

Agenda

Natural Features Protection Review Board



City of Kalamazoo

Tuesday, September 23, 2025

4:00 PM

City Commission Chambers at City Hall - 241 W. South Street

A. CALL TO ORDER/ROLL CALL

1. Excuse Absent Board Members (**Action: Motion to Excuse Absent Board Members**)

B. ADOPTION OF AGENDA

(Action: Motion to approve the agenda)

1. Agenda Approval (**Action: Motion to Approve Agenda as presented**)

C. APPROVAL OF MINUTES

1. Approval of the minutes from the Natural Features Protection Review Board meeting on August 26th, 2025 (**Action: Motion to Approve the meeting minutes from the Natural Features Protection Overview Review Board Meeting on August 26th, 2025 as presented**).

D. PUBLIC COMMENTS

E. BOARD MEMBER COMMENTS

F. NEW BUSINESS

1. 3050 Oakland Drive - 7 Eleven

G. UNFINISHED BUSINESS

- 1.

H. STAFF REPORTS AND UPDATES

I. COMMUNICATIONS AND ANNOUNCEMENTS

1. **Leaf Pick-up begins in November through December.**

J. ADJOURNMENT



NFP Review Board Staff Report

City of Kalamazoo

TO: The Natural Features Protection Review Board

FROM: Nolan Bergstrom, NFP Board Liaison

DATE: September 23, 2025

SUBJECT: 3050 Oakland Drive - 7 Eleven

RECOMMENDATION:

It is recommended the Natural Features Protection (NFP) Review Board approve the NFP Site Plan application for 3050 Oakland Drive conditioned upon:

- Completion of MNFI Rare Species On-Site Review.
- Full Approval by the Site Plan Review Committee.

BACKGROUND:

The subject parcel is owned by the City of Kalamazoo in the Oakland Drive-Winchell Neighborhood at 3050 Oakland Drive. The property is zoned [Commercial Node or C-Node](#) and owned by Cheker Oil Company of Michigan Inc. and operated as a Speedway Gas Station Convenience Store has been such since the 1960s in various forms.

The proposed work includes:

- Removal and Replacement of Dispensers, Storm Sewer, and Underground Fuel Tanks
- Replacement of pavement

The project is seeking NFP Board approval to obtain full site plan approval and site permits. They attended a Checklist Meeting on July 30th, 2025. Following this, the applicant applied for Full Site Plan Review. Full Site Plan Review is scheduled for October 1st, 2025.

FINDINGS:

The property is within the NFP Overlay District due to:

Primary Natural Feature: Protected Slopes

Secondary Natural Feature: Woodlands

Tertiary Natural Feature: Adjacent to Hydrology (Woods Lake)

MNFI Rare Species Review: Yes.

The property is also within, 5-, and 10-year [wellhead capture zones](#).

The following NFP Site Development Standards Apply to this project:

- **Water Resources Standard** – Woods Lake is near the site buffered by Woods Lake Park. Work is planned to occur outside the setback from Woods Lake.
- **Wetland Standard** – Similar standards to Water Resources. Permits from State or Federal Agencies are required to be on-file, if needed. No work is planned in any wetland delineated areas.
- **Protected Tree Standard** – There are no proposed tree removals for this project.
- **Woodland Protection Standard** – There are no proposed woodland impacts with this project. Construction Protection fencing is not currently shown on the plans but the limits of work area is shown on the plans which is within the existing paved areas.
- **Natural Heritage Areas Standard** – MNFI Rare Species review is required for this project. Several at-risk species and/or natural communities have been documented within 1.5 miles of the project location and it is possible that adverse impacts will occur. Per [§ 50-6.2I\(3\)](#) an on-site review is required.
- **Plant Selection** – Plant selection needs to adhere to [§ 50-6.2J\(4\)](#) and tree plantings will come from the Tree Replacement List ([Table 6.2-5](#)). A nativar of Honey Locust is shown on the landscaping plans. No other landscaping is required.
- **Stormwater Management** – A Soil Erosion and Soil Control Plan is required, and stormwater management will be required to adhere to the NFP Ordinance per [§ 50-6.2J\(6\)](#). The project is also located within multiple wellhead capture zones. SESC measures / plans are provided with the Plans.

After staff review, the plan appears to meet NFP standards and qualifies for conditional approval based upon the following:

- Completion of MNFI Rare Species On-Site Review.
- Full Approval by the Site Plan Review Committee.

SUPPLEMENTAL SITE PLAN REVIEW APPLICATION FOR NATURAL FEATURES PROTECTION

For projects located within the Natural Features Protection (NFP) Overlay District, separate site plan approval is required before the full site plan can be approved. This review is done either by the NFP Review Board or administratively by staff to verify conformance with NFP Overlay District zoning code ([Chapter 50, NFP](#)). The NFP Overlay District map can be found on the [City's GIS mapping website](#) (select "Planning & Zoning" layer and make sure "NFP Overlay" is clicked on).

The NFP Supplemental Application must be completed and submitted with the regular Site Plan Review Application and checklists. The NFP Review Board meets monthly to review and approve applications. City staff can assist in scheduling a project at an upcoming NFP Review Board meeting. While the review process offers some flexibility, projects often seek NFP approval between the Pre-Application meeting and regular Site Plan Review meeting.

Section I. Project & Applicant Information

All projects must complete Section I. If the project will not impact any natural features on the site, and does not trigger additional stormwater controls or treatment, applicants should sign and submit Section I only. Staff will review and determine if the application can be approved administratively.

Section II. Natural Features Checklist & Attachments

For projects proposing improvements or changes to the site that impact natural features, change grading, or involve work in or near NFP setbacks, Sections II and III must be completed. Section II identifies which natural features are present and standards apply. Section III will assist you in determining what documentation and additional plan sets are needed for a complete application. Once a complete application is submitted to the City, the project will be scheduled for the next available NFP Review Board meeting and an application fee of \$110 will apply.

QUESTIONS

Contact the NFP staff liaison with any questions about your NFP Supplemental Application at (269) 337-8045 or development@kalamazoo.org.

SECTION I. PROJECT AND APPLICANT INFORMATION

Please provide all of the project and applicant information requested below. Include the date of your regular site plan review meeting, if one has been scheduled or already taken place.

APPLICANT NAME:	(first) _____ (last) _____		
APPLICANT ADDRESS:	(number) _____		(street name) _____
	(city) _____	(state) _____	(Zip) _____
APPLICANT EMAIL:	_____	PHONE:	_____
PARCEL ADDRESS/PIN:	_____		
PROJECT DESCRIPTION:	_____		

OWNER NAME: <i>(if different)</i>	(first) _____ (last) _____		
HAS REGULAR SITE PLAN REVIEW MEETING OCCURRED?	<input type="checkbox"/> Yes <input type="checkbox"/> No	DATE OF SITE PLAN REVIEW MEETING:	_____

NFP APPLICATION REQUIRED?

Is the project limited to interior work <u>only</u> with no exterior ground changes or increase in impervious coverage?	
YES	If YES , Sections II & III of this application are not needed. Sign below & submit only this page with your site plan review or permit application.
NO	If NO , proceed to Sections II & III. Do NOT sign below.

By signing below, the applicant certifies that no natural features will be disturbed as part of this project.

Print name: _____

Signature: Mandy G. Hauss

Date: _____

SECTION II. NFP SITE PLAN CHECKLIST & ATTACHMENTS

Use the checklist to determine what documentation and additional plans sets must be prepared for this application. All plan sets, maps, and additional information must be attached to this application to be considered complete. If you checked “no” to certain NFP items in questions 1-7 in Section II, record “N/A” on the checklist.

REQUIRED: NFP SITE PLAN SET

All applications must include separate sheets in the plan set showing the following:

1. Existing conditions map showing an inventory of all protected natural features and any associated natural features setbacks with distances (use checklist below)
2. Future development plan overlaid onto the existing conditions and natural features inventory; indicate where and to what extent protected natural features will be disturbed, removed, altered, or impacted in any way and which natural features will be protected during and after construction

Future development plan must include:

- **Boundary with extent of re-grading**, construction, or site preparation activities
 - **All existing and new building footprints** (mark whether existing buildings will be removed or maintained)
 - **New and existing parking** surfaces or structures, sidewalks, trails, and other impervious or semi-impervious surfaces including decks, patios, viewing platforms, etc. (list proposed surface materials and whether existing surfaces will be maintained or removed)
 - **Proposed location of fencing and screening**, whether permanent, natural, or construction silt fencing and/or natural feature protection fencing (with specifications)
 - **Stormwater facilities** showing boundary of ground disturbance, grading or construction activities, if located near natural features
 - **New utilities** and/or relocation of existing utilities showing corridors that could impact natural features
3. Landscape plan detailing the minimum elements needed to meet zoning code requirements and all proposed additional landscaping elements or features (include table with species name)
 4. Any additional plans or tables detailing which natural features will be restored or replaced after construction, if required (e.g., riparian buffer installation or slope restoration plan may be required under certain circumstances when the ordinance allows changes within these protected areas)

WETLANDS	Present:	Included on page #:	Notes:
Mark existing wetland boundaries with notes about wetland conditions. <i>Attach a copy of EGLE permit or permit application for work impacting Part 303 wetlands regulated by the State.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
WATER RESOURCES	Present:	Included on page #:	Notes:
Mark the location of all water resources on the parcel and those within 25 feet of the parcel boundaries. <i>Attach a copy of EGLE permit or permit application for work impacting Part 301 waters regulated by the State.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Show required setbacks with dimensions; describe existing or future ground cover within riparian setbacks.			
TREES	Present:	Included on page #:	Notes:
Mark the location of all “protected” trees that are proposed to be removed and those that will remain and require protection fencing.	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Include a table with species name, size (DBH and height), and condition of “protected” trees that are proposed to be removed and list replacement tree information.	N/A - no trees being removed		
Provide a note with justification for removal.			
WOODLANDS	Present:	Included on page #:	Notes:
Delineate the boundary of all woodlands on the parcel noting where woodlands likely extend onto adjacent parcels.	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Mark all areas of woodland that will be retained and removed (i.e., cleared).	N/A - no trees being removed		
Include a table or note with the required preservation ratio (based on existing woodland coverage), percentage proposed to be removed, and rationale for selecting area for removal.	N/A - no trees being removed		
SLOPES	Present:	Included on page #:	Notes:
Provide a slope analysis that shows the boundaries of all “protected” slopes and mark the required setback(s).	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Include a note with co-existing feature that triggers “protected” slope status (e.g., wooded, within 500 ft of water resource.	N/A - no slopes being impacted		

NATURAL HERITAGE AREAS	Present:	
<p>Is an MNFI* rare species review required? <i>Parcels can be pre-screened using the City's GIS website, click on the "Planning & Zoning" layer and "NFP Overlay" layer; then click on parcel and see MNFI status.</i></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>MSU is taking eight weeks to turn around reports. Request was sent on 08/11/2025</p>
<p>If an MNFI rare species review is required, attach the resulting report.</p>		

*Michigan Natural Features Inventory (MNFI) Rare Species Reviews can be requested at:

<https://mnfi.anr.msu.edu/services/rare-species-reviews>

ACCEPTED DATA SOURCES & ANALYSIS

All data sources, analysis, and professionals are subject to approval by the City Planner according to Chapter 50-6.2. The following guidance may be useful when selecting a professional or methodology for inventorying natural features.

1. WETLANDS

- Wetland delineation report performed by a qualified consultant including a map denoting delineated boundary of all wetlands, OR
- Most recent US Fish & Wildlife Service's National Wetlands Inventory boundary (State of Michigan mapper: <https://www.michigan.gov/egle/about/organization/water-resources/wetlands/inventory-maps>)

2. PROTECTED TREE IDENTIFICATION

- May be performed by an qualified professional (including ISA Certified Arborist or similar); a full tree inventory is not required if all necessary information can be obtained and communicated using another survey, inventory, or site assessment methodology

3. WOODLANDS

- A qualified professional, such as an ISA Certified Arborist, landscape architect, or license engineer may perform a desktop analysis or field survey to delineate woodlands
- When a variances is being requests to remove more woodland cover than is allowed under the preservation ration, the following is required
 - Woodland assessment report with determination that the Trees per Area (TPA) meets the NFP definition of a woodland and mapped delineation of woodland
 - Woodland assessment report with a determination that Basal Area is equivalent to the TPA in the NFP definition and meets definition of a woodland and mapped delineation of woodland
 - In addition to determination of whether stand of trees meets NFP definition of a woodland, assessment must include information on general species diversity,
 -

composition of species, any notable trees (either notable species or size), invasive species composition, and general health and age observations of tree stand

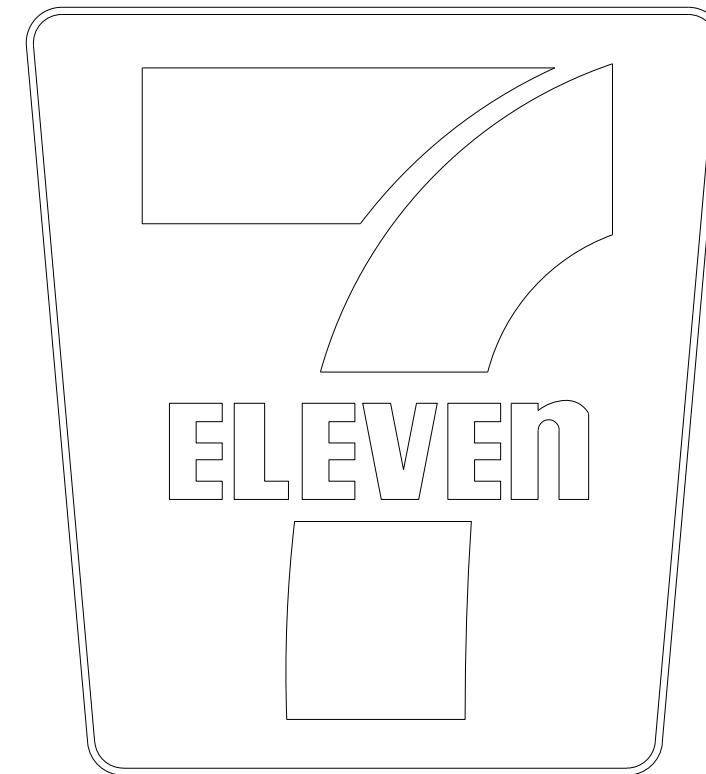
4. PROTECTED SLOPES

- Topographic survey performed in the field by a qualified consultant to delineate areas of a slope with grade of 20% or greater
- Desktop analysis performed using U.S. Geological Survey digital topographic maps, LIDAR, digital elevation map, or equivalent data showing 2' intervals or finer resolution, performed by a qualified consultant or engineer

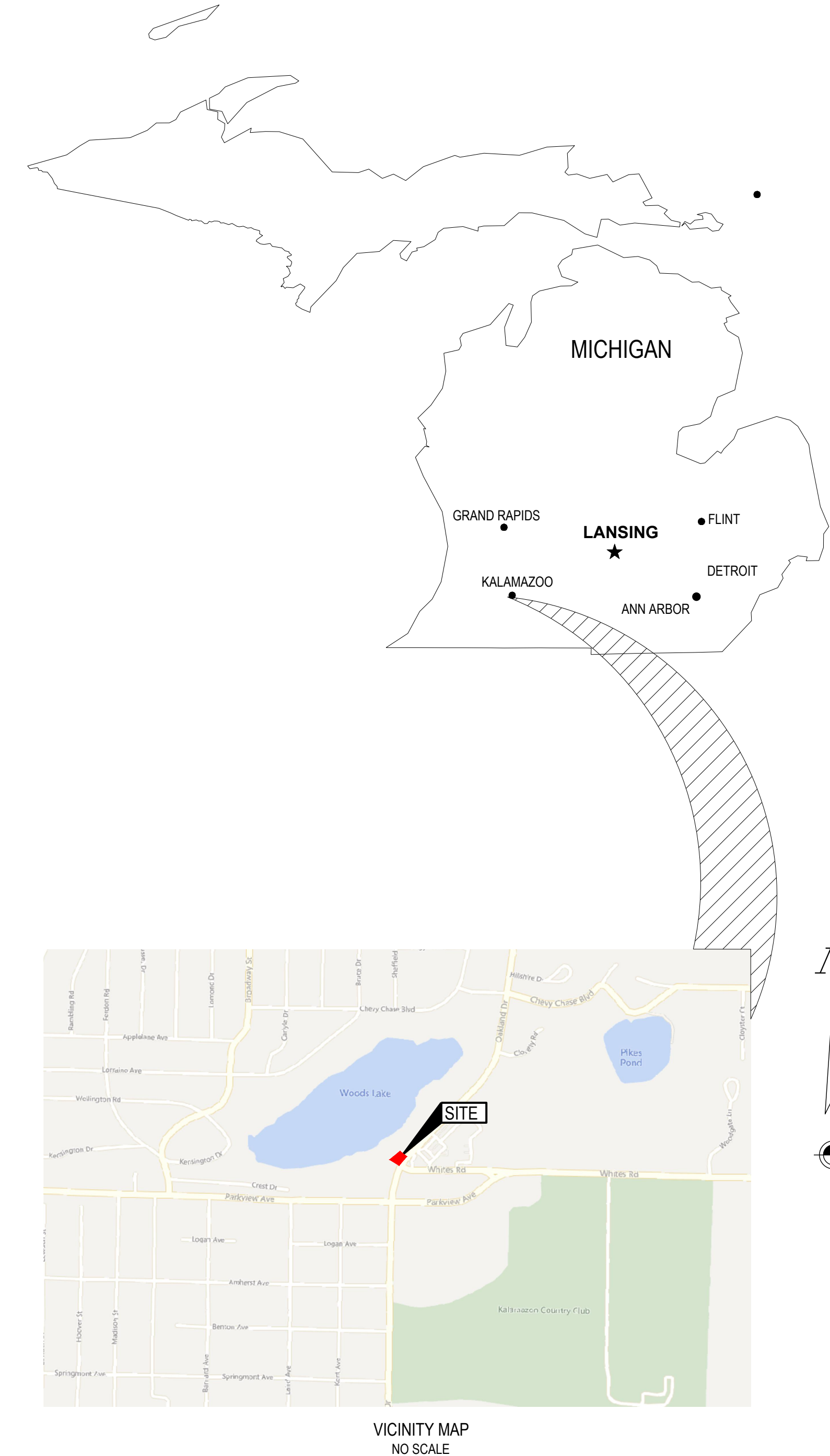
CITY OF KALAMAZOO, KALAMAZOO COUNTY, MICHIGAN CONSTRUCTION PLANS

FOR 7-ELEVEN

**3050 OAKLAND DRIVE
KALAMAZOO, MI 49008**



Sheet List Table	
Sheet Number	Sheet Title
CV	COVER SHEET
CD	DEMOLITION PLAN
CS	SITE PLAN
CS1	DIMENSION PLAN
CR	CIRCULATION PLAN
CU	UTILITY PLAN
CU1	UTILITY DETAIL
CE	SWPPP PHASE 1
CE1	SWPPP PHASE 2
CE2	SWPPP NOTES & DETAILS
CG	GRADING PLAN
CPC-1	DETAILS
CYE-A	DETAILS
CUD1	DETAILS
DET-1	CONSTRUCTION DETAILS
1 OF 1	TOPOGRAPHIC SURVEY



SURVEY PROVIDED BY:
 GEODETIC DESIGNS, INC.
 2300 N. GRAND RIVER AVE.
 LANSING, MI 48906
 PHONE: 517.908.0008
 DATED: 2022.10.31

CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

BENCHMARK DATUM: NAVD88
 BM "A" - SITE BM "A"
 TOP OF WESTERLY BOLT ON WEST LEG OF GAS STATION
 916.78

OWNER/DEVELOPER:
 7-ELEVEN (AKA SPEEDWAY LLC)
 3200 HACKBERRY RD
 IRVING, TX 75063
 CONTACT: JAMES HUGHES

CONSTRUCTION MANAGER:
 7-ELEVEN (AKA SPEEDWAY LLC)
 3200 HACKBERRY RD
 IRVING, TX 75063
 CONTACT: KENNETH LETZ
 PHONE: (330) 690-2345

**Site Plan Review
 Received: 09/09/2025
 City of Kalamazoo
 E.Szymanski**

ENGINEER:
 CESO, INC.
 13060 S US HIGHWAY 27
 DEWITT, MI 48820
 PHONE: (517) 212-4185
 CONTACT: MANDY GUASS
 EOR: ZACH FRESHNER

GOVERNING AGENCIES AND UTILITY COMPANIES:

SEWER:
 JAMES BAKER, P.E.
 CITY OF KALAMAZOO
 241 W SOUTH STREET
 KALAMAZOO, MI 49007
 EMAIL: COKPUBLICSERVICES@KALAMAZOOCITY.ORG

WATER:
 JAMES BAKER, P.E.
 CITY OF KALAMAZOO
 241 W SOUTH STREET
 KALAMAZOO, MI 49007
 EMAIL: COKPUBLICSERVICES@KALAMAZOOCITY.ORG

STORMWATER:
 JAMES BAKER, P.E.
 CITY OF KALAMAZOO
 241 W SOUTH STREET
 KALAMAZOO, MI 49007
 EMAIL: COKPUBLICSERVICES@KALAMAZOOCITY.ORG

ZONING:
 PETE ELDRIDGE, ZONING ADMINISTRATOR
 CITY OF KALAMAZOO
 241 W SOUTH STREET
 KALAMAZOO, MI 49007
 EMAIL: ELDRIDGE@KALAMAZOOCITY.ORG

PROPERTY DATA:

PARCEL OWNER: 7-ELEVEN (AKA SPEEDWAY LLC)

PARCEL ID: 0454725

ADDRESS: 3050 OAKLAND DRIVE
KALAMAZOO, MI 49008

PROPERTY AREA: 0.65 AC

ZONING: C-NODE

PROPOSED USE: CONVENIENCE STORE / GAS STATION

DEVELOPMENT CONDITIONS:	PERVIOUS	IMPERVIOUS
EXISTING:	0.25 AC	0.40 AC
PROPOSED:	0.25 AC	0.40 AC

BUILDING AREA: 1,685 SF

	REQUIRED	PROPOSED
BUILDING SETBACKS		
FRONTAGE ALONG STREET:	0'	36.8'
SIDE:	0'	10.3'
REAR:	25'	41.3'

FLOODPLAIN DESIGNATION: PARCEL IS LOCATED WITHIN "ZONE X" AS INDICATED BY THE FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NUMBER 26077C0188D, EFFECTIVE DATE: 02/17/2010; PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.



3051 Rgby Rd., Suite 300
 Mansfield, OH 43342
 Phone: 937.435.8584 Fax: 888.208.4826



7-ELEVEN- KALAMAZOO
 3050 OAKLAND DRIVE
 KALAMAZOO, MICHIGAN 49008

7-ELEVEN, INC.

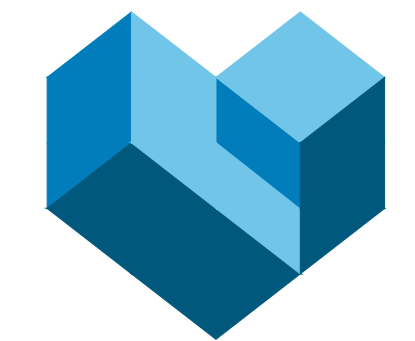
Revisions / Submissions		
ID	Description	Date

© 2024 CESO, INC.

Project Number: 764708
Scale: N/A
Drawn By: TEP
Checked By: JDC
Date: 08/12/2025
Issue: CONSTRUCTION PLANS

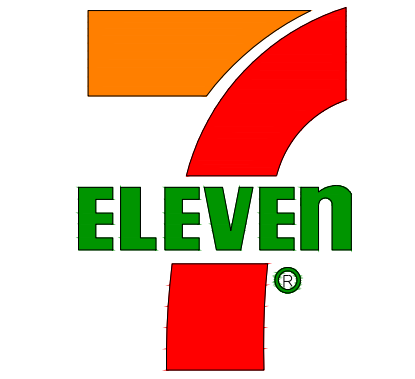
Drawing Title:
COVER SHEET

CV



CESO
WWW.CESOINC.COM

3601 Rgby Rd., Suite 300
Mansfield, OH 43342
Phone: 937.435.8584 Fax: 888.208.4826



7-ELEVEN-KALAMAZOO
3050 OAKLAND DRIVE
KALAMAZOO, MICHIGAN 49008

7-ELEVEN, INC.

Revisions / Submissions

ID Description Date

Project Number: 764708
Scale: 1"=20'
Drawn By: TEP
Checked By: JDC
Date: 08/12/2025
Issue: CONSTRUCTION PLANS

Drawing Title:
DEMOLITION PLAN

CD

LEGEND

- ===== CURBING TO REMAIN
- ///// CURBING TO BE REMOVED
- X-X-X-X- UTILITY LINE TO BE REMOVED &/OR RELOCATED
- X-X-X-X- FENCE
- STM --- STORM SEWER
- SAN --- SANITARY SEWER
- G --- GAS LINE
- W --- WATER LINE
- UGT --- TELEPHONE LINE
- UGE --- UNDERGROUND ELECTRIC LINE
- OHE --- OVERHEAD ELECTRIC LINE
- SAWCUT LINE
- UTILITY POLE
- LIGHT POLE
- GUY WIRE
- ↑ SIGN (AS NOTED)
- ⊕ HYDRANT

A. GENERAL NOTES

1. CONTRACTOR SHALL NOTIFY THE OWNER OF ANY UNFORSEEN CONDITIONS.
2. THE PROPERTY CORNERS SHALL BE MARKED BY OWNER AND PROTECTED AND MAINTAINED BY CONTRACTOR.
3. IF DAMAGED AS A RESULT OF THIS CONTRACT, ANY ITEMS TO REMAIN SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. CONTRACTOR SHALL NOTIFY LOCAL UTILITIES 48 HRS. PRIOR TO DEMOLITION.
5. CONTRACTOR SHALL INSPECT OVERALL SITE PRIOR TO CONSTRUCTION START AND VERIFY THAT THE ALTA SURVEY INDICATES THE CORRECT TOPOGRAPHY. IF ANY INACCURACIES ARE NOTED, PLEASE CONTACT OWNER'S REPRESENTATIVE.
6. CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH ALL UTILITIES AND COMPLY WITH REGULATIONS AND STANDARDS FOR EACH UTILITY.
7. WHEN REMOVING EXISTING UTILITY, CAP UTILITY AT THE MAIN.
8. CONTRACTOR SHALL PROVIDE BARRIERS, PERIMETER FENCING, PARTITIONS, PLANKING, BRACING, SHORING, LIGHTS, AND SIGNS AS NECESSARY TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES.
9. CONTRACTOR SHALL EXERCISE CARE TO PREVENT DUST, VIBRATION, SETTLEMENT, OR OTHER IMPACT TO ADJACENT PROPERTY.

B. KEY NOTES TO REMAIN

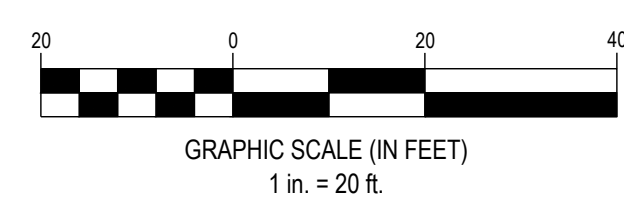
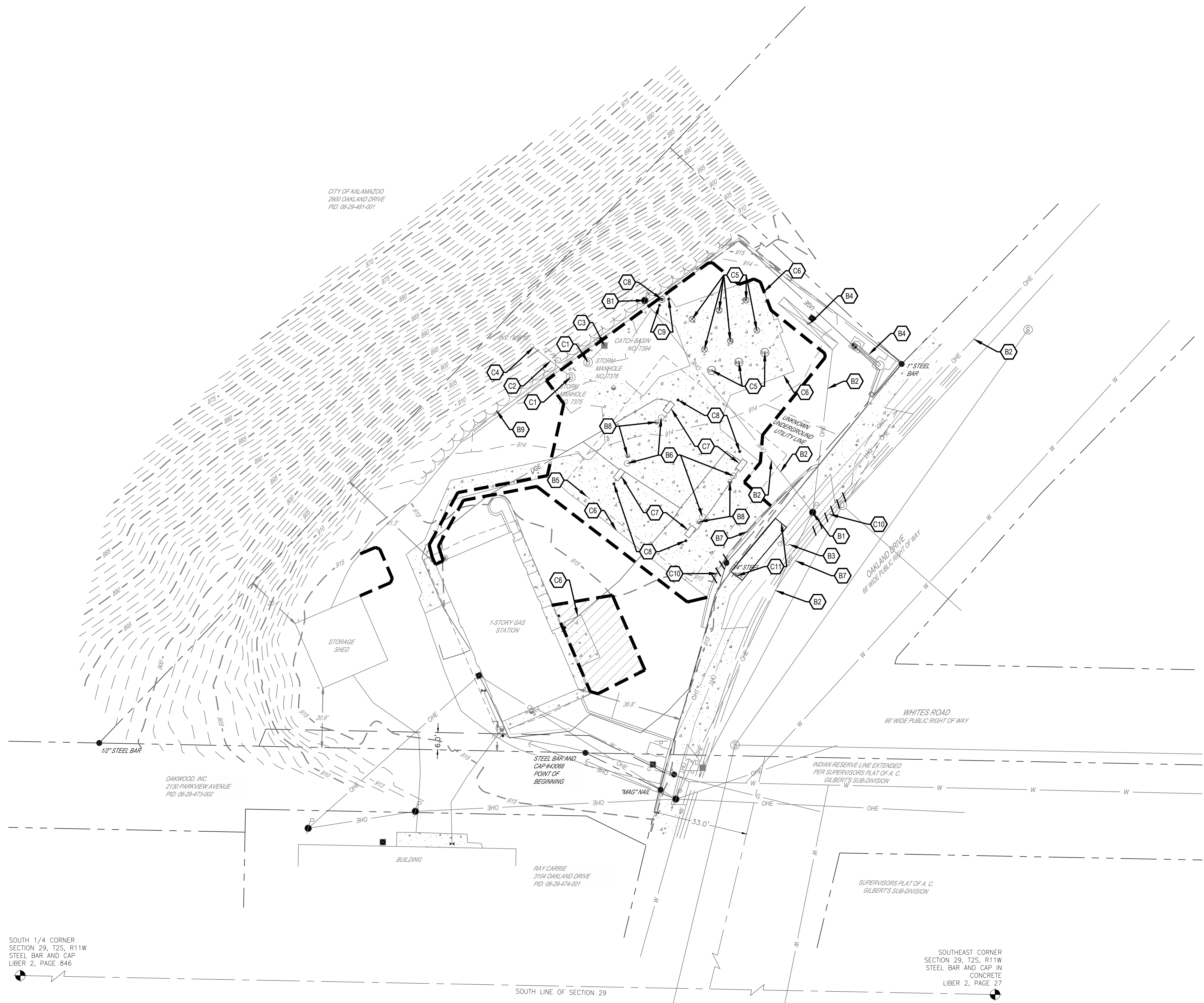
1. EXISTING POWER POLE TO REMAIN.
2. EXISTING POWER LINE TO REMAIN.
3. EXISTING GUY WIRE TO REMAIN.
4. EXISTING SIGN TO REMAIN.
5. EXISTING AUTO CANOPY TO REMAIN.
6. EXISTING CANOPY COLUMN TO REMAIN.
7. EXISTING CURB TO REMAIN.
8. EXISTING CLEANOUT TO REMAIN.
9. EXISTING TREE LINE TO REMAIN.

C. KEY NOTES TO BE REMOVED

1. EXISTING MANHOLE TO BE REMOVED.
2. EXISTING STORM PIPE TO BE REMOVED.
3. EXISTING CATCH BASIN TO BE REMOVED.
4. EXISTING HEADWALL TO BE REMOVED.
5. EXISTING FUEL STRUCTURE TO BE REMOVED.
6. EXISTING CONCRETE TO BE REMOVED.
7. EXISTING DISPENSER TO BE REMOVED.
8. EXISTING FUEL VENTS TO BE REMOVED.
9. EXISTING BOLLARD TO BE REMOVED.
10. EXISTING CURB TO BE REMOVED.
11. EXISTING SIDEWALK TO BE REMOVED.

DEMOLITION LEGEND

- PROPOSED
- REMOVE EXISTING ASPHALT PAVEMENT & CONCRETE (OR AS NOTED ON THE PLANS)

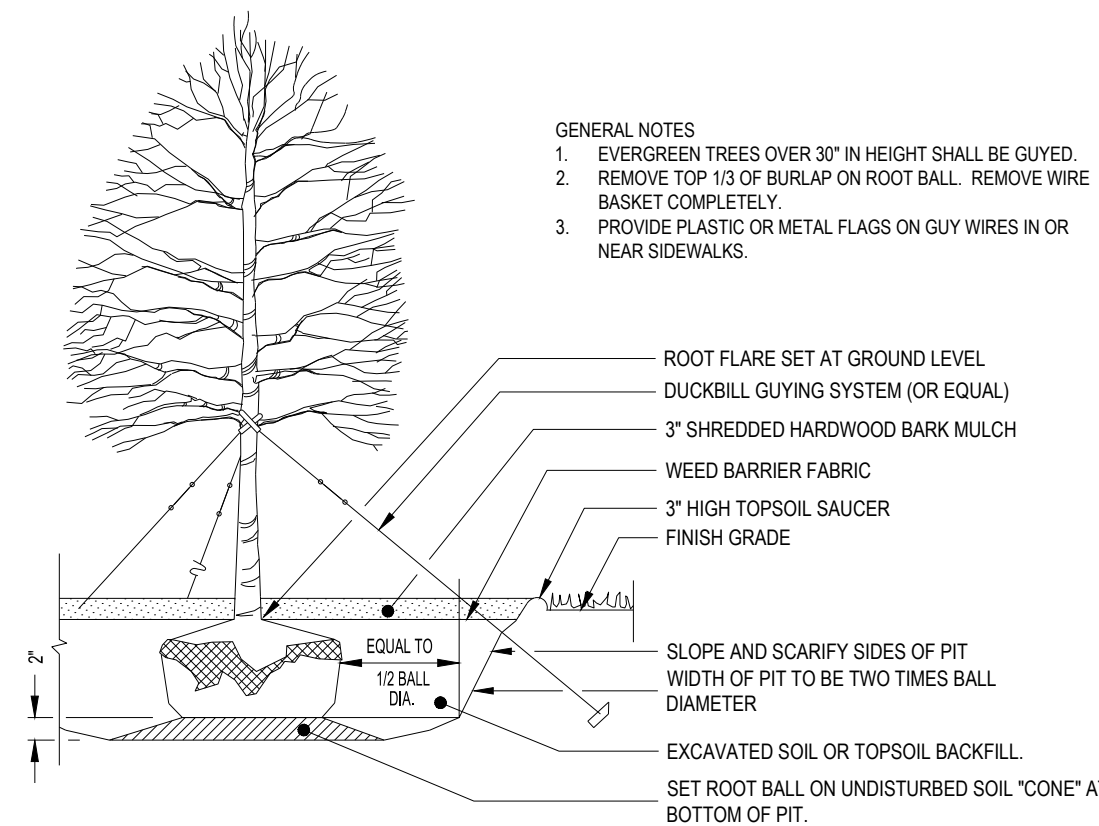


SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

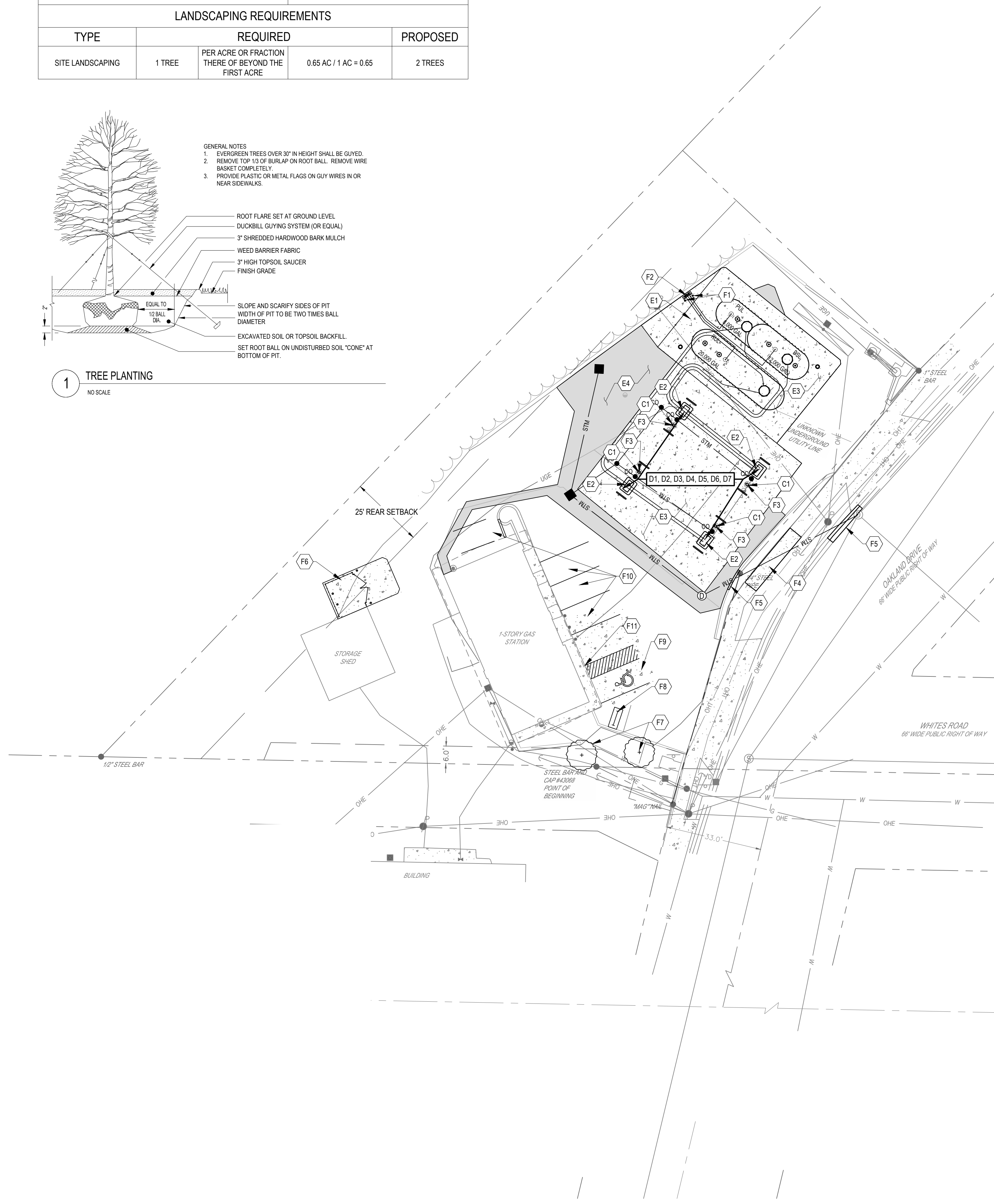
C:\D:\ACC\des\CESO\7-Eleven Kalamazoo MI 7785\Project Files\CESO03-CIVIL\PLAN\LOT764708_EXISTING CONDITIONS.dwg - 8/12/2025 - Lisa Gunter

PLANT SCHEDULE					
SYM.	QTY.	PLANT NAME	INSTALLATION SIZE	MATURE HT/SPD	SPACING
CLASS I (SHADE TREE)					
TH	2	THORNLESS HONEYLOCUST - GLEDITSIA TRIACANTHOS	2.5' CAL. B/B	30'/30'	SEE PLAN

TOTAL SITE AREA		0.97 AC	
LANDSCAPING REQUIREMENTS			
TYPE	REQUIRED	PROPOSED	
SITE LANDSCAPING	1 TREE PER ACRE OR FRACTION THERE OF BEYOND THE FIRST ACRE	0.65 AC / 1 AC = 0.65	2 TREES



1 TREE PLANTING
NO SCALE



- A. GENERAL NOTES**
- ALL MATERIAL NOTED ON DRAWINGS WILL BE SUPPLIED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
 - RESTORE TO ORIGINAL OR BETTER CONDITION ALL AREAS DISTURBED BY CONSTRUCTION. UPON COMPLETION, POWER WASH ALL PAVING TO OWNER'S SATISFACTION.
 - SHOW ALL MODIFIED PIPING, CONDUIT RUNS, UTILITIES AND ANY MODIFICATIONS MADE TO THE ORIGINAL DRAWINGS ON "AS-BUILT" PRINT AND TURN OVER TO OWNER'S REPRESENTATIVE UPON COMPLETION.
 - TURNOVER MANUAL: ON THE DAY OF THE "TURNOVER" THE CONTRACTOR WILL PROVIDE ONE COPY OF THE COMPLETION MANUALS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF THE ENTIRE SITE. THE PROPERTY CORNERS SHALL BE MARKED BY OWNER AND PROTECTED AND MAINTAINED BY CONTRACTOR.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL WOODEN FORMS PRIOR TO CONSTRUCTION COMPLETION.
- B. BUILDING DETAILS**
- NOT USED.
- C. CANOPY DETAILS**
- EXISTING AUTO CANOPY AND EXISTING COLUMNS TO REMAIN UNDISTURBED THROUGHOUT CONSTRUCTION.
- D. DISPENSER DETAILS**
- THE CONTRACTOR IS RESPONSIBLE FOR PURGING OF THE FUELING SYSTEM NECESSARY AT START-UP AND DISPENSER CALIBRATION. THE OWNER SHALL PAY FOR (1) THIRD-PARTY LINE TEST FOR EACH PRODUCT LINE AFTER PURGING IS COMPLETE. COST OF ANY ADDITIONAL DISPENSER CALIBRATIONS AND/OR LINE TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PURGE SYSTEM PER DISPENSER MANUFACTURER'S INSTRUCTIONS AND OWNER'S SPECIFICATIONS. ALL TESTING TO BE COORDINATED WITH SPEEDWAY COMPLIANCE DEPARTMENT. AFTER PURGING IS COMPLETE, CONTRACTOR SHALL REMOVE SCHRADER VALVES AND JUMPERS. CONTRACTOR SHALL REMOVE AND DISCARD SCREENS AND FACTORY FILTERS AND INSTALL NEW FILTERS (MODEL NOTED BELOW), FURNISHED BY OWNER. INSTALLATION DATES SHALL BE CLEARLY MARKED ON FILTER BY CONTRACTOR. FILTER MODELS ARE (A) AUTO. PETROCLEAR 40510A-AD (B) AUTO-DSL AND K-1; PETROCLEAR 40510W-AD (C) FLEX. CIMTEK 70991 (D) HIGHFLOW DSL. PETROCLEAR 51110W OR 40910W (E) RACING FUEL (CAM2 280 GT). PETROCLEAR 40510A (F) FACING FUEL (CAM2 STANDARD) AND NON ETHANOL. PETROCLEAR 40510W. SPEEDWAY'S MAINTENANCE DEPARTMENT SHALL INSTALL DISPENSER FACE LABELS.
 - THE CONTRACTOR SHALL COMPLETE THE WAYNE PROVIDED START-UP CALIBRATION REPORT FORM "W2940136" PRIOR TO START-UP. THE 0.1 TEST MUST BE COMPLETED VIA THE ATG PRIOR TO OPENING FUEL SALES. FORM "917653-003" SHALL BE COMPLETED BY WAYNE'S AUTHORIZED SERVICE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH SPEEDWAY'S PREFERRED AUTHORIZED SERVICE CONTRACTOR (ASC) FOR TRIPS AS FOLLOWS:

TRIP	WAYNE ASC RESPONSIBILITIES	FINANCIAL RESPONSIBILITY
1	PREP DISPENSERS FOR CONTRACTOR TO PURGE PROGRAM EVO AUTOMATIC TANK GAUGE MONITORING SYSTEM	WAYNE
2	REVIEW CONTRACTOR'S PURGE WORK INSTALL EMV KITS REVIEW CONTRACTOR'S COMPLETED WAYNE START-UP CALIBRATION FORM "W2940136" COMPLETE FORM "917653-003" (PRE POS INTEGRATION)	WAYNE
3	COMPLETE FORM "917653-003" (POST POS INTEGRATION) POS INTEGRATION WITH SPEEDWAY IT ANALYST	WAYNE
4	OPENING DAY SUPPORT (SPEEDWAY REQUIREMENT)	CONTRACTOR

- THE CONTRACTOR WILL BE RESPONSIBLE TO HAVE, AT A MINIMUM, THE SITE SUPERINTENDENT, CERTIFIED ELECTRICIAN, AND PETROLEUM START-UP CONTRACTOR ON-SITE AT OPENING FOR A MINIMUM OF (1) HOUR TO ENSURE PROPER OPERATION OF THE FUELING SYSTEM.
- INSTALL (4) NEW WAYNE 4 PRODUCT (3+1) HIGH HOSE DISPENSER WITH CARD READER. INSTALL (8) HOSES, NOZZLES, SWIVELS AND BREAKAWAY FOR GASOLINE DISPENSERS, (8) HOSES, NOZZLES, SWIVELS AND BREAKAWAY FOR DIESEL DISPENSERS AND (2) HOSES, NOZZLES, SWIVELS AND BREAKAWAY FOR ETHANOL FLEX DISPENSERS. PRODUCT PIPING LINE-UP AND FRONT SIDE "A" (F.S. "A") OF DISPENSERS SHALL BE AS SHOWN.
- INSTALL NEW (1) 1" AND (3) 3/4" CONDUITS FROM WIRE WAY IN BUILDING TO EACH DISPENSER. (1) 1" CONDUIT TO BE USED FOR POWER/DATA. (1) 3/4" CONDUIT TO BE USED FOR DISPENSER SUMP SENSOR. (1) 3/4" CONDUIT TO BE USED FOR INTERCOM AND APPLAUSE MEDIA SYSTEM. OTHER 3/4" CONDUIT TO BE INSTALLED FOR FUTURE USE. PULL NEW WIRE AND WIRE DISPENSER PER MANUFACTURER'S SPECIFICATIONS.
- INSTALL ESCO INTERCOM SYSTEM PER DIRECTION OF OWNER'S REPRESENTATIVE AND DRAWING EIW.
- ADA REQUIRES DISPENSER ISLANDS TO BE A MAXIMUM OF 6" ABOVE GRADE.

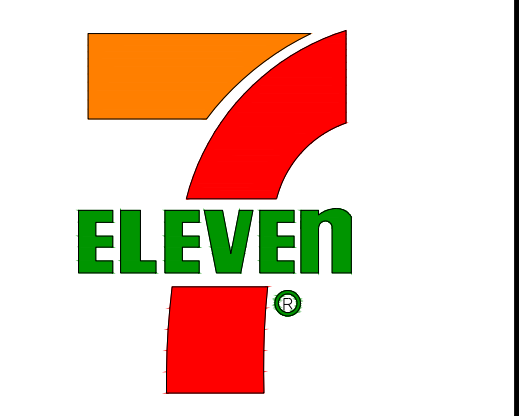
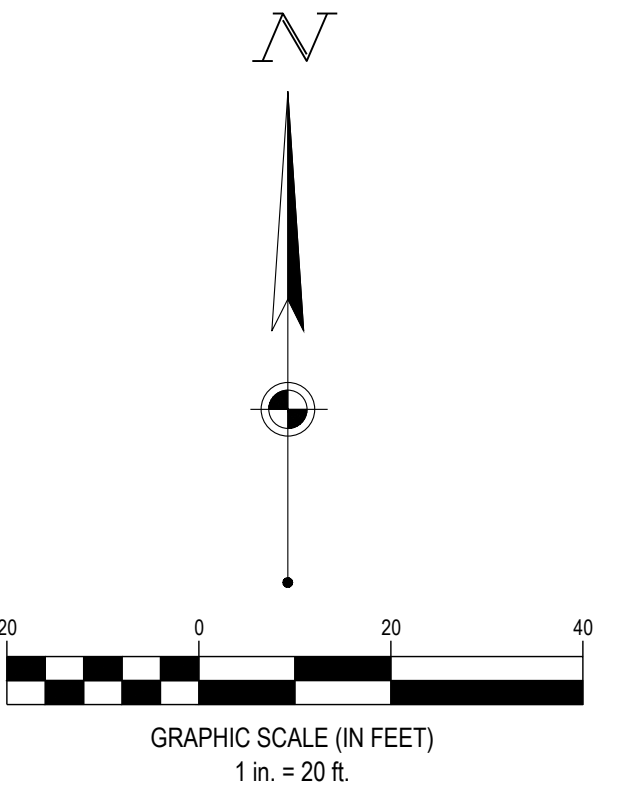
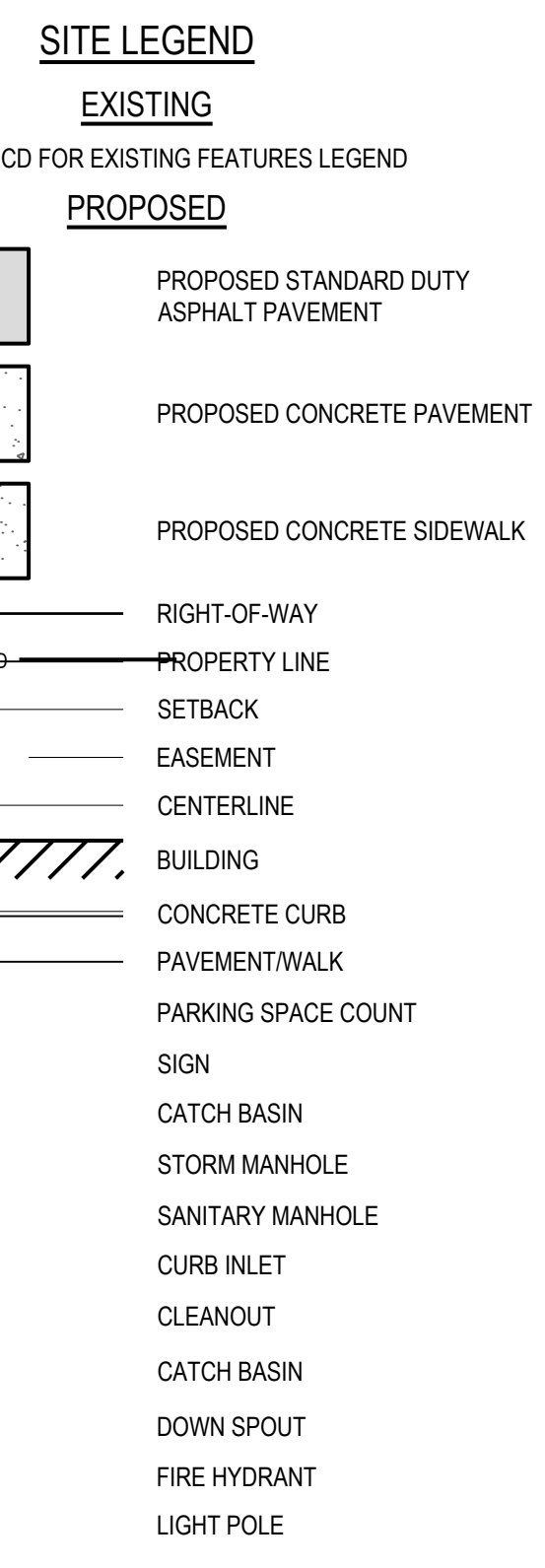
- E. PAVING DETAILS**
- CONSTRUCT NEW CONCRETE TANK SLAB PER DRAWINGS PQ-4.1 AND CPC-1.
 - INSTALL (4) NEW CONCRETE DISPENSER ISLANDS WITH 3' X 5' X 13" ISLAND FORM FOR AUTO DISPENSERS.
 - INSTALL HIGH STRENGTH CONCRETE PAVEMENT WITH AN AGGREGATE BASE PER PAVEMENT SECTION ON CPC-1 AND USE THE RECOMMENDATIONS OF GEOTECHNICAL CONSULTANT FOR ALL OTHER SUBSURFACE CONDITIONS ON THIS SITE. NOTIFY THE OWNER'S REPRESENTATIVE IF THERE ARE ANY CONFLICTS.
 - INSTALL ASPHALT PAVEMENT WITH AN AGGREGATE BASE PER PAVEMENT SECTION ON CPC-1 AND USE THE RECOMMENDATIONS OF GEOTECHNICAL CONSULTANT FOR ALL OTHER SUBSURFACE CONDITIONS ON THIS SITE. NOTIFY THE OWNER'S REPRESENTATIVE IF THERE ARE ANY CONFLICTS.

CONTRACTOR SHALL REVIEW THE COMPLETE DRAWING SET AND NOTIFY THE DESIGN PROFESSIONAL IN WRITING PRIOR TO CONSTRUCTION, IF ANY DISCREPANCIES ARE FOUND WITHIN THE DRAWINGS OR WITH ACTUAL FIELD CONDITIONS.



SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

- F. YARD AREA DETAILS**
- SUPPLY AND INSTALL (2) 6" BOLLARDS PER AREA YARD GUARDS DETAIL ON DRAWING CYE-A. BOLLARD SHALL BE PAINTED RED PER OWNER'S SPECIFICATIONS.
 - INSTALL 3" PVC PIPE TO HOLD TANK STICK PER OWNER'S REPRESENTATIVE.
 - PROVIDE AND INSTALL CODE APPROVED FIRE EXTINGUISHERS (1 MINIMUM) WITH PLASTIC BOX HOLDER IN APPROVED LOCATIONS AS REQUIRED BY LOCAL FIRE OFFICIALS. FIRE EXTINGUISHERS ARE OWNER SUPPLIED AND VENDOR INSTALLED, AND SHALL BE LOCATED SUCH THAT AN EXTINGUISHER IS NOT MORE THAN 75 FEET FROM PUMPS, DISPENSERS, OR STORAGE TANK FILL OPENINGS. FIRE EXTINGUISHER MINIMUM RATING SHALL BE 2-A-20-B.C. CONSTRUCT PROPOSED SIDEWALK AFTER STORM SEWER INSTALLATION. CONTRACTOR TO MATCH EXISTING SIDEWALK. CITY OF KALAMAZOO DOES NOT ALLOW ANY WORK WITHIN THE RIGHT-OF-WAY AFTER 11/01/2025.
 - CONSTRUCT PROPOSED CURB SECTIONS AFTER STORM SEWER INSTALLATION. CONTRACTOR TO MATCH EXISTING CURB SECTIONS. CITY OF KALAMAZOO DOES NOT ALLOW ANY WORK WITHIN THE RIGHT-OF-WAY AFTER 11/01/2025.
 - PROPOSED DUMPSTER ENCLOSURE WITH 6' OPAQUE WOOD FENCE REFER TO DETAIL ON DET-1.
 - PROPOSED TREE. SEE DETAIL ON THIS SHEET.
 - PROPOSED BIKE PARKING. REFER TO DETAIL ON SHEET CYE-A.
 - PROPOSED (1) ADA PARKING SPACE.
 - PROPOSED (4) PARKING SPACES.
 - 12' ADDRESS NUMBERS ADDED TO THE FRONT OF THE BUILDING.



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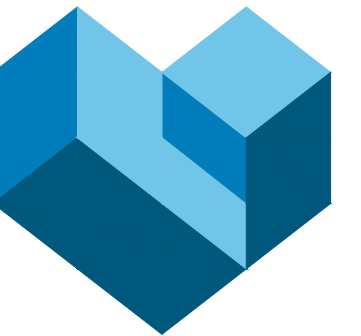
Revisions / Submissions

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Drawing Title:
SITE PLAN

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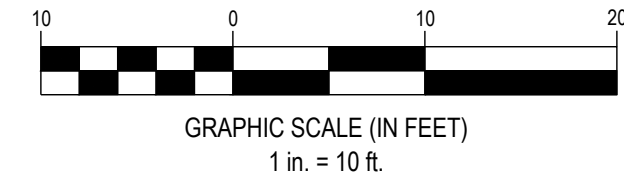
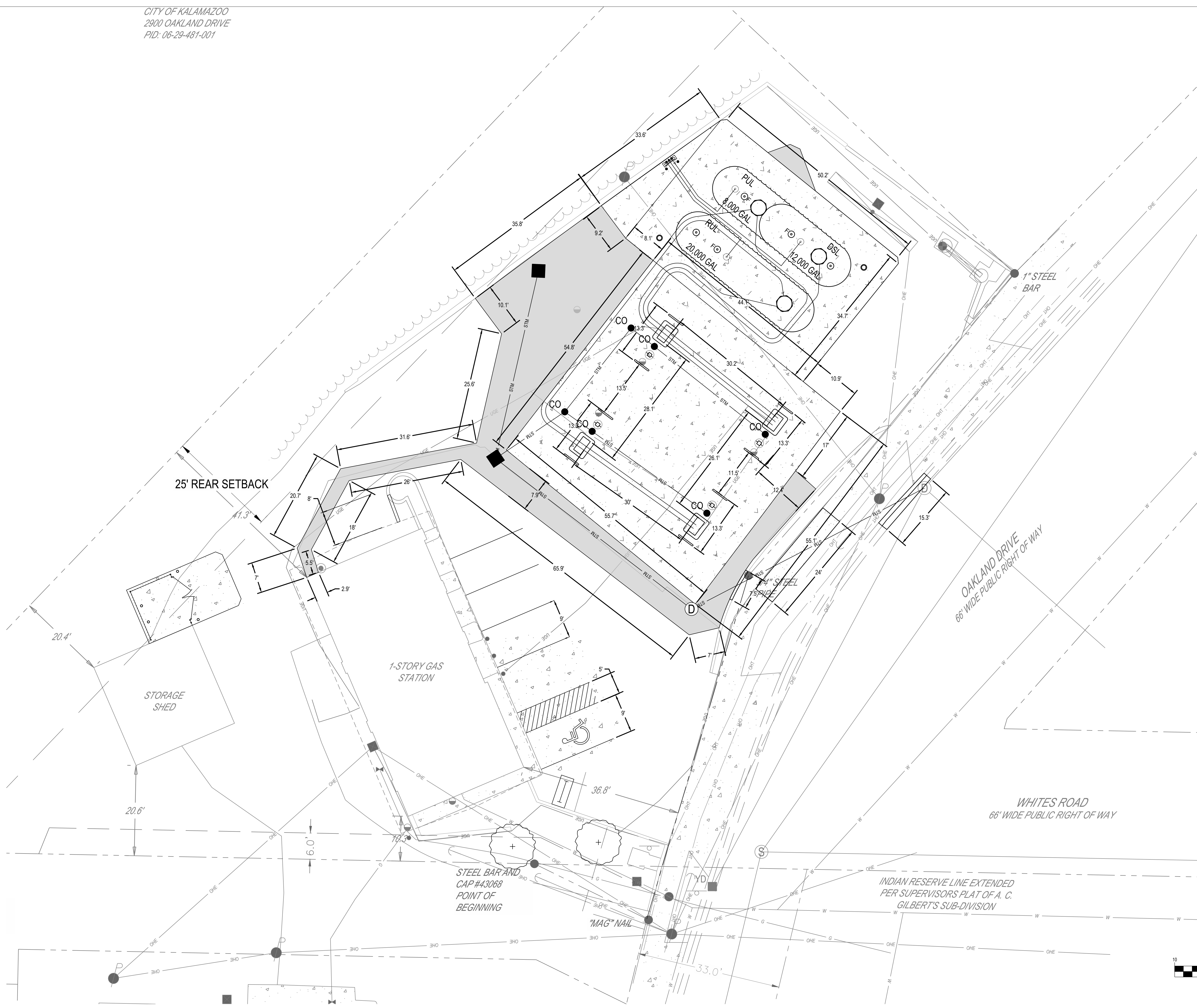
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DIMENSION PLAN

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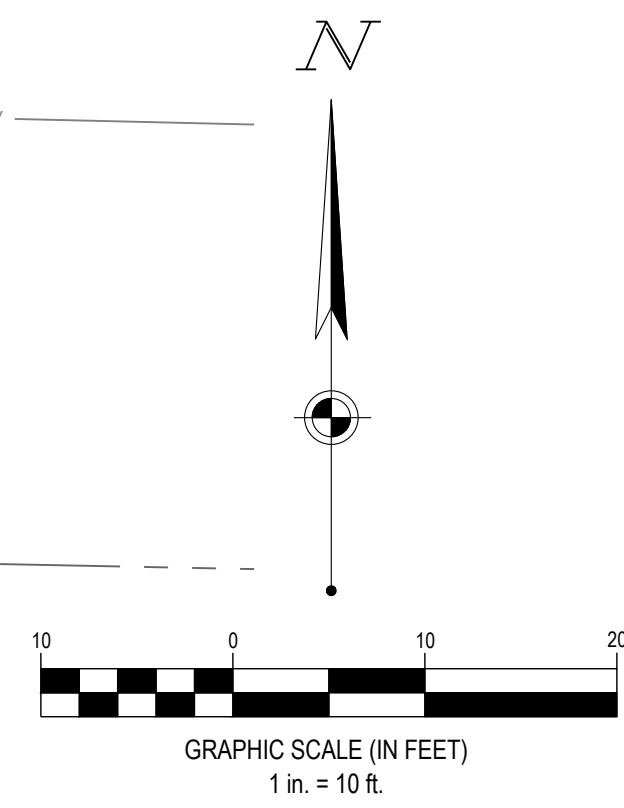
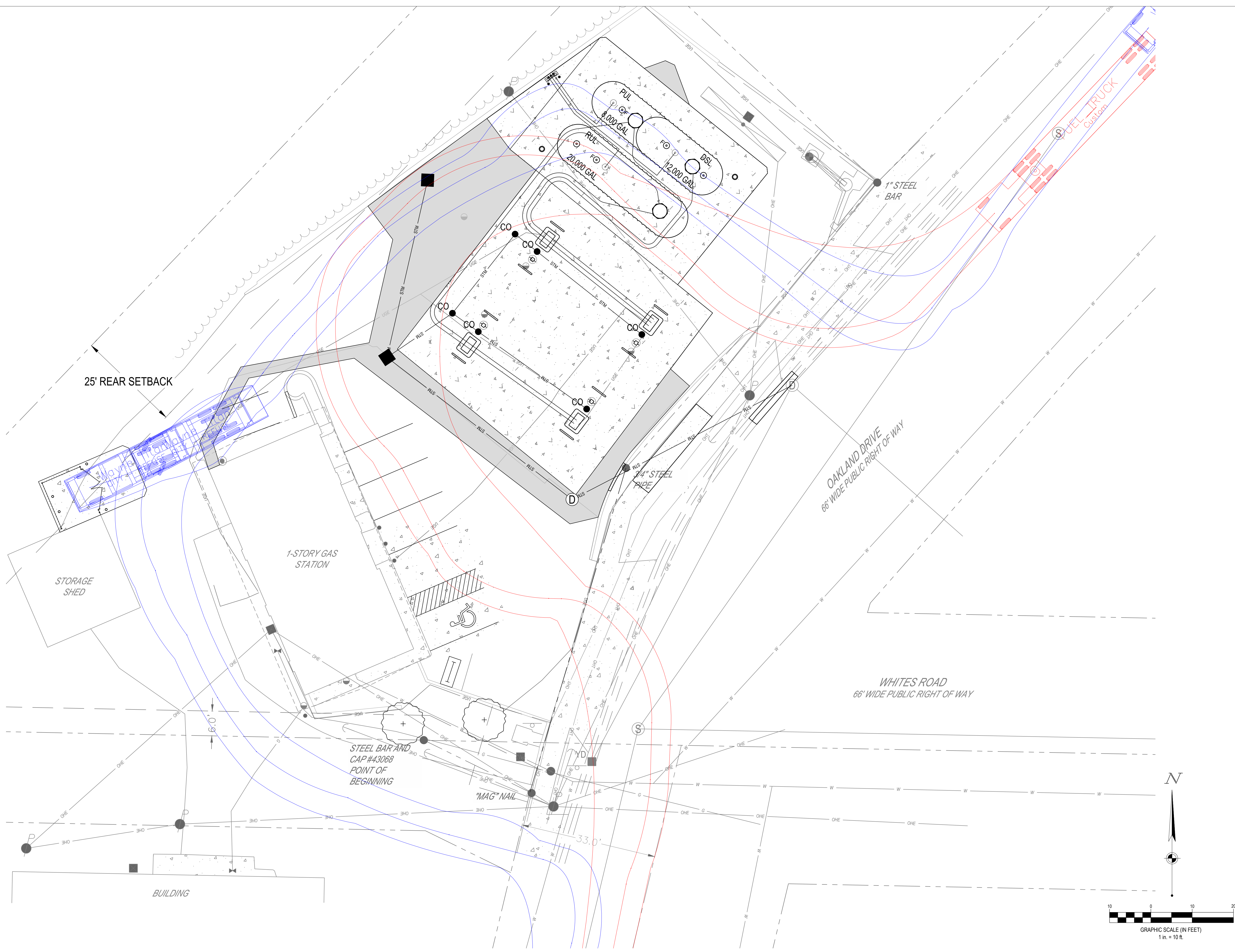
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Drawing Title:
CIRCULATION PLAN

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Drawing Title:
UTILITY PLAN

CU

UTILITY LEGEND

- EXISTING**
REFER TO CD FOR EXISTING FEATURES LEGEND
- PROPOSED**
- BUILDING
 - CONCRETE CURB
 - PAVEMENT/WALK
 - STORM SEWER LINE
 - UGE
 - UNDERGROUND ELECTRIC LINE
 - CATCH BASIN
 - STORM SEWER

A. TANKS AND PRODUCT PIPING DETAILS

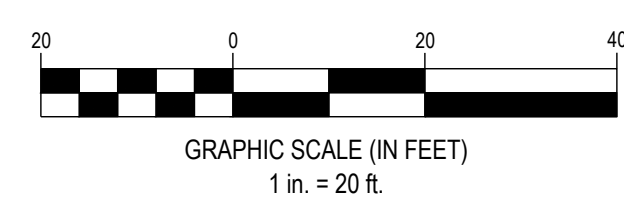
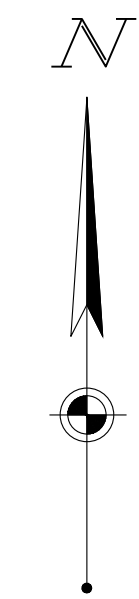
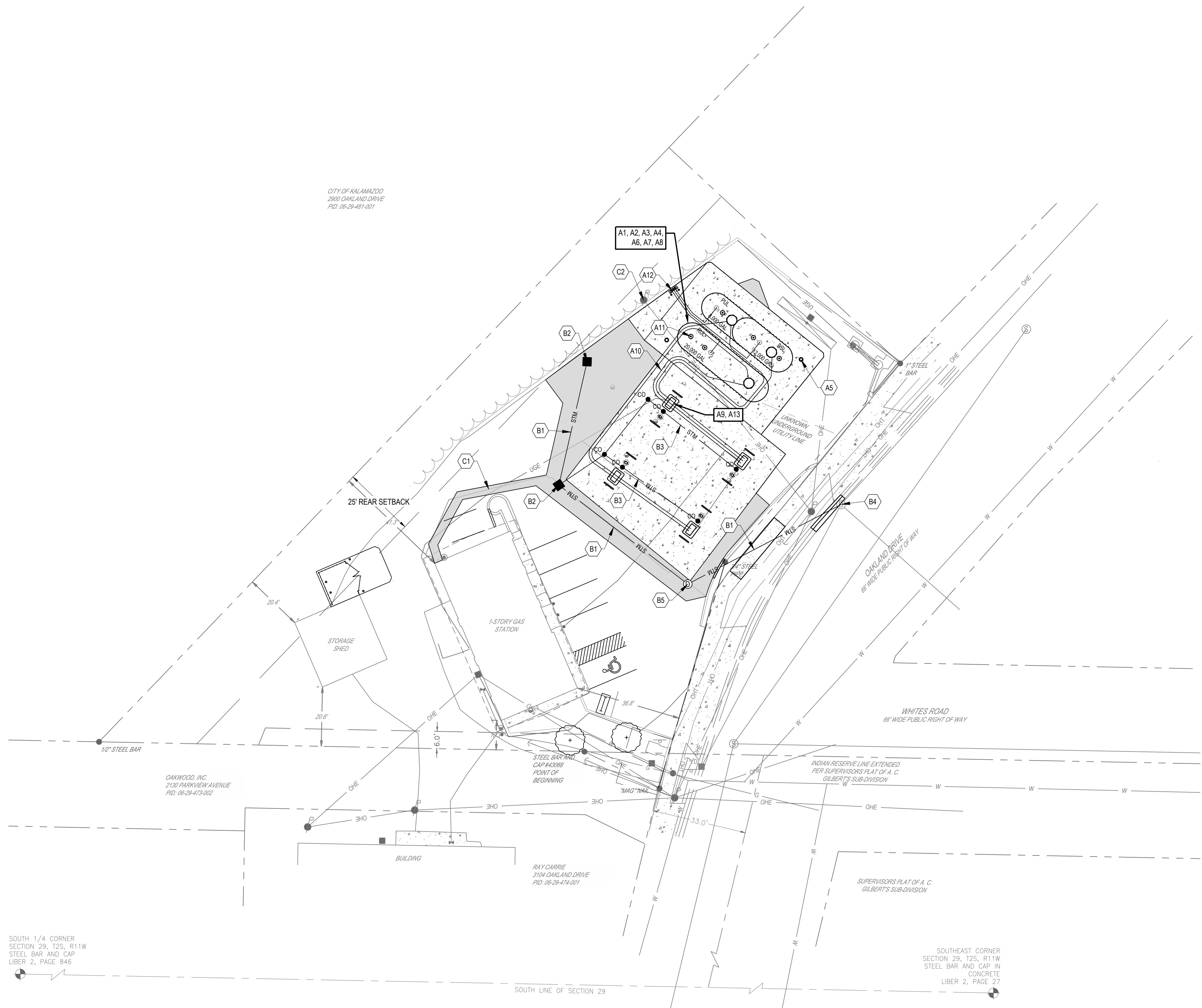
- CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AS INDICATED ON PQ SERIES DRAWINGS.
- ALL NEW INSTALLATIONS AND MODIFICATIONS TO THE UNDERGROUND STORAGE TANK SYSTEM SHALL COMPLY WITH PEI RP100-05, PEI RP300-09, API RP1615 AND ALL FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.
- TANKS SHALL BE ANCHORED PER STANDARD DRAWING PQ-5.
- BALLAST TANKS TO 90% FULL WITH CLEAN WATER. AFTER THE TANKS HAVE BEEN PROPERLY COVERED BY OVERBURDEN AND BEFORE PRODUCT IS DELIVERED, THE CONTRACTOR SHALL REMOVE ALL WATER. COORDINATE WITH OWNER'S REPRESENTATIVE FOR DELIVERY OF PRODUCT. ANY WATER REMAINING IN TANKS AFTER PRODUCT DELIVERY SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
- PRIME AND PAINT FILL, VAPOR RECOVERY, AND OBSERVATION WELL MANHOLE COVERS AND RIMS PER COLOR CODE IN SPECIFICATIONS. ANY MANHOLES OR STREET BOXES NOT COLOR SPECIFIED SHALL BE PRIMED AND PAINTED DARK GREY #430C PER SPECIFICATIONS.
- INSTALL TANK CONDUIT FROM TANK TO DISPENSER ELECTRICAL EQUIPMENT INSIDE BUILDING PER PQ SERIES DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.
- INSTALL EVO LINE LEAK DETECTION AND ATG SYSTEM, RELATED MANHOLES, CONDUITS, AND JUNCTION BOXES PER DRAWING EVO-550 AND MANUFACTURER'S INSTRUCTIONS. INSTALL TANK INTERSTITIAL SENSORS FURNISHED BY OWNER. CONTRACTOR TO BE CERTIFIED BY FRANKLIN FUELING.
- INSTALL TANK SUMP SENSORS FURNISHED BY OWNER.
- PRODUCT PIPING LINE-UP AND FRONT SIDE "A" (F.S. "A") OF DISPENSERS SHALL BE AS SHOWN. PIPING AND CONDUIT LOCATION AND SPACING UNDER DISPENSERS SHALL BE PER STD-PQ SERIES DRAWINGS.
- INSTALL 2" COAXIAL FLEXIBLE PRODUCT PIPING (OPW FLEX LOOP SYSTEM) WITHIN 4' ACCESS/CONTAINMENT PIPE PER MANUFACTURER'S RECOMMENDATIONS AND SERIES STD-PQ DRAWINGS. THE PIPE, APPURTENANCES (INCLUDING BULKHEAD ENTRY FITTINGS), AND MISC. MATERIALS NECESSARY TO ASSEMBLE SYSTEM SHALL BE OWNER SUPPLIED.
- INSTALL A SECOND FILL PIPE ON TANKS PER DETAILS ON THE STD-PQ SERIES DRAWINGS.
- SUPPLY AND INSTALL 2" SINGLEWALL FIBERGLASS VENT LINES AND RELATED EQUIPMENT. CONTRACTOR TO LOCATE VENT STACKS A MINIMUM OF 10' AWAY FROM ELECTRICAL EQUIPMENT AND EXISTING BUILDING STRUCTURES.
- FUTURE FUEL LINE TO BE RUN TO EACH DISPENSER. LINE IS TO BE CAPPED AT EACH DISPENSER WHERE THE LINE IS NOT BEING USED (AND IN FUTURE FUEL SUMP).

B. STORM PIPING

- SUPPLY AND INSTALL STORM DRAINAGE PIPING AS SHOWN PER STANDARD DRAWING SERIES CUD.
- SUPPLY AND INSTALL (2) CATCH BASIN, WITH SPIDER DRAINS, INCLUDING CONCRETE COLLAR IF IN ASPHALT PAVEMENT.
- SUPPLY AND INSTALL STORM ROOF DRAIN PIPING AS SHOWN PER STANDARD DRAWING SERIES CUD.
- CONNECT TO EXISTING STORM SEWER MANHOLE.
- SUPPLY AND INSTALL (1) AQUASWIRL WATER TREATMENT STRUCTURE. REFER TO UTILITY DETAIL ON SHEET CU1.

C. UTILITIES

- FUELING CONTRACTOR RESPONSIBLE FOR FIELD VERIFYING EXISTING ELECTRICAL ROOM, AND RELOCATING CONDUIT TRENCH AS NEEDED. FUELING CONTRACTOR TO PICK UP CONDUITS AND ROUTE TO FINAL TERMINATION AND FOR PULLING WIRE AND MAKING FINAL TERMINATIONS.
- EXISTING OVERHEAD ELECTRICAL LINE. CONTRACTOR TO VERIFY IF OVERHEAD LINE CAN REMAIN DURING EXISTING TANK REMOVAL AND NEW TANK INSTALLATION. IF NOT CONTRACTOR TO VERIFY IF LINE CAN BE TEMPORARILY MOVED DURING CONSTRUCTION AND RECONNECTED AFTER INSTALLATION.



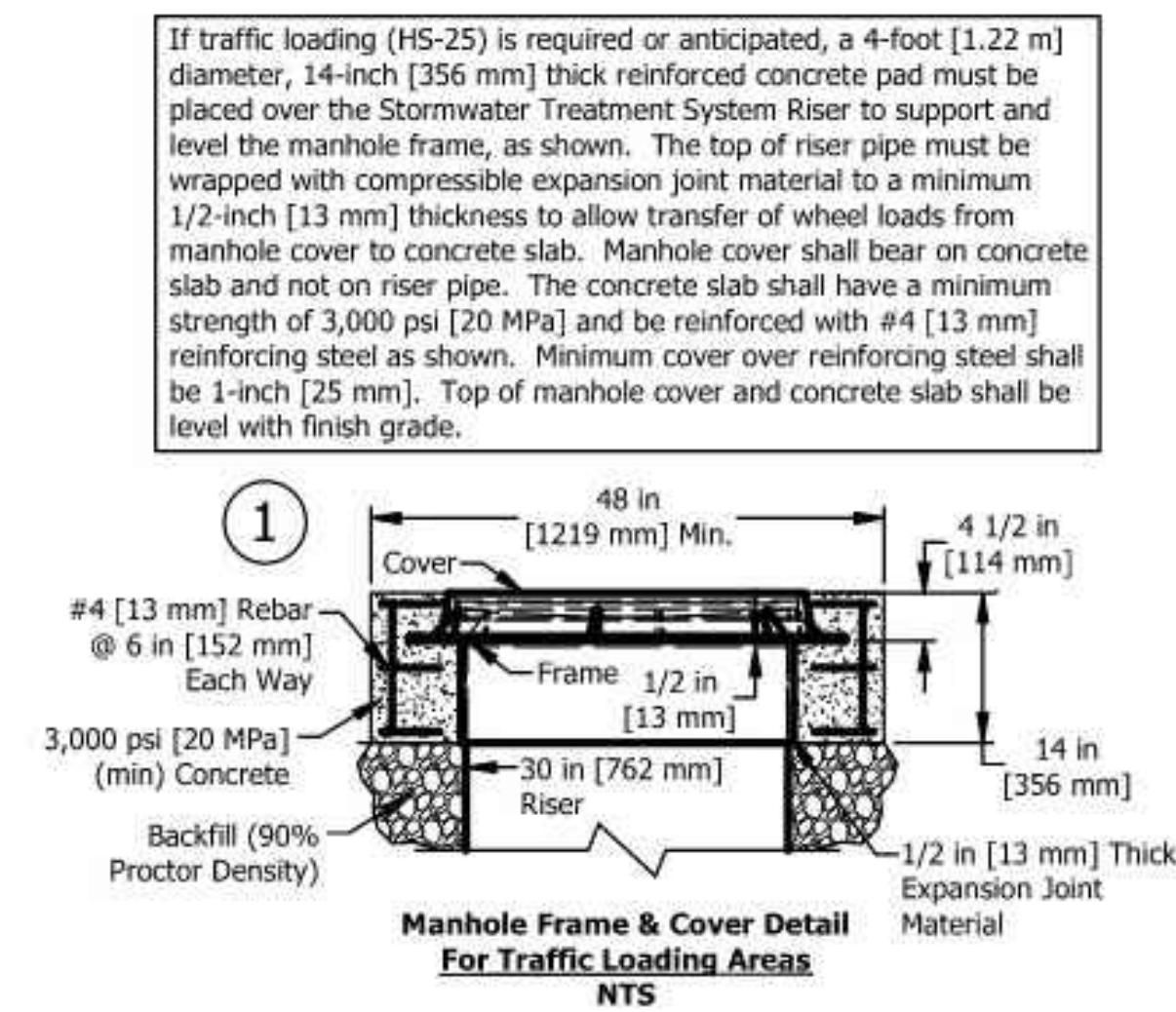
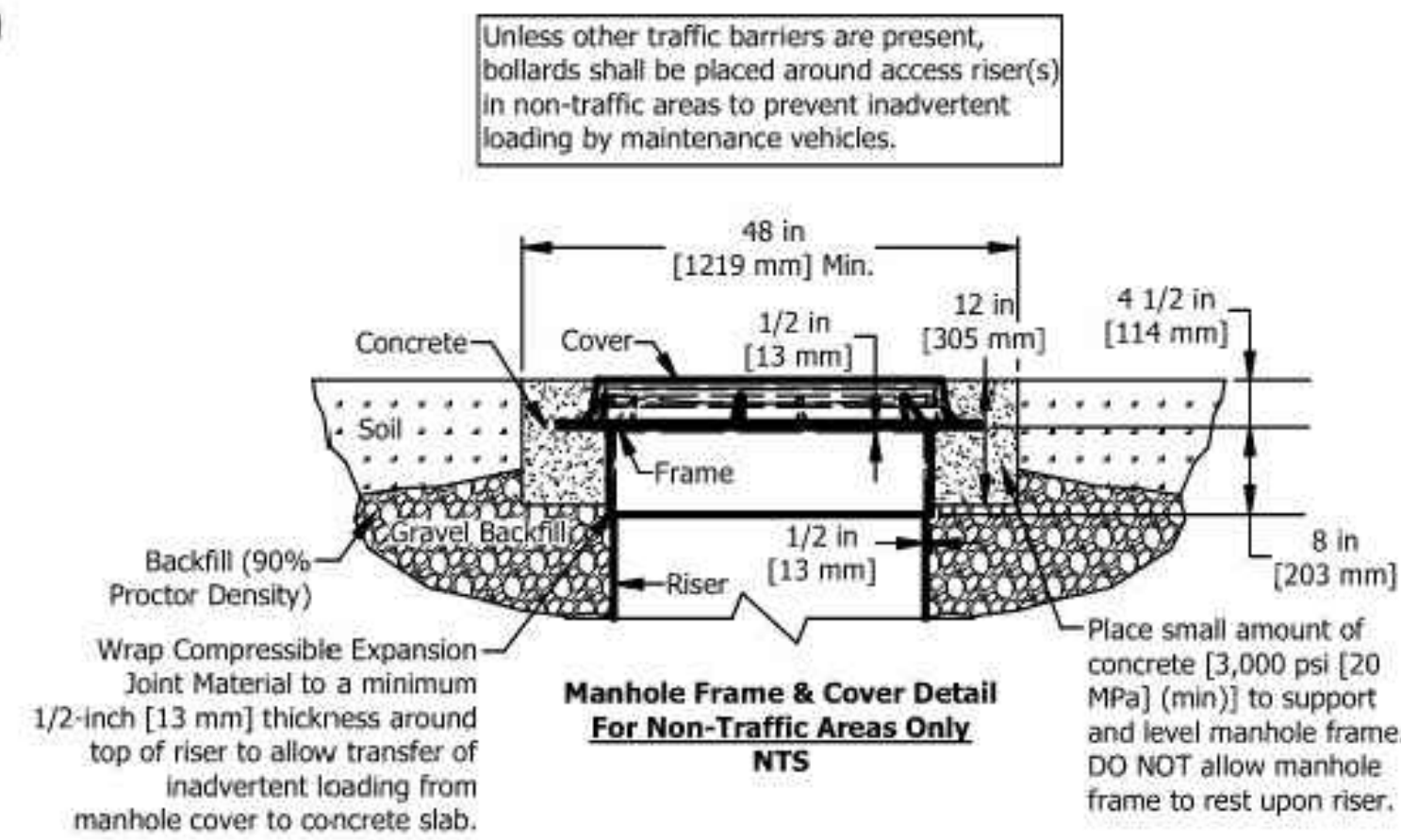
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Aqua-Swirl Polymer Coated Steel (PCS)
Stormwater Treatment System

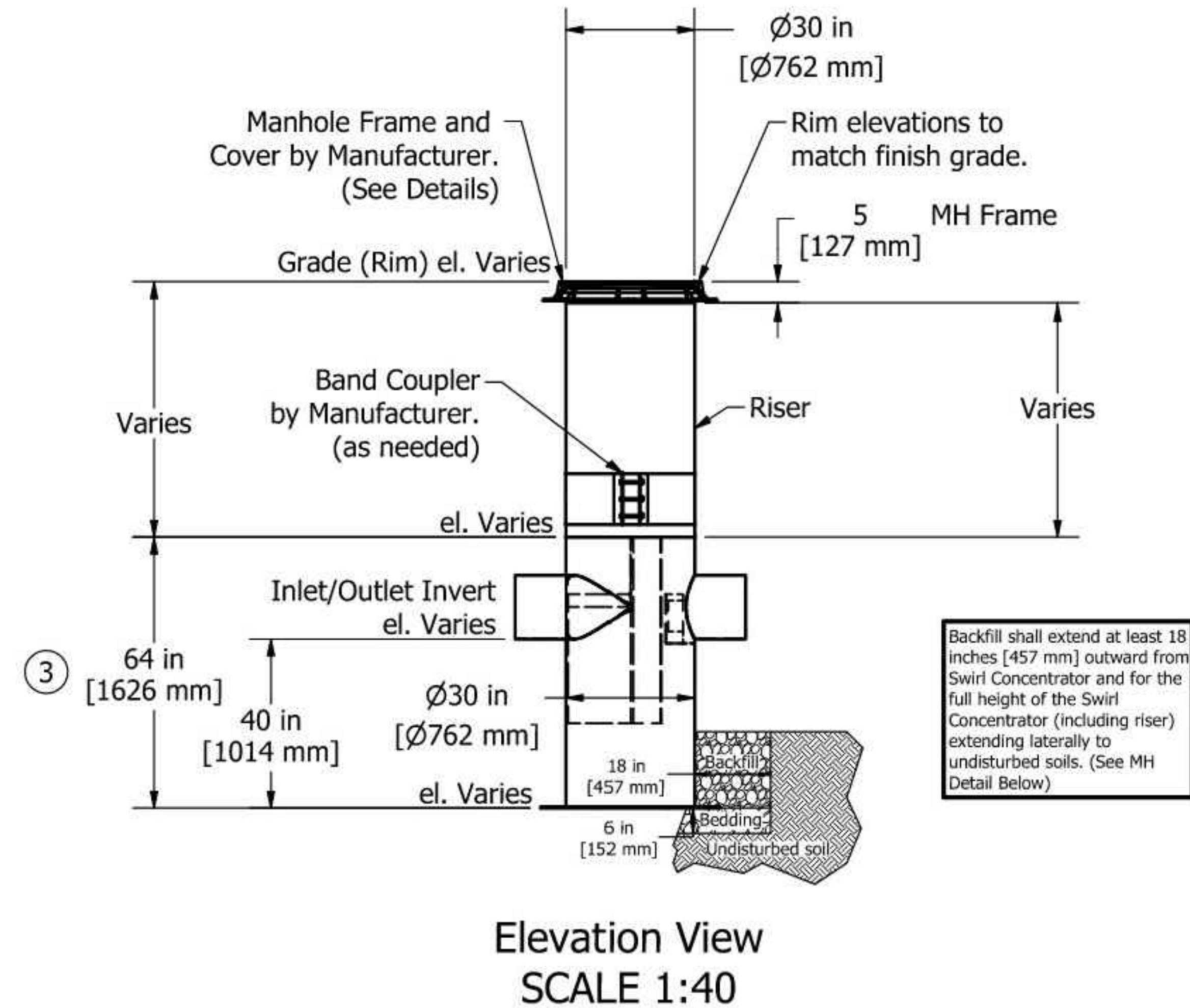
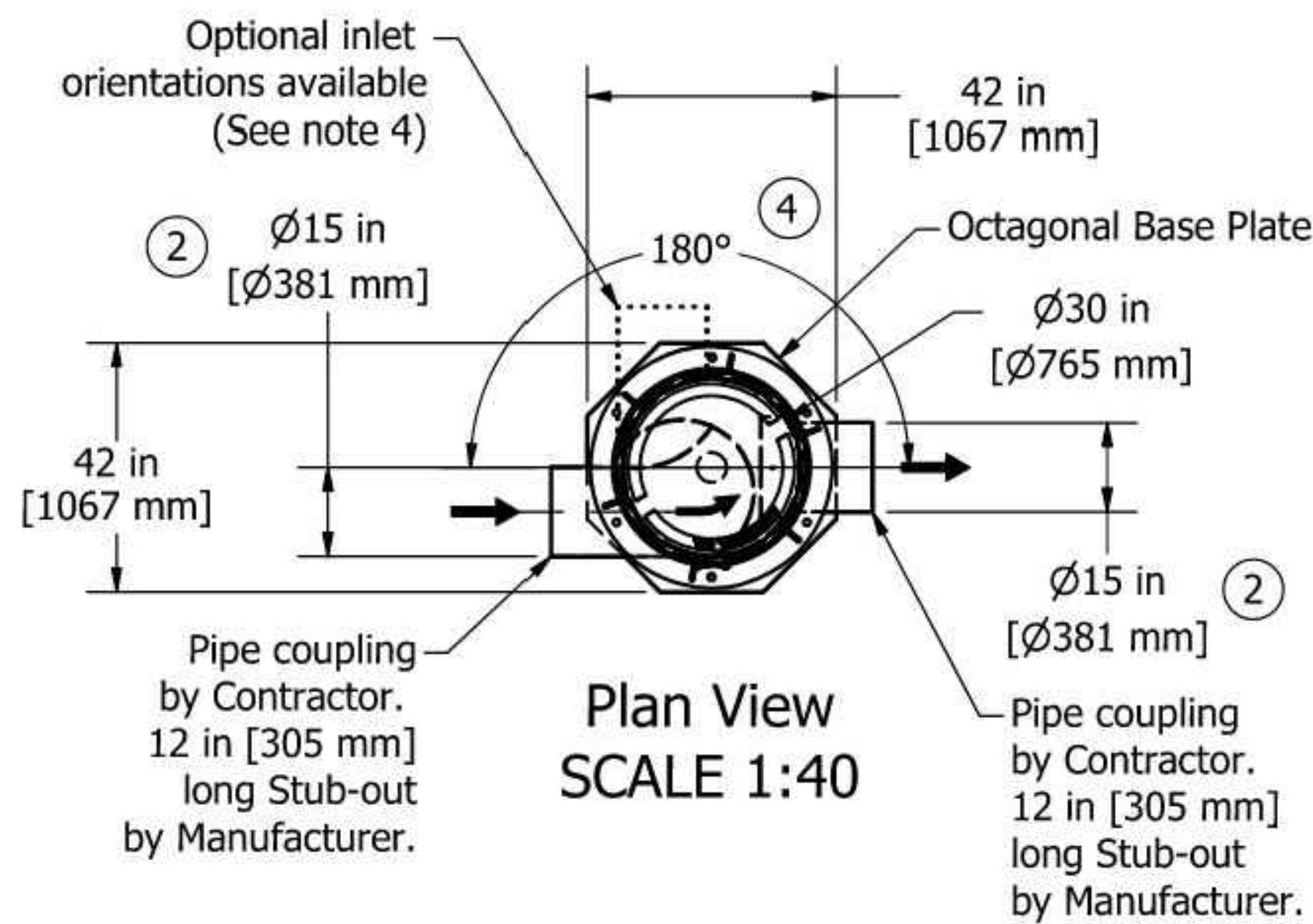


Projected View
SCALE 1:70




Please see accompanied Aqua-Swirl specification notes. See Site Plan for actual System orientation. Approximate dry (pick) weight: 1000 lbs [500 kg].

- ① As an alternative, 42 in [1067 mm] diameter, HS-20/25 rated precast concrete rings may be substituted. 14 in [356 mm] thickness must be maintained.
- ② XC-2 inlet/outlet pipe size ranges up to 15 in [381 mm].
- ③ XC-2 chamber height may vary up to 64 in [1626 mm], depending on inlet/outlet pipe size.
- ④ Orientation may vary from a minimum of 90° to a maximum of 180°. Clockwise or counterclockwise orientation as needed.



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 WATER TREATMENT SOLUTIONS 2733 Kanasita Drive, Suite 111, Chattanooga, TN 37343 Phone (888) 344-9044 Fax (423) 826-2112 www.aquashieldinc.com	Aqua-Swirl Xcelerator	Structure #:	XC-2 STD	Rvwed	Rvw. Date
	XC-2 CCW STD	Drawn By:	OFlores		
	Aqua-Swirl Stormwater Treatment System	Scale:	As Shown		
	Standard Detail	Date:	1/30/2020		
U.S. Patent No. 6524473 and other Patent Pending					

Revisions / Submissions		
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UTILITY DETAIL

CU1



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Drawing Title:
SWPPP PHASE 1

CE

SWPPP LEGEND

PROPOSED

- MAJOR CONTOUR
- MINOR CONTOUR
- PAVEMENT/WALK
- STORM SEWER
- SILT FENCE
- COMPOST SOCK
- GRADING/SEEDING LIMITS
- LIMIT OF DISTURBANCE
- PERMANENT EROSION CONTROL BLANKET ON ALL 3:1 SLOPES OR STEEPER
- CONSTRUCTION ENTRANCE
- STORAGE AREA
- BASIN SEDIMENT FILTER
- STORM MANHOLE
- CATCH BASIN
- CURB INLET
- STABILIZED CONSTRUCTION ENTRANCE
- TEMPORARY SEEDING
- PERMANENT SOD
- HAZARDOUS WASTE STORAGE AREA
- FUEL STORAGE AREA
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- DANDY CURB (INLET PROTECTION)
- DANDY BAG (INLET PROTECTION)
- TRASH AREA

NOTES

- CONSTRUCTION ENTRANCE, PAVEMENT TO BE MAINTAINED AND TRACKOUT PREVENTED WITH A TRACK OUT MAT IF NEEDED

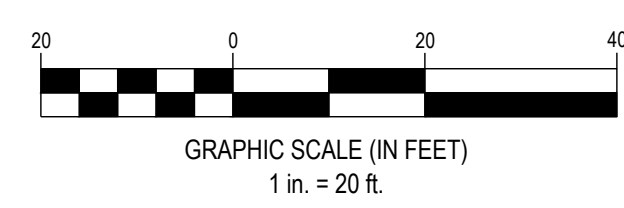
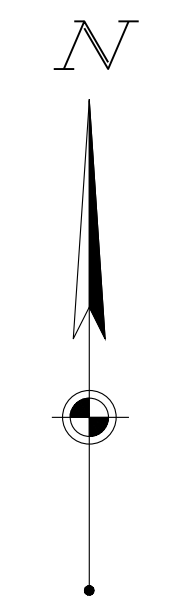
SEQUENCE OF CONSTRUCTION

UNLESS NOTED OTHERWISE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL MEASURES IN STRICT ACCORDANCE WITH THE SWPPP THROUGHOUT THE DURATION OF THE PROJECT.

PHASE 1

- NOTIFY CITY/COUNTY ENGINEER BEFORE WORK IS TO BEGIN.
- INSTALL ALL TEMPORARY EROSION CONTROL MEASURES INCLUDING SILT FENCE, CONSTRUCTION EXIT, FILTER SACKS, CONCRETE WASHOUT.
- SITE DEMOLITION AND CLEARING.
- ROUGH GRADING, PROVIDE TEMPORARY SEEDING OF DISTURBED AREAS WHICH ARE INACTIVE.
- MASS GRADING AS REQUIRED.

NOTE: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED.
NOTE: CONTRACTOR TO MAINTAIN AND CLEAN OUT ALL TEMPORARY SEDIMENT TRAPS DURING DEMOLITION AND CONSTRUCTION, IN ACCORDANCE WITH MICHIGAN STORMWATER CONTROL AND REGULATIONS.



SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

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Drawing Title:

SWPPP PHASE 2

CE1

SWPPP LEGEND

PROPOSED

- MAJOR CONTOUR
- MINOR CONTOUR
- PAVEMENT/WALK
- STORM SEWER
- SILT FENCE
- COMPOST SOCK
- GRADING/SEEDING LIMITS
- LIMIT OF DISTURBANCE
- PERMANENT EROSION CONTROL BLANKET ON ALL 3:1 SLOPES OR STEEPER
- STABILIZED CONSTRUCTION ENTRANCE
- STORAGE AREA
- BASIN SEDIMENT FILTER
- STORM MANHOLE
- CATCH BASIN
- CURB INLET
- STABILIZED CONSTRUCTION ENTRANCE
- TEMPORARY SEEDING
- PERMANENT SOD
- HAZARDOUS WASTE STORAGE AREA
- FUEL STORAGE AREA
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- DANDY CURB (INLET PROTECTION)
- DANDY BAG (INLET PROTECTION)
- TRASH AREA

SEQUENCE OF CONSTRUCTION

UNLESS NOTED OTHERWISE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL MEASURES IN STRICT ACCORDANCE WITH THE SWPPP THROUGHOUT THE DURATION OF THE PROJECT.

PHASE 2

INSPECTION OF EROSION CONTROL MEASURES AS OUTLINED IN NOTES, MAINTENANCE, REPAIRS AND/OR REPLACEMENTS SHALL BE MADE AS NECESSARY.

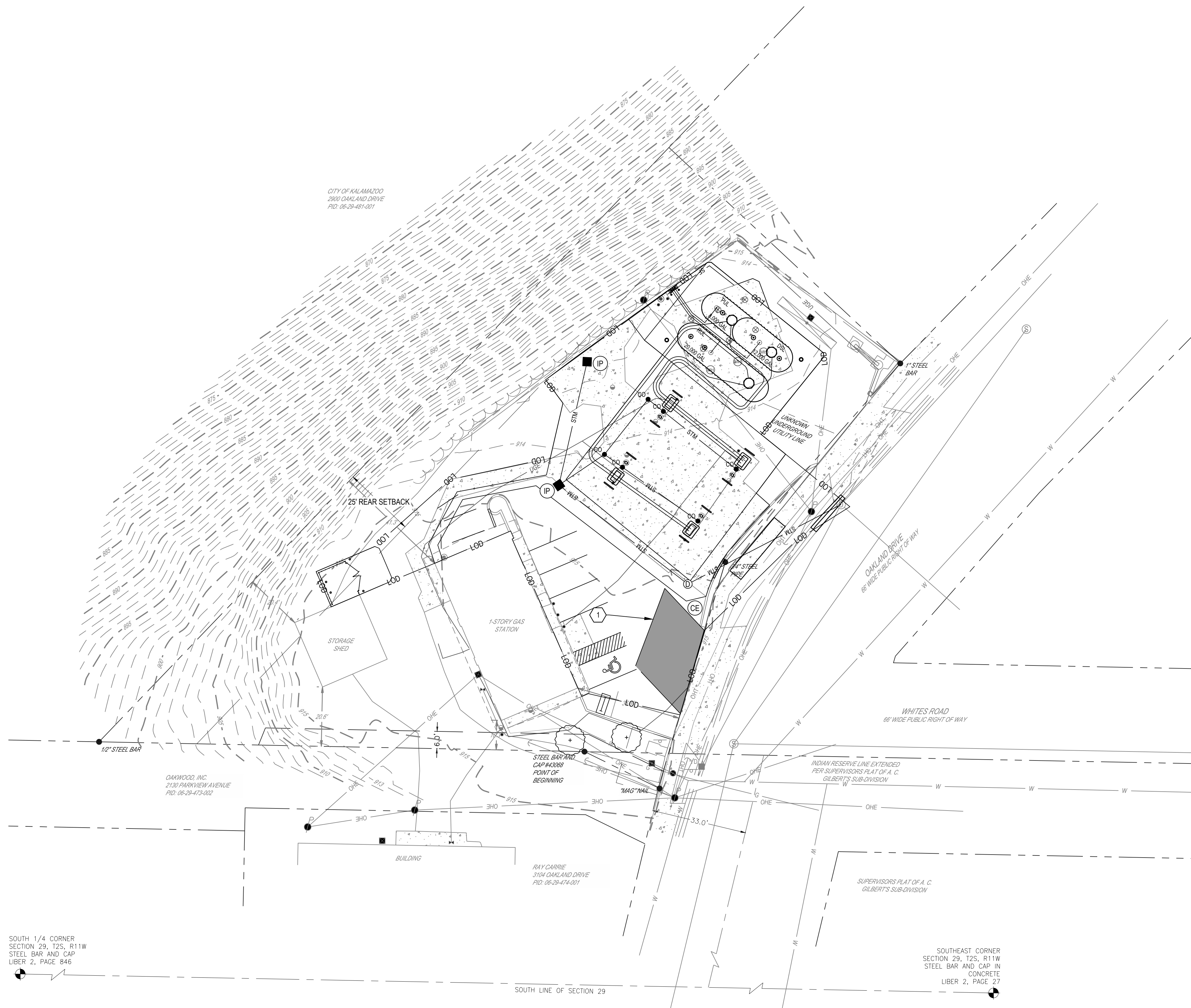
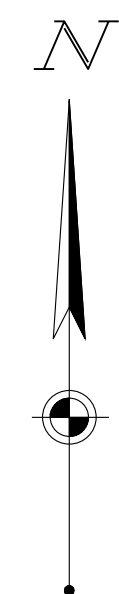
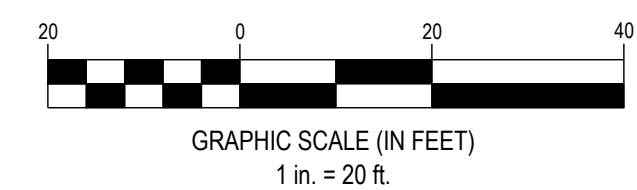
1. BEGIN BUILDING CONSTRUCTION.
2. INSTALL SANITARY SEWER AND WATER SERVICE.
3. INSTALL STORM SEWER SYSTEM AFTER THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
4. INSTALL ALL PUBLIC UTILITIES (GAS, ELECTRIC, AND TELEPHONE).
5. INSTALL ALL PAVEMENT.
6. REDISTRIBUTE TOPSOIL PER LANDSCAPE PLAN. ALL AREAS DISTRIBUTED BY CONSTRUCTION THAT WILL NOT BE PAVED SHALL BE GRADED AND HAVE VEGETATION ESTABLISHED PER LANDSCAPE PLAN.
7. ONCE 70% STABILIZATION OCCURS, AND PRIOR TO THE REMOVAL OF TEMPORARY BMP DEVICES, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT BASIN AND IT SHALL BE RE-GRADED AS NECESSARY TO ACHIEVE FINAL GRADING AS SHOWN. ONCE 70% OF FINAL STABILIZATION OCCURS AND SEDIMENT BASIN IS TRANSITIONED TO PERMANENT STORMWATER DETENTION, TEMPORARY BMP DEVICES SHALL BE REMOVED.
8. REMOVE SOIL EROSION CONTROL MEASURES AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED. ENSURE NOTICE OF TERMINATION (N.O.T.) IS FIELD.

NOTE: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED.

NOTE: CONTRACTOR TO MAINTAIN AND CLEAN OUT ALL TEMPORARY SEDIMENT TRAPS DURING DEMOLITION AND CONSTRUCTION, IN ACCORDANCE WITH MICHIGAN STORMWATER CONTROL AND REGULATIONS.



SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE



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EROSION AND SEDIMENT CONTROL NARRATIVE

PLAN DESIGNER
CESO, INC.
13060 S US HWY 27
DEWITT, MI 48820

ENGINEER OF RECORD: MANDY GAUSS, P.E.
P: 586-855-8130
E: mandy.gauss@cesoinc.com

EXISTING SITE CONDITIONS:
PROJECT DESCRIPTION: THE SITE CONSISTS OF AN EXISTING SPEEDWAY WITH UNDERGROUND FUEL TANKS & AUTO CANOPY. THE PROJECT IS A DEVELOPMENT OF A PROPOSED 0.65 ACRE PARCEL, INTO A PROPOSED 7-ELEVEN GAS STATION. IMPROVEMENTS WILL INCLUDE A AUTO PARKING, AUTO FUELING.

DISTURBED AREA: ± ACRES

SITE DRAINS TO: **THE SITE WILL SHEET FLOW TO A SERIES OF STORM INLETS. STORM INLETS WILL SHEET FLOW INTO AN OUTLET TO A ROADSIDE DITCH WITH AN EVENTUAL OUTFALL INTO A SERIES OF CITY OWNED STORM INLETS.**

RECEIVING STREAM: UNNAMED TRIBUTARY

SITE BMP'S: FINAL LOCATIONS OF ALL SITE BMP'S INCLUDE DUMPSTER, VEHICLE FUELING AREAS, MATERIAL STORAGE, AND TOPSOIL STOCKPILES SHALL BE DETERMINED BY CONTRACTOR. IF FINAL LOCATION OF BMP'S DIFFER FROM THE LOCATIONS SHOWN, CONTRACTOR SHALL MODIFY SWPPP AND INFORM MICHIGAN EGLE OF NEW LOCATION OF BMP'S.

SOILS ON SITE CONSIST OF: -U_b - URBAN LAND

EROSION AND SEDIMENT CONTROL MEASURES:
PROVIDE INLET PROTECTION OF ALL NEW AND EXISTING DRAINAGE STRUCTURES INDICATED ON THIS PLAN.
ANY OFF-SITE BORROW OR SPOIL AREAS SHALL BE SUBJECT TO THE REQUIREMENTS SET FORTH BY CITY OF WARREN AND/OR MICHIGAN EGLE. ALL EROSION AND SEDIMENT CONTROL MEASURES FOR OFF-SITE AREAS NOT COVERED BY A SEPARATE NOI OR SWP3 SHALL BE COORDINATED WITH THE MICHIGAN EGLE.
ALL TRENCH OR EXCAVATION GROUNDWATER CONTAINING SEDIMENT MUST BE EFFECTIVELY TREATED PRIOR TO DISCHARGE INTO THE STORM SEWER SYSTEM.
USE ALL MEANS NECESSARY TO CONTROL DUST ON THE SITE AND PREVENT TRACKING SOIL OFF SITE.

JURISDICTION: ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DISCRETION OF MACOMB COUNTY AND/OR MICHIGAN EGLE.

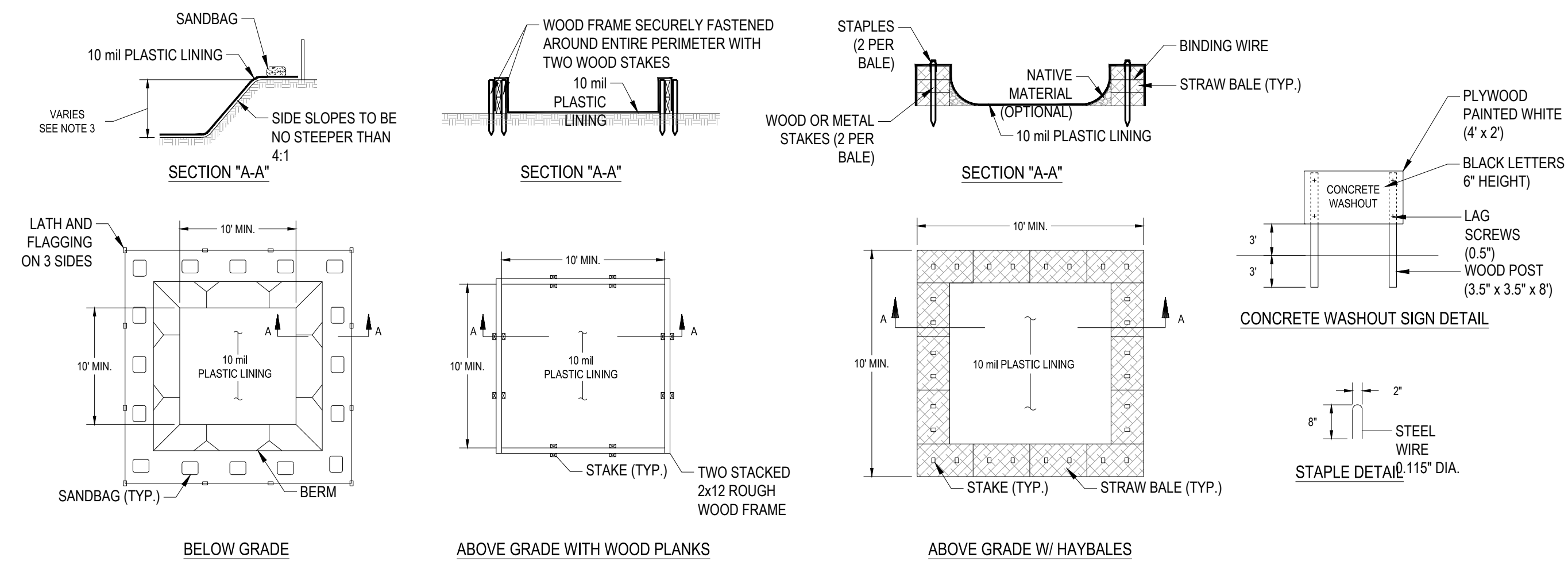
RUNOFF: THE PRE-CONSTRUCTION RUNOFF COEFFICIENT IS C=0.10. THE POST-CONSTRUCTION RUNOFF COEFFICIENT IS C=0.85.

CONSTRUCTION: ESTIMATED START DATE: 1/2026
ESTIMATED COMPLETION DATE: 6/2026

- NOTES:
- SITE EROSION CONTROLS SHALL BE CHECKED AND IF NECESSARY, REPAIR WEEKLY AND WITHIN 24 HOURS AFTER EACH RAINFALL GREATER THAN 1/4". IN THE EVENT OF CONTINUOUS RAINFALL, EROSION CONTROLS SHALL BE CHECKED DAILY.
 - ALL AREAS TO REMAIN BARE > 15 DAYS MUST BE TEMPORARILY STABILIZED.
- PROJECT IS LOCATED WITHIN ZONE X AND AE AS IT APPEARS ON FEMA FLOOD MAP PANEL #26077C0188E DATED 07/31/2024.
- REFER TO CG FOR ALL PROPOSED GRADES
 - REFER TO CE-02 FOR FURTHER EROSION CONTROL NOTES AND DETAILS

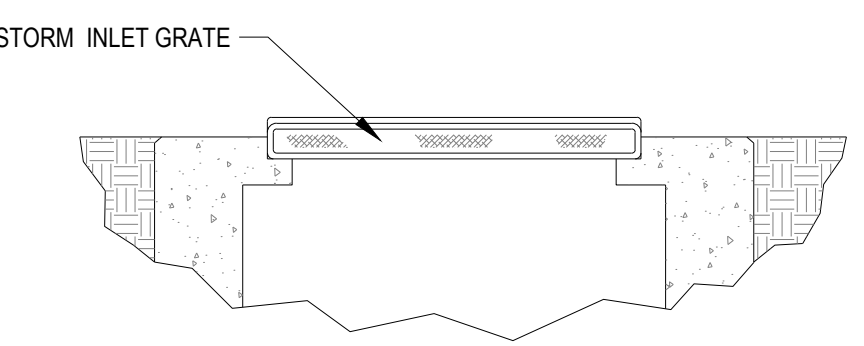
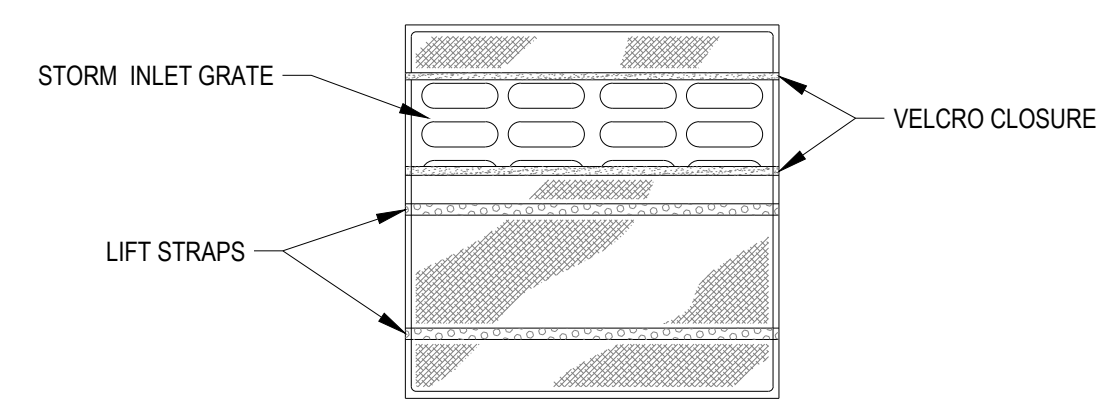
OWNERS REPRESENTATIVE FOR EROSION CONTROL MAINTENANCE:
NAME: DAVE TABBERT
PHONE #: 248-535-1736

SIGNATURE OF OPERATOR _____ DATE _____



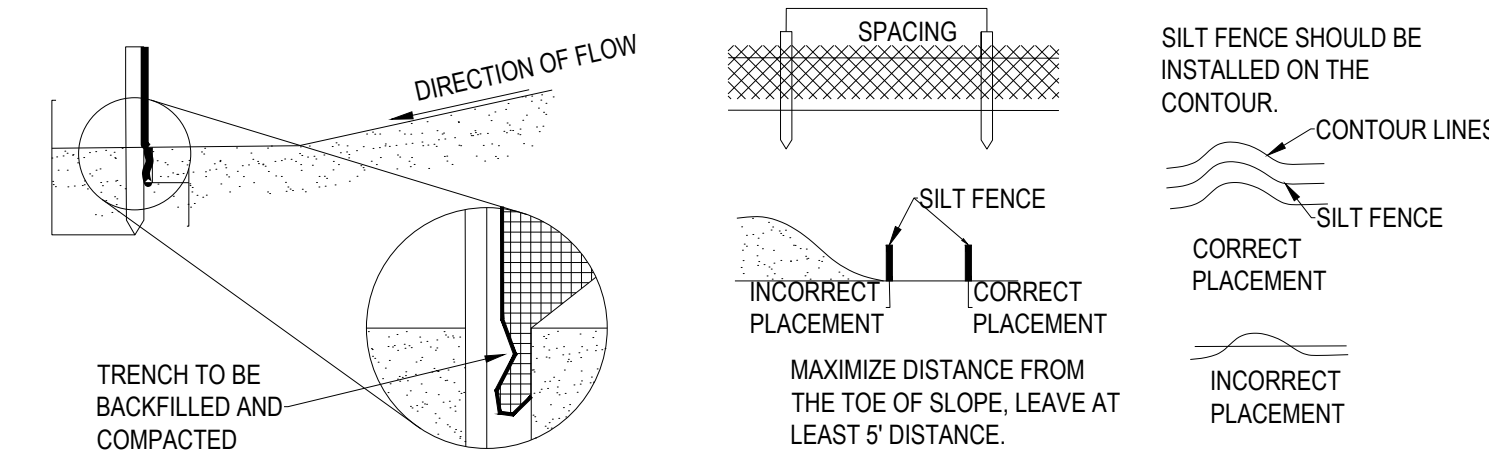
- NOTES:
- ACTUAL LAYOUT DETERMINED IN THE FIELD.
 - THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
 - THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING BUT NOT LIMITED TO OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.

CONCRETE WASHOUT
NTS



NOTE:
INLET PROTECTION SHALL BE DANDY BAG OR APPROVED OTHER.

INLET PROTECTION
NTS



- NOTES:
- SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
 - ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
 - TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
 - WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
 - WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FT. (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE ESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
 - THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 IN. ABOVE THE ORIGINAL GROUND SURFACE.
 - THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM 6 IN. DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICES WHICH WILL ENSURE ADEQUATE UNIFORM TRENCH DEPTH.
 - THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT THE 8 INCHES OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 IN. DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.
 - SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.
 - MAINTENANCE - SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONLY OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
 - THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED.
 - ACCUMULATED SEDIMENT SHALL BE REMOVED, OR
 - OTHER PRACTICES SHALL BE INSTALLED.

SILT FENCE
NTS

SPECIFICATIONS FOR SILT FENCE

FABRIC PROPERTIES	VALUES	TEST METHODS
GRAB TENSILE STRENGTH	90 LB. MINIMUM	ASTM D-1682
MULEN BURST STRENGTH	190 PSI MINIMUM	ASTM D-3786
SLURRY FLOW RATE	0.3 GAL/MIN/FT. MAX.	
EQUIVALENT OPENING SIZE	40-80	US STD. SIEVE CW 02215
ULTRAVIOLET RADIATION STABILITY	90% MINIMUM	ASTM - G 26

CRITERIA FOR SILT FENCE MATERIALS

- FENCE POSTS - THE LENGTH SHALL BE A MINIMUM OF 32 INCHES LONG. WOOD POSTS WILL BE 2 IN. X 2 IN. HARDWOOD OF SOUND QUALITY. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT.
- SILT FENCE FABRIC (SEE CHART BELOW)



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7-ELEVEN-KALAMAZOO
3050 OAKLAND DRIVE
KALAMAZOO, MICHIGAN 49008

7-ELEVEN, INC.

Revisions / Submissions

ID	Description	Date

Project Number: 764708
Scale: 1"=20'
Drawn By: TEP
Checked By: JDC
Date: 08/12/2025
Issue: CONSTRUCTION PLANS

Drawing Title:
SWPPP NOTES & DETAILS

CE2



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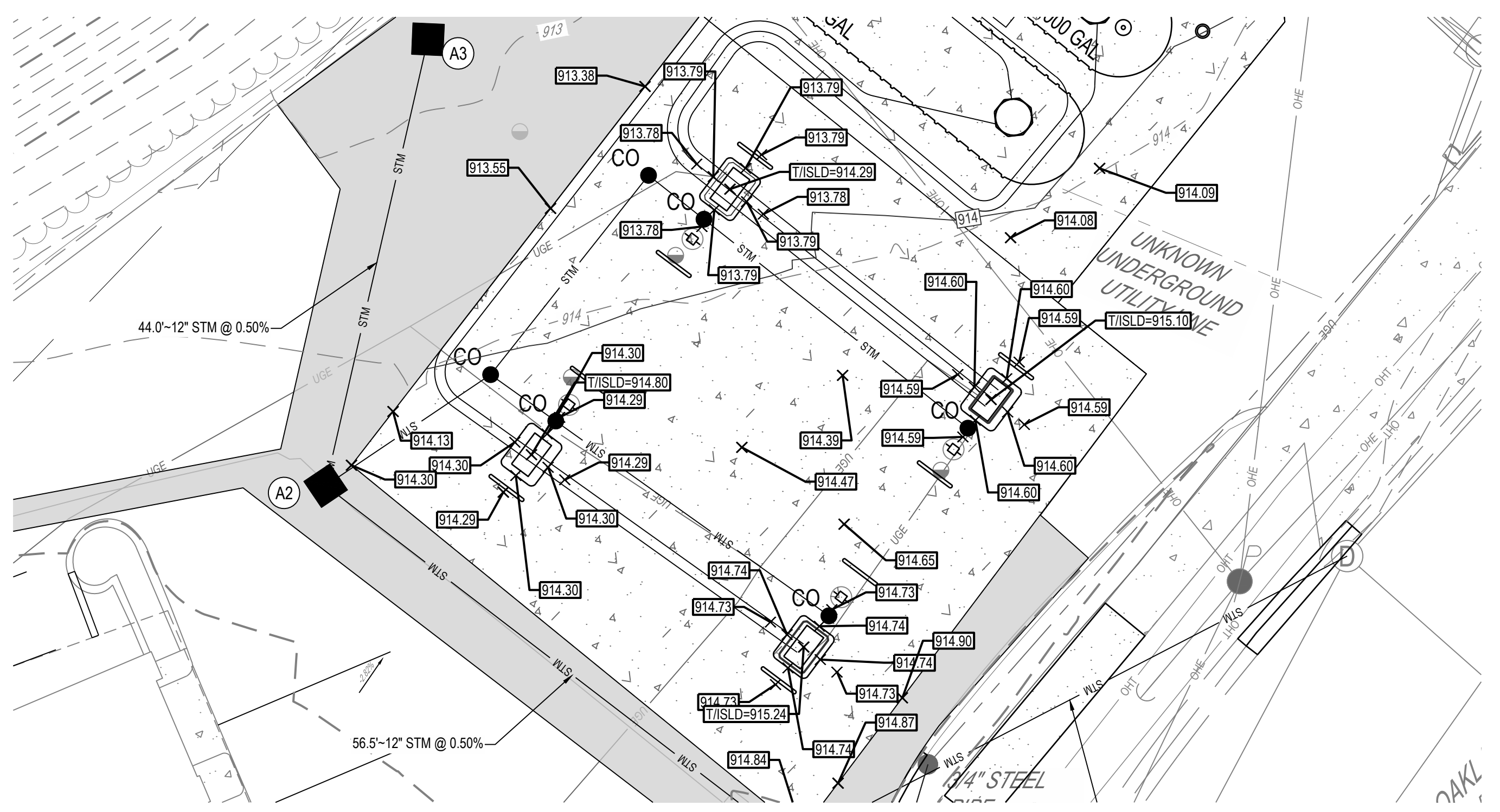
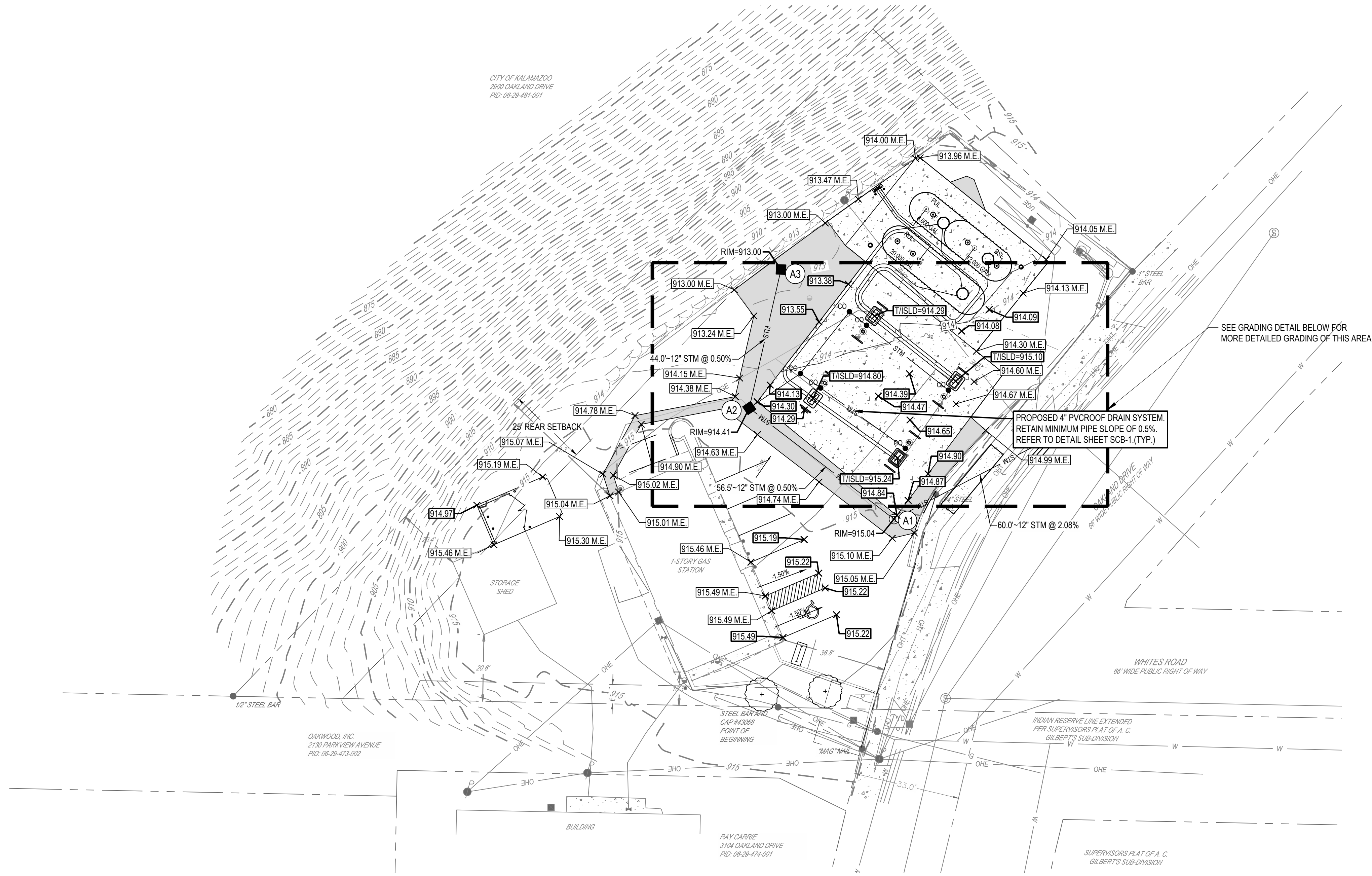
GRADING LEGEND

EXISTING

REFER TO CD FOR EXISTING FEATURES LEGEND

PROPOSED

- R/W — RIGHT-OF-WAY
- — — — — PROPERTY LINE
- — — — — SETBACK
- — — — — EASEMENT
- ▬ BUILDING
- ▬ MAJOR CONTOUR
- ▬ MINOR CONTOUR
- ▬ GRADE BREAK
- ▬ FLOW LINE
- ① STRUCTURE NUMBER
- ⊙ CATCH BASIN
- ⊙ STORM MANHOLE
- XXX.XX FINISHED GRADE ELEVATION
- RIM=XXX.XX RIM ELEVATION
- BC=XXX.XX BACK OF CURB ELEVATION
- TC=XXX.XX
FG=XXX.XX TOP OF CURB ELEVATION
FINISHED GRADE ELEVATION
- TP=XXX.XX
FTG=XXX.XX TOP OF PAVEMENT ELEVATION
TOP OF FOOTING ELEVATION
- M.E. MATCH EXISTING ELEVATION
- X.XX% SLOPE ARROW
- ➔ FLOOD ROUTE



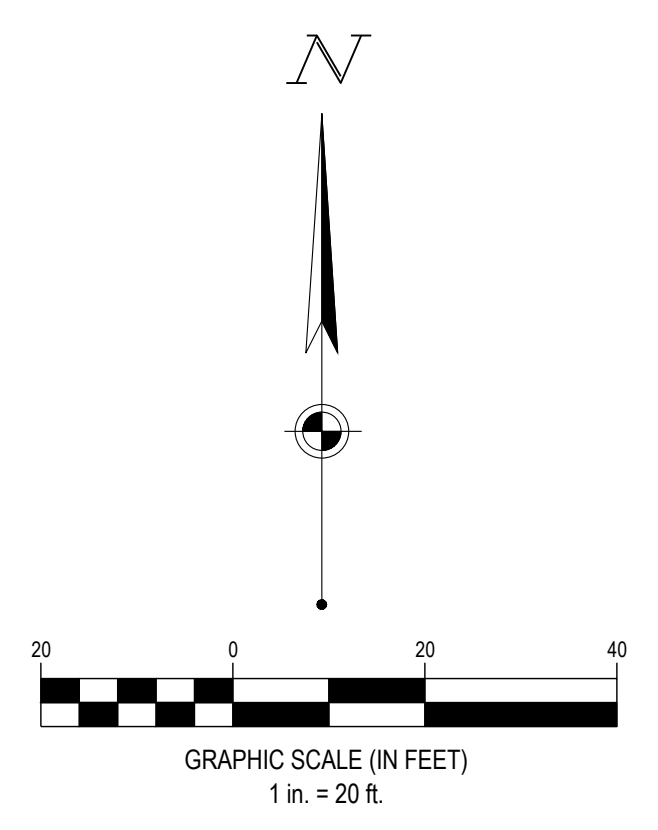
STORM SEWER STRUCTURE SCHEDULE			
NO.	STRUCTURE	GRATE	INVERT
A1	AQUASWIRL AS-3	915.03	909.88 (12") NE 909.88 (12") NW
A2	2X2 CB	914.41	910.16 (12") SE 910.16 (12") N 910.16 (4") NE
A3	3X3 CB	912.88	910.38 (12") S

GRADING NOTES:

- CONTRACTOR TO USE EXTREME CAUTION WHEN GRADING IN AND AROUND EXISTING UTILITIES. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH PRIOR TO START OF CONSTRUCTION.
- EXCAVATE SOILS AS NECESSARY TO COMPLETE PROPOSED CONSTRUCTION. UNLESS OTHERWISE DIRECTED (REFER TO GEOTECHNICAL REPORT), USE ALL EXCAVATED SOILS AS FILL ON SITE. ANY SOILS THAT CANNOT BE UTILIZED ON SITE SHALL BE LOADED DIRECTLY ONTO TRANSPORT TRUCKS AND HAULED TO OWNER'S APPROVED LOCATION. ANY IMPACTED SOILS ENCOUNTERED SHALL BE LOADED SEPARATELY AND SHALL NOT BE COMINGLED WITH CLEAN SOILS. ANY EXCAVATED SOIL OR MATERIALS THAT LEAVE THE SITE MUST GO TO AN APPROVED LANDFILL LOCATION OR BE ACCOMPANIED BY AN APPROVED BILL OF SALE.
- BID AS ALTERNATE A: IMPACTED SOILS SHALL BE PLACED ON MINIMUM 6 MIL. VISQUEEN AND COVERED WITH 40' X 100' SHEETS OF 4 MIL. VISQUEEN. A SAND BERM SHALL BE CONSTRUCTED AROUND ENTIRE PILE OF SOIL TO HOLD THE VISQUEEN DOWN. ALL SEAMS OR OVERLAP (6" MINIMUM) IN THE VISQUEEN COVERING SHALL BE SECURED WITH WEIGHTED MATERIAL.
- BID AS ALTERNATE B: PROVIDE DEWATERING NECESSARY FOR ANY EXCAVATIONS AND TO PREVENT TANKS FROM FLOATING WHILE THE TANKS ARE NOT COVERED BY PROPER OVERBURDEN. DEWATERING SHALL CONSIST OF SUPPLYING EQUIPMENT AND LABOR TO MAINTAIN PUMPING ACTIVITIES AS NECESSARY. COORDINATE WITH OWNER'S REPRESENTATIVE TO DETERMINE WHERE WATER CAN BE PUMPED. IDENTIFY THIS COST AS A SPECIFIC LINE ITEM IN THE BID. DISPOSAL OF CONTAMINATED WATER SHALL BE THE OWNER'S RESPONSIBILITY.
- THE ENVIRONMENTAL CONSULTANT AND THE CONTRACTOR SHALL USE THE "SOILS WORKSHEET" TO ACCOUNT FOR ALL EXCAVATED SOILS.
- A REPORT OF THE SUBSURFACE INVESTIGATION IS MADE AVAILABLE TO THE CONTRACTOR AT TIME OF BIDDING. THE BASE BID SHALL INCLUDE LAND BALANCING ACTIVITIES BASED ON THE ASSUMPTION THAT EXCAVATED SOIL CAN BE REUSED AS NECESSARY FOR CONSTRUCTION. UPON REVIEWING THE SUBSURFACE INVESTIGATION, CONTRACTOR SHALL INCLUDE THE FOLLOWING AS ALTERNATE:
 - A. OVER-EXCAVATE AREAS OF UNSUITABLE SOILS AND STABILIZE AREAS PER THE SUBSURFACE INVESTIGATION. ESTIMATE QUANTITY OF OVER-EXCAVATED AREAS AND REPLACEMENT BACKFILL IN EACH AREA. ALONG WITH THE TYPE OF BACKFILL. ACTUAL QUANTITIES WILL BE VERIFIED DURING CONSTRUCTION PER THE DIRECTION OF THE GEOTECH CONSULTANT AND OWNER'S REPRESENTATIVE, WITH DETAILED CHANGE ORDERS SUBMITTED TO OWNER.
- ANY DISCREPANCIES BETWEEN ELEVATIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND THE DESIGN ENGINEER.
- CONTRACTOR TO FIELD VERIFY LOCATION OF CANOPY DRAINS AND TIE INTO PROPOSED STORM SEWER.



SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE



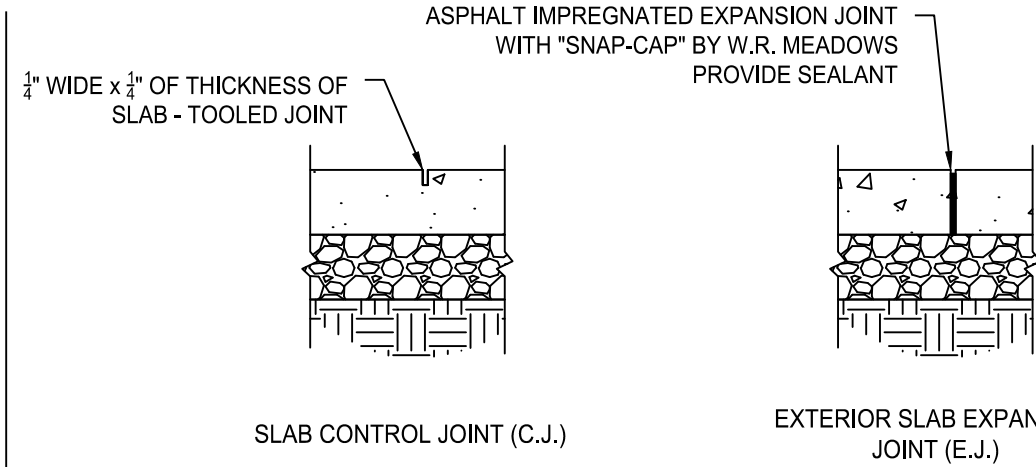
C:\D:\ACC\des\CESO7-Elleven Kalamazoo MI 7785\Project Files\CESO03-CIVIL\PLAN\LOT764708_GRADING PLAN.dwg - 8/18/2025 - Lisa Gunter

Revisions / Submissions		
ID	Description	Date

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Project Number: 764708
Scale: 1"=20'
Drawn By: TEP
Checked By: JDC
Date: 08/12/2025
Issue: CONSTRUCTION PLANS

Drawing Title:
GRADING PLAN

CG



FOR 5' OR 8' WALKS, INSTALL A CONTROL JOINT EVERY 5' AND ONE IN THE CENTER (5' FROM THE BACK OF THE BUILDING FOR EXAMPLE)

DETAILS ONLY APPLY TO BUILDING SIDEWALK. THEY DO NOT APPLY TO INTERIOR SLAB OR SITE CONCRETE.

10 CONCRETE WALK JOINTING SECTIONS

NOT TO SCALE

ASPHALT SEALING

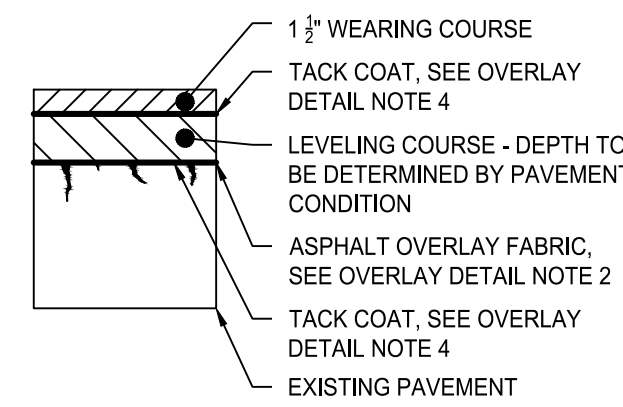
- SURFACE CLEANING**
THE SURFACE TO BE SEALED SHALL BE FREE FROM DIRT AND OTHER FOREIGN MATTER. ANY ACCUMULATIONS OF OIL OR GREASE SHALL BE CLEANED OFF THE PAVEMENT WITH DETERGENT SOLUTION. THE RESIDUE OF WHICH SHALL BE THOROUGHLY WASHED AWAY WITH CLEAN WATER BEFORE SEALANT IS APPLIED.
- SEALING:**
THE SEAL COATING MATERIAL SHALL BE COMPRISED OF A RUBBERIZED COAL-TAR PITCH EMULSION AND SHALL MEET OR EXCEED FEDERAL SPECIFICATION R-P-3556. SUPPLIED IN CONCENTRATED FORM, IT SHALL BE DILUTED A MINIMUM OF 15% AND A MAXIMUM OF 25% WITH FRESH, CLEAN WATER. THE SEALANT MATERIAL SHALL CONTAIN 5-6 LBS. PER GALLON OF FINE, CLEAN, DRY SILICAS AND MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING
#16	100
#30	80-100
#50	10-60
#100	0-5

THE SEALANT SHALL BE APPLIED TO THE PAVEMENT IN TWO COATS AT THE RATE OF 0.08 TO 0.12 GALLONS PER SQUARE YARD. A LATEX ADDITIVE MAY ALSO BE ADDED TO THE SEALANT TO ALLOW FOR QUICKER DRYING TIME IN THOSE AREAS SPECIFIED BY OWNER'S REPRESENTATIVE.

7 ASPHALT SEALING NOTES

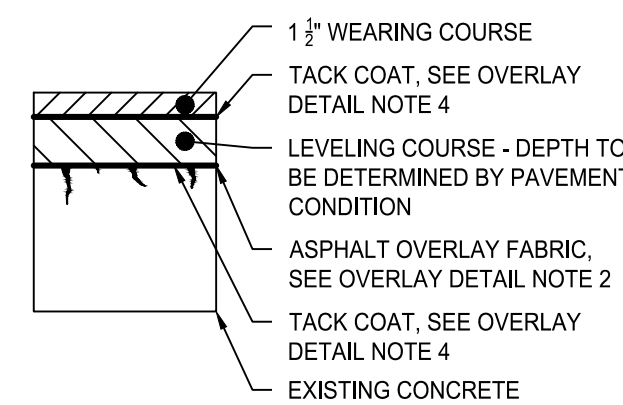
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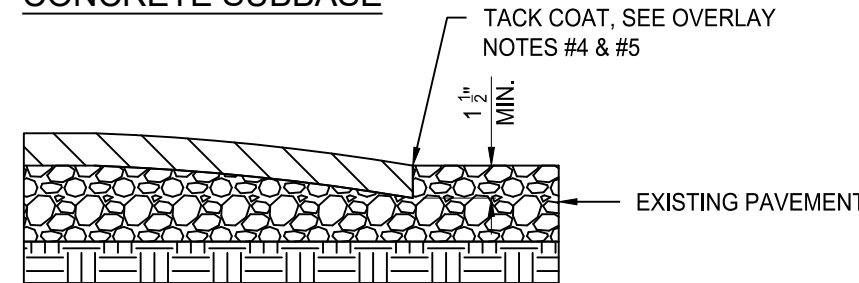
OVERLAY DETAIL NOTES:

- THE OVERLAY SHALL BE PLACED IN ACCORDANCE WITH OWNER'S SPECIFICATIONS.
- ALL FAILED AREAS SHALL BE REPAIRED WITH PROPER PATCHES BEFORE OVERLAY IS PLACED.
- IF THE SURFACE IS DISTURBED, THE CONTRACTOR SHALL CONSTRUCT LEVELING COURSES TO RESTORE PROPER LINE AND CROSS SECTION.
- THE PAVEMENT SHALL BE THOROUGHLY CLEANED AND A TACK COAT OF ASPHALT SHALL BE APPLIED BEFORE THE OVERLAY IS PLACED.
- ALL VERTICAL SURFACES COMING IN CONTACT WITH THE OVERLAY SHALL BE SPRAYED OR PAINTED WITH A UNIFORM COATING OF EMULSIFIED ASPHALT IMMEDIATELY PRIOR TO PAVEMENT CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR ENSURING PROPER SURFACE DRAINAGE, PONDING OR PUDDLING OF WATER ON THE FINAL SURFACE WILL BE UNACCEPTABLE.
- REPLACE IN KIND ANY EXISTING TRAFFIC LOOPS AND/OR RELATED SENSOR EQUIPMENT THAT IS REMOVED OR DAMAGED DUE TO PAVEMENT MILLING ACTIVITY.

ASPHALT SUBBASE



CONCRETE SUBBASE



WHERE OVERLAY IS NOT SPECIFIED FOR ENTIRE EXISTING SURFACE, THE INTERFACE BETWEEN THE NEW OVERLAY AND THE OLD PAVEMENT SURFACE SHALL BE PER THE ABOVE DETAIL. FEATHERING OF THE ASPHALT TO MEET THE EXISTING PAVEMENT WILL NOT BE ACCEPTABLE.

EDGE DETAIL

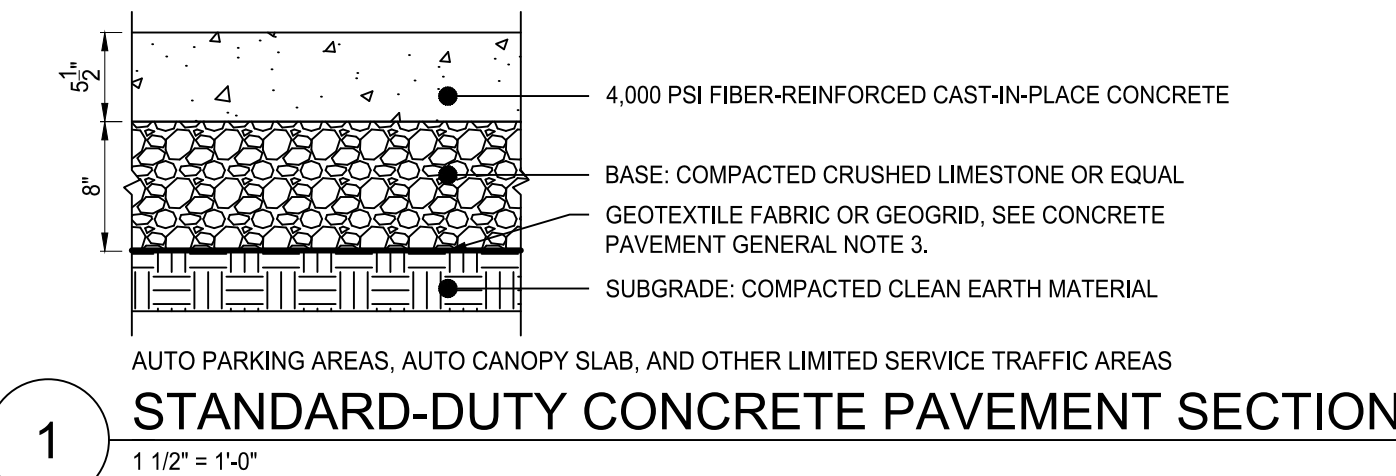
8 ASPHALT OVERLAY PAVEMENT SECTIONS

NOT TO SCALE

TYPE OF JOINT	USE DESCRIPTION	DETAIL
A. CONTROL JOINT ("SJ" ON FUEL PROTOTYPES) 1. SAWN 2. PREMOLD STRIP 3. HAND FORMED AND SAWN AT CRITICAL JOINTS	USE SPECIFICATION ACI 360R-06 TO PLACE CONTROL JOINTS SO AS TO UNIFORMLY DIVIDE SLABS INTO NOMINAL 12' x 12' (STANDARD-DUTY) OR 16' x 16' (HEAVY-DUTY) SECTIONS. (SEAL CONTROL JOINTS ONLY IF SPECIFIED ON DRAWINGS OR BY OWNER'S REPRESENTATIVE.	
B. EXPANSION JOINT (ISOLATION JOINT)	PLACE AGAINST CONCRETE TANK SLAB, ABUTTING ROADWAY PAVEMENTS AND STRUCTURES (BUILDINGS, CANOPY COLUMNS, CATCH BASINS, ETC.)	
C. CONSTRUCTION JOINT ("CJ" ON FUEL PROTOTYPES)	CONSTRUCTION JOINTS MUST BE APPROVED BY OWNER'S REPRESENTATIVE. PLACE WHEN CONTINUOUS POUR OPERATIONS ARE SUSPENDED FOR MORE THAN 30 MINUTES.	

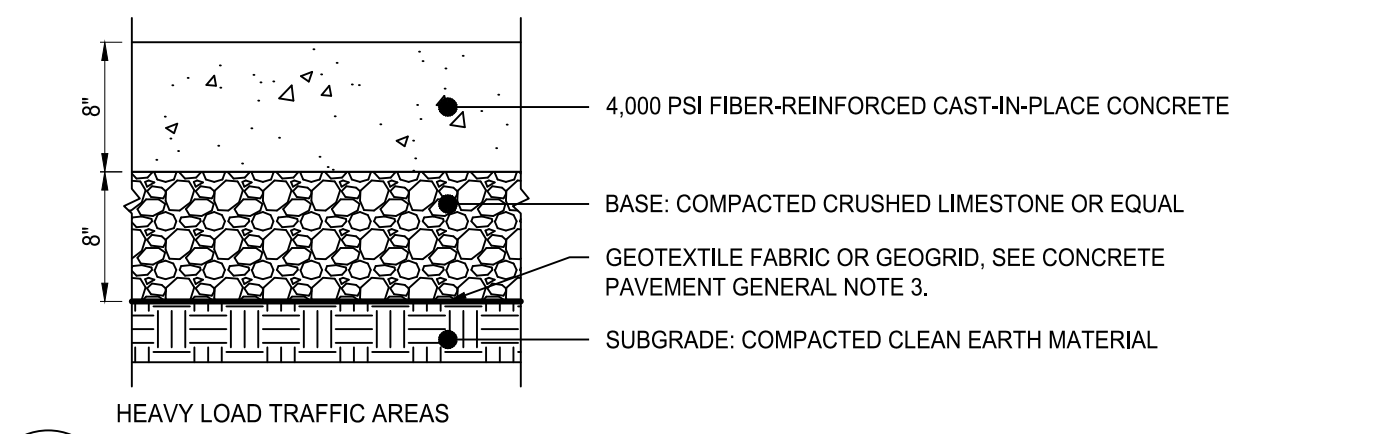
9 CONCRETE PAVEMENT JOINTING SECTIONS

NO SCALE



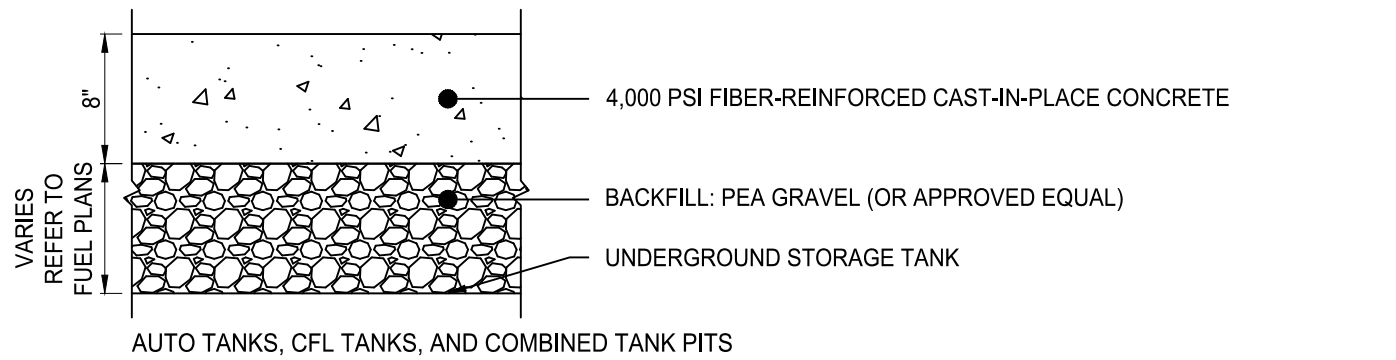
1 STANDARD-DUTY CONCRETE PAVEMENT SECTION

1 1/2" = 1'-0"



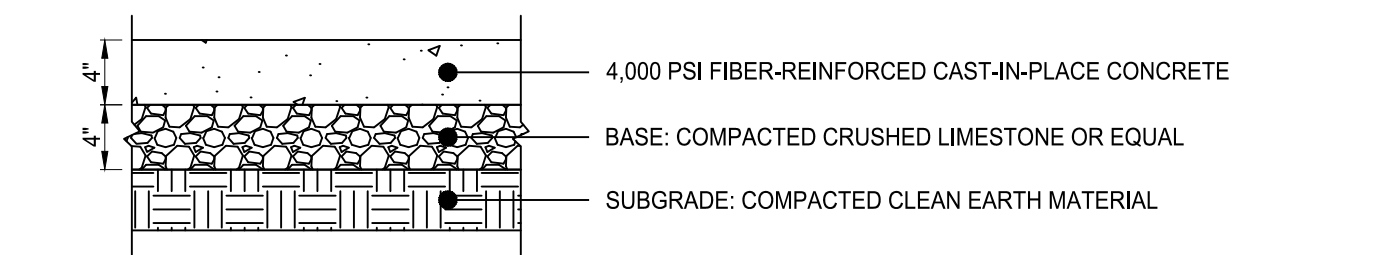
2 HEAVY-DUTY CONCRETE PAVEMENT SECTION

1 1/2" = 1'-0"



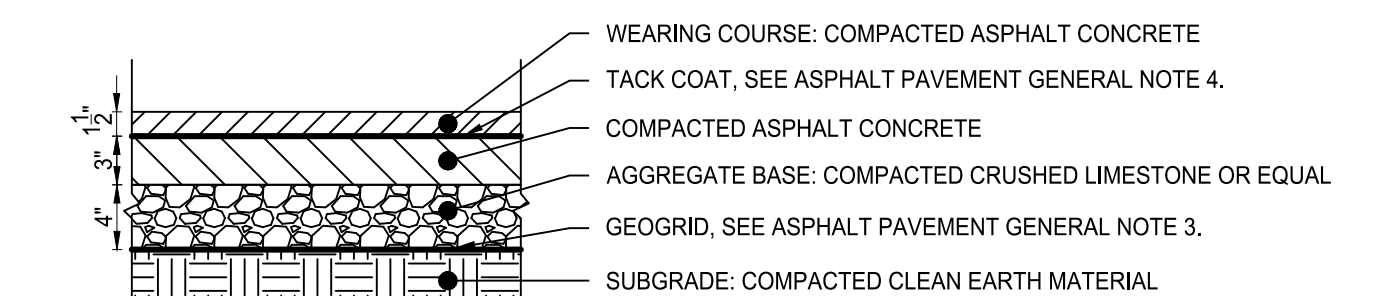
3 TANK SLAB CONCRETE PAVEMENT SECTION

1 1/2" = 1'-0"



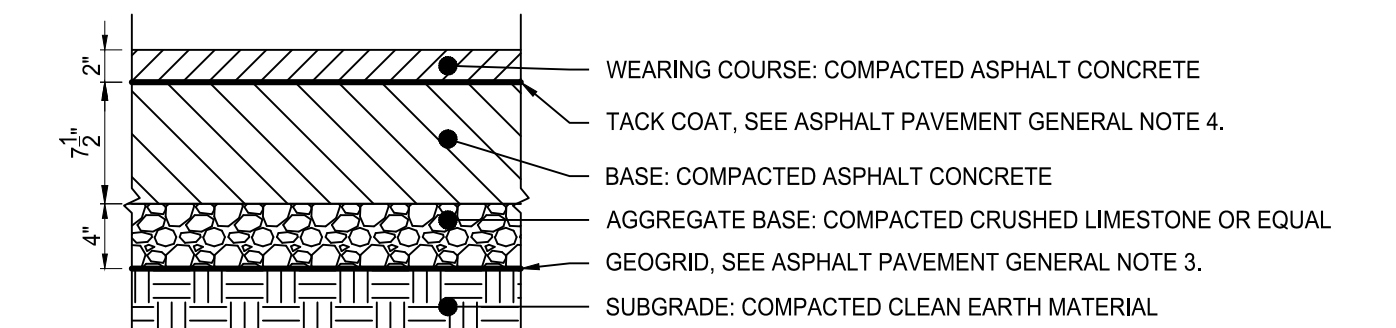
4 CONCRETE WALK PAVEMENT SECTION

1 1/2" = 1'-0"



5 STANDARD-DUTY ASPHALT PAVEMENT SECTION

1 1/2" = 1'-0"



6 HEAVY-DUTY ASPHALT PAVEMENT SECTION

1 1/2" = 1'-0"

PAVING EXECUTION NOTES:

- LOCATE AND INSTALL CONSTRUCTION, ISOLATION, AND EXPANSION JOINTS AS INDICATED OR REQUIRED.
- PLACE CONCRETE IN A CONTINUOUS OPERATION WITHIN PLANNED JOINTS OR SECTIONS. DO NOT ADD WATER TO ADJUST SLUMP.
- FLOAT SURFACES TO TRUE PLANES WITHIN A TOLERANCE OF 1/4 INCH IN 10 FEET.
- TOOL EDGES AND JOINTS TO A RADIUS OF 1/4 INCH FOR SIDEWALKS.
- ALLOW CONCRETE PAVING TO CURE FOR A MINIMUM OF 28 DAYS AND DRY BEFORE STARTING PAVEMENT MARKING.
- APPLY TRAFFIC PAINT WITH MECHANICAL EQUIPMENT TO A MINIMUM WET FILM THICKNESS OF 15 MILS.
- PROTECT CONCRETE PAVING FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVING FOR AT LEAST 14 DAYS.

CONCRETE PAVEMENT GENERAL NOTES:

- SEE FUEL PROTOTYPE FOR ADDITIONAL REQUIREMENTS FOR TANK SLABS.
- SEE FUEL PROTOTYPE FOR ADDITIONAL REQUIREMENTS FOR DISPENSER ISLAND SLABS.
- A GEOTEXTILE OR GEOGRID IS ONLY NEEDED WHEN THE GEOTECHNICAL REPORT AND/OR A GEOTECH EXPERT REQUIRES IT FOR THE SPECIFIC SITE'S SOIL CONDITIONS.
- UNDISTURBED SOIL OR COMPACTED BACK FILL NOT LESS THAN 95% OF MODIFIED PROCTOR DENSITY (ASHTO-T-180).
- REFER TO CIVIL DESIGN GUIDELINES (CDG) FOR PAVEMENT LOCATION GUIDANCE.
- CONTRACTOR REFER TO THE GEOTECH REPORT FOR PAVEMENT AND FOUNDATION DESIGN AND CONSTRUCTION RECOMMENDATIONS IF MORE STRINGENT THAN PROTOTYPE DETAILS.
- COMPACTION IS NOT REQUIRED OVER THE TANK PIT(S).

ASPHALT PAVEMENT GENERAL NOTES:

- ALL WORK SHALL BE IN CONFORMANCE WITH OWNER'S SPECIFICATIONS FOR ASPHALTIC CONCRETE PAVING.
- GEOGRID IS ONLY NEEDED WHEN THE GEOTECHNICAL REPORT AND/OR A GEOTECH EXPERT REQUIRES IT FOR THE SPECIFIC SITE'S SOIL CONDITION.
- FOR SUBSURFACE DRAINAGE OR STABILITY ISSUES DURING CONSTRUCTION (UNDER DIRECTION BY GEOTECH EXPERT):
A. SUBSURFACE DRAINAGE ISSUE - REFER TO GUIDELINES FOR DEWATERING ISSUES TO DERIVE ACCEPTABLE OPTIONS.
B. SUBSURFACE STABILITY ISSUE - INSTALL GEOGRID PER GEOTECH EXPERT RECOMMENDATION.
- THE PAVEMENT SHALL BE THOROUGHLY CLEANED AND A TACK COAT OF ASPHALT SHALL BE APPLIED BEFORE THE OVERLAY IS PLACED.
- REFER TO CIVIL DESIGN GUIDELINES (CDG) FOR PAVEMENT LOCATION GUIDANCE.

CONTRACTOR MUST REFER TO THE GEOTECH REPORT FOR PAVEMENT AND FOUNDATION DESIGN AND CONSTRUCTION RECOMMENDATIONS



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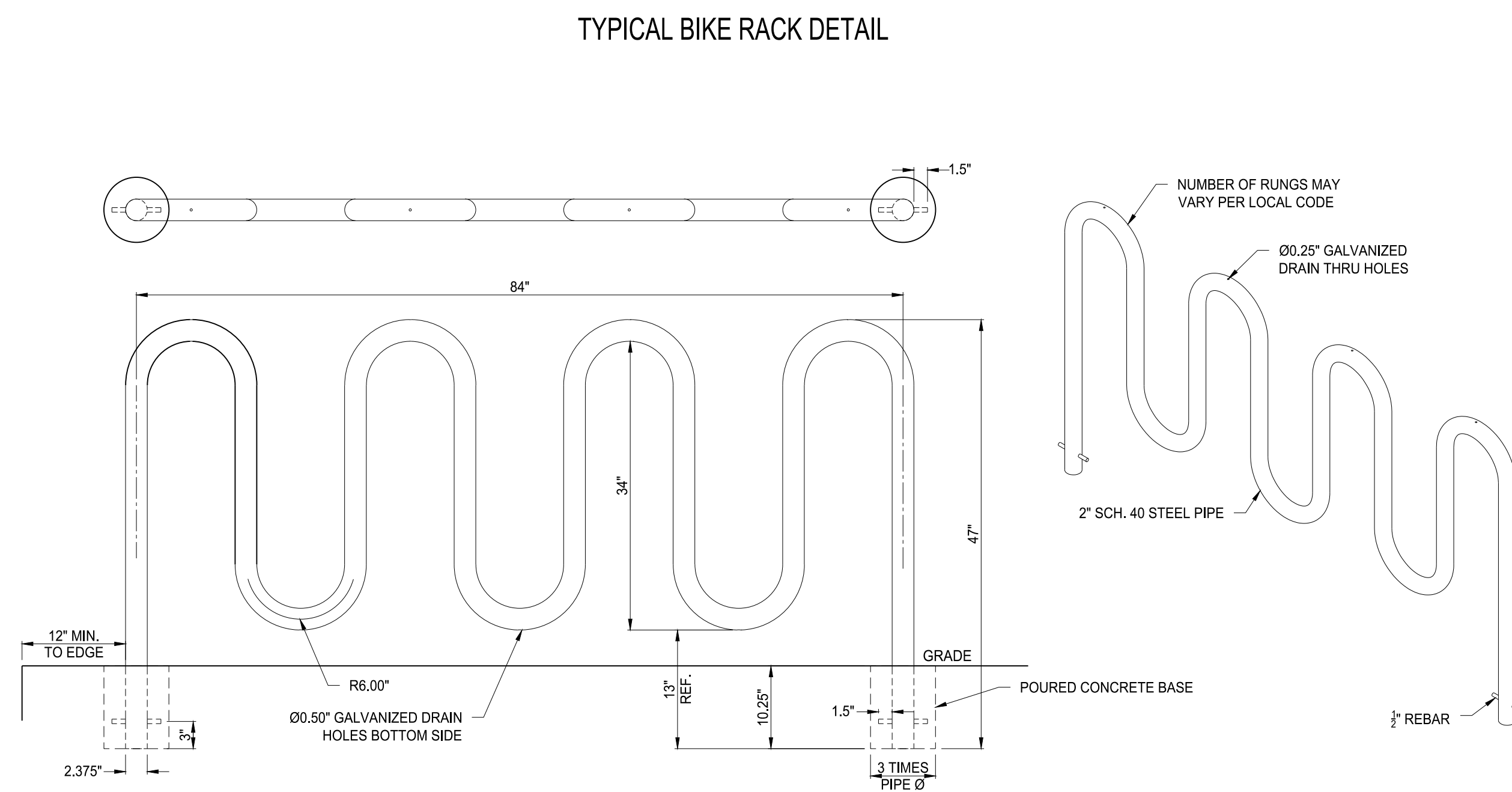
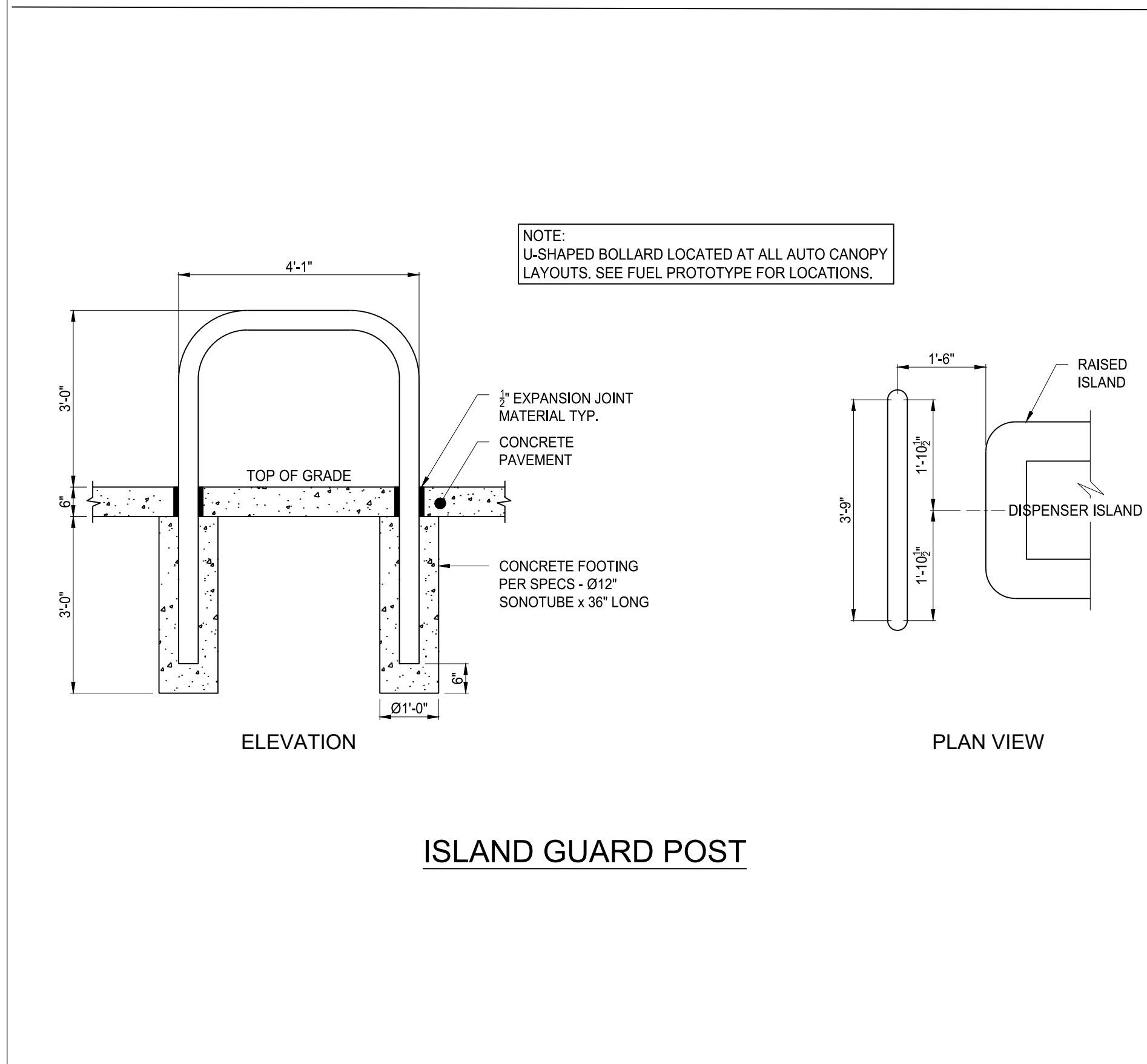
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Project Number: 764708
Scale: N/A
Drawn By: TEP
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Issue: CONSTRUCTION PLANS

Drawing Title:
DETAILS

CPC-1



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Revisions / Submissions		
ID	Description	Date

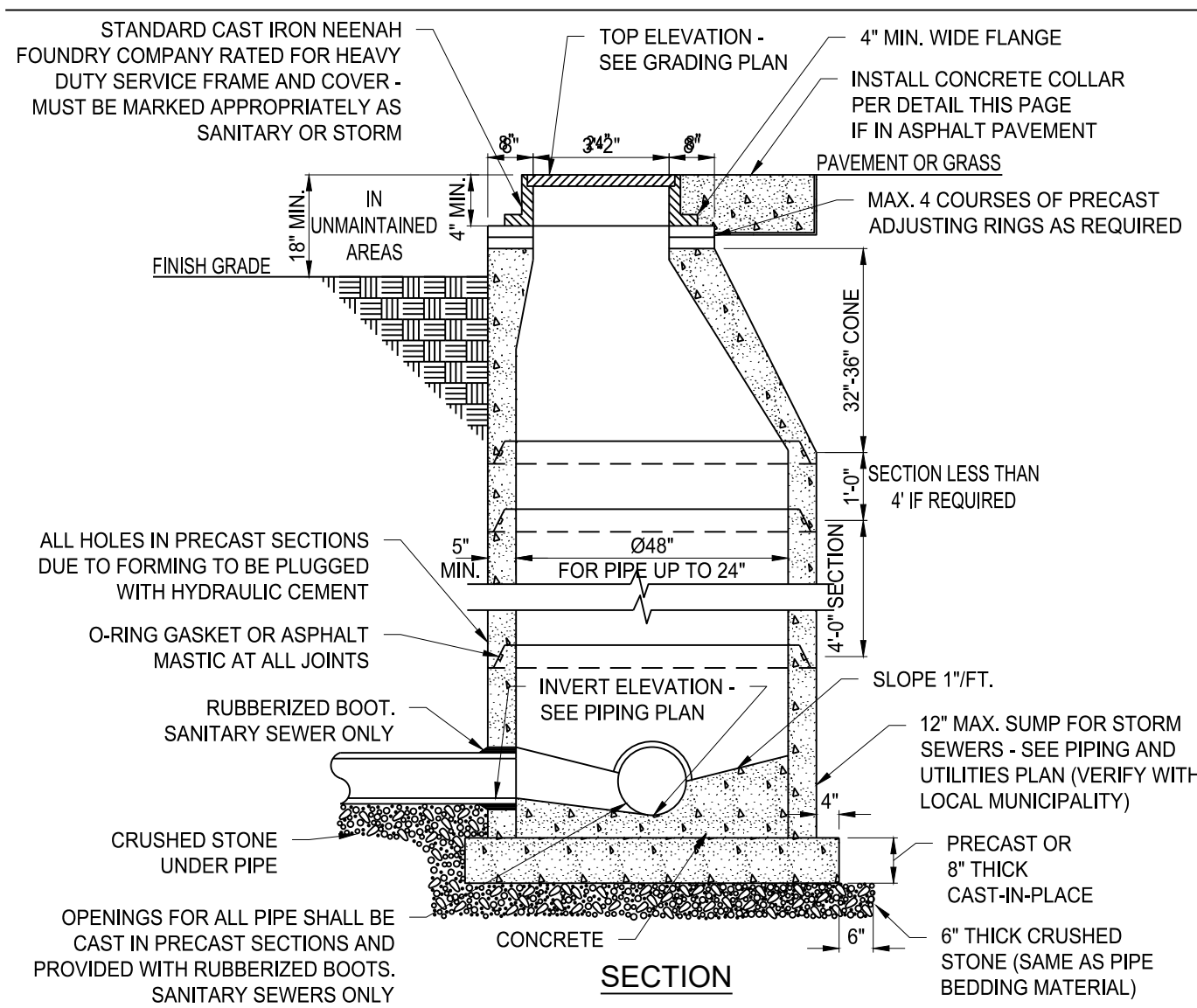
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Project Number: 764708
Scale: N/A
Drawn By: TEP
Checked By: JDC
Date: 08/12/2025
Issue: CONSTRUCTION PLANS

Drawing Title:
DETAILS

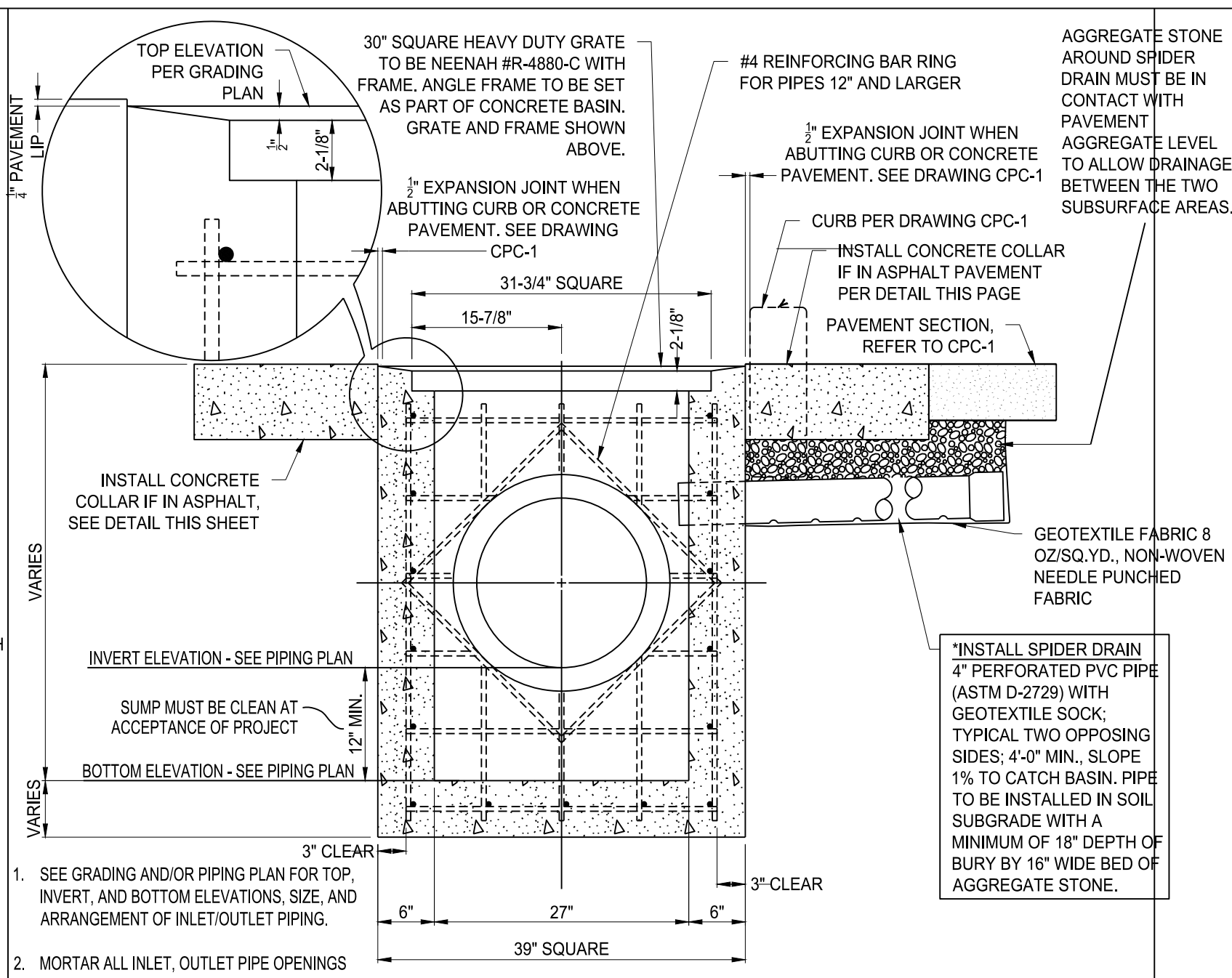
CYE-A

Drainage & Utility Details & Specifications



- MANHOLES SHOWN ON THE PLOT OR PIPING PLAN SHALL BE PRECAST CONCRETE AND CONSTRUCTED OF MATERIALS AND IN A MANNER MEETING THE SPECIFICATIONS OF ASTM C-478 AND THE PUBLIC AUTHORITY HAVING JURISDICTION.
 - SEE GRADING AND/OR PIPING PLAN FOR TOP AND INVERT ELEVATIONS, SIZE AND ARRANGEMENT OF INLET/OUTLET PIPING.
 - ADDITIONAL MASONRY BRICK OR BLOCK WORK IS NOT PERMITTED TO MEET SURFACE ELEVATION.
 - OBTAIN APPROVAL OF MANUFACTURER'S STRUCTURAL ENGINEER FOR DEPTHS EXCEEDING 10'.
- FOR SANITARY SEWERS ONLY**
- THE BOTTOM OF THE MANHOLE SHALL BE CONTOURED WITH CONCRETE TO CHANNEL THE FLOW THROUGH THE MANHOLE.
 - WHEN SPECIFIED ON THE PLANS, AN EXTERIOR "DROP" MANHOLE SHALL BE CONSTRUCTED PER LOCAL SPECIFICATIONS.

A STANDARD MANHOLE
NOT TO SCALE



- SEE GRADING AND/OR PIPING PLAN FOR TOP, INVERT, AND BOTTOM ELEVATIONS, SIZE, AND ARRANGEMENT OF INLET/OUTLET PIPING.
 - MORTAR ALL INLET, OUTLET PIPE OPENINGS WITH HYDRAULIC CEMENT GROUT.
 - REINFORCEMENT: PLACE #4 REBARS AT 8" CENTER TO CENTER BOTH WAYS IN WALLS AND FLOOR. INCLUDE #4 REBAR RING AROUND ALL OPENINGS 12" AND LARGER.
 - ADDITIONAL MASONRY BRICK OR BLOCK WORK IS NOT PERMITTED TO MEET SURFACE ELEVATION.
- NOTE: PREFAB UNIT, MEETING STRENGTH EQUIVALENCE, MAY BE SUBSTITUTED IF APPROVED BY OWNERS REP.

C HEAVY DUTY CATCH BASIN
FOR OUTLETS UP TO 18" R.C.P. TO BE USED IN HIGH STRENGTH PAVEMENT AREAS

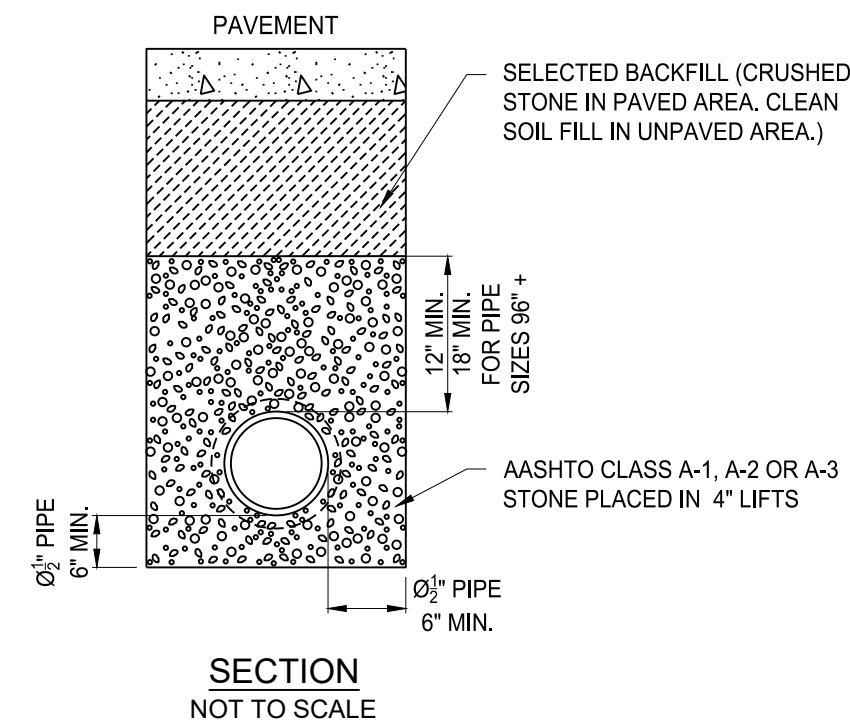
D GEOTEXTILE FABRIC SPECIFICATIONS
GENERAL NOTES:

- ALL STORM AND SANITARY PIPING SHALL BE THE SIZE AND TYPE SHOWN ON THE GRADING OR PIPING PLAN, AND SHALL CONFORM TO THE ASTM AND AASHTO STANDARD SPECIFICATIONS LISTED HERE, UNLESS OTHERWISE REQUIRED BY GOVERNING AUTHORITIES.
- CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF 7-ELEVEN'S SPECIFICATIONS.
- CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO STARTING ANY BELOW GRADE WORK TO LOCATE UNDERGROUND FACILITIES.
- ALL SANITARY SEWERS SHALL HAVE "PREMIUM" SEALED JOINTS. STORM SEWERS WITHIN 20' OF HYDROCARBON PRODUCT PIPING OR UNDERGROUND TANKS SHALL HAVE "PREMIUM SEALED JOINTS."
- THE PIPE INVERT SHALL BE STRAIGHT LINE GRADED BETWEEN ELEVATIONS SHOWN ON THE PLAN.
- PIPE SHALL BE LAID FROM THE LOWER ELEVATION TO THE HIGHER ELEVATION.
- CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS PRIOR TO BEGINNING WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
- PIPING TO BE MIN. 12" BELOW TOP OF RIGID PAVEMENT, BOTTOM OF FLEXIBLE PAVEMENT, OR FINISHED GRADE IN NON-TRAFFIC AREAS. APPLICABLE AASHTO OR AISI GUIDELINES SHALL OVERRIDE AND GOVERN MINIMUM COVER HEIGHTS WHEN GREATER THAN STATED ABOVE.
- SEE DRAWING # SCB-1 FOR CANOPY DOWNSPOUT DRAIN DETAILS.

MINIMUM DEPTH OF BURY:
(SEE NOTE #8)

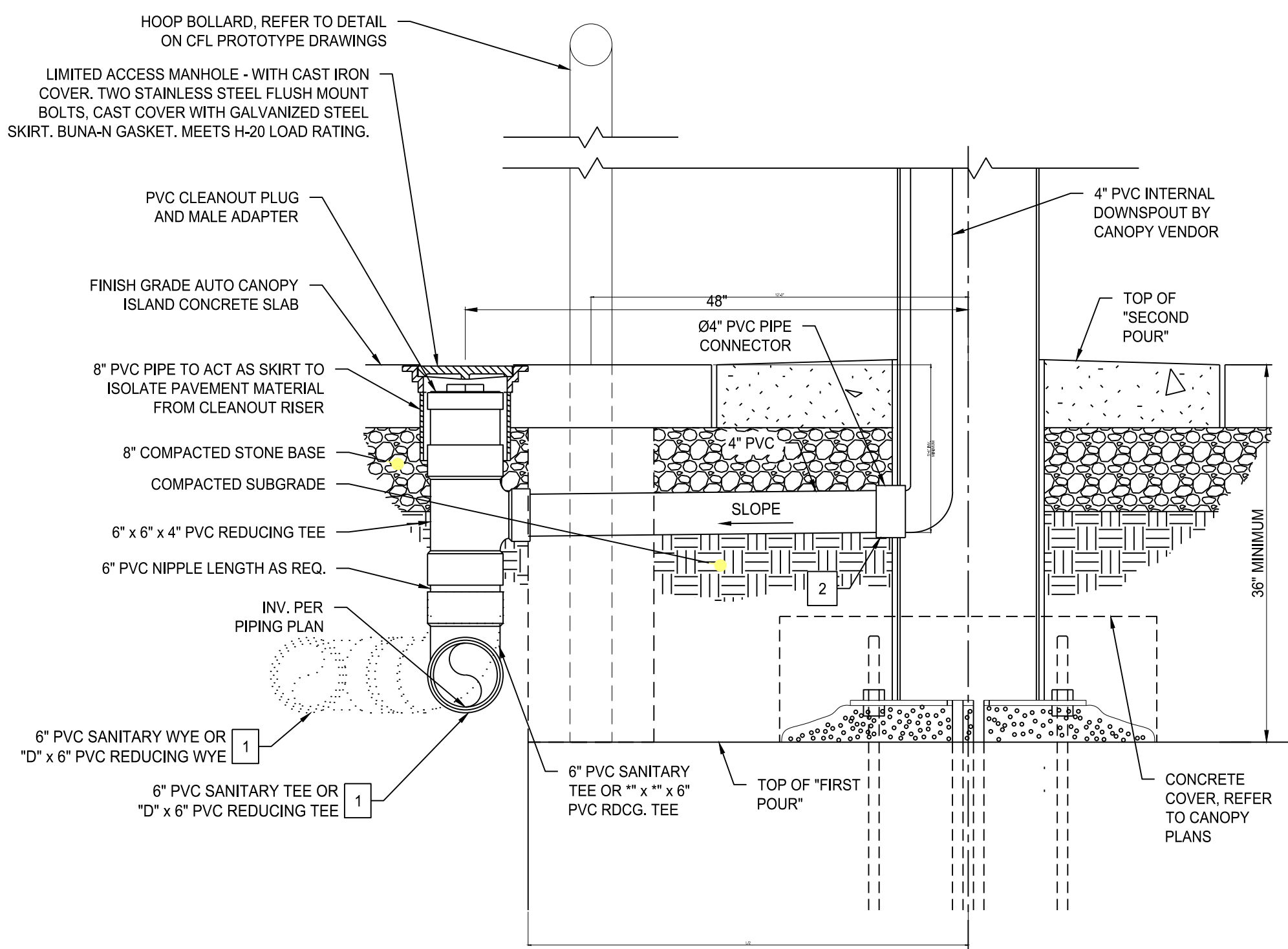
PVC	18"
RCP	12"
HDPE	18"

NOTE: REFER TO GEOTECHNICAL REPORT FOR PLACEMENT RECOMMENDATION. INSTALL WHEN MANHOLE OR CATCH BASIN CASTING OCCURS AT LOW POINTS AND CLAYEY SUBGRADES. SEE DETAIL B AND C THIS SHEET.



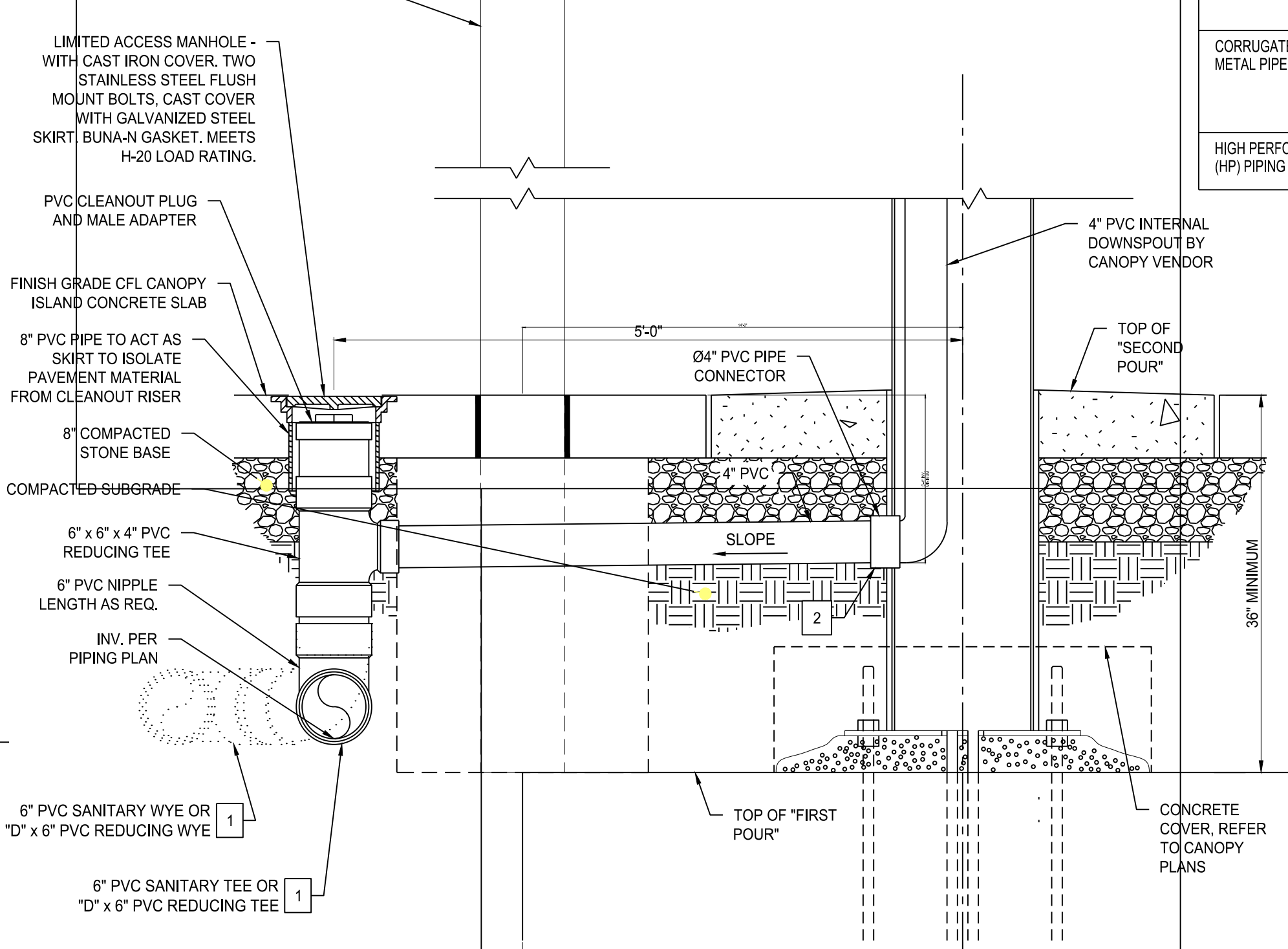
H PIPE BEDDING
NOT TO SCALE

PIPE SPECIFICATIONS							
TYPE OF PIPE	"I" VALUES	SIZES PERMITTED	SERVICE AND USE	PIPE SPECIFICATION	INSTALLATION SPECIFICATION	JOINT SPECIFICATION	PREMIUM JOINTS
POLY-VINYL CHLORIDE (PVC)	0.01	6"	SANITARY SEWER	ASTM D-3034 SDR 35	ASTM D-2321	ASTM D-3212	ASTM F-477
		8" - 12"	STORM DRAINAGE	STANDARD SPECIFICATION FOR TYPE PSM PVC SEWER PIPE AND FITTINGS	STANDARD PRACTICE FOR INSTALLATION OF FLEXIBLE THERMOPLASTIC SEWER PIPE	STANDARD SPECIFICATION FOR JOINTS FOR DRAIN AND SEWER PLASTIC PIPES USING FLEXIBLE ELASTOMERIC SEALS	ELASTOMERIC SEALS FOR JOINING PLASTIC PIPE (OIL RESISTANT) HIGH NITRILE (NBR), EPICHLOROHYDRIN (ECO), NEOPRENE (CR), POLYSULFIDE (T), OR FLUORO ELASTOMER (FPM)
REINFORCED CONCRETE (RCP)	0.013	Ø12" AND LARGER	STORM DRAINAGE	ASTM C-76, ASTM C1479 CLASS 3, WALL B-TONGUE AND GROOVE	PIPE BEDDING PER DETAIL	BITUMINOUS MASTIC	ASTM C-443
			STANDARD SPECIFICATION FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE	WHEN OUTLETTING TO SURFACE GRADE FLARED END SECTION MUST BE USED	STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE. USING RUBBER GASKETS (OIL RESISTANT)		
SMOOTH LINED CORRUGATED HDPE N-12 BY ADVANCED DRAINAGE SYSTEMS (800) 333-8554	0.012	8" AND LARGER	STORM DRAINAGE	AASHTO M294-S	ASTM D-2321	STANDARD COUPLERS (PRO LINK)	PVC DOUBLE BELL COUPLER WITH GASKET (PRO LINK 10.8)
		12" AND LARGER	STORM DRAINAGE	AASHTO M294-S	ASTM D-2321	USE GASKET IN FINE SOILS BELL & SPIGOT WITH GASKET (SURE-LOK)	AVAILABLE THROUGH 24" BELL & SPIGOT WITH POLYISOPRENE GASKET (SURE-LOK 10.8)
DUCTILE IRON (DI)	0.012	4" - 12"	SPECIAL	ASTM A-746 CLASS 50 STANDARD SPECIFICATION FOR DUCTILE IRON GRAVITY SEWER PIPE	PIPE BEDDING PER DETAIL	RUBBER GASKET COMPRESSION TYPE JOINT	GASKET TO BE OIL RESISTANT NITRILE-BUTADIENE (NBR)
			UNDERDRAINS AND SEPTIC DISPOSAL FIELDS ONLY	ASTM F-405	SEE UNDERDRAIN DETAIL	STANDARD COUPLINGS	NA
CORRUGATED METAL PIPE (CMP)	0.022	Ø12" AND LARGER	STORM DRAINAGE	ASTM A-780	STANDARD SPECIFICATION FOR CORRUGATED METAL PIPE, METALLIC-COATED FOR SEWERS AND DRAINS	STANDARD COUPLINGS	NA
			STORM DRAINAGE	AASHTO M330	ASTM D2321	WATER TIGHT	EXTENDED REINFORCED INTEGRAL BELL AND GASKETED SPIGOT
HIGH PERFORMANCE (HP) PIPING	0.012	12" - 60"	STORM DRAINAGE	AASHTO M330	ASTM D2321	WATER TIGHT	EXTENDED REINFORCED INTEGRAL BELL AND GASKETED SPIGOT



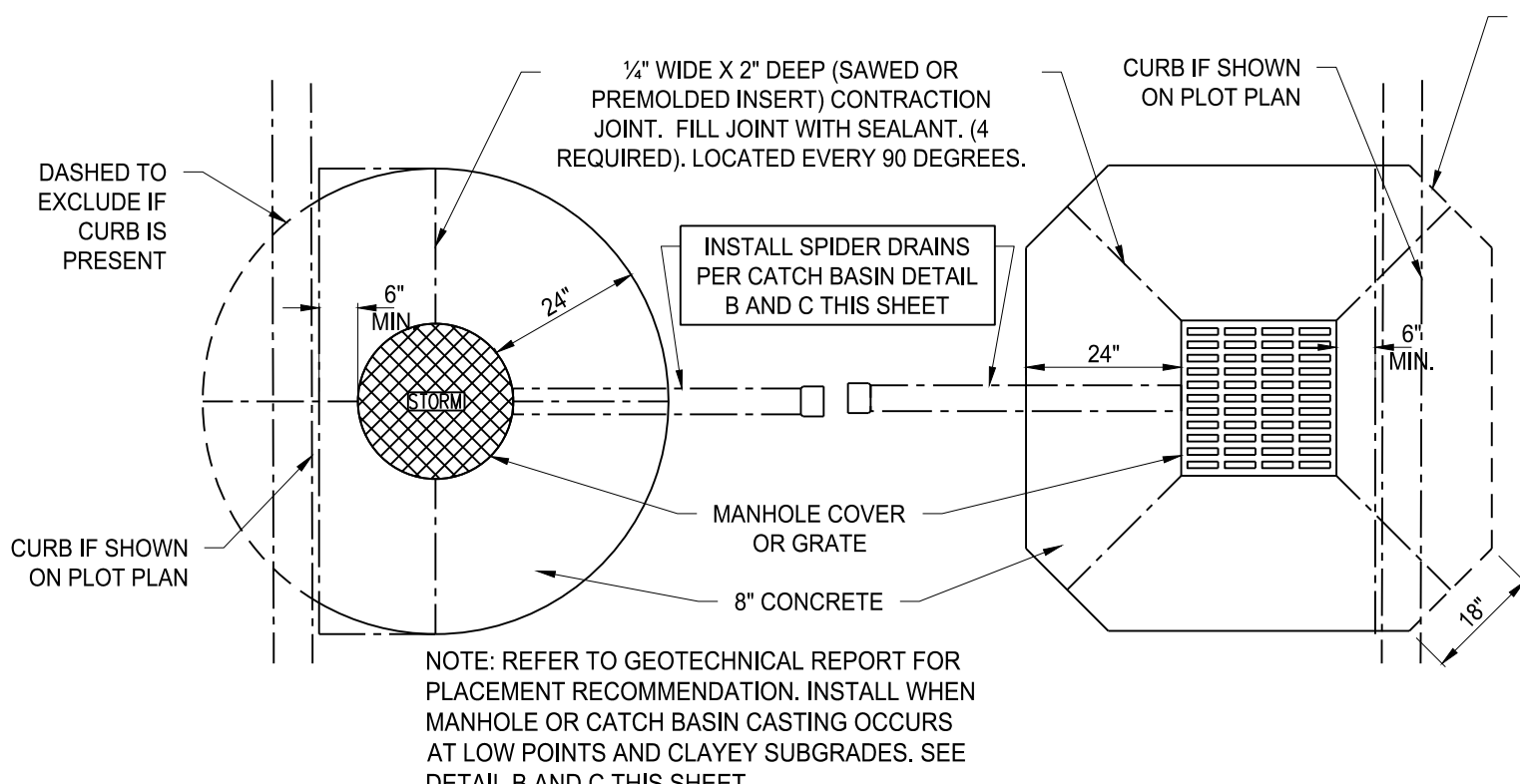
- GENERAL NOTES**
- CANOPY CLEANOUT LOCATIONS PREFERENCES
 - AUTO STARTING GATE - AWAY FROM PRODUCT PIPING OPPOSITE THE BUILDING SIDE COLUMNS
 - AUTO STACKED - AWAY FROM PRODUCT PIPING OPPOSITE BOTH ROWS OF COLUMNS
 - REFER TO FUEL PROTOTYPE DRAWINGS FOR AUTO DISPENSER ISLAND (NOT SHOWN HEREON) DETAILS.
 - REFER TO CIVIL PROTOTYPE DRAWINGS SHEET CPC-1 FOR AUTO CANOPY PAVEMENT DETAIL.
- SECTION "A-A" KEY NOTES**
- "D" = SIZE OF ROOF DRAIN COLLECTOR PIPE. REFER TO PIPING PLAN TO VERIFY SIZE OF COLLECTOR PIPE.
 - REFER TO DIVISION OF WORK FOR G.C. CONNECTION TO ROOF DRAIN AT COLUMN.

1 SECTION "A-A" - INTERNAL DOWNSPOUT (AUTO CANOPY COLUMNS)
1"=1'-0"



- GENERAL NOTES**
- CANOPY CLEANOUT LOCATION PREFERENCES
 - CFL - AWAY FROM PRODUCT PIPING OPPOSITE OF ENTRY SIDE COLUMNS
 - REFER TO CFL PROTOTYPE DRAWINGS FOR CFL DISPENSER ISLAND (NOT SHOWN HEREON) DETAILS.
 - REFER TO CIVIL PROTOTYPE DRAWINGS SHEET CPC-1 FOR CFL CANOPY PAVEMENT DETAIL.
- SECTION "B-B" KEY NOTES**
- "D" = SIZE OF ROOF DRAIN COLLECTOR PIPE. REFER TO PIPING PLAN TO VERIFY SIZE OF COLLECTOR PIPE.
 - REFER TO DIVISION OF WORK FOR G.C. CONNECTION TO ROOF DRAIN AT COLUMN.

2 SECTION "B-B" - INTERNAL DOWNSPOUT (CFL CANOPY COLUMNS)
1"=1'-0"



F CONCRETE COLLAR - ROUND GRATE & FRAME
NOT TO SCALE

CONCRETE COLLAR - SQUARE GRATE & FRAME
NOT TO SCALE



7-ELEVEN - KALAMAZOO
3050 OAKLAND DRIVE
KALAMAZOO, MICHIGAN 49008

Revisions / Submissions

ID	Description	Date

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Project Number: 764708
Scale: N/A
Drawn By: TEP
Checked By: JDC
Date: 08/12/2025
Issue: CONSTRUCTION PLANS

Drawing Title:
DETAILS

CUD1

September 9, 2025

NOTICE OF UPCOMING PROJECT

7-Eleven (AKA Speedway) Remodel

3050 Oakland Dr., Kalamazoo, MI 49008

Project Information:

This project involves the reconfiguration of an existing Speedway convenience store and fueling station. The scope of work includes the removal and replacement of the existing fuel dispensers, storm sewer system, and underground fuel storage tanks. In addition, the associated pavement in the areas impacted by this work will be removed and reconstructed as necessary to accommodate the new infrastructure. The improvements are intended to modernize the fueling facilities, upgrade site utilities, and restore pavement to ensure safe and efficient site operations.

Plan Information:

A copy of the demolition and site plan sheets is included in this mailing. The full plan set can be viewed at this link: <https://tinyurl.com/ytapp2na>

Original link: <https://acc.autodesk.com/docs/share/projects/d7b2dc26-b62d-47cc-8f4d-84bb4fe4b2f1/files?shareId=2305fbd-2899-4696-a26b-f9f7ee87bb00>

Project Questions/Comments:

Any project-related questions or comments can be directed to:

Mandy Gauss
Senior Project Manager
CESO, Inc.
mandy.gauss@cesoinc.com
586-855-8130

Project Schedule:

- City of Kalamazoo Site Plan Review Submittal: **August 2025**
- City of Kalamazoo Natural Features Protection (NFP) Review Meeting: **September 23, 2025**
 - NFP Standards to be reviewed: removal and replacement of the existing fuel dispensers, storm sewer system, and underground fuel storage tanks.
- Construction Timeline: **October 2025 – November 2025** (estimated)

Mandy Gauss
CESO
13060 S. US Hwy 27, Suite D
Dewitt, MI 48820

September 9, 2025

Re: Rare Species Review #5560 – 3050 Oakland Dr Kalamazoo MI - Gas Station Rare Species Review, Kalamazoo County, MI

Hello:

The location for the proposed project was checked against known localities for rare species and unique natural features, which are recorded in the Michigan Natural Features Inventory (MNFI) natural heritage database. This continuously updated database is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features. The absence of records in the database for a particular site may mean that the site has not been surveyed. The only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, ...fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Michigan Department of Natural Resources (MDNR), Wildlife Division. Responsibility to protect endangered and threatened species is not limited to the lists below. Other species may be present that have not been recorded in the database.



MSU EXTENSION

Michigan Natural Features Inventory

PO Box 13036
Lansing MI 48901

(517) 284-6200
Fax (517) 373-9566

mnfi.anr.msu.edu

Several at-risk species and/or natural communities have been documented within 1.5 miles of the project location and it is possible that adverse impacts will occur. This response reflects a desktop review of the database and MNFI cannot fully evaluate this project without visiting the area. MNFI offers several levels of [Rare Species Reviews](#), including field surveys which I would be happy to discuss with you.

Sincerely,

Nicolette Sexton

Nicolette Sexton
Environmental Review Assistant
Michigan Natural Features Inventory

Comments for Rare Species Review #5560

It is important to note that it is the applicant’s responsibility to comply with both state and federal threatened and endangered species legislation. Therefore, if a state listed species occurs at a project site, and you think you need an endangered species permit, please contact Amy Bleisch at DNR-Wildlife Division, DNR-StateTEPermit@michigan.gov and review details on the [MDNR’s Threatened/Endangered Species](#) resource page. If a federally listed species is involved and, you think a permit is needed, please contact Jessica Pruden, U.S. Fish and Wildlife Service, East Lansing office, 517-351-8316, or Jessica.Pruden@fws.gov.

NOTE: Special concern species and natural communities are not protected under endangered species legislation, but efforts should be taken to minimize any or all impacts. Please consult MNFI’s [Rare Species pages](#) for additional information on Michigan’s rare plants and animals.

Table 1: Occurrences of Threatened & Endangered Species within 1.5 miles of Project Site

Element Category	Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	EO Rank	First Observed Date	Last Observed Date
Animal	<i>Bombus affinis</i>	Rusty-patched bumble bee	LE	E	G2	SH	H	1963-07-25	1975-07-12
Animal	<i>Clemmys guttata</i>	Spotted turtle		T	G5	S2	H	1958	1958-04-21
Animal	<i>Sistrurus catenatus</i>	Eastern massasauga	LT	T	G3	S3	D	1993	2004
Animal	<i>Terrapene carolina carolina</i>	Eastern box turtle		T	G5T5	S2S3	H	1978	1978-06-21
Animal	<i>Terrapene carolina carolina</i>	Eastern box turtle		T	G5T5	S2S3	E	2002-04-26	2025-04-29
Animal	<i>Terrapene carolina carolina</i>	Eastern box turtle		T	G5T5	S2S3	E	2000-07-03	2024-06-14
Animal	<i>Terrapene carolina carolina</i>	Eastern box turtle		T	G5T5	S2S3	E	2019-08-08	2023-08-24
Plant	<i>Boechea missouriensis</i>	Missouri rock-cress		T	G5	S2	H	1947	1947
Plant	<i>Bouteloua curtipendula</i>	Side-oats grama grass		E	G5	S1	D	2005-11-16	2005-11-16
Plant	<i>Dichanthelium leibergii</i>	Leiberg's panic grass		T	G4	S2	E	1926	1997
Plant	<i>Dichanthelium leibergii</i>	Leiberg's panic grass		T	G4	S2	E	1940	2013-07-03
Plant	<i>Eryngium yuccifolium</i>	Rattlesnake-master or button snakeroot		E	G5	S2	X	1979	1979-10-31
Plant	<i>Eryngium yuccifolium</i>	Rattlesnake-master or button snakeroot		E	G5	S2	F	1980-06-16	1980-06-16
Plant	<i>Mertensia virginica</i>	Virginia bluebells		T	G5	S1S2	E	2025-04-27	2025-04-29

Plant	<i>Panax quinquefolius</i>	Ginseng		T	G3G4	S2S3	H	1838-07-27	1838-07-27
Plant	<i>Silene stellata</i>	Starry campion		T	G5	S2	D	1983-07-28	2019-07-02
Plant	<i>Silphium integrifolium</i>	Rosinweed		T	G5	S2	CD	1979	1983-07-28
Plant	<i>Silphium integrifolium</i>	Rosinweed		T	G5	S2	C	1962	2019-09-18
Plant	<i>Silphium laciniatum</i>	Compass plant		E	G5	S1S2	E	1970	1980-06-16
Plant	<i>Synthyris bullii</i>	Kitten-tails		E	G3	S1	H	1932-05-20	1932-05-20
Plant	<i>Trillium sessile</i>	Toadshade		T	G5	S2S3	E	2025-04-29	2025-04-29
Plant	<i>Zizania aquatica</i>	Wild rice		T	G5	S2S3	B	2005-09-15	2005-09-15

Comments for Table 1

Most of the above EO's are historical and/or far removed from the project area and are not of concern. However, impacts are possible for the eastern box turtle EO's above. See species comments below:

Species Comments for Table 1

Eastern box turtle (*Terrapene carolina carolina*)

Habitat

The Eastern Box Turtle is Michigan's only truly terrestrial turtle. It typically occurs in forested habitats with sandy soils near a source of water such as a stream, pond, lake, marsh or swamp. They also may be found in adjacent thickets, old fields, pastures, or vegetated dunes. Access to unshaded nesting sites in sandy, open areas, is critical for successful reproduction. This species has been observed in several locations within the 1.5-mile buffer of the project area and suitable habitat appears to occur within the project area.

Management Recommendations

Conservation efforts should concentrate on protecting large tracts of habitat especially on public land to provide the box turtle additional protection from the effects of development. Wetland hydrology and quality should be maintained by preventing improper off-road vehicle use, implementing minimum development set-back distances, leaving buffer zones during timber harvest, grazing and agricultural operations, minimizing use of herbicides and pesticides in or near wetlands, and/or controlling invasive plants. Upland nesting areas should be identified, protected and in some cases created. Construction of new roads should be minimized or routed to avoid separating foraging and/or overwintering habitat from nesting areas. Finally, the public should be educated about the laws protecting reptiles and amphibians and encouraged to leave wild turtles in their natural habitats rather than collecting them for pets.

For more information, see the [Terrapene carolina carolina](#) species page on the MNFI website.

Table 2: Occurrences of Special Concern Species and Natural Communities within 1.5 miles of Project Site

Element Category	Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	EO Rank	First Observed Date	Last Observed Date
Animal	<i>Buteo lineatus</i>	Red-shouldered hawk		SC	G5	S4	E	2022-04-15	2022-04-15
Animal	<i>Emydoidea blandingii</i>	Blanding's turtle		SC	G4	S2S3		2000-04-22	2019-08-07
Animal	<i>Fontigens nickliniana</i>	Watercress snail		SC	G5	S2S3	E	2022-10-05	2022-10-05
Animal	<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker		SC	G5	S3	E	2024-06-15	2024-06-15
Animal	<i>Pandion haliaetus</i>	Osprey		SC	G5	S4	E	2022-07-20	2022-07-20
Animal	<i>Pantherophis spiloides</i>	Gray rat snake		SC	G4G5	S2S3		2000-08-28	2000-08-28
Animal	<i>Utterbackia imbecillis</i>	Paper pondshell		SC	G5	S2S3	E	2018-07-25	2018-07-25
Plant	<i>Amorpha canescens</i>	Leadplant		SC	G5	S3	X	1980	1990
Plant	<i>Arnoglossum plantagineum</i>	Prairie indian-plantain		SC	G5	S3	CD	2002-07-15	2002-07-15
Plant	<i>Berula erecta</i>	Cut-leaved water parsnip		SC	G4G5	S2	C	2002-07-15	2002-07-15
Plant	<i>Eleocharis equisetoides</i>	Horsetail spike rush		SC	G4	S3	H	1936	1936-08-04
Plant	<i>Sporobolus heterolepis</i>	Prairie dropseed		SC	G5	S3	H	1933	1933-07-21
Plant	<i>Sporobolus heterolepis</i>	Prairie dropseed		SC	G5	S3	F	1940	1940-08-01

Comments for Table 2

Most of the above EO's are historical and/or far removed from the project area and are not of concern. However, impacts are possible for the gray rat snake and Blanding's turtle EO's. See species comments below:

Species Comments for Table 2

Gray rat snake (*Pantherophis spiloides*)

Habitat

Gray Ratsnakes usually occur in forested habitats, primarily deciduous forests, but they also use adjacent open habitats including shrubby fields, prairies and marsh and bog edges. Gray Ratsnakes also are often found in or around barns, outbuildings, old foundations and trash dumps. The Gray Ratsnake is a very good climber and often climbs trees to eat nestling birds or eggs. Gray Ratsnakes hibernate in mammal burrows, root networks, rock crevices or other burrows or crevices that provide refuge from freezing temperatures. Gray Ratsnakes deposit eggs in loose soil, rotted stumps or logs, sawdust piles or cavities under rocks, boards or other cover. This species has been observed 1 mile from the project area and suitable habitat appears to occur within the project area.

Management Recommendations

Protecting known populations and maintaining large, contiguous forested habitat complexes or mosaics of forested and open habitats are essential for conservation of this species. These snakes rapidly disappear with deforestation, but they may persist in patches of forest. Partial timber harvest techniques and low-intensity agricultural uses that create mosaics of forested and open habitats would benefit this species. Management activities that have potential to cause take or adverse impacts on Gray Ratsnakes (e.g., timber harvesting, use of heavy equipment, mowing) should be conducted when the snakes are inactive or less active (i.e., November to March) to minimize the potential for adverse impacts. To reduce habitat fragmentation and road mortality, construction of new roads through suitable habitat complexes for Gray Ratsnakes should be discouraged or minimized, and closure of existing roads through suitable habitat complexes should be considered. Surveys and research are needed to determine this species' status and distribution and investigate this species' ecology and conservation and management needs in Michigan. Public education also is needed to communicate the harmless nature of this snake, demonstrate the value and benefits of maintaining this species (e.g., its consumption of rodents makes it useful in agricultural areas) and discourage persecution and harassment.

For more information, see the [Pantherophis spiloides](#) species page on the MNFI website.

Blanding's turtle (*Emydoidea blandingii*)

Habitat

Blanding's Turtles inhabit clean, shallow waters with abundant aquatic vegetation and soft muddy bottoms over firm substrates. This species is found in ponds, marshes, swamps, bogs, wet prairies, river backwaters, embayments, sloughs, slow-moving rivers, and lake shallows and inlets. Blanding's Turtles also occupy terrestrial habitats in the spring and summer during the mating and nesting seasons and in the fall to a lesser extent. Females nest in open uplands adjacent to wetland habitats, preferring sunny areas with moist but well-drained sandy or loamy soil. They will nest in lawns, gardens, plowed fields or even gravel road embankments if suitable natural nesting habitat is not available. This species has been observed within 1 mile of the project area and suitable habitat appears to occur within the project area.

Management Recommendations

The most critical conservation need for this species is protection and management of suitable wetland

and adjacent upland habitats. Maintaining good water quality, restricting herbicide and pesticide use in or near wetlands, implementing minimum development set-back distances, leaving buffer zones during timber harvest, grazing and agricultural operations, and minimizing the construction of roads in or near suitable wetlands would be beneficial to this species. Timber harvesting can benefit this species by creating or maintaining open habitat conditions for thermoregulation and nesting. Minimizing adult mortality or removal is crucial for population viability given this species' life history. Thus, habitat management activities should be conducted in such a manner so as to minimize the potential for causing take of adults (e.g., timber harvesting during the inactive season). Minimizing road mortality and illegal collection also would be beneficial to this species. In some cases, on-site protection of nest sites and predator control may be necessary to facilitate or increase successful reproduction or population recruitment.

For more information, see the [Emydoidea blandingii](#) species page on the MNFI website.

Codes to accompany table

State Protection Status Code Definitions

E = Endangered

T = Threatened

SC = Special concern

Federal Protection Status Code Definitions

LE = listed endangered

LT = listed threatened

LELT = partly listed endangered and partly listed threatened

PDL = proposed delist

E(S/A) = endangered based on similarities/appearance

PS = partial status (federally listed in only part of its range)

C = species being considered for federal status

Global Heritage Status Rank Definitions (G RANK)

The priority assigned by [NatureServe](#)'s national office for data collection and protection based upon the element's status throughout its entire world-wide range. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 = imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

Q = Taxonomy uncertain

State Heritage Status Rank Definitions (S RANK)

The priority assigned by the Michigan Natural Features Inventory for data collection and protection based upon the element's status within the state. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

S1 = Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.

S2 = Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.

S3 = Rare or uncommon in state (on the order of 21 to 100 occurrences). S4 = apparently secure in state, with many occurrences.

S5 = demonstrably secure in state and essentially ineradicable under present conditions.

SX = apparently extirpated from state.

EO Rank Codes

Element Occurrence (EO) ranks refer to the viability or ecological integrity of the occurrence; they provide an assessment of the likelihood that if current conditions prevail the EO will persist for a defined period of time, typically 20-100 years.

- A - Excellent estimated viability/ecological integrity
- A? - Possibly excellent estimated viability/ecological integrity
- AB - Excellent or good estimated viability/ecological integrity
- AC - Excellent, good, or fair estimated viability/ecological integrity
- B - Good estimated viability/ecological integrity
- B? - Possibly good estimated viability/ecological integrity
- BC - Good or fair estimated viability/ecological integrity
- BD - Good, fair, or poor estimated viability/ecological integrity
- C - Fair estimated viability/ecological integrity
- C? - Possibly fair estimated viability/ecological integrity
- CD - Fair or poor estimated viability/ecological integrity
- D - Poor estimated viability/ecological integrity
- D? - Possibly poor estimated viability/ecological integrity
- E - Verified extant (viability/ecological integrity not assessed)
- F - Failed to find
- F? - Possibly failed to find
- H - Historical
- H? - Possibly historical
- X - Extirpated
- X? - Possibly extirpated
- U - Unrankable
- NR - Not ranked

Section 7 Comments for Rare Species Review #5560

3050 Oakland Dr Kalamazoo MI - Gas Station Rare Species Review, Kalamazoo County, MI

Mandy Gauss

CESO

13060 S. US Hwy 27, Suite D

Dewitt, MI 48820

September 9, 2025

For projects involving Federal funding or a federal agency authorization

The following information is provided to assist you with Section 7 compliance of the Federal Endangered Species Act (ESA). The ESA directs all Federal agencies "to work to conserve endangered and threatened species. Section 7 of the ESA, called "Interagency Cooperation," is the means by which Federal agencies ensure their actions, including those they authorize or fund, do not jeopardize the existence of any listed species."

The project falls within the range of the following federally listed/proposed/candidate species which have been identified by the U.S. Fish and Wildlife Service (USFWS) to occur in Kalamazoo County, Michigan:

Federally Endangered

Indiana bat – there does appear to be suitable habitat within 1.5 miles of the project. Indiana bats (*Myotis sodalis*) are found only in the eastern United States and are typically confined to the southern three tiers of counties in Michigan. Indiana bats that summer in Michigan winter in caves in Indiana and Kentucky. This species forms colonies and forages in riparian and mature floodplain habitats. Nursery roost sites are usually located under loose bark or in hollows of trees near riparian habitat. Indiana bats typically avoid houses or other artificial structures and typically roost underneath loose bark of dead elm, maple and ash trees. Other dead trees used include oak, hickory and cottonwood. Foraging typically occurs over slow-moving, wooded streams and rivers as well as in the canopy of mature trees. Movements may also extend into the outer edge of the floodplain and to nearby solitary trees. A summer colony's foraging area usually encompasses a stretch of stream over a half-mile in length. Upland areas isolated from floodplains and non-wooded streams are generally avoided.

Management and Conservation: Every March, the USFWS publishes [survey guidelines](#) to assist project proponents (both Federal and non-Federal) with conservation planning for Federally listed bats in Michigan. We strongly encourage project managers and their designated representatives to use the U.S. Fish and Wildlife Service (USFWS) online planning tool [Information for Planning and Consultation](#) (IPaC) to evaluate potential effects of proposed activities on listed bats and other Federally listed species in Michigan. Projects that complete consultation or coordination through IPaC automatically adhere to the recommendations provided in these guidelines and are not required to implement any additional conservation measures for listed bats.

Snuffbox – there does appear to be suitable habitat within 1.5 miles of the project. The state and federally endangered snuffbox mussel (*Epioblasma triquetra*) inhabits rivers and streams with cobble, gravel, or sand bottoms in swift currents and usually is deeply buried in the substrate. Glochidia, the parasitic larval stage of the mussel, are released from May to mid-July. In Michigan, the only host fish known for snuffbox is the log perch (*Percina caprodes*). In other parts of their range the banded sculpin (*Cottus carolinae*) is also a known host. After completing the parasitic stage and reaching adulthood, snuffbox remain relatively sessile on the river bottom, living between 8-10 years. The best time to survey for snuffbox is April through September.

Management and Conservation: the snuffbox mussel is sensitive to river impoundment, siltation, and disturbance, due to its requirement for clean, swift current and relative immobility as an adult. To maintain the current populations in Michigan, rivers need to be protected to reduce silt loading and run-off. Maintaining or establishing vegetated riparian buffers can aid in controlling many of the threats to mussels. Control of zebra mussels is critical to preserving native

mussels. And as with all mussels, protection of their hosts habitat is also crucial. Because the life cycle of the snuffbox is inherently linked with that of the logperch in Michigan, conservation and management of this fish species is needed to ensure that of the snuffbox.

Mitchell's satyr butterfly – there does not appear to be suitable habitat within 1.5 miles of the project. The federally endangered and state endangered Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*) is restricted to calcareous wetlands known as prairie fens. In Michigan, this habitat is characterized by scattered tamaracks, poison sumac, and dogwood with a ground cover of sedges, shrubby cinquefoil, and a variety of herbaceous species with prairie affinities. Adult Mitchell's satyr butterflies are active two to three weeks each summer, with males emerging before females. Adult flight dates are from mid-June to mid-July. Larvae hibernate near the bottom of a sedge. The larval food plant is thought to be several species of sedge. The caterpillar is green with white stripes.

Management and Conservation: the primary threat to the continued survival of this species is habitat loss and modification. Many of the wetland complexes occupied currently have been altered or drained for agriculture or development. Wetland alteration is responsible for extirpating the single known satyr population in Ohio. Wetland alteration also can lead to invasion by exotic plant species such as glossy buckthorn (*Rhamnus frangula*), purple loosestrife (*Lythrum salicaria*), common buckthorn (*Rhamnus cathartica*), and the common reed (*Phragmites australis*). In addition, landscape-scale processes that may be important for maintaining suitable satyr habitat and/or creating new habitat, such as wildfires, fluctuations in hydrologic regimes, and flooding from beaver (*Castor canadensis*) activity, have been virtually eliminated or altered throughout the species' range.

Northern long-eared bat – Northern long-eared bat (*M. septentrionalis*) numbers in the northeast US have declined up to 99 percent. Loss or degradation of summer habitat, wind turbines, disturbance to hibernacula, predation, and pesticides have contributed to declines in Northern long-eared bat populations. However, no other threat has been as severe to the decline as White-nose Syndrome (WNS). WNS is a fungus that thrives in the cold, damp conditions in caves and mines where bats hibernate. The disease is believed to disrupt the hibernation cycle by causing bats to repeatedly awake thereby depleting vital energy reserves. This species was federally listed in May 2015 primarily due to the threat from WNS.

Although no known hibernacula or roost trees have been documented within 1.5 miles of the project site, this activity occurs within the designated WNS zone (i.e., within 150 miles of positive counties/districts impacted by WNS). Also, there does appear to be suitable habitat within 1.5 miles of the project.

Also called northern bat or northern myotis, this bat is distinguished from other *Myotis* species by its long ears. In Michigan, northern long-eared bats hibernate in abandoned mines and caves in the Upper Peninsula; they also commonly hibernate in the Tippy Dam spillway in Manistee County. This species is a regional migrant with migratory distance largely determined by locations of suitable hibernacula sites.

Northern long-eared bats typically roost and forage in forested areas. During the summer, these bats roost singly or in colonies underneath bark, in cavities or in crevices of both living and dead trees. Roost trees are selected based on the suitability to retain bark or provide cavities or crevices. Common roost trees in southern Lower Michigan include species of ash, elm and maple. Foraging occurs primarily in areas along woodland edges, woodland clearings and over small woodland ponds. Moths, beetles, and small flies are common food items. Like all temperate bats this species typically produces only 1-2 young per year.

Management and Conservation: Every March, the USFWS publishes [survey guidelines](#) to assist project proponents (both Federal and non-Federal) with conservation planning for Federally listed bats in Michigan. We strongly encourage project managers and their designated representatives to use the U.S. Fish and Wildlife Service (USFWS) online planning tool [Information for Planning and Consultation](#) (IPaC) to evaluate potential effects of proposed activities on listed bats and other Federally listed species in Michigan. Projects that complete consultation or coordination through IPaC automatically adhere to the recommendations provided in these guidelines and are not required to implement any additional conservation measures for listed bats.

Federally Threatened

Eastern massasauga rattlesnake (EMR) – there does appear to be suitable habitat within 1.5 miles of the project. The project falls outside Tier 1/Tier 2 EMR habitat as designated by the U.S. Fish & Wildlife Service (USFWS). The federally threatened and state special concern Eastern massasauga rattlesnake (*Sistrurus catenatus*) is Michigan's only venomous snake and is found in a variety of wetland habitats including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests. Eastern massasaugas occur throughout the Lower Peninsula but are not found in the Upper Peninsula. Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are better known from lowland coniferous forests, such as cedar swamps. These snakes normally overwinter in crayfish or small mammal burrows often close to the groundwater level and emerge in spring as water levels rise. During late spring, these snakes move into adjacent uplands they spend the warmer months foraging in shrubby fields and grasslands in search of mice and voles, their favorite food.

Often described as “shy and sluggish”, these snakes avoid human confrontation and are not prone to strike, preferring to leave the area when they are threatened. However, like any wild animal, they will protect themselves from anything they see as a potential predator. Their short fangs can easily puncture skin and they do possess potent venom. Like many snakes, the first human reaction may be to kill the snake, but it is important to remember that all snakes play vital roles in the ecosystem. Some may eat harmful insects. Others like the massasauga consider rodents a delicacy and help control their population. Snakes are also a part of a larger food web and can provide food to eagles, herons, and several mammals.

Management and Conservation: protection of extant populations and suitable wetland and adjacent upland habitats is crucial for successful conservation of the Eastern Massasauga. Maintaining or restoring open habitat conditions is critical for this species. Fragmentation of suitable wetland-upland habitat complexes by roads or other barriers should be avoided or minimized. Land management practices such as timber harvesting, mowing, disking or prescribed burning should be conducted in such a manner so as to minimize the potential for adverse impacts to massasaugas (e.g., conducting management activities during the snakes' inactive season (November through early March) or on days when snakes are less likely to be active on the surface during the active season). Protecting suitable hibernation sites also is critical.

Copperbelly water snake – there does appear to be suitable habitat within 1.5 miles of the project. The federally threatened and state endangered copperbelly water snake (*Nerodia erythrogaster neglecta*) can grow to a length of 4-5 feet. Adult snakes are easily identified by their deep brown or black back which contrasts easily with the unmarked reddish-to-orange belly and chin.

Copperbelly water snakes are usually found in or near shrub swamps, ponds, lakes, oxbow sloughs, fens, and slow-moving streams. They can also be found in mature or second-growth woodlands and in more open habitats adjacent to wetland areas. In spring these snakes often inhabit the open edges of shallow ponds and buttonbush swamps and frequently bask on shoreline vegetation, muskrat lodges, or woody debris. When temperatures rise, and these seasonal waters begin to dry up in early summer, the snakes migrate to permanent waters (lake and stream edges), often using fairly dry wooded or grassy upland corridors. They may become largely nocturnal during hot weather. As excellent swimmers, they hunt aquatic species including tadpoles, frogs, salamanders, insect larvae, and crayfish. In the spring, tadpoles seem to be especially tasty to hungry copper-bellied water snakes.

Management and Conservation: a copperbelly water snake travels often during spring, summer, and fall. It moves to different wetlands as water levels and food availability change and then travels to and from its hibernation site. When moving to various locations, these snakes are vulnerable to predators (e.g., skunks, raccoons, raptors, and snapping turtles), especially if the snakes must travel across cleared areas, such as roads, mowed areas and farmlands. The decline of this species can be attributed to habitat loss and fragmentation, collection for the pet trade and predation. Conservation efforts should protect or create riparian corridors and habitat corridors between wetlands, protect existing and expand upland forest habitats, and reduce forest fragmentation. Permanently lowering water tables can cause seasonally inundated wetlands and hibernacula sites to become permanently dry which could lead to local population extirpations. Maintaining adequate prey base (i.e., mainly frogs) and shrub and log cover along the edge of wetlands for

cover and thermoregulation also is crucial. Please inform field crews that snakes should not be killed, harmed, or harassed. Any copperbelly water snake sightings should be reported to this office.

USFWS Section 7 Consultation Technical Assistance can be found at:

<https://www.fws.gov/service/esa-section-7-consultation>

The website offers step-by-step instructions to guide you through the Section 7 consultation process with prepared templates for documenting "no effect" as well as requesting concurrence on "may affect, but not likely to adversely affect" determinations.

Please let us know if you have questions.

Nicolette Sexton
Environmental Review Assistant
Michigan Natural Features Inventory



Natural Features Protection Guide

Table of Contents

Introduction

Adopted in 2019, the Natural Features Protection Ordinance put in place standards for the development of land on or near areas identified with Natural Features in order to achieve better management and long-term protection of these areas. Overlay districts provide an additional set of requirements for the development and use of parcels with the overlay.

When a parcel is developed, redeveloped, or the natural feature is impacted due to any site alterations, the standards for all applicable natural features are applied. The site development standards shall be applied to all parcels in the NFP Overlay District. The NFP Overlay District is intended to balance development with the consideration of natural features in the City of Kalamazoo, specifically wetlands, water resources, trees, woodlands, floodplains, slopes, natural heritage areas, and habitat corridors.



Contact

City Liaison

Nolan Bergstrom, Community Planner

Phone

311 or 269-337-8000

Email

development@kalamazoocity.org

Location

245 N Rose Street Suite 100
Kalamazoo, MI 49007

Introduction

The Creation of the NFP Overlay District & Ordinance

Guiding Principles

The creation of the NFP Overlay was guided by four principles:

- 1 Does not mean no development, means more thoughtful development as it relates to Natural Features
- 2 Standards must be protective of the defined natural feature
- 3 City staff must be able to manage and enforce standards
- 4 The ordinance must work for a variety of parcels all over the City

Phases

There are three phases to Natural Features Protection in the City:

- 1 **Engagement, Ordinance Creation, Map**
2019
- 2 **Mapping Analysis**
2020 - 2021
- 3 **Public Education & Stewardship**
2024 & Beyond

What is a Zoning Overlay?

A Zoning Overlay is a set of zoning standards applied to a property in addition to the zoning standards from the base or underlying zoning district. For properties within the NFP Overlay, the standards of today's zoning district apply in addition to those of the NFP Overlay. In cases of conflict, the NFP Overlay standards apply.

Environmental Responsibility



A green and healthy city.

Since the last Master Plan was adopted (7 years ago) we have:

Sustainability Plan & Greenhouse Gas Reports
A 10-year guiding document to create a more sustainable, resilient city and a document to detail where we are now.

1,400+ NFP Parcels Added
Protecting natural features during new and existing development projects

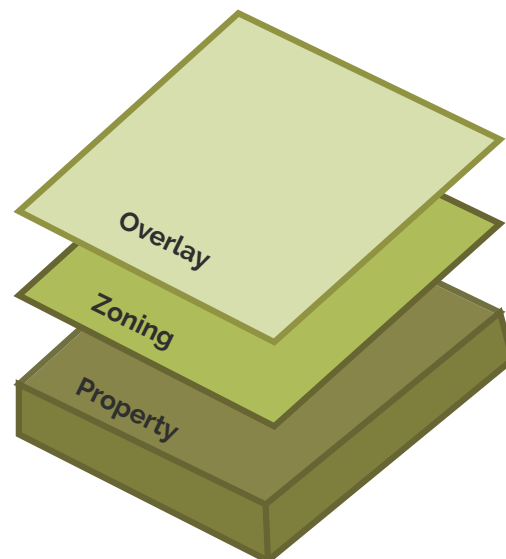
Purchase of Renewable Energy
Beginning in 2028, the City of Kalamazoo will use renewable energy for its electric use.

Recycling Audit & Tree Inventory Completed
Gaining understanding of the City's green resources and capacity for growth.

Affordable Green Housing
35 homes audited for energy efficiency and future sustainability

1,800+ Trees Planted
Initiative to grow our urban forest so everyone can enjoy the benefits trees provide

5,000 Tires Recycled
Recycled tires are used in alleyways, trails, and other products



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Development Process

Road to Approval

Projects located within the NFP Overlay District have pathways for approval. The following pages will go through each step in greater detail. The next section will showcase real project examples and how they navigated this process.

Project Review Paths

There are three different review pathways for projects to consider for development or changes planned for an NFP property:

- 1 Administrative Review**
For projects not requiring Site Plan Review & require permits.
- 2 NFP Review Board & Site Plan Review**
For projects requiring Site Plan Review OR there is a ground disturbance affecting existing natural features.
- 3 NFP Review Board & Public Notice**
For more extensive projects with multiple Natural Features and those requiring zoning approvals from the Planning Commission or Zoning Board of Appeals

All projects require site plan review, except:

- Development or expansion of a one-family or two-family dwelling unit.
- Placement of a dwelling unit in an approved mobile home park.
- Internal construction or change in the floor area of a structure that does not increase gross floor area, increase the intensity of use or affect parking requirements on a site that meets all development and site design standards of this Ordinance.
- Grading, excavation, filling, soil removal, creation of ponds or clearing of trees within an area of less than 1/2 acre in size.
- Temporary Uses
- Expansion or new structures up to and including 250 square feet in area.
- Antenna co-locations in compliance with State Act 514 (plans will be reviewed to determine if Site Plan Review is required)

Development Process

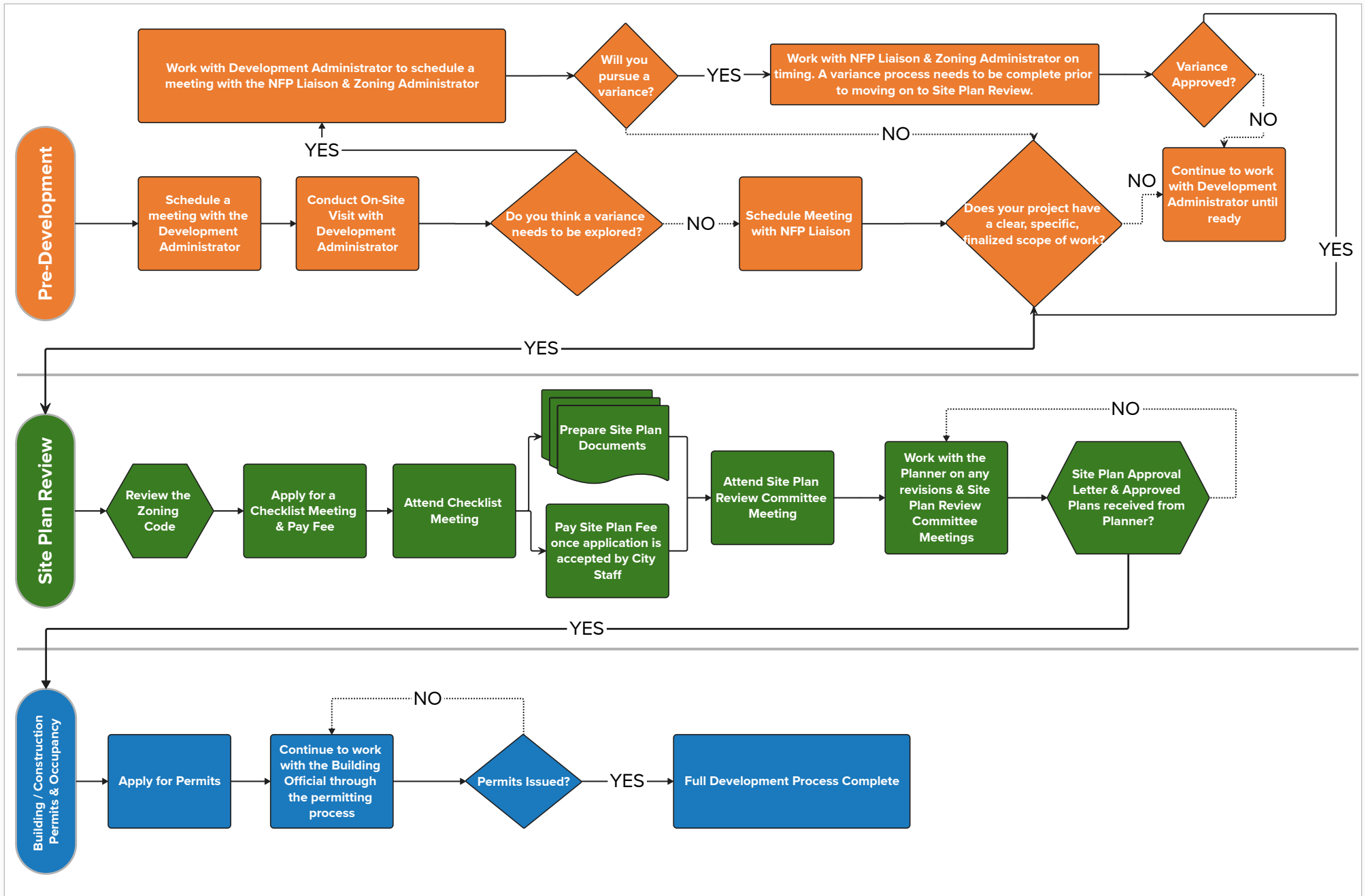
In 2025, the City of Kalamazoo launched a new Development process (see picture on next page). This streamlines the process and walks you, the applicant, through each step with the end goal of completing the development process.

NFP processes are primarily tied to Site Plan Review. It is important for you as the applicant to connect with the City of Kalamazoo in the Pre-Development phase to discuss these processes.



STOP! Scan the QR code at the right to connect to more resources related to Development within the City of Kalamazoo.

Development Process



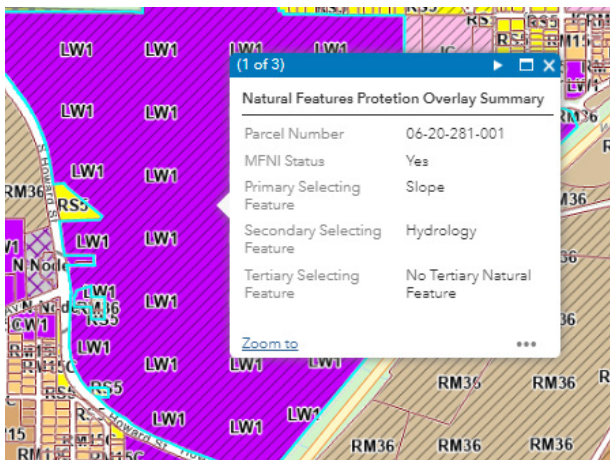
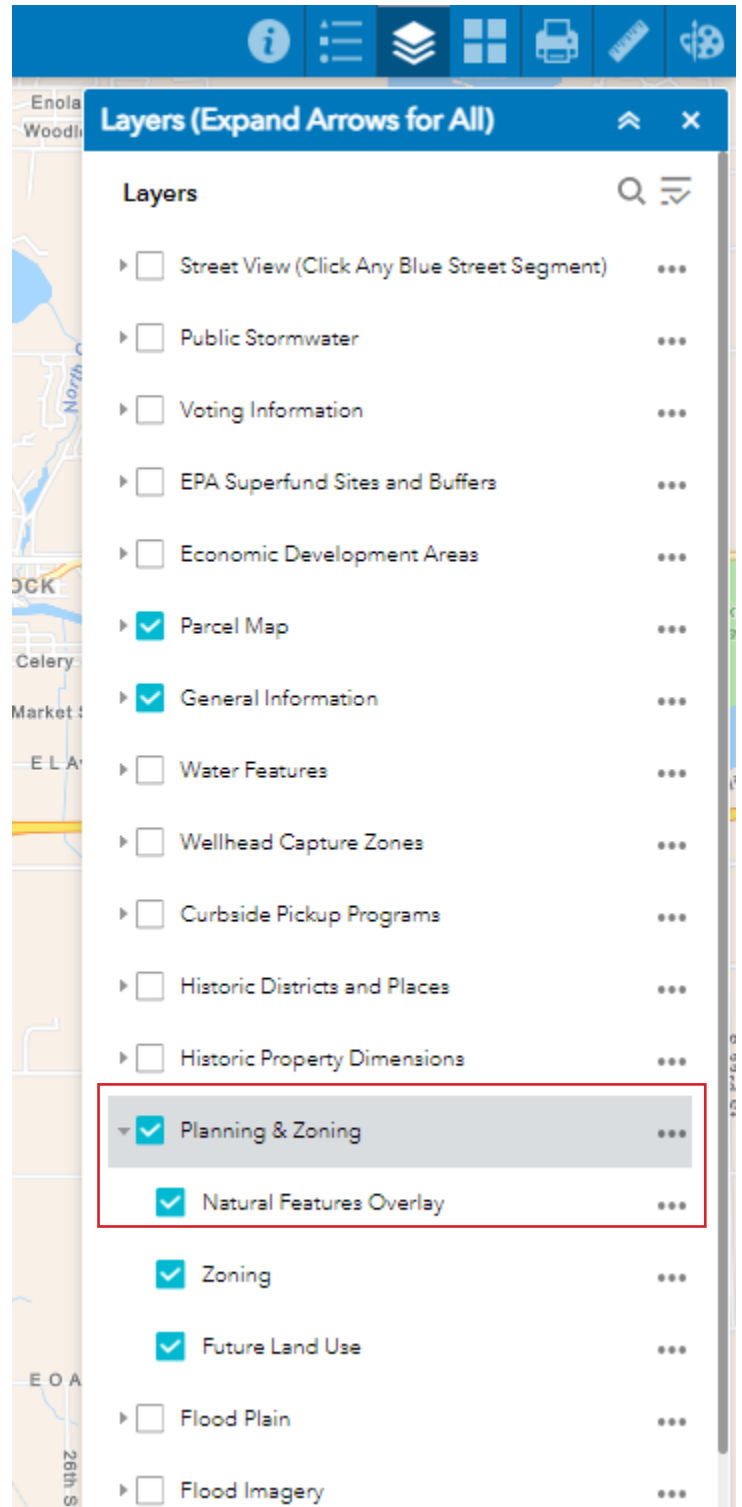
GIS / Map Review

The City of Kalamazoo has a Public GIS Map available for anyone to use. A desktop review is advisable to understand which natural features are on your site, if you require rare species review, and what the base zoning is for the site.

The Public GIS Map system is available here: [City of Kalamazoo GIS](#) and provides many layers including aerial imagery to help conduct a desktop review of your property.

When you expand the layers tab on the Public GIS Map you will want to expand the Planning & Zoning category and make sure the Natural Features Overlay is checked. With this layer checked, properties within the NFP Overlay District will have a hatched marking within them. You can select your property and a pop-up box will give a brief summary of what the natural features identified on-site are as well as the Michigan Natural Features Inventory Rare Species Review Status.

There are a many other layers available to help complete a thorough desktop review. Once this review is complete, you can move onto a review of the ordinance and NFP Supplemental Application.

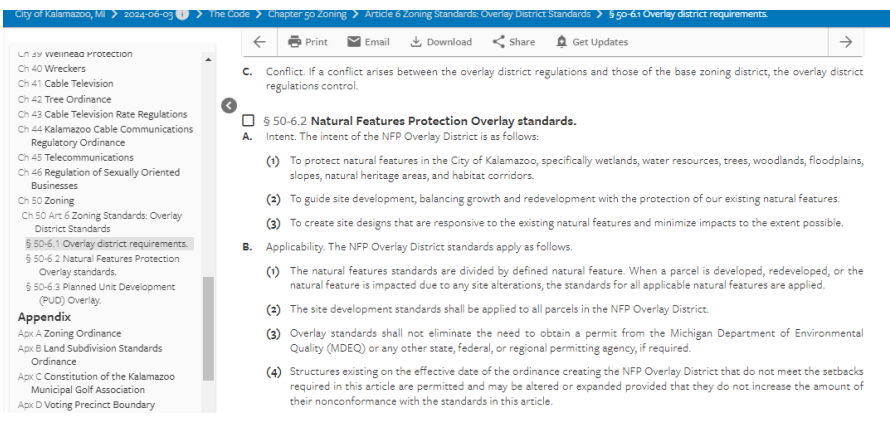
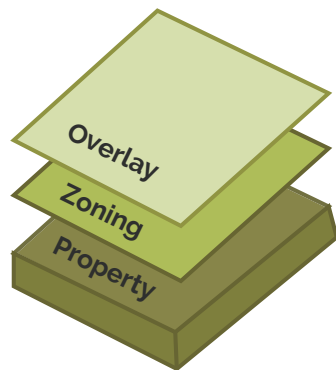


Zoning & NFP Ordinance Review

NFP Overlay District Standards are located within Chapter 50 of the Zoning Code. It is highly recommended that applicants review the standards and procedures to prepare for conversations with City staff. This review is a benefit to you as an applicant in prepping questions for City staff and familiarizing yourself with the Standards within the NFP Ordinance. This can also save time and financial resources.

It is important to remember that Zoning still applies to the site.

[The ordinance is available online to review.](#)



City of Kalamazoo, MI > 2024-06-03 > The Code > Chapter 50 Zoning > Article 6 Zoning standards: Overlay District standards > § 50-6.1 Overlay district requirements.

Ln 29 vveineea protection
Ch 40 Wreckers
Ch 41 Cable Television
Ch 42 Tree Ordinance
Ch 43 Cable Television Rate Regulations
Ch 44 Kalamazoo Cable Communications Regulatory Ordinance
Ch 45 Telecommunications
Ch 46 Regulation of Sexually Oriented Businesses
Ch 50 Zoning
Ch 50 Art. 6 Zoning Standards: Overlay District Standards
§ 50-6.1 Overlay district requirements.
§ 50-6.2 Natural Features Protection Overlay standards.
§ 50-6.3 Planned Unit Development (PUD) Overlay.
Appendix
App. A Zoning Ordinance
App. B Land Subdivision Standards Ordinance
App. C Constitution of the Kalamazoo Municipal Golf Association
App. D Voting Precinct Boundary

Print Email Download Share Get Updates

C. Conflict. If a conflict arises between the overlay district regulations and those of the base zoning district, the overlay district regulations control.

§ 50-6.2 Natural Features Protection Overlay standards.

A. Intent. The intent of the NFP Overlay District is as follows:

- (1) To protect natural features in the City of Kalamazoo, specifically wetlands, water resources, trees, woodlands, floodplains, slopes, natural heritage areas, and habitat corridors.
- (2) To guide site development, balancing growth and redevelopment with the protection of our existing natural features.
- (3) To create site designs that are responsive to the existing natural features and minimize impacts to the extent possible.

B. Applicability. The NFP Overlay District standards apply as follows.

- (1) The natural features standards are divided by defined natural feature. When a parcel is developed, redeveloped, or the natural feature is impacted due to any site alterations, the standards for all applicable natural features are applied.
- (2) The site development standards shall be applied to all parcels in the NFP Overlay District.
- (3) Overlay standards shall not eliminate the need to obtain a permit from the Michigan Department of Environmental Quality (MDEQ) or any other state, federal, or regional permitting agency, if required.
- (4) Structures existing on the effective date of the ordinance creating the NFP Overlay District that do not meet the setbacks required in this article are permitted and may be altered or expanded provided that they do not increase the amount of their nonconformance with the standards in this article.

Supplemental NFP Application

A Supplemental Application is required for project that are on a parcel in the NFP Overlay District.

The application consists of various sections related to the NFP Standards. There is a section about if an NFP Application is required. If the project is limited to interior work only with no increase in impervious surface or ground work apart of the scope, then you would sign the page and not fill-in the sections on the following pages. A conversation with the NFP Staff Liaison can help determine what the best path forward is based upon the proposed project scope.

An example of what the Supplemental Application looks like is on the following pages.

The supplemental application is available on the City's website [here](#).

SUPPLEMENTAL SITE PLAN REVIEW APPLICATION FOR NATURAL FEATURES PROTECTION

For projects located within the Natural Features Protection (NFP) Overlay District, separate site plan approval is required before the full site plan can be approved. This review is done either by the NFP Review Board or administratively by staff to verify conformance with NFP Overlay District zoning code ([Chapter 50, NFP](#)). The NFP Overlay District map can be found on the [City's GIS mapping website](#) (select "Planning & Zoning" layer and make sure "NFP Overlay" is clicked on).

The NFP Supplemental Application must be completed and submitted with the regular Site Plan Review Application and checklists. The NFP Review Board meets monthly to review and approve applications. City staff can assist in scheduling a project at an upcoming NFP Review Board meeting. While the review process offers some flexibility, projects often seek NFP approval between the Pre-Application meeting and regular Site Plan Review meeting.

Section I. Project & Applicant Information

All projects must complete Section I. If the project will not impact any natural features on the site, and does not trigger additional stormwater controls or treatment, applicants should sign and submit Section I only. Staff will review and determine if the application can be approved administratively.

Section II. Natural Features Checklist & Attachments

For projects proposing improvements or changes to the site that impact natural features, change grading, or involve work in or near NFP setbacks, Sections II and III must be completed. Section II identifies which natural features are present and standards apply. Section III will assist you in determining what documentation and additional plan sets are needed for a complete application. Once a complete application is submitted to the City, the project will be scheduled for the next available NFP Review Board meeting and an application fee of \$110 will apply.

QUESTIONS

SECTION I. PROJECT AND APPLICANT INFORMATION

Please provide all of the project and applicant information requested below. Include the date of your regular site plan review meeting, if one has been scheduled or already taken place.

APPLICANT NAME:	(first) (last)		
APPLICANT ADDRESS:	(number) (street name)		
	(city)	(state)	(zip)
APPLICANT EMAIL:		PHONE:	()
PARCEL ADDRESS/PIN:			
PROJECT DESCRIPTION:			
OWNER NAME: <i>(if different)</i>	(first) (last)		
HAS REGULAR SITE PLAN REVIEW MEETING OCCURRED?	<input type="checkbox"/> Yes <input type="checkbox"/> No	DATE OF SITE PLAN REVIEW MEETING:	

NFP APPLICATION REQUIRED?

Is the project limited to interior work only with no exterior ground changes or increase in impervious coverage?

YES	If <u>YES</u> , Sections II & III of this application are not needed. Sign below & submit only this page with your site plan review or permit application.
NO	If <u>NO</u> , proceed to Sections II & III. Do NOT sign below.

By signing below, the applicant certifies that no natural features will be disturbed as part of this project.

Print name: _____

Signature: _____

Date: _____

SECTION II. NFP SITE PLAN CHECKLIST & ATTACHMENTS

Use the checklist to determine what documentation and additional plans sets must be prepared for this application. All plan sets, maps, and additional information must be attached to this application to be considered complete. If you checked “no” to certain NFP items in questions 1-7 in Section II, record “N/A” on the checklist.

REQUIRED: NFP SITE PLAN SET

All applications must include separate sheets in the plan set showing the following:

1. Existing conditions map showing an inventory of all protected natural features and any associated natural features setbacks with distances (use checklist below)
2. Future development plan overlaid onto the existing conditions and natural features inventory; indicate where and to what extent protected natural features will be disturbed, removed, altered, or impacted in any way and which natural features will be protected during and after construction

Future development plan must include:

- **Boundary with extent of re-grading**, construction, or site preparation activities
 - **All existing and new building footprints** (mark whether existing buildings will be removed or maintained)
 - **New and existing parking** surfaces or structures, sidewalks, trails, and other impervious or semi-impervious surfaces including decks, patios, viewing platforms, etc. (list proposed surface materials and whether existing surfaces will be maintained or removed)
 - **Proposed location of fencing and screening**, whether permanent, natural, or construction silt fencing and/or natural feature protection fencing (with specifications)
 - **Stormwater facilities** showing boundary of ground disturbance, grading or construction activities, if located near natural features
 - **New utilities** and/or relocation of existing utilities showing corridors that could impact natural features
3. Landscape plan detailing the minimum elements needed to meet zoning code requirements and all proposed additional landscaping elements or features (include table with species name)
 4. Any additional plans or tables detailing which natural features will be restored or replaced after construction, if required (e.g., riparian buffer installation or slope restoration plan may be required under certain circumstances when the ordinance allows changes within these protected areas)

WETLANDS	Present:	Included on page #:	Notes:
Mark existing wetland boundaries with notes about wetland conditions. <i>Attach a copy of EGLE permit or permit application for work impacting Part 303 wetlands regulated by the State.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
WATER RESOURCES	Present:	Included on page #:	Notes:
Mark the location of all water resources on the parcel and those within 25 feet of the parcel boundaries. <i>Attach a copy of EGLE permit or permit application for work impacting Part 301 waters regulated by the State.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Show required setbacks with dimensions; describe existing or future ground cover within riparian setbacks.			
TREES	Present:	Included on page #:	Notes:
Mark the location of all “protected” trees that are proposed to be removed and those that will remain and require protection fencing.	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Include a table with species name, size (DBH and height), and condition of “protected” trees that are proposed to be removed and list replacement tree information.			
Provide a note with justification for removal.			
WOODLANDS	Present:	Included on page #:	Notes:
Delineate the boundary of all woodlands on the parcel noting where woodlands likely extend onto adjacent parcels.	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Mark all areas of woodland that will be retained and removed (i.e., cleared).			
Include a table or note with the required preservation ratio (based on existing woodland coverage), percentage proposed to be removed, and rationale for selecting area for removal.			
SLOPES	Present:	Included on page #:	Notes:
Provide a slope analysis that shows the boundaries of all “protected” slopes and mark the required setback(s).	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Include a note with co-existing feature that triggers “protected” slope status (e.g., wooded, within 500 ft of water resource.			

NATURAL HERITAGE AREAS	Present:	Included on page #:	Notes:	
Is an MNFI* rare species review required? <i>Parcels can be pre-screened using the City's GIS website, click on the "Planning & Zoning" layer and "NFP Overlay" layer; then click on parcel and see MNFI status.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No			
If an MNFI rare species review is required, attach the resulting report.				

*Michigan Natural Features Inventory (MNFI) Rare Species Reviews can be requested at:
<https://mnfi.anr.msu.edu/services/rare-species-reviews>

ACCEPTED DATA SOURCES & ANALYSIS

All data sources, analysis, and professionals are subject to approval by the City Planner according to Chapter 50-6.2. The following guidance may be useful when selecting a professional or methodology for inventorying natural features.

1. WETLANDS

- Wetland delineation report performed by a qualified consultant including a map denoting delineated boundary of all wetlands, OR
- Most recent US Fish & Wildlife Service's National Wetlands Inventory boundary (State of Michigan mapper: <https://www.michigan.gov/egle/about/organization/water-resources/wetlands/inventory-maps>)

2. PROTECTED TREE IDENTIFICATION

- May be performed by an qualified professional (including ISA Certified Arborist or similar); a full tree inventory is not required if all necessary information can be obtained and communicated using another survey, inventory, or site assessment methodology

3. WOODLANDS

- A qualified professional, such as an ISA Certified Arborist, landscape architect, or license engineer may perform a desktop analysis or field survey to delineate woodlands
- When a variances is being requests to remove more woodland cover than is allowed under the preservation ration, the following is required
 - Woodland assessment report with determination that the Trees per Area (TPA) meets the NFP definition of a woodland and mapped delineation of woodland
 - Woodland assessment report with a determination that Basal Area is equivalent to the TPA in the NFP definition and meets definition of a woodland and mapped delineation of woodland
 - In addition to determination of whether stand of trees meets NFP definition of a woodland, assessment must include information on general species diversity,
 -

composition of species, any notable trees (either notable species or size), invasive species composition, and general health and age observations of tree stand

4. **PROTECTED SLOPES**

- Topographic survey performed in the field by a qualified consultant to delineate areas of a slope with grade of 20% or greater
- Desktop analysis performed using U.S. Geological Survey digital topographic maps, LIDAR, digital elevation map, or equivalent data showing 2' intervals or finer resolution, performed by a qualified consultant or engineer

App Submittal

Once you have completed your NFP Supplemental Application you must submit it along with your regular site plan checklist for review by both City staff and the NFP Review Board.

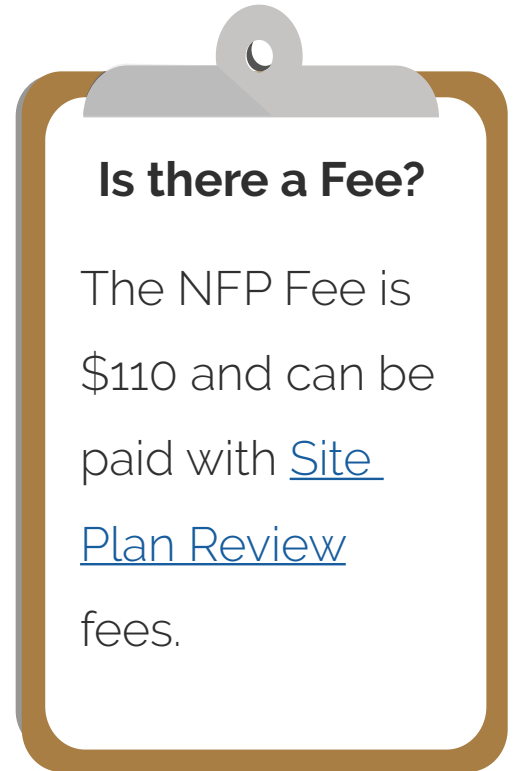
Full site plan approval requires approval from the NFP review board or an Administrative Approval. Meeting with City Staff to discuss the project will help determine the appropriate next steps.

Timing is important. A completed application must be submitted 14 -21 days before the regular meeting of the NFP Review Board.

Public notice is required under [certain situations \(§ 50-6.2K\(1\)\(C\)\)](#). If you are required to notice the public, letters must be mailed no less than **14 days** before the regular NFP Review Board Meeting.

Remember!

If a property is multiple units, in the letter ask the property owner/manager to share this info with tenants or post this information in a public location.



Completed Checklist Due

Date:

14-21 days

Turn in your checklist no less than **2-3 weeks** before the regular NFP Review Board Meeting

IF/When Public Notice is

Required:

14 Days

Mail your letters no less than **14 days** before the regular NFP Review Board Meeting. NOTE! Checklist must be submitted prior to mailing

NFP Meeting Schedule

Meeting Schedule

All meetings are held at
City Hall (241 W South St, Kalamazoo MI 49007) in the City
Commission Chambers

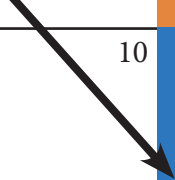
November 2023						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 CR Civil Rights Bo...	2 EC Election Com...	3	4
5	6 SP Shared Prosp...	7	8	9 UP Utility Policy C... ZB Zoning Board ...	10	11
12	13	14 PR Parks & Recre... PS Citizens Publi...	15 E Environmenta...	16 BR Brownfield Re... KG Kalamazoo M... CD Community D... NC Northside Cu...	17	18

You can visit the [City of Kalamazoo website](#) to look at the board meetings calendar to track changes to meeting dates.

FEBRUARY 2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	1
2	3	Preferred Deadline for Supplemental Application Submittal (21 days)	5	6	7	8
9	10	Deadline to submit Supplemental Application (14 Days)	12	13	14	15
16	17	18	19	20	21	22
23	24	NFP Board Meeting	26	27	28	1

**If public notice is required,
it must be post-marked no
later than 14 days prior to
the meeting.**



NFP Board Meeting Preparation

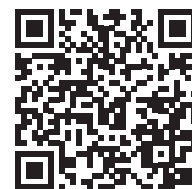
It is strongly recommended that the following be completed in preparation for the NFP Board Meeting:

1. Share copy of Presentation with NFP Board Liaison
2. Bring copy of presentation on PC or USB Thumbdrive
3. Advisable to have both applicant and consultant team members available for the presentation
4. Consider Accessibility of Presented content (see Public Participation Plan Document in Resources section)
5. Review previous NFP Meetings on the City YouTube page to understand pace of meeting
6. Prepare for questions from NFP Board Members
7. Work with City staff to review timing of other required meetings through the approval process
8. Parking is available along South St, Lovell St, next to City Hall and along Rose St
9. Utilize the rear entrance of City Hall
10. Check-in with security staff prior to moving to the second floor

There is a microphone available for when presenting content at the podium. There are TV screens that will show the presentation on the live-stream and for Board members.



July 2023 NFP
Meeting



Please see the July 2023 NFP Meeting by scanning the QR code above as an example of a well prepared presentation on a larger-scale project.

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Site Development Standards - Overview

Development Standards

View the full [zoning code](#) and [NFP Ordinance](#) to view all information related to NFP Site Development Standards. These items can be discussed with city staff throughout the Site Plan Review Process. The following Resources are represented in the NFP Ordinance.



Water Resources & Wetlands

Protection of these Natural Features requires specific setbacks from wetlands, rivers, streams, and lakes. A planted buffer is required in the setback to limit pollutants from getting into our waterway.



Woodlands

Protection of this Natural Feature requires developers to preserve a portion of Woodlands on the property, maintain habitat corridors, and avoid damaging roots of nearby trees.



Trees

Individual trees located on a property must be protected within the NFP Overlay. Large trees and special species trees must be replaced if they must be removed. A list of native, climate resilient, and site-appropriate trees guides developers to plant trees that will thrive.



Slopes

Slopes tied to Water Resources, Wetlands, and Woodlands are protected Natural Features and new development will be limited. Setbacks at the top and bottom will help protect the stability of the slope and other Natural Features.



Natural Heritage Areas

Remnants of natural communities and rare species are protected by requiring a database search for known locations of these Natural Features. An on-site survey must be done when species are found in the vicinity of the property.



Zoning & Stormwater

Additional zoning and stormwater requirements apply within the NFP Overlay. For example, certain intensive uses are not allowed and all landscaping must use native plants. And sites must capture and treat more of the stormwater on the property.

Development Standards

View the full [zoning code](#) and [NFP Ordinance](#) to view all information related to NFP Site Development Standards. These items can be discussed with city staff throughout the Site Plan Review Process. When there is a conflict between the Zoning Code and the NFP Ordinance, the NFP Ordinance takes precedence.

Impervious Coverage

- Areas that are required to remain pervious must be left undisturbed (no grading, clearing, etc.)

Landscaping

- Native species must be used for all required landscaping
- No invasive species from the Prohibited Planting List may be planted
- Fill material brought on the parcel must not be contaminated or contain invasive species

Protected Trees

- Table 6.2-4 shows what are considered Protected Trees
- In order to be considered a protected tree both the species and DBH requirements need to be met
- A certified Arborist can help with inventorying protected trees
- The protected tree standard does not apply to a delineated woodland. It may apply elsewhere on-site.

Rare Species Review

- Some NFP sites require MNFI Rare Species Review
- MNFI stands for the Michigan Natural Features Inventory via the Michigan State Extension
- Fees and Review is conducted in conjunction with the MSU Extension or another qualified professional

Stormwater Management

- Restricted uses: Wellhead Protection Overlay 10-year restrictions and Wellhead Protection Overlay 1-year restrictions within 500 feet of surface water apply for NFP Properties
- Higher volumes of stormwater must be collected and treated on-site using more than one stormwater BMP (or underground storage can be used)

Water Resources & Setbacks

- A water resource is any lake, pond, or impoundment; a river, stream, or creek which may or may not be serving as a drain; or any other body of water that has defined banks, a bed, and visible evidence of a continued flow or continued occurrence of water, or as otherwise defined in Part 301 of the NREPA
- The setback from water resources is accompanied by a vegetative buffer to protect the resource where no existing vegetation exists.

Slopes & Slope Setbacks

- Slopes greater than or equal to 20% grade are protected
- Usually coincides with woodland areas
- Many limitations to work that can be completed within the slope face and slope setback

Woodland

- Defined as a minimum area of 21,780 square feet or half an acre, regardless of parcel boundaries.
- At least 40 trees per acre of at least 2 inches DBH
- Requires a Woodland Assessment

Water Resources

How do I know if I have a water resource?

Step 1

Desktop Review

The City's online GIS map can be used as the first step in exploring water resources on your property.

[City of Kalamazoo GIS](#)



- Expand the layers tab
- Click the checkbox next to the “**Water Features**” layer



Step 2

In Person Review

Any lake, pond, river, stream, wetland, or county drain is considered a Water Resource. Look for these features on your property or on adjacent properties within 25 feet of your property boundary.

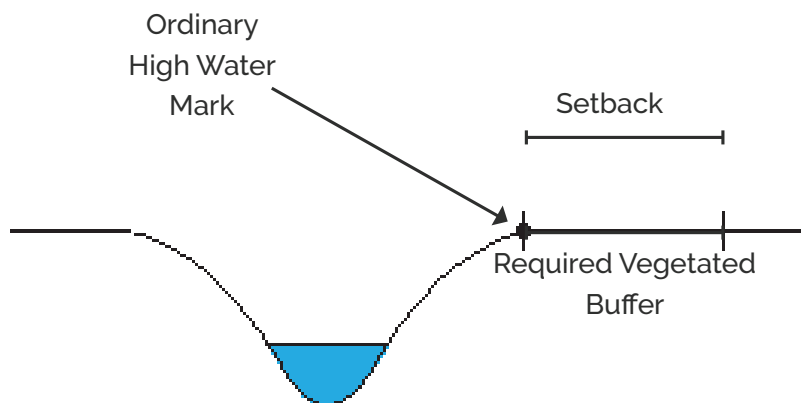


Figure 3 Measuring Water Resource Setbacks

Size of Parent Parcel	Minimum Required Setback
Greater than 1 acre	25 feet
1/2 acre - 1 acre	20 feet
Less than 1/2 acre	15 feet

Table 2 - Water Resource Setbacks

Note!

- A setback is required from the edge of the water resource based on the size of your parcel
- When measuring the setback, be sure to start from the ordinary high watermark
- No impervious coverage, grading, or vegetation removal allowed in the setback area
- Natural vegetation must be kept within the setback area or new vegetation must be planted

Water Resources

Step 3

Ordinance Review

Chapter 50 NFP Overlay District

- Refer to the [Water Resources Section \(§ 50-6.2D\)](#)

Step 4

Be prepared to:

- Mark the location of water resources and the correct setback on the site plan map
- Design your site plan to keep impervious coverage out of the setback area
- Work with a landscape architect, Certified Natural Shoreline Professional, or consultant to design a vegetated buffer or create your own design with native plants
- Install temporary construction fence or silt fencing at the setback boundary to protect this area during construction

Step 5

Professional Review *Optional but Recommended*

The exact location of Water Resources on the property should be confirmed beyond steps 1 and 2. This is not required but is recommended.

Find a Certified Natural Shoreline Professional

- mishorelinepartnership.org/find-a-shoreline-contractor

Design Your Own Vegetated Buffer

Natural Shoreline Landscaping

- tworiverscoalition.org/naturalshoreline.asp

Native Plants

- mishorelinepartnership.org/plants-for-inland-lakes

Supplemental Site Plan Review Checklist for NFP

Fill out the corresponding sections of the checklist:

- Section II. Part B. Questions 2-4**
- Section III. Water Resources** (*If you have a water resource*)

Wetlands

How do I know if I have a wetland?

Step 1

Desktop Review

There are several online maps you can use as the first step in exploring if you have wetlands on your parcel. Wetlands are considered a water feature.

Michigan EGLE Wetland Map Viewer
mcgi.state.mi.us/wetlands/mcgiMap.html

Step 2

In Person Review

You can also review your property in person and look for any area on the parcel that is wet enough during some part of the year to grow wetland plants (e.g., cattails, pond weed, water lilies, sedges, willow, white cedar, dogwood, or moss).

Step 3

Professional Review *Optional*

If there are low lying areas, soggy spots, or other areas on the parcel you are unsure are wetlands, a Professional Wetland Scientist can perform a wetland determination through an on-site assessment to confirm whether wetlands are on the parcel. The State of Michigan maintains a list of consultants.

State of Michigan List of Consultants

- Visit michigan.gov/egle
- Click “Water” “Wetlands”
- Under “Wetland Quick Links” click “Wetland Consultants List”



Note!

A wetland does not have to be wet all of the time. Areas with soggy, saturated soils that grow wetland plants can also be wetlands.

If you are unsure whether or not you have wetlands, but don't want to hire a consultant for a professional review, you can always just treat the area in question as a wetland and apply the wetland standards.

Supplemental Site Plan Review Checklist for NFP

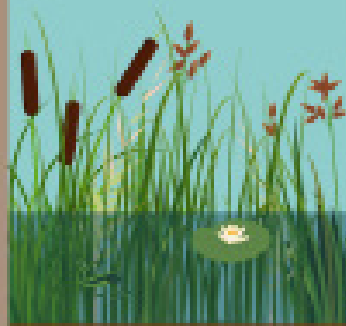
Fill out the corresponding sections of the checklist:

- Section II. Part B. Question 1**
- Section III. Wetlands**
(If you have wetlands)

TYPES OF WETLANDS

MARSH

Marshes are wetlands found at the edges of water bodies, dominated by rooted plants that grow under water, float, or extend out of the water.



WATER DEPTH 1-6 feet (standing or slow moving)

FREQUENCY Permanent

PLANTS Cattails, Bulrushes, Lotus, Sedges, Water Lily

WET MEADOW

Wet meadows can occur in wetland depressions, swales, or in the transitional zone between marshes and other wetlands with less saturated soils.



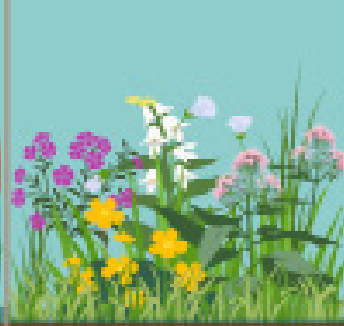
WATER DEPTH At or near soil surface

FREQUENCY Permanent or near permanent

PLANTS Sedges, Grasses

WET PRAIRIE

Wet prairies are wetland ecosystems where the water level usually varies in wetness between wet meadows and dry prairies.



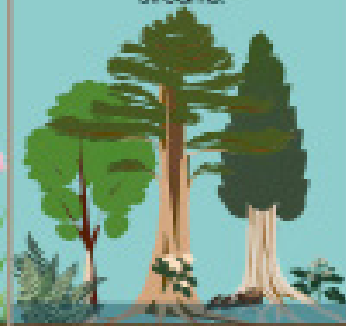
WATER DEPTH Saturated soils (0-1 feet below soil surface)

FREQUENCY Frequent

PLANTS Grass-like and flowering plants, Orchids

SWAMP

Swamps are dominated by woody vegetation, and are often found in basins or low-elevation floodplains along rivers or slow-moving streams.



WATER DEPTH 0-2 feet (standing or slow moving)

FREQUENCY Permanent

PLANTS Alders, Cypress, Ferns

BOG

Bogs are isolated basin wetlands characterized by spongy peat-rich soils. They have nutrient poor, acidic waters with floating mats of vegetation that are fed by rainfall and snow melt.



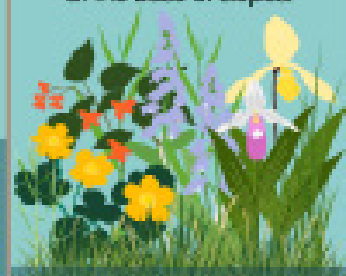
WATER DEPTH Shallow lake basins

FREQUENCY Seasonal to Permanent

PLANTS Sphagnum Moss, Pitcher Plant, Tamarack, Cranberry

FENS & SEEPS

Fens are peatlands that are fed by a calcareous groundwater source, resulting in an alkaline water chemistry. Seeps, or springs, are areas where the groundwater naturally comes to the surface at the base of slopes.



WATER DEPTH Saturated soils

FREQUENCY Seasonal to Permanent

PLANTS Sedges, Grasses, Orchids, Marsh Marigolds

VERNAL POOL

Vernal pools are shallow, isolated depressions that are filled each spring by rain and snow melt, then dry up since they are not connected to other water bodies. They serve as an essential breeding habitat for frogs and salamanders.



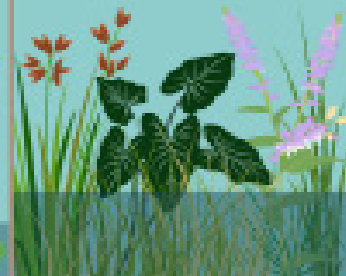
WATER DEPTH 0.5-3 feet

FREQUENCY Seasonal (Spring)

PLANTS Ferns, Irises, Mosses, Marsh Purslane

PRAIRIE POTHOLE

Prairie potholes are water-holding depressions of glacial origin. These isolated wetlands provide essential food and resting places to migrating waterfowl.



WATER DEPTH 1-4 feet

FREQUENCY Seasonal to Permanent

PLANTS Water Lilies, Pondweeds, Bulrushes, Arrowhead

Wetlands

Step 4

View the Full Standards

Chapter 50 NFP Overlay District

- Refer to the [Wetland Section \(§ 50-6.2C\)](#)

Size of Parent Parcel	Minimum Required Setback
Greater than 1 acre	25 feet
1/2 acre - 1 acre	20 feet
Less than 1/2 acre	15 feet

Table 1 - Wetland Setbacks

will need a
A detailed

Be prepared to:

- Mark the location of wetlands and the correct setback on the site plan map
- Design your site plan to keep impervious coverage out of the setback area
- Install temporary construction fence or silt fencing at the setback boundary to

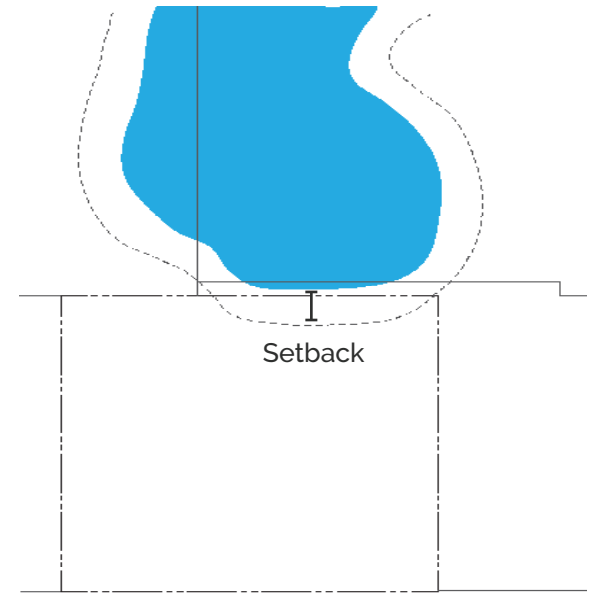
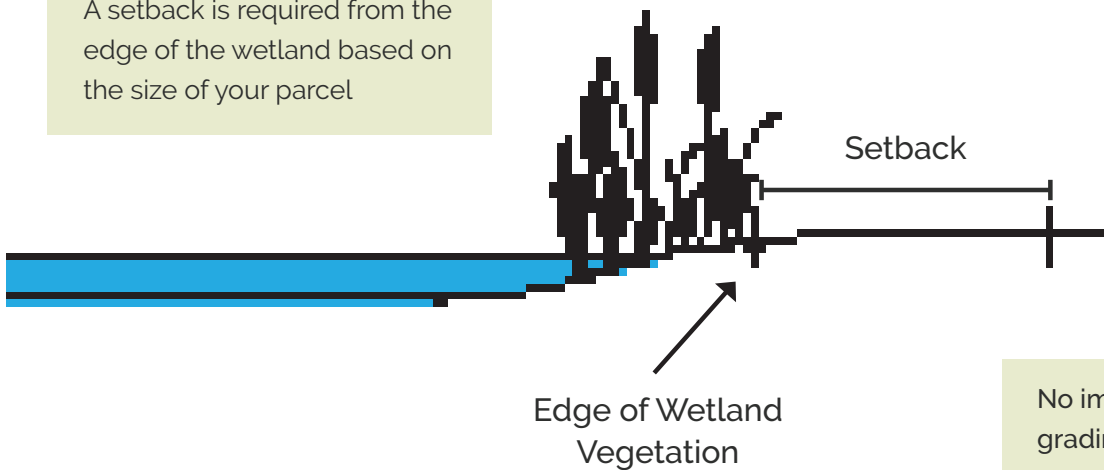


Figure 2 - Setbacks Across Parcel Boundaries

A setback is required from the edge of the wetland based on the size of your parcel



No impervious coverage, grading, or vegetation removal allowed in the setback area

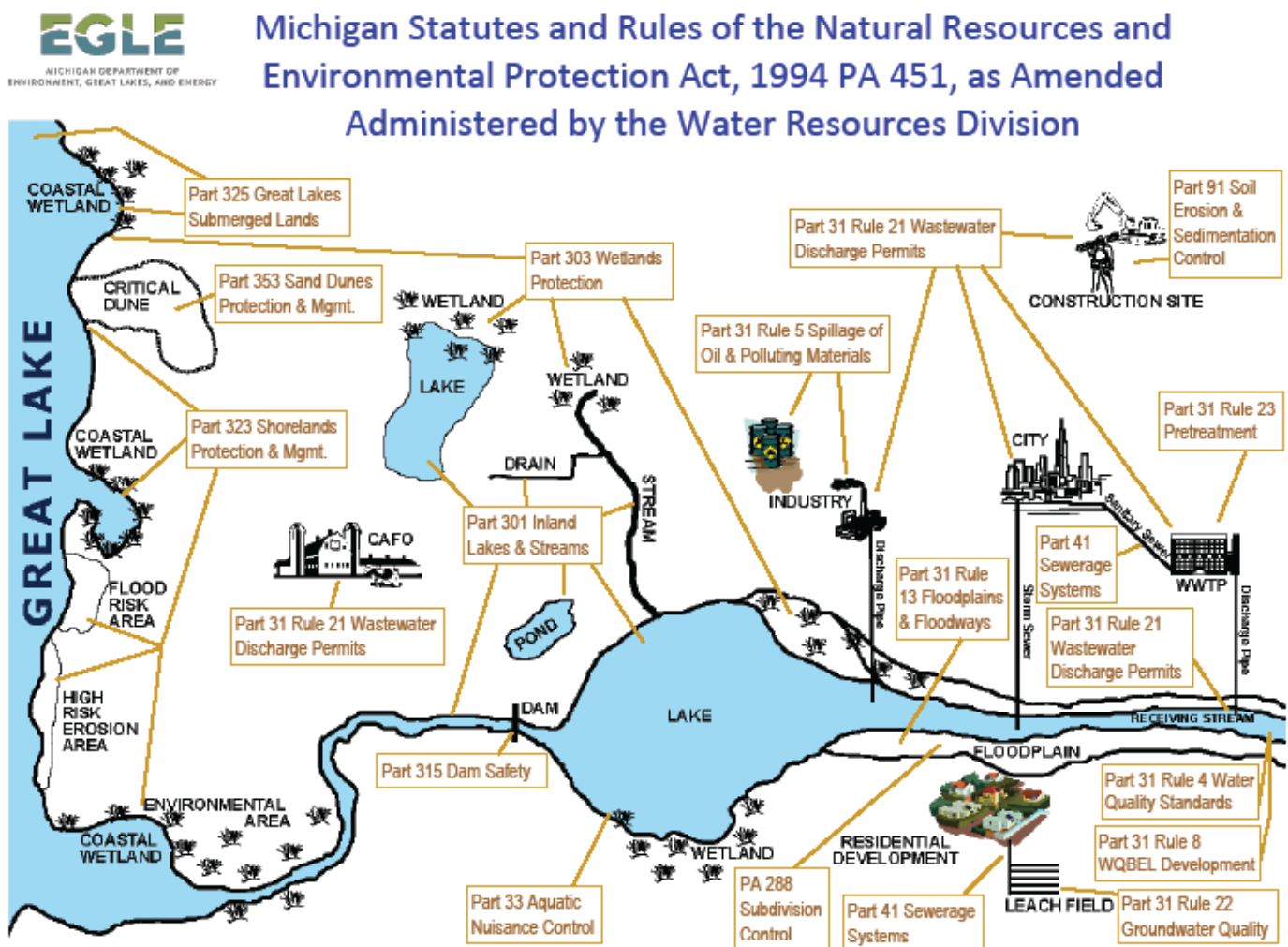
State/Federal Permits

It is important to understand if any State of Michigan or Federal permits are required for your project. The Michigan Department of Environment, Great Lakes, and Energy provides a nice overview of when certain permits may be required.

NFP Projects frequently require but are not limited to:

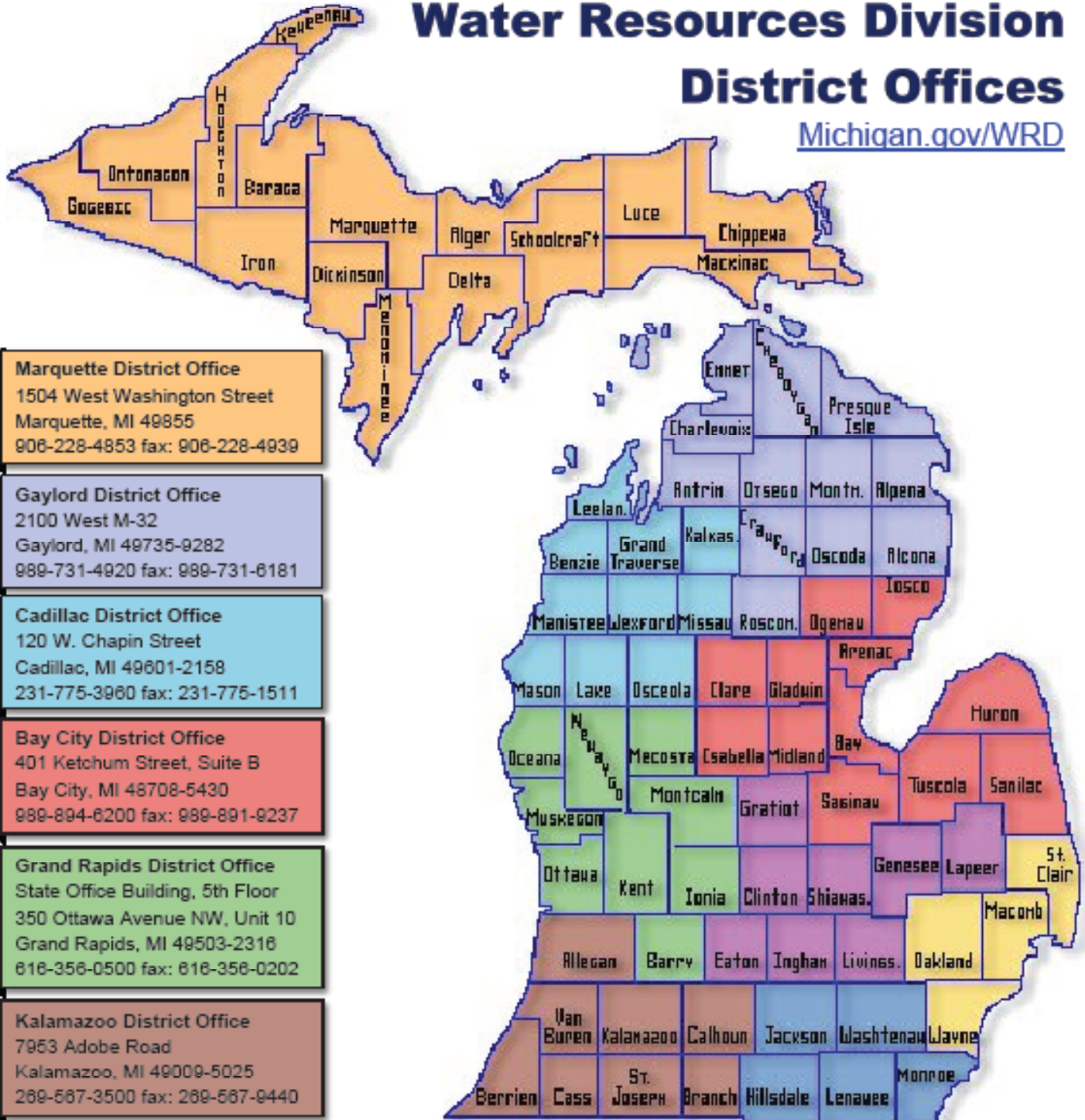
- [Part 303 Wetlands Protection](#)
- [Part 91 Soil Erosion and Sedimentation Control](#)
- [Part 301 Inland Lakes & Streams](#)

If you are unsure of what permit is required, please contact the Michigan Department of Environment, Great Lakes, and Energy Water Resources Division.



Water Resources Division District Offices

Michigan.gov/WRD



Marquette District Office
1504 West Washington Street
Marquette, MI 49855
906-228-4853 fax: 906-228-4939

Gaylord District Office
2100 West M-32
Gaylord, MI 49735-9282
989-731-4920 fax: 989-731-6181

Cadillac District Office
120 W. Chapin Street
Cadillac, MI 49601-2158
231-775-3960 fax: 231-775-1511

Bay City District Office
401 Ketchum Street, Suite B
Bay City, MI 48708-5430
989-894-6200 fax: 989-891-9237

Grand Rapids District Office
State Office Building, 5th Floor
350 Ottawa Avenue NW, Unit 10
Grand Rapids, MI 49503-2316
616-356-0500 fax: 616-356-0202

Kalamazoo District Office
7953 Adobe Road
Kalamazoo, MI 49009-5025
269-567-3500 fax: 269-567-9440

Lansing District Office
525 W. Allegan (Constitution Hall, 1S)
P.O. Box 30242
Lansing, MI 48909-7742
517-284-6651 fax: 517-241-3571

Jackson District Office
301 E Louis Glick Highway
Jackson, MI 49201-1558
517-780-7690 fax: 517-780-7855

Warren District Office
27700 Donald Court
Warren, MI 48092-2793
586-753-3700 fax: 586-753-3751

EGLE Water Resources Division

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan.gov/WRD ↔ 517-284-5567

Protected Trees

How do I know if I have Protected Trees?

Step 1

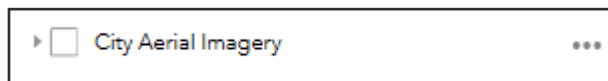
Desktop Review

The easiest way to identify trees on the parcel is by visiting the site when leaves are on the trees. Individual trees may be visible on the City GIS map, but distinguishing individual trees may be difficult.

[City of Kalamazoo GIS](#)



- Expand the layers tab
- Click the checkbox next to the "City Aerial Imagery" layer



Step 2

In Person Review

Look for any tree with a trunk diameter of 24" or larger (or equal to approximately 75" when measured around the trunk at 4.5 feet above ground). Measuring Tree DBH can vary based on external factors like angle of the tree due to slope and the growing pattern of the trunk or if a tree has multiple trunks. Some specific types of trees are "protected" when smaller than 24" diameter.

- Refer to Table 6.2-4 in the NFP Ordinance for the Protected Tree List

Note!

The tree standard only applies to individual trees not grouped in what would be considered a delineated woodland.

All of the protected trees on the parcel must be marked on the Engineering Plans or Site Plan Documents.

You can find ISA Certified Arborists in Michigan by visiting: www.asm-isa.org/
This is the Michigan Chapter of the International Society of Arboriculture (ISA)

Step 3

Professional Review *Recommended*

If you have trouble identifying the tree species, it is best to get a tree survey performed by an ISA-certified arborist. The tree survey should include location, species, size (diameter and height), and condition for all "protected" trees.

Protected Trees

Step 4

View the full standards

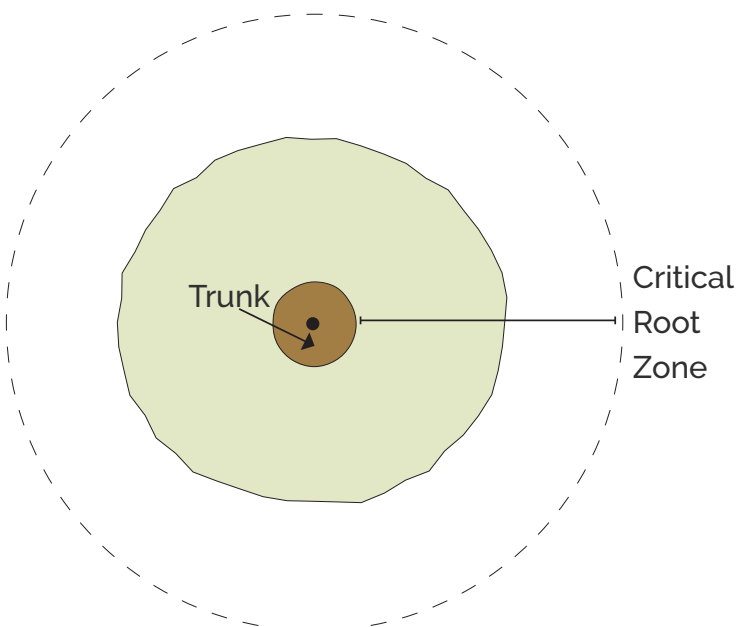
[Chapter 50 NFP Overlay District](#)

- Refer to [Protected Tree](#) Standard (§ 50-6.2F)

Step 5

Be prepared to:

- Find an ISA-certified arborist to complete a tree survey
- Mark on the site plan map the location, species, size, and condition of all “protected” trees and whether they will remain or be removed
- Provide justification why a tree must be removed per the NFP Ordinance.
- Use tree protection fencing during construction to protect the Critical Root Zones of ALL Protected Trees.



Supplemental Site Plan Review Checklist for NFP

Fill out the corresponding sections of the checklist:

- Section II. Part B. Question 5
- Section III. Trees *(If you have a protected tree(s))*

Note!

- Protected trees must remain on the site during and after construction
- In specific situations, some trees may be removed (see full tree standard)
- Any “protected” trees that are removed must be replaced with new trees per the NFP Ordinance



Replacement Trees

The NFP Overlay District provides a replacement tree list that focuses on native species. Below are some of the species of trees that are native to the State of Michigan. More information on each can be reached if you click on the corresponding image.

Tree-NA *American Basswood*

Height: 60'-100'

Leaves: Heart-shaped

Flowers: Yellowish-white, fragrant



Tree-NA *American Chestnut*

Lifespan: 200-800 years

Fruit: Chestnut

Leaf Shape: Pointed oval



TreeNA *Northern White Cedar*

Scientific name: *Thuja occidentalis*

Leaves: Flattened scales

Tree Height: 32' - 50'





Tree-NA *Hornbeam*

Height: 20'-30'

Leaves: Pointed oval

Bark: Gray, "muscular"




Tree-NA Paper Birch

Leaf Shape: *Pointed oval*

Bark: *White and paper-like*

Location: *Almost every MI county*




Forest Resources Division

Tree-NA Eastern Redbud

Leaves: *Heart-shaped*

Height: *15'-25'*

Flowers: *Pink/lavender*



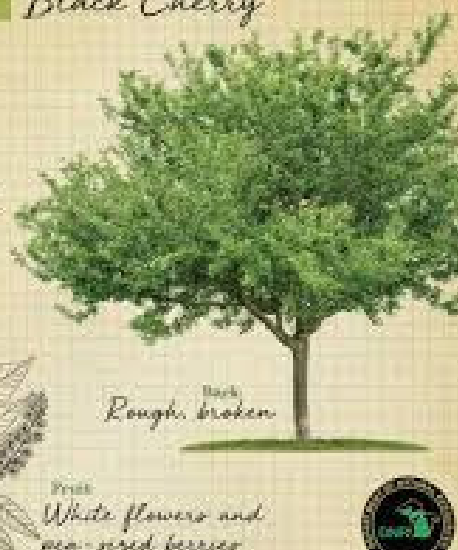
Department of Natural Resources
DNR

Tree-NA Black Cherry

Height: *50'-85'*

Bark: *Rough, broken*

Fruit: *White flowers and pea-sized berries*



Forest Resources Division

Tree-NA Shagbark Hickory

Tree Height: *60'-120'*

Bark: *Smoky gray, shaggy*

Nut: *Hickory nut*



Forest Resources Division

Tree-NA Sugar Maple

Leaf Shape: *5-lobed*

Tree Height: *60'-75'*

Fruit: *Samara, aka 'helicopters'*



Forest Resources Division

Tree-NA American Beech

Bark Color: *Smooth and grayish*

Leaf Shape: *Oval, toothed edges*


Fruit: *Beech nut*



Forest Resources Division



TreeNA *Tamarack*
(also known as the Eastern Larch)

Tree Type:
Conifer



Needles:
Soft clusters

Tree Height:
60'

Tree-NA *Paw Paw*

Height:
15'-30'

Leaves:
Lush, dark green

Fruit:
paw paw




Tree-NA *Northern Red Oak*

Height:
60'-75'

Lifespan:
Up to 500 years

Fruit: *Acorns*






Tree-NA *White Oak*

Leaf Shape:
Lobed with rounded tips

Fruit: *Acorns*

Bark:
Light gray, scaly, ridged






TreeNA *White Pine*

Location:
Upper and Lower Peninsula

Tree Height:
150'-210'

Needles:
Bundles or fascicles of five

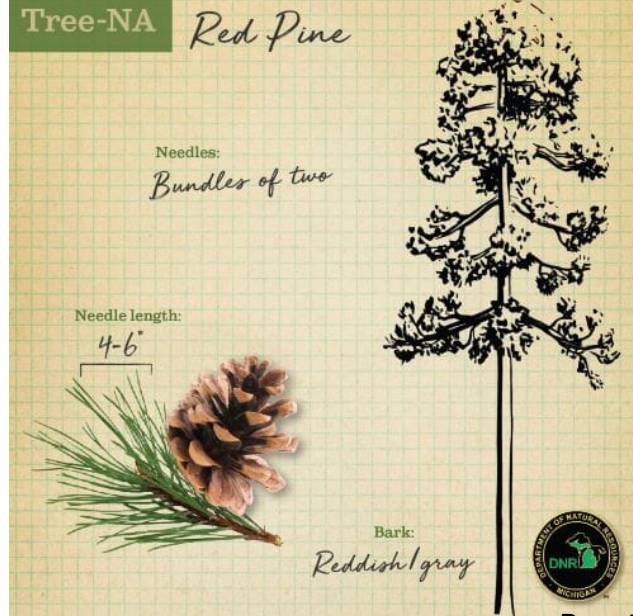




Tree-NA *Red Pine*

Needles:
Bundles of two

Needle length:
4-6"

Bark:
Reddish/gray

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Woodlands

How do I know if I have a woodland?

Step 1

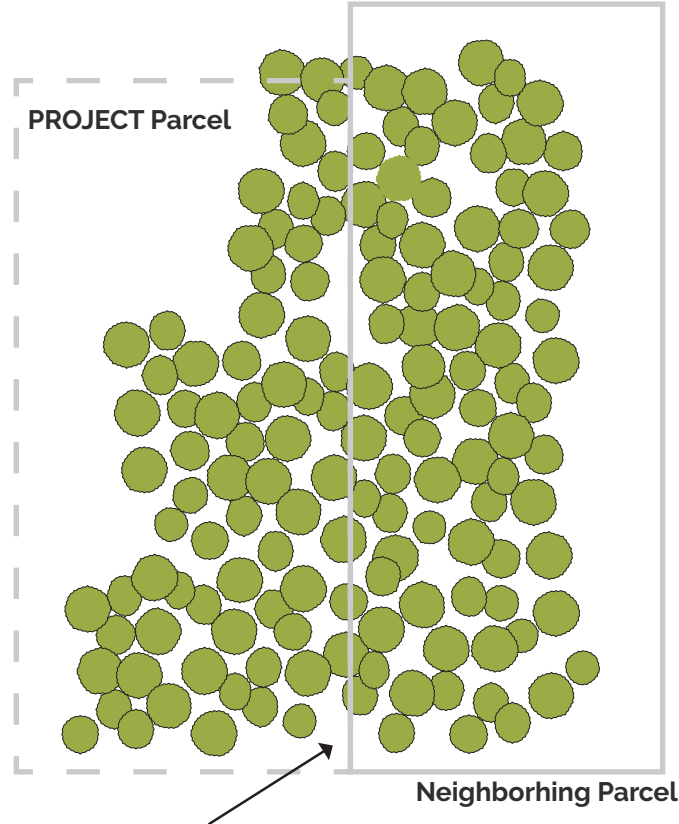
Desktop Review

You can use the Public GIS Map to review woodland areas on or adjacent to your parcel. It is recommended that an ISA-Certified Arborist or other qualified professional assist in both the desktop and in-person reviews and analysis.

[City of Kalamazoo GIS](#)



- Expand the layers tab
- Click the checkbox next to the "City Aerial Imagery" layer



Size of a Woodland is measured across parcel boundaries

Step 2

In Person Review

Look for a grouping of trees that covers an area a half acre or greater, regardless of whether the grouping is entirely on your parcel or extends onto adjacent parcels. To be a woodland, the number of trees must be equal to 40 per acre at least 2" diameter or greater. Look for other woodland features, such as natural ground cover (i.e., not mowed lawn) and understory shrubs.

Step 3

Professional Review *Recommended*

If none of the woodlands on the property will be disturbed, then a professional assessment is not required. When woodlands will be cleared, a qualified professional must delineate and assess the existing woodlands (e.g., woodland ecosystem assessment, basal area measurement, or tree survey)

Woodland Coverage of Parent Parcel	Minimum Required Woodland Coverage to be Preserved
75% to 100%	25%
50% up to 75%	50%
25% up to 50%	75%
Less than 25%	90%

Table 3 Woodland Preservation

Woodlands

Step 4

View the full standards

Chapter 50 NFP Overlay District

- Refer to the [Woodland Section](#)

Step 5

Be prepared to:

- Mark the full boundary of existing woodland, the section to be removed, and acreage and percent calculations on the site plan map
- Provide justification why the section of the woodland was chosen for preservation
- Fence preserved woodland with temporary barrier fencing during construction at the outer edge of the critical root zone (see Figure 4)
- **An Example Woodland Delineation Report can be found at the end of the NFP Guide.**

No disturbance allowed in preserved woodlands or critical root zones, except for specific permitted activities in the zoning code

Supplemental Site Plan Review Checklist

Fill out the corresponding sections of the checklist:

- Section II. Part B. Question 5 & 7
- Section III. Woodlands (If you have a woodland(s))

July 18, 2023

Preservation Action Plan:

Each Zone identified in the commentary will have itemized actions identified. None are implemented until September 2023. Based on individual tree conditions, alterations are possible. In September, a calendar of events will be published.

1. The Southside Tree Community:

In mid-September, the graded zone from the property fence line, north should have a granular application of 10-10-10 at 2 lb./1000 sq. ft. 25 feet wide band.

The excavation has produced exposed roots, some are broken. The broken roots should be cut clean, and this area should be covered with native soil to cover the roots up to 2" deep. This line of trees should be inspected in May 2024 for any individual tree flagging or other issues so that remediation can be engaged in a timely fashion.

2. The Southeast Corner currently has no firm development plans, yet. If there are changes, the trees on both sides of the wetlands should be analyzed for impact and preservation.

3. The Eastside slope, "Playground Area" will need an individual tree analysis. All trees, within and adjacent to it, must have an ID tag. A detailed analysis was not engaged on the 13th, but it is needed in the fall of 2023 for work coordination. A map of the work zone, with individual marked trees, is available and will be used as the site template for the Actions Plan implementation. This will be submitted in September 2023. All trees must be tagged and inventoried.

However, from the site overview on 07.13, each tree in the playground area should be systemically fertilized in October 2023 to prepare it for 2024 impacts. In the winter 2023-24, the trees should be pruned: low, potentially interfering branches and deadwood 1" and bigger taken. Any concerning tree structures should have aerial inspections.

Since wood chips are the designed ground cover, it should be spread at 2" deep over the whole area in late 2023, or early 2024 for soil protection.

In May 2024, a ground application of Glyphosate should be made to kill all herbaceous growth in the playground. An inspection of both trees and the efficacy of the spray, should be made 30 days after the herbicide is applied to insure effectiveness and no tree damages.

All identified trees within the action zone of the retaining wall/sidewalk removal should be systemically fertilized as with the Playground trees. Corrective root pruning, after the "raw excavation" should be done.

4. The two Northedge Trees identified in the G station, will have -6' wide area of fill pulled back from the buttress zone. The two trees should be systemically fertilized in the Fall, 2023.

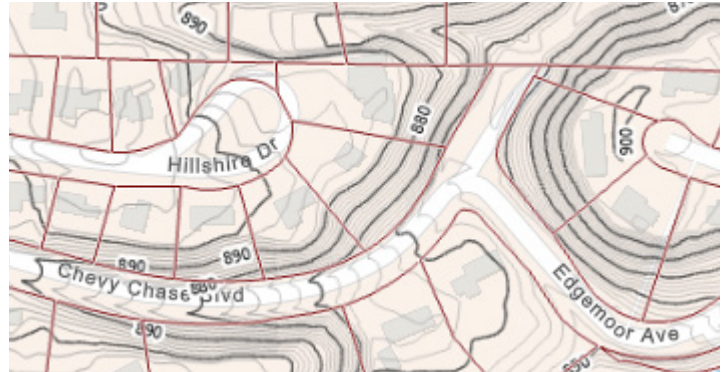
Slopes

How do I know if I have protected slopes?

Step 1

Desktop Review

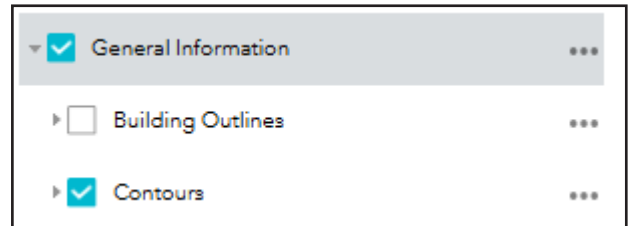
The City's online GIS map can be used as the first step in exploring slopes on your property. When 2-foot topographic contour lines are spaced 10 feet or closer, the slope grade is 20% or greater. Closer lines mean steeper grades



[City of Kalamazoo GIS](#)



- Expand the Layers tab
- Expand the "General Information" Layer and check the "Contours" Layer



Step 2

In Person Review

Look for sloping areas on your parcel (with grade of 20% or greater) that are covered in woodlands or a natural heritage area or within 500 feet of a water resource or wetland. Slopes that meet this definition are considered "protected" slopes.

Step 3

Professional Review *Required*

If none of the slopes on the property will be disturbed, then a professional assessment is not required. All setbacks still apply. For sites with "protected" slopes, complex topography, or a site plan that would disturb or encroach on slopes, a slope analysis must be done by a qualified professional. A resulting map showing "protected" slopes and the top and toe of slope setbacks must be included with your site plan review application

Supplemental Site Plan Review Checklist for NFP

Fill out the corresponding sections of the checklist:

- Section II. Part B. Question 6
- Section III. Slopes (*If you have a slope*)

Slopes

Step 4

View the full standards

[Chapter 50 NFP Overlay District](#)

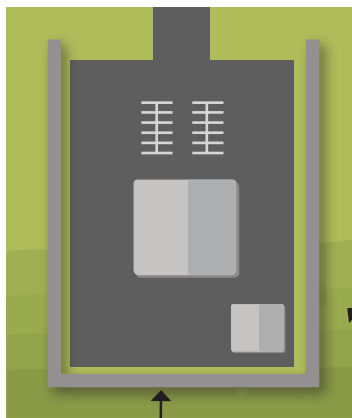
- Refer to the [Slopes Section \(§ 50-6.2H\)](#)

Step 5

Be prepared to:

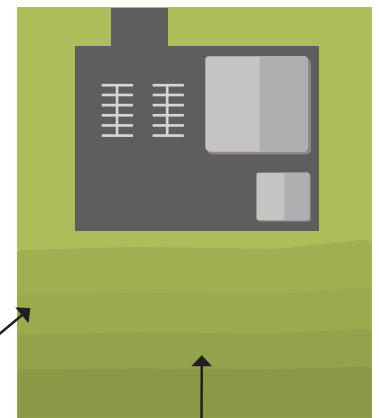
- Mark the location of “protected” slopes and the setbacks on the site plan map
- Consult a qualified professional for a slope analysis, if necessary
- Design your site plan to keep impervious coverage out of the setback area
- Fence “protected” slopes with temporary barrier fencing during construction at the outer edge of the setbacks

Initial Design

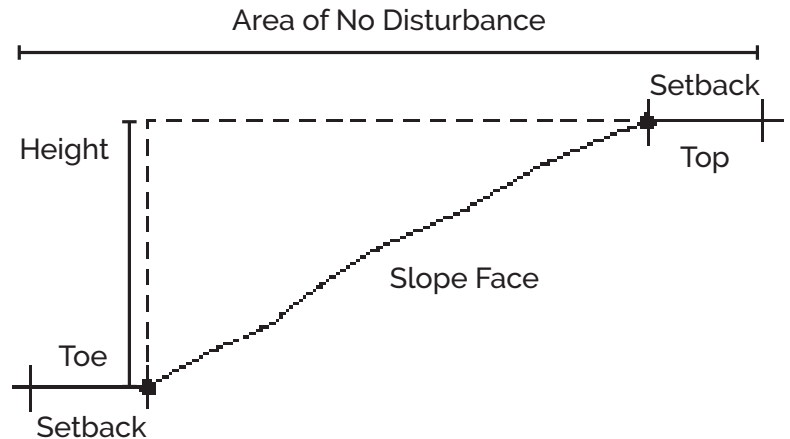


Retaining Wall

NFP Sensitive Design



NFP Protection Area



A Soil Erosion Soil Control (SESC) Plan is required when there is any earth change which disturbs one or more acres of land, is on a parcel adjacent to public streets, or is within 500 feet of waters of the state.

The City of Kalamazoo has a Soil Erosion and Soil Control Ordinance. This authority is granted to the City of Kalamazoo by the State of Michigan through the Part 91 of the Natural Resources and Environmental Protection Act (NREPA).

Visit kalamazoocity.org and search for Soil Erosion and Control Permit to learn more about the permitting process.

Natural Heritage Areas

Michigan Natural Feature Inventory (MNFI) Rare Species Review

Step 1

Desktop Review

Natural heritage areas include rare species of plants and animals and patches of historically or culturally significant ecosystems, all of which are considered protected under the zoning code. You can use the City of Kalamazoo Public GIS webmap to pre-screen if your property requires Rare Species Review. You can learn more about this program by viewing this [StoryMap](#) created by the Michigan State University Extension in partnership with the MI-DNR.

Step 2

MNFI Species Review

Michigan Natural Features Inventory
MSU Extension

If the property is labeled as "Yes" for Rare Species Review, then the review process should be started as soon as possible. The Michigan State University Extension staff can be busy during certain times of the year.

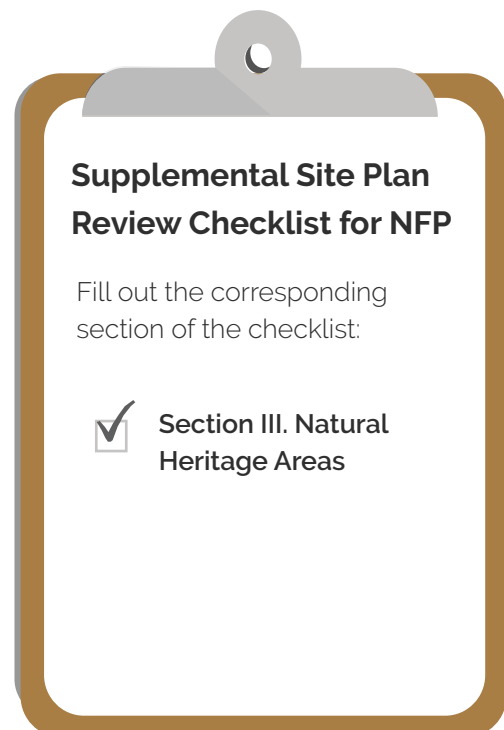
Visit: mnfi.anr.msu.edu/services/rare-species-reviews

- Follow the procedure and payment processes for submitting for Rare Species Review

Step 3

On-Site Survey

In some cases, an on-site survey is required when the MNFI rare species search confirms sightings of rare species within close vicinity of the property.



What should I do if a natural heritage area is present?

Step 4

View the full standards

[Chapter 50 NFP Overlay District](#)

- Refer to the [Natural Heritage Area Section](#)

Note!

All State and Federal protections and/or mitigation activities must be followed. Learn more at:

mnfi.anr.msu.edu/species/definitions-laws

Step 5

Be prepared to:

- Apply for a Rare Species Review through the MSU Extension as soon as possible
- Follow State and Federal protections, if necessary

Phone

(517) 284-6200

Fax

(517) 241-0012

Email

mnfi@msu.edu

Mailing Address

Michigan Natural Features Inventory
PO Box 13036
Lansing, MI 48901-3036

Shipping Address

Michigan Natural Features Inventory
Deborah A. Stabenow Building, 1st Floor
525 W. Allegan St.
Lansing, MI 48933

Landscaping

Step 1

Desktop Review

Additional landscape and screening activities apply within the NFP Overlay District. When conflicts between the underlying zoning district and the NFP Overlay District occur, the Overlay District takes precedent. It is recommended that you work with a professional to navigate these requirements. A few key elements to remember are:

- Native Species are required.
- Existing non-native vegetation needs to be contained
- non-native, non-invasive species may be approved by the NFP Board
- Prohibited plants in table 6.2-6 are not allowed.
- non-native and invasive plant species apart of the [Midwest Invasive Species Network](#) (MISIN) are not allowed.

Step 2

Professional Review (Recommended)

It is recommended that you work with a professional to navigate these requirements, especially for larger projects. Navigating plant species, planting locations, soil conditions is difficult.

You can review professionals near you by clicking [HERE](#).

Step 3

View the full standards

[Chapter 50 NFP Overlay District](#)

- Refer to Section [§ 50-6.2J \(Site Development Standards\)](#)

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Project Examples

Example 1: Commercial Redevelopment

Project Address:

209 E Stockbridge Ave (including 205 E Stockbridge and 210, 216, 220, 302, 302 Rear, 308, 308 Rear, & 316 Lake St)

Natural Features:

	C1.0.0	EXISTING CONDITIONS MAP - ZONING
Wetlands	C1.1.0	EXISTING CONDITIONS MAP -
Trees		NATURAL FEATURES
Woodland	C1.1.1	NFP CODE ANALYSIS - WETLANDS
		AND WATER RESOURCES
Applicable NFP Standards:	C1.1.2	NFP CODE ANALYSIS - FLOODPLAINS,
Wetlands		TREES, AND WOODLANDS
Protected Tree	C1.1.3	NFP CODE ANALYSIS - TREES AND
Woodland		WOODLANDS
Landscaping	C1.1.4	NFP CODE ANALYSIS - SLOPES,
		NATURAL HERITAGE AREAS
Stormwater	C1.1.5	NFP CODE ANALYSIS - SITE
		DEVELOPMENT STANDARDS & ADMIN

Project Summary:

The subject properties are undeveloped and owned by Kalamazoo Community Housing Choices and located in Kalamazoo, in the Edison Neighborhood, along Stockbridge Avenue and Lake St. The parcels are either split-zoned Community Commercial (CC) and Industrial (M-1) zone districts, Commercial Neighborhood (CN-1) and Community Commercial (CC) or solely zoned Community Commercial (CC). The applicant is proposing to redevelop the site by combining parcels into one parent parcel and constructing a 4-story mixed use building having 36 residential units and ground floor non-residential space, parking, and a paved path connecting the building to the sidewalk on Lake Street.

The project started the site plan process in 2021 and proposed a more intensive development with two buildings. The 2023 site plan documents show one building instead of two, perimeter greenspace and an added path connecting to Lake Street which has been moved to mitigate impacts to wetlands and the floodplain. The funding structure of this project also required alternations to stay out of the floodplain.

Example 2: Administrative Approval

Project Address:

251 Mills Street (Growler's Baseball Stadium)

Natural Features:

Wetlands

Water Resources

Trees

Woodland

Natural Heritage Areas / Rare Species Review (MNFI)

Applicable NFP Standards:

Wetlands

Protected Tree

Woodland

Landscaping

Stormwater

Drawing Index:

A-01	Index and Rendering
A-02	Aerial Site Photo
A-03	Ground Screw Foundation Plan
A-04	Ball Field Level Floor Plan
A-05	Upper Deck Framing Plan & Code Requirements
A-06	Upper Deck Level Floor Plan & Notes
A-07	Table Seating Plan
A-08	Team Store Roof Framing Plan
A-09	Roof Plan
A-10	Gazebo & Deck Cross Section
A-11	Team Store Cross Section
A-12	North & West Walkway Cross Sections
A-13	Wedge Wall & Details
A-14	Construction Details
A-15	20x12 Norwood Gazebo Assembly
A-16	South East Perspective

Project Summary:

The subject properties are owned by the City of Kalamazoo and located in Kalamazoo, in the Edison Neighborhood, along Mills Street. This area includes Mayor's Riverfront Park and Kalamazoo River Access as well as the Kalamazoo River Valley Trail. The parcel is zoned Live-Work 1 (LW-1). The Kalamazoo Growler's Organization approached staff with work proposed on the interior of the Stadium. The addition of a team store space and upper deck renovations were proposed.

The project scope was limited to working within the Stadium itself. Due to this, the project did not require Full NFP Board Approval because no natural features were to be impacted by conducting this work. This process only required Administrative Approval by the NFP Board Liaison to proceed. Site Plan Review was still required.

In this project, NFP development standards were not applied as the work did not affect existing Natural Features. This is why it is important to complete a full NFP Review and reach out to City Staff if there are questions. buildi

Example 3: Variance Request from NFP

Project Address:

209 E Stockbridge Ave (including 205 E Stockbridge and 210, 216, 220, 302, 302 Rear, 308, 308 Rear, & 316 Lake St)

Natural Features:

Wetlands

Trees

Woodland

Applicable NFP Standards:

Wetlands

Protected Tree

Woodland

Landscaping

Stormwater

Project Summary:

The subject properties are undeveloped and owned by Kalamazoo Community Housing Choices and located in Kalamazoo, in the Edison Neighborhood, along Stockbridge Avenue and Lake St. The parcels are either split-zoned Community Commercial (CC) and Industrial (M-1) zone districts, Commercial Neighborhood (CN-1) and Community Commercial (CC) or solely zoned Community Commercial (CC). The applicant is proposing to redevelop the site by combining parcels into one parent parcel and constructing a 4-story mixed use building having 36 residential units and ground floor non-residential space, parking, and a paved path connecting the building to the sidewalk on Lake Street.

The project started the site plan process in 2021 and proposed a more intensive development with two buildings. The 2023 site plan documents show one building instead of two, perimeter greenspace and an added path connecting to Lake Street which has been moved to mitigate impacts to wetlands and the floodplain. The funding structure of this project also required alternations to stay out of the floodplain.

In this project, NFP development standards helped inform a less intensive design and pushed to mitigate disturbances to natural features.

Example 4: Residential Development

Project Address:

209 E Stockbridge Ave (including 205 E Stockbridge and 210, 216, 220, 302, 302 Rear, 308, 308 Rear, & 316 Lake St)

Natural Features:

Wetlands

Trees

Woodland

Applicable NFP Standards:

Wetlands

Protected Tree

Woodland

Landscaping

Stormwater

Project Summary:

The subject properties are undeveloped and owned by Kalamazoo Community Housing Choices and located in Kalamazoo, in the Edison Neighborhood, along Stockbridge Avenue and Lake St. The parcels are either split-zoned Community Commercial (CC) and Industrial (M-1) zone districts, Commercial Neighborhood (CN-1) and Community Commercial (CC) or solely zoned Community Commercial (CC). The applicant is proposing to redevelop the site by combining parcels into one parent parcel and constructing a 4-story mixed use building having 36 residential units and ground floor non-residential space, parking, and a paved path connecting the building to the sidewalk on Lake Street.

The project started the site plan process in 2021 and proposed a more intensive development with two buildings. The 2023 site plan documents show one building instead of two, perimeter greenspace and an added path connecting to Lake Street which has been moved to mitigate impacts to wetlands and the floodplain. The funding structure of this project also required alternations to stay out of the floodplain.

In this project, NFP development standards helped inform a less intensive design and pushed to mitigate disturbances to natural features.

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Appendix A

Example Documents

Example Woodland Assessment

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- 1. Background Page 2
- 2. Minimum Area Page 4
- 3. Tree Count Page 4
- 4. Natural Groundcover Page 4
- 5. Preservation Requirements ... Page 6
- 6. Tree Inventory Page 7

Background

A trail development project has been proposed by the Southwest Michigan Land Conservancy at its Bow in the Clouds Natural Area, which lies between the City of Kalamazoo and Kalamazoo Township. Within the city, it also lies in the Natural Features Protection Layer. This project is intended to create increased community access to this important natural area through Universal Access principles, while also allowing the City of Kalamazoo staff access to manhole covers to conduct maintenance on below-ground sewers that cross the preserve in several areas. The City has a legal access easement to build a road and maintain these sewer lines, but a plan and layout formed working with SWMLC will allow legal access while maintaining a natural area aesthetic.

While several natural features are found on site (wetlands, waterways, slopes, and woodland), only impact to the slope and slope setback features cannot be avoided per NFP requirements. A recommendation was sought for a variance to this feature from the NFP Board and was recommended (5/28/24) with a subsequent approval by the Zoning Board of Appeals (6/13/24). The woodland feature was proposed (as opposed to the tree feature) by SWMLC, and would allow for much more than the limited removal of trees that is being proposed to make room for the trail layout. However, the delineation needed to be demonstrated by meeting the definition of a woodland per the NFP Ordinance language. This document clearly defines the project area as woodland, and represents the additional acreage of woodland on site outside the project area.

Woodland is defined by NFP verbiage by its:

- Minimum area
- Tree count
- Natural ground cover

NFP Woodland Delineation: Bow in the Clouds

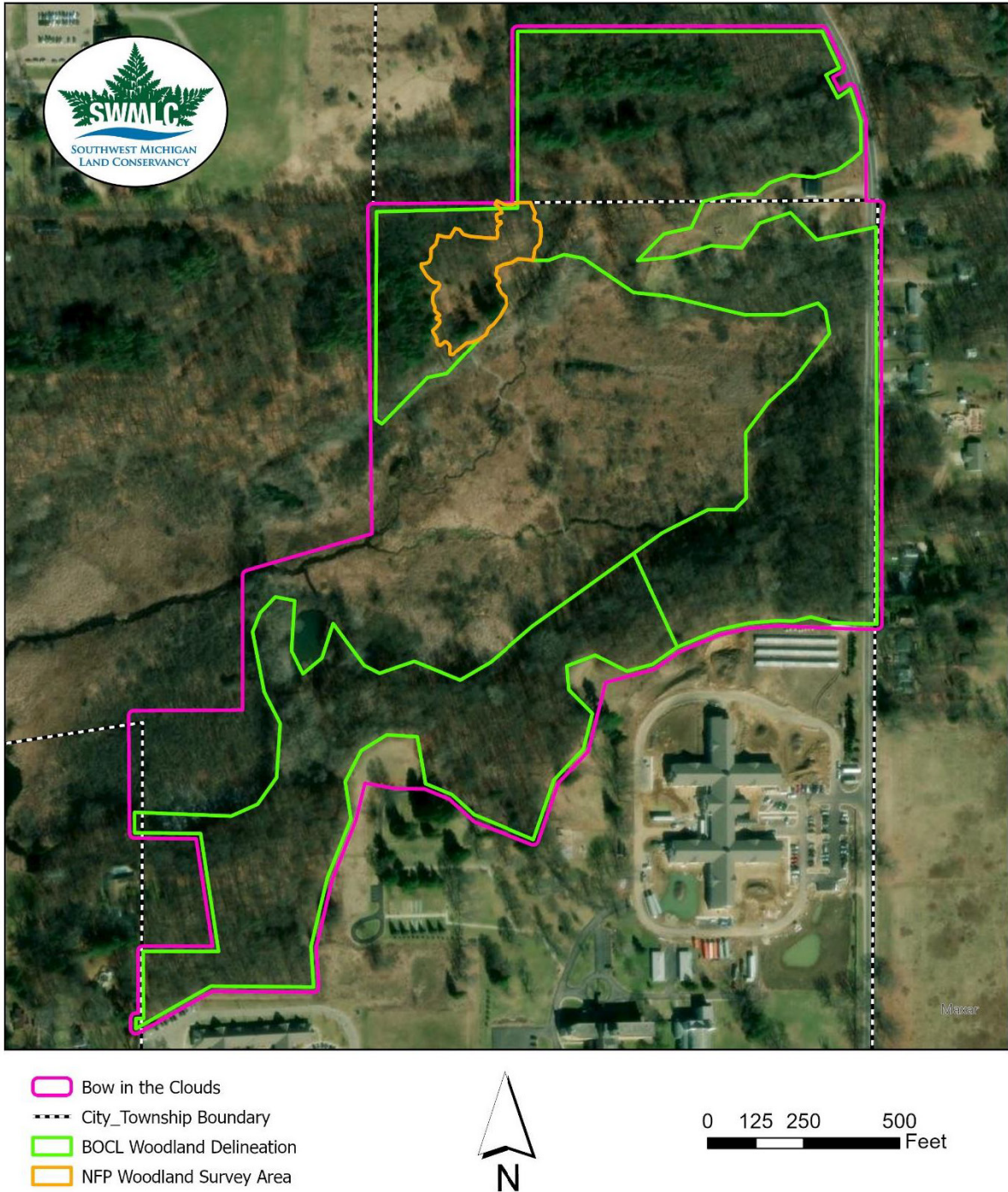


Image 2. Bow in the Clouds Natural Area, including boundary, city/township line, woodland delineation, and survey area.

Minimum Area

Trees cover a minimum area of 21,780 square feet or a half (1/2) acre, regardless of parcel boundaries (NFP II Ordinance with text amendments).

Woodland acreage for the overall property is 34.92 acres (see “BOCL Woodland Delineation” on Image 1). This results in 59% (34.92 acres woodland/58.94 acres parent parcel) coverage and 52% (26.51 acres woodland/50.53 acres parent parcel) coverage if only the acreage within the City of Kalamazoo is counted. This acreage was calculated in a GIS analysis using largely National Wetland Inventory data, aerial imagery, and ground truthing to distinguish between woodland and wetland acreage.

Tree Count

The area contains the equivalent of at least forty (40) trees per acre of at least two (2) inches DBH and reach or at maturity will reach at least fifty feet (50) in height (NFP II Ordinance with text amendments).

SWMLC Stewardship Staff conducted a representative tree inventory in July 2024 using the following criteria: 1) within the City limits, 2) within the project area excluding wetland acreage, 3) trees 2” DBH or greater, and 4) excluding understory trees (less than 50’ at maturity) in density estimates. Trees were measured, identified to species wherever possible, and GPS coordinates/location recorded (See Image 3). Understory trees were initially recorded and reflected in the set of points, but later removed for purposes of calculating tree density per acre (per NFP Guidelines). 297 trees were initially recorded representing 25 species and 275 trees representing 17 species remained once understory trees were eliminated from the calculations (See Table 1). These include native and non-native species. The survey area was 1.44 acres.

191 trees per acre is the tree density within the project area.

Natural Ground Cover

No more than twenty-five (25) percent of the ground area is mowed turf grass (NFP II Ordinance with text amendments).

Bow in the Clouds has approximately 1.25 acre of mowed turf grass and prairie but these were not included in the woodland acreage assessment. Woodland areas had a natural understory of shrubs, herbaceous grasses and forbs, and leaf litter (see Image 4).

Tree Count

Table 1. Tree inventory within representative survey area. 275 total trees were counted and measured.

Tree #	Common Name	Scientific Name	Size (DBH in inches)
3	American elm	<i>Ulmus americana</i>	9.5
164	Black Cherry	<i>Prunus serotina</i>	2
172	Black Cherry	<i>Prunus serotina</i>	2
271	Black Cherry	<i>Prunus serotina</i>	2
278	Black Cherry	<i>Prunus serotina</i>	2
158	Black Cherry	<i>Prunus serotina</i>	2.5
296	Black Cherry	<i>Prunus serotina</i>	2.5
297	Black Cherry	<i>Prunus serotina</i>	2.5
233	Black Cherry	<i>Prunus serotina</i>	3
235	Black Cherry	<i>Prunus serotina</i>	3
244	Black Cherry	<i>Prunus serotina</i>	3
218	Black Cherry	<i>Prunus serotina</i>	3.5
220	Black Cherry	<i>Prunus serotina</i>	3.5
237	Black Cherry	<i>Prunus serotina</i>	3.5
274	Black Cherry	<i>Prunus serotina</i>	3.5
154	Black Cherry	<i>Prunus serotina</i>	4
156	Black Cherry	<i>Prunus serotina</i>	4
248	Black Cherry	<i>Prunus serotina</i>	4
275	Black Cherry	<i>Prunus serotina</i>	4
280	Black Cherry	<i>Prunus serotina</i>	4
295	Black Cherry	<i>Prunus serotina</i>	4

Rare Plant Survey of Friendship Village Complex Kalamazoo, Michigan



Prepared By:

Paul R. Schilke and Michael A. Sanders, Michigan Natural Features Inventory, Michigan State University Extension, PO Box 13036, Lansing, MI 48901-3036

Prepared For:

Lifecare, Inc.

July 31, 2024

MNFI Report Number 2024-16

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INTRODUCTION

Lifecare Inc. contracted with Michigan Natural Features Inventory in 2024 to conduct a survey of two parcels: 1400 and 1402 Drake Road in the city of Kalamazoo. A rare species review of the Michigan Natural Heritage Database found historical occurrences of three rare plant species, white wild indigo (*Baptisia lactea*), prairie coreopsis (*Coreopsis palmata*), and American ginseng (*Panax quinquefolius*), within one kilometer of the survey area (Table 1) (Michigan Natural Features Inventory).

Table 1: Historical occurrences of rare plant species within one kilometer of the survey area at 1400 and 1402 Drake Road, Kalamazoo.

Species (Common Name)	Species (Scientific Name)	Michigan Status	Year last observed	Habitat
white false indigo	<i>Baptisia lactea</i>	State Threatened	1978	Grassland/prairie
prairie coreopsis	<i>Coreopsis palmata</i>	State Threatened	1838	Grassland/prairie
American ginseng	<i>Panax quinquefolius</i>	State Threatened	1838	Forest

Much of the survey area has been developed but the parcel at 1402 Drake Road includes areas of undeveloped forest and grassland and the parcel at 1400 Drake Road includes undeveloped grassy and shrubby areas. These undeveloped areas can harbor remnant natural communities that have not been substantially altered by human activity and often provide suitable habitat for rare plant species. Historical landcover of the survey area included both forest and grassland in the broader region while the survey area was grassland circa 1800 (Fig. 1) (Comer et al. 1995). Natural occurrences of white wild indigo and prairie coreopsis are found in remnant prairie and savanna habitats in Southwest Michigan (Slaughter 2009). American ginseng occurs in shaded habitats of dry-mesic and mesic forests in Michigan (Penskar 1996).

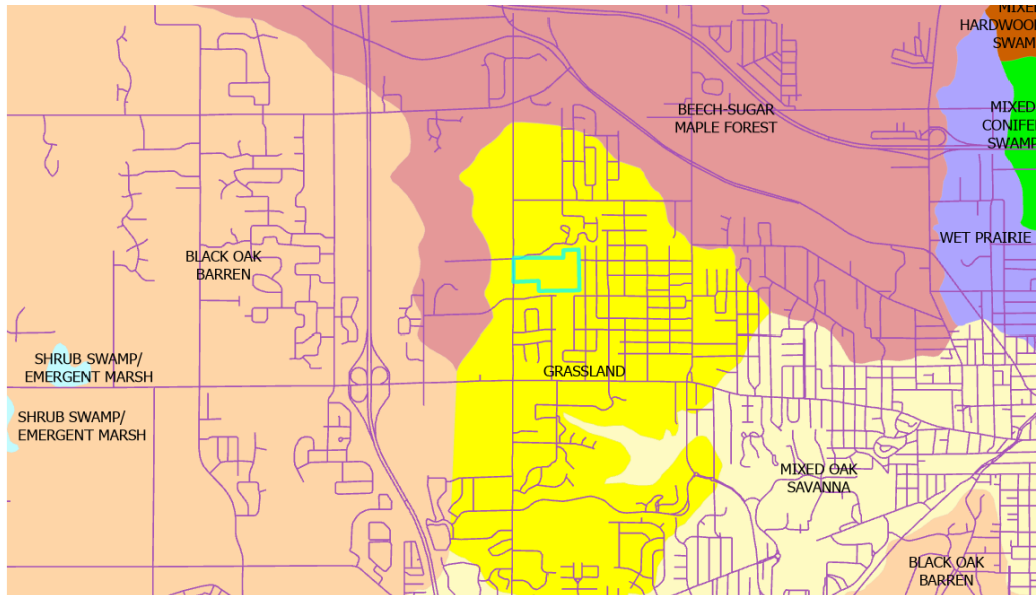


Figure 1. Historical landcover with current roads for reference. The map shows the survey area in Kalamazoo, Michigan highlighted in light blue. The c1800 landcover derived from General Land Office notes was grassland with forest and barrens in the surrounding area.

METHODS

Friendship Village provided aerial photographs and parcel boundaries of the survey area (Fig. 2). MNFI reviewed aerial imagery and the Michigan Natural Heritage Database to determine priority areas for rare plant surveys. A field survey was conducted on June 4th, 2024 by MNFI botanist Paul Schilke. Meander surveys were conducted in priority survey areas. In addition, other undeveloped areas that were encountered were also surveyed. A later season survey of the prairie area was conducted on July 5th, 2024, to match the ideal survey window for several of the rare plant species found in grasslands.

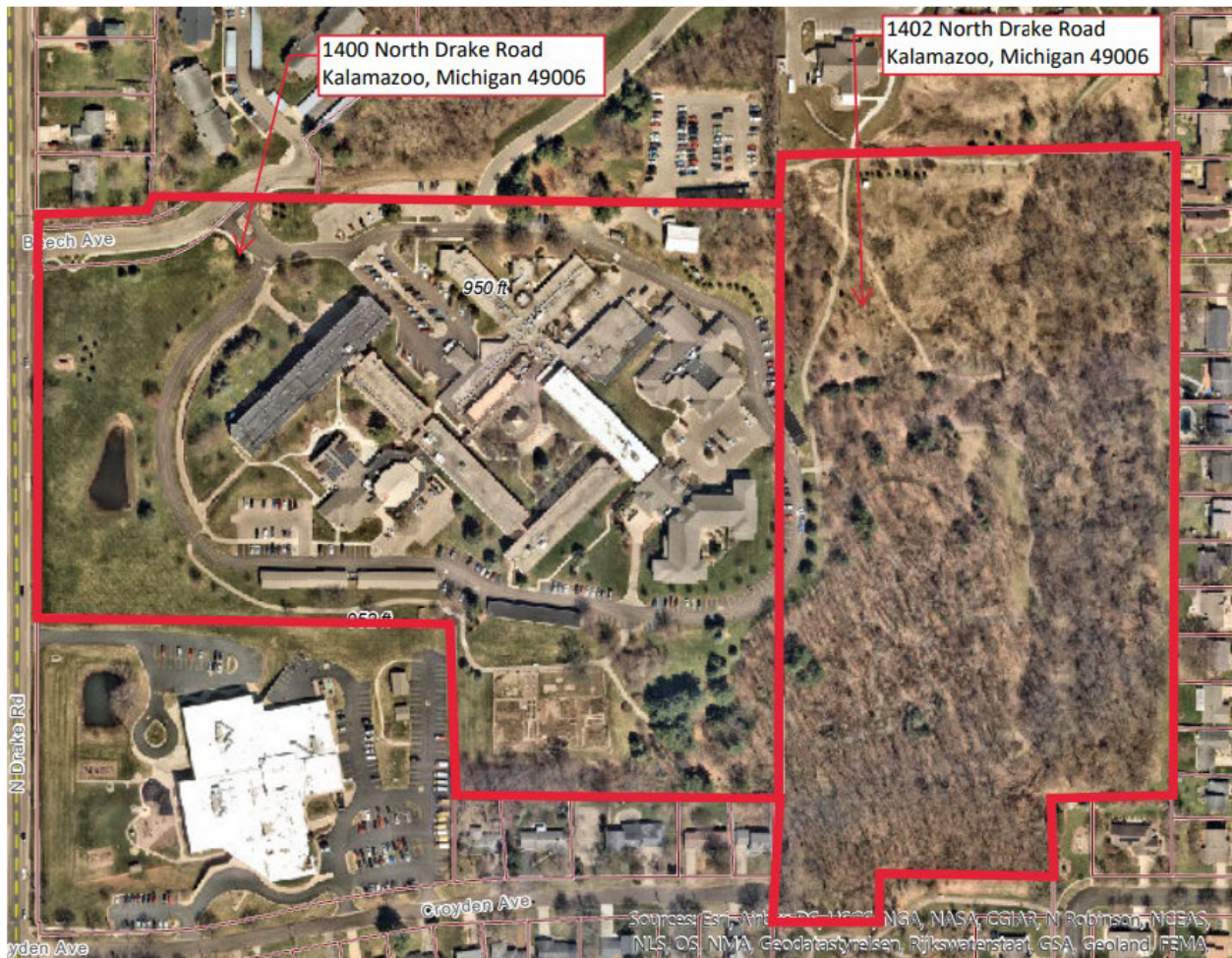


Figure 2. Aerial photograph with parcel boundaries (survey areas) outlined in red.

RESULTS

No natural occurrences of rare plant species were found in the survey area. Five rare plant species were found in the survey area; however, these were determined to have been planted and therefore require no protection or mitigation and were not added to the Michigan Natural Heritage Database (Table 2).

Table 2: Rare plants encountered during the survey. All these species were most likely planted and therefore were not added to the Michigan Natural Heritage Database.

Species (Common Name)	Species (Scientific Name)	Michigan Status	Coefficient of Conservatism	Habitat
twinleaf	<i>Jeffersonia diphylla</i>	Special Concern	9	Forest
goldenseal	<i>Hydrastis canadensis</i>	State Threatened	10	Forest
Virginia bluebells	<i>Mertensia virginiana</i>	State Threatened	10	Forest
rattlesnake master	<i>Eryngium yuccifolium</i>	State Endangered	10	Grassland/prairie
leadplant	<i>Amorpha canescens</i>	Special Concern	8	Grassland/prairie

There were no areas found within 1400 and 1402 Drake Road that have a high likelihood of harboring rare plants. The wooded area at 1402 Drake Road was dominated by black walnut (*Juglans nigra*) and black cherry (*Prunus serotina*) in the overstory and non-native shrubs and forbs in the shrub and ground layer. The grassy and shrubby areas were dominated by non-native species and contained several native species that can be found in either high-quality or semi-degraded grasslands, such as Virginia mountain mint (*Pycnanthemum virginianum*).

A noxious weed – poison hemlock – was found in one area at the northern edge of 1402 Drake Road. The survey area contains a high diversity of plant species; however, a large proportion of them are not indigenous to Southwest Michigan and appeared spontaneously or appeared to have been planted for aesthetic value.



Poison hemlock (*Conium maculatum*) was observed near the northern edge of the 1402 Drake Street parcel. This carrot-family species is highly toxic to humans.

Past and current human activity is the main process shaping the plant communities at 1400 and 1402 Drake Road. No remnant forest or grassland areas were located, and all of the area was likely farmed with row crops or grazed in the past. The forests and grasslands in the survey area formed after intensive human disturbance rather than from pre-settlement natural communities and therefore include a mix of native and non-native species (Appendix 1).

DISCUSSION

The three rare plant species that were targets of surveys, white wild indigo, prairie coreopsis, and American ginseng, are species associated with high quality natural communities. White indigo and prairie coreopsis are primarily found in remnant prairies where the native flora has not been disturbed by development, agriculture, or other human activity. American ginseng is found in high-quality woodlands where the native ground flora has not been disturbed by logging, grazing, tilling, harvesting, or other anthropogenic disturbance. The Friendship Village survey area has been heavily altered by past and current human activity and does not contain remnant natural communities that harbor rare plants. Due to the lack of high-quality habitat, it is unlikely that these, or other rare plants, could persist in the survey area.

The types of anthropogenic natural communities observed in the Friendship Village survey area are common in Southern Michigan and have a low likelihood of harboring rare plants and animals compared to natural communities that have primarily been shaped by natural processes. The wooded area is similar to other woodlands in Southern Michigan that regenerated after major anthropogenic disturbances, such as logging and tilling for agriculture. These second or third-growth woodlands contain many non-native plants and relatively few native plants. A vine, bittersweet (*Celastrus orbiculatus*), is a common non-native component of young forests such as those at Friendship Village and makes these forests difficult to traverse.



Bittersweet is a common component of the forests at 1402 Drake Road. This non-native plant species has degraded forests throughout Southern Michigan.

The wooded area at Friendship Village contains many plant species that were planted. The plantings include three woodland native plants that are threatened or endangered in Michigan: goldenseal, twinleaf, and Virginia bluebells. These rare plant species occurred near trails and in small numbers. The lack of associated specialized plants, the low quality of the woodland

habitat, and signs indicating plantings in some areas all indicate that these are not natural occurrences and therefore not protected.

The grassland and shrubland located in the northern portion of the survey area is similar to other grasslands that have assembled after historic land clearing, tilling, and agriculture. These grasslands contain many non-native species and relatively few native species. In particular, rare and specialized perennial grassland plants such as white wild indigo and prairie coreopsis are not found in these types of grasslands, while the rare species leadplant and rattlesnake master were observed to have been planted. Native plantings can provide food and habitat for native animals such as pollinating insects, increasing the ecological value of anthropogenic grasslands.



A grassland with planted species is located in the north portion of 1402 Drake Road

Example Arborist Report

July 18, 2023

REPORT

From:

Re:

Executive Summary:

On 05.31.2023, the Kalamazoo Planning Department issued a Violation Citation: # 06-34-38-001 based upon observed actions on the [REDACTED] property.

The violation is focused on several locations, with identified concerns. These are:

1. The grading of the south property line, with visible root damage, where the installment of construction fencing was placed approximately 30' north of the actual identified and approved clearance line.
2. The far Southeast corner of the property, which holds a protected wetlands and the surrounding trees growing there.
3. The east side of the property, the sloped west bank of White's Lake, which is scheduled for a construction retaining wall, which is the location of the cantilevered Platform Tennis Courts and walls for the pools/patios. The children's playground/boardwalk, under the oaks to the south and down the slope. Also in this zone, an old concrete sidewalk is scheduled for removal. Concurrently, within this area, are several trees which will have the critical root zone impacted.
4. On the Northside, two trees, a Maple and Black Cherry were identified to be impacted by recent grading actions.

All the areas were inspected closely and all impacted trees in each zone were individually assessed. Identified trees requiring imperative actions, pruning or removal were marked with paint. A Preservation Action Plan was verbally approved by [REDACTED] (See Commentary on Page 2 and Recommendations on Page 4.) This is the currently stated Action Plan.

Procedure:

On 07.13.2023 at 11:00 AM a group [REDACTED] [REDACTED] walked the site and inspected the trees in the zones of concern. Specific issues, listed in the Citation were addressed.

Commentary on the 07.13 Site/Tree Inspection:

The Southside Property Line was approved for “total tree removal” in the 2022 Zoning Approval. Excavation was stopped within approximately 30± of the prescribed and approved edge and ~ 15’ south of it was graded. Within the area left untouched, ~15’ were scores of trees, which the city Planning Department had accepted originally as taken and lost. No exact count was taken, however on the over the 1,500’+ of property line considered, there is 10,000± sq. ft. of canopy, approved in 2022, for removal, by the Planning Department, which remains.

In the analysis of individual trees, nearly all Black Cherries, *Prunus serotina*, were condemned due to species-specific concerns. These removals will not alter the overall canopy texture or context, due to the connection to the property adjacent and the dominance of the other trees. The Cherry removals will reduce risk of structural failures in the future and provide added root zones for those trees remaining.

Of the other trees in this location, most were Sassafras, *Sassafras albidum*. This species is native and naturally a “sandbank” tree, prospering in very gritty, sandy, high drainage soils. It has naturally deep roots, and routinely produces sinker roots which can explore 6’+ deep. They can withstand more construction stress, and reproduce both by seed and asexually, causing the tree community, as a whole, to be more resolute.

Most significant to the preservation of this identified tree community is that over 60%+, and for many trees 80%+, of the trees’ root zones had not been impacted by the grading. Nearly all trees, showed no decline in their canopies, even with the unusually dry conditions of 2023.

The Southeast Corner is still in a decision mode; thus, commentary is not warranted with the trees in this portion of the property.

The west bank of White’s Lake, on the east side of the development, is a mature southern Mesic Forest*. It is historical and unique for the whole [REDACTED] property. Preservation of the mature trees on site will require individual care, and routine inspection. There are three specific issues in this location: The proposed playground, installation actions and post-installation tree management. The upper edge within the construction impact zone, retaining wall installation and the impact on the nearby tree root masses. The removal of the old concrete stairs going down the slope to the lake shore.

*Dry-mesic Southern Forest – Michigan Natural Features Inventory
Michigan Natural Features Inventory MSU Extension, Dry-mesic Southern Forest

Commentary on the 07.13 Site/Tree Inspection, cont.:

The playground under the oaks is a unique feature, does pose immediate and long-term risks if the trees are not managed properly. The trees, the installed features, and those who use the site for recreation are considerations for both risk exposure and management actions.

The current tree density affords installation with marginal impacts and no removal of trees. The stated plan for wood chips as the ground cover is positive for the trees. The post/pylon installation of both boardwalk and play equipment will not negatively reduce tree root volumes.

Pre-construction actions are critical to elevate the negentropy of the individual trees within the proposed feature. Canopy pruning is critical to reduce failure risks. Each tree should have a permanent ID number tag, installed. (See Recommendation, Page 4)

Yearly inspections in June will allow evaluation of each tree's condition. This annual inspection will update the current condition of each tree and project directions for fall - winter maintenance schedules. Any overt/acute condition can be dealt with before the summer activity season.

The trees on the bluff, exposed to potential construction actions, were evaluated individually. Those condemned were marked for removal. There will be Fall, 2023 preservation actions on those to be preserved.

The Concrete Stair Removal will not impact any trees in this area, if implemented properly. The Hickory at the top of the concrete walk is scheduled for removal. One Black Oak, to the near north of the walkway, will be marginally affected. It can be individually preserved.

To minimize any potential negative impact, this work should be done after November 1 and before February 1. Snow cover will reduce traction of equipment. Rubber-tracked equipment should be used, and the process should begin from top to bottom lifting and carrying the broken concrete pieces up and out along the old concrete walk location.

General Discussion:

In the three actions zones, there is nothing unusual or unique from other construction sites. All trees are energy systems and reactive growers; they either grow or decline based upon their genetic presets and their environment. Preemptive actions and ongoing inspections, with timely responses, as determined, will insure their future and each tree's contribution to the development.

While preliminary discussions on reforestation, for each zone, have been engaged to date, it is only vision casting.

Preservation Action Plan:

Each Zone identified in the commentary will have itemized actions identified. None are implemented until September 2023. Based on individual tree conditions, alterations are possible. In September, a calendar of events will be published.

1. The Southside Tree Community:

In mid-September, the graded zone from the property fence line, north should have a granular application of 10-10-10 at 2 lb./1000 sq. ft, 25 feet wide band.

The excavation has produced exposed roots, some are broken. The broken roots should be cut clean, and this area should be covered with native soil to cover the roots up to 2" deep.

This line of trees should be inspected in May 2024 for any individual tree flagging or other issues so that remediation can be engaged in a timely fashion.

2. The Southeast Corner currently has no firm development plans, yet. If there are changes, the trees on both sides of the wetlands should be analyzed for impact and preservation.

3. The Eastside slope, "Playground Area" will need an individual tree analysis. All trees, within and adjacent to it, must have an ID tag. A detailed analysis was not engaged on the 13th, but it is needed in the fall of 2023 for work coordination. A map of the work zone, with individual marked trees, is available and will be used as the site template for the Actions Plan implementation. This will be submitted in September 2023. All trees must be tagged and inventoried.

However, from the site overview on 07.13, each tree in the playground area should be systemically fertilized in October 2023 to prepare it for 2024 impacts. In the winter 2023-24, the trees should be pruned: low, potentially interfering branches and deadwood 1" and bigger taken. Any concerning tree structures should have aerial inspections.

Since wood chips are the designed ground cover, it should be spread at 2" deep over the whole area in late 2023, or early 2024 for soil protection.

In May 2024, a ground application of Glyphosate should be made to kill all herbaceous growth in the playground. A inspection of both trees and the efficacy of the spray, should be made 30 days after the herbicide is applied to insure effectiveness and no tree damages..

All identified trees within the action zone of the retaining wall/sidewalk removal should be systemically fertilized as/with the Playground trees. Corrective root pruning, after the "raw excavation" should be done.

4. The two Northedge Tees identified in the Citation, will have ~6' wide area of fill pulled back from the buttress zone. The two trees should be systemically fertilized in the Fall, 2023.

Michigan's Invasive Species Watch List

The following information is presented as a guide for reporting occurrences of select invasive species of concern in Michigan.

Invasive Species Watch List

The invasive species included on the watch list are priority species that have been identified as posing an immediate and significant threat to Michigan's natural resources. These species have either never been confirmed in Michigan or have very limited distribution or are localized. Early detection and timely reporting of occurrences of these species is crucial for increasing the likelihood of stopping an invasion and limiting negative ecological and economic impacts. Species are listed below by category. The invasive species below should be reported immediately and directly to staff. Please use the contacts below each category to report a possible detection of a watch list species.

Insects and Tree Diseases (Tree diseases list the scientific name for the pathogen or fungus associated with the disease)

- Asian longhorned beetle (*Anoplophora glabripennis*)
- Balsam woolly adelgid (*Adelges piceae*)
- Beech leaf disease (*Litylenchus crenatae* and potential associates)
- Hemlock woolly adelgid (*Adelges tsugae*)
- Mountain pine beetle (*Dendroctonus ponderosae* Hopkins)
- Spotted lanternfly (*Lycorma delicatula*)
- Thousand cankers disease (*Geosmithia morbida*)

Report the species above to Robert Miller – MDARD Plant Health Section, MillerR35@michigan.gov, 517-284-5650.

Mammals

- Nutria (*Myocastor coypus*)

Report the species above to Ryan Wheeler – DNR Wildlife Division, WheelerR5@Michigan.gov, 517-614-1501.

Terrestrial Plants

- Calligraphy sedge (*Carex kobomugi*)
- Chaff flower (*Achyranthes japonica*)
- Cinnamon vine (*Dioscorea polystachya*)
- Kudzu (*Pueraria montana* var. *lobata*)
- Lesser celandine (*Ficaria verna*)
- Mile-a-minute weed (*Persicaria perfoliata*)
- Purple jewelweed (*Impatiens glandulifera*)
- Stiltgrass (*Microstegium vimineum*)

Report the species above to Katie Grzesiak – DNR Terrestrial Invasive Species Coordinator, GrzesiakK1@Michigan.gov, 231-492-7811.

Aquatic Plants

- Brazilian elodea (*Egeria densa*)
- European water-clover (*Marsilea quadrifolia*) – This species is currently allowable for sale and possession. Please contact EGLE if these plants are observed outside of cultivation.
- Hydrilla (*Hydrilla verticillata*)
- Parrot feather (*Myriophyllum aquaticum*)
- Water chestnut (*Trapa natans*)
- Water hyacinth (*Eichhornia crassipes*) – This species is currently allowable for sale and possession. Please contact EGLE if these plants are observed outside of cultivation.
- Water lettuce (*Pistia stratiotes*) – This species is currently allowable for sale and possession. Please contact EGLE if these plants are observed outside of cultivation.
- Water-primrose (*Ludwigia grandifolia*, *Ludwigia peploides* and *Ludwigia hexapetala*)
- Water soldier (*Stratiotes aloides*)
- Yellow floating heart (*Nymphoides peltata*)

Report the species above to Aquatic Invasive Species Unit– EGLE Water Resources Division, EGLE-WRD-AIP@Michigan.gov, 517-342-4087.

Fish and other Aquatic Animals

- Invasive carps
 - Silver carp (*Hypophthalmichthys molitrix*)
 - Bighead carp (*Hypophthalmichthys nobilis*)
 - Grass carp (*Ctenopharyngodon idella*)
 - Black carp (*Mylopharyngodon piceus*)
- Marbled crayfish (*Procambarus virginalis*)
- New Zealand mudsnail (*Potamopyrgus antipodarum*)
- Northern snakehead (*Channa argus*)
- Red swamp crayfish (*Procambarus clarkii*)

Report crayfish species to Kathleen Quebedeaux – DNR Fisheries Division, QuebedeauxK@Michigan.gov, 734-780-5571.

Report fish or other invertebrate species to Justin Bopp – DNR Fisheries Division, BoppJ@Michigan.gov, 517-420-9110.

For invasive carp report electronically at Michigan.gov/InvasiveCarp.

For more information, please visit:

Michigan.gov/Invasives



Important External Resources

VIEW FROM THE CURB

THE CITY OF KALAMAZOO'S GUIDE TO WASTE, RECYCLING & PUBLIC SERVICES

INSIDE:

- Seasonal Programs 2
- Bulk Trash 4
- Hazardous Waste, EPS Foam 5
- Recycling 6
- Code Enforcement 8

QUICK TIPS:

NEW!

You can now drop food scraps off to be recycled into compost! Learn more on page 3.

Wait to report missed leaf pickup until the scheduled collection is over in your area.

Don't block streets, sidewalks, or bike lanes when putting your leaves out for pickup.



Scan to view recycling services online or report a missed pickup!



Is there anything we can help with? Call 311 or (269) 337-8000 for help with city services

CURBSIDE RECYCLING

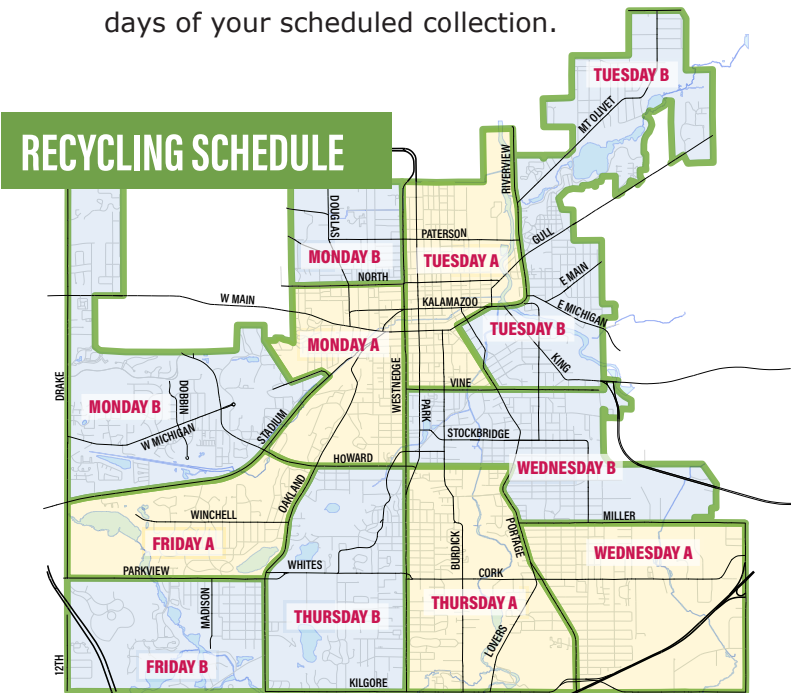
Every city resident can take advantage of bi-weekly curbside recycling! Just request a cart, learn what can be recycled, and place your cart out for your pickup.

Request a cart

- Visit kalamazocity.org/recycle to request a cart online.
- Call 311 or (269) 337-8000 and we'll arrange for a cart to be delivered.

Schedule and collection

- Recycling is collected every other week. Use the recycling schedule map and the calendar on the inside flap of this newsletter to find your collection day. You can also find the schedule at kalamazocity.org/recycle.
- Place your cart at the curb the night before your pickup. Bring it back by the end of the day of your pickup.
- Report missed pickups within two days of your scheduled collection.



Thank you for recycling these materials **loosely in your cart, and empty, clean, and dry**

Paper

Paper, Cups, and Cartons
Papel, vasos de papel y envases de cartón

Glass

Glass Bottles and Jars
(empty and dry)
Botellas y frascos de vidrio
(vacíos y secos)

Metal

Aluminum and Metal Cans
(empty and rinse)
Latas de aluminio y metal
(vacías y enjuagadas)

Plastic

Plastic Bottles, Tubs, and Containers
(empty, rinse and replace cap)
Botellas, tinas y recipientes de plástico
(vacíe, enjuague y reemplace la tapa)

Cardboard

Cardboard and Boxboard
(empty and flatten)
Cartón
(vacío y aplanado)

Also accepting:

- ✓ Paper cups & lids
- ✓ Plastic cups & lids
- ✓ Gable top containers



View Recycling Info Online!
kalamazocity.org/recycle

Thank you for **NOT** recycling these materials curbside in your cart

No Bagged Recyclables (no trash)

No Plastic Bags or Plastic Wrap

No Styrofoam™ or EPS foam #6

No Batteries or Electronics (drop-off only)

No Tangles, Cords, Hoses, or Chains

No Food or Liquid (empty and dry)

There are other recycling options available! Look for EPS foam recycling or HHW on page 5.



Recycling at multi-unit properties

Different container sizes and collection schedules are available for properties with more than five units. Multi-unit recycling accepts the same materials as curbside and residents have 24-hour access to recycling. Have your property manager call 311 or (269) 337-8000 to start.

Recycle Coach app

The free Recycle Coach app for iOS and Android mobile devices can remind you of collection days, share important service notices, and you can even look up what items are recyclable. Just search for it in your device's app store.

Recycling drop-off

You can drop off recyclable material directly to Republic Services too:

Republic Services
3432 Gembrit Circle
Monday - Friday, 8 a.m. - 4:30 p.m.
Saturday, 8 a.m. - 12 p.m.

2026 Recycling Calendar

January							February							March						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4	5	6	7	8	9	10	8	9	10	11	12	13	14	8	9	10	11	12	13	14
11	12	13	14	15	16	17	15	16	17	18	19	20	21	15	16	17	18	19	20	21
18	19	20	21	22	23	24	22	23	24	25	26	27	28	22	23	24	25	26	27	28
25	26	27	28	29	30	31	29	30	31					29	30	31				

April							May							June						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4					1	2	1	2	3	4	5	6		
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30				
							31													

July							August							September						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4						1			1	2	3	4	5	
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	7	8	9	10	11	12
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30			
							30	31												

October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
25	26	27	28	29	30	31	29	30						27	28	29	30	31		

RECYCLING COLLECTION KEY:

Gold highlighted weeks are **A WEEK**

Blue highlighted weeks are **B WEEK**

Red highlighted days are **Holidays**

If your weekly pickup is scheduled on or after a holiday, your service will be provided one day later.

Program schedule maps can be found in the View from the Curb or on each program's page at kalamazocity.org.

MY BULK TRASH, BRUSH, AND SPRING CLEAN-UP DAY IS:

MY RECYCLING DAY IS:

Cut out this schedule and put it on your fridge!



KEEP OUR NEIGHBORHOODS CLEAN AND INVITING

The City of Kalamazoo wants neighborhoods that are safe, clean, and welcoming for everyone. City ordinances exist not just to enforce rules, but to protect public health, safety, and the overall quality of life in our community. Our staff would much rather see residents maintain their properties than spend time enforcing codes!

Curb lawn nuisances

Materials left at the curb outside of scheduled collection times can attract pests, create safety hazards, and make neighborhoods look unkempt.

- Furniture, trash, brush, or other items left out may be removed by the City, with costs billed to the property owner.

Porch violations

Storing indoor furniture or clutter on porches and decks can create fire hazards, obstruct walkways, and negatively impact neighborhood appearance.

- Violations may result in fines and additional costs if not corrected.

Tall grass & weeds

Overgrown grass and noxious weeds can harbor pests, reduce visibility for drivers and pedestrians, and create health hazards.

- Grass must be kept under 8 inches tall.
- Poison ivy, poison oak, and other noxious weeds are violations at any height.
- If not addressed, the City may mow and charge the owner.
- Fines increase for repeat offenses.

Trash on private property

Accumulated trash and debris can attract pests, create odors, and increase fire risks.

- Owners have 10 days to clean up before the City intervenes at the owner's expense.

Garbage & recycling containers

Proper storage of containers keeps streets safer, prevents litter, and helps protect wildlife.

- Store containers no closer to the street than the front of the house, with lids closed.
- Place at the curb the evening before collection and remove by 11 p.m. on collection day.
- Improper timing or storage may result in corrective action billed to the property owner.

Rental registration

Registered rental properties ensure safe, code-compliant housing for tenants and reduce neighborhood complaints.

- All rental housing must be registered and certified with the City.
- Check registration at kalamazoo.org/rental.
- To report unregistered properties, email kzoorentalprogram@kalamazoo.org or call 311 / (269) 337-8000.

Keep your sidewalks clear

Clearing sidewalks of snow and ice prevents slips and falls, especially for older adults, children, and people with disabilities.

- Property owners must clear snow and ice within 48 hours.
- Use sand or salt if surfaces remain slippery.
- Clear around fire hydrants to ensure Public Safety can respond quickly in emergencies.

Solve a problem with 311

Notice something in your neighborhood that needs attention? Report issues at kalamazoo.org/report or call 311 or (269) 337-8000 during business hours.

View the full Code of Ordinances

Read the full City of Kalamazoo Code of Ordinances at kalamazoo.org (search "Code of Ordinances").

