T.S.

BY	DESCRIPTION	DATE	REV

THOMAS M. MILLER REGISTERED No. PE60910397 STATE OF INDIANA PROFESSIONAL ENGINEER

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR: McDonald's USA, LLC

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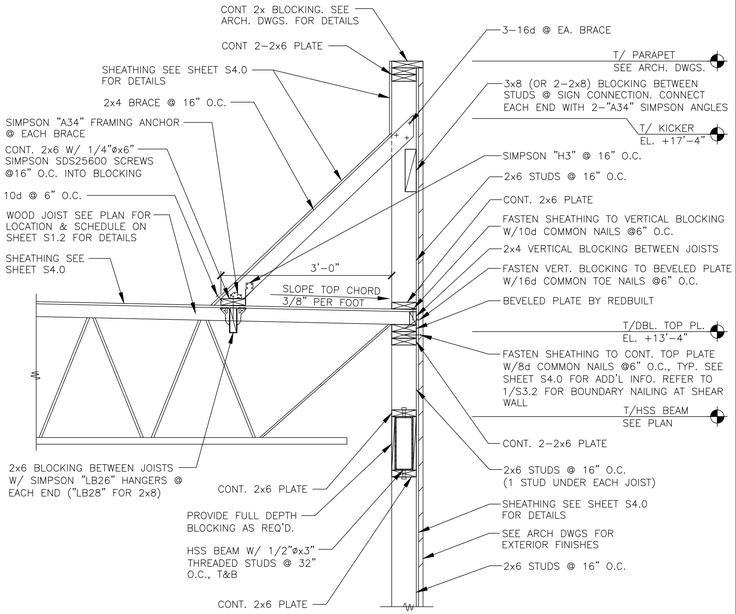
DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED
-	2025 10		10.22.2025

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

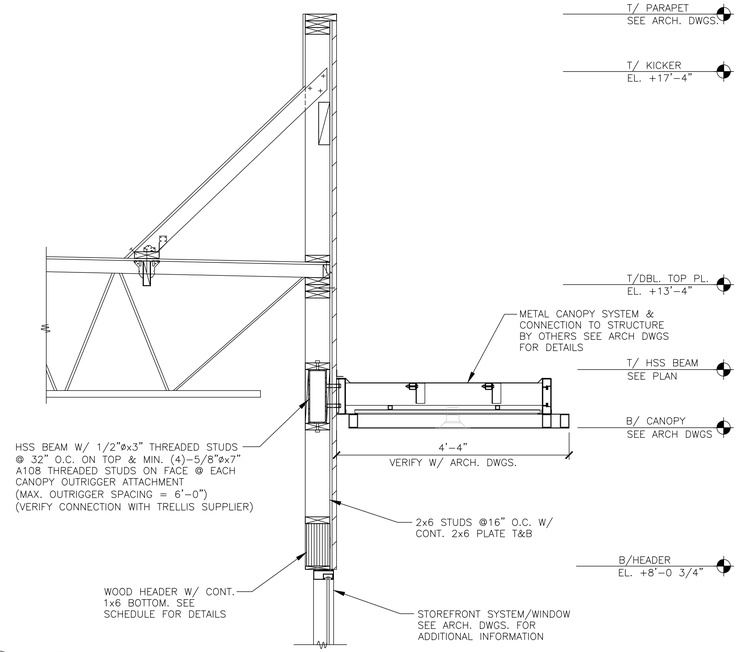
DESCRIPTION	
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI	
WOOD TRUSS ROOF FRAMING	
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH	
NSN: 44868	SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
131263	

SHEET NO. 013.1263.00.0
S3.2
DETAILS



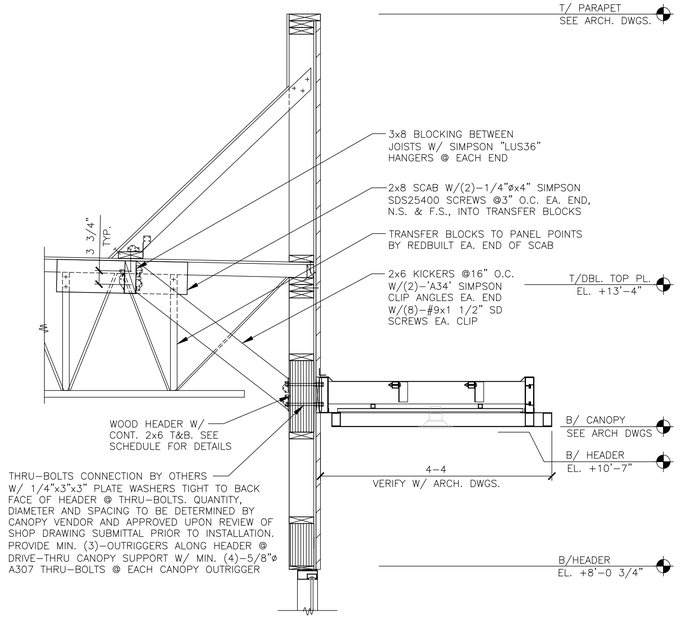
1 S3.5 SECTION
3/4" = 1'-0"

SEE SECTION 1/S3.5 FOR ADDITIONAL INFORMATION



2 S3.5 SECTION
3/4" = 1'-0"

SEE SECTION 2/S3.5 FOR ADDITIONAL INFORMATION



3 S3.5 SECTION
3/4" = 1'-0"

4 S3.5 NOT USED
3/4" = 1'-0"

5 S3.5 NOT USED
3/4" = 1'-0"

6 S3.5 NOT USED
3/4" = 1'-0"

REV	DATE	DESCRIPTION	BY

THOMAS M. MINTER REGISTERED LAP No. PE60910397 STATE OF INDIANA PROFESSIONAL ENGINEER

PREPARED BY: LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204
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PREPARED FOR: McDonald's USA, LLC
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DRAWN BY	–
STD ISSUE DATE	2025 10
REVIEWED BY	
DATE ISSUED	10.22.2025

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 44868
SITE ADDRESS
7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
1.31263

SHEET NO. 013.1263.00.0
S3.5
FRAMING SECTIONS

STRUCTURAL GENERAL NOTES:

DESIGN AND LOADING
1. THE STRUCTURAL DESIGN OF THIS BUILDING WAS BASED ON THE DESIGN CRITERIA:
   A. BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE
   B. FLOOR:
      LIVE LOAD: 100 PSF (NON-REDUCIBLE)
   C. ROOF:
      LIVE LOAD: 20 PSF
      DEAD LOAD: 20 PSF
   D. SNOW:
      GROUND LOAD, p_g: 25 PSF
      FLAT ROOF LOAD, p_f: 18 PSF
      IMPORTANCE FACTOR, I_s: 1.0
      EXPOSURE FACTOR, C_e: 1.0
      THERMAL FACTOR, C_t: 1.0
      SLOPE FACTOR, C_s: 1.0
   E. WIND:
      BASIC DESIGN WIND SPEED (3-SECOND GUST), V: 115 MPH
      ALLOWABLE STRESS DESIGN WIND SPEED (3-SECOND GUST), V_{ASD}: 90 MPH
      RISK CATEGORY: II
      WIND EXPOSURE: C
      GC_{pi} = ±0.18
      PRESSURES PER ASCE 7-16
   F. SEISMIC:
      RISK CATEGORY: II
      IMPORTANCE FACTOR: 1.00
      SITE CLASS: D (ASSUMED)
      SS = 0.250, S1= 0.100
      SDS = 0.267, SD1 = 0.160
      DESIGN CATEGORY: C
      PLYWOOD SHEAR WALLS (R = 6.5)
      STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE (R = 3.0)
      Cs1: 0.041 (LONGITUDINAL DIRECTION)   Cs2: 0.089 (TRANSVERSE DIRECTION)
      DESIGN BASE SHEAR = SEE CALCULATIONS
      ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
   G. FLOOD LOAD: N/A
   H. SPECIAL LOADS: N/A
   I. RAIN LOADS: N/A

FOUNDATION NOTES
1. THE FOUNDATION DESIGN OF THIS BUILDING WAS BASED ON THE FOLLOWING CRITERIA:
   A. MINIMUM ALLOWABLE SOIL BEARING CAPACITY = 3,000 PSF.
   B. RECOMMENDED BY ECS MIDWEST, LLC IN THEIR REPORT #66:1647 DATED 11/01/2025
   C. ANY FILL REQUIRED BELOW SLABS ON GRADE OR FOOTINGS SHALL BE COMPACTED AS REQUIRED BY THE SOILS REPORT NOTED IN ITEM #2.
2. ALL EXTERIOR FOOTINGS SHALL EXTEND BELOW THE MAXIMUM ANTICIPATED DEPTH OF FROST. MINIMUM 36"
3. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OR ENGINEER OF RECORD IMMEDIATELY IN THE EVENT THAT THE SOILS CONDITIONS ENCOUNTERED VARY FROM THOSE SHOWN ON THE BORING LOGS.
4. ALL FOUNDATION EXCAVATIONS SHALL BE INSPECTED BY A SOILS TESTING LABORATORY PRIOR TO PLACEMENT OF CONCRETE.

CONCRETE AND REINFORCING
1. ALL CONCRETE SHALL BE IN ACCORDANCE WITH THE "AMERICAN CONCRETE INSTITUTE BUILDING CODE" (ACI 318) AND WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301) LATEST EDITIONS.
2. ALL NORMAL WEIGHT CONCRETE (145 PCF) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI (3500 PSI FOR SLABS).
3. ALL CONCRETE SUBJECT TO EXTERIOR EXPOSURE SHALL BE AIR ENTRAINED AS RECOMMENDED BY ACI 318.
4. TEST CYLINDERS SHALL BE MADE AND TESTED AS OUTLINED IN CHAPTER 16 OF ACI-301.
5. REINFORCING BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARD 315 AND 315R.
6. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITIONS SHOWN ON THE PLANS AND DETAILS. PLASTIC COATED ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.
7. THE GENERAL CONTRACTOR SHALL CHECK WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND THE SUB-CONTRACTORS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK AND SHALL ASSUME RESPONSIBILITY FOR THEIR PROPER LOCATION.

STRUCTURAL STEEL
1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC360 "SPECIFICATION FOR STRUCTURAL STEEL". SEISMIC DESIGN OF STRUCTURAL STEEL STRUCTURES SHALL CONFORM TO AISC 341.
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:

A. ANCHOR RODS	F1554, GRADE 36
B. HIGH STRENGTH STRUCTURAL BOLTS	A325-N U.N.O.
C. STRUCTURAL SHAPES (W)	A992
D. STRUCTURAL SHAPES (M, S, C, MC, PLATES)	A36
E. STRUCTURAL SHAPES (HP)	A572
F. STRUCTURAL TUBING (HSS)	A500 GRADE C
G. STRUCTURAL ANGLES	A572

3. ALL WELDING ELECTRODES SHALL BE E70-XX. ALL SHOP AND FIELD WELDING SHALL BE MADE IN ACCORDANCE WITH A.W.S. D1.1 "CODE FOR WELDING IN BUILDING CONSTRUCTION" AND SHALL BE MADE BY CERTIFIED WELDERS.

LAMINATED VENEER LUMBER (LVL)
1. ALL BEAMS SHALL BE MANUFACTURED WITH LAMINATED VENEER LUMBER AND WATERPROOF ADHESIVES.
2. SIZE, MANUFACTURER & SERIES OF ALL LVL MEMBERS SHALL BE AS SHOWN ON DRAWINGS.
3. ANY SUBSTITUTIONS MUST BE APPROVED IN WRITING BY ENGINEER OR ARCHITECT OF RECORD.
4. PROVIDE 3" MINIMUM BEARING OR AS SPECIFIED ON PLANS. REFER TO PLANS FOR FASTENING OF MULTIPLE PIECE BEAMS.

OPEN WEB WOOD JOISTS
1. OPEN WEB WOOD JOISTS SHALL BE MANUFACTURED WITH MACHINE STRESS RATED TOP AND BOTTOM CHORDS. WEBS SHALL BE TUBULAR STEEL MEMBERS PER MANUFACTURERS' SPECIFICATIONS.
2. SIZE, MANUFACTURER & SERIES OF ALL OPEN WEB JOISTS SHALL BE AS SHOWN ON DRAWINGS. ANY SUBSTITUTIONS MUST BE APPROVED IN WRITING BY ENGINEER OR ARCHITECT OF RECORD.
3. PROVIDE 3 1/2" MINIMUM BEARING OR AS SPECIFIED ON PLANS. SHIM AS REQUIRED TO PROVIDE FULL BEARING AND LEVEL SUPPORT.
4. DO NOT CUT TOP OR BOTTOM CHORDS.
5. ALL HANGERS AND FRAMING CONNECTORS SHOWN ARE MANUFACTURED BY SIMPSON STRONG TIE. ANY SUBSTITUTIONS MUST BE APPROVED IN WRITING BY ENGINEER OR ARCHITECT OF RECORD.
6. REFER TO PLANS FOR WEB STIFFENER AND CONCENTRATED LOAD REQUIREMENTS.
7. REFER TO MANUFACTURERS' INSTALLATION GUIDE FOR JOIST BRACING DURING ERECTION. REFER TO MANUFACTURERS' INSTALLATION GUIDE FOR JOIST BRIDGING REQUIREMENTS.

SAWN LUMBER
1. ALL GRADES OF LUMBER INDICATED ON STRUCTURAL DRAWINGS SHALL BE RATED BY THE SOUTHERN PINE INSPECTION BUREAU (SPIB), OR THE WESTERN WOOD PRODUCTS ASSOCIATION (WWPA). LUMBER GRADES SHALL BE AS FOLLOWS, WITH A MAXIMUM MOISTURE CONTENT OF 19%:
   A. SOUTHERN PINE NO. 1.
   B. DOUGLAS FIR-LARCH NO. 1.
   C. HEM-FIR NORTH NO. 1
2. BOLT HEADS AND NUTS BEARING ON WOOD SHALL BE PROVIDED WITH STANDARD CUT WASHERS. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
3. MINIMUM NAILED CONNECTIONS FOR WOOD FRAMING MEMBERS SHALL BE IN ACCORDANCE WITH THE LOCAL BUILDING CODE OR TABLE 2304.9.1 OF THE INTERNATIONAL BUILDING CODE IF NO OTHER CRITERIA IS GIVEN.
4. CONNECTORS SHOWN ON THE DETAILS ARE MANUFACTURED BY SIMPSON. WRITTEN APPROVAL BY ENGINEER REQUIRED FOR SUBSTITUTIONS.

ROOF & WALL SHEATHING
1. ALL SHEATHING SHALL CONFORM TO AMERICAN PLYWOOD ASSOCIATION (APA) DESIGN SPECIFICATIONS, LATEST EDITION. SHEATHING SHALL BE CONTINUOUS OVER THREE ADJACENT SPANS MINIMUM.
2. WALL SHEATHING SHALL BE 15/32" (1/2" NOMINAL) APA RATED SHEATHING, EXPOSURE 1, 32/16. ALL WALL SHEATHING SHALL BE FASTENED TO SUPPORTING MEMBERS W/ 8d COMMON NAILS @ 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATED SUPPORTS, U.N.O.
3. ROOF SHEATHING SHALL BE 23/32" (3/4" NOMINAL) APA RATED SHEATHING, EXPOSURE 1, 48/24. ALL ROOF SHEATHING SHALL BE FASTENED TO SUPPORTING MEMBERS W/10d COMMON NAILS @ 6" O.C. AT PANEL EDGES, AND 12" O.C. AT INTERMEDIATE SUPPORTS. U.N.O.
4. ORIENTED STRAND BOARD (OSB) IS NOT AN ACCEPTABLE SUBSTITUTION FOR PLYWOOD. PLYWOOD SHALL BE USED FOR ALL EXTERIOR SHEATHING APPLICATIONS.

LIGHT GAGE METAL FRAMING
1. 16 GA. AND HEAVIER STUDS SHALL HAVE A MINIMUM YIELD STRESS OF 50,000 PSI. 18 GA. AND LIGHTER STUDS AND TRACKS SHALL HAVE A MINIMUM YIELD STRESS OF 33,000 PSI.
2. STUDS AND TRACKS SHALL BE 18 GA. MINIMUM U.N.O. THEY SHALL BE MANUFACTURED BY DIETRICH INDUSTRIES, INC. OR APPROVED EQUAL.
3. PROVIDE DOUBLE STUDS FOR FULL HEIGHT OF WALL EACH SIDE OF ALL OPENINGS UNLESS OTHERWISE NOTED. WELD STUDS TO EACH OTHER WITH 1 1/2" LONG 1/8" FILLET WELDS AT 12" O.C. EACH SIDE. PROVIDE STUD TRACK AT EACH HEAD AND SILL.
4. REFER TO PLANS AND DETAILS FOR CONNECTION OF STUD WALLS TO FOUNDATION, FLOOR OR ROOF.

SHOP DRAWINGS
1. SHOP DRAWING SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY.
2. SHOP DRAWINGS SHALL BE REVIEWED BY CONTRACTOR TO VERIFY THAT SUBMITTAL IS COMPLETE PRIOR TO SUBMITTING TO ARCHITECT/ENGINEER.
3. DRAWINGS CREATED BY THE ENGINEER OF RECORD CANNOT BE REPRODUCED AND/OR USED AS A SHOP DRAWING SUBMITTAL. SHOP DRAWING SUBMITTALS SHALL INCLUDE THE FOLLOWING:
   A. CONCRETE MIX DESIGN
   B. FOUNDATION REINFORCING BARS
   C. STRUCTURAL STEEL
   D. OPEN WEB JOISTS AND CALCULATIONS
   E. ROOF SHEATHING
   F. TRELLIS SYSTEM & CALCULATIONS
   G. LAMINATED VENEER LUMBER (LVL)
   H. SAWN LUMBER AND CONNECTORS

SPECIAL INSPECTIONS
1. SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 1705 OF IBC AND THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED UNDER SECTION 1705. THE FOLLOWING AREAS OF WORK REQUIRE SPECIAL INSPECTIONS IN ACCORDANCE WITH THE LISTED 2021 INTERNATIONAL BUILDING CODE SECTIONS/LOCATIONS:
   A. SOILS - SECTION 1705.6 PER TABLE 1705.6
   B. CONCRETE - SECTION 1705.3 PER TABLE 1705.3
   C. STEEL - SECTION 1705.2 (SEE AISC 360-16)
   D. WOOD - SECTION 1705.5

MISCELLANEOUS
1. ALL DIMENSIONS ON STRUCTURAL DRAWINGS TO BE CHECKED AGAINST ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS BY THE GENERAL CONTRACTOR AND ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
2. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES, AND FOR SAFE CONDITIONS ON THE JOB SITE.
3. DO NOT SCALE THE DRAWINGS.

REV	DATE	DESCRIPTION	BY
			-

THOMAS M. MILTNER REGISTERED No. PE60910397 STATE OF INDIANA PROFESSIONAL ENGINEER

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR: c 2025 McDonald's USA, LLC
McDonald's USA, LLC

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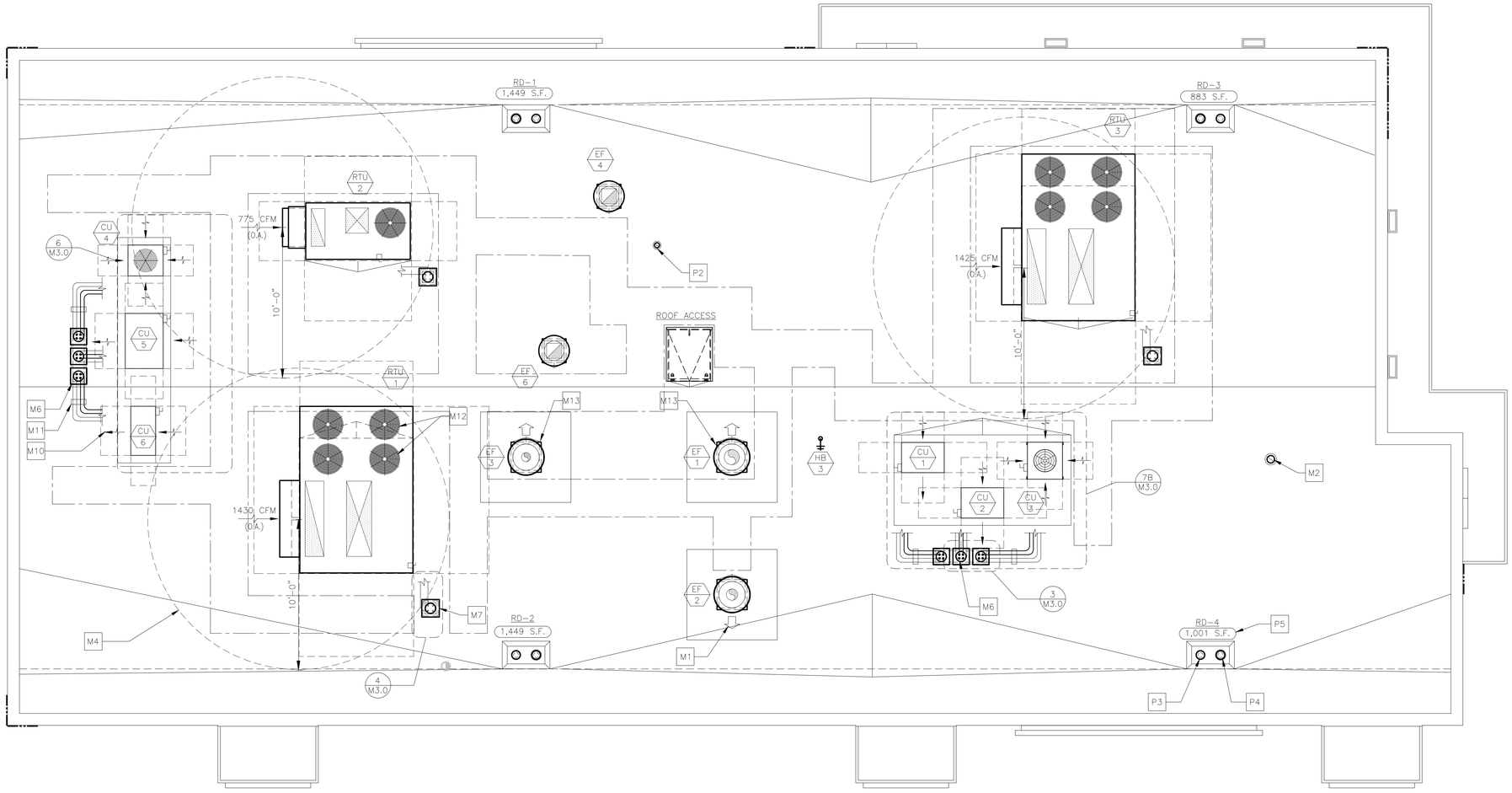
DRAWN BY: -
STD ISSUE DATE: 2025 10
REVIEWED BY:
DATE ISSUED: 10.22.2025

TITLE: 2025 OPTIMIZED BUILDING - BB20 4590-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci
WOOD TRUSS ROOF FRAMING
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 44860 131263
SITE ADDRESS: 7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112

SHEET NO. 013.1263.00.0
S4.0
STRUCTURAL NOTES



CONDENSATE LINE FROM RTUs DOWN THROUGH THE ROOF ON UNITS BASE, TO BE FURNISHED AND INSTALLED BY PC. SEE PLUMBING SHEETS P1.2, P2.1 AND COORDINATION SCHEDULE ON M4.1.

1 / M1.0 ROOF PLAN
1/4"=1'-0"

DRAWING NOTES

1. ROOFTOP EQUIPMENT LOCATIONS SHOWN ARE GENERAL. ACTUAL LOCATIONS SHALL BE COORDINATED WITH THE STRUCTURAL DRAWINGS.
2. ROOF OPENINGS FOR ROOFTOP UNITS AND EXHAUST FANS SHALL BE COORDINATED WITH THE MANUFACTURER.
3. ROOF OPENINGS FOR PIPE PORTALS SHALL ONLY BE LARGE ENOUGH TO ALLOW PIPE AND CONDUIT PENETRATIONS. PIPE PORTAL CURB SHALL BE FILLED WITH AS MUCH BATT INSULATION AS POSSIBLE.
4. PRIOR TO INSTALLING THE TOP OF THE EQUIPMENT PLATFORM, INSIDE OF THE PLATFORM SHALL BE INSULATED WITH AS MUCH BATT INSULATION AS POSSIBLE.

KEYED NOTES

- M1 ARROW INDICATES DIRECTION OF EXHAUST FAN HINGE SWING (TYP.)
- M2 6"ø ALUMINUM EXHAUST DUCT FROM EXHAUST FAN (EF-5). PROVIDE PORTALS PLUS PLASTI-FLASH WITH C-126 CAP (OR EQUAL) FOR ROOF PENETRATION. TERMINATE DUCT A MIN. OF 24" ABOVE FINISHED ROOF WITH GOOSENECK.
- M3 NOT USED
- M4 MAINTAIN A MINIMUM 10'-0" CLEARANCE FROM EDGE OF OUTLETS AND VENT TERMINALS TO FRESH AIR INTAKES (TYP.)
- M5 NOT USED
- M6 ROOF PIPE PORTAL FOR CONDENSING UNITS
- M7 ROOF PIPE PORTAL FOR ROOFTOP UNITS (TYP. 3 PLACES)
- M8 NOT USED
- M9 NOT USED
- M10 ARROW INDICATES DIRECTION OF AIRFLOW FOR CONDENSING OR ROOFTOP UNIT AIR INTAKE (TYP.)
- M11 REFRIGERANT PIPING SUPPORT AS REQUIRED. PROVIDE ROOFTOP BLOX MODEL RTB-01 (OR EQUAL) AND ALL NECESSARY ACCESSORIES FOR PROPER PIPE AND CONDUIT SUPPORT. PROVIDE GALVANIZED PIPE SHIELD TO PROTECT INSULATION AT ALL SUPPORTS.
- M12 PROVIDE HAIL GUARD FOR RTU-1 PROTECTING CONDENSER COIL FROM GREASE.
- M13 EXHAUST FANS WITH WINDBAND EXTENSION TO PREVENT DIRECT GREASE BLOW ONTO CONDENSER COIL OF UNIT RTU-1.
- P1 NOT USED.
- P2 PLUMBING VENT THROUGH ROOF (SEE PLUMBING DRAWINGS). PROVIDE PORTALS PLUS PLASTI-FLASH WITH C-126 CAP (OR EQUAL) FOR ROOF PENETRATION.
- P3 PRIMARY ROOF DRAIN WITH DOME STRAINER (TYP). (SEE PLUMBING DRAWINGS)
- P4 OVERFLOW ROOF DRAIN WITH DOME STRAINER (TYP). (SEE PLUMBING DRAWINGS)
- P5 AREA OF ROOF SERVED BY ROOF DRAIN (TYP.)

PIPE PORTAL SCHEDULE

MANUFACTURER	CURB DIMENSIONS	CURB TYPE	CAP TYPE (QTY)	SERVES
RPS	12"x12"x11"H	RC-2A	N18 (1)	RTU-1 THROUGH RTU-3
RPS	43"x12"x13"H	RC-2A	N18 (3)	CU-1 THROUGH CU-6

SEQUENCE OF OPERATION

THERMOSTAT SETTINGS

MODE	FAN	SETPOINTS COOLING	SETPOINTS HEATING
OCCUPIED	ON	75°F	70°F
UNOCCUPIED	AUTO	90°F	55°F

HUMIDITY	
HUMIDITY SETPOINT (FOR DEHUMIDIFICATION UNITS ONLY)	60%

RTU-1, RTU-2 & RTU-3:

1. OCCUPIED MODE SHALL BEGIN AS FOLLOWS:
   - RTU-1: 1.5 HOURS BEFORE OPEN
   - RTU-2: 1 HOUR BEFORE OPEN
   - RTU-3: 30 MINUTES BEFORE OPEN
2. ROOFTOP UNIT FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED MODE
3. ECONOMIZER SHALL BE OPEN DURING OCCUPIED MODE (OUTDOOR AIR THROUGH ROOFTOP UNITS SERVES AS MAKE-UP AIR FOR THE KITCHEN EXHAUST SYSTEM) – REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS.
4. UNOCCUPIED MODE SHALL BEGIN ONE (1) HOUR AFTER STORE CLOSES
5. DURING UNOCCUPIED MODE, ECONOMIZER IS CLOSED AND HEATING, COOLING AND FAN OPERATE IN AUTO MODE (ON DEMAND)
6. RTU-2 SHALL BE INTERLOCKED WITH EF-6. UPON ACTIVATION OF EF-6, RTU-2 SHALL INCREASE SUPPLY AND OUTSIDE AIR BY 600 CFM, WHILE MAINTAINING 1275 CFM RETURN AIR. COORDINATE WITH E.C. AND BAS SUPPLIER.

NO.	DESCRIPTION	DATE	BY

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
7710 Allisonville Road, Suite 2
Fishers, IN 46038
317.915.9400
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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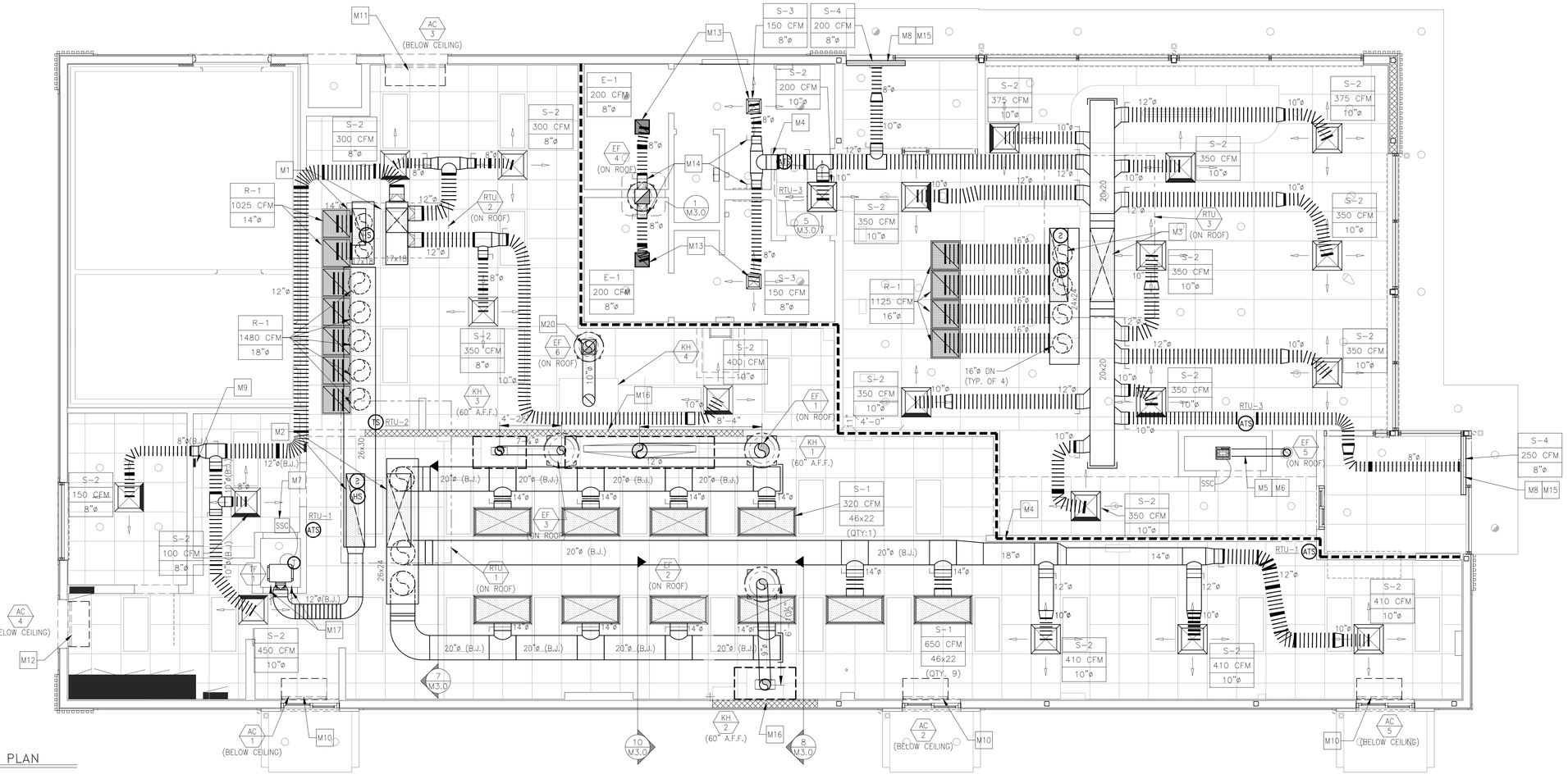
TITLE: 2025 OPTIMIZED BUILDING – BB20
4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
MSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

DRAWN BY: ES
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 00/00/00

SHEET NO.: 013.1263.00.0
M1.0
ROOF PLAN



1 M1.2 DUCTWORK PLAN
1/4"=1'-0"

DRAWING NOTES

1. ALL DUCTWORK SHALL BE RUN BETWEEN OR THROUGH THE JOISTS UNLESS NOTED OTHERWISE. DUCTWORK DESIGNATED WITH (B.J.) SHALL BE RUN BELOW THE JOISTS.
2. DUCT SIZES SHOWN ARE INTERNAL FREE AREA DIMENSIONS UNLESS NOTED OTHERWISE.
3. ALL SHEET METAL DUCTWORK SHALL BE EXTERNALLY INSULATED. INSULATION IS NOT SHOWN FOR CLARITY. SEE MECHANICAL NOTES FOR INSULATION REQUIREMENTS.
4. CARBON STEEL KITCHEN EXHAUST DUCTWORK SHALL BE EXTERNALLY INSULATED. INSULATION NOT SHOWN FOR CLARITY. SEE MECHANICAL NOTES AND DETAILS FOR INSULATION REQUIREMENTS.
5. RETURN AIRFLOW VOLUME SHOWN ON PLAN IS FOR DUCTWORK SIZING PURPOSES WHEN THE UNIT IS IN RECIRCULATION (UNOCCUPIED) MODE.
6. DIFFUSERS IN DINING ROOM ARE SPECIFIC TO THE DECOR PLAN SHOWN. DIFFERENT CEILING LAYOUTS MAY REQUIRE A DIFFERENT DIFFUSER TYPES, QUANTITIES, LOCATIONS AND FINISHES/COLORS.
7. NO DIFFUSERS OR GRILLES TO BE INSTALLED ABOVE KIOSKS TO AVOID CONFLICTS WITH KIOSK'S CEILING PENETRATIONS FOR CONDUITS

KEYED NOTES

M1 18x20 SUPPLY AND 11x30 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU-2)

M2 20x60 SUPPLY AND 15x60 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU-1)

M3 20x60 SUPPLY AND 15x60 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU-3)

M4 PROVIDE SHEET METAL DUCT AT ALL DRAFTSTOP WALL PENETRATIONS (TYP.)

M5 6"ø ALUMINUM DUCT FROM EXHAUST FAN UP THROUGH ROOF

M6 EXTERNALLY INSULATE EXHAUST DUCT FROM FAN TO ROOF PENETRATION

M7 STEADY STATE SPEED CONTROLLER FOR CEILING MOUNTED EXHAUST FAN. STEADY STATE SPEED CONTROLLER SHALL BE INSTALLED OVER SUSPENDED CEILING FOR ACCESS. DO NOT INSTALL OVER AREAS WITH DRYWALL CEILINGS. SET IT CLOSET THERMOSTAT TO 80°F.

M8 SET DIFFUSER'S (S-5) OUTER SLOT FOR VERTICAL AIR THROW PATTERN AND INNER SLOT FOR HORIZONTAL THROW PATTERN (TYP.)

M9 BUILDING AUTOMATION SYSTEM LOCATION. SEE LIGHTING CONTROL DETAILS ON SHEET E4.1.

M10 MOUNT AIR CURTAIN TIGHT TO CEILING

M11 MOUNT AIR CURTAIN WITH BOTTOM OF UNIT AT TOP OF DOOR FRAME

M12 MOUNT AIR CURTAIN WITH BOTTOM OF UNIT ABOVE DOOR FRAME AND TOP OF SWITCHGEAR TO MEET 3'-0" MINIMUM SWITCHGEAR'S CLEARANCE REQUIREMENT

M13 FOR DIFFUSERS INSTALLED IN DRYWALL CEILINGS, VOLUME DAMPER IS INTEGRAL TO DIFFUSER AND ADJUSTABLE AT FACE OF DIFFUSER (SEE NOTE 18 UNDER "VENTILATION SYSTEMS" ON DRAWING M4.0 AND AIR DEVICE SCHEDULE ON DRAWING M4.1)

M14 FOR DIFFUSERS INSTALLED IN DRYWALL CEILINGS, INSTALL HIGH-EFFICIENCY TAKE-OFFS WITH VOLUME DAMPER IN FULL-OPEN POSITION TO FACILITATE BALANCING AT FACE OF DIFFUSER.

M15 GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL T-BAR FRAME TO PROPERLY LOCATE DIFFUSER AS SHOWN. AIR STREAM FROM DIFFUSER SHALL COVER ENTIRE DOOR OPENING.

M16 NONCOMBUSTIBLE WALL CONSTRUCTION BEHIND TYPE I KITCHEN HOODS. REFER TO SHEET A1.0 FOR MORE INFORMATION.

M17 6"X18" DOOR LOUVER BY NATIONAL GUARD PRODUCTS, MODEL: L-700-RX. ONE IN EACH DOOR TO IT CLOSET (200 CFM) (TYP. OF 2), SEE ARCHITECTURAL PLANS FOR LOUVERED DOOR SCHEDULE.

M18 NOT USED

M19 NOT USED

M20 10" TYPE 304 STAINLESS STEEL DUCT (BY KES) FROM TYPE II EXHAUST HOOD UP THROUGH ROOF TO EXHAUST FAN. DUCTWORK SHALL BE PITCHED TOWARDS TYPE II EXHAUST HOOD. EXTERNALLY INSULATE EXHAUST DUCT FROM TYPE II EXHAUST HOOD CONNECTION TO ROOF PENETRATION.

2014 IMC SECTION 403.3 - VENTILATION SCHEDULE

UNIT	AREA SERVED	AREA FT² (Az)	CFM/PERSON (Rp)	CFM/FT² (Ra)	PEOPLE OR PEOPLE/1000 FT² (Pz)	UNCORRECTED REQUIRED O/A CFM (Vbz)	Ez*	Ev**	REQUIRED O/A CFM (Vot)***	ACTUAL O/A CFM	REQUIRED EXHAUST CFM	ACTUAL EXHAUST CFM
RTU-1	PRESENTER	396	5	0.06	4	45	0.8	0.98				
	KITCHEN	765	7.5	0.18	18	-	0.8					
						317			324	1430		
RTU-2	SUPPORT	565	0	0.12	0	68	0.8	0.84	-	-		
	MANAGER'S OFFICE	65	5	0.06	1	9	0.8		-	-		
	CREW ROOM	96	5	0.06	5	30	0.8		-	-		
	ORDER	134	5	0.06	7	42	0.8		-	-		
						148			176	775		
RTU-3	DINING	1043	7.5	0.18	73	735	0.8	0.91	-	-		
	VESTIBULE 1	72	0	0.06	0	4	0.8		-	-		
	VESTIBULE 2	55	0	0.06	0	3	0.8		-	-		
	WOMEN'S	135	0	0.06	0	8	0.8		-	-		
	MEN'S	122	0	0.06	0	7	0.8		-	-		
						758			833	1425		
EF-1, 2 & 3	KITCHEN	765	-	0.7	-	-	-	-	-	-	536	2405
EF-4	WOMEN'S	135	-	-	-	-	-	-	-	-	100	200
	MEN'S	122	-	-	-	-	-		-	-	100	200
EF-5	JANITOR'S CLOSET	19	-	-	-	-	-	-	-	-	50	75
EF-6	WAREWASHER HOOD	-	-	-	-	-	-		-	-	350	600
										TOTAL:	1136	3480

* ZONE AIR DISTRIBUTION EFFECTIVENESS BASED ON ASHRAE 62.1 TABLE 6.2 FOR CEILING SUPPLY PF WARM AIR 15° F OR MORE ABOVE SPACE TEMPERATURE AND CEILING RETURN (IMC TABLE 403.3.1.2)

** VENTILATION SYSTEM EFFICIENCY BASED ON ASHRAE 62.1 TABLE 6.3 AND SECTION 6.2.5 (IMC SECTION 403.3.2.3 MZ)

*** CORRECTED REQUIRED O/A INTAKE REQUIRED FOR SYSTEM CALCULATED BASED ON ASHRAE 62.1 SECTION 6.2 (IMC SECTION 403.3)

AIR BALANCE SCHEDULE

UNIT	SUPPLY AIR	RETURN AIR	OUTDOOR AIR	EXHAUST AIR	PRESSURE
RTU-1	7400	5970	1430		1430
RTU-2	2050	1275	775		775
RTU-3	4500	3075	1425		1425
EF-1				1350	-1350
EF-2				575	-575
EF-3				480	-480
EF-4				400	-400
EF-5				75	-75
EF-6				600	-600
TOTALS	13950	10320	3630	3480	150

NOTES:
1. BALANCING TOLERANCES ARE AS FOLLOWS:
   HOODS: 0% TO +10%
   OUTDOOR AIR: 0% TO +10%
   SUPPLY AND RETURN AIR DIFFUSERS: -10% TO +10%
   TOILET EXHAUST AIR: -10% TO +10%
2. BALANCE ROOFTOP UNIT SUPPLY AND RETURN AIR PRIOR TO TURNING ON EXHAUST FANS.
3. EXHAUST HOODS SHALL BE BALANCED WITH A 4" VANE ANEMOMETER.
4. RTU BLOWER TO RUN CONTINUOUSLY DURING OCCUPIED HOURS. REFER TO SEQUENCE OF OPERATIONS ON M1.0 AND E3.2 FOR HOOD/FAN INTERLOCK DETAILS.
5. EF-6 DOES NOT RUN CONTINUOUSLY - VALUES SHOWN IN AIR BALANCE SCHEDULE REFLECT OPERATIONAL STATE. WHEN EF-6 IS NOT OPERATIONAL, RTU-2 SHALL BE DECREASED BY 600 CFM ACCORDINGLY. REFER TO M1.0 FOR ADDITIONAL DETAILS OF SEQUENCE OF OPERATIONS AND INTERLOCKING REQUIREMENTS.

HEATING SCHEDULE

EQUIPMENT	INPUT (kW)	OUTPUT (BTU/HR)	REQUIRED HEAT (BTU/HR)
ROOFTOP UNIT (RTU-1)	52	177,476	154,884
ROOFTOP UNIT (RTU-2)	26	88,738	86,295
ROOFTOP UNIT (RTU-3)	52	177,476	176,240
TOTALS	130	443,690	417,419

ENGINEER OF RECORD:
DAVID LEIFFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY: CORE STATES GROUP
7710 Allisonville Road, Suite 2
Fishers, IN 46038
317.770.7777
www.corestates.com

PREPARED FOR: McDonald's USA, LLC

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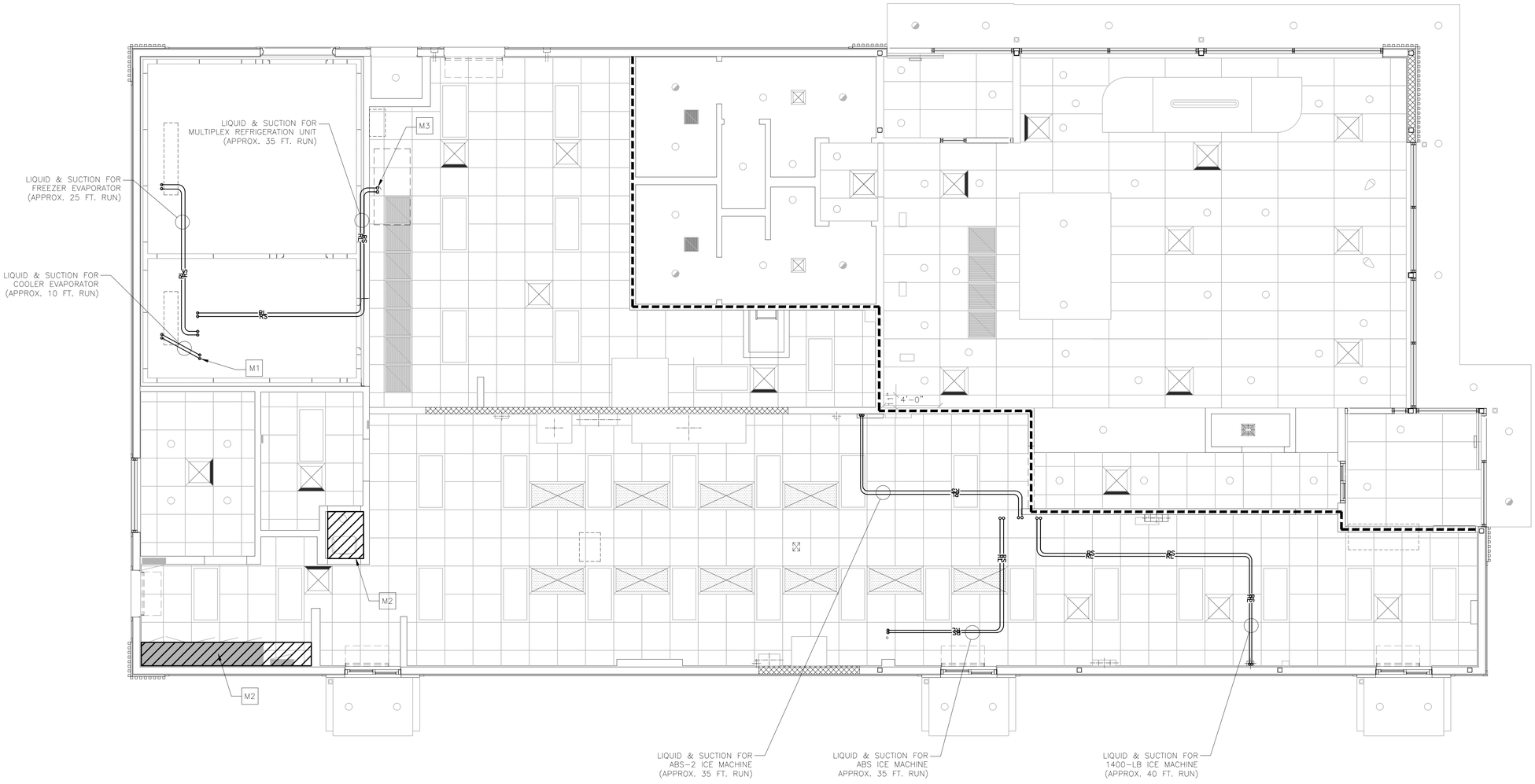
BY	DESCRIPTION	DATE	REV

DRAWN BY: ES
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 00/00/00

TITLE: 2025 OPTIMIZED BUILDING - B2O
4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & C
WOOD TRUSS ROOF FRAMING
E.I.F.S./FAATEN/LAP SIDING EXTERIOR FINISH
MSN: SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN
013.1263

SHEET NO.: 013.1263.00.0
M1.2
DUCTWORK PLAN



1 M1.4 MECHANICAL PIPING PLAN
1/4"=1'-0"

DRAWING NOTES

1. REFRIGERANT PIPE SIZES SHALL BE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

KEYED NOTES

M1 REFRIGERANT LIQUID AND SUCTION LINES UP THROUGH ROOF TO CONDENSING UNITS (TYP. 6 PLACES – SEE DETAIL 3 ON DRAWING M3.0)

M2 UTILITIES SHALL NOT BE ROUTED ABOVE TECH. CLOSET. OR SWITCHGEAR.

M3 REFRIGERANT LINES DOWN TO SODA SYSTEM (MULTIPLEX).

REV	DATE	DESCRIPTION	BY

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
7710 Allisonville Road, Suite 2
Indianapolis, IN 46250
317.915.0400
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED
ES	DL	00/00/00
STD ISSUE DATE 2025 05		

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

MSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

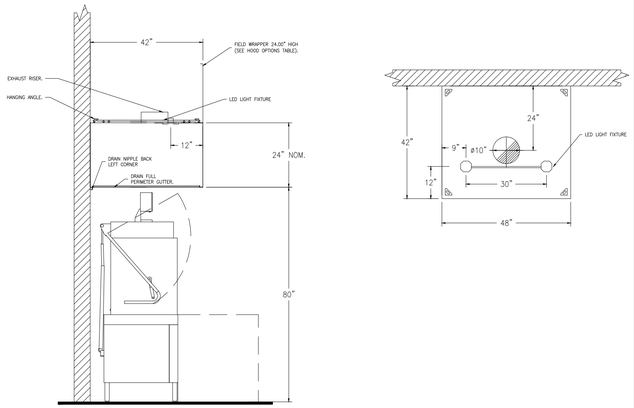
SHEET NO.
013.1263.00.0
M1.4
MECH. PIPING PLAN

HOOD INFORMATION

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM REQUIRED						HOOD CONSTRUCTION	HOOD CONFIG.	
								WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.	END TO END	ROW
1	DISH	CLASS 2	48"	NA	DISH	150	600			4"	10"	600	1100	-0.25"	304 SS	ALONE	ALONE

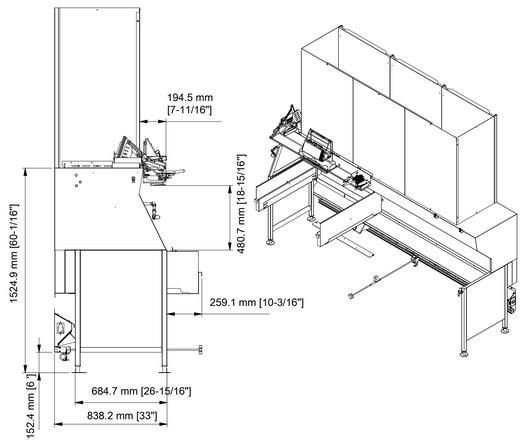
HOOD OPTIONS

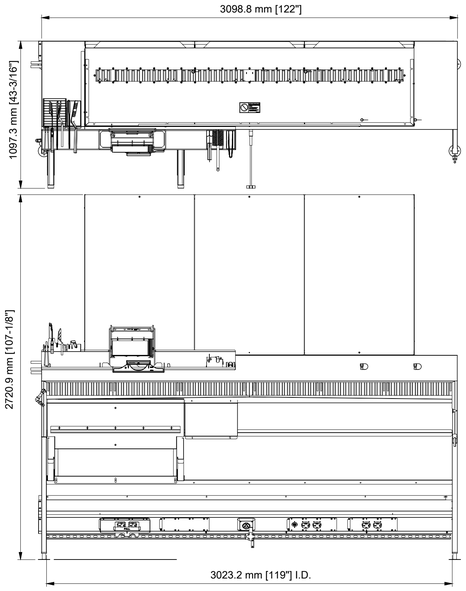
HOOD NO.	TAG	OPTION
1	DISH	FASCIA PANEL 14.00" HIGH FRONT, LEFT, RIGHT (FASCIA HEIGHT INCREASES FOR TALLER CEILING)



KITCHEN EXHAUST HOOD (TYPE II)

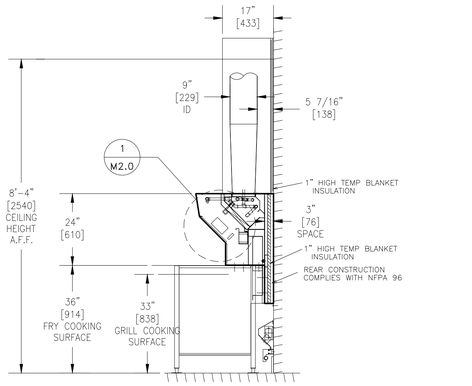
TAG: KH-4 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
N.T.S.

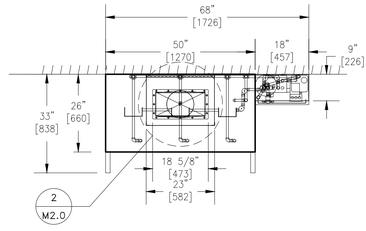


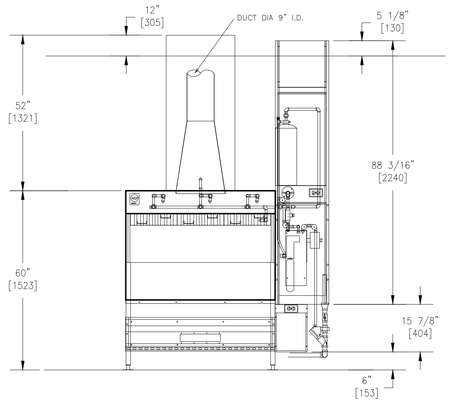


KITCHEN EXHAUST HOOD (TYPE I)

TAG: KH-1 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"

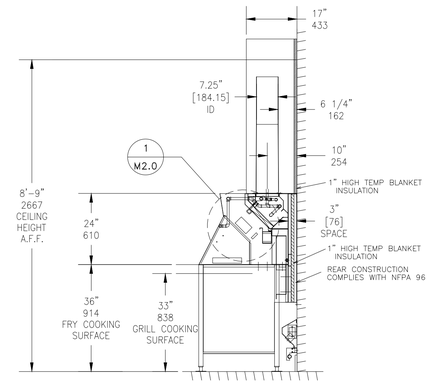


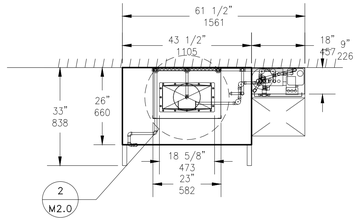


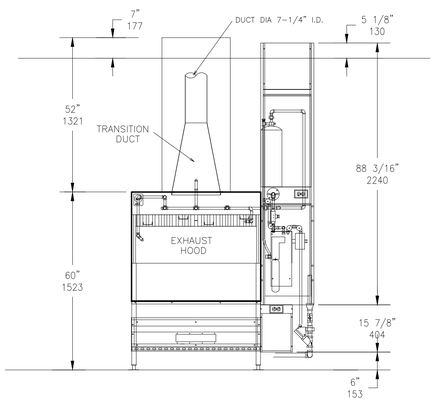


KITCHEN EXHAUST HOOD (TYPE I)

TAG: KH-2 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"





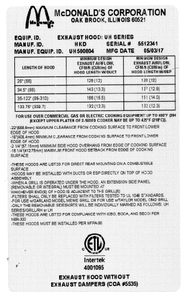


KITCHEN EXHAUST HOOD (TYPE I)

TAG: KH-3 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"

DRAWING NOTES

1. 16 GA. STAINLESS STEEL MATERIAL USED FOR HOOD CONSTRUCTION
2. FILTER BAFFLE:
   UL FILE R14372, VOL. 1, SEC. 1
   UL CONTROL NUMBER 5L65
   MEA-446-92-M
3. EXHAUST HOOD:
   UL FILE MH12755, VOL. 4
   UL CONTROL NUMBER 78L1
4. UTILITY CHASE AND RACEWAY:
   UL FILE E163328, VOL.1, SEC.3
5. HIGH TEMP GASKET:
   UL FILE MH12755, VOL. 2, SEC. 1, ILL. 9
6. HOOD CONSTRUCTION COMPLIES WITH NSF STANDARD 2
7. HOOD PERFORMANCE TESTED IN ACCORDANCE WITH UL 710
8. UL 300 AND NFPA 17A COMPLIANT R-102 WET CHEMICAL SYSTEM INCLUDED WITH HOOD INSTALLATION
9. ANSUL CONNECTIONS AND STARTUP BY APPROVED ANSUL REPRESENTATIVE
10. REFER E3.2 FOR HOOD/FAN INTERLOCK DETAILS
11. CAPTURE JET PLENUMS ARE TO BE ATTACHED WHEN CALLED OUT PER KITCHEN SCHEDULE.



McDONALD'S CORPORATION
OAK BROOK, ILLINOIS 60521

EQUIP. ID. EXHAUST HOOD: UH SERIES
MANUF. ID. HCD SERIAL #: 5612341
MANUF. EQUIP. ID. UH500804 MFG DATE: 05/03/17

LENGTH OF HOOD	MINIMUM SYSTEM EXHAUST AIR FLOW, CFM (L/s) PER LINEAR HOOD LENGTH IN FEET	MINIMUM SYSTEM EXHAUST AIRFLOW, CFM (L/s) PER LINEAR HOOD LENGTH IN METERS
39" (99)	126 (10)	126 (10)
94.5" (240)	140 (13.5)	137 (12.8)
95.125" (241.6)	180 (18.5)	181 (16.8)
139.75" (359.7)	180 (18.5)	181 (12.8)

FOR USE OVER COMMERCIAL GAS OR ELECTRIC COOKING EQUIPMENT UP TO AND* 254 EXCEPT UPPER PLATEAU OF 3 SIDED CORNER MAY BE UP TO 435°F (218°C).

-23"(584.2mm) MINIMUM CLEARANCE FROM COOKING SURFACE TO FRONT LOWER EDGE OF HOOD
-16"(406.4mm) MINIMUM C.CLEARANCE FROM COOKING SURFACE TO FRONT LOWER EDGE OF HOOD
-2 1/4" (57.15mm) MINIMUM SIDE HOOD OVERHANG FROM EDGE OF COOKING SURFACE
-SIDE PANELS (IF PRESENT) MAKE UP FRONT HOOD SETBACK FROM EDGE OF COOKING SURFACE

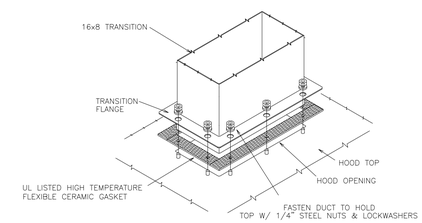
-THESE HOODS ARE LISTED FOR DIRECT REAR MOUNTING ON A COMBUSTIBLE SURFACE
-HOODS MAY BE INSTALLED WITH DUCTS OR ESP DIRECTLY ON TOP OF HOOD
-DUCTWORK
-WHEN A WALL IS CERRIED UNDER THE HOOD, AN EXTENSION SIDE PANEL (REMOVABLE OR INTEGRAL) MUST BE MOUNTED AT
-THESE HOODS ARE LISTED WITH OR WITHOUT GREASE
-FILTERS SHALL ONLY BE REPLACED WITH FILTERS TESTED TO UL 1046 STANDARDS
-FOR USE WITH/ARLAND MODEL MERE SHALL BE FOR USE WITH GUN MODEL ONLY SHALL
-FOR USE WITH/ARLAND MODEL MERE SHALL BE FOR USE WITH GUN MODEL ONLY SHALL
-FOR USE WITH/ARLAND MODEL MERE SHALL BE FOR USE WITH GUN MODEL ONLY SHALL
-THESE HOODS ARE LISTED FOR COMPLIANCE WITH IEBC, IECA, AND IBECO PER
-THESE HOODS MUST BE INSTALLED PER APPLIE

Intertek
4001955
EXHAUST HOOD WITHOUT EXHAUST DAMPERS (COA #5335)

DETAIL

UL LABEL
SCALE: NONE

1
M2.0



DETAIL

HOOD CONNECTION
SCALE: NONE

2
M2.0

NO.	DESCRIPTION	DATE	BY

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
2120 Fox Mill Road, Suite 2
Herndon, VA 20171
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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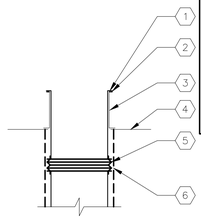
DRAWN BY: ES
STD ISSUE DATE 2025 05
REVIEWED BY DL
DATE ISSUED 00/00/00

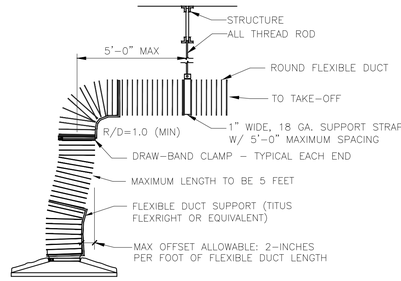
TITLE: 2025 OPTIMIZED BUILDING - B20 4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN
MSN: 013.1263

SHEET NO. M2.0
013.1263.00.0
EXHAUST HOODS

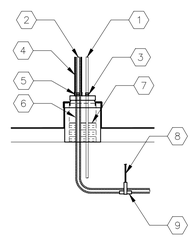


KEYED NOTES:
1. SHEET METAL DUCT DROP (SUPPLY, RETURN OR EXHAUST)
2. FOAM GASKET BETWEEN DUCT AND CURB
3. ROOF CURB
4. ROOF LINE
5. 6" FACE-TO-FACE CANVAS FLEXIBLE CONNECTION
6. 2" EXTERIOR INSULATION (SUPPLY AND RETURN)

DETAIL 1 M3.0
DUCT DROP INSTALLATION
SCALE: NONE



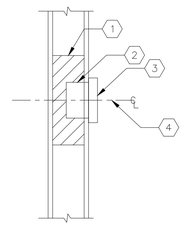
DETAIL 2 M3.0
DIFFUSER/GRILLE CONNECTION
SCALE: NONE



KEYED NOTES:
1. REFRIGERANT LIQUID LINE
2. REFRIGERANT SUCTION LINE WITH 1" THICK EXTERNAL FOAM INSULATION (ARMAFLEX BY ARMACELL OR EQUAL)
3. STAINLESS STEEL CLAMP
4. APPLY WEATHERPROOFING OVER FOAM INSULATION (ALUMAGUARD BY POLYGUARD OR EQUAL)
5. WRAP FOAM INSULATION OVER PIPE PORTAL NIPPLE AND STAINLESS STEEL CLAMP
6. RESTART FOAM INSULATION IMMEDIATELY AFTER PIPE PORTAL PENETRATION
7. INSULATE BOTTOM OF ROOF PORTAL CURB (MIN. R-19)
8. PIPE HANGER
9. LIGHT GAUGE GALVANIZED STEEL PROTECTIVE SHIELD

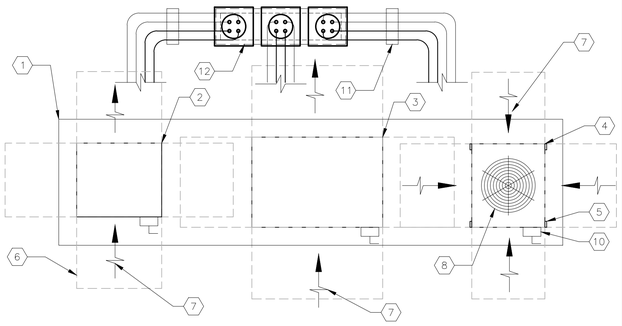
DETAIL 3 M3.0
REFRIGERANT PIPE INSTALLATION
SCALE: NONE

DETAIL 4 M3.0
NOT USED



KEYED NOTES:
1. PROVIDE BATT INSULATION FOR TEMPERATURE SENSORS INSTALLED IN HOLLOW CAVITY WALLS
2. 2x4 ELECTRICAL BOX
3. SENSOR (TEMPERATURE, HUMIDITY OR CO2)
4. MOUNT SENSOR(S) BETWEEN 4'-0" TO 4'-6" A.F.F.

DETAIL 5 M3.0
REMOTE SENSOR INSTALLATION
SCALE: NONE

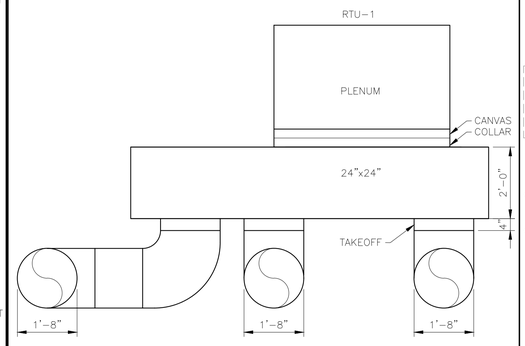


KEYED NOTES:
1. 180"Lx43"Wx14"H EQUIPMENT PLATFORM MANUFACTURED BY RPS OR EQUAL
2. 28⅛"Lx24¾"Wx19¾"H CONDENSING UNIT (COOLER).
3. 43⅜"Lx30½"Wx29¼"H CONDENSING UNIT (FREEZER).
4. 29"Lx24½"Wx34"H CONDENSING UNIT (MULTIPLEX).
5. FASTEN CONDENSING UNIT TO TOP OF PLATFORM AND SEAL FASTENER PENETRATIONS WITH UV RESISTANT SEALANT
6. OUTLINE OF SERVICE CLEARANCE EXTENDING 3'-0" FROM CONDENSING UNIT ON ALL SIDES
7. CONDENSER AIR INTAKE
8. CONDENSER FAN OUTLET ON TOP OF UNIT
9. CONDENSER FAN OUTLET ON SIDE OF UNIT
10. DISCONNECT SWITCH FURNISHED WITH UNIT
11. PROVIDE PIPE SUPPORT AS REQUIRED (TREATED LUMBER IS NOT ACCEPTABLE)
12. MULTIPLE PIPE PORTAL MANUFACTURED BY RPS OR EQUAL

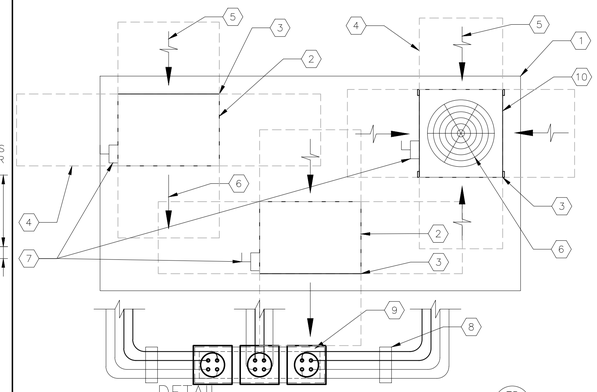
CONDUIT SIZES: (PER CONDENSING UNIT)
(1) ¾" POWER
(1) ¾" CONTROL

REFRIGERANT PIPING SIZES:
SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR RECOMMENDED REFRIGERANT PIPE SIZING

DETAIL 6 M3.0
REMOTE CONDENSER UNITS (CU-4, CU-5 & CU-6)
SCALE: ½"=1'-0"



DETAIL 7 M3.0
VIEW TOWARDS REAR OF KITCHEN AT DUCT DROPS
SCALE: ½"=1'-0"

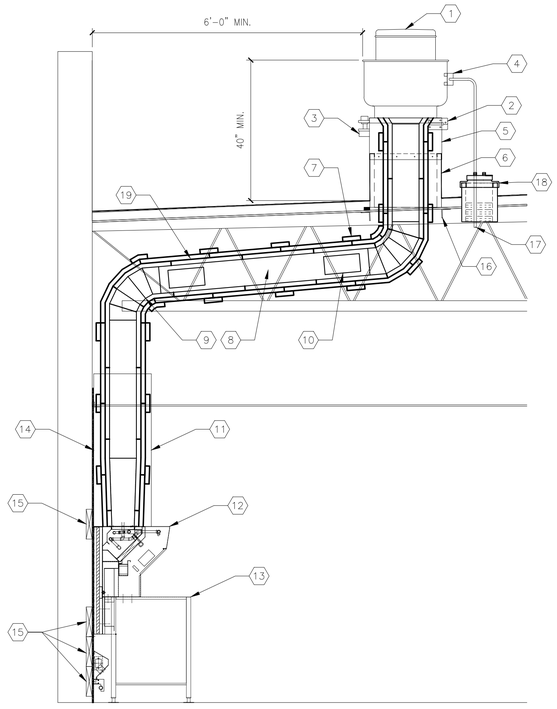


KEYED NOTES:
1. 141"x72"x14"H EQUIPMENT PLATFORM MANUFACTURED BY RPS OR EQUAL
2. 34"x24⅛"x25¾"H CONDENSING UNIT
3. FASTEN CONDENSING UNIT TO TOP OF PLATFORM AND SEAL FASTENER PENETRATIONS WITH UV RESISTANT SEALANT
4. OUTLINE OF SERVICE CLEARANCE EXTENDING FROM CONDENSING UNIT ON ALL SIDES
5. CONDENSER AIR INTAKE
6. CONDENSER FAN OUTLET
7. DISCONNECT SWITCH PROVIDED BY ELECTRICAL CONTRACTOR
8. PROVIDE PIPE SUPPORT AS NECESSARY (TREATED LUMBER IS NOT ACCEPTABLE)
9. MULTIPLE PIPE PORTAL MANUFACTURED BY RPS OR EQUAL
10. 29½"x28"x38"H CONDENSING UNIT

CONDUIT SIZES: (PER CONDENSING UNIT)
(1) ¾" POWER
(1) ¾" CONTROL

REFRIGERANT PIPING SIZES:
(PER CONDENSING UNIT)
ICE MACHINE - ½" LIQUID, ¾" SUCTION
(CU-3 CONDENSING UNIT)
ICE MACHINE - ⅜" LIQUID, ½" SUCTION

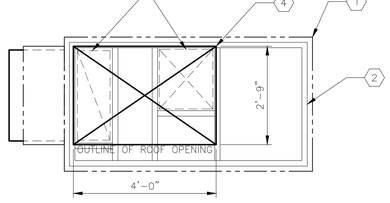
DETAIL 7B M3.0
REMOTE CONDENSER UNIT (CU-1, CU-2 & CU-3)
SCALE: ½"=1'-0"



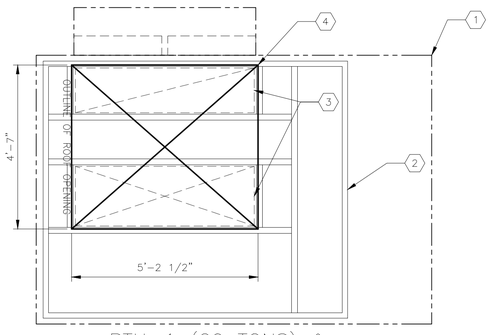
KEYED NOTES:
1. UPBLAST EXHAUST FAN (SEE EXHAUST FAN SCHEDULE)
2. HINGED CURB CAP FOR CLEANING ACCESS (FURNISHED WITH FAN)
3. GREASE TRAP (FURNISHED WITH FAN)
4. NEMA 3R DISCONNECT SWITCH (FURNISHED WITH FAN)
5. 12" HIGH CURB EXTENSION (FURNISHED WITH FAN)
6. 18" HIGH CURB (FURNISHED WITH FAN)
7. TWO (2) LAYERS OF 1½" THICK DUCT WRAP TO MEET ASTM E2336 INSTALLED PER MANUFACTURER'S INSTRUCTIONS (SEE MECHANICAL NOTES FOR INSULATION SPECIFICATION)
8. 16 GAUGE BLACK IRON (CARBON STEEL) OR 18 GAUGE STAINLESS STEEL DUCTWORK WELDED LIQUID-TIGHT
9. 5-GORE BLACK IRON (CARBON STEEL) RADIUS ELBOW
10. 12"x6" ACCESS DOOR AT ALL CHANGES IN DIRECTION
11. STAINLESS STEEL FASCIA PANEL TO PROTECT DUCTWORK AND INSULATION
12. BACKSHELF TYPE EXHAUST HOOD (SEE KITCHEN EXHAUST HOOD SCHEDULE)
13. COOKING APPLIANCE (SEE KITCHEN DRAWINGS)
14. REAR WALL CONSTRUCTION SHALL CONSIST OF CERAMIC TILE OR MIN. 22 GAUGE STAINLESS STEEL OVER ⅝" TYPE X GYPSUM BOARD OR ½" CEMENT BOARD FROM FLOOR TO CEILING AND EXTENDING 24" TO EACH SIDE OF THE HOOD INSTALLED ON NON-COMBUSTIBLE WALL (REFER TO SHEET A1.0 FOR MORE INFORMATION.
15. 2x10 LIGHT GAUGE STEEL FOR SUPPORT BLOCKING FOR HOOD AND RACEWAY (COORDINATE INSTALLATION WITH HOOD INSTALLER)
16. STRUCTURAL FRAMING FOR ROOF OPENING (SEE STRUCTURAL DRAWINGS)
17. TRANSITION TO FLEXIBLE CONDUIT UNDER ROOF PENETRATION WHERE ALLOWED BY CODE.
18. ROOF PIPE PORTAL, RPS-N18(1) RC-2A 12x12x11H.
19. ¼" PER FOOT SLOPE PITCHED BACK TOWARDS THE HOOD.

SECTION 8 M3.0
KITCHEN EXHAUST HOOD INSTALLATION
SCALE: ½"=1'-0"

KEYED NOTES:
1. OUTLINE OF ROOFTOP UNIT
2. ROOF CURB
3. SUPPLY AND RETURN AIR DUCT DROPS
4. ROOF OPENING

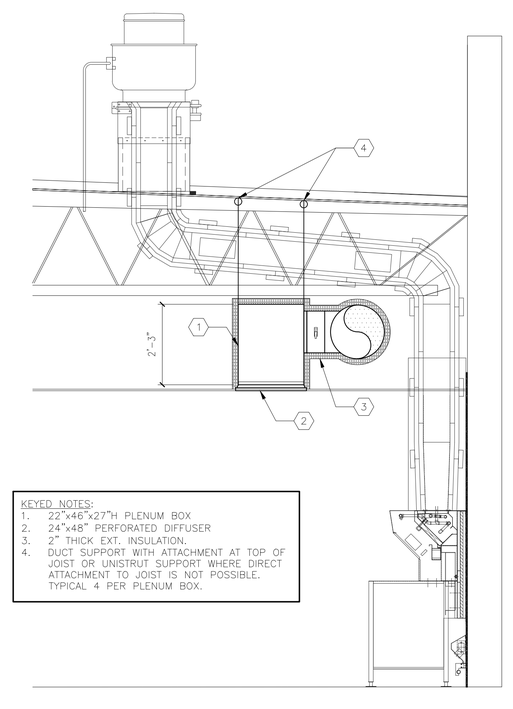


RTU-2 (6-TONS)



RTU-1 (20 TONS) & RTU-3 (13-TONS)

DETAIL 9 M3.0
ROOF OPENINGS
SCALE: ½"=1'-0"



KEYED NOTES:
1. 22"x46"x27"H PLENUM BOX
2. 24"x48" PERFORATED DIFFUSER
3. 2" THICK EXT. INSULATION.
4. DUCT SUPPORT WITH ATTACHMENT AT TOP OF JOIST OR UNISTRUT SUPPORT WHERE DIRECT ATTACHMENT TO JOIST IS NOT POSSIBLE. TYPICAL 4 PER PLENUM BOX.

SECTION 10 M3.0
SUPPLY (S-1) PLENUM INSTALLATION
SCALE: ½"=1'-0"

NO.	DESCRIPTION	DATE	BY

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600087 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
7710 Carondelet Avenue, Suite 2
Saint Louis, MO 63105
314.727.0100
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE
ES	2025 05
REVIEWED BY	DATE ISSUED
DL	00/00/00

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & C
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 013.1263
SITE ADDRESS
7030 Northfield Dr. BROWNSBURG, IN

013.1263.00.0
SHEET NO. M3.0
DETAILS

MECHANICAL NOTES

GENERAL:
1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
2. ALL DIMENSIONS, CLEARANCES AND TOLERANCES SHALL BE VERIFIED PRIOR TO INSTALLATION.
3. ALL MATERIALS, FIXTURES AND EQUIPMENT USED SHALL BE IN ACCORDANCE WITH McDONALD'S SPECIFICATIONS. SPECIFICATIONS ARE CONTAINED WITHIN THESE DRAWINGS AND THE McDONALD'S PROJECT MANUAL. ANY CONTRACTOR IN NEED OF A COPY OF THE McDONALD'S PROJECT MANUAL SHALL CONTACT THE McDONALD'S AREA CONSTRUCTION MANAGER. ANY VARIANCE FROM THE McDONALD'S SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER–OF–RECORD.
4. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. SEE COORDINATION SCHEDULE FOR ADDITIONAL SCOPE OF WORK.
6. PRIOR TO BUILDING TURNOVER, A COMPLETE START–UP, TEST, ADJUST AND BALANCE SHALL BE PERFORMED ON ALL MECHANICAL SYSTEMS. THIS WORK SHALL BE PERFORMED BY A CERTIFIED TEST AND BALANCE CONTRACTOR. A CERTIFIED TEST AND BALANCE CONTRACTOR CAN BE FOUND BY VISITING:
   HTTP://WWW.AABCHQ.COM/DIRECTORY
   HTTP://WWW.NEBB.ORG/DIRECTORY.HTM
   HTTP://WWW.TABBCERTIFIED.ORG/SITE/CONTENT/CONTRACTORS/SEARCH
7. UPON COMPLETION OF THE PUNCHLIST, THE MECHANICAL CONTRACTOR AND TEST AND BALANCE CONTRACTOR SHALL SUBMIT REDLINED OR AS–BUILT DRAWINGS ALONG WITH THE TEST AND BALANCE REPORT AND ALL EQUIPMENT OPERATION AND MAINTENANCE MANUALS TO THE McDONALD'S AREA CONSTRUCTION MANAGER. A MINIMUM OF TWO (2) COPIES SHALL BE PROVIDED, ONE (1) FOR REGIONAL RECORDS AND ONE (1) FOR THE RESTAURANT.
8. ALL PENETRATIONS OF FIRE–RATED WALLS SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING SYSTEM.

VENTILATION SYSTEMS:
1. ALL SHEET METAL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH LOCAL CODES AND SMACNA STANDARDS.
2. ALL DUCTWORK DIMENSIONS ARE INTERNAL FREE AREA DIMENSIONS AND SIZED FOR 0.08" W.C. PER 100 FT. OF DUCT.
3. ALL SHEET METAL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA TABLES FOR 2" W.C. AND SHALL BE SUPPORTED WITH AN APPROVED HANGER AT INTERVALS NOT EXCEEDING 10 FT.
4. ALL DUCT DROPS INTO THE BUILDING SHALL BE INSTALLED WITH FLEXIBLE CONNECTIONS TO ISOLATE THE DUCTWORK SYSTEM FROM NOISE AND VIBRATION. FLEXIBLE CONNECTIONS SHALL BE TESTED IN ACCORDANCE WITH UL 181 AND LISTED AS CLASS 0 OR CLASS 1.
5. ALL DUCT DROPS INTO THE BUILDING SHALL BE OFFSET AS NECESSARY TO ALLOW FOR THE CLEAR INSTALLATION OF THE EXTERNAL DUCTWORK INSULATION.
6. ALL DUCTWORK BRANCHES THAT SERVE A SINGLE DIFFUSER SHALL BE SUPPLIED WITH A VOLUME DAMPER FOR BALANCING. BRANCHES THAT SERVE MULTIPLE DIFFUSERS, THE BALANCING IS HANDLED VIA REMOTE DAMPER INSTALLED NEAR THE DIFFUSER. REFER TO M1.2 FOR DAMPER LOCATIONS. VOLUME DAMPER SHALL HAVE A 2" OFFSET TO ACCOMMODATE EXTERNAL INSULATION.
7. TAKE–OFFS FROM RECTANGULAR TO ROUND DUCT SHALL BE DUCTMATE STRAIGHT–SIDED OR CENTER HIGH–EFFICIENCY TAKE–OFFS WITH A 2" DAMPER STAND–OFF TO ACCOMMODATE FOR EXTERNAL INSULATION.
8. ALL DUCTWORK JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS SHALL BE SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), TAPES, ETC. ALL SEALANT MATERIALS SHALL BE LISTED IN ACCORDANCE WITH UL 181A OR 181B.
9. ALL SUPPLY AND RETURN SHEET METAL DUCTWORK LOCATED WITHIN THE CEILING SPACE SHALL BE EXTERNALLY INSULATED. INSULATION SHALL BE 2" THICK MICROLITE FSK–100 BY JOHNS MANVILLE OR EQUAL.
10. ALL SUPPLY AND RETURN SHEET METAL DUCTWORK LOCATED OUTSIDE OF THE BUILDING SHALL BE INTERNALLY LINED WITH A 1" THICK FIBERGLASS (MIN. R–4.2) AND EXTERNALLY INSULATED WITH A 2" THICK RIGID POLYSTYRENE, POLYURETHANE OR POLYISOCYANURATE BOARD (MIN. R–8 FOR CLIMATE ZONES 1 THROUGH 4), OR A 3" THICK (MIN R–12 FOR CLIMATE ZONES 5 THROUGH 8). INTERNAL FIBERGLASS INSULATION SHALL BE LINATEX BY JOHNS MANVILLE OR EQUAL. EXTERNAL RIGID BOARD INSULATION SHALL BE THERMAPINK BY OWENS CORNING OR EQUAL.
11. FOR APPLICABLE SITUATIONS OR PLAYPLACE ADDITIONS: ALL EXPOSED SPIRAL DUCTWORK SHALL BE INTERNALLY INSULATED TO PREVENT CONDENSATION (MIN. R–4.3). INTERNAL INSULATION SHALL BE 1" THICK SPIRACOUSTIC PLUS BY JOHNS MANVILLE OR EQUAL.
12. ALL DUCTWORK PENETRATIONS THROUGH FIRE–RATED WALLS, BARRIERS OR PARTITIONS SHALL BE PROTECTED WITH A FIRE DAMPER. THE PERIMETER OF THE FIRE DAMPER SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING MATERIAL.
13. ALL EXTERIOR SHEET METAL DUCTWORK SHALL BE EXTERNALLY WRAPPED WITH AN APPROVED WEATHERPROOFING MATERIAL TO PROTECT AGAINST WATER PENETRATION AND CORROSION. SIDES AND TOP OF EXTERNAL WEATHERPROOFING SHALL BE ALUMAGUARD 60 MIL UV BARRIER BY POLYGUARD OR EQUAL. BOTTOM OF EXTERNAL WEATHERPROOFING SHALL BE VAPORGUARD 5 MIL MEMBRANE BY POLYGUARD OR EQUAL.
14. ALL FLEXIBLE DUCTWORK, METALLIC AND NONMETALLIC, SHALL CONFORM TO THE FOLLOWING:
   A. 2" THICK INSULATION (R–6.0) SEE NOTE#9 AND TABLE(S) BELOW:

DUCT LOCATION: UNCONDITIONED SPACE			CLIMATE ZONES 1 THROUGH 8
DUCTWORK CLASSIFICATION	PRESSURE	SEAL CLASS	INSULATION
SUPPLY	2.00" W.C.	A	TYPE A (R–6)
RETURN	–2.00" W.C.	A	TYPE A (R–6)
EXHAUST	–2.00" W.C.	A	(*)TYPE A (R–6)
HANGER SUPPORTS	EVERY 6 FT.		1" TYPE B

DUCT LOCATION: EXTERIOR (INCLUDES ATTICS ABOVE INSULATED CEILINGS AND CRAWL SPACES.			CLIMATE ZONES 1 THROUGH 4	CLIMATE ZONES 5 THROUGH 8
DUCTWORK CLASSIFICATION	PRESSURE	SEAL CLASS	INSULATION	INSULATION
SUPPLY	2.00" W.C.	A	TYPE A (R–8)	TYPE A (R–12)
RETURN	–2.00" W.C.	A	TYPE A (R–8)	TYPE A (R–12)
EXHAUST	–2.00" W.C.	A	(*)TYPE A (R–8)	(*)TYPE A (R–12)
HANGER SUPPORTS	EVERY 6 FT.		1" TYPE B	

(*) EXHAUST DUCTWORK IS ONLY REQUIRED TO BE INSULATED WITHIN 2–FEET OF ROOF PENETRATION. REFER TO "COMMERCIAL KITCHEN EXHAUST SYSTEMS", NOTE#4 FOR FIRE WRAPPING REQUIREMENTS ON KITCHEN GREASE DUCTWORK.

   B. INTEGRAL VAPOR BARRIER
   C. LISTED AND LABELED UL 181, CLASS 0 OR CLASS 1
   D. INSTALLED IN ACCORDANCE WITH:
      i. SMACNA STANDARDS,
      ii. AIR DIFFUSION COUNCIL INSTALLATION GUIDELINES, AND/OR
      iii. MANUFACTURER'S INSTALLATION INSTRUCTIONS
14. FLEXIBLE DUCTWORK SHALL NOT PENETRATE WALLS. SHEET METAL DUCTWORK IS REQUIRED AT ALL FIRE–RATED AND DRAFTSTOP WALL PENETRATIONS.
15. ALL COVERINGS, LININGS AND ADHESIVES (TAPES, ETC.) SHALL HAVE A FLAME–SPREAD INDEX NOT GREATER THAN 25 AND A SMOKE–DEVELOPED INDEX NOT GREATER THAN 50.
16. DUCT–MOUNTED SMOKE DETECTORS, PROVIDED BY ROOFTOP UNIT MANUFACTURER, SHALL BE INSTALLED IN SYSTEMS WITH DESIGN CAPACITY GREATER THAN 2,000 CFM. SEE MECHANICAL DRAWINGS FOR LOCATIONS OF SMOKE DETECTORS. DUCT–MOUNTED SMOKE DETECTORS ARE NOT REQUIRED WHEN THE BUILDING IS PROTECTED THROUGHOUT BY AREA SMOKE DETECTORS CONNECTED TO A FIRE ALARM SYSTEM WHERE THE FIRE ALARM SYSTEM IS DESIGNED TO SHUT DOWN THE ROOFTOP UNITS.
17. ALL SUPPLY AIR DIFFUSERS SHALL BE INSULATED TO PREVENT CONDENSATION.
18. ALL AIR DEVICES LOCATED IN DRYWALL CEILINGS SHALL BE SUPPLIED WITH AN INTEGRAL VOLUME DAMPER ACCESSIBLE FROM THE AIR DEVICE FACE TO FACILITATE BALANCING.
19. ALL OUTDOOR AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10 FT. HORIZONTALLY FROM ANY SOURCE OF CONTAMINATION SUCH AS EXHAUST FANS, PLUMBING VENTS, WATER HEATER FLUES, ETC. WHERE A CONTAMINANT SOURCE IS LOCATED WITHIN 10 FT. OF AN INTAKE, THE INTAKE OPENING SHALL BE LOCATED A MINIMUM OF 2 FT. BELOW THE CONTAMINANT SOURCE.
20. ALL ROOFTOP CONDENSING UNITS THAT DISCHARGE HORIZONTALLY SHALL BE ORIENTED SUCH THAT THE DISCHARGE DOES NOT BLOW IN THE DIRECTION OF AN OUTDOOR AIR INTAKE.

COMMERCIAL KITCHEN EXHAUST SYSTEMS:
1. ALL METAL DUCTWORK USED FOR THE CONVEYANCE OF GREASE–LADEN AIR SHALL BE CONSTRUCTED OF MINIMUM 18 GAUGE STAINLESS STEEL OR 16 GAUGE CARBON STEEL (BLACK IRON).
2. ALL GREASE EXHAUST DUCTWORK JOINTS SHALL BE EITHER TELESCOPING OR BELL TYPE. BUTT–WELDED JOINTS ARE PROHIBITED.
3. ALL GREASE EXHAUST DUCTWORK SEAMS AND JOINTS SHALL BE CONTINUOUSLY WELDED WATER–TIGHT ON THE EXTERNAL SURFACE OF THE DUCT SYSTEM. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER.
4. ALL GREASE EXHAUST DUCTWORK SHALL BE EXTERNALLY INSULATED WITH A ASTM E2336 LISTED AND LABELED GREASE DUCT ENCLOSURE SYSTEM. INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. ACCESS PANELS SHALL BE PROVIDED AT ALL CHANGES IN DIRECTION OF THE GREASE EXHAUST DUCTWORK SYSTEM. ACCESS PANELS SHALL BE INSTALLED IN ACCORDANCE WITH THE INSULATION MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SHALL BE LABELED AS FOLLOWS: "ACCESS PANEL – DO NOT OBSTRUCT".
6. ALL HORIZONTAL GREASE EXHAUST DUCTWORK SHALL BE INSTALLED WITH A MINIMUM ¼" PER FOOT SLOPE AND SHALL BE PITCHED BACK TOWARD THE HOOD.
7. UPBLAST KITCHEN EXHAUST FANS SHALL BE LOCATED A MINIMUM OF 6 FT. FROM ANY PARAPET WALL OR ADJACENT STRUCTURE AND SHALL TERMINATE A MINIMUM OF 40 INCHES ABOVE THE FINISHED ROOFING MATERIAL.

REFRIGERANT PIPING:
1. ALL REFRIGERATION WORK SHALL BE PERFORMED BY A CERTIFIED REFRIGERATION CONTRACTOR.
2. ALL REFRIGERANT PIPING SHALL BE SEAMLESS COPPER TUBING OF TYPE L IN ACCORDANCE WITH ASTM B 88 AND ALL JOINTS SHALL BE SOLDERED.
3. ALL REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH A MINIMUM 1" FOAM PIPE INSULATION. PIPE INSULATION INSTALLED OUTDOORS SHALL BE PROTECTED WITH AN APPROVED WEATHERPROOFING MATERIAL.
4. ALL SUSPENDED REFRIGERANT PIPING SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER TUBING ≤1¼"	6 FT.	10 FT.
COPPER TUBING ≥1½"	10 FT.	10 FT.

5. ALL REFRIGERANT PIPING SHALL BE SIZED PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
6. PRE–CHARGED LINESETS ARE NOT PERMITTED AS LINES WILL MOST LIKELY NEED TO BE CUT TO FIT THE APPLICATION AND REFRIGERANT WILL NEED TO BE RECLAIMED.
7. ALL PIPE INSULATION SHALL BE PROTECTED FROM DAMAGE FROM PIPE HANGERS. PROTECTION SHALL BE LIGHT GAUGE GALVANIZED STEEL OR EQUAL.
8. ALL REFRIGERANT PIPING SYSTEMS SHALL BE PRESSURE TESTED FOR LEAKS PRIOR TO START–UP. ALL LEAKS SHALL BE REMEDIED PRIOR TO BUILDING TURNOVER.
9. ALL PIPING SHALL MEET MINIMUM INSULATION THICKNESS PER THE TABLE BELOW:

PIPING	MINIMUM INSULATION THICKNESS (IN INCHES) PER NOMINAL PIPE OR TUBE SIZE				
NOMINAL PIPE SIZE	<1	1 TO 1.5	1.5 TO <4	4 TO <8	≥8
LIQUID (REFRIGERATION) (<40°F)	0.5	1.0	1.0	1.0	1.5
SUCTION (REFRIGERATION) (<40°F)	0.5	1.0	1.0	1.0	1.5

CO2 DETECTION EQUIPMENT:
1. THE CO2 DETECTOR SHALL BE HARD–WIRED TO PREVENT TAMPERING AND SHALL BE INSTALLED AT 12" A.F.F. WITHIN A 5 FT. RADIUS OF THE CO2 STORAGE TANKS.
2. ONE (1) AUDIBLE AND ONE (1) VISUAL ALARM SHALL BE INSTALLED A MINIMUM OF 7 FT. A.F.F., IN PLAIN SIGHT IN THE SAME ROOM AS THE CO2 STORAGE TANKS.
3. ONE (1) AUDIBLE AND ONE (1) VISUAL ALARM SHALL BE INSTALLED A MINIMUM OF 7 FT. A.F.F., AT THE BACK OF THE KITCHEN AND IN PLAIN SIGHT FROM THE MAIN SIDE OF THE PREP LINE.
4. THE CO2 EXTERIOR STROBE SHALL BE INSTALLED AS SHOWN ON SHEET A2.0, (DETAIL 2) AND ON SHEET E1.1. THE INSIDE AUDIBLE AND VISUAL ALARM SHALL BE INSTALLED INSIDE THE CO2 CLOSET, AND IN THE SUPPORT/BACK–OF–THE HOUSE LOCATION AS SHOWN ON SHEETS E1.1 AND E3.0.

CONDENSATE PIPING:
1. CONDENSATE PIPING SHALL BE GALVANIZED STEEL, COPPER OR PVC.
2. PVC PIPE SHALL BE PAINTED WITH WATER BASED LATEX PAINTING TO RESIST DEGRADATION FROM ULTRAVIOLET EXPOSURE.
3. PIPE SUPPORTS SHALL BE RPS MODEL PMP–2 OR EQUAL. QUANTITY AS REQUIRED DEPENDANT UPON PIPING MATERIAL.
4. PIPING SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER PIPE	12 FT.	10 FT.
GALVANIZED STEEL	12 FT.	15 FT.
PVC	4 FT.	15 FT.

5. CONDENSATE PIPING SHALL SLOPE A MINIMUM OF ⅛" PER FOOT.
6. CONDENSATE PIPING SHALL BE SIZED BASED ON THE FOLLOWING:

TOTAL TONS SERVED BY PIPE	MINIMUM PIPE SIZE
<20 TONS	¾"
>20 TONS, <40 TONS	1"

LEGEND

TS	TEMPERATURE SENSOR
ATS	AVERAGING TEMPERATURE SENSOR
CO2	CO2 SENSOR FOR ROOFTOP UNIT DEMAND CONTROL VENTILATION
HS	HUMIDITY SENSOR
T	THERMOSTAT
2	SMOKE DETECTOR
KH 2	EQUIPMENT TAG
R–1 / 1750 CFM / 18"ø	DIFFUSER INFORMATION LINE 1: TAG LINE 2: AIRFLOW LINE 3: NECK SIZE
	SUPPLY AIR DUCT (VERTICAL)
	RETURN OR EXHAUST AIR DUCT (VERTICAL)
	ROUND DUCT (VERTICAL)
SSC	STEADY–STATE SPEED CONTROLLER
	PLAQUE DIFFUSER (SHADED AREA DESIGNATES BLANK–OFF PANEL LOCATION)
	LINEAR SLOT DIFFUSER
	LOUVERED FACE DIFFUSER
	CEILING–MOUNTED EXHAUST FAN
	SPIN–IN COLLAR WITH VOLUME DAMPER
	VOLUME DAMPER
	FLEXIBLE DUCTWORK
12"ø	SHEET METAL DUCTWORK W/DIA. SIZE
	PERFORATED FACE DIFFUSER
	SHEET METAL TEE WITH CAP

ABBREVIATIONS

ACM	AREA CONSTRUCTION MANAGER
B.J.	BELOW JOISTS
BSI	BEVERAGE SYSTEM INSTALLER
DCV	DEMAND CONTROL VENTILATION
E.A.	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
FAC	FIRE ALARM CONTRACTOR
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
I.D.	INSIDE DIMENSION
KEI	KITCHEN EQUIPMENT INSTALLER
KES	KITCHEN EQUIPMENT SUPPLIER
M.A. (S)	MIXED AIR – SUMMER
M.A. (W)	MIXED AIR – WINTER
MC	MECHANICAL CONTRACTOR
O.A.	OUTDOOR AIR
O.D.	OUTSIDE DIMENSION
O/O	OWNER/OPERATOR
PC	PLUMBING CONTRACTOR
R.A.	RETURN AIR
RC	REFRIGERATION CONTRACTOR
S.A.	SUPPLY AIR
S.P.	STATIC PRESSURE
MC	TEST AND BALANCE CONTRACTOR

REV	DATE	DESCRIPTION	BY

ENGINEER OF RECORD:
DAVID LEIFFER REGISTERED No. 11600507 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
212 SE 34th. Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY: ES
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 00/00/00

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci; WOOD TRUSS ROOF FRAMING; E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

SHEET NO. 013.1263.00.0
M4.0
GENERAL NOTES

COORDINATION SCHEDULE

GENERAL REQUIREMENTS	FURNISH	INSTALL	FINAL CONNECTION	NOTES
MECHANICAL PERMIT	MC			1–3
HOT WORK (WELDING) PERMIT (IF APPLICABLE)	MC			1–3
REFRIGERATION PERMIT (IF APPLICABLE)	KES			1–3
PLUMBING PERMIT	PC			1–3
ELECTRICAL PERMIT	EC			1–3
FIRE SPRINKLER PERMIT (IF APPLICABLE)	FPC			1–3
FIRE ALARM PERMIT (IF APPLICABLE)	FAC			1–3
CONTRACTOR COORDINATION REQUIREMENTS				
HEATING & AIR–CONDITIONING				
ROOFTOP UNITS, INTAKE AND RELIEF	MCD CP	MC		1–5, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 20, 22
GAS PIPING AND GAS PIPE KIT	PC	PC	PC	1–3, 14, 22–23
CONTROLS WIRING	MC	EC	EC	1–3, 19, 22, 24
POWER WIRING	EC	EC	EC	1–3, 19, 22, 24
CONDENSATE TRAP	MC	PC		1–3, 22–23
CONDENSATE PIPING (IF APPLICABLE)	PC	PC		1–3, 22–23
DUCT–MOUNTED SMOKE DETECTOR	MC	MC	EC	1–3, 22, 24
GENERAL EXHAUST SYSTEMS				
EXHAUST FANS	MCD CP	MC		1–3, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 22
CONTROLS (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
TEMPERATURE CONTROLS				
BUILDING AUTOMATION SYSTEM	MCD CP	MC	EC	1–3, 22, 24
REMOTE SENSORS (RH AND/OR TEMPERATURE)	MC	MC	EC	1–3, 22, 24
CONTROLS WIRING (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
DUCTWORK AND ACCESSORIES				
GALVANIZED SHEET METAL DUCTWORK	MC	MC		1–3, 22
EXTERNAL INSULATION	MC	MC		1–3, 22
INTERNAL INSULATION (IF APPLICABLE)	MC	MC		1–3, 22
WEATHERPROOFING (IF APPLICABLE)	MC	MC		1–3, 22
SPIN–IN COLLARS	MC	MC		1–3, 22
FLEXIBLE DUCTWORK	MC	MC		1–3, 22
VOLUME/BALANCING DAMPERS	MC	MC		1–3, 22
FIRE DAMPERS (IF APPLICABLE)	MC	MC		1–3, 22
FIRESTOPPING (IF APPLICABLE)	MC	MC		1–3, 22
AIR DEVICES AND ACCESSORIES	MC	MC	MC	1–3, 7, 22, 28
PLUMBING SYSTEMS				
WATER HEATERS	MCD CP	PC	PC	1–3, 11–12, 23
HOT AND COLD WATER PIPE	PC	PC	PC	1–3, 23
VENTS AND INTAKES	PC	PC	PC	1–3, 23
THERMOSTATIC MIXING VALVE	PC	PC	PC	1–3, 23
POWER AND CONTROL WIRING	EC	EC	EC	1–3, 23–24
KITCHEN EXHAUST SYSTEMS				
McDONALD'S BACKSHELF EXHAUST HOODS	KES	KEI		1–3, 6, 22, 27
CANOPY EXHAUST HOODS (IF APPLICABLE)	KES	KEI		1–3, 6, 22, 27
BLACK IRON DUCTWORK	KES	KEI		1–3, 6, 22
STAINLESS STEEL DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
ALUMINUM DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
UL LISTED DUCT WRAP	MC	MC		1–3, 6, 22
FIRE–RATED DUCT ENCLOSURE (IF APPLICABLE)	GC	GC		1–3, 6, 20, 22
EXHAUST FANS	MCD CP	MC		1–3, 6, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 6, 20, 22
CURB EXTENSIONS	MC	MC		1–3, 6, 22
CONTROLS (WHERE APPLICABLE)	EC	EC	EC	1–3, 6, 22, 24
POWER WIRING	EC	EC	EC	1–3, 6, 22, 24
FIRE SUPPRESSION SYSTEM	KES	KES	KES	1–3, 16, 22, 27
KITCHEN EQUIPMENT				
COOLER/FREEZER	KES	GC		1–3, 27
EVAPORATOR COILS	KES	MC		1–3, 27
CONDENSATE PIPING	PC	PC	PC	1–3, 23, 27
REMOTE CONDENSING UNIT (MAC)	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	EC	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
ICE MACHINES	KES	KEI		1–3, 27
WATER SUPPLY PIPING	KES	KEI	BSI	1–3, 27
REMOTE CONDENSING UNITS	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22, 27
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	KES	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
GRILLS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
CONTROL CABLE (6' CLAMSHELL ONLY)	MC	EC	EC	1–3, 23, 24, 27
FRYERS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
3–COMPARTMENT SINK	KES	KES		1–3, 12, 27
FAUCETS AND PRE–RINSE SPRAYER	KES	KES		1–3, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
HAND SINKS	MCD CP	PC		1–3, 23, 27
FAUCET	MCD CP	PC		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
VEGETABLE SINK	KES	KES		1–3, 23, 27
FAUCET	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WASHING MACHINE	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WARE WASHER	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
MISCELLANEOUS ITEMS				
FIRE SPINKLER SYSTEMS	FPC	FPC	FPC	1–3, 15, 25
HVAC EQUIPMENT START–UP	MC			1–3, 22
TEST, ADJUST AND BALANCE HVAC SYSTEMS	TAB			1–3, 22
DOOR GRILLES (IF APPLICABLE)	MC	GC		1–3, 20, 22
ROOF/WALL OPENINGS	GC			1–3, 20–24
APPLIANCE BACKFLOW PREVENTION	KES/BSI	PC	PC	1–3, 23, 27
CO2 DETECTION SYSTEM	KES/BSI	EC/BSI	EC/BSI	1–3, 22, 27

NOTES:
1. THIS SCHEDULE IS INTENDED AS A GUIDE FOR THE WORK TO BE PERFORMED. ALL WORK SHALL BE COORDINATED BETWEEN THE McDONALD'S AREA CONSTRUCTION MANAGER AND ALL GC AND O/O SUBCONTRACTORS.
2. ONE (1) COPY OF THE DECOR PACKAGE DRAWINGS SHALL BE SUPPLIED TO THE GENERAL CONTRACTOR AND EACH OF THE SUBCONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THE SUBCONTRACTORS TO INSURE THAT THEY HAVE RECEIVED THE DECOR PACKAGE DRAWINGS.
3. FOR ANY WORK NOT CLARIFIED IN THIS SCHEDULE OR IN THE NOTES AND SPECIFICATIONS, PLEASE CONSULT THE McDONALD'S CONSTRUCTION MANAGER FOR SCOPE OF WORK.
4. ALL ROOFTOP UNIT EQUIPMENT SUPPLIED BY THE MECHANICAL CONTRACTOR AND THE KITCHEN EQUIPMENT SUPPLIER SHALL BE ON SITE AT THE SAME TIME FOR A SINGLE CRANE LIFT. EQUIPMENT SITE ARRIVAL DATE SHALL BE COORDINATED BETWEEN THE CONSTRUCTION MANAGER, MECHANICAL CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER.
5. ALL ROOFTOP UNITS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY EQUIPMENT. THE INSTALLATION OF STANDARD EFFICIENCY ROOFTOP UNITS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR HVAC EQUIPMENT PERFORMANCE REQUIREMENTS.
6. ALL KITCHEN EQUIPMENT REQUIRING EXHAUST SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS. ANY VARIATION FROM THESE PLANS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER AND THE ENGINEER–OF–RECORD.
7. WHERE GYPSUM BOARD CEILINGS ARE INSTALLED, THE MECHANICAL CONTRACTOR SHALL SUPPLY DRYWALL MOUNTING FRAMES FOR LAY–IN TYPE DIFFUSERS.
8. ALL WORK SHOWN ON P1.6 DRAWING(S) SHALL BE COMPLETED BY THE BEVERAGE SYSTEM INSTALLER (OR K.E.S.) UNLESS OTHERWISE NOTED IN THE PLUMBING DRAWINGS.
9. ALL WORK ON P1.0 & P1.2 DRAWING(S) SHALL BE BY THE PLUMBING CONTRACTOR.
10. THE BEVERAGE SYSTEM INSTALLER FURNISHES, RUNS AND CONNECTS ALL FLEXIBLE WATER AND SYRUP LINES FOR ALL AFFECTED EQUIPMENT INCLUDING THE FOLLOWING:
    A. HOT CHOCOLATE
    B. COFFEE BREWER
    C. ICE MACHINE
    D. O.J.
    E. SODA TOWERS
11. ALL WATER HEATERS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY SEALED–COMBUSTION WATER HEATERS. THE INSTALLATION OF STANDARD EFFICIENCY GRAVITY–VENTED WATER HEATERS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR SERVICE WATER–HEATING EQUIPMENT PERFORMANCE EFFICIENCY REQUIREMENTS.
12. THE CONSTRUCTION MANAGER, PLUMBING CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER SHALL COORDINATE WHICH SOILED DISHWASHER (3–COMPARTMENT SINK) IS BEING INSTALLED IN THE RESTAURANT.
13. N/A
14. N/A
15. ALL FIRE PROTECTION DRAWINGS CONTAINED WITHIN THIS SET ARE STRICTLY FOR REFERENCE ONLY. FIRE SPRINKLER DRAWINGS SHALL BE DESIGNED AND PERMITTED BY A FIRE PROTECTION CONTRACTOR.
16. ALL R–102 WET CHEMICAL FIRE SUPPRESSION SYSTEMS FOR TYPE I HOODS SHALL BE DESIGNED AND INSTALLED BY A LOCAL ANSUL AGENT. THE USE OF DRY CHEMICAL SYSTEMS IS PROHIBITED. THE LOCAL ANSUL AGENT CONTRACT IS HANDLED THROUGH THE KITCHEN EQUIPMENT SUPPLIER.
17. ALL ROOFTOP UNITS AND EXHAUST FANS ARE SUPPLIED WITH A FACTORY–INSTALLED DISCONNECT SWITCH.
18. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES FOR REMOTE CONDENSING UNITS.
19. ALL ELECTRICAL CONDUITS FOR ROOFTOP EQUIPMENT SHALL BE BROUGHT UP THROUGH THE BASE OF THE UNIT TO MINIMIZE ROOF PENETRATIONS. WHERE THIS IS NOT POSSIBLE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY PIPE PORTALS ON ROOF.
20. WALK–IN COOLER AND WALK–IN FREEZER REFRIGERATION SYSTEMS SHALL MEET THE PERFORMANCE REQUIREMENTS OUTLINED IN THE LATEST EDITION OF IECC. MINIMUM ANNUAL WALK–IN ENERGY FACTOR (AWEF) PROVIDED BY EQUIPMENT MANUFACTURER IS DETERMINED IN ACCORDANCE WITH AHRI 1250.
21. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
22. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
23. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
24. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
25. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
26. SEE FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.
27. SEE FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
28. SEE KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION.
29. SEE DECOR DRAWINGS FOR ADDITIONAL INFORMATION.

AIR DEVICE SCHEDULE

TAG	MANUFACTURER	MODEL	BORDER	SIZE	COLOR	ACCESSORIES	NOTES
S–1	TITUS / PRICE	PDR / PDDRE	LAY–IN	48x24	WHITE	7	1,2,8
S–2	TITUS / PRICE	OMNI / SPD	LAY–IN	24x24	VARIES	4,6,7	1,6,7,8
S–3	TITUS / PRICE	OMNI / SPD	LAY–IN	12x12	VARIES	1,2,7	1,3,6,8
S–4	TITUS / PRICE	TBDI–80 / TBDI4	LAY–IN	48" (2) ¾" SLOTS	VARIES	7	1,5,6,8
R–1	TITUS / PRICE	PAR / 10	LAY–IN	24x24	VARIES	7	1,6,8
R–2	TITUS / PRICE	355RL / 530	SURFACE MOUNT	4x12	WHITE	–	8
E–1	TITUS / PRICE	355RL / 530	LAY–IN	12x12	WHITE	1,7	1,8

ACCESSORIES:
1. COMBINATION DAMPER AND EQUALIZING GRID
2. PLASTER FRAME FOR DRYWALL CEILING INSTALLATION
3. (NOT USED)
4. BACKPAN INSULATION
5. (NOT USED)
6. BLANK–OFF PANEL AS SHOWN ON DUCTWORK PLAN
7. PLASTER FRAME MAY BE NECESSARY – COORDINATE WITH DECOR DRAWINGS

NOTES:
1. SEE PLAN FOR NECK SIZES
2. FABRICATE 46"x22"x27"H PLENUM WITH 14"ø SIDE INLET (SEE DETAIL 10 ON DRAWING M3.0)
3. PROVIDE 1" FIBERGLASS INSULATION FOR DIFFUSER BACKPAN
4. NOT USED
5. GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL 4 FT. T–BAR FOR DIFFUSER FRAMING
6. AIR DEVICE FINISH WILL VARY:
   * KITCHEN, STORAGE, RESTROOMS – WHITE
   * DINING ROOM, VESTIBULES – WHITE, BLACK OR PAINTABLE/PRIME COAT (COORDINATE FINAL COLOR WITH DECOR PLANS).
7. ADDITIONAL ACCESSORIES AND/OR ALTERNATE DIFFUSERS MAY BE REQUIRED. REFER TO DECOR DRAWINGS TO VERIFY.
8. ACCEPTABLE ALTERNATIVE MANUFACTURERS: NAILOR & METALAIRE.

AIR CURTAIN SCHEDULE

TAG	MANUFACTURER	MODEL	SERVES	AIRFLOW	ELEC	ACCESS.	NOTES
AC 1	POWERED AIRE	MP 1–30E	CASH BOOTH	VARIABLE	MCA: 40.5A MOCP: 60A ⅕ HP	2,3,5,6	1,2
AC 2	POWERED AIRE	MP 1–30E	PRESENTER'S BOOTH	VARIABLE	MCA: 40.5A MOCP: 60A ⅕ HP	2,3,5,6	1,2
AC 3	POWERED AIRE	RBT 1–48	STORAGE ENTRANCE	2,559 CFM	MCA: 10 MOCP: 20 ¾ HP	1–4	1,2
AC 4	POWERED AIRE	RBT 1–36	REAR ENTRANCE	2,541 CFM	MCA: 10 MOCP: 20 ¾ HP	1–4	1,2
AC 5	POWERED AIRE	MP 1–30	FORWARD PRESENTER'S BOOTH	VARIABLE	MCA: 5.5 MOCP: 20 ⅕ HP	2–4	1,2

ACCESSORIES:
1. NSF LISTING
2. DOOR SWITCH (AC–1,2,3: MAGNETIC; AC–4: ROLLER/PLUNGER)
3. DELAY TIMER
4. 120V/ 1ø /60HZ
5. UNIT MOUNTED VARIABLE SPEED SWITCH
6. 208V/ 1ø /60HZ

NOTES:
1. SET DELAY TIMER TO 30 SECONDS
2. MAINTAIN 7" CLEARANCE FOR MOTOR ACCESS ON SIDE OF AIR CURTAIN.

CONTROLS

SYMBOL	DESCRIPTION	MANUFACTURER	MODEL
T	24V THERMOSTAT (ROOFTOP UNITS)	–	–
T	120V THERMOSTAT (COMPUTER CLOSET)	HONEYWELL	T651A3018
TS	REMOTE TEMPERATURE SENSOR	–	–
ATS	REMOTE AVERAGING TEMPERATURE SENSOR	–	–
HS	REMOTE HUMIDITY SENSOR	–	–
	BULK CO2 DETECTION SYSTEM	LOGICO2	–

NOTES:
1. FOR TSTAT, TS, HS AND ATS INFORMATION, REFER TO E4.1
2. TO ORDER HONEYWELL EQUIPMENT CALL (800)575–4841
3. SEE KITCHEN DRAWINGS FOR BULK CO2 DETECTION LOCATIONS

KITCHEN HOOD SCHEDULE

GENERAL					AIRFLOW		FILTERS	
TAG	SERVED BY	MANUFACTURER	MODEL	NOTES	CFM	CFM/LF	QTY/SIZE	FPM
KH 1	EXHAUST FAN (EF–1)	FRANKE / H&K	UH–122	1–4	1350	166	(5)10x20	263
KH 2	EXHAUST FAN (EF–2)	FRANKE / H&K	UH–50	1–4	575	173	(3)10x16	255
KH 3	EXHAUST FAN (EF–3)	FRANKE / H&K	UH–43	1–4	480	166	(2)10x20	255
KH 4	EXHAUST FAN (EF–6)	FRANKE / H&K	TYPE II	1–2, 5	600	150	–	–

NOTES:
1. HOODS SHALL BE PROVIDED BY THE KES (SEE COORDINATION SCHEDULE)
2. SEE HOOD DRAWINGS FOR CONSTRUCTION DETAILS AND UL INFORMATION
3. REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS
4. CAPTURE JET PLENUMS TO BE INSTALLED ON HOOD, REFER TO K2.1 KITCHEN SCHEDULE.
5. PROVIDE WITH FASCIA KIT. COORDINATE CONDENSATE DRAINAGE WITH P.C.

FAN SCHEDULE

GENERAL						DESIGN				ELECTRICAL				
TAG	MANUFACTURER	MODEL	SERVES	ACCESSORIES	NOTES	CFM	S.P.	BHP	FRPM	VOLTS	Ø	Hz	HP	FLA AMPS
EF 1	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–1)	1–5,13,14	1,2,6	1350	1.75	0.61	1725	115 TO 10VDC ECM	1	60	1	11.5
EF 2	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–2)	1–5,14	1,2,6	575	1.75	0.19	1725	115 TO 10VDC ECM	1	60	1	11.5
EF 3	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–3)	1–5,13,14	1,2,6	480	1.75	0.19	1725	115 TO 10VDC ECM	1	60	1	11.5
EF 4	ACCUREX	XRED–099–VG4X–QD	DINING RESTROOMS	6–9,14	1,2,5	400	0.50	0.07	1126	115 TO 10VDC ECM	1	60	¼	2.5
EF 5	GREENHECK	SP–AP0511WL	DINING ROOM JANITOR'S CLOSET	9–12	1–3,5	75	0.20	–	900	115	1	60	–	0.52
EF 6	ACCUREX	XCUE–099–VG	KITCHEN HOOD (KH–4)	6–9,14	1,2,7	600	0.75	0.19	1725	115	1	60	¼	2.9
TF 1	GREENHECK	SP–A510	COMPUTER CLOSET	9,15	1–4	400	0.25	–	1100	115	1	60	–	3.3

ACCESSORIES:
1. 2–POLE NEMA 3R DISCONNECT SWITCH FACTORY–WIRED AND MOUNTED TO FAN
2. UL 762 LISTED AND LABELED
3. ROOF CURB MODEL GPF–24–G30 WITH 1" INSULATION
4. CURB EXTENSION INTEGRAL TO MCD FAN PACKAGE
5. HINGED CURB CAP KIT WITH CABLES
6. 120VAC BACKDRAFT DAMPER
7. ROOF CURB MODEL GPI–19–G14 WITH 1" INSULATION AND DAMPER TRAY
8. NEMA 3R DISCONNECT SWITCH
9. EXTERNAL STEADY–STATE SPEED CONTROLLER
10. ROUND DUCT CONNECTOR
11. TWO (2) 10W COMPACT LED LAMPS
12. WITH INTEGRATED NIGHTLIGHT
13. WINDBAND EXTENSION ON FAN OUTLET
14. VARIGREEN 10VDC ELECTRONICALLY COMMUTATED MOTOR
15. SQUARE DUCT CONNECTOR (8"X8").

NOTES:
1. NO SUBSTITUTIONS PERMITTED
2. TO ORDER ACCUREX EQUIPMENT CALL (888)325–6629 OR E–MAIL: MCD@ACCUREX.COM
3. ELECTRICAL CONTRACTOR SHALL PROVIDE DOOR SWITCH FOR LIGHT CONTROL
4. MECHANICAL CONTRACTOR SHALL FURNISH LINE VOLTAGE THERMOSTAT FOR FAN CONTROL. ELECTRICAL CONTRACTOR SHALL INSTALL THERMOSTAT.
5. CONNECT TO TIMECLOCK FOR FAN SHUT–OFF DURING UNOCCUPIED HOURS
6. REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS
7. UNIT SHALL BE INTERLOCKED WITH WAREWASHER SWITCHING CONTACT.

PACKAGED ROOFTOP UNIT SCHEDULE - DX/ELEC

TAG	AREA SERVED	NOMINAL TONNAGE	MINIMUM OA (CFM)	SUPPLY FAN: SUPPLY AIRFLOW (CFM)	SUPPLY FAN: EXT. S.P. (IN W.C.)	SUPPLY FAN: MHP	SUPPLY FAN: BHP	SUPPLY FAN: RPM	COOLING COIL (DX): ENTERING AIR DB °F	ENTERING AIR WB °F	LEAVING AIR DB °F	LEAVING AIR WB °F	COOLING CAPACITY (MBH) SENSIBLE	COOLING CAPACITY (MBH) TOTAL
RTU-1	KITCHEN	20	1,430	7,400	1.40	7.5	5.4	1018	78.0	65.5	55.0	55.0	194.1	255.4
RTU-2	SUPPORT	6	775	2,050	0.80	1.0	0.9	769	80.8	66.4	55.0	55.0	59.6	79.4
RTU-3	DINING ROOM	13	1,425	4,500	1.0	3.0	2.0	800	79.9	66.7	55.0	55.0	118.2	165.2

TAG	HEAT EXCHANGER (ELECTRICAL RESISTANCE): ENTERING AIR (DB °F)	LEAVING AIR (DB °F)	TOTAL CAPACITY (MBH) INPUT (kW)	TOTAL CAPACITY (MBH) OUTPUT	# OF STAGES	MINIMUM EFFICIENCY		WEIGHT (LBS.)*	UNIT POWER CONNECTION: VOLT.	PHASE	MCA	MOCP	MANUFACTURER	MODEL NO.	ACCESSORIES
RTU-1	55.0	85	52	177,476	2	15.6	IEER	2,982	208	3	156	175	LENNOX	LCT 240 H5M L 1Y	1, 3, 4, 7, 9, 11, 12, 16, 17, 19, 20, 21
RTU-2	42.6	85	26	88,738	2	17.3	IEER	1,035	208	3	84	90	LENNOX	LCT 072 H5E J 1Y	1, 3, 4, 7, 8, 9, 11, 12, 13, 17, 19, 20, 21
RTU-3	46.8	85	52	177,476	2	15.6	IEER	2,552	208	3	139	150	LENNOX	LCT 156 H5M L 1Y	1, 3, 4, 7, 8, 9, 11, 12, 17, 19, 20, 21

ACCESSORIES:
1. DIFF. ENTHALPY ECONOMIZER
2. MOTORIZED O.A. DAMPER
3. BAROMETRIC RELIEF
4. MERV 13 FILTER
5. POWER EXHAUST
6. CO2 SENSOR FOR DCV
7. HUMIDITY CONTROL
8. SUPPLY AIR TEMPERING
9. TEMPERATURE SENSOR
10. COMBINED TEMP/HUMIDITY SENSOR
11. DISCONNECT SWITCH
12. FIELD WIRED 120V CONVENIENCE OUTLET
13. STAINLESS STEEL HEAT EXCHANGER
14. CONDENSER COIL PROTECTIVE COATING
15. EVAPORATOR COIL PROTECTIVE COATING
16. HAIL GUARD
17. RETURN AIR SMOKE DETECTOR
18. SUPPLY AIR SMOKE DETECTOR
19. 14" ROOF CURB
20. CONDENSATE DRAIN W/ P-TRAP
21. FLOAT SWITCH KIT

* NET WEIGHT ONLY - DOES NOT INCLUDE ADDITIONAL FACTORY OR FIELD INSTALLED OPTIONS / ACCESSORIES.

NOTES:
1. NO SUBSTITUTIONS PERMITTED.
2. TO ORDER TRANE EQUIPMENT, CALL **(800)367-6285** TO ORDER AND FAX COPY OF SCHEDULE TO **(800)453-7290**. EMAIL: mcdonalds@lennoxind.com.
3. FACTORY INSTALLED DISCONNECT SWITCH IS NOT AVAILABLE WHEN MOCP IS 200 AMPS OR HIGHER. VERIFY WITH MANUFACTURER'S DOCUMENTATION PRIOR TO ORDERING.
4. MECHANICAL CONTRACTOR SHALL INSTALL SECONDARY ENTHALPY SENSOR IN RETURN AIR DUCT DROP & WIRE TO UNIT PER MAUFACTURERS
5. ROOFTOP UNITS PROVIDED WITH **R-454B** REFRIGERANT

REV	DATE	DESCRIPTION	BY

ENGINEER OF RECORD:
DAVID LEIFFER REGISTERED No. 11600507 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
212 SE 34th. Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

PREPARED FOR:
McDonald's USA, LLC

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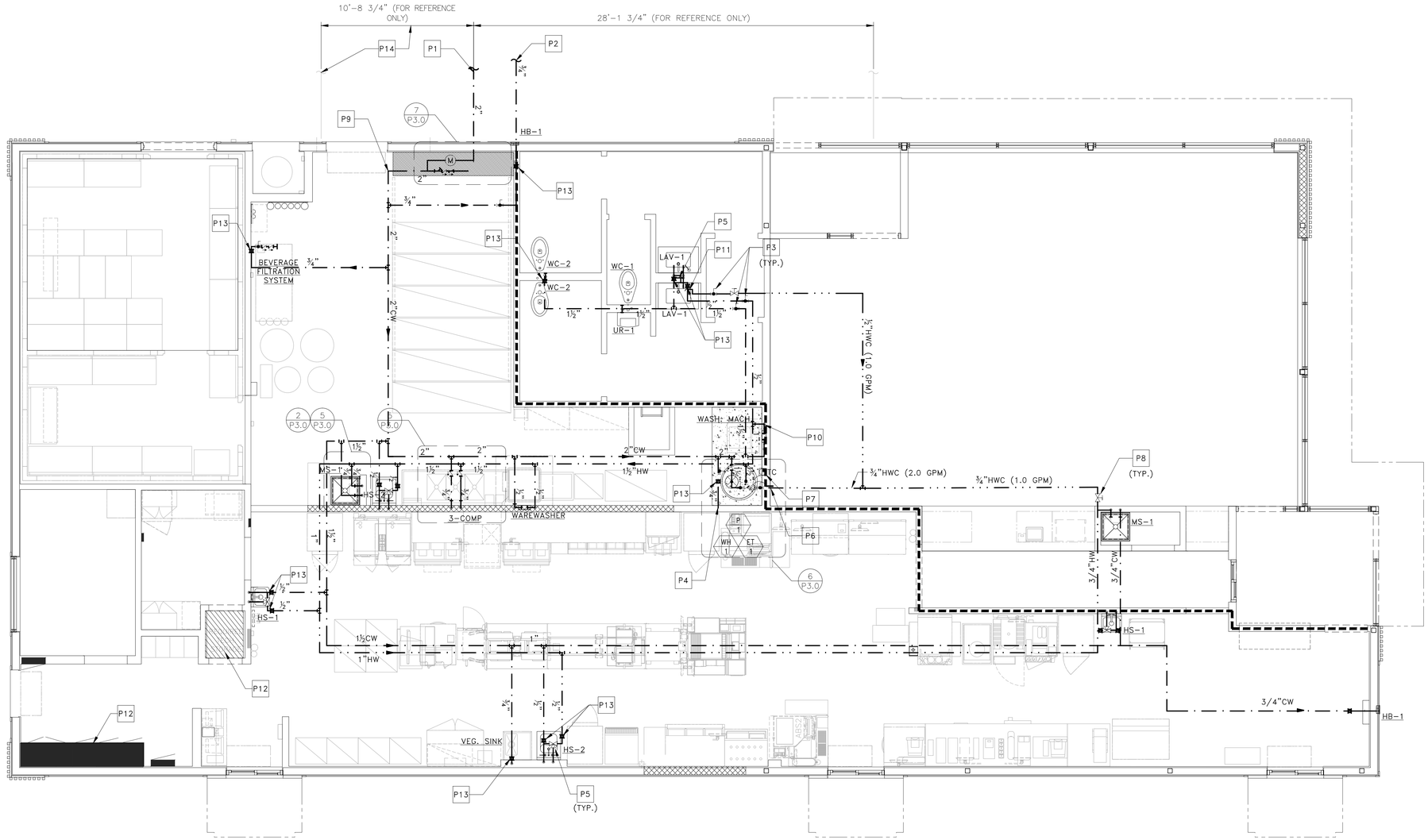
DRAWN BY: TP/ES
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 00/00/00

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci; WOOD TRUSS ROOF FRAMING; E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

013.1263.00.0
SHEET NO. M4.1
SCHEDULES



1 / P1.0 DOMESTIC WATER PIPING
SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. PIPING ROUTES AS SHOWN ARE GENERAL AND MAY VARY DUE TO FIELD CONDITIONS. COORDINATE ALL PIPE ROUTES WITH OTHER TRADES. MAKE SURE HOT WATER MAIN LOOP REMAINS WITHIN 10 FT OF FIXTURE FOR ENERGY CODE PURPOSE.
2. ALL WATER DISTRIBUTION PIPING SHALL BE INSULATED. INSULATION NOT SHOWN FOR CLARITY. SEE PLUMBING NOTES FOR INSULATION REQUIREMENTS, SHEET M4.0, "DOMESTIC SUPPLY SYSTEMS", NOTE 18.

KEYED NOTES

P1 INCOMING UNDERGROUND WATER SERVICE (SEE SITE PLAN FOR CONTINUATION). WATER PIPING FROM THIS POINT TO CEILING PENETRATION INSIDE BUILDING SHALL BE COPPER.

P2 COLD WATER UNDERGROUND TO YARD HYDRANT (HB-2) IN TRASH CORRAL. SEE SITE PLAN FOR CONTINUATION.

P3 SHUT-OFF VALVE FOR RESTROOM ISOLATION. SEE VALVE SCHEDULE. ALL SHUT-OFF VALVES SHALL BE LOCATED OVER SUSPENDED CEILINGS FOR ACCESSIBILITY. DO NOT LOCATE IN AREAS WITH DRYWALL CEILINGS.

P4 ¾" COLD WATER UP TO ROOF HYDRANT.

P5 FOR MIXING VALVE LOCATIONS AND INSTALLATION DETAILS ON PUBLIC LAVATORIES, SEE DETAIL 3 ON DRAWING P3.0. FOR PRIVATE HAND SINKS OR LAVS, MIXING VALVES FOR INFORMATIONAL PURPOSES.

P6 PIPE-MOUNTED AQUASTAT TO SHUT PUMP DOWN WHEN RECIRULATION TEMPERATURE REACHES 140°F. SEE DETAIL 6 ON DRAWING P3.0.

P7 TIME CLOCK TO SHUT PUMP AND WATER HEATER DOWN DURING UNOCCUPIED HOURS. SEE ELECTRICAL DRAWINGS FOR WIRING DETAIL.

P8 BALANCING VALVE FOR RECIRCULATION SYSTEM. SEE VALVE SCHEDULE. ALL BALANCING VALVES SHALL BE LOCATED OVER SUSPENDED CEILINGS FOR ACCESSIBILITY. DO NOT LOCATE IN AREAS WITH DRYWALL CEILINGS.

P9 WATER PIPING AFTER CEILING PENETRATION CAN TRANSITION TO CPVC OR PEX WHERE PERMITTED BY CODE.

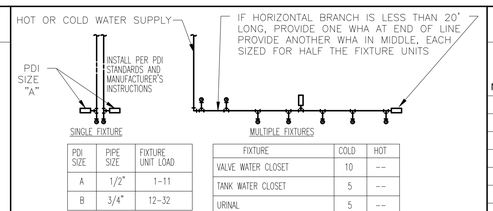
P10 PROPERLY SEAL ALL PIPE PENETRATIONS THROUGH DRAFT STOP WALL (TYP.)

P11 HOT WATER RECIRCULATION SHALL CONNECT WITHIN 6" OF SUPPLY STUB OUT TO FIXTURE.

P12 UTILITIES SHALL NOT BE ROUTED ABOVE THE TECH. CLOSET AND THE SWITCHGEAR.

P13 INSTALL WATER-HAMMER ARRESTOR WHERE QUICK-CLOSING VALVES ARE UTILIZED. WATER-HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. WATER-HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.

P14 MAINTAIN A MINIMUM OF 10'-0" CLEARANCE FROM THE INCOMING DOMESTIC WATER TO THE GREASE WASTE AND SANITARY LINES.



PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32

FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
HOSE BIBB	2	--
SODA FACTORY	10	--
WAREWASHER	4	4

PC TO PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

DETAIL 2 / P1.0
WATER-HAMMER ARRESTER (TYP.)
NOT TO SCALE

FIXTURE COUNT - IPC

NO.	FIXTURE DESCRIPTION	SUPPLY CONNECTIONS WSFU	COLD	HOT	TOTAL
1	VEGETABLE PREP SINK	4	¾"	–	4
4	HAND SINK	1	½"	½"	4
4	HOSE BIBB	3	¾"	–	12
1	SODA FACTORY	10	1"	–	10
1	KITCHEN SINK (3-COMP)	4	¾"	¾"	4
2	MOP SINK	2	¾"	¾"	4
2	LAVATORY	1	½"	½"	2
1	URINAL	5	1"	–	5
3	WATER CLOSET	5	1 ½"	–	15
1	WASHING MACHINE	4	¾"	¾"	4
1	WAREWASHER	4	½"	½"	4
				TOTAL:	68

(57 GPM)

NO.	DESCRIPTION	REV	DATE

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY: CORE STATES GROUP
7710 Allisonville Road, Suite 2
Indianapolis, IN 46250
317.577.0400 www.corestates.com

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PREPARED FOR: McDonald's USA, LLC
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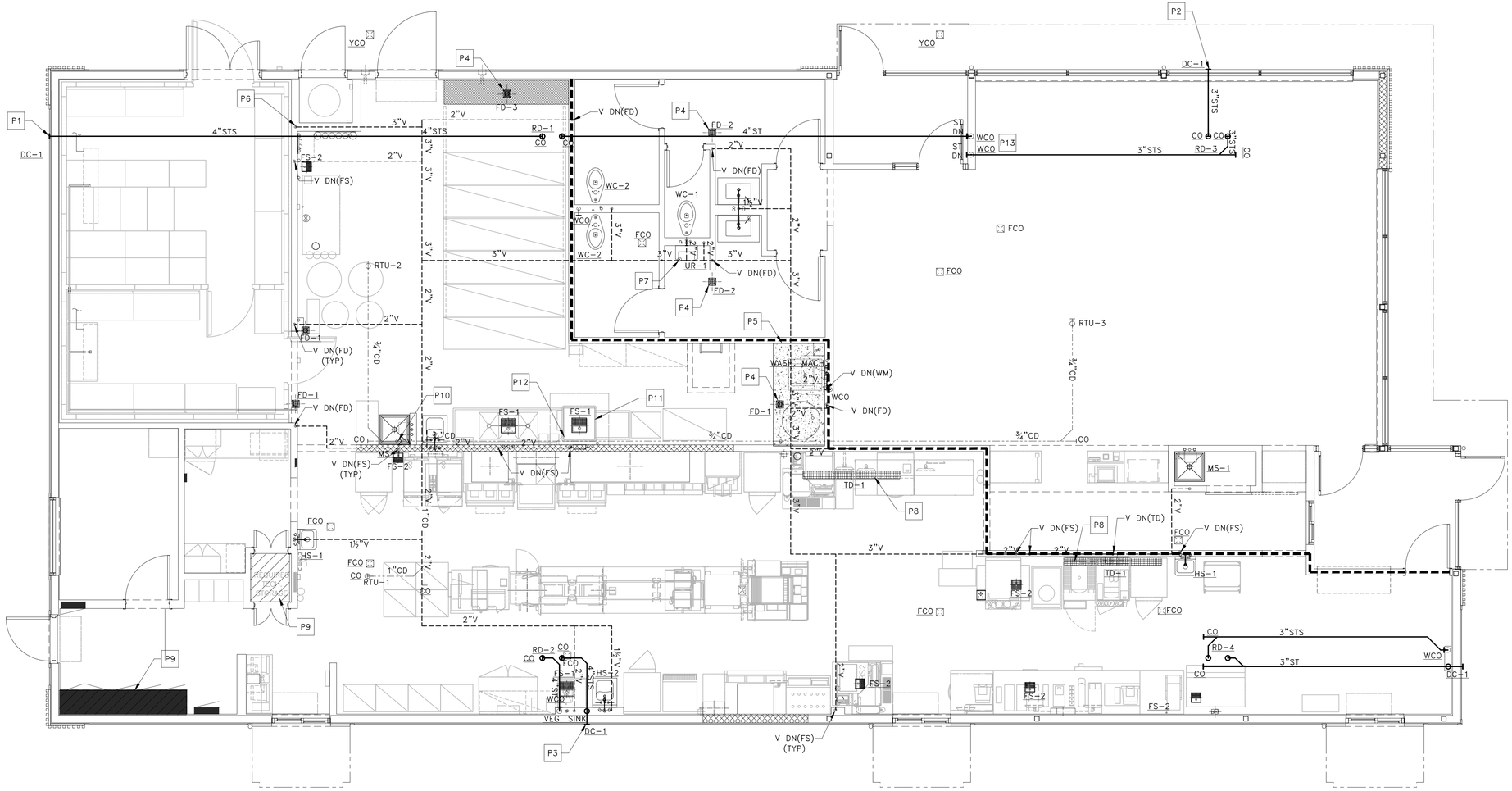
DRAWN BY: ES | STD ISSUE DATE: 2025 05 | REVIEWED BY: DL | DATE ISSUED: 00/00/00

TITLE: 2025 OPTIMIZED BUILDING - BB20 4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN
NSN: 013.1263

SHEET NO.: 013.1263.00.0 P1.0
DOMESTIC WATER PIPING



1 P1.2 VENT & STORM PIPING PLAN

SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. PIPING ROUTES ARE GENERAL AND MAY VARY DUE TO FIELD CONDITIONS. COORDINATE ALL PIPE ROUTES WITH OTHER TRADES.
2. WALL CLEAN-OUTS FOR WASTE PIPING NOT SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.
3. ONLY MAIN FLOOR CLEAN-OUTS ARE SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.
4. ALL HORIZONTAL STORM DRAINAGE PIPING SHALL BE INSULATED TO PREVENT CONDENSATION. INSULATION NOT SHOWN FOR CLARITY. SEE PLUMBING NOTES FOR INSULATION REQUIREMENTS.

KEYED NOTES

- P1 TERMINATE OVERFLOW DRAIN AS HIGH AS POSSIBLE WITH DOWNSPOUT COVER.
- P2 TERMINATE OVERFLOW DRAIN ABOVE TRELLIS WITH DOWNSPOUT COVER. BOTTOM OF DOWNSPOUT OUTLET PIPE SHALL BE AT LEAST 3" BUT NOT MORE THAN 8" ABOVE TOP OF TRELLIS.
- P3 TERMINATE BOTTOM OF OVERFLOW DRAIN A MINIMUM OF 12" ABOVE GRADE WITH DOWNSPOUT COVER.
- P4 PROVIDE PROSET TRAP GUARD® FOR FLOOR DRAIN.
- P5 TOP OF CONCRETE SLAB IS 0'-6" A.F.F.
- P6 VENT FROM GREASE INTERCEPTOR. SEE SITE PLAN FOR CONTINUATION. COORDINATE PIPE ROUTING WITH LOCATION OF GREASE INTERCEPTOR.
- P7 4" VENT UP THROUGH ROOF WITH A 4"x5" VENT CAP
- P8 REFERENCE MANUFACTURER INSTALLATION GUIDE FOR LAYOUT AND SLOPING GUIDELINES PRIOR TO INSTALL AND POURING THE SLAB.
- P9 UTILITIES SHALL NOT BE ROUTED ABOVE THE TECH. CLOSET AND THE SWITCHGEAR.
- P10 CONDENSATE LINE FROM RTUs DOWN TO DRAIN AT MOP SINK INDIRECT WITH AIR GAP 2 x DIAMETER, TERMINATE PIPE ABOVE FLOOD RIM. FURNISHED AND INSTALLED BY PC. SEE COORDINATION SCHEDULE ON P4.1 & M4.1.
- P11 CONTRACTOR SHALL ROUTE ½" OD 304 S/S PIPE (PROVIDED BY OTHERS) FROM TYPE II EXHAUST HOOD TO FLOOR SINK.
- P12 CONTRACTOR SHALL INSTALL DRAIN PIPE AND AIR GAP KIT (PROVIDED BY OTHERS). CONNECT DRAIN HOSES FROM WAREWASHER TO DRAIN PIPE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFER TO DETAIL 9/P3-0 FOR FURTHER DETAILS.
- P13 WALL CLEAN OUTS TO BE INSTALLED 18" A.F.F. ON VESTIBULE SIDE. OPTIONAL: PAINT TO MATCH WALL FINISH FOR CONCEALMENT.

STORM PIPE SIZING

RAINFALL = 3.1 IN./HR

VERTICAL LEADERS

ROOF DRAIN	ROOF AREA SQ. FT.	SIZE IN.
RD-1	1,449	4
RD-2	1,449	4
RD-3	883	3
RD-4	1,001	3
TOTAL	4,779	

HORIZONTAL PIPING (SLOPE ⅛" PER FOOT)

ROOF DRAIN	ROOF AREA SQ. FT.	SIZE IN.
RD-2 & RD-4	2,450	6
RD-2, RD-3 & RD-4	3,333	6
RD-1, RD-2, RD-3 & RD-4	4,782	6

NO.	DESCRIPTION	DATE	BY

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
2132 Dallas Street Suite 2
Aurora, IL 60506
630.972.0555
www.corestates.com

PREPARED FOR: McDonald's USA, LLC
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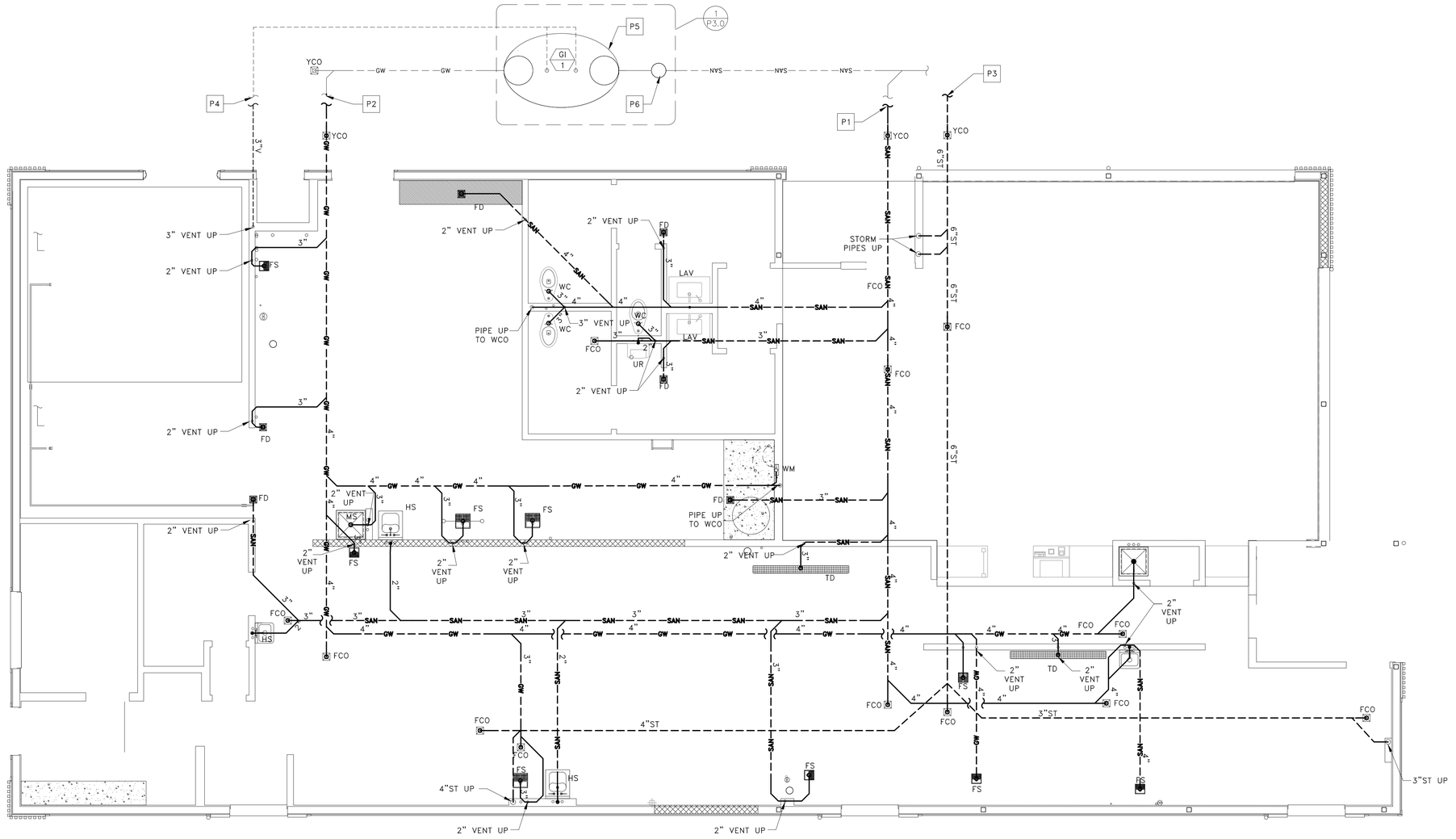
DRAWN BY: ES
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 00/00/00

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN
NSN: 013.1263

SHEET NO. P1.2
013.1263.00.0
VENT & STORM PIPING PLAN



1 P1.3 UNDERFLOOR PLUMBING PLAN

SCALE: 1/4" = 1'-0"

SANITARY AND STORM OUTFALL SIZING AND LOCATION TO BE COORDINATED WITH CIVIL ENGINEER AND DRAWINGS PRIOR TO CONSTRUCTION.

DRAWING NOTES

1. PIPING ROUTES ARE GENERAL AND MAY VARY DUE TO FIELD CONDITIONS. COORDINATE ALL PIPE ROUTES WITH OTHER TRADES.
2. WALL CLEAN-OUTS FOR WASTE PIPING NOT SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.
3. ONLY MAIN FLOOR CLEAN-OUTS ARE SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.

KEYED NOTES

- P1 SANITARY LINE TO SANITARY SEWER. SEE SITE PLAN FOR CONTINUATION.
- P2 GREASE LINE TO EXTERIOR GREASE INTERCEPTOR. SEE SITE PLAN FOR CONTINUATION
- P3 STORM LINE TO STORM SYSTEM. SEE SITE PLAN FOR CONTINUATION.
- P4 VENT FROM GREASE INTERCEPTOR. SEE SITE PLAN FOR CONTINUATION. COORDINATE PIPE ROUTING WITH LOCATION OF GREASE INTERCEPTOR.
- P5 GREASE INTERCEPTOR LOCATION SHOWN FOR REFERENCE ONLY. COORDINATE GREASE INTERCEPTOR LOCATION WITH CIVIL ENGINEER AND SITE CONTRACTOR.
- P6 NSTALL SAMPLE CHAMBER GREEN TURTLE OR APPROVED ALTERNATIVE.

WASTE PIPE SIZING - IPC

FIXTURE TYPE	TRAP SIZE	DFU	QUANTITY	TOTAL
URINAL	2 IN.	4	1	4
WATER CLOSET	3 IN.	4	3	12
LAVATORY	1¼ IN.	1	2	2
WASH SINK (HAND SINK)	1½ IN.	2	4	8
FLOOR DRAIN OR SINK	3 IN.	5	5	25
FLOOR DRAIN OR SINK	4 IN.	6	1	6
EMERGENCY FLOOR DRAIN (BATHROOMS)	3 IN.	0	2	0
			TOTAL	57

GREASE PIPE SIZING - IPC

SERVICE SINK (MOP SINK)	3 IN.	3	2	6
FLOOR DRAIN OR SINK	3 IN.	5	8	40
FLOOR DRAIN OR SINK	4 IN.	6	1	6
WASHING MACHINE	2 IN.	3	1	3
			TOTAL	55

STORM PIPE SIZING

RAINFALL = 3.1 IN./HR

VERTICAL LEADERS

	ROOF AREA	SIZE
ROOF DRAIN	SQ. FT.	IN.
RD-1	1,449	4
RD-2	1,449	4
RD-3	883	3
RD-4	1,001	3
TOTAL	4,779	

HORIZONTAL PIPING (SLOPE ⅛" PER FOOT)

	ROOF AREA	SIZE
ROOF DRAIN	SQ. FT.	IN.
RD-2 & RD-4	2,450	6
RD-2, RD-3 & RD-4	3,333	6
RD-1, RD-2, RD-3 & RD-4	4,782	6

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
7730 Union Square Drive, Suite 2
New Albany, IN 47150
812.206.2888
www.corestates.com

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PREPARED FOR:
McDonald's USA, LLC

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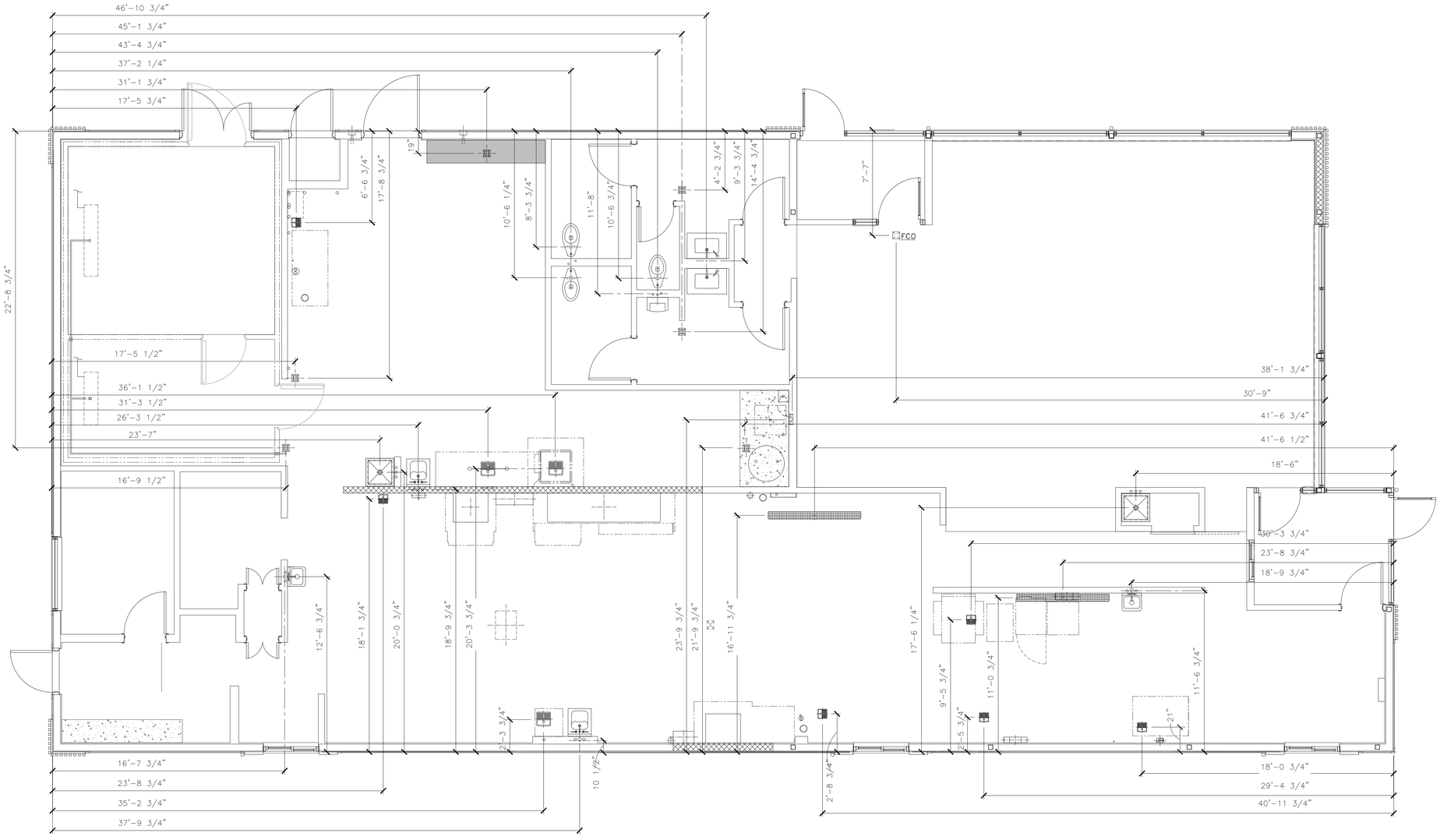
DRAWN BY: ES
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 00/00/00

TITLE: 2025 OPTIMIZED BUILDING - BB20 4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN
NSN: 013.1263

SHEET NO.: 013.1263.00.0
P1.3
UNDERGROUND PLUMBING



1 / P1.4 UNDERGROUND ROUGH-IN

SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. THIS PLAN IS PROVIDED AS A GUIDE FOR THE PLUMBING CONTRACTOR. ALL DIMENSIONS ARE ROUNDED TO THE NEAREST ¼" AND ARE TAKEN FROM THE OUTSIDE EDGE OF THE FOUNDATION WALL TO CENTERLINE OF SLAB PENETRATION.

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:

DAVID LEIFER REGISTERED No. 11800587 STATE OF INDIANA PROFESSIONAL ENGINEER

11-21-2025

PREPARED BY:

CORE STATES GROUP
2130 Lake Park Blvd Suite 2
Carmel, IN 46032
317.575.1434
www.corestates.com

PREPARED FOR:

McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE
ES	2025 05
REVIEWED BY	DATE ISSUED
DL	00/00/00

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

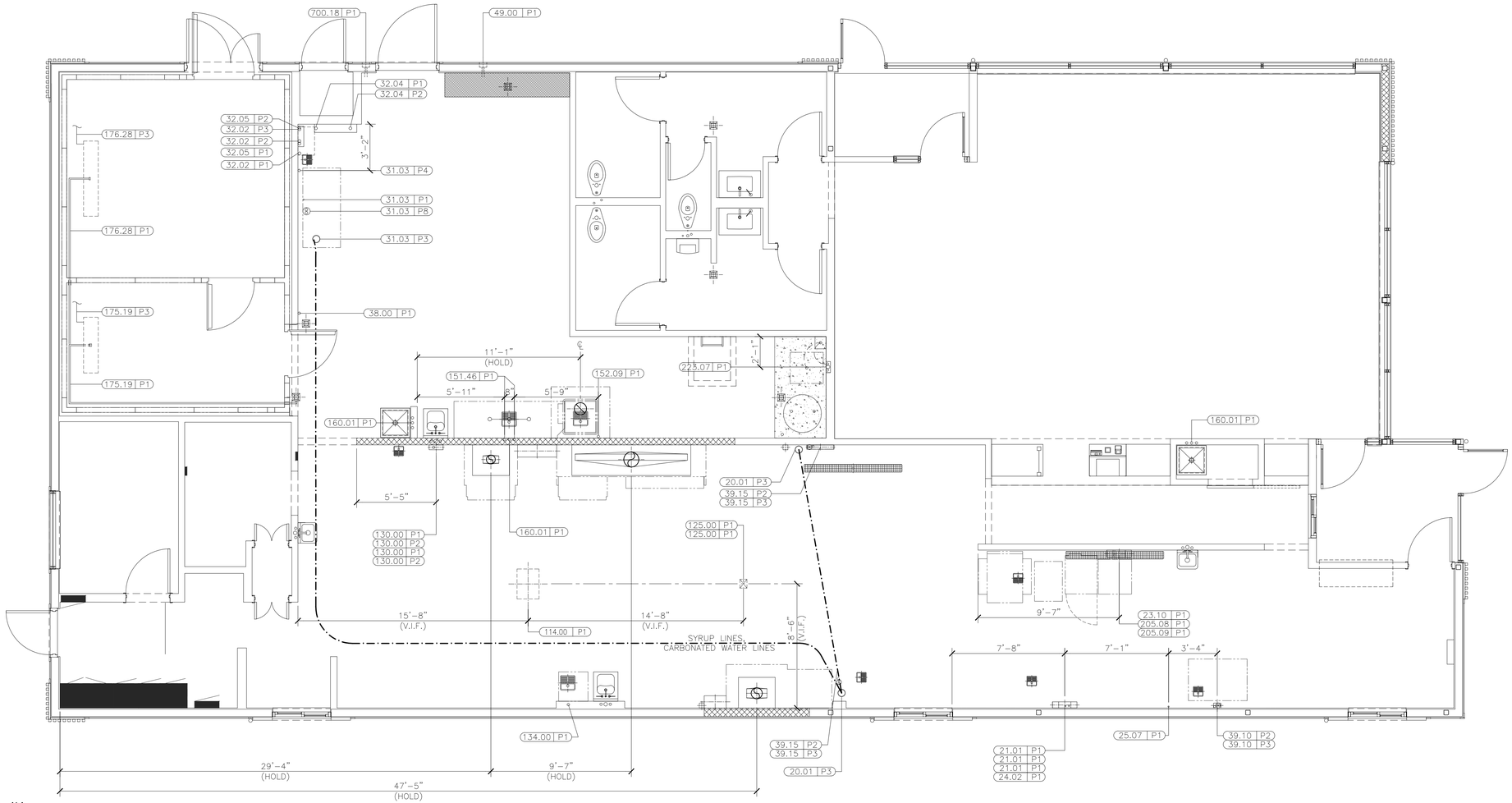
MSN: 013.1263

SITE ADDRESS
7030 Northfield Dr. BROWNSBURG, IN

013.1263.00.0

SHEET NO.: P1.4

UNDERGROUND ROUGH-IN



1 / P1.6 OVERHEAD ROUGH-IN

SCALE: 1/4" = 1'-0"

VIF = Verify in Field
PC = Plumbing Contractor
BSI = Beverage System Installer

PLUMBING SCHEDULE

TAG #	QTY	DESCRIPTION	GAS TYPE	GAS BTU	GAS SIZE	HW	CW	MISC PLBG	HGT AFF	DRAIN	REQUIREMENTS & REMARKS
020.01P3	2	AUTOMATED BEVERAGE SYSTEM 2.0	–	–	–	–	–	SODA BUNDLE	SEE RMKS	–	DN CHASE FROM SODA SYSTEM – "T" FROM D/T – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES
021.01P1	3	COFFEE BREWER (GLASS DECANTERS)	–	–	–	–	1/4" TRTD	–	SEE RMKS	–	DN CHASE FROM SODA SYSTEM – IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONN CW LINE PER LOCAL CODES. 1/4" R.O. WATER OPTIONAL
023.10P1	1	ESPRESSO BREWER	–	–	–	–	3/8" R.O.	–	SEE RMKS	3/8" IND	DN CHASE FROM R.O. SYSTEM – IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONN CW LINE PER LOCAL CODES
024.02P1	1	JUICE DISPENSER	–	–	–	–	1/2" FLTR	–	SEE RMKS	–	–
025.07P1	1	INFUSION TEA BREWER – MIS	–	–	–	–	1/2" TRTD	3/8" CO2	SEE RMKS	–	DN CHASE FROM SODA SYSTEM – IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONN CW LINE PER LOCAL CODES
031.03P1	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	–	3/8" OUTLET	SEE RMKS	–	FLEX LINE OVERHEAD TO VARIOUS EQUIP. BSI TO MAKE FINAL CONN PER LOCAL CODES
031.03P3	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	–	SODA BUNDLE	SEE RMKS	–	OVERHEAD TO SODA TOWER CHASE(S) – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES
031.03P4	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	3/4"	–	1'-6"	3/4" IND	BSI TO MAKE CONNECTION FROM BACKFLOW PREVENTER (VERIFY HEIGHT IN FIELD)
031.03P8	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	–	REFRIG LINES	SEE RMKS	–	FROM REMOTE CONDENSING UNIT
032.02P1	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	–	–	–	–	3/8" FLTR	–	SEE RMKS	–	FLEX LINE OVERHEAD TO RAPID STEAMER, ESPRESSO, AND COFFEE (OPT.) –BSI TO MAKE FINAL CONN PER LOCAL CODES
032.02P2	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	–	–	–	–	–	3/8" OUTLET	SEE RMKS	–	FLEX LINE OVERHEAD TO RAPID STEAMER, ESPRESSO, AND COFFEE (OPT.) –BSI TO MAKE FINAL CONN PER LOCAL CODES
032.02P3	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	–	–	–	–	–	–	–	1/4" WASTE	–
032.04P1	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" INLET	6'-0"	–	–
032.04P2	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" OUTLET	–	–	3/4" GHT RINSE CONN. FLEX LINE OVHD. TO RAPID STEAMER, ESPRESSO, & COFFEE (OPT.) –BSI TO MAKE FINAL CONN PER LOCAL CODE
032.05P1	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" INLET	SEE RMKS	–	FLEX LINE OVERHEAD FROM R.O. SYSTEM –BSI TO MAKE FINAL CONN PER LOCAL CODES
032.05P2	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" OUTLET	SEE RMKS	–	FLEX LINE OVERHEAD TO COMBI OVENS AND STAGING CABINET –BSI TO MAKE FINAL CONN PER LOCAL CODES
038.00P1	1	CLEAN IN PLACE PANEL	–	–	–	–	1/2" FLTR	–	6'-0"	–	FOR CLEANING BULK COKE TANKS. INSTALL HEIGHT TO BOTTOM OF UNIT
039.10P2	1	ICE MACHINE – 1400 LB.	–	–	–	–	1/2" TRTD	–	SEE RMKS	3/4" IND	WATER LINE OVERHEAD FROM SODA SYSTEM – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES

VIF = Verify in Field
PC = Plumbing Contractor
BSI = Beverage System Installer

PLUMBING SCHEDULE

TAG #	QTY	DESCRIPTION	GAS TYPE	GAS BTU	GAS SIZE	HW	CW	MISC PLBG	HGT AFF	DRAIN	REQUIREMENTS & REMARKS
039.10P3	1	ICE MACHINE – 1400 LB.	–	–	–	–	–	REFRIG LINES	–	–	REFRIGERATION LINES OVERHEAD FROM REMOTE CONDENSING UNIT
039.15P2	2	ICE MACHINE – 1000 LB.	–	–	–	–	1/2" TRTD	–	SEE RMKS	3/4" IND	WATER LINE OVERHEAD FROM SODA SYSTEM – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES
039.15P3	2	ICE MACHINE – 1000 LB.	–	–	–	–	–	REFRIG LINES	–	–	REFRIGERATION LINES OVERHEAD FROM REMOTE CONDENSING UNIT
049.00P1	1	CO2 FILL BOX	–	–	–	–	–	–	3'-4"	–	HEIGHT IS TO BOTTOM OF FILL BOX;SUPPLIED BY MANUFACTURER;INSTALLED BY G.C. SEE BUILDING ELEVATIONS.
114.00P1	1	HUMIDIFIED HOLDING CABINET	–	–	–	–	3/8" R.O.	–	SEE RMKS	–	BSI EXTENDS CW LINE OVERHEAD FROM R.O. SYSTEM & TERM. W/QUICK DISCONN. AND SHUTOFF
125.00P1	2	RAPID BUN STEAMER	–	–	–	–	3/8" R.O.	–	SEE RMKS	–	BSI EXTENDS CW LINE FROM R.O. SYSTEM & TERM. W/QUICK DISCONN.
130.00P1	2	COMBI OVEN	–	–	–	–	1/2" FLTR	–	SEE RMKS	1 1/2" IND	BSI EXTENDS CW LINE OVERHEAD FROM SODA SYSTEM & TERM. W/QUICK DISCONN. AND SHUTOFF
130.00P2	2	COMBI OVEN	–	–	–	–	3/8" R.O.	–	SEE RMKS	–	BSI EXTENDS CW LINE OVERHEAD FROM R.O. SYSTEM & TERM. W/QUICK DISCONN. AND SHUTOFF
134.00P1	1	VEGETABLE SINK	–	–	–	–	3/4"	–	1'-10"	1-1/2" IND	–
151.46P1	1	SOILED DISHTABLE – RIGHT HAND – 90.5" WIDE	–	–	–	3/4" 140	3/4"	–	1'-6"	–	PC MAKES FINAL CONNECTIONS PER LOCAL CODE
152.09P1	1	WAREWASHER – HIGH TEMP	–	–	–	1/2" 140	1/2"	–	SEE RMKS	2" INDIRECT	PC TO PROVIDE HW, CW, INDIRECT DRAIN PIPING, DRAIN @ 9" AFF. FOR ECOLAB FROM WB–2, SPLIT CW: 3/4" CW TO DTV, 3/4" CW TO VAPOR VENT.
160.01P1	3	CHEMICAL SYSTEM	–	–	–	3/4" 110	–	–	SEE RMKS	–	PC TO PROVIDE 3/4" MHT. FINAL CONNECTIONS BY EQUIPMENT INSTALLER PER LOCAL CODE. SEE SHEET P3.0 FOR INSTALLATION HEIGHT
175.19P1	1	COOLER EVAPORATOR	–	–	–	–	–	–	–	3/4" COND.	PC TO ROUTE CONDENSATE DRAIN LINE TO FLOOR DRAIN. PC TO LIQUID–TIGHT SEAL OPENING FOR LINE EXITING BOX
175.19P3	1	COOLER EVAPORATOR	–	–	–	–	–	REFRIG LINES	–	–	RUN TO REMOTE CONDENSING UNIT–INSULATE FULL RUN LENGTH –INSTALLED BY REFRIG. CONTRACTOR
176.28P1	1	FREEZER EVAPORATOR	–	–	–	–	–	–	–	3/4" COND.	PC TO ROUTE CONDENSATE DRAIN LINE TO FLOOR DRAIN. PC TO LIQUID–TIGHT SEAL OPENING FOR LINE EXITING BOX. HEAT TAPE BY REF.
176.28P3	1	FREEZER EVAPORATOR	–	–	–	–	–	REFRIG LINES	–	–	RUN TO REMOTE CONDENSING UNIT–INSULATE FULL RUN LENGTH–INSTALLED BY REFRIG. CONTRACTOR
205.08P1	1	BIC MACHINE	–	–	–	–	1/2" FLTR	–	SEE RMKS	1" IND	DN CHASE. IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONNECT LINES PER LOCAL CODES
205.09P1	1	FROZEN BEVERAGE DISPENSER	–	–	–	–	1/2" FLTR	3/8" CO2	SEE RMKS	–	DN CHASE. IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONNECT LINES PER LOCAL CODES
223.07P1	1	WASHER	–	–	–	3/4" 140	3/4"	–	4'-0"	1 1/2" D	SEE PLUMBING DWGS FOR WALL BOX. INSTALL HEIGHT IS TO BOTTOM OF THE BOX
700.18P1	1	BULK OIL FILL BOX	–	–	–	–	–	–	3'-4"	–	HEIGHT IS TO BOTTOM OF FILL BOX;SUPPLIED BY MANUFACTURER;INSTALLED BY G.C. SEE BUILDING ELEVATIONS.

NO.	DESCRIPTION	DATE	BY

ENGINEER OF RECORD:
DAVID LEIFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
7710 Allisonville Road, Suite 2
Indianapolis, IN 46250
317.288.3000
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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STD ISSUE DATE	2025 05
REVIEWED BY	DL
DATE ISSUED	00/00/00

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD

DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

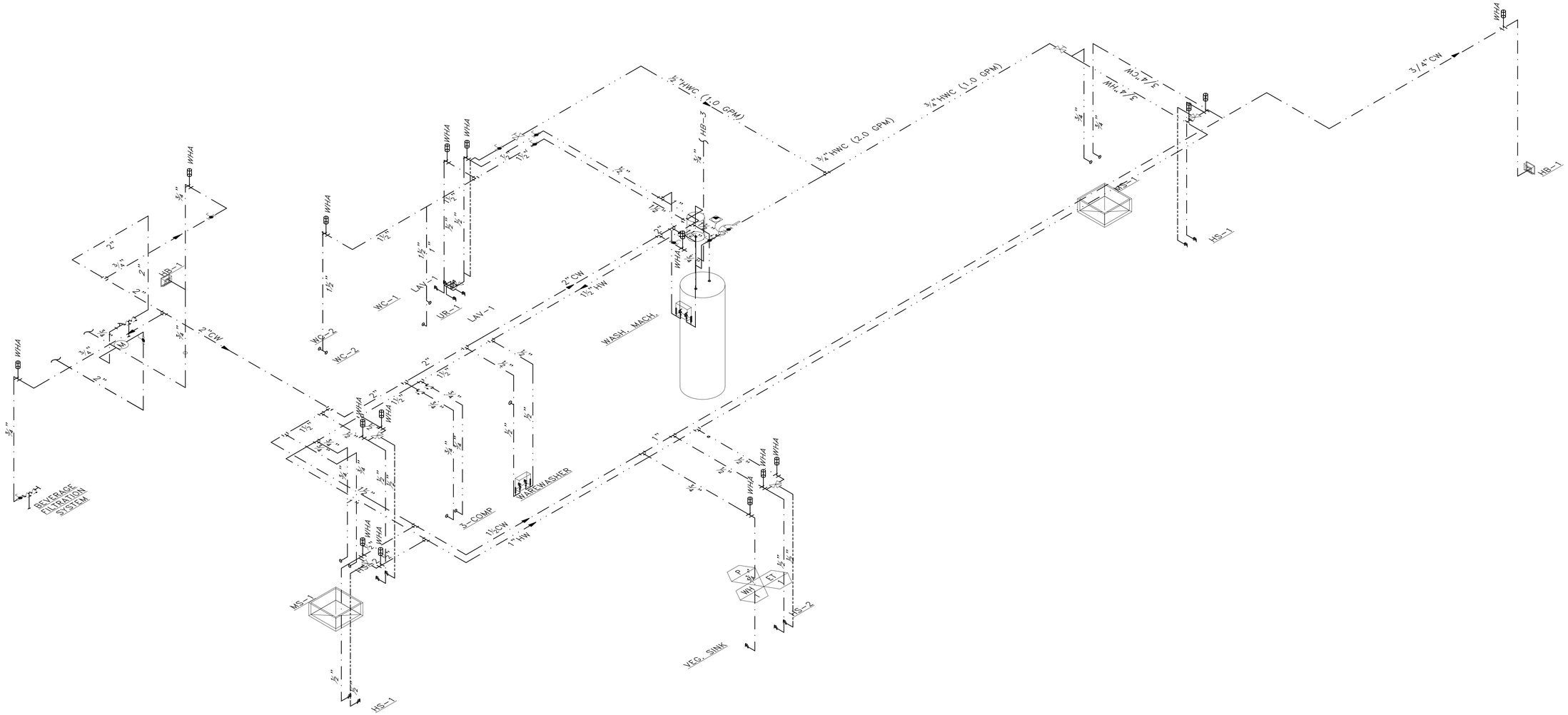
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

NSN: 013.1263

SHEET NO.: 013.1263.00.0

P1.6

OVERHEAD ROUGH-IN



1 P2.0 DOMESTIC WATER PIPING ISOMETRIC

SCALE: NONE

REV	DATE	DESCRIPTION	BY

ENGINEER OF RECORD:
DAVID LEIFER
REGISTERED
No. 11800587
STATE OF INDIANA
PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
7710 Allisonville Road, Suite 2
Fishers, IN 46038
317.570.2400
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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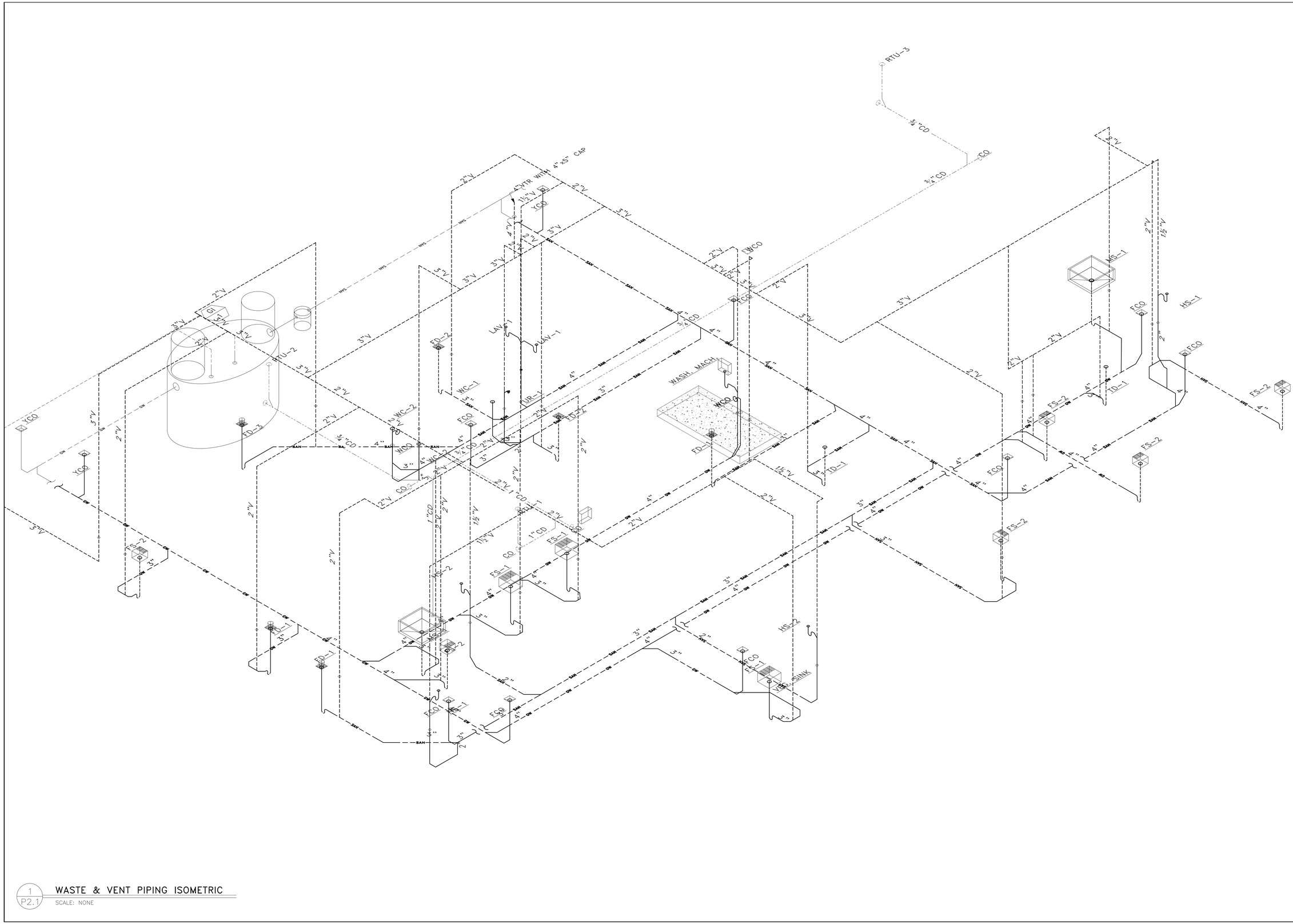
4590-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 013.1263

SITE ADDRESS
7030 Northfield Dr. BROWNSBURG, IN

SHEET NO.
013.1263.00.0
P2.0
DOMESTIC WATER ISOMETRIC



1 P2.1 WASTE & VENT PIPING ISOMETRIC

SCALE: NONE

REV	DATE	DESCRIPTION	BY

ENGINEER OF RECORD:

DAVID LEIFFER REGISTERED No. 11600567 STATE OF INDIANA PROFESSIONAL ENGINEER

11-21-2025

PREPARED BY:

CORE STATES GROUP

212 S. 38th Street, Suite 2
Bentonville, AR 72712
479.927.3465
www.corestates.com

PREPARED FOR:

McDonald's USA, LLC

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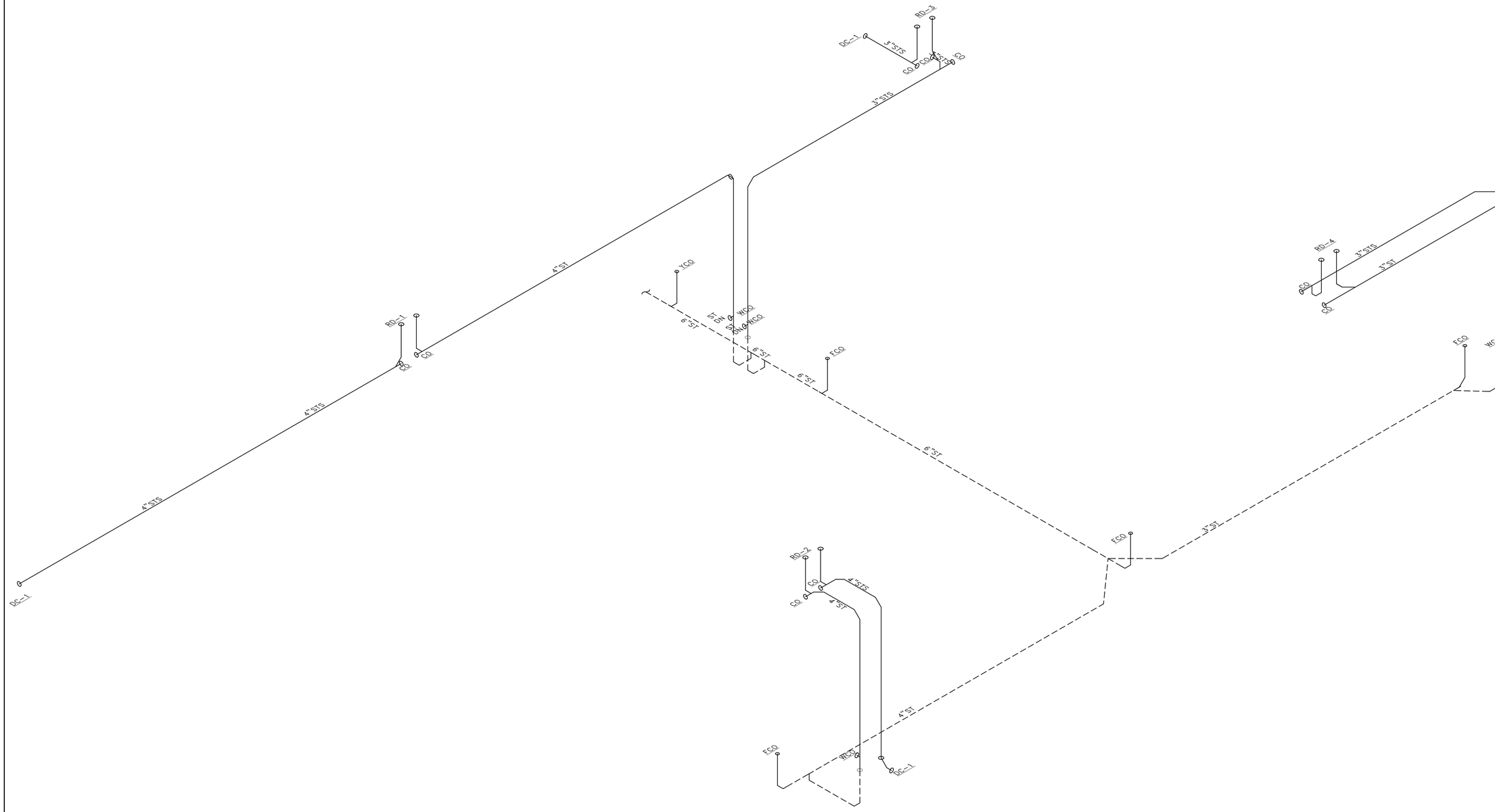
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

SHEET NO. 013.1263.00.0

P2.1

WASTE & VENT ISOMETRIC



1 P2.2 STORM PIPING ISOMETRIC

SCALE: NONE

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ENGINEER OF RECORD:

DAVID LEIFFER REGISTERED No. 11600[illegible] STATE OF INDIANA PROFESSIONAL ENGINEER

11-21-2025

PREPARED BY:

CORE STATES GROUP

212 SE 34th Street, Suite 2
Bentonville, AR 72712
479.877.5465
www.corestates.com

PREPARED FOR:

McDonald's USA, LLC

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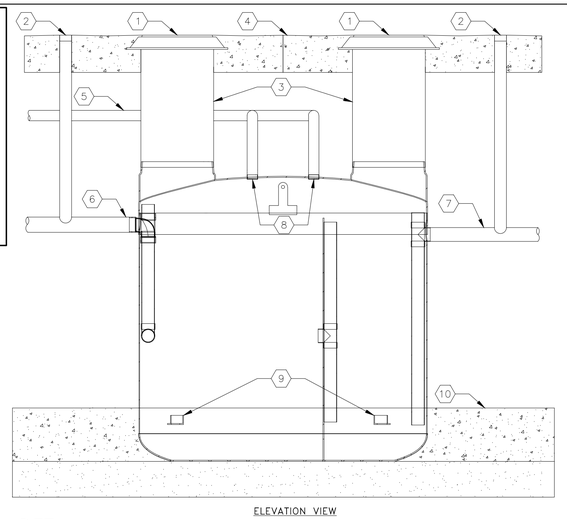
P2.2

STORM ISOMETRIC

KEYED NOTES:
1. 24"ø MANWAY ACCESS COVER, CONSTRUCTED OF ROUND CAST IRON OR SIMILAR RATED FOR HEAVY ROAD TRAFFIC WITH SUFFICIENT WEIGHT TO PREVENT UNAUTHORIZED ACCESS OR BOLT OR LOCKING MECHANISM.
2. 4" CLEAN–OUT
3. MANWAY EXTENSION TO FINISHED GRADE
4. CONCRETE SLAB FOR TRAFFIC LOADING
5. 3"ø VENT BACK TO BUILDING
6. 4"ø INLET
7. 4"ø OUTLET
8. 3"ø VENT CONNECTION
9. HOLD DOWN BRACKET
10. ANTI–BUOYANCY PAD FOR HIGH WATER TABLE INSTALLATIONS

*SEE GREEN TURTLE PROCEPTOR INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION.



ELEVATION VIEW

DETAIL 1 P3.0
GREASE INTERCEPTOR INSTALLATION
SCALE: NONE

Grease Trap Sizing Formula (EPA-2 Model)

A. Determine maximum drainage flow from fixtures:

Type of fixture	Flow rate per unit	Quantity
Triple sink, 2 in. drain	35 gpm	1
Washing machine	10 gpm	1
Warewasher	15 gpm	1
Mop sink	20 gpm	2
Floor Drain or Sink	3 gpm	6
Vegetable Sink, 3 in drain	20 gpm	1
Total	*138 gpm*	*12*

B. Total - Divided by number of fixtures

Total	*11.50 gpm*

C. Loading factor

Fast food - paper delivery	0.5

D. B x C = Sub-total

Sub-total	*5.75 gpm*

E. D x 60 min. = Max. flow for one-hour

Max. Flow	*345 gpm*

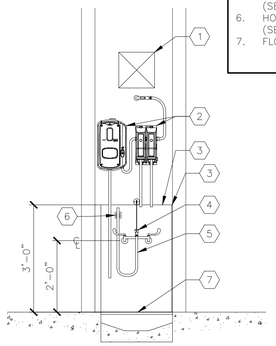
F. E x 2 hour retention time = Volume of Trap in gallons

Volume of Trap	*690 gallons*

Minimum Grease Trap Size
1300 gallons

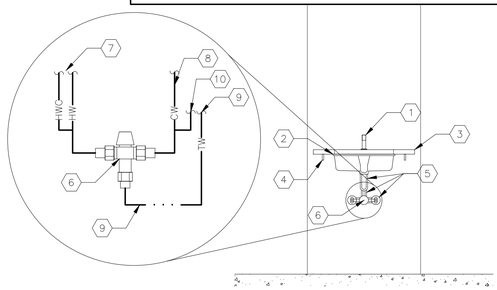
GRAVITY GREASE INTERCEPTOR SIZING (EPA–2 MODEL)

KEYED NOTES:
1. ACCESS PANEL FOR THERMOSTATIC MIXING VALVE (SEE CHEMICAL SYSTEM INSTALLATION DETAIL)
2. ECOLAB CHEMICAL SYSTEM (SEE CHEMICAL SYSTEM INSTALLATION DETAIL)
3. 24"Wx36"H WALL GUARD (QTY. 2) FURNISHED WITH MOP SINK (SEE PLUMBING FIXTURE SCHEDULE)
4. MOP SINK FAUCET WITH INTEGRAL VACUUM BREAKER (SEE PLUMBING FIXTURE SCHEDULE)
5. HOSE FURNISHED WITH MOP SINK FAUCET (SEE PLUMBING FIXTURE SCHEDULE)
6. HOSE BRACKET FURNISHED WITH MOP FAUCET (SEE PLUMBING FIXTURE SCHEDULE)
7. FLOOR GRATE

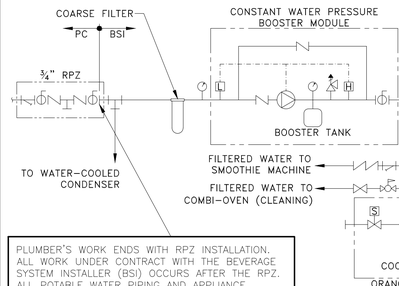


DETAIL 2 P3.0
RECESSED MOP SINK
SCALE: ½"=1'–0"

KEYED NOTES:
1. FAUCET (SEE PLUMBING FIXTURE SCHEDULE)
2. LAVATORY OR HAND SINK (SEE PLUMBING FIXTURE SCHEDULE)
3. CORIAN COUNTERTOP – TOILET ROOMS ONLY (FURNISHED BY G.C.)
4. LAVATORY CARRIER – TOILET ROOMS ONLY (SEE ARCHITECTURAL DRAWINGS)
5. OUTLINE OF ADA COMPLIANT WRAP (SEE PLUMBING FIXTURE SCHEDULE)
6. THERMOSTATIC MIXING VALVE (SEE VALVE SCHEDULE)
7. HOT WATER AND HWC DOWN WALL (WITH BALANCING VALVE AND CHECK VALVE INSTALLED).
8. COLD WATER DOWN TO MIXING VALVE
9. TEMPERATED WATER TO FIXTURES
10. COLD WATER TO FIXTURES AS APPLICABLE.

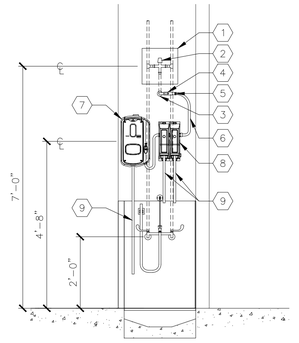


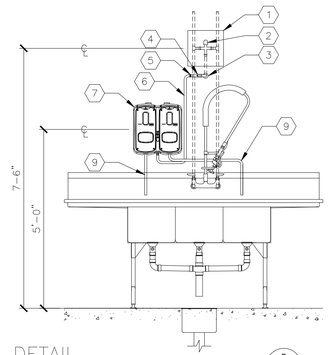
DETAIL 3 P3.0
LAVATORY (PUBLIC)
SCALE: ½"=1'–0"



PLUMBER'S WORK ENDS WITH RPZ INSTALLATION. ALL WORK UNDER CONTRACT WITH THE BEVERAGE SYSTEM INSTALLER (BSI) OCCURS AFTER THE RPZ. ALL POTABLE WATER PIPING AND APPLIANCE BACKFLOW PREVENTION SHALL COMPLY WITH THE LOCAL PLUMBING CODE. IT IS THE RESPONSIBILITY OF THE BSI TO COMPLY WIITH THESE REGULATIONS.

DETAIL 4 P3.0
BEVERAGE SYSTEM DISTRIBUTION SCHEMATIC
SCALE: NONE



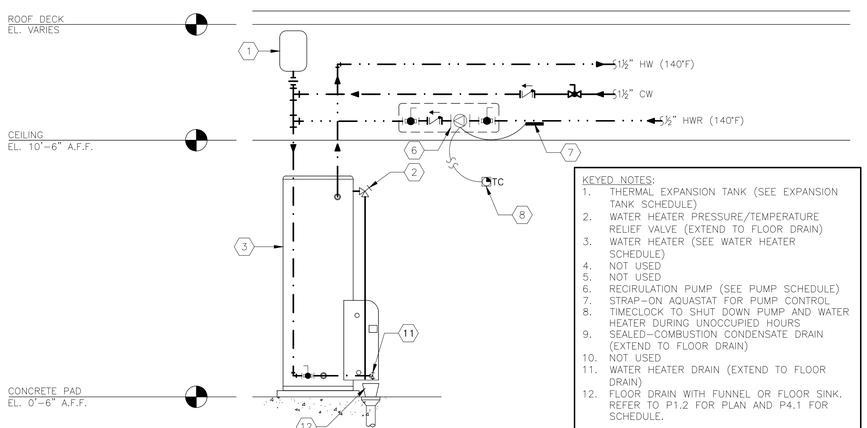


DETAIL 5 P3.0
CHEMICAL SYSTEM INSTALLATION
SCALE: ½"=1'–0"

KEYED NOTES:
1. 12"x12" ACCESS PANEL (COORDINATE INSTALLATION WITH G.C.)
2. THERMOSTATIC MIXING VALVE SET TO 110°F (SEE VALVE SCHEDULE)
3. PIPE THROUGH WALL WITH ESCUTCHEON PLATE
4. SHUT–OFF VALVE
5. ¾" MHT CONNECTION

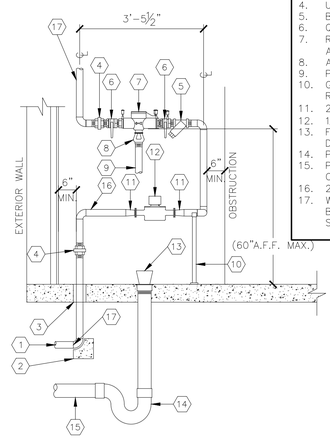
PLUMBER'S WORK ENDS AT MHT CONNECTION

6. HOSE TO CHEMICAL SYSTEM
7. ECOLAB SOLIDSENSE CHEMICAL DISPENSER
8. ECOLAB SMARTSHAPE CHEMICAL DISPENSER
9. CHEMICAL DISPENSING HOSE



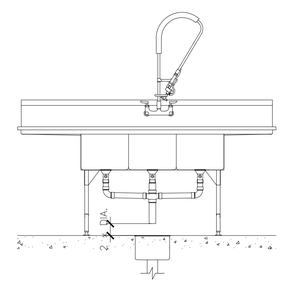
KEYED NOTES:
1. THERMAL EXPANSION TANK (SEE EXPANSION TANK SCHEDULE)
2. WATER HEATER PRESSURE/TEMPERATURE RELIEF VALVE (EXTEND TO FLOOR DRAIN)
3. WATER HEATER (SEE WATER HEATER SCHEDULE)
4. NOT USED
5. NOT USED
6. RECIRULATION PUMP (SEE PUMP SCHEDULE)
7. STRAP–ON AQUASTAT FOR PUMP CONTROL
8. TIMECLOCK TO SHUT DOWN PUMP AND WATER HEATER DURING UNOCCUPIED HOURS
9. SEALED–COMBUSTION CONDENSATE DRAIN (EXTEND TO FLOOR DRAIN)
10. NOT USED
11. WATER HEATER DRAIN (EXTEND TO FLOOR DRAIN)
12. FLOOR DRAIN WITH FUNNEL OR FLOOR SINK. REFER TO P1.2 FOR PLAN AND P4.1 FOR SCHEDULE.

DETAIL 6 P3.0
WATER HEATER PIPING
SCALE: NONE

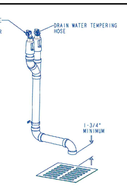


KEYED NOTES:
1. INCOMING UNDERGROUND WATER SERVICE SIZED PER DOMESTIC WATER CALCULATIONS. (MIN. 2")
2. BLOCKING AT CHANGES IN DIRECTION
3. MINIMUM ½" ANNULAR CLEARANCE
4. UNION
5. BRONZE STRAINER
6. QUARTER–TURN BALL VALVE
7. REDUCED PRESSURE ZONE (RPZ) ASSEMBLY
8. AIR GAP FOR RELIEF VALVE
9. PIPING FROM AIR GAP TO FLOOR DRAIN
10. GALVANIZED STEEL PIPE SUPPORTS AS REQUIRED
11. 2"x1½" BUSHING
12. 1½" WATER METER
13. FLOOR DRAIN–PITCH FLOOR TOWARDS DRAIN
14. P–TRAP
15. PIPE TO SEWER–PITCH AND VENT PER CODE
16. 2" PIPE FOR WATER SERVICE
17. WATER PIPING FROM 5 FT. FROM BUILDING TO CEILING PENETRATION SHALL BE COPPER.

DETAIL 7 P3.0
INCOMING WATER SERVICE
SCALE: ½"=1'–0"



DETAIL 8 P3.0
INDIRECT DRAINAGE PIPING (TYP.)
SCALE: ½"=1'–0"



DETAIL 9 P3.0
WAREWASHER DRAIN AIR GAP KIT
SCALE: NTS

ENGINEER OF RECORD:
DAVID LEIFFER REGISTERED No. 11600587 STATE OF INDIANA PROFESSIONAL ENGINEER
11-21-2025

BY	DESCRIPTION	DATE	REV

PREPARED BY:
CORE STATES GROUP
7312 W. Jefferson Blvd. Suite 2
Fort Wayne, IN 46804
260.672.2444
www.corestates.com

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MSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

013.1263.00.0

SHEET NO. P3.0
DETAILS

GENERAL PLUMBING NOTES

GENERAL:
1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
2. ALL PLUMBING WORK SHALL BE PERFORMED BY A LICENSED PLUMBER.
3. ALL DIMENSIONS, CLEARANCES AND TOLERANCES SHALL BE VERIFIED PRIOR TO INSTALLATION. ALL ROUGH–IN LOCATIONS SHALL BE COORDINATED WITH THE MANUFACTURER'S SUBMITTAL INFORMATION.
4. ALL DIMENSIONAL INFORMATION IS AS FOLLOWS (UNLESS NOTED OTHERWISE):
   A. UNDERGROUND PIPE IS TO FOUNDATION
   B. OVERHEAD PIPE IS TO FINISHED WALL
   C. ELEVATIONS ARE TO FINISHED FLOOR
5. ALL MATERIALS, FIXTURES AND EQUIPMENT USED SHALL BE IN ACCORDANCE WITH McDONALD'S SPECIFICATIONS. SPECIFICATIONS ARE CONTAINED WITHIN THESE DRAWINGS AND THE McDONALD'S PROJECT MANUAL. ANY CONTRACTOR IN NEED OF A COPY OF THE McDONALD'S PROJECT MANUAL SHALL CONTACT THE McDONALD'S AREA CONSTRUCTION MANAGER. ANY VARIANCE FROM THE McDONALD'S SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER–OF–RECORD.
6. SEE COORDINATION SCHEDULE FOR ADDITIONAL SCOPE OF WORK.
7. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
8. WHERE POOR SOIL CONDITIONS EXIST OR WHERE SUBSTANTIAL SETTLEMENT OF EITHER THE PIPING, THE BUILDING OR ADJACENT WALKS, PLANTERS, ETC., MAY OCCUR, THE CONTRACTOR SHALL PROVIDE ADEQUATE UNDERSLAB STAINLESS STEEL PIPE HANGERS OR APPROVED OTHER SUPPORT.
9. ALL PIPE SLEEVES SHALL BE PROPERLY SEALED AND INSULATED TO PREVENT HEAT LOSS AND SEEPAGE.
10. ALL PIPE INSULATION SHALL BE PROTECTED FROM DAMAGE FROM PIPE HANGERS. PROTECTION SHALL BE LIGHT GAUGE GALVANIZED STEEL OR EQUAL.
11. ALL PENETRATIONS OF FIRE–RATED WALLS SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING SYSTEM.

SANITARY AND VENT SYSTEMS:
1. THE BUILDING SANITARY PIPE SHALL BE LOCATED A MINIMUM OF 10 FT. FROM THE INCOMING WATER SERVICE. WHERE A 10 FT. SEPARATION IS NOT POSSIBLE, THE BOTTOM OF THE WATER SERVICE PIPE SHALL BE A MINIMUM OF 12 IN. ABOVE THE TOP OF THE HIGHEST POINT OF THE SANITARY PIPE.
2. ALL SANITARY AND VENT PIPE SHALL BE PVC TYPE DWV, ABS OR CAST–IRON WHERE REQUIRED BY CODE.
3. ALL HORIZONTAL SANITARY PIPE SHALL BE INSTALLED WITH A MINIMUM PITCH AS FOLLOWS:

PIPE SIZE	MIN. SLOPE
2½" OR LESS	¼" PER FT.
3" TO 6"	⅛" PER FT.
8" OR LARGER	⅛" PER FT. (MIN)

4. CLEANOUTS SHALL BE INSTALLED IN ALL HORIZONTAL DRAINAGE PIPE AND SHALL BE LOCATED NOT MORE THAN 100 FT. APART. (UNLESS OTHERWISE DICTATED BY LOCAL CODES).
5. CLEANOUTS SHALL BE INSTALLED AT ALL CHANGES OF DIRECTION GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A SINGLE PIPE RUN, ONLY ONE (1) CLEANOUT SHALL BE REQUIRED FOR EVERY 40 FEET OF DEVELOPED LENGTH.
6. CLEANOUTS SHALL BE INSTALLED ON PIPES PRIOR TO ANY SLAB PENETRATION.
7. WHERE PIPING IS LOCATED WITHIN WALL CAVITIES, ACCESS TO THE CLEANOUTS SHALL BE PROVIDED.
8. CLEANOUTS ON 6–IN. AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 IN. CLEANOUTS ON 8–IN. AND LARGER PIPE SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 36 IN.
9. ALL SUSPENDED SANITARY AND VENT PIPE SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
ABS	4 FT.	10 FT.
PVC (TYPE DWV)	4 FT.	10 FT.
CAST–IRON (<10 FT. PIPE SECTIONS)	5 FT.	15 FT.
CAST–IRON (10 FT. PIPE SECTIONS)	10 FT.	15 FT.

10. ALL PLUMBING FIXTURES SHALL BE VENTED AND THE MAXIMUM DISTANCE FROM THE FIXTURE TRAP TO THE VENT SHALL BE AS FOLLOWS:

TRAP SIZE	SLOPE	DISTANCE
1¼"	¼" PER FT.	2'–6"
1½"	¼" PER FT.	3'–6"
2"	¼" PER FT.	5'–0"
3"	⅛" PER FT.	6'–0"
4" & LARGER	⅛" PER FT.	10'–0"

11. ALL PLUMBING VENTS THROUGH THE ROOF SHALL TERMINATE A MINIMUM OF 12 INCHES ABOVE THE ROOF AND SHALL BE LOCATED A MINIMUM OF 8 FT. FROM ANY PARAPET WALL. WHERE A VENT TERMINATES WITHIN 8 FT. OF A PARAPET WALL, THE VENT SHALL TERMINATE A MINIMUM OF 6 INCHES ABOVE THE PARAPET.
12. ALL PLUMBING VENTS SHALL TERMINATE A MINIMUM OF 10 FT. HORIZONTALLY FROM ANY OUTDOOR AIR INTAKE. WHERE A PLUMBING VENT IS LOCATED WITHIN 10 FT. OF AN INTAKE, THE VENT SHALL TERMINATE A MINIMUM OF 2 FT. ABOVE THE INTAKE.
13. ALL SIDE WALL VENT TERMINATIONS SHALL BE PROTECTED TO PREVENT BIRDS OR RODENTS FROM ENTERING OR BLOCKING THE VENT OPENING.
14. ALL FLOOR DRAINS THAT DO NOT SERVE EQUIPMENT SHALL BE PROTECTED AGAINST DRYING OUT EITHER THROUGH THE INSTALLATION OF A TRAP PRIMER, DEEP SEAL TRAP OR PROSET TRAP GUARD. ALL TRAPS SHALL BE FILLED WITH AN INITIAL LAYER OF COOKING OIL.
15. ALL APPLIANCES SHALL DRAIN TO AN APPROVED SANITARY WASTE RECEPTOR (FLOOR SINK OR FLOOR DRAIN WITH FUNNEL). INDIRECT DRAINAGE FROM AN APPLIANCE SHALL MAINTAIN AN AIR GAP BETWEEN THE PIPE OUTLET AND THE TOP OF THE RECEPTOR. THE MINIMUM DISTANCE BETWEEN THE PIPE OUTLET AND THE TOP OF THE RECEPTOR SHALL BE TWICE THE DIAMETER OF THE APPLIANCE DRAIN PIPE.

GREASE INTERCEPTORS:
1. SEE SITE PLAN FOR THE SIZE AND LOCATION OF THE GREASE INTERCEPTOR.
2. THE GREASE INTERCEPTOR SHALL BE INSTALLED IN A LOCATION THAT IS ACCESSIBLE FOR PUMPING.
3. THE GREASE INTERCEPTOR SHALL BE CONSTRUCTED OF FIBERGLASS OR ROTATIONALLY–MOLDED POLYETHYLENE. GREASE INTERCEPTOR CONSTRUCTION SHALL CONFORM TO ALL LOCAL CODES. CONCRETE GREASE INTERCEPTORS ARE NOT PERMITTED UNLESS REQUIRED BY THE LOCAL AHJ.
4. GREASE INTERCEPTORS SHALL BE GRAVITY TYPE, SIZED FOR THE APPLICATION LISTED.
5. THE GREASE INTERCEPTOR SHALL BE VENTED.
6. ACCESS TO THE GREASE INTERCEPTOR SHALL BE PROVIDED WITH TWO (2) 24–IN. MANHOLES. COVER SHALL PROVIDE WATER/GAS–TIGHT SEAL AND HAVE A MINIMUM 16,000 LBS. LOAD CAPACITY. ALL SURFACE WATER MUST DRAIN AWAY FROM MANHOLES.
7. PIPING INLET AND OUTLET SIDES SHALL BE CLEARLY LABELED ON THE TOP OF THE GREASE INTERCEPTOR TO INSURE PROPER INSTALLATION.

DOMESTIC SUPPLY SYSTEMS:
1. THE INCOMING WATER SERVICE PIPE SHALL BE LOCATED A MINIMUM OF 10 FT. FROM THE EXITING SANITARY PIPE. WHERE A 10 FT. SEPARATION IS NOT POSSIBLE, THE BOTTOM OF THE WATER SERVICE PIPE SHALL BE A MINIMUM OF 12 IN. ABOVE THE TOP OF THE HIGHEST POINT OF THE SANITARY PIPE.
2. ALL UNDERGROUND SITE PLUMBING SHALL CONFORM TO NSF 61, SHALL BE TYPE K COPPER TUBING OR COPPER PIPE, POLYETHYLENE (PE), PEX OR CPVC. IF CPVC IS USED, FOAM INSULATION SHALL BE INSTALLED AT ALL CHANGES OF DIRECTION TO ACCOUNT FOR EXPANSION AND CONTRACTION.
3. INCOMING DOMESTIC WATER SIZE TO BE 2" INNER DIAMETER. FOR PROJECTS WISHING TO DOWNSIZE, A HYDRANT FLOW TEST IS REQUIRED PRIOR TO CONSTRUCTION DOCUMENTS. ENGINEER OF RECORD TO SUBMIT PRESSURE DROP CALCULATIONS AND HYDRANT FLOW TEST TO USRD FOR REVIEW AND APPROVAL OF SMALLER INCOMING DOMESTIC WATER LINE
4. IF PEX PIPING IS USED, ALL MAINS SHALL BE UPSIZED BY 0.5" DIAMETER.
5. INCOMING WATER SERVICE PRESSURE SHOULD BE BETWEEN 50 AND 55 PSI STATIC. WHERE WATER PRESSURE SERVICE EXCEEDS 80 PSI STATIC, AN APPROVED WATER–PRESSURE REDUCING VALVE WITH STRAINER CONFORMING TO ASSE 1003 SHALL BE INSTALLED. WHERE INCOMING WATER PRESSURE IS BELOW 50 PSI STATIC, A PRESSURE BOOSTER SYSTEM SHALL BE INSTALLED.
6. IF THE RESTAURANT HAS A COMBINED WATER AND FIRE SPRINKLER SERVICE, THE INCOMING WATER SERVICE SHALL BE SIZED BASED ON THE FIRE SPRINKLER CONTRACTOR'S HYDRAULIC CALCULATIONS.
7. PROVIDE A MINIMUM ½" ANNULAR CLEARANCE AROUND ALL PIPE SLAB PENETRATIONS.
8. A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (RPZ) SHALL BE INSTALLED AT THE INCOMING SERVICE WHERE REQUIRED BY CODE. (MIN. 60" A.F.F.)
9. AN EXPANSION TANK SHALL BE INSTALLED ON THE COLD WATER LINE INLET TO THE WATER HEATER. SEE EXPANSION TANK SCHEDULE.
10. ALL WATER SUPPLY PIPE WITHIN 5 FT. OF THE BUILDING AND INSIDE THE BUILDING SHALL COMPLY WITH NSF 61 AND SHALL BE TYPE L COPPER TUBING, COPPER PIPE, PEX OR CPVC PIPE.
11. CPVC PIPE SHALL BE FLOWGUARD GOLD OR FLOWGUARD BENDABLE AS MANUFACTURED BY LUBRIZOL.
12. CPVC PIPE SHALL BE CONNECTED WITH FLOWGUARD GOLD YELLOW LOW–VOC SOLVENT CEMENT AS MANUFACTURED BY IPS WELD–ON OR OATEY.
13. ALL CPVC PIPE SHALL BE INSULATED TO PREVENT EXPOSURE TO GREASE.
14. ALL SUSPENDED PIPE SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER PIPE	12 FT.	10 FT.
COPPER TUBING ≤1¼"	6 FT.	10 FT.
COPPER TUBING >1½"	10 FT.	10 FT.
CPVC ≤1"	3 FT.	10 FT.
CPVC ≥1¼"	4 FT.	10 FT.
PEX ≤1"	3 FT.	10 FT.
PEX ≥1¼"	4 FT.	10 FT.

15. A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (RPZ) SHALL BE INSTALLED AT THE INLET TO THE WATER FILTRATION SYSTEM. ALL PIPING DOWNSTREAM OF THE RPZ SHALL BE COPPER OR CROSS–LINKED POLYETHYLENE (PEX).
16. ALL DEVICES, APPLIANCES, AND APPARATUS INTENDED TO SERVE SOME SPECIAL FUNCTION (EX.: SODA MACHINE, COFFEE MACHINE, BEVERAGE DISPENSERS, ETC.) SHALL BE PROVIDED WITH PROTECTION AGAINST BACKFLOW AND CONTAMINATION OF THE WATER SUPPLY SYSTEM. ALL BACKFLOW PREVENTION DEVICES SHALL BE ASSE LISTED AND APPROVED FOR THE DEVICE OR APPLIANCE THEY SERVE.
17. ALL WATER SUPPLY LINES SHALL BE PROVIDED WITH A QUARTER–TURN SHUT–OFF VALVE BEFORE FINAL CONNECTION TO EQUIPMENT.
18. QUARTER–TURN SHUT–OFF VALVES SHALL BE INSTALLED UPSTREAM OF ANY INLINE BACKFLOW PREVENTION DEVICE.
19. ALL VALVES AND BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED WITH FITTINGS THAT FACILITATE REMOVAL IN CASE OF FAILURE.
20. ALL OVERHEAD WATER LINES SHALL BE INSULATED PER SCHEDULE THIS SHEET WITH EXTERNAL JACKETED INSULATION AND A MINIMUM INSTALLED R–VALUE OF 3.7.
21. PRIOR TO BUILDING TURNOVER, THE DOMESTIC WATER SUPPLY SYSTEM SHALL BE PURGED OF DELETERIOUS MATERIAL AND DISINFECTED. DISINFECTION SHALL BE DONE IN ACCORDANCE WITH THE LOCAL HEALTH CODE, PLUMBING CODE OR IN ACCORDANCE WITH AWWA C651 OR AWWA C652.

STORM DRAINAGE SYSTEMS:
1. ALL ROOF DRAINS SHALL BE SIZED IN ACCORDANCE WITH LOCAL CODES AND SHALL CONFORM TO ASME A112.21.2M OR A112.3.1.
2. ALL STORM DRAINAGE PIPING SHALL BE ABS, PVC TYPE DWV OR CAST–IRON WHERE REQUIRED BY CODE.
3. ALL SUSPENDED STORM DRAINAGE PIPE SUPPORT REQUIREMENTS SHALL BE THE SAME AS THE SANITARY AND VENT REQUIREMENTS.
4. ALL HORIZONTAL STORM DRAINAGE PIPE PITCH REQUIREMENTS SHALL BE THE SAME AS THE SANITARY AND VENT REQUIREMENTS.
5. ALL HORIZONTAL STORM DRAINAGE PIPE SHALL BE INSULATED WITH 1" THICK EXTERNAL JACKETED INSULATION AND A MINIMUM INSTALLED R–VALUE OF 3.7 TO PROTECT AGAINST CONDENSATION.
6. CLEANOUTS SHALL BE INSTALLED IN ALL HORIZONTAL DRAINAGE PIPE AND SHALL BE LOCATED NOT MORE THAN 100 FT. APART.
7. CLEANOUTS SHALL BE INSTALLED AT ALL CHANGES OF DIRECTION GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A SINGLE PIPE RUN, ONLY ONE (1) CLEANOUT SHALL BE REQUIRED FOR EVERY 40 FEET OF DEVELOPED LENGTH.
8. CLEANOUTS SHALL BE INSTALLED ON PIPES PRIOR TO ANY SLAB PENETRATION.
9. WHERE PIPING IS LOCATED WITHIN WALL CAVITIES, ACCESS TO THE CLEANOUTS SHALL BE PROVIDED.
10. ROOF DRAINS AND OVERFLOW ROOF DRAINS SHALL BE PIPED INDEPENDENTLY. OVERFLOW ROOF DRAINS SHALL NOT BE CONNECTED TO THE PRIMARY ROOF DRAINAGE SYSTEM.
11. MINIMUM PIPING INSULATION THICKNESS HEATING AND HOT–WATER SYSTEMS (STEAM, STEAM CONDENSATE, HOT–WATER HEATING AND DOMESTIC WATER SYSTEMS). PLEASE REFER TO THE LATEST EDITION OF IECC FOR MINIMUM PIPE INSULATION THICKNESS (TABLE C403.12.3)

PIPING	MINIMUM INSULATION THICKNESS (IN INCHES) PER NOMINAL PIPE OR TUBE SIZE				
NOMINAL PIPE SIZE	<1	1 TO 1.5	1.5 TO <4	4 TO <8	≥8
DOMESTIC COLD WATER (40°F TO 60°F)	0.5	0.5	1.0	1.0	1.0
TEMPERATE HOT WATER (105°F TO 140°F)	1.0	1.0	1.5	1.5	1.5
HOT WATER (141°F TO 200°F)	1.5	1.5	2.0	2.0	2.0
STORM DRAIN (HORIZONTAL)	–	–	1.0	1.0	1.0

LEGEND

	COLD WATER PIPING
	TEMPERED WATER PIPING (110°F)
	HOT WATER PIPING (140°F)
	RECIRCULATED HOT WATER PIPING
	OVERHEAD LINES (BY P.C.)
SAN	UNDERGROUND SANITARY PIPING
GW	UNDERGROUND GREASE WASTE PIPING
	VENT PIPING
ST	ABOVE GROUND PRIMARY STORM PIPING
ST	UNDERGROUND PRIMARY STORM PIPING
STS	ABOVE GROUND SECONDARY STORM PIPING
CD	CONDENSATE PIPING
	HOSE BIBB
	CHECK VALVE
	BALL VALVE
	THERMOSTATIC MIXING VALVE
	FLOOR DRAIN
	CLEAN–OUT (FLOOR OR YARD)
	FLOOR SINK
	PRESSURE GUAGE
L	LOW PRESSURE SWITCH
H	HIGH PRESSURE SWITCH
S	SOLENOID VALVE
	THREE–WAY VALVE
	PRESSURE REGULATOR
	DUAL CHECK VALVE OR RPZ
	DUAL CHECK VALVE WITH ATMOSPHERIC VENT
	STRAINER
	RELIEF VENT
	WATER–HAMMER ARRESTER

ABBREVIATIONS

ACM	AREA CONSTRUCTION MANAGER
AVB	ATMOSPHERIC VACUUM BREAKER
BSI	BEVERAGE SYSTEM INSTALLER
CO	CLEAN–OUT
DC	DOWNSPOUT COVER
DFU	DRAINAGE FIXTURE UNIT(S)
EC	ELECTRICAL CONTRACTOR
FAC	FIRE ALARM CONTRACTOR
FCO	FLOOR CLEAN–OUT
FD	FLOOR DRAIN
FPC	FIRE PROTECTION CONTRACTOR
FS	FLOOR SINK
GC	GENERAL CONTRACTOR
GI	GREASE INTERCEPTOR
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
HS	HAND SINK
I.P.S.	IRON PIPE SIZE (ALSO NPS)
KEI	KITCHEN EQUIPMENT INSTALLER
KES	KITCHEN EQUIPMENT SUPPLIER
LAV	LAVATORY
MC	MECHANICAL CONTRACTOR
MHT	MALE HOSE THREADS
MS	MOP SINK
NPS	NATIONAL PIPE THREAD STANDARD
NPT	NATIONAL PIPE THREAD TAPERED
O/O	OWNER/OPERATOR
OH	OVERHEAD
P	PUMP
PC	PLUMBING CONTRACTOR
RC	REFRIGERATION CONTRACTOR
RPZ	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
SS	SANITARY SEWER
ST STS	STORM SEWER (PRIMARY) STORM SEWER (SECONDARY)
SVB	ANTI–SIPHON, SPILL RESISTANT VACUUM BREAKER
TAB	TEST AND BALANACE CONTRACTOR
UG	UNDERGROUND
UR	URINAL
V	VENT
WC	WATER CLOSET
WCO	WALL CLEAN–OUT
WSFU	WATER SUPPLY FIXTURE UNIT(S)
YC	YARD CLEAN–OUT

REV	DATE	DESCRIPTION	BY

ENGINEER OF RECORD:
DAVID LEIFFER
REGISTERED
No. 11600587
STATE OF INDIANA
PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
212 SE 34th. Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY: ES
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 00/00/00

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

SHEET NO. 013.1263.00.0
P4.0
GENERAL NOTES

COORDINATION SCHEDULE

GENERAL REQUIREMENTS	FURNISH	INSTALL	FINAL CONNECTION	NOTES
MECHANICAL PERMIT	MC			1–3
HOT WORK (WELDING) PERMIT (IF APPLICABLE)	MC			1–3
REFRIGERATION PERMIT (IF APPLICABLE)	KES			1–3
PLUMBING PERMIT	PC			1–3
ELECTRICAL PERMIT	EC			1–3
FIRE SPRINKLER PERMIT (IF APPLICABLE)	FPC			1–3
FIRE ALARM PERMIT (IF APPLICABLE)	FAC			1–3
CONTRACTOR COORDINATION REQUIREMENTS				
HEATING & AIR–CONDITIONING				
ROOFTOP UNITS, INTAKE AND RELIEF	MCD CP	MC		1–5, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 20, 22
GAS PIPING AND GAS PIPE KIT	PC	PC	PC	1–3, 14, 22–23
CONTROLS WIRING	MC	EC	EC	1–3, 19, 22, 24
POWER WIRING	EC	EC	EC	1–3, 19, 22, 24
CONDENSATE TRAP	MC	PC		1–3, 22–23
CONDENSATE PIPING (IF APPLICABLE)	PC	PC		1–3, 22–23
DUCT–MOUNTED SMOKE DETECTOR	MC	MC	EC	1–3, 22, 24
GENERAL EXHAUST SYSTEMS				
EXHAUST FANS	MCD CP	MC		1–3, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 22
CONTROLS (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
TEMPERATURE CONTROLS				
BUILDING AUTOMATION SYSTEM	MCD CP	MC	EC	1–3, 22, 24
REMOTE SENSORS (RH AND/OR TEMPERATURE)	MC	MC	EC	1–3, 22, 24
CONTROLS WIRING (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
DUCTWORK AND ACCESSORIES				
GALVANIZED SHEET METAL DUCTWORK	MC	MC		1–3, 22
EXTERNAL INSULATION	MC	MC		1–3, 22
INTERNAL INSULATION (IF APPLICABLE)	MC	MC		1–3, 22
WEATHERPROOFING (IF APPLICABLE)	MC	MC		1–3, 22
SPIN–IN COLLARS	MC	MC		1–3, 22
FLEXIBLE DUCTWORK	MC	MC		1–3, 22
VOLUME/BALANCING DAMPERS	MC	MC		1–3, 22
FIRE DAMPERS (IF APPLICABLE)	MC	MC		1–3, 22
FIRESTOPPING (IF APPLICABLE)	MC	MC		1–3, 22
AIR DEVICES AND ACCESSORIES	MC	MC	MC	1–3, 7, 22, 28
PLUMBING SYSTEMS				
WATER HEATERS	MCD CP	PC	PC	1–3, 11–12, 23
HOT AND COLD WATER PIPE	PC	PC	PC	1–3, 23
VENTS AND INTAKES	PC	PC	PC	1–3, 23
THERMOSTATIC MIXING VALVE	PC	PC	PC	1–3, 23
POWER AND CONTROL WIRING	EC	EC	EC	1–3, 23–24
KITCHEN EXHAUST SYSTEMS				
McDONALD'S BACKSHELF EXHAUST HOODS	KES	KEI		1–3, 6, 22, 27
CANOPY EXHAUST HOODS (IF APPLICABLE)	KES	KEI		1–3, 6, 22, 27
BLACK IRON DUCTWORK	KES	KEI		1–3, 6, 22
STAINLESS STEEL DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
ALUMINUM DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
UL LISTED DUCT WRAP	MC	MC		1–3, 6, 22
FIRE–RATED DUCT ENCLOSURE (IF APPLICABLE)	GC	GC		1–3, 6, 20, 22
EXHAUST FANS	MCD CP	MC		1–3, 6, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 6, 20, 22
CURB EXTENSIONS	MC	MC		1–3, 6, 22
CONTROLS (WHERE APPLICABLE)	EC	EC	EC	1–3, 6, 22, 24
POWER WIRING	EC	EC	EC	1–3, 6, 22, 24
FIRE SUPPRESSION SYSTEM	KES	KES	KES	1–3, 16, 22, 27
KITCHEN EQUIPMENT				
COOLER/FREEZER	KES	GC		1–3, 27
EVAPORATOR COILS	KES	MC		1–3, 27
CONDENSATE PIPING	PC	PC	PC	1–3, 23, 27
REMOTE CONDENSING UNIT (MAC)	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	EC	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
ICE MACHINES	KES	KEI		1–3, 27
WATER SUPPLY PIPING	KES	KEI	BSI	1–3, 27
REMOTE CONDENSING UNITS	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22, 27
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	KES	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
GRILLS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
CONTROL CABLE (6" CLAMSHELL ONLY)	MC	EC	EC	1–3, 23, 24, 27
FRYERS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
3–COMPARTMENT SINK	KES	KES		1–3, 12, 27
FAUCETS AND PRE–RINSE SPRAYER	KES	KES		1–3, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
HAND SINKS	MCD CP	PC		1–3, 23, 27
FAUCET	MCD CP	PC		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
VEGETABLE SINK	KES	KES		1–3, 23, 27
FAUCET	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WASHING MACHINE	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WARE WASHER	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
MISCELLANEOUS ITEMS				
FIRE SPRINKLER SYSTEMS	FPC	FPC	FPC	1–3, 15, 25
HVAC EQUIPMENT START–UP	MC			1–3, 22
TEST, ADJUST AND BALANCE HVAC SYSTEMS	TAB			1–3, 22
DOOR GRILLES (IF APPLICABLE)	MC	GC		1–3, 20, 22
ROOF/WALL OPENINGS	GC			1–3, 20–24
APPLIANCE BACKFLOW PREVENTION	KES/BSI	PC	PC	1–3, 23, 27
CO2 DETECTION SYSTEM	KES/BSI	EC/BSI	EC/BSI	1–3, 22, 27

NOTES:
1. THIS SCHEDULE IS INTENDED AS A GUIDE FOR THE WORK TO BE PERFORMED. ALL WORK SHALL BE COORDINATED BETWEEN THE McDONALD'S AREA CONSTRUCTION MANAGER AND ALL GC AND O/O SUBCONTRACTORS.
2. ONE (1) COPY OF THE DECOR PACKAGE DRAWINGS SHALL BE SUPPLIED TO THE GENERAL CONTRACTOR AND EACH OF THE SUBCONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THE SUBCONTRACTORS TO INSURE THAT THEY HAVE RECEIVED THE DECOR PACKAGE DRAWINGS.
3. FOR ANY WORK NOT CLARIFIED IN THIS SCHEDULE OR IN THE NOTES AND SPECIFICATIONS, PLEASE CONSULT THE McDONALD'S CONSTRUCTION MANAGER FOR SCOPE OF WORK.
4. ALL ROOFTOP UNIT EQUIPMENT SUPPLIED BY THE MECHANICAL CONTRACTOR AND THE KITCHEN EQUIPMENT SUPPLIER SHALL BE ON SITE AT THE SAME TIME FOR A SINGLE CRANE LIFT. EQUIPMENT SITE ARRIVAL DATE SHALL BE COORDINATED BETWEEN THE CONSTRUCTION MANAGER, MECHANICAL CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER.
5. ALL ROOFTOP UNITS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY EQUIPMENT. THE INSTALLATION OF STANDARD EFFICIENCY ROOFTOP UNITS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR HVAC EQUIPMENT PERFORMANCE REQUIREMENTS.
6. ALL KITCHEN EQUIPMENT REQUIRING EXHAUST SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS. ANY VARIATION FROM THESE PLANS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER AND THE ENGINEER–OF–RECORD.
7. WHERE GYPSUM BOARD CEILINGS ARE INSTALLED, THE MECHANICAL CONTRACTOR SHALL SUPPLY DRYWALL MOUNTING FRAMES FOR LAY–IN TYPE DIFFUSERS.
8. ALL WORK SHOWN ON P1.6 DRAWING(S) SHALL BE COMPLETED BY THE BEVERAGE SYSTEM INSTALLER (OR K.E.S.) UNLESS OTHERWISE NOTED IN THE PLUMBING DRAWINGS.
9. ALL WORK ON P1.0 & P1.2 DRAWING(S) SHALL BE BY THE PLUMBING CONTRACTOR.
10. THE BEVERAGE SYSTEM INSTALLER FURNISHES, RUNS AND CONNECTS ALL FLEXIBLE WATER AND SYRUP LINES FOR ALL AFFECTED EQUIPMENT INCLUDING THE FOLLOWING:
    A. HOT CHOCOLATE
    B. COFFEE BREWER
    C. ICE MACHINE
    D. O.J.
    E. SODA TOWERS
11. ALL WATER HEATERS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY SEALED–COMBUSTION WATER HEATERS. THE INSTALLATION OF STANDARD EFFICIENCY GRAVITY–VENTED WATER HEATERS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR SERVICE WATER–HEATING EQUIPMENT PERFORMANCE EFFICIENCY REQUIREMENTS.
12. THE CONSTRUCTION MANAGER, PLUMBING CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER SHALL COORDINATE WHICH SOILED DISHWASHER (3–COMPARTMENT SINK) IS BEING INSTALLED IN THE RESTAURANT.
13. N/A
14. N/A
15. ALL FIRE PROTECTION DRAWINGS CONTAINED WITHIN THIS SET ARE STRICTLY FOR REFERENCE ONLY. FIRE SPRINKLER DRAWINGS SHALL BE DESIGNED AND PERMITTED BY A FIRE PROTECTION CONTRACTOR.
16. ALL R–102 WET CHEMICAL FIRE SUPPRESSION SYSTEMS FOR TYPE I HOODS SHALL BE DESIGNED AND INSTALLED BY A LOCAL ANSUL AGENT. THE USE OF DRY CHEMICAL SYSTEMS IS PROHIBITED. THE LOCAL ANSUL AGENT CONTRACT IS HANDLED THROUGH THE KITCHEN EQUIPMENT SUPPLIER.
17. ALL ROOFTOP UNITS AND EXHAUST FANS ARE SUPPLIED WITH A FACTORY–INSTALLED DISCONNECT SWITCH.
18. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES FOR REMOTE CONDENSING UNITS.
19. ALL ELECTRICAL CONDUITS FOR ROOFTOP EQUIPMENT SHALL BE BROUGHT UP THROUGH THE BASE OF THE UNIT TO MINIMIZE ROOF PENETRATIONS. WHERE THIS IS NOT POSSIBLE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY PIPE PORTALS ON ROOF.
20. WALK–IN COOLER AND WALK–IN FREEZER REFRIGERATION SYSTEMS SHALL MEET THE PERFORMANCE REQUIREMENTS OUTLINED IN THE LATEST EDITION OF IECC. MINIMUM ANNUAL WALK–IN ENERGY FACTOR (AWEF) PROVIDED BY EQUIPMENT MANUFACTURER IS DETERMINED IN ACCORDANCE WITH AHRI 1250.
21. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
22. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
23. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
24. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
25. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
26. SEE FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.
27. SEE FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
28. SEE KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION.
29. SEE DECOR DRAWINGS FOR ADDITIONAL INFORMATION.

PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	HP	V	Ø	Hz	ACCESSORIES
P–1	GRUNDFOS	UP 15–18 B7	1/25	120	1	60	1–3

ACCESSORIES:
1. TIMECLOCK
2. AQUASTAT
3. CHECK VALVE

NOTES:
1. SEE ELECTRICAL DRAWINGS FOR TIMECLOCK WIRING
2. DESIGN: 2 GPM, 7 FT. HEAD
3. SEE DETAIL 6 ON DRAWING P3.0

EXPANSION TANK SCHEDULE

TAG	MANUFACTURER	MODEL	TOTAL VOL.	CONNECTION	ACCESSORIES
ET–1	AMTROL	ST–12	4.4 GAL.	¾"	–

NOTES:
1. SEE DETAIL 6 ON DRAWING P3.0

BACKFLOW PREVENTER SCHEDULE

TYPE	MFR.	MODEL	ASSE LISTING	SERVES	LOCATION
AG	FURN. WITH CHEM. SYS.		1055B	CHEMICAL SYSTEM	DIN. RM.–MOP SINK
AG	FURN. WITH CHEM. SYS.		1055B	CHEMICAL SYSTEM	KITCHEN–MOP SINK
AVB	FURN. WITH CHEM. SYS.		1001	CHEMICAL SYSTEM	SUPP. RM.–3–COMP
AVB	FURN. WITH FAUCET		–	MOP SINK FAUCET	SEE DRAWINGS
VB	FURN. WITH HB		1011	WALL HYDRANT	SEE DRAWINGS
DCV	FURN. WITH HB		1052	YARD HYDRANT	TRASH CORRAL
DCV	FURN. WITH HB		1052	ROOF HYDRANT	ROOF
DCV	WATTS	SD–3	1022	SODA TOWERS AND SPEC. COFFEE	
RPZ	WILKINS	375XL–SXL–AG	1013	INCOMING WATER	SUPPORT ROOM
RPZ	WILKINS	375XL–AG	1013	FILTRATION SYSTEM	SUPPORT ROOM

WATER HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	SIZE GAL.	HEATING TYPE	HEATING KW	RECOV. 100°F ΔT GPH	ELECTRICAL VOLTS	Ø	Hz	F.L.A.
WH–1	BRADFORD–WHITE	CEHD120(A)54–3*CF	119	ELEC.	54	223	208	3	60	150

ACCESSORIES:
1. NSF INSTALLATION KIT

VALVE SCHEDULE

MANUFACTURER	MODEL	TEMP. SETTING	LISTING	SERVES
WATTS	LFMMV	110°F	ASSE 1017,1069,1070	CHEMICAL SYSTEM MIXING
WATTS	LFMMV	104°F	ASSE 1017,1069,1070	LAVS & HAND SINKS MIXING
ZURN	ZW3870XLT	104°F		
WATTS	LFUSG–B	110°F	ASSE 1016, 1070	VEGETABLE PREP. SINK MIXING
B & G	CB–1/2	–	–	RECIRC. SYSTEM BALANCING VALVE
NIBCO	585–70–HC	–	–	CHEMICAL SYSTEM SHUT–OFF
NIBCO	S–FP–600A–LF	–	–	RESTROOM SHUT–OFF
NIBCO	S–FP–600A–LF	–	–	COMBI OVEN WATER SHUT OFF
WATTS	LFFBV–PEX	–	–	COMBI OVEN RO WATER SHUT OFF

INTERCEPTOR SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	ACCESSORIES	NOTES
GI–1	EXTERIOR GREASE INTERCEPTOR	–	–	–	–
		ZURN – GREEN TURTLE	PROCEPTOR MODEL GMC1300–UPC	4" INLET, 4" OUTLET	1–2, 4

NOTES:
1. SEE GREASE INTERCEPTOR NOTES AND ACCESSORIES ON DRAWING P4.0
2. GREASE INTERCEPTOR IS SIZED FOR CITY SEWER APPLICATIONS ONLY. DO NOT USE FOR SEPTIC FIELDS.
3. NOT USED
4. FOR ZURN PROCEPTOR ORDERING, CONTACT HUGHES SUPPLY, DIRECT LINE: (407) 244–7918, OR E–MAIL: MCDCOORD@HAJOCA.COM

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	WATER USE	ACCESSORIES/COMMENTS	
F–1	FAUCET FOR LAV–1	SLOAN	SF–2150	0.5 GPM (0.08 GAL/10 SEC CYCLE)	FAUCET OPERATION: SENSOR	
		ZURN	ZG6950XL–F–10S			
F–2	FAUCET FOR MS–1	ZURN	Z843M4		FAUCET OPERATION: MANUAL SEE DETAIL 2 ON DRAWING P3.0	5' VINYL HOSE WALL HOOK
FCO	6x6 FLOOR CLEAN OUT	ZURN	Z1400–SZ		SEE DRAWINGS FOR PIPE SIZES SEE NOTE 8	
		JAY R. SMITH	4040			
FD–1	6x6 FLOOR DRAIN WITH FUNNEL	ZURN	Z415–SZ1		PIPE SIZE: 3" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: ZURN Z329 SEE NOTE 8
		JAY R. SMITH	3510–F25			
FD–2	6x6 FLOOR DRAIN	ZURN	Z415–SZ1		PIPE SIZE: 3" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: NONE SEE NOTE 8
		JAY R. SMITH	2005			
FD–3	6x6 FLOOR DRAIN WITH FUNNEL	ZURN	Z415–SZ1		PIPE SIZE: 4" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: ZURN Z329 SEE NOTE 8
		JAY R. SMITH	3510–F25			
FD–4	6x6 FLOOR DRAIN	ZURN	Z415–SZ1		PIPE SIZE: 4" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: NONE SEE NOTE 8
		JAY R. SMITH	2005			
FS–1	12x12 FLOOR SINK WITH HALF–GRATE	ZURN	ZN1901		PIPE SIZE: 3" DOME STRAINER: ALUMINUM	GRATE: HALF – NICKEL–BRONZE SEE NOTE 8
		JAY R. SMITH	3435			
FS–2	8x8 FLOOR SINK WITH HALF–GRATE	ZURN	ZN1910		PIPE SIZE: 3" DOME STRAINER: ALUMINUM	GRATE: HALF – NICKEL–BRONZE SEE NOTE 8
		JAY R. SMITH	3415			
FS–3	8x8 FLOOR SINK	ZURN	ZN1910		PIPE SIZE: 3" DOME STRAINER: ALUMINUM	GRATE: FULL – NICKEL–BRONZE SEE NOTE 8
		JAY R. SMITH	3415			
HB–1	WALL HYDRANT	WOODFORD	B65		WALL CLAMP: ADJUSTABLE VERIFY WALL THICKNESS	SEE NOTE 3
		ZURN	Z1320–EZ			
		JAY R. SMITH	5519			
HB–2	YARD HYDRANT	WOODFORD	S4H		SEE NOTES 4 & 9	
HB–3	ROOF HYDRANT	WOODFORD	SRH–MS		(NO DRAIN REQUIRED)	
HS–1	STAINLESS STEEL HAND SINK	ADVANCE TABCO	7–PS–61	1 GPM	FAUCET: INCLUDED WITH SINK	SEE NOTES 6 & 10
HS–2	STAINLESS STEEL HAND SINK – ADA	ADVANCE TABCO	7–PS–26	1 GPM	FAUCET: INCLUDED WITH SINK	SEE NOTES 6 & 10
LAV–1	LAVATORY	KOHLER	K–2882–0		FAUCET: F–1 TRUEBRO LAVGUARD2 MODEL #102–E–Z CORIAN COUNTER BY G.C.	SEE NOTE 10 SEE DETAIL 3 ON P3.0 SEE NOTE 11
		SLOAN	SS3021			
MS–1	MOP SINK	FIELD FABRICATED	RECESSED – FLOOR		FAUCET: F–2 INCLUDES HOSE, HOSE BRACKET AND TWO (2) 24"Wx36"H WALL GUARDS SEE DETAIL 2 ON P3.0	
			(24x24x12)			
		ADVANCE TABCO	9–OP–24FM–SS			
TD–1	TRENCH DRAIN	ZURN	Z886–DGC		CLASS C DUCTILE IRON SLOTTED GRATE. NO–HUB BOTTOM OUTLET. BOTTOM DOME STRAINER. CLOSED END CAP	
UR–1	ADA WALL–HUNG URINAL	SLOAN	SU–1009	0.125 GPF	FLUSH VALVE: SLOAN SOLIS 8186 ZURN ZTR6203–ULF–LL ¾" I.P.S., 1" TOP SPUD	FLUSH VALVE OPERATION: SENSOR SEE NOTE 2
		ZURN	ZK5755.380.00			
		–	–			
WB–1	WALL BOX FOR WASHING MACHINE	SIOUX CHIEF	696–2313		HAMMER ARRESTERS INCLUDED WITH BOX MOUNTING HEIGHT: 12" A.F.F.	SEE NOTE 7
WB–2	WALL BOX FOR WAREWASHER	SIOUX CHIEF	696–2413MF		MOUNTING HEIGHT: 12" A.F.F.	ORDER WITH TWO (2) ¾" FHTx ½" MIP ADAPTERS. SEE NOTE 7
WC–1	WATER CLOSET	SLOAN	ST–2009	1.28 GPF	FLUSH VALVE: SLOAN SOLIS 8111 ZURN ZTR6200EV–LL 1" I.P.S., 1½" TOP SPUD	FLUSH VALVE OPERATION: SENSOR SEAT: BEMIS MODEL 2155CT
		ZURN	ZK5655.381.00.03.00			
		–	–			
WC–2	ADA WATER CLOSET	SLOAN	ST–2029 ADA	1.28 GPF	FLUSH VALVE: SLOAN SOLIS 8111 ZURN ZTR6200EV–CC–LL 1" I.P.S., 1½" TOP SPUD	FLUSH VALVE OPERATION: SENSOR SEAT: BEMIS MODEL 2155CT
		ZURN	ZK5655.4MC.00.03.00			
		–	–			
–	SOILED DISHTABLE (3–COMPARTMENT SINK)	–	–		ITEM: 151.46	SEE NOTE 7
–	VEGETABLE PREPARATION SINK	–	–		ITEM: 134.00	SEE NOTE 7
–	WAREWASHER	ECOLAB	XL–HTHH–VV		ITEM: 152.09 WALL BOX: WB–2	**SEE NOTE 7.** TIE ¾"HW INTO ECOLAB. SPLIT CW: ¾" TO DTV, ⅜" TO VAPOR VENT.
–	WASHING MACHINE	–	–		ITEM: 223.07 WALL BOX: WB–1	SEE NOTE 7
WCO	WALL CLEAN OUT	ZURN	Z1446		SEE DRAWINGS FOR PIPE SIZES	INCLUDE VANDAL–PROOF SCREW IN PUBLIC AREAS
		JAY R. SMITH	9776T			
WHA	WATER–HAMMER ARRESTER	SIOUX CHIEF	SERIES 650		–	SEE SHEET P1.2
ROOF DRAINS AND ACCESSORIES						
DC–1	OVERFLOW DOWNSPOUT COVER	ZURN	Z199–SS		SEE DRAWINGS FOR PIPE SIZES	SEE NOTE 8
		JAY R. SMITH	1770–BS		BIRD SCREEN	
RD–1 THRU RD–4	COMBINATION MAIN ROOF AND OVERFLOW DRAIN	ZURN	Z165		SEE DRAWINGS FOR PIPE SIZES ROOF OPENING: 30"x14"	SEE NOTE 8

NOTES:
1. SEE McDONALD'S PROJECT MANUAL FOR ADDITIONAL MANUFACTURERS
2. PLUMBING CONTRACTOR SHALL COORDINATE WITH G.C. TO PROVIDE BLOCKING FOR PROPER URINAL SUPPORT
3. PLUMBING CONTRACTOR SHALL COORDINATE WITH G.C. TO PROVIDE INTERIOR BLOCKING ON W/W BUILDING FOR WALL CLAMP
4. YARD HYDRANT IS FOR TRASH CORRAL – SEE SITE PLAN FOR LOCATION
5. PLUMBING CONTRACTOR SHALL ROUTE ⅛" DRAIN PIPE FROM HOSE BIBB TO NEAREST FLOOR DRAIN OR FLOOR SINK
6. PLUMBING CONTRACTOR SHALL COORDINATE WITH G.C. TO PROVIDE BLOCKING FOR PROPER SINK SUPPORT
7. SEE KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION – PLUMBING CONTRACTOR SHALL COORDINATE INSTALLATION WITH K.E.S.
8. PLUMBING CONTRACTOR SHALL SPECIFY CONNECTION MATERIAL/TYPE WHEN ORDERING
9. PLUMBING CONTRACTOR SHALL SPECIFY BURY DEPTH WHEN ORDERING
10. PLUMBING CONTRACTOR SHALL PROVIDE GRID DRAIN, P–TRAP AND VALVE STOPS FOR ALL SINKS & LAVS
11. FOR ALTERNATIVE LAVATORY OPTIONS, SUCH AS MOLDED SINKS OR DECK MOUNTED HAND DRYER, PLEASE CONTACT USRD OR HUGHES DIRECTLY.

TO ORDER PLUMBING FIXTURES, CONTACT HUGHES SUPPLY:
E–MAIL:
MCDCOORD@HUGHESSUPPLY.COM
OR MCDCOORD@HAJOCA.COM

WCO	Wall Clean Out	ZURN	Z1446		SEE DRAWINGS FOR PIPE SIZES	INCLUDE VANDAL–PROOF SCREWS IN PUBLIC AREAS
		JAY R. SMITH	9776T			

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:
DAVID LEIFER
REGISTERED
No. 11800027
STATE OF INDIANA
PROFESSIONAL ENGINEER
11-21-2025

PREPARED BY:
CORE STATES GROUP
7312 Woodland Drive, Suite 2
Indianapolis, IN 46278
317.705.0400
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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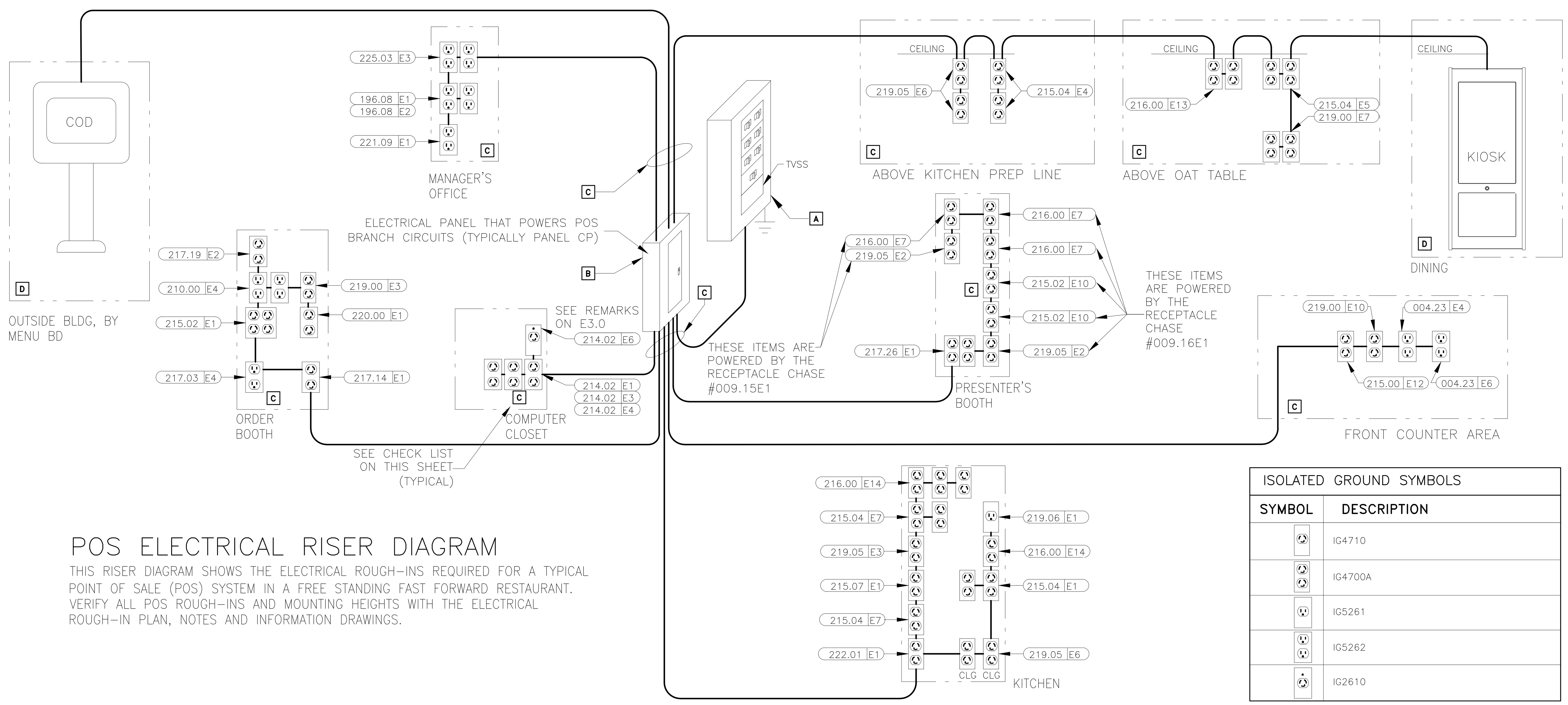
THE PURPOSE OF THIS SHEET IS TO PROVIDE A CHECKLIST AND VISUAL GUIDE SO THE INSTALLING EC CAN VERIFY THE WORK IS IN COMPLIANCE WITH MCDONALD'S SPECIFICATIONS THAT ARE CRITICAL TO THE PROPER FUNCTIONING OF OUR POINT OF SALE (POS) COMPUTER SYSTEMS.



POS ELECTRICAL RISER DIAGRAM

THIS RISER DIAGRAM SHOWS THE ELECTRICAL ROUGH-INS REQUIRED FOR A TYPICAL POINT OF SALE (POS) SYSTEM IN A FREE STANDING FAST FORWARD RESTAURANT. VERIFY ALL POS ROUGH-INS AND MOUNTING HEIGHTS WITH THE ELECTRICAL ROUGH-IN PLAN, NOTES AND INFORMATION DRAWINGS.

ISOLATED GROUND SYMBOLS	
SYMBOL	**DESCRIPTION**
	IG4710
	IG4700A
	IG5261
	IG5262
	IG2610

LOW VOLTAGE CABLE MANAGEMENT SPECIFICATION

GENERAL/MATERIALS

1. THE GC OR EC SHALL FURNISH AND INSTALL A COMPLETE LOW VOLTAGE CABLE MANAGEMENT SYSTEM UTILIZING CADDY-ERICO TYPE CAT-32 J-HOOK SUPPORTS (2-INCH DIAMETER LOOP MINIMUM). ALL J-HOOKS SHALL;
   - HAVE A MINIMUM BEARING SURFACE OF 1⅜",
   - HAVE FLARED EDGES TO PREVENT DAMAGE TO HIGH PERFORMANCE CABLES,
   - HAVE AN ELECTRO-GALVANIZED FINISH,
   - HAVE 3/8" WIDE CABLE RETAINING STRAPS,
   - BE UL LISTED AND LABELED,
   - BEAR THE UL SYMBOL MARKING ON THE PART FOR IDENTIFICATION
   - BE INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. THE ENTIRE INSTALLATION SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), NEC SECTION 800, BICSI STANDARDS 568 & 569, ALL APPLICABLE NATIONAL, STATE, LOCAL, AND SAFETY CODES, AND McDONALD'S SPECIFICATIONS.

INSTALLATION

1. LOW VOLTAGE J-HOOK CABLE PATHWAY (FOR POS CABLING SYSTEM) SHALL BE PROVIDED FROM THE MANAGERS OFFICE (OR COMPUTER CLOSET) DATA CONDUIT STUB-UP LOCATION TO THE FOLLOWING DATA CONDUIT STUB-UP LOCATIONS (AS APPLICABLE):
   - FRONT COUNTER.
   - PRESENTERS BOOTH.
   - CASHIERS BOOTH.
   - THIRD DRIVE-THRU WINDOW(IF PRESENT).
   - CREW ROOM.
   - VALENCE WALL.
   - REMOTE ORDERING STATIONS.
   - NETPOP TELEPHONE PANEL LOCATION.
   - KIOSK
   - DIGITAL MERCHANDISER

   CABLE SUPPORTS SHALL BE PROVIDED WITHIN 24 INCHES OF THESE STUB-UP LOCATIONS. ALL STUB-UP CONDUITS SHALL BE PROVIDED WITH AN INSULATED BUSHING TO PROTECT CABLES DURING INSTALLATION.
2. THE LOCATION AND ROUTING OF THE LOW VOLTAGE CABLE MANAGEMENT SYSTEM SHALL BE COORDINATED WITH ALL OTHER CONSTRUCTION TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH THE OTHER TRADES FINAL INSTALLATIONS, BOTH BEFORE AND AFTER THE CABLE MANAGEMENT SYSTEM AND THE POS CABLING ARE INSTALLED. FINAL INSTALLATION LOCATION SHALL BE READILY ACCESSIBLE TO ALLOW FOR EASE IN INSTALLATION OF THE POS CABLING BY THE POS VENDOR'S INSTALLER.
3. LOW VOLTAGE J-HOOK CABLE SUPPORTS AND APPURTENANCES SHALL BE FASTENED TO THE BUILDING STRUCTURAL AND/OR FRAMING MEMBERS. LOW VOLTAGE J-HOOK CABLE SUPPORTS SHALL NOT BE FASTENED OR UTILIZE THE CEILING GRID SUSPENSION WIRES OR T-BAR GRID FOR INSTALLATION. CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACKETS, HANGERS, RODS, CLAMPS, FLANGES, SUPPORTS, ETC. FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM. THE INSTALLATION OF THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM SHALL BE DONE SO THAT THE ROUTING OF THE CABLES IS PARALLEL TO AND/OR PERPENDICULAR TO FRAMING AND STRUCTURAL BUILDING MEMBERS.
4. LOW VOLTAGE J-HOOK **CABLE SUPPORTS** SHALL BE INSTALLED A MAXIMUM OF 36 INCHES APART. AT TRANSITION LOCATIONS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL J-HOOKS TO ALLOW FOR A MINIMUM ONE-FOOT RADIUS BEND AND FOR ADDITIONAL CABLE SUPPORT AT THESE TRANSITION POINTS.
5. TO AVOID **ELECTROMAGNETIC INTERFERENCE** (EMI), ALL PATHWAYS SHALL PROVIDE A MINIMUM CLEARANCE OF 4 FEET (1.2 METERS) FROM MOTORS AND TRANSFORMERS AND A MINIMUM CLEARANCE OF 1 FOOT (0.3 METERS) FROM CONDUIT AND CABLES UTILIZED FOR ELECTRICAL POWER DISTRIBUTION, AND OTHER NON-POS LOW VOLTAGE CONDUCTORS.
6. ANY **CEILING TILES** IN THE AREA WHERE THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM IS LOCATED SHALL NOT BE INSTALLED UNTIL THE POS VENDOR'S CONTRACTOR COMPLETES THE INSTALLATION OF ALL POS CABLING.
7. ALL NON-POS LOW VOLTAGE CABLING SHALL BE INSTALLED IN A SEPARATE CABLE MANAGEMENT SYSTEM INDEPENDENT OF THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM UTILIZED FOR THE POS CABLING.
8. THE POS INSTALLER SHALL BE RESPONSIBLE TO FURNISH AND INSTALL ALL LOW VOLTAGE CABLING REQUIRED FOR THE COMPLETE AND FULLY FUNCTIONAL OPERATION OF THE POS SYSTEM. ALL POS CABLING SHALL BE INSTALLED WITHIN THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM.
9. GENERAL CONTRACTOR TO COORDINATE WITH POS INSTALLER. POS INSTALLER TO PERFORM POS CABLE INSTALLATION PRIOR TO CLOSING OF WALLS AND CEILING.

ELECTRICAL POS CERTIFICATION

AS OF THE DATE BELOW, I HEREBY CERTIFY THAT ALL ELECTRICAL WORK, ELECTRICAL SERVICE AND ELECTRICAL SYSTEMS, MATERIALS AND LABOR RELATED TO THE POS ELECTRICAL INSTALLATION IN WHICH THE UNDERSIGNED ARE DIRECTLY OR INDIRECTLY RESPONSIBLE HAVE BEEN PROPERLY INSTALLED IN FULL COMPLIANCE WITH ALL CONSTRUCTION DOCUMENTS AND ALL NFPA, BUILDING, ELECTRICAL AND OTHER APPLICABLE CODES, ALONG WITH ALL OF THE REQUIREMENTS OUTLINED ON THIS DRAWING. I FURTHER CERTIFY THAT THE ELECTRIC SERVICE POWERING THE POS SYSTEM HAS BEEN PROPERLY INSTALLED BY A QUALIFIED ELECTRICIAN. SKILLED, KNOWLEDGEABLE AND TRAINED TO INSTALL ALL THE REQUIRED ELECTRICAL DISTRIBUTION COMPONENTS NECESSARY TO POWER THE POINT OF SALE (POS) SYSTEM.

GENERAL CONTRACTOR: ____________________

BY: ____________________

DATE: ____________________

ELECTRICAL CONTRACTOR: ____________________

BY: ____________________

DATE: ____________________

START HERE

A VISUALLY INSPECT THE MAIN ELECTRICAL PANEL (MDP)

YES NO N/A

1. IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
2. DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
3. DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
4. DOES THE ISOLATED GROUND CONDUCTOR (GREEN W/YELLOW STRIPE) TERMINATE ON THE EQUIPMENT GROUND BAR?
5. IS THERE AN APPROPRIATE ELECTRICAL CONNECTION (BOND) BETWEEN THE NEUTRAL BAR AND THE EQUIPMENT GROUND BAR?
6. DOES THE GROUNDING SYSTEM COMPLY WITH MCDONALD'S "BUILDING ELECTRICAL GROUNDING DETAIL"?
7. IS A SURGE PROTECTOR INSTALLED THAT COMPLIES WITH MCDONALD'S "TVSS INSTALLATION GUIDE" OR DETAIL?
8. ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
9. ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?

B VISUALLY INSPECT THE PANEL "CP" THAT POWERS POS

YES NO N/A

1. IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
2. IS AN **ISOLATED GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **INSULATED** FROM THE PANEL?
3. DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
4. DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
5. DO ALL ISOLATED GROUND CONDUCTORS (GREEN W/YELLOW STRIPE) TERMINATE ONLY TO THE ISOLATED GROUND BAR?
6. ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
7. ARE ALL POS AND COD CIRCUIT BREAKERS ON THE SAME PANEL?
8. ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?
9. DO ALL POS & COD CIRCUIT BREAKERS HAVE A LOCKING MECHANISM ON THEIR HANDLES TO PREVENT THEM FROM BEING SHUT OFF BY MISTAKE?
10. DOES THE FEEDER CIRCUIT FOR THIS SUBPANEL CONTAIN PHASE, NEUTRAL ONE EQUIPMENT GROUND AND ONE ISOLATED GROUND CONDUCTORS THAT ARE PROPERLY TERMINATED (SEE POS & COD ISO GND/DED CKT DETAIL)?

VISUALLY INSPECT ALL REMAINING ELECTRICAL SUBPANELS

YES NO N/A

1. IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
2. DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
3. DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
4. ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
5. ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?
6. DOES THE FEEDER CIRCUIT FOR THIS SUBPANEL CONTAIN PHASE, NEUTRAL AND ONE EQUIPMENT GROUND CONDUCTORS THAT ARE PROPERLY TERMINATED? (SEE BUILDING ELECTRICAL GROUNDING DETAIL)

C VISUALLY INSPECT THE POS BRANCH CIRCUITS

YES NO N/A

1. ARE THE POS BRANCH CIRCUITS ROUTED IN THEIR OWN CONDUIT BY THEMSELVES?
2. IF THE POS BRANCH CIRCUIT IS ROUTED ABOVE GRADE, IS IT IN A METALLIC CONDUIT?
3. DOES EACH POS BRANCH CIRCUIT CONTAIN: ONE PHASE (BLACK COLORED INSULATION) ONE NEUTRAL (WHITE COLORED INSULATION) ONE EQUIPMENT GROUND (GREEN COLORED INSULATION) ONE ISOLATED GROUND (GREEN W/YELLOW STRIPE COLORED INSULATION).
4. DO ALL POS BRANCH CIRCUITS TERMINATE AT EITHER AN IG4700, IG4710, IG5261, IG5262 RECEPTACLES OR ANY COMBINATION OF THESE?
5. ARE ALL ELECTRICAL TERMINATIONS TO IG RECEPTACLES MADE WITH SOLID #12 AWG WIRE CAPTURED AROUND THE SCREW BARREL AND SUITABLY TIGHTENED?
6. ARE ALL BRANCH CIRCUIT CONNECTIONS PROPERLY TIGHTENED?
7. ARE THE CORRECT AMOUNT AND TYPE OF IG RECEPTACLES PROVIDED AS SHOWN IN THE ELECTRICAL ROUGH-IN PLAN, NOTES AND INFORMATION?
8. DO ALL POS RECEPTACLES HAVE ORANGE "COMPUTER ONLY" COVERPLATES?
9. DO ALL POS BRANCH CIRCUITS COMPLY WITH THE "POS & COD ISOLATED GROUND/DEDICATED CIRCUIT DETAIL?

D VISUALLY INSPECT THE POS BRANCH CIRCUIT FOR THE COD & KIOSK

YES NO N/A

1. ARE THE COD AND KIOSK BRANCH CIRCUITS ROUTED IN THEIR OWN CONDUIT BY THEMSELVES?
2. DOES EACH COD AND KIOSK BRANCH CIRCUIT CONTAIN;
   - ONE PHASE (BLACK COLORED INSULATION),
   - ONE NEUTRAL (WHITE COLORED INSULATION),
   - ONE EQUIPMENT GROUND (GREEN COLORED INSULATION),
   - ONE ISOLATED GROUND (GREEN W/YELLOW STRIPE COLORED INSULATION).
3. ARE THE COD(S) AND KIOSK(S) POWERED FROM THE SAME PANEL AS THE POS?
4. DO THE BREAKERS FOR THE COD(S) AND KIOSK(S) HAVE A LOCKING MECHANISM ON THEIR HANDLES THAT WILL PREVENT IT FROM BEING SHUT OFF?
5. DO THE COD BRANCH CIRCUIT(S) COMPLY WITH THE "POS & COD ISOLATED GROUND/DEDICATED CIRCUIT DETAIL?

ARE **ALL** BOXES CHECKED "YES"?

NO

REWORK ELECTRICAL SYSTEM TO BRING INTO COMPLIANCE WITH MCDONALD'S SPECIFICATIONS

YES

ALL WORK IS NOT CONSIDERED TO MEET MCDONALD'S SPECIFICATIONS UNTIL THE INSTALLED ELECTRICAL SYSTEM SUPPORTS A "YES" ANSWER FOR ALL QUESTIONS ASKED.

AS PART OF THIS PROCESS, THE EC AND THE GC WILL BE REQUIRED TO SIGN THE ELECTRICAL CERTIFICATION DOCUMENT INDICATING THAT THE INSTALLED ELECTRICAL SYSTEM MEETS MCDONALD'S SPECIFICATIONS.

NOTICE:

CHANGES SHALL NOT BE MADE TO THE POS ELECTRICAL SYSTEM AFTER THE POS EQUIPMENT HAS BEEN INSTALLED WITHOUT FIRST NOTIFYING THE POS VENDOR.

IF CHANGES ARE MADE TO THE POS ELECTRICAL SYSTEM **AFTER** THE CERTIFICATION PROCESS HAS BEEN COMPLETED, THEN A SYSTEM RE-CERTIFICATION SHALL BE REQUIRED.

FINISHED

REV	DATE	DESCRIPTION	BY

JOHN DALE FERGUSON REGISTERED No. 10805646 STATE OF INDIANA PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY:
CORE STATES GROUP
212 SE 34th. Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY: DA
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 11/25/25

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD

DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

013.1263.00.0

SHEET NO. E1.0

POS RISER DIAGRAM

Q:\RESTAURANTS\MCDONALDS CORPORATION\LANCER ASSOCIATES ARCHITECTURE\BROWNSBURG, IN (7030 NORTHFIELD DR) 013- - LNA.25.41913.01\DESIGN FILES\ARCHITECTURE\ELEC.DWG 11-21-2025 13:29

TRASH CORRAL POWER:
3/4"C-4#10 & 1#10 GND TO A 30A-2P AND A 20A-1P CB IN PANEL AP-2 FOR TRASH COMPACTOR AND WP GFCI DCO. PROVIDE 30A-2P NF DISCONNECT FOR TRASH COMPACTOR. VERIFY EXACT LOCATION AND ALL REQUIREMENTS OF TRASH CORRAL IN FIELD.

COMPLETE INSTALLATION OF THE SECONDARY DETECTOR LOOPS & C.O.D. CONDUIT FOR CURRENT & ANY FUTURE D/T EQUIPMENT. IF SECONDARY D/T IS NOT INSTALLED, EXTEND INTO LANDSCAPED AREA BEHIND BUILDING, STUB, & CAP FOR FUTURE ACCESS.

EXTEND 2" CONDUIT TO DT CAMERA MOUNTED ON LIGHT POLE OR OTHER POLE. COORDINATE STUB-UP LOCATION WITH ACM AND DT CAMERA INSTALLER

EXTEND CONDUITS TO OUTDOOR MENU BOARDS FOR DATA CONNECTIONS. REFER TO DRIVE THRU DIAGRAM ON SHEET E4.0

(2) 1-1/2" CONDUIT TO SECONDARY SPEAKER FOR DATA & LOOP DETECTOR SEE CIVIL DRAWINGS 217.10 | E1

(2) 1-1/2" CONDUIT TO PRIMARY SPEAKER FOR DATA & LOOP DETECTOR SEE CIVIL DRAWINGS 217.10 | E1

DINING ROOM CEILING DCO'S 1/2"C-2#12 & 1#12 GND. AP-5:32 (TYP. OF 5)

1/2"C-2#12 & 1#12 GND AP-2:33

RECIRC PUMP

RACEWAY PROVIDED WITH COUNTER, INSTALLED BY E.C. (REFER TO DETAIL ON SHEET E3.1)

1/2"C-2#12 & 1#12 GND AP-2:9 GFCI BKR

UP TO EXHAUST FAN

4 SECTION UTILITY CHASE BY K.E.S

ROUGH-INS FOR LATE NIGHT WINDOW PUSH BUTTON OPERATES WALL-MOUNTED HORN STROBE BUZZER POWER FROM ACCESS CONTROL SYSTEMS POWER SUPPLY.

C.P. PANEL

L.P. PANEL

4-SECTION MODULAR SWITCHBOARD "MDP", AP-1, 2, 3, 4, 5, 6 14'-3"

AP-5:14

PROVIDE 2" HOLE & GROMMET IN JUNCTION BOX COVER PLATE FOR POS DATA CABLES

CONDUIT TO DETECTOR LOOP. SEE SITE PLAN & DETAIL ON SHEET E4.0

AP-5:18

AP-5:16

4 SECTION UTILITY CHASE BY K.E.S

CONDUIT TO DETECTOR LOOP. SEE SITE PLAN & DETAIL ON SHEET E4.0

TAP 1 1/2" HOLE FOR DATA LINES WITH 1 1/2" GROMMET

ROUGH-INS SHOWN ARE FOR ACCESS CONTROL SYSTEMS. VERIFY ROUGH-IN AND INSTALLATION REQUIREMENTS WITH SECURITY CONTRACTOR PRIOR TO INSTALLATION. (TYP.)

29'-5" (HOLD)

9'-7" (HOLD)

47'-6" (HOLD)

39'-6"

1 E1.1 ELECTRICAL ROUGH-IN PLAN
1/4" = 1'-0"

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SINGLE POLE SWITCH, 3W=THREE WAY SWITCH, K=KEYED SWITCHED, VS=VACANCY SENSOR	(B)	BUZZER
T	MANUAL SWITCH (T=THERMAL OVERLOADS)	(B)	BUTTON FOR BUZZER
T	TRANSFORMER		PULLBOX
	JB WITH DUPLEX CONVENIENCE OUTLET (FLUSH WITH CEILING)		PANELBOARD
	JB WITH SINGLE CONVENIENCE OUTLET		CIRCUIT BREAKER
	JB WITH DUPLEX CONVENIENCE OUTLET	A	AMPERES
	JB WITH TWO DUPLEX CONVENIENCE OUTLETS	ACM	AREA CONSTRUCTION MANAGER
	JB WITH SPECIAL PURPOSE OUTLET	AFF	ABOVE FINISHED FLOOR
	JB WITH ISOLATED GROUND OUTLET = IG4710, =IG5261, =IG4700A, =IG5262	C	CONDUIT
		CCT	CIRCUIT
	INTERCOM STATION W/ 3/4"C- TO MAIN STATION	EC	ELECTRICAL CONTRACTOR
	TELEPHONE JACK	GC	GENERAL CONTRACTOR
J	JUNCTION BOX - WALL OR CEILING MOUNTED	GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	DISCONNECT SWITCH	GND	GROUND
S	STUB UP THRU ROOF	IG	ISOLATED GROUND
T	THERMOSTAT SENSOR W/ 1/2"C- UP TO CEILING SPACE	JB	JUNCTION BOX
M	MOTOR CONNECTION	KES	KITCHEN EQUIPMENT SUPPLIER
	CONDUIT RUN CONCEALED IN CEILING OR WALLS	MLO	MAIN LUGS ONLY
	CONDUIT RUN IN FLOOR SLAB	WP	WEATHERPROOF
||X	HOT (SHORT), NEUTRAL (LONG), EQUIP GRD (LONG WITH DOT), & & 'X' DENOTES ISOLATED GRD	CO	CARBON MONOXIDE SENSOR
	J-BOX WITH FINAL EQUIPMENT CONNECTION	GB	GROUND BUS TERMINAL
OS	CEILING MOUNTED OCCUPANCY SENSOR	DS	DAYLIGHT SENSOR

ADT ROUGH-IN NOTES

1. COORDINATE EXACT INSTALLATION REQUIREMENTS WITH ADT PRIOR TO INSTALLATION TEL. 800-417-8238
2. EC SHALL PROVIDE A 2 GANG 3 25/32" X 3 25/32" X 3 1/8"D JUNCTION BOX AT DOOR FOR INSTALLATION OF DOOR ALARM UNIT. STUB 1/2"C ABOVE CEILING FROM JUNCTION BOX. PROVIDE 1/2"C FROM J-BOX TO DOOR MAGNETIC SWITCH LOCATION.
3. EC SHALL PROVIDE 4" X 4" JUNCTION BOX ABOVE CEILING FOR INSTALLATION OF LOW VOLTAGE TRANSFORMER. VERIFY EXACT LOCATION WITH ADT PRIOR TO INSTALLATION. PROVIDE 1/2"C-2#12 TO LOCKOUT TYPE CB IN PANEL LP-1.

GENERAL NOTES

1. SEE SHEET E3.0 FOR PANEL & CIRCUIT BREAKER ASSIGNMENT, VOLT/PH, FLA, BREAKER SIZE, COND/WIRE, RECEPTACLE TYPE, HEIGHT ABOVE FINISHED FLOOR, REQUIREMENTS & REMARKS FOR ALL ELECTRICAL EQUIPMENT.
2. SEE LOW VOLTAGE CABLE MANAGEMENT SPECIFICATION ON SHEET E1.0 FOR POS, DATA, AND SOUND SYSTEM REQUIREMENTS.
3. GC/EC SHALL COORDINATE LOCATION AND ALL REQUIREMENTS OF CT& METER CABINET WITH LOCAL UTILITY COMPANY. CT & METER CABINET SHALL NOT BE INSTALLED ON D/T SIDE OF BUILDING. GC SHALL PAINT TO MATCH BUILDING COLOR.

KEY NOTES

1. TAMPER RESISTANT GFCI DUPLEX RECEPTACLE IN PUBLIC AREAS. EC SHALL PROVIDE HUBBELL GFTRST* ("*": AL=ALMOND, BK=BLACK, --=BROWN, GY=GRAY, I=IVORY, LA=LIGHT ALMOND, R=RED, W=WHITE). SPECIFIED RECEPTACLE BECOMES DE-ENERGIZED UPON FAILURE OF GFCI DEVICE. NO SUBSTITUTIONS.(TYPICAL)
2. SEE POS ELECTRICAL RISER DIAGRAM ON SHEET E1.0. (TYPICAL)

KEY NOTES

3. EC TO FURNISH AND INSTALL A FLUSH MOUNTED JUNCTION BOX WITH WEATHERPROOF GASKET AND OUTDOOR WEATHERPROOF, 24 VOLT CO2 HORN/STROBE UNIT COMPATIBLE WITH CO2 ALARM SYSTEM - EDWARDS GENESIS WGAVRN OR APPROVED EQUAL. STROBE SHALL HAVE AN AMBER COVER AND MEET ALL LOCAL REGULATORY REQUIREMENTS FOR SPECIFICATIONS AND INSTALLATION. PROVIDE A 3/4" CONDUIT STUB-IN INTO BUILDING WITH THERMOPLASTIC BUSHING FROM WEATHERPROOF BACKBOX. PROVIDE FINAL WIRING TERMINATIONS AT HORN/STROBE UNIT AND THEN PROVIDE 36 INCHES OF PIGTAIL WIRING FROM HORN/STROBE INTO THE BUILDING AND NEATLY COIL FOR FINAL CONNECTION. FINAL WIRING CONNECTION FROM OUTDOOR HORN/STROBE PIGTAILS TO THE CO2 ALARM SYSTEM INSTALLATION TO BE PROVIDED BY BEVERAGE INSTALLER.
4. PER THE AMERICAN WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG), A MINIMUM OF ONE (1) ADA COMPLIANT ELECTRICAL RECEPTACLE SHALL BE INSTALLED AT AN ACCESSIBLE TABLE. GC/EC SHALL REFERENCE FINAL DECOR PLANS AND PROVIDE RECEPTACLES AS NECESSARY FOR COMPLIANCE. (TYPICAL)
5. COORDINATE LOCATION OF RECEPTACLES SO THAT RECEPTACLES ARE LOCATED ON FULL HEIGHT WALLS PER THE DECOR PLAN. STUB UP AND CIRCUIT IN HALF WALL FOR RECEPTACLES NOT ON FULL HEIGHT WALLS, CONFIRM FINAL LOCATIONS WITH DECOR DRAWINGS PRIOR TO ROUGH-IN.
6. IF MOUNTED TO A LIGHTING POLE, DT CAMERA SHALL ONLY BE INSTALLED ON A POLE WITH MAXIMUM OF (2) LIGHTING HEADS. PROVIDE ISOLATION OF DT CAMERA MOUNTING HARDWARE AND POLE TO PREVENT BI-METALLIC OR GALVANIC CORROSION.
7. E.C. TO PROVIDE AN ALLOWANCE IN BID TO PROVIDE TWO(2) FLEXIBLE POWER CONNECTIONS FOR POWER TO FURNITURE/ FAMILY EXPERIENCE ELEMENTS AS PART OF THE DECOR PACKAGE. E.C. SHALL VERIFY EXACT LOCATIONS IN FIELD AND WITH DECOR DRAWINGS. PROVIDE ALL NECESSARY MATERIALS AND LABOR FOR A COMPLETE AND FULLY NEC CODE COMPLIANT INSTALLATION. ALL COMPONENTS SHALL BE FED FROM A GFCI TYPE CIRCUIT BREAKER AND BRANCH CIRCUIT SHALL CONTAIN TWO PATHS OF GROUNDING (CONDUIT BODY AND AN INSULATED GROUNDING CONDUCTOR) TO COMPLY WITH McDONALD'S GROUNDING STANDARDS.
8. DRIVE THRU WINDOW POWER, CONFIRM REQUIREMENTS WITH MANUFACTURER DRAWINGS.

KEY NOTES

9. PROVIDE POWER FOR CONNECTION TO SELF ORDER KIOSKS. COORDINATE EXACT LOCATION OF KIOSKS WITH DECOR DRAWINGS. PROVIDE 2#12, 1#12 GRD., & 1#12 ISOLATED GROUND ON A 20A DEDICATED CIRCUIT FED FROM THE CP PANEL FOR EVERY KIOSK.
10. VERIFY DROP CORDS AND RECEPTACLES DO NOT FALL BELOW HEIGHTS LISTED ON E3.0 ELECTRICAL SCHEDULE. RECEPTACLES SHOULD BE LOCATED AT HEIGHTS TO AVOID CONTACT WITH HOT APPLIANCES.
11. PROVIDE POWER AND DATA ROUGH-INS FOR DIGITAL MERCHANDISER. EXTEND CIRCUIT TO DINING FROM FRONT COUNTER MERCHANDISER IN SERVICE AREA. EXTEND J-HOOKS FROM SERVICE AREA FOR DATA CABLES. REFER TO 3/E3.1.
12. EC TO INSTALL DROP CORDS JUSTIFIED TO THE DRIVE THRU SIDE OF THE BUILDING.
13. PROVIDE POWER AND DATA ROUGH-INS FOR CASH HANDLERS REFER TO 4/E3.1 FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH DECOR DRAWINGS.
14. AT&T TO PROVIDE #8 GRD CONDUCTOR FROM BUILDING EXTERIOR WIRELESS ACCESS POINT TO ABOVE INTERIOR CEILING. EC TO EXEND CONDUCTOR TO BUILDING GROUNDING SYSTEM. COORDINATE EXACT LOCATION OF ACCESS POINT IN FIELD WITH AT&T.
15. CONTRACTOR TO PUNCH HOLES IN SERVICE POD FOR CABLE AND CONDUIT ROUTING. UTILIZE BUSHINGS PROVIDE WITH SERVICE POD TO PROTECT CABLES.

REV	DATE	DESCRIPTION	BY

DALE FERGUSON REGISTERED STATE OF INDIANA PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY: CORE STATES GROUP
FIRST Min. Street, Suite 2
Bordentown, NJ 08505
(609) 499-4000
www.corestates.com

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PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED
DA	DL	11/25/25

STD ISSUE DATE 2025 05

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

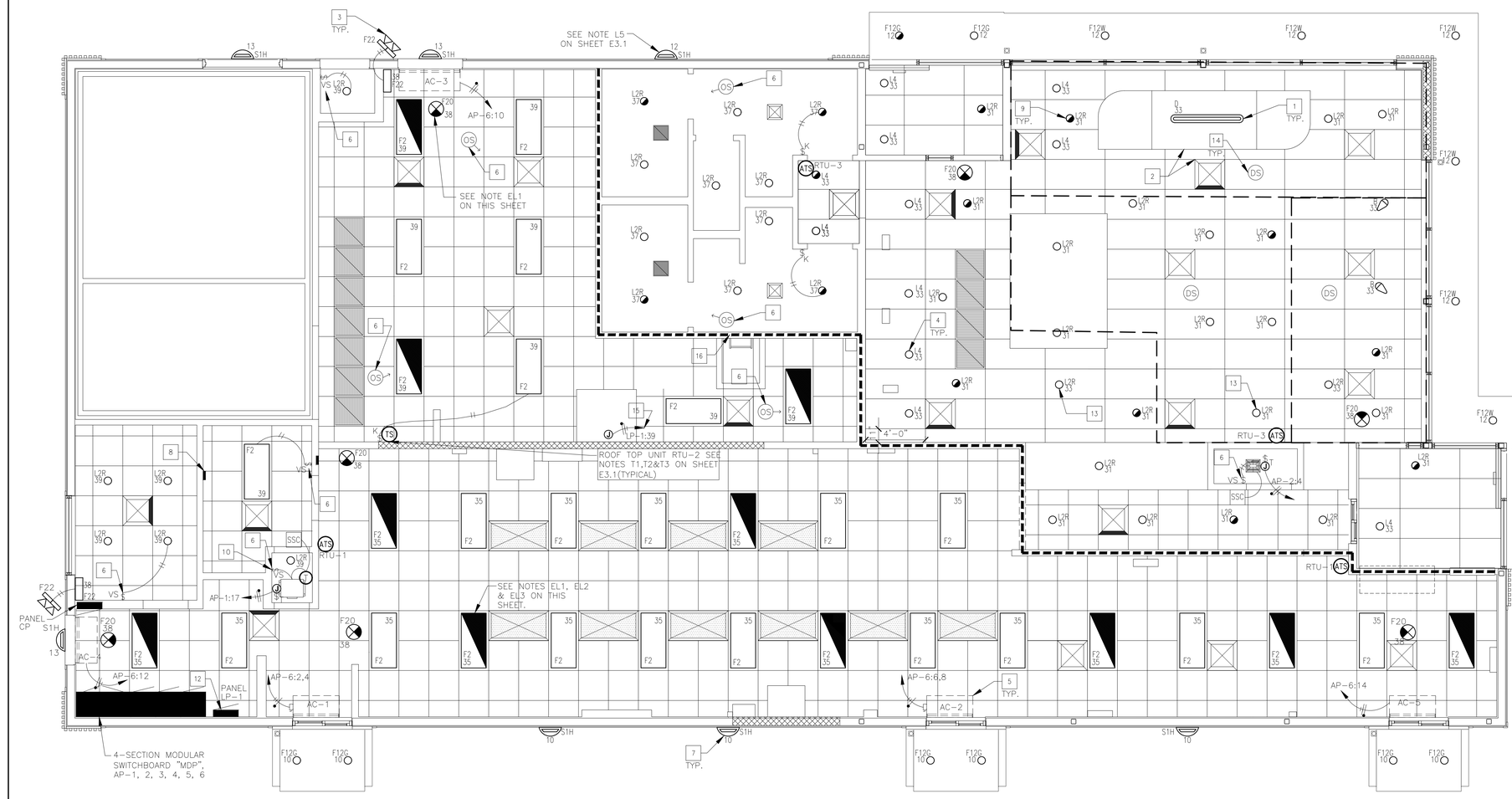
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

SITE ADDRESS
7030 Northfield Dr. BROWNSBURG, IN

NSN: 013.1263

SHEET NO. E1.1
ROUGH-IN PLAN

013.1263.00.0



1 E2.0 LIGHTING FLOOR PLAN
1/4"=1'-0"

KEY NOTES

1. CENTER PENDANT LIGHTS OVER TABLES (TYPICAL)
2. ALL SOFFIT LOCATIONS, LIGHTING, & SUPPLY GRILLS SHALL BE COORDINATED WITH DECOR COMPANY DRAWING PRIOR TO INSTALLATION.
3. EC SHALL INSTALL AND CONFIGURE REMOTE EMERGENCY LIGHTING AT ALL EGRESS EXTERIOR DOORS FOR MAXIMUM ILLUMINATION AT POINTS OF EGRESS. INSTALL WP J-BOX WITHIN SOFFIT TO ALLOW A FLUSH INSTALLATION OF ANY EXTERIOR EMERGENCY EGRESS LIGHTING (TYPICAL).
4. OPTIONAL ADJUSTABLE WALL WASH FIXTURE TO ILLUMINATE LOGO OR GRAPHICS. EC SHALL VERIFY EXACT LOCATION SO AS TO ADEQUATELY ILLUMINATE McDONALD'S ARCH LOGO SIGN AND GRAPHICS.
5. AIR CURTAIN UNIT. NON HEATED VERSION TO USE 1/2"C. 2#12, 1#12GRD. HEATED VERSION TO USE 1"C. 2#6, 1#10 GRD. (TYPICAL).
6. PROVIDE DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR OR WALL MOUNTED VACANCY SENSOR AS SHOWN. ORDER ALL SENSORS FROM SECURITY LIGHTING SYSTEMS, INC.
7. RADIAL WALL SCONCE. SEE NOTE L2 ON SHEET E3.1 AND ARCHITECTURAL ELEVATIONS ON SHEETS A2.0 & A2.1. (TYPICAL)
8. BUILDING AUTOMATION SYSTEM LOCATION. SEE LIGHTING CONTROL DETAILS ON SHEET E4.1.
9. PROVIDE LIGHTING INVERTER FOR USE WITH FIXTURES SHOWN SLASHED. MODEL #LG125T SHOULD BE USED FOR L2R, L4 & FI2G WITH NOT MORE THAN SEVEN DOWNLIGHTS CONNECTED TO EACH INVERTER, AND NOT MORE THAN TWO F2 FIXTURES. IF DECOR USES ALTERNATE FIXTURES, COORDINATE INVERTER TO BE USED WITH LIGHTING SUPPLIER. E.C. SHALL VERIFY THE QUANTITY OF FIXTURES THAT CAN BE CONNECTED WITHOUT EXCEEDING OPERATING CAPACITY OF UNIT AND PROVIDE ADDITIONAL CIRCUITS AND INVERTERS AS REQUIRED. (TYPICAL)
10. CENTER VACANCY SENSOR SWITCH OPPOSITE COMPUTER RACK IN A LOCATION ACCESSIBLE FROM BOTH DOORS FOR CONTROL OF CEILING MOUNTED LIGHT, IN DATA ROOM. FAN CONTROLLED BY LOCAL THERMOSTAT.
11. NOT USED.
12. LIGHTING CONTACTORS IN NEMA 1 ENCLOSURE JUST BELOW CEILING. EC SHALL PROVIDE 120 VOLT CONTROL CIRCUIT TO CONTACTOR PANEL. VERIFY EXACT LOCATION IN FIELD AND REFER TO DRAWING E4.1 FOR ADDITIONAL DETAILS.
13. ADJUST FIXTURE TO ILLUMINATE DELIVERY POD SHELVING.
14. NEW DAYLIGHT SENSOR TO BE INSTALLED TO CONTROL DAYLIGHT AREAS IN THE DINNING AREAS. ORDER ALL DAYLIGHT SENSORS FROM; SECURITY LIGHTING SYSTEMS, INC.
15. PROVIDE POWER FOR LIGHT WITHIN EXHAUST HOOD. INTEGRATE INTO LOCAL LIGHTING CONTROLS.
16. DRAFT STOP ABOVE CEILING, SEAL ALL ELECTRICAL PENETRATIONS.

EMERGENCY LIGHTING NOTES

EL1. EC SHALL VERIFY ALL REQUIREMENTS AND FINAL EMERGENCY LIGHTING LOCATIONS WITH LOCAL AUTHORITIES. INCLUDE ALL COSTS IN BASE BID.

EL2. IF NOT INSTALLED BY MANUFACTURER, EC SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF THE EMERGENCY INVERTER IN SWITCHED EMERGENCY FIXTURES SHOWN ON THIS SHEET.

EL3. LED FIXTURES DENOTED AS SWITCHED EMERGENCY SHALL BE CONNECTED TO AN INVERTER. INVERTER SHALL BE CAPABLE OF ILLUMINATING FIXTURE FOR 1.5 HOURS TO COMPLY WITH NEC SECTION 700 AND UL924.

EL4. EMERGENCY BATTERY LIGHTING WALL PACKS IN PLAYPLACE SHALL BE LOCATED SO AS TO PROVIDE FOR MAXIMUM ILLUMINATION OF AREA. EC SHALL VERIFY EXACT PLACEMENT IN THE FIELD WITH McDONALD'S ACM. (IF APPLICABLE)

EL5. EMERGENCY LIGHTING HAS BEEN DESIGNED PER NFPA 101 TO MAINTAIN 1 FC IN PATH OF EGRESS. IF FIELD CONDITIONS REQUIRE ANY CHANGES TO LIGHTING DESIGN, EMERGENCY LIGHTING, SHALL BE INSTALLED TO MEET THE ABOVE REQUIREMENTS.

KEY

DENOTES FIXTURE TYPE — F2
DENOTES CIRCUIT NUMBER — 41

LIGHTING FIXTURES SHOWN HALF HATCHED SHALL BE WIRED TO AN EMERGENCY INVERTER AND CIRCUITED AS SWITCHED EMERGENCY FIXTURES SO THE FIXTURE IS CONTROLLED VIA TIMECLOCK BUT TURNS ON UPON LOSS OF POWER. SEE NOTE EL3 ON THIS SHEET. COORDINATE LOCATION WITH DECOR.

LIGHTING FIXTURES SHOWN WITH ARROW DENOTES GENERAL DIRECTION TO AIM ADJUSTABLE FIXTURES. VERIFY IN FIELD.

SEE SHEET E3.1 FOR GENERAL LIGHTING NOTES AND "ROOF PLAN" (SHEET E2.1) FOR ADDITIONAL ELECTRICAL ROUGH-IN & LIGHTING REQUIREMENTS.

McDONALD'S SITE SIGNAGE:

EC SHALL PROVIDE:

ELECTRICAL CONTRACTOR SHALL COORDINATE POWER REQUIRED FOR ROAD SIGN. MOST SIGNS REQUIRE (1) 20 AMP 120V CIRCUIT. IF USED A 90-200 SIGN REQUIRES (4) 20 AMP 120V CIRCUITS OR ONE 1-PHASE 60 AMP 120/208V CIRCUIT. COORDINATE WITH SUPPLIERS DRAWINGS.
(1) 20 AMP 208 VOLT CIRCUIT, EC TO WIRE 2#12 TO 208 VOLT FLAG FLOODLIGHTS.
(1) 20 AMP 120 VOLT CIRCUIT TO D.C.O. IN ROAD SIGN BASE IF REQUIRED.
(2) 20 AMP 120 VOLT CIRCUITS FOR INGRESS/EGRESS DIRECTIONAL SIGNS (IF APPLICABLE).

*VERIFY EXACT LOCATIONS/TYPES/QUANTITIES OF ALL THE ABOVE WITH SITE/CIVIL PLANS AND MCD ACM.

LIGHTING FIXTURE SCHEDULE:

MARK	SYMBOL	DESCRIPTION	DIFFUSER	LAMPS WATTS	LAMPS TYPE	BALLAST	MOUNTING	MANUFACTURER AND CATALOG NUMBER
F2		2' X 4' GRID TROFFER	PRISMATIC ACRYLIC	48W	LED	–	RECESSED	SECURITY LIGHTING: # CBT24-A-LSCS-EDD-HIGH, EMERGENCY FIXTURE # CBT24-A-LSCS-EDD-ELL14-HIGH
F7		1' X 4' GRID TROFFER	PRISMATIC ACRYLIC	38W	LED	–	RECESSED	SECURITY LIGHTING # CBT14-A-LSCS-EDD-HIGH
L2R	○	4" LED ADJUSTABLE DOWN LIGHT	–	16W	LED	–	RECESSED	SECURITY LIGHTING # RDA-136LM-30-FL-S/RDA-136-H VERIFY DOWNLIGHT TO BE USED WITH PHOTOMETRIC
L4	○	3" LED ADJUSTABLE DOWN LIGHT	–	7W	LED	–	RECESSED	SECURITY LIGHTING # RDA-60LM-30-NF-S/RDA-60-H VERIFY DOWNLIGHT TO BE USED WITH PHOTOMETRIC
F12G	○	6" LED DOWN LIGHT – GOLD TRIM	–	12.5W	LED	–	RECESSED	SECURITY LIGHTING # 8542-5CCT
B		SEED PENDANT	–	4W	LED	–	SUSPENDED	CS ILLUMINATION # 16464-MCSEED-C-CR-4603-4GU10/LED/930/DIM/G/120/V T20 10/1
D		CHROME BOAT	–	24W	LED	–	SUSPENDED	CS ILLUMINATION # 16464 MCBOAT-5FT-30H-U-W-W CUSTOM BOAT FIXTURE 8' CHROME WRAP FINISH LED UP/DOWN LIGHT
F20	⊗	EXIT SIGN WITH BATTERY BACKUP	–	1.8W	LED	–	SURFACE	SECURITY LIGHTING: EVEURWE. SEE NOTE LS2 ON THIS SHEET.
F21		2 HEADED EMERGENCY BATTERY LIGHT	–	–	LED	–	SURFACE TO WALL OR CEILING	SECURITY LTG. #EV4D
F22		EMERG BATTERY & 2 REMOTE HEADS	–	–	LED	–	SURFACE TO WALL OR SOFFIT	SECURITY LTG. #EV4D-02L-0/EVODB
F23		2 HEADED EMERG LIGHT & 2 REMOTE HEAD IF REQ'D	–	–	LED	–	SURFACE TO WALL OR SOFFIT	SECURITY LTG. #EV4D/EVODB
S1H		"DOWN ONLY" RADIAL WALL SCONCE – SILVER	TEMPERED GLASS	(1)-14W	LED	–	SURFACE TO WALL	SECURITY LIGHTING: #RWSC-36L-5K-DO-U-PS
F12W	○	6" LED DOWN LIGHT – WHITE TRIM	–	12.5W	LED	–	RECESSED	SECURITY LIGHTING # 8542-5CCT

LIGHTING SCHEDULE NOTES:

ORDER LED EXIT SIGNS WITH LETTER COLORS THAT COMPLY WITH LOCAL CODES.
– FOR RED LETTERS USE #EVE-U-R (UNIVERSAL),
– FOR GREEN LETTERS USE #EVE-U-G (UNIVERSAL), OR
IF THE ABOVE EXIT SIGNS DO NOT COMPLY WITH LOCAL CODES USE: LED SIGN WITH BATTERY BACKUP, LETTER SIZE, COLOR, TYPE & DIRECTIONAL ARROWS AS REQUIRED BY THE LOCAL AUTHORITIES.

ALL INTERIOR LIGHT FIXTURES SHALL BE 120 VOLT UNLESS NOTED OTHERWISE.

LIGHTING FIXTURES HAVE BEEN CHOSEN TO ACHIEVE MAXIMUM ENERGY CONSERVATION WHILE MAINTAINING ADEQUATE LEVEL OF ILLUMINATION. SPECIFICATIONS SHALL BE STRICTLY FOLLOWED. ANY DEVIATION FROM THE SPECIFICATIONS SHALL BE APPROVED IN WRITING BY McDONALD'S CORPORATION.

ORDER ALL LIGHT FIXTURES FROM:

SECURITY LIGHTING SYSTEMS, INC.
PHONE: 1-800-LIGHT-IT (800-544-4848)
EMAIL: SLORDERS@CURRENTLIGHTING.COM

CS ILLUMINATIONS
PHONE: 760-477-1244
EMAILS: MCD@CSILLUMINATIOINS.COM
WWW.CSILLUMINATIONS.COM/MCD

BACK OF HOUSE TROFFERS, EXTERIOR LIGHTING, AND LOT LIGHTING FURNISHED BY MCDONALDS GSSS. ALL OTHER INTERIOR LIGHTING INCLUDING EMERGENCY AND EXIT FURNISHED BY GC

BY	DESCRIPTION	DATE	REV

DONALD SCOTT FERGUSON — REGISTERED — STATE OF INDIANA — PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY:
CORE STATES GROUP
2132 Mt. Moriah Suite 2
Memphis, TN 38115
901-794-4824
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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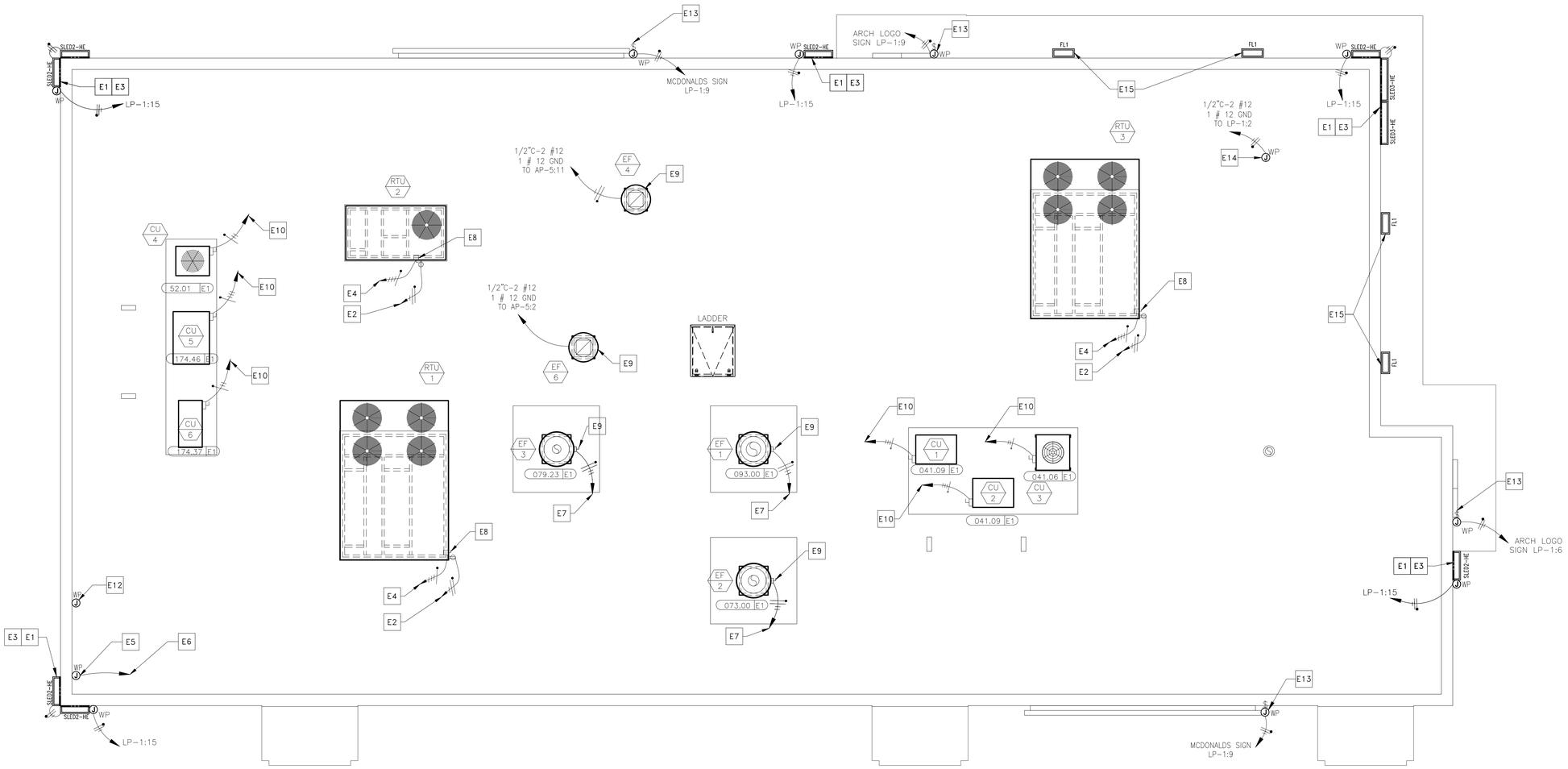
DRAWN BY: DA
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 11/25/25

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
MSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

013.1263.00.0
SHEET NO. E2.0
LIGHTING PLAN



ELECTRICAL ROOF PLAN

SCALE: 1/4"=1'-0"

KEYED NOTES

E1 EVERY LINEAR RUN OF SLED FIXTURES REQUIRES A DEDICATED WHIP KIT PROVIDED WITH FIXTURE. CONTRACTOR TO FIELD VERIFY FIXTURE MOUNTING HEIGHT, LOCATION, QUANTITY, FIXTURE LENGTHS, AND ALL ELECTRICAL CONNECTION REQUIREMENTS WITH SECURITY LIGHTING PRIOR TO ORDERING AND INSTALLATION (TYPICAL).

E2 WEATHER PROOF RECEPTACLES WITH GFCI PROTECTION ARE PROVIDED AND MOUNTED WITHIN MOTOR HOUSING LOCATIONS PER NEC ARTICLE 210.63. CIRCUIT SHALL EMANATE FROM PANEL AP-5,CCT.#13.(TYPICAL).

E3 SMOOTH BRACING IS REQUIRED FOR LED FIXTURE INSTALLATION UNDER COPING/FLASHING.(TYPICAL)

E4 REFER TO SHEET E4.0 FOR CONDUIT AND WIRE SIZE.(TYPICAL)

E5 E.C SHALL PROVIDE A WEATHER-PROOF J-BOX ON INSIDE FACE OF PARAPET, MOUNTED 6" BELOW TOP OF PARAPET FOR LIGHTING CONTROL PANEL PHOTOCELL. (PHOTOCELL FURNISHED BY OTHERS AND INSTALLED BY EC). REFER TO LIGHTING CONTROL DETAILS ON E4.1

E6 TO LIGHTING ENCLOSURE W/ TIMER. COORDINATE WITH LIGHTING CONTROL DETAILS ON SHEET E4.1

E7 COOKING EQUIPMENT EXHAUST FANS. SEE SHEET E3.0 FOR ELECTRICAL REQUIREMENTS. SEE SHEET E3.2 FOR EXHAUST FAN INTERLOCK WIRING DIAGRAMS. (TYPICAL)

E8 PROVIDE NEMA 3R DISCONNECT WITH CURRENT LIMITING FUSES TO COMPLY WITH NEC 110 AND 440. ELECTRICAL CONTRACTOR SHALL STUB UP THRU RACEWAY IN CURB TO ELIMINATE CONDUIT PENETRATION OF ROOFING. (TYPICAL)

E9 EXTERNAL NEMA 3R MOUNTED ON SIDE OF FAN BY MANUFACTURER. ELECTRICAL CONTRACTOR SHALL STUB-UP THRU ROOF AND PROVIDE FLEXIBLE WEATHERPROOF CONDUIT FROM ROOF PENETRATION TO DISCONNECT (TYPICAL).

E10 REMOTE CONDENSING UNITS. SEE SHEET E3.0 FOR WIRING AND CIRCUITRY REQUIREMENTS.

E11 NOT USED.

E12 E.C. SHALL PROVIDE A WEATHER-PROOF JUNCTION BOX WITH ¾"C STUB DOWN TO CEILING SPACE WITH BUSHING FOR ROOF-TOP CAMERA OR SATELLITE. VERIFY EXACT LOCATION(S) WITH MCD AREA CONSTRUCTION MANAGER PRIOR TO INSTALLATION.

E13 E.C. SHALL PROVIDE A JUNCTION BOX FOR ARCH LOGO / McDONALD'S FASCIA / PLAY-PLACE SIGN. SEE NOTE L1 ON SHEET E3.1. COORDINATE EXACT LOCATION IN FIELD WITH ACM. ALL SIGNS PROVIDED WITH INTEGRAL DISCONNECT SWITCH FROM MANUFACTURER.(TYPICAL)

E14 E.C. SHALL PROVIDE A JUNCTION BOX FOR ROOF-TOP FLAG POLE LIGHTING. VERIFY LOCATION(S) WITH MCD PROJECT MANAGER PRIOR TO INSTALLATION.

E15 FLOOD LIGHT MOUNTED ABOVE CANOPY. LP-1:11 EC SHALL VERIFY EXACT SPECIFICATIONS AND LOCATION WITH ARCHITECTURAL ELEVATIONS. VERIFY EXACT INFEED REQUIREMENTS IN THE FIELD. SEE FLOOD LIGHT DETAIL ON SHEET E3.1. (TYPICAL)

DRAWING NOTES

1. SEE DRAWING M-4.0 FOR GENERAL MECHANICAL NOTES.
2. SEE DRAWINGS M-3.0 AND M-4.1 FOR MECHANICAL EQUIPMENT SCHEDULES AND DETAILS.
3. SEE DRAWING M-4.0 FOR MECHANICAL LEGEND.
4. SEE DRAWING K-2.1 FOR REMOTE CONDENSER AND MAC UNIT INFORMATION.
5. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

LED GENERAL NOTES

1. PLACE LED FIXTURE AT DESIRED LOCATION AND ATTACH POWER SUPPLY AND MOUNTING BRACKET AS RECOMMENDED BY MANUFACTURER.
2. EC SHALL CONNECT NEW FIXTURES TO A 120V CIRCUIT AND MAKE ALL ELECTRICAL CONNECTIONS AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
3. POWER SUPPLY SHALL ALWAYS BE INSTALLED TO THE LEFT SIDE OF FIXTURE WHEN FACING BRAND WALL.

LED FIXTURE SCHEDULE:

MARK	SYMBOL	DESCRIPTION	DIFFUSER	LAMPS		BALLAST	MOUNTING	MANUFACTURER AND CATALOG NUMBER
				WATTS	TYPE			
SLED2-HE	▬	DOWN ONLY ACCENT LIGHTING (SEE PLAN)	TEMPERED GLASS	1-10W PER FIXTURE	LED	–	SURFACE	SECURITY LIGHTING: SLED-HE-24-DO-U-IO CUSTOM BUILT FOR EXTERIOR ACCENT CHANNELS.
SLED3-HE	▬	DOWN ONLY ACCENT LIGHTING (SEE PLAN)	TEMPERED GLASS	1-14W PER FIXTURE	LED	–	SURFACE	SECURITY LIGHTING: SLED-HE-36-DO-U-IO CUSTOM BUILT FOR EXTERIOR ACCENT CHANNELS.
SLED4-HE	▬	DOWN ONLY ACCENT LIGHTING (SEE PLAN)	TEMPERED GLASS	1-19W PER FIXTURE	LED	–	SURFACE	SECURITY LIGHTING: SLED-HE-48-DO-U-IO CUSTOM BUILT FOR EXTERIOR ACCENT CHANNELS.
FL1	▭	UP ONLY ACCENT LIGHTING (SEE PLAN)	TEMPERED GLASS	1-16W PER FIXTURE	LED	–	SURFACE	SECURITY LIGHTING: RFL2-44L-25-5K7-W-UNV-K-IO-JWIO

REV	DATE	DESCRIPTION	BY

DONDALE FERGUSON REGISTERED ARCHITECT STATE OF INDIANA PROFESSIONAL ENGINEER

11/21/2025

PREPARED BY:
CORE STATES GROUP
7210 E 96th Street, Suite 2
Bardonville, IN 72112
317.288.8888
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC
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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED
DA	2025 05	DL	11/25/25

TITLE: 2025 OPTIMIZED BUILDING – B820
4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

SHEET NO.: 013.1263.00.0
E2.1
ELEC. ROOF PLAN

PB = Pullbox
JB = Junction Box
EC = Electrical Contractor
VIF = Verify in Field

ELECTRICAL SCHEDULE

TAG #	QTY	DESCRIPTION	VOLT/PH	FLA	BRK SIZE	COND/WIRE	PNL/CCT	RECEP TYPE	HGT AFF	REQUIREMENTS & REMARKS
004.23E4	2	DIGITAL MERCHANDISER – MEDIA PLAYER	120/1 ISOLATED	1.0	20A	1/2"C–2#12IG	CP:6	IG5262	3'–4"	USE SAME RECEPTACLE AS 4.23E6
004.23E5	2	DIGITAL MERCHANDISER – MEDIA PLAYER	DATA CABLE	–	–	–	–	JB	3'–4"	JB W/ 1" C. TO FULL HEIGHT WALL AND TO ABOVE CEILING W/BUSHINGS. FOR DATA CABLES. SUPPLY W/GROMMETED OPENING IN COVER PLATE
004.23E6	2	DIGITAL MERCHANDISER	120/1 ISOLATED	2.6	20A	1/2"C–2#12IG	CP:6	IG5262	3'–4"	–
009.15E1	1	UTILITY CHASE – FFDT INTERIOR WALL	–	–	–	–	–	–	SEE RMKS	UTILITY CHASE AND RECEPTACLES PROVIDED BY K.E.S.
009.16E1	1	UTILITY CHASE – FFDT EXTERIOR WALL	–	–	–	–	–	–	SEE RMKS	UTILITY CHASE AND RECEPTACLES PROVIDED BY K.E.S.
020.01E1	2	AUTOMATED BEVERAGE SYSTEM 2.0	120/1	5.0	20A	1/2"C–2#12	AP–1:12, AP–2:24	5–20R	2'–0"	–
020.01E2	2	AUTOMATED BEVERAGE SYSTEM 2.0	120/1	14.9	20A	1/2"C–2#12	AP–1:6, AP–2:26	5–20R	3'–10"	FOR PRE–COOLER
021.01E3	3	COFFEE BREWER (THERMAL POTS)	120–208/1	15.5	20A	1/2"C–3#12	AP–1:(2,4)(14,16), AP–5:(20,22)	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO L14–20R RECEPTACLE IN CHASE
023.10E1	1	ESPRESSO BREWER	208/1	21.6	30A	1/2"C–2#10	AP–1:(19,21)	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO L6–30R RECEPTACLE IN CHASE
023.12E1	1	COFFEE CREAM DISPENSER	120/1	1.0	20A	1/2"C–2#12	AP–1:8	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5–20R RECEPTACLE IN CHASE
023.14E1	1	SUGAR/SWEETENER DISPENSER	120/1	1.5	20A	1/2"C–2#12	AP–1:8	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5–20R RECEPTACLE IN CHASE
024.02E1	1	JUICE DISPENSER	120/1	4.5	20A	1/2"C–2#12	AP–1:8	5–20R	SEE RMKS	EC TO EXTEND CIRCUIT TO 5–20R RECEPTACLE IN CHASE
025.07E1	1	INFUSION TEA BREWER – MIS	120–208/1	13.0	20A	1/2"C–3#12	AP–2:(32,34)	L14–20R	2'–3"	–
025.07E2	1	INFUSION TEA BREWER – MIS	–	–	–	–	–	JB	2'–3"	FOR WATER LINE TO ICED TEA BREWER IF CHASE IS NOT SPECIFIED. (SEE P1.6)
031.03E1	1	SODA SYSTEM PACKAGE – B.I.B. (RECIRCULATING– 3 TOWERS)	208/3	26.0	30A	3/4"C–3#10	AP–2:(37,39,41)	SEE RMKS	3'–0" SEE RMKS	EC SUPPLIES 30A–3P NF DISC SW MTD 9" BELOW CEILING PER NEC SECT. 404.8(A)
031.03E2	1	SODA SYSTEM PACKAGE – B.I.B. (RECIRCULATING– 3 TOWERS)	–	–	–	–	–	JB	4'–0"	FOR CONTROL WIRES FROM REMOTE CONDENSING UNIT
031.03E3	1	SODA SYSTEM PACKAGE – B.I.B. (RECIRCULATING– 3 TOWERS)	120/1	(2) 6.8	20A	1/2"C–2#12	AP–2:35	5–20R	6'–6"	FOR WATER BOOSTER SYSTEM AND OPTIONAL AIR COMPRESSOR
032.02E1	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	120/1	4.0	20A	1/2"C–2#12 EA.	AP–2:23	5–20R	6'–0"	–
032.04E1	1	WATER FILTRATION SYSTEM	120/1	0.08	20A	1/2"C–2#12 EA.	AP–2:23	5–20R	6'–0"	–
037.03E1	2	CO2 SAFETY SYSTEM – DETECTOR	120/1	1.0	20A	1/2"C–2#12	AP–1:10	JB	SEE RMKS	PROVIDE LOCKOUT CB. SEE MECHANICAL DRAWINGS
037.03E2	2	CO2 SAFETY SYSTEM	–	–	–	–	–	JB	SEE RMKS	FOR LV WIRES. STUB 3/4"C. ABV. CLG. SEE MECHANICAL DRAWINGS
037.03E4	4	CO2 SAFETY SYSTEM – CO2 DETECTOR AV ALARM	–	–	–	–	–	JB	7'–0" MINIMUM	STUB 3/4"C. ABOVE CLG. FOR LV COND. TO 037.03E2. SEE MECHANICAL DRAWINGS
038.00E1	1	CLEAN IN PLACE PANEL	120/1	1.0	20A	1/2"C–2#12	AP–2:21	5–20R	5'–6"	–
039.10E1	1	ICE MACHINE – 1400 LB.	208/3	13.4	20A	1/2"C–3#12	AP–2:(1,3,5)	SEE RMKS	SEE RMKS	EC SUPPLIES 30A–3P NF DISC SW MTD9"BELOW CEILING PER NEC 404.8(A) EX.2 VERIFY W/ AHJ
039.10E2	1	ICE MACHINE – 1400 LB.	–	–	–	–	–	JB	4'–6" SEE RMKS	CONTROL WIRES TO REMOTE CONDENSER
039.15E1	2	ICE MACHINE – 1000 LB.	120/1	1.1	15A	1/2"C–2#12	AP–1:37,39	5–20R	SEE RMKS	MOUNT 9" BELOW CEILING – CIRCUIT BREAKERS SHALL BE HACR TYPE
039.15E2	2	ICE MACHINE – 1000 LB.	–	–	–	1/2"C	–	JB	SEE RMKS	MOUNT 9" BELOW CEILING – CONTROL WIRES TO REMOTE CONDENSER
041.06E1	1	ICE MACHINE REMOTE CONDENSER – 1400 LB.	208/1	1.0	20A SEE RMKS	1/2"C–3#12	AP–1:(26,28)	SEE RMKS	SEE RMKS	EC TO PROVIDE WP 30A–2P NF DISC AT UNIT ON ROOF – CIRCUIT BREAKERS SHALL BE HACR TYPE
041.09E1	2	ICE MACHINE REMOTE CONDENSER – 1000 LB.	208/3	11.1	15A RMKS SEE	1/2"C–3#12 SEE RMKS	AP–1:(32,34,36)(38,40,42)	SEE RMKS	SEE RMKS	EC TO PROVIDE WP 30A–3P NF DISC AT UNIT ON ROOF – CIRCUIT BREAKERS SHALL BE HACR TYPE
043.21E1	1	OPTIMIZED ORDER ASSEMBLY TABLE	120/1	5.4	20A	SEE RMKS	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES OUTLET CHASE FOR HLA
052.01E1	1	SODA SYSTEM PACKAGE REMOTE CONDENSER – 3–TOWER	208/1	2.5	20A SEE RMKS	SEE RMKS	SEE RMKS	SEE RMKS	SEE RMKS	EC TO PROVIDE 30A–2P DISC SW W/15A FUSE – POWERED BY 31.03 – LOCATION BY ACM
052.01E2	1	SODA SYSTEM PACKAGE REMOTE CONDENSER – 3–TOWER	–	–	–	–	–	–	SEE RMKS	CONTROL WIRES TO SODA SYSTEM – LOCATION BY ACM
061.00E1	1	FRY BAGGING STATION 36"	120/1	12.5	20A	1/2"C–2#12	AP–1:31	JB	4'–0"	–
065.30E1	1	3–VAT LOV FRYER – ELECTRIC – F/F/F	208/3	38.9 EA. VAT	(3) 50A	1"C–3#6 EA. VAT	AP–4:(13,15,17)(19,21,23)(25,27,29)	BY KES	SEE RMKS	PLUGS INTO RACEWAY RECEP WITH(1)L21–20P INTERLOCK PLUG &(3) 15–60P POWER PLUG BY KES
066.47E1	1	4–VAT LOV FRYER – ELECTRIC – S/S/S/S	208/3	38.9 EA. VAT	(4) 50A	1"C–3#6 EA. VAT	AP–3:(1,3,5)(7,9,11)(2,4,6)(8,10,12)	BY KES	SEE RMKS	PLUGS INTO RACEWAY RECEP WITH(1)L21–20P INTERLOCK PLUG &(4) 15–60P POWER PLUG BY KES
073.00E1	1	UNIVERSAL EXHAUST HOOD 3–VAT FRYER	120/1	12.5, 9.8	(2)20A–1P	1/2"C–2#12EA	AP–1:23,24	BY KES	SEE RMKS	EC TO CONN POWER TO RACEWAY FLA = 12.0 FRYER CONTROLS, 0.5 CAPTURE JET & 9.8 INDIVID. EXHAUST FAN INTERLOCK
079.23E1	1	UNIVERSAL EXHAUST HOOD FULL–CLAM/4–VAT FRYER	120/1	17.6, 13.8	(2)20A–1P	1/2"C–2#12EA	AP–1:29,41	BY KES	SEE RMKS	EC TO CONN POWER TO RACEWAY FLA=3.6 GRILL,13.0 FRYER CONTROLS, 1.0 CAPTURE JET & 13.8 INDVID EXHAUST FAN INTERLOCK
079.26E2	2	VENTLESS HOOD COMBI OVEN	120/1	8.0	15A	1/2"C–2#12	AP–4:14,16	BY KES	SEE RMKS	EC TO EXTEND DEDICATED CIRCUIT TO 5–15R RECEPTACLE IN CHASE
085.05E1	1	FROZEN FRY DISPENSER	120/1	9.0	20A	1/2"C–2#12	AP–1:27	5–20R	4'–0"	–
091.02E1	1	WALL MOUNT FREEZER UNIT–SINGLE WIDE–HIGH CAPACITY	120/1	5.0	20A	1/2"C–2#12	AP–5:23	5–20R	7'–6"	–
093.00E1	1	UNIVERSAL EXHAUST HOOD FULL–CLAM GRILL	120/1	13.9	20A	1/2"C–2#12	AP–2:17	BY KES	SEE RMKS	EC TO CONN. POWER TO RACEWAY FLA = 3.6 GRILL CONTROLS, 0.5 CAPTURE JET & 9.8 INDIVID. EXHAUST FAN INTERLOCK
096.21E1	2	36" NEXT GEN 3–PLATEN CLAMSHELL GRILL – ELECTRIC	208/3	21.7, 43.3	(2)50A	1–1/2"C– 6#4	AP–3:(14,16,18)(20,22,24) AP–4:(1,3,5)(7,9,11)	BY KES	SEE RMKS	PLUGS IN RACEWAY RECEP WITH(1)L21–20P INTERLOCK& (2) 15–50P POWER PLUG EA GRILL
097.08E1	1	MEAT FREEZER – DOUBLE WIDE – HIGH CAPACITY – RIGHT HAND	120/1	7.0	20A	1/2"C–2#12	AP–2:19	5–15R	SEE RMKS	UNIT PLUGS INTO RACEWAY RECEPTACLE
110.01E1	1	OPTIMIZED BREAKFAST TABLE	–	–	–	–	AP–5:9	–	5'–6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C4W(Y) PROVIDED BY KES– HEIGHT TO BOTTOM OF RECEPTACLE
114.00E1	1	HUMIDIFIED HOLDING CABINET	208/1	9.1	20A	1/2"C–2#12	AP–5:(34,36)	SEE RMKS	5'–6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C6W(B) PROVIDED BY KES – HEIGHT TO BOTTOM OF RECEPTCLE
116.23E4	2	UNIVERSAL HOLDING CABINET – HIGH DENSITY – 2–SIDED – PIN & SLEEVE	208/1	15.2	20A	1/2"C–2#12	AP–5:(4,6)(8,10)	BY KES	5'–6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C6W(B) PROVIDED BY KES – HEIGHT TO BOTTOM OF RECEPTCLE
117.30E1	1	UHC TABLE COPL – 2 SIDED – 51"D x 34"W – PIN&SLEEVE	120/1	2.0	20A	1/2"C–2#12	AP–5:12	BY KES	5'–6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C4W(Y) PROVIDED BY KES– HEIGHT TO BOTTOM OF RECEPTACLE
118.00E1	1	Q'ING OVEN – PIN & SLEEVE	208/1	15.4	20A	1/2"C–2#12	AP–2:(38,40)	SEE RMKS	5'–6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C6W(B) PROVIDED BY KES– HEIGHT TO BOTTOM OF RECEPTACLE
118.03E1	2	Q'ING OVEN – PIN & SLEEVE	208/1	14.9	20A	1/2"C–2#12	AP–2:(18,20)(28,30)	SEE RMKS	5'–6"	PLUGS INTO OVERHEAD RECEPTACLE # 330C6W(B) PROVIDED BY KES– HEIGHT TO BOTTOM OF RECEPTACLE
122.27E1	1	NEXT GEN. UNIVERSAL RADIANT TOASTER – PIN & SLEEVE	208/1	25.2	30A	1/2"C–2#10	AP–5:(27,29)	SEE RMKS	5'–6"	PLUGS INTO KES RACEWAY RECEPTACLE
122.28E2	1	NEXT GEN. UNIVERSAL CONTACT TOASTER – PIN & SLEEVE	208/1	25.2	30A	1/2"C–2#10	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES RACEWAY RECEPTACLE
123.36E1	1	ECU TABLE – COPL	208/1	4.9	15A	SEE RMKS	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES OUTLET CHASE.
123.37E1	1	BREAKER PANEL– 125 AMP – 1 PHASE – EQUIPMENT MOUNTED	120–208/1	SEE RMKS	125A	1–1/2C"–3#1	MDP:11	–	–	EC TO EXTEND AND CONNECT ELECTRICAL SERVICE. HARDWIRE TO KES BREAKER PANEL.
123.40E1	1	PREP TABLE – HD – 2–SIDED COPL – 38"D x 83 1/2" – PIN & SLEEVE W/ REF.	120/1	10.0	20A	SEE RMKS	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES OUTLET CHASE.
125.00E2	2	RAPID BUN STEAMER	208/1	14.3	30A	1/2"C–2#10	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES RACEWAY RECEPTACLE
130.00E3	2	COMBI OVEN	208/3	15.1	30A	1/2"C–3#10	AP–4:(2,4,6)(8,10,12)	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO L430R9 RECEPTACLE IN CHASE
146.00E1	1	BUTTER WARMER	120/1	0.5	20A	1/2"C–2#12	AP–5:9	BY KES	SEE RMKS	PLUGS INTO EQUIPMENT–MOUNTED RECEPTACLE
152.09E1	1	WAREWASHER – HIGH TEMP	208/3	29.4, 22.3	40A, 30A	3/4"C–3#8, 1/2"C–3#10	AP–5(31,33,35)(37,39,41)	SEE RMKS	SEE RMKS	EC TO SUPPLY 30A & 60A–3P NF DISC SW HANDLE HGT. MTD @ 6'–7" AFF PER NEC 404.8(A). LABEL "WAREWASHER (# OF 2)" IF HOBART IS ORDERED USE (2) 30A BRKRS
163.02E1	4	REMOTE ANSUL PULL	–	–	–	–	–	JB	SEE DETAILS	4" OCTAGONAL, RACO #165 OR EQUAL MUST BE USED.
171.01E1	1	WALK–IN COOLER / FREEZER FLOORLESS	120/1	10.0	20A	1/2"C–2#12	AP–2:14,16	JB	FLUSH ON CLG	JB FOR LIGHTS &]DOOR HEATER– UNSWITCHED LIGHT TO BE IN BOTH COOLER & FREEZER,EC TO CONNECT POWER
171.01E2	1	WALK–IN COOLER / FREEZER FLOORLESS	–	–	–	–	–	–	VIF	EC TO FURNISH & INSTALL CONDUIT,WIRE & LIGHT FIXTURES& OTHER DEVICES INSIDE COOLER/FREEZER BOX
174.37E1	1	REMOTE CONDENSING UNIT	208/1	15.0	25A	1/2"C–2#10	AP–5:(38,40)	JB	VIF	EC TO PROVIDE 30A–2P NF DISC AT UNIT ON ROOF. CIRCUIT BREAKERS TO BE HARC RATED.
174.37E2	1	REMOTE CONDENSING UNIT	LOW VOLT WIRES	–	–	–	–	–	VIF	–
174.46E1	1	REMOTE CONDENSING UNIT	208/3	30.3	50A	1"C–3#6	MDP:15	JB	VIF	EC TO PROVIDE 60A–3P NF DISC AT UNIT ON ROOF. CIRCUIT BREAKERS TO BE HARC RATED.
174.46E2	1	REMOTE CONDENSING UNIT	LOW VOLT WIRES	–	–	–	–	–	VIF	–
175.19E1	1	COOLER EVAPORATOR	208/1	1.0	20A	1/2"C–2#12	AP–6:(9,11)	JB	FLUSH ON CLG	–
175.19E2	1	COOLER EVAPORATOR	LOW VOLT WIRES	–	–	–	–	–	FLUSH ON CLG	L V WIRES CONN UNIT TO EVAPS & SHALL BE ROUTED SEPARATELY FROM POWER CONDUCTORS
176.28E1	1	FREEZER EVAPORATOR	208/1	20.3	30A	1/2"C–2#10	AP–6:(13,15)	JB	FLUSH ON CLG	–
176.28E2	1	FREEZER EVAPORATOR	LOW VOLT WIRES	–	–	–	–	–	FLUSH ON CLG	L V WIRES CONN UNIT TO EVAPS & SHALL BE ROUTED SEPARATELY FROM POWER CONDUCTORS
177.03E2	1	REACH–IN REFRIGERATOR–SINGLE WIDE	120/1	2.7	20A	1/2"C–2#12	AP–2:31	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO 5–20R RECEPTACLE IN CHASE
178.05E1	3	REACH–IN FREEZER–SINGLE WIDE	120/1	11.0	20A	1/2"C–2#12	AP–1:25,30,35	5–20R	7'–6"	–
181.13E1	1	REFRIGERATOR – SPECIALTY COFFEE– 27" WIDE	120/1	3.9	20A	1/2"C–2#12	AP–2:22	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5–20R RECEPTACLE IN CHASE
181.14E1	1	REFRIGERATOR – WORK TOP – 48" WIDE	120/1	5.0	20A	1/2"C–2#12	AP–2:8	5–20R	2'–0"	–
183.00E1	1	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 33" H	120/1	5.0	20A	1/2"C–2#12	AP–5:1	5–20R	2'–0"	–
183.02E1	1	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 30" H	120/1	5.0	20A	1/2"C–2#12	AP–5:3	5–20R	2'–0"	–
183.02E2	2	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 30" H	120/1	5.0	20A	1/2"C–2#12	AP–5:5,7	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5–20R RECEPTACLE IN CHASE
183.02E4	1	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 30" H	120/1	5.0	20A	1/2"C–2#12	AP–5:9	BY KES	SEE RMKS	PLUGS INTO EQUIPMENT–MOUNTED RECEPTACLE
196.06E1	1	SAFE – STANDARD BLDG.	120/1	1.0	20A	1/2"C–2#12	AP–1:7	5–20R	2'–0"	PROVIDE LOCKOUT TYPE CB

PB = Pullbox
JB = Junction Box
EC = Electrical Contractor
VIF = Verify in Field

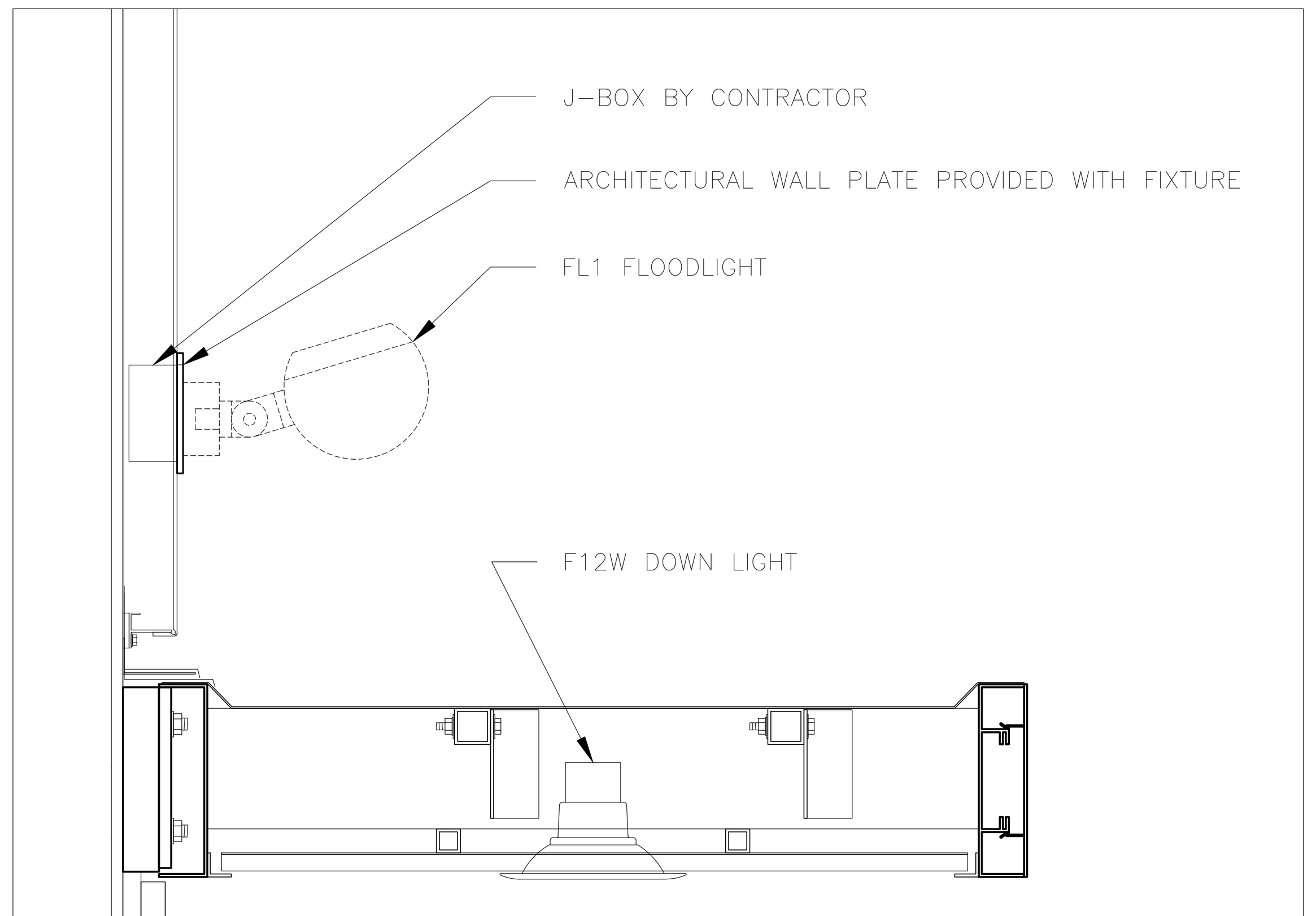
ELECTRICAL SCHEDULE

TAG #	QTY	DESCRIPTION	VOLT/PH	FLA	BRK SIZE	COND/WIRE	PNL/CCT	RECEP TYPE	HGT AFF	REQUIREMENTS & REMARKS
197.01E1	1	HAND WASH TIMER	120/1	0.1	20A	1/2"C–2#12	AP–1:33	5–20R	4'–6"	–
203.01E1	1	HEAT TREAT COMBINATION SHAKE/SUNDAE MACHINE	208/3	13.0	30A	3/4"C–3#8	AP–1:(18,20,22)	4x4x4 PB	1'–0"	RECEP #A460R9 BY KES, IF TAYLOR C602 IS ORDERED USE A 40A BRKR & #6 CONDUCTORS –EC MAKES FINAL CONN
205.08E1	1	BIC MACHINE	120/1	8.6	20A	1/2"C–2#12	AP–2:29	BY KES	SEE RMKS	EC TO EXTEND DEDICATED CIRCUIT TO 5–20R RECEPTACLE IN CHASE
205.09E2	1	FROZEN BEVERAGE DISPENSER	208/1	20.0	30A	1/2"C–2#10	AP–5:(17,19)	SEE RMKS	SEE RMKS	RECEP L6–30R IN CHASE BY KES, EC MAKES FINAL CONN
207.01E2	1	BLENDER – MCFLURRY – RAIL MOUNT	120/1	1.2	20A	1/2"C–2#12	AP–2:7	5–20R	4'–0"	
211.00E6	1	DELIVERY TABLETS	120/1	3.0	20A	1/2"C–2#12	AP–5:21	(2) 5–20R	5'–6"	–
214.02E1	1	82" 44U STATIONARY RACK	120/1 ISOLATED	5.0	20A	1/2"C–2#12IG	CP:11	IG4700	2'–0"	FOR NETWORK HARDWARE (GATEWAY/CONTROLLER, SWITCHES & HUBS)
214.02E3	1	82" 44U STATIONARY RACK	120/1 ISOLATED	10.0	20A	1/2"C–2#12IG	CP:15	IG4700	2'–0"	FOR POS SYSTEM SERVERS
214.02E4	1	82" 44U STATIONARY RACK	120/1 ISOLATED	12.0	20A	1/2"C–2#12IG	CP:17	IG2310	4'–0"	FOR OTHER POS SYSTEM & BACK OFFICE HARDWARE
214.02E5	1	82" 44U STATIONARY RACK	DATA CABLE	–	–	–	–	8x6x4 PB	7'–6"	EXTEND (2) 2 1/2" CONDUIT ABOVE CLG. W/BUSHING FOR DATA CABLES
214.02E6	1	82" 44U STATIONARY RACK	120/1 ISOLATED	14.0	30A	1/2"C–2#10IG	CP:12	IG2610	3'–0"	FOR POS SYSTEM UPS
215.00E12	1	POS REGISTER – FRONT COUNTER	120/1 ISOLATED	3.0 EA.	20A	3/4"C–2#12IG	CP:19	IG4700	SEE RMKS	PROVIDE IG RECEP. IN COUNTER–MOUNTED RACEWAY
215.00E3	1	POS REGISTER – FRONT COUNTER	DATA CABLE	–	–	–	–	4x4x4 PB	10"	EXTEND 2" CONDUIT TO ABOVE CEILING FOR POS DATA CABLES
215.02E1	1	POS REGISTER – 2 WINDOW D/T	120/1 ISOLATED	3.0 EA.	SEE RMKS	1/2"C–2#12IG	SEE REMARKS	(2)IG4700	2'–5"	IN ORDER BOOTH, CONNECT TO CP:7 – IF INCLUDED IN PRESENTERS BOOTH, CONNECT TO CP:8
215.02E10	2	POS REGISTER – 2 WINDOW D/T	120/1 ISOLATED	3.0 EA.	20A	1/2"C–2#12IG	CP:1	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
215.02E12	1	POS REGISTER – 2 WINDOW D/T	–	–	–	–	–	18x12x4 PB	10"	REFER TO D/T LOW VOLTAGE CONDUIT DIAGRAM FOR CONDUITS UNDER SLAB AND EXTEND (2) 2 1/2"C. TO ABOVE CLG.
215.02E13	1	POS REGISTER – 2 WINDOW D/T	–	–	–	–	–	4x4x4 PB	10"	EXTEND 1 1/2"C. UNDER SLAB TO 217.11E1 AND 2 1/2" C. TO ABOVE CEILING FOR POS DATA CABLES
215.02E17	1	POS REGISTER – 2 WINDOW D/T	–	–	–	–	–	4x4x4 PB	10"	EXTEND 1 1/2"C. UNDER SLAB TO 217.11E1 AND 2 1/2" C. ABOVE TO 215.02E18
215.02E18	1	POS REGISTER – 2 WINDOW D/T	–	–	–	–	–	4x4x4 PB	5'–0"	EXTEND 2 1/2" C. BELOW TO 215.02E17 AND 2 1/2" C. TO ABOVE CEILING FOR POS DATA CABLES
215.04E1	2	POS – KVS MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C–2#12IG	CP:8	IG4700	FLUSH ON CLG	–
215.04E2	2	POS – KVS MONITOR	120/1 ISOLATED	1.5	20A	1/2"C–2#12IG	CP:26	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN OEP
215.04E5	2	POS – KVS MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C–2#12IG	CP:3	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
215.04E7	3	POS – KVS MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C–2#12IG	CP:23	IG4700	5'–6"	–
215.04E8	1	POS – KVS MONITOR	DATA CABLE	–	–	–	–	4x4x4 PB	4'–0"	EXTEND 2" CONDUIT ABOVE CEILING. CABLE FURNISHED AND INSTALLED BY POS SYSTEM SUPPLIER
215.07E1	1	POS REGISTER – DELIVERY	120/1 ISOLATED	3.0	20A	1/2"C–2#12IG	CP:23	IG4700	3'–6"	
215.07E3	1	POS REGISTER – DELIVERY	DATA CABLE	–	–	–	–	4x4x4 PB	3'–6"	EXTEND 2" CONDUIT TO ABOVE CEILING FOR POS DATA CABLES
216.00E13	2	POS – VIDEO MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C–2#12IG	CP:3	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
216.00E14	4	POS – VIDEO MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C–2#12IG	CP:9	IG4700	SEE RMKS	EXTEND CONDUIT DOWN GRILL HOOD SHROUD AND PROVIDE IG4700 RECEPTACLE
216.00E7	3	POS – VIDEO MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C–2#12IG	CP:1	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
217.03E4	1	POS – COD OPTICAL ISOLATOR	120/1 ISOLATED	1.0	20A	1/2"C–2#12IG	CP:14	IG5262	7'–6"	–
217.10E1	2	REMOTE DETECTOR LOOP	–	–	–	–	–	–	–	1 1/2"CONDUIT–CONN TO PULLBOX#215.03E5,215.01E4, OR 215.02E12 PER DRIVE–THRU CONFIG–SEE SITE PLAN
217.11E1	2	DETECTOR LOOP	–	–	–	–	–	–	–	1 1/2"CONDUIT–CONN TO PULLBOX#215.02E5,215.02E13, OR 215.02E4 PER DRIVE–THRU CONFIG–SEE SITE PLAN
217.13E1	1	MERGE POINT MONITOR (DOUBLE DRIVE THRU)	120/1	2.0	20A	1/2"C–2#12	AP–1:11	5–20R	3'–6"	DO NOT POWER FROM POS CIRCUIT
217.13E2	2	MERGE POINT MONITOR (DOUBLE DRIVE THRU)	120/1	2.0	20A	1/2"C–2#12	AP–1:11	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5–20R RECEPTACLE IN CHASE
217.14E1	1	POS– VIDEO MONITOR (DOUBLE DRIVE THRU)	120/1 ISOLATED	1.5	20A	1/2"C–2#12IG	CP:7	IG4700	3'–6"	–
217.18E1	3	HAND HELD ORDER TAKER AND MANAGEMENT OF SHIFT EQUIPMENT	120/1	5.0	20A	1/2"C–2#12	AP–1:15	5–20R	4'–6"	–
217.19E2	1	WIRELESS HEADSET BASE STATION	120/1 ISOLATED	1.9	20A	1/2"C–2#12IG	CP:1	IG4700	4'–6"	
217.19E3	1	WIRELESS HEADSET BASE STATION	DATA CABLE	–	–	–	–	4x4x4 PB	5'–0"	
217.24E1	1	DANGER POINT MONITOR (DOUBLE DRIVE–THRU)	120/1	2.0	20A	1/2"C–2#12	AP–1:11	5–20R	8'–0"	DO NOT POWER FROM POS CIRCUIT
217.26E1	1	ZOOM TIMER	120/1 ISOLATED	6.0	20A	1/2"C–2#12IG	CP:10	(2) IG4700	7'–6"	–
217.26E2	1	ZOOM TIMER	DATA CABLE	–	–	–	–	JB	7'–6"	JB W/ 1–1/2" C. TO TERMINATE ABOVE CEILING W/BUSHINGS. FOR DATA CABLES. SUPPLY W/ GROMMETED OPENING IN COVER PLATE
219.00E10	1	POS – RECEIPT PRINTER	120/1 ISOLATED	0.7	20A	3/4"C–2#12IG	SEE RMKS	IG4700	SEE RMKS	PROVIDE IG RECEP. IN COUNTER–MOUNTED RACEWAY, POWER FROM SAME CIRCUIT AS 215.00E12
219.00E3	1	POS – RECEIPT PRINTER/CASHLESS	120/1 ISOLATED	0.7	20A	1/2"C–2#12IG	CP:4	IG4700	2'–0"	–
219.00E7	2	POS – RECEIPT PRINTER	120/1 ISOLATED	0.7	20A	1/2"C–2#12IG	CP:3	BY KES	SEE RMKS	EC TO EXTEND IG CIRCUIT TO IG4700 RECEPTACLE IN KES OUTLET CHASE.
219.05E2	2	STICKY LABEL PRINTER	120/1 ISOLATED	0.7	20A	1/2"C–2#12IG	CP:1	BY KES	SEE RMKS	EC TO EXTEND IG CIRCUIT TO IG4700 RECEPTACLE IN CHASE
219.05E3	1	STICKY LABEL PRINTER	120/1 ISOLATED	0.7	20A	1/2"C–2#12IG	CP:3	IG4700	3'–2"	–
219.05E6	2	STICKY LABEL PRINTER	120/1 ISOLATED	0.7	20A	1/2"C–2#12IG	CP:3	IG4700	FLUSH ON CLG	–
219.06E1	1	LABELING SYSTEM	120/1 ISOLATED	2.0	20A	1/2"C–2#12IG	CP:8	IG5261	2'–0"	–
220.00E1	1	POS – COIN DISPENSER	120/1 ISOLATED	0.75	20A	1/2"C–2#12IG	CP:7	IG4700	2'–0"	–
221.09E1	1	O/O EQUIPMENT RACK	120/1 ISOLATED	4.0	20A	2" C	CP:31	IG5262	8'–0"	–
221.09E2	1	O/O EQUIPMENT RACK	DATA CABLE	–	–	2" C	–	4x4x4 PB	8'–0"	EXTEND 2" CONDUIT ABOVE CLG. W/ BUSHING FOR DATA CABLES
222.01E1	1	TIME CLOCK	120/1 ISOLATED	0.5	20A	1/2"C–2#12IG	CP:28	IG4700	4'–0"	–
222.01E2	1	TIME CLOCK	DATA CABLE	–	–	–	–	JB	4'–0"	EXTEND 1" CONDUIT ABOVE CEILING
223.07E1	1	WASHER	120/1	8.0	15A	1/2"C–2#12	AP–1:13	5–15R	3'–6"	–
225.03E3	2	OFFICE PACKAGE/DESK UNIT	120/1 ISOLATED	10.0	20A	1/2"C–2#12IG	CP:20,22	IG5262	4'–6"	FOR MONITOR, PR

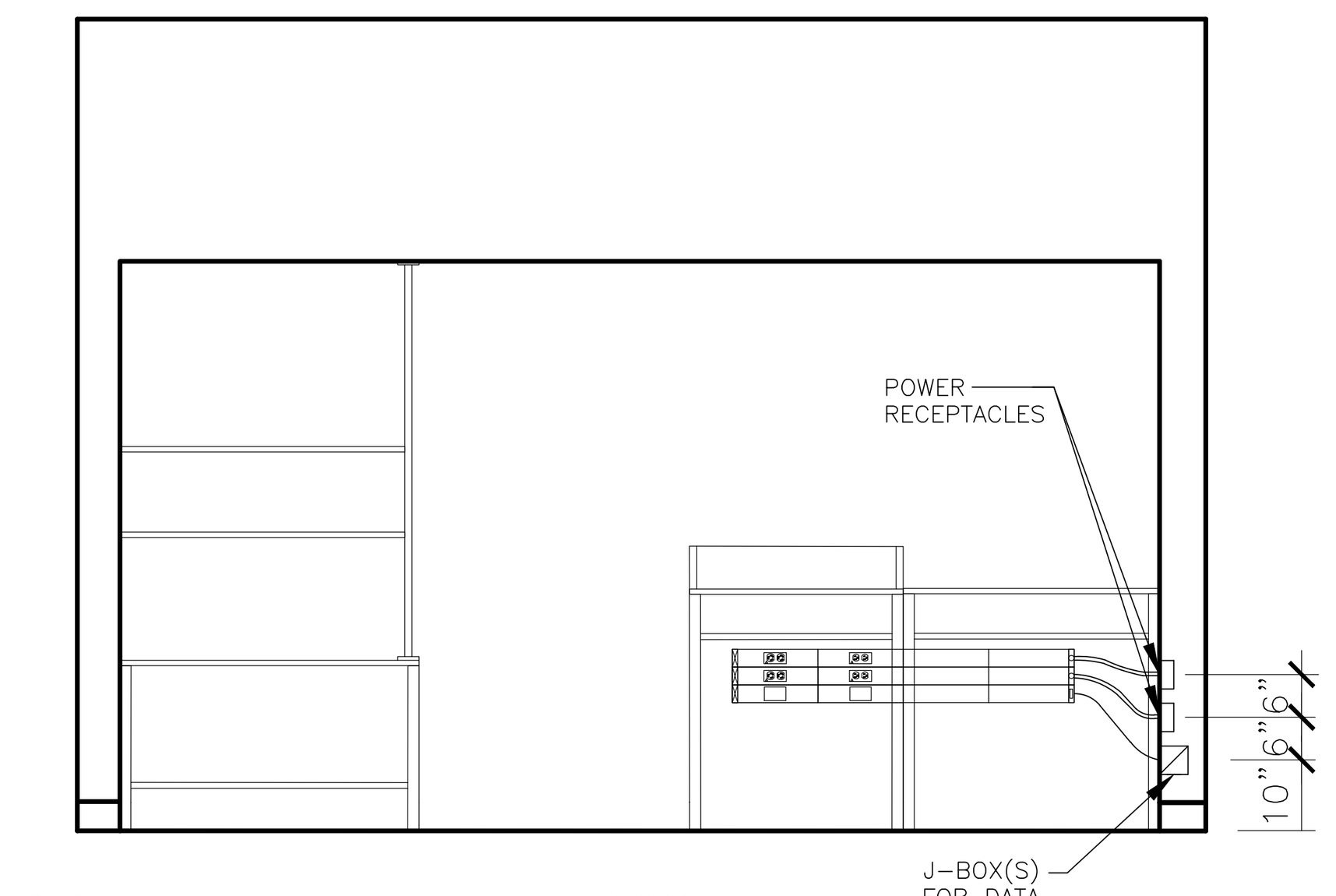
PB = Pullbox
JB = Junction Box
EC = Electrical Contractor
VIF = Verify in Field

ELECTRICAL SCHEDULE

TAG #	QTY	DESCRIPTION	VOLT/PH	FLA	BRK SIZE	COND/WIRE	PNL/CCT	RECEP TYPE	HGT AFF	REQUIREMENTS & REMARKS
701.34E1	1	ACCESS CONTROL PANEL	120/1	2.0	20A	1/2"C-2#12	LP-1:16	JB	8'-0"	ROUTE LOW VOLTAGE WIRES TO DOOR BUTTON, HORN AND DOOR STRIKE AS REQUIRED. SUPPLY WITH 4 RELAY CONTROL BOARD.



2 / E-3.1 **FLOODLIGHT MOUNTING DETAIL**
NOT TO SCALE

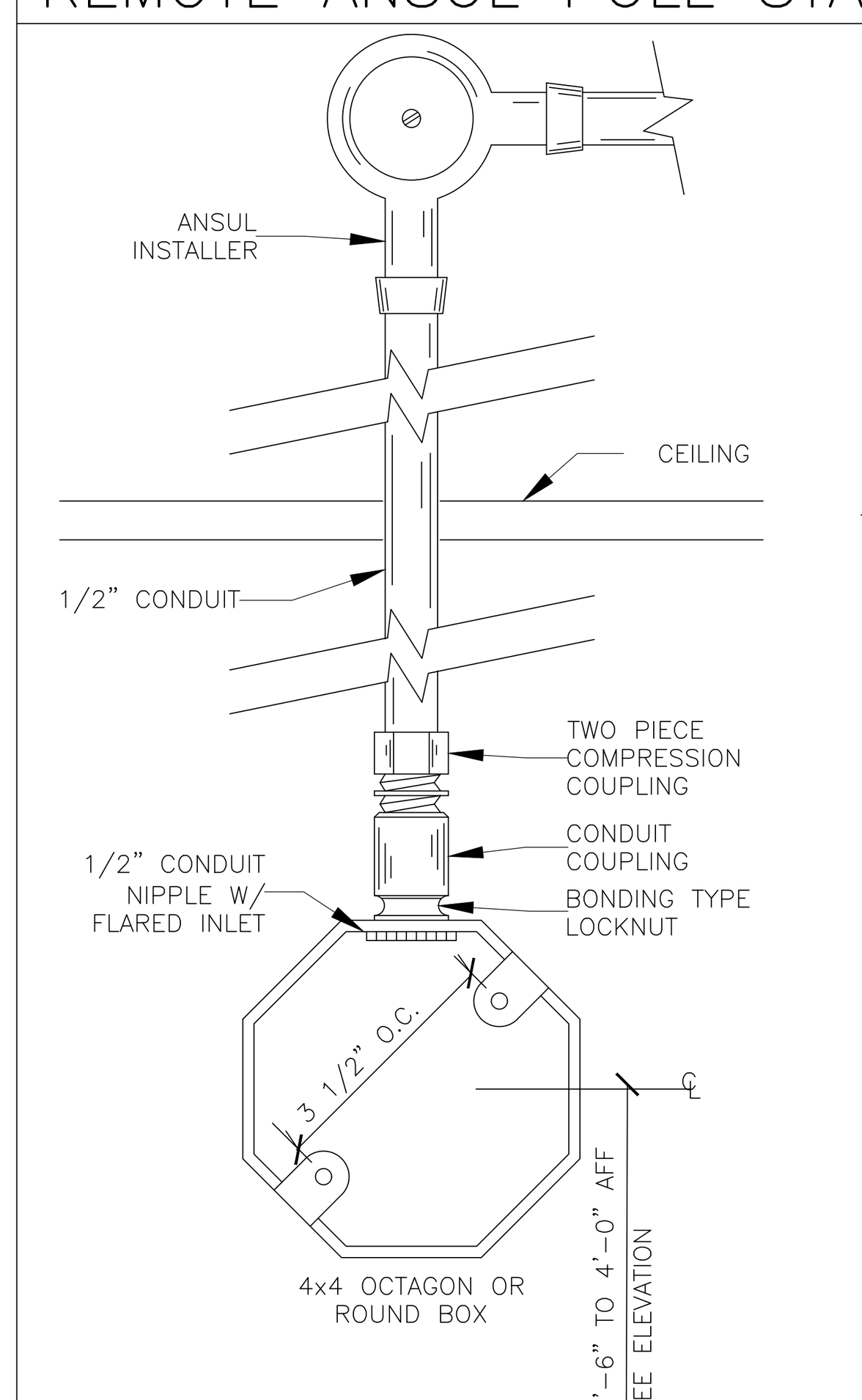


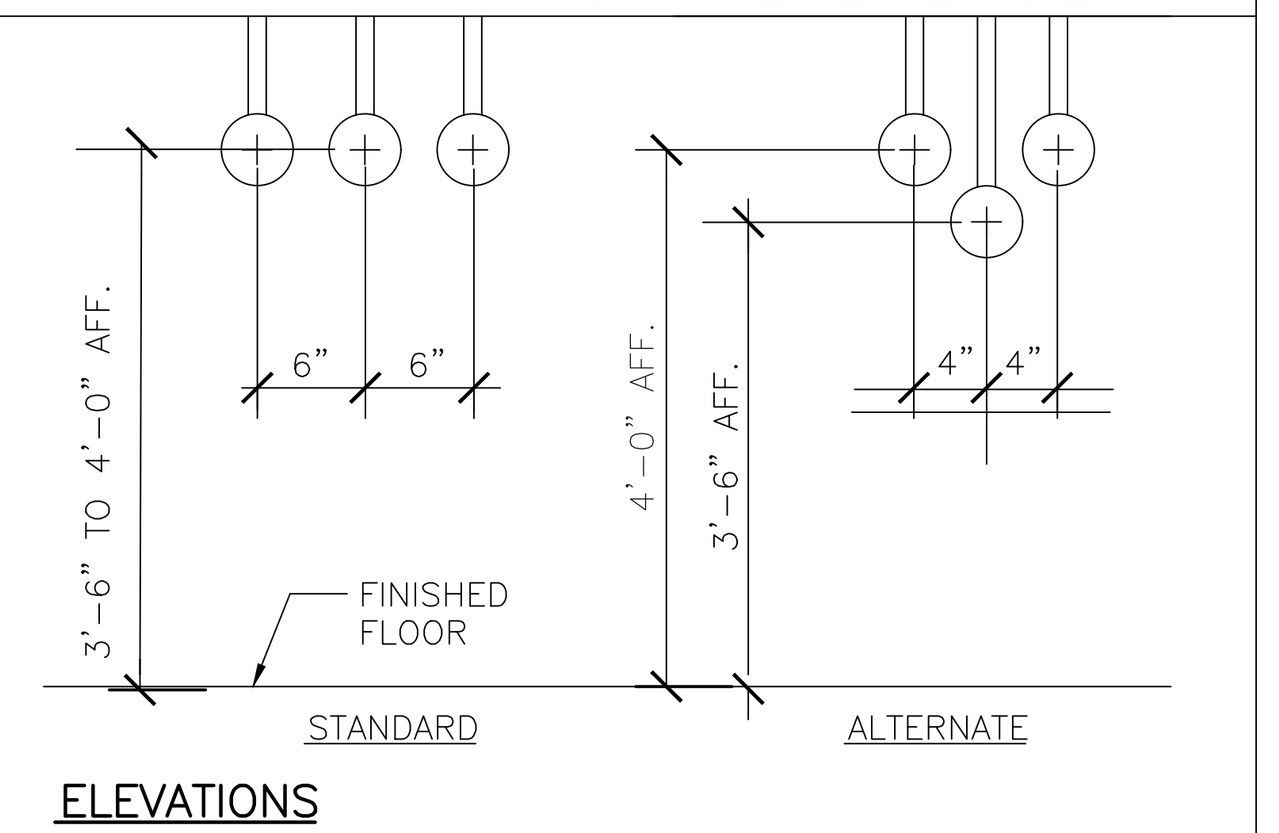
SYMBOL	CATALOG #	DESCRIPTION
	HBLALU57DR & IG4700	RECEPTACLE COVERPLATE WITH ORANGE, TWIST LOCK, ISOLATED GROUND DUPLEX RECEPTACLE
	HBLALU57DR & 5-20R FOR BAKED GOODS AND IG5262 FOR CASH	RECEPTACLE COVERPLATE WITH STRAIGHT BLADE RECEPTACLE
	HBLALU57LPB	COMMUNICATIONS COVERPLATE
	HBLALU7620B02M290	2' SECTION OF RACEWAY. INCLUDES COUPLERS
	HBLALU7620B03M290	3' SECTION OF RACEWAY. INCLUDES COUPLERS
	HBLALU7610B2M2	SERVICE ENTRANCE FITTING & BUSHING FOR DATA CABLES
	HBLALU7610B	BLANK END FITTING
N/A	HBLALU5701	COUPLER (INCLUDED WITH RACEWAY SECTION)
N/A	HBLALU5709	GROUND ADAPTER

NOTES:
1. REFER TO SERVICE POD MANUFACTURER INSTRUCTIONS FOR EXACT PLACEMENT OF RACEWAY
2. RACEWAY AND RECEPTACLES TO BE PROVIDED WITH SERVICE POD, INSTALLED BY CONTRACTOR.
3. DETAIL SHOWN IS A TYPICAL CONFIGURATION ONLY. SITE SPECIFICS MIGHT CAUSE DEVIATIONS.
4. PART NUMBERS SHOWN REFLECT HUBBELL, SOME SUPPIERS MAY USE WIREMOLE EQUIVALENT.

1 / E-3.1 **SERVICE POD RACEWAY DETAIL**
NOT TO SCALE

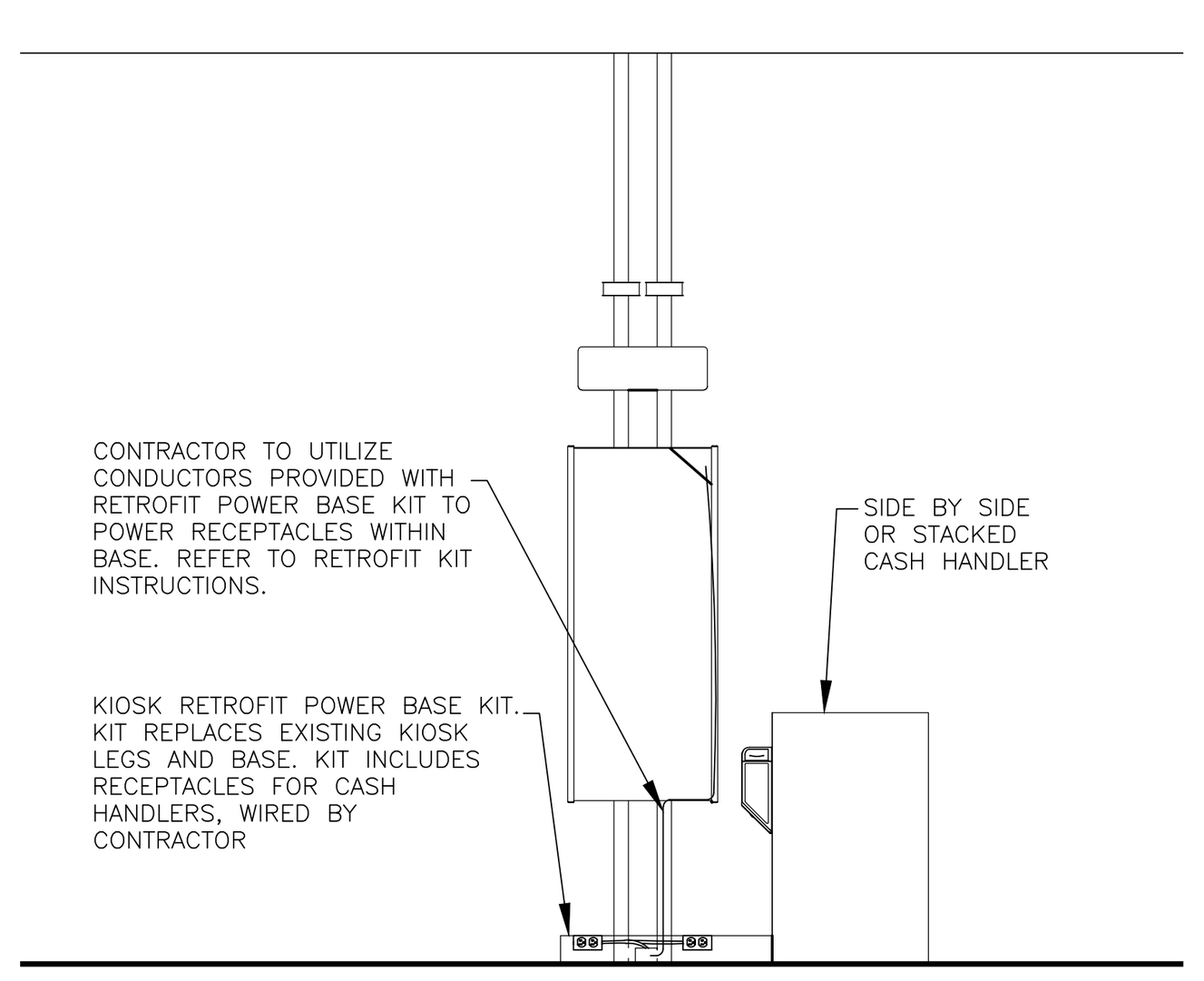
REMOTE ANSUL PULL STATION — FOR REFERENCE





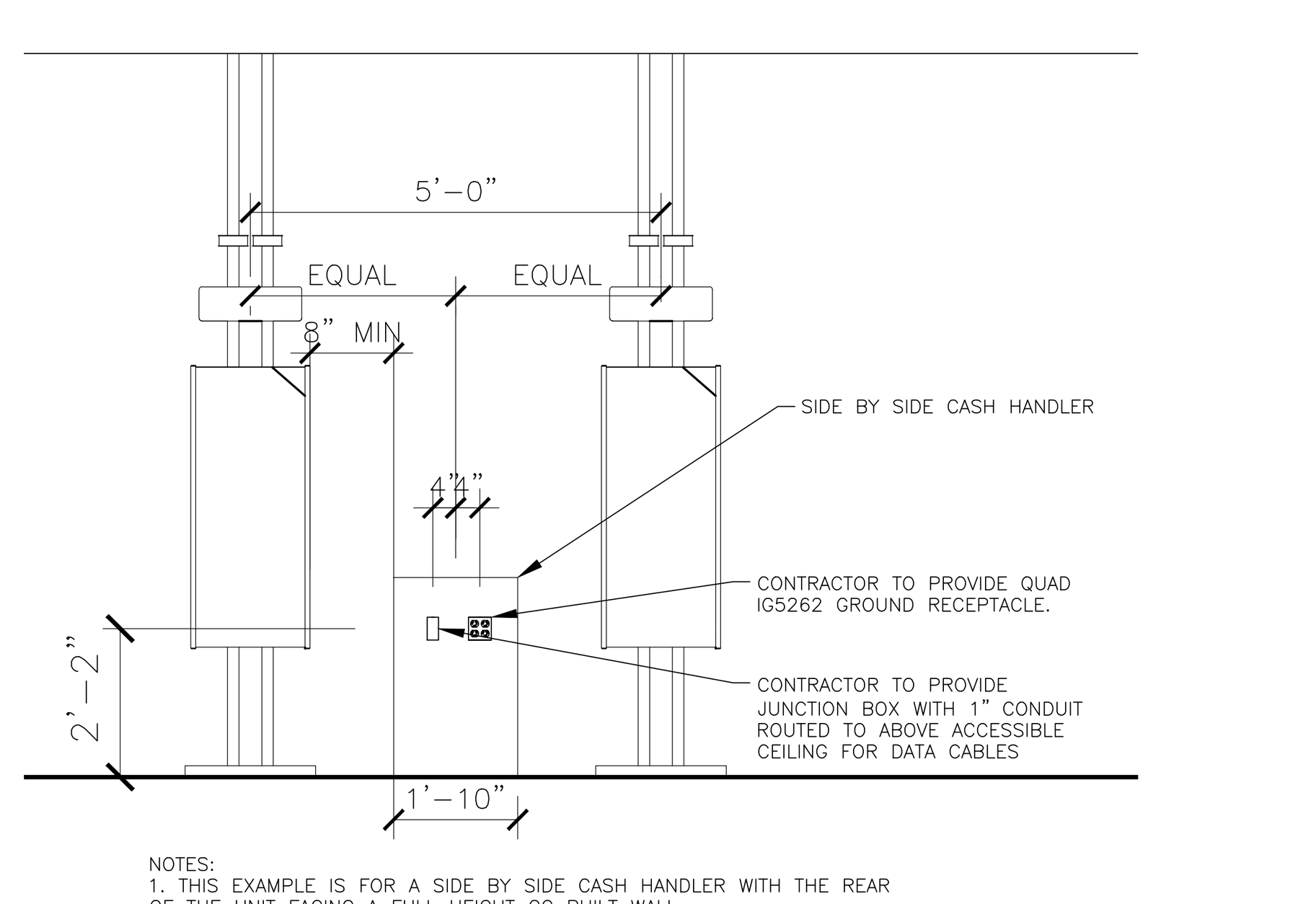
ELEVATIONS

NOTES:
1. ANSUL INSTALLER SHALL INSTALL CONDUIT AND PULLEY ELBOWS ABOVE CEILING AND TO KITCHEN EQUIPMENT.
2. ELECTRICAL CONTRACTOR SHALL INSTALL BOX AND TERMINATE CONDUIT ABOVE CEILING. THE CONDUIT SHALL BE 18" ABOVE CEILING OR 6" ABOVE BOTTOM CHORD OF JOIST WHICH EVER IS LOWER.
3. ALL CONDUIT ENDS SHALL BE DEBURRED INSIDE AND OUT.
4. TABS SHALL BE IN ORIENTATION SHOWN FOR WORDING ON COVER TO BE RIGHT SIDE UP.
5. FINAL HEIGHT AND LOCATION TO BE DETERMINED BY AUTHORITY HAVING JURISDICTION.



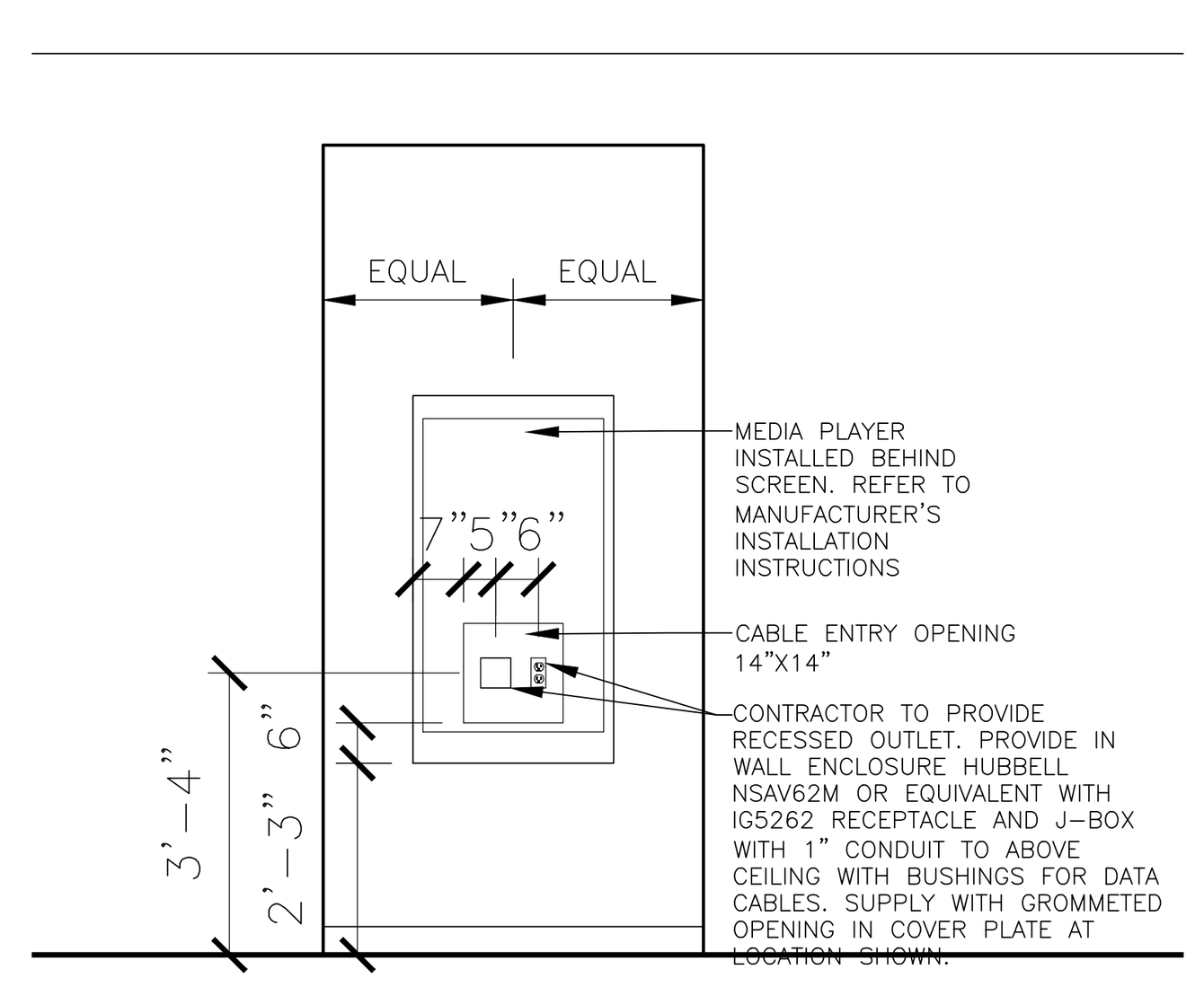
NOTES:
1. THIS EXAMPLE IS FOR A SIDE BY SIDE CASH HANDLER THAT DOES NOT HAVE A GC WALL BEHIND IT AND IS NEXT TO A KIOSK. IT IS ALSO INTENDED FOR ALL STACKED CASH HANDLERS.
2. EACH SIDE BY SIDE CASH HANDLER UTILIZES 3 PLUGS AND ADDS 4.4 AMPS OF LOAD TO THE KIOSK CIRCUIT.
3. EACH STACKED CASH HANDLER UTILIZED 2 PLUGS AND ADDS 3.6 AMPS OF LOAD TO THE KIOSK CIRCUIT.
4. ONLY 1 SIDE BY SIDE CAN BE CONNECTED TO A KIOSK, HOWEVER TWO STACKED UNITS CAN BE CONNECTED. REFER TO DECOR PLANS FOR EXACT CONFIGURATIONS.

5 / E-3.1 **TYP. CASH HANDLER POWER DETAIL**
NOT TO SCALE



NOTES:
1. THIS EXAMPLE IS FOR A SIDE BY SIDE CASH HANDLER WITH THE REAR OF THE UNIT FACING A FULL HEIGHT GC BUILT WALL.
2. EACH SIDE BY SIDE CASH HANDLER UTILIZES 3 PLUGS AND ADDS 4.4 AMPS OF LOAD.

4 / E-3.1 **CASH HANDLER POWER DETAIL W/REAR TO WALL**
NOT TO SCALE



NOTES:
1. THIS EXAMPLE IS FOR A WALL MOUNTED DIGITAL MERCHANDISER.

3 / E-3.1 **DIGITAL MERCHANDISER POWER DETAIL**
NOT TO SCALE

GENERAL ELECTRICAL NOTES:

INSTALLATION METHODS:

M1. ALL ELECTRICAL MATERIAL USED ON THIS PROJECT SHALL BE "UL" LISTED AND LABELED.

M2. ALL DIMENSIONS SHOWN ARE TAKEN FROM FACE OF GYP BOARD/PLYWOOD. THE EC SHALL MAKE NECESSARY DIMENSIONAL ALLOWANCES. ALL DIMENSIONS SHOWN ARE TO CENTER LINE OF OUTLET BOX AND/OR RECEPTACLE UNLESS NOTED OTHERWISE.

M3. ALL J-BOXES, DCOs, AND OTHER ELECTRICAL DEVICES SHOWN SHALL BE RECESSED INTO A WALL, FLOOR OR CEILING UNLESS SPECIFICALLY NOTED OTHERWISE.

M4. ALL RECEPTACLES (EXCEPT SPECIFIED HUBBELL PIN & SLEEVE TYPES) SHALL BE FURNISHED BY THE EC. THE RECEPTACLES INCLUDING PIN AND SLEEVE TYPE SHALL BE INSTALLED BY THE EC.

M5. EC SHALL PROVIDE STAINLESS STEEL COVER PLATES ON ALL RECEPTACLES AND J-BOXES. ADDITIONALLY, EC SHALL PROVIDE ORANGE NYLON COVER PLATES MARKED "COMPUTER ONLY" ON ALL ISOLATED GROUND/DEDICATED CIRCUIT RECEPTACLES. PURCHASE PJ8CO (ONE DUPLEX) OR PJ82CO (TWO DUPLEX) FROM HUBBELL.

M6. ROUGH-INS FOR OPTIONAL EQUIPMENT ARE SHOWN ON THESE SHEETS. EC SHALL VERIFY WITH McDONALD'S PROJECT MANAGER WHICH OPTIONAL EQUIPMENT IS TO BE INCLUDED AND INSTALL OPTIONAL ROUGH-INS AS REQUIRED. PRICING FOR OPTIONAL ROUGH-INS SHALL BE INCLUDED IN BID AND CALLED OUT AS OPTIONAL.

M7. EC SHALL COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER, MECHANICAL CONTRACTOR AND GC FOR FINAL LOCATIONS AND CONNECTION REQUIREMENTS OF ALL EQUIPMENT PRIOR TO INSTALLATION OF ANY CONDUIT AND/OR STUB-UP LOCATIONS.

M8. CEILING MOUNTED ECONOMY OEP BOX IS FURNISHED BY McDONALD'S, AND INSTALLED BY THE GC. CORD AND PLUG SET FURNISHED BY KES AND INSTALLED BY THE EC.

M9. FOR GRILLS, FRYERS, AND ANSUL SYSTEMS, EC SHALL EXTEND CONDUIT AND CONDUCTORS DOWN CHASE OR WALL TO TERMINAL BLOCK MOUNTED ON EQUIPMENT AND MAKE FINAL CONNECTIONS TO TERMINAL BLOCKS.

M10. ALL HOLES IN THE FRONT COUNTER FOR THE POS CORDS AND CABLES SHALL BE LOCATED BY OWNER AND DRILLED BY GC.

M11. ALL ELECTRICAL CONDUCTORS SHALL BE CONNECTED TO RECEPTACLES USING ONLY THE TERMINAL SCREWS. RECEPTACLE BACK WIRE/QUICK CONNECTIONS SHALL NOT BE USED. HUBBELL EDGE CONNECT IS APPROVED ALTERNATIVE.

M12. EC SHALL PROVIDE 208V HEAT TRACE ON THE FREEZER EVAPORATOR CONDENSATE DRAIN LINE. HEAT TRACE SHALL OPERATE CONTINUOUSLY. EC SHALL WIRE HEAT TRACE TO FREEZER EVAPORATOR POWER SUPPLY. A SEPARATE CIRCUIT FOR HEAT TRACE IS NOT REQUIRED. VERIFY HEAT TRACE REQUIREMENTS WITH EVAPORATOR MANUFACTURER

M13. POWER AND CONTROL CORDS ARE FURNISHED WITH KITCHEN APPLIANCES. THE EC SHALL CONNECT CORD SETS TO APPLIANCES AS REQUIRED.

M14. GC SHALL NOT INSTALL CEILING TILE IN AREAS OF THE BEVERAGE BAR REFRIGERATION LINES AND EQUIPMENT PENETRATION LOCATIONS UNTIL THE LINES HAVE BEEN INSTALLED. THE CEILING TILE INSTALLER SHALL RETURN AND INSTALL THE TILES AFTER THE REFRIGERATION LINES HAVE BEEN INSTALLED AND TESTED.

UTILITIES:

U1. INCOMING SERVICE SHALL BE 208Y/120V, 3 PHASE, 4 WIRE. ANY DEVIATIONS TO THIS SERVICE TYPE SHALL NOT BE PERMITTED UNLESS APPROVED IN WRITING BY McDONALD'S.

U2. THE EC SHALL ARRANGE WITH THE ELECTRIC, TELEPHONE, AND OTHER UTILITY COMPANIES FOR INCOMING SERVICE REQUIREMENTS AND SHALL INCLUDE ALL COSTS IN BASE BID.

U3. THE EC SHALL VERIFY EXACT METHODS AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANY. CURRENT TRANSFORMERS SHALL BE INSTALLED OUTSIDE RESTAURANT, LOCATE INSIDE ONLY IF REQUIRED BY UTILITY COMPANY OR LOCAL AUTHORITIES.

U4. PROVIDE CONCRETE PAD IF TRANSFORMER IS LOCATED ON GRADE AND PROVIDE SECONDARY SERVICE FEEDER AND CONDUITS TO PANEL MDP AS PER LOCAL UTILITY REQUIREMENTS.

U5. THE EC/GC/ACM SHALL OBTAIN AVAILABLE SHORT CIRCUIT CURRENT FROM THE LOCAL UTILITY COMPANY. THE EC/GC/ACM SHALL ADVISE IN WRITING (FAX SUPPLIER THE UTILITY LETTER) THE AVAILABLE AMOUNT OF FAULT CURRENT. THE PANELBOARD SUPPLIER SHALL BE RESPONSIBLE TO VERIFY THAT THE ELECTRICAL EQUIPMENT SHIPPED HAS APPROPRIATE ELECTRICAL RATINGS WHICH ARE EQUAL TO OR GREATER THAN THE AVAILABLE AMOUNT OF FAULT CURRENT AT THE SITE.

U6. EC AND ACM OR OWNER/OPERATOR AND ACM SHALL COORDINATE WITH LOCAL PHONE COMPANY TO PROVIDE A 10 PAIR (OR MORE) COPPER TELEPHONE CABLE FROM THE TELEPHONE UTILITY EASEMENT TO THE RESTAURANT TELEPHONE DEMARCATION POINT. IF THE TELEPHONE PANEL/BOX IS LOCATED INSIDE THE RESTAURANT, EC SHALL PROVIDE (2) EMPTY 3/4" CONDUITS FROM THE TELEPHONE PANEL/BOX UP TO ABOVE THE CEILING FOR FUTURE TELEPHONE CABLE INSTALLATION. ADDITIONALLY, THE EC SHALL PROVIDE AN EMPTY 3/4" CONDUIT FROM THE TELEPHONE PANEL/BOX TO THE LOCATION OF THE FUTURE INTERNET SERVER (VERIFY LOCATION WITH PM). EC SHALL CONNECT, INSTALL AND INCORPORATE ALL OTHER REQUIREMENTS NECESSARY FOR COMPLETE AND OPERATIONAL TELEPHONE SYSTEM(S) FOR THIS SITE. THE REMAINING UNUSED TELEPHONE CONDUCTOR PAIRS SHALL BE CAPPED AND LEFT IN PLACE FOR FUTURE USE. THE TELEPHONE PANEL/BOX SHALL BE GROUNDED AS SHOWN IN THE "BUILDING ELECTRICAL GROUNDING DETAIL."

U7. EC SHALL PROVIDE A 4" SCHEDULE 40/80 PVC CONDUIT THAT IS SUITABLE FOR DIRECT BURIAL FROM BUILDING TO UTILITY EASEMENT/ROW IN UTILITY CABLING/CONDUIT TRENCH PROVIDED BY GC. CONDUIT SHALL RUN FROM INCOMING TELCOM LOCATION AT BUILDING TO TELECOM PEDESTAL LOCATION IN UTILITY EASEMENT/ROW. VERIFY EXACT LOCATIONS IN FIELD WITH AREA CONSTRUCTION MANAGER AND TELECOM UTILITY PROVIDER PRIOR TO INSTALLATION.

INSTALLATION NOTES:

1. IF TELCOM CONDUIT IS TERMINATED WITHIN BUILDING, PVC SHALL TRANSITION TO HWG/RMC TYPE CONDUIT PRIOR TO RISING ABOVE FINISHED SLAB.
2. PROVIDE THERMOPLASTIC BUSHINGS AT BOTH ENDS OF CONDUIT FOR CABLING PROTECTION.
3. IF 90 DEGREE BENDS ARE REQUIRED, CONTRACTOR SHALL PROVIDE WIDE SWEEPING BENDS TO PREVENT BENDING/DAMAGE TO CABLE
4. ALL COMMUNICATIONS CABLING SHALL BE PULLED VIA THIS CONDUIT.
5. INSTALL A MINIMUM OF 6 PULL WIRES IN CONDUIT TO ALLOW FOR THE INSTALLATION OF FUTURE CABLING. USE NON-DEGRADING POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE OR #12 AWGT SOLID COPPER CONDUCTORS WITH NOT LESS THAN 200 LBF TENSILE STRENGTH. PROVIDE AT LEAST 12 INCHES OF SLACK AT EACH END OF PULL WIRE.
6. AFTER INSTALLATION OF COMMUNICATIONS CABLING AND PULLSTRINGS/WIRES, CONTRACTOR SHALL SEAL BOTH ENDS OF CONDUIT TO PREVENT INTRUSION FROM WEATHER, RODENTS, DEBRIS, ETC. SEAL SHALL BE OF TYPE TO ALLOW FOR REMOVAL FOR INSTALLATION OF FUTURE CABLING

CONDUIT AND WIRE:

W1. THE FOLLOWING WIRING METHODS SHALL NOT BE USED: NON-METALLIC SHEATHED CABLE (ROMEX, NM, NMC, & NMS), ARMORED CABLE TYPE AC (BX), ELECTRICAL NON-METALLIC TUBING, TYPE ENT (SMURF-TUBE).

W2. CONDUIT RUNS MAY BE COMBINED EXCEPT WHERE ISOLATED GROUNDS ARE USED. IG CIRCUITS SHALL BE RUN IN SEPARATE CONDUITS. ALL HOME RUNS SHALL BE SIZED BASED ON DERATED CONDUCTOR AMPACITIES AND INCREASE CONDUIT AND WIRE SIZE AS REQUIRED BY NEC SECTION 310 REQUIREMENTS.

W3. CONDUIT SHALL HAVE A MAXIMUM OF 4 BENDS WITHOUT A JUNCTION BOX TO PREVENT DAMAGE TO CABLE DURING PULLING. THE EC SHALL PIGTAIL #12 PULL WIRE AT EACH END FOR INSTALLER TO PULL CABLE. ALL LOW VOLTAGE CONDUIT STUB-UPS SHALL BE PROVIDED WITH A BUSHING.

W4. MINIMUM WIRE SIZE SHALL BE #12 AWG COPPER UNLESS NOTED OTHERWISE. MINIMUM CONDUIT SIZE SHALL BE 1/2" UNLESS NOTED OTHERWISE. WIRES INSTALLED UNDERGROUND OR OUTDOORS SHALL BE THW.

W5. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID COPPER. CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER. ALUMINUM CONDUCTORS SHALL NOT BE UTILIZED FOR FEEDER OR BRANCH CIRCUIT DISTRIBUTION.

W6. RACEWAYS SHALL BE ANY OF THE FOLLOWING MATERIALS, INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES:

OUTDOORS: (FOR SPECIFIC APPLICATIONS AND APPROPRIATE FITTINGS, SEE TABLE W6)

1. EXPOSED: RMC, IMC.
2. CONCEALED: RMC, IMC.
3. BELOW GRADE, SINGLE RUN: RNC, RMC.
4. BELOW GRADE, GROUPED: RNC, RMC.
5. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): LFMC.
6. BOXES AND ENCLOSURES: NEMA 250, TYPE 3R OR 4.

INDOORS: (FOR SPECIFIC APPLICATIONS AND APPROPRIATE FITTINGS, SEE TABLE W6)

1. EXPOSED: EMT, IMC.
2. CONCEALED: EMT, IMC.

(CONTINUED ON TOP)

3. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC; EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.
4. DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT.
5. BOXES AND ENCLOSURES: NEMA 250, TYPE 1, EXCEPT AS FOLLOWS: A. DAMP, WET OR KITCHEN LOCATIONS: NEMA 250, TYPE 4, STAINLESS STEEL.

TABLE W6:

LOCATION	208V.	480V.	LOW ENERGY*
EXPOSED			
INDOORS	< 1" EMT COMPRESS. FTGS >1.25" IMC THREADED FTGS	IMC THREADED FTGS	EMT COMPR. FTGS
OUTDOORS	RMC OR IMC THREADED FTGS	RMC OR IMC THREADED FTGS	RMC OR IMC THREADED FTGS
CONCEALED			
WALLS	<2" EMT SET SCREW FTGS >2.5" IMC THREADED FTGS	<2" EMT SET SCREW. FTGS >2.5" IMC THREADED FTGS	EMT 1/2"- 2" SET SCREW FTGS 2.5" - 4" COMPR. FTGS
AIR HANDLING CEILING/SPACE	<2" EMT COMPR. FTGS >2.5" IMC THREADED. FTGS	2" EMT COMPR. FTGS < >2.5" IMC THREADED. FTGS	EMT COMPR. FTGS
NON AIR HANDLING CEILING/SPACE	<2" EMT SET SCREW FTGS >2.5" IMC THREADED. FTGS	<2" EMT COMPR. FTGS >2.5" IMC THREADED. FTGS	EMT 1/2" - 2" SET SCREW FTGS 2.5"- 4" COMPR. FTGS
BELOW GRADE			
INTERIOR	IMC THREADED FTGS OR SCHEDULE 40 OR 80 PVC	IMC THREADED FTGS	IMC THREADED FTGS SCHEDULE 40 OR 80 PVC
EXTERIOR	SCHEDULE 40 OR 80 PVC OR RMC THREADED FTGS	SCHEDULE 40 OR 80 PVC OR RMC THREADED FTGS	SCHEDULE 40 OR 80 PVC OR RMC THREADED FTGS

W7. ALL CONDUITS PENETRATING THE FREEZER/COOLER BOX SHALL BE SEALED IN COMPLIANCE NEC SECTION 300 AND THE FREEZER/COOLER BOX MANUFACTURERS REQUIREMENTS.

W8. PROVIDE THREE (3) 3/4" EMPTY CONDUITS FROM PANEL LP-1 UP TO THE CEILING SPACE AND CAP FOR FUTURE USE.

GROUNDING:

G1. ALL BRANCH AND FEEDER CIRCUITS SHALL BE GROUNDED BY TWO METHODS. THE FIRST METHOD SHALL INCLUDE AN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR CONTAINED WITHIN THE SAME CONDUIT AS THE PHASE CIRCUIT CONDUCTORS AND SIZED PER NEC SECTION 250 REQUIREMENTS. THIS INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL HAVE ONE END PROPERLY TERMINATED AT THE EQUIPMENT GROUND BUS IN THE CORRESPONDING CIRCUIT BREAKER PANEL, AND THE OTHER END TERMINATED AT THE GROUNDING CONTACT OF A GROUNDING RECEPTACLE AND TO THE JUNCTION BOX OR TO AN EQUIPMENT CABINET, AS APPLICABLE. THE SECOND METHOD PROVIDES EQUIPMENT GROUNDING VIA METALLIC CONDUIT THAT IS CONNECTED AND TERMINATED IN FITTINGS LISTED FOR GROUNDING PER NEC SECTION 250 REQUIREMENTS. BOTH GROUNDING METHODS ARE REQUIRED IN A MCDONALD'S RESTAURANT. ISOLATED GROUND SHALL BE INSTALLED WHERE INDICATED ON PLAN AND AS SHOWN IN POS ISOLATED GROUND/DEDICATED CIRCUIT DETAIL ON SHEET E4.2.

G2. THE BUILDING GROUNDING SYSTEM SHALL COMPLY WITH NEC ARTICLE 250, MCDONALD'S SPECIFICATIONS, AND SHEET E4.2. CAUTION: IT IS A SAFETY HAZARD AND AN NEC VIOLATION TO HAVE ANY NEUTRAL TO GROUND CONNECTIONS BEYOND THE MAIN ELECTRICAL DISCONNECT MEANS. MCDONALD'S GROUNDING STANDARDS PURPOSELY EXCEED THOSE GIVEN BY THE NEC. THE EC SHALL PROVIDE A BUILDING GROUNDING SYSTEM MEETING NEC SECTION 250 REQUIREMENTS AS WELL AS MCDONALD'S STANDARDS.

G3. EC SHALL REFER TO "POS ISOLATED GROUND/DEDICATED CIRCUIT DETAIL, SHEET E4.2, FOR REQUIRED WIRING REQUIREMENTS OF COMPUTER PANEL CP.

G4. METAL RACEWAYS CONTAINING A GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED AT BOTH ENDS AS REQUIRED BY NEC SECTION 250 REQUIREMENTS.

TEMPERATURE CONTROLS:

T1. REMOTE TEMPERATURE SENSORS: EC SHALL PROVIDE 1/2" CONDUIT FROM JUNCTION BOX ABOVE CEILING DOWN TO SENSOR MOUNTED AT 4'-0" TO 4'-6" AFF.

T2. SEE DETAIL ON SHEET M3.0. FOR SENSOR MOUNTING DETAIL. LOCATION OF WALL MOUNTED TEMPERATURE SENSORS ARE SHOWN ON SHEET M1.2 AND E2.0.

T3. WHEN WIRING FOR PROGRAMMABLE THERMOSTATS AND REMOTE SENSORS IS NOT IN A CONDUIT, THE WIRING SHALL BE RUN TO THE UNDERSIDE OF THE ROOF DECK. NONE OF THE WIRING SHALL BE ROUTED OVER FLUORESCENT BALLASTS, POWER BOXES OR IN A CONDUIT WITH LINE VOLTAGE WIRING AS ELECTRICAL INTERFERENCE (NOISE) WILL CAUSE ERRATIC CONTROL OPERATION. ALL THERMOSTATS SHALL BE MOUNTED 4'-0" AFF.

FLAT PANEL TELEVISIONS:

TV1. EC SHALL PROVIDE A DUPLEX RECEPTACLE AND A LOW VOLTAGE BROADBAND CONNECTION FOR THE INSTALLATION OF FLAT PANEL TELEVISIONS. COORDINATE EXACT LOCATIONS WITH DECOR COMPANY. FOR BROADBAND CONNECTION, EC SHALL PROVIDE A 4 X 4 BOX WITH A 3/4" CONDUIT STUB-UP WITH A BUSHING INTO ACCESSIBLE CEILING SPACE.

ELECTRICAL PANELS:

E1. THE EC SHALL BE RESPONSIBLE FOR BALANCING THE LOADS ON ALL PANELS.

E2. THE EC SHALL PROVIDE ELECTRICAL SERVICE TO THE EQUIPMENT MOUNTED BREAKER PANEL. SEE ELECTRICAL ROUGH-IN PLAN AND SCHEDULE FOR ALL REQUIREMENTS.

E3. THE EC SHALL BE RESPONSIBLE FOR THE PROPER IDENTIFICATION AND LABELING OF ALL CIRCUIT BREAKERS. EACH PANEL SHALL BE PROVIDED WITH AN ACCURATE TYPEWRITTEN CIRCUIT DIRECTORY AT THE CONCLUSION OF THE PROJECT AND PRIOR TO RESTAURANT OPENING.

SECURITY AND DRIVE-THRU CAMERAS:

S1. EC TO PROVIDE ELECTRICAL POWER AND COMMUNICATION CONDUITS FOR BUILDING MOUNTED SECURITY AND DRIVE THRU CAMERAS. COORDINATE FINAL LOCATIONS WITH SECURITY AND DRIVE THRU CAMERA INSTALLERS.

LIGHTING:

L1. PROVIDE A WEATHERPROOF JUNCTION BOX IN PARAPET FOR FASCIA SIGN. FINAL CONNECTION BY OTHERS.

L2. COORDINATE THE LOCATION OF JUNCTION BOX (IN THE WALL) WITH THE OPENING IN TRELLIS (FOR THE LIGHT FIXTURE WIRES). THE LOCATION OF THE JUNCTION BOX AND THE OPENING IN THE TRELLIS SHALL BE ALIGNED FOR THE LIGHT FIXTURE TO BE INSTALLED PROPERLY. COORDINATE INSTALLATION OF JUNCTION BOX AND ANY NECESSARY OPENINGS IN TRELLIS WITH GC AND TRELLIS/CANOPY MANUFACTURER. SEE LIGHT FIXTURE INSTALLATION INSTRUCTIONS FOR REQUIREMENTS REGARDING MOUNTING BRACKETS FOR USE IN C-CHANNEL TRELLISES.

L3. EC SHALL FIELD VERIFY THAT LIGHT FIXTURES DO NOT OBSTRUCT OR CONFLICT WITH THE WORK OF OTHER TRADES. IF A DISCREPANCY IS FOUND, THE EC SHALL IMMEDIATELY NOTIFY THE GC BEFORE THE THE INSTALLATION OF SUCH FIXTURE(S). EC SHALL COORDINATE LOCATIONS OF ALL LIGHT FIXTURES IN DINING AREA WITH FINAL SEATING AND DECOR PLANS.

L4. IF PC-POS CASH REGISTER SYSTEM IS INSTALLED, EC SHALL RELOCATE FIXTURES ABOVE FRONT COUNTER TO AVOID GLARE ON THE CASH REGISTER SCREENS. EC SHALL INSTALL CABLE WHIP TO FIXTURES SO THAT FIXTURE MAY BE RELOCATED FOUR FEET WITHOUT DISCONNECTING CABLE WHIP.

L5. EC SHALL COORDINATE LOCATION OF ALL EXTERIOR LIGHTS TO AVOID INTERFERENCE WITH ANY CORBELS, TRUSSES, BEAMS OR OTHER SPECIAL EXTERIOR TREATMENTS. INSTALL LIGHT FIXTURES WITH CORRECT ORIENTATION PER MANUFACTURER'S INSTRUCTIONS

L6. THE USE OF INTERLOCK TYPE "MC" CABLE IN LENGTHS OF 6 FEET OR LESS (WHERE PERMITTED BY LOCAL CODES) SHALL BE ALLOWED FOR WIRING TO INTERIOR LIGHTING FIXTURES. "ROMEX" OR "BX" SHALL NOT BE USED.

L7. EC SHALL VERIFY THAT NOT MORE THAN 3% VOLTAGE DROP EXISTS FROM THE LIGHTING PANEL TO ANY EXTERIOR LIGHTING FIXTURE OR SIGNAGE BALLAST.

L8. WHERE MCDONALD'S RESTAURANT HAS A PLAYPLACE, THE EC SHALL COORDINATE EXACT LOCATION OF PLAYPLACE LIGHTING WITH PLAYPLACE TOY VENDOR FOR MAXIMUM ILLUMINATION AND SAFETY PER THE FINAL LOCATION OF THE PLAYPLACE TOY. LIGHTING FIXTURES SHALL NOT BE MOUNTED TO THE TOY OR ANY PART OF THE TOY STRUCTURE.

L9. EC SHALL VERIFY ALL TAP SETTINGS FOR H.I.D. LIGHTING FIXTURES AND MAKE ANY NECESSARY CORRECTIONS PRIOR TO INSTALLATION.

REV	DATE	DESCRIPTION	BY

JOHN DALE FERGUSON REGISTERED No. 10820546 STATE OF INDIANA PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY: CORE STATES GROUP
212 SE 34th. Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

PREPARED FOR: McDonald's USA, LLC

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DRAWN BY: DA
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 11/25/25

TITLE: 2025 OPTIMIZED BUILDING - BB20 4590-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

SHEET NO. 013.1263.00.0
E3.1
NOTES & DETAILS

Q:\RESTAURANTS\MCDONALDS CORPORATION\LANCER ASSOCIATES ARCHITECTURE\BROWNSBURG, IN (7030 NORTHFIELD DR) 013- - LNA.25.41913.01\DESIGN FILES\ARCHITECTURE\ELEC.DWG 11-21-2025 13:29

SEQUENCE OF OPERATION:

1. TURNING "ON" ANY PIECE OF COOKING EQUIPMENT UNDER A HOOD WILL TURN ON THE EXHAUST FAN AND ASSOCIATED RTU PROVIDING MAKEUP AIR FOR THAT HOOD.
2. TURNING "OFF" THE LAST PIECE OF COOKING EQUIPMENT UNDER A HOOD WILL TURN OFF THE EXHAUST FAN FOR THAT HOOD.
3. IF THE ANSUL SYSTEM SHOULD DISCHARGE WHILE THE COOKING EQUIPMENT AND EXHAUST FAN ARE OPERATING, THE COOKING EQUIPMENT WILL BE SHUT OFF, BUT THE EXHAUST FAN WILL CONTINUE TO RUN AND WILL FORCE THE ROOFTOP UNITS INTO A "SCHEDULED" MODE
4. THE ANSUL SYSTEM MUST BE RECHARGED AND MANUALLY RESET BEFORE THE COOKING EQUIPMENT WILL AGAIN BE ABLE TO OPERATE.
5. THE ON/OFF SWITCH ON THE EXHAUST FAN IS NORMALLY KEPT IN THE "ON" POSITION. IF IT IS TURNED OFF FOR SERVICE, THE COOKING EQUIPMENT WILL TURN OFF AND NOT BE ABLE TO OPERATE UNTIL THE EXHAUST FAN ON/OFF SWITCH IS AGAIN TURNED ON.

INTERLOCK DIAGRAM LEGEND

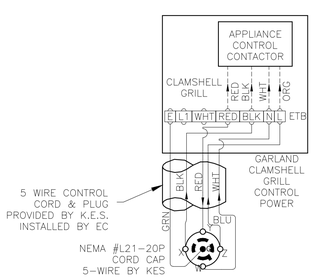
- ● TERMINAL BLOCK IN CHASE
- CTB – CHASE TERMINAL BLOCK, PROVIDED AND INSTALLED BY KITCHEN EQUIPMENT SUPPLIER
- ETB – EQUIPMENT TERMINAL BLOCK
- EFCR – EXHAUST FAN CONTROL RELAY. PROVIDED BY CONTRACTOR.
- IGR – INTERNAL GRILL RELAY PROVIDED WITHIN GARLAND GRILLS
- MS – ANSUL MICROSWITCH PROVIDED BY KITCHEN EQUIPMENT SUPPLIER
- >> CONTROL CORD PLUG & RECEPTACLE
- —— FIELD WIRING
- ═══ CONTROL CORD/INTERNAL WIRING
- - - - FACTORY WIRING
- ═══ EQUIPMENT OR ENCLOSURE

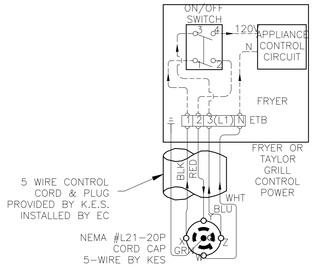
COOKING EQUIPMENT EXHAUST FAN	MAKE UP PROVIDED BY
EF/1	RTU–3
EF/2	RTU–1
EF/3	RTU–2

NOTE
RTU # ASSOCIATED WITH EACH EXHAUST FAN BASED ON PROTOTYPICAL VALUES ONLY. VERIFY THAT EXHAUST FAN ACTIVATES THE CORRESPONDING RTU TO PROVIDE AN ADEQUATE AMOUNT OF MAKEUP AIR.

1 E-3.2 **TYPICAL MAKEUP AIR RTU EXHAUST FAN SCHEDULE**
FOR REFERENCE ONLY

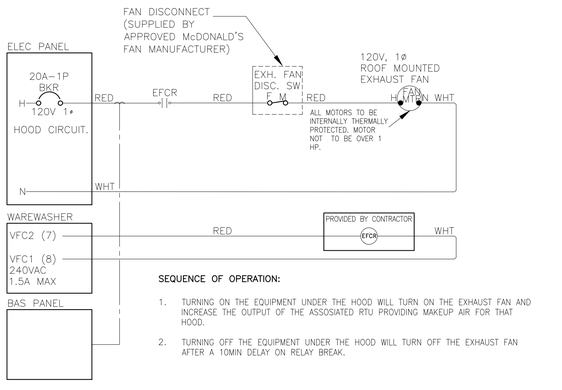
REVISED: 6/18





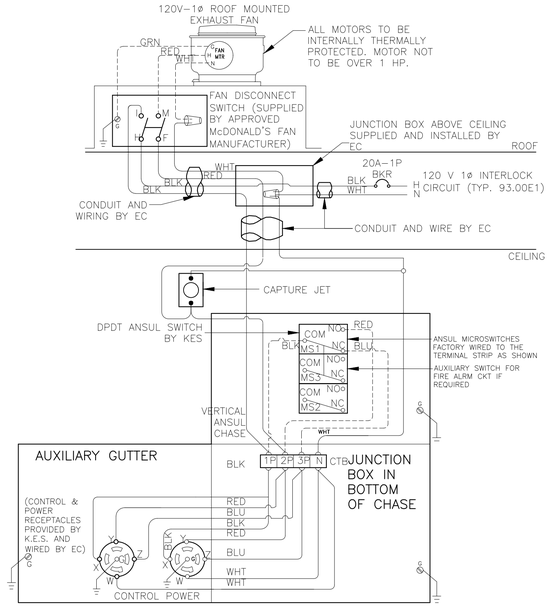
4 E-3.2 **CONTROL CORD CONNECTION**
FOR REFERENCE ONLY

REVISED: 6/18



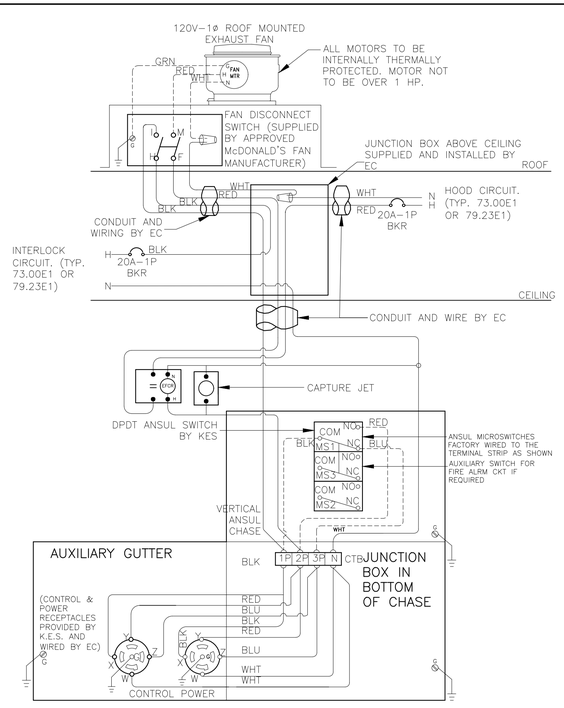
7 E-3.2 **INTERLOCK LADDER DIAGRAM FOR EXHAUST FAN AND WAREWASHER**
FOR REFERENCE ONLY

REVISED: 02/24



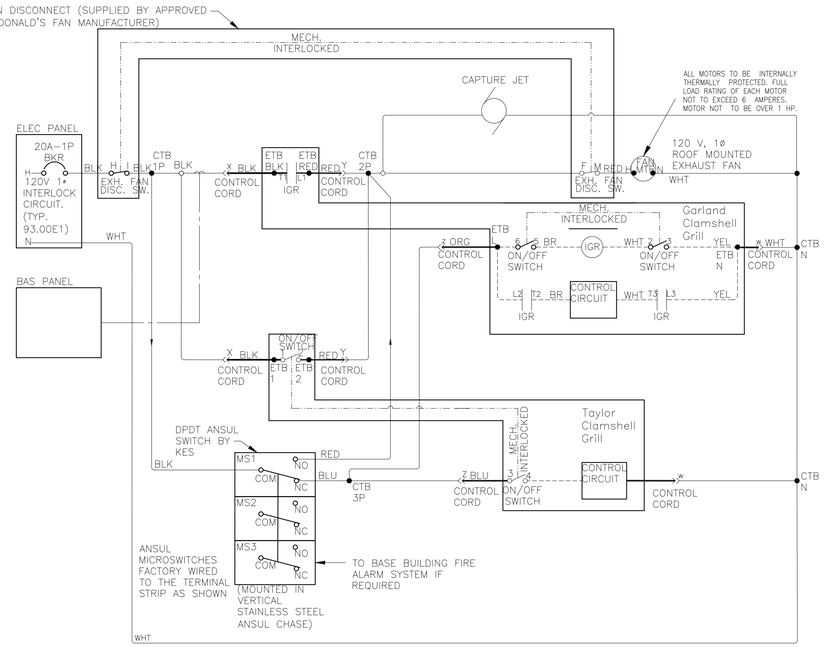
2 E-3.2 **INTERLOCK WIRING DIAGRAM FOR EXHAUST FAN AND COOKING EQUIPMENT**
FOR REFERENCE ONLY

REVISED: 6/18



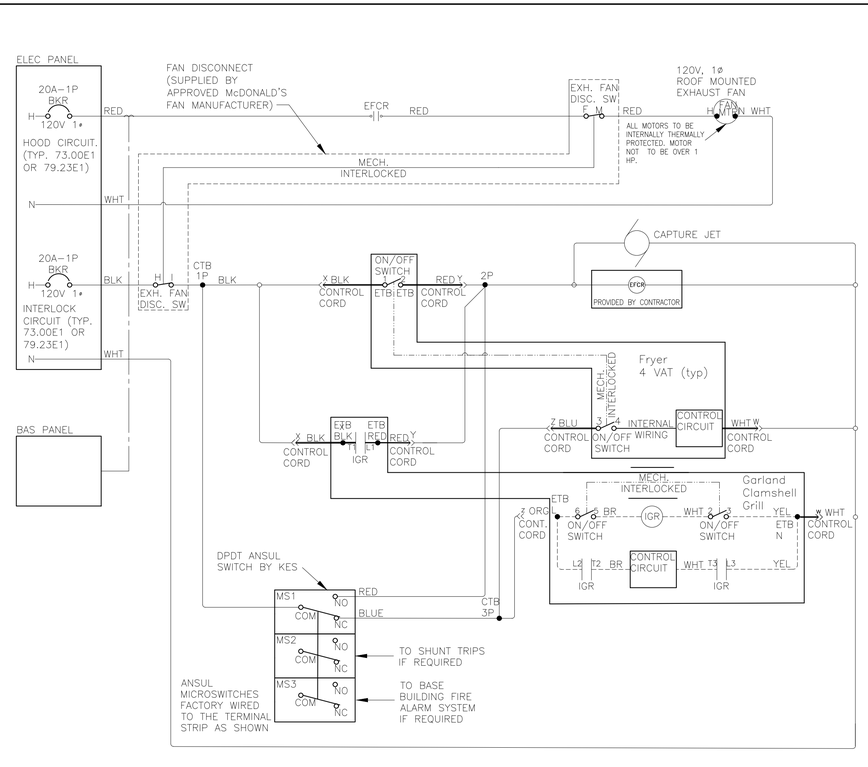
5 E-3.2 **INTERLOCK WIRING DIAGRAM FOR EXHAUST FAN AND COOKING EQUIPMENT**
FOR REFERENCE ONLY

REVISED: 6/18



3 E-3.2 **INTERLOCK LADDER DIAGRAM**
FOR REFERENCE ONLY

REVISED: 6/18



6 E-3.2 **INTERLOCK LADDER DIAGRAM**
FOR REFERENCE ONLY

REVISED: 6/18

REV	DATE	DESCRIPTION	BY

DONDALE FERGUSON — REGISTERED — STATE OF INDIANA — PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY:
CORE STATES GROUP
12140 Woodcrest Executive Drive, Suite 2
Saint Louis, MO 63141
314.692.2400
www.corestates.com

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PREPARED FOR:
McDonald's USA, LLC

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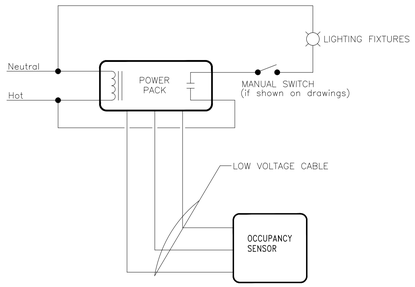
DRAWN BY	REVIEWED BY	DATE ISSUED
DA	DL	11/25/25
STD ISSUE DATE 2025 05		

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

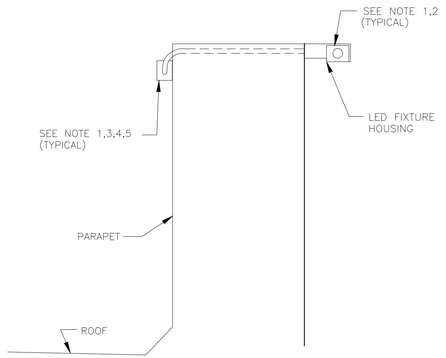
SHEET NO.
013.1263.00.0
E3.2
INTERLOCK DIAGRAMS



NOTES:

1. REFER TO LIGHTING PLAN FOR OCCUPANCY SENSOR LOCATIONS AND QUANTITIES.

1 / E-4.0 **OCCUPANCY SENSOR CONTROL DETAIL**
NOT TO SCALE



3 / E-4.0 **BRAND WALL LIGHTING DETAIL**
NOT TO SCALE

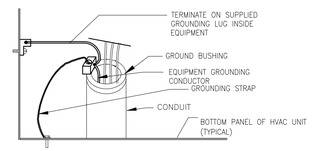
GENERAL NOTES

1. PLACE LED FIXTURE AT DESIRED LOCATION AND INSTALL FIXTURE FROM LEFT TO RIGHT WHEN FACING ARCADE AND ATTACH POWER SUPPLY AND MOUNTING BRACKET AS RECOMMENDED BY MANUFACTURER.
2. EC SHALL CONNECT NEW FIXTURES TO THE NEXT AVAILABLE SPARE 120V CIRCUIT AND MAKE ALL ELECTRICAL CONNECTIONS AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
3. POWER SUPPLY SHALL ALWAYS BE INSTALLED TO THE LEFT SIDE OF FIXTURE WHEN FACING ARCADE.
4. OVERALL FIXTURE RUN TO BE CENTERED ON OVERALL LENGTH OF WALL.
5. CONNECT NEW LED FIXTURES TO EXISTING LIGHTING CIRCUIT(S) AS REQUIRED. ENSURE THAT CIRCUIT BREAKER AND CONDUCTOR SIZES DO NOT EXCEED 1200 WATTS ON A 15A CIRCUIT AND 1600 WATTS ON A 20A CIRCUIT. VERIFY EXISTING CONDITIONS AND REQUIREMENTS IN FIELD. PROVIDE ADDITIONAL CIRCUITS (C.B.,WIRING,CONDUITS) AS REQUIRED.

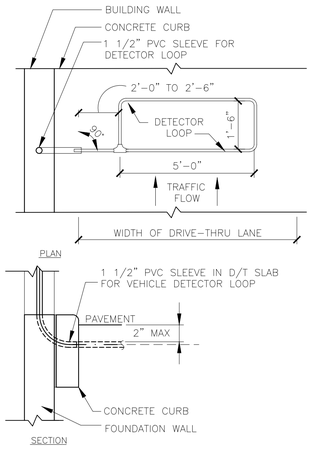
CONDUIT, WIRE SIZE AND GROUNDING FOR HVAC UNITS

HACR BRKR SIZE	CONDUIT & WIRE SIZE
40A	1"C–3#8
45A	1"C–3#6
50A	1"C–3#6
60A	1"C–3#6
70A	1–1/4"C–3#4
80A	1–1/4"C–3#3
90A	1–1/4"C–3#3
100A	1–1/4"C–3#2
125A	1–1/2"C–3#1
150A	1–1/2"C–3#1/0
175A	2"C–3#2/0
200A	2"C–3#3/0
225A	2"C–3#4/0
250A	2–1/2"C–3#250

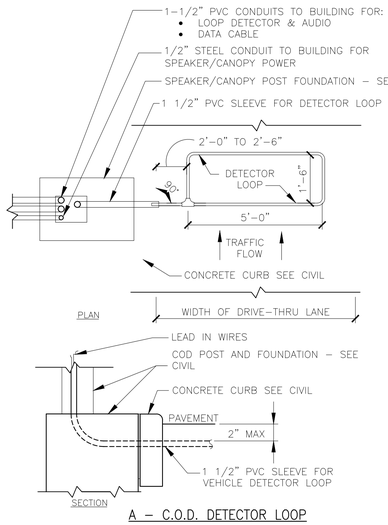
THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION OF ALL ELECTRICAL FEEDERS AND CIRCUIT BREAKERS WITH THE MANUFACTURER'S WRITTEN DATA FOR EACH MECHANICAL DEVICE PRIOR TO SUBMITTAL OF ANY ELECTRICAL EQUIPMENT FOR REVIEW. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY CHANGES TO ELECTRICAL FEEDERS OR CIRCUIT BREAKERS REQUIRED FOR ANY MECHANICAL DEVICES.



4 / E-4.0 **HVAC GROUNDING DETAIL**
NOT TO SCALE



B – DT WINDOW DETECTOR LOOP

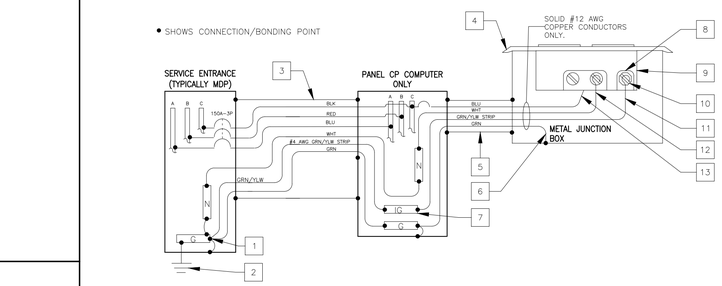


A – C.O.D. DETECTOR LOOP

2 / E-4.0 **DETECTOR LOOP DETAILS**
NOT TO SCALE

NOTES

1. VERIFY CONDUIT SIZES AND LAYOUT WITH DETECTOR LOOP MANUFACTURER.
2. CENTER VEHICLE DETECTOR LOOP (ITEM # 217.11E1) IN DRIVE THRU LANE. INSTALL PER MFR. RECOMMENDATIONS.
3. SEE CIVIL FOR DIMENSIONS OF DRIVE–THRU LANE CONCRETE PAD FOR DETECTOR LOOP.
4. NO STEEL (REBAR OR ELECTRICAL WIRE) SHALL BE USED WITHIN 2' OF LOOP.
5. DETECTOR LOOP MANUFACTURERS:
   DETECTOR LOOPS MAY BE BY ONE OF THE FOLLOWINGS COMPANIES OR EQUAL.
   3M: 1–800–328–0033
   HME: 1–800–848–4468
6. DETECTOR LOOP MATERIAL:
   PVC TUBING 1/2" I.D. 100 PSI LOOP MADE FROM ONE LENGTH OF THIN FOURTEEN GAUGE STRANDED WIRE. LEAD–IN IS PRE–TWISTED AT FACTORY.
7. DETECTOR LOOP CONSTRUCTION:
   FORMED WITH ONE CONTINUOUS LENGTH OF PVC WITH NO SHARP CORNERS AS DETAILED. WIRE LOOPED, FORMED, & PIGTAILED AS DETAILED.



NOTES

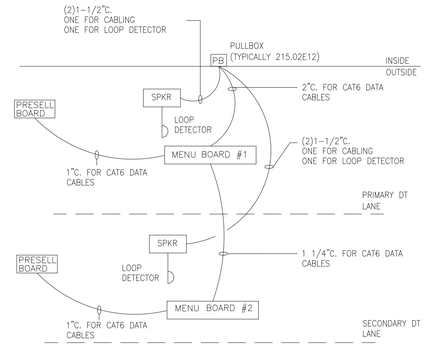
1. ALL P.O.S. EQUIPMENT (COMPUTERS,PRINTERS,MONITORS KVS, MODEM, HUB & COD) SHALL BE POWERED FROM THE COMPUTER PANEL.

   ALL OTHER COMPUTER/DIGITAL EQUIPMENT SHALL BE POWERED FROM PHASE "A" IN THE COMPUTER PANEL.
2. ISOLATED GROUND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF NEC SECTION 250 .
3. EACH 20 AMP CIRCUIT SHALL HAVE IT'S OWN ISOLATED EQUIPMENT GROUNDING CONDUCTOR.
4. ENTIRE GROUNDING SYSTEM SHALL COMPLY WITH NEC ARTICLE 250 AND MCDONALD'S BUILDING GROUNDING DETAIL.
5. EC SHALL VERIFY CORRECT POLARITY AT RECEPTACLE.
6. EC SHALL VERIFY THAT SUBPANEL CP DOES NOT CONTAIN ANY ILLEGAL NEUTRAL TO GROUND BONDS.
7. PANEL CP SHALL ONLY BE USED TO POWER SENSITIVE ELECTRONIC EQUIPMENT, AS OUTLINED IN NOTE #1. IT SHALL NOT BE USED TO POWER ANY OTHER LOADS.
8. IT IS A SAFETY HAZARD AND AN NEC VIOLATION FOR THE POS SYSTEM TO HAVE ITS OWN INDEPENDENT GROUNDING ROD. IF AN INDEPENDENT GROUND ROD IS FOUND FOR THE POS SYSTEM, IT SHALL BE BONDED TO THE BUILDING GROUNDING SYSTEM.

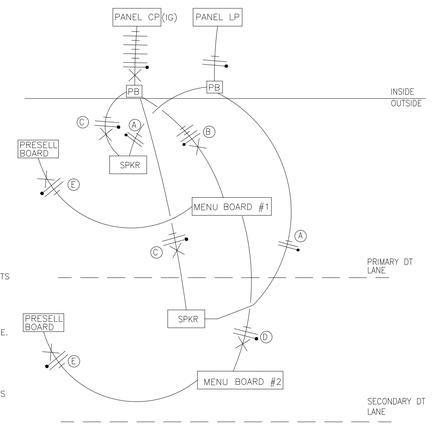
KEY NOTES

1. THIS IS THE ONLY POINT WHERE THE ISOLATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE BUILDING'S GROUNDING SYSTEM.
2. SEE BUILDING GROUNDING DETAIL SHEET E4.2.
3. 2" METAL CONDUIT: 4–#1/0 CU + 1–#6 CU EQUIP GND + 1–#4 CU ISOLATED GND.
4. ALL ISOLATED GROUND/ DEDICATED CIRCUIT RECEPTACLE COVER PLATES SHALL BE ORANGE HUBBELL PJ7CO (SINGLE), PJ8CO (ONE DUPLEX) OR PJ82CO (TWO DUPLEX) MARKED "COMPUTER ONLY".
5. METAL CONDUIT SHALL CONTAIN ONLY P.O.S. CIRCUIT CONDUCTORS (DEDICATED CIRCUIT). ONLY USE RIGID NON–METALLIC CONDUIT BELOW GRADE WHEN REQUIRED BY LOCAL CODE.
6. EQUIPMENT GROUNDING BONDING CONDUCTOR (TYPICAL)
7. ISOLATED GROUND BUS, ELECTRICALLY INSULATED FROM PANEL ENCLOSURE USED TO TERMINATE ONLY ISOLATED EQUIPMENT GROUNDING CONDUCTORS.
8. ALL CONDUCTORS SHALL BE SOLID COPPER AND TERMINATED TO THEIR APPROPRIATE TERMINAL SCREWS BY WRAPPING THE CONDUCTOR COMPLETELY AROUND THE SCREW BARREL AND TIGHTENING THE SCREW PER MANUFACTURER'S TORQUE SPECIFICATIONS.
9. ISOLATED GROUND RECEPTACLE HUBBELL–IG4700,IG4710,IG5262 OR IG5261. SEE ROUGH IN SCHEDULE FOR THE APPROPRIATE RECEPTACLE TO USE.
10. ISOLATED GREEN GROUND SCREW.
11. ISOLATED EQUIPMENT GROUNDING CONDUCTOR (GRN W/YLW STRIP)
12. NEUTRAL CONDUCTOR TERMINATED ON SILVER SCREW.
13. PHASE CONDUCTOR TERMINATED ON BRASS SCREW

5 / E-4.0 **POS & COD ISOLATED GROUND/DEDICATED CIRCUIT**
NOT TO SCALE



DT LOW VOLTAGE CONDUIT DIAGRAM
NOT TO SCALE



NOTE:

* VERIFY EXACT CIRCUITS & QUANTITIES OF CIRCUITS WITH PANEL SCHEDULES AND MANUFACTURERS INSTALLATION INSTRUCTIONS.
* VERIFY LOW VOLTAGE CABLE COUNT WITH POS INSTALLER. LOW VOLTAGE CABLE SUPPLIED AND TERMINATED BY POS INSTALLER. EC TO PULL CABLE.

(A) 2#12 & 1#12 GND. TO LP–1 FOR COD CANOPY LIGHTING.
(B) 4#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO MENUBOARDS AND MEDIA PLAYERS.
(C) 2#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO SPEAKER CANOPY/STAND. EACH CANOPY/STAND SHALL BE ON ITS OWN SEPARATE CIRCUIT.
(D) 2#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO MENUBOARDS AND MEDIA PLAYERS.
(E) 2#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO FOR PRESELL BOARDS AND MEDIA PLAYER.

DRIVE THRU POWER DIAGRAM
NOT TO SCALE

NO.	DESCRIPTION	DATE	BY

DONALE FERGUSON REGISTERED ARCHITECT STATE OF INDIANA PROFESSIONAL ENGINEER

11/21/2025

PREPARED BY:
CORE STATES GROUP
7210 E 56th Street, Suite 2
Indianapolis, IN 46226
317.549.1000
www.corestates.com

PREPARED FOR:
McDonald's USA, LLC

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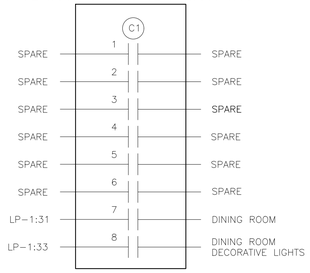
DRAWN BY: DA
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 11/25/25

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI WOOD TRUSS ROOF FRAMING E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH
NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

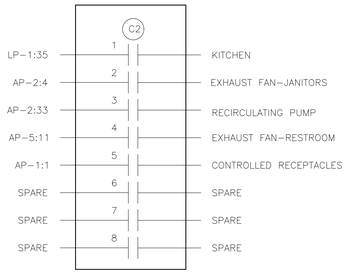
SHEET NO.: E4.0
013.1263.00.0
WIRING DETAILS

LIGHTING CONTROL SYSTEM

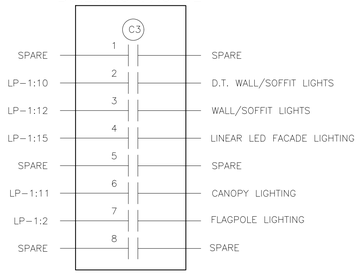
INTERIOR CUSTOMER LIGHTING



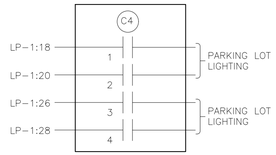
INTERIOR CREW LIGHTING



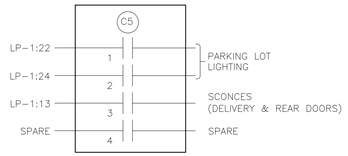
BUILDING FACADE



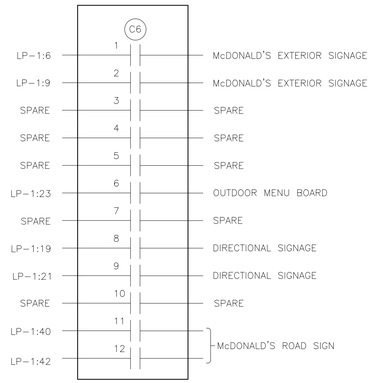
EXTERIOR LIGHTING



EXTERIOR LIGHTING



EXTERIOR SIGNAGE



INTERIOR LIGHTING CONTROL SCHEDULE							
	LOCAL CONTROL	MANUAL ON	PARTIAL ON	MULTI LEVEL	DAYLIGHTING	AUTO OFF	SCHEDULE OFF
DINING	MANAGERS OFFICE		X		X		X
KITCHEN	MANAGERS OFFICE		X				X
SUPPORT/STOCK	X					X	
CREW	X	X		X		X	
MANAGER	X	X		X		X	
BATHROOM						X	
SMALL STORAGE	X	X				X	
ENTRY VESTIBULE							X

NOTES:
1. LOCAL CONTROL: MANUAL LIGHTING CONTROL THAT PROVIDES ON AND OFF CONTROL IN SPACE. REMOTE LOCATION CONTROL DEVICE MUST BE LABELED TO IDENTIFY CONTROLLED LIGHTING.
2. MANUAL ON: NONE OF THE LIGHTING SHALL BE AUTOMATICALLY TURNED ON.
3. PARTIAL ON: 50% OF THE GENERAL LIGHTING SHALL BE AUTOMATICALLY TURNED ON.
4. MULTI LEVEL: GENERAL LIGHTING SHALL BE FITTED WITH A MANUAL CONTROLLED CONTINUOUS DIMMER.
5. DAYLIGHTING: REQUIRED WHEN PRIMARY AND SECONDARY ZONES CONTAIN 150W OF GENERAL LIGHTING. PHOTOCONTROL SHALL REDUCE LIGHTING IN RESPONSE TO AVAILABLE DAYLIGHT USING CONTINUOUS DIMMING TO 20% AND OFF.
6. AUTO OFF: ALL LIGHTING INCLUDING LIGHTING CONNECTED TO EMERGENCY CIRCUITS SHALL BE AUTOMATICALLY SHUT OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING THE SPACE.
7. SCHEDULE OFF: ALL LIGHTING, INCLUDING LIGHTING CONNECTED TO EMERGENCY CIRCUITS, SHALL BE AUTOMATICALLY SHUT OFF DURING PERIODS WHEN THE SPACE IS SCHEDULED TO BE UNOCCUPIED.
8. 0.02W PER SQUARE FT OF BUILDING ALLOWED TO BE CONTINUOUSLY LIT.

EXTERIOR LIGHTING CONTROL SCHEDULE			
	TIME CLOCK	PHOTCELL	OCCUPANCY SENSOR
POLE LIGHTING	X	X	X
BUILDING MOUNT LIGHTING	X	X	
SIGNAGE	X	X	

NOTES:
1. TIME CLOCK: LIGHTING SHALL BE AUTOMATICALLY SHUT OFF BETWEEN BUSINESS CLOSING (OR MIDNIGHT) AND BUSINESS OPENING (OR 6AM) WHICHEVER PROVIDES THE SHORTEST OFF DURATION.
2. PHOTOCELL: LIGHTING SHALL BE AUTOMATICALLY TURNED OFF WHEN SUFFICIENT DAYLIGHT IS AVAILABLE.
3. OCCUPANCY SENSOR: LIGHTING SHALL AUTOMATICALLY REDUCE THE CONNECTED LIGHTING POWER BY 50% WHEN NO ACTIVITY HAS BEEN DETECTED IN AREA IN 15 MINUTES. NO MORE THAN 1500W OF LIGHTING PER CONTROL ZONE.

LIGHTING CONTROL NOTES:

LIGHTING CONTROL NOTES

LC1. CONTACTOR DETAILS ARE DIAGRAMMATIC ONLY AND ARE SHOWN WITH TYPICAL LOADS AND CIRCUIT ASSIGNMENTS. LOADS, CIRCUIT ASSIGNMENTS AND NUMBER OF CONTACTORS MAY VARY BY RESTAURANT LOCATION AND PER BAS SUPPLIERS SYSTEMS. VERIFY EXACT REQUIREMENTS WITH BAS INSTALLATION DETAILS, SITE PLANS, ELECTRICAL PANEL SCHEDULES AND ACM. EC SHALL MAKE ALL MODIFICATIONS AS REQUIRED. FINAL INSTALLATION SHALL BE FULLY NEC AND ENERGY CODE COMPLIANT.

LC2. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL WIRING, CONNECTIONS, TERMINATIONS, ETC. THAT ARE NOT PROVIDED BY THE BAS SUPPLIER FOR A COMPLETE, FULLY OPERATIONAL AND CODE COMPLIANT LIGHTING CONTROL SYSTEM.

LC3. ALL COMPONENTS FOR THIS LIGHTING CONTROL SYSTEM SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE BOXED NOTE BELOW FOR OPTIONS.

LC4. ALL COMPONENTS SHALL BE UL LISTED AND LABELED AND THE SYSTEM SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL ENERGY CODE REQUIREMENTS.

LC5. ALL CONTACTORS SHALL BE LOCATED IN A NEMA 1 ENCLOSURE WITH SCREW TYPE COVER MOUNTED DIRECTLY ABOVE LIGHTING PANEL OR SWITCHGEAR SO AS TO BE ACCESSIBLE.

LC6. ALL CONTACTORS SHALL BE RATED FOR 30 AMP LOADS UNLESS NOTED OTHERWISE AND SHALL BE HID RATED WHERE REQUIRED.

LC7. COIL VOLTAGES FOR ALL CONTACTORS SHALL BE 120 VOLT UNLESS NOTED OTHERWISE.

LC8. CONTACTOR C5 IS INTENDED TO CONTROL PARKING LOT LIGHTS NEAR TRASH CORRAL, DELIVERY DOORS, AND EMPLOYEE PARKING, THUS ALLOWING A DIFFERENT LIGHTING SCHEDULE TO BE USED IN THOSE AREAS.

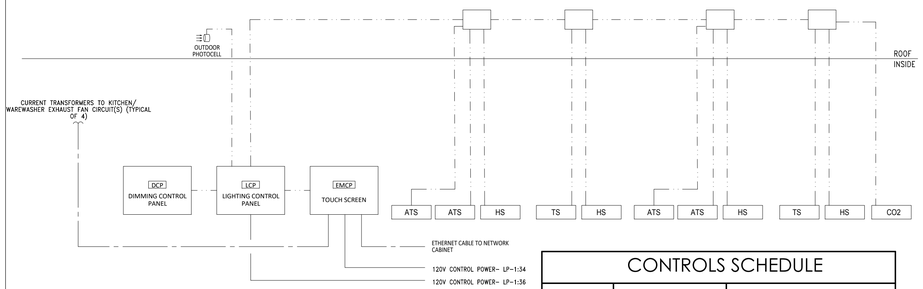
LIGHTING CONTROL INSTALLATION OPTIONS

OPTION 1 (STANDARD) CONTACTORS AND CONTACTOR ENCLOSURE FOR THIS LIGHTING CONTROL SYSTEM SHALL BE FURNISHED BY THE BAS SUPPLIER AND INSTALLED BY THE ELECTRICAL CONTRACTOR ON SITE FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

OPTION 2 (OPTIONAL) LIGHTING CONTROL CAN BE ACCOMPLISHED VIA UTILIZATION OF A SMART TYPE BREAKER PANEL REPLACING STANDARD PANEL LP-1. PANEL SHALL UTILIZE AN INTEGRAL MOTOR OPERATED CIRCUIT BREAKERS OR AN INTEGRAL CIRCUIT BREAKER/CONTACTOR TYPE COMBINATION DEVICE WITH AN INTEGRAL PROGRAMMING CONTROL MODULE AND SHALL BE ORDERED THROUGH OUR ELECTRICAL EQUIPMENT NATIONAL ACCOUNT PROGRAM (SQUARE-D) THROUGH OUR CONSTRUCTION PURCHASING TEAM.

BUILDING AUTOMATION SYSTEM

INSTALLATION & TECHNICAL ASSISTANCE INFORMATION:
LENNOX BAS: McD@CCBAC.com



PROVIDE AND INSTALL DATA OUTLET NEXT TO BAS PANEL. REMOTE COMMISSIONING IS NOT POSSIBLE WITHOUT DATA CONNECTION.

INSTALLATION NOTES:

1. PROVIDE, INSTALL AND SECURE ALL NECESSARY CABLE & CONDUIT PER BAS DRAWINGS AND SPECIFICATIONS.
2. MOUNT ALL BAS CONTROL ENCLOSURES.
3. PERFORM ALL LOW VOLTAGE TERMINATIONS.
4. ROUGH-IN, INSTALLATION AND WIRING FOR TEMPERATURE SENSORS AND TOUCHSCREEN PER PLAN LOCATIONS.
5. PROVIDE POWER CIRCUITS INTO CONTROL CANS PER BAS DETAILS.
6. COORDINATE WITH SUPPLIER TO SCHEDULE REMOTE COMMISSIONING.
7. CORRECT ALL PUNCH LIST ITEMS FOUND DURING REMOTE COMMISSIONING.

CONTROLS SCHEDULE		
MARK	DESCRIPTION	MANUFACTURER MODEL
TS	TEMPERATURE SENSOR	*PROVIDED WITH BAS
ATS	AVERAGING TEMPERATURE SENSOR	*PROVIDED WITH BAS
HS	HUMIDITY SENSOR	*PROVIDED WITH BAS

NOTES:
1. FOR TS, HS AND ATS LOCATIONS, REFER TO M1.2

WIRE LEGEND	
MARK	WIRE/CABLE TYPE
—— - ——	CAT 5E
—— · ——	18 AWG CONDUCTORS

BUILDING AUTOMATION SYSTEM NOTES

BAS1. THE DIAGRAM SHOWN ABOVE IS SCHEMATIC IN NATURE AND SHOWS THE GENERAL REQUIREMENTS FOR THE INSTALLATION OF THE BUILDING AUTOMATION SYSTEM. EXACT EQUIPMENT REQUIREMENTS AND QUANTITIES WILL VARY PER SITE. G.C., M.C., T.C.C. AND E.C. SHALL COORDINATE ALL EXACT EQUIPMENT AND INSTALLATION REQUIREMENTS WITH SUPPLIER PRIOR TO SUBMITTING BID FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

BAS2. THE BUILDING AUTOMATION SYSTEM ALSO HAS ADDITIONAL OPTIONS AVAILABLE SUCH AS MONITORING DOOR CONTACTS (RESTROOM & COOLER FREEZER), ENERGY METER, COOLER/FREEZER TEMP. ADDITIONAL OPTIONS MAY BE SELECTED ON CENTRAL PURCHASING PROJECT DETAIL FORM. G.C., M.C., T.C.C. AND E.C. SHALL COORDINATE ALL EXACT INSTALLATION REQUIREMENTS WITH SUPPLIER PRIOR TO SUBMITTING BID FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

BAS3. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LINE AND LOW VOLTAGE WIRING AND CONNECTIONS, INCLUDING BUT NOT LIMITED TO CONTROL POWER TO ALL BAS COMPONENTS AND POWER CIRCUITRY WIRING OF ALL LIGHTING CONTACTORS. COORDINATE INSTALLATION WITH SITE SPECIFIC BAS INSTALLATION DETAILS PROVIDED BY SUPPLIER.

BY	DESCRIPTION	DATE	REV
TPF			

DONALD FERGUSON REGISTERED STATE OF INDIANA PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY: CORE STATES GROUP
7210 E 96th Street, Suite 2
Fishers, IN 46038
317.842.2273
www.corestates.com

PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED
DA	2025 05	DL	11/25/25

TITLE: 2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & C
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

SITE ADDRESS:
7030 Northfield Dr. BROWNSBURG, IN

NSN: 013.1263

SHEET NO. 013.1263.00.0
E4.1
LIGHTING CONTROLS

MLO, AIC: NOTES D6,D7,&D8, Mounting: flush, NEMA 1 — PANEL LP-1 — 225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C		BRKR REQ	TRIP POLES	CCT NO.	CCT NO.	TRIP POLES	BRKR REQ		WATTS A	WATTS B	WATTS C
0			Spare		20A-1	1	2	20A-1	S	Flag Pole	220		
	0		Spare		20A-1	3	4	20A-1		Spare		0	
		0	Spare		20A-1	5	6	20A-1	S	Exterior Signage			294
0			Spare		20A-1	7	8	20A-1	S	Spare	0		
	294		Exterior Signage	S	20A-1	9	10	20A-1	S	Exterior Wall/Soffit Lights DT		114	
		0	Spare	S	20A-1	11	12	20A-1	S	Exterior Wall/Soffit Lights			114
42			Back of House Sconces	S,L	20A-1	13	14	20A-1		DCO In Road Sign Base	180		
	126		Linear LED Façade Lighting	S	20A-1	15	16	20A-1	L	Dr Alarm\CO2\Access Control panel		524	
		0	Spare		20A-1	17	18	30A-2		Lot Lights			480
96			Directional Sign	S	20A-1	19	20	|		|	480		
	96		Directional Sign	S	20A-1	21	22	30A-2		Lot Lights		240	
		120	COD lighting	S	20A-1	23	24	|		|			240
0			Spare		20A-1	25	26	30A-2		Lot Lights	480		
	0		Spare	S	20A-1	27	28	|		|	480		
		0	Spare	S	20A-1	29	30	30A-2		Spare			0
308			Dining Area Lighting	S	20A-1	31	32	|		|	0		
	189		Pendants/cove lights	S	20A-1	33	34	20A-1	L	BAS Controller		300	
		880	Kitchen Lighting	S	20A-1	35	36	20A-1	L	Lighting Control Panel			180
176			Restroom Lighting	S	20A-1	37	38	20A-1	S,L	Exit/Egress Lighting	80		
	520		Support Area Lighting	S	20A-1	39	40	60A-2	S	Mcd'S Road Sign		2496	
		0	Spare		20A-1	41	42	|	|	|			2496
										Total Connect	2062	5379	4804
										Connect Amps		34	Amps
										Demand Amps		42	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: MDP, NEMA 1 — PANEL AP-4 — 225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C		BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP PLS	BRKR REQ		WATTS A	WATTS B	WATTS C
2604			Clamshell Grill	G	50A-3	1	2	30A-3	G	Combi Oven	1812		
	2604		|	|	|	3	4	|	|		1812	
		2604	|	|	|	5	6	|	|			1812
5196			Clamshell Grill	G	50A-3	7	8	30A-3	G	Combi Oven	1812		
	5196		|	|	|	9	10	|	|		1812	
		5196	|	|	|	11	12	|	|			1812
4668			3-Vat-Fryer-Electric-F/F/F	G	50A-3	13	14	15A-1		Combi Oven Hood	960		
	4668		|	|	|	15	16	15A-1		Combi Oven Hood		960	
		4668	|	|	|	17	18			Space			0
4668			3-Vat-Fryer-Electric-F/F/F	G	50A-3	19	20			Space	0		
	4668		|	|	|	21	22			Space		0	
		4668	|	|	|	23	24			Space			0
4668			3-Vat-Fryer-Electric-F/F/F	G	50A-3	25	26			Space	0		
	4668		|	|	|	27	28			Space		0	
		4668	|	|	|	29	30			Space			0
0			Space			31	32			Space	0		
	0		Space			33	34			Space		0	
		0	Space			35	36			Space			0
0			Space			37	38			Space	0		
	0		Space			39	40			Space		0	
		0	Space			41	42			Space			0
										Total Connect	26388	26408	25428
										Connect Amps		217	Amps
										Demand Amps		141	Amps

150 MLO AIC: SEE NOTES D6, D7, & D8, Mounting: Flush — COMPUTER PANEL — 150A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C		BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP- PLS	BRKR REQ		WATTS A	WATTS B	WATTS C
1656			Pres Pos Reg/Vid Mon/HeadSet/Label	L	20A-1	1	2	20A-1	L	Spare	0		
	1200		Kvs Mon Out/Vid Mon/Rec/Label	G, L	20A-1	3	4	20A-1	L	Rec		84	
		120	Cctv/Timer	L	20A-1	5	6	20A-1	L	Digital Merch/Media Player			432
630			Order Pos Reg/Vid Mon/ Coin dispenser	L	20A-1	7	8	20A-1	G,L	Kvs Mon Kit/Labeling System	600		
	720		Vid Mon	G,L	20A-1	9	10	20A-1		Zoom Timer		720	
		600	Tech Rack	L	20A-1	11	12	30A-1	L	Tech Rack UPS			1680
0			Spare	L	20A-1	13	14	20A-1	L	Cod Optical Isolator	120		
	1200		Tech Rack	L	20A-1	15	16	20A-1	L	Speaker Canopy #1		120	
		1440	Tech Rack	L	20A-1	17	18	20A-1	L	Speaker Canopy #2			120
444			Counter Pos Reg/ Rec	L	20A-1	19	20	20A-1	L	Office desk Unit	1200		
	0		Spare	L	20A-1	21	22	20A-1	L	Office desk Unit		1200	
		900	KVS Mon/Kit/Del .Pos Reg	G,L	20A-1	23	24	20A-1	L	Spare			0
1860			Exterior Menu Boards/Media Player	L	20A-1	25	26	20A-1	G,L	Kvs Mon Prep	360		
	0		Spare	L	20A-1	27	28	20A-1	G,L	Time Clock		60	
		1860	Exterior Menu Boards/Media Player	L	20A-1	29	30	20A-1	L	Kiosk Cash Handler			528
480			DO Equipment Rack	L	20A-1	31	32	20A-1	L	Kiosks	1080		
	0		Spare	L	20A-1	33	34	20A-1	L	Kiosks		1080	
		0	Space			35	36	20A-1	L	Kiosks			1080
0			Space			37	38			Space	0		
	0		Space			39	40			Space		0	
		0	Space			41	42			Space			0
										Total Connect	8430	6384	8760
										Connect Amps		65	Amps
										Demand Amps		82	Amps

MLO, AIC: NOTES D6, D7, & D8, Mounting: MDP, NEMA — PANEL AP-1 — 225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
1620			Dco-manager's office/crew room		20A-1	1	2	20A-2	G	Coffee brewer (presenter's booth)	1612		
	720		Dco-General Purpose	G	20A-1	3	4	|	|	|		1612	
		1200	Crew Microwave	G	20A-1	5	6	20A-1	G	ABS (phase c, presenter's booth)			1788
120			Safe - (mo) DCO Gen Purp	L	20A-1	7	8	20A-1	G	Juice disp/ coffee cream disp	840		
	240		Remote Order Battery		20A-1	9	10	20A-1	G	CO2 Detector		120	
		960	Merge/audio sys/drv mon/Deliv.	G	20A-1	11	12	20A-1	G	Automated beverage sys			600
960			Washer		15A-1	13	14	20A-2	G	Coffee Brewer (front counter)	1612		
	1800		Hand Held Order		20A-1	15	16	|	|	|		1612	
		120	Computer Room (TF/1)		20A-1	17	18	30A-3	G	Heat treat combo shake			1560
2246			Espresso Brewer	G	30A-2	19	20	|	|	|	1560		
	2246		|	|	|	21	22	|	|	|		1560	
		1500	3-Vat fryer hood interlock		20A-1	23	24	20A-1		3-Vat fryer hood Interlock			1176
1320			Reach in Freezer-SW	G	20A-1	25	26	20A-2	H	Ice Machine Remote Cond 1400lb	104		
	1080		Frozen fry dispenser (fry wall)		20A-1	27	28	|	|	|		104	
		2112	4-Vat fryer hood interlock		20A-1	29	30	20A-1	G	Reach in Freezer-SW			1320
1500			Fry Bagging Station	L,G	20A-1	31	32	15A-3	H	Ice Machine Remote Cond 1000lb	1332		
	60		Hand Wash Timers	G	20A-1	33	34	|	|	|		1332	
		1320	Reach in Freezer-SW	G	20A-1	35	36	|	|	|			1332
132			Ice mach - 1000 lb (self serve)		15A-1	37	38	15A-3	H	Ice Machine Remote Cond 1000lb	1332		
	132		Ice mach - 1000 lb (self serve)		15A-1	39	40	|	|	|		1332	
		1656	4-Vat fryer hd interlock		20A-1	41	42	|	|	|			1332
										Total Connect	16290	13950	17976
										Connect Amps		134	Amps
										Demand Amps		93	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: FLUSH, NEMA — PANEL AP-5 — 225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
600			Fridge/Freezer 2Dr Base	G	20A-1	1	2	20A-1		Warewasher Exhaust Fan	864		
	600		Fridge/Freezer 2Dr Base	G	20A-1	3	4	20A-2	G	Universal Holding Cabinet P&S		1581	
		600	Fridge/Freezer 2Dr Base	G	20A-1	5	6	|	|	|			1581
600			Fridge/Freezer 2Dr Base	G	20A-1	7	8	20A-2	G	Univeral Holding Cabinet P&S	1581		
	600		Fridge/Freezer 2Dr Base	G	20A-1	9	10	|	|	|		1581	
		864	Toilet Exhaust Fan	G	20A-1	11	12	20A-1	G	Univeral Holding Cabinet Table			240
540			Roof Receptacles	G	20A-1	13	14	20A-1		DT Power Window	120		
	0		Spare		20A-1	15	16	20A-1		DT Power Window		120	
		2080	Frozen Carbonated Beverage	G	30A-2	17	18	20A-1		DT Power Window			120
2080			|	|	|	19	20	20A-2	G	Coffee Brewer (front counter)	1612		
	360		Delivery Tablets	G	20A-1	21	22	|	|	|		1612	
		600	Wall Mount Frz Unit SW HC	G	20A-1	23	24	20A-1	G	Pie Display			564
828			Bulk Oil System	G	20A-1	25	26	20A-1	G	Pie Display	564		
	2620		Universal Radiant Toaster	G	30A-2	27	28	20A-1	G	Optimized Breakfast Table		600	
		2620	|	|	|	29	30	20A-1		DCO-Muzak satellite system			120
3531			Warewasher 1of2	G	40A-3	31	32	20A-1		Clg. Mt window recepts	540		
	3531		|	|	|	33	34	20A-2	G	Humidified holding cabinet		947	
		3531	|	|	|	35	36	|	|	|			947
2678			Warewasher 2of2	G	30A-3	37	38	25A-2	H	Remote Condensing Unit	1560		
	2678		|	|	|	39	40	|	|	|		1560	
		2678	|	|	|	41	42	20A-1	G	Butter Warmer			60
										Total Connect	17698	18390	16605
										Connect Amps		146	Amps
										Demand Amps		95	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: MDP, NEMA 1 — PANEL AP-2 — 225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
1608			Ice machine 1400LB	H	20A-3	1	2	20A-1		Spare	0		
	1608		|	|	|	3	4	20A-1		Janitors EF		100	
		1608	|	|	|	5	6	20A-1	G	Dco-General Purpose			540
144			Blender McFlurry	G	20A-1	7	8	20A-1	G	Refrig-at-48"	600		
	180		Janitor's closet	G	20A-1	9	10	30A-2	H	Trash Compactor		2496	
		204	Crew Smart Lockers	G	20A-1	11	12	|	|	|			2496
0			Spare	G	20A-1	13	14	20A-1		Walk in cooler / freezer	600		
	864		Bulk oil system (sup area)	G	20A-1	15	16	20A-1		Walk in cooler / freezer		600	
		1668	Clm grl exhast hood interlock		20A-1	17	18	20A-2	G	Qc/ oven - P& S			1550
840			Meat freezer DW (grill side)	G	20A-1	19	20	|	|	|	1550		
	120		Clean in place panel	G	20A-1	21	22	20A-1	G	Specialty Coffee Refrigerator 27"		468	
		490	Reverse Osmosis, Filtration	G	20A-1	23	24	20A-1	G	Automated beverage sys			600
180			Taco in trash comall	G	20A-1	25	26	20A-1	G	ABS (presenter's booth)	1788		
	1200		Bulk oil sys - support area (sa)	G	20A-1	27	28	20A-2	G	Q'ing oven - P& S		1550	
		1032	BIC Machine	G	20A-1	29	30	|	|	|			1550
324			Reach In SW fridge	G	20A-1	31	32	20A-2	G	Infusion Tea Brewer	1352		
	120		Recirc pump		20A-1	33	34	|	|	|		1352	
		1632	Soda syst pack (support area)		20A-1	35	36	20A-1		Spare			0
3120			Soda syst pack (support area)		30A-3	37	38	20A-2	G	Q'ing oven - P& S	1602		
	3120		|	|	|	39	40	|	|	|	1602		
		3120	|	|	|	41	42	20A-1	G	Dco-General Purpose			540
										Total Connect	13708	15380	17030
										Connect Amps		128	Amps
										Demand Amps		85	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: FLUSH, NEMA — PANEL AP-6 — 225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
1092			Hand Dryer	L,G	20A-1	1	2	60A-2		Unit AC-1	4212		
	1092		Hand Dryer	L,G	20A-1	3	4	|		|		4212	
		0	Spare	L,G	20A-1	5	6	60A-2		Unit AC-2			4212
0			Spare	L,G	20A-1	7	8	|		|	4212		
	104		Cooler Evap	H	20A-2	9	10	20A-1		Unit AC-3		1200	
		104	|	|	|	11	12	20A-1		Unit AC-4			1200
2111			Freezer Evap	H	30A-2	13	14	20A-1		Unit AC-5	660		
	2111		|	|	|	15	16	20A-1		Spare		0	
		0	Spare			20A-1	17	18	20A-1		Spare			0
0			Spare			20A-1	19	20	20A-1		Spare	0		
	0		Space				21	22			Space		0	
		0	Space				23	24			Space			0
0			Space				25	26			Space	0		
	0		Space				27	28			Space		0	
		0	Space				29	30			Space			0
0			Space				31	32			Space	0		
	0		Space				33	34			Space		0	
		0	Space				35	36			Space			0
0			Space				37	38			Space	0		
	0		Space				39	40			Space		0	
		0	Space				41	42			Space			0
										Total Connect	12287	8719	5516
										Connect Amps		74	Amps
										Demand Amps		50	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: MDP, NEMA 1 — PANEL AP-3 — 225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP- PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
4668			4-Vat-Fryer-Electric-S/S/S/S	G	50A-3	1	2	50A-3	G	4-Vat-Fryer-Electric-S/S/S/S	4668		
	4668		|	|	|	3	4	|	|	|		4668	
		4668	|	|	|	5	6	|	|	|			4668
4668			4-Vat-Fryer-Electric-S/S/S/S	G	50A-3	7	8	50A-3	G	4-Vat-Fryer-Electric-S/S/S/S	4668		
	4668		|	|	|	9	10	|	|	|		4668	
		4668	|	|	|	11	12	|	|	|			4668
0			Space				13	14	50A-3	G	Clamshell Grill	2604		
	0		Space				15	16	|	|	|		2604	
		0	Space				17	18	|	|	|			2604
0			Space				19	20	50A-3	G	Clamshell Grill	5196		
	0		Space				21	22	|	|	|		5196	
		0	Space				23	24	|	|	|			5196
0			Space				25	26			Space	0		
	0		Space				27	28			Space		0	
		0	Space				29	30			Space			0
0			Space				31	32			Space	0		
	0		Space				33	34			Space		0	
		0	Space				35	36			Space			0
0			Space				37	38			Space	0		
	0		Space				39	40			Space		0	
		0	Space				41	42			Space			0
										Total Connect	26472	26472	26472
										Connect Amps		220	Amps
										Demand Amps		143	Amps

1200A MCB, NOTES D6, D7, & D8, Mounting: Free Standing, NEMA 1 — PANEL MDP — 208Y/120 VAC, 3PH, 4W

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
2062	5379	4804	Lighting Panel 1; LP-1		225A-3	1	2	225A-3		Appliance Panel; AP-1	16290	13950	17976
13708	15380	17030	Appliance Panel; AP-2		225A-3	3	4	225A-3	SHT	Appliance Panel; AP-3	26472	26472	26472
18720	18720	18720	*Roof Top Unit 1	H	175A-3	5	6	150A-3	L	CP Panel	8430	6384	8760
12287	8719	5516	Appliance Panel; AP-6		225A-3	7	8	150A-3	H	*Roof Top Unit 3	16680	16680	16680
17698	18390	16605	Appliance Panel; AP-5		225A-3	9	10	225A-3	SHT	Appliance Panel; AP-4	26388	26408	25428
6992	7304	0	KES Breaker Panel		125A-2	11	12	90A-3	H	*Roof Top Unit 2	10080	10080	10080
0	0	0	Space			13	14	200A-3	H,L	Water Heater 54KW	18000	18000	18000
3636	3636	3636	Remote Cond Unit	H	50A-3	15	16			SPD			
0	0	0	SPACE			17	18			SPD			
0	0	0	SPACE			19	20			SPD			
* SEE ELECT SHTS FOR CONDUIT AND WIRE SIZE										Total Connect	197443	195502	189707
										Connect Amps		1617	Amps

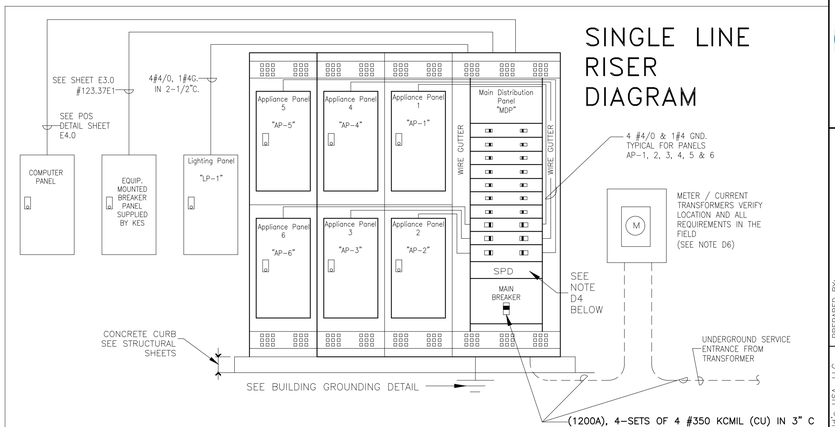
SEE SHEET E3.1 FOR GENERAL ELECTRICAL NOTES

BREAKER MODIFICATIONS:
G – GFCI PERSONNEL PROTECTION (5MA)
HID – HID & SWD RATED
L – HANDLE LOCK
H – HACR RATED
S – SWITCH DUTY RATED
SHT – SHUNT TRIP

TOTAL BUILDING 208Y/120V, 3 PHASE, 4–WIRE GENERAL SERVICE POWER BASED ON NEC 220.88 FOR AN "ALL ELECTRIC" NEW RESTAURANT.

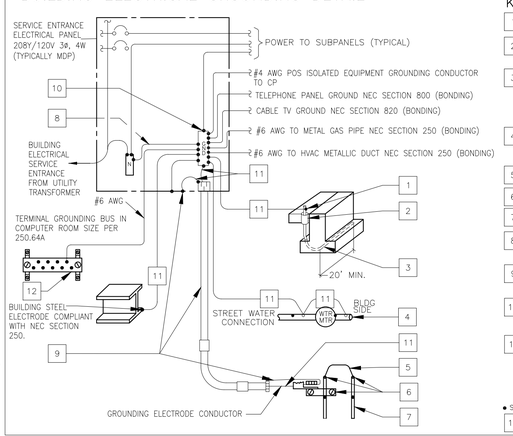
ALL ELECTRIC UTILITIES CALC

NEC Optional Method	(kW)	(A)
1. Continuous Loads:	36	99
2. Kitchen Loads:	400	1110
3. HVAC Loads:	147	408
4. Cooling:	75	207
5. Total (1+2+3+4):	657	1824
6. Base Value (See 220.88):	325	902
7. Amount Over Base Value (5-6):	332	922
8. Demand Factor:	0.50	
9. Adjusted Value (8*7):	166	461
10. Adjusted Base Value (220.88):	172.5	479
11. Demand (9+10):	339	**940**



SINGLE LINE RISER DIAGRAM

BUILDING ELECTRICAL GROUNDING DETAIL



KEY NOTES

1. PROVIDE ENOUGH LENGTH TO TERMINATE DIRECTLY TO GROUND BUS OR USE BOLTED–TYPE CONNECTION DEVICE OR EXOTHERMIC WELD.
2. NON–METALLIC PROTECTIVE SLEEVE. LOCATE SLEEVE DIRECTLY UNDER THE ELECTRICAL SERVICE ENTRANCE PANEL. EC TO PROVIDE PLIABLE SEALANT BETWEEN COPPER WIRE AND SLEEVE.
3. FOR NEW CONSTRUCTION WHEN A SPREAD FOOTING OR DOWN TURNED SLAB IS USED, EC SHALL INSTALL A CONCRETE ENCASED ELECTRODE, COMPLIANT WITH NEC SECTION 250, CONSISTING OF AT LEAST 20 FEET OF BARE #4 AWG COPPER ENCASED IN 2 INCHES OF CONCRETE NEAR THE BOTTOM OF THE FOOTING OR FOUNDATION (BELOW GRADE) THAT IS IN DIRECT CONTACT WITH EARTH.
4. METAL UNDERGROUND WATER PIPE ELECTRODE COMPLIANT WITH NEC SECTION 250. THE GROUNDING CONNECTION TO THE INTERIOR METAL WATER PIPE SHALL BE MADE WITHIN THE FIRST FIVE FEET OF THE WATER PIPE ENTRANCE TO THE BUILDING.
5. IF MULTIPLE GROUNDING RODS ARE BEING USED OR NEED TO BE USED, THEY SHALL ALL BE BONDED TOGETHER PER NEC SECTION 250.
6. CLAMPS SUITABLE FOR DIRECT BURIAL OR EXOTHERMIC WELD.
7. 8'–0" X 5/8" CU ROD GROUNDING ELECTRODE COMPLIANT WITH NEC SECTION 250.
8. CU BONDING JUMPER SIZED PER NEC SECTION 250 OR FACTORY PROVIDED NEUTRAL TO GROUND BAR LINK. (THIS IS THE ONLY PLACE IN THE BUILDING WHERE N–G SHALL BE BONDED TOGETHER)
9. ALL METAL RACEWAYS CONTAINING GROUNDING ELECTRODE CONDUCTORS SHALL BE BONDED AT BOTH ENDS AS REQUIRED BY NEC SECTION 250. PROVIDE GROUNDING TYPE BUSHINGS & FITTINGS.
10. MCDONALD'S GROUNDING STANDARDS PURPOSELY EXCEED THOSE GIVEN BY THE NEC. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A BUILDING GROUNDING SYSTEM MEETING NEC AND MCDONALD'S STANDARDS AS SHOWN ON THIS DRAWING.
11. CU GROUNDING ELECTRODE CONDUCTORS AND BONDING JUMPERS SHALL BE SIZED BASED UPON ELECTRICAL SERVICE SIZE PER NEC SECTION 250

800A	1000A	1200A
3/0 CU	3/0 CU	4/0 CU

• SHOWS CONNECTION/BONDING POINT
12. TERMINAL GROUNDING BUS AT 90°AFF. HARGER #GBI14212D.

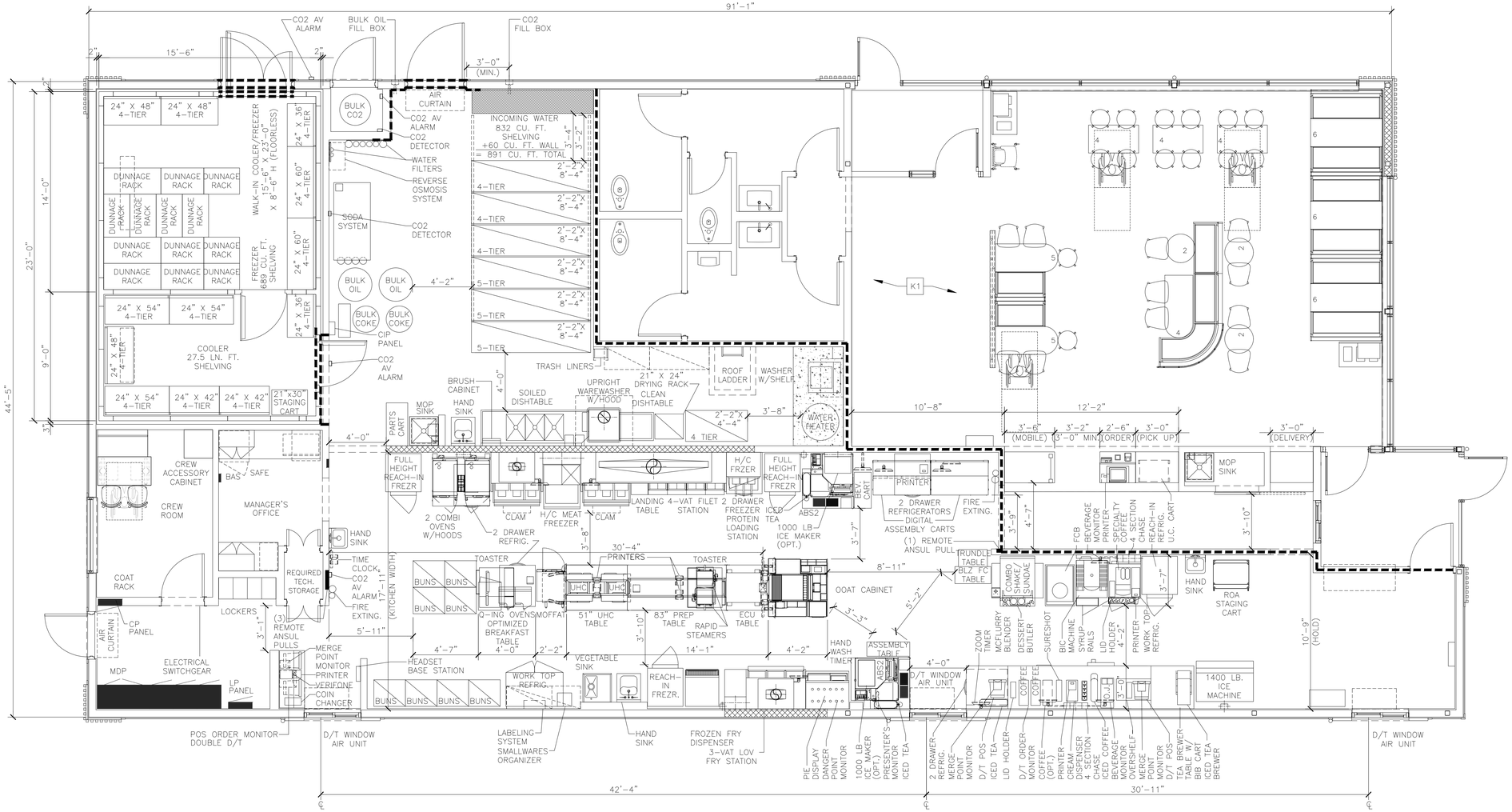
DISTRIBUTION EQUIPMENT NOTES:

D1. ALL ELECTRICAL MATERIAL USED ON THIS PROJECT SHALL BE "UL" LISTED AND LABELED.

D2. THE EC/GC/AREA CONSTRUCTION MANAGER WHEN ORDERING PANELBOARDS, SHALL DETERMINE THE NUMBER OF SERVICE ENTRANCE CONDUCTORS, SIZE AND MATERIAL TYPE, AND SHALL PROVIDE THIS INFORMATION TO THE PANELBOARD SUPPLIER SO THAT THE APPROPRIATE LUGS CAN BE PROVIDED FROM THE FACTORY.

D3. ALUMINUM SERVICE ENTRANCE CONDUCTORS SHALL ONLY BE USED WHEN THEY ARE TERMINATED DIRECTLY TO THE LINE LUGS ON A C/T AND METERING CABINET, THE LINE LUGS OF A FUSIBLE DISCONNECT SWITCH OR TO THE LINE LUGS OF A MAIN LUG ONLY (6 HANDLE RULE) SERVICE ENTRANCE PANEL. ALUMINUM SERVICE ENTRANCE CONDUCTORS SHALL NOT BE TERMINATED TO THE LINE LUGS OF ANY MAIN BREAKER SINCE DOING SO WILL VIOLATE IT'S 100% UL RATING. IF ALUMINUM CONDUCTORS ARE USED AS PREVIOUSLY INDICATED THEY SHALL BE TERMINATED AS FOLLOWS, AND THE WIRE SIZE INCREASED DUE TO LOWER AMPACITY OF ALUMINUM. EXPOSED ALUMINUM CONDUCTOR STRANDS SHALL BE COATED WITH AN ANTI–OXIDANT IMMEDIATELY AFTER INSULATION IS STRIPPED AWAY. A COMPRESSION LUG SHALL BE PROPERLY INSTALLED ONTO THE EXPOSED ALUMINUM CONDUCTOR STRANDS, AND THAT COMPRESSION LUG SHALL THEN BE BOLTED TO THE TRANSFORMER TAPS AND SWITCHBOARD BUSS USING PROPERLY SIZED BOLTS, NUTS AND WASHERS. MERELY INSERTING ALUMINUM STRANDS UNDER A SCREW LUG SHALL NOT BE ACCEPTABLE.

D4. THE SURGE PROTECTIVE DEVICE (SPD) UNIT SHALL BE AN INTEGRAL UNIT PROVIDED AND INSTALLED BY THE SWITCHBOARD MANUFACTURER. ORDER APPRO



1 / K1.0 KITCHEN COVER SHEET

1/4" = 1'-0"

KEYED NOTES

K1 CUSTOMER KIOSK & DECOR LAYOUT FOR REFERENCE ONLY. VERIFY KIOSK PLACEMENT PER USRD APPROVED KIOSK REVIEW

BY	DESCRIPTION	DATE	REV

LONSDALE FERGUSON REGISTERED STATE OF INDIANA PROFESSIONAL ENGINEER

11/21/2025

PREPARED BY: CORE STATES GROUP

317 E 96th Street, Suite 2
Indianapolis, IN 46240
317.721.7328
www.corestatesgroup.com

PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED
DA	DL	11/25/25
STD ISSUE DATE 2025 05		

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr, BROWNSBURG, IN

SHEET NO. 013.1263.00.0 K1.0 KITCHEN COVER SHT

NOTE: DIMENSION VARIES BETWEEN CLR/FZR & EXT. WALL 2" MIN. – 4" MAX. SEE ARCH DWGS.

INCOMING WATER

ELECTRICAL PANELS

(REQUIRED TECH. STORAGE)

(TRACK W/ STOPS)

(HOLD)

(CLEAR)

(MOBILE)

(3'–0" MIN.)

(ORDER)

(PICKUP)

(DELIVERY)

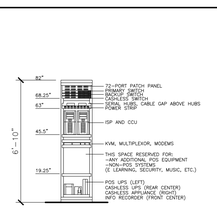
(REFERENCE)

DRAWING NOTES

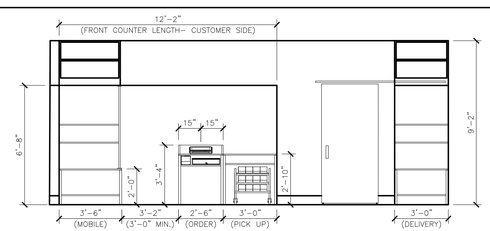
1. ALL DIMENSIONS SHOWN ARE TAKEN TO FACE OF WALL FINISH
2. * INDICATES OPTIONAL EQUIPMENT
3. KES TO VERIFY ALL BLOCKING FOR WALL MOUNTED EQUIPMENT AS REQUIRED BY GENERAL NOTE 9 ON A1.0 PRIOR TO INSTALLATION

SEE SHEET K2.1 FOR EQUIPMENT SCHEDULE

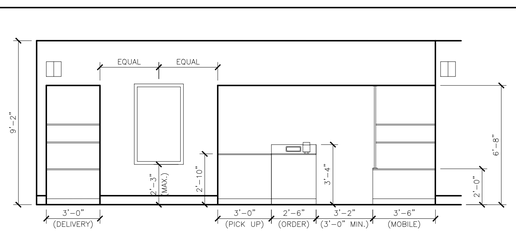
1 K2.0 KITCHEN EQUIPMENT PLAN
1/4" = 1'–0"



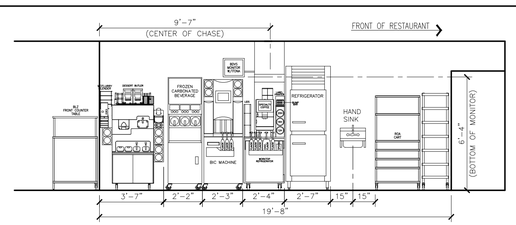
2 K2.0 COMPUTER CLOSET RACK
1/4" = 1'–0"



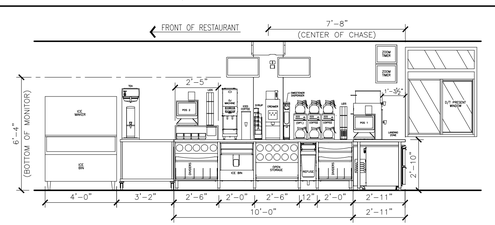
3 K2.0 FRONT COUNTER
1/4" = 1'–0"



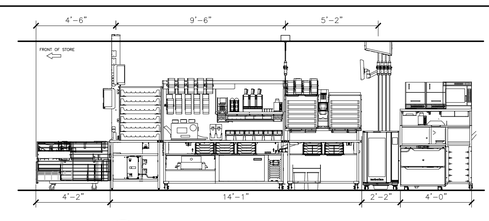
4 K2.0 FRONT COUNTER ELEVATION
1/4" = 1'–0"



5 K2.0 BEVERAGE CELL (INTERIOR WALL)
1/4" = 1'–0"



6 K2.0 BEVERAGE CELL (EXTERIOR WALL)
1/4" = 1'–0"



7 K2.0 COMPACT OPTIMIZED PREP LINE
1/4" = 1'–0"

NO.	DESCRIPTION	DATE

JOHN DALE FERGUSON REGISTERED STATE OF INDIANA PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY:
CORE STATES GROUP
721 E Main Street, Suite 2
Zionsville, IN 46077-1324
317.733.1324
www.corestates.com

PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	DA
STD ISSUE DATE	2025 05
REVIEWED BY	DL
DATE ISSUED	11/25/25

TITLE: 2025 OPTIMIZED BUILDING – BB20
4590–WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI
WOOD TRUSS ROOF FRAMING
E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

MSN: 013.1263.
SITE ADDRESS: 7030 Northfield Dr, BROWNSBURG, IN

SHEET NO. 013.1263.00.0
K2.0
KITCHEN PLAN

EQUIPMENT SCHEDULE

x = Optional Equipment VIF = Verify in Field
GC = General Contractor
R = Relocated Equipment

ITEM	O	QTY	DESCRIPTION	MANUFACTURER	MODEL #	UL	NSF	FURNISHED	GENERAL REMARKS	SPECIAL REQUIREMENTS
1.40		1	SERVICE POD – 30"	DECOR	SEE PLAN	–	2	GC	–	
1.51		1	PICKUP POD – 36"	DECOR	SEE PLAN	–	2	GC	–	
1.52		1	PICKUP POD – 42"	DECOR	SEE PLAN	–	2	GC	–	
1.63		1	McDELIVERY PICKUP COUNTER	DECOR	SEE PLAN	–	2	GC	–	
2.05		1	UNDER COUNTER CART – 24"W x 18"D FRONT COUNTER	INTERMETRO	UC18–DMS	–	2	KES	–	
9.08		2	UTILITY CHASE – ICE MAKER ON ABS VERSION	KES	5"x8"x23"	–	2	KES	CONCEALS WATER AND CONDENSING UNIT LINES	
9.15		1	UTILITY CHASE – FFDT INTERIOR WALL	KES	20"x5"x76"	–	2	KES	4 SECTION CHASE FOR BUYOUT RECEPTACLES, POS, CO2 AND WATER	
9.16		1	UTILITY CHASE – FFDT EXTERIOR WALL	KES	20"x5"x76"	–	2	KES	4 SECTION CHASE FOR BUYOUT RECEPTACLES, POS AND WATER	
9.18		2	UTILITY CHASE – WALL VERSION	KES	4"x4"x82"	–	2	KES	CHASE FOR BULK OIL LINES, MOUNT AT 2'–0"	
9.20		1	UTILITY CHASE – COMBI CELL	KES	4"x8"x84"	–	2	KES	CHASE FOR BUYOUT RECEPTACLES AND WATER	
19.00		2	DIGITAL ASSEMBLY CART – 48"	INTERMETRO	MCDDAC–48	–	2	KES	–	
19.04		1	ROA STAGING CART – 24"X 30"	INTERMETRO	MCDROA–2430	–	2	KES	–	
20.01		2	AUTOMATED BEVERAGE SYSTEM 2.0	IMI CORNELIUS	621058590LON	–	–	KES	INSTALLATION KIT INCLUDES STAINLESS STEEL CHASE & DATA LINE	
21.01		3	COFFEE BREWER (THERMAL POTS)	BUNN–O– MATIC	AXIOM–DV–3	E32066	4	KES	W/ELECTRONIC CONTROLLER FOR CONVERSION TO LOW OR HIGH VOLTAGE	
23.10		1	ESPRESSO BREWER	FRANKE	FM850	–	4	KES	–	
23.12		1	COFFEE CREAM DISPENSER	SURESHOT	AC110–PC–51	E217698	20	KES	–	
23.14		1	SUGAR/SWEETENER DISPENSER	SURESHOT	AC2–GP–1–G38	E217698	18	KES	–	
24.02		1	JUICE DISPENSER	BUNN–O– MATIC	JDF–2S	–	18	KES	–	
25.01		4	SLIMLINE ICED BEVERAGE DISPENSER	BUNN–O– MATIC	TDO–N	E32066	4	KES	KES TO VERIFY EXACT QUANTITY PER MARKET	
25.06		3	SLIMLINE ICED BEVERAGE DISPENSER – SHORT	BUNN–O– MATIC	TDO–N LP	E32066	4	KES	KES TO VERIFY EXACT QUANTITY PER MARKET	
25.07		1	INFUSION TEA BREWER – MIS	BUNN–O– MATIC	ITCB–DV	E32066	4	KES	PROVIDED WITH BREWER, INSTALLATION KIT AND TDO–N BOOSTER	
25.95		3	SLIMLINE ICED BEVERAGE DISPENSER – 2 TIER STAND	KES	–	–	2	KES	–	
26.01		1	TEA BREWER TABLE – 36"X36"	ISS SHELVING	WST1758C	–	2	KES	–	
31.03		1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS) – REMOTE	MULTIPLEX	50MR04	SA4632	18	KES	–	
32.02		1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	EVERPURE	MRS–600HE	–	–	KES	FOR COFFEE MAKER, ESPRESSO MACHINE, AND RAPID BUN STEAMER	
32.04		1	WATER FILTRATION SYSTEM	EVERPURE	EV9437–32	–	–	KES	–	
32.05		1	WATER FILTRATION SYSTEM	EVERPURE	EV9272–24	–	–	KES	FOR COMBI OVENS AND STAGING CABINET	
36.00		2	BULK COKE	CHART INDUSTRIES	10667511	–	18	MANU–FACTURER	SYRUP LINES BY CHART INDUSTRIES	
37.00		1	BULK CO2 – 750 LB.	CHART INDUSTRIES	CARBO–MAX 750	–	–	MANU–FACTURER	–	
37.03		2	CO2 SAFETY SYSTEM	SEE RMKS	–	–	–	KES	SEE MECHANICAL DRAWINGS	INCLUDES DETECTOR, PWER MONITOR W/ TROUBLE SIGNAL AND (4) AV ALARMS
38.00		1	CLEAN IN PLACE PANEL	CHART INDUSTRIES	10667431	–	18	MANU–FACTURER	MOUNT 6"W x 7"H. BOX @ 6'–0" AFF TO BOX CENTER LINE	
39.10		1	ICE MACHINE – 1400 LB.	MANITOWOC	IYT1500N3/ D970	SA4027	12	KES	USE HEADMASTER KIT K00221	
39.15		2	ICE MACHINE – 1000 LB.	MANITOWOC	IBT1020C–161	SA4027	12	KES	CONDENSER: CVDT1200	
40.00		1	ICE MACHINE CHASE	KES	4"x6"x48"	–	2	KES	CONCEALS WATER AND CONDENSING UNIT LINES	
41.06		1	ICE MACHINE REMOTE CONDENSER – 1400 LB.	MANITOWOC	JCT–1500	SA4027	12	KES	–	
41.09		2	ICE MACHINE REMOTE CONDENSER – 1000 LB.	MANITOWOC	CVDT1200–263A	SA4027	12	KES	–	
43.21		1	OPTIMIZED ORDER ASSEMBLY TABLE	KES	90001	E152097	2	KES	–	
44.46		1	SMALL RISER SHELF – 18" TO 30"	FRANKE	18006010	–	2	KES	–	
45.20		1	MODULAR BEVERAGE CABINET – 10'–0"	KES	–	–	2	KES	–	
45.21		1	BEVERAGE CABINET – DRIVE–THRU TABLE 35"	KES	–	–	2	KES	–	
46.00		1	CUP DISPENSER VERTICAL 3 CUP	KES	–	–	2	KES	–	
46.02		1	SYRUP BOTTLE RACK – (5) SYRUP PUMPS	PRONTO	–	–	2	KES	–	
49.00		1	CO2 FILL BOX – 6 1/2"W x 18"H	CHART INDUSTRIES	8512629	–	–	MANU–FACTURER	SEE EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT. INSTALLED BY GC	
51.02		1	CUP LID HOLDER	KES	AOCLH–9	–	2	KES	–	
51.03		3	CUP LID HOLDER 3 HIGH S/S	KES	–	–	2	KES	–	
51.04		2	CUP LID HOLDER SINGLE STACK 8" HIGH	KES	–	–	2	KES	–	
61.00		1	FRY BAGGING STATION 36"	KES	FB25A	E99018	2	KES	–	
65.30		1	3–VAT LOV FRYER – ELECTRIC – F/F/F	HENNY PENNY	LVE–303	E30993	4	KES	–	IDLE ENERGY RATE=0.73kW, ENERGY EFFICIENCY=87%
66.47		1	4–VAT LOV FRYER – ELECTRIC – S/S/S/S	HENNY PENNY	LVE–304	E30993	4	KES	–	IDLE ENERGY RATE=0.73kW, ENERGY EFFICIENCY=87%
69.00		2	CAPTURE JET PLENUM – FRYER	HALTON	CJP–F	MH27607	2	KES	ATTACH TO UNIVERSAL EXHAUST HOOD	
69.01		2	CAPTURE JET PLENUM – GRILL	HALTON	CJP–G	MH27607	2	KES	ATTACH TO UNIVERSAL EXHAUST HOOD	
73.00		1	UNIVERSAL EXHAUST HOOD 3–VAT FRYER	KES	UH–50	MH12755	2	KES	–	
79.23		1	UNIVERSAL EXHAUST HOOD FULL–CLAM/4–VAT FRYER	KES	UH–122	MH12755	2	KES	–	
79.26		2	VENTLESS HOOD FOR COMBI OVEN	CONVOTHERM	CONOVENT MINI 6.10	E325060	2	KES	–	
80.00		1	MECHANICAL CHASE	KES	9"x18" SGCL.	E163328	2	KES	–	
80.08		1	MECHANICAL CHASE	KES	9"x32" SGCL.	E163328	2	KES	–	
81.00		1	PROTEIN LOADING STATION KIT	KES	272436	–	2	KES	–	
81.01		1	PRODUCT LANDING SHELF – SOLID TOP	KES	–	–	2	KES	–	
82.00		1	LANDING TABLE	INTERMETRO	TLDP–S	–	2	KES	–	
85.05		1	FROZEN FRY DISPENSER	RAM	280–FP	E140753	4	KES	–	
91.02		1	WALL MOUNT FREEZER UNIT–SINGLE WIDE–HIGH CAPACITY	KES	HCWF1	SA7329	7	KES	AIR–COOLED, SELF–CONTAINED – MOUNT BOTTOM AT 51" AFF	HCWF1.99A INSTALL HARDWARE KIT REQUIRED
93.00		1	UNIVERSAL EXHAUST HOOD FULL–CLAM GRILL	KES	UH–43	MH12755	2	KES	–	
96.21		2	36" NEXT GEN 3–PLATEN CLAMSHELL GRILL – ELECTRIC	GARLAND	ME–3PX	E28898	4	KES	–	
97.08		1	MEAT FREEZER – DOUBLE WIDE – HIGH CAPACITY – RIGHT HAND	KES	HCMF30B–RH	SA6032 S	2	KES	AIR–COOLED, SELF–CONTAINED	
99.01		2	GRILL TOOL ORGANIZER – 43" HOOD	KES	–	–	2	KES	–	
110.01		1	OPTIMIZED BREAKFAST TABLE	KES	OBT	–	2	KES	–	
114.00		1	HUMIDIFIED HOLDING CABINET	MOFFAT	HP10T–LMD	197	4	KES	–	
116.23		2	UNIVERSAL HOLDING CABINET – HIGH DENSITY – 2–SIDED – PIN & SLEEVE	FRYMASTER	UHCHD6T	E44571	4	KES	–	
117.30		1	UHC TABLE COPL – 2 SIDED – 51"D x 34"W – PIN&SLEEVE	KES	91011	–	2	KES	–	
118.00		1	Q'ING OVEN – PIN & SLEEVE	AMANA	MC23MPW2	E40456	4	KES	–	
118.03		2	Q'ING OVEN – PIN & SLEEVE	ACP	MCMOC24	–	4	KES	–	
122.27		1	NEXT GEN. UNIVERSAL RADIANT TOASTER – PIN & SLEEVE	ANTUNES	HRT–5H	–	4	KES	–	
122.28		1	NEXT GEN. UNIVERSAL CONTACT TOASTER – PIN & SLEEVE	ANTUNES	HCT–5H	–	4	KES	–	
123.36		1	ECU TABLE – COPL	KES	90165	–	2	KES	–	
123.37		1	BREAKER PANEL– 125 AMP – 1 PHASE – EQUIPMENT MOUNTED	KES	–	–	–	KES	–	
123.40		1	PREP TABLE – HD – 2–SIDED COPL – 38"D x 83 1/2" – PIN & SLEEVE W/REF.	KES	91010	–	2	KES	–	
125.00		2	RAPID BUN STEAMER	PRINCE CASTLE	625–MFY	–	4	KES	–	
130.00		2	COMBI OVEN	CONVOTHERM	MS6102083LCMD1	E360598	4	KES	–	0.89kW, 69% STEAM MODE, 0.61kW, 81% CONVECTION MODE
134.02		1	VEGETABLE SINK	KES	SK04–4	–	2	KES	PROVIDE W/ BOWL COVER	
139.04		1	COMBI OVEN STAND – DOUBLE WIDE	KES	–	–	2	KES	–	
146.00		2	BUTTER WARMER	H&K	90016	–	–	KES	–	
151.12		1	CLEAN DISHTABLE – LEFT HAND – 28.23"	KES	SK–SPL	–	2	KES	–	
151.46		1	SOILED DISHTABLE – RIGHT HAND – 90.5" WIDE	KES	SK–SPL	–	2	KES	–	
152.04		1	WAREWASHER HOOD	KES	–		3		TYPE 2 HOOD FOR NON GREASE APPLICATION – REQUIRED PER CODE	
152.09		1	WAREWASHER – HIGH TEMP	ECOLAB	XL–HTHH–VV	E5956	3	MANU–FACTURER	PROVIDE VAPOR VENT	IDLE ENERGY RATE=0.486kW, WATER CONSUMPTION=0.84 GAL./RACK
153.00		1	SCULLERY SHELVING KIT – 3 TIER – 14" x 36"	INTERMETRO	SHSS–4	–	2	KES	–	
153.04		1	SMALLWARE WALL ORGANIZER	INTERMETRO	SW1812–MPS	–	2	KES	–	
153.06		1	REUSABLE DRYING RACK	INTERMETRO	MCD2124–DRY6	–	2	KES	–	
154.00		1	BRUSH CABINET	KES	8047	–	4	KES	–	
157.00		1	TRASH LINER DISPENSER SHELF	KES	A0053	–	2	KES	–	
159.03		1	UNIVERSAL PARTS CART – 36" W	INTERMETRO	MCD–1836UPC	–	2	KES	–	
160.01		4	CHEMICAL SYSTEM	ECOLAB	–	–	–	MANU–FACTURER	–	
163.00		2	FIRE EXTINGUISHER – 5 LB. – ABC	ANSUL	SEE RMKS	–	–	SEE RMKS	LOCAL ANSUL AGENT SPECIFIES, SUPPLIES & LOCATES PER LOCAL CODE	
163.01		2	FIRE EXTINGUISHER – 6 L. – K GUARD	ANSUL	SEE RMKS	–	–	SEE RMKS	LOCAL ANSUL AGENT SPECIFIES, SUPPLIES & LOCATES PER LOCAL CODE	
163.02		4	REMOTE ANSUL PULL	ANSUL	4835	EX3470	–	SEE RMKS	CODE MAY REQUIRE LOCAL ANSUL AGENT TO SUPPLY	
171.01		1	WALK–IN COOLER / FREEZER FLOORLESS	NORLAKE	–	E42763	7	KES	–	
174.37		1	REMOTE CONDENSING UNIT	BOHN	BCH0015MBACZC0225	SA4272	–	KES	BEACON II/INTELLIGEN SYSTEM	
174.46		1	REMOTE CONDENSING UNIT	BOHN	BCH0060LCACZC0225	SA4272	–	KES	BEACON II/INTELLIGEN SYSTEM	
175.19		1	COOLER EVAPORATOR	BOHN	BEL0105BS6AMAD0096	SA1525	–	KES	INTELLIGEN EVAPORATOR	
176.28		1	FREEZER EVAPORATOR	BOHN	BEL0205BS6EEAD0096	SA1525	–	KES	INTELLIGEN EVAPORATOR	
177.03		1	REACH–IN REFRIGERATOR–SINGLE WIDE	BEVERAGE AIR	HR1HC–1HS	SA2651	7	KES	–	
178.05		3	REACH–IN FREEZER – SINGLE WIDE	BEVERAGE AIR	HF1HC–1HS	SA2651	7	KES	–	
181.13		1	REFRIGERATOR – SPECIALTY COFFEE– 27" WIDE	TRUE	TUC–27 MCDCF1	SA33040	7	KES	RIGHT–HAND HINGED	

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ITEM	O	QTY	DESCRIPTION	MANUFACTURER	MODEL #	UL	NSF	FURNISHED	GENERAL REMARKS	SPECIAL REQUIREMENTS
181.14		1	REFRIGERATOR – WORKTOP – 48" WIDE	TRUE	TWT–48 MCD1	SA4065	7	KES	–	
183.00		1	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 33" H	KES	18012498	SA4044	7	KES	–	
183.02		4	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 30" H	KES	18021304	SA4044	7	KES	–	
187.71		1	FREEZER SHELVING 24" x 36" x 74" H. – 4–TIER	ISS SHELVING	FSMS/FSMA742436E	–	2	KES	–	
187.73		2	FREEZER SHELVING 24" x 48" x 74" H. – 4–TIER	ISS SHELVING	FSMS/FSMA742448E	–	2	KES	–	
187.75		2	FREEZER SHELVING 24" x 60" x 74" H. – 4–TIER	ISS SHELVING	FSMS/FSMA742460E	–	2	KES	–	
188.00		7	DUNNAGE RACK 22" x 36"	INTERMETRO	HP2236PD	–	2	KES	–	
188.07		1	UNIVERSAL STAGING CART	ISS SHELVING	WST1384Y	–	2	KES	–	
188.08		3	DUNNAGE RACK 22" x 30"	INTERMETRO	HP2230PD	–	2	KES	–	
188.09		3	DUNNAGE RACK 22" x 48"	INTERMETRO	HP2248PD	–	2	KES	–	
189.71		1	COOLER SHELVING 24" x 36" x 74" H. – 4–TIER	ISS SHELVING	FSMS/FSMA742436E	–	2	KES	–	
189.72		2	COOLER SHELVING 24" x 42" x 74" H. – 4–TIER	ISS SHELVING	FSMS/FSMA742442E	–	2	KES	–	
189.73		1	COOLER SHELVING 24" x 48" x 74" H. – 4–TIER	ISS SHELVING	FSMS/FSMA742448E	–	2	KES	–	
189.74		3	COOLER SHELVING 24" x 54" x 74" H. – 4–TIER	ISS SHELVING	FSMS/FSMA742454E	–	2	KES	–	
191.00		1	VALANCE SHELVING – 18" x 36"	INTERMETRO	M1836C–MP	–	2	KES	MOUNT AT 6'–8"AFF TO SHELF BOTTOM UNLESS OTHERWISE NOTED	
191.01		1	VALANCE SHELVING – 18" x 48"	INTERMETRO	M1848C–MP	–	2	KES	MOUNT AT 6'–8"AFF TO SHELF BOTTOM UNLESS OTHERWISE NOTED	
191.02		1	VALANCE SHELVING – 18" x 60"	INTERMETRO	M1860C–MP	–	2	KES	MOUNT AT 6'–8"AFF TO SHELF BOTTOM UNLESS OTHERWISE NOTED	
191.03		1	VALANCE SHELVING – 18" x 30"	INTERMETRO	M1830C–MP	–	2	KES	MOUNT AT 5'–0"AFF TO SHELF BOTTOM FOR ABOVE WASHER APPLICATION	
191.04		1	VALANCE SHELVING – 18" x 36"	INTERMETRO	M1836C–MP	–	2	KES	MOUNT AT 5'–0"AFF TO SHELF BOTTOM –W/ST STL LINER FOR SALAD EQUIP	
194.32		1	DRY SHELVING 26" x 52" x 84" H.– 4–TIER – MOBILE	DENSTOR	–	–	2	KES	–	
194.36		3	DRY SHELVING 26" x 100" x 84" H.–4–TIER – MOBILE	DENSTOR	–	–	2	KES	–	
195.36		2	DRY SHELVING 26" x 100" x 84" H.–5–TIER–MOBILE	DENSTOR	–	–	2	KES	–	
195.51		1	DRY SHELVING 26" x 100" x 84" H.– 5–TIER–FIXED	DENSTOR	–	–	2	KES	–	
196.06		1	SAFE – STANDARD BLDG. – LEFT HINGE	NKL	BSD4125FGXL–MC	–	–	OWNER	–	
197.00		2	STAINLESS STEEL HAND SINK	ADVANCE TABCO	7–PS–61	–	2	GC	REFER TO PLUMB. DWGS. FOR DETAILS, SOAP & TOWEL DISP. BY OTHERS	PROVIDE SIDE SPLASHES (7–PS–11) WHEN REQUIRED BY LOCAL CODE
197.01		1	HAND WASH TIMER	NATIONAL CONTROLS	TMD–T1715–120	E53595	–	KES	–	
197.03		2	STAINLESS STEEL HAND SINK – ADA	ADVANCE TABCO	7–PS–26	–	2	GC	REFER TO PLUMB. DWGS. FOR DETAILS, SOAP & TOWEL DISP. BY OTHERS	PROVIDE SIDE SPLASHES (7–PS–11D) WHEN REQUIRED BY LOCAL CODE
201.13		1	DRIVE–THRU CASH STAND – 21" D x 48" W	INTERMETRO	DT48–8	–	2	KES	SOLID WORK TOP, WIRE SHELVES	
201.15		1	READY NEXT DRIVE–THRU ASSEMBLY CART – 12" D x 36" W	INTERMETRO	DTPC–36	–	2	KES	–	
201.16		2	DRIVE–THRU ABS CART – LEFT HAND	KES	–	–	2	KES	ABS DRINK STAGING CART WITH TROUGH	
201.18		2	CBB STAGING CART	INTERMETRO	MCD–CBB	–	2	KES	–	
201.21		1	BLZ FRONT COUNTER TABLE – 30" D x 14" W	INTERMETRO	MCD1430–BLZM	–	2	KES	W/ CASTERS AND OVERSHELF	
203.01		1	HEAT TREAT COMBINATION SHAKE/SUNDAE MACHINE	CARPIGIANNI	K3	SA4203	6	KES	SUPPLIED WITH CONE DISPENSER AND 7'–6" LONG CORD	
203.03		2	CUP/CONE DISPENSER	KES	–	–	2	KES	–	
205.08		1	BIC MACHINE	MULTPLEX	MA–8–2	SA12070	6	KES	–	
205.09		1	FROZEN BEVERAGE DISPENSER	IMI CORNELIUS	VIPER 3	SA2128	6	KES	–	
206.01		1	SPECIALTY BEVERAGE STANDOFF SHELF	KES	KES	–	2	KES	MOUNT SHELF @ 2'–6" AFF	
207.01		1	BLENDER – RAIL MOUNT – MCFLURRY	VITAMIX	056385	–	8	KES	SUPPLIED MOUNTING BRACKETS	
207.09		1	DESSERT BUTLER	KES	–	–	2	KES	–	–
211.00		1	DELIVERY TABLET	APPLE	IPAD	–	–	DELIVERY PARTNER	QUANTITY DEPENDENT UPON NUMBER OF DELIVERY PARTNERS	
214.02		1	82" 44U STATIONARY RACK	BY OWNER	BY OWNER	OEM	–	OWNER	–	
215.00		1	POS REGISTER – FRONT COUNTER	BY OWNER	BY OWNER	OEM	–	OWNER	INCLUDES MONITOR AND CPU	
215.02		4	POS REGISTER – 2 WINDOW D/T	BY OWNER	BY OWNER	OEM	–	OWNER	INCLUDES MONITOR AND CPU	
215.04		8	POS – KVS MONITOR	BY OWNER	BY OWNER	OEM	–	OWNER	–	
215.07		1	POS REGISTER – DELIVERY	BY OWNER	BY OWNER	OEM	–	OWNER	–	
216.00		8	POS – VIDEO MONITOR	BY OWNER	BY OWNER	E106786	–	OWNER	SUPPORTS INSTALLED BY GC IF REQUIRED – MOUNT @ 5'–8" AFF	FOR APPLICATIONS ABOVE ABS, MOUNT AT 6'–6" AFF
217.13		3	MERGE POINT MONITOR (DOUBLE DRIVE–THRU)	BY OWNER	BY OWNER	–	–	OWNER	MONITORS ARE REQUIRED FOR SIDE BY SIDE DRIVE THRU SYSTEM	–
217.14		1	POS – ORDER MONITOR (DOUBLE DRIVE THRU)	BY OWNER	BY OWNER	E106786	–	OWNER	SUPPORTS INSTALLED BY GC IF REQUIRED – MOUNT @ 5'–8" AFF	
217.19		1	WIRELESS HEADSET BASE STATION	HME	NEXEO HDX	–	–	OWNER	–	
217.24		1	DANGER POINT MONITOR (DOUBLE DRIVE–THRU)	BY OWNER	BY OWNER	–	–	OWNER	MONITORS ARE REQUIRED FOR SIDE BY SIDE DRIVE THRU SYSTEM	
217.26		1	ZOOM TIMER	HME	ZOOM NITRO	–	–	OWNER	–	
219.00		4	POS – RECEIPT PRINTER	BY OWNER	BY OWNER	OEM	–	OWNER	–	
219.05		7	STICKY LABEL PRINTER	BY OWNER	BY OWNER	OEM	–	OWNER	–	–
219.06		1	LABELING SYSTEM	TRANSACT	9700	–	–	KES	–	
220.00		1	POS – COIN DISPENSER	BY OWNER	BY OWNER	OEM	–	OWNER	–	
221.01		1	77" 38U ROLLING RACK	PARAGON	PRMCD77CA	OEM	–	OWNER	–	
221.09		1	O/O EQUIPMENT RACK	TRIPP–LITE	SRW12USDP	–	–	OWNER	AVAILABLE THROUGH POS SUPPLIER	
222.01		1	TIME CLOCK	BY OWNER	BY OWNER	OEM	–	OWNER	–	
223.07		1	WASHER – ELECTRIC	WHIRLPOOL	CAE2793BQ	–	–	KES	–	
225.03		1	OFFICE PACKAGE/DESK UNIT	DENSTOR	2000–0100	–	–	KES	WORK SURFACE 75", (1) DESK PEDESTAL W/ 2 DRAWERS AND (1) PEDESTAL W/ 3 DRAWERS	
225.04		1	OFFICE PACKAGE/ 2–WALL CABINETS	DENSTOR	2000–0200	–	–	KES	–	
225.05		1	OFFICE PACKAGE/HIGH WORK SURFACE	DENSTOR	2000–0300	–	–	KES	W/ (6) L–BRACKETS – WORK SURFACE IS 75" W. – CUT IN FIELD IF REQUIRED	
225.06		1	OFFICE PACKAGE W/3 DRAWER LATERAL FILE	DENSTOR	2000–0400	–	–	KES	–	
226.08		4	CREW LOCKERS –12" x 12" x 18" (6 HIGH)	DENSTOR	3–121278	–	2	KES	–	
226.09		1	CREW SMART LOCKERS	DENSTOR	C3	–	–	KES	LOCATED IN CREW ACCESSORY CABINET	
237.00		1	PIE DISPLAY	PRINCE CASTLE	524–MCDC	E341354	4	KES	PROVIDE WITH S/S PANEL	
700.02		2	MOP SINK	GC	–	–	2	GC	–	
700.06		1	WATER HEATER – ELECTRIC – 54KW	GC	SEE RMKS	–	2	GC	REFER TO PLUMB. DWGS. FOR DETAILS	
700.09		1	ECONOMY OEP BOX W/MOUNTING HARDWARE	ACS	OEP–6	E71309	–	KES	6" W. x 24" D.	
700.10	X	1	BULK OIL SYSTEM	RTI	BI–3F	SEE RMKS	4	MANU–FACTURER	IF AVAILABLE IN MARKET – ETL ELECTRICAL RATING: 9900762	
700.11		1	OEP UTILITY PANEL W/ MOUNTING HARDWARE – STATIC BOX	H&K DALLAS	–	–	–	H&K DALLAS	2'–4"x2'–4" x4" HIGH BOX	
700.18	X	1	BULK OIL FILL BOX – 8"Wx10"H	RTI	–	–	–	MANU–FACTURER	SEE EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT, INSTALLED BY GC	

SEE SHEET K2.0 FOR EQUIPMENT LAYOUT AND TAG IDENTIFICATION

1 / K2.1 KITCHEN SCHEDULE

REV | DATE | DESCRIPTION | BY

JOHN DALE FERGUSON, REGISTERED, No. 10805045, STATE OF INDIANA, PROFESSIONAL ENGINEER
11/21/2025

PREPARED BY: CORE STATES GROUP
212 SE 34th. Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

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PREPARED FOR: McDonald's USA, LLC

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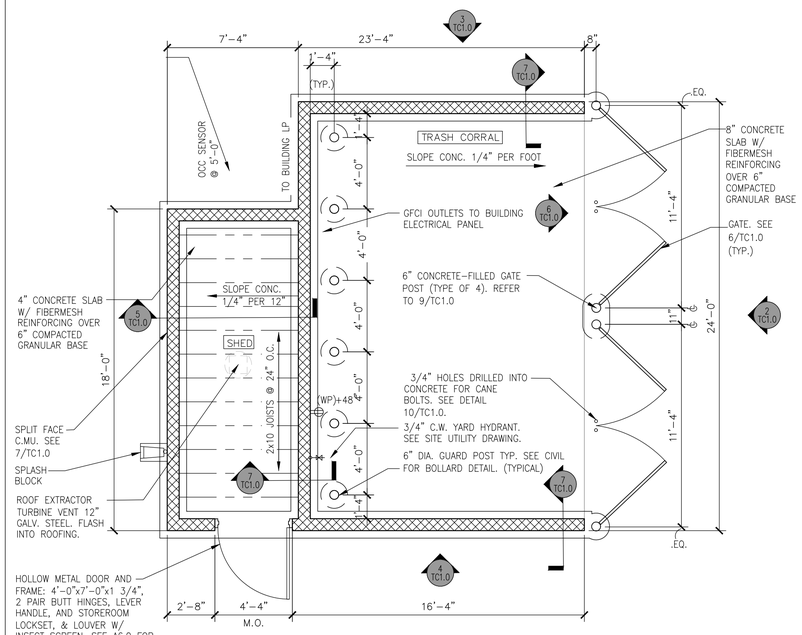
DRAWN BY: DA
STD ISSUE DATE: 2025 05
REVIEWED BY: DL
DATE ISSUED: 11/25/25

TITLE: 2025 OPTIMIZED BUILDING – BB20 4590–WOOD/WOOD

DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & Ci; WOOD TRUSS ROOF FRAMING; E.I.F.S./BATTEN/LAP SIDING EXTERIOR FINISH

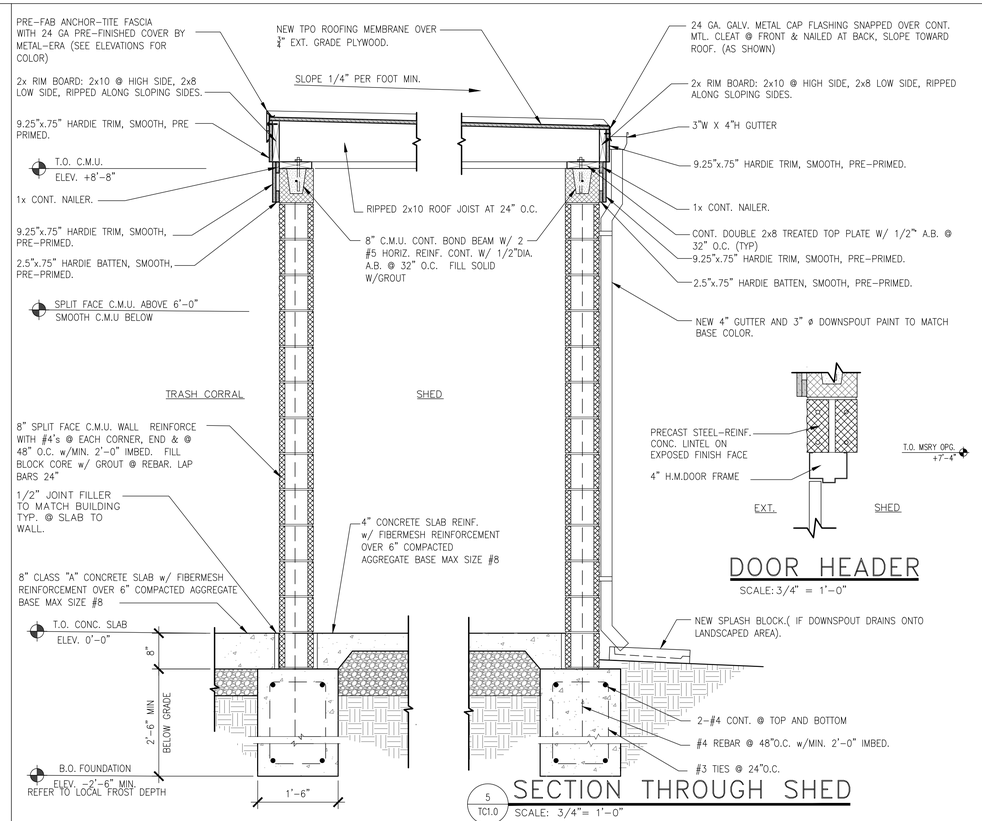
NSN: 013.1263
SITE ADDRESS: 7030 Northfield Dr. BROWNSBURG, IN

SHEET NO. 013.1263.00.0
K2.1
KITCHEN SCHEDULE



1 TC1.0 TRASH ENCLOSURE PLAN W/ SHED

SCALE: 1/4" = 1'-0"



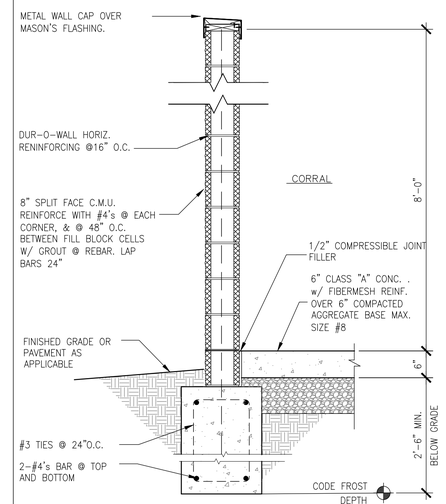
5 TC1.0 SECTION THROUGH SHED

SCALE: 3/4"= 1'-0"

DOOR HEADER

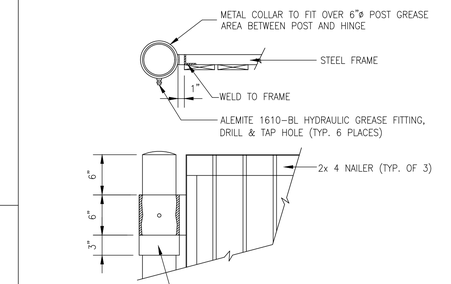
SCALE: 3/4" = 1'-0"

* NOTE: SEE DWG. S-1 FOR RECOMMENDED FOUNDATION DEPTH RELATING TO REGIONAL FROST-LINE DEPTH.



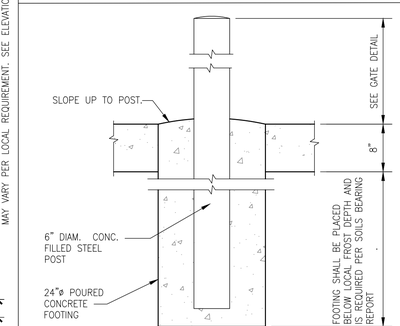
7 TC1.0 TYPICAL WALL SECTION

SCALE: 3/4"= 1'-0"



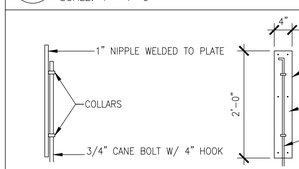
8 TC1.0 HINGE DETAIL

SCALE: 1"= 1'-0"



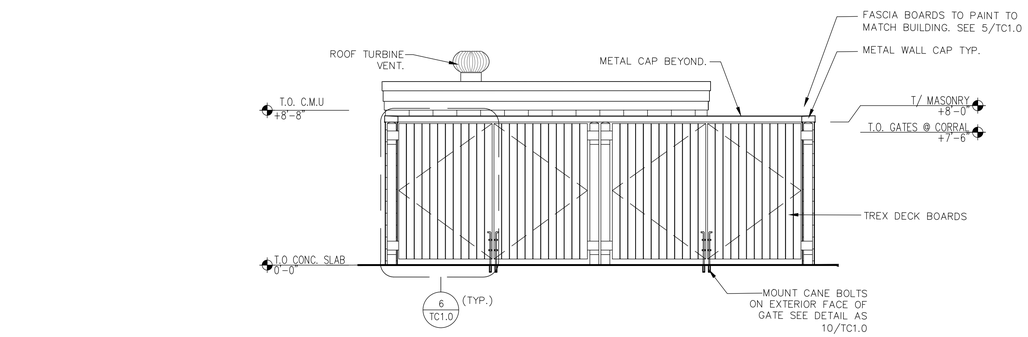
9 TC1.0 TYPICAL GATE POST DETAIL

SCALE: 1"= 1'-0"



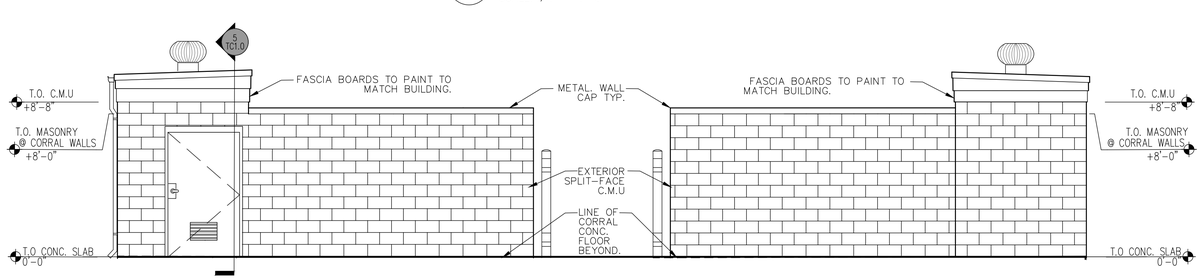
10 TC1.0 BOLT DETAIL

SCALE: 3/4" = 1'-0"



2 TC1.0 FRONT SIDE ELEVATION

SCALE: 1/4" = 1'-0"

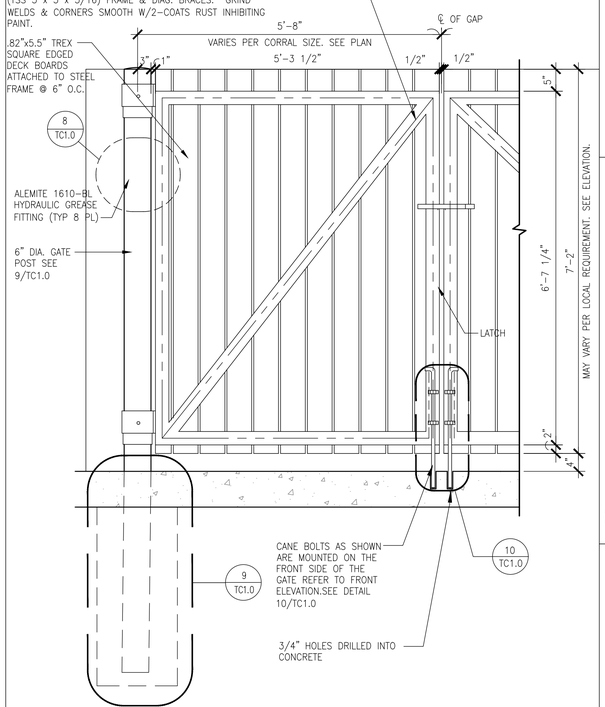


4 TC1.0 LEFT SIDE ELEVATION

SCALE: 1/4" = 1'-0"

3 TC1.0 RIGHT SIDE ELEVATION

SCALE: 1/4" = 1'-0"



6 TC1.0 TYPICAL GATE DETAIL

SCALE: 3/4" = 1'-0"

REV	DATE	DESCRIPTION	BY

PREPARED BY:
LANCER ASSOCIATES ARCHITECTURE
145 N EAST STREET
INDIANAPOLIS, IN 46204

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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED
mbh	WTS	11.24.2025
STD ISSUE DATE 2025 10		

TITLE
2025 OPTIMIZED BUILDING - BB20
4590-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH & CI	
WOOD TRUSS ROOF FRAMING	
CITADEL ACM WALL PANELS/BATTEN/LAP SIDING EXTERIOR FINISH	7030 NORTHFIELD DRIVE, BROWNSBURG, IN, 46112
NSN:452011	
L/C:13263	

013.1263.00.0

SHEET NO. TC1.0
TRASH CORRAL

Docusign Envelope ID: 6FE64812-C8DD-41FD-B73B-C710F5374D93

Letter of Intent

July 16th, 2025

RE: BLI: 253355
City, ST: Brownsburg, IN
Address: SEC of Green St. & Northfield Dr.
L/C: 131263
County: Hendricks

This non-binding letter (Letter) sets forth the basic terms for a purchase contract (the "**Contract**") with respect to the property located in Hendricks County at the address referenced above. All documents in this transaction (including the Contract) will be prepared on Tenant's form documents.

1. **Purchaser:** McDonald's USA, LLC, a Delaware limited liability company or its nominee.

2. **Seller: Christian Brothers**
Address: 17725 Katy Freeway, Houston, TX 77904
Phone Number:
E-Mail: Michael.suttle@cbac.com
Seller's Federal Tax ID #: Will present at closing

3. **Premises:** Approximately 67,954 square feet with a frontage of 200 feet on Green St. See **Exhibit A.**

4. **Purchase Price:** $ $799,000

5. **Earnest Money:** Purchaser will deposit $15,000.00 with the title insurance company as escrow agent within 30 days after Contract execution.

6. **Restrictive Covenant:** Seller will restrict all property, where they are the same owner as this property, within a two-mile radius from being a restaurant serves any hamburgers, cheeseburgers, chicken sandwiches or other beef and chicken products in sandwich form unless only one such item is on the restaurant's menu.

7. **Zoning/Subdivision:** Already zoned and platted.

8. **Contingencies:** Purchaser shall have 240 days after the execution of the Contract (the Contingency Period) to review any due diligence reports or matters and to obtain all necessary permits and approvals. Purchaser shall have the right to extend the Contingency Period for 2 period(s) of 30 days. Each 30-day extension shall require an additional earnest money deposit of $10,000/ each. At the time of the first extension being made, the earnest money shall all become non-refundable.

9. **Signage:** Purchaser will have the right to pursue entitlements to obtain the maximum amount of signage permitted on the Premises.

10. **Seller's Work:** This is an "as-is" sale. All utilities are at the site or in the right of way.

11. **Broker Commission:** Seller agrees to pay any real estate agent, broker, finder.

Name of Broker(s): Andrew Clifford of 7D Commercial Real Estate.

12. **Scope of this Letter/Non-Binding Effect:** The parties agree and understand that this Letter is intended to be, and will be construed only as, an understanding that summarizes the discussions between the parties. This

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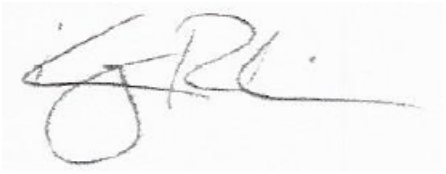
Docusign Envelope ID: 6FE64812-C8DD-41FD-B73B-C710F5374D93

Letter of Intent

Letter does not constitute a binding agreement, nor does it constitute a binding agreement to enter into an agreement, or an agreement to agree. The rights and obligations of the parties remain to be defined in the Contract. Even if a party changes its financial position or otherwise relies on the subject matter of this Letter, any such reliance will not be construed as the creation of an enforceable contract between the parties.

Sincerely,



Korey Robinson
National Real Estate Manager
McDonald's USA, LLC

Michael Suttle

Signed by:
Michael Suttle
C2FE7191AAFF43C...

Chief Development officer

7/22/2025

Approved this 16th day of July, 2025.

SELLER:

By: Signed by: Michael Suttle
C2FE7191AAFF43C...
Name: _____
Title: _____

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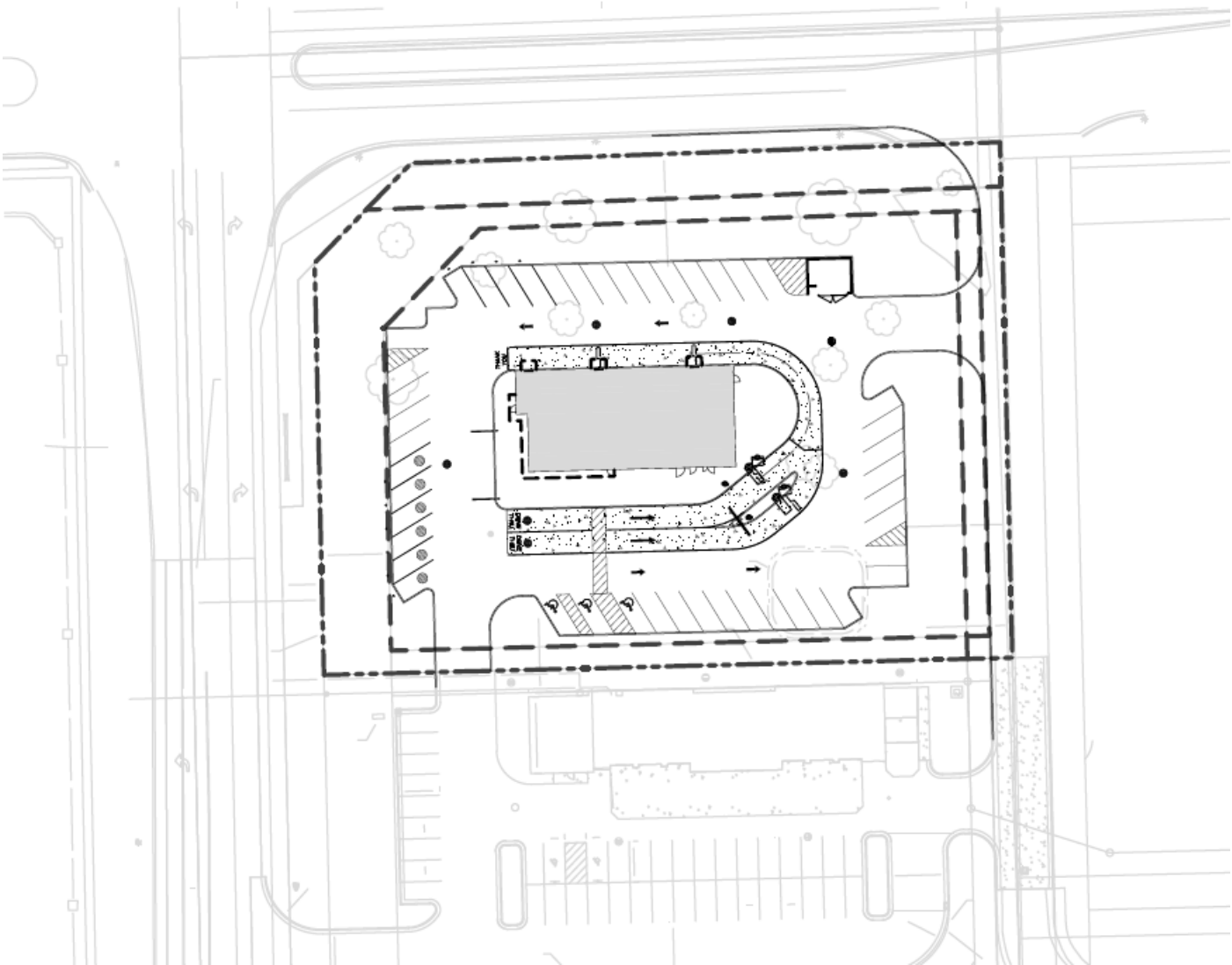
Letter of Intent

Exhibit “A”



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Docusign Envelope ID: 6FE64812-C8DD-41FD-B73B-C710F5374D93

Exhibit “B”

UTILITIES

“AS-IS” delivery. All utilities are at the site or in the right of way.

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Prepared Exclusively for Project # 69391

7030 Northfield Dr
Brownsburg, IN 46112-9031

December 8, 2025

Account Manager: Kari Moyle
kmoyle@everbrite.com (414) 529-3500

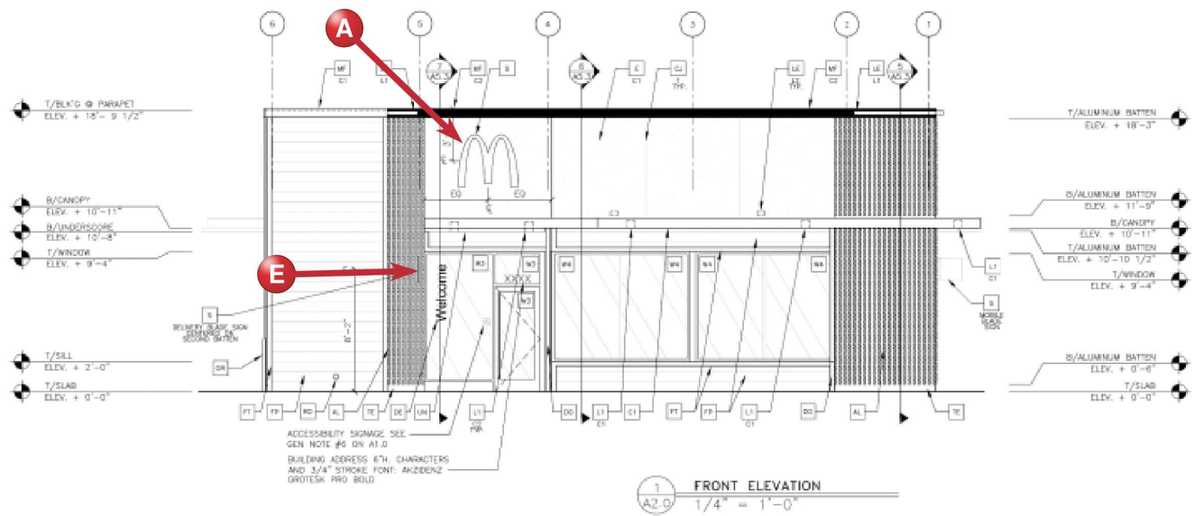
COORDINATION REVIEW

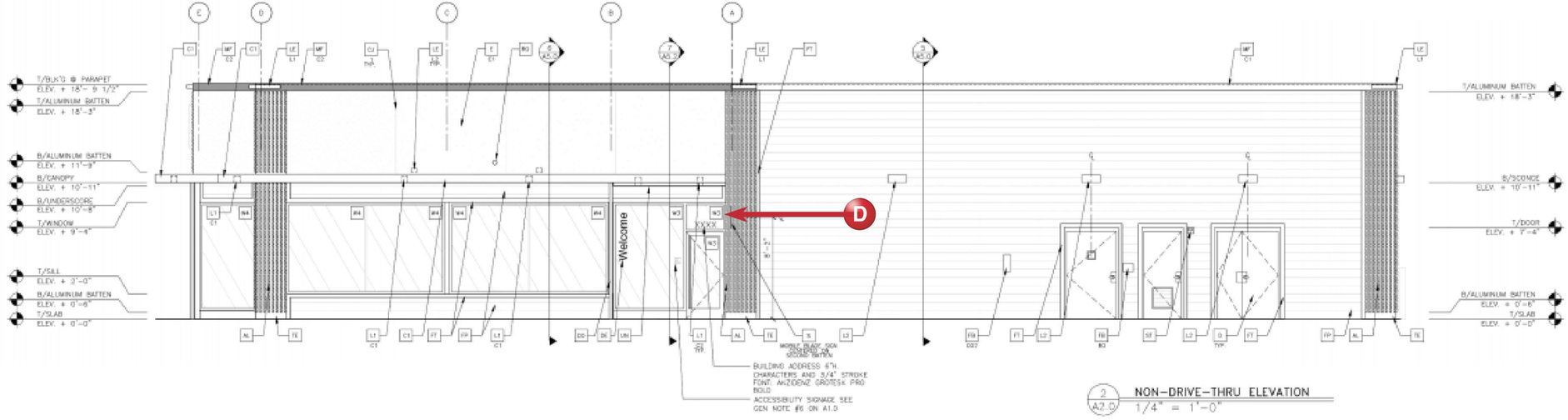
USRD DPM

DATE: 12/10/2025 BY: BD

This information is being reviewed for McDonald's coordination only and does not relieve the designer of responsibility for regulatory/ code compliance as well as implementation of applicable McDonald's guidelines

McDonald's USA, LLC





Sign Schedule

- **A** 42" NG Arch **14 sq ft**
- **D** Mobile Order Blade Sign
- **E** McDelivery Blade Sign

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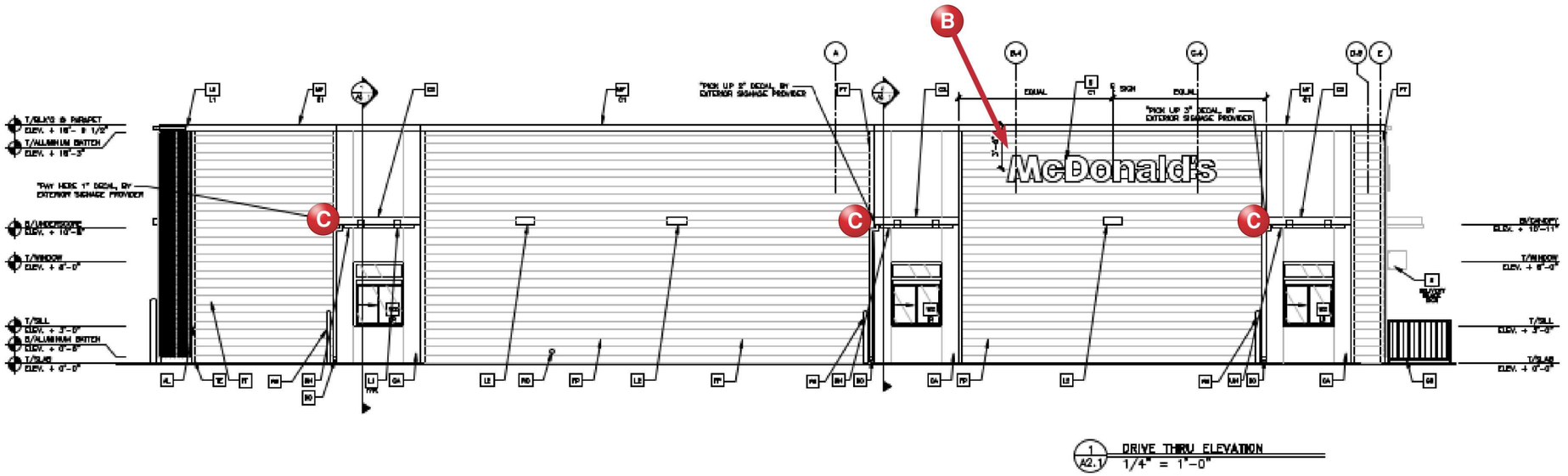
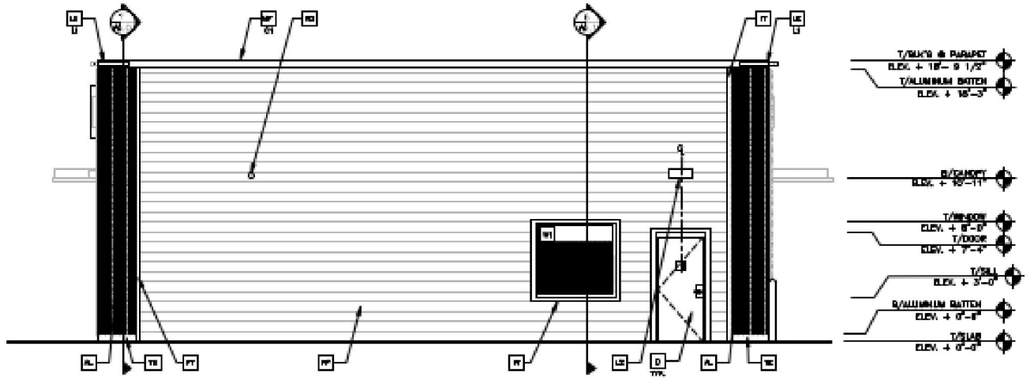


1 A2.1 DRIVE THRU ELEVATION
1/4" = 1'-0"



2 A2.1 REAR ELEVATION
1/4" = 1'-0"

Sign Schedule

- **B** 24" NG Wordmark **32.83 sq ft**
- **C** Drive-Thru Trellis Decals, 3 Windows

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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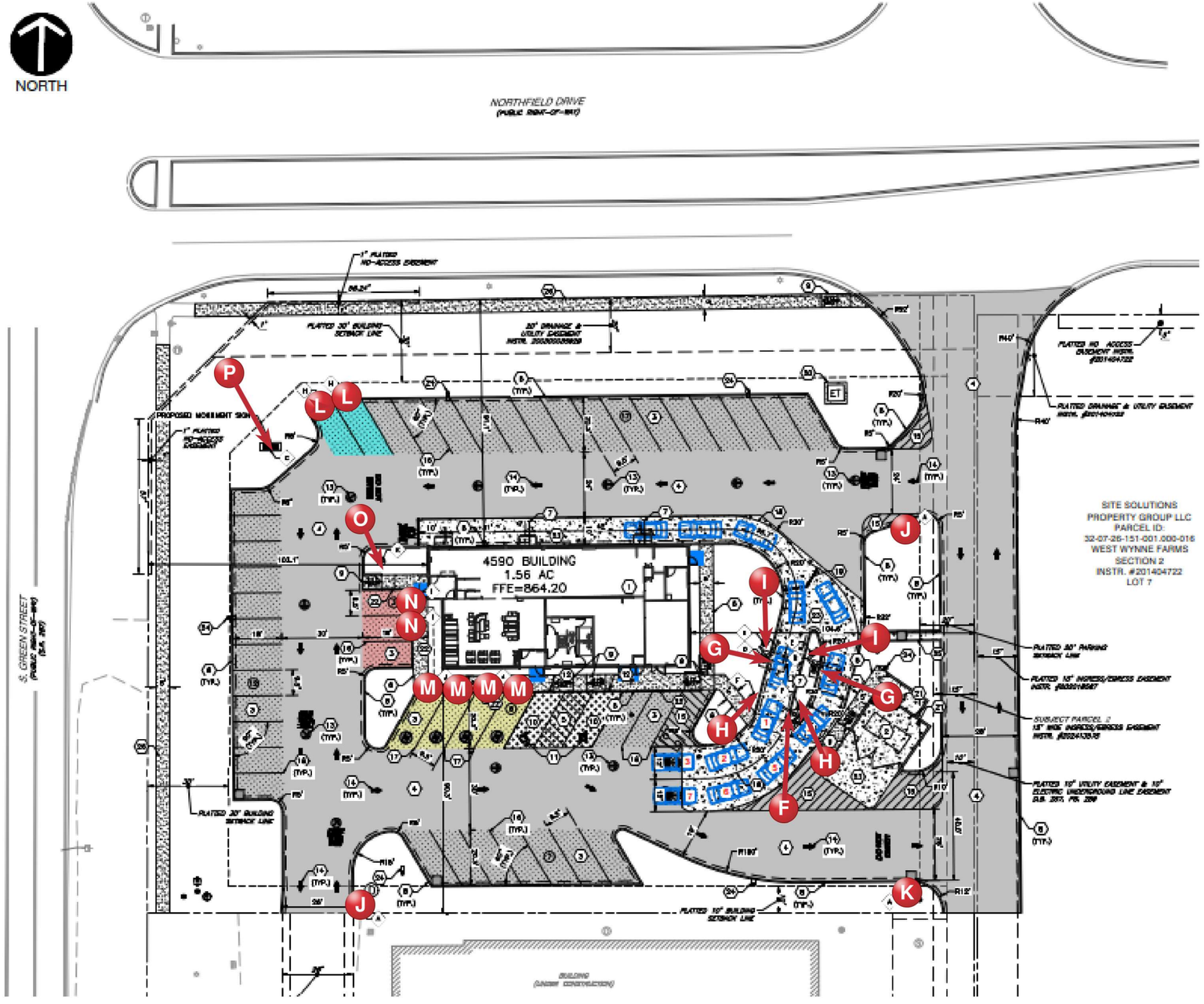

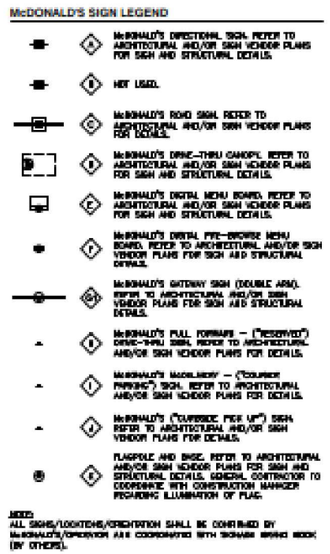

Sign Schedule

- **F** Double Welcome Point Gateway-Charcoal
- **G** Spring Board Canopy-Charcoal
- **H** Outdoor Digital Pre-Browse
- **I** Outdoor Digital Menu Board
- **J** 3 sqft @36"OAH Directional Welcome w Arch
- **K** 3 sqft @36"OAH Directional Thank You w Arch
- **L** Drive-Thru Reserved Signage
- **M** Curbside Pick Up Signage
- **N** Courier Parking Sign
- **O** 25' Flag Pole
- **P** 5' x 5' Next Gen Monument at 6OAH

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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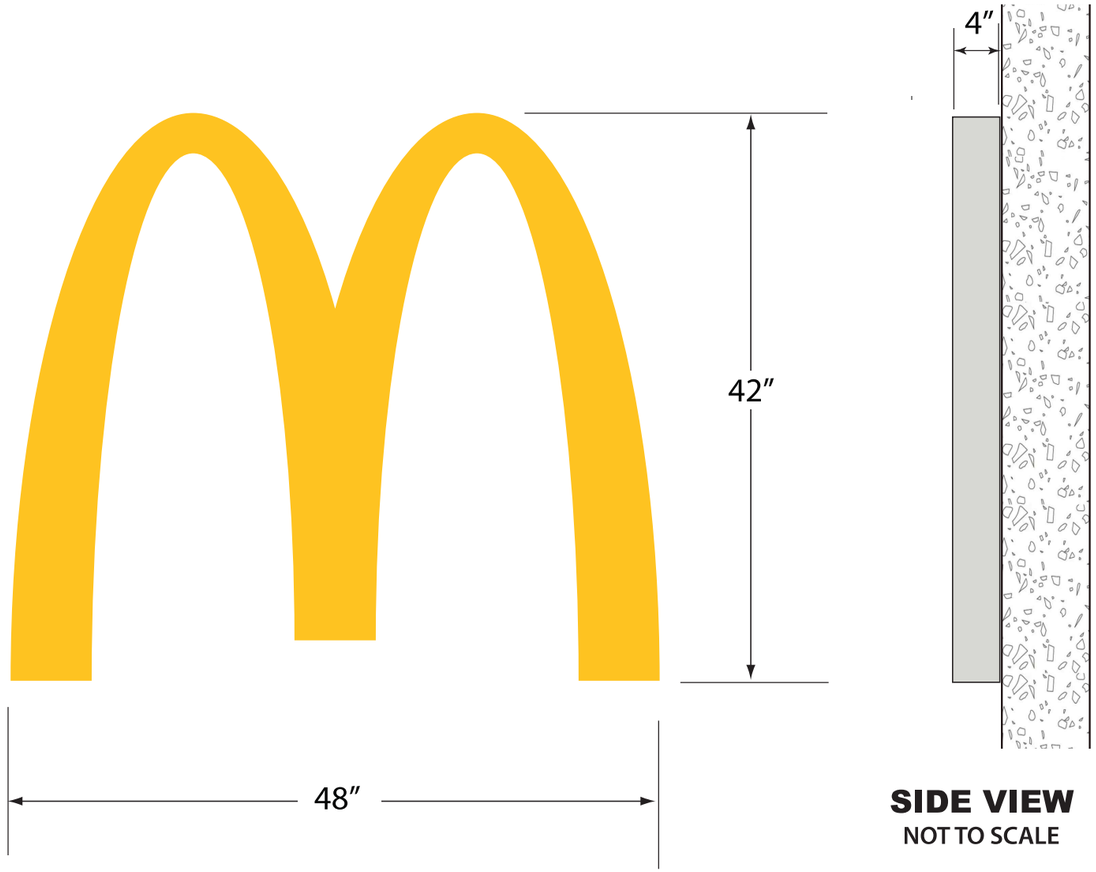

SIDE VIEW
NOT TO SCALE

SIGN DETAILS:

LED illuminated McDonald's Arch Face

Injection-molded logo with PMS123C Yellow and Next Gen Silver return

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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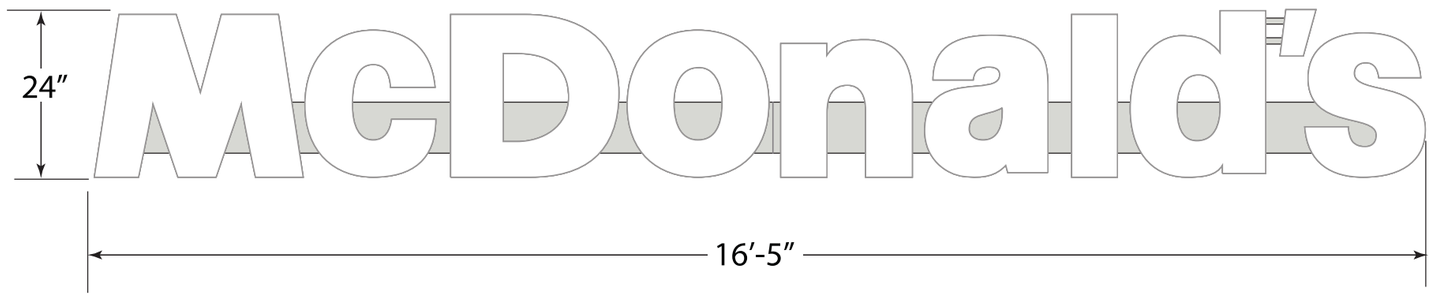

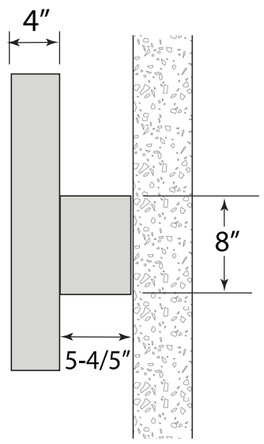

SIDE VIEW
NOT TO SCALE

SIGN DETAILS:

LED illuminated McDonald's Wordmark on Next Gen Silver raceway

Injection-molded letters with White faces and Next Gen Silver returns

Wall mount is standard. Tube mounting kit available for mansard roofs.

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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Broken line represents edge of charcoal trellis. Decal kit supplies white letters and yellow squares only

Product Details:

Decals for 48" charcoal drive-thru trellis ONLY.
White vinyl letters
PMS 132C Yellow vinyl square with number cut out

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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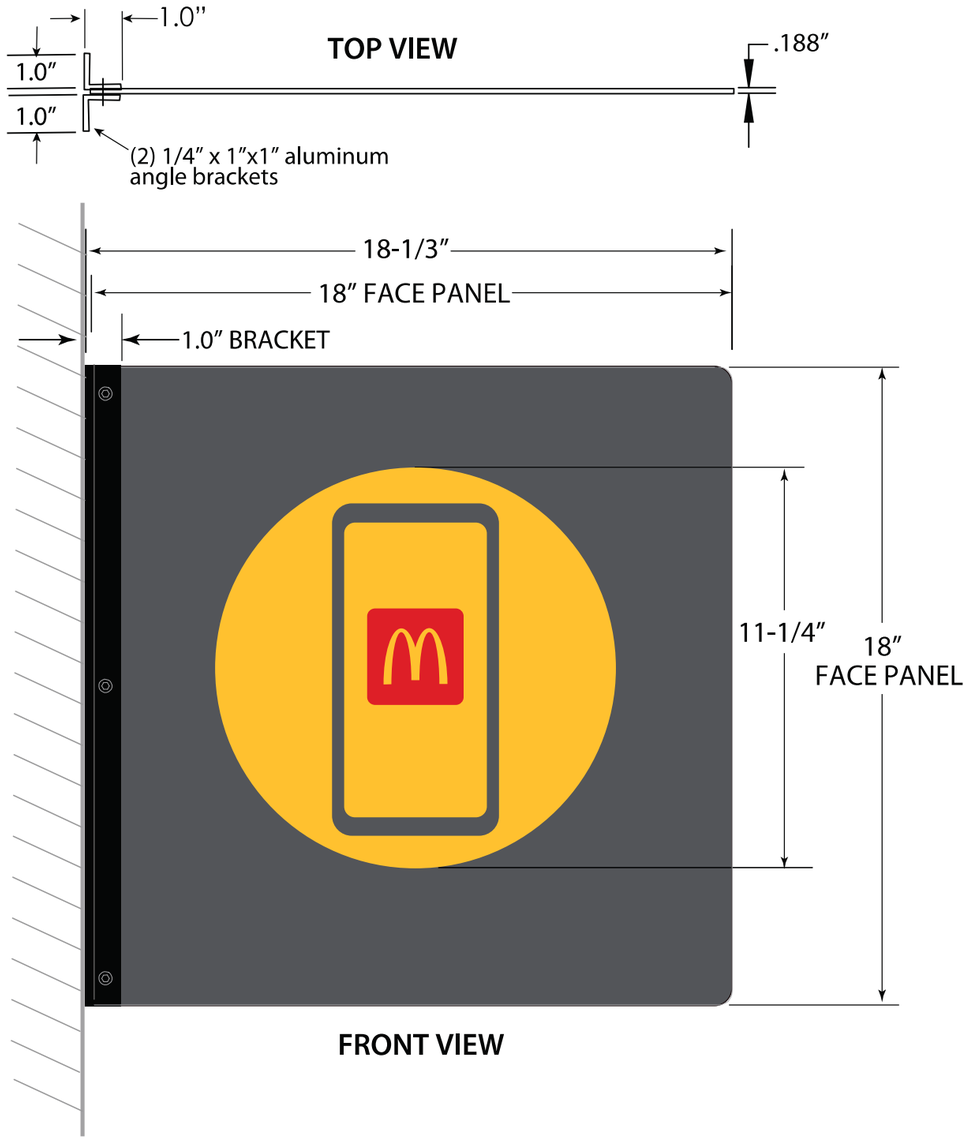

SIGN DETAILS:

Non-illuminated double-sided face and mounting bracket

Next Gen charcoal with vinyl Mobil Order graphic

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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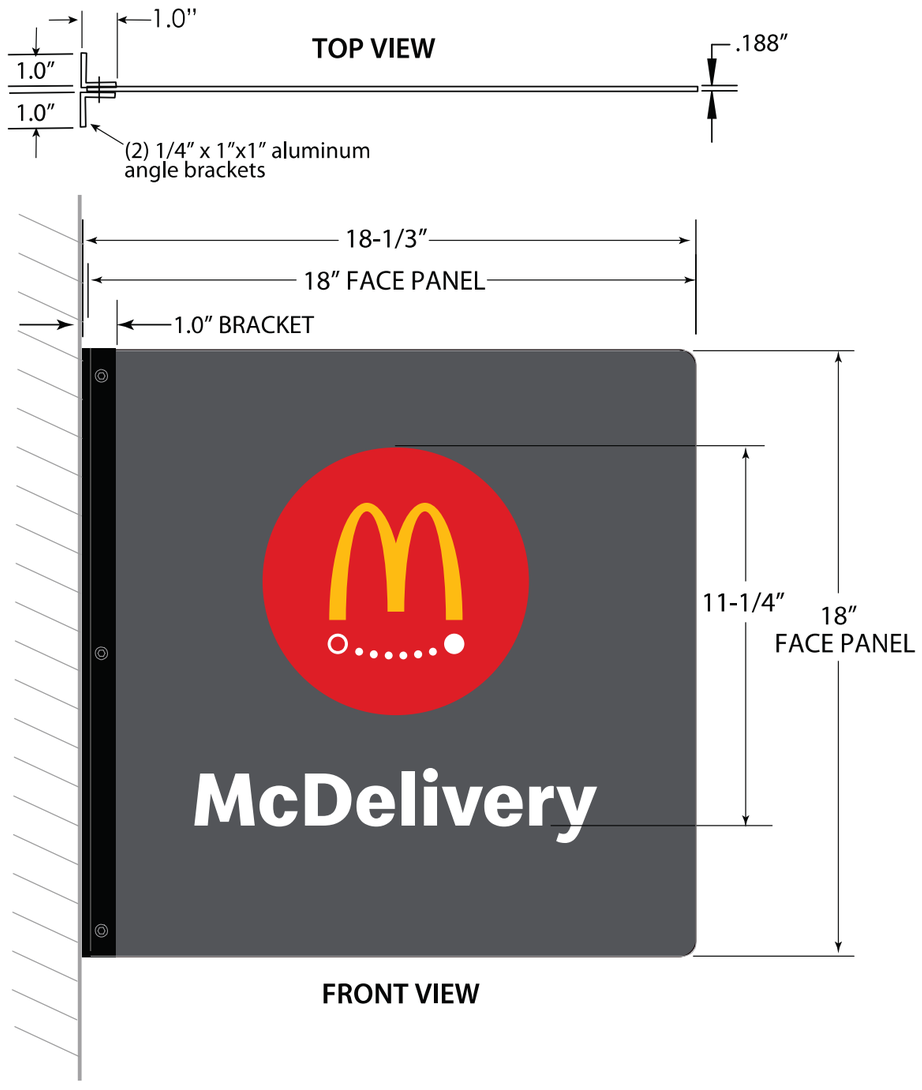

SIGN DETAILS:

Non-illuminated double-sided face and mounting bracket

Next Gen charcoal with vinyl McDelivery graphic

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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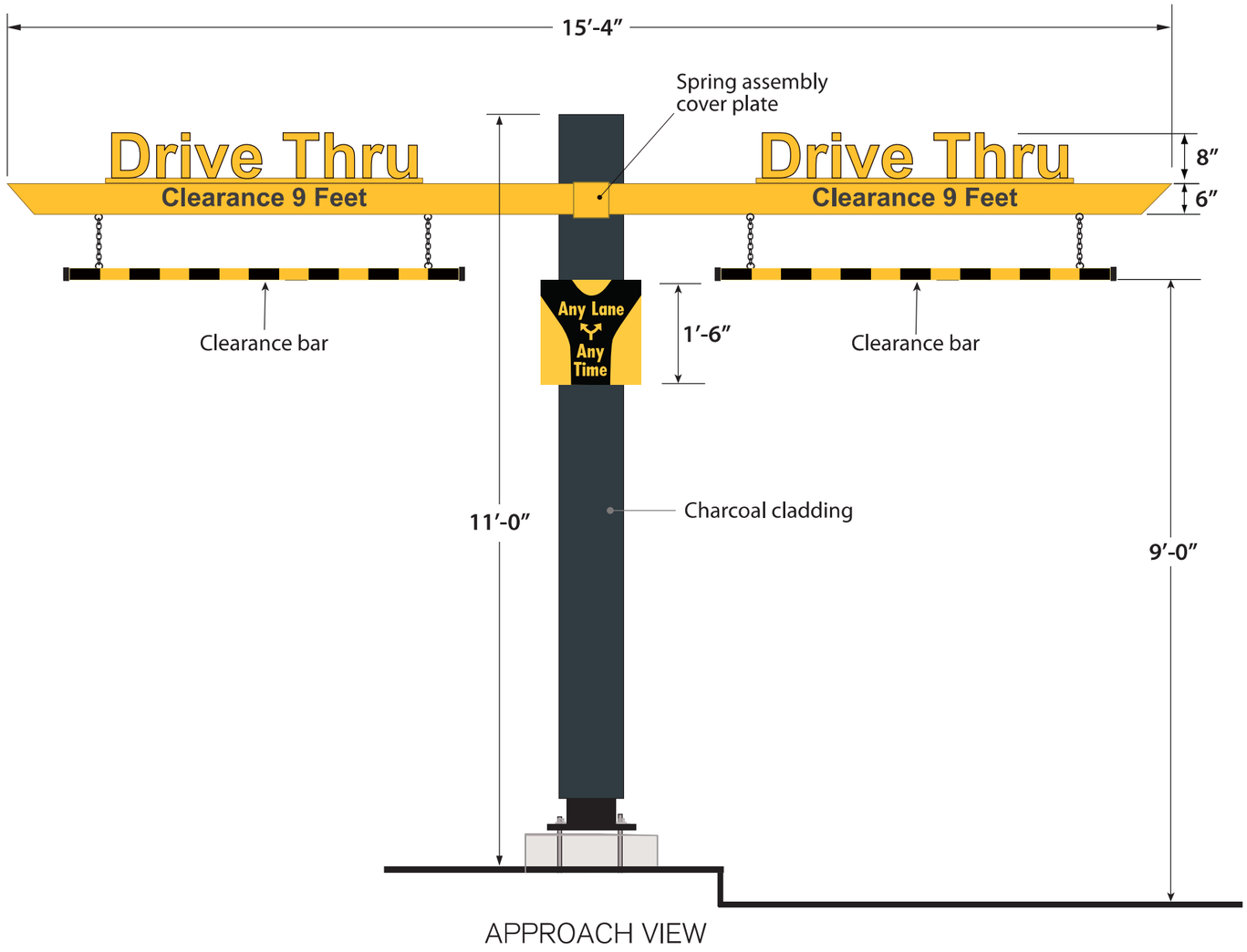

APPROACH VIEW

SIGN DETAILS:

Non-illuminated clearance sign with spring loaded clearance arms

Clearance copy to be black vinyl

Adjustable PMS 123C Yellow and black bang bar

Sintra “Drive Thru” letters with reflective PMS 123C Yellow vinyl decal

PMS 123C Yellow and black “Any Lane Any Time” face

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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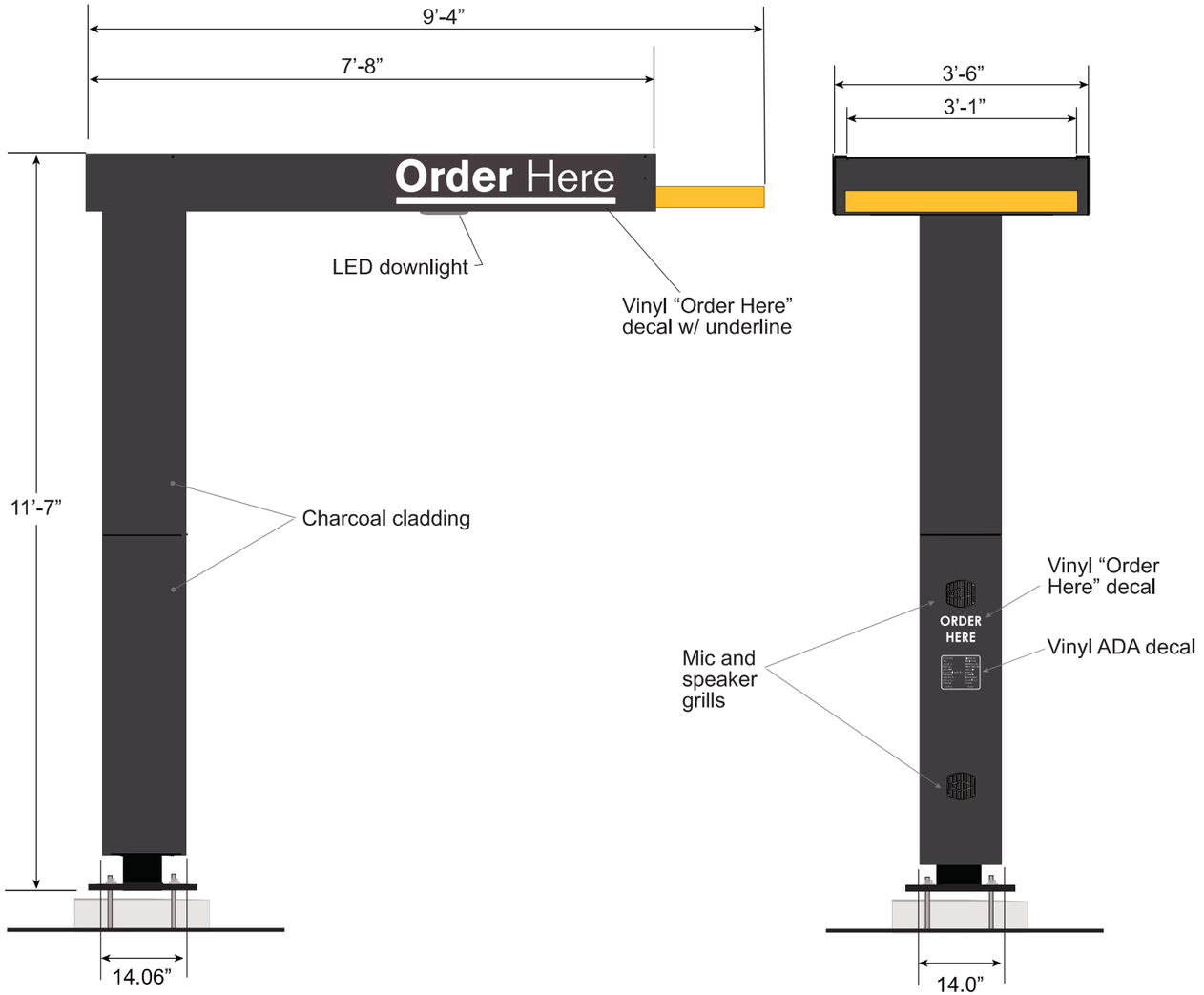

SIGN DETAILS:

LED illuminated order canopy and cladding

Next Gen Charcoal with PMS 123C Yellow accents

Reflective White vinyl Order Here letters

Audio provided by others

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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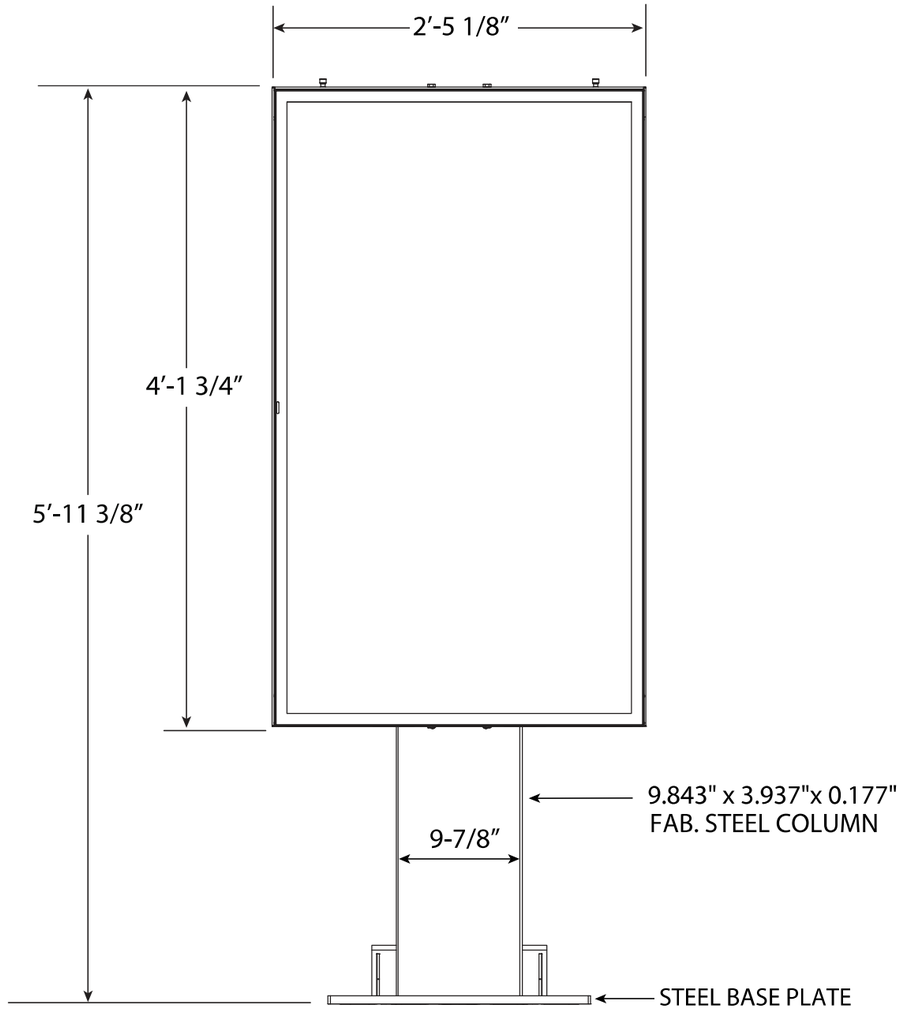

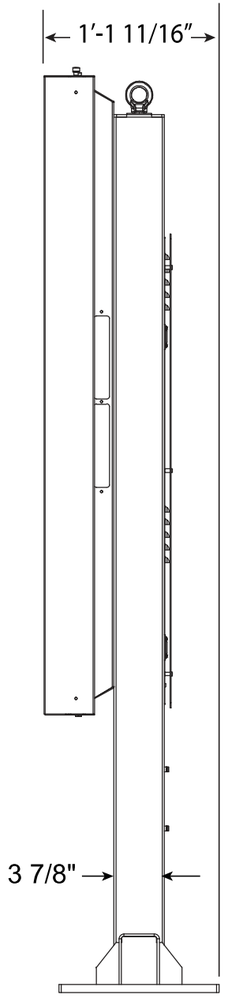

ODPB DESIGNED BY COATES

coates



10 SQUARE FEET

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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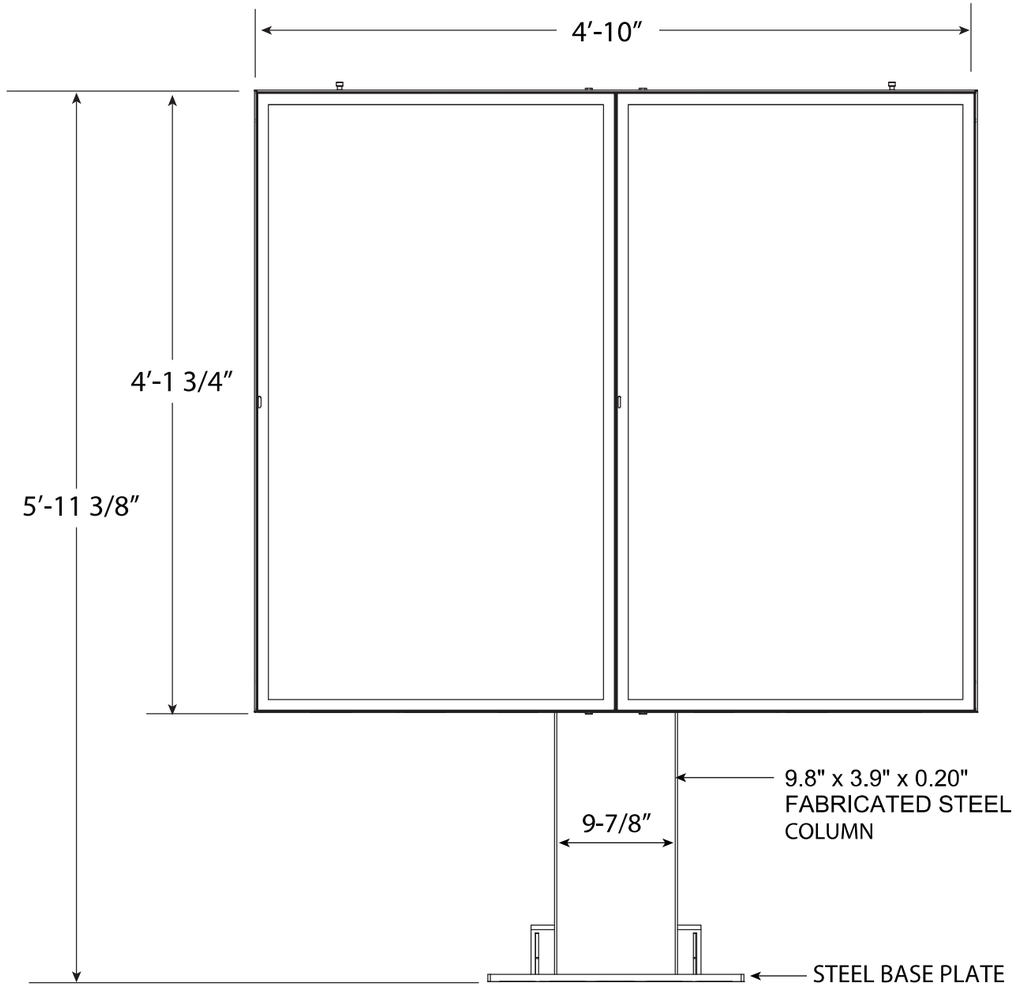

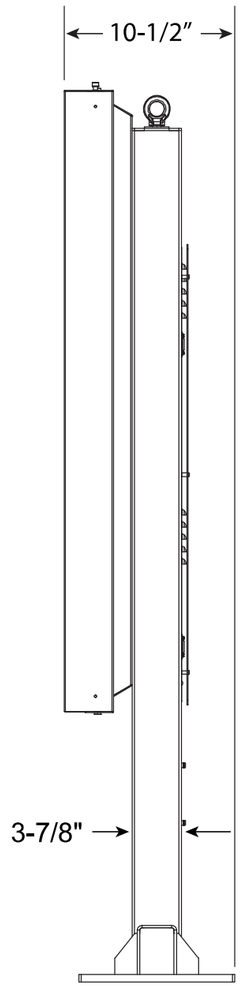

ODMB DESIGNED BY COATES

coates



20 SQUARE FEET

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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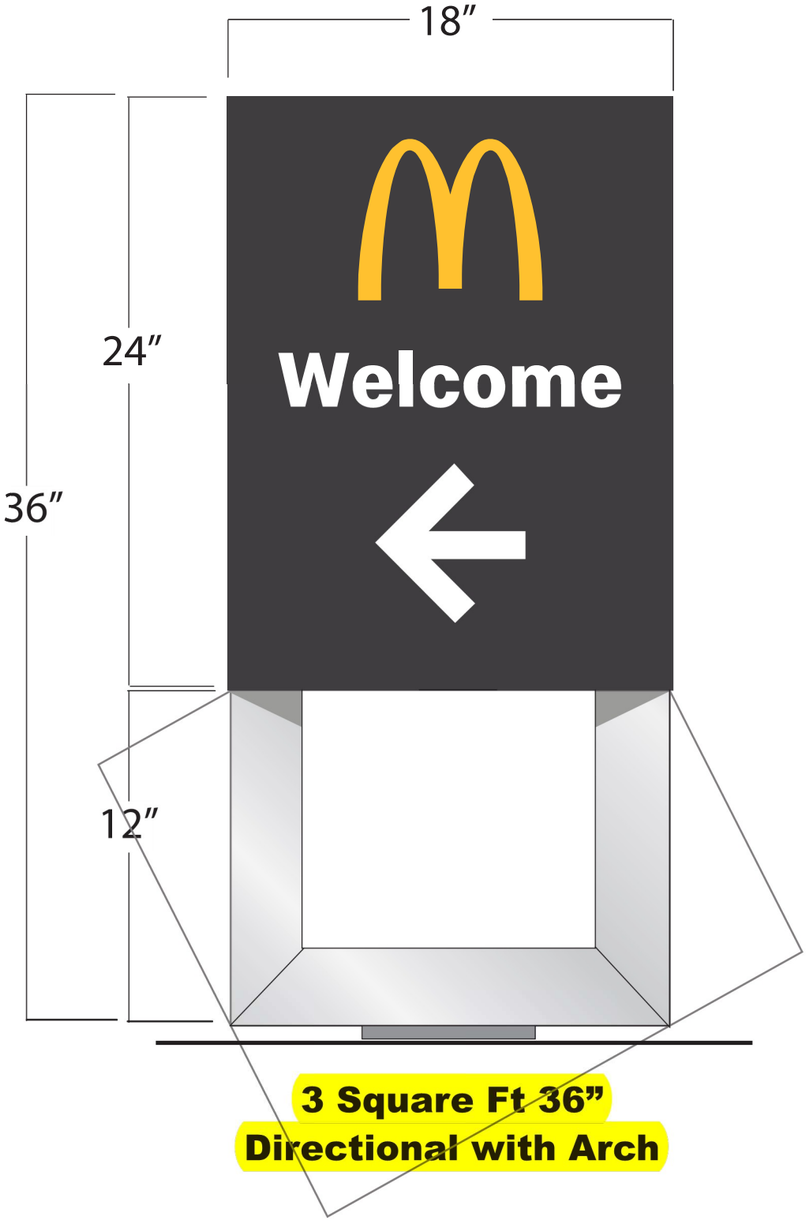

3 Square Ft 36”
Directional with Arch

SIGN DETAILS:

Routed aluminum Next Gen Charcoal faces and Next Gen Silver frame

LED illuminated letters, arrow, and optional Arch logo

White letters and arrow, PMS 123C Yellow Arch

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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SIGN DETAILS:

Routed aluminum Next Gen Charcoal faces and Next Gen Silver frame

LED illuminated letters, arrow, and optional Arch logo

White letters and arrow, PMS 123C Yellow Arch

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
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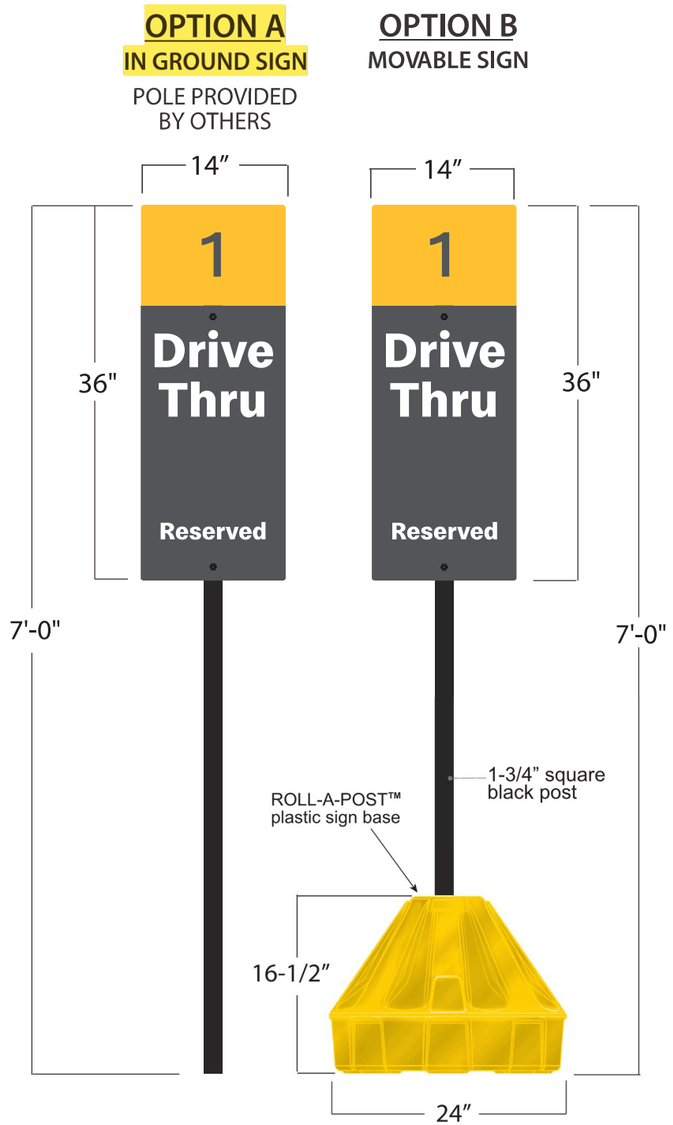
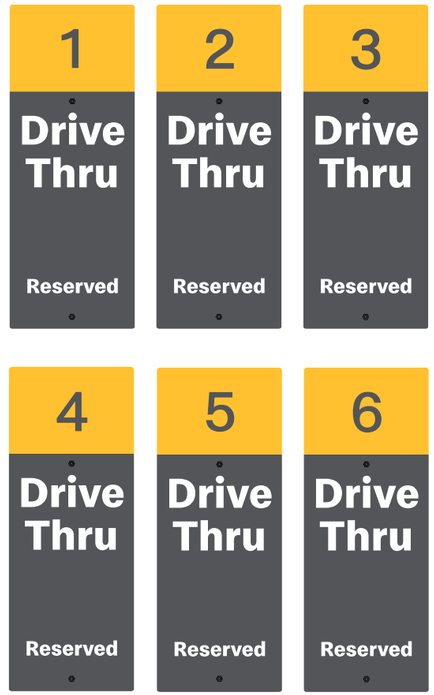


FACE OPTIONS



SIGN DETAILS:

Non-illuminated ACM panel

Next Gen Charcoal with matte finish screened copy and graphics

Reflective PMS123C Yellow vinyl number square

Shown with yellow ROLL-A-POST™ and black plastic post, sold separately

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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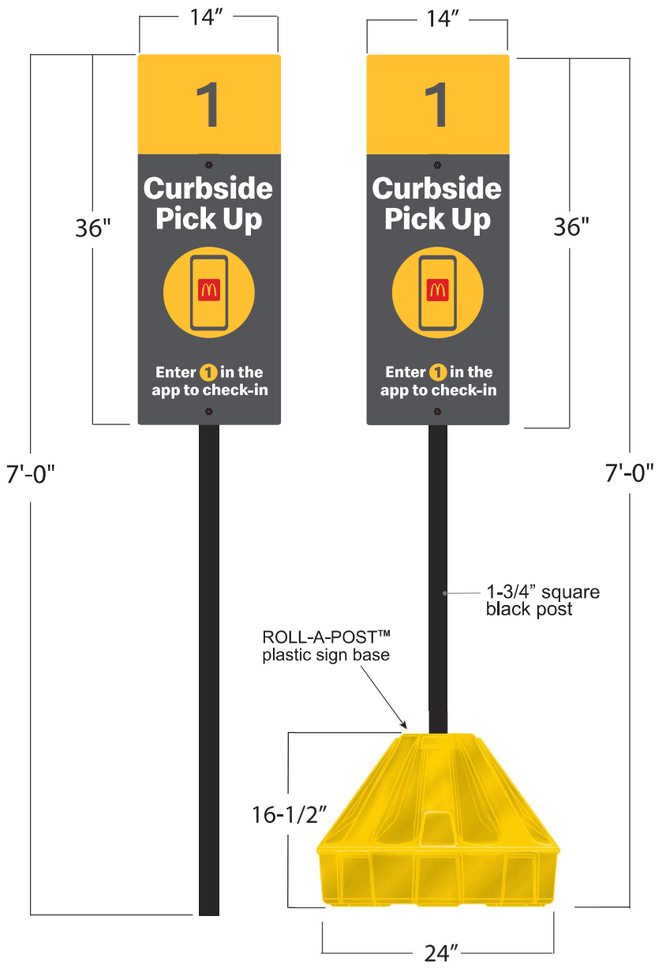
OPTION A
IN GROUND SIGN
POLE PROVIDED BY OTHERS

OPTION B
MOVABLE SIGN



FACE OPTIONS



SIGN DETAILS:

Non-illuminated ACM panel

Next Gen Charcoal with matte finish screened copy and graphics

Reflective PMS123C Yellow vinyl number square

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Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
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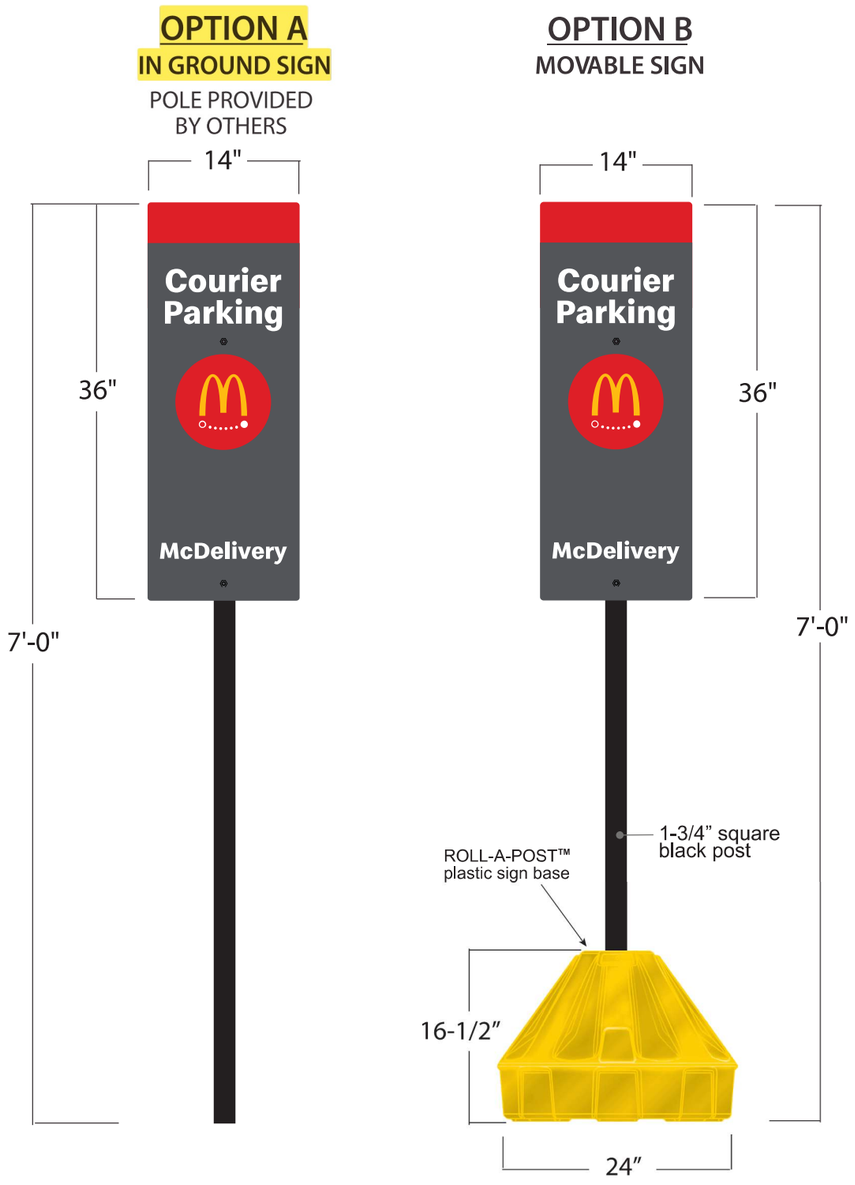

SIGN DETAILS:

Non-illuminated ACM panel

Next Gen Charcoal with matte finish screened copy and graphics

Shown with yellow ROLL-A-POST™ and black plastic post, sold separately

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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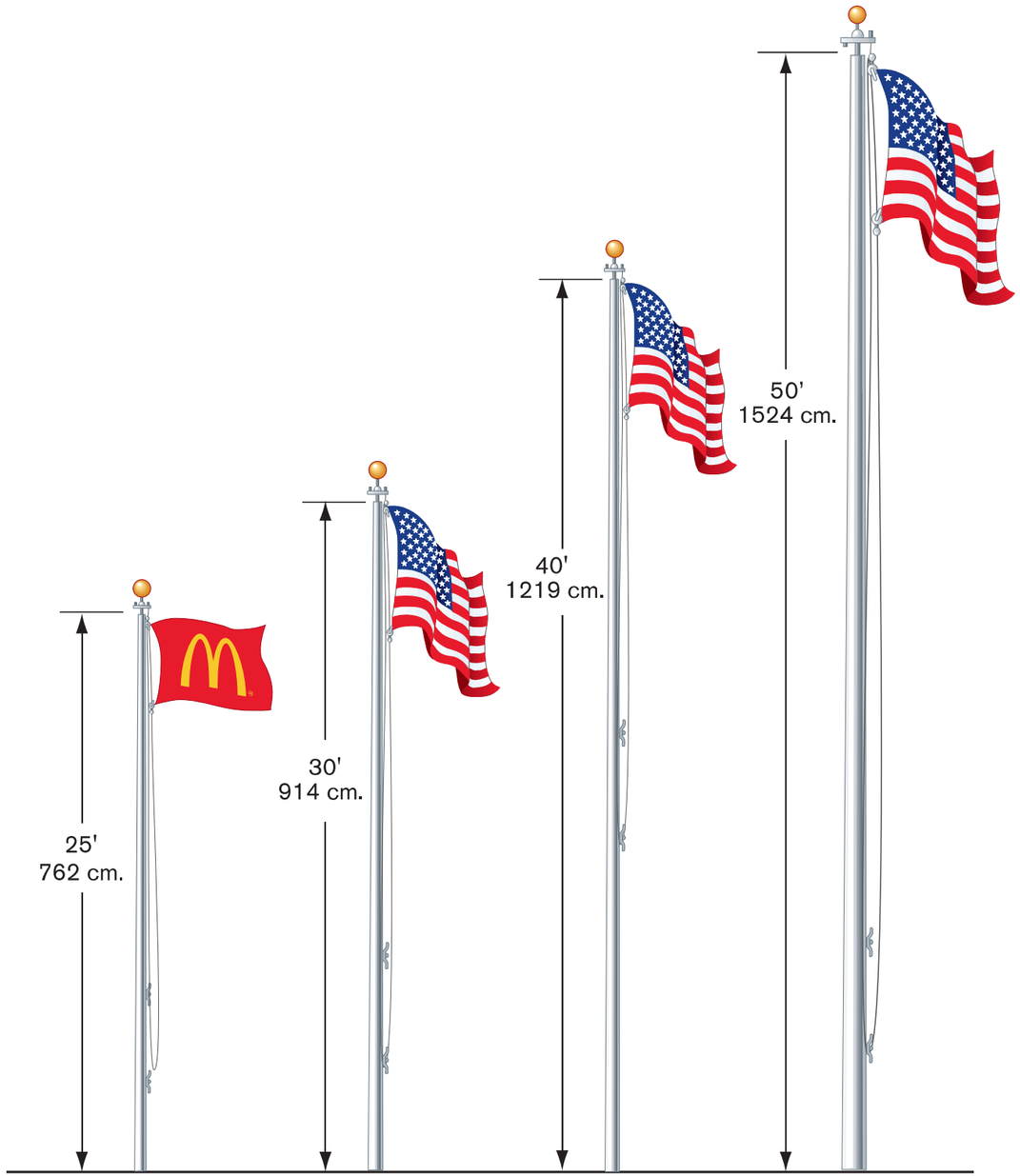
Flag Poles



Available Heights:	25' (762 cm.) 30' (914 cm.) 40' (1219 cm.) 50' (1524 cm.)
Construction:	Spun aluminum
Includes:	Halyard, rope and cleat
Max. allowable sq. ft. of flag: (flag not included)	25' - 40 sq. ft. 5' x 8' flag 30' - 60 sq. ft. 6' x 10' flag 40' - 96 sq. ft. 8' x 12' flag 50' - 150 sq. ft. 10' x 15' flag
Other:	• 25', 30', 40' AND 50' flag poles- standard with ball top.

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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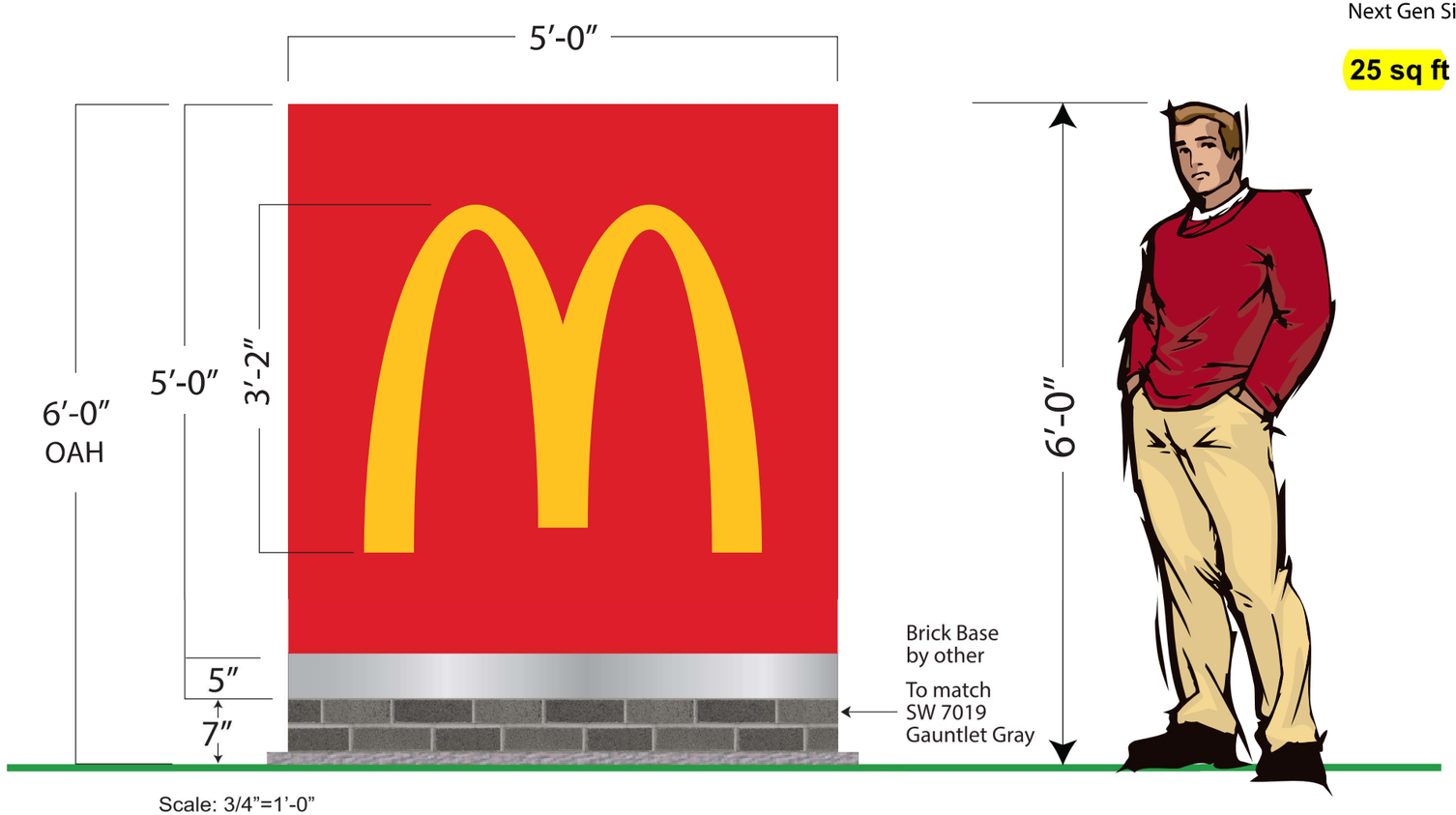
SIGN DETAILS:

Routed aluminum faces with LED illuminated Arch logo

Next Gen Red cabinet and PMS 123C Yellow Arch

Next Gen Silver band

25 sq ft



Scale: 3/4”=1’-0”

Project No: 69391	Prepared By: Kari Moyle	
Address: 7030 Northfield Dr Brownsburg, IN 46112-9031	Date: 12/08/2025	PIF: 532583-0
Description: McDonald's Rest #45201	Customer Signature:	

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LANCER
ASSOCIATES
ARCHITECTURE

RE: McDonald's Restaurant – Brownsburg IN
Response to Technical Review Committee Comments
Location: 7030 Northfield Drive, Brownsburg, Indiana

To Whom It May Concern,

We submit the following responses to the Technical Review Committee comments. Revised architectural drawings have been prepared and included with this resubmittal.

1. Exterior Masonry Requirement

The building exterior has been revised to a full brick façade to comply with the requirement that a minimum of 75% of the exterior be masonry or architectural block.

2. Fenestration Percentages

Fenestration percentages for each façade have been added to Sheets A2.0 and A2.1 to demonstrate compliance with the minimum 30% fenestration requirement.

3. Façade Articulation (Projections/Recesses)

Façade bump-outs have been incorporated into the design to meet the requirement for projections/recesses extending at least 20% of the façade length for elevations exceeding 75 feet. These architectural features are shown on the updated elevations and plans (Sheets A1.0, A2.0 and A2.1).

4. Repeating Architectural Elements

The revised elevations now incorporate repeating architectural elements, including material changes (brick articulation), profile changes via façade bump-outs, and fenestration variation, satisfying the requirement for multiple visual design elements.

5. Signage Modifications

Building signage has been modified to align with the updated architectural design and Town requirements. Revised signage is shown on the architectural elevation sheets.

All above revisions address the Development Services architectural comments regarding masonry percentage, fenestration, façade articulation, and architectural patterning. Please let us know if any additional clarification is required.

Sincerely,

Chelsea Meadows
Project Manager
Lancer Associates Architects

LANCER ASSOCIATES ARCHITECTURE

ADDENDUM TO RESPONSE LETTER

McDonald's Restaurant

7030 Northfield Drive, Brownsburg, Indiana

Date: February 16, 2026

To Whom It May Concern,

This addendum is submitted to clarify Item 2 (Fenestration Percentages) within our previously submitted Technical Review response letter.

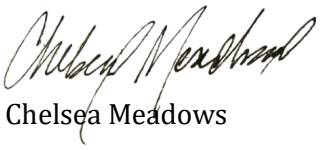
While fenestration percentages were added to Sheets A2.0 and A2.1 for reference, the current elevations do not yet meet the minimum 30% fenestration requirement on all façades. The project team is actively evaluating design options to address this requirement, including potential revisions to increase glazing and/or pursuing alternative compliance pending Owner direction.

Updated elevations and/or supporting documentation will be provided with a subsequent submittal once a finalized approach is confirmed.

All other architectural responses included in the original response letter remain unchanged.

We appreciate your understanding and continued coordination.

Sincerely,



Chelsea Meadows

Project Manager

Lancer Associates Architects

Advisory Plan Commission

Town of Brownsburg

Assigned Staff: Lauren Bouslog, Planner I

Report Date: 2/11/2026

Request Type: Development Plan Review

General Information

CASE NUMBER	PSDP-26-1
APPLICANT	Jillian Richardson, Woolpert Inc.
LOCATION	32-08-06-311-006.000-016. Within Outlot A in the new Meijer subdivision on E. 56th St.
PARCEL SIZE	1.21 acres

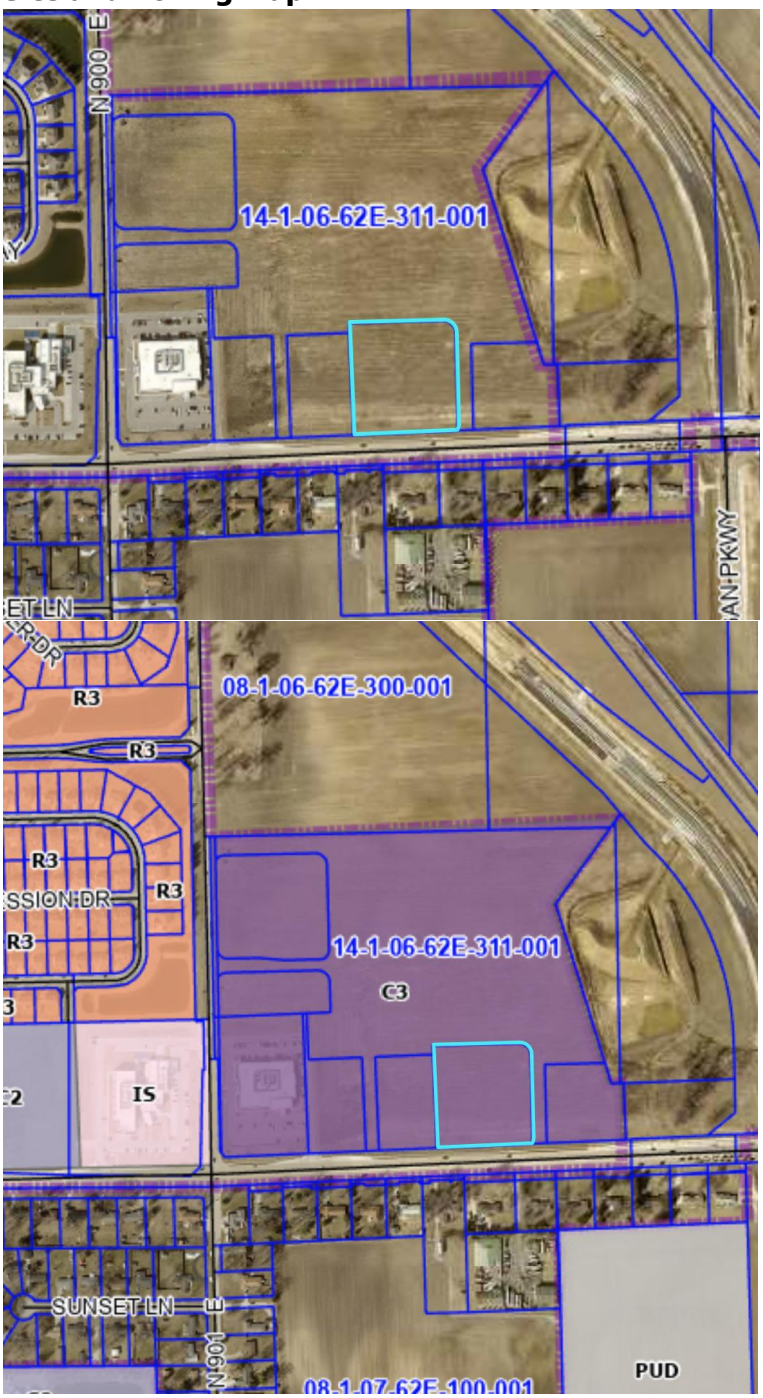
Cross References

Previous APC Cases	PSDP-23-18; Development Plan Review for the Meijer at 56th & 900 PCPP-23-10; Primary Plat for the Meijer at 56th & 900 PCCZ-06-21-1922; Meijer at 56th & 900 Commerce Park Rezone to C2 (C3 under new 2025 ordinance) APLA-26-1 (submitted with this development plan review – not yet signed); Administrative Plat to subdivide Outlot A into Lot 8 & 9 (Heartland Dental would be in the smaller Lot 9 in the southeast corner of the parcel)
Relevant BZA Cases	N/A for this outlot (There have been several variances for the main Meijer store lot & parking to the north)
Other	The parcel was annexed into the Town of Brownsburg under Ord. No. 2021-28 in 2021.

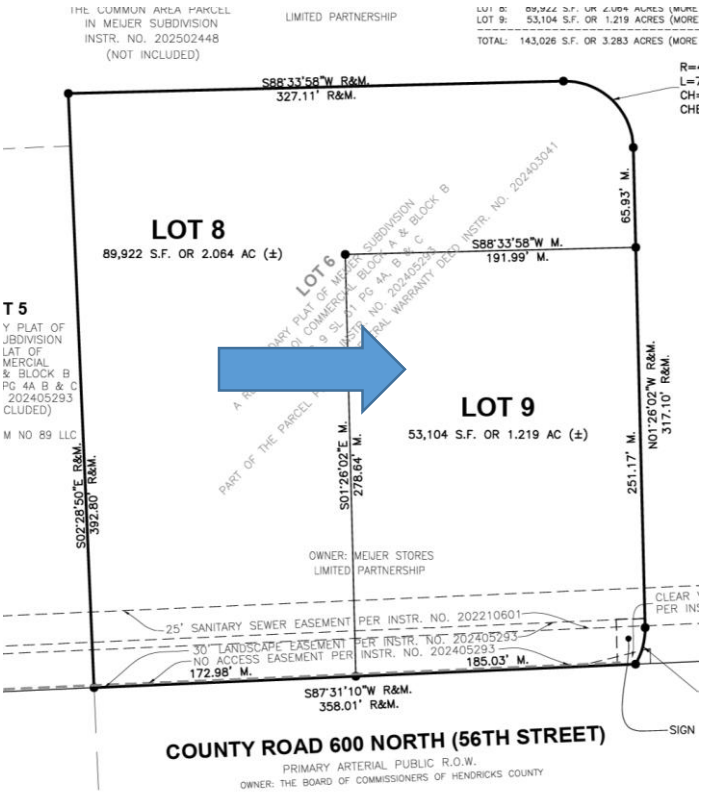
Attachments

☒	Tech Review & Response
☒	Site Plan/Civil
☒	Landscape Plan
☒	Architectural Plans
☒	Other: Stormwater Management Report, O & M Manual, Lighting Plan

Site and Zoning Map:



Proposed Administrative Plat with Outlot Subdivide:



Project and Site Background:

This proposed development includes the construction of a 4,285 sq. ft. Heartland Dental office building with associated sidewalks, parking area, landscaping, and utilities on 1.21 acres. The project will get access from a private drive in between Heartland Dental and the new Meijer gas station to the east. This access drive has both right and left turn lanes onto E. 56th St. The project does not require any variances.

Technical Review:

The TECH review for this project took place on January 15, 2026. Planning Services commented that vision clearance triangles need to be added to the landscape plan and a stub needs to be added to the right northwest corner for connectivity and emergency services when a business goes in next to Heartland Dental in the future. The lot coverage percentage needs added to the civil plans and the streets need a private or public designation put under the road name with the road width labeled as well. The Water Department commented that the water service for this property is provided by Citizens Energy Group. The Wastewater Department commented that this area is within the Hendricks County Regional Sewer District/ Aqua IN Service Area. The Fire Territory commented that the majority of the proposed building is more than 400' from the closest fire hydrant along an approved route. A hydrant shall be placed to satisfy requirement of IFC 507.5.1. The preferred location mentioned was at the parking lot

entrance on the northeast corner of the parcel. The final location must be approved by the Fire Marshal. The Police Department wanted to ensure there would be no landscape obstructions for egress traffic onto 56th St (CR 600 N).

Traffic Study:

There was not a traffic study submitted for this project.

Criteria:

Pursuant to Chapter 8 of the Brownsburg Unified Development Ordinance the Advisory Plan Commission shall make findings of fact on the following criteria:

1) The Development Plan is consistent with the **Comprehensive Plan**.

   Future Land Use Map Link: https://www.brownsburg.org/DocumentCenter/View/1068/2021-Future-Land-Use-Map-PDF

   a) The Future Land Use Map notes this parcel being used for Regional Commercial. The parcel Heartland Dental is on was platted as an outlot for a regional commercial anchor (Meijer). The outlots bring diverse, need based services to a larger, anchored commercial center. Regional commercial areas are typically located near major traffic corridors, in this case the Ronald Reagan Parkway.



   Based on the above information, staff believes this criterion has been met.

2) The Development Plan complies with applicable development requirements and standards of **CHAPTER 2 – ZONING DISTRICTS, CHAPTER 3 – PERMITTED USES,** and/or the PUD Ordinance.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=14

   a) The project's lot coverage is at 61.2% which is under the maximum allowed 75%. The max allowed height in a C3 district is 60', the dental office is 23'-4". The civil plan submittal has the setbacks marked and the setbacks satisfy UDO requirements.

Based on the above information, staff believes this criterion has been met.

3) The Development Plan complies with applicable standards found in **CHAPTER 5: SITE DEVELOPMENT** and/or the PUD Ordinance.

https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=101

a) *Landscaping*: The on-site, street frontage, perimeter parking lot, interior parking lot, foundation, and buffer yard landscaping standards have been met.

b) *Lighting*: The lighting does not exceed the maximum allowed 20 lux at the property lines.

c) *Parking*: There are 37 standard parking spaces and 2 ADA accessible spaces for a total of 39 spaces. The requirement for a dental/ medical office is 1.5 spaces per treatment space which would only require them to have 18 spaces.

d) *Vision Clearance Triangle*: The most recent landscape plan submittal has the vision clearance triangles marked on it and there is not any landscaping within the vision clearance triangles.

Based on the above information, staff believes this criterion has been met.

4) The Development Plan complies with any **other applicable provisions** of this Ordinance or **Overlay Standards.**

a) No special provisions that relate to the plat are noted for this site. Overlay districts are not applicable to this project.

Based on the above information, staff believes this criterion has been met.

5) Satisfies any provision related to a development's design as found in **CHAPTER 7 – SUBDIVISION REGULATIONS** and/or the PUD Ordinance.

https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=168

a) The project was not subject to open space requirements being in a commercial district. Easements are shown and labeled in the civil plans. Setbacks, lot coverage, and height have also been met.

Based on the above information, staff believes this criterion has been met.

6) The Development Plan satisfies the construction requirements of the **Brownsburg Construction Standards and Specifications.**

a) The project did not receive any waivers. Stormwater review is ongoing, Wessler is reviewing the applicant's new submittals since the TECH review meeting. TECH review comments will need to be resolved before permitting, this will be added as a condition for approval.

Based on the above information, staff believes this criterion has been met.

Recommendations:

The Advisory Plan Commission may request conditions and commitments related to the project and criteria. Conditions or commitments must be made as part of the motion.

Based on the information provided and the criteria responses, staff recommends a motion to

☐	Approve PSDP-26-1 as presented.
☒	Approve PSDP-26-1 with the following staff conditions: 1. The approval of Findings of Fact and Report of Determination. 2. The stamping of the construction plans by the Director. 3. The completion of any outstanding TECH comments.
☐	Deny PSDP-26-1 based on the following criteria:

Advisory Plan Commission
TECHNICAL REVIEW COMMITTEE

TOWN OF Brownsburg
61 North Green Street | Brownsburg, Indiana 46112
Tel 317.852.1128 | Fax 317.852.1134

Project Name: Heartland Dental DPR
Record Number: PSDP-26-1
TECH Meeting Date: January 15, 2026

The following Technical Review Committee ("TECH") members provided comments for the project as detailed below:

Development Services
- ☐ Kevin Tolloty, Senior Planner
- ☒ Lauren Bouslog, Planner I
- ☐ Steve Fletcher, Building Commissioner/Director
- ☐ Frank Wise, Senior Building Inspector

Town Administration
- ☐ Debbie Cook, Town Manager
- ☐ Aaron Kaytar, Capital Projects & Procurement Manager
- ☐ Ethan Pierce, Economic Development Manager

Water Department
- ☒ Frank Monts, Superintendent

Wastewater Department
- ☒ Kathy Dillon, Water Utilities Director
- ☐

Street Department
- ☐ Aaron Love, Superintendent
- ☐ Matt Griner, Asst. Superintendent

Parks Department
- ☐ Amber Lane, Director
- ☐

Fire Territory
- ☒ Paul Hudson, Fire Marshal
- ☐ Jeff Schlageter, Deputy Fire Marshal

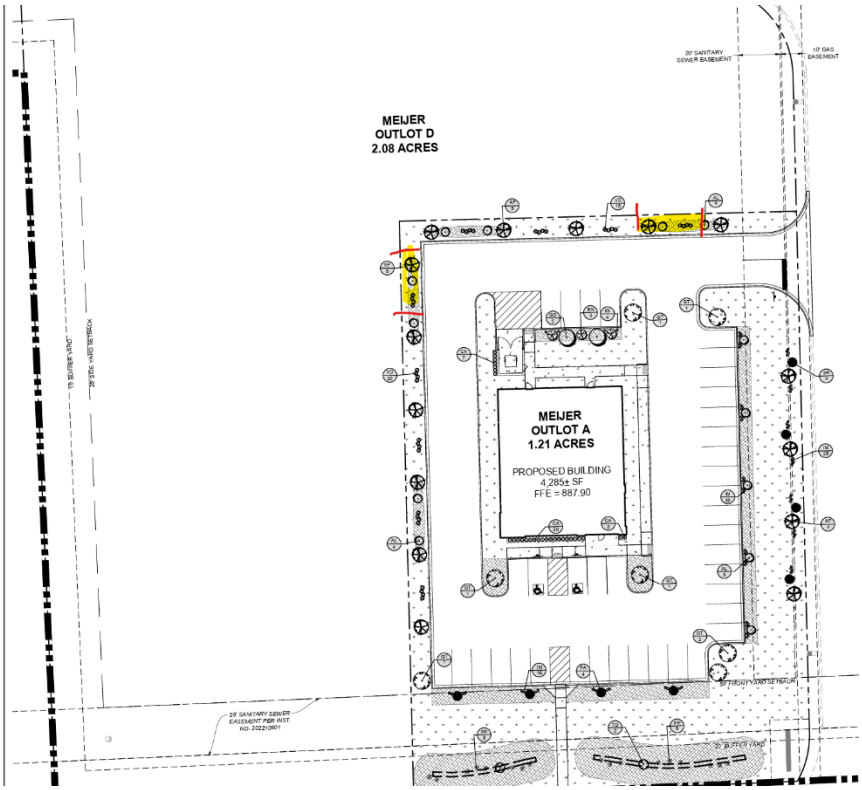
Police Department
- ☐ Joe Grimes, Chief
- ☐ Pat Bullock, Captain
- ☒ Bryan Fultz, Major

External Agencies
- ☐ Regan Huff, BCSC
- ☐ Dave Gaston, P.S., Hend. Co. Surveyor
- ☐ John Ayers, Hendricks Co. Engineer
- ☒ Mary Atkins, Wessler Engineering
- ☐ Angie DeKemper, CountryMark
- ☐ Gerry Jones, Vectren

1) DEVELOPMENT SERVICES

a) Add Vision Clearance Triangles to the Landscape Plan.

b) Do you foresee future businesses on this outlot to need access at these points below? That will influence where your landcaping can go. We would like for a stub to be added for connectivity and emergency services.



c) Add lot coverage percentage to civil plans (impervious surface %).
d) Label streets and put private or public designation under the name with the road width (Ex. 56' Public ROW)

2) BUILDING

a) None

3) CAPITAL PROJECTS

a) None

4) ECONOMIC DEVELOPMENT

a) None

5) WATER

a) Water service for this property is provided by Citizens Energy Group.

6) WASTEWATER

a) This area is within the Hendricks County Regional Sewer District/Aqua IN service area.

7) STREET/PUBLIC WORKS

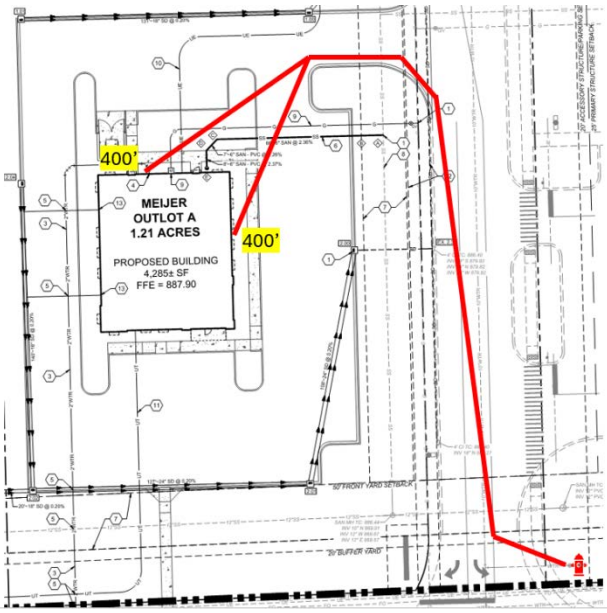
a) None

8) PARKS

a) None

9) FIRE TERRITORY

a) Majority of proposed building is more than 400' from closest fire hydrant along approved route.



10) 2014 IN Fire Code 675 IAC 22-2.5

507.5 Fire hydrant systems. Fire hydrant systems shall comply with Sections 507.5.1 through 507.5.6.

507.5.1 Where required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an *approved* route around the exterior of the facility or building, on-site fire hydrants and mains shall be
provided.

Exceptions:
1. For Group R-3 and Group U occupancies, the distance
requirement shall be 600 feet (183 m).
2. For buildings equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement shall be 600 feet (183 m).

ACTION REQUIRED: A hydrant shall be placed to satisfy requirement of IFC 507.5.1. Preferred location to be at parking lot entrance at northeast corner of parcel. Location to be approved by Fire Marshal.

11) POLICE

a) Ensure there is no landscape obstructions for egress traffic onto 56th Street (CR 600 N).

12) STORMWATER

a) See attached

13) BROWNSBURG COMMUNITY SCHOOL CORPORATION

a) None

14) **HENDRICKS COUNTY SURVEYOR**

a) None

15) **HENDRICKS COUNTY ENGINEER**

a) None

16) **COUNTRYMARK**

a) None

17) **VECTREN**

a) None

Please provide a written response to this report addressing each issue and, if necessary, indicate where on the revised plans the modification has been made.

TOWN OF BROWNSBURG STORMWATER/DRAINAGE PLAN REVIEW

CO Comment Originator
CR Comment Respondee

NAME OF PROJECT: Heartland Dental-Meijer Outlot 338A
DESIGN PACKAGE: Development
DESIGNER: **Woolpert**

		Wessler - Reviewer to complete		Designer to complete	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
1	Flood Routing	RS	Evaluate stormwater ponding and overflow path routing for Ch. 151.21 I. Show hatching of ponded areas with peak elevation on the plans and flow arrows indicating the surface flow path to the termination (watercourse).		
2	Soil Survey Map	RS	Add this to the construction plans.		
3	Title Sheet	RS	Missing parcel number		
4	Impervious Surface Area	RS	Please provide the total amount of impervious surface area in square feet for the completed project on the Title Sheet. In addition to the total, provide a breakdown of total compacted gravel, total concrete/asphalt and total building footprint (in square feet). This is used for stormwater utility billing.		
5	HGL	RS	Include calculations showing that the HGL for the 10-yr event remains below the crown of the pipe.		
6	Inlets	RS	Include calculations showing the ponding at inlets when inlets are 50% clogged for the 10-yr event. Max allowable ponding depth is 6 inches.		
7	Utility Separation	RS	Vertical separation for electric and phone appear to be less than 18 inches.		

These comments should not be construed as a comprehensive list of comments, and the reviewer may make additional comments based on subsequent submittals

TOWN OF Brownsburg

Construction/ Stormwater Pollution Prevention Plan Technical Review
Town of Brownsburg Stormwater Management Ordinance
https://codelibrary.amlegal.com/codes/brownsburg/latest/brownsburg_in/0-0-0-26557
IDEM Construction Stormwater General Permit:
https://www.in.gov/idem/stormwater/construction-land-disturbance-permitting/
(INRA00000 effective 12/18/2021)

Construction/Stormwater Pollution Prevention Plan Technical Review and Comment

Project Name: MEIJER OUTLOT #338A - HEARTLAND DENTAL
Scope of Project: Dental office and associated infrastructure
Location of Project: 9180 E 56th St, Brownsburg, IN
County(ies): Hendricks
Latitude: N 39.851910 **Longitude:** W -86.359869

Plan Submittal Date: **January 6, 2026**
Plan Review Date: **January 9, 2026**

Plan Preparer: Brianne Vangorder, PE **Affiliation:** Woolpert, Inc.
Address: 333 N Alabama St., Suite 200
City: Indianapolis **State:** IN **Zip:** 46204
Phone: (317) 299-7500 **Cell Phone:** **Email:** BRIANNE.VANGORDER@WOOLPERT.COM

Project Site Owner: **Company Name (if applicable):** Meijer Stores Limited Partnership
Address: 2350 Three Mile Road
City: Grand Rapids **State:** MI **Zip:** 49544
Phone: **Cell Phone:** **Email:**

Plan Reviewer: Mary Atkins, PE, CPESC **Affiliation:** Wessler Engineering **On behalf of:** Town of Brownsburg
Assisted By: Michaela Tauil, CPESC – Wessler Engineering
Address: 6219 South East Street
City: Indianapolis, IN **State:** IN **Zip:** 46227
Phone: 317-788-4551 **Cell Phone:** **Email:** MaryA@wesslerengineering.com

Plan Review Status:		
☐	**Plan is Adequate**	A comprehensive plan review has been completed and it has been determined that the plan satisfies the minimum requirements of the Town of Brownsburg Stormwater Management Ordinance and Construction Standards, and the Construction Stormwater General Permit INRA00000 (Effective 12-18-2021).
☐	**Preliminary Review**	A comprehensive review will not be completed at this time. The plan review authority reserves the right to perform a comprehensive review at a later date, and revisions may be required at that time.
☐	**Conditional Acceptance**	Acceptance of the plan is conditional. The conditional acceptance is contingent upon addressing the issues identified in the comment sections.
☒	**Plan is Deficient**	Significant deficiencies were identified and must be addressed. Refer to the comment sections.

Action:	
☐	**Submit a Notice of Intent:** Submit the Notice of Intent (NOI) online through the IDEM Regulatory ePortal. It is required to upload a copy of this review form when submitting the NOI through the IDEM Regulatory ePortal: (https://stormwater.idem.in.gov/ncore/external/home)
☒	**Do not file a Notice of Intent or commence land-disturbing activities:** Deficiencies must be adequately addressed and an acceptable plan review completed.
☒	**Comments:** Refer to Plan Review Comments Sections of this document.
☒	**Revisions:** Update and submit the revised Construction/Stormwater Pollution Prevention Plan as indicated below.
	☒ Update and submit a complete plan set that addresses plan deficiencies.
	☒ Update and submit a document (narrative and/or plan sheets) that address plan deficiencies.
	☐ Update and submit a complete plan set that addresses plan deficiencies. A comprehensive plan review will not be completed.

Plan Review Information

- *The technical review and comment is intended to evaluate the completeness of the Construction/Stormwater Pollution Prevention Plan for the project. The Plan submitted was not reviewed for the adequacy of engineering design. All measures included in the plan, as well as those recommended in the comments should be evaluated as to their feasibility by a qualified individual with structural measures designed by a qualified engineer. The Plan has not been reviewed for other local, state, or federal permits that may be required to proceed with this project.*
- *Construction activities and unforeseen weather conditions may affect the performance of the erosion and sediment control system, individual measures, or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute measures as necessary to ensure compliance.*

Priority Site Information:

☐	**Nature and Extent of Construction**	☐	**Close Proximity to Wetlands**
☐	**Close Proximity to Sensitive Area**	☐	**Potential for Direct Runoff to Receiving Waters**
☐	**Steep Topography on Proposed Construction Site**	☒	**Not a Priority Site**

Section A: Construction Plan Elements

Adequate	Deficient	NA	A	*The construction plan elements include general information associated with the project site that are critical for the evaluation of the stormwater pollution prevention plan component. This information includes, but is not limited to an index, resource information, reference maps, grading information, project layout and design, and drainage plan*
☒	☐	☐	**1**	Index of the location of required plan elements in the construction plan
☒	☐	☐	**2**	A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads
☒	☐	☐	**3**	Narrative of the nature and purpose of the project
☒	☐	☐	**4**	Latitude and longitude to the nearest fifteen (15) seconds
☒	☐	☐	**5**	Legal description of the project site
☒	☐	☐	**6**	11 X 17-inch plat showing building lot numbers/boundaries and road layout/names
☒	☐	☐	**7**	Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways
☒	☐	☐	**8**	Land use of all adjacent properties
☒	☐	☐	**9**	Identification of a U.S. EPA approved or established TMDL
☒	☐	☐	**10**	Name(s) of the receiving water(s)
☒	☐	☐	**11**	Identification of discharges to a water on the current 303d list of impaired waters and the pollutant(s) for which it is impaired
☒	☐	☐	**12**	Soil map of the predominant soil types
☒	☐	☐	**13**	Identification and location of all known wetlands, lakes and water courses on or adjacent to the project site (construction plan, existing site layout)
☒	☐	☐	**14**	Identification of any other state or federal water quality permits or authorizations that are required for construction activities– required 50-foot natural buffer
☐	☒	☐	**15**	Identification and delineation of existing cover, including natural buffers
☒	☐	☐	**16**	Existing topography at a contour interval appropriate to indicate drainage patterns
☒	☐	☐	**17**	Location(s) of where run-off enters the project site
☒	☐	☐	**18**	Location(s) of where run-off discharges from the project site prior to land disturbance. Erosion measures required at the discharge point.
☒	☐	☐	**19**	Location of all existing structures on the project site
☒	☐	☐	**20**	Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management

☒	☐	☐	**21**	Locations where stormwater may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features
☐	☒	☐	**22**	Size of the project area expressed in acres
☐	☒	☐	**23**	Total expected land disturbance expressed in acres
☒	☐	☐	**24**	Proposed final topography
☒	☐	☐	**25**	Locations and approximate boundaries of all disturbed areas
☐	☒	☐	**26**	Location, size, and dimensions of all stormwater drainage systems, such as culverts, storm sewers, and conveyance channels
☒	☐	☐	**27**	Locations of specific points where stormwater and non-stormwater discharges will leave the project site
☒	☐	☐	**28**	Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas
☒	☐	☐	**29**	Location of all on-site soil stockpiles and borrow areas
☒	☐	☐	**30**	Construction support activities that are expected to be part of the project
☐	☐	☒	**31**	Location of any in-stream activities that are planned for the project including, but not limited to stream crossings and pump arounds

Section A – Comments:

- A15: Sheet C100 does not indicate the existing vegetation on the site.
- A22/A23: Disturbed area is greater than the total project area, please clarify and update as needed.
- A26: Sheet C705 is not included in the plan set. Update the SWPPP to reference the correct sheet.

Section B: Stormwater Pollution Prevention Plan – Erosion and Sediment Control/Project Site Management				
Adequate	**Deficient**	**NA**	**B**	*The construction component of the Stormwater Pollution Prevention Plan includes stormwater quality measures to address erosion, sedimentation, and other pollutants associated with land disturbance and construction activities. Proper implementation of the plan, maintenance of measures, and administering a self-monitoring program is required to manage the project site to minimize the discharge of sediment and other pollutants. Construction activities and unforeseen weather conditions may affect the performance of the erosion and sediment control system, individual measures, or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute measures as necessary to ensure compliance.*
☒	☐	☐	**1**	Description of the potential pollutant generating sources and pollutants, including all potential non-stormwater discharges
☒	☐	☐	**2**	Stable construction entrance locations and specifications. Plan to clear tracking of sediments on road. Dust suppression plan.
☐	☒	☐	**3**	Specifications for temporary and permanent stabilization. Include seeding and mulching plan and 70% coverage requirement for final stabilization. Include 7-day stabilization requirement.
☐	☒	☐	**4**	Sediment control measures for concentrated flow areas (sediment basins if used have specific requirements)
☒	☐	☐	**5**	Sediment control measures for sheet flow areas
☐	☒	☐	**6**	Run-off control measures
☐	☒	☐	**7**	Stormwater outlet protection locations and specifications
☐	☐	☒	**8**	Grade stabilization structure locations and specifications
☒	☐	☐	**9**	Dewatering applications and management methods
☐	☐	☒	**10**	Measures utilized for work within waterbodies
☒	☐	☐	**11**	Maintenance guidelines for each proposed temporary stormwater quality measure
☐	☒	☐	**12**	Planned construction sequence describing the relationship between implementation of stormwater quality measures in relation to land disturbance
☐	☐	☒	**13**	Provisions for erosion and sediment control on individual building lots regulated under the proposed project

☒	☐	☐	**14**	Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1
☒	☐	☐	**15**	Material handling and storage procedures associated with construction activity. Management of waste materials and dumpsters for runoff and wind. Concrete washout management. Fueling areas. Equipment washing. Application of pesticides, herbicides, insecticides and fertilizers. Disposal of hazardous waste. Washing of paint or grout applicators.

Section B – Comments:

- B3: The SWPP indicates the erosion control blanket will be used and the plans have hatching and a key note for the measure however there is no blanket shown. Evaluate if erosion control blanket is needed on site and show as appropriate.
- B4: Section B4 of the SWPPP indicates temporary sediment basins will be used however these are not shown on the plans. Clarify if these measures will be utilized.
- B6/B7: Section B6 and Section B7 of the SWPPP do not appear to have been updated for this project.
- B12: Per Town of Brownsburg Construction Standards 02101 submit notice of termination (NOT) inspection request to Town prior to filing NOT with IDEM. The note should added to the Plan Sheets specifying this requirement.

Section C: Stormwater Pollution Prevention Plan – Post-Construction

Adequate	Deficient	NA	C	*The post-construction component of the Stormwater Pollution Prevention Plan includes the implementation of stormwater quality measures to address pollutants that will be associated with the final project land use. Post-construction stormwater measures should be functional upon completion of the project. Long term functionality of the measures is critical to their performance and should be monitored and maintained.*
☒	☐	☐	**1**	Description of pollutants and their sources associated with the proposed land use
☒	☐	☐	**2**	Description of proposed post-construction stormwater measures including stormwater detention and water quality treatment according to the local ordinance (refer also to separate technical review comments)
☒	☐	☐	**3**	Plan details for each stormwater measure
☒	☐	☐	**4**	Sequence describing stormwater measure implementation
☒	☐	☐	**5**	Maintenance guidelines for proposed post-construction stormwater measures. Operation and Maintenance (O&M) Manual.
☒	☐	☐	**6**	Entity that will be responsible for operation and maintenance of the post-construction stormwater measures

Section C – Comments:

- O&M Manual: Per the Town of Brownsburg Stormwater Management Ordinance Chapter 151, and O&M Manual shall be provided for alltormwater management facilities including pipes, structures, swales, open channels, and subsurface drains. Provide an O&M Manual meeting the Town of Brownsburg requirements for this specific site and it's infrastructure.

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL

Response to Heartland Dental (Meijer ABE-OD1) – TECH Resubmittal Comments

To: Town of Brownsburg

From: Brianne VanGorder, PE

Date: January 29, 2026

This response to the review comments received via email from the Town of Brownsburg Technical Review Committee on 01/15/2026.

Development Services:

a) Add Vision Clearance Triangles to the Landscape Plan.
Woolpert Response: Triangles are added to sheet C-600.

b) Do you foresee future businesses on this outlot to need access at these points below? That will influence where your landscaping can go. We would like for a stub to be added for connectivity and emergency services.
Woolpert Response: There aren't any plans for development to the North, but a stub street has been added for any future development to the West.

c) Add lot coverage percentage to civil plans (impervious surface %).
Woolpert Response: See sheet C-001 for this information per the stormwater review.

d) Label streets and put private or public designation under the name with the road width (Ex. 56' Public ROW)
Woolpert Response: This information has been added to the plan sheets.

Building Comments:

No Comments

Capital Projects:

No Comments

Economic Development:

No Comments

Woolpert, Inc.
1203 Walnut Street, 2nd Floor
Cincinnati, OH 45202
513.272.8300

Water:

a) Water service for this property is provided by Citizens Energy Group.
Woolpert Response: Noted

Wastewater:

a) This area is within the Hendricks County Regional Sewer District/Aqua IN service area.
Woolpert Response: Noted

Streets/Public Works:

No Comments

Parks:

No Comments

Fire Territory:

a) Majority of proposed building is more than 400' from closest fire hydrant along approved route. ACTION REQUIRED: A hydrant shall be placed to satisfy requirement of IFC 507.5.1. Preferred location to be at parking lot entrance at northeast corner of parcel. Location to be approved by Fire Marshal.
Woolpert Response: A fire hydrant was added to the entrance of the parking lot.

Police:

a) Ensure there is no landscape obstructions for egress traffic onto 56th Street (CR 600 N).
Woolpert Response: The vision clearance triangle for this intersection has been added to sheet C-600.

Stormwater:

		Wessler - Reviewer to complete		**Designer to complete**	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
1	Flood Routing	RS	Evaluate stormwater ponding and overflow path routing for Ch. 151.21 I. Show hatching of ponded areas with peak elevation on the plans and flow arrows indicating the surface flow path to the termination (watercourse).		Flood routing and ponding areas area added to sheet C-300.
2	Soil Survey Map	RS	Add this to the construction plans.		The soil information is shown on the plan on sheets C-310 and C-311.
3	Title Sheet	RS	Missing parcel number		Information added to sheet C-001

4	Impervious Surface Area	RS	Please provide the total amount of impervious surface area in square feet for the completed project on the Title Sheet. In addition to the total, provide a breakdown of total compacted gravel, total concrete/asphalt and total building footprint (in square feet). This is used for stormwater utility billing.		Information added to sheet C-001
5	HGL	RS	Include calculations showing that the HGL for the 10- yr event remains below the crown of the pipe.		The SWM memo is updated to include this information.
6	Inlets	RS	Include calculations showing the ponding at inlets when inlets are 50% clogged for the 10-yr event. Max allowable ponding depth is 6 inches.		The SWM memo is updated to include this information.
7	Utility Separation	RS	Vertical separation for electric and phone appear to be less than 18 inches.		See updated profiles on sheet C-405
These comments should not be construed as a comprehensive list of comments, and the reviewer may make additional comments based on subsequent submittals					

Construction/Stormwater Pollution Prevention Plan Technical Review

1. A15: Sheet C100 does not indicate the existing vegetation on the site.
   Woolpert Response: Information added to sheet C-100.

2. A22/A23: Disturbed area is greater than the total project area, please clarify and update as needed.
   Woolpert Response: Areas revised to reflect the same acreage.

3. A26: Sheet C705 is not included in the plan set. Update the SWPPP to reference the correct sheet.
   Woolpert Response: Referenced information has been updated.

4. B3: The SWPP indicates the erosion control blanket will be used and the plans have hatching and a key note for the measure however there is no blanket shown. Evaluate if erosion control blanket is needed on site and show as appropriate.
   Woolpert Response: Erosion control blanket is shown on C-311

5. B4: Section B4 of the SWPPP indicates temporary sediment basins will be used however these are not shown on the plans. Clarify if these measures will be utilized.
   Woolpert Response: No sediment basin will be used. The section is updated as such.

6. B6/B7: Section B6 and Section B7 of the SWPPP do not appear to have been updated for this project.
   Woolpert Response: These sections are updated.

7. B12: Per Town of Brownsburg Construction Standards 02101 submit notice of termination (NOT) inspection request to Town prior to filing NOT with IDEM. The note should added to the Plan Sheets specifying this requirement.
   Woolpert Response: Note has been added to the construction sequence on sheet C-311.

8. O&M Manual: Per the Town of Brownsburg Stormwater Management Ordinance Chapter 151, and O&M Manual shall be provided for all stormwater management facilities including pipes, structures, swales, open channels, and subsurface drains. Provide an O&M Manual meeting the Town of Brownsburg requirements for this specific site and it's infrastructure.
   Woolpert Response: O&M Manual is provided with this submittal.

WOOLPERT

Stormwater Management Summary

To: Town of Brownsburg Engineering Department

From: Brianne VanGorder, P.E.

Date: January 29, 2026

Subject: Meijer #338A-OD1 – Stormwater Management Summary

INTRODUCTION

This Stormwater Management summary was prepared to summarize the drainage conditions and analysis for the proposed Heartland Dental in the Meijer outlot development located at 9180 E. 56th Street, Brownsburg, Indiana. Detention facilities are designed and constructed by the overall developer as established by the Meijer Store ABE Stormwater Management Report developed by Woolpert, Inc. dated September 5, 2023, and revised January 10, 2025. See Exhibit 3 for a copy of this report.

SITE DESCRIPTION

1. Existing Conditions: Outlot A of the Meijer subdivision, which is 1.21-acres. The lot has been prepared for future development. It is rough graded for a building pad and drainage facilities provided.

2. Proposed Conditions: A Heartland Dental with associated parking areas and access drives will be constructed on the 1.21-acre site. Storm sewer and utility services will be constructed and connected to the proposed subdivision utility infrastructure. Stormwater runoff will be managed within stormwater management facilities that are designed and constructed by the overall development. See FIG-1B of the Meijer Subdivision Stormwater Management Report for the Post-Development Project Area Drainage Plan. See FIG-1D of the Meijer Subdivision Stormwater Management Report for the subdivision Inlet Drainage Plan.

STORM SEWER DESIGN

See Exhibit 1 for the Inlet Drainage Plan. The storm sewer system is divided into multiple drainage areas, all of which drain to a proposed catch basin or curb inlet. The proposed drainage structures discharge to existing drainage structures as part of the Meijer subdivision. The onsite storm sewers were designed in accordance with the Town of Brownsburg Codified Ordinances. The storm sewers are designed to convey the 10-year storm event. An n-value of 0.012 was used for the storm design calculations. See Exhibit 2 for the post-developed weighted C calculations and storm sewer design. The areas draining to Structures 1.01 and 2.03 are assumed to include future development on Outlot D. As such, the runoff coefficient reflects that area being 75% impervious and 25% pervious. Based on this analysis, the Meijer subdivision storm sewer has the capacity for the proposed Heartland Dental development.

Woolpert, Inc.
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

EXHIBIT 1
INLET DRAINAGE PLAN

Woolpert, Inc.
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

MEIJER
OUTLOT D
2.08 ACRES

MEIJER
OUTLOT A
1.21 ACRES

PROPOSED BUILDING
4,285± SF
FFE = 887.90

20' SANITARY SEWER EASEMENT

10' GAS EASEMENT

N02°28'55"W R.

S87°31'05"W R.

15' BUFFER YARD

25' SIDE YARD SETBACK

20' BUFFER YARD

50' FRONT YARD SETBACK

20' ACCESSORY STRUCTURE/PARKING SETBACK

25' PRIMARY STRUCTURE SETBACK

25' SANITARY SEWER EASEMENT PER INST. NO. 202210601

EAST 56TH STREET (E. COUNTY ROAD 600 N.)

1.01
0.35 ACRES
C = 0.74

CUMULATIVE 1.00
0.46 ACRES
C = 0.73

1.00
0.11 ACRES
C = 0.72

2.04
0.13 ACRES
C = 0.85

2.03
0.82 ACRES
C = 0.70

2.02
0.16 ACRES
C = 0.74

2.00
0.14 ACRES
C = 0.69

CUMULATIVE 2.00
1.36 ACRES
C = 0.72

2.01
0.11 ACRES
C = 0.77

5' CI TC: 886.41
INV 24" W 879.66
INV 30" E 879.66

4' YARD INLET TC: 885.00
INV 24" E 880.00

5' CI TC: 886.42
INV 24" W 879.92
INV 30" E 879.47
INV 24" S 879.57

5' CI TC: 886.42
INV 30" W 879.43
INV 30" NE 879.33

4' CI TC: 886.40
INV 18" S 879.92
INV 24" N 879.82
INV 24" W 879.92

4' CI TC: 886.40
INV 18" N 880.27

STM MH TC: 885.21
INV 36" RCP W 879.33
INV 36" RCP E 879.33
INV 15" RCP S 879.91

CURB INLET TC: 884.16
INV 15" RCP N 879.76
INV 15" RCP S 879.86

STM MH TC: 884.98
INV 36" RCP W 875.09
INV 36" RCP E 874.99
INV 15" RCP S 878.68

CURB INLET TC: 883.93
INV 15" RCP N 879.53
INV 15" RCP S 879.73

A1 INLET DRAINAGE PLAN
1"=20'

NORTH

0 20 40 60
GRAPHIC SCALE IN FEET

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9190 E. 56TH STREET
BROWNSBURG, INDIANA 46112

INLET DRAINAGE PLAN

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

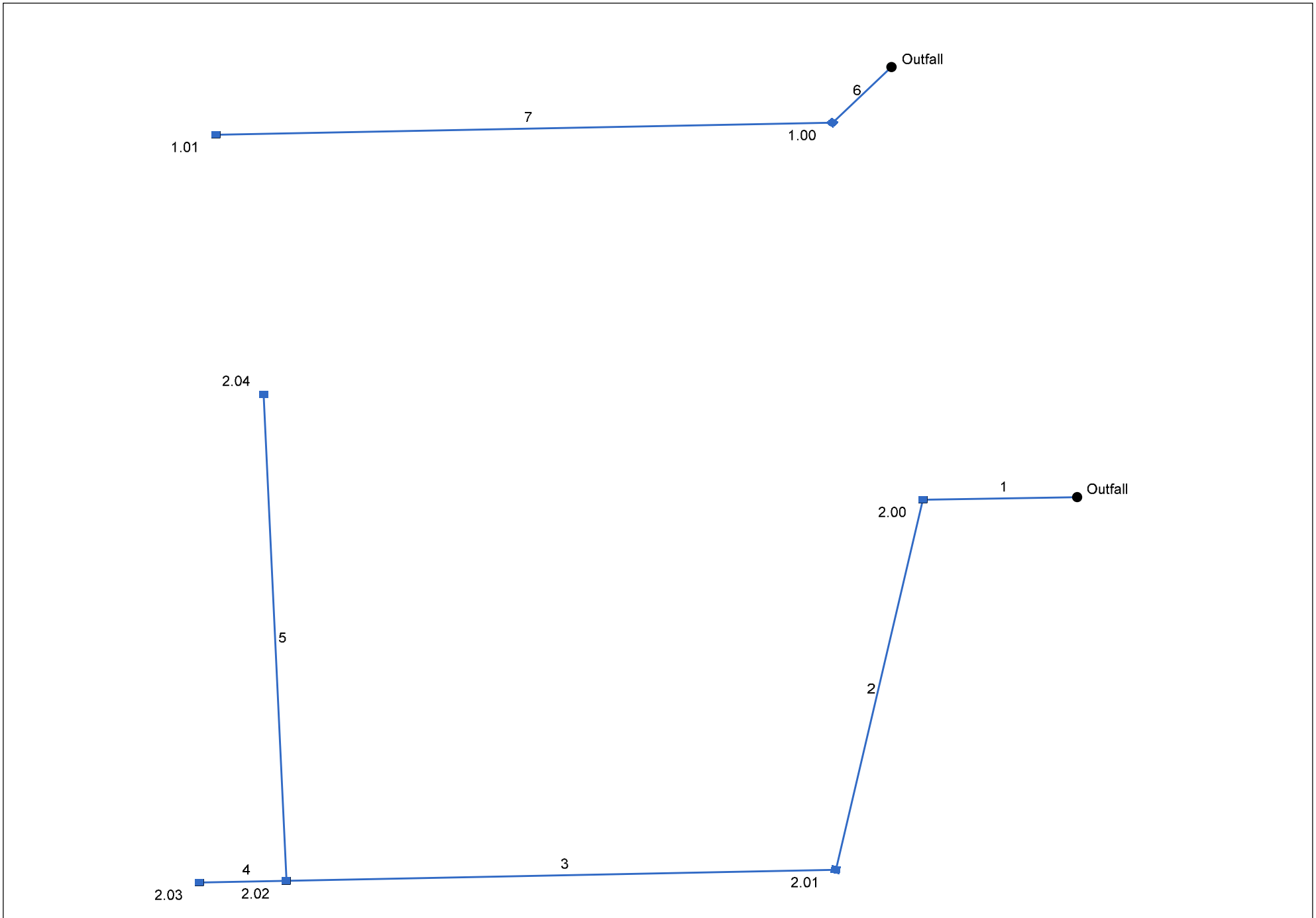
EXH 1

Images: _Xrefs: 10026635TBLK.dwg; 10026635-x.dwg; 10026635-p.dwg; 10026635-g.dwg
Layout: "A1" Model: INLET DRAINAGE PLAN
Last Saved By:BJVonGorder, 1/23/2026 2:55:05 PM
G:\DE\Clients\Meijer\10026635 Meijer 338A-OD1, Brownsburg, IN\4.0 Disciplines\Civil\Eng\Storm Design\10026635-Drainage Plan Exhibit.dwg Plotted By:VonGorder, Brianne Plotted:January 23, 2026, 2:55:49 PM

EXHIBIT 2
STORM SEWER DESIGN

Woolpert, Inc.
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: P-STM.stm	Number of lines: 7	Date: 1/23/2026

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
7	1.01	1.94	15	Cir	142.000	880.30	881.00	0.493	881.68	881.79	0.09	881.88	6	Grate
6	1.00	2.53	15	Cir	21.000	880.10	880.20	0.476	881.60*	881.63*	0.05	881.68	End	Grate
5	2.04	0.83	12	Cir	140.000	880.67	881.37	0.500	882.55*	882.61*	0.02	882.63	3	Grate
4	2.03	4.30	18	Cir	20.000	880.77	880.87	0.500	882.55*	882.58*	0.09	882.67	3	Generic
3	2.02	6.02	24	Cir	126.500	880.42	880.67	0.198	882.42	882.49	0.06	882.55	2	Grate
2	2.01	6.65	24	Cir	108.323	880.10	880.32	0.203	882.10	882.17	0.07	882.24	1	Grate
1	EX 2.31	7.37	24	Cir	35.487	879.92	879.99	0.197	881.92	881.95	0.08	882.03	End	Grate

Project File: P-STM.stm | Number of lines: 7 | Run Date: 1/23/2026

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown).

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
7	6	142.000	0.35	0.35	0.74	0.26	0.26	5.0	5.0	7.5	1.94	4.91	1.98	15	0.49	880.30	881.00	881.68	881.79	886.00	885.68	1.01
6	End	21.000	0.11	0.46	0.72	0.08	0.34	5.0	5.0	7.5	2.53	4.83	2.06	15	0.48	880.10	880.20	881.60	881.63	885.00	886.00	1.00
5	3	140.000	0.13	0.13	0.85	0.11	0.11	5.0	5.0	7.5	0.83	2.73	1.05	12	0.50	880.67	881.37	882.55	882.61	885.53	886.43	2.04
4	3	20.000	0.82	0.82	0.70	0.57	0.57	5.0	5.0	7.5	4.30	8.04	2.43	18	0.50	880.77	880.87	882.55	882.58	885.53	885.00	2.03
3	2	126.500	0.16	1.11	0.74	0.12	0.80	5.0	5.0	7.5	6.02	10.89	1.96	24	0.20	880.42	880.67	882.42	882.49	885.90	885.53	2.02
2	1	108.323	0.11	1.22	0.77	0.08	0.89	5.0	5.0	7.5	6.65	11.04	2.15	24	0.20	880.10	880.32	882.10	882.17	886.00	885.90	2.01
1	End	35.487	0.14	1.36	0.69	0.10	0.98	5.0	5.0	7.5	7.37	10.88	2.35	24	0.20	879.92	879.99	881.92	881.95	886.40	886.00	EX 2.31

Project File: P-STM.stm | Number of lines: 7 | Run Date: 1/23/2026

NOTES:Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period =Yrs. 10 ; Pipe travel time suppressed. ; c = cir e = ellip b = box

Inlet Report

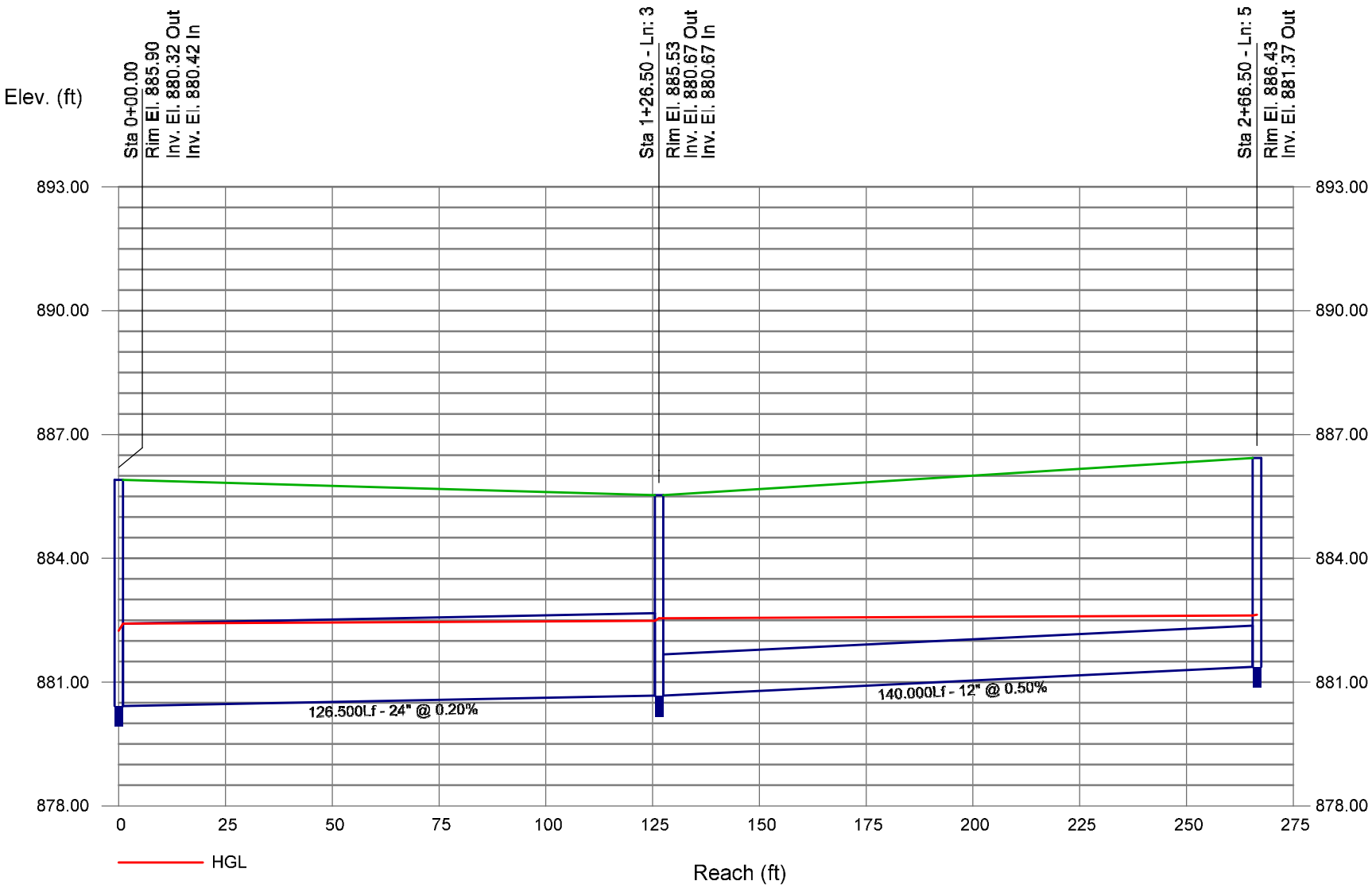
Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
7	1.01	1.94	0.00	1.94	0.00	Grate	0.0	0.00	0.74	0.93	0.80	Sag	1.00	0.005	0.020	0.012	0.40	20.98	0.40	20.98	0.0	Off
6	1.00	0.59	0.00	0.59	0.00	Grate	0.0	0.00	0.74	0.93	0.80	Sag	1.00	0.050	0.020	0.012	0.20	8.63	0.20	8.63	0.0	Off
5	2.04	0.83	0.00	0.83	0.00	Grate	0.0	0.00	0.74	0.93	0.80	Sag	1.00	0.050	0.020	0.012	0.25	10.91	0.25	10.91	0.0	Off
4	2.03	4.30	0.00	4.30	0.00	Genr	0.0	0.00	0.00	0.00	0.00	Sag	1.00	0.050	0.020	0.012	0.30	13.50	0.30	13.50	0.0	Off
3	2.02	0.89	0.00	0.89	0.00	Grate	0.0	0.00	0.74	0.93	0.80	Sag	1.00	0.050	0.020	0.012	0.26	11.44	0.26	11.44	0.0	Off
2	2.01	0.63	0.00	0.63	0.00	Grate	0.0	0.00	0.74	0.93	0.80	Sag	1.00	0.050	0.020	0.012	0.21	9.05	0.21	9.05	0.0	Off
1	2.00	0.72	0.00	0.72	0.00	Grate	0.0	0.00	0.74	0.93	0.80	Sag	1.00	0.050	0.020	0.012	0.23	9.93	0.23	9.93	0.0	Off

Project File: P-STM.stm | Number of lines: 7 | Run Date: 1/23/2026

NOTES: Inlet N-Values = 0.012; Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

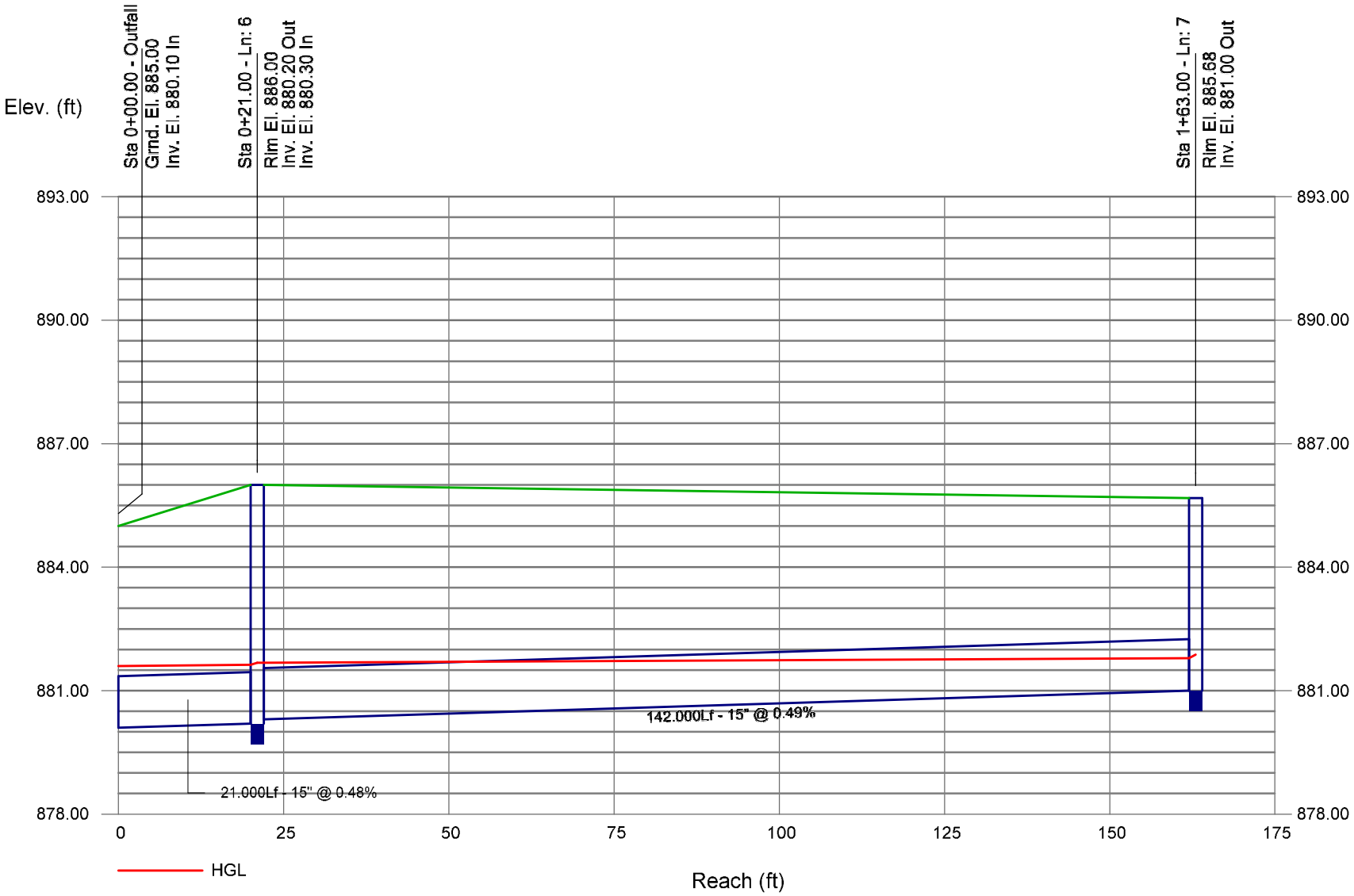
Storm Sewer Profile

Proj. file: P-STM.stm



Storm Sewer Profile

Proj. file: P-STM.stm



Storm Sewer Profile

Proj. file: P-STM.stm

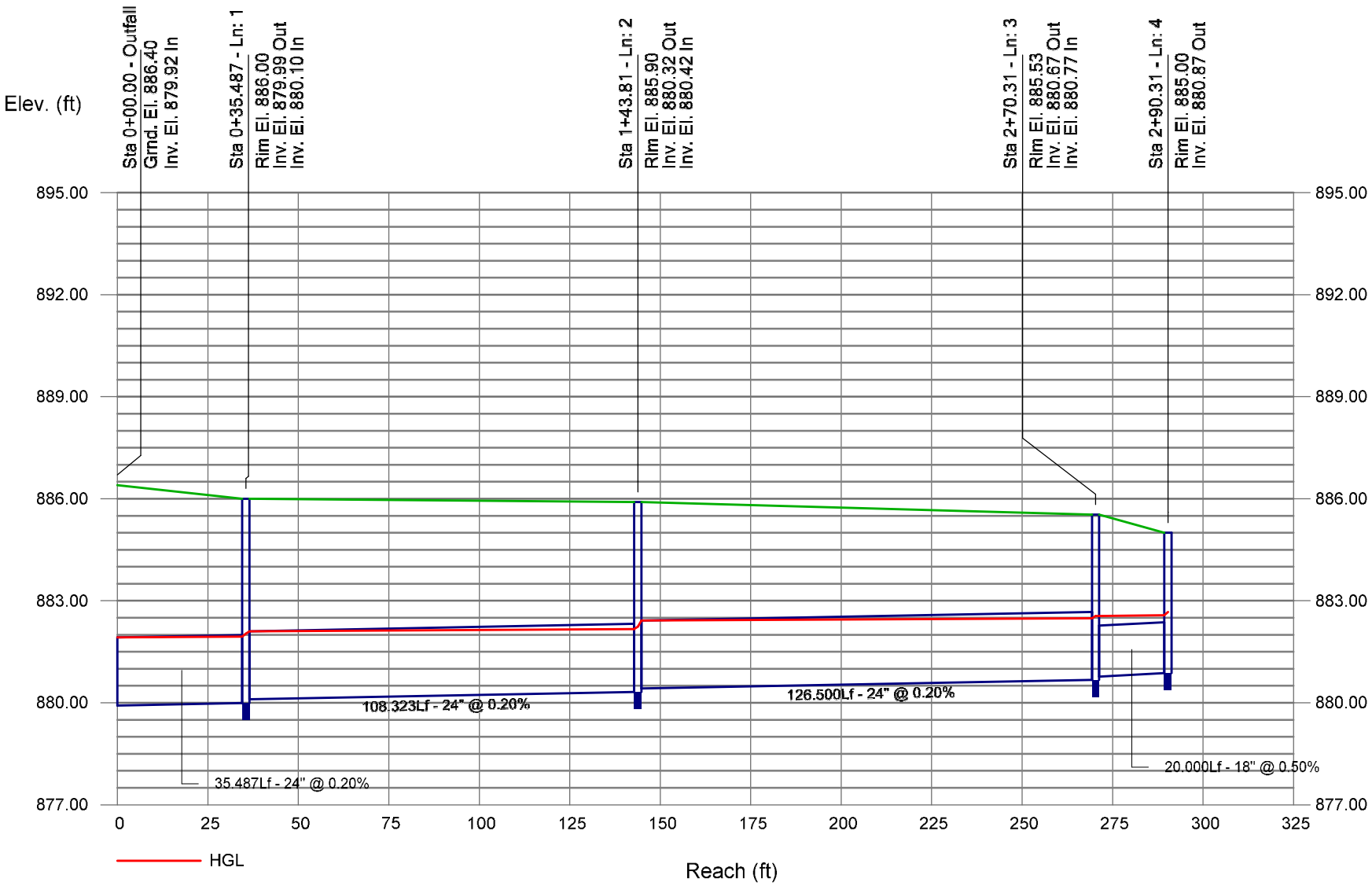


EXHIBIT 3

STORMWATER MANAGEMENT REPORT FOR MEIJER STORE ABE

Woolpert, Inc.
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL

STORMWATER MANAGEMENT REPORT

PREPARED FOR:

MEIJER STORE #338 ABE
9202 E 56TH STREET
TOWN OF BROWNSBURG
HENDRICKS COUNTY, INDIANA 46112

PREPARED BY:

WOOLPERT, INC.
4454 IDEA CENTER BOULEVARD
DAYTON, OH 45430

WOOLPERT PROJECT: 10020046

September 5, 2023
REV. February 23, 2024
REV. January 10, 2025

Woolpert, Inc.
1203 Walnut Street, Second Floor
Cincinnati, OH 45202
513.272.8300

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INTRODUCTION

This stormwater management report was prepared to provide the methodology and control measures that will be utilized to control stormwater runoff from the proposed Meijer development in post-construction conditions. The development will be constructed at 9202 East 56th St, Brownsburg, Hendricks County, IN. The site is bordered by East 56th Street (E CR 600 N) to the south, N CR 900 E to the west, undeveloped agricultural land to the north, and the right-of-way and future stormwater management basin for the Ronald Reagan Parkway extension to the east.

The Town of Brownsburg Stormwater Management regulations were used to design the stormwater management system, along with the Hendricks County required release rates. HydroCAD was used to simulate pre- and post-developed runoff and to model post-developed stormwater management routing.

PROJECT DESCRIPTION

The 31.63-acre site will be developed as a Meijer supercenter and mExpress convenience/fueling store with associated parking area, access drives and landscaping. Four entrance drives will be constructed to access the site: two on East 56th Street (E CR 600 N) and two on N CR 900 E. Storm sewer and utility services will be constructed and connect to the existing utility infrastructure. Two proposed above-ground stormwater management basins and an underground stormwater management system will provide detention and water quality treatment for the Meijer development in accordance with the Town of Brownsburg and Hendricks County requirements. Additionally, the commercial outlots to be constructed in the future have been considered in the proposed design. The proposed stormwater management system is designed to manage all detention from the commercial outlots.

PRE-DEVELOPED SITE CONDITIONS

See Figure 1A for the Pre-Developed Drainage Plan and Figure 1C for the Site Watershed Map. The existing 31.63-acre site is an undeveloped agricultural field. The site is composed primarily of poorly drained Hydrologic Soil Group (HSG) C/D (Treaty Silt Loam) and somewhat poorly drained HSG B/D (Crosby Silt Loam) soils. The site slopes from northwest to southeast at roughly 0.50 – 2.00 percent. Existing storm runoff sheet flows to a common low point at the southeast corner of the site. Additionally, there is an existing 27” storm pipe running West to East across the site. This pipe conveys stormwater discharge from the Hession Farms Subdivision from the west side of CR 900 as well as discharge from the OrthoIndy detention basin located to the southwest of the subject site. The 27” pipe increases in size to a 36” pipe immediately downstream (east) of the subject site and discharges to School Branch. Immediately east of the subject site is the South Detention Pond for the Ronald Regan Extension Road Project, currently under construction. This detention basin is owned and maintained by the Hendricks County Engineering Department. As part of the construction, the 36” discharge pipe from Hession Farms and OrthoIndy will be rerouted around the new detention basin. All stormwater discharge from the South Detention Pond and the 36” pipe will discharge to School Branch. Lastly, the southern portion of the site is bordered by two outlots owned by OrthoIndy, B-1 and B-2, 1.70 acres and 1.80 acres in area, respectively. These outlots will be developed by others but existing runoff within these areas sheet flows from west to east towards the common low point on the subject property.

POST-DEVELOPED SITE CONDITIONS

See Figure 1B for the Post-Developed Drainage Plan. The Meijer supercenter and convenience store as well as the outlots of the development will be constructed on the 31.63-acre site. The existing 27” storm pipe will remain undisturbed throughout construction. Storm sewer and utility services will be constructed and connect to existing utility infrastructure. The proposed stormwater management system will provide detention and water quality treatment for the development per Town of Brownsburg and Hendricks County requirements.

The proposed stormwater management system is separated into two detention systems for the north and south portions of the site generally delineated by the existing 27” storm pipe running West to East across the site. The majority of the north portion of the site discharges to the above-ground wet detention basin (Pond 1P) located along the northern and eastern property lines. Pond 1P provides detention volume and water quality for the Meijer supercenter store, northern parking lots, Outlots B & C and off-site drainage north of the subject property. The on-site drainage areas referred to as A-1, Out B, and Out C will be detained within the basin. The off-site drainage areas north of the subject property referred to as D-1 and D-2 will bypass through the basin as uncontrolled flow. The small area along

the perimeter referred to as C-2 will remain uncontrolled and contribute to the total site runoff. Pond 1P has a wet bottom elevation of 875.00, a normal pool elevation of 877.29, and a top of bank elevation of 885.00.

The majority of the south portion of the site discharges to the combined above-ground basin and underground detention facility (Pond 2P) located north of Outlot A and the mExpress. Pond 2P provides detention volume and water quality for the Meijer convenience store/fueling station, southern parking lots, and Outlot A. The on-site drainage areas referred to as A-2 and Out A will be detained within the detention system. Small areas along the perimeter referred to as C-3, C-4, C-5, C-6, and C-7 will remain uncontrolled and contribute to the total site runoff. The underground stormwater management facility and the above-ground detention basin are connected via a 42" equalization pipe. The underground detention system does not accept any site runoff but works in combination with the above-ground detention basin to provide additional storage volume. The 42” equalizer pipe will begin to stage as the above-ground detention basin fills up. Runoff volume will continue to stage between the above-ground detention basin, the 42” equalizer pipe and the underground detention system. Runoff volume will flow into and out of the underground detention system via the 42” pipe as the above-ground detention basin fills up and begins to outlet from the outlet control structure, 3.02, at a controlled release rate. Both systems are hydraulically connected and have been modeled as one entity. Pond 2P has a dry bottom elevation of 877.38 with a top of bank elevation of 886.00. The underground detention system is a CONTECH 72” CMP system with stone backfill.

For each post-developed drainage area, the acreage, CN value, and time of concentration were determined. The CN value is weighted based on an impervious CN of 98 and an open space, good condition CN of 80. To comply with Town of Brownsburg and Hendricks County requirements, the future outlots were assumed to have a CN of 95 for commercial development. In post-developed conditions, the HSG has been modeled as Group D. The post-developed time of concentrations for detained developed areas were calculated to be 15.0 minutes assuming 10 minutes of overland flow and 5 minutes of pipe flow. The post-developed time of concentrations for the undetained perimeter areas were assumed to be 6.0 minutes based on the minimum allowable per TR-55 guidance.

The outlet control structures for each detention basin discharge to the existing 27” pipe in accordance with Watershed-Specific Release Rates as coordinated with the Hendricks County Drainage Board. An analysis of the existing 27” pipe running through the subject site indicates that the pipe has sufficient capacity to convey the detained runoff from the proposed development to School Branch. See Appendix 1.6 for the analysis.

Emergency overflow spillways have been provided for both above-ground detention basins and are designed to directly discharge into the future Ronald Reagan detention basin east of the site. An analysis of the Ronald Reagan Parkway detention basin indicates that the emergency spillway has sufficient capacity to allow for the potential overflow from the Meijer basin emergency spillways. See Appendix 1.3 for the Emergency Spillway Calculations.

DETENTION DESIGN

Stormwater detention will be provided for the proposed development in accordance with the Town of Brownsburg and Hendricks County design requirements. Per a comment received from the Hendricks County Drainage Board on January 4th, 2024, the allowable release rates for the 10- and 100-year storm events have been calculated based on 0.1 cfs per acre and 0.3 cfs per acre, respectively. Table 1.1 on the following page provides the drainage areas for each detention system as well as the allowable release rates. Tables 1.2 and 1.3 provide summaries of the designed release rates. See Appendices 1.1 and 1.2 for HydroCAD Inputs and Results.

POND 1P (ABOVE-GROUND BASIN) DETENTION DESIGN

The proposed above-ground stormwater management system is designed so that runoff from the post-developed Meijer supercenter store, northern parking lots, Outlots B & C will be managed within the detention basin up to and including the 100-year storm. Runoff from the drainage areas referred to as A-1, Out B, and Out C will discharge to the proposed basin. A 40" X 40" structure will be modified to serve as the outlet control structure to control the post-developed release rates for this area. A 4" orifice at invert 877.29 will function as the primary control device. A 12" orifice at invert 882.14 will function as the secondary control device. The grate of the outlet control structure will have an elevation of 884.54. The stormwater management system will outlet to the existing 27" pipe through a 12" pipe at invert 877.29. An emergency spillway will be provided at elevation 884.54 and the top of the basin is at 885.00. See Appendix 1.4 for the Outlet Structure Detail.

POND 2P (COMBINED ABOVE-GROUND & UNDERGROUND BASIN) DETENTION DESIGN

The proposed combined above-ground basin and 72" underground stormwater management system is designed so that runoff from the post-developed Meijer convenience store/fueling station, southern parking lots, and Outlot A will be managed within the detention basin up to and including the 100-year storm. Runoff from the drainage areas referred to as A-2 and Out A will discharge to the proposed basin. A storm structure will be modified to serve as the outlet control structure to control the post-developed release rates for this area. A 4" orifice at invert 877.38 will function as the primary control device. A 12" orifice at invert 882.61 will function as the secondary control device. The grate of the outlet control structure will have an elevation of 885.40. The stormwater management system will outlet to the existing 27" pipe through a 12" pipe at invert 877.38. An emergency spillway will be provided at elevation 885.40 and the top of the basin is at 886.00. See Appendix 1.4 for the Outlet Structure and Underground Detention System Details.

Per comments received from the Hendricks County Drainage Board on January 4th, 2024, the underground detention system was requested to be modeled separately from the above-ground detention basin 2P. Due to HydroCAD modeling software limitations, the model produced oscillations in the hydrograph output for the south pond. After reviewing various HydroCAD help documents, it is recommended to model these systems as a single detention facility for accurate routing.

Table 1.1: Allowable Release Rate Calculations

Rows highlighted orange denote drainage areas that are detained within the detention systems. Non-highlighted rows indicate drainage areas that are bypassed within the detention systems.

Detention System 1P (North Detention Basin)

Site Type	Node Name	Area (acres)	10-yr Existing Release Rate (cfs)	10-yr Allowable (0.1 cfs/acre)	100-yr Existing Release Rate (cfs)	100-yr Allowable (0.3 cfs/acre)	
Meijer Site	A-1	16.51	96.82	1.65	147.35	4.95	
Outlot B	Out B	1.92	7.32	0.19	11.59	0.58	
Outlot C	Out C	3.82	10.34	0.38	16.52	1.15	
North Offsite D-1	D-1	18.48	24.10	24.10	38.78	38.78	
North Offsite D-2	D-2	10.72	29.71	29.71	47.46	47.46	
	Total Area	51.45					
				Total 10-yr Allowable Release Rate =		56.04	cfs
				Total 100-yr Allowable Release Rate =		92.92	cfs

Detention System 2P (South Detention Basin & Underground System)

Site Type	Node Name	Area (acres)	10-yr Existing Release Rate (cfs)	10-yr Allowable (0.1 cfs/acre)	100-yr Existing Release Rate (cfs)	100-yr Allowable (0.3 cfs/acre)	
Meijer Site	A-2	5.18	27.86	0.52	42.39	1.55	
Outlot A	Out A	3.12	10.92	0.31	17.40	0.94	
	Total Area	8.30					
				Total 10-yr Allowable Release Rate =		0.83	cfs
				Total 100-yr Allowable Release Rate =		2.49	cfs

Undetained Area (Bypass Flow Contributing to Total Site Runoff)

Site Type	Node Name	Area (acres)	10-yr Existing Release Rate (cfs)	10-yr Allowable (0.1 cfs/acre)	100-yr Existing Release Rate (cfs)	100-yr Allowable (0.3 cfs/acre)	
Ortho-Indy Oulot	B-1	1.70	7.07	7.07	12.17	12.17	
Ortho-Indy Oulot	B-2	1.80	4.25	4.25	7.65	7.65	
Undetained Area 2	C-2	0.16	0.70	0.02	1.21	0.05	
Undetained Area 3	C-3	0.29	1.07	0.03	1.85	0.09	
Undetained Area 4	C-4	0.19	0.66	0.02	1.09	0.06	
Undetained Area 5	C-5	0.16	0.38	0.02	0.66	0.05	
Undetained Area 6	C-6	0.05	0.26	0.01	0.39	0.02	
Undetained Area 7	C-7	0.19	0.26	0.02	0.39	0.06	
	Total Area	4.54					
				Total 10-yr Allowable Release Rate =		11.42	cfs
				Total 100-yr Allowable Release Rate =		20.13	cfs

Total On-Site 10-YR Allowable Release Rate =	3.16	cfs
Total On-Site 100-YR Allowable Release Rate =	9.48	cfs

Total Site 10-YR Allowable Release Rate =	68.29	cfs
Total Site 100-YR Allowable Release Rate =	115.54	cfs

Table 1.2: On-Site Release Rate Summary

Site Area	10-YR Allowable Release Rate	10-YR Design Release Rate	WSE	100-YR Allowable Release Rate	100-YR Design Release Rate	WSE
Pond 1P	2.23 cfs	0.91 cfs	882.14’	6.68 cfs	4.00 cfs	883.27’
Pond 2P	0.83 cfs	0.95 cfs*	882.61’	2.49 cfs	5.19 cfs*	884.29’
Undetained Areas	0.10 cfs			0.31 cfs		
Total Site Runoff	3.16 cfs	5.62 cfs*		9.48 cfs	9.08 cfs	

*Note:
The design release rates for the detention system are above the calculated allowable release rates. This is due to the minimum orifice size of 4” as stated in the Town of Brownsburg Stormwater Manual.

Table 1.3: On-Site & Off-Site Release Rate Summary

Site Area	10-YR Allowable Release Rate	10-YR Design Release Rate	WSE	100-YR Allowable Release Rate	100-YR Design Release Rate	WSE
Pond 1P	56.04 cfs	6.24 cfs	884.48’	92.92 cfs	61.91 cfs	884.86’
Pond 2P	0.83 cfs	0.95 cfs*	882.61’	2.49 cfs	5.19 cfs*	884.29’
Undetained Areas	11.42 cfs			20.13 cfs		
Total Site Runoff	68.29 cfs	15.13 cfs		115.54 cfs	69.48 cfs	

*Note:
The design release rates for the detention system are above the calculated allowable release rates. This is due to the minimum orifice size of 4” as stated in the Town of Brownsburg Stormwater Manual. However, once both on-site detained and off-site bypass areas are considered, actual release rates for both the 10- and 100-year design storms are below allowable release rates.

STORM WATER QUALITY

Stormwater quality will be provided by a treatment train of three Hydrodynamic Separators, Structures 1.01, 1.31, & 2.01, to allow for pre-treatment of the stormwater runoff prior to entering the detention systems and the detention basins. Applicable water quality flow rates were used to size each structure to adhere to Town of Brownsburg requirements. Each water quality structure is specified as a Cascade Separator™ by CONTECH Engineering which has independent third-party testing showing 80% TSS removal rates as required by the Town of Brownsburg. See Appendix 1.5 for Water Quality Structure Sizing.

STORM SEWER DESIGN

See Figure 1D for the Inlet Drainage Plan. The storm sewer system for the site is divided into multiple drainage areas, all of which typically drain to a proposed catch basin or curb inlet and discharge to one of the proposed detention basins. The storm sewer is sized to convey the 10-year storm event and keep the hydraulic grade line within the pipe per Town of Brownsburg and Hendricks County requirements. The system was also designed to keep the hydraulic grade line below the rims of the drainage structures for the 25-year storm event. An n-value of 0.012 was used for the storm sewer design calculations. Additionally, a ponding analysis was completed for all drainage structures with the assumption that 50% of the open grate area for each inlet was blocked. The castings assumed for this analysis adhere to the Town of Brownsburg Construction Standards and utilize applicable Neenah casting types. See Appendices 2.2, 2.3 and 2.4 for Hydraflow Storm Sewers Calculations.

Per Town of Brownsburg regulations, the 100-yr ponding limits under the assumption that all storm inlets are at capacity have been provided on the proposed grading plan. The ponding limits at storm structures 1.02 and 1.03 include the truck dock area and abut the east building face. The pavement elevations in this area are set at or above the 100-yr water surface elevation of the detention basin, so the water elevations in the pond will not impact or flood this area. This ponding would only be a result of clogging or capacity issues with the storm sewer inlet grates to receive surface runoff. Additionally, per Meijer prototypical design standards, the truck dock entrance doors are set 50” above finished grade in this area to align with the main store finished floor elevation and the concrete pad for the entrance is sloped away from the building face at 1.00% to allow for positive drainage. Although the ponding limits abut the building face, site runoff will not pond up to the truck dock entrance doors, even in a case of clogging or capacity issues. The structural integrity of the building foundation will not be impacted by the ponding. The ponding will fluctuate as the detention

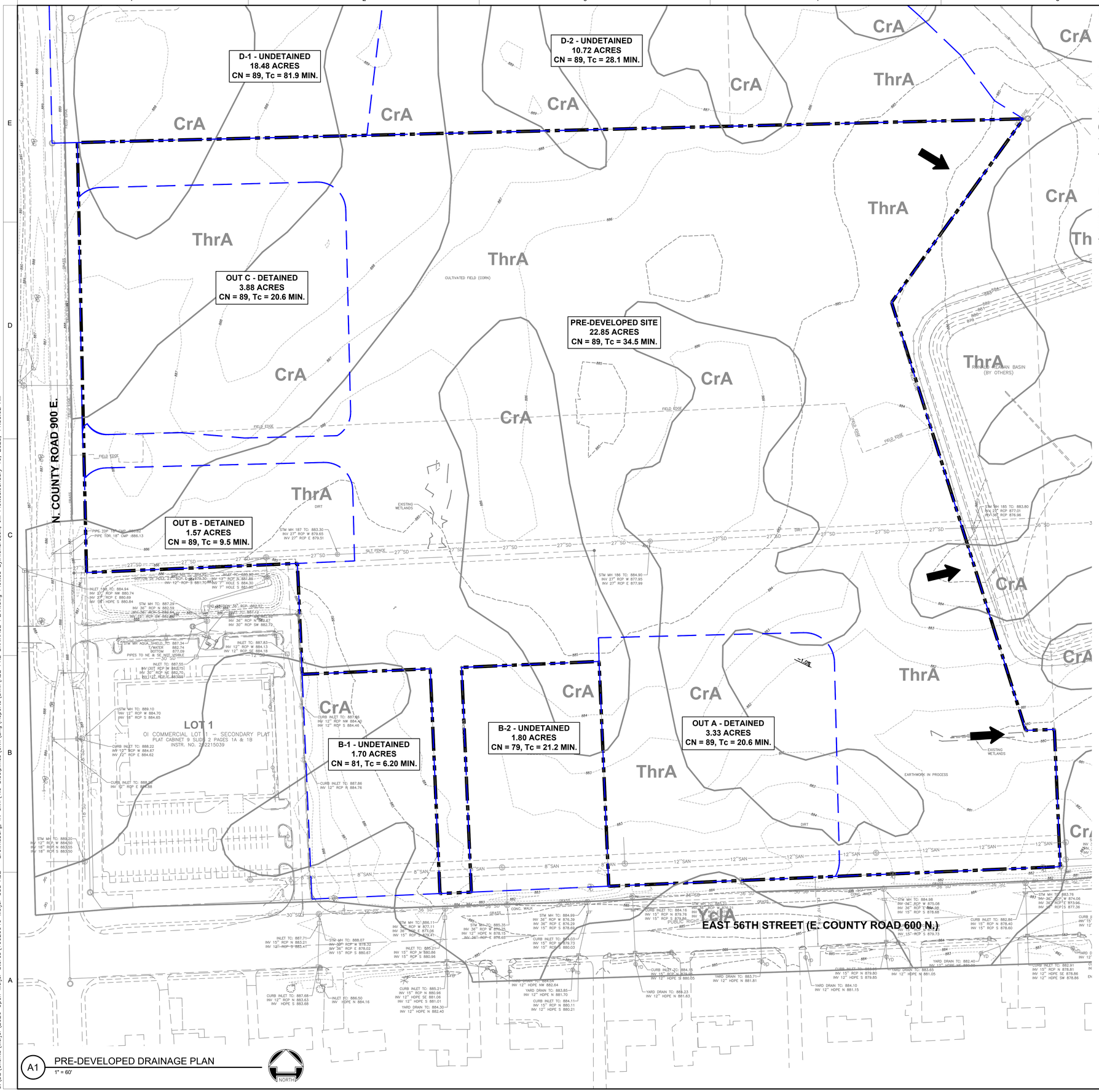
basin fills up and drains, so no permanent ponding will occur in this area. In summary, the design is not anticipated to impact the building foundation.

CONCLUSION

The proposed design meets the requirements outlined in the Town of Brownsburg and Hendricks County Stormwater Technical Standards Manual Adopted October 2017.

FIGURES

FIGURE 1A – PRE-DEVELOPED DRAINAGE PLAN



A1 PRE-DEVELOPED DRAINAGE PLAN
1" = 60'

NORTH

LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING STORM SEWER
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROJECT BOUNDARY
- DRAINAGE AREA BOUNDARY

SOILS LEGEND

CrA	CROSBY SILT LOAM, 0–2% SLOPES HYDROLOGIC GROUP: C/D
YclA	CROSBY SILT LOAM (URBAN LAND COMPLEX), 0–2% SLOPES HYDROLOGIC GROUP: C/D
ThrA	TREATY SILTY CLAY LOAM, 0–1% SLOPES HYDROLOGIC GROUP: B/D

DRAINAGE AREA SUMMARY

AREA B–1	1.70 ACRES
AREA B–2	1.80 ACRES
AREA D–1	18.48 ACRES
AREA D–2	10.72 ACRES
OUTLOT A	3.33 ACRES
OUTLOT B	1.57 ACRES
OUTLOT C	3.87 ACRES
PRE–DEVELOPED SITE	22.85 ACRES
TOTAL AREA	64.32 ACRES

BENCHMARK:

THE BASIS OF ELEVATIONS HEREON IS NAVD 88 PER OBSERVATIONS OF SELECTED STATIONS IN THE NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATION (NGS CORS) NETWORK.
MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT – SEE DRAWING FOR LOCATION.

ELEVATION = 889.36'

0 60 120 180
GRAPHIC SCALE IN FEET

Indiana811 Know what's below. Call before you dig.

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

PRE-DEVELOPED DRAINAGE PLAN

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

1A

Images: Topo – County GIS.PNG; Xrefs: 10020046-x.dwg; 10020046TBLK.dwg
Layout Tab Name: PRE-DEVELOPED DRAINAGE PLAN
Last Saved By:richardsonj, 1/10/2025 11:34:15 AM
G:\DE\Clients\Meijer\2026 Open Meijer Stores\10020046 Meijer 338 ABE – Brownsburg, IN Civil\4.0 Disciplines\Civil\Eng\Reports\SWM\ABE PRE DRAINAGE PLAN.dwg Plotted By:Richardson, Jill Plotted:January 10, 2025, 11:35:02 AM

FIGURE 1B – POST-DEVELOPED DRAINAGE PLAN

D-1 - UNDETAINED
18.48 ACRES
CN = 89, Tc = 81.9 MIN.

D-2 - UNDETAINED
10.72 ACRES
CN = 89, Tc = 28.1 MIN.

OUT C - DETAINED
3.82 ACRES
CN = 95, Tc = 15 MIN.

meijer
159,935 SQ. FT.
FF ELEV = 889.00

A-1 - DETAINED
16.51 ACRES
CN = 92, Tc = 15 min

OUTDOOR GARDEN CENTER

OUTDOOR SALES AREA

OUT B - DETAINED
1.92 ACRES
CN = 95, Tc = 15 MIN.

C-2 - UNDETAINED
0.16 ACRES
CN = 80, Tc = 6 MIN.

C-3 - UNDETAINED
0.29 ACRES
CN = 80, Tc = 6 MIN.

C-4 - UNDETAINED
0.19 ACRES
CN = 80, Tc = 6 MIN.

C-5 - UNDETAINED
0.17 ACRES
CN = 80, Tc = 6 MIN.

B-2 - UNDETAINED
1.80 ACRES
CN = 79, Tc = 21.1 MIN.

B-1 - UNDETAINED
1.70 ACRES
CN = 81, Tc = 6.2 MIN.

OUTLOT
(BY OTHERS)
1.86 ACRES

OUTLOT
(BY OTHERS)
1.80 ACRES

OUT A - DETAINED
3.12 ACRES
CN = 95, Tc = 15 MIN.

A-2 - DETAINED
5.18 ACRES
CN = 93
Tc = 15 MIN.

C-6 - UNDETAINED
0.05 ACRES
CN = 94, Tc = 6 MIN.

C-7 - UNDETAINED
0.19 ACRES
CN = 84, Tc = 6 MIN.

N. COUNTY ROAD 900 E.

EAST 56TH STREET (E. COUNTY ROAD 600 N.)

RONALD REAGAN BASIN
(BY OTHERS)

WET DETENTION BASIN
TOP OF BANK ELEV. = 885.00
NORMAL POOL ELEV. = 877.29
BOTTOM ELEV. = 865.00
10 YR. ELEV. = 882.14
100 YR. ELEV. = 883.27

EMERGENCY SPILLWAY
FLOOD ROUTING PATH
ELEVATION = 884.54

EMERGENCY SPILLWAY
FLOOD ROUTING PATH
ELEVATION = 885.40

DRY DETENTION BASIN
TOP OF BANK ELEV. = 885.00
BOTTOM ELEV. = 877.38
10 YR. ELEV. = 882.61
100 YR. ELEV. = 884.29

UNDERGROUND DETENTION SYSTEM
(72" CMP ROUND CHAMBER SYSTEM)
TOP OF STONE ELEV. = 884.53
TOP OF PIPE ELEV = 884.03
BOTTOM OF PIPE ELEV. = 878.03
BOTTOM OF STONE ELEV. = 877.53
10 YR. ELEV. = 882.61
100 YR. ELEV. = 884.29

LOT 1
OI COMMERCIAL LOT 1 – SECONDARY PLAT
PLAT CABINET 9 SLIDE 2 PAGES 1A & 1B
INSTR. NO. 202215039

LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING STORM SEWER
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR
- STORM SEWER
- DRAINAGE STRUCTURE
- XX STORM STRUCTURE ID
- PROJECT BOUNDARY
- DRAINAGE AREA BOUNDARY

DRAINAGE AREA SUMMARY

NORTH DETENTION POND DRAINAGE AREA

A–1 – DETAINED	16.51 AC
OUT B – DETAINED	1.92 AC
OUT C – DETAINED	3.82 AC
D–1 – UNDETAINED, BYPASS	18.48 AC
D–2 – UNDETAINED, BYPASS	10.72 AC
TOTAL DRAINAGE AREA	51.45 ACRES

SOUTH DETENTION POND & UNDERGROUND SYSTEM DRAINAGE AREA

A–2 – DETAINED	5.18 AC
OUT A – DETAINED	3.12 AC
TOTAL DRAINAGE AREA	8.30 ACRES

UNDETAINED AREAS, CONSIDERED WITHIN TOTAL SITE RUNOFF

B–1 – UNDETAINED	1.70 AC
B–2 – UNDETAINED	1.80 AC
C–2 – UNDETAINED	0.16 AC
C–3 – UNDETAINED	0.29 AC
C–4 – UNDETAINED	0.19 AC
C–5 – UNDETAINED	0.16 AC
C–6 – UNDETAINED	0.05 AC
C–7 – UNDETAINED	0.19 AC
TOTAL UNDETAINED AREA	4.54 ACRES

DRAINAGE AREA LEGEND

- A–1
- A–2
- MEIJER OUTLOTS A, B, & C
- OUTLOTS BY OTHERS B–1 & B–2
- C–2
- C–3
- C–4
- C–5
- C–6
- C–7
- D–1
- D–2

A1 POST-DEVELOPED DRAINAGE PLAN
1" = 60'

NORTH

0 60 120 180
GRAPHIC SCALE IN FEET

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Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
8202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

POST-DEVELOPED DRAINAGE PLAN

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

1B

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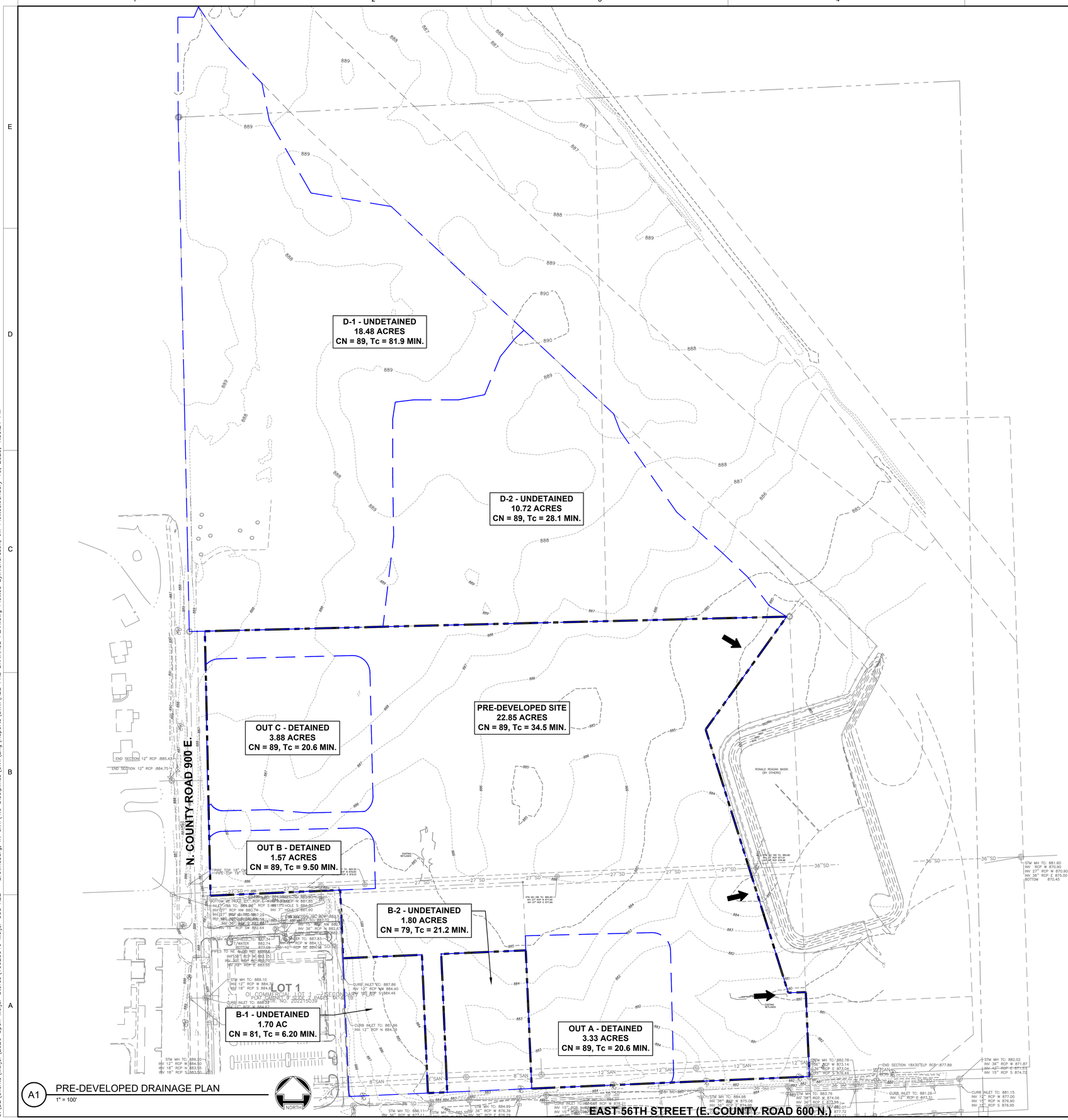
FIGURE 1C – SITE WATERSHED MAP



A1 PRE-DEVELOPED DRAINAGE PLAN
1" = 100'

LEGEND

	EXISTING DRAINAGE STRUCTURE
SD	EXISTING STORM SEWER
1179	EXISTING 1' CONTOUR
1180	EXISTING 5' CONTOUR
	PROJECT BOUNDARY
	DRAINAGE AREA BOUNDARY

DRAINAGE AREA SUMMARY

AREA B-1	1.70 ACRES
AREA B-2	1.80 ACRES
AREA D-1	18.48 ACRES
AREA D-2	10.72 ACRES
OUTLOT A	3.33 ACRES
OUTLOT B	1.57 ACRES
OUTLOT C	3.87 ACRES
PRE-DEVELOPED SITE	22.85 ACRES
TOTAL AREA	64.32 ACRES

0 100 200 300
GRAPHIC SCALE IN FEET

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BROWNSBURG, INDIANA 46112

SITE WATERSHED MAP

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

1C

Images: Topo - County GIS.PNG; . Xrefs: 10020046-x.dwg; 10020046TBLK.dwg
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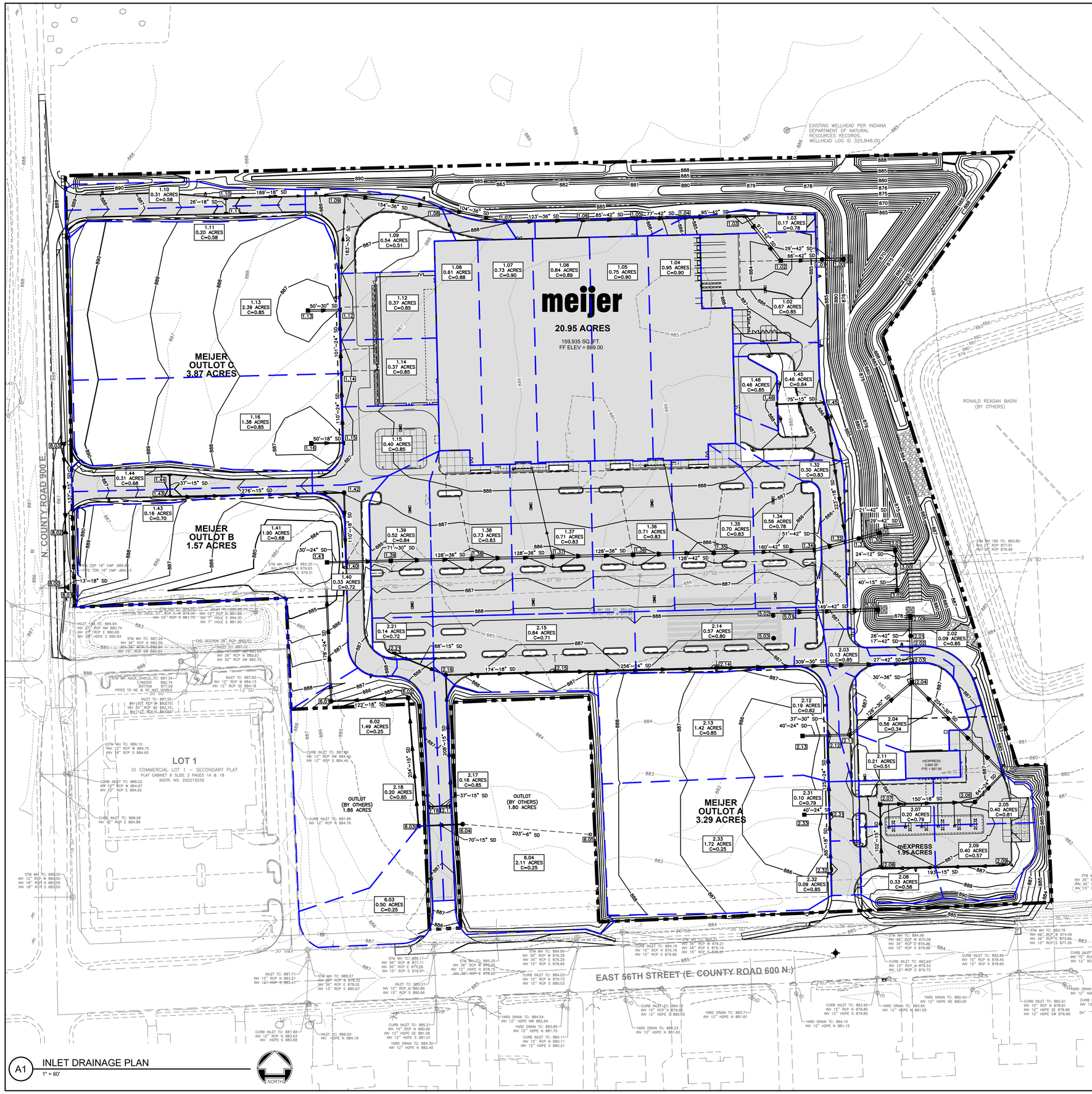
FIGURE 1D – INLET DRAINAGE PLAN



A1 INLET DRAINAGE PLAN
1" = 60'

0 60 120 180
GRAPHIC SCALE IN FEET

LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING STORM SEWER
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROJECT BOUNDARY
- DRAINAGE AREA BOUNDARY
- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR
- STORM SEWER
- UNDERDRAIN
- MANHOLE
- DRAINAGE BASIN
- CLEANOUT
- STORM STRUCTURE ID NUMBER
- IMPERVIOUS AREA

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REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

INLET DRAINAGE PLAN

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

1D

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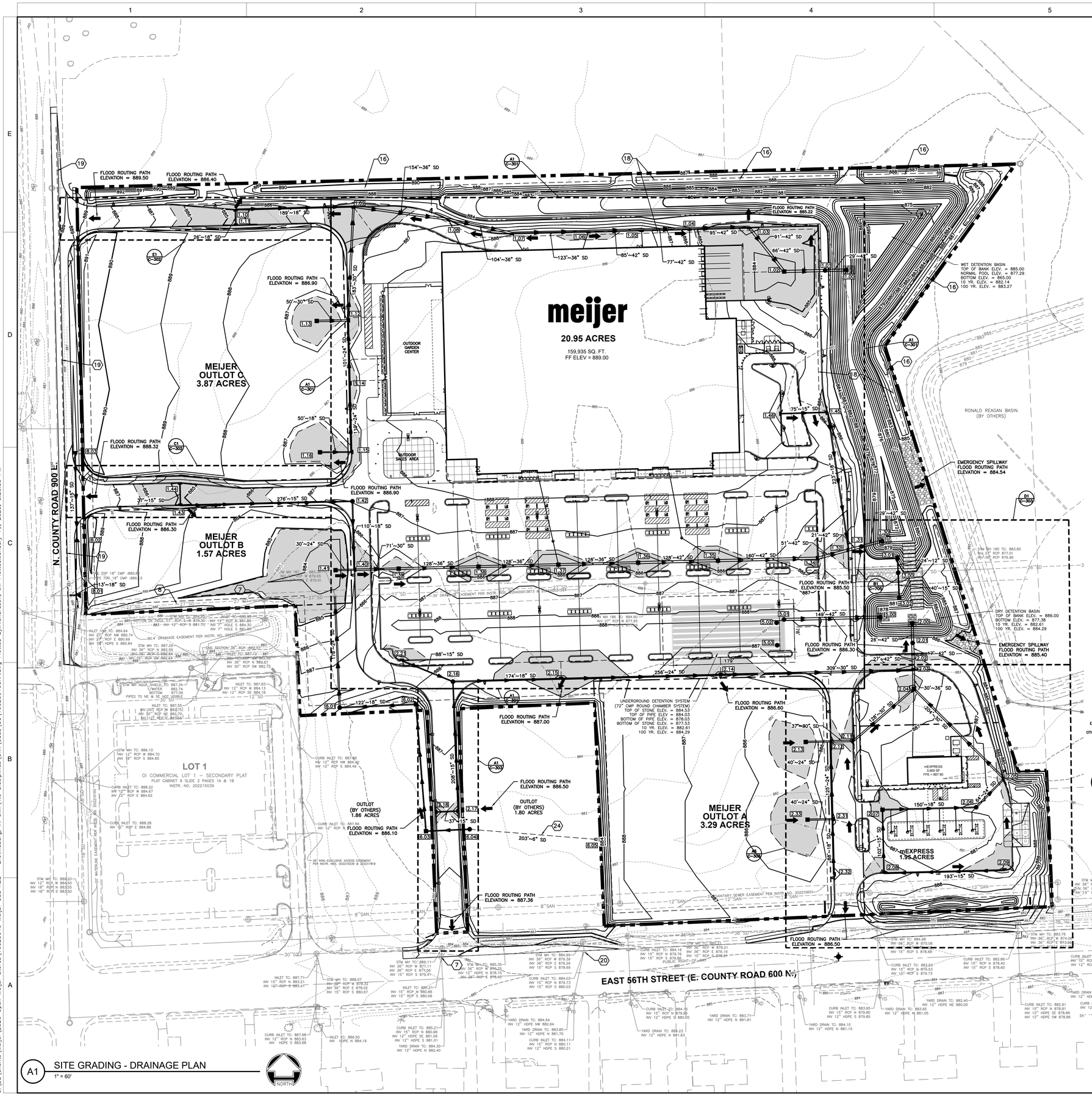
FIGURE 2 – GRADING PLANS



LEGEND

- PROPERTY LINE
- 799 EXISTING 1' CONTOUR
- 800 EXISTING 5' CONTOUR
- SD EXISTING STORM SEWER
- 799 PROPOSED 1' CONTOUR
- 800 PROPOSED 5' CONTOUR
- STORM SEWER
- FUTURE STORM SEWER
- UNDERDRAIN
- MANHOLE
- DRAINAGE BASIN
- CLEANOUT
- XX STORM STRUCTURE ID NUMBER
- ROCK OUTLET PROTECTION
- FLOOD ROUTING ARROW
- 100-YEAR FLOOD LIMITS (WITH ALL INLETS BLOCKED)

GRADING NOTES

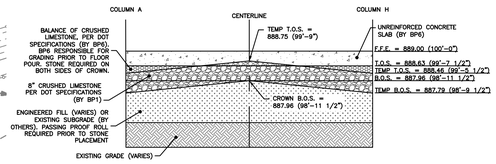
1. ALL SPOT ELEVATIONS ARE TO:
   TOP OF PAVEMENT – (TP)
   TOP OF SLAB – (TS)
   TOP OF CURB – (TC)
   TOP OF WALL – (TW)
   GUTTER PAN – (GP)
   UNLESS NOTED OTHERWISE.
2. CONTOURS SHOWN ARE FOR REFERENCE ONLY.
3. PROVIDE POSITIVE DRAINAGE AT ALL TIMES TO ENSURE NO STANDING WATER WITHIN PAVEMENT, BUILDING PAD, OR GREEN AREAS.
4. FOR ALL CURB ISLANDS, CENTER OF ISLANDS TO BE A MINIMUM OF 6" HIGHER THAN TOP OF CURB.
5. RESTORE ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE DITCHES, AND OTHER PUBLIC OR PRIVATE STRUCTURES THAT ARE DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO MATCH AT A MINIMUM EXISTING CONDITIONS.
6. CONTRACTOR'S MANNER AND METHOD OF INGRESS AND EGRESS WITH RESPECT TO THE PROJECT AREAS SHALL IN NO WAY PROHIBIT OR DISTURB NORMAL PEDESTRIAN OR VEHICULAR TRAFFIC IN THE VICINITY AND IS SUBJECT TO REGULATION AND WRITTEN APPROVAL OF APPROPRIATE GOVERNING AGENCIES.
7. FINISHED SUBGRADE SURFACE SHALL NOT BE MORE THAN 0.1 FEET ABOVE OR BELOW ESTABLISHED FINISHED SUBGRADE ELEVATIONS AND ALL GROUND SURFACES SHALL VARY UNIFORMLY BETWEEN INDICATED ELEVATIONS. FINISHED DITCHES SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION.
8. VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. UTILITIES SHALL END 5 FEET FROM THE BUILDING UNLESS NOTED OTHERWISE.
10. PROTECT AND MAINTAIN CROSSINGS OF OTHER UTILITIES.
11. ALL MATERIAL, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL BE IN CONFORMANCE WITH MEIJER STANDARD SPECIFICATIONS AND THOSE OF THE APPROPRIATE UTILITY COMPANIES.
12. BEFORE COMMENCING WORK, CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES.
13. ACCORDING TO THE FLOOD INSURANCE RATE MAP – MAP NUMBER 18063C0176E, PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY WITH A REVISION DATE OF JUNE 15, 2022, WHICH IS THE MOST CURRENT FLOOD INSURANCE RATE MAP AVAILABLE ON FEMA'S WEBSITE, THIS SITE IS LOCATED IN ZONE "X" (NO SCREEN) – AREAS OF MINIMAL FLOOD HAZARD. THE ABOVE REFERENCED FLOODPLAIN MAP WAS UTILIZED FOR THIS DETERMINATION.
14. ENTRY LANDINGS PART OF AN ACCESSIBLE ROUTE SHALL MAINTAIN A MAXIMUM SLOPE OF 1.50% IN ALL DIRECTIONS. THIS IS INTENDED TO ALLOW FOR CONSTRUCTION TOLERANCES. SLOPES STEEPER THAN 1:48 SHALL NOT BE PERMITTED THUS MEETING THE REQUIREMENTS OF THE DEPARTMENT OF JUSTICE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN. ALL SLOPES TO BE VERIFIED AS ACCEPTABLE BY USING A 2'–0" LEVEL.

KEYNOTES

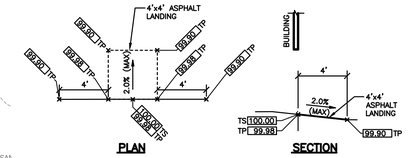
1. CONNECT TO EXISTING UTILITY PER AGENCY REQUIREMENTS, CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITY IN WHICH TO MAKE CONNECTION.
2. ABOVE–GROUND STORMWATER MANAGEMENT FACILITY.
3. UNDERGROUND STORMWATER MANAGEMENT FACILITY, SEE SHEET C–407 FOR PLAN AND PROFILE. SEE SHEET C–708 FOR MORE DETAIL.
4. DETENTION OUTLET STRUCTURE.
5. EMERGENCY SPILLWAY. SEE DETAIL A6 ON SHEET C–314.
6. WATER QUALITY HYDRODYNAMIC SEPARATOR.
7. ADJUST EXISTING UTILITY STRUCTURE TO FINISHED GRADE
8. EXISTING RCP STORM PIPE TO BE MAINTAINED DURING CONSTRUCTION.
9. 4" CANOPY DRAIN AT 1.00% (MIN) INVERT AT BUILDING FACE = 886.75.
10. 6" PVC STORM AT 2.00 % (MIN). INVERT AT BUILDING = 886.50.
11. 4" GARDEN CENTER DRAIN AT 1.00% (MIN).
12. SCREEN WALL. SEE ARCHITECTURAL PLANS..
13. DOCK RETAINING WALL. SEE ARCHITECTURAL PLANS.
14. LOADING DOCK WALL 4" UNDERDRAIN. INVERT = 882.43.
15. ENVIRONMENTAL CATCH BASIN.
16. 3' BERM ALONG NORTH AND EAST PROPERTY LINE. SEE LANDSCAPE PLAN.
17. NDS EZ ROLL PAVER SAFETY ACCESS RAMPS.
18. DETENTION BASIN EASEMENT.
19. 6" UNDERDRAIN PER TOWN OF BROWNSBURG REQUIREMENTS. SEE DETAIL TR–14 OF THE BROWNSBURG CONSTRUCTION STANDARDS.
20. CONVERT EXISTING CHAIR BACK CURB INLET TO FLAT GRATE STORM INLET PER TOWN OF BROWNSBURG REQUIREMENTS.
21. 6" ROOF DRAIN FOR GUTTER DOWNSPOUTS. SEE DETAIL C2 ON SHEET C–700.
22. RIPRAP PLACED AT POND OUTLET PER TOWN OF BROWNSBURG CONSTRUCTION STANDARD DETAIL EC–03.
23. RONALD REAGAN STORM BY OTHERS.
24. 6" PERFORATED UNDERDRAIN.

IMPERVIOUS SURFACE BREAKDOWN

MAIN STORE	
TYPE	AREA (SQ. FT.)
COMPACTED GRAVEL	0
CONCRETE/ASPHALT	450,622
BUILDING FOOTPRINT	159,935
TOTAL IMPERVIOUS SURFACE	610,557
mEXPRESS	
TYPE	AREA (SQ. FT.)
COMPACTED GRAVEL	0
CONCRETE/ASPHALT	40,037
BUILDING FOOTPRINT	3,660
TOTAL IMPERVIOUS SURFACE	43,697



B5 STONE CROWN BUILDING PAD DETAIL
NOT TO SCALE



NOTES:
1. MAXIMUM GRADE OF LANDING IS 2%.
2. FOR DOUBLE DOORS, PAD SHALL BE 4'x8' WITH SIMILAR ELEVATIONS.

A6 TYPICAL GRADES AT DOOR
NOT TO SCALE

BENCHMARK:

THE BASIS OF ELEVATIONS HEREON IS NAVD 88 PER OBSERVATIONS OF SELECTED STATIONS IN THE NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATION (NOS CORS) NETWORK.
MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT – SEE DRAWING FOR LOCATION.
ELEVATION = 889.36'

A1 SITE GRADING - DRAINAGE PLAN
1" = 60'

0 60 120 180
GRAPHIC SCALE IN FEET

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(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

SITE GRADING - DRAINAGE PLAN

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-300

Images: ..., Xrefs: 10020046-x.dwg; 10020046TBLK.dwg; 10020046-GRA-NOTES.dwg; 10020046-p.dwg
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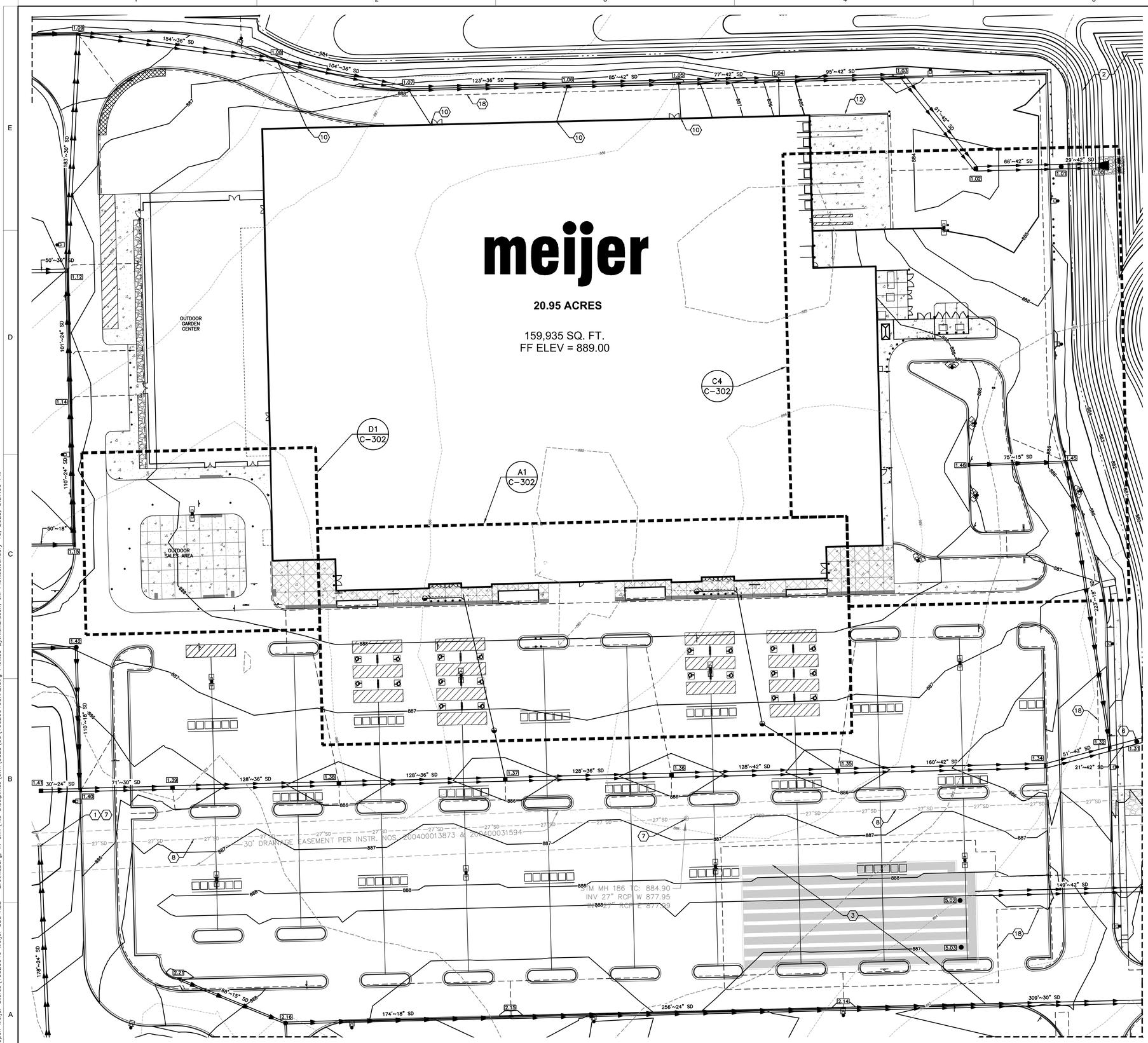

LEGEND

- PROPERTY LINE
- 799 EXISTING 1' CONTOUR
- 800 EXISTING 5' CONTOUR
- SD EXISTING STORM SEWER
- 799 PROPOSED 1' CONTOUR
- 800 PROPOSED 5' CONTOUR
- STORM SEWER
- FUTURE STORM SEWER
- UNDERDRAIN
- MANHOLE
- DRAINAGE BASIN
- CLEANOUT
- XX STORM STRUCTURE ID NUMBER
- ROCK OUTLET PROTECTION

KEYNOTES

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23. RONALD REAGAN STORM BY OTHERS.
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BENCHMARK:

THE BASIS OF ELEVATIONS HEREON IS NAVD 88 PER OBSERVATIONS OF SELECTED STATIONS IN THE NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATION (NGS CORS) NETWORK.
MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT – SEE DRAWING FOR LOCATION.
ELEVATION = 889.36'

A1 DETAILED SITE GRADING - DRAINAGE PLAN
1" = 30'

0 30 60 90
GRAPHIC SCALE IN FEET

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(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
902 E. 56TH STREET
BROWNSBURG, INDIANA 46112

DETAILED SITE GRADING - DRAINAGE PLAN

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-301

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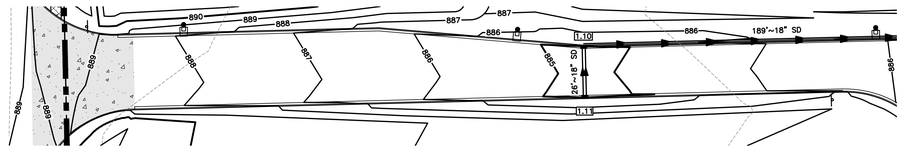
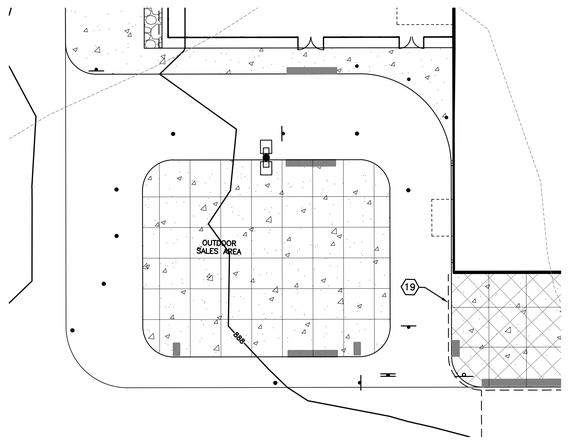
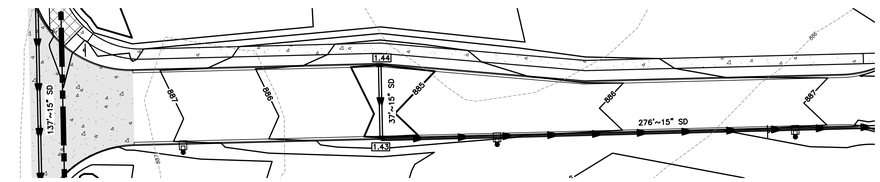


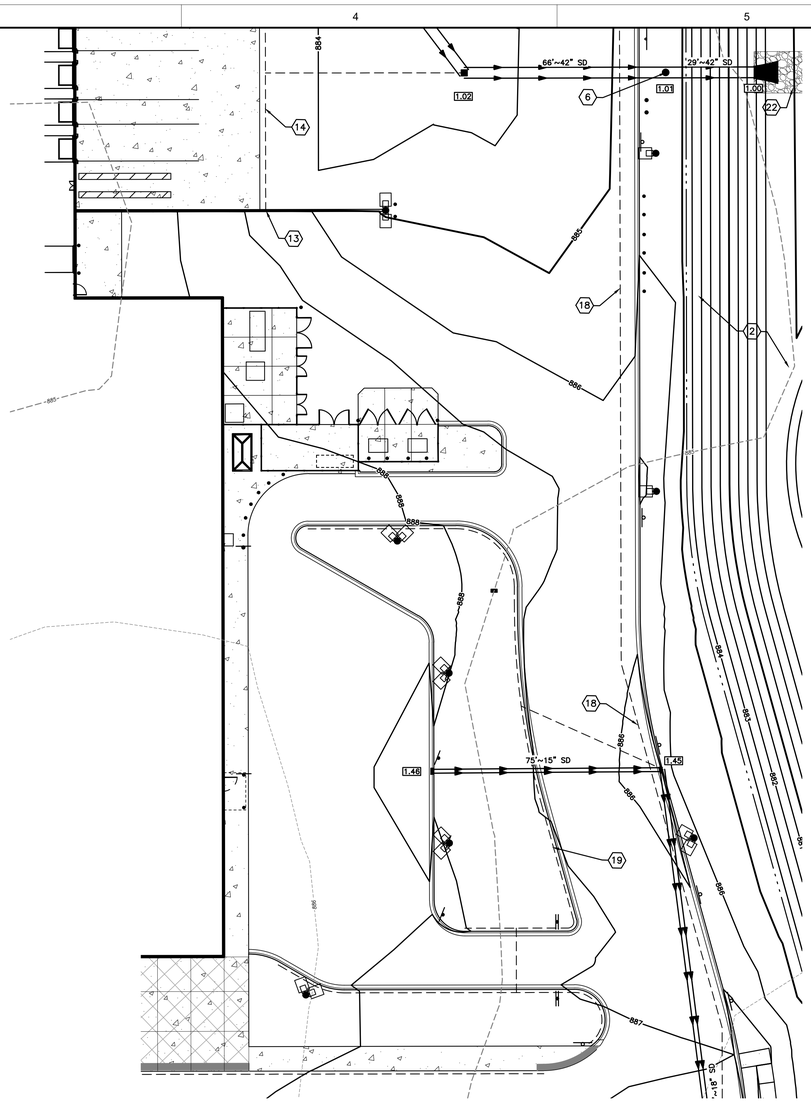
E1 ENLARGED N. CR. 900 E. NORTH ENTRANCE
1" = 30'



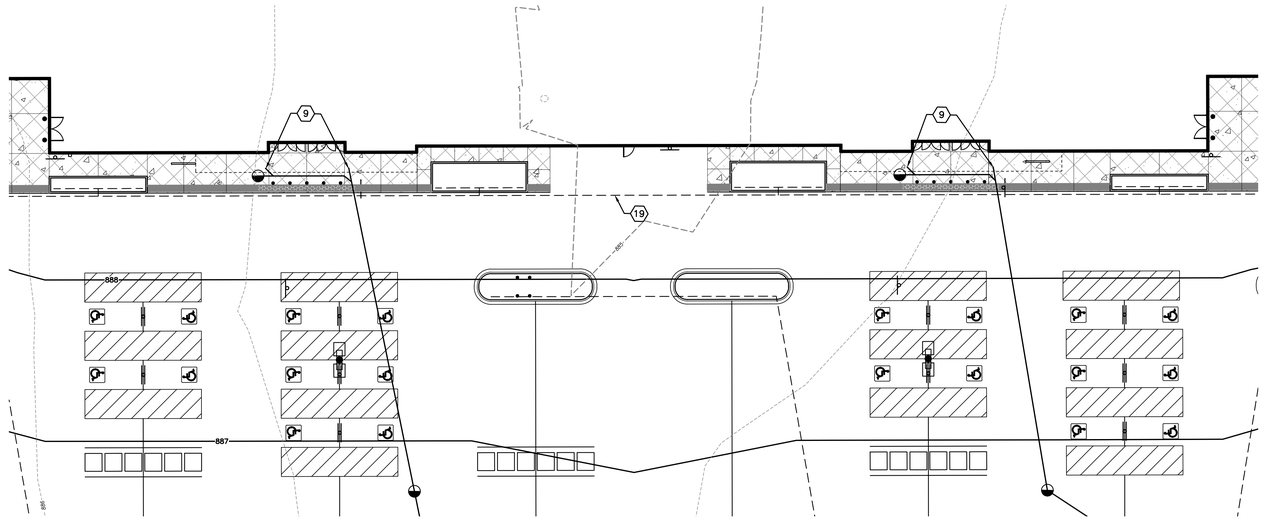
D1 ENLARGED PHARMACY DRIVE-THRU
1" = 20'



C1 ENLARGED N. CR. 900 E. SOUTH ENTRANCE
1" = 30'



C4 ENLARGED PICKUP AREA, EXTERIOT SHELTER, ORGANIX. STORAGE AREA, ELECTRIC YARD, GRADE LEVEL RECEIVING
1" = 20'



A1 ENLARGED FRONT OF BUILDING/LANDSCAPE BEDS
1" = 20'

LEGEND

- PROPERTY LINE
- 799 EXISTING 1' CONTOUR
- 800 EXISTING 5' CONTOUR
- SD EXISTING STORM SEWER
- 799 PROPOSED 1' CONTOUR
- 800 PROPOSED 5' CONTOUR
- STORM SEWER
- FUTURE STORM SEWER
- UNDERDRAIN
- MANHOLE
- DRAINAGE BASIN
- CLEANOUT
- XX STORM STRUCTURE ID NUMBER
- ROCK OUTLET PROTECTION

(X) KEYNOTES

1. CONNECT TO EXISTING UTILITY PER AGENCY REQUIREMENTS. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITY IN WHICH TO MAKE CONNECTION.
2. ABOVE-GROUND STORMWATER MANAGEMENT FACILITY.
3. UNDERGROUND STORMWATER MANAGEMENT FACILITY. SEE SHEET C-407 FOR PLAN AND PROFILE. SEE SHEET C-708 FOR MORE DETAIL.
4. DETENTION OUTLET STRUCTURE.
5. EMERGENCY SPILLWAY. SEE DETAIL A6 ON SHEET C-314.
6. WATER QUALITY HYDRODYNAMIC SEPARATOR.
7. ADJUST EXISTING UTILITY STRUCTURE TO FINISHED GRADE
8. EXISTING RCP STORM PIPE TO BE MAINTAINED DURING CONSTRUCTION.
9. 4" CANOPY DRAIN AT 1.00% (MIN) INVERT AT BUILDING FACE = 886.75.
10. 6" PVC STORM AT 2.00 % (MIN). INVERT AT BUILDING = 886.50.
11. 4" GARDEN CENTER DRAIN AT 1.00% (MIN).
12. SCREEN WALL. SEE ARCHITECTURAL PLANS..
13. DOCK RETAINING WALL. SEE ARCHITECTURAL PLANS.
14. LOADING DOCK WALL 4" UNDERDRAIN. INVERT = 882.43.
15. ENVIRONMENTAL CATCH BASIN.
16. 3' BERM ALONG NORTH AND EAST PROPERTY LINE. SEE LANDSCAPE PLAN.
17. NDS EZ ROLL PAVER SAFETY ACCESS RAMPS.
18. DETENTION BASIN EASEMENT.
19. 6" UNDERDRAIN PER TOWN OF BROWNSBURG REQUIREMENTS. SEE DETAIL TR-14 OF THE BROWNSBURG CONSTRUCTION STANDARDS.
20. CONVERT EXISTING CHAIR BACK CURB INLET TO FLAT GRATE STORM INLET PER TOWN OF BROWNSBURG REQUIREMENTS.
21. 6" ROOF DRAIN FOR GUTTER DOWNSPOUTS. SEE DETAIL C2 ON SHEET C-700.
22. RIPRAP PLACED AT POND OUTLET PER TOWN OF BROWNSBURG CONSTRUCTION STANDARD DETAIL EC-03.
23. RONALD REAGAN STORM BY OTHERS.
24. 6" PERFORATED UNDERDRAIN.

GRADING NOTES

1. ALL SPOT ELEVATIONS ARE TO:
   TOP OF PAVEMENT – (TP)
   TOP OF SLAB – (TS)
   TOP OF CURB – (TC)
   TOP OF WALL – (TW)
   GUTTER PAN – (GP)
   UNLESS NOTED OTHERWISE.
2. CONTOURS SHOWN ARE FOR REFERENCE ONLY.
3. PROVIDE POSITIVE DRAINAGE AT ALL TIMES TO ENSURE NO STANDING WATER WITHIN PAVEMENT, BUILDING PAD, OR GREEN AREAS.
4. FOR ALL CURB ISLANDS, CENTER OF ISLANDS TO BE A MINIMUM OF 6" HIGHER THAN TOP OF CURB.
5. RESTORE ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE DITCHES, AND OTHER PUBLIC OR PRIVATE STRUCTURES THAT ARE DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO MATCH AT A MINIMUM EXISTING CONDITIONS.
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14. ENTRY LANDINGS PART OF AN ACCESSIBLE ROUTE SHALL MAINTAIN A MAXIMUM SLOPE OF 1.50% IN ALL DIRECTIONS. THIS IS INTENDED TO ALLOW FOR CONSTRUCTION TOLERANCES. SLOPES STEEPER THAN 1:48 SHALL NOT BE PERMITTED THUS MEETING THE REQUIREMENTS OF THE DEPARTMENT OF JUSTICE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN. ALL SLOPES TO BE VERIFIED AS ACCEPTABLE BY USING A 2'-0" LEVEL.

BENCHMARK:

THE BASIS OF ELEVATIONS HEREON IS NAVD 88 PER OBSERVATIONS OF SELECTED STATIONS IN THE NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATION (NGS CORS) NETWORK.
MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT – SEE DRAWING FOR LOCATION.
ELEVATION = 889.36'

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Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

SITE GRADING - DRAINAGE PLAN ENLARGEMENTS & DETAILS

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-302

Images: ..\Xrefs\10020046-x.dwg; 10020046TBLK.dwg; 10020046-GRA-NOTES.dwg; 10020046-p.dwg; 10020046-g.dwg
Layout: C-302
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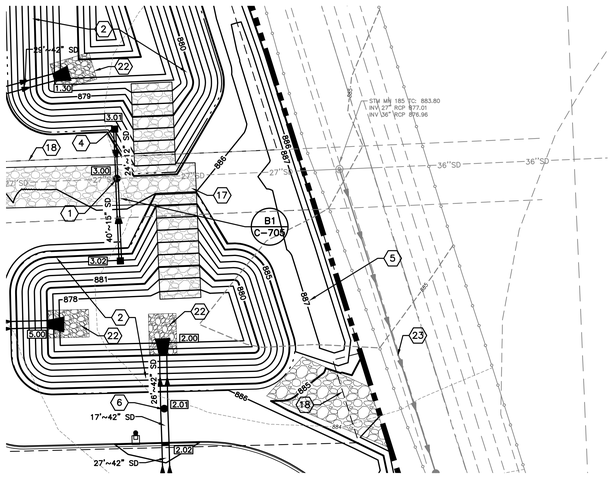
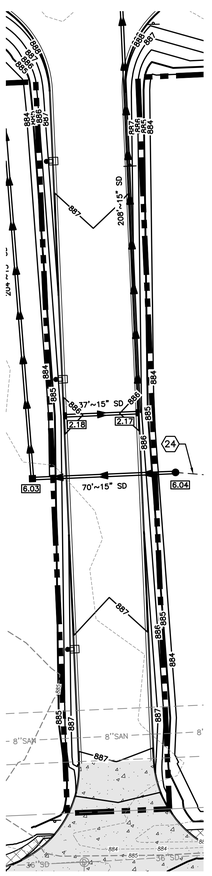
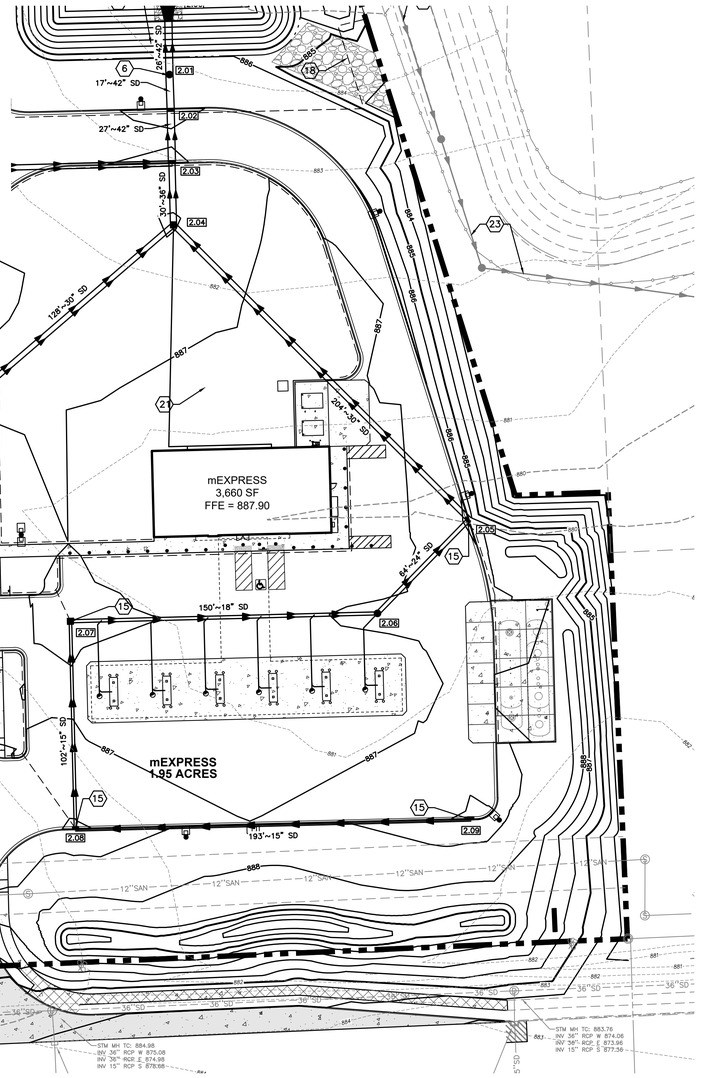


D1 ENLARGED DETENTION OUTLET AREA
1" = 30'



A1 ENLARGED E. CR. 600. NORTH WEST ENTRANCE
1" = 30'



A3 ENLARGED mEXPRESS
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REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

SITE GRADING - DRAINAGE PLAN ENLARGEMENTS & DETAILS

ISSUED FOR:	
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PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-303

Images: , , Xrefs: 10020046-x.dwg; 10020046TBLK.dwg; 10020046-GRA-NOTES.dwg; 10020046-p.dwg; 10020046-g.dwg
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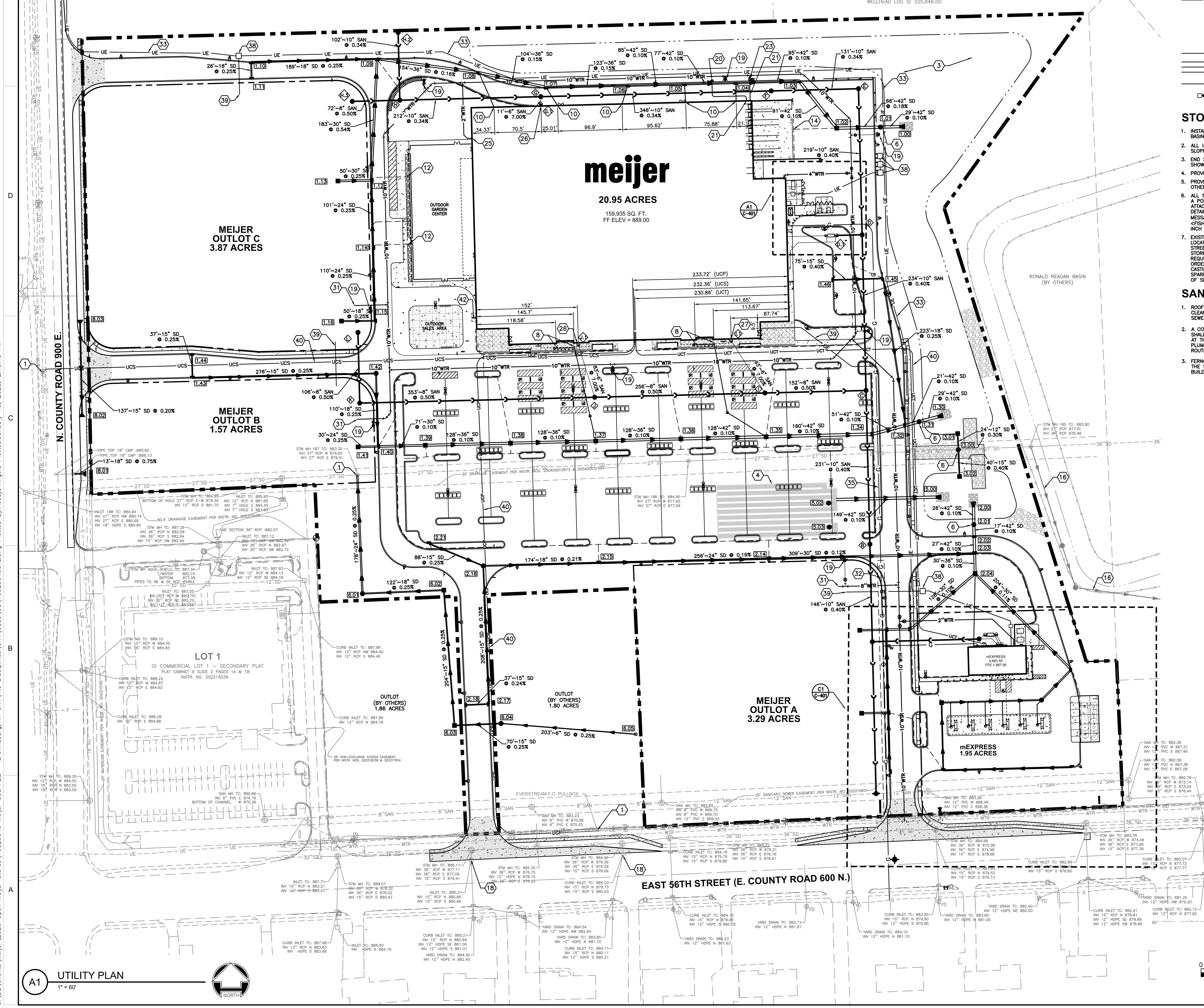
FIGURE 3 – UTILITY PLANS

UTILITIES RESPONSIBILITIES SUMMARY

1. "WORK" IS DEFINED AS INSTALLATION OF SUBJECT UTILITY, INCLUDING TRENCHING, BEDDING, BACKFILL, AS WELL AS DEMOLITION AND RESTORATION OF THE DISTURBED AREA. INSPECTIONS ARE NOT INCLUDED. "INSTALL" MEANS PROVIDE AND INSTALL UNLESS NOTED OTHERWISE.
2. SANITARY SEWER: MEIJER CONTRACTOR (MC) SHALL PERFORM ALL WORK INCLUDING MAKING CONNECTION TO THE EXISTING MAIN. MC TO SCHEDULE PRE-CONSTRUCTION MEETING WITH HENDRICKS COUNTY REGIONAL SEWER DISTRICT (HCRSD) PRIOR TO STARTING CONSTRUCTION. MC SHALL NOTIFY HCRSD 48 HOURS PRIOR TO ANY SANITARY INSTALLATION AND TESTING. HCRSD TO BE PRESENT FOR ALL TESTING.
3. WATER: MC SHALL PERFORM ALL WORK ASSOCIATED WITH INSTALLATION OF THE WATER SERVICE LINE. CITIZENS ENERGY GROUP (CEG) SHALL MAKE THE TAP ON THE EXISTING MAIN. MC SHALL CONNECT TO THE TAP. MC SHALL CONTACT CEG TO SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO INSTALLING FIRE PROTECTION SERVICES. MC TO NOTIFY THE BROWNSBURG FIRE DEPARTMENT (BFD) 48 HOURS PRIOR TO INSTALLATION OF WATER AND FIRE SERVICE LINES, BUT PRESENCE IS NOT REQUIRED. BFD TO BE PRESENT TO WITNESS ACCEPTANCE TESTING.
4. STORM SEWER: MC SHALL PERFORM ALL WORK. MC SHALL CONTACT THE TOWN OF BROWNSBURG WHEN PERFORMING WORK IN THE RIGHT-OF-WAY TO DETERMINE CONTRACTOR REQUIREMENTS.
5. GAS: FOR BOTH BUILDINGS, THE GAS COMPANY, CENTERPOINT ENERGY (CE), SHALL PROVIDE ALL SERVICE PIPING AND EQUIPMENT FROM THE POINT OF CONNECTION AT THE RIGHT-OF-WAY UP TO AND INCLUDING THE GAS METER. MC TO INSTALL ALL SERVICE PIPING FROM THE POINT OF CONNECTION AT THE RIGHT-OF-WAY TO THE GAS METER. CE TO INSTALL GAS METER ONCE MC HAS INSTALLED THE STUBBED OUT CONNECTION. MC TO PROVIDE AND INSTALL ALL PIPING AND MATERIALS DOWNSTREAM OF THE GAS METER. MC SHALL INSTALL METER PROTECTION BOLLARDS PER CE REQUIREMENTS.
6. COMMUNICATIONS:
   - 6.1. MAIN STORE: MC SHALL ISNTALL ALL CONDUIT AND MANHOLES. MC SHALL COORDINATE WITH MEIJER IT AND EVERSTREAM TO COORDINATE WITH MEIJER-SELECTED COMMUNICATIONS PROVIDER WHO SHALL PULL ALL WIRING AND MAKE CONNECTIONS.
   - 6.2. mEXPRESS: MC SHALL INSTALL HANDHOLES AND WIRING. MC SHALL COORDINATE WITH MEIJER IT AND EVERSTREAM TO MAKE CONNECTIONS.
7. ELECTRIC:
   - 7.1. MAIN STORE: THE ELECTRIC COMPANY, HENDRICKS POWER (HP), SHALL PROVIDE AND INSTALL ALL CONDUIT, CONDUCTOR, AND EQUIPMENT FROM THE POINT OF CONNECTION UP TO THE PRIMARY METERING CABINET. MC TO PROVIDE AND INSTALL ALL CONDUIT, CONDUCTOR, AND EQUIPMENT DOWNSTREAM OF THE METERING CABINET.
   - 7.2. mEXPRESS: HP SHALL PROVIDE AND INSTALL ALL CONDUIT, CONDUCTOR, AND EQUIPMENT FROM THE POINT OF CONNECTION UP TO AND INCLUDING THE TRANSFORMER. HP TO PROVIDE TRANSFORMER PAD. HP TO INSTALL METER ON SIDE OF TRANSFORMER.

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL RESTORATION AND CLEAN-UP ASSOCIATED WITH THE INSTALLATION OF THE PROPOSED UTILITIES WITHIN THE PUBLIC RIGHT-OF-WAY AND EASEMENT.
2. VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. UTILITIES SHALL END 5 FEET FROM THE BUILDING UNLESS NOTED OTHERWISE.
4. PROTECT AND MAINTAIN CROSSINGS OF OTHER UTILITIES.
5. ALL DIMENSIONS ARE TO COLUMN LINE, CENTERLINE OF PIPE, CENTER OF MANHOLE, EDGE OF PAVEMENT OR BACK OF CURB WHERE APPLICABLE. DIMENSIONS TO COLUMN LINE ASSUME 9" THICK BUILDING WALL.
6. ALL MATERIAL, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL BE IN CONFORMANCE WITH MEIJER STANDARD SPECIFICATIONS AND DETAILS AND TOWN OF BROWNSBURG AND HENDRICKS COUNTY REQUIREMENTS.
7. CONTRACTOR SHALL PERFORM FULL DEPTH REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT PER MEIJER REQUIREMENTS AT PROPOSED UTILITIES INSTALLATION IN EXISTING PAVED AREAS.
8. PROVIDE MINIMUM 18" VERTICAL CLEARANCE AT ALL UTILITY CROSSINGS.



A1 UTILITY PLAN
1" = 60'

LEGEND

- CATCH BASIN
- CURB INLET
- MANHOLE
- CLEANOUT
- STORM SEWER (XX'~XX" SD)
- UNDERDRAIN
- STORM STRUCTURE I.D. (X.X)
- SANITARY SEWER (XX'~8" SAN)
- SANITARY SERVICE
- SANITARY SEWER I.D.
- FIRE SERVICE (10"WTR)
- DOMESTIC WATER SERVICE (4"WTR)
- FIRE HYDRANT
- WATER VALVE
- TEE
- WATER BEND
- GAS SERVICE (G)
- UNDERGROUND COMMUNICATIONS SERVICE (UCT, UCP, UCS)
- UNDERGROUND ELECTRIC SERVICE (UE)
- LIGHT POLE

UTILITIES SUMMARY

SUPERCENTER:

ELECTRIC: PRIMARY SERVICE, PREFERRED BASED ON RATE, MEIJER OWNED TRANSFORMER 2,000 KVA, SECONDARY 480/277V, 3PH, 4W GRD WYE.

PHONE: FIBER OPTIC ENTRANCE CABLE.

GAS: 11,966 CFH @ 2 PSI (5 PSI IF AVAILABLE) FOR 1.5 STORE.

WATER: 4" DIA. PIPE WITH 2" METER, 10,000 GPD SUMMER, 5,000 GPD WINTER, 150 GPM PEAK USE, 65 PSI AFTER BACKFLOW PREVENTER.

FIRE PROTECTION: 10" DIA. MIN., 1,575 GPM @ 35 PSI AT BASE OF RISER.

SANITARY SEWER: 5,000 GPD AVG., 40 GPM PEAK FLOW.

IRRIGATION: DESIGN TO BE PROVIDED AS PART OF FINAL DESIGN.

MEXPRESS:

ELECTRIC: SECONDARY SERVICE PREFERRED BASED ON RATE, PAD-MOUNT UTILITY OWNED TRANSFORMER, 600 AMP, 120/208V, 3PH, 4W SECONDARY SERVICE. TRANSFORMER SIZED AND FURNISHED BY UTILITY COMPANY.

PHONE: FED FROM SUPERCENTER, TYPICALLY NO DEDICATED SERVICE.

GAS: 394 CFH @ 7" WC

WATER: 2" DIA., 1.5" METER, 50 GPM PEAK USE, 65 PSI AFTER BACKFLOW PREVENTER. 750 GPD SUMMER, 500 GPD NON-SUMMER.

FIRE PROTECTION: NOT REQUIRED.

SANITARY SEWER: 500 GPD AVG. 20 GPM PEAK.

STORM NOTES

1. INSTALL UNDERDRAINS AT ALL PROPOSED CATCH BASINS.
2. ALL UNDERDRAINS ARE 4" DIAMETER AT MINIMUM SLOPE OF 0.50% UNLESS OTHERWISE NOTED.
3. END SECTIONS ARE INCLUDED IN PIPE LENGTHS SHOWN.
4. PROVIDE INLET FILTER FOR ALL CATCH BASIN INLETS.
5. PROVIDE RIP RAP AT ALL END SECTIONS UNLESS OTHERWISE NOTED.
6. ALL STORM GRATE CASTINGS TO BE PRE-CAST WITH A POLLUTION PREVENTION MESSAGE PERMANENTLY ATTACHED. PER TOWN OF BROWNSBURG STANDARD DETAILS SW-13 AND SW-14, POLLUTION PREVENTION MESSAGE TO STATE, AT MINIMUM, "DUMP NO WASTE <FISH ICON> DRAINGS TO WATERWAY" IN MINIMUM 1 INCH HIGH LETTERS.
7. EXISTING CHAIR BACK CURB DRAIN INLETS THAT ARE LOCATED IN THE NEW DRIVE ENTRANCES TO 56TH STREET ARE TO BE CONVERTED TO FLAT GRATE STORM INLET PER TOWN OF BROWNSBURG REQUIREMENTS. CASTINGS WILL HAVE TO BE SPECIAL ORDERED. CONTRACTOR PROVIDE ONE ADDITIONAL CASTING TO BROWNSBURG STREET DEPARTMENT AS SPARE STOCK FOR EACH CONVERSION FOR A TOTAL OF SIX NEW CASTINGS.

SANITARY NOTES

1. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
2. A CONTINUOUS 20' LENGTH OF SDR-35 PVC SHALL BE EXTENDED FROM THE YARD CLEANOUTS AT THE FRONT OF THE BUILDING. COORDINATE WITH PLUMBING CONTRACTOR ON LOCATION AND ROUTING.
3. FERNCO COUPLINGS SHALL NOT BE USED ALONG THE SERVICE LATERALS FROM THE FRONT OF THE BUILDING TO THE SANITARY MANHOLE OR MAIN.

WATER NOTES

1. INSTALL WATER MAIN WITH A MINIMUM OF 4.5 FEET OF COVER.
2. CONTRACTOR TO COORDINATE WITH CITIZENS ENERGY GROUP FOR INSPECTION OF INSTALLATION OF WATER LINES INCLUDING CONNECTIONS TO EXISTING. PROVIDE 48 HOURS NOTICE.
3. ON SITE HYDRANTS SHALL FACE THE BUILDING.
4. HYDRANTS LOCATED IN CURB ISLAND OR GREEN SPACE SHALL BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT (TYP.).
5. INSTALL CONCRETE PADS FOR ALL HYDRANT VALVES IN NON-PAVED AREAS.
6. PROVIDE A MINIMUM OF EIGHTEEN (18) INCHES OF VERTICAL SEPARATION AND TEN (10) FEET OF HORIZONTAL SEPARATION BETWEEN THE WATER LINE AND ALL SANITARY AND STORM SEWERS.
7. PROVIDE THRUST BLOCKS AT ALL WATER BENDS, PLUGS AND TEES IF REQUIRED BY THE UTILITY COMPANY.
8. EXISTING WATER MAINS AND ALL HYDRANTS REQUIRE TESTING. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
9. ALL PROPOSED WATER METERS AND BACKFLOW PREVENTERS TO ADHERE TO CITIZENS ENERGY GROUP STANDARD DETAILS AND REQUIREMENTS.
10. FIRE DEPARTMENT CONNECTION SHALL BE 5" STORZ WITH 30-DEGREE DOWN ANGLE AND HEIGHT BETWEEN 3'-4' ABOVE FINISHED GRADE. REFER TO TOWN OF BROWNSBURG CONSTRUCTION STANDARD DETAIL DW-12.

GAS NOTES

1. GAS COMPANY WILL PROVIDE GAS SERVICE TAP, METER, REGULATOR, AND INSTALL THE NEW SERVICE LINE TO THE METER.

KEYNOTES (X)

1. CONNECT TO EXISTING UTILITY PER AGENCY REQUIREMENTS. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITY IN WHICH TO MAKE CONNECTION.
2. ELECTRIC UTILITY OWNER TO MAKE CONNECTION TO EXISTING UTILITY. UTILITY OWNER TO PERFORM RESTORATION WORK OF DISTURBED AREA UNLESS NOTED OTHERWISE.
3. ABOVE-GROUND STORMWATER MANAGEMENT FACILITY.
4. UNDERGROUND STORMWATER MANAGEMENT FACILITY.
5. DETENTION OUTLET STRUCTURE.
6. WATER QUALITY HYDRODYNAMIC SEPARATOR.
7. ENVIRONMENTAL CATCH BASIN.
8. 4" CANOPY STORM DRAIN AT 1.00% (MIN). INVERT AT BUILDING FACE = 886.75.
9. 6" CANOPY DRAIN INV. 883.90. 5' BEYOND EDGE OF CONCRETE SLAB.
10. 6" STORM ROOF DRAIN AT 2.00% (MIN). INVERT AT BUILDING = 886.50.
11. 6" CANOPY STORM DRAIN AT 0.50% (MIN).
12. 4" GARDEN CENTER DRAIN AT 0.50% (MIN). INVERT = 886.00.
13. 6" ROOF DRAIN FOR GUTTER DOWNSPOUTS. SEE C2 ON C-700.
14. LOADING DOCK WALL 4" UNDERDRAIN. INVERT = 882.43.
15. 4" SANITARY SERVICE. INVERT AT BUILDING = 883.90.
16. RONALD REAGAN STORM BY OTHERS.
17. 4" HDPE PERFORATED DRAIN WITH NYLON SOCK. INVERT = 881.90 ADJACENT TO FUEL TANKS. CONNECT TO STRUCTURE 2.05. INSTALLATION AND FINAL DETERMINATION WILL BE DECISION OF FUEL SYSTEM DESIGNER.
18. CONVERT EXISTING CHAIR BACK CURB INLET TO FLAT GRATE STORM INLET PER TOWN OF BROWNSBURG REQUIREMENTS. SEE STORM NOTE 7 THIS SHEET.
19. PROPOSED FIRE HYDRANT ASSEMBLY.
20. FIRE DEPARTMENT CONNECTION. SEE WATER NOTE 10.
21. 10" BUILDING FIRE SERVICE.
22. 4" DOMESTIC WATER SERVICE. 2" DOMESTIC METER AND BACKFLOW PREVENTER TO BE LOCATED INSIDE THE BUILDING.
23. POST INDICATOR VALVE.
24. 2" WATER SERVICE. 1.5" DOMESTIC METER AND BACKFLOW PREVENTER TO BE LOCATED INSIDE THE BUILDING.
25. 2" IRRIGATION SERVICE. 1.5" METER AND BACKFLOW PREVENTER TO BE LOCATED INSIDE THE BUILDING. IRRIGATION METER SHALL HAVE DUAL SET UP PER CITIZENS ENERGY GROUP STANDARD DRAWING T.4. SEE DETAIL ON C-709.
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27. 6" SANITARY SERVICE. INVERT AT BUILDING = 882.00.
28. 6" SANITARY SERVICE. INVERT AT BUILDING = 882.60.
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30. GREASE INTERCEPTOR SANITARY VENT LINE.
31. 8" WATER LINE TO SERVE FUTURE OUTLOT DEVELOPMENT. PROVIDE WATER LINE CAP PER AGENCY REQUIREMENTS.
32. GAS MAIN BY GAS COMPANY LOCATED IN 10' EASEMENT. GAS COMPANY TO RESTORE ALL DISTURBED AREAS OUTSIDE OF MEIJER WORK LIMITS RELATED TO GAS MAIN INSTALLATION WORK.
33. UNDERGROUND ELECTRIC LOCATED IN 10' EASEMENT. WIRING TO BE DIRECT BURIED BY HENDRICKS POWER.
34. GAS METER.
35. MAIN STORE 2" GAS SERVICE.
36. mEXPRESS 1" GAS SERVICE.
37. PAD-MOUNTED TRANSFORMER. SEE SHEET C-800.
38. PAD-MOUNTED ELECTRICAL EQUIPMENT. SEE SHEET C-800.
39. UNDERGROUND ELECTRIC SERVICE. SEE SHEET C-800.
40. UNDERGROUND COMMUNICATIONS SERVICE. SEE SHEET C-800.
41. HELIUM CABINET. SEE P-405.
42. PHARMACY DETECTION LOOP. VENDOR TO SAWCUT ASPHALT, INSTALL DETECTION LOOP, AND SEAL ASPHALT.

BENCHMARK:

THE BASIS OF ELEVATIONS HEREON IS NAVD 88 PER OBSERVATIONS OF SELECTED STATIONS IN THE NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATION (NGS CORS) NETWORK.
MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT – SEE DRAWING FOR LOCATION.
ELEVATION = 889.36'

0 60 120 180
GRAPHIC SCALE IN FEET

Indiana811 Know what's below. Call before you dig.

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

UTILITY PLAN

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-400

Images: , Xrefs: 10020046-x.dwg; 10020046TBLK.dwg; 10020046-UTL-NOTES.dwg; 10020046-p.dwg
Layout Tab Name: C-400 UTILITY PLAN
Last Saved By:A.Reedy, 1/10/2025 1:52:23 PM
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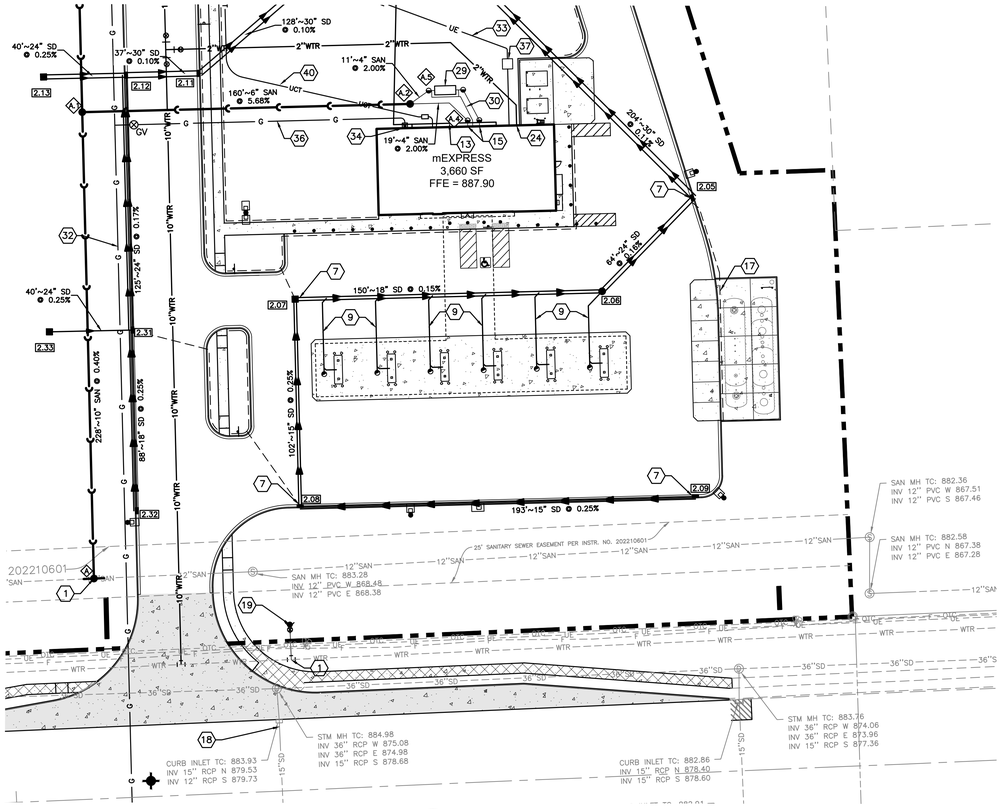
UTILITIES RESPONSIBILITIES SUMMARY

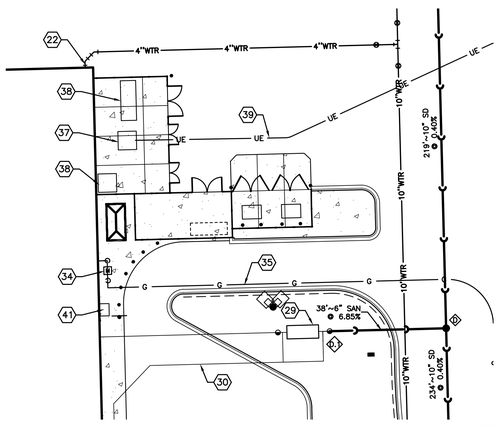
1. "WORK" IS DEFINED AS INSTALLATION OF SUBJECT UTILITY, INCLUDING TRENCHING, BEDDING, BACKFILL, AS WELL AS DEMOLITION AND RESTORATION OF THE DISTURBED AREA. INSPECTIONS ARE NOT INCLUDED. "INSTALL" MEANS PROVIDE AND INSTALL UNLESS NOTED OTHERWISE.
2. SANITARY SEWER: MEIJER CONTRACTOR (MC) SHALL PERFORM ALL WORK INCLUDING MAKING CONNECTION TO THE EXISTING MAIN. MC TO SCHEDULE PRE-CONSTRUCTION MEETING WITH HENDRICKS COUNTY REGIONAL SEWER DISTRICT (HCRSD) PRIOR TO STARTING CONSTRUCTION. MC SHALL NOTIFY HCRSD 48 HOURS PRIOR TO ANY SANITARY INSTALLATION AND TESTING. HCRSD TO BE PRESENT FOR ALL TESTING.
3. WATER: MC SHALL PERFORM ALL WORK ASSOCIATED WITH INSTALLATION OF THE WATER SERVICE LINE. CITIZENS ENERGY GROUP (CEG) SHALL MAKE THE TAP ON THE EXISTING MAIN. MC SHALL CONNECT TO THE TAP. MC SHALL CONTACT CEG TO SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO INSTALLING FIRE PROTECTION SERVICES. MC TO NOTIFY THE BROWNSBURG FIRE DEPARTMENT (BFD) 48 HOURS PRIOR TO INSTALLATION OF WATER AND FIRE SERVICE LINES, BUT PRESENCE IS NOT REQUIRED. BFD TO BE PRESENT TO WITNESS ACCEPTANCE TESTING.
4. STORM SEWER: MC SHALL PERFORM ALL WORK. MC SHALL CONTACT THE TOWN OF BROWNSBURG WHEN PERFORMING WORK IN THE RIGHT-OF-WAY TO DETERMINE CONTRACTOR REQUIREMENTS.
5. GAS: FOR BOTH BUILDINGS, THE GAS COMPANY, CENTERPOINT ENERGY (CE), SHALL PROVIDE ALL SERVICE PIPING AND EQUIPMENT FROM THE POINT OF CONNECTION AT THE RIGHT-OF-WAY UP TO AND INCLUDING THE GAS METER. MC TO INSTALL ALL SERVICE PIPING FROM THE POINT OF CONNECTION AT THE RIGHT-OF-WAY TO THE GAS METER. CE TO INSTALL GAS METER ONCE MC HAS INSTALLED THE STUBBED OUT CONNECTION. MC TO PROVIDE AND INSTALL ALL PIPING AND MATERIALS DOWNSTREAM OF THE GAS METER. MC SHALL INSTALL METER PROTECTION BOLLARDS PER CE REQUIREMENTS.
6. COMMUNICATIONS:
   - 6.1. MAIN STORE: MC SHALL ISNTALL ALL CONDUIT AND MANHOLES. MC SHALL COORDINATE WITH MEIJER IT AND EVERSTREAM TO COORDINATE WITH MEIJER-SELECTED COMMUNICATIONS PROVIDER WHO SHALL PULL ALL WIRING AND MAKE CONNECTIONS.
   - 6.2. mEXPRESS: MC SHALL INSTALL HANDHOLES AND WIRING. MC SHALL COORDINATE WITH MEIJER IT AND EVERSTREAM TO MAKE CONNECTIONS.
7. ELECTRIC:
   - 7.1. MAIN STORE: THE ELECTRIC COMPANY, HENDRICKS POWER (HP), SHALL PROVIDE AND INSTALL ALL CONDUIT, CONDUCTOR, AND EQUIPMENT FROM THE POINT OF CONNECTION UP TO THE PRIMARY METERING CABINET. MC TO PROVIDE AND INSTALL ALL CONDUIT, CONDUCTOR, AND EQUIPMENT DOWNSTREAM OF THE METERING CABINET.
   - 7.2. mEXPRESS: HP SHALL PROVIDE AND INSTALL ALL CONDUIT, CONDUCTOR, AND EQUIPMENT FROM THE POINT OF CONNECTION UP TO AND INCLUDING THE TRANSFORMER. HP TO PROVIDE TRANSFORMER PAD. HP TO INSTALL METER ON SIDE OF TRANSFORMER.

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL RESTORATION AND CLEAN-UP ASSOCIATED WITH THE INSTALLATION OF THE PROPOSED UTILITIES WITHIN THE PUBLIC RIGHT-OF-WAY AND EASEMENT.
2. VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. UTILITIES SHALL END 5 FEET FROM THE BUILDING UNLESS NOTED OTHERWISE.
4. PROTECT AND MAINTAIN CROSSINGS OF OTHER UTILITIES.
5. ALL DIMENSIONS ARE TO COLUMN LINE, CENTERLINE OF PIPE, CENTER OF MANHOLE, EDGE OF PAVEMENT OR BACK OF CURB WHERE APPLICABLE. DIMENSIONS TO COLUMN LINE ASSUME 9" THICK BUILDING WALL.
6. ALL MATERIAL, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL BE IN CONFORMANCE WITH MEIJER STANDARD SPECIFICATIONS AND DETAILS AND TOWN OF BROWNSBURG AND HENDRICKS COUNTY REQUIREMENTS.
7. CONTRACTOR SHALL PERFORM FULL DEPTH REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT PER MEIJER REQUIREMENTS AT PROPOSED UTILITIES INSTALLATION IN EXISTING PAVED AREAS.
8. PROVIDE MINIMUM 18" VERTICAL CLEARANCE AT ALL UTILITY CROSSINGS.



C1 mEXPRESS UTILITY PLAN
1" = 30'



A1 UTILITY CONNECTION ENLARGEMENT
1" = 20'

LEGEND

- CATCH BASIN
- CURB INLET
- MANHOLE
- CLEANOUT
- XX'~XX" SD — STORM SEWER
- UNDERDRAIN
- [X.X] — STORM STRUCTURE I.D.
- XX'~8" SAN — SANITARY SEWER
- SANITARY SERVICE
- SANITARY SEWER I.D.
- 10"WTR — FIRE SERVICE
- 4"WTR — DOMESTIC WATER SERVICE
- FIRE HYDRANT
- WATER VALVE
- TEE
- WATER BEND
- G — GAS SERVICE
- UCT — UNDERGROUND COMMUNICATIONS SERVICE
- UCP — UNDERGROUND COMMUNICATIONS SERVICE
- UCS — UNDERGROUND COMMUNICATIONS SERVICE
- UE — UNDERGROUND ELECTRIC SERVICE
- LIGHT POLE

STORM NOTES

1. INSTALL UNDERDRAINS AT ALL PROPOSED CATCH BASINS.
2. ALL UNDERDRAINS ARE 4" DIAMETER AT MINIMUM SLOPE OF 0.50% UNLESS OTHERWISE NOTED.
3. END SECTIONS ARE INCLUDED IN PIPE LENGTHS SHOWN.
4. PROVIDE INLET FILTER FOR ALL CATCH BASIN INLETS.
5. PROVIDE RIP RAP AT ALL END SECTIONS UNLESS OTHERWISE NOTED.
6. ALL STORM GRATE CASTINGS TO BE PRE-CAST WITH A POLLUTION PREVENTION MESSAGE PERMANENTLY ATTACHED. PER TOWN OF BROWNSBURG STANDARD DETAILS SW-13 AND SW-14, POLLUTION PREVENTION MESSAGE TO STATE, AT MINIMUM, "DUMP NO WASTE <FISH ICON> DRAINGS TO WATERWAY" IN MINIMUM 1 INCH HIGH LETTERS.
7. EXISTING CHAIR BACK CURB DRAIN INLETS THAT ARE LOCATED IN THE NEW DRIVE ENTRANCES TO 56TH STREET ARE TO BE CONVERTED TO FLAT GRATE STORM INLET PER TOWN OF BROWNSBURG REQUIREMENTS. CASTINGS WILL HAVE TO BE SPECIAL ORDERED. CONTRACTOR PROVIDE ONE ADDITIONAL CASTING TO BROWNSBURG STREET DEPARTMENT AS SPARE STOCK FOR EACH CONVERSION FOR A TOTAL OF SIX NEW CASTINGS.

SANITARY NOTES

1. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
2. A CONTINUOUS 20' LENGTH OF SDR-35 PVC SHALL BE EXTENDED FROM THE YARD CLEANOUTS AT THE FRONT OF THE BUILDING. COORDINATE WITH PLUMBING CONTRACTOR ON LOCATION AND ROUTING.
3. FERNCO COUPLINGS SHALL NOT BE USED ALONG THE SERVICE LATERALS FROM THE FRONT OF THE BUILDING TO THE SANITARY MANHOLE OR MAIN.

KEYNOTES (X)

1. CONNECT TO EXISTING UTILITY PER AGENCY REQUIREMENTS. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITY IN WHICH TO MAKE CONNECTION.
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MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT - SEE DRAWING FOR LOCATION.
ELEVATION = 889.36'

Know what's below. Call before you dig.

UTILITIES SUMMARY

SUPERCENTER:

ELECTRIC: PRIMARY SERVICE, PREFERRED BASED ON RATE, MEIJER OWNED TRANSFORMER 2,000 KVA, SECONDARY 480/277V, 3PH, 4W GRD WYE.

PHONE: FIBER OPTIC ENTRANCE CABLE.

GAS: 11,966 CFH @ 2 PSI (5 PSI IF AVAILABLE) FOR 1.5 STORE.

WATER: 4" DIA. PIPE WITH 2" METER, 10,000 GPD SUMMER, 5,000 GPD WINTER, 150 GPM PEAK USE, 65 PSI AFTER BACKFLOW PREVENTER.

FIRE PROTECTION: 10" DIA. MIN., 1,575 GPM @ 35 PSI AT BASE OF RISER.

SANITARY SEWER: 5,000 GPD AVG., 40 GPM PEAK FLOW.

IRRIGATION: DESIGN TO BE PROVIDED AS PART OF FINAL DESIGN.

MEXPRESS:

ELECTRIC: SECONDARY SERVICE PREFERRED BASED ON RATE, PAD-MOUNT UTILITY OWNED TRANSFORMER, 600 AMP, 120/208V, 3PH, 4W SECONDARY SERVICE, TRANSFORMER SIZED AND FURNISHED BY UTILITY COMPANY.

PHONE: FED FROM SUPERCENTER, TYPICALLY NO DEDICATED SERVICE.

GAS: 394 CFH @ 7" WC

WATER: 2" DIA., 1.5" METER, 50 GPM PEAK USE, 65 PSI AFTER BACKFLOW PREVENTER. 750 GPD SUMMER, 500 GPD NON-SUMMER.

FIRE PROTECTION: NOT REQUIRED.

SANITARY SEWER: 500 GPD AVG. 20 GPM PEAK.

WATER NOTES

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2. CONTRACTOR TO COORDINATE WITH CITIZENS ENERGY GROUP FOR INSPECTION OF INSTALLATION OF WATER LINES INCLUDING CONNECTIONS TO EXISTING. PROVIDE 48 HOURS NOTICE.
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REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

UTILITY PLAN ENLARGEMENTS

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-401

Images: _Xrefs: 10020046-p.dwg; 10020046-x.dwg; 10020046TBLK.dwg; 10020046-UTL-NOTES.dwg
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STORM STRUCTURE TABLE

STRUCTURE ID	DESCRIPTION	RIM/GRATE	INVERTS	NORTHING	EASTING	CASTING	MISCELLANEOUS NOTES
1.00	42" CONCRETE FLARED END SECTION	881.13	42" = 877.39 (W)	1678527.9570	3156056.0038		
1.01	CONTECH CDS 10-C UNIT	885.52	42" = 877.52 (W) 42" = 877.42 (E)	1678527.2352	3156027.1678	SEE DETAIL ON C-708	
1.02	5' CB	883.43	42" = 877.74 (NW) 42" = 877.64 (E)	1678525.5918	3155961.5195	NEENAH R-3402-E	
1.03	5' CI	884.33	42" = 877.93 (W) 42" = 877.83 (SE)	1678596.6609	3155905.0400	NEENAH R-3287-SB10	
1.04	5' CI	886.02	42" = 878.13 (W) 42" = 878.03 (E) 6" = 882.74 (S)	1678594.2737	3155809.6806	NEENAH R-3287-SB10	
1.05	5' CI	889.18	42" = 878.31 (W) 42" = 878.21 (E) 6" = 885.93 (S)	1678592.3473	3155732.7256	NEENAH R-3287-SB10	
1.06	4' CI	888.47	36" = 878.50 (W) 42" = 878.40 (E) 6" = 885.22 (S)	1678590.2184	3155647.6807	NEENAH R-3287-SB10	
1.07	4' CI	888.48	36" = 878.78 (W) 36" = 878.68 (E) 6" = 885.23 (SE)	1678587.1437	3155524.8532	NEENAH R-3287-SB10	
1.08	4' CI	887.29	36" = 879.66 (W) 36" = 878.94 (E) 6" = 884.04 (SE)	1678609.1607	3155423.6957	NEENAH R-3287-SB10	
1.09	4' CI	885.53	36" = 879.90 (E) 18" = 880.00 (W) 30" = 880.00 (S)	1678629.8852	3155270.9014	NEENAH R-3287-SB10	
1.10	4' CI	885.16	18" = 880.47 (E) 18" = 880.57 (S)	1678625.1479	3155081.6606	NEENAH R-3287-SB10	
1.11	3'' CI	885.15	18" = 880.64 (N)	1678599.1540	3155082.2291	NEENAH R-3287-SB10	
1.12	4' CI	887.01	30" = 880.99 (N) 24" = 881.09 (S) 30" = 881.09 (W)	1678447.2178	3155261.9716	NEENAH R-3287-SB10	
1.13	4' CB	886.50	30" = 881.22 (E)	1678446.3431	3155211.9793	NEENAH R-4215-C	
1.14	4' CI	887.17	24" = 881.44 (S) 24" = 881.34 (N)	1678346.3190	3155264.4974	NEENAH R-3287-SB10	
1.15	4' CB	886.91	24" = 881.72 (N) 18" = 881.82 (W)	1678236.2526	3155267.2527	NEENAH R-3287-SB10	
1.16	3' CB	886.41	18" = 881.95 (E)	1678235.8757	3155217.2479	NEENAH R-4215-C	
1.30	42" CONCRETE FLARED END SECTION	881.13	42" = 877.39 (W)	1678092.2588	3156113.4527		
1.31	CONTECH CDS 8-C UNIT	885.13	42" = 877.52 (W) 42" = 877.42 (E)	1678084.7401	3156085.2803	SEE DETAIL ON C-708	
1.32	5' CI	885.53	18" = 878.99 (N) 42" = 877.64 (W) 42" = 877.54 (E)	1678079.3089	3156064.9300	NEENAH R-3287-SB10	
1.34	5' CI	885.60	42" = 877.69 (E) 42" = 877.79 (W)	1678066.1818	3156015.7431	NEENAH R-3287-SB10	
1.35	5' CB	885.50	42" = 877.95 (E) 42" = 878.05 (W)	1678062.1652	3155855.2934	NEENAH R-3402-E	
1.36	5' CB	885.50	36" = 878.28 (W) 42" = 878.18 (E)	1678058.9620	3155727.3335	NEENAH R-3402-E	
1.37	4' CB	885.50	36" = 878.51 (W) 36" = 878.41 (E)	1678055.7588	3155599.3736	NEENAH R-3402-E	
1.38	4' CB	885.50	36" = 878.74 (W) 36" = 878.64 (E)	1678052.5556	3155471.4136	NEENAH R-3402-E	
1.39	4' CB	885.50	30" = 878.97 (W) 36" = 878.87 (E)	1678049.3495	3155343.3408	NEENAH R-3402-E	
1.40	4' CI	885.84	18" = 879.75 (N) 30" = 879.04 (E) 24" = 879.14 (W)	1678047.5634	3155271.9891	NEENAH R-3287-SB10	
1.41	4' CB	883.25	24" = 879.21 (E)	1678046.8801	3155242.1641	NEENAH R-4215-C	
1.42	TYPE 1 MANHOLE	887.07	15" = 880.12 (W) 18" = 880.02 (S)	1678157.2801	3155269.2401	NEENAH R-1642	
1.43	3' CI	885.32	15" = 880.91 (N) 15" = 880.81 (E)	1678150.3740	3154993.4070	NEENAH R-3287-SB10	
1.44	3' CI	885.20	15" = 881.00 (S)	1678187.3645	3154992.5633	NEENAH R-3287-SB10	
1.45	3' CI	886.11	18" = 879.55 (S) 15" = 879.65 (W)	1678299.9729	3156031.3733	NEENAH R-3287-SB10	
1.46	2' CI	887.85	15" = 879.95 (E)	1678297.7123	3155956.8991	NEENAH R-3287-SB10	
2.00	42" CONCRETE FLARED END SECTION	881.22	42" = 877.48 (S)	1677956.6825	3156166.9908		
2.01	CONTECH CDS 8-C UNIT	886.10	42" = 877.61 (S) 42" = 877.51 (N)	1677930.1920	3156167.4878	SEE DETAIL ON C-708	
2.02	5' CI	886.31	42" = 877.73 (S) 42" = 877.63 (N)	1677913.6959	3156168.0668	NEENAH R-3287-SB10	
2.03	5' CI	886.40	42" = 877.76 (N) 30" = 877.95 (W) 36" = 877.86 (S)	1677886.7044	3156168.7425	NEENAH R-3287-SB10	
2.04	4' CB	885.90	36" = 877.89 (N) 30" = 878.26 (SE) 30" = 877.99 (SW)	1677856.7075	3156169.4934	NEENAH R-4215-C	
2.05	3' ENV. CI	886.40	24" = 878.79 (SW) 30" = 878.49 (NW)	1677712.6462	3156314.0564	NEENAH R-3287-SB10	
2.06	TYPE 1 MANHOLE	886.76	18" = 879.39 (W) 24" = 878.89 (NE)	1677666.6980	3156269.2328	NEENAH R-1642	
2.07	3' ENV. CB	886.56	15" = 879.72 (S) 18" = 879.62 (E)	1677662.8426	3156119.0763	NEENAH R-3402-E	
2.08	2' ENV. CI	886.40	15" = 880.07 (E) 15" = 879.97 (N)	1677560.8796	3156121.5775	NEENAH R-3287-SB10	
2.09	2' ENV. CI	886.40	15" = 880.55 (W)	1677565.7188	3156314.8899	NEENAH R-3287-SB10	
2.11	4' CI	885.97	30" = 878.22 (W) 30" = 878.12 (NE)	1677773.3026	3156072.5903	NEENAH R-3287-SB10	
2.12	4' CI	886.42	24" = 878.36 (W) 30" = 878.26 (E) 24" = 879.55 (S)	1677772.3767	3156035.6019	NEENAH R-3287-SB10	
2.13	4' CB	885.00	24" = 878.46 (E)	1677771.5320	3155996.0642	NEENAH R-4215-C	
2.14	4' CI	886.41	24" = 878.81 (W) 30" = 878.31 (E)	1677878.9726	3155859.8792	NEENAH R-3287-SB10	
2.15	3' CI	886.41	24" = 879.29 (E) 18" = 879.39 (W)	1677872.5662	3155603.9594	NEENAH R-3287-SB10	
2.16	4' MH	887.83	15" = 879.85 (S) 18" = 879.75 (E) 15" = 879.95 (W)	1677868.2195	3155430.3212	NEENAH R-1642	
2.17	2' CI	886.41	15" = 880.47 (W) 15" = 880.37 (N)	1677660.7673	3155439.3086	NEENAH R-3287-SB10	
2.18	2' CI	886.41	15" = 880.56 (E)	1677659.1658	3155402.3432	NEENAH R-3287-SB10	
2.21	2' CI	887.39	15" = 880.17 (E)	1677901.6862	3155348.6507	NEENAH R-3287-SB10	
2.31	3' CI	886.40	18" = 879.86 (S) 24" = 879.76 (N) 24" = 879.86 (W)	1677647.7225	3156038.7234	NEENAH R-3287-SB10	
2.32	3' CI	886.40	18" = 880.08 (N)	1677559.3610	3156040.9359	NEENAH R-3287-SB10	
2.33	4' CB	885.00	24" = 879.96 (E)	1677646.8715	3155998.9347	NEENAH R-4215-C	
3.00	TYPE 1 MANHOLE	885.21	12" = 877.22 (N) 15" = 877.22 (S)	1678042.7255	3156144.2836	NEENAH R-1642	
3.01	OUTLET CONTROL STRUCTURE	885.00	12" = 877.29 (S)	1678066.9172	3156143.2356	SEE DETAIL ON C-705	
3.02	OUTLET CONTROL STRUCTURE	883.90	15" = 877.38 (N)	1678002.4776	3156146.0273	SEE DETAIL ON C-705	
5.00	42" CONCRETE FLARED END SECTION	881.12	42" = 877.38 (W)	1677971.5263	3156110.6416		
5.01	UNDERGROUND DETENTION OUTLET	881.47	42" = 877.53 (E)	1677967.7856	3155961.2094		

STORM STRUCTURE TABLE

STRUCTURE ID	DESCRIPTION	RIM/GRATE	INVERTS	NORTHING	EASTING	CASTING	MISCELLANEOUS NOTES
5.02	UG DET 36" DIA. RISER	887.91		1677962.4862	3155949.3388		
5.03	UG DET 36" DIA. RISER	887.31		1677926.4976	3155950.2433		
6.01	TYPE 1 MANHOLE	886.15	18" = 879.96 (E) 24" = 879.96 (N)	1677826.5182	3155248.8253	NEENAH R-1642	
6.02	3' CB	883.35	15" = 880.27 (S) 18" = 880.27 (W)	1677831.8138	3155371.0609	NEENAH R-4215-C	
6.03	2' CB	884.15	15" = 880.78 (E) 15" = 880.78 (N)	1677628.4798	3155387.1571	NEENAH R-4215-C	
6.04	4' MH	883.49	15" = 880.96 (W) 6" = 880.96 (E)	1677631.5095	3155457.0915		
6.05	8" DIA. NYLOPLAST DRAIN BASIN 2808AG	882.64	6" = 881.47 (W)	1677615.3695	3155659.6249		
8.00	CONCRETE COLLAR FOR EX 18" RCP	887.93	18" = 886.13 (E)	1678006.4230	3154816.5790		
8.01	18" END SECTION	888.43	18" = 886.23 (W)	1678006.6681	3154829.3078		
8.02	15" END SECTION	887.49	15" = 885.55 (N)	1678096.2812	3154827.4023		
8.03	15" END SECTION	887.77	15" = 885.83 (S)	1678233.2540	3154824.4897		

SANITARY STRUCTURE TABLE

STRUCTURE ID	DESCRIPTION	RIM	INVERTS	NORTHING	EASTING	MISCELLANEOUS NOTES
A	DOGHOUSE SAN MH	888.21	10" = 869.79 (N) 12" = 868.67 (W) 12" = 868.67 (E)	1677526.1858	3156020.6652	
A.1	SAN MH	885.84	10" = 870.81 (N) 10" = 870.71 (S) 6" = 872.50 (E)	1677754.3198	3156014.9544	
A.2	SAN MH	887.66	6" = 881.61 (W) 4" = 883.27 (S) 4" = 881.71 (NE)	1677758.3321	3156175.2870	
A.3	NODE	884.02	4" = 883.65 (SE) 4" = 883.65 (W)	1677758.8122	3156194.4729	
A.4	CLEANOUT	887.76	4" = 883.90 (NW)	1677750.2618	3156203.4624	
A.5	CLEANOUT	887.58	4" = 881.93 (SW)	1677764.8328	3156184.3979	
B	SAN MH	887.31	10" = 871.49 (N) 10" = 871.39 (S)	1677900.7685	3156011.2883	
C	SAN MH	886.02	10" = 872.52 (N) 10" = 872.42 (S) 8" = 873.06 (W)	1678131.6740	3156005.5081	
D	SAN MH W/ DROP CONNECTION	886.84	6" = 880.43 (W) 10" = 873.55 (N) 10" = 873.45 (S)	1678365.5606	3155999.6532	
D.1	CLEANOUT	888.04	6" = 883.03 (E)	1678364.6098	3155961.6693	
E	SAN MH	884.85	10" = 874.53 (W) 10" = 874.43 (S)	1678584.8588	3155994.1637	
F	SAN MH	884.39	10" = 875.08 (W) 10" = 874.98 (E)	1678581.5819	3155863.0017	
G	SAN MH W/ DROP CONNECTION	888.41	10" = 876.36 (W) 6" = 884.02 (S) 10" = 876.26 (E)	1678572.9302	3155516.7065	
G.1	CLEANOUT	888.82	6" = 884.79 (S) 6" = 884.79 (N)	1678561.9388	3155516.9815	
G.2	CONNECT TO MAIN STORE SANITARY SYSTEM	885.54	6" = 885.00 (N)	1678558.9397	3155517.0566	
H	SAN MH	886.55	10" = 877.18 (N) 10" = 877.08 (E) 8" = 877.18 (W)	1678567.6399	3155304.9572	
H.2	SAN MH	889.29	10" = 877.52 (S)	1678669.4005	3155302.4096	
H.3	SAN MH	887.74	8" = 877.54 (E)	1678565.8540	3155233.4742	
I	SAN MH	887.22	8" = 873.92 (W) 6" = 875.47 (NW) 8" = 873.82 (E)	1678127.8831	3155853.6483	
I.1	CLEANOUT	888.95	6" = 882.00 (SE)	1678206.1491	3155802.8981	
J	SAN MH W/ DROP CONNECTION	887.22	8" = 875.30 (W) 6" = 879.22 (N) 8" = 875.20 (E)	1678121.4947	3155597.7280	
J.1	CLEANOUT	888.95	6" = 885.00 (S)	1678200.3994	3155573.2133	
K	SAN MH	885.08	8" = 877.16 (N) 8" = 877.06 (E)	1678112.6827	3155244.7203	
L	SAN MH	886.79	8" = 877.69 (S)	1678218.8371	3155242.0617	

STRUCTURE TABLE NOTES

1. EX = EXISTING.
2. CI = CURB INLET.
3. CB = CATCH BASIN.
4. MH = MANHOLE.
5. CTE = CONNECT TO EXISTING.
6. RIM/GRATE ELEVATION INDICATES:
   - 6.1. FOR MANHOLE, JUNCTION BOX/CLEANOUT: RIM ELEVATION.
   - 6.2. FOR CATCH BASIN: GRATE ELEVATION.
   - 6.3. FOR CURB INLET: TOP OF CASTING/TOP OF CURB ELEVATION.
7. ALL PROPOSED STORM STRUCTURE TYPES SHALL BE IN ACCORDANCE WITH TOWN OF BROWNSBURG CONSTRUCTION STANDARD DETAILS UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL REVIEW CONDITION OF EXISTING STRUCTURES TO REMAIN IN WHICH PROPOSED PIPES ARE PROPOSED TO CONNECT. IF CONDITIONS WARRANT IT, STRUCTURE(S) SHALL BE REPLACED.
9. ALL STORM GRATE CASTINGS TO BE PRE-CAST WITH A POLLUTION PREVENTION MESSAGE PERMANENTLY ATTACHED. PER TOWN OF BROWNSBURG STANDARD DETAILS SW-13 AND SW-14. POLLUTION PREVENTION MESSAGE TO STATE, AT MINIMUM, "DUMP NO WASTE <FISH ICON> DRAINS TO WATERWAY" IN MINIMUM 1 INCH HIGH LETTERS.
10. STORM SEWER PIPING TO BE HIGH DENSITY POLYETHYLENE (HDPE) FOR PIPES 12 TO 24 INCHES IN DIAMETER, POLYPROPYLENE (PP) FOR PIPES 12 TO 60 INCHES IN DIAMETER, POLYVINYL CHLORIDE (PVC) FOR PIPES 12 TO 36 INCHES IN DIAMETER, OR REINFORCED CONCRETE (RCP) FOR PIPES 12 INCHES IN DIAMETER OR LARGER IN ACCORDANCE WITH THE TOWN OF BROWNSBURG CONSTRUCTION STANDARDS, MOST CURRENT EDITION.
11. CONTRACTOR TO SIZE STORM STRUCTURES PER TOWN OF BROWNSBURG STANDARDS.
12. ALL CATCH BASINS AND CURB INLETS SHALL HAVE A 2' SUMP. OUTLET STRUCTURES SHALL NOT HAVE A SUMP.
13. BID ALTERNATE 5: PROVIDE SQUARE CONCRETE COLLARS FOR SANITARY AND STORM STRUCTURES.

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

STRUCTURE DATA TABLES

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-402

Images: , Xrefs: 10020046-p.dwg; 10020046-x.dwg; 10020046IBLK.dwg; 10020046-UTL-NOTES.dwg
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APPENDICES

SECTION 1:
DETENTION DESIGN INFORMATION

1.1 – HydroCAD INPUTS AND RESULTS – ONSITE RUNOFF

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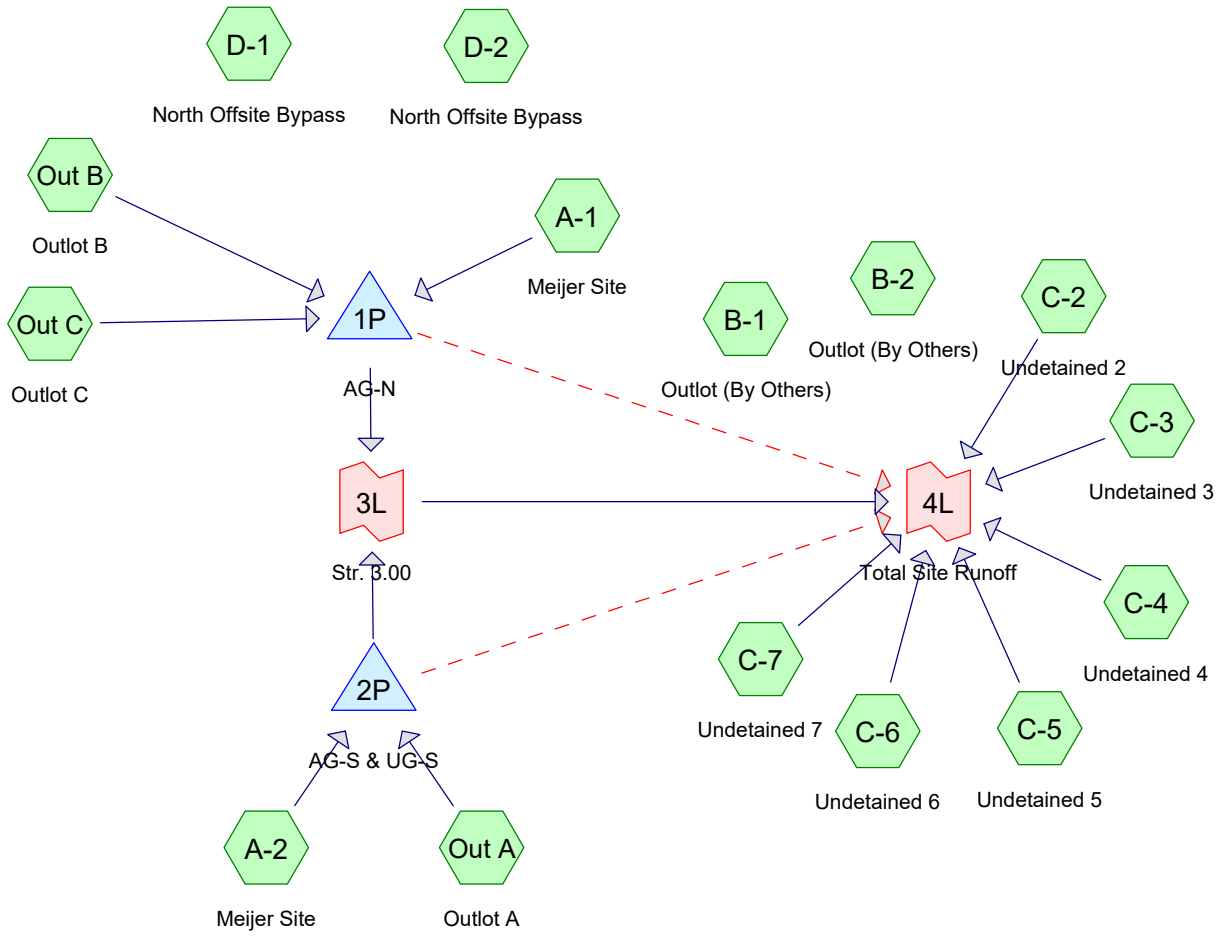
48 Link 4L: Total Site Runoff



Subcat Reach Pond Link

Routing Diagram for Meijer ABE SWM
Prepared by Woolpert, Inc, Printed 1/10/2025
HydroCAD® 10.20-5c s/n 00728 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	10yr-24hr	Type II 24-hr		Default	24.00	1	4.28	2
2	100yr-24hr	Type II 24-hr		Default	24.00	1	6.30	2

Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A-1: Meijer Site Runoff Area=16.510 ac 69.41% Impervious Runoff Depth=3.39"
Tc=15.0 min CN=92 Runoff=69.11 cfs 203,077 cf

Subcatchment A-2: Meijer Site Runoff Area=5.180 ac 69.31% Impervious Runoff Depth=3.39"
Tc=6.0 min CN=92 Runoff=28.92 cfs 63,715 cf

Subcatchment B-1: Outlot (By Others) Runoff Area=1.700 ac 0.00% Impervious Runoff Depth=2.36"
Flow Length=263' Tc=6.2 min CN=81 Runoff=7.05 cfs 14,557 cf

Subcatchment B-2: Outlot (By Others) Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=2.19"
Flow Length=274' Tc=21.1 min CN=79 Runoff=4.25 cfs 14,330 cf

Subcatchment C-2: Undetained 2 Runoff Area=0.160 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.65 cfs 1,321 cf

Subcatchment C-3: Undetained 3 Runoff Area=0.290 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=1.17 cfs 2,395 cf

Subcatchment C-4: Undetained 4 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.77 cfs 1,569 cf

Subcatchment C-5: Undetained 5 Runoff Area=0.170 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.69 cfs 1,404 cf

Subcatchment C-6: Undetained 6 Runoff Area=0.050 ac 80.00% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=94 Runoff=0.29 cfs 653 cf

Subcatchment C-7: Undetained 7 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.77 cfs 1,569 cf

Subcatchment D-1: North Offsite Bypass Runoff Area=18.480 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=1,684' Tc=81.9 min CN=89 Runoff=24.12 cfs 207,069 cf

Subcatchment D-2: North Offsite Bypass Runoff Area=10.720 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=952' Tc=28.1 min CN=89 Runoff=29.65 cfs 120,118 cf

Subcatchment Out A: Outlot A Runoff Area=3.120 ac 85.00% Impervious Runoff Depth=3.71"
Tc=20.0 min CN=95 Runoff=12.01 cfs 41,988 cf

Subcatchment Out B: Outlot B Runoff Area=1.920 ac 85.00% Impervious Runoff Depth=3.71"
Tc=15.0 min CN=95 Runoff=8.50 cfs 25,839 cf

Subcatchment Out C: Outlot C Runoff Area=3.820 ac 85.00% Impervious Runoff Depth=3.71"
Tc=15.0 min CN=95 Runoff=16.92 cfs 51,408 cf

Pond 1P: AG-N Peak Elev=882.14' Storage=236,943 cf Inflow=94.53 cfs 280,324 cf
Primary=0.91 cfs 178,351 cf Secondary=0.00 cfs 0 cf Outflow=0.91 cfs 178,351 cf

Pond 2P: AG-S & UG-S Peak Elev=882.61' Storage=70,517 cf Inflow=36.68 cfs 105,703 cf
Primary=0.95 cfs 105,686 cf Secondary=0.00 cfs 0 cf Outflow=0.95 cfs 105,686 cf

Link 3L: Str. 3.00 Inflow=1.84 cfs 284,037 cf
Primary=1.84 cfs 284,037 cf

Link 4L: Total Site Runoff Inflow=5.62 cfs 292,950 cf
Primary=5.62 cfs 292,950 cf

Total Runoff Area = 2,800,908 sf Runoff Volume = 751,012 cf Average Runoff Depth = 3.22"
64.82% Pervious = 1,815,537 sf 35.18% Impervious = 985,371 sf

Summary for Subcatchment A-1: Meijer Site

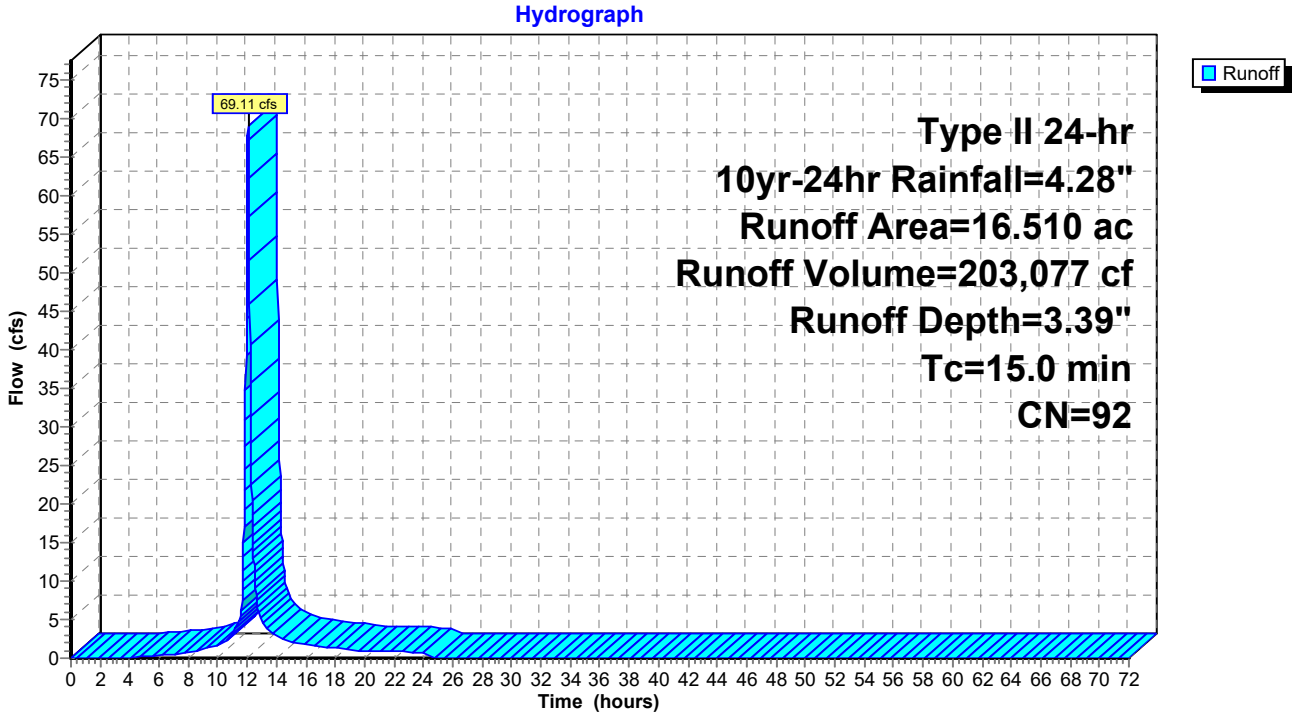
Runoff = 69.11 cfs @ 12.06 hrs, Volume= 203,077 cf, Depth= 3.39"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
11.460	98	Paved parking, HSG D
5.050	80	>75% Grass cover, Good, HSG D
16.510	92	Weighted Average
5.050	80	30.59% Pervious Area
11.460	98	69.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment A-1: Meijer Site



Summary for Subcatchment A-2: Meijer Site

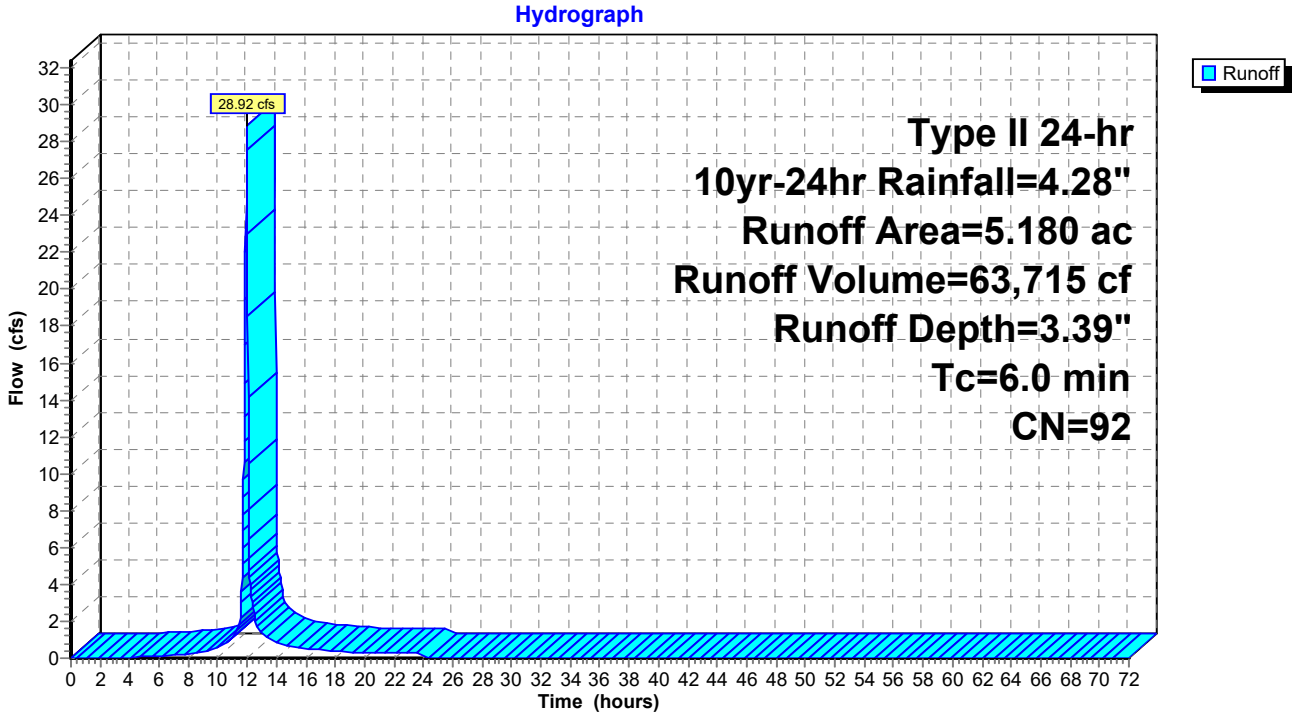
Runoff = 28.92 cfs @ 11.97 hrs, Volume= 63,715 cf, Depth= 3.39"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
3.590	98	Paved parking, HSG D
1.590	80	>75% Grass cover, Good, HSG D
5.180	92	Weighted Average
1.590	80	30.69% Pervious Area
3.590	98	69.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment A-2: Meijer Site



Summary for Subcatchment B-1: Outlot (By Others)

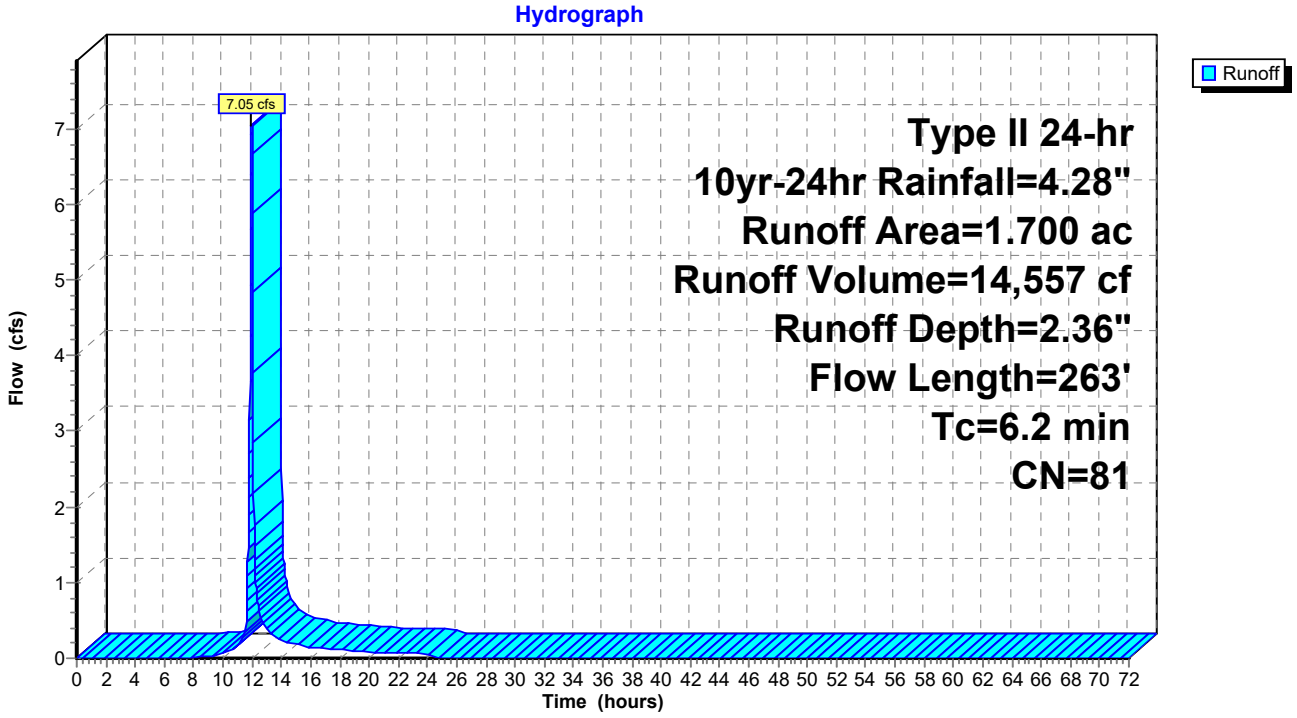
Runoff = 7.05 cfs @ 11.98 hrs, Volume= 14,557 cf, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

	Area (ac)	CN	Description
*	1.000	78	Row crops, straight row, Good, HSG B
	0.700	85	Row crops, straight row, Good, HSG C
	1.700	81	Weighted Average
	1.700	81	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	100	0.0327	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
2.8	163	0.0113	0.96		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
6.2	263	Total			

Subcatchment B-1: Outlot (By Others)



Summary for Subcatchment B-2: Outlot (By Others)

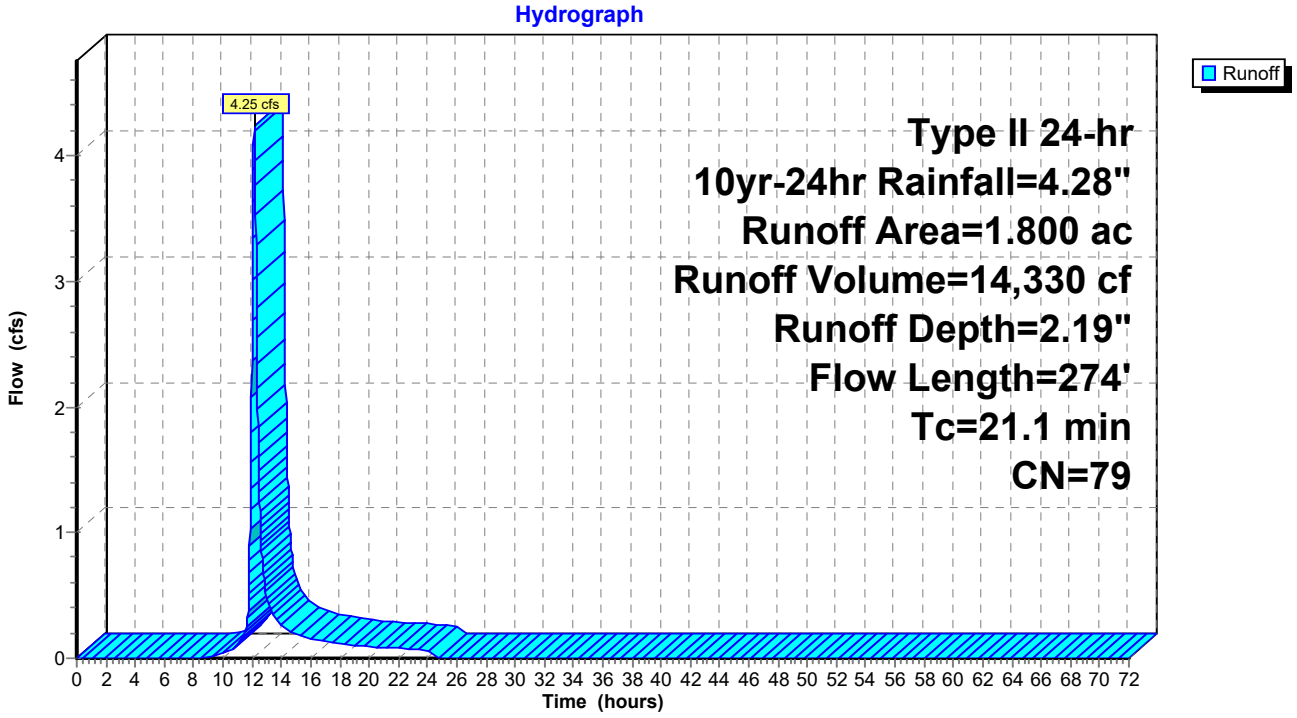
Runoff = 4.25 cfs @ 12.14 hrs, Volume= 14,330 cf, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

	Area (ac)	CN	Description
*	1.500	78	Row crops, straight row, Good, HSG B
	0.300	85	Row crops, straight row, Good, HSG C
	1.800	79	Weighted Average
	1.800	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.0130	0.33		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
16.1	174	0.0004	0.18		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
21.1	274	Total			

Subcatchment B-2: Outlot (By Others)



Summary for Subcatchment C-2: Undetained 2

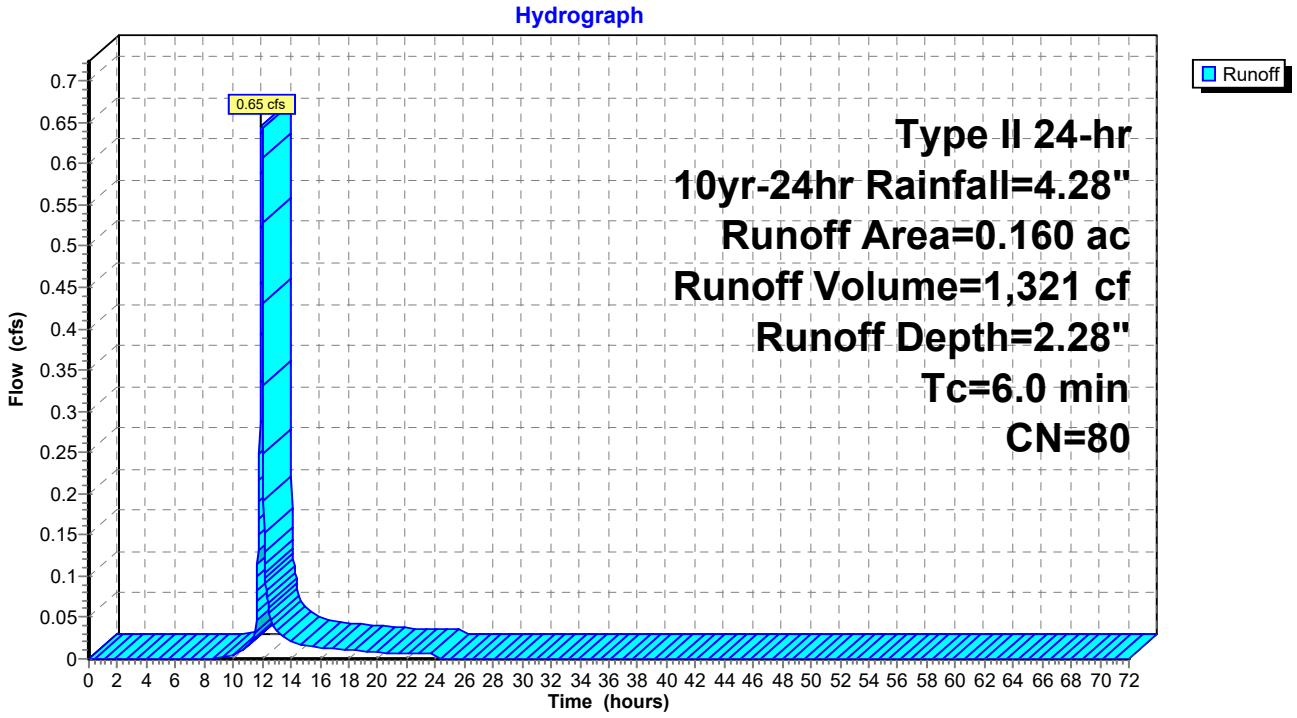
Runoff = 0.65 cfs @ 11.97 hrs, Volume= 1,321 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.160	80	>75% Grass cover, Good, HSG D
0.160	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-2: Undetained 2



Summary for Subcatchment C-3: Undetained 3

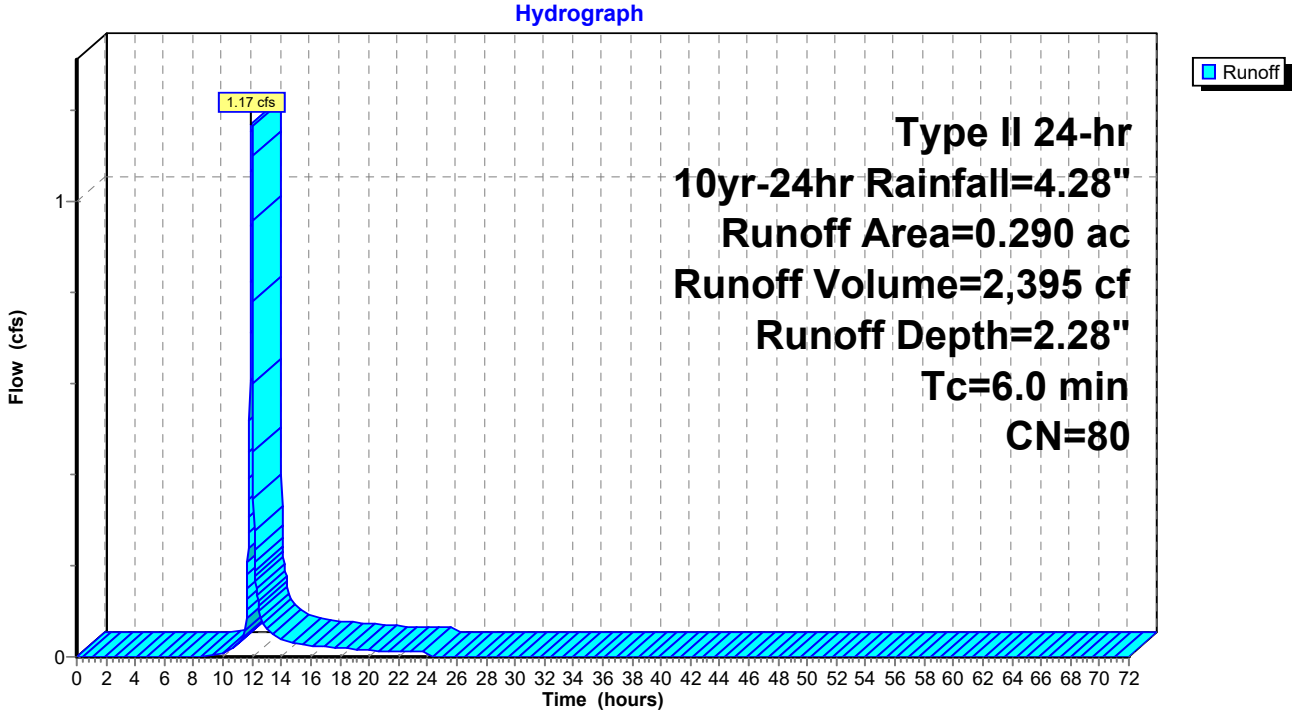
Runoff = 1.17 cfs @ 11.97 hrs, Volume= 2,395 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.290	80	>75% Grass cover, Good, HSG D
0.290	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-3: Undetained 3



Summary for Subcatchment C-4: Undetained 4

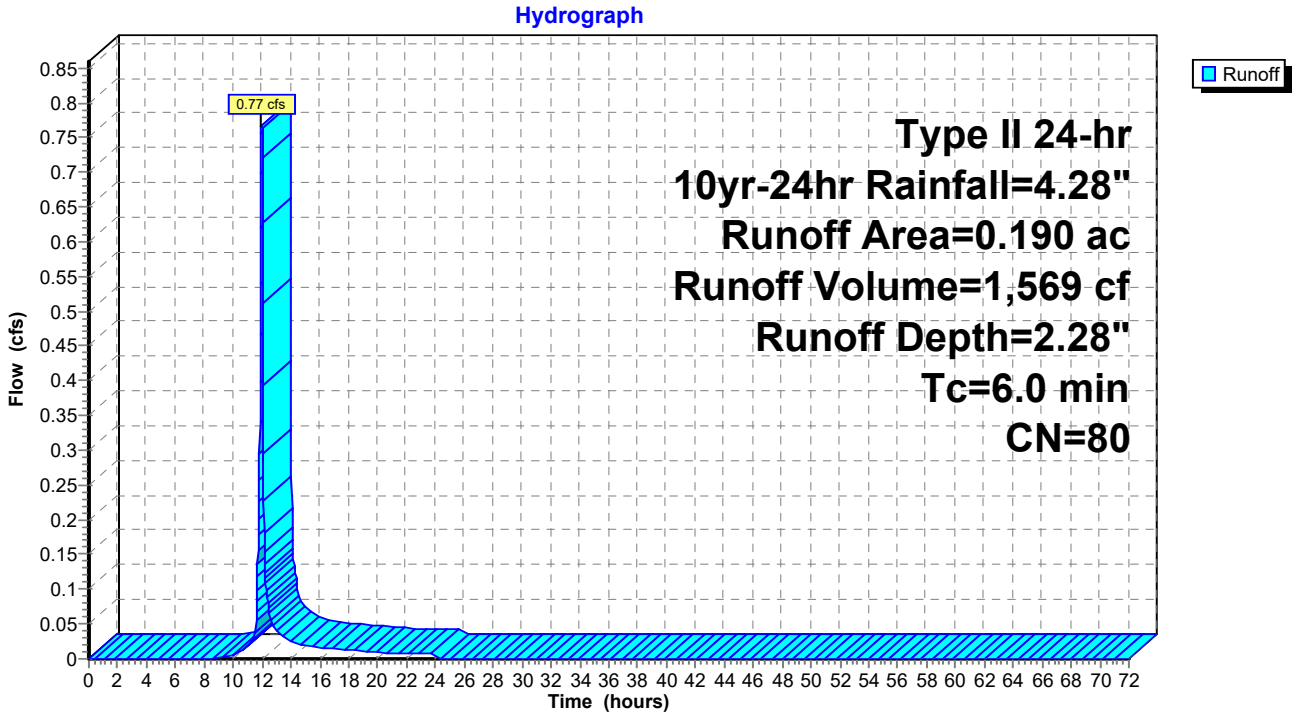
Runoff = 0.77 cfs @ 11.97 hrs, Volume= 1,569 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-4: Undetained 4



Summary for Subcatchment C-5: Undetained 5

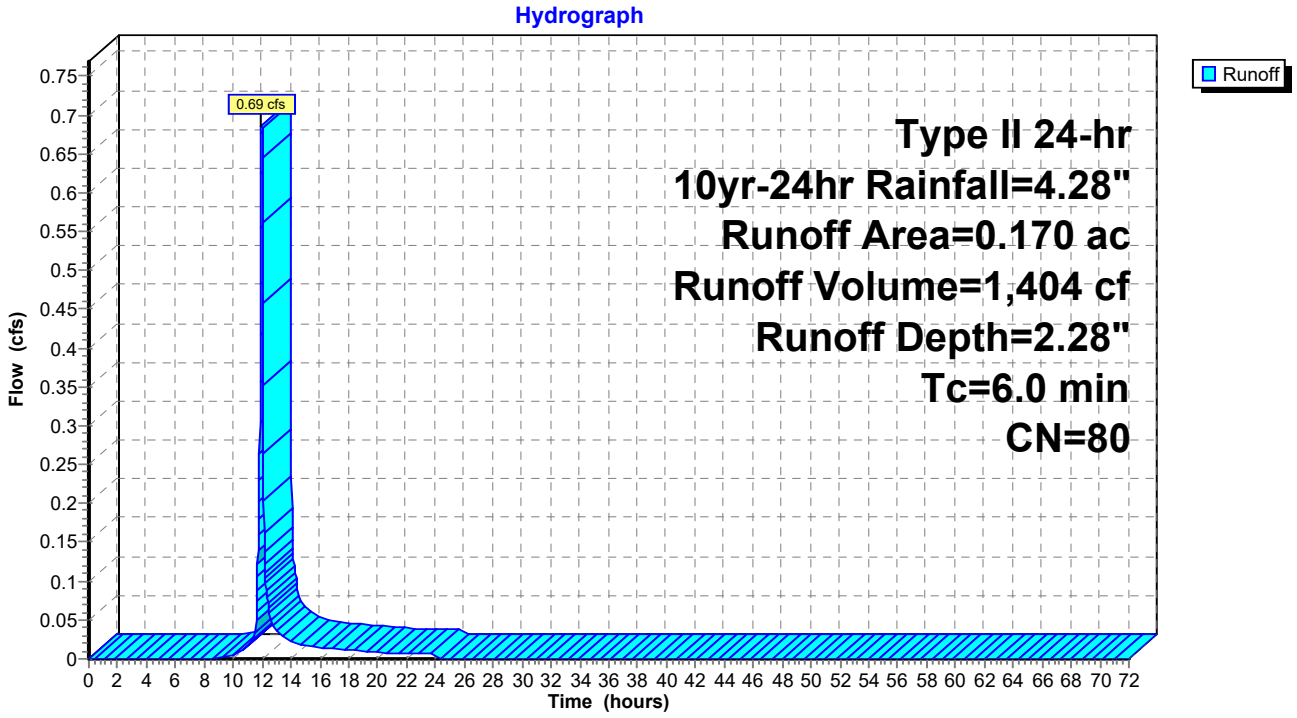
Runoff = 0.69 cfs @ 11.97 hrs, Volume= 1,404 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.170	80	>75% Grass cover, Good, HSG D
0.170	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-5: Undetained 5



Summary for Subcatchment C-6: Undetained 6

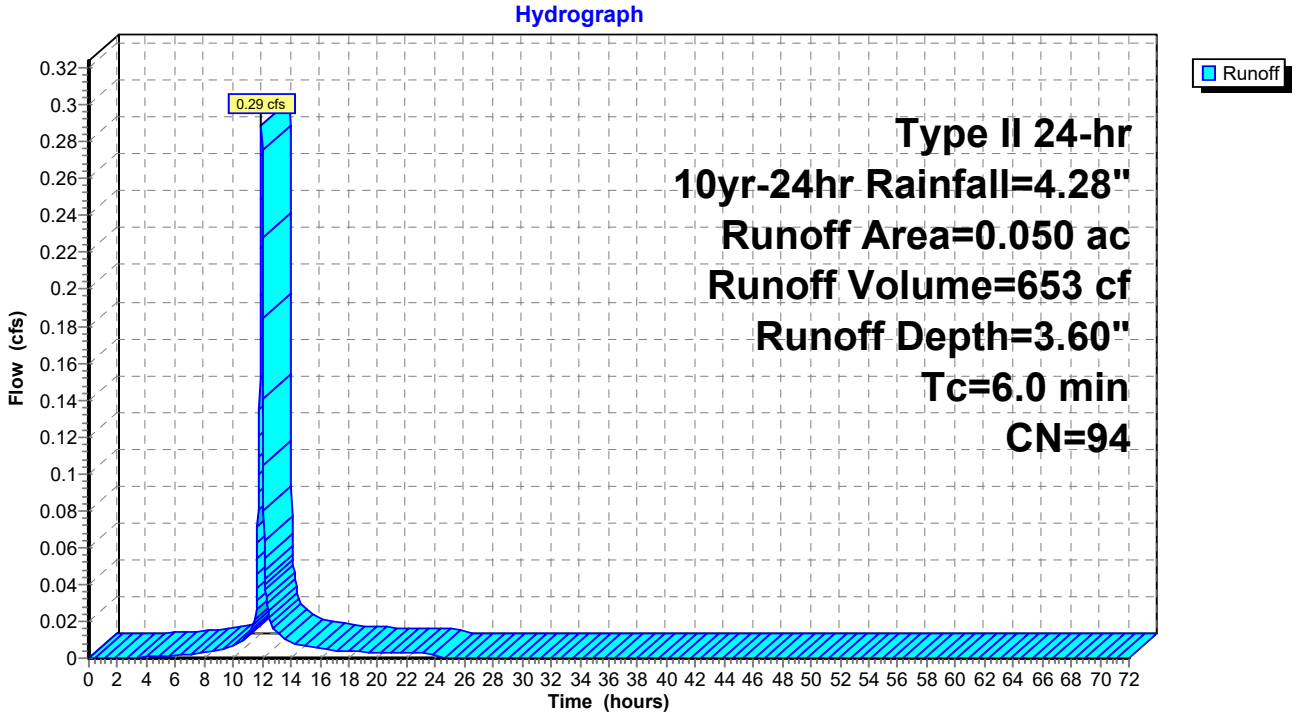
Runoff = 0.29 cfs @ 11.97 hrs, Volume= 653 cf, Depth= 3.60"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.040	98	Paved parking, HSG D
0.010	80	>75% Grass cover, Good, HSG D
0.050	94	Weighted Average
0.010	80	20.00% Pervious Area
0.040	98	80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-6: Undetained 6



Summary for Subcatchment C-7: Undetained 7

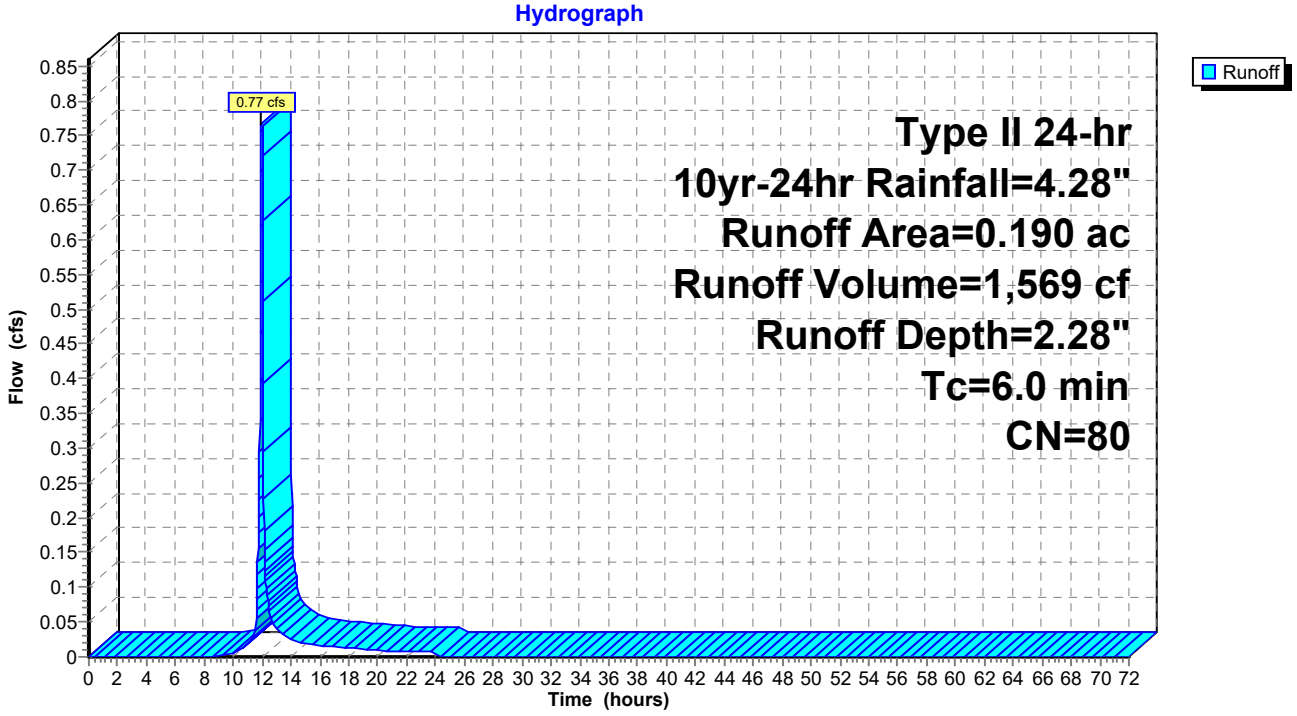
Runoff = 0.77 cfs @ 11.97 hrs, Volume= 1,569 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-7: Undetained 7



Summary for Subcatchment D-1: North Offsite Bypass

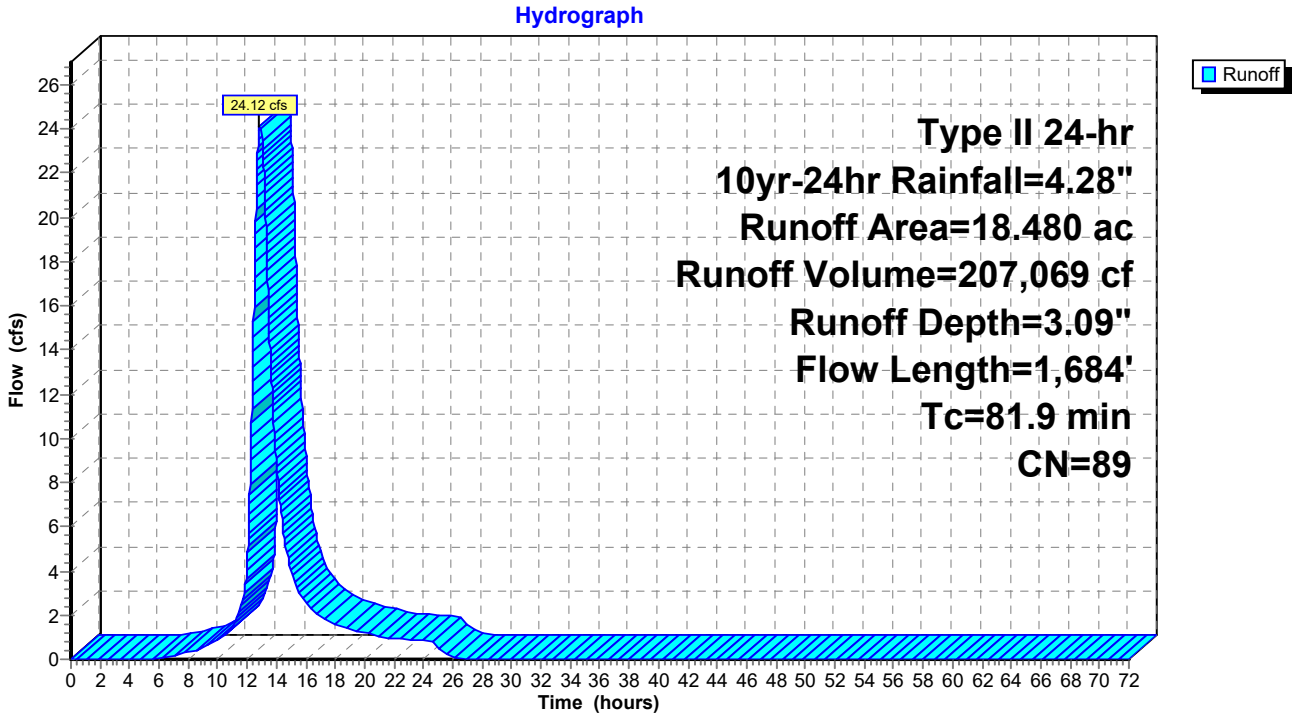
Runoff = 24.12 cfs @ 12.85 hrs, Volume= 207,069 cf, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
18.480	89	Row crops, straight row, Good, HSG D
18.480	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0075	0.27		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
75.7	1,584	0.0015	0.35		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
81.9	1,684	Total			

Subcatchment D-1: North Offsite Bypass



Summary for Subcatchment D-2: North Offsite Bypass

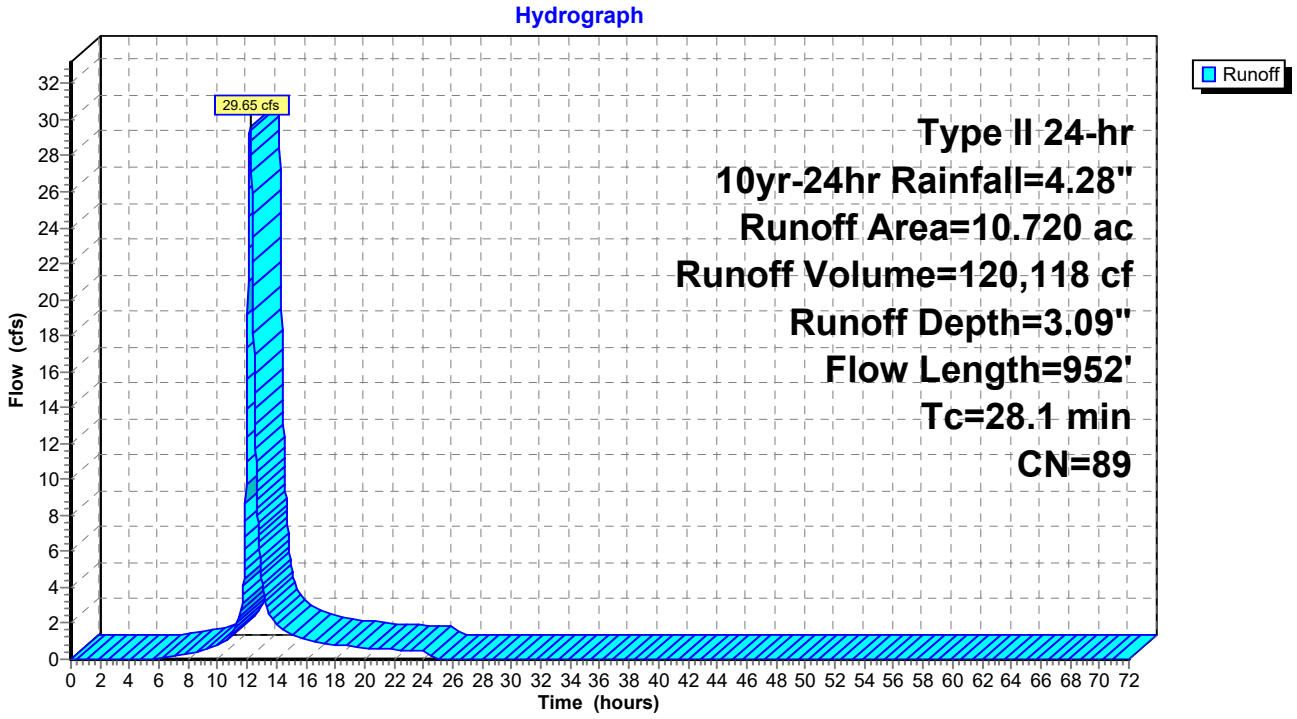
Runoff = 29.65 cfs @ 12.21 hrs, Volume= 120,118 cf, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
10.720	89	Row crops, straight row, Good, HSG D
10.720	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0090	0.29		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
22.3	852	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
28.1	952	Total			

Subcatchment D-2: North Offsite Bypass



Summary for Subcatchment Out A: Outlot A

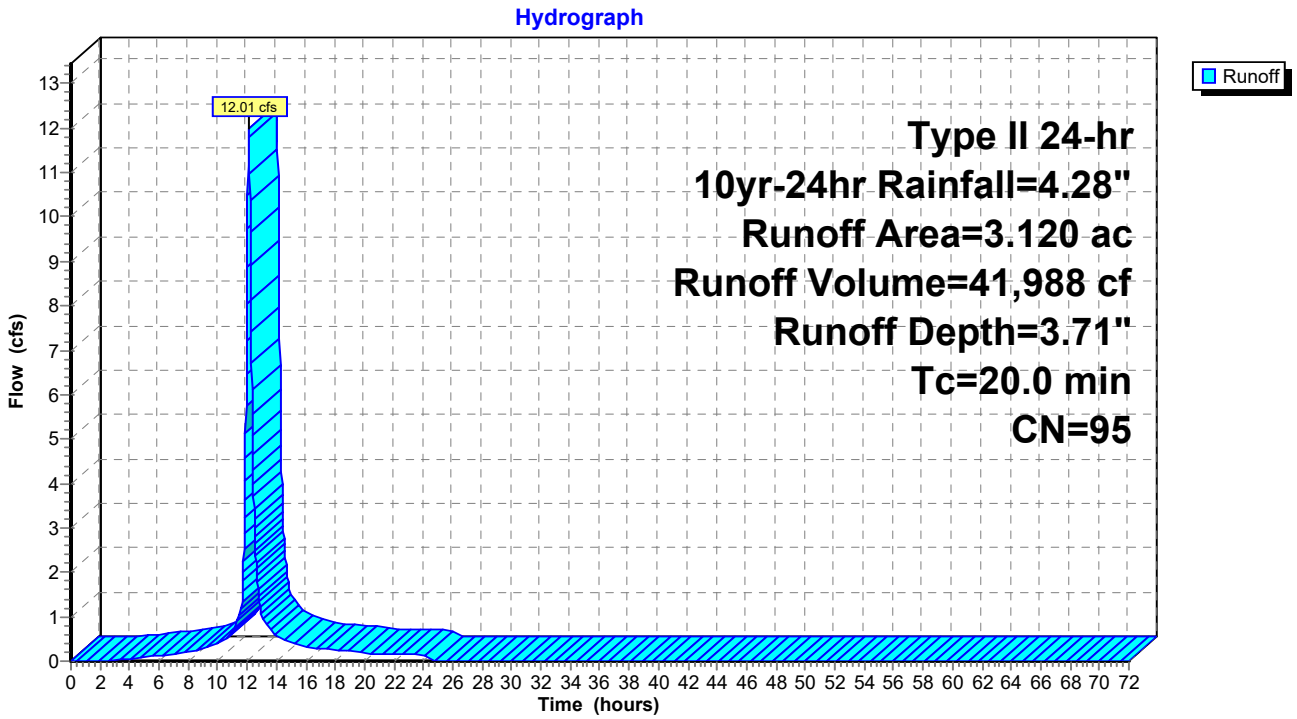
Runoff = 12.01 cfs @ 12.12 hrs, Volume= 41,988 cf, Depth= 3.71"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
3.120	95	Urban commercial, 85% imp, HSG D
0.468	78	15.00% Pervious Area
2.652	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0					**Direct Entry,**

Subcatchment Out A: Outlot A



Summary for Subcatchment Out B: Outlot B

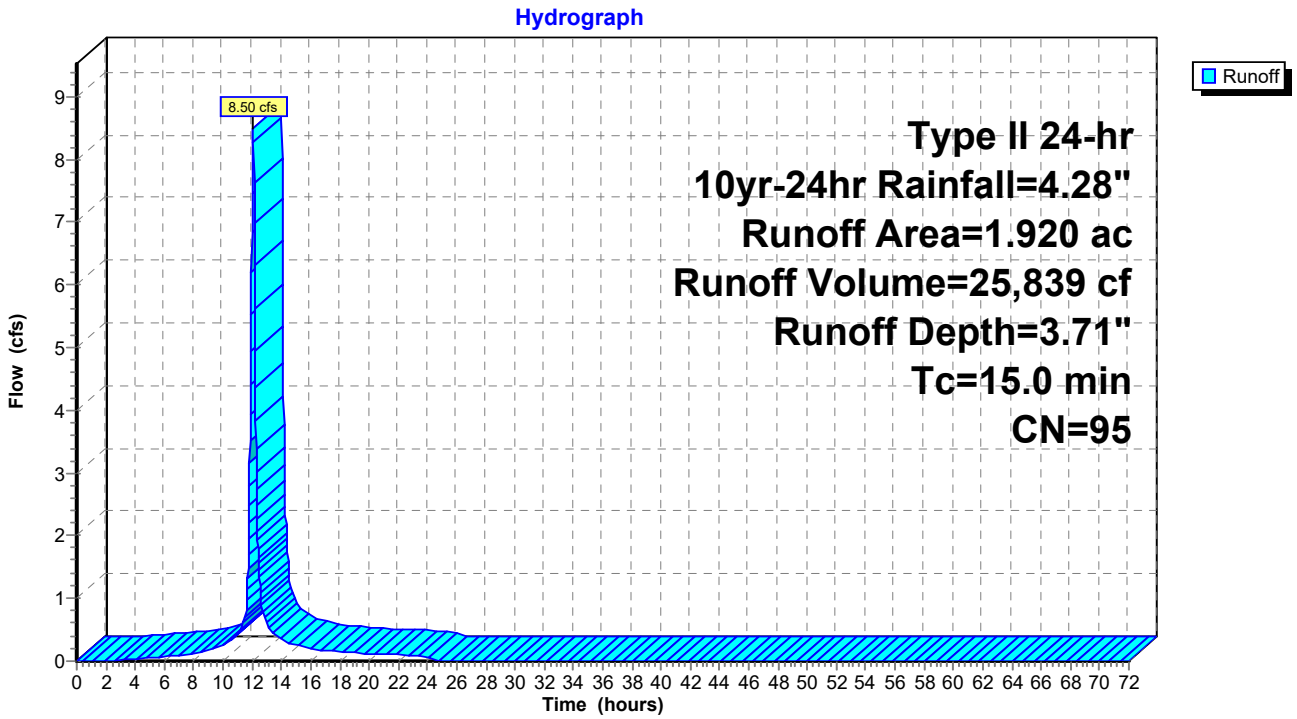
Runoff = 8.50 cfs @ 12.06 hrs, Volume= 25,839 cf, Depth= 3.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
1.920	95	Urban commercial, 85% imp, HSG D
0.288	78	15.00% Pervious Area
1.632	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out B: Outlot B



Summary for Subcatchment Out C: Outlot C

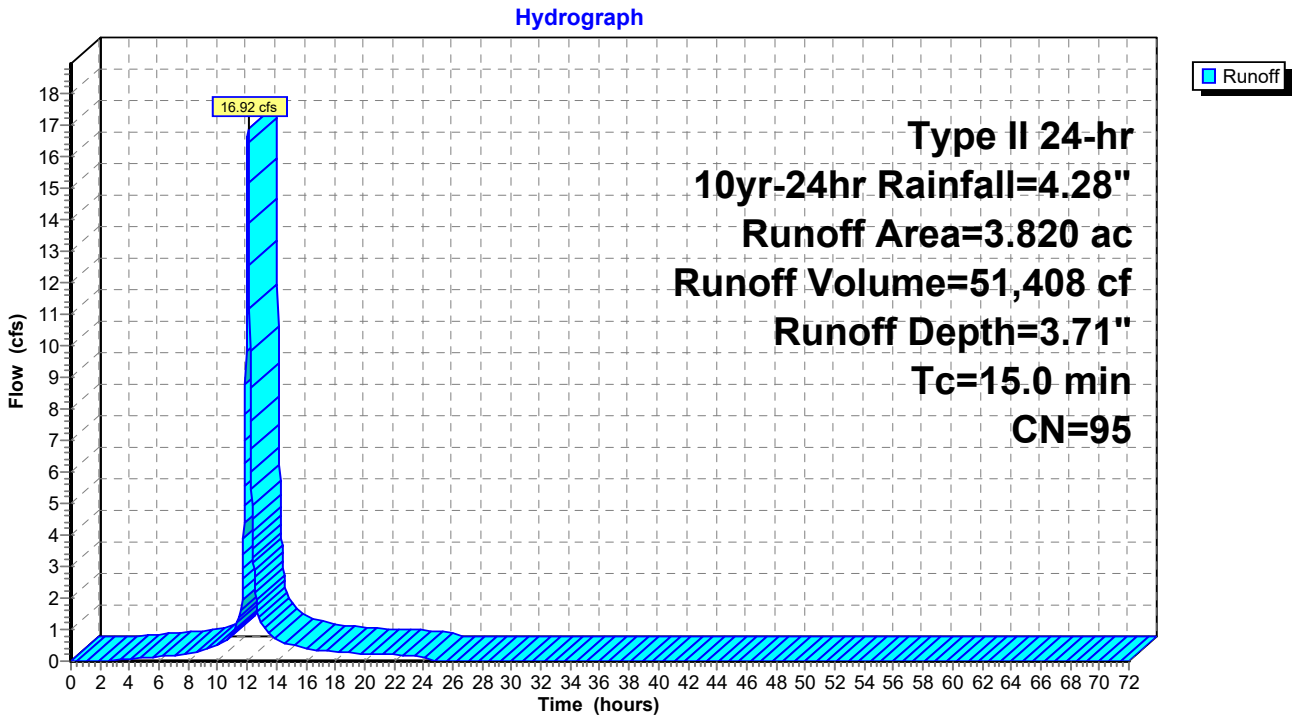
Runoff = 16.92 cfs @ 12.06 hrs, Volume= 51,408 cf, Depth= 3.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
3.820	95	Urban commercial, 85% imp, HSG D
0.573	78	15.00% Pervious Area
3.247	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out C: Outlot C



Summary for Pond 1P: AG-N

Inflow Area = 969,210 sf, 73.43% Impervious, Inflow Depth = 3.47" for 10yr-24hr event
Inflow = 94.53 cfs @ 12.06 hrs, Volume= 280,324 cf
Outflow = 0.91 cfs @ 24.12 hrs, Volume= 178,351 cf, Atten= 99%, Lag= 723.4 min
Primary = 0.91 cfs @ 24.12 hrs, Volume= 178,351 cf
Routed to Link 3L : Str. 3.00
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 882.14' @ 24.12 hrs Surf.Area= 68,682 sf Storage= 236,943 cf

Plug-Flow detention time= 1,692.1 min calculated for 178,302 cf (64% of inflow)
Center-of-Mass det. time= 1,590.5 min (2,379.0 - 788.5)

Volume	Invert	Avail.Storage	Storage Description
#1	877.29'	573,880 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

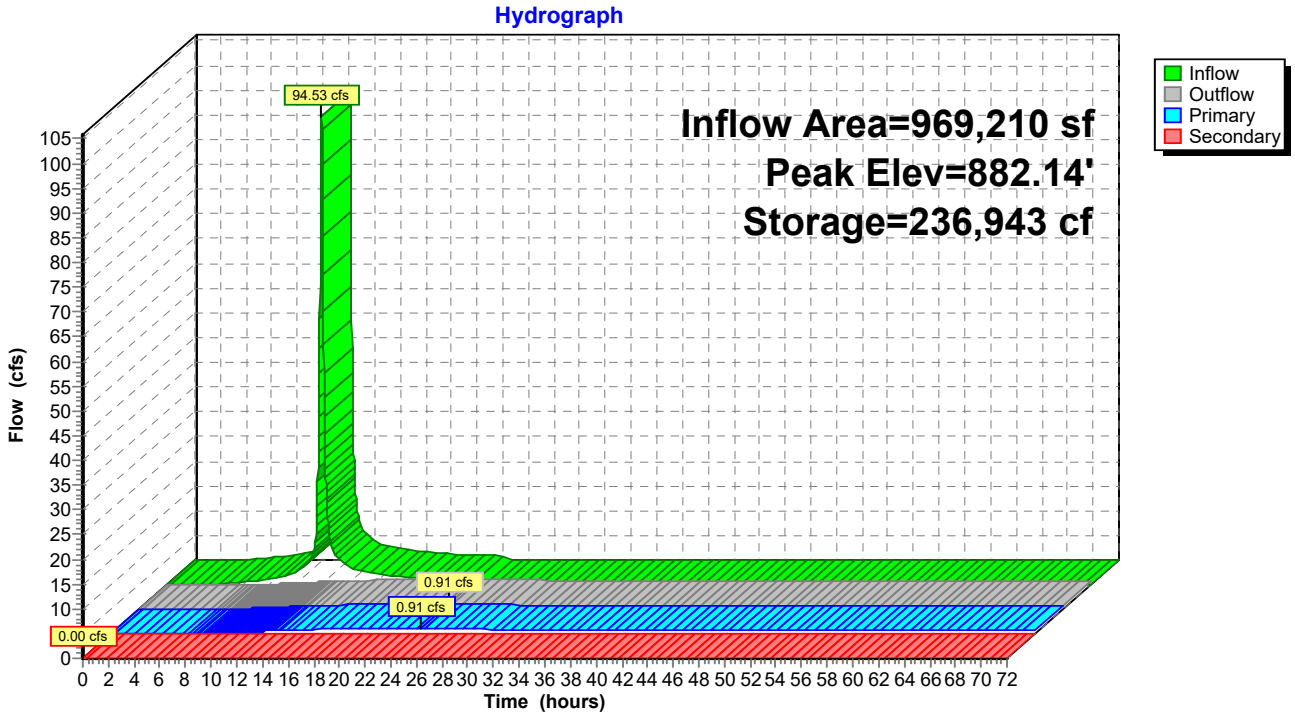
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.29	33,121	1,437.0	0	0	33,121
878.00	37,072	1,579.0	24,905	24,905	67,219
879.00	42,856	1,793.0	39,929	64,834	124,667
880.00	49,752	2,010.0	46,261	111,096	190,366
881.00	57,879	2,227.0	53,764	164,860	263,563
882.00	67,238	2,444.0	62,500	227,360	344,257
883.00	77,811	2,659.0	72,460	299,820	431,602
884.00	87,356	2,779.0	82,537	382,358	483,602
884.64	92,754	2,793.0	57,627	439,984	490,061
885.00	95,775	2,800.0	33,934	473,918	493,335
886.00	104,208	2,819.0	99,962	573,880	502,283

Device	Routing	Invert	Outlet Devices
#1	Primary	877.29'	**12.0" Round Culvert** L= 24.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.29' / 877.22' S= 0.0029 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	877.29'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.14'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	884.54'	**110.0' long + 3.0 '/' SideZ x 26.2' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.91 cfs @ 24.12 hrs HW=882.14' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.91 cfs of 7.89 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.91 cfs @ 10.42 fps)
└**3=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.11 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=877.29' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: AG-N


Hydrograph
Inflow Area=969,210 sf
Peak Elev=882.14'
Storage=236,943 cf
94.53 cfs
0.91 cfs
0.91 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond 2P: AG-S & UG-S

Inflow Area = 361,548 sf, 75.20% Impervious, Inflow Depth = 3.51" for 10yr-24hr event
Inflow = 36.68 cfs @ 11.98 hrs, Volume= 105,703 cf
Outflow = 0.95 cfs @ 15.57 hrs, Volume= 105,686 cf, Atten= 97%, Lag= 215.7 min
Primary = 0.95 cfs @ 15.57 hrs, Volume= 105,686 cf
Routed to Link 3L : Str. 3.00
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 882.61' @ 15.57 hrs Surf.Area= 20,190 sf Storage= 70,517 cf

Plug-Flow detention time= 866.2 min calculated for 105,686 cf (100% of inflow)
Center-of-Mass det. time= 866.1 min (1,649.5 - 783.4)

Volume	Invert	Avail.Storage	Storage Description
#1	877.38'	43,614 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
#2A	877.53'	22,031 cf	**80.00'W x 180.82'L x 7.00'H Underground Detention** 101,259 cf Overall - 46,183 cf Embedded = 55,076 cf x 40.0% Voids
#3A	878.03'	46,183 cf	**CMP Round 72** x 9 Inside #2 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +152.82' x 28.27 sf x 9 rows 78.00' Header x 28.27 sf x 1 = 2,205.4 cf Inside
		111,827 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.38	1,605	205.0	0	0	1,605
878.00	2,000	220.0	1,115	1,115	2,129
879.00	2,697	245.0	2,340	3,455	3,083
880.00	3,462	265.0	3,072	6,527	3,934
881.00	4,284	284.0	3,866	10,392	4,808
882.00	5,163	303.0	4,717	15,109	5,743
883.00	6,098	321.0	5,624	20,733	6,690
884.00	7,090	340.0	6,588	27,321	7,742
885.00	8,138	359.0	7,608	34,929	8,855
885.90	9,130	376.0	7,766	42,695	9,903
886.00	9,248	378.0	919	43,614	10,029

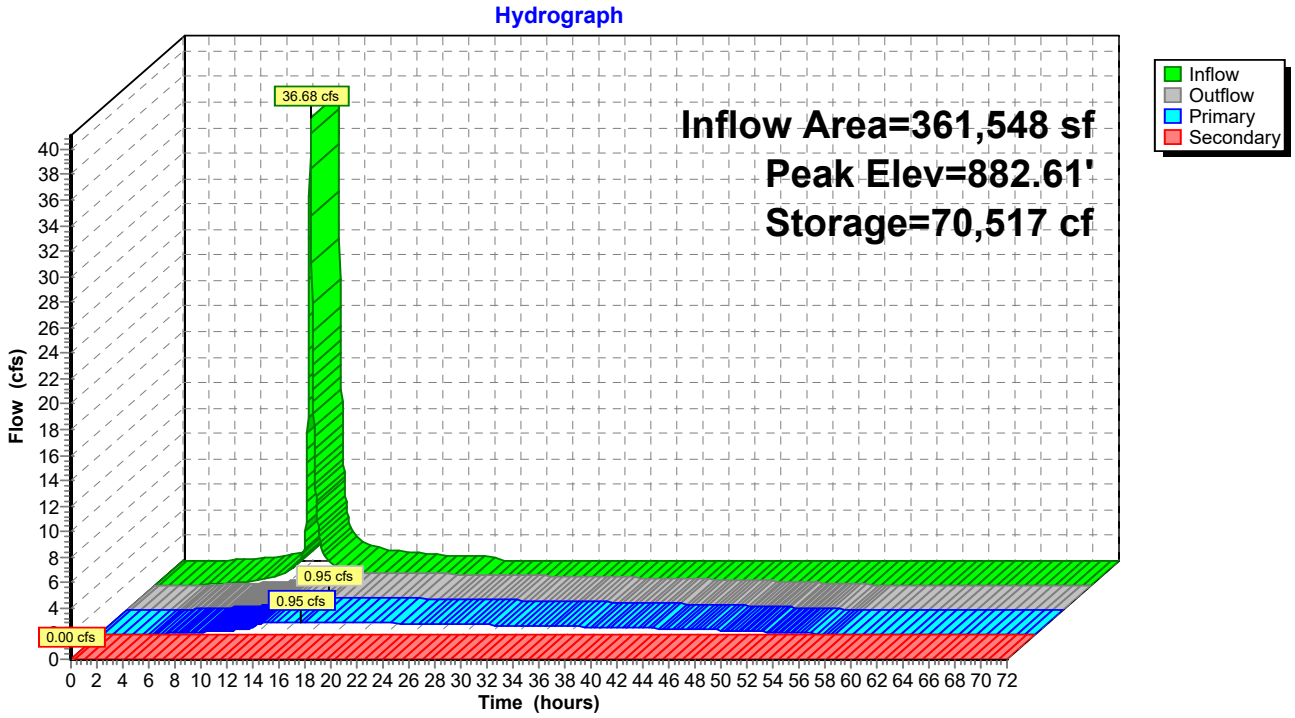
Device	Routing	Invert	Outlet Devices
#1	Primary	877.38'	**15.0" Round Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.38' / 877.22' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	877.38'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.61'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	885.40'	**25.0' long + 3.0 '/' SideZ x 53.8' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.95 cfs @ 15.57 hrs HW=882.61' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.95 cfs of 12.68 cfs potential flow)
  └─**2=Orifice/Grate** (Orifice Controls 0.95 cfs @ 10.83 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=877.38' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 2P: AG-S & UG-S

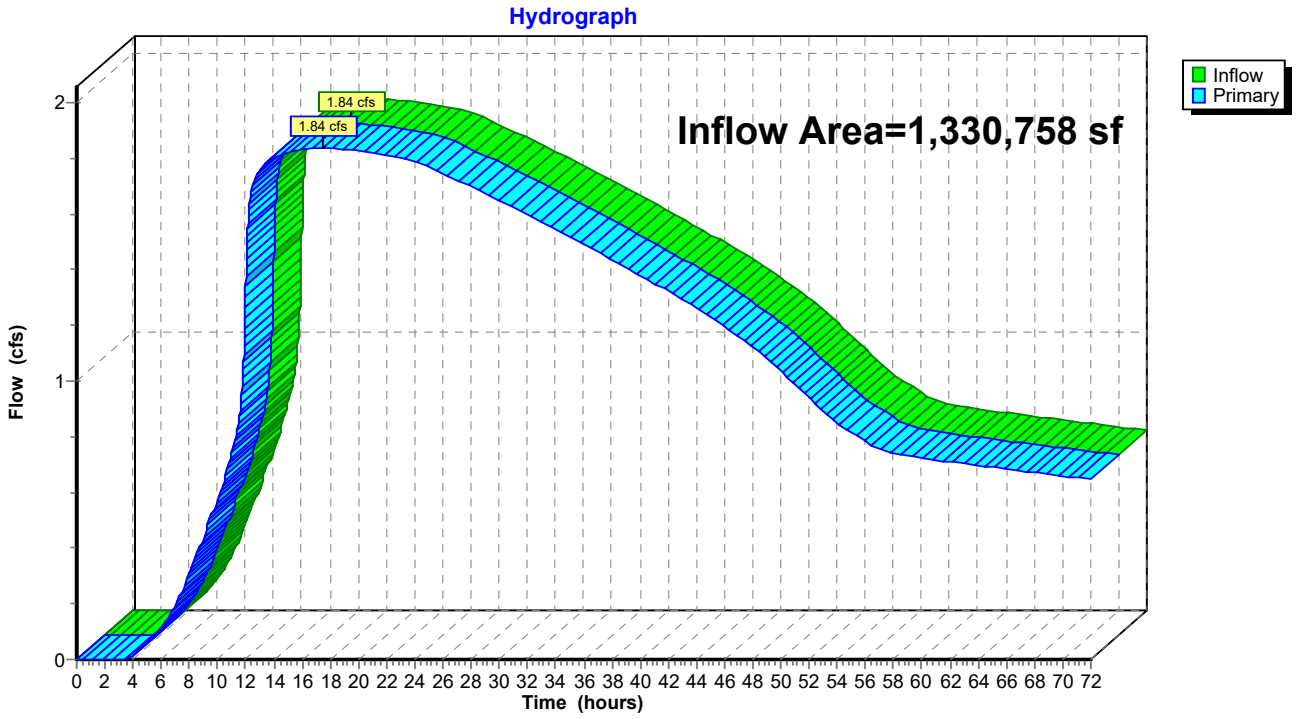


Summary for Link 3L: Str. 3.00

Inflow Area = 1,330,758 sf, 73.91% Impervious, Inflow Depth > 2.56" for 10yr-24hr event
Inflow = 1.84 cfs @ 17.43 hrs, Volume= 284,037 cf
Primary = 1.84 cfs @ 17.43 hrs, Volume= 284,037 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Total Site Runoff

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 3L: Str. 3.00

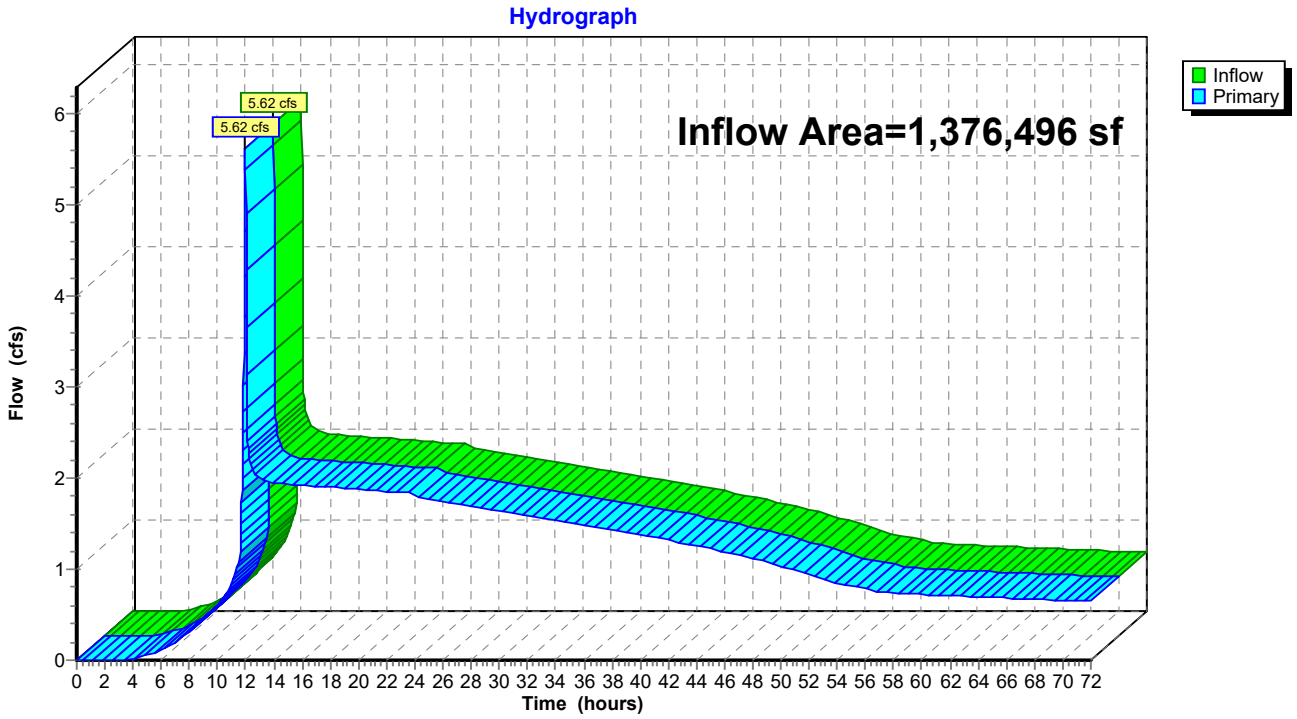


Summary for Link 4L: Total Site Runoff

Inflow Area = 1,376,496 sf, 71.59% Impervious, Inflow Depth > 2.55" for 10yr-24hr event
Inflow = 5.62 cfs @ 11.98 hrs, Volume= 292,950 cf
Primary = 5.62 cfs @ 11.98 hrs, Volume= 292,950 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 4L: Total Site Runoff



Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A-1: Meijer Site Runoff Area=16.510 ac 69.41% Impervious Runoff Depth=5.36"
Tc=15.0 min CN=92 Runoff=106.61 cfs 321,508 cf

Subcatchment A-2: Meijer Site Runoff Area=5.180 ac 69.31% Impervious Runoff Depth=5.36"
Tc=6.0 min CN=92 Runoff=44.40 cfs 100,873 cf

Subcatchment B-1: Outlot (By Others) Runoff Area=1.700 ac 0.00% Impervious Runoff Depth=4.16"
Flow Length=263' Tc=6.2 min CN=81 Runoff=12.14 cfs 25,660 cf

Subcatchment B-2: Outlot (By Others) Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=3.95"
Flow Length=274' Tc=21.1 min CN=79 Runoff=7.64 cfs 25,801 cf

Subcatchment C-2: Undetained 2 Runoff Area=0.160 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.13 cfs 2,354 cf

Subcatchment C-3: Undetained 3 Runoff Area=0.290 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=2.04 cfs 4,267 cf

Subcatchment C-4: Undetained 4 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.34 cfs 2,795 cf

Subcatchment C-5: Undetained 5 Runoff Area=0.170 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.20 cfs 2,501 cf

Subcatchment C-6: Undetained 6 Runoff Area=0.050 ac 80.00% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=94 Runoff=0.44 cfs 1,015 cf

Subcatchment C-7: Undetained 7 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.34 cfs 2,795 cf

Subcatchment D-1: North Offsite Bypass Runoff Area=18.480 ac 0.00% Impervious Runoff Depth=5.03"
Flow Length=1,684' Tc=81.9 min CN=89 Runoff=38.79 cfs 337,185 cf

Subcatchment D-2: North Offsite Bypass Runoff Area=10.720 ac 0.00% Impervious Runoff Depth=5.03"
Flow Length=952' Tc=28.1 min CN=89 Runoff=47.37 cfs 195,597 cf

Subcatchment Out A: Outlot A Runoff Area=3.120 ac 85.00% Impervious Runoff Depth=5.71"
Tc=20.0 min CN=95 Runoff=18.08 cfs 64,665 cf

Subcatchment Out B: Outlot B Runoff Area=1.920 ac 85.00% Impervious Runoff Depth=5.71"
Tc=15.0 min CN=95 Runoff=12.79 cfs 39,794 cf

Subcatchment Out C: Outlot C Runoff Area=3.820 ac 85.00% Impervious Runoff Depth=5.71"
Tc=15.0 min CN=95 Runoff=25.45 cfs 79,173 cf

Pond 1P: AG-N Peak Elev=883.27' Storage=320,793 cf Inflow=144.85 cfs 440,475 cf
Primary=4.00 cfs 314,892 cf Secondary=0.00 cfs 0 cf Outflow=4.00 cfs 314,892 cf

Pond 2P: AG-S & UG-S Peak Elev=884.29' Storage=96,191 cf Inflow=56.14 cfs 165,538 cf
Primary=5.19 cfs 165,518 cf Secondary=0.00 cfs 0 cf Outflow=5.19 cfs 165,518 cf

Link 3L: Str. 3.00 Inflow=8.48 cfs 480,410 cf
Primary=8.48 cfs 480,410 cf

Link 4L: Total Site Runoff Inflow=9.08 cfs 496,137 cf
Primary=9.08 cfs 496,137 cf

Total Runoff Area = 2,800,908 sf Runoff Volume = 1,205,983 cf Average Runoff Depth = 5.17"
64.82% Pervious = 1,815,537 sf 35.18% Impervious = 985,371 sf

Summary for Subcatchment A-1: Meijer Site

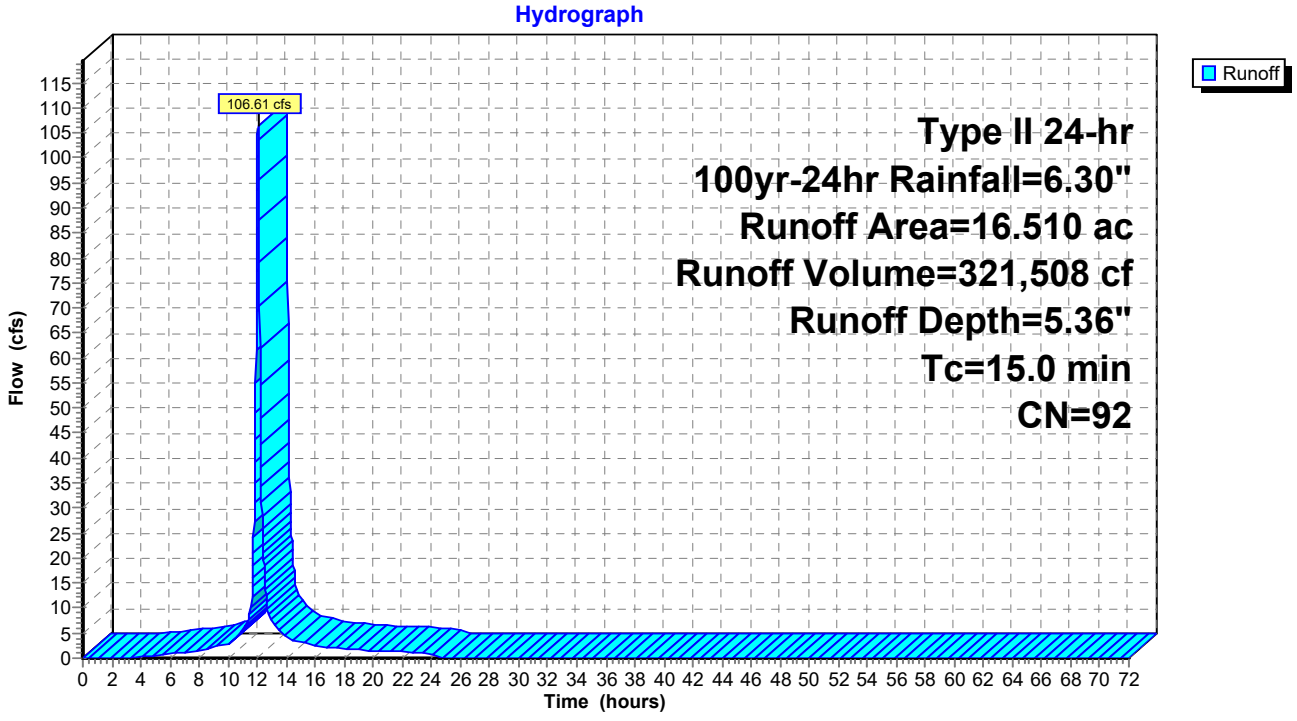
Runoff = 106.61 cfs @ 12.06 hrs, Volume= 321,508 cf, Depth= 5.36"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
11.460	98	Paved parking, HSG D
5.050	80	>75% Grass cover, Good, HSG D
16.510	92	Weighted Average
5.050	80	30.59% Pervious Area
11.460	98	69.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment A-1: Meijer Site



Summary for Subcatchment A-2: Meijer Site

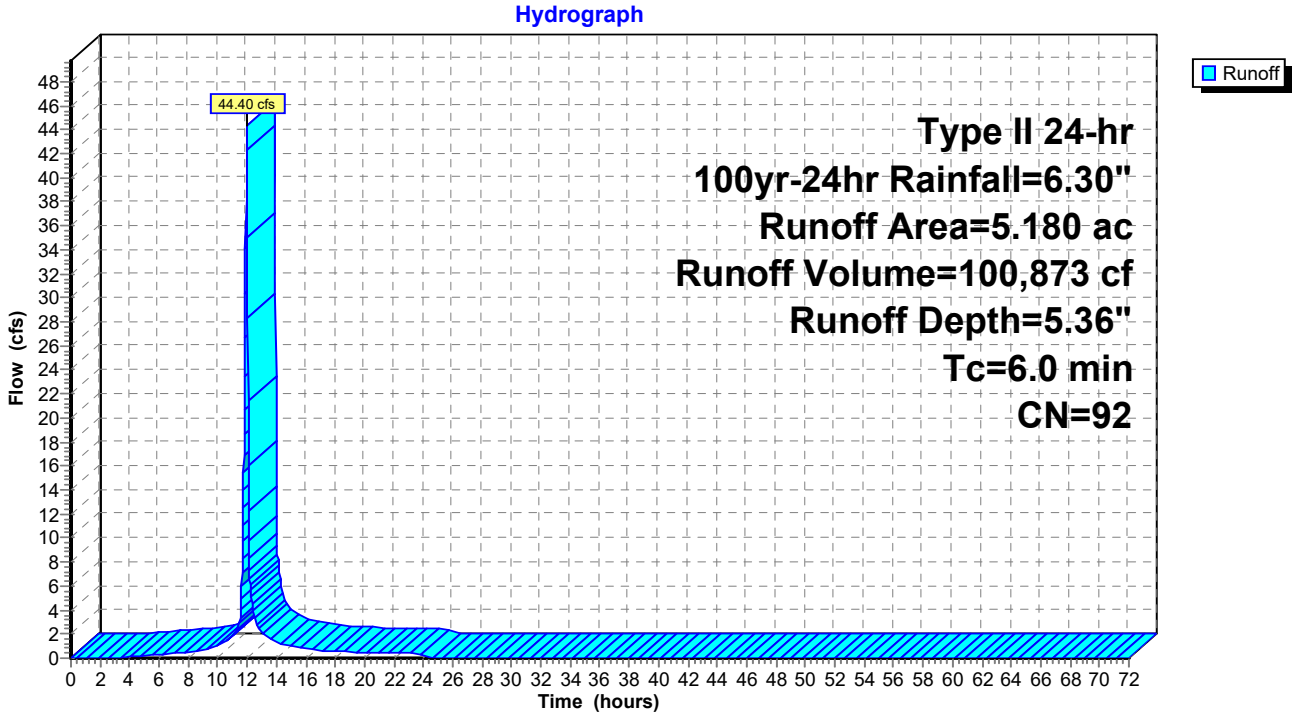
Runoff = 44.40 cfs @ 11.97 hrs, Volume= 100,873 cf, Depth= 5.36"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
3.590	98	Paved parking, HSG D
1.590	80	>75% Grass cover, Good, HSG D
5.180	92	Weighted Average
1.590	80	30.69% Pervious Area
3.590	98	69.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment A-2: Meijer Site



Summary for Subcatchment B-1: Outlot (By Others)

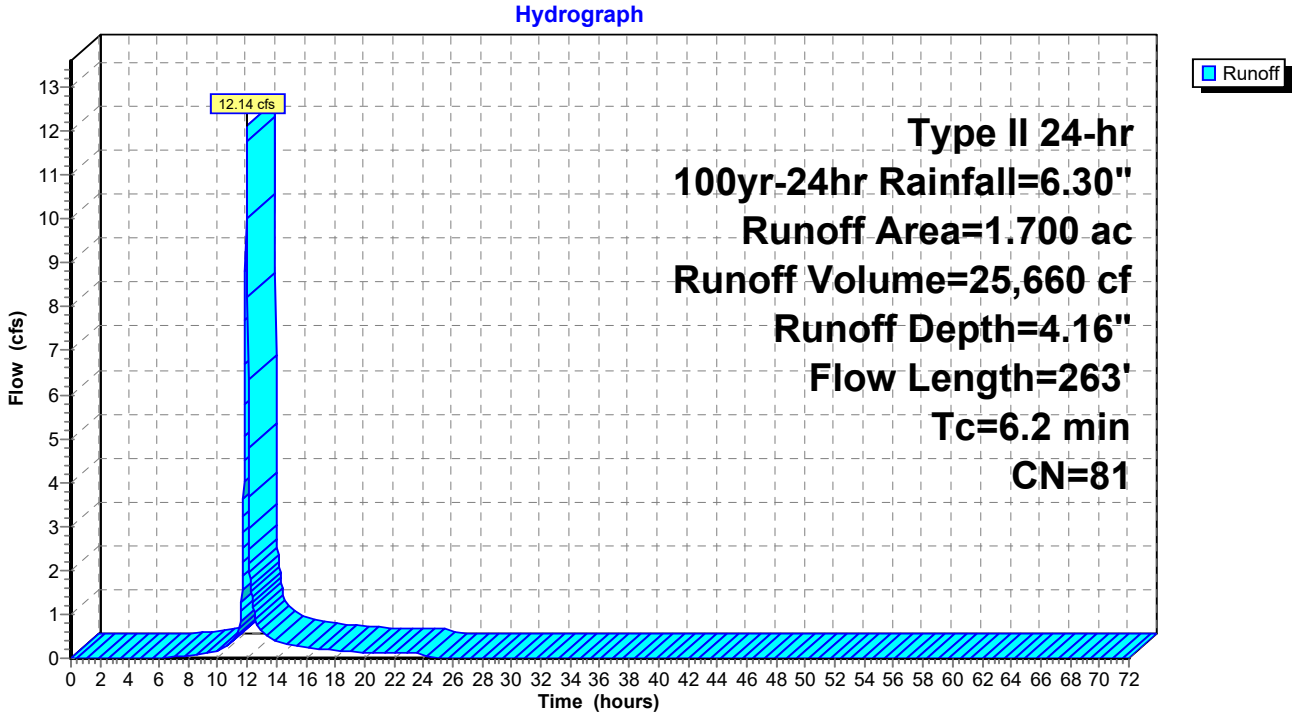
Runoff = 12.14 cfs @ 11.97 hrs, Volume= 25,660 cf, Depth= 4.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

	Area (ac)	CN	Description
*	1.000	78	Row crops, straight row, Good, HSG B
	0.700	85	Row crops, straight row, Good, HSG C
	1.700	81	Weighted Average
	1.700	81	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	100	0.0327	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
2.8	163	0.0113	0.96		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
6.2	263	Total			

Subcatchment B-1: Outlot (By Others)



Summary for Subcatchment B-2: Outlot (By Others)

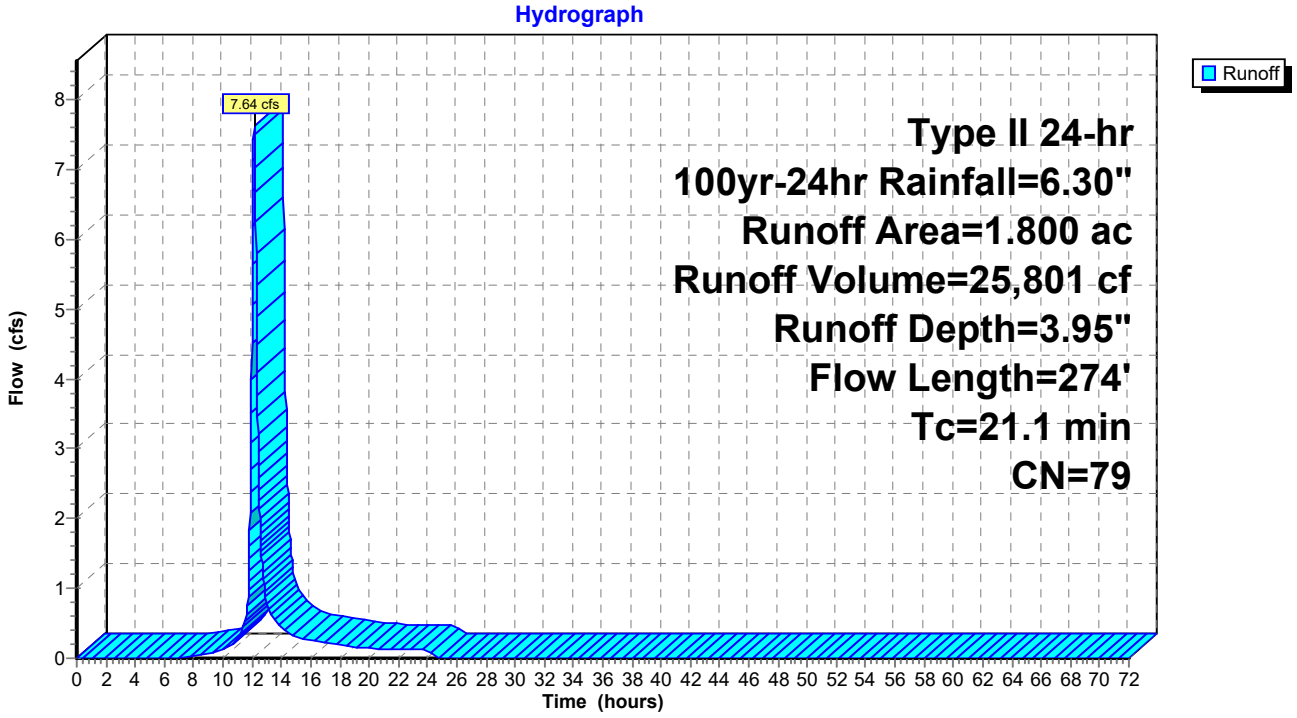
Runoff = 7.64 cfs @ 12.13 hrs, Volume= 25,801 cf, Depth= 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

	Area (ac)	CN	Description
*	1.500	78	Row crops, straight row, Good, HSG B
	0.300	85	Row crops, straight row, Good, HSG C
	1.800	79	Weighted Average
	1.800	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.0130	0.33		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
16.1	174	0.0004	0.18		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
21.1	274	Total			

Subcatchment B-2: Outlot (By Others)



Summary for Subcatchment C-2: Undetained 2

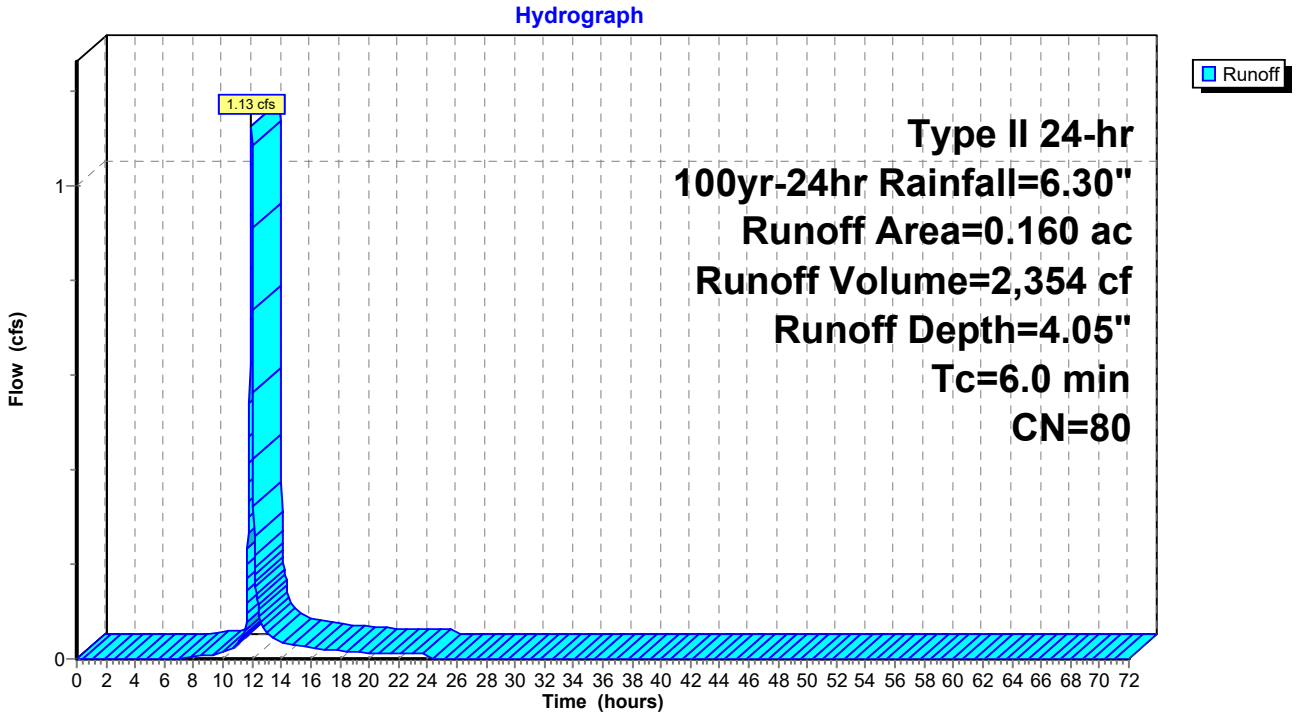
Runoff = 1.13 cfs @ 11.97 hrs, Volume= 2,354 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.160	80	>75% Grass cover, Good, HSG D
0.160	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-2: Undetained 2



Summary for Subcatchment C-3: Undetained 3

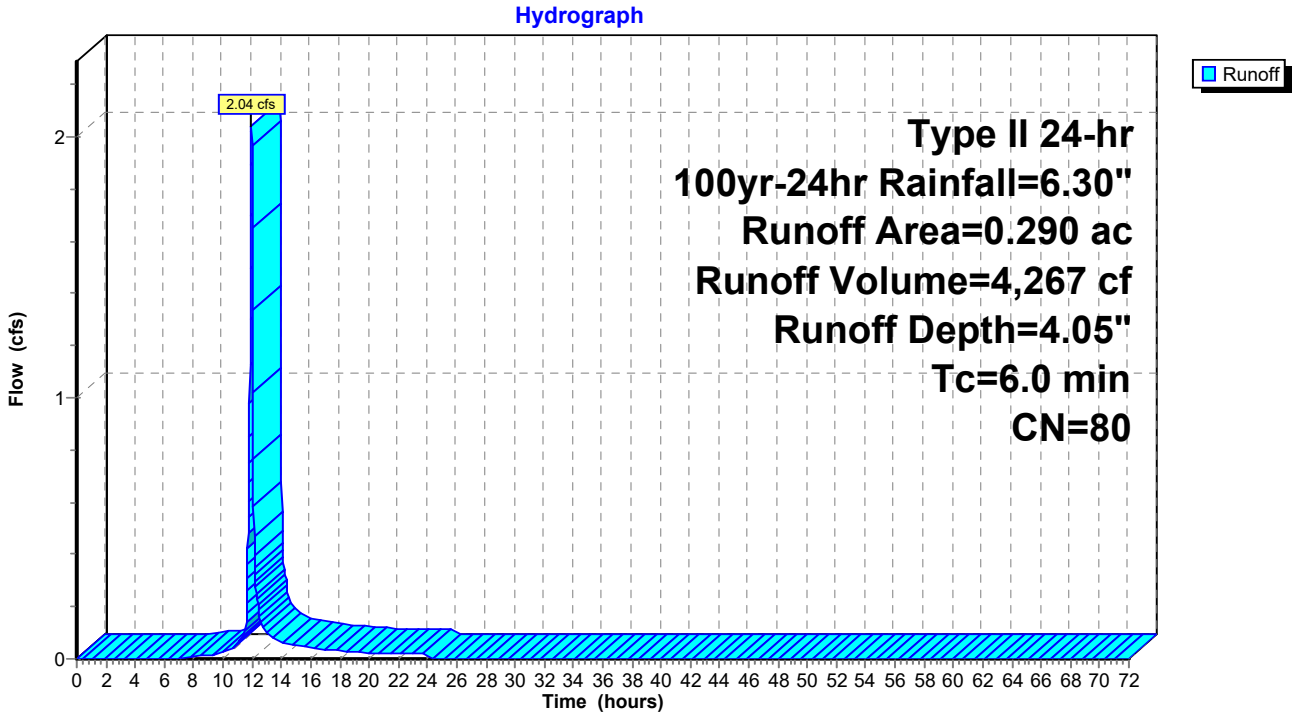
Runoff = 2.04 cfs @ 11.97 hrs, Volume= 4,267 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.290	80	>75% Grass cover, Good, HSG D
0.290	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-3: Undetained 3



Summary for Subcatchment C-4: Undetained 4

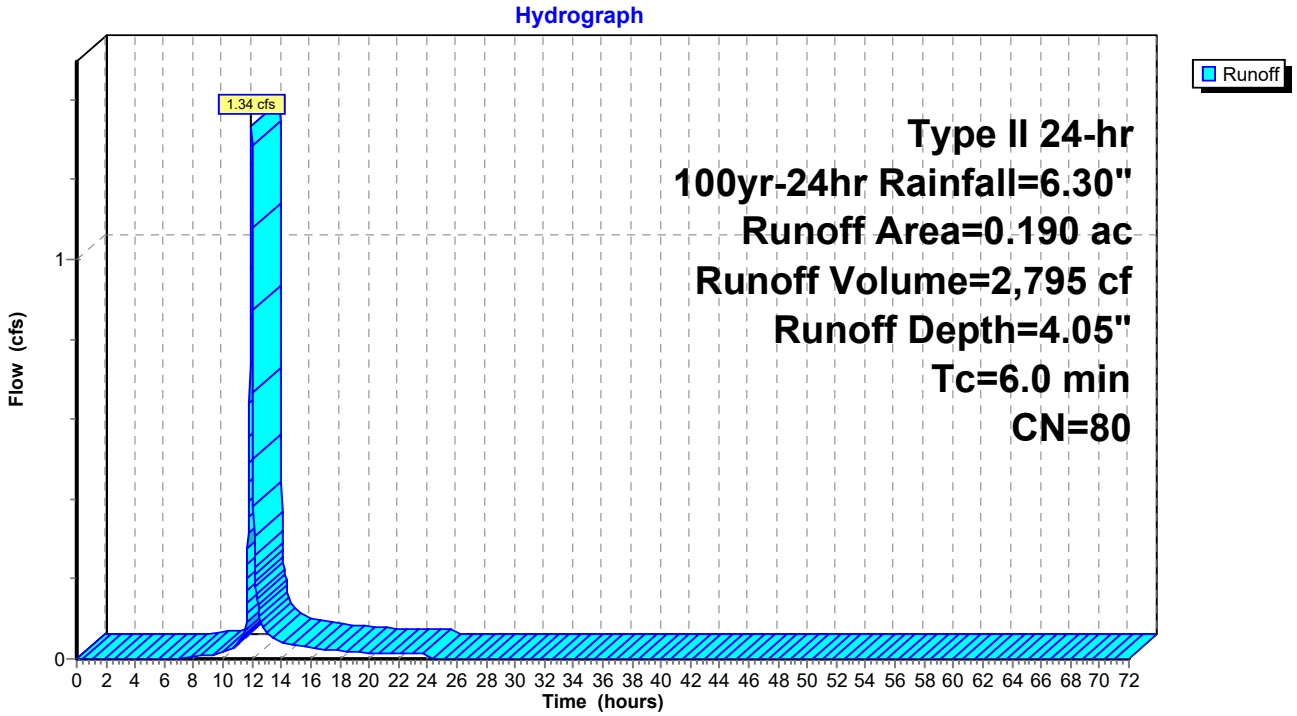
Runoff = 1.34 cfs @ 11.97 hrs, Volume= 2,795 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-4: Undetained 4



Summary for Subcatchment C-5: Undetained 5

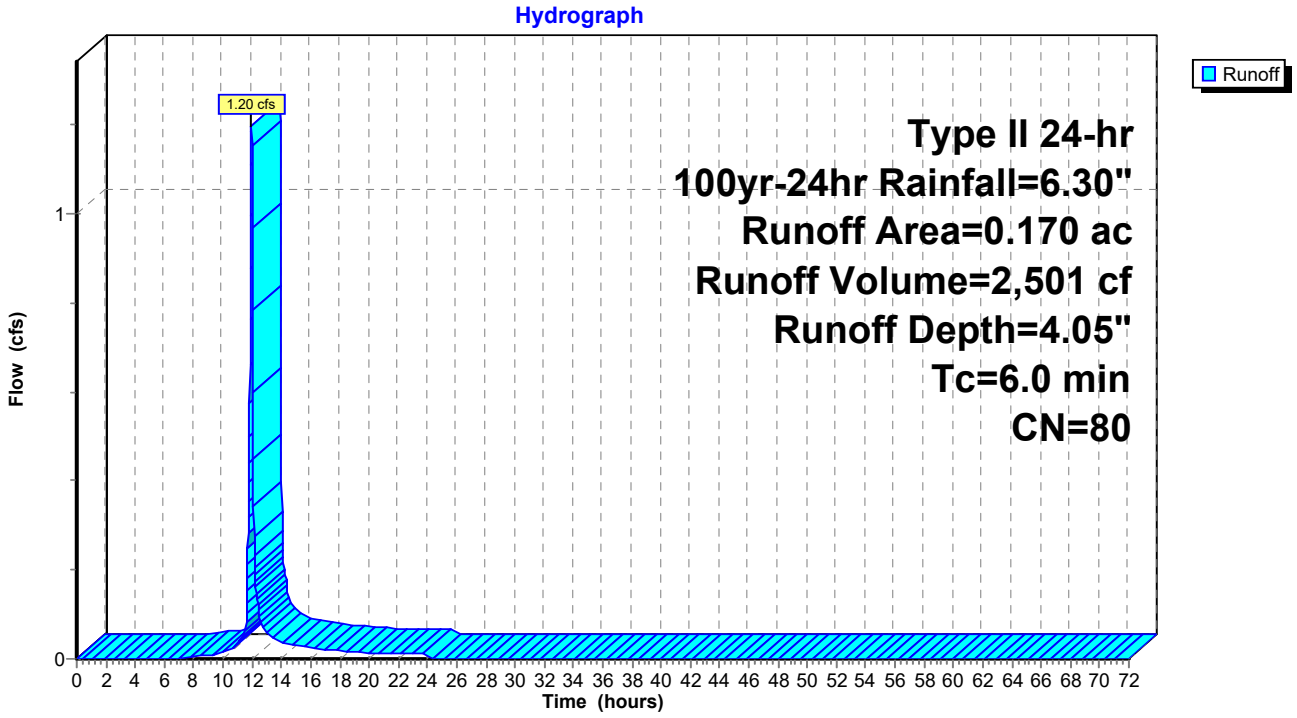
Runoff = 1.20 cfs @ 11.97 hrs, Volume= 2,501 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.170	80	>75% Grass cover, Good, HSG D
0.170	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-5: Undetained 5



Summary for Subcatchment C-6: Undetained 6

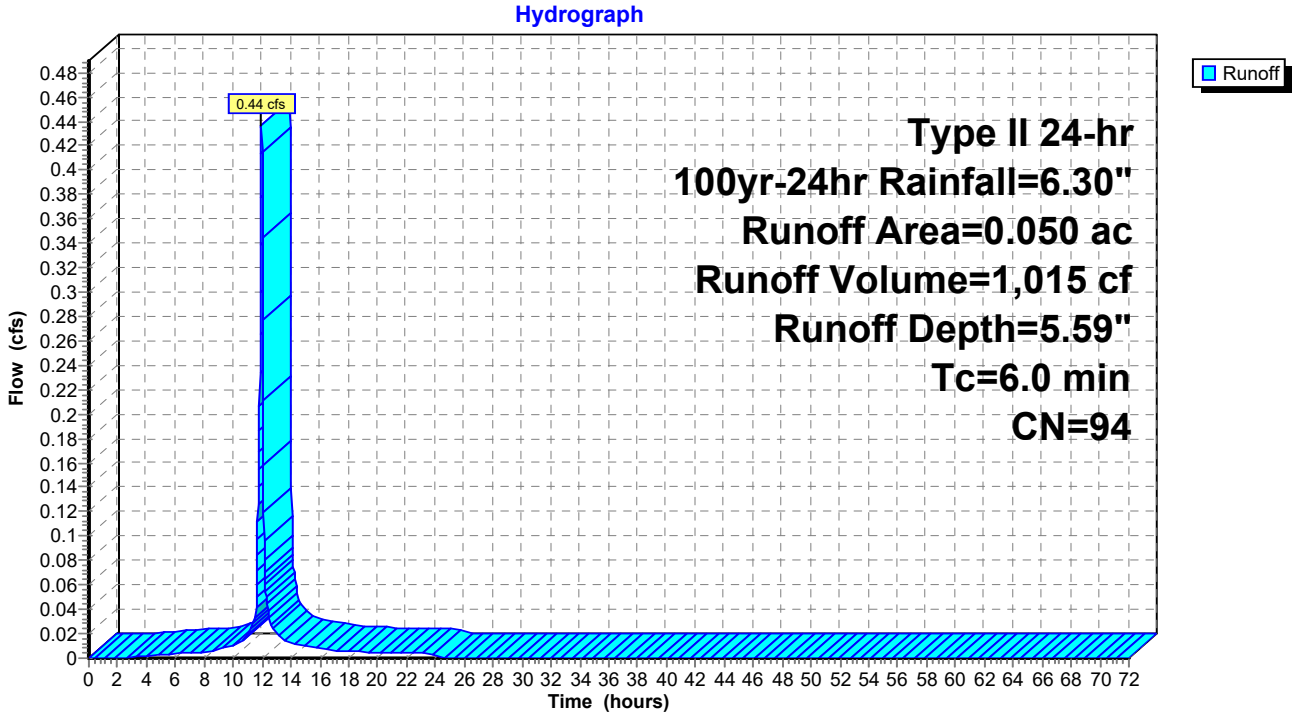
Runoff = 0.44 cfs @ 11.97 hrs, Volume= 1,015 cf, Depth= 5.59"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.040	98	Paved parking, HSG D
0.010	80	>75% Grass cover, Good, HSG D
0.050	94	Weighted Average
0.010	80	20.00% Pervious Area
0.040	98	80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-6: Undetained 6



Summary for Subcatchment C-7: Undetained 7

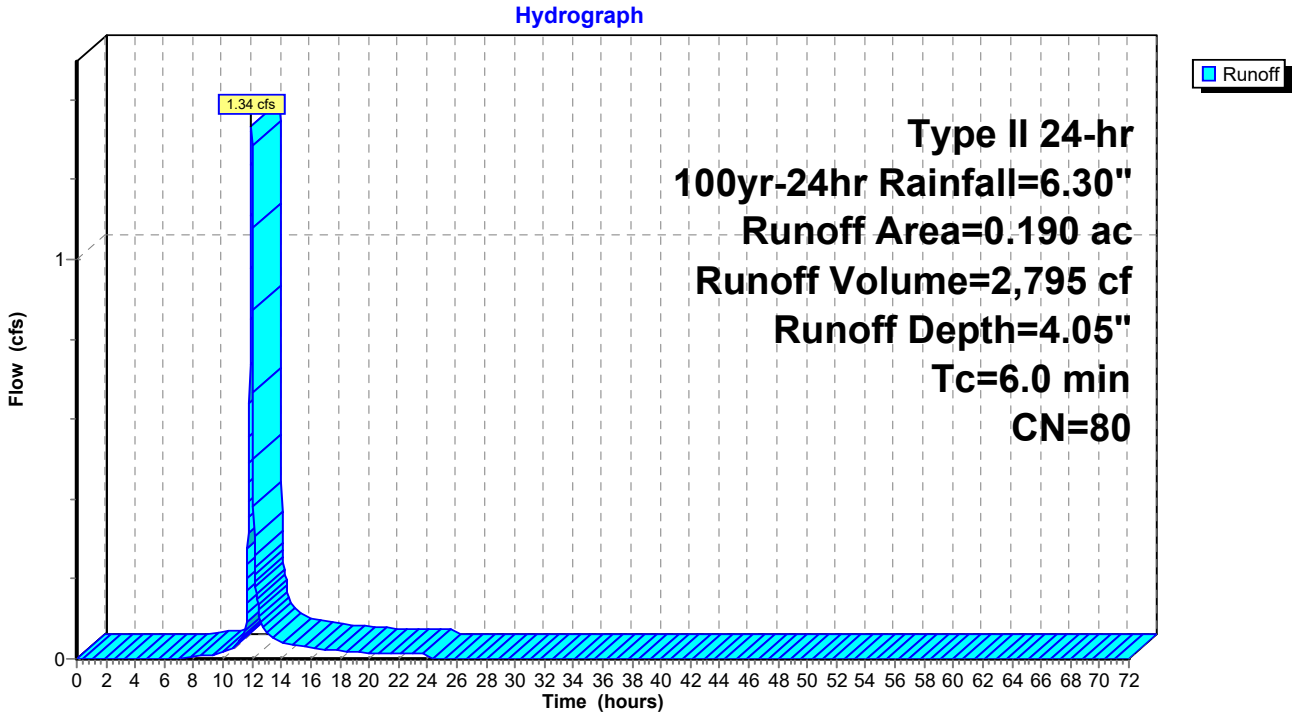
Runoff = 1.34 cfs @ 11.97 hrs, Volume= 2,795 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-7: Undetained 7



Summary for Subcatchment D-1: North Offsite Bypass

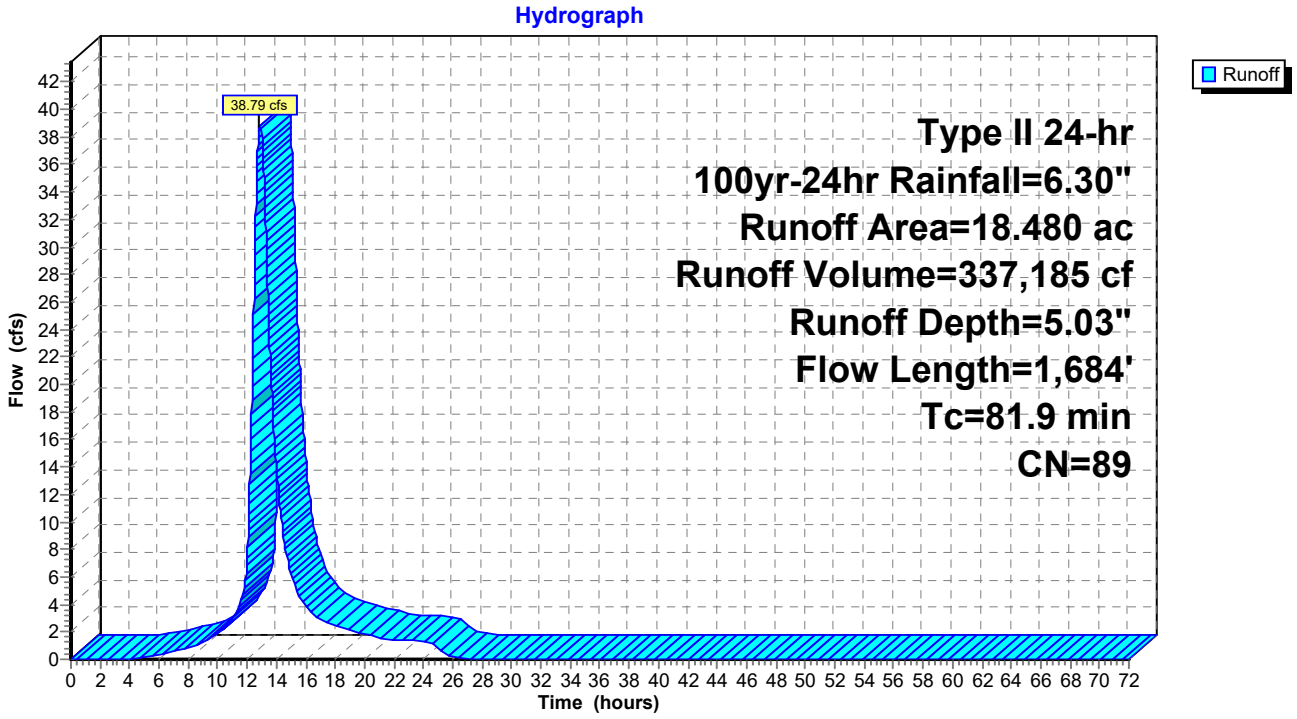
Runoff = 38.79 cfs @ 12.85 hrs, Volume= 337,185 cf, Depth= 5.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
18.480	89	Row crops, straight row, Good, HSG D
18.480	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0075	0.27		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
75.7	1,584	0.0015	0.35		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
81.9	1,684	Total			

Subcatchment D-1: North Offsite Bypass



Summary for Subcatchment D-2: North Offsite Bypass

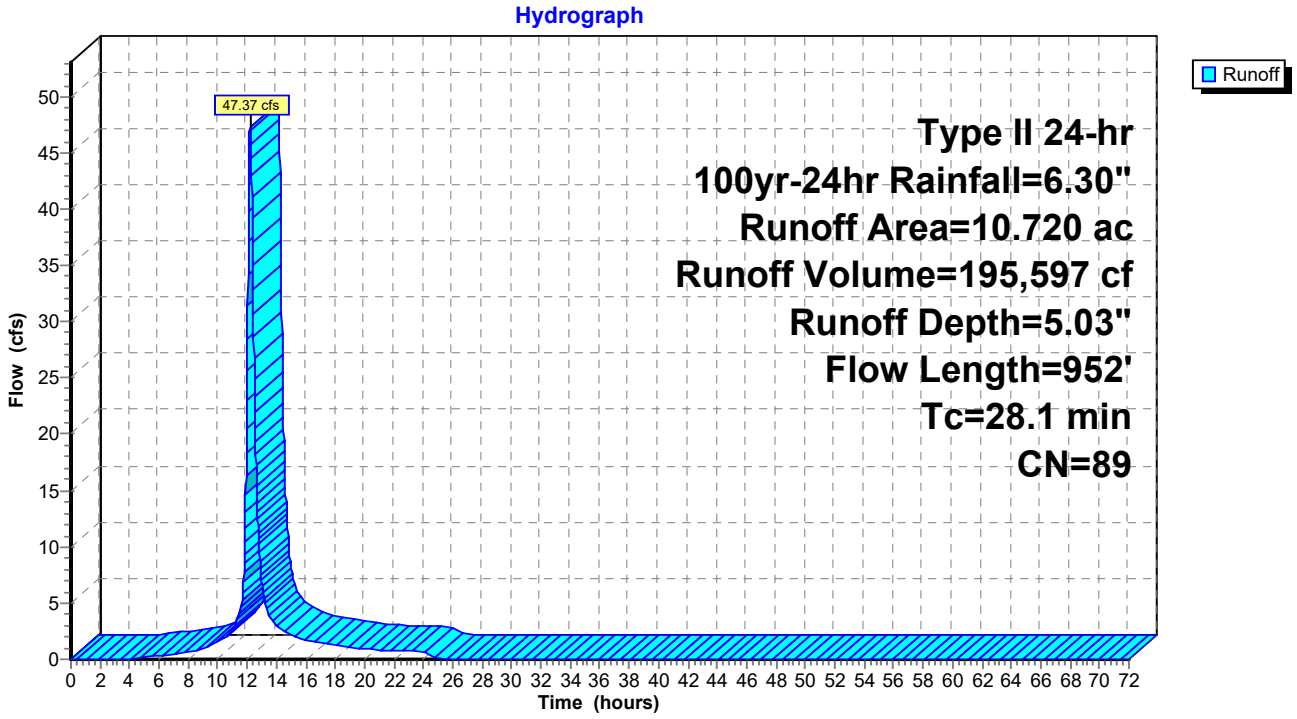
Runoff = 47.37 cfs @ 12.21 hrs, Volume= 195,597 cf, Depth= 5.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
10.720	89	Row crops, straight row, Good, HSG D
10.720	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0090	0.29		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
22.3	852	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
28.1	952	Total			

Subcatchment D-2: North Offsite Bypass



Summary for Subcatchment Out A: Outlot A

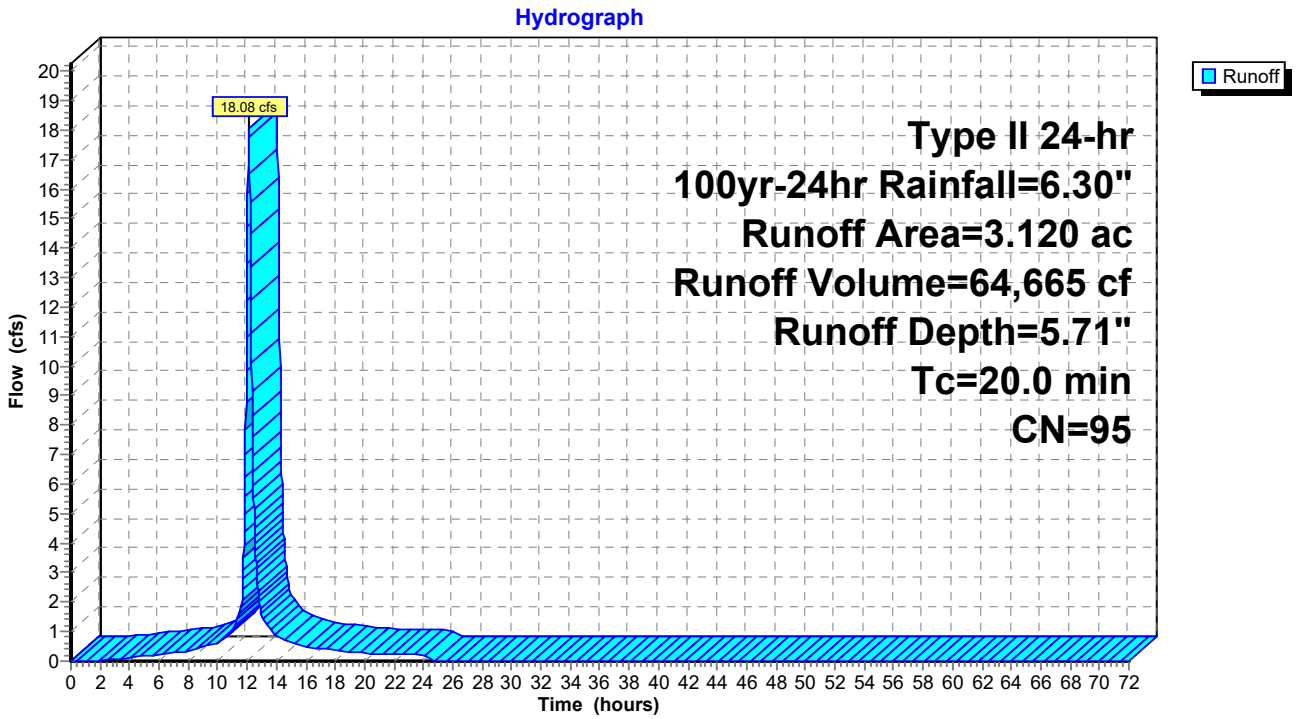
Runoff = 18.08 cfs @ 12.12 hrs, Volume= 64,665 cf, Depth= 5.71"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
3.120	95	Urban commercial, 85% imp, HSG D
0.468	78	15.00% Pervious Area
2.652	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0					**Direct Entry,**

Subcatchment Out A: Outlot A



Summary for Subcatchment Out B: Outlot B

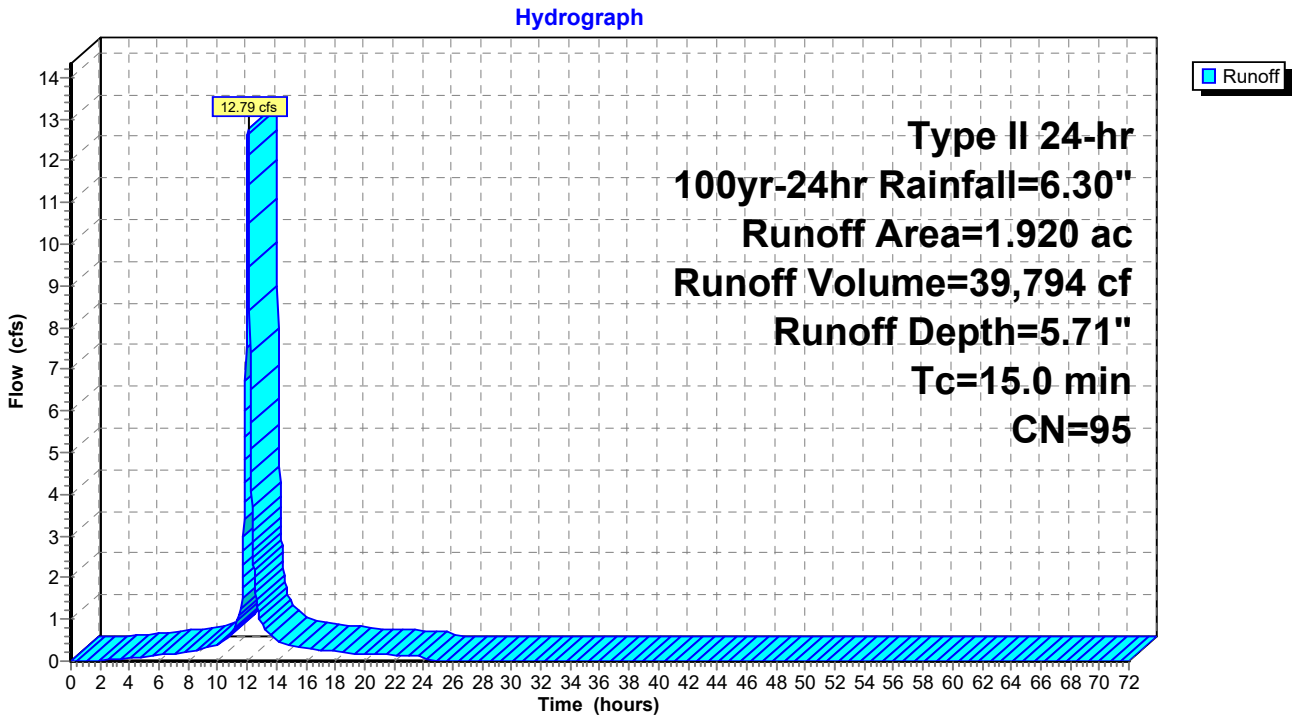
Runoff = 12.79 cfs @ 12.06 hrs, Volume= 39,794 cf, Depth= 5.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
1.920	95	Urban commercial, 85% imp, HSG D
0.288	78	15.00% Pervious Area
1.632	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out B: Outlot B



Summary for Subcatchment Out C: Outlot C

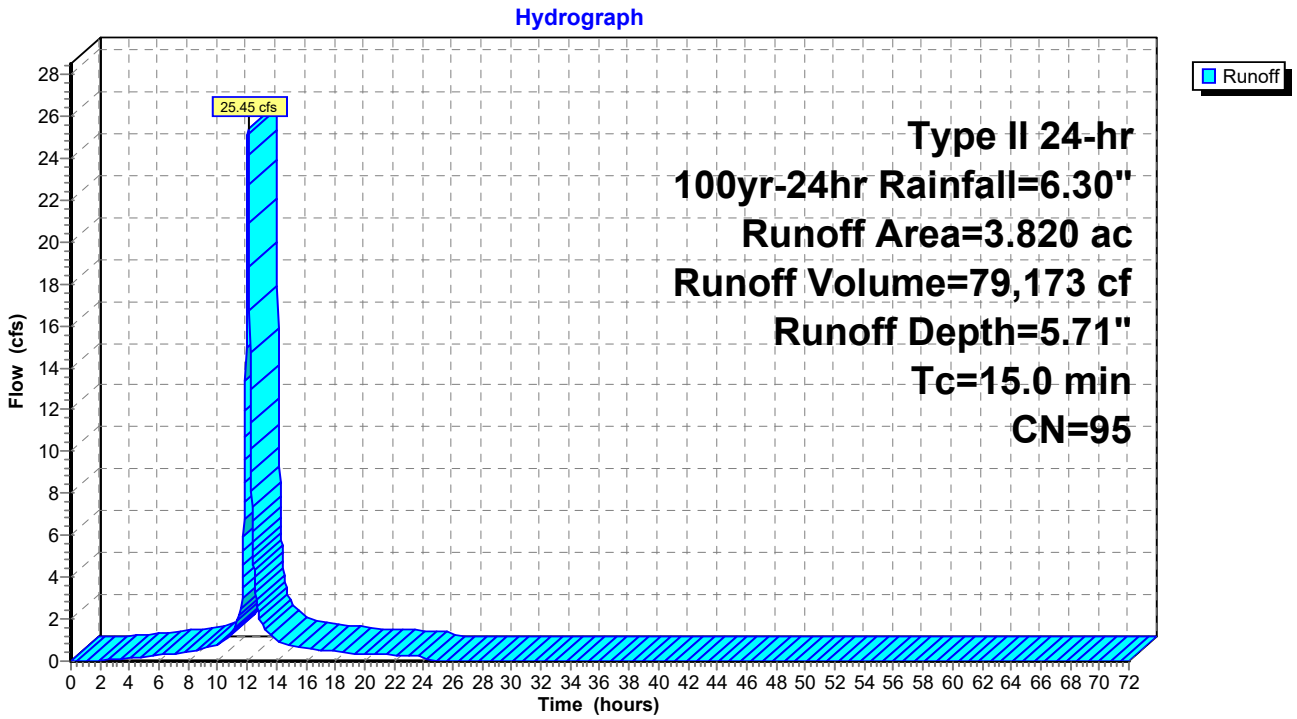
Runoff = 25.45 cfs @ 12.06 hrs, Volume= 79,173 cf, Depth= 5.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
3.820	95	Urban commercial, 85% imp, HSG D
0.573	78	15.00% Pervious Area
3.247	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out C: Outlot C



Summary for Pond 1P: AG-N

Inflow Area = 969,210 sf, 73.43% Impervious, Inflow Depth = 5.45" for 100yr-24hr event
Inflow = 144.85 cfs @ 12.06 hrs, Volume= 440,475 cf
Outflow = 4.00 cfs @ 15.40 hrs, Volume= 314,892 cf, Atten= 97%, Lag= 200.3 min
Primary = 4.00 cfs @ 15.40 hrs, Volume= 314,892 cf
Routed to Link 3L : Str. 3.00
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 883.27' @ 15.40 hrs Surf.Area= 80,290 sf Storage= 320,793 cf

Plug-Flow detention time= 1,199.9 min calculated for 314,804 cf (71% of inflow)
Center-of-Mass det. time= 1,106.9 min (1,883.8 - 776.9)

Volume	Invert	Avail.Storage	Storage Description
#1	877.29'	573,880 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

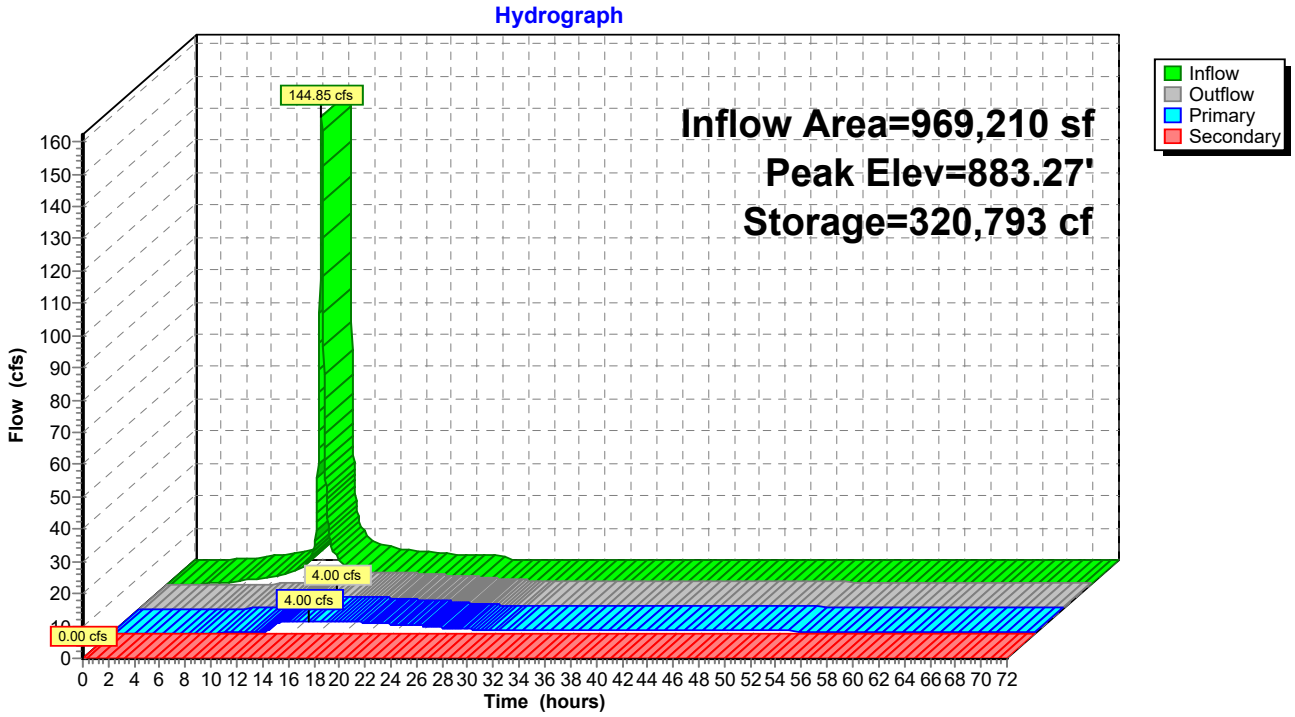
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.29	33,121	1,437.0	0	0	33,121
878.00	37,072	1,579.0	24,905	24,905	67,219
879.00	42,856	1,793.0	39,929	64,834	124,667
880.00	49,752	2,010.0	46,261	111,096	190,366
881.00	57,879	2,227.0	53,764	164,860	263,563
882.00	67,238	2,444.0	62,500	227,360	344,257
883.00	77,811	2,659.0	72,460	299,820	431,602
884.00	87,356	2,779.0	82,537	382,358	483,602
884.64	92,754	2,793.0	57,627	439,984	490,061
885.00	95,775	2,800.0	33,934	473,918	493,335
886.00	104,208	2,819.0	99,962	573,880	502,283

Device	Routing	Invert	Outlet Devices
#1	Primary	877.29'	**12.0" Round Culvert** L= 24.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.29' / 877.22' S= 0.0029 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	877.29'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.14'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	884.54'	**110.0' long + 3.0 '/' SideZ x 26.2' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.00 cfs @ 15.40 hrs HW=883.27' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 4.00 cfs of 8.85 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 1.01 cfs @ 11.60 fps)
└**3=Orifice/Grate** (Orifice Controls 2.99 cfs @ 3.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=877.29' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: AG-N


Hydrograph
Inflow Area=969,210 sf
Peak Elev=883.27'
Storage=320,793 cf
144.85 cfs
4.00 cfs
4.00 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond 2P: AG-S & UG-S

Inflow Area = 361,548 sf, 75.20% Impervious, Inflow Depth = 5.49" for 100yr-24hr event
Inflow = 56.14 cfs @ 11.98 hrs, Volume= 165,538 cf
Outflow = 5.19 cfs @ 12.70 hrs, Volume= 165,518 cf, Atten= 91%, Lag= 43.3 min
Primary = 5.19 cfs @ 12.70 hrs, Volume= 165,518 cf
Routed to Link 3L : Str. 3.00
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 884.29' @ 12.70 hrs Surf.Area= 21,848 sf Storage= 96,191 cf

Plug-Flow detention time= 678.6 min calculated for 165,472 cf (100% of inflow)
Center-of-Mass det. time= 679.0 min (1,451.1 - 772.0)

Volume	Invert	Avail.Storage	Storage Description
#1	877.38'	43,614 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
#2A	877.53'	22,031 cf	**80.00'W x 180.82'L x 7.00'H Underground Detention** 101,259 cf Overall - 46,183 cf Embedded = 55,076 cf x 40.0% Voids
#3A	878.03'	46,183 cf	**CMP Round 72** x 9 Inside #2 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +152.82' x 28.27 sf x 9 rows 78.00' Header x 28.27 sf x 1 = 2,205.4 cf Inside
		111,827 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.38	1,605	205.0	0	0	1,605
878.00	2,000	220.0	1,115	1,115	2,129
879.00	2,697	245.0	2,340	3,455	3,083
880.00	3,462	265.0	3,072	6,527	3,934
881.00	4,284	284.0	3,866	10,392	4,808
882.00	5,163	303.0	4,717	15,109	5,743
883.00	6,098	321.0	5,624	20,733	6,690
884.00	7,090	340.0	6,588	27,321	7,742
885.00	8,138	359.0	7,608	34,929	8,855
885.90	9,130	376.0	7,766	42,695	9,903
886.00	9,248	378.0	919	43,614	10,029

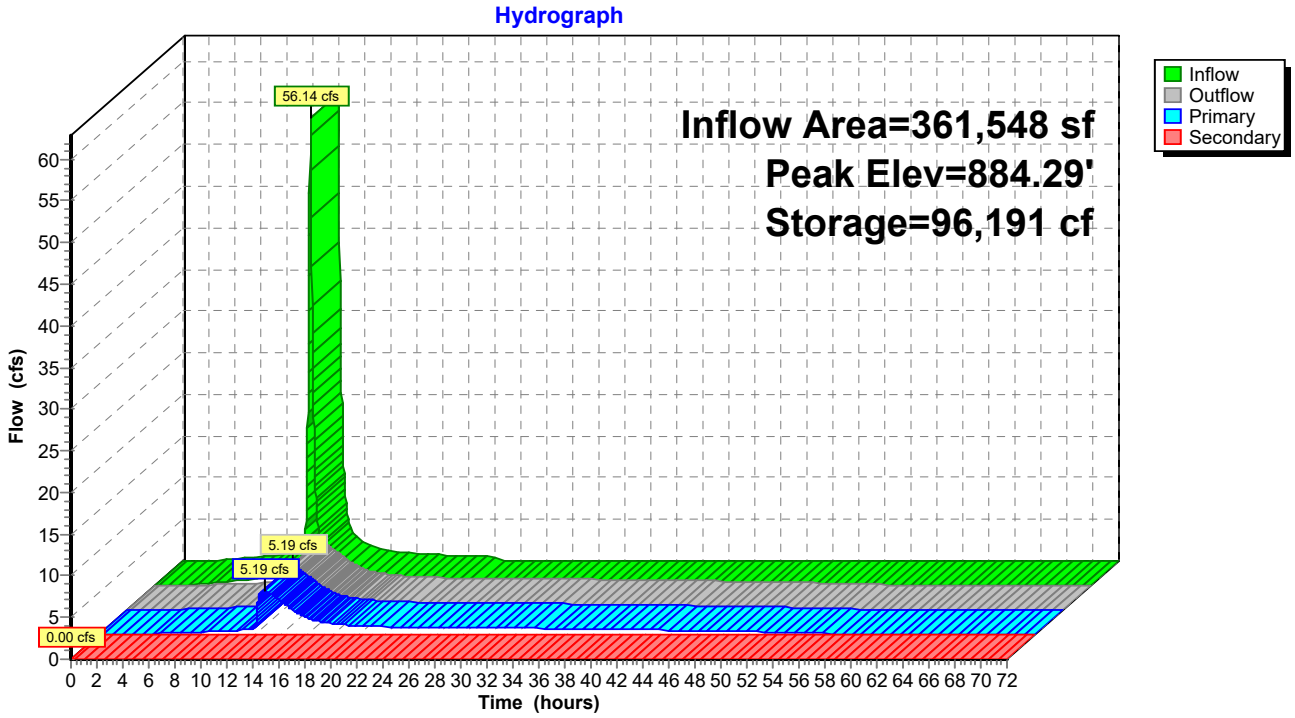
Device	Routing	Invert	Outlet Devices
#1	Primary	877.38'	**15.0" Round Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.38' / 877.22' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	877.38'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.61'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	885.40'	**25.0' long + 3.0 '/' SideZ x 53.8' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.19 cfs @ 12.70 hrs HW=884.29' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 5.19 cfs of 14.81 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 1.09 cfs @ 12.50 fps)
└**3=Orifice/Grate** (Orifice Controls 4.10 cfs @ 5.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=877.38' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 2P: AG-S & UG-S

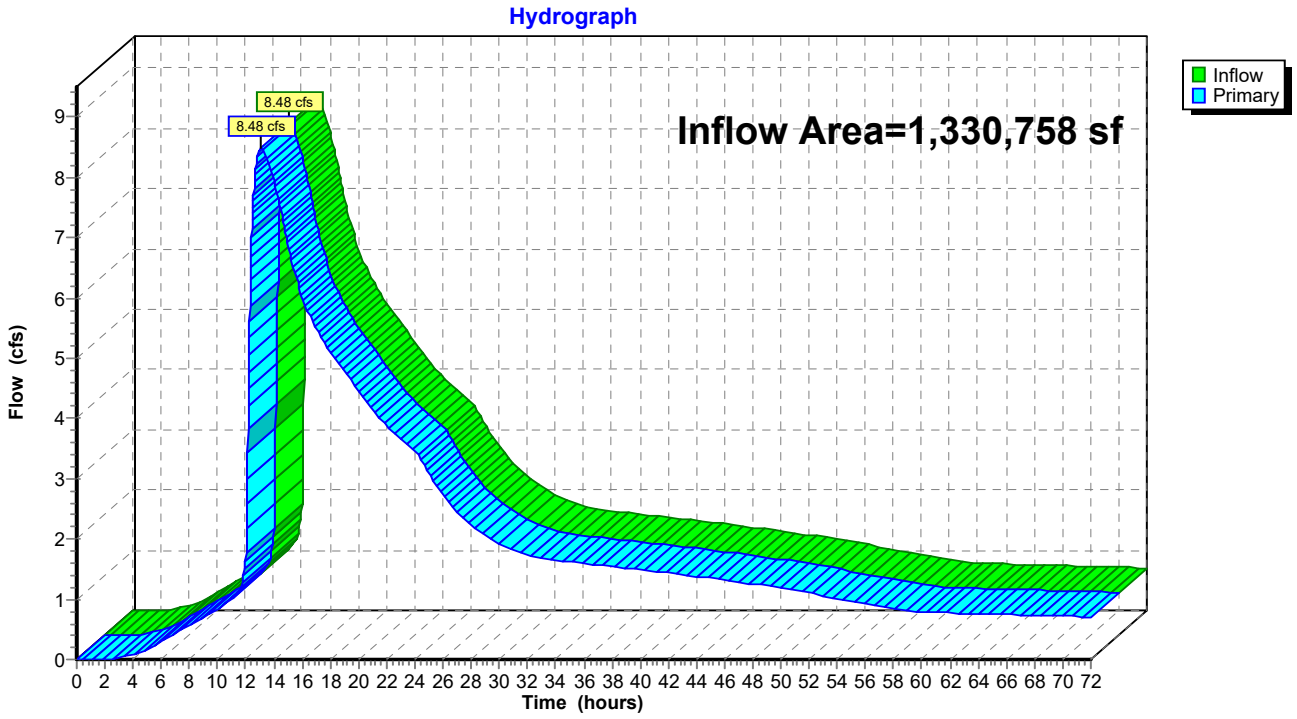


Summary for Link 3L: Str. 3.00

Inflow Area = 1,330,758 sf, 73.91% Impervious, Inflow Depth > 4.33" for 100yr-24hr event
Inflow = 8.48 cfs @ 13.10 hrs, Volume= 480,410 cf
Primary = 8.48 cfs @ 13.10 hrs, Volume= 480,410 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Total Site Runoff

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 3L: Str. 3.00

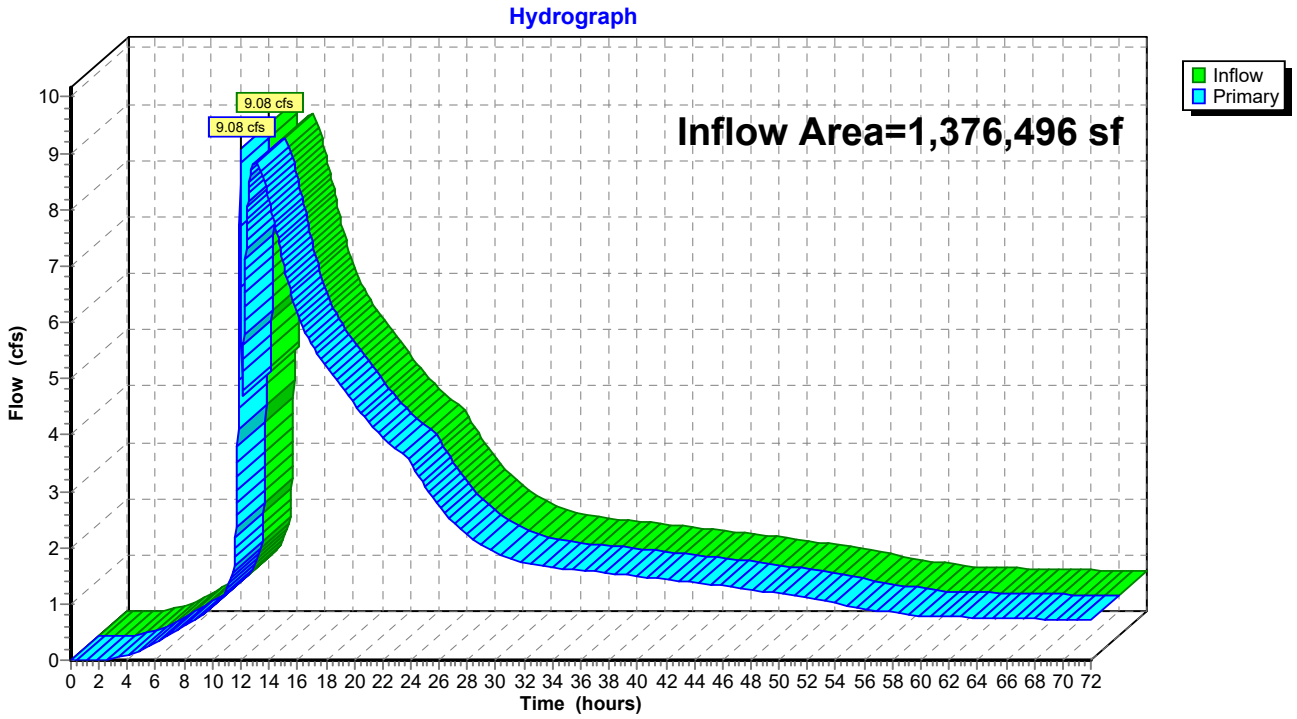


Summary for Link 4L: Total Site Runoff

Inflow Area = 1,376,496 sf, 71.59% Impervious, Inflow Depth > 4.33" for 100yr-24hr event
Inflow = 9.08 cfs @ 11.97 hrs, Volume= 496,137 cf
Primary = 9.08 cfs @ 11.97 hrs, Volume= 496,137 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 4L: Total Site Runoff



1.2 – HydroCAD INPUTS AND RESULTS – ONSITE & OFFSITE RUNOFF

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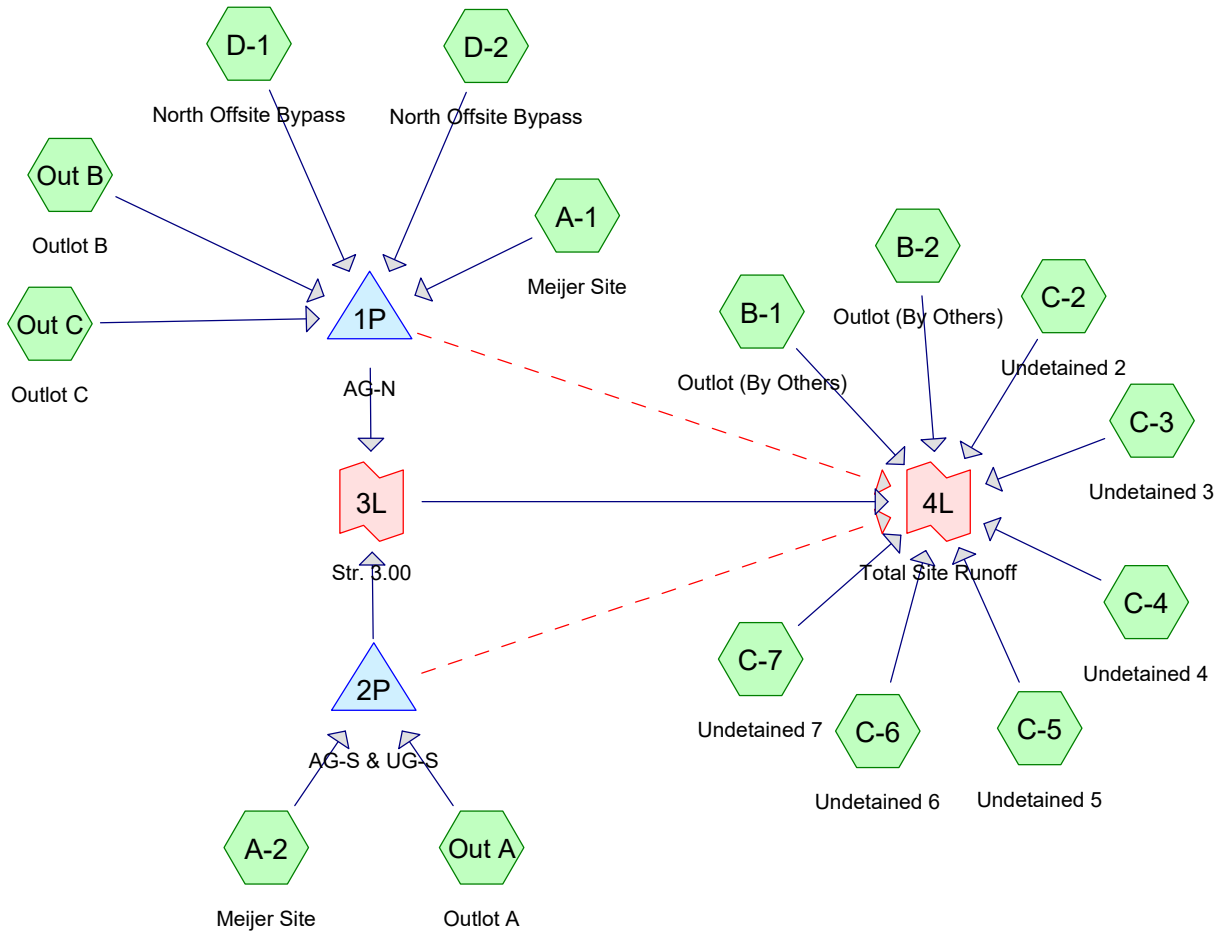


Subcat Reach Pond Link

Routing Diagram for Meijer ABE SWM
Prepared by Woolpert, Inc, Printed 1/10/2025
HydroCAD® 10.20-5c s/n 00728 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	10yr-24hr	Type II 24-hr		Default	24.00	1	4.28	2
2	100yr-24hr	Type II 24-hr		Default	24.00	1	6.30	2

Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A-1: Meijer Site Runoff Area=16.510 ac 69.41% Impervious Runoff Depth=3.39"
Tc=15.0 min CN=92 Runoff=69.11 cfs 203,077 cf

Subcatchment A-2: Meijer Site Runoff Area=5.180 ac 69.31% Impervious Runoff Depth=3.39"
Tc=6.0 min CN=92 Runoff=28.92 cfs 63,715 cf

Subcatchment B-1: Outlot (By Others) Runoff Area=1.700 ac 0.00% Impervious Runoff Depth=2.36"
Flow Length=263' Tc=6.2 min CN=81 Runoff=7.05 cfs 14,557 cf

Subcatchment B-2: Outlot (By Others) Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=2.19"
Flow Length=274' Tc=21.1 min CN=79 Runoff=4.25 cfs 14,330 cf

Subcatchment C-2: Undetained 2 Runoff Area=0.160 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.65 cfs 1,321 cf

Subcatchment C-3: Undetained 3 Runoff Area=0.290 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=1.17 cfs 2,395 cf

Subcatchment C-4: Undetained 4 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.77 cfs 1,569 cf

Subcatchment C-5: Undetained 5 Runoff Area=0.170 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.69 cfs 1,404 cf

Subcatchment C-6: Undetained 6 Runoff Area=0.050 ac 80.00% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=94 Runoff=0.29 cfs 653 cf

Subcatchment C-7: Undetained 7 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=80 Runoff=0.77 cfs 1,569 cf

Subcatchment D-1: North Offsite Bypass Runoff Area=18.480 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=1,684' Tc=81.9 min CN=89 Runoff=24.12 cfs 207,069 cf

Subcatchment D-2: North Offsite Bypass Runoff Area=10.720 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=952' Tc=28.1 min CN=89 Runoff=29.65 cfs 120,118 cf

Subcatchment Out A: Outlot A Runoff Area=3.120 ac 85.00% Impervious Runoff Depth=3.71"
Tc=20.0 min CN=95 Runoff=12.01 cfs 41,988 cf

Subcatchment Out B: Outlot B Runoff Area=1.920 ac 85.00% Impervious Runoff Depth=3.71"
Tc=15.0 min CN=95 Runoff=8.50 cfs 25,839 cf

Subcatchment Out C: Outlot C Runoff Area=3.820 ac 85.00% Impervious Runoff Depth=3.71"
Tc=15.0 min CN=95 Runoff=16.92 cfs 51,408 cf

Pond 1P: AG-N Peak Elev=884.48' Storage=425,157 cf Inflow=122.04 cfs 607,511 cf
Primary=6.24 cfs 467,517 cf Secondary=0.00 cfs 0 cf Outflow=6.24 cfs 467,517 cf

Pond 2P: AG-S & UG-S Peak Elev=882.61' Storage=70,517 cf Inflow=36.68 cfs 105,703 cf
Primary=0.95 cfs 105,686 cf Secondary=0.00 cfs 0 cf Outflow=0.95 cfs 105,686 cf

Link 3L: Str. 3.00 Inflow=7.19 cfs 573,203 cf
Primary=7.19 cfs 573,203 cf

Link 4L: Total Site Runoff Inflow=15.13 cfs 611,002 cf
Primary=15.13 cfs 611,002 cf

Total Runoff Area = 2,800,908 sf Runoff Volume = 751,012 cf Average Runoff Depth = 3.22"
64.82% Pervious = 1,815,537 sf 35.18% Impervious = 985,371 sf

Summary for Subcatchment A-1: Meijer Site

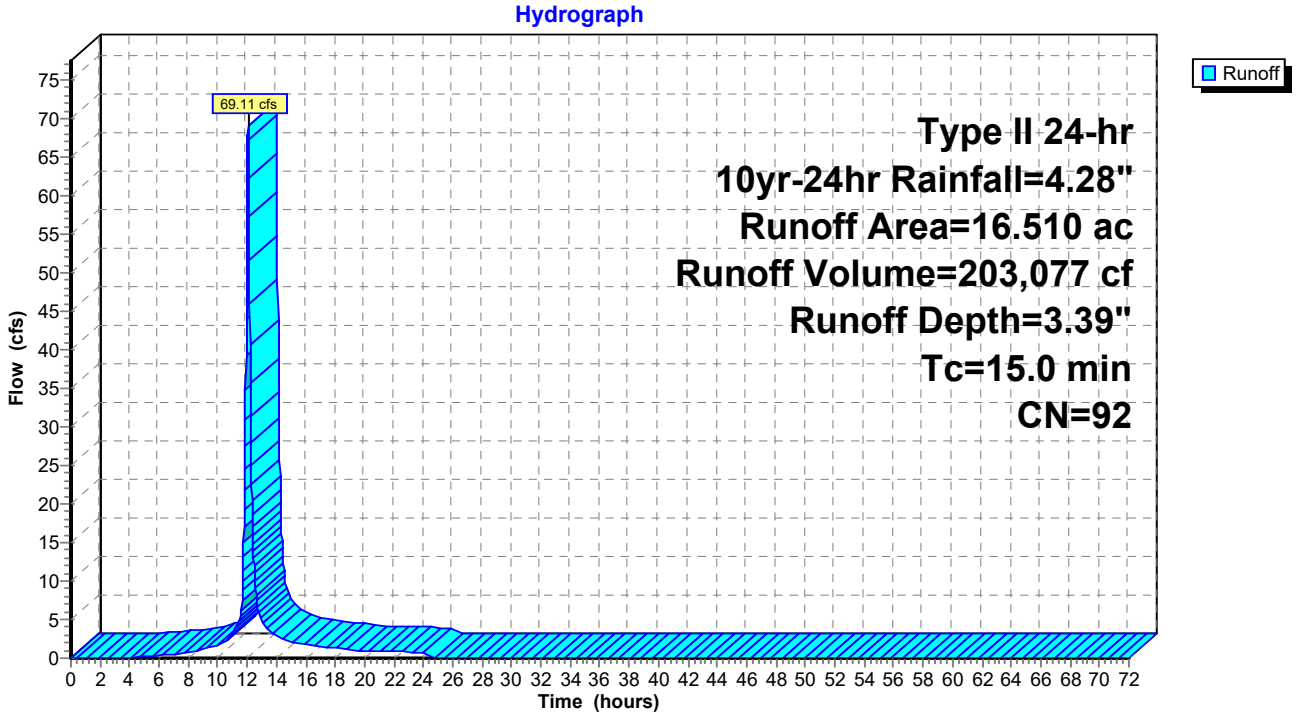
Runoff = 69.11 cfs @ 12.06 hrs, Volume= 203,077 cf, Depth= 3.39"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
11.460	98	Paved parking, HSG D
5.050	80	>75% Grass cover, Good, HSG D
16.510	92	Weighted Average
5.050	80	30.59% Pervious Area
11.460	98	69.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment A-1: Meijer Site



Summary for Subcatchment A-2: Meijer Site

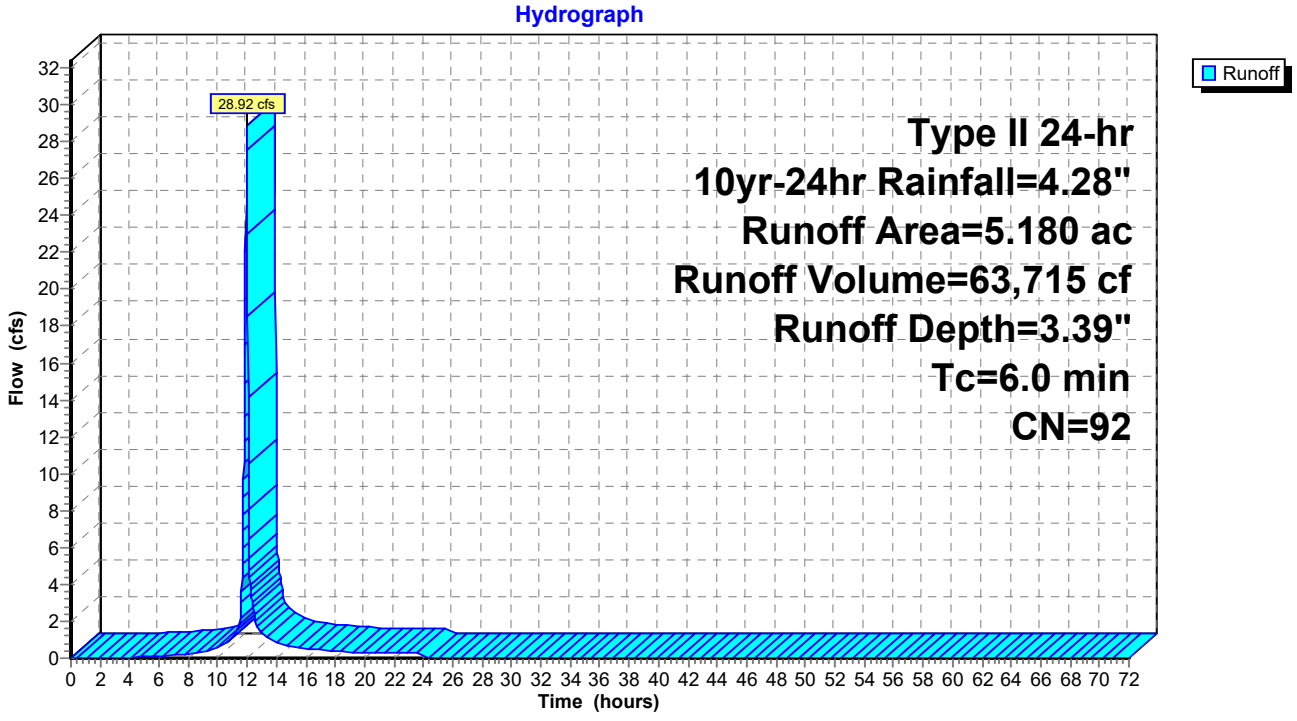
Runoff = 28.92 cfs @ 11.97 hrs, Volume= 63,715 cf, Depth= 3.39"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
3.590	98	Paved parking, HSG D
1.590	80	>75% Grass cover, Good, HSG D
5.180	92	Weighted Average
1.590	80	30.69% Pervious Area
3.590	98	69.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment A-2: Meijer Site



Summary for Subcatchment B-1: Outlot (By Others)

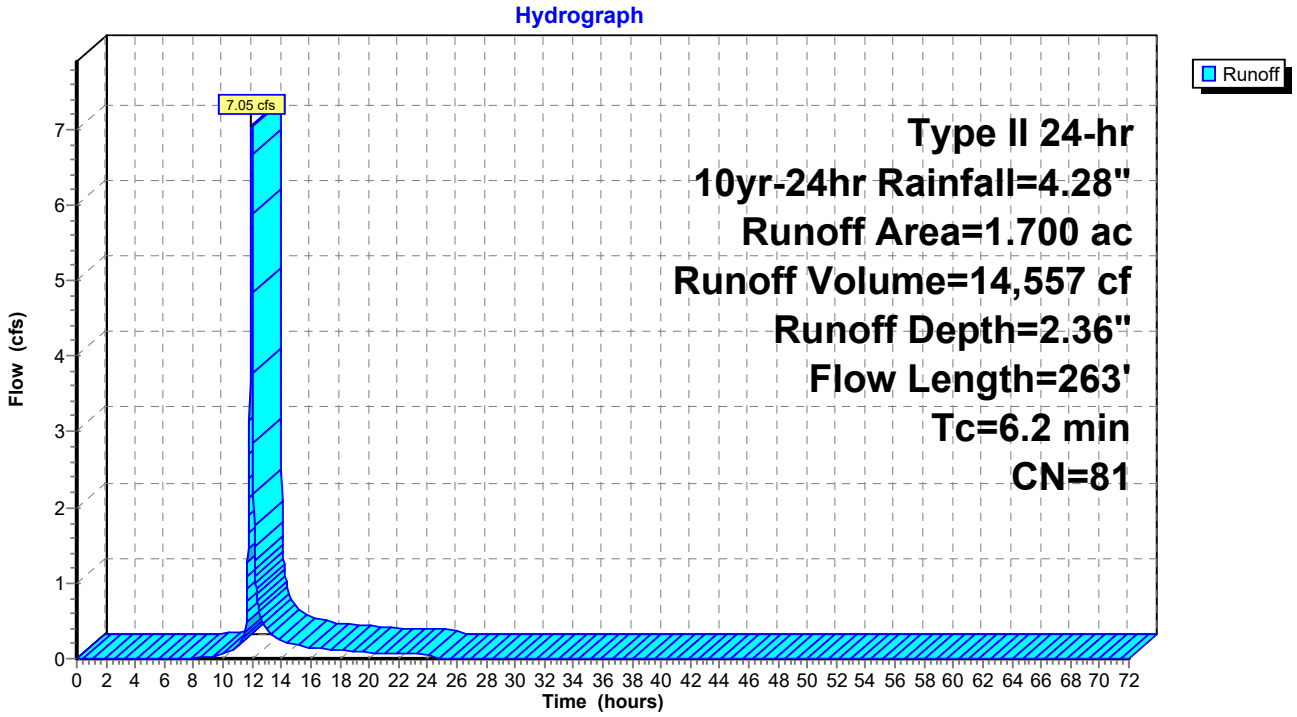
Runoff = 7.05 cfs @ 11.98 hrs, Volume= 14,557 cf, Depth= 2.36"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

	Area (ac)	CN	Description
*	1.000	78	Row crops, straight row, Good, HSG B
	0.700	85	Row crops, straight row, Good, HSG C
	1.700	81	Weighted Average
	1.700	81	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	100	0.0327	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
2.8	163	0.0113	0.96		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
6.2	263	Total			

Subcatchment B-1: Outlot (By Others)



Summary for Subcatchment B-2: Outlot (By Others)

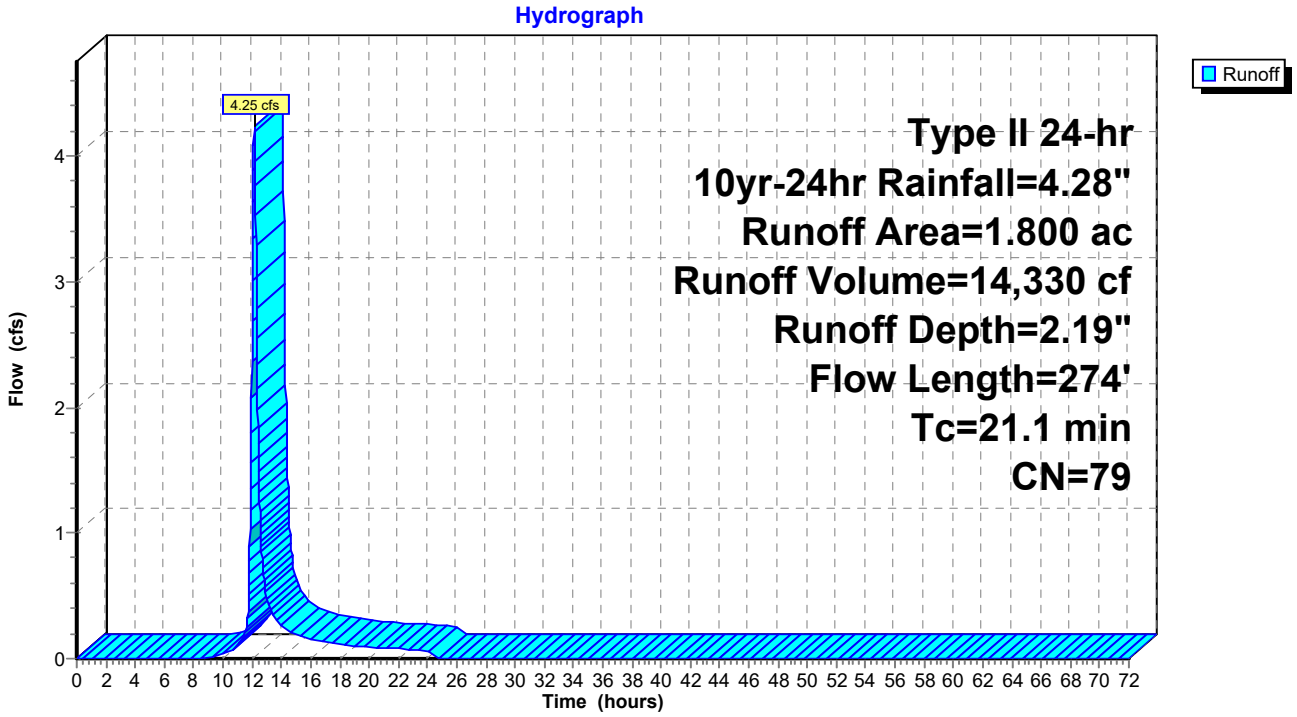
Runoff = 4.25 cfs @ 12.14 hrs, Volume= 14,330 cf, Depth= 2.19"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

	Area (ac)	CN	Description
*	1.500	78	Row crops, straight row, Good, HSG B
	0.300	85	Row crops, straight row, Good, HSG C
	1.800	79	Weighted Average
	1.800	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.0130	0.33		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
16.1	174	0.0004	0.18		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
21.1	274	Total			

Subcatchment B-2: Outlot (By Others)



Summary for Subcatchment C-2: Undetained 2

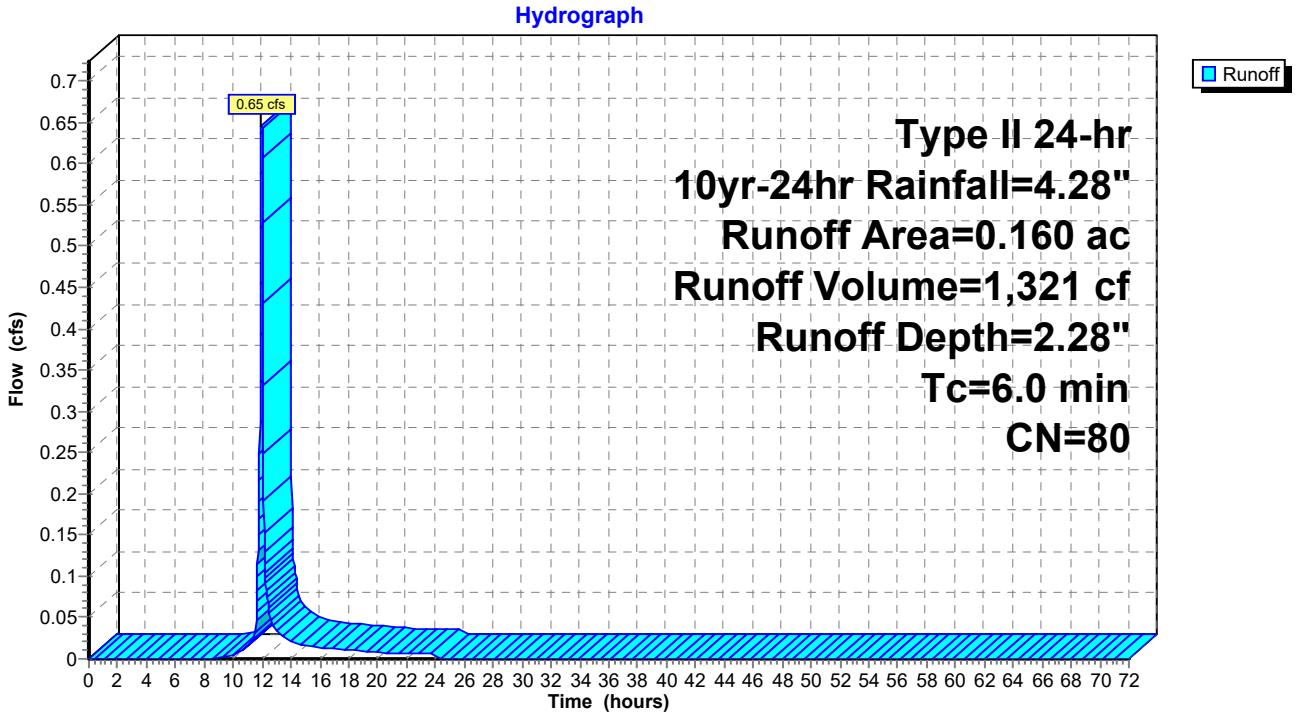
Runoff = 0.65 cfs @ 11.97 hrs, Volume= 1,321 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.160	80	>75% Grass cover, Good, HSG D
0.160	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-2: Undetained 2



Summary for Subcatchment C-3: Undetained 3

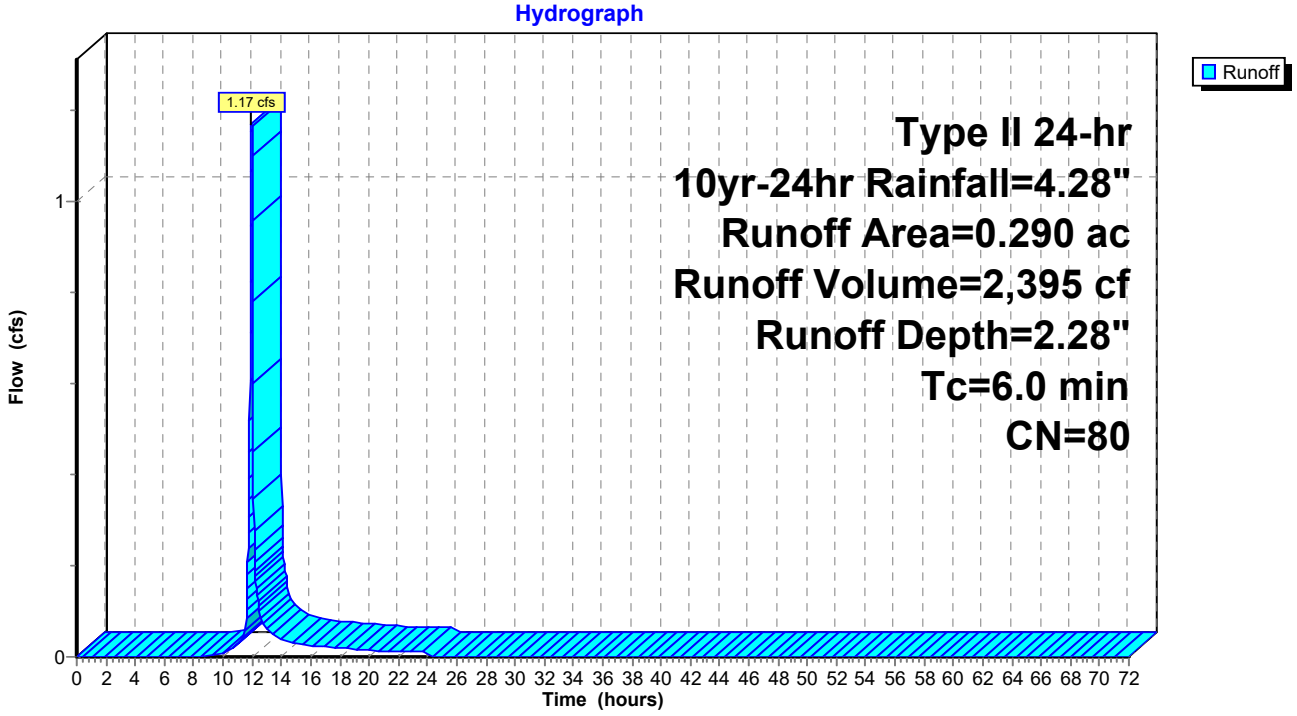
Runoff = 1.17 cfs @ 11.97 hrs, Volume= 2,395 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.290	80	>75% Grass cover, Good, HSG D
0.290	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-3: Undetained 3



Summary for Subcatchment C-4: Undetained 4

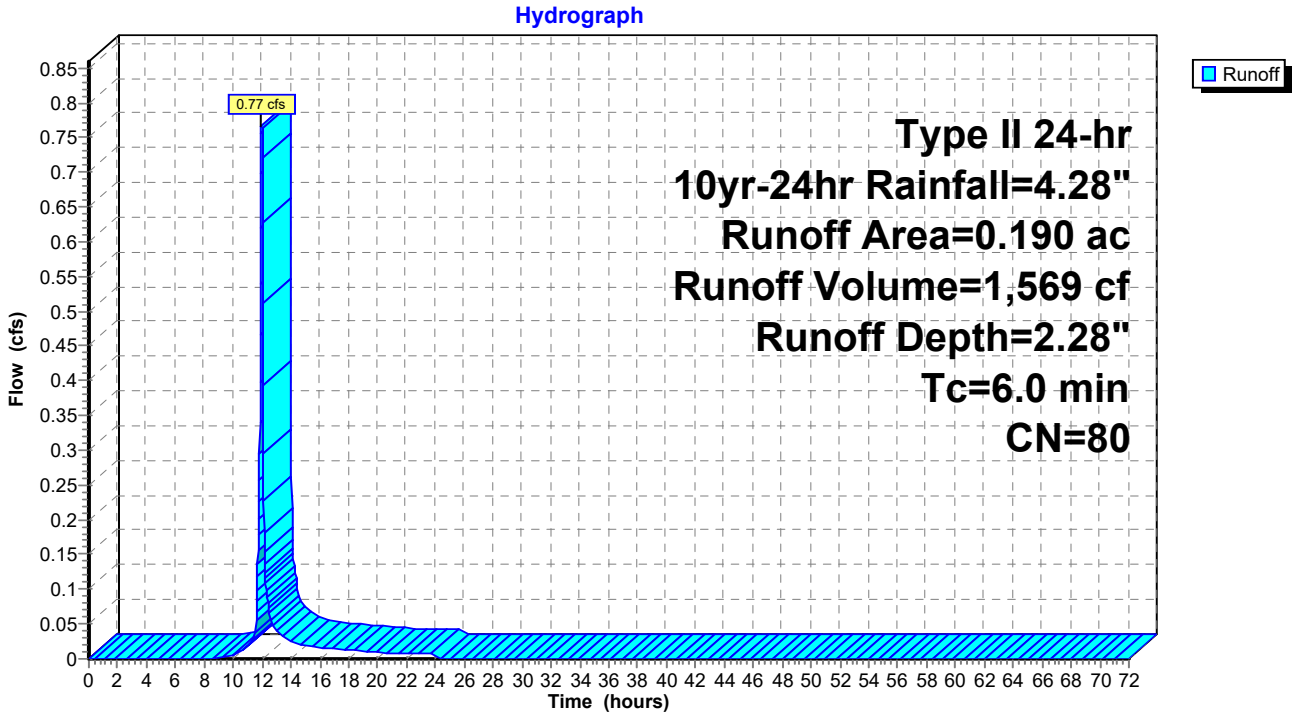
Runoff = 0.77 cfs @ 11.97 hrs, Volume= 1,569 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-4: Undetained 4



Summary for Subcatchment C-5: Undetained 5

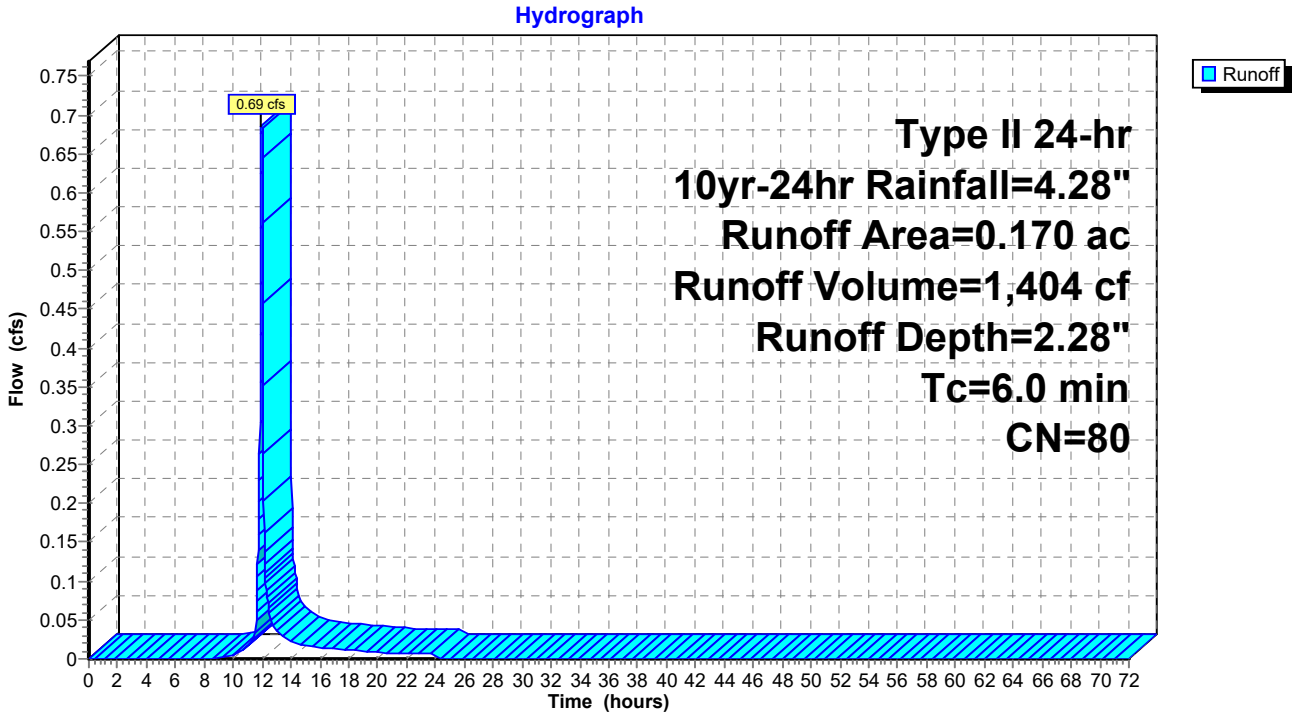
Runoff = 0.69 cfs @ 11.97 hrs, Volume= 1,404 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.170	80	>75% Grass cover, Good, HSG D
0.170	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-5: Undetained 5



Summary for Subcatchment C-6: Undetained 6

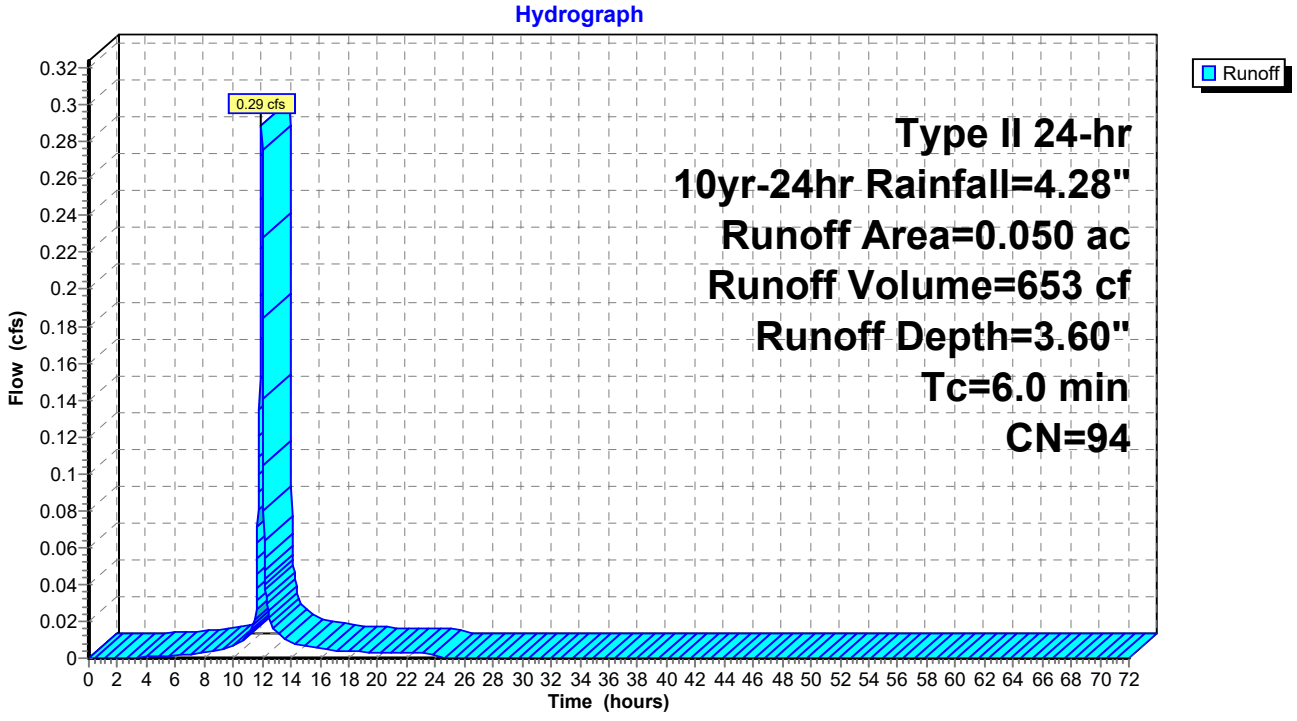
Runoff = 0.29 cfs @ 11.97 hrs, Volume= 653 cf, Depth= 3.60"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.040	98	Paved parking, HSG D
0.010	80	>75% Grass cover, Good, HSG D
0.050	94	Weighted Average
0.010	80	20.00% Pervious Area
0.040	98	80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-6: Undetained 6



Summary for Subcatchment C-7: Undetained 7

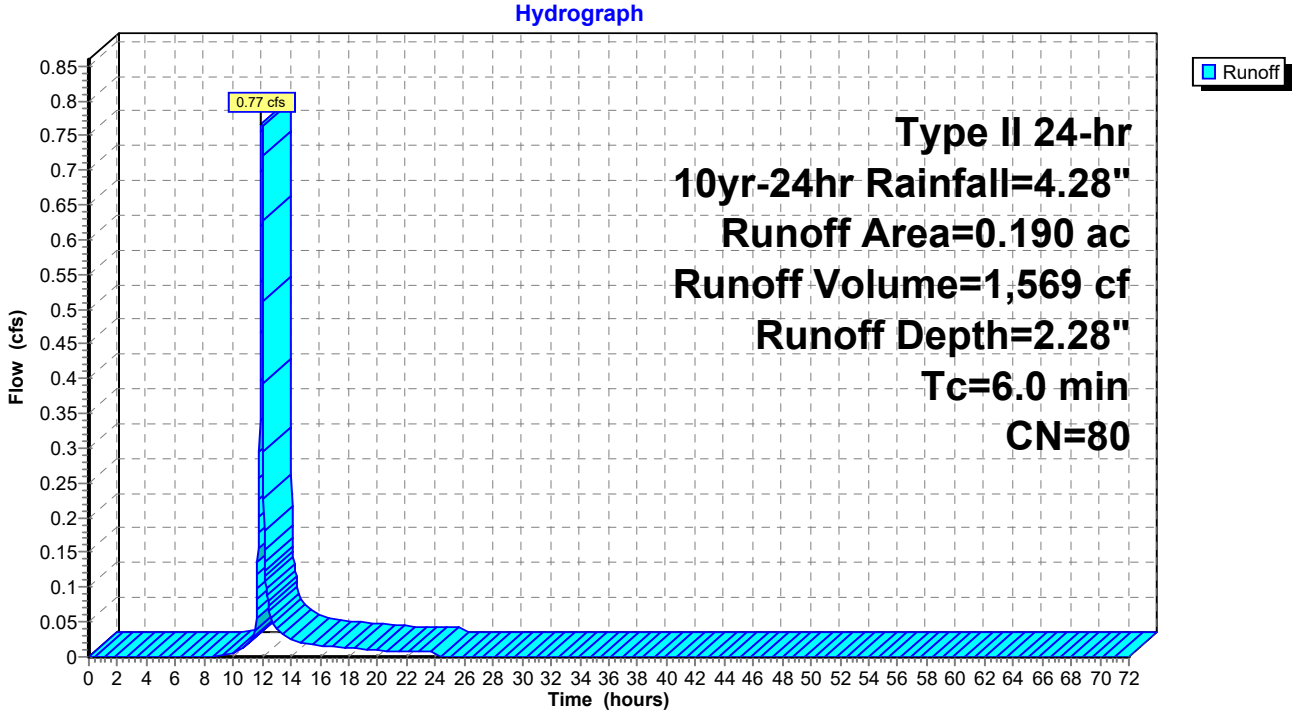
Runoff = 0.77 cfs @ 11.97 hrs, Volume= 1,569 cf, Depth= 2.28"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-7: Undetained 7



Summary for Subcatchment D-1: North Offsite Bypass

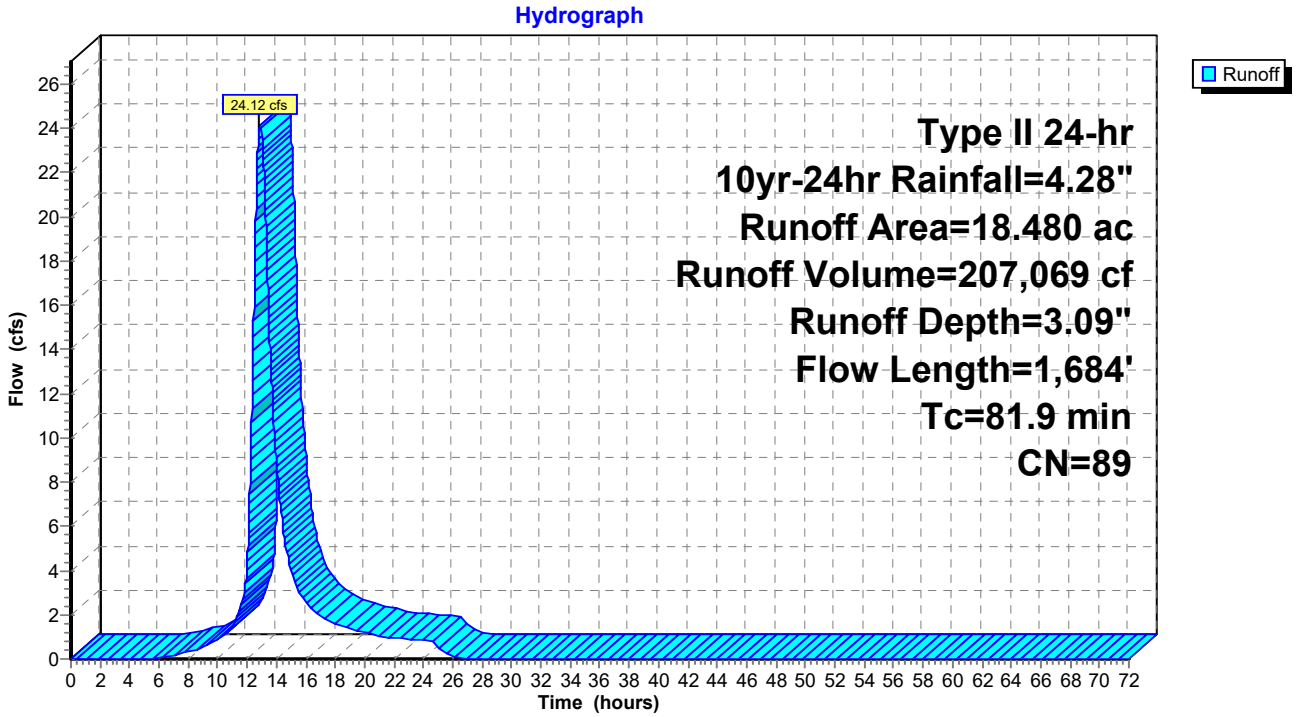
Runoff = 24.12 cfs @ 12.85 hrs, Volume= 207,069 cf, Depth= 3.09"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
18.480	89	Row crops, straight row, Good, HSG D
18.480	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0075	0.27		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
75.7	1,584	0.0015	0.35		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
81.9	1,684	Total			

Subcatchment D-1: North Offsite Bypass



Summary for Subcatchment D-2: North Offsite Bypass

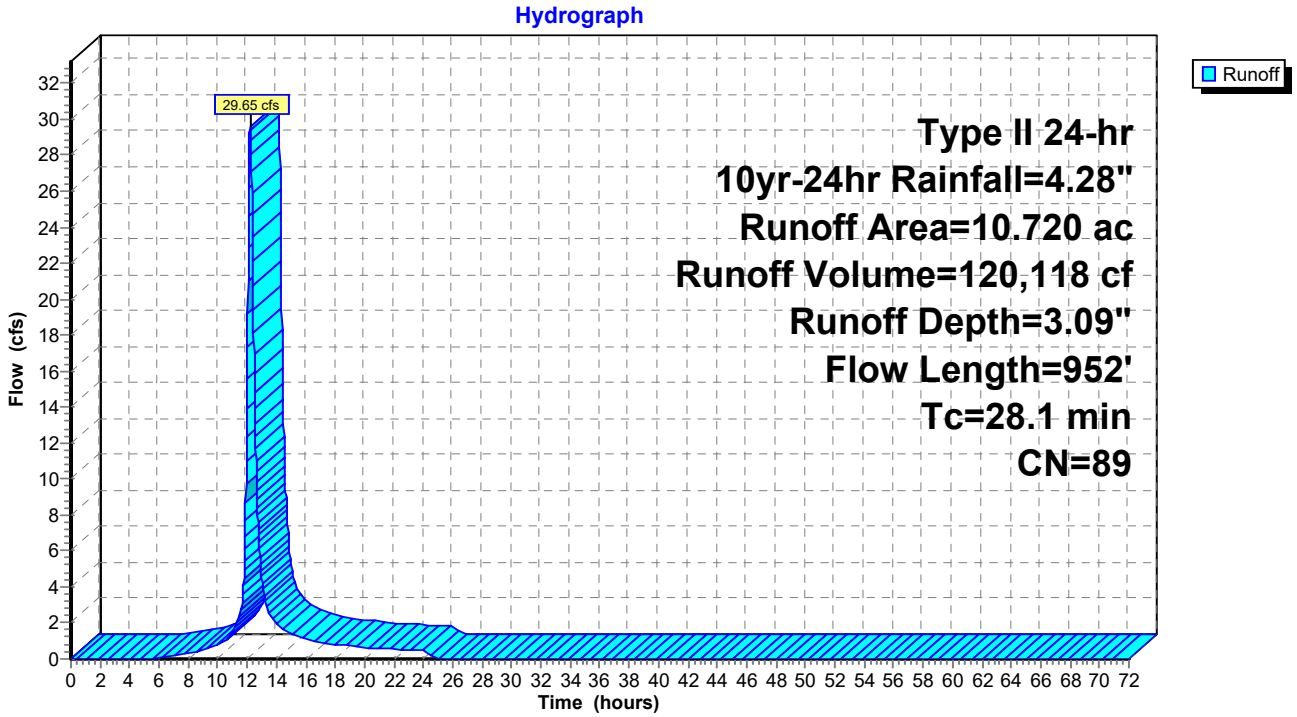
Runoff = 29.65 cfs @ 12.21 hrs, Volume= 120,118 cf, Depth= 3.09"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
10.720	89	Row crops, straight row, Good, HSG D
10.720	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0090	0.29		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
22.3	852	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
28.1	952	Total			

Subcatchment D-2: North Offsite Bypass



Summary for Subcatchment Out A: Outlot A

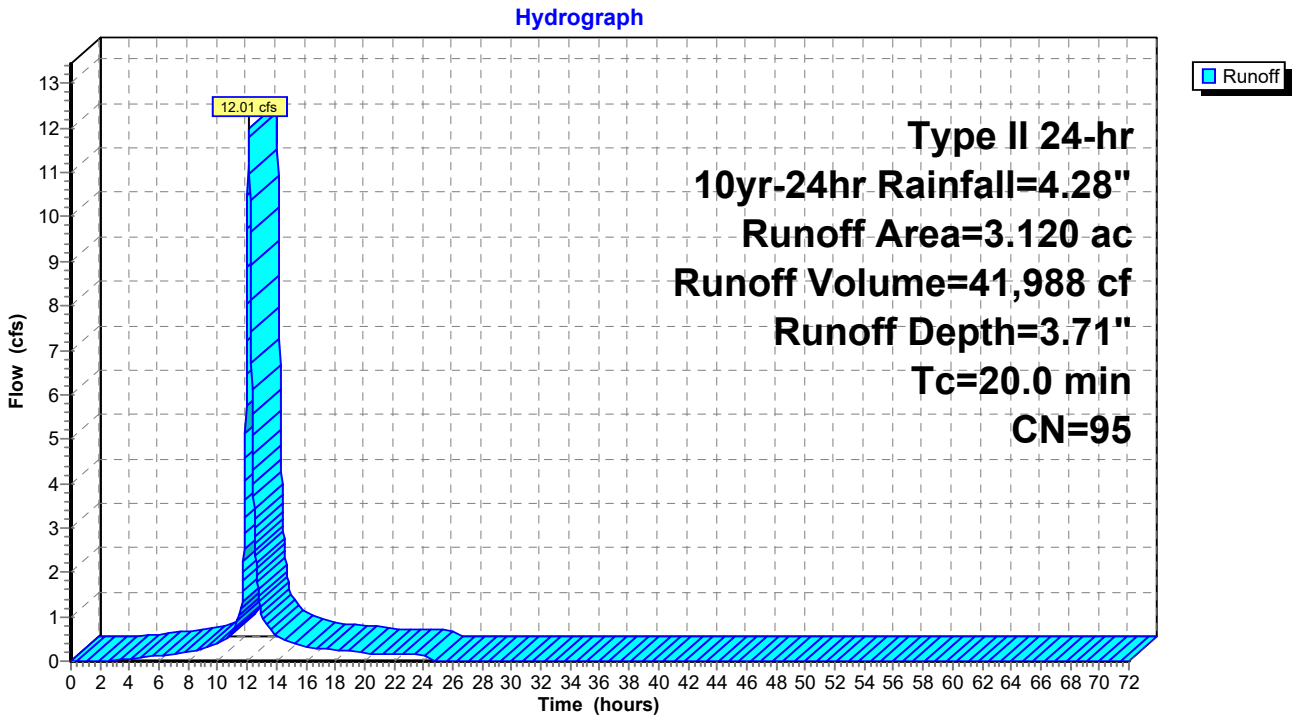
Runoff = 12.01 cfs @ 12.12 hrs, Volume= 41,988 cf, Depth= 3.71"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
3.120	95	Urban commercial, 85% imp, HSG D
0.468	78	15.00% Pervious Area
2.652	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0					**Direct Entry,**

Subcatchment Out A: Outlot A



Summary for Subcatchment Out B: Outlot B

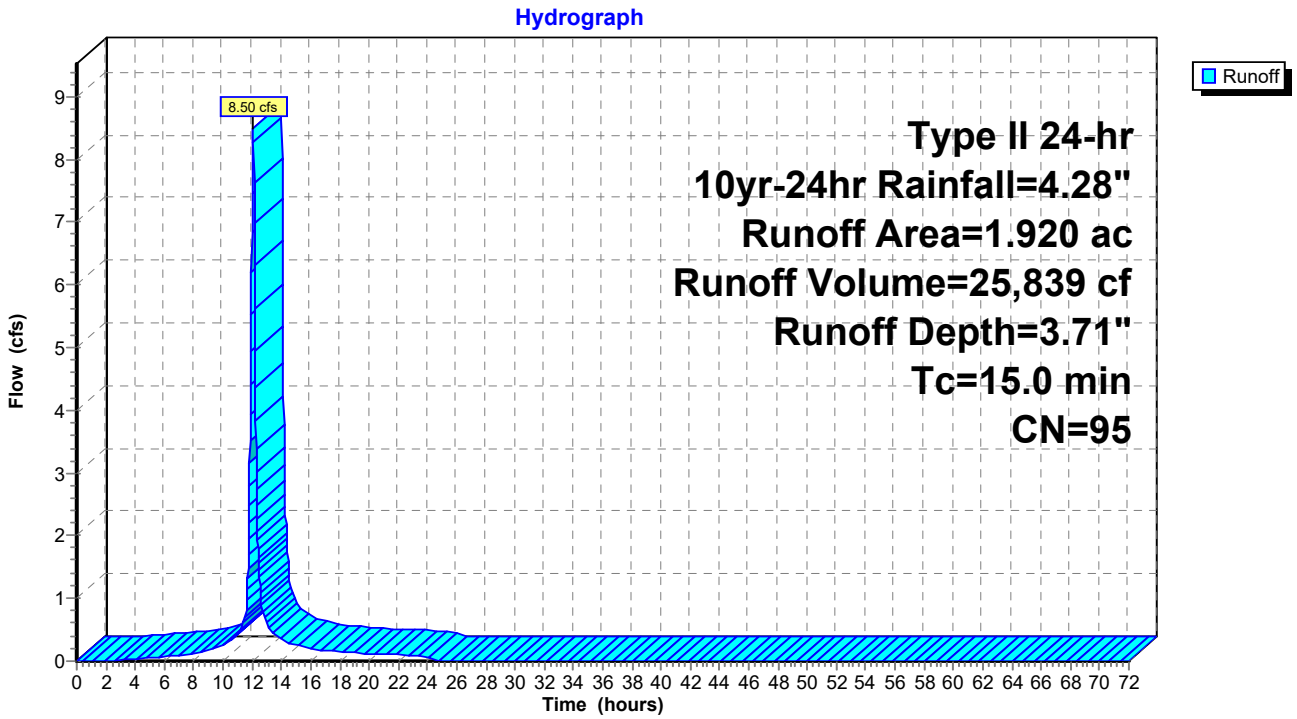
Runoff = 8.50 cfs @ 12.06 hrs, Volume= 25,839 cf, Depth= 3.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
1.920	95	Urban commercial, 85% imp, HSG D
0.288	78	15.00% Pervious Area
1.632	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out B: Outlot B



Summary for Subcatchment Out C: Outlot C

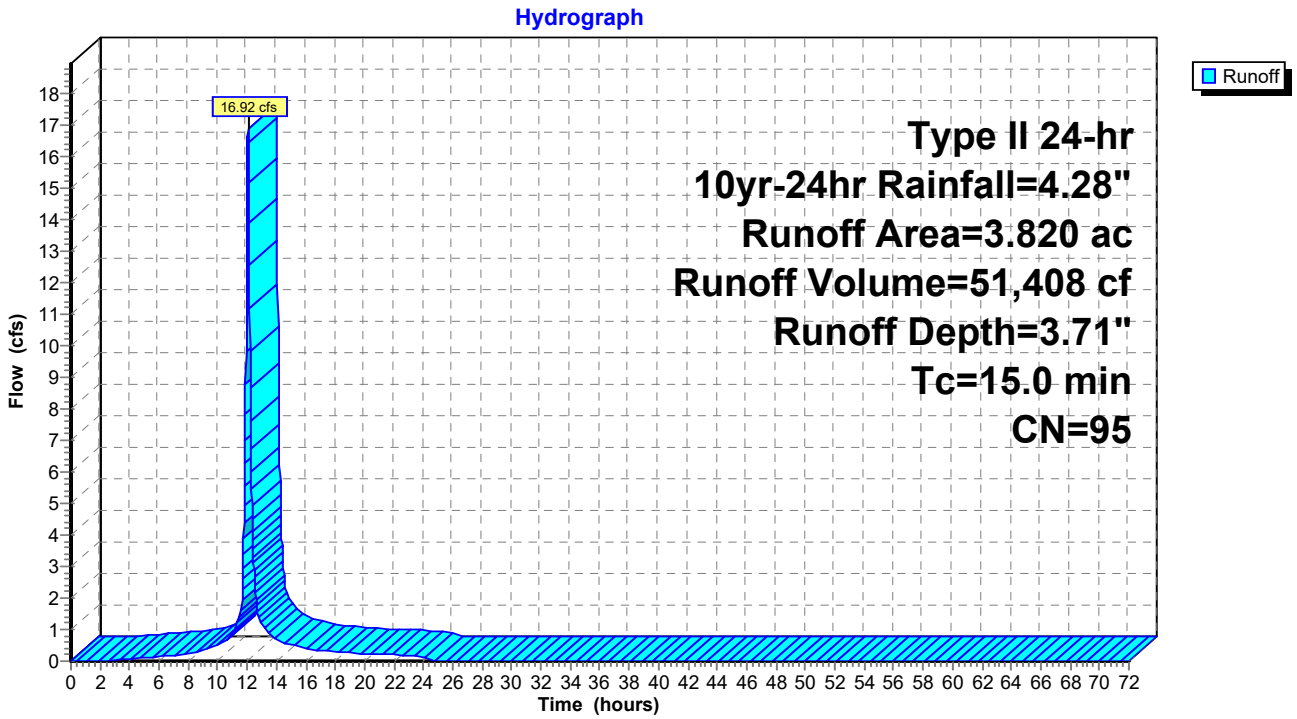
Runoff = 16.92 cfs @ 12.06 hrs, Volume= 51,408 cf, Depth= 3.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10yr-24hr Rainfall=4.28"

Area (ac)	CN	Description
3.820	95	Urban commercial, 85% imp, HSG D
0.573	78	15.00% Pervious Area
3.247	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out C: Outlot C



Summary for Pond 1P: AG-N

Inflow Area = 2,241,162 sf, 31.76% Impervious, Inflow Depth = 3.25" for 10yr-24hr event
Inflow = 122.04 cfs @ 12.08 hrs, Volume= 607,511 cf
Outflow = 6.24 cfs @ 15.84 hrs, Volume= 467,517 cf, Atten= 95%, Lag= 225.6 min
Primary = 6.24 cfs @ 15.84 hrs, Volume= 467,517 cf
Routed to Link 3L : Str. 3.00
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 884.48' @ 15.84 hrs Surf.Area= 91,380 sf Storage= 425,157 cf

Plug-Flow detention time= 993.3 min calculated for 467,517 cf (77% of inflow)
Center-of-Mass det. time= 905.7 min (1,726.7 - 821.1)

Volume	Invert	Avail.Storage	Storage Description
#1	877.29'	573,880 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

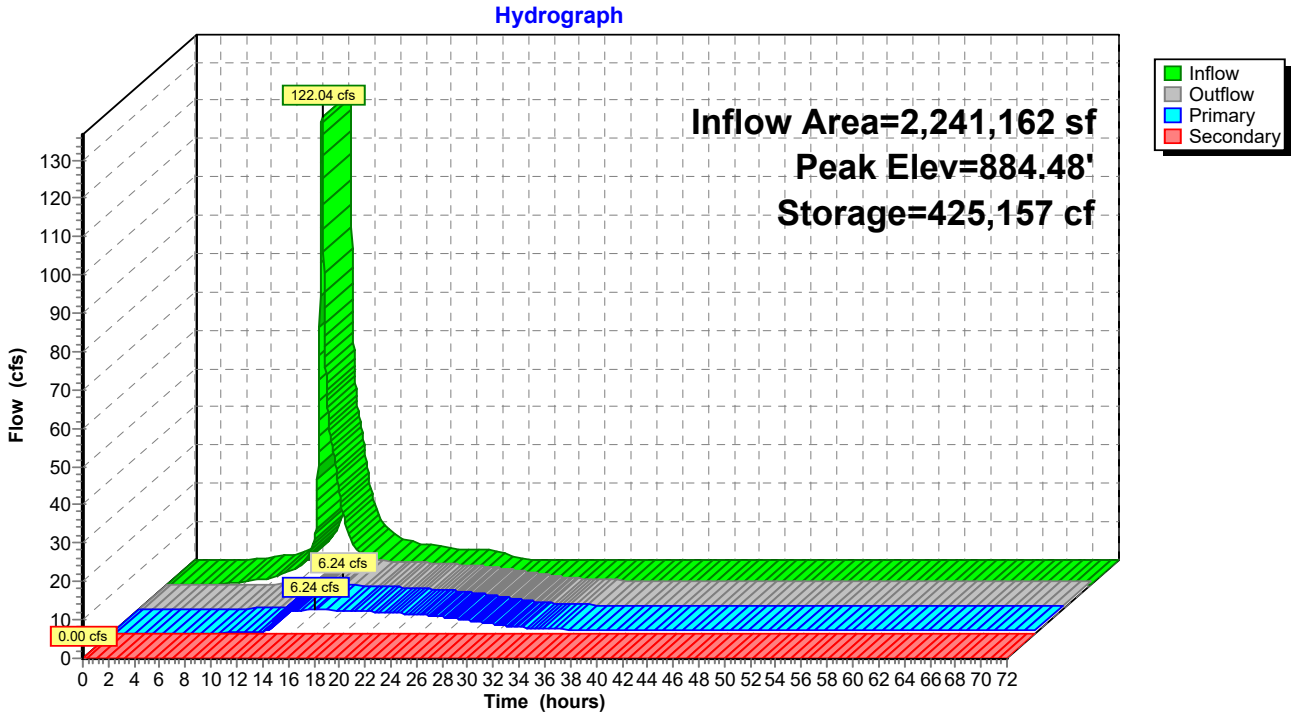
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.29	33,121	1,437.0	0	0	33,121
878.00	37,072	1,579.0	24,905	24,905	67,219
879.00	42,856	1,793.0	39,929	64,834	124,667
880.00	49,752	2,010.0	46,261	111,096	190,366
881.00	57,879	2,227.0	53,764	164,860	263,563
882.00	67,238	2,444.0	62,500	227,360	344,257
883.00	77,811	2,659.0	72,460	299,820	431,602
884.00	87,356	2,779.0	82,537	382,358	483,602
884.64	92,754	2,793.0	57,627	439,984	490,061
885.00	95,775	2,800.0	33,934	473,918	493,335
886.00	104,208	2,819.0	99,962	573,880	502,283

Device	Routing	Invert	Outlet Devices
#1	Primary	877.29'	**12.0" Round Culvert** L= 24.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.29' / 877.22' S= 0.0029 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	877.29'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.14'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	884.54'	**110.0' long + 3.0 '/' SideZ x 26.2' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.24 cfs @ 15.84 hrs HW=884.48' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.24 cfs of 9.78 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 1.11 cfs @ 12.76 fps)
└**3=Orifice/Grate** (Orifice Controls 5.13 cfs @ 6.53 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=877.29' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: AG-N


Hydrograph
Inflow Area=2,241,162 sf
Peak Elev=884.48'
Storage=425,157 cf
122.04 cfs
6.24 cfs
6.24 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 10 20 30 40 50 60 70 80 90 100 110 120 130
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 2P: AG-S & UG-S

Inflow Area = 361,548 sf, 75.20% Impervious, Inflow Depth = 3.51" for 10yr-24hr event
Inflow = 36.68 cfs @ 11.98 hrs, Volume= 105,703 cf
Outflow = 0.95 cfs @ 15.57 hrs, Volume= 105,686 cf, Atten= 97%, Lag= 215.7 min
Primary = 0.95 cfs @ 15.57 hrs, Volume= 105,686 cf
Routed to Link 3L : Str. 3.00
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 882.61' @ 15.57 hrs Surf.Area= 20,190 sf Storage= 70,517 cf

Plug-Flow detention time= 866.2 min calculated for 105,686 cf (100% of inflow)
Center-of-Mass det. time= 866.1 min (1,649.5 - 783.4)

Volume	Invert	Avail.Storage	Storage Description
#1	877.38'	43,614 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
#2A	877.53'	22,031 cf	**80.00'W x 180.82'L x 7.00'H Underground Detention** 101,259 cf Overall - 46,183 cf Embedded = 55,076 cf x 40.0% Voids
#3A	878.03'	46,183 cf	**CMP Round 72** x 9 Inside #2 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +152.82' x 28.27 sf x 9 rows 78.00' Header x 28.27 sf x 1 = 2,205.4 cf Inside
		111,827 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.38	1,605	205.0	0	0	1,605
878.00	2,000	220.0	1,115	1,115	2,129
879.00	2,697	245.0	2,340	3,455	3,083
880.00	3,462	265.0	3,072	6,527	3,934
881.00	4,284	284.0	3,866	10,392	4,808
882.00	5,163	303.0	4,717	15,109	5,743
883.00	6,098	321.0	5,624	20,733	6,690
884.00	7,090	340.0	6,588	27,321	7,742
885.00	8,138	359.0	7,608	34,929	8,855
885.90	9,130	376.0	7,766	42,695	9,903
886.00	9,248	378.0	919	43,614	10,029

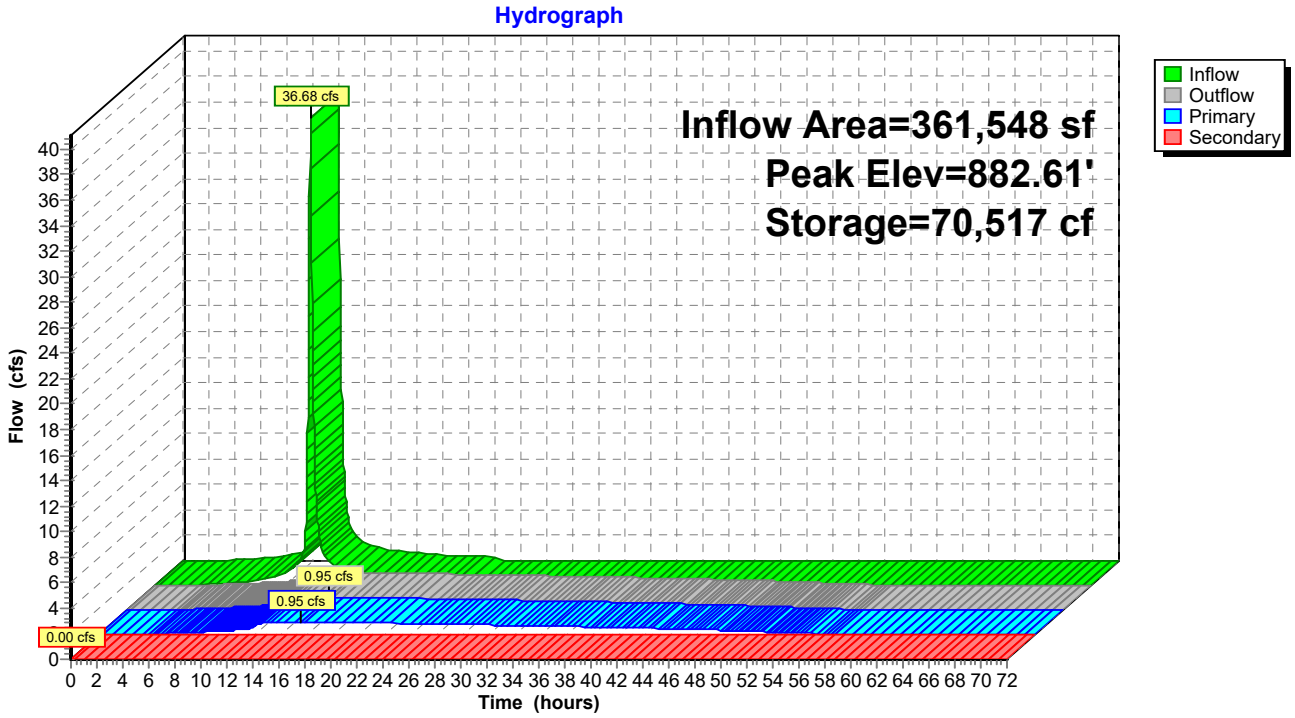
Device	Routing	Invert	Outlet Devices
#1	Primary	877.38'	**15.0" Round Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.38' / 877.22' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	877.38'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.61'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	885.40'	**25.0' long + 3.0 '/' SideZ x 53.8' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.95 cfs @ 15.57 hrs HW=882.61' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.95 cfs of 12.68 cfs potential flow)
  └─**2=Orifice/Grate** (Orifice Controls 0.95 cfs @ 10.83 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=877.38' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 2P: AG-S & UG-S

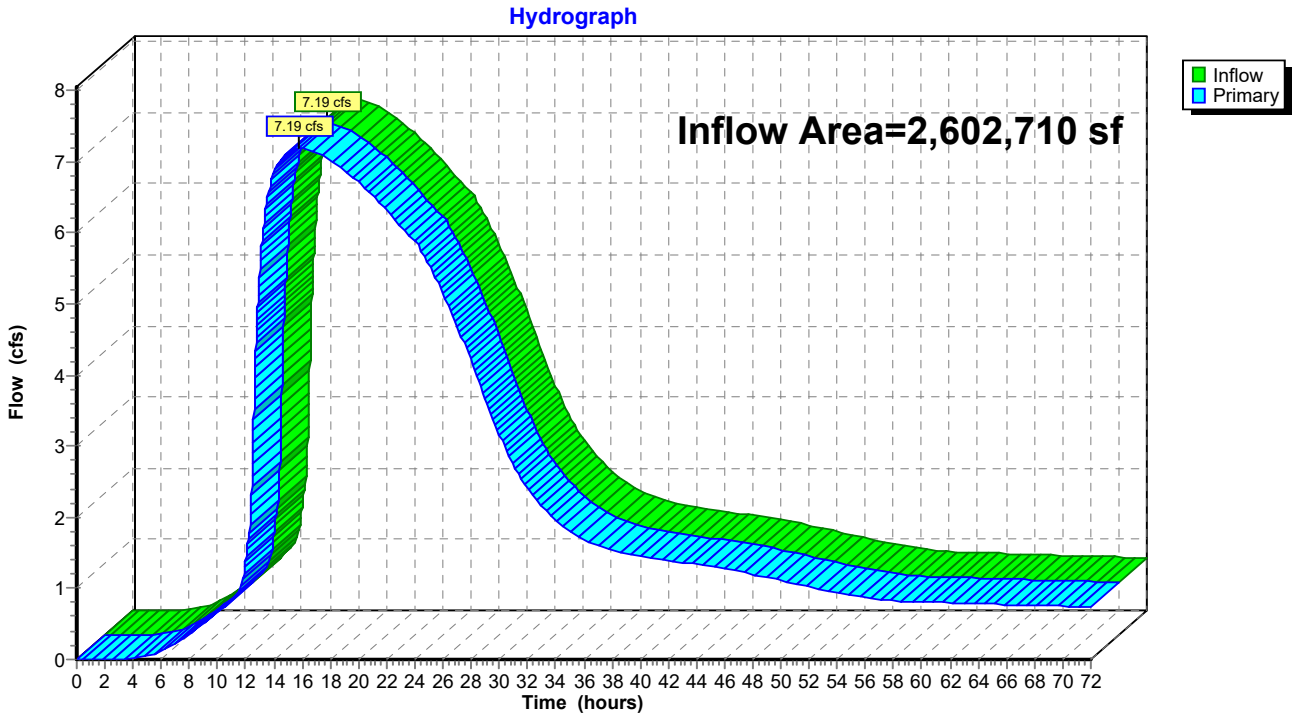


Summary for Link 3L: Str. 3.00

Inflow Area = 2,602,710 sf, 37.79% Impervious, Inflow Depth > 2.64" for 10yr-24hr event
Inflow = 7.19 cfs @ 15.83 hrs, Volume= 573,203 cf
Primary = 7.19 cfs @ 15.83 hrs, Volume= 573,203 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Total Site Runoff

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 3L: Str. 3.00

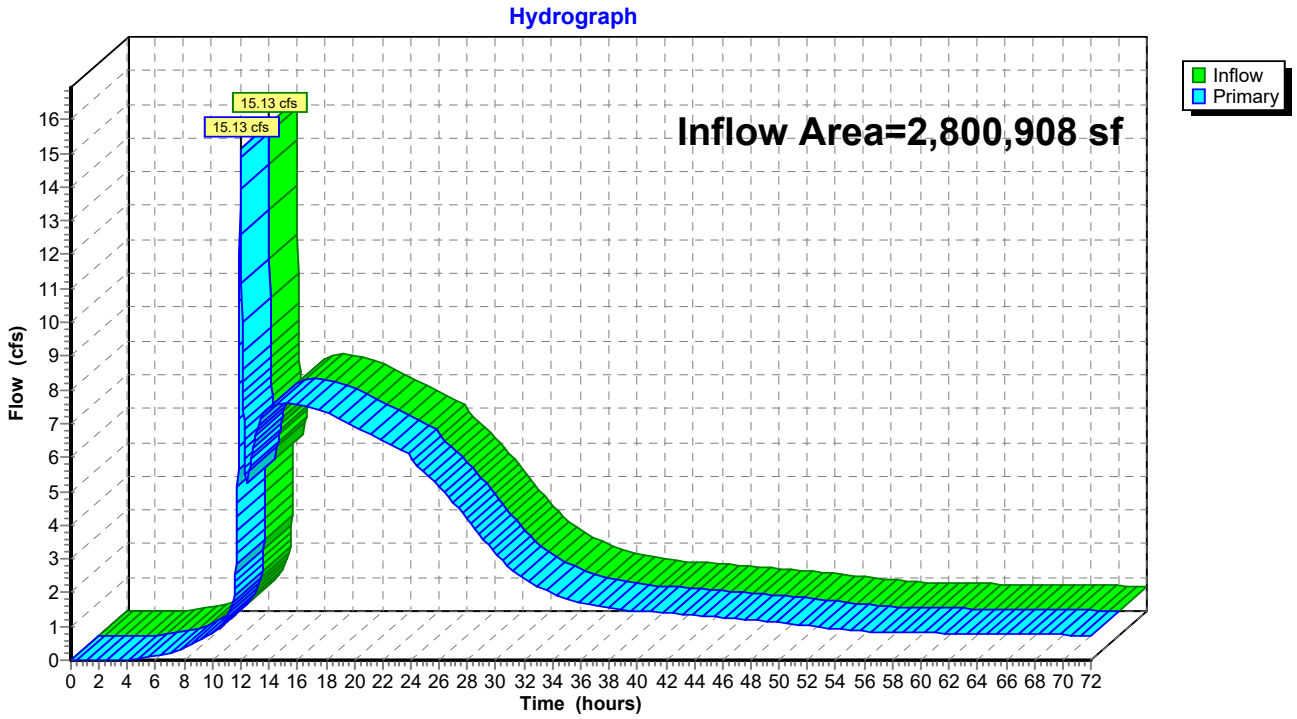


Summary for Link 4L: Total Site Runoff

Inflow Area = 2,800,908 sf, 35.18% Impervious, Inflow Depth > 2.62" for 10yr-24hr event
Inflow = 15.13 cfs @ 11.98 hrs, Volume= 611,002 cf
Primary = 15.13 cfs @ 11.98 hrs, Volume= 611,002 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 4L: Total Site Runoff



Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A-1: Meijer Site Runoff Area=16.510 ac 69.41% Impervious Runoff Depth=5.36"
Tc=15.0 min CN=92 Runoff=106.61 cfs 321,508 cf

Subcatchment A-2: Meijer Site Runoff Area=5.180 ac 69.31% Impervious Runoff Depth=5.36"
Tc=6.0 min CN=92 Runoff=44.40 cfs 100,873 cf

Subcatchment B-1: Outlot (By Others) Runoff Area=1.700 ac 0.00% Impervious Runoff Depth=4.16"
Flow Length=263' Tc=6.2 min CN=81 Runoff=12.14 cfs 25,660 cf

Subcatchment B-2: Outlot (By Others) Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=3.95"
Flow Length=274' Tc=21.1 min CN=79 Runoff=7.64 cfs 25,801 cf

Subcatchment C-2: Undetained 2 Runoff Area=0.160 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.13 cfs 2,354 cf

Subcatchment C-3: Undetained 3 Runoff Area=0.290 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=2.04 cfs 4,267 cf

Subcatchment C-4: Undetained 4 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.34 cfs 2,795 cf

Subcatchment C-5: Undetained 5 Runoff Area=0.170 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.20 cfs 2,501 cf

Subcatchment C-6: Undetained 6 Runoff Area=0.050 ac 80.00% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=94 Runoff=0.44 cfs 1,015 cf

Subcatchment C-7: Undetained 7 Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=80 Runoff=1.34 cfs 2,795 cf

Subcatchment D-1: North Offsite Bypass Runoff Area=18.480 ac 0.00% Impervious Runoff Depth=5.03"
Flow Length=1,684' Tc=81.9 min CN=89 Runoff=38.79 cfs 337,185 cf

Subcatchment D-2: North Offsite Bypass Runoff Area=10.720 ac 0.00% Impervious Runoff Depth=5.03"
Flow Length=952' Tc=28.1 min CN=89 Runoff=47.37 cfs 195,597 cf

Subcatchment Out A: Outlot A Runoff Area=3.120 ac 85.00% Impervious Runoff Depth=5.71"
Tc=20.0 min CN=95 Runoff=18.08 cfs 64,665 cf

Subcatchment Out B: Outlot B Runoff Area=1.920 ac 85.00% Impervious Runoff Depth=5.71"
Tc=15.0 min CN=95 Runoff=12.79 cfs 39,794 cf

Subcatchment Out C: Outlot C Runoff Area=3.820 ac 85.00% Impervious Runoff Depth=5.71"
Tc=15.0 min CN=95 Runoff=25.45 cfs 79,173 cf

Pond 1P: AG-N Peak Elev=884.86' Storage=461,014 cf Inflow=190.01 cfs 973,257 cf
Primary=6.78 cfs 537,974 cf Secondary=55.12 cfs 289,883 cf Outflow=61.91 cfs 827,857 cf

Pond 2P: AG-S & UG-S Peak Elev=884.29' Storage=96,191 cf Inflow=56.14 cfs 165,538 cf
Primary=5.19 cfs 165,518 cf Secondary=0.00 cfs 0 cf Outflow=5.19 cfs 165,518 cf

Link 3L: Str. 3.00 Inflow=11.97 cfs 703,492 cf
Primary=11.97 cfs 703,492 cf

Link 4L: Total Site Runoff Inflow=69.48 cfs 1,060,563 cf
Primary=69.48 cfs 1,060,563 cf

Total Runoff Area = 2,800,908 sf Runoff Volume = 1,205,983 cf Average Runoff Depth = 5.17"
64.82% Pervious = 1,815,537 sf 35.18% Impervious = 985,371 sf

Summary for Subcatchment A-1: Meijer Site

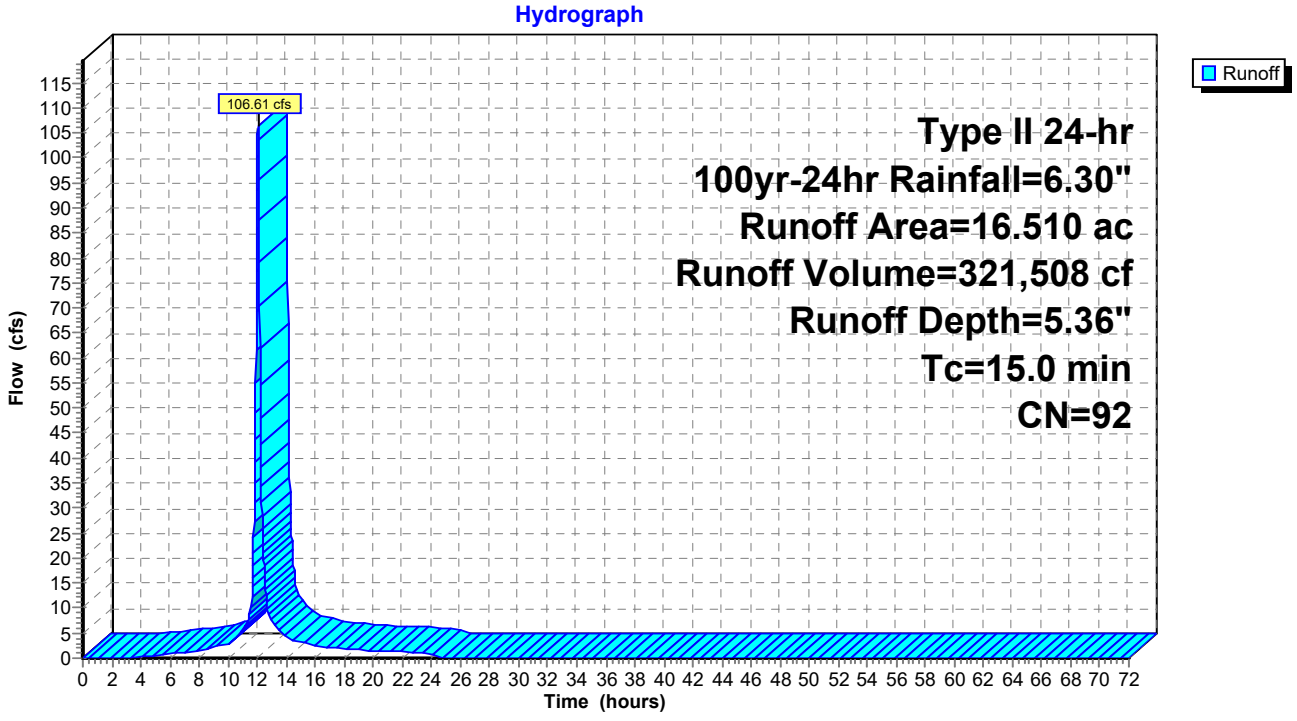
Runoff = 106.61 cfs @ 12.06 hrs, Volume= 321,508 cf, Depth= 5.36"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
11.460	98	Paved parking, HSG D
5.050	80	>75% Grass cover, Good, HSG D
16.510	92	Weighted Average
5.050	80	30.59% Pervious Area
11.460	98	69.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment A-1: Meijer Site



Summary for Subcatchment A-2: Meijer Site

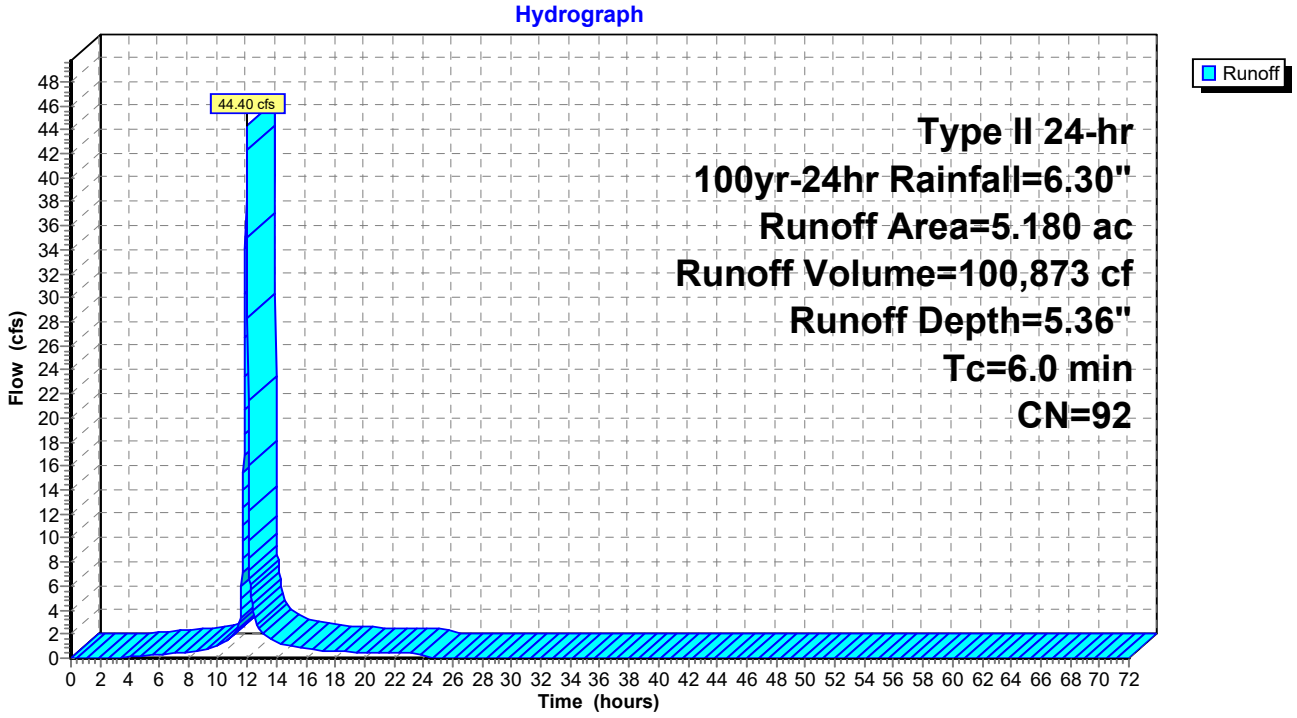
Runoff = 44.40 cfs @ 11.97 hrs, Volume= 100,873 cf, Depth= 5.36"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
3.590	98	Paved parking, HSG D
1.590	80	>75% Grass cover, Good, HSG D
5.180	92	Weighted Average
1.590	80	30.69% Pervious Area
3.590	98	69.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment A-2: Meijer Site



Summary for Subcatchment B-1: Outlot (By Others)

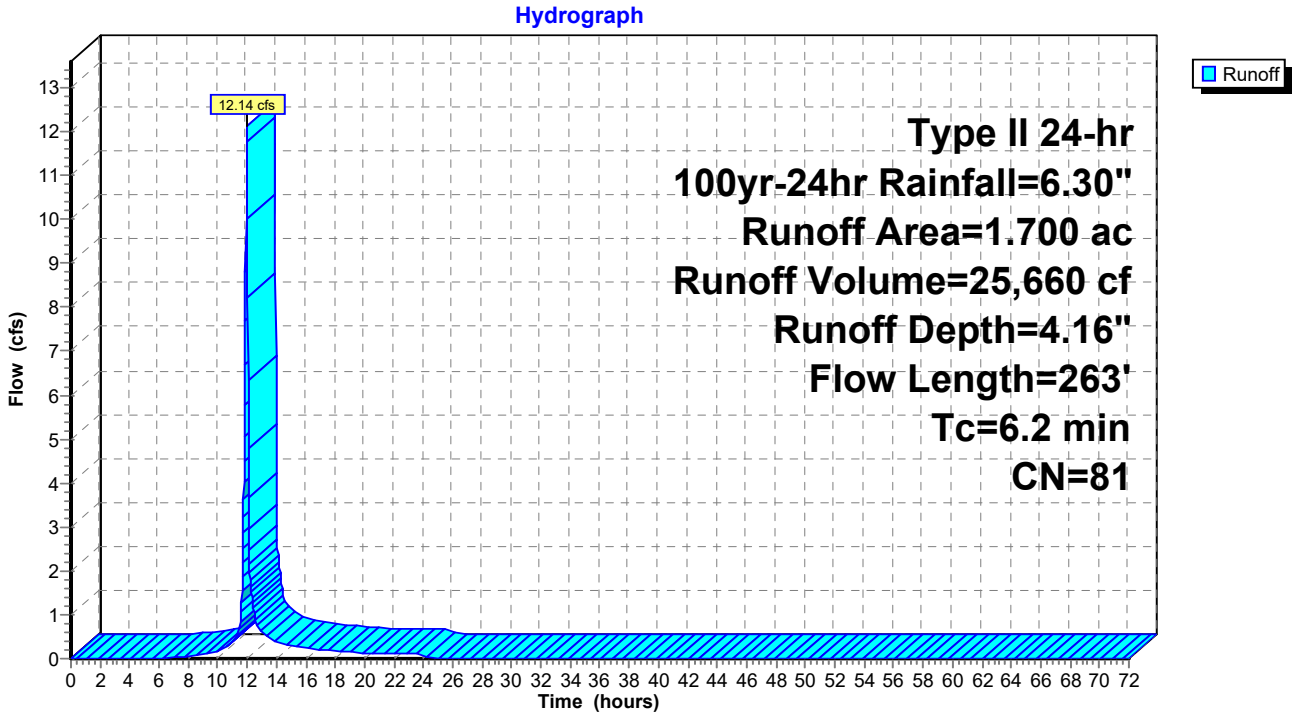
Runoff = 12.14 cfs @ 11.97 hrs, Volume= 25,660 cf, Depth= 4.16"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

	Area (ac)	CN	Description
*	1.000	78	Row crops, straight row, Good, HSG B
	0.700	85	Row crops, straight row, Good, HSG C
	1.700	81	Weighted Average
	1.700	81	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	100	0.0327	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
2.8	163	0.0113	0.96		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
6.2	263	Total			

Subcatchment B-1: Outlot (By Others)



Summary for Subcatchment B-2: Outlot (By Others)

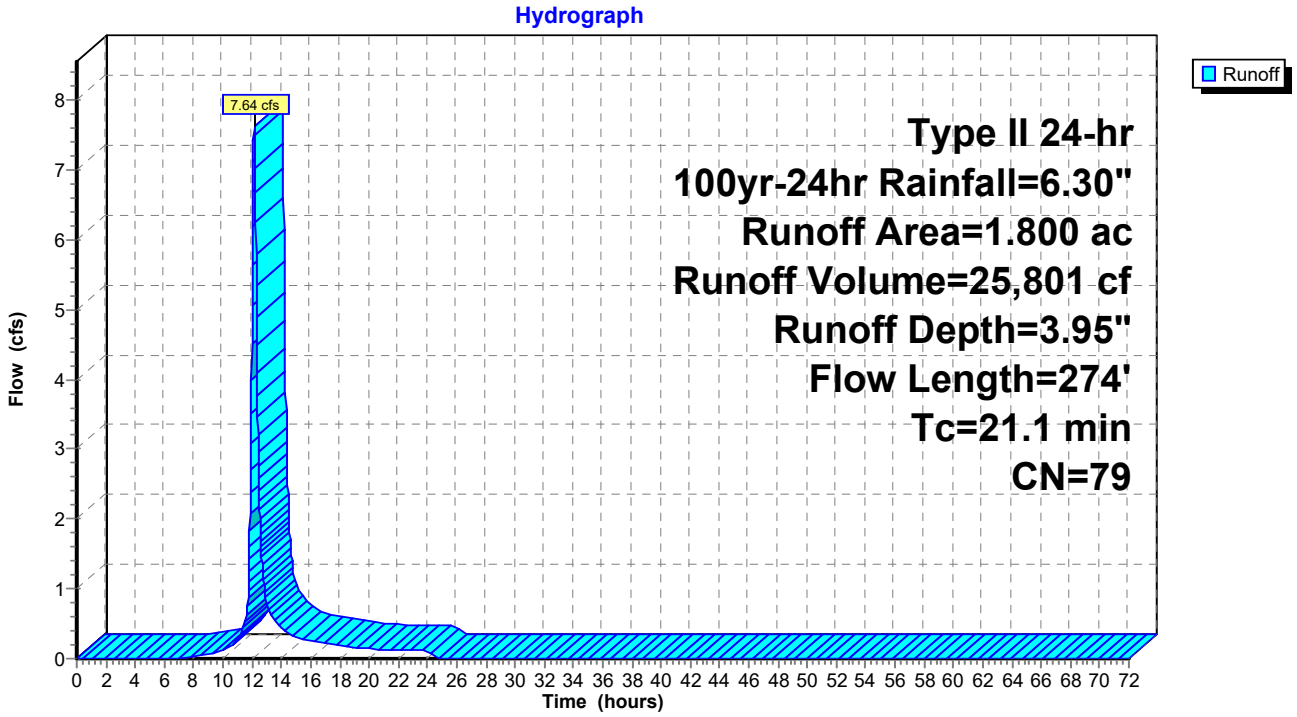
Runoff = 7.64 cfs @ 12.13 hrs, Volume= 25,801 cf, Depth= 3.95"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

	Area (ac)	CN	Description
*	1.500	78	Row crops, straight row, Good, HSG B
	0.300	85	Row crops, straight row, Good, HSG C
	1.800	79	Weighted Average
	1.800	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.0130	0.33		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
16.1	174	0.0004	0.18		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
21.1	274	Total			

Subcatchment B-2: Outlot (By Others)



Summary for Subcatchment C-2: Undetained 2

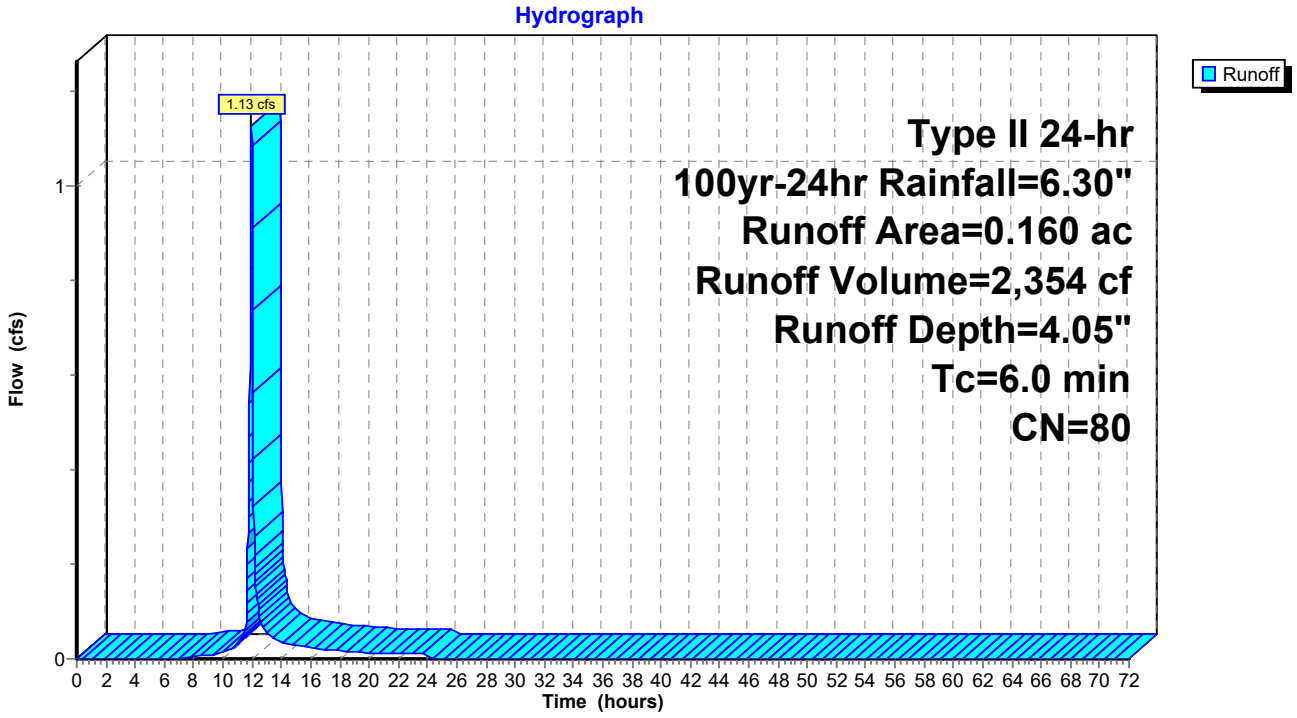
Runoff = 1.13 cfs @ 11.97 hrs, Volume= 2,354 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.160	80	>75% Grass cover, Good, HSG D
0.160	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-2: Undetained 2



Summary for Subcatchment C-3: Undetained 3

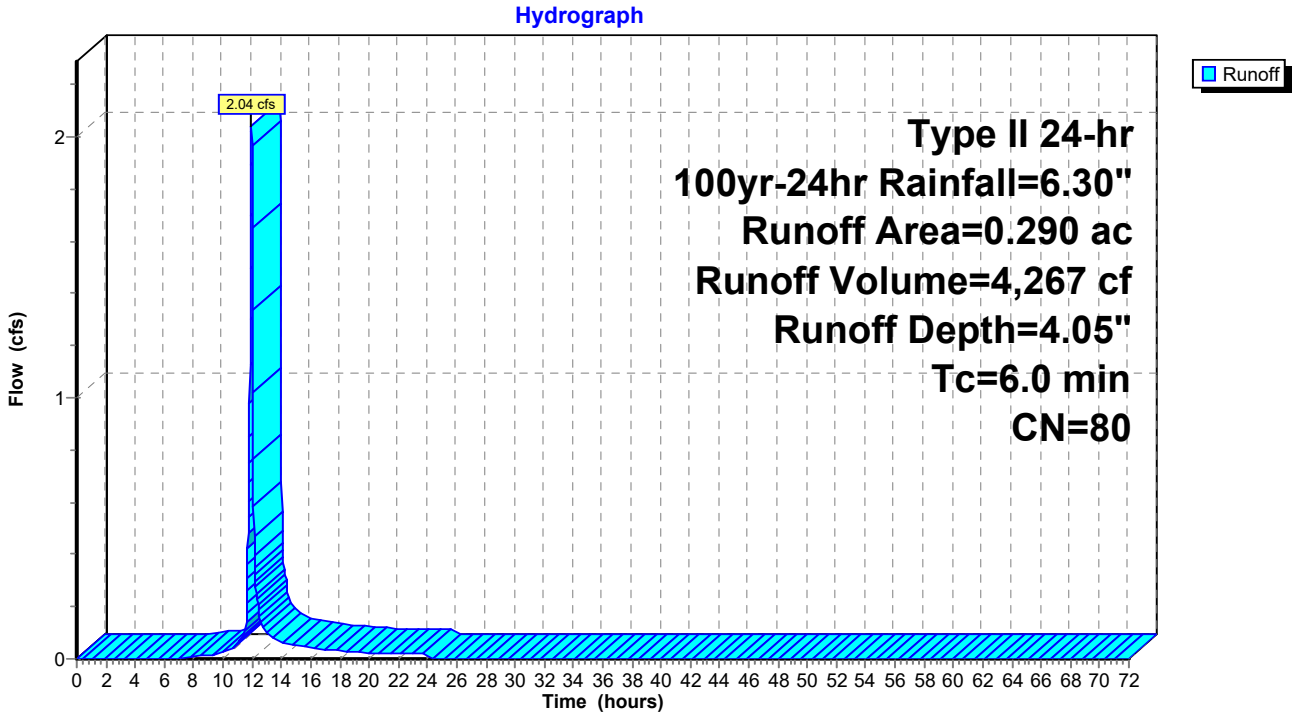
Runoff = 2.04 cfs @ 11.97 hrs, Volume= 4,267 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.290	80	>75% Grass cover, Good, HSG D
0.290	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-3: Undetained 3



Summary for Subcatchment C-4: Undetained 4

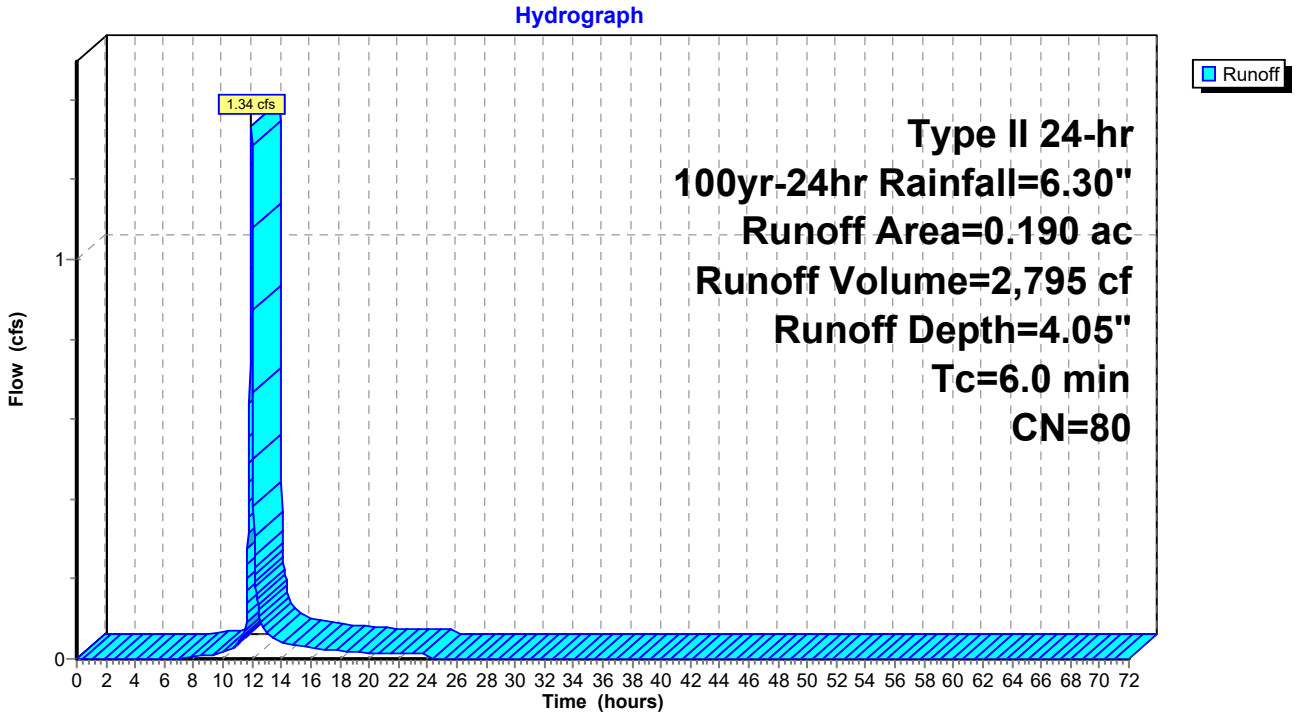
Runoff = 1.34 cfs @ 11.97 hrs, Volume= 2,795 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-4: Undetained 4



Summary for Subcatchment C-5: Undetained 5

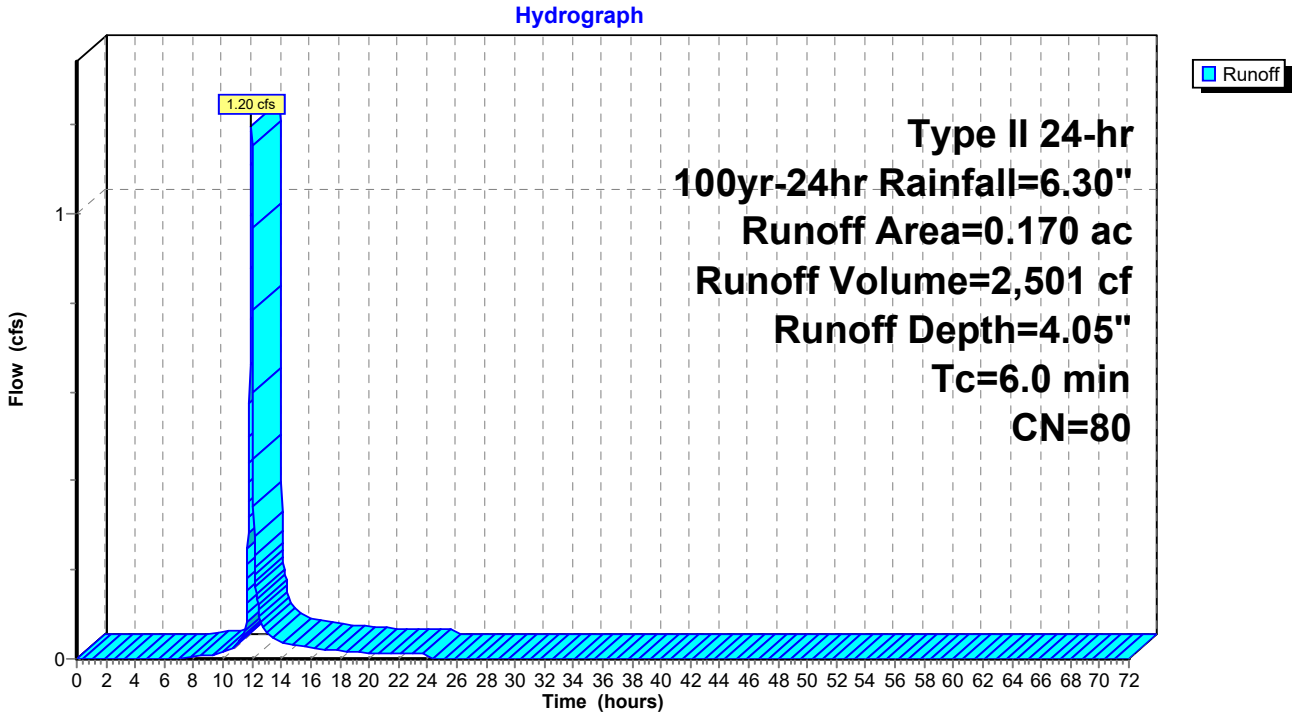
Runoff = 1.20 cfs @ 11.97 hrs, Volume= 2,501 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.170	80	>75% Grass cover, Good, HSG D
0.170	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-5: Undetained 5



Summary for Subcatchment C-6: Undetained 6

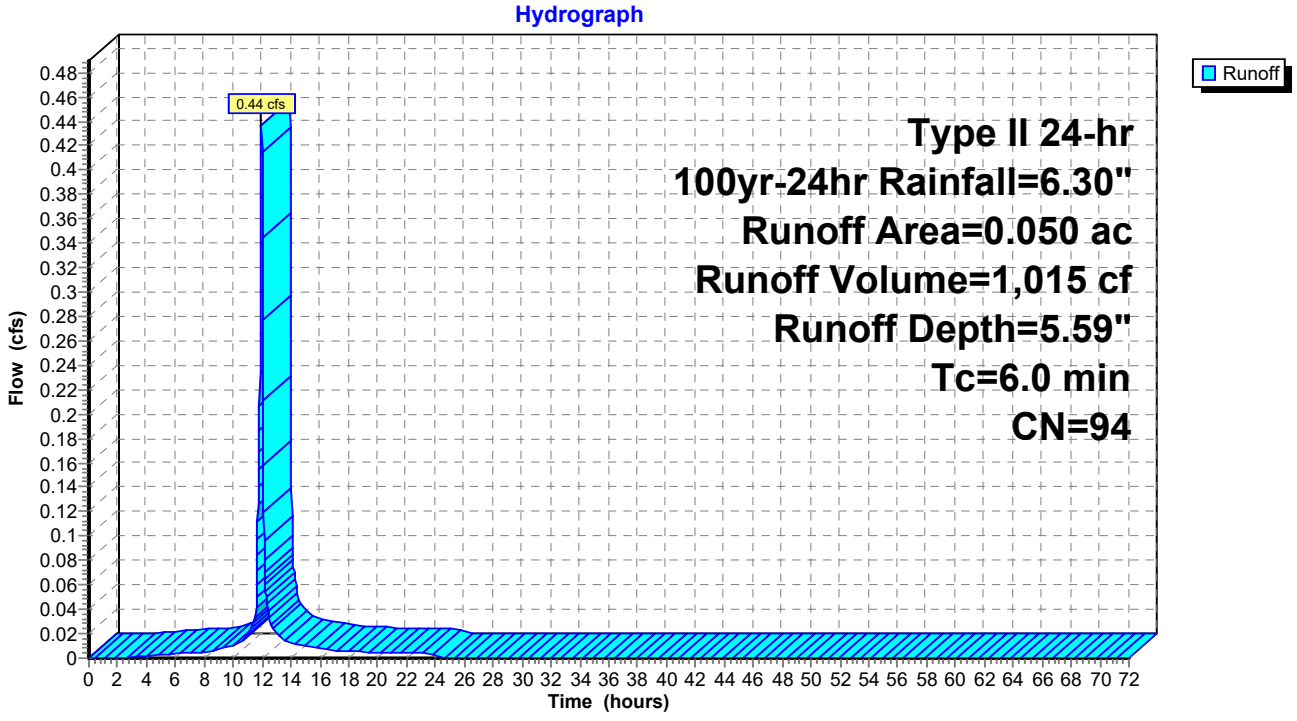
Runoff = 0.44 cfs @ 11.97 hrs, Volume= 1,015 cf, Depth= 5.59"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.040	98	Paved parking, HSG D
0.010	80	>75% Grass cover, Good, HSG D
0.050	94	Weighted Average
0.010	80	20.00% Pervious Area
0.040	98	80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-6: Undetained 6



Summary for Subcatchment C-7: Undetained 7

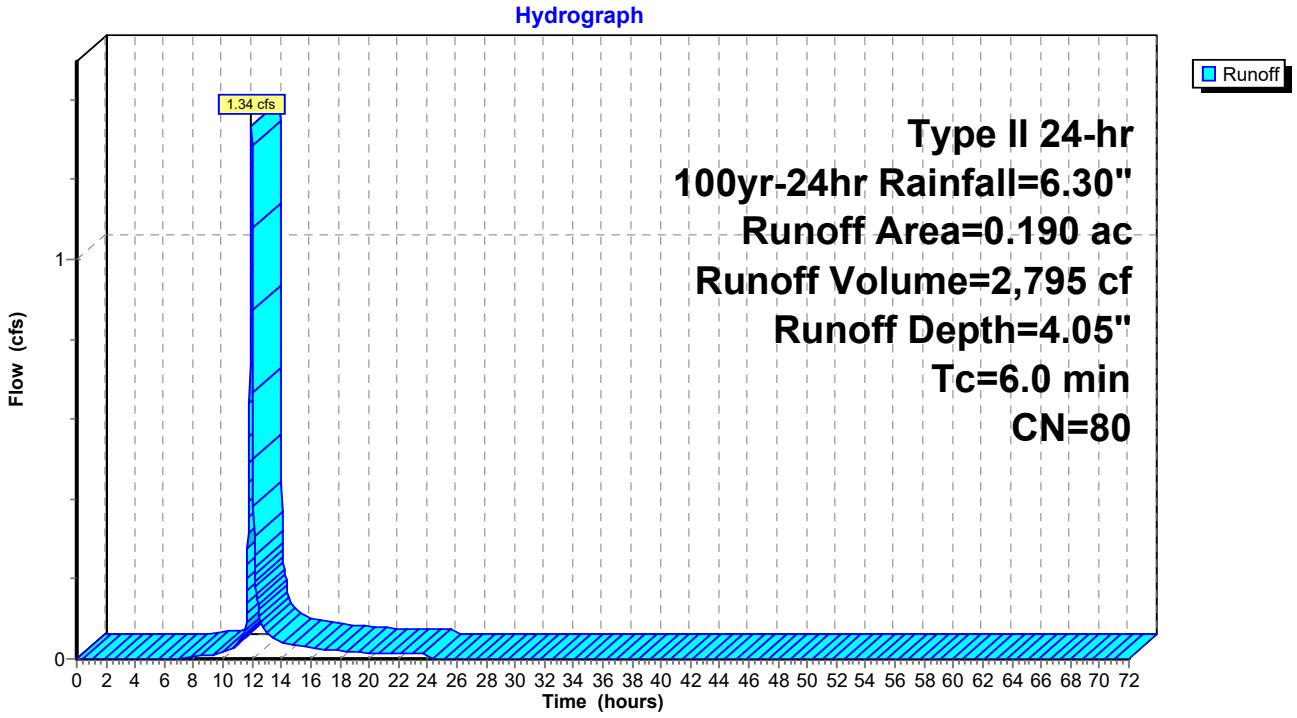
Runoff = 1.34 cfs @ 11.97 hrs, Volume= 2,795 cf, Depth= 4.05"
Routed to Link 4L : Total Site Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
0.190	80	>75% Grass cover, Good, HSG D
0.190	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment C-7: Undetained 7



Summary for Subcatchment D-1: North Offsite Bypass

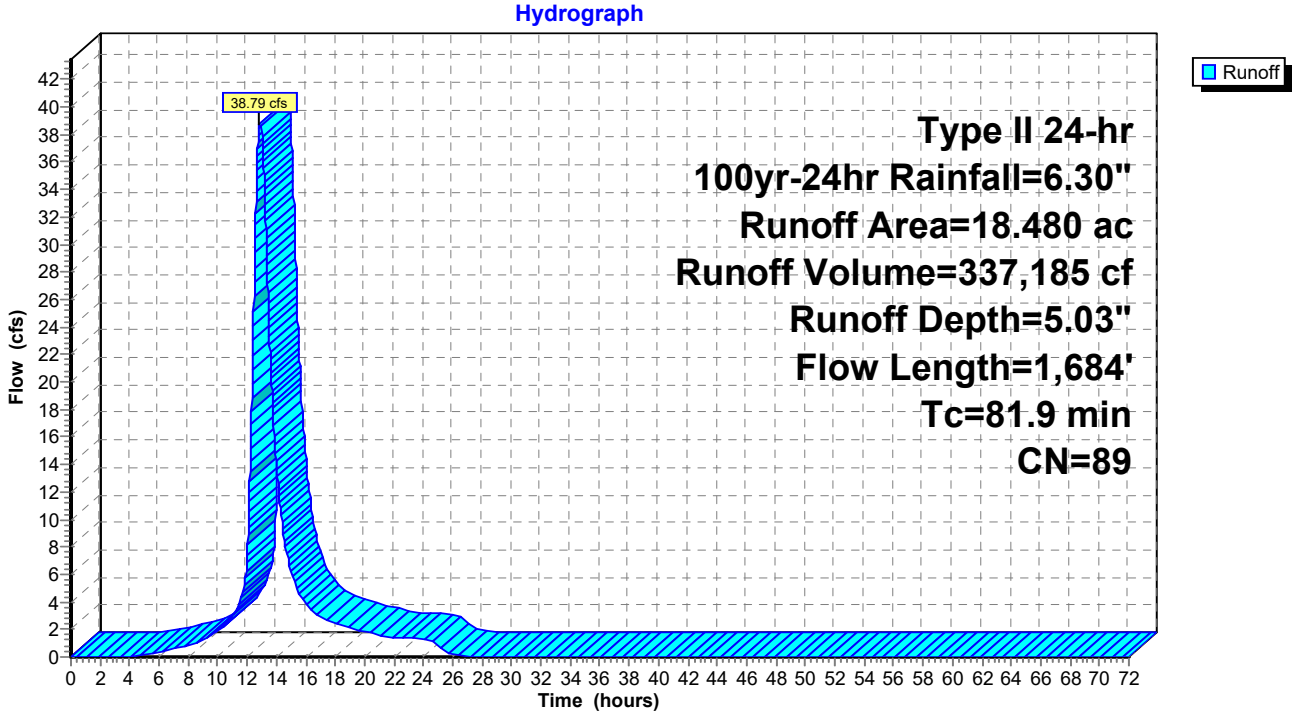
Runoff = 38.79 cfs @ 12.85 hrs, Volume= 337,185 cf, Depth= 5.03"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
18.480	89	Row crops, straight row, Good, HSG D
18.480	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0075	0.27		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
75.7	1,584	0.0015	0.35		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
81.9	1,684	Total			

Subcatchment D-1: North Offsite Bypass



Summary for Subcatchment D-2: North Offsite Bypass

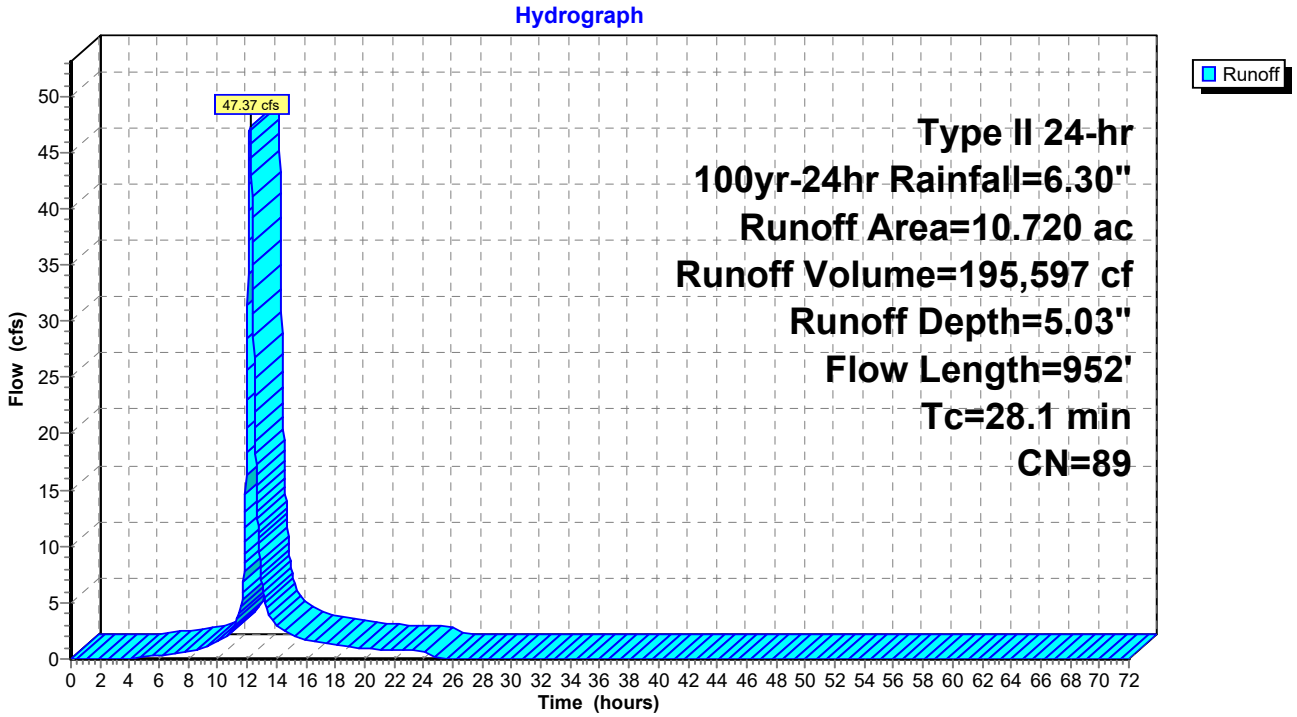
Runoff = 47.37 cfs @ 12.21 hrs, Volume= 195,597 cf, Depth= 5.03"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
10.720	89	Row crops, straight row, Good, HSG D
10.720	89	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0090	0.29		**Sheet Flow,** Fallow n= 0.050 P2= 3.02"
22.3	852	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
28.1	952	Total			

Subcatchment D-2: North Offsite Bypass



Summary for Subcatchment Out A: Outlot A

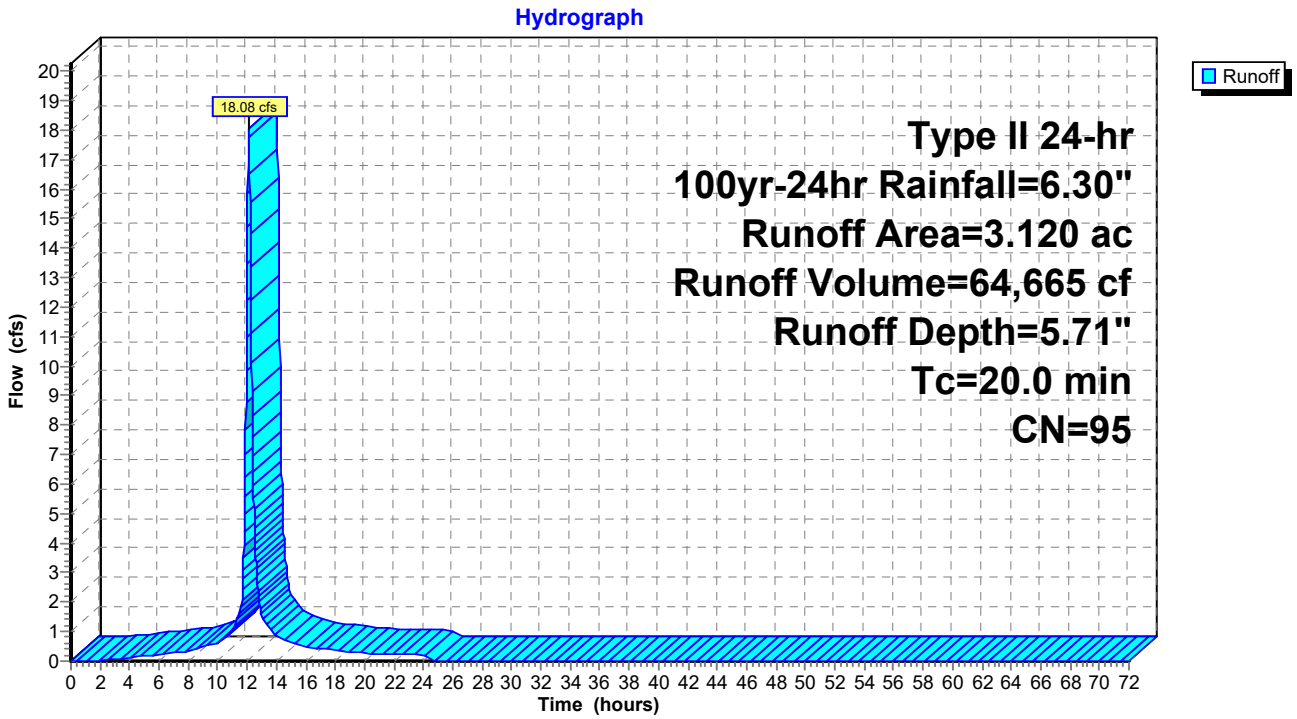
Runoff = 18.08 cfs @ 12.12 hrs, Volume= 64,665 cf, Depth= 5.71"
Routed to Pond 2P : AG-S & UG-S

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
3.120	95	Urban commercial, 85% imp, HSG D
0.468	78	15.00% Pervious Area
2.652	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0					**Direct Entry,**

Subcatchment Out A: Outlot A



Summary for Subcatchment Out B: Outlot B

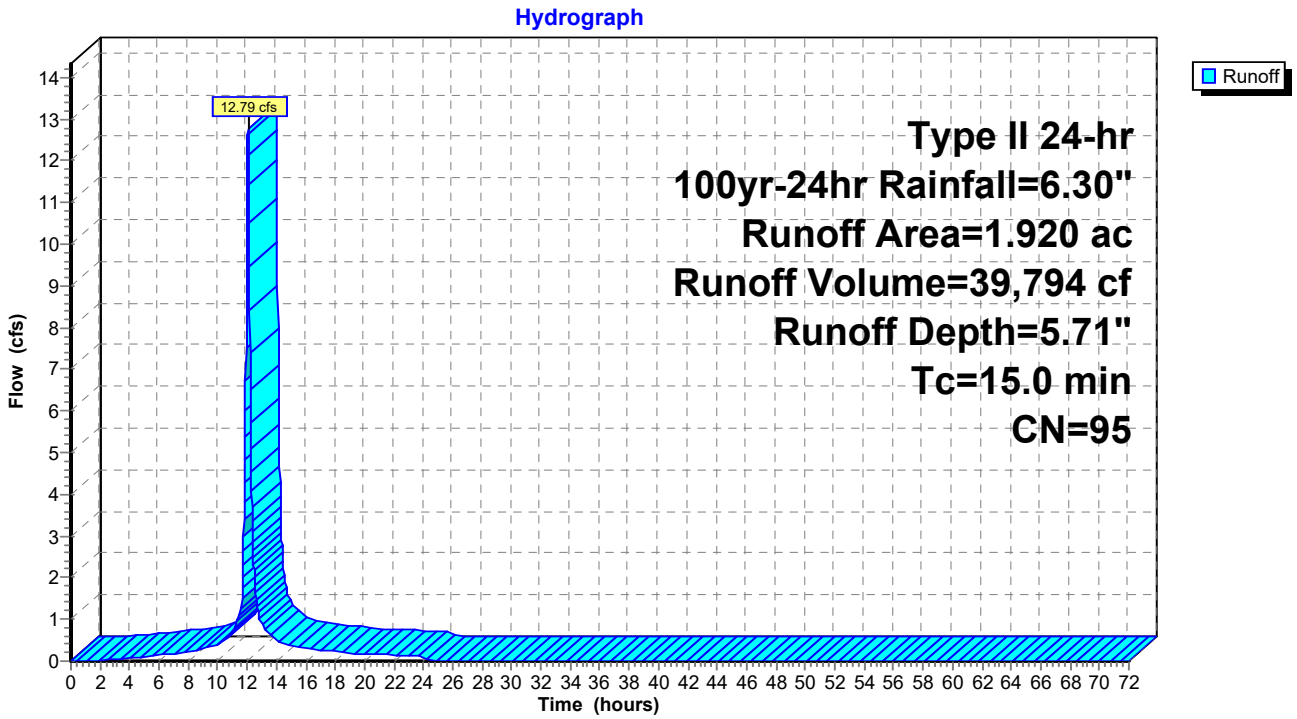
Runoff = 12.79 cfs @ 12.06 hrs, Volume= 39,794 cf, Depth= 5.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
1.920	95	Urban commercial, 85% imp, HSG D
0.288	78	15.00% Pervious Area
1.632	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out B: Outlot B



Summary for Subcatchment Out C: Outlot C

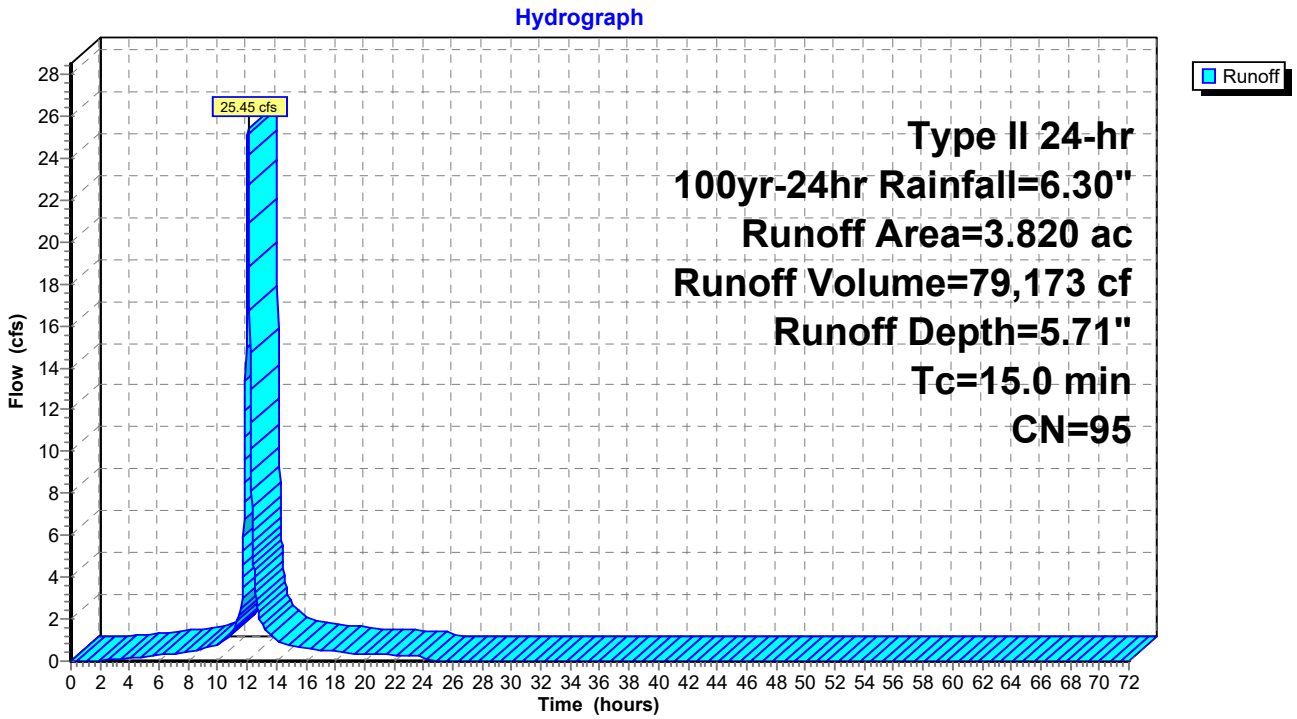
Runoff = 25.45 cfs @ 12.06 hrs, Volume= 79,173 cf, Depth= 5.71"
Routed to Pond 1P : AG-N

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100yr-24hr Rainfall=6.30"

Area (ac)	CN	Description
3.820	95	Urban commercial, 85% imp, HSG D
0.573	78	15.00% Pervious Area
3.247	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment Out C: Outlot C



Summary for Pond 1P: AG-N

Inflow Area = 2,241,162 sf, 31.76% Impervious, Inflow Depth = 5.21" for 100yr-24hr event
Inflow = 190.01 cfs @ 12.08 hrs, Volume= 973,257 cf
Outflow = 61.91 cfs @ 12.75 hrs, Volume= 827,857 cf, Atten= 67%, Lag= 40.5 min
Primary = 6.78 cfs @ 12.75 hrs, Volume= 537,974 cf
Routed to Link 3L : Str. 3.00
Secondary = 55.12 cfs @ 12.75 hrs, Volume= 289,883 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 884.86' @ 12.75 hrs Surf.Area= 94,632 sf Storage= 461,014 cf

Plug-Flow detention time= 635.9 min calculated for 827,627 cf (85% of inflow)
Center-of-Mass det. time= 568.4 min (1,377.3 - 808.9)

Volume	Invert	Avail.Storage	Storage Description
#1	877.29'	573,880 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

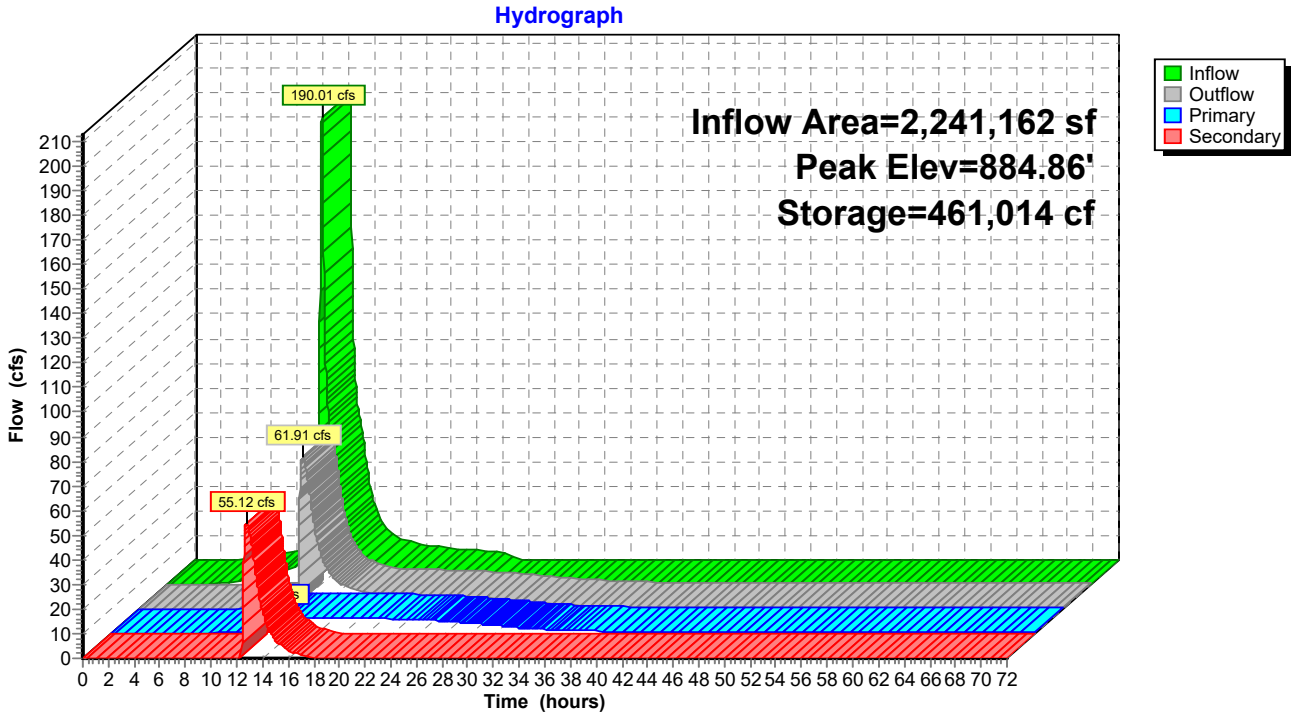
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.29	33,121	1,437.0	0	0	33,121
878.00	37,072	1,579.0	24,905	24,905	67,219
879.00	42,856	1,793.0	39,929	64,834	124,667
880.00	49,752	2,010.0	46,261	111,096	190,366
881.00	57,879	2,227.0	53,764	164,860	263,563
882.00	67,238	2,444.0	62,500	227,360	344,257
883.00	77,811	2,659.0	72,460	299,820	431,602
884.00	87,356	2,779.0	82,537	382,358	483,602
884.64	92,754	2,793.0	57,627	439,984	490,061
885.00	95,775	2,800.0	33,934	473,918	493,335
886.00	104,208	2,819.0	99,962	573,880	502,283

Device	Routing	Invert	Outlet Devices
#1	Primary	877.29'	**12.0" Round Culvert** L= 24.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.29' / 877.22' S= 0.0029 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	877.29'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.14'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	884.54'	**110.0' long + 3.0 '/' SideZ x 26.2' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.78 cfs @ 12.75 hrs HW=884.86' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.78 cfs of 10.06 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 1.14 cfs @ 13.11 fps)
└**3=Orifice/Grate** (Orifice Controls 5.64 cfs @ 7.18 fps)

Secondary OutFlow Max=55.11 cfs @ 12.75 hrs HW=884.86' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 55.11 cfs @ 1.53 fps)

Pond 1P: AG-N


Hydrograph
Inflow Area=2,241,162 sf
Peak Elev=884.86'
Storage=461,014 cf
190.01 cfs
61.91 cfs
55.12 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond 2P: AG-S & UG-S

Inflow Area = 361,548 sf, 75.20% Impervious, Inflow Depth = 5.49" for 100yr-24hr event
Inflow = 56.14 cfs @ 11.98 hrs, Volume= 165,538 cf
Outflow = 5.19 cfs @ 12.70 hrs, Volume= 165,518 cf, Atten= 91%, Lag= 43.3 min
Primary = 5.19 cfs @ 12.70 hrs, Volume= 165,518 cf
Routed to Link 3L : Str. 3.00
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Total Site Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 884.29' @ 12.70 hrs Surf.Area= 21,848 sf Storage= 96,191 cf

Plug-Flow detention time= 678.6 min calculated for 165,472 cf (100% of inflow)
Center-of-Mass det. time= 679.0 min (1,451.1 - 772.0)

Volume	Invert	Avail.Storage	Storage Description
#1	877.38'	43,614 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
#2A	877.53'	22,031 cf	**80.00'W x 180.82'L x 7.00'H Underground Detention** 101,259 cf Overall - 46,183 cf Embedded = 55,076 cf x 40.0% Voids
#3A	878.03'	46,183 cf	**CMP Round 72** x 9 Inside #2 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +152.82' x 28.27 sf x 9 rows 78.00' Header x 28.27 sf x 1 = 2,205.4 cf Inside
		111,827 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
877.38	1,605	205.0	0	0	1,605
878.00	2,000	220.0	1,115	1,115	2,129
879.00	2,697	245.0	2,340	3,455	3,083
880.00	3,462	265.0	3,072	6,527	3,934
881.00	4,284	284.0	3,866	10,392	4,808
882.00	5,163	303.0	4,717	15,109	5,743
883.00	6,098	321.0	5,624	20,733	6,690
884.00	7,090	340.0	6,588	27,321	7,742
885.00	8,138	359.0	7,608	34,929	8,855
885.90	9,130	376.0	7,766	42,695	9,903
886.00	9,248	378.0	919	43,614	10,029

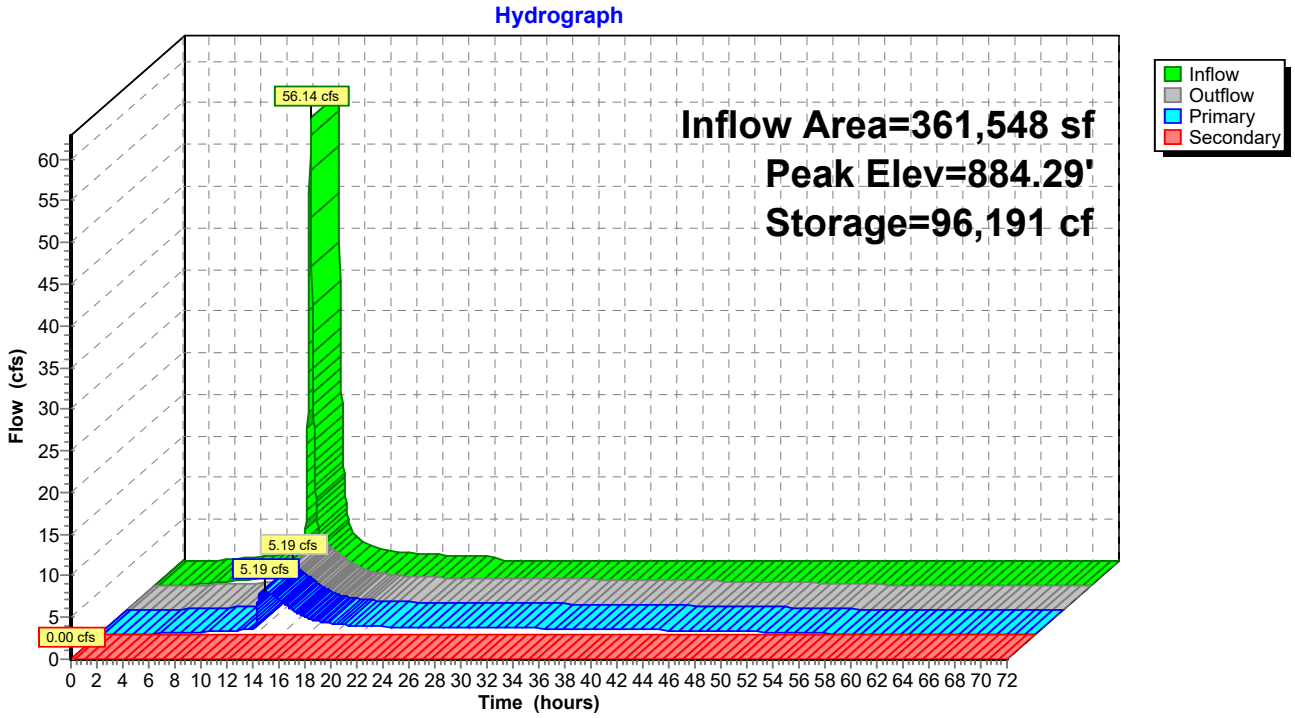
Device	Routing	Invert	Outlet Devices
#1	Primary	877.38'	**15.0" Round Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 877.38' / 877.22' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	877.38'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	882.61'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	885.40'	**25.0' long + 3.0 '/' SideZ x 53.8' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.19 cfs @ 12.70 hrs HW=884.29' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 5.19 cfs of 14.81 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 1.09 cfs @ 12.50 fps)
└**3=Orifice/Grate** (Orifice Controls 4.10 cfs @ 5.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=877.38' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 2P: AG-S & UG-S

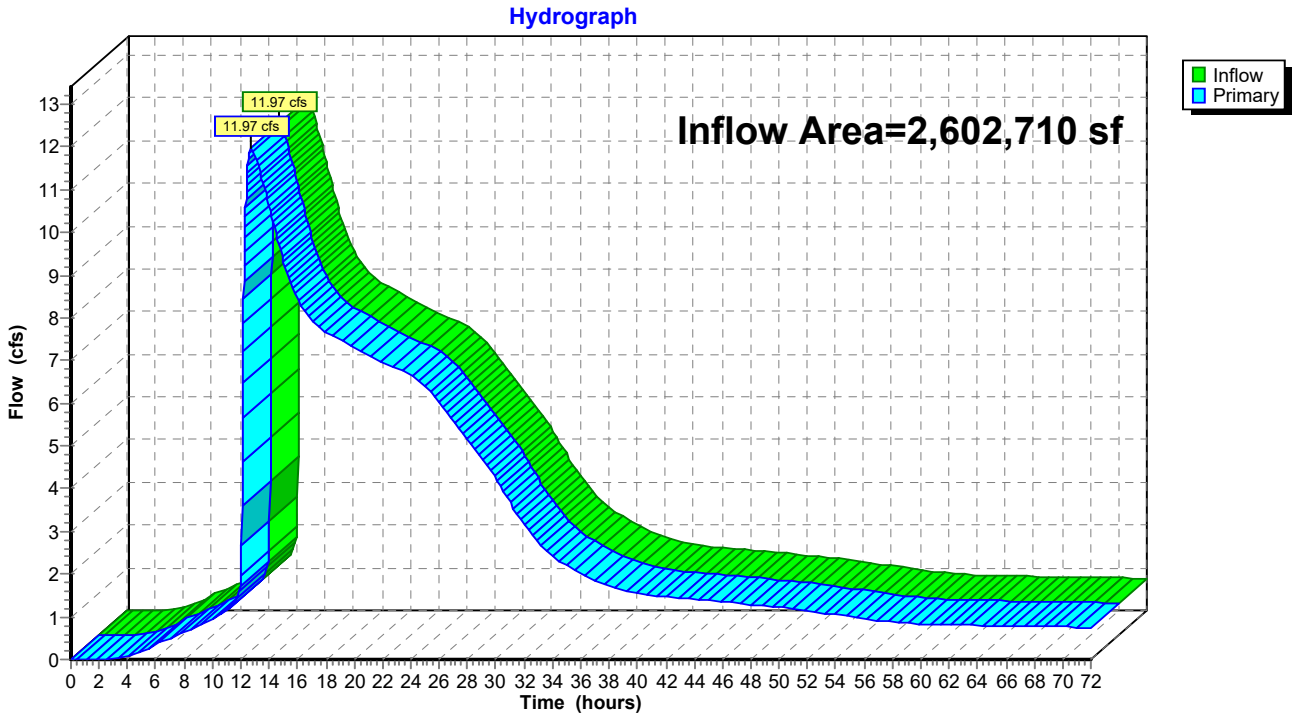


Summary for Link 3L: Str. 3.00

Inflow Area = 2,602,710 sf, 37.79% Impervious, Inflow Depth > 3.24" for 100yr-24hr event
Inflow = 11.97 cfs @ 12.72 hrs, Volume= 703,492 cf
Primary = 11.97 cfs @ 12.72 hrs, Volume= 703,492 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Total Site Runoff

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 3L: Str. 3.00

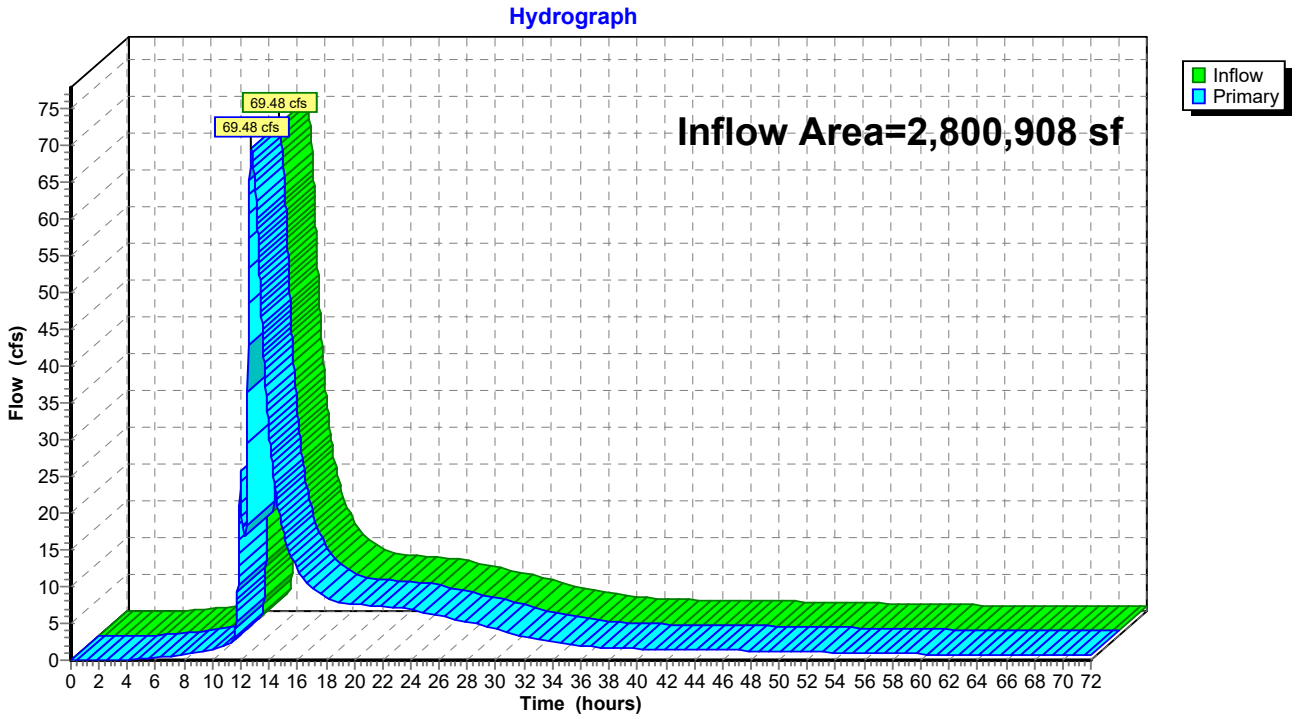


Summary for Link 4L: Total Site Runoff

Inflow Area = 2,800,908 sf, 35.18% Impervious, Inflow Depth > 4.54" for 100yr-24hr event
Inflow = 69.48 cfs @ 12.74 hrs, Volume= 1,060,563 cf
Primary = 69.48 cfs @ 12.74 hrs, Volume= 1,060,563 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link 4L: Total Site Runoff



1.3 – EMERGENCY SPILLWAY CALCULATIONS

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Jan 10 2025

North Detention Basin - Emergency Spillway

Trapezoidal

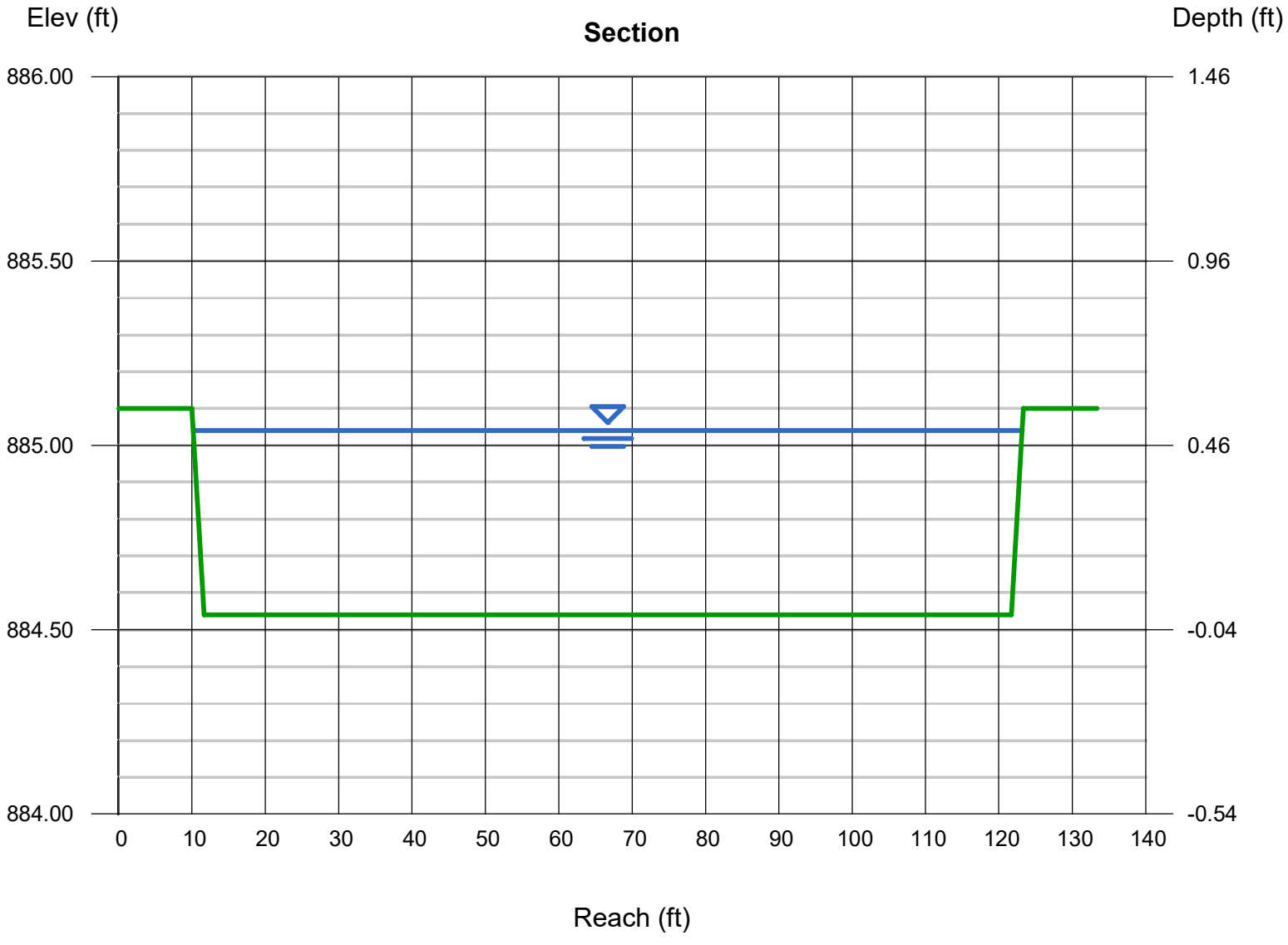
Bottom Width (ft)	= 110.00
Side Slopes (z:1)	= 3.00, 3.00
Total Depth (ft)	= 0.56
Invert Elev (ft)	= 884.54
Slope (%)	= 2.00
N-Value	= 0.025

Calculations

Compute by:	Known Q
Known Q (cfs)	= 288.76

Highlighted

Depth (ft)	= 0.50
Q (cfs)	= 288.76
Area (sqft)	= 55.75
Velocity (ft/s)	= 5.18
Wetted Perim (ft)	= 113.16
Crit Depth, Yc (ft)	= 0.56
Top Width (ft)	= 113.00
EGL (ft)	= 0.92



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Jan 10 2025

South Detention Basin Emergency Spillway

Trapezoidal

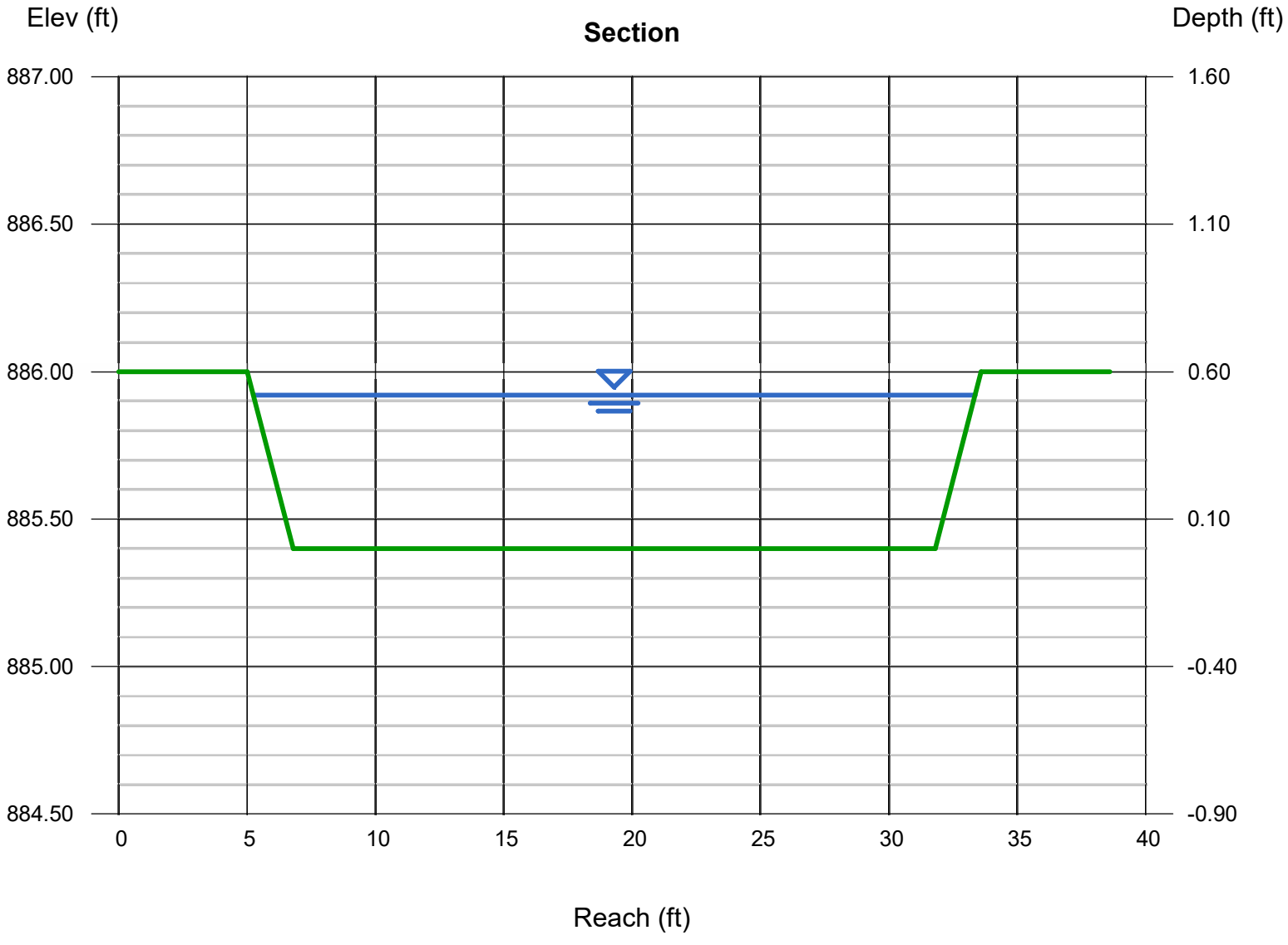
Bottom Width (ft)	= 25.00
Side Slopes (z:1)	= 3.00, 3.00
Total Depth (ft)	= 0.60
Invert Elev (ft)	= 885.40
Slope (%)	= 2.00
N-Value	= 0.025

Calculations

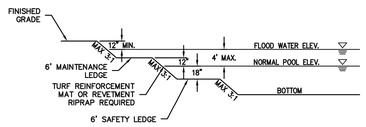
Compute by:	Known Q
Known Q (cfs)	= 70.41

Highlighted

Depth (ft)	= 0.52
Q (cfs)	= 70.41
Area (sqft)	= 13.81
Velocity (ft/s)	= 5.10
Wetted Perim (ft)	= 28.29
Crit Depth, Yc (ft)	= 0.60
Top Width (ft)	= 28.12
EGL (ft)	= 0.92



1.4 – STORMWATER DETAILS



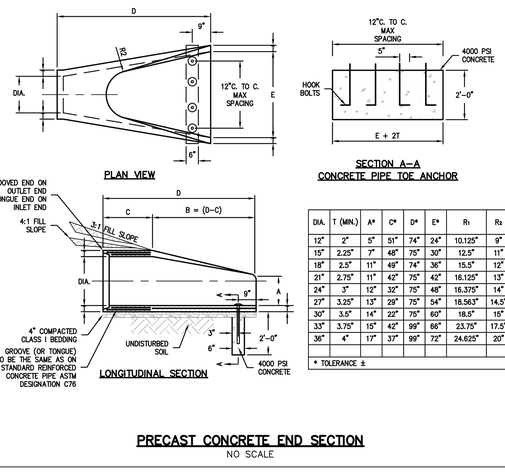
POND SECTION

NOTES:

1. GENERAL
   - A. ALL PONDS, INCLUDING THOSE NOT USED FOR DETENTION/RETENTION SHALL INCORPORATE APPLICABLE REQUIREMENTS BELOW. PONDS SHALL MEET THE REQUIREMENTS OF THE TOWN'S STORMWATER MANAGEMENT ORDINANCE AND THE HENDRICKS COUNTY STORMWATER TECHNICAL STANDARDS MANUAL UNLESS OTHERWISE NOTED.
2. ACCESS
   - A. PROVIDE INGRESS AND EGRESS FROM A NEARBY ROAD AND A SAFETY RAMP INTO THE POND.
   - B. SAFETY RAMP SHALL BE A MINIMUM OF 20 FEET WIDE AND MAXIMUM EXIT SLOPE OF 6H:1V.
3. WET POND DESIGN
   - A. MAXIMUM GROUND SLOPE AND POND DIMENSIONS SHALL BE AS SHOWN.
   - B. POND SHALL BE DESIGNED TO PREVENT STAGNATION OF WATER. POND DESIGN SHALL CONSIDER SHAPE, DEPTH, VEGETATIVE BUFFERS, AND OTHER METHODS TO ENCOURAGE A WELL – FUNCTIONING POND. THE TOWN MAY REQUIRE SURFACE OR SUBMERGED AERATION EQUIPMENT IF POND STAGNATION IS A CONCERN.
4. DRY POND DESIGN
   - A. AN UNDERDRAIN IS REQUIRED.
   - B. MAXIMUM GROUND SLOPE SHALL BE 3H:1V. PROTECT SIDE SLOPES WITH TURF REINFORCEMENT MAT.

DETENTION/RETENTION PONDS
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. EW-04
REVISION DATE: SEPT 2016



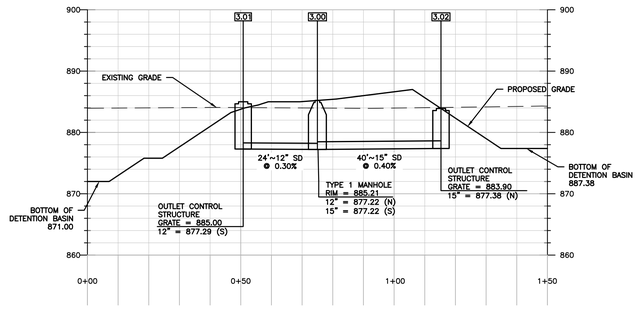
DIA.	T (MIN.)	A*	C*	D*	E*	R1	R2	APPROX. WEIGHT
12"	2"	5"	51"	74"	24"	10.125"	9"	800
15"	2.25"	7"	48"	75"	30"	12.5"	11"	1100
18"	2.5"	11"	49"	74"	36"	15.5"	12"	1300
21"	2.75"	11"	42"	75"	42"	16.125"	13"	1500
24"	3"	12"	32"	75"	48"	16.375"	14"	1800
27"	3.25"	13"	29"	75"	54"	18.563"	14.5"	2100
30"	3.5"	14"	22"	75"	60"	18.5"	15"	2400
33"	3.75"	15"	42"	99"	66"	23.75"	17.5"	4100
36"	4"	17"	37"	99"	72"	24.625"	20"	4200

* TOLERANCE ±

PRECAST CONCRETE END SECTION
NO SCALE

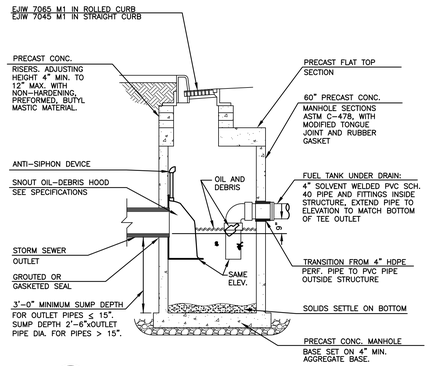
TOWN OF BROWNSBURG
DETAIL NO. SW-09
REVISION DATE: SEPT 2016

B1 TOWN OF BROWNSBURG STORM DETAILS
HORIZ: 1"= 20' VERT: 1"=10'

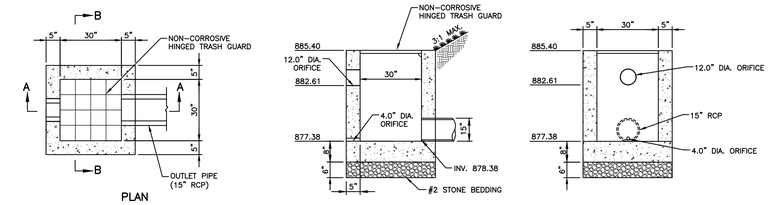


SECTION A-A

A1 DETENTION BASIN CROSS SECTION A-A
HORIZ: 1"= 20' VERT: 1"=10'



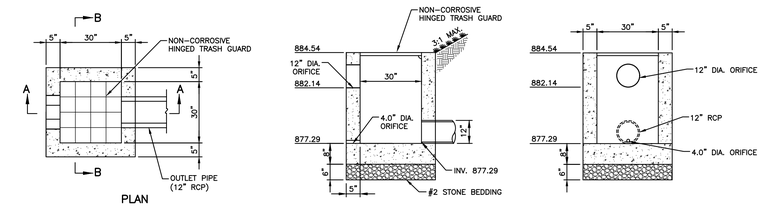
D3 ENVIRONMENTAL CATCH BASIN (mEXPRESS)
NTS



NOTE: CONCRETE SHALL BE PRECAST.

STRUCTURE 3.02
SOUTH POND OUTLET DETAIL
NO SCALE

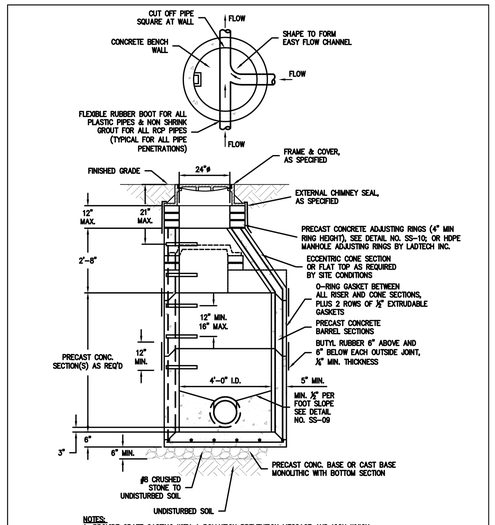
D4 POND 2 OUTLET STRUCTURE (SOUTH)
NTS



NOTE: CONCRETE SHALL BE PRECAST.

STRUCTURE 3.01
NORTH POND OUTLET DETAIL
NO SCALE

C4 POND 1 OUTLET STRUCTURE (NORTH)
NTS



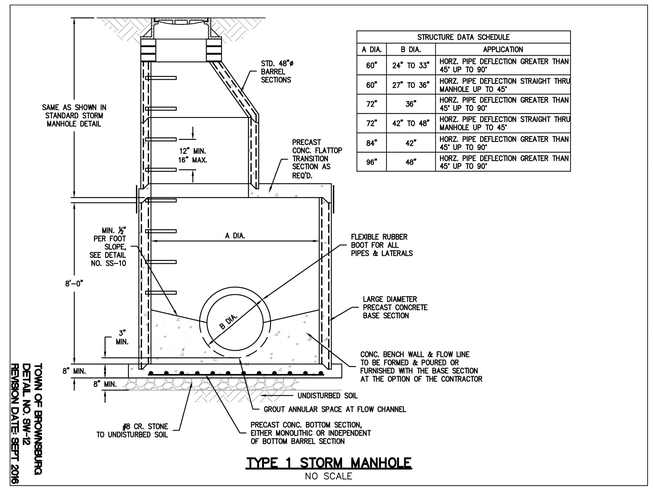
NOTES:
1. PROVIDE GRATE CASTING WITH A POLLUTION PREVENTION MESSAGE AND ICON WHICH ARE PERMANENTLY ATTACHED OR CAST DIRECTLY INTO THE CASTING. THE CASTING SHALL HAVE THE MESSAGE "DUMP NO WASTE <FISH ICON> DRAINS TO WATERWAY" IN MINIMUM 1 INCH HIGH LETTERS.
2. INSTALL CASTING ¾" BELOW FINISHED PAVEMENT ELEVATION.

STANDARD STORM MANHOLE
NO SCALE

REFER TO SPEC SECTION 02720

TOWN OF BROWNSBURG
DETAIL NO. SW–11
REVISION DATE: FEBRUARY 2024

Town standards can be found at www.brownsburg.org



STRUCTURE DATA SCHEDULE		
A DIA.	B DIA.	APPLICATION
60"	24" TO 33"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°
60"	27" TO 36"	HORZ. PIPE DEFLECTION STRAIGHT THRU MANHOLE UP TO 45°
72"	36"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°
72"	42" TO 48"	HORZ. PIPE DEFLECTION STRAIGHT THRU MANHOLE UP TO 45°
84"	42"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°
96"	48"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°

TYPE 1 STORM MANHOLE
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. SW–12
REVISION DATE: SEPT 2016

A3 TOWN OF BROWNSBURG MANHOLE DETAILS
NTS

BENCHMARK:

THE BASIS OF ELEVATIONS HEREON IS NAVD 88 PER OBSERVATIONS OF SELECTED STATIONS IN THE NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATION (NGS CORS) NETWORK.
MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT – SEE DRAWING FOR LOCATION.
ELEVATION = 889.36'

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

STORMWATER DETAILS

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-705

Indiana 811 Know what's below. Call before you dig.

Images: _Xrefs: 10220046TBLK.dwg; 10220046GRA.dwg
Layout: C-705 Notes
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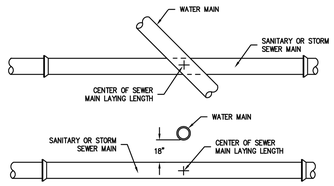
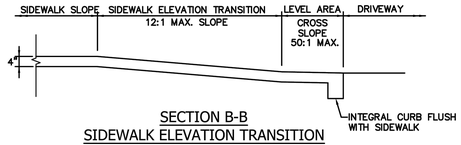


NOTES:
1. WATER MAIN AND SEWER MINIMUM SEPARATION: 18" VERTICAL SEPARATION 10'-0" HORIZONTAL SEPARATION.

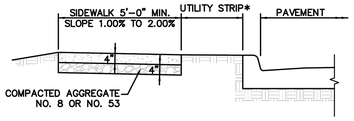
MINIMUM CROSSOVER AND SEPARATION REQUIREMENTS FOR SEWER & WATER MAINS

NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. GE-02
REVISION DATE: SEPT 2016



SECTION B-B
SIDEWALK ELEVATION TRANSITION



SECTION A-A
SIDEWALK WITH UTILITY STRIP

* UTILITY STRIP WIDTH SHALL COMPLY WITH THE CURRENT TOWN OF BROWNSBURG SUBDIVISION CONTROL ORDINANCE AND CURRENT TOWN OF BROWNSBURG THOROUGHFARE PLAN.

CONCRETE SIDEWALK DETAIL

NO SCALE

NOTE:

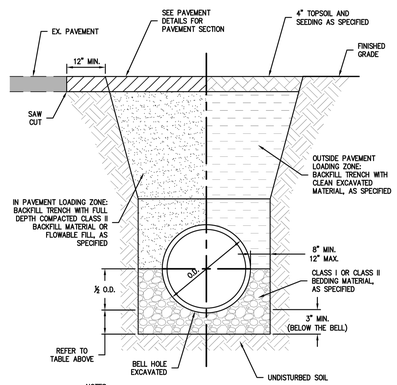
CONCRETE SIDEWALK SHALL BE INSTALLED ON COMPACTED SUBGRADE. NO. 8 OR NO. 53 STONE SHALL BE INSTALLED AND COMPACTED ON THE APPROVED SUBGRADE. CONCRETE SHALL BE INDOT CLASS A CONCRETE AND IT SHALL HAVE A 28-DAY MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4,000 PSI. WHERE A SIDEWALK PASSES THROUGH A DRIVE APPROACH, IT SHALL BE THE SAME THICKNESS AS THE ADJACENT CONCRETE DRIVE, THE CONCRETE EQUIVALENT FOR THE ADJACENT HMA DRIVE, OR SIX (6) INCHES, WHICHEVER IS GREATER.

REFER TO SPEC SECTION 02500, 02502

TOWN OF BROWNSBURG
DETAIL NO. TR-06
REVISION DATE: FEBRUARY 2024

Town standards can be found at www.brownsburg.org

PIPE SIZE	12" TO 15"	18" TO 30"	36" & OVER
BEDDING BELOW THE PIPE BARREL	4"	O.D. / 4	8"



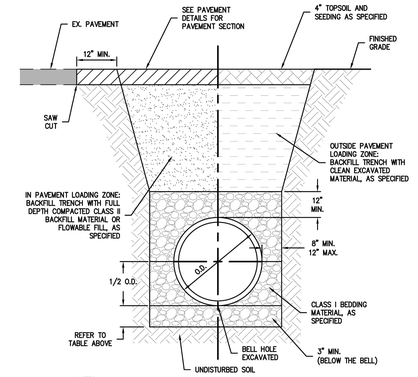
NOTES:
1. RIGID PIPE MATERIALS FOR STORM SEWERS INCLUDE DUCTILE IRON AND REINFORCED CONCRETE PIPE (RCP).
2. RIGID PIPE MATERIALS FOR SANITARY SEWERS INCLUDE DUCTILE IRON PIPE.
3. PAVEMENT LOADING ZONE IS THE AREA WITHIN 5 FEET OF ANY EDGE OF PAVEMENT, CURB, GUTTER, SIDEWALK OR SIMILAR STRUCTURE.

RIGID GRAVITY PIPE TRENCH

NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. OT-02
REVISION DATE: SEPT 2016

PIPE SIZE	12" TO 15"	18" TO 30"	36" & OVER
BEDDING BELOW THE PIPE BARREL	4"	O.D. / 4	8"



NOTES:
1. INSTALLATION OF FLEXIBLE PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321.
2. FLEXIBLE PIPE MATERIALS FOR STORM SEWERS INCLUDE HIGH DENSITY POLYETHYLENE (HDPE), POLYPROPYLENE, AND POLYVINYL CHLORIDE (PVC) PIPE.
3. FLEXIBLE PIPE MATERIALS FOR SANITARY SEWERS INCLUDE POLYVINYL CHLORIDE (PVC) PIPE.
4. PAVEMENT LOADING ZONE IS THE AREA WITHIN 5 FEET OF ANY EDGE OF PAVEMENT, CURB, GUTTER, SIDEWALK OR SIMILAR STRUCTURE.

FLEXIBLE GRAVITY PIPE TRENCH

NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. OT-04
REVISION DATE: FEB 2017

Indiana 811
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ARCHITECTURE | ENGINEERING | GEOSPATIAL
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

TOWN OF BROWNSBURG DETAILS

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

C-706

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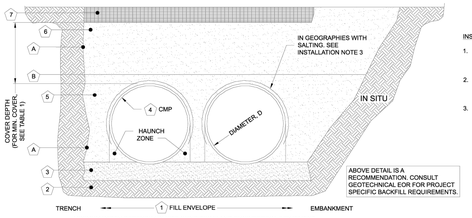

TABLE 1:

DIAMETER, D	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
>48"-96"	12"	3" x 1", 5" x 1"
>96"	D/8	3" x 1", 5" x 1"

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.

INSTALLATION NOTES

1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
3. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

TABLE 2: xFiltration

XFILTRATION® JOINT STANDARD BACKFILL SPECIFICATIONS

	MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1	FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.50 × D	MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3.00 PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10'0"
2	FOUNDATION	**AASHTO 26.5.2** - PER ENGINEER OF RECORD	PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND FOUNDATION BROUGHT BACK TO GRADE WITH A FILL MATERIAL APPROVED BY THE ENGINEER OF RECORD.	
3	BEDDING	**AASHTO M 43: 3, 357, 4, 467, 5, 56, 57**	PIPE SHOULD BE PLACED ON THE FOUNDATION BOTTOM WITH A 4"-6" MINIMUM STONE DEPTH ROUGHLY SHAPPED TO FIT THE BOTTOM OF THE PIPE. IF THE ENGINEER OF RECORD DETERMINES THAT STONE BEDDING IS NOT NEEDED, THE PIPE MAY BE PLACED ON THE TRENCH BOTTOM SEPERATED WITH A NON-WOVEN GEOTEXTILE PLACED AT THE INVERT OF A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH.	
4			CORRUGATED METAL PIPE	
5	BACKFILL	FREE-DRAINING, ANGULAR, NATURALLY OCCURING WASHED-STONE PER **AASHTO M 43: 3, 357, 4, 467, 5, 56, 57** APPROVED EQUAL * OR AASHTO	HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. BACKFILL SHALL BE PLACED IN 8" +/- LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WHERE CONVENTIONAL COMPACTION TESTING IS NOT PRACTICAL, THE MATERIAL SHALL BE MECHANICALLY COMPACTED UNTIL NO FURTHER YIELDING OF MATERIAL IS OBSERVED UNDER THE COMPACTOR. AREAS WITH HIGH WATER TABLE FLUCTUATIONS THAT INTERACT WITH THE PIPE ZONE, CONSIDER INSTALLING A GEOTEXTILE SEPARATION LAYER TO PREVENT SOIL MIGRATION.	*IN
6	COVER MATERIAL	UP TO MIN. COVER - **AASHTO M 145: A-1, A-2, A-3** ABOVE MIN. COVER - PER ENGINEER OF RECORD	COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROADBASE MATERIAL WITHIN MIN COVER LIMITS	
7	RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE)	PER ENGINEER OF RECORD	FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.	
A	SIDE GEOTEXTILE	NONE	GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION WHEN STONE BEDDING IS USED. IF NO STONE BEDDING IS USED, THEN SIDE GEOTEXTILE IS REQUIRED.	
B	GEOTEXTILE BETWEEN LAYERS	NONE	IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE INVERT, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION.	

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
- APPROVED REGIONAL EQUIVALENTS FOR SECTION 5 INCLUDE CA-7, MIDOT 6AA, 6A, OR 5G, PROVIDED THEY MEET THE PARTICLE SIZES INDICATED.

MANUFACTURER RECOMMENDED BACKFILL

NOT TO SCALE

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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO65166 Meijer ABE - Brownsburg, IN
72" Underground xFiltration - Rev2
Brownsburg, IN
DETENTION SYSTEM

PROJECT No.: 45892	SEQ. No.: 65166	DATE: 12/20/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

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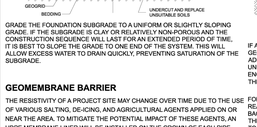
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.



GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

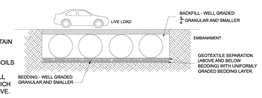
GEOMEMBRANE BARRIER

THE RESISTIVITY OF A PROJECT SITE MAY CHANGE OVER TIME DUE TO THE USE OF VARIOUS SALTING, DE-ICING, AND AGRICULTURAL AGENTS APPLIED ON OR NEAR THE AREA. TO MITIGATE THE POTENTIAL IMPACT OF THESE AGENTS, AN HDPE MEMBRANE LINER WILL BE INSTALLED ON THE CROWN OF EACH PIPE, CREATING AN IMPERMEABLE BARRIER. THIS MEASURE IS DESIGNED TO PROTECT THE SYSTEM FROM ENVIRONMENTAL CHANGES THAT COULD LEAD TO PREMATURE CORROSION AND REDUCE THE OVERALL SERVICE LIFE.

IN-SITU TRENCH WALL

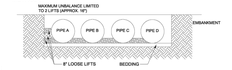
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



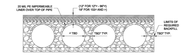
BACKFILL PLACEMENT

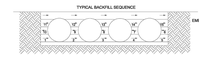
MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.



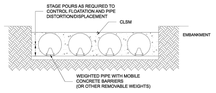
IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.





WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

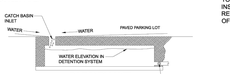


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED; INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

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CONTECH CMP DETENTION SYSTEMS
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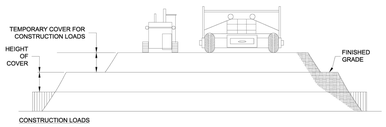
DYO65166 Meijer ABE - Brownsburg, IN
72" Underground xFiltration - Rev2
Brownsburg, IN
DETENTION SYSTEM

PROJECT No.: 45892	SEQ. No.: 65166	DATE: 12/20/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		



CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

POLYMER COATED: AASHTO M-245 OR ASTM A-762

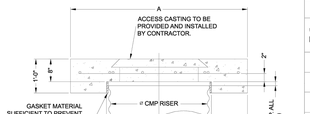
ALUMINUM: AASHTO M-196 OR ASTM B-745

APPLICABLE HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSPS (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

REQUIREMENTS
INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION I OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

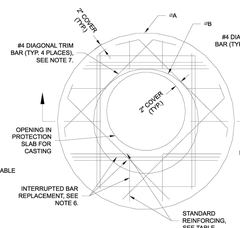
NOTE:
THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



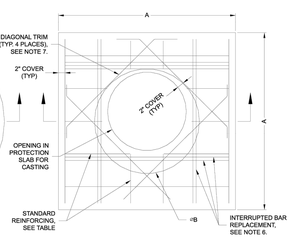
SECTION VIEW

REINFORCING TABLE				
ø CMP RISER	A	ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	ø 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	ø 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	ø 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	ø 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	ø 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL

SCALE: N.T.S.

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DYO65166 Meijer ABE - Brownsburg, IN
72" Underground xFiltration - Rev2
Brownsburg, IN
DETENTION SYSTEM

PROJECT No.: 45892	SEQ. No.: 65166	DATE: 12/20/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

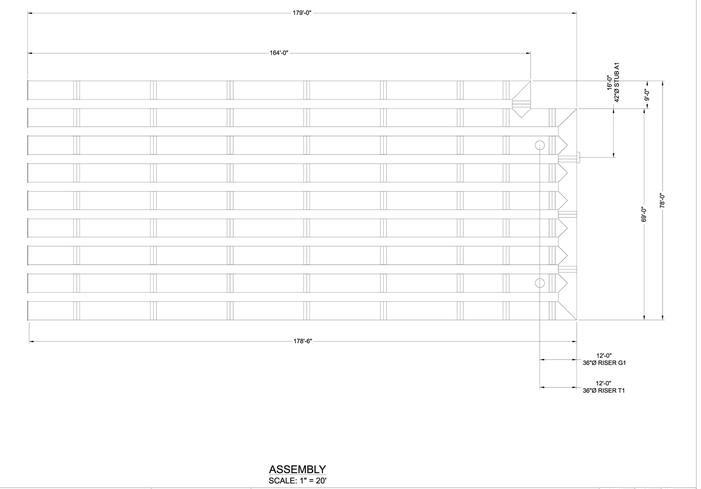
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 1,620 LF

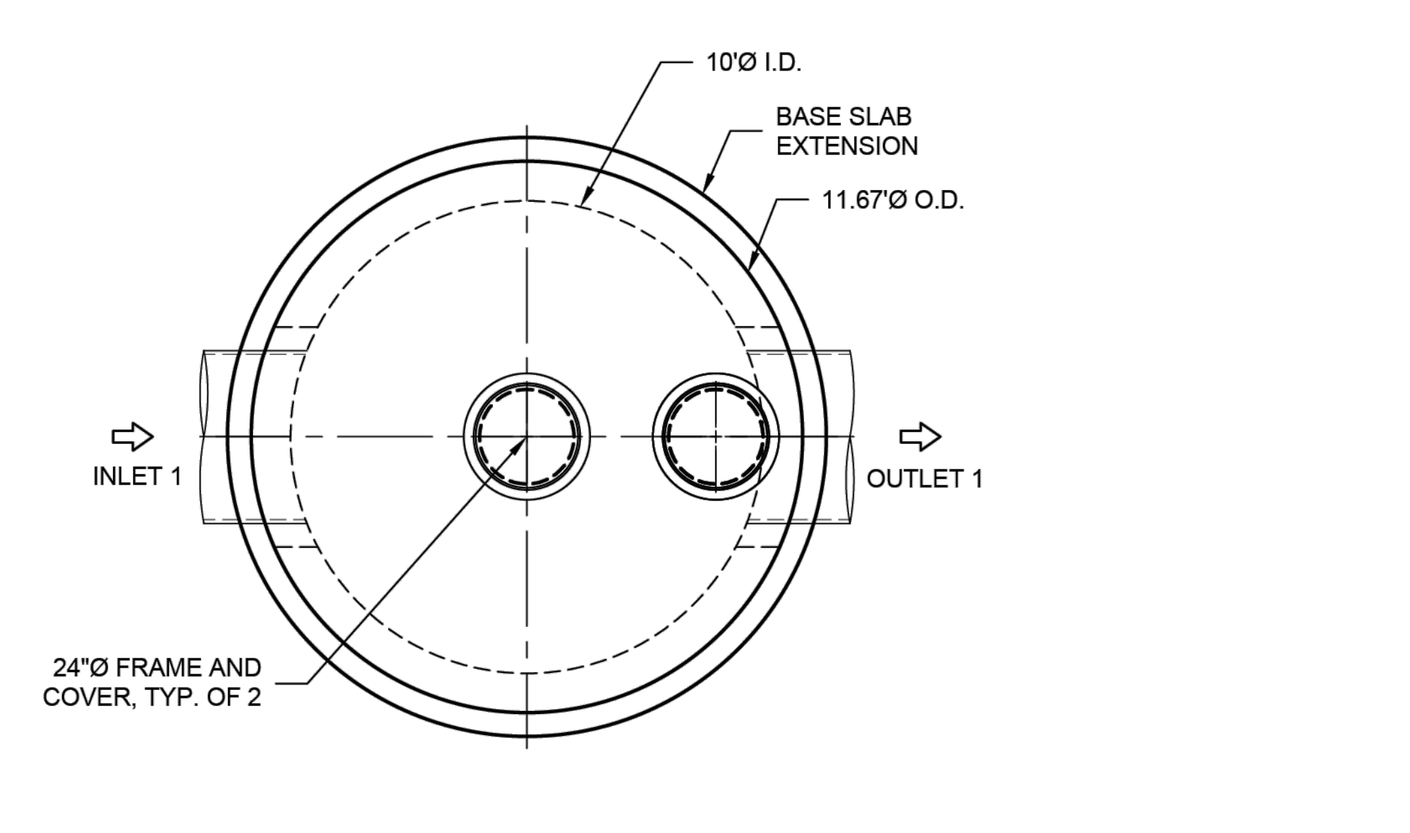
STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 68,080 CF
- PIPE STORAGE VOLUME = 45,804 CF
- BACKFILL STORAGE VOLUME = 22,412 CF
- TOTAL STORAGE PROVIDED = 68,216 CF
- STONE VOID = 40%

PIPE DETAILS
- DIAMETER = 72"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = ALT2
- WALL TYPE = X-FILTRATION
- BARREL SPACING = 36"

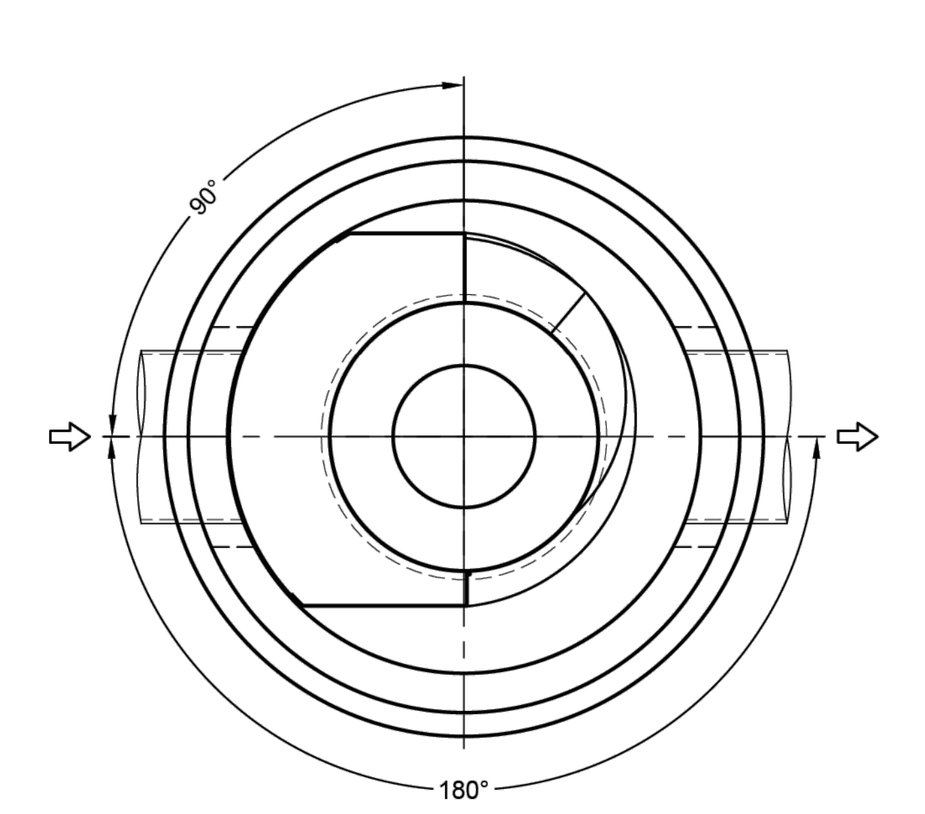
BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 6"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 6"



NOTES
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OT



PLAN VIEW
INTERNALS NOT SHOWN



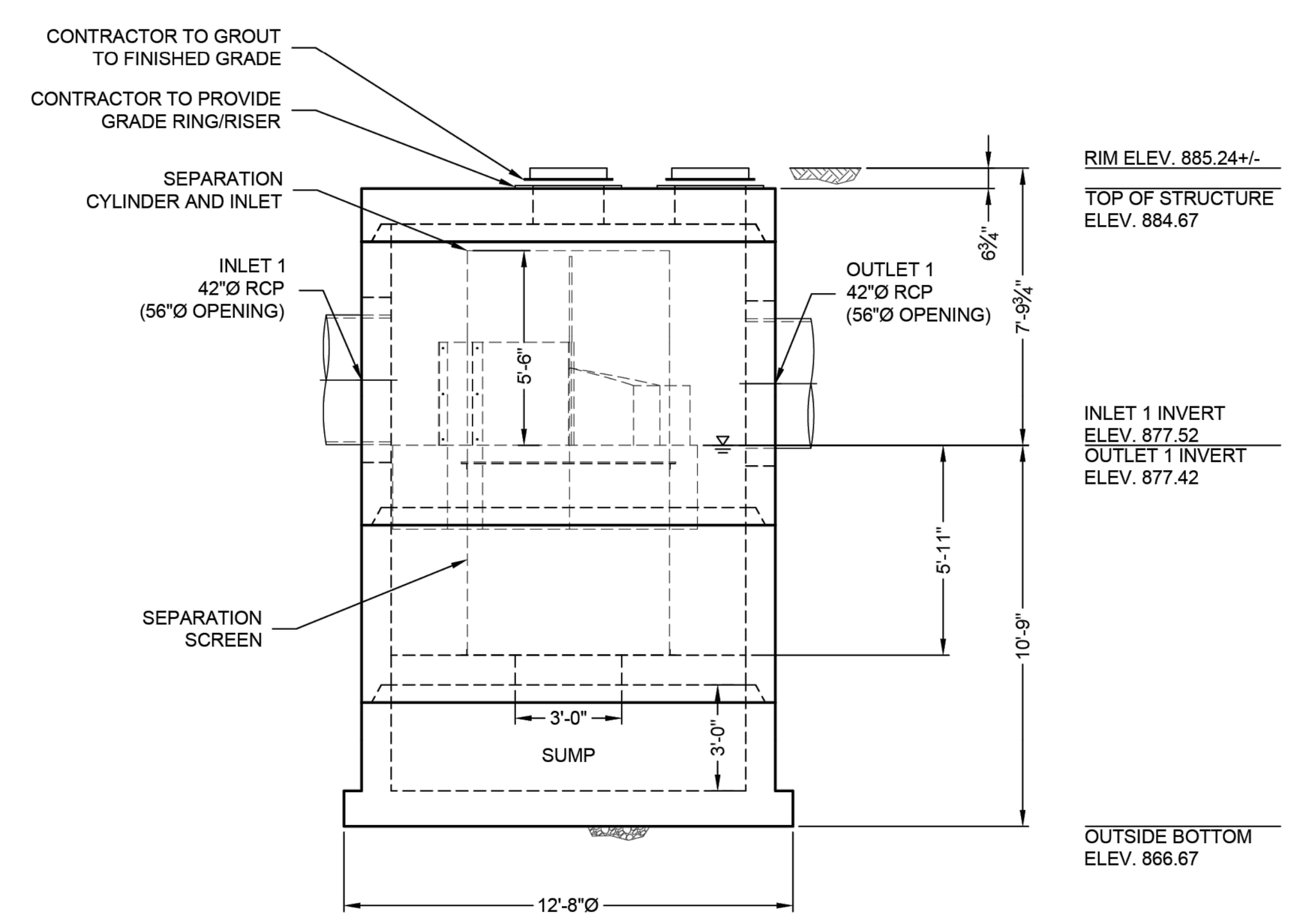
PLAN VIEW FOR PIPE ORIENTATION
TOP SLAB NOT SHOWN

MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	5653-10 CONCENTRIC FIBERGLASS INSERT	CONTRACTOR
1	5653, 2400 micron, 5.71' O.D. x 5.42' SCREEN, GREEN FLANGE UP	CONTRACTOR
1	56 SERIES HARDWARE KIT	CONTRACTOR
1	SEALANT FOR JOINTS	CONTRACTOR
2	24"Ø X 4" FRAME AND COVER, EJ #41600389, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	9.46 CFS
PEAK FLOW RATE	53.09 CFS
RETURN PERIOD OF PEAK FLOW	100 YRS



ELEVATION VIEW

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 32500 LBS.
STRUCTURE IS DELIVERED IN 4 PIECES

MAX FOOTPRINT = 12.67'Ø

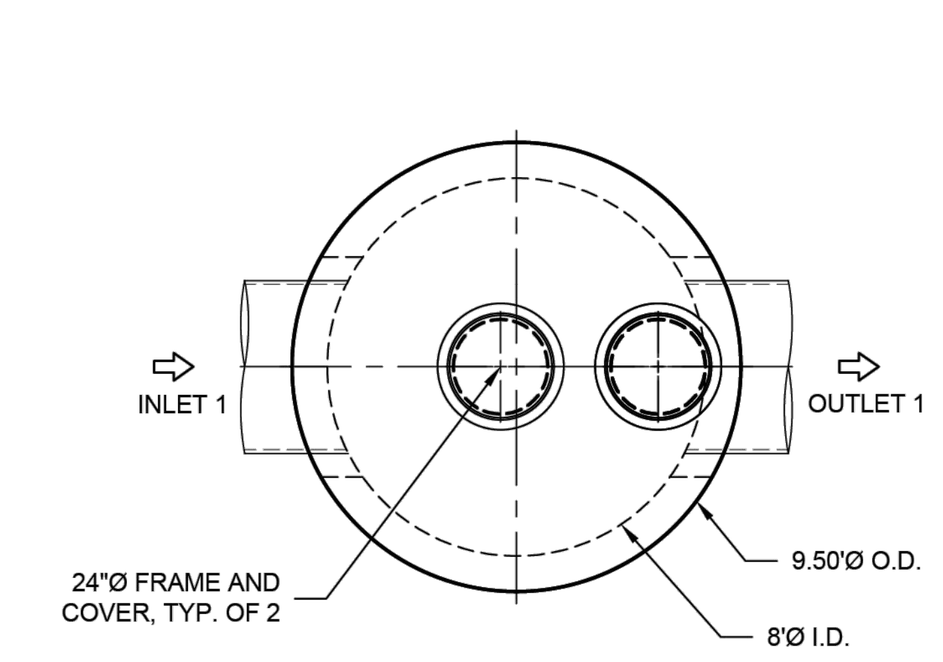
CONTECH **CONTRACT** DRAWING

NCI
LAYOUT 1A

CDS5653-10-C - 831258-15
MEIJER ABE - BROWNSBURG, IN
BROWNSBURG, IN
SITE DESIGN: SITE DESIGNATION: 1.01 - WQU

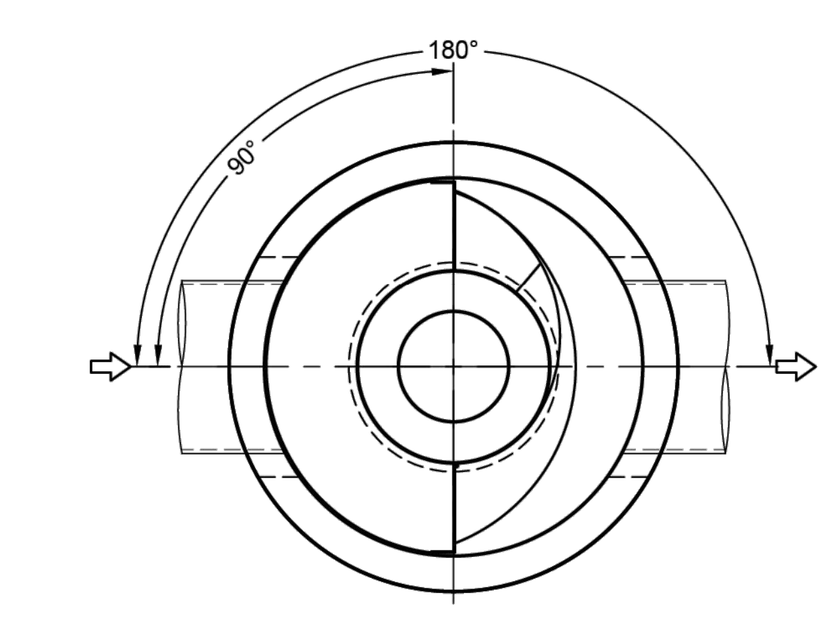
CONTECH ENGINEERED SOLUTIONS LLC www.ContechES.com

DATE: 12/12/24	
DESIGNED: MDB	DRAWN: CER
CHECKED: MDB	APPROVED: MDB
PROJECT No.: 831258	SEQUENCE No.: 15
SHEET: 1 OF 1	



PLAN VIEW
INTERNALS NOT SHOWN

INTERNAL COMPONENTS TO BE INSTALLED ON SITE BY CONTECH FIELD CONSULTANT. PLEASE CONTACT CONTECH FOR CURRENT INSTALLATION LEAD TIME



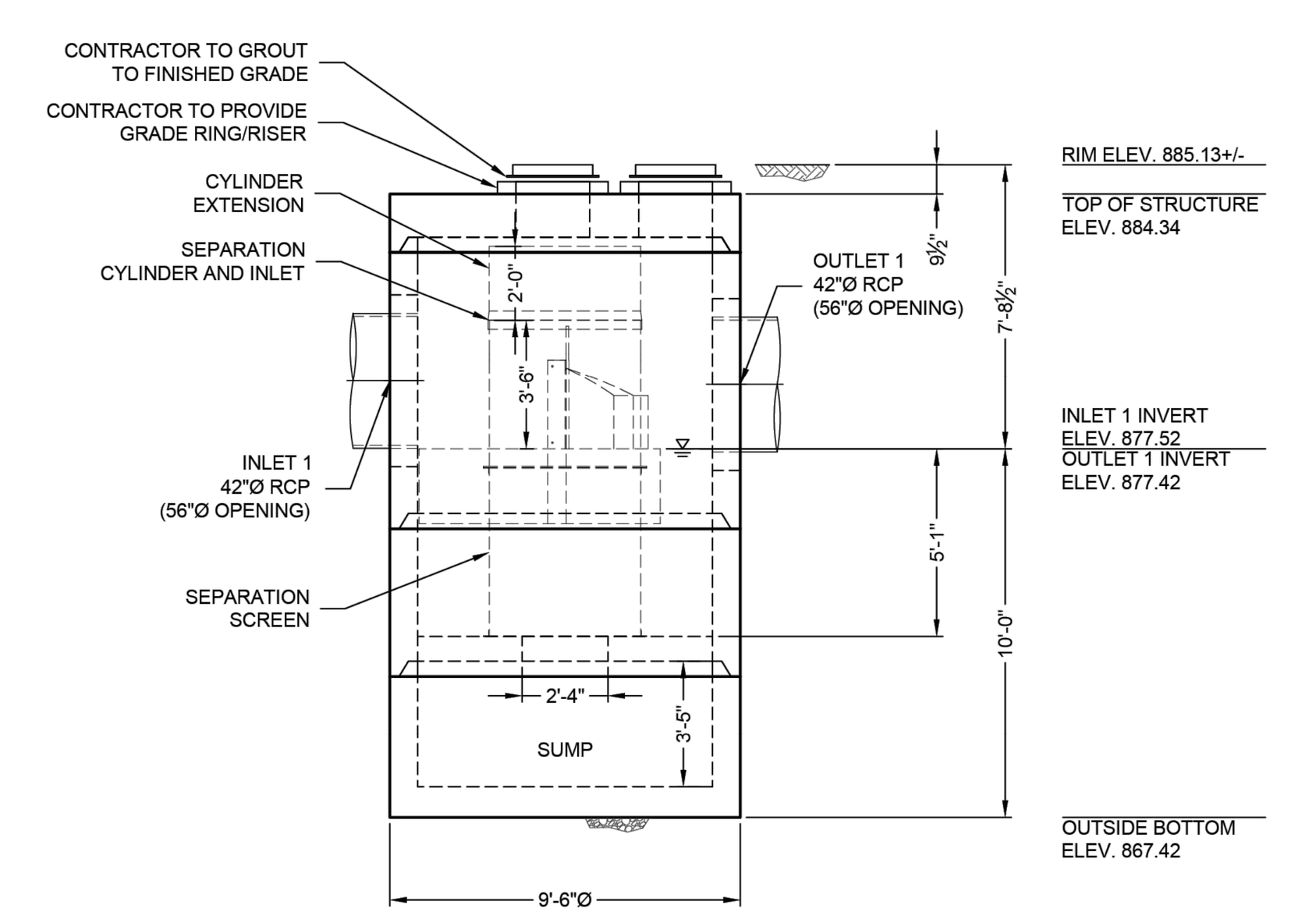
PLAN VIEW FOR PIPE ORIENTATION
TOP SLAB NOT SHOWN

MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	4045-8 CONCENTRIC FIBERGLASS INSERT	CONTRACTOR
1	4045, 2400 micron, 4.1' O.D. x 4.58' SCREEN, GREEN FLANGE UP	CONTRACTOR
1	20, 30, 40 SERIES HARDWARE KIT	CONTRACTOR
1	40 SERIES, 3 FT. TALL CYLINDER EXTENSION	CONTRACTOR
1	SEALANT FOR JOINTS	CONTRACTOR
2	24"Ø X 4" FRAME AND COVER, EJ #41600389, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	6.58 CFS
PEAK FLOW RATE	42.08 CFS
RETURN PERIOD OF PEAK FLOW	100 YRS



ELEVATION VIEW

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 20000 LBS.
STRUCTURE IS DELIVERED IN 4 PIECES

MAX FOOTPRINT = 9.50'Ø

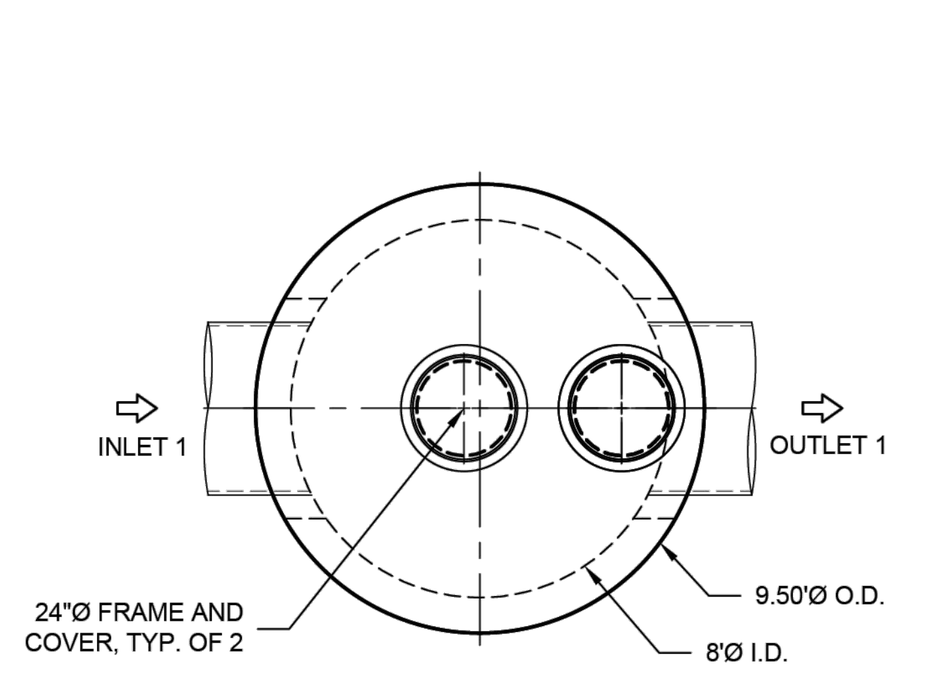
CONTECH **PROPOSAL** DRAWING

NCI
LAYOUT 1A

CDS4045-8-C - 831258-20
MEIJER ABE - BROWNSBURG, IN
BROWNSBURG, IN
SITE DESIGNATION: 1.31 - WQU

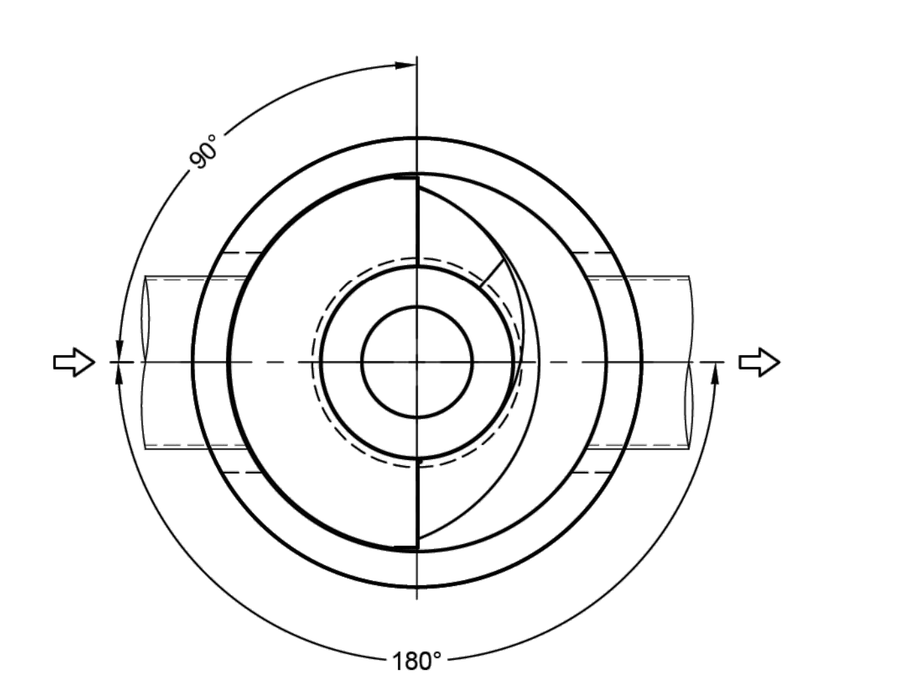
CONTECH ENGINEERED SOLUTIONS LLC www.ContechES.com

DATE: 12/13/24	
DESIGNED: MDB	DRAWN: CER
CHECKED: MDB	APPROVED: MDB
PROJECT No.: 831258	SEQUENCE No.: 20
SHEET: 1 OF 1	



PLAN VIEW
INTERNALS NOT SHOWN

INTERNAL COMPONENTS TO BE INSTALLED ON SITE BY CONTECH FIELD CONSULTANT. PLEASE CONTACT CONTECH FOR CURRENT INSTALLATION LEAD TIME



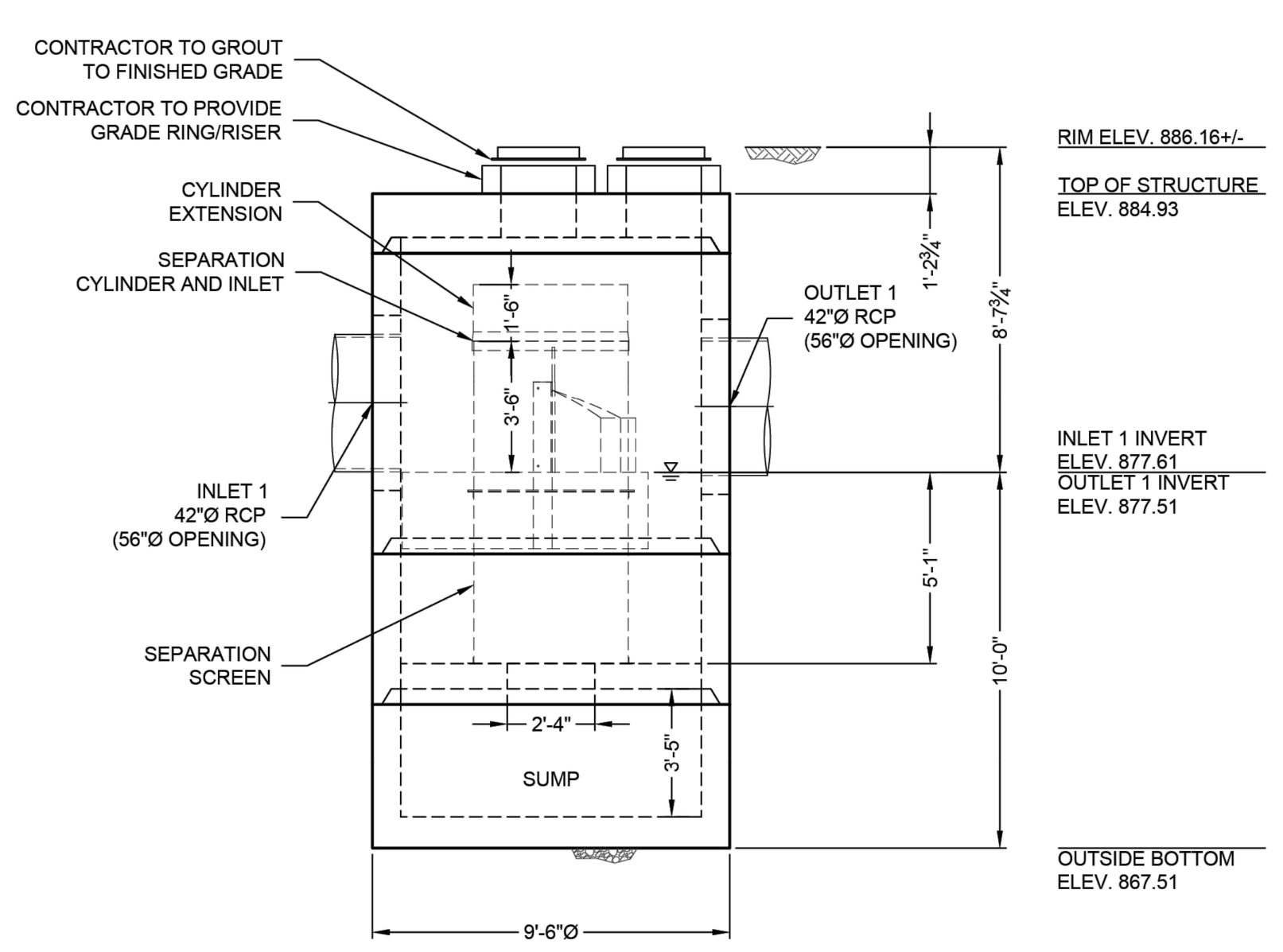
PLAN VIEW FOR PIPE ORIENTATION
TOP SLAB NOT SHOWN

MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	4045-8 CONCENTRIC FIBERGLASS INSERT	CONTRACTOR
1	4045, 2400 micron, 4.1' O.D. x 4.58' SCREEN, GREEN FLANGE UP	CONTRACTOR
1	20, 30, 40 SERIES HARDWARE KIT	CONTRACTOR
1	40 SERIES, 1.5 FT. TALL CYLINDER EXTENSION	CONTRACTOR
1	SEALANT FOR JOINTS	CONTRACTOR
2	24"Ø X 4" FRAME AND COVER, EJ #41600389, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	6.55 CFS
PEAK FLOW RATE	34.22 CFS
RETURN PERIOD OF PEAK FLOW	100 YRS



ELEVATION VIEW

GENERAL NOTES
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STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 22000 LBS.
STRUCTURE IS DELIVERED IN 4 PIECES

MAX FOOTPRINT = 9.50'Ø

CONTECH **CONTRACT** DRAWING

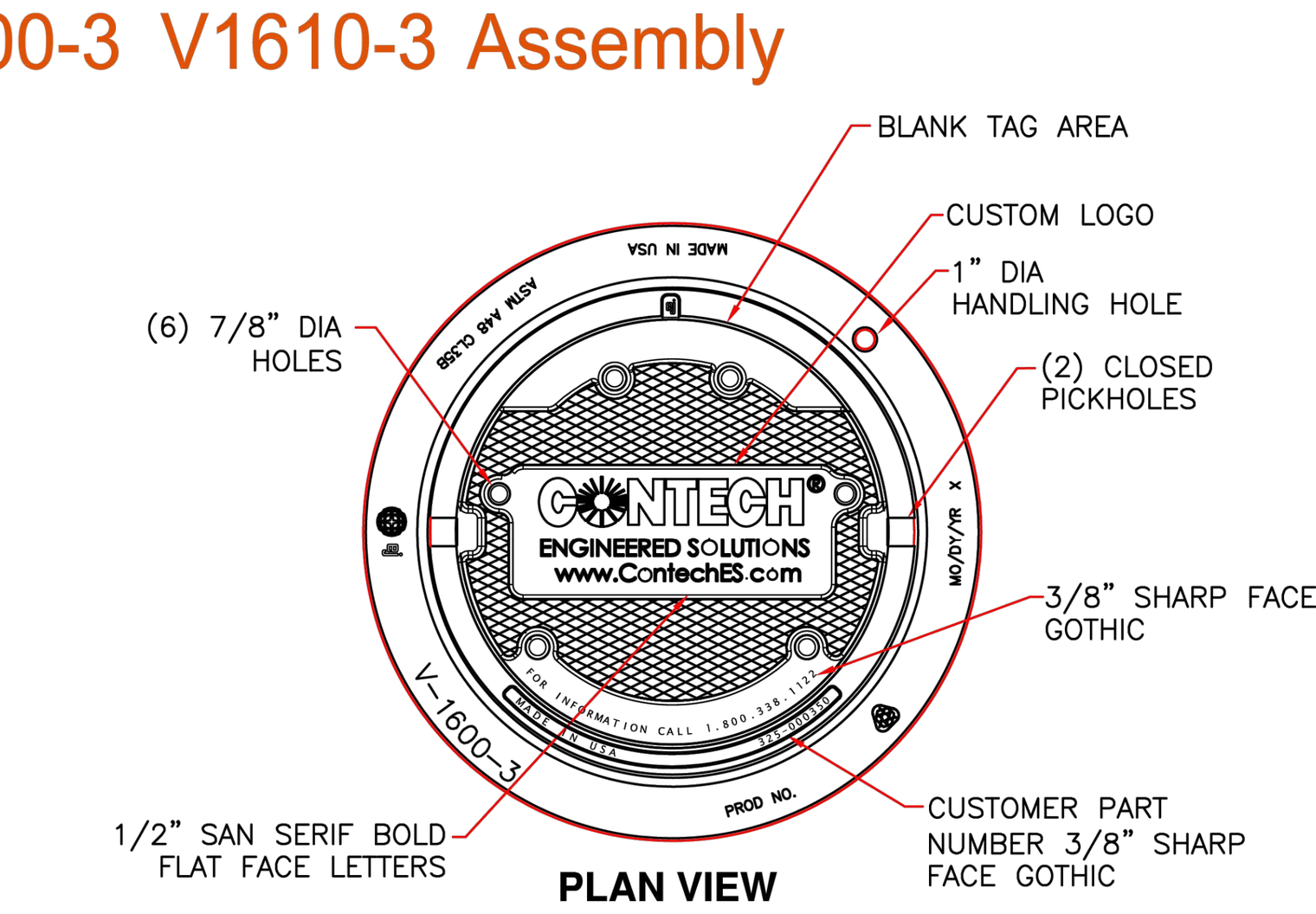
NCI
LAYOUT 1A

CDS4045-8-C - 831258-25
MEIJER ABE - BROWNSBURG, IN
BROWNSBURG, IN
SITE DESIGNATION: 2.01 - WQU

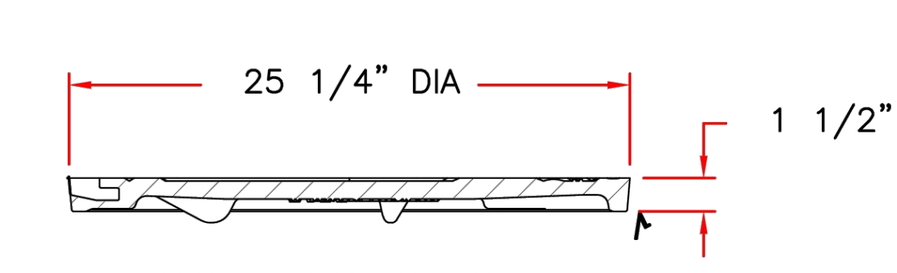
CONTECH ENGINEERED SOLUTIONS LLC www.ContechES.com

DATE: 12/13/24	
DESIGNED: MDB	DRAWN: CER
CHECKED: MDB	APPROVED: MDB
PROJECT No.: 831258	SEQUENCE No.: 25
SHEET: 1 OF 1	

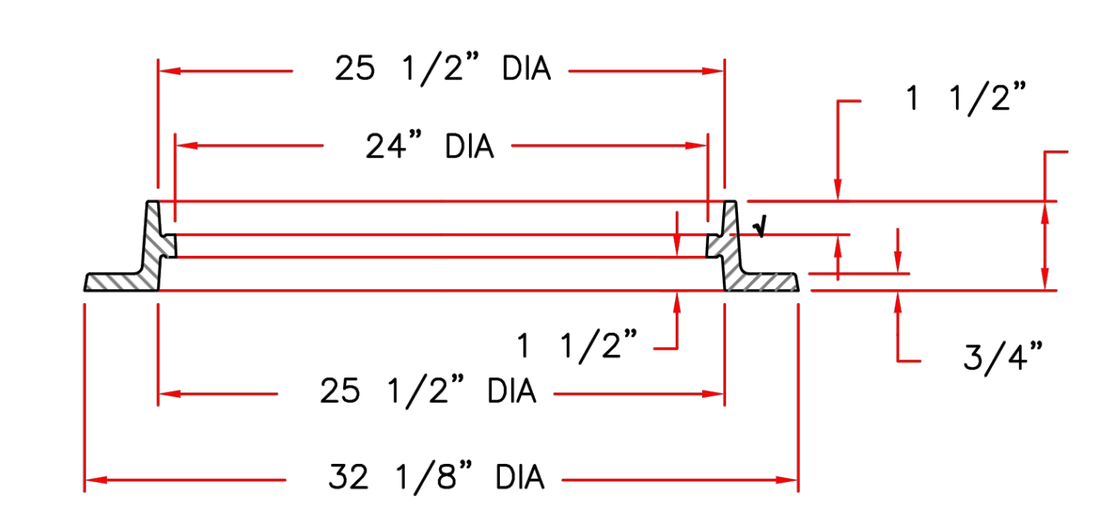
V1600-3 V1610-3 Assembly



PLAN VIEW



COVER SECTION



RING SECTION

Product Number
41600389
Design Features
-Materials
Frame
Gray Iron (CL35B)
Cover
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
- √ Designates Machined Surface

Certification
-
- ASTM A48
-
-Country of Origin: USA

Major Components
41600310
41600374

Drawing Revision
05/02/2008 Designer: DEW
6/20/2017 Revised By: DAE

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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Contact
800 626 4653
ejco.com

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER STORE #338
9202 E. 56TH STREET
BROWNSBURG, INDIANA 46112

CONTECH DETAILS

ISSUED FOR:	
PERMIT	MM/DD/YY
BID	MM/DD/YY
CONSTRUCTION	MM/DD/YY

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
NS-26-00338

Indiana811 Know what's below. Call before you dig.

C-708

Images: , Xrefs: 10020046TBLK.dwg
Layout Tab Name: C-708 CONTECH DETAILS
Last Saved By:Daulton, 12/20/2024 3:56:20 PM
G:\DE\Clients\Meijer\2026 Open Meijer Stores\10020046 Meijer 338 ABE - Brownsburg, IN Civil\4.0 Disciplines\Civil\Cadd\Cd\10020046DET7.dwg Plotted By:Reedy, Angela Plotted:January 10, 2025, 2:35:54 PM

1.5 – WATER QUALITY STRUCTURE SIZING

Project: Meijer ABE
Location: *Brownsburg, IN*
Prepared For: Woolpert, Inc

Purpose: To calculate the first flush runoff flow rate (WQF) over a given site area. In this situation the WQV to be analyzed is the runoff produced by the first 1" of rainfall.

Reference: United States Department of Agriculture Natural Resources Conservation Service TR-55 Manual

Given:

Structure Name	A (acres)	A ($miles^2$)	Runoff Coefficient	Percent Imp. (%)*	t_c (min)	t_c (hr)
1.01	10.67	0.01667	0.84	90.00	19.0	0.317
1.31	7.54	0.01178	0.79	81.67	16.0	0.267
2.01	7.59	0.01186	0.77	78.33	15.0	0.250

* Assumes runoff coefficient of 0.3 for pervious areas and 0.9 for impervious areas.

Procedure:

The Water Quality Flow (WQF) is calculated using the Water Quality Volume (WQV). This WQV, converted to watershed inches, is substituted for the runoff depth (Q) in the Natural Resources Conservation Service (formerly Soil Conservation Service), TR-55 Gr

1. Compute WQV in watershed inches using the following equation:

$$WQV = P * R$$

where: WQV = water quality volume (watershed inches)
P = design precipitation (inches)
R = volumetric runoff coefficient = 0.05 + 0.009(I)
I = percent impervious cover

Structure Name	Percent Imp. (%)	R	P (in)	WQV (in)	WQV (CF)
1.01	90.00	0.860	1	0.860	33,309.61
1.31	81.67	0.785	1	0.785	21,485.61
2.01	78.33	0.755	1	0.755	20,801.53

2. Compute the NRCS Runoff Curve Number (CN) using the following equation, or graphically using Figure 2-1 from TR-55 (USDA, 1986):

$$CN = 1000 / [10+5P+10Q-10(Q^2+1.25QP)^{1/2}]$$

where: CN = Runoff Curve Number
P = design precipitation (inches)
Q = runoff depth (watershed inches)

Structure Name	Q (in)	CN
1.01	0.860	98.72
1.31	0.785	97.93
2.01	0.755	97.59



3. Using computed CN, read initial abstraction (I_a) from Table 4-1 in Chapter 4 of TR-55; compute I_a/P, interpolating when appropriate.

Structure Name	I_a (in)	I_a/P
1.01	0.041	0.041
1.31	0.041	0.041
2.01	0.041	0.041

4. Compute the time of concentration (t_c) in hours and the drainage area in square miles. A minimum t_c of 0.167 hours (10 minutes) should be used.

Structure Name	t_c (hr)	A (miles^2)
1.01	0.317	0.01667
1.31	0.267	0.01178
2.01	0.250	0.01186

5. Read the unit peak discharge (q_u) from Exhibit 4-II in Chapter 4 of TR-55 for appropriate t_c for type II rainfall distribution.

Structure Name	t_c (hr)	I_a/P	q_u (csm/in)
1.01	0.317	0.041	660
1.31	0.267	0.041	712
2.01	0.250	0.041	731

6. Substituting WQV (watershed inches) for runoff depth (Q), compute the water quality flow (WQF) from the following equation:

$$\mathbf{WQF = (q_u)*(A)*(Q)}$$

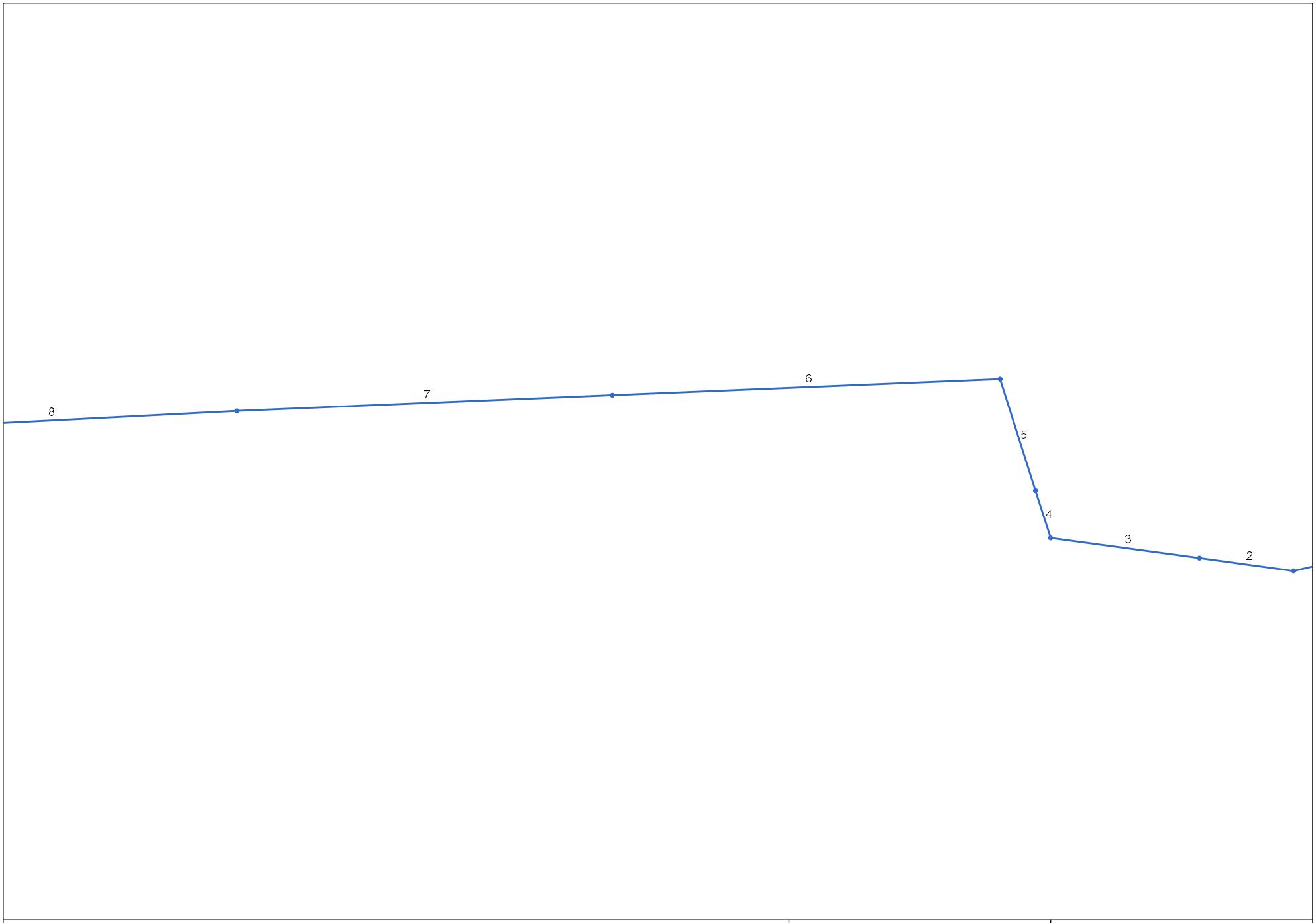
where: WQF = water quality flow (cfs)
q_u = unit peak discharge (cfs/mi^2/inch)
A = drainage area (mi^2)
Q = runoff depth (watershed inches)

Structure Name	q_u (csm/in)	A (miles^2)	Q (in)	WQF (cfs)	
1.01	660	0.01667	0.860	9.46	CDS5653-10
1.31	712	0.01178	0.785	6.58	CDS4045-8
2.01	731	0.01186	0.755	6.55	CDS4045-8



1.6 – EXISTING 27” PIPE ANALYSIS

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: 10018158 - EX STM PIPE.stm	Number of lines: 8	Date: 1/31/2024

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	166.000	166.947	MH	0.00	0.00	0.00	0.0	876.37	0.09	876.52	36	Cir	0.013	0.41	880.35	205
2	1	126.000	20.811	MH	0.00	0.00	0.00	0.0	876.52	0.09	876.63	36	Cir	0.013	0.15	879.48	204
3	2	199.000	0.000	MH	0.00	0.00	0.00	0.0	876.63	0.09	876.81	36	Cir	0.013	0.92	882.04	203
4	3	66.000	64.661	MH	0.00	0.00	0.00	0.0	876.81	0.09	876.87	36	Cir	0.013	0.15	883.12	202
5	4	156.000	0.000	MH	0.00	0.00	0.00	0.0	876.87	0.09	877.01	36	Cir	0.013	0.97	883.80	185-201
6	5	515.000	-74.830	MH	1.84*	0.00	0.00	0.0	877.01	0.19	877.99	36	Cir	0.013	0.15	886.51	186
7	6	498.000	0.000	MH	2.56**	0.00	0.00	0.0	877.95	0.31	879.51	27	Cir	0.013	0.15	884.86	187
8	7	499.000	-0.552	MH	16.53**	0.00	0.00	0.0	879.30	0.28	880.69	27	Cir	0.013	1.00	884.94	188

*10-year outflow from Meijer detention basins. Emergency flood routing via spillways at the Meijer property lines.

**100-year outflow from Hession Farms, OrthoIndy, and future OrthoIndy detention basins due to emergency flood routing requirements.

Project File: 10018158 - EX STM PIPE.stm | Number of lines: 8 | Date: 1/31/2024

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	166.000	0.00	0.00	0.00	0.00	0.00	0.0	9.4	0.0	20.93	20.05	3.22	36	0.09	876.37	876.52	878.97	879.12	0.00	880.35	205
2	1	126.000	0.00	0.00	0.00	0.00	0.00	0.0	8.7	0.0	20.93	19.70	3.14	36	0.09	876.52	876.63	879.20	879.31	880.35	879.48	204
3	2	199.000	0.00	0.00	0.00	0.00	0.00	0.0	7.7	0.0	20.93	20.06	3.13	36	0.09	876.63	876.81	879.33	879.50	879.48	882.04	203
4	3	66.000	0.00	0.00	0.00	0.00	0.00	0.0	7.3	0.0	20.93	20.11	3.03	36	0.09	876.81	876.87	879.64	879.70	882.04	883.12	202
5	4	156.000	0.00	0.00	0.00	0.00	0.00	0.0	6.4	0.0	20.93	19.98	3.02	36	0.09	876.87	877.01	879.72	879.85	883.12	883.80	185-201
6	5	515.000	0.00	0.00	0.00	0.00	0.00	0.0	3.7	0.0	20.93	29.09	3.17	36	0.19	877.01	877.99	879.99	880.44	883.80	886.51	186
7	6	498.000	0.00	0.00	0.00	0.00	0.00	0.0	2.0	0.0	19.09	17.33	4.80	27	0.31	877.95	879.51	880.47	882.36	886.51	884.86	187
8	7	499.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	16.53	16.34	4.16	27	0.28	879.30	880.69	882.42	883.84	884.86	884.94	188

Project File: 10018158 - EX STM PIPE.stm

Number of lines: 8

Run Date: 1/31/2024

NOTES:Intensity = 50.33 / (Inlet time + 5.80) ^ 0.66; Return period =Yrs. 100 ; c = cir e = ellip b = box

SECTION 2:
SUPPLEMENTAL DESIGN DATA

2.1 – NCRS WEB SOIL SURVEY REPORT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Hendricks County, Indiana



October 23, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,160 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hendricks County, Indiana
Survey Area Data: Version 27, Sep 1, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 15, 2022—Jun 21, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	10.9	34.6%
ThrA	Treaty silty clay loam, 0 to 1 percent slopes	20.7	65.4%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	0.0	0.1%
Totals for Area of Interest		**31.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Hendricks County, Indiana

CrA—Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2thy4
Elevation: 600 to 1,000 feet
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 49 to 54 degrees F
Frost-free period: 145 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Crosby and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crosby

Setting

Landform: Water-lain moraines, recessionial moraines, ground moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Silty material or loess over loamy till

Typical profile

Ap - 0 to 10 inches: silt loam
Btg - 10 to 17 inches: silty clay loam
2Bt - 17 to 29 inches: clay loam
2BCt - 29 to 36 inches: loam
2Cd - 36 to 79 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 24 to 40 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 55 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F111XA008IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Williamstown, eroded

Percent of map unit: 5 percent
Landform: Recessionial moraines, ground moraines, water-lain moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Ecological site: F111XA009IN - Till Ridge
Hydric soil rating: No

Treaty, drained

Percent of map unit: 2 percent
Landform: Swales, water-lain moraines, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F111XA007IN - Till Depression Flatwood
Hydric soil rating: Yes

ThrA—Treaty silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2ygzn
Elevation: 450 to 1,200 feet
Mean annual precipitation: 37 to 46 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 145 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Treaty, frequently ponded, drained, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Treaty, Frequently Ponded, Drained

Setting

Landform: Depressions, ground moraines, water-lain moraines, swales
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Silty material or loess over loamy till

Typical profile

Ap - 0 to 10 inches: silty clay loam
A - 10 to 14 inches: silty clay loam

Btg1 - 14 to 36 inches: silty clay loam
2Btg2 - 36 to 59 inches: loam
2C - 59 to 79 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F111XA007IN - Till Depression Flatwood
Hydric soil rating: Yes

Minor Components

Southwest, frequently ponded, drained

Percent of map unit: 5 percent
Landform: Depressions, ground moraines, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: F111XA004IN - Wet Alluvium
Hydric soil rating: Yes

Rensselaer, frequently ponded, drained

Percent of map unit: 5 percent
Landform: Depressions, ground moraines, glacial drainage channels
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R111XA016IN - Outwash Mollisol
Hydric soil rating: Yes

Pella, frequently ponded, drained

Percent of map unit: 5 percent
Landform: Outwash plains, till plains, lake plains, ground moraines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R111XA016IN - Outwash Mollisol
Hydric soil rating: Yes

Crosby

Percent of map unit: 5 percent
Landform: Recessionial moraines, ground moraines, water-lain moraines

Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F111XA008IN - Wet Till Ridge
Hydric soil rating: No

YclA—Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2w57p
Elevation: 600 to 1,040 feet
Mean annual precipitation: 36 to 46 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 145 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Crosby and similar soils: 60 percent
Urban land: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crosby

Setting

Landform: Recessionial moraines, ground moraines, water-lain moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Silty material or loess over loamy till

Typical profile

Ap - 0 to 10 inches: silt loam
Btg - 10 to 17 inches: silty clay loam
2Bt - 17 to 29 inches: clay loam
2BCt - 29 to 36 inches: loam
2Cd - 36 to 79 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 24 to 40 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum content: 55 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F111XA008IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Treaty, drained

Percent of map unit: 5 percent
Landform: Swales, water-lain moraines, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F111XA007IN - Till Depression Flatwood
Hydric soil rating: Yes

Williamstown, eroded

Percent of map unit: 5 percent
Landform: Recessionial moraines, ground moraines, water-lain moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Ecological site: F111XA009IN - Till Ridge
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (Meijer - ABE)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group (Meijer - ABE)



Map Scale: 1:3,160 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hendricks County, Indiana
Survey Area Data: Version 27, Sep 1, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 15, 2022—Jun 21, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (Meijer - ABE)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	C/D	10.9	34.6%
ThrA	Treaty silty clay loam, 0 to 1 percent slopes	B/D	20.7	65.4%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	C/D	0.0	0.1%
Totals for Area of Interest			**31.7**	**100.0%**

Rating Options—Hydrologic Soil Group (Meijer - ABE)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

2.2 – HYDRAFLOW STORM SEWERS – 10-YR DESIGN CALCULATIONS

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	28.845	0.00	10.68	0.00	0.00	8.93	0.0	27.4	3.5	31.14	31.63	3.75	42	0.10	877.39	877.42	880.21	880.24	881.13	885.49	1.01
2	1	65.669	0.67	10.68	0.85	0.57	8.93	5.0	27.0	3.5	31.37	43.01	3.91	42	0.18	877.52	877.64	880.27	880.33	885.49	883.43	1.02
3	2	90.779	0.17	10.01	0.78	0.13	8.36	5.0	26.6	3.6	29.69	45.76	3.52	42	0.10	877.74	877.83	880.64	880.67	883.43	883.83	1.03
4	3	95.389	0.95	9.84	0.90	0.86	8.23	5.0	26.0	3.6	29.56	32.58	3.39	42	0.10	877.93	878.03	880.91	880.99	883.83	885.52	1.04
5	4	76.979	0.75	8.89	0.90	0.68	7.37	5.0	25.6	3.6	26.76	32.44	3.10	42	0.10	878.13	878.21	881.08	881.13	885.52	888.68	1.05
6	5	85.072	0.84	8.14	0.89	0.75	6.70	5.0	25.0	3.7	24.62	35.46	2.91	42	0.11	878.31	878.40	881.21	881.24	888.68	887.97	1.06
7	6	122.866	0.73	7.30	0.90	0.66	5.95	5.0	24.4	3.7	22.21	25.53	3.25	36	0.15	878.50	878.68	881.31	881.43	887.97	887.98	1.07
8	7	103.526	0.61	6.57	0.88	0.54	5.29	5.0	23.8	3.8	20.04	26.22	3.00	36	0.15	878.78	878.94	881.51	881.58	887.98	886.79	1.08
9	8	154.193	0.54	5.96	0.53	0.29	4.76	5.0	22.8	3.9	18.45	26.32	3.75	36	0.16	879.66	879.90	881.66	881.85	886.79	885.03	1.09
10	9	182.886	0.37	4.91	0.85	0.31	4.17	5.0	21.9	4.0	16.56	32.69	4.73	30	0.54	880.00	880.99	882.34	882.36	885.03	886.51	1.12
11	10	100.931	0.37	2.15	0.85	0.31	1.83	5.0	21.2	4.0	7.39	12.19	3.67	24	0.25	881.09	881.34	882.36	882.52	886.51	886.68	1.14
12	11	110.101	0.40	1.78	0.85	0.34	1.51	5.0	20.3	4.1	6.27	12.36	3.46	24	0.25	881.44	881.72	882.63	882.78	886.68	886.41	1.15
13	12	50.006	1.38	1.38	0.85	1.17	1.17	20.0	20.0	4.2	4.90	5.80	3.10	18	0.26	881.82	881.95	883.10	883.18	886.41	886.41	1.16
14	10	50.000	2.39	2.39	0.85	2.03	2.03	20.0	20.0	4.2	8.49	20.91	3.50	30	0.26	881.09	881.22	882.36	882.42	886.51	886.50	1.13
15	9	189.300	0.31	0.51	0.58	0.18	0.30	5.0	5.9	7.1	2.11	5.67	1.19	18	0.25	880.00	880.47	882.34	882.41	885.03	884.66	1.10
16	15	26.000	0.20	0.20	0.58	0.12	0.12	5.0	5.0	7.5	0.87	5.45	0.49	18	0.27	880.57	880.64	882.44	882.44	884.66	884.65	1.11
17	End	29.159	0.00	7.79	0.00	0.00	5.97	0.0	22.3	3.9	23.51	31.79	3.61	42	0.10	877.39	877.42	879.63	879.66	881.13	885.13	1.31
18	17	21.063	0.30	7.79	0.83	0.25	5.97	5.0	22.1	3.9	23.59	30.97	3.54	42	0.09	877.52	877.54	879.81	879.83	885.13	885.03	1.32
19	18	50.908	0.56	6.63	0.78	0.44	5.09	5.0	21.7	4.0	20.30	31.53	2.80	42	0.10	877.64	877.69	880.12	880.15	885.03	885.11	1.34
20	19	160.500	0.70	6.07	0.83	0.58	4.65	5.0	20.5	4.1	19.19	31.77	2.76	42	0.10	877.79	877.95	880.21	880.29	885.11	885.50	1.35
21	20	128.000	0.71	5.37	0.83	0.59	4.07	5.0	19.4	4.3	17.33	32.06	2.63	42	0.10	878.05	878.18	880.35	880.41	885.50	885.50	1.36
22	21	128.000	0.71	4.66	0.83	0.59	3.48	5.0	18.4	4.4	15.23	21.25	2.79	36	0.10	878.28	878.41	880.46	880.55	885.50	885.50	1.37

Project File: 250106 ABE STM.stm

Number of lines: 52

Run Date: 1/9/2025

NOTES:Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	22	128.000	0.73	3.95	0.83	0.61	2.90	5.0	17.3	4.5	13.08	21.25	2.52	36	0.10	878.51	878.64	880.61	880.67	885.50	885.50	1.38
24	23	128.113	0.52	3.22	0.84	0.44	2.29	5.0	15.9	4.7	10.80	21.25	2.23	36	0.10	878.74	878.87	880.72	880.78	885.50	885.50	1.39
25	24	71.374	0.33	2.70	0.72	0.24	1.85	5.0	15.2	4.8	8.93	12.84	2.32	30	0.10	878.97	879.04	880.82	880.86	885.50	885.34	1.40
26	25	109.751	0.00	0.47	0.00	0.00	0.32	0.0	7.8	6.5	2.08	5.69	1.47	18	0.25	879.75	880.02	881.01	881.04	885.34	887.07	1.42
27	26	275.920	0.16	0.47	0.70	0.11	0.32	5.0	5.5	7.3	2.35	3.50	2.72	15	0.25	880.12	880.81	881.08	881.55	887.07	884.82	1.43
28	27	37.000	0.31	0.31	0.68	0.21	0.21	5.0	5.0	7.5	1.58	3.45	1.83	15	0.24	880.91	881.00	881.78	881.80	884.82	884.70	1.44
29	18	223.201	0.46	0.86	0.64	0.29	0.63	5.0	5.6	7.2	4.59	5.26	3.28	18	0.25	878.99	879.55	880.12	880.64	885.03	885.61	1.45
30	29	74.508	0.40	0.40	0.85	0.34	0.34	5.0	5.0	7.5	2.55	4.44	2.22	15	0.40	879.65	879.95	880.90	880.97	885.61	887.64	1.46
31	25	29.833	1.90	1.90	0.68	1.29	1.29	15.0	15.0	4.9	6.28	11.87	2.08	24	0.23	879.14	879.21	881.01	881.02	885.34	883.25	1.41
32	End	26.495	0.00	7.75	0.00	0.00	5.83	0.0	22.9	3.9	22.54	33.87	3.76	42	0.11	877.48	877.51	879.57	879.60	881.22	886.16	2.01
33	32	16.506	0.09	7.75	0.85	0.08	5.83	5.0	22.8	3.9	22.61	35.04	3.87	42	0.12	877.61	877.63	879.66	879.67	886.16	885.81	2.02
34	33	27.000	0.13	7.66	0.85	0.11	5.75	5.0	22.6	3.9	22.42	33.55	3.73	42	0.11	877.73	877.76	879.82	879.86	885.81	885.90	2.03
35	34	308.960	0.57	1.91	0.80	0.46	1.46	5.0	11.3	5.6	8.11	14.00	1.85	30	0.12	877.95	878.31	880.18	880.29	885.90	885.91	2.14
36	35	256.000	0.84	1.34	0.71	0.60	1.00	5.0	9.3	6.0	6.06	9.79	2.64	24	0.19	878.81	879.29	880.32	880.56	885.91	885.91	2.15
37	36	173.693	0.00	0.50	0.00	0.00	0.41	0.0	7.5	6.6	2.67	4.78	1.94	18	0.21	879.39	879.75	880.62	880.74	885.91	887.83	2.16
38	37	207.647	0.16	0.36	0.85	0.14	0.31	5.0	5.6	7.2	2.22	3.23	2.47	15	0.25	879.85	880.37	880.82	881.15	887.83	885.91	2.17
39	38	37.000	0.20	0.20	0.85	0.17	0.17	5.0	5.0	7.5	1.27	4.60	1.51	15	0.24	880.47	880.56	881.33	881.33	885.91	885.91	2.18
40	34	30.006	0.56	5.62	0.34	0.19	4.18	5.0	22.4	3.9	16.39	22.86	2.80	36	0.10	877.86	877.89	880.18	880.19	885.90	885.90	2.04
41	40	204.089	0.40	1.33	0.81	0.32	0.90	5.0	10.0	5.9	5.27	13.77	1.27	30	0.11	878.26	878.49	880.34	880.38	885.90	885.90	2.05
42	41	64.190	0.00	0.93	0.00	0.00	0.58	0.0	9.1	6.1	3.51	8.93	1.32	24	0.16	878.79	878.89	880.42	880.43	885.90	886.76	2.06
43	42	150.206	0.20	0.93	0.79	0.16	0.58	5.0	8.0	6.4	3.70	4.11	2.63	18	0.15	879.39	879.62	880.50	880.73	886.76	886.56	2.07
44	43	101.994	0.33	0.73	0.58	0.19	0.42	5.0	7.3	6.6	2.78	3.20	2.39	15	0.25	879.72	879.97	880.89	881.05	886.56	885.90	2.08

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES:Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	44	193.373	0.40	0.40	0.57	0.23	0.23	5.0	5.0	7.5	1.71	3.22	1.77	15	0.25	880.07	880.55	881.19	881.34	885.90	885.90	2.09
46	40	127.854	0.21	3.73	0.51	0.11	3.09	5.0	21.6	4.0	12.37	14.17	2.60	30	0.10	877.99	878.12	880.34	880.43	885.90	885.92	2.11
47	46	37.000	0.19	3.52	0.82	0.16	2.98	5.0	21.3	4.0	12.02	14.62	2.54	30	0.11	878.22	878.26	880.54	880.56	885.92	885.92	2.12
48	47	124.693	0.10	1.91	0.79	0.08	1.62	5.0	20.3	4.1	6.69	10.06	3.42	24	0.17	879.55	879.76	880.74	880.96	885.92	885.90	2.31
49	48	39.798	1.72	1.72	0.85	1.46	1.46	20.0	20.0	4.2	6.11	12.28	2.75	24	0.25	879.86	879.96	881.23	881.25	885.90	885.00	2.33
50	48	88.389	0.09	0.09	0.85	0.08	0.08	5.0	5.0	7.5	0.57	7.57	1.43	18	0.25	879.86	880.08	881.23	880.36	885.90	885.90	2.32
51	37	88.261	0.14	0.14	0.72	0.10	0.10	5.0	5.0	7.5	0.76	3.22	0.99	15	0.25	879.95	880.17	880.82	880.83	887.83	886.89	2.21
52	47	39.547	1.42	1.42	0.85	1.21	1.21	20.0	20.0	4.2	5.04	12.32	1.60	24	0.25	878.36	878.46	880.71	880.73	885.92	885.00	2.13

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES:Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period =Yrs. 10 ; c = cir e = ellip b = box

2.3 – HYDRAFLOW STORM SEWERS – 25-YR DESIGN CALCULATIONS

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	28.845	0.00	10.68	0.00	0.00	8.93	0.0	26.4	4.1	36.96	31.63	3.84	42	0.10	877.39	877.42	882.14	882.18	881.13	885.49	1.01
2	1	65.669	0.67	10.68	0.85	0.57	8.93	5.0	26.1	4.2	37.19	43.01	3.87	42	0.18	877.52	877.64	882.21	882.30	885.49	883.43	1.02
3	2	90.779	0.17	10.01	0.78	0.13	8.36	5.0	25.7	4.2	35.14	45.76	3.65	42	0.10	877.74	877.83	882.59	882.65	883.43	883.83	1.03
4	3	95.389	0.95	9.84	0.90	0.86	8.23	5.0	25.2	4.2	34.93	32.58	3.63	42	0.10	877.93	878.03	882.91	883.02	883.83	885.52	1.04
5	4	76.979	0.75	8.89	0.90	0.68	7.37	5.0	24.8	4.3	31.58	32.44	3.28	42	0.10	878.13	878.21	883.12	883.20	885.52	888.68	1.05
6	5	85.072	0.84	8.14	0.89	0.75	6.70	5.0	24.4	4.3	29.00	35.46	3.01	42	0.11	878.31	878.40	883.28	883.34	888.68	887.97	1.06
7	6	122.866	0.73	7.30	0.90	0.66	5.95	5.0	23.8	4.4	26.10	25.53	3.69	36	0.15	878.50	878.68	883.41	883.60	887.97	887.98	1.07
8	7	103.526	0.61	6.57	0.88	0.54	5.29	5.0	23.3	4.4	23.50	26.22	3.33	36	0.15	878.78	878.94	883.71	883.84	887.98	886.79	1.08
9	8	154.193	0.54	5.96	0.53	0.29	4.76	5.0	22.4	4.5	21.56	26.32	3.05	36	0.16	879.66	879.90	883.92	884.08	886.79	885.03	1.09
10	9	182.886	0.37	4.91	0.85	0.31	4.17	5.0	21.7	4.6	19.29	32.69	3.93	30	0.54	880.00	880.99	884.40	884.75	885.03	886.51	1.12
11	10	100.931	0.37	2.15	0.85	0.31	1.83	5.0	21.1	4.7	8.58	12.19	2.73	24	0.25	881.09	881.34	885.11	885.23	886.51	886.68	1.14
12	11	110.101	0.40	1.78	0.85	0.34	1.51	5.0	20.3	4.8	7.25	12.36	2.31	24	0.25	881.44	881.72	885.29	885.39	886.68	886.41	1.15
13	12	50.006	1.38	1.38	0.85	1.17	1.17	20.0	20.0	4.8	5.66	5.80	3.20	18	0.26	881.82	881.95	885.51	885.63	886.41	886.41	1.16
14	10	50.000	2.39	2.39	0.85	2.03	2.03	20.0	20.0	4.8	9.80	20.91	2.00	30	0.26	881.09	881.22	885.11	885.14	886.51	886.50	1.13
15	9	189.300	0.31	0.51	0.58	0.18	0.30	5.0	5.8	8.3	2.44	5.67	1.38	18	0.25	880.00	880.47	884.40	884.49	885.03	884.66	1.10
16	15	26.000	0.20	0.20	0.58	0.12	0.12	5.0	5.0	8.6	1.00	5.45	0.57	18	0.27	880.57	880.64	884.53	884.54	884.66	884.65	1.11
17	End	29.159	0.00	7.79	0.00	0.00	5.97	0.0	21.3	4.7	27.88	31.79	2.90	42	0.10	877.39	877.42	882.14	882.16	881.13	885.13	1.31
18	17	21.063	0.30	7.79	0.83	0.25	5.97	5.0	21.2	4.7	27.96	30.97	2.91	42	0.09	877.52	877.54	882.18	882.20	885.13	885.03	1.32
19	18	50.908	0.56	6.63	0.78	0.44	5.09	5.0	20.9	4.7	24.03	31.53	2.50	42	0.10	877.64	877.69	882.40	882.42	885.03	885.11	1.34
20	19	160.500	0.70	6.07	0.83	0.58	4.65	5.0	19.8	4.9	22.61	31.77	2.35	42	0.10	877.79	877.95	882.47	882.55	885.11	885.50	1.35
21	20	128.000	0.71	5.37	0.83	0.59	4.07	5.0	18.8	5.0	20.33	32.06	2.11	42	0.10	878.05	878.18	882.60	882.65	885.50	885.50	1.36
22	21	128.000	0.71	4.66	0.83	0.59	3.48	5.0	18.0	5.1	17.80	21.25	2.52	36	0.10	878.28	878.41	882.68	882.78	885.50	885.50	1.37

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES:Intensity = 55.51 / (Inlet time + 7.50) ^ 0.74; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	22	128.000	0.73	3.95	0.83	0.61	2.90	5.0	17.0	5.3	15.22	21.25	2.15	36	0.10	878.51	878.64	882.82	882.89	885.50	885.50	1.38
24	23	128.113	0.52	3.22	0.84	0.44	2.29	5.0	15.8	5.5	12.49	21.25	1.77	36	0.10	878.74	878.87	882.93	882.97	885.50	885.50	1.39
25	24	71.374	0.33	2.70	0.72	0.24	1.85	5.0	15.2	5.6	10.29	12.84	2.10	30	0.10	878.97	879.04	883.00	883.04	885.50	885.34	1.40
26	25	109.751	0.00	0.47	0.00	0.00	0.32	0.0	7.5	7.6	2.44	5.69	1.38	18	0.25	879.75	880.02	883.16	883.21	885.34	887.07	1.42
27	26	275.920	0.16	0.47	0.70	0.11	0.32	5.0	5.4	8.4	2.72	3.50	2.22	15	0.25	880.12	880.81	883.24	883.66	887.07	884.82	1.43
28	27	37.000	0.31	0.31	0.68	0.21	0.21	5.0	5.0	8.6	1.82	3.45	1.48	15	0.24	880.91	881.00	883.77	883.80	884.82	884.70	1.44
29	18	223.201	0.46	0.86	0.64	0.29	0.63	5.0	5.5	8.4	5.31	5.26	3.01	18	0.25	878.99	879.55	882.40	882.97	885.03	885.61	1.45
30	29	74.508	0.40	0.40	0.85	0.34	0.34	5.0	5.0	8.6	2.93	4.44	2.39	15	0.40	879.65	879.95	883.18	883.31	885.61	887.64	1.46
31	25	29.833	1.90	1.90	0.68	1.29	1.29	15.0	15.0	5.6	7.23	11.87	2.30	24	0.23	879.14	879.21	883.16	883.19	885.34	883.25	1.41
32	End	26.495	0.00	7.75	0.00	0.00	5.83	0.0	22.5	4.5	26.35	33.87	2.74	42	0.11	877.48	877.51	883.27	883.29	881.22	886.16	2.01
33	32	16.506	0.09	7.75	0.85	0.08	5.83	5.0	22.4	4.5	26.42	35.04	2.75	42	0.12	877.61	877.63	883.31	883.32	886.16	885.81	2.02
34	33	27.000	0.13	7.66	0.85	0.11	5.75	5.0	22.3	4.6	26.18	33.55	2.72	42	0.11	877.73	877.76	883.38	883.39	885.81	885.90	2.03
35	34	308.960	0.57	1.91	0.80	0.46	1.46	5.0	10.5	6.6	9.64	14.00	1.96	30	0.12	877.95	878.31	883.57	883.74	885.90	885.91	2.14
36	35	256.000	0.84	1.34	0.71	0.60	1.00	5.0	8.7	7.1	7.15	9.79	2.27	24	0.19	878.81	879.29	883.77	884.02	885.91	885.91	2.15
37	36	173.693	0.00	0.50	0.00	0.00	0.41	0.0	7.1	7.7	3.12	4.78	1.77	18	0.21	879.39	879.75	884.06	884.22	885.91	887.83	2.16
38	37	207.647	0.16	0.36	0.85	0.14	0.31	5.0	5.5	8.4	2.56	3.23	2.09	15	0.25	879.85	880.37	884.27	884.59	887.83	885.91	2.17
39	38	37.000	0.20	0.20	0.85	0.17	0.17	5.0	5.0	8.6	1.47	4.60	1.20	15	0.24	880.47	880.56	884.69	884.70	885.91	885.91	2.18
40	34	30.006	0.56	5.62	0.34	0.19	4.18	5.0	22.1	4.6	19.12	22.86	2.70	36	0.10	877.86	877.89	883.57	883.59	885.90	885.90	2.04
41	40	204.089	0.40	1.33	0.81	0.32	0.90	5.0	9.4	6.9	6.24	13.77	1.27	30	0.11	878.26	878.49	883.73	883.77	885.90	885.90	2.05
42	41	64.190	0.00	0.93	0.00	0.00	0.58	0.0	8.6	7.2	4.14	8.93	1.32	24	0.16	878.79	878.89	883.81	883.83	885.90	886.76	2.06
43	42	150.206	0.20	0.93	0.79	0.16	0.58	5.0	7.6	7.5	4.33	4.11	2.45	18	0.15	879.39	879.62	883.85	884.11	886.76	886.56	2.07
44	43	101.994	0.33	0.73	0.58	0.19	0.42	5.0	7.0	7.7	3.24	3.20	2.64	15	0.25	879.72	879.97	884.25	884.50	886.56	885.90	2.08

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES:Intensity = 55.51 / (Inlet time + 7.50) ^ 0.74; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	44	193.373	0.40	0.40	0.57	0.23	0.23	5.0	5.0	8.6	1.97	3.22	1.60	15	0.25	880.07	880.55	884.67	884.85	885.90	885.90	2.09
46	40	127.854	0.21	3.73	0.51	0.11	3.09	5.0	21.4	4.7	14.38	14.17	2.93	30	0.10	877.99	878.12	883.73	883.86	885.90	885.92	2.11
47	46	37.000	0.19	3.52	0.82	0.16	2.98	5.0	21.1	4.7	13.96	14.62	2.84	30	0.11	878.22	878.26	884.00	884.03	885.92	885.92	2.12
48	47	124.693	0.10	1.91	0.79	0.08	1.62	5.0	20.3	4.8	7.75	10.06	2.47	24	0.17	879.55	879.76	884.22	884.35	885.92	885.90	2.31
49	48	39.798	1.72	1.72	0.85	1.46	1.46	20.0	20.0	4.8	7.06	12.28	2.25	24	0.25	879.86	879.96	884.49	884.52	885.90	885.00	2.33
50	48	88.389	0.09	0.09	0.85	0.08	0.08	5.0	5.0	8.6	0.66	7.57	0.37	18	0.25	879.86	880.08	884.49	884.49	885.90	885.90	2.32
51	37	88.261	0.14	0.14	0.72	0.10	0.10	5.0	5.0	8.6	0.87	3.22	0.71	15	0.25	879.95	880.17	884.27	884.28	887.83	886.89	2.21
52	47	39.547	1.42	1.42	0.85	1.21	1.21	20.0	20.0	4.8	5.83	12.32	1.85	24	0.25	878.36	878.46	884.22	884.24	885.92	885.00	2.13

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES:Intensity = 55.51 / (Inlet time + 7.50) ^ 0.74; Return period =Yrs. 25 ; c = cir e = ellip b = box

2.4 – HYDRAFLOW STORM SEWERS – PONDING ANALYSIS

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	1.01	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	1.02	4.27	0.00	4.27	0.00	DrGrt	0.0	0.00	1.04	1.02	1.02	Sag	2.00	0.020	0.020	0.000	0.58	60.30	0.58	60.30	0.0	Off
3	1.03	0.99	0.00	0.99	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.20	6.86	0.20	6.86	0.0	Off
4	1.04	6.41	0.00	6.41	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.55	24.26	0.55	24.26	0.0	Off
5	1.05	5.06	0.00	5.06	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.47	20.69	0.47	20.69	0.0	Off
6	1.06	5.60	0.00	5.60	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.50	22.17	0.50	22.17	0.0	Off
7	1.07	4.92	0.00	4.92	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.47	20.32	0.47	20.32	0.0	Off
8	1.08	4.02	0.00	4.02	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.41	17.73	0.41	17.73	0.0	Off
9	1.09	2.14	0.00	2.14	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.29	11.59	0.29	11.59	0.0	Off
10	1.12	2.36	0.00	2.36	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.013	0.31	12.36	0.31	12.36	0.0	Off
11	1.14	2.36	0.00	2.36	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.31	12.36	0.31	12.36	0.0	Off
12	1.15	2.55	0.00	2.55	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.32	13.03	0.32	13.03	0.0	Off
13	1.16	4.90	0.00	4.90	0.00	DrGrt	0.0	0.00	1.64	1.28	1.28	Sag	2.00	0.020	0.020	0.000	0.47	48.67	0.47	48.67	0.0	Off
14	1.13	8.49	0.00	8.49	0.00	DrGrt	0.0	0.00	1.65	4.28	1.28	Sag	2.00	0.020	0.020	0.000	0.92	93.60	0.92	93.60	0.0	Off
15	1.10	1.35	0.00	1.35	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.013	0.23	8.45	0.23	8.45	0.0	Off
16	1.11	0.87	0.00	0.87	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.013	0.19	6.25	0.19	6.25	0.0	Off
17	1.31	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
18	1.32	1.87	0.00	1.87	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.27	10.55	0.27	10.55	0.0	Off
19	1.34	3.27	0.00	3.27	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.37	15.43	0.37	15.43	0.0	Off
20	1.35	4.35	0.00	4.35	0.00	DrGrt	0.0	0.00	1.04	1.02	1.02	Sag	2.00	0.020	0.020	0.000	0.61	62.68	0.61	62.68	0.0	Off
21	1.36	4.42	0.00	4.42	0.00	DrGrt	0.0	0.00	1.04	1.02	1.02	Sag	2.00	0.020	0.020	0.000	0.62	64.42	0.62	64.42	0.0	Off
22	1.37	4.42	0.00	4.42	0.00	DrGrt	0.0	0.00	1.04	1.02	1.02	Sag	2.00	0.020	0.020	0.000	0.62	64.42	0.62	64.42	0.0	Off
23	1.38	4.54	0.00	4.54	0.00	DrGrt	0.0	0.00	1.04	1.02	1.02	Sag	2.00	0.020	0.020	0.000	0.66	67.99	0.66	67.99	0.0	Off

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES: Inlet N-Values = 0.016; Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
24	1.39	3.27	0.00	3.27	0.00	DrGrt	0.0	0.00	1.04	1.02	1.02	Sag	2.00	0.020	0.020	0.000	0.41	43.48	0.41	43.48	0.0	Off
25	1.40	1.78	0.00	1.78	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.26	10.22	0.26	10.22	0.0	Off
26	1.42	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
27	1.43	0.84	0.00	0.84	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.18	6.11	0.18	6.11	0.0	Off
28	1.44	1.58	0.00	1.58	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.25	9.42	0.25	9.42	0.0	Off
29	1.45	2.21	0.00	2.21	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.30	11.82	0.30	11.82	0.0	Off
30	1.46	2.55	0.00	2.55	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.32	13.03	0.32	13.03	0.0	Off
31	1.41	6.28	0.00	6.28	0.00	DrGrt	0.0	0.00	1.64	1.28	1.28	Sag	2.00	0.020	0.020	0.000	0.55	57.05	0.55	57.05	0.0	Off
32	2.01	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
33	2.02	0.57	0.00	0.57	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.15	4.69	0.15	4.69	0.0	Off
34	2.03	0.83	0.00	0.83	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.18	6.05	0.18	6.05	0.0	Off
35	2.14	3.42	0.00	3.42	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.38	15.88	0.38	15.88	0.0	Off
36	2.15	4.47	0.00	4.47	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.013	0.44	19.04	0.44	19.04	0.0	Off
37	2.16	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
38	2.17	1.02	0.00	1.02	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.20	6.98	0.20	6.98	0.0	Off
39	2.18	1.27	0.00	1.27	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.22	8.13	0.22	8.13	0.0	Off
40	2.04	1.43	0.00	1.43	0.00	DrGrt	0.0	0.00	1.64	1.28	1.28	Sag	2.00	0.020	0.020	0.000	0.20	22.49	0.20	22.49	0.0	Off
41	2.05	2.43	0.00	2.43	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.31	12.61	0.31	12.61	0.0	Off
42	2.06	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
43	2.07	1.18	0.00	1.18	0.00	DrGrt	0.0	0.00	1.04	1.02	1.02	Sag	2.00	0.020	0.020	0.000	0.21	23.05	0.21	23.05	0.0	Off
44	2.08	1.43	0.00	1.43	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.24	8.82	0.24	8.82	0.0	Off
45	2.09	1.71	0.00	1.71	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.26	9.93	0.26	9.93	0.0	Off
46	2.11	0.80	0.00	0.80	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.18	5.92	0.18	5.92	0.0	Off

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES: Inlet N-Values = 0.016; Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
47	2.12	1.17	0.00	1.17	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.21	7.66	0.21	7.66	0.0	Off
48	2.31	0.59	0.00	0.59	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.16	4.79	0.16	4.79	0.0	Off
49	2.33	6.11	0.00	6.11	0.00	DrGrt	0.0	0.00	1.64	1.28	1.28	Sag	2.00	0.020	0.020	0.000	0.54	56.05	0.54	56.05	0.0	Off
50	2.32	0.57	0.00	0.57	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.15	4.69	0.15	4.69	0.0	Off
51	2.21	0.76	0.00	0.76	0.00	Comb	6.0	2.00	0.75	0.87	0.87	Sag	2.00	0.050	0.020	0.000	0.17	5.68	0.17	5.68	0.0	Off
52	2.13	5.04	0.00	5.04	0.00	DrGrt	0.0	0.00	1.64	1.28	1.28	Sag	2.00	0.020	0.020	0.000	0.48	49.57	0.48	49.57	0.0	Off

Project File: 250106 ABE STM.stm | Number of lines: 52 | Run Date: 1/9/2025

NOTES: Inlet N-Values = 0.016; Intensity = 58.29 / (Inlet time + 8.60) ^ 0.79; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

TOWN OF Brownsburg

AFFIDAVIT & CONSENT OF PROPERTY OWNER

That I/We PHILIP QUARTEY after first being duly sworn, depose and say:

That I am/we are the owner(s) of Real Estate located at: (Legal and/or common address)
9180 E 56th St, Brownsburg, IN

Parcel Number(s): 32-08-06-311-006.000-016

That we have examined the application for a/an Development Plan Review on this property, and I/we are familiar with its contents. (application type)

That I/we have no objections to, and consent to such request as set forth in the application.

Signature of Affiant

PHILIP QUARTEY
Printed Name

State of Michigan)
) SS:
County of Kent)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared Philip Quartey, who acknowledged the execution of the above and foregoing instrument to its voluntary act and deed on the 6th day of January, 2026.

June 28, 2029
Commission Expiration Date

Ottawa
County of Residence

Notary

Bryan Heyboer
Printed Name

BRYAN HEYBOER
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF OTTAWA
My Commission Expires June 28, 2029
Acting in the County of Kent

Appendix O-1
Draft Long-Term Post-Construction Operation and Maintenance Plan

for

Meijer Outlot ABE-OD1 (Heartland Dental)

Water Quality BMP's

Site Location:

Meijer Outlot ABE – OD1
9108 E. 56th Street
Brownsburg, IN 46112

Prepared By:
Woolpert, Inc.
333 N Alabama St, Suite 200
Indianapolis, IN 46204

January 29, 2026

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General Provisions Page

The following maintenance plan provides guidelines for proper operation and maintenance of the specified water quality best management practices (BMP's). The information supplied is based on the guidelines of the Town of Brownsburg and should be followed to ensure proper operation and longevity of the system.

Water quality BMP's are to be inspected bi-annually, and per the schedule included in Appendix O-1A. In the event that an unsatisfactory condition exists, it is the responsibility of the Owner to clean or perform any other necessary work to the water quality BMP's so that their condition is deemed satisfactory by the Town of Brownsburg. Maintained infrastructure shall include all pipes and channels built to convey stormwater to the facility, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater from the facility. "Maintain" is herein defined as good working condition so that these facilities are performing their design functions. Any additional costs of repair, maintenance and inspection are the sole responsibility of the Owner. All work performed on the water quality BMP's is to be within recommendations and specifications of the Town of Brownsburg.

Information Page

Owner's Contact Information:

Property Owner:
Meijer Stores Limited Partnership
2350 Three Mile Road
Grand Rapids, MI 49544
(616) 791-3061

Maintenance Staff:
TBD
Meijer Stores Limited Partnership
2350 Three Mile Road
Grand Rapids, MI 49544
Office:
Mobile:
Email:

Person Responsible for Performing Inspection:
TBD

Section 1.0 – Owner Information

Owner information submitted to the Town of Brownsburg should be current and up-to-date at all times. In the event of a change of ownership, contact person, phone, fax, or any other change in information listed on the Owner's Information page, is the responsibility of the Owner to notify the Town of Brownsburg of the changes. It is the responsibility of the Owner to notify the Town of Brownsburg when major repairs or failure have occurred. Owner must notify the Town in writing within thirty (30) days. All changes in ownership and notifications of major repairs or failure can be directed to the Town of Brownsburg at the address listed below:

Town of Brownsburg
Department of Development Services
61 N. Green Street
Brownsburg, IN 46112
DevelopmentServices@Brownsburg.org
(317) 852-1128

Section 2.0 – Site Information

The site in which this manual is written for is located at the address listed below. A set of construction plans may be obtained from the Owner listed on the Owner's Information page in this manual.

Site Address: Heartland Dental
9180 E. 56th Street
Brownsburg, IN 46112

Section 3.0 – Maintenance of BMP's

Maintenance of the BMP's is the responsibility of the Owner. All maintenance is to be performed within the guidelines and requirements of the Town of Brownsburg. These requirements are in Appendix O-1A of this manual. Any deviation from the required maintenance could result in unsatisfactory conditions, increased cost of inspection or even total replacement of the BMP's. Proper maintenance is imperative to ensure proper function and longevity of each BMP measure.

Following construction completion and the issuance of a Notice of Termination (NOT), inspection and maintenance of stormwater management facilities and BMP's shall be the long-term responsibility of the Owner.

Section 4.0 – Inspection of BMP's

Inspections of the water quality BMP's are to be completed in accordance with the schedule included in Appendix O-1A. An Owner representative will perform this inspection and access must be granted to the Town of Brownsburg, if requested.

Inspections shall cover all elements for the stormwater facility as defined in this Maintenance Plan. The Owner shall keep an updated logbook or inspection worksheets documenting the performance of the required operation and maintenance activities for perpetuity. Note inspection dates, facility components inspected, facility condition, and any maintenance performed, or repairs made. Documentation must be provided upon the request of the Town Personnel within forty-eight (48) hours of the request.

The stormwater management facility or BMP Owner must conduct necessary inspections at least once per year. The inspections shall follow the guidelines and requirements of the Town of Brownsburg. The inspection shall cover physical conditions, available water quality storage capacity, and the operational condition of key facility elements. Completed inspection forms must be maintained by the Owner and produced upon request by the Town Personnel within forty-eight (48) hours of the request.

Annual inspection reports shall be due to the Development Services Department, beginning one year after construction is completed. Subsequent reports shall be due each year within the same month of the initial report. All deficiencies found during the inspection shall be addressed. If the annual inspection report is not received within the month it is due, if there are deficiencies which exist but are not included in the report, or if any deficiencies included in the report are not addressed in a timely manner, the Town may take enforcement action in accordance with Chapter 151.29 of the Town of Brownsburg Stormwater Management Ordinance.

In the event that the Town Personnel find a stormwater management facility in need of maintenance or repair, the Development Services Department will notify the Owner on record of the necessary maintenance or repairs

and give the Owner a timeframe for completing the work. If maintenance or repairs are not completed within the designated timeframe, the Town may perform the work and bill the Owner for the actual costs of the work.

Any questions or issues regarding the inspection of the water quality BMP's should be directed to Town of Brownsburg.

Section 5.0 – Town Required Maintenance

In the event that any of the BMP's fail an inspection, it is the responsibility of the Owner to correct the problem and follow the directions as shown on the inspection sheet. All costs incurred through repair or additional inspection of the water quality BMP's is the responsibility of the Owner.

The Town also has the authority to perform long-term inspection of all public or privately-owned stormwater management facilities. Such inspections will be in addition to the regular inspections required to be performed by the facility owner. The inspections will follow the operation and maintenance procedures listed in Appendix O-1A. Noted deficiencies and recommended corrective action will be included in an inspection report.

Appendix O-1A

Maintenance Guidelines

Stormwater Water Quality BMP Inspection and Maintenance Activities

Operation and maintenance procedures and practices shall be reviewed and assessed annually. The BMP owner agrees to follow the following maintenance and inspection program:

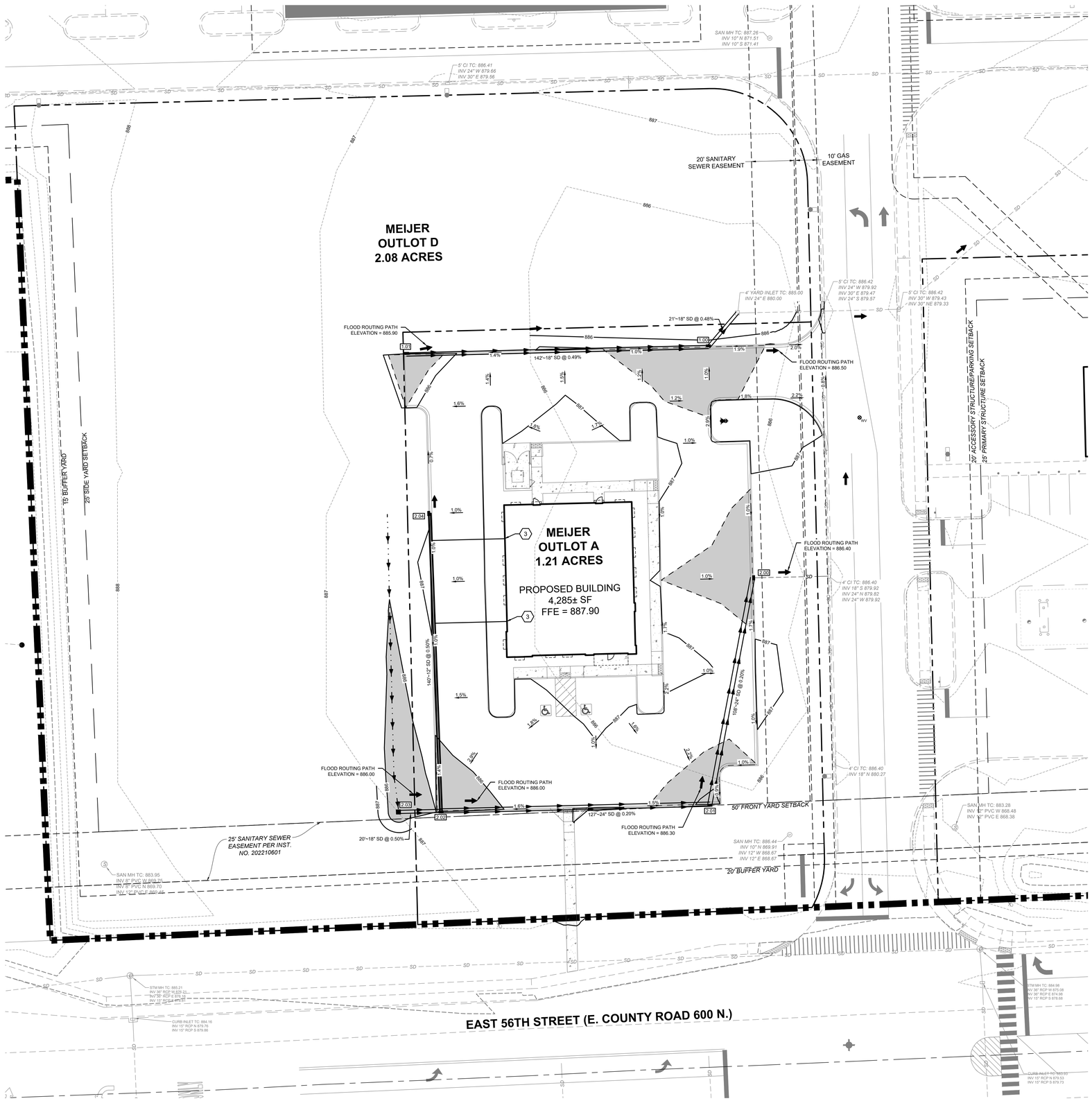
Maintenance Item	Inspection Frequency	Maintenance
Storm Structures & Pipes		
1. Access	Annually	• Open the access hatch to ensure proper function.
2. Remove Debris	Bi-Annually and after major storm events (1.50 inches or greater)	• Remove debris from the storm structures when the depth of debris exceeds 4 inches.
3. Sediment Buildup	Annually and after major storm events (1.50 inches or greater)	• Remove sediment from the drainage structure's sump when the sediment depth exceeds 18 inches.
4. Function	Annually and after major storm events (1.50 inches or greater)	• Ensure the grate and structure is not blocked.
Access Routes		
1. General Inspection	Annually and as needed	• Access routes, including roadways and sidewalks, shall be inspected and maintained as needed.
Pest Control Measures		
1. General Inspection	As needed	• Pest control measures shall be implemented to address insects, rodents, and other pests. • Natural pest control is preferred over chemical treatments.

Signage		
1. Installation and Maintenance	As needed	• Signage shall be installed and maintained in accordance with the Town of Brownsburg Construction Standards and where necessary to protect property and the public. • Native vegetation plantings shall have “No Mow” or other appropriate signage.

Note: Do not enter underground detention manholes to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.

Appendix O-1B

Site Exhibit



A1 SITE GRADING - DRAINAGE PLAN
1"=20'

LEGEND

- MEIJER PROPERTY LINE
- PROPERTY LINE
- 799 EXISTING 1' CONTOUR
- 800 EXISTING 5' CONTOUR
- SD EXISTING STORM SEWER
- EXISTING DRAINAGE BASIN
- 799 PROPOSED 1' CONTOUR
- 800 PROPOSED 5' CONTOUR
- DRAINAGE BASIN
- XX"~XX" SD STORM SEWER
- X.X STORM STRUCTURE I.D.
- 1.00% FLOW DIRECTION AND GRADE (PROP.)
- DRAINAGE SWALE
- 100-YEAR FLOOD LIMITS (WITH ALL INLETS BLOCKED)
- FLOOD ROUTING PATH

0 20 40 60
GRAPHIC SCALE IN FEET

Indiana 811
Know what's below. Call before you dig.

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

SITE GRADING - DRAINAGE PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

O-1B

Images: , Xrefs: 10026635TBLK.dwg; 10026635-x.dwg; 10026635-p.dwg; 10026635-g.dwg
Layout Tab Name: C-300 SITE GRADING - DRAINAGE PLAN
Last Saved By:B.VanGorder, 1/26/2026 1:14:31 PM
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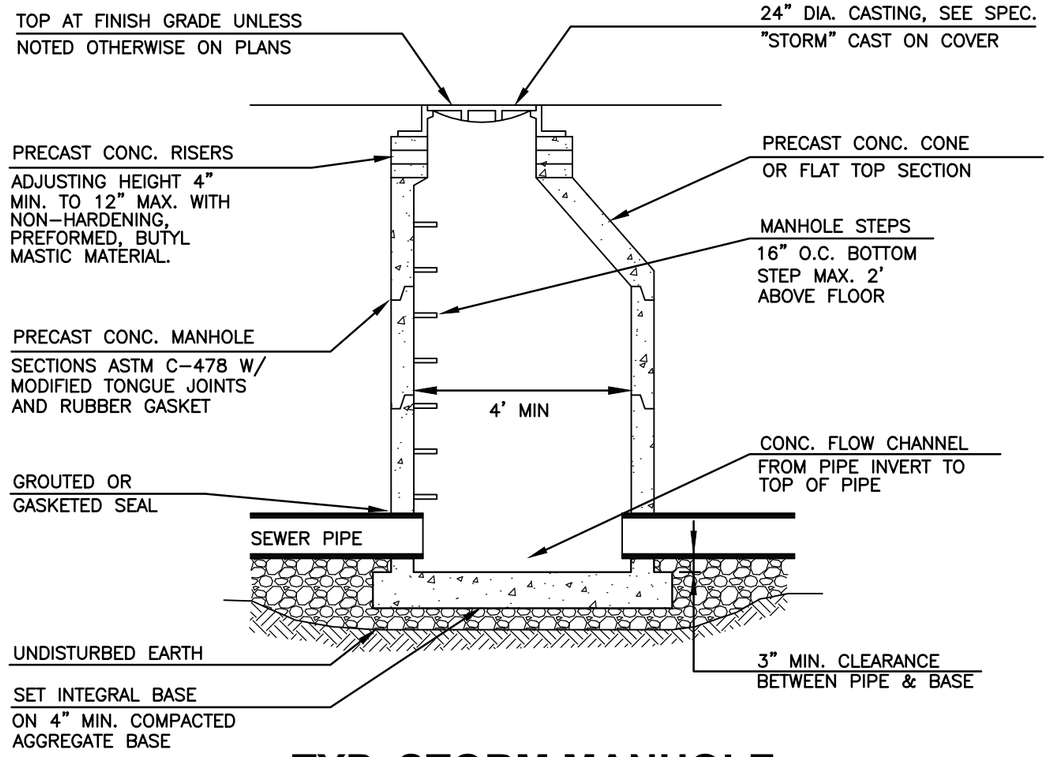
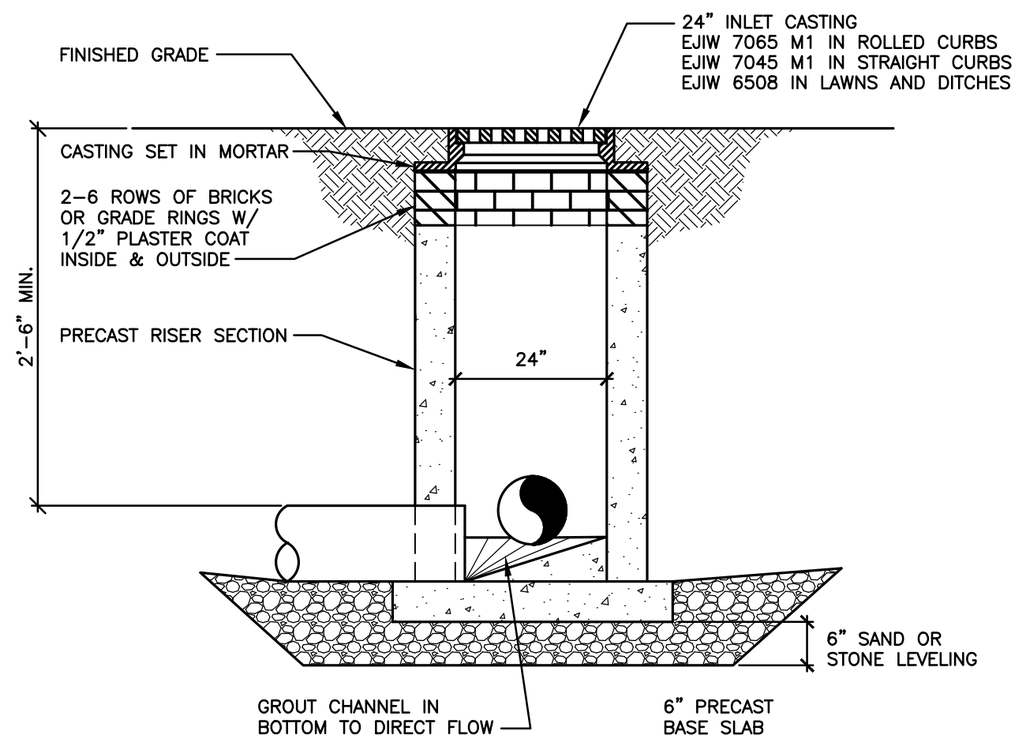


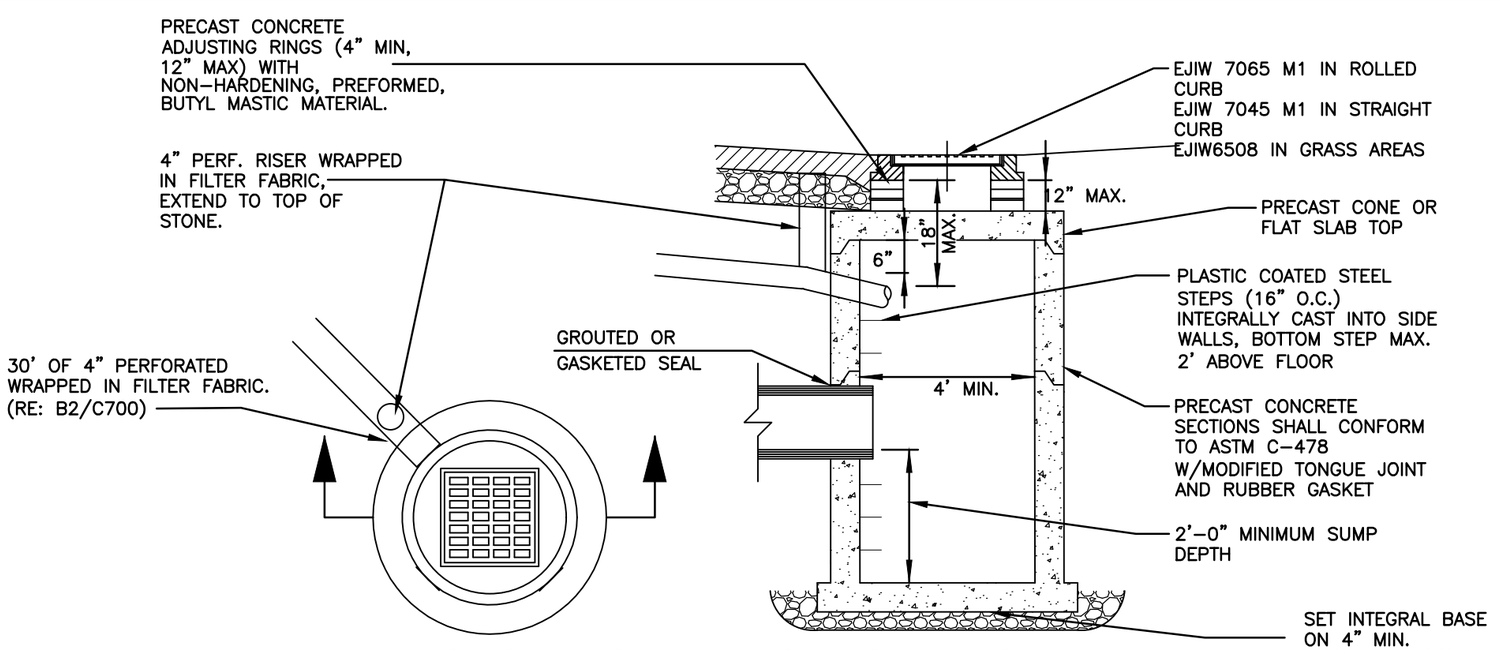
TYP. STORM MANHOLE

NO SCALE



24" DIA. CATCH BASIN

NO SCALE



STORM SEWER CATCH BASIN

NO SCALE

PROJECT NO. 10026635
DATE 01/29/2026
DR. BVG
SHT. NO. O-1B

WOOLPERT
333 North Alabama Street
Suite 200
Indianapolis, IN 46204
317.299.7500

MEIJER OUTLOT #338A

9180 E. 56TH STREET BROWNSBURG, INDIANA 46112

STORM DETAILS

Layout Tab Name: O&M Detail Exhibit - 3
Last Saved By:BVanGorder, 1/26/2026 1:48:41 PM
G:\DE\Clients\Meijer\10026635 Meijer 338A-001, Brownsburg, IN\4.0 Disciplines\Civil\Eng\SWPPP\Appendices\Supporting Documents\10026635-DET.dwg, Plotted By:VanGorder, Brianne Plotted:January 26, 2026, 1:50:59 PM

Appendix O-1C

Maintenance Checklists

I. Inlet and/or Manhole Inspection Checklist

Site Name:_____

Owner Changed Since Last Inspection? Y or N

Owner Name, Address, and Phone Number:

_____

_____

Location:_____

Date:_____

Time:_____

Inspector Name:_____

Inlet/Manhole Maintenance Item	**Satisfactory/ Unsatisfactory**	**Comments**
Structure (Inspect at least once per year before rainy season)		
1. Sediment/Litter accumulation?		
2. Structure free from damage?		
3. Weir free from damage?		

Note: *Sediments and debris shall be removed by hand or with a vacuum truck. Sediments and waste shall be disposed of in accordance with City of Indianapolis and any applicable state, and/or federal requirements*.

Additional Comments and Actions to be Taken:	Timeframe:

II. Conveyance System Inspection Checklist

Site Name:_____

Owner Changed Since Last Inspection? Y or N

Owner Name, Address, and Phone Number:

_____

_____

Location:_____

Date:_____

Time:_____

Inspector Name:_____

Conveyance Maintenance Item	**Satisfactory/ Unsatisfactory**	**Comments**
Pipe/Swale (Inspect at least once per year before rainy season)		
1. Sediment/Litter accumulation?		
2. Structure free from damage?		
3. Weir free from damage?		

Note: *Sediments and debris shall be removed by hand or with a vacuum truck. Sediments and waste shall be disposed of in accordance with City of Indianapolis and any applicable state, and/or federal requirements*.

Additional Comments and Actions to be Taken:	Timeframe:

Appendix O-1D

Right-of-Entry Statement

Right-of-Entry Statement

That I/We_____after first being duly sworn, depose and say:

The Town of Brownsburg has the right to enter the property and inspect the stormwater management facility or BMP.

Property Address(es): Meijer Outlot #338A-OD1
9180 E 56th Street
Brownsburg, IN 46112

_____
Signature of Affiant

_____
Printed Name

State of_____)

) SS:

County of_____)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared

_____, who acknowledged the execution of the above and foregoing instrumentto

its voluntary act and deed on the_____day of_____, 20____.

_____ _____
Commission Expiration Date Notary

_____ _____
County of Residence Printed Name

MEIJER OUTLOT #338A - HEARTLAND DENTAL
9180 E. 56TH STREET
BROWNSBURG, LINCOLN TOWNSHIP,
HENDRICKS COUNTY, INDIANA 46112

±1.21 ACRES LOCATED IN LOT 6 OF THE MEIJER SUBDIVISION IN THE SOUTHWEST QUARTER OF FRACTIONAL SECTION 6, TOWNSHIP 16 NORTH, RANGE 2 EAST, IN THE TOWN OF BROWNSBURG, HENDRICKS COUNTY, INDIANA.

OWNER
MEIJER STORES LIMITED PARTNERSHIP
2350 THREE MILE ROAD
GRAND RAPIDS, MI 49544

PLAN PREPARER & ENGINEER
WOOLPERT, INC.
BRIANNE VANGORDER, P.E.
333 N ALABAMA ST, SUITE 200
INDIANAPOLIS, IN 46204
(317) 299-7500
BRIANNE.VANGORDER@WOOLPERT.COM

LAND SURVEYOR
WOOLPERT, INC.
STEVE KREGER, PLS
3333 WARRENVILLE ROAD, SUITE 200
LISLE, IL 60532
(630) 693-6340
STEVE.KREGER@WOOLPERT.COM

PROPERTY DESCRIPTION
BLOCK A AND BLOCK B IN OI COMMERCIAL LOT 1 - SECONDARY PLAT SUBDIVISION, AS PER PLAT THEREOF, RECORDED JUNE 23, 2022 IN PLAT CABINET 9, SLIDE 2, PAGES 1A AND 1B, AND AS INSTRUMENT NO. 202215039, IN THE OFFICE OF THE RECORDER OF HENDRICKS COUNTY, INDIANA.

CIVIL DRAWING INDEX

FILLED CIRCLE INDICATES INCLUDED IN ISSUANCE	LATEST ISSUANCE NUMBER	LATEST ISSUANCE DATE	SHEET NUMBER	SHEET TITLE
•	-	-	C-001	COVER SHEET
•	-	-	C-100	EXISTING CONDITIONS - DEMOLITION PLAN
•	-	-	C-200	SITE PLAN - PAVEMENT PLAN & SIGNAGE AND STRIPING PLAN
•	-	-	C-300	SITE GRADING - DRAINAGE PLAN
•	-	-	C-310	PHASE 1 STORMWATER POLLUTION PREVENTION PLAN
•	-	-	C-311	PHASE 2 STORMWATER POLLUTION PREVENTION PLAN
•	-	-	C-312	STORMWATER POLLUTION PREVENTION DETAILS
•	-	-	C-313	STORMWATER POLLUTION PREVENTION DETAILS
•	-	-	C-400	UTILITY PLAN
•	-	-	C-405	STORM & SANITARY PROFILES AND STRUCTURE DATA TABLES
•	-	-	C-600	LANDSCAPE PLAN
•	-	-	C-700	DETAILS
•	-	-	C-701	DETAILS
•	-	-	C-702	DETAILS
•	-	-	C-703	TOWN OF BROWNSBURG DETAILS
•	-	-	C-704	WATER DETAILS
•	-	-	C-800	PHOTOMETRIC PLAN

GENERAL NOTES

1. CONDUCT SITE CLEARING OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION. STREETS AND ROADWAYS SHALL BE THOROUGHLY CLEANED AND/OR SWEPT ON A DAILY BASIS OR MORE FREQUENTLY AS REQUIRED BY THE GOVERNING AUTHORITY. RESTORE DAMAGED IMPROVEMENTS TO ORIGINAL CONDITION AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
2. PROVIDE DUST CONTROL MEASURES IN ACCORDANCE WITH LOCAL AUTHORITIES.
3. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH SPECIFICATIONS.
4. UNLESS SPECIFIED OTHERWISE, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH MEIJER STANDARD SPECIFICATIONS, THE STATE DEPARTMENT OF ENVIRONMENTAL QUALITY STANDARDS, DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND/OR THE APPROPRIATE LOCAL AUTHORITIES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, PERMIT FEES, LICENSES, AND LICENSE FEES, UNLESS NOTED OTHERWISE.
6. RELOCATION OF ANY UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROPRIATE UTILITY COMPANY AND/OR REGULATORY AGENCY. OBTAIN WRITTEN APPROVAL FROM THE ENGINEER BEFORE ANY UTILITY RELOCATION.
7. ELECTRONIC FILES IN DWG FORMAT WILL BE SUPPLIED TO THE CONSTRUCTION MANAGER FOR LAYOUT AND GRADING.
8. ELECTRONIC FILE USE TERMS AND CONDITIONS:
   - 8.A. RECIPIENT ACKNOWLEDGES THAT ANY USE OF THE TRANSFERRED DATA IS FOR INFORMATION ONLY AND NOT GUARANTEED OR WARRANTED BY MEIJER OR ITS CONSULTANTS. USE OF TRANSFERRED DATA BY THE RECIPIENT SHALL BE AT RECIPIENT'S SOLE RISK. RECIPIENT ACKNOWLEDGES THAT THE AUTOMATED CONVERSION OF INFORMATION AND DATA FROM THE ORIGINAL FORMAT AND SYSTEM TO AN ALTERNATE FORMAT OR SYSTEM CAN NOT BE ACCOMPLISHED WITHOUT THE INTRODUCTION OF INEXACTITUDES, ANOMALIES, AND ERRORS. RECIPIENT FURTHER ACKNOWLEDGES THAT THE ELECTRONIC DATA MAY NOT BE FULLY COMPATIBLE WITH RECIPIENT'S COMPUTER SYSTEM AND NEITHER MEIJER NOR ITS CONSULTANTS MAKE NO REPRESENTATIONS REGARDING SUCH COMPATIBILITY.
   - 8.B. ACCORDINGLY, WITH RESPECT TO THE CONVERSION AND USE OF SUCH ELECTRONIC DATA. RECIPIENT AGREES TO ASSUME ALL RISKS ASSOCIATED THEREWITH, AND TO THE FULLEST EXTENT PERMITTED BY LAW, TO HOLD HARMLESS AND INDEMNIFY MEIJER AND THEIR CONSULTANTS FROM AND AGAINST ALL CLAIMS, LIABILITIES, LOSSES, DAMAGES, AND COSTS, INCLUDING BUT NOT LIMITED TO ATTORNEY'S FEES AND COSTS, WHETHER OR NOT SUIT HAS BEEN FILED, ARISING OUT OF, OR IN ANY WAY CONNECTED WITH THE USE, MODIFICATION, MISINTERPRETATION, MISUSE, OR REUSE BY RECIPIENT OR OTHERS OF THE ELECTRONIC DATA WHICH IS PROVIDED BY MEIJER OR ITS CONSULTANTS UNDER THESE TERMS AND CONDITIONS.
   - 8.C. THESE TERMS AND CONDITIONS SHALL BE BINDING UPON THE SUCCESSORS AND ASSIGNS OF THE PARTIES.

   UPON ACCEPTANCE OF THE ELECTRONIC DATA TRANSMISSION, RECIPIENT HEREBY AGREES TO THE FOREGOING TERMS AND CONDITIONS. IF RECIPIENT DOES NOT AGREE TO THE FOREGOING TERMS AND CONDITIONS, MEIJER AND ITS CONSULTANTS DO NOT AUTHORIZE THE USE OF THE TRANSMITTED DATA, AND RECIPIENT SHALL DESTROY THE TRANSMITTED DATA AND NOTIFY MEIJER OR ITS CONSULTANTS OF THE SAME BY PROVIDING WRITTEN NOTICE WITHIN ONE DAY OF TRANSMISSION. FAILURE TO PROVIDE SUCH NOTICE SHALL ACT AS WAIVER AND RECIPIENT SHALL BE BOUND TO THE FOREGOING TERMS AND CONDITIONS.

LOCAL UTILITY LOCATING AGENCY

ALL CONTRACTORS SHALL NOTIFY UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING OF THE INTENT TO EXCAVATE NO LESS THAN 72 HOURS PRIOR TO SUCH EXCAVATION (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND HOLIDAYS) AND CALL LOCAL UTILITY LOCATING AGENCY AT 1-800-382-5544.

EXISTING UTILITY LOCATIONS SHOWN SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. LOCATIONS OF UNDERGROUND UTILITIES ON THESE DRAWINGS ARE APPROXIMATE ONLY AND BASED ON ACTUAL FIELD LOCATIONS OF VISIBLE STRUCTURES AND PLAN COMPUTATIONS.

SURVEY

EXISTING TOPOGRAPHY IS BASED ON AN ACTUAL FIELD SURVEY PERFORMED BY WOOLPERT, INC., COMPLETED ON JUNE 17, 2023 AND SUPPLEMENTED ON OCTOBER 10, 2023.

GEOTECHNICAL

REFER TO REPORT OF GEOTECHNICAL INVESTIGATION - PHASE 1 PREPARED BY ATLAS TECHNICAL CONSULTANTS LLC DATED OCTOBER 10, 2023.

REFER TO SOIL BORING LOGS BY ATLAS TECHNICAL CONSULTANTS LLC DATED AUGUST 21, 2023 TO SEPTEMBER 13, 2023.

SHEET KEYNOTE INSTRUCTIONS --

SHEET KEYNOTES ARE NOTED WITHIN THE GRAPHIC AREA OF THE DRAWING. THESE ARE REPRESENTED BY A NUMBER SURROUNDED BY A HEXAGON, WITH OR WITHOUT A LEADER. A LEGEND ON THE RIGHT SIDE OF THE PAGE LISTS THE NOTES IN NUMERICAL ORDER.

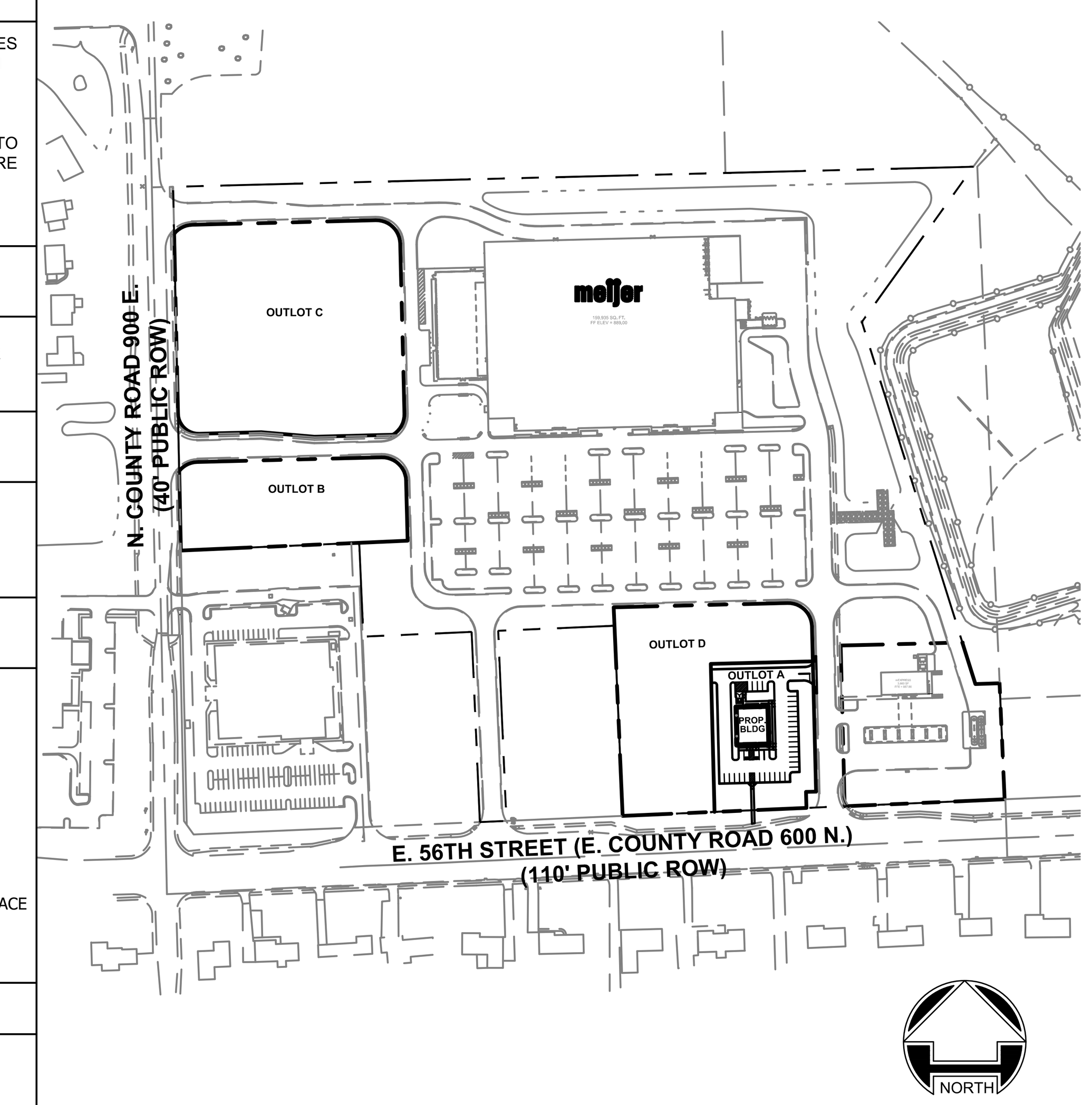
EXAMPLE: (1)

1. ALIGN NEW CONSTRUCTION WITH THE FACE OF EXISTING CONSTRUCTION.

TABULATED SITE DATA

MEIJER OUTLOT A AREA = 53,110± SF

PROPOSED LAND COVERAGE	AREA (SF)	PERCENTAGE
PROPOSED BUILDING	4,285	8.1%
PROPOSED COMPACTED GRAVEL	0	0%
PROPOSED CONCRETE/ASPHALT	28,200	53.1%
TOTAL AMOUNT OF IMPERVIOUS SURFACE	**32,485**	**61.2%**



B5 OVERALL SITE PLAN
NTS

SITE ADDRESS:
9180 E. 56TH STREET

SYMBOL LEGEND

EXISTING MAJOR CONTOUR
EXISTING MINOR CONTOUR
NEW MINOR CONTOUR
NEW MAJOR CONTOUR
CENTER OF DITCH
LOT LINE (AS PLATTED)
R.O.W. LINE
SECTION LINE
FENCE
GRAVEL SURFACE
PAVED SURFACE
EXISTING CURB & GUTTER
PROPOSED CURB & GUTTER
TURN DOWN CONCRETE SLAB
SIGN
SITE LIGHT POLES
BENCH MARK
SECTION CORNER
EASEMENT LINE
PROPOSED ELEVATION (0.50 ATC, 0.00 DTP)
PROPOSED PAVEMENT MARKING (PAINTING)
PROPOSED BARRIER FREE PARKING

SANITARY SEWER & MANHOLE (8" SAN)
WYE & LEAD
RISER & LEAD
STANDARD SEWER CLEANOUT
STORM SEWER & MANHOLE (12" SD)
CATCH BASIN WITH EROSION CONTROL
UNDERDRAIN
WATER MAIN (8"WTR)
VALVE & BOX (8"WTR)
METER
PLUG
STANDARD FIRE HYDRANT ASSEMBLY
CURB STOP & BOX
GAS MAIN (G)
UNDERGROUND ELECTRIC (UE)
UNDERGROUND TELEPHONE (UT)
TELEPHONE PEDESTAL (TP)
CONCRETE SLAB
HEAVY DUTY ASPHALT
LIGHT DUTY ASPHALT
MATCH LINE

MATCH LINE
BREAK MARK
CONTROL POINT (CP1)
DATUM MARK (T.O. MASONRY 12'-0")
WALL SECTION MARK (A1 / A-101)
BUILDING SECTION MARK (A1 / A-101)
ELEVATION TAGS (A1, A2, B4, E2, A-101)
ENLARGED PLAN OR DETAIL (1 / A101, SIM)
REVISION CLOUD

ABBREVIATIONS

A	AREA	PC	POINT OF CURVATURE
ALT	ALTERNATE	PE	POLYETHYLENE
AMP	AMPERE	PH	PHASE
ARCH	ARCHITECTURAL	PSI	POUNDS PER SQUARE INCH
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	PT	POINT OF TANGENCY
B/C	BACK OF CURB	PVC	POLYVINYL CHLORIDE
BIT	BITUMINOUS PAVEMENT	PVMT	PAVEMENT
BM	BENCH MARK	R	RADIUS
BP	BID PACKAGE	RCP	REINFORCED CONCRETE PIPE
C	CONDUIT	RE;	REFERENCE
CAL	CALIPER	REQ'D	REQUIRED
CB	CATCH BASIN	ROW	RIGHT-OF-WAY
CFH	CUBIC FEET PER HOUR	RW	RETAINING WALL
C.I.	CURB ISLAND	(S)	SOUTH
CIR	CIRCUIT	SAN	SANITARY SEWER
CONC	CONCRETE	SB	SOIL BORING
DIA	DIAMETER	SF, SQFT	SQUARE FEET
(E)	EAST	SQ	SQUARE
E.I.F.S.	EXTERIOR INSULATION FINISHING SYSTEM	STM	STORM SEWER
EL. ELEV	ELEVATION	STRUC	STRUCTURE
EQ	EQUIVALENT	TC	TOP OF CURB
ES	END SECTION	TEL	TELEPHONE
ETC	ETCETERA	TP	TOP OF PAVEMENT
FH	FIRE HYDRANT	TRNF	TRANSFORMER
FF	FINISHED FLOOR	TS	TOP OF SLAB
FT²	FOOT SQUARE	TW	TOP OF WALL
GND, GRD	GROUND	TYP	TYPICAL
GP	GUTTER PAN	UC	UTILITY CROSSING
GPD	GALLONS PER DAY	UD	UNDER DRAIN
GPM	GALLONS PER MINUTE	W	WIRE
GV&BOX	GATE VALVE AND BOX	(W)	WEST
HC	HIGH CAPACITY	W/	WITH
HD	HEAVY DUTY	WC	WATER COLUMN
HT	HEIGHT	WTR	WATER
IE	INVERT ELEVATION	WWF	WELDED WIRE FABRIC
KVA	KILOVOLT AMPERE		
LBS	POUNDS		
LD	LIGHT DUTY		
LED	LIGHT EMITTING DIODE		
LF	LINEAR FEET		
LG	LARGE		
MANUF	MANUFACTURE		
MAT'L	MATERIAL		
MAX	MAXIMUM		
MECH	MECHANICAL		
MIN	MINIMUM		
MH	MANHOLE		
(N)	NORTH		
OC	ON CENTER		
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION		

AGENCIES

ZONING
TOWN OF BROWNSBURG
DEVELOPMENT SERVICES
JENNA WERTMAN, DEVELOPMENT SERVICES DIRECTOR
61 N. GREEN STREET
BROWNSBURG, IN 46112
(317) 852-1128
EMAIL: JWERTMAN@BROWNSBURG.ORG

HIGHWAY DEPARTMENT
HENDRICKS COUNTY HIGHWAY DEPARTMENT
930 E. MAIN STREET
CURT HIGGINBOTHAM, SUPERINTENDENT
DANVILLE, IN 46122
(317) 745-9227
EMAIL: CHIGGINBOTHAM@CO.HENDRICKS.IN.US

SANITARY
HENDRICKS COUNTY REGIONAL SEWER DISTRICT
JIM MARDIS
355 S. WASHINGTON STREET, #206
DANVILLE, IN 46122
(317) 718-6038

AQUA INDIANA
KIERAN TANSY
5750 CASTLE CREEK PARKWAY NORTH DRIVE, SUITE #314
INDIANAPOLIS, IN 46250
(317) 716-6026

WATER
CITIZENS ENERGY GROUP
RICHARD NEWELL, PROJECT MANAGER
2150 DR. MARTIN LUTHER KING JR. ST.
INDIANAPOLIS, IN 46202
(317) 927-4377
EMAIL: RNEWELL@CITIZENSENERGYGROUP.COM

STORMWATER
HENDRICKS COUNTY SURVEYOR'S OFFICE
DAVID GASTON, HENDRICKS COUNTY SURVEYOR
355 S. WASHINGTON STREET, #170
DANVILLE, IN 46122
(317) 745-9237
EMAIL: DGASTON@CO.HENDRICKS.IN.US

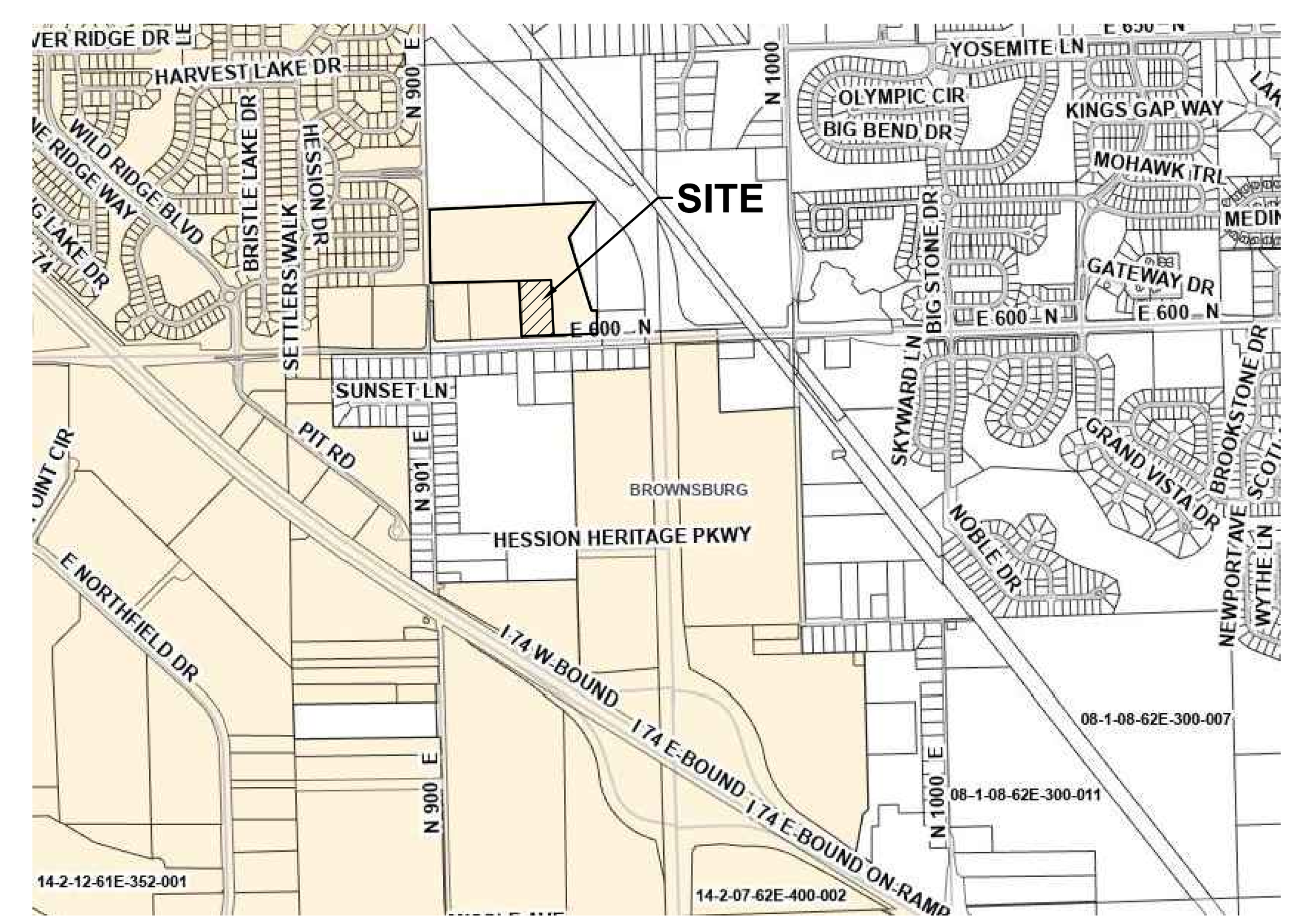
FIRE
TOWN OF BROWNSBURG FIRE TERRITORY
PAUL HUDSON, FIRE MARSHAL
470 E. NORTHFIELD DRIVE
BROWNSBURG, IN 46112
(317) 696-0546
EMAIL: PHUDSON@BROWNSBURGFIRE.ORG

ELECTRIC
HENDRICKS POWER
DAVID VANWYE, DISTRIBUTION DESIGNER
P.O. BOX 309
DANVILLE, IN 46122
(317) 745-5473
EMAIL: DVANWYE@HENDRICKSPOWER.COM

GAS
CENTERPOINT ENERGY
JON EASTHAM, SENIOR GAS ENGINEER
8399 ZIONSVILLE ROAD
INDIANAPOLIS, IN 46268
(765) 287-2119
EMAIL: JONATHANEASTHAM@CENTERPOINTENERGY.COM

TELEPHONE & INTERNET

VICINITY MAP



A5 VICINITY MAP
NTS

Indiana 811 — Know what's below. Call before you dig.

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

COVER SHEET

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-001

Images: Vicinity Map.jpg; , Xrefs: 10026635TBLK.dwg; 10026635-x.dwg; 10026635-p.dwg
Layout Tab Name: C-001 COVER SHEET
Last Saved By:B.VanGorder, 1/27/2026 2:00:05 PM
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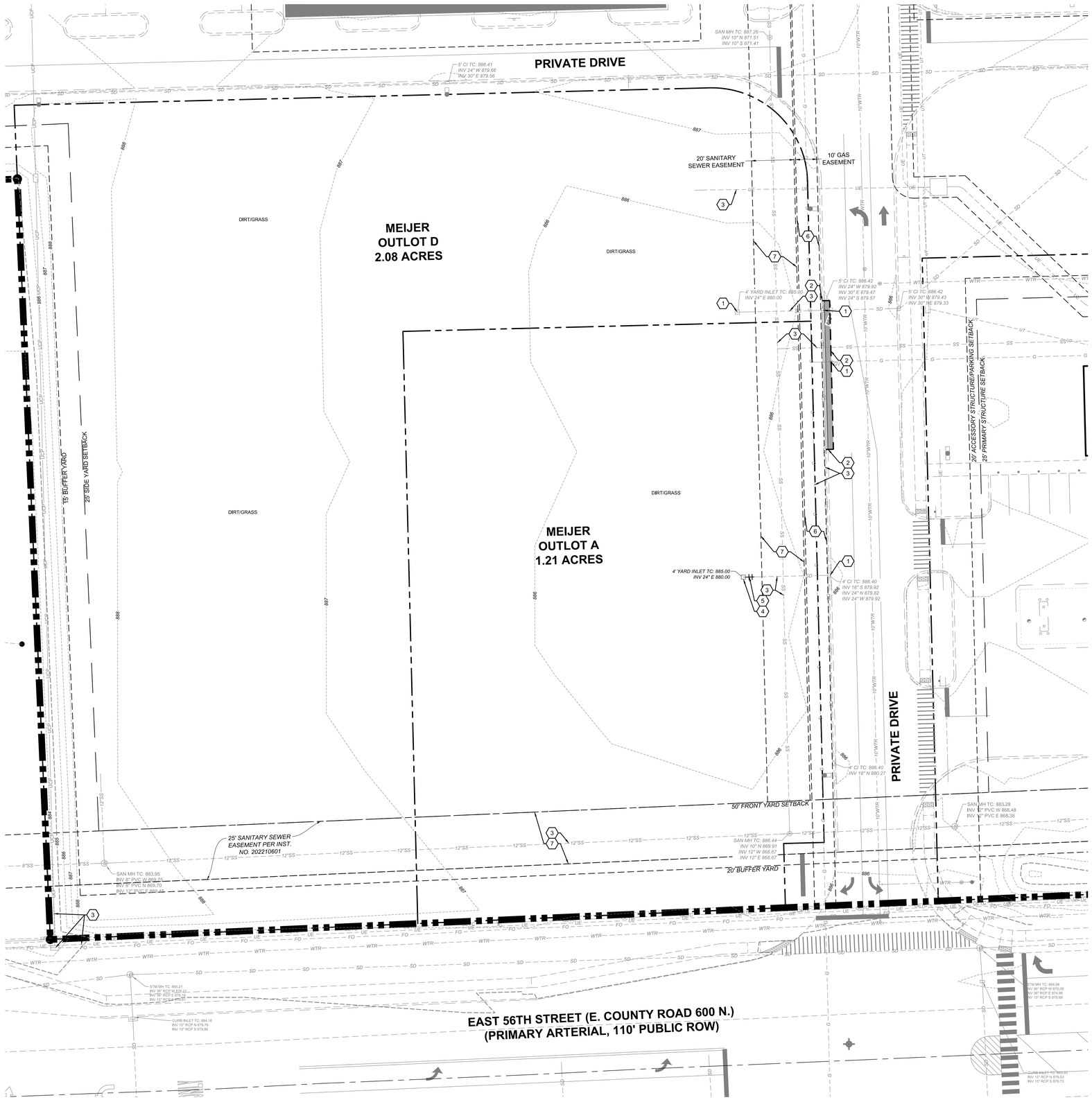

A1 EXISTING CONDITIONS - DEMOLITION PLAN
1"=20'

NORTH

EXISTING LEGEND

- MEIJER PROPERTY LINE
- PROPERTY BOUNDARY
- 799 — 1' CONTOUR
- 800 — 5' CONTOUR
- SD — STORM SEWER
- WTR — WATER MAIN
- SS — SANITARY SEWER
- G — GAS MAIN
- UE — UNDERGROUND ELECTRIC
- UT — UNDERGROUND TELEPHONE
- OE — OVERHEAD ELECTRIC
- OEC — OVERHEAD ELECTRIC AND CABLE
- OET — OVERHEAD ELECTRIC AND TELECOMM
- OETC — OVERHEAD ELECTRIC, TELECOMM, AND CABLE
- SANITARY MANHOLE
- STORM MANHOLE
- DRAINAGE INLET
- FIRE HYDRANT
- POWER POLE
- SIGN
- LIGHT POLE

DEMOLITION LEGEND

- ASPHALT PAVEMENT TO BE REMOVED
- APPROXIMATE SAW/CUT LINE
- UTILITY LINE TO BE REMOVED

GENERAL NOTES

1. PLANIMETRIC FEATURES SHOWN HEREON ARE BASED UPON A FIELD SURVEY COMPLETED BY WOOLPERT INC. ON JUNE 17, 2023 AND SUPPLEMENTED ON OCTOBER 10, 2023 AND WILL NOT REFLECT ANY CHANGES TO THE PHYSICAL SITE THROUGH MANMADE OR NATURAL OCCURRENCES BEYOND SAID DATE. CONTRACTOR SHALL VISIT THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION TO VERIFY SITE CONDITIONS. ANY DISCREPANCIES BETWEEN THE ACTUAL FIELD CONDITIONS AND PLAN DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE MEIJER PROJECT MANAGER IMMEDIATELY.
2. ANY USE OF THIS DRAWING BY PARTIES NOT CONTRACTED DIRECTLY WITH WOOLPERT OR CERTIFIED TO ON THIS DRAWING IS PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION.
3. ONLY THE IMPROVEMENTS THAT WERE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY, THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE, ARE SHOWN ON THE FACE OF THIS PLAT. THIS SURVEY MAY NOT REFLECT ALL UTILITIES OR IMPROVEMENTS, IF SUCH ITEMS ARE HIDDEN BY LANDSCAPING, OR ARE COVERED BY SUCH THINGS AS DUMPSTERS, TRAILERS, SNOW, ETC.
4. ACCORDING TO THE FLOOD INSURANCE RATE MAPS - MAP NUMBERS 18063C0176E, PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY WITH A REVISION DATE OF JUNE 15, 2022, WHICH IS THE MOST CURRENT FLOOD INSURANCE RATE MAP AVAILABLE ON FEMA'S WEBSITE, THIS SITE IS LOCATED IN ZONE "X" (NO SCREEN) - AREAS OF MINIMAL FLOOD HAZARD, THE ABOVE REFERENCED FLOODPLAIN MAP WAS UTILIZED FOR THIS DETERMINATION.
5. RECYCLED CONCRETE MATERIAL IS DEFINED AS CRUSHED CONCRETE SLAB, FOUNDATIONS, CURBS AND SIDEWALK, ALONG WITH THE GRANULAR BASE MATERIAL ASSOCIATED WITH THESE ITEMS (EXCLUDES CRUSHED CONCRETE BLOCK). THIS MATERIAL SHALL BE CRUSHED AND OR PROCESSED TO BE IN ACCORDANCE WITH MEIJER SPECIFICATIONS AND CAN BE USED AS FOLLOWS:
   - MASS GRADING AND GENERAL FILL AREAS.
   - UTILITY TRENCH BACKFILL (EXCEPT FOR PIPE BEDDING).
   - SUBGRADE FILL MATERIAL DIRECTLY UNDER THE ASPHALT AND CONCRETE PAVEMENT SECTIONS. (MATERIAL SHALL NOT BE USED AS PART OF THE PAVEMENT SECTIONS.)
   - BACKFILL MATERIAL AROUND THE UNDERGROUND DETENTION SYSTEM (MATERIAL SHALL NOT BE USED AS PIPE BEDDING), IF USED IN THIS APPLICATION, CONTRACTOR MUST DEMONSTRATE THAT THE MATERIAL MEETS THE REQUIRED GRADATION SPECIFICATIONS AND THE MATERIAL IS FREE OF CONTAMINATION.

DEMOLITION NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS RELATED TO AIR QUALITY DURING DEMOLITION FROM IDEM.
2. CONTRACTOR SHALL DISPOSE OF ALL DEMOLITION DEBRIS IN A LEGAL MANNER IN ACCORDANCE WITH ALL APPLICABLE GOVERNING CRITERIA. UPON COMPLETION OF DEMOLITION WORK, CONTRACTOR SHALL CLEAR SITE OF ALL DEBRIS.
3. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITY SERVICES TO EXISTING ADJACENT BUILDINGS TO REMAIN. CONTRACTOR TO COORDINATE WITH EXISTING BUILDING OWNER(S) SHOULD ANY SERVICE INTERRUPTIONS BE REQUIRED.
4. CONTRACTOR SHALL ENSURE THAT ALL APPROPRIATE MEASURES ARE IN PLACE SHOULD A RAIN EVENT OCCUR DURING THE REMOVAL AND/OR CONSTRUCTION OF THE STORM AND SANITARY SEWER SYSTEMS TO MAINTAIN FLOW TO THE APPROPRIATE SYSTEMS.
5. VOIDS CREATED BY REMOVAL OF EXISTING ITEMS, SUCH AS LIGHT POLES, SIGNS, ETC., SHALL BE FILLED IN ACCORDANCE WITH MEIJER SPECIFICATIONS.
6. REMOVE (UNDER PROPOSED PAVEMENT AND BUILDING)/ABANDON (UNDER PROPOSED LAWN) ANY LOCATED INACTIVE STORM OR DOWNSPOUT LINES, SANITARY SERVICES, GAS SERVICES, WATER SERVICES, LIGHTING CONDUIT OR OTHER FOUND UTILITIES PER AGENCY REQUIREMENTS.
7. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO PERFORM WORK ON THE OWNER'S PROPERTY.
8. CONTRACTOR RESPONSIBLE FOR COORDINATING TEMPORARY POWER TO SITE.
9. FIRE EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED DURING CONSTRUCTION.
10. PORTABLE FIRE EXTINGUISHERS MUST BE READILY AVAILABLE TO CONSTRUCTION CREWS DURING CONSTRUCTION.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION TO VERIFY SITE CONDITIONS. ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND PLAN DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE MEIJER PROJECT MANAGER IMMEDIATELY.
12. OPEN BURNING ON SITE IS PROHIBITED.

KEYNOTES ⟨X⟩

1. ITEM TO REMAIN, PROTECT IN PLACE.
2. SAWCUT PAVEMENT/CURB/SIDEWALK. REMOVE SIDEWALK AT NEAREST EXISTING JOINT.
3. EXISTING UTILITY TO BE MAINTAINED DURING CONSTRUCTION.
4. REMOVE AND RELOCATE EXISTING UTILITY STRUCTURE. SEE C-400 FOR PROPOSED LOCATION. CONTRACTOR SHALL REVIEW CONDITION OF EXISTING STRUCTURE TO BE RELOCATED IN WHICH PROPOSED PIPES ARE PROPOSED TO CONNECT, IF CONDITIONS WARRANT IT, STRUCTURE SHALL BE REPLACED.
5. REMOVE PIPE.
6. 10' GAS EASEMENT.
7. PUBLIC SANITARY EASEMENT.

BENCHMARK:

THE BASIS OF ELEVATIONS HEREON IS NAVD 88 PER OBSERVATIONS OF SELECTED STATIONS IN THE NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATION (NGS CORS) NETWORK.
MAG NAIL SET IN THE CORNER TOP OF THE CURB JOINT - SEE C-001 FOR LOCATION.

ELEVATION = 889.36'

0 20 40 60
GRAPHIC SCALE IN FEET

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WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

EXISTING CONDITIONS - DEMOLITION PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-100

Images: - Xrefs: 10026635-cp.dwg; 10026635-x.dwg; 10026635TBLK.dwg
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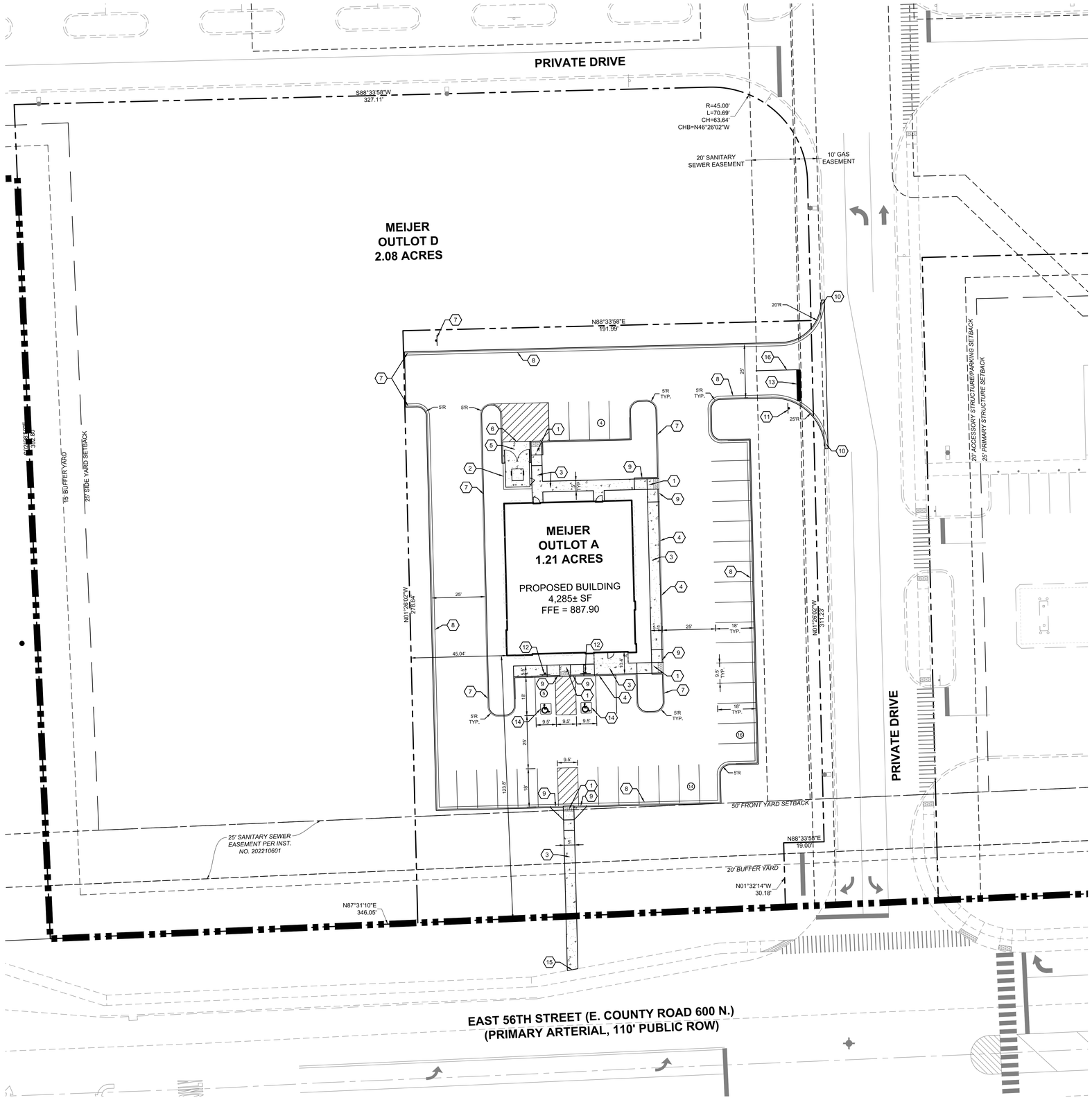

A1 SITE PLAN - PAVEMENT PLAN & SIGNAGE AND STRIPING PLAN
1"=20'

NORTH

0 20 40 60
GRAPHIC SCALE IN FEET

LEGEND

- MEIJER PROPERTY LINE
- PROPERTY LINE
- LIGHT POLE
- 9.5' x 18' PARKING SPACES, UNLESS NOTED OTHERWISE
- CONCRETE PAVEMENT, SEE DETAIL D1 ON C-702
- LIGHT DUTY ASPHALT PAVEMENT, SEE DETAIL D1 ON C-702

PROJECT AREA SUMMARY	
EXISTING LOT 6	3.29 ACRES
PROPOSED LOT A	1.21 ACRES
PROPOSED LOT D	2.08 ACRES

PARKING SUMMARY	
9 FT X 18 FT STANDARD PARKING	37 SPACES
VAN ACCESSIBLE ADA	2 SPACES
TOTAL PROVIDED PARKING	39 SPACES
MINIMUM REQUIRED BY CODE (1.5 SPACES/TREATMENT SPACE)	18 SPACES

GENERAL NOTES

1. NO DIMENSION MAY BE SCALED. REFER UNCLEAR ITEMS TO THE ENGINEER FOR INTERPRETATION.
2. DIMENSIONS AND/OR COORDINATES ARE TO FACE OF CURB, FACE OF BUILDING (FACE OF PRECAST), EDGE OF PAVEMENT OR CENTER OF STRUCTURE OR SIGN. VERIFY BUILDING DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
3. BUILDING SLABS, UNDERBED THICKNESS AND LOCATIONS ARE SHOWN FOR REFERENCE. VERIFY WITH STRUCTURAL DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING TO ACCOMPLISH ALL WORK INDICATED ON PLANS AND PERFORM REQUIRED COMPACTION OPERATIONS.
5. PROVIDE ADEQUATE BARRICADES AT DRIVES, ENTRANCES, EXCAVATIONS AND OTHER OPENINGS TO KEEP OUT UNAUTHORIZED PERSONS AND FOR PUBLIC SAFETY AND TRAFFIC CONTROL. SAFETY PROVISIONS OF APPLICABLE LAWS SHALL BE OBSERVED AT ALL TIMES. BARRICADES LEFT IN PLACE AT NIGHT SHALL BE LIGHTED.
6. NO EQUIPMENT OR MATERIAL STORAGE IS PERMITTED IN THE RIGHT-OF-WAY.
7. WORK SHALL CONFORM TO THE REQUIREMENTS OF MEIJER STANDARD SPECIFICATIONS, GOVERNING AGENCIES HAVING JURISDICTION, GRADING, PAVING AND MATERIALS SHALL COMPLY WITH THE STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AS WELL AS PROJECT SPECIFICATIONS AND DRAWINGS, IN CASE OF DISCREPANCIES BETWEEN REQUIREMENTS, THE MORE STRINGENT SHALL APPLY.
8. EXTERIOR CONCRETE SLABS ADJACENT TO BUILDING SHALL BE PLACED ON 4" STRUCTURAL CUSHION, UNLESS NOTED OTHERWISE.
9. AGGREGATE TO EXTEND 12" BEYOND BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
10. ALL RADII SHALL BE 4' UNLESS OTHERWISE NOTED.
11. ALL PAVEMENT MARKING SHALL BE YELLOW IN COLOR UNLESS NOTED OTHERWISE.
12. REFER TO SHEET C-701 FOR SIGNAGE/STRIPING DETAILS.

(X) KEYNOTES

1. ADA RAMP WITH DETECTABLE WARNING SURFACE, SEE DETAIL ON C-702.
2. DUMPSTER ENCLOSURE. SEE ARCHITECTURAL PLANS FOR DETAILS.
3. 4" CONCRETE SIDEWALK ON 4" BASE MATERIAL, SEE DETAIL ON C-702.
4. CONCRETE CURBED WALK. SEE DETAIL A1 ON C-702.
5. HEAVY DUTY CONCRETE DUMPSTER APRON, SEE DETAIL D1 ON C-702.
6. THICKENED BITUMINOUS PAVEMENT EDGE. SEE DETAIL B1 ON C-702.
7. CONCRETE STRAIGHT CURB, SEE DETAIL C2 ON C-702.
8. CONCRETE STRAIGHT CURB AND GUTTER, SEE DETAIL E6 ON C-702.
9. TRANSITION CURB HEIGHT FROM 6" TO 0", SEE DETAIL E4 ON C-702.
10. TRANSITION TO EXISTING CURB.
11. "STOP" SIGN, SEE DETAIL C1 ON C-701.
12. "VAN ACCESSIBLE" PARKING SIGN, SEE DETAIL C3 ON C-701.
13. 12" STOP LINE, WHITE.
14. ADA GRAPHIC AT ADA PARKING STALL, SEE DETAIL E2 ON C-701.
15. TRANSITION TO EXISTING CONCRETE WALK.
16. 4" SINGLE SOLID LINE, WHITE.
17. "DEAD END" SIGN, SEE DETAIL C1 ON C-701.

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9160 E. 56TH STREET
BROWNSBURG, INDIANA 46112

SITE PLAN - PAVEMENT PLAN & SIGNAGE AND STRIPING PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-200

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Images: , Xrefs: 10026635-p.dwg; 10026635-x.dwg; 10026635TBLK.dwg
Layout: C-200 Name: C-200 - SITE PLAN
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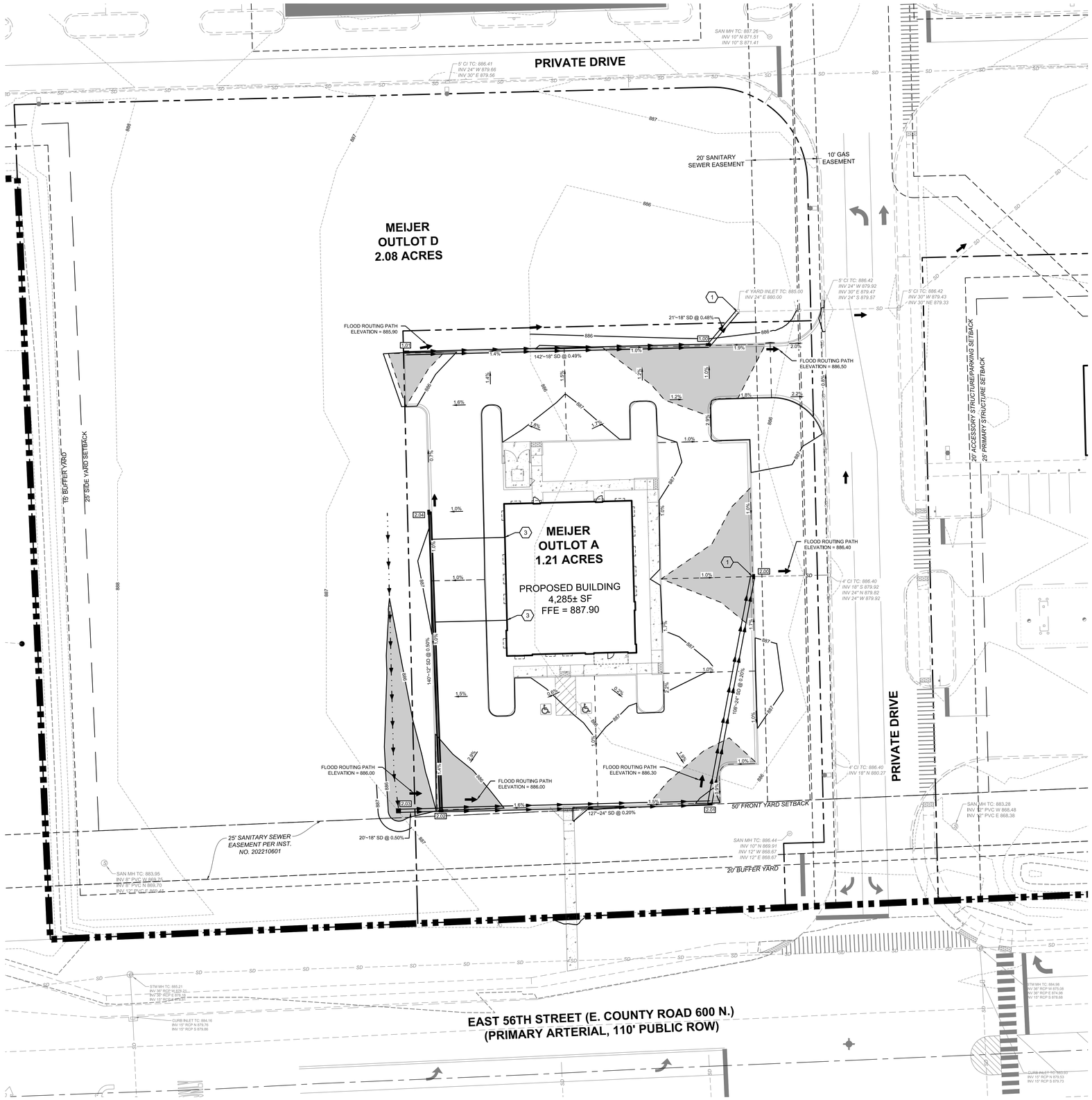

A1 SITE GRADING - DRAINAGE PLAN
1"=20'

0 20 40 60
GRAPHIC SCALE IN FEET

LEGEND

- MEIJER PROPERTY LINE
- PROPERTY LINE
- 799 EXISTING 1' CONTOUR
- 800 EXISTING 5' CONTOUR
- SD EXISTING STORM SEWER
- EXISTING DRAINAGE BASIN
- 799 PROPOSED 1' CONTOUR
- 800 PROPOSED 5' CONTOUR
- DRAINAGE BASIN
- CLEANOUT
- XX"~XX" SD STORM SEWER
- XX STORM STRUCTURE I.D.
- 1.00% SLOPE LABEL
- GRADE BREAK
- DRAINAGE SWALE
- 100-YEAR FLOOD LIMITS (WITH ALL INLETS BLOCKED)
- FLOOD ROUTING PATH

GRADING NOTES

1. ALL SPOT ELEVATIONS ARE TO:
   TOP OF PAVEMENT - (TP)
   TOP OF SLAB - (TS)
   TOP OF CURB - (TC)
   TOP OF WALL - (TW)
   GUTTER PAN - (GP)
   U.O.N.- UNLESS OTHERWISE NOTED
2. CONTOURS SHOWN ARE FOR REFERENCE ONLY.
3. PROVIDE POSITIVE DRAINAGE AT ALL TIMES TO ENSURE NO STANDING WATER WITHIN PAVEMENT, BUILDING PAD, OR GREEN AREAS.
4. FOR ALL CURB ISLANDS, CENTER OF ISLANDS TO BE A MINIMUM OF 6" HIGHER THAN TOP OF CURB.
5. RESTORE ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE DITCHES, AND OTHER PUBLIC OR PRIVATE STRUCTURES THAT ARE DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO MATCH AT A MINIMUM EXISTING CONDITIONS.
6. CONTRACTOR'S MANNER AND METHOD OF INGRESS AND EGRESS WITH RESPECT TO THE PROJECT AREAS SHALL IN NO WAY PROHIBIT OR DISTURB NORMAL PEDESTRIAN OR VEHICULAR TRAFFIC IN THE VICINITY AND IS SUBJECT TO REGULATION AND WRITTEN APPROVAL OF APPROPRIATE GOVERNING AGENCIES.
7. FINISHED SUBGRADE SURFACE SHALL NOT BE MORE THAN 0.1 FEET ABOVE OR BELOW ESTABLISHED FINISHED SUBGRADE ELEVATIONS AND ALL GROUND SURFACES SHALL VARY UNIFORMLY BETWEEN INDICATED ELEVATIONS. FINISHED DITCHES SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION.
8. VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. PROTECT AND MAINTAIN CROSSINGS OF OTHER UTILITIES.
10. ALL MATERIAL, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL BE IN CONFORMANCE WITH MEIJER STANDARD SPECIFICATIONS AND THOSE OF THE APPROPRIATE UTILITY COMPANIES.
11. BEFORE COMMENCING WORK, CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES.
12. ENTRY LANDINGS PART OF AN ACCESSIBLE ROUTE SHALL MAINTAIN A MAXIMUM SLOPE OF 1.50% IN ALL DIRECTIONS. THIS IS INTENDED TO ALLOW FOR CONSTRUCTION TOLERANCES. SLOPES STEEPER THAN 1:48 SHALL NOT BE PERMITTED THUS MEETING THE REQUIREMENTS OF THE DEPARTMENT OF JUSTICE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN. ALL SLOPES TO BE VERIFIED AS ACCEPTABLE BY USING A 2'-0" LEVEL.
13. CONTRACTOR TO NOTIFY THE SITE ENGINEER SHOULD ANY EXISTING DRAINS AND/OR TILES BE ENCOUNTERED DURING CONSTRUCTION.

KEYNOTES (X)

1. CONNECT TO EXISTING UTILITY PER AGENCY REQUIREMENTS. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITY IN WHICH TO MAKE CONNECTION.
2. ADJUST EXISTING UTILITY STRUCTURE TO FINISHED GRADE.
3. 6" ROOF DRAIN FOR GUTTER DOWNSPOUTS. SEE DETAIL A5 ON C-700.

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

SITE GRADING - DRAINAGE PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-300

Indiana 811 Know what's below. Call before you dig.

Images: - Xrefs: 10026635TBLK.dwg; 10026635-x.dwg; 10026635-p.dwg; 10026635-g.dwg
Layout: - Tab Name: C-300 SITE GRADING - DRAINAGE PLAN
Last Saved By:BJVonGorder, 1/29/2026 10:40:28 AM
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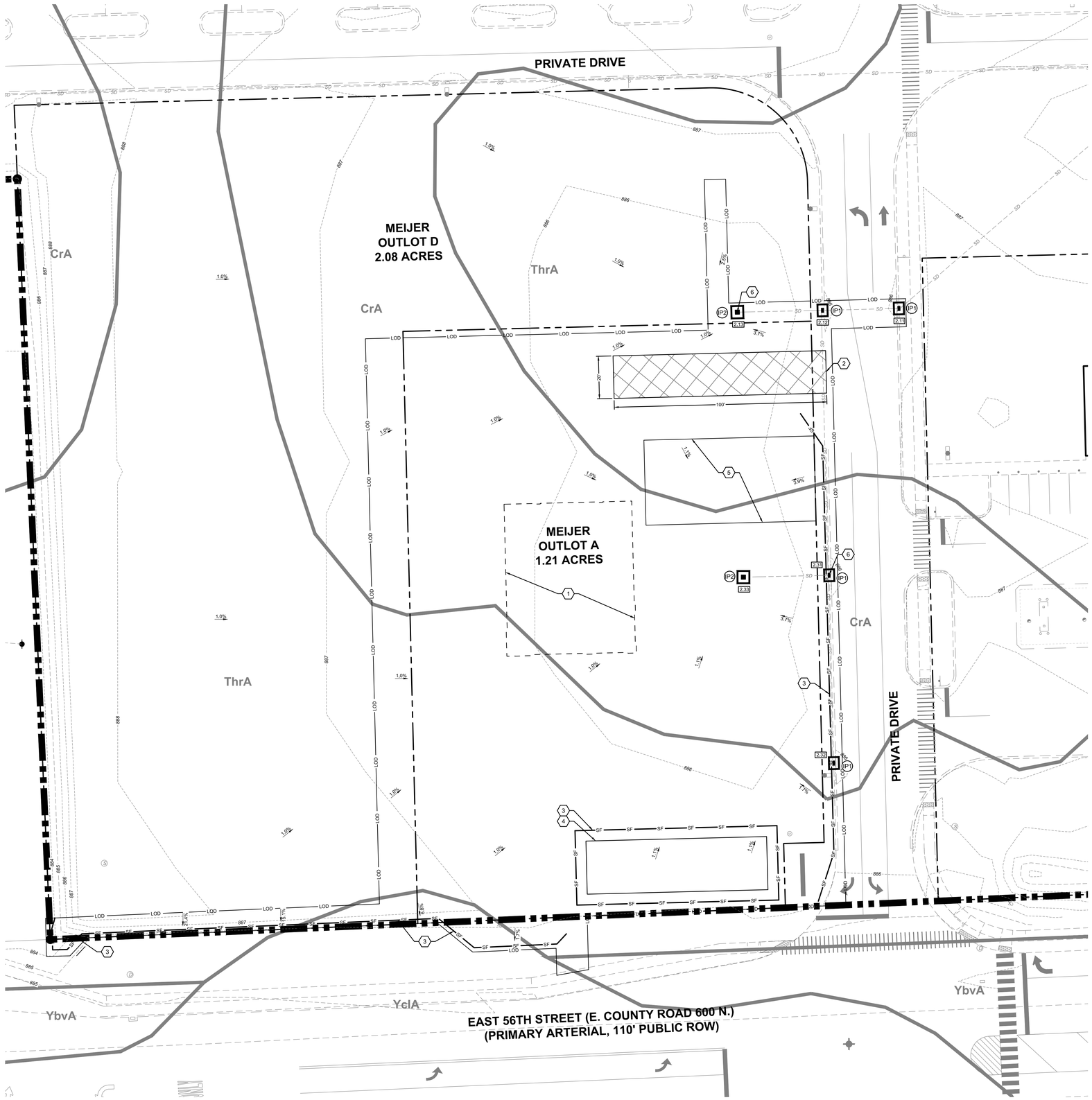

A1 PHASE 1 STORMWATER POLLUTION PREVENTION PLAN
1"=20'

NORTH

SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
CrA	CROSBY SILT LOAM, 0-2% SLOPES HYDROLOGIC GROUP: C/D
YclA	CROSBY SILT LOAM (URBAN LAND COMPLEX), 0-2% SLOPES HYDROLOGIC GROUP: C/D
ThrA	TREATY SILTY CLAY LOAM, 0-1% SLOPES HYDROLOGIC GROUP: B/D

NOTE: CONTRACTOR IS RESPONSIBLE FOR SECURING NECESSARY SWPPP APPROVAL AND IDEM CONSTRUCTION GENERAL PERMIT NOI FOR ANY OFFSITE BORROW AND SPOILS SITES. CONTACT CITY, COUNTY AND APPLICABLE MUNICIPALITIES TO DETERMINE IF SPECIAL HAULING OR OTHER PERMITS WILL BE REQUIRED. OBTAIN THESE PERMITS PRIOR TO INITIATION OF ACTIVITIES.

DEVELOPER

MEIJER STORES LIMITED PARTNERSHIP
ATTN: KEVIN WIERINGA
2350 3 MILE RD, NW
GRAND RAPIDS, MI 49544
PHONE: 616-791-3288
EMAIL: KEVIN.WIERINGA@MEIJER.COM

LEGEND

- MEIJER PROPERTY LINE
- PROPERTY LINE
- 799 — EXISTING 1' CONTOUR
- 800 — EXISTING 5' CONTOUR
- SD — EXISTING STORM SEWER
- EXISTING STORM STRUCTURE
- XX STORM STRUCTURE I.D.
- 1.0% EXISTING FLOW DIRECTION AND GRADE
- LOD — LIMITS OF DISTURBANCE
- SF — SILT FENCE/EROSION EEL
- (IP1) INLET PROTECTION - TYPE 1 (PAVEMENT)
- (IP2) INLET PROTECTION - TYPE 2 (LAWN)
- Cy SOIL TYPE
- SOIL TYPE BOUNDARY
- PROPOSED BUILDING FOOTPRINT
- TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

1. THE TOWN OF BROWNSBURG RESERVES THE RIGHT TO REQUIRE ADDITIONAL ONSITE CONTROLS AS DEEMED NECESSARY TO MAINTAIN COMPLIANCE WITH THE INDIANA CONSTRUCTION STORMWATER GENERAL PERMIT AND THE TOWN'S STORMWATER MANAGEMENT ORDINANCE. ALL EROSION AND SEDIMENT CONTROLS, BEST MANAGEMENT PRACTICES AND POLLUTION PREVENTION MEASURES MUST BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE INDIANA STORMWATER QUALITY MANUAL.
2. EXISTING SOIL SOIL TYPES, HYDROLOGIC SOIL GROUPS, AND SOIL DESCRIPTIONS ARE FROM THE NATIONAL RESOURCE CONSERVATION SERVICE'S (NRCS) WEB SOIL SURVEY. PLEASE SEE THE SOIL LEGEND FOR ADDITIONAL DETAILS.
3. REFER TO SHEET C-313 FOR EROSION CONTROL NOTES AND ESTIMATED SWPPP IMPLEMENTATION SCHEDULE.

BEST MANAGEMENT PRACTICE (BMP) PHASE 1 IMPLEMENTATION SEQUENCE

1. PER TOWN OF BROWNSBURG REQUIREMENTS, FOLLOWING APPROVAL OF THE SWPPP AND AT LEAST 72 HOURS PRIOR TO ANY LAND-DISTURBING ACTIVITIES (INCLUDING INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES), CONTRACTOR SHALL SET UP AND CONDUCT AN ONSITE PRE-CONSTRUCTION MEETING. REQUIRED ATTENDEES INCLUDE: THE TOWN, DEVELOPER, CONTRACTOR, SEDIMENT AND EROSION CONTROL INSTALLER, AND THE QUALIFIED INDIVIDUAL FOR THE SEDIMENT AND EROSION CONTROL INSPECTIONS.
2. POST A COPY OF THE NOI AT THE CONSTRUCTION ENTRANCE ALONG WITH THE CONTACT INFORMATION OF THE PERSON RESPONSIBLE FOR IMPLEMENTING THE SWPPP. THE SWPPP SHOULD BE ONSITE AND WEEKLY SITE REPORTS NEED TO BE AVAILABLE WITHIN 48 HOURS OF A REQUEST.
3. STAKE THE PROJECT LIMITS OF DISTURBANCE AS SHOWN ON THE SWPPP DRAWING.
4. BEGIN CLEARING AND GRUBBING ONLY THE MINIMUM AREA NECESSARY FOR INSTALLATION OF PHASE 1 BMPS. CLEAR AREAS REQUIRED FOR BMPS AS EACH BMP IS BEING INSTALLED.
5. INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE.
6. PERIMETER CONTROLS AND OTHER PRACTICES INTENDED TO TRAP SEDIMENT SHALL BE IMPLEMENTED PRIOR TO GRADING AND WITHIN SEVEN (7) DAYS FROM THE START OF GRUBBING FOR SAID PERIMETER CONTROLS AND PHASE 1 BMPS.
7. INSTALL PERIMETER CONTROLS.
8. INSTALL INLET PROTECTION AT EXISTING DRAINAGE STRUCTURES.
9. TEMPORARILY STABILIZE PER DETAIL C1 ON C-312 ANY AREAS DISTURBED BY THE PLACEMENT OR ADJUSTMENT OF TEMPORARY BMPS.
10. PRIOR TO MODIFICATION OF THE APPROVED SWPPP DESIGN, CONSULT WITH WOOLPERT PROJECT ENGINEER. ANY DESIGN MODIFICATIONS OR ADDENDA TO THE PROJECT ARE REQUIRED TO BE SUBMITTED TO THE TOWN OF BROWNSBURG FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.

KEYNOTES (X)

1. PROPOSED BUILDING FOOTPRINT.
2. TEMPORARY STABILIZED CONSTRUCTION ENTRANCE.
3. SILT FENCE/EROSION EEL. SEE DETAIL E1 ON SHEET C-312 FOR EROSION EEL DETAIL. SEE NOTE BELOW FOR ADDITIONAL DETAILS ON SILT FENCE AND EROSION EEL INSTALLATION.
4. STOCKPILE AREA. SEE DETAIL A3 ON SHEET C-312.
5. POTENTIAL CONSTRUCTION STAGING MATERIAL STORAGE AREA (INCLUDES FUELING AREA, DUMPSTERS, CONCRETE WASHOUT, TRAILERS, PORT-O-LET, ETC.).
6. OUTFALL: SHEET FLOW INTO PROPOSED AND MODIFIED EXISTING INLETS, WHICH DISCHARGE TO THE MEIJER STORE DRAINAGE SYSTEM.

RUNOFF COEFFICIENTS	
PRE-CONSTRUCTION RUNOFF COEFFICIENT	0.25
POST-CONSTRUCTION RUNOFF COEFFICIENT	0.61

SUMMARY OF ACREAGE (ACRES)	
TOTAL PROJECT AREA	1.21±
PERMITTED DISTURBED AREA ON PROPERTY	1.27±
PERMITTED DISTURBED AREA ON OFF-SITE AREAS	0.2±
TOTAL PERMITTED DISTURBED AREA FOR PROJECT	1.47±

ALL AREAS THAT ARE LEFT UNDISTURBED FOR 7 DAYS SHALL RECEIVE SEED AND MULCH.

0 20 40 60
GRAPHIC SCALE IN FEET

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WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

PHASE 1 STORMWATER POLLUTION PREVENTION PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-310

Images: _Xrefs: 10026635-p.dwg; 10026635-x.dwg; 10026635TBLK.dwg; 10026635-LOD.dwg; 10026635-x-soils.dwg
Layout: C-310 Name: C-310, SHEET 1, STORMWATER POLLUTION PREVENTION PLAN
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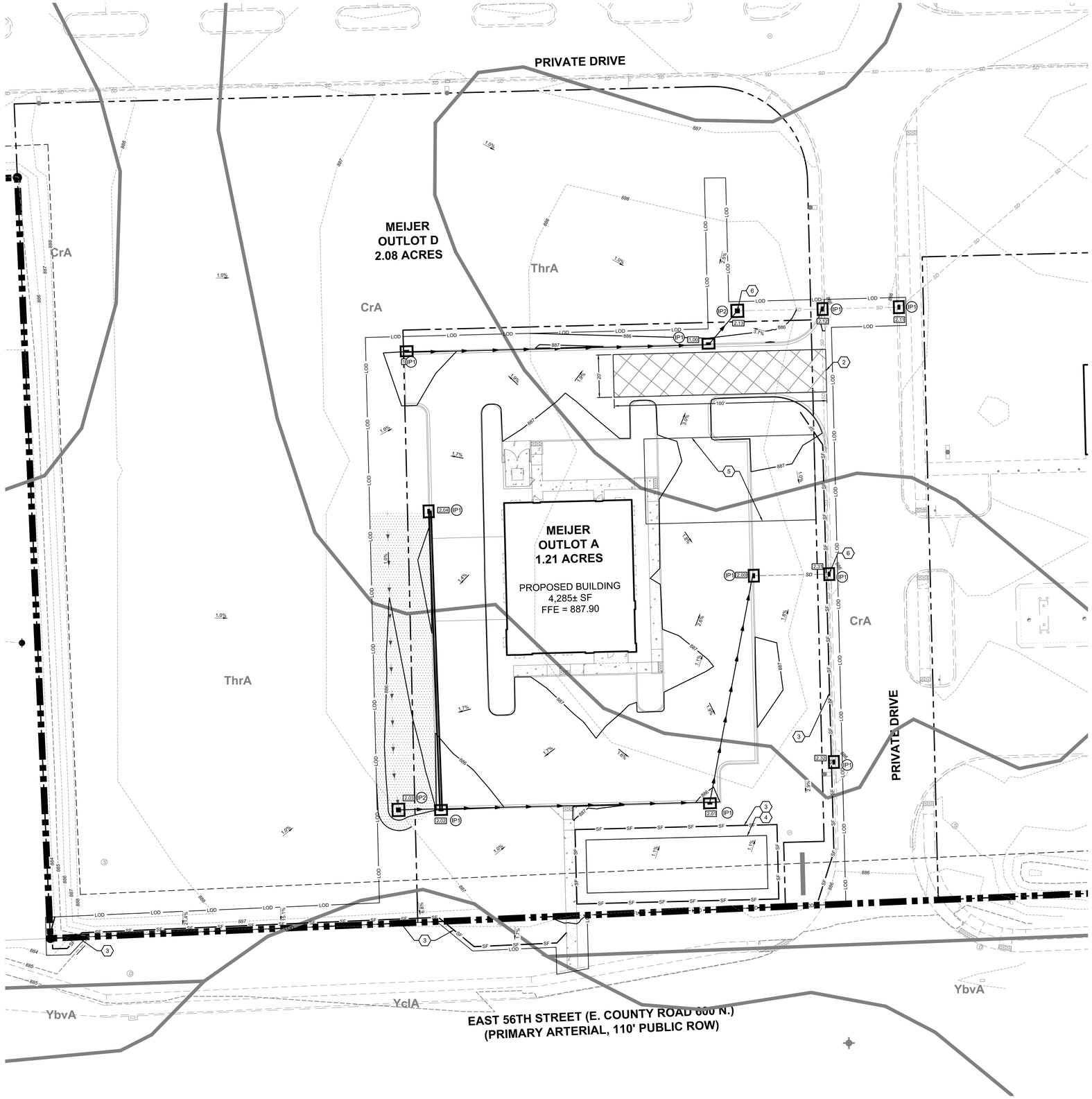

A1 PHASE 2 STORMWATER POLLUTION PREVENTION PLAN
1"=20'

NORTH

0 20 40 60
GRAPHIC SCALE IN FEET

LEGEND

- MEIJER PROPERTY LINE
- PROPERTY LINE
- 799 EXISTING 1' CONTOUR
- 800 EXISTING 5' CONTOUR
- SD EXISTING STORM SEWER
- EXISTING STORM STRUCTURE
- 799 PROPOSED 1' CONTOUR
- 800 PROPOSED 5' CONTOUR
- DRAINAGE BASIN
- STORM SEWER
- 1.0% PROPOSED FLOW DIRECTION AND GRADE
- XX STORM STRUCTURE I.D.
- LOD LIMITS OF DISTURBANCE
- SF SILT FENCE/EROSION EEL
- IP1 INLET PROTECTION - TYPE 1 (PAVEMENT)
- IP2 INLET PROTECTION - TYPE 2 (LAWN)
- Cy SOIL TYPE
- SOIL TYPE BOUNDARY
- TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET

GENERAL NOTES

1. THE TOWN OF BROWNSBURG RESERVES THE RIGHT TO REQUIRE ADDITIONAL ONSITE CONTROLS AS DEEMED NECESSARY TO MAINTAIN COMPLIANCE WITH THE IDEM CONSTRUCTION STORMWATER GENERAL PERMIT AND THE CITY'S STORMWATER MANAGEMENT ORDINANCE. ALL EROSION AND SEDIMENT CONTROLS, BEST MANAGEMENT PRACTICES AND POLLUTION PREVENTION MEASURES MUST BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE INDIANA STORMWATER QUALITY MANUAL.
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3. REFER TO SHEET C-313 FOR EROSION CONTROL NOTES AND FOR ESTIMATED SWPPP IMPLEMENTATION SCHEDULE.

BEST MANAGEMENT PRACTICE (BMP) PHASE 2 IMPLEMENTATION SEQUENCE

1. BEGIN MASS GRADING THE SITE, PROVIDE TEMPORARY STABILIZATION.
2. START CONSTRUCTION OF BUILDING PAD AND BUILDINGS, IMPLEMENT TEMPORARY STABILIZATION PER DETAIL C1 ON C-312.
3. INSTALL UTILITIES, STORM SEWERS, WATER SUPPLY LINES, SANITARY SEWERS, ETC.
4. INSTALL INLET PROTECTION MEASURES AT STORM SEWER INLETS AS EACH INLET STRUCTURE IS INSTALLED.
5. PREPARE SITE FOR PAVING, AND PAVE SITE.
6. COMPLETE GRADING, BUILDING CONSTRUCTION AND INSTALLATION OF PERMANENT STABILIZATION MEASURES ON ALL DISTURBED AREAS.
7. REMOVE ALL REMAINING TEMPORARY BMPS UPON APPROVAL OF MEIJER OR ITS DESIGNATED REPRESENTATIVE.
8. PERMANENTLY STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF TEMPORARY BMPS PER DETAIL C3 ON C-312.
9. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL HYDRAULICALLY CLEAN THE STORM SEWERS TO THE SATISFACTION OF THE CITY ENGINEER, ALL SEDIMENT SHALL BE REMOVED FROM THE SYSTEM AND SHALL NOT BE FLUSHED DOWNSTREAM.
10. NOTIFY MEIJER OR ITS DESIGNATED REPRESENTATIVE OF FINAL SITE STABILIZATION.
11. MEIJER OR ITS DESIGNATED REPRESENTATIVE SHALL SUBMIT NOTICE OF TERMINATION INSPECTION REQUEST TO THE TOWN OF BROWNSBURG PRIOR TO FILING THE NOT WITH IDEM.
12. MEIJER OR ITS DESIGNATED REPRESENTATIVE SHALL SUBMIT NOTICE OF TERMINATION TO THE PERMITTING AGENCY.
13. NOTE: THE CONTRACTOR MAY COMPLETE CONSTRUCTION ACTIVITIES CONCURRENTLY, PROVIDED ALL PRECEDING BMPS AND STABILIZATION ACTIVITIES HAVE BEEN COMPLETELY INSTALLED.

KEYNOTES (X)

1. EROSION CONTROL BLANKET, SEE DETAIL E3 ON SHEET C-312.
2. TEMPORARY STABILIZED CONSTRUCTION ENTRANCE.
3. SILT FENCE/EROSION EEL. SEE DETAIL E1 ON SHEET C-312 FOR EROSION EEL DETAIL. SEE NOTE BELOW FOR ADDITIONAL DETAILS ON SILT FENCE AND EROSION EEL INSTALLATION.
4. STOCKPILE AREA, SEE DETAIL A3 ON SHEET C-312.
5. POTENTIAL CONSTRUCTION STAGING MATERIAL STORAGE AREA (INCLUDES FUELING AREA, DUMPSTERS, CONCRETE WASHOUT, TRAILERS, PORT-O-LET, ETC.).
6. OUTFALL: SHEET FLOW INTO PROPOSED AND MODIFIED EXISTING INLETS, WHICH DISCHARGE TO THE MEIJER STORE DRAINAGE SYSTEM.

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Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9160 E. 56TH STREET
BROWNSBURG, INDIANA 46112

PHASE 2 STORMWATER POLLUTION PREVENTION PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-311

Images: Xrefs: 10026635-x.dwg; 10026635TBLK.dwg; 10026635-LOD.dwg; 10026635-x-soils.dwg; 10026635-p.dwg
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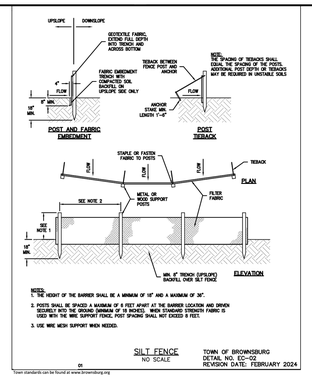


SILT FENCE
NO SCALE

TOWN OF BROWNSBURG
DETAIL NO. EC-02
REVISION DATE: FEBRUARY 2024

Town standards can be found at www.brownsburg.org

E1 SILT FENCE

NTS

DESCRIPTION

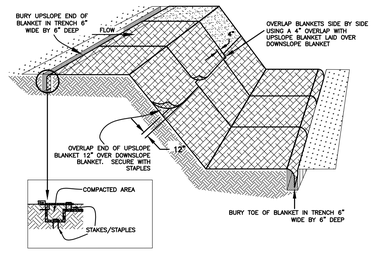
SILT FENCE IS THE MOST COMMON TEMPORARY SEDIMENT BARRIER AND CONSISTS OF A GEOTEXTILE FABRIC THAT IS ATTACHED TO SUPPORTING POSTS AND TRENCHED OR SLICED INTO THE GROUND. SEDIMENT-LADEN RUNOFF PONDS UPHILL FROM THE SILT FENCE AND RUNOFF IS TEMPORARILY STORED TO ALLOW SEDIMENT TO SETTLE OUT OF THE WATER. THIS PRACTICE APPLIES WHERE SHEET EROSION OCCURS ON SMALL DISTURBED AREAS. SILT FENCE IS INTENDED TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE. SILT FENCES CAN ALSO PREVENT SHEET EROSION BY DECREASING THE VELOCITY OF THE RUNOFF. SILT FENCE IS NOT INTENDED TO BE USED IN CONCENTRATED FLOW PATHS.

INSTALLATION

1. INSTALL PARALLEL TO A CONTOUR.
2. THE SILT FENCE SHOULD BE MADE OF WOVEN GEOTEXTILE FABRIC.
3. SILT FENCE SHOULD ACCOMMODATE NO MORE THAN 1/2 TO 1 ACRE OF DRAINAGE PER 100' OF FENCE AND ON SLOPES LESS THAN 1:2 (V:H).
4. DIG A 6" TRENCH ALONG THE AREA WHERE THE FENCE IS TO BE INSTALLED.
5. PLACE 6" OF THE SILT FENCE BOTTOM FLAP INTO THE TRENCH.
6. BACKFILL THE TRENCH WITH SOIL AND COMPACT THE SOIL ON BOTH SIDES. CREATE A SMALL RIDGE ON THE UP-SLOPE SIDE OF THE FENCE.
7. INSTALL WOODEN STAKES 6 – 10' APART AND DRIVE INTO THE GROUND A MINIMUM OF 12".
8. STAPLE THE GEOTEXTILE FABRIC TO THE WOODEN STAKES.
9. JOIN SECTIONS OF SILT FENCE BY WRAPPING ENDS TOGETHER (SEE DRAWING).

MAINTENANCE

- INSPECT FREQUENTLY AND IMMEDIATELY AFTER EACH STORM EVENT. CHECK SEVERAL TIMES DURING PROLONGED STORM EVENTS. IF NECESSARY, REPAIR IMMEDIATELY.
- IF THE SEDIMENT HAS REACHED 1/3 THE HEIGHT OF THE FENCE, THE SOIL SHOULD BE REMOVED AND DISPOSED OF IN A STABLE UPLAND SITE.
- THE FENCE SHOULD BE RE-INSTALLED IF WATER IS SEEPING UNDERNEATH IT OR IF THE FENCE HAS BECOME INEFFECTIVE.
- SILT FENCE SHOULD BE REMOVED ONCE VEGETATION IS ESTABLISHED AND UP-SLOPE AREA HAS STABILIZED.
- SILT FENCE MAY CAUSE TEMPORARY PONDING AND COULD FAIL IF TOO MUCH WATER FLOWS THROUGH THE AREA.
- DO NOT USE IN AREAS WITH CONCENTRATED FLOWS.
- CHANCE OF FAILURE INCREASES IF FENCE IS INSTALLED INCORRECTLY OR IF SEDIMENT ACCUMULATION IS NOT REMOVED.



E3 EROSION CONTROL BLANKET

NTS

DESCRIPTION

EROSION CONTROL BLANKETS ARE USED TO AID IN CONTROLLING EROSION ON CRITICAL AREAS BY PROVIDING A PROTECTIVE COVER. EROSION CONTROL BLANKETS ARE USED ON SLOPES AND CHANNELS WHERE THE EROSION HAZARD IS HIGH AND PLANT GROWTH IS LIKELY TO BE SLOW TO PROVIDE ADEQUATE PROTECTIVE COVER FOR THE SEED AND SOIL UNTIL GERMINATION. EROSION CONTROL BLANKETS ARE TO BE INSTALLED IN ACCORDANCE WITH THE SWPPP DRAWING AND DETAILS AND FOLLOWING THE MANUFACTURER'S SPECIFICATIONS.

INSTALLATION

1. PREPARE SUBGRADE TO PROPER GRADE AND COMPACTION REQUIREMENTS.
2. REMOVE RUTS, ROOTS, SOIL CLODS, OR OTHER DEBRIS FROM SURFACE SUBJECT TO MULCH BLANKET INSTALLATION.
3. SPREAD OR DRILL SEED.
4. CONSULT WITH EROSION CONTROL MATERIAL SUPPLIER TO SELECT EROSION CONTROL BLANKET BASED ON SLOPE GRADIENT, EXPECTED SURFACE RUN-OFF, AND PROTECTION TERM NECESSARY (LONG OR SHORT TERM).
5. POSITION SELECTED MULCH BLANKET AS CLOSE AS POSSIBLE TO INTENDED USE LOCATION.
6. INSTALL BLANKET AT TOP OF SLOPE, FIRST ANCHORING TOE IN TRENCH 6" WIDE X 6" DEEP, PROGRESSING DOWN-SLOPE OR DOWN-GRADIENT WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH.
7. ANCHOR THE BLANKET WITH STAPLES/STAKES PLACED APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER SECURING.
8. APPLY SEED TO COMPACTED SOIL AND FOLD THE 12" PORTION OF THE BLANKET OVER COMPACTED AREA AND SECURE WITH A ROW OF STAPLES/STAKES PLACED 12" APART ACROSS THE WIDTH OF THE BLANKET.
9. UNROLL THE BLANKETS DOWN OR HORIZONTALLY ACROSS THE SLOPE. OVERLAP BLANKET EDGES BY A MINIMUM OF 4" AND BLANKET ENDS BY A MINIMUM OF 12".
10. OVERLAPS SHOULD BE IN THE DIRECTION OF EXPECTED FLOW WITH THE UP-SLOPE BLANKET PLACED OVER THE DOWN-SLOPE BLANKET EDGE.
11. SECURE DOWN-SLOPE END OF BLANKET WITH STAPLES/STAKES AND TRENCH IN.

MAINTENANCE

- CHECK AFTER A RAIN EVENT TO ENSURE THE BLANKET IS STILL IN PLACE.
- KEEP ERODED SOIL, VEHICULAR AND PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF AWAY FROM THE BLANKETED AREA.
- EROSION CONTROL BLANKETS AND ANCHORS MAY INHIBIT MOWING.

NOTES

1. PLACE EROSION CONTROL BLANKET PARALLEL TO FLOW AND ANCHOR SECURELY.
2. WHEN BLANKETS ARE USED IN FLOWING DITCH, BLANKETS SHOULD NOT OVERLAP IN DITCH CENTER PARALLEL TO FLOW.
3. STAPLES INSTALLED/SECURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
4. WHERE POSSIBLE, CONSTRUCT WITH BIODEGRADABLE MATERIAL.

E5 AS-BUILT REQUIREMENTS

NTS

TOWN OF BROWNSBURG AS-BUILT REQUIREMENTS:

AFTER COMPLETION OF CONSTRUCTION AND BEFORE FINAL PROJECT ACCEPTANCE OF THE STORMWATER MANAGEMENT PLAN (THE ISSUANCE OF A "VERIFIED" NOT), A PROFESSIONALLY PREPARED AND CERTIFIED AS-BUILT DRAWINGS BY A PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR REGISTERED IN THE STATE OF INDIANA SHALL BE SUBMITTED TO THE TOWN OF BROWNSBURG FOR REVIEW. THESE AS-BUILT PLANS MUST BE PREPARED AND CERTIFIED BY THE ENGINEER OF RECORD, I.E. THE COMPANY/ENGINEER WHO ORIGINALLY PREPARED THE SURVEY ASSOCIATED WITH THE CONSTRUCTION PLANS. IN ADDITION TO HARD COPIES, DIGITAL COPIES OF THE AS-BUILT PLANS AND FINALIZED VERSIONS OF ALL ANALYSES, MODELS, MANUALS, AND REPORTS THAT ARE CONSISTENT WITH THE AS-BUILT CONDITIONS ARE REQUIRED IN DIGITAL FORMATS ACCEPTED BY THE TOWN OF BROWNSBURG. THESE PLANS SHALL INCLUDE ALL PERTINENT DATA RELEVANT TO THE COMPLETED STORM DRAINAGE SYSTEM AND STORMWATER MANAGEMENT FACILITIES, AND SHALL INCLUDE THE FOLLOWING:

A. PIPE SIZE AND PIPE MATERIAL
B. INVERT ELEVATIONS, TOP OF CASTING ELEVATIONS, SWALE FLOW LINES, LOT ELEVATIONS, ETC.
C. TOP RIM ELEVATIONS
D. PIPE STRUCTURE LENGTHS
E. BMP TYPES, DIMENSIONS, AND BOUNDARIES/EASEMENTS
F. "AS-PLANTED" PLANS FOR BMPS, AS APPLICABLE
G. DATA AND CALCULATIONS SHOWING DETENTION BASIN STORAGE VOLUME
H. DATA AND CALCULATIONS SHOWING BMP TREATMENT CAPACITY
I. CERTIFIED STATEMENT ON PLANS STATING THE COMPLETED STORM DRAINAGE SYSTEM AND STORMWATER MANAGEMENT FACILITIES SUBSTANTIALLY COMPLY WITH CONSTRUCTION PLANS AND THE STORMWATER MANAGEMENT PERMIT AS APPROVED BY THE TOWN OF BROWNSBURG

Concrete Washout Areas

Installation:

1. Concrete wash water shall not be allowed to flow to streams, ditches, storm drains, or any other water conveyance and washout pits shall be situated a minimum of fifty (50) feet from them.
2. Field tile or other subsurface drainage structures within 10 ft. of the sump shall be cut and plugged.
3. Ensure a stable path is provided for concrete trucks to reach the washout area.
4. A highly visible sign that reads "Concrete Washout Area" shall be erected adjacent to the washout pit.
5. Surface runoff generated from upslope areas shall be diverted away from below-grade washout pits so as not to flow into them.
6. A single centralized washout area may be utilized for multiple sublots.

Sizing of Concrete Washout Pits

Above-grade (2-ft depth)		
# of concrete trucks expected to be washed out on site*	Width (ft)	Length (ft)
2	3	3
3-4	4	4
5-6	5	5
7-8	6	6
9-11	7	7
12-15	8	8

Maintenance:

7. The washout pit must be inspected daily and after heavy rains to check for leaks, identify if any plastic linings and sidewalls have been damaged by construction activities, and determine whether the pit has been filled to over 75% capacity.
8. If 75% of the original volume of the washout pit is filled, wash water should be vacuumed off or allowed to evaporate to avoid overflows. Then when the remaining material has hardened, it must be removed and properly disposed of. Once the hardened concrete is removed, the liner will need to be replaced if torn. A new pit must be constructed if the original structure is no longer suitable.
9. Before heavy rains, the washout container's liquid level should be lowered, or the container should be covered to avoid an overflow during the rain event.

Removal:

10. Once the washout pit is no longer needed, ensure all washout material has completely hardened, then remove and properly dispose of all materials. If straw bales were used, they can be spread as mulch.
11. Prefabricated containers specifically designed for concrete washout collection may be used subject to prior approval by the Engineer. Follow the manufacturer's suggestions for installation, maintenance and removal procedures.

Note: Contractor to provide and utilize a lined dumpster for use as a concrete washout as necessary. The concrete washout shall be located a minimum of 50' away from adjacent storm drainage structures.

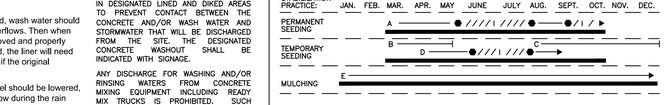
*For small projects using a maximum of only one truckload of concrete or utilizing on-site mixing, rinsing of equipment may take place on the lot without a pit, provided it can be done a minimum of fifty (50) feet away from any water conveyances.

DISCHARGE OF EXCESS OR WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS WILL BE ALLOWED ON THE CONSTRUCTION SITE, BUT ONLY IN DESIGNATED LINED AND DIKED AREAS TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH WATER AND STORMWATER THAT WILL BE DISCHARGED FROM THE SITE. THE DESIGNATED CONCRETE WASHOUT SHALL BE INDICATED WITH SIGNAGE.

ANY DISCHARGE FOR WASHING AND/OR RINSING WATERS FROM CONCRETE MIXING EQUIPMENT INCLUDING READY MIX TRUCKS IS PROHIBITED. SUCH POLLUTANTS SHALL BE ADEQUATELY TREATED AND CANNOT BE DISCHARGED TO WATERS OF THE STATE. ANY SPILLS SHALL BE CLEANED IMMEDIATELY UPON DISCOVERY.

D1 CONCRETE WASHOUT AREA

NTS



A = KENTUCKY BLUEGRASS 40%, TURF TYPE TALL FESCUE 40%, ANNUAL RYE GRASS 20% PLUS 2 TONS OF STRAW MULCH/ ACRE
APPLY MIXTURE AT A RATE OF 2 LBS. PER 1000 SQ.FT.

B = SPRING OATS 3 BUSHEL PER ACRE

C = WHEAT OR RYE 2 BUSHEL PER ACRE

D = ANNUAL RYE GRASS (1 LB. PER 1000 SQ. FT.)

E = STRAW MULCH (90 LBS. PER 1000 SQ.FT.)

●/ / ● IRRIGATION NEEDED DURING JUNE, JULY, AND / OR SEPTEMBER.

●● IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD

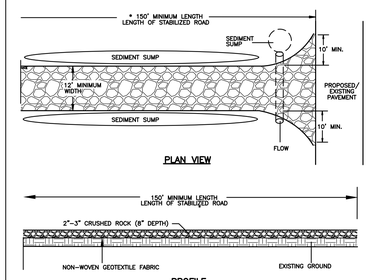
NOTE: ALL SEEDING SHALL HAVE 12-12-12 FERTILIZER APPLIED 400-600 LBS. PER ACRE OR AS SPECIFIED.

D3 SEEDING SCHEDULE

NTS

D4

NTS



DESCRIPTION

ALL ACCESS POINTS FROM THE CONSTRUCTION SITE ARE TO INCLUDE A STABILIZED CONSTRUCTION ENTRANCE/EXIT COMPOSED OF COARSE STONE TO THE DIMENSIONS AND SPECIFICATIONS SHOWN HERE. CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE AT THE STABILIZED CONSTRUCTION EXIT. THE PURPOSE IS TO TRAP DUST AND MUD THAT WOULD OTHERWISE BE CARRIED BEYOND THE PERMITTED PROJECT AREA BY CONSTRUCTION TRAFFIC. THE ROUGH TEXTURE OF THE STONE HELPS TO REMOVE CLUMPS OF SOIL ADHERING TO THE CONSTRUCTION VEHICLE TIRES THROUGH THE ACTION OF VIBRATION AND JARRING OVER THE ROUGH SURFACE.

IN THE EVENT THE STABILIZED CONSTRUCTION ENTRANCE IS NOT EFFECTIVE BY ITSELF AND/OR REQUIRES A SIGNIFICANT AMOUNT OF MAINTENANCE, ADDITIONAL PRACTICES, SUCH AS WHEEL WASHING OR STREET SWEEPING, MAY BE REQUIRED.

INSTALLATION

1. STABILIZED CONSTRUCTION ACCESS ROAD SHOULD BE ESTABLISHED AT THE ONSET OF THE CONSTRUCTION ACTIVITIES AND MAINTAINED IN PLACE FOR THE DURATION OF THE CONSTRUCTION PROJECT.
2. INSTALLATION OF THIS PRACTICE SHOULD BE THE RESPONSIBILITY OF THE SITE CLEARING OR EXCAVATING CONTRACTOR.
3. ACCESS LOCATION SHOULD BE CLEARED OF WOODY VEGETATION.
4. NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.
5. ACCESS LENGTH SHOULD BE A MINIMUM OF 150'.
6. ACCESS WIDTH SHOULD BE 12' MINIMUM, FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
7. CRUSHED AGGREGATE (2" TO 3"), OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT, SHALL BE PLACED AT LEAST 8" DEEP OVER THE LENGTH AND WIDTH OF THE INGRESS/EGRESS CORRIDOR.

MAINTENANCE

- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.
- STABILIZED ENTRANCES SHALL BE REPAIRED AND ROCK ADDED AS NECESSARY.
- SEDIMENT DEPOSITED ON PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY AND RETURNED TO THE CONSTRUCTION SITE.
- IF SOILS ARE SUCH THAT WASHING OF TIRES IS REQUIRED, IT SHALL BE DONE IN A WASH RACK AREA, STABILIZED WITH STONE, IMMEDIATELY PRIOR TO THE CONSTRUCTION ACCESS STABILIZED CORRIDOR.
- AT THE PROJECT COMPLETION, ROCK ACCESS ROAD SHOULD BE REMOVED AND DISPOSED OF UNLESS UTILIZED AS SUBGRADE FOR FINAL ROAD.
- EFFECTIVENESS LIMITED, SEDIMENT MAY BE TRACKED ONTO ROADS REQUIRING ADDITIONAL ACTION.

NOTES

1. ESTABLISH STABILIZED CONSTRUCTION ENTRANCE PRIOR TO THE INITIATION OF SITE CONSTRUCTION ACTIVITIES.
2. CARE SHOULD BE TAKEN TO PREVENT MATERIAL MOVEMENT INTO ADJACENT WETLANDS/WATERBODIES.
3. CARE SHOULD BE TAKEN TO MAINTAIN EXISTING ROADSIDE DRAINAGE VIA CULVERT INSTALLATION, WITH SEDIMENT SUMP PLACED DOWNFLOW OF CULVERT.

C5 STABILIZED CONSTRUCTION ENTRANCE

NTS

DESCRIPTION

TEMPORARY STABILIZATION MEASURES SHALL BE IMPLEMENTED IMMEDIATELY WHENEVER EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED ON ANY PORTION OF THE SITE. EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED WHEN CLEARING, GRADING, AND EXCAVATION WITHIN ANY AREA OF THE SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES WILL NOT RESUME (I.E., THE LAND WILL BE IDLE) FOR A PERIOD OF 7 OR MORE CALENDAR DAYS, BUT SUCH ACTIVITIES WILL RESUME IN THE FUTURE. THE TERM "IMMEDIATELY" IS USED TO DEFINE THE DEADLINE FOR INITIATING STABILIZATION MEASURES, IN THE CONTEXT OF THIS REQUIREMENT, "IMMEDIATELY" MEANS AS SOON AS PRACTICABLE, BUT NO LATER THAN THE END OF THE NEXT WORK DAY FOLLOWING THE DAY WHEN THE EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED. IMPLEMENTATION OF TEMPORARY STABILIZATION MEASURES ARE TO BE COMPLETED NO LATER THAN 14 CALENDAR DAYS AFTER THE INITIATION OF SOIL STABILIZATION MEASURES.

TEMPORARY STABILIZATION IS NOT ACHIEVED SIMPLY THROUGH SEEDING. IN ORDER FOR AN AREA OR CONSOLIDATION AREA TO BE SUFFICIENTLY STABILIZED VIA TEMPORARY STABILIZATION, SEED MUST GERMINATE, GROW AND PROVIDE ADEQUATE VEGETATIVE DENSITY.

ALL DISTURBED AREAS ON SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION (I.E., WITH VEHICLE CLEAT MARKS RUNNING PERPENDICULAR TO THE FALL LINE OF THE SLOPE) WHEN TEMPORARY STABILIZATION IS NOT ATTAINABLE TO HELP REDUCE POTENTIAL FOR EROSION.

INSTALLATION

1. REVIEW CONSTRUCTION PHASING AND SOIL EROSION CONTROL PLAN TO IDENTIFY AREAS REQUIRING TEMPORARY SEEDING.
2. SELECT ANNUAL GRASS SEED FOR TEMPORARY COVER AREAS.
3. SEED MIXES MAY VARY, SHOULD ONLY CONTAIN ANNUAL, NON-AGGRESSIVE SPECIES, AND GENERALLY INCLUDE RYE, WHEAT, OR OAT SPECIES. SEED MIXES SHOULD BE OBTAINED FROM A SEED SUPPLIER AS SEED MIXES ARE DEPENDENT ON SOIL TYPE, LIGHT, MOISTURE, AND USE APPLICATION.
4. PREPARE SEEDBED BY REMOVAL OF CONSTRUCTION/WOODY DEBRIS. THEN SCARIFY OR RAKE SEEDBED.
5. SLOPES STEEPER THAN 1:3 SHOULD BE ROUGHENED.
6. APPLY SEED AS SOON AS POSSIBLE AFTER SEEDBED PREPARATION. MULCH IMMEDIATELY AFTER SEEDING.
7. THE TIME TO SEED IS DEPENDENT ON THE CLIMATE OF THE AREA.
8. PROTECT SEEDED AREAS FROM PEDESTRIAN/VEHICULAR TRAFFIC.
9. DIVERT CONCENTRATED FLOWS AWAY FROM SEEDED AREA UNTIL VEGETATION IS ESTABLISHED.
10. INSPECT TEMPORARY SEEDED AREAS WEEKLY AND FOLLOWING EACH RAIN EVENT UNTIL FINAL GRADING AND STABILIZATION ACTIVITIES ARE COMPLETED.
11. MUST BE FOLLOWED BY PERMANENT SEEDING.

MAINTENANCE

1. SEEDS NEED ADEQUATE TIME TO ESTABLISH.
2. MAY NOT BE APPROPRIATE IN AREAS WITH FREQUENT TRAFFIC.
3. SEEDED AREA MAY REQUIRE IRRIGATION IN DRY PERIODS.

C1 TEMPORARY STABILIZATION/SEEDING

NTS

DESCRIPTION

PERMANENT STABILIZATION MEASURES SHALL BE IMPLEMENTED IMMEDIATELY WHENEVER EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE. EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED WHEN CLEARING AND EXCAVATION WITHIN ANY AREA OF THE SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES HAVE BEEN COMPLETED. THE TERM "IMMEDIATELY" IS USED TO DEFINE THE DEADLINE FOR INITIATING STABILIZATION MEASURES. IN THE CONTEXT OF THIS REQUIREMENT, "IMMEDIATELY" MEANS AS SOON AS PRACTICABLE, BUT NO LATER THAN THE END OF THE NEXT WORK DAY FOLLOWING THE DAY WHEN THE EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED. IMPLEMENTATION OF PERMANENT STABILIZATION MEASURES ARE TO BE COMPLETED NO LATER THAN 14 CALENDAR DAYS AFTER THE INITIATION OF SOIL STABILIZATION MEASURES.

IN AREAS WHERE FINAL STABILIZATION WILL OCCUR, VEHICLE AND EQUIPMENT ACCESS WILL BE RESTRICTED IN ORDER TO MINIMIZE COMPACTION. IN ADDITION, THE SOIL MAY NEED TO BE CONDITIONED FOR SEEDING OR PLANTING. SEEDED AREAS SHALL BE PROTECTED WITH STRAW MULCH, HYDRAULIC MULCH OR A ROLLED EROSION CONTROL PRODUCT.

FINAL SITE STABILIZATION IS ACHIEVED WHEN THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER PROVIDES A DENSITY OF AT LEAST 70 PERCENT OVER THE ENTIRE AREA TO BE STABILIZED. THIS AREA IS EXCLUSIVE OF AREAS THAT ARE COVERED WITH ROCK (CRUSHED GRANITE, GRAVEL, ETC.) OR LANDSCAPE MULCH, PAVED OR HAVE A BUILDING OR OTHER PERMANENT STRUCTURE ON THEM.

INSTALLATION

1. REVIEW SESC PLAN AND CONSTRUCTION PHASING TO IDENTIFY AREAS IN NEED OF PERMANENT VEGETATIVE STABILIZATION.
2. SELECT PERENNIAL GRASS AND GROUND COVER FOR PERMANENT COVER.
3. SEED MIXES VARY. HOWEVER, THEY SHOULD CONTAIN NATIVE SPECIES.
4. SEED MIXES SHOULD BE SELECTED THROUGH CONSULTATION WITH A CERTIFIED SEED PROVIDER AND WITH CONSIDERATION OF SOIL TYPE, LIGHT, MOISTURE, USE APPLICATIONS, AND NATIVE SPECIES CONTENT.
5. SOIL TESTS SHOULD BE PERFORMED TO DETERMINE THE NUTRIENT AND PH LEVELS IN THE SOIL. THE PH MAY NEED TO BE ADJUSTED TO BETWEEN 6.5 AND 7.0.
6. PREPARE A 3–5" DEEP SEEDBED, WITH THE TOP 3–4" CONSISTING OF TOPSOIL.
7. SLOPES STEEPER THAN 1:3 SHOULD BE ROUGHENED.
8. APPLY SEED AS SOON AS POSSIBLE AFTER SEEDBED PREPARATION. SEED MAY BE BROADCAST BY HAND, HYDROSEEDING, OR BY USING MECHANICAL DRILLS.
9. MULCH IMMEDIATELY AFTER SEEDING.
10. DORMANT SEED MIXES ARE FOR USE AFTER THE GROWING SEASON, USING SEED WHICH LIES DORMANT IN THE WINTER AND BEGINS GROWING AS SOON AS SITE CONDITIONS BECOME FAVORABLE.
11. PROTECT SEEDED AREAS FROM PEDESTRIAN OR VEHICULAR TRAFFIC.
12. DIVERT CONCENTRATED FLOWS AWAY FROM THE SEEDED AREA UNTIL VEGETATION IS ESTABLISHED.

MAINTENANCE

1. INSPECT WEEKLY AND WITHIN 24 HOURS FOLLOWING EACH RAIN EVENT IN THE FIRST FEW MONTHS FOLLOWING INSTALLATION TO BE SURE SEED HAS GERMINATED AND PERMANENT VEGETATIVE COVER IS BEING ESTABLISHED.
2. ADD SUPPLEMENTAL SEED AS NECESSARY.
3. SEEDS NEED ADEQUATE TIME TO ESTABLISH.
4. MAY NOT BE APPROPRIATE IN AREAS WITH FREQUENT TRAFFIC.
5. SEEDED AREAS MAY REQUIRE IRRIGATION DURING DRY PERIODS.
6. SEEDING SUCCESS IS SITE SPECIFIC, CONSIDER MULCHING OR SODDING WHEN NECESSARY.

C3 PERMANENT STABILIZATION/SEEDING

NTS

NOTICE:

THE PUMPING OR DIRECT DISCHARGE OF SEDIMENT-LADEN (MUDDY) WATER TO THE TOWN'S SEWER SYSTEM OR A RECEIVING STREAM IS A VIOLATION OF IDEM REGULATIONS. DISCHARGES FROM DEWATERING ACTIVITIES, INCLUDING DISCHARGES FROM DEWATERING OF TRENCHES AND EXCAVATIONS, ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS. IN NO CASE IS WATER FROM DEWATERING ACTIVITIES TO BE PUMPED OFF-SITE WITHOUT BEING PROPERLY TREATED.

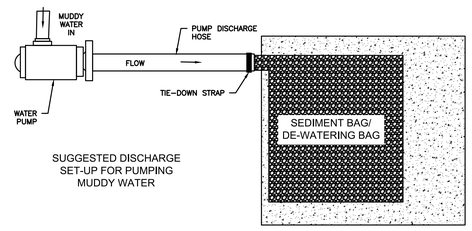
ALL INLETS RECEIVING FLOW FROM RUNOFF, PUMPING ACTIVITIES, OR OTHER DIRECT DISCHARGES SHALL BE FITTED WITH AN INLET PROTECTION DEVICE THAT IS PROPERLY SIZED AND SECURED TO REDUCE THE DISCHARGE OF SEDIMENT INTO THE STORM SEWER SYSTEM AND RECEIVING STREAM. INLET PROTECTION IS REQUIRED ON ALL INLETS RECEIVING DISCHARGE REGARDLESS OF WHETHER OR NOT THE INLET IS TRIBUTARY TO ANY DOWNSTREAM EROSION AND SEDIMENT CONTROLS.

DISCHARGES FROM DEWATERING ACTIVITIES, INCLUDING DISCHARGES FROM DEWATERING OF TRENCHES AND EXCAVATIONS, ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS. IN NO CASE IS WATER FROM DEWATERING ACTIVITIES TO BE PUMPED OFF-SITE WITHOUT BEING PROPERLY TREATED.

SEDIMENT BASINS SHALL BE DEWATERED AT THE POND SURFACE USING A SKIMMER OR EQUIVALENT DEVICE.

DEWATERING THAT HAS SEDIMENT-LADEN WATER MUST DISCHARGE TO A SEDIMENT BASIN OR EQUIVALENT SETTLING, FILTERING, OR ENERGY DISSIPATION MEASURES TO REMOVE SUSPENDED SOLIDS BEFORE DISCHARGE. SEDIMENT BAGS, INFILTRATION TRENCHES, VEGETATED SWALES, OR FILTER BERMS MAY ALSO BE USED. SECONDARY CONTAINMENT SHOULD BE USED TO PREVENT THE POTENTIAL LEAK OF CHEMICALS USED DURING DEWATERING, SUCH AS CHEMICALS FOR FLOCCULATION.

DISCHARGE HOSES USED DURING PUMPING ACTIVITIES SHALL BE FITTED WITH SEDIMENT BAGS THAT ARE PROPERLY SIZED PER MANUFACTURER'S RECOMMENDATIONS REGARDLESS OF WHAT OTHER SEDIMENT CONTROLS ARE IN PLACE FURTHER DOWNSTREAM. SEDIMENT BAGS MUST BE PROPERLY SECURED TO THE DISCHARGE HOSE AND PLACED OVER VEGETATED AREAS, WHERE FEASIBLE, DURING DISCHARGE. SEE DETAIL BELOW OF A TYPICAL SEDIMENT BAG INSTALLATION.



SUGGESTED DISCHARGE SET-UP FOR PUMPING MUDDY WATER

DRAIN OVER VEGETATED AREA (WHERE POSSIBLE)

DISCHARGES FROM DEWATERING ACTIVITIES, INCLUDING DISCHARGES FROM DEWATERING OF TRENCHES AND EXCAVATIONS, ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS. IN NO CASE IS WATER FROM DEWATERING ACTIVITIES TO BE PUMPED OFF-SITE WITHOUT BEING PROPERLY TREATED.

DEWATERING THAT HAS SEDIMENT-LADEN WATER MUST DISCHARGE TO A SEDIMENT BASIN OR EQUIVALENT SETTLING, FILTERING, OR ENERGY DISSIPATION MEASURES TO REMOVE SUSPENDED SOLIDS BEFORE DISCHARGE. SEDIMENT BAGS, INFILTRATION TRENCHES, VEGETATED SWALES, OR FILTER BERMS MAY ALSO BE USED. SECONDARY CONTAINMENT SHOULD BE USED TO PREVENT THE POTENTIAL LEAK OF CHEMICALS USED DURING DEWATERING, SUCH AS CHEMICALS FOR FLOCCULATION.

B1 DEWATERING

LARGE AREAS OF SOIL THAT ARE DENUDED OF VEGETATION AND HAVE NO PROTECTION FROM PARTICLES BEING PICKED UP AND CARRIED BY WIND SHOULD BE PROTECTED WITH A TEMPORARY COVER OR KEPT UNDER CONTROL WITH WATER OR OTHER SOIL ADHERING PRODUCTS TO LIMIT WIND TRANSPORTED PARTICLES EXITING THE SITE PERIMETER.

WATER TRUCKS OR OTHER DUST CONTROL AGENTS ARE TO BE USED AS NEEDED DURING CONSTRUCTION TO MINIMIZE DUST GENERATED ON THE SITE. TACKIFIERS MAY BE USED TO HOLD SOIL IN PLACE AND PREVENT DUST. MANUFACTURER RECOMMENDATIONS FOR APPLICATION RATES MUST BE USED FOR DUST CONTROL APPLICATIONS. DUST CONTROL MUST BE PROVIDED BY THE CONTRACTOR TO A DEGREE THAT IS IN COMPLIANCE WITH APPLICABLE LOCAL AND STATE DUST CONTROL REGULATIONS.

B2 DUST CONTROL

NTS

DISCHARGE FROM WASHING AND MAINTENANCE OF EQUIPMENT OR VEHICLES WILL BE ALLOWED ON THE CONSTRUCTION SITE, BUT ONLY IN DESIGNATED LINED AND DIKED AREAS TO PREVENT CONTACT BETWEEN THE WASH WATER AND STORMWATER THAT WILL BE DISCHARGED FROM THE SITE.

DISCHARGES OF CONTAMINATED WATERS FROM WASHING AND MAINTAINING VEHICLES OR EQUIPMENT, INCLUDING WASHING AND/OR RINSING WATERS FROM CONTAINERS OR APPLICATORS INVOLVED WITH THE USE OF PAINT, CONCRETE, OR OTHER SUCH MATERIALS, IS PROHIBITED. SUCH POLLUTANTS SHALL BE ADE

ESTIMATED SWPPP IMPLEMENTATION SCHEDULE																			
ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
STABILIZED CONSTRUCTION ENTRANCE																				
SILT FENCE																				
INLET FILTERS/ROCK DONUTS AT EX. INLETS																				
SEDIMENT BASIN AND APPURTENANCES																				
DIVERSION DITCHES/ROCK CHECKS																				
STAGING/MATERIALS STORAGE AREA																				
CONCRETE WASHOUT/DUMPSTERS																				
CLEARING AND GRUBBING																				
ROUGH GRADING																				
STORM SEWERS/UTILITIES																				
INLET FILTERS AT PROPOSED INLETS																				
FOUNDATION/BUILDING CONSTRUCTION																				
ASPHALT INSTALLATION																				
FINAL GRADING																				
PERMANENT STORMWATER CONTROLS																				
FINAL STABILIZATION																				
NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR ESTIMATED PROJECT SCHEDULE AT ONSET OF CONSTRUCTION AND UPDATE AS CONSTRUCTION PROCEEDS.																				

E4 SWPPP IMPLEMENTATION SCHEDULE

NTS

SECTION A: CONSTRUCTION PLAN

A1 PLAN INDEX ITEMS RELATED TO THE SWPPP ARE SHOWN AS NOTES ON THIS SHEET.

A2 VICINITY MAP IS SHOWN ON SHEET C-001.

A3 THIS PROJECT INVOLVES THE CONSTRUCTION OF AN APPROXIMATELY 4,300 SF DENTAL OFFICE WITH ASSOCIATED ACCESS DRIVES, PARKING, AND UTILITIES.

A4 LATITUDE N 39.851910, LONGITUDE W -86.359869

A5 LOT 6 PARCEL IN MEIJER SUBDIVISION, A REPLAT OF OI COMMERCIAL BLOCK A & BLOCK B, AS PER PLAT THEREOF, RECORDED MARCH 28, 2024 IN PLAT CABINET 9, SLIDE 51, PAGES 4A THROUGH 4C, AND AS INSTRUMENT 202405293, IN THE OFFICE OF THE RECORDER OF HENDRICKS COUNTY, INDIANA.

A6 11x17 INCH PLAT IS INCLUDED SEPARATELY.

A7 NO FLOODPLAIN, FLOODWAYS, OR FLOODWAY FRINGES ARE ON THE PROPERTY.

A8 ADJACENT LAND USES:
NORTH: COMMERCIAL
SOUTH: RESIDENTIAL
EAST: COMMERCIAL
WEST: COMMERCIAL

A9 THE PROJECT DOES NOT FALL WITHIN A WATERSHED THAT HAS AN APPROVED OR ESTABLISHED TMDL.

A10 THE SITE DISCHARGE INTO SCHOOL BRANCH STREAM WITH AN ULTIMATE RECEIVING WATER OF EAGLE CREEK RESERVOIR.

A11 SCHOOL BRANCH STREAM IS AN IMPAIRED WATERBODY ON THE 303(d) LIST. SCHOOL BRANCH STREAM IS IMPAIRED FOR FULL BODY CONTACT WITH E.COLI AS AN IDENTIFIED ISSUE. EAGLE CREEK RESERVOIR IS AN IMPAIRED FRESHWATER LAKE ON THE 303(d) LIST. EAGLE CREEK RESERVOIR IS IMPAIRED FOR HUMAN HEALTH AND WILDLIFE WITH PCBS IN FISH TISSUE AS AN IDENTIFIED ISSUE AND PUBLIC WATER SUPPLY WITH TASTE AS AN IDENTIFIED ISSUE.

A12 SOIL MAP AND DESCRIPTIONS SHOWN ON SHEETS C-310 AND C-311.

A13 THERE ARE NO WETLANDS LOCATED ON SITE.

A14 IDEM HAS DETERMINED THAT THERE ARE NO WETLANDS ON SITE.

A15 EXISTING VEGETATIVE COVER DETAILS ARE SHOWN IN THE EXISTING CONDITIONS PLAN, C-100. THERE ARE NO NATURAL BUFFERS PRESENT ON SITE.

A16 EXISTING TOPOGRAPHY IS SHOWN IN THE EXISTING CONDITIONS PLAN, C-100.

A17 EXISTING STORMWATER FLOWS ARE SHOWN ON SHEET C-310.

A18 EXISTING RUNOFF DISCHARGES PRIOR TO LAND DISTURBANCE ARE SHOWN ON THE SWPPP PLANS, C-310 AND C-311.

A19 LOCATIONS OF ALL EXISTING STRUCTURES ARE SHOWN ON THE EXISTING CONDITIONS PLAN, C-100.

A20 EXISTING STORMWATER MANAGEMENT FEATURES ARE SHOWN ON SHEET C-100.

A21 THERE ARE NO KNOWN LOCATIONS OF DIRECT STORMWATER DISCHARGE INTO GROUND WATER AREAS ON SITE OR DOWNSTREAM OF THE SITE. THERE IS AN UNSPECIFIED WELL TYPE LOCATED NORTH OF THE SUBJECT PROPERTY BUT IT IS NOT ANTICIPATED TO IMPACT DIRECT STORMWATER DISCHARGE AS IT IS LOCATED UPSTREAM OF THE SUBJECT PROPERTY.

A22 PROJECT SITE AREA = 1.5± ACRES.

A23 DISTURBED ACREAGE = 1.5± ACRES.

A24 PROPOSED CONTOURS AND SPOT SHOTS ARE PROVIDED ON THE GRADING PLANS, C-300.

A25 CONSTRUCTION LIMITS ARE SHOWN ON THE STORMWATER POLLUTION PREVENTION PLAN SHEETS, C-310 & C-311.

A26 ALL PROPOSED STORMWATER SYSTEMS ARE SHOWN ON THE GRADING PLANS, UTILITY PLANS, AND STORM PLAN AND PROFILES; C-300; C-400; C-405, RESPECTIVELY, SEE DETAILS ON SHEET C-703.

A27 PROPOSED STORMWATER DISCHARGES ARE SHOWN ON THE GRADING, UTILITY, AND PHASE 2 SWPPP PLANS, C-300; C-400; C-311, RESPECTIVELY.

A28 PROPOSED SITE IMPROVEMENTS ARE SHOWN ON THE SITE PLAN, SHEETS C-200. PROPOSED UTILITY IMPROVEMENTS ARE SHOWN ON THE UTILITY PLAN, SHEETS C-400. TWO EMERGENCY SPILLWAYS HAVE BEEN CONSTRUCTED AS A PART OF THE MEIJER MAIN STORE CONSTRUCTION PROJECT.

A29 PROPOSED STOCKPILE LOCATION IS PROVIDED ON SHEETS C-310 AND C-311.

A30 PROPOSED CONSTRUCTION STAGING AREA IS SHOWN ON SHEETS C-310 AND C-311.

A31 THERE ARE NO WETLAND AREAS LOCATED ON SITE AND WETLAND PERMIT INFORMATION LISTED IN A14.

SECTION B: CONSTRUCTION COMPONENT

B1 POTENTIAL POLLUTANT SOURCES DURING CONSTRUCTION ACTIVITIES INCLUDE SEDIMENT, CONCRETE WASTE WATER, TRASH, FOSSIL FUELS, OIL, GREASE, PAINT, EXPOSURE OF THESE POLLUTANTS TO STORMWATER RUNOFF SHOULD BE MINIMIZED BY PERFORMING ACTIVITIES SUCH AS EROSION CONTROL, EQUIPMENT STORAGE, REFUELING, MAINTENANCE AND PORT-A-LET PLACEMENT IN DESIGNED AREAS AS SHOWN ON THE EROSION CONTROL PLAN.

B2 CONSTRUCTION ENTRANCE LOCATIONS ARE SHOWN ON SHEETS C-310 AND C-311.

CONTRACTOR TO REFERENCE SHEET C-312 FOR CONSTRUCTION ENTRANCE DETAILS, FOR DETAILED SPECIFICATIONS AND INSTALLATION REQUIREMENTS, SEE INDIANA STORM WATER QUALITY MANUAL, PUBLISHED BY INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM), OCTOBER 2007.

B3 SEE PHASE 1 AND PHASE 2 IMPLEMENTATION SEQUENCING NOTES ON SHEETS C-310 AND C-311, SEE SHEETS C-312 FOR TEMPORARY AND PERMANENT STABILIZATION DETAILS. EROSION CONTROL BLANKETS TO BE USED ON SLOPES GREATER THAN 3:1. EROSION CONTROL BLANKET LOCATIONS ARE SHOWN ON SHEETS C-310 AND C-311, EROSION CONTROL BLANKET DETAIL IS ON SHEET C-312.

B4 SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS INCLUDE INLET PROTECTION (TYPES 1 AND 2), DETAILS CAN BE FOUND ON SHEET C-313, FOR DETAILED SPECIFICATIONS AND INSTALLATION REQUIREMENTS, SEE INDIANA STORM WATER QUALITY MANUAL, PUBLISHED BY INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM), OCTOBER 2007.

B5 SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS ARE SILT FENCE, CONTRACTOR TO REFERENCE THE TOWN OF BROWNSBURG CONSTRUCTION DETAIL EC-02, FOR DETAILED SPECIFICATIONS AND INSTALLATION REQUIREMENTS, SEE INDIANA STORM WATER QUALITY MANUAL, PUBLISHED BY INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM), OCTOBER 2007.

B6 RUNOFF CONTROL MEASURES FOR SWALES AND DIVERSION DITCHES INCLUDES PERMANENT SEEDING WITH EROSION CONTROL BLANKET, DETAILS FOR EROSION CONTROL BLANKET CAN BE FOUND ON SHEET C-312. FOR DETAILED SPECIFICATIONS AND INSTALLATION REQUIREMENTS, SEE INDIANA STORM WATER QUALITY MANUAL, PUBLISHED BY INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM), OCTOBER 2007.

B7 NOT APPLICABLE, NO OUTLET PROTECTION IS PROPOSED,

B8 NOT APPLICABLE, NO GRADE STABILIZATION STRUCTURES ARE PROPOSED.

B9 DEWATERING METHODS ARE PROVIDED ON SHEETS C-310 AND C-311, DETAIL CAN BE FOUND ON SHEET C-312.

B10 NO PROPOSED IN-STREAM ACTIVITIES WILL OCCUR ON SITE.

B11 REFERENCE INDIVIDUAL SWPPP DETAILS ON SHEETS C-312 - C-313 AND CHART BELOW FOR MAINTENANCE PROCEDURES.

B12 REFERENCE PHASE 1 AND PHASE 2 IMPLEMENTATION SEQUENCING NOTES ON SHEETS C-310 AND C-311 AND EROSION CONTROL NOTES, DETAIL E4, ON THIS SHEET.

B13 PROPOSED OUTLOTS WILL BE DEVELOPED AT A FUTURE DATE BY INDIVIDUAL OWNERS AND WILL BE REQUIRED TO OBTAIN THEIR OWN PERMIT COVERAGE.

B14 MATERIAL HANDLING AND SPILL PREVENTION PLAN:

IN ORDER TO MINIMIZE THE RELEASE OF POTENTIAL POLLUTANTS DURING CONSTRUCTION THE CONTRACTOR SHALL IMPLEMENT THIS MATERIAL HANDLING AND SPILL PREVENTION PLAN. THE CONTRACTOR SHALL REVIEW THIS PLAN WITH ALL SUBCONTRACTORS AND REQUIRE THAT THEY IMPLEMENT THE PLAN AS WELL. IF A SPILL SHOULD OCCUR PLEASE CONTACT THE APPROPRIATE AUTHORITIES BELOW:

EMERGENCY RESPONSE	911
BROWNSBURG FIRE TERRITORY	(317) 852-1190
BROWNSBURG POLICE DEPARTMENT	(317) 852-1109
INDIANA DEPARTMENT OF NATURAL RESOURCES	(877) 463-6367
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT	(888) 233-7745
HENDRICKS COUNTY SOIL AND WATER	(317) 745-2555 EXT. 3

1. CONSTRUCTION EQUIPMENT

A. FUELING, LUBRICATION, AND FLUIDS: ALL OPERATIONS INVOLVING THE ADDITION OF FLUIDS TO EQUIPMENT SHOULD BE DONE IN ONE LOCATION, SO THAT SPILLS ARE LIMITED TO THAT SPECIFIC LOCATION WHICH WILL FACILITATE THE CLEANUP OF SPILLS, IF AN OUTSIDE FUELING TANK IS PLANNED TO BE ON SITE, IT SHALL BE DOUBLE WALLED AND STORED IN THIS DESIGNATED AREA, THIS LOCATION IS AN AREA THAT WILL NOT ALLOW SPILLED FLUIDS TO MIGRATE INTO SUBSURFACE SOILS, IN THE EVENT OF A SPILL, THE FLUID SHALL IMMEDIATELY BE CLEANED UP BY REMOVING THE CONTAMINATED SOIL OR STONE WHICH SHALL BE DISPOSED OF IN AN ACCEPTABLE MANNER, SPILLS ON HARD SURFACES SHALL BE SOAKED UP BY AN ACCEPTABLE MATERIAL SUCH AS OIL DRY AND THE ABSORBENT MATERIAL DISPOSED OF IN A PROPER MANNER, THE SPILL SHALL ALSO BE REPORTED IMMEDIATELY TO THE CONTRACTOR'S SUPERINTENDENT.

B. EQUIPMENT REPAIR, ESPECIALLY WHEN FLUIDS MUST BE REMOVED FROM THE EQUIPMENT OR THE POSSIBILITY OF FLUID SPILLS IS HIGH, SHOULD ALWAYS BE DONE OFFSITE AT A FACILITY THAT IS MORE SUITABLE THAN A CONSTRUCTION SITE TO HANDLE SPILLS. WHEN EQUIPMENT MUST BE REPAIRED ONSITE IT SHOULD BE MOVED TO THE MAINTENANCE AND FUELING AREA IF POSSIBLE, OTHERWISE, SUITABLE ON SITE CONTAINERS SHOULD BE PLACED UNDER THE EQUIPMENT DURING REPAIR TO CATCH ANY SPILLED FLUIDS AND THESE FLUIDS SHOULD BE DISPOSED OF IN A PROPER MANNER.

C. ALL REUSABLE FLUID CONTAINERS, SUCH AS GASOLINE CANS, SHALL BE INSPECTED FOR LEAKS EACH TIME THEY ARE USED, IF LEAKS ARE FOUND, THE FLUID SHALL BE REMOVED FROM THE CONTAINER IN A PROPER MANNER AND THE CONTAINER DISPOSED OF IN AN ACCEPTABLE MANNER, EMPTY DISPOSABLE CONTAINERS, SUCH AS GREASE TUBES AND LUBRICATING OIL AND BRAKE FLUID CONTAINERS, AND THEIR PACKAGING, SHALL BE DISPOSED OF IN A PROPER MANNER AND SHALL NOT BE LEFT ON THE GROUND OR IN THE OPEN ON THE CONSTRUCTION SITE.

2. CONSTRUCTION MATERIALS AND THEIR PACKAGING

A. EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION IN THE PROPER SEQUENCING TO MINIMIZE SOIL EROSION, EROSION CONTROLS SHALL BE INSPECTED AND MAINTAINED AS DESCRIBED ELSEWHERE IN THESE PLANS, EXCESSIVE DUSTING OF SOIL ON THE SITE SHALL BE MINIMIZED BY REDUCING CONSTRUCTION TRAFFIC ACROSS BARE SOIL DURING DRY AND/OR WINDY WEATHER, AND BY APPLYING WATER OR OTHER ACCEPTABLE DUST CONTROL MEASURES TO THE SOIL. UPON COMPLETION OF CONSTRUCTION AND SUITABLE ESTABLISHMENT OF PERMANENT VEGETATION, TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE AND INLET PROTECTION DEVICES SHALL BE REMOVED IN A MANNER TO MINIMIZE ADDITIONAL LAND DISTURBANCE, ANY AREAS DISTURBED BY THESE OPERATIONS SHALL BE PROPERLY STABILIZED.

B. LARGE WASTE MATERIALS CREATED BY CUTTING, SAWING, DRILLING, OR OTHER OPERATIONS SHALL BE PROPERLY DISPOSED OF IN SUITABLE ONSITE WASTE CONTAINERS, THE SITE SHALL BE CHECKED AT THE END OF THE DAY, AT MINIMUM, AND ALL WASTE MATERIALS, INCLUDING THOSE BLOWN AGENCIES OFF THE SITE BY WIND, SHALL BE PICKED UP AND DISPOSED OF IN SUITABLE CONTAINERS, WHERE POSSIBLE, OPERATIONS SUCH AS SAWING THAT CREATE SMALL PARTICLES SHOULD BE PERFORMED IN ONE SPOT IN AN AREA PROTECTED FROM WIND, AND WASTE PARTICLES COLLECTED AND DISPOSED OF FREQUENTLY TO MINIMIZE WIND DISPERSAL, PACKAGING USED TO TRANSPORT MATERIALS TO THE SITE FOR CONSTRUCTION OF THE FACILITY SHALL BE DISPOSED OF PROPERLY, WHETHER THE MATERIAL IS TAKEN OUT OF ITS PACKAGE AND INCORPORATED INTO THE PROJECT IMMEDIATELY OR STORED ONSITE FOR FUTURE USE. PACKAGED MATERIALS STORED ONSITE SHALL BE INSPECTED REGULARLY AND ANY LOOSE PACKAGING SHALL BE REPAIRED OR DISPOSED OF PROPERLY.

C. ALL DEWATERING ACTIVITIES SHALL BE DONE IN ACCORDANCE TO GOOD EROSION CONTROL PRACTICES, THESE PRACTICES SHOULD INCLUDE THE USE OF DIRT BAGS SUCH AS DANDY DIRT BAGS, THE USE OF THESE TYPES OF DEWATERING DEVICES WILL REMOVE LARGE QUANTITIES OF SILT, SEDIMENT, AND DIRT AND PREVENT THESE MATERIALS FROM ENTERING THE STORM SEWER SYSTEM.

D. IF THE USE OF LIME IS USED TO STABILIZE THE SOIL OF THE SITE THEN ALL CONSTRUCTION EQUIPMENT USED SHALL BE CLEANED OF ALL EXCESS MATERIAL WITH WATER IN THE CONSTRUCTION STAGING AREA AS SHOWN WITHIN THESE PLANS.

E. NUTRIENTS AND FERTILIZERS SHALL ONLY BE USED TO ESTABLISH RAPID VEGETATION. WHEN THESE PRODUCTS ARE UTILIZED, THE USER SHOULD PAY STRICT ATTENTION TO THE PRODUCTS RECOMMENDED USAGE.

3. CONCRETE WASTE WATER

A. ALL CONCRETE WASTE WATER SHALL BE DISPOSED OF IN THE DESIGNATED CONCRETE WASHOUT AREAS SHOWN ON SHEETS C-310 AND C-311, CONCRETE WASTE WATER SHALL BE DISCHARGED INTO A 4'-HIGH, 10'-DIAMETER DOUGHNUT-TYPE MULCH BERM CONSTRUCTED OVER A POLYETHYLENE LINER, CONTRACTOR SHALL INSPECT THIS AREA ON A DAILY BASIS AT A MINIMUM, WHEN THIS AREA BECOMES FULL, THE POLLUTANTS SHALL BE EXCAVATED, PLACED IN AN ACCEPTABLE CONTAINER AND DISPOSED OF IN A PROPER MANNER.

4. PAINT PRODUCTS

A. ALL EXCESS PAINT AND THEIR RELATED PRODUCTS SHALL BE DISPOSED OF IN THE MANNER BY WHICH THE MANUFACTURER SUGGESTS, UNDER NO CIRCUMSTANCES SHALL PAINT OR THEIR RELATED PRODUCTS BE CLEANED OR DISPOSED OF IN SOIL, SANITARY SEWERS, STORM SEWERS OR STORMWATER MANAGEMENT BASINS. ANY VIOLATIONS OF THIS SHALL BE REPORTED TO THE JOB SUPERINTENDENT.

B15 SEE SHEETS C-310 AND C-311 FOR CONSTRUCTION STAGING AREAS, WASTE REMOVAL AND CONCRETE WASHOUT AREAS, REFERENCE DETAILS ON SHEET C-312.

SECTION C: POST-CONSTRUCTION COMPONENT

C1 EXPECTED POLLUTANTS IN THE POST-DEVELOPED CONDITION ARE: SEDIMENT, OIL, GREASE, ANTIFREEZE, AND GASOLINE MAY OCCUR IN LIMITED AMOUNTS AS A RESULT OF THIS PROJECT. THE ONLY OTHER REASONABLY FORESEEN POLLUTION FROM THIS SITE WILL BE LITTER AND TRASH DUMPED BY OTHERS.

C2 THE STORMWATER MANGEMENT SYSTEM OF THIS SITE WILL CONNECT TO THE DRY DETENTION BASIN AND UNDERGROUND DETENTION SYSTEM OF THE LARGER MEIJER DEVELOPMENT LOCATED NORTHEAST OF THE SITE. VEGETATION COVERS THE TOP AND SIDES OF THE DRY BASIN, THE SITE DRAINS TO AN HDS WATER QUALITY STRUCTURE IMMEDIATELY NORTH OF THE MEIJER CONVENIENCE STORE, THAT SERVES AS PRE-TREATMENT PRIOR TO SITE RUNOFF ENTERING THE DETENTION SYSTEMS.

ALL STRUCTURES HAVE A SUMP TO CAPTURE DEBRIS AND SEDIMENT.

C3 POST-CONSTRUCTION STORMWATER MEASURES ARE SHOWN ON SHEETS C-311.

C4 SEE PHASE 1 AND PHASE 2 SEQUENCING NOTES ON C-310 AND C-312, RESPECTIVELY, FOR AN APPROPRIATE CONSTRUCTION SEQUENCING AND INSTALLATION OF EROSION CONTROL MEASURES.

C5 APPLICABLE MAINTENANCE MANUALS ARE INCLUDED SEPARATELY.

C6 OWNER CONTACT:

KEVIN WIERINGA
MEIJER STORES LIMITED PARTNERSHIP
2350 THREE MILE ROAD NW
GRAND RAPIDS, MICHIGAN 49544
PHONE: (616) 916-3288

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTROL WASTE, GARBAGE, DEBRIS, WASTEWATER, AND OTHER SUBSTANCES ON THE SITE IN SUCH A WAY THAT THEY SHALL NOT BE TRANSPORTED FROM THE SITE BY THE ACTION OF WINDS, STORM WATER RUNOFF, OR OTHER FORCES. PROPER DISPOSAL OR MANAGEMENT OF ALL WASTES AND UNUSED BUILDING MATERIALS, APPROPRIATE TO THE NATURE OF THE WASTE OR MATERIAL, IS REQUIRED.
2. PUBLIC OR PRIVATE ROADWAYS SHALL BE KEPT CLEARED OF ACCUMULATED SEDIMENT. BULK CLEARING OF ACCUMULATED SEDIMENT SHALL NOT INCLUDE FLUSHING THE AREA WITH WATER. CLEARED SEDIMENT SHALL BE RETURNED TO THE POINT OF LIKELY ORIGIN OR OTHER SUITABLE LOCATION.
3. THIS EROSION CONTROL PLAN SHALL BE IMPLEMENTED ON ALL DISTURBED AREAS WITHIN THE CONSTRUCTION SITE. ALL MEASURES INVOLVING EROSION CONTROL PRACTICES SHALL BE INSTALLED UNDER THE GUIDANCE OF QUALIFIED PERSONNEL EXPERIENCED IN EROSION CONTROL, AND FOLLOWING THE PLANS AND SPECIFICATIONS INCLUDED HEREIN.
4. ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH MEIJER SPECIFICATIONS AND THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT'S "INDIANA STORM WATER QUALITY MANUAL" DATED OCTOBER 2007.

(B11) MONITORING AND MAINTENANCE GUIDELINES

EROSION CONTROL MEASURE	*MAINTENANCE FREQUENCY	INSTALLATION SEQUENCE
STONE ENTRANCE	AS NEEDED	PRIOR TO CLEARING AND GRADING
SILT FENCE	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING
INLET PROTECTION	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING (EX.), ALONG WITH NEW STORM SEWER INLETS (PRO.)
TEMPORARY SEDIMENT BASIN (INCLUDING OUTLET STRUCTURE, DISCHARGING PIPE, TEMPORARY SKIMMER, BAFFLE, EMERGENCY SPILLWAY)	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING
EROSION CONTROL BLANKET	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	ALONG WITH ALL EARTHWORK ACTIVITIES
SEED, SOD & LANDSCAPE	WATER AS NEEDED	AFTER FINISH GRADING
DUST CONTROL	AS NEEDED	ALONG WITH ALL EARTHWORK ACTIVITIES
CONCRETE WASHOUT	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO START OF ANY CONCRETE WORK
DIVERSION DITCHES/BERMS	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	ALONG WITH ALL EARTHWORK ACTIVITIES
ROCK CHECK DAM	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING (EX.), ALONG WITH DITCH GRADING (PRO.)
ROCK DONUT	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING (EX.), ALONG WITH NEW CULVERT PIPE INLETS (PRO.)
REMOVAL OF INLET PROTECTION	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED
REMOVAL OF SILT FENCE	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED
REMOVAL OF TEMPORARY SEDIMENT BASIN APPURTENANCES	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED
REMOVAL OF DIVERSION DITCHES/BERMS	N/A	ALONG WITH INSTALLATION OF STORM SEWER SYSTEM
REMOVAL OF ROCK CHECK DAM	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED
REMOVAL OF ROCK DONUT	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED

EROSION CONTROL MEASURES MAINTENANCE REQUIREMENTS
-SEE CHART FOR MAINTENANCE REQUIREMENTS *

SILT FENCE MAINTENANCE REQUIREMENTS:
1. INSPECT THE SILT FENCE PERIODICALLY AND AFTER EACH STORM EVENT.
2. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT OR IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEAN OUT.
5. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE MAINTENANCE REQUIREMENTS:
1. INSPECT ENTRANCE PAD AND SEDIMENT DISPOSAL AREA DAILY AND AFTER STORM EVENTS OR HEAVY USE.
2. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
3. TOPDRESS WITH CLEAN STONE AS NEEDED.
4. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING.
5. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.

CONCRETE WASHOUT MAINTENANCE REQUIREMENTS:
1. INSPECT EACH CONCRETE WASHOUT AREAS DAILY AND AFTER STORM EVENTS OR HEAVY USE.
2. INSPECT THE INTEGRITY OF THE OVERALL STRUCTURE. CHECK FOR LEAKS, SPILLS OR TRACKING OF SOIL BY EQUIPMENT.
3. REMOVE EXCESS CONCRETE WHEN WASHOUT SYSTEMS REACHES 50% OF THE DESIGN CAPACITY. UPON REMOVAL, INSPECT STRUCTURE. REPAIR AS NEEDED.
4. DISPOSE OF ALL CONCRETE IN A LEGAL MANNER.
5. REPLACE PLASTIC LINER AFTER EVERY CLEANING. ENLARGE AS NECESSARY TO MAINTAIN CAPACITY.

INLET PROTECTION MAINTENANCE REQUIREMENTS:
1. INSPECT EACH INLET PROTECTION MEASURE DAILY AND AFTER STORM EVENTS OR HEAVY USE.
2. INSPECT STORM INLET BASKET OR GEOTEXTILE FABRIC AND MAKE REPAIRS.
3. REMOVE ANY SEDIMENT. AVOID DAMAGING OR UNDERCUTTING FABRIC.

ROCK DONUT MAINTENANCE REQUIREMENTS:
1. INSPECT EACH ROCK DONUT MEASURE DAILY AND AFTER STORM EVENTS OR HEAVY USE.
2. MAKE NEEDED REPAIRS IMMEDIATELY.
3. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF THE HEIGHT OF THE ROCK DONUT TO MAINTAIN END SECTION INLET CAPACITY.
4. ADD RIPRAP AND AGGREGATE AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION OF THE ROCK DONUTS.
5. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE RIPRAP AND AGGREGATE AND PROPERLY DISPOSE OF ALL SEDIMENT AND CONSTRUCTION MATERIAL AND RESTABILIZE.

TEMPORARY SEDIMENT BASIN MAINTENANCE REQUIREMENTS:
1. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. REMOVE AND PROPERLY DISPOSE OF SEDIMENT WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME.
3. PERIODICALLY CHECK EMBANKMENT, EMERGENCY SPILLWAY, AND OUTLET FOR EROSION DAMAGE, PIPING, SETTLING, SEEPAGE, OR SLUMPING ALONG THE TOE OR AROUND THE BARREL; REPAIR IMMEDIATELY.
4. REMOVE TRASH AND OTHER DEBRIS FROM RISER, EMERGENCY SPILLWAY, AND POOL AREA.
5. CLEAN OR REPLACE AGGREGATE AROUND THE RISER IF THE SEDIMENT POOL DOES NOT DEWATER (DRAIN) WITHIN 48 TO 72 HOURS FOLLOWING A STORM WATER RUNOFF EVENT.
6. REMOVE BASIN AFTER DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, INSPECTED, AND APPROVED, DO SO BY DRAINING ANY WATER, REMOVING SEDIMENT TO A DESIGNATED DISPOSAL AREA, SMOOTHING THE SITE TO BLEND WITH THE SURROUNDING AREA, AND THEN STABILIZING WITH SEED AND MULCH OR ANOTHER APPROPRIATE NONERODSIVE COVER.

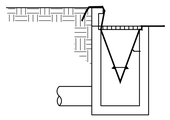
EROSION CONTROL BLANKET MAINTENANCE REQUIREMENTS:
1. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. CHECK FOR EROSION OR DISPLACEMENT OF THE BLANKET.
3. IF ANY AREA SHOWS EROSION, PULL BACK THAT PORTION OF THE BLANKET COVERING THE ERODED AREA, ADD SOIL AND TAMP, RESEED THE AREA, REPLACE AND STAPLE THE BLANKET.

ROCK CHECK DAM MAINTENANCE REQUIREMENTS:
1. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, INSTALL AN EROSION-RESISTANT LINER IN THAT PORTION OF THE CHANNEL.
3. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF THE HEIGHT OF THE DAM TO MAINTAIN CHANNEL CAPACITY. ALLOW DRAINAGE THROUGH THE DAM, AND PREVENT LARGE FLOW FROM DISPLACING SEDIMENT.
4. ADD RIPRAP AND AGGREGATE AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION OF THE DAMS.
5. WHEN DAMS ARE NO LONGER NEEDED, REMOVE THE RIPRAP AND AGGREGATE AND STABILIZE THE CHANNEL, USING AN EROSION-RESISTANT LINING IF NECESSARY, (RIPRAP AND AGGREGATE FROM THE DAM MAY BE REMOVED OR UTILIZED TO STABILIZE THE CHANNEL)

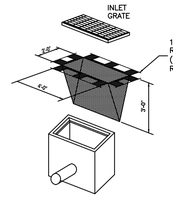
DIVERSION DITCH / BERM MAINTENANCE REQUIREMENTS:
1. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. REMOVE SEDIMENT FROM CHANNEL / TOE OF BERM TO MAINTAIN POSITIVE GRADE.
3. CHECK OUTLETS AND MAKE NECESSARY REPAIRS IMMEDIATELY.
4. ADJUST RIDGE HEIGHT TO PREVENT OVERTOPPING.

A1 IDEM CONSTRUCTION GENERAL PERMIT NOTES

NTS



INSTALLATION DETAIL



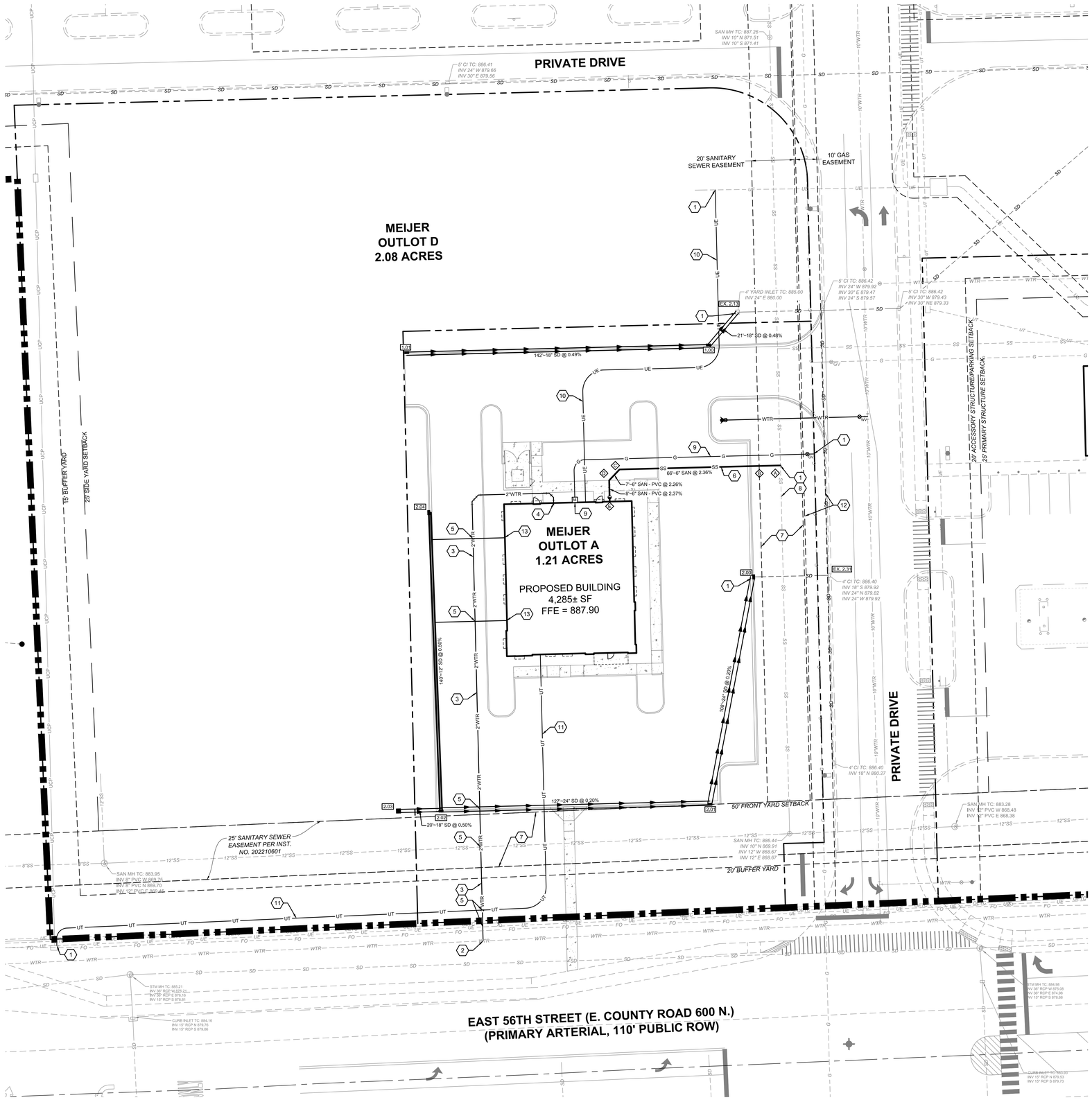
ISOMETRIC VIEW

DESCRIPTION

VARIOUS TYPES OF STORM SEWER INLET PROTECTION MEASURES ARE AVAILABLE DEPENDING ON THE TYPE OF INLET STRUCTURE (E.G., CURB OR AREA) AND THE STAGE OF CONSTRUCTION. IN GENERAL, INLET PROTECTION MEASURES ARE TEMPORARY SEDIMENT CONTROL BARRIER FORMED AROUND OR IN A STORM SEWER INLET TO HELP PREVENT SEDIMENT FROM ENTERING STORM DRAINS DURING CONSTRUCTION. INLET PROTECTION MEASURES ARE TO BE INSTALLED AS EACH INLET STRUCTURE IS CONSTRUCTED.

INSTALLATION
1. A FILTER FABRIC BAG IS HUNG INSIDE THE INLET, BENEATH THE GRATE.
2. REPLACE GRATE, WHICH WILL HOLD BAG IN PLACE.
3. ANCHOR FILTER BAG WITH 1" REBAR FOR REMOVAL FROM INLET.
4. FLAPS OF BAG THAT EXTEND BEYOND THE BAG CAN BE BURIED IN SOIL IN EARTH AREAS.

MAINTENANCE
- DRO



A1 UTILITY PLAN
1"=20'

0 20 40 60
GRAPHIC SCALE IN FEET

LEGEND

- MEIJER PROPERTY LINE
- PROPERTY LINE
- SD — EXISTING STORM SEWER
- WTR — EXISTING WATER MAIN
- SS — EXISTING SANITARY SEWER
- G — EXISTING GAS MAIN
- UE — EXISTING UNDERGROUND ELECTRIC
- UT — EXISTING UNDERGROUND TELEPHONE
- OE — EXISTING OVERHEAD ELECTRIC
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- EXISTING CURB INLET
- EXISTING CATCH BASIN
- EXISTING FIRE HYDRANT
- EXISTING POWER POLE
- CURB INLET
- CATCH BASIN
- CLEANOUT
- XX"~XX" SD — STORM SEWER
- XX — STORM STRUCTURE I.D.
- XX"~8" SAN — SANITARY SEWER
- SANITARY STRUCTURE I.D.
- X" WTR — DOMESTIC WATER SERVICE, SIZE PER PLAN
- WV — WATER VALVE
- TEE WITH THRUST BLOCK
- WATER BEND WITH THRUST BLOCK
- G — GAS SERVICE
- GV — GAS VALVE
- M — GAS METER
- UCT — UNDERGROUND COMMUNICATIONS SERVICE
- UE — UNDERGROUND ELECTRIC SERVICE
- LIGHT POLE

GENERAL NOTES

1. VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. UTILITIES SHALL END 5 FEET FROM THE BUILDING UNLESS NOTED OTHERWISE.
3. PROTECT AND MAINTAIN CROSSINGS OF OTHER UTILITIES.
4. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE, CENTER OF MANHOLE, EDGE OF PAVEMENT OR BACK OF CURB WHERE APPLICABLE. DIMENSIONS TO COLUMN LINE ASSUME 9" THICK BUILDING WALL.
5. ALL MATERIAL, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL BE IN CONFORMANCE WITH MEIJER STANDARD SPECIFICATIONS AND DETAILS AND TOWN OF BROWNSBURG AND HENDRICKS COUNTY REQUIREMENTS.
6. PROVIDE MINIMUM 18" VERTICAL CLEARANCE AT ALL UTILITY CROSSINGS.
7. BEFORE COMMENCING WORK, CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES.

KEYNOTES (X)

1. CONNECT TO EXISTING UTILITY PER AGENCY REQUIREMENTS. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITY IN WHICH TO MAKE CONNECTION.
2. CONNECT TO EXISTING WATER MAIN PER CITIZENS ENERGY GROUP REQUIREMENTS. CONTRACTOR TO VERIFY THERE IS 3' OF CLEARANCE FROM EXISTING TAPS AND FITTINGS.
3. 2" DOMESTIC WATER SERVICE. HDPE SDR9, 1.5" DOMESTIC METER AND BACKFLOW PREVENTER TO BE LOCATED INSIDE THE BUILDING.
4. COPPER OR DUCTILE IRON SHALL BE INSTALLED FROM 5 FEET OUTSIDE OF THE BUILDING FOOTER INTO THE BUILDING METER SETUP. SEE ARCHITECTURAL PLANS FOR CONTINUATION. SEE CEG STANDARDS SECTION 8.06.
5. ADJUST WATER LINE VERTICALLY AS NECESSARY TO PROVIDE 18" VERTICAL CLEARANCE FROM SANITARY OR STORM SEWER WHILE MAINTAINING APPROPRIATE COVER FOR WATER LINE.
6. 6" SANITARY SERVICE.
7. PUBLIC SANITARY EASEMENT.
8. PUBLIC SANITARY SEWER.
9. GAS SERVICE AND METER.
10. UNDERGROUND ELECTRIC SERVICE. PROVIDE (2) 4" CONDUIT FOR ELECTRIC SERVICE.
11. UNDERGROUND COMMUNICATIONS SERVICE. PROVIDE (2) 4" CONDUIT FOR TELECOMMUNICATIONS.
12. GAS EASEMENT.
13. 6" ROOF DRAIN FOR GUTTER DOWNSPOUTS.

WATER NOTES

ALL MATERIALS, INSTALLATION, TESTING, AND RELATED WORK SHALL COMPLY WITH THE CITIZENS WATER STANDARDS MANUAL, LATEST EDITION.

1. FULL-DEPTH GRANULAR BACKFILL IS REQUIRED BENEATH AND WITHIN FIVE (5) FEET OF ALL PAVEMENT, IN ACCORDANCE WITH THE CITIZENS WATER STANDARDS MANUAL, LATEST EDITION.
2. THE TRACING WIRE AND IDENTIFICATION RIBBON SHALL BE INSTALLED AS SPECIFIED IN SECTION 9.17, "INSTALLATION OF TRACING WIRE AND IDENTIFICATION RIBBON"
3. MANDATORY PIPE COVER SHALL BE 54-INCH BELOW FINISHED GRADE OR AS REQUIRED BY 327 IAC 8-3.2-17.
4. A MINIMUM OF A 10' HORIZONTAL SEPARATION AND AN 18" VERTICAL SEPARATION BETWEEN SEWER LINES (SANITARY OR STORM) AND THE WATER SERVICE LINES MUST BE MAINTAINED.
5. TAPS MUST BE A MINIMUM OF 3 FEET FROM EACH OTHER/EXISTING FITTINGS.
6. TAPS MUST BE PERPENDICULAR TO THE MAIN.
7. BENDS ARE NOT ALLOWED WITHIN THE RIGHT-OF-WAY.
8. AT LEAST 3' OF SEPARATION MUST MAINTAINED BETWEEN THE WATER SERVICE LINES AND OTHER UTILITIES.

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

UTILITY PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-400

Indiana 811 Know what's below. Call before you dig.

Images: ..\Xrefs\ 10026635-p.dwg; 10026635-x.dwg; 10026635TBLK.dwg
Layout: A1 Name: C-400 UTILITY PLAN
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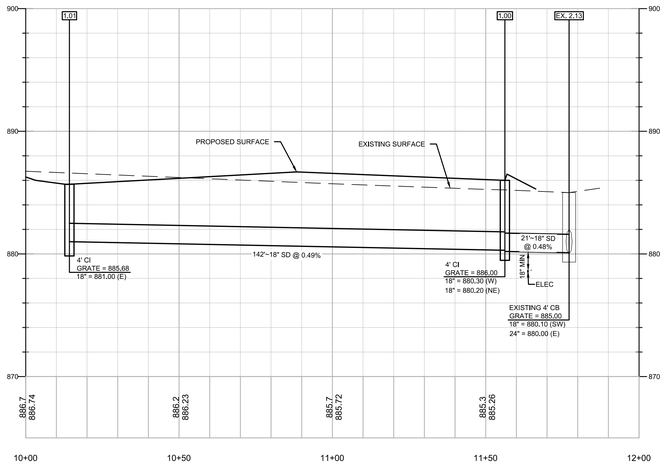
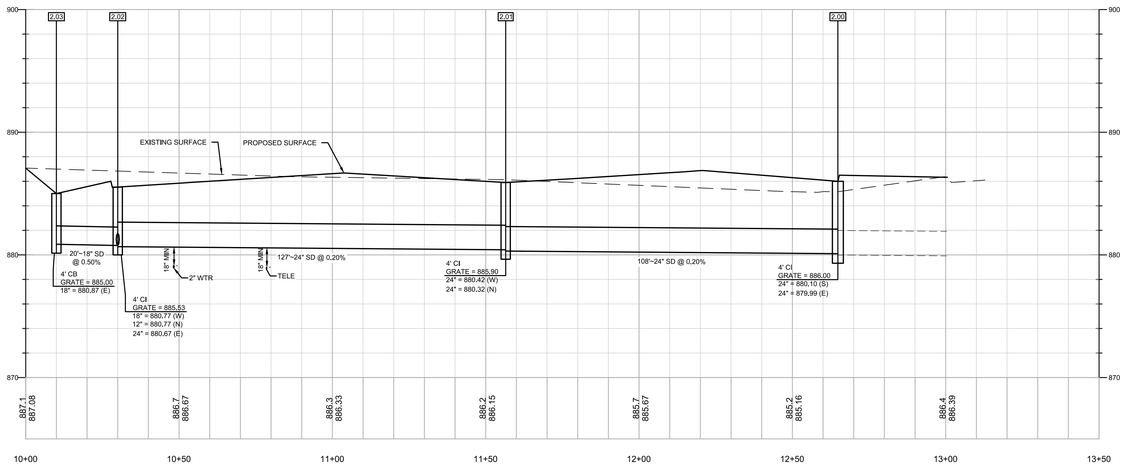


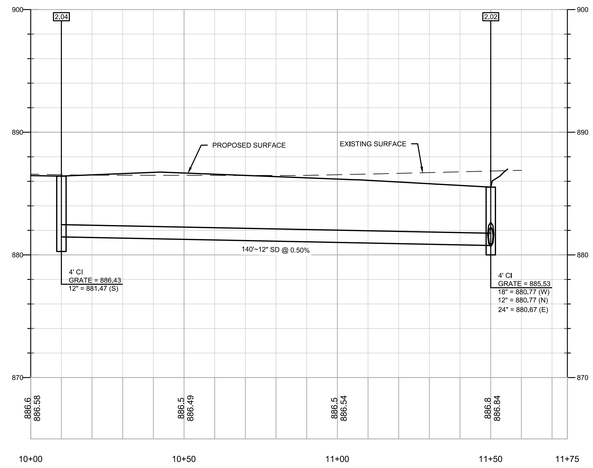
D1 STM 1.00 - 1.01 PROFILE

1"=20'



B1 STM 2.03 - EX.2.31 PROFILE

1"=20'



D1 STM 2.04 - 2.02 PROFILE

1"=20'

STORM STRUCTURE TABLE

STRUCTURE ID	DESCRIPTION	RIM/GRATE	INVERTS	NORTHING	EASTING	CASTING	MISCELLANEOUS NOTES
1.00	4' CI	886.00	18" = 880.20 (NE) 18" = 880.30 (W)	1677755.5716	3155982.5205	NEENAH R-3287-SB10	
1.01	4' CI	885.68	18" = 881.00 (E)	1677752.0180	3155840.5650	NEENAH R-3287-SB10	
2.00	4' CI	886.00	24" = 879.99 (E) 24" = 880.10 (S)	1677646.9637	3156003.2449	NEENAH R-3287-SB10	EAST INVERT IS EXISTING, CONTRACTOR TO VERIFY.
2.01	4' CI	885.90	24" = 880.32 (N) 24" = 880.42 (W)	1677540.5200	3155983.1524	NEENAH R-3287-SB10	
2.02	4' CI	885.53	18" = 880.77 (W) 24" = 880.67 (E) 12" = 880.77 (N)	1677537.3543	3155856.6920	NEENAH R-3287-SB10	
2.03	4' CB	885.00	18" = 880.87 (E)	1677536.8643	3155836.6980	NEENAH R-4215-C	
2.04	4' CI	886.43	12" = 881.47 (S)	1677677.2663	3155851.4391	NEENAH R-3287-SB10	

SANITARY STRUCTURE TABLE

STRUCTURE ID	DESCRIPTION	RIM/GRATE	INVERTS	NORTHING	EASTING	MISCELLANEOUS NOTES
A	8"X6" WYE CONNECTION	887.01	6" = 870.60 (W)	1677699.4225	3156016.3286	EX. 10" = 870.60 TO BE VERIFIED
B	BEND	882.17	6" = 880.60 (W) 6" = 880.60 (E)	1677699.1867	3156006.3314	
C	BEND	882.54	6" = 882.15 (SW) 6" = 882.15 (E)	1677697.5322	3155940.6606	
D	BEND	882.79	6" = 882.31 (S) 6" = 882.31 (NE)	1677692.4078	3155935.7881	
E	CLEAN OUT	887.87	6" = 882.50 (N) 6" = 882.50 (S)	1677684.4073	3155935.9897	
F	CONNECT TO BUILDING SANITARY	887.90	6" = 882.50 (N)	1677682.4079	3155936.0397	

STRUCTURE TABLE NOTES

1. EX = EXISTING.
2. CI = CURB INLET.
3. CB = CATCH BASIN.
4. MH = MANHOLE.
5. CTE = CONNECT TO EXISTING.
6. RIM/GRATE ELEVATION INDICATES:
   - 6.1. FOR MANHOLE, JUNCTION BOX/CLEANOUT: RIM ELEVATION.
   - 6.2. FOR CATCH BASIN: GRATE ELEVATION.
   - 6.3. FOR CURB INLET: TOP OF CASTING/TOP OF CURB ELEVATION.
7. ALL PROPOSED STORM AND SANITARY STRUCTURE TYPES SHALL BE IN ACCORDANCE WITH THE TOWN OF BROWNSBURG STANDARD CONSTRUCTION DETAILS UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL REVIEW CONDITION OF EXISTING STRUCTURES TO REMAIN IN WHICH PROPOSED PIPES ARE PROPOSED TO CONNECT. IF CONDITIONS WARRANT IT, STRUCTURE(S) SHALL BE REPLACED.
9. ALL STORM GRATE CASTINGS TO BE PRE-CAST WITH A POLLUTION PREVENTION MESSAGE PERMANENTLY ATTACHED. PER TOWN OF BROWNSBURG STANDARD DETAILS SW-13 AND SW-14, POLLUTION PREVENTION MESSAGE TO STATE, AT MINIMUM, "DUMP NO WASTE <FISH ICON> DRAINS TO WATERWAY" IN MINIMUM 1 INCH HIGH LETTERS.
10. STORM SEWER PIPING TO BE HIGH DENSITY POLYETHYLENE (HDPE) FOR PIPES 12 TO 24 INCHES IN DIAMETER, POLYPROPYLENE (PP) FOR PIPES 12 TO 60 INCHES IN DIAMETER, POLYVINYL CHLORIDE (PVC) FOR PIPES 12 TO 36 INCHES IN DIAMETER, OR REINFORCED CONCRETE (RCP) FOR PIPES 12 INCHES IN DIAMETER OR LARGER IN ACCORDANCE WITH THE TOWN OF BROWNSBURG CONSTRUCTION STANDARDS, MOST CURRENT EDITION.
11. CONTRACTOR TO SIZE STORM STRUCTURES PER TOWN OF BROWNSBURG STANDARDS.
12. SUMPS ARE NOT PERMITTED IN INLET STRUCTURES PER TOWN OF BROWNSBURG STANDARDS.

WOOLPERT

4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer

2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

STORM & SANITARY PROFILES AND STRUCTURE DATA TABLES

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-405

Images: * Xrefs: 10026635TBLK.dwg; 10026635-x.dwg; 10026635-p.dwg
Drawing Name: C-405 STORM & SANITARY PROFILES AND STRUCTURE DATA TABLES
Last Saved By:B.VonGorder, 1/23/2026 1:35:56 PM
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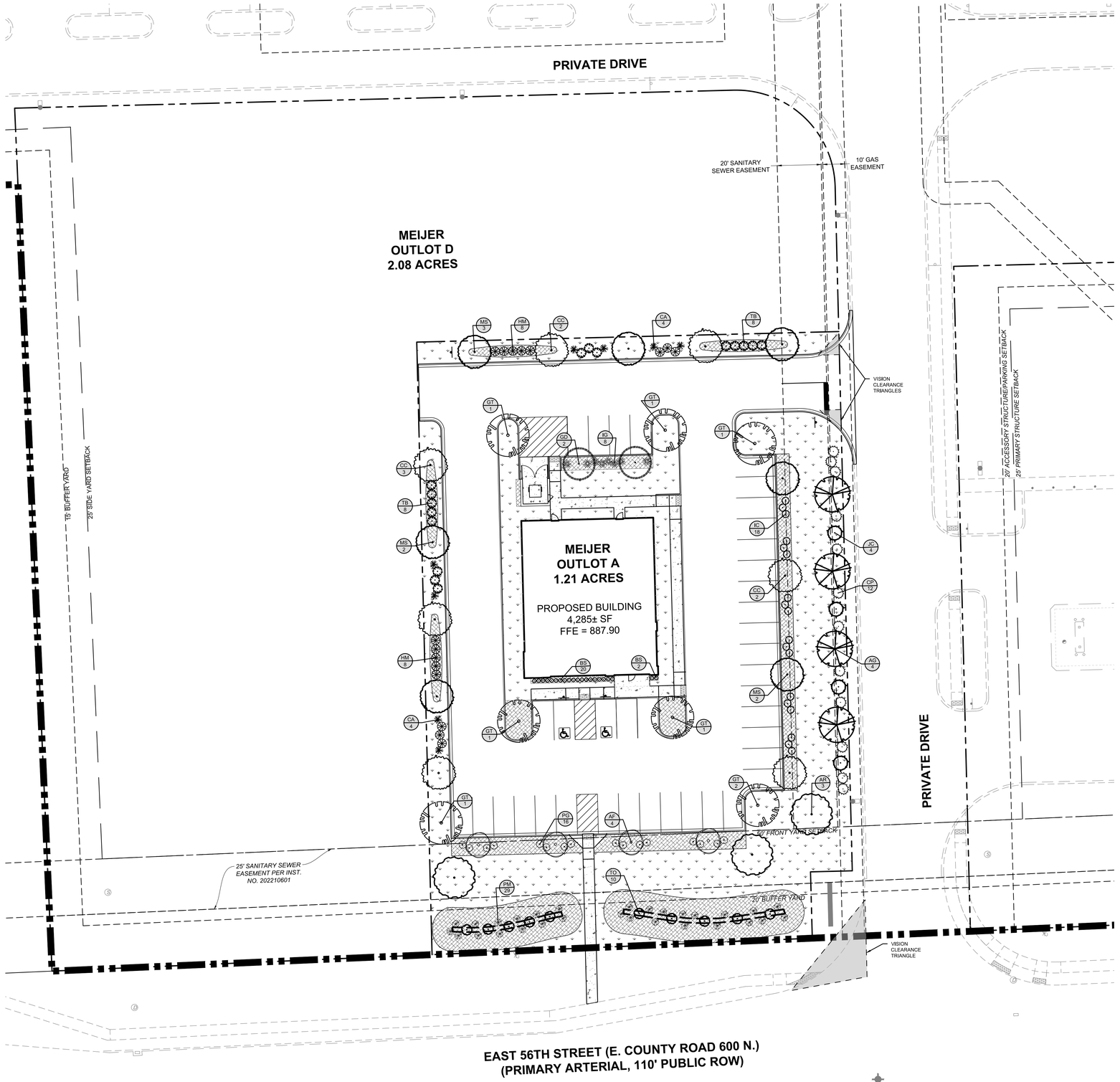

A1 LANDSCAPE PLAN
1"=20'

LANDSCAPE NOTES

1. COORDINATE PLACEMENT OF PLANTS WITH UTILITY LOCATIONS AND SIGHT LINES TO BUILDING. MAKE ADJUSTMENTS AS REQUIRED TO AVOID PLANTING OVER THE UTILITIES AND/OR WITHIN SIGHT LINES TO ALL MEIJER BUILDING SIGNAGE.
2. THE CENTER OF LARGE ISLANDS IS TO BE SIX INCHES HIGHER THAN TOP OF CURB. ENSURE ALL ISLANDS ARE SLOPED FOR POSITIVE DRAINAGE.
3. ALL AREAS THAT REQUIRE SEEDING SHALL RECEIVE 4" MINIMUM TOPSOIL, UNLESS NOTED OTHERWISE.
4. SEED ALL AREAS INDICATED ON THE LANDSCAPE PLAN, THE SOIL EROSION CONTROL PLAN AND ALL DISTURBED AREA. REVIEW AREAS OF SEEDING WITH CONSTRUCTION MANAGER PRIOR TO ANY SEEDING. ANY AREAS DISTURBED BY THE CONTRACTOR WHICH ARE BEYOND THE LIMITS OF GRADING AND EARTHWORK SHALL BE SEEDED AT NO ADDITIONAL COST TO THE OWNER.
5. TOPSOIL SHALL BE TESTED AND AMENDED AS NECESSARY DURING FINAL GRADING AND PREPARATION FOR SEEDING BY CONTRACTOR.
6. ALL SHRUBS BEDS (EXISTING AND NEW) TO BE MULCHED WITH A MIN. 3 INCH LAYER OF MULCH (DOUBLE SHREDDED HARDWOOD MULCH.
7. APPLY STARTER FERTILIZER (16-32-4) AT 250 POUNDS/ACRE TO SEEDED AREAS.
8. ALL LANDSCAPE ISLANDS SHALL BE NATURAL COLOR, DYE-FREE, 3" DEEP SHREDDED HARDWOOD MULCH EXCEPT AS NOTED. PLACE MULCH OVER WEED BARRIER FABRIC AND TREAT WITH PRE-EMERGENT HERBICIDE.
9. ALL LANDSCAPING SHALL BE INSTALLED A MINIMUM OF 4' FROM THE EDGE OF PAVEMENT WHERE A VEHICLE WILL OVERHANG A LANDSCAPE BED.

LANDSCAPE CODE SUMMARY

CURRENT ZONING: C3 (HEAVY COMMERCIAL)

ON-SITE LANDSCAPING STANDARDS
COMMERCIAL USE (C3) - REQUIRED PLANT QUANTITIES ARE BASED ON OPEN SPACE. THESE PLANTING REQUIREMENTS ARE IN ADDITION TO THE OTHER LANDSCAPE REQUIREMENTS.
CALCULATED OPEN SPACE = 0.53 ACRES

SHADE TREES REQUIRED / PROVIDED:
4 SHADE TREES PER HALF ACRE OF OPEN SPACE = 5 SHADE TREES / 5 SHADE TREES

SHRUBS REQUIRED:
8 LARGE SHRUBS PER HALF ACRE OF OPEN SPACE = 8 SHRUBS / 8 SHRUBS

STREET FRONTAGE LANDSCAPING.
THE AMOUNT OF LANDSCAPING REQUIRED IS BASED ON THE LENGTH OF FRONTAGE.

LENGTH OF FRONTAGE: 245 FT
SHADE OR EVERGREEN TREES REQUIRED / PROVIDED:
(1,5 TREES / 100 LF) 4 TREES / 4 TREES

ORNAMENTAL TREES REQUIRED / PROVIDED:
(1,5 TREES / 100 LF) 4 TREES / 4 TREES

SHRUBS REQUIRED / PROVIDED:
(5 SHRUBS / 100 LF) 12 SHRUBS / 12 SHRUBS

PERIMETER PARKING LOT LANDSCAPING
THE AMOUNT OF LANDSCAPING REQUIRED IS BASED ON THE LENGTH OF FRONTAGE. TREES REQUIRED 35' O.C. ADJACENT TO R/W.

8' WIDE LANDSCAPED AREA FRONT YARD: 134 FT
SHADE TREES (1 TREE / 35 FT OF PARKING LOT FRONTAGE)
REQUIRED / PROVIDED: 4 TREES / 4 TREES

EVERGREEN SHRUBS (4 SHRUBS / 35 FT OF PARKING LOT FRONTAGE)
REQUIRED / PROVIDED: 16 SHRUBS / 16 TREES

6' WIDE LANDSCAPED AREA SIDE/REAR YARD: 505
TREES (1 TREE / 35 FT OF PARKING LOT FRONTAGE)
REQUIRED / PROVIDED: 14 TREES / 14 TREES

MEDIUM SHRUBS (4 SHRUBS / 35 FT OF PARKING LOT FRONTAGE)
REQUIRED / PROVIDED: 58 SHRUBS / 58 SHRUBS

INTERIOR PARKING LOT LANDSCAPING.
INTERIOR PARKING LOT LANDSCAPING INCLUDES 1 SHADE TREE PER PER INDIVIDUAL ISLAND OR PER 160 SQUARE FEET. LANDSCAPE ISLANDS ARE REQUIRED AT THE ENDS OF ALL ROWS OF PARKING.

TREES REQUIRED / PROVIDED:
7 TREES / 7 TREES

FOUNDATION LANDSCAPING
FAÇADES SHALL INCLUDE FOUNDATION PLANTINGS AT A RATE OF 1 SHRUB OR ORNAMENTAL TREE PER 10 FEET OF FAÇADE LENGTH.

FRONT AND SIDE FAÇADE LENGTH = 133 FT
TREES OR SHRUBS REQUIRED / PROVIDED:
14 TREES OR SHRUBS / 22 SHRUBS

BUFFER YARD PLANTING.
BUFFER YARD PLANTS MUST REACH MATURE HEIGHT OF 48" AFTER 3 YEARS AND BE AT LEAST 24 INCES TALL AT TIME OF INSTALLATION

C3 ADJACENT TO C3: NO BUFFER YARD REQUIRED

EAST 56TH STREET BUFFER YARD (HIGH INTENSITY BUFFER): 192 LF

EVERGREEN TREES REQUIRED / PROVIDED:
(1 TREE / 20 LF)* = 10 TREES / 10 TREES

LARGE SHRUBS REQUIRED / PROVIDED:
(3 LARGE SHRUBS / 20 LF)* = 29 SHRUBS / 29 SHRUBS

BERM REQUIRED:
UNDULATING BERM WITH 3'-0" HEIGHT.

TAG	QTY	SCIENTIFIC NAME	COMMON NAME	COND.	SIZE	REMARKS
TREES						
AR	3	Acer rubrum 'October Glory'	October Glory Red Maple	B&B	2,5" Cal,	Full, well shaped
GT	7	Gleditsia triacanthos var. inermis 'Street Keeper'	Street Keeper Thornless Honey Locust	B&B	2,5" Cal,	Full, well shaped
AG	4	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	B&B	2" Cal,	Full, well shaped
AF	4	Acer Rubrum 'Armstrong'	Armstrong Red Maple	B&B	2.5" Cal.	Columnar
MS	7	Magnolia x stellata 'Royal Star'	Royal Star Magnolia	B&B	1.5" Cal,	Full, well shaped
CC	7	Cercis canadensis 'Ace of Hearts'	Ace of Hearts Redbud	B&B	1.5" Cal,	Full, well shaped
GD	2	Gymnocladus diocus 'Morton'	Skinny Latte Kentucky Coffee Tree	B&B	2,5" Cal,	Full, well shaped
EVERGREEN TREES						
TO	10	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	B&B	6' Ht,	Full, well shaped
JC	4	Juniperus chinensis 'Blue Point'	Blue Point Juniper	B&B	6' Ht,	Full, well shaped
SHRUBS						
CP	12	Chamaecyparis pisifera 'Golden Mop'	Golden Mop False Cypress	#5 cont.	24"ht. x 24"wd,	Full, vigorous
IG	8	Ilex glabra 'Shamrock'	Shamrock Inkberry Holly	#5 cont.	24"ht. x 24"wd,	Full, vigorous
HM	18	Hydrangea macrophylla 'Endless Summer'	Endless Summer Hydrangea	#5 cont.	24"ht. x 24"wd,	Full, vigorous
PM	29	Pinus mugo 'Emerald Dwarf'	Emerald Dwarf Mugo Pine	#5 cont,	24"ht. x 24"wd,	Full, vigorous
IC	18	Ilex crenata 'Soft Touch'	Soft Touch Holly	#3 cont,	18"ht. x 18"wd,	Full, vigorous
TB	16	Taxus baccata 'Icicle'	Icicle English Yew	#5 cont,	24"ht. x 24"wd,	Full, vigorous
PG	16	Picea glauca 'Little Gem'	Little Gem Dwarf Alberta Spruce	#3 cont.	18"ht. x 18"wd,	Full, vigorous
BS	22	Buxus sempervirens 'Green Gem'	Green Gem Boxwood	#3 cont.	12"ht. x 12"wd,	Full, vigorous
ORNAMENTAL GRASSES						
CA	8	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	#3 cont.	12"ht. x 12"wd,	Full, vigorous

* QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES OF PLANTS ON LANDSCAPE PLAN.

A5 PLANTING SCHEDULE
NTS

LEGEND

- MEIJER PROPERTY LINE
- PROPERTY LINE
- SHREDDED HARDWOOD MULCH TO 3" DEPTH, UNLESS NOTED OTHERWISE. SEE SPECIFICATIONS
- SEED MIXTURE TYPE A

0 20 40 60
GRAPHIC SCALE IN FEET

Indiana 811 Know what's below. Call before you dig.

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Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9160 E. 56TH STREET
BROWNSBURG, INDIANA 46112

LANDSCAPE PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-600

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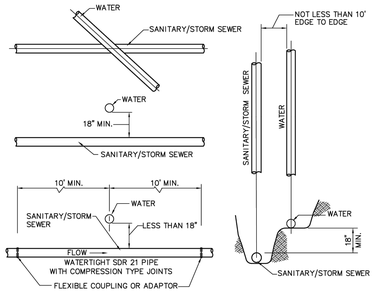
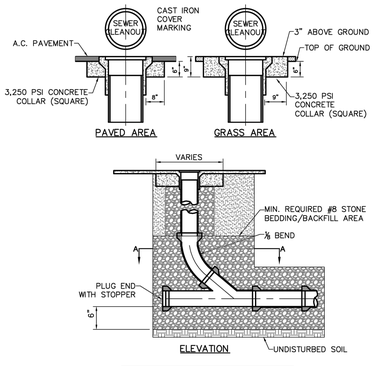


NOTES:

1. WHEN LATERAL SEPARATION IS 10' OR GREATER NO VERTICAL CLEARANCE IS NEEDED
2. ALL CROSSINGS AND SEPARATIONS TO BE 327 IAC, ARTICLES 3 & 8
3. WHEN HORIZONTAL SEPARATION IS LESS THAN 10' OR VERTICAL SEPARATION IS LESS THAN 18", SANITARY PIPE MUST BE WATERTIGHT SDR 21 WITH COMPRESSION TYPE JOINTS.
4. CONTRACTOR SHALL VERIFY THAT MORE STRINGENT SEPARATION REQUIREMENTS DO NOT EXIST WITH THE JURISDICTIONAL WATER UTILITY. IF THEY DO EXIST, CONTRACTOR SHALL FOLLOW THE MORE STRINGENT REQUIREMENTS.

MIN. CROSSOVER & SEPARATION REQUIREMENTS FOR WATER & SANITARY/STORM SEWERS

NOT TO SCALE

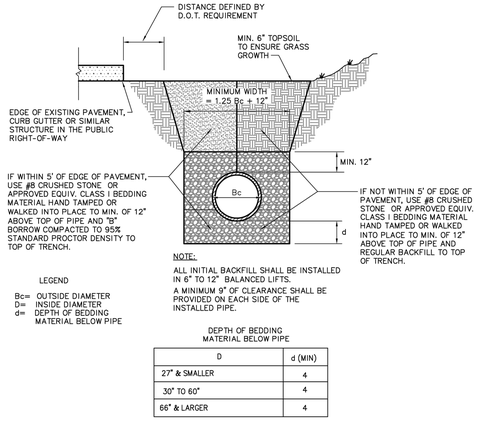


NOTES:

1. CLEANOUT PIPE TO BE SAME SIZE AND KIND OF MATERIAL AS MAIN
2. INSTALL SEWUR VALVE BY KODIAK CONTROLS, INC., OR APPROVED EQUAL

SEWER CLEANOUT

NOT TO SCALE



LEGEND

Bc= OUTSIDE DIAMETER
D= INSIDE DIAMETER
d= DEPTH OF BEDDING MATERIAL BELOW PIPE

NOTE:

ALL INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS.

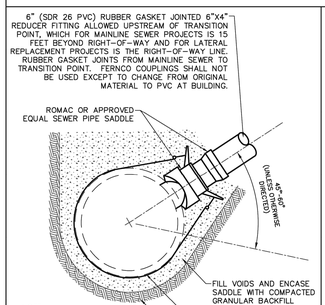
A MINIMUM 9" OF CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE.

DEPTH OF BEDDING MATERIAL BELOW PIPE

D	d (MIN)
27" & SMALLER	4
30" TO 60"	4
66" & LARGER	4

PLASTIC PIPE (PVC & HDPE) BEDDING DETAIL

NOT TO SCALE

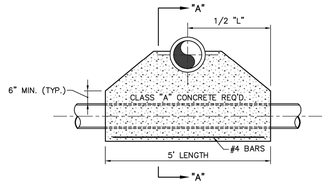


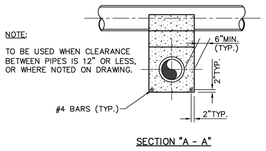
NOTE:

1. SEWER PIPE SADDLE SHOULD BE ROMAC INDUSTRIES, INC. STYLE "CB" SEWER SADDLE OR APPROVED EQUAL.

LATERAL CONNECTION TO EXISTING SEWER

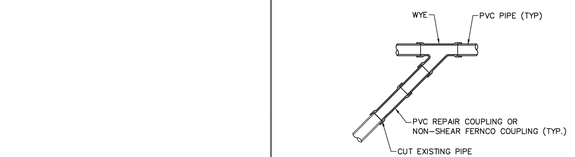
NOT TO SCALE





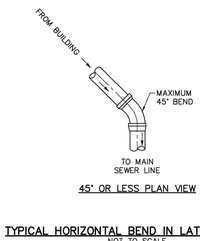
CONCRETE SADDLE DETAIL

NOT TO SCALE



EXISTING LATERAL RECONNECTION DETAIL

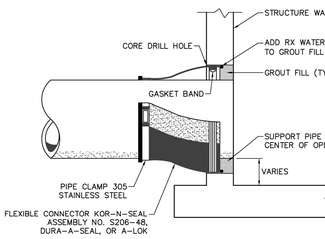
NOT TO SCALE



45° OR LESS PLAN VIEW

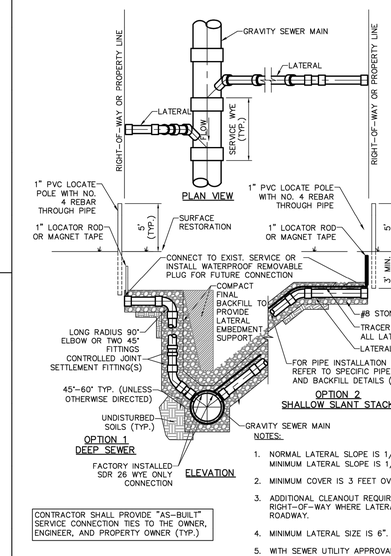
TYPICAL HORIZONTAL BEND IN LATERAL DETAIL

NOT TO SCALE



NEW CONNECTION TO EXISTING MANHOLE

NOT TO SCALE



NOTES:

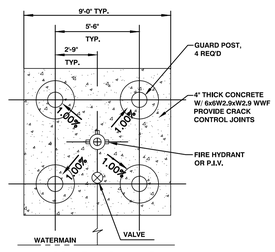
1. NORMAL LATERAL SLOPE IS 1/4" PER FOOT MINIMUM LATERAL SLOPE IS 1/8" PER FOOT
2. MINIMUM COVER IS 3 FEET OVER PIPE
3. ADDITIONAL CLEANOUT REQUIRED AT RIGHT-OF-WAY WHERE LATERAL CROSSES ROADWAY.
4. MINIMUM LATERAL SIZE IS 6".
5. WITH SEWER UTILITY APPROVAL, DEEP SEWER SLANT STACK MAY BE INSTALLED.
6. LATERALS SHALL BE PVC SDR 26.

CONTRACTOR SHALL PROVIDE "AS-BUILT" SERVICE CONNECTION TIES TO THE OWNER, ENGINEER, AND PROPERTY OWNER (TYP.)

TYPICAL SERVICE CONNECTION

NOT TO SCALE

C6 HCRSD SANITARY DETAILS
NTS



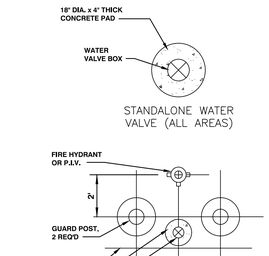
HYDRANT AND VALVE IN PAVED AREAS

NOTES:

PROVIDE POSITIVE DRAINAGE (1% MIN) AWAY FROM THE FIRE HYDRANT.

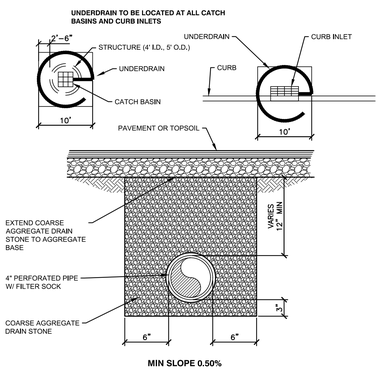
GUARD POSTS NOT REQUIRED WHERE FH IS BEHIND CURB. FIRE HYDRANTS LOCATED IN LOADING DOCK AREAS WILL REQUIRE 2 GUARD POSTS REGARDLESS IF THERE IS CURB.

SEE TOWN OF BROWNSBURG STANDARD DETAIL O.1 FOR VEHICLE IMPACT PROTECTION REQUIREMENTS FOR FIRE HYDRANTS.



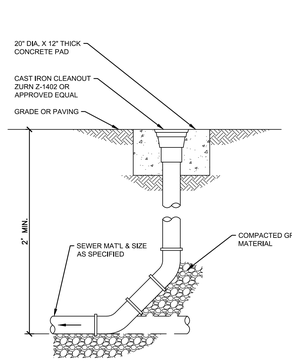
HYDRANT AND VALVE IN NON-PAVED AREAS

A1 FH AND WATER VALVE LAYOUT
NTS

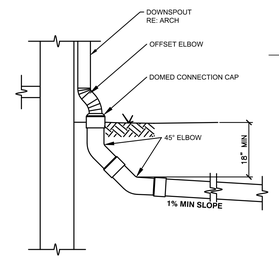


MIN SLOPE 0.50%

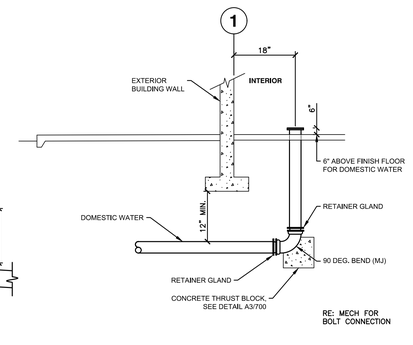
A3 PERFORATED UNDERDRAIN
NTS



A4 TYP. CLEANOUT DETAIL
NTS



A5 DOWNSPOUT CONNECTION
NTS



A6 TYP. DOMESTIC WATER RISER
NTS

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

HENDRICKS COUNTY REGIONAL SEWER DISTRICT

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

HENDRICKS COUNTY REGIONAL SEWER DISTRICT

STANDARD DETAILS

DREW C. SAXON REGISTERED No. PE11500679 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIED BY

ISSUANCE INDEX
DATE:
04/30/2021

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE
1	DIRECT ADDED	12/10/2018
3	REVISIONS TO AIR RELEASE VALVE, LATERAL CONNECTION TO EXISTING SEWER, DETAIL AND LIFT STATION SPECIFICATIONS UPDATES	01/03/2019
4		01/21/2021
SPECIFICATIONS		
1	UPDATED TESTING REQ PER IDEM COMMENTS	01/20/2017
2	UPDATED TESTING REQ PER IDEM COMMENTS	12/10/2018
3	GENERAL REVISIONS	01/03/2019
4	ASTM REFERENCE	08/05/2019

Project Number 2000.00103

SANITARY SEWER STANDARD DETAILS

02

MEJER OUTLET #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

DETAILS

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-700

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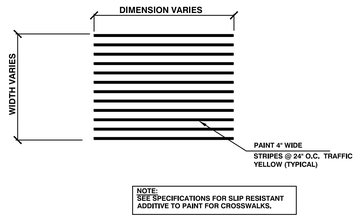
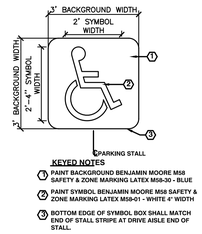
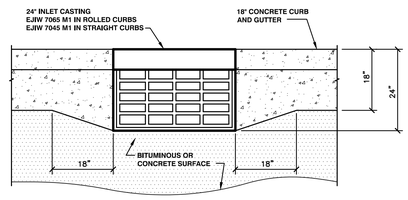


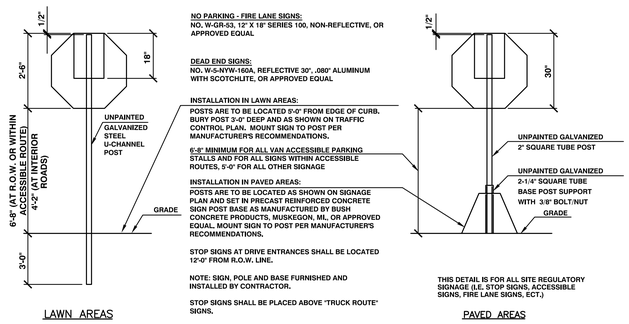
E1 PEDESTRIAN CROSSWALK
NTS



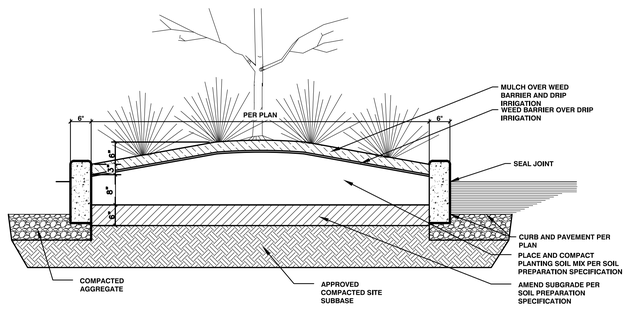
E2 ACCESIBLE PAVEMENT SYMBOL
NTS



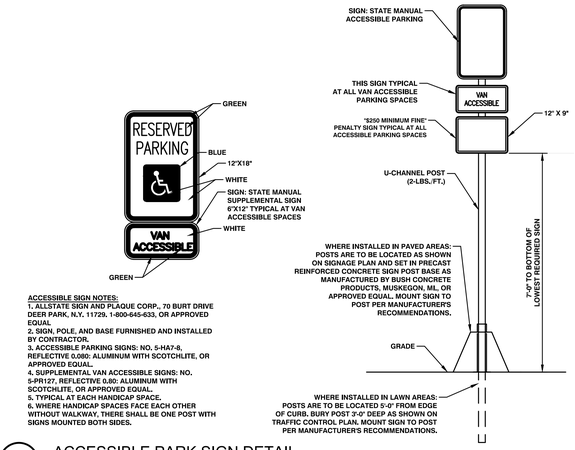
E3 CURB TRANSITION DETAIL
NTS



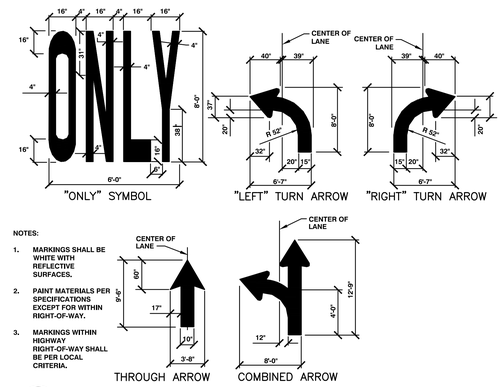
C1 TRAFFIC CONTROL SIGNAGE
NTS



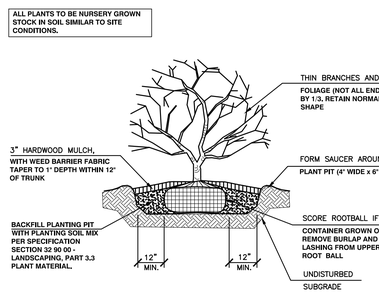
B1 LANDSCAPE PARKING LOT ISLAND SECTION
NTS



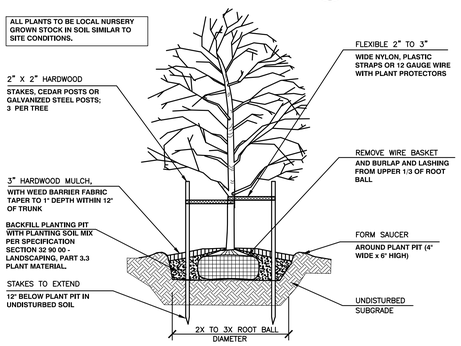
C3 ACCESSIBLE PARK SIGN DETAIL
NTS



C5 PAVEMENT MARKING DETAILS
NTS

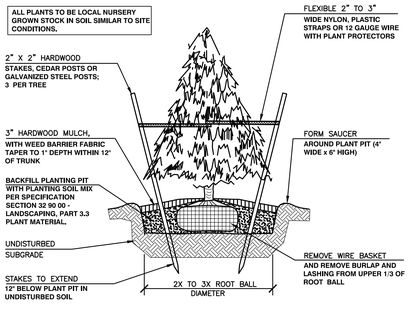


A1 SHRUB PLANTING
NTS



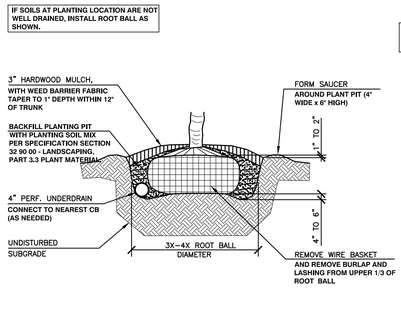
NOTE: CONTRACTOR TO SUPPLY, INSTALL, AND MAINTAIN TREE WATERING DEVICES PER THE PROJECT SPECIFICATIONS

A2 DECIDUOUS TREE PLANTING
NTS

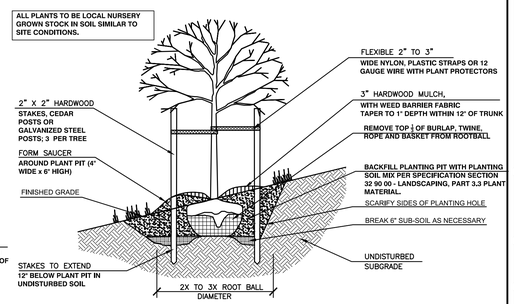


NOTE: CONTRACTOR TO SUPPLY, INSTALL, AND MAINTAIN TREE WATERING DEVICES PER THE PROJECT SPECIFICATIONS

A3 EVERGREEN TREE PLANTING
NTS



A4 POORLY DRAINED SOILS PLANTING
NTS



NOTE: CONTRACTOR TO SUPPLY, INSTALL, AND MAINTAIN TREE WATERING DEVICES PER THE PROJECT SPECIFICATIONS

A5 TREE PLANTING ON SLOPE
NTS

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 45430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

DETAILS

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-701

Images: - Xrefs: 10026635TBLK.dwg
Underlays: - None -
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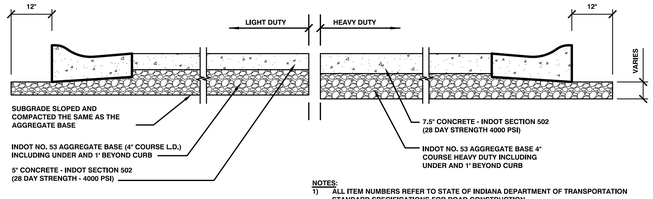
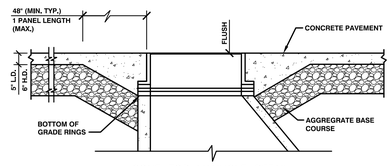
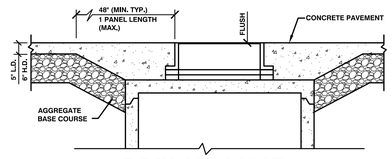


NOTES:
1) ALL ITEM NUMBERS REFER TO STATE OF INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD CONSTRUCTION.
2) THE POURING FOR BOTH TYPES CAN BE COMPLETED AT THE SAME TIME. ALL PAVEMENT JOINTS SHOULD BE IN CONFORMANCE WITH DETAIL PROVIDED ON THIS SHEET.
3) SEE SPECIFICATIONS FOR MODIFICATIONS TO STANDARD CONCRETE D.O.T. MIXES.

D1 LIGHT DUTY/HEAVY DUTY CONCRETE PAVEMENT SECTION
NTS

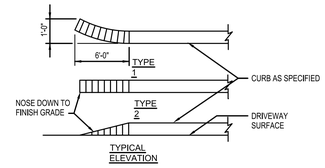


CONE TOP MANHOLE DETAIL

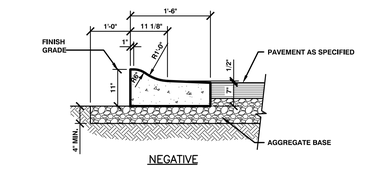


FLAT TOP CATCH BASIN DETAIL

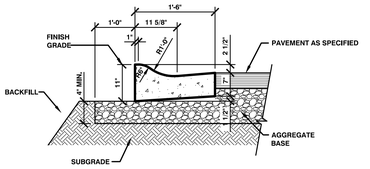
D3 TYPICAL CONCRETE PAVEMENT AT MH AND CB
NTS



E4 CURB TAPER
NTS



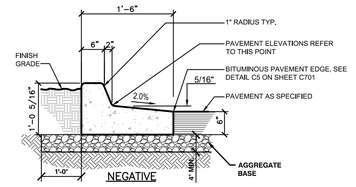
NEGATIVE



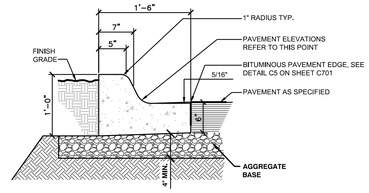
POSITIVE

1. FOR USE OUTSIDE O.C.R.C. RIGHT-OF-WAY INFLUENCE.
2. CURBS MAY BE INSTALLED INTEGRALLY WITH SLAB POUR AT CONTRACTORS OPTION.

E5 ROLLED CURB & GUTTER DETAIL
NTS

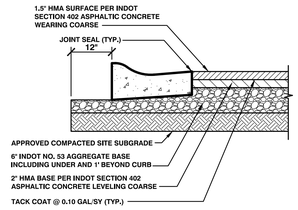


NEGATIVE



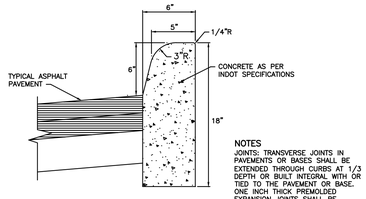
POSITIVE

E6 STRAIGHT CURB AND GUTTER
NTS



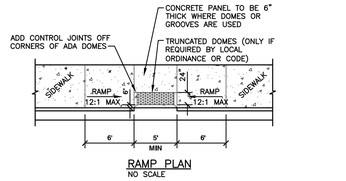
NOTES:
1. ALL ITEM NUMBERS REFER TO LOCAL STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. THE SURFACE FOR BOTH TYPES CAN BE COMPLETED AT THE SAME TIME. ALL PAVEMENT JOINTS SHOULD BE SQUARE WITHOUT FEATHERING.
3. SEE SPECIFICATIONS FOR MODIFICATIONS TO STANDARD BITUMINOUS D.O.T. MIXES.

C1 LIGHT DUTY PAVEMENT SECTION
NTS



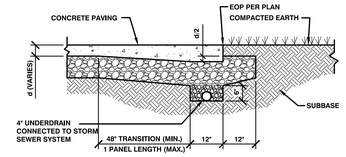
NOTES
JOINTS: TRANSVERSE JOINTS IN PAVEMENTS OR BASES SHALL BE EXTENDED THROUGH CURBS AT 1/3 DEPTH OR BUILT INTEGRAL WITH OR TIED TO THE PAVEMENT OR BASE. ONE INCH THICK PREMOLDED EXPANSION JOINTS SHALL BE CONSTRUCTED AT THE BEGINNING AND END OF INTERSECTION RADIUS CURB AND AT INTERVALS NOT TO EXCEED 300 FT.

C2 6" STRAIGHT CURB
NTS

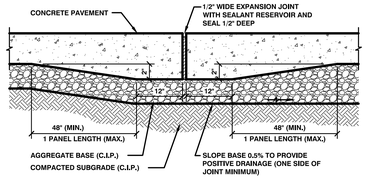


RAMP PLAN
NO SCALE

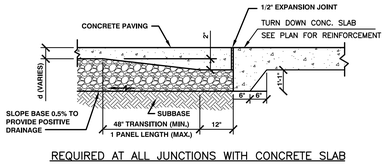
D4 TRUNCATED DOME DETAIL
NTS



REQUIRED AT ALL JUNCTIONS WITH LAWN AREAS

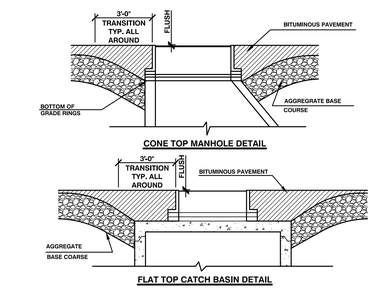


C4 EXPANSION JOINT
NTS

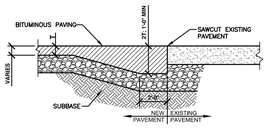


REQUIRED AT ALL JUNCTIONS WITH CONCRETE SLAB

C5 CONCRETE PAVEMENT EDGE DETAIL
NTS

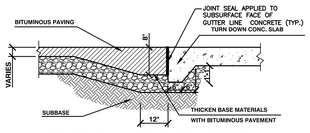


CONE TOP MANHOLE DETAIL



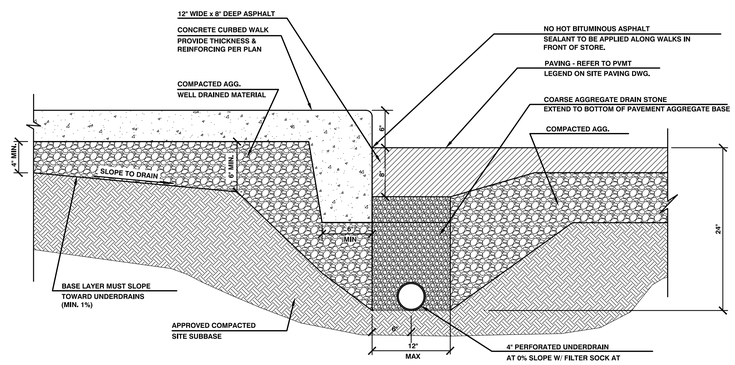
REQUIRED AT ALL JUNCTIONS WITH EXISTING PAVEMENT

FLAT TOP CATCH BASIN DETAIL

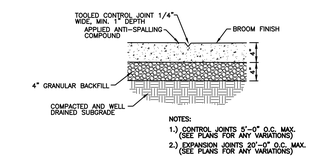


REQUIRED AT ALL JUNCTIONS WITH CONCRETE

B1 BITUMINOUS PAVEMENT EDGE DETAILS
NTS

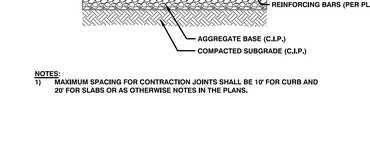


A1 CONCRETE CURBED WALK
NTS



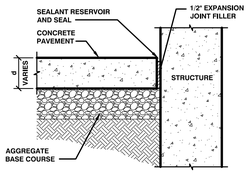
NOTES:
1.) CONTROL JOINTS 5'-0" O.C. MAX. (SEE PLANS FOR ANY VARIATIONS)
2.) EXPANSION JOINTS 20'-0" O.C. MAX. (SEE PLANS FOR ANY VARIATIONS)

A3 CONCRETE WALK DETAIL
NTS

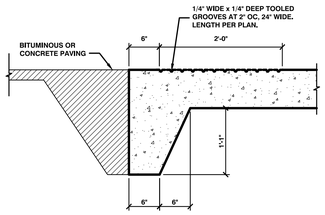


NOTES:
1) MAXIMUM SPACING FOR CONTRACTION JOINTS SHALL BE 10' FOR CURB AND 20' FOR SLABS OR AS OTHERWISE NOTES IN THE PLANS.

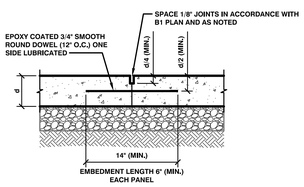
B4 CONTRACTION JOINT (UNDOWELED)
NTS



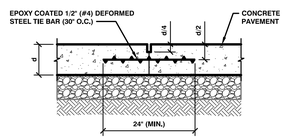
B5 CONCRETE PAVEMENT EDGE
NTS



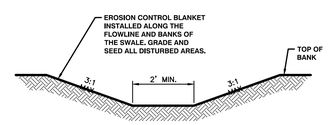
B6 CONCRETE GROOVE DETAIL
NTS



A4 DOWELED BUTT JOINT
NTS



A5 TIED BUTT JOINT
NTS



A6 TYPICAL DRAINAGE SWALE
NTS

WOOLPERT
4454 Idea Center Boulevard
Dayton, OH 43430
937.461.5660

meijer
2929 WALKER AVENUE
GRAND RAPIDS, MICHIGAN 49544
(616) 453-6711

REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9160 E. 56TH STREET
BROWNSBURG, INDIANA 46112

DETAILS

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-702

Images: , Xrefs: 10026635TBLK.dwg
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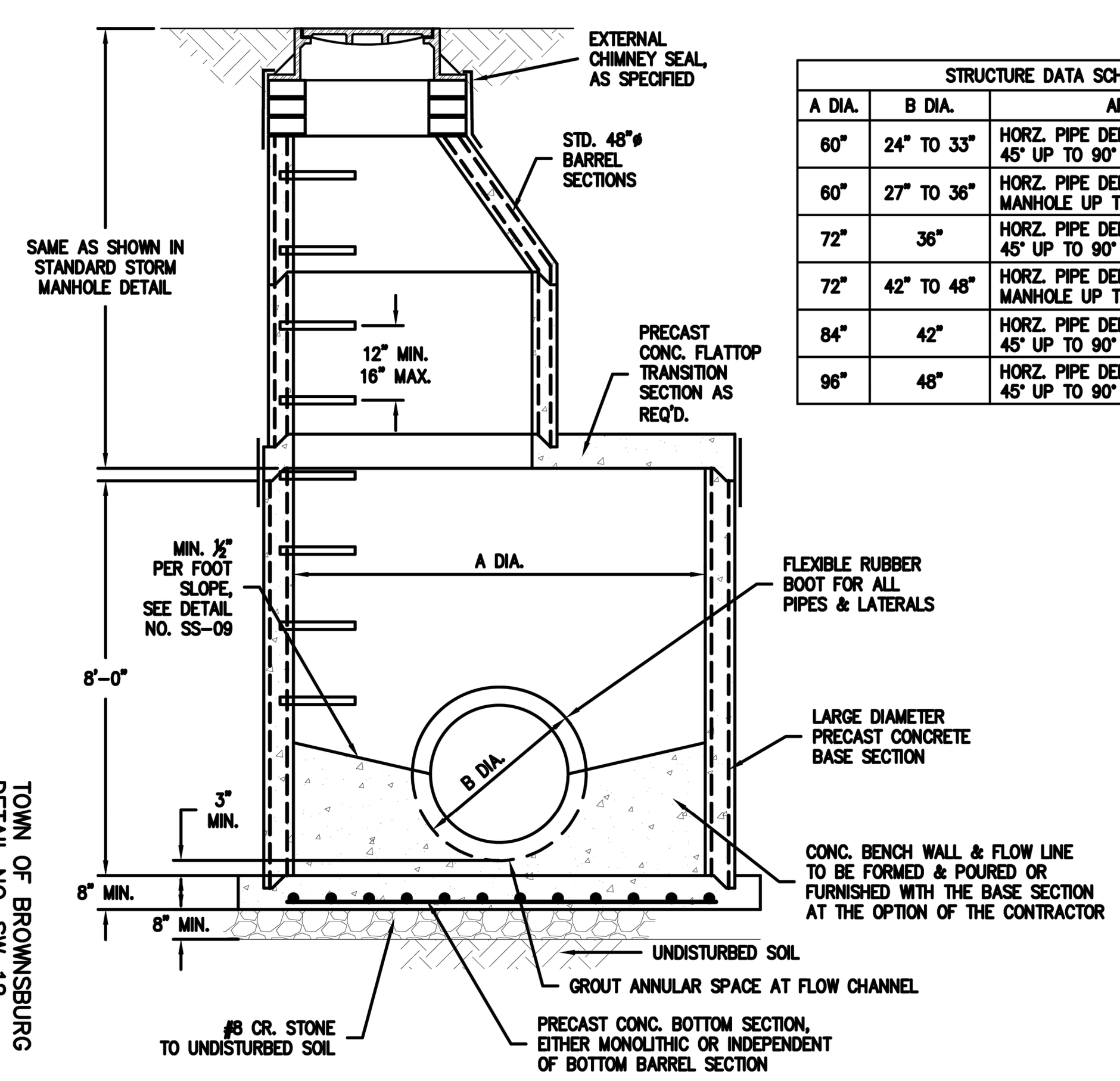
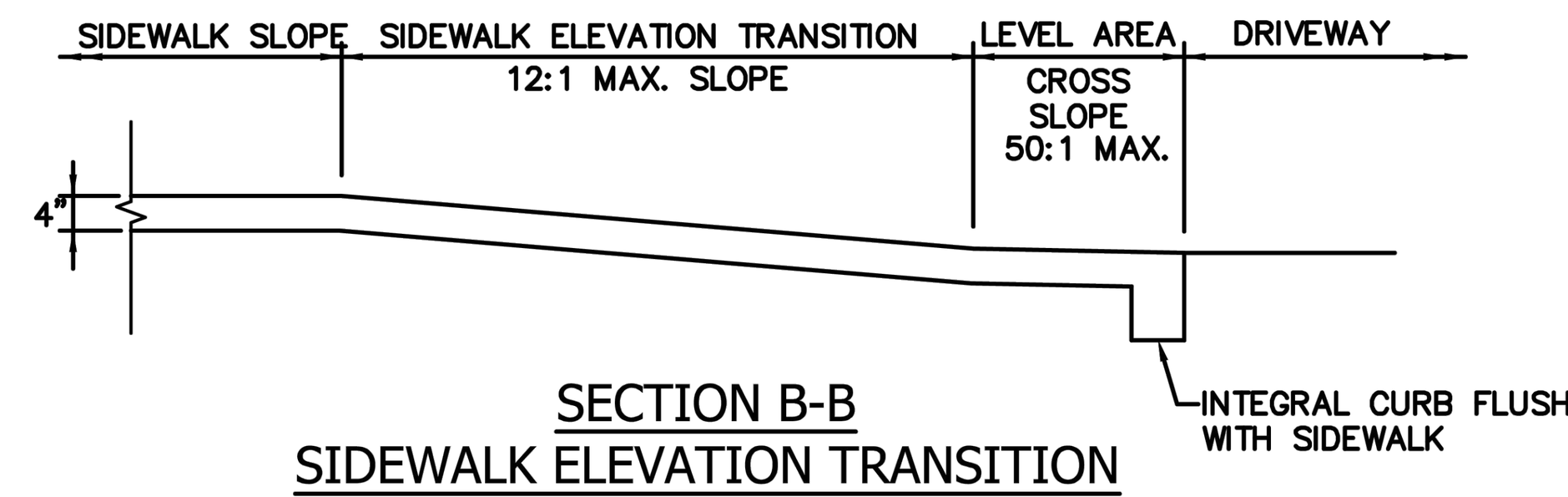
A DIA.	B DIA.	APPLICATION
STRUCTURE DATA SCHEDULE		
60"	24" TO 33"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°
60"	27" TO 36"	HORZ. PIPE DEFLECTION STRAIGHT THRU MANHOLE UP TO 45°
72"	36"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°
72"	42" TO 48"	HORZ. PIPE DEFLECTION STRAIGHT THRU MANHOLE UP TO 45°
84"	42"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°
96"	48"	HORZ. PIPE DEFLECTION GREATER THAN 45° UP TO 90°



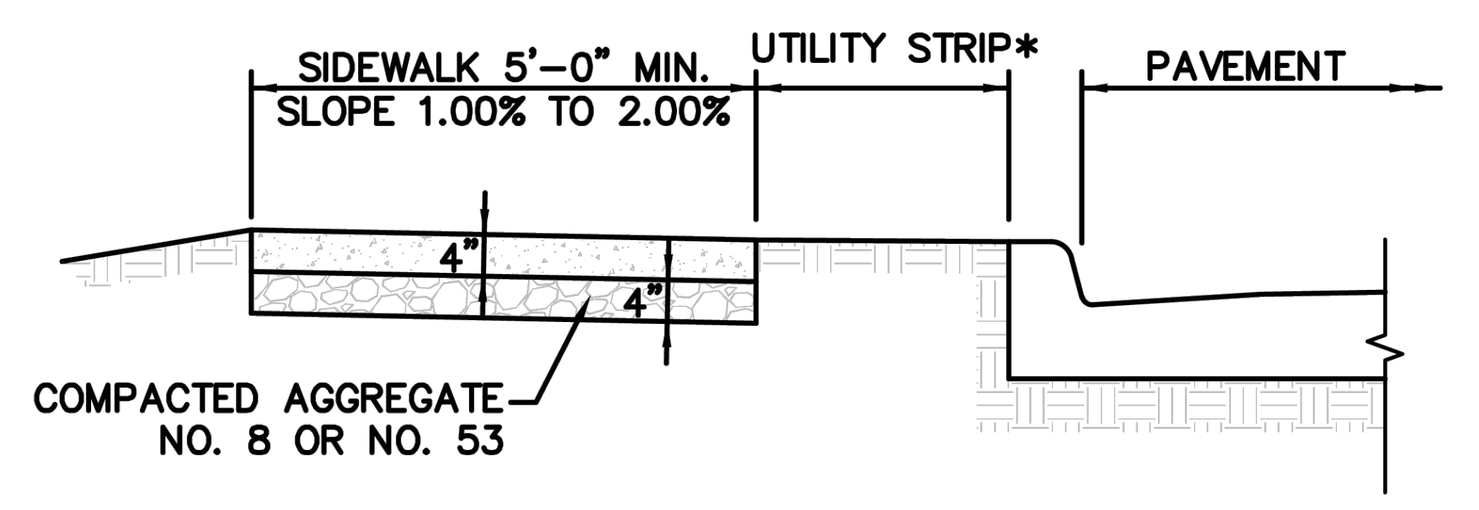
TYPE 1 STORM MANHOLE
NO SCALE

REFER TO SPEC SECTION 02720

TOWN OF BROWNSBURG
DETAIL NO. SW-12
REVISION DATE: FEBRUARY 2024



SECTION B-B
SIDEWALK ELEVATION TRANSITION



SECTION A-A
SIDEWALK WITH UTILITY STRIP

* UTILITY STRIP WIDTH SHALL COMPLY WITH THE CURRENT TOWN OF BROWNSBURG SUBDIVISION CONTROL ORDINANCE AND CURRENT TOWN OF BROWNSBURG THOROUGHFARE PLAN.

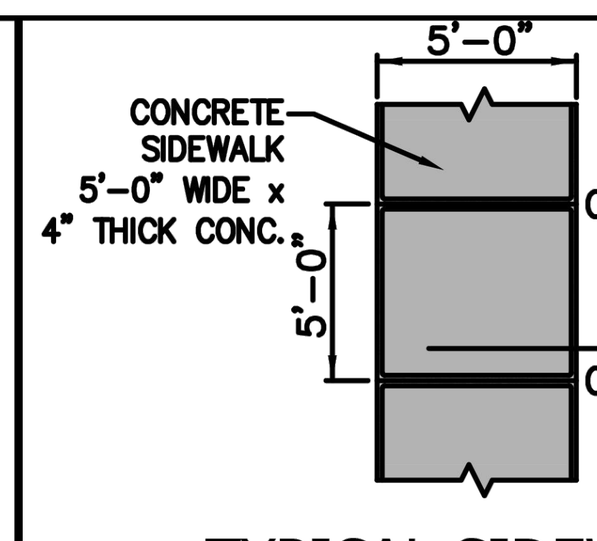
CONCRETE SIDEWALK DETAIL
NO SCALE

NOTE:

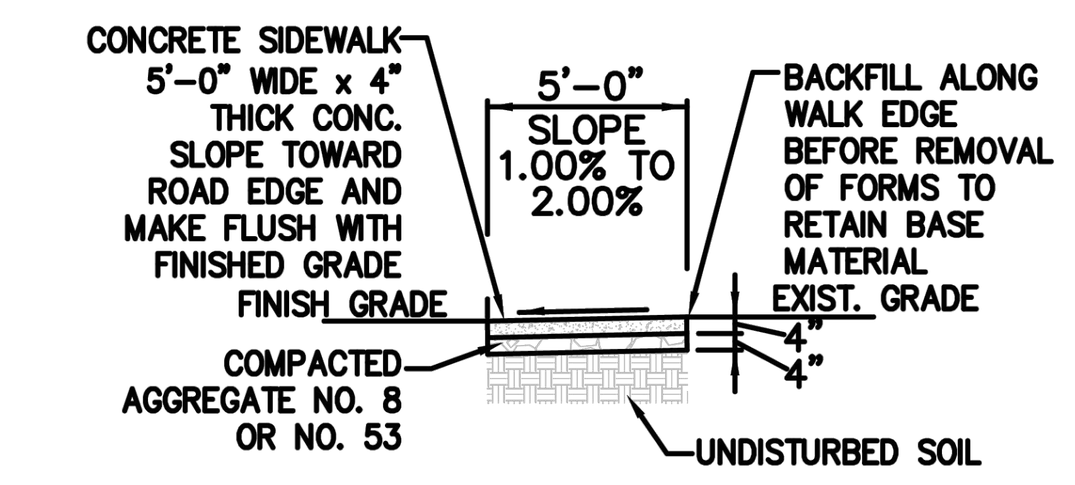
CONCRETE SIDEWALK SHALL BE INSTALLED ON COMPACTED SUBGRADE. NO. 8 OR NO. 53 STONE SHALL BE INSTALLED AND COMPACTED ON THE APPROVED SUBGRADE. CONCRETE SHALL BE INDOT CLASS A CONCRETE AND IT SHALL HAVE A 28-DAY MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4,000 PSI. WHERE A SIDEWALK PASSES THROUGH A DRIVE APPROACH, IT SHALL BE THE SAME THICKNESS AS THE ADJACENT CONCRETE DRIVE, THE CONCRETE EQUIVALENT FOR THE ADJACENT HMA DRIVE, OR SIX (6) INCHES, WHICHEVER IS GREATER.

REFER TO SPEC SECTION 02500, 02502

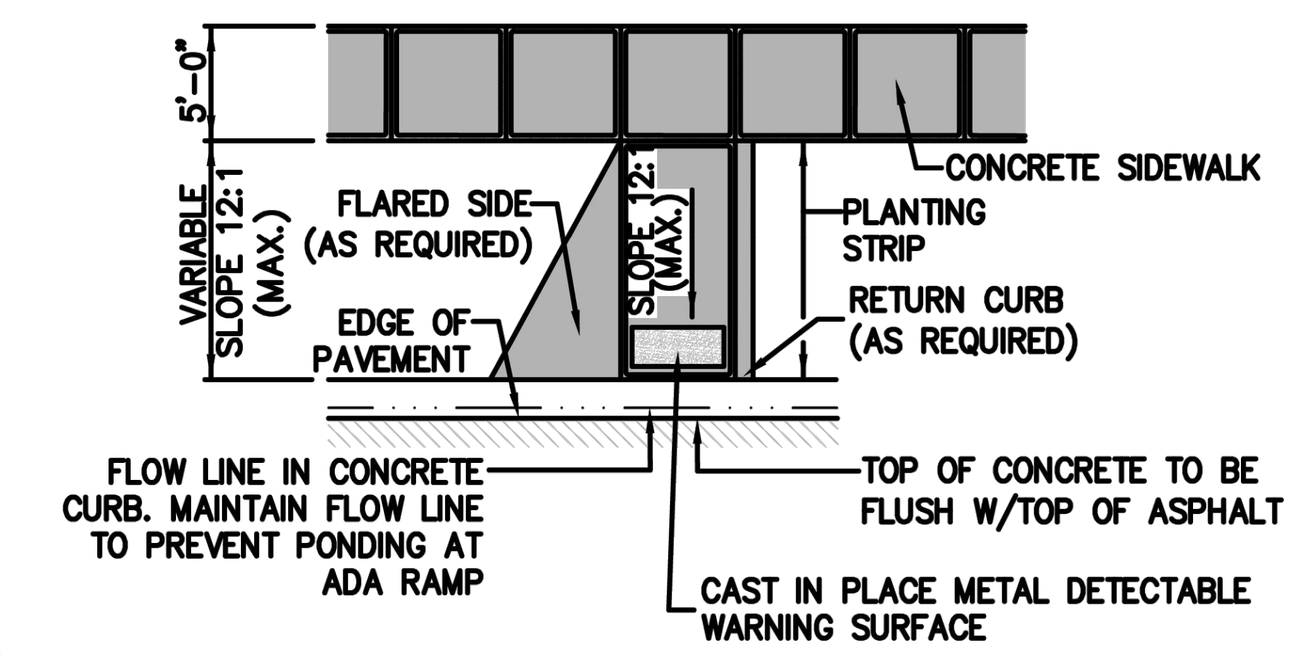
TOWN OF BROWNSBURG
DETAIL NO. TR-06
REVISION DATE: FEBRUARY 2024



TYPICAL SIDEWALK
NO SCALE



SIDEWALK SECTION C-C
NO SCALE



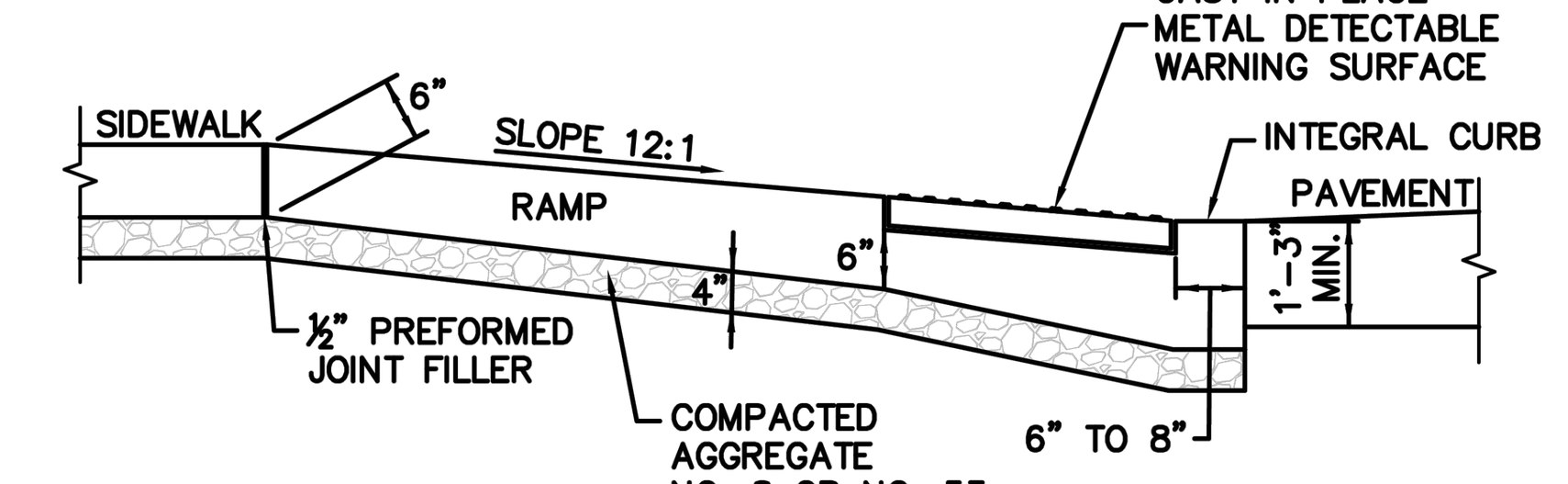
SIDEWALK ADA RAMP DETAIL
NO SCALE

SIDEWALK REQUIREMENTS:

1. CONCRETE FOR SIDEWALKS SHALL MEET THE FOLLOWING SPECIFICATIONS:
   A) 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS
   B) 564 LBS. CEMENT PER CUBIC YARD CONCRETE
   C) MAXIMUM WATER CEMENT RATIO: 0.40
   D) AIR CONTENT: 5%-7%
   E) WATER REDUCING ADMIXTURE REQUIRED
2. SIDEWALKS SHALL HAVE A BROOM FINISH WITH TOOLED EDGES AND TOOLED CONTROL JOINTS.
3. CURING COMPOUND EQUAL TO "HYDROCIDE CURING COMPOUND" AS MANUFACTURED BY SONNEBORN, SHALL BE APPLIED TO FINISHED CONCRETE.
4. EXPANSION/CONTRACTION JOINTS SHALL BE INSTALLED AT MAXIMUM OF 50' INTERVALS, AND WHERE CONCRETE WILL ABUT EXISTING WALKS, CURBING, DRIVES, OR OTHER CONCRETE.
5. EXPANSION/CONTRACTION JOINT SHALL BE INSTALLED WITH THREE (3) 1/4" DIA. SMOOTH DOWEL BARS, EACH 12" LONG. DOWEL BARS SHALL HAVE A FULL END CAP ON ONE END. EXPANSION/CONTRACTION JOINT SHALL BE FILLED WITH EXPANSION JOINT FILLER. CONNECTION TO EXISTING WALKS OR SLABS SHALL REQUIRE DRILLING TO INSTALL DOWELS. EPOXY SHALL BE USED TO SET DOWELS IN EXISTING CONCRETE.
6. AT DRIVEWAYS, CONCRETE SHALL BE REINFORCED WITH 6 x 6 x 6/6 WELDED WIRE FABRIC. REINFORCING WELDED WIRE FABRIC SHALL CONFORM TO ASTM 185-73.
7. SIDEWALK THICKNESS IN DRIVEWAY AND APRON BETWEEN SIDEWALK AND CURB SHALL MATCH THE EXISTING CONCRETE DRIVEWAY, THE EQUIVALENT CONCRETE THICKNESS OF THE HMA DRIVEWAY OR SIX (6) INCHES, WHICHEVER IS GREATER.
8. DETAIL IS MEANT TO PROVIDE GUIDANCE ONLY, RAMPS SHALL MEET THE REQUIREMENT OF INDOT STANDARD DRAWINGS E 604-SWCR AND PROWAG.

REFER TO SPEC SECTION 02500, 02502

TOWN OF BROWNSBURG
DETAIL NO. TR-07
REVISION DATE: FEBRUARY 2024



DETECTABLE WARNING SURFACE DETAIL
NO SCALE

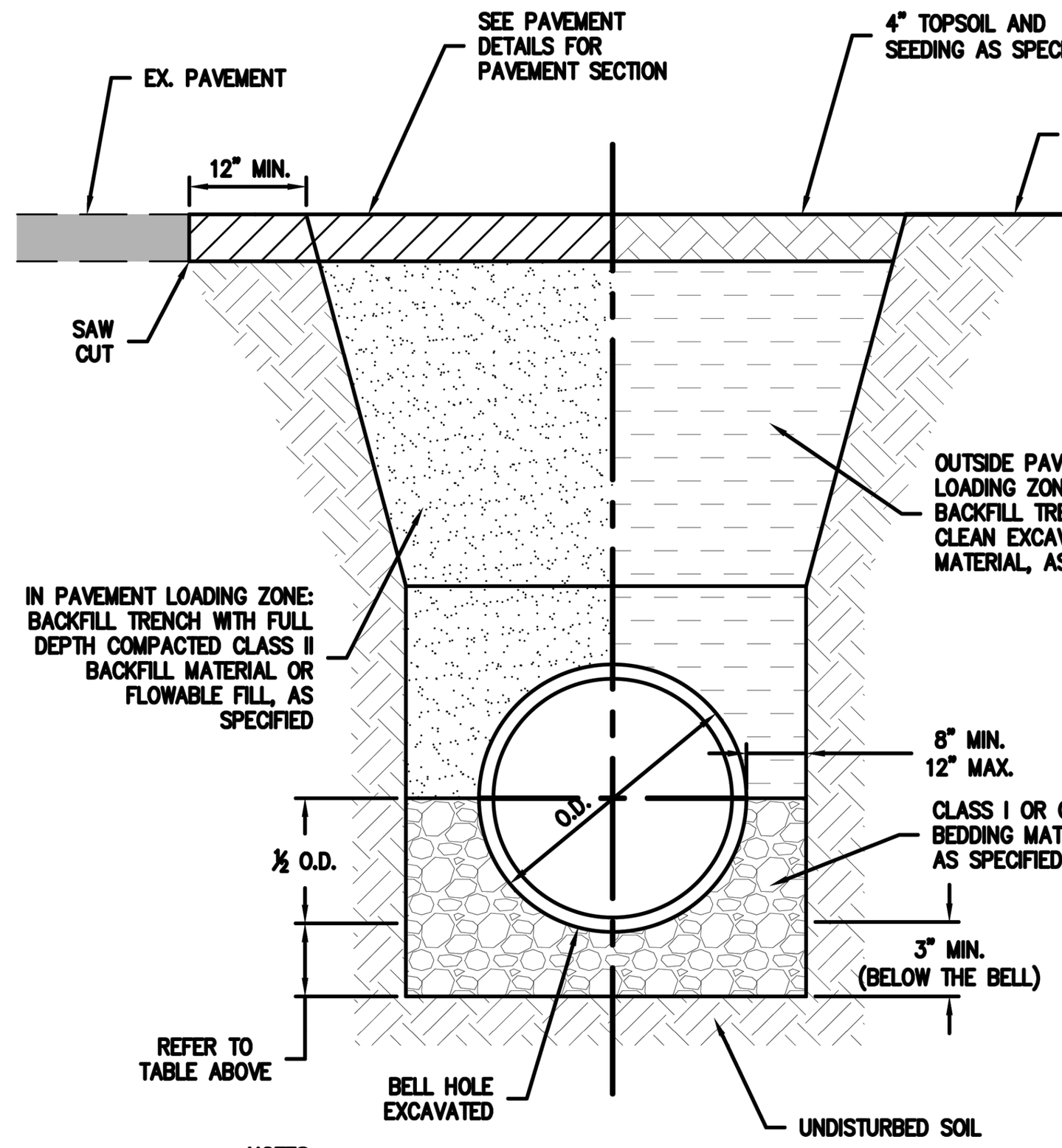
NOTE:

THIS DETAIL SHALL BE USED WHEN ACCESSIBLE RAMPS ARE TO BE INSTALLED. DETECTABLE WARNING SURFACE SHALL MEET APPLICABLE TOWN STANDARDS. WHEN PLACED IN CORNER RADII, MATERIAL SHALL BE CAST IRON DETECTABLE WARNING PLATES, SIMILAR TO NEENAH FOUNDRY PRODUCT, OR APPROVED EQUAL.

REFER TO SPEC SECTION 02500, 02502

TOWN OF BROWNSBURG
DETAIL NO. TR-08
REVISION DATE: FEBRUARY 2024

PIPE SIZE	12" TO 15"	18" TO 30"	36" & OVER
BEDDING BELOW THE PIPE BARREL	4"	O.D. / 4	8"



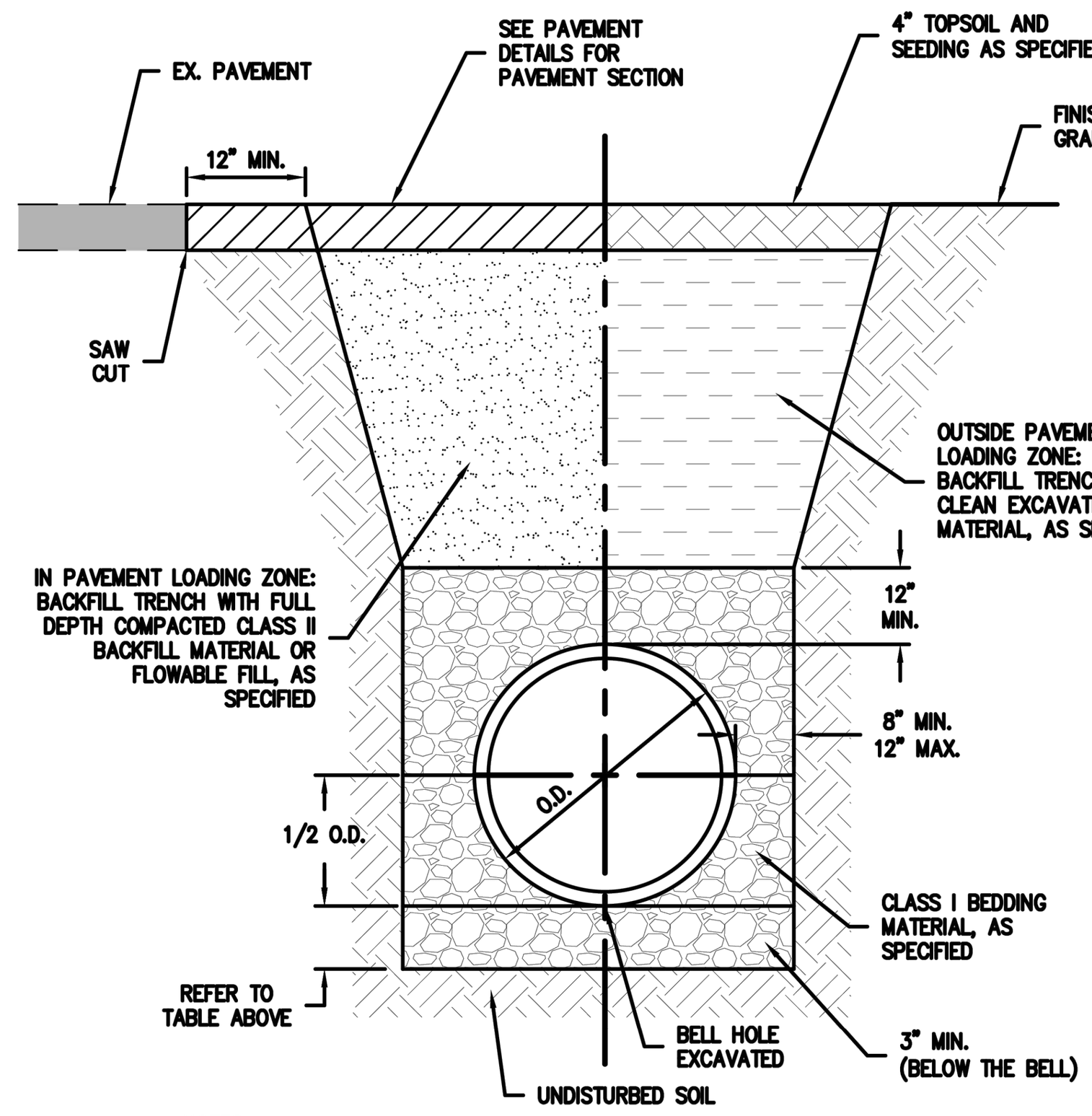
NOTES:
1. RIGID PIPE MATERIALS FOR STORM SEWERS INCLUDE DUCTILE IRON AND REINFORCED CONCRETE PIPE (RCP).
2. RIGID PIPE MATERIALS FOR SANITARY SEWERS INCLUDE DUCTILE IRON PIPE.
3. PAVEMENT LOADING ZONE IS THE AREA WITHIN 5 FEET OF ANY EDGE OF PAVEMENT, CURB, GUTTER, SIDEWALK OR SIMILAR STRUCTURE.

RIGID GRAVITY PIPE TRENCH
NO SCALE

REFER TO SPEC SECTION 02220

TOWN OF BROWNSBURG
DETAIL NO. OT-02
REVISION DATE: FEBRUARY 2024

PIPE SIZE	12" TO 15"	18" TO 30"	36" & OVER
BEDDING BELOW THE PIPE BARREL	4"	O.D. / 4	8"

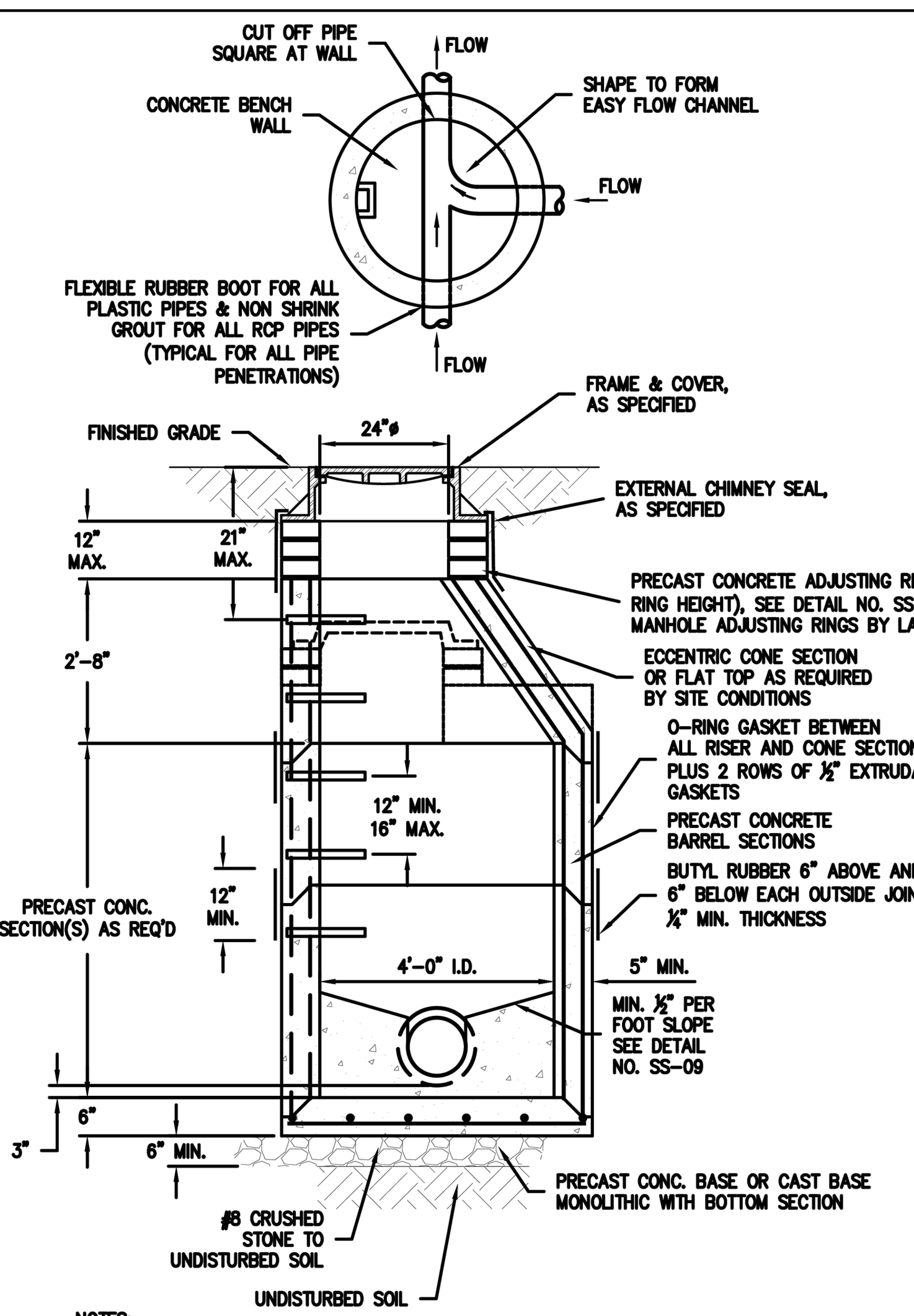


NOTES:
1. INSTALLATION OF FLEXIBLE PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321.
2. FLEXIBLE PIPE MATERIALS FOR STORM SEWERS INCLUDE HIGH DENSITY POLYETHYLENE (HDPE), POLYPROPYLENE, AND POLYVINYL CHLORIDE (PVC) PIPE.
3. FLEXIBLE PIPE MATERIALS FOR SANITARY SEWERS INCLUDE POLYVINYL CHLORIDE (PVC) PIPE.
4. PAVEMENT LOADING ZONE IS THE AREA WITHIN 5 FEET OF ANY EDGE OF PAVEMENT, CURB, GUTTER, SIDEWALK OR SIMILAR STRUCTURE.

FLEXIBLE GRAVITY PIPE TRENCH
NO SCALE

REFER TO SPEC SECTION 02220

TOWN OF BROWNSBURG
DETAIL NO. OT-04
REVISION DATE: FEBRUARY 2024

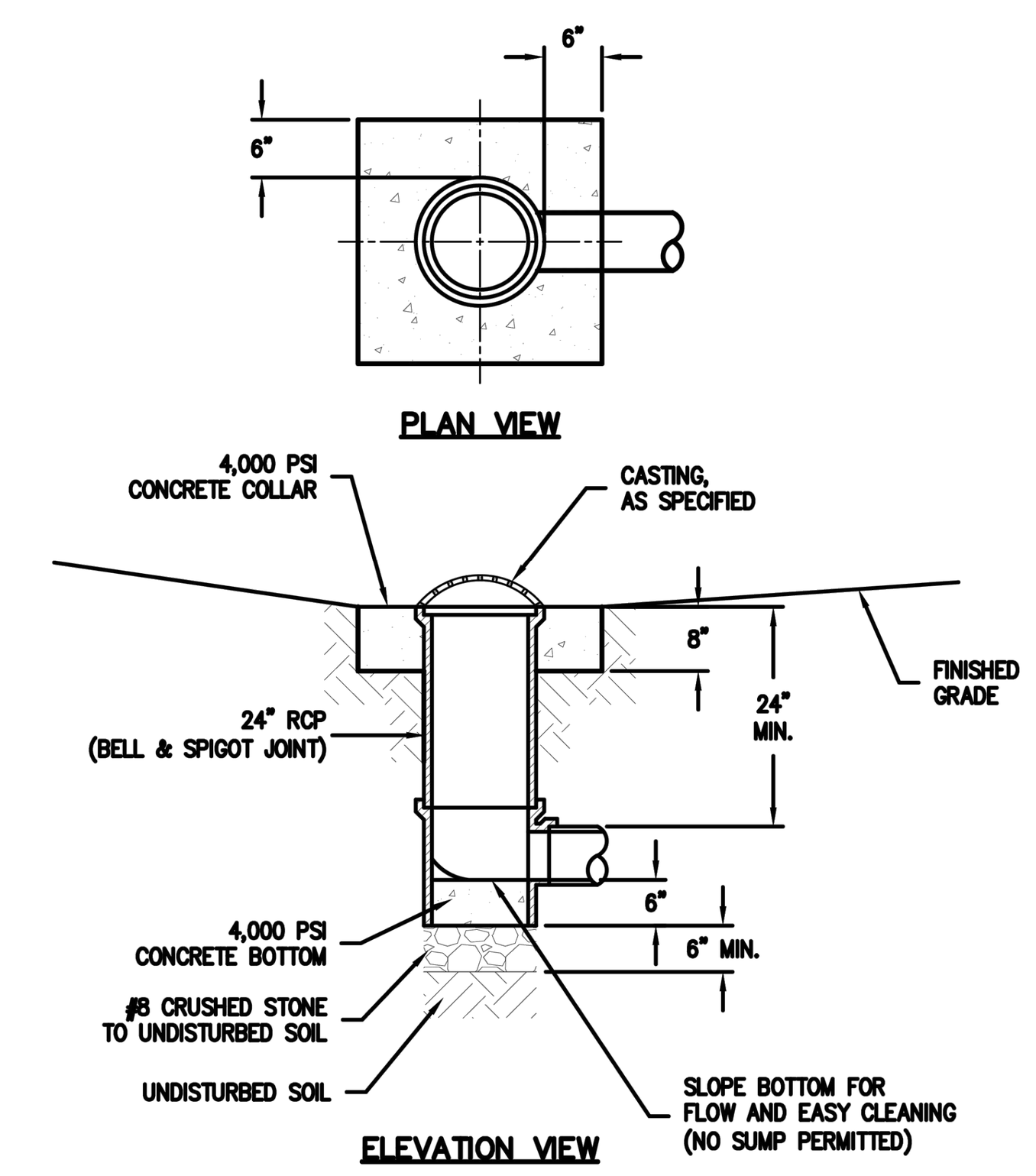


NOTES:
1. PROVIDE GRATE CASTING WITH A POLLUTION PREVENTION MESSAGE AND ICON WHICH ARE PERMANENTLY ATTACHED OR CAST DIRECTLY INTO THE CASTING. THE CASTING SHALL HAVE THE MESSAGE "DUMP NO WASTE <FISH ICON> DRAINS TO WATERWAY" IN MINIMUM 1 INCH HIGH LETTERS.
2. INSTALL CASTING ¼" BELOW FINISHED PAVEMENT ELEVATION.

STANDARD STORM MANHOLE
NO SCALE

REFER TO SPEC SECTION 02720

TOWN OF BROWNSBURG
DETAIL NO. SW-11
REVISION DATE: FEBRUARY 2024



NOTES:
1. YARD INLET ONLY TO BE USED IN YARD OR SWALE LOCATIONS. YARD INLET IS NOT PERMITTED IN TRAFFIC LOCATIONS.
2. PROVIDE GRATE CASTING WITH A POLLUTION PREVENTION MESSAGE AND ICON WHICH ARE PERMANENTLY ATTACHED OR CAST DIRECTLY INTO THE CASTING. THE CASTING SHALL HAVE THE MESSAGE "DUMP NO WASTE <FISH ICON> DRAINS TO WATERWAY" IN MINIMUM 1 INCH HIGH LETTERS.

YARD INLET
NO SCALE

REFER TO SPEC SECTION 02720

TOWN OF BROWNSBURG
DETAIL NO. SW-14
REVISION DATE: FEBRUARY 2024

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REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

TOWN OF BROWNSBURG DETAILS

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-703

Images: , Xrefs: 10026635TBLK.dwg
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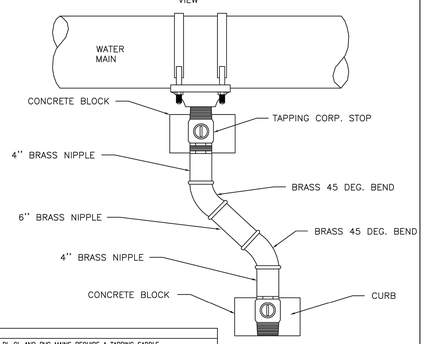
CITIZENS WATER
STANDARD PRACTICE N

REVISION DATE: 7/25/2018 ISSUE DATE: 6/8/2009

1-1/2" & 2" SERVICE LINE
SWING JOINT



NOTES:
1) ALL SIZE DI, CI, AND PVC MAINS REQUIRE A TAPPING SADDLE
2) ALL SIZE POLY MAINS REQUIRE A FUSED ON TAPPING SADDLE FOR 1-1/2" AND 2" SERVICE LINES.
3) SADDLE AND TAPPING CORP. STOP SUPPLIED & INSTALLED BY CCG. THIS MATERIAL WILL NOT BE SUPPLIED ON DEVELOPER PROJECTS.
4) ALL TAP EXCAVATIONS ARE REQUIRED TO BE BACKFILLED WITH GRANULAR OR FLOWABLE FILL TO A POINT 1'-0" ABOVE WATER MAIN
5) SWING JOINT DIRECTION MUST NOT DEVIATE FROM DRAWING.
6) A COMPRESSION FITTING MUST BE USED OUT OF CURB STOP TO SERVICE LINE.
7) STIFFENERS MUST BE USED ON ALL POLY SERVICES.
8) 4" PLASTIC RISER W/ 5-1/4" VALVE BOX MUST BE INSTALLED OVER CURB STOP AND RESTING ON CONCRETE BLOCK.
9) POLY SERVICES REQUIRE A TRACER WIRE WHICH SHOULD BE ROUTED ON THE OUTSIDE OF THE 4" RISER THEN STUBBED INSIDE THE RISER AT THE TOP. VERIFY THIS WIRE DOES NOT INTERFERE WITH THE OPERATION OF THE CURB STOP.

CITIZENS WATER
STANDARD PRACTICE O

REVISION DATE: 11/06/2023 ISSUE DATE: 6/8/2009

INSTALLATION OF RESTRAINTS

MAIN ENDING WITH BLOW-OFF ASSEMBLY OR HYDRANT

6" & 8" MAINS WITH BLOW-OFF — MAIN SIZE TAPPED PLUG, B.O.

MAINS 10" & LARGER WITH BLOW-OFF — B.O., MJ, 6" PLUG WITH 2" TAP, KICKER REQUIRED, MAIN SIZE X 6" TEE, MAIN SIZE PLUG

6" MAINS WITH HYDRANT — MJ

8" MAINS WITH HYDRANT — MJ MJ

10" MAINS & LARGER WITH HYDRANT — MJ, KICKER REQUIRED, MAIN SIZE PLUG

1 JOINT RESTRAINT & 1 MECHANICAL JOINT RESTRAINT MIN. 20'

IN-LINE FITTINGS

(2) JOINT RESTRAINT ON EACH SIDE — 6" & 8": MJ MJ; 10" & LARGER

(2) JOINT RESTRAINTS AND (1) MECH. JOINT RESTRAINT ON EACH SIDE

BEND RESTRAINT

1. ALL BENDS REQUIRE RESTRAINERS.
2. ALL BENDS ARE DUCTILE IRON AND REQUIRE (1) MECHANICAL JOINT RESTRAINT ON EACH SIDE OF THE FITTING.
3. 22 1/2° BENDS REQUIRE ONLY MECHANICAL JOINT RESTRAINTS AND 30° BENDS REQUIRE MECHANICAL JOINT RESTRAINTS AND A SET OF JOINT RESTRAINTS 40' EACH SIDE OF THE FITTING.
4. THRUST BLOCK REQUIRED ON ALL 45° & 90° BENDS.

MAIN LINE REDUCER

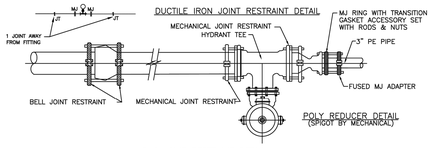
6" & 8": USE 1 MECHANICAL JOINT RESTRAINT & 1 JOINT RESTRAINER @ MIN. 20' ON EACH SIDE OF REDUCER. MJ MJ

10" & LARGER: USE 2 JOINT RESTRAINERS ON THE LARGER SIDE @ MIN. 20' ON THE SMALL SIDE @ MIN. 20'. MJ MJ

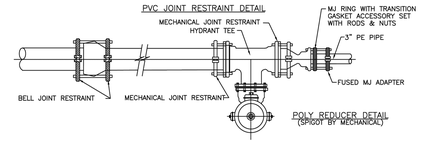
FITTING RESTRAIN WITH PE PIPE

WATER STOP, MJ ADAPTER, MJ PVC OR DI, PE PIPE, ANY FITTING

DUCTILE IRON JOINT RESTRAINT DETAIL



PVC JOINT RESTRAINT DETAIL



CITIZENS WATER
STANDARD PRACTICE O.1

REVISION DATE: 8/25/2010 ISSUE DATE: 9/1/2010

VEHICLE IMPACT PROTECTION FOR HYDRANTS

ADOPTED CODE FOR THE STATE OF INDIANA, TAKEN FROM THE 2006 INTERNATIONAL FIRE CODE.

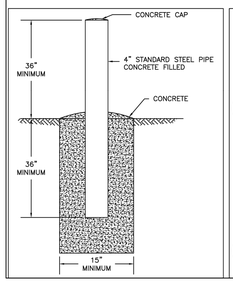
SECTION 312 VEHICLE IMPACT PROTECTION

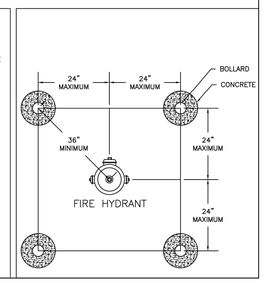
312.1 GENERAL. VEHICLE IMPACT PROTECTION REQUIRED BY THIS CODE SHALL BE PROVIDED BY POSTS THAT COMPLY WITH SECTION 312.2 OR BY OTHER APPROVED PHYSICAL BARRIERS THAT COMPLY WITH SECTION 312.3.

312.2 POSTS. GUARD POSTS SHALL COMPLY WITH ALL OF THE FOLLOWING REQUIREMENTS:

1. CONSTRUCTED OF STEEL NOT LESS THAN 4 INCHES (102 MM) IN DIAMETER AND CONCRETE FILLED.
2. SPACED NOT MORE THAN 4 FEET (1219 MM) BETWEEN POSTS ON CENTER.
3. SET NOT LESS THAN 3 FEET (914 MM) DEEP IN A CONCRETE FOOTING OF NOT LESS THAN A 15-INCH (381 MM) DIAMETER.
4. SET WITH THE TOP OF THE POSTS NOT LESS THAN 3 FEET (914 MM) ABOVE GROUND.
5. LOCATED NOT LESS THAN 3 FEET (914 MM) FROM THE PROTECTED OBJECT

312.3 OTHER BARRIERS. PHYSICAL BARRIERS SHALL BE A MINIMUM OF 36 INCHES (914 MM) IN HEIGHT AND SHALL RESIST A FORCE OF 12,000 POUNDS (53 375 N) APPLIED 36 INCHES (914 MM) ABOVE ADJACENT GROUND SURFACE.



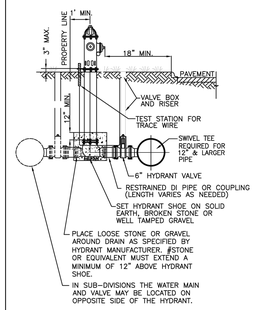


CITIZENS WATER
STANDARD PRACTICE B

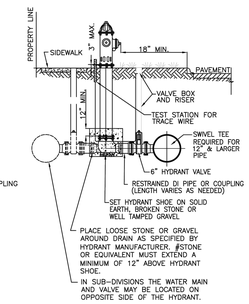
REVISION DATE: 10/02/2019 ISSUE DATE: 12/31/2019

STANDARD HYDRANT SETTING

NOTES:
1. ALL HYDRANTS SHALL BE RESTRAINED TO THE HYDRANT TEE WITH DUCTILE IRON BRANCH PIPING ENCASED IN POLYETHYLENE WRAP.
2. SWIVEL 90° BEND MAY BE USED TO INSTALL HYDRANT AND VALVE IN GRASS STRIP BETWEEN CURB & SIDEWALK.
3. A MANUFACTURED "OUT OF SERVICE" SIGN WILL BE REQUIRED ON HYDRANTS UNTIL MAIN HAS BEEN PLACED "IN SERVICE" BY THE INSPECTOR.
4. FOR BRANCH PIPE LONGER THAN 10', INSTALL TRACING WIRE ALONG HYDRANT VALVE RISER.



SECTION VIEW
(WITHOUT SIDEWALK)



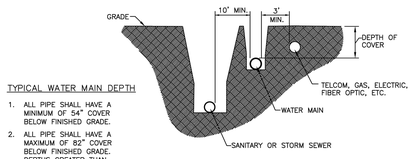
SECTION VIEW
(WITH SIDEWALK)

CITIZENS WATER
STANDARD PRACTICE A

REVISION DATE: 09/29/2021 ISSUE DATE: 6/8/2009

WATER MAIN SEPARATION FROM OTHER UTILITIES

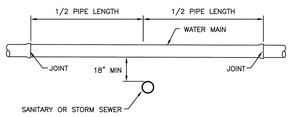
NOTE:
WATER MAIN AND SANITARY SEWERS SHALL BE PLACED IN SEPARATE TRENCHES.



TYPICAL WATER MAIN DEPTH

1. ALL PIPE SHALL HAVE A MINIMUM OF 54" COVER BELOW FINISHED GRADE.
2. ALL PIPE SHALL HAVE A MAXIMUM OF 82" COVER BELOW FINISHED GRADE. DEPTHS GREATER THAN 82" COVER WILL REQUIRE A LOWERING

WATER MAIN LAYING PARALLEL TO OTHER UTILITIES SECTION VIEW

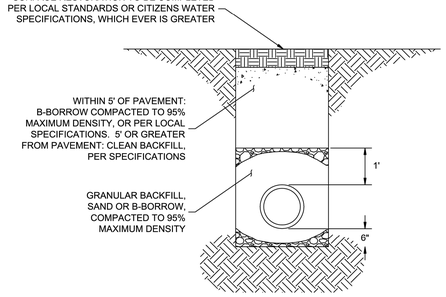


WATER MAIN CROSSING SEWER SECTION VIEW

CITIZENS WATER
STANDARD PRACTICE A.1

REVISION DATE: 9/20/2018 ISSUE DATE: 7/17/2013

WATER MAIN AND SERVICE BACKFILL REQUIREMENTS



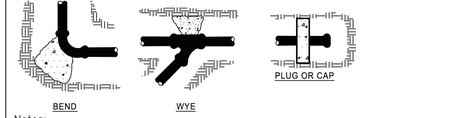
SCALE: NTS

NOTE:
COMPACTED BACKFILL IN LIFTS OF 12" MAXIMUM. TRENCH EXCAVATION SHALL CONFORM TO LOCAL STANDARDS.

CITIZENS WATER
STANDARD PRACTICE A.2

REVISION DATE: 10/02/2019 ISSUE DATE: 12/31/2019

THRUST BLOCKING



Notes:
1) CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2) KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3) POLYETHYLENE ENCASEMENT SHALL BE PLACED BETWEEN CONCRETE AND FITTINGS.
4) ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3,000 P.S.I., 2" TO 4" SLUMP AND INCLUDE WIRE MESH FOR REINFORCEMENT.
5) MINIMUM SOIL BEARING SURFACE AREA REQUIREMENTS ARE PROVIDED BELOW BASED ON 150 P.S.I. WATER PRESSURE PLUS 100 P.S.I. WATER HAMMER AND SOIL BEARING CAPACITY OF 3,000 POUNDS PER SQUARE FOOT.

Minimum Soil Bearing Surface Area (ft2) (Assuming 3,000 psf Soil Bearing Capacity)				
Pipe Size	Horizontal Bends			Tee or Dead End (Plug/Cap)
	22-1/2°	45°	90°	
6"		6	8	6
8"		6	8	6
12"	4	6	11	8
16"	6	11	22	15
20"	9	18	36	24
24"	13	27	50	36
30"	20	45	76	57
36"	31	59	115	80

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REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

WATER DETAILS

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-704

Images: , Xrefs: 10026633TBLK.dwg
Layout: C-704 WATER DETAILS
Last Saved By:BVanGorder, 1/26/2026 10:07:49 AM
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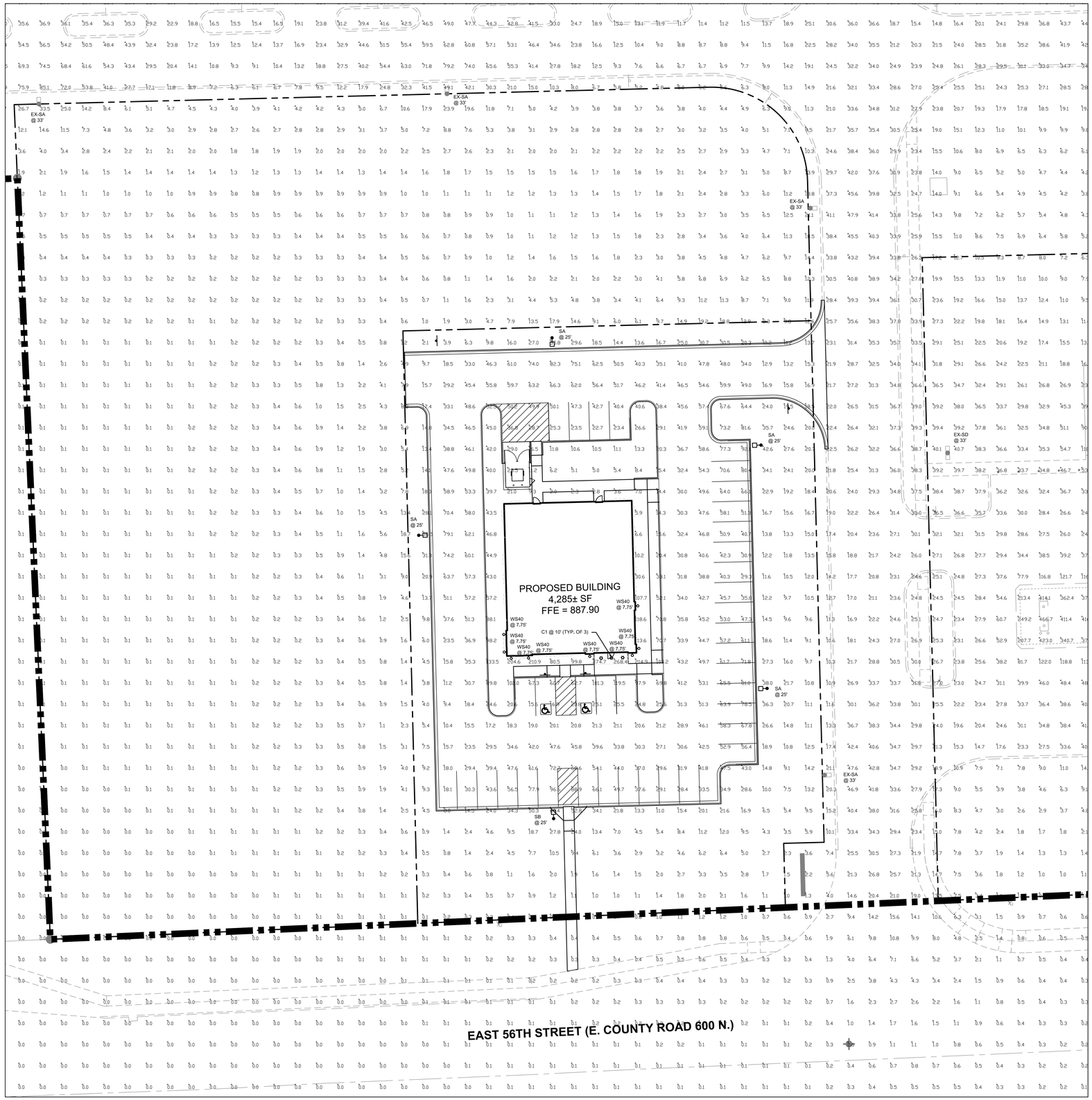
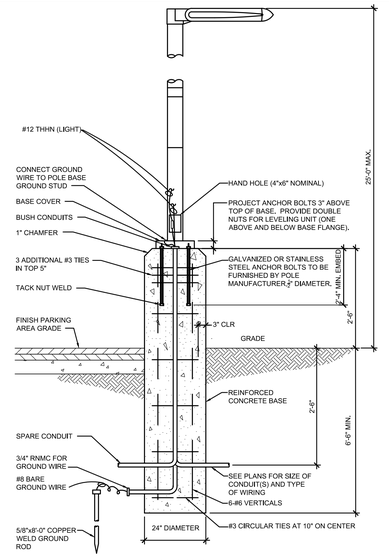


A1 PHOTOMETRIC PLAN
1"=20'

NORTH



D6 RAISED CONCRETE LIGHTING BASE DETAIL
NTS

STATISTICAL AREA SUMMARY					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
SITE	14.8	466.7	0.0	N.A.	N.A.
DENTAL OFFICE SITE	34.3	274.7	0.2	171.7	1374
PARKING LOT	51.9	96.6	8.0	6.5	12.1
PROPERTY LINE	6.8	19.2	0.1	68.2	192.0

NOTES:
1. CALCULATION POINTS IN LUX (LUMEN / SQUARE METER) PER TOWN OF BROWNSBURG GUIDELINES.
2. MOUNTING HEIGHT VARIES. SEE LABEL ON PLAN.

C6 CALCULATION SUMMARY
NTS

LUMINAIRE SCHEDULE					
LABEL	QTY	TAG	DESCRIPTION	LUM. LUMENS	LLF
WS40	8	WALL MOUNTED, LED	REFER TO LIGHTING FIXTURE IN ARCHITECTURAL PLAN SET	4270	0.810
SA	3	SITE LIGHT ARM MOUNTED, TYPE 3 BACKLIGHT CONTROL, 32,000 LUMEN LED, 22.5' POLE	RSX3 LED P4 40K R3 HS	28386	0.810
SB	1	SITE LIGHT ARM MOUNTED, TYPE 4 BACKLIGHT CONTROL, 34,000 LUMEN LED, 22.5' POLE	RSX3 LED P4 40K R4 HS	26929	0.810
C1	3	CANOPY MOUNTED, LED	REFER TO LIGHTING FIXTURE IN ARCHITECTURAL PLAN SET	4142	0.810

B5 LUMINAIRE SCHEDULE
NTS

0 20 40 60
GRAPHIC SCALE IN FEET

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REV.	DATE	DESCRIPTION

MEIJER OUTLOT #338A
9180 E. 56TH STREET
BROWNSBURG, INDIANA 46112

PHOTOMETRIC PLAN

ISSUED FOR:	
PERMIT	01/29/26
BID	XX/XX/26
CONSTRUCTION	XX/XX/26

PROJECT MANAGER	DESIGNER
BLS	JMR

JOB NO.
10026635

C-800

Images: , Xrefs: 10026635-p.dwg; 10026635-x.dwg; 10026635TBLK.dwg; 10026635-photometrics.dwg
Layout Tab Name: C-800 PHOTOMETRIC PLAN
Last Saved By:Bischof, 12/29/2025 11:04:36 AM
G:\DE\Clients\Meijer\10026635 Meijer 338A-OD1, Brownsburg, IN\4.0 Disciplines\Civil\Cadd\Cd\10026635-LTG.dwg Plotted By:VanGorder, Brianne Plotted:January 29, 2026, 10:58:14 AM



MATERIAL	PERCENTAGE
BRICK	48%
EIFS	52%

WEST ELEVATION



MATERIAL	PERCENTAGE
BRICK	67%
EIFS	33%

SOUTH ELEVATION

MATERIALS

BRICK + SOLDIER
TAYLOR BRICK
'319 GREY
MODULAR WIRECUT'

BRICK + SOLDIER
TAYLOR BRICK
'323 GREY
MODULAR WIRECUT'

EIFS
SHERWIN WILLIAMS
SW7015
'REPOSE GREY'

CANVAS AWNING
SUNBRELLA
'HOGAN CAROB'

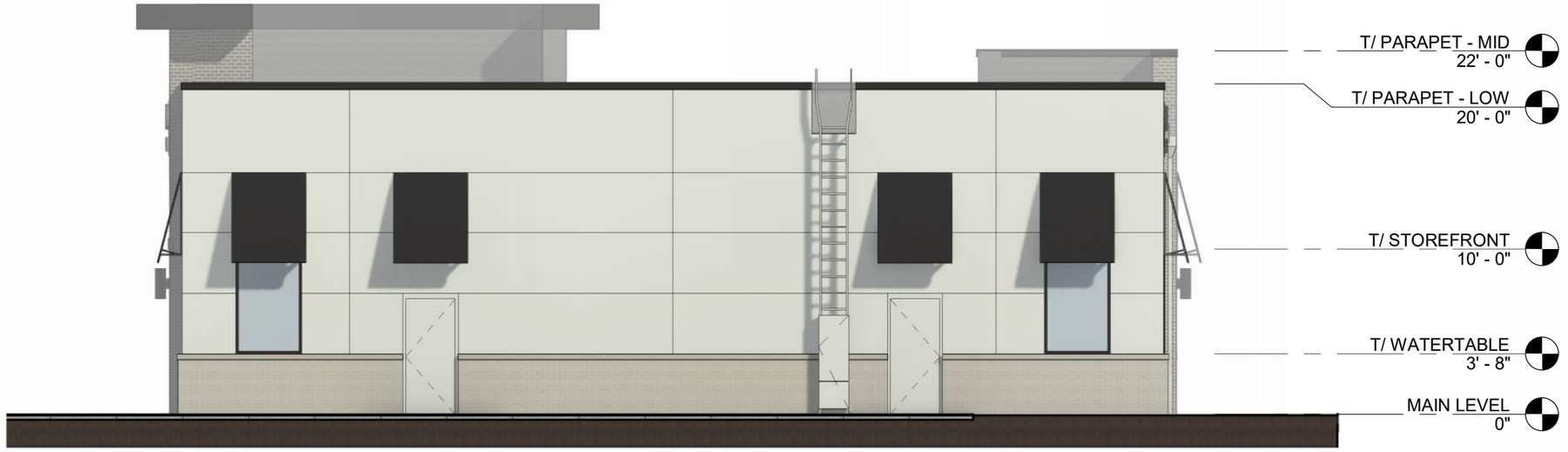
STOREFRONT
+ ACCENT METALS
'DARK BRONZE'

DP3 ARCHITECTS

DENTAL OFFICE BROWNSBURG, IN EAST 56TH STREET

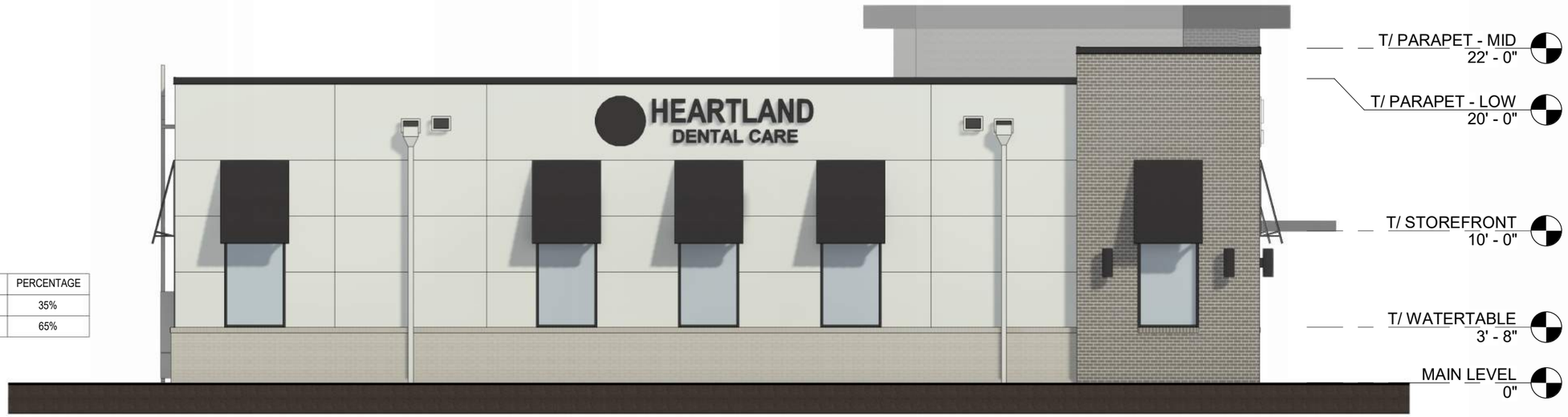
CONCEPT ELEVATIONS 22 DEC 2025

MATERIAL	PERCENTAGE
BRICK	18%
EIFS	82%



NORTH ELEVATION

MATERIAL	PERCENTAGE
BRICK	35%
EIFS	65%



EAST ELEVATION

MATERIALS



BRICK + SOLDIER
TAYLOR BRICK
'323 GREY
MODULAR WIRECUT'



BRICK + SOLDIER
TAYLOR BRICK
'323 GREY
MODULAR WIRECUT'



EIFS
SHERWIN WILLIAMS
SW7015
'REPOSE GREY'



CANVAS AWNING
SUNBRELLA
'HOGAN CAROB'



STOREFRONT
+ ACCENT METALS
'DARK BRONZE'

DP3 ARCHITECTS

DENTAL OFFICE BROWNSBURG, IN EAST 56TH STREET

CONCEPT ELEVATIONS 22 DEC 2025



DP3 ARCHITECTS

DENTAL OFFICE BROWNSBURG, IN EAST 56TH STREET

CONCEPT PERSPECTIVES 22 DEC 2025



DP3 ARCHITECTS

DENTAL OFFICE BROWNSBURG, IN EAST 56TH STREET

CONCEPT PERSPECTIVES 22 DEC 2025



DP3 ARCHITECTS

DENTAL OFFICE BROWNSBURG, IN EAST 56TH STREET

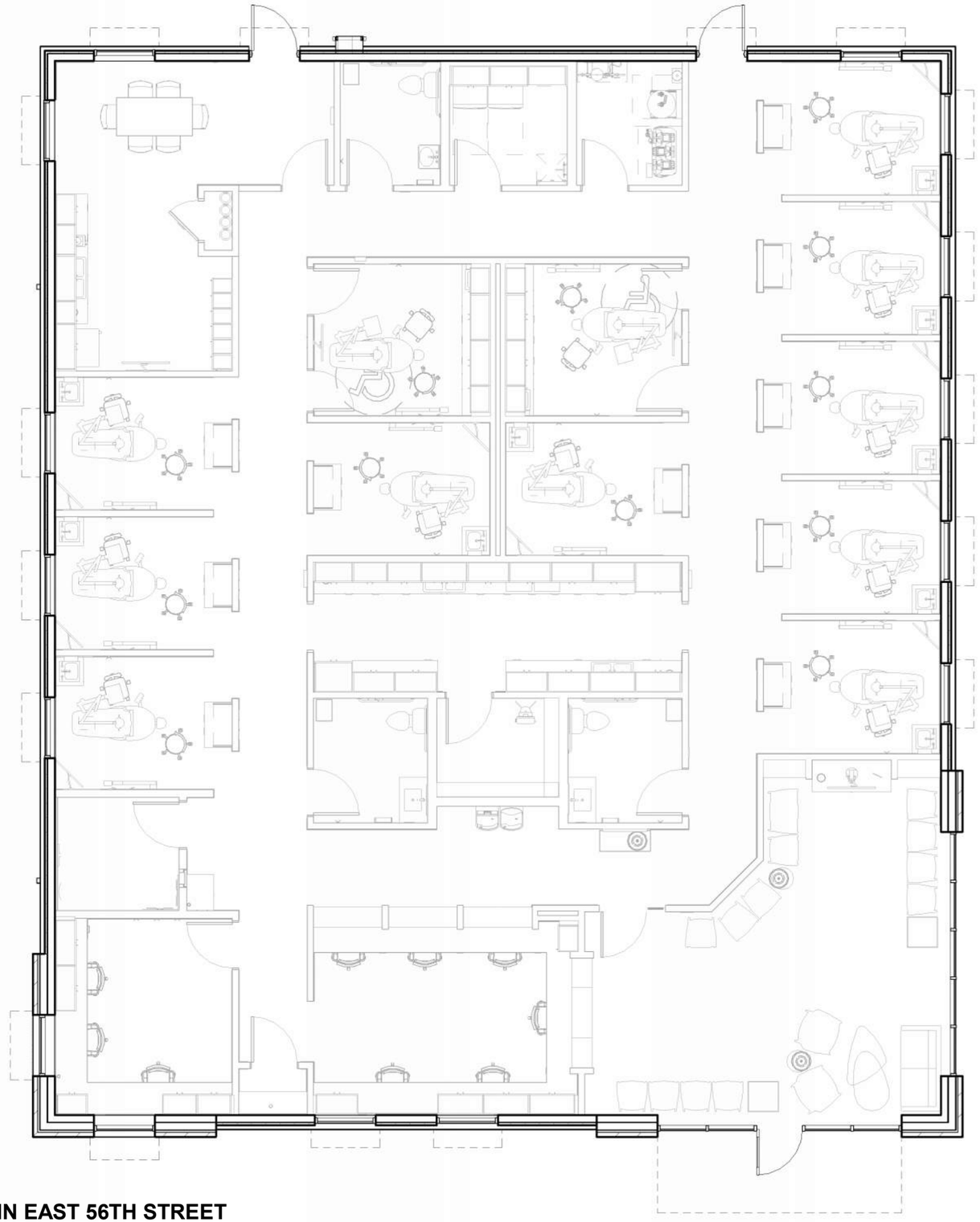
CONCEPT PERSPECTIVES 22 DEC 2025



DP3 ARCHITECTS

DENTAL OFFICE BROWNSBURG, IN EAST 56TH STREET

CONCEPT PERSPECTIVES 22 DEC 2025



DP3 ARCHITECTS

DENTAL OFFICE BROWNSBURG, IN EAST 56TH STREET

CONCEPT PLAN 22 DEC 2025

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TRAFFIC IMPACT STUDY

PROPOSED RESIDENTIAL DEVELOPMENT
"HAWK'S LANDING"

BROWNSBURG, INDIANA

PREPARED FOR

David Weekley Homes

NOVEMBER 2025

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CERTIFICATION

I certify that this **TRAFFIC IMPACT STUDY** has been prepared by me and under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

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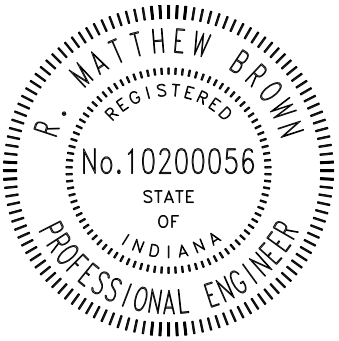

November 18, 2025
R. Matt Brown, P.E.
Indiana Registration 10200056

Trevor Reich, P.E.
Senior Traffic Engineer

Isadora Ribeiro
Traffic Engineer

Pooja Aswar
Traffic Engineer

INTRODUCTION

This **TRAFFIC IMPACT STUDY**, prepared on behalf of David Weekley Homes, is for a proposed residential development known as "Hawk's Landing" that will be located south of CR 800 N & west of SR 267 (Green Street) in Brownsburg, Indiana.

PURPOSE

The purpose of this analysis is to determine what impact traffic generated by the proposed residential development will have on the existing adjacent roadway system. This analysis will identify any existing roadway deficiencies or ones that may occur in the future.

Conclusions will be reached that will determine if the roadway system can accommodate the anticipated traffic volumes or will determine the modifications that will be required to the system if there are identified deficiencies.

Recommendations will be made that will address the conclusions resulting from this analysis. These recommendations will address feasible roadway system improvements to provide safe ingress and egress, to and from the proposed residential development, with minimal interference to traffic on the public street system.

SCOPE OF WORK

The scope of work for this analysis is as follows:

First, obtain peak hour turning movement traffic volume counts between the hours of 6:30 AM to 9:30 AM and 3:00 PM to 8:00 PM on a typical Thursday and between the hours of 7:00 AM to 2:00 PM on a typical Sunday at the following intersections:

- CR 800 N & CR 650 E
- CR 800 N & SR 267 (Green Street)
- CR 700 N & CR 650 E
- CR 700 N & SR 267 (Green Street)
- SR 267 (Green Street) & Acre Lane

Second, estimate the year 2030 background traffic volumes by applying growth rate factors to the existing traffic volumes.

Third, estimate the number of peak hour weekday trips and Sunday midday peak hour trips that will be generated by the proposed development.

Fourth, assign and distribute the generated traffic from the proposed development to the study intersections.

Fifth, prepare a capacity analysis/level of service analysis and turn lane analysis at the study intersections for each of the following scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing peak hour traffic volumes.

Scenario 2: Year 2030 Background Traffic Volumes – Based on applying growth rate factors to the existing traffic volumes.

Scenario 3: Year 2030 + Proposed Development Traffic Volumes – Based on the sum of year 2030 background traffic volumes and generated traffic volumes from the proposed development.

Sixth, prepare recommendations for the roadway geometrics that will be needed to accommodate the total traffic volumes once the proposed development is constructed.

Finally, prepare a **TRAFFIC IMPACT STUDY** report documenting all data, analyses, conclusions, and recommendations to provide for the safe and efficient movement of traffic through the study area.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development will be located south of CR 800 North & west of SR 267 (Green Street) in Brownsburg, Indiana. The proposed residential development will consist of two parcels. The west parcel will have 81 single-family homes that will be served by one full-access drive along CR 800 N and a secondary access connection to Windridge Lane. The east parcel will have 24 single-family homes that will be served via a connection to the existing Connection Pointe Christian Church access drive along SR 267 (Green Street). **Figure 1** is an area map showing the location and general layout of the proposed site. The detailed site plan for the proposed development is included in the **Appendix**.

STUDY AREA

The study area for this analysis has been defined to include the following intersections:

- CR 800 N & CR 650 E
- CR 800 N & SR 267 (Green Street)
- CR 700 N & CR 650 E
- CR 700 N & SR 267 (Green Street)
- SR 267 (Green Street) & Acre Lane / Proposed Development Access Drive
- CR 800 N & Proposed Access Drive

Figures 2A and **2B** show the existing intersection geometrics.

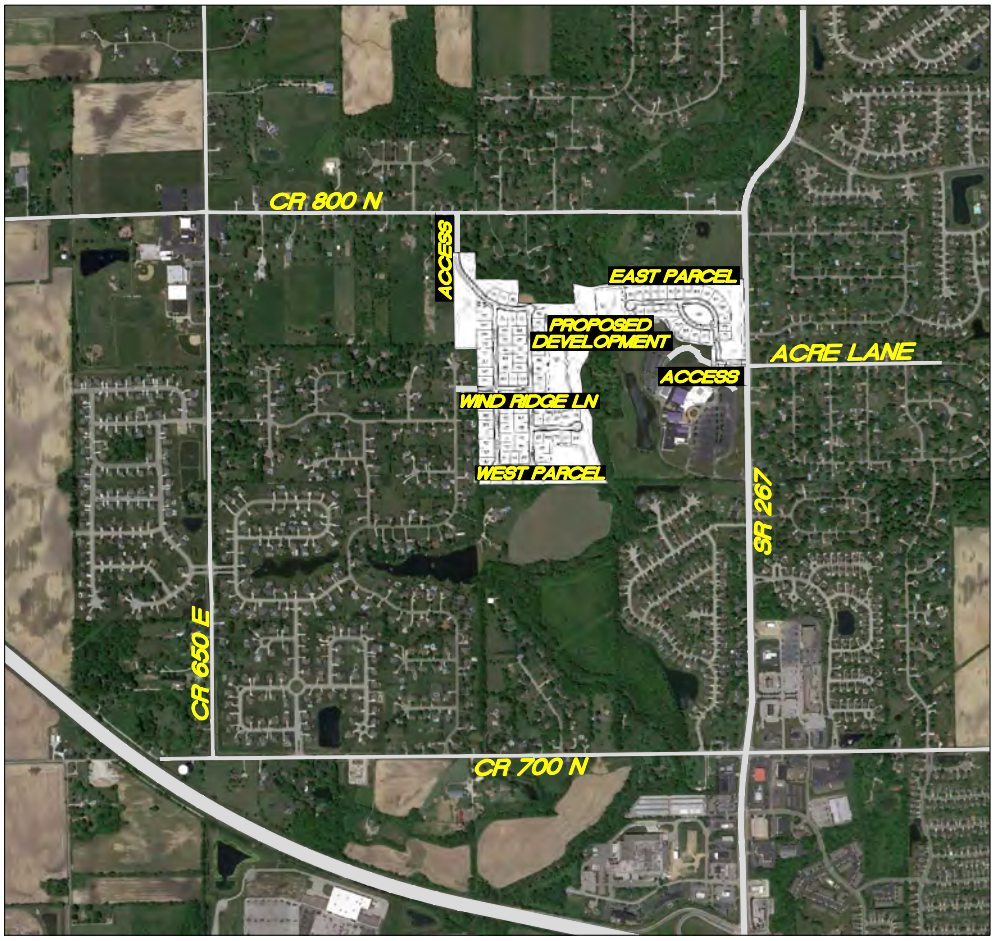

FIGURE 1

AREA MAP

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BROWNSBURG, IN

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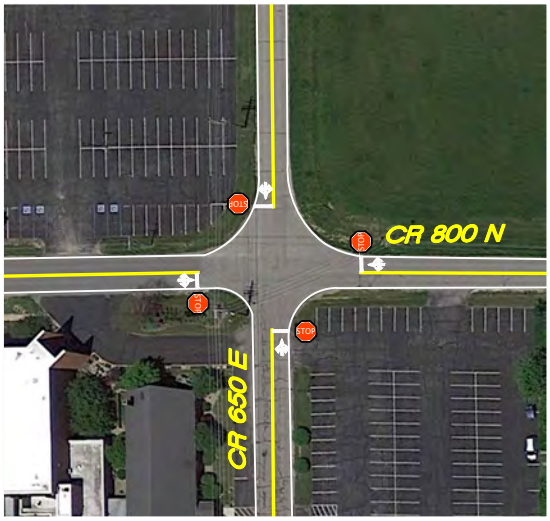
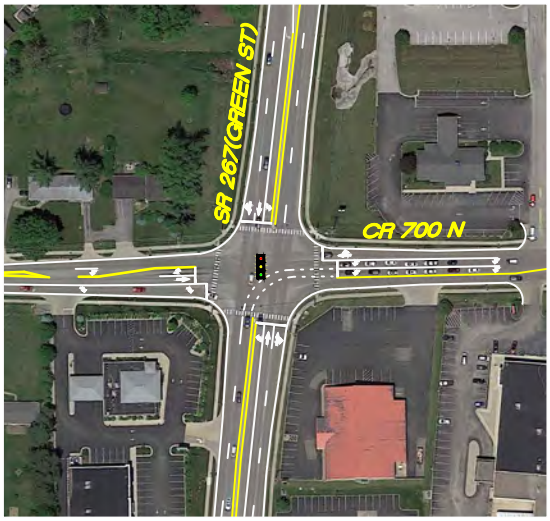


CR 800 N & CR 650 E



CR 700 N & CR 650 E



CR 700 N & SR 267(GREEN ST)



CR 800 N & SR 267(GREEN ST)

FIGURE 2A

EXISTING INTERSECTION GEOMETRICS

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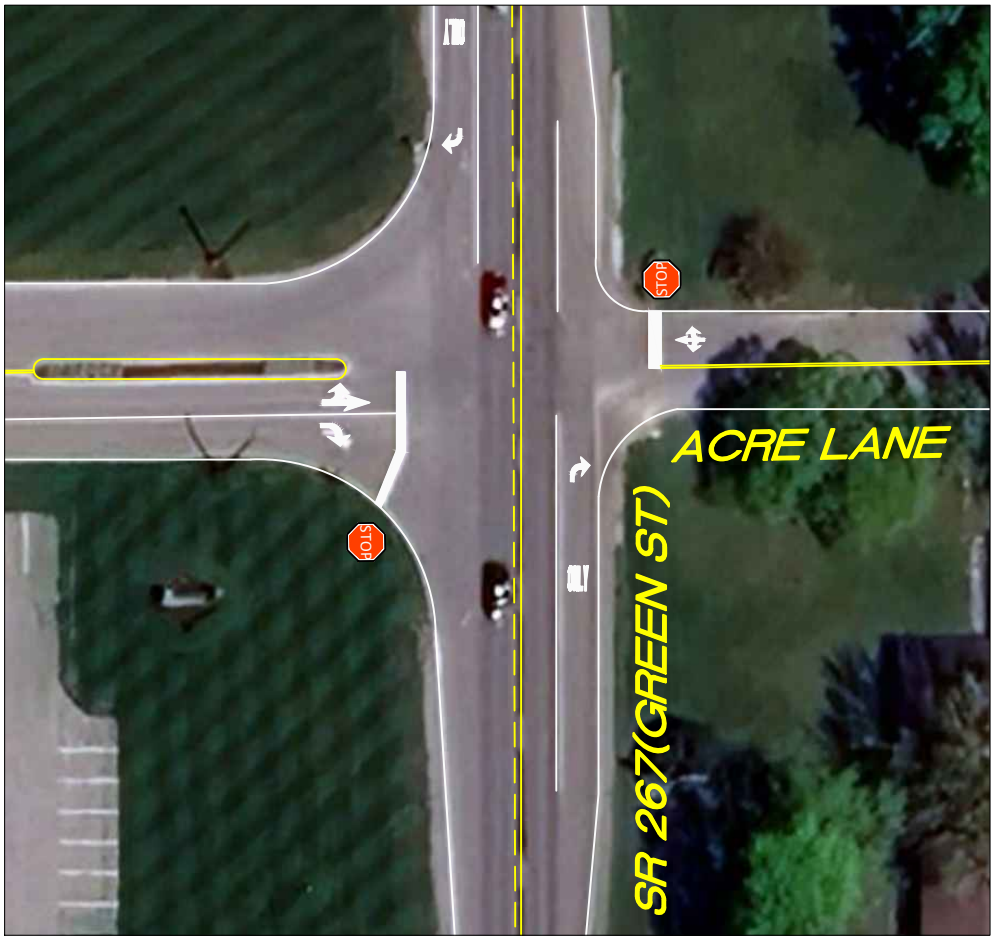

SR 267(GREEN ST) & ACRE LANE

FIGURE 2B

EXISTING INTERSECTION GEOMETRICS

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DESCRIPTION OF ABUTTING STREET SYSTEM

The proposed residential development will be primarily served by the public roadway system that includes CR 800 N, CR 650 E, CR 700 N, and SR 267 (Green Street).

TABLE 1 – DESCRIPTION OF THE ABUTTING STREET SYSTEM

STREET NAME	NUMBER OF LANES	SPEED LIMIT (MPH)	ROADWAY CLASSIFICATION *
CR 800 N	2	35	Collector
CR 650 E	2	45	Secondary Arterial
CR 700 N	2	30	Secondary Arterial
SR 267 (Green Street)	2	45	Primary Arterial

* Roadway classification based on INDOT Roadway Inventory & Functional Class Viewer

EXISTING TRAFFIC VOLUMES & PEAK HOURS

Turning movement traffic volume counts were collected by the A&F Engineering at the existing study intersections between the hours of 6:30 AM and 9:30 AM and 3:00 PM and 8:00 PM on a typical Thursday and between the hours of 7:00 AM to 2:00 PM on a typical Sunday in October and November 2025 under good weather conditions. According to the turning movement traffic volume counts, the AM and PM weekday and Sunday peak hours vary slightly at each study intersection. Hence, the actual peak hours are used at each study intersection to create a "worse-case" scenario. The intersection count output summary sheets are included in the **Appendix**, and the AM and PM peak hour traffic volumes at the study intersection are shown in **Figure 3**.

REDISTRIBUTION OF EXISTING TRAFFIC VOLUMES

The west parcel of the proposed development will have a secondary access via a connection to Windridge Lane. Therefore, it is possible that existing traffic from the Windridge subdivision could utilize this connection to access CR 800 N. However, it is not anticipated that these volumes will be significant during the peak hours. Therefore, these volumes have been considered negligible for the purposes of this analysis.

YEAR 2030 BACKGROUND TRAFFIC VOLUMES

To account for annual growth in traffic that would occur due to future development outside of the study area, growth rate factors were applied to the existing traffic volumes. Growth rate factors provided by Shrewsberry were applied to the existing traffic volumes to obtain year 2030 background traffic volumes shown in **Figure 4.**

FIGURE 3: EXISTING TRAFFIC VOLUMES

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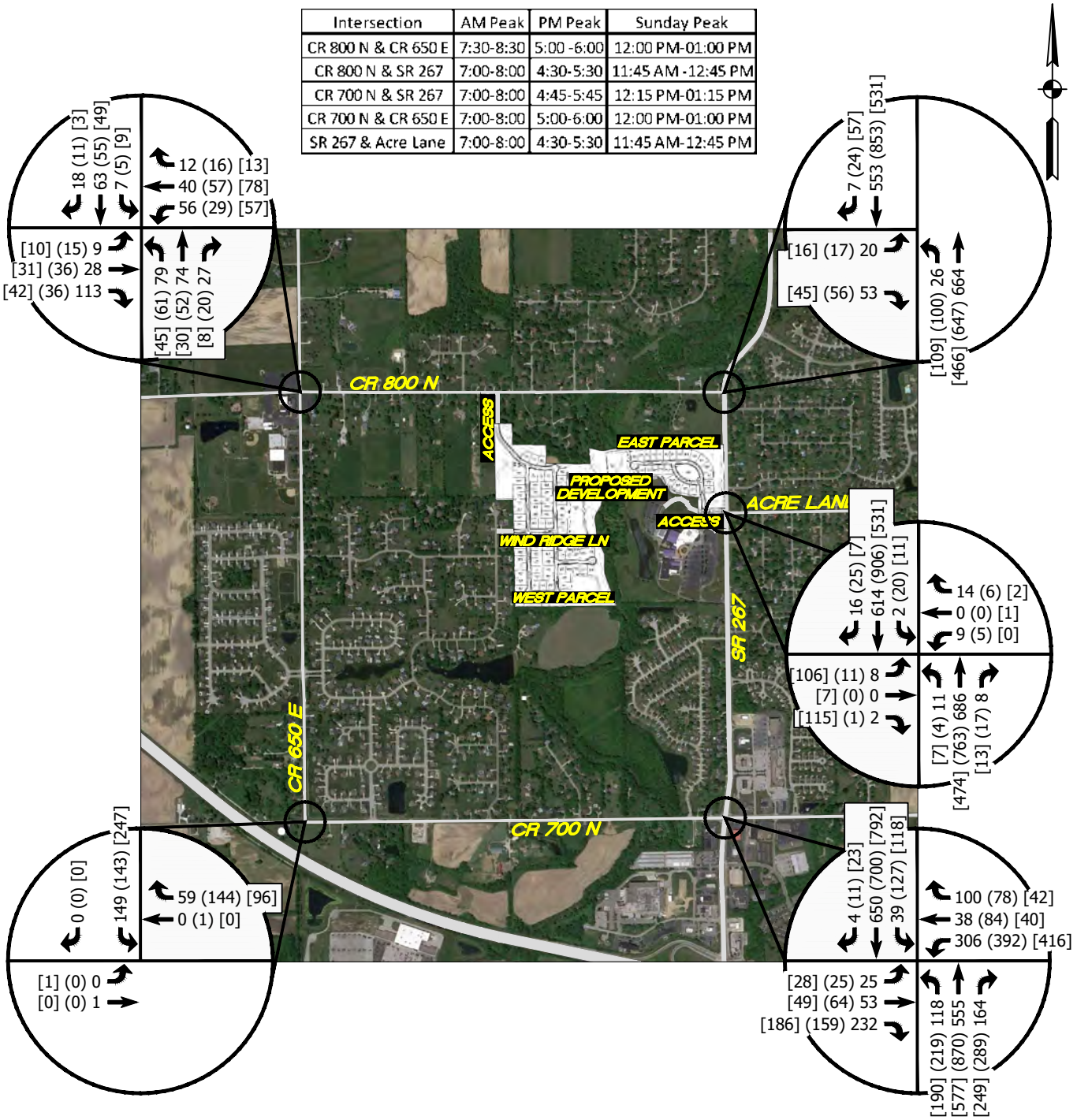
Intersection	AM Peak	PM Peak	Sunday Peak
CR 800 N & CR 650 E	7:30-8:30	5:00 -6:00	12:00 PM-01:00 PM
CR 800 N & SR 267	7:00-8:00	4:30-5:30	11:45 AM -12:45 PM
CR 700 N & SR 267	7:00-8:00	4:45-5:45	12:15 PM-01:15 PM
CR 700 N & CR 650 E	7:00-8:00	5:00-6:00	12:00 PM-01:00 PM
SR 267 & Acre Lane	7:00-8:00	4:30-5:30	11:45 AM-12:45 PM



LEGEND

XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
[XX] = SUNDAY PEAK HOUR
* = NEGLIGIBLE

FIGURE 3

EXISTING TRAFFIC VOLUMES

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BROWNSBURG, IN

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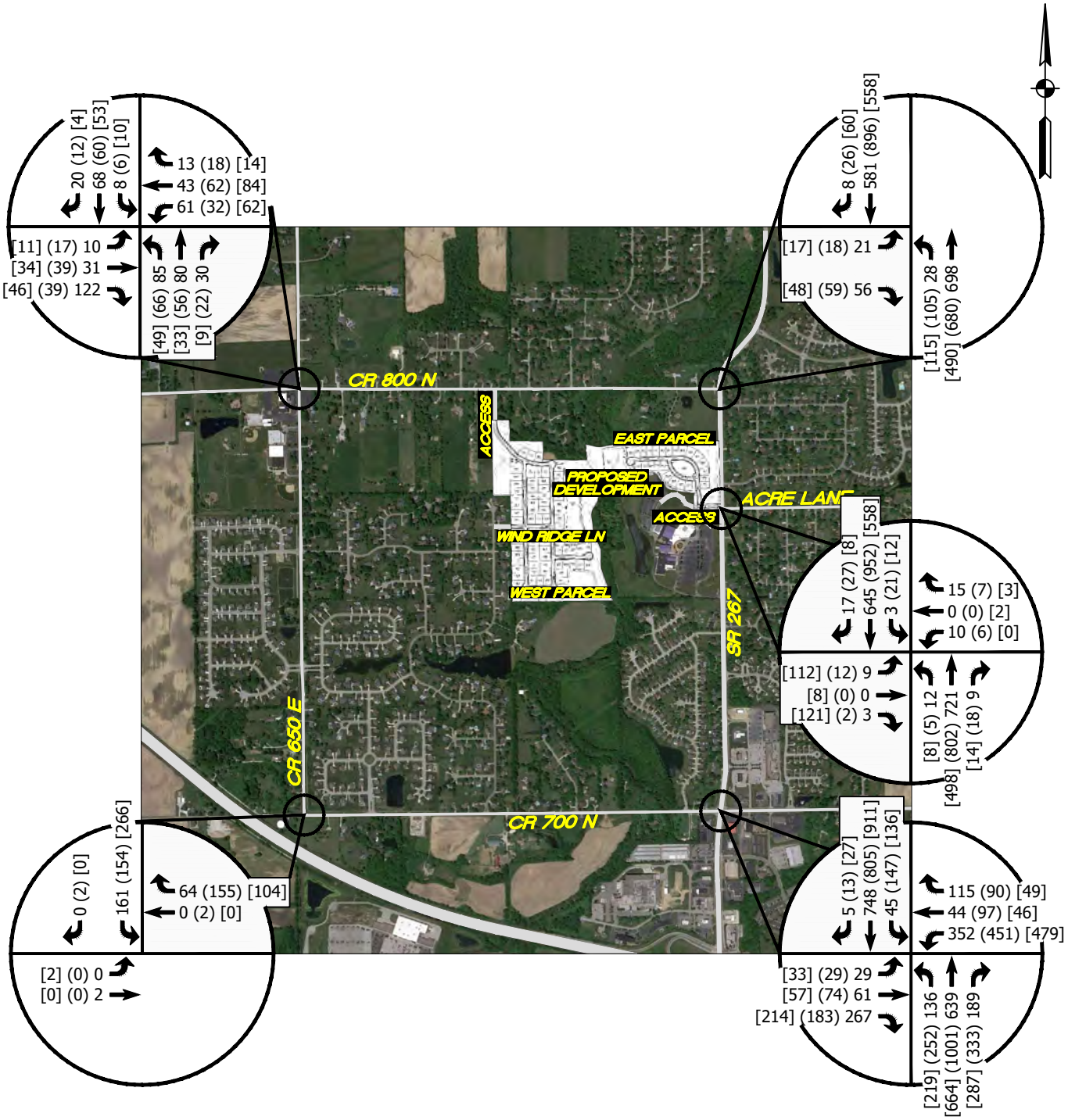

LEGEND

XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
[XX] = SUNDAY PEAK HOUR
* = NEGLIGIBLE

FIGURE 4

YEAR 2030 BACKGROUND TRAFFIC VOLUMES

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BROWNSBURG, IN

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GENERATED TRIPS FOR PROPOSED DEVELOPMENT

The estimate of newly generated traffic is a function of the development size and of the character of the land use. The ITE *Trip Generation Manual*[1] was used to calculate the number of trips that will be generated by the proposed development. This report is a compilation of trip data for various land uses as collected by transportation professionals throughout the United States in order to establish the average number of trips generated by those land uses. **Table 2** summarizes the trips that will be generated by the subject site.

TABLE 2 – GENERATED TRIPS FOR PROPOSED DEVELOPMENT

DEVELOPMENT INFORMATION			GENERATED TRIPS					
LAND USE	ITE CODE	SIZE	WEEKDAY AM PEAK HOUR		WEEKDAY PM PEAK HOUR		SUNDAY MIDDAY PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT	ENTER	EXIT
Single-Family Housing (East Parcel)	210	24 DU	6	16	16	10	8	6
Single-Family Housing (West Parcel)	210	81 DU	16	44	49	30	34	25

Note: Sunday Trip Generation is based on 24-Hour Sunday trip generation data & applying time-of-day distribution data from the *ITE Trip Generation Manual* Appendices for the 12:00 PM - 1:00 PM time period.

PASS-BY & INTERNAL TRIPS

Pass-by trips are trips that are already in the existing traffic stream along the adjacent public roadway system that enter a site, utilize the site, and then return to the existing traffic stream. Residential developments don't typically generate a significant number of pass-by trips. Therefore, pass-by trips were not considered in this study.

An internal trip results when a trip is made between two or more land uses without traversing the external public roadway system. The proposed development is a single land use. Therefore, internal trips were not considered in this study.

[1] *Trip Generation Manual*, Institute of Transportation Engineers, Twelfth Edition, 2025.

ASSIGNMENT AND DISTRIBUTION OF GENERATED TRIPS

The study methodology used to determine the traffic volumes from the site that will be added to the street system is defined as follows:

1. The volume of traffic that will enter and exit the proposed development must be assigned to the access points and to the public street system. Using the traffic volume data collected for this analysis, traffic to and from the site development has been assigned to the proposed driveways and to the public street system that will be serving the site.
2. To determine the volume of traffic that will be added to the public roadway system, the generated traffic must be distributed by direction to the public roadways at their intersection with the driveways. For the proposed development, the trip distribution was based on the location of the development, the existing traffic patterns, and the assignment of generated traffic.

Figures 5A, 5B, 5C and **5D** illustrate the assignment and distribution of generated traffic volumes for the proposed development.

GENERATED TRIPS ADDED TO THE STREET SYSTEM

The generated traffic volumes that can be expected from the proposed development have been assigned to each of the study intersections. These volumes were determined based on the previously discussed trip generation data, assignment and distribution of generated traffic. The peak hour total generated traffic volumes from the proposed development are shown in **Figure 6**, and **Figure 7** shows the sum of background year 2030 traffic volumes and generated traffic volumes from the proposed development. The separated generated traffic volumes from the east parcel and west parcel of the development are shown in **Figure A** and **Figure B** in the **Appendix.**

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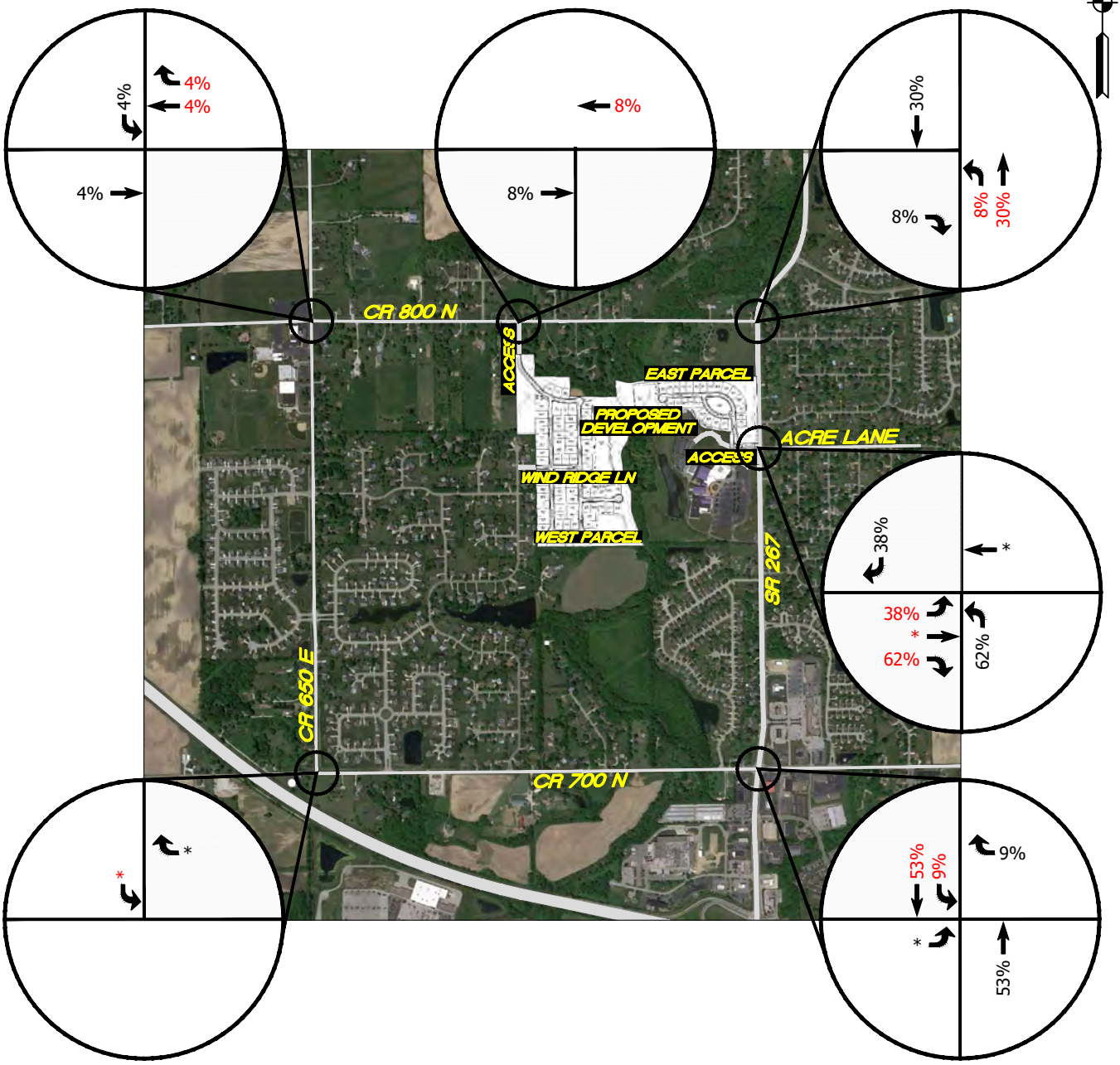

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE 5A

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (WEEKDAY - EAST PARCEL)

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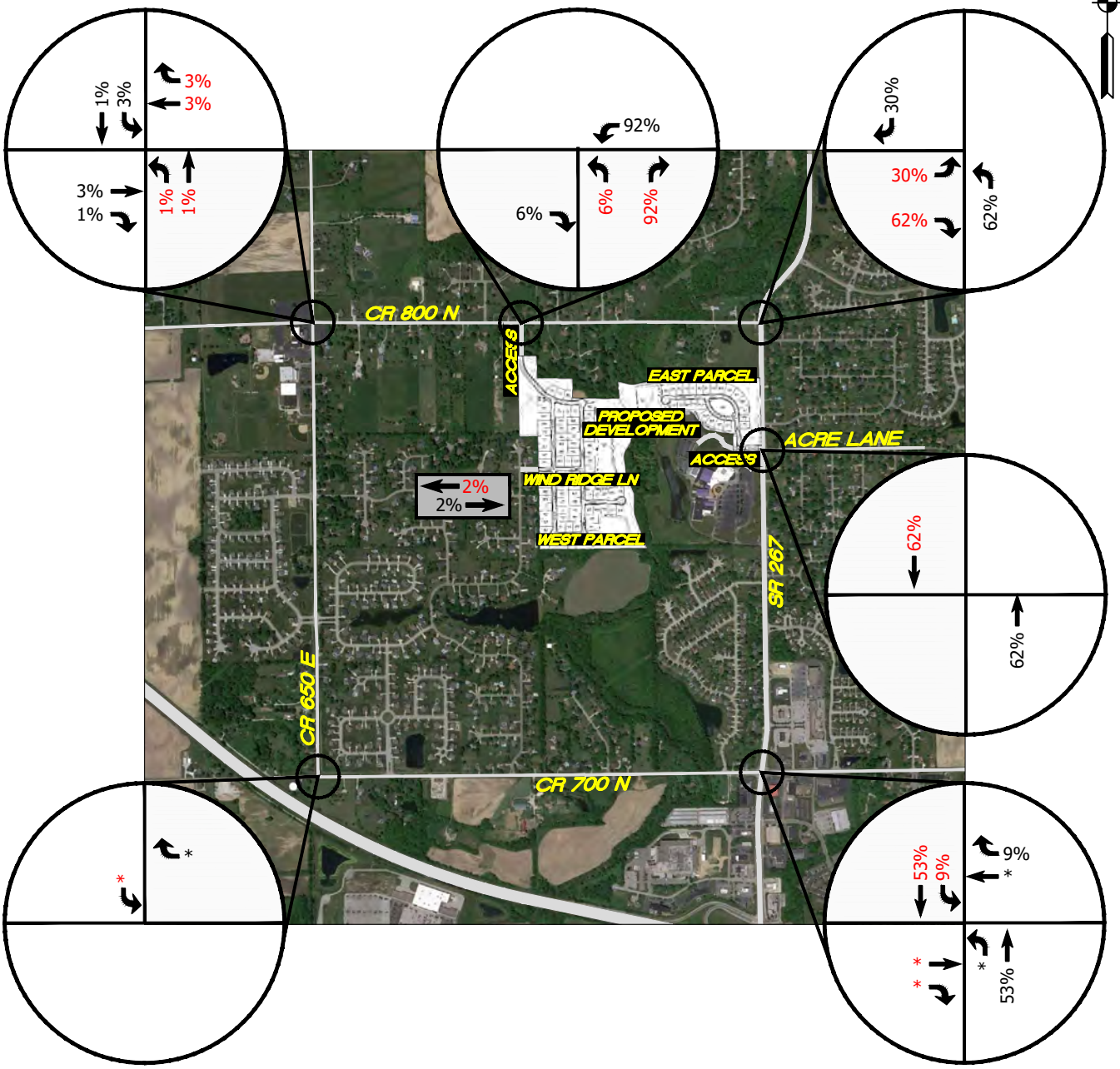

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE 5B

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (WEEKDAY - WEST PARCEL)

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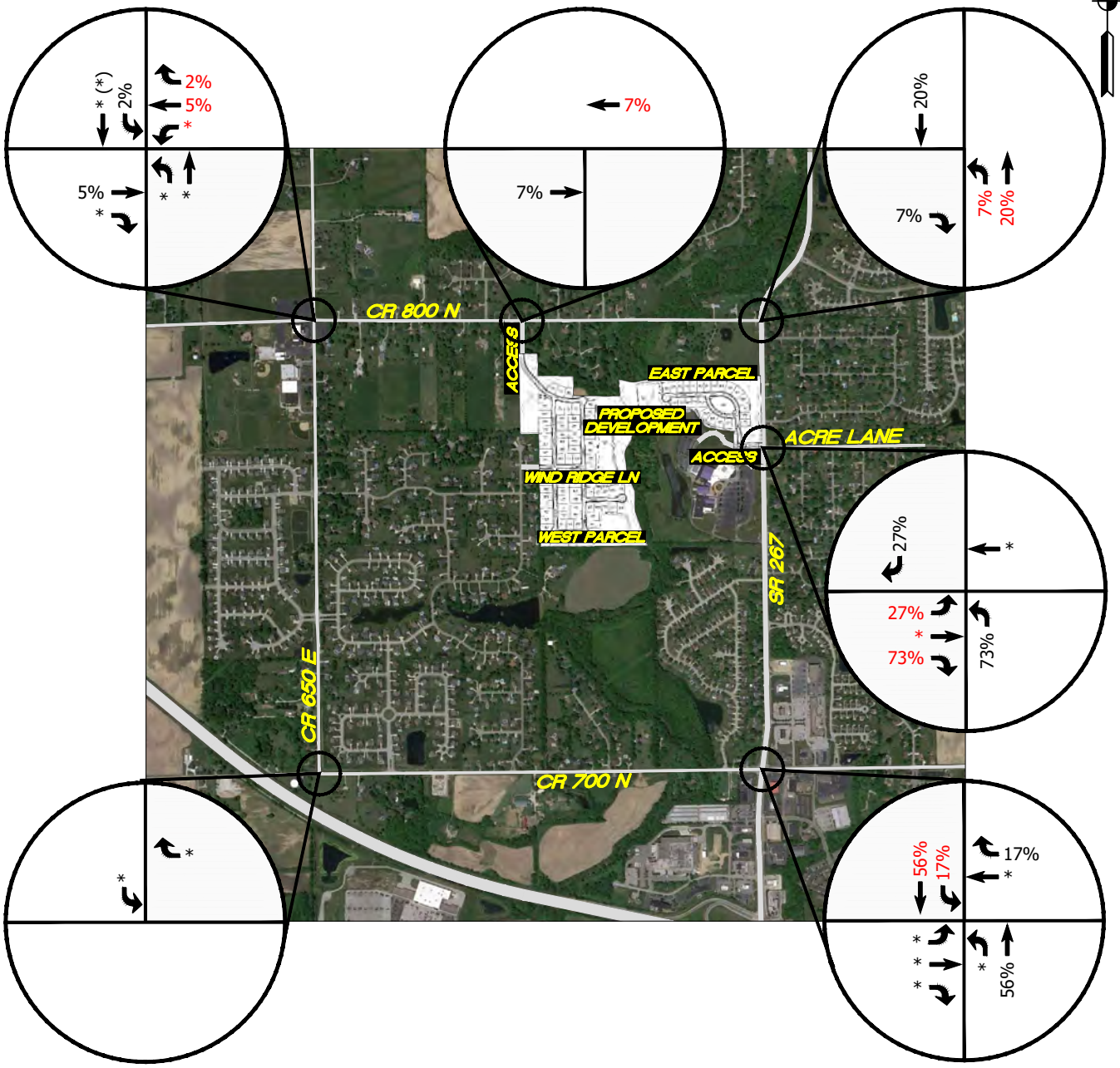

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE 5C

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (SUNDAY - EAST PARCEL)

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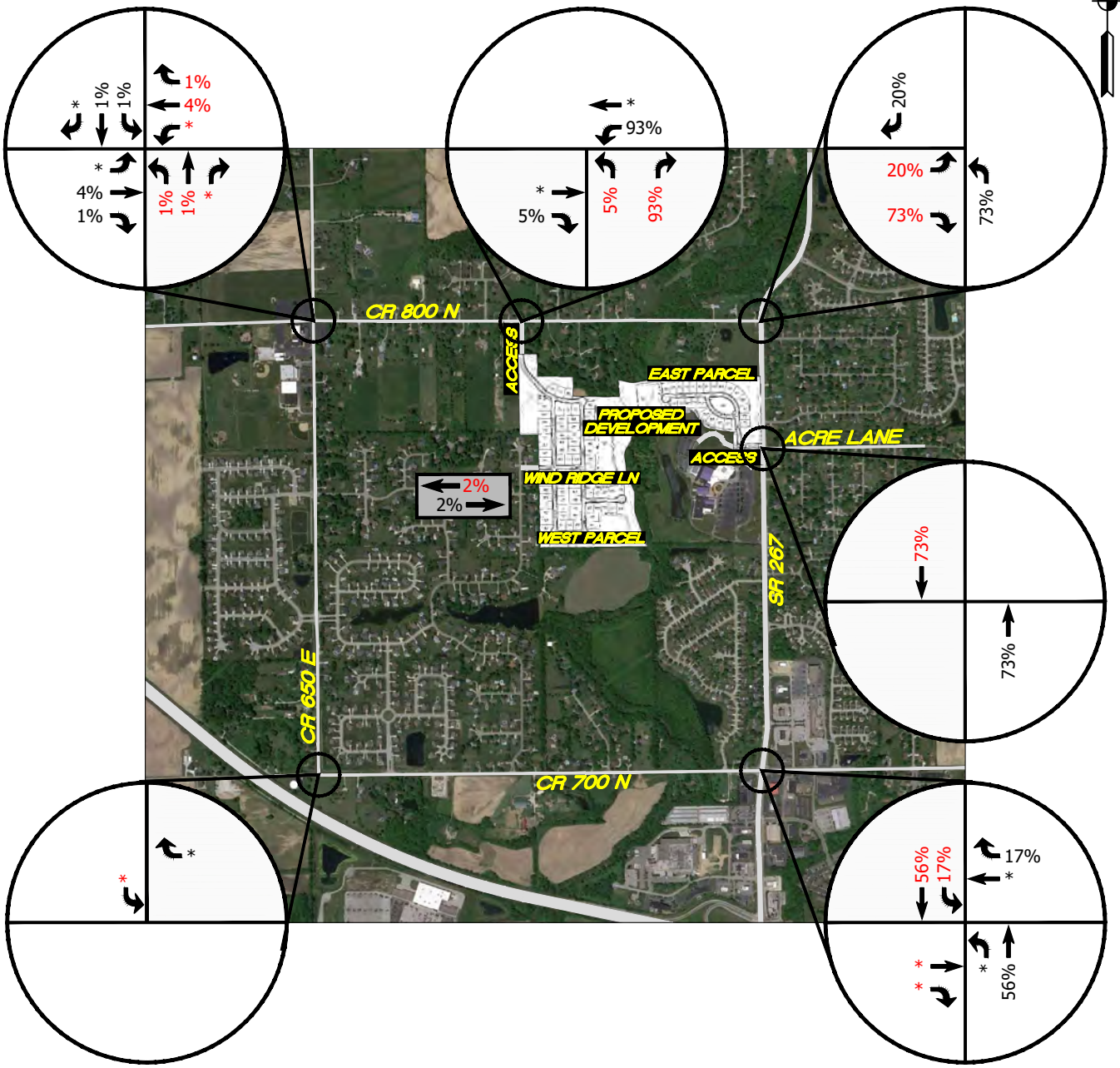

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE 5D

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (SUNDAY - WEST PARCEL)

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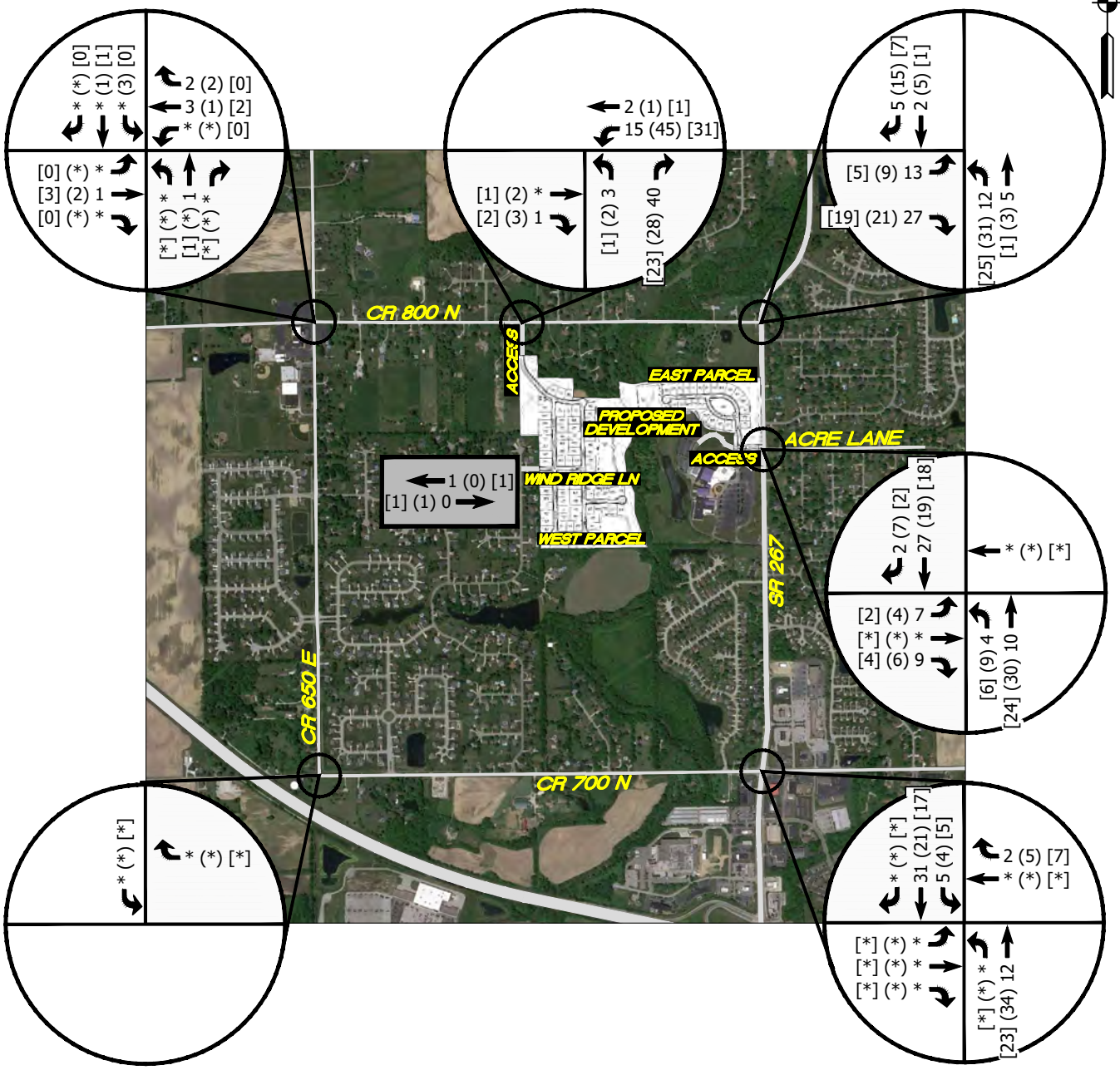


LEGEND

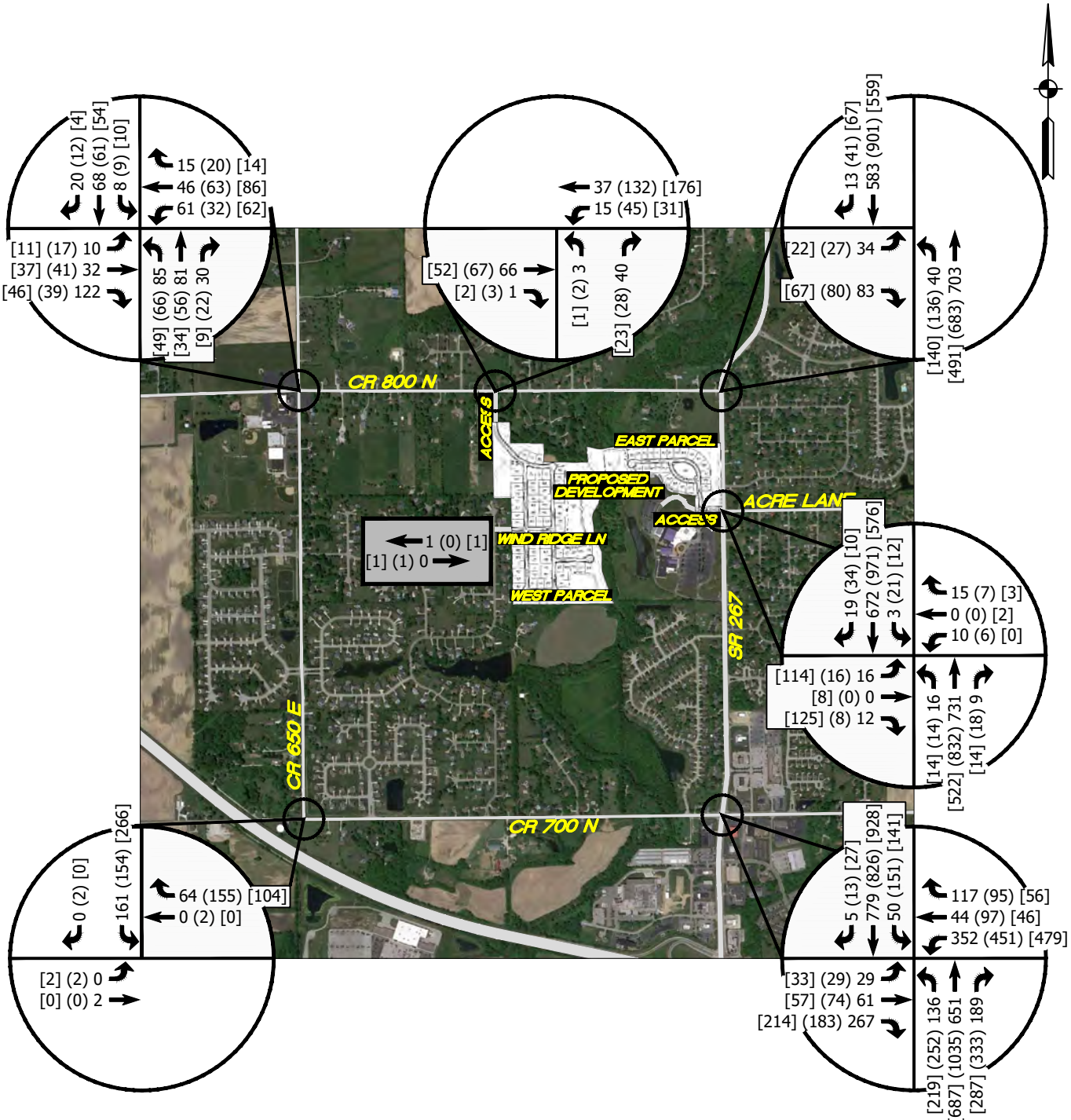
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
[XX] = SUNDAY PEAK HOUR
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE 6

TOTAL GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

Z:\2025\25103S-David Weekley Homes, TIS, Hawks Landing Revised, Brownsburg\25103S-EXH.dwg 1=1 2025-11-13 SK



LEGEND

XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
[XX] = SUNDAY PEAK HOUR
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE 7

SUM OF YEAR 2030 BACKGROUND TRAFFIC VOLUMES & GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

Z:\2025\25103S-David Weekley Homes, TIS, Hawks Landing Revised, Brownsburg\25103S-EXH.dwg 1=1 2025-11-13 SK

TURN LANE WARRANT ANALYSIS

The year 2030 background traffic volumes were combined with the generated traffic volumes from the proposed development to determine if turn lanes would be required along CR 800 N at the proposed access drive location. This analysis was done in accordance with the INDOT *Driveway Permit Guide*[2] and the results are summarized in the following table.

TABLE 3 – TURN LANE WARRANT RESULTS

LOCATION	RIGHT- TURN LANE	LEFT-TURN LANE
CR 800 N & Proposed Access Drive	✗	✗

✔=Turn Lane warranted; ✗=Turn Lane not warranted

The graphs that show the turn lane warrant criteria are shown in the **Appendix**. Furthermore, it should be noted that where turn lanes are not shown to be warranted, turn treatments could be required by Hendricks County based on local preferences.

CAPACITY ANALYSIS

The "efficiency" of an intersection is based on its ability to accommodate the traffic volumes that approach the intersection. It is defined by the Level-of-Service (LOS) of the intersection. The LOS is determined by a series of calculations commonly called a "capacity analysis". Input data into a capacity analysis includes traffic volumes, intersection geometry, and number and use of lanes. To determine the LOS at each of the study intersections, a capacity analysis has been made using the recognized computer program *Synchro/SimTraffic*[3]. This program allows intersections to be analyzed and optimized using the capacity calculation methods outlined within the *Highway Capacity Manual (HCM 7th Edition)*[4]. The following list shows the delays related to the levels of service for unsignalized and signalized intersections:

[2] INDOT *Driveway Permit Guide*, Version 1.4, Indiana Department of Transportation, 2024
[3] *Synchro/SimTraffic 12*, Cubic Transportation Systems, 2023.
[4] *Highway Capacity Manual (HCM), 7th Edition* Transportation Research Board, National Research Council, Washington, DC, 2022.

Level of Service	Control Delay (seconds/vehicle)	
	UNSIGNALIZED	SIGNALIZED
A	Less than or equal to 10	Less than or equal to 10
B	Between 10.1 and 15	Between 10.1 and 20
C	Between 15.1 and 25	Between 20.1 and 35
D	Between 25.1 and 35	Between 35.1 and 55
E	Between 35.1 and 50	Between 55.1 and 80
F	greater than 50	greater than 80

CAPACITY ANALYSIS SCENARIOS

To evaluate the proposed development's impact on the public street system, a series of traffic volume scenarios were analyzed to determine the adequacy of the existing roadway network. From this analysis, necessary recommendations can be made to improve the public street system so it will accommodate future traffic volumes. An analysis has been made for the peak hours at each of the study intersections for the following traffic volume scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing peak hour traffic volumes. **Figure 3** is a summary of these traffic volumes.

Scenario 2: Year 2030 Background Traffic Volumes – Based on applying growth rate factors to the existing traffic volumes. **Figure 4** is a summary of these traffic volumes.

Scenario 3: Year 2030 + Proposed Development Traffic Volumes – Based on the sum of year 2030 background traffic volumes and generated traffic volumes from the proposed development. **Figure 7** is a summary of these traffic volumes.

The following tables summarize the level of service results at each study intersection. The *Synchro* (*HCM 7th Edition*) intersection reports illustrating the capacity analysis results are included in the **Appendix**.

TABLE 4 – LEVEL OF SERVICE SUMMARY: CR 800 N & CR 650 E

APPROACH	AM PEAK Scenarios			PM PEAK Scenarios			SUNDAY PEAK Scenarios		
	1	2	3	1	2	3	1	2	3
Northbound Approach	A	A	A	A	A	A	A	A	A
Southbound Approach	A	A	A	A	A	A	A	A	A
Eastbound Approach	A	A	A	A	A	A	A	A	A
Westbound Approach	A	A	A	A	A	A	A	A	A
Intersection	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**

TABLE 5 – LEVEL OF SERVICE SUMMARY: CR 800 N & SR 267 (GREEN STREET)

APPROACH	AM PEAK					PM PEAK				
	Scenarios					Scenarios				
	1A	2A	2B	3A	3B	1A	2A	2B	3A	3B
Northbound Left-Turn	A	A	A	A	A	B	B	B	B	B
Eastbound Approach	C	C	C	D	C	E	F	E	F	F

APPROACH	SUNDAY PEAK				
	Scenarios				
	1A	2A	2B	3A	3B
Northbound Left-Turn	A	A	A	A	A
Eastbound Approach	C	C	C	D	C

Scenario A considers existing intersection geometrics.

Scenario B considers construction of an exclusive eastbound right-turn lane and an exclusive eastbound left-turn lane.

TABLE 6 – LEVEL OF SERVICE SUMMARY: CR 700 N & SR 267 (GREEN STREET)

APPROACH	AM PEAK			PM PEAK			SUNDAY PEAK		
	Scenarios			Scenarios			Scenarios		
	1	2	3	1	2	3	1	2	3
Northbound Approach	C	C	C	C	C	C	C	C	C
Southbound Approach	C	C	C	C	C	C	C	C	C
Eastbound Approach	C	C	C	C	D	D	C	C	C
Westbound Approach	C	C	C	D	D	D	C	C	C
Intersection	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**

TABLE 7 – LEVEL OF SERVICE SUMMARY: CR 700 N & CR 650 E

APPROACH	AM PEAK			PM PEAK			SUNDAY PEAK		
	Scenarios			Scenarios			Scenarios		
	1	2	3	1	2	3	1	2	3
Southbound Approach	A	A	A	A	A	A	B	B	B
Eastbound Left-Turn	A	A	A	A	A	A	A	A	A

TABLE 8 – LEVEL OF SERVICE SUMMARY: SR 267 (GREEN STREET) & ACRE LANE/CONNECTION POINTE CHRISTIAN CHURCH/PROPOSED DEVELOPMENT ACCESS DRIVE

APPROACH	AM PEAK			PM PEAK			SUNDAY PEAK		
	Scenarios			Scenarios			Scenarios		
	1	2	3	1	2	3	1	2	3
Northbound Left-Turn	A	A	A	B	B	B	A	A	A
Southbound Left-Turn	B	B	B	A	B	A	A	A	A
Eastbound Approach	E	E	E	F	F	F	E	F	F
Westbound Approach	D	D	D	F	F	F	C	C	C

TABLE 9 – LEVEL OF SERVICE SUMMARY: CR 800 N & PROPOSED DEVELOPMENT ACCESS DRIVE

APPROACH	AM PEAK	PM PEAK	SUNDAY PEAK
	Scenario 3	Scenario 3	Scenario 3
Northbound Approach	A	A	A
Westbound Left-Turn	A	A	A

Analysis considers construction of the access drive with one inbound and one outbound lane that will stop for CR 800 N.

CONCLUSIONS & RECOMMENDATIONS

The conclusions that follow are based on existing traffic volume data, trip generation, assignment and distribution of generated traffic, and the capacity analyses/level of service results. Based on the analysis and the resulting conclusions of this study, the following recommendations are formulated to ensure that the roadway system will accommodate the increased traffic volumes from the proposed development.

CR 800 N & CR 650 E

Capacity analyses for all traffic volume scenarios have shown that this intersection currently operates and will continue to operate at acceptable levels of service during the AM, PM and Sunday peak hours with the existing intersection conditions.

CR 800 N & SR 267 (GREEN STREET)

Capacity analyses have shown that all approaches to this intersection currently operate at acceptable levels of service during the AM and Sunday peak hours with the existing intersection conditions. It is expected that the eastbound approach will experience increased delays during the peak hours as future traffic is added to the intersection. However, additional analyses have shown that these future delays can be substantially reduced if an exclusive left-turn lane and an exclusive right-turn lane are constructed along the eastbound approach.

CR 700 N & SR 267 (GREEN STREET)

Capacity analyses for all traffic volume scenarios have shown that this intersection currently operates and will continue to operate at acceptable levels of service during the AM, PM and Sunday peak hours with the existing intersection conditions.

CR 700 N & CR 650 E

Capacity analyses for all traffic volume scenarios have shown that all approaches to this intersection currently operate and will continue to operate at acceptable levels of service during the AM, PM and Sunday peak hours with the existing intersection conditions.

SR 267 (GREEN STREET) & ACRE LANE/CONNECTION POINTE CHRISTIAN CHURCH/PROPOSED DEVELOPMENT ACCESS DRIVE

Capacity analyses have shown that the eastbound approach currently operates below acceptable levels of service during the weekday and Sunday peak hours. Additionally, the westbound approach currently operates below acceptable levels of service during the PM peak hour. The eastbound and westbound approach delays will increase when future traffic volumes (background and proposed development) are added to the intersection. However, it should be noted that minor street approach peak hour delays are not uncommon when the major street has high peak hour volumes.

CR 800 N & PROPOSED DEVELOPMENT ACCESS DRIVE

Capacity analyses have shown that all approaches at this intersection will operate at acceptable levels of service during the AM, PM and Sunday peak hours when the generated traffic volumes from the proposed development are added to the roadway network and the following recommended intersection conditions are considered.

- Construction of the full access drive with one inbound lane and one outbound lane.
- The intersection should be stop-controlled with the access drive stopping for CR 800 N.

TRAFFIC IMPACT STUDY

APPENDIX

A&F ENGINEERING
Transportation & Site Engineering
Creating Order Since 1966

8365 Keystone Crossing Boulevard, Suite 201
Indianapolis, IN 46240
Phone: (317) 202-0864 Fax: (317) 202-0908

ADDITIONAL FIGURES

C.A. "A"
162,367 sq. ft.
3.73 Ac.±

C.A. "B"
734,265 sq. ft.
16.86 Ac. ±

C.A. "C"
64,531 sq. ft.
1.66 Ac.±

LOT 1 12,221 sq. ft.
LOT 2 12,113 sq. ft.
LOT 3 10,570 sq. ft.
LOT 4 14,972 sq. ft.
LOT 5 12,670 sq. ft.
LOT 6 13,058 sq. ft.
LOT 7 9,619 sq. ft.
LOT 8 10,800 sq. ft.
LOT 9 10,800 sq. ft.
LOT 10 10,800 sq. ft.
LOT 11 10,800 sq. ft.
LOT 12 10,800 sq. ft.
LOT 13 10,800 sq. ft.
LOT 14 10,800 sq. ft.
LOT 15 10,800 sq. ft.
LOT 16 10,800 sq. ft.
LOT 17 10,800 sq. ft.
LOT 18 10,753 sq. ft.
LOT 19 10,800 sq. ft.
LOT 20 10,878 sq. ft.
LOT 21 12,364 sq. ft.
LOT 22 10,759 sq. ft.
LOT 23 11,370 sq. ft.
LOT 24 10,939 sq. ft.
LOT 25 10,800 sq. ft.
LOT 26 10,800 sq. ft.
LOT 27 10,752 sq. ft.
LOT 28 13,993 sq. ft.
LOT 29 12,364 sq. ft.
LOT 30 13,631 sq. ft.
LOT 31 15,706 sq. ft.
LOT 32 12,209 sq. ft.
LOT 33 12,852 sq. ft.
LOT 34 12,785 sq. ft.
LOT 35 14,727 sq. ft.
LOT 36 22,918 sq. ft.
LOT 37 12,398 sq. ft.
LOT 38 13,555 sq. ft.
LOT 39 13,556 sq. ft.
LOT 40 13,556 sq. ft.
LOT 41 13,557 sq. ft.
LOT 42 13,558 sq. ft.
LOT 43 13,559 sq. ft.
LOT 44 14,267 sq. ft.
LOT 45 14,311 sq. ft.
LOT 46 13,561 sq. ft.
LOT 47 13,562 sq. ft.
LOT 48 13,563 sq. ft.
LOT 49 13,564 sq. ft.
LOT 50 13,564 sq. ft.
LOT 51 13,565 sq. ft.
LOT 52 13,566 sq. ft.
LOT 53 12,600 sq. ft.
LOT 54 12,600 sq. ft.
LOT 55 12,600 sq. ft.
LOT 56 12,600 sq. ft.
LOT 57 12,600 sq. ft.
LOT 58 12,017 sq. ft.
LOT 59 11,827 sq. ft.
LOT 60 12,600 sq. ft.
LOT 61 12,600 sq. ft.
LOT 62 13,776 sq. ft.
LOT 63 12,600 sq. ft.
LOT 64 12,600 sq. ft.
LOT 65 11,849 sq. ft.
LOT 66 11,250 sq. ft.
LOT 67 11,849 sq. ft.
LOT 68 12,600 sq. ft.
LOT 69 12,600 sq. ft.
LOT 70 13,776 sq. ft.
LOT 71 12,600 sq. ft.
LOT 72 12,600 sq. ft.
LOT 73 11,827 sq. ft.
LOT 74 11,250 sq. ft.
LOT 75 11,430 sq. ft.
LOT 76 12,017 sq. ft.
LOT 77 12,600 sq. ft.
LOT 78 12,600 sq. ft.
LOT 79 12,600 sq. ft.
LOT 80 12,600 sq. ft.
LOT 81 12,600 sq. ft.
LOT 82 10,036 sq. ft.
LOT 83 10,454 sq. ft.
LOT 84 11,042 sq. ft.
LOT 85 11,308 sq. ft.
LOT 86 11,198 sq. ft.
LOT 87 11,089 sq. ft.
LOT 88 10,979 sq. ft.
LOT 89 10,869 sq. ft.
LOT 90 13,037 sq. ft.
LOT 91 13,660 sq. ft.
LOT 92 13,289 sq. ft.
LOT 93 13,327 sq. ft.
LOT 94 11,868 sq. ft.
LOT 95 9,427 sq. ft.
LOT 96 9,397 sq. ft.
LOT 97 10,825 sq. ft.
LOT 98 11,633 sq. ft.
LOT 99 11,633 sq. ft.
LOT 100 11,633 sq. ft.
LOT 101 10,682 sq. ft.
LOT 102 9,520 sq. ft.
LOT 103 9,520 sq. ft.
LOT 104 9,520 sq. ft.
LOT 105 9,477 sq. ft.
LOT 113 42,100 sq. ft.

HAWK HOLLOW BEND
MEADOWBROOK LANE
FEATHERCREST LANE
WINDJAMMER COURT
WINDJAMMER CT.
WINDJAMMER DR.
WINDRIDGE WAY
SKYHAVEN DRIVE
HAWKEYE CIRCLE
SUNNY HOLLOW COURT
HORIZON BEND
WHEELWRIGHT
CONNECTION POINTE DRIVE
STATE ROAD 267
HICKORY ROAD
ACRE LANE

0 100' 200'

Sym.	Revisions	Date
1	REVISIONS PER TECH REVIEW COMMITTEE COMMENTS	10-02-2025

Designed: GAF
Drawn: GAF
Checked: AGI, SB
Scale: 1"= 60'
Date: 09-08-2025

R1 - PRIMARY PLAT
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

CHANDLER A. HARDEN
REGISTERED
NO.
22300025
STATE OF
INDIANA
LAND SURVEYOR
Chandler Harden

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No:

jbaldwin P:\2023\23369\Engineering\Cadd\Preliminary\R1 Lots\23369-R1-PP-Overall.dwg Oct 30, 2025 - 10:21am

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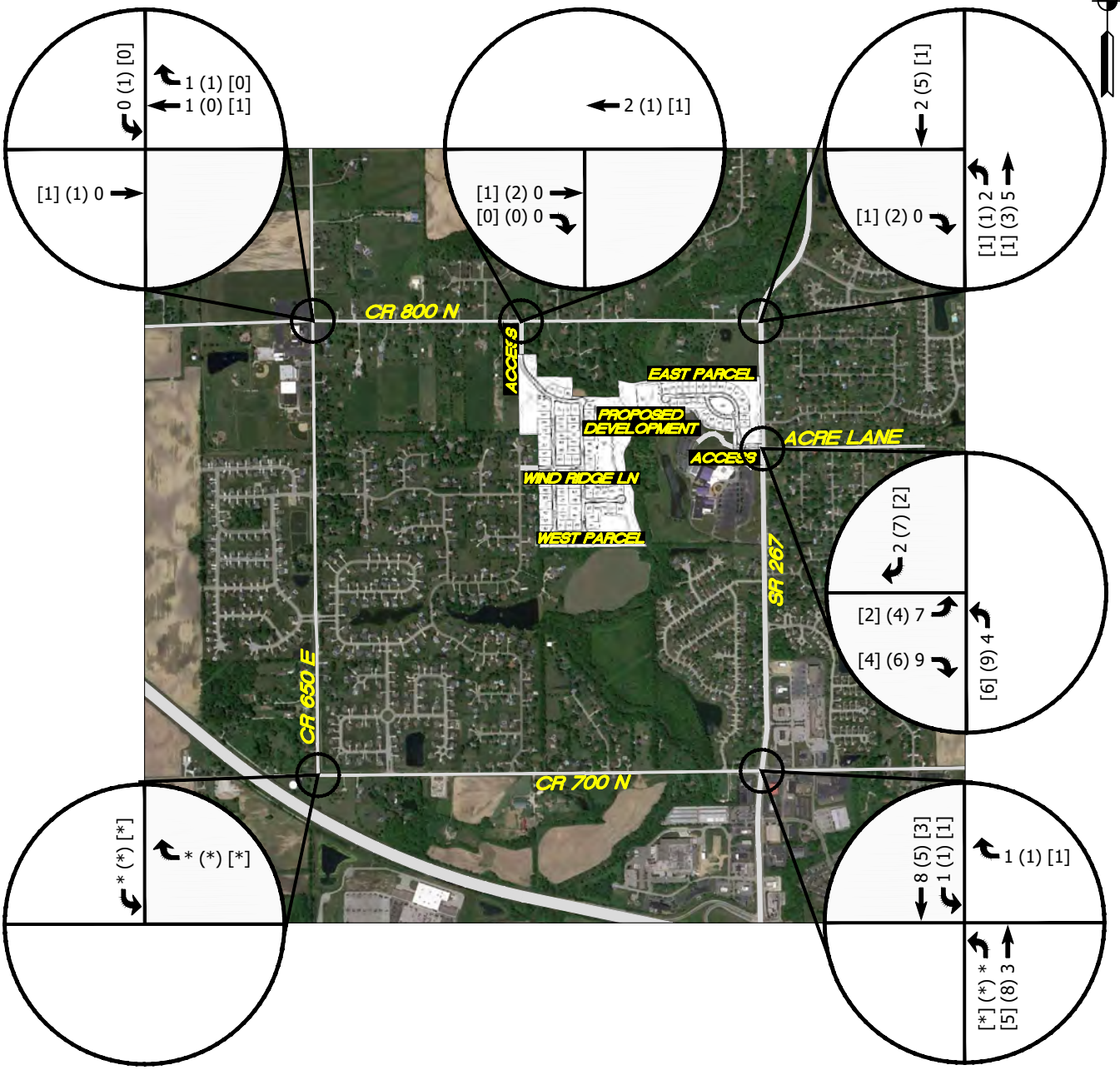

LEGEND

XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
[XX] = SUNDAY PEAK HOUR
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE A

GENERATED TRAFFIC VOLUMES FROM THE PROPOSED DEVELOPMENT (EAST PARCEL)

Z:\2025\25103S-David Weekley Homes, TIS, Hawks Landing Revised, Brownsburg\25103S-EXH.dwg 1=1 2025-11-13 SK

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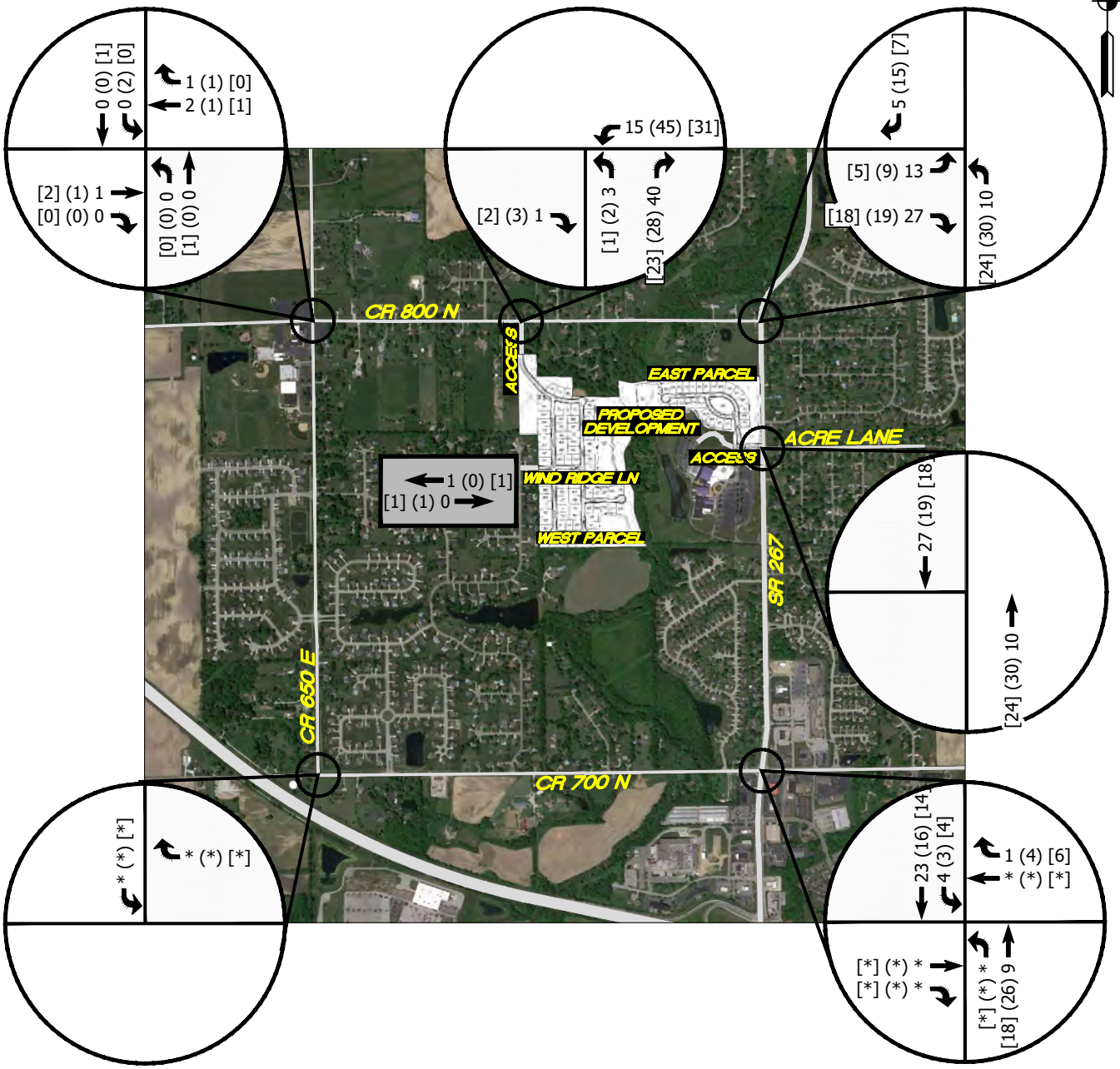


LEGEND

XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
[XX] = SUNDAY PEAK HOUR
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE B

GENERATED TRAFFIC VOLUMES FROM THE PROPOSED DEVELOPMENT (WEST PARCEL)

Z:\2025\25103S-David Weekley Homes, TIS, Hawks Landing Revised, Brownsburg\25103S-EXH.dwg 1=1 2025-11-13 SK

CR 800 N & CR 650 E

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

CR 650 E & CR 800 N THURSDAY AM - TMC

Thu Nov 6, 2025
AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1355979, Location: 39.880045, -86.411371

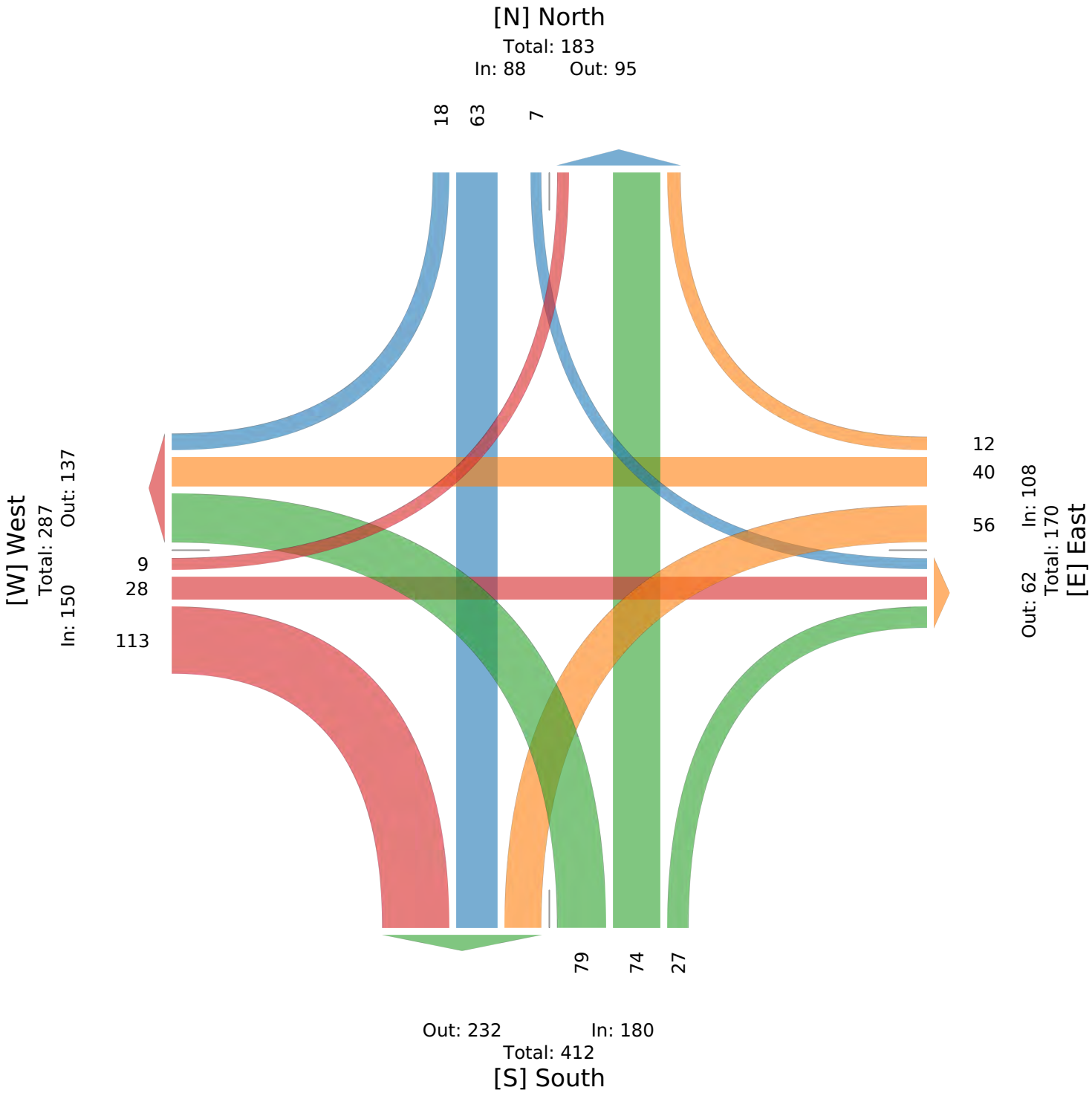
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg / Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-11-06 7:30AM	11	13	2	0	**26**	1	4	4	0	**9**	1	7	15	0	**23**	4	10	0	0	**14**	**72**
7:45AM	8	9	3	0	**20**	2	14	0	0	**16**	3	12	25	0	**40**	10	7	7	0	**24**	**100**
8:00AM	25	17	13	0	**55**	1	22	5	0	**28**	3	7	32	0	**42**	24	4	3	0	**31**	**156**
8:15AM	35	35	9	0	**79**	3	23	9	0	**35**	2	2	41	0	**45**	18	19	2	0	**39**	**198**
Total	79	74	27	0	**180**	7	63	18	0	**88**	9	28	113	0	**150**	56	40	12	0	**108**	**526**
% Approach	43.9%	41.1%	15.0%	0%	**-**	8.0%	71.6%	20.5%	0%	**-**	6.0%	18.7%	75.3%	0%	**-**	51.9%	37.0%	11.1%	0%	**-**	-
% Total	15.0%	14.1%	5.1%	0%	**34.2%**	1.3%	12.0%	3.4%	0%	**16.7%**	1.7%	5.3%	21.5%	0%	**28.5%**	10.6%	7.6%	2.3%	0%	**20.5%**	-
PHF	0.564	0.529	0.519	-	**0.570**	0.583	0.685	0.500	-	**0.629**	0.750	0.583	0.689	-	**0.833**	0.583	0.526	0.429	-	**0.692**	0.664
Lights and Motorcycles	78	73	27	0	**178**	6	63	17	0	**86**	8	28	111	0	**147**	54	40	12	0	**106**	517
% Lights and Motorcycles	98.7%	98.6%	100%	0%	**98.9%**	85.7%	100%	94.4%	0%	**97.7%**	88.9%	100%	98.2%	0%	**98.0%**	96.4%	100%	100%	0%	**98.1%**	98.3%
Heavy	1	1	0	0	**2**	1	0	1	0	**2**	1	0	2	0	**3**	2	0	0	0	**2**	9
% Heavy	1.3%	1.4%	0%	0%	**1.1%**	14.3%	0%	5.6%	0%	**2.3%**	11.1%	0%	1.8%	0%	**2.0%**	3.6%	0%	0%	0%	**1.9%**	1.7%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 650 E & CR 800 N THURSDAY AM - TMC
Thu Nov 6, 2025
AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1355979, Location: 39.880045, -86.411371

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 650 E & CR 800 N - TMC

Thu Oct 30, 2025
PM Peak (Oct 30 2025 5PM - 6 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354702, Location: 39.880045, -86.411371

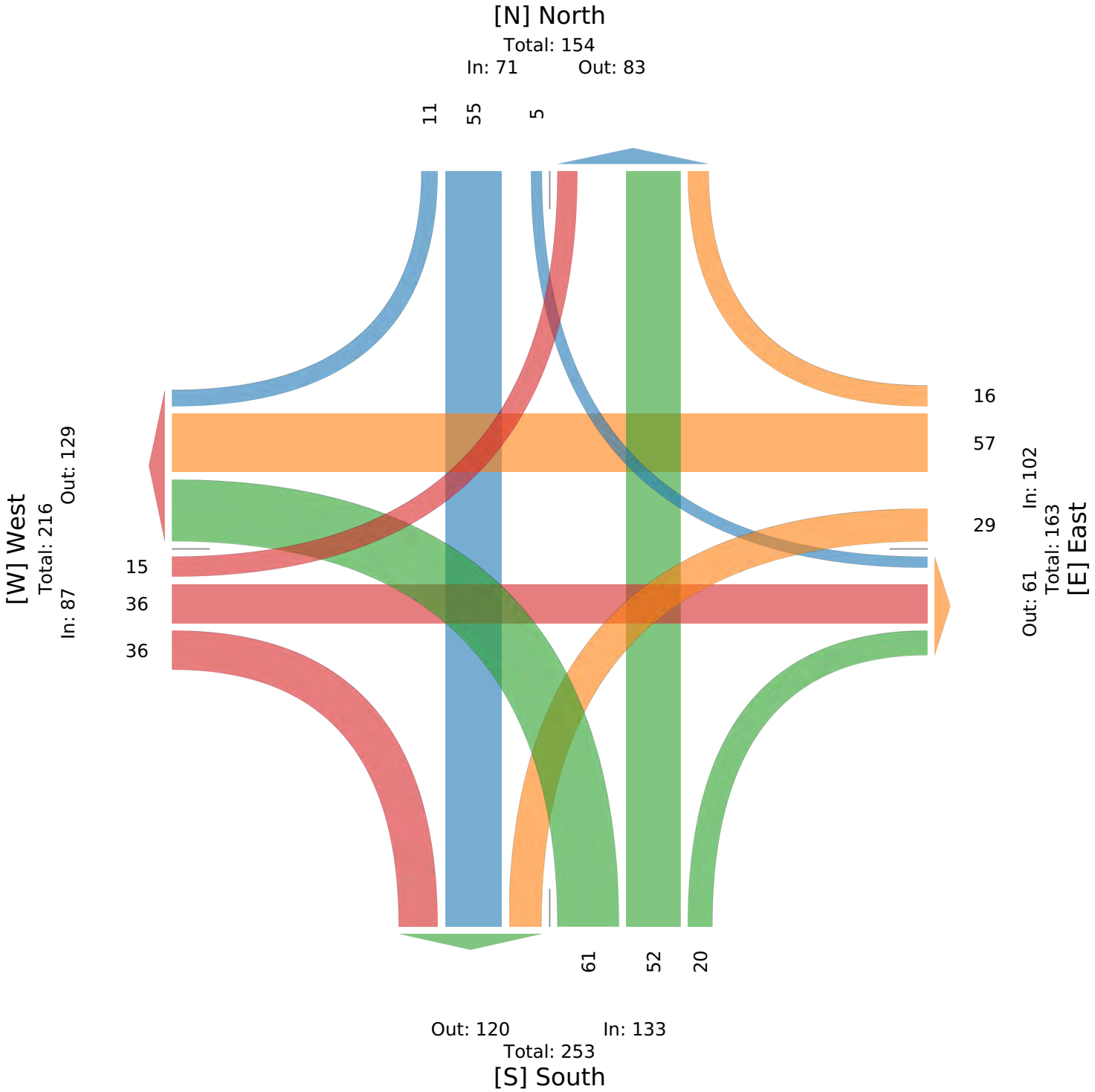
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-30 5:00PM	20	13	1	0	**34**	1	19	2	0	**22**	2	7	9	0	**18**	8	12	4	0	**24**	**98**
5:15PM	12	15	7	0	**34**	2	17	5	0	**24**	6	11	11	0	**28**	8	16	6	0	**30**	**116**
5:30PM	16	10	7	0	**33**	2	8	2	0	**12**	2	12	12	0	**26**	8	15	4	0	**27**	**98**
5:45PM	13	14	5	0	**32**	0	11	2	0	**13**	5	6	4	0	**15**	5	14	2	0	**21**	**81**
Total	61	52	20	0	**133**	5	55	11	0	**71**	15	36	36	0	**87**	29	57	16	0	**102**	**393**
% Approach	45.9%	39.1%	15.0%	0%	**-**	7.0%	77.5%	15.5%	0%	**-**	17.2%	41.4%	41.4%	0%	**-**	28.4%	55.9%	15.7%	0%	**-**	-
% Total	15.5%	13.2%	5.1%	0%	**33.8%**	1.3%	14.0%	2.8%	0%	**18.1%**	3.8%	9.2%	9.2%	0%	**22.1%**	7.4%	14.5%	4.1%	0%	**26.0%**	-
PHF	0.763	0.867	0.714	-	**0.978**	0.625	0.724	0.550	-	**0.740**	0.625	0.750	0.750	-	**0.777**	0.906	0.891	0.667	-	**0.850**	0.847
Lights and Motorcycles	61	52	20	0	**133**	4	55	11	0	**70**	15	36	36	0	**87**	29	57	16	0	**102**	392
% Lights and Motorcycles	100%	100%	100%	0%	**100%**	80.0%	100%	100%	0%	**98.6%**	100%	100%	100%	0%	**100%**	100%	100%	100%	0%	**100%**	99.7%
Heavy	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	1
% Heavy	0%	0%	0%	0%	**0%**	20.0%	0%	0%	0%	**1.4%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.3%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 650 E & CR 800 N - TMC
Thu Oct 30, 2025
PM Peak (Oct 30 2025 5PM - 6 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354702, Location: 39.880045, -86.411371

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 650 E & CR 800 N - TMC

Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 12PM - 1 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354702, Location: 39.880045, -86.411371

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg / Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-11-02 12:00PM	6	4	2	0	**12**	5	13	2	0	**20**	2	7	17	0	**26**	3	11	2	0	**16**	**74**
12:15PM	8	10	2	0	**20**	1	14	0	0	**15**	3	8	11	0	**22**	8	19	3	0	**30**	**87**
12:30PM	20	8	2	0	**30**	1	13	1	0	**15**	3	5	6	0	**14**	17	31	5	0	**53**	**112**
12:45PM	11	8	2	0	**21**	2	9	0	0	**11**	2	11	8	0	**21**	29	17	3	0	**49**	**102**
Total	45	30	8	0	**83**	9	49	3	0	**61**	10	31	42	0	**83**	57	78	13	0	**148**	**375**
% Approach	54.2%	36.1%	9.6%	0%	**-**	14.8%	80.3%	4.9%	0%	**-**	12.0%	37.3%	50.6%	0%	**-**	38.5%	52.7%	8.8%	0%	**-**	-
% Total	12.0%	8.0%	2.1%	0%	**22.1%**	2.4%	13.1%	0.8%	0%	**16.3%**	2.7%	8.3%	11.2%	0%	**22.1%**	15.2%	20.8%	3.5%	0%	**39.5%**	-
PHF	0.563	0.750	1.000	-	**0.692**	0.450	0.875	0.375	-	**0.763**	0.833	0.705	0.618	-	**0.798**	0.491	0.629	0.650	-	**0.698**	0.837
Lights and Motorcycles	45	29	8	0	**82**	9	49	3	0	**61**	10	31	42	0	**83**	57	77	12	0	**146**	372
% Lights and Motorcycles	100%	96.7%	100%	0%	**98.8%**	100%	100%	100%	0%	**100%**	100%	100%	100%	0%	**100%**	100%	98.7%	92.3%	0%	**98.6%**	99.2%
Heavy	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	1	0	**2**	3
% Heavy	0%	3.3%	0%	0%	**1.2%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	1.3%	7.7%	0%	**1.4%**	0.8%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 650 E & CR 800 N - TMC
Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 12PM - 1 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354702, Location: 39.880045, -86.411371

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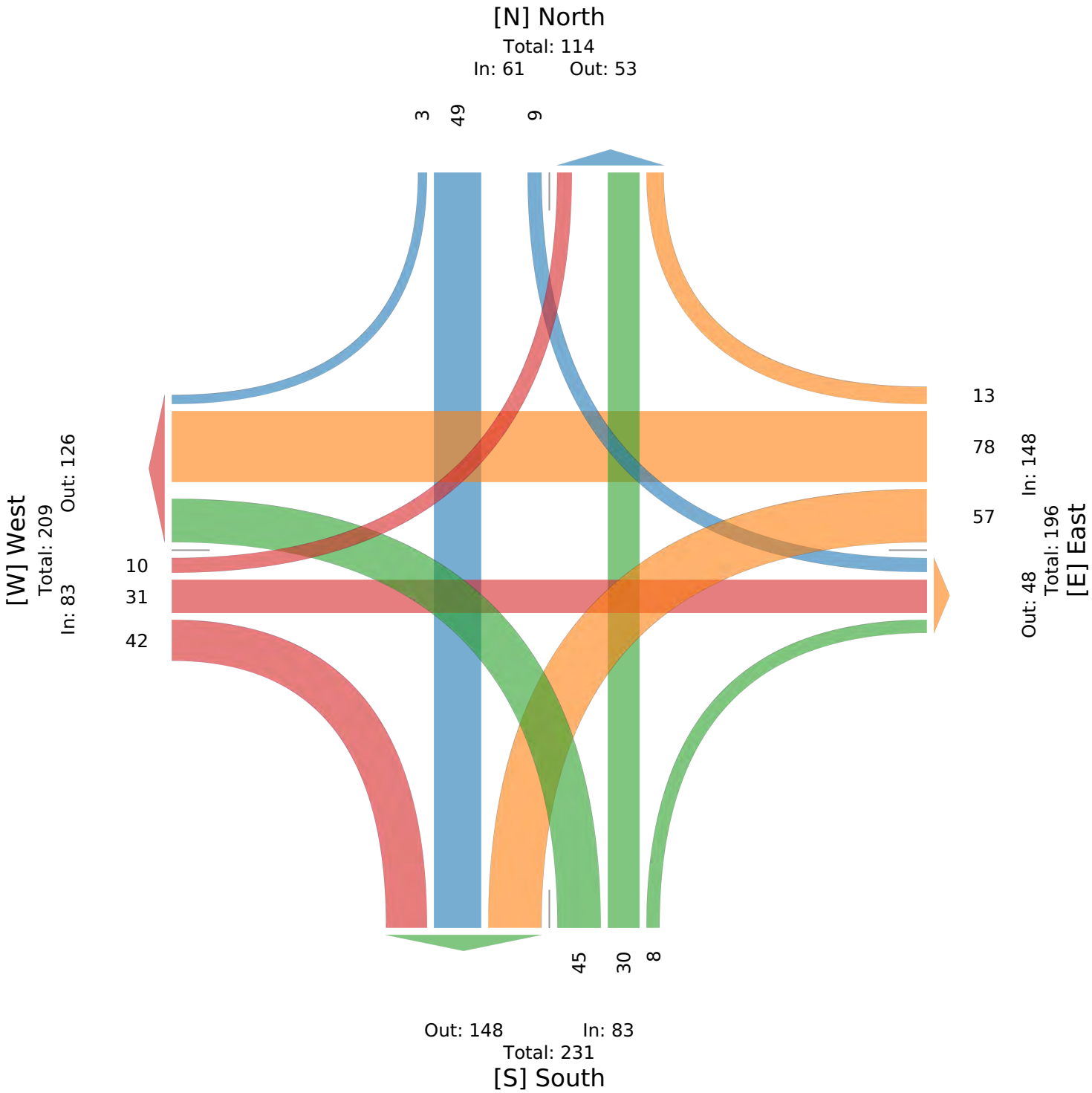


Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	28	113	56	40	12	79	74	27	7	63	18
Future Vol, veh/h	9	28	113	56	40	12	79	74	27	7	63	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	30	123	61	43	13	86	80	29	8	68	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.4	8.8	9.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	6%	52%	8%
Vol Thru, %	41%	19%	37%	72%
Vol Right, %	15%	75%	11%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	150	108	88
LT Vol	79	9	56	7
Through Vol	74	28	40	63
RT Vol	27	113	12	18
Lane Flow Rate	196	163	117	96
Geometry Grp	1	1	1	1
Degree of Util (X)	0.255	0.196	0.158	0.125
Departure Headway (Hd)	4.689	4.335	4.852	4.709
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	763	825	737	759
Service Time	2.732	2.376	2.896	2.758
HCM Lane V/C Ratio	0.257	0.198	0.159	0.126
HCM Control Delay, s/veh	9.3	8.4	8.8	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.7	0.6	0.4

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	36	36	29	57	16	61	52	20	5	55	11
Future Vol, veh/h	15	36	36	29	57	16	61	52	20	5	55	11
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	20	0	0
Mvmt Flow	18	42	42	34	67	19	72	61	24	6	65	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.1	8.4	8.6	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	17%	28%	7%
Vol Thru, %	39%	41%	56%	77%
Vol Right, %	15%	41%	16%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	87	102	71
LT Vol	61	15	29	5
Through Vol	52	36	57	55
RT Vol	20	36	16	11
Lane Flow Rate	156	102	120	84
Geometry Grp	1	1	1	1
Degree of Util (X)	0.196	0.125	0.152	0.113
Departure Headway (Hd)	4.511	4.395	4.547	4.851
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	815	788	738
Service Time	2.541	2.425	2.576	2.883
HCM Lane V/C Ratio	0.196	0.125	0.152	0.114
HCM Control Delay, s/veh	8.6	8.1	8.4	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.5	0.4

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	31	42	57	78	13	45	30	8	9	49	3
Future Vol, veh/h	10	31	42	57	78	13	45	30	8	9	49	3
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	1	8	0	3	0	0	0	0
Mvmt Flow	12	37	50	68	93	15	54	36	10	11	58	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.8	8.7	8.4	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	12%	39%	15%
Vol Thru, %	36%	37%	53%	80%
Vol Right, %	10%	51%	9%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	83	148	61
LT Vol	45	10	57	9
Through Vol	30	31	78	49
RT Vol	8	42	13	3
Lane Flow Rate	99	99	176	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.128	0.116	0.217	0.093
Departure Headway (Hd)	4.654	4.225	4.438	4.635
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	849	810	773
Service Time	2.679	2.248	2.458	2.664
HCM Lane V/C Ratio	0.128	0.117	0.217	0.094
HCM Control Delay, s/veh	8.4	7.8	8.7	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.4	0.8	0.3

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	31	122	61	43	13	85	80	30	8	68	20
Future Vol, veh/h	10	31	122	61	43	13	85	80	30	8	68	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	34	133	66	47	14	92	87	33	9	74	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.7	9.1	9.7	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	6%	52%	8%
Vol Thru, %	41%	19%	37%	71%
Vol Right, %	15%	75%	11%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	195	163	117	96
LT Vol	85	10	61	8
Through Vol	80	31	43	68
RT Vol	30	122	13	20
Lane Flow Rate	212	177	127	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.28	0.218	0.175	0.139
Departure Headway (Hd)	4.763	4.421	4.94	4.799
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	750	808	722	742
Service Time	2.818	2.472	2.996	2.86
HCM Lane V/C Ratio	0.283	0.219	0.176	0.14
HCM Control Delay, s/veh	9.7	8.7	9.1	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.8	0.6	0.5

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	39	39	32	62	18	66	56	22	6	60	12
Future Vol, veh/h	17	39	39	32	62	18	66	56	22	6	60	12
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	20	0	0
Mvmt Flow	20	46	46	38	73	21	78	66	26	7	71	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.2	8.6	8.9	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	18%	29%	8%
Vol Thru, %	39%	41%	55%	77%
Vol Right, %	15%	41%	16%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	95	112	78
LT Vol	66	17	32	6
Through Vol	56	39	62	60
RT Vol	22	39	18	12
Lane Flow Rate	169	112	132	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.215	0.139	0.169	0.126
Departure Headway (Hd)	4.577	4.473	4.616	4.928
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	800	776	727
Service Time	2.612	2.508	2.65	2.965
HCM Lane V/C Ratio	0.216	0.14	0.17	0.127
HCM Control Delay, s/veh	8.9	8.2	8.6	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.5	0.6	0.4

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	34	46	62	84	14	49	33	9	10	53	4
Future Vol, veh/h	11	34	46	62	84	14	49	33	9	10	53	4
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	1	8	0	3	0	0	0	0
Mvmt Flow	13	40	55	74	100	17	58	39	11	12	63	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8	8.9	8.5	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	12%	39%	15%
Vol Thru, %	36%	37%	53%	79%
Vol Right, %	10%	51%	9%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	91	160	67
LT Vol	49	11	62	10
Through Vol	33	34	84	53
RT Vol	9	46	14	4
Lane Flow Rate	108	108	190	80
Geometry Grp	1	1	1	1
Degree of Util (X)	0.142	0.129	0.238	0.104
Departure Headway (Hd)	4.72	4.289	4.495	4.702
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	759	835	800	761
Service Time	2.753	2.318	2.52	2.737
HCM Lane V/C Ratio	0.142	0.129	0.238	0.105
HCM Control Delay, s/veh	8.5	8	8.9	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.4	0.9	0.3

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	32	122	61	46	15	85	81	30	8	68	20
Future Vol, veh/h	10	32	122	61	46	15	85	81	30	8	68	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	35	133	66	50	16	92	88	33	9	74	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	9.1	9.7	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	43%	6%	50%	8%
Vol Thru, %	41%	20%	38%	71%
Vol Right, %	15%	74%	12%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	164	122	96
LT Vol	85	10	61	8
Through Vol	81	32	46	68
RT Vol	30	122	15	20
Lane Flow Rate	213	178	133	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.283	0.22	0.182	0.14
Departure Headway (Hd)	4.78	4.436	4.937	4.817
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	748	804	723	739
Service Time	2.836	2.49	2.995	2.881
HCM Lane V/C Ratio	0.285	0.221	0.184	0.141
HCM Control Delay, s/veh	9.7	8.8	9.1	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.8	0.7	0.5

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	41	39	32	63	20	66	56	22	9	61	12
Future Vol, veh/h	17	41	39	32	63	20	66	56	22	9	61	12
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	20	0	0
Mvmt Flow	20	48	46	38	74	24	78	66	26	11	72	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.3	8.6	8.9	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	18%	28%	11%
Vol Thru, %	39%	42%	55%	74%
Vol Right, %	15%	40%	17%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	97	115	82
LT Vol	66	17	32	9
Through Vol	56	41	63	61
RT Vol	22	39	20	12
Lane Flow Rate	169	114	135	96
Geometry Grp	1	1	1	1
Degree of Util (X)	0.216	0.142	0.174	0.133
Departure Headway (Hd)	4.598	4.494	4.623	4.953
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	779	795	775	723
Service Time	2.635	2.533	2.659	2.993
HCM Lane V/C Ratio	0.217	0.143	0.174	0.133
HCM Control Delay, s/veh	8.9	8.3	8.6	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.5	0.6	0.5

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	37	46	62	86	14	49	34	9	10	54	4
Future Vol, veh/h	11	37	46	62	86	14	49	34	9	10	54	4
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	1	8	0	3	0	0	0	0
Mvmt Flow	13	44	55	74	102	17	58	40	11	12	64	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8	9	8.6	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	53%	12%	38%	15%
Vol Thru, %	37%	39%	53%	79%
Vol Right, %	10%	49%	9%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	94	162	68
LT Vol	49	11	62	10
Through Vol	34	37	86	54
RT Vol	9	46	14	4
Lane Flow Rate	110	112	193	81
Geometry Grp	1	1	1	1
Degree of Util (X)	0.144	0.134	0.241	0.106
Departure Headway (Hd)	4.738	4.308	4.505	4.722
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	757	831	797	759
Service Time	2.77	2.338	2.532	2.755
HCM Lane V/C Ratio	0.145	0.135	0.242	0.107
HCM Control Delay, s/veh	8.6	8	9	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	0.9	0.4

CR 800 N & SR 267 (GREEN STREET)

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

CR 800 N & SR 267 - TMC

Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354693, Location: 39.880061, -86.39249

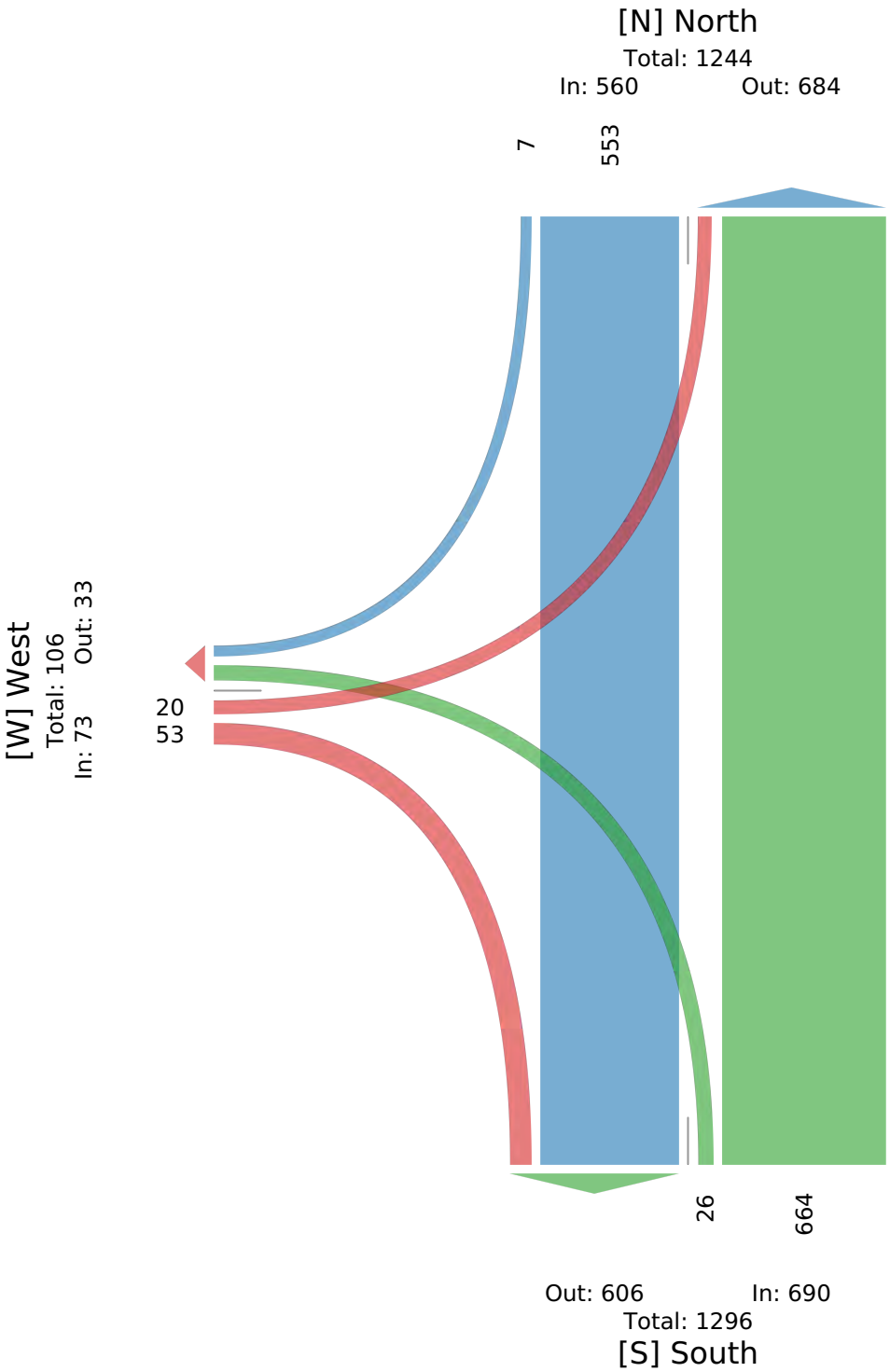
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				West				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2025-10-30 7:00AM	2	143	0	**145**	165	2	0	**167**	3	17	0	**20**	**332**
7:15AM	6	156	0	**162**	112	2	0	**114**	9	11	0	**20**	**296**
7:30AM	7	185	0	**192**	131	0	0	**131**	6	9	0	**15**	**338**
7:45AM	11	180	0	**191**	145	3	0	**148**	2	16	0	**18**	**357**
Total	26	664	0	**690**	553	7	0	**560**	20	53	0	**73**	**1323**
% Approach	3.8%	96.2%	0%	**-**	98.8%	1.3%	0%	**-**	27.4%	72.6%	0%	**-**	-
% Total	2.0%	50.2%	0%	**52.2%**	41.8%	0.5%	0%	**42.3%**	1.5%	4.0%	0%	**5.5%**	-
PHF	0.591	0.897	-	**0.898**	0.838	0.583	-	**0.838**	0.556	0.779	-	**0.913**	0.926
Lights and Motorcycles	26	645	0	**671**	527	6	0	**533**	20	51	0	**71**	1275
% Lights and Motorcycles	100%	97.1%	0%	**97.2%**	95.3%	85.7%	0%	**95.2%**	100%	96.2%	0%	**97.3%**	96.4%
Heavy	0	19	0	**19**	26	1	0	**27**	0	2	0	**2**	48
% Heavy	0%	2.9%	0%	**2.8%**	4.7%	14.3%	0%	**4.8%**	0%	3.8%	0%	**2.7%**	3.6%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 800 N & SR 267 - TMC
Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354693, Location: 39.880061, -86.39249

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 800 N & SR 267 - TMC

Thu Oct 30, 2025
PM Peak (Oct 30 2025 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354693, Location: 39.880061, -86.39249

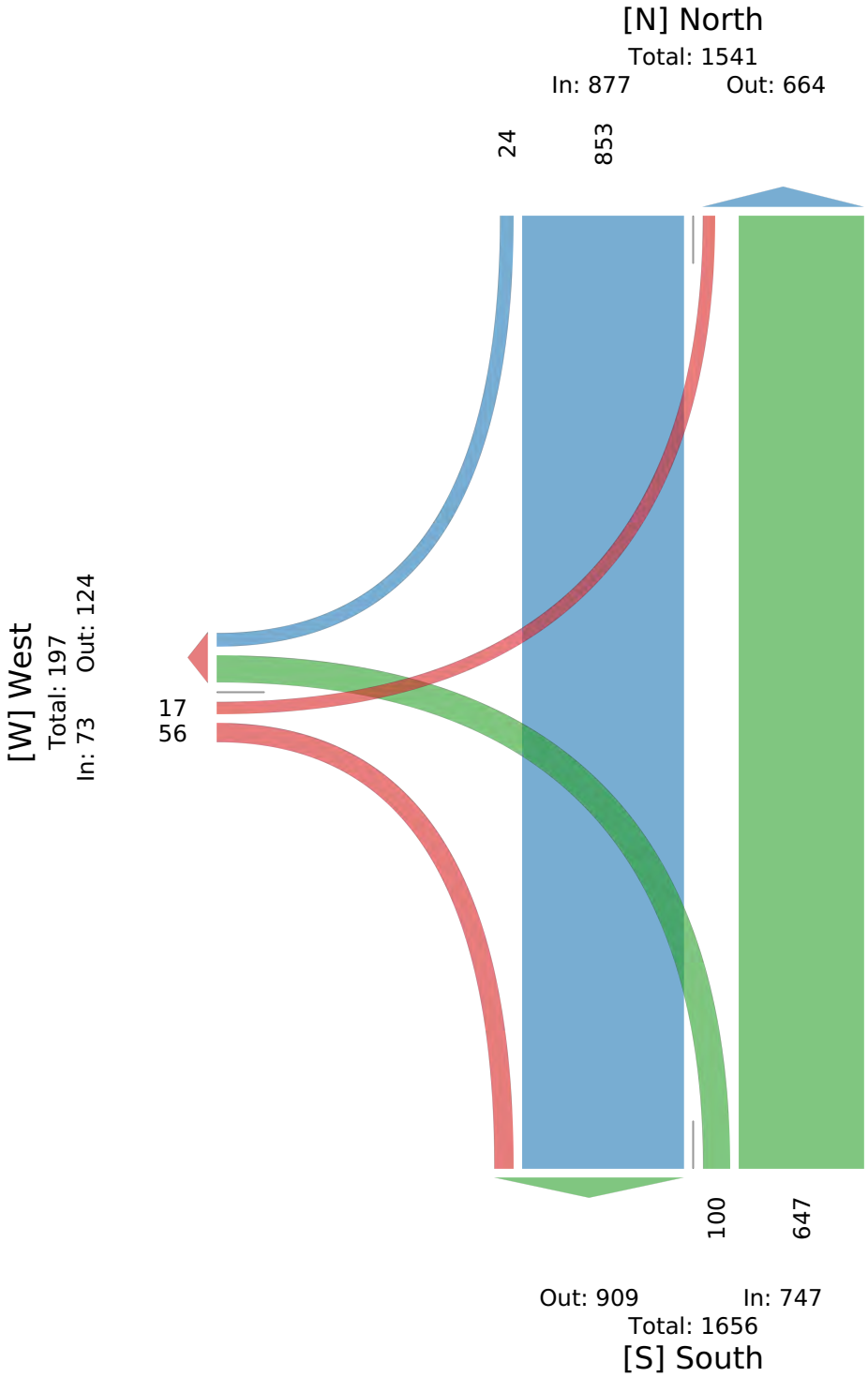
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				West				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2025-10-30 4:30PM	17	182	0	**199**	193	4	0	**197**	4	16	0	**20**	**416**
4:45PM	26	149	0	**175**	238	5	0	**243**	2	9	0	**11**	**429**
5:00PM	20	164	0	**184**	179	6	0	**185**	4	15	0	**19**	**388**
5:15PM	37	152	0	**189**	243	9	0	**252**	7	16	0	**23**	**464**
Total	100	647	0	**747**	853	24	0	**877**	17	56	0	**73**	**1697**
% Approach	13.4%	86.6%	0%	**-**	97.3%	2.7%	0%	**-**	23.3%	76.7%	0%	**-**	-
% Total	5.9%	38.1%	0%	**44.0%**	50.3%	1.4%	0%	**51.7%**	1.0%	3.3%	0%	**4.3%**	-
PHF	0.676	0.889	-	**0.938**	0.878	0.667	-	**0.870**	0.607	0.875	-	**0.793**	0.914
Lights and Motorcycles	99	625	0	**724**	801	23	0	**824**	16	56	0	**72**	1620
% Lights and Motorcycles	99.0%	96.6%	0%	**96.9%**	93.9%	95.8%	0%	**94.0%**	94.1%	100%	0%	**98.6%**	95.5%
Heavy	1	22	0	**23**	52	1	0	**53**	1	0	0	**1**	77
% Heavy	1.0%	3.4%	0%	**3.1%**	6.1%	4.2%	0%	**6.0%**	5.9%	0%	0%	**1.4%**	4.5%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 800 N & SR 267 - TMC
Thu Oct 30, 2025
PM Peak (Oct 30 2025 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354693, Location: 39.880061, -86.39249

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 800 N & SR 267 - TMC

Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 11:45AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354693, Location: 39.880061, -86.39249

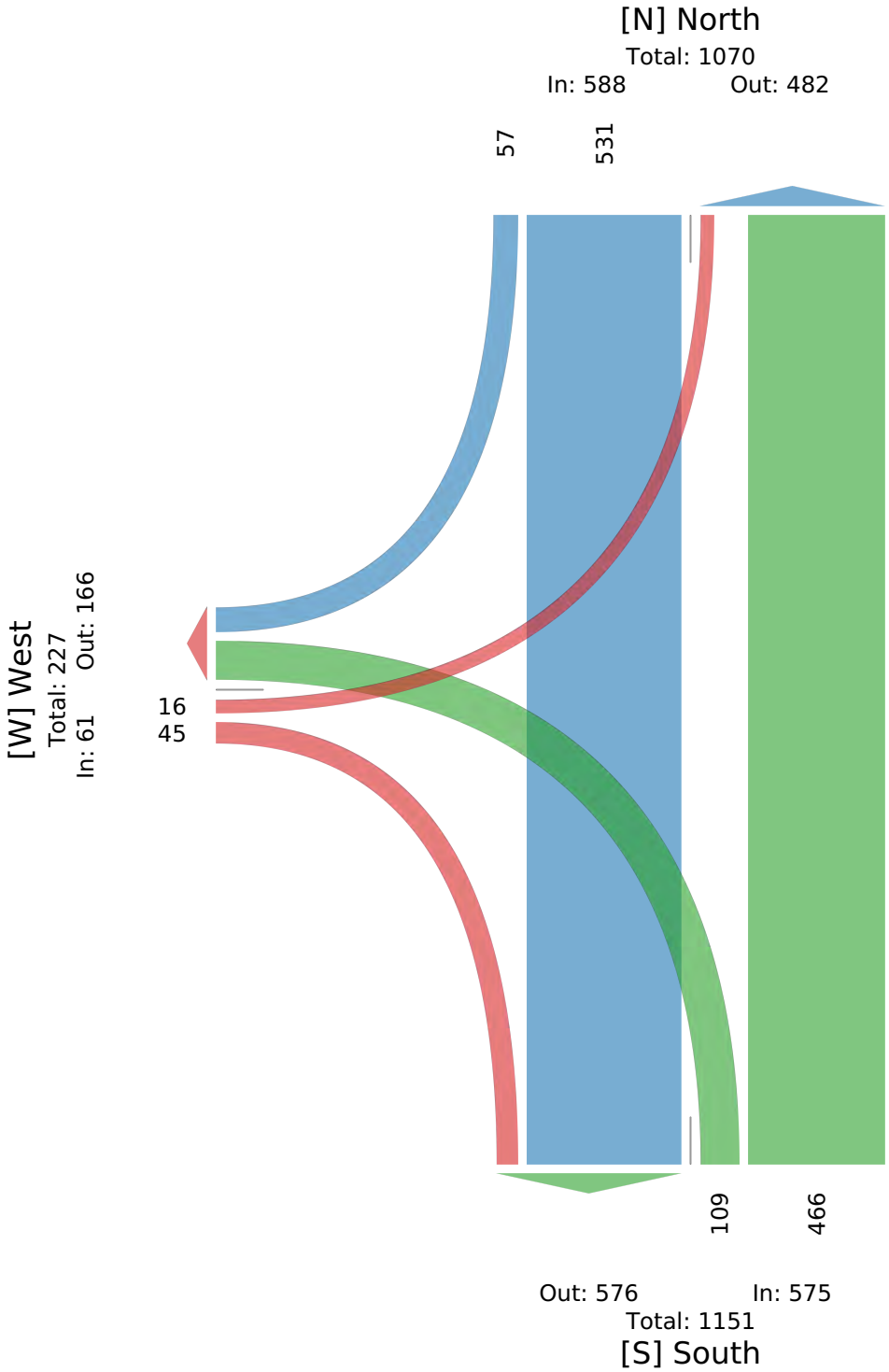
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				West				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2025-11-02 11:45AM	14	117	0	**131**	196	14	0	**210**	1	8	0	**9**	**350**
12:00PM	13	93	0	**106**	128	9	0	**137**	5	16	0	**21**	**264**
12:15PM	35	122	0	**157**	105	15	0	**120**	6	15	0	**21**	**298**
12:30PM	47	134	0	**181**	102	19	0	**121**	4	6	0	**10**	**312**
Total	109	466	0	**575**	531	57	0	**588**	16	45	0	**61**	**1224**
% Approach	19.0%	81.0%	0%	**-**	90.3%	9.7%	0%	**-**	26.2%	73.8%	0%	**-**	-
% Total	8.9%	38.1%	0%	**47.0%**	43.4%	4.7%	0%	**48.0%**	1.3%	3.7%	0%	**5.0%**	-
PHF	0.580	0.869	-	**0.794**	0.677	0.750	-	**0.700**	0.667	0.703	-	**0.726**	0.874
Lights and Motorcycles	109	464	0	**573**	525	56	0	**581**	16	45	0	**61**	1215
% Lights and Motorcycles	100%	99.6%	0%	**99.7%**	98.9%	98.2%	0%	**98.8%**	100%	100%	0%	**100%**	99.3%
Heavy	0	2	0	**2**	6	1	0	**7**	0	0	0	**0**	9
% Heavy	0%	0.4%	0%	**0.3%**	1.1%	1.8%	0%	**1.2%**	0%	0%	0%	**0%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 800 N & SR 267 - TMC
Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 11:45AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354693, Location: 39.880061, -86.39249

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	53	26	664	553	7
Future Vol, veh/h	20	53	26	664	553	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	4	0	3	5	14
Mvmt Flow	22	57	28	714	595	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1365	595	602	0	-	0
Stage 1	595	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	164	501	985	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	160	501	985	-	-	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	460	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	20.13	0.33	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	985	-	316	-	-
HCM Lane V/C Ratio	0.028	-	0.249	-	-
HCM Ctrl Dly (s/v)	8.8	-	20.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	56	100	647	853	24
Future Vol, veh/h	17	56	100	647	853	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	0	1	3	6	4
Mvmt Flow	19	62	110	711	937	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1868	937	964	0	-	0
Stage 1	937	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Critical Hdwy	6.46	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	78	324	718	-	-	-
Stage 1	375	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	324	718	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	317	-	-	-	-	-
Stage 2	377	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	44.11	1.46	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	718	-	169	-	-
HCM Lane V/C Ratio	0.153	-	0.474	-	-
HCM Ctrl Dly (s/v)	10.9	-	44.1	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.5	-	2.2	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	45	109	466	531	57
Future Vol, veh/h	16	45	109	466	531	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	1	2
Mvmt Flow	18	52	125	536	610	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1397	610	676	0	-	0
Stage 1	610	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	157	498	925	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	136	498	925	-	-	-
Mov Cap-2 Maneuver	136	-	-	-	-	-
Stage 1	472	-	-	-	-	-
Stage 2	452	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	21.11	1.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	925	-	293	-	-
HCM Lane V/C Ratio	0.135	-	0.239	-	-
HCM Ctrl Dly (s/v)	9.5	-	21.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.9	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	56	28	698	581	8
Future Vol, veh/h	21	56	28	698	581	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	4	0	3	5	14
Mvmt Flow	23	60	30	751	625	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1435	625	633	0	-	0
Stage 1	625	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	149	481	959	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	144	481	959	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	521	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22	0.34	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	959	-	294	-	-
HCM Lane V/C Ratio	0.031	-	0.282	-	-
HCM Ctrl Dly (s/v)	8.9	-	22	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	56	28	698	581	8
Future Vol, veh/h	21	56	28	698	581	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	4	0	3	5	14
Mvmt Flow	23	60	30	751	625	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1435	625	633	0	-	0
Stage 1	625	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	149	481	959	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	144	481	959	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	521	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	19.28	0.34	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	959	-	144	481	-	-
HCM Lane V/C Ratio	0.031	-	0.157	0.125	-	-
HCM Ctrl Dly (s/v)	8.9	-	34.6	13.5	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.4	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	59	105	680	896	26
Future Vol, veh/h	18	59	105	680	896	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	0	1	3	6	4
Mvmt Flow	20	65	115	747	985	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1963	985	1013	0	-	0
Stage 1	985	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Critical Hdwy	6.46	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	68	304	688	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	56	304	688	-	-	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	296	-	-	-	-	-
Stage 2	358	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	56.28	1.51	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	688	-	150	-	-
HCM Lane V/C Ratio	0.168	-	0.564	-	-
HCM Ctrl Dly (s/v)	11.3	-	56.3	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.6	-	2.9	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	59	105	680	896	26
Future Vol, veh/h	18	59	105	680	896	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	0	1	3	6	4
Mvmt Flow	20	65	115	747	985	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1963	985	1013	0	-	0
Stage 1	985	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Critical Hdwy	6.46	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	68	304	688	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	56	304	688	-	-	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	296	-	-	-	-	-
Stage 2	358	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	38.73	1.51	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	688	-	56	304	-	-
HCM Lane V/C Ratio	0.168	-	0.351	0.213	-	-
HCM Ctrl Dly (s/v)	11.3	-	100	20	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1.3	0.8	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	48	115	490	558	60
Future Vol, veh/h	17	48	115	490	558	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	1	2
Mvmt Flow	20	55	132	563	641	69

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1469	641	710	0	-	0
Stage 1	641	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	142	478	898	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	478	898	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	433	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	23.37	1.84	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	898	-	270	-	-
HCM Lane V/C Ratio	0.147	-	0.277	-	-
HCM Ctrl Dly (s/v)	9.7	-	23.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	48	115	490	558	60
Future Vol, veh/h	17	48	115	490	558	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	1	2
Mvmt Flow	20	55	132	563	641	69

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1469	641	710	0	-	0
Stage 1	641	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	142	478	898	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	478	898	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	433	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	20.54	1.84	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	898	-	121	478	-	-
HCM Lane V/C Ratio	0.147	-	0.161	0.115	-	-
HCM Ctrl Dly (s/v)	9.7	-	40.4	13.5	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.6	0.4	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	83	40	703	583	13
Future Vol, veh/h	34	83	40	703	583	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	4	0	3	5	14
Mvmt Flow	37	89	43	756	627	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1469	627	641	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	142	480	953	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	135	480	953	-	-	-
Mov Cap-2 Maneuver	135	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	426	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	28.51	0.48	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	953	-	276	-	-
HCM Lane V/C Ratio	0.045	-	0.456	-	-
HCM Ctrl Dly (s/v)	9	-	28.5	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.1	-	2.2	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	83	40	703	583	13
Future Vol, veh/h	34	83	40	703	583	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	4	0	3	5	14
Mvmt Flow	37	89	43	756	627	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1469	627	641	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	142	480	953	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	135	480	953	-	-	-
Mov Cap-2 Maneuver	135	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	426	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.02	0.48	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	953	-	135	480	-	-
HCM Lane V/C Ratio	0.045	-	0.27	0.186	-	-
HCM Ctrl Dly (s/v)	9	-	41.1	14.2	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1	0.7	-	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	80	136	683	901	41
Future Vol, veh/h	27	80	136	683	901	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	0	1	3	6	4
Mvmt Flow	30	88	149	751	990	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2040	990	1035	0	-	0
Stage 1	990	-	-	-	-	-
Stage 2	1049	-	-	-	-	-
Critical Hdwy	6.46	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	61	302	675	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	331	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	47	302	675	-	-	-
Mov Cap-2 Maneuver	47	-	-	-	-	-
Stage 1	275	-	-	-	-	-
Stage 2	331	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	124.79	1.97	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	675	-	128	-	-
HCM Lane V/C Ratio	0.221	-	0.92	-	-
HCM Ctrl Dly (s/v)	11.8	-	124.8	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	6	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	80	136	683	901	41
Future Vol, veh/h	27	80	136	683	901	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	0	1	3	6	4
Mvmt Flow	30	88	149	751	990	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2040	990	1035	0	-	0
Stage 1	990	-	-	-	-	-
Stage 2	1049	-	-	-	-	-
Critical Hdwy	6.46	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	61	302	675	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	331	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	47	302	675	-	-	-
Mov Cap-2 Maneuver	47	-	-	-	-	-
Stage 1	275	-	-	-	-	-
Stage 2	331	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	58.38	1.97	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	675	-	47	302	-	-
HCM Lane V/C Ratio	0.221	-	0.629	0.291	-	-
HCM Ctrl Dly (s/v)	11.8	-	166.9	21.8	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.8	-	2.4	1.2	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	67	140	491	559	67
Future Vol, veh/h	22	67	140	491	559	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	1	2
Mvmt Flow	25	77	161	564	643	77

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1529	643	720	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	130	477	891	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	107	477	891	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	432	-	-	-	-	-
Stage 2	406	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	27.96	2.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	891	-	257	-	-
HCM Lane V/C Ratio	0.181	-	0.398	-	-
HCM Ctrl Dly (s/v)	9.9	-	28	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.7	-	1.8	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	67	139	491	559	67
Future Vol, veh/h	22	67	139	491	559	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	1	2
Mvmt Flow	25	77	160	564	643	77

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1526	643	720	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	131	477	891	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	107	477	891	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	433	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.53	2.19	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	891	-	107	477	-	-
HCM Lane V/C Ratio	0.179	-	0.235	0.161	-	-
HCM Ctrl Dly (s/v)	9.9	-	48.5	14	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.7	-	0.9	0.6	-	-

CR 700 N & CR 650 E

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

CR 700 N & CR 650 E - TMC

Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354694, Location: 39.865393, -86.41116

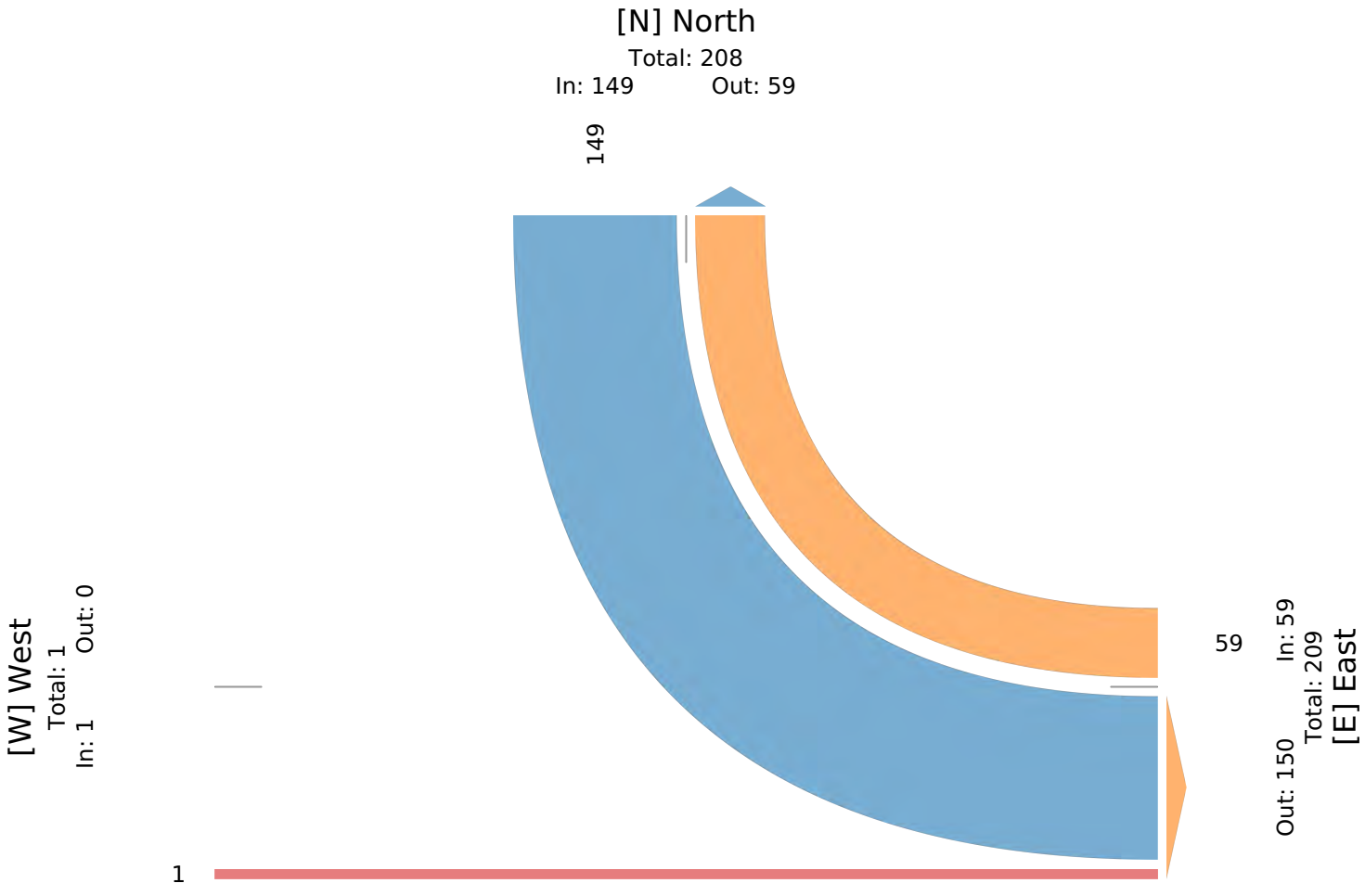
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	North				West				East				
Direction	Southbound				Eastbound				Westbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2025-10-30 7:00AM	46	0	0	**46**	0	0	0	**0**	0	8	0	**8**	**54**
7:15AM	47	0	0	**47**	0	1	0	**1**	0	5	0	**5**	**53**
7:30AM	26	0	0	**26**	0	0	0	**0**	0	23	0	**23**	**49**
7:45AM	30	0	0	**30**	0	0	0	**0**	0	23	0	**23**	**53**
Total	149	0	0	**149**	0	1	0	**1**	0	59	0	**59**	**209**
% Approach	100%	0%	0%	**-**	0%	100%	0%	**-**	0%	100%	0%	**-**	-
% Total	71.3%	0%	0%	**71.3%**	0%	0.5%	0%	**0.5%**	0%	28.2%	0%	**28.2%**	-
PHF	0.793	-	-	**0.793**	-	0.250	-	**0.250**	-	0.641	-	**0.641**	0.968
Lights and Motorcycles	147	0	0	**147**	0	1	0	**1**	0	54	0	**54**	202
% Lights and Motorcycles	98.7%	0%	0%	**98.7%**	0%	100%	0%	**100%**	0%	91.5%	0%	**91.5%**	96.7%
Heavy	2	0	0	**2**	0	0	0	**0**	0	5	0	**5**	7
% Heavy	1.3%	0%	0%	**1.3%**	0%	0%	0%	**0%**	0%	8.5%	0%	**8.5%**	3.3%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 700 N & CR 650 E - TMC
Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354694, Location: 39.865393, -86.41116

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 700 N & CR 650 E - TMC

Thu Oct 30, 2025
PM Peak (Oct 30 2025 5PM - 6 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354694, Location: 39.865393, -86.41116

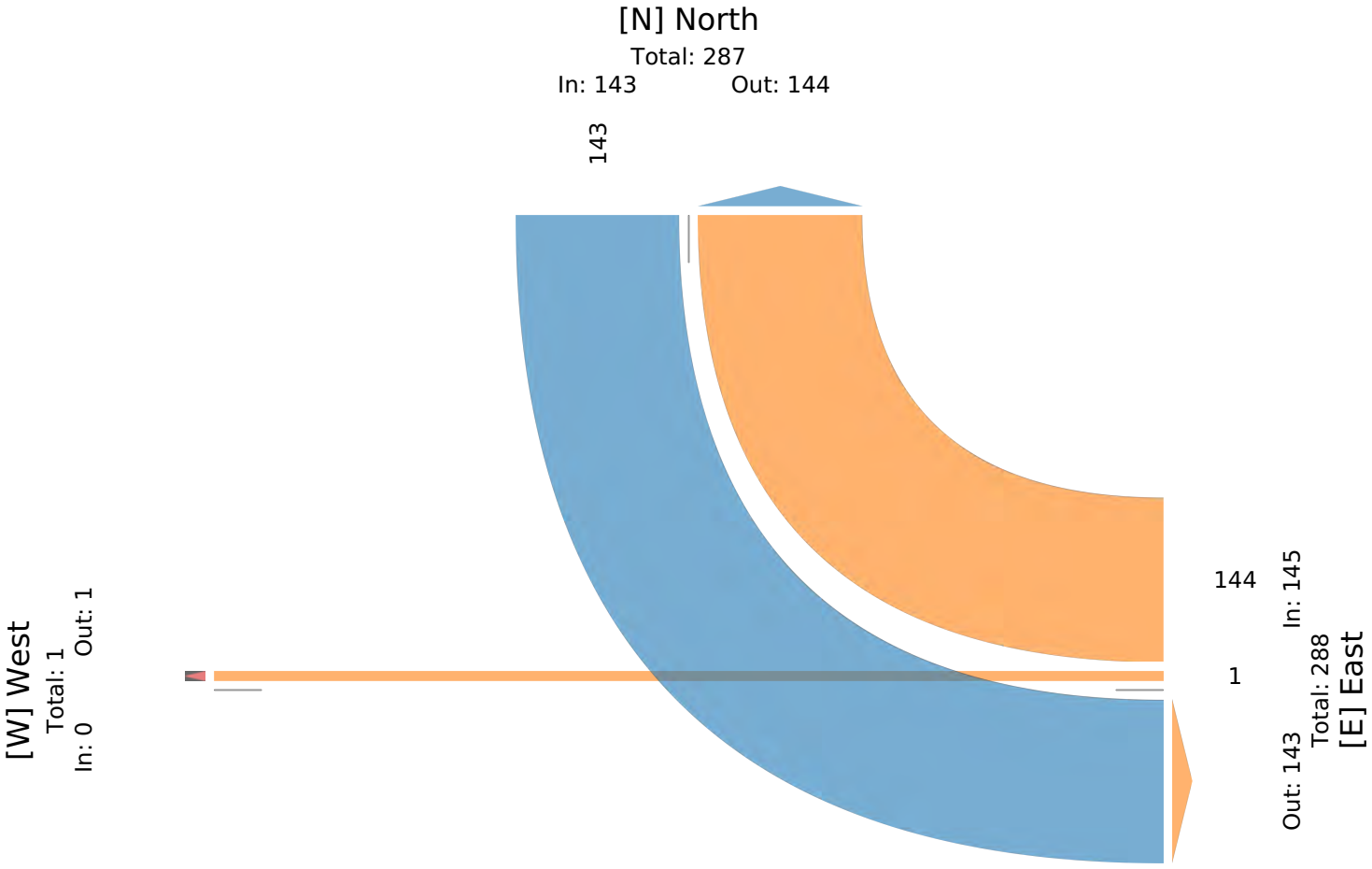
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg Direction	North Southbound				West Eastbound				East Westbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2025-10-30 5:00PM	32	0	0	**32**	0	0	0	**0**	0	38	0	**38**	**70**
5:15PM	36	0	0	**36**	0	0	0	**0**	0	27	0	**27**	**63**
5:30PM	40	0	0	**40**	0	0	0	**0**	1	41	0	**42**	**82**
5:45PM	35	0	0	**35**	0	0	0	**0**	0	38	0	**38**	**73**
Total	143	0	0	**143**	0	0	0	**0**	1	144	0	**145**	**288**
% Approach	100%	0%	0%	**-**	0%	0%	0%	**-**	0.7%	99.3%	0%	**-**	-
% Total	49.7%	0%	0%	**49.7%**	0%	0%	0%	**0%**	0.3%	50.0%	0%	**50.3%**	-
PHF	0.894	-	-	**0.894**	-	-	-	**-**	0.250	0.878	-	**0.863**	0.878
Lights and Motorcycles	143	0	0	**143**	0	0	0	**0**	1	144	0	**145**	288
% Lights and Motorcycles	100%	0%	0%	**100%**	0%	0%	0%	**-**	100%	100%	0%	**100%**	100%
Heavy	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Heavy	0%	0%	0%	**0%**	0%	0%	0%	**-**	0%	0%	0%	**0%**	0%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 700 N & CR 650 E - TMC
Thu Oct 30, 2025
PM Peak (Oct 30 2025 5PM - 6 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354694, Location: 39.865393, -86.41116

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 700 N & CR 650 E - TMC

Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 12PM - 1 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354694, Location: 39.865393, -86.41116

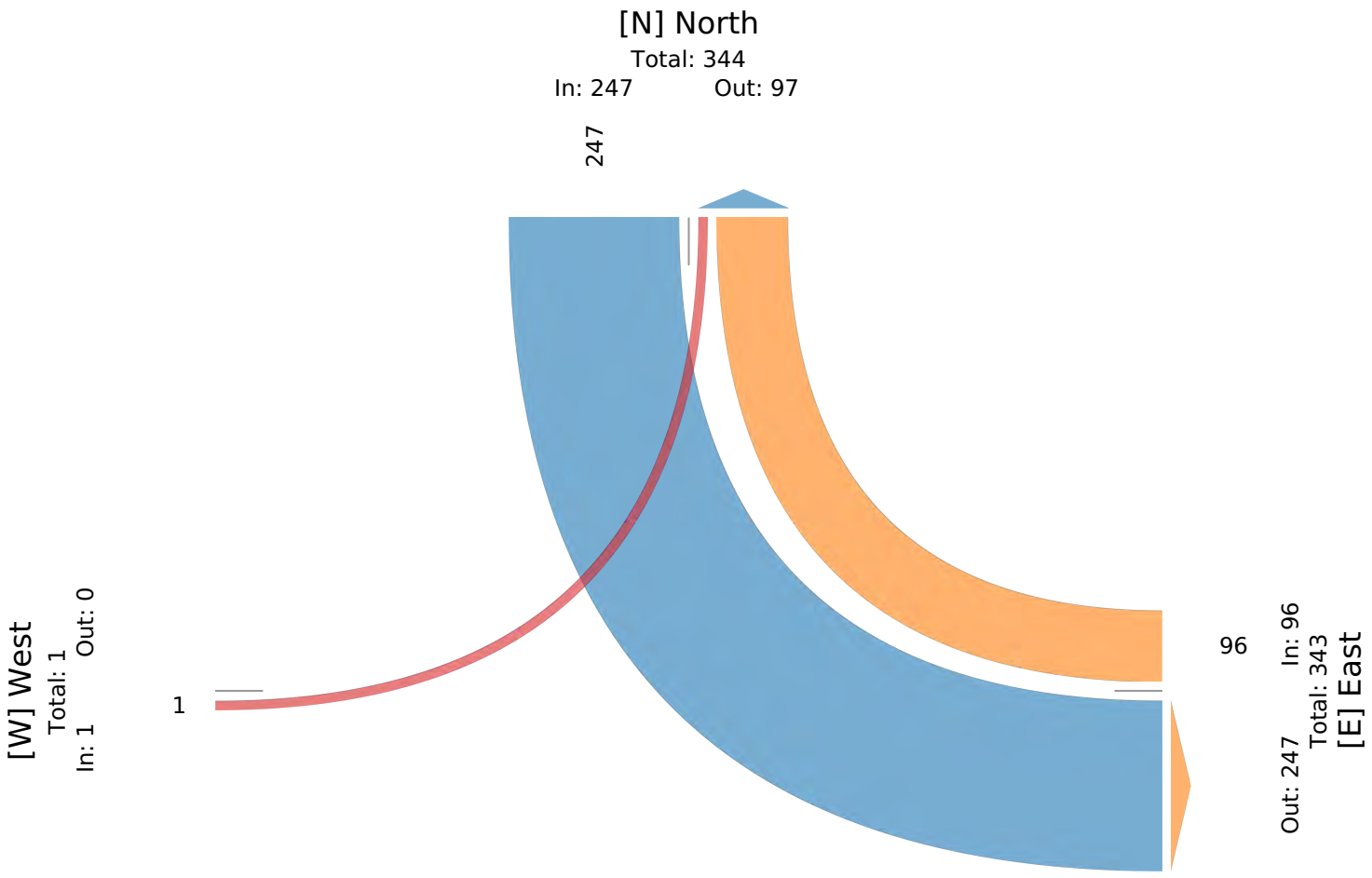
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201,
Indianapolis, IN, 46240, US

Leg Direction	North Southbound				West Eastbound				East Westbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2025-11-02 12:00PM	80	0	0	**80**	0	0	0	**0**	0	13	0	**13**	**93**
12:15PM	72	0	0	**72**	0	0	0	**0**	0	24	0	**24**	**96**
12:30PM	46	0	0	**46**	0	0	0	**0**	0	34	0	**34**	**80**
12:45PM	49	0	0	**49**	1	0	0	**1**	0	25	0	**25**	**75**
Total	247	0	0	**247**	1	0	0	**1**	0	96	0	**96**	**344**
% Approach	100%	0%	0%	**-**	100%	0%	0%	**-**	0%	100%	0%	**-**	-
% Total	71.8%	0%	0%	**71.8%**	0.3%	0%	0%	**0.3%**	0%	27.9%	0%	**27.9%**	-
PHF	0.772	-	-	**0.772**	0.250	-	-	**0.250**	-	0.706	-	**0.706**	0.896
Lights and Motorcycles	247	0	0	**247**	1	0	0	**1**	0	96	0	**96**	344
% Lights and Motorcycles	100%	0%	0%	**100%**	100%	0%	0%	**100%**	0%	100%	0%	**100%**	100%
Heavy	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Heavy	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 700 N & CR 650 E - TMC
Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 12PM - 1 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354694, Location: 39.865393, -86.41116

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201,
Indianapolis, IN, 46240, US



Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	59	149	0
Future Vol, veh/h	0	1	0	59	149	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	9	1	0
Mvmt Flow	0	1	0	61	154	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	61	0	-	0	31	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	4.1	-	-	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.3
Pot Cap-1 Maneuver	1555	-	-	-	985	1050
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	1025	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	985	1050
Mov Cap-2 Maneuver	-	-	-	-	985	-
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	1025	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	9.33
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1555	-	-	-	985
HCM Lane V/C Ratio	-	-	-	-	0.156
HCM Ctrl Dly (s/v)	0	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	1	144	143	0
Future Vol, veh/h	0	0	1	144	143	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	1	164	163	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	165	0	-	0	83	83
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1426	-	-	-	924	982
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1426	-	-	-	924	982
Mov Cap-2 Maneuver	-	-	-	-	924	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	9.73
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1426	-	-	-	924
HCM Lane V/C Ratio	-	-	-	-	0.176
HCM Ctrl Dly (s/v)	0	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	96	247	0
Future Vol, veh/h	1	0	0	96	247	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	0	0	107	274	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	107	0	-	0	56	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	2	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1497	-	-	-	957	1020
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	1026	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1497	-	-	-	957	1020
Mov Cap-2 Maneuver	-	-	-	-	957	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	1026	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	7.41	0	10.27
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1497	-	-	-	957
HCM Lane V/C Ratio	0.001	-	-	-	0.287
HCM Ctrl Dly (s/v)	7.4	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	64	161	0
Future Vol, veh/h	0	2	0	64	161	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	9	1	0
Mvmt Flow	0	2	0	66	166	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	66	0	-	0	35	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	2	-
Critical Hdwy	4.1	-	-	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.3
Pot Cap-1 Maneuver	1549	-	-	-	980	1046
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	1024	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1549	-	-	-	980	1046
Mov Cap-2 Maneuver	-	-	-	-	980	-
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	1024	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	9.42
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1549	-	-	-	980
HCM Lane V/C Ratio	-	-	-	-	0.169
HCM Ctrl Dly (s/v)	0	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	155	154	0
Future Vol, veh/h	0	0	2	155	154	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	2	176	175	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	178	0	-	0	90	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1410	-	-	-	915	973
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1410	-	-	-	915	973
Mov Cap-2 Maneuver	-	-	-	-	915	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	9.86
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1410	-	-	-	915
HCM Lane V/C Ratio	-	-	-	-	0.191
HCM Ctrl Dly (s/v)	0	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	104	266	0
Future Vol, veh/h	2	0	0	104	266	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	0	0	116	296	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	0	-	0	62	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1486	-	-	-	949	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	1024	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1486	-	-	-	948	1014
Mov Cap-2 Maneuver	-	-	-	-	948	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1024	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	7.43	0	10.51
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1486	-	-	-	948
HCM Lane V/C Ratio	0.001	-	-	-	0.312
HCM Ctrl Dly (s/v)	7.4	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.3

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	64	161	0
Future Vol, veh/h	0	2	0	64	161	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	9	1	0
Mvmt Flow	0	2	0	66	166	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	66	0	-	0	35	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	2	-
Critical Hdwy	4.1	-	-	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.3
Pot Cap-1 Maneuver	1549	-	-	-	980	1046
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	1024	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1549	-	-	-	980	1046
Mov Cap-2 Maneuver	-	-	-	-	980	-
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	1024	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	9.42
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1549	-	-	-	980
HCM Lane V/C Ratio	-	-	-	-	0.169
HCM Ctrl Dly (s/v)	0	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	155	154	0
Future Vol, veh/h	0	0	2	155	154	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	2	176	175	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	178	0	-	0	90	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1410	-	-	-	915	973
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1410	-	-	-	915	973
Mov Cap-2 Maneuver	-	-	-	-	915	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	9.86
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1410	-	-	-	915
HCM Lane V/C Ratio	-	-	-	-	0.191
HCM Ctrl Dly (s/v)	0	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	104	266	0
Future Vol, veh/h	2	0	0	104	266	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	0	0	116	296	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	0	-	0	62	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1486	-	-	-	949	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	1024	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1486	-	-	-	948	1014
Mov Cap-2 Maneuver	-	-	-	-	948	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1024	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	7.43	0	10.51
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1486	-	-	-	948
HCM Lane V/C Ratio	0.001	-	-	-	0.312
HCM Ctrl Dly (s/v)	7.4	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.3

CR 700 N & SR 267 (GREEN STREET)

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

SR 267 & CR 700 N - TMC

Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354608, Location: 39.865526, -86.392498

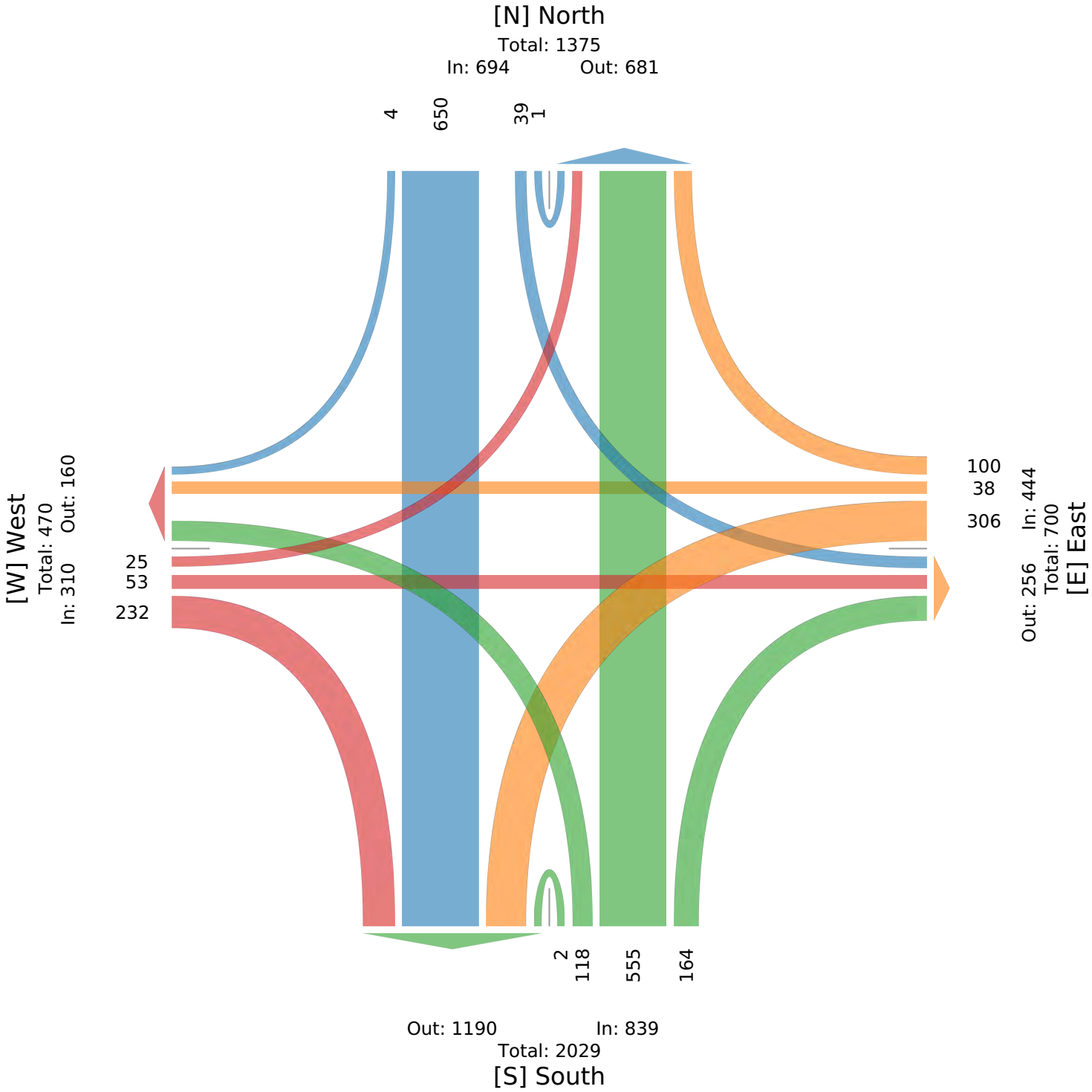
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-30 7:00AM	18	109	23	0	**150**	9	190	1	0	**200**	5	10	84	0	**99**	69	10	22	0	**101**	**550**
7:15AM	32	138	40	1	**211**	9	140	2	1	**152**	7	22	61	0	**90**	83	4	23	0	**110**	**563**
7:30AM	38	152	52	1	**243**	14	145	0	0	**159**	5	13	52	0	**70**	77	13	27	0	**117**	**589**
7:45AM	30	156	49	0	**235**	7	175	1	0	**183**	8	8	35	0	**51**	77	11	28	0	**116**	**585**
Total	118	555	164	2	**839**	39	650	4	1	**694**	25	53	232	0	**310**	306	38	100	0	**444**	**2287**
% Approach	14.1%	66.2%	19.5%	0.2%	**-**	5.6%	93.7%	0.6%	0.1%	**-**	8.1%	17.1%	74.8%	0%	**-**	68.9%	8.6%	22.5%	0%	**-**	-
% Total	5.2%	24.3%	7.2%	0.1%	**36.7%**	1.7%	28.4%	0.2%	0%	**30.3%**	1.1%	2.3%	10.1%	0%	**13.6%**	13.4%	1.7%	4.4%	0%	**19.4%**	-
PHF	0.776	0.889	0.788	0.500	**0.863**	0.696	0.855	0.500	0.250	**0.868**	0.781	0.602	0.690	-	**0.783**	0.922	0.731	0.893	-	**0.949**	0.971
Lights and Motorcycles	116	535	159	2	**812**	38	626	4	1	**669**	25	52	228	0	**305**	296	35	99	0	**430**	2216
% Lights and Motorcycles	98.3%	96.4%	97.0%	100%	**96.8%**	97.4%	96.3%	100%	100%	**96.4%**	100%	98.1%	98.3%	0%	**98.4%**	96.7%	92.1%	99.0%	0%	**96.8%**	96.9%
Heavy	2	20	5	0	**27**	1	24	0	0	**25**	0	1	4	0	**5**	10	3	1	0	**14**	71
% Heavy	1.7%	3.6%	3.0%	0%	**3.2%**	2.6%	3.7%	0%	0%	**3.6%**	0%	1.9%	1.7%	0%	**1.6%**	3.3%	7.9%	1.0%	0%	**3.2%**	3.1%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & CR 700 N - TMC
Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354608, Location: 39.865526, -86.392498

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 267 & CR 700 N - TMC

Thu Oct 30, 2025
PM Peak (Oct 30 2025 4:45PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354608, Location: 39.865526, -86.392498

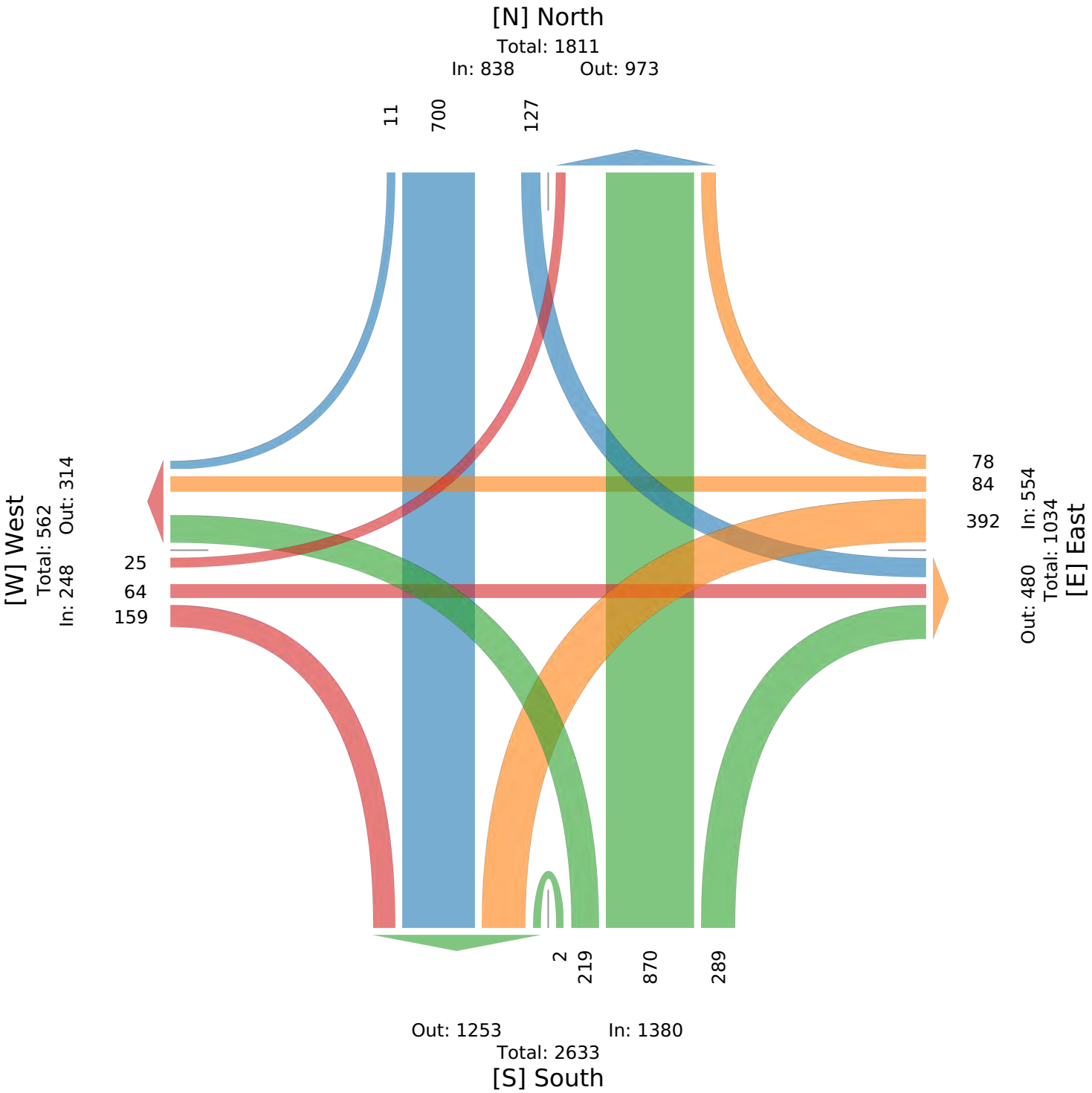
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-30 4:45PM	55	211	96	1	**363**	31	193	1	0	**225**	3	15	32	0	**50**	100	23	19	0	**142**	**780**
5:00PM	47	207	68	0	**322**	35	159	4	0	**198**	5	16	41	0	**62**	101	25	19	0	**145**	**727**
5:15PM	48	208	54	0	**310**	35	188	3	0	**226**	7	20	36	0	**63**	109	18	16	0	**143**	**742**
5:30PM	69	244	71	1	**385**	26	160	3	0	**189**	10	13	50	0	**73**	82	18	24	0	**124**	**771**
Total	219	870	289	2	**1380**	127	700	11	0	**838**	25	64	159	0	**248**	392	84	78	0	**554**	**3020**
% Approach	15.9%	63.0%	20.9%	0.1%	**-**	15.2%	83.5%	1.3%	0%	**-**	10.1%	25.8%	64.1%	0%	**-**	70.8%	15.2%	14.1%	0%	**-**	-
% Total	7.3%	28.8%	9.6%	0.1%	**45.7%**	4.2%	23.2%	0.4%	0%	**27.7%**	0.8%	2.1%	5.3%	0%	**8.2%**	13.0%	2.8%	2.6%	0%	**18.3%**	-
PHF	0.793	0.891	0.753	0.500	**0.896**	0.907	0.907	0.688	-	**0.927**	0.625	0.800	0.795	-	**0.849**	0.899	0.840	0.813	-	**0.955**	0.968
Lights and Motorcycles	219	848	289	2	**1358**	126	652	11	0	**789**	25	64	158	0	**247**	387	84	77	0	**548**	2942
% Lights and Motorcycles	100%	97.5%	100%	100%	**98.4%**	99.2%	93.1%	100%	0%	**94.2%**	100%	100%	99.4%	0%	**99.6%**	98.7%	100%	98.7%	0%	**98.9%**	97.4%
Heavy	0	22	0	0	**22**	1	48	0	0	**49**	0	0	1	0	**1**	5	0	1	0	**6**	78
% Heavy	0%	2.5%	0%	0%	**1.6%**	0.8%	6.9%	0%	0%	**5.8%**	0%	0%	0.6%	0%	**0.4%**	1.3%	0%	1.3%	0%	**1.1%**	2.6%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & CR 700 N - TMC
Thu Oct 30, 2025
PM Peak (Oct 30 2025 4:45PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354608, Location: 39.865526, -86.392498

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 267 & CR 700 N - TMC

Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 12:15PM - 1:15 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354608, Location: 39.865526, -86.392498

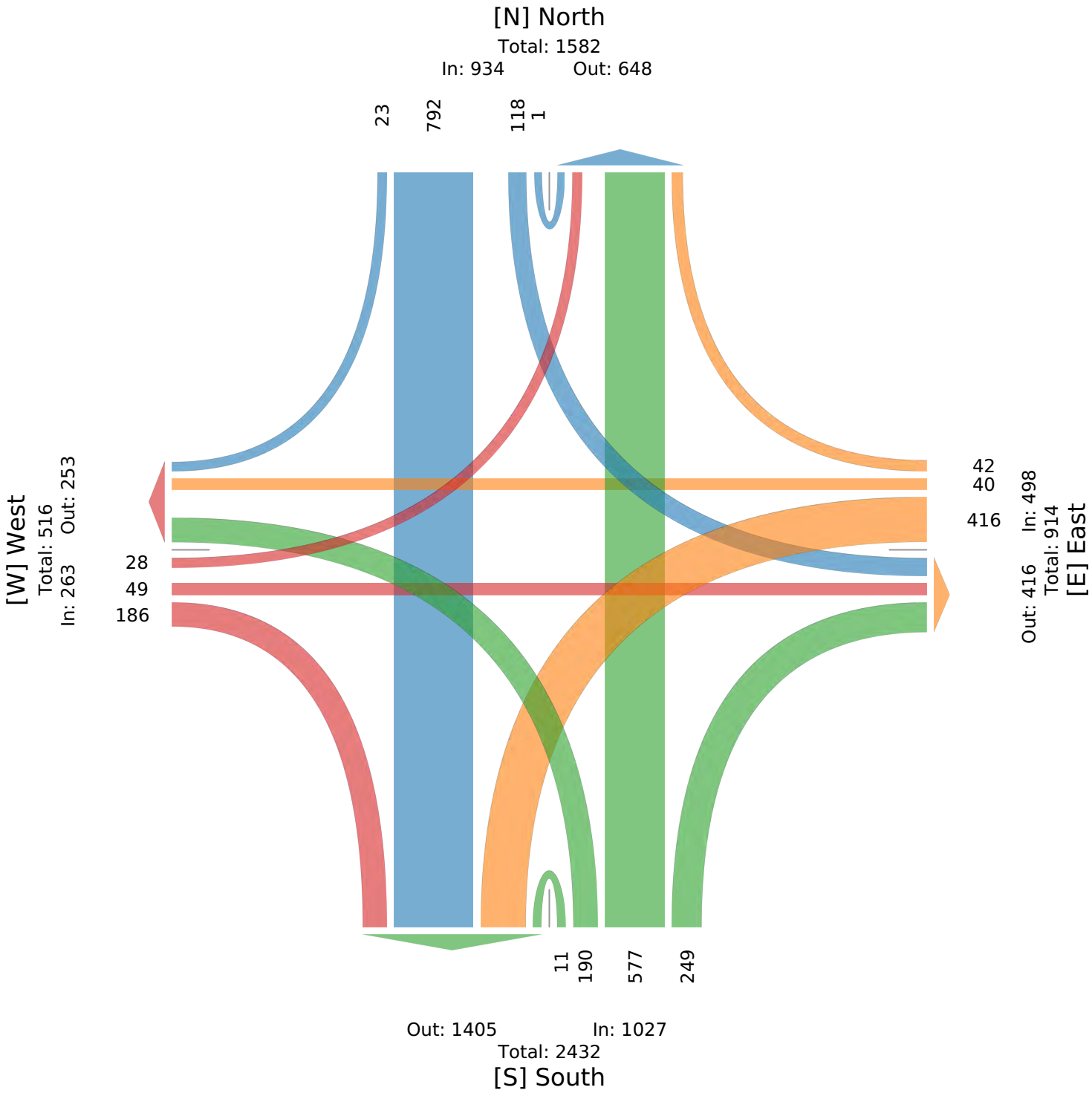
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

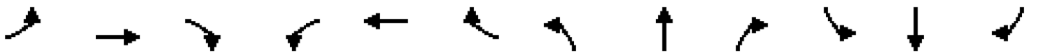
Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-11-02 12:15PM	45	135	57	1	**238**	25	201	7	0	**233**	13	21	65	0	**99**	101	6	12	0	**119**	**689**
12:30PM	55	155	51	4	**265**	37	216	2	0	**255**	5	13	46	0	**64**	88	14	12	0	**114**	**698**
12:45PM	37	137	64	5	**243**	24	221	4	0	**249**	4	7	51	0	**62**	113	15	10	0	**138**	**692**
1:00PM	53	150	77	1	**281**	32	154	10	1	**197**	6	8	24	0	**38**	114	5	8	0	**127**	**643**
Total	190	577	249	11	**1027**	118	792	23	1	**934**	28	49	186	0	**263**	416	40	42	0	**498**	**2722**
% Approach	18.5%	56.2%	24.2%	1.1%	**-**	12.6%	84.8%	2.5%	0.1%	**-**	10.6%	18.6%	70.7%	0%	**-**	83.5%	8.0%	8.4%	0%	**-**	-
% Total	7.0%	21.2%	9.1%	0.4%	**37.7%**	4.3%	29.1%	0.8%	0%	**34.3%**	1.0%	1.8%	6.8%	0%	**9.7%**	15.3%	1.5%	1.5%	0%	**18.3%**	-
PHF	0.864	0.931	0.808	0.550	**0.914**	0.797	0.896	0.575	0.250	**0.916**	0.538	0.583	0.715		**0.664**	0.912	0.667	0.875	-	**0.902**	0.975
Lights and Motorcycles	190	573	248	11	**1022**	118	787	23	1	**929**	28	49	186	0	**263**	415	40	42	0	**497**	2711
% Lights and Motorcycles	100%	99.3%	99.6%	100%	**99.5%**	100%	99.4%	100%	100%	**99.5%**	100%	100%	100%	0%	**100%**	99.8%	100%	100%	0%	**99.8%**	99.6%
Heavy	0	4	1	0	**5**	0	5	0	0	**5**	0	0	0	0	**0**	1	0	0	0	**1**	11
% Heavy	0%	0.7%	0.4%	0%	**0.5%**	0%	0.6%	0%	0%	**0.5%**	0%	0%	0%	0%	**0%**	0.2%	0%	0%	0%	**0.2%**	0.4%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & CR 700 N - TMC
Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 12:15PM - 1:15 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354608, Location: 39.865526, -86.392498

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

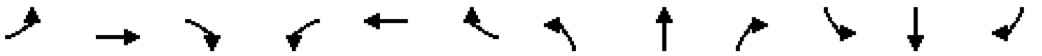




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	53	232	306	38	100	118	555	164	39	650	4
Future Volume (veh/h)	25	53	232	306	38	100	118	555	164	39	650	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1856	1781	1885	1870	1841	1856	1856	1841	1900
Adj Flow Rate, veh/h	26	55	239	315	39	103	122	572	169	40	670	4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	3	8	1	2	4	3	3	4	0
Cap, veh/h	324	335	433	616	78	205	338	783	231	276	909	5
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.09	0.29	0.29	0.05	0.25	0.25
Sat Flow, veh/h	1810	1870	1585	3428	433	1143	1781	2663	785	1767	3564	21
Grp Volume(v), veh/h	26	55	239	315	0	142	122	375	366	40	329	345
Grp Sat Flow(s),veh/h/ln	1810	1870	1585	1714	0	1576	1781	1749	1699	1767	1749	1837
Q Serve(g_s), s	0.8	1.7	8.6	5.5	0.0	5.4	3.2	12.9	12.9	1.1	11.5	11.5
Cycle Q Clear(g_c), s	0.8	1.7	8.6	5.5	0.0	5.4	3.2	12.9	12.9	1.1	11.5	11.5
Prop In Lane	1.00		1.00	1.00		0.73	1.00		0.46	1.00		0.01
Lane Grp Cap(c), veh/h	324	335	433	616	0	283	338	514	500	276	446	468
V/C Ratio(X)	0.08	0.16	0.55	0.51	0.00	0.50	0.36	0.73	0.73	0.14	0.74	0.74
Avail Cap(c_a), veh/h	325	336	434	668	0	307	531	875	850	367	707	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	23.2	20.8	24.7	0.0	24.7	16.3	21.2	21.2	17.1	22.8	22.8
Incr Delay (d2), s/veh	0.1	0.2	1.5	0.7	0.0	1.4	0.6	2.0	2.1	0.2	2.4	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	3.2	2.2	0.0	2.0	1.3	5.2	5.1	0.4	4.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.9	23.4	22.3	25.4	0.0	26.1	17.0	23.2	23.3	17.4	25.2	25.1
LnGrp LOS	C	C	C	C		C	B	C	C	B	C	C
Approach Vol, veh/h		320			457			863			714	
Approach Delay, s/veh		22.5			25.6			22.4			24.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	24.6		17.0	10.8	22.0		17.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	7.1	33.4		12.0	13.5	27.0		13.0				
Max Q Clear Time (g_c+I1), s	3.1	14.9		10.6	5.2	13.5		7.5				
Green Ext Time (p_c), s	0.0	4.6		0.2	0.2	3.5		1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			23.7									
HCM 7th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	64	159	392	84	78	219	870	289	127	700	11
Future Volume (veh/h)	25	64	159	392	84	78	219	870	289	127	700	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1885	1900	1856	1900	1885	1796	1900
Adj Flow Rate, veh/h	26	66	164	404	87	80	226	897	298	131	722	11
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	1	1	0	1	0	3	0	1	7	0
Cap, veh/h	234	246	361	531	139	128	439	1129	374	273	1412	22
Arrive On Green	0.13	0.13	0.13	0.15	0.15	0.15	0.10	0.43	0.43	0.07	0.41	0.41
Sat Flow, veh/h	1810	1900	1598	3483	911	838	1810	2601	862	1795	3441	52
Grp Volume(v), veh/h	26	66	164	404	0	167	226	607	588	131	358	375
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1742	0	1749	1810	1763	1700	1795	1706	1787
Q Serve(g_s), s	1.2	2.9	8.2	10.3	0.0	8.3	6.5	27.5	27.7	3.8	14.5	14.5
Cycle Q Clear(g_c), s	1.2	2.9	8.2	10.3	0.0	8.3	6.5	27.5	27.7	3.8	14.5	14.5
Prop In Lane	1.00		1.00	1.00		0.48	1.00		0.51	1.00		0.03
Lane Grp Cap(c), veh/h	234	246	361	531	0	267	439	765	738	273	700	733
V/C Ratio(X)	0.11	0.27	0.45	0.76	0.00	0.63	0.51	0.79	0.80	0.48	0.51	0.51
Avail Cap(c_a), veh/h	235	247	362	829	0	416	627	1197	1155	407	1070	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	36.3	30.9	37.6	0.0	36.7	14.5	22.6	22.6	18.2	20.3	20.3
Incr Delay (d2), s/veh	0.2	0.6	0.9	2.3	0.0	2.4	0.9	2.0	2.2	1.3	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	3.2	4.5	0.0	3.7	2.6	11.2	10.9	1.6	5.7	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.7	36.9	31.8	39.8	0.0	39.1	15.4	24.6	24.8	19.5	20.9	20.9
LnGrp LOS	D	D	C	D		D	B	C	C	B	C	C
Approach Vol, veh/h		256			571			1421			864	
Approach Delay, s/veh		33.5			39.6			23.2			20.7	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	45.1		17.0	13.4	43.0		19.1				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	13.7	62.8		12.0	18.5	58.0		22.0				
Max Q Clear Time (g_c+I1), s	5.8	29.7		10.2	8.5	16.5		12.3				
Green Ext Time (p_c), s	0.2	10.5		0.2	0.4	5.3		1.8				

Intersection Summary			
HCM 7th Control Delay, s/veh		26.4	
HCM 7th LOS		C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	49	186	416	40	42	190	577	249	118	792	23
Future Volume (veh/h)	28	49	186	416	40	42	190	577	249	118	792	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	29	50	190	424	41	43	194	589	254	120	808	23
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	0
Cap, veh/h	293	307	422	570	138	145	352	793	341	327	1108	32
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.10	0.33	0.33	0.09	0.31	0.31
Sat Flow, veh/h	1810	1900	1610	3510	849	891	1810	2437	1050	1810	3557	101
Grp Volume(v), veh/h	29	50	190	424	0	84	194	433	410	120	407	424
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1755	0	1740	1810	1791	1696	1810	1791	1867
Q Serve(g_s), s	1.0	1.7	7.3	8.5	0.0	3.1	5.2	15.9	15.9	3.2	15.0	15.0
Cycle Q Clear(g_c), s	1.0	1.7	7.3	8.5	0.0	3.1	5.2	15.9	15.9	3.2	15.0	15.0
Prop In Lane	1.00		1.00	1.00		0.51	1.00		0.62	1.00		0.05
Lane Grp Cap(c), veh/h	293	307	422	570	0	283	352	583	552	327	558	582
V/C Ratio(X)	0.10	0.16	0.45	0.74	0.00	0.30	0.55	0.74	0.74	0.37	0.73	0.73
Avail Cap(c_a), veh/h	294	309	423	903	0	447	575	1086	1028	408	921	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	26.7	22.8	29.5	0.0	27.2	16.4	22.2	22.2	16.2	22.7	22.7
Incr Delay (d2), s/veh	0.1	0.2	0.8	1.9	0.0	0.6	1.3	1.9	2.0	0.7	1.8	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.8	2.7	3.6	0.0	1.3	2.1	6.6	6.2	1.3	6.2	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.5	26.9	23.6	31.4	0.0	27.8	17.8	24.1	24.2	16.9	24.5	24.4
LnGrp LOS	C	C	C	C		C	B	C	C	B	C	C
Approach Vol, veh/h		269			508			1037			951	
Approach Delay, s/veh		24.5			30.8			22.9			23.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	29.0		17.0	11.9	28.0		17.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	9.7	44.8		12.0	16.5	38.0		19.0				
Max Q Clear Time (g_c+I1), s	5.2	17.9		9.3	7.2	17.0		10.5				
Green Ext Time (p_c), s	0.1	6.1		0.3	0.3	5.4		1.4				

Intersection Summary			
HCM 7th Control Delay, s/veh		24.7	
HCM 7th LOS		C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	61	267	352	44	115	136	639	189	45	748	5
Future Volume (veh/h)	29	61	267	352	44	115	136	639	189	45	748	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1856	1781	1885	1870	1841	1856	1856	1841	1900
Adj Flow Rate, veh/h	30	63	275	363	45	119	140	659	195	46	771	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	3	8	1	2	4	3	3	4	0
Cap, veh/h	303	313	411	575	72	192	339	888	263	277	1071	7
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.09	0.33	0.33	0.06	0.30	0.30
Sat Flow, veh/h	1810	1870	1585	3428	432	1143	1781	2661	787	1767	3562	23
Grp Volume(v), veh/h	30	63	275	363	0	164	140	433	421	46	378	398
Grp Sat Flow(s),veh/h/ln	1810	1870	1585	1714	0	1576	1781	1749	1699	1767	1749	1837
Q Serve(g_s), s	1.0	2.1	11.1	7.1	0.0	6.9	3.7	15.7	15.7	1.2	13.8	13.8
Cycle Q Clear(g_c), s	1.0	2.1	11.1	7.1	0.0	6.9	3.7	15.7	15.7	1.2	13.8	13.8
Prop In Lane	1.00		1.00	1.00		0.73	1.00		0.46	1.00		0.01
Lane Grp Cap(c), veh/h	303	313	411	575	0	264	339	584	567	277	526	552
V/C Ratio(X)	0.10	0.20	0.67	0.63	0.00	0.62	0.41	0.74	0.74	0.17	0.72	0.72
Avail Cap(c_a), veh/h	303	313	411	814	0	374	626	1084	1054	349	816	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	25.7	23.8	27.7	0.0	27.7	16.0	21.1	21.1	16.4	22.3	22.3
Incr Delay (d2), s/veh	0.1	0.3	4.1	1.2	0.0	2.4	0.8	1.9	1.9	0.3	1.9	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.9	4.4	2.9	0.0	2.7	1.5	6.3	6.1	0.5	5.6	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.4	26.0	27.9	28.9	0.0	30.1	16.8	23.0	23.1	16.7	24.2	24.1
LnGrp LOS	C	C	C	C		C	B	C	C	B	C	C
Approach Vol, veh/h		368			527			994			822	
Approach Delay, s/veh		27.4			29.3			22.2			23.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	28.9		17.0	11.1	26.5		17.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	7.1	44.4		12.0	18.1	33.4		17.0				
Max Q Clear Time (g_c+I1), s	3.2	17.7		13.1	5.7	15.8		9.1				
Green Ext Time (p_c), s	0.0	6.2		0.0	0.3	4.6		1.5				

Intersection Summary			
HCM 7th Control Delay, s/veh		24.7	
HCM 7th LOS		C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	74	183	451	97	90	252	1001	333	147	805	13
Future Volume (veh/h)	29	74	183	451	97	90	252	1001	333	147	805	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1885	1900	1856	1900	1885	1796	1900
Adj Flow Rate, veh/h	30	76	189	465	100	93	260	1032	343	152	830	13
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	1	1	0	1	0	3	0	1	7	0
Cap, veh/h	215	226	344	583	152	141	419	1261	415	232	1552	24
Arrive On Green	0.12	0.12	0.12	0.17	0.17	0.17	0.10	0.48	0.48	0.06	0.45	0.45
Sat Flow, veh/h	1810	1900	1598	3483	906	842	1810	2606	858	1795	3439	54
Grp Volume(v), veh/h	30	76	189	465	0	193	260	695	680	152	412	431
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1742	0	1748	1810	1763	1701	1795	1706	1787
Q Serve(g_s), s	1.7	4.3	12.4	15.1	0.0	12.1	8.7	39.5	40.4	5.3	20.5	20.5
Cycle Q Clear(g_c), s	1.7	4.3	12.4	15.1	0.0	12.1	8.7	39.5	40.4	5.3	20.5	20.5
Prop In Lane	1.00		1.00	1.00		0.48	1.00		0.50	1.00		0.03
Lane Grp Cap(c), veh/h	215	226	344	583	0	293	419	853	823	232	770	806
V/C Ratio(X)	0.14	0.34	0.55	0.80	0.00	0.66	0.62	0.81	0.83	0.66	0.53	0.53
Avail Cap(c_a), veh/h	215	226	344	948	0	476	643	1342	1295	422	1213	1270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	47.5	41.0	47.0	0.0	45.8	16.7	25.9	26.1	24.1	23.3	23.3
Incr Delay (d2), s/veh	0.3	0.9	1.8	2.6	0.0	2.5	1.5	2.2	2.6	3.1	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	5.0	6.7	0.0	5.5	3.7	16.5	16.4	2.3	8.3	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.7	48.4	42.9	49.6	0.0	48.3	18.2	28.1	28.7	27.2	23.9	23.9
LnGrp LOS	D	D	D	D		D	B	C	C	C	C	C
Approach Vol, veh/h		295			658			1635			995	
Approach Delay, s/veh		44.7			49.2			26.8			24.4	
Approach LOS		D			D			C			C	

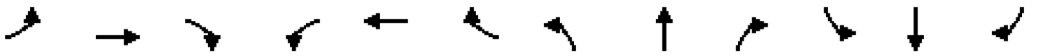
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	61.9		19.0	15.8	58.0		24.7				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	20.0	89.5		14.0	25.9	83.6		32.0				
Max Q Clear Time (g_c+I1), s	7.3	42.4		14.4	10.7	22.5		17.1				
Green Ext Time (p_c), s	0.3	14.4		0.0	0.7	6.6		2.6				

Intersection Summary			
HCM 7th Control Delay, s/veh		31.7	
HCM 7th LOS		C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	57	214	479	46	49	219	664	287	136	911	27
Future Volume (veh/h)	33	57	214	479	46	49	219	664	287	136	911	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	34	58	218	489	47	50	223	678	293	139	930	28
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	0
Cap, veh/h	259	272	403	629	151	160	341	887	383	301	1198	36
Arrive On Green	0.14	0.14	0.14	0.18	0.18	0.18	0.11	0.36	0.36	0.08	0.34	0.34
Sat Flow, veh/h	1810	1900	1610	3510	842	896	1810	2435	1052	1810	3550	107
Grp Volume(v), veh/h	34	58	218	489	0	97	223	499	472	139	469	489
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1755	0	1739	1810	1791	1696	1810	1791	1866
Q Serve(g_s), s	1.4	2.3	9.8	11.1	0.0	4.1	6.5	20.5	20.5	4.1	19.7	19.7
Cycle Q Clear(g_c), s	1.4	2.3	9.8	11.1	0.0	4.1	6.5	20.5	20.5	4.1	19.7	19.7
Prop In Lane	1.00		1.00	1.00		0.52	1.00		0.62	1.00		0.06
Lane Grp Cap(c), veh/h	259	272	403	629	0	311	341	652	618	301	604	630
V/C Ratio(X)	0.13	0.21	0.54	0.78	0.00	0.31	0.65	0.76	0.76	0.46	0.78	0.78
Avail Cap(c_a), veh/h	259	272	403	1007	0	499	592	1113	1054	426	940	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	31.7	27.2	32.8	0.0	29.9	18.3	23.4	23.4	18.0	24.9	24.9
Incr Delay (d2), s/veh	0.2	0.4	1.5	2.1	0.0	0.6	2.1	1.9	2.0	1.1	2.2	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.0	3.8	4.8	0.0	1.7	2.7	8.6	8.1	1.7	8.3	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.5	32.1	28.6	34.9	0.0	30.4	20.4	25.3	25.4	19.1	27.1	27.0
LnGrp LOS	C	C	C	C		C	C	C	C	B	C	C
Approach Vol, veh/h		310			586			1194			1097	
Approach Delay, s/veh		29.6			34.1			24.5			26.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.2	35.5		17.0	13.5	33.2		20.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	12.5	52.0		12.0	20.6	43.9		24.0				
Max Q Clear Time (g_c+I1), s	6.1	22.5		11.8	8.5	21.7		13.1				
Green Ext Time (p_c), s	0.2	7.6		0.0	0.5	6.6		1.9				

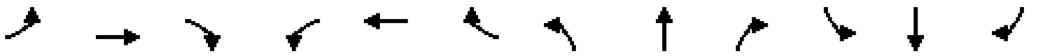
Intersection Summary												
HCM 7th Control Delay, s/veh			27.3									
HCM 7th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	61	267	352	44	117	136	651	189	50	779	5
Future Volume (veh/h)	29	61	267	352	44	117	136	651	189	50	779	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1856	1781	1885	1870	1841	1856	1856	1841	1900
Adj Flow Rate, veh/h	30	63	275	363	45	121	140	671	195	52	803	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	3	8	1	2	4	3	3	4	0
Cap, veh/h	299	309	405	566	70	190	335	906	263	284	1108	7
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.09	0.34	0.34	0.06	0.31	0.31
Sat Flow, veh/h	1810	1870	1585	3428	427	1148	1781	2673	776	1767	3563	22
Grp Volume(v), veh/h	30	63	275	363	0	166	140	439	427	52	394	414
Grp Sat Flow(s),veh/h/ln	1810	1870	1585	1714	0	1575	1781	1749	1701	1767	1749	1837
Q Serve(g_s), s	1.0	2.1	11.4	7.2	0.0	7.1	3.7	16.1	16.1	1.4	14.6	14.6
Cycle Q Clear(g_c), s	1.0	2.1	11.4	7.2	0.0	7.1	3.7	16.1	16.1	1.4	14.6	14.6
Prop In Lane	1.00		1.00	1.00		0.73	1.00		0.46	1.00		0.01
Lane Grp Cap(c), veh/h	299	309	405	566	0	260	335	593	576	284	544	571
V/C Ratio(X)	0.10	0.20	0.68	0.64	0.00	0.64	0.42	0.74	0.74	0.18	0.72	0.72
Avail Cap(c_a), veh/h	299	309	405	802	0	368	651	1179	1147	356	890	935
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	26.2	24.4	28.3	0.0	28.3	16.0	21.2	21.2	16.2	22.3	22.3
Incr Delay (d2), s/veh	0.1	0.3	4.5	1.2	0.0	2.6	0.8	1.8	1.9	0.3	1.9	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.9	4.5	2.9	0.0	2.8	1.5	6.4	6.3	0.5	5.9	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.9	26.5	28.9	29.5	0.0	30.9	16.8	23.0	23.1	16.5	24.1	24.0
LnGrp LOS	C	C	C	C		C	B	C	C	B	C	C
Approach Vol, veh/h		368			529			1006			860	
Approach Delay, s/veh		28.2			30.0			22.2			23.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	29.6		17.0	11.1	27.6		17.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	7.5	49.0		12.0	19.5	37.0		17.0				
Max Q Clear Time (g_c+I1), s	3.4	18.1		13.4	5.7	16.6		9.2				
Green Ext Time (p_c), s	0.0	6.5		0.0	0.3	5.2		1.5				

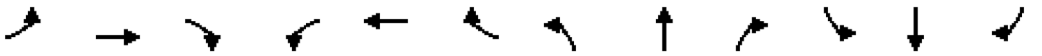
Intersection Summary			
HCM 7th Control Delay, s/veh		24.9	
HCM 7th LOS		C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	74	183	451	97	95	252	1035	333	151	826	13
Future Volume (veh/h)	29	74	183	451	97	95	252	1035	333	151	826	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1885	1900	1856	1900	1885	1796	1900
Adj Flow Rate, veh/h	30	76	189	465	100	98	260	1067	343	156	852	13
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	1	1	0	1	0	3	0	1	7	0
Cap, veh/h	192	202	323	576	146	143	421	1291	411	233	1581	24
Arrive On Green	0.11	0.11	0.11	0.17	0.17	0.17	0.10	0.49	0.49	0.06	0.46	0.46
Sat Flow, veh/h	1810	1900	1598	3483	881	863	1810	2631	837	1795	3441	52
Grp Volume(v), veh/h	30	76	189	465	0	198	260	711	699	156	423	442
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1742	0	1745	1810	1763	1705	1795	1706	1787
Q Serve(g_s), s	1.7	4.2	12.0	14.5	0.0	12.1	8.2	38.9	40.0	5.1	20.1	20.1
Cycle Q Clear(g_c), s	1.7	4.2	12.0	14.5	0.0	12.1	8.2	38.9	40.0	5.1	20.1	20.1
Prop In Lane	1.00		1.00	1.00		0.49	1.00		0.49	1.00		0.03
Lane Grp Cap(c), veh/h	192	202	323	576	0	288	421	865	837	233	784	821
V/C Ratio(X)	0.16	0.38	0.58	0.81	0.00	0.69	0.62	0.82	0.84	0.67	0.54	0.54
Avail Cap(c_a), veh/h	192	202	323	802	0	402	623	1171	1133	395	1043	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	47.0	40.7	45.4	0.0	44.4	15.8	24.5	24.8	23.3	21.9	21.9
Incr Delay (d2), s/veh	0.4	1.2	2.7	4.3	0.0	2.9	1.5	3.5	4.1	3.3	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	5.0	6.6	0.0	5.4	3.4	16.4	16.5	2.3	8.0	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.2	48.1	43.4	49.7	0.0	47.3	17.3	28.1	28.9	26.6	22.5	22.5
LnGrp LOS	D	D	D	D		D	B	C	C	C	C	C
Approach Vol, veh/h		295			663			1670			1021	
Approach Delay, s/veh		44.9			49.0			26.7			23.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	60.4		17.0	15.4	56.9		23.7				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	17.5	75.0		12.0	23.5	69.0		26.0				
Max Q Clear Time (g_c+I1), s	7.1	42.0		14.0	10.2	22.1		16.5				
Green Ext Time (p_c), s	0.3	13.5		0.0	0.6	6.7		2.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	31.2
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	57	214	479	46	56	219	687	287	141	928	27
Future Volume (veh/h)	33	57	214	479	46	56	219	687	287	141	928	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	34	58	218	489	47	57	223	701	293	144	947	28
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	0
Cap, veh/h	255	268	398	630	140	170	339	912	381	298	1221	36
Arrive On Green	0.14	0.14	0.14	0.18	0.18	0.18	0.11	0.37	0.37	0.08	0.34	0.34
Sat Flow, veh/h	1810	1900	1610	3510	782	948	1810	2462	1029	1810	3552	105
Grp Volume(v), veh/h	34	58	218	489	0	104	223	510	484	144	477	498
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1755	0	1729	1810	1791	1700	1810	1791	1866
Q Serve(g_s), s	1.4	2.3	10.0	11.3	0.0	4.5	6.6	21.3	21.3	4.2	20.3	20.3
Cycle Q Clear(g_c), s	1.4	2.3	10.0	11.3	0.0	4.5	6.6	21.3	21.3	4.2	20.3	20.3
Prop In Lane	1.00		1.00	1.00		0.55	1.00		0.61	1.00		0.06
Lane Grp Cap(c), veh/h	255	268	398	630	0	310	339	663	630	298	616	642
V/C Ratio(X)	0.13	0.22	0.55	0.78	0.00	0.34	0.66	0.77	0.77	0.48	0.78	0.78
Avail Cap(c_a), veh/h	255	268	398	1032	0	509	604	1167	1108	432	990	1032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	32.3	27.9	33.3	0.0	30.5	18.5	23.6	23.6	18.2	25.0	25.0
Incr Delay (d2), s/veh	0.2	0.4	1.6	2.1	0.0	0.6	2.2	1.9	2.0	1.2	2.1	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.1	3.9	4.9	0.0	1.9	2.8	8.9	8.5	1.8	8.6	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.2	32.7	29.4	35.4	0.0	31.1	20.6	25.5	25.6	19.4	27.1	27.0
LnGrp LOS	C	C	C	D		C	C	C	C	B	C	C
Approach Vol, veh/h		310			593			1217			1119	
Approach Delay, s/veh		30.4			34.6			24.6			26.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	36.5		17.0	13.5	34.2		20.3				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	13.1	55.4		12.0	21.5	47.0		25.0				
Max Q Clear Time (g_c+I1), s	6.2	23.3		12.0	8.6	22.3		13.3				
Green Ext Time (p_c), s	0.2	8.0		0.0	0.5	7.0		2.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		27.5	
HCM 7th LOS		C	

SR 267 (GREEN STREET)/ACRE LANE & PROPOSED DEVELOPMENT ACCESS DRIVE

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

SR 267 & ACRE LN - TMC

Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354610, Location: 39.875951, -86.392426



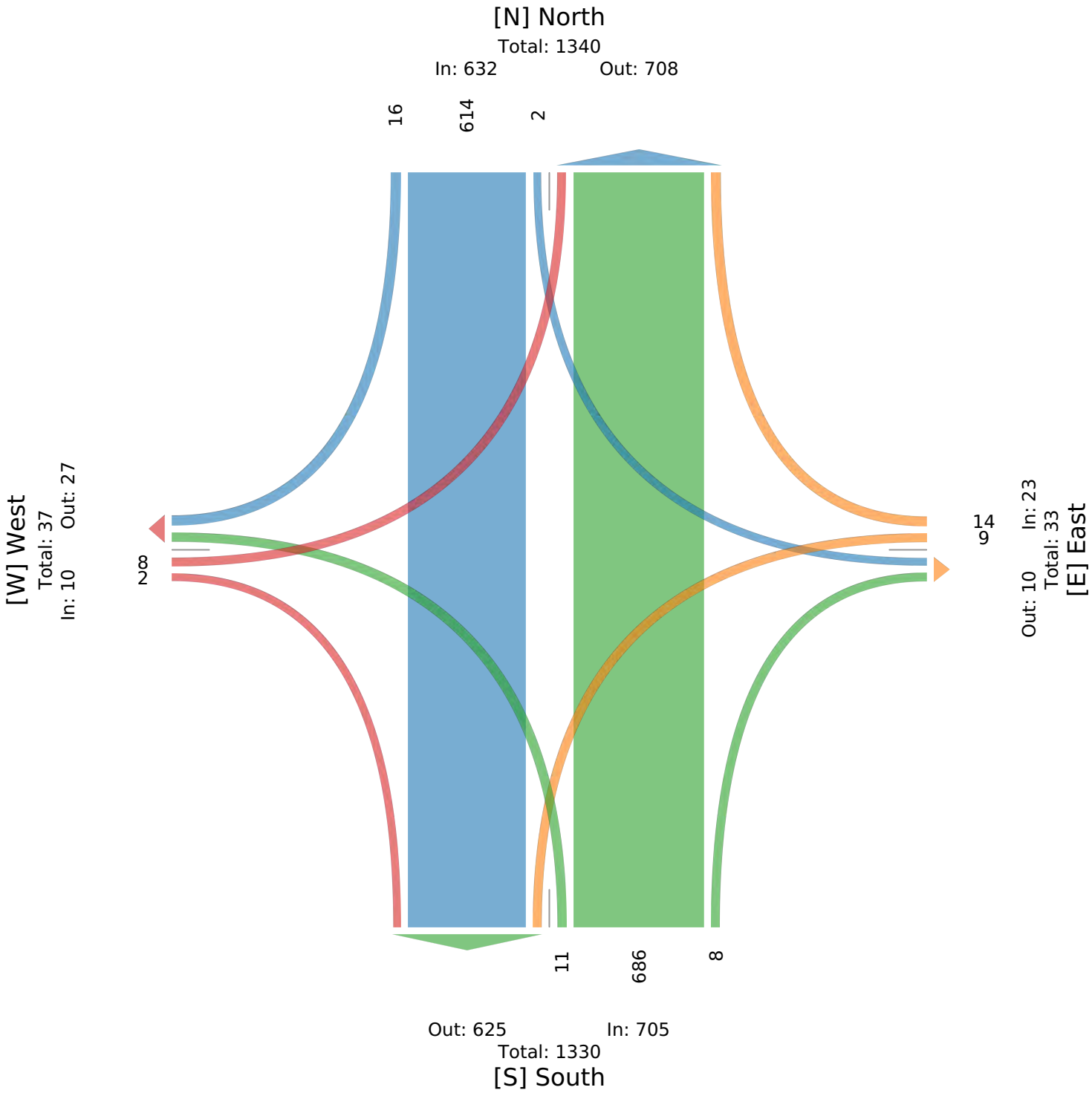
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg / Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-30 7:00AM	3	148	0	0	**151**	1	188	2	0	**191**	2	0	1	0	**3**	2	0	5	0	**7**	**352**
7:15AM	1	161	3	0	**165**	0	118	5	0	**123**	4	0	0	0	**4**	2	0	0	0	**2**	**294**
7:30AM	2	184	4	0	**190**	0	148	5	0	**153**	1	0	1	0	**2**	4	0	8	0	**12**	**357**
7:45AM	5	193	1	0	**199**	1	160	4	0	**165**	1	0	0	0	**1**	1	0	1	0	**2**	**367**
Total	11	686	8	0	**705**	2	614	16	0	**632**	8	0	2	0	**10**	9	0	14	0	**23**	**1370**
% Approach	1.6%	97.3%	1.1%	0%	**-**	0.3%	97.2%	2.5%	0%	**-**	80.0%	0%	20.0%	0%	**-**	39.1%	0%	60.9%	0%	**-**	-
% Total	0.8%	50.1%	0.6%	0%	**51.5%**	0.1%	44.8%	1.2%	0%	**46.1%**	0.6%	0%	0.1%	0%	**0.7%**	0.7%	0%	1.0%	0%	**1.7%**	-
PHF	0.550	0.889	0.500	-	**0.886**	0.500	0.816	0.800	-	**0.827**	0.500	-	0.500	-	**0.625**	0.563	-	0.438	-	**0.479**	0.933
Lights and Motorcycles	11	668	8	0	**687**	1	588	16	0	**605**	8	0	2	0	**10**	9	0	14	0	**23**	1325
% Lights and Motorcycles	100%	97.4%	100%	0%	**97.4%**	50.0%	95.8%	100%	0%	**95.7%**	100%	0%	100%	0%	**100%**	100%	0%	100%	0%	**100%**	96.7%
Heavy	0	18	0	0	**18**	1	26	0	0	**27**	0	0	0	0	**0**	0	0	0	0	**0**	45
% Heavy	0%	2.6%	0%	0%	**2.6%**	50.0%	4.2%	0%	0%	**4.3%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	3.3%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & ACRE LN - TMC
Thu Oct 30, 2025
AM Peak (Oct 30 2025 7AM - 8 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354610, Location: 39.875951, -86.392426

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 267 & ACRE LN - TMC

Thu Oct 30, 2025
PM Peak (Oct 30 2025 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354610, Location: 39.875951, -86.392426

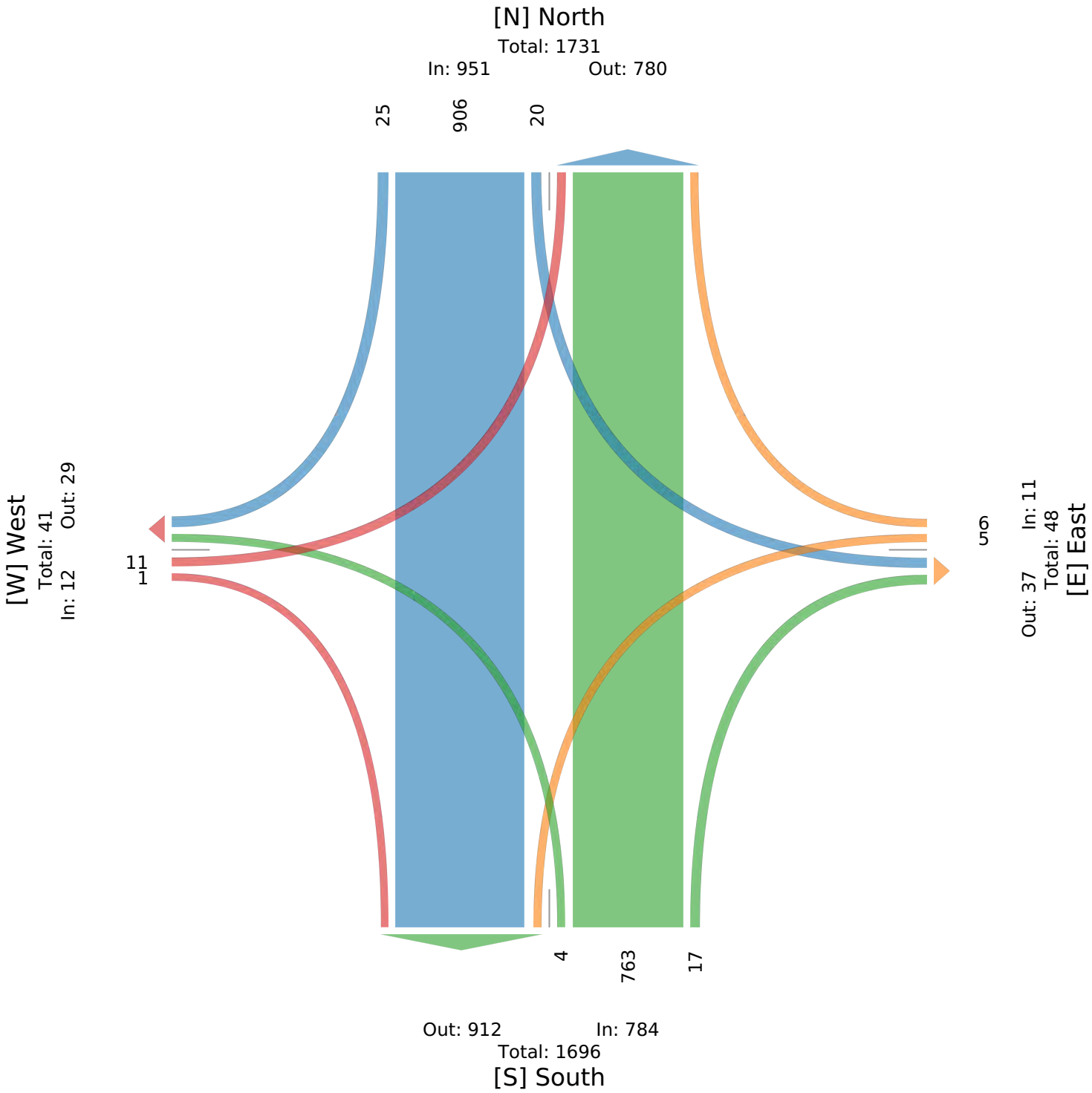
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-30 4:30PM	0	207	4	0	**211**	5	212	5	0	**222**	2	0	0	0	**2**	2	0	1	0	**3**	**438**
4:45PM	2	173	5	0	**180**	4	244	5	0	**253**	2	0	1	0	**3**	2	0	1	0	**3**	**439**
5:00PM	1	186	6	0	**193**	4	199	8	0	**211**	3	0	0	0	**3**	1	0	2	0	**3**	**410**
5:15PM	1	197	2	0	**200**	7	251	7	0	**265**	4	0	0	0	**4**	0	0	2	0	**2**	**471**
Total	4	763	17	0	**784**	20	906	25	0	**951**	11	0	1	0	**12**	5	0	6	0	**11**	**1758**
% Approach	0.5%	97.3%	2.2%	0%	**-**	2.1%	95.3%	2.6%	0%	**-**	91.7%	0%	8.3%	0%	**-**	45.5%	0%	54.5%	0%	**-**	-
% Total	0.2%	43.4%	1.0%	0%	**44.6%**	1.1%	51.5%	1.4%	0%	**54.1%**	0.6%	0%	0.1%	0%	**0.7%**	0.3%	0%	0.3%	0%	**0.6%**	-
PHF	0.500	0.921	0.708	-	**0.929**	0.714	0.902	0.781	-	**0.897**	0.688	-	0.250	-	**0.750**	0.625	-	0.750	-	**0.917**	0.933
Lights and Motorcycles	4	737	17	0	**758**	20	855	25	0	**900**	11	0	1	0	**12**	4	0	6	0	**10**	1680
% Lights and Motorcycles	100%	96.6%	100%	0%	**96.7%**	100%	94.4%	100%	0%	**94.6%**	100%	0%	100%	0%	**100%**	80.0%	0%	100%	0%	**90.9%**	95.6%
Heavy	0	26	0	0	**26**	0	51	0	0	**51**	0	0	0	0	**0**	1	0	0	0	**1**	78
% Heavy	0%	3.4%	0%	0%	**3.3%**	0%	5.6%	0%	0%	**5.4%**	0%	0%	0%	0%	**0%**	20.0%	0%	0%	0%	**9.1%**	4.4%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & ACRE LN - TMC
Thu Oct 30, 2025
PM Peak (Oct 30 2025 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354610, Location: 39.875951, -86.392426

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 267 & ACRE LN - TMC

Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 11:45AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354610, Location: 39.875951, -86.392426

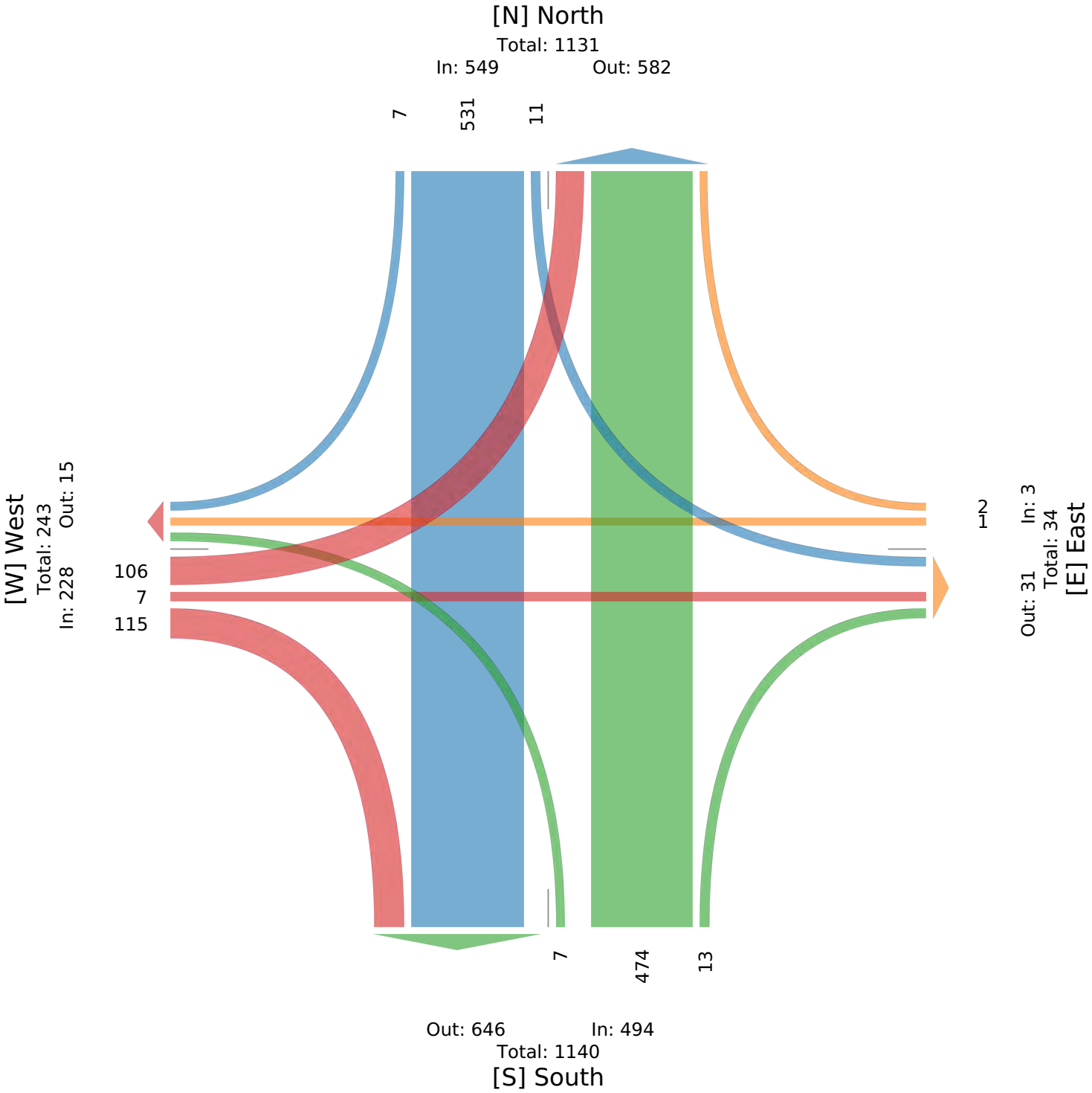
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-11-02 11:45AM	0	129	3	0	**132**	3	204	0	0	**207**	2	0	0	0	**2**	0	1	1	0	**2**	**343**
12:00PM	3	110	4	0	**117**	2	137	2	0	**141**	2	0	4	0	**6**	0	0	0	0	**0**	**264**
12:15PM	1	106	4	0	**111**	2	102	3	0	**107**	61	5	63	0	**129**	0	0	0	0	**0**	**347**
12:30PM	3	129	2	0	**134**	4	88	2	0	**94**	41	2	48	0	**91**	0	0	1	0	**1**	**320**
Total	7	474	13	0	**494**	11	531	7	0	**549**	106	7	115	0	**228**	0	1	2	0	**3**	**1274**
% Approach	1.4%	96.0%	2.6%	0%	**-**	2.0%	96.7%	1.3%	0%	**-**	46.5%	3.1%	50.4%	0%	**-**	0%	33.3%	66.7%	0%	**-**	-
% Total	0.5%	37.2%	1.0%	0%	**38.8%**	0.9%	41.7%	0.5%	0%	**43.1%**	8.3%	0.5%	9.0%	0%	**17.9%**	0%	0.1%	0.2%	0%	**0.2%**	-
PHF	0.583	0.919	0.813	-	**0.922**	0.688	0.651	0.583	-	**0.663**	0.434	0.350	0.456	-	**0.442**	-	0.250	0.500	-	**0.375**	0.918
Lights and Motorcycles	7	472	13	0	**492**	11	527	7	0	**545**	106	7	115	0	**228**	0	1	2	0	**3**	1268
% Lights and Motorcycles	100%	99.6%	100%	0%	**99.6%**	100%	99.2%	100%	0%	**99.3%**	100%	100%	100%	0%	**100%**	0%	100%	100%	0%	**100%**	99.5%
Heavy	0	2	0	0	**2**	0	4	0	0	**4**	0	0	0	0	**0**	0	0	0	0	**0**	6
% Heavy	0%	0.4%	0%	0%	**0.4%**	0%	0.8%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.5%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & ACRE LN - TMC
Sun Nov 2, 2025
Midday Peak (WKND) (Nov 02 2025 11:45AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1354610, Location: 39.875951, -86.392426

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	2	9	0	14	11	686	8	2	614	16
Future Vol, veh/h	8	0	2	9	0	14	11	686	8	2	614	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	50	4	0
Mvmt Flow	9	0	2	10	0	15	12	738	9	2	660	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1426	1434	660	1430	1447	742	677	0	0	746	0	0
Stage 1	665	665	-	766	766	-	-	-	-	-	-	-
Stage 2	761	770	-	665	682	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.6	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.65	-	-
Pot Cap-1 Maneuver	114	135	466	113	133	419	924	-	-	680	-	-
Stage 1	453	461	-	399	415	-	-	-	-	-	-	-
Stage 2	401	413	-	453	453	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	108	133	466	111	130	419	924	-	-	680	-	-
Mov Cap-2 Maneuver	108	133	-	111	130	-	-	-	-	-	-	-
Stage 1	451	459	-	393	410	-	-	-	-	-	-	-
Stage 2	381	408	-	449	451	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	35.46	25.43	0.14	0.03
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	924	-	-	108	466	201	6	-	-
HCM Lane V/C Ratio	0.013	-	-	0.08	0.005	0.123	0.003	-	-
HCM Ctrl Dly (s/v)	8.9	-	-	41.1	12.8	25.4	10.3	0	-
HCM Lane LOS	A	-	-	E	B	D	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.4	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	1	5	0	6	4	763	17	20	906	25
Future Vol, veh/h	11	0	1	5	0	6	4	763	17	20	906	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	20	0	0	0	3	0	0	6	0
Mvmt Flow	12	0	1	5	0	6	4	820	18	22	974	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1846	1865	974	1855	1882	830	1001	0	0	839	0	0
Stage 1	1017	1017	-	838	838	-	-	-	-	-	-	-
Stage 2	829	847	-	1017	1044	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.68	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	58	74	308	51	72	373	700	-	-	805	-	-
Stage 1	289	318	-	336	384	-	-	-	-	-	-	-
Stage 2	368	381	-	265	309	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	53	69	308	47	67	373	700	-	-	805	-	-
Mov Cap-2 Maneuver	53	69	-	47	67	-	-	-	-	-	-	-
Stage 1	271	298	-	334	382	-	-	-	-	-	-	-
Stage 2	359	378	-	248	290	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	84.74	50.89	0.05	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	700	-	-	53	308	90	39	-	-
HCM Lane V/C Ratio	0.006	-	-	0.222	0.003	0.131	0.027	-	-
HCM Ctrl Dly (s/v)	10.2	-	-	90.9	16.7	50.9	9.6	0	-
HCM Lane LOS	B	-	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	7	115	0	1	2	7	474	13	11	531	7
Future Vol, veh/h	106	7	115	0	1	2	7	474	13	11	531	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	1	0
Mvmt Flow	115	8	125	0	1	2	8	515	14	12	577	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1132	1146	577	1142	1146	522	585	0	0	529	0	0
Stage 1	601	601	-	538	538	-	-	-	-	-	-	-
Stage 2	531	545	-	605	609	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	182	201	520	179	201	558	1000	-	-	1048	-	-
Stage 1	490	492	-	531	526	-	-	-	-	-	-	-
Stage 2	536	522	-	488	489	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	176	196	520	128	196	558	1000	-	-	1048	-	-
Mov Cap-2 Maneuver	176	196	-	128	196	-	-	-	-	-	-	-
Stage 1	482	484	-	527	522	-	-	-	-	-	-	-
Stage 2	528	518	-	359	480	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	37.75	15.52	0.12	0.17
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1000	-	-	177	520	346	37	-	-
HCM Lane V/C Ratio	0.008	-	-	0.694	0.24	0.009	0.011	-	-
HCM Ctrl Dly (s/v)	8.6	-	-	61.8	14.1	15.5	8.5	0	-
HCM Lane LOS	A	-	-	F	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.2	0.9	0	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	0	3	10	0	15	12	721	9	3	645	17
Future Vol, veh/h	9	0	3	10	0	15	12	721	9	3	645	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	50	4	0
Mvmt Flow	10	0	3	11	0	16	13	775	10	3	694	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1501	1511	694	1506	1524	780	712	0	0	785	0	0
Stage 1	700	700	-	806	806	-	-	-	-	-	-	-
Stage 2	801	811	-	700	718	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.6	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.65	-	-
Pot Cap-1 Maneuver	101	121	446	101	119	398	897	-	-	656	-	-
Stage 1	433	444	-	379	398	-	-	-	-	-	-	-
Stage 2	381	396	-	433	436	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	95	119	446	98	116	398	897	-	-	656	-	-
Mov Cap-2 Maneuver	95	119	-	98	116	-	-	-	-	-	-	-
Stage 1	430	441	-	373	392	-	-	-	-	-	-	-
Stage 2	360	390	-	426	432	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	38.64	28.73	0.15	0.05
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	897	-	-	95	446	178	8	-	-
HCM Lane V/C Ratio	0.014	-	-	0.102	0.007	0.151	0.005	-	-
HCM Ctrl Dly (s/v)	9.1	-	-	47.1	13.1	28.7	10.5	0	-
HCM Lane LOS	A	-	-	E	B	D	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.5	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	2	6	0	7	5	802	18	21	952	27
Future Vol, veh/h	12	0	2	6	0	7	5	802	18	21	952	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	20	0	0	0	3	0	0	6	0
Mvmt Flow	13	0	2	6	0	8	5	862	19	23	1024	29

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1942	1961	1024	1952	1981	872	1053	0	0	882	0	0
Stage 1	1069	1069	-	883	883	-	-	-	-	-	-	-
Stage 2	873	892	-	1069	1098	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.68	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	50	64	288	43	62	353	669	-	-	775	-	-
Stage 1	270	300	-	317	367	-	-	-	-	-	-	-
Stage 2	348	363	-	248	291	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	59	288	40	57	353	669	-	-	775	-	-
Mov Cap-2 Maneuver	45	59	-	40	57	-	-	-	-	-	-	-
Stage 1	251	279	-	314	364	-	-	-	-	-	-	-
Stage 2	337	360	-	229	271	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	101.11	63.03	0.06	0.21
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	669	-	-	45	288	76	39	-	-
HCM Lane V/C Ratio	0.008	-	-	0.288	0.007	0.185	0.029	-	-
HCM Ctrl Dly (s/v)	10.4	-	-	115	17.6	63	9.8	0	-
HCM Lane LOS	B	-	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1	0	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	8	121	0	2	3	8	498	14	12	558	8
Future Vol, veh/h	112	8	121	0	2	3	8	498	14	12	558	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	1	0
Mvmt Flow	122	9	132	0	2	3	9	541	15	13	607	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1192	1207	607	1203	1208	549	615	0	0	557	0	0
Stage 1	633	633	-	566	566	-	-	-	-	-	-	-
Stage 2	560	574	-	637	641	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	165	185	500	163	185	539	974	-	-	1024	-	-
Stage 1	471	477	-	512	510	-	-	-	-	-	-	-
Stage 2	517	507	-	469	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	158	180	500	111	180	539	974	-	-	1024	-	-
Mov Cap-2 Maneuver	158	180	-	111	180	-	-	-	-	-	-	-
Stage 1	462	467	-	508	506	-	-	-	-	-	-	-
Stage 2	507	502	-	333	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	50.67	17.25	0.13	0.18
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	974	-	-	159	500	299	38	-	-
HCM Lane V/C Ratio	0.009	-	-	0.819	0.263	0.018	0.013	-	-
HCM Ctrl Dly (s/v)	8.7	-	-	86.9	14.7	17.2	8.6	0	-
HCM Lane LOS	A	-	-	F	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	5.4	1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	12	10	0	15	16	731	9	3	672	19
Future Vol, veh/h	16	0	12	10	0	15	16	731	9	3	672	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	50	4	0
Mvmt Flow	17	0	13	11	0	16	17	786	10	3	723	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1549	1559	723	1554	1575	791	743	0	0	796	0	0
Stage 1	729	729	-	825	825	-	-	-	-	-	-	-
Stage 2	820	830	-	729	749	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.6	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.65	-	-
Pot Cap-1 Maneuver	94	113	430	93	111	393	873	-	-	649	-	-
Stage 1	417	431	-	369	390	-	-	-	-	-	-	-
Stage 2	372	388	-	417	422	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	87	110	430	88	108	393	873	-	-	649	-	-
Mov Cap-2 Maneuver	87	110	-	88	108	-	-	-	-	-	-	-
Stage 1	414	427	-	362	382	-	-	-	-	-	-	-
Stage 2	349	380	-	401	418	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	37.87	31.16	0.19	0.05
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	873	-	-	87	430	164	8	-	-
HCM Lane V/C Ratio	0.02	-	-	0.197	0.03	0.164	0.005	-	-
HCM Ctrl Dly (s/v)	9.2	-	-	56	13.6	31.2	10.6	0	-
HCM Lane LOS	A	-	-	F	B	D	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.1	0.6	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	0	8	6	0	7	14	832	18	21	971	34
Future Vol, veh/h	16	0	8	6	0	7	14	832	18	21	971	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	20	0	0	0	3	0	0	6	0
Mvmt Flow	17	0	9	6	0	8	15	895	19	23	1044	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2014	2033	1044	2024	2060	904	1081	0	0	914	0	0
Stage 1	1089	1089	-	934	934	-	-	-	-	-	-	-
Stage 2	925	944	-	1089	1126	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.68	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	44	58	281	38	56	338	653	-	-	754	-	-
Stage 1	263	294	-	296	347	-	-	-	-	-	-	-
Stage 2	325	343	-	241	282	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	39	52	281	33	50	338	653	-	-	754	-	-
Mov Cap-2 Maneuver	39	52	-	33	50	-	-	-	-	-	-	-
Stage 1	243	272	-	289	339	-	-	-	-	-	-	-
Stage 2	311	336	-	216	261	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	110.31	74.91	0.17	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	653	-	-	39	281	65	38	-	-
HCM Lane V/C Ratio	0.023	-	-	0.441	0.031	0.215	0.03	-	-
HCM Ctrl Dly (s/v)	10.6	-	-	156.3	18.2	74.9	9.9	0	-
HCM Lane LOS	B	-	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.1	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	11.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	8	125	0	2	3	14	522	14	12	576	10
Future Vol, veh/h	114	8	125	0	2	3	14	522	14	12	576	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	-	-	275
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	1	0
Mvmt Flow	124	9	136	0	2	3	15	567	15	13	626	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1251	1265	626	1262	1268	575	637	0	0	583	0	0
Stage 1	652	652	-	605	605	-	-	-	-	-	-	-
Stage 2	599	613	-	657	663	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	151	171	488	148	170	521	956	-	-	1002	-	-
Stage 1	460	467	-	488	490	-	-	-	-	-	-	-
Stage 2	492	486	-	457	462	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	143	165	488	98	164	521	956	-	-	1002	-	-
Mov Cap-2 Maneuver	143	165	-	98	164	-	-	-	-	-	-	-
Stage 1	451	458	-	480	482	-	-	-	-	-	-	-
Stage 2	479	479	-	317	453	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	64.88	18.19	0.22	0.17
HCM LOS	F	C		

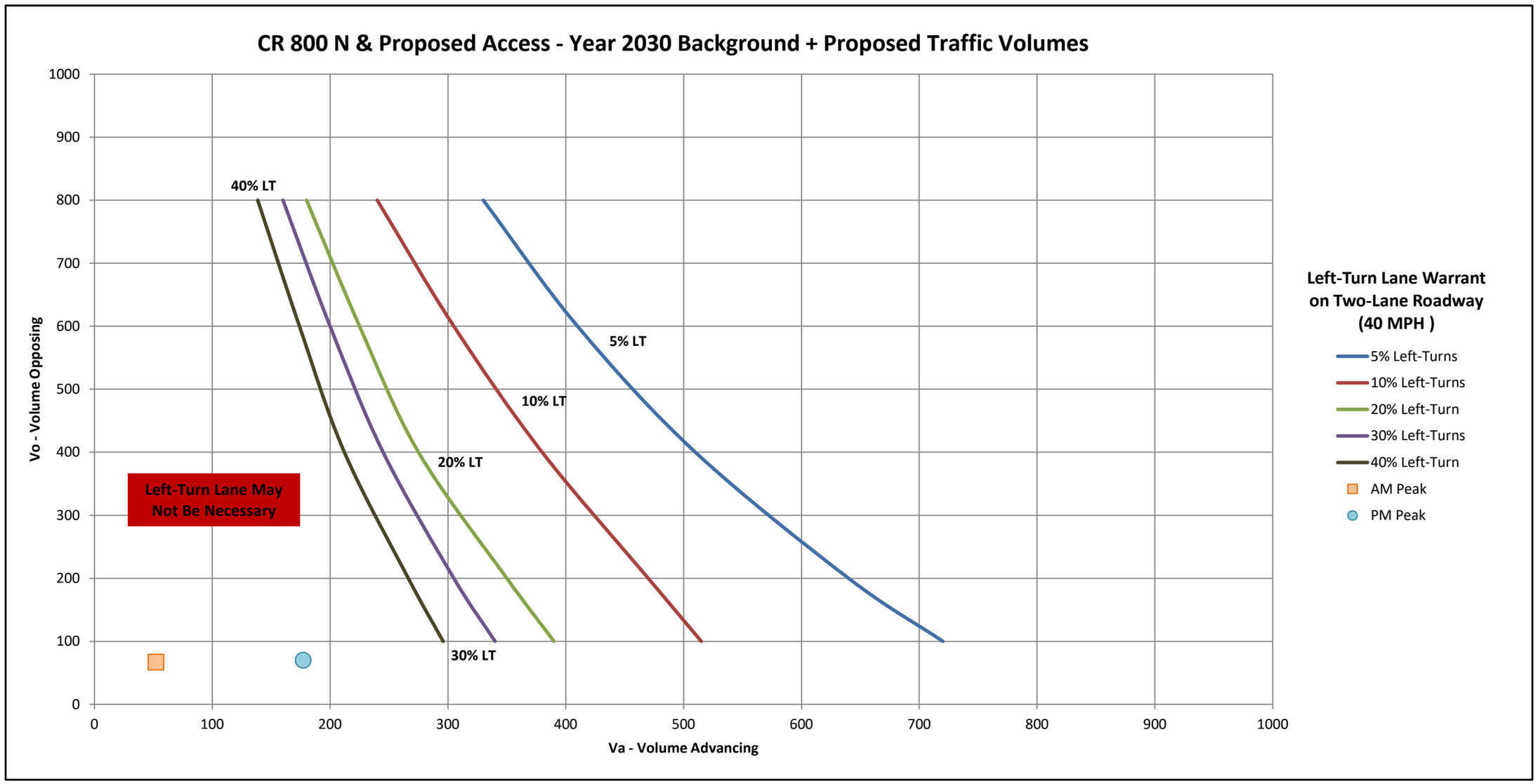
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	956	-	-	144	488	278	37	-	-
HCM Lane V/C Ratio	0.016	-	-	0.922	0.279	0.02	0.013	-	-
HCM Ctrl Dly (s/v)	8.8	-	-	115.8	15.2	18.2	8.6	0	-
HCM Lane LOS	A	-	-	F	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	6.4	1.1	0.1	0	-	-

CR 800 N & PROPOSED DEVELOPMENT ACCESS DRIVE

TURN LANE ANALYSIS
CAPACITY ANALYSIS

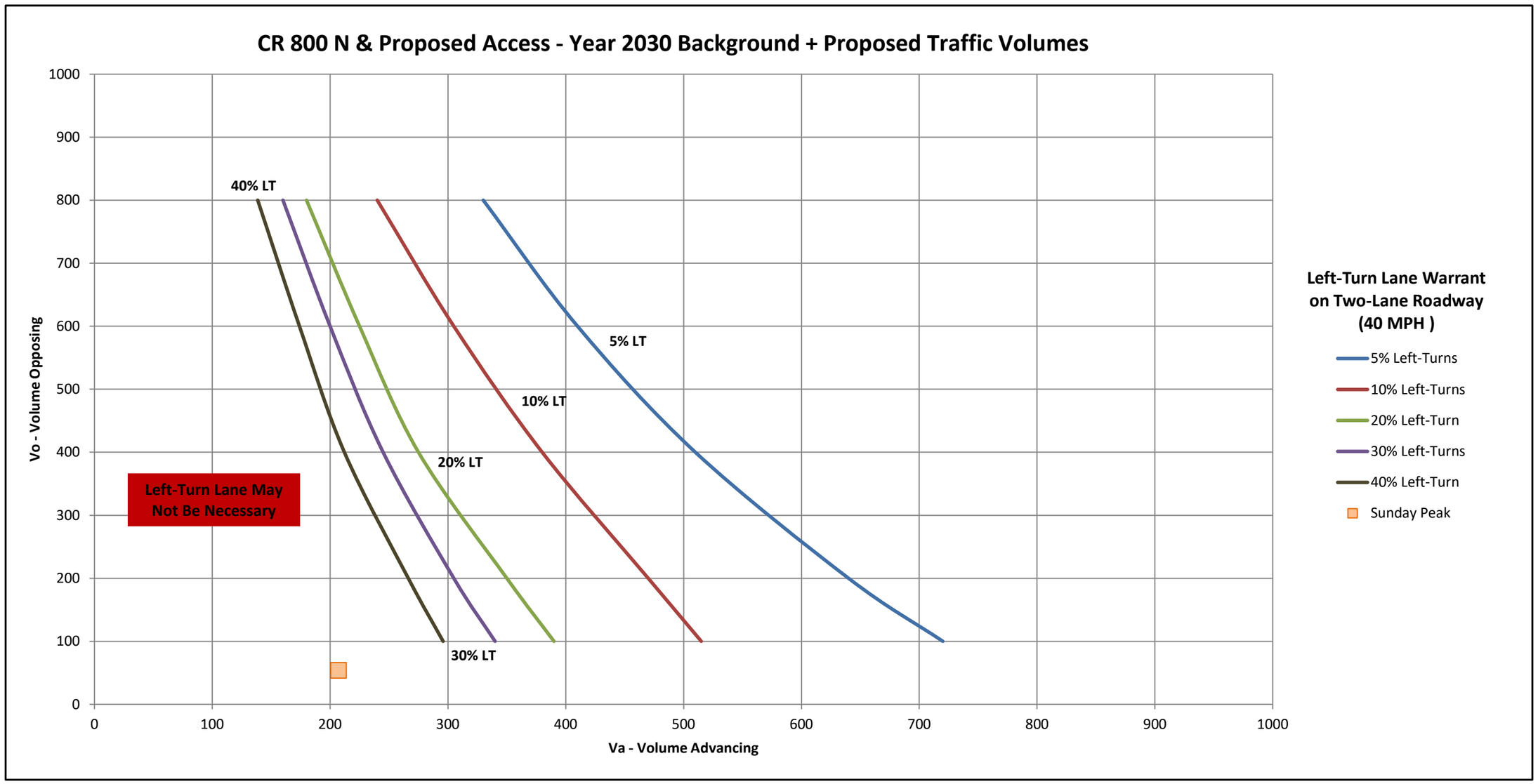
Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	207	180	168	160	146	139
	600	410	305	260	225	211	200	184	174
	400	510	380	320	275	258	245	224	212
	200	640	470	401	350	324	305	282	266
	100	720	515	446	390	360	340	313	296

AM Peak Hour Traffic Volume Input		PM Peak Hour Traffic Volume Input	
Advancing Volume (Va)	52	Advancing Volume (Va)	177
Opposing Volume (Vo)	67	Opposing Volume (Vo)	70
Left-Turn Volume	15	Left-Turn Volume	45
% Left-Turn	29%	% Left-Turn	25%
WARRANTED?	NO	WARRANTED?	NO



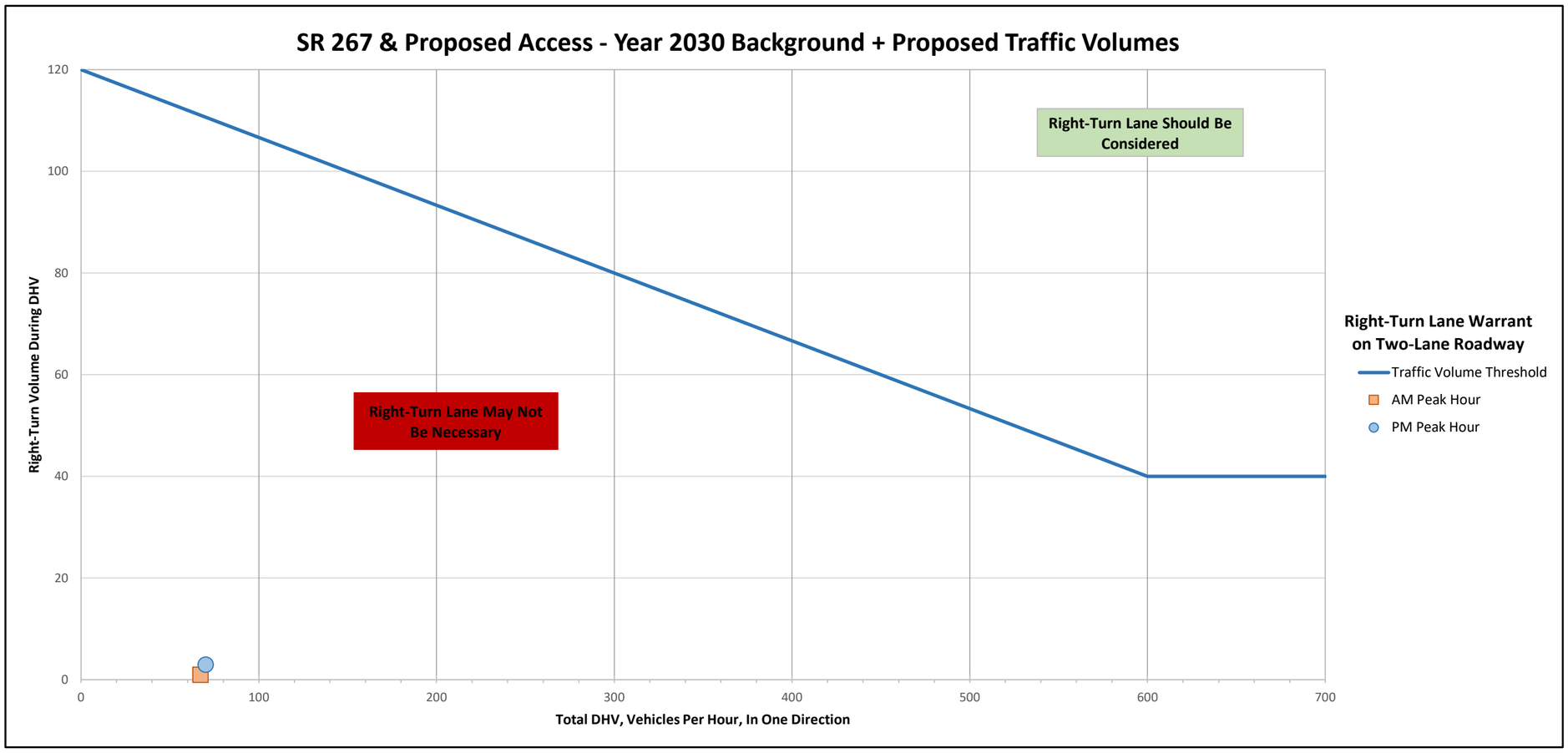
Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	207	180	168	160	146	139
	600	410	305	260	225	211	200	184	174
	400	510	380	320	275	258	245	224	212
	200	640	470	401	350	324	305	282	266
	100	720	515	446	390	360	340	313	296

Sunday Peak Traffic Volume Input	
Advancing Volume (Va)	207
Opposing Volume (Vo)	54
Left-Turn Volume	31
% Left-Turn	15%
WARRANTED?	NO



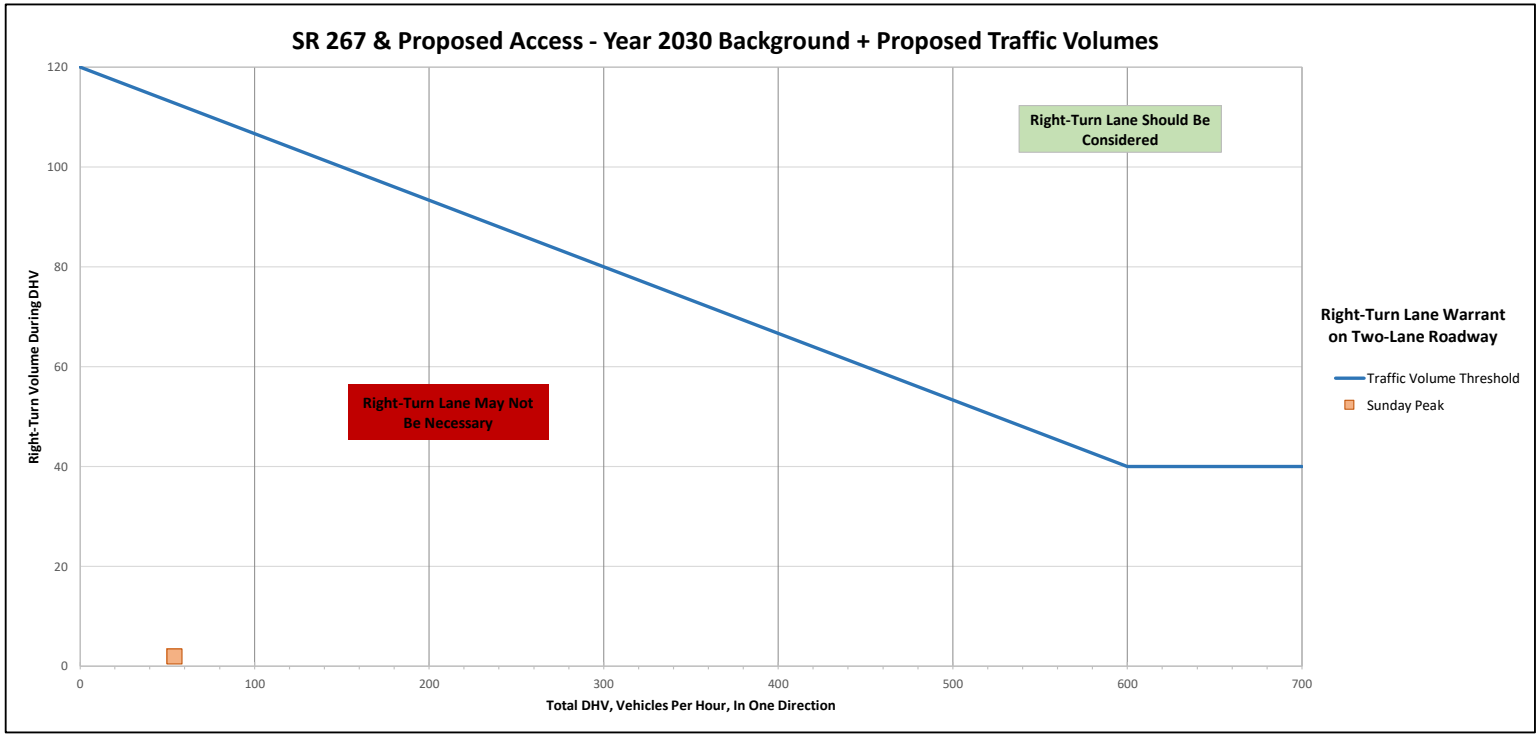
Total Approach Volume	Right-Turn Volume
0	120
600	40
700	40

AM Peak Hour Traffic Volume Input		PM Peak Hour Traffic Volume Input	
Total Approach Volume	67	Total Approach Volume	70
Right-Turn Volume	1	Right-Turn Volume	3
WARRANTED?	NO	WARRANTED?	NO



Total Approach Volume	Right-Turn Volume
0	120
600	40
700	40

Sunday Peak Traffic Volume Input	
Total Approach Volume	54
Right-Turn Volume	2
WARRANTED?	NO



Intersection	
Int Delay, s/veh	4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	1	15	37	3	40
Future Vol, veh/h	0	1	15	37	3	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	16	40	3	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	73	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	73	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	930	1084
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	950	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	921	1084
Mov Cap-2 Maneuver	-	-	-	-	921	-
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.09	8.51
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1071	-	-	519	-
HCM Lane V/C Ratio	0.044	-	-	0.01	-
HCM Ctrl Dly (s/v)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	67	3	45	132	2	28
Future Vol, veh/h	67	3	45	132	2	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	3	49	143	2	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	76	0	316	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	241	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1523	-	677	987
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1523	-	654	987
Mov Cap-2 Maneuver	-	-	-	-	654	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	771	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.89	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	955	-	-	458	-
HCM Lane V/C Ratio	0.034	-	-	0.032	-
HCM Ctrl Dly (s/v)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	2	31	176	1	23
Future Vol, veh/h	52	2	31	176	1	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	2	34	191	1	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	59	0	316	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	259	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1545	-	677	1009
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	785	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1545	-	660	1009
Mov Cap-2 Maneuver	-	-	-	-	660	-
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	765	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.11	8.75
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	987	-	-	270	-
HCM Lane V/C Ratio	0.026	-	-	0.022	-
HCM Ctrl Dly (s/v)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

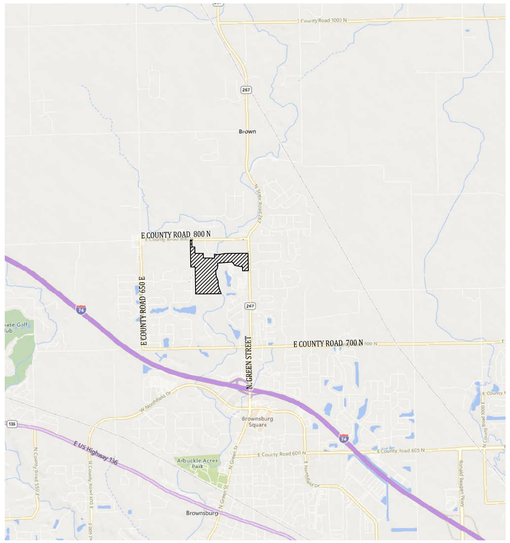
PRIMARY PLAT

HAWKS LANDING

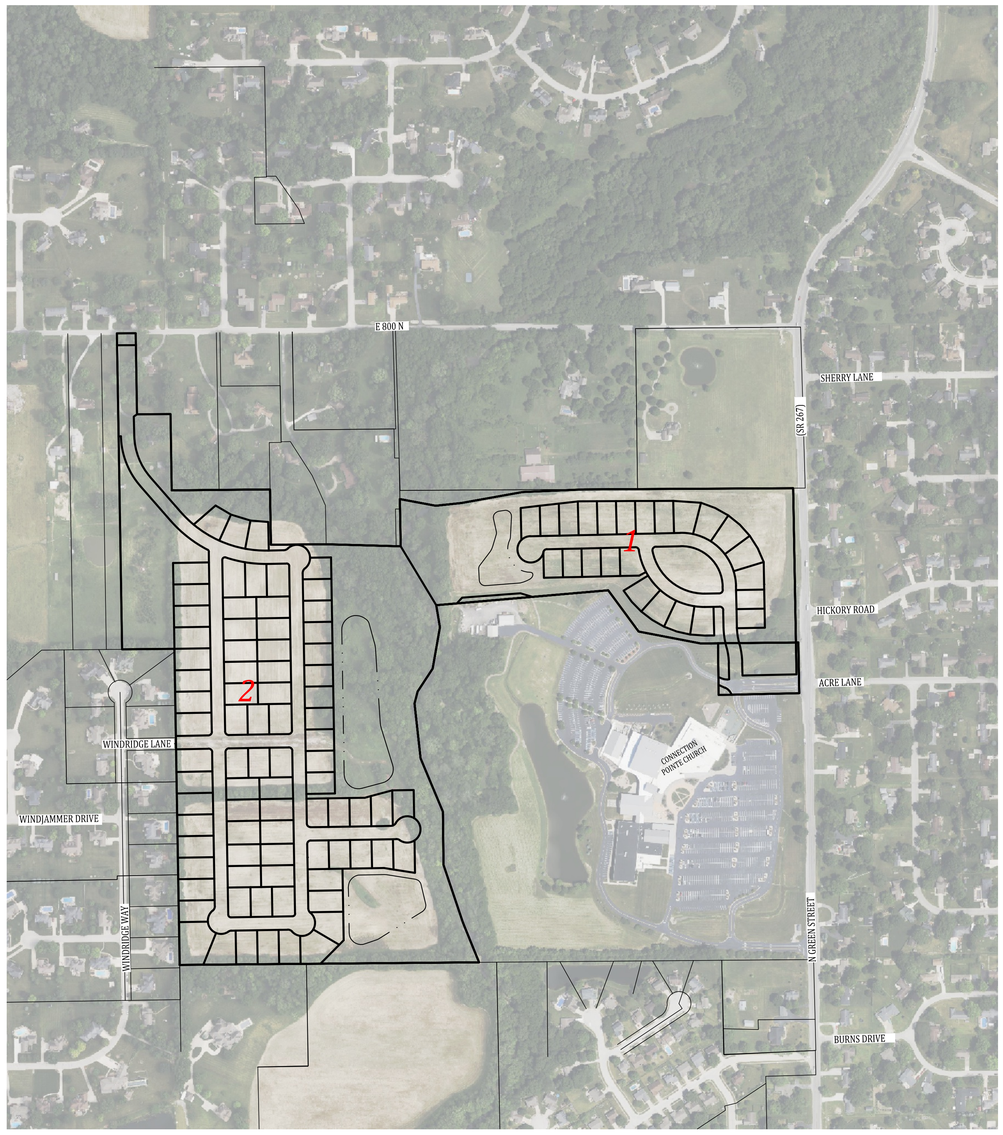
SECTION 34, TOWNSHIP 17N, RANGE 1E,
TOWN OF BROWNSBURG, BROWN TWP., HENDRICKS CO., INDIANA
ZONED: R3

PLANS PREPARED FOR:
DAVID WEEKLEY HOMES
ATTENTION: ED FREEMAN
9310 NORTH MERIDIAN, SUITE 100,
INDIANAPOLIS, IN 46260
EFREEMAN@DWHOMES.COM

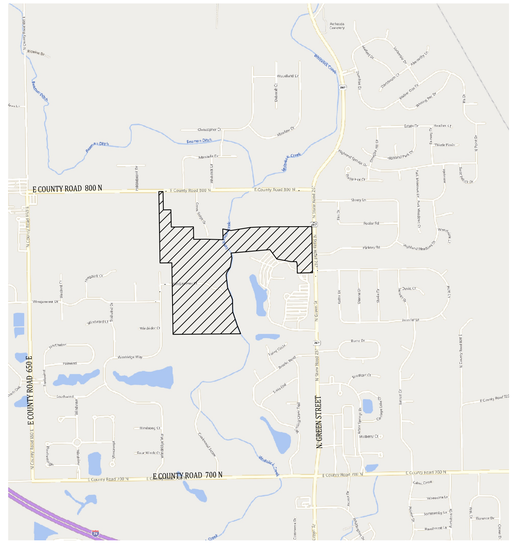
Building Dreams, Enhancing Lives
David Weekley Homes



VICINITY MAP
NO SCALE



SITE MAP
SCALE: 1"=300'



LOCATION MAP
NO SCALE

OPERATING AUTHORITIES

GAS
VECTREN (NORTH)
ANDREW THEISZ
2345 E. MAIN STREET
DANVILLE, IN 46122
812-231-6403

ELECTRIC
DUKE ENERGY
1000 E MAIN STREET
PLAINFIELD, IN 46168

ELECTRIC
HENDRICKS POWER COOPERATIVE
PO BOX 309
DANVILLE, IN 46112
317-745-5473
MIKE GOOD

FIBER OPTIC
MCI

FIBER OPTIC
TCS COMMUNICATION, LLC

TOWN OF BROWNSBURG
61 N. GREEN STREET
BROWNSBURG, IN 46112
317-852-1120

SANITARY - TOWN OF BROWNSBURG
KATHY DILLON, DIRECTOR
225 S. MARDALE DRIVE
BROWNSBURG, IN 46112
317-852-1114

COMMUNICATION
AT&T - DISTRIBUTION
MATT SPINDLER
240 N. MERIDIAN ST. RM 1791
INDIANAPOLIS, IN 46204
317-265-3050

CABLE TELEVISION
SPECTRUM
JASON KIRKMAN
3030 ROOSEVELT AVENUE
INDIANAPOLIS, IN 46218
317-429-6691

CABLE TELEVISION
COMCAST CABLE INDPLS.
RAY REEVES
5330 E. 65TH STREET
INDIANAPOLIS, IN

STORM
WASTEWATER DEPARTMENT
225 S MARDALE DRIVE
BROWNSBURG, IN 46112
317-852-1114

WATER - TOWN OF BROWNSBURG
FRANK MONTS, DIRECTOR
220 S. MARDALE DRIVE
BROWNSBURG, IN 46112
317-858-4147

POLICE DEPARTMENT
BROWNSBURG POLICE DEPARTMENT
JOE GRIMES
31 N. GREEN STREET
BROWNSBURG, IN 46112
317-852-1190

FIRE DEPARTMENT
BROWNSBURG FIRE TERRITORY
FIRE MARSHAL
470 NORTHFIELD DR.
BROWNSBURG, IN 46112
317-852-1190

SCHOOL DISTRICT
BROWNSBURG COMMUNITY
SCHOOL CORP.
DR. JIM SNAPP
310 STADIUM DRIVE
BROWNSBURG, IN 46112-1414
317-852.5726

PLAN COMMISSION CERTIFICATE

Pursuant to I.C. 36-7-4-700 et. seq., and all amendments thereof, the undersigned do hereby certify that the public notice of the hearing by the Town of Brownsburg Advisory Plan Commission (the "Commission"); on the application for approval of this plat duly complied with I.C. 36-7-4-706 and all amendments thereof, and said primary plat was granted primary approval by the Commission on the _____ day of _____, 20_____; pursuant to the Town of Brownsburg Unified Development Ordinance, with a majority of the members of the Commission concurring in said approval.

_____ Zoning Administrator

_____ Date

This approval is valid for a time period specified in Article 9 of the Town of Brownsburg Unified Development Ordinance.

Dated: _____

Certified this 21st day of December, 2021.

REVISIONS		
NUMBER	DESCRIPTION	DATE

PHASING NOTE:

THE DEVELOPMENT PHASING SHALL BE ACCORDING TO THE SECTIONS AS SHOWN HERE. HOWEVER, IF NECESSARY, THE DEVELOPER HAS THE ABILITY TO REVISE THE SECTIONS TO ACCOMMODATE THE UTILITY SERVICES, DRAINAGE PLAN AND STREET ACCESS.

SHEET INDEX	
SHEET NO	DESCRIPTION
C100	TITLE SHEET
C101-C104	EXISTING TOPOGRAPHY
C200-C203	PRIMARY PLAT
C300-C303	UTILITY PLAN
C400-C401	AMENITIES & LANDSCAPING PLAN
C500	SOIL MAP & FLOOD MAP, DETAILS
C501	PHASING PLAN

PLANS PREPARED BY:

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

CONTACT: AUSTON LEWIS
EMAIL: alewis@banning-eng.com

CERTIFIED: 10-02-2025

CHANDLER A. HARDEN
REGISTERED
No. 22300025
STATE OF INDIANA
LAND SURVEYOR

CERTIFIED: 10-02-2025

W. CHAD ZIEGLER
REGISTERED
No. PE11200667
STATE OF INDIANA
PROFESSIONAL ENGINEER

NOTE:

USERS OF THE EXISTING TOPOGRAPHY PLAN ARE CAUTIONED TO CONSIDER THAT ALL NATURAL SURFACES ARE SUBJECT TO DISPLACEMENT DUE TO THE EFFECTS OF ENVIRONMENTAL AND MECHANICAL FACTORS ON SOIL PROPERTIES. THE INTERPOLATED CONTOUR LINES DEPICTED HEREON ARE REPRESENTATIVE OF THE SURFACE OF THE SITE ON THE DATE(S) THE FIELD SURVEY WAS PERFORMED. CHANGES IN SURFACE ELEVATIONS VARYING UP TO 0.5 FEET AFTER THE DATE OF THE SURVEY MAY BE POSSIBLE WITHOUT ANY OBVIOUS VISIBLE INDICATIONS. THEREFORE, IT IS RECOMMENDED THAT THE SURFACE ELEVATIONS OF THIS SITE BE VERIFIED PRIOR TO CONSTRUCTION AND THAT ANY SIGNIFICANT DISCREPANCIES BE REPORTED TO THE ENGINEER FOR EVALUATION. THE SURVEYOR IS NOT RESPONSIBLE FOR ESTIMATING OR ACCOUNTING FOR ANY VERTICAL VARIANCE CAUSED BY SUCH ENVIRONMENTAL OR MECHANICAL INFLUENCES.

THIS EXISTING TOPOGRAPHY PLAN REFLECTS ABOVE GROUND INDICATIONS OF UTILITIES AND INFORMATION AVAILABLE FROM UTILITY COMPANIES. THE ENGINEER/SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER/SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH HE / SHE DOES CONFIRM THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE ENGINEER/SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

Indiana 811
Know what's below. Call before you dig.

THESE PLANS ARE NOT INTENDED TO BE REPRESENTED AS A RETRACEMENT OR ORIGINAL BOUNDARY SURVEY, A ROUTE SURVEY, OR A SURVEYOR LOCATION REPORT.

Date: 09-08-2025
Project No: 23369
Sheet No: C100

HAWKS LANDING-PRIMARY PLAT - 23369

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SEE SHEET C104 FOR CONTINUATION

SEE SHEET C102 FOR CONTINUATION

0 60' 120'

LEGEND

- T — UNDERGROUND TELEPHONE LINE
- W — UNDERGROUND WATER LINE
- CATV — UNDERGROUND CATV LINE
- G — UNDERGROUND GAS LINE
- OHU — OVERHEAD UTILITY LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- SECTION LINE
- X — FENCE LINE
- ST — TREE/BUSH LINE
- S — STORM SEWER PIPE
- SANITARY SEWER PIPE
- FLOWLINE
- CABLE STRUCTURE
- FIRE HYDRANT
- WATER METER
- WATER VALVE
- WATER SPIGOT
- ELECTRIC METER
- GUY ANCHOR
- UTILITY POLE
- ELECTRIC BOX
- ELECTRIC TRANSFORMER
- AIR CONDITIONING UNIT
- MAILBOX POST
- SIGN
- STORM SEWER STRUCTURE
- SANITARY SEWER STRUCTURE
- TELEPHONE STRUCTURE
- SEPTIC LID
- LIGHT POLE
- BUSH
- CONIFEROUS TREE
- DECIDUOUS TREE
- 5/8" REBAR SET
- MAGNAIL SET
- EP — EDGE OF PAVEMENT
- D.U. & U.E. — DRAINAGE & UTILITY EASEMENT

TBM #20
CUT SQUARE ON TOP EAST SIDE OF CONCRETE LIGHT POLE BASE. LOCATED APPROXIMATELY 100' SOUTHWEST OF 267 & NORTH ENTRANCE DRIVE TO CONNECTION POINT CHURCH. ON THE SOUTH SIDE OF ENTRANCE DRIVE.
ELEVATION= 895.37'

TBM #21
CUT SQUARE ON NORTHEAST TOP OF CONCRETE LIGHT POLE BASE. +- 800' WEST OF STATE ROAD 267. +- 100' SOUTHEAST OF THE FURTHEST NORTHWEST CORNER OF ASPHALT IN PARKING LOT.
ELEVATION= 890.94

NOTES:

Per 865 IAC 1-12-12 this drawing is not intended to be represented as a retracement or original boundary survey, a route survey, or a Surveyor Location Report.

The topographic information shown hereon was obtained in the field during JULY 2024. The topographic data was gathered using a robotic total station and data collector applying standard radial surveying techniques and by global positioning equipment, utilizing the VRS Network, a real-time kinematic (RTK) correction service over the internet.

Elevations on hard surfaces or structures are accurate to within 0.05 feet, elevations on natural surfaces are accurate to within 0.10 feet. The contours shown hereon were plotted based upon interpolation of spot elevations and other topographic information and are accurate to within one half of a contour interval.

This survey reflects above ground indications of utilities and information available from utility companies. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated, although they are located as accurately as possible from the information available. The surveyor has not physically located the underground utilities.

Indiana 811 Know what's below. Call before you dig.

Revisions | Sym. | Date

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1" = 60'
Date: 09-08-2025

EXISTING TOPOGRAPHY
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

CHAD ZIGLER — REGISTERED — No. PE11200637 — STATE OF INDIANA — PROFESSIONAL ENGINEER
W. Chad Zigler

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C101

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SEE SHEET C104 FOR CONTINUATION



SEE SHEET C103 FOR CONTINUATION

SEE SHEET C101 FOR CONTINUATION

0 60' 120'

LEGEND

T	UNDERGROUND TELEPHONE LINE
W	UNDERGROUND WATER LINE
CATV	UNDERGROUND CATV LINE
G	UNDERGROUND GAS LINE
OHU	OVERHEAD UTILITY LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EASEMENT LINE
X	SECTION LINE
	FENCE LINE
ST	TREE/BUSH LINE
S	STORM SEWER PIPE
	SANITARY SEWER PIPE
	FLOWLINE
	CABLE STRUCTURE
	FIRE HYDRANT
	WATER METER
	WATER VALVE
	WATER SPIGOT
	ELECTRIC METER
	GUY ANCHOR
	UTILITY POLE
	ELECTRIC BOX
	ELECTRIC TRANSFORMER
	AIR CONDITIONING UNIT
	MAILBOX POST
	SIGN
	STORM SEWER STRUCTURE
	SANITARY SEWER STRUCTURE
	TELEPHONE STRUCTURE
	SEPTIC LID
	LIGHT POLE
	BUSH
	CONIFEROUS TREE
	DECIDUOUS TREE
	5/8" REBAR SET
	MAGNAIL SET
EP	EDGE OF PAVEMENT
D.U. & U.E.	DRAINAGE & UTILITY EASEMENT

TBM #20
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Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1" = 60'
Date: 09-08-2025

EXISTING TOPOGRAPHY
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

COMMONWEALTH OF INDIANA
W. CHAD ZIEGLER
REGISTERED
NO.
PE11200037
STATE
INDIANA
PROFESSIONAL ENGINEER

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C102

Indiana 811 Know what's below. Call before you dig.

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SEE SHEET C102 FOR CONTINUATION



SEE SHEET C101 FOR CONTINUATION

0 60' 120'

LEGEND

- T — UNDERGROUND TELEPHONE LINE
- W — UNDERGROUND WATER LINE
- CATV — UNDERGROUND CATV LINE
- G — UNDERGROUND GAS LINE
- OHU — OVERHEAD UTILITY LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
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- TREE/BUSH LINE
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- FLOWLINE
- CABLE STRUCTURE
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- WATER VALVE
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- ELECTRIC METER
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- SANITARY SEWER STRUCTURE
- TELEPHONE STRUCTURE
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Scale: 1"= 60'
Date: 09-08-2025

EXISTING TOPOGRAPHY
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

COMMONWEALTH OF INDIANA — W. CHAD ZIEGLER — REGISTERED — NO. PE11200637 — STATE OF INDIANA — PROFESSIONAL ENGINEER

BANNING ENGINEERING
853 COLUMBIA ROAD SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700 FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Indiana 811 — Know what's below. Call before you dig.

Project No: 23369
Sheet No: C103

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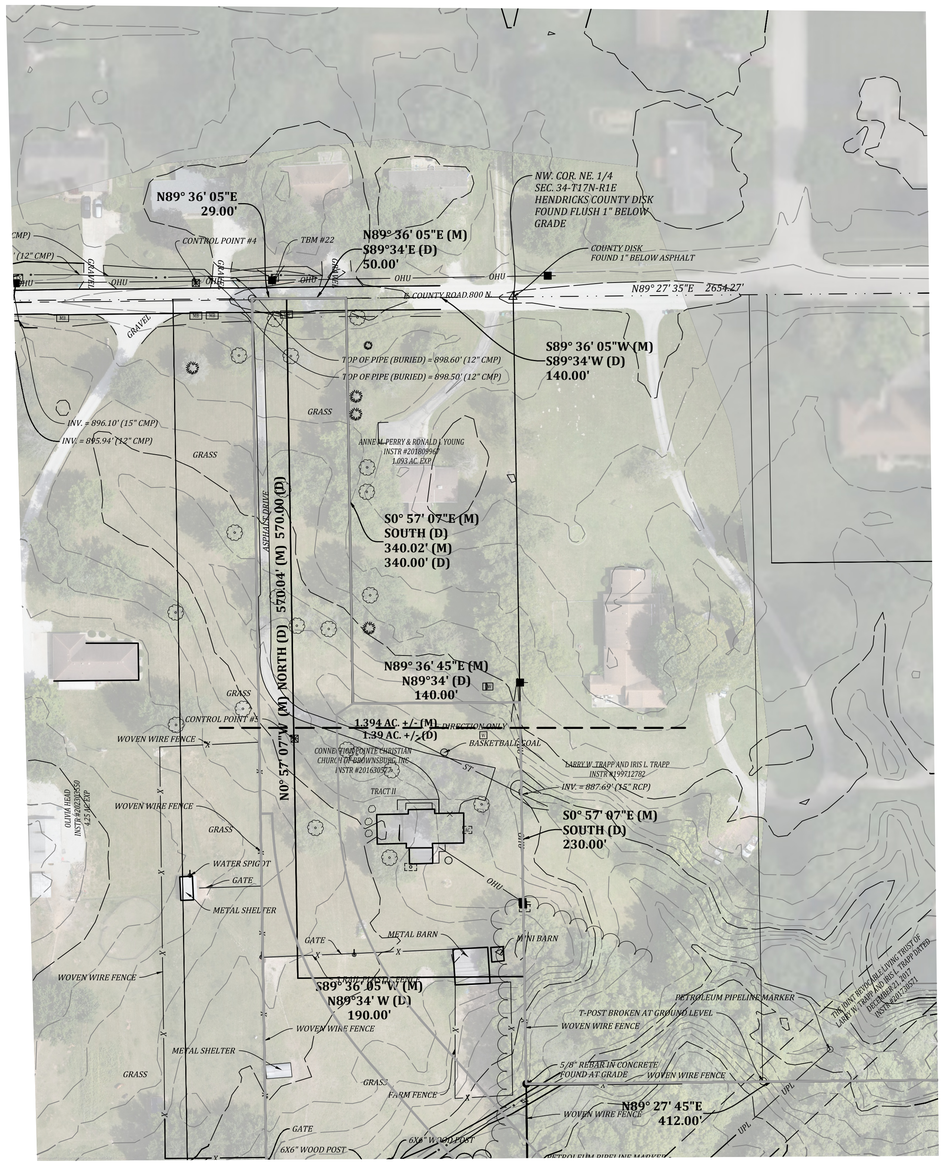

SEE SHEET C102 FOR CONTINUATION

LEGEND

- T — UNDERGROUND TELEPHONE LINE
- W — UNDERGROUND WATER LINE
- CATV — UNDERGROUND CATV LINE
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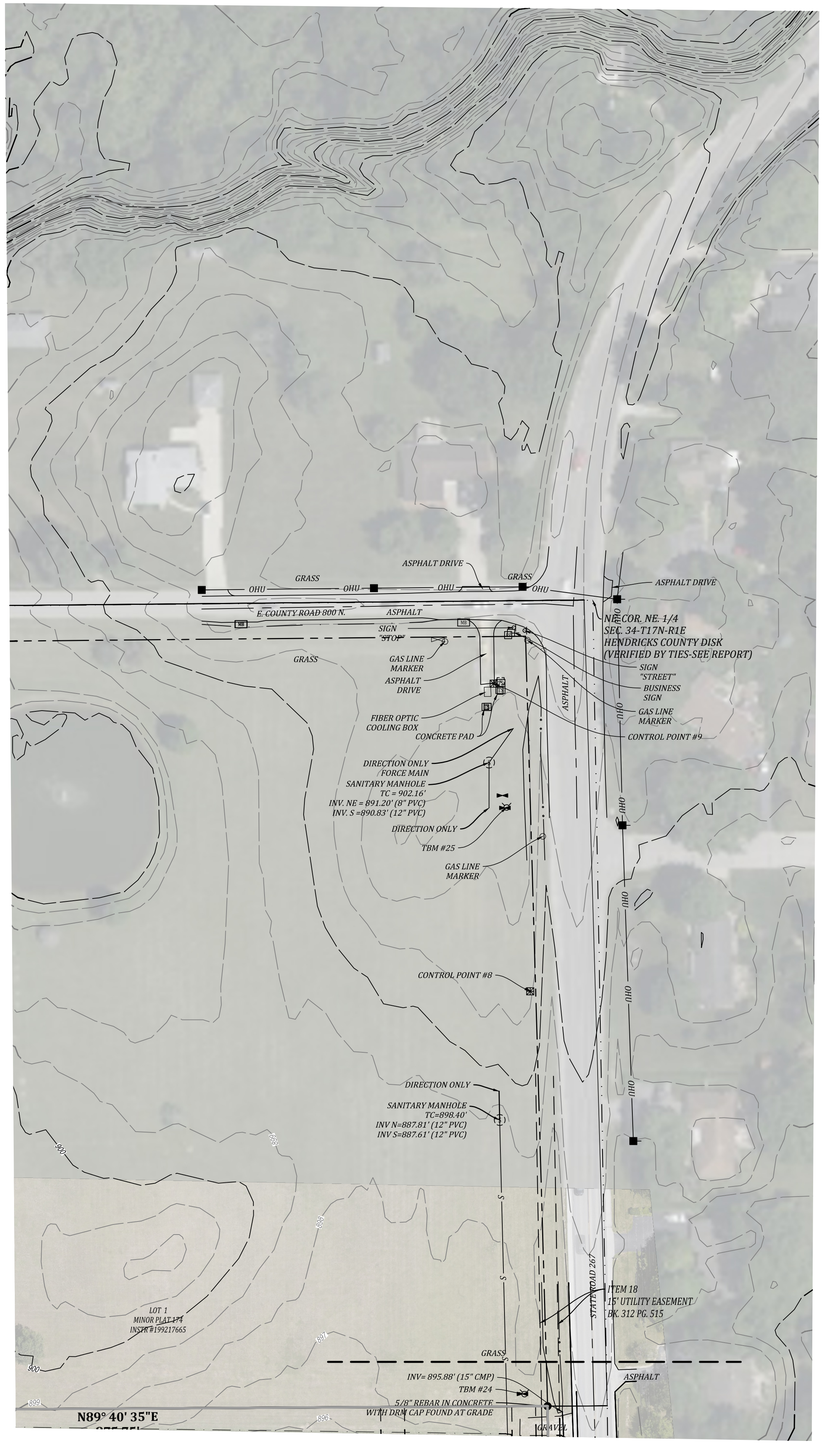

SEE SHEET C101 FOR CONTINUATION

Indiana 811
Know what's below. Call before you dig.

Revisions

Sym.	Date

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1"= 60'
Date: 09-08-2025

EXISTING TOPOGRAPHY
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

CHAD ZIEGLER
REGISTERED
NO.
PE11200657
STATE OF
INDIANA
PROFESSIONAL ENGINEER
W. Chad Ziegler

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700 FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C104

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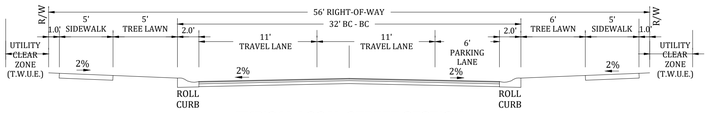


TYPICAL LOCAL STREET SECTION

ALL STREETS PARKING ON ONE SIDE ONLY
NO SCALE

0 60' 120'

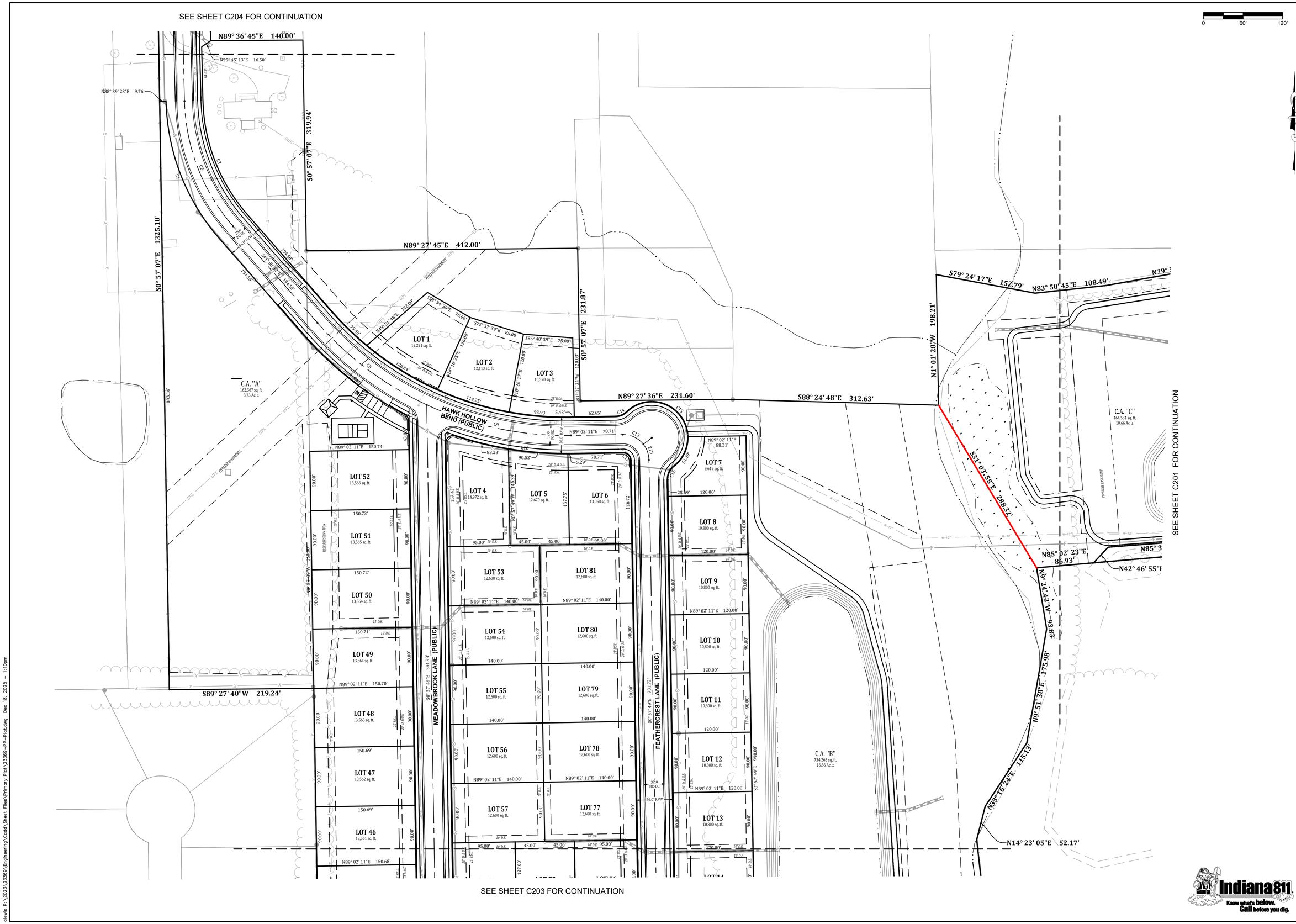
PROPOSED LEGEND

- STORM SEWER PIPE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- STORM SEWER CURB INLET
- STORM SEWER END-SECTION
- SANITARY SEWER PIPE
- SANITARY SEWER MANHOLE
- SANITARY FORCEMAIN
- WATER MAIN
- STREET LIGHT
- STOP SIGN / STREET SIGN

D.E.	DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
T.W.U.E.	WATER EASEMENT
L.B.E.	LANDSCAPE BUFFER YARD EASEMENT
IRR.	IRREGULAR
R/W	RIGHT OF WAY
B.S.L.	BUILDING SETBACK LINE
L.E.	LANDSCAPE EASEMENT
sq. ft.	SQUARE FEET

SEE SHEET C202 FOR CONTINUATION

N89° 40' 35"E 875.75'
N87° 32' 04"E 259.27'
N79° 53' 04"E 260.12'
50' 45"E 108.49'
N89° 40' 34"E 396.85'
N83° 27' 07"E 244.23'
PIPELINE EASEMENT
STATE ROAD 267
SUNNY HOLLOW COURT (PUBLIC)
N88° 41' 38"E 410.56'
N88° 41' 38"E 150.02'
S1° 18' 22"E 7.09'
HORIZON BEND (PUBLIC)
WINGHAVEN WAY (PUBLIC)
CONNECTION POINTE DRIVE (PUBLIC)
HICKORY ROAD
ACRE LANE
C.A. "C" 464,531 sq. ft. 10.66 Ac. ±
C.A. "D" 42,100 sq. ft. 0.97 Ac. ±
LOT 82 10,036 sq. ft.
LOT 83 10,454 sq. ft.
LOT 84 11,042 sq. ft.
LOT 85 11,308 sq. ft.
LOT 86 11,198 sq. ft.
LOT 87 11,089 sq. ft.
LOT 88 10,979 sq. ft.
LOT 89 10,869 sq. ft.
LOT 90 13,037 sq. ft.
LOT 91 13,660 sq. ft.
LOT 92 13,289 sq. ft.
LOT 93 13,327 sq. ft.
LOT 94 11,868 sq. ft.
LOT 95 9,427 sq. ft.
LOT 96 9,397 sq. ft.
LOT 97 10,825 sq. ft.
LOT 98 11,633 sq. ft.
LOT 99 11,633 sq. ft.
LOT 100 11,633 sq. ft.
LOT 101 10,682 sq. ft.
LOT 102 9,520 sq. ft.
LOT 103 9,520 sq. ft.
LOT 104 9,520 sq. ft.
LOT 105 9,477 sq. ft.
N1° 18' 22"W 134.18'
N85° 35' 58"E 245.53'
N85° 02' 23"E 86.93'
N42° 46' 55"E 32.48'
N72° 55' 59"W 51.83'
N85° 02' 23"E 319.12'
N26° 19' 37"W 215.00'
N70° 10' 15"W 265.51'
S89° 24' 07"W 72.46'
N0° 35' 53"W 216.72'
S1° 01' 28"E 646.93'
S1° 01' 28"E 212.84'
S88° 41' 38"W 226.89'
N88° 41' 38"E 276.32'
S88° 44' 35"W 338.22'
N89° 24' 12"E 10.00'
S88° 41' 38"W 399.62'
S61° 50' 10"W 31.69'
N88° 57' 33"E 167.69'
S88° 57' 33"W 118.02'
S88° 57' 33"W 117.26'
S14° 29' 33"E 11.88'
S73° 07' 26"W 132.15'
S14° 17' 06"W 135.61'
S35° 04' 04"W 131.09'
S52° 39' 22"W 130.11'
S51° 18' 22"E 135.18'
S51° 18' 22"E 119.81'
S51° 18' 22"E 140.69'
S51° 18' 22"E 141.09'
S51° 18' 22"E 135.18'
S51° 18' 22"E 119.00'
S51° 18' 22"E 119.00'
S51° 18' 22"E 119.00



Sym.	Revisions	Date

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1"= 60'
Date: 09-08-2025

PRIMARY PLAT
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

CHANDLER A. HARDEN
REGISTERED
No. 22300025
STATE OF INDIANA
LAND SURVEYOR
Chandler Harden

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Indiana 811
Know what's below. Call before you dig.

Project No: 23369
Sheet No: C201

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SEE SHEET C202 FOR CONTINUATION

SEE SHEET C201 FOR CONTINUATION

0 60' 120'

WINDJAMMER CT.

WINDJAMMER WAY

WINDJAMMER DR.

WINDJAMMER COURT (PUBLIC)

FEATHERCREST LANE (PUBLIC)

MEADOWBROOK LANE (PUBLIC)

HAWKEYE CIRCLE (PUBLIC)

SKYHAVEN DRIVE (PUBLIC)

LOT 46 13,561 sq. ft.
LOT 45 14,311 sq. ft.
LOT 44 14,267 sq. ft.
LOT 43 13,559 sq. ft.
LOT 42 13,558 sq. ft.
LOT 41 13,557 sq. ft.
LOT 40 13,556 sq. ft.
LOT 39 13,556 sq. ft.
LOT 38 13,555 sq. ft.
LOT 37 12,398 sq. ft.
LOT 36 22,918 sq. ft.
LOT 35 14,727 sq. ft.
LOT 34 12,785 sq. ft.
LOT 33 12,852 sq. ft.
LOT 32 12,209 sq. ft.
LOT 31 15,706 sq. ft.
LOT 30 13,631 sq. ft.
LOT 29 13,334 sq. ft.
LOT 28 13,222 sq. ft.
LOT 27 10,752 sq. ft.
LOT 26 10,800 sq. ft.
LOT 25 10,800 sq. ft.
LOT 24 10,939 sq. ft.
LOT 23 11,370 sq. ft.
LOT 22 10,759 sq. ft.
LOT 21 12,364 sq. ft.
LOT 20 10,878 sq. ft.
LOT 19 10,800 sq. ft.
LOT 18 10,753 sq. ft.
LOT 17 10,800 sq. ft.
LOT 16 10,800 sq. ft.
LOT 15 10,800 sq. ft.
LOT 14 10,800 sq. ft.
LOT 58 12,017 sq. ft.
LOT 75 11,430 sq. ft.
LOT 76 12,017 sq. ft.
LOT 59 11,827 sq. ft.
LOT 74 11,250 sq. ft.
LOT 73 11,827 sq. ft.
LOT 60 12,600 sq. ft.
LOT 72 12,600 sq. ft.
LOT 61 12,600 sq. ft.
LOT 71 12,600 sq. ft.
LOT 62 13,776 sq. ft.
LOT 70 13,776 sq. ft.
LOT 63 12,600 sq. ft.
LOT 69 12,600 sq. ft.
LOT 64 12,600 sq. ft.
LOT 68 12,600 sq. ft.
LOT 65 11,849 sq. ft.
LOT 66 11,250 sq. ft.
LOT 67 11,849 sq. ft.

S0° 58' 09"E 1325.43'
N89° 02' 11"E 150.68'
S89° 02' 11"W 178.67'
N89° 02' 11"E 336.00'
N0° 57' 49"W 392.28'
S0° 57' 49"E 684.40'
N89° 02' 17"E 414.70'
N14° 23' 05"E 52.17'
N6° 22' 20"W 231.47'
N22° 37' 52"W 242.02'
N0° 39' 59"W 222.70'
N18° 37' 14"W 255.48'
N22° 07' 00"W 179.89'
N89° 30' 41"E 1254.85'

PRIMARY PLAT
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

Sym.	Revisions	Date

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1" = 60'
Date: 09-08-2025

CHANDLER A. HARDEN
REGISTERED
NO.
22300021
STATE OF
INDIANA
LAND SURVEYOR
Chandler Harden

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C202

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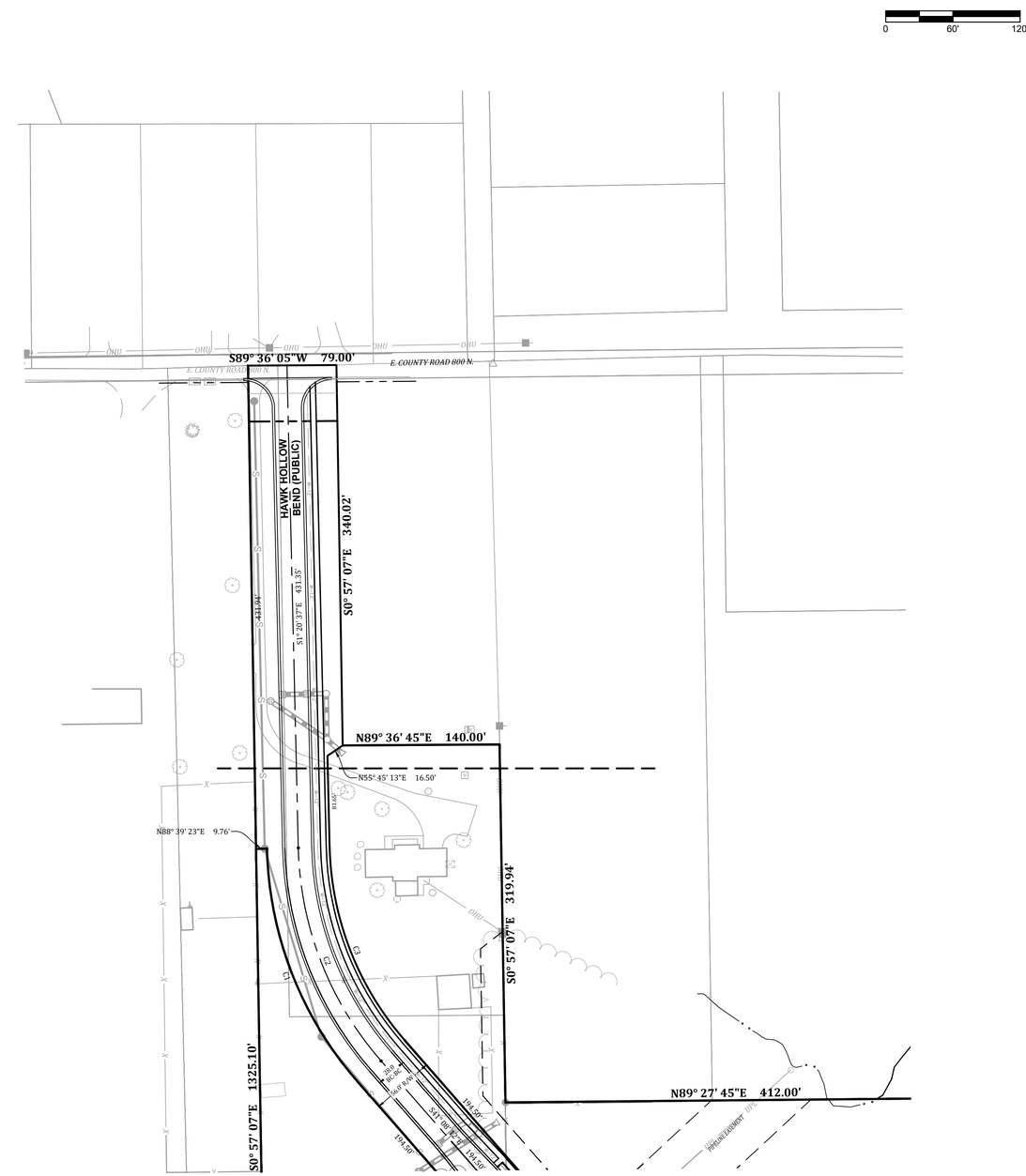

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Sym.	Revisions	Date

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PRIMARY PLAT
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

CHANDLER A. HARDEN
REGISTERED
No. 22300025
STATE OF INDIANA
LAND SURVEYOR
Chandler Harden

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C203

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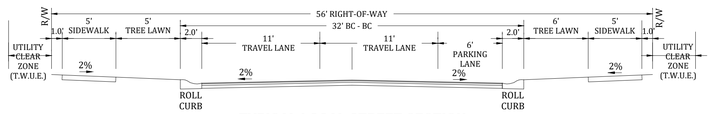

TYPICAL LOCAL STREET SECTION

ALL STREETS PARKING ON ONE SIDE ONLY
NO SCALE

0 60' 120'

PROPOSED LEGEND

- STORM SEWER PIPE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- STORM SEWER CURB INLET
- STORM SEWER END-SECTION
- SANITARY SEWER PIPE
- SANITARY SEWER MANHOLE
- SANITARY FORCEMAIN
- WATER MAIN
- STREET LIGHT
- STOP SIGN / STREET SIGN

D.E.	DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
T.W.U.E.	WATER EASEMENT
L.B.E.	LANDSCAPE BUFFER YARD EASEMENT
IRR.	IRREGULAR
R/W	RIGHT OF WAY
B.S.L.	BUILDING SETBACK LINE
L.E.	LANDSCAPE EASEMENT
sq. ft.	SQUARE FEET

SEE SHEET C304 FOR CONTINUATION

SEE SHEET C302 FOR CONTINUATION

LOT 82 10,036 sq. ft.
LOT 83 10,454 sq. ft.
LOT 84 11,042 sq. ft.
LOT 85 11,308 sq. ft.
LOT 86 11,198 sq. ft.
LOT 87 11,089 sq. ft.
LOT 88 10,979 sq. ft.
LOT 89 10,869 sq. ft.
LOT 90 13,037 sq. ft.
LOT 91 13,660 sq. ft.
LOT 92 13,289 sq. ft.
LOT 93 13,327 sq. ft.
LOT 94 11,868 sq. ft.
LOT 95 9,427 sq. ft.
LOT 96 9,397 sq. ft.
LOT 97 10,825 sq. ft.
LOT 98 11,633 sq. ft.
LOT 99 11,833 sq. ft.
LOT 100 11,633 sq. ft.
LOT 101 10,682 sq. ft.
LOT 102 9,528 sq. ft.
LOT 103 9,520 sq. ft.
LOT 104 9,520 sq. ft.
LOT 105 9,477 sq. ft.
C.A. "C" 464,531 sq. ft. 10.66 Ac. ±
C.A. "D" 42,100 sq. ft. 0.97 Ac. ±

SUNNY HOLLOW COURT (PUBLIC)
HORIZON BEND (PUBLIC)
WINGHAVEN WAY (PUBLIC)
CONNECTION POINTE DRIVE (PUBLIC)
STATE ROAD 267

PROPOSED POND

TIE INTO EXISTING SANITARY SEWER HERE

TIE INTO EXISTING WATER MAIN HERE

PIPELINE EASEMENT

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Scale:	1" = 60'
Date:	09-08-2025

Sym.	Revisions	Date

UTILITY PLAN
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

COMMERCIAL DEVELOPMENT

W. CHAD ZIEGLER — REGISTERED — LICENSED — PE11300657 — STATE OF — INDIANA — PROFESSIONAL ENGINEER

W. Chad Ziegler

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C300

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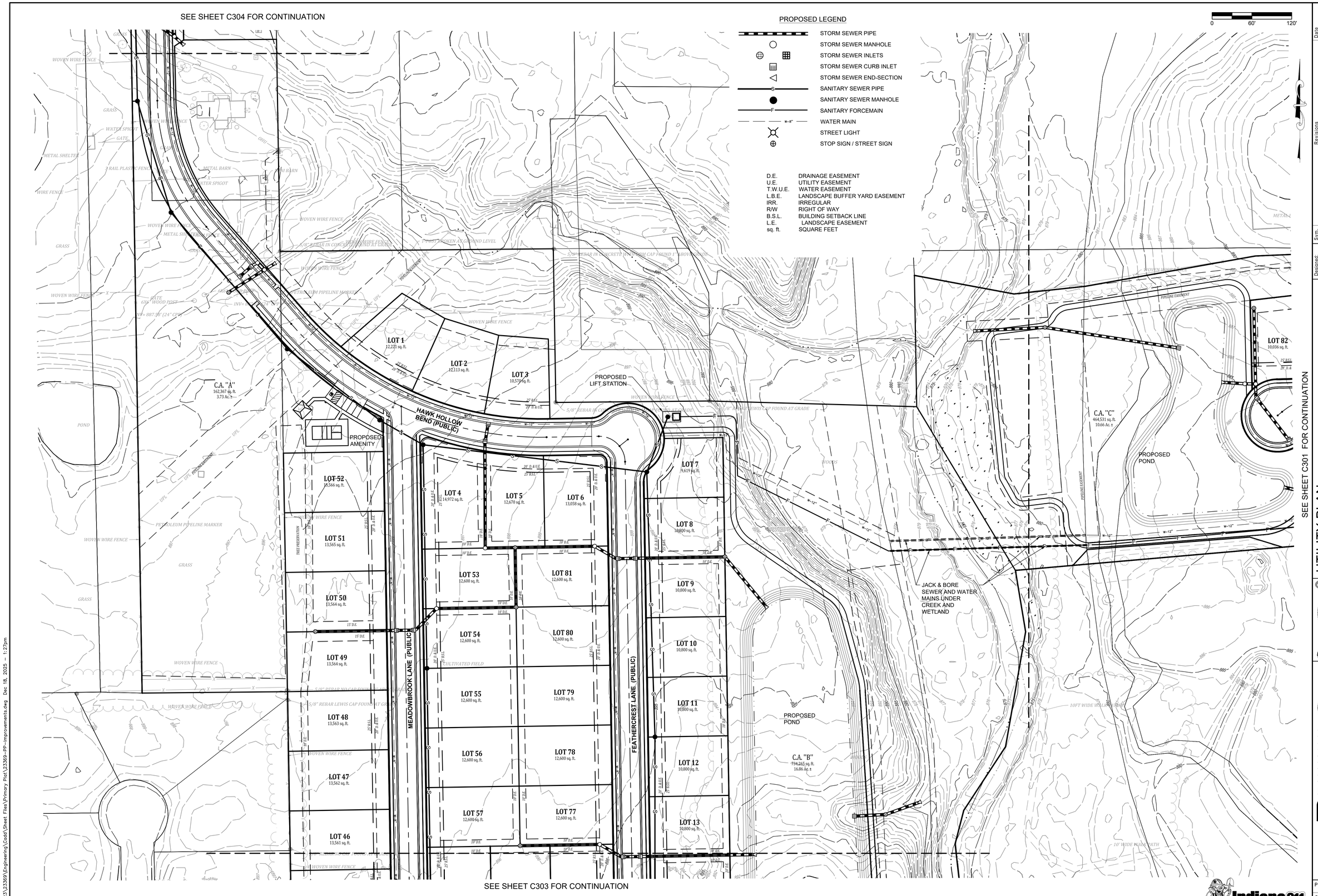

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Sym.	Revisions	Date

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1"= 60'
Date: 09-08-2025

UTILITY PLAN
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

W. CHAD ZIEGLER REGISTERED PROFESSIONAL ENGINEER PE11200667 STATE OF INDIANA

W. Chad Ziegler

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C301

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SEE SHEET C302 FOR CONTINUATION

SEE SHEET C301 FOR CONTINUATION

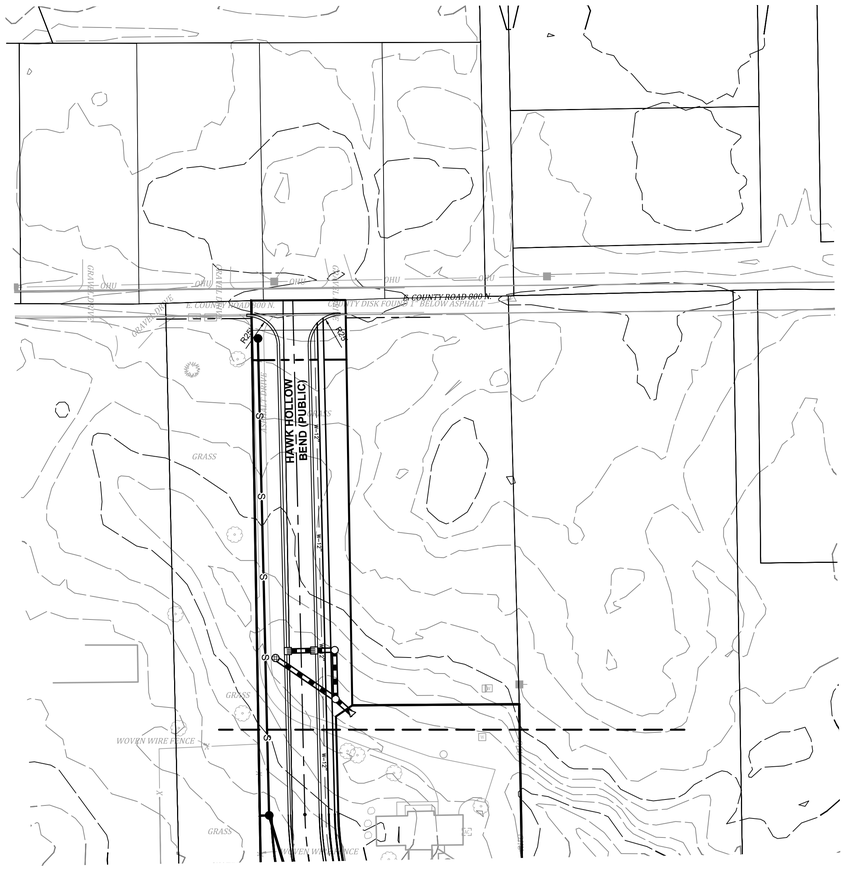
0 60' 120'

PROPOSED LEGEND

- STORM SEWER PIPE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- STORM SEWER CURB INLET
- STORM SEWER END-SECTION
- SANITARY SEWER PIPE
- SANITARY SEWER MANHOLE
- SANITARY FORCEMAIN
- WATER MAIN
- STREET LIGHT
- STOP SIGN / STREET SIGN

D.E.	DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
T.W.U.E.	WATER EASEMENT
L.B.E.	LANDSCAPE BUFFER YARD EASEMENT
IRR.	IRREGULAR
R/W	RIGHT OF WAY
B.S.L.	BUILDING SETBACK LINE
L.E.	LANDSCAPE EASEMENT
sq. ft.	SQUARE FEET

WINDJAMMER COURT (PUBLIC)
MEADOWBROOK LANE (PUBLIC)
FEATHERCREST LANE (PUBLIC)
HAWKEYE CIRCLE (PUBLIC)
SKYHAVEN DRIVE (PUBLIC)
WINDJAMMER CT.
WINDJAMMER DR.
WINDJAMMER WAY
PROPOSED POND
PROPOSED POND
WOODS
WOODS
WOODS
LOT 46 13,561 sq. ft.
LOT 45 14,311 sq. ft.
LOT 44 14,267 sq. ft.
LOT 43 13,559 sq. ft.
LOT 42 13,558 sq. ft.
LOT 41 13,557 sq. ft.
LOT 40 13,556 sq. ft.
LOT 39 13,556 sq. ft.
LOT 38 13,555 sq. ft.
LOT 37 12,398 sq. ft.
LOT 36 22,918 sq. ft.
LOT 35 14,727 sq. ft.
LOT 58 12,017 sq. ft.
LOT 75 11,430 sq. ft.
LOT 76 12,017 sq. ft.
LOT 59 11,827 sq. ft.
LOT 74 11,250 sq. ft.
LOT 73 11,827 sq. ft.
LOT 60 12,600 sq. ft.
LOT 72 12,600 sq. ft.
LOT 61 12,600 sq. ft.
LOT 71 12,600 sq. ft.
LOT 62 13,776 sq. ft.
LOT 70 13,776 sq. ft.
LOT 63 12,600 sq. ft.
LOT 69 12,600 sq. ft.
LOT 64 12,600 sq. ft.
LOT 68 12,600 sq. ft.
LOT 65 11,849 sq. ft.
LOT 66 11,250 sq. ft.
LOT 67 11,849 sq. ft.
LOT 34 12,785 sq. ft.
LOT 33 12,082 sq. ft.
LOT 32 12,209 sq. ft.
LOT 31 15,706 sq. ft.
LOT 13 10,800 sq. ft.
LOT 14 10,800 sq. ft.
LOT 15 10,800 sq. ft.
LOT 16 10,800 sq. ft.
LOT 17 10,800 sq. ft.
LOT 18 10,753 sq. ft.
LOT 19 10,800 sq. ft.
LOT 20 10,878 sq. ft.
LOT 21 12,364 sq. ft.
LOT 22 10,759 sq. ft.
LOT 27 10,752 sq. ft.
LOT 26 10,800 sq. ft.
LOT 25 10,800 sq. ft.
LOT 24 10,959 sq. ft.
LOT 23 11,310 sq. ft.
LOT 28 13,222 sq. ft.
LOT 29 13,134 sq. ft.
LOT 30 13,634 sq. ft.
5/8" REBAR LEWIS CAP FOUND 1" ABOVE GRADE
5/8" REBAR LEWIS CAP FOUND 1" BELOW GRADE
5/8" REBAR LEWIS FOUND 1" ABOVE GRADE
5/8" REBAR IN 4"X4" CONCRETE MONUMENT FOUND AT GRADE
5/8" REBAR NO CAP FOUND 2" ABOVE GRADE
5/8" REBAR NO CAP FOUND 1" BELOW GRADE
5/8" REBAR NO CAP FOUND 2" ABOVE GRADE
4' WOVEN WIRE FENCE
4' WOVEN WIRE
4' WOVEN WIRE FENCE
4' WOVEN WIRE FENCE
4' WOVEN WIRE FENC



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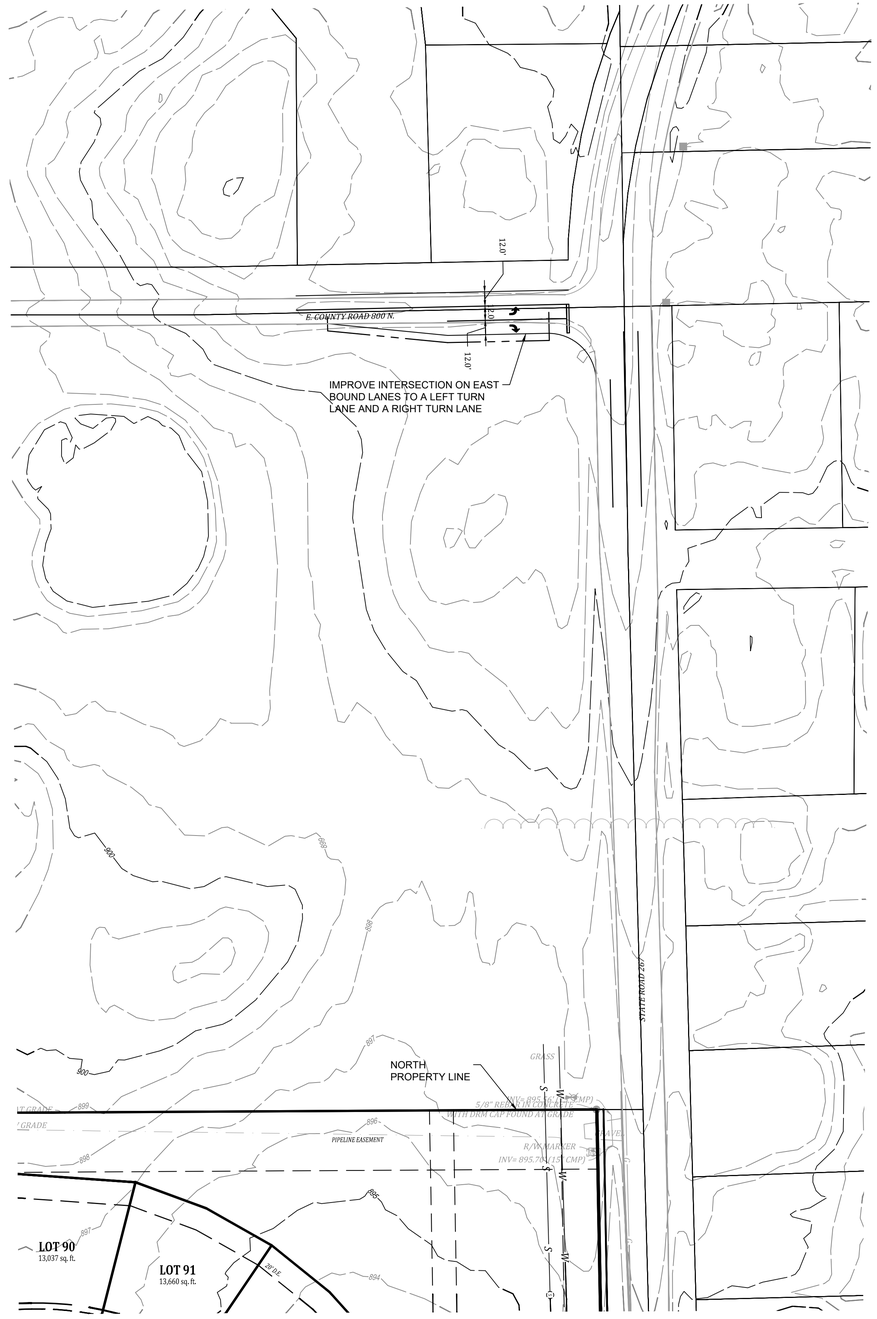

SEE SHEET C301 FOR CONTINUATION

0 60' 120'

PROPOSED LEGEND

- STORM SEWER PIPE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- STORM SEWER CURB INLET
- STORM SEWER END-SECTION
- SANITARY SEWER PIPE
- SANITARY SEWER MANHOLE
- SANITARY FORCEMAIN
- WATER MAIN
- STREET LIGHT
- STOP SIGN / STREET SIGN

D.E.	DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
T.W.U.E.	WATER EASEMENT
L.B.E.	LANDSCAPE BUFFER YARD EASEMENT
IRR.	IRREGULAR
R/W	RIGHT OF WAY
B.S.L.	BUILDING SETBACK LINE
L.E.	LANDSCAPE EASEMENT
sq. ft.	SQUARE FEET

Indiana 811. Know what's below. Call before you dig.

Date | Sym. | Revisions

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1"= 60'
Date: 09-08-2025

UTILITY PLAN
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

W. CHAD ZIEGLER — REGISTERED No. PE11200657 — STATE OF INDIANA — PROFESSIONAL ENGINEER
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BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C303

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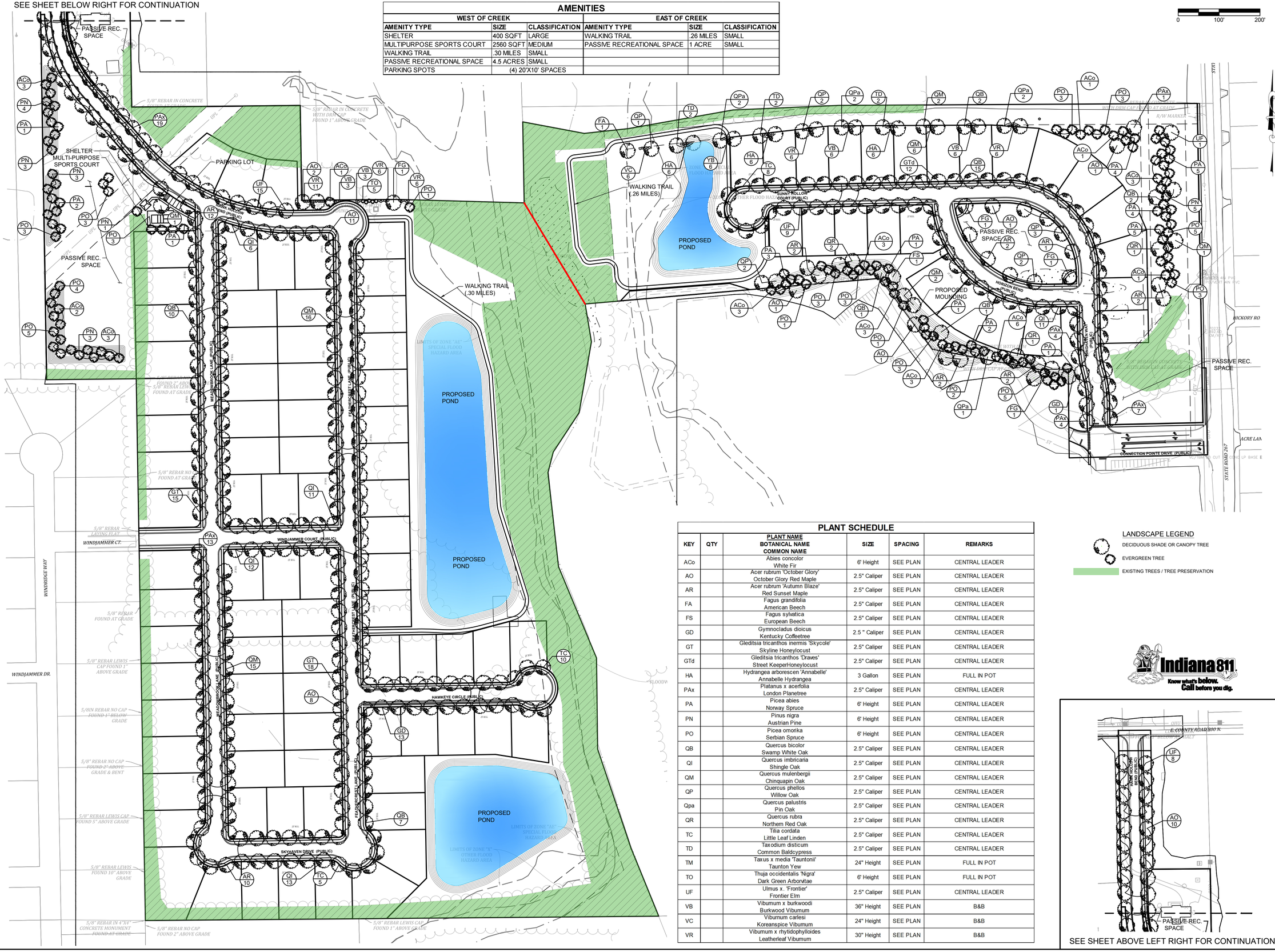
SEE SHEET BELOW RIGHT FOR CONTINUATION

AMENITIES

WEST OF CREEK			EAST OF CREEK		
AMENITY TYPE	SIZE	CLASSIFICATION	AMENITY TYPE	SIZE	CLASSIFICATION
SHELTER	400 SQFT	LARGE	WALKING TRAIL	.26 MILES	SMALL
MULTIPURPOSE SPORTS COURT	2560 SQFT	MEDIUM	PASSIVE RECREATIONAL SPACE	1 ACRE	SMALL
WALKING TRAIL	.30 MILES	SMALL			
PASSIVE RECREATIONAL SPACE	4.5 ACRES	SMALL			
PARKING SPOTS	(4) 20'X10' SPACES				

0 100' 200'



PLANT SCHEDULE

KEY	QTY	PLANT NAME BOTANICAL NAME COMMON NAME	SIZE	SPACING	REMARKS
ACo		Abies concolor White Fir	6' Height	SEE PLAN	CENTRAL LEADER
AO		Acer rubrum 'October Glory' October Glory Red Maple	2.5" Caliper	SEE PLAN	CENTRAL LEADER
AR		Acer rubrum 'Autumn Blaze' Red Sunset Maple	2.5" Caliper	SEE PLAN	CENTRAL LEADER
FA		Fagus grandifolia American Beech	2.5" Caliper	SEE PLAN	CENTRAL LEADER
FS		Fagus sylvatica European Beech	2.5" Caliper	SEE PLAN	CENTRAL LEADER
GD		Gymnocladus dioicus Kentucky Coffeetree	2.5 " Caliper	SEE PLAN	CENTRAL LEADER
GT		Gleditsia tricanthos inermis 'Skycole' Skyline Honeylocust	2.5" Caliper	SEE PLAN	CENTRAL LEADER
GTd		Gleditsia tricanthos 'Draves' Street KeeperHoneylocust	2.5" Caliper	SEE PLAN	CENTRAL LEADER
HA		Hydrangea arborescen 'Annabelle' Annabelle Hydrangea	3 Gallon	SEE PLAN	FULL IN POT
PAx		Platanus x acerfolia London Planetree	2.5" Caliper	SEE PLAN	CENTRAL LEADER
PA		Picea abies Norway Spruce	6' Height	SEE PLAN	CENTRAL LEADER
PN		Pinus nigra Austrian Pine	6' Height	SEE PLAN	CENTRAL LEADER
PO		Picea omorika Serbian Spruce	6' Height	SEE PLAN	CENTRAL LEADER
QB		Quercus bicolor Swamp White Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
QI		Quercus imbricaria Shingle Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
QM		Quercus mulenbergii Chinquapin Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
QP		Quercus phellos Willow Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
Qpa		Quercus palustris Pin Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
QR		Quercus rubra Northern Red Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
TC		Tilia cordata Little Leaf Linden	2.5" Caliper	SEE PLAN	CENTRAL LEADER
TD		Taxodium disticum Common Baldcypress	2.5" Caliper	SEE PLAN	CENTRAL LEADER
TM		Taxus x media 'Tauntonii' Taunton Yew	24" Height	SEE PLAN	FULL IN POT
TO		Thuja occidentalis 'Nigra' Dark Green Arborvtae	6' Height	SEE PLAN	FULL IN POT
UF		Ulmus x. 'Frontier' Frontier Elm	2.5" Caliper	SEE PLAN	CENTRAL LEADER
VB		Vibumum x burkwoodi Burkwood Vibumum	36" Height	SEE PLAN	B&B
VC		Viburnum carlesi Koreanspice Viburnum	24" Height	SEE PLAN	B&B
VR		Vibumum x rhytidophylloides Leatherleaf Vibumum	30" Height	SEE PLAN	B&B

LANDSCAPE LEGEND

- DECIDUOUS SHADE OR CANOPY TREE
- EVERGREEN TREE
- EXISTING TREES / TREE PRESERVATION

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SEE SHEET ABOVE LEFT RIGHT FOR CONTINUATION

Date | Sym. | Revisions

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1"= 100'
Date: 09-08-2025

AMENITIES & LANDSCAPING PLAN
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

CHAD ZIEGLER REGISTERED No. PE11200627 STATE OF INDIANA PROFESSIONAL ENGINEER
W. Chad Ziegler

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C400

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LANDSCAPE SPECIFICATIONS

GENERAL NOTES:

1. STREET TREES MAY BE PLANTED WHERE SUFFICIENT LANDSCAPE AREA IS PROVIDED BETWEEN THE CURB AND SIDEWALK OR IN A STREET MEDIAM. STREET TREE PLACEMENT SHOULD NOT INTERFERE WITH UTILITY LOCATIONS. WHERE STREET TREES ARE PROPOSED NEAR OR UTILITY LINES, APPROVAL MUST BE OBTAINED IN WRITING FROM IMPACTED UTILITIES PRIOR TO APPROVAL OF THE LANDSCAPE PLAN.

A. STREET TREES TO BE SPACED APPROXIMATELY 35 FEET ON CENTER. THE TYPE OF TREE SELECTED MUST HAVE AN APPROPRIATE MATURE HEIGHT AND ROOT SYSTEM TO MINIMIZE FUTURE DAMAGE AND OBSTRUCTION TO THE SIDEWALK.

B. STREET TREES MAY BE COUNTED TOWARD ANY STREET FRONTAGE OR LOT LANDSCAPING REQUIREMENT.

Table 5-3: Required Buffer Level Matrix

	Incoming Use							
Existing Use	Single Detached Home	Duplex	Triplex or Quadplex	Townhomes	Apartments	Commercial	Industrial/ Motorsports	Institutional
Agriculture	Low	Low	Low	Low	Low	Moderate	Moderate	Moderate
SF Detached Home	Low	Low	Low	Moderate	High	High	High	Moderate
Duplex	Low	Low	Low	Moderate	High	High	High	Moderate
Triplex or Quadplex	Low	Low	Low	Low	Moderate	High	High	Moderate
Townhomes	Low	Low	Low	Low	Moderate	High	High	Moderate
Apartments	Moderate	Moderate	Moderate	Low	Low	Moderate	High	Low
Commercial	High	Moderate	Moderate	Moderate	Moderate	None	None	Low
Industrial	High	High	High	High	High	None	None	Low
Institutional	Low	Low	Low	Low	Low	Moderate	Moderate	None

Table 5-4: Low Intensity Buffer

	Option 1 Base Standard	Option 2 Fence/Wall	Option 3 Vegetative Screen
Buffer Width (min.)	10'	5'	8'
Tree Planting (min.)	1 shade, or evergreen tree per 50 linear feet	n/a	n/a
Shrub Planting (min.)	3 large shrubs per 50 linear feet	n/a	Continuous planting at least 6' high and 50% opacity
Fence/Wall (min.)	n/a	6' high 50% opacity	n/a

NORTH PERIMETER PROPERTY LINE
LANDSCAPE PLANTINGS
LEVEL LOW LANDSCAPE PLANTING
1 CANOPY, 1 EVERGREEN TREE OR
1 EXISTING TREES / 50'
3 SHRUBS / 50'

Location	Plant No. per 50'	Type of Plant	LANDSCAPE CLASSIFICATION LOW
N1	0 0	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N2	0 0	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N3	3	EVERGREEN TREES	LOW CLASSIFICATION SHOWN ON PLAN
N4	3	EVERGREEN TREES	LOW CLASSIFICATION SHOWN ON PLAN
N5	3	EVERGREEN TREES	LOW CLASSIFICATION SHOWN ON PLAN
N6	3	EVERGREEN TREES	LOW CLASSIFICATION SHOWN ON PLAN
N7	3	EVERGREEN TREES	LOW CLASSIFICATION SHOWN ON PLAN
N8	0 0	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N9	1 3	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N10	3 3	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N11	1 3	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N12	1 3	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N13	1 3	CANOPY TREE SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
N14-N28	1 3 .	CANOPY TREE SHRUBS EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
N29-N52	1 3 .	CANOPY TREE SHRUBS EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN

EAST PERIMETER PROPERTY LINE
LANDSCAPE PLANTINGS
LEVEL LOW LANDSCAPE PLANTING
1 CANOPY, 1 EVERGREEN TREE OR
1 EXISTING TREES / 50'
3 SHRUBS / 50'

Location	Plant No. per 50'	Type of Plant	LANDSCAPE CLASSIFICATION LOW
E1	0	TREES	SHOWN ON PLAN
E2	1 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E3	0 4	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E4	0 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E5	2 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E6	0 4	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E7	1 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E8	1 4	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E9	1 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
E10	1 3	CANOPY TREE EXISTING TREE	LOW CLASSIFICATION SHOWN ON PLAN
E11	3	EXISTING TREE	LOW CLASSIFICATION SHOWN ON PLAN
E12	3	EXISTING TREE	LOW CLASSIFICATION SHOWN ON PLAN
E13	4	EXISTING TREE	LOW CLASSIFICATION SHOWN ON PLAN
E14	2 4	CANOPY TREE EXISTING TREE	LOW CLASSIFICATION SHOWN ON PLAN
E15	2	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
E16	2	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN

SOUTH PERIMETER PROPERTY LINE
LANDSCAPE PLANTINGS
LEVEL LOW LANDSCAPE PLANTING
1 CANOPY, 1 EVERGREEN TREE OR
1 EXISTING TREES / 50'
3 SHRUBS / 50'

Location	Plant No. per 50'	Type of Plant	LANDSCAPE CLASSIFICATION
S1-S4		EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
S5	2	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
S6	2	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
S7	1 1	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S8	1 5	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S9	2 2	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S10	1 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S11	1 2	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S12	1 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S13	2 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S14	0 4	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S15	5 1	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S16	2 4	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S17	0 4	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S18	2 2	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S19	1 3	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S20	2 2	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S21	1 4	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S22	1 1	CANOPY TREE EVERGREEN TREE	LOW CLASSIFICATION SHOWN ON PLAN
S23-29		NO TREES/SHRUBS	LOW CLASSIFICATION SHOWN ON PLAN
S30-S52		EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN

WEST PERIMETER PROPERTY LINE
LANDSCAPE PLANTINGS
LEVEL LOW LANDSCAPE PLANTING
1 CANOPY, 1 EVERGREEN TREE OR
1 EXISTING TREES / 50'
3 SHRUBS / 50'

Location	Plant No. per 50'	Type of Plant	LANDSCAPE CLASSIFICATION LOW
W1	0	TREES	LOW CLASSIFICATION SHOWN ON PLAN
W2	2	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W3	1	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W4	1	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W5	1	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W6	2	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W7	1	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W8	1	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W9	1	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W10	2	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W11	1	CANOPY TREE	LOW CLASSIFICATION SHOWN ON PLAN
W12	1 3	CANOPY TREE EXISTING TREE 5' BERM	LOW CLASSIFICATION SHOWN ON PLAN
W13	2 3 .	CANOPY TREE EXISTING TREE 5' BERM	LOW CLASSIFICATION SHOWN ON PLAN
W14	2 3 .	CANOPY TREE EXISTING TREE 5' BERM	LOW CLASSIFICATION SHOWN ON PLAN
W15	2 3 .	CANOPY TREE EXISTING TREE 5' BERM	LOW CLASSIFICATION SHOWN ON PLAN
W16	0	TREE - DRAINAGE AREA	LOW CLASSIFICATION SHOWN ON PLAN
W17	3 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W18	4 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W19	3 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W20	1 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W21	0	TREE - GAS EASEMENT	LOW CLASSIFICATION SHOWN ON PLAN
W22	2 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W23	3 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W24	3 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W25	3 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W26	1 . .	EVERGREEN TREE 5' BERM EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN
W27 - W52	0	EXISTING TREES	LOW CLASSIFICATION SHOWN ON PLAN

LANDSCAPE SPECIFICATIONS

GENERAL NOTES:

1. ALL UTILITIES SHALL BE LOCATED AND MARKED/FLAGGED BEFORE BEGINNING LANDSCAPE WORK. RELOCATED PLANTS THAT ARE UNDER OR OVER UTILITIES. THE RELOCATED PLANTS TO BE APPROVED BY OWNER AND/OR LANDSCAPE ARCHITECT/DESIGNER PRIOR TO INSTALLATION. CONTRACTOR SHALL NOTIFY UTILITY LOCATE SERVICE (811) A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION.
2. UTILITY LOCATION NOTE: ALL LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND BASED ON PROVIDED INFORMATION BY SURVEYOR OR CIVIL ENGINEER OR OWNER AND OR MEASURED IN THE FIELD. IF DISCREPANCIES EXIST OR ARE PRESENT, CONTRACTOR SHALL NOTIFY OWNER, OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT/DESIGNER PRIOR TO BEGINNING ANY WORK.
3. IN CASE OF DISCREPANCIES BETWEEN THE PLANS AND PLANT LIST. THE PLAN SHALL DICTATE.
4. THESE SPECIFICATIONS COVER THE FURNISHING OF LABOR, PLANTS, EQUIPMENT, AND MATERIALS TO PERFORM LANDSCAPE OPERATIONS IN CONNECTION WITH THIS CONSTRUCTION PROJECT AT THE LOCATIONS SHOWN ON THE LANDSCAPE DRAWING.
5. PLANTS AND ALL LANDSCAPE MATERIAL TO BE STORED ON SITE WILL BE PLACED WHERE THEY ARE NOT IN CONFLICT WITH CONSTRUCTION OPERATIONS.
6. REMOVE AND CLEAN UP ALL DEBRIS AND REMOVE FROM SITE, REPAIR DAMAGED OR DISTURBED AREAS CAUSED BY LANDSCAPE CONTRACTOR.
7. TOPSOIL: TOPSOIL SHALL BE FRIABLE, NATURAL LOAM, SURFACE SOIL AND FREE OF SUBSOIL, CLAY LUMPS, BRUSH, WEEDS, LITTER, ROOTS, STONES DOMESTIC AND AGRICULTURE FERTILIZERS, HERBICIDES, AND OTHER TOXIC MATERIALS HARMFUL TO PLANT GROWTH AND ENVIRONMENT. WASTE SOILS, BORROW, OR HEAVY CLAY BASED SOILS WILL NOT BE ACCEPTED. TOPSOIL SHALL HAVE A PH VALUE OF 6.0-7.4. SUBMIT SOIL SAMPLES, PH SAMPLES, PH LEVELS AND NPK ANALYSIS PRIOR TO DELIVERY.

PLANTING NOTES:

1. REMOVE WEEDS, ORGANIC MATTER, ROCKS LARGER THAN 1.5" FROM SOIL.
2. LANDSCAPE MATERIALS: FERTILIZER: GRANULAR NON-BURNING PRODUCT COMPOSED OF NOT LESS THAN 50% ORGANIC SLOW ACTING, GUARANTEED ANALYSIS PROFESSIONAL FERTILIZER; 20% NITROGEN, 10% PHOSPHORIC ACID, AND 5% POTASH BY WEIGHT OR SIMILARLY APPROVED COMPOSITION.
3. PLANTING BACKFILL SOIL: BACKFILL PLANT PITS WITH THE FOLLOWING TOPSOIL MIXTURE: 1 PART ON-SITE TOPSOIL, 1 PART IMPORTED TOPSOIL, 1 PART COMPOST AND 1/2 POUND PLANT SPECIFIED FERTILIZER PER CUBIC YARD.
4. PLANT MATERIALS: PROVIDE TREES AND SHRUBS AS INDICATED. COMPLY WITH SIZING AND GRADING STANDARDS OF "AMERICAN STANDARD FOR NURSERY STOCK". PROVIDE ONLY SOUND, HEALTHY VIGOROUS PLANTS FREE FROM DEFECTS, DISFIGURING KNOTS, SUNSCALD INJURIES, FROST CRACKS, PLANT DISEASES, INSECTS OR ANY OTHER FORM OF DISEASE OR INFESTATION. ALL PLANTS SHALL HAVE FULLY DEVELOPED FORM WITHOUT VOIDS OR OPEN SPACES.
5. NO SUBSTITUTIONS OF PLANT MATERIAL WILL NOT BE ALLOWED. IF PLANTS ARE NOT AVAILABLE. THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT/DESIGNER, OWNERS REPRESENTATIVE IN WRITING. ALL PLANTS SHALL BE INSPECTED AND TAGGED WITH PROJECT I.D. AT NURSERY OR CONTRACTORS OPERATIONS PRIOR TO MOVING TO JOB SITE. PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOB SITE BY LANDSCAPE ARCHITECT/DESIGNER OR OWNERS REPRESENTATIVE.
6. LANDSCAPE ARCHITECT/DESIGNER OR OWNERS REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY AND ALL PLANT MATERIALS DURING THE COURSE OF THE PROJECT.
7. PLANTING BED MULCH: 3 INCHES OF GRADE 'A' SHREDDED HARDWOOD MULCH WHERE PLANTING BED ADJOINS EITHER PAVEMENT OR TURF.
8. PLANTING BED FABRIC: DEWITT PRO 5 WEED BARRIER. INSTALL ONLY IN PLANTING BEDS.
9. SEE PLANTING DETAILS FOR PLANTING, PRUNING AND STAKING REQUIREMENTS.

SEEDING AND SODDING PREPARATION:

1. LANDSCAPE CONTRACTOR TO FINE GRADE AND PREPARE ALL SITE AREAS TO RECEIVE SODDING OR SEEDING. FINE GRADE SITE SMOOTH TO FINAL GRADING PLAN ELEVATIONS. FILL IN DEPRESSIONS, LOW SPOTS AND GRADE SMOOTH.
2. ALL TURF AREAS WITHIN LIMIT LINES TO RECEIVE 6" TOPSOIL PRIOR TO OPERATIONS. ONCE TOPSOIL HAS BEEN PLACED. CONSTRUCTION ACTIVITY OF ANY KIND (EXCLUDING LANDSCAPING) SHALL NOT BE PERMITTED ON OR ACROSS ANY PLANTING AREA.
3. TURF AREAS TO TO BE SCARIFIED/CULTIVATE TO A DEPTH OF 4" AND LIGHTLY ROLLED (NOT COMPACTED) PRIOR TO BEING SODDED OR SEEDED.
4. LAWNS TO BE FERTILIZED WITH 12-12-12 AT A RATE OF 10 LBS/1000 SQ.FT. PRIOR TO INSTALLATION.
5. WATER AND MAINTAIN GRASS STAND IS ESTABLISHED AND READY FOR MOWING AT A MINIMUM 4" HEIGHT. CONTRACTOR SHALL MAINTAIN LAWN FOR A PERIOD OF 60 DAYS BEYOND FINAL ACCEPTANCE BY MOWING AND WATERING AS REQUIRED TO MAINTAIN VIGOROUS GROWTH DURING ESTABLISHMENT.

SEEDED LAWN:

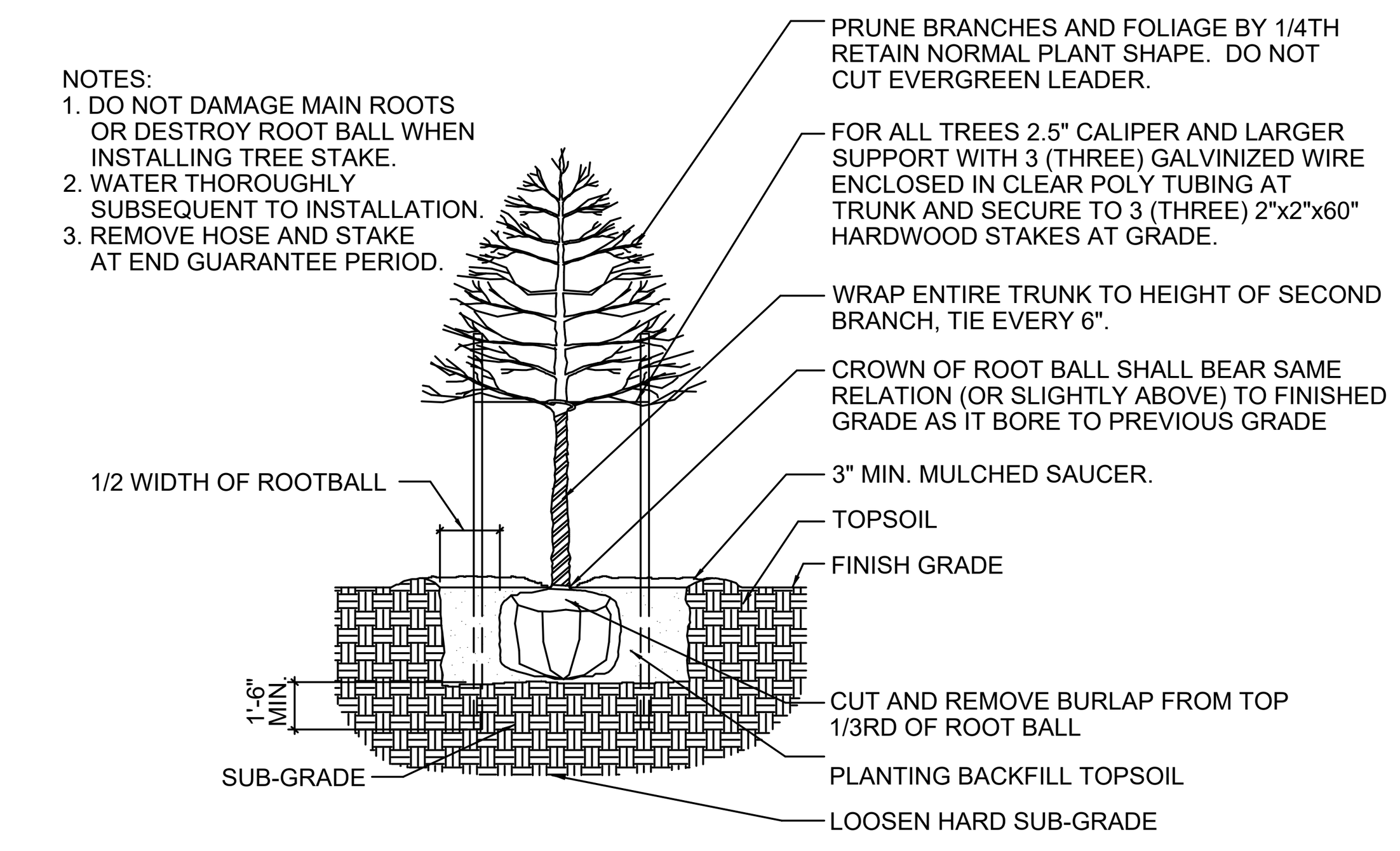
TURF TYPE TALL FESCUE - SEED

1. COMPLETE ALL OTHER LANDSCAPE PLANTINGS, MULCHING, FINE GRADING AND STAKING PRIOR TO SEEDING LAWN AREAS.
2. PROVIDE SEEDED LAWN FOR ALL LAWN AREAS UTILIZING AMER-TURF FRONT-RUNNER TURF TYPE TALL FESCUE BLEND SEED.
3. APPLY SEED AT A RATE OF 5 POUNDS PER 1000 SQUARE FEET.
4. SEED BED SHALL BE IN A FIRM BUT UNCOMPACTED CONDITION WITH A RELATIVELY FINE TEXTURE AT TIME OF SEEDING.
5. CONTRACTOR SHALL MAINTAIN SEEDING LAWN FOR A PERIOD OF 60 DAYS BEYOND FINAL ACCEPTANCE BY MOWING AND WATERING AS REQUIRED TO MAINTAIN VIGOROUS GROWTH DURING ESTABLISHMENT PERIOD.
6. LAWN AREAS SHALL NOT HAVE VOIDS LARGER THAN 6"X6". IF VOIDS ARE LARGER THAN ACCEPTABLE SIZE AN OVERSEEDING SHALL BE COMPLETED BY THE CONTRACTOR DURING THE NEXT AVAILABLE GROWING SEASON.
7. GROWING SEASON AUGUST 15TH - SEPTEMBER 20TH. SPRING GROWING SEASON MARCH 20TH - APRIL 20TH.

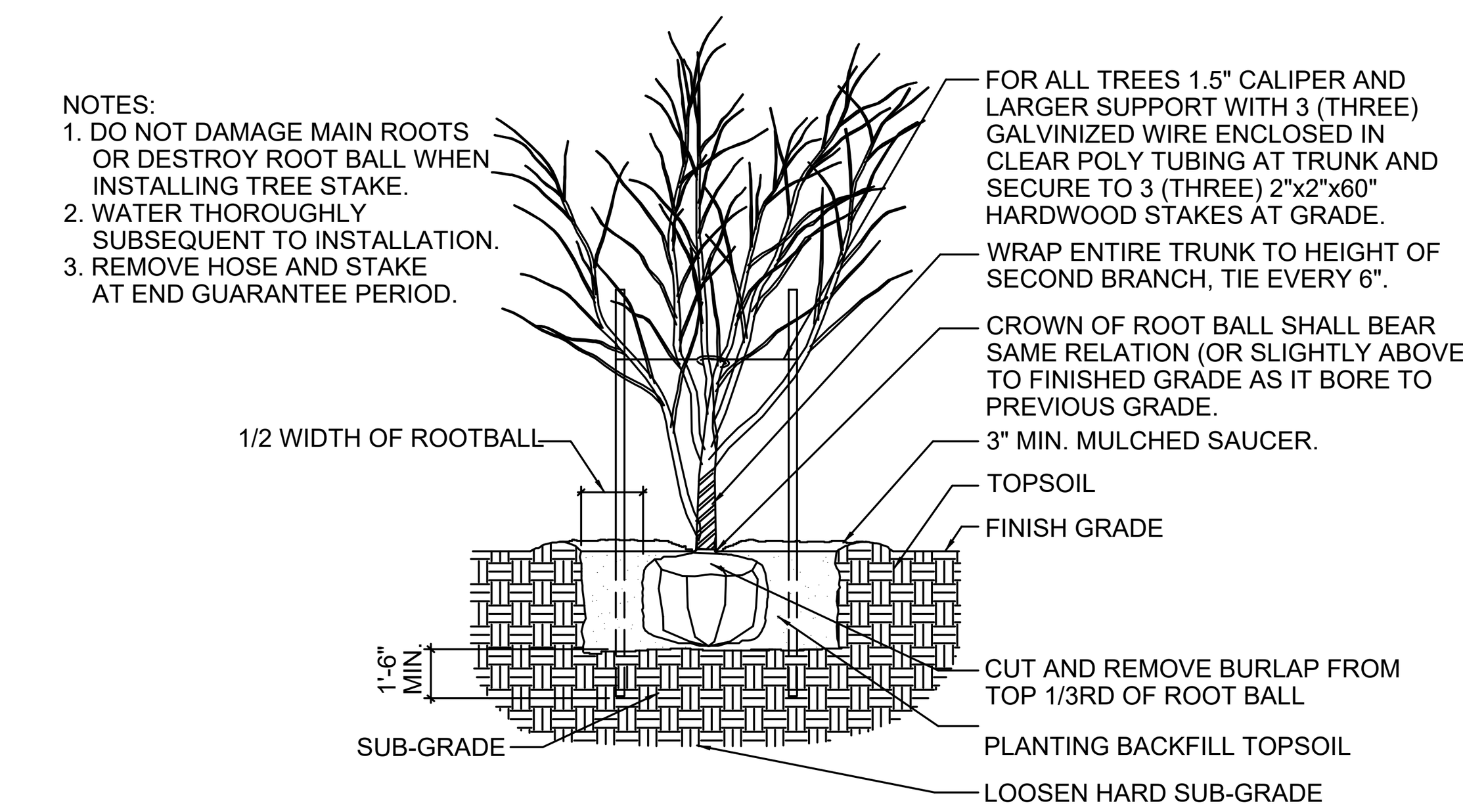
PROJECT WARRANTY:

1. CONTRACTOR SHALL WARRANT TREES, SHRUBS, AND PLANTS FOR A PERIOD OF ONE YEAR AFTER DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM NEGLECT BY THE OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND INSTALLER'S CONTROL. REMOVE AND REPLACE TREES, SHRUBS OR OTHER PLANTS FOUND TO BE DEAD OR IN UNHEALTHY CONDITION DURING WARRANTY PERIOD. REPLACE TREES AND SHRUBS WHICH ARE IN DOUBTFUL CONDITION AT END OF WARRANTY PERIOD.

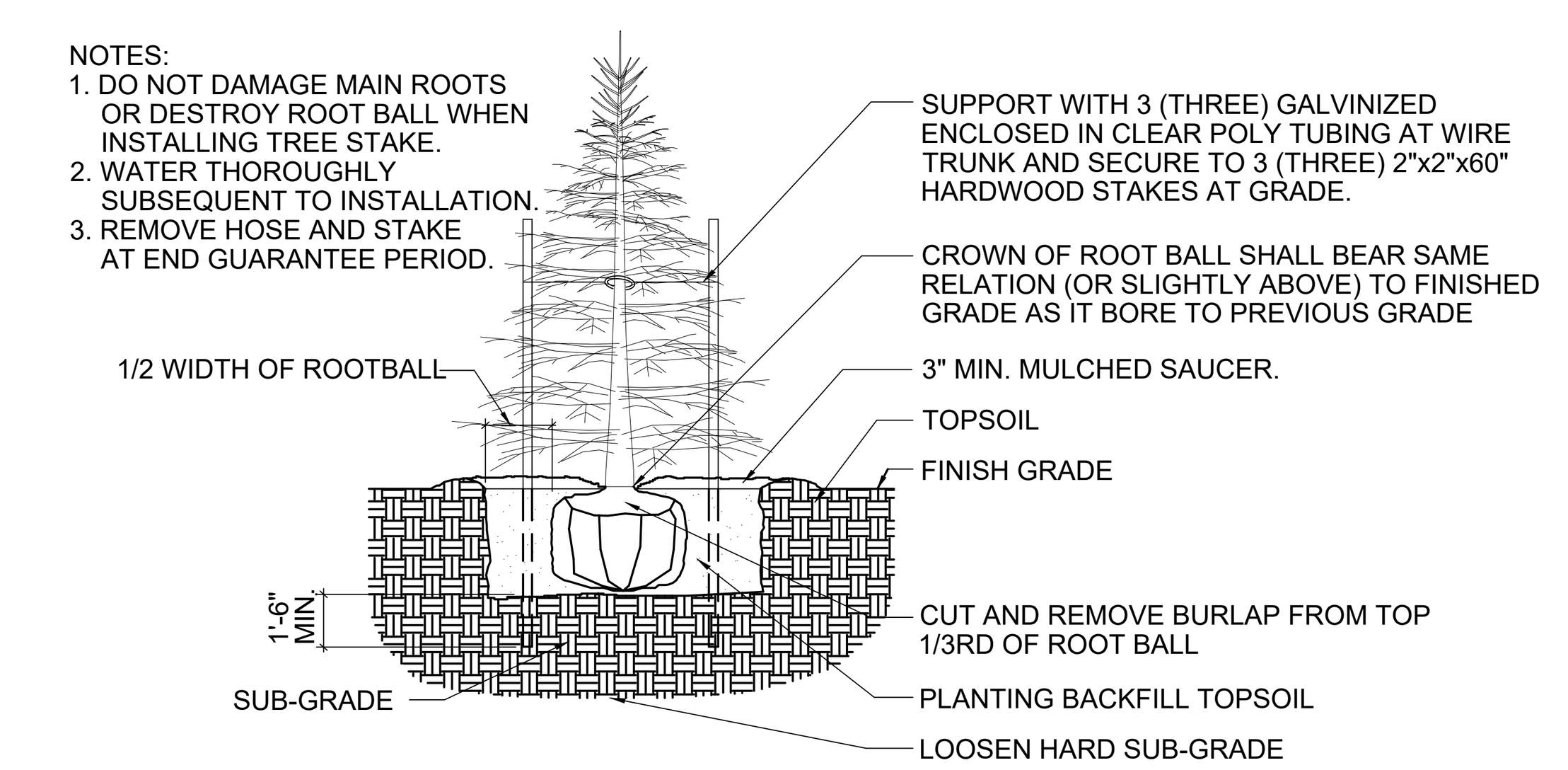
0 100' 200'



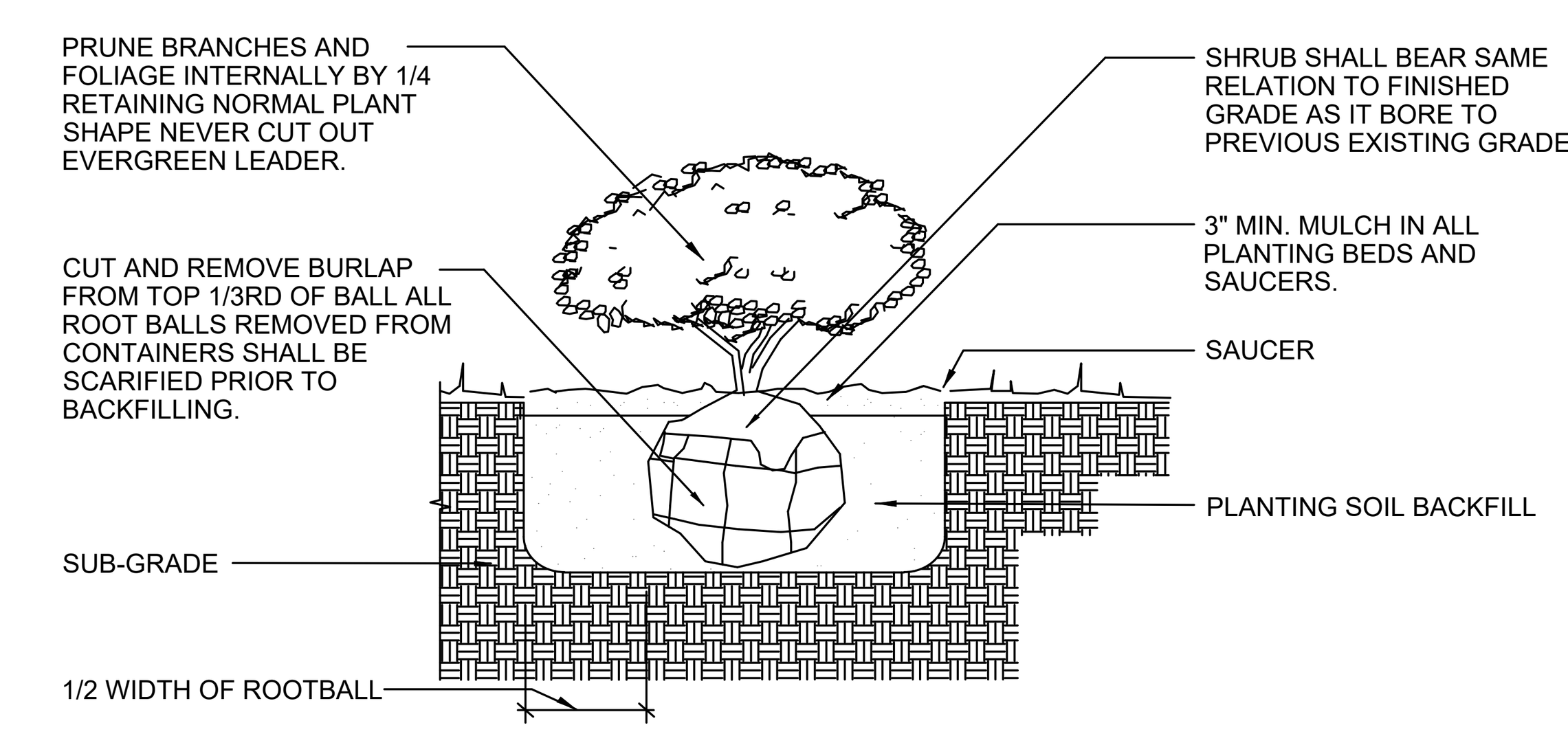
CANOPY TREE PLANTING
NO SCALE



ORNAMENTAL TREE PLANTING
NO SCALE



EVERGREEN TREE PLANTING
NO SCALE



SHRUB PLANTING
NO SCALE

Indiana 811
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Revisions

Sym.	Date

Designed: GAF
Drawn: GAF
Checked: AGL/SB
Scale: 1"= 100'
Date: 09-08-2025

LANDSCAPE DETAILS & SPECIFICATIONS
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

W. CHAD ZIEGLER
REGISTERED
No. PE11200667
STATE OF INDIANA
PROFESSIONAL ENGINEER
CONSTRUCTION

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369
Sheet No: C400

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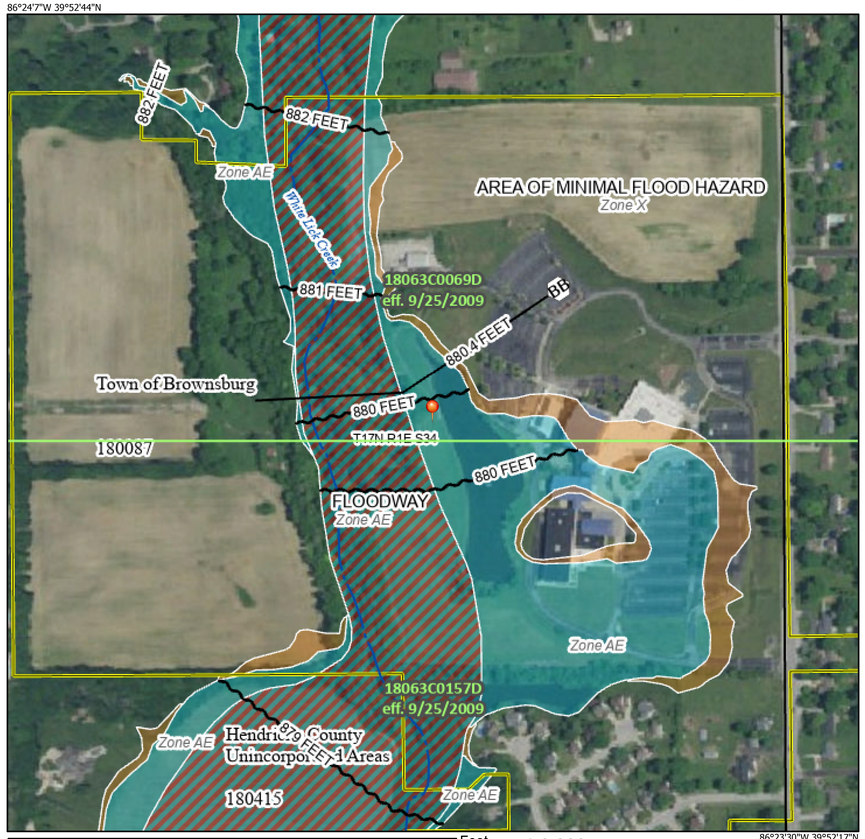
National Flood Hazard Layer FIRMette

86°24'7"W 39°52'44"N



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, VE, AR*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee *Zone D*
- **OTHER AREAS**
  - NO SCREEN — Area of Minimal Flood Hazard *Zone X*
  - Effective LOMRs
  - Area of Undetermined Flood Hazard *Zone D*
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
  - Coastal Transect
  - 513 — Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

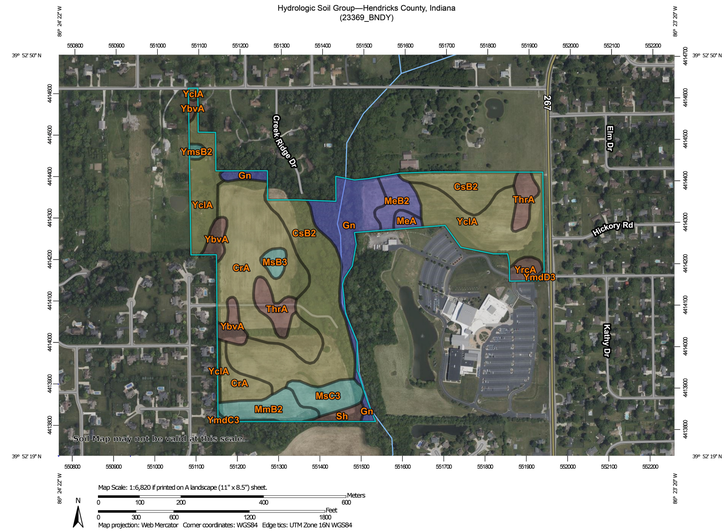
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/2/2025 at 4:03 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

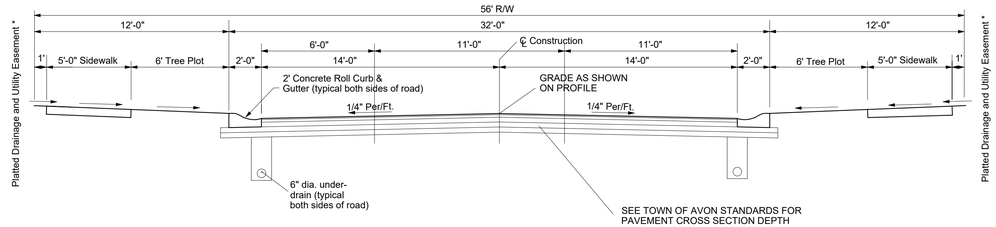
Map unit symbol	Map unit name
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes
CsB2	Crosby-Miami silt loams, 2 to 4 percent slopes, eroded
Gn	Genesee silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration
MeA	Martinsville loam, 0 to 2 percent slopes
MeB2	Martinsville loam, 2 to 6 percent slopes, eroded
MmB2	Miami silt loam, 2 to 6 percent slopes, eroded
MsB3	Miami clay loam, 2 to 6 percent slopes, severely eroded
MsC3	Miami clay loam, 6 to 12 percent slopes, severely eroded
Sh	Shoals silt loam, 0 to 2 percent slopes, frequently flooded, brief duration
ThrA	Treaty silty clay loam, 0 to 1 percent slopes
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes
YmdC3	Miami clay loam-Urban land complex, 6 to 12 percent slopes, severely eroded
YmdD3	Miami clay loam-Urban land complex, 12 to 18 percent slopes, severely eroded



USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

8/14/2025
Page 1 of 5



56' R/W PUBLIC ROAD CROSS SECTION

NO SCALE

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Scale: 1" = 60'
Date: 09-08-2025

DETAILS
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

W. CHAD ZIEGLER — REGISTERED — NO. PE11200657 — STATE OF INDIANA — PROFESSIONAL ENGINEER

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 23369

Sheet No: C500

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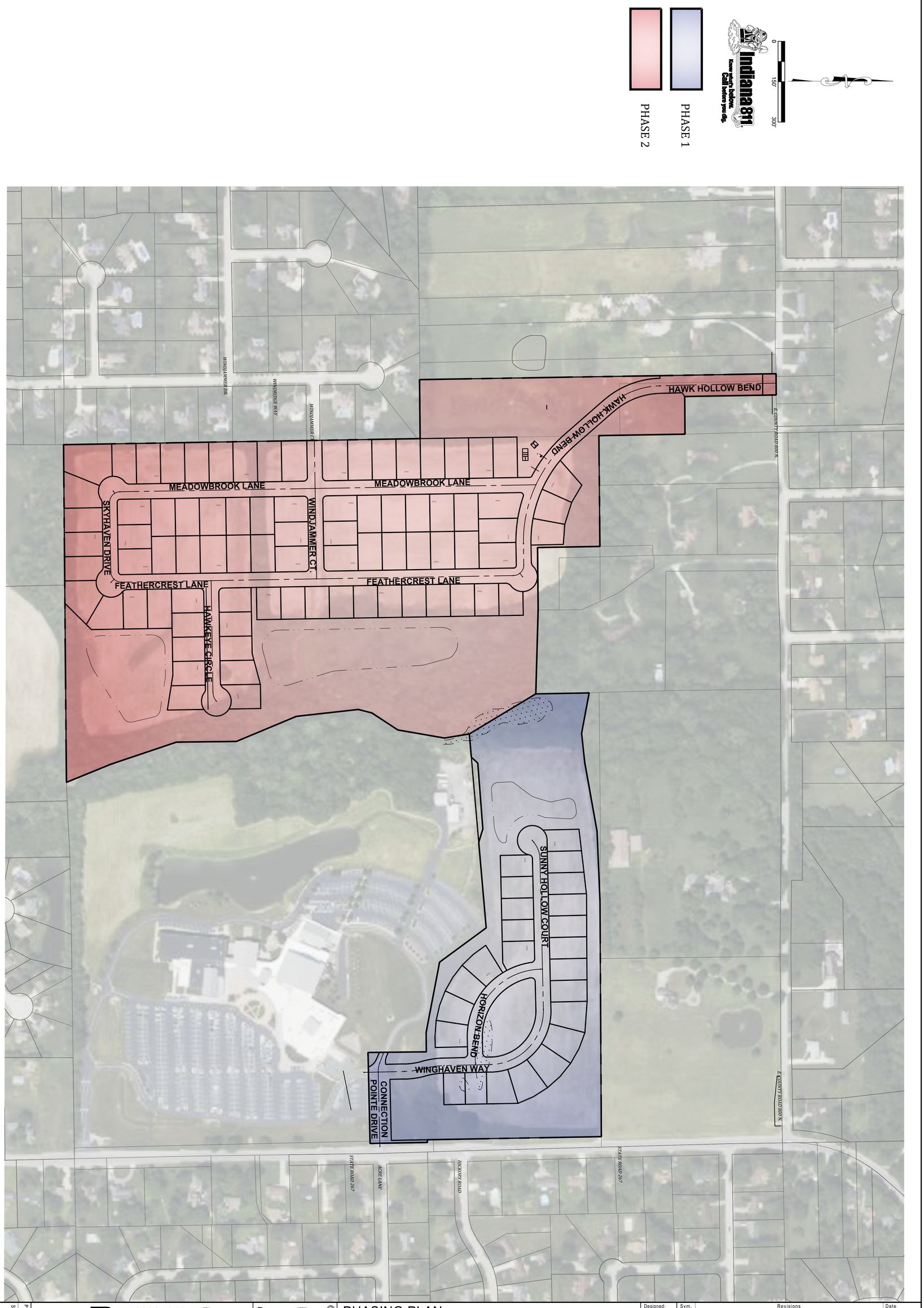

Project No: 23369

Sheet No: C501

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

CHAD Z. IEGLER
PROFESSIONAL ENGINEER
STATE OF INDIANA
PETER A. BANNING
PROFESSIONAL ENGINEER
STATE OF INDIANA

PHASING PLAN
HAWKS LANDING
HENDRICKS COUNTY
BROWNSBURG, INDIANA

Designed: GAF	Sym.	Revisions	Date
Drawn: GAF			
Checked: AGL/SB			
Scale: 1"= 150'			
Date: 09-08-2025			

December 4, 2025

Lauren Bouslog
Development Services
61 N. Green St.
Brownsburg, IN 46112

RE: Hawks Landing TIS

Lauren,

We have reviewed the submitted traffic impact study (TIS) for the proposed residential development of Hawks Landing. Our review is intended to provide a review of appropriateness of intersections, traffic distributions, forecasts, and recommendations according to current industry practices. Below you will find my comments:

1. Traffic distributions, growth rates, and forecasts are appropriate as presented.
2. Resultant capacity analysis on selected intersections and recommended improvements meets acceptable performance levels.

Please contact me at 317-780-1555, x124 if you have any questions.

Sincerely,

Andrew J. Wolf, P.E.
CrossRoad Engineers, PC

Hawks Landing Primary Plat

LETTER OF INTENT

Hawk's Landing is a proposed residential development in Town of Brownsburg, Brown Township, Hendricks County, Indiana. The development is located on the Northwest corner of Green Street and Acre Lane. Hawk's Landing covers approximately 72.39 acres and will include the construction of 105 single family homes with associated roadway, utility infrastructure and amenity areas.

This development is unique in that it is split into two separate residential areas by a large creek and forested wetland bisecting the site from north to south. The eastern portion of the development, accessed from Green Street, contains 24 lots. Amenities for this portion of the development include 1.2 acres of passive open space, 1 acre of which is located within a level central common area. This area will include benches and will be available to the residents for active recreational activity. This portion of the development also includes a 0.26-mile walking trail that circles the detention pond and meanders through the wooded area along the creek and near the wetland.

The western portion of the development consists of 81 lots and is accessed by a roadway connection to Co Rd. 800 N and an existing street stub from the Windridge neighborhood (Windridge Lane). Amenities for this area will include a large 400 SF shelter house, a medium 2,560 SF multi-sport court, a 0.25-mile walking trail and 4.5 acres of passive recreational space.

Linking the eastern and western portions of the development with a pedestrian facility is not practical. The most viable means of connection would be construction of a suspension bridge, spanning the floodway along the creek. However, such a bridge would require a span of nearly 300', would likely approach $1 million dollars in cost and it is doubtful that it could be made an accessible route. Development of a bridge would require removal of trees within the riparian buffer along the creek as well as disturbance of the wetland. Mitigation of tree loss would be required and payment for disturbance of wetland area at a rate of $90,000 an acre could be anticipated. A pedestrian bridge linking both sides of the community is not viable for many of the same reasons that a vehicular bridge is not viable. The creek and wetland area is a physical barrier that is not customary on most development sites.

In recognition of that lack of a pedestrian link between the 2 portions of the neighborhood, 5 off-street parking spaces have been provided near the western amenity area. The location of the amenity area was carefully chosen to be conveniently located to serve as a mailbox kiosk location as well. Additional on-street parking is available north and west of the amenity area without the need to park in front of a home for those residents who may drive to the amenity area.

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TRAFFIC IMPACT STUDY

PROPOSED RESIDENTIAL DEVELOPMENT

HAWK'S CREEK

BROWNSBURG, INDIANA

PREPARED FOR

David Weekley Homes

JULY 2024

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FIGURE 7: SUM OF YEAR 2029 BACKGROUND TRAFFIC VOLUMES & GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT 14

CERTIFICATION

I certify that this **TRAFFIC IMPACT STUDY** has been prepared by me and under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

A&F ENGINEERING CO., LLC





July 23, 2024
R. Matt Brown, P.E.
Indiana Registration 10200056



Sri Gayatri Kesara
Traffic Engineer Technician

INTRODUCTION

This **TRAFFIC IMPACT STUDY**, prepared on behalf of David Weekley Homes, is for a proposed residential development known as "Hawk's Creek" that will be located south of CR 800 North & west of SR 267 (Green Street) in Brownsburg, Indiana.

PURPOSE

The purpose of this analysis is to determine what impact traffic generated by the proposed residential development will have on the existing adjacent roadway system. This analysis will identify any existing roadway deficiencies or ones that may occur in the future.

Conclusions will be reached that will determine if the roadway system can accommodate the anticipated traffic volumes or will determine the modifications that will be required to the system if there are identified deficiencies.

Recommendations will be made that will address the conclusions resulting from this analysis. These recommendations will address feasible roadway system improvements to provide safe ingress and egress, to and from the proposed residential development, with minimal interference to traffic on the public street system.

SCOPE OF WORK

The scope of work for this analysis is as follows:

First, obtain peak hour turning movement traffic volume counts between the hours of 6:30 AM and 9:00 AM and 3:30 PM and 7:00 PM at the following intersections:

- CR 800 N & CR 650 E
- CR 800 N & SR 267 (Green Street)
- CR 700 N & CR 650 E
- CR 700 N & SR 267 (Green Street)
- SR 267 (Green Street) & Acre Lane

Second, estimate the year 2029 background traffic volumes by applying growth rate factors provided by Shrewsberry to the existing traffic volumes.

Third, estimate the number of peak hour trips that will be generated by the proposed residential development.

Fourth, assign and distribute the generated peak hour traffic from the proposed residential development to each of the study intersections.

Fifth, prepare a capacity analysis, level of service analysis and turn lane analysis at the study intersections for each of the following scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing peak hour traffic volumes.

Scenario 2: Year 2029 Background Traffic Volumes – Based on applying growth rate factors provided by Shrewsberry to the existing traffic volumes.

Scenario 3: Year 2029 + Proposed Development Traffic Volumes – Based on the sum of year 2029 background traffic volumes and generated traffic volumes from the proposed development.

Sixth, prepare recommendations for the roadway geometrics that will be needed to accommodate the future traffic volumes.

Finally, prepare a **TRAFFIC IMPACT STUDY** report documenting all data, analyses, conclusions, and recommendations to provide for the safe and efficient movement of traffic through the study area.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development will be located south of CR 800 North & west of SR 267 (Green Street) in Brownsburg, Indiana. The proposed residential development will consist of two parcels. The west parcel will have 89 homes and the east parcel will have 25 homes. As proposed, the west parcel will be served by a full access drive along CR 800 N and a connection to the existing Windridge Lane. The east parcel will be served via a realigned access drive at the existing Connection Pointe Christian Church access location along SR 267 (Green Street). **Figure 1** is an area map showing the location and general layout of the proposed site.

STUDY AREA

The study area for this analysis has been defined to include the following intersections:

- CR 800 N & CR 650 E
- CR 800 N & SR 267 (Green Street)
- CR 700 N & CR 650 E
- CR 700 N & SR 267 (Green Street)
- SR 267 (Green Street) & Acre Lane/ Connection Pointe Christian Church/ Proposed Development Access Drive
- CR 800 N & Proposed Access Drive

Figures 2A & 2B show the existing intersection geometrics at the study intersections.

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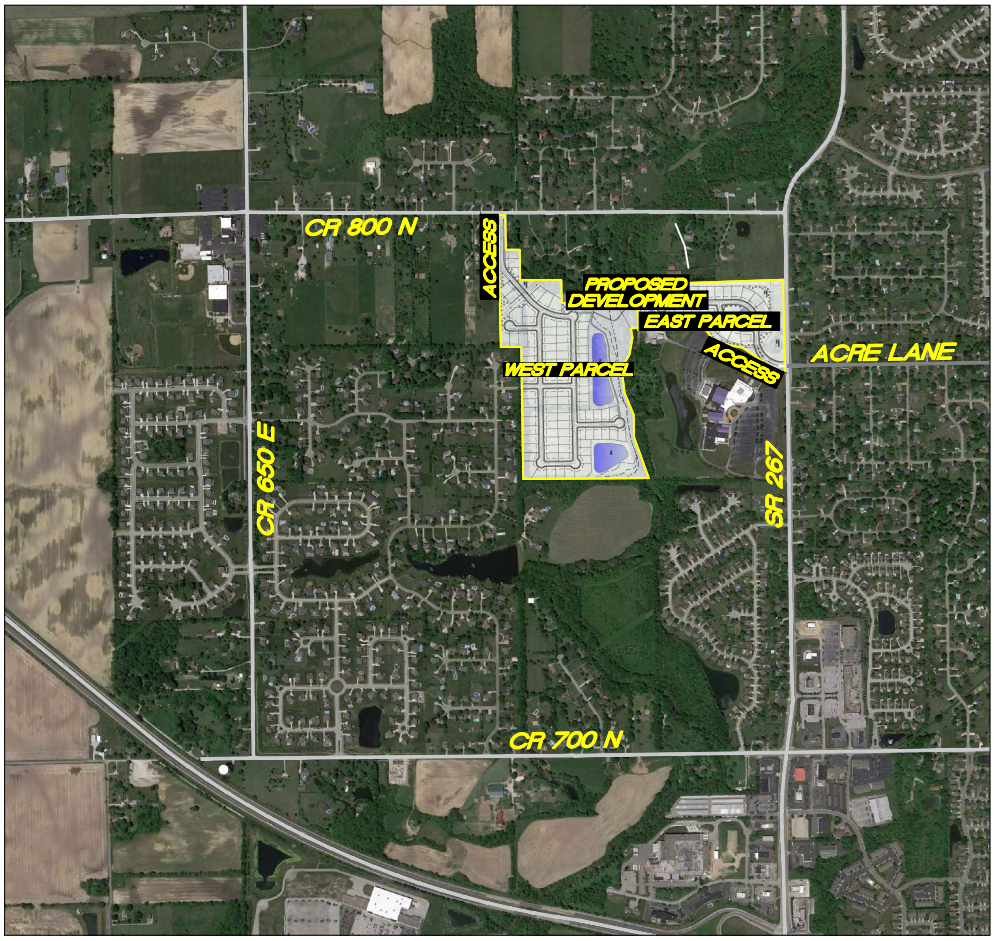

FIGURE 1

AREA MAP

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

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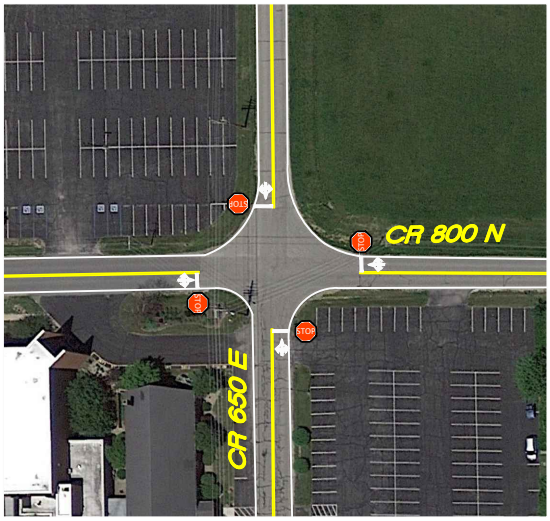
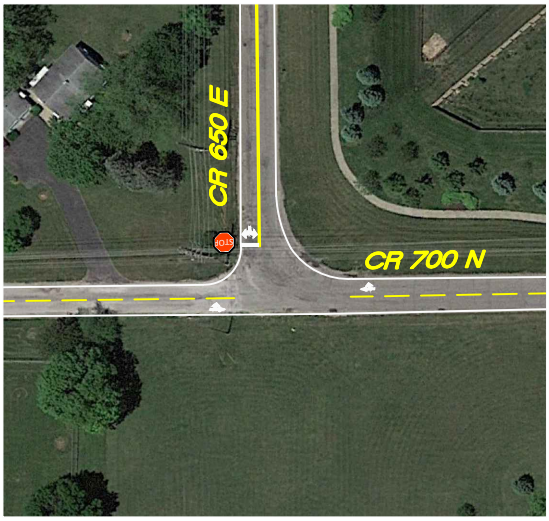
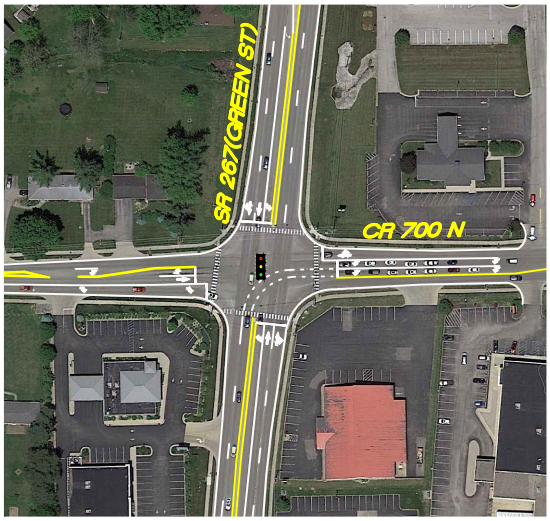


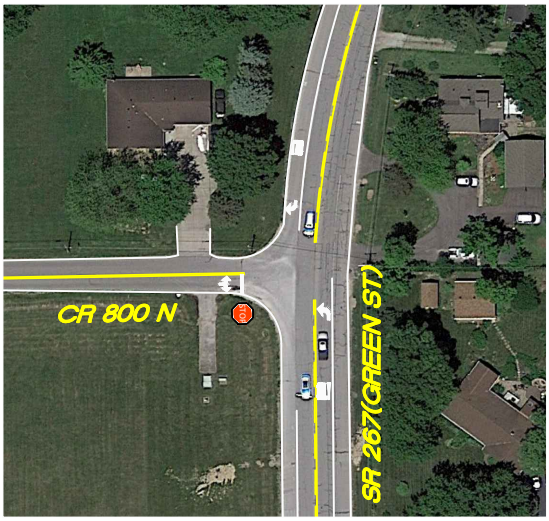
CR 800 N & CR 650 E



CR 700 N & CR 650 E



CR 700 N & SR 267(GREEN ST)



CR 800 N & SR 267(GREEN ST)

FIGURE 2A

EXISTING INTERSECTION GEOMETRICS

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DAVID WEEKLEY HOMES
BROWNSBURG, IN

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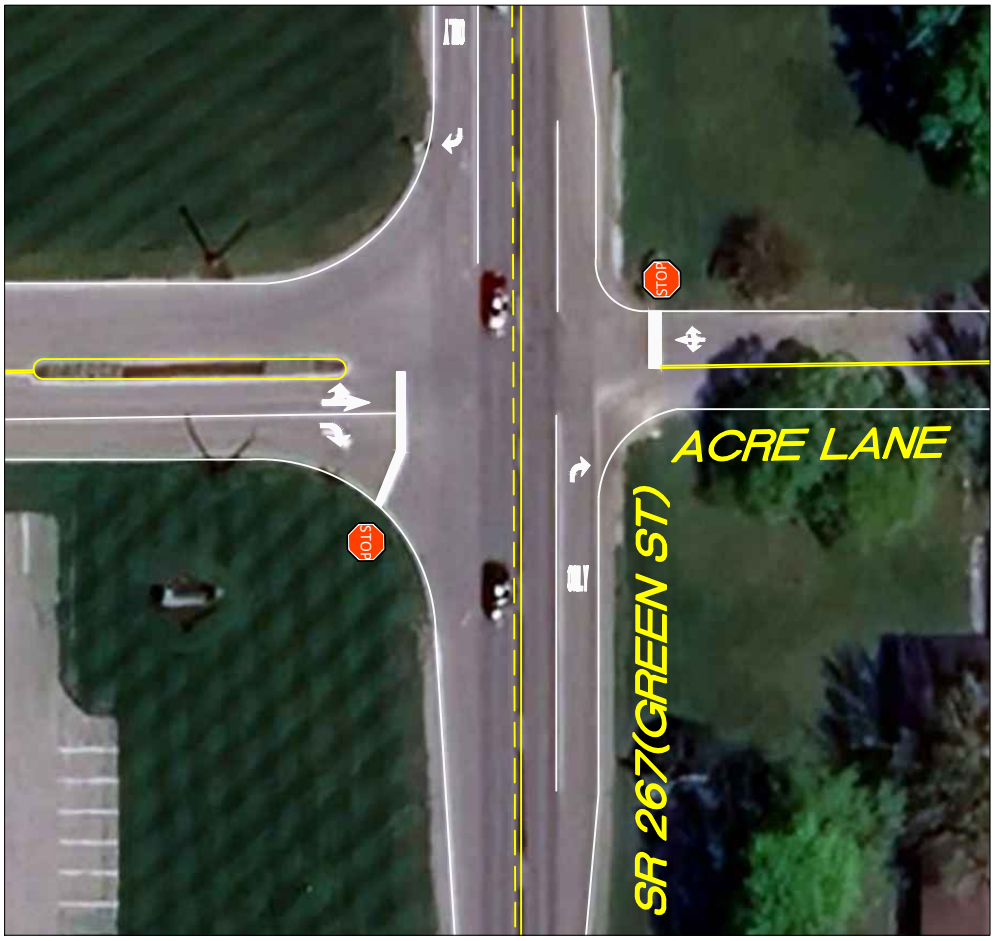

SR 267(GREEN ST) & ACRE LANE

FIGURE 2B

EXISTING INTERSECTION GEOMETRICS

TRAFFIC IMPACT STUDY
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BROWNSBURG, IN

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DESCRIPTION OF ABUTTING STREET SYSTEM

The proposed residential development will be primarily served by the public roadway system that includes CR 800 N, CR 650 E, CR 700 N, and SR 267 (Green Street).

TABLE 1 – DESCRIPTION OF THE ABUTTING STREET SYSTEM

STREET NAME	NUMBER OF LANES	SPEED LIMIT (MPH)	FUNCTIONAL CLASSIFICATION
CR 800 N	2	35	Collector
CR 650 E	2	45	Secondary Arterial
CR 700 N	2	30	Secondary Arterial
SR 267 (Green Street)	2	45	Primary Arterial

EXISTING TRAFFIC VOLUMES & PEAK HOURS

The turning movement traffic volume counts were collected by A&F Engineering at the study intersections between the hours of 6:30 AM to 9:00 AM and 3:30 PM to 7:00 PM during a typical weekday in December 2023 & May 2024 under good weather conditions. According to the turning movement counts, the AM and PM peak hours vary slightly at each study intersection. Hence, the actual peak hours are used at each study intersection to create a "worse-case" scenario. The peak hour volumes are shown on **Figure 3** and the intersection count output summary sheets, are included in the **Appendix.**

REDISTRIBUTION OF EXISTING TRAFFIC VOLUMES

The west parcel of the proposed development will have a secondary access via a connection to Windridge Lane. Therefore, it is possible that existing traffic from the Windridge subdivision could utilize this connection to access CR 800 N. However, it is not anticipated that these volumes will be significant during the peak hours. Therefore, these volumes have been considered negligible for the purposes of this analysis.

YEAR 2029 BACKGROUND TRAFFIC VOLUMES

In order to account for annual growth in traffic that would occur due to future development outside of the study area, growth rate factors are applied to the existing traffic volumes. Growth rate factors provided by Shrewsberry were applied to the existing traffic volumes to obtain year 2029 background traffic volumes. The year 2029 background traffic volumes are shown in **Figure 4.**

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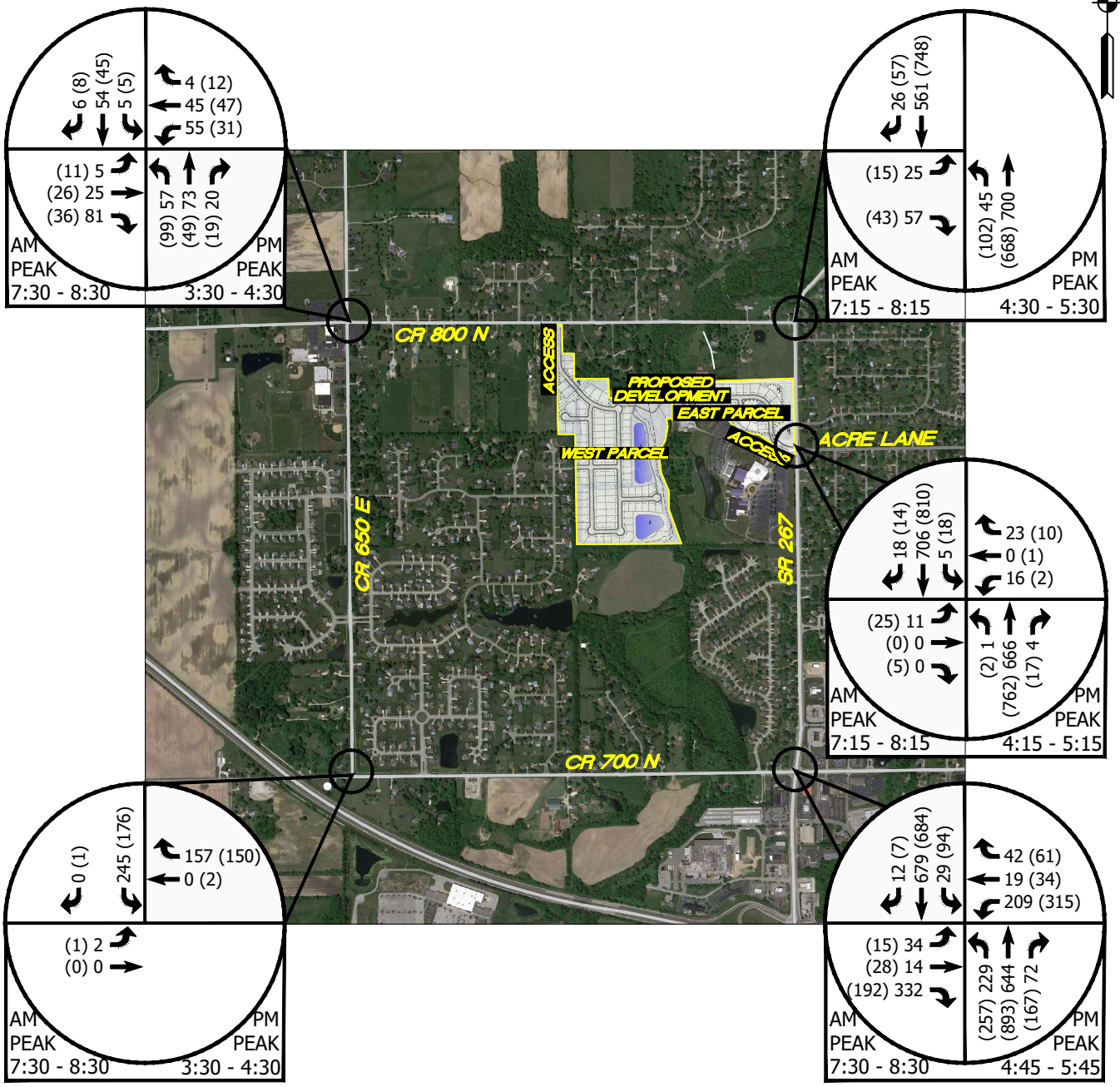

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 3

EXISTING TRAFFIC VOLUMES

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

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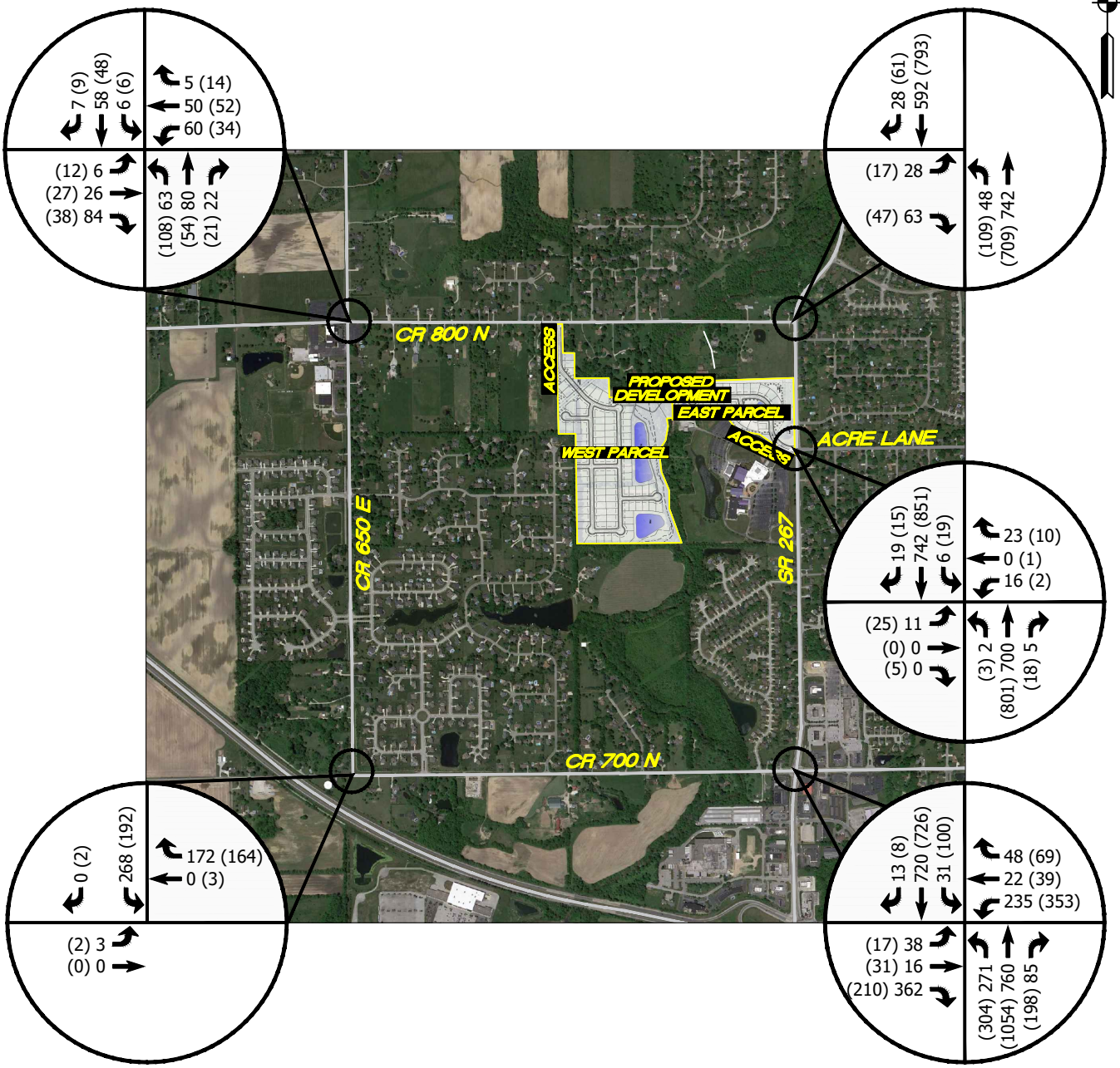

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 4

YEAR 2029 BACKGROUND TRAFFIC VOLUMES

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

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GENERATED TRIPS FOR PROPOSED DEVELOPMENT

The estimate of newly generated traffic is a function of the development size and of the character of the land use. The ITE *Trip Generation Manual*[1] was used to calculate the number of trips that will be generated by the proposed Hawk's Creek development. This report is a compilation of trip data for various land uses as collected by transportation professionals throughout the United States in order to establish the average number of trips generated by those land uses. **Table 2** summarizes the total number of trips that will be generated by the proposed development.

TABLE 2 – GENERATED TRIPS FOR PROPOSED DEVELOPMENT

DEVELOPMENT INFORMATION			GENERATED TRIPS			
LAND USE	ITE CODE	SIZE	AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Single-Family Housing (East Parcel)	210	25 DU	5	16	17	10
Single-Family Housing (West Parcel)	210	89 DU	17	50	56	33

PASS-BY & INTERNAL TRIPS

Pass-by trips are trips that are already in the existing traffic stream along the adjacent public roadway system that enter a site, utilize the site, and then return to the existing traffic stream. Residential developments do not typically attract a significant number of pass-by trips. Therefore, pass-by trip reductions are not included in this study.

An internal trip results when a trip is made between two or more land uses without traversing the external public roadway system. The proposed development is a single land use only. Hence, internal trip reductions are not considered in this study.

ASSIGNMENT AND DISTRIBUTION OF GENERATED TRIPS

The study methodology used to determine the traffic volumes from the site that will be added to the street system is defined as follows:

1. The volume of traffic that will enter and exit the proposed development must be assigned to the access points and to the public street system. Using the traffic volume data collected for this analysis, traffic to and from the site development has been assigned to the proposed driveways and to the public street system that will be serving the site.

[1] *Trip Generation Manual*, Institute of Transportation Engineers, Eleventh Edition, 2021.

2. To determine the volume of traffic that will be added to the public roadway system, the generated traffic must be distributed by direction to the public roadways at their intersection with the driveways. For the proposed development, the trip distribution was based on the location of the development, the existing traffic patterns, and the assignment of generated traffic.

Figure 5A and 5B illustrate the assignment and distribution of generated traffic volumes for the proposed development.

GENERATED TRIPS ADDED TO THE STREET SYSTEM

The generated traffic volumes from the proposed development have been assigned to each of the study intersections. These volumes were determined based on the previously discussed trip generation data, assignment and distribution of generated traffic. The total peak hour generated traffic volumes from the proposed development are shown in **Figure 6,** and **Figure 7** shows the sum of the year 2029 background traffic volumes and generated traffic volumes from the proposed development.

TURN LANE WARRANT ANALYSIS

A turn lane analysis was conducted to determine if exclusive turn lanes would be warranted at the proposed access drive along CR 800 N when the proposed residential development is constructed. This analysis was done in accordance with the INDOT *Driveway Permit Manual*[2]. The results are summarized in the following table.

TABLE 3 –TURN LANE WARRANT ANALYSIS SUMMARY

LOCATION	SCENARIO	RIGHT-TURN LANE	LEFT-TURN LANE
CR 800 N & Proposed Development Access Drive	Year 2029 Traffic Volumes + Proposed Development Traffic Volumes	✗	✗

✔ =Turn Lane warranted; ✗ =Turn Lane not warranted

The graphs that show the turn lane warrant criteria are shown in the **Appendix**.

[2] INDOT *Driveway Permit Manual*, Indiana Department of Transportation, 2018

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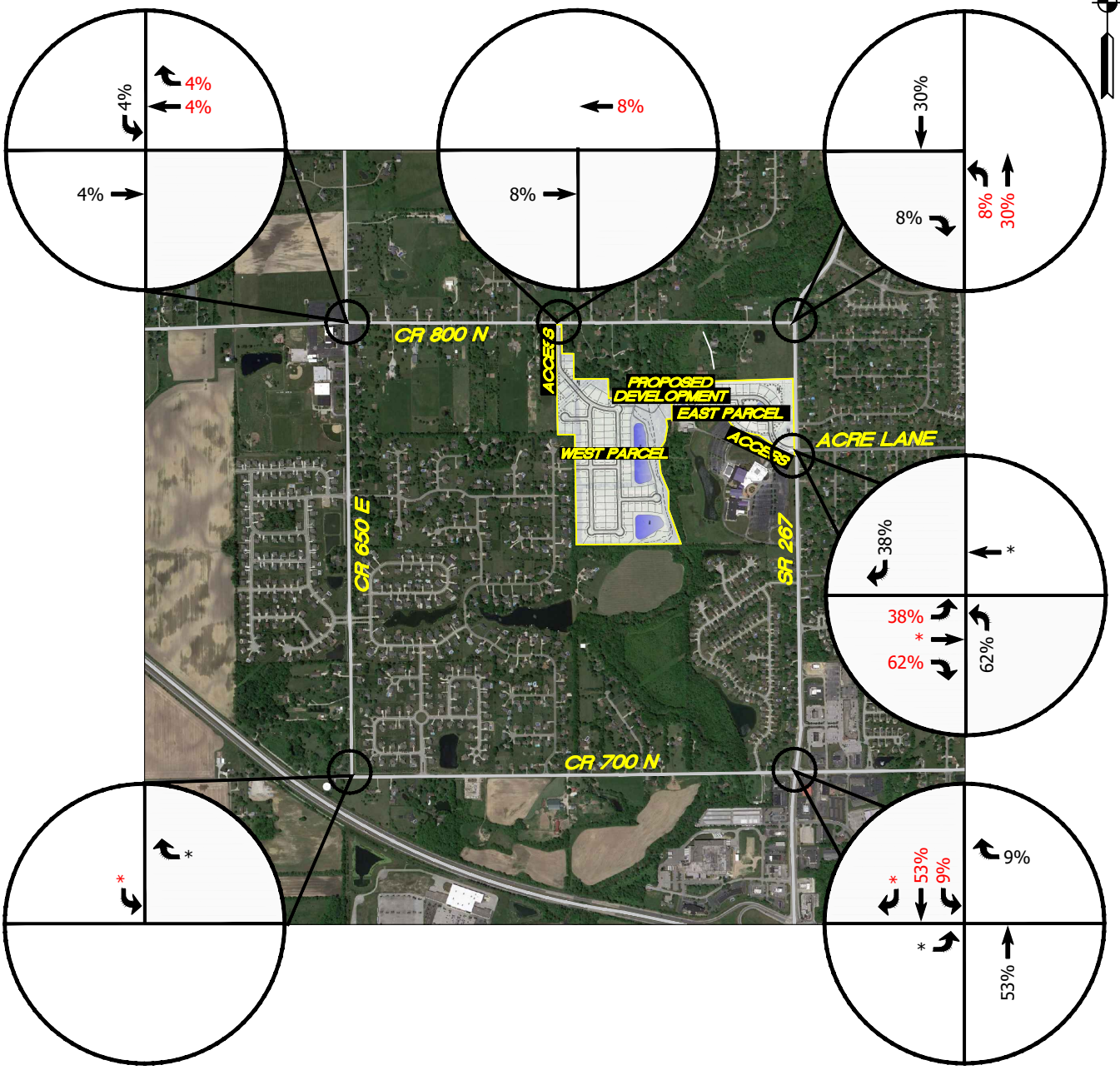

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE 5A

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (EAST PARCEL)

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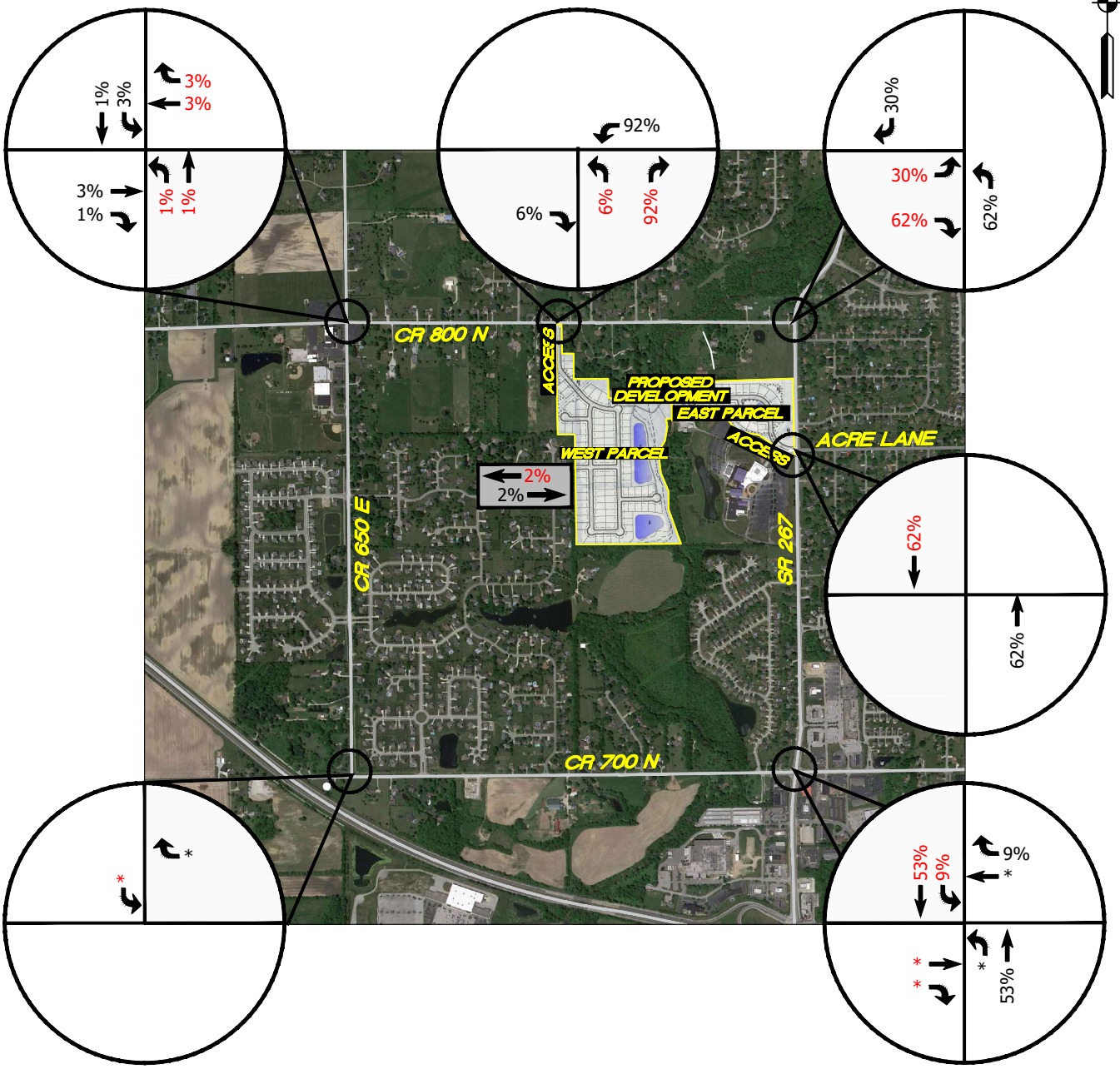

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

FIGURE 5B

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT (WEST PARCEL)

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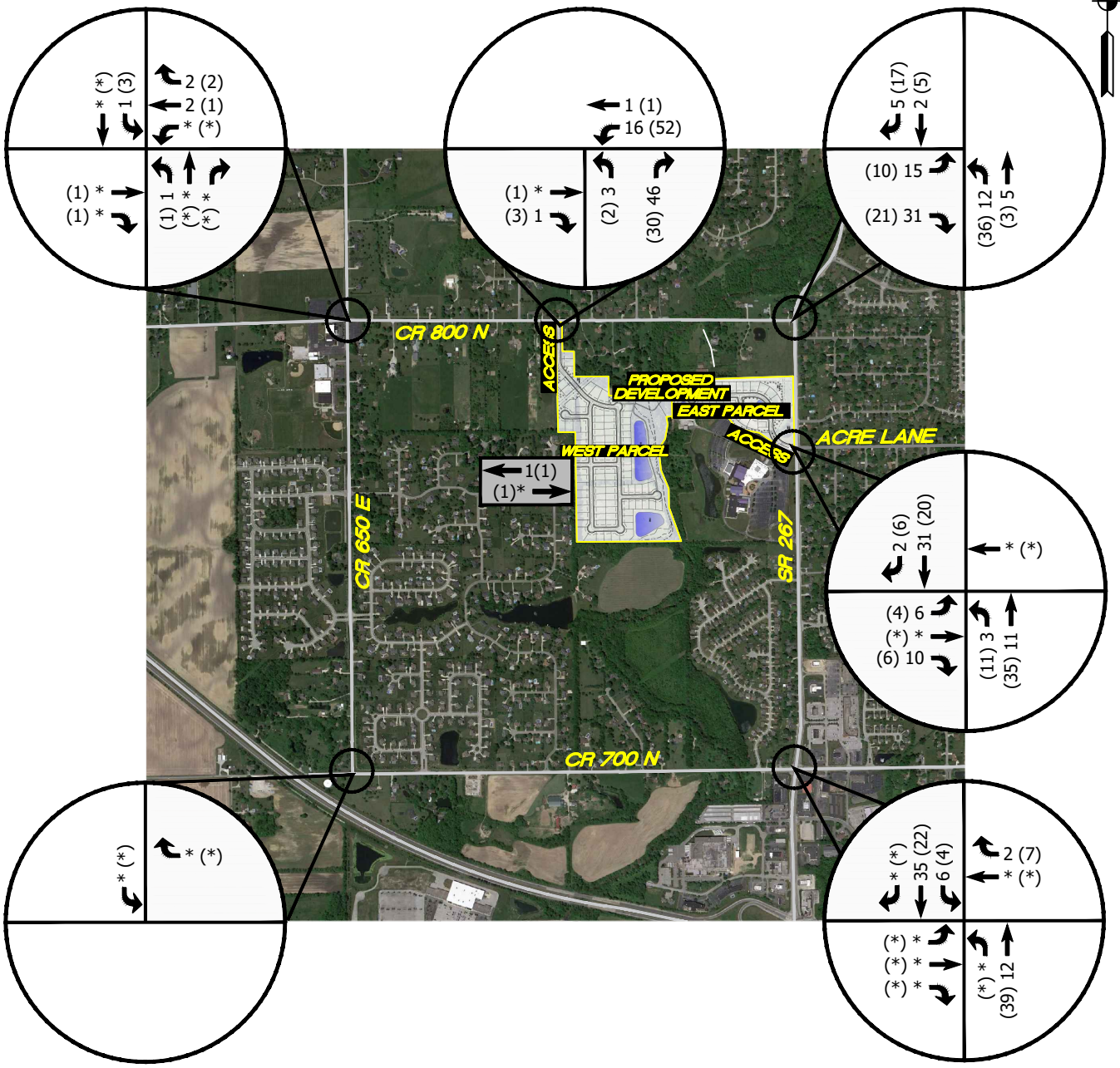

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 6
GENERATED TRAFFIC VOLUMES FROM THE PROPOSED DEVELOPMENT

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

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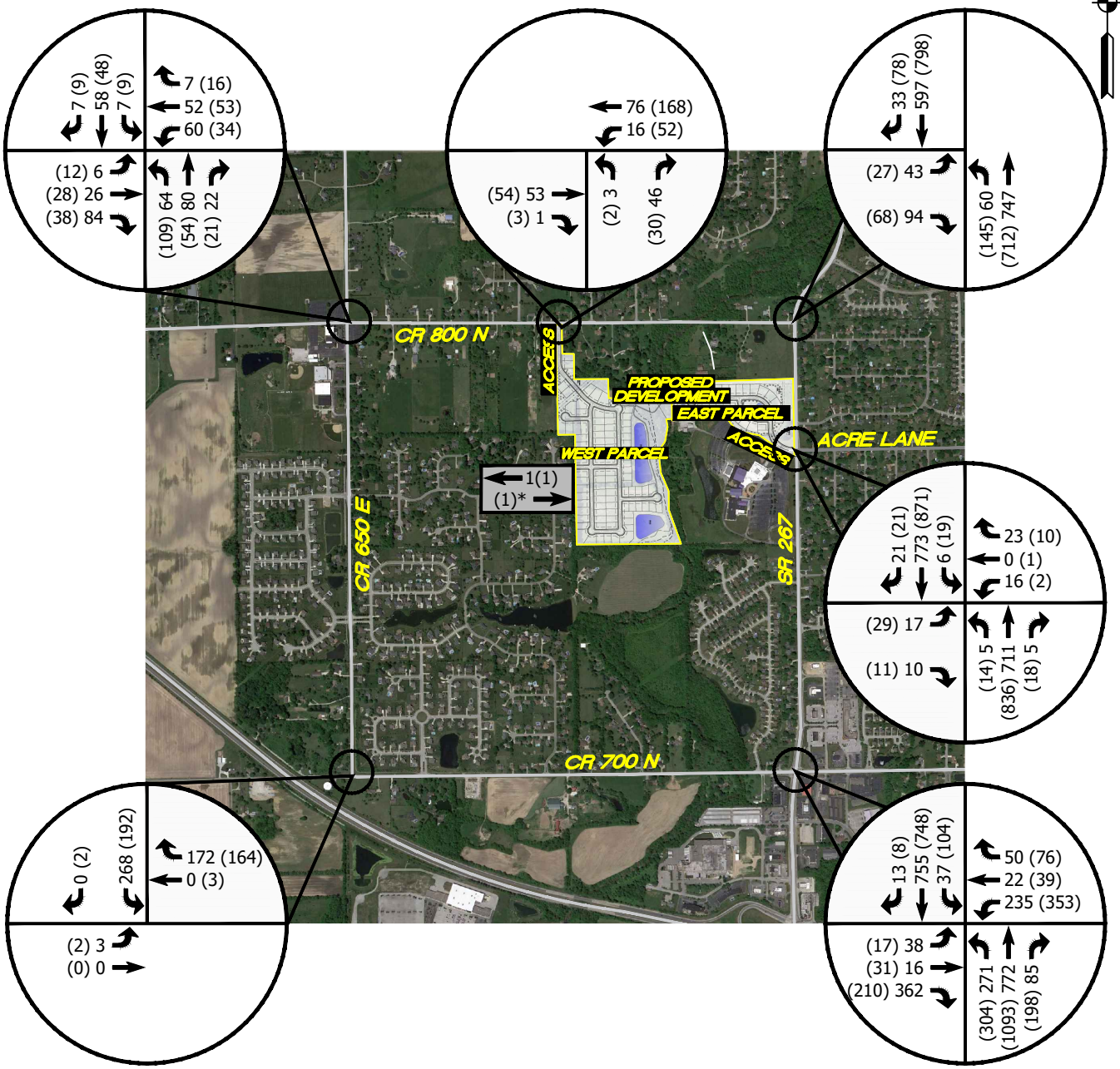

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 7

SUM OF YEAR 2029 BACKGROUND TRAFFIC VOLUMES & GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

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CAPACITY ANALYSIS

The "efficiency" of an intersection is based on its ability to accommodate the traffic volumes that approach the intersection. It is defined by the Level-of-Service (LOS) of the intersection. The LOS is determined by a series of calculations commonly called a "capacity analysis". Input data into a capacity analysis include traffic volumes, intersection geometry, and number and use of lanes. To determine the LOS at each of the study intersections, a capacity analysis has been made using the recognized computer program *Synchro/SimTraffic*[3].This program allows intersections to be analyzed and optimized using the capacity calculation methods outlined within the *Highway Capacity Manual (HCM 7th Edition)*[4]. The following list shows the delays related to the levels of service for unsignalized and signalized intersections:

Level of Service	Control Delay (seconds/vehicle)	
	UNSIGNALIZED	SIGNALIZED
A	Less than or equal to 10	Less than or equal to 10
B	Between 10.1 and 15	Between 10.1 and 20
C	Between 15.1 and 25	Between 20.1 and 35
D	Between 25.1 and 35	Between 35.1 and 55
E	Between 35.1 and 50	Between 55.1 and 80
F	greater than 50	greater than 80

CAPACITY ANALYSIS SCENARIOS

To evaluate the proposed development's effect on the public street system, a series of traffic volume scenarios were analyzed to determine the adequacy of the existing roadway network. From this analysis, necessary recommendations can be made to improve the public street system so it will accommodate future traffic volumes. An analysis has been made for the peak hours at each of the study intersections for the following traffic volume scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing peak hour traffic volumes.

Scenario 2: Year 2029 Background Traffic Volumes – Based on applying growth rate factors provided by Shrewsberry to the existing traffic volumes.

Scenario 3: Year 2029 + Proposed Development Traffic Volumes – Based on the sum of year 2029 background traffic volumes and generated traffic volumes from the proposed development.

[3] *Synchro/SimTraffic 12*, Cubic Transportation Systems, 2023.
[4] *Highway Capacity Manual (HCM), 7th Edition* Transportation Research Board, National Research Council, Washington, DC, 2022.

The following tables summarize the peak hour level of service results at each of the study intersections. The *Synchro* (*HCM 7th Edition*) intersection reports illustrating the capacity analysis results are included in the **Appendix**.

TABLE 4 – LEVEL OF SERVICE SUMMARY: CR 800 N & CR 650 E

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Northbound Approach	B	B	B	A	A	A
Southbound Approach	A	A	A	A	A	A
Eastbound Approach	A	A	B	A	A	A
Westbound Approach	A	B	B	A	A	A
Intersection	**A**	**B**	**B**	**A**	**A**	**A**

TABLE 5 – LEVEL OF SERVICE SUMMARY: CR 800 N & SR 267 (GREEN STREET)

APPROACH	AM PEAK					PM PEAK				
	Scenarios					Scenarios				
	1	2A	2B	3A	3B	1	2A	2B	3A	3B
Northbound Left-Turn	A	A	A	A	A	B	B	B	B	B
Eastbound Approach	C	D	C	E	D	D	E	D	F	E

Analysis considers the following intersection geometrics:
Scenario A considers existing intersection geometrics.
Scenario B considers construction of a eastbound left-turn lane and right-turn lane.

TABLE 6 – LEVEL OF SERVICE SUMMARY: CR 700 N & SR 267 (GREEN STREET)

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Northbound Approach	B	B	B	C	C	C
Southbound Approach	C	C	C	C	C	C
Eastbound Approach	C	C	C	C	C	C
Westbound Approach	C	C	C	C	D	D
Intersection	**C**	**C**	**C**	**C**	**C**	**C**

TABLE 7 – LEVEL OF SERVICE SUMMARY: CR 700 N & CR 650 E

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Southbound Approach	B	B	B	B	B	B
Eastbound Left-Turn	A	A	A	A	A	A

TABLE 8 – LEVEL OF SERVICE SUMMARY: SR 267 (GREEN STREET) & ACRE LANE/CONNECTION POINTE CHRISTIAN CHURCH/PROPOSED DEVELOPMENT ACCESS DRIVE

APPROACH	AM PEAK			PM PEAK		
	Scenarios			Scenarios		
	1	2	3	1	2	3
Northbound Left-Turn	A	A	A	A	A	A
Southbound Left-Turn	A	A	A	A	A	A
Eastbound Approach	E	F	E	F	F	F
Westbound Approach	D	D	E	C	D	D

TABLE 9 – LEVEL OF SERVICE SUMMARY: CR 800 N & PROPOSED DEVELOPMENT ACCESS DRIVE

APPROACH	AM PEAK	PM PEAK
	Scenario 3	Scenario 3
Northbound Approach	A	A
Westbound Left-Turn	A	A

Analysis considers construction of the access drive with one inbound and one outbound lane that will stop for CR 800 N.

CONCLUSIONS & RECOMMENDATIONS

The conclusions that follow are based on existing traffic volume data, trip generation, assignment and distribution of generated traffic, capacity analyses/level of service results and a field review conducted at the site. Based on the analysis and the resulting conclusions of this study, recommendations are formulated to ensure that the roadway system will accommodate the increased traffic volumes from the proposed residential development.

CR 800 N & CR 650 E

Capacity analyses for all traffic volume scenarios have shown that this intersection currently operates and will continue to operate at acceptable levels of service during the AM and PM peak hours with the existing intersection conditions.

CR 800 N & SR 267 (GREEN STREET)

Capacity analyses have shown that all approaches to this intersection currently operate at acceptable levels of service during the AM and PM peak hours with the existing intersection conditions. It is expected that the eastbound approach will experience increased delays during the peak hours as future traffic is added to the intersection. However, additional analyses have shown that these delays can be substantially reduced if separate left-turn and right-turn lanes are constructed along the eastbound approach.

CR 700 N & SR 267 (GREEN STREET)

Capacity analyses for all traffic volume scenarios have shown that this intersection currently operates and will continue to operate at acceptable levels of service during the AM and PM peak hours with the existing intersection conditions.

CR 700 N & CR 650 E

Capacity analyses for all traffic volume scenarios have shown that all approaches to this intersection currently operate and will continue to operate at acceptable levels of service during the AM and PM peak hours with the existing intersection conditions.

SR 267 (GREEN STREET) & ACRE LANE/CONNECTION POINTE CHRISTIAN CHURCH/PROPOSED DEVELOPMENT ACCESS DRIVE

Capacity analyses have shown that the eastbound approach currently operates below acceptable levels of service during the peak hours. The eastbound and westbound approach delays will increase when future traffic volumes are added to the intersection. However, it should be noted that minor street approach peak hour delays are not uncommon when the major street has high peak hour volumes.

CR 800 N & PROPOSED DEVELOPMENT ACCESS DRIVE

Capacity analyses have shown that all approaches to this intersection will operate at acceptable levels of service during the AM and PM peak hours with the following recommended intersection conditions:

- Construction of the access drive with one inbound and one outbound lane.
- The intersection should be stop-controlled with the proposed access drive stopping for CR 800 N.

TRAFFIC IMPACT STUDY

APPENDIX

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ADDITIONAL FIGURES

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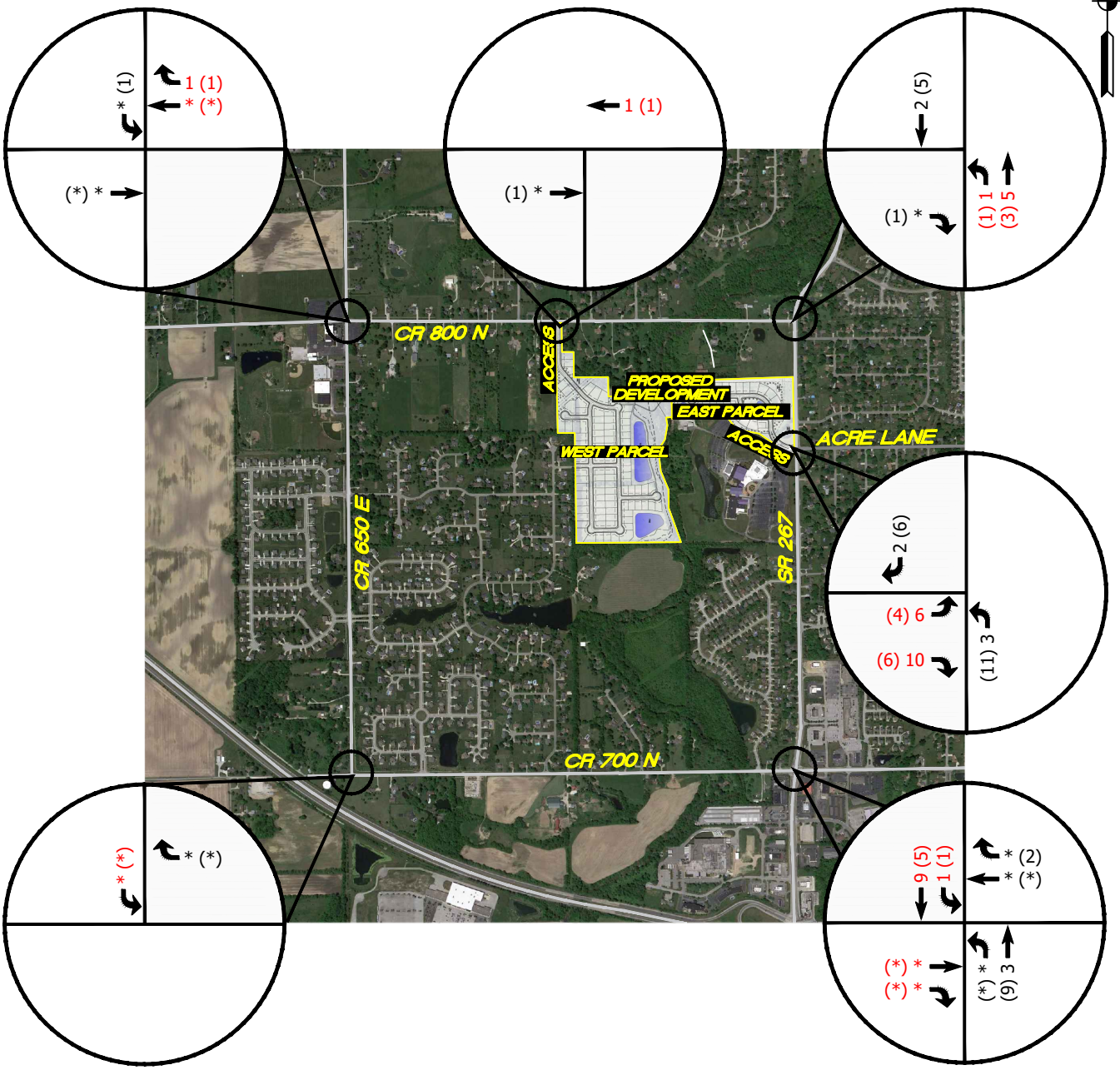

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
DAVID WEEKLEY HOMES
BROWNSBURG, IN

FIGURE A

GENERATED TRAFFIC VOLUMES FROM THE PROPOSED DEVELOPMENT (EAST PARCEL)

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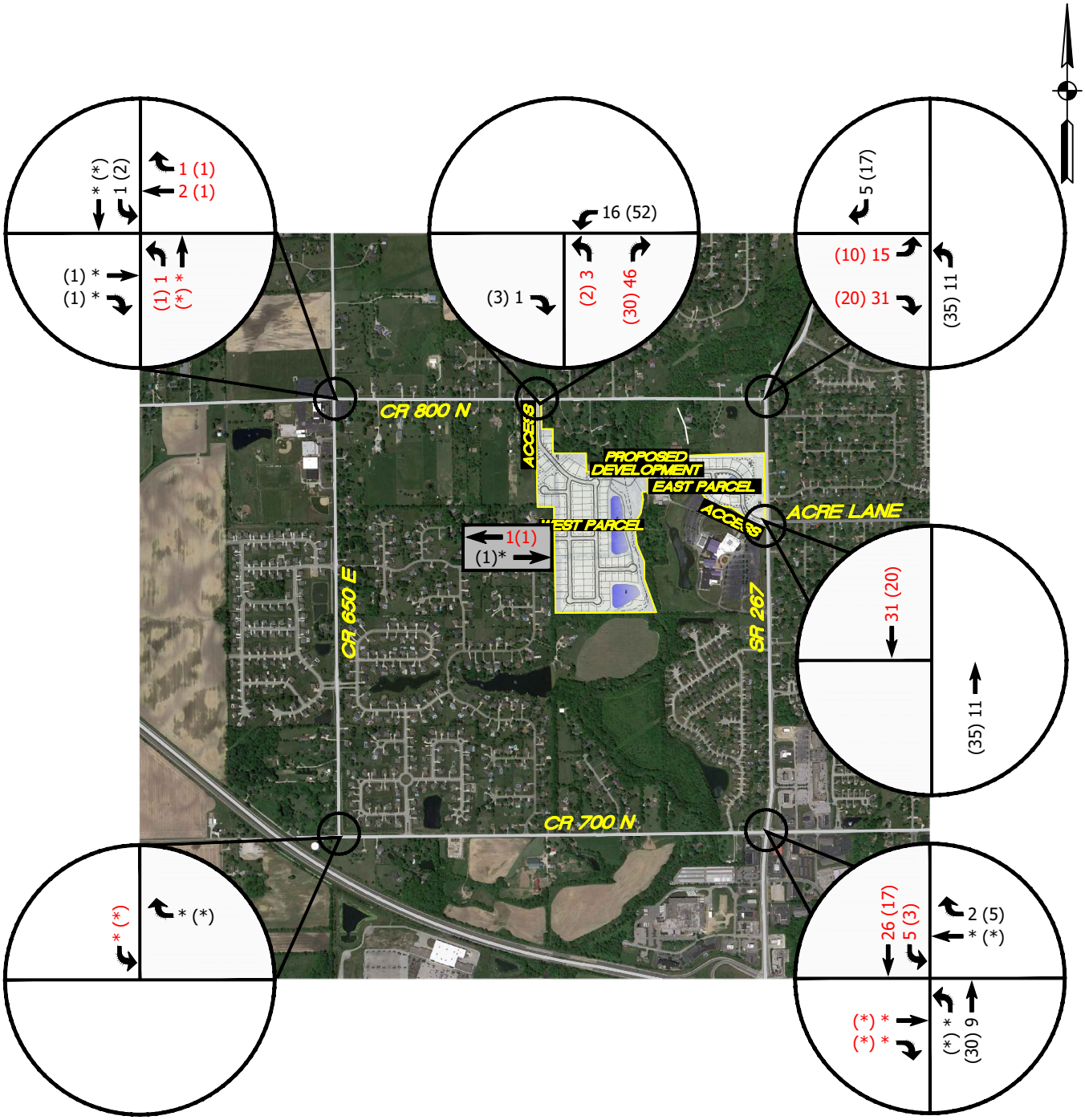

FIGURE B

GENERATED TRAFFIC VOLUMES FROM THE PROPOSED DEVELOPMENT (WEST PARCEL)

TRAFFIC IMPACT STUDY
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CR 800 N & CR 650 E

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

CR 800 N & CR 650 E - TMC

Tue Dec 12, 2023
AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142922, Location: 39.880045, -86.411371



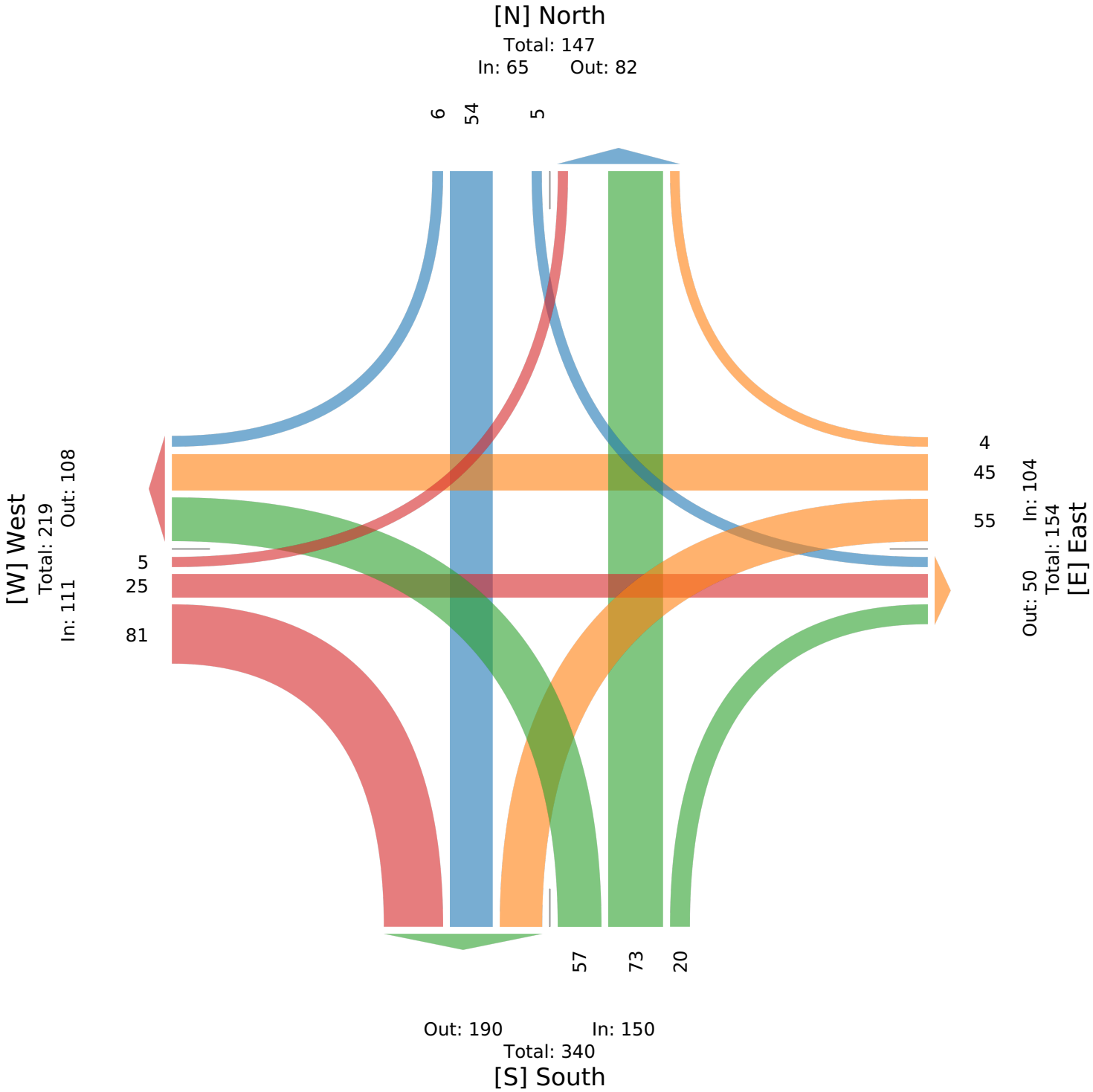
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2023-12-12 7:30AM	1	13	4	0	**18**	2	11	1	0	**14**	2	5	11	0	**18**	2	7	2	0	**11**	**61**
7:45AM	7	9	0	0	**16**	1	6	0	0	**7**	0	9	15	0	**24**	14	4	0	0	**18**	**65**
8:00AM	18	20	7	0	**45**	2	17	2	0	**21**	1	5	27	0	**33**	19	13	1	0	**33**	**132**
8:15AM	31	31	9	0	**71**	0	20	3	0	**23**	2	6	28	0	**36**	20	21	1	0	**42**	**172**
Total	57	73	20	0	**150**	5	54	6	0	**65**	5	25	81	0	**111**	55	45	4	0	**104**	**430**
% Approach	38.0%	48.7%	13.3%	0%	**-**	7.7%	83.1%	9.2%	0%	**-**	4.5%	22.5%	73.0%	0%	**-**	52.9%	43.3%	3.8%	0%	**-**	-
% Total	13.3%	17.0%	4.7%	0%	**34.9%**	1.2%	12.6%	1.4%	0%	**15.1%**	1.2%	5.8%	18.8%	0%	**25.8%**	12.8%	10.5%	0.9%	0%	**24.2%**	-
PHF	0.460	0.589	0.556	-	**0.528**	0.625	0.675	0.500	-	**0.707**	0.625	0.694	0.723	-	**0.771**	0.688	0.536	0.500	-	**0.619**	0.625
Lights and Motorcycles	57	73	19	0	**149**	4	54	6	0	**64**	4	25	81	0	**110**	53	44	4	0	**101**	424
% Lights and Motorcycles	100%	100%	95.0%	0%	**99.3%**	80.0%	100%	100%	0%	**98.5%**	80.0%	100%	100%	0%	**99.1%**	96.4%	97.8%	100%	0%	**97.1%**	98.6%
Heavy	0	0	1	0	**1**	1	0	0	0	**1**	1	0	0	0	**1**	2	1	0	0	**3**	6
% Heavy	0%	0%	5.0%	0%	**0.7%**	20.0%	0%	0%	0%	**1.5%**	20.0%	0%	0%	0%	**0.9%**	3.6%	2.2%	0%	0%	**2.9%**	1.4%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 800 N & CR 650 E - TMC
Tue Dec 12, 2023
AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142922, Location: 39.880045, -86.411371

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 800 N & CR 650 E - TMC

Tue Dec 12, 2023
PM Peak (3:30 PM - 4:30 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142922, Location: 39.880045, -86.411371

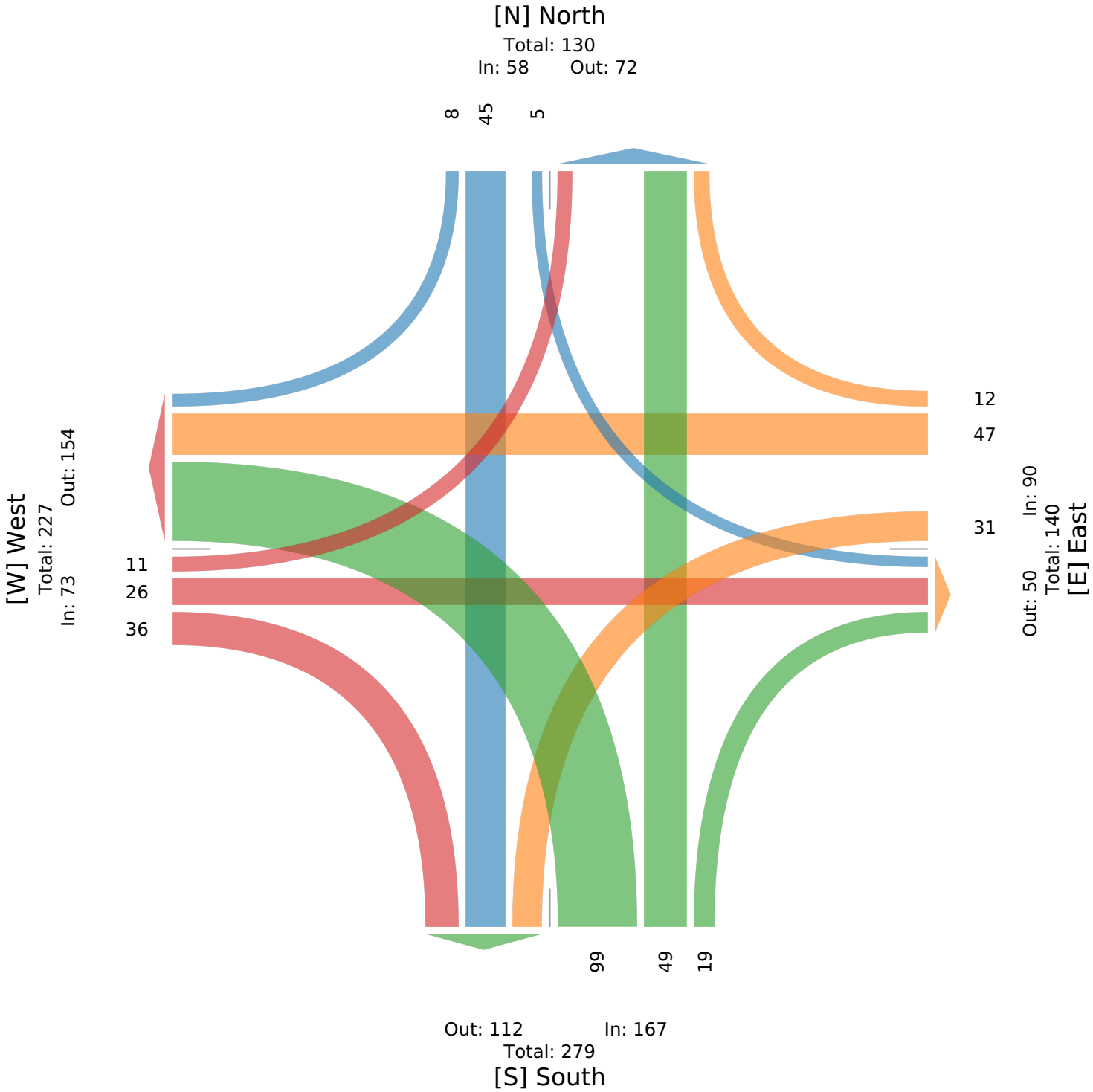
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg / Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2023-12-12 3:30PM	21	5	6	0	**32**	2	13	5	0	**20**	1	3	15	0	**19**	9	18	3	0	**30**	**101**
3:45PM	51	20	9	0	**80**	0	10	1	0	**11**	4	8	5	0	**17**	9	14	1	0	**24**	**132**
4:00PM	14	14	2	0	**30**	0	9	1	0	**10**	3	4	8	0	**15**	5	7	3	0	**15**	**70**
4:15PM	13	10	2	0	**25**	3	13	1	0	**17**	3	11	8	0	**22**	8	8	5	0	**21**	**85**
Total	99	49	19	0	**167**	5	45	8	0	**58**	11	26	36	0	**73**	31	47	12	0	**90**	**388**
% Approach	59.3%	29.3%	11.4%	0%	**-**	8.6%	77.6%	13.8%	0%	**-**	15.1%	35.6%	49.3%	0%	**-**	34.4%	52.2%	13.3%	0%	**-**	-
% Total	25.5%	12.6%	4.9%	0%	**43.0%**	1.3%	11.6%	2.1%	0%	**14.9%**	2.8%	6.7%	9.3%	0%	**18.8%**	8.0%	12.1%	3.1%	0%	**23.2%**	-
PHF	0.485	0.613	0.528	-	**0.522**	0.417	0.865	0.400	-	**0.725**	0.688	0.591	0.600	-	**0.830**	0.861	0.653	0.600	-	**0.750**	0.735
Lights and Motorcycles	99	47	19	0	**165**	5	43	8	0	**56**	9	24	36	0	**69**	28	46	9	0	**83**	373
% Lights and Motorcycles	100%	95.9%	100%	0%	**98.8%**	100%	95.6%	100%	0%	**96.6%**	81.8%	92.3%	100%	0%	**94.5%**	90.3%	97.9%	75.0%	0%	**92.2%**	96.1%
Heavy	0	2	0	0	**2**	0	2	0	0	**2**	2	2	0	0	**4**	3	1	3	0	**7**	15
% Heavy	0%	4.1%	0%	0%	**1.2%**	0%	4.4%	0%	0%	**3.4%**	18.2%	7.7%	0%	0%	**5.5%**	9.7%	2.1%	25.0%	0%	**7.8%**	3.9%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 800 N & CR 650 E - TMC
Tue Dec 12, 2023
PM Peak (3:30 PM - 4:30 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142922, Location: 39.880045, -86.411371

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	25	81	55	45	4	57	73	20	5	54	6
Future Vol, veh/h	5	25	81	55	45	4	57	73	20	5	54	6
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	20	0	0	4	2	0	0	0	5	20	0	0
Mvmt Flow	8	40	131	89	73	6	92	118	32	8	87	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.6	9.9	10.4	9.5
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	38%	5%	53%	8%
Vol Thru, %	49%	23%	43%	83%
Vol Right, %	13%	73%	4%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	111	104	65
LT Vol	57	5	55	5
Through Vol	73	25	45	54
RT Vol	20	81	4	6
Lane Flow Rate	242	179	168	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.329	0.244	0.24	0.157
Departure Headway (Hd)	4.9	4.908	5.152	5.381
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	726	723	689	659
Service Time	2.977	2.99	3.236	3.474
HCM Lane V/C Ratio	0.333	0.248	0.244	0.159
HCM Control Delay, s/veh	10.4	9.6	9.9	9.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.4	1	0.9	0.6

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	26	36	31	47	12	99	49	19	5	45	8
Future Vol, veh/h	11	26	36	31	47	12	99	49	19	5	45	8
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	18	8	0	10	2	25	0	4	0	0	4	0
Mvmt Flow	15	35	49	42	64	16	134	66	26	7	61	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	8.9	9.5	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	59%	15%	34%	9%
Vol Thru, %	29%	36%	52%	78%
Vol Right, %	11%	49%	13%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	73	90	58
LT Vol	99	11	31	5
Through Vol	49	26	47	45
RT Vol	19	36	12	8
Lane Flow Rate	226	99	122	78
Geometry Grp	1	1	1	1
Degree of Util (X)	0.287	0.132	0.165	0.101
Departure Headway (Hd)	4.585	4.811	4.897	4.643
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	744	731	770
Service Time	2.617	2.851	2.937	2.683
HCM Lane V/C Ratio	0.289	0.133	0.167	0.101
HCM Control Delay, s/veh	9.5	8.6	8.9	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.5	0.6	0.3

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	26	84	60	50	5	63	80	22	6	58	7
Future Vol, veh/h	6	26	84	60	50	5	63	80	22	6	58	7
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	20	0	0	4	2	0	0	0	5	20	0	0
Mvmt Flow	10	42	135	97	81	8	102	129	35	10	94	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10	10.4	11.2	9.9
HCM LOS	A	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	38%	5%	52%	8%
Vol Thru, %	48%	22%	43%	82%
Vol Right, %	13%	72%	4%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	165	116	115	71
LT Vol	63	6	60	6
Through Vol	80	26	50	58
RT Vol	22	84	5	7
Lane Flow Rate	266	187	185	115
Geometry Grp	1	1	1	1
Degree of Util (X)	0.378	0.267	0.276	0.179
Departure Headway (Hd)	5.114	5.143	5.366	5.616
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	708	698	670	639
Service Time	3.114	3.175	3.398	3.646
HCM Lane V/C Ratio	0.376	0.268	0.276	0.18
HCM Control Delay, s/veh	11.2	10	10.4	9.9
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.8	1.1	1.1	0.6

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	27	38	34	52	14	108	54	21	6	48	9
Future Vol, veh/h	12	27	38	34	52	14	108	54	21	6	48	9
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	18	8	0	10	2	25	0	4	0	0	4	0
Mvmt Flow	16	36	51	46	70	19	146	73	28	8	65	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	9.2	9.9	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	59%	16%	34%	10%
Vol Thru, %	30%	35%	52%	76%
Vol Right, %	11%	49%	14%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	77	100	63
LT Vol	108	12	34	6
Through Vol	54	27	52	48
RT Vol	21	38	14	9
Lane Flow Rate	247	104	135	85
Geometry Grp	1	1	1	1
Degree of Util (X)	0.319	0.142	0.187	0.112
Departure Headway (Hd)	4.647	4.905	4.974	4.727
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	772	727	719	754
Service Time	2.688	2.959	3.025	2.779
HCM Lane V/C Ratio	0.32	0.143	0.188	0.113
HCM Control Delay, s/veh	9.9	8.8	9.2	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.4	0.5	0.7	0.4

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	26	84	60	52	7	64	80	22	7	58	7
Future Vol, veh/h	6	26	84	60	52	7	64	80	22	7	58	7
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	20	0	0	4	2	0	0	0	5	20	0	0
Mvmt Flow	10	42	135	97	84	11	103	129	35	11	94	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.1	10.6	11.3	9.9
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	39%	5%	50%	10%
Vol Thru, %	48%	22%	44%	81%
Vol Right, %	13%	72%	6%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	166	116	119	72
LT Vol	64	6	60	7
Through Vol	80	26	52	58
RT Vol	22	84	7	7
Lane Flow Rate	268	187	192	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.382	0.269	0.286	0.182
Departure Headway (Hd)	5.141	5.167	5.368	5.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	696	670	635
Service Time	3.141	3.2	3.401	3.679
HCM Lane V/C Ratio	0.381	0.269	0.287	0.183
HCM Control Delay, s/veh	11.3	10.1	10.6	9.9
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	1.8	1.1	1.2	0.7

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	28	39	34	53	16	109	54	21	9	48	9
Future Vol, veh/h	12	28	39	34	53	16	109	54	21	9	48	9
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	18	8	0	10	2	25	0	4	0	0	4	0
Mvmt Flow	16	38	53	46	72	22	147	73	28	12	65	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	9.2	9.9	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	59%	15%	33%	14%
Vol Thru, %	29%	35%	51%	73%
Vol Right, %	11%	49%	16%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	184	79	103	66
LT Vol	109	12	34	9
Through Vol	54	28	53	48
RT Vol	21	39	16	9
Lane Flow Rate	249	107	139	89
Geometry Grp	1	1	1	1
Degree of Util (X)	0.323	0.146	0.193	0.118
Departure Headway (Hd)	4.671	4.927	4.984	4.761
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	768	724	717	749
Service Time	2.714	2.984	3.037	2.815
HCM Lane V/C Ratio	0.324	0.148	0.194	0.119
HCM Control Delay, s/veh	9.9	8.8	9.2	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.4	0.5	0.7	0.4

CR 800 N & SR 267

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

SR 267 & CR 800 N - TMC

Tue Dec 12, 2023
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142924, Location: 39.880075, -86.392508

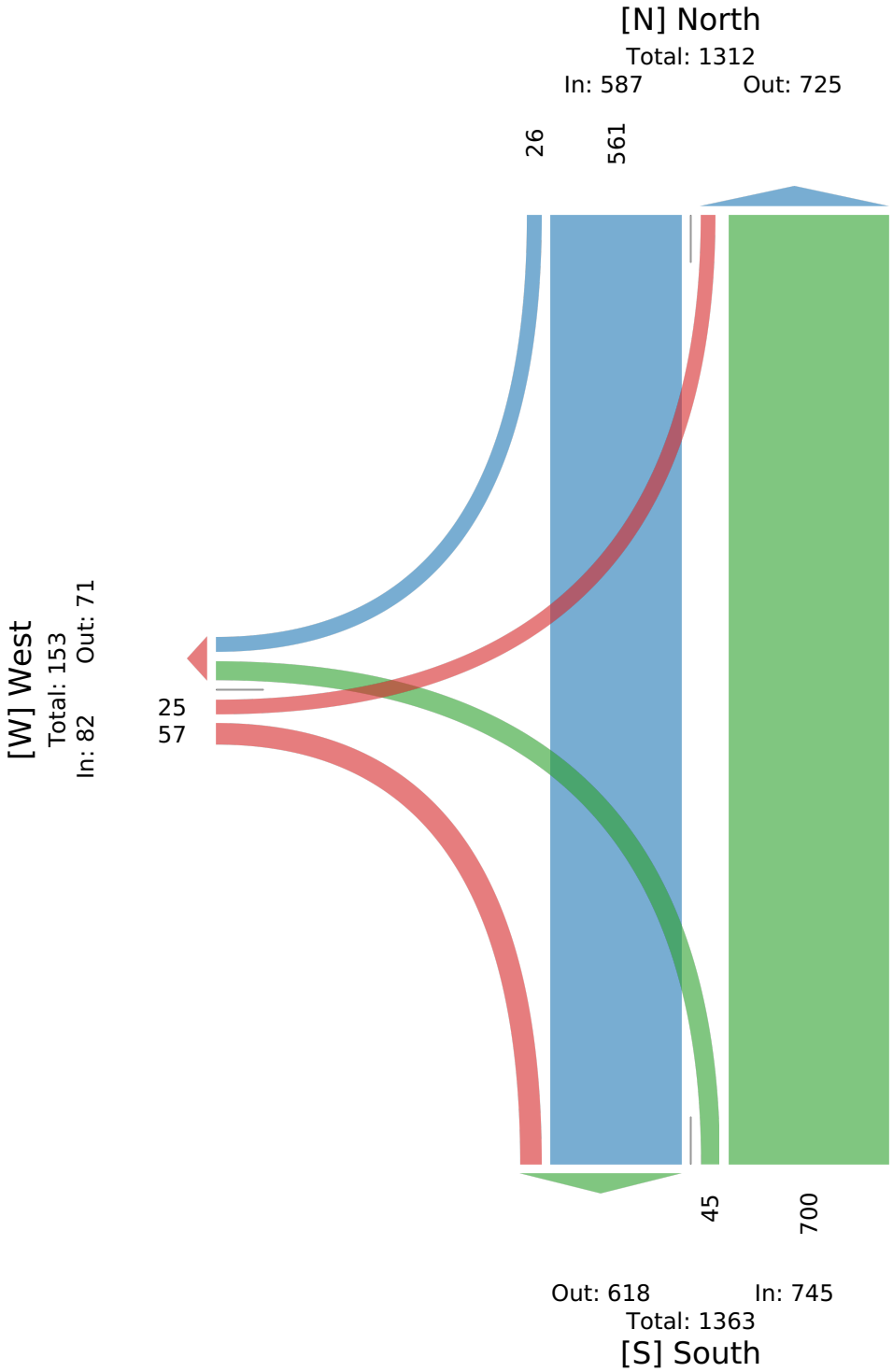
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				West				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2023-12-12 7:15AM	5	191	0	**196**	156	1	0	**157**	10	13	0	**23**	**376**
7:30AM	8	191	0	**199**	131	5	0	**136**	9	12	0	**21**	**356**
7:45AM	4	182	0	**186**	145	10	0	**155**	4	17	0	**21**	**362**
8:00AM	28	136	0	**164**	129	10	0	**139**	2	15	0	**17**	**320**
Total	45	700	0	**745**	561	26	0	**587**	25	57	0	**82**	**1414**
% Approach	6.0%	94.0%	0%	**-**	95.6%	4.4%	0%	**-**	30.5%	69.5%	0%	**-**	-
% Total	3.2%	49.5%	0%	**52.7%**	39.7%	1.8%	0%	**41.5%**	1.8%	4.0%	0%	**5.8%**	-
PHF	0.402	0.916	-	**0.936**	0.899	0.650	-	**0.935**	0.625	0.838	-	**0.891**	0.940
Lights and Motorcycles	45	680	0	**725**	540	24	0	**564**	25	55	0	**80**	1369
% Lights and Motorcycles	100%	97.1%	0%	**97.3%**	96.3%	92.3%	0%	**96.1%**	100%	96.5%	0%	**97.6%**	96.8%
Heavy	0	20	0	**20**	21	2	0	**23**	0	2	0	**2**	45
% Heavy	0%	2.9%	0%	**2.7%**	3.7%	7.7%	0%	**3.9%**	0%	3.5%	0%	**2.4%**	3.2%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & CR 800 N - TMC
Tue Dec 12, 2023
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142924, Location: 39.880075, -86.392508

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 267 & CR 800 N - TMC

Tue Dec 12, 2023
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142924, Location: 39.880075, -86.392508

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South				North				West				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2023-12-12 4:30PM	30	169	0	**199**	172	18	0	**190**	3	5	0	**8**	**397**
4:45PM	20	156	0	**176**	202	13	0	**215**	1	10	0	**11**	**402**
5:00PM	26	173	0	**199**	174	15	0	**189**	7	19	0	**26**	**414**
5:15PM	26	170	0	**196**	200	11	0	**211**	4	9	0	**13**	**420**
Total	102	668	0	**770**	748	57	0	**805**	15	43	0	**58**	**1633**
% Approach	13.2%	86.8%	0%	**-**	92.9%	7.1%	0%	**-**	25.9%	74.1%	0%	**-**	-
% Total	6.2%	40.9%	0%	**47.2%**	45.8%	3.5%	0%	**49.3%**	0.9%	2.6%	0%	**3.6%**	-
PHF	0.850	0.965	-	**0.967**	0.926	0.792	-	**0.936**	0.536	0.566	-	**0.558**	0.972
Lights and Motorcycles	102	655	0	**757**	726	56	0	**782**	14	43	0	**57**	1596
% Lights and Motorcycles	100%	98.1%	0%	**98.3%**	97.1%	98.2%	0%	**97.1%**	93.3%	100%	0%	**98.3%**	97.7%
Heavy	0	13	0	**13**	22	1	0	**23**	1	0	0	**1**	37
% Heavy	0%	1.9%	0%	**1.7%**	2.9%	1.8%	0%	**2.9%**	6.7%	0%	0%	**1.7%**	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & CR 800 N - TMC
Tue Dec 12, 2023
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142924, Location: 39.880075, -86.392508

Provided by: A&F Engineering
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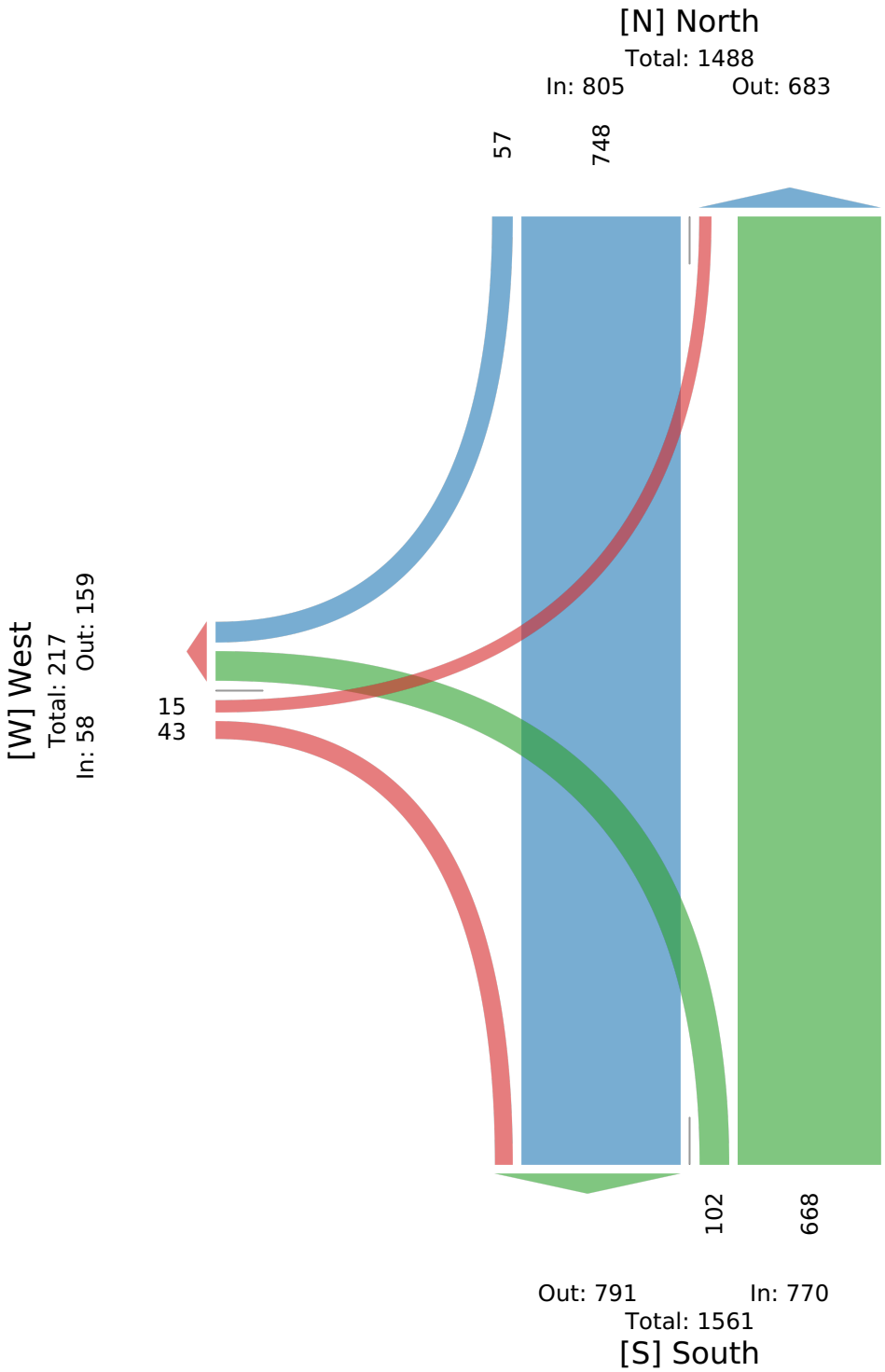


Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	57	45	700	561	26
Future Vol, veh/h	25	57	45	700	561	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	4	0	3	4	8
Mvmt Flow	27	61	48	745	597	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1437	597	624	0	-	0
Stage 1	597	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	148	499	967	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	141	499	967	-	-	-
Mov Cap-2 Maneuver	141	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	427	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	23.45	0.54	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	967	-	281	-	-
HCM Lane V/C Ratio	0.05	-	0.31	-	-
HCM Control Delay (s/veh)	8.9	-	23.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	43	102	668	748	57
Future Vol, veh/h	15	43	102	668	748	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	2	3	2
Mvmt Flow	15	44	105	689	771	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1670	771	830	0	-	0
Stage 1	771	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	103	403	811	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	389	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	89	403	811	-	-	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	390	-	-	-	-	-
Stage 2	389	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	28.63	1.34	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	811	-	211	-	-
HCM Lane V/C Ratio	0.13	-	0.283	-	-
HCM Control Delay (s/veh)	10.1	-	28.6	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.4	-	1.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	63	48	742	592	28
Future Vol, veh/h	28	63	48	742	592	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	4	0	3	4	8
Mvmt Flow	30	67	51	789	630	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1521	630	660	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	132	478	938	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	478	938	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	506	-	-	-	-	-
Stage 2	404	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	27.46	0.55	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	938	-	255	-	-
HCM Lane V/C Ratio	0.054	-	0.379	-	-
HCM Control Delay (s/veh)	9.1	-	27.5	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	1.7	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	47	109	709	793	61
Future Vol, veh/h	17	47	109	709	793	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	2	3	2
Mvmt Flow	18	48	112	731	818	63

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1773	818	880	0	-	0
Stage 1	818	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	89	379	776	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	76	379	776	-	-	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	366	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	35.19	1.39	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	776	-	184	-	-
HCM Lane V/C Ratio	0.145	-	0.359	-	-
HCM Control Delay (s/veh)	10.4	-	35.2	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.5	-	1.5	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	63	48	742	592	28
Future Vol, veh/h	28	63	48	742	592	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	4	0	3	4	8
Mvmt Flow	30	67	51	789	630	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1521	630	660	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	132	478	938	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	478	938	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	506	-	-	-	-	-
Stage 2	404	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	22.67	0.55	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	938	-	125	478	-	-
HCM Lane V/C Ratio	0.054	-	0.239	0.14	-	-
HCM Control Delay (s/veh)	9.1	-	42.7	13.8	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	0.5	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	47	109	709	793	61
Future Vol, veh/h	17	47	109	709	793	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	2	3	2
Mvmt Flow	18	48	112	731	818	63

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1773	818	880	0	-	0
Stage 1	818	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	89	379	776	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	76	379	776	-	-	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	366	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	29.27	1.39	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	776	-	76	379	-	-
HCM Lane V/C Ratio	0.145	-	0.231	0.128	-	-
HCM Control Delay (s/veh)	10.4	-	66.3	15.9	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.8	0.4	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	43	94	60	747	597	33
Future Vol, veh/h	43	94	60	747	597	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	4	0	3	4	8
Mvmt Flow	46	100	64	795	635	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1557	635	670	0	-	0
Stage 1	635	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	125	475	930	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	475	930	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	391	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	40.17	0.68	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	930	-	242	-	-
HCM Lane V/C Ratio	0.069	-	0.603	-	-
HCM Control Delay (s/veh)	9.2	-	40.2	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	3.5	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	68	145	712	798	78
Future Vol, veh/h	27	68	145	712	798	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	2	3	2
Mvmt Flow	28	70	149	734	823	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1856	823	903	0	-	0
Stage 1	823	-	-	-	-	-
Stage 2	1033	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	79	377	761	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	63	377	761	-	-	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	336	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	60.45	1.84	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	761	-	156	-	-
HCM Lane V/C Ratio	0.196	-	0.627	-	-
HCM Control Delay (s/veh)	10.9	-	60.5	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.7	-	3.4	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	43	94	60	747	597	33
Future Vol, veh/h	43	94	60	747	597	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	4	0	3	4	8
Mvmt Flow	46	100	64	795	635	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1557	635	670	0	-	0
Stage 1	635	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.2	-	-	-
Pot Cap-1 Maneuver	125	475	930	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	475	930	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	391	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	27.12	0.68	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	930	-	117	475	-	-
HCM Lane V/C Ratio	0.069	-	0.392	0.211	-	-
HCM Control Delay (s/veh)	9.2	-	54.5	14.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	0.8	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	68	145	712	798	78
Future Vol, veh/h	27	68	145	712	798	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	195	-	-	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	2	3	2
Mvmt Flow	28	70	149	734	823	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1856	823	903	0	-	0
Stage 1	823	-	-	-	-	-
Stage 2	1033	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	79	377	761	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	63	377	761	-	-	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	336	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	40.64	1.84	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	761	-	63	377	-	-
HCM Lane V/C Ratio	0.196	-	0.441	0.186	-	-
HCM Control Delay (s/veh)	10.9	-	100.9	16.7	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.7	-	1.7	0.7	-	-

CR 700 N & CR 650 E

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

CR 700 N & CR 650 E - TMC

Tue Dec 12, 2023
AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142921, Location: 39.865393, -86.41116

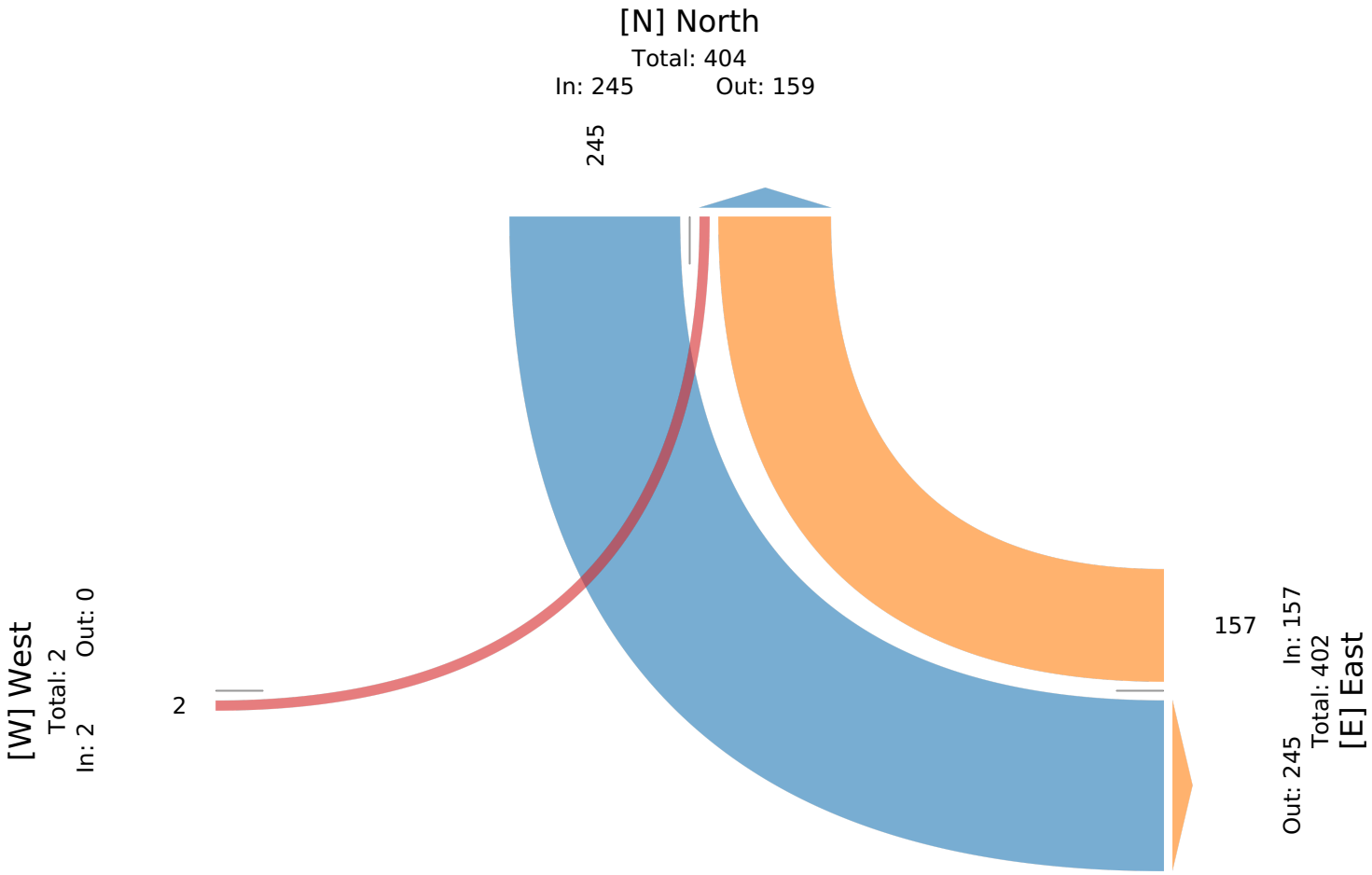
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	North				West				East				
Direction	Southbound				Eastbound				Westbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2023-12-12 7:30AM	33	0	0	**33**	1	0	0	**1**	0	15	0	**15**	**49**
7:45AM	39	0	0	**39**	0	0	0	**0**	0	36	0	**36**	**75**
8:00AM	67	0	0	**67**	1	0	0	**1**	0	58	0	**58**	**126**
8:15AM	106	0	0	**106**	0	0	0	**0**	0	48	0	**48**	**154**
Total	245	0	0	**245**	2	0	0	**2**	0	157	0	**157**	**404**
% Approach	100%	0%	0%	**-**	100%	0%	0%	**-**	0%	100%	0%	**-**	-
% Total	60.6%	0%	0%	**60.6%**	0.5%	0%	0%	**0.5%**	0%	38.9%	0%	**38.9%**	-
PHF	0.578	-	-	**0.578**	0.500	-	-	**0.500**	-	0.677	-	**0.677**	0.656
Lights and Motorcycles	238	0	0	**238**	2	0	0	**2**	0	153	0	**153**	393
% Lights and Motorcycles	97.1%	0%	0%	**97.1%**	100%	0%	0%	**100%**	0%	97.5%	0%	**97.5%**	97.3%
Heavy	7	0	0	**7**	0	0	0	**0**	0	4	0	**4**	11
% Heavy	2.9%	0%	0%	**2.9%**	0%	0%	0%	**0%**	0%	2.5%	0%	**2.5%**	2.7%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 700 N & CR 650 E - TMC
Tue Dec 12, 2023
AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142921, Location: 39.865393, -86.41116

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



CR 700 N & CR 650 E - TMC

Tue Dec 12, 2023
PM Peak (3:30 PM - 4:30 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142921, Location: 39.865393, -86.41116

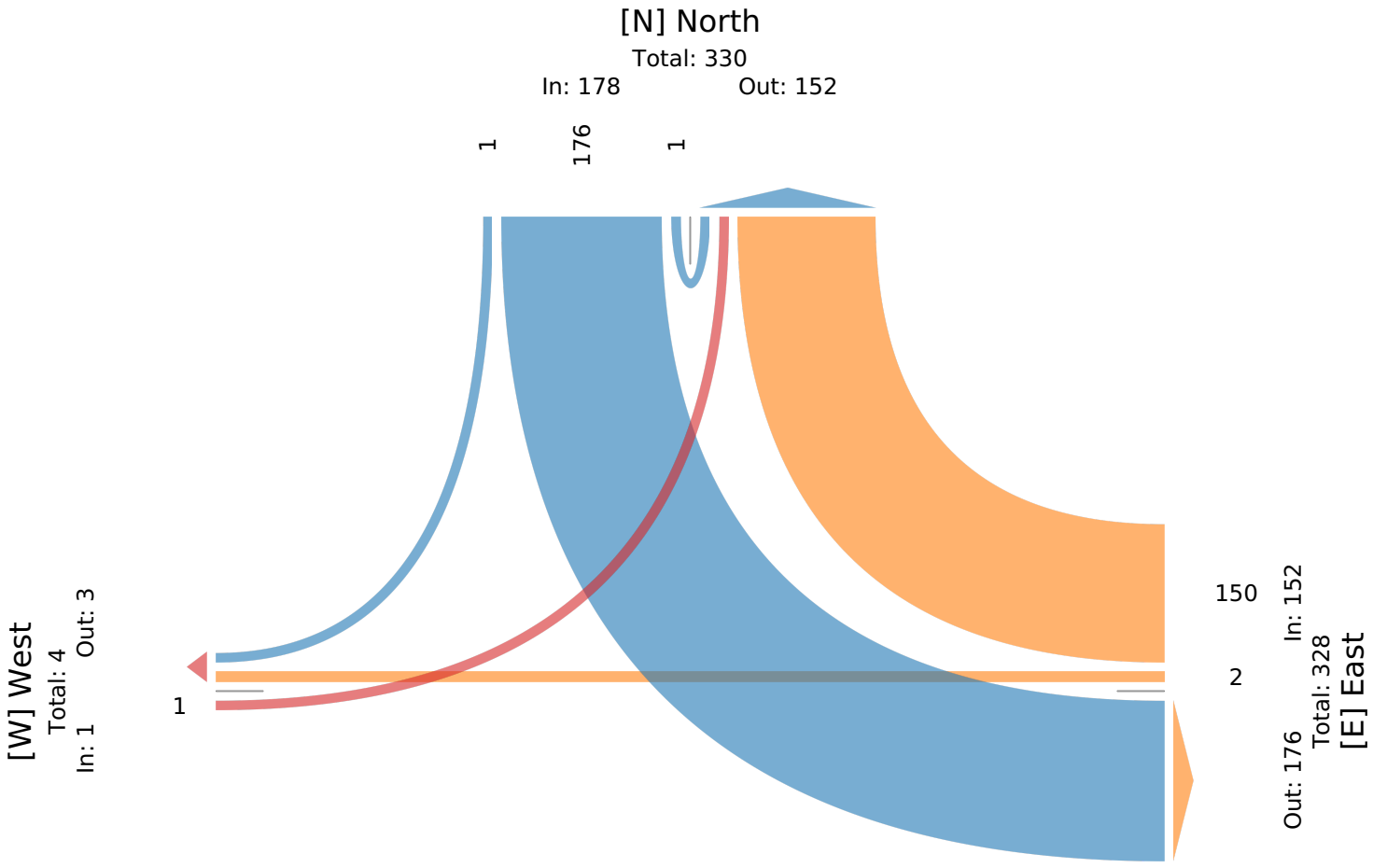
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg / Direction	North Southbound				West Eastbound				East Westbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2023-12-12 3:30PM	49	0	0	**49**	1	0	0	**1**	0	44	0	**44**	**94**
3:45PM	71	0	0	**71**	0	0	0	**0**	0	26	0	**26**	**97**
4:00PM	27	1	1	**29**	0	0	0	**0**	0	37	0	**37**	**66**
4:15PM	29	0	0	**29**	0	0	0	**0**	2	43	0	**45**	**74**
Total	176	1	1	**178**	1	0	0	**1**	2	150	0	**152**	**331**
% Approach	98.9%	0.6%	0.6%	**-**	100%	0%	0%	**-**	1.3%	98.7%	0%	**-**	-
% Total	53.2%	0.3%	0.3%	**53.8%**	0.3%	0%	0%	**0.3%**	0.6%	45.3%	0%	**45.9%**	-
PHF	0.620	0.250	0.250	**0.627**	0.250	-	-	**0.250**	0.250	0.852	-	**0.844**	0.853
Lights and Motorcycles	167	0	0	**167**	0	0	0	**0**	2	148	0	**150**	317
% Lights and Motorcycles	94.9%	0%	0%	**93.8%**	0%	0%	0%	**0%**	100%	98.7%	0%	**98.7%**	95.8%
Heavy	9	1	1	**11**	1	0	0	**1**	0	2	0	**2**	14
% Heavy	5.1%	100%	100%	**6.2%**	100%	0%	0%	**100%**	0%	1.3%	0%	**1.3%**	4.2%

*L: Left, R: Right, T: Thru, U: U-Turn

CR 700 N & CR 650 E - TMC
Tue Dec 12, 2023
PM Peak (3:30 PM - 4:30 PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142921, Location: 39.865393, -86.41116

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	157	245	0
Future Vol, veh/h	2	0	0	157	245	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	3	0	0	238	371	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	238	0	-	0	125	119
Stage 1	-	-	-	-	119	-
Stage 2	-	-	-	-	6	-
Critical Hdwy	4.1	-	-	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.2	-	-	-	3.527	3.3
Pot Cap-1 Maneuver	1341	-	-	-	867	938
Stage 1	-	-	-	-	904	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1341	-	-	-	866	938
Mov Cap-2 Maneuver	-	-	-	-	866	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	1014	-

Approach	EB	WB	SB
HCM Control Delay, s/v	7.69	0	12.25
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1341	-	-	-	866
HCM Lane V/C Ratio	0.002	-	-	-	0.429
HCM Control Delay (s/veh)	7.7	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	2.2

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	2	150	176	1
Future Vol, veh/h	1	0	2	150	176	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	100	0	0	1	5	100
Mvmt Flow	1	0	2	176	207	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	93	91
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	2	-
Critical Hdwy	5.1	-	-	-	6.45	7.2
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	3.1	-	-	-	3.545	4.2
Pot Cap-1 Maneuver	973	-	-	-	900	754
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	1013	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	973	-	-	-	899	754
Mov Cap-2 Maneuver	-	-	-	-	899	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	1013	-

Approach	EB	WB	SB
HCM Control Delay, s/v	8.71	0	10.22
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	973	-	-	-	898
HCM Lane V/C Ratio	0.001	-	-	-	0.232
HCM Control Delay (s/veh)	8.7	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.9

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	0	172	268	0
Future Vol, veh/h	3	0	0	172	268	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	5	0	0	261	406	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	261	0	-	0	139	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	4.1	-	-	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.2	-	-	-	3.527	3.3
Pot Cap-1 Maneuver	1316	-	-	-	851	925
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1316	-	-	-	848	925
Mov Cap-2 Maneuver	-	-	-	-	848	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	SB
HCM Control Delay, s/v	7.75	0	13.08
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1316	-	-	-	848
HCM Lane V/C Ratio	0.003	-	-	-	0.479
HCM Control Delay (s/veh)	7.7	0	-	-	13.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	2.6

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	3	164	192	2
Future Vol, veh/h	2	0	3	164	192	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	100	0	0	1	5	100
Mvmt Flow	2	0	4	193	226	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	196	0	-	0	105	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	5	-
Critical Hdwy	5.1	-	-	-	6.45	7.2
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	3.1	-	-	-	3.545	4.2
Pot Cap-1 Maneuver	956	-	-	-	886	744
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	956	-	-	-	884	744
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	SB
HCM Control Delay, s/v	8.78	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	956	-	-	-	882
HCM Lane V/C Ratio	0.002	-	-	-	0.259
HCM Control Delay (s/veh)	8.8	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	0	172	268	0
Future Vol, veh/h	3	0	0	172	268	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	5	0	0	261	406	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	261	0	-	0	139	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	4.1	-	-	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.2	-	-	-	3.527	3.3
Pot Cap-1 Maneuver	1316	-	-	-	851	925
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1316	-	-	-	848	925
Mov Cap-2 Maneuver	-	-	-	-	848	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	SB
HCM Control Delay, s/v	7.75	0	13.08
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1316	-	-	-	848
HCM Lane V/C Ratio	0.003	-	-	-	0.479
HCM Control Delay (s/veh)	7.7	0	-	-	13.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	2.6

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	3	164	192	2
Future Vol, veh/h	2	0	3	164	192	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	100	0	0	1	5	100
Mvmt Flow	2	0	4	193	226	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	196	0	-	0	105	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	5	-
Critical Hdwy	5.1	-	-	-	6.45	7.2
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	3.1	-	-	-	3.545	4.2
Pot Cap-1 Maneuver	956	-	-	-	886	744
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	956	-	-	-	884	744
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	SB
HCM Control Delay, s/v	8.78	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	956	-	-	-	882
HCM Lane V/C Ratio	0.002	-	-	-	0.259
HCM Control Delay (s/veh)	8.8	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1

CR 700 N & SR 267

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

SR 267 & CR 700 N - TMC

Tue Dec 12, 2023
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142918, Location: 39.865527, -86.39247

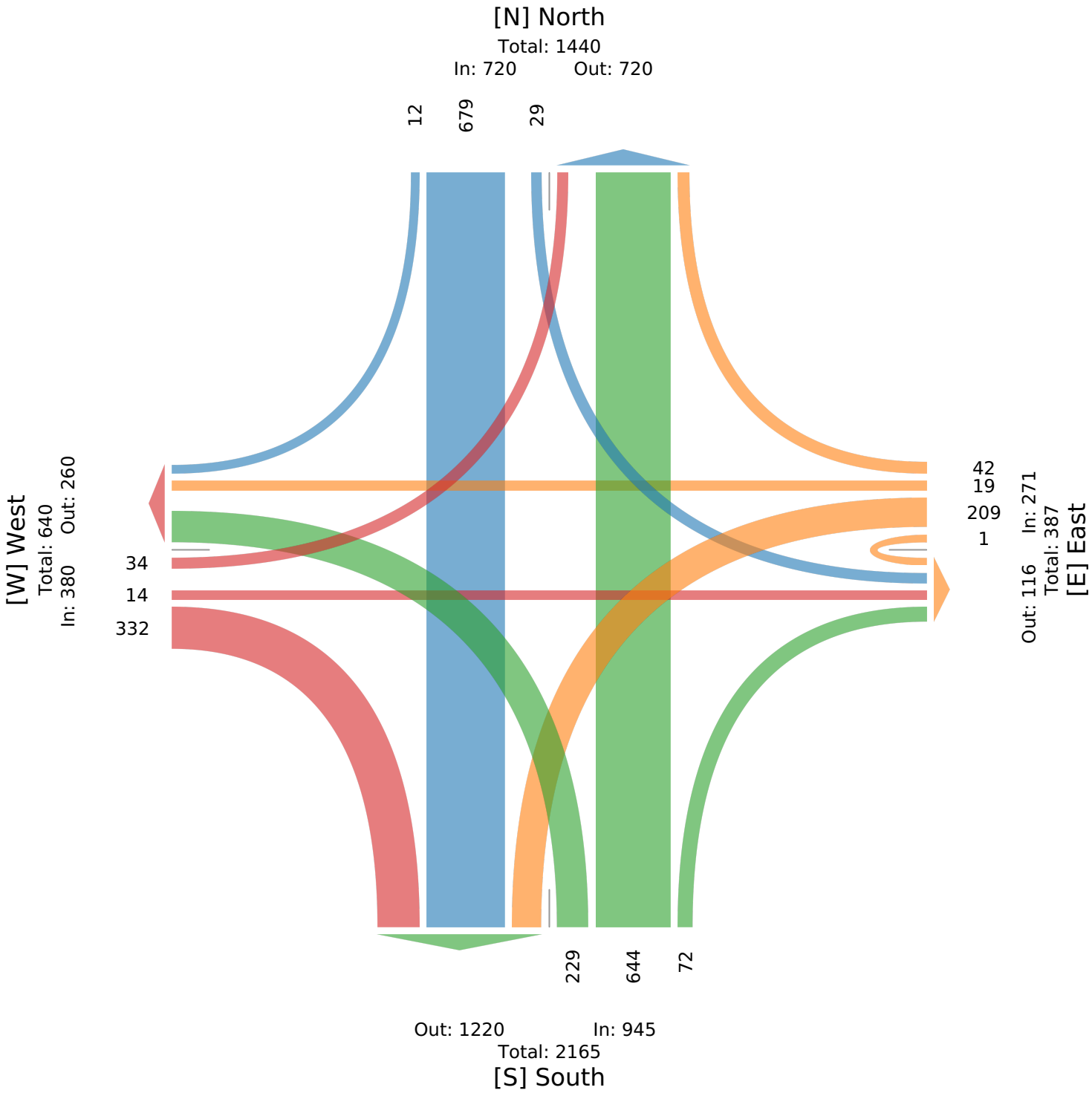
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg / Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2023-12-12 7:30AM	45	170	16	0	**231**	7	180	2	0	**189**	10	5	61	0	**76**	57	5	13	0	**75**	**571**
7:45AM	67	185	15	0	**267**	5	173	0	0	**178**	7	4	60	0	**71**	37	5	8	0	**50**	**566**
8:00AM	61	147	20	0	**228**	9	148	5	0	**162**	11	2	82	0	**95**	54	5	8	0	**67**	**552**
8:15AM	56	142	21	0	**219**	8	178	5	0	**191**	6	3	129	0	**138**	61	4	13	1	**79**	**627**
Total	229	644	72	0	**945**	29	679	12	0	**720**	34	14	332	0	**380**	209	19	42	1	**271**	**2316**
% Approach	24.2%	68.1%	7.6%	0%	**-**	4.0%	94.3%	1.7%	0%	**-**	8.9%	3.7%	87.4%	0%	**-**	77.1%	7.0%	15.5%	0.4%	**-**	-
% Total	9.9%	27.8%	3.1%	0%	**40.8%**	1.3%	29.3%	0.5%	0%	**31.1%**	1.5%	0.6%	14.3%	0%	**16.4%**	9.0%	0.8%	1.8%	0%	**11.7%**	-
PHF	0.854	0.870	0.857	-	**0.885**	0.806	0.943	0.600	-	**0.942**	0.773	0.700	0.643	-	**0.688**	0.857	0.950	0.808	0.250	**0.858**	0.923
Lights and Motorcycles	225	623	67	0	**915**	27	661	12	0	**700**	34	14	325	0	**373**	209	18	41	1	**269**	2257
% Lights and Motorcycles	98.3%	96.7%	93.1%	0%	**96.8%**	93.1%	97.3%	100%	0%	**97.2%**	100%	100%	97.9%	0%	**98.2%**	100%	94.7%	97.6%	100%	**99.3%**	97.5%
Heavy	4	21	5	0	**30**	2	18	0	0	**20**	0	0	7	0	**7**	0	1	1	0	**2**	59
% Heavy	1.7%	3.3%	6.9%	0%	**3.2%**	6.9%	2.7%	0%	0%	**2.8%**	0%	0%	2.1%	0%	**1.8%**	0%	5.3%	2.4%	0%	**0.7%**	2.5%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & CR 700 N - TMC
Tue Dec 12, 2023
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142918, Location: 39.865527, -86.39247

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 267 & CR 700 N - TMC

Tue Dec 12, 2023
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142918, Location: 39.865527, -86.39247

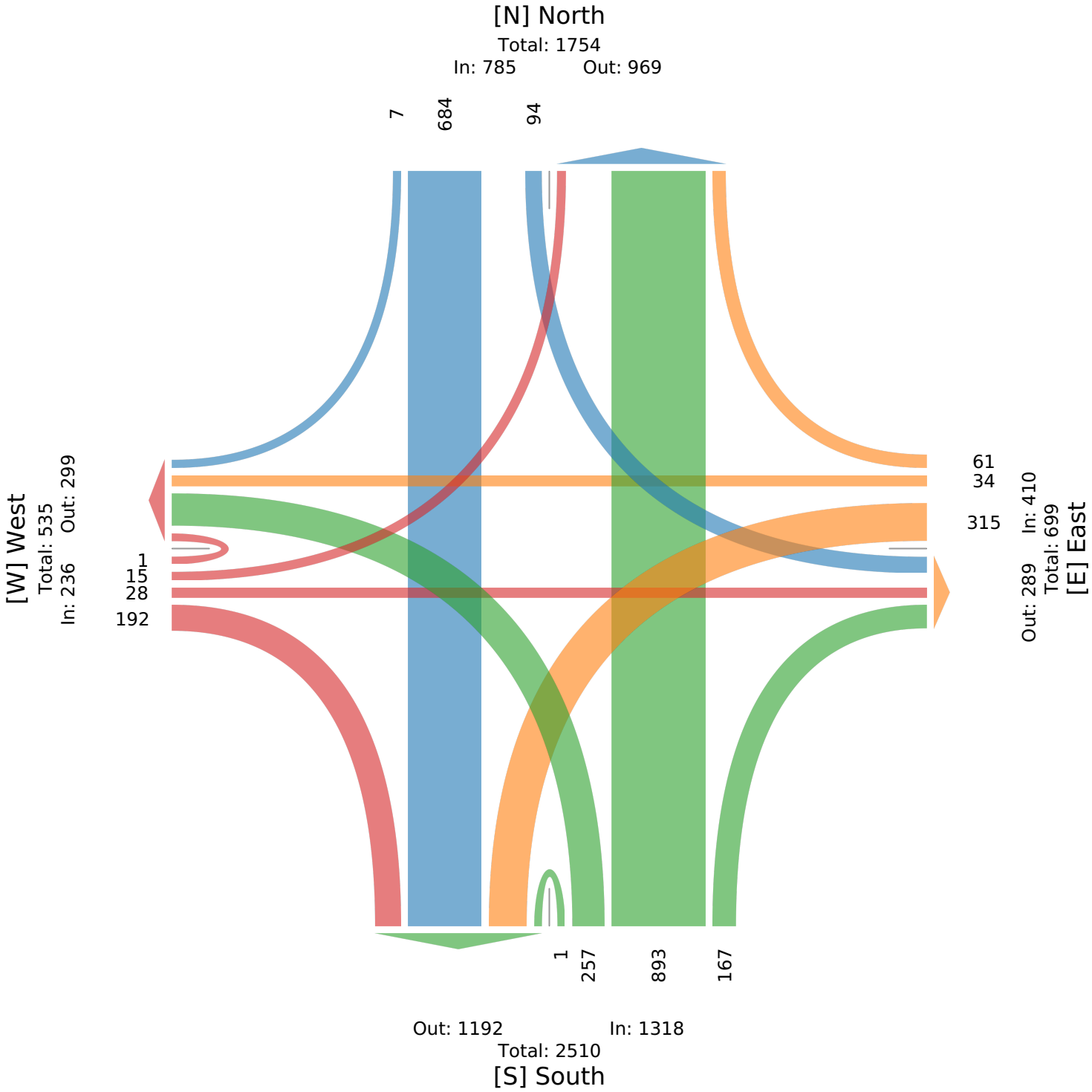
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

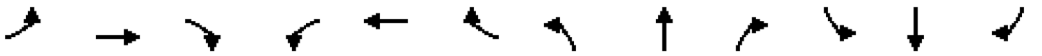
Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2023-12-12 4:45PM	63	215	42	1	**321**	26	191	0	0	**217**	4	2	46	0	**52**	78	9	13	0	**100**	**690**
5:00PM	78	228	36	0	**342**	23	132	2	0	**157**	4	12	33	1	**50**	86	8	14	0	**108**	**657**
5:15PM	52	225	40	0	**317**	24	194	5	0	**223**	4	4	55	0	**63**	70	8	15	0	**93**	**696**
5:30PM	64	225	49	0	**338**	21	167	0	0	**188**	3	10	58	0	**71**	81	9	19	0	**109**	**706**
Total	257	893	167	1	**1318**	94	684	7	0	**785**	15	28	192	1	**236**	315	34	61	0	**410**	**2749**
% Approach	19.5%	67.8%	12.7%	0.1%	**-**	12.0%	87.1%	0.9%	0%	**-**	6.4%	11.9%	81.4%	0.4%	**-**	76.8%	8.3%	14.9%	0%	**-**	-
% Total	9.3%	32.5%	6.1%	0%	**47.9%**	3.4%	24.9%	0.3%	0%	**28.6%**	0.5%	1.0%	7.0%	0%	**8.6%**	11.5%	1.2%	2.2%	0%	**14.9%**	-
PHF	0.824	0.979	0.852	0.250	**0.963**	0.904	0.881	0.350	-	**0.880**	0.938	0.583	0.828	0.250	**0.831**	0.916	0.944	0.803	-	**0.940**	0.973
Lights and Motorcycles	256	878	167	1	**1302**	94	660	7	0	**761**	15	28	190	1	**234**	314	34	60	0	**408**	2705
% Lights and Motorcycles	99.6%	98.3%	100%	100%	**98.8%**	100%	96.5%	100%	0%	**96.9%**	100%	100%	99.0%	100%	**99.2%**	99.7%	100%	98.4%	0%	**99.5%**	98.4%
Heavy	1	15	0	0	**16**	0	24	0	0	**24**	0	0	2	0	**2**	1	0	1	0	**2**	44
% Heavy	0.4%	1.7%	0%	0%	**1.2%**	0%	3.5%	0%	0%	**3.1%**	0%	0%	1.0%	0%	**0.8%**	0.3%	0%	1.6%	0%	**0.5%**	1.6%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & CR 700 N - TMC
Tue Dec 12, 2023
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1142918, Location: 39.865527, -86.39247

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

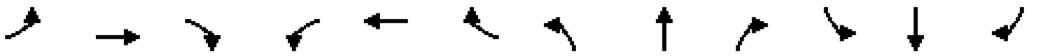




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	14	332	209	19	42	229	644	72	29	679	12
Future Volume (veh/h)	34	14	332	209	19	42	229	644	72	29	679	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1870	1900	1826	1870	1870	1856	1796	1796	1856	1900
Adj Flow Rate, veh/h	37	15	361	227	21	46	249	700	78	32	738	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	0	5	2	2	3	7	7	3	0
Cap, veh/h	458	353	499	374	126	276	403	1147	128	312	981	17
Arrive On Green	0.05	0.19	0.19	0.11	0.25	0.25	0.13	0.36	0.36	0.05	0.28	0.28
Sat Flow, veh/h	1810	1900	1585	3510	509	1116	1781	3198	356	1711	3545	62
Grp Volume(v), veh/h	37	15	361	227	0	67	249	386	392	32	367	384
Grp Sat Flow(s),veh/h/ln	1810	1900	1585	1755	0	1625	1781	1763	1791	1711	1763	1844
Q Serve(g_s), s	1.0	0.4	12.0	4.0	0.0	2.1	5.9	11.6	11.6	0.8	12.3	12.3
Cycle Q Clear(g_c), s	1.0	0.4	12.0	4.0	0.0	2.1	5.9	11.6	11.6	0.8	12.3	12.3
Prop In Lane	1.00		1.00	1.00		0.69	1.00		0.20	1.00		0.03
Lane Grp Cap(c), veh/h	458	353	499	374	0	402	403	632	643	312	488	511
V/C Ratio(X)	0.08	0.04	0.72	0.61	0.00	0.17	0.62	0.61	0.61	0.10	0.75	0.75
Avail Cap(c_a), veh/h	562	353	499	543	0	402	724	1129	1148	419	777	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	21.6	19.6	27.6	0.0	19.1	14.3	17.0	17.0	15.4	21.3	21.3
Incr Delay (d2), s/veh	0.1	0.0	5.1	1.6	0.0	0.2	1.5	1.0	0.9	0.1	2.4	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.2	5.1	1.7	0.0	0.8	2.1	4.1	4.2	0.3	4.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.2	21.6	24.8	29.2	0.0	19.3	15.8	18.0	18.0	15.5	23.7	23.6
LnGrp LOS	B	C	C	C		B	B	B	B	B	C	C
Approach Vol, veh/h		413			294			1027			783	
Approach Delay, s/veh		24.2			26.9			17.4			23.3	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	28.2	11.9	17.0	12.8	22.9	7.9	21.0
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.1	41.4	10.0	12.0	20.0	28.5	7.1	15.4
Max Q Clear Time (g_c+I1), s	2.8	13.6	6.0	14.0	7.9	14.3	3.0	4.1
Green Ext Time (p_c), s	0.0	4.7	0.3	0.0	0.5	3.6	0.0	0.2

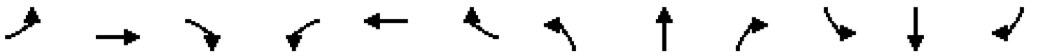
Intersection Summary	
HCM 7th Control Delay, s/veh	21.5
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	28	192	315	34	61	257	893	167	94	684	7
Future Volume (veh/h)	15	28	192	315	34	61	257	893	167	94	684	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1870	1900	1900	1841	1900
Adj Flow Rate, veh/h	15	29	198	325	35	63	265	921	172	97	705	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	1	0	0	2	0	2	0	0	4	0
Cap, veh/h	340	292	440	438	158	285	453	1172	219	299	1239	12
Arrive On Green	0.02	0.15	0.15	0.12	0.26	0.26	0.12	0.39	0.39	0.08	0.35	0.35
Sat Flow, veh/h	1810	1900	1598	3510	608	1095	1810	2989	558	1810	3548	35
Grp Volume(v), veh/h	15	29	198	325	0	98	265	547	546	97	347	365
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1755	0	1703	1810	1777	1770	1810	1749	1834
Q Serve(g_s), s	0.5	1.0	8.0	7.0	0.0	3.5	6.9	21.1	21.1	2.5	12.6	12.6
Cycle Q Clear(g_c), s	0.5	1.0	8.0	7.0	0.0	3.5	6.9	21.1	21.1	2.5	12.6	12.6
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.32	1.00		0.02
Lane Grp Cap(c), veh/h	340	292	440	438	0	443	453	697	694	299	611	641
V/C Ratio(X)	0.04	0.10	0.45	0.74	0.00	0.22	0.58	0.79	0.79	0.32	0.57	0.57
Avail Cap(c_a), veh/h	469	293	440	811	0	503	733	1159	1154	381	875	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	28.3	23.3	32.9	0.0	22.6	14.0	20.8	20.8	15.9	20.6	20.6
Incr Delay (d2), s/veh	0.1	0.1	0.7	2.5	0.0	0.2	1.2	2.0	2.0	0.6	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	3.0	3.0	0.0	1.4	2.5	8.0	8.0	0.9	4.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.5	28.5	24.1	35.4	0.0	22.9	15.2	22.8	22.8	16.6	21.4	21.4
LnGrp LOS	C	C	C	D		C	B	C	C	B	C	C
Approach Vol, veh/h		242			423			1358			809	
Approach Delay, s/veh		24.7			32.5			21.3			20.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	35.5	14.7	17.0	14.0	32.2	6.4	25.3
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	9.7	50.8	18.0	12.0	21.5	39.0	7.5	23.0
Max Q Clear Time (g_c+I1), s	4.5	23.1	9.0	10.0	8.9	14.6	2.5	5.5
Green Ext Time (p_c), s	0.1	7.4	0.8	0.2	0.6	4.1	0.0	0.4

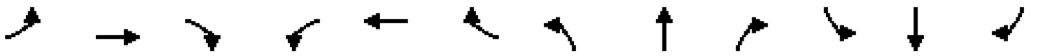
Intersection Summary	
HCM 7th Control Delay, s/veh	23.1
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	16	362	235	22	48	271	760	85	31	720	13
Future Volume (veh/h)	38	16	362	235	22	48	271	760	85	31	720	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1870	1900	1826	1870	1870	1856	1796	1796	1856	1900
Adj Flow Rate, veh/h	41	17	393	255	24	52	295	826	92	34	783	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	0	5	2	2	3	7	7	3	0
Cap, veh/h	445	336	510	359	119	257	423	1229	137	289	1022	18
Arrive On Green	0.06	0.18	0.18	0.10	0.23	0.23	0.14	0.38	0.38	0.05	0.29	0.29
Sat Flow, veh/h	1810	1900	1585	3510	513	1112	1781	3198	356	1711	3544	63
Grp Volume(v), veh/h	41	17	393	255	0	76	295	455	463	34	389	408
Grp Sat Flow(s),veh/h/ln	1810	1900	1585	1755	0	1626	1781	1763	1791	1711	1763	1844
Q Serve(g_s), s	1.2	0.5	12.0	4.8	0.0	2.6	7.2	14.5	14.5	0.9	13.7	13.7
Cycle Q Clear(g_c), s	1.2	0.5	12.0	4.8	0.0	2.6	7.2	14.5	14.5	0.9	13.7	13.7
Prop In Lane	1.00		1.00	1.00		0.68	1.00		0.20	1.00		0.03
Lane Grp Cap(c), veh/h	445	336	510	359	0	376	423	677	688	289	509	532
V/C Ratio(X)	0.09	0.05	0.77	0.71	0.00	0.20	0.70	0.67	0.67	0.12	0.77	0.77
Avail Cap(c_a), veh/h	534	336	510	466	0	376	678	1102	1120	385	780	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	23.2	20.8	29.5	0.0	21.0	14.6	17.3	17.3	15.7	22.0	22.0
Incr Delay (d2), s/veh	0.1	0.1	7.1	3.5	0.0	0.3	2.1	1.2	1.1	0.2	2.4	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.2	6.2	2.1	0.0	1.0	2.6	5.1	5.2	0.3	5.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.5	23.2	27.9	32.9	0.0	21.3	16.7	18.5	18.5	15.9	24.5	24.4
LnGrp LOS	C	C	C	C		C	B	B	B	B	C	C
Approach Vol, veh/h		451			331			1213			831	
Approach Delay, s/veh		27.0			30.2			18.0			24.1	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	31.1	11.9	17.0	14.3	24.6	8.3	20.7
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.1	42.4	9.0	12.0	19.5	30.0	7.1	14.4
Max Q Clear Time (g_c+I1), s	2.9	16.5	6.8	14.0	9.2	15.7	3.2	4.6
Green Ext Time (p_c), s	0.0	5.7	0.2	0.0	0.6	3.9	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	22.7
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	31	210	353	39	69	304	1054	198	100	726	8
Future Volume (veh/h)	17	31	210	353	39	69	304	1054	198	100	726	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1870	1900	1900	1841	1900
Adj Flow Rate, veh/h	18	32	216	364	40	71	313	1087	204	103	748	8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	1	0	0	2	0	2	0	0	4	0
Cap, veh/h	308	257	421	462	150	266	472	1316	246	264	1366	15
Arrive On Green	0.03	0.14	0.14	0.13	0.24	0.24	0.13	0.44	0.44	0.07	0.39	0.39
Sat Flow, veh/h	1810	1900	1598	3510	614	1090	1810	2988	559	1810	3545	38
Grp Volume(v), veh/h	18	32	216	364	0	111	313	645	646	103	369	387
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1755	0	1704	1810	1777	1770	1810	1749	1834
Q Serve(g_s), s	0.7	1.3	10.2	8.9	0.0	4.7	8.6	28.3	28.5	2.9	14.6	14.6
Cycle Q Clear(g_c), s	0.7	1.3	10.2	8.9	0.0	4.7	8.6	28.3	28.5	2.9	14.6	14.6
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.32	1.00		0.02
Lane Grp Cap(c), veh/h	308	257	421	462	0	416	472	783	780	264	674	707
V/C Ratio(X)	0.06	0.12	0.51	0.79	0.00	0.27	0.66	0.82	0.83	0.39	0.55	0.55
Avail Cap(c_a), veh/h	402	257	421	712	0	449	740	1041	1037	306	710	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	33.7	27.8	37.3	0.0	27.1	14.3	21.8	21.9	17.9	21.2	21.2
Incr Delay (d2), s/veh	0.1	0.2	1.1	3.3	0.0	0.3	1.6	4.1	4.3	0.9	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	3.9	4.0	0.0	1.9	3.2	11.3	11.3	1.1	5.6	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.4	34.0	28.9	40.6	0.0	27.4	15.9	25.9	26.2	18.9	22.0	22.0
LnGrp LOS	C	C	C	D		C	B	C	C	B	C	C
Approach Vol, veh/h		266			475			1604			859	
Approach Delay, s/veh		29.7			37.5			24.1			21.6	
Approach LOS		C			D			C			C	

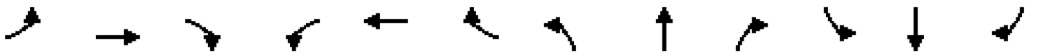
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	44.1	16.7	17.0	15.9	39.2	7.0	26.7
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.5	52.0	18.0	12.0	24.5	36.0	7.1	23.4
Max Q Clear Time (g_c+I1), s	4.9	30.5	10.9	12.2	10.6	16.6	2.7	6.7
Green Ext Time (p_c), s	0.1	8.6	0.8	0.0	0.7	4.1	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	25.9
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	16	362	235	22	50	271	772	85	37	755	13
Future Volume (veh/h)	38	16	362	235	22	50	271	772	85	37	755	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1870	1900	1826	1870	1870	1856	1796	1796	1856	1900
Adj Flow Rate, veh/h	41	17	393	255	24	54	295	839	92	40	821	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	0	5	2	2	3	7	7	3	0
Cap, veh/h	438	331	501	356	114	256	416	1241	136	295	1063	18
Arrive On Green	0.06	0.17	0.17	0.10	0.23	0.23	0.14	0.39	0.39	0.05	0.30	0.30
Sat Flow, veh/h	1810	1900	1585	3510	500	1124	1781	3204	351	1711	3547	60
Grp Volume(v), veh/h	41	17	393	255	0	78	295	462	469	40	408	427
Grp Sat Flow(s),veh/h/ln	1810	1900	1585	1755	0	1624	1781	1763	1792	1711	1763	1845
Q Serve(g_s), s	1.2	0.5	12.0	4.9	0.0	2.7	7.2	15.0	15.0	1.1	14.5	14.5
Cycle Q Clear(g_c), s	1.2	0.5	12.0	4.9	0.0	2.7	7.2	15.0	15.0	1.1	14.5	14.5
Prop In Lane	1.00		1.00	1.00		0.69	1.00		0.20	1.00		0.03
Lane Grp Cap(c), veh/h	438	331	501	356	0	369	416	683	694	295	528	553
V/C Ratio(X)	0.09	0.05	0.78	0.72	0.00	0.21	0.71	0.68	0.68	0.14	0.77	0.77
Avail Cap(c_a), veh/h	525	331	501	458	0	369	641	1084	1103	379	793	830
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	23.7	21.4	30.0	0.0	21.6	14.7	17.5	17.5	15.4	22.0	22.0
Incr Delay (d2), s/veh	0.1	0.1	8.0	3.8	0.0	0.3	2.2	1.2	1.2	0.2	2.7	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.2	6.4	2.2	0.0	1.0	2.6	5.3	5.4	0.4	5.6	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.0	23.8	29.4	33.8	0.0	21.9	16.9	18.7	18.7	15.6	24.7	24.6
LnGrp LOS	C	C	C	C		C	B	B	B	B	C	C
Approach Vol, veh/h		451			333			1226			875	
Approach Delay, s/veh		28.5			31.0			18.3			24.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	31.7	12.0	17.0	14.3	25.6	8.3	20.7
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.1	42.4	9.0	12.0	18.5	31.0	7.1	14.4
Max Q Clear Time (g_c+I1), s	3.1	17.0	6.9	14.0	9.2	16.5	3.2	4.7
Green Ext Time (p_c), s	0.0	5.8	0.2	0.0	0.6	4.1	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	23.1
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	31	210	353	39	76	304	1093	198	104	748	8
Future Volume (veh/h)	17	31	210	353	39	76	304	1093	198	104	748	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1870	1900	1900	1841	1900
Adj Flow Rate, veh/h	18	32	216	364	40	78	313	1127	204	107	771	8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	1	0	0	2	0	2	0	0	4	0
Cap, veh/h	302	252	412	454	138	269	468	1356	244	260	1409	15
Arrive On Green	0.03	0.13	0.13	0.13	0.24	0.24	0.13	0.45	0.45	0.07	0.40	0.40
Sat Flow, veh/h	1810	1900	1598	3510	576	1122	1810	3008	542	1810	3546	37
Grp Volume(v), veh/h	18	32	216	364	0	118	313	664	667	107	380	399
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1755	0	1698	1810	1777	1773	1810	1749	1834
Q Serve(g_s), s	0.8	1.3	10.5	9.1	0.0	5.1	8.6	29.7	30.0	3.0	15.2	15.2
Cycle Q Clear(g_c), s	0.8	1.3	10.5	9.1	0.0	5.1	8.6	29.7	30.0	3.0	15.2	15.2
Prop In Lane	1.00		1.00	1.00		0.66	1.00		0.31	1.00		0.02
Lane Grp Cap(c), veh/h	302	252	412	454	0	406	468	801	799	260	695	729
V/C Ratio(X)	0.06	0.13	0.52	0.80	0.00	0.29	0.67	0.83	0.83	0.41	0.55	0.55
Avail Cap(c_a), veh/h	393	252	412	620	0	406	723	1040	1037	319	741	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	34.7	28.8	38.3	0.0	28.2	14.3	21.8	21.9	18.3	21.0	21.0
Incr Delay (d2), s/veh	0.1	0.2	1.2	5.3	0.0	0.4	1.7	4.5	4.7	1.0	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	4.1	4.2	0.0	2.1	3.2	11.9	12.0	1.2	5.8	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.3	34.9	30.1	43.6	0.0	28.6	15.9	26.3	26.6	19.3	21.7	21.7
LnGrp LOS	C	C	C	D		C	B	C	C	B	C	C
Approach Vol, veh/h		266			482			1644			886	
Approach Delay, s/veh		30.8			39.9			24.4			21.4	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	45.8	16.7	17.0	15.9	41.0	7.0	26.7
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	9.5	53.0	16.0	12.0	24.1	38.4	7.1	21.4
Max Q Clear Time (g_c+I1), s	5.0	32.0	11.1	12.5	10.6	17.2	2.8	7.1
Green Ext Time (p_c), s	0.1	8.8	0.6	0.0	0.7	4.4	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	26.4
HCM 7th LOS	C

SR 267 (GREEN STREET)/ACRE LANE & PROPOSED DEVELOPMENT ACCESS DRIVE

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

SR 267 & ACRE LANE - TMC

Tue May 21, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1189708, Location: 39.875959, -86.392414

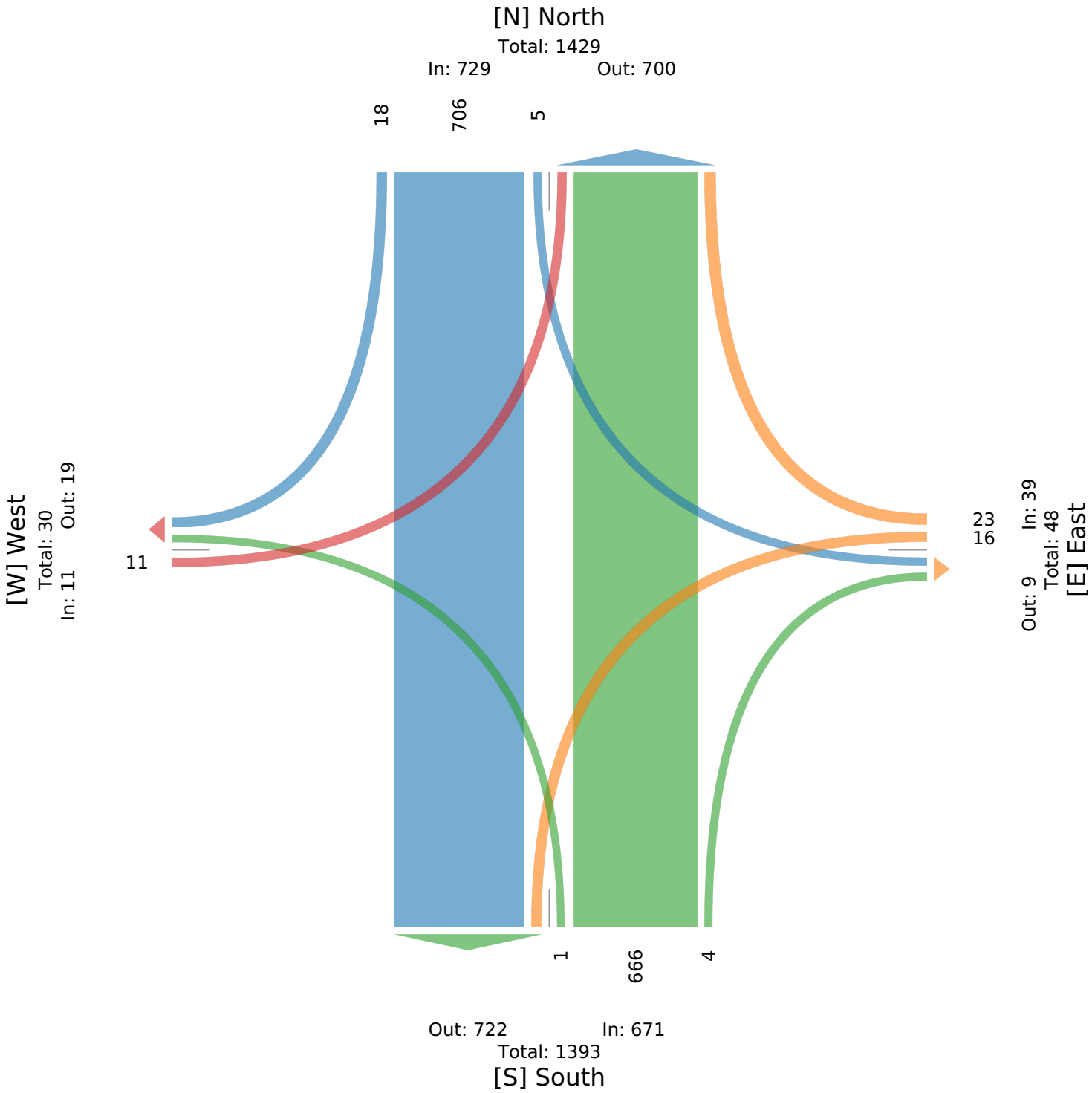
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg	South					North					West					East					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2024-05-21 7:15AM	0	150	1	0	**151**	1	197	2	0	**200**	2	0	0	0	**2**	6	0	4	0	**10**	**363**
7:30AM	0	186	2	0	**188**	1	164	5	0	**170**	4	0	0	0	**4**	2	0	8	0	**10**	**372**
7:45AM	1	166	0	0	**167**	1	195	8	0	**204**	3	0	0	0	**3**	4	0	9	0	**13**	**387**
8:00AM	0	164	1	0	**165**	2	150	3	0	**155**	2	0	0	0	**2**	4	0	2	0	**6**	**328**
Total	1	666	4	0	**671**	5	706	18	0	**729**	11	0	0	0	**11**	16	0	23	0	**39**	**1450**
% Approach	0.1%	99.3%	0.6%	0%	**-**	0.7%	96.8%	2.5%	0%	**-**	100%	0%	0%	0%	**-**	41.0%	0%	59.0%	0%	**-**	-
% Total	0.1%	45.9%	0.3%	0%	**46.3%**	0.3%	48.7%	1.2%	0%	**50.3%**	0.8%	0%	0%	0%	**0.8%**	1.1%	0%	1.6%	0%	**2.7%**	-
PHF	0.250	0.895	0.500	-	**0.892**	0.625	0.896	0.563	-	**0.893**	0.688	-	-	-	**0.688**	0.667	-	0.639	-	**0.750**	0.937
Lights and Motorcycles	1	638	3	0	**642**	5	678	18	0	**701**	11	0	0	0	**11**	16	0	23	0	**39**	1393
% Lights and Motorcycles	100%	95.8%	75.0%	0%	**95.7%**	100%	96.0%	100%	0%	**96.2%**	100%	0%	0%	0%	**100%**	100%	0%	100%	0%	**100%**	96.1%
Heavy	0	28	1	0	**29**	0	28	0	0	**28**	0	0	0	0	**0**	0	0	0	0	**0**	57
% Heavy	0%	4.2%	25.0%	0%	**4.3%**	0%	4.0%	0%	0%	**3.8%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	3.9%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & ACRE LANE - TMC
Tue May 21, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1189708, Location: 39.875959, -86.392414

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



SR 267 & ACRE LANE - TMC

Tue May 21, 2024
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1189708, Location: 39.875959, -86.392414

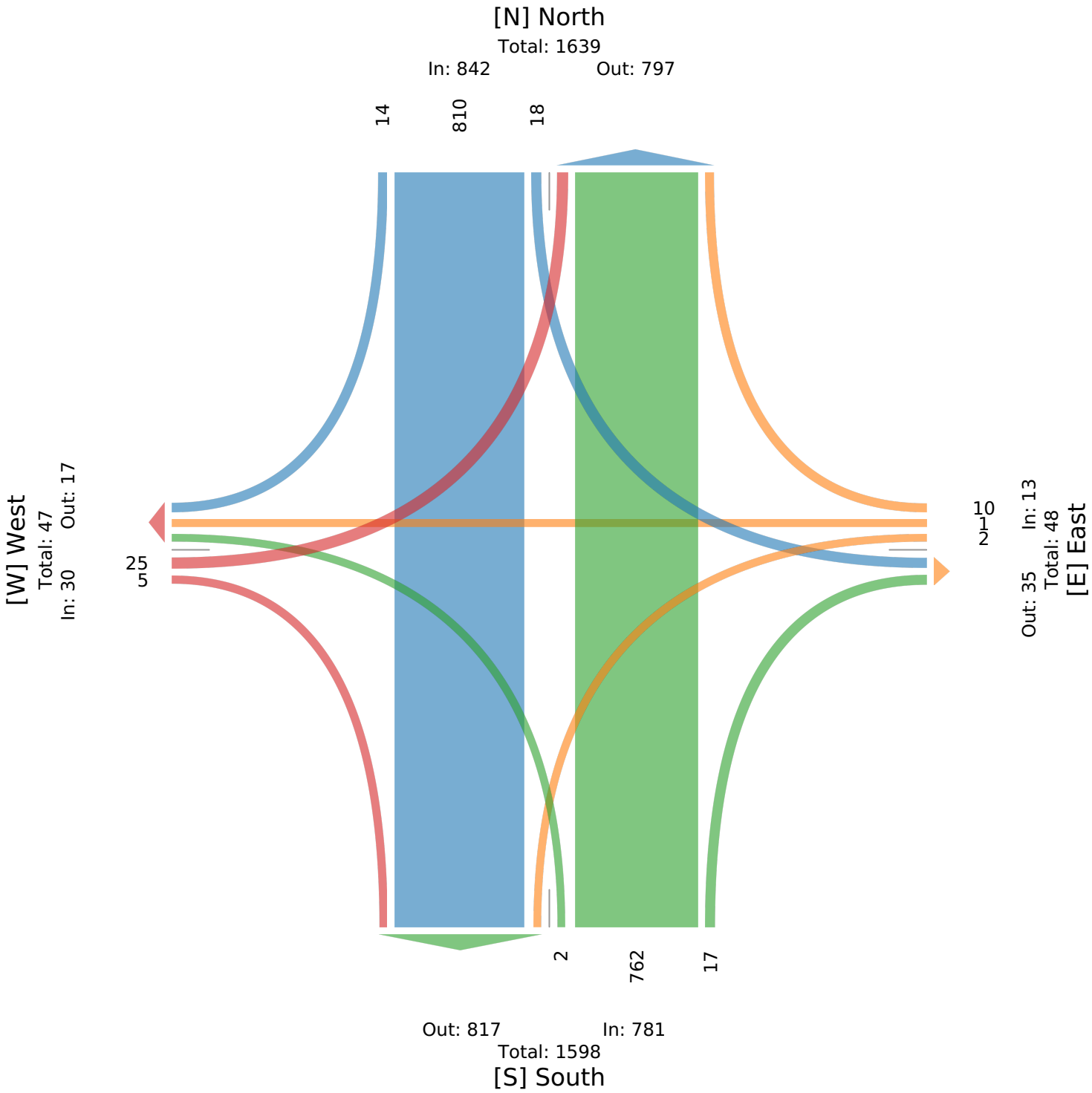
Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US

Leg / Direction	South Northbound					North Southbound					West Eastbound					East Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2024-05-21 4:15PM	0	179	5	0	**184**	3	204	2	0	**209**	8	0	1	0	**9**	1	0	1	0	**2**	**404**
4:30PM	1	197	2	0	**200**	7	198	4	0	**209**	4	0	0	0	**4**	1	0	4	0	**5**	**418**
4:45PM	1	199	6	0	**206**	1	204	6	0	**211**	6	0	2	0	**8**	0	1	4	0	**5**	**430**
5:00PM	0	187	4	0	**191**	7	204	2	0	**213**	7	0	2	0	**9**	0	0	1	0	**1**	**414**
Total	2	762	17	0	**781**	18	810	14	0	**842**	25	0	5	0	**30**	2	1	10	0	**13**	**1666**
% Approach	0.3%	97.6%	2.2%	0%	**-**	2.1%	96.2%	1.7%	0%	**-**	83.3%	0%	16.7%	0%	**-**	15.4%	7.7%	76.9%	0%	**-**	-
% Total	0.1%	45.7%	1.0%	0%	**46.9%**	1.1%	48.6%	0.8%	0%	**50.5%**	1.5%	0%	0.3%	0%	**1.8%**	0.1%	0.1%	0.6%	0%	**0.8%**	-
PHF	0.500	0.957	0.708	-	**0.948**	0.643	0.993	0.583	-	**0.988**	0.781	-	0.625	-	**0.833**	0.500	0.250	0.625	-	**0.650**	0.969
Lights and Motorcycles	2	745	17	0	**764**	17	788	14	0	**819**	25	0	5	0	**30**	2	1	10	0	**13**	1626
% Lights and Motorcycles	100%	97.8%	100%	0%	**97.8%**	94.4%	97.3%	100%	0%	**97.3%**	100%	0%	100%	0%	**100%**	100%	100%	100%	0%	**100%**	97.6%
Heavy	0	17	0	0	**17**	1	22	0	0	**23**	0	0	0	0	**0**	0	0	0	0	**0**	40
% Heavy	0%	2.2%	0%	0%	**2.2%**	5.6%	2.7%	0%	0%	**2.7%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	2.4%

*L: Left, R: Right, T: Thru, U: U-Turn

SR 267 & ACRE LANE - TMC
Tue May 21, 2024
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 1189708, Location: 39.875959, -86.392414

Provided by: A&F Engineering
8365 Keystone Crossing, Suite 201, Indianapolis, IN, 46240, US



Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	0	16	0	23	1	666	4	5	706	18
Future Vol, veh/h	11	0	0	16	0	23	1	666	4	5	706	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	0	4	0
Mvmt Flow	12	0	0	17	0	24	1	709	4	5	751	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1482	1486	761	1474	1494	711	770	0	0	713	0	0
Stage 1	771	771	-	713	713	-	-	-	-	-	-	-
Stage 2	711	715	-	762	781	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	104	126	409	106	124	437	853	-	-	896	-	-
Stage 1	396	412	-	426	439	-	-	-	-	-	-	-
Stage 2	427	438	-	401	408	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	98	125	409	105	123	437	853	-	-	896	-	-
Mov Cap-2 Maneuver	98	125	-	105	123	-	-	-	-	-	-	-
Stage 1	393	410	-	426	438	-	-	-	-	-	-	-
Stage 2	403	437	-	398	406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	46.71	29.15	0.01	0.06
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	853	-	-	98	-	190	896	-	-
HCM Lane V/C Ratio	0.001	-	-	0.12	-	0.218	0.006	-	-
HCM Control Delay (s/veh)	9.2	-	-	46.7	0	29.1	9	-	-
HCM Lane LOS	A	-	-	E	A	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0.8	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	5	2	1	10	2	762	17	18	810	14
Future Vol, veh/h	25	0	5	2	1	10	2	762	17	18	810	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	6	3	0
Mvmt Flow	26	0	5	2	1	10	2	786	18	19	835	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1670	1687	842	1671	1685	794	849	0	0	803	0	0
Stage 1	879	879	-	798	798	-	-	-	-	-	-	-
Stage 2	790	807	-	872	887	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.254	-	-
Pot Cap-1 Maneuver	77	95	367	77	95	391	797	-	-	803	-	-
Stage 1	345	368	-	382	401	-	-	-	-	-	-	-
Stage 2	386	397	-	348	365	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	73	92	367	74	93	391	797	-	-	803	-	-
Mov Cap-2 Maneuver	73	92	-	74	93	-	-	-	-	-	-	-
Stage 1	337	359	-	381	400	-	-	-	-	-	-	-
Stage 2	374	396	-	335	357	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	69.03	23.77	0.02	0.2
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	797	-	-	73	367	205	803	-	-
HCM Lane V/C Ratio	0.003	-	-	0.355	0.014	0.065	0.023	-	-
HCM Control Delay (s/veh)	9.5	-	-	79.8	14.9	23.8	9.6	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	0	16	0	23	2	700	5	6	742	19
Future Vol, veh/h	11	0	0	16	0	23	2	700	5	6	742	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	0	4	0
Mvmt Flow	12	0	0	17	0	24	2	745	5	6	789	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1561	1566	799	1554	1574	747	810	0	0	750	0	0
Stage 1	812	812	-	752	752	-	-	-	-	-	-	-
Stage 2	749	754	-	802	822	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	92	112	388	93	111	416	825	-	-	868	-	-
Stage 1	376	395	-	406	421	-	-	-	-	-	-	-
Stage 2	407	420	-	380	391	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	86	111	388	92	110	416	825	-	-	868	-	-
Mov Cap-2 Maneuver	86	111	-	92	110	-	-	-	-	-	-	-
Stage 1	373	392	-	405	420	-	-	-	-	-	-	-
Stage 2	382	419	-	378	388	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	53.53	32.8	0.03	0.07
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	825	-	-	86	-	170	868	-	-
HCM Lane V/C Ratio	0.003	-	-	0.137	-	0.243	0.007	-	-
HCM Control Delay (s/veh)	9.4	-	-	53.5	0	32.8	9.2	-	-
HCM Lane LOS	A	-	-	F	A	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0.9	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	5	2	1	10	3	801	18	19	851	15
Future Vol, veh/h	25	0	5	2	1	10	3	801	18	19	851	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	6	3	0
Mvmt Flow	26	0	5	2	1	10	3	826	19	20	877	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1757	1775	885	1758	1773	835	893	0	0	844	0	0
Stage 1	924	924	-	841	841	-	-	-	-	-	-	-
Stage 2	832	851	-	916	932	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.254	-	-
Pot Cap-1 Maneuver	67	84	347	67	84	371	768	-	-	775	-	-
Stage 1	326	351	-	362	383	-	-	-	-	-	-	-
Stage 2	366	379	-	329	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	63	81	347	64	81	371	768	-	-	775	-	-
Mov Cap-2 Maneuver	63	81	-	64	81	-	-	-	-	-	-	-
Stage 1	317	342	-	361	382	-	-	-	-	-	-	-
Stage 2	354	378	-	316	339	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	84.3	26.04	0.04	0.21
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	768	-	-	63	347	184	775	-	-
HCM Lane V/C Ratio	0.004	-	-	0.412	0.015	0.073	0.025	-	-
HCM Control Delay (s/veh)	9.7	-	-	98.1	15.5	26	9.8	-	-
HCM Lane LOS	A	-	-	F	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	0	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	10	16	0	23	5	711	5	6	773	21
Future Vol, veh/h	17	0	10	16	0	23	5	711	5	6	773	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	0	4	0
Mvmt Flow	18	0	11	17	0	24	5	756	5	6	822	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1613	1619	834	1605	1627	759	845	0	0	762	0	0
Stage 1	846	846	-	770	770	-	-	-	-	-	-	-
Stage 2	767	772	-	835	857	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	85	104	371	86	103	410	801	-	-	860	-	-
Stage 1	360	381	-	396	413	-	-	-	-	-	-	-
Stage 2	398	412	-	365	377	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	78	103	371	82	102	410	801	-	-	860	-	-
Mov Cap-2 Maneuver	78	103	-	82	102	-	-	-	-	-	-	-
Stage 1	357	378	-	394	410	-	-	-	-	-	-	-
Stage 2	372	409	-	352	374	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	45.94	36.39	0.07	0.07
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	801	-	-	78	371	155	860	-	-
HCM Lane V/C Ratio	0.007	-	-	0.231	0.029	0.267	0.007	-	-
HCM Control Delay (s/veh)	9.5	-	-	64.2	15	36.4	9.2	-	-
HCM Lane LOS	A	-	-	F	B	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.1	1	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	0	11	2	1	10	14	836	18	19	871	21
Future Vol, veh/h	29	0	11	2	1	10	14	836	18	19	871	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	6	3	0
Mvmt Flow	30	0	11	2	1	10	14	862	19	20	898	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1839	1857	909	1837	1859	871	920	0	0	880	0	0
Stage 1	948	948	-	900	900	-	-	-	-	-	-	-
Stage 2	891	909	-	937	959	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.254	-	-
Pot Cap-1 Maneuver	59	74	336	59	74	353	751	-	-	751	-	-
Stage 1	316	342	-	336	360	-	-	-	-	-	-	-
Stage 2	340	356	-	320	338	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	71	336	54	71	353	751	-	-	751	-	-
Mov Cap-2 Maneuver	54	71	-	54	71	-	-	-	-	-	-	-
Stage 1	308	333	-	329	353	-	-	-	-	-	-	-
Stage 2	322	350	-	301	329	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	102.9	28.87	0.16	0.21
HCM LOS	F	D		

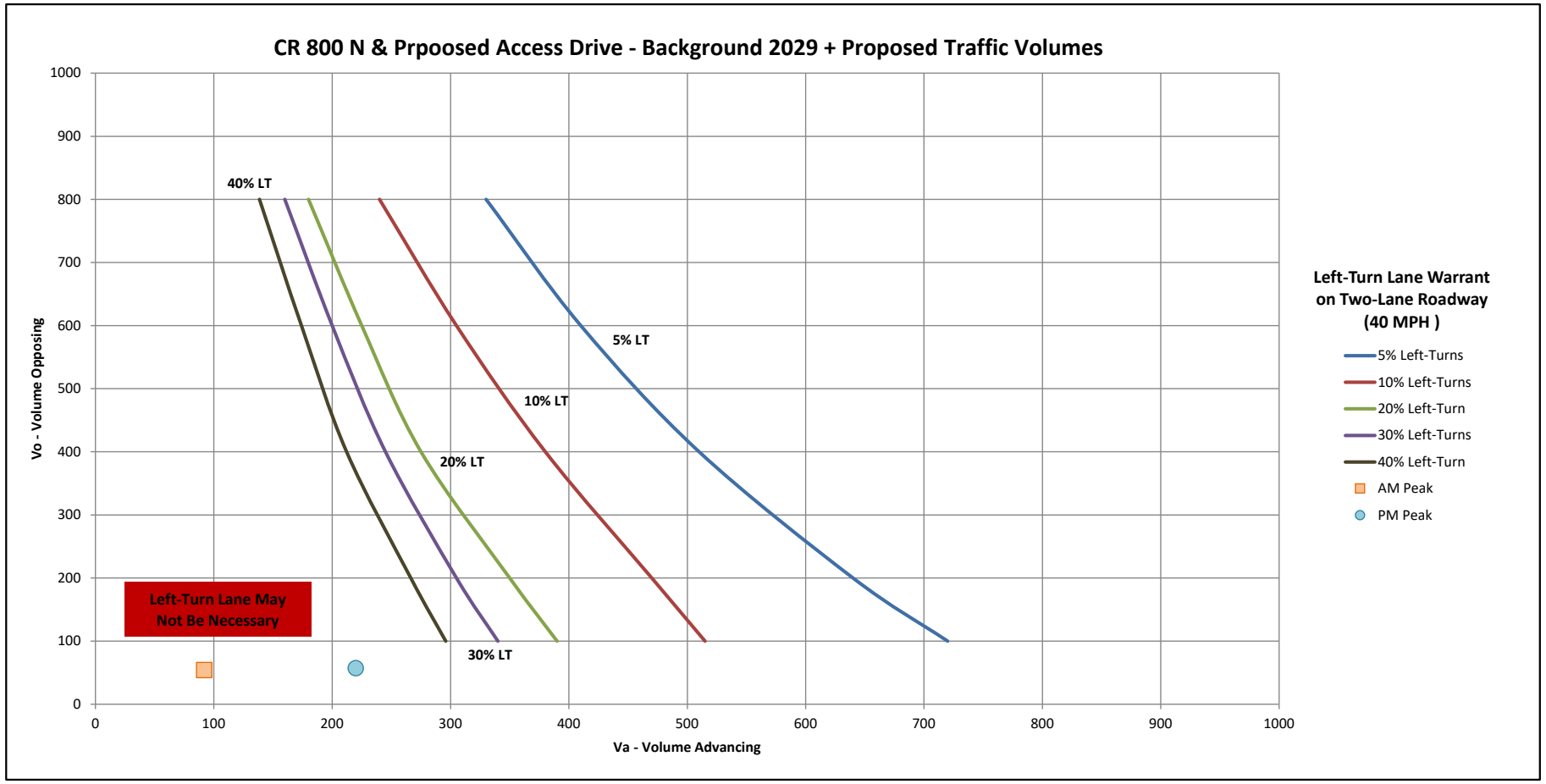
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	751	-	-	54	336	164	751	-	-
HCM Lane V/C Ratio	0.019	-	-	0.557	0.034	0.082	0.026	-	-
HCM Control Delay (s/veh)	9.9	-	-	135.8	16.1	28.9	9.9	-	-
HCM Lane LOS	A	-	-	F	C	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.2	0.1	0.3	0.1	-	-

CR 800 N & PROPOSED DEVELOPMENT ACCESS DRIVE

TURN LANE ANALYSIS
CAPACITY ANALYSIS

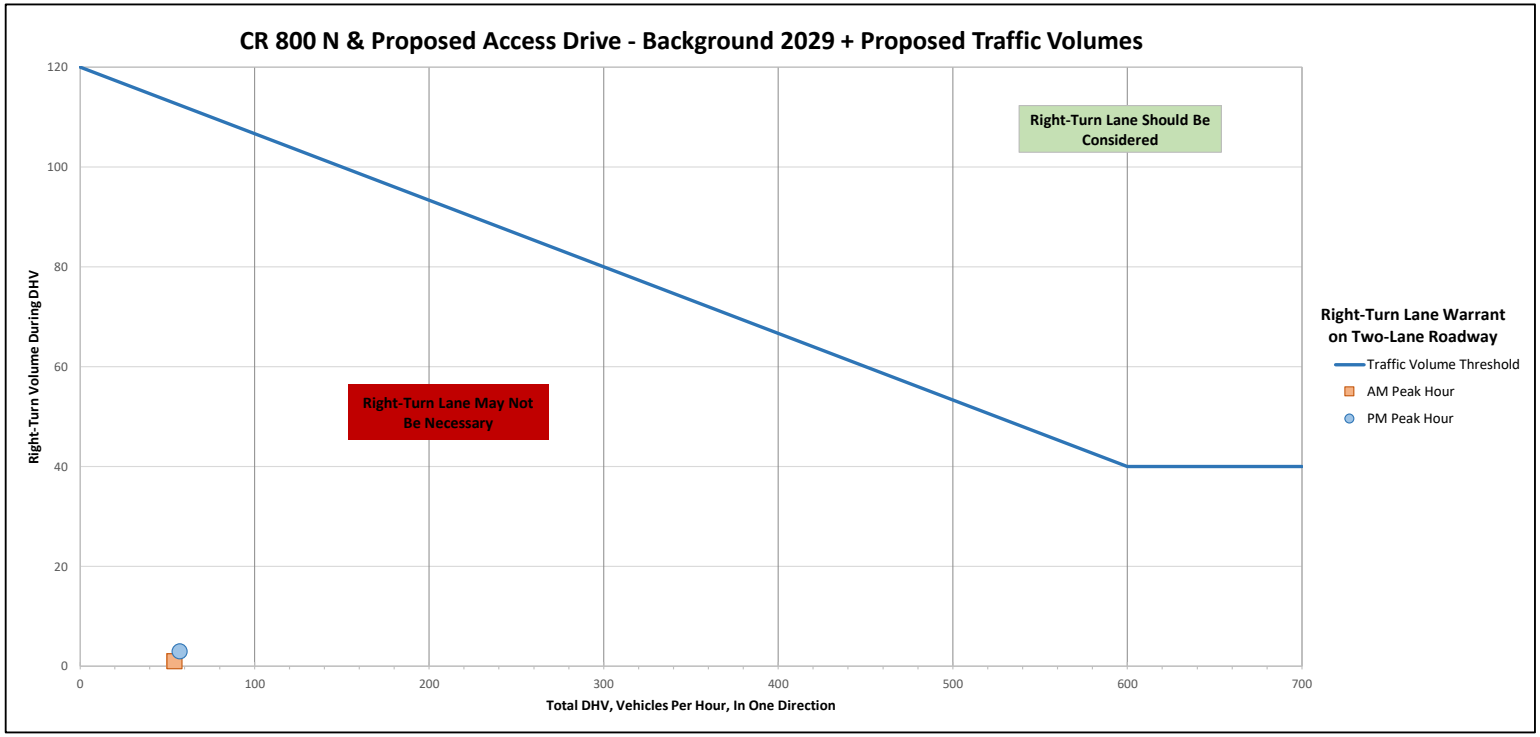
Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
40	800	330	240	207	180	168	160	146	139
	600	410	305	260	225	211	200	184	174
	400	510	380	320	275	258	245	224	212
	200	640	470	401	350	324	305	282	266
	100	720	515	446	390	360	340	313	296

AM Peak Hour Traffic Volume Input		PM Peak Hour Traffic Volume Input	
Advancing Volume (Va)	92	Advancing Volume (Va)	220
Opposing Volume (Vo)	54	Opposing Volume (Vo)	57
Left-Turn Volume	16	Left-Turn Volume	52
% Left-Turn	17%	% Left-Turn	24%
WARRANTED?	NO	WARRANTED?	NO



Total Approach Volume	Right-Turn Volume
0	120
600	40
700	40

AM Peak Hour Traffic Volume Input		PM Peak Hour Traffic Volume Input	
Total Approach Volume	54	Total Approach Volume	57
Right-Turn Volume	1	Right-Turn Volume	3
WARRANTED?	NO	WARRANTED?	NO



NOTE : For highways with a design speed below 80 km/h (50 mph) with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	1	16	76	3	46
Future Vol, veh/h	53	1	16	76	3	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	1	17	83	3	50

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	59	0	176	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1545	-	814	1008
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	908	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1545	-	805	1008
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	897	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.28	8.83
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	992	-	-	313	-
HCM Lane V/C Ratio	0.054	-	-	0.011	-
HCM Control Delay (s/veh)	8.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	3	52	168	2	30
Future Vol, veh/h	54	3	52	168	2	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	3	57	183	2	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	62	0	356	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1541	-	642	1005
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1541	-	616	1005
Mov Cap-2 Maneuver	-	-	-	-	616	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	724	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.76	8.86
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	967	-	-	425	-
HCM Lane V/C Ratio	0.036	-	-	0.037	-
HCM Control Delay (s/veh)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Advisory Plan Commission
TECHNICAL REVIEW COMMITTEE

TOWN OF Brownsburg
61 North Green Street | Brownsburg, Indiana 46112
Tel 317.852.1128 | Fax 317.852.1134

Project Name: Hawk's Landing Primary Plat
Record Number: PCPP-25-3
TECH Meeting Date: September 18, 2025

The following Technical Review Committee ("TECH") members provided comments for the project as detailed below:

Development Services
- ☐
- ☒ Lauren Bouslog, Planner I
- ☐ Steve Fletcher, Building Commissioner/Director
- ☐ Frank Wise, Senior Building Inspector

Town Administration
- ☐ Debbie Cook, Town Manager
- ☒ Aaron Kaytar, Capital Projects & Procurement Manager
- ☐ Ethan Pierce, Economic Development Manager

Water Department
- ☒ Frank Monts, Superintendent

Wastewater Department
- ☒ Kathy Dillon, Water Utilities Director
- ☐

Street Department
- ☐ Aaron Love, Superintendent
- ☐ Matt Griner, Asst. Superintendent

Parks Department
- ☐ Amber Lane, Director
- ☐

Fire Territory
- ☐ Paul Hudson, Fire Marshal
- ☐ Jeff Schlageter, Deputy Fire Marshal

Police Department
- ☐ Joe Grimes, Chief
- ☐ Pat Bullock, Captain
- ☐ Bryan Fultz, Major

External Agencies
- ☐ Regan Huff, BCSC
- ☐ Dave Gaston, P.S., Hend. Co. Surveyor
- ☐ John Ayers, Hendricks Co. Engineer
- ☐ Mary Atkins, Wessler Engineering
- ☐ Angie DeKemper, CountryMark
- ☐ Gerry Jones, Vectren

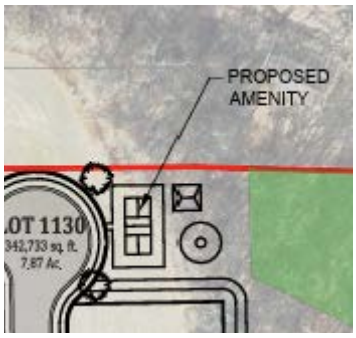
1) DEVELOPMENT SERVICES

a) A land surveyor, not an engineer needs to stamp the plat.

Primary Plat Requirements.

1. Preparation: The primary plat shall be prepared by a land surveyor licensed by the State of Indiana at a scale of no more than 1" = 100' and the sheets must be numbered in sequence if more than one sheet.

b) Label what the proposed amenities are on the legend or plat.

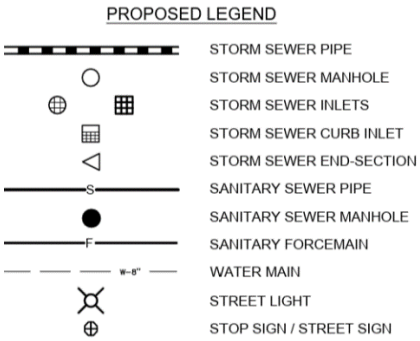


c) There need to be calculations for required and proposed vegetation on the landscape plan.

d) The tree preservation area is currently just being shown with a pale green outline. Adding a cross hatch would make it easier to see.

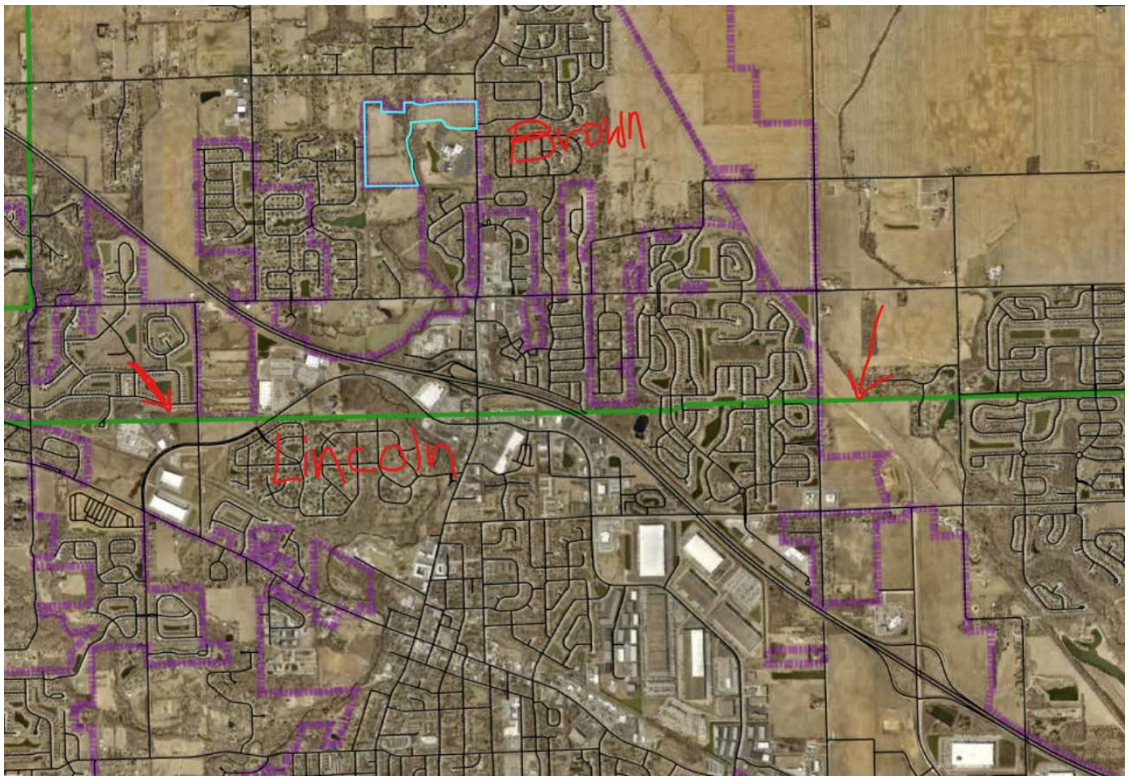
e) Add names to all new streets and write if the streets are public or private.

f) Mark the size of existing water, storm water, and sanitary sewer systems.



D.E.	DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
T.W.U.E.	WATER EASEMENT
L.B.E.	LANDSCAPE BUFFER YARD EASEMENT
IRR.	IRREGULAR
R/W	RIGHT OF WAY
B.S.L.	BUILDING SETBACK LINE
L.E.	LANDSCAPE EASEMENT
sq. ft.	SQUARE FEET

g) The Letter of Intent/ Project Info has Lincoln being the township, it needs changed to Brown Township. It changes at the green horizon line shown below.



2) BUILDING

a) None

3) CAPITAL PROJECTS

a) Depending on traffic, additional improvements may need to be done to N. Green St (SR 267).

4) ECONOMIC DEVELOPMENT

a) None

5) WATER

a) On the cover page and all future plans, the Water Dept. contact should be changed to Frank Monts.

b) I know this is just a primary plat and the water mains are just penciled in for now, but when construction plans are being drawn up, the water main coming in from SR 267 on Street "I" and around Street "G", across the creek and along Street "A" back out to CR 800 N all need to be 12" All other mains shall be 8". Please have valves on all sides of any tees, a valve on each side of the creek crossing, and hydrants spaced at 300' with hydrant locations at culdesacs per Town Standards.

c) As a reminder, the booster station on SR 267, at the SE corner of Connection Pointe Church, must be upgraded at the developer's cost before Hawk's Landing can be served.

6) WASTEWATER

a) The routing of the sanitary force main has changed significantly. The original layout provided accessibility. The updated layout has the force main placed in backyards and near the storm pond. How is safe accessibility going to be provided?

b) Please provide verification that the development cannot be served completely by gravity. Long-term operation of maintenance of a lift station when the area can be served by gravity is not cost effective for the community.

c) A reminder that downstream pump upgrades (Maple Lift Station) are needing completed at the time of sanitary line installation. The lift station is currently at capacity.

7) STREET/PUBLIC WORKS

a) None

8) PARKS

a) None

9) FIRE TERRITORY

a) None

10) POLICE

a) None

11) STORMWATER

a) See attached

12) BROWNSBURG COMMUNITY SCHOOL CORPORATION

a) None

13) **HENDRICKS COUNTY SURVEYOR**

a) None

14) **HENDRICKS COUNTY ENGINEER**

a) None

15) **COUNTRYMARK**

a) None

16) **VECTREN**

a) None

Please provide a written response to this report addressing each issue and, if necessary, indicate where on the revised plans the modification has been made.

TOWN OF BROWNSBURG STORMWATER/DRAINAGE PLAN REVIEW

CO Comment Originator
CR Comment Respondee

NAME OF PROJECT: Hawk's Landing
DESIGN PACKAGE: Primary Plat
DESIGNER: Weihe Engineers

		Wessler - Reviewer to complete		Designer to complete	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
	General	MKA	We have no stormwater review comments for the Primary Plat. The following comments are for information and planning purposes when preparing development plans. Note that Chapter 151 was updated as of April 25, 2024.		
1	Storm sewer design	MKA	For the future development plan submittal, refer to Chapter 151.21 D. for storm sewer design standards and drainage report requirements.		
2	Flood routing	MKA	For development plans, evaluate stormwater ponding and overflow path routing for Ch. 151.21 I.		
3	Drainage Report	MKA	Refer to Chapter 151.20.B (2)(f) for drainage report guidelines. Include runoff, storm sewer sizing calculations when preparing the drainage report.		
4	Post-construction stormwater quality	MKA	Post-construction stormwater quality BMPs must be in accordance with Chapter 151.23 of the Brownsburg ordinances. An upstream BMP is required for detention ponds/underground. An Operation and Maintenance Manual will be required and easements for BMPs.		
5	County approval	MKA	Coordinate with the Hendricks County Surveyor to determine if Drainage Board approval is necessary.		
6	Details and specifications	MKA	Refer to the Town's Standard Details and Specifications when developing Construction Plans.		
7	Stormwater detention	MKA	Detention design requirements follow Brownsburg's ordinance, Chapter 151.21 and Detail EW-04 "Detention/Retention Ponds" in the Town's Standard Details and Specifications. Ordinance revised in April 2024.		
8	Adequate outlet	MKA	Ensure that there is an adequate outlet for drainage of stormwater.		
9	Erosion control and SWPPP	MKA	A SWPPP and Construction Stormwater General Permit will be required for the development plan submittal. Refer also to Chapter 151.22 for SWPPP requirements.		

These comments should not be construed as a comprehensive list of comments, and the reviewer may make additional comments based on subsequent submittals

MEMORANDUM OF UNDERSTANDING
HAWK'S CREEK

This Memorandum of Understanding ("**Agreement**") is made and entered into on this day of July 8, 2025 ("**Effective Date**"), by and between **Weekley Homes, LLC**, a Delaware limited liability company, or its assigns ("**Developer**"), and the **Board of Commissioners of Hendricks County, Indiana** ("**Commissioners**"). Developer and Commissioners are sometimes referred to as the "**Parties**".

WITNESSETH:

WHEREAS, Developer desires to develop a residential development consisting of not more than 117 single-family homes (western section) in Brown Township, Hendricks County, Indiana, known as Hawk's Creek (the "**Development**");

WHEREAS, Developer intends to construct and install an access drive for the Development along County Road 800 North (the "**Access Drive**");

WHEREAS, Developer has obtained a Traffic Impact Study, prepared by A&F Engineering Co., LLC and dated July 2024 (the "**Traffic Study**") for the Development;

WHEREAS, the Traffic Study finds, among other things, that all approaches to the Access Drive will operate at acceptable levels of service during the AM and PM peak hours with the following intersection conditions: (i) construction of the Access Drive with one inbound and one outbound lane, and (ii) the intersection should be stop-controlled with the Access Drive stopping for County Road 800 North;

WHEREAS, the Development is located entirely within the Town Brownsburg;

WHEREAS, since the county road provides ingress and egress to the Development a driveway permit is required to be issued by the County;

WHEREAS, the Commissioners believe that additional right-of-way and road improvements will be needed in the future along County Road 800 North, including without limitation acceleration and deceleration lanes and passing blisters; and

WHEREAS, Developer has agreed to contribute funds sufficient to pay a portion of the cost of such right-of-way and road improvements to County Road 800 North;

NOW THEREFORE, the Parties agree as follows:

AGREEMENT

1. Incorporation. The Recitals above are incorporated herein by reference.

2. Developer Obligations. Developer agrees to:

a. At such time that Developer prepares construction plans for the Development, Developer shall prepare construction plans for the road improvements shown on the attached Exhibit A (the "**Road Improvements**").

b. At such time that Developer prepares construction plans for the Development, Developer shall have estimates prepared for the cost of the Road Improvements, which estimates shall include the cost right-of-way acquisition, acceleration lanes, deceleration lanes, passing blister, utility relocation, and drainage improvements, in the area depicted on Exhibit A (the "**Road Improvements Estimate**").

c. At such time that Developer obtains a land disturbance permit for the Development, Developer shall pay the amount of the Road Improvements Estimate to Commissioners.

3. Commissioners' Obligations. Commissioners agree to:

a. Construct the Road Improvements at such time that Hendricks County makes improvements to County Road 800 North adjacent to and near the Access Drive.

4. Applicable Laws. This Agreement shall be subject to, governed by, and construed under the laws of State of Indiana.

5. Severability. The illegality, invalidity or unenforceability under law of any covenant, restriction, condition or other provision of this Agreement shall not impair or affect in any manner the validity, enforceability or effect of the remaining provisions of this Agreement.

6. Notice. All notices, requests or other communications hereunder shall be effective upon receipt, shall be in writing and shall be delivered in person or by first class or certified mail, postage prepaid, by overnight courier service or by electronic mail to the parties at the following addresses or at such other address as either party may hereafter furnish to the other in accordance herewith:

If to Developer:

Weekley Homes, LLC
9310 N. Meridian Street
Indianapolis, Indiana 46260
Attn: Ed Freeman, Senior Land Acquisition Manager
EFreeman@dwhomes.com

If to Commissioners:

Hendricks County Board of Commissioners
Hendricks County Government Center
355 S. Washington Street, #100
Danville, Indiana 46122
Attn: Board President

With a copy to:

Gregory E. Steuerwald
Steuerwald, Witham & Youngs, LLP
106 N. Washington Street
P.O. Box 503
Danville, Indiana 46122
Email: gseuerwald@swylawyers.com

7. Modification. This Agreement may not be modified or amended, except pursuant to a written agreement in recordable form executed by each of the parties hereto.

8. Authority. Each person signing this Agreement on behalf of a party represents that he/she is duly authorized to do so, and that when executed, this Agreement shall be the duly executed, valid and binding agreement of such party.

9. Entire Agreement. The Parties agree that this Agreement represents the entire and integrated agreement between the Parties. It supersedes all prior and contemporaneous communications, representations, whether written or oral, relating to the subject matter of this Agreement. This Agreement may be modified only by written amendments signed by the Parties hereto.

[SIGNATURES ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, this Agreement has been duly executed by the parties:

"Developer"

Weekley Homes, LLC, a Delaware limited liability company

By: _____

Name: John Burchfield

Title: VP & General Counsel

Dated: July 25, 2025

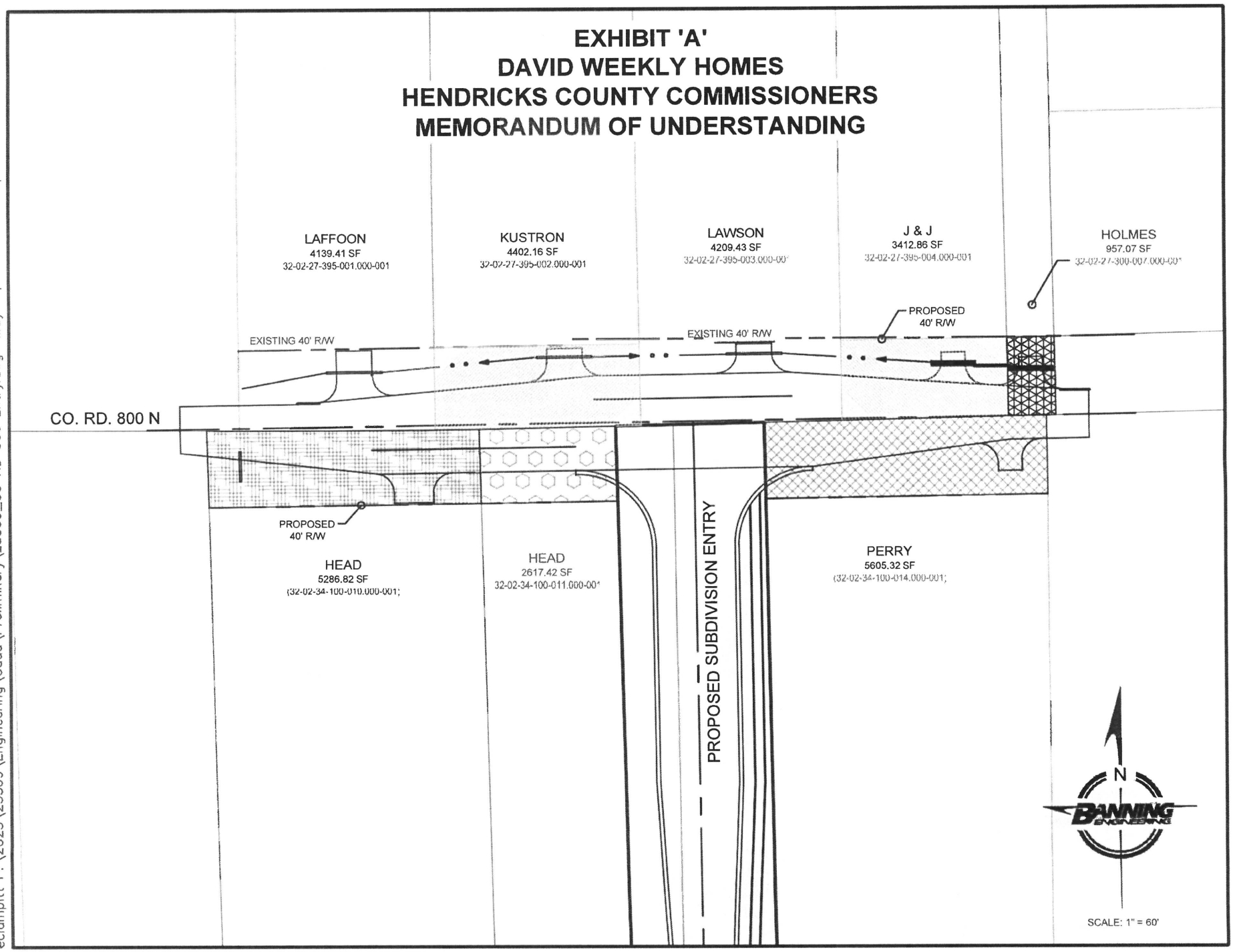
"Commissioners"

_____

Dennis W. Dawes, President

Dated: July 23, 2025

EXHIBIT 'A'
DAVID WEEKLY HOMES
HENDRICKS COUNTY COMMISSIONERS
MEMORANDUM OF UNDERSTANDING



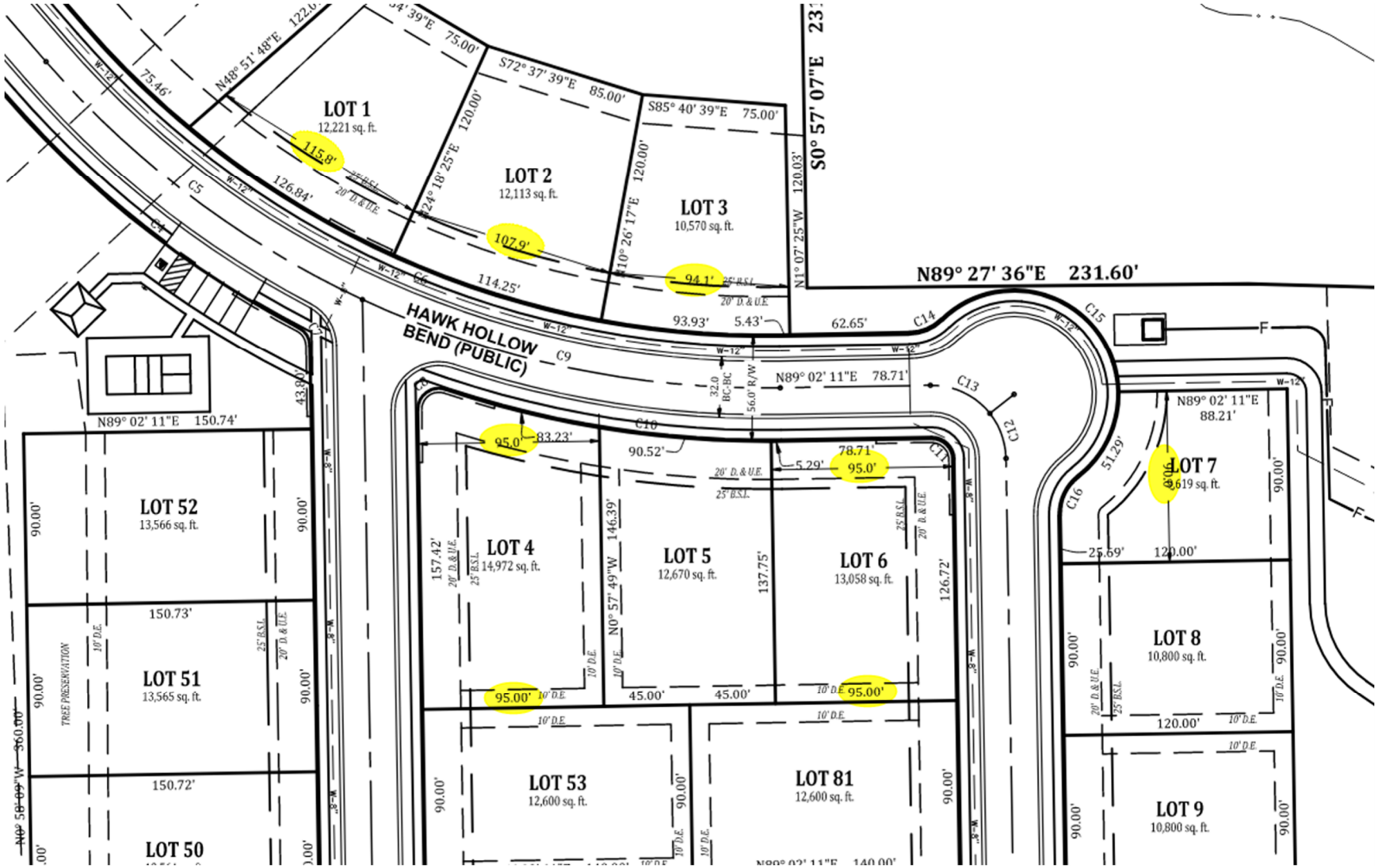
eclampitt P:\2023\23369\Engineering\Cadd\Preliminary\23369_CO RD 800 Entry.dwg May 12, 2025 - 12:00pm

Town of Brownsburg Unified Development Ordinance:

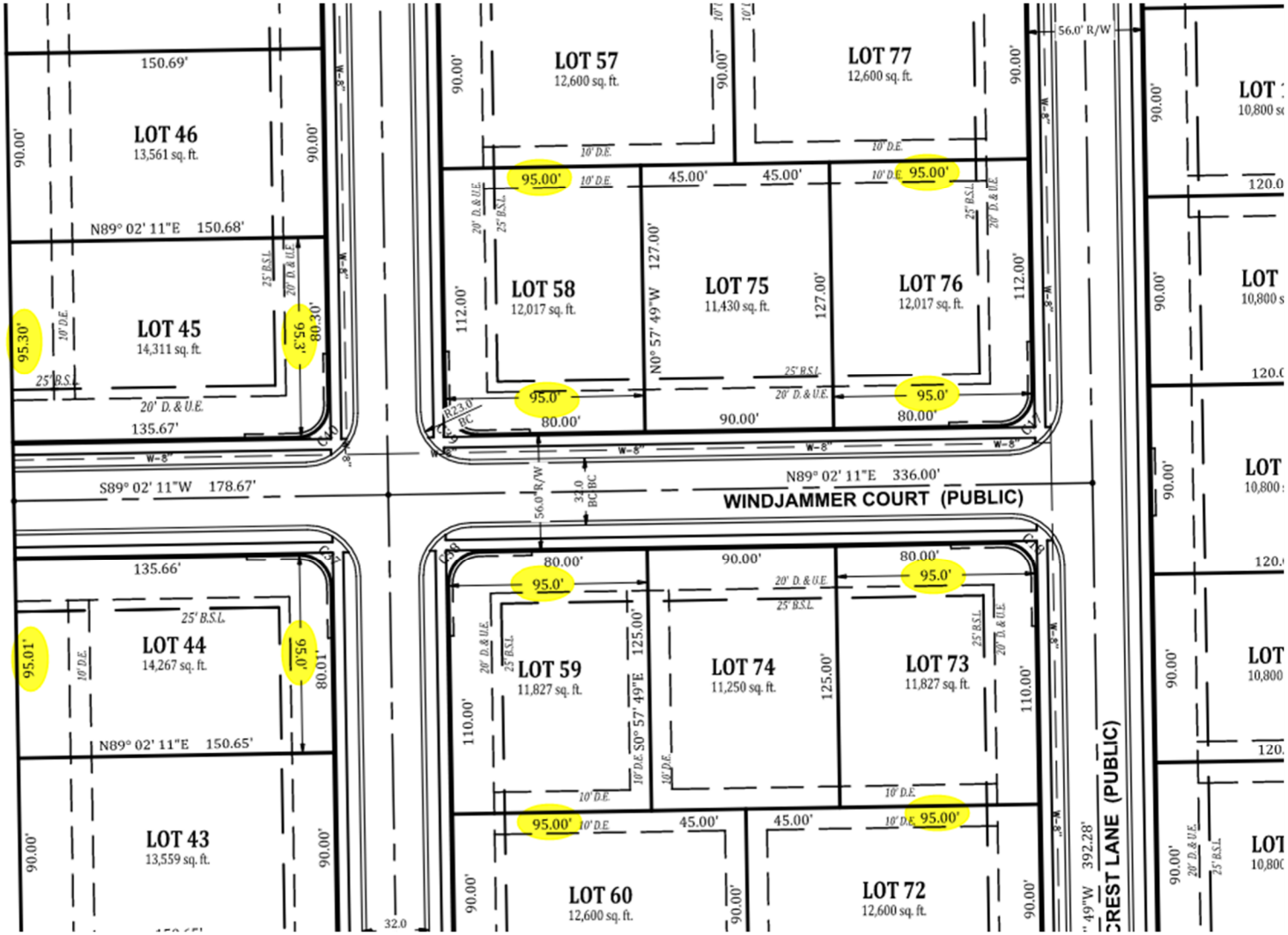
<u>Lot Line, Front</u>: The line marking the boundary between the lot and each of the abutting streets.

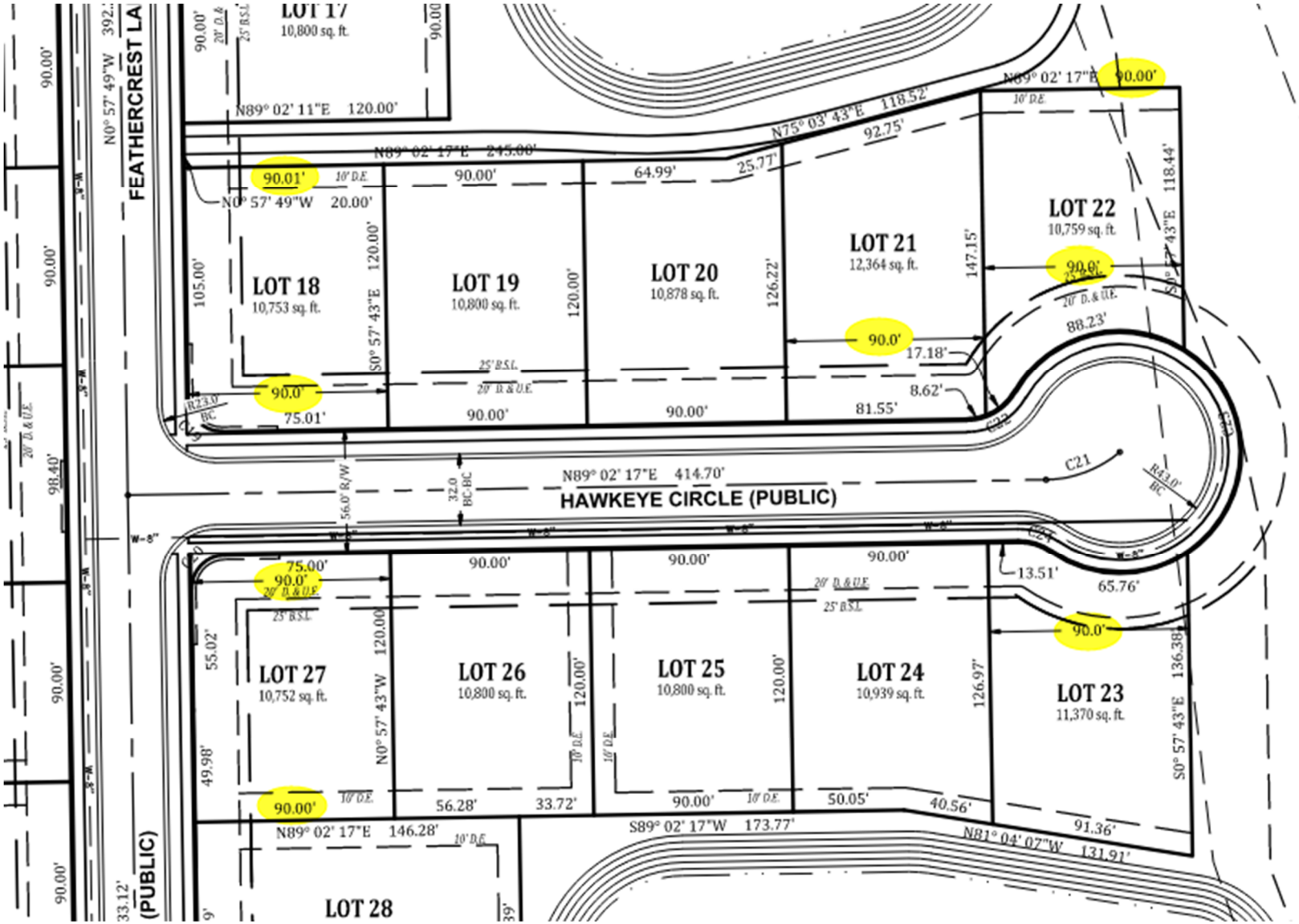
<u>Lot Width</u>: The distance between the side lot lines as measured along the front lot line.
Cul-de-sac and irregularly shaped lots measure their front lot widths along the front yard setback line from one side lot line to the other.

<u>David Weekley Homes Primary Plat</u>

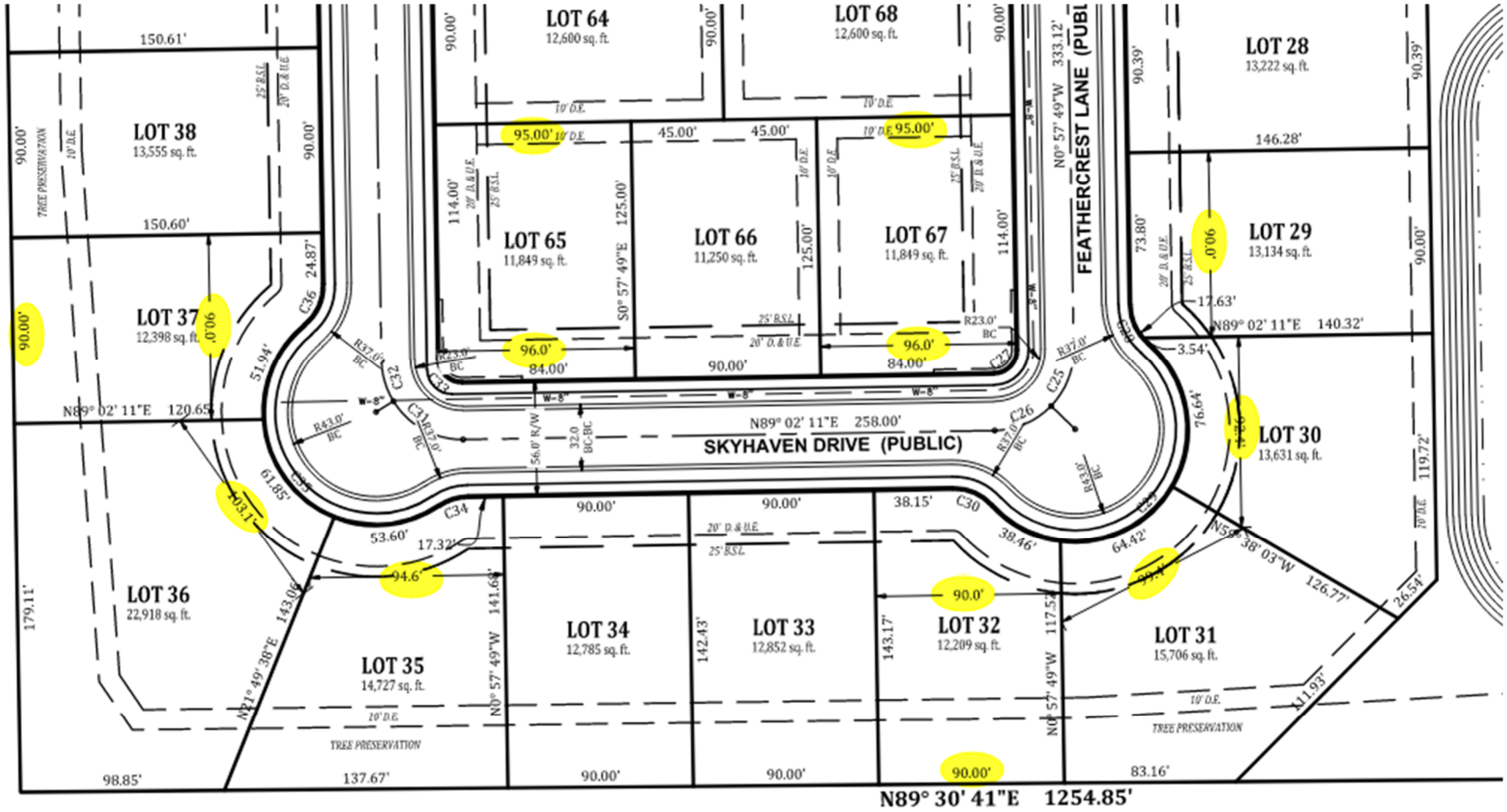


NDJAMMER CT.

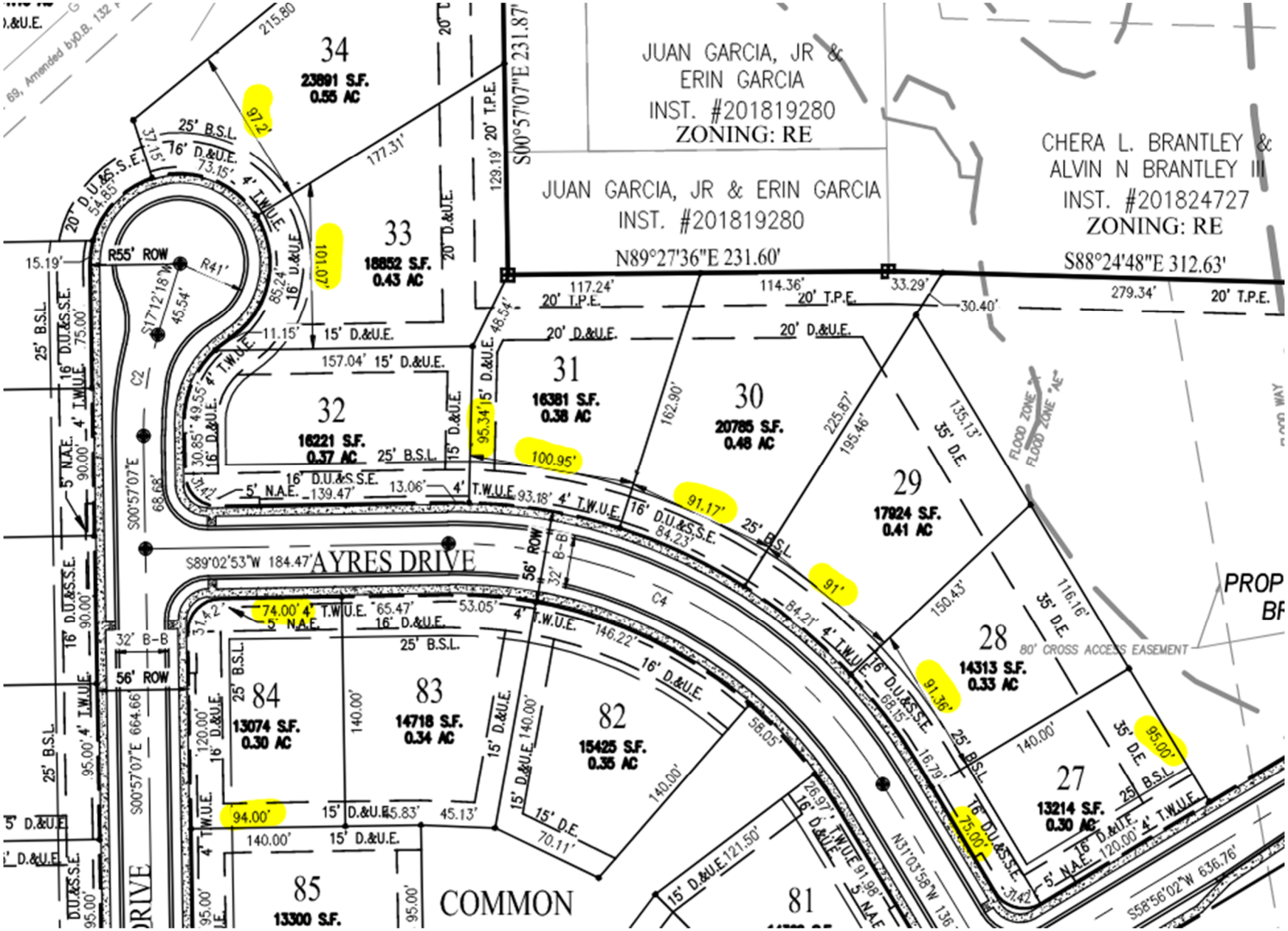

LOT 46
13,561 sq. ft.
150.69'
90.00'
N89° 02' 11"E 150.68'
LOT 45
14,311 sq. ft.
95.30'
95.3'
80.30'
135.67'
LOT 57
12,600 sq. ft.
LOT 77
12,600 sq. ft.
LOT 58
12,017 sq. ft.
LOT 75
11,430 sq. ft.
LOT 76
12,017 sq. ft.
N0° 57' 49"W 127.00'
112.00'
45.00'
80.00'
56.0' R/W
S89° 02' 11"W 178.67'
N89° 02' 11"E 336.00'
WINDJAMMER COURT (PUBLIC)
LOT 44
14,267 sq. ft.
95.01'
95.0'
80.01'
135.66'
N89° 02' 11"E 150.65'
LOT 43
13,559 sq. ft.
LOT 59
11,827 sq. ft.
LOT 74
11,250 sq. ft.
LOT 73
11,827 sq. ft.
S0° 57' 49"E 125.00'
110.00'
LOT 60
12,600 sq. ft.
LOT 72
12,600 sq. ft.
CREST LANE (PUBLIC)

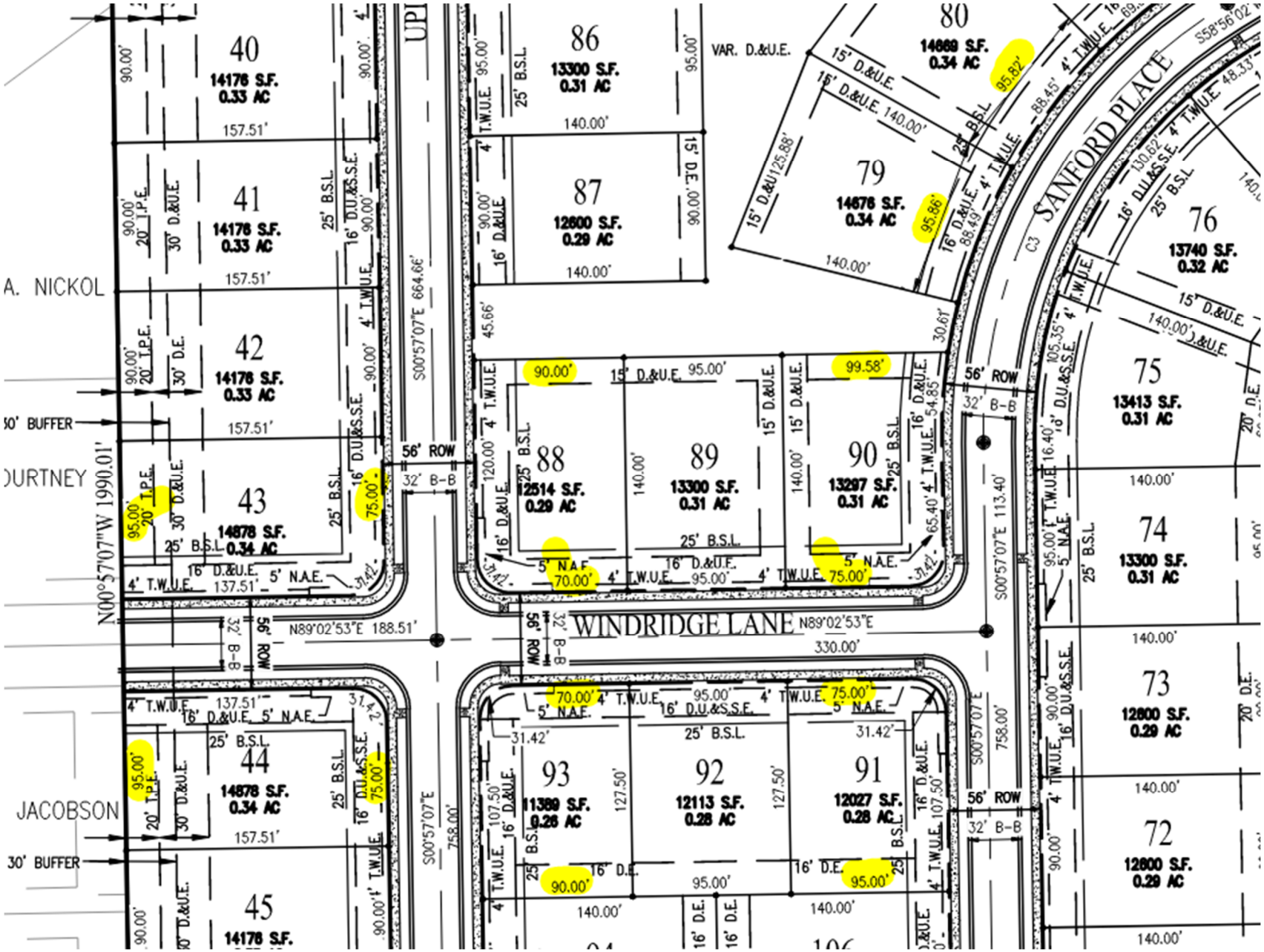


LOT 17
10,800 sq. ft.
N89° 02' 11"E 120.00'
N89° 02' 17"E 245.00'
N75° 03' 43"E 118.52'
N89° 02' 17"E
90.00'
92.75'
25.77'
64.99'
90.00'
90.01'
N0° 57' 49"W 20.00'
FEATHERCREST LA
N0° 57' 49"W
LOT 18
10,753 sq. ft.
LOT 19
10,800 sq. ft.
LOT 20
10,878 sq. ft.
LOT 21
12,364 sq. ft.
LOT 22
10,759 sq. ft.
105.00'
120.00'
126.22'
147.15'
118.44'
S0° 57' 43"E
90.0'
88.23'
17.18'
8.62'
81.55'
75.01'
90.00'
N89° 02' 17"E 414.70'
HAWKEYE CIRCLE (PUBLIC)
C21
C22
C24
13.51'
65.76'
75.00'
90.0'
LOT 27
10,752 sq. ft.
LOT 26
10,800 sq. ft.
LOT 25
10,800 sq. ft.
LOT 24
10,939 sq. ft.
LOT 23
11,370 sq. ft.
55.02'
49.98'
N0° 57' 43"W
126.97'
136.38'
S0° 57' 43"E
56.28'
33.72'
50.05'
40.56'
91.36'
N89° 02' 17"E 146.28'
S89° 02' 17"W 173.77'
N81° 04' 07"W 131.91'
LOT 28
(PUBLIC)
33.12'
98.40'

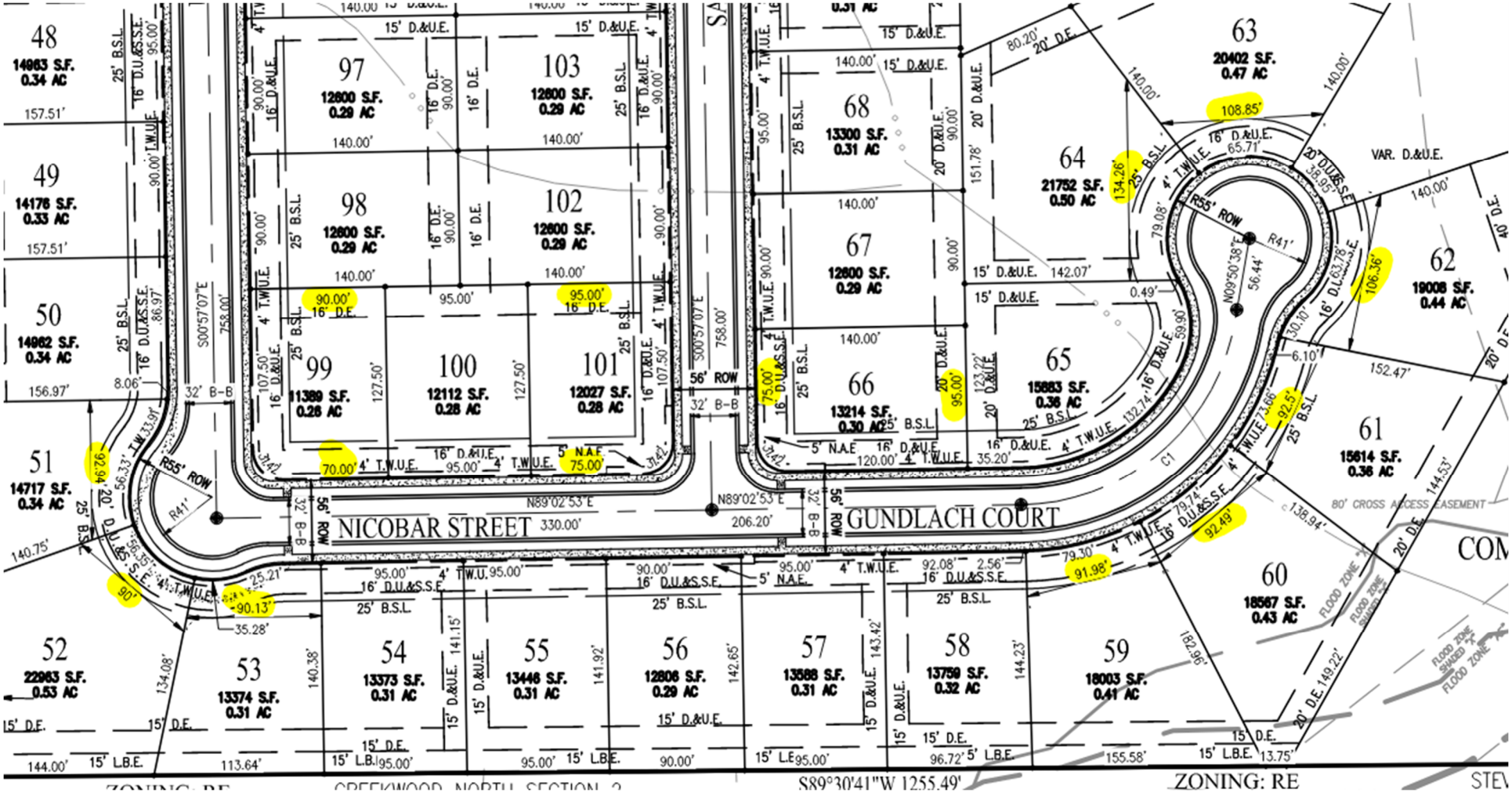

LOT 64
12,600 sq. ft.
LOT 68
12,600 sq. ft.
LOT 28
13,222 sq. ft.
LOT 38
13,555 sq. ft.
LOT 65
11,849 sq. ft.
LOT 66
11,250 sq. ft.
LOT 67
11,849 sq. ft.
LOT 29
13,134 sq. ft.
LOT 37
12,398 sq. ft.
FEATHERCREST LANE (PUBL
SKYHAVEN DRIVE (PUBLIC)
N89° 02' 11"E 258.00'
LOT 30
13,631 sq. ft.
LOT 36
22,918 sq. ft.
LOT 35
14,727 sq. ft.
LOT 34
12,785 sq. ft.
LOT 33
12,852 sq. ft.
LOT 32
12,209 sq. ft.
LOT 31
15,706 sq. ft.
TREE PRESERVATION
N89° 30' 41"E 1254.85'

Approved Lennar Primary Plat





40
14176 S.F.
0.33 AC
41
14176 S.F.
0.33 AC
42
14176 S.F.
0.33 AC
43
14878 S.F.
0.34 AC
44
14878 S.F.
0.34 AC
45
14176 S.F.
86
13300 S.F.
0.31 AC
87
12600 S.F.
0.29 AC
88
12514 S.F.
0.29 AC
89
13300 S.F.
0.31 AC
90
13297 S.F.
0.31 AC
91
12027 S.F.
0.28 AC
92
12113 S.F.
0.28 AC
93
11389 S.F.
0.26 AC
79
14676 S.F.
0.34 AC
80
14669 S.F.
0.34 AC
76
13740 S.F.
0.32 AC
75
13413 S.F.
0.31 AC
74
13300 S.F.
0.31 AC
73
12600 S.F.
0.29 AC
72
12600 S.F.
0.29 AC
A. NICKOL
JACOBSON
WINDRIDGE LANE
SANFORD PLACE
N00°57'07"W 1990.01'
N89°02'53"E 188.51'
N89°02'53"E
330.00'
S00°57'07"E 664.66'
S00°57'07"E 113.40'
S00°57'07"E
758.00'
56' ROW
32' B-B
30' BUFFER
VAR. D.&U.E.


NICOBAR STREET
GUNDLACH COURT
56' ROW
330.00'
206.20'
N89°02'53"E
S89°30'41"W 1255.49'
ZONING: RE
48
14983 S.F.
0.34 AC
49
14176 S.F.
0.33 AC
50
14962 S.F.
0.34 AC
51
14717 S.F.
0.34 AC
52
22963 S.F.
0.53 AC
53
13374 S.F.
0.31 AC
54
13373 S.F.
0.31 AC
55
13446 S.F.
0.31 AC
56
12806 S.F.
0.29 AC
57
13588 S.F.
0.31 AC
58
13759 S.F.
0.32 AC
59
18003 S.F.
0.41 AC
60
18567 S.F.
0.43 AC
61
15614 S.F.
0.36 AC
62
19008 S.F.
0.44 AC
63
20402 S.F.
0.47 AC
64
21752 S.F.
0.50 AC
65
15883 S.F.
0.36 AC
66
13214 S.F.
0.30 AC
67
12600 S.F.
0.29 AC
68
13300 S.F.
0.31 AC
97
12600 S.F.
0.29 AC
98
12600 S.F.
0.29 AC
99
11389 S.F.
0.26 AC
100
12112 S.F.
0.28 AC
101
12027 S.F.
0.28 AC
102
12600 S.F.
0.29 AC
103
12600 S.F.
0.29 AC
R55' ROW
R41'
80' CROSS ACCESS EASEMENT
VAR. D.&U.E.
FLOOD ZONE
FLOOD ZONE SHADED X
FLOOD ZONE

202132848 ORDINANCE $25.00
10/05/2021 09:02:16A 5 PGS
Theresa D. Lynch
Hendricks County Recorder IN
Recorded as Presented

Ordinance No. 2021-30
Brownsburg, Indiana
Sept 23, 2021

AN ORDINANCE TO AMEND THE OFFICIAL ZONING MAP OF THE TOWN OF BROWNSBURG, HENDRICKS COUNTY, INDIANA FOR CERTAIN REAL ESTATE LOCATED WEST OF AND ADJACENT TO N. GREEN STREET AND SOUTH OF CR 800 N.

WHEREAS, Lennar Homes of Indiana (the "Applicant") has filed for an amendment to the Official Zoning Map for the Town of Brownsburg, Hendricks County, Indiana (the "Proposal") for certain real estate located on Parcel(s) 32-02-34-275-002.000-026, which is more particularly described on **Exhibit A** and generally depicted on **Exhibit B** (the "Property") pursuant to I.C. 36-7-4-608, *et seq.*; and

WHEREAS, the Property is zoned IS (institutional); and,

WHEREAS, the Applicant's Proposal is to rezone the property to R3 (high density single-family residential) for the purposes of constructing a5residential subdivision; and,

WHEREAS, the Applicant's Proposal is consistent with the goals, objectives and policies of the Comprehensive Plan, and the Owner's desired use of the Property; and,

WHEREAS, the Applicant's Proposal is compatible with the current conditions and overall character of the existing development in the immediate vicinity of the Property; and,

WHEREAS, the Applicant's Proposal is the most desirable use for which the land in each district is adapted; and,

WHEREAS, the Applicant's Proposal is expected to conserve property values throughout the jurisdiction; and,

WHEREAS, the Applicant's Proposal is deemed responsible development and growth; and,

WHEREAS, the Plan Commission (the "Commission") has considered said Proposal at a public meeting, on August 23rd, 2021 and forwards the request on the proposal to the Town Council (the "Council") with a (5-1) **FAVORABLE RECOMMENDATION** and with the following conditions:

(1) All lots west of the creek will have a have a minimum lot width of 90'.

(2) A minimum of 85% of the homes west of the creek shall include a side load garage or courtyard garage.

(3) The maximum number of Lots will not exceed 110 Lots.

(4) That the Preliminary Plat shall be in substantial compliance with the Concept Plan considered with the Rezone, subject to final engineering approval of the Preliminary Plat from the Town.

(5) In the event that the Plan Commission and Council do not desire a connection from the Real Estate to the stub street on Windjammer Drive, as part of any Plat application request, Lennar shall seek a TECH Waiver(s) and any other necessary approvals from the requirement(s) that the stub street connect. In the event the TECH Waiver(s) is granted and any other approvals are obtained for the stub street not to connect and the development to substantially comply with the Concept Plan, Lennar will not connect the stub street, but will install any treatment in this area as may be required by the TECH Committee and/or Plan Commission (i.e.: emergency access only, etc.).

(6) Building Permits for homes on Lots west of the creek shall not be issued until approved access is provided by means other than the stub street at Windjammer Drive.

(7) Regarding home construction traffic: Lennar will install "No Construction Traffic" signs at the entrances to the Windridge Neighborhood for the period of home construction subject to the granting of approval by the owner(s) of real estate at the subdivision entrances allowing placement of the sign(s).

(8) Regarding Landscaping:

(a) A twenty (20) foot Tree Preservation Area shall be provided along the west perimeter of the Real Estate as depicted on the Concept Plan. The 20' Tree Preservation area shall also be extended along the north perimeter of the real estate within the common areas.

(b) In the event the preservation of existing trees within the Tree Preservation Area does not meet the landscaping planting requirements of the UDO Evergreen trees will be installed in order to meet the planting standards of the UDO. In addition to meeting the planting standards of the UDO, one evergreen tree (minimum 6 feet tall) will be added to the rear yard of each lot abutting the west perimeter of the Real Estate.

(9) In regard to the proposed bridge: Lennar shall seek input from the Indiana Department of Environmental Management (IDEM) regarding standards they have, if any, regarding the number of vehicular access points required for subdivisions served by a bridge.

(10) The approval of the Findings of Fact and Report of Determination by the Plan Commission.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of the Town of Brownsburg, Hendricks County, Indiana as follows:

1) The above recitals are incorporated herein by reference as though set forth fully herein below.

2) The Applicant shall assume and be responsible for payment of all costs incurred in the preparation and filing of all changes in this ordinance.

3) The zoning on the Property, as shown on the Official Zoning Map, shall be changed to R3 (High Density Single-family Residential).

This Ordinance is hereby passed by the Town Council of the Town of Brownsburg, Indiana, this 23rd day of Sept, 2021.

BROWNSBURG TOWN COUNCIL

Travis Tschaenn, President

ATTEST:

Ann Hathaway, Clerk-Treasurer

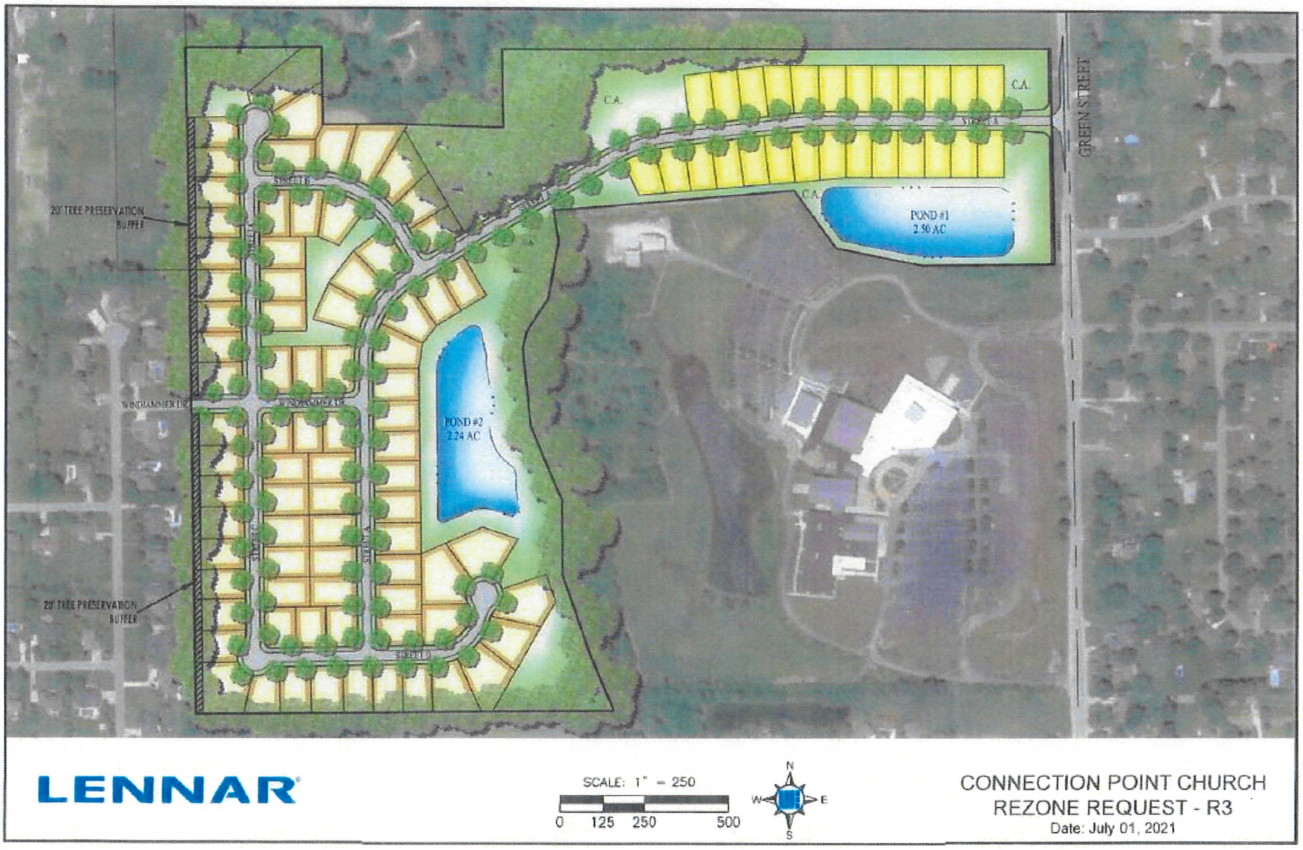
This instrument prepared by Jodi Dickey, Town of Brownsburg, 61 N. Green Street, Brownsburg, Indiana 46112. I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law. Jodi Dickey

EXHIBIT "A"
Legal Description

LEGAL DESCRIPTION

Lot Numbered Two (2) in the Replat of Connection Pointe, a subdivision in Town of Brownsburg, Brown Township, Hendricks County, Indiana, as per plat thereof recorded June 12, 2020, as Instrument No. 202015394 in Plat Cabinet 8, Slide 299, page 2ABCDEFGHI, in the office of the Recorder of Hendricks County, Indiana. Containing 65.920 acres more or less.

EXHIBIT "B"
General Depiction



Advisory Plan Commission

Town of Brownsburg

Assigned Staff: Elizabeth Williams, Planning Consultant

Report Date: 1/16/2026

Request Type: Primary Plat

General Information

CASE NUMBER	PCPP-25-3
APPLICANT	Lindsey Phipps on behalf of David Weekley Homes
LOCATION	32-02-34-275-002.000-026, 32-02-34-100-012.000-001, 32-02-34-100-013.000-001
PARCEL SIZE	72.39 total subdivision acreage

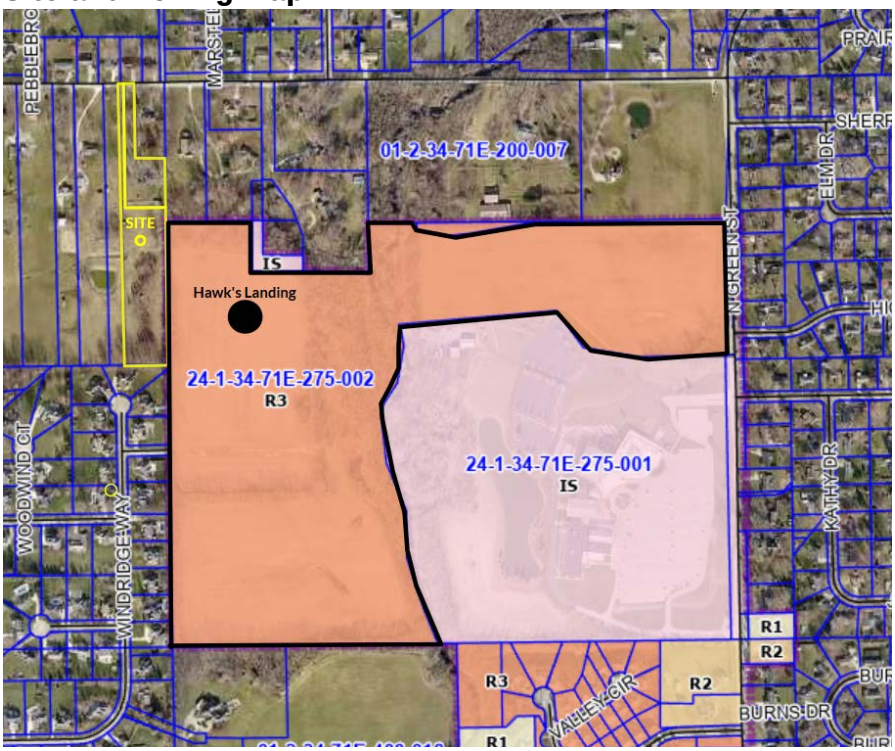
Cross References

Previous APC Cases	PCPP-03-18-1715/CPSP-05-19-1733 (Plat separating extra acreage) PCMA-07-21-1929 (Rezone of extra acreage to R3) PCPP-10-21-1954 (Hawk's Landing Primary Plat) PCCZ-24-3 (Conditional Rezone to R-3, extension of Hawks Landing for entrance)
Relevant BZA Cases	N/A
Other	

Attachments

☒	Tech Review & Response
☒	Site Plan/Civil
☒	Landscape Plan
☐	Architectural Plans
☒	Other: Traffic Study, Crossroad Engineer's Review Letter, Memorandum of Understanding, Updated Letter of Intent; Plat Lot Width Exhibit

Site and Zoning Map:



Project and Site Background:

The two smaller parcels in the northwest corner were brought in to be used for an entrance on to County Road 800 for Hawk's Landing, a single-family residential subdivision. The proposed new access road is called Hawk Hollow Bend and is a public street. Right-of-ways do not require annexation in order to put an entrance on the land. The houses that were proposed along this new entrance at the April 28th APC meeting have since been removed. The new proposal breaks the development into two more distinct sections, this will help with traffic dispersion going onto other roads. The original development project has been revised and will not have a vehicular bridge being built across the creek. The bridge is not feasible nor desirable in terms of ongoing maintenance and infrastructure costs. The habitat disruption, erosion, stream maintenance and mitigation and the multi-million-dollar expense were all factors in the removal of the bridge from the design. The conditional rezone request (PCCZ-24-3) was withdrawn at the April 28th APC meeting. The church to the southeast of Hawk's Landing has attempted to sell their land for some time, but the balance of the site faces various hurdles regarding entrances due to the largely landlocked west side of the church parcel (32-02-34-275-001.000-026).

New Information since October 2025:

Petitioners commissioned an update to the Traffic Study including new traffic counts both on a Thursday and Sunday. The traffic study has been reviewed by Crossroad Engineer's, the Town's consulting engineer and received feedback that the information provided is appropriate and the results on affects to selected intersections and recommended improvements meet acceptable performance standards. The study was also provided to the County Engineer. Petitioners previously worked with Indiana Department of

Transportation (INDOT), resulting in moving the location of the initial access point on SR 267 south to the current location. The petitioner entered into a Memorandum of Understanding with the Hendricks County Commissioners regarding the access point improvements on CR 800 North in July 2025.

The plat has been updated to meet the conditions of the 2021 rezoning. Petitioners have provided the following regarding the bridge connection: Linking the eastern and western portions of the development with any kind of bridge is not practical, would require the removal of trees within the riparian buffer along the creek as well as, disturbance of the floodway and wetlands.

It is staff's opinion that bridge location at this location and the resulting damage to the eco-system is not appropriate or desired. For these reasons it also the staff's opinion that the final engineering details support that the plat is as consistent as possible to the conceptual plan.

Petitioners have also provided an exhibit identifying and clarifying compliance with the lot width on the west side of the creek meeting the 90' width requirement.

Technical Review:

The TECH review for this project took place on September 18, 2025. Planning Services commented that proposed amenities need to be labeled, calculations for required and proposed vegetation need to be added to the landscape plan, the tree preservation area needed to have a cross hatch added, and street names needed to be added with a public or private designation. The township information needed changed to reflect Brown Township and the size of existing water and sanitary sewer systems will have to be added to the legend. Capital Projects commented that depending on traffic, additional improvements may need to be done to N Green St (SR 267). The Fire Department discussed AutoTurn information for the Brownsburg Fire Territory ladder truck and has been working on a solution with the applicant for the Windjammer Court stub road that connects to the neighboring Windridge North subdivision. If a Knox Box was put in, that raised questions on emergency services maneuverability due to the lot count on the west side of Hawk's Landing. Other traffic calming mechanisms were suggested such as speed tables to not impede the second access point as substantially. The Wastewater Department mentioned that the routing of the sanitary force main has changed significantly from the original layout, safe accessibility will need to be provided. The development will need to complete downstream pump upgrades to the Maple Lift station at the time of sanitary line installation. The lift station is currently at capacity. The Water Department commented to make changes in water main sizes on future construction plans. Valves are needed on all sides of any tees, a valve on each side of the creek crossing, and hydrants should be spaced 300' apart with hydrant locations at cul-de-sacs per Town Standards.

The revised Traffic Study was provided to all Technical Review Committee members for review and comment.

Criteria:

Pursuant to Chapter 8 of the Brownsburg Unified Development Ordinance the Advisory Plan Commission shall make findings of fact on the following criteria:

1) The subdivision of land meets the lot width, size, and area as provided in Chapter 2 or as modified by any waiver.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=30

   a) The proposal meets the minimum dimensional requirements established for the R3 Single-Family Residential District in Chapter 2 of the UDO. Each lot provides a minimum lot area of 9,000 square feet, consistent with the required standard. Lot widths and depths have been designed to provide adequate building envelopes that accommodate required setbacks and easements.

      Based on the above information, staff believes this criterion has been met.

2) The subdivision of land provides appropriate areas and easements for necessary public utilities and drainage in accordance with **Chapter 7: Subdivision Regulations**.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=168

   a) The project has been designed to comply with the development standards of the Brownsburg Unified Development Ordinance (UDO), including all applicable requirements for setbacks, easements, lot coverage, and building height. There is a large pipeline easement that causes a break in the landscaping on the west side by the Windridge subdivision. The subdivision layout provides adequate public utility and drainage easements in accordance with Chapter 7: Subdivision Regulations. These easements are located along property lines and within common areas as needed to accommodate stormwater infrastructure, sanitary sewer, water, electric, and communication facilities.

      Based on the above information, staff believes this criterion has been met.

3) The plat provides the appropriate right-of-way for the extension of public roads and infrastructure and access to internal or adjacent lots.

   a) The applicant was instructed to work with Hendricks County and INDOT to determine what road and entrance improvements would be required. The project will be broken up into two phases. The smaller east side will be constructed first, followed by the west side. The Thoroughfare Plan has SR 267 marked as a Principal Arterial and CR 800 as a Major Collector. Major collectors collect traffic from local streets and move it to larger arterial roads, reducing congestion on small neighborhood roads. The proposed new streets provide 56' of right-of-way width for a local road.

      Based on the above information, staff believes this criterion has been met.

4) The plat complies with any other applicable provision of **Chapter 7: Subdivision Regulations**.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=168

   a) *7.4 Easement Standards*: A 20' drainage and utility easement is present along the front of the lots followed by the 25' building setback line. There are also 10' and 15' drainage easements on the back side of the lots visibly shown on the plat. The final plat shall include any applicable easement descriptions and required language from the UDO.

   b) *7.6 Open Space Standards*: The creek is a barrier to the connectivity of this subdivision. The subdivision will function as two separate entities, however the petitioner has amended the plat to

provide for larger amenity areas on the east and west sides of the creek, meeting the standards independently for each side. They have also provided parking at the west side amenity area for those wanting to utilize the shelter or game courts. The applicant put common areas, sidewalks, and trails in the submission. This project meets the open spaces standards for the district (12% minimum required 44% provided) and has also laid out an extensive tree preservation buffer (11.78 acres preserved).

c) *7.9 Pedestrian Network Standards:* All concrete sidewalks, asphalt pathways, and crosswalk improvements must be constructed per the Town's Construction Standards and comply with requirements of the Americans with Disabilities Act (ADA). Sidewalks should be at least five feet wide. When abutting a curb, sidewalks must be at least 6 feet wide. Sidewalks must be provided on both sides of internal streets in all developments. This project meets those standards and has two walking trails in addition to sidewalks for amenities.

d) 7.11 Access Standards: The east side of the subdivision will get access to the site from Connection Pointe Dr once turning off of SR 267. You can then either take Winghaven Way or Horizon Bend to meander around that side of the neighborhood. The west side of the subdivision has two access points. You first have to turn off of E County Rd 800 N to access Hawk Hollow Bend or go through the stub road on Windridge Ct. Subdivisions cannot be designed to alienate or perpetuate the land-locking of adjacent undeveloped land. Connectivity must be considered and appropriate stub streets created for future connectivity. Where a stub street exists from a previous development, any new development shall connect to the stub street and use the existing road name.

Based on the above information, staff believes this criterion has been met.

5) The Plat Satisfies any **other applicable provisions** of the Unified Development Ordinance.

a) No special provisions that relate to the plat are noted for this site. Overlay districts are not applicable to this project.

Based on the above information, staff believes this criterion has been met.

6) The Plat Satisfies the **construction requirements** of the Brownsburg Standard Details.

a) The project did not request any waivers. Any remaining TECH comments will need to be completed before permitting. This was added as a condition of approval.

Based on the above information, staff believes this criterion has been met.

Recommendations:

The Advisory Plan Commission may request conditions and commitments related to the project and criteria. Conditions or commitments must be made as part of the motion.

Based on the information provided and the criteria responses, staff recommends a motion to

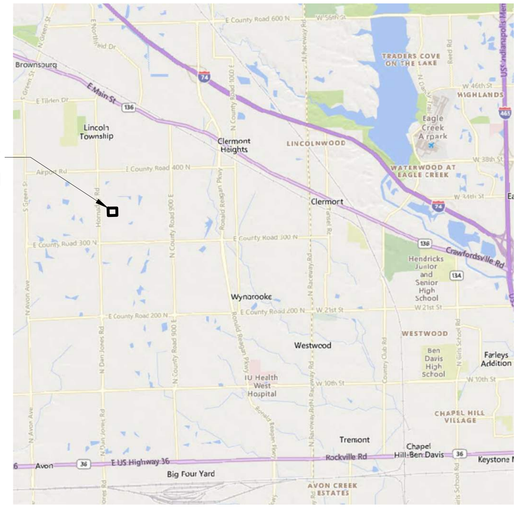
☐	Approve PCPP-25-3 as presented.
☒	Approve PCPP-25-3 with the following staff conditions: 1. All remaining technical review comments will be addressed prior to stamping the Primary Plat.

	2. The final plat shall be recorded in the Office of the Recorder of Hendricks County prior to issuance of any building permits. 3. The approval of the Findings of Fact and Report of Determination by the Plan Commission. 4. Petitioners shall comply with the Memorandum of Understanding with Hendricks County dated July 8, 2025. 5. Petitioners shall comply with the recommendations of the Traffic Study dated November 2025.
☐	Deny PCPP-25-3 based on the following criteria:

PROMENADE, SECTION 3
PRIMARY PLAT

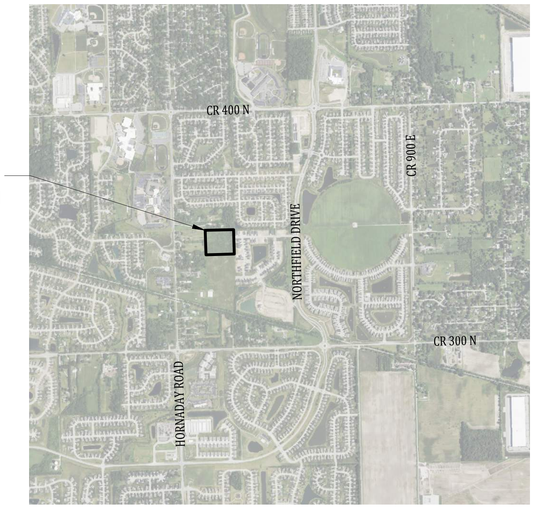
SW QUARTER, SECTION 24, TOWNSHIP 16N, RANGE 1E
LINCOLN TOWNSHIP, HENDRICKS COUNTY
BROWNSBURG, INDIANA

PROJECT LOCATION

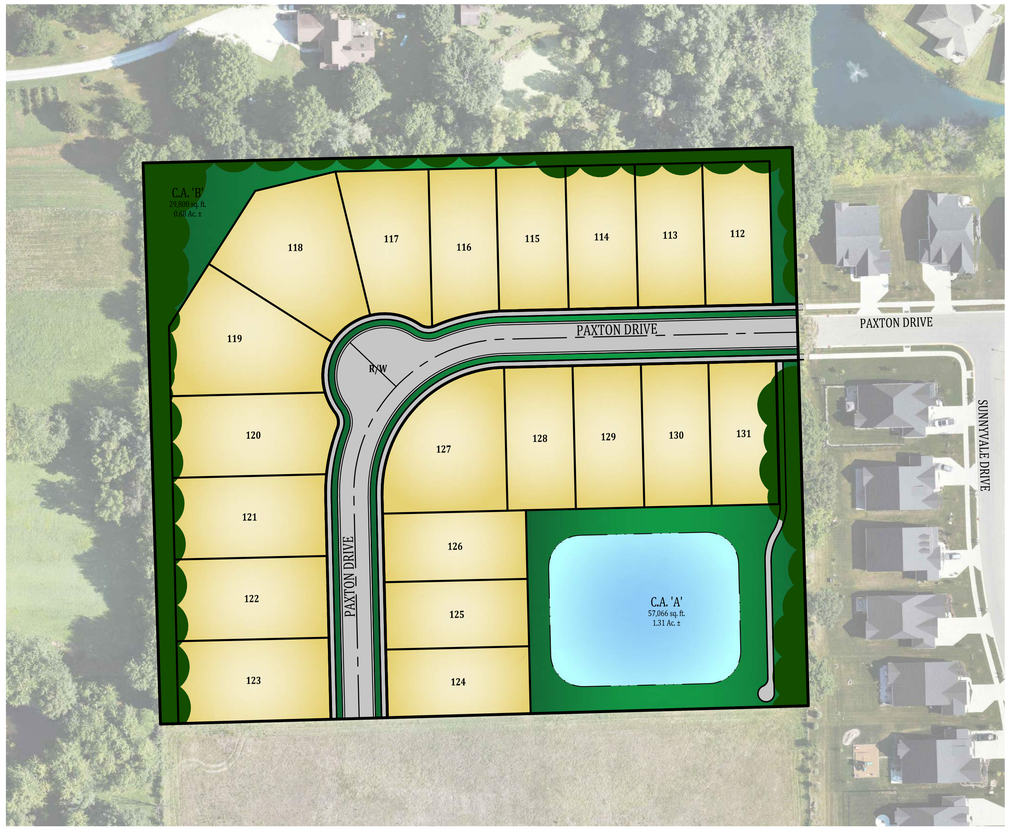


VICINITY MAP
NO SCALE

PROJECT LOCATION



LOCATION MAP
NO SCALE



SITE MAP
NO SCALE

OPERATING AUTHORITIES

GAS Centerpoint 2345 E. Main Street Danville, IN 46122 317-718-3639	SANITARY Town of Brownsburg 225 S. Mardale Drive Brownsburg, IN 46112 317-852-1114	SCHOOL DISTRICT Brownsburg Community School Corp. 310 Stadium Drive Brownsburg, IN 46112 317-852-5726
ELECTRIC Hendricks Power Cooperative 86 N. County Road 500 East PO Box 39 Danville, IN 46122 317-745-5473	STORM & MS4 Town of Brownsburg 61 North Green Street Brownsburg, IN 46112 317-852-1128	FIRE DEPARTMENT Brownsburg Fire Territory 470 East Northfield Drive Brownsburg, IN 46112 317-852-1190
TELEPHONE AT&T 240 North Meridian Street Indianapolis, IN 46204 317-265-3050	WATER Town of Brownsburg 220 Mardale Drive Brownsburg, IN 46112 317-858-4147	POLICE DEPARTMENT Brownsburg Police Department 31 North Green Street Brownsburg, IN 46112 317-852-1109
CABLE TELEVISION Comcast Cablevision 5330 East 65th Street Indianapolis, IN 46220 317-594-6509	CABLE TELEVISION Bright House Networks 3030 Roosevelt Ave. Indianapolis, IN 46218 317-632-9077	DEVELOPMENT SERVICES/ PERMITTING & PLANNING Town of Brownsburg 61 North Green St. Brownsburg, IN 46112 317-852-1128

PLAN COMMISSION CERTIFICATE

Pursuant to I.C. 36-7-4-700 et. seq., and all amendments thereof, the undersigned do hereby certify that the public notice of the hearing by the Town of Brownsburg Advisory Plan Commission (the "Commission"); on the application for approval of this plat duly complied with I.C. 36-7-4-706 and all amendments thereof, and said primary plat was granted primary approval by the Commission on the _____ day of _____, 20_____; pursuant to the Town of Brownsburg Unified Development Ordinance, with a majority of the members of the Commission concurring in said approval.

_____ Zoning Administrator

_____ Date

This approval is valid for a time period specified in Article 9 of the Town of Brownsburg Unified Development Ordinance.

Dated: _____

Certified this ___ day of _____, 20__.

Indiana 811. Know what's below. Call before you dig.

REVISIONS		
NUMBER	DESCRIPTION	DATE
1	TAC COMMENTS DATED DECEMBER 18, 2025	12/23/2025

SHEET INDEX	
SHEET NO	DESCRIPTION
C100	TITLE SHEET
C101	EXISTING TOPOGRAPHY
C102	PRIMARY PLAT
C103	UTILITY PLAN
C104	MISCELLANEOUS DETAILS
L1.0	LANDSCAPING AND AMENITY PLAN
L2.0	LANDSCAPING DETAILS

PLANS PREPARED FOR:
PULTE GROUP
ATTN: REX RAMAGE - VP of LAND PLANNING & ENTITLEMENT
11595 MERIDIAN STREET, SUITE 700
CARMEL, INDIANA 46032
PHONE: (847) 489-8816
EMAIL: Rex.Ramage@PulteGroup.com

PLANS PREPARED BY:
BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com
CONTACT: PARKER MAYS
EMAIL: pmays@banning-eng.com

CERTIFIED BY: _____ _____

NOTE:

USERS OF THE EXISTING TOPOGRAPHY PLAN ARE CAUTIONED TO CONSIDER THAT ALL NATURAL SURFACES ARE SUBJECT TO DISPLACEMENT DUE TO THE EFFECTS OF ENVIRONMENTAL AND MECHANICAL FACTORS ON SOIL PROPERTIES. THE INTERPOLATED CONTOUR LINES DEPICTED HEREON ARE REPRESENTATIVE OF THE SURFACE OF THE SITE ON THE DATE(S) THE FIELD SURVEY WAS PERFORMED. CHANGES IN SURFACE ELEVATIONS VARYING UP TO 0.5 FEET AFTER THE DATE OF THE SURVEY MAY BE POSSIBLE WITHOUT ANY OBVIOUS VISIBLE INDICATIONS. THEREFORE, IT IS RECOMMENDED THAT THE SURFACE ELEVATIONS OF THIS SITE BE VERIFIED PRIOR TO CONSTRUCTION AND THAT ANY SIGNIFICANT DISCREPANCIES BE REPORTED TO THE ENGINEER FOR EVALUATION. THE SURVEYOR IS NOT RESPONSIBLE FOR ESTIMATING OR ACCOUNTING FOR ANY VERTICAL VARIANCE CAUSED BY SUCH ENVIRONMENTAL OR MECHANICAL INFLUENCES.

THIS EXISTING TOPOGRAPHY PLAN REFLECTS ABOVE GROUND INDICATIONS OF UTILITIES AND INFORMATION AVAILABLE FROM UTILITY COMPANIES. THE ENGINEER/SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER/SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH HE / SHE DOES CONFIRM THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE ENGINEER/SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

THESE PLANS ARE NOT INTENDED TO BE REPRESENTED AS A RETRACEMENT OR ORIGINAL BOUNDARY SURVEY, A ROUTE SURVEY, OR A SURVEYOR LOCATION REPORT.

Date:	12-08-25
Project No:	25155
Sheet No:	C100

25155 PROMENADE, SECTION 3 - PRIMARY PLAT

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EXISTING TOPOGRAPHY
PROMENADE, SECTION 3
LINCOLN TOWNSHIP, HENDRICKS COUNTY
BROWNSBURG, INDIANA

Sym.	Revisions	Date
1	TAC COMMENTS DATED DECEMBER 18, 2025	12/23/2025

Designed: JET
Drawn: PEM
Checked: LGF
Scale: 1" = 40'
Date: 12-08-25

JACOB E. TOOLEY
REGISTERED
PE12400624
STATE
INDIANA
PROFESSIONAL ENGINEER
12-23-25

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 25155
Sheet No: C101

pmoys P:\2025\25155\Engineering\Cadd\Sheet Files\Primary Plat\25155_PP topo.dwg December 23, 2025 11:11 AM



PROPOSED LEGEND

— — —	BUILDING SETBACK
- - - - -	EASEMENT LINE
B.S.L.	BUILDING SETBACK LINE
D.E.	DRAINAGE EASEMENT
N.A.E.	NON ACCESS EASEMENT
D.&U.E.	DRAINAGE & UTILITY EASEMENT

0 30' 60'

NOTES:

* CONSISTENT WITH SECTION 7.10.E.3.F OF THE TOWN OF BROWNSBURG UNIFIED DEVELOPMENT ORDINANCE, IF THE PROPERTY IS DEVELOPED AS A RESIDENTIAL SUBDIVISION, A TEMPORARY TURNAROUND SHALL BE PROVIDED AS SHOWN ON SHEET C104. WHILE THE TEMPORARY TURNAROUND IS CURRENTLY DEPICTED ON LOT 122, IT MAY BE TRANSFERRED TO ANY LOT PROVIDED THAT THE ALTERNATIVE LOT MAY BE APPROVED BY THE BROWNSBURG FIRE DEPARTMENT. ANY SUCH LOT AFFECTED BY TEMPORARY TURNAROUND MAY BE PLATTED; HOWEVER, IT MAY NOT BE IMPROVED WITH RESIDENTIAL DWELLINGS UNTIL SUCH TIME AS EITHER (1) AN OFFSITE EASEMENT OR FEE SIMPLE RIGHTS FOR A TEMPORARY TURNAROUND ARE OBTAINED FROM THE LANDOWNER TO THE SOUTH OR (2) A CONNECTION TO THE STUB STREET IS MADE TO THE SOUTH. AT SUCH TIME AS THE EARLIER OF THESE TWO EVENTS OCCURS, THIS COMMITMENT STATED IN THIS PARAGRAPH SHALL AUTOMATICALLY TERMINATE PURSUANT TO IND. CODE § 36-7-4-1015(B)(4) AND AN IMPROVEMENT LOCATION PERMIT FOR THE LOT AFFECTED BY THE TEMPORARY TURNAROUND MAY ISSUE IMMEDIATELY THEREAFTER.

- EXCEPT IN THE EVENT OF CONFLICTS WITH DRAINAGE OR UTILITY IMPROVEMENTS OR REMOVAL OF DEAD, DYING, OR DISEASED VEGETATION, THE DEVELOPER SHALL NOT REMOVE EXISTING TREES WITHIN FIFTEEN FEET (15') OF THE EAST, WEST, AND NORTH PROPERTY BOUNDARIES. IN ADDITION, THE DEVELOPER SHALL PLANT SUPPLEMENTAL ADDITIONAL TREES WITHIN THIS SAME AREA AT THE RATE OF 7 PER 100 LINEAR FEET, WITH AT LEAST SEVENTY-FIVE PERCENT (75%) OF SUCH PLANTINGS BEING EVERGREEN VARIETIES.

- SEE SHEET C104 FOR PROPOSED STREET CROSS SECTION.



KEY MAP

LAND DESCRIPTION

A PART OF THE SOUTHWEST QUARTER OF SECTION 24, TOWNSHIP 16 NORTH, RANGE 1 EAST OF THE SECOND PRINCIPAL MERIDIAN IN INDIANA, SAID PART BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID QUARTER SECTION, THENCE NORTH AND ALONG THE WEST LINE OF SAID QUARTER SECTION 2677.20 FEET; THENCE SOUTH 89 DEGREES 35 MINUTES 30 SECONDS EAST 700.00 FEET TO THE BEGINNING POINT OF THIS DESCRIPTION; THENCE CONTINUING SOUTH 89 DEGREES 35 MINUTES 30 SECONDS EAST 632.63 FEET; THENCE SOUTH 550.00 FEET; THENCE NORTH 89 DEGREES 35 MINUTES 30 SECONDS WEST 632.32 FEET; THENCE NORTH 550.00 FEET TO THE BEGINNING POINT OF THIS DESCRIPTION. CONTAINING IN ALL 7.99 ACRES. SUBJECT TO ALL LEGAL HIGHWAYS, RIGHTS-OF-WAY AND EASEMENTS OF RECORD.

Sym.	Revisions	Date
1	TAC COMMENTS DATED DECEMBER 18, 2025	12/23/2025

Designed: JET
Drawn: PEM
Checked: LGF
Scale: 1" = 30'
Date: 12-08-25

PRIMARY PLAT
PROMENADE, SECTION 3
LINCOLN TOWNSHIP, HENDRICKS COUNTY
BROWNSBURG, INDIANA

COMMONWEALTH OF INDIANA · JACOB E. TOOLEY · REGISTERED · PE12100624 · STATE · INDIANA · PROFESSIONAL ENGINEER

BANNING ENGINEERING
853 COLUMBIA ROAD SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700 FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 25155
Sheet No: C102

pmoya P:\2025\25155\Engineering\Cadd\Sheet Files\Primary Plat\25155_PP plan.dwg December 23, 2025 12:05 PM

NOTES:

- STREET SIGNAGE WILL BE IN ACCORDANCE WITH BROWNSBURG STANDARDS FOR LOCATION AND TYPE.
- THE EROSION CONTROL PLAN WILL MEET ALL LOCAL, CSGP, AND IDEM REQUIREMENTS AND WILL BE SUBMITTED TO IDEM
- THE MAIN DRAINAGE OUTLET FOR THIS PROJECT WILL UTILIZE THE PROMENADE, SECTION 1 EXISTING STORM SEWER SYSTEM TO THE EAST.
- ALL INFRASTRUCTURE TO MEET TOWN OF BROWNSBURG UTILITY STANDARDS AND REQUIREMENTS.
- WATER SERVICE LATERALS, METER PIT LOCATIONS, AND FINAL LOCATIONS OF ALL UTILITIES TO BE DETERMINED WITH THE CONSTRUCTION PLANS.
- SEE SHEET C104 FOR RIGHT OF WAY CROSS SECTION.

PROPOSED LEGEND

—W—	WATER MAIN
	WATER MAIN VALVE
	FIRE HYDRANT ASSEMBLY
—S—	SANITARY SEWER
	SANITARY MANHOLE
	STORM STRUCTURES / INLETS
	STORM SEWER
	STREET LIGHTS
B.S.L.	BUILDING SETBACK LINE
D.E.	DRAINAGE EASEMENT
N.A.E.	NON ACCESS EASEMENT
U.&D.E.	UTILITY & DRAINAGE EASEMENT

0 30' 60'



Sym.	Revisions	Date
1	TAC COMMENTS DATED DECEMBER 18, 2025	12/23/2025

Designed: JET
Drawn: PEM
Checked: LGF
Scale: 1"= 30'
Date: 12-08-25

UTILITY PLAN
PROMENADE, SECTION 3
LINCOLN TOWNSHIP, HENDRICKS COUNTY
BROWNSBURG, INDIANA

JACOB E. TOOLEY
REGISTERED
PE12400024
STATE OF INDIANA
PROFESSIONAL ENGINEER

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

Project No: 25155
Sheet No: C103

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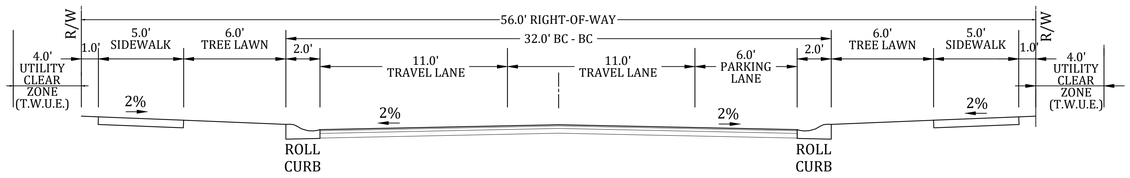
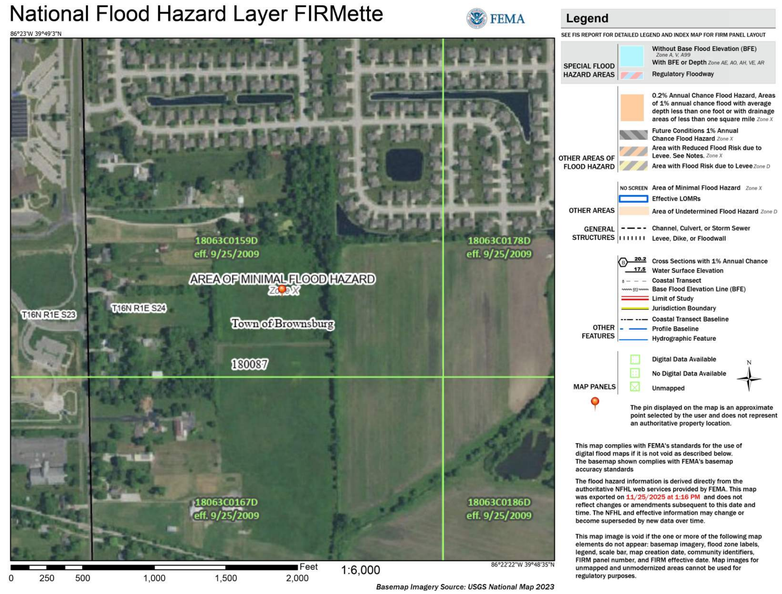
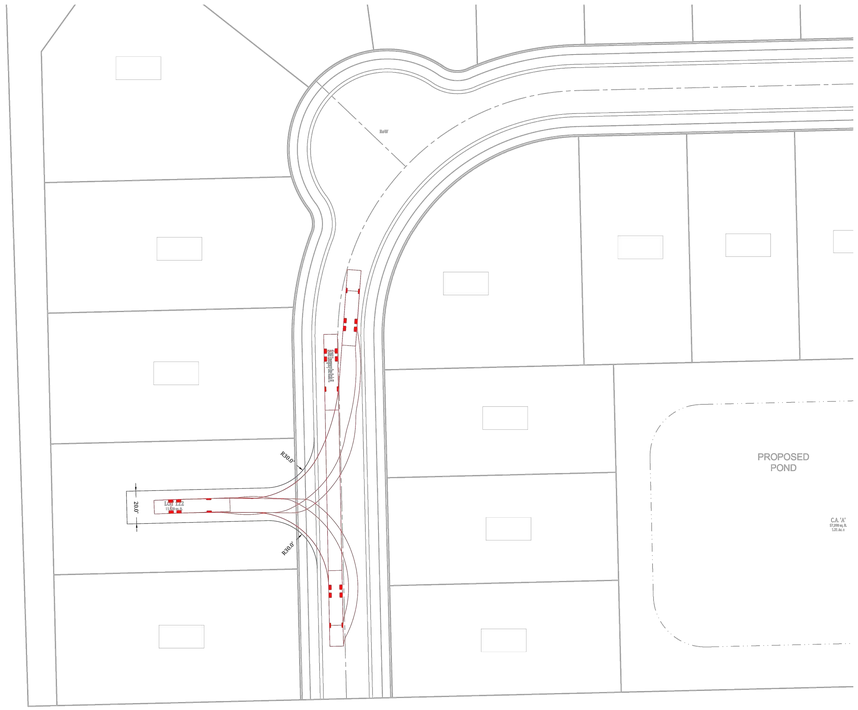


TYPICAL LOCAL STREET SECTION





Map unit symbol	Map unit name
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes
ThrA	Treaty silty clay loam, 0 to 1 percent slopes
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes



TEMPORARY TURNAROUND

Revisions			Date
Sym.			
1	TAC COMMENTS DATED DECEMBER 18, 2025		12/23/2025

Designed: JET
Drawn: PEM
Checked: LGF
Scale: NO SCALE
Date: 12-08-25

MISCELLANEOUS DETAILS
PROMENADE, SECTION 3
LINCOLN TOWNSHIP, HENDRICKS COUNTY
BROWNSBURG, INDIANA

JACOB E. TOOLEY
REGISTERED
PE12300024
STATE OF INDIANA
PROFESSIONAL ENGINEER
12/23/2025

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
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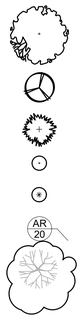
Project No: 25155
Sheet No: C104

pmoys P:\2025\25155\Engineering\Cadd\Sheet Files\Primary Plot\25155_PP dtls.dwg December 23, 2025 12:06 PM



LANDSCAPE PER COMMITMENTS CONCERNING THE PROPERTY. *EXCEPT IN THE EVENT OF CONFLICTS WITH DRAINAGE OR UTILITY IMPROVEMENTS OR REMOVAL OF DEAD,DYING OR DISEASED VEGETATION, THE DEVELOPER SHALL NOT REMOVE EXISTING TREES WITHIN FIFTEEN FEET (15') OF THE EAST, WEST AND NORTH BOUNDARIES. IN ADDITION, THE DEVELOPER SHALL PLANT SUPPLEMENTAL TREES WITHIN THIS SAME AREA AT A RATE OF 7 PER 100' LINEAR FEET WITH AT LEAST 75% OF SUCH PLANTINGS BEING EVERGREEN VARIETIES .

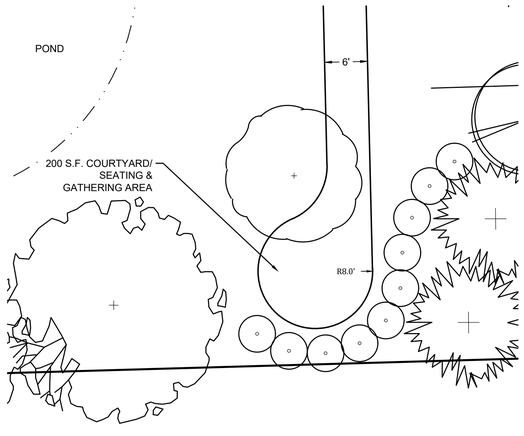
LANDSCAPE SYMBOLOGY

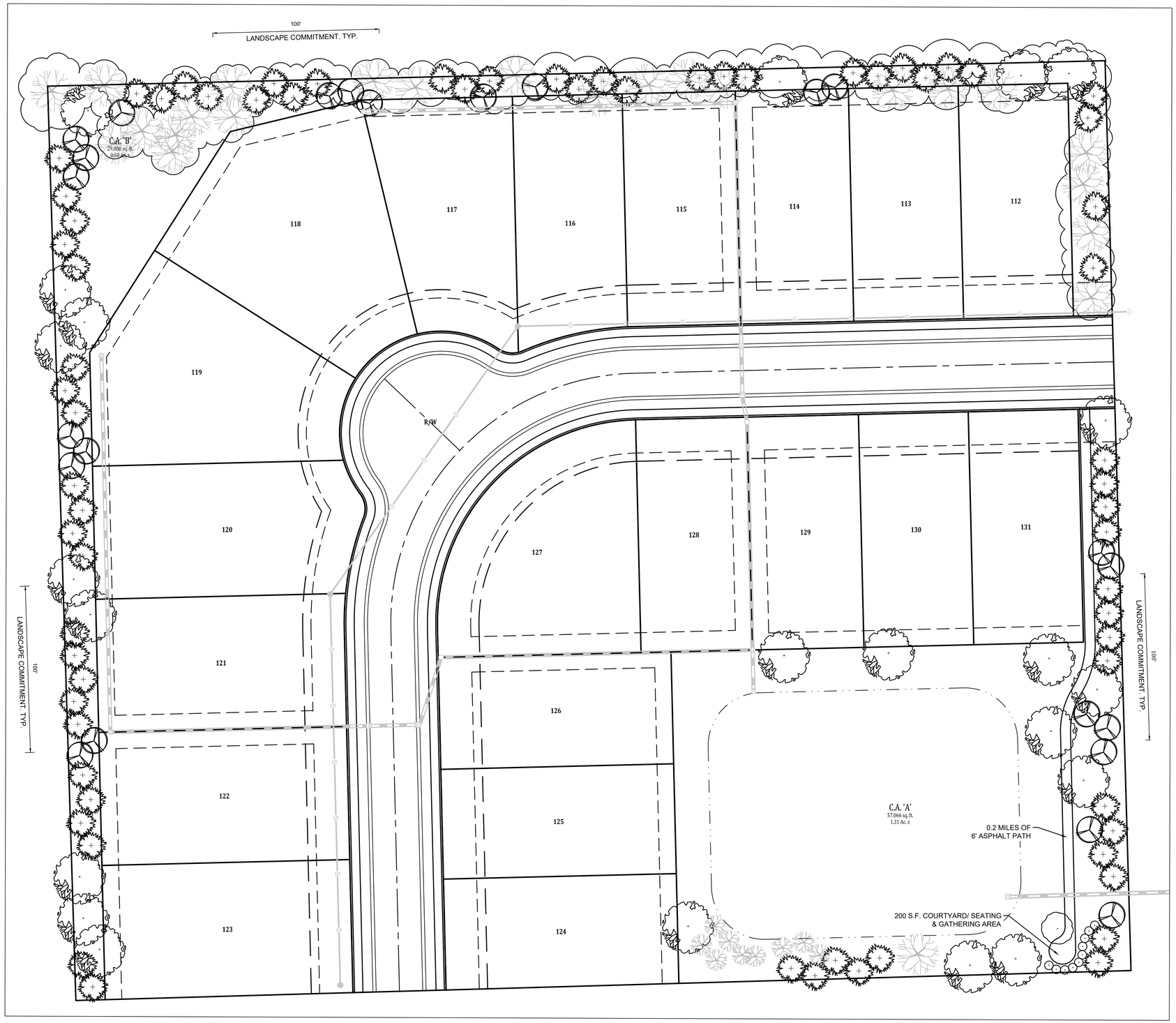


PLANT SCHEDULE

KEY	QTY	PLANT NAME BOTANICAL NAME COMMON NAME	SIZE	SPACING	REMARKS
AC		Amelanchier canadensis Serviceberry	8' Height	SEE PLAN	FULL, DENSE BRANCHING, WIDTH NOT LESS THAN 60' OF HEIGHT
AR		Acer rubrum 'Franksred' Red Maple	2.5" Caliper	SEE PLAN	CENTRAL LEADER
CC		Cercis canadensis Eastern Redbud	1.5" Caliper	SEE PLAN	FULL, DENSE BRANCHING, WIDTH NOT LESS THAN 60' OF HEIGHT
GD		Gymnocladus dioicus Kentucky Coffeetree	2.5 " Caliper	SEE PLAN	CENTRAL LEADER
HM		Hydrangea macrophylla 'All Summer Beauty' All Summer Beauty Hydrangea	24" Height	SEE PLAN	FULL IN POT
PAx		Platanus x acerfolia London Planetree	2.5" Caliper	SEE PLAN	CENTRAL LEADER
PA		Picea abies Norway Spruce	8'-10' Height	SEE PLAN	CENTRAL LEADER
PAc		Picea abies 'Cupresina Columnar Norway Spruce	6' Height	SEE PLAN	CENTRAL LEADER
PM		Pseudotsuga menziesii Douglas Fir	8' Height	SEE PLAN	CENTRAL LEADER
PO		Picea omorika Serbian Spruce	10'-12' Height	SEE PLAN	CENTRAL LEADER
QA		Quercus alba White Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
QB		Quercus bicolor Swamp White Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
QMA		Quercus macrocarpa Burr Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
QM		Quercus mulenbergii Chinquapin Oak	2.5" Caliper	SEE PLAN	CENTRAL LEADER
TD		Taxodium disticum Common Baldcypress	2.5" Caliper	SEE PLAN	CENTRAL LEADER
VJ		Vibumum x juddii Judd Vibumum	30" Height	SEE PLAN	FULL IN POT

PROPOSED AMENITIES:
AMENITIES FOR THIS PROJECT WILL INCLUDE 0.2 MILES OF 6' ASPHALT TRAIL AND A 200 S.F. COURTYARD SEATING & GATHERING AREA. THE COURTYARD WILL BE A HARD SURFACE TO SATISFY THE UDO REQUIREMENT FOR AMENITIES.





Designed:	JET
Drawn:	PEM
Checked:	LGF
Scale:	1" = 30'
Date:	12-08-25

Sym.	Revisions	Date
1	TAC COMMENTS DATED DECEMBER 18, 2025	12/23/2025

LANDSCAPING AND AMENITY PLAN
PROMENADE, SECTION 3
LINCOLN TOWNSHIP, HENDRICKS COUNTY
BROWNSBURG, INDIANA



BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN. 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
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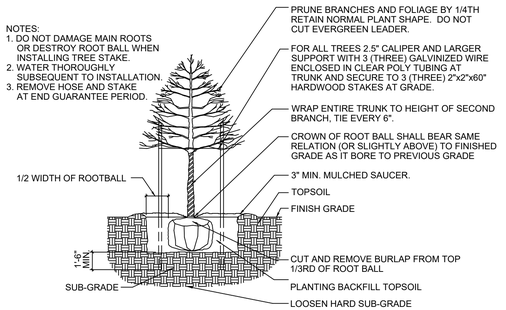
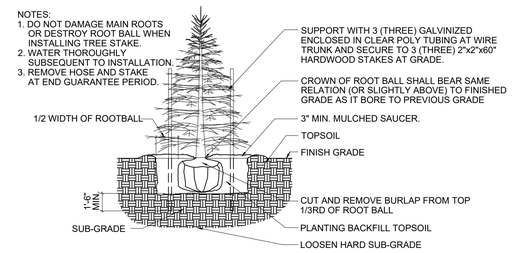
Project No:	25155
Sheet No:	L1.0

Xrefs: P:\2025\25155\Engineering\Cadd\Sheet Files\Primary Plot\25155_PP Lnd.dwg December 23, 2025 12:06 PM



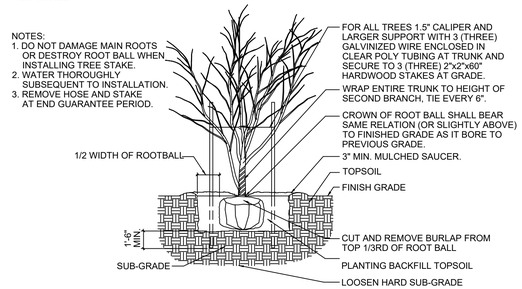
CANOPY TREE PLANTING

NO SCALE



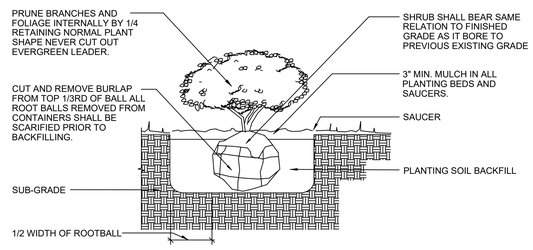
EVERGREEN TREE PLANTING

NO SCALE



ORNAMENTAL TREE PLANTING

NO SCALE



SHRUB PLANTING

NO SCALE

LANDSCAPE SPECIFICATIONS

GENERAL NOTES:

1. ALL UTILITIES SHALL BE LOCATED AND MARKED/FLAGGED BEFORE BEGINNING LANDSCAPE WORK RELOCATED PLANTS THAT ARE UNDER OR OVER UTILITIES. THE RELOCATED PLANTS TO BE APPROVED BY OWNER AND/OR LANDSCAPE ARCHITECT/DESIGNER PRIOR TO INSTALLATION. CONTRACTOR SHALL NOTIFY UTILITY LOCATE SERVICE (811) A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION.
2. UTILITY LOCATION NOTE: ALL LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND BASED ON PROVIDED INFORMATION BY SURVEYOR OR CIVIL ENGINEER OR OWNER AND OR MEASURED IN THE FIELD. IF DISCREPANCIES EXIST OR ARE PRESENT, CONTRACTOR SHALL NOTIFY OWNER, OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT/DESIGNER PRIOR TO BEGINNING ANY WORK.
3. IN CASE OF DISCREPANCIES BETWEEN THE PLANS AND PLANT LIST. THE PLAN SHALL DICTATE.
4. THESE SPECIFICATIONS COVER THE FURNISHING OF LABOR, PLANTS, EQUIPMENT, AND MATERIALS TO PERFORM LANDSCAPE OPERATIONS IN CONNECTION WITH THIS CONSTRUCTION PROJECT AT THE LOCATIONS SHOWN ON THE LANDSCAPE DRAWING.
5. PLANTS AND ALL LANDSCAPE MATERIAL TO BE STORED ON SITE WILL BE PLACED WHERE THEY ARE NOT IN CONFLICT WITH CONSTRUCTION OPERATIONS.
6. REMOVE AND CLEAN UP ALL DEBRIS AND REMOVE FROM SITE, REPAIR DAMAGED OR DISTURBED AREAS CAUSED BY LANDSCAPE CONTRACTOR.
7. TOPSOIL: TOPSOIL SHALL BE FRIABLE, NATURAL LOAM, SURFACE SOIL AND FREE OF SUBSOIL, CLAY LUMPS, BRUSH, WEEDS, LITTER, ROOTS, STONES DOMESTIC AND AGRICULTURE FERTILIZERS, HERBICIDES, AND OTHER TOXIC MATERIALS HARMFUL TO PLANT GROWTH AND ENVIRONMENT. WASTE SOILS, BORROW, OR HEAVY CLAY BASED SOILS WILL NOT BE ACCEPTED. TOPSOIL SHALL HAVE A PH VALUE OF 6.0-7.4. SUBMIT SOIL SAMPLES, PH SAMPLES, PH LEVELS AND NPK ANALYSIS PRIOR TO DELIVERY.

PLANTING NOTES:

1. REMOVE WEEDS, ORGANIC MATTER, ROCKS LARGER THAN 1.5" FROM SOIL.
2. LANDSCAPE MATERIALS: FERTILIZER: GRANULAR NON-BURNING PRODUCT COMPOSED OF NOT LESS THAN 50% ORGANIC SLOW ACTING, GUARANTEED ANALYSIS PROFESSIONAL FERTILIZER; 20% NITROGEN, 10% PHOSPHORIC ACID, AND 5% POTASH BY WEIGHT OR SIMILARLY APPROVED COMPOSITION.
3. PLANTING BACKFILL SOIL: BACKFILL PLANT PITS WITH THE FOLLOWING TOPSOIL MIXTURE: 1 PART ON-SITE TOPSOIL, 1 PART IMPORTED TOPSOIL, 1 PART COMPOST AND 1/2 POUND PLANT SPECIFIED FERTILIZER PER CUBIC YARD.
4. PLANT MATERIALS: PROVIDE TREES AND SHRUBS AS INDICATED. COMPLY WITH SIZING AND GRADING STANDARDS OF "AMERICAN STANDARD FOR NURSERY STOCK". PROVIDE ONLY SOUND, HEALTHY VIGOROUS PLANTS FREE FROM DEFECTS, DISFIGURING KNOTS, SUNSCALD INJURIES, FROST CRACKS, PLANT DISEASES, INSECTS OR ANY OTHER FORM OF DISEASE OR INFESTATION. ALL PLANTS SHALL HAVE FULLY DEVELOPED FORM WITHOUT VOIDS OR OPEN SPACES.
5. NO SUBSTITUTIONS OF PLANT MATERIAL WILL NOT BE ALLOWED. IF PLANTS ARE NOT AVAILABLE. THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT/DESIGNER, OWNERS REPRESENTATIVE IN WRITING. ALL PLANTS SHALL BE INSPECTED AND TAGGED WITH PROJECT I.D. AT NURSERY OR CONTRACTORS OPERATIONS PRIOR TO MOVING TO JOB SITE. PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOB SITE BY LANDSCAPE ARCHITECT/DESIGNER OR OWNERS REPRESENTATIVE.
6. LANDSCAPE ARCHITECT/DESIGNER OR OWNERS REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY AND ALL PLANT MATERIALS DURING THE COURSE OF THE PROJECT.
7. PLANTING BED MULCH: 3 INCHES OF GRADE 'A' SHREDDED HARDWOOD MULCH WHERE PLANTING BED ADJOINS EITHER PAVEMENT OR TURF.
8. PLANTING BED FABRIC: DEWITT PRO 5 WEED BARRIER. INSTALL ONLY IN PLANTING BEDS.
9. SEE PLANTING DETAILS FOR PLANTING, PRUNING AND STAKING REQUIREMENTS.

SEEDING AND SODDING PREPARATION:

1. LANDSCAPE CONTRACTOR TO FINE GRADE AND PREPARE ALL SITE AREAS TO RECEIVE SODDING OR SEEDING. FINE GRADE SITE SMOOTH TO FINAL GRADING PLAN ELEVATIONS. FILL IN DEPRESSIONS, LOW SPOTS AND GRADE SMOOTH.
2. ALL TURF AREAS WITHIN LIMIT LINES TO RECEIVE 6" TOPSOIL PRIOR TO OPERATIONS. ONCE TOPSOIL HAS BEEN PLACED. CONSTRUCTION ACTIVITY OF ANY KIND (EXCLUDING LANDSCAPING) SHALL NOT BE PERMITTED ON OR ACROSS ANY PLANTING AREA.
3. TURF AREAS TO TO BE SCARIFIED/CULTIVATE TO A DEPTH OF 4" AND LIGHTLY ROLLED (NOT COMPACTED) PRIOR TO BEING SODDED OR SEEDED.
4. LAWNS TO BE FERTILIZED WITH 12-12-12 AT A RATE OF 10 LBS/1000 SQ.FT. PRIOR TO INSTALLATION.
5. WATER AND MAINTAIN GRASS STAND IS ESTABLISHED AND READY FOR MOWING AT A MINIMUM 4" HEIGHT. CONTRACTOR SHALL MAINTAIN LAWN FOR A PERIOD OF 60 DAYS BEYOND FINAL ACCEPTANCE BY MOWING AND WATERING AS REQUIRED TO MAINTAIN VIGOROUS GROWTH DURING ESTABLISHMENT.

SEEDED LAWN:

TURF TYPE TALL FESCUE - SEED

1. COMPLETE ALL OTHER LANDSCAPE PLANTINGS, MULCHING, FINE GRADING AND STAKING PRIOR TO SEEDING LAWN AREAS.
2. PROVIDE SEEDED LAWN FOR ALL LAWN AREAS UTILIZING AMER-TURF FRONT-RUNNER TURF TYPE TALL FESCUE BLEND SEED.
3. APPLY SEED AT A RATE OF 5 POUNDS PER 1000 SQUARE FEET.
4. SEED BED SHALL BE IN A FIRM BUT UNCOMPACTED CONDITION WITH A RELATIVELY FINE TEXTURE AT TIME OF SEEDING.
5. CONTRACTOR SHALL MAINTAIN SEEDING LAWN FOR A PERIOD OF 60 DAYS BEYOND FINAL ACCEPTANCE BY MOWING AND WATERING AS REQUIRED TO MAINTAIN VIGOROUS GROWTH DURING ESTABLISHMENT PERIOD.
6. LAWN AREAS SHALL NOT HAVE VOIDS LARGER THAN 6"X6". IF VOIDS ARE LARGER THAN ACCEPTABLE SIZE AN OVERSEEDING SHALL BE COMPLETED BY THE CONTRACTOR DURING THE NEXT AVAILABLE GROWING SEASON.
7. GROWING SEASON AUGUST 15TH - SEPTEMBER 20TH. SPRING GROWING SEASON MARCH 20TH - APRIL 20TH.

PROJECT WARRANTY:

1. CONTRACTOR SHALL WARRANT TREES, SHRUBS, AND PLANTS FOR A PERIOD OF ONE YEAR AFTER DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM NEGLECT BY THE OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND INSTALLER'S CONTROL. REMOVE AND REPLACE TREES, SHRUBS OR OTHER PLANTS FOUND TO BE DEAD OR IN UNHEALTHY CONDITION DURING WARRANTY PERIOD. REPLACE TREES AND SHRUBS WHICH ARE IN DOUBTFUL CONDITION AT END OF WARRANTY PERIOD.

Sym.	Revisions	Date
1	TAC COMMENTS DATED DECEMBER 18, 2025	12/23/2025

Designed:	JET
Drawn:	PEM
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Scale:	
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LANDSCAPING DETAILS
PROMENADE, SECTION 3
LINCOLN TOWNSHIP, HENDRICKS COUNTY
BROWNSBURG, INDIANA

JACOB TODLEY — REGISTERED — NO. PE12100014 — STATE OF INDIANA — PROFESSIONAL ENGINEER

BANNING ENGINEERING
653 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
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Project No: 25155

Sheet No: L2.0

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202524700 MISC $25.00
12/9/2025 2:53:14 PM 5 PGS
Laura Herzog
Hendricks County Recorder IN
Recorded as Presented

WRITTEN COMMITMENT CONCERNING THE USE OF PROPERTY

WHEREAS, pursuant to Ind. Code § 36-7-4-608, et seq., Joseph R. Daniels ("Owner") has applied for a zone map amendment from AG-Agriculture to PUD-Planned Unit Development for that certain real property located in the Lincoln Township, Hendricks County, Indiana, more particularly described on Exhibit A attached hereto and incorporated by reference herein (the "Property"); and

WHEREAS, Owner desires to make certain commitments in connection with such application;

NOW THEREFORE, in accordance with Ind. Code § 36-7-4-1015(a)(1), the Owner of the Property, hereby makes the following commitment ("Commitment") concerning the Property:

1. Consistent with Section 7.10.E.3.f of the Town of Brownsburg Unified Development Ordinance, if the Property is developed as a residential subdivision, a temporary turnaround shall be provided as depicted below:



While the temporary turnaround is currently depicted on Lot 122, it may be transferred to any lot provided that the alternative lot may be approved by the Brownsburg Fire Department. Any such lot affected by temporary turnaround may be platted; however, it may not be improved with residential Dwellings until such time as either (1) an offsite easement or fee simple rights for a temporary turnaround are obtained from the landowner to the south or (2) a connection to the stub street is made to the south. At such time as the earlier of these two events occurs, this commitment stated in this paragraph shall automatically terminate pursuant to Ind. Code § 36-7-4-1015(b)(4) and an improvement location permit for the lot affected by the temporary turnaround may issue immediately thereafter.

2. DarkSky or fully shielded lighting fixtures shall be used on the rear patios of Lots 119-123 depicted on Exhibit B attached hereto. Notice of this limitation shall be included on a supplemental set of covenants, conditions, and restrictions ("CCRs") applicable to the Property (Promenade Phase 3) only. These supplemental CCR's may be stated on the recorded plat for Promenade Phase 3. The commitment stated in this paragraph is for the benefit of and may be enforced directly by the owners of parcels immediate adjoining Lots 119-123 to the west.

3. With respect to the original construction of single-family homes on the Property, construction activity which is likely to generate noise impacting existing adjacent residential properties must not commence earlier than 7:00 a.m. nor continue past 8:00 p.m. Pursuant to Ind. Code § 36-7-4-1015(b)(4), the commitment stated in this paragraph shall automatically terminate as to each lot within the community after the original construction of the single-family home on that lot has been completed.

4. Except in the event of conflicts with drainage or utility improvements or removal of dead, dying, or diseased vegetation, the developer shall not remove existing trees within fifteen feet (15') of the east, west, and north property boundaries. In addition, the developer shall plant supplemental additional trees within this same area at the rate of 7 per 100 linear feet, with at least seventy-five percent (75%) of such plantings being evergreen varieties.

5. Lots 120-123 depicted on Exhibit B attached hereto shall be a minimum of eighty feet (80') wide at the building setback line.

6. To the extent that the Town of Brownsburg shall approve a 3-way stop at the intersection of Paxton Drive and Sunnyvale Drive in Promenade Section 1B, the developer, at developer's expense, shall arrange for the installation of appropriate signage during the site development of Promenade Phase 3.

7. These Commitments shall run with the land, be binding upon the Owner of the Property and subsequent owners of the Property. Except as provided in Section 1 hereof

(providing for automatic termination), these Commitments may be modified or terminated by a decision of the Brownsburg Plan Commission made at a public hearing after proper notice has been given. The Commitments contained in this instrument shall be effective upon the approval of Petition No. PCMA-25-4, pursuant to the Town of Brownsburg Unified Development Ordinance and shall continue in effect until modified or terminated by the Town of Brownsburg Plan Commission.

8. The undersigned hereby authorizes the Secretary of the Town of Brownsburg Plan Commission to record this Commitment in the Office of the Recorder of Hendricks County, Indiana upon final approval of Petition No. PCMA-25-4.

IN WITNESS WHEREOF, the Owner has executed these Written Commitment Concerning the of Property this 5 day of December, 2025.

Joseph R. Daniel

Joseph R. Daniel

STATE OF INDIANA)
)SS:
COUNTY OF HENDRICKS)

Before me, a Notary Public in and for said County and State, personally appeared Joseph R. Daniel, who acknowledged execution of the foregoing as his voluntary act and deed.

Witness my hand and Notarial Seal this 5th day of December, 2025.

Tabitha S Calvain

Notary Public

Tabitha S Calvain
Notary Public Seal State of Indiana
Johnson County
Commission Number NP0700980
My Commission Expires 5/30/2033

My Commission Expires: 5/30/33
My County of Residence: Johnson

I affirm, under the penalty of perjury, that I have taken reasonable care to redact each Social Security number in this document: Melissa R. Garrard

This instrument prepared by: Melissa R. Garrard, Pulte Homes of Indiana, LLC, 11595 N. Meridian Street, Suite 700, Carmel, Indiana 46032, Tel. (317) 593-4534

Exhibit A

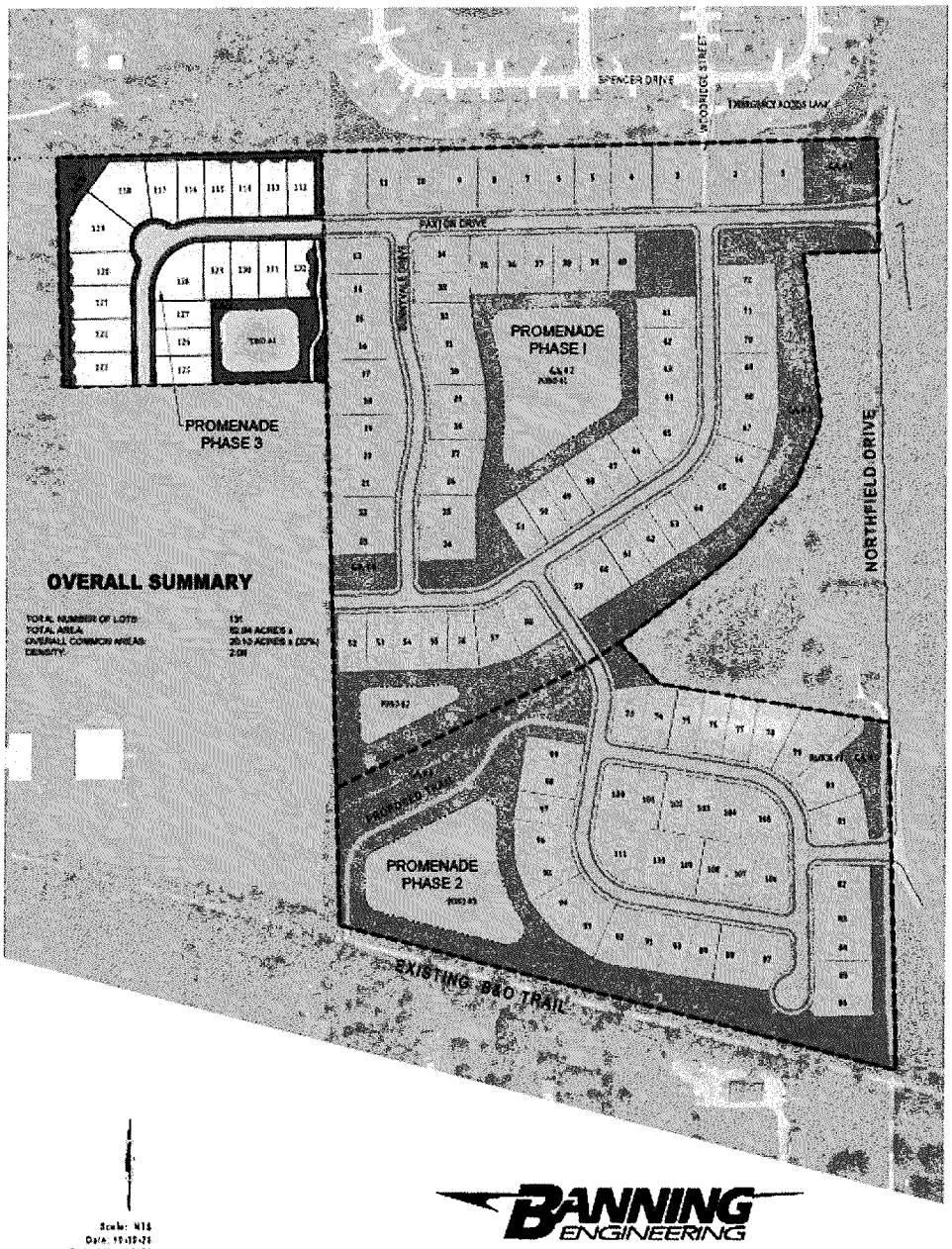
LEGAL DESCRIPTION

A PART OF THE SOUTHWEST QUARTER OF SECTION 24, TOWNSHIP 16 NORTH, RANGE 1 EAST OF THE SECOND PRINCIPAL MERIDIAN IN INDIANA. SAID PART BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID QUARTER SECTION, THENCE NORTH AND ALONG THE WEST LINE OF SAID QUARTER SECTION 2677.20 FEET; THENCE SOUTH 89 DEGREES 35 MINUTES 30 SECONDS EAST 700.00 FEET TO THE BEGINNING POINT OF THIS DESCRIPTION; THENCE CONTINUING SOUTH 89 DEGREES 35 MINUTES 30 SECONDS EAST 632.63 FEET; THENCE SOUTH 550.00 FEET; THENCE NORTH 89 DEGREES 35 MINUTES 30 SECONDS WEST 632.32 FEET; THENCE NORTH 550.00 FEET TO THE BEGINNING POINT OF THIS DESCRIPTION. CONTAINING IN ALL 7.99 ACRES. SUBJECT TO ALL LEGAL HIGHWAYS, RIGHTS-OF-WAY AND EASEMENTS OF RECORD.

Exhibit B

PROMENADE

CONCEPTUAL PLANNED UNIT DEVELOPMENT
BROWNSBURG, INDIANA



BANNING ENGINEERING

TOWN OF Brownsburg

AFFIDAVIT & CONSENT OF PROPERTY OWNER

That I/We Joseph Daniels after first being duly sworn, depose and say:

That I am/we are the owner(s) of Real Estate located at: (Legal and/or common address)

3495 N. CR 800 E, Brownsburg, IN

Parcel Number(s): 32-07-24-300-001.000-016 (7.99 acres)

That we have examined the application for a/an Rezone / Primary Plat / Construction Plans / on this property, and I/we are familiar with its contents. (application type)

That I/we have no objections to, and consent to such request as set forth in the application.

Joseph R Daniels
Signature of Affiant

Joseph Daniels
Printed Name

State of Indiana)

) SS:

County of Tippecanoe)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared Joseph Daniels, who acknowledged the execution of the above and foregoing instrument to its voluntary act and deed on the 19 day of August, 2025.

10-25-2031
Commission Expiration Date

Melissa L. Wilson
Notary

Warren
County of Residence

Melissa L. Wilson
Printed Name

MELISSA L WILSON
Notary Public - Seal
Warren County - State of Indiana
Commission Number NP0674625
My Commission Expires Oct 25, 2031

TOWN OF Brownsburg

AFFIDAVIT & CONSENT OF PROPERTY OWNER

That I/We Joseph Daniels after first being duly sworn, depose and say:

That I am/we are the owner(s) of Real Estate located at: (Legal and/or common address)

3495 N. CR 800 E, Brownsburg, IN

Parcel Number(s): 32-07-24-300-001.000-016 (7.99 acres)

That we have examined the application for a/an Rezone / Primary Plat / Construction Plans / on this property, and I/we are familiar with its contents. (application type)

That I/we have no objections to, and consent to such request as set forth in the application.

Joseph R Daniels
Signature of Affiant

Joseph Daniels
Printed Name

State of Indiana)

) SS:

County of Tippecanoe)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared Joseph Daniels, who acknowledged the execution of the above and foregoing instrument to its voluntary act and deed on the 19 day of August, 2025.

10-25-2031
Commission Expiration Date

Melissa L. Wilson
Notary

Warren
County of Residence

Melissa L. Wilson
Printed Name

MELISSA L WILSON
Notary Public - Seal
Warren County - State of Indiana
Commission Number NP0674625
My Commission Expires Oct 25, 2031

Advisory Plan Commission
TECHNICAL REVIEW COMMITTEE

TOWN OF Brownsburg
61 North Green Street | Brownsburg, Indiana 46112
Tel 317.852.1128 | Fax 317.852.1134

Project Name: Promenade, Sec. 3 Primary Plat
Record Number: PCPP-25-5
TECH Meeting Date: December 18, 2025

The following Technical Review Committee ("TECH") members provided comments for the project as detailed below:

Development Services
- ☐ Kevin Tolloty, Senior Planner
- ☒ Lauren Bouslog, Planner I
- ☐ Steve Fletcher, Building Commissioner/Director
- ☐ Frank Wise, Senior Building Inspector

Town Administration
- ☐ Debbie Cook, Town Manager
- ☐ Aaron Kaytar, Capital Projects & Procurement Manager
- ☐ Ethan Pierce, Economic Development Manager

Water Department
- ☒ Frank Monts, Superintendent

Wastewater Department
- ☐ Kathy Dillon, Water Utilities Director
- ☐

Street Department
- ☐ Aaron Love, Superintendent
- ☐ Matt Griner, Asst. Superintendent

Parks Department
- ☐ Amber Lane, Director
- ☐

Fire Territory
- ☒ Paul Hudson, Fire Marshal
- ☐ Jeff Schlageter, Deputy Fire Marshal

Police Department
- ☐ Joe Grimes, Chief
- ☐ Pat Bullock, Captain
- ☐ Bryan Fultz, Major

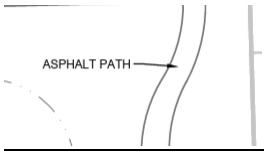
External Agencies
- ☐ Regan Huff, BCSC
- ☒ Dave Gaston, P.S., Hend. Co. Surveyor
- ☐ John Ayers, Hendricks Co. Engineer
- ☒ Mary Atkins, Wessler Engineering
- ☐ Angie DeKemper, CountryMark
- ☐ Gerry Jones, Vectren

1) DEVELOPMENT SERVICES

a) Paxton Drive needs to have a public or private road designation written under it and if it is a ROW, put the width (ex. 56' Public ROW)

b) Add acreage dimensions under the square feet calculations for each lot on page C102.

c) Note how wide and long this asphalt path is. I saw the sidewalks are labeled 5' wide on the street section.



d) You can combine your amenities plan and landscape plan since you are only required to have 1 amenity for 20 lots. I did not see a required vs proposed planting schedule table; that will need to be added to page L1.0. See below.

6. Additional Information for Residential Subdivision Plats: The following information shall be included with any primary plat for a residential subdivision:

   a. An amenities exhibit showing the location and type of amenities to be provided throughout the subdivision. The Amenities Plan may use a combination of text and representative images to convey the amenities that will be provided.

   b. Landscape plan and calculations showing the required landscaping and what is being proposed.

---

2) BUILDING

a) None

3) CAPITAL PROJECTS

a) None

4) ECONOMIC DEVELOPMENT

a) None

5) WATER

a) On the cover sheet, the phone number for the Water Dept. needs changed to 317-858-4147.

b) Please include all required valves and hydrants (no hydrant shown at dead-end of bump-out) on Development Plan submittal.

6) WASTEWATER

a) None

7) STREET/PUBLIC WORKS

a) None

8) PARKS

a) None

9) FIRE TERRITORY

a) Temporary fire turnaround noted.

10) POLICE

a) None

11) STORMWATER

a) See attached

12) BROWNSBURG COMMUNITY SCHOOL CORPORATION

a) None

13) **HENDRICKS COUNTY SURVEYOR**

a) This project will be required to receive Drainage Board approval.

14) **HENDRICKS COUNTY ENGINEER**

a) None

15) **COUNTRYMARK**

a) None

16) **VECTREN**

a) None

Please provide a written response to this report addressing each issue and, if necessary, indicate where on the revised plans the modification has been made.

TOWN OF BROWNSBURG STORMWATER/DRAINAGE PLAN REVIEW

CO Comment Originator
CR Comment Respondee

NAME OF PROJECT: Promenade Section 3
DESIGN PACKAGE: Primary Plat
DESIGNER: Banning Engineering

		Wessler - Reviewer to complete		Designer to complete	
No.	PAGE/SHEET REFERENCE	CO	COMMENT	CR	RESPONSE
	General	RS	The following comments are for information and planning purposes when preparing development plans. Note that Chapter 151 was updated April 25, 2024.		
1	Storm Sewer	RS	For the future development plan submittal, refer to Ch. 151.21 D. for storm sewer design standards and drainage report requirements.		
2	Flood routing	RS	For development plans, evaluate stormwater ponding and overflow path routing for Ch. 151.21 I.		
3	Drainage Report	RS	Refer to Ch. 151.20.B (2)(f) for drainage report guidelines. Include runoff, storm sewer sizing calculations, etc. when preparing the drainage report.		
4	Post-construction stormwater quality	RS	Refer to Ch. 151.23 for post-construction water quality volume and flow rate requirements. Upstream BMPs are required for ponds/underground detention. An Operation and Maintenance Manual and easements are required for BMPs. (Note: 30 minute minimum Tc for water quality flow rate calculations).		
5	County approval	RS	Coordinate with the Hendricks County Surveyor to determine if Drainage Board approval is necessary.		
6	Details and specifications	RS	Refer to the Town's Standard Details and Specifications when developing Construction Plans.		
7	Stormwater detention	RS	Detention design requirements follow Chapter 151.21 and Detail EW-04 "Detention/Retention Ponds" in the Town's Standard Details and Specifications. Ordinance revised in April 2024.		
8	Adequate outlet	RS	Ensure that there is an adequate outlet for drainage of stormwater.		
9	Erosion control and SWPPP	MMT	If the project will disturb 1 acre or more of land then a SWPPP and Construction Stormwater General Permit will be required for the development plan submittal. Refer also to Chapter 151.22 for SWPPP requirements.		

These comments should not be construed as a comprehensive list of comments, and the reviewer may make additional comments based on subsequent submittals

BANNING ENGINEERING
Over 30 Years of Making Your Project Our Priority

December 23, 2025

Lauren Bouslog, Associate Planner
Town of Brownsburg
61 North Green St.
Brownsburg, IN 46112

RE: TECH Review Meeting – Promenade, Section 3 Primary Plat

Please find below our responses to the TECH review comments dated December 18, 2025:

Development Services – Lauren Bouslog:

a) Paxton Drive needs to have a public or private road designation written under it and if it is a ROW, put the width (ex. 56' Public ROW).

Paxton Drive will be a 56' Public ROW. Notes have been added to Sheet C102 indicating the designation.

b) Add acreage dimensions under the square feet calculations for each lot on page C102.

Acreage dimensions have been added as requested.

c) Note how wide and long this asphalt path is. I saw the sidewalks are labeled 5' wide on the street section.

The asphalt path will be 6' wide and approximately 0.2 miles long. A 200 S.F. courtyard and seating area has been added at the south end of the trail to satisfy the UDO amenity requirements. Additional notes were added to the plans as well.

d) You can combine your amenities plan and landscape plan since you are only required to have 1 amenity for 20 lots. I did not see a required vs proposed planting schedule table; that will need to be added to page L1.0. See below.

The landscaping plan has be updated to include the amenity plans and planting schedule table.

Banning Engineering, Inc. • 853 Columbia Road, Suite 101 • Plainfield, IN 46168
Phone: (317) 707-3700 • Fax: (317) 707-3800 • E-mail: banning@BanningEngineering.com

Water – Frank Monts:

a) On the cover sheet, the phone number for the Water Dept. needs changed to 317-858-4147.

The phone number has been updated.

b) Please include all required valves and hydrants (no hydrant shown at dead-end of bump-out) on Development Plan submittal.

Valves and hydrants have been added to plans based off discussions with Frank Monts. Final locations to be determined with construction plan approval.

Fire Territory – Paul Hudson:

a) Temporary fire turnaround noted.

Noted.

Fire Territory – Paul Hudson:

a) This project will be required to receive Drainage Board approval.

Applications will be submitted to the Drainage Board for review.

Stormwater – Wessler Engineering:

a) The following comments are for information and planning purposes when preparing development plans. Note that Chapter 151 was updated April 25, 2025.

All Wessler comments have been received and will be taken into consideration when preparing construction plans.

Please contact me at pmays@banning-eng.com or (317) 707-3741 if you have any questions.

Parker Mays

CC: Lance Ferrell – Banning Engineering

CC: Melissa Garrard – Pulte Homes

Banning Engineering, Inc. • 853 Columbia Road, Suite 101 • Plainfield, IN 46168
Phone: (317) 707-3700 • Fax: (317) 707-3800 • E-mail: banning@BanningEngineering.com

"Your Project is Our Priority"

PRELIMINARY DRAINAGE REPORT

for

PROMENADE, SECTION 3

In

Town of Brownsburg
Hendricks County, Indiana

Prepared for:

Pulte Group
11595 North Meridian St., Suite 700
Carmel, Indiana 46032
Phone: (847) 489-8816
Email: joseph.marx@pultegroup.com
Contact: Joe Marx

December 08, 2025

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Drainage Narrative for:
Promenade, Section 3

I. INTRODUCTION:

The Promenade, Section 3 project is an 8.0± acre proposed residential development that will serve as an additional section to existing Promenade subdivision which was finalized in the spring of 2024. The Promenade project is located about 0.3 miles east of Hornaday Road near the northwest corner of E County Rd 300N and the new extension of Northfield Dr., in the southwest quarter; Section 24; Township 16 North; Range 1 East; Town of Brownsburg; Hendricks County, Indiana. The Promenade, Section 3 project is a proposed residential development that will contain 20 single family residences. This report includes the results of a preliminary drainage analysis for the project, summarizing the existing and developed conditions of the site.

II. ADJOINING LAND CONDITIONS:

North: Residential
South: Residential
East: Residential
West: Residential

III. EXISTING SOIL TYPES:

Symbol	Name	Hydrologic Soil Group
CrA	Crosby silt loam	C
ThrA	Treaty silty clay loam	B
YbvA	Brookston silty clay loam	B
YclA	Crosby silt loam	C

IV. SITE DRAINAGE ANALYSIS:

a. Stormwater Discharge Requirements

Allowable Stormwater discharge is based on requirements found in the Hendricks County Stormwater Management Ordinance. Allowable discharge is based on a rate of discharge (CFS) per acre of development. The following **Table 1** are summaries of the stormwater discharge requirements.

TABLE 1
STORMWATER DISCHARGE REQUIREMENTS
HENDRICKS COUNTY

$Q_{10p} \leq$ 0.1 cfs / acre of development **$Q_{100p} \leq$ 0.3 cfs / acre of development**	Where: **Q_{10p}** = Developed release rate up to and including 10-year return period storm event **Q_{100p}** = Developed release rate for 11 to 100-year return period storm event

b. DRAINAGE DESIGN

i. EXISTING CONDITIONS

The majority of the 8.0± acre site consists of wood and shrubs. The existing 8.0±acres to be developed (EX-1 & EX-2) currently drain into the Pollard Todd Legal Drain to an existing 48" culvert under a trail at the south end of the site (BNDY). Approximately 6.15± acres drain east to an existing 24" end section designed to capture the site in Promenade Sections 1A and 1B. Approximately 1.84± acres drains south along the west border of the Promenade Section 1A and 1B site directly to the Pollard Todd Legal Drain.

ii. DEVELOPED CONDITIONS

In the developed condition, stormwater from the site will be routed to a proposed wet bottom pond to reduce the discharge rates. Approximately 8.0± acres of developed onsite area (DEV-1) drain through a proposed storm sewer system to the proposed Pond, which will outlet to Existing Storm Sewer System via an Inline structure connection just south of Existing Structure 130 from Promenade, Section 1A and 1B. Structure 130 drains south to existing "Pond 2" from Promenade Section A and 1B before out letting into the Pollard Todd Legal Drain. In addition, approximately 7.1± acres of offsite area (OFF-1) will be routed through a proposed storm sewer network into the proposed pond.

A preliminary hydrologic/hydraulic model of the developed site was completed to calculate the developed stormwater discharges and stage elevations. The discharge from the developed project site to the boundary is less than the allowable discharge. **Table 2** below provides a summary of the allowable and developed discharge rates for the project. **Table 3** below provides a summary of the developed 100-year detention pond stage elevations including offsite areas. Complete calculations can be found in the appendix.

TABLE 2
MASTER DRAINAGE DESIGN DEVELOPED CONDITION
STORMWATER DISCHARGE (ONSITE ONLY)

Discharge Point	Developed Discharge (CFS)		Allowable Discharge (CFS)	
BNDY	Q_{10p} = 0.78	<	0.1 CFS / ACRE = 0.8	OK
	Q_{100p} = 2.35	<	0.3 CFS / ACRE = 2.4	OK

TABLE 3
MASTER DRAINAGE DESIGN DEVELOPED CONDITION
DETENTION PONDS STAGES (WITH OFFSITE & TAILWATER)

Discharge Point	Normal Pool Elevation	100-year Stage Elevation
POND 1	867.5	870.95

Storm sewers will be designed to provide capacity for a 10-year storm event. The rational method will be used to model the runoff rates, and Manning's Equation will be used to calculate the capacity of the pipes. Calculations will be provided with the final design

The wet bottom detention pond will provide a best management practice (BMP) for stormwater quality. A stormwater quality structure that treats 80% total suspended solids will be installed as a pre-treatment measure for the detention ponds. Calculations will be provided with the final design.

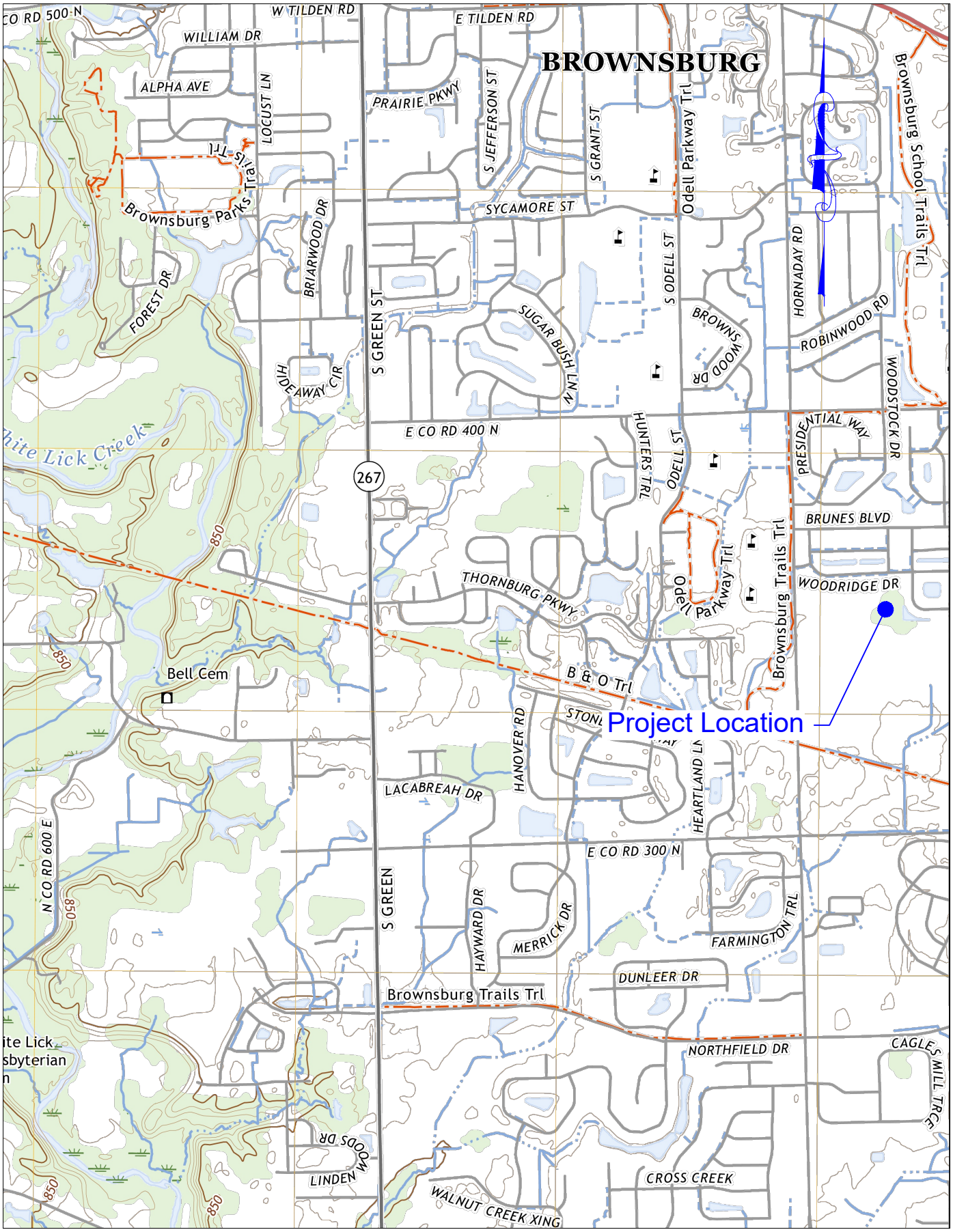
In conclusion, the calculations in this report show that drainage from the project will not cause any adverse impacts to the surrounding areas or the project site itself. We believe the project falls within the requirements of the Town of Brownsburg and Hendricks County drainage ordinances.

References:

Design data and methods are based on the following reference materials:

1. NRCS Web Soil Survey (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)
2. USGS Mapping
3. StormWise v4.08.03, Streamline Technologies, Inc.
4. Technical Report 55, Small Watershed Hydrology, NRCS
5. Hendricks County Stormwater Technical Standards Manual (December 2004 Edition)

A. USGS AREA MAP

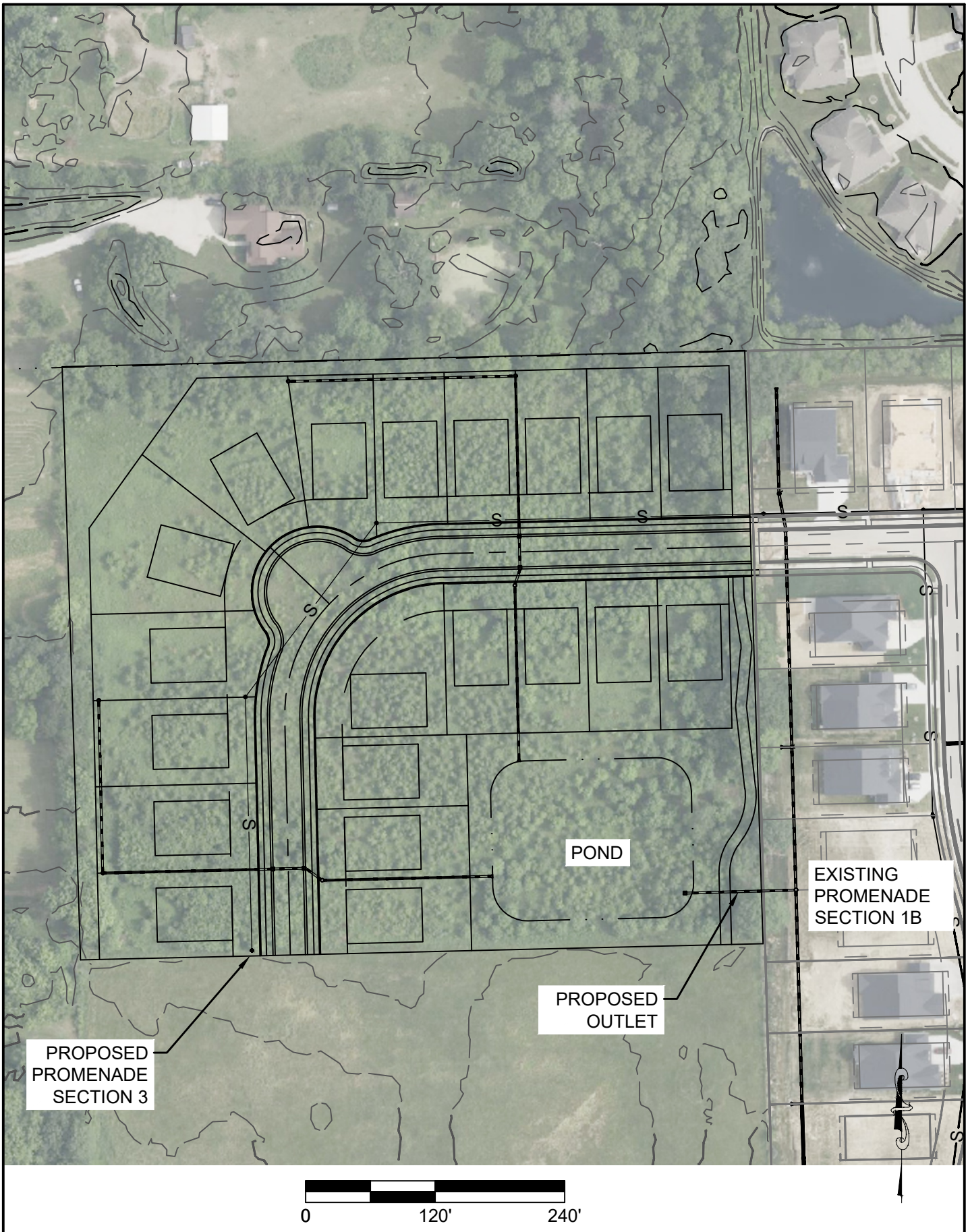


Drawn By: JET
Date: 12/02/2025
Project No.: 25155
Scale: NONE
Page: 1 of 1

AREA MAP
PROMENADE, SECTION 3
HENDRICKS COUNTY
AVON, INDIANA

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

B. SITE MAP



Drawn By: JET
Date: 12/03/2025
Project No.: 25155
Scale: AS SHOWN
Page: 1 of 1

SITE MAP
PROMENADE, SECTION 3
HENDRICKS COUNTY
BROWNSBURG, INDIANA

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

C. SOILS MAP


86° 22' 51" W
86° 22' 33" W
39° 49' 0" N
39° 48' 42" N
552990
553060
553130
553200
553270
553340
553410
4407610
4407540
4407470
4407400
4407330
4407260
4407190
4407120
4407050
Woodridge St
Pine Cone Dr
YclA
YbvA
ThrA
CrA
Soil Map may not be valid at this scale.
Map Scale: 1:2,750 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 40 80 160 240
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hendricks County, Indiana
Survey Area Data: Version 29, Sep 3, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	C/D	1.6	4.9%
ThrA	Treaty silty clay loam, 0 to 1 percent slopes	B/D	9.0	27.1%
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	B/D	9.2	27.8%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	C/D	13.3	40.2%
Totals for Area of Interest			**33.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

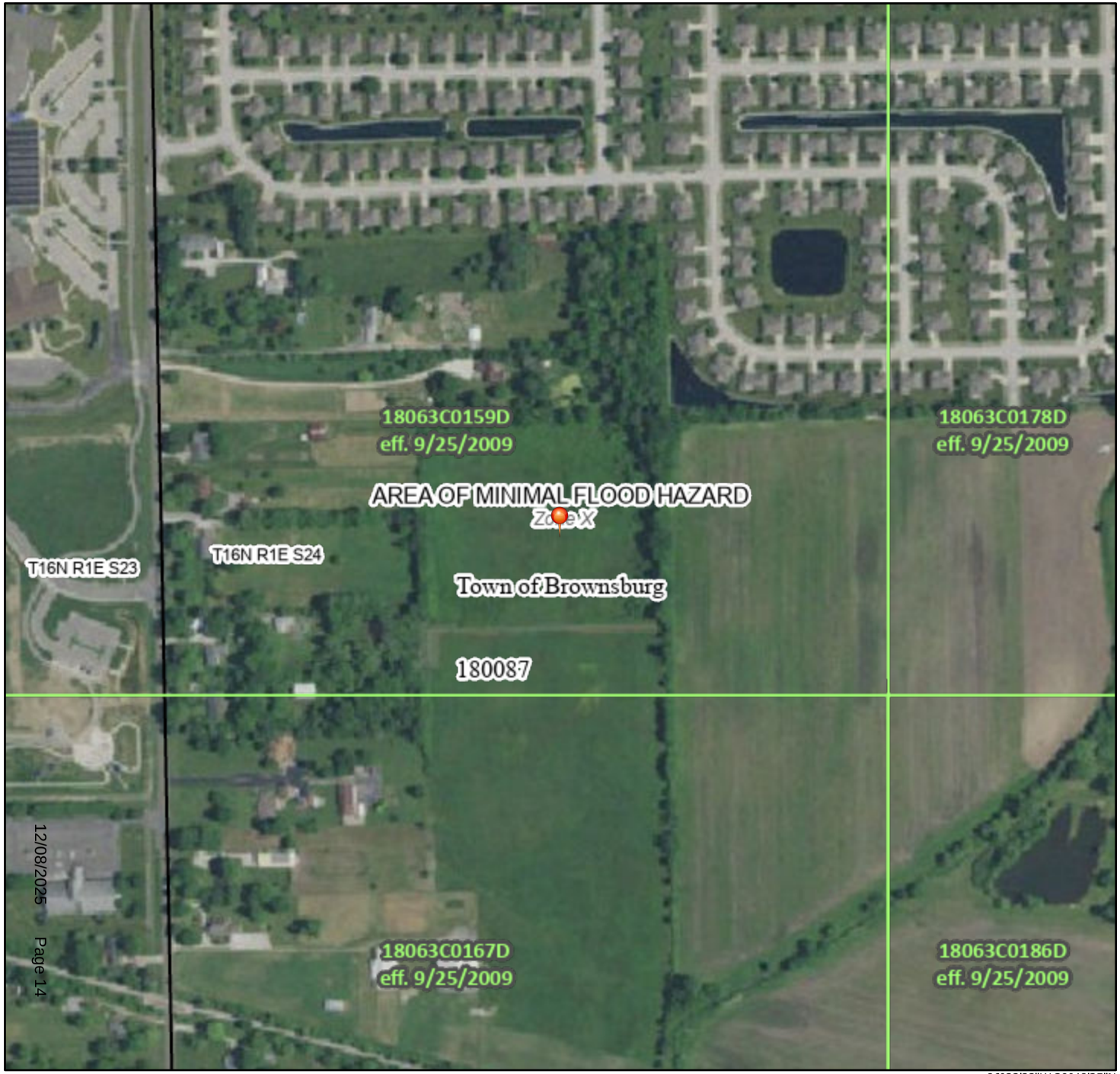
Tie-break Rule: Higher

D. FLOOD MAP

National Flood Hazard Layer FIRMette

FEMA

86°23'W 39°49'3"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

86°22'22"W 39°48'35"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

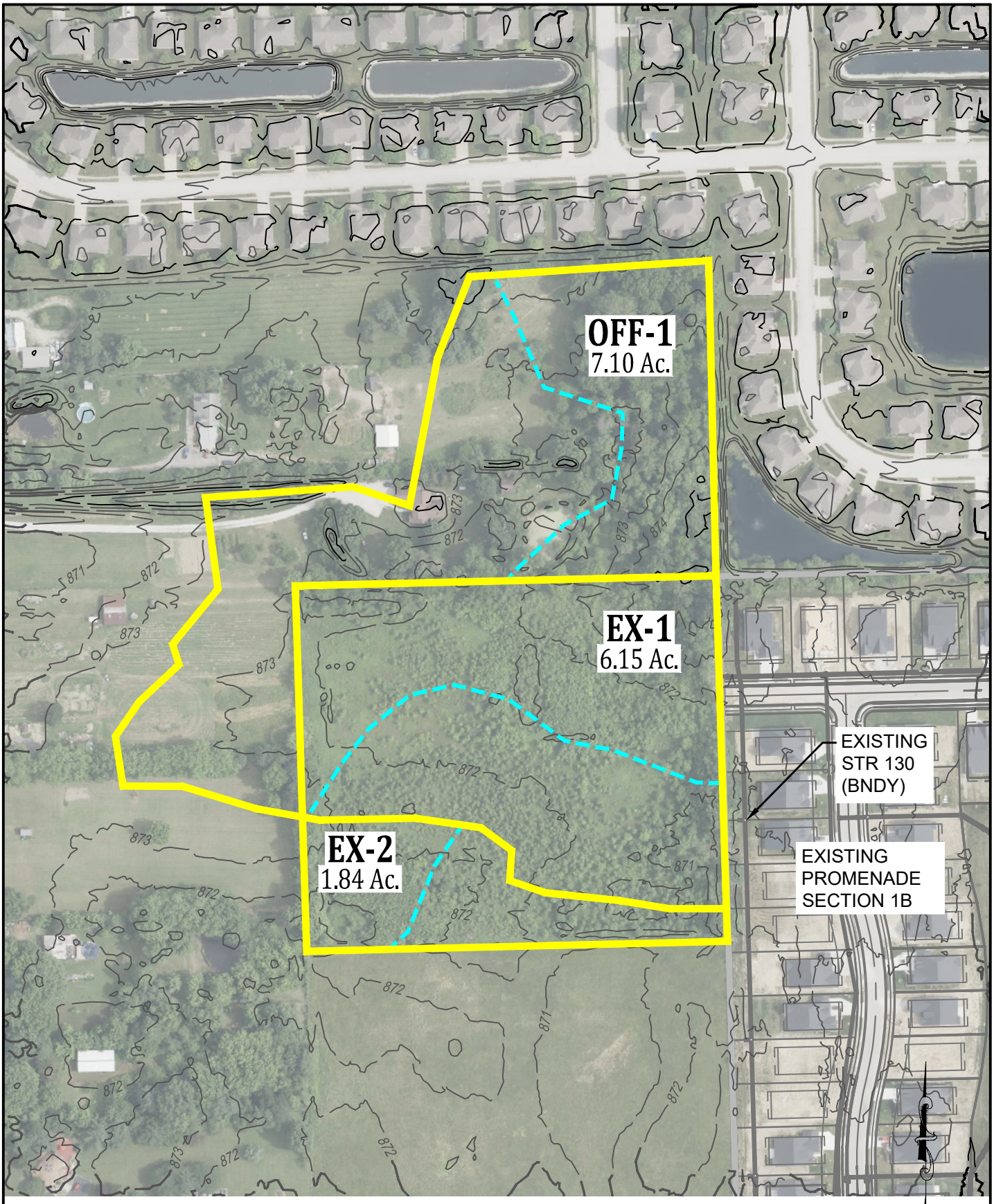
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/25/2025 at 1:16 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

E. DRAINAGE DESIGN

E1. EXISTING CONDITION BASIN MAP

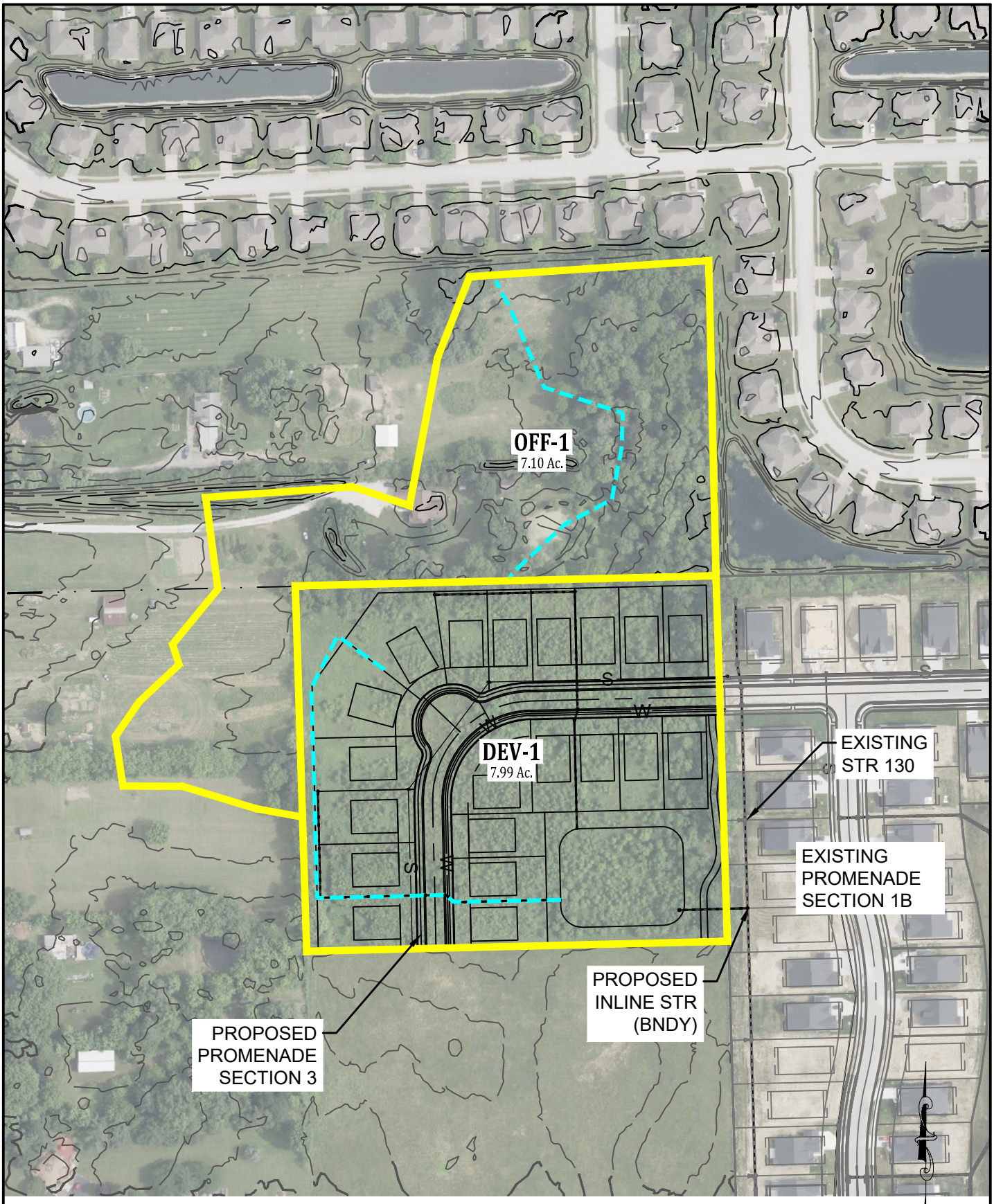


Drawn By: JET
Date: 11/26/2025
Project No.: 25155
Scale: AS SHOWN
Page: 1 of 1

EXISTING BASIN MAP
PROMENADE, SECTION 3
HENDRICKS COUNTY
BROWNSBURG, INDIANA

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

E2. DEVELOPED CONDITION BASIN MAP



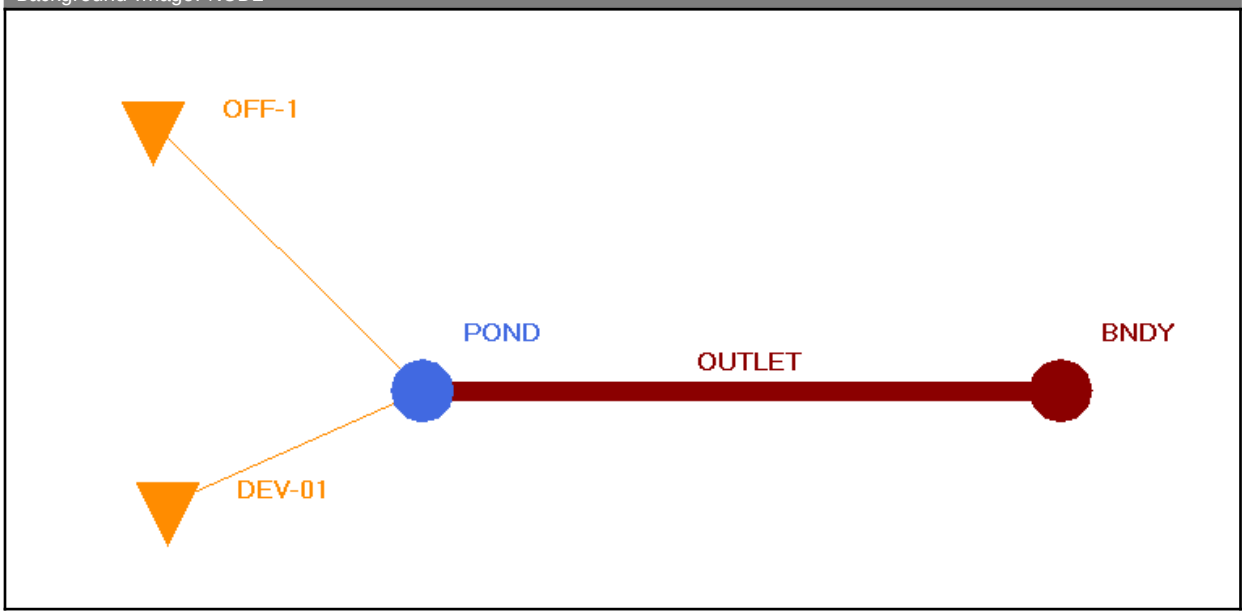
Drawn By: JET
Date: 11/26/2025
Project No.: 25155
Scale: AS SHOWN
Page: 1 of 1

DEVELOPED BASIN MAP
PROMENADE, SECTION 3
HENDRICKS COUNTY
BROWNSBURG, INDIANA

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BanningEngineering.com

E3. DEVELOPED CONDITION CALCULATIONS

Background Image: NODE



Node Max Conditions : Multi Item | (name, sim) [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BNDY	010yr-24hr	867.10	867.10	867.00	0.0000	0.78	0.00	0
BNDY	100yr-24hr	867.10	867.10	867.00	0.0000	2.35	0.00	0
POND	010yr-24hr	871.50	871.50	869.31	0.0010	23.54	0.78	31033
POND	100yr-24hr	871.50	871.50	870.27	0.0010	39.49	2.35	33036

Node Max Conditions : Multi Item | (name, sim) [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BNDY	010yr-24hr	867.10	867.10	867.00	0.0000	1.78	0.00	0
BNDY	100yr-24hr	867.10	867.10	867.00	0.0000	9.48	0.00	0
POND	010yr-24hr	871.50	871.50	869.86	0.0010	30.61	1.78	32156
POND	100yr-24hr	871.50	871.50	870.95	0.0010	55.35	9.48	34521

E4. DEVELOPED CONDITION Tc AND Cn VALUES

TR-55
-COMPOSITE CN-VALUES & TIME OF CONCENTRATION-

PROJECT: Promenade, Section 3
JOB #: 25155
DATE: 12/3/25
COMPUTED BY: JET

BASINS

BASIN	Composite CN	Area (ft^2)	Area (acres)	Area (miles)	Tc
DEV-1	84.00	348044	7.99	0.01	17.3
OFF-1	68.00	309276	7.10	0.01	26.5

Basin	Cover Description	Soil Group	Area (Acres)	CN	CN * Acres
DEV-1	Paved parking lots, roofs, driveways	C	3	98	294
DEV-1	Good condition; grass cover > 75%	C	3.65	74	270.1
DEV-1	Good condition; grass cover > 75%	D	1.34	80	107.2
OFF-1	Paved parking lots, roofs, driveways	C	0.2	98	19.6
OFF-1	Woods - grass combination GOOD	B	1.27	58	73.66
OFF-1	Woods - grass combination GOOD	C	2	72	144
OFF-1	Good condition; grass cover > 75%	B	1.63	61	99.43
OFF-1	Good condition; grass cover > 75%	C	2	74	148

Time of Concentration Worksheet
Based on TR-55

PROJECT: Promenade, Section 3
JOB #: 25155

Typical values for Manning's n

Overland Flow		Channel Flow	
short grass	0.15	grass	0.03
dense grass	0.24	concrete	0.02
pavement	0.011	rip-rap	0.04
woods light	0.4		
cultivated > 20%	0.17		

2 year, 24 hour rainfall = 3.02 inches
minimum T_c = 5 minutes

	Overland flow				**Shallow Concentrated Flow (1)**					**Shallow Concentrated Flow (2)**					**Channel Flow**								**T_c**
Basin name	Length (ft)	S %	n	T_t (min)	Length (ft)	S %	Paved/Un (P or U)	Vel. (ft/s)	T_t (min)	Length (ft)	S %	Paved/Un (P or U)	Vel. (ft/s)	T_t (min)	Length (ft)	a (s.f.)	Pw (ft)	r (ft)	S %	n	Vel. (ft/s)	T_t (min)	(min)
				0					0					0								0	
				0					0					0								0	
DEV-1	85	2.5	0.24	12	320	1	U	1.6	3					0	391						3.00	2	17
OFF-1	100	1	0.24	19	531	0.6	U	1.2	7					0								0	26
				0					0					0								0	
				0					0					0								0	

E5. DEVELOPED CONDITION ICPR INPUT DATA

Simple Basin: DEV-01

Scenario:	Scenario1
Node:	POND
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	17.3000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	7.9900 ac
Curve Number:	84.0
Ia/S:	0.00
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: OFF-1

Scenario:	Scenario1
Node:	POND
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	26.5000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	7.1000 ac
Curve Number:	68.0
Ia/S:	0.00
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: BNDY

Scenario:	Scenario1
Type:	Time/Stage
Base Flow:	0.00 cfs
Initial Stage:	867.00 ft

Warning Stage: 867.10 ft
Alert Stage: 867.10 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	867.00
0	0	0	30.0000	867.00

Comment:

Node: POND

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 867.50 ft
Warning Stage: 871.50 ft
Alert Stage: 871.50 ft

Stage [ft]	Area [ac]	Area [ft2]
867.50	0.5500	23958
868.50	0.6800	29621
869.50	0.7200	31363
870.50	0.7700	33541
871.50	0.8200	35719

Comment:

Drop Structure Link: OUTLET

Scenario: Scenario1
From Node: POND
To Node: BNDY
Link Count: 1
Pipe Flow Direction: Both
Solution: Combine
Increments: 0
Pipe Count: 1
Damping: 0.0000 ft
Length: 100.00 ft
FHWA Code: 0
Entr Loss Coef: 1
Exit Loss Coef: 0
Bend Loss Coef: 0
Bend Location: 0.00 dec
Energy Switch: Energy

Upstream Pipe		Downstream Pipe	
Invert:	867.50 ft	Invert:	867.20 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.25 ft	Max Depth:	1.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	867.50 ft
Control Elevation:	867.50 ft
Max Depth:	0.42 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component	
Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	869.30 ft
Control Elevation:	869.30 ft
Max Depth:	0.50 ft
Max Width:	0.70 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component	
Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	870.27 ft
Control Elevation:	870.27 ft
Max Depth:	3.00 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Simulation: 010yr-24hr

Scenario: Scenario1
Run Date/Time: 11/26/2025 3:25:10 PM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Ia/S: 0.20 dec

Max dZ:	1.0000 ft	Smp/Man Basin Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft		
		Rainfall Name:	~SCSII-24
		Rainfall Amount:	4.28 in
		Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 100yr-24hr

Scenario: Scenario1
Run Date/Time: 11/26/2025 3:25:15 PM
Program Version: StormWise 4.08.03

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options			
Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec	Ia/S:	0.20 dec
dZ Tolerance:	0.0010 ft		
Max dZ:	1.0000 ft	Smp/Man Basin Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft		
		Rainfall Name:	~SCSII-24
		Rainfall Amount:	6.30 in
		Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

F. PREVIOUS DRAINAGE CALCULATIONS & SUPPORTING DOCUMENTS

"Your Project is Our Priority"

DRAINAGE REPORT

for

PROMENADE, SECTIONS 1A & 1B

In

Town of Brownsburg
Hendricks County, Indiana

Prepared for:

Pulte Group – Indianapolis Division
11590 North Meridian St., Suite 530
Carmel, Indiana 46032
Phone: (317) 814-2251
Email: David.compton@pultegroup.com
Contact: David Compton

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(Submittal to Town of Brownsburg)

Banning Engineering, P.C. • 853 Columbia Road, Suite 101 • Plainfield, IN 46168
Phone: (317) 707-3700 • Fax: (317) 707-3800 • E-mail: banning@BanningEngineering.com
Job #21113-S1

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Drainage Narrative for:
Promenade, Sections 1A & 1B

I. INTRODUCTION:

This drainage report was prepared for a 54.2± acre residential subdivisions known as Promenade, located about 0.3 miles east of Hornaday Road near the northwest corner of E County Rd 300N and the new extension of Northfield Dr., in the southwest quarter; Section 24; Township 16 North; Range 1 East; Town of Brownsburg; Hendricks County, Indiana. The Promenade project is a proposed residential development that will contain 124 single family residences. The project will be developed in sections, with Sections 1A & 1B developed first. Sections 1A & 1B consists of 34.3± acres of development resulting in 72 lots of single-family dwellings. This report includes the result of a master drainage design for the entire development and the result of Sections 1A & 1B alone.

II. ADJOINING LAND CONDITIONS:

North: Residential
South: Residential
East: Agricultural
West: Residential

III. EXISTING SOIL TYPES:

Symbol	Name	Hydrologic Soil Group
CrA	Crosby silt loam	C
ThrA	Treaty silty clay loam	B
YclA	Brookston silty clay loam	B
YbvA	Crosby silt loam	C

IV. SITE DRAINAGE ANALYSIS:

a. Stormwater Discharge Requirements

Allowable Stormwater discharge is based on requirements found in the Hendricks County Stormwater Management Ordinance. Allowable discharge is based on a rate of discharge (CFS) per acre of development. The project is located within a watershed area that has a more restrictive release rate. The following **Table 1** are summaries of the stormwater discharge requirements.

TABLE 1
STORMWATER DISCHARGE REQUIREMENTS
HENDRICKS COUNTY

Q_{10p} ≤ 0.025 cfs / acre of development **Q_{100p} ≤ 0.073 cfs / acre of development**	Where: **Q_{10p}** = Developed release rate up to and including 10-year return period storm event **Q_{100p}** = Developed release rate for 11 to 100-year return period storm event

b. MASTER DRAINAGE DESIGN

i. EXISTING CONDITIONS

The majority of the 54.2± acre site consists of farm field (row crops), with the Pollard Todd Legal Drain running from the northeast to southwest corner of the site. The existing 50.6± acres to be developed (EX-1 & EX-2) currently drain directly into the Pollard Todd Legal Drain to an existing 48" culvert under a trail at the south end of the site (BNDY). Several offsite/undeveloped areas also drain through the Pollard Todd legal drain. OFF-1 is a 13.3± acre area directly west of the site that drains east to the west property line, then south into the legal drain. OFF-2 is an 8.5± acre area located east of the site that drains west into the legal drain. OFF-3 is a 26.0± acre area located west of the site that drains southeast into the legal drain. UNDEV is a 0.7± acre area at the northeast corner of the site that drains into the legal drain. BEACON PND A is a 71.6± acre area that drains to Pond A in Beacon Point subdivision. Pond A routes to Pond B in Beacon Point, which receives 27.0± acres and outlets to the Pollard Todd Legal Drain. Calculations and supporting data from the previous Beacon Pointe drainage report and Northfield Drive drainage report can be found under Appendix F. About 39.3± acres in Holiday Pine subdivision (HOL PINE PND N1, HOL PINE PND N2, HOL PINE PND N3 & HOL PINE PND N4) are all interconnected and discharge into the Pollard Todd Legal Drain. Calculations and supporting data from the previous Holiday Pines drainage report can be found under Appendix F. A hydrologic/hydraulic model of the existing conditions for the entire watershed to BNDY was completed using Streamline Technologies Interconnected Channel and Pond Routing software (ICPR-4). Results can be found under Appendix D.

ii. DEVELOPED CONDITIONS

In the developed condition, there are three ponds that will receive runoff from the development, providing stormwater detention (POND-1, POND-2, POND-3). Approximately 20.4± acres of developed onsite area (DEV-1) drains to POND-1, which outlets to POND-2. About 6.7± acres of developed onsite area (108, 110, 111 & 112) drains to the storm system that interconnects Pond-1 & Pond-2. About 5.6± acres of developed onsite area (DEV-2) and 13.3± acres of existing offsite area (OFF-1) drains to POND-2, which outlets into the Pollard Todd Legal Drain. About 0.7± acres of undeveloped area (UNDEV), located at the northeast corner of the site, drains directly to the legal drain. About 19.4± acres of developed onsite area (DEV-3) drains to POND-3, which outlets into the Pollard Todd Drain. The Pollard Todd Legal Drain and tributary watershed was included in the developed hydrologic/hydraulic model for analyzing the tailwater condition at the pond outlets. Results are provided in the appendix showing discharge from the site with onsite conditions only, and with offsite conditions that include tailwater conditions in the Pollard Todd Drain. There are two locations where a new roadway will cross the Pollard Todd Legal Drain. Box culverts will be installed at the crossings to ensure continuous flow through the legal drain. Design of the culverts are included in the hydrologic/hydraulic model. The allowable discharge rate at BNDY is based on the 50.6± acres that are being developed. The following **TABLE 2** shows the allowable and developed discharge rates. **TABLE 3** shows the developed 100-year detention pond stage elevations with offsite areas and tailwater from the Pollard Todd Legal Drain included.

TABLE 2 MASTER DRAINAGE DESIGN DEVELOPED CONDITION STORMWATER DISCHARGE (ONSITE ONLY)				
Discharge Point	**Developed Discharge (CFS)**		**Allowable Discharge (CFS)**	
BNDY	**Q_{10p} = 1.2**	**<**	**0.025 CFS / ACRE = 1.3**	**OK**
	Q_{100p} = 2.6	**<**	**0.073 CFS / ACRE = 3.7**	**OK**

TABLE 3 MASTER DRAINAGE DESIGN DEVELOPED CONDITION DETENTION PONDS STAGES (WITH OFFSITE & TAILWATER)		
Discharge Point	**Normal Pool Elevation**	**100-year Stage Elevation**
POND 1	**867**	**869.8**
POND 2	**865.5**	**870.2**
POND 3	**866**	**870.4**

c. SECTIONS 1A & 1B DRAINAGE DESIGN

Approximately 31.1± acres will be developed for Promenade, Sections 1A & 1B. Two ponds will be developed (POND-1, POND-2) to provide stormwater detention. Approximately 20.4± acres of developed onsite area (DEV-1) drains to POND-1, which outlets to POND-2. About 6.7± acres of developed onsite area (108, 110, 111 & 112) drains to the storm system that interconnects Pond-1 & Pond-2. About 5.6± acres of developed onsite area (DEV-2) and 13.3± acres of existing offsite area (OFF-1) drains to POND-2, which outlets into the Pollard Todd Legal Drain. About 0.7± acres of undeveloped area (UNDEV), located at the northeast corner of the site, drains directly to the legal drain. As with the Master Drainage Design, the Pollard Todd Legal Drain and tributary watershed was included in the developed Sections 1A & 1B hydrologic/hydraulic model for analyzing the tailwater condition at the pond outlet. Results are provided in the appendix showing discharge from the site with onsite conditions only, and with offsite conditions that include tailwater conditions in the Pollard Todd Drain. There is one location where a new roadway will cross the Pollard Todd Legal Drain in Sections 1A & 1B. A 6'x5' Box culvert (with on-foot sump below the flowline) will be installed at the crossings to ensure continuous flow through the legal drain. Design of the culvert is included in the hydrologic/hydraulic model. The allowable discharge rate at BNDY is based on the 31.1± acres that are being developed. The following **TABLE 4** on the following page shows the allowable and developed discharge rates. **TABLE 5** shows the developed 100-year detention pond stage elevations with offsite areas and tailwater from the Pollard Todd Legal Drain included.

TABLE 4 SECTIONS 1A & 1B DEVELOPED CONDITION STORMWATER DISCHARGE (ONSITE ONLY)				
Discharge Point	**Developed Discharge (CFS)**		**Allowable Discharge (CFS)**	
BNDY	**Q_{10p} = 0.6**	**<**	**0.025 CFS / ACRE = 0.8**	**OK**
	Q_{100p} = 1.8	**<**	**0.073 CFS / ACRE = 2.3**	**OK**

TABLE 5 SECTIONS 1A & 1B DEVELOPED CONDITION DETENTION PONDS STAGES (WITH OFFSITE & TAILWATER)		
Discharge Point	**Normal Pool Elevation**	**100-year Stage Elevation**
POND 1	**867**	**869.8**
POND 2	**865.5**	**870.3**

Storm sewers were designed to provide capacity for a 10-year storm event. The rational method was used to model the runoff rates, and Manning's Equation was used to calculate the capacity of the pipes. Calculations can be found in the appendix. The proposed 6'x5' box culvert for the crossing of the Pollard Todd Legal Drain was designed with capacity to convey the emergency flood routing from the upstream watershed during a 100-yr storm event. About 98.6± acres (BEACON PND A & BEACON PND B) flood routes from Pond B in Beacon Point heading to the south along the east side of Northfield Rd. About 39.3± acres in Holiday Pine subdivision (HOL PINE PND N1, HOL PINE PND N2, HOL PINE PND N3 & HOL PINE PND N4) flood routes from Pond N1 and into the Pollard Todd Legal Drain just north of the proposed culvert. A hydrologic/hydraulic model was developed to analyze this scenario. In this model, all the links upstream of the proposed culvert are designed as broad crested weirs to simulate overland flow. The 24-inch outlet from Pond B in Beacon Pointe to the proposed culvert remains active to model the discharge from the headwater generated by the flood routing along the east side of Northfield Rd. Calculations can be found in the appendix.

The wet bottom detention pond will provide a best management practice (BMP) for stormwater quality. A stormwater quality structure that treats 80% total suspended solids will be installed as a pre-treatment measure for the detention ponds.

In conclusion, the calculations in this report show that drainage from the project will not cause any adverse impacts to the surrounding areas or the project site itself. We believe the project falls within the requirements of the Town of Brownsburg and Hendricks County drainage ordinances.

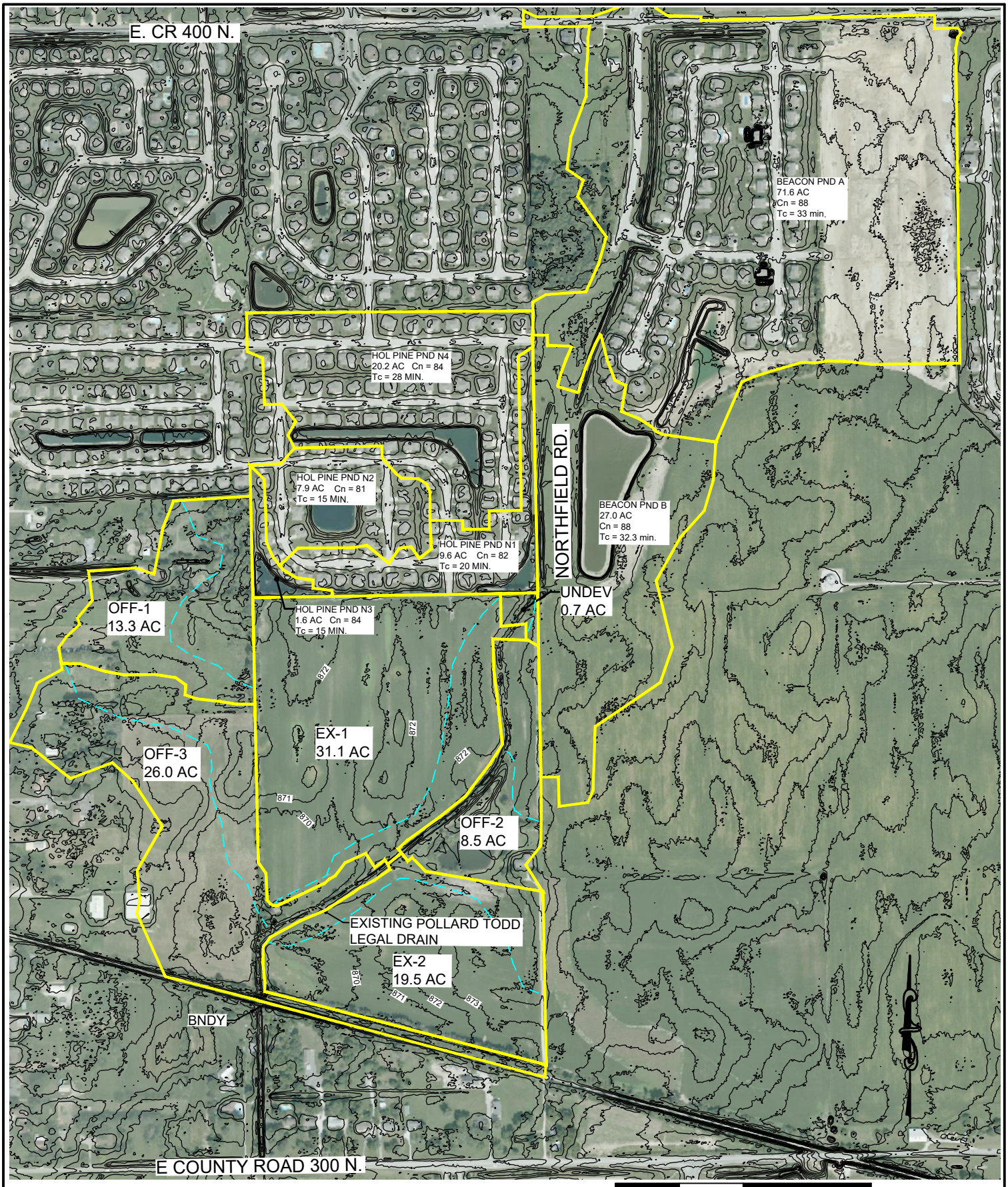
References:

Design data and methods are based on the following reference materials:

1. NRCS Web Soil Survey (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)
2. USGS Mapping
3. ICPR v4.05.01, Streamline Technologies, Inc.
4. Technical Report 55, Small Watershed Hydrology, NRCS
5. Hendricks County Stormwater Technical Standards Manual (December 2004 Edition)

D. MASTER DRAINAGE DESIGN

D1. EXISTING CONDITION BASIN MAP

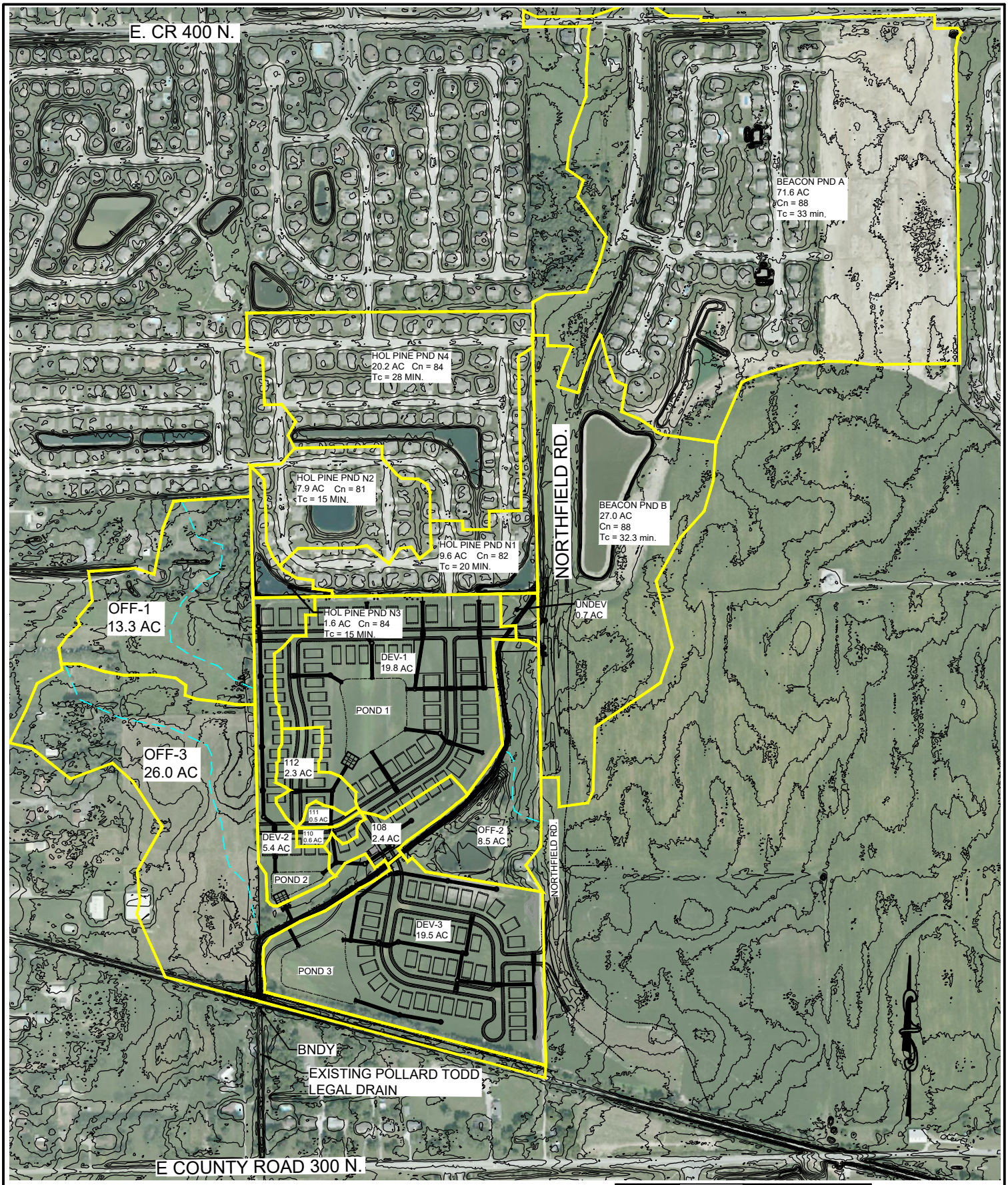


Drawn By: JET
Date: 12/31/2021
Project No.: 21113
Scale: AS SHOWN
Page: 1 of 1

EXISTING CONDITIONS
MASTER DRAINAGE DESIGN
PROMENADE
HENDRICKS COUNTY
BROWNSBURG, INDIANA

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BannningEngineering.com

D5. DEVELOPED CONDITION BASIN MAP



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Date: 11/30/2021
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Scale: AS SHOWN
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DEVELOPED OVERALL BASINS
MASTER DRAINAGE DESIGN
PROMENADE
HENDRICKS COUNTY
BROWNSBURG, INDIANA

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
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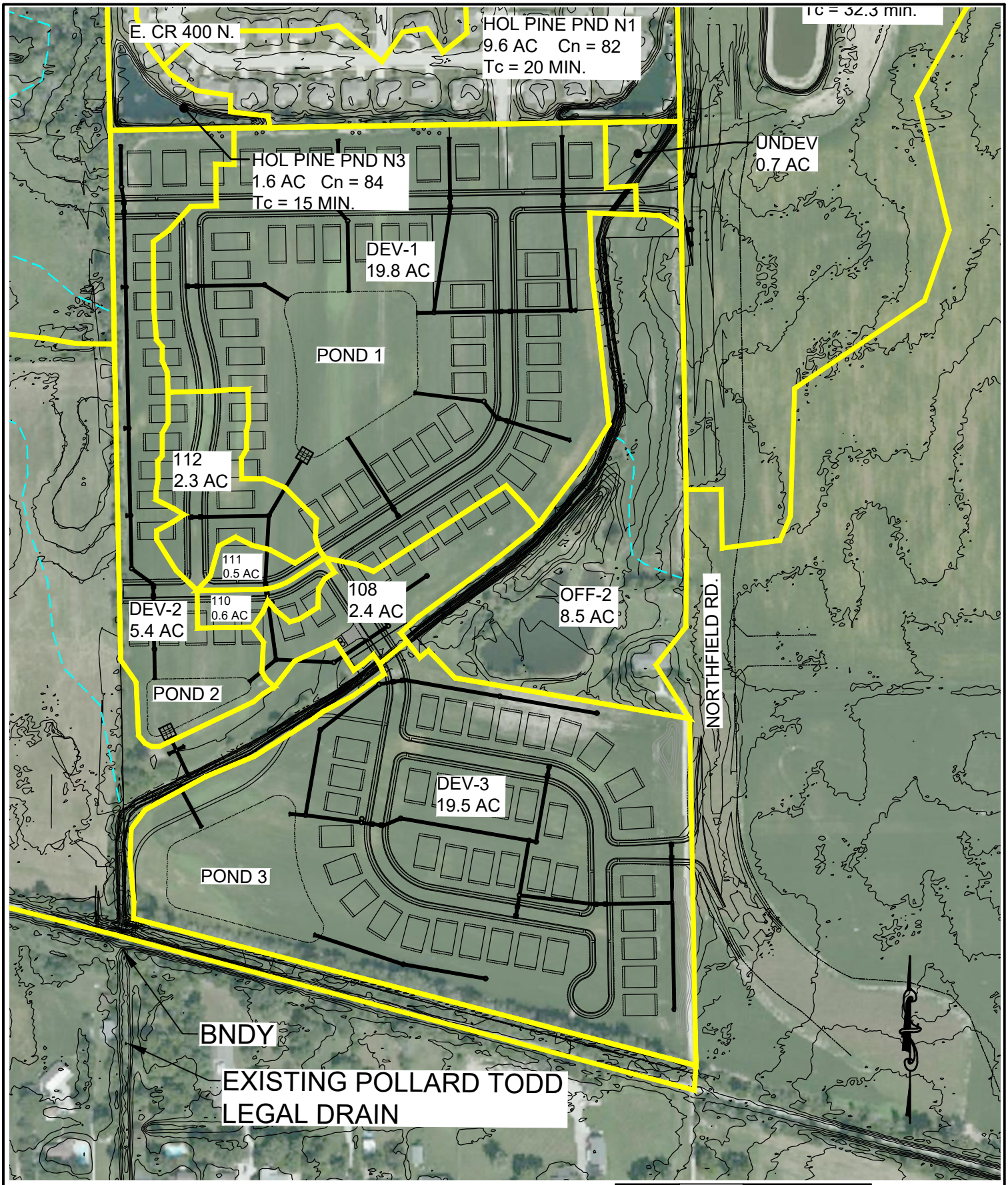

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Date: 11/30/2021
Project No.: 21113
Scale: AS SHOWN
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DEVELOPED SITE BASINS
MASTER DRAINAGE DESIGN
PROMENADE
HENDRICKS COUNTY
BROWNSBURG, INDIANA

BANNING ENGINEERING
853 COLUMBIA ROAD, SUITE #101
PLAINFIELD, IN 46168
BUS: (317) 707-3700, FAX: (317) 707-3800
E-MAIL: Banning@BanningEngineering.com
WEB: www.BannningEngineering.com

D6. DEVELOPED CONDITION CALCULATIONS

Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
0+06.69	10 -yr 24-hour	867.00	864.49	0.00	1.23	1.23	234.9
0+06.69	100-yr 24-hour	867.00	864.65	0.00	2.55	2.56	298.4
0+94.92	10 -yr 24-hour	871.00	864.94	0.00	1.23	1.23	1475.4
0+94.92	100-yr 24-hour	871.00	865.12	0.00	2.55	2.55	1944.3
10+49.75	10 -yr 24-hour	871.00	865.40	0.00	0.00	0.00	454.4
10+49.75	100-yr 24-hour	871.00	865.55	0.00	0.02	0.01	508.1
108	10 -yr 24-hour	868.50	868.17	0.00	18.67	18.67	214.8
108	100-yr 24-hour	868.50	869.15	0.00	27.30	27.40	214.8
109	10 -yr 24-hour	870.60	868.59	0.00	11.00	11.25	151.9
109	100-yr 24-hour	870.60	869.85	0.00	14.46	14.56	151.9
110	10 -yr 24-hour	870.20	868.72	0.00	10.96	11.00	100.0
110	100-yr 24-hour	870.20	870.09	0.00	14.44	14.46	100.0
111	10 -yr 24-hour	870.20	868.83	0.00	8.68	8.73	186.8
111	100-yr 24-hour	870.20	870.26	0.00	11.37	10.99	186.8
112	10 -yr 24-hour	870.30	869.02	0.00	7.50	7.51	155.0
112	100-yr 24-hour	870.30	870.50	0.00	12.15	12.19	155.0
15+76.08	10 -yr 24-hour	871.00	866.06	0.00	0.00	0.00	318.1
15+76.08	100-yr 24-hour	871.00	866.07	0.00	0.00	0.00	395.8
19+73.33	10 -yr 24-hour	871.00	866.36	0.00	0.00	0.00	129.1
19+73.33	100-yr 24-hour	871.00	866.36	0.00	0.00	0.00	141.1
22+28.59	10 -yr 24-hour	871.00	866.52	0.00	0.00	0.00	283.3
22+28.59	100-yr 24-hour	871.00	866.52	0.00	0.00	0.00	286.6
23+85.21	10 -yr 24-hour	871.00	866.60	0.00	0.00	0.00	512.1
23+85.21	100-yr 24-hour	871.00	866.60	0.00	0.00	0.00	512.1
24+96.7	10 -yr 24-hour	871.00	866.63	0.00	0.00	0.00	100.0
24+96.7	100-yr 24-hour	871.00	866.63	0.00	0.00	0.00	100.0

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
4+70.06	10 -yr 24-hour	871.00	865.37	0.00	1.23	1.23	2839.8
4+70.06	100-yr 24-hour	871.00	865.55	0.00	2.56	2.55	3420.1
9+39.55	10 -yr 24-hour	871.00	865.37	0.00	0.07	0.00	1023.1
9+39.55	100-yr 24-hour	871.00	865.55	0.00	0.09	0.02	1259.4
BNDY	10 -yr 24-hour	863.10	863.00	0.00	1.23	0.00	0.0
BNDY	100-yr 24-hour	863.10	863.00	0.00	2.56	0.00	0.0
Beacon Pnd A	10 -yr 24-hour	873.00	868.50	0.00	0.00	0.00	87296.4
Beacon Pnd A	100-yr 24-hour	873.00	868.50	0.00	0.00	0.00	87302.7
Beacon Pnd B	10 -yr 24-hour	872.00	868.50	0.00	0.00	0.00	152635.9
Beacon Pnd B	100-yr 24-hour	872.00	868.50	0.00	0.00	0.00	152641.6
HOL PINE N1	10 -yr 24-hour	872.00	868.00	0.00	0.00	0.00	19230.8
HOL PINE N1	100-yr 24-hour	872.00	868.01	0.00	0.00	0.00	19282.2
HOL PINE N2	10 -yr 24-hour	873.00	869.00	0.00	0.00	0.00	31392.2
HOL PINE N2	100-yr 24-hour	873.00	869.00	0.00	0.00	0.00	31417.2
HOL PINE N3	10 -yr 24-hour	873.50	870.00	0.00	0.00	0.00	18764.0
HOL PINE N3	100-yr 24-hour	873.50	870.01	0.00	0.00	0.00	18788.8
HOL PINE N4	10 -yr 24-hour	873.00	869.00	0.00	0.00	0.00	61001.9
HOL PINE N4	100-yr 24-hour	873.00	869.00	0.00	0.00	0.00	61016.6
POND 1	10 -yr 24-hour	871.00	868.64	0.00	59.26	0.36	129092.9
POND 1	100-yr 24-hour	871.00	869.70	0.00	98.04	0.48	133707.5
POND 2	10 -yr 24-hour	870.00	867.97	0.00	33.33	0.60	47799.1
POND 2	100-yr 24-hour	870.00	868.74	0.00	51.59	1.77	49209.5
POND 3	10 -yr 24-hour	871.00	868.72	0.00	54.76	0.63	72849.7
POND 3	100-yr 24-hour	871.00	870.37	0.00	89.15	0.82	80028.6
STR 101	10 -yr 24-hour	870.00	865.48	0.00	0.60	0.60	100.0
STR 101	100-yr 24-hour	870.00	865.71	0.00	1.77	1.77	100.0

Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
0+06.69	10 -yr 24-hour	867.00	867.11	0.00	59.04	58.80	2156.6
0+06.69	100-yr 24-hour	867.00	868.04	0.00	88.52	85.99	8664.6
0+94.92	10 -yr 24-hour	871.00	867.16	0.00	59.03	59.04	4001.9
0+94.92	100-yr 24-hour	871.00	868.06	0.00	87.79	88.52	7697.5
10+49.75	10 -yr 24-hour	871.00	867.84	0.00	29.42	28.15	2936.8
10+49.75	100-yr 24-hour	871.00	868.60	0.00	54.00	51.71	3596.0
108	10 -yr 24-hour	868.50	868.94	0.00	18.67	18.68	214.8
108	100-yr 24-hour	868.50	870.20	0.00	26.65	26.52	214.7
109	10 -yr 24-hour	870.60	868.95	0.00	11.00	11.27	151.9
109	100-yr 24-hour	870.60	870.19	0.00	14.19	14.04	151.9
110	10 -yr 24-hour	870.20	868.95	0.00	10.96	11.00	100.0
110	100-yr 24-hour	870.20	870.27	0.00	14.37	14.19	100.0
111	10 -yr 24-hour	870.20	868.95	0.00	8.70	8.74	186.8
111	100-yr 24-hour	870.20	870.41	0.00	11.40	11.02	186.8
112	10 -yr 24-hour	870.30	869.02	0.00	7.50	7.52	155.0
112	100-yr 24-hour	870.30	870.62	0.00	12.15	12.13	155.0
15+76.08	10 -yr 24-hour	871.00	868.39	0.00	31.17	29.42	5923.6
15+76.08	100-yr 24-hour	871.00	869.12	0.00	56.90	54.00	7222.6
19+73.33	10 -yr 24-hour	871.00	868.78	0.00	32.12	31.17	3709.7
19+73.33	100-yr 24-hour	871.00	869.51	0.00	58.53	56.90	4538.6
22+28.59	10 -yr 24-hour	871.00	868.98	0.00	24.37	24.38	1766.0
22+28.59	100-yr 24-hour	871.00	869.64	0.00	37.52	37.73	2042.3
23+85.21	10 -yr 24-hour	871.00	869.03	0.00	24.32	24.37	977.9
23+85.21	100-yr 24-hour	871.00	869.71	0.00	37.43	37.52	1096.4
24+96.7	10 -yr 24-hour	871.00	869.09	0.00	24.14	24.13	992.5
24+96.7	100-yr 24-hour	871.00	869.76	0.00	36.64	36.74	1039.7

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
4+70.06	10 -yr 24-hour	871.00	867.58	0.00	59.60	59.03	6437.6
4+70.06	100-yr 24-hour	871.00	868.36	0.00	90.86	87.79	7468.9
9+39.55	10 -yr 24-hour	871.00	867.79	0.00	28.15	28.28	3341.5
9+39.55	100-yr 24-hour	871.00	868.52	0.00	51.71	49.76	3872.6
BNDY	10 -yr 24-hour	863.10	863.00	0.00	58.80	0.00	0.0
BNDY	100-yr 24-hour	863.10	863.00	0.00	85.99	0.00	0.0
Beacon Pnd A	10 -yr 24-hour	873.00	871.33	0.00	168.44	65.28	101642.1
Beacon Pnd A	100-yr 24-hour	873.00	873.12	0.00	271.95	93.41	109434.7
Beacon Pnd B	10 -yr 24-hour	872.00	871.32	0.00	123.07	12.45	174317.5
Beacon Pnd B	100-yr 24-hour	872.00	873.03	0.00	185.62	19.82	187317.9
HOL PINE N1	10 -yr 24-hour	872.00	869.51	0.00	28.76	15.24	23825.0
HOL PINE N1	100-yr 24-hour	872.00	870.50	0.00	48.78	23.76	26631.3
HOL PINE N2	10 -yr 24-hour	873.00	870.14	0.00	22.39	2.19	33199.7
HOL PINE N2	100-yr 24-hour	873.00	871.20	0.00	38.83	2.62	34684.5
HOL PINE N3	10 -yr 24-hour	873.50	870.40	0.00	5.00	0.90	19953.6
HOL PINE N3	100-yr 24-hour	873.50	870.68	0.00	8.36	1.71	20676.6
HOL PINE N4	10 -yr 24-hour	873.00	870.63	0.00	46.46	5.30	70763.8
HOL PINE N4	100-yr 24-hour	873.00	871.89	0.00	78.39	6.89	78638.1
POND 1	10 -yr 24-hour	871.00	868.79	0.00	59.26	0.28	129783.7
POND 1	100-yr 24-hour	871.00	869.78	0.00	98.99	0.49	134090.1
POND 2	10 -yr 24-hour	870.00	868.94	0.00	44.44	2.19	49551.5
POND 2	100-yr 24-hour	870.00	870.19	0.00	71.42	23.87	53097.0
POND 3	10 -yr 24-hour	871.00	868.75	0.00	54.76	0.63	72983.1
POND 3	100-yr 24-hour	871.00	870.43	0.00	89.15	0.89	80264.0
STR 101	10 -yr 24-hour	870.00	868.31	0.00	32.53	32.52	106.7
STR 101	100-yr 24-hour	870.00	869.72	-0.02	67.74	51.26	197099.2

D7. DEVELOPED CONDITION
Tc AND Cn VALUES

TR-55
-COMPOSITE CN-VALUES & TIME OF CONCENTRATION-

PROJECT: Promenade
JOB #: 21113
DATE: 1/7/22
COMPUTED BY: JET

BASINS

BASIN	Composite CN	Area (ft^2)	Area (acres)	Area (miles)	Tc
DEV-1	88.00	862488	19.80	0.03	21.9
DEV-2	84.00	235224	5.40	0.01	20.5
DEV-3	87.00	849420	19.50	0.03	23.1
108	85.00	104544	2.40	0.00	14.4
110	92.00	26136	0.60	0.00	14.1
111	87.00	21780	0.50	0.00	13.8
112	87.00	100188	2.30	0.00	16.8

Basin	Cover Description	Soil Group	Area (Acres)	CN	CN * Acres	number
DEV-1	Good condition; grass cover > 75%	D	10.5	80	840	5
DEV-1	Paved parking lots, roofs, driveways	D	9.3	98	911.4	5
DEV-2	Good condition; grass cover > 75%	D	4.1	80	328	5
DEV-2	Paved parking lots, roofs, driveways	D	1.3	98	127.4	5
DEV-3	Good condition; grass cover > 75%	D	11.6	80	928	5
DEV-3	Paved parking lots, roofs, driveways	D	7.9	98	774.2	5
108	Good condition; grass cover > 75%	D	1.8	80	144	5
108	Paved parking lots, roofs, driveways	D	0.6	98	58.8	5
110	Good condition; grass cover > 75%	D	0.2	80	16	5
110	Paved parking lots, roofs, driveways	D	0.4	98	39.2	5
111	Good condition; grass cover > 75%	D	0.3	80	24	5
111	Paved parking lots, roofs, driveways	D	0.2	98	19.6	5
112	Good condition; grass cover > 75%	D	1.4	80	112	5
112	Paved parking lots, roofs, driveways	D	0.9	98	88.2	5

Basin #	CN	Acres	CN * Acres
DEV-1	88	19.8	1751.4
DEV-2	84	5.4	455.4
DEV-3	87	19.5	1702.2
108	85	2.4	202.8
110	92	0.6	55.2
111	87	0.5	43.6
112	87	2.3	200.2

Time of Concentration Worksheet
Based on TR-55

PROJECT: Promenade
JOB #: 21113

Typical values for Manning's n

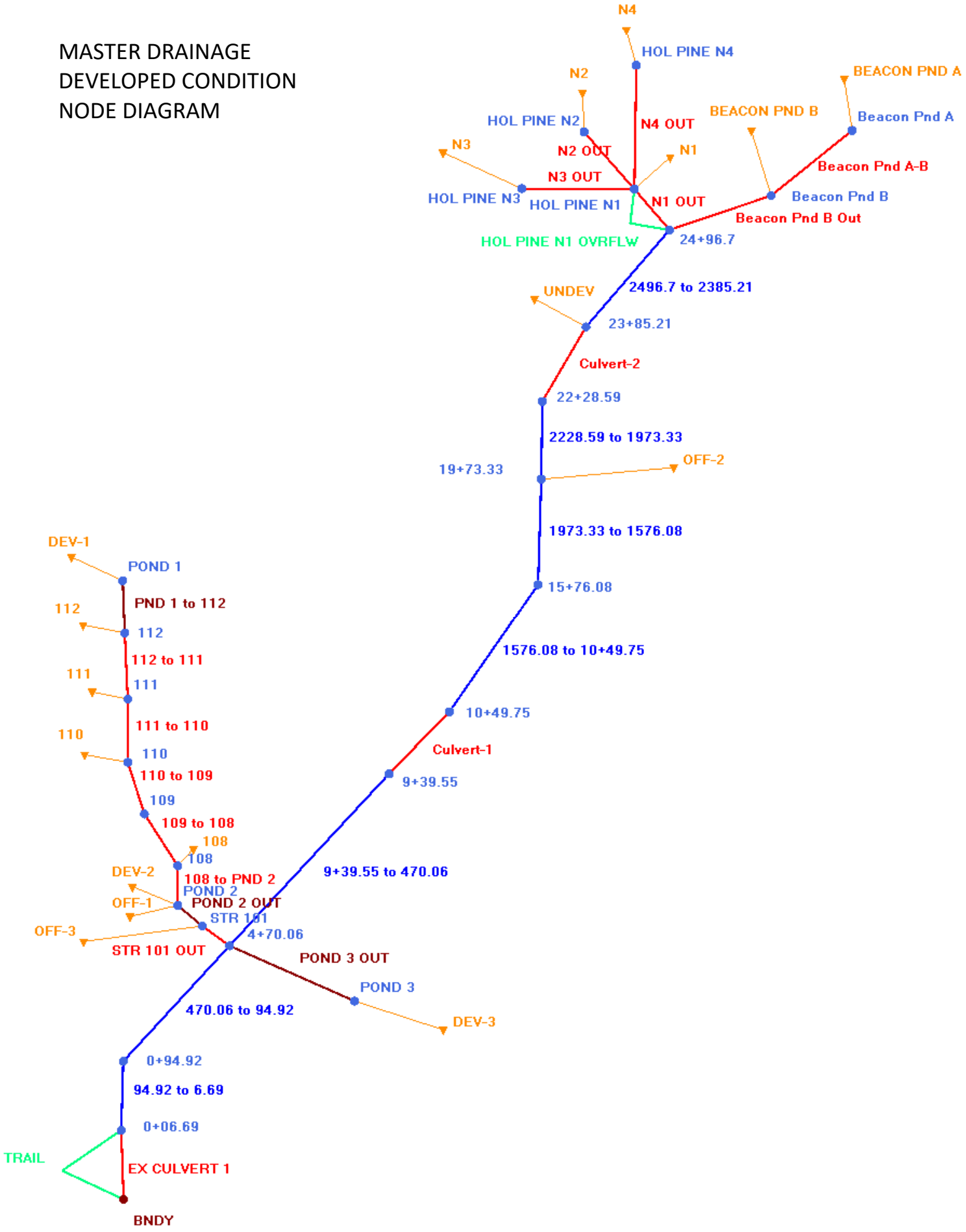
Overland Flow		Channel Flow	
short grass	0.15	grass	0.03
dense grass	0.24	concrete	0.02
pavement	0.011	rip-rap	0.04
woods light	0.4		
cultivated > 20%	0.17		

2 year, 24 hour rainfall = 2.66 inches
minimum T_c = 5 minutes

Basin	Overland flow				Shallow Concentrated Flow (1)					Shallow Concentrated Flow (2)					Channel Flow								T_c
name	Length (ft)	S %	n	T_t (min)	Length (ft)	S %	Paved/Un (P or U)	Vel. (ft/s)	T_t (min)	Length (ft)	S %	Paved/Un (P or U)	Vel. (ft/s)	T_t (min)	Length (ft)	a (s.f.)	Pw (ft)	r (ft)	S %	n	Vel. (ft/s)	T_t (min)	(min)
				0					0					0								0	
DEV-1	75	2	0.24	12	175	1	U	1.6	2					0	1150						2.50	8	22
DEV-2	80	1	0.24	17	75	1	P	2	1					0	390						2.50	3	20
DEV-3	75	1.6	0.24	14	129	1	U	1.6	1	259	1	P	2	2	913.5						2.50	6	23
108	75	2	0.24	12	195	1	U	1.6	2					0								0	14
110	75	2	0.24	12	135	0.7	U	1.3	2					0								0	14
111	80	2	0.24	13	60	0.7	U	1.3	1					0								0	14
112	75	2	0.24	12	350	0.7	U	1.3	4					0								0	17
				0					0					0								0	
				0					0					0								0	

D8. DEVELOPED CONDITION ICPR INPUT DATA

MASTER DRAINAGE
DEVELOPED CONDITION
NODE DIAGRAM



Simple Basin: 108

Scenario:	Scenario1
Node:	108
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.4 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	2.4 ac
Curve Number:	85.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: 110

Scenario:	Scenario1
Node:	110
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.1 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	0.6 ac
Curve Number:	92.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: 111

Scenario:	Scenario1
Node:	111
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.8 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	0.5 ac
Curve Number:	87.0
% Impervious:	0.0

% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: 112

Scenario:	Scenario1
Node:	112
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.8 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	2.3 ac
Curve Number:	87.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: BEACON PND A

Scenario:	Scenario1
Node:	Beacon Pnd A
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	33.0 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	71.6 ac
Curve Number:	88.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: BEACON PND B

Scenario:	Scenario1
Node:	Beacon Pnd B
Hydrograph Method:	NRCS Unit Hydrograph

Infiltration Method:	Curve Number
Time of Concentration:	32.3 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	27.0 ac
Curve Number:	88.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: DEV-1

Scenario:	Scenario1
Node:	POND 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	21.9 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	19.8 ac
Curve Number:	88.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: DEV-2

Scenario:	Scenario1
Node:	POND 2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	20.5 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	5.4 ac
Curve Number:	84.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: DEV-3

Scenario:	Scenario1
Node:	POND 3
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	23.1 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	19.5 ac
Curve Number:	87.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: N1

Scenario:	Scenario1
Node:	HOL PINE N1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	20.0 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	9.6 ac
Curve Number:	82.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: N2

Scenario:	Scenario1
Node:	HOL PINE N2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr

Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	7.9 ac
Curve Number:	81.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: N3

Scenario:	Scenario1
Node:	HOL PINE N3
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	1.6 ac
Curve Number:	84.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: N4

Scenario:	Scenario1
Node:	HOL PINE N4
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	28.0 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	20.2 ac
Curve Number:	84.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: OFF-1

Scenario:	Scenario1
Node:	POND 2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	45.0 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	13.3 ac
Curve Number:	78.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: OFF-2

Scenario:	Scenario1
Node:	19+73.33
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	17.0 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	8.5 ac
Curve Number:	78.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: OFF-3

Scenario:	Scenario1
Node:	STR 101
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	53.7 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	26.0 ac
Curve Number:	79.0
% Impervious:	0.0

% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Simple Basin: UNDEV

Scenario:	Scenario1
Node:	23+85.21
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	18.1 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	0.7 ac
Curve Number:	74.0
% Impervious:	0.0
% DCIA:	0.0
% Direct:	0.0
Rainfall Name:	

Comment:

Node: 0+06.69

Scenario:	Scenario1
Type:	Stage/Area
Base Flow:	0.00 cfs
Initial Stage:	864.10 ft
Warning Stage:	867.00 ft

Comment:

Node: 0+94.92

Scenario:	Scenario1
Type:	Stage/Area
Base Flow:	0.00 cfs
Initial Stage:	864.46 ft
Warning Stage:	871.00 ft

Comment:

Node: 10+49.75

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 865.38 ft
Warning Stage: 871.00 ft

Comment:

Node: 108

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 865.68 ft
Warning Stage: 868.50 ft

Comment:

Node: 109

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 865.94 ft
Warning Stage: 870.60 ft

Comment:

Node: 110

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.06 ft
Warning Stage: 870.20 ft

Comment:

Node: 111

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.20 ft
Warning Stage: 870.20 ft

Comment:

Node: 112

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.49 ft
Warning Stage: 870.30 ft

Comment:

Node: 15+76.08

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.03 ft
Warning Stage: 871.00 ft

Comment:

Node: 19+73.33

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.31 ft
Warning Stage: 871.00 ft

Comment:

Node: 22+28.59

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.49 ft
Warning Stage: 871.00 ft

Comment:

Node: 23+85.21

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.60 ft
Warning Stage: 871.00 ft

Comment:

Node: 24+96.7

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.61 ft
Warning Stage: 871.00 ft

Comment:

Node: 4+70.06

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 864.77 ft
Warning Stage: 871.00 ft

Comment:

Node: 9+39.55

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 864.88 ft
Warning Stage: 871.00 ft

Comment:

Node: BNDY

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 863.00 ft
Warning Stage: 863.10 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0	863.00
0	0	0	30.0	863.00

Comment:

Node: Beacon Pnd A

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 868.50 ft
Warning Stage: 873.00 ft

Stage [ft]	Area [ac]	Area [ft2]
861.00	1.1	47916.0
868.50	2.0	87120.0
869.00	2.1	91476.0
872.00	2.4	104544.0
874.00	2.6	113256.0
875.00	2.8	121968.0

Comment:

Node: Beacon Pnd B

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 868.50 ft
Warning Stage: 872.00 ft

Stage [ft]	Area [ac]	Area [ft2]
861.00	2.2	95832.0
867.00	2.9	126324.0
868.00	3.3	143748.0
868.50	3.5	152460.0
873.00	4.3	187308.0

Comment:

Node: HOL PINE N1

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 868.00 ft
Warning Stage: 872.00 ft

Stage [ft]	Area [ac]	Area [ft2]
868.00	0.4	19166.4
869.00	0.5	22215.6
870.00	0.6	24829.2
871.00	0.7	28314.0

Comment:

Node: HOL PINE N2

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 869.00 ft
Warning Stage: 873.00 ft

Stage [ft]	Area [ac]	Area [ft2]
869.00	0.7	31363.2
870.00	0.8	32670.0
871.00	0.8	34412.4
872.00	0.8	35719.2

Comment:

Node: HOL PINE N3

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 870.00 ft
Warning Stage: 873.50 ft

Stage [ft]	Area [ac]	Area [ft2]
870.00	0.4	18730.8
871.00	0.5	21344.4
872.00	0.5	23522.4
872.50	0.6	26136.0

Comment:

Node: HOL PINE N4

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 869.00 ft
Warning Stage: 873.00 ft

Stage [ft]	Area [ac]	Area [ft2]
869.00	1.4	60984.0
870.00	1.5	66646.8

Stage [ft]	Area [ac]	Area [ft2]
871.00	1.7	73180.8
872.00	1.8	79279.2

Comment:

Node: POND 1

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 867.00 ft
Warning Stage: 871.00 ft

Stage [ft]	Area [ac]	Area [ft2]
867.00	2.6	113256.0
868.00	2.9	126324.0
869.00	3.0	130680.0
870.00	3.1	135036.0
871.00	3.2	139392.0
872.00	3.3	143748.0

Comment:

Node: POND 2

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 865.50 ft
Warning Stage: 870.00 ft

Stage [ft]	Area [ac]	Area [ft2]
865.50	0.6	26136.0
866.00	0.8	34848.0
867.00	1.0	43560.0
868.00	1.1	47916.0
869.00	1.1	49658.4
870.00	1.2	52272.0
871.00	1.3	56628.0
872.00	1.4	60984.0

Comment:

Node: POND 3

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 866.00 ft
Warning Stage: 871.00 ft

Stage [ft]	Area [ac]	Area [ft2]
866.00	1.2	52272.0
867.00	1.5	65340.0
868.00	1.6	69696.0
869.00	1.7	74052.0
870.00	1.8	78408.0
871.00	1.9	82764.0

Comment:

Node: STR 101

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 865.19 ft
Warning Stage: 870.00 ft

Stage [ft]	Area [ac]	Area [ft2]
865.19	0.0	21.8
869.45	0.0	21.8
869.50	3.0	130680.0
870.00	6.5	283140.0

Comment:

Pipe Link: 108 to PND 2		Upstream		Downstream	
Scenario:	Scenario1	Invert:	865.68 ft	Invert:	865.50 ft
From Node:	108	Manning's N:	0.013	Manning's N:	0.013
To Node:	POND 2	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	81.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Pipe Link: 109 to 108		Upstream		Downstream	
Scenario:	Scenario1	Invert:	865.94 ft	Invert:	865.78 ft
From Node:	109	Manning's N:	0.013	Manning's N:	0.013
To Node:	108	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft

Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	134.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Pipe Link: 110 to 109		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.06 ft	Invert:	866.04 ft
From Node:	110	Manning's N:	0.013	Manning's N:	0.013
To Node:	109	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	18.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Pipe Link: 111 to 110		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.20 ft	Invert:	866.16 ft
From Node:	111	Manning's N:	0.013	Manning's N:	0.013
To Node:	110	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	32.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Pipe Link: 112 to 111		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.49 ft	Invert:	866.30 ft

From Node:	112	Manning's N:	0.013	Manning's N:	0.013
To Node:	111	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	155.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Channel Link: 1576.08 to 10+49.75		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.03 ft	Invert:	865.38 ft
From Node:	15+76.08	Manning's N:	0.000	Manning's N:	0.000
To Node:	10+49.75	Geometry: Irregular		Geometry: Irregular	
Link Count:	1	Cross Section:	15+76.08	Cross Section:	10+49.75
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	526.3 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.0 dec				
Energy Switch:	Energy				

Comment:

Channel Link: 1973.33 to 1576.08		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.31 ft	Invert:	866.03 ft
From Node:	19+73.33	Manning's N:	0.000	Manning's N:	0.000
To Node:	15+76.08	Geometry: Irregular		Geometry: Irregular	
Link Count:	1	Cross Section:	19+73.33	Cross Section:	15+76.08
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	397.3 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.0 dec				
Energy Switch:	Energy				

Comment:

Channel Link: 2228.59 to 1973.33		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.49 ft	Invert:	866.31 ft
From Node:	22+28.59	Manning's N:	0.000	Manning's N:	0.000
To Node:	19+73.33	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	22+28.59	Cross Section:	19+73.33
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	255.3 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.0 dec				
Energy Switch:	Energy				
Comment:					

Channel Link: 2496.7 to 2385.21		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.61 ft	Invert:	866.60 ft
From Node:	24+96.7	Manning's N:	0.000	Manning's N:	0.000
To Node:	23+85.21	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	24+96.7	Cross Section:	23+85.21
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	111.5 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.0 dec				
Energy Switch:	Energy				
Comment:					

Channel Link: 470.06 to 94.92		Upstream		Downstream	
Scenario:	Scenario1	Invert:	864.77 ft	Invert:	864.46 ft
From Node:	4+70.06	Manning's N:	0.000	Manning's N:	0.000
To Node:	0+94.92	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	4+70.06	Cross Section:	0+94.92
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	375.1 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.0 dec				
Energy Switch:	Energy				
Comment:					

Channel Link: 9+39.55 to 470.06		Upstream		Downstream	
Scenario:	Scenario1	Invert:	864.88 ft	Invert:	864.77 ft
From Node:	9+39.55	Manning's N:	0.000	Manning's N:	0.000
To Node:	4+70.06	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	9+39.55	Cross Section:	4+70.06
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	469.5 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.0 dec				
Energy Switch:	Energy				
Comment:					

Channel Link: 94.92 to 6.69		Upstream		Downstream	
Scenario:	Scenario1	Invert:	864.46 ft	Invert:	864.10 ft
From Node:	0+94.92	Manning's N:	0.000	Manning's N:	0.000
To Node:	0+06.69	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	0+94.92	Cross Section:	0+06.69
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	88.2 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.0 dec				
Energy Switch:	Energy				
Comment:					

Pipe Link: Beacon Pnd A-B		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.00 ft	Invert:	866.00 ft
From Node:	Beacon Pnd A	Manning's N:	0.013	Manning's N:	0.013
To Node:	Beacon Pnd B	Geometry:	Circular	Geometry:	Circular
Link Count:	2	Max Depth:	3.0 ft	Max Depth:	3.0 ft
Flow Direction:	Both		Bottom Clip		
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	75.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	1.00		Top Clip		
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000
Comment:					

Pipe Link: Beacon Pnd B Out		Upstream		Downstream	
Scenario:	Scenario1	Invert:	868.50 ft	Invert:	868.20 ft
From Node:	Beacon Pnd B	Manning's N:	0.013	Manning's N:	0.013
To Node:	24+96.7	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	271.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000
Comment:					

Pipe Link: Culvert-1		Upstream		Downstream	
Scenario:	Scenario1	Invert:	865.40 ft	Invert:	865.20 ft
From Node:	10+49.75	Manning's N:	0.020	Manning's N:	0.020
To Node:	9+39.55	Geometry: Rectangular		Geometry: Rectangular	
Link Count:	1	Max Depth:	4.0 ft	Max Depth:	4.0 ft
Flow Direction:	Both	Max Width:	6.0 ft	Max Width:	6.0 ft
Damping:	0.0000 ft	Fillet:	0.0 ft	Fillet:	0.0 ft
Length:	65.0 ft	Bottom Clip			
FHWA Code:	0	Default:	0.0 ft	Default:	0.0 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.000	Manning's N:	0.000
Bend Location:	0.0 dec	Top Clip			
Energy Switch:	Energy	Default:	0.0 ft	Default:	0.0 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000
Comment:					

Pipe Link: Culvert-2		Upstream		Downstream	
Scenario:	Scenario1	Invert:	866.60 ft	Invert:	866.50 ft
From Node:	23+85.21	Manning's N:	0.020	Manning's N:	0.020
To Node:	22+28.59	Geometry: Rectangular		Geometry: Rectangular	
Link Count:	1	Max Depth:	4.0 ft	Max Depth:	4.0 ft
Flow Direction:	Both	Max Width:	6.0 ft	Max Width:	6.0 ft
Damping:	0.0000 ft	Fillet:	0.0 ft	Fillet:	0.0 ft
Length:	85.0 ft	Bottom Clip			
FHWA Code:	0	Default:	0.0 ft	Default:	0.0 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.000	Manning's N:	0.000
Bend Location:	0.0 dec	Top Clip			
Energy Switch:	Energy	Default:	0.0 ft	Default:	0.0 ft
		Op Table:		Op Table:	

	Ref Node:		Ref Node:
	Manning's N:	0.000	Manning's N: 0.000

Comment:

Pipe Link: EX CULVERT 1		Upstream		Downstream	
Scenario:	Scenario1	Invert:	864.10 ft	Invert:	863.67 ft
From Node:	0+06.69	Manning's N:	0.024	Manning's N:	0.024
To Node:	BNDY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	4.0 ft	Max Depth:	4.0 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	45.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Weir Link: HOL PINE N1 OVRFLW			
Scenario:	Scenario1	Bottom Clip	
From Node:	HOL PINE N1	Default:	0.0 ft
To Node:	24+96.7	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.0 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	870.33 ft	Discharge Coefficients	
Control Elevation:	870.33 ft	Weir Default:	2.80
Cross Section:	HOL PINE N1 OVRFLW	Weir Table:	
		Orifice Default:	0.60
		Orifice Table:	

Comment:

Pipe Link: N1 OUT		Upstream		Downstream	
Scenario:	Scenario1	Invert:	868.00 ft	Invert:	867.50 ft
From Node:	HOL PINE N1	Manning's N:	0.013	Manning's N:	0.013
To Node:	24+96.7	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	40.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			

Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Pipe Link: N2 OUT		Upstream		Downstream	
Scenario:	Scenario1	Invert:	869.00 ft	Invert:	868.00 ft
From Node:	HOL PINE N2	Manning's N:	0.013	Manning's N:	0.013
To Node:	HOL PINE N1	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.3 ft	Max Depth:	1.3 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	902.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Pipe Link: N3 OUT		Upstream		Downstream	
Scenario:	Scenario1	Invert:	870.00 ft	Invert:	869.00 ft
From Node:	HOL PINE N3	Manning's N:	0.013	Manning's N:	0.013
To Node:	HOL PINE N1	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.3 ft	Max Depth:	1.3 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	315.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Pipe Link: N4 OUT		Upstream		Downstream	
Scenario:	Scenario1	Invert:	869.00 ft	Invert:	868.00 ft
From Node:	HOL PINE N4	Manning's N:	0.013	Manning's N:	0.013
To Node:	HOL PINE N1	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.5 ft	Max Depth:	1.5 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	504.0 ft	Op Table:		Op Table:	

FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Drop Structure Link: PND 1 to 112		Upstream Pipe		Downstream Pipe	
Scenario:	Scenario1	Invert:	867.00 ft	Invert:	866.59 ft
From Node:	POND 1	Manning's N:	0.013	Manning's N:	0.013
To Node:	112	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.5 ft	Max Depth:	1.5 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.0 ft	Default:	0.0 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.000	Manning's N:	0.000
Length:	165.0 ft	Top Clip			
FHWA Code:	0	Default:	0.0 ft	Default:	0.0 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.000	Manning's N:	0.000
Bend Location:	0.0 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.0 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.0 ft
Invert:	867.00 ft	Op Table:	
Control Elevation:	867.00 ft	Ref Node:	
Max Depth:	0.3 ft	Discharge Coefficients	
		Weir Default:	3.20
		Weir Table:	
		Orifice Default:	0.60
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.0 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.0 ft
Invert:	870.00 ft	Op Table:	
Control Elevation:	870.00 ft	Ref Node:	
Max Depth:	3.0 ft	Discharge Coefficients	

Max Width:	3.0 ft
Fillet:	0.0 ft

Weir Default:	3.20
Weir Table:	
Orifice Default:	0.60
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: POND 2 OUT		Upstream Pipe		Downstream Pipe	
Scenario:	Scenario1	Invert:	865.50 ft	Invert:	865.39 ft
From Node:	POND 2	Manning's N:	0.013	Manning's N:	0.013
To Node:	STR 101	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.0 ft	Max Depth:	2.0 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.0 ft	Default:	0.0 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.000	Manning's N:	0.000
Length:	48.0 ft	Top Clip			
FHWA Code:	0	Default:	0.0 ft	Default:	0.0 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.000	Manning's N:	0.000
Bend Location:	0.0 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	865.50 ft
Control Elevation:	865.50 ft
Max Depth:	0.3 ft

Bottom Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.20
Weir Table:	
Orifice Default:	0.60
Orifice Table:	

Weir Comment:

Weir Component	
Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	868.10 ft
Control Elevation:	868.10 ft
Max Depth:	0.3 ft

Bottom Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	
Discharge Coefficients	

Max Width:	1.0 ft		
Fillet:	0.0 ft	Weir Default:	3.20
		Weir Table:	
		Orifice Default:	0.60
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	3	Bottom Clip	
Weir Count:	1	Default:	0.0 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.0 ft
Invert:	868.90 ft	Op Table:	
Control Elevation:	868.90 ft	Ref Node:	
Max Depth:	3.0 ft	Discharge Coefficients	
Max Width:	3.0 ft	Weir Default:	3.20
Fillet:	0.0 ft	Weir Table:	
		Orifice Default:	0.60
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: POND 3 OUT		Upstream Pipe		Downstream Pipe	
Scenario:	Scenario1	Invert:	866.00 ft	Invert:	865.50 ft
From Node:	POND 3	Manning's N:	0.013	Manning's N:	0.013
To Node:	4+70.06	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.0 ft	Max Depth:	1.0 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.0 ft	Default:	0.0 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.000	Manning's N:	0.000
Length:	114.0 ft	Top Clip			
FHWA Code:	0	Default:	0.0 ft	Default:	0.0 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.000	Manning's N:	0.000
Bend Location:	0.0 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.0 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.0 ft
Invert:	866.00 ft	Op Table:	
Control Elevation:	866.00 ft	Ref Node:	
Max Depth:	0.3 ft	Discharge Coefficients	

Weir Default:	3.20
Weir Table:	
Orifice Default:	0.60
Orifice Table:	

Weir Comment:

Weir Component	
Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	870.40 ft
Control Elevation:	870.40 ft
Max Depth:	2.0 ft
Max Width:	2.0 ft
Fillet:	0.0 ft

Bottom Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.20
Weir Table:	
Orifice Default:	0.60
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Pipe Link: STR 101 OUT		Upstream		Downstream	
Scenario:	Scenario1	Invert:	865.19 ft	Invert:	865.00 ft
From Node:	STR 101	Manning's N:	0.013	Manning's N:	0.013
To Node:	4+70.06	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.5 ft	Max Depth:	2.5 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.0 ft	Default:	0.0 ft
Length:	68.0 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.000	Manning's N:	0.000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.0 ft	Default:	0.0 ft
Bend Location:	0.0 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.000	Manning's N:	0.000

Comment:

Weir Link: TRAIL	
Scenario:	Scenario1
From Node:	0+06.69
To Node:	BNDY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular

Bottom Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.0 ft
Op Table:	
Ref Node:	

Invert: 872.01 ft
Control Elevation: 872.01 ft
Cross Section: Trail

Discharge Coefficients

Weir Default: 2.80
Weir Table:
Orifice Default: 0.60
Orifice Table:

Comment:

Simulation: 10 -yr 24-hour

Scenario: Scenario1
Run Date/Time: 2/22/2022 11:34:16 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0
End Time:	0	0	0	30.0

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0	0.1
Max Calculation Time:		30.0

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0	15.0

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0	15.0

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
IA Recovery Time: 24.0 hr

Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	4.3 in
Edge Length Option:	Automatic	Storm Duration:	24.0 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100.0 ft2
		Energy Switch (1D):	Momentum

Comment:

Simulation: 100-yr 24-hour

Scenario: Scenario1
Run Date/Time: 2/22/2022 11:34:31 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0
End Time:	0	0	0	48.0

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0	0.1
Max Calculation Time:		30.0

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0	15.0

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0	15.0

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:

Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	6.3 in
Edge Length Option:	Automatic	Storm Duration:	24.0 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100.0 ft2
		Energy Switch (1D):	Momentum

Comment:

Simulation: 2-yr 24-hour

Scenario:	Scenario1
Run Date/Time:	1/26/2022 5:38:26 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0
End Time:	0	0	0	30.0

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0	0.1
Max Calculation Time:		30.0

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0	15.0

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0	15.0

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

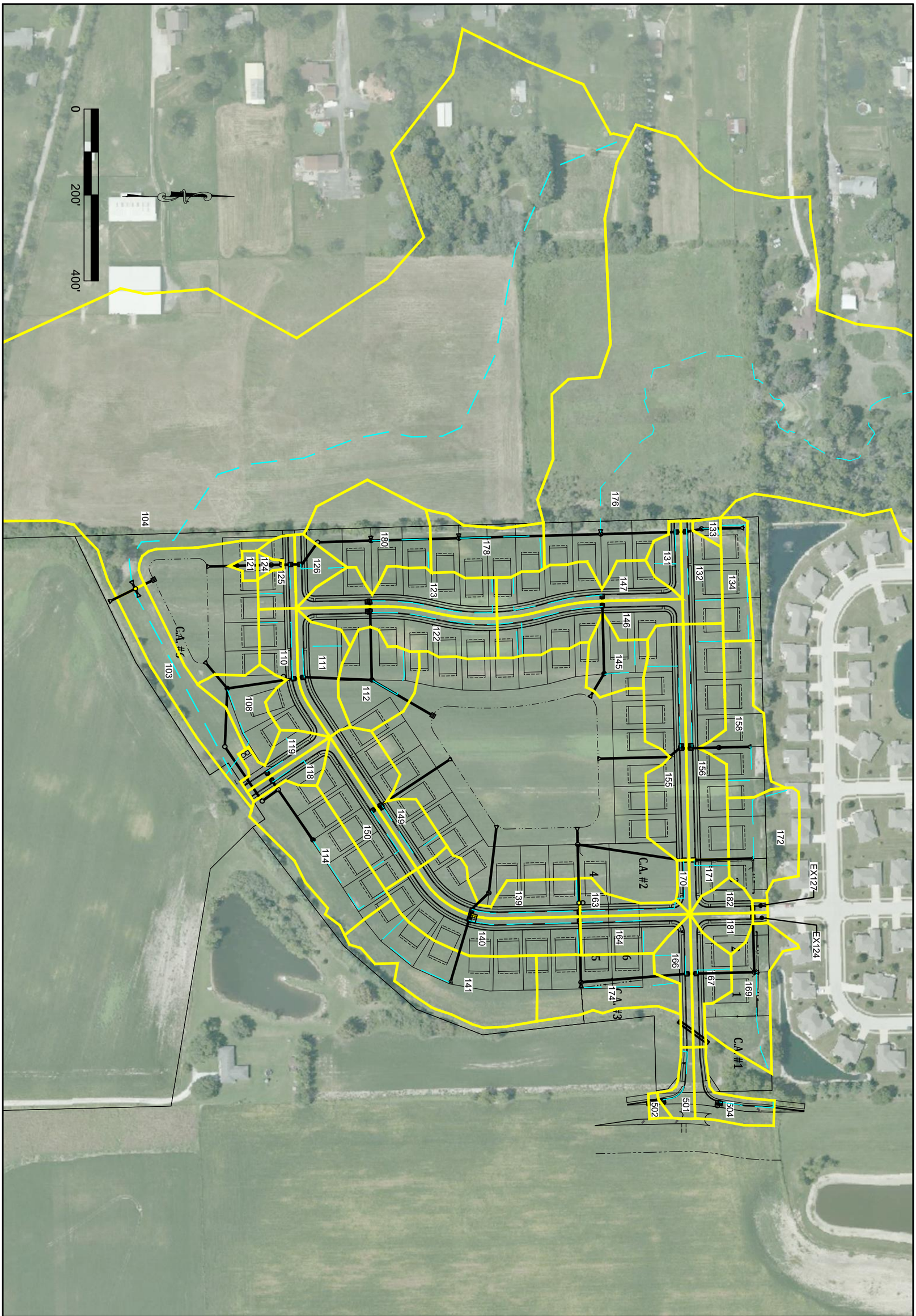
Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	3.0 in
Edge Length Option:	Automatic	Storm Duration:	24.0 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100.0 ft2
		Energy Switch (1D):	Momentum

Comment:

E6. STORM SEWER CALCULATIONS



Drawn By: WCZ Date: 03/04/2022 Project No.: 21113-S1 Scale: AS SHOWN Page: 1 of 1	STORM SEWER BASIN MAP PROMENADE, SECTION 1A & 1B HENDRICKS COUNTY BROWNSBURG, INDIANA	BANNING ENGINEERING 853 COLUMBIA ROAD, SUITE #101 PLAINFIELD, IN 46168 BUS: (317) 707-3700, FAX: (317) 707-3800 E-MAIL: Banning@BanningEngineering.com WEB: www.BannningEngineering.com

STORM SEWER DESIGN CALCULATIONS
-PIPE DESIGN-

PROJECT:	Promenade, Sections 1A & 1B	STORM:	10 Year
JOB #:	21113-S1	COMPUTED BY:	JET
DATE:	3/24/22	SHEET NO.:	

Manning's Roughness Coefficient (n) = 0.013

STRUCTURE		DESIGN				CAP.						
FROM	TO	Q (cfs)	L (ft)	DIA. (in)	SLOPE %	Q (cfs)	VEL. (ft/s)	RIM ELEV. UP	RIM ELEV. DOWN	INVERT ELEV. UP	INVERT ELEV. DOWN	COVER (ft)
134	133	0.83	98	12	1.39	4.25	5.41	ES	871.90	870.00	868.64	ES
133	132	0.96	32	12	0.30	1.97	2.51	871.90	872.01	868.54	868.44	2.19
132	131	1.77	32	12	0.30	1.97	2.51	872.01	872.01	868.34	868.24	2.50
131	130	2.21	171	15	0.23	3.13	2.55	872.01	872.20	868.14	867.75	2.43
130	129	8.93	331	24	0.16	9.12	2.90	872.20	871.00	867.20	866.67	2.75
129	128	9.29	206	24	0.17	9.40	2.99	871.00	871.00	866.67	866.32	2.08
128	127	9.85	124	24	0.19	9.93	3.16	871.00	870.09	866.32	866.08	2.43
127	126	9.75	63	24	0.19	9.93	3.16	870.09	869.90	866.08	865.96	1.76
126	125	9.94	32	24	0.20	10.19	3.24	869.90	869.91	865.96	865.90	1.69
125	124A	10.31	16	24	0.21	10.44	3.32	869.91	869.98	865.90	865.87	1.76
124A	124	10.30	24	24	0.21	10.44	3.32	869.98	869.90	865.87	865.82	1.86
124	121	10.33	80	24	0.21	10.44	3.32	869.90	869.50	865.82	865.65	1.83
121	120	10.33	70	24	0.21	10.44	3.32	869.50	ES	865.65	865.50	1.60
176	130	7.59	10	24	1.50	27.91	8.88	ES	872.20	868.60	868.45	ES
178	129	1.15	10	12	2.00	5.10	6.49	ES	871.00	867.90	867.70	ES
180	128	1.31	10	12	2.00	5.10	6.49	ES	871.00	867.90	867.70	ES
158	157	1.33	75	12	2.26	5.42	6.90	ES	871.50	870.00	868.31	ES
157	156	1.32	60	12	0.30	1.97	2.51	871.50	871.71	868.21	868.03	2.12
156	155	3.64	32	15	0.32	3.69	3.01	871.71	871.71	867.93	867.83	2.34
155	WQ8	5.93	23	18	0.42	6.87	3.89	871.71	872.04	867.73	867.63	2.27
WQ8	153	5.92	177	18	0.36	6.32	3.57	872.04	ES	867.63	867.00	2.70
169	168	0.88	10	12	0.30	1.97	2.51	ES	874.61	870.00	869.97	#VALUE!
168	167	1.59	130	12	0.30	1.97	2.51	874.61	874.61	869.03	868.64	4.41
167	166	2.57	32	15	0.23	3.13	2.55	874.61	874.61	868.54	868.47	4.63
166	165	3.23	242	18	0.18	4.50	2.55	874.61	871.83	868.37	867.93	4.53
165	164	4.26	137	24	0.12	7.89	2.51	871.83	873.96	867.83	867.67	1.75
164	163	5.06	32	24	0.12	7.89	2.51	873.96	873.96	867.57	867.53	4.14
163	162A	5.64	16	24	0.12	7.89	2.51	873.96	874.57	867.43	867.41	4.28
162A	162	5.62	136	24	0.12	7.89	2.51	874.57	871.27	867.31	867.15	5.01
162	161	7.11	40	24	0.12	7.89	2.51	871.27	ES	867.05	867.00	1.97
174	165	1.19	12	12	3.00	6.25	7.95	ES	871.83	869.20	868.84	ES
172	171	1.48	135	15	0.23	3.13	2.55	ES	874.71	870.00	869.69	ES
171	170	1.93	32	15	0.23	3.13	2.55	874.71	874.71	869.59	869.52	3.68
170	WQ7	2.19	13	15	0.99	6.49	5.29	874.71	875.10	869.42	869.29	3.85
WQ7	162	2.19	232	15	0.92	6.26	5.10	875.10	871.27	869.29	867.16	4.37
147	146	1.60	32	12	0.30	1.97	2.51	871.51	871.51	867.97	867.87	2.37
146	WQ9	3.25	13	15	0.27	3.39	2.76	871.51	871.99	867.77	867.73	2.30
WQ9	145	3.24	140	15	0.27	3.36	2.74	871.99	870.80	867.73	867.36	2.82
145	144	3.85	64	15	0.40	4.13	3.36	870.80	ES	867.26	867.00	2.10
141	140	2.11	149	12	1.03	3.66	4.66	ES	871.21	869.50	867.97	ES
140	139	4.45	32	15	0.47	4.48	3.65	871.21	871.21	867.82	867.67	1.95
139	WQ6	6.14	5	18	0.34	6.18	3.50	871.21	871.50	867.57	867.55	1.93
WQ6	138	6.13	47	18	0.34	6.18	3.50	871.50	871.25	867.55	867.39	2.24
138	137	6.11	158	24	0.12	7.89	2.51	871.25	ES	867.19	867.00	1.81
150	149	1.69	32	12	0.30	1.97	2.51	871.21	871.21	867.75	867.65	2.29
149	WQ5	3.41	4	15	0.30	3.58	2.91	871.21	871.47	867.55	867.54	2.22
WQ5	148	3.41	188	15	0.29	3.49	2.84	871.47	ES	867.54	867.00	2.49

STORM SEWER DESIGN CALCULATIONS
-PIPE DESIGN-

PROJECT:	Promenade, Sections 1A & 1B	STORM:	10 Year
JOB #:	21113-S1	COMPUTED BY:	JET
DATE:	3/24/22	SHEET NO.:	

Manning's Roughness Coefficient (n) = 0.013

STRUCTURE		DESIGN				CAP.		RIM ELEV.		INVERT ELEV.		COVER
FROM	TO	Q (cfs)	L (ft)	DIA. (in)	SLOPE %	Q (cfs)	VEL. (ft/s)	UP	DOWN	UP	DOWN	(ft)
113	112	0.00	165	18	0.25	5.30	3.00	OUTLET	870.50	867.00	866.59	OUTLET
112	111	4.66	155	24	0.12	7.89	2.51	870.50	870.65	866.49	866.30	1.76
111	110	5.46	32	24	0.12	7.89	2.51	870.65	870.65	866.20	866.16	2.20
110	109	6.74	13	24	0.16	9.12	2.90	870.65	870.89	866.06	866.04	2.34
109	108	6.73	138	24	0.12	7.89	2.51	870.89	869.00	865.94	865.77	2.70
108	107	10.05	81	24	0.21	10.44	3.32	869.00	ES	865.67	865.50	1.08
123	122	1.74	32	18	0.18	4.50	2.55	871.21	871.21	867.03	866.97	2.47
122	112	3.39	155	18	0.18	4.50	2.55	871.21	870.50	866.87	866.59	2.63
119	118	1.01	32	12	0.30	1.97	2.51	870.46	870.46	866.95	866.85	2.34
118	117	1.71	20	12	0.30	1.97	2.51	870.46	870.88	866.75	866.69	2.54
117	WQ4	3.83	47	18	0.18	4.50	2.55	870.88	871.45	866.49	866.41	2.68
WQ4	115	3.77	145	18	0.19	4.62	2.62	871.45	870.88	866.41	866.13	3.33
115	108	3.62	136	18	0.18	4.50	2.55	870.88	869.00	866.03	865.79	3.14
114	117	1.74	141	12	0.30	1.97	2.51	869.56	870.88	867.12	866.70	1.27
104	101	13.84	20	24	0.40	14.41	4.59	ES	869.50	865.80	865.72	ES
103	101	0.64	20	12	0.30	1.97	2.51	ES	869.50	866.00	865.94	ES
502	501	0.24	34	12	0.30	1.97	2.51	874.86	874.90	871.55	871.45	2.14
501	500	1.22	10	12	0.30	1.97	2.51	874.90	874.56	871.45	871.42	2.28
500	EX1	1.22	34	12	1.48	4.39	5.58	874.56	875.76	871.42	870.92	1.97
504	503	1.78	12	12	0.30	1.97	2.51	875.16	874.88	871.34	871.30	2.65
102	101	0.00	48	24	0.23	10.93	3.48	OUTLET	869.50	865.50	865.39	OUTLET
101	100	14.22	68	30	0.28	21.83	4.45	869.50	ES	865.19	865.00	1.52
182	181	0.55	32	12	0.30	1.97	2.51	872.92	872.92	869.70	X 869.60	2.05
181	168	1.13	125	12	0.30	1.97	2.51	872.92	874.61	869.50	869.13	2.25
EX127	EX124	0.12	28	12	0.30	1.97	2.51	872.00	872.00	868.86	868.78	1.97
EX124	EX103	0.23	93	12	0.30	1.97	2.51	872.00	873.60	868.78	868.50	2.05

STORM SEWER DESIGN CALCULATIONS
-RATIONAL METHOD-

PROJECT:	Promenade, Sections 1A & 1B	STORM:	10 Year
JOB #:	21113-S1	COMPUTED BY:	JET
DATE:	3/24/22	SHEET NO.:	

STRUCTURE		BASINS							COMPOSITE BASINS				TRAVEL
FROM	TO	BASIN #	c	A (acres)	c*A	Tc (min)	I (in/hr)	Q (cfs)	SUM (c*A)	Tc (min)	I (in/hr)	Q (cfs)	TIME (min)
134	133	134	0.39	0.42	0.16	12	5.06	0.83	0.16	12	5.06	0.83	0.30
133	132	133	0.42	0.07	0.03	7	6.44	0.18	0.19	13	5.00	0.96	0.21
132	131	132	0.52	0.45	0.23	19	4.16	0.97	0.43	19	4.16	1.77	0.21
131	130	131	0.51	0.21	0.11	9	5.66	0.62	0.54	19	4.14	2.21	1.12
130	129	130	0.00	0.00	0.00	5	6.99	0.00	3.56	45	2.51	8.93	1.90
129	128	129	0.00	0.00	0.00	5	6.99	0.00	3.81	47	2.44	9.29	1.15
128	127	128	0.00	0.00	0.00	5	6.99	0.00	4.12	48	2.39	9.85	0.65
127	126	127	0.00	0.00	0.00	5	6.99	0.00	4.12	49	2.37	9.75	0.33
126	125	126	0.43	0.24	0.10	20	4.02	0.42	4.22	49	2.36	9.94	0.16
125	124A	125	0.62	0.27	0.17	16	4.45	0.75	4.39	50	2.35	10.31	0.08
124A	124	124A	0.00	0.00	0.00	5	6.99	0.00	4.39	50	2.35	10.30	0.12
124	121	124	0.41	0.05	0.02	8	6.12	0.13	4.41	50	2.34	10.33	0.40
121	120	121	0.43	0.06	0.03	12	5.13	0.14	4.44	50	2.33	10.33	0.35
176	130	176	0.22	13.92	3.03	45	2.51	7.59	3.03	45	2.51	7.59	0.02
178	129	178	0.34	0.73	0.25	15	4.61	1.15	0.25	15	4.61	1.15	0.03
180	128	180	0.29	1.07	0.30	18	4.29	1.31	0.30	18	4.29	1.31	0.03
158	157	158	0.36	0.75	0.27	13	4.94	1.33	0.27	13	4.94	1.33	0.18
157	156	157	0.00	0.00	0.00	5	6.99	0.00	0.27	13	4.91	1.32	0.40
156	155	156	0.52	1.12	0.58	18	4.26	2.49	0.85	18	4.26	3.64	0.18
155	WQ8	155	0.51	1.07	0.54	16	4.43	2.41	1.40	18	4.24	5.93	0.10
WQ8	153	WQ8	0.00	0.00	0.00	5	6.99	0.00	1.40	18	4.23	5.92	0.83
169	168	169	0.25	0.82	0.20	17	4.36	0.88	0.20	17	4.36	0.88	0.07
168	167	168	0.00	0.00	0.00	5	6.99	0.00	0.36	17	4.35	1.59	0.86
167	166	167	0.63	0.38	0.24	15	4.55	1.08	0.60	18	4.27	2.57	0.21
166	165	166	0.50	0.31	0.16	8	5.96	0.94	0.76	18	4.25	3.23	1.58
165	164	165	0.00	0.00	0.00	5	6.99	0.00	1.04	20	4.09	4.26	0.91
164	163	164	0.51	0.43	0.22	14	4.72	1.05	1.26	21	4.01	5.06	0.21
163	162A	163	0.60	0.25	0.15	5	6.91	1.05	1.41	21	3.98	5.64	0.11
162A	162	162A	0.00	0.00	0.00	5	6.99	0.00	1.41	21	3.97	5.62	0.90
162	161	162	0.00	0.00	0.00	5	6.99	0.00	1.83	22	3.89	7.11	0.27
174	165	174	0.30	0.95	0.28	18	4.23	1.19	0.28	18	4.23	1.19	0.03
172	171	172	0.32	0.82	0.27	10	5.59	1.48	0.27	10	5.59	1.48	0.88
171	170	171	0.59	0.16	0.10	11	5.33	0.52	0.36	11	5.33	1.93	0.21
170	WQ7	170	0.72	0.07	0.05	5	6.99	0.37	0.41	11	5.29	2.19	0.04
WQ7	162	WQ7	0.00	0.00	0.00	5	6.99	0.00	0.41	11	5.29	2.19	0.76
147	146	147	0.50	0.79	0.40	20	4.03	1.60	0.40	20	4.03	1.60	0.21
146	WQ9	146	0.50	0.83	0.41	20	4.08	1.68	0.81	21	4.01	3.25	0.08
WQ9	145	WQ9	0.00	0.00	0.00	5	6.99	0.00	0.81	21	4.00	3.24	0.85
145	144	145	0.41	0.42	0.17	13	4.86	0.84	0.98	21	3.92	3.85	0.32
141	140	141	0.30	1.46	0.44	13	4.85	2.11	0.44	13	4.85	2.11	0.53
140	139	140	0.57	0.96	0.54	15	4.54	2.47	0.98	15	4.54	4.45	0.15
139	WQ6	139	0.54	0.69	0.38	15	4.54	1.70	1.35	15	4.53	6.14	0.02
WQ6	138	WQ6	0.00	0.00	0.00	5	6.99	0.00	1.35	15	4.53	6.13	0.22
138	137	138	0.00	0.00	0.00	5	6.99	0.00	1.35	15	4.51	6.11	1.05
150	149	150	0.57	0.66	0.38	16	4.50	1.69	0.38	16	4.50	1.69	0.21
149	WQ5	149	0.57	0.68	0.39	16	4.47	1.73	0.76	16	4.47	3.41	0.02
WQ5	148	WQ5	0.00	0.00	0.00	5	6.99	0.00	0.76	16	4.47	3.41	1.10
113	112	113	0.00	0.00	0.00	5	6.99	0.00	0.00	5	6.99	0.00	0.92
112	111	112	0.30	0.74	0.22	17	4.38	0.96	1.06	17	4.38	4.66	1.03
111	110	111	0.39	0.54	0.21	14	4.80	1.02	1.28	18	4.28	5.46	0.21
110	109	110	0.55	0.56	0.31	14	4.78	1.47	1.58	18	4.26	6.74	0.07
109	108	109	0.00	0.00	0.00	5	6.99	0.00	1.58	18	4.25	6.73	0.92
108	107	108	0.32	0.51	0.16	14	4.65	0.75	2.42	19	4.16	10.05	0.41
123	122	123	0.51	0.84	0.43	20	4.04	1.74	0.43	20	4.04	1.74	0.21
122	112	122	0.52	0.80	0.41	19	4.12	1.70	0.84	20	4.02	3.39	1.01

STORM SEWER DESIGN CALCULATIONS
-RATIONAL METHOD-

PROJECT:	Promenade, Sections 1A & 1B	STORM:	10 Year
JOB #:	21113-S1	COMPUTED BY:	JET
DATE:	3/24/22	SHEET NO.:	

STRUCTURE		BASINS							COMPOSITE BASINS				TRAVEL
FROM	TO	BASIN #	c	A (acres)	c*A	Tc (min)	I (in/hr)	Q (cfs)	SUM (c*A)	Tc (min)	I (in/hr)	Q (cfs)	TIME (min)
119	118	119	0.64	0.26	0.17	8	6.07	1.01	0.17	8	6.07	1.01	0.21
118	117	118	0.62	0.21	0.13	9	5.75	0.75	0.30	9	5.75	1.71	0.13
117	WQ4	117	0.00	0.00	0.00	5	6.99	0.00	0.67	9	5.71	3.83	0.31
WQ4	115	WQ4	0.00	0.00	0.00	5	6.99	0.00	0.67	10	5.62	3.77	0.92
115	108	115	0.00	0.00	0.00	5	6.99	0.00	0.67	10	5.39	3.62	0.89
114	117	114	0.31	1.22	0.37	14	4.66	1.74	0.37	14	4.66	1.74	0.93
104	101	104	0.29	22.10	6.34	54	2.18	13.84	6.34	54	2.18	13.84	0.07
103	101	103	0.20	0.88	0.18	25	3.60	0.64	0.18	25	3.60	0.64	0.13
502	501	502	0.74	0.05	0.03	5	6.99	0.24	0.03	5	6.99	0.24	0.23
501	500	501	0.76	0.19	0.14	5	6.99	1.00	0.18	5	6.92	1.22	0.07
500	EX1	500	0.00	0.00	0.00	5	6.99	0.00	0.18	5	6.90	1.22	0.10
504	503	504	0.74	0.34	0.25	5	6.99	1.78	0.25	5	6.99	1.78	0.08
503	EX2	503	0.00	0.00	0.00	5	6.99	0.00	0.25	5	6.97	1.78	0.00
102	101	102	0.00	0.00	0.00	5	6.99	0.00	0.00	5	6.99	0.00	0.23
101	100	101	0.00	0.00	0.00	5	6.99	0.00	6.52	54	2.18	14.22	0.25
182	181	182	0.44	0.18	0.08	5	6.99	0.55	0.08	5	6.99	0.55	0.21
181	168	181	0.41	0.20	0.08	5	6.99	0.59	0.16	5	6.93	1.13	0.83
EX127	EX124	EX127	0.72	0.02	0.02	5	6.99	0.12	0.02	5	6.99	0.12	0.19
EX124	EX103	EX124	0.72	0.02	0.02	5	6.99	0.12	0.03	5	6.93	0.23	0.62

STORM SEWER DESIGN CALCULATIONS
-COMPOSITE C-VALUES-

PROJECT: Promenade, Sections 1A & STORM: 10 Year
JOB #: 21113-S1 COMPUTED BY: JET
DATE: 3/24/22

BASINS					RUNOFF COEFFICIENTS				
BASIN #	c	Area (ft2)	Area (acres)	c*A	Pavement 0.85 Area (ft^2)	Lawns 0.20 Area (ft^2)	Other 0.30 Area (ft^2)	Other Area (ft^2)	Other Area (ft^2)
134	0.39	18279	0.42	0.16	5400	12879			
133	0.42	2913	0.07	0.03	1000	1913			
132	0.52	19475	0.45	0.24	9662	9813			
131	0.51	9237	0.21	0.11	4455	4782			
130	0.00	0	0.00	0.00					
129	0.00	0	0.00	0.00					
128	0.00	0	0.00	0.00					
127	0.00	0	0.00	0.00					
126	0.43	10506	0.24	0.10	3684	6822			
125	0.62	11863	0.27	0.17	7613	4250			
124A	0.00	0	0.00	0.00					
124	0.41	2180	0.05	0.02	700	1480			
121	0.43	2828	0.06	0.03	1000	1828			
176	0.22	606511	13.92	3.03	16170	590341			
178	0.34	31833	0.73	0.25	7000	24833			
180	0.29	46482	1.07	0.31	6125	40357			
158	0.36	32727	0.75	0.27	8000	24727			
157	0.00	0	0.00	0.00					
156	0.52	48574	1.12	0.59	24194	24380			
155	0.51	46457	1.07	0.55	22160	24297			
WQ8	0.00	0	0.00	0.00					
169	0.25	35794	0.82	0.20	2500	33294			
168	0.00	0	0.00	0.00					
167	0.63	16456	0.38	0.24	10889	5567			
166	0.50	13634	0.31	0.16	6341	7293			
165	0.00	0	0.00	0.00					
164	0.51	18864	0.43	0.22	9058	9806			
163	0.60	10953	0.25	0.15	6813	4140			
162A	0.00	0	0.00	0.00					
162	0.00	0	0.00	0.00					
174	0.30	41405	0.95	0.28	6125	35280			
172	0.32	35897	0.82	0.26	6744	29153			
171	0.59	7175	0.16	0.09	4276	2899			
170	0.72	3159	0.07	0.05	2538	621			
WQ7	0.00	0	0.00	0.00					
147	0.50	34516	0.79	0.40	16000	18516			
146	0.50	36137	0.83	0.41	16500	19637			
WQ9	0.00	0	0.00	0.00					
145	0.41	18361	0.42	0.17	6000	12361			
141	0.30	63645	1.46	0.44	9625	54020			
140	0.57	41667	0.96	0.55	23621	18046			
139	0.54	30085	0.69	0.37	15883	14202			
WQ6	0.00	0	0.00	0.00					
138	0.00	0	0.00	0.00					
150	0.57	28680	0.66	0.38	16403	12277			
149	0.57	29732	0.68	0.38	16747	12985			
WQ5	0.00	0	0.00	0.00					

STORM SEWER DESIGN CALCULATIONS
-COMPOSITE C-VALUES-

PROJECT: Promenade, Sections 1A & STORM: 10 Year
JOB #: 21113-S1 COMPUTED BY: JET
DATE: 3/24/22

BASINS						RUNOFF COEFFICIENTS				
BASIN #	c	Area (ft2)	Area (acres)	c*A		Pavement 0.85 Area (ft^2)	Lawns 0.20 Area (ft^2)	Other 0.30 Area (ft^2)	Other Area (ft^2)	Other Area (ft^2)
113	0.00	0	0.00	0.00						
112	0.30	32273	0.74	0.22		4795	27478			
111	0.39	23600	0.54	0.21		7000	16600			
110	0.55	24179	0.56	0.31		13169	11010			
109	0.00	0	0.00	0.00						
108	0.32	22057	0.51	0.16		4000	18057			
123	0.51	36727	0.84	0.43		17500	19227			
122	0.52	34837	0.80	0.41		17000	17837			
119	0.64	11245	0.26	0.17		7680	3565			
118	0.62	9257	0.21	0.13		5916	3341			
117	0.00	0	0.00	0.00						
WQ4	0.00	0	0.00	0.00						
115	0.00	0	0.00	0.00						
114	0.31	53040	1.22	0.37		8750	44290			
104	0.29	962551	22.10	6.34		7000	162971	792580		
103	0.20	38463	0.88	0.18			38463			
502	0.74	2008	0.05	0.04		1658	350			
501	0.76	8222	0.19	0.14		7022	1200			
500	0.00	0	0.00	0.00						
504	0.74	14973	0.34	0.25		12473	2500			
503	0.00	0	0.00	0.00						
102	0.00	0	0.00	0.00						
101	0.00	0	0.00	0.00						
182	0.44	7698	0.18	0.08		2876	4822			
181	0.41	8900	0.20	0.08		2920	5980			
EX127	0.72	1000	0.02	0.01		800	200			
EX124	0.72	1000	0.02	0.01		800	200			

Time of Concentration Worksheet
Based on TR-55

PROJECT: Promenade, Sections 1A & 1B
JOB #: 21113-S1

Typical values for Manning's n			
Overland Flow		Channel Flow	
short grass	0.15	grass	0.03
dense grass	0.24	concrete	0.015
pavement	0.011	rip-rap	0.035

2 year, 24 hour rainfall = 2.66 inches
minimum T_c = 5 minutes

	Overland flow seg. 1				Overland flow seg. 2				Shallow Concentrated Flow					Channel Flow								T_c
Basin name	Length (ft)	S %	n	T_t (min)	Length (ft)	S %	n	T_t (min)	Length (ft)	S %	Paved/Un (P or U)	Vel. (ft/s)	T_t (min)	Length (ft)	a (s.f.)	Pw (ft)	r (ft)	S %	n	Vel. (ft/s)	T_t (min)	(min)
				0				0					0								0	
134	60	2	0.24	10				0	180	1	U	1.6	2								0	12
133	50	4	0.24	7				0					0								0	7
132	79	1	0.24	17				0	157	0.6	P	1.6	2								0	19
131	51	2.4	0.24	9				0	81	0.6	P	1.6	1								0	9
130				0				0					0								0	5
129				0				0					0								0	5
128				0				0					0								0	5
127				0				0					0								0	5
126	100	1.1	0.24	20				0	18	1	P	2	0								0	20
125	76	1.2	0.24	15				0	69	1	P	2	1								0	16
124A				0				0					0								0	5
124	30	1	0.24	8				0					0								0	8
121	50	1	0.24	12				0					0								0	12
				0				0					0								0	
176	100	1	0.24	21				0	1200	0.3	U	0.8	25								0	45
				0				0					0								0	
178	80	2.1	0.24	13				0	189	1	U	1.6	2								0	15
				0				0					0								0	
180	72	0.9	0.24	16				0	133	1	U	1.6	1								0	18
				0				0					0								0	
158	60	2	0.24	10				0	240	1	U	1.6	2								0	13
157				0				0					0								0	5
156	80	1.3	0.24	15				0	248	0.7	P	1.6	3								0	18
155	76	1.5	0.24	14				0	193	0.7	P	1.6	2								0	16
WQ8				0				0					0								0	5
				0				0					0								0	
169	100	2	0.24	16				0	127	1	U	1.6	1								0	17
168				0				0					0								0	5
167	80	1.4	0.24	15				0	9	0.7	P	1.6	0								0	15
166	71	5.5	0.24	8				0	45	0.7	P	1.6	0								0	8
165				0				0					0								0	5
164	77	2.1	0.24	13				0	148	0.6	P	1.6	2								0	14
163	18	4.2	0.24	3				0	219	0.6	P	1.6	2								0	5
162A				0				0					0								0	5
				0				0					0								0	
174	77	1	0.24	17				0	148	1	U	1.6	2								0	18
				0				0					0								0	
172	85	7	0.24	8				0	135	1.1	U	1.7	1								0	10
171	78	3.2	0.24	11				0	12	0.7	P	1.6	0								0	11
170	17	3.2	0.24	3				0	86	0.7	P	1.6	1								0	5
WQ7				0				0					0								0	5
				0				0					0								0	
147	87	1	0.24	18				0	190	0.7	P	1.7	2								0	20
146	84	1	0.24	18				0	190	0.7	P	1.7	2								0	20
WQ9				0				0					0								0	5
145	75	2	0.25	13				0	70	2	U	2.3	1								0	13
				0				0					0								0	
141	75	2.5	0.24	11				0	189	1	U	1.6	2								0	13
140	75	1.7	0.24	13				0	253	1.4	P	2.4	2								0	15
139	75	1.7	0.24	13				0	248	1.3	P	2.3	2								0	15
WQ6				0				0					0								0	5
138				0				0					0								0	5
				0				0					0								0	
150	75	1.4	0.24	14				0	108	0.7	P	1.6	1								0	16
149	76	1.4	0.24	14				0	135	0.7	P	1.6	1								0	16
WQ5				0				0					0								0	5
				0				0					0								0	
113				0				0					0								0	5
112	75	2	0.24	12				0	350	0.7	U	1.3	4								0	17
111	80	2	0.24	13				0	60	0.7	P	1.7	1								0	14
110	75	2	0.24	12				0	135	0.7	P	1.7	1								0	14
109				0				0					0								0	5
108	75	2	0.24	12				0	195	1	U	1.6	2								0	14
				0				0					0								0	
123	82	1.1	0.24	17				0	337	0.7	P	1.7	3								0	20
122	81	1.2	0.24	16				0	337	0.7	P	1.7	3								0	19
				0				0					0								0	
119	41	2.3	0.24	7				0	81	0.6	P	1.6	1								0	8
118	41	1.7	0.24	8				0	87	0.6	P	1.6	1								0	9

Time of Concentration Worksheet
Based on TR-55

PROJECT: Promenade, Sections 1A & 1B
JOB #: 21113-S1

Typical values for Manning's n			
Overland Flow		Channel Flow	
short grass	0.15	grass	0.03
dense grass	0.24	concrete	0.015
pavement	0.011	rip-rap	0.035

2 year, 24 hour rainfall = 2.66 inches
minimum T_c = 5 minutes

	Overland flow			seg. 1	**Overland flow**			seg. 2	**Shallow Concentrated Flow**					**Channel Flow**								**T_c**
Basin name	Length (ft)	S %	n	T_t (min)	Length (ft)	S %	n	T_t (min)	Length (ft)	S %	Paved/Un (P or U)	Vel. (ft/s)	T_t (min)	Length (ft)	a (s.f.)	Pw (ft)	r (ft)	S %	n	Vel. (ft/s)	T_t (min)	(min)
117				0				0					0								0	5
WQ4				0				0					0								0	5
115				0				0					0								0	5
				0				0					0								0	
114	75	2	0.24	12				0	190	1	U	1.6	2								0	14
				0				0					0								0	
104	100	1	0.24	21				0	1620	0.3	U	0.8	33								0	54
				0				0					0								0	
103	100	1	0.24	21				0	400	1	U	1.6	4								0	25
				0				0					0								0	
502	15	2	0.24	3				0	20	0.7	P	1.7	0								0	5
501	15	2	0.24	3				0	140	0.7	P	1.7	1								0	5
500				0				0					0								0	5
				0				0					0								0	
504	15	2	0.24	3				0	130	0.7	P	1.7	1								0	5
503				0				0					0								0	5
				0				0					0								0	
102				0				0					0								0	5
101				0				0					0								0	5
				0				0					0								0	
182				0				0					0								0	5
181				0				0					0								0	5
				0				0					0								0	
EX127				0				0					0								0	5
EX124				0				0					0								0	5

STORM SEWER DESIGN CALCULATIONS
-INLET CAPACITY - 50% CLOGGED DEPTH OVER CASITING-

PROJECT:	Promenade, Sections 1A & 1B	STORM:	10 Year
JOB #:	21113-S1	COMPUTED BY:	JET
DATE:	3/24/2022	SHEET NO.:	

*Takes into account inlet depression. Depth from curb flowline.

Inlet #	Basin CFS	Bypass CFS to Inlet	Total CFS	Grade At Inlet	Cross Slope (ft/ft)	Longitudinal Slope (ft/ft)	Casting Model / Name	# of Castings	**SAG Only** Multiple Inlet Seperation (ft)	**SAG Only** Inlet Depression (ft)	Maximum Depth (ft) *At Gutter	Inlet Width (in)	Inlet Length (in)	50% Clogged Inlet Perimeter (ft)	Bypass Inlet	Bypass CFS
133	0.18	0.00	0.18	SAG	0.0208		R-4342	1			0.07			3.00		
132	0.97	0.00	0.97	SAG	0.0208		R-3501-R	1		0.083	0.14	18.7	28.625	2.75		
131	0.62	0.00	0.62	SAG	0.0208		R-3501-R	1		0.083	0.08	18.7	28.625	2.75		
126	0.42	0.00	0.42	SAG	0.0208		R-3501-R	1		0.083	0.05	18.7	28.625	2.75		
125	0.75	0.00	0.75	SAG	0.0208		R-3501-R	1		0.083	0.11	18.7	28.625	2.75		
124	0.13	0.00	0.13	SAG	0.0208		R-4342	1			0.06			3.00		
121	0.14	0.00	0.14	SAG	0.0208		R-4342	1			0.06			3.00		
156	2.49	0.00	2.49	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.18	18.7	28.625	5.50		
155	2.41	0.00	2.41	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.18	18.7	28.625	5.50		
167	1.08	0.00	1.08	SAG	0.0208		R-3501-R	1		0.083	0.16	18.7	28.625	2.75		
166	0.94	0.00	0.94	SAG	0.0208		R-3501-R	1		0.083	0.14	18.7	28.625	2.75		
164	1.05	0.00	1.05	Continuous	0.0208	0.0080	R-3501-R	1		0.083	0.06	18.7	28.625			0.00
163	1.05	0.00	1.05	Continuous	0.0208	0.0080	R-3501-R	1		0.083	0.06	18.7	28.625			0.00
171	0.52	0.00	0.52	Continuous	0.0208	0.0130	R-3501-R	1		0.083	0.02	18.7	28.625			0.00
170	0.37	0.00	0.37	Continuous	0.0208	0.0130	R-3501-R	1		0.083	0.01	18.7	28.625			0.00
147	1.60	0.00	1.6	SAG	0.0208		R-3501-R	1		0.083	0.23	18.7	28.625	2.75		
146	1.68	0.00	1.68	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.12	18.7	28.625	5.50		
WQ9	0.00	0.00	0	SAG	0.0208		R-4342	1			0.00			3.00		
140	2.47	0.00	2.47	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.18	18.7	28.625	5.50		
139	1.70	0.00	1.7	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.12	18.7	28.625	5.50		
150	1.69	0.00	1.69	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.12	18.7	28.625	5.50		
149	1.73	0.00	1.73	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.13	18.7	28.625	5.50		
112	0.96	0.00	0.96	SAG	0.0208		R-4342	1			0.21			3.00		
111	1.02	0.00	1.02	SAG	0.0208		R-3501-R	1		0.083	0.15	18.7	28.625	2.75		
110	1.47	0.00	1.47	SAG	0.0208		R-3501-R	1		0.083	0.21	18.7	28.625	2.75		
108	0.75	0.00	0.75	SAG	0.0208		R-4342	1			0.18			3.00		
123	1.74	0.00	1.74	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.13	18.7	28.625	5.50		
122	1.70	0.00	1.7	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	0.12	18.7	28.625	5.50		
119	1.01	0.00	1.01	SAG	0.0208		R-3501-R	1		0.083	0.15	18.7	28.625	2.75		
118	0.75	0.00	0.75	SAG	0.0208		R-3501-R	1		0.083	0.11	18.7	28.625	2.75		
114	1.74	0.00	1.74	SAG	0.0208		R-4342	1			0.31			3.00		
502	0.24	0.00	0.24	Continuous	0.0208	0.0050	R-3287-15	1			0.09	22.5	45			0.00
501	1.00	0.00	1	SAG	0.0208		R-3287-15	1			0.19	22.5	45	3.75		
504	1.78	0.00	1.78	SAG	0.0208		R-3287-15	2	2* Inlet Width		0.17	22.5	45	7.50		
182	0.55	0.00	0.55	Continuous	0.0208	0.0070	R-3501-R	1		0.083	0.03	18.7	28.625			0.00
181	0.59	0.00	0.59	Continuous	0.0208	0.0070	R-3501-R	1		0.083	0.04	18.7	28.625			0.00

STORM SEWER DESIGN CALCULATIONS
-INLET CAPACITY - GUTTER SPREAD-

PROJECT:	Promenade, Sections 1A & 1B	STORM:	10 Year
JOB #:	21113-S1	COMPUTED BY:	JET
DATE:	3/24/2022	SHEET NO.:	

*Takes into account inlet depression. Depth from curb flowline.

Inlet #	Basin CFS	Bypass CFS to Inlet	Total CFS	Grade At Inlet	Cross Slope (ft/ft)	Longitudinal Slope (ft/ft)	Casting Model / Name	# of Castings	**SAG Only** Multiple Inlet Seperation (ft)	**SAG Only** Inlet Depression (ft)	Allowable Spread (ft)	Actual Spread (ft)	Maximum Depth (ft) *At Gutter	Inlet Width (in)	Inlet Length (in)	Inlet Perimeter (ft)	Bypass Inlet	Bypass CFS
132	0.97	0.00	0.97	SAG	0.0208		R-3501-R	1		0.083	6	2.83	0.06	18.7	28.625	5.50		
131	0.62	0.00	0.62	SAG	0.0208		R-3501-R	1		0.083	6	1.07	0.02	18.7	28.625	5.50		
126	0.42	0.00	0.42	SAG	0.0208		R-3501-R	1		0.083	6	-0.09	0.00	18.7	28.625	5.50		
125	0.75	0.00	0.75	SAG	0.0208		R-3501-R	1		0.083	6	1.75	0.04	18.7	28.625	5.50		
156	2.49	0.00	2.49	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	6	4.06	0.08	18.7	28.625	11.00		
155	2.41	0.00	2.41	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	6	3.89	0.08	18.7	28.625	11.00		
167	1.08	0.00	1.08	SAG	0.0208		R-3501-R	1		0.083	6	3.34	0.07	18.7	28.625	5.50		
166	0.94	0.00	0.94	SAG	0.0208		R-3501-R	1		0.083	6	2.69	0.06	18.7	28.625	5.50		
164	1.05	0.00	1.05	Continuous	0.0208	0.0080	R-3501-R	1		0.083	6	2.93	0.06	18.7	28.625			0.00
163	1.05	0.00	1.05	Continuous	0.0208	0.0080	R-3501-R	1		0.083	6	2.93	0.06	18.7	28.625			0.00
171	0.52	0.00	0.52	Continuous	0.0208	0.0130	R-3501-R	1		0.083	6	0.86	0.02	18.7	28.625			0.00
170	0.37	0.00	0.37	Continuous	0.0208	0.0130	R-3501-R	1		0.083	6	0.28	0.01	18.7	28.625			0.00
147	1.60	0.00	1.6	SAG	0.0208		R-3501-R	1		0.083	6	5.53	0.12	18.7	28.625	5.50		
146	1.68	0.00	1.68	SAG	0.0208		R-3501-R	1		0.083	6	5.84	0.12	18.7	28.625	5.50		
140	2.47	0.00	2.47	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	6	4.02	0.08	18.7	28.625	11.00		
139	1.70	0.00	1.7	SAG	0.0208		R-3501-R	1		0.083	6	5.92	0.12	18.7	28.625	5.50		
150	1.69	0.00	1.69	SAG	0.0208		R-3501-R	1		0.083	6	5.88	0.12	18.7	28.625	5.50		
149	1.73	0.00	1.73	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	6	2.33	0.05	18.7	28.625	11.00		
112	0.96	0.00	0.96		0.0208													
111	1.02	0.00	1.02	SAG	0.0208		R-3501-R	1		0.083	6	3.06	0.06	18.7	28.625	5.50		
110	1.47	0.00	1.47	SAG	0.0208		R-3501-R	1		0.083	6	5.01	0.10	18.7	28.625	5.50		
123	1.74	0.00	1.74	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	6	2.35	0.05	18.7	28.625	11.00		
122	1.70	0.00	1.7	SAG	0.0208		R-3501-R	2	2* Inlet Width	0.083	6	2.25	0.05	18.7	28.625	11.00		
119	1.01	0.00	1.01	SAG	0.0208		R-3501-R	1		0.083	6	3.02	0.06	18.7	28.625	5.50		
118	0.75	0.00	0.75	SAG	0.0208		R-3501-R	1		0.083	6	1.75	0.04	18.7	28.625	5.50		
502	0.24	0.00	0.24	SAG	0.0208		R-3287-15	1			6	2.19	0.05	22.5	45	7.50		
501	1.00	0.00	1	SAG	0.0208		R-3287-15	1			6	5.66	0.12	22.5	45	7.50		
504	1.78	0.00	1.78	SAG	0.0208		R-3287-15	2	2* Inlet Width		6	5.24	0.11	22.5	45	15.00		
182	0.55	0.00	0.55	Continuous	0.0208	0.0070	R-3501-R	1		0.083	6	1.57	0.03	18.7	28.625			0.00
181	0.59	0.00	0.59	Continuous	0.0208	0.0070	R-3501-R	1		0.083	6	1.72	0.04	18.7	28.625			0.00

10-YEAR HGL CALCULATION RESULTS

Conduit FlexTable: Combined Pipe/Node Report

Start Node	Stop Node	Flow (cfs)	Length (User Defined) (ft)	Diameter (in)	Slope (Calculated) (ft/ft)	Capacity (Design) (cfs)	Velocity (ft/s)	Elevation Ground (Start) (ft)	Hydraulic Grade Line (In) (ft)	Invert (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (Out) (ft)	Invert (Stop) (ft)	Headloss (ft)
504	503	1.78	12.0	12.0	0.003	2.10	3.00	875.16	871.99	871.34	874.88	871.87	871.30	0.12
501	500	1.22	10.2	12.0	0.003	1.96	2.63	874.90	871.98	871.45	874.56	871.89	871.42	0.10
502	501	0.24	34.3	12.0	0.003	1.94	1.69	874.86	872.00	871.55	874.90	872.00	871.45	0.00
171	170	1.93	32.0	15.0	0.002	3.09	2.65	874.71	870.27	869.59	874.71	870.07	869.52	0.19
170	WQ7	2.19	12.5	15.0	0.011	6.64	4.85	874.71	870.01	869.42	875.10	869.88	869.29	0.13
166	165	3.23	242.4	18.0	0.002	4.48	2.76	874.61	869.31	868.37	871.83	868.84	867.93	0.47
167	166	2.57	32.0	15.0	0.002	3.02	2.76	874.61	869.40	868.54	874.61	869.31	868.47	0.08
162A	162	5.62	136.0	24.0	0.001	7.76	2.69	874.57	868.48	867.31	871.27	868.23	867.15	0.26
164	163	5.06	32.0	24.0	0.001	8.00	2.69	873.96	868.60	867.57	873.96	868.52	867.53	0.08
163	162A	5.64	16.0	24.0	0.001	8.00	2.76	873.96	868.52	867.43	874.57	868.48	867.41	0.04
165	164	4.26	137.0	24.0	0.001	7.73	2.52	871.83	868.84	867.83	873.96	868.60	867.67	0.24
WQ8	153	5.92	177.0	18.0	0.004	6.26	4.03	872.04	868.79	867.63	868.71	867.94	867.00	0.85
132	131	1.77	32.0	12.0	0.003	1.96	2.83	872.01	869.11	868.34	872.01	869.02	868.24	0.09
131	130	2.21	171.0	15.0	0.002	3.09	2.73	872.01	869.02	868.14	872.00	868.81	867.75	0.20
130	129	8.93	330.5	24.0	0.002	9.06	3.29	872.00	868.81	867.20	871.84	868.28	866.67	0.53
133	132	0.96	32.4	12.0	0.003	1.96	2.48	871.90	869.14	868.54	872.01	869.11	868.44	0.03
128	127	9.85	124.0	24.0	0.002	9.91	3.60	871.85	867.91	866.32	870.09	867.66	866.08	0.26
129	128	9.29	204.8	24.0	0.002	9.35	3.39	871.84	868.28	866.67	871.85	867.91	866.32	0.36
156	155	3.64	32.0	15.0	0.003	3.65	3.39	871.71	868.98	867.93	871.71	868.88	867.83	0.10
155	WQ8	5.93	23.0	18.0	0.004	6.86	4.37	871.71	868.87	867.73	872.04	868.80	867.63	0.07
147	146	1.60	32.0	12.0	0.003	1.96	2.78	871.51	868.79	867.97	871.51	868.74	867.87	0.06
146	WQ9	3.25	13.0	15.0	0.003	3.58	3.31	871.51	868.73	867.77	871.99	868.70	867.73	0.04
157	156	1.32	60.1	12.0	0.003	1.95	2.67	871.50	869.04	868.21	871.71	868.98	868.03	0.06
162	161	7.11	40.0	24.0	0.001	7.61	2.75	871.27	868.23	867.05	869.25	867.95	867.00	0.27
138	137	6.11	157.8	24.0	0.001	7.81	2.75	871.25	868.40	867.19	869.25	867.88	867.00	0.52
150	149	1.69	32.0	12.0	0.003	2.00	2.85	871.21	868.61	867.75	871.21	868.55	867.65	0.06
149	WQ5	3.41	4.0	15.0	0.003	3.50	3.25	871.21	868.54	867.55	871.47	868.53	867.54	0.01
140	139	4.45	32.0	15.0	0.005	4.42	4.11	871.21	868.87	867.82	871.21	868.72	867.67	0.14
139	WQ6	6.14	5.0	18.0	0.004	6.64	4.27	871.21	868.71	867.57	871.50	868.69	867.55	0.02
123	122	1.74	32.0	18.0	0.002	4.47	2.37	871.21	867.87	867.03	871.21	867.86	866.97	0.02
122	112	3.39	155.0	18.0	0.002	4.46	2.78	871.21	867.86	866.87	869.90	867.59	866.59	0.27
116	115	3.77	153.6	18.0	0.002	4.48	2.84	871.20	867.49	866.41	870.88	867.24	866.13	0.25
109	108	6.73	133.7	24.0	0.001	7.82	2.80	871.01	867.30	865.94	868.50	867.09	865.78	0.20
117	116	3.83	45.9	18.0	0.002	4.44	2.83	870.88	867.60	866.59	871.20	867.50	866.51	0.11
115	108	3.62	135.6	18.0	0.002	4.42	2.79	870.88	867.24	866.03	868.50	867.09	865.79	0.15

10-YEAR HGL CALCULATION RESULTS

Conduit FlexTable: Combined Pipe/Node Report

Start Node	Stop Node	Flow (cfs)	Length (User Defined) (ft)	Diameter (in)	Slope (Calculated) (ft/ft)	Capacity (Design) (cfs)	Velocity (ft/s)	Elevation Ground (Start) (ft)	Hydraulic Grade Line (In) (ft)	Invert (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (Out) (ft)	Invert (Stop) (ft)	Headloss (ft)
145	144	3.85	64.2	15.0	0.004	4.10	3.80	870.80	868.20	867.26	868.44	867.80	867.00	0.41
110	109	6.74	17.6	24.0	0.001	7.82	2.80	870.65	867.33	866.06	871.01	867.30	866.04	0.03
111	110	5.46	32.0	24.0	0.001	8.00	2.74	870.65	867.38	866.20	870.65	867.33	866.16	0.05
119	118	1.01	32.0	12.0	0.003	1.96	2.52	870.46	867.67	866.95	870.46	867.65	866.85	0.02
118	117	1.71	20.1	12.0	0.003	1.94	2.79	870.46	867.65	866.75	870.88	867.61	866.69	0.04
127	126	9.75	63.1	24.0	0.002	9.87	3.58	870.09	867.65	866.08	869.91	867.51	865.96	0.13
114	117	1.74	140.9	12.0	0.003	1.95	2.80	869.56	867.91	867.12	870.88	867.61	866.70	0.30
124A	124	10.30	24.0	24.0	0.002	10.30	3.74	869.98	867.38	865.87	869.60	867.32	865.82	0.06
125	124A	10.31	16.0	24.0	0.002	10.30	3.74	869.91	867.43	865.90	869.98	867.39	865.87	0.04
126	125	9.94	32.0	24.0	0.002	10.04	3.64	869.91	867.50	865.96	869.91	867.43	865.90	0.07
112	111	4.66	155.4	24.0	0.001	7.91	2.62	869.90	867.58	866.49	870.65	867.38	866.30	0.20
124	121	10.33	80.0	24.0	0.002	10.43	3.78	869.60	867.32	865.82	869.50	867.08	865.65	0.24
121	120	10.33	70.0	24.0	0.002	10.47	3.80	869.50	867.07	865.65	867.75	866.65	865.50	0.42
101	100	14.48	68.0	30.0	0.003	21.68	4.73	869.42	866.65	865.19	867.79	866.28	865.00	0.37
108	107	10.05	81.3	24.0	0.002	10.64	3.85	868.50	867.09	865.68	867.75	866.64	865.50	0.45
134	133	0.83	98.0	12.0	0.014	4.20	4.16	871.17	870.38	870.00	871.90	869.14	868.64	1.24
176	130	7.59	10.0	24.0	0.015	27.70	7.52	870.85	869.58	868.60	872.00	869.27	868.45	0.32
178	129	1.15	10.0	12.0	0.020	5.04	5.20	869.78	868.35	867.90	871.84	868.29	867.70	0.06
180	128	1.31	10.0	12.0	0.020	5.04	5.39	869.77	868.38	867.90	871.85	868.07	867.70	0.31
174	165	1.19	12.0	12.0	0.030	6.17	6.07	871.17	869.66	869.20	871.83	869.16	868.84	0.50
172	171	1.48	135.0	15.0	0.002	3.10	2.50	871.44	870.61	870.00	874.71	870.27	869.69	0.34
141	140	2.11	148.8	12.0	0.010	3.61	4.78	871.17	870.12	869.50	871.21	868.87	867.97	1.25
113	112	0.00	164.7	18.0	0.002	5.24	0.00	870.00	867.59	867.00	869.90	867.59	866.59	0.00
104	101	13.84	20.0	24.0	0.004	14.31	5.19	868.05	867.27	865.80	869.42	867.06	865.72	0.21
103	101	0.64	20.0	12.0	0.003	1.95	2.22	868.00	866.67	866.00	869.42	866.66	865.94	0.01
102	101	0.00	47.9	24.0	0.002	10.84	0.00	868.90	866.65	865.50	869.42	866.65	865.39	0.00
158	157	1.33	74.9	12.0	0.023	5.35	5.65	871.17	870.49	870.00	871.50	869.04	868.31	1.44
168	167	1.59	130.0	12.0	0.003	1.95	2.77	874.61	869.73	869.03	874.61	869.40	868.64	0.33
169	168	0.88	10.0	12.0	0.003	1.95	2.42	873.00	870.45	870.00	874.61	870.36	869.97	0.08
182	181	0.55	32.0	12.0	0.003	1.99	2.17	872.92	870.09	869.70	872.92	870.05	869.60	0.04
181	168	1.13	125.0	12.0	0.003	1.94	2.56	872.92	870.05	869.50	874.61	869.73	869.13	0.32
WQ5	148	3.41	188.0	15.0	0.003	3.46	3.21	871.47	868.53	867.54	868.44	867.75	867.00	0.78
WQ6	138	6.13	47.0	18.0	0.003	6.13	3.95	871.50	868.69	867.55	871.25	868.40	867.39	0.29
WQ7	162	2.19	233.2	15.0	0.009	6.17	4.60	875.10	869.88	869.29	871.27	868.23	867.16	1.65
WQ9	145	3.24	140.0	15.0	0.003	3.32	3.08	871.99	868.70	867.73	870.80	868.21	867.36	0.48

Advisory Plan Commission

Town of Brownsburg

Assigned Staff: Lauren Bouslog, Planner I

Report Date: 1/13/2026

Request Type: Primary Plat

General Information

CASE NUMBER	PCPP-25-5
APPLICANT	Melissa Garrard, Pulte Homes of Indiana LLC
LOCATION	32-07-24-300-001.000-016
PARCEL SIZE	7.99 acres

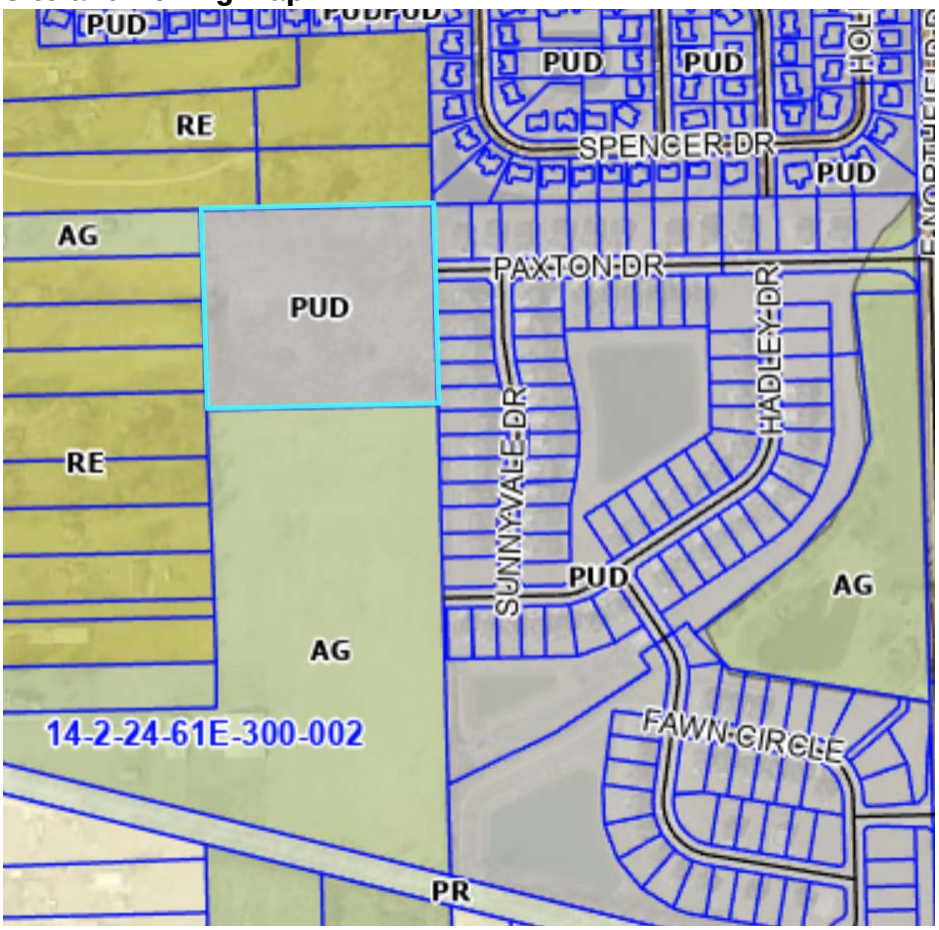
Cross References

Previous APC Cases	PCMA-25-4; Rezoning of AG land into the existing Promenade PUD (single-family residential) PCZT-25-2; Promenade PUD Zoning Text Amendment
Relevant BZA Cases	N/A
Other	The parcel was annexed into the Town of Brownsburg under Ord. 2013-10 in 2014.

Attachments

☒	Tech Review & Response
☒	Site Plan/Civil
☐	Landscape Plan
☐	Architectural Plans
☒	Other: Recorded commitments from rezone (PCMA-25-4)

Site and Zoning Map:



Project and Site Background:

This project (Promenade, Section 3) proposes a rezone of 7.99 acres of AG (agriculture) zoned land to be turned into 20 lots of single-family residential. This will be an extension of the existing Promenade PUD. The 20 new lots will get access from Paxton Road that leads to Northfield Drive. The parcel to the south (32-07-24-300-002.000-016) has not yet been acquired by the developer, but it is likely that another extension request will be made using this parcel in the future. One of the conditions of the rezone to be approved was to install a temporary turnaround (Lot 122 on the plat) until the stub road to the south can be connected. The site does not require any variances.

Technical Review:

The TECH review took place on December 18, 2025. Development Services commented that Paxton Drive needs to have a public or private road designation, acreage needs added under the square feet calculations for each lot, and dimensions for the asphalt path need marked. The amenities needed added to the landscape plan as well as a required vs. proposed planting schedule table. The Water Department commented that the phone number for the Water Dept. on the cover sheet needs changed and all required valves and hydrants will need shown on the Development Plan submittal. The Fire Territory

mentioned that a temporary fire turnaround was noted. The Hendricks County Surveyor's Office commented that the project will be required to receive Drainage Board approval.

Criteria:

Pursuant to Chapter 8 of the Brownsburg Unified Development Ordinance the Advisory Plan Commission shall make findings of fact on the following criteria:

1) The subdivision of land meets the lot width, size, and area as provided in Chapter 2 or as modified by any waiver.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=30

   a) The proposal is within a PUD, so the approved ordinance lists out the standards the project must follow. The development standards of the Promenade PD are consistent with the intent of an R3 district in that the primary area of flexibility sought in the Promenade PD is limited to minimum lot width, lot area, and side yard setbacks resulting in the benefit of allowing for the creation of more open space, as well as activation of the open space areas by the installation of pedestrian paths. Every lot is over the minimum 9,000 sq. ft. that is required with at least 40' of lot frontage and 66' of lot width measured at the building setback line.

      Based on the above information, staff believes this criterion has been met.

2) The subdivision of land provides appropriate areas and easements for necessary public utilities and drainage in accordance with **Chapter 7: Subdivision Regulations**.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=168

   a) The plat shows the required 25' B.S.L. (building setback line). As this project progresses into the Development Plan Review stage, the homes will need to stay under 50% of the lot area. The primary structures will be allowed a max height of 35' and accessory structures are capped at 20'.

      Based on the above information, staff believes this criterion has been met.

3) The plat provides the appropriate right-of-way for the extension of public roads and infrastructure and access to internal or adjacent lots.

   a) The plat has marked Paxton Drive as a 56' public ROW. This extension into the new section will match the existing road width on the east side that is completed. For 20 lots or fewer, only one street, driveway, or point of vehicle access is permitted from a residential development onto an arterial or collector. The closest road not in the PUD, Northfield Drive, is a minor arterial.

      Based on the above information, staff believes this criterion has been met.

4) The plat complies with any other applicable provision of **Chapter 7: Subdivision Regulations**.

   https://www.brownsburg.org/DocumentCenter/View/3743/Brownsburg-UDO-PDF#page=168

   a) *7.4 Easement Standards*: There is a 20' drainage and utility easement that runs along the front side of all the lots. The common area (C.A. 'A') has been marked on the plat as a drainage

easement. There is a 10' drainage easement to accommodate the storm sewer that runs in between lots 114 and 115, lots 121 and 122, and lots 128 and 129. There is a non-access easement marked in the legend, but not shown on the plat. If this type of easement will not be used later when the applicant gets to the driveway design stage, it can be removed from the legend.

b) *7.6 Open Space Standards*: The minimum open space required for the Promenade PUD is 25%. This is more intensive than what the 2025 Unified Development Ordinance requires (20%). There are two common areas marked, C.A. 'A' is on the southeast side of the new extension and C.A. 'B' is in the top northwest corner. Unless there is a conflict with drainage or utility improvements or removal of dead/diseased vegetation, the developer will not remove existing trees within 15' of the east, west, and north property boundaries.

c) *7.9 Pedestrian Network Standards:* The plat shows sidewalks on both sides of the street to satisfy the standards and the new sidewalks will connect to the existing sidewalks in the PUD to the east. The sidewalks running on either side of the street will be 5' wide and there will be a 0.2-mile-long asphalt path that is 6' wide that leads to a 200 s.f. courtyard seating and gathering area. The courtyard will be hard surface to satisfy the amenity requirement in the UDO (6-20 units require 1 amenity).

d) 7.11 Access Standards: The site will utilize one access point until the parcel below is acquired. The current access road is on the north east side of the site. Paxton Drive leads onto Northfield Drive. If more potential homes are added onto the parcel below in the future, there would more than likely be another access road that leads onto N 800 E. The B & O trail runs along the southern border of the unacquired parcel as well.

Based on the above information, staff believes this criterion has been met.

5) The Plat Satisfies any **other applicable provisions** of the Unified Development Ordinance.

a) No special provisions that relate to the plat are noted for this site. Overlay districts are not applicable to this project.

Based on the above information, staff believes this criterion has been met.

6) The Plat Satisfies the **construction requirements** of the Brownsburg Standard Details.

a) The project did not require any waivers. The applicant will need to complete any remaining TECH comments, and that will be added as a condition of approval. This project is on the February 10th agenda for preliminary drainage board approval. The site flows into the Pollard & Todd Regulated Drain.

Based on the above information, staff believes this criterion has been met.

Recommendations:

The Advisory Plan Commission may request conditions and commitments related to the project and criteria. Conditions or commitments must be made as part of the motion.

Based on the information provided and the criteria responses, staff recommends a motion to

☐	Approve PCPP-25-5 as presented.
☒	Approve PCPP-25-5 with the following staff conditions: 1. All remaining Technical Review comments will be addressed prior to stamping the Primary Plat. 2. The final plat shall be recorded in the Office of the Recorder of Hendricks County prior to issuance of any building permits. 3. The approval of the Findings of Fact and the Report of Determination by the Plan Commission. 4. The approval of the Hendricks County Drainage Board (per Hendricks County Surveyor's TECH comment)
☐	Deny PCPP-25-5 based on the following criteria:

Advisory Plan Commission

Town of Brownsburg

Report Date: 12/2/2025

Purpose: Westbranch PUD Ordinance Changes

From: Kevin Tolloty, Senior Planner

General Information

The following are proposed changes to the Westbranch PUD Ordinance for discussion by the Plan Commission. The applicant, Justin Mitchell, on behalf of Onyx + East, has submitted this zoning text amendment (PCZT-25-5) to reflect the change that would need to be made to the Westbranch PUD to allow a permanent wall sign on the clubhouse. The only proposed change is to the sign standards in the chart below.

Section to be Amended

Additional District Development Standards that Apply to the TR-2 District Area
(Single-Family Front Load Homes)

Accessory Structure Standards:	Same as TR District (Sections 5.02 and 5.06 of the UDO)**
Architectural Standards:	Same as TR District (Section 5.16 of the UDO)** See also Exhibit E and Exhibit H for Additional Architectural Standards*
Anti-monotony Standards:	See attached Exhibit I.* Same as TR District (Section 5.22 of the UDO)**
Environmental Standards:	Same as TR District of the UDO (Sections 5.23 and 5.26 of the UDO)**
Fence and Wall Standards:	Pool fences shall be permitted to be 6' in height. Fences in rear and side yards shall be permitted to be 42" in height.
Home Business Standards:	Same as TR District (Section 5.32 of the UDO).**
Landscaping Standards:	For the Perimeter Planting and Bufferyard Requirements, see attached Exhibit D.1. For each individual home unit, the landscaping standard shall require the following: (i) 1 deciduous shade tree placed as a street tree; (ii) 1 ornamental tree; and, 3 shrubs. See Ex. F.1 (Rear-Load Planting Exhibit) and Ex. F.2 (Front-Load Planting Exhibit).*
Lighting Standards:	Same as TR District (Sections 5.42 and 5.43 of the UDO).**
Minimum Open Space:	See Ex. D.3 for the overall TR District Open Space Standards, including 35% minimum open space for combined TR-1 District and TR-2 District.*
Outdoor Storage Standards:	Same as TR District (Section 5.51 of the UDO).**

Parking Standards:	Same as TR District (Sections 5.56 and 5.58 of the UDO).**
Sewer and Water Standards:	Same as TR District (Section 5.64 of the UDO).**
Sign Standards:	Same as TR District (Sections 5.66 and 5.69 of the UDO)**, **except as follows: Clubhouse shall be permitted one (1) permanent, non-illuminated wall sign, not to exceed 25 square feet in size.**
Temporary Use Standards:	Same as TR District (Section 5.85 of the UDO).**
Temporary Structure Standards:	Same as TR District (Section 5.87 of the UDO).**
Trash Receptacle Standards:	Same as TR District (Section 5.90 of the UDO).**
Vision Clearance Standards:	Same as TR District (Section 5.91 of the UDO).**

*Exhibits refer to those in Ord. 2021-14

**UDO references are to the 2014 UDO, as amended

Recommendations:

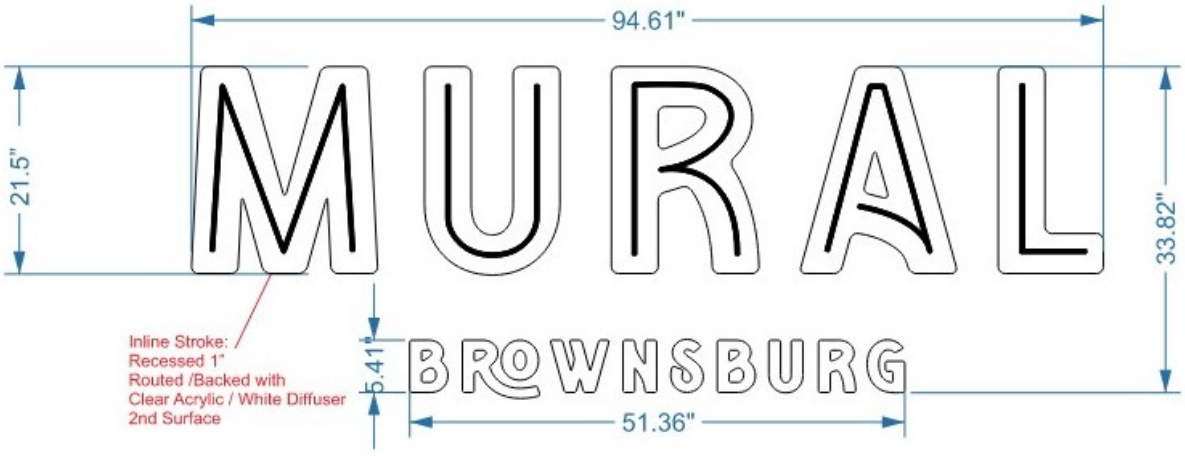
The Advisory Plan Commission may request conditions and commitments related to the project and criteria. Conditions or commitments must be made as part of the motion. For this case type, a motion will be a favorable or unfavorable recommendation forwarded to the Town Council.

Based on the information provided and the criteria responses, staff recommends a motion to:

☒	Send a **Favorable** Recommendation for PCZT-25-5 as presented.
☐	Send a **Favorable** Recommendation for PCZT-25-5 with the following staff conditions: 1.
☐	Send an **Unfavorable** Recommendation for PCZT-25-5 based on the following criteria:

Proposed Clubhouse Sign





TOWN OF Brownsburg

AFFIDAVIT & CONSENT OF PROPERTY OWNER

That I/We BOE BTR Westbranch Holdings, LLC after first being duly sworn, depose and say:

That I am/we are the owner(s) of Real Estate located at: (Legal and/or common address)
5942 Bristlecone Dr. Brownsburg, IN 46112

Parcel Number(s): 32-07-04-451-005.000-016

That we have examined the application for a/an PUD Text Amendment (application type) on this property, and I/we are familiar with its contents.

That I/we have no objections to, and consent to such request as set forth in the application.

Brett L

Signature of Affiant

Brett Davis

Printed Name

State of Indiana)
) SS:
County of Marion)

Ellie Miller
Notary Public, State of Indiana
Hancock County
Commission Number NP0755844
My Commission Expires
April 3, 2032

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared Brett Davis who acknowledged the execution of the above and foregoing instrument to its voluntary act and deed on the 5th day of January, 2026.

4-3-32

Commission Expiration Date

Ellie Miller

Notary

Hancock

County of Residence

Ellie Miller

Printed Name

EXHIBIT "A"
Legal Description

A part of the Southeast quarter of Section 4, Township 16 North, Range 1 East of the Second Principal Meridian in Lincoln Township, Hendricks County, Indiana, and being more particularly described as follows, to-wit:

Beginning at a stone found marking the southeast corner of said quarter section; thence north 00 degrees 07 minutes 27 seconds west along the east line of said quarter section and the west line of Stony Brook, Subdivision, Section One, as per plat thereof recorded in Plat Book 12 Page 30 in the Office of the Recorder of Hendricks County, Indiana; 509.36 feet to the centerline of U.S.R. 136, as now located and established, also the northwest corner of said Stony Brook Subdivision; thence north 63 degrees 06 minutes 23 seconds west along said centerline 860.46 feet; thence north 63 degrees 38 minutes 05 seconds west along said centerline 319.35 feet; thence north 64 degrees 15 minutes 14 seconds west along said centerline 288.29 feet to the southeast corner of Rolling Acres Subdivision, Section One, as per plat thereof recorded in Plat Book 4 Page 134 in the Office of the Recorder of Hendricks County, Indiana; thence north 64 degrees 49 minutes 10 seconds west along said centerline and along the south line of said Rolling Acres, Section One 249.88 feet; thence south 00 degrees 19 minutes 12 seconds west parallel with the east line of the southwest quarter of the southeast quarter of said section 4 a distance of 1280.40 feet to the south line of said quarter section; thence north 89 degrees 41 minutes 16 seconds east along said south line 226.74 feet to a stone found marking the center south of said quarter section; thence continue north 89 degrees 41 minutes 16 seconds east along said south line 1320.88 feet to the point of beginning. Containing 31.93 acres, more or less, and subject to all legal highways, rights of way and easements of record.

EXCEPT
A part of the Southeast Quarter of Section 4, Township 16 North, Range 1 East, Lincoln Township, Hendricks County, Indiana, being bounded as follows:

Commencing at the Southeast Corner of said Quarter Section; thence North 00 degrees 03 minutes 45 seconds East (assumed bearing) along the East line of said Quarter Section 447.76 feet to POINT OF BEGINNING of this description, said point lying South 00 degrees 03 minutes 45 seconds West 63.33 feet from the centerline of US Highway 136 (as now located and established); thence continuing North 00 degrees 03 minutes 45 seconds East along said East line 63.33 feet to the centerline of US Highway 136; thence North 62 degrees 58 minutes 52 seconds West along said centerline 36.00 feet; thence South 27 degrees 01 minutes 08 seconds West perpendicular to said centerline 30.00 feet; thence South 28 degrees 49 minutes 10 seconds East 60.43 feet; thence South 89 degrees 56 minutes 15 seconds East perpendicular to the East line of said Quarter Section 16.50 feet to the POINT OF BEGINNING, containing 0.056 acres, more or less.

EXCEPT
A part of the Southeast Quarter of Section 4, Township 16 North, Range 1 East, Hendricks County, Indiana, and being that part of the grantors' land lying within the right-of-way lines depicted on the attached Right-of-Way Parcel Plat, marked Exhibit "B", described as follows: Beginning at the southeast corner of said section, designated as point "15" on the Location Control Route Survey recorded in Instrument 201112220 in the Office of the Recorder of said county; thence South 88 degrees 19 minutes 30 seconds West 45.00 feet along the south line of said section to point "48" designated on said Parcel Plat; thence North 01 degree 28 minutes 53 seconds West 30.98 feet to point "110" designated on said Parcel Plat; thence North 21 degrees 56 minutes 50 seconds East 32.70 feet to point "111" designated on said Parcel Plat; thence North 04 degrees 34 minutes 55 seconds West 240.35 feet to point "112" designated on said Parcel Plat; thence North 01 degree 55 minutes 58 seconds West 127.00 feet to point "47" designated on said Parcel Plat; thence North 18 degrees 25 minutes 23 seconds West 48.32 feet to point "46" designated on said Parcel Plat; thence North 37 degrees 59 minutes 27 seconds West 55.90 feet to point "49" designated on said Parcel Plat; thence North 64 degrees 33 minutes 21 seconds West 208.00 feet to point "71" designated on said Parcel Plat; thence North *25* degrees 26 minutes 39 seconds East 35.00 feet to the centerline of U.S.R 136; thence South 64 degrees 33 minutes 21 seconds East 259.00 feet along said centerline to a corner of the grantors' land; thence South 25 degrees 26 minutes 39 seconds West 30.00 feet along a line of the grantors' land to the southwestern boundary of the intersection of said U.S.R. 136 and County Road 600 East; thence South 30 degrees 12 minutes 00 seconds East 60.57 feet (60.43 feet by Instrument 94-8727, Deed Book 333, page 712) along the southwestern boundary of the intersection of said U.S.R. 136 and said county road to a corner of the grantors' land; thence North 88 degrees 31 minutes 07 seconds East 16.50 feet along a line of the grantors' land to the east line of said section; thence South 01 degree 28 minutes 53 seconds East 447.22 feet (447.76 feet by said Instrument 94-8727, Deed Book 333, page 712) along said east line to the point of beginning and containing 0.676 acres, more or less, inclusive of the presently existing right-of-way which contains 0.216 acres, more or less. The above-described land abuts the 0.56-acre parcel described in said Instrument 94-8727, Deed Book 333, page 712, and any seeming bearing discrepancies result merely from the different bearing systems upon which they are based.

ALSO
A part of the West half of the Southeast quarter of Section 4, Township 16 North, Range 1 East and described as follows:

Beginning at the Southwest corner of the said West half quarter; thence North with section bearing 101. 7 6 rods; thence South 80 degrees East 23 .2 7 rods; thence South 65 degrees East 63. 02 rods; thence South with section bearing 70 rods and 12.5 feet; thence West with the section bearing 80 rods to THE PLACE OF BEGINNING, estimated to contain 44.51 acres, more or less. EXCEPTING THE FOLLOWNG TRACT: Beginning at the Southeast corner of said half quarter; thence West on and along the South line thereof 3 .44 chains to a point; thence North parallel to the East line of said half quarter 19 .40 chains to the center of the Indianapolis and Crawfordsville Road; thence southeasterly in the center of said road to the

East line of said half quarter; thence South on and along the East line of said half quarter to the point of beginning. ALSO EXCEPT THE FOLOWING TRACT: Beginning at a stone at the Southwest corner of said half quarter section and run thence North on and along the West line thereof 7.394 chains, thence South 85 degrees 36 minutes East 7.51 chains; thence South parallel to the West line of said quarter quarter section 6.79 chains to the South line thereof; thence South 89 degrees 47.5 minutes West on and along said South line 7.488 chains to the point of beginning, containing 5.31 acres, more or less, containing in the above tract, exclusive of said exceptions 33.17 acres, more or less. Subject to all legal highways, rights of way and easements of record.

In all containing 64.368 acres, more or less.

This description is for zoning purposes only and not for the conveyance of title.

Traditional Residential District (TR) Area – For TR-1 and TR-2 Areas

District Intent	Permitted Uses	Special Exception Uses
• The Traditional Residential District (TR) of the Westbranch PD is intended to be used as a high intensity single-family detached dwellings on small to medium sized lots.	• Residential Permitted Uses: dwelling, single-family detached; and, fair housing facility (small). • Accessory Permitted Uses: home business (type 1).	• Accessory Special Exception Uses: home business (type 2) and wind turbine, small. • Residential Special Exception Uses: assisted living facility; bed and breakfast; dwelling, duplex (2 units); and, dwelling, single-family, attached.

District Development Standards: TR-1 District Area (Single-Family Front Load Homes):

Minimum Lot Area:	NA
Minimum Lot Width:	NA
Minimum Lot Frontage:	NA
Minimum Front Yard Setback –	
All Structures:	20 feet
Minimum Side Yard Setback –	NA – See below
Primary Structures:	NA
Accessory Structures:	NA
Minimum Aggregate Side Yard Setback between Dwellings	20 feet
Minimum Rear Yard Setback –	
Primary Structures:	20 feet
Accessory Structures:	20 feet
Maximum Lot Coverage:	65% (applicable to overall TR district)
Minimum Dwelling Unit Size (Excludes basement)	
One story dwelling:	2,000 sq. ft.
Two story dwelling:	2,000 sq. ft.
Maximum Number of TR-1 Units (Single-Family Front Load):	42 units
Maximum Structure Height –	
Primary Structures:	35 feet (2 ½ stories)
Accessory Structures:	20 feet

Additional District Development Standards that Apply to the TR-1 District Area (Single-Family Front Load Homes):

Accessory Structure Standards:	Same as TR District (Sections 5.02 and 5.06 of the UDO)
Architectural Standards:	Same as TR District (Section 5.16 of the UDO) See also Exhibit E and Exhibit H for Additional Architectural Standards
Anti-monotony Standards:	See attached Exhibit I.
Environmental Standards:	Same as TR District (Section 5.22 of the UDO).
Fence and Wall Standards:	Same as TR District of the UDO (Sections 5.23 and 5.26 of the UDO). Pool fences shall be permitted to be 6' in height. Fences in rear and side yards shall be permitted to be 42" in height. The Developer shall install a privacy fence that is 6' in height along the southern perimeter of the Real Estate for that segment of the Real Estate that is between the two (2) ponds located along the southern perimeter.
Home Business Standards:	Same as TR District (Section 5.32 of the UDO).
Landscaping Standards:	For the Perimeter Planting and Bufferyard Requirements, see attached Exhibit D.1. For the southern perimeter of the Real Estate that is adjacent to the Arbor Springs neighborhood, additional Perimeter Bufferyard Requirements are depicted in Exhibit D.2 which requires that the number of homes in the TR-1 District Area along the Real Estate's southern perimeter (between the two (2) ponds that are located along this segment) shall only include seven (7) homes. For the northern perimeter of the Real Estate that is adjacent to US HWY 136, all homes shall be a minimum of 100' from US HWY 136. For each individual home unit, the landscaping standard shall require the following: (i) 1 deciduous shade tree placed as a street tree; (ii) 1 ornamental tree; and, 3 shrubs See Ex. F.1 (Rear-Load Planting Exhibit) and Ex. F.2 (Front-Load Planting Exhibit).
Lighting Standards:	Same as TR District (Sections 5.42 and 5.43 of the UDO).

Minimum Open Space:	See Ex. D.3 for the overall TR District Open Space Standards, including 35% minimum open space for combined TR-1 District and TR-2 District.
Outdoor Storage Standards:	Same as TR District (Section 5.51 of the UDO).
Parking Standards:	Same as TR District (Sections 5.56 and 5.58 of the UDO).
Sewer and Water Standards:	Same as TR District (Section 5.64 of the UDO).
Sign Standards:	Same as TR District (Sections 5.66 and 5.69 of the UDO).
Temporary Use Standards:	Same as TR District (Section 5.85 of the UDO).
Temporary Structure Standards:	Same as TR District (Section 5.87 of the UDO).
Trash Receptacle Standards:	Same as TR District (Section 5.90 of the UDO).
Vision Clearance Standards:	Same as TR District (Section 5.91 of the UDO).
Additional Standards:	See Ex. D for Additional Standards, as well as for the 1 Acre Neighborhood Commercial Flex Parcel that is located in the NC/TR-1 District Area.

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Note: All of the above standards shall be the standards that were in effect as of the date of the application submittal of this Ordinance (March 8, 2022).

Street and Alley Cross Section Requirements:

Street cross sections:	See Ex. G.1 for the required street cross sections.
Private Alleys:	See Ex. G.2 for the required private alley cross sections.

District Development Standards: TR-2 District Area (Single-Family Rear Load Homes):

Minimum Lot Area:	NA
Minimum Lot Width:	NA
Minimum Lot Frontage:	NA
Minimum Front Yard Setback –	
All Structures:	8 feet
Minimum Side Yard Setback –	NA – See below
Primary Structures:	NA
Accessory Structures:	NA
Minimum Aggregate Side Yard Setback between Dwellings	12 feet
Minimum Rear Yard Setback –	
Primary Structures:	8 feet
Accessory Structures:	8 feet
Maximum Lot Coverage:	65% (applicable to overall TR district)
Minimum Dwelling Unit Size (Excludes basement)	
One story dwelling:	1,500 sq. ft.
Two story dwelling:	1,500 sq. ft.
Maximum Number of TR-2 Units (Single-Family Rear Load homes):	145 units
Maximum Structure Height –	
Primary Structures:	35 feet (2 ½ stories)
Accessory Structures:	20 feet

Additional District Development Standards that Apply to the TR-2 District Area (Single-Family Front Load Homes):

Accessory Structure Standards:	Same as TR District (Sections 5.02 and 5.06 of the UDO)
Architectural Standards:	Same as TR District (Section 5.16 of the UDO) See also Exhibit E and Exhibit H for Additional Architectural Standards
Anti-monotony Standards:	See attached Exhibit I.
Environmental Standards:	Same as TR District (Section 5.22 of the UDO).
Fence and Wall Standards:	Same as TR District of the UDO (Sections 5.23 and 5.26 of the UDO). Pool fences shall be permitted to be 6' in height. Fences in rear and side yards shall be permitted to be 42" in height.
Home Business Standards:	Same as TR District (Section 5.32 of the UDO).
Landscaping Standards:	For the Perimeter Planting and Bufferyard Requirements, see attached Exhibit D.1. For each individual home unit, the landscaping standard shall require the following: (i) 1 deciduous shade tree placed as a street tree; (ii) 1 ornamental tree; and, 3 shrubs. See Ex. F.1 (Rear-Load Planting Exhibit) and Ex. F.2 (Front-Load Planting Exhibit).
Lighting Standards:	Same as TR District (Sections 5.42 and 5.43 of the UDO).
Minimum Open Space:	See Ex. D.3 for the overall TR District Open Space Standards, including 35% minimum open space for combined TR-1 District and TR-2 District.
Outdoor Storage Standards:	Same as TR District (Section 5.51 of the UDO).
Parking Standards:	Same as TR District (Sections 5.56 and 5.58 of the UDO).
Sewer and Water Standards:	Same as TR District (Section 5.64 of the UDO).
Sign Standards:	Same as TR District (Sections 5.66 and 5.69 of the UDO), **except as follows: Clubhouse shall be permitted one (1) permanent, non-illuminated wall sign, not to exceed 25 square feet in size.**
Temporary Use Standards:	Same as TR District (Section 5.85 of the UDO).
Temporary Structure Standards:	Same as TR District (Section 5.87 of the UDO).

Trash Receptacle Standards: Same as TR District (Section 5.90 of the UDO).

Vision Clearance Standards: Same as TR District (Section 5.91 of the UDO).

Additional Standards: See Ex. D for Additional Standards.

Note: All of the above standards shall be the standards that were in effect as of the date of the application submittal of this Ordinance (March 8, 2022).

Street and Alley Cross Section Requirements:

Street cross sections: See Ex. G.1 for the required street cross sections.

Private Alleys: See Ex. G.2 for the required private alley cross sections.

Exhibit A

(Location Exhibit)



Exhibit B

(District Area Exhibit)



Westbranch Development PUD
Exhibit B | District Map

ONYX+EAST

Exhibit C

(Concept Plan)



Westbranch Development PUD
Exhibit C | Concept Plan

ONYX+EAST

Exhibit D

(Additional Standards)

1. 1 Acre Neighborhood Commercial Flex Parcel located within the NC/TR-1 District Area: As shown on the District Map Plan, there is a "1 Acre Neighborhood Commercial Flex Parcel" that is located within the NC/TR-1 District Area. The below standards and requirements shall apply to the 1 Acre Neighborhood Commercial Flex Parcel:

    a. Upon approval of all zoning requests and acquisition of the Real Estate by the Developer, the Developer shall place the 1 Acre Neighborhood Commercial Flex Parcel for sale and shall market the same as a "Neighborhood Commercial" outlot.

    b. In the event the 1 Acre Neighborhood Commercial Flex Parcel is purchased and acquired by a third party (as evidenced by a recorded deed of transfer) on or before December 31, 2024, said 1 Acre Neighborhood Commercial Flex Parcel shall be required to be developed in accordance with the all applicable NC District Area development standards and requirements, as the same are set forth in this Westbranch PD Ordinance.

    c. In the event that the 1 Acre Neighborhood Commercial Flex Parcel is not purchased and acquired by a third party by January 1, 2025, the Developer shall submit the Town's required application and/or any and all other documents as may be required by the Town in its sole discretion necessary for the Council to consider approval or denial of such request in its sole discretion for the Developer to develop five (5) homes within the 1 Acre Neighborhood Commercial Flex Parcel pursuant to the TR-1 District standards and requirements after the Developer completes the following:

        i. The Developer shall appear before the Town Council any time after January 1, 2025, to inform and provide the Town Council of the following: (i) the Developer has not secured any third party purchasers for the 1 Acre Neighborhood Commercial Flex Area; (ii) the Developer shall submit a written explanation of their efforts to market and sell 1 Acre Neighborhood Commercial Flex Parcel; and, (iii) the Developer shall provide written minutes of any meetings/discussions with third party prospective buyers who expressed interest in the 1 Acre Neighborhood Commercial Flex Parcel.

        ii. Approval to permit the development of the 1 Acre Neighborhood Flex Parcel shall be solely at the discretion of the Town Council at the time they review such request. In addition, in the event the Developer's request requires Plan Commission consideration and approval, the Developer shall cooperate in that process.

d. Until it is finally determined if the 1 Acre Neighborhood Commercial Flex Parcel will be a commercial use or a residential use, the existing trees along this segment of US HWY 136 shall be preserved (notwithstanding any utility conflicts affecting the development of the Real Estate).

e. In the event the 1 Acre Neighborhood Commercial Flex Parcel becomes a residential use, the Developer shall provide a naturally enhanced buffer along this segment of US HWY 136 in the area of the five (5) homes.

2. Snow Removal: The property management company shall be responsible for and incur the expense of snow removal from all roads and alley ways within the TR-1 District and TR-2 District.

3. Fountains for Ponds: All ponds in the NC District, TR-1 District and TR-2 District shall be required to have fountains.

4. "Welcome to Brownsburg" Signage Along US HWY 136: The Developer shall coordinate with the Town of Brownsburg's Development Services Director to provide a mutually agreeable location along US HWY 136 for a "Welcome to Brownsburg" sign, but such sign shall not interfere with the development, sale and use of any of the Real Estate by the Developer. The final design and expense of installing the "Welcome to Brownsburg" sign shall be by the Town of Brownsburg.

5. Rental Rates: The Developer commits that the project will always be at or above market rates, and that there shall not be any government subsidies thereof. Further, occupancy rates shall comply with all applicable Town of Brownsburg ordinances and local code and to be enforced by the Westbranch Community Association.

6. Pools: Swimming pools shall be subject to the following standards:

   a. Only in an in-ground pools shall be permitted.
   b. Pools shall require an Improvement Location Permit.
   c. Pools shall be professionally managed by the property management company.

7. Development Amenities: Development Amenities to be installed by the Developer shall include: (i) an amenity area consisting of a pool house with restrooms, in ground swimming pool of at least 400 square feet in size within thirty (30) months of recording the primary plat for the Westbranch PD Ordinance; and, (ii) a playground.

8. Landscape Buffers: For the Perimeter Planting and Bufferyard Requirements, see attached Exhibit D.1.

9. Density: A maximum of 5.0 dwellings per acre (187 Dwellings) is permitted in the combined TR-1 and TR-2 Districts.

10. Open Space: See Ex. D.2 for the proposed Open Space plan and areas.

11. Shrub Sizes: There shall be a minimum of three (3) shrubs with a mature size of 3' to 5' diameter per each home.

Exhibit D.1

(Perimeter Plantings and Buffers)



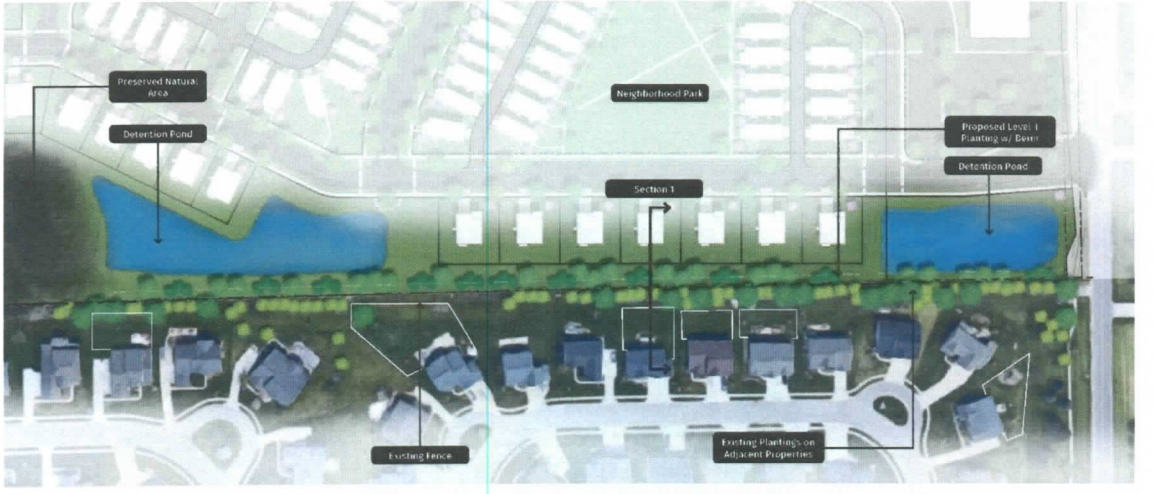
Westbranch Development PUD

Exhibit D.1 | Perimeter Plantings and Buffers

ONYX+EAST

Exhibit D.2

(South Perimeter Buffer)





Westbranch Development PUD
Exhibit D.2 | South Perimeter Buffer

ONYX+EAST

Exhibit D.3

(Open Space)



Westbranch Development PUD
Exhibit D.3 | Open Space

ONYX+EAST

5.66 SI-01: General Sign Standards

This Sign Standards (SI) section applies to the following zoning districts:

PR AG RE R1 R2 R3 TR M1 M2 M3 MP IS NC UC C1 C2 HC EC I1 I2 MS HI

The following standards apply:

A. Cross Reference:
   1. *Home Businesses*: Signs associated with a home business shall be exempt from the Sign Standards section, but shall comply with the *Home Businesses Standards (HB)*.
   2. *Lighting Standards*: When illumination of signs is permitted by this Sign Standards section, all illumination and lighting associated with signs shall meet the glare, light trespass, and any other applicable *Lighting Standards (LT)*.
   3. *Special Event Signs*: Signs associated with special events as permitted in *Section 5.88: Nonresidential Temporary Use and Structure Standards* shall be exempt from the Sign Standards section, but shall comply with that section's limitations.

B. Freedom of Speech: Any permanent sign or standard temporary sign permitted by the Sign Standards may be used for freedom of speech (i.e. the expression of opinions not including commercial messages) for any length of time.

C. Permits:
   1. *Improvement Location Permit*: An Improvement Location Permit shall be required for all signs located, erected, constructed, reconstructed, enlarged, moved, or altered, except as follows:
      a. Signs undergoing periodic or routine maintenance, including painting, repainting, cleaning and changing burnt-out light elements. Maintenance does not include changing the intensity or brightness of internal or external lighting.
      b. Changing of the sign's message (i.e. content) assuming the sign area, projection, dimension, materials (e.g. changing a wood sign to a LED sign), and other "time, place, and manner" standards are not changed.
      c. Standard Temporary Signs as may be permitted in each zoning district, but shall still comply with all applicable standards.
      d. Permitted and legally complying temporary signs that are replaced due to storms, mowing, or site maintenance; and when intentionally removed and replaced at a later time (e.g. at the end of business hours and replaced at the beginning of business hours).
      e. Permanent and legally complying signs damaged by accident or mother nature, when replaced with an effectively identical sign.
   2. *State Permit*: All signs proposed to be located along a State-owned interstate or highway shall obtain the proper State sign permit or written authorization from the Indiana Department of Transportation prior to seeking an Improvement Location Permit from the Town of Brownsburg.

D. Interim Sign:
   1. *Qualification*: Any new businesses may install an interim sign if their permanent sign is not able to be installed on or before the official occupancy date; or any business that has lost a pre-existing, legally established permanent sign due to fire, automobile accident, or act of mother nature may install an interim sign while a permanent sign is being fabricated to replace the lost sign. Under all circumstances, the following conditions shall be met:
      a. Proposal for Interim Sign: The property owner shall make a request for an interim sign, including the material, location, anchoring method, proposed installation date, and other information that may be requested by the Zoning Administrator.

b. Approval of Permanent Signs: A sign permit for one (1) or more permanent signs shall be fully approved prior to any interim signs being installed. If the permanent sign was pre-existing, evidence that the sign was legally established shall be confirmed before installing the interim sign.

c. Proof of Purchase: Proof shall be provided to the Zoning Administrator that the approved permanent sign has been officially commissioned or purchased from a sign manufacturer.

d. Size and Height: An interim sign shall not be larger in sign area or mounted higher than the corresponding approved permanent sign.

e. Location: The interim sign shall generally be in the same location as the approved permanent sign.

f. Quantity: No more than one (1) interim sign per approved (or lost) permanent sign shall be installed, with a maximum of two (2) interim signs in total.

g. Time Limitation: An interim sign may be in place for up to ninety (90) days. If evidence that unforeseen circumstances has prevented the permanent sign from being installed, the Zoning Administrator can grant a one-time thirty (30) day extension.

h. Building Inspector: An inspection of the interim sign is not required. However, if the building inspector becomes aware of any safety concerns, those concerns shall be addressed to his/her satisfaction within a time-frame consistent with the safety concern.

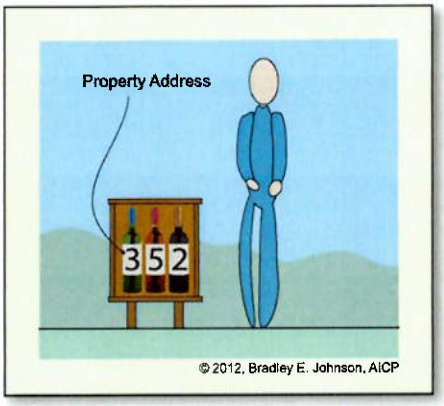
i. Maintenance: The interim sign shall be kept in good repair.

j. Removal: The interim sign shall be removed upon delivery and installation of the permanent sign(s).

E. Exempt: The following devices, as described, are not considered commercial messages and shall be exempt from the Sign Standards. However, the below described exemptions shall still meet all Vision Clearance Standards (VC) and other non-sign standards. Items that do not meet the description and that are used as part of, or fully as, a commercial message shall be regulated as a sign.

1. *Flags*: A flag or insignia of any nation, state, municipality, or other political unit is exempt. However, when a flag or insignia of any nation, state, municipality, or other political unit is used as an integral component of a commercial message, it shall comply with the sign standards for the applicable zoning district. For example, an American Flag integrated into a corporation's brand or logo.
2. *Political Signs*: Political campaign signs shall be exempt.
3. *Public Safety Message*: Posting of a public safety or privacy message by a private property owner shall be exempt, provided that no individual posting exceeds the maximum area permitted for a standard temporary sign in the applicable zoning district. Examples include "Beware of Dog," "Private Property," "No Trespassing," "Weight Limit," "Video Surveillance," and "No Turnaround."
4. *Operational Limitations or Information*: Posting of operational limitations and information shall be exempt, provided the letters are not greater than twelve (12) inches in height. Examples include hours of operation, admittance requirements, "Employees Only," "Men," "Women," "Visitor Parking," and "No deliveries."
5. *Indoor Commercial Messages*: Commercial messages displayed inside a building that cannot be viewed legibly by pedestrians or drivers outside the building shall be exempt. Examples include a commercial message on a scoreboard inside a gymnasium, a wall clock inside a restaurant with a branded logo, or product signs hanging or mounted on the wall of a retail store.
6. *Miniscule Commercial Messages*: Miniscule commercial messages displayed on or near a primary entrance shall be exempt, provided that the area of each miniscule commercial message does not exceed thirty (30) square inches and the cumulative area of all miniscule commercial messages does not exceed two (2) square feet per primary entrance. Examples include "Visa," "Master Card," "Diner's Club," "ATM Inside," and corporate logos of products sold inside.
7. *Price Tags*: A price tag in conjunction with outdoor merchandise shall not be considered a sign if less than eighty (80) square inches.

8. *Addresses*: Posting of a street address on a mailbox, building, or other prominent location to provide adequate property identification shall be exempt. However, when a street address is more than four times (4X) the minimum required address size required by the 2006 International Fire Code, or integrates graphics that convey a commercial message, then it shall be regulated as a sign. For example, an address posted on a sign illustrated with bottles of wine for a wine shop would not be exempt.



9. *Residential Nameplate*: Posting of the occupant's name in a single-family residential districts when the text is not greater than nine (9) inches in height is exempt (e.g. "Smith Family" or "Jones Place").
10. *Property Name*: A name given to a property and posted by the owners, and that does not exceed five (5) square feet in sign area is exempt. For example "Dream Cottage" or "Wild Wind Farm." However, if the sign is related to the property's use for a commercial purpose (e.g. a home business, bed and breakfast, vacation rental, or has agricultural tourism) the property name sign shall not be exempt.
11. *Required Postings*: Messages required by a State agency, State law, federal agency, or federal law shall be exempt, provided the area of the message and height of posting are consistent with the minimum requirement by the agency or law.
12. *Religious Symbols*: Religious symbols (e.g. Cross, Star of David, or Star and Crescent) incorporated into the architecture or site at places of worship occupied by the religious organizations shall be exempt. Logos, brands, or slogans used by religious organizations shall not be considered religious symbols.
13. *Murals*: A mural shall be exempt, provided it conveys no commercial message. Murals with a commercial message shall be regulated as a wall sign.
14. *Commercial Messages on a Permanent Display Board*: A commercial message attached to and contained within the sign area of a legally established permanent display board sign shall be exempt.
15. *Outdoor Sports Fields*: Any advertising or sponsor signs mounted on an outdoor scoreboard, dugout, press box, fence, bleachers, concession stand, restroom, or similar structures used in conjunction with a legally-established sport field shall be exempt if designed to be predominantly seen by the players and audience. However, if the advertising is visible from a public street and contains a commercial message intended for the non-attending public, it shall comply with the sign standards for the applicable zoning district.
16. *Directional Devices*: Directional devices used to mark the entrance or exit of an establishment for vehicle safety and information purposes that does not exceed the following limitations shall be exempt:
    a. Applicable Zoning Districts: The commercial, M2, M3, institutional, parks and recreation, or industrial zoning districts may utilize directional devices.
    b. Device Area: Directional devices shall not exceed four (4) square feet in area per face.
    c. Device Height: Directional devices shall not exceed three (3) feet in height.
    d. Quantity: Two (2) directional devices may be installed per street frontage in which the property has legally established curb cuts; with an absolute maximum of four (4).
    e. Location: Directional devices shall be subject to *Section 5.66(G): Prohibited Locations*.
    f. Message: Directional devices shall either contain the words "In," "Enter," "Entrance," "Out," "Exit," "Do Not Enter," or similar; and/or have directional arrows indicating desired traffic movement. Further, directional devices may include corporate colors or a corporate logo as long as the corporate logo does not exceed fifty percent (50%) of the device area.

17. *Wayfinding System Signs*: Wayfinding systems may be permitted for large developments that encompass multiple lots or multiple buildings, provided the following conditions are met.
    a. Wayfinding systems shall be used to direct vehicular and pedestrian traffic to specific neighborhood, amenity, or other major destinations.
    b. Wayfinding systems shall be required to have signs of consistent size, scale, and appearance.
    c. Wayfinding signs shall not exceed six (6) feet in height and two (2) square feet in sign area.
    d. Proposals for wayfinding systems shall be reviewed and approved at the discretion of the Zoning Administrator. The Zoning Administrator may take into account the need for the wayfinding system, the size and complexity of the development, quantity and location of signs, number of entrances and exits, and the appearance of signs.

F. Prohibited Signs: The following type of signs shall be prohibited.
1. *Animated*: Signs that gain attention through animation shall not be permitted, including any of the following.
    a. Signs that utilize any motion picture or animation from an LED display, LED projector, film projector, video projector, or the like.
    b. Signs that emit audible sound, odor, or visible matter.
    c. Signs that have blinking, flashing, scrolling, or fluttering lights; or changing light intensity, brightness, or color; or that give such illusion.
    d. Signs that "shoot" laser light, "cast" intense or visible light beams, or cast laser or projector-created light images onto the ground, sidewalk, wall or other visible surface.
2. *Vehicle Signs*: Vehicles with signs greater than eight (8) square feet in cumulative area shall not be permitted to be parked for the primary purpose of displaying the sign. Prohibited vehicle signs shall not be construed to include vehicles with signs on them that:
    a. Are lawfully parked overnight or during non-business hours in a discreet location.
    b. Are making deliveries, sales calls, transporting persons or property, or conducting customary practices relating to operating the business.
    c. Are used in conjunction with customary construction operations on a construction site.
3. *Lights*: Strobe lights, search lights, beacons, or any light that rapidly flashes, projects light in visible beams skyward, or projects light horizontally shall not be permitted regardless if the light is part of or independent of a sign.
4. *Signs with Moving or Movable Parts*: Signs or devices with visibly moving parts, including humans holding or acting as signs, shall not be permitted; except as may be permitted as a Special Temporary Sign.
5. *Obscene Content*: Signs that contain obscene content, indecent content, "fighting words," or profane words not allowable on broadcast television or radio during daytime hours according to the rules of the FCC; or content that would result in an NC-17 rating by the Motion Picture Association of America, shall not be permitted.
6. *Driver Hazard*: Signs that emulate emergency service vehicles or common traffic signs or signals shall not be permitted. For example, a sign that uses "Stop," "Slow," "Caution," "Danger," "Warning," or similar words mounted on a sign using similar shape, scale, color, and location resulting in driver confusion or otherwise creating an unsafe condition.
7. *Streamers*: Pennants, streamers, strings of flags, and the like with a commercial message shall be prohibited.
8. *Non-Permitted*: Any sign type not specifically permitted or that isn't clearly meeting the intent of the Sign Standards shall be prohibited.

G. Prohibited Locations: Signs regardless of type, shall not be permitted in any of the following locations, except as may be expressly permitted elsewhere in this Unified Development Ordinance:

1. *Vision Clearance*: Signs shall not be permitted in areas prohibited by *Vision Clearance Standards (VC)*.
2. *Right-of-way*: Signs shall not be permitted in any right-of-way unless authorized by the Town Council, except as allowed in *Section 5.73: Urban Commercial Sign Standards*.
3. *Poles*: Signs shall not be permitted on any traffic control device, street sign, construction sign, or utility pole.
4. *Fences*: Signs shall not be permitted on any fence.
5. *Trees*: Signs shall not be permitted to be attached to any tree, shrub, or other natural object.
6. *Benches*: Signs shall not be permitted to be attached to or integrated into any bench.
7. *Towers*: Signs shall not be permitted to be attached to or integrated into any telecommunication antennae, telecommunication tower, television antennae, or similar towers.
8. *Roofs*: Signs shall not be permitted to be placed on, set upon, attached to, or be perceived to be attached to the roof of a structure. This provision includes signs integrated into the roofing material.
9. *Fire Safety Devices*: Signs shall not be permitted on a fire escape or in a manner that substantially blocks view from the right-of-way to a fire door.
10. *Obstructs Circulation*: Signs that obstruct or interfere with safe internal or external movement of vehicular or pedestrian traffic shall not be permitted.
11. *Artificial Elevation*: Signs shall not be permitted to be installed on a berm, mound, or otherwise raised portion of the site unless the sign height is measured from the elevation at the base of the berm, mound, or raised portion of the site.
12. *Wall Signs over Windows*: No permanent wall sign shall be installed such that it covers windows in the building.

H. Maintenance: All signs and sign components shall be kept in good repair, in safe condition, and working condition. If landscaping is required around the base of a sign, it shall be maintained in living condition, consistent in character with the approval, and not overgrown. Landscaping shall be designed and maintained to be in compliance with the visibility restrictions for signs.

5.69 SI-04: Single-family and Two-family Residential Sign Standards

This Sign Standards (SI) section applies to the following zoning districts:

RE R1 R2 R3 TR M1

The following standards apply:

A. Temporary Signs: Temporary signs on individual lots shall be permitted as follows:
   1. *Location*: Temporary signs shall be located outside the Vision Clearance Triangle and a minimum of ten (10) feet from any right-of-way, or edge of pavement associated with a street or driveway.
   2. *Illumination*: Temporary signs shall not be illuminated.
   3. *Standard Temporary Signs*: Standard temporary signs shall be permitted as follows.
      a. Type: A standard temporary sign shall be a yard sign. Examples of standard temporary signs include sale of property, garage sale, and supporting school events.
      b. Quantity: One (1) standard temporary sign shall be permitted per lot frontage, plus one (1) additional sign for each 300 feet of street frontage. For corner lots, no two (2) standard temporary signs on separate frontages shall be closer than 150 feet, measured using the shortest tangent.
      c. Sign Area: The sign area for a standard temporary sign shall not exceed ten (10) square feet per side.
      d. Height Above Ground: The sign copy of a standard temporary sign shall be no more than six (6) feet above the ground. The sign structure shall not be greater than 120% taller than the sign copy.
      e. Duration: A standard temporary sign may stay in place for the duration of the temporary event. The standard temporary sign may be put in place up to seven (7) days prior to the temporary event. All standard temporary signs shall be taken down within five (5) days after the standard temporary sign's purpose no longer exists.

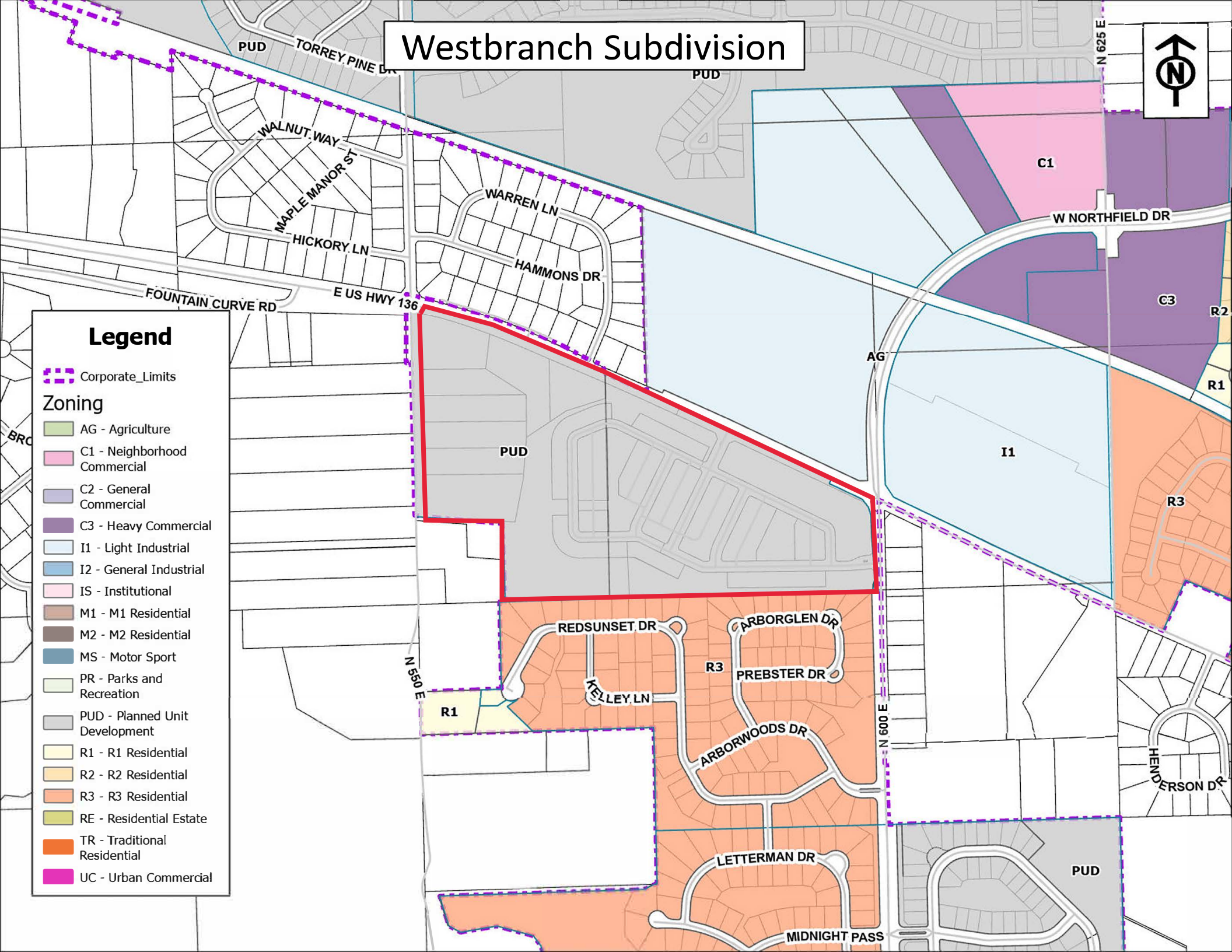

Westbranch Subdivision
PUD
TORREY PINE DR
PUD
N 625 E
WALNUT WAY
MAPLE MANOR ST
WARREN LN
HICKORY LN
HAMMONS DR
C1
W NORTHFIELD DR
C3
R2
FOUNTAIN CURVE RD
E US HWY 136
AG
R1
PUD
I1
R3
REDSUNSET DR
ARBORGLEN DR
R3
PREBSTER DR
KELLEY LN
N 550 E
R1
ARBORWOODS DR
N 600 E
HENDERSON DR
LETTERMAN DR
PUD
MIDNIGHT PASS
Legend
Corporate_Limits
Zoning
AG - Agriculture
C1 - Neighborhood Commercial
C2 - General Commercial
C3 - Heavy Commercial
I1 - Light Industrial
I2 - General Industrial
IS - Institutional
M1 - M1 Residential
M2 - M2 Residential
MS - Motor Sport
PR - Parks and Recreation
PUD - Planned Unit Development
R1 - R1 Residential
R2 - R2 Residential
R3 - R3 Residential
RE - Residential Estate
TR - Traditional Residential
UC - Urban Commercial

Exhibit "D"

Statement of Intent, Project Description and Comprehensive Plan Statement for

the Westbranch PD Ordinance - 2023 Amendment

The applicant, Onyx and East, LLC ("Onyx"), is seeking text amendment approval to the Westbranch Planned Development Ordinance, Ordinance #2022-14, which was adopted by the Brownsburg Town Council on August 25, 2022 (the "Westbranch PD"). The Westbranch PD is a mixed-use Planned Development District that consists of approximately 44 acres, which parcels are generally located at the southwest intersection of West Northfield Drive and E. US Highway 136 (collectively, the "Real Estate").

The purpose of the text amendment request (the "Westbranch Amendment Ordinance") is to add additional lot development standards that were not included in the Westbranch PD Ordinance in order to allow for the platting of individual lots in the TR-1 and TR-2 District Areas, as well as providing additional home design options for consideration.

The "Westbranch Amendment Ordinance" will meet or exceed all the requirements of *IC 36-7-4-1500* et seq. which sets forth the State of Indiana requirements for the consideration and adoption of Planned Unit Developments, and amendments thereto, by local jurisdictions. To this end the plan for the Real Estate is predominately consistent with the Goals and Objectives of the Brownsburg Comprehensive Plan and compatible with surrounding land uses and adjacent zoning districts. In this regard, The Town of Brownsburg's Comprehensive Plan Map classifies the subject Real Estate as "Single Family Detached" residential and "Neighborhood Commercial. Surrounding the Real Estate to the immediate south is the Arbor Springs residential neighborhood; (ii) to the immediate north is the US Hwy 136 and further to the north is a future industrial development; (iii) to the immediate west is N Country Road 550 E, also to the west is the Lincoln Park and estate residences; and, (iv) to the immediate east are single family residences. The Westbranch Amendment Ordinance provides a context sensitive transition residential adjacent to the surrounding residential uses and neighborhood commercial at the corner.

The Westbranch Amendment Ordinance meets the intent of the Brownsburg Zoning Ordinance, and specifically Article 4 Planned Development District in that the Westbranch Amendment Ordinance is intended to provide development standards for a mixed-use development which will include both residential and commercial uses in three (4) distinct use areas – (I) an NC District Area for neighborhood commercial uses; (ii) an RE District Area for estate lots; (iii) a TR-1 District Area; and, (iv) a TR-2 District Areas and these two (2) TR Areas will include two (2) different types of residential home offerings (single-family front load homes and single-family rear load homes).

The proposed NC District Area and RE District Area of the Westbranch Amendment Ordinance have development standards that are essentially consistent with the development standards and intent in the respective underlying zoning classifications of the Unified Development Ordinance ("UDO").

The Westbranch Amendment Ordinance for the proposed TR-1 and TR-2 District Areas adds additional lot development standards that were not included in the Westbranch PD Ordinance in order to allow for the platting of individual lots in the TR-1 and TR-2 District Areas, as well as providing additional home design options for consideration, as the development standards in the underlying TR zoning classification of the UDO do not easily comply with the development standards necessary to achieve the design intent for the TR-1 District Area (front load homes) and the TR-2 District Area (rear load homes). For the two (2) TR District Areas of the Westbranch Amendment Ordinance, the proposed development standards are limited to and only seek relief and flexibility from TR development standards of the UDO in order to produce the desired development for these two (2) TR District areas within the community.

The Westbranch Amendment Ordinance includes a mix and diversity of uses and residential home offerings. The NC District Area is intended for neighborhood commercial types of uses, the RE District Area is intended for estate lots and the TR-1 and TR-2 District Areas are intended for residential uses that offer different home offerings. The mix of uses offered within the community should benefit the immediate vicinity surrounding the Real Estate, as well as benefit the Town as a whole in providing a unique mixed-use development along an important corridor and roadway of the Town.

The NC District Area of the Westbranch Amendment Ordinance adopts the architectural standards and requirements of the UDO Section 5.18 AR-04 Commercial Architectural Standards, as those standards and requirements are more appropriate to apply to the proposed commercial buildings in the NC District Area of the Westbranch Amendment Ordinance. The RE District Area adopts the architectural standards and requirements of the UDO. For the TR-1 and TR-2 District Areas, the Westbranch Amendment Ordinance includes specific design and architectural standards (see Exhibit E and Exhibit H of the Westbranch TA Ordinance) – that, as applied, will be sensitive to the character of the surrounding area and uses and which will provide amenities for future residents.

The Westbranch TA Ordinance meets district intent and prerequisites of Article 4.1 in the following ways:

1. The Real Estate consists of two (2) parcels of that when combined are uniquely shaped with existing natural features, including the western portion of the Real Estate that includes mature tree areas, gently rolling terrain and features that deserve sensitivity. The eastern portion of the Real Estate is located at the southwest intersection of US Hwy 136 and Northfield Drive/N CR 600 E and the western portion is located south of and adjacent to US Hwy 136, and east of N. CR 550 E. The Westbranch Amendment Ordinance seeks to combine these parcels into a coherent development that is not disjointed and the subject of individual zoning requests on the various parcels that may not be part of an overall plan to effectively and appropriately develop the Real Estate.

2. The Westbranch Amendment Ordinance will provide for a mixed-use development that shall include both residential and commercial uses within in four (4) distinct use areas – NC District Area, RE District Area and the TR-1 and TR-2 District Areas for the two (2) different residential home offerings (single-family front load homes and single-family rear load homes). The two (2) TR District Areas are unique in that these areas are master-

planned and include a mixed-use lifestyle living experience in a premium residential community that shall be managed by a professional management company.

3. Because the eastern portion of the Real Estate is located in a prominent corridor of the southwest intersection of US Hwy 136 and Northfield Drive/N CR 600 E, this area is proposed to be the NC District use area which is intended per the Comprehensive Plan for neighborhood commercial types of uses area. The area just south of the NC District Use, will be the two (2) TR District Areas which will provide for a residential uses in the form of front load homes and rear load homes that will benefit the immediate vicinity area surrounding the Real Estate and the Town as a whole by providing another housing option.

4. By utilizing the unique location of the Real Estate, its unique size and taking into consideration the natural features of the Real Estate when developing a sensitive and thoughtful land plan, the Westbranch Amendment Ordinance seeks to avoid a disjointed development of the various parcels through separate rezone requests, and instead seeks to develop the parcels in a coherent and unified manner so that they live and feel more like a "micro-community" and not separate and unrelated developments.

5. Another aspect of utilizing the natural features of the site and seeking to have a connected and vibrant community, the Westbranch proposals includes a path system that allows residents in the estate section to utilize a path that will meander through some of the mature tree areas that will be preserved over to the commercial area and other residential area. Pathways such as this have the effect of creating community connection and engagement between the residents of the different areas of the development.

6. The sidewalk system within and around the community and the common areas and park areas provide the residents and public alike an opportunity to enjoy the natural features of the overall site, including the trees that will be preserved and the many new trees, shrubs and plants that will be installed upon development.

7. The original rezone to the Westbranch PD, as a "Planned Development", was desired in order to allow for the development of the Real Estate into a community that was planned with thought and the idea of connecting its residents to each other within the development and providing convenient and nearby appropriate neighborhood commercial types of uses for their enjoyment. If "straight rezone" were pursued for the development of the individual parcels to achieve the proposed Westbranch development, it would require separate rezone filings, various Board of Zoning Appeals ("BZA") approvals on various development standards from the Unified Development Ordinance for any underlying zoning district that was sought. Additionally, the platting standards would present various additional variances and waivers that would be required. Further, while rezones would require approval by the Council, the BZA is the

body that approves development standards variance requests. Further, a petitioner cannot file for a BZA variance until after the Council approves a rezone. This results in the BZA making the final land use decision/policy decision on the development of the land when that jurisdiction or role seems to rest more appropriately with the Council.

8. The Applicant chose a Planned Development rezone in order to present the Westbranch PD Ordinance and proposal as a comprehensive, master planned proposal for the Council's consideration, which proposal the Council adopted. The Applicant is now presenting the Council with a text amendment to the original Westbranch PD for the same purpose and to add additional lot development standards that were not included in the Westbranch PD Ordinance in order to allow for the platting of individual lots in the TR-1 and TR-2 District Areas, as well as providing additional home design options for consideration.

9. The Westbranch Amendment Ordinance includes a mix and diversity of uses (commercial and residential) and the proposal's intent is to provide a unique and innovative development design by providing a mix of uses in a coherent and complimentary overall design, while being sensitive to other surroundings uses, buffers and transitions.

10. Finally, the subject Real Estate meets the ownership, minimum site area and underlying zoning district prerequisites as set forth in Article 4 of the UDO and the Westbranch Amendment Ordinance is predominantly in-line with the permitted uses in the original zoning district and the Comprehensive Plan and is compatible with the land uses and adjacent zoning districts.