

Agenda

Natural Features Protection Review Board



City of Kalamazoo

Tuesday, April 28, 2026

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

C. APPROVAL OF MINUTES

1. Approval of the meeting minutes from the Natural Features Protection Review Board Meeting on March 24th, 2026 (**Action: Motion to approve the meeting minutes from the Natural Features Protection Review Board Meeting on March 24th, 2026**)

D. PUBLIC COMMENTS

E. BOARD MEMBER COMMENTS

F. NEW BUSINESS

1. 1617 N. Drake Road - Westgate Sports Complex - Phase 2

G. UNFINISHED BUSINESS

- 1.

H. STAFF REPORTS AND UPDATES

I. COMMUNICATIONS AND ANNOUNCEMENTS

J. ADJOURNMENT



Natural Features Protection Review
Board Minutes
March 24, 2026, 4:00p.m.
City Hall, Commission Chambers

MEMBERS PRESENT: Director Hollander, Director Fredrickson, Director Rowe, Director Bassett, Director Stemple, Director Martin

MEMBERS ABSENT: Director Murgia

CITY STAFF PRESENT: Nolan Bergstrom

A. CALL TO ORDER/ROLL CALL

Director Fredrickson called the meeting to order at 4:01p.m.

DIRECTOR BASSETT MADE A MOTION TO EXCUSE ABSENT MEMBERS, SUPPORTED BY DIRECTOR MARTIN. MOTION PASSED UNANIMOUSLY.

B. ADOPTION OF AGENDA

DIRECTOR BASSETT MADE A MOTION TO ADOPT THE AGENDA, SUPPORTED BY DIRECTOR HOLLANDER. MOTION PASSED UNANIMOUSLY.

C. APPROVAL OF MEETING MINUTES FROM FEBRUARY 24th, 2026

DIRECTOR STEMPLER MADE A MOTION TO APPROVE THE MINUTES FROM FEBRUARY 24th, 2026, NATURAL FEATURES PROTECTION REVIEW BOARD, SUPPORTED BY DIRECTOR MARTIN. MOTION PASSED.

D. PUBLIC COMMENTS

None.

E. BOARD COMMENTS

None.

F. NEW BUSINESS

1. 1617 N Drake Road – Youth Sports Complex Phase 1 DIRECTOR FREDRICKSON RECUSED THEMSELVES FROM PARTICIPATING IN ACTIVITIES RELATED TO THE 1617 N DRAKE ROAD NEW BUSINESS ITEM.

The board reviewed a proposal for Phase 1 of a youth sports complex specifically focused on woodland clearing. The project was previously reviewed in December for variances. The ZBA Board granted a slope and slope setback variance, but they denied a woodland variance.

The applicant updated the plan to meet the 25% minimum preservation requirement, now proposing to leave 27.2% of the woodland onsite. Phase 1 is limited to woodland removal motivated by potential bat habitat on-site.

The applicant had a bat assessment completed by ATSI which identified nine specific trees in poor health as potential habitat. These nine trees were removed as regular maintenance activities by the landowner. The applicant is working toward full site plan approval to remove the remaining trees by mid-April to avoid bat season. Members of the NFP board discussed the necessity of removing stumps to prevent the spread of Oak wilt. Board members also questioned site circulation and the potential for a future northerly roadway extension requested by Oshtemo Township.

DIRECTOR HOLLANDER MADE A MOTION THAT THE NATURAL FEATURES PROTECTION BOARD APPROVE THE PHASE 1 SITE PLAN FOR THE WESTGATE SPORTS COMPLEX PROJECT AT 1617 N. DRAKE ROAD WITH THE FOLLOWING CONDITIONS:

- **NO WORK BEGINS UNTIL FULL SITE PLAN REVIEW APPROVAL**
- **IF REQUIRED, A COPY OF ANY REQUIRED PERMIT OBTAINED FROM A STATE OR FEDERAL AGENCY MUST BE SUBMITTED TO THE CITY.**
- **TREE PROTECTION FENCING IS IN PLACE PRIOR TO WORK BEGINNING**
- **CREATION OF A BOND FOR THE PROJECT THE TYPE AND AMOUNT TO BE ESTABLISHED BY CITY STAFF:**
 - **REMAIN CONSISTENT WITH OTHER PROJECTS**
 - **CONSISTENT WITH CITY COMMITMENT TO INTENT OF NFP ORDINANCE**
 - **DUE TO PROJECT BEING SPLIT INTO TWO PHASES**

THE MOTION WAS SECONDED BY DIRECTOR BASSETT. THE MOTION

PASSED UNANIMOUSLY BY ROLL CALL VOTE.

2. NFP Board Member Application Recommendation

The board interviewed Sarah Munchow for a full three-year term. Munchow is an architect by profession and is also the sustainability manager, with experience in building development, are a member of the Kalamazoo Area Wild ones and have an interest in native plant species. They provided background to NFP Board members about who they are and why they are interested in serving on the NFP Board.

Members of the NFP Nominating Subcommittee provided feedback to the rest of the NFP Board members on the candidates' qualifications and the answers from the applicant interview, feeling that the candidate is a good fit for the NFP Board.

DIRECTOR BASSETT MADE A MOTION TO APPROVE A RECOMMENDATION TO THE CITY COMMISSION FOR THE APPOINTMENT OF SARAH MUNCHOW TO THE NFP BOARD FOR A FULL TERM OF THREE YEARS. THIS MOTION WAS SECONDED BY DIRECTOR STEMPLE. THE MOTION PASSED UNANIMOUSLY BY A ROLL CALL.

G. UNFINISHED BUSINESS

None.

H. STAFF REPORTS AND UPDATES

- NFP Guide

Nolan presented the current draft of the NFP Guide, designed to assist developers and residents in navigating the ordinance and finding qualified consultants.

- Development Process

The board discussed refining the Development Process graphic to clarify that it represents the entitlements process and includes disclaimers regarding case-by-case costs and complexities.

- Board Training

There is interest in future training sessions on ethical responsibilities, social impact, and joint board sessions with the ZBA or Planning Commission.

I. COMMUNICATIONS AND ANNOUNCEMENTS

1. Imagine Kalamazoo - Master Plan meetings recently concluded across 15

neighborhoods

2. **Two- Way Conversion** – Gas work by Consumers Energy is currently underway downtown as part of the preliminary steps for the conversion project
3. **Cal Recovery Project** – a groundbreaking ceremony is scheduled for April 14th at 1:30 PM

4. **ADJOURNMENT**

Director Fredrickson adjourned the meeting at 5:24 p.m.



NFP Review Board Staff Report

City of Kalamazoo

TO: The Natural Features Protection Review Board

FROM: Nolan Bergstrom, NFP Board Liaison

DATE: April 28, 2026

SUBJECT: 1617 N. Drake Road - Westgate Sports Complex - Phase 2

RECOMMENDATION:

It is recommended the Natural Features Protection (NFP) Review Board approve the Phase 2 Site Plan for the Westgate Sports Complex project at 1617 N. Drake Road with the following conditions:

- No work begins until Full Site Plan Review Approval
- If required, a copy of any required permit obtained from a state or federal agency must be submitted to the City.
- Tree Protection Fencing remains in place during work

BACKGROUND:

Property Overview

1617 North Drake Road is owned by WESTGATE 131, LLC. The parcel is zoned RS-5 or Single Family Residential. The property is located within the Westwood Neighborhood and is flag shaped with Oshtemo Township and Kalamazoo Township bordering three sides of it. Discover Kalamazoo is looking to construct an amateur sports facility as there is visibility from US-131. This project is being led by Discover Kalamazoo in partnership with multiple agencies. The parcel, presently, is approximately 62 acres. However, the plan is to split this parcel into two separate parcels. The resulting project parcel will be approximately 23.34 acres and be where the Sports complex is located. The project is complex, involving multiple agencies and government jurisdictions. Access to the site is proposed by extending Maple Hill Drive from Oshtemo Township and onto the site, connecting with the parking lot.

December 2025 NFP Meeting

In December 2025, the applicant was before the NFP Review Board seeking a recommendation to the Zoning Board of Appeals from the NFP Board for two variances: 1) NFP Woodland Standard to preserve 13.5% of the existing woodland, when 25% is the minimum allowed by right, given the woodland delineation and size of the parcel, and 2) to the Protected Slopes and Slope Setback standards within the project limits.

Four of the seven NFP Board members were present for the meeting, constituting a majority of the members creating a quorum. The final vote of 3 yesses to 1 no represents the vote of the majority of members present at the meeting at which a quorum is present, constituting the action of the Board. The variances and conditions that were recommended by the NFP Board to the Zoning Board of Appeals were:

- A Recommendation to the Zoning Board of Appeals to grant a variance from the Protected Slopes and Slope Setback NFP Standards within the project limits.
- A Recommendation to the Zoning Board of Appeals to grant a variance from the Woodland Standard to preserve 13.5% of the existing woodland when 25% is the minimum required by right conditioned upon as much of the remaining green space or undeveloped area as possible to be replanted using native species with a preference for dense replanting of native tree species.

The project went before the Zoning Board of Appeals in January 2026. The Zoning Board of Appeals granted the Slope and Slope Setback variance but denied the Woodland Preservation variance. This outcome led to changes to the development process as well as a reassessment of how to meet the Woodland Preservation percentage.

March 2026 NFP Meeting

Phase 1 of the project was before the NFP Board in March and was approved with the following conditions:

- No work begins until Full Site Plan Review Approval
- If required, a copy of any required permit obtained from a state or federal agency must be submitted to the City.
- Tree Protection Fencing is in place prior to work beginning
- Creation of a Bond for the project the type and amount to be established by City Staff:
 1. Remains consistent with other projects
 2. Consistent with city commitment to intent of the NFP Ordinance
 3. Due to project being split into two phases

This phase of the project held Site Plan Review on April 1st and was approved. The remaining woodland to be preserved as shown on Phase 1 was bonded against for the amount of \$100,000. Phase 2 focuses on the rest of the site development.

Changes since December 2025 Special NFP Meeting:

- Since the ZBA decision in January 2026. The applicant has since updated the boundary of parcel to meet the woodland preservation requirement.
- The applicant is also pursuing a two-phase Site Plan Review process.
- The NFP Board reviewed the Phase 1 project in March 2026.
- Phase 2 review processes are occurring in April 2026.

Phase 2 Project Overview:

Phase 2 of the project focuses on the construction of the Sports Complex Facility, Surface Parking Lot, Landscaping, Stormwater Detention, vehicle drives, access lanes, and utilities. Phase 1 of the project focuses specifically on the woodlands onsite. The building will be approximately 140,000 Square Feet in area with multiple facilities to service multiple sports.

Site Plan Next Steps

The Phase 2 project is scheduled for Site Plan Review on April 29th, 2026.

FINDINGS:

The site is within the NFP Overlay District due to variations in topography, including **areas of slopes that are greater than or equal to 20 percent grade** and because the **site is majority woodland**. The site also **requires MNFI Rare Species Review**.

Since the project is located within the NFP Overlay District, the NFP Standards were reviewed and applied as follows:

- **Water Resources Standard** ([§ 50-6.2D](#)) – Significant water resources do not exist / have not been identified on-site.
- **Wetland Standard** ([§ 50-6.2C](#)) – Wetlands do not exist / have not been identified on-site.
- **Woodland Standard** ([§ 50-6.2G](#)) – A woodland delineation was conducted by Hurley & Stewart. The 23.34-acre project area is approximately 89.2% wooded and is a part of a larger woodland complex extending out into the adjacent Townships and City of Kalamazoo sized at approximately 152 acres. A woodland report provides more information on the woodland itself. This means that approximately 20.82 acres is

delineated as woodland. The applicant is proposing to remove 72.8% of the Woodland. This would preserve 27.2% of the woodland or 5.66 acres. This meets the 25% Preservation requirement as described in Table 6.2-3 (Woodland Preservation). Woodland areas to be preserved are along the Northern property line staying consistent with maintaining the boundary areas of the larger woodland complex that cuts across jurisdictional boundaries. There is also a large area to the east that corresponds with steeper slopes that will be preserved. Woodland protection fencing for the proposed woodland areas to be preserved is shown on the plans alongside the specifications for the fencing. Per [§ 50-6.2G\(6\)](#) of the NFP Ordinance: *Woodlands trees and their CRZ shall be protected during site construction following the standards of [§ 50-6.2K\(8\)](#), Protection during construction.*

- This work was approved as part of the Phase 1 project that was before the NFP Board in March 2026.

- **Protected Slopes and Slope Setbacks Standards ([§ 50-6.2H](#))** — Slopes 20% grade or greater are located throughout the project limits. The applicant obtained a variance to the Slope and Slope Setbacks within the project area.

- **Protected Tree Standard ([§ 50-6.2F](#))** — The site is approximately 89.2 percent woodland and thus, the woodland standard is applied.

- **Rare Species Review** – This site required Rare Species Review to be completed by the [Michigan State University Extension](#). The review was completed by MSU Extension and is attached. The assessment from the MSU Extension MNFI Staff Biologist was that: *Although several at-risk species and/or natural communities have been documented within 1.5 miles of the project location it is unlikely 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.* Per [§ 50-6.2I\(3\)](#) of the NFP Ordinance states: *On-site survey. When a database search indicates a rare species has been identified within two miles of the parcel, an on-site survey shall be conducted. The survey must be conducted by a consultant with a Michigan endangered species permit or another qualified professional approved by the City Planner.* ASTI Environmental conducted an on-site survey focused on Bats. Nothing within the MNFI Report indicated a need to start woodland work prior to April 1st.

- **Plant Selection (§ 50-6.2J(4)(b))** – Any landscaping and screening are required for this project as well as other plantings. Per [§ 50-6.1C](#) *If a conflict arises between the overlay district regulations and those of the base zoning district, the overlay district regulations control.* Submitted landscaping plans show a majority of species are native or nativar species to the United States, not necessarily Michigan. None of the species appear to be invasive, aggressive, or destructive to local ecosystems. The Slope Stabilization Seed mix is primarily native or nativar species except the Temporary Grass Cover species. The Stormwater Detention Seed mix is similar to the slope stabilization seed mix regarding native or nativar species and has the same exceptions where the temporary seed grass cover is not native or a nativar species. The Landscaping and Screening in Chapter 50, Article 8 of the Kalamazoo Zoning Code ([§ 50-8.3B\(2\)\(b\)](#)) states: *A minimum of 50% of plant material used to meet the landscape and screening requirements of this article shall be natives or nativars.* The comprised lists in the landscaping plans including the seed mixes are well above this minimum percentage.
- **Stormwater Management (§ 50-6.2J(6))** – Stormwater requirements on NFP sites are dictated by the City of Kalamazoo Performance Standards for Groundwater Protection within Wellhead Protection Capture Zones. Stormwater is shown as being captured on-site. This will be reviewed by the City Stormwater Engineer. A stormwater agreement will be required for this project. A stormwater detention seed mix is also provided.



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@kalamazoocity.org.



Community Planning & Economic Development

245 N Rose St • Suite 100 • Kalamazoo, MI 49007
(269) 337-8000 • www.kalamazoocity.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) <u>K.C.E.C.A.D.</u> (last)		
APPLICANT ADDRESS:	(number) <u>240</u> (street name) <u>W. MICHIGAN AVE.</u>		
	(city) <u>KALAMAZOO</u>	(state) <u>MI</u>	(Zip) <u>49007</u>
APPLICANT EMAIL:	<u>bpersky@discoverkalamazoo.com</u>	PHONE:	<u>269-488-9000</u>
PARCEL ADDRESS/PIN:	<u>1617 N. DRAKE RD., # 05-12-413-001</u>		
PROJECT DESCRIPTION:	<u>CONSTRUCTION OF A NEW YOUTH SPORTS CENTER.</u>		
OWNER NAME: (if different)	(first) <u>WESTBATE 131, LLC</u> (last)		
HAS REGULAR SITE PLAN REVIEW MEETING OCCURRED?	☐ Yes ☒ No	DATE OF SITE PLAN REVIEW MEETING:	<u>4/29/20</u>

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: _____

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)



Community Planning & Economic Development

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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>	☐ Yes ☒ 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>	☐ Yes ☒ 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.	☐ Yes ☒ 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.	☒ Yes ☐ No	2	Reviewed and approved as Phase 1
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).	☒ Yes ☐ No	4	Variance approved by ZBA
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:		
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>	☒ Yes ☐ 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

SITE PLAN REVIEW

INDOOR YOUTH & AMATEUR SPORTS FACILITY

Site Plan Review
Received: 3/27/2026
City of Kalamazoo
E.Szymanski

1617 NORTH DRAKE ROAD
KALAMAZOO
Kalamazoo County, MI
March 27, 2026

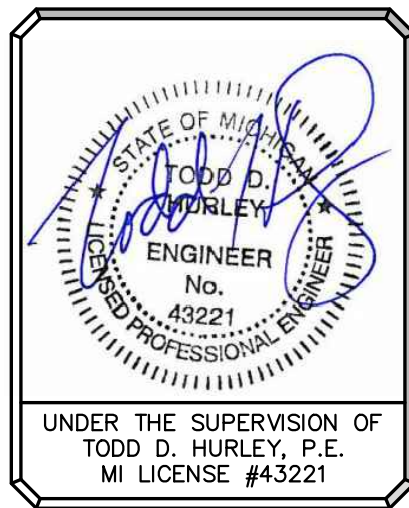
OWNER

KALAMAZOO COUNTY EVENT
CENTER ASSESSMENT DISTRICT C/O
DISCOVER! KALAMAZOO
201 WEST MICHIGAN AVENUE
KALAMAZOO, MI 49007
269.488.9000

PLANS PREPARED BY:



hurley & stewart, llc
2800 s. 11th street
kalamazoo, michigan 49009
269.552.4960 fax 269.552.4961
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UTILITY CONTACTS:

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ELECTRIC

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GAS

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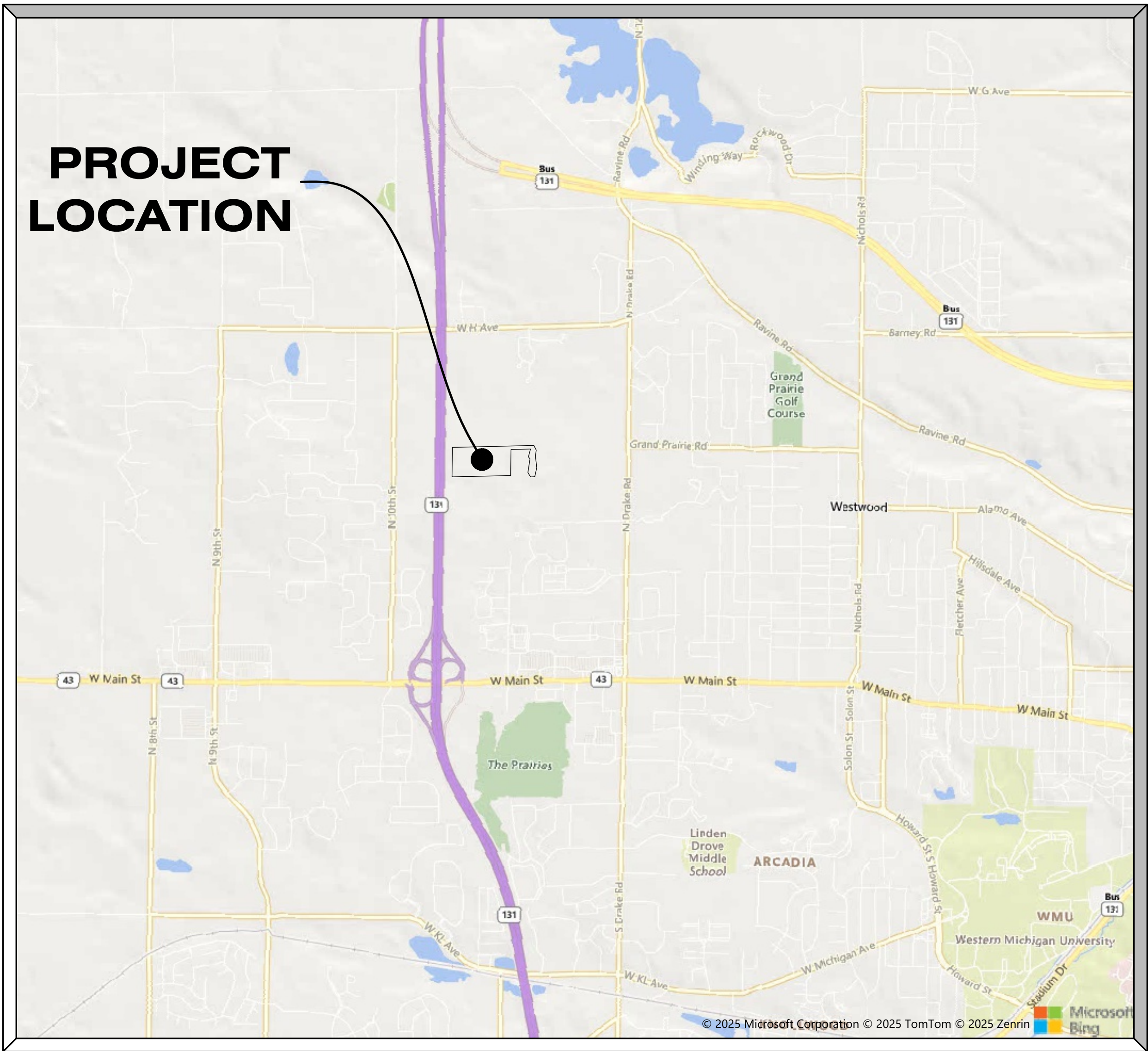
TELEPHONE

CITY OF KALAMAZOO,
1415 NORTH HARRISON STREET
KALAMAZOO, MI 49007
(269) 337-8551, MR. RYAN STOUGHTON
STOUGHTONR@KALAMAZOOCITY.ORG

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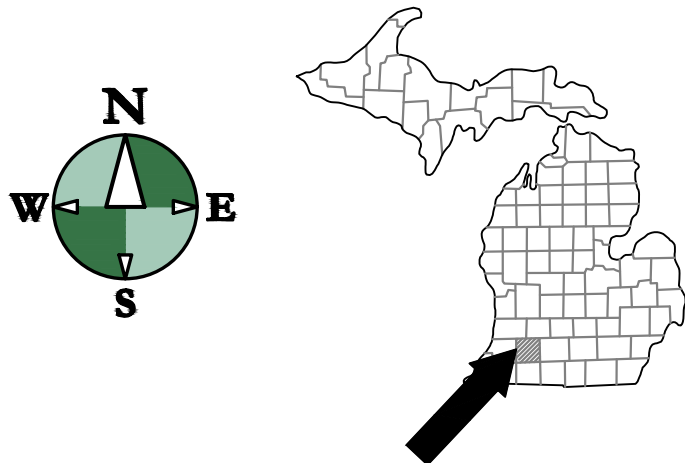
CITY OF KALAMAZOO,
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(269) 337-8601, MR. RON RIDENOUR
RIDENOURR@KALAMAZOOCITY.ORG

FIBER OPTIC



SITE LOCATION MAP

SCALE: 1" = 2000'



DRAWING INDEX

SHT # DESCRIPTION

- CD 101 - EXISTING CONDITIONS AND DEMO PLAN
- CD 102 - NFP TREE LOT DETERMINATION
- CD 103 - NFP SLOPE EVALUATION
- CD 200 - TREE CLEARING AND SESC PLAN
- CD 201 - TREE CLEARING AND SESC NOTES
- C 100 - OVERALL SITE LAYOUT PLAN
- C 101 - SITE LAYOUT PLAN WEST
- C 102 - SITE LAYOUT PLAN EAST
- C 103 - SITE SIGNAGE PLAN
- C 200 - SITE GRADING PLAN WEST
- C 201 - SITE GRADING PLAN CENTRAL
- C 202 - SITE GRADING PLAN EAST
- C 300 - SITE WATERMAIN PLAN
- C 301 - SITE SANITARY PLAN
- C 302 - SITE STORMWATER PLAN WEST
- C 303 - SITE STORMWATER PLAN EAST
- C 304 - SANITARY PROFILE
- C 305 - WATER MAIN PROFILE
- C 306 - WATER MAIN PROFILE
- C 307 - WATER MAIN PROFILE
- C 308 - ROADWAY PLAN & PROFILE
- C 309 - ROADWAY PLAN & PROFILE
- C 310 - ROADWAY PLAN & PROFILE
- C 400 - SITE DETAILS
- C 401 - UTILITY DETAILS
- C 402 - UTILITY DETAILS

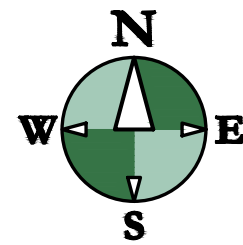
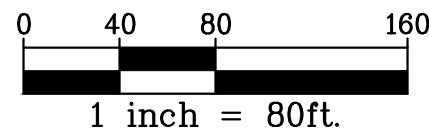
PRELIMINARY
NOT FOR CONSTRUCTION



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DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE
RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE
EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY
ARE THE ONLY UTILITIES IN THE AREA.

FIELD WORK PERFORMED BY:
HURLEY & STEWART, LLC

ISSUED FOR:
SITE PLAN REVIEW
3/27/2026

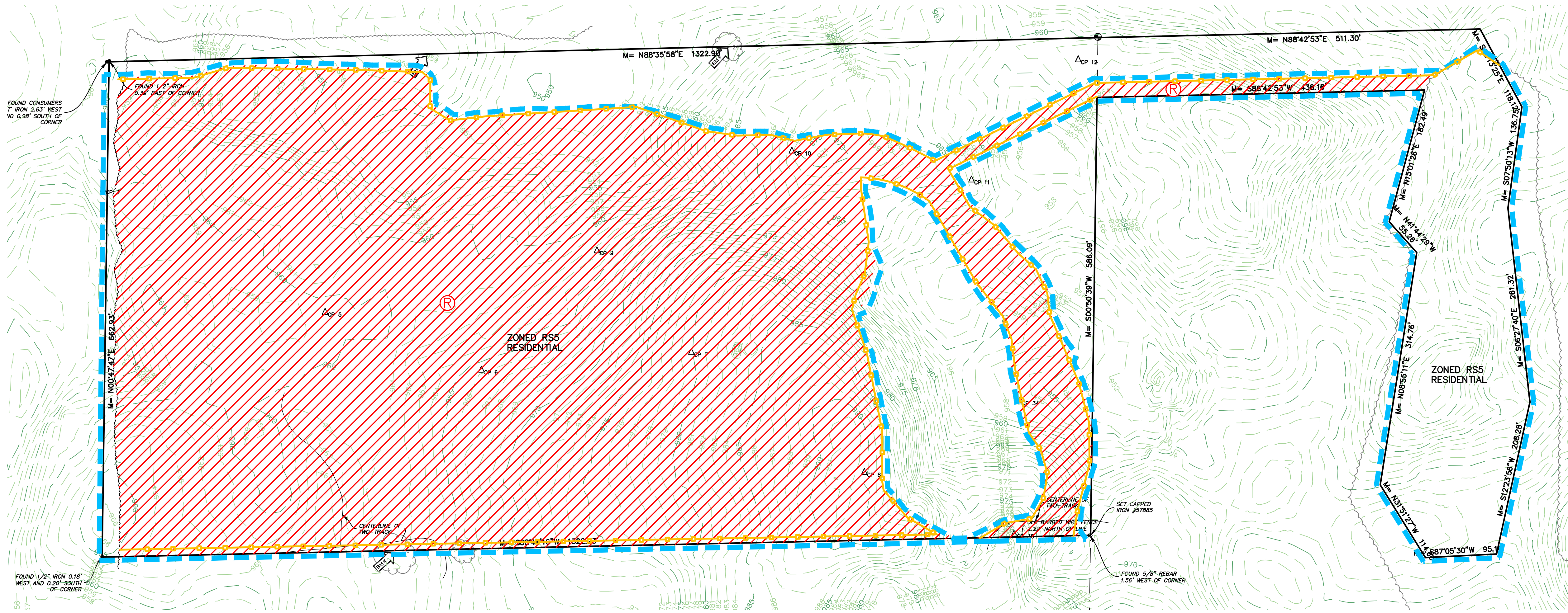


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2800 s. 11th street
kalamazoo, michigan 49009
269.552.4960 fax 269.552.4961
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REMOVAL NOTES

- REVIEW ALL THE REMOVALS AND PROTECTION WITH OWNER PRIOR TO COMMENCING CONSTRUCTION. INSTALL TEMPORARY SNOW FENCE AROUND ALL TREES REQUIRING PROTECTION. SNOW FENCE SHALL BE PLACED AT EDGE OF DRIP LINE.
- SAWCUT ALL CURB, SIDEWALK, AND PAVEMENTS PRIOR TO REMOVAL. ADDITIONAL SAWCUT MAY BE NECESSARY PRIOR TO REPLACEMENT TO ENSURE CLEAN EDGE.
- ALL REMOVALS SHALL BE TAKEN OFF-SITE AND DISPOSED OF. NO STOCKPILE OR BURNING OF DEBRIS IS ALLOWED.
- COMPLY WITH ALL ASPECTS OF THE SOIL EROSION CONTROL PERMIT AS ISSUED BY KALAMAZOO COUNTY. ALL TEMPORARY CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION.
- ALL REMOVALS SHALL BE TO THE LIMITS INDICATED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. UNAUTHORIZED REMOVALS AND SUBSEQUENT REPLACEMENT SHALL BE AT THE CONTRACTOR'S EXPENSE.
- REMOVE, STORE, AND RESET ANY EXISTING SIGNS AS DIRECTED BY THE ENGINEER/OWNER.
- REMOVE ALL TREES TO THE CLEARING LIMITS AS SHOWN. REMOVE ALL EXISTING TREES, STUMPS AND BRUSH FROM THE SITE AS NECESSARY TO CONSTRUCT THE IMPROVEMENTS.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
- FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

REMOVALS LEGEND

- PAVEMENT/SIDEWALK REMOVAL
- SAWCUT
- TREE REMOVAL
- LIMITS OF CONSTRUCTION
- REMOVE
- TREE PROTECTION SEE C401 FOR DETAIL

TREE REMOVAL PERCENTAGES

89.2% OF CURRENT SITE IS TREELOT
72.8% OF 23.34 ACRE SITE TREES TO BE REMOVED

DESCRIPTION

PART OF THE NORTH HALF OF SECTION 12, TOWN 02 SOUTH, RANGE 12 WEST, CITY OF KALAMAZOO, COUNTY OF KALAMAZOO, STATE OF MICHIGAN, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE WEST QUARTER CORNER OF SECTION 12, TOWN 02 SOUTH, RANGE 12 WEST; THENCE ALONG THE NORTH LINE OF SAID SECTION 12, NORTH 88 DEGREES 35 MINUTES 36 SECONDS EAST 1322.90 FEET TO WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 12; THENCE ALONG SAID WEST LINE, SOUTH 00 DEGREES 47 MINUTES 47 SECONDS WEST 1.00 FEET TO THE POINT OF BEGINNING; THENCE PARALLEL WITH THE NORTH LINE OF THE WEST HALF SAID SECTION 12, NORTH 88 DEGREES 35 MINUTES 36 SECONDS EAST 1322.90 FEET TO THE NORTH AND SOUTH QUARTER LINE OF SAID SECTION; THENCE PARALLEL WITH THE NORTH LINE OF THE EAST HALF OF SAID SECTION 12, NORTH 88 DEGREES 42 MINUTES 53 SECONDS EAST 511.30 FEET; THENCE SOUTH 28 DEGREES 13 MINUTES 25 SECONDS EAST 118.12 FEET; THENCE SOUTH 07 DEGREES 50 MINUTES 13 SECONDS WEST 136.75 FEET; THENCE SOUTH 06 DEGREES 27 MINUTES 40 SECONDS EAST 261.32 FEET; THENCE SOUTH 12 DEGREES 23 MINUTES 56 SECONDS WEST 208.28 FEET; THENCE SOUTH 87 DEGREES 05 MINUTES 30 SECONDS WEST 95.16 FEET; THENCE NORTH 31 DEGREES 51 MINUTES 27 SECONDS WEST 114.60 FEET; THENCE NORTH 08 DEGREES 55 MINUTES 11 SECONDS EAST 314.76 FEET; THENCE NORTH 41 DEGREES 44 MINUTES 29 SECONDS WEST 55.26 FEET; THENCE NORTH 15 DEGREES 01 MINUTES 26 SECONDS EAST 182.49 FEET TO A POINT 81.00 FEET SOUTH (PERPENDICULAR MEASURE) OF THE NORTH LINE OF THE EAST HALF OF SAID SECTION 12; THENCE PARALLEL WITH SAID NORTH LINE, SOUTH 88 DEGREES 42 MINUTES 53 SECONDS WEST 438.16 FEET TO THE NORTH AND SOUTH QUARTER LINE OF SAID SECTION; THENCE ALONG SAID NORTH AND SOUTH QUARTER LINE, SOUTH 00 DEGREES 50 MINUTES 39 SECONDS WEST 586.09 FEET TO THE SOUTH LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 12; THENCE ALONG SAID SOUTH LINE, SOUTH 88 DEGREES 44 MINUTES 16 SECONDS WEST 1322.23 FEET TO THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION; THENCE ALONG SAID WEST LINE, NORTH 00 DEGREES 47 MINUTES 47 SECONDS EAST 662.93 FEET TO A POINT LYING 1.00 FEET SOUTH OF THE NORTH LINE OF SAID SECTION AND THE POINT OF BEGINNING. PARCEL CONTAINS 23.33± ACRES (1,016,402± SQUARE FEET). SUBJECT TO EASEMENTS AND RESTRICTIONS BOTH APPARENT AND OF RECORD.

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SHEET TITLE
EXISTING CONDITIONS AND DEMO
PLAN

SHEET NUMBER
CD 101
25-034D

DATE
MARCH 27, 2026

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
1617 NORTH DRAKE ROAD
KALAMAZOO, MI

PROJECT TITLE
INDOOR YOUTH &
AMATEUR SPORTS
FACILITY

DESCRIPTION 1
ISSUED FOR

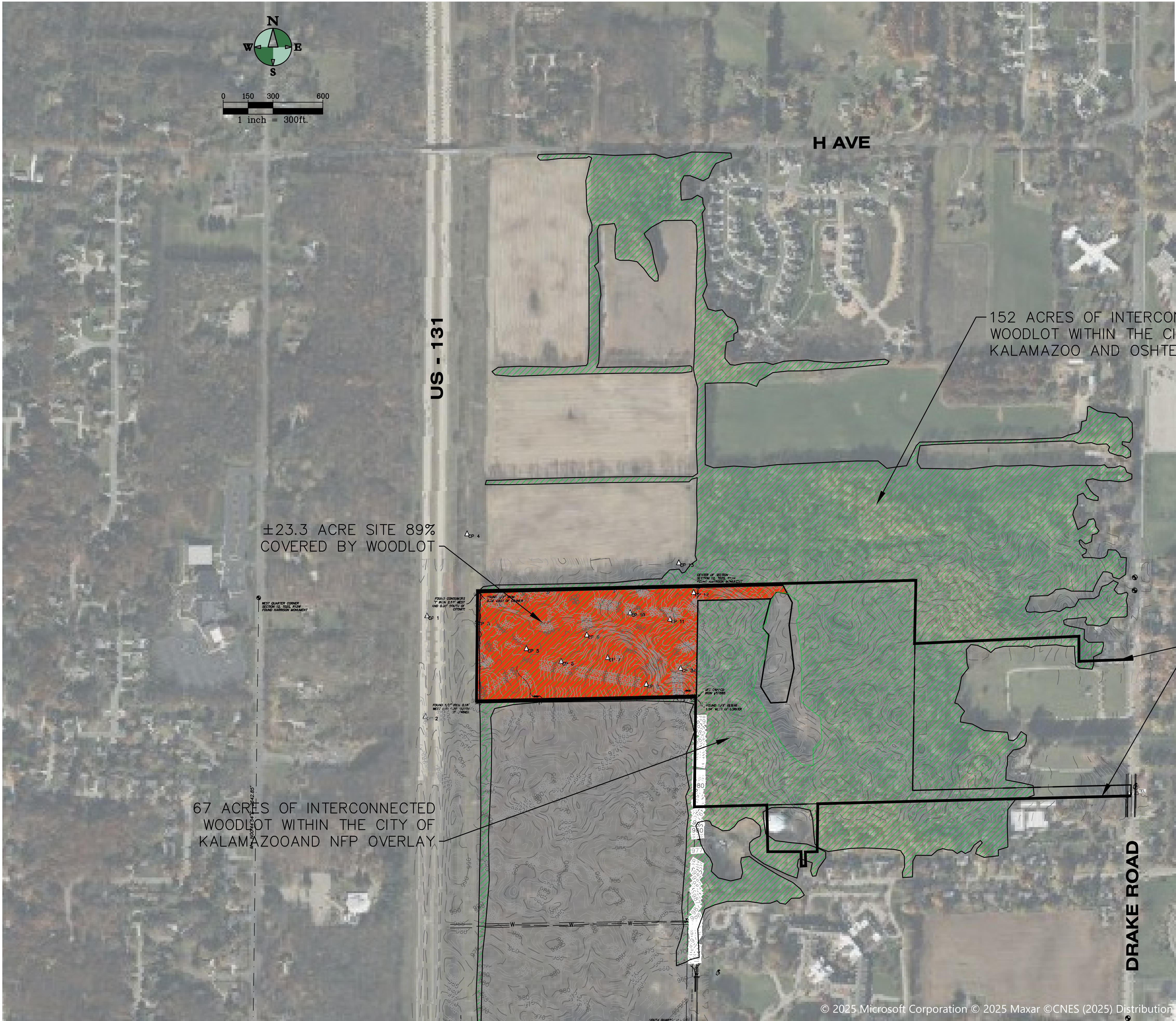
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DATE

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FIELD WORK PERFORMED BY:
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DESCRIPTION 1
ISSUED FOR

DATE 1
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INDOOR YOUTH &
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FACILITY

OWNER
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EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
KALAMAZOO, MI

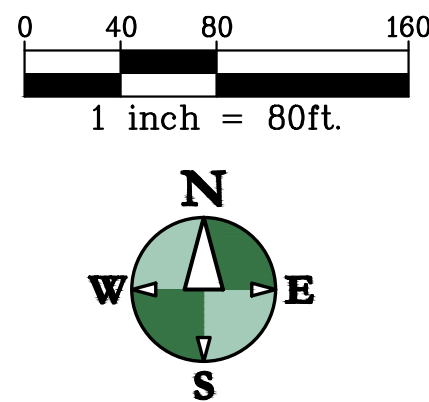
SHEET TITLE
NFP TREE LOT DETERMINATION

SHEET NUMBER
CD 102
25-034D

DATE
MARCH 27, 2026

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- SLOPES GREATER THAN 20%
- SLOPE SETBACKS
- 85,414 SFT OF SLOPES AND SETBACKS



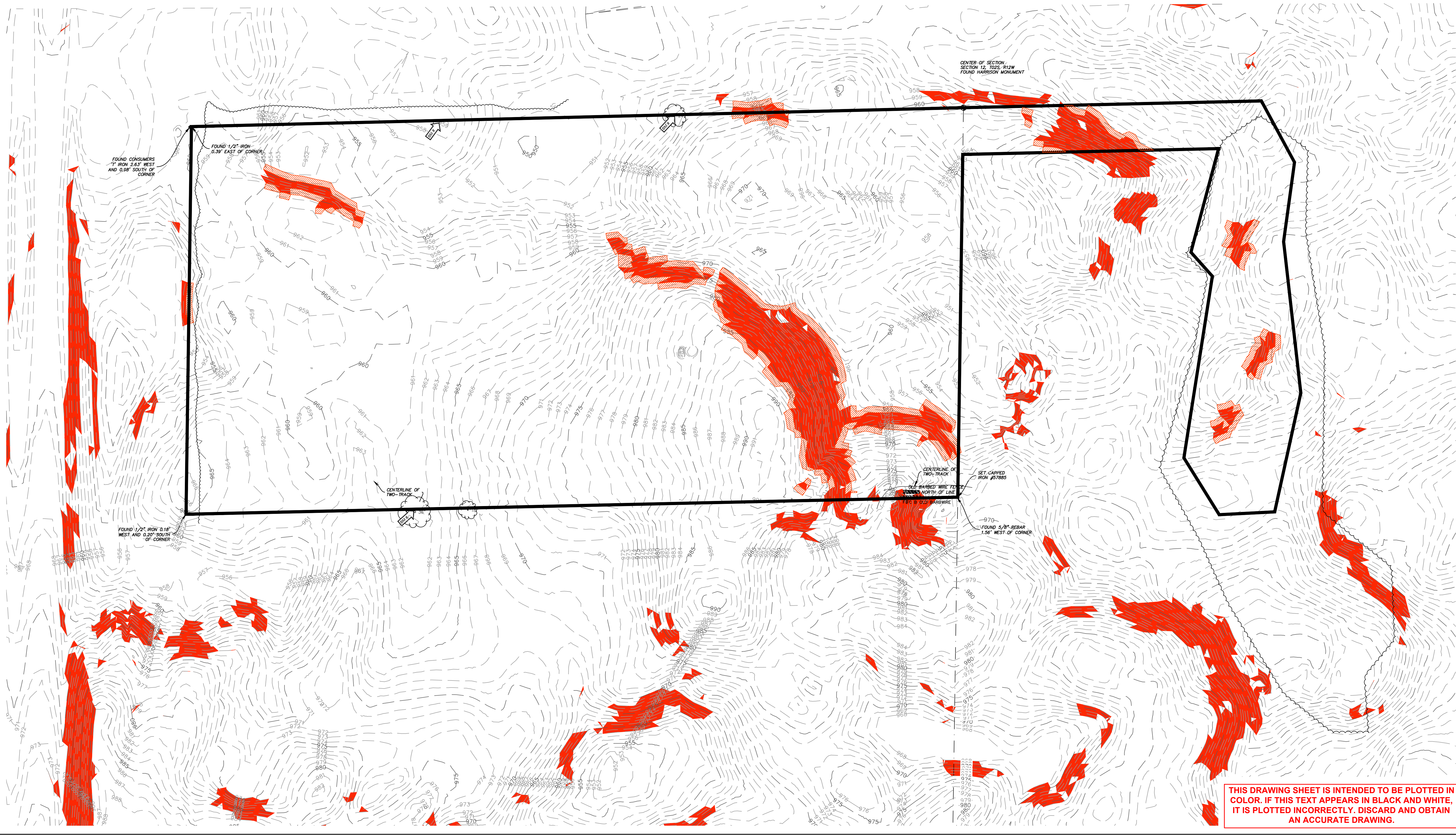
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DESCRIPTION 1
ISSUED FOR

DATE 1
DATE

PROJECT TITLE
INDOOR YOUTH &
AMATEUR SPORTS
FACILITY

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
KALAMAZOO, MI

SHEET TITLE
NFP SLOPE EVALUATION

DATE
MARCH 27, 2026

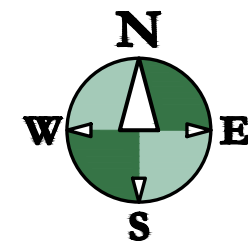
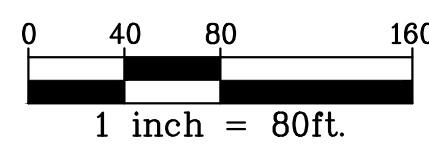
SHEET NUMBER
CD 103
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DRAWING LOCATION: H: 25-0340 (Metaspate Sports Facility) - FINAL DRAWINGS VMP City of Kalamazoo Exhibit A.C 200 Tree Clearing and SESC Plan.dwg LAST SAVED BY: BCDREWS ON 3/27/2026

TREE REMOVAL PERCENTAGES
89.2% OF CURRENT SITE IS TREELOT
72.8% OF 23.34 ACRE SITE TREES TO BE REMOVED



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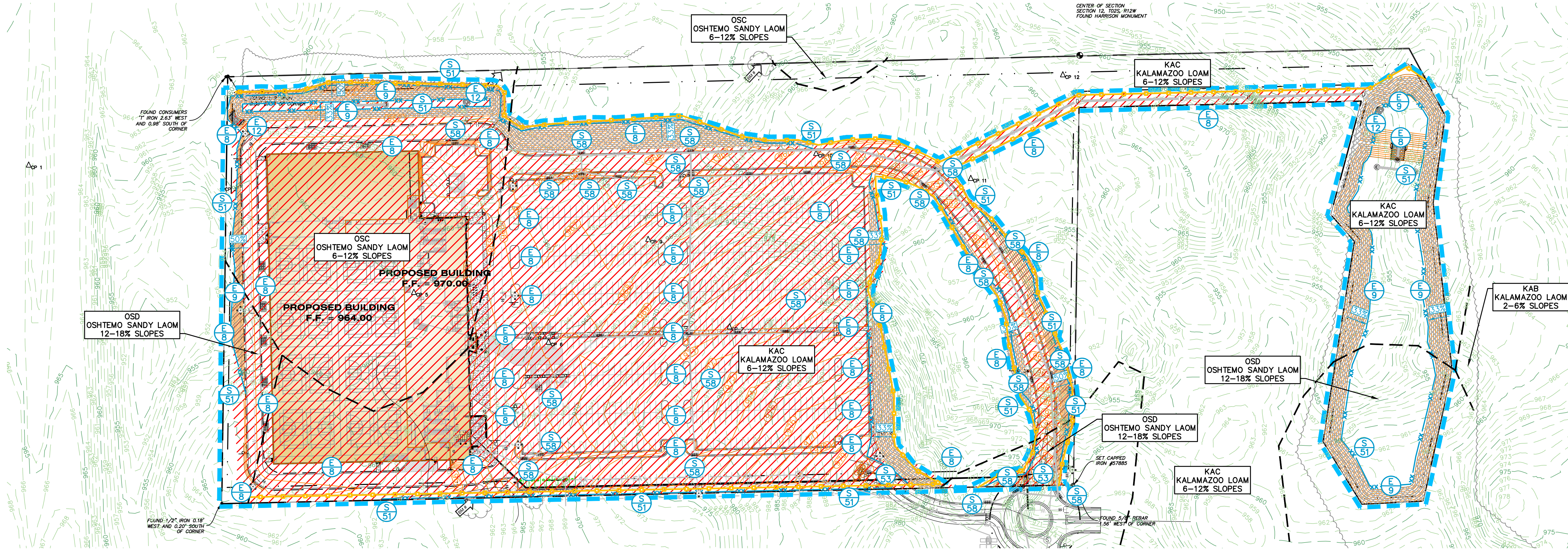
PROJECT TITLE
INDOOR YOUTH &
AMATEUR SPORTS
FACILITY

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
1617 NORTH DRAKE ROAD
KALAMAZOO, MI

SHEET TITLE
TREE CLEARING AND SESC PLAN

DATE
MARCH 27, 2026

SHEET NUMBER
CD 200
25-034D



LEGAL DESCRIPTION

PART OF THE NORTH HALF OF SECTION 12, TOWN 02 SOUTH, RANGE 12 WEST, CITY OF KALAMAZOO, COUNTY OF KALAMAZOO, STATE OF MICHIGAN, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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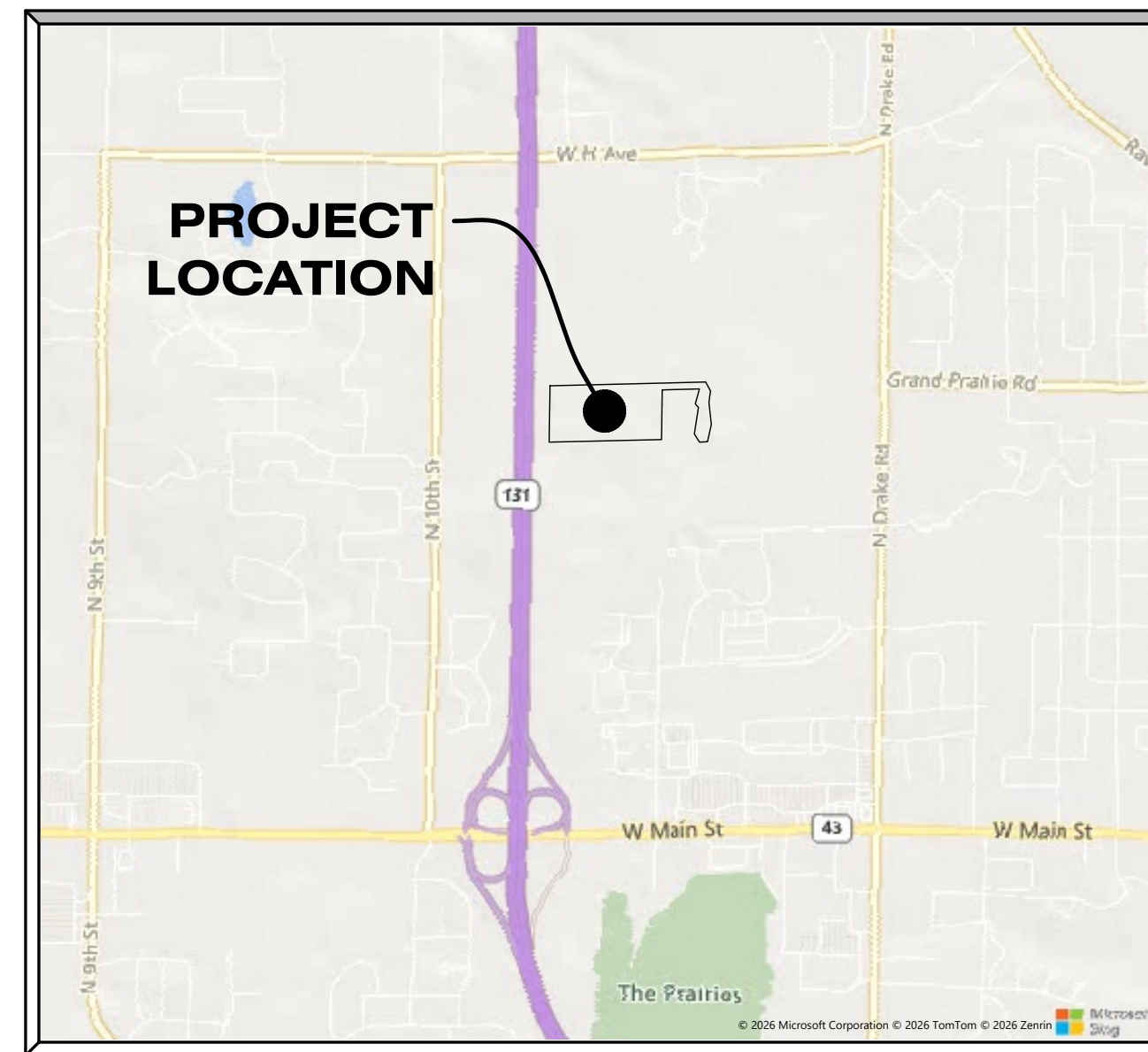
SESC PLAN LEGEND

- TREE REMOVAL
- PROPOSED SILT FENCE
- MULCH BLANKET
- COIR MAT*
- BENCH MARK
- SOIL EROSION MEASURE
- SEDIMENT CONTROL MEASURE
- TREE PROTECTION
- LIMITS OF CONSTRUCTION
- SOIL DELINEATION

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
E8	PERMANENT SEEDING		Stabilization method utilized on sites where earth change has been completed (final grading attained).
E9*	MULCH BLANKETS		On exposed slopes, newly seeded areas, new ditch bottoms, or areas subject to erosion.
E12	RIPRAP		Use along shorelines, waterways, or where concentrated flows occur. Slows velocity, reduces sediment load, and reduces erosion.
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic enters or leaves a construction site.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.

* - ALL SOIL EROSION MULCH BLANKETS THAT ARE APPLIED TO 2:1 SLOPES SHALL INCLUDE 30% COCONUT FIBER AND MEET ASTM D 4595 DRY AND WET TENSILE STRENGTH.



DRAWING LOCATION: H:\25-0340 (Newgate Sports Facility)_FINAL DRAWINGS\WP City of Kalamazoo ExhibitA.C 200 Tree Clearing and SESC Plan.dwg LAST SAVED BY: BCDREES ON 3/27/2026

GRADING & SESC NOTES

1. ALL WORK WILL COMPLY WITH THE PROVISIONS OF THE SOIL EROSION AND SEDIMENTATION CONTROL ACT (PA 451, PART 91 OF 1984 AS AMENDED) ADMINISTERED BY THE CITY OF KALAMAZOO.
2. FOR INSTALLATION SPECIFICATIONS FOR SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES, REFER TO THE STATE OF MICHIGAN DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET (DTMB) SESC MANUAL.
3. FOR PROJECTS DISTURBING 5 ACRES OR MORE, THE CONTRACTOR/CONSTRUCTION MANAGER IS RESPONSIBLE FOR SUBMITTING THE REQUIRED EGLE NOTICE OF COVERAGE (NOC) UNDER THE CONSTRUCTION STORMWATER PERMIT. ALL FEES, DOCUMENTATION, AND COORDINATION WITH EGLE SHALL BE COMPLETED BY THE CONTRACTOR/CM. PROOF OF NOC COVERAGE MUST BE PROVIDED TO THE OWNER AND ENGINEER BEFORE EARTHWORK BEGINS.
4. AVOID UNNECESSARY DISTURBING OR REMOVING EXISTING VEGETATED TOPSOIL OR EARTH COVER. THESE AREAS ACT AS SEDIMENT FILTERS.
5. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEANUP AND APPROVAL.
6. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION.
7. ALL SOIL PILES SHALL BE SURROUNDED BY SILT FENCE IF ALLOWED TO REMAIN IN PLACE FOR MORE THAN 7 DAYS. TOPSOIL PILES SHALL BE SEEDED IF ALLOWED TO REMAIN IN PLACE FOR MORE THAN 20 DAYS. SPOIL PILES SHALL NOT BE PLACED WITHIN 50' FROM ANY TEMPORARY OR PERMANENT WATERCOURSE.
8. THE CONTRACTOR SHALL COMPLY WITH THE WEEKLY RECOMMENDATIONS OF THE CERTIFIED STORM WATER OPERATOR.
9. PROVIDE SILT SACKS IN EACH CATCH BASIN UNTIL SITE IS STABILIZED.
10. SEE LANDSCAPING PLAN FOR FINAL SLOPE TREATMENTS.
11. PLACE TOPSOIL AND SEED ACCORDING TO THE LANDSCAPE PLANS AS SOON AS AREAS ARE BROUGHT TO GRADE.
12. WATER SITE WHEN NECESSARY TO PREVENT AIR BORNE SEDIMENT TRANSFER.
13. STRAW MULCH BLANKETS SHALL BE USED ON 3:1 SLOPES OR GREATER. ALL SLOPES ON SITE SHALL BE 4:1 OR LESS, UNLESS OTHERWISE DIRECTED BY ENGINEER.
14. MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN. MATCH AT 1 ON 6 IF NOT LABELED.
15. ALL EXCAVATION AND SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT, DRIESENGA & ASSOCIATES, INC PROJECT NO. 2551059.3A ISSUED 03/09/2026.
16. THE CONTRACTOR SHALL INSTALL PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
17. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
18. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
19. REMOVE AND REPLACE WITH CONTROLLED FILL ANY AREAS THAT HAVE BEEN SOFTENED BY RAINS, FREEZING, CONSTRUCTION EQUIPMENT, ETC.
20. ALL REQUIRED FILL FOR THIS PROJECT SHALL BE SELECTED EXCAVATED MATERIAL FROM THE SITE APPROVED BY THE ENGINEER OR CLASS II GRANULAR MATERIAL FROM BORROW AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
21. ALL COMPACTION SHALL BE ACCOMPLISHED BY PLACING THE FILL IN 12" LOOSE LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO AT LEAST THE SPECIFIED MINIMUM DRY DENSITY. FIELD DENSITY TESTS SHOULD BE PERFORMED ON EACH LIFT AS NECESSARY TO ENSURE THAT ADEQUATE MOISTURE CONDITIONS AND COMPACTION ARE BEING ACHIEVED.
22. SITE CONTRACTOR SHALL REMOVE AND STOCKPILE ALL TOPSOIL AND BLACK ORGANIC SOILS ON-SITE TO BE USED IN THE REGRADING OF LANDSCAPE AREAS. THIS MATERIAL IS NOT TO BE USED FOR FILL OR PAVEMENT SUBBASE. REMOVAL OF ANY EXCESS SOIL OFF-SITE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
23. CONTRACTOR RESPONSIBLE FOR VERIFYING EARTHWORK CALCULATIONS PRIOR TO COMMENCING WORK. NO EXTRA EARTHWORK WILL BE PAID FOR ONCE EARTHWORK HAS BEGUN. ANY DISCREPANCIES WITH THE EARTHWORK CALCULATIONS SHALL BE REVIEWED WITH THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION.
24. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. SCRAPE ROAD AT THE END OF EACH WORKDAY AND SWEEP AT LEAST ONCE A WEEK.
25. ANY DISTURBED AREA THAT WILL BE LEFT UNWORKED 5 DAYS OR LONGER MUST BE SEEDED AND MULCHED OR SODDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.
26. ROAD RIGHTS-OF-WAY MUST BE STABILIZED WITH SEED AND MULCH WITHIN 5 DAYS OF COMPLETING UTILITY WORK IN THE RIGHT-OF-WAY.
27. AREAS OF EARTH CHANGE THAT ARE DISTURBED BEYOND THE FALL SEEDING DEADLINE (NOV. 1) MUST BE TEMPORARILY STABILIZED WITH A MINIMUM OF STRAW MULCH SECURELY CRIMPED TO THE GROUND.
28. ACCUMULATED SEDIMENT TO BE REMOVED FROM STORM SYSTEM UPON COMPLETION OF CONSTRUCTION. ALL TEMPORARY CONTROLS TO BE REMOVED AFTER SITE IS STABILIZED AND VEGETATION ESTABLISHED.
29. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
30. ONLY EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN BIONET S150BN AND WESTERN WOOD FIBERS EXCEL SS-2 ALL NATURAL (BIODEGRADABLE JUTE/SCRIM NETTING WITH LENO WEAVE TYPE MESH) OR EQUIVALENT ARE CONSIDERED ACCEPTABLE PRODUCTS. NET EROSION BLANKETS CONTAINING PLASTIC OR SYNTHETIC NET OR NETTING SHALL NO LONGER BE AUTHORIZED, NOR APPROVED FOR USE.

SOIL EROSION CONTROL MAINTENANCE TASKS AND SCHEDULE

DURING CONSTRUCTION
TO BE PERFORMED BY CONTRACTOR

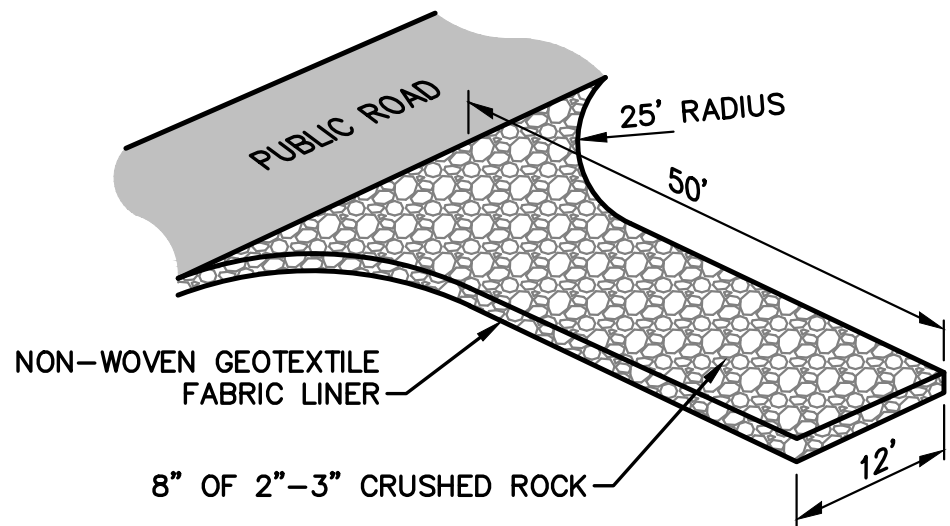
TASKS	COMPONENTS	STORM DRAINAGE SYSTEM	CATCH BASIN SUMPS	CATCH BASIN INLET CASTINGS	SITE DISTURBED AREA	SCHEDULE
INSPECT FOR SEDIMENT ACCUMULATION		X	X	X	X	WEEKLY OR AS NEEDED*
REMOVAL OF SEDIMENT ACCUMULATION		X	X		X	AS NEEDED* AND PRIOR TO TURNOVER
INSPECT FOR FLOATABLES AND DEBRIS		X	X	X		QUARTERLY
CLEANING FOR FLOATABLES AND DEBRIS		X	X	X		QUARTERLY AND AT TURNOVER
INSPECTION FOR EROSION					X	WEEKLY OR AS NEEDED*
REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES					X	AS NEEDED AND PRIOR TO TURNOVER
INSPECT STRUCTURAL ELEMENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS (BY A PROFESSIONAL ENGINEER REPORTING TO THE OWNER)		X				AS NEEDED PRIOR TO TUNROVER
MAKE ADJUSTMENTS OR REPLACEMENTS AS DETERMINED		X		X	X	AS NEEDED

* "AS NEEDED" MEANS WHEN SEDIMENT HAS ACCUMULATED TO A MAXIMUM OF ONE FOOT DEPTH

PERMANENT MAINTENANCE
TO BE PERFORMED BY THE PROPERTY OWNER

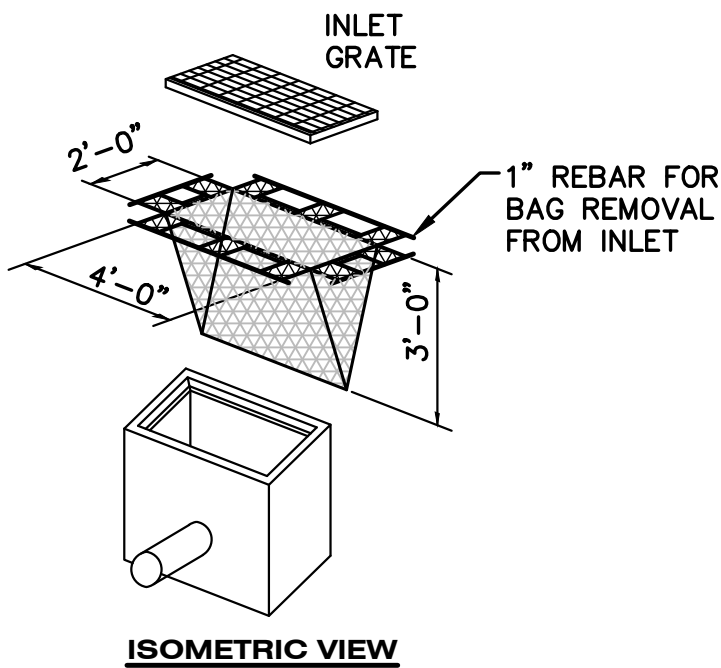
TASKS	COMPONENTS	PAVED AREAS	STORM DRAINAGE SYSTEM	CATCH BASIN SUMPS	CATCH BASIN INLET CASTINGS	SCHEDULE
INSPECT FOR SEDIMENT ACCUMULATION			X	X		SEMI-ANNUALLY AS NEEDED*
REMOVAL OF SEDIMENT ACCUMULATION			X	X		ANNUALLY AS NEEDED*
INSPECT FOR FLOATABLES AND DEBRIS			X	X	X	ANNUALLY
CLEANING FOR FLOATABLES AND DEBRIS			X	X	X	ANNUALLY
INSPECTION FOR EROSION			X			ANNUALLY
REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES			X			AS NEEDED
CLEAN DRIVES AND PARKING LOTS		X				SEMI-ANNUALLY
INSPECT STRUCTURAL ELEMENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS (BY A PROFESSIONAL ENGINEER REPORTING TO THE OWNER)			X			SEMI-ANNUALLY
MAKE ADJUSTMENTS OR REPLACEMENTS AS DETERMINED BY ANNUAL WET WEATHER INSPECTION			X			ANNUALLY
OWNER TO HAVE A PROFESSIONAL ENGINEER CARRY OUT EMERGENCY INSPECTIONS UPON IDENTIFICATION OF SEVER PROBLEMS			X	X	X	AS NEEDED

* "AS NEEDED" MEANS WHEN SEDIMENT HAS ACCUMULATED TO A MAXIMUM OF ONE FOOT DEPTH

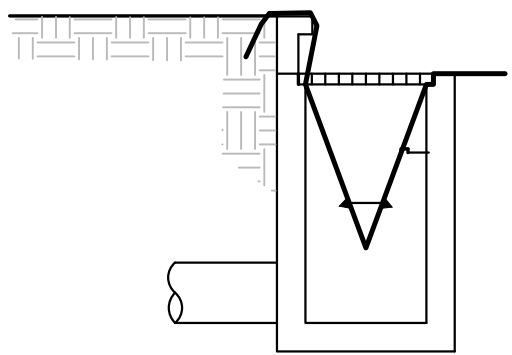


S53 STABILIZED
CONSTRUCTION ACCESS

NOT TO SCALE



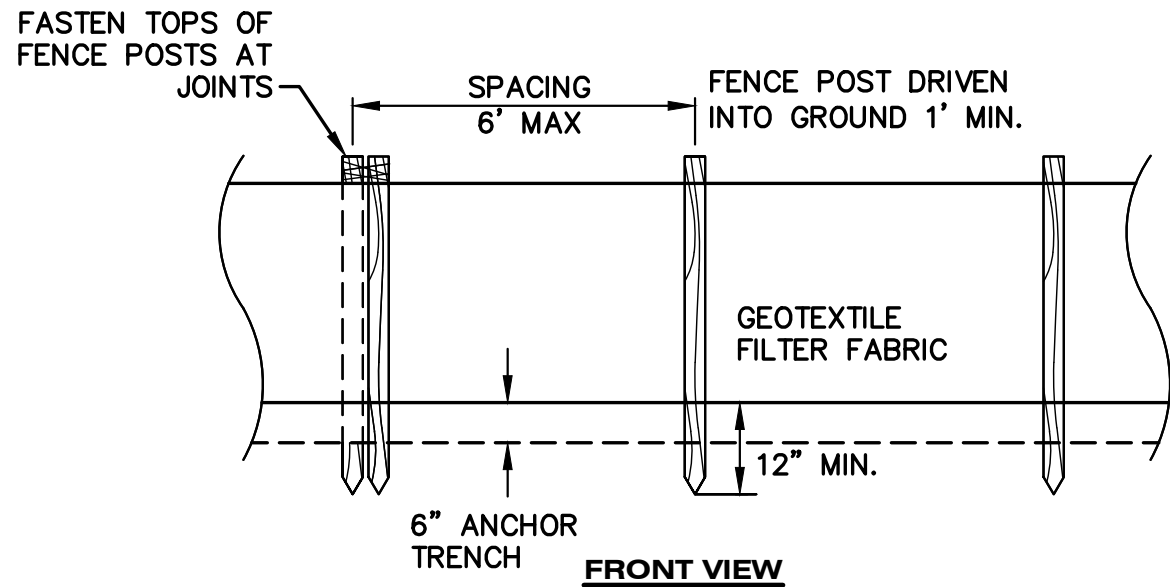
ISOMETRIC VIEW



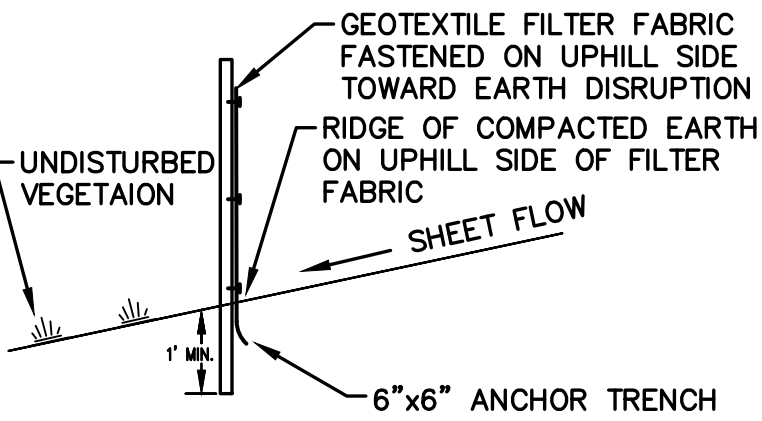
INSTALLATION DETAIL

S58 INLET PROTECTION
FABRIC DROP

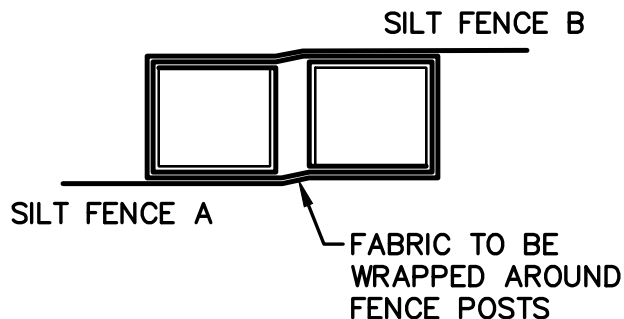
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FRONT VIEW



SECTION



JOINT DETAIL

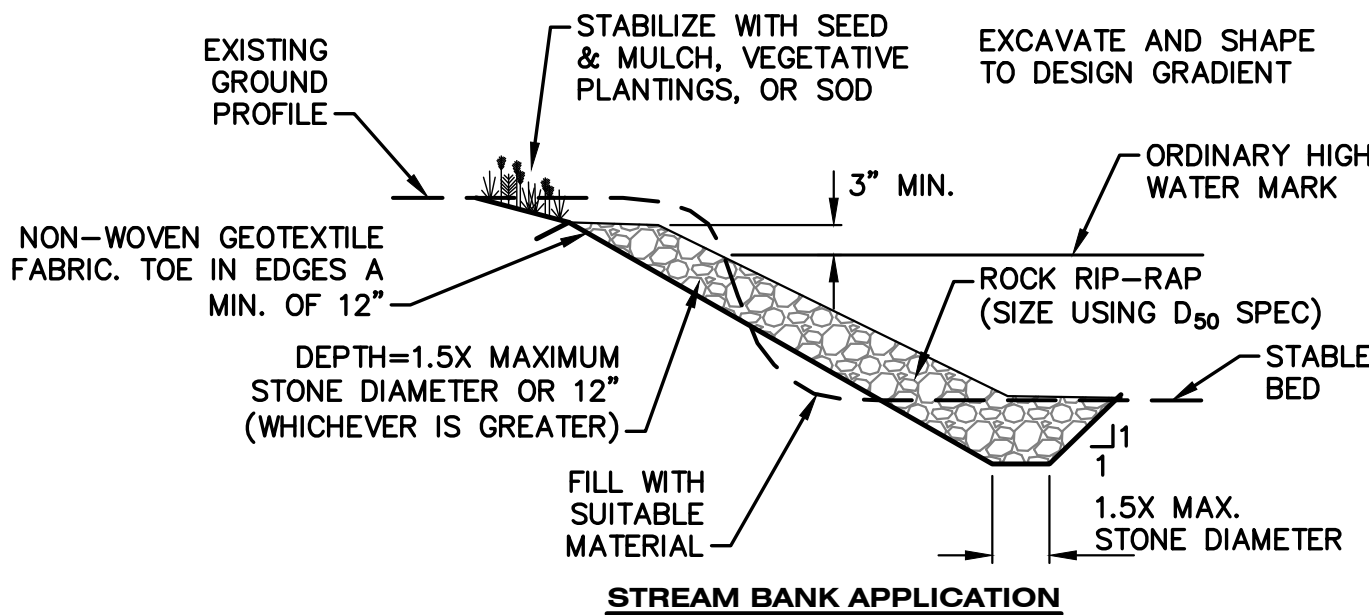
S51 SILT FENCE DETAIL

NOT TO SCALE

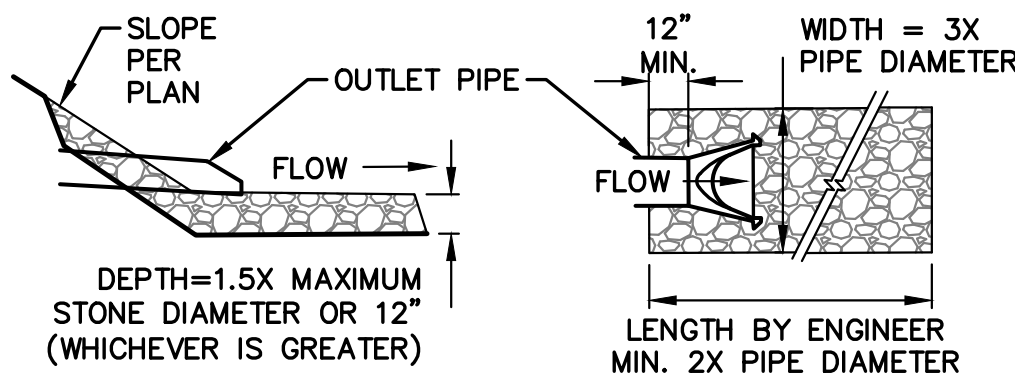


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STREAM BANK APPLICATION



OUTLET POINT APPLICATION

E12 STANDARD RIPRAP DETAIL

NOT TO SCALE

ISSUED FOR DATE

PROJECT TITLE
INDOOR YOUTH &
AMATEUR SPORTS
FACILITY

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
1617 NORTH DRAKE ROAD
KALAMAZOO, MI

SHEET TITLE
TREE CLEARING AND SESC NOTES
NOTES & SCHEDULE

DATE
MARCH 27, 2026

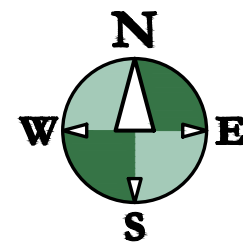
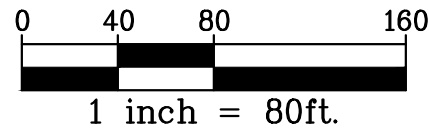
SHEET NUMBER
CD 201
25-034D

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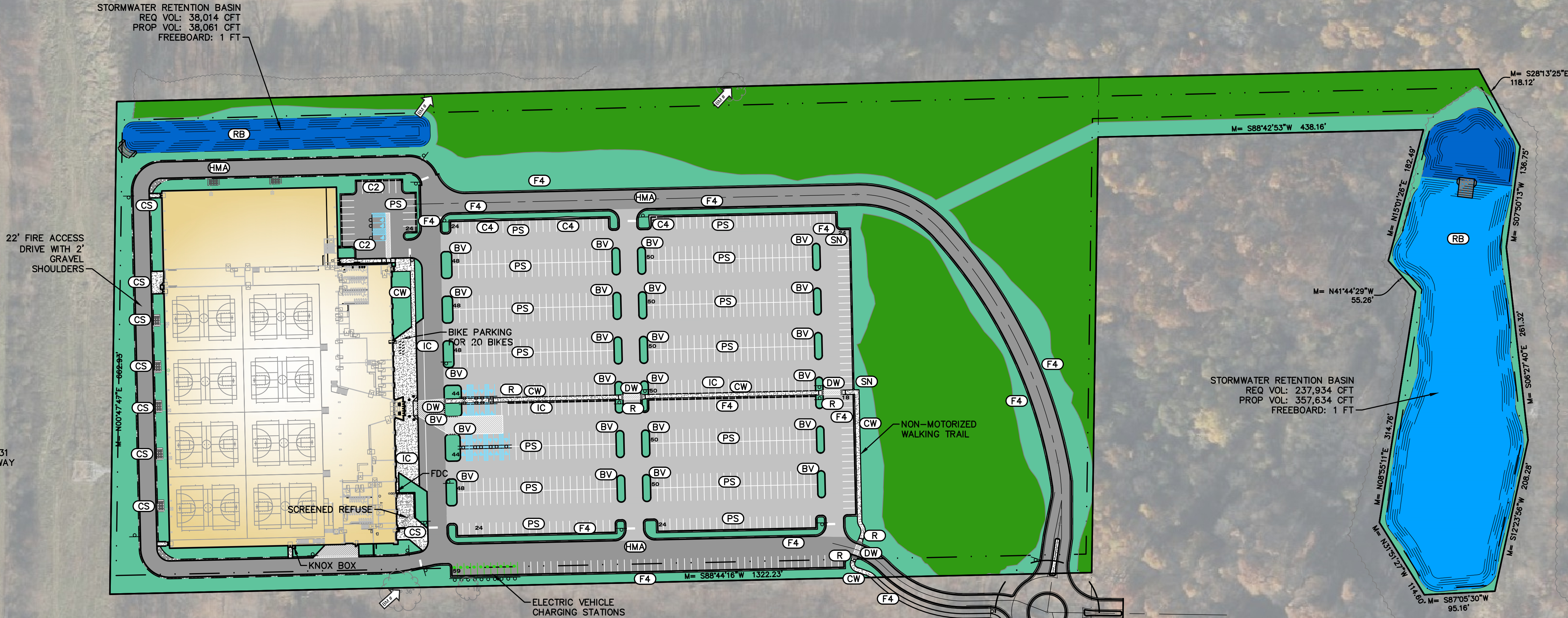
PROJECT TITLE
INDOOR YOUTH &
AMATEUR SPORTS
FACILITY

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
1617 NORTH DRAKE ROAD
KALAMAZOO, MI

SHEET TITLE
OVERALL SITE LAYOUT PLAN

DATE
MARCH 27, 2026

SHEET NUMBER
C 100
25-034D



GENERAL NOTES

- ALL DIMENSIONS SHOWN ARE TO EDGE OF METAL.
- PROVIDE CURB CUTS/RAMPS AT ALL BARRIER FREE ACCESS POINTS.
- PAVEMENT MARKINGS AND SIGNAGE SHALL CONFORM TO THE CURRENT MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND MICHIGAN BARRIER FREE CODE.
- ALL ADA ACCESS AISLES TO BE STRIPED AT 45° WITH 4 INCH BLUE STRIPES SPACED 24 INCHES ON CENTER.
- EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, AND CITY OF KALAMAZOO STANDARDS SPECIFICATIONS.
- ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.
- ALL EXTERIOR CONCRETE SHALL BE MDOT GRADE P1 (3500PSI), AIR ENTRAINED, LIMESTONE AGGREGATE, BROOM FINISHED, CURING SEAL.
- THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- ALL REQUIRED FILL FOR THIS PROJECT SHALL BE SELECTED EXCAVATED MATERIAL FROM THE SITE APPROVED BY THE ENGINEER OR CLASS II GRANULAR MATERIAL FROM BORROW AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.
- ANY BITUMINOUS OR CONCRETE PAVEMENT, SANITARY SEWER, SANITARY SEWER SERVICE LEADS, OR STORM SEWER, WHICH IS DAMAGED BY THE CONTRACTOR DURING HIS OPERATIONS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AND AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL INSTALL PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
- ALL UNSUITABLE SUBBASE MATERIAL MUST BE REMOVED TO A MINIMUM DEPTH OF 24" BELOW THE TOP OF THE SUBGRADE OR AS DETERMINED BY THE COUNTY ENGINEER.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

ZONING REQUIREMENTS

ZONING
THE SITE IS ZONED RS-5 (RESIDENTIAL)
SETBACKS: FRONT; 25'
BACK; 25'
SIDES; 8'

PROPOSED USE
FACILITY USE: SPORTS (ASSEMBLY/THEATER)
CONSTRUCTION TYPE II-B

PARKING
TOTAL PARKING SPACES PERMITTED:
- 1 SPACES PER 3 PERSONS AT MAX OCCUPANCY
- MAX OCCUPANCY 2615 ALLOWS 871 PARKING SPACES
- PARKING FOR PHYSICAL THERAPY USE 1 PER EMPLOYEE, 1 PER PATIENT = 13 SPACES
TOTAL PARKING PROVIDED = 805 SPACES

BARRIER FREE SPACES REQUIRED = 19
BARRIER FREE SPACES = 23 PROVIDED
ALL BARRIER FREE SPACES DESIGNED PER ADA REQUIREMENTS
TYPICAL PARKING SPACE DIMENSION = 9'x18'

INTERIOR LANDSCAPE REQUIRED 5% OF 274,155 SF PARKING 13,708 SF REQUIRED 16,758 SF INTERIOR LANDSCAPE PROVIDED 6.11%

ZONING INFORMATION
BIKING PARKING ZONING VARIANCE ACQUIRED. PARKING FOR 20 BIKES PROVIDED.
IMPERVIOUS SITE REQUIREMENTS 56% ALLOWED THROUGH ZONING VARIANCE ACQUIRED. 48.9% IMPERVIOUS COVERAGE.
BUILDING HEIGHT ALLOWED THROUGH VARIANCE: 56'
NFP PROTECTED SLOPES DISRUPTION ALLOWED THROUGH ZONING VARIANCE ACQUIRED.
NFP TREE RETENTION 25% REQUIRED, 27% PROVIDED (5.7 ACRES RETAINED OF 20.8 ACRES OF EXISTING WOODLOT)

LEGEND

- STANDARD-DUTY BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT AND SIDEWALK
- PROPOSED BUILDING
- PARKING STRIPING (BLUE)
- PARKING STRIPING (WHITE)
- PARKING STRIPING (GREEN)
- CURB AND GUTTER
- PROPOSED WET RETENTION BASIN
- EXISTING FOREST TO REMAIN
- PROPOSED GREEN SPACE

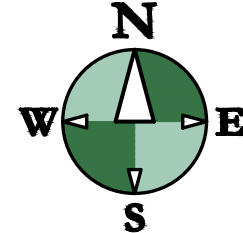
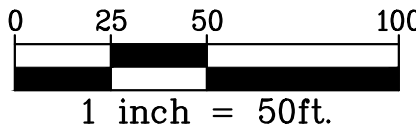
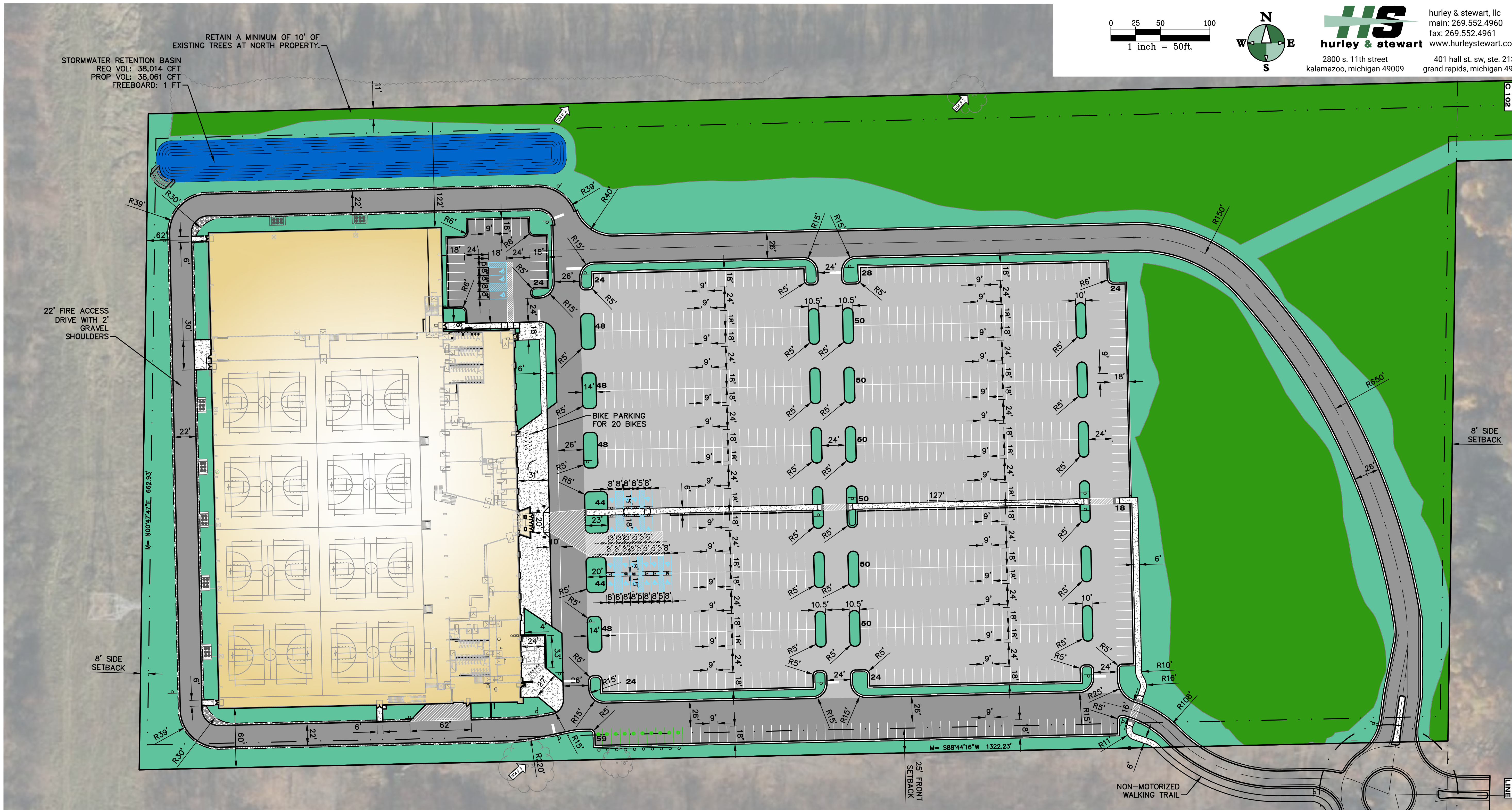
SITE LEGEND

- HMA PAVEMENT
- DETECTABLE WARNING STRIP
- C2 CURB AND GUTTER
- F4 CURB AND GUTTER
- C4 CURB AND GUTTER, MODIFIED
- BIT VALLEY GUTTER
- INTEGRAL CURB WALK
- SNOW CURB
- CONCRETE WALK
- CONCRETE SURFACE
- PARKING STRIPING (9'x18')
- TYPE R RAMP
- RETENTION BASIN

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LEGEND	
	STANDARD-DUTY BITUMINOUS PAVEMENT
	HEAVY-DUTY BITUMINOUS PAVEMENT
	CONCRETE PAVEMENT AND SIDEWALK
	PROPOSED BUILDING
	PARKING STRIPING (BLUE)
	PARKING STRIPING (WHITE)
	PARKING STRIPING (GREEN)
	CURB AND GUTTER
	PROPOSED WET RETENTION BASIN
	EXISTING FOREST TO REMAIN
	PROPOSED GREEN SPACE



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PROJECT TITLE

INDOOR YOUTH & AMATEUR SPORTS FACILITY

OWNER

KALAMAZOO COUNTY EVENT CENTER ASSESSMENT DISTRICT (KCECAD)

SHEET TITLE

SITE LAYOUT PLAN WEST

ISSUED FOR

DATE

DATE

MARCH 27, 2026

SHEET NUMBER

C 101

1617 NORTH DRAKE ROAD KALAMAZOO, MI

25-034D

25-034D

Page 25 of 54

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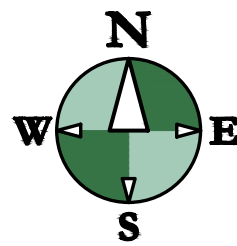
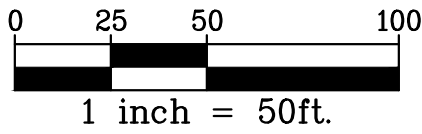
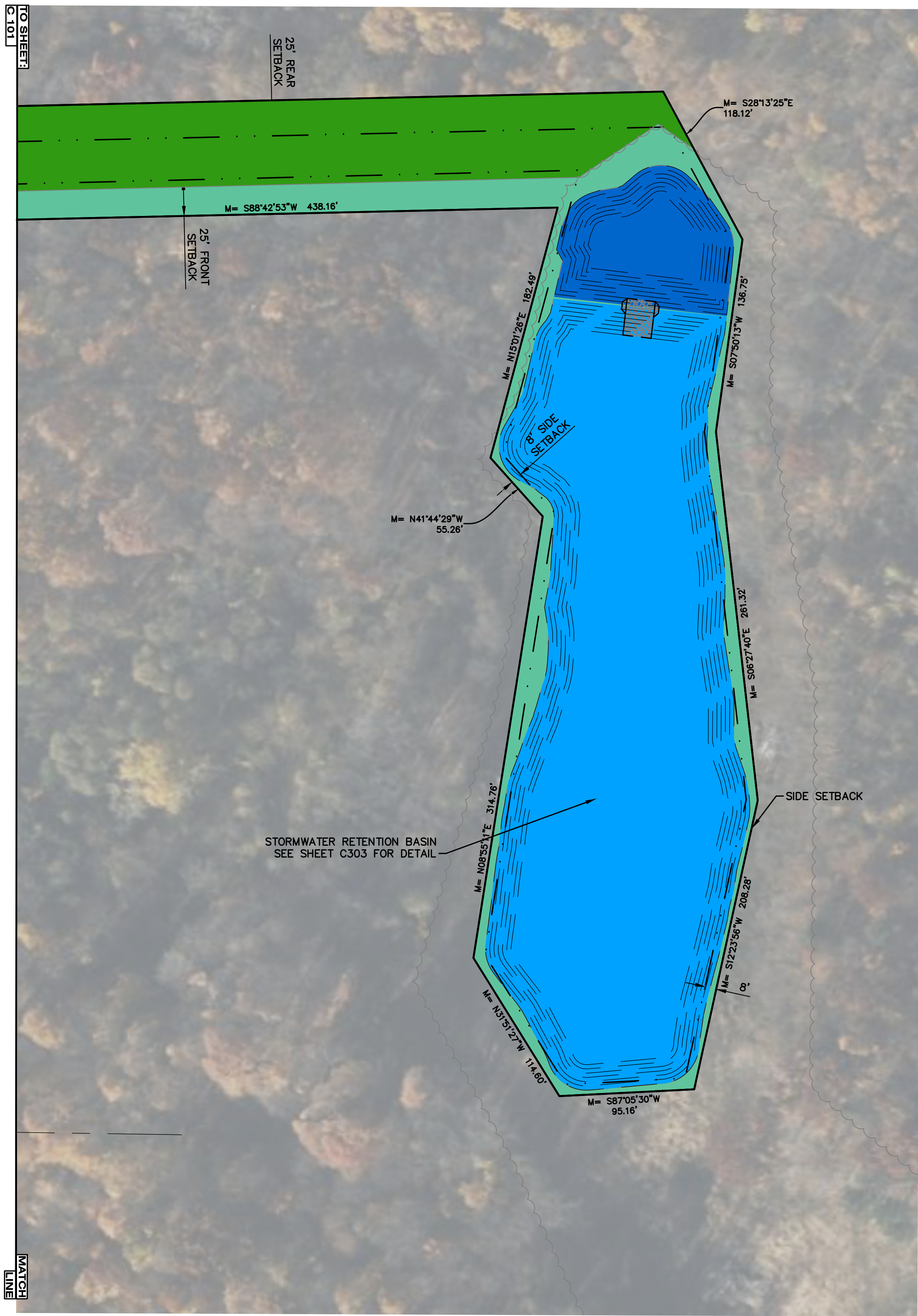
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SHEET TITLE
SITE LAYOUT PLAN EAST

SHEET NUMBER
C 102
25-034D

DATE
MARCH 27, 2026

PROJECT TITLE
INDOOR YOUTH &
AMATEUR SPORTS
FACILITY

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
1617 NORTH DRAKE ROAD
KALAMAZOO, MI

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DATE

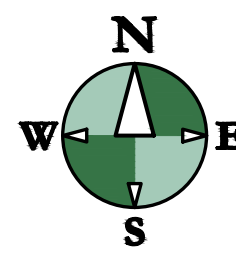
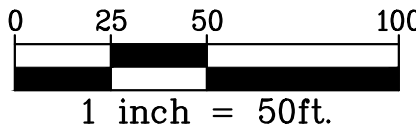
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1 QTY: 8 SIZE: 36"x36" (9 SFT) TOTAL AREA: 81 SFT  DESIGNATION R1-1	2 QTY: 7 SIZE: 36"x48" (12 SFT) TOTAL AREA: 84 SFT  DESIGNATION R1-5	3 QTY: 23 SIZE: 12"x6" (.5 SFT) TOTAL AREA: 11.5 SFT  DESIGNATION R7-8	4 QTY: 4 SIZE: 18"x12" (1.5 SFT) TOTAL AREA: 6 SFT  DESIGNATION	5 QTY: 1 SIZE: 12"x18" (1.5 SFT) TOTAL AREA: 1.5 SFT  DESIGNATION
6 QTY: 1 SIZE: 30"x24" (5 SFT) TOTAL AREA: 5 SFT  DESIGNATION R6-6	7 QTY: 10 SIZE: 12"x6" (.5 SFT) TOTAL AREA: 5 SFT  DESIGNATION R7-8c	8 QTY: 1 SIZE: 18"x12" (1.5 SFT) TOTAL AREA: 1.5 SFT  DESIGNATION R7-6		

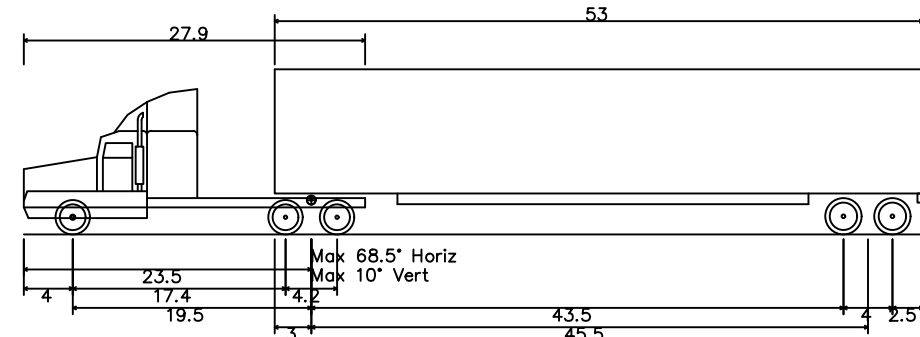
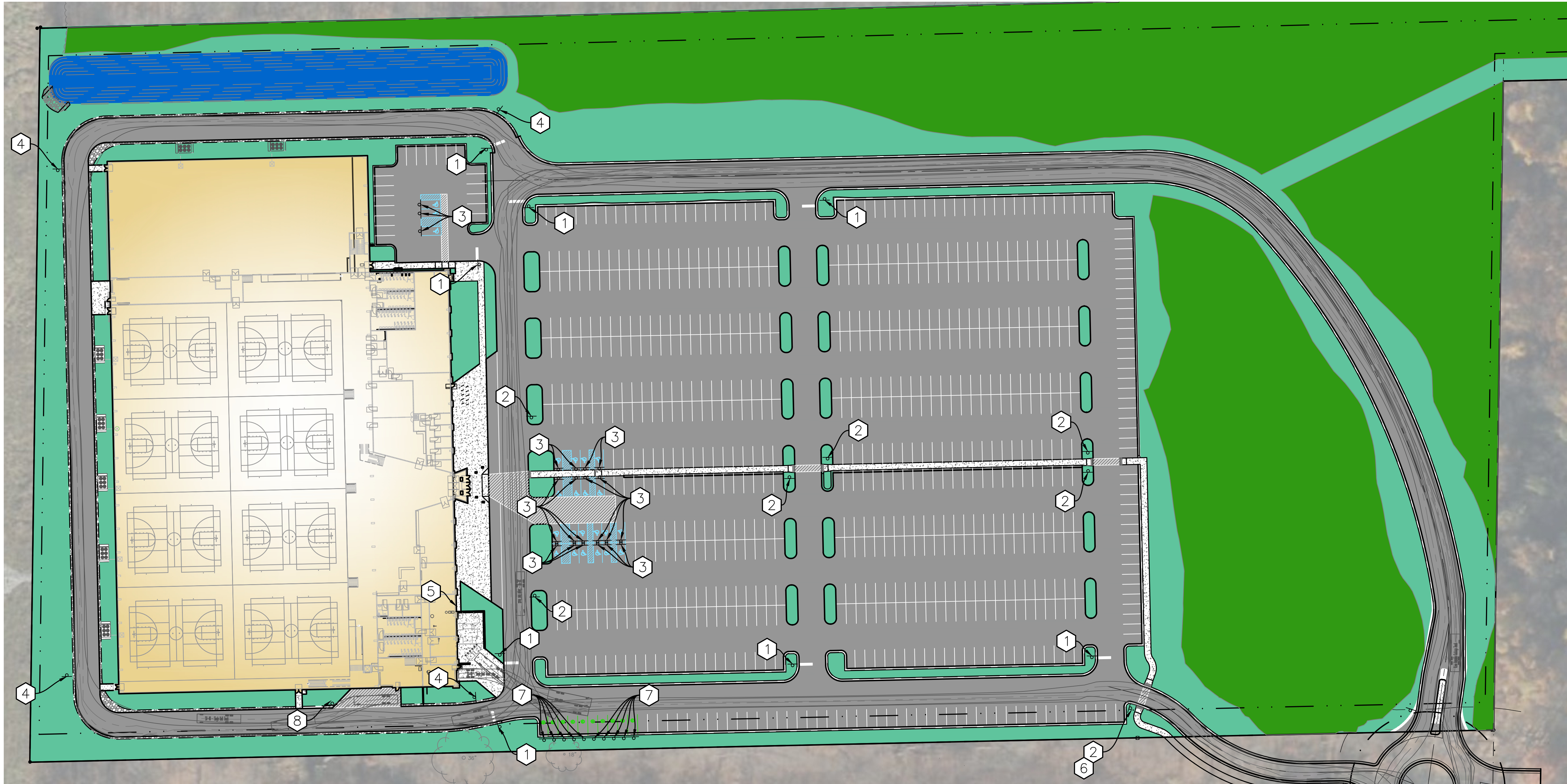




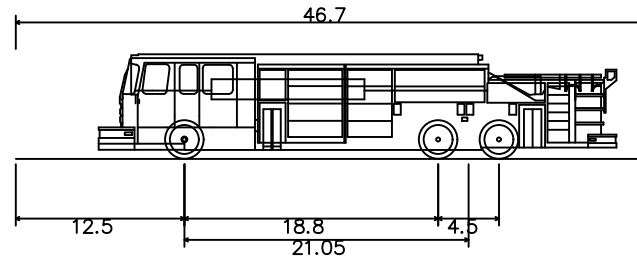
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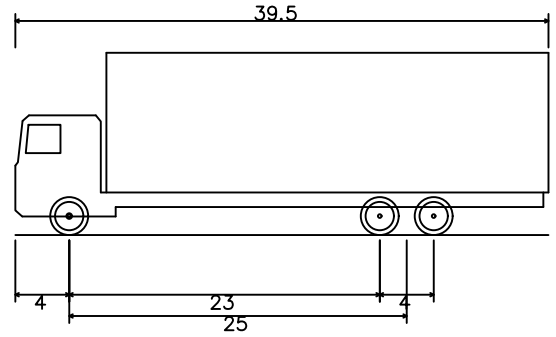
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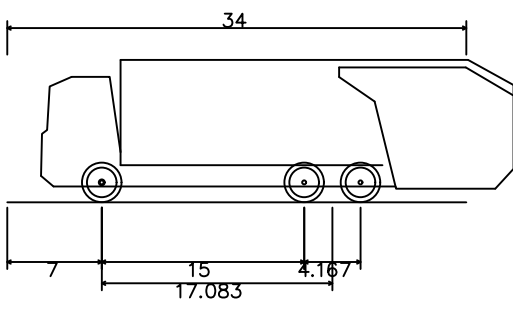
WB-67 - Interstate Semi-Trailer
Overall Length 73.501ft
Overall Width 8.500ft
Overall Body Height 13.500ft
Min Body Ground Clearance 1.34ft
Max Track Width 8.500ft
Lock-to-lock time 6.00s
Max Steering Angle (Virtual) 28.40°



Kalamazoo Fire Truck 6
Overall Length 46.700ft
Overall Width 8.167ft
Overall Body Height 7.745ft
Min Body Ground Clearance 0.656ft
Max Track Width 8.167ft
Lock-to-lock time 5.00s
Curb to Curb Turning Radius 42.050ft



SU-40 - Single Unit Truck
Overall Length 39.500ft
Overall Width 8.000ft
Overall Body Height 13.500ft
Min Body Ground Clearance 1.367ft
Track Width 8.000ft
Lock-to-lock time 5.00s
Max Steering Angle (Virtual) 31.80°



Kzoo Republic Garbage Truck
Overall Length 34.000ft
Overall Width 8.375ft
Overall Body Height 10.546ft
Min Body Ground Clearance 1.000ft
Track Width 8.375ft
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 36.000ft



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SHEET TITLE
SITE SIGNAGE PLAN

PROJECT TITLE
INDOOR YOUTH & AMATEUR SPORTS FACILITY

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)
1617 NORTH DRAKE ROAD
KALAMAZOO, MI

ISSUED FOR
DATE

DATE
MARCH 27, 2026

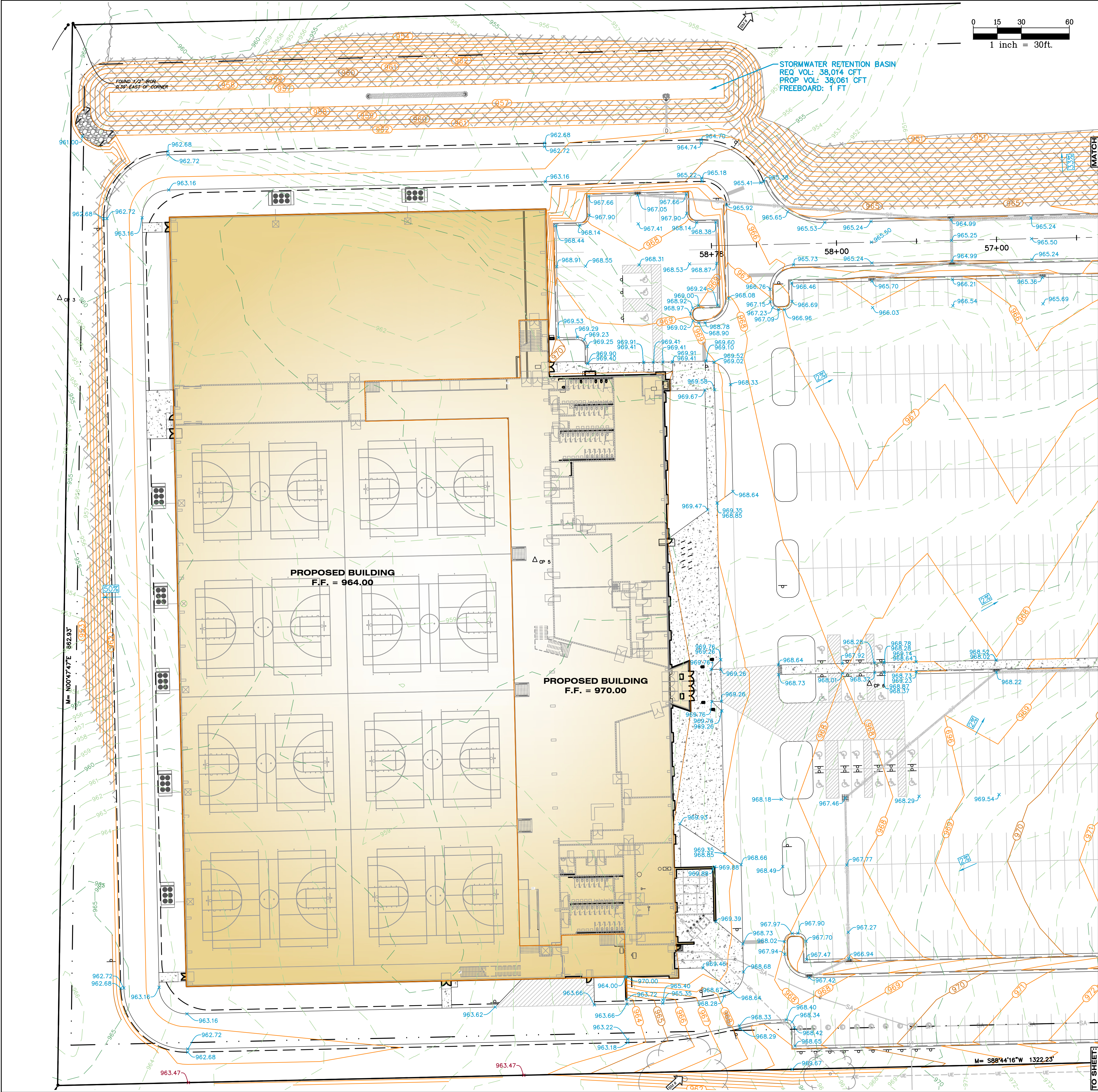
SHEET NUMBER
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GRADING PLAN LEGEND

- PROPOSED CONTOUR 5-FT
- PROPOSED CONTOUR NORMAL
- EXISTING CONTOUR 5-FT
- EXISTING CONTOUR NORMAL
- PROPOSED SPOT GRADE
- PROPOSED SPOT GRADES: TOP AND BOTTOM OF CURB/WALL
- EXISTING SPOT GRADE
- PROPOSED SURFACE SLOPE
- SOIL BORING
- BENCH MARK

GRADING & SESC NOTES

- ALL WORK WILL COMPLY WITH THE PROVISIONS OF THE SOIL EROSION AND SEDIMENTATION CONTROL ACT (PA 451, PART 91 OF 1994 AS AMENDED) ADMINISTERED BY THE CITY OF KALAMAZOO.
- FOR INSTALLATION SPECIFICATIONS FOR SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES, REFER TO THE STATE OF MICHIGAN DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET (DTMB) SESC MANUAL.
- FOR PROJECTS DISTURBING 5 ACRES OR MORE, THE CONTRACTOR/CONSTRUCTION MANAGER IS RESPONSIBLE FOR SUBMITTING THE REQUIRED EGLE NOTICE OF COVERAGE (NOC) UNDER THE CONSTRUCTION STORMWATER PERMIT. ALL FEES, DOCUMENTATION, AND COORDINATION WITH EGLE SHALL BE COMPLETED BY THE CONTRACTOR/CM. PROOF OF NOC COVERAGE MUST BE PROVIDED TO THE OWNER AND ENGINEER BEFORE EARTHWORK BEGINS.
- AVOID UNNECESSARY DISTURBING OR REMOVING EXISTING VEGETATED TOPSOIL OR EARTH COVER. THESE AREAS ACT AS SEDIMENT FILTERS.
- ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEANUP AND APPROVAL.
- ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION.
- ALL SOIL PILES SHALL BE SURROUNDED BY SILT FENCE IF ALLOWED TO REMAIN IN PLACE FOR MORE THAN 7 DAYS. TOPSOIL PILES SHALL BE SEEDED IF ALLOWED TO REMAIN IN PLACE FOR MORE THAN 20 DAYS. SPOIL PILES SHALL NOT BE PLACED WITHIN 50' FROM ANY TEMPORARY OR PERMANENT WATERCOURSE.
- THE CONTRACTOR SHALL COMPLY WITH THE WEEKLY RECOMMENDATIONS OF THE CERTIFIED STORM WATER OPERATOR.
- PROVIDE SILT SACKS IN EACH CATCH BASIN UNTIL SITE IS STABILIZED.
- SEE LANDSCAPING PLAN FOR FINAL SLOPE TREATMENTS.
- PLACE TOPSOIL AND SEED ACCORDING TO THE LANDSCAPE PLANS AS SOON AS AREAS ARE BROUGHT TO GRADE.
- WATER SITE WHEN NECESSARY TO PREVENT AIR BORNE SEDIMENT TRANSFER.
- STRAW MULCH BLANKETS SHALL BE USED ON 3:1 SLOPES OR GREATER. ALL SLOPES ON SITE SHALL BE 4:1 OR LESS, UNLESS OTHERWISE DIRECTED BY ENGINEER.
- MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN. MATCH AT 1 ON 6 IF NOT LABELED.
- ALL EXCAVATION AND SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT, DRIESENGA & ASSOCIATES, INC PROJECT NO. 2551059.3A ISSUED 03/09/2026.
- THE CONTRACTOR SHALL INSTALL PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
- ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
- ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
- REMOVE AND REPLACE WITH CONTROLLED FILL ANY AREAS THAT HAVE BEEN SOFTENED BY RAINS, FREEZING, CONSTRUCTION EQUIPMENT, ETC.
- ALL REQUIRED FILL FOR THIS PROJECT SHALL BE SELECTED EXCAVATED MATERIAL FROM THE SITE APPROVED BY THE ENGINEER OR CLASS II GRANULAR MATERIAL FROM BORROW AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- ALL COMPACTION SHALL BE ACCOMPLISHED BY PLACING THE FILL IN 12" LOOSE LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO AT LEAST THE SPECIFIED MINIMUM DRY DENSITY. FIELD DENSITY TESTS SHOULD BE PERFORMED ON EACH LIFT AS NECESSARY TO ENSURE THAT ADEQUATE MOISTURE CONDITIONS AND COMPACTION ARE BEING ACHIEVED.
- SITE CONTRACTOR SHALL REMOVE AND STOCKPILE ALL TOPSOIL AND BLACK ORGANIC SOILS ON-SITE TO BE USED IN THE REGRADING OF LANDSCAPE AREAS. THIS MATERIAL IS NOT TO BE USED FOR FILL OR PAVEMENT SUBBASE. REMOVAL OF ANY EXCESS SOIL OFF-SITE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- CONTRACTOR RESPONSIBLE FOR VERIFYING EARTHWORK CALCULATIONS PRIOR TO COMMENCING WORK. NO EXTRA EARTHWORK WILL BE PAID FOR ONCE EARTHWORK HAS BEGUN. ANY DISCREPANCIES WITH THE EARTHWORK CALCULATIONS SHALL BE REVIEWED WITH THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. SCRAPE ROAD AT THE END OF EACH WORKDAY AND SWEEP AT LEAST ONCE A WEEK.
- ANY DISTURBED AREA THAT WILL BE LEFT UNWORKED 5 DAYS OR LONGER MUST BE SEEDED AND MULCHED OR SODDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.
- ROAD RIGHTS-OF-WAY MUST BE STABILIZED WITH SEED AND MULCH WITHIN 5 DAYS OF COMPLETING UTILITY WORK IN THE RIGHT-OF-WAY.
- AREAS OF EARTH CHANGE THAT ARE DISTURBED BEYOND THE FALL SEEDING DEADLINE (NOV. 1) MUST BE TEMPORARILY STABILIZED WITH A MINIMUM OF STRAW MULCH SECURELY CRIMPED TO THE GROUND.
- ACCUMULATED SEDIMENT TO BE REMOVED FROM STORM SYSTEM UPON COMPLETION OF CONSTRUCTION. ALL TEMPORARY CONTROLS TO BE REMOVED AFTER SITE IS STABILIZED AND VEGETATION ESTABLISHED.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
- ONLY EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN BIONET S150BN AND WESTERN WOOD FIBERS EXCEL SS-2 ALL NATURAL (BIODEGRADABLE JUTE/SCRM NETTING WITH LENO WEAVE TYPE MESH) OR EQUIVALENT ARE CONSIDERED ACCEPTABLE PRODUCTS. NET EROSION BLANKETS CONTAINING PLASTIC OR SYNTHETIC NET OR NETTING SHALL NO LONGER BE AUTHORIZED, NOR APPROVED FOR USE.

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PROJECT TITLE
INDOOR YOUTH & AMATEUR SPORTS FACILITY

OWNER
KALAMAZOO COUNTY
EVENT CENTER
ASSESSMENT
DISTRICT (KCECAD)

DATE
MARCH 27, 2026

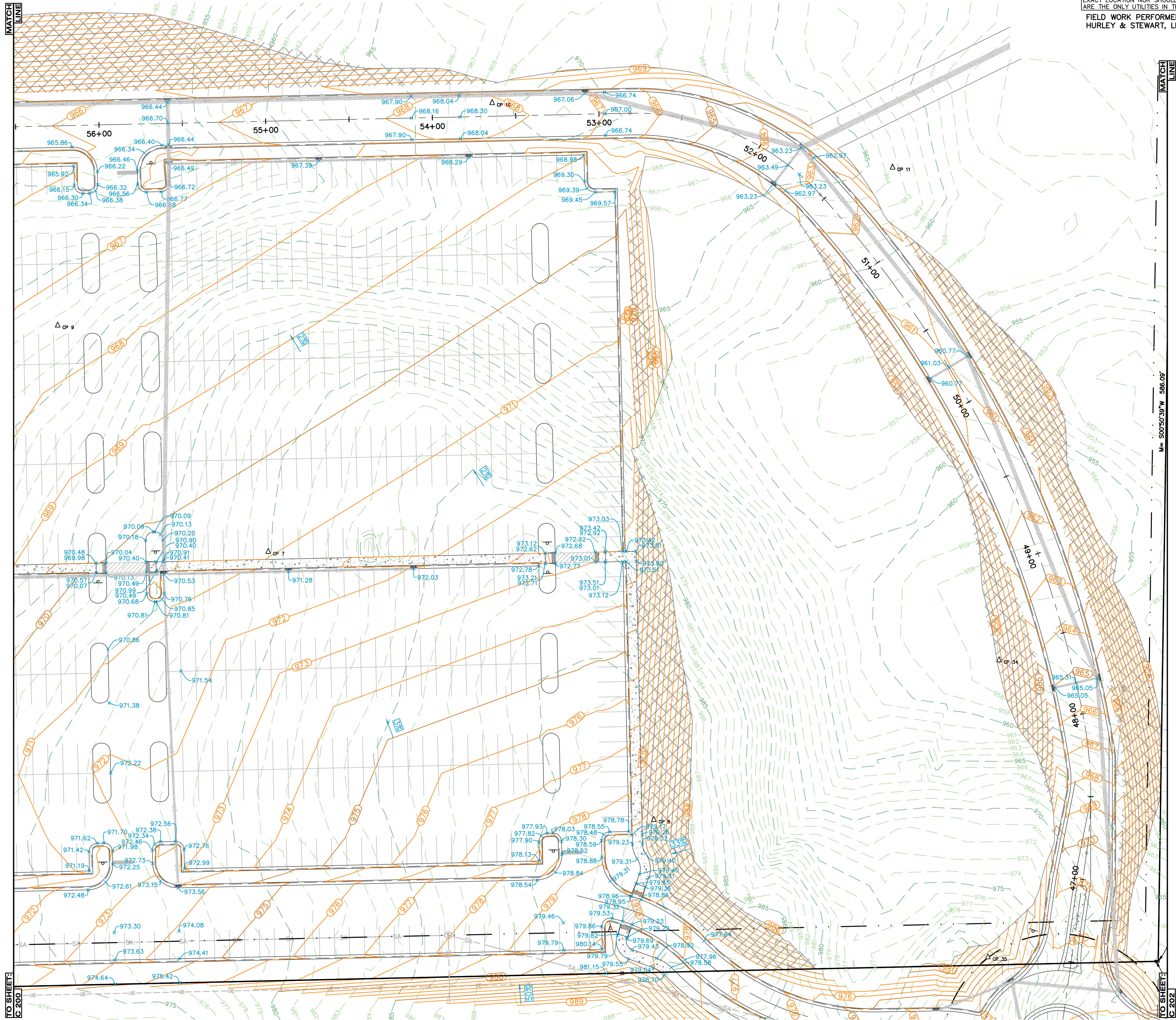
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25-034D

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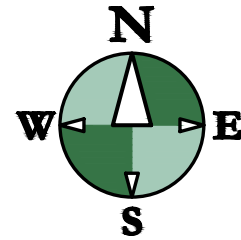
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1617 NORTH DRAKE ROAD
KALAMAZOO, MI

SHEET TITLE
SITE GRADING PLAN WEST



0 15 30 60
1 inch = 30ft.



Know what's below.
Call before you dig.

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS
DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE
RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE
EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY
ARE THE ONLY UTILITIES IN THE AREA.

FIELD WORK PERFORMED BY:
HURLEY & STEWART, LLC

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hurley & stewart, llc
2800 s. 11th street
kalamazoo, michigan 49009
269.552.4960 fax 269.552.4961
www.hurleystewart.com

GRADING PLAN LEGEND

- PROPOSED CONTOUR 5-FT
- PROPOSED CONTOUR NORMAL
- EXISTING CONTOUR 5-FT
- EXISTING CONTOUR NORMAL
- PROPOSED SPOT GRADE
- PROPOSED SPOT GRADES: TOP AND BOTTOM OF CURB/WALL
- EXISTING SPOT GRADE
- PROPOSED SURFACE SLOPE
- SOIL BORING
- BENCH MARK

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PROJECT TITLE
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DISTRICT (KCECAD)

1617 NORTH DRAKE ROAD
KALAMAZOO, MI

SHEET TITLE
SITE GRADING PLAN CENTRAL

DATE
MARCH 27, 2026

SHEET NUMBER
C 201
25-034D

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DATE

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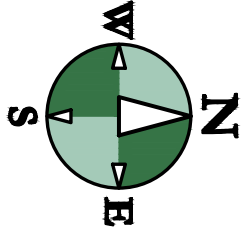
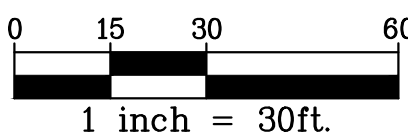
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TO SHEET:
C 201

MATCH
LINE



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kalamazoo, michigan 49009
269.552.4960 fax 269.552.4961
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GRADING PLAN LEGEND

- PROPOSED CONTOUR 5-FT
- PROPOSED CONTOUR NORMAL
- EXISTING CONTOUR 5-FT
- EXISTING CONTOUR NORMAL
- PROPOSED SPOT GRADE
- PROPOSED SPOT GRADES: TOP AND BOTTOM OF CURB/WALL
- EXISTING SPOT GRADE
- PROPOSED SURFACE SLOPE
- SOIL BORING
- BENCH MARK

STORMWATER RETENTION BASIN
940.00-946.00
REQ VOL: 296,582 CFT
PROP VOL: 313,181 CFT
FREEBOARD: 1 FT

20 FT WIDE EMERGENCY
SPILLWAY ELEV = 945.00

PROPOSED LINED PRETREATMENT/SPILL
CONTAINMENT CELL
939.00-944.00
13,670 CFT SPILL CONTAINMENT VOLUME
@ 942.00

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DISTRICT (KCECAD)

1617 NORTH DRAKE ROAD
KALAMAZOO, MI

SHEET TITLE
SITE GRADING PLAN EAST

DATE
MARCH 27, 2026

SHEET NUMBER
C 202
25-034D

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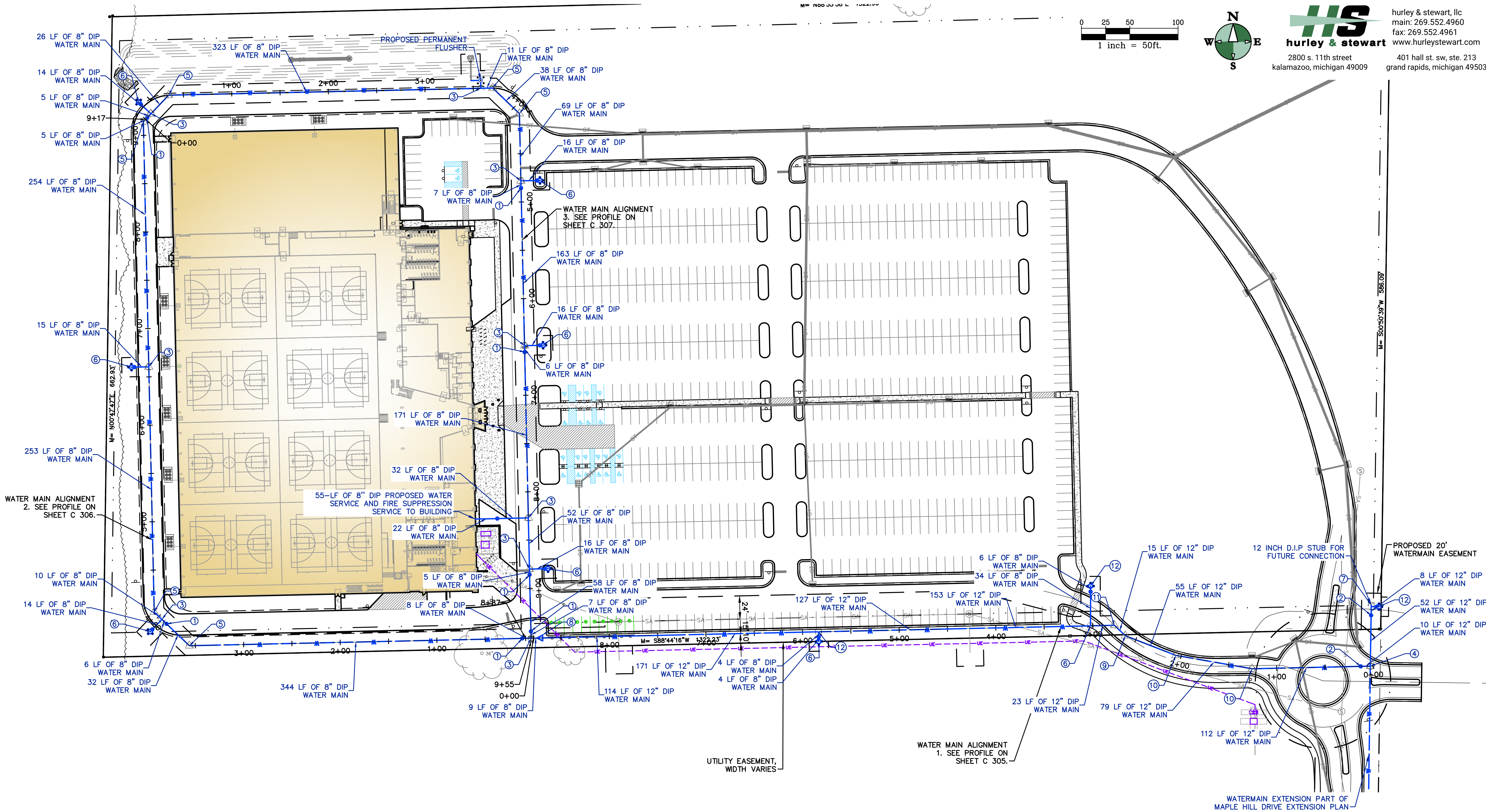
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WATER UTILITY NOTES

- FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.
- ALL MATERIAL AND CONSTRUCTION WILL BE IN ACCORDANCE WITH THE MOST RECENT CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT). MDOT SPECIFICATIONS ARE SUBJECT TO THE CURRENT ADDENDA. IN ADDITION, ALL WORK WILL BE IN COMPLIANCE WITH ALL APPLICABLE FEDERAL AND STATE STANDARDS AND REGULATIONS.
- ALL BEDDING MATERIAL TYPES ARE TO BE PER MDOT SPEC. 402.03.
- DEWATERING MAY BE REQUIRED TO INSTALL OR REMOVE SOME UTILITIES. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. REFER TO GEOTECHNICAL REPORT FOR MORE INFORMATION.
- ALL WATER MAIN INSTALLED IN GROUNDWATER SHALL BE WRAPPED WITH POLYETHYLENE.
- PROVIDE 18" WATER MAIN SEPARATION WHEN CROSSING OTHER UTILITIES. DEFLECT UNDER OTHER UTILITIES W/O USING FITTINGS WHENEVER POSSIBLE. SEE WATER MAIN PROFILE SHEET.
- VERIFY NUMBER OF FITTINGS PRIOR TO ORDERING. TOTALS DO NOT INCLUDE VERTICAL DEFLECTIONS THAT MAY BE NEEDED.
- THE CONTRACTOR SHALL INSTALL PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
- CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR GROUNDWATER AND SOILS INFORMATION. ANY UTILITIES REQUIRING DEWATERING SHALL BE INSTALLED TO THE CITY OF KALAMAZOO STANDARDS AND INCLUDED IN THE INSTALLATION COSTS. CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING NECESSARY TO CONSTRUCT UTILITIES IN THE DRY.
- CONTRACTOR TO COORDINATE PRIVATE UTILITY CONNECTIONS WITH UTILITY COMPANIES.
- SITE CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL UTILITIES TO 5' FROM BUILDING WALL.
- COORDINATE ALL UTILITY LOCATIONS AND ELEVATIONS WITH MECHANICAL DRAWINGS AND BUILDING CONTRACTOR PRIOR TO INSTALLATION.
- WATER SUPPLY MATERIALS AND INSTALLATION SHALL COMPLY WITH CITY OF KALAMAZOO UTILITIES REQUIREMENTS AND SPECIFICATIONS. COORDINATE CONNECTIONS WITH CITY OF KALAMAZOO.
- SEE SITE ELECTRICAL PLAN FOR LOCATION OF ALL ELECTRICAL SLEEVES AND CONDUIT.
- UNDERGROUND ELECTRICAL SHALL BE PROVIDED TO THE SITE LIGHT POLES.
- REMOVE SEDIMENT FROM ALL STRUCTURES ONCE PAVING IS COMPLETE AND REMOVE SILT SACKS.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

WATER MAIN FITTING SCHEDULE

FITTING NUMBER	DESCRIPTION	TOTAL THIS SHEET
①	8" GATE VALVE	7
②	12" BUTTERFLY VALVE	2
③	8"x8" TEE	9
④	12" 90° BEND	1
⑤	8" 45° BEND	6
⑥	8" HYDRANT ASSEMBLY WITH VALVE	8
⑦	12" CAP	1
⑧	12"x8" REDUCER	1
⑨	12" 22.5° BEND	1
⑩	12" 11.25° BEND	2
⑪	12" 45° BEND	1
⑫	12"x8" TEE	2

SHEET TITLE
SITE WATERMAIN PLAN

SHEET NUMBER
C 300
25-034D

DATE
MARCH 27, 2026

OWNER
KALAMAZOO COUNTY
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ASSESSMENT
DISTRICT (KCECAD)
1617 NORTH DRAKE ROAD
KALAMAZOO, MI

PROJECT TITLE
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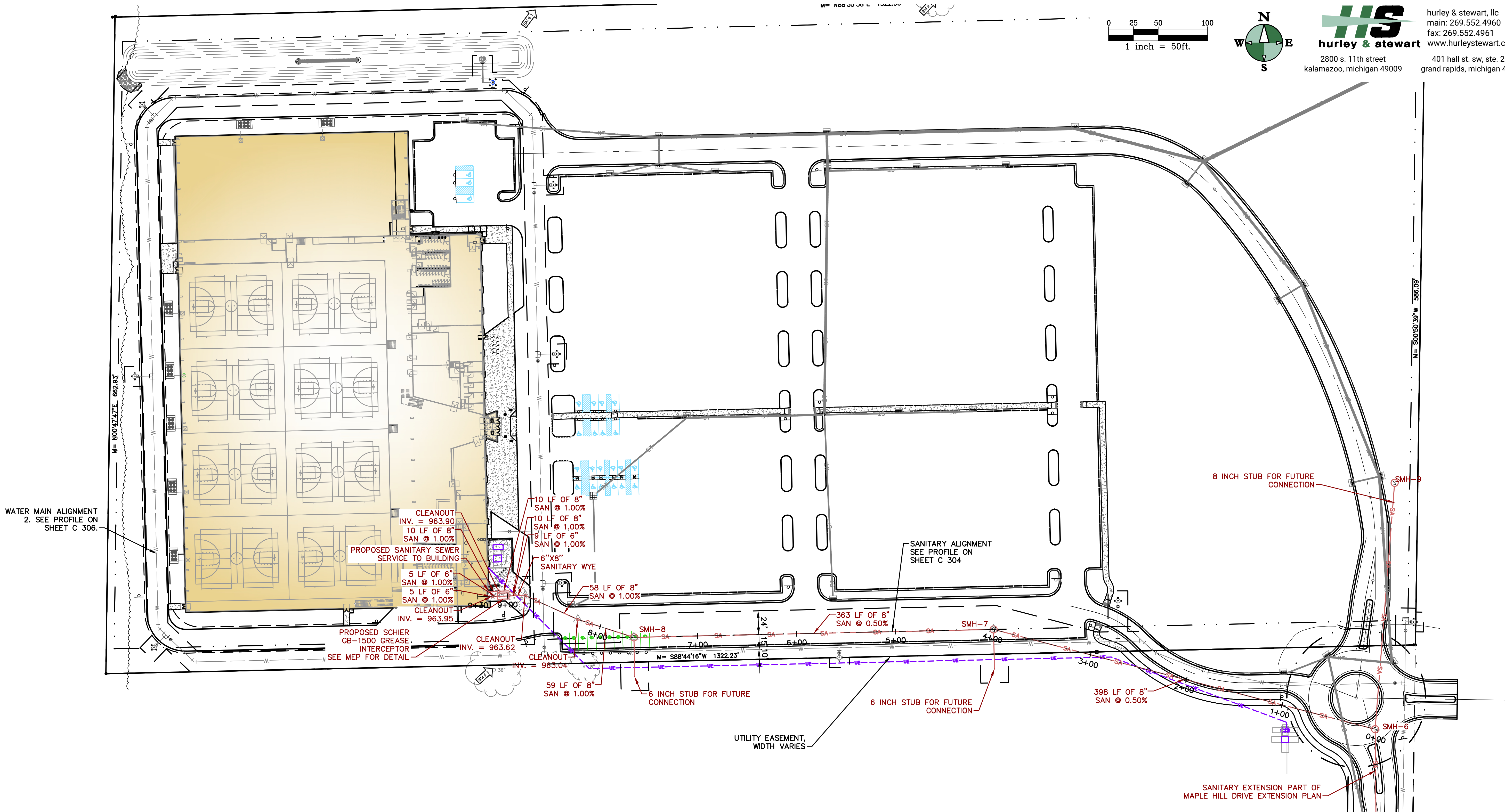
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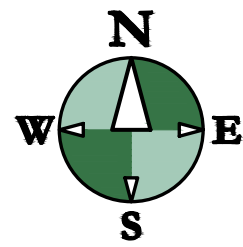
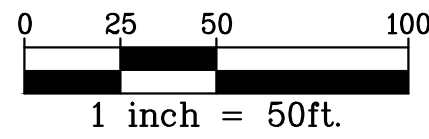
SANITARY UTILITY NOTES

- FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.
- ALL MATERIAL AND CONSTRUCTION WILL BE IN ACCORDANCE WITH THE MOST RECENT CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT). MDOT SPECIFICATIONS ARE SUBJECT TO THE CURRENT ADDENDA. IN ADDITION, ALL WORK WILL BE IN COMPLIANCE WITH ALL APPLICABLE FEDERAL AND STATE STANDARDS AND REGULATIONS.
- PLACE SANITARY CLEANOUT EVERY 100' AND/OR AT BENDS ON ALL 6" SANITARY SEWER LEADS.
- ALL BEDDING MATERIAL TYPES ARE TO BE PER MDOT SPEC. 402.03.
- DEWATERING MAY BE REQUIRED TO INSTALL OR REMOVE SOME UTILITIES. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. REFER TO GEOTECHNICAL REPORT FOR MORE INFORMATION.
- ALL STRUCTURE CASTINGS TO BE EAST JORDAN IRON WORKS OR APPROVED EQUAL. SEE STRUCTURE TABLE FOR SPECIFIC CASTING AT EACH STRUCTURE.
- VERIFY LOCATION AND ELEVATION OF EXISTING SANITARY LEAD PRIOR TO ORDERING STRUCTURES AND CONSTRUCTION.
- VERIFY NUMBER OF FITTINGS PRIOR TO ORDERING. TOTALS DO NOT INCLUDE VERTICAL DEFLECTIONS THAT MAY BE NEEDED.
- THE CONTRACTOR SHALL INSTALL PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
- CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR GROUNDWATER AND SOILS INFORMATION. ANY UTILITIES REQUIRING DEWATERING SHALL BE INSTALLED TO THE CITY OF KALAMAZOO STANDARDS AND INCLUDED IN THE INSTALLATION COSTS. CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING NECESSARY TO CONSTRUCT UTILITIES IN THE DRY.
- CONTRACTOR TO COORDINATE PRIVATE UTILITY CONNECTIONS WITH UTILITY COMPANIES.
- SITE CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL UTILITIES TO 5' FROM BUILDING WALL.
- COORDINATE ALL UTILITY LOCATIONS AND ELEVATIONS WITH MECHANICAL DRAWINGS AND BUILDING CONTRACTOR PRIOR TO INSTALLATION.
- SANITARY SEWER MATERIALS AND INSTALLATION SHALL COMPLY WITH CITY OF KALAMAZOO REQUIREMENTS. COORDINATE WORK AND INSPECTIONS WITH CITY OF KALAMAZOO.
- SEE SITE ELECTRICAL PLAN FOR LOCATION OF ALL ELECTRICAL SLEEVES AND CONDUIT.
- UNDERGROUND ELECTRICAL SHALL BE PROVIDED TO THE SITE LIGHT POLES.
- REMOVE SEDIMENT FROM ALL STRUCTURES ONCE PAVING IS COMPLETE AND REMOVE SILT SACKS.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
- SANITARY SEWER CONNECTION WILL ADHERE TO THE CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR WASTEWATER SEWER INSTALLATION, 2013.

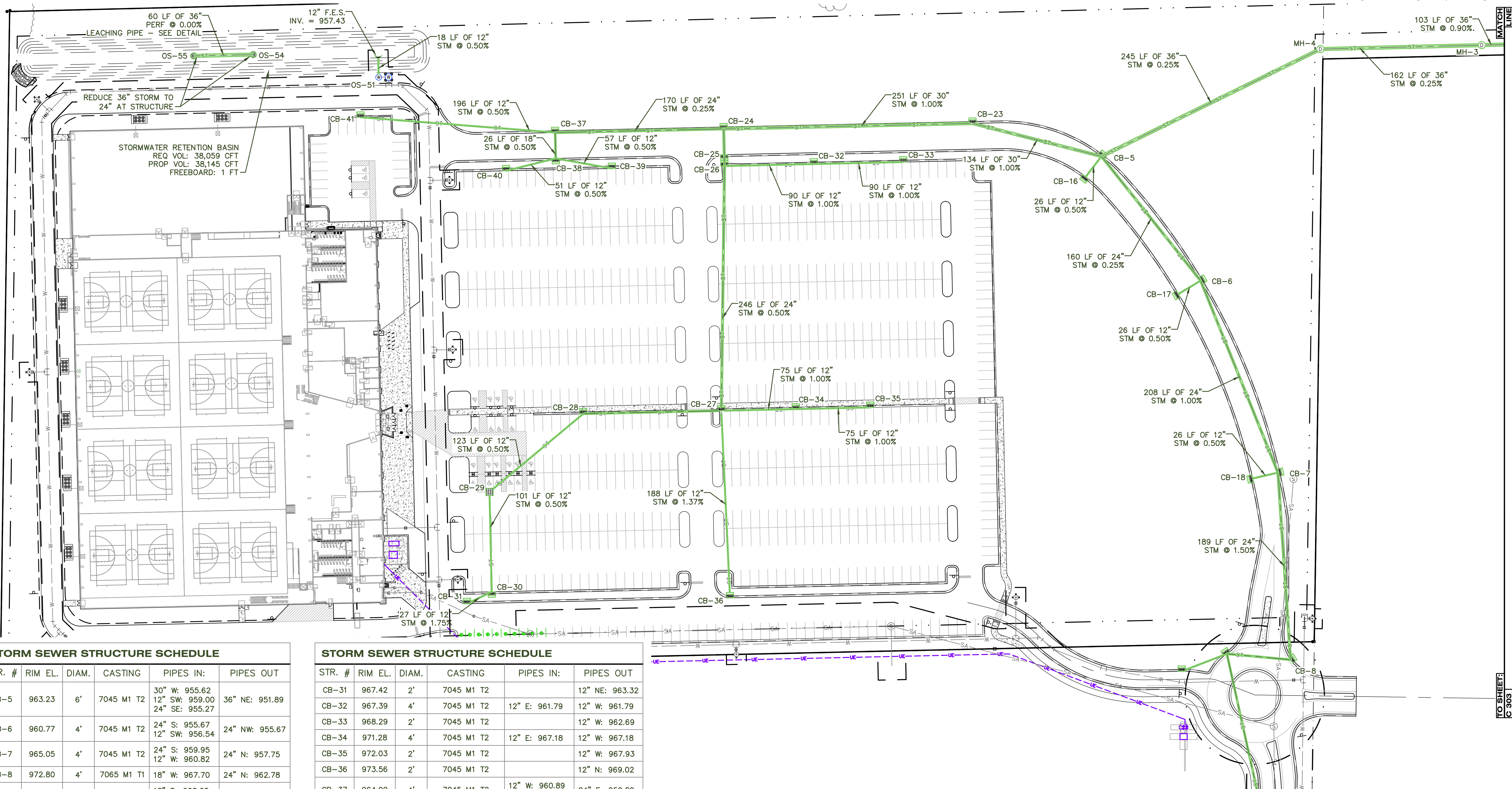
SANITARY SEWER STRUCTURE SCHEDULE

STR. #	RIM EL.	DIAM.	CASTING	PIPES IN:	PIPES OUT
SMH-6	973.86	4'	1040 A	8" N: 958.43 8" W: 958.43	8" S: 958.33
SMH-7	977.97	4'	1040 A	8" W: 960.52	8" E: 960.42 8" S: 960.20
SMH-8	969.98	4'	1040 A	8" W: 962.44	8" E: 962.34 8" S: 962.44
SMH 9	962.69	4'	1040A		8" S: 959.68

** SEE MEP PLANS FOR DISCHARGE BASIS OF DESIGN FLOW RATE
- PEAK DAILY BASED ON 1200 PEOPLE
- LOW: 6,400 GALLONS
- HIGH: 20,600 GALLONS
- TYPICAL: 12,700 GALLONS



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www.hurleystewart.com
401 hall st. sw, ste. 213
grand rapids, michigan 49503



STORM SEWER STRUCTURE SCHEDULE

STR. #	RIM EL.	DIAM.	CASTING	PIPES IN:	PIPES OUT
CB-5	963.23	6'	7045 M1 T2	30" W: 955.62 12" SW: 959.00 24" SE: 955.27	36" NE: 951.89
CB-6	960.77	4'	7045 M1 T2	24" S: 955.67 12" SW: 956.54	24" NW: 955.67
CB-7	965.05	4'	7045 M1 T2	24" S: 959.95 12" W: 960.82	24" N: 957.75
CB-8	972.80	4'	7065 M1 T1	18" W: 967.70	24" N: 962.78
CB-9	972.65	4'	7065 M1 T1	18" S: 968.05 12" W: 968.55	18" E: 968.05
CB-16	963.23	2'	7045 M1 T2		12" NE: 959.13
CB-17	960.77	2'	7045 M1 T2		12" NE: 956.67
CB-18	965.05	2'	7045 M1 T2		12" E: 960.95
CB-19	973.61	2'	7045 M1 T2		12" E: 968.79
CB-23	967.06	5'	7045 M1 T2	30" W: 956.96	30" E: 956.96
CB-24	966.44	5'	7045 M1 T2	24" W: 959.47 24" S: 959.62	30" E: 959.47
CB-25	966.44	4'	7045 M1 T2	24" S: 959.75	24" N: 959.75
CB-26	966.49	4'	7150 M1 T1	24" S: 959.81 12" E: 960.88	24" N: 959.81
CB-27	970.53	4'	7045 M1 T2	18" W: 961.04 12" E: 966.43 12" S: 966.43	24" N: 961.04
CB-28	968.22	4'	7045 M1 T2	12" SW: 961.73	18" E: 961.73
CB-29	967.46	4'	5105 M3	12" S: 962.34	12" NE: 962.34
CB-30	966.94	4'	7045 M1 T2	12" SW: 962.84	12" N: 962.84

STORM SEWER STRUCTURE SCHEDULE

STR. #	RIM EL.	DIAM.	CASTING	PIPES IN:	PIPES OUT
CB-31	967.42	2'	7045 M1 T2		12" NE: 963.32
CB-32	967.39	4'	7045 M1 T2	12" E: 961.79	12" W: 961.79
CB-33	968.29	2'	7045 M1 T2		12" W: 962.69
CB-34	971.28	4'	7045 M1 T2	12" E: 967.18	12" W: 967.18
CB-35	972.03	2'	7045 M1 T2		12" W: 967.93
CB-36	973.56	2'	7045 M1 T2		12" N: 969.02
CB-37	964.99	4'	7045 M1 T2	12" W: 960.89 18" S: 960.26	24" E: 959.89
CB-38	964.99	4'	7045 M1 T2	12" W: 960.48 12" E: 959.74	18" N: 960.39
CB-39	965.36	4'	7150 M1 T1		12" W: 960.03
CB-40	965.70	4'	7150 M1 T1		12" E: 960.74
CB-41	967.05	2'	7050 M1 T2		12" E: 961.87
MH-3	967.64	5'	1040 A	36" W: 950.87	36" E: 950.63
MH-4	963.95	5'	1040 A	36" SW: 951.28	36" E: 951.28
OS-51	962.52	4'	1040 A		12" N: 957.52
OS-54	958.00	4'	HAALA PS48-58S	24" W: 950.00	
OS-55	958.00	4'	HAALA PS48-58S		24" E: 950.00

STORM UTILITY NOTES

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- ALL MATERIAL AND CONSTRUCTION WILL BE IN ACCORDANCE WITH THE MOST RECENT CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT). MDOT SPECIFICATIONS ARE SUBJECT TO THE CURRENT ADDENDA. IN ADDITION, ALL WORK WILL BE IN COMPLIANCE WITH ALL APPLICABLE FEDERAL AND STATE STANDARDS AND REGULATIONS.
- ALL BEDDING MATERIAL TYPES ARE TO BE PER MDOT SPEC. 402.03.
- DEWATERING MAY BE REQUIRED TO INSTALL OR REMOVE SOME UTILITIES. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. REFER TO GEOTECHNICAL REPORT FOR MORE INFORMATION.
- ALL STRUCTURE CASTINGS TO BE EAST JORDAN IRON WORKS, AFINITAS HAALA, OR APPROVED EQUAL. SEE STRUCTURE TABLE FOR SPECIFIC CASTING AT EACH STRUCTURE.
- STORM SEWERS SHALL BE CONCRETE C76-III, SOLID WALL ADS N-12 RIGID PIPE MEETING AASHTO M-294, TYPE S, OR APPROVED EQUAL INSTALLED PER THE REQUIREMENTS OF MDOT AND CITY OF KALAMAZOO. MANDREL TESTING SHALL BE PERFORMED PRIOR TO PAVING. USE CONCRETE PIPE WHERE INDICATED.
- VERIFY NUMBER OF FITTINGS PRIOR TO ORDERING. TOTALS DO NOT INCLUDE VERTICAL DEFLECTIONS THAT MAY BE NEEDED.
- THE CONTRACTOR SHALL INSTALL PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
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- CONTRACTOR TO COORDINATE PRIVATE UTILITY CONNECTIONS WITH UTILITY COMPANIES.
- SITE CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL UTILITIES TO 5' FROM BUILDING WALL.
- COORDINATE ALL UTILITY LOCATIONS AND ELEVATIONS WITH MECHANICAL DRAWINGS AND BUILDING CONTRACTOR PRIOR TO INSTALLATION.
- SEE SITE ELECTRICAL PLAN FOR LOCATION OF ALL ELECTRICAL SLEEVES AND CONDUIT.
- UNDERGROUND ELECTRICAL SHALL BE PROVIDED TO THE SITE LIGHT POLES.
- REMOVE SEDIMENT FROM ALL STRUCTURES ONCE PAVING IS COMPLETE AND REMOVE SILT SACKS.
- IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

SHEET TITLE
SITE STORMWATER PLAN WEST

SHEET NUMBER
C 302
25-0342

DATE
MARCH 27, 2026

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KALAMAZOO COUNTY
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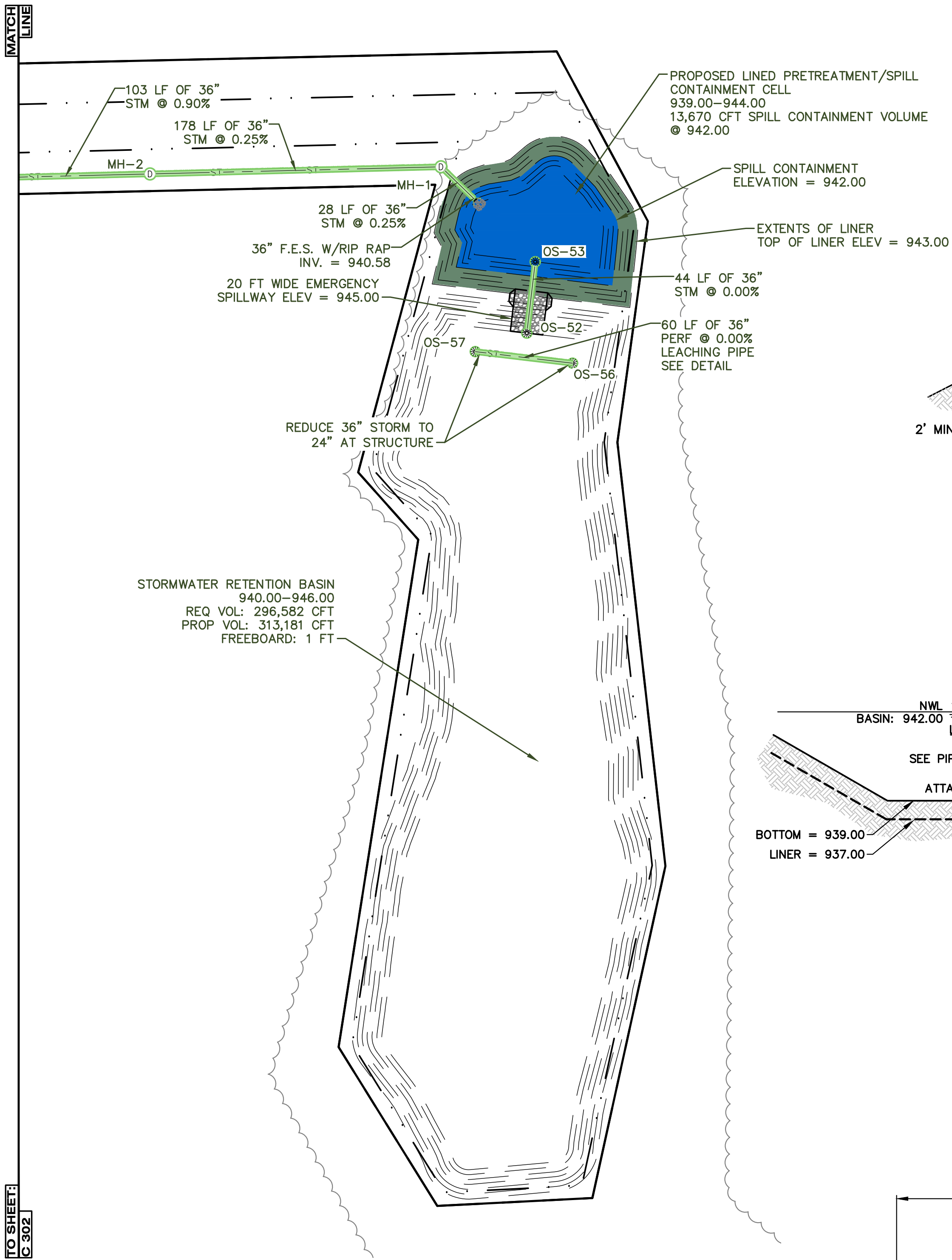
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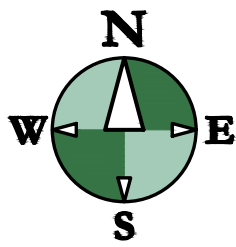
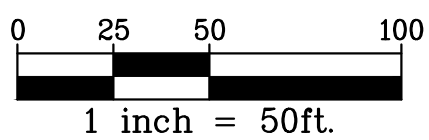
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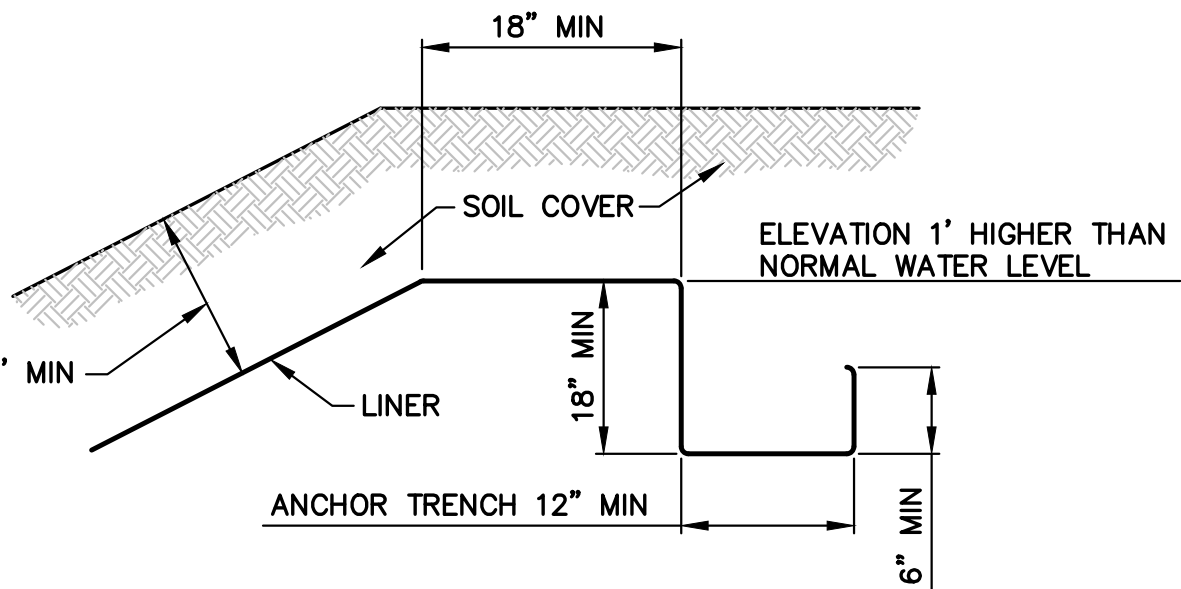


STORM SEWER STRUCTURE SCHEDULE					
STR. #	RIM EL.	DIAM.	CASTING	PIPES IN:	PIPES OUT
MH-1	947.46	5'	1040 A	36" W: 940.65	36" SE: 940.65
MH-2	955.00	5'	1040 A	36" W: 949.70	36" E: 941.10
OS-52	942.00	5'	HAALA PS60-72S	36" N: 933.00	
OS-53	941.00	5'	HAALA PS60-72S		36" S: 933.00
OS-56	941.00	4'	HAALA PS48-58S	24" W: 933.00	
OS-57	941.00	4'	HAALA PS48-58S		24" E: 933.00

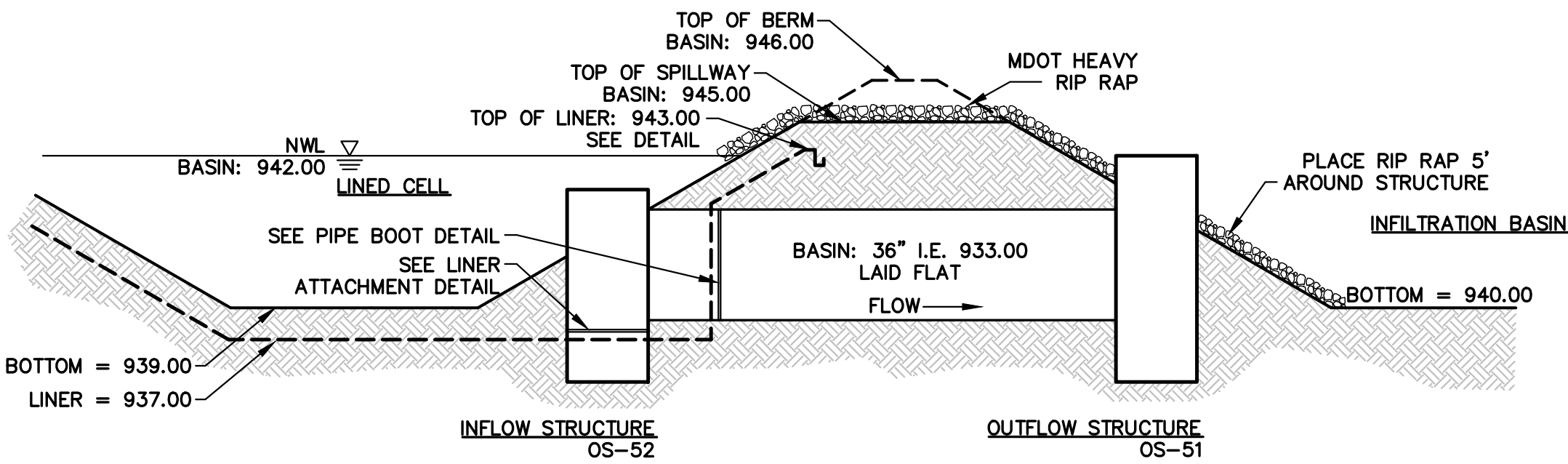


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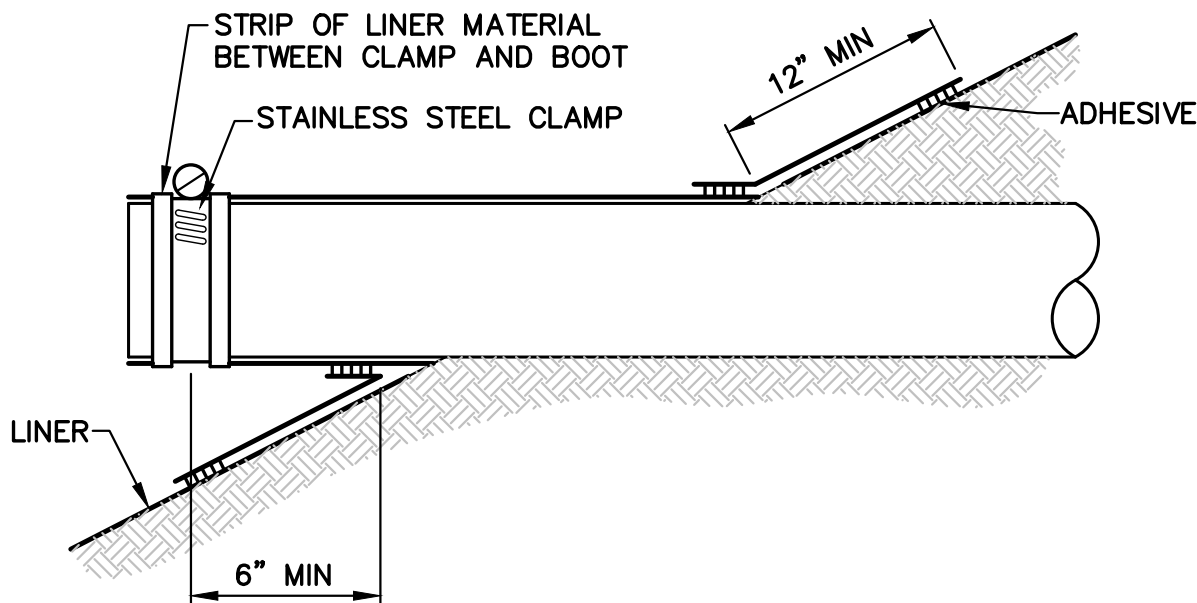
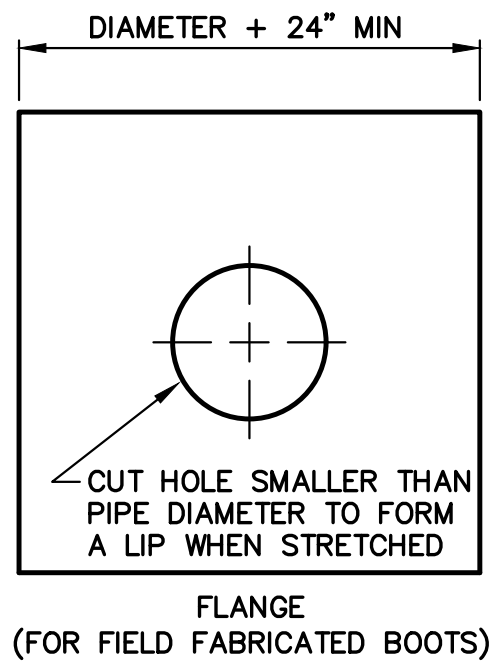
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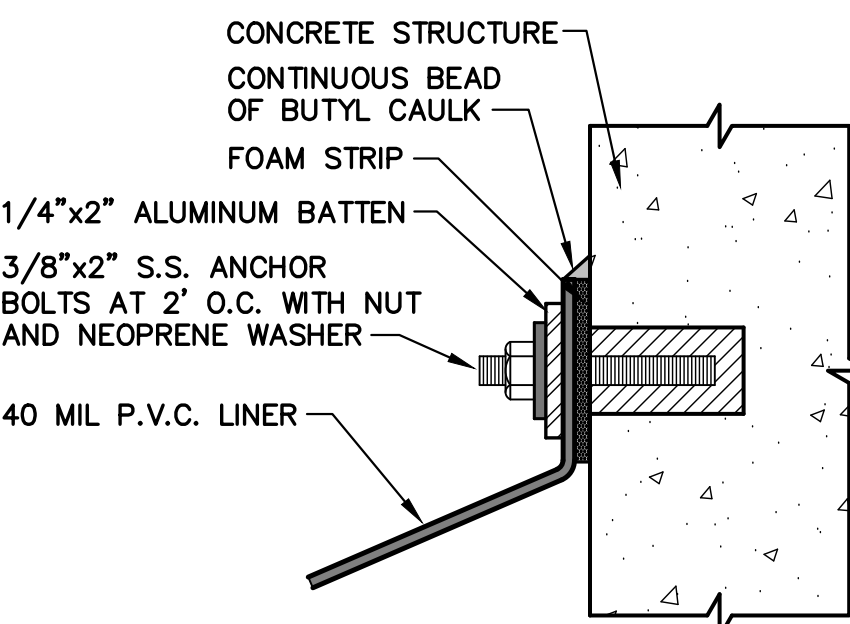
LINER ANCHOR TRENCH DETAIL
NOT TO SCALE



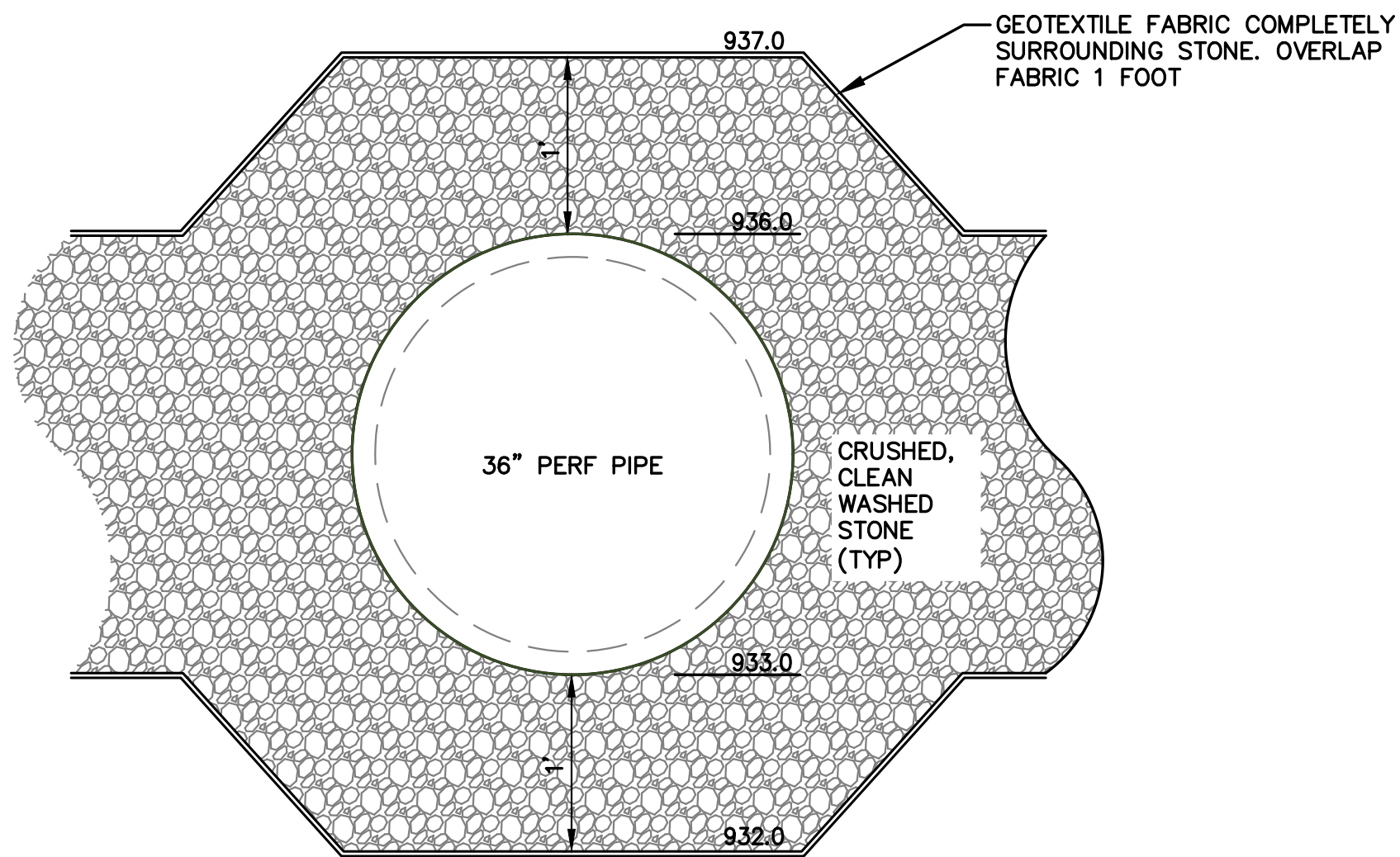
CENTRAL BASIN TRANSFER STRUCTURE DETAIL
NOT TO SCALE



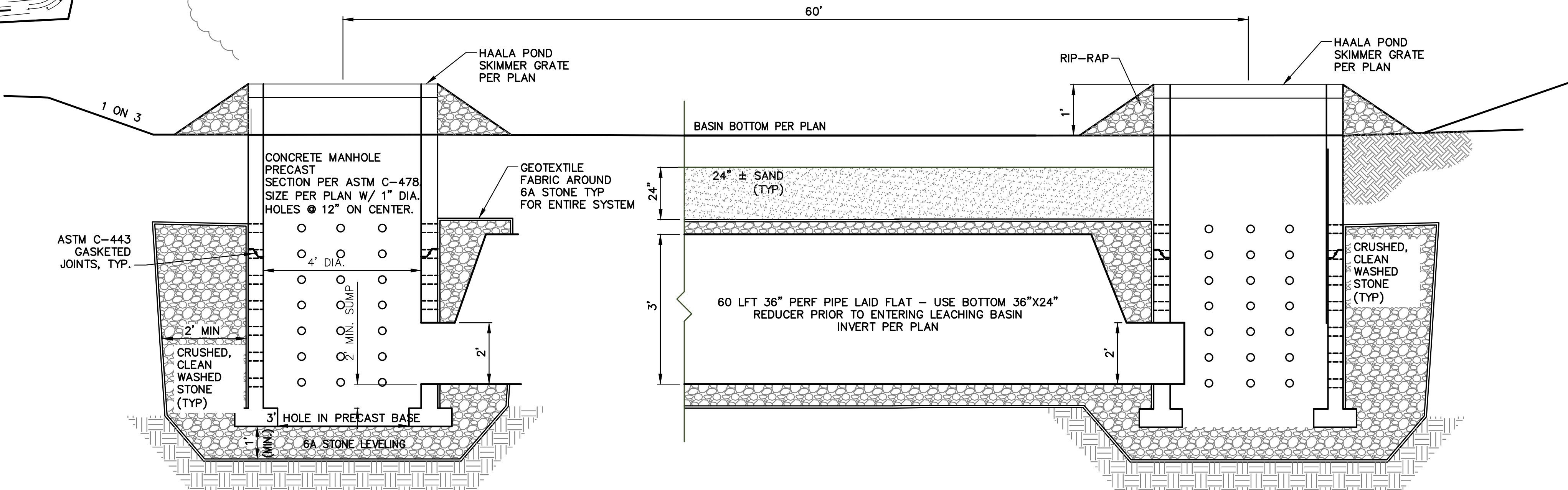
PIPE BOOT DETAIL
NOT TO SCALE



LINER ATTACHMENT DETAIL
NOT TO SCALE



STONE TRENCH DETAIL



LEACHING PIPE / TRENCH DETAIL FOR BASIN
NO SCALE

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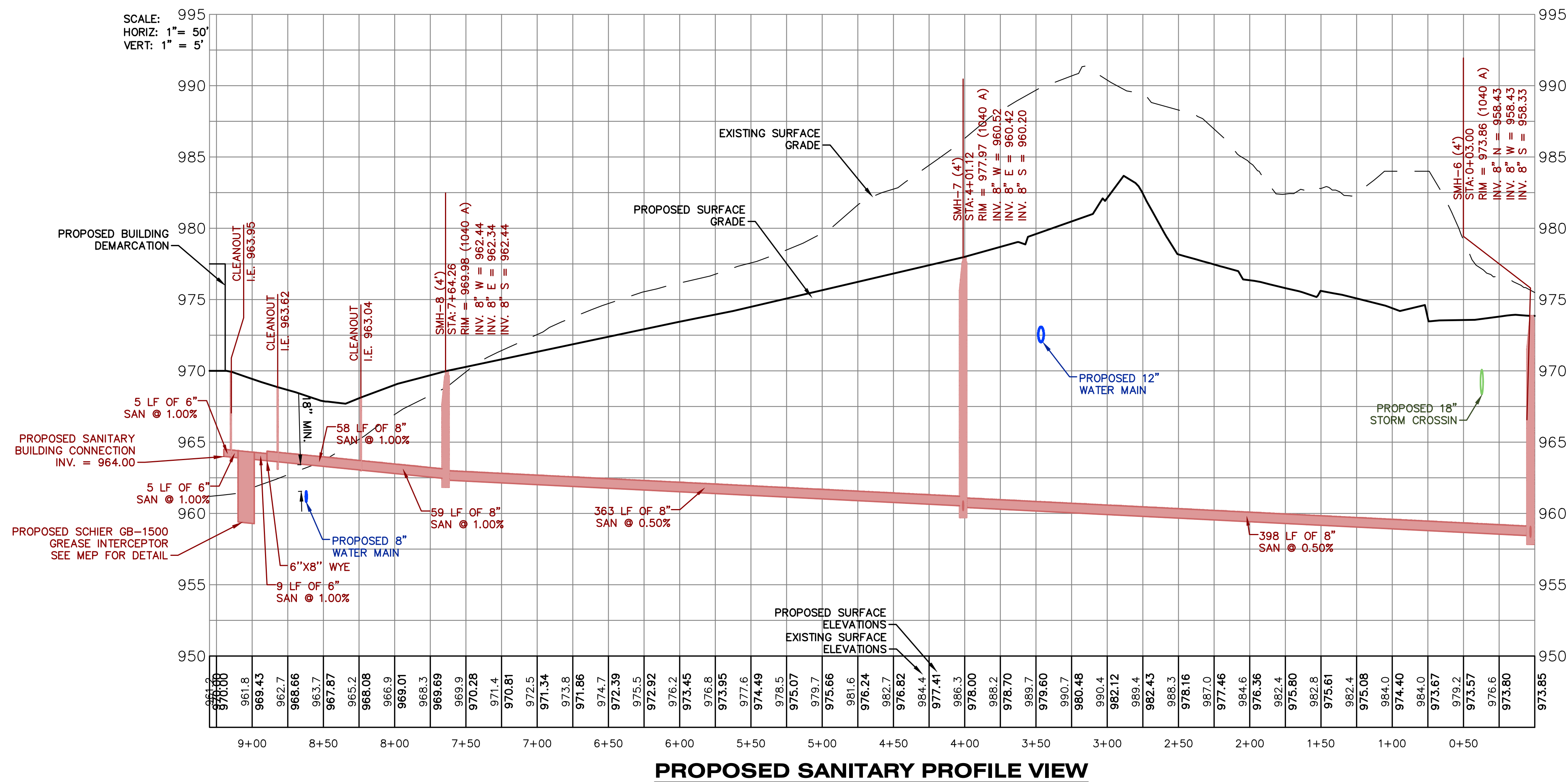
SHEET TITLE
SITE STORMWATER PLAN EAST

DATE
MARCH 27, 2026

SHEET NUMBER
C 303
25-034D

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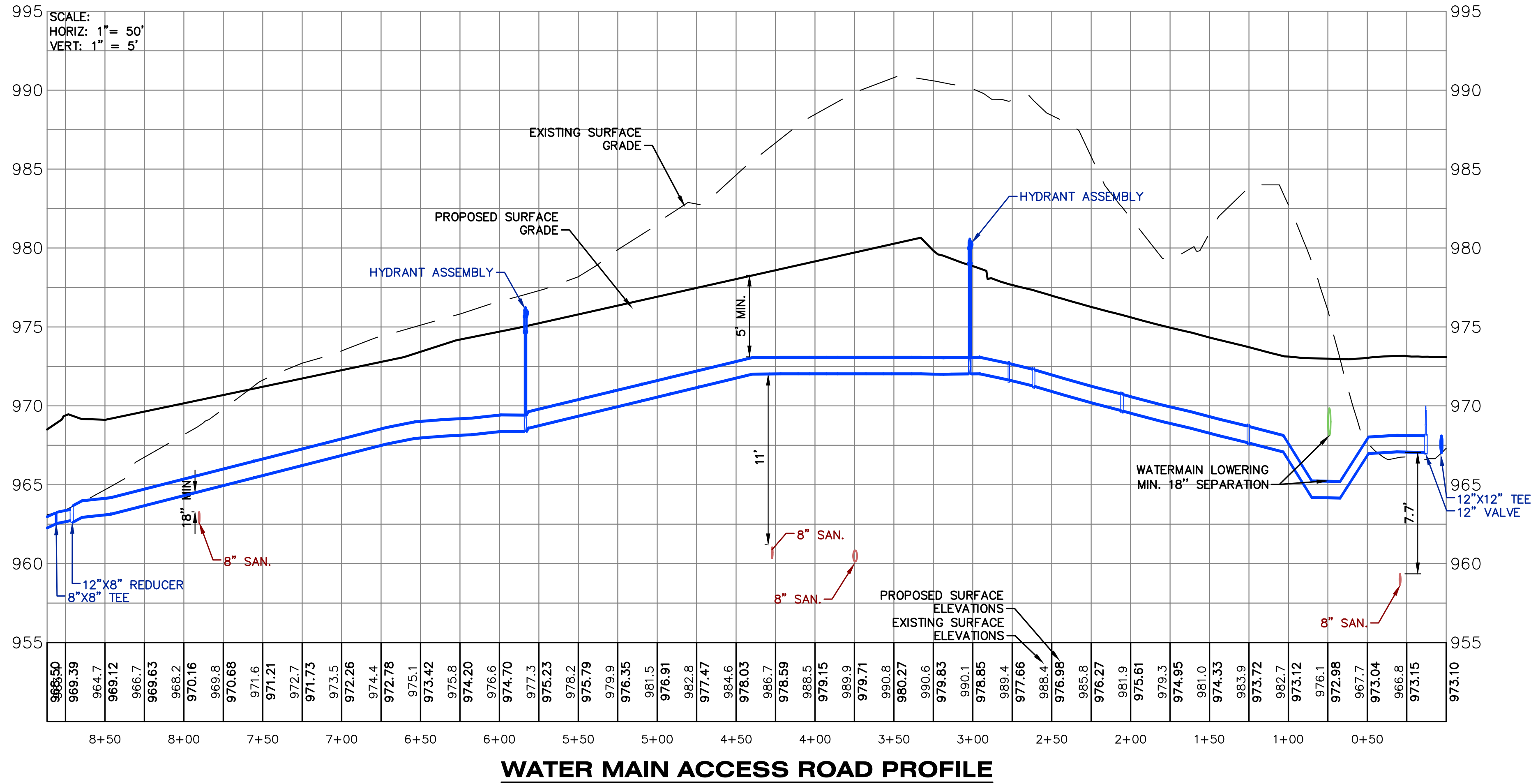
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SHEET TITLE
WATER MAIN PROFILE

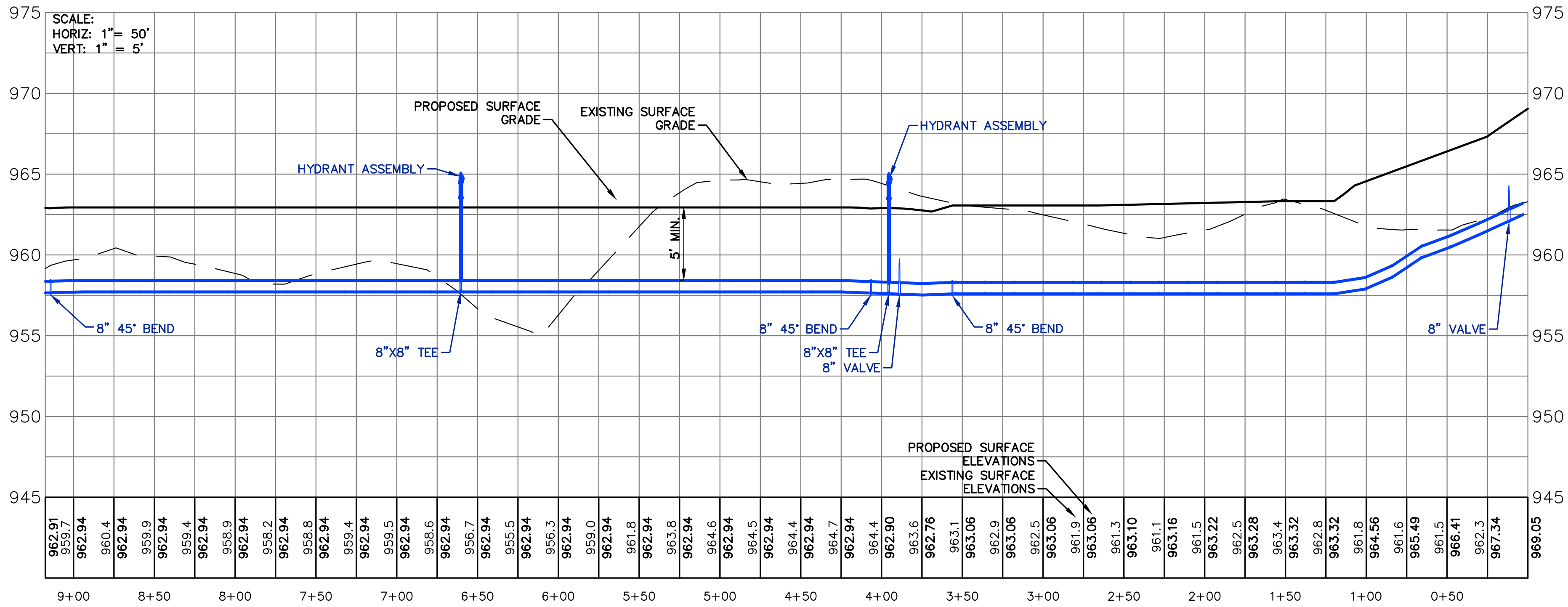
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WATER MAIN LOOP PROFILE 1

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SHEET TITLE
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MARCH 27, 2026

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25-034D

DRAWING LOCATION: H:\25-0340 (Westgate Sports Facility)\FINAL DRAWINGS\25-0340 Roadway Plan & Profile Sheets.dwg LAST SAVED BY: BOWRENS ON 3/27/2026

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02040

1 inch = 40ft.

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Maple Hill Drive (66' PUBLIC) plan view showing the road layout from station 27+00 to 38+00. The drawing includes existing watermain and easement lines, a non-motorized path routing, and manhole locations (SMH-1, SMH-2, SMH-3). A note indicates the removal and relocation of a sanitary manhole outside the proposed Maple Hill Drive curb, maintaining a minimum 10' separation from the existing watermain. The drawing also shows existing easements, including L1363/PG806.

Maple Hill Drive Profile View showing the elevation profile from station 26+50 to 38+00. The profile includes the existing ground line, the proposed road centerline, and the proposed 12" water main layout. Key features include vertical curves (BVC, EVC, LVC), manhole locations (SMH-1, SMH-2, SMH-3), and water main connections (tee to hydrant assembly, cross to fire hydrant assembly). The profile also shows the existing 12" water main and the proposed 12" valve locations.

NOTE: MAPLE HILL DRIVE EXTENSION PLANS ARE SHOWN FOR REFERENCE ONLY. SHEETS ARE PROVIDED TO SHOW SANITARY AND WATER UTILITY RUN AND CONNECTION LOCATION TO EXISTING UTILITY INFRASTRUCTURE ALONG MAPLE HILL DRIVE.

SCALE: HORIZ: 1" = 40' VERT: 1" = 4'

Station	Elevation
26+50	952.9
27+00	953.9
27+50	954.0
28+00	954.9
28+50	955.9
29+00	956.2
29+50	956.20
30+00	956.8
30+50	957.4
31+00	958.3
31+50	958.09
32+00	959.1
32+50	958.85
33+00	959.1
33+50	958.74
34+00	958.1
34+50	957.4
35+00	956.8
35+50	956.2
36+00	955.9
36+50	955.9
37+00	955.9
37+50	955.9
38+00	955.9

MAPLE HILL PROFILE 1

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SHEET TITLE
ROADWAY PLAN & PROFILE

DATE
MARCH 27, 2026

SHEET NUMBER
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25-034D

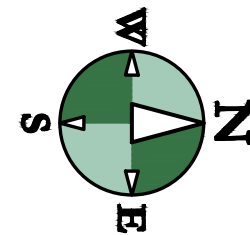
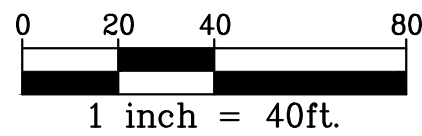
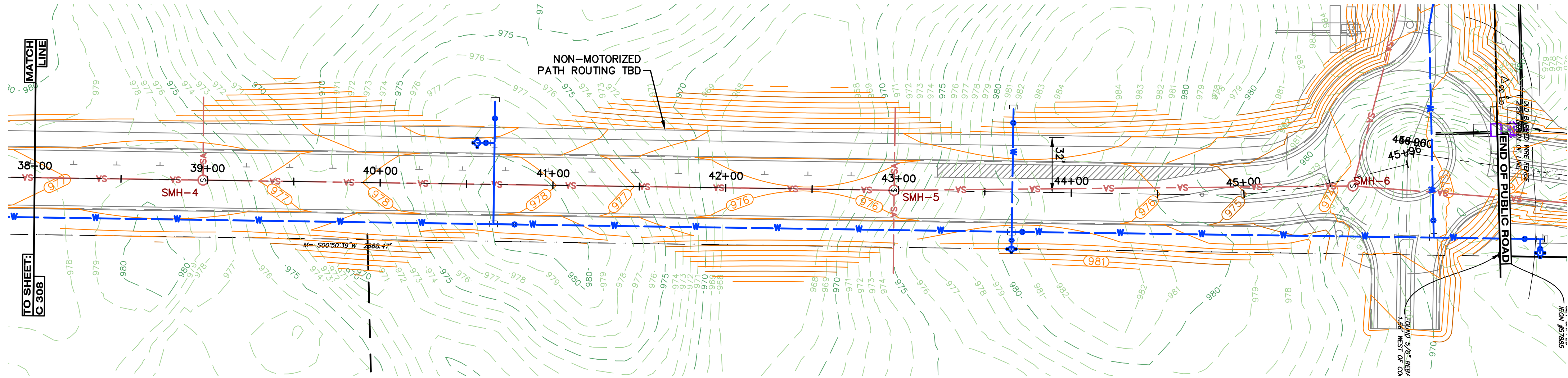
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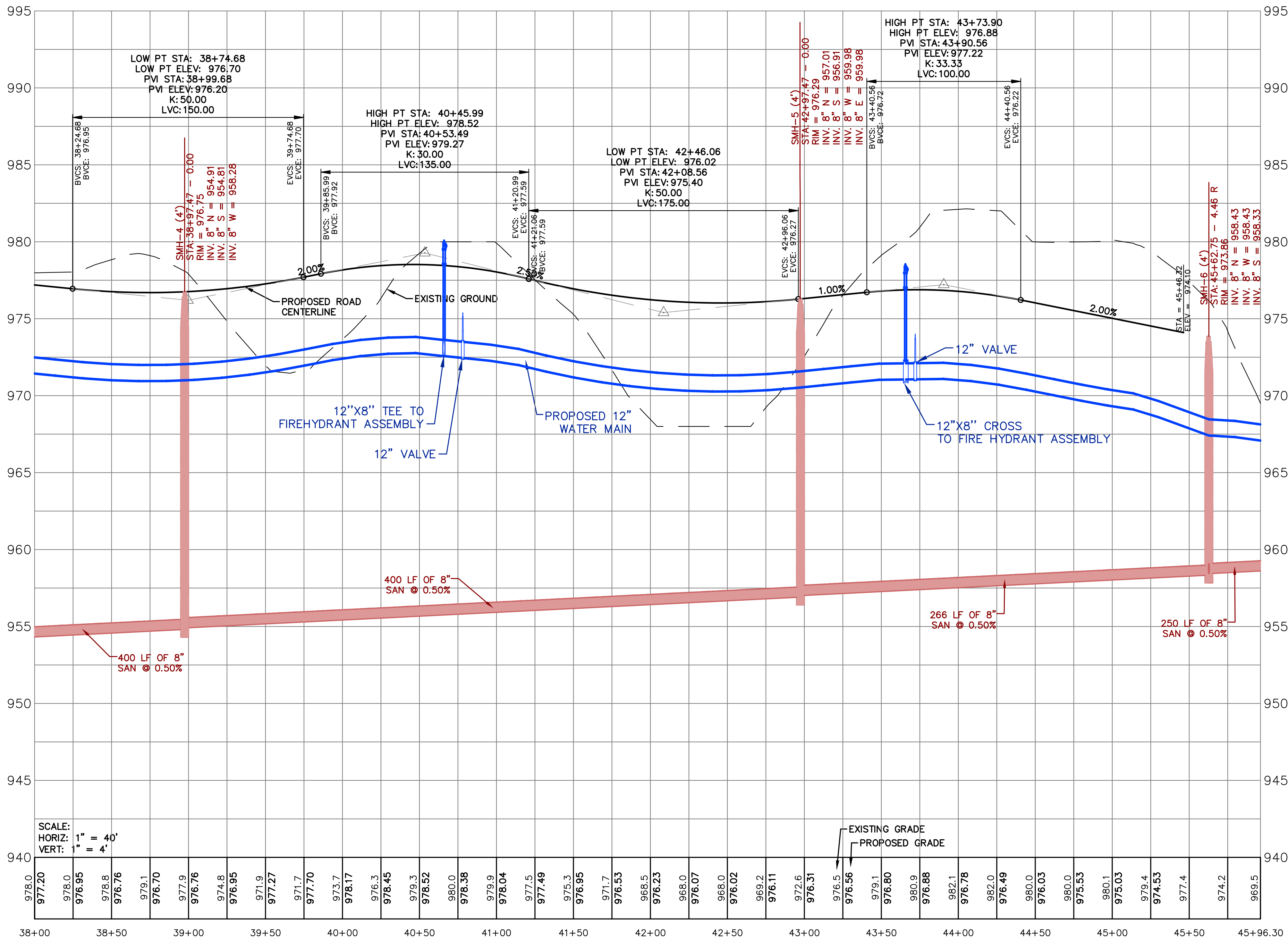
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LOCATION TO EXISTING UTILITY INFRASTRUCTURE ALONG
MAPLE HILL DRIVE.



MAPLE HILL PROFILE 2

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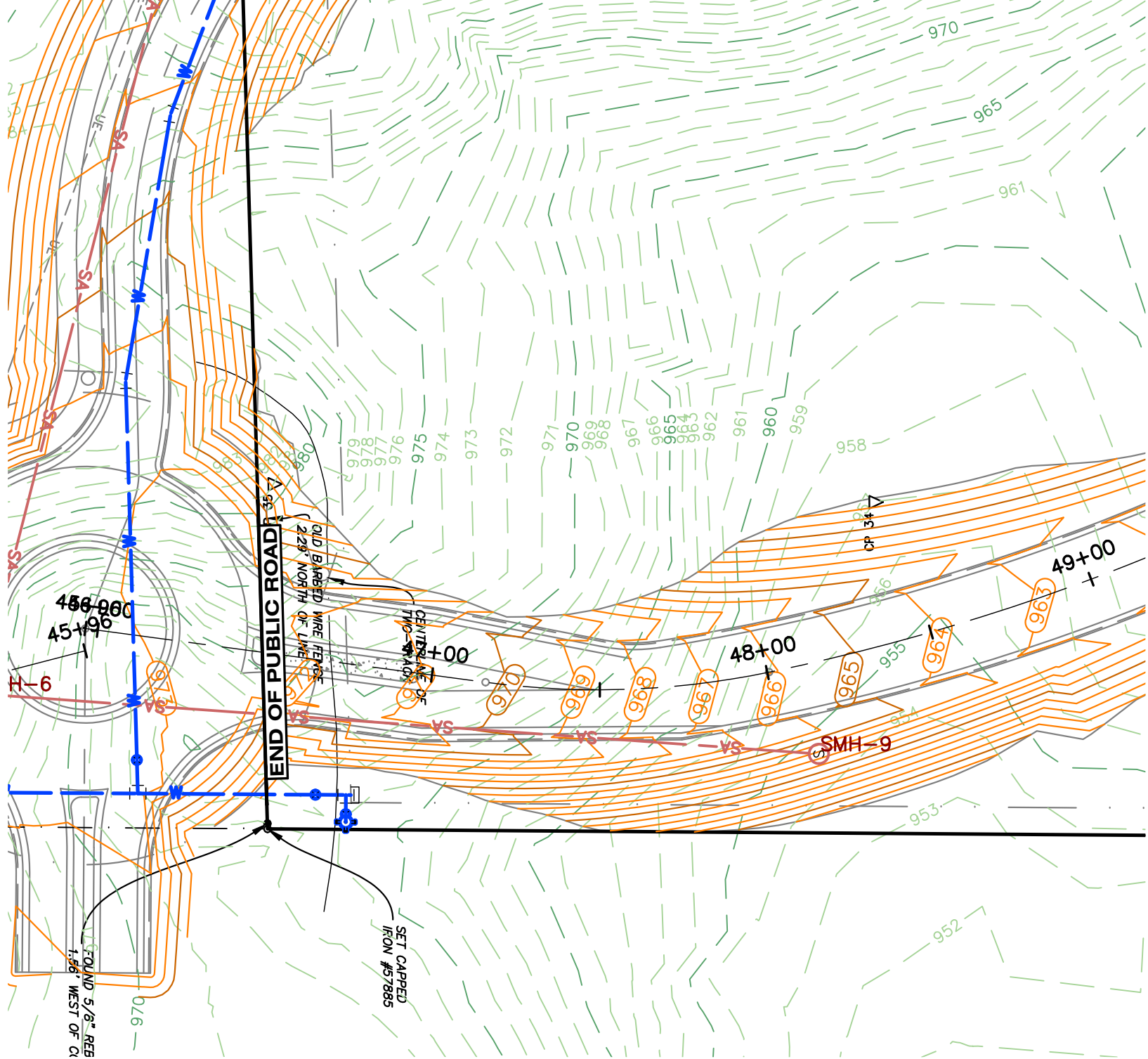
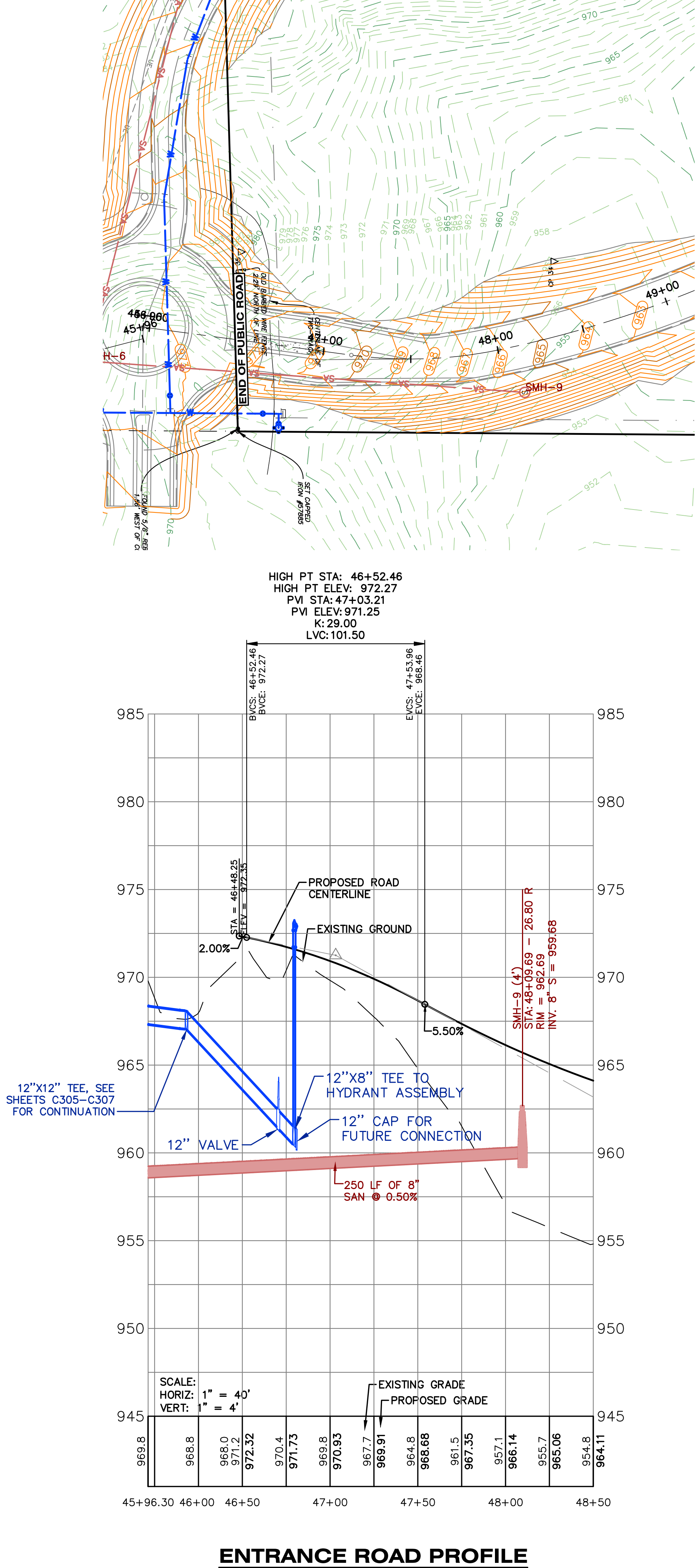
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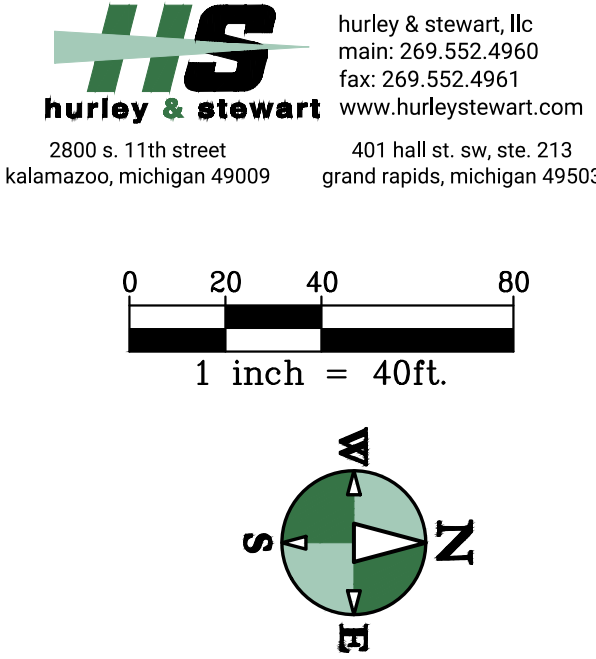
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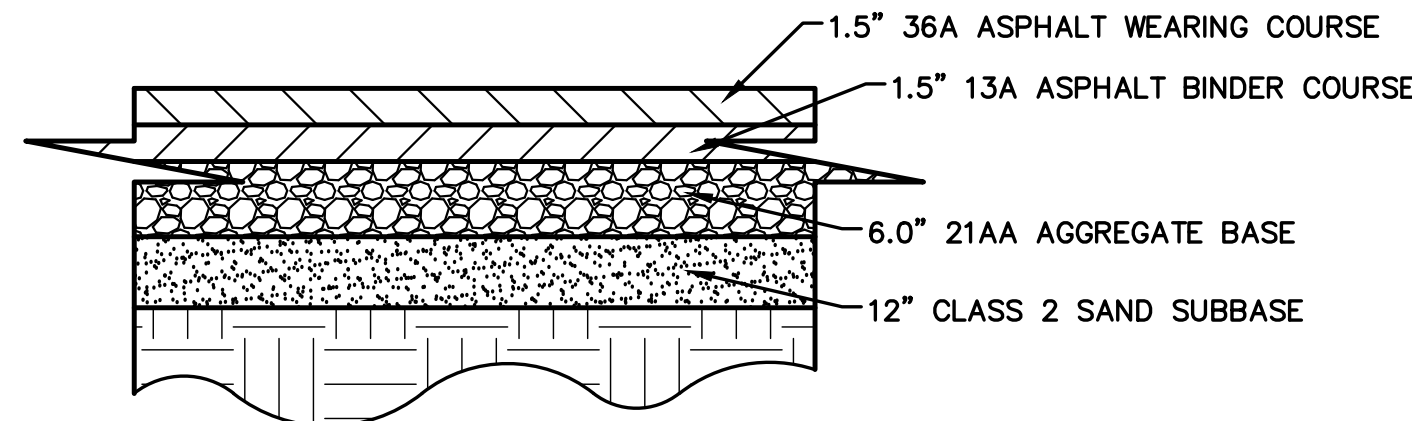
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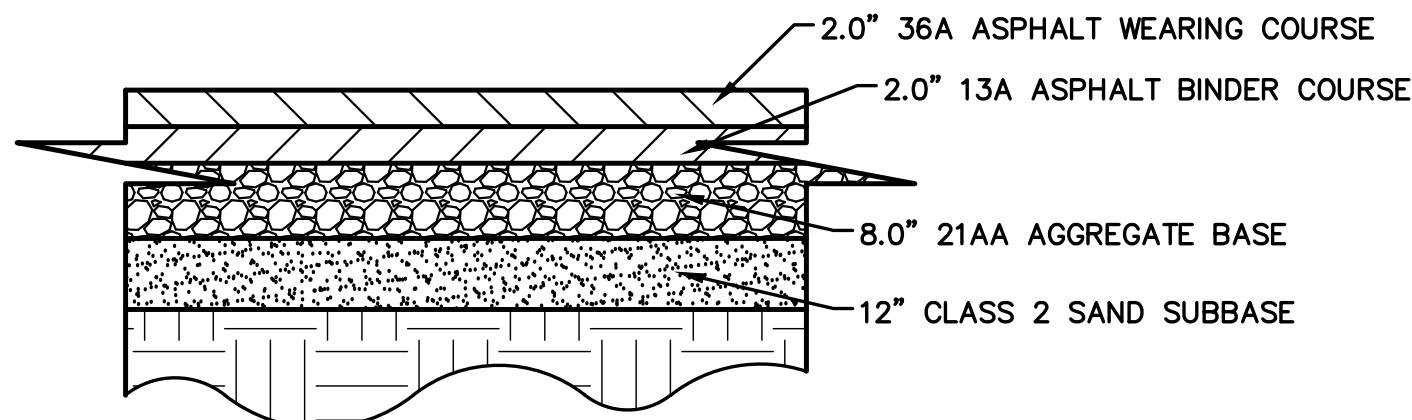
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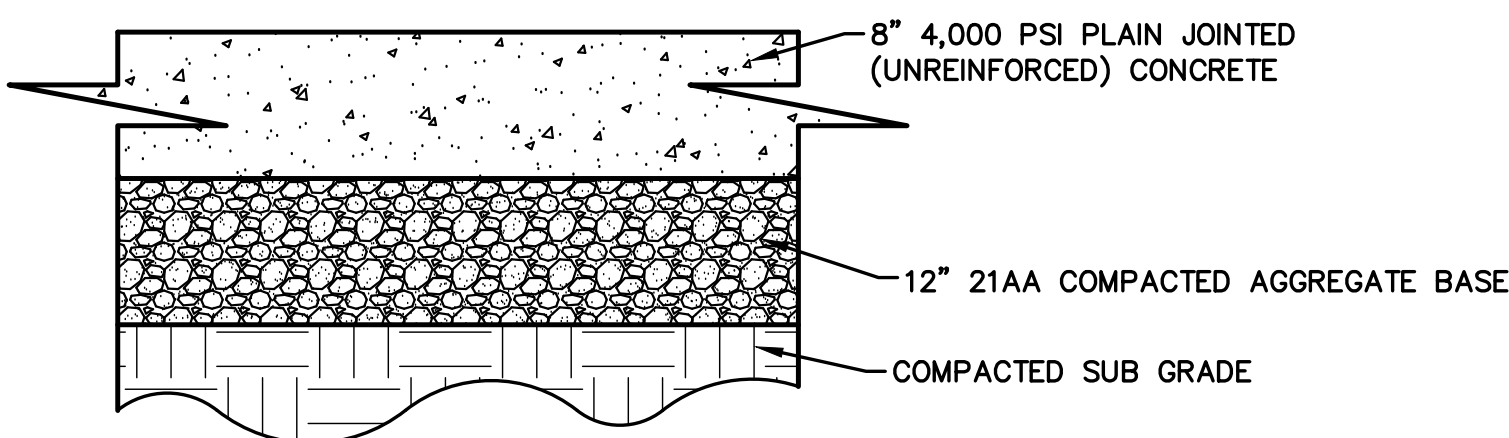
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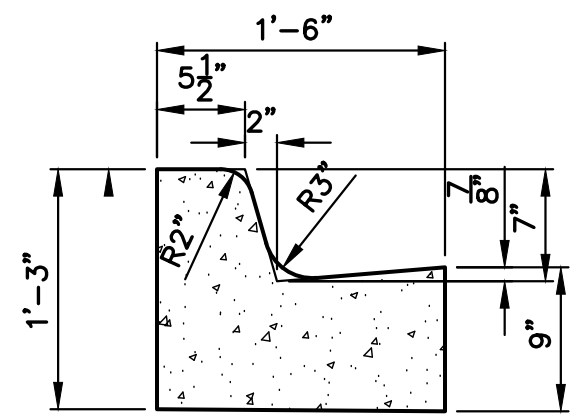
ALL MATERIALS COMPACTED IN PLACE ON PREPARED SUBGRADE
LIGHT DUTY ASPHALT DETAIL
NOT TO SCALE



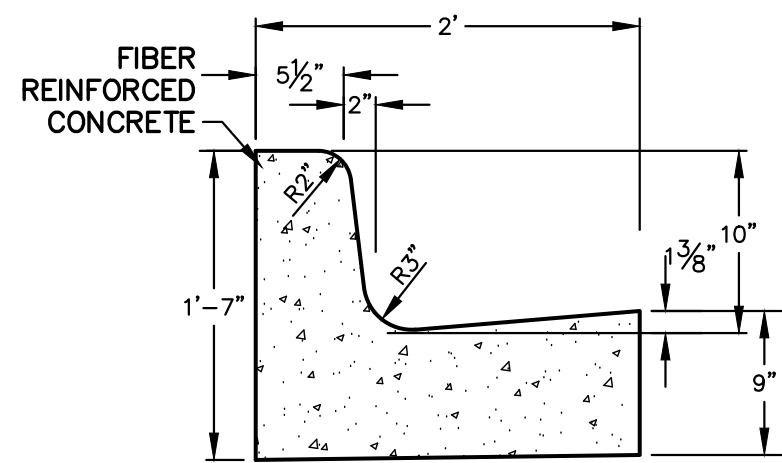
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HEAVY DUTY ASPHALT DETAIL
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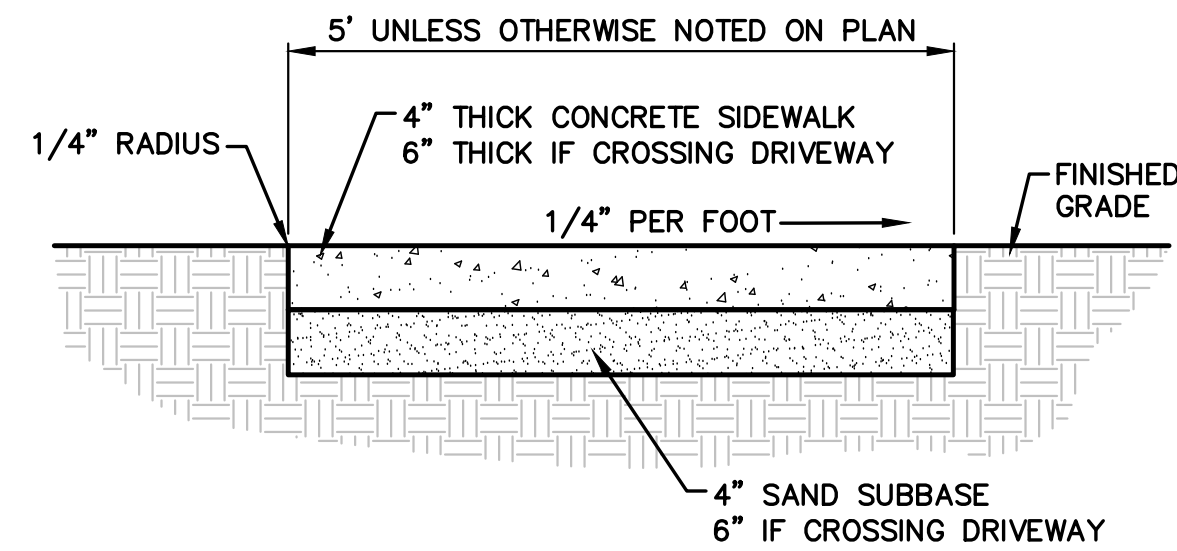
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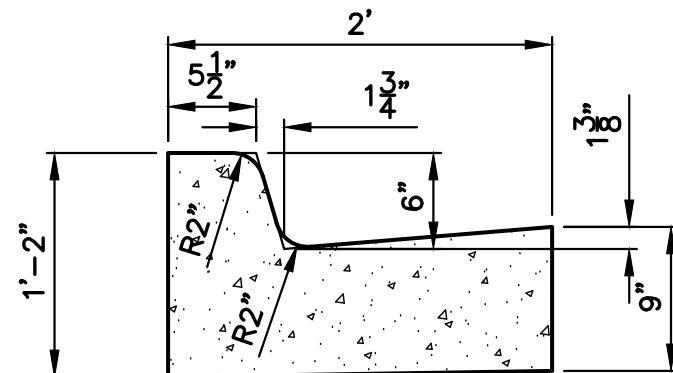
"C2" CURB DETAIL
NOT TO SCALE



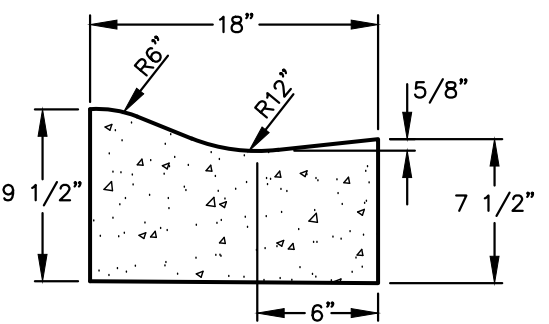
"C4" CURB AND GUTTER, MODIFIED DETAIL
NOT TO SCALE



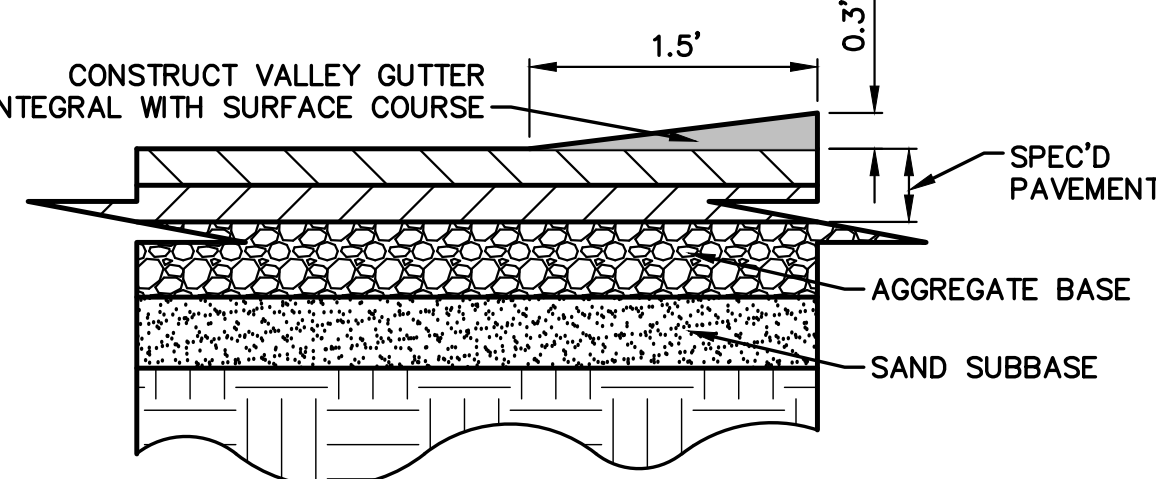
SIDEWALK DETAIL
NOT TO SCALE



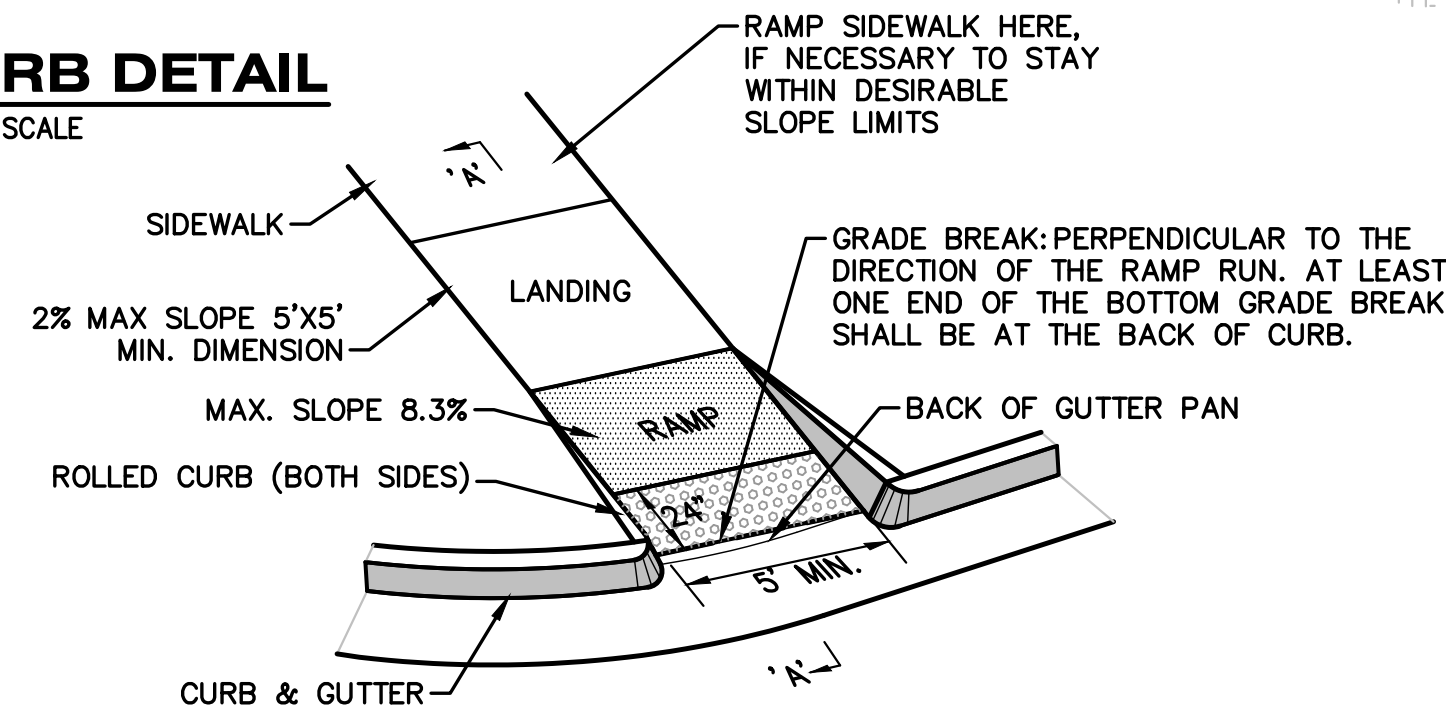
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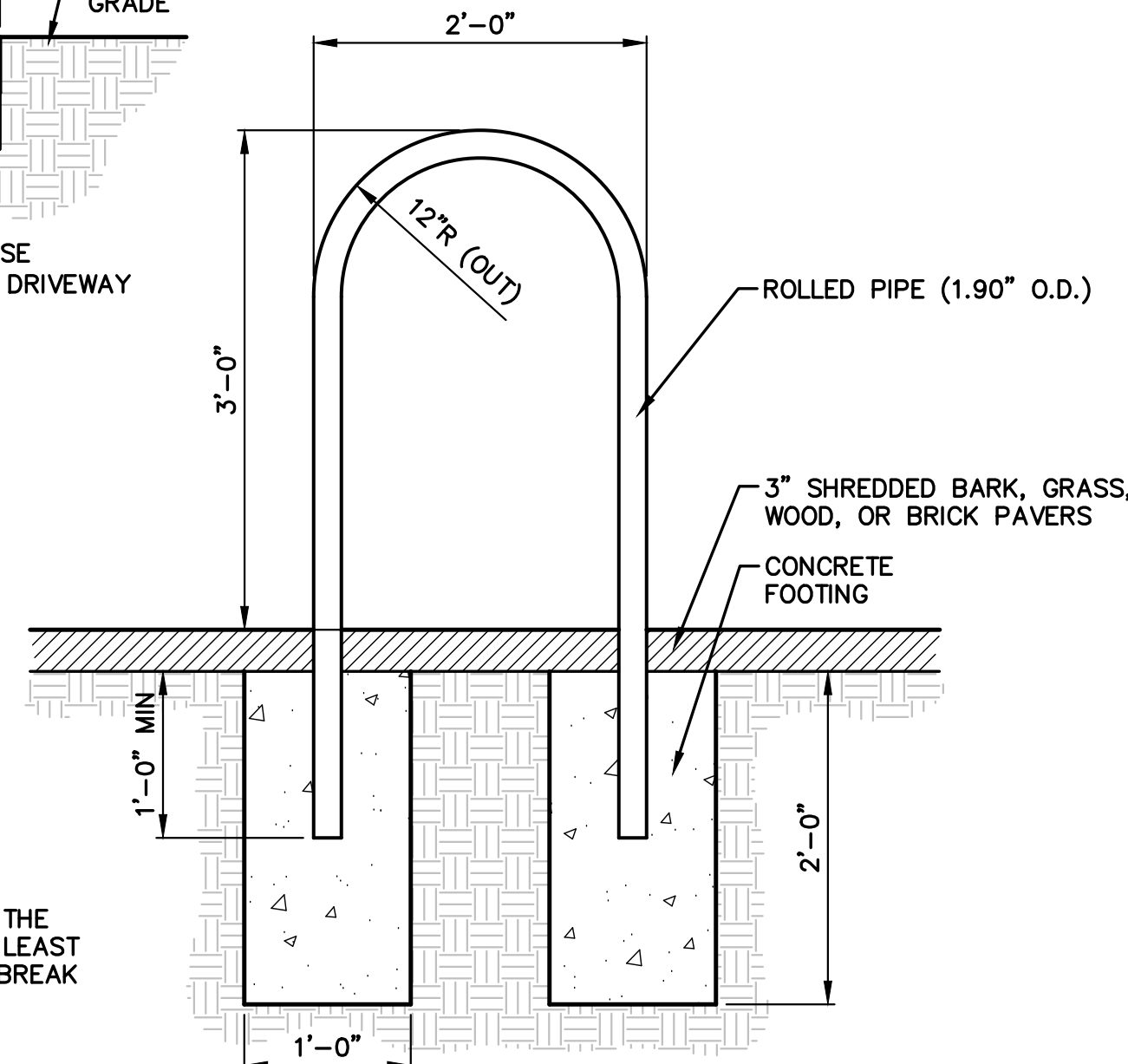
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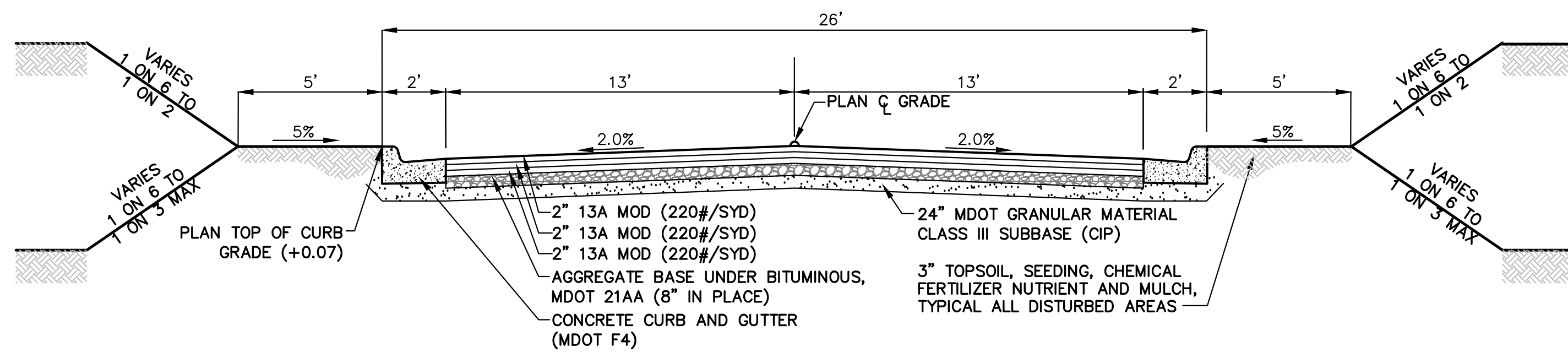
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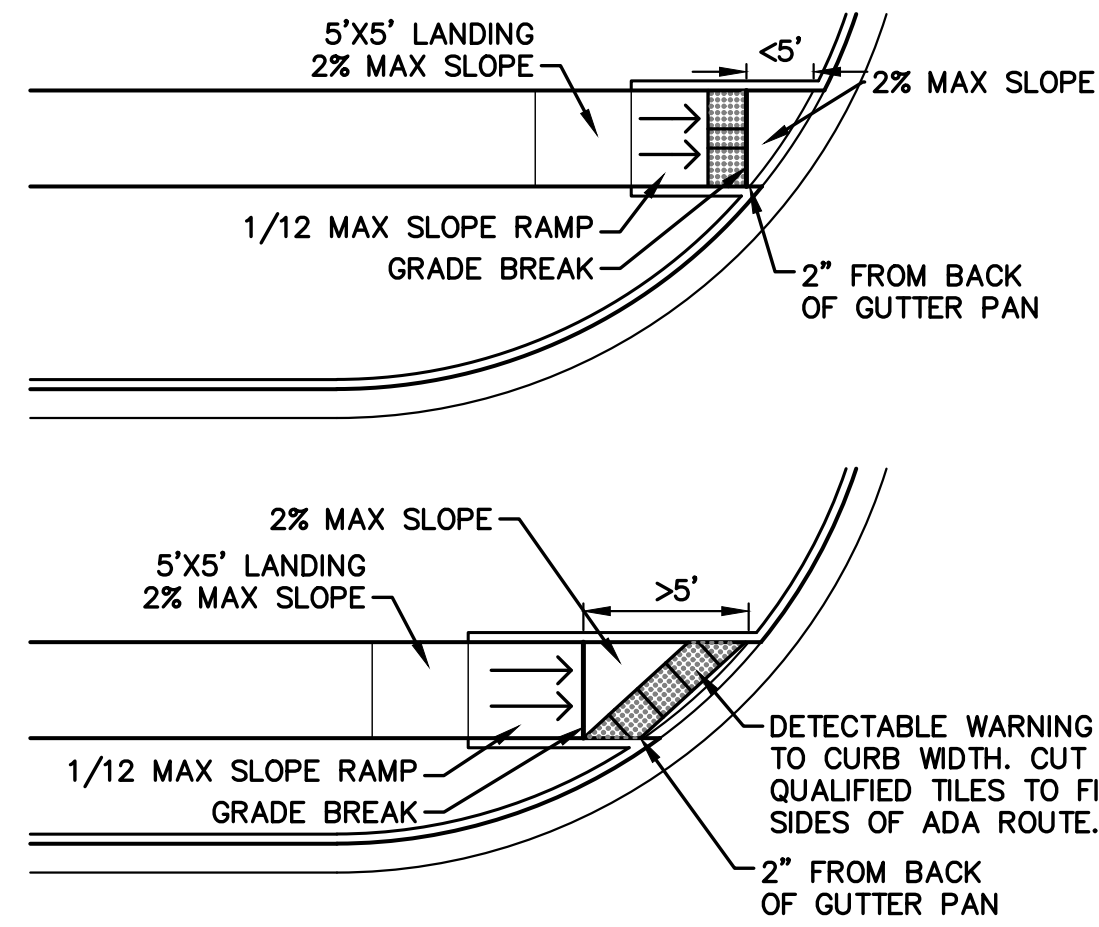
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(ROLLED SIDES)
NOT TO SCALE



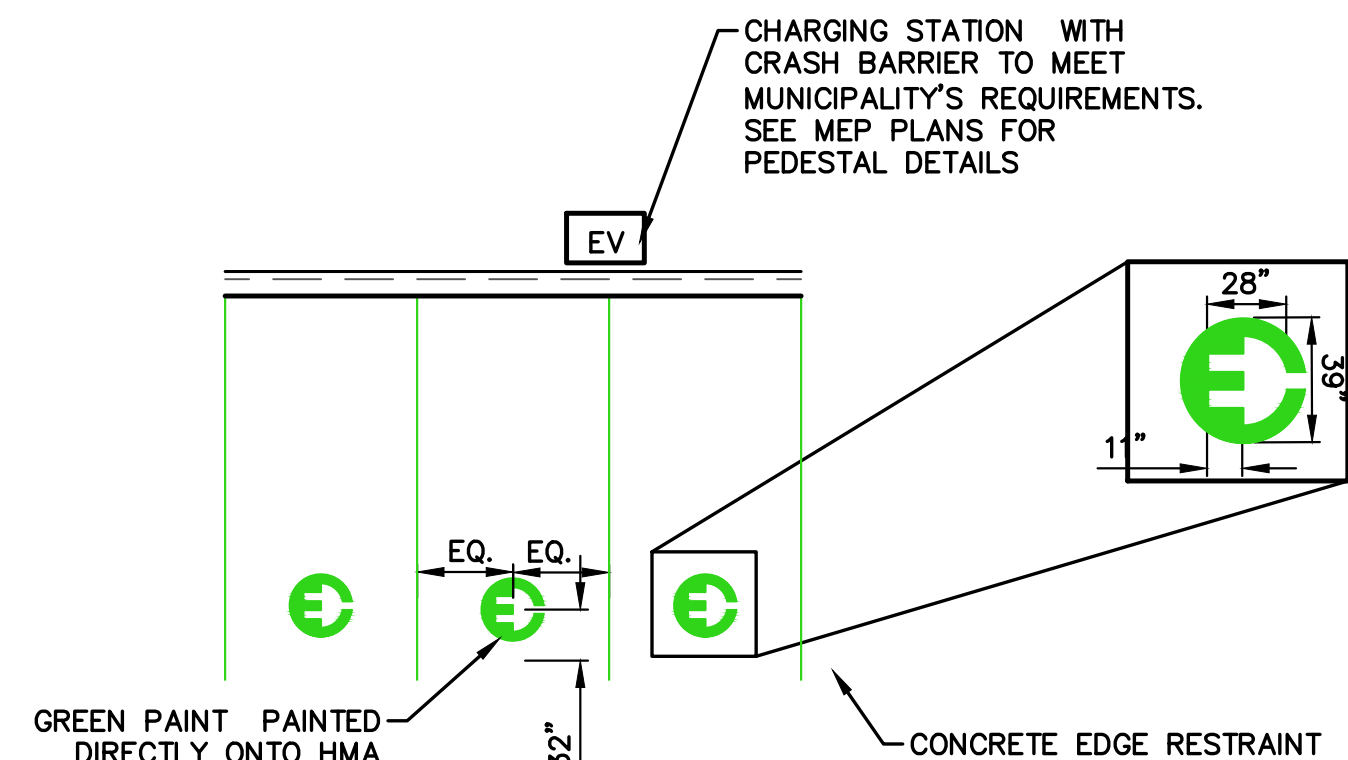
BICYCLE RACK DETAIL
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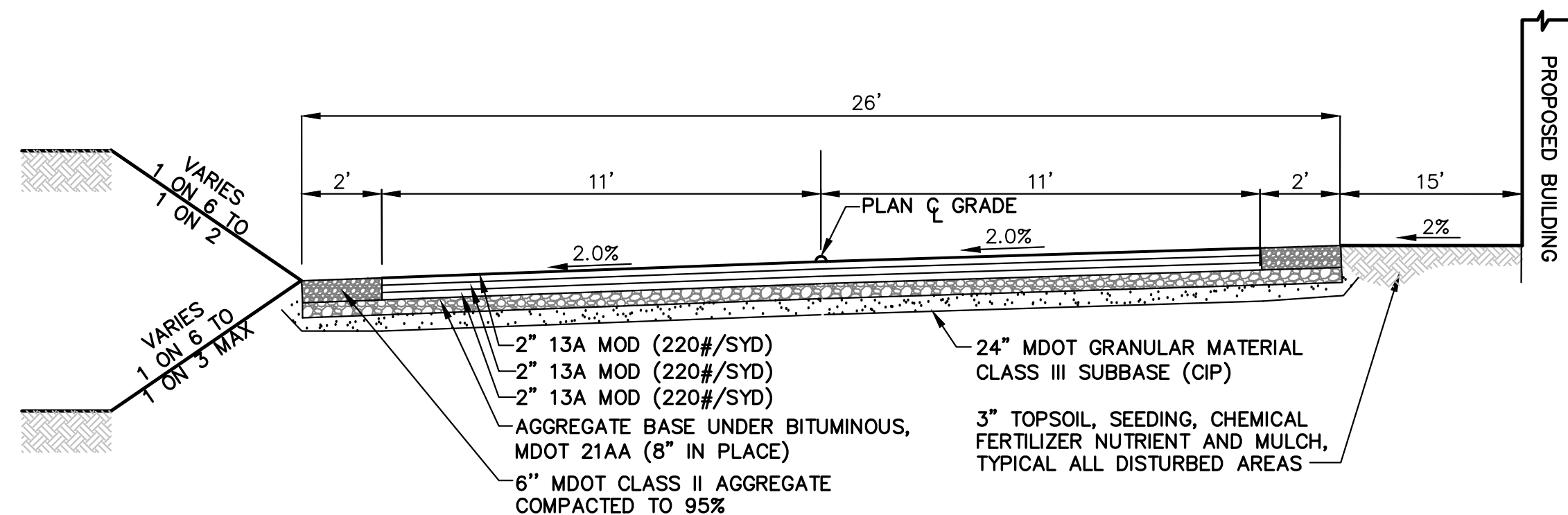
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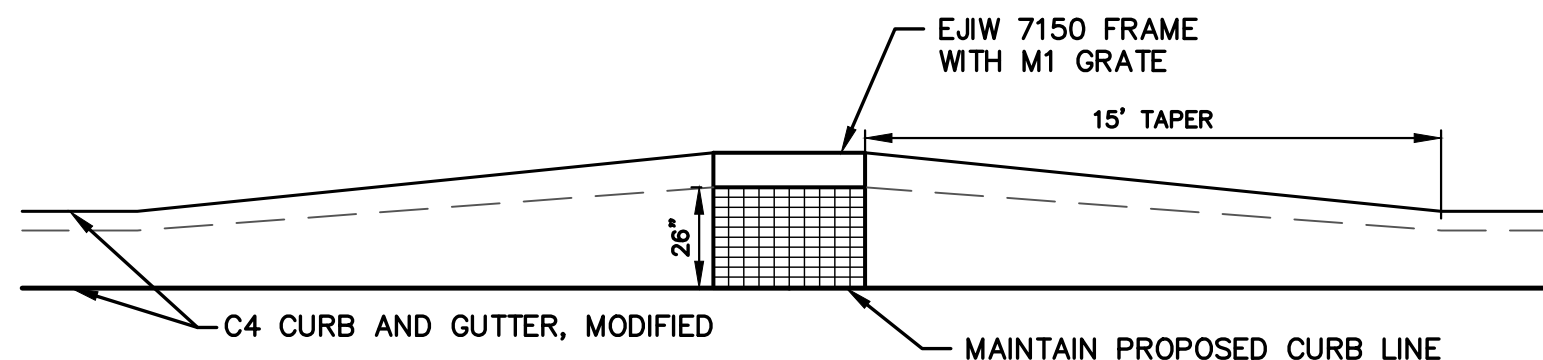
**RAMP TYPE R
WARNING STRIP POSITIONING**
NOT TO SCALE



ELECTRIC VEHICLE PARKING BAYS
NOT TO SCALE



TYPICAL FIRE LANE
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CURB TAPER DETAIL
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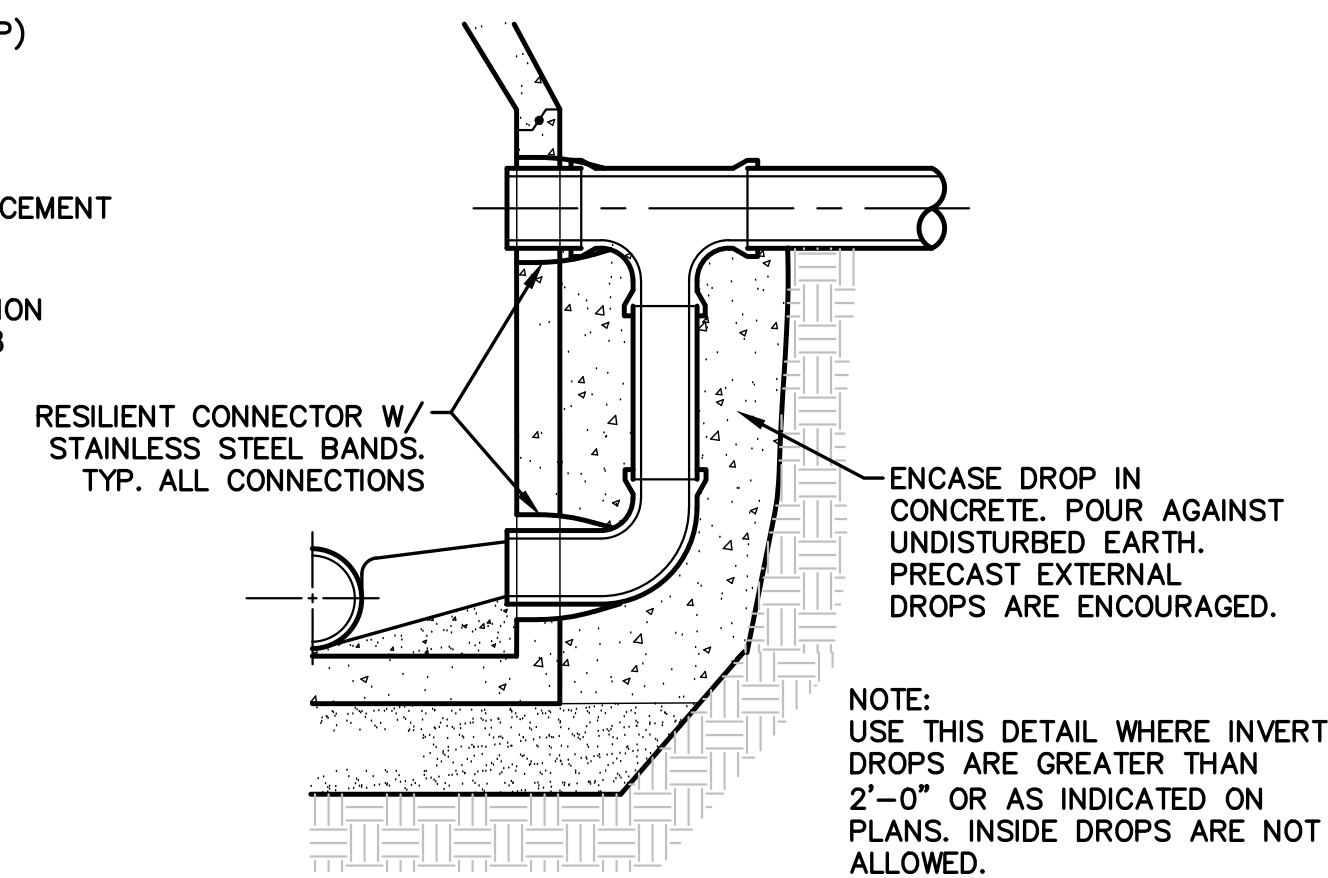
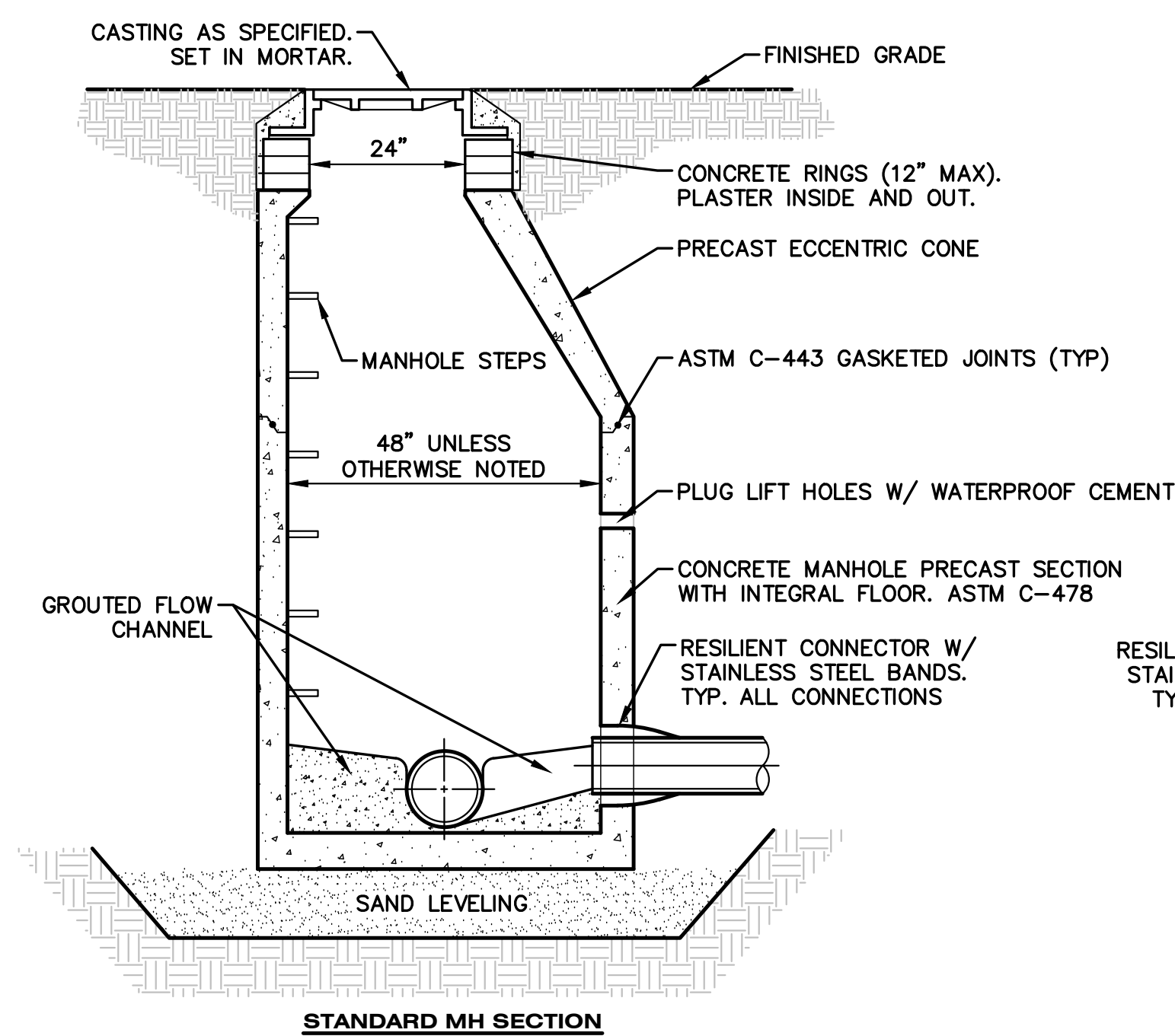
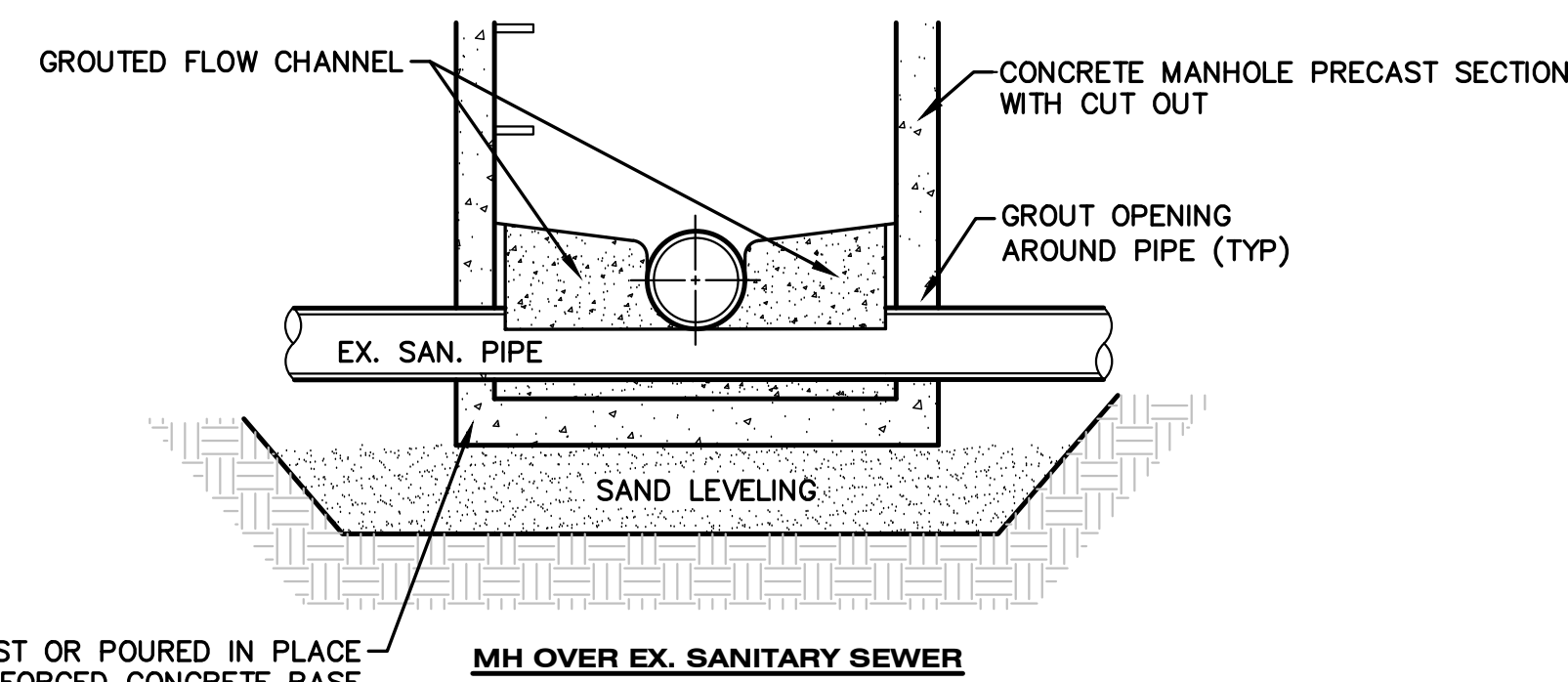
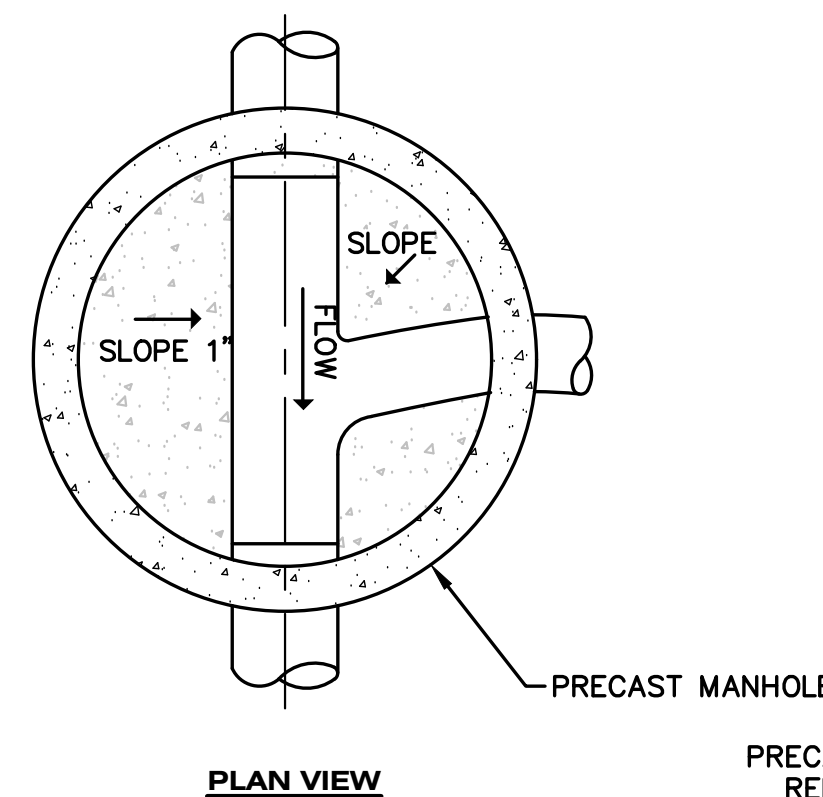
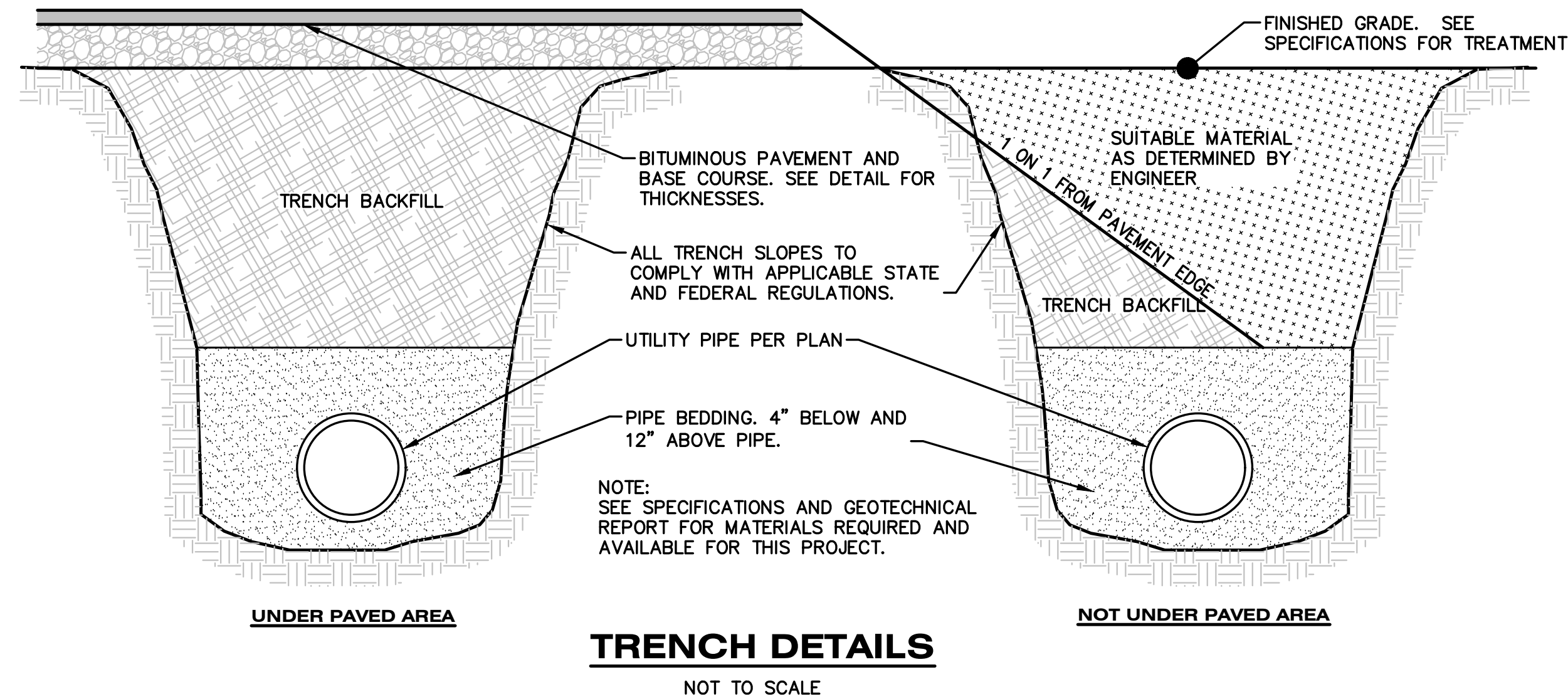
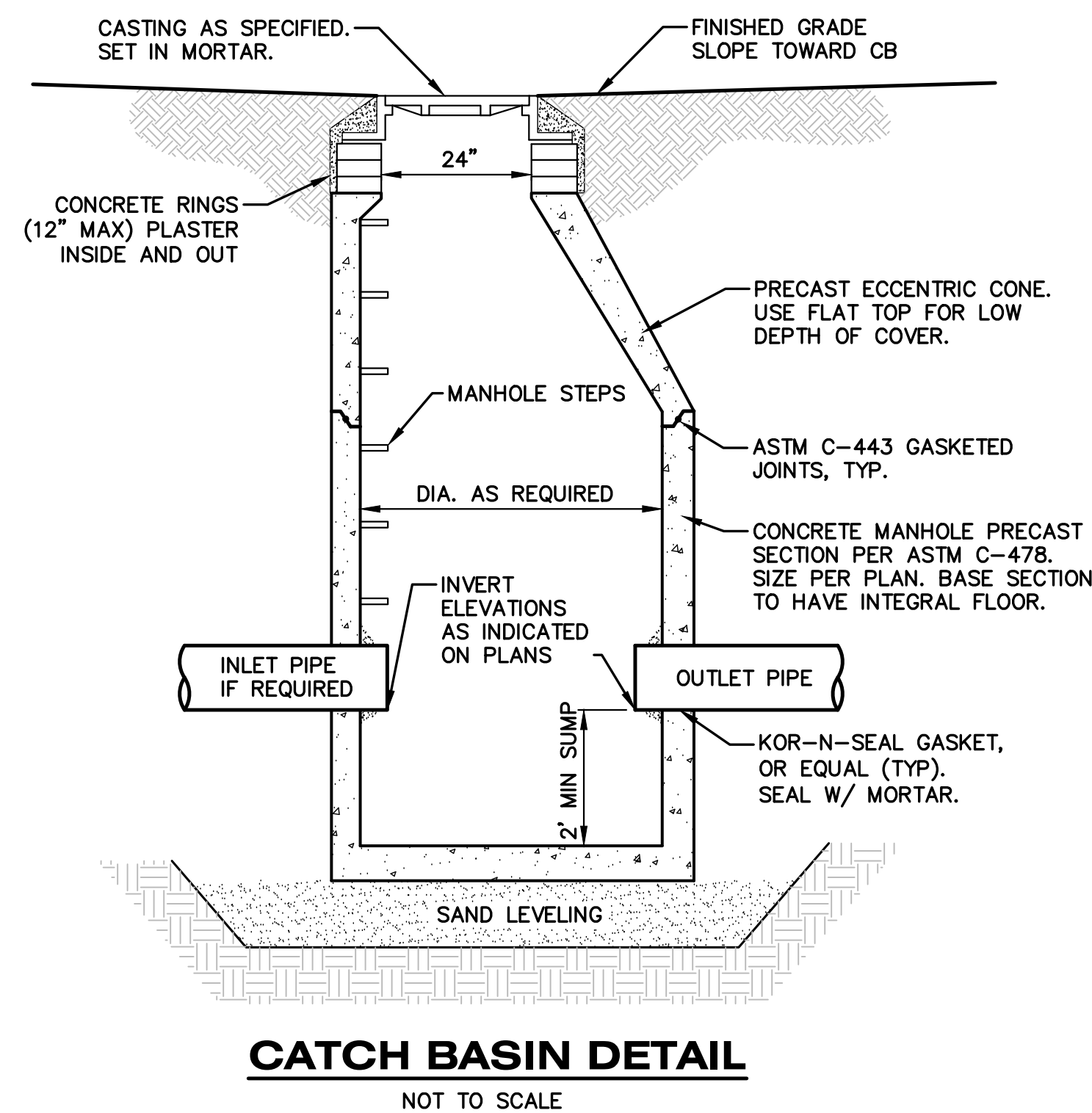
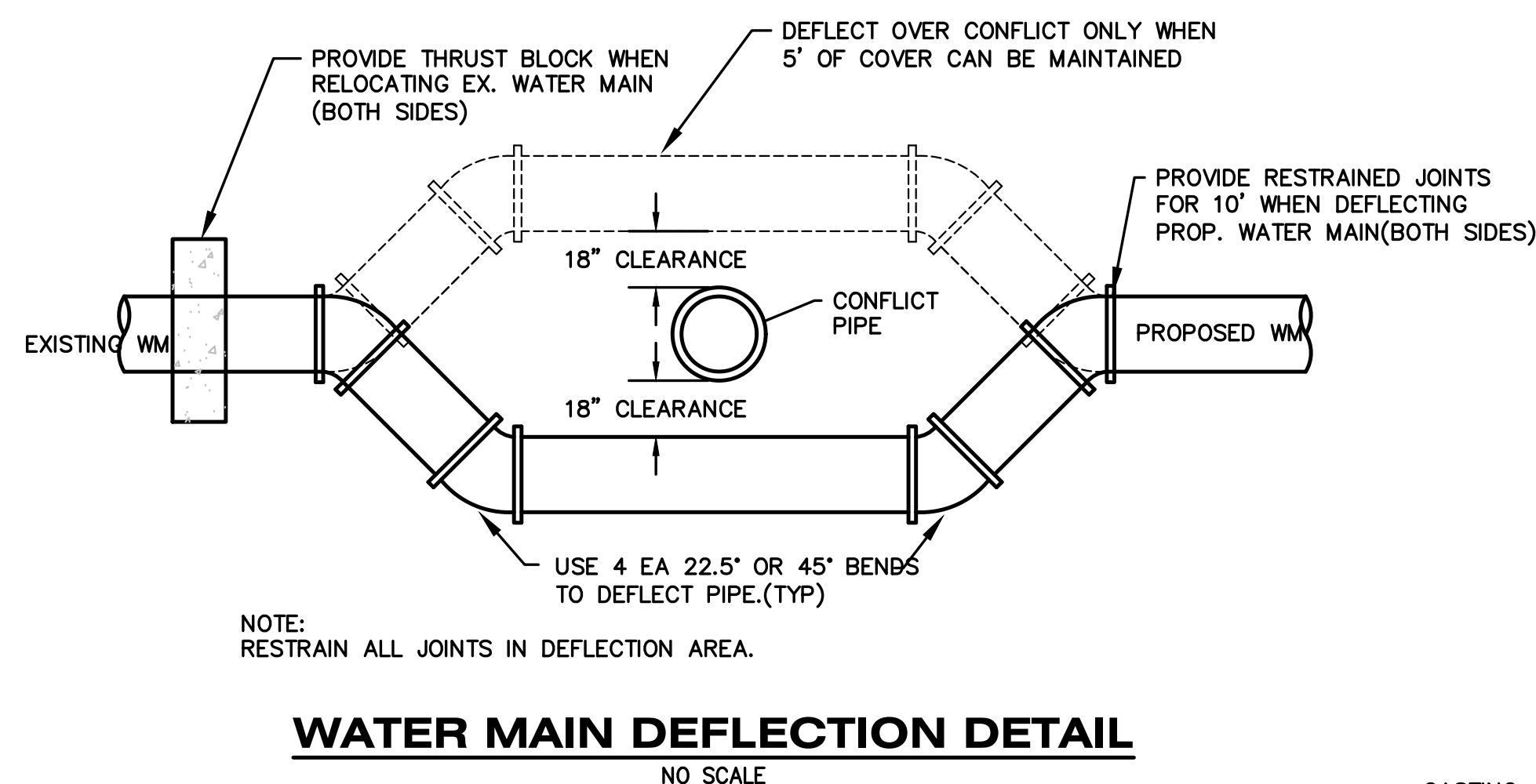
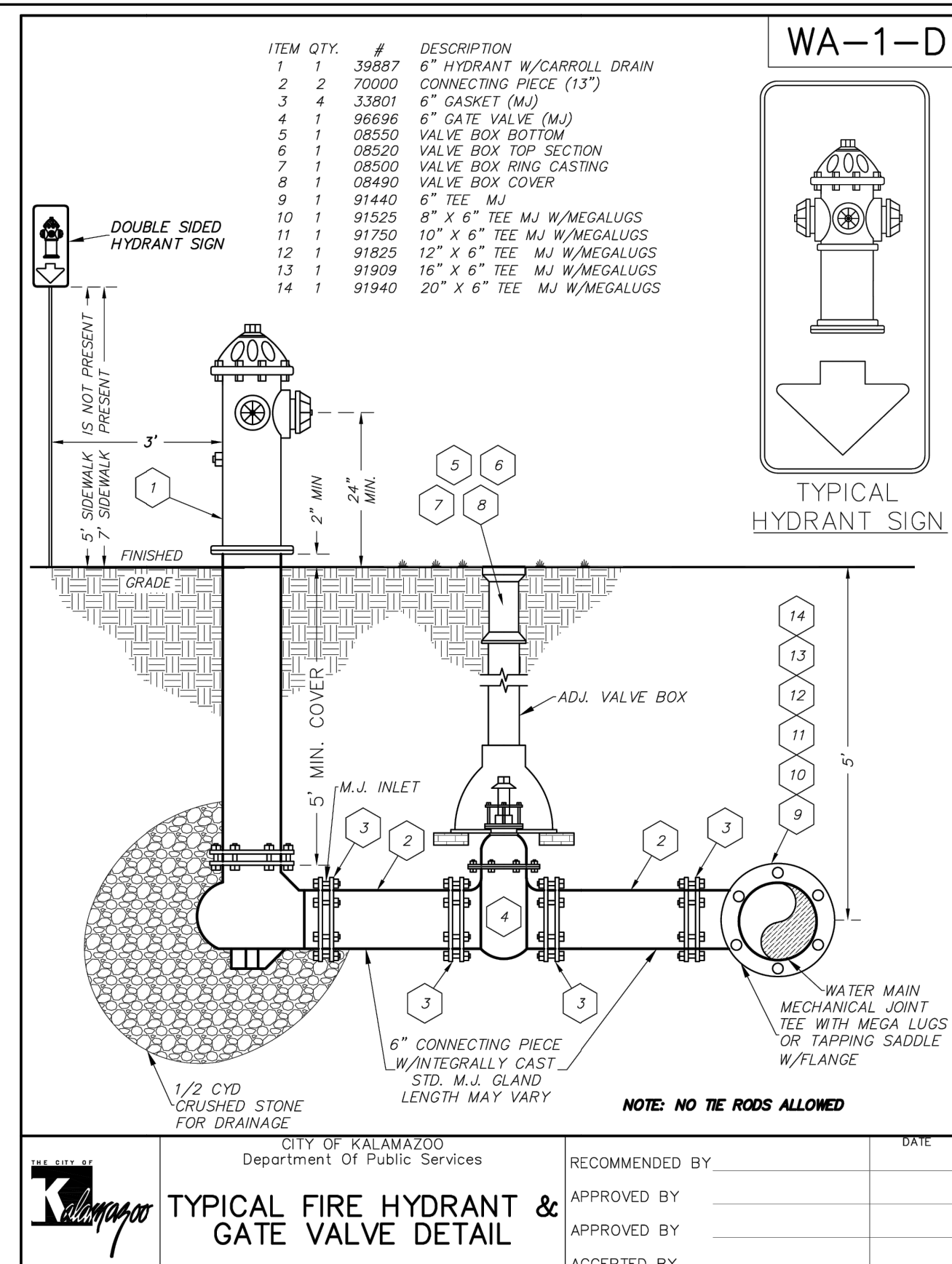
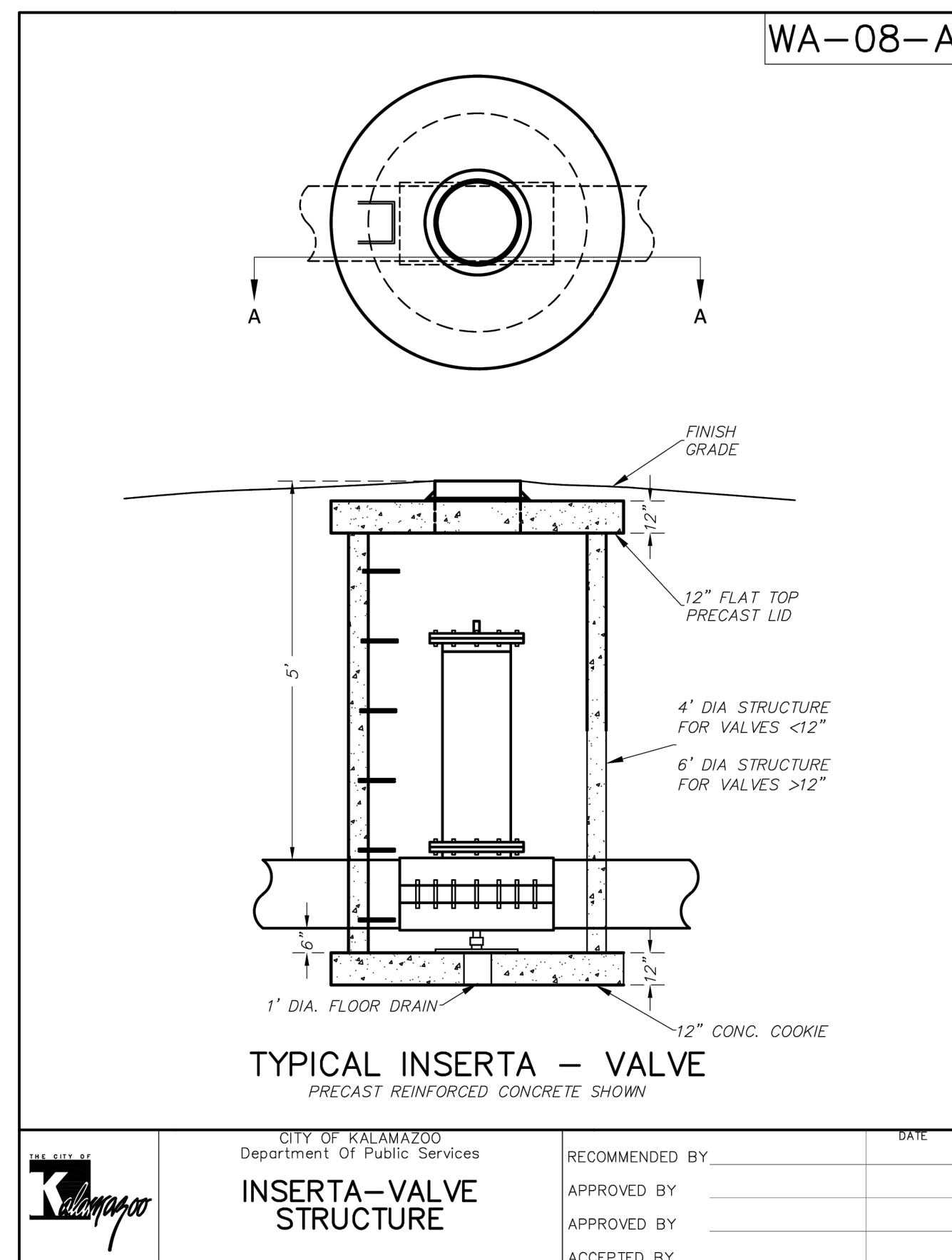
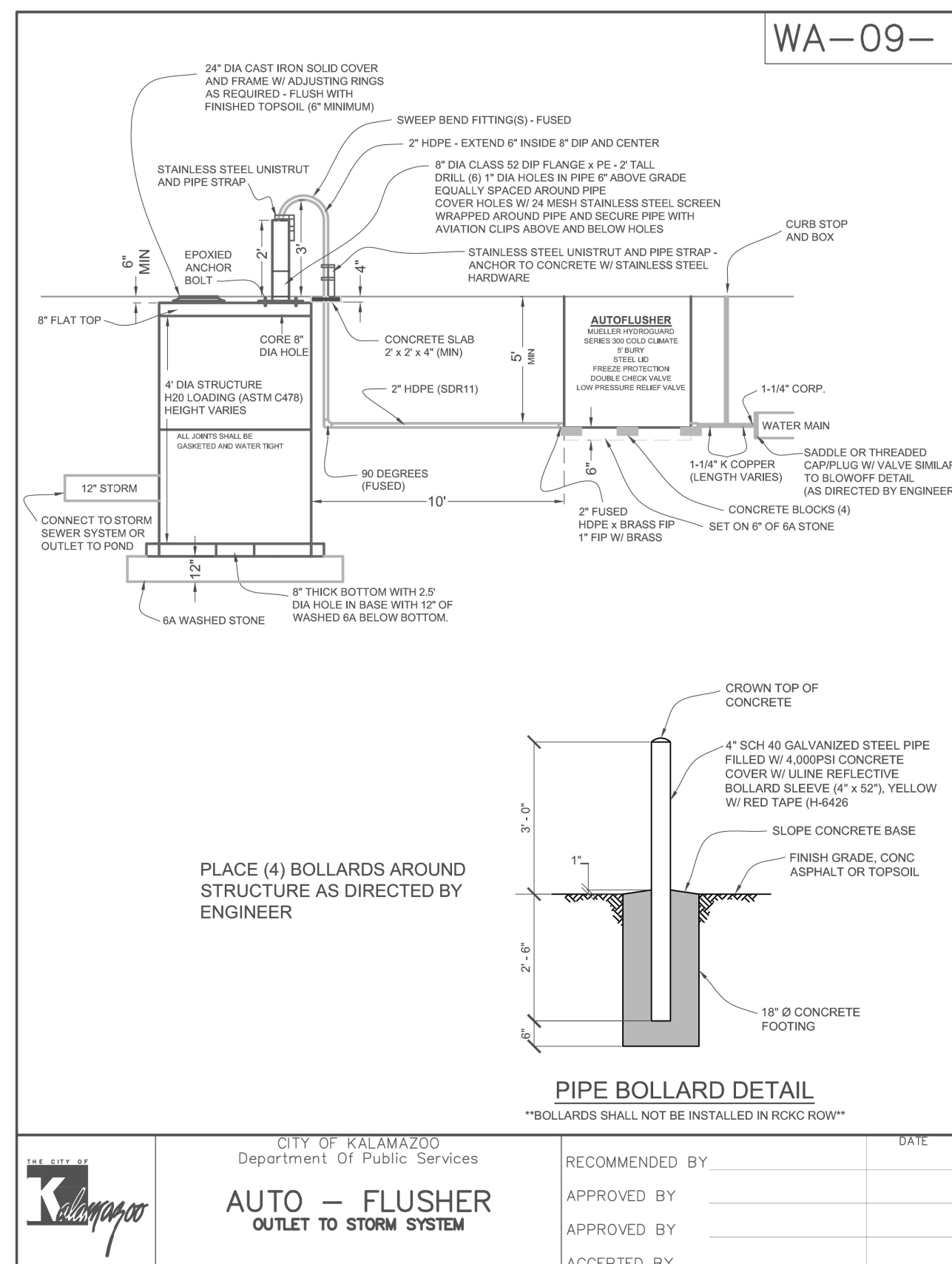
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SHEET TITLE
SITE DETAILS

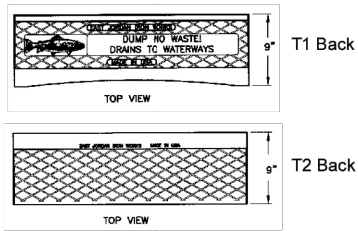
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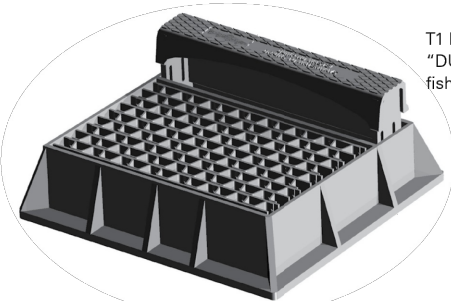


7150 CATCH BASIN CURB INLET

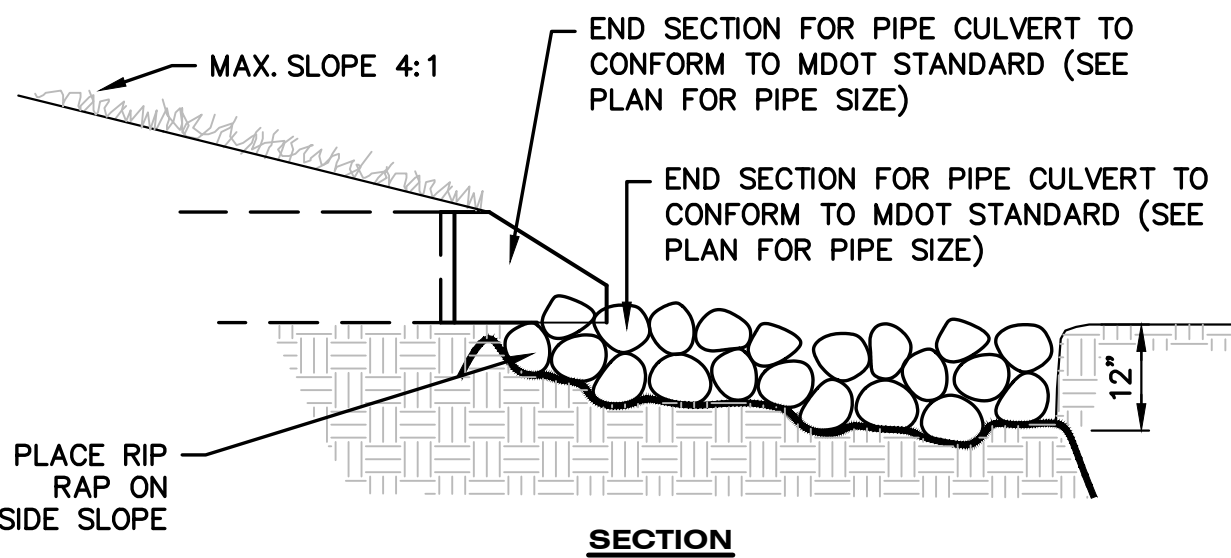
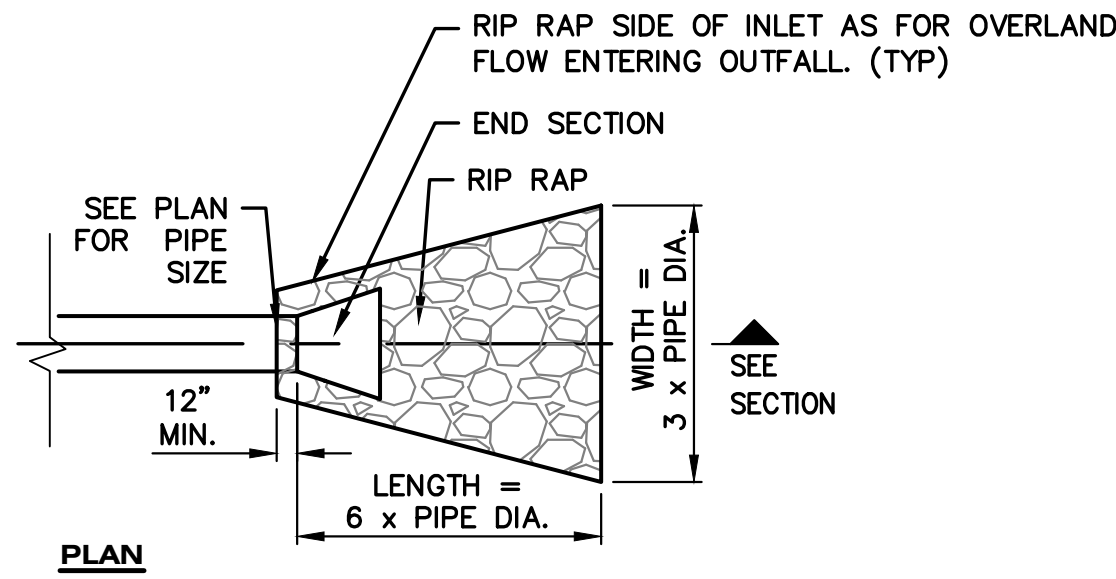
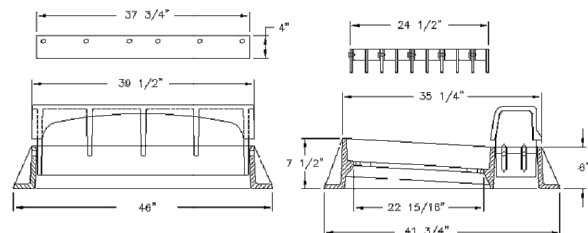
Heavy duty
With galvanized steel grate and
Type T1 non-mountable back
Curb back height adjusts 6" to 10"
7150Z1 frame with 7 1/2" height front
and 6" height back
NY state DOT — Type P2, G2, CU2 & CM2



T2 Mountable Back (CM2) with
"DUMP NO WASTE!" lettering
and fish image

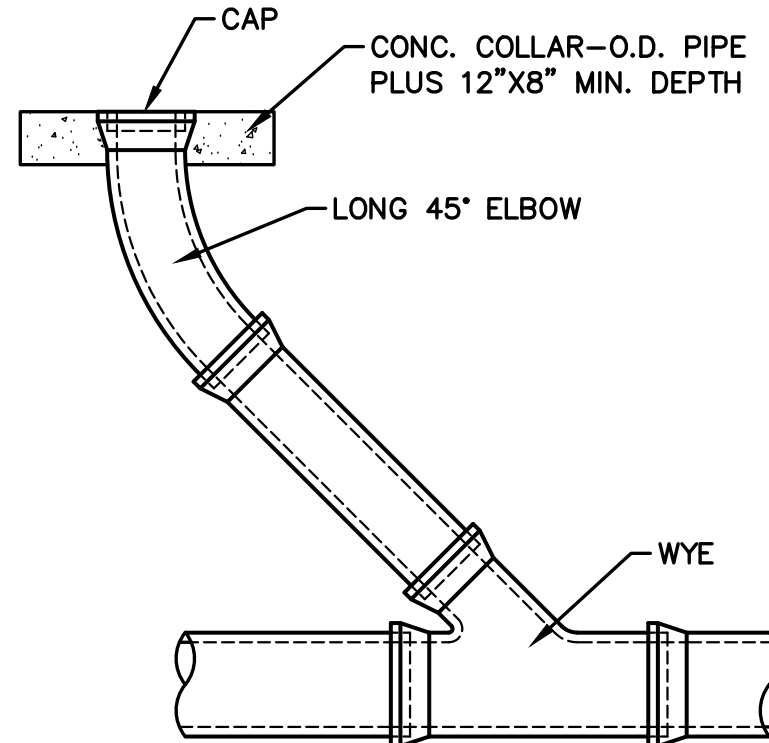


T1 Non-mountable Back (CU2) with
"DUMP NO WASTE!" lettering and
fish image



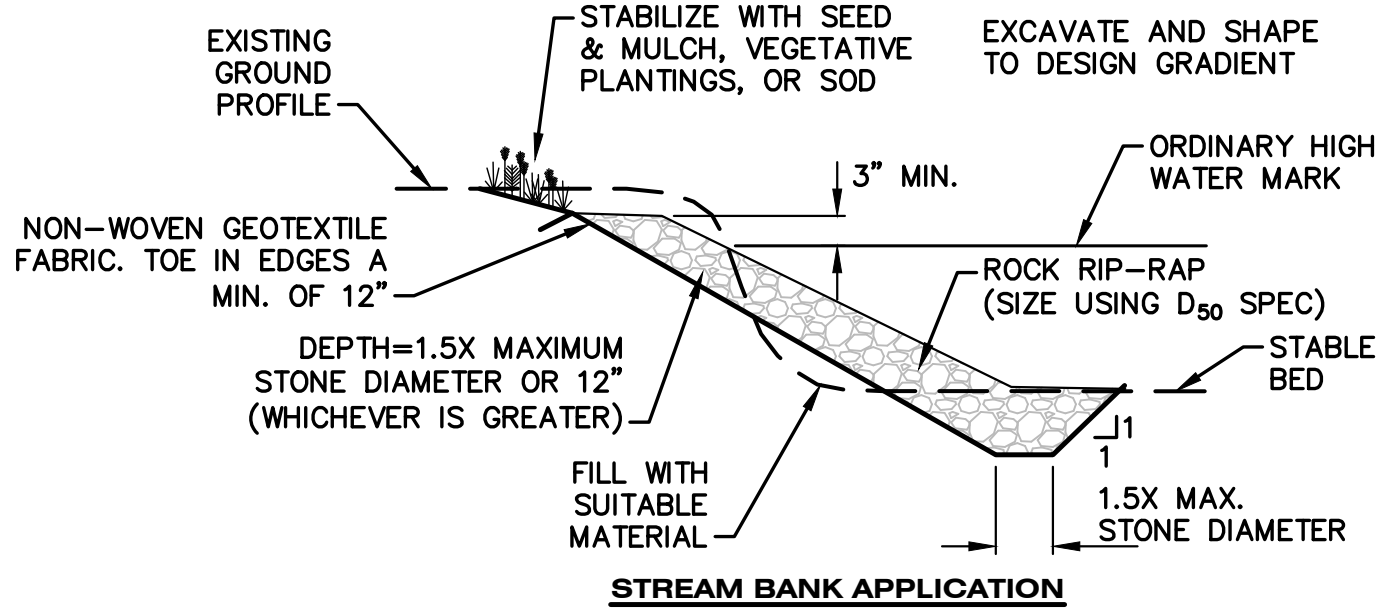
**PIPE CULVERT
WITH FLARED END SECTION DETAIL**

NOT TO SCALE

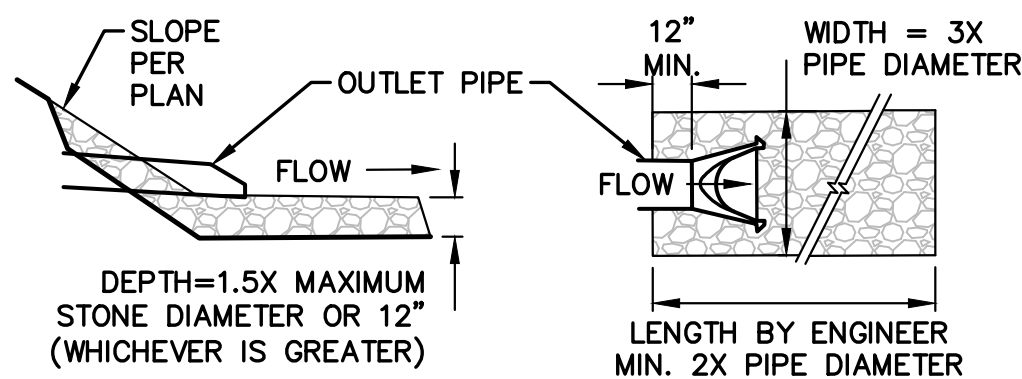


CLEANOUT DETAIL

NOT TO SCALE



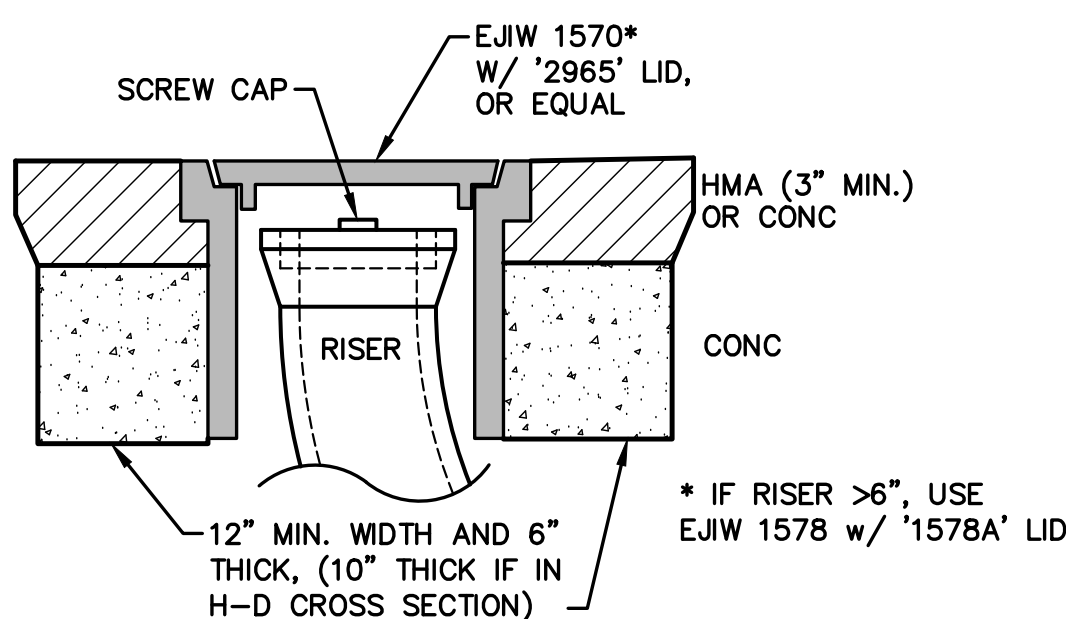
STREAM BANK APPLICATION



OUTLET POINT APPLICATION

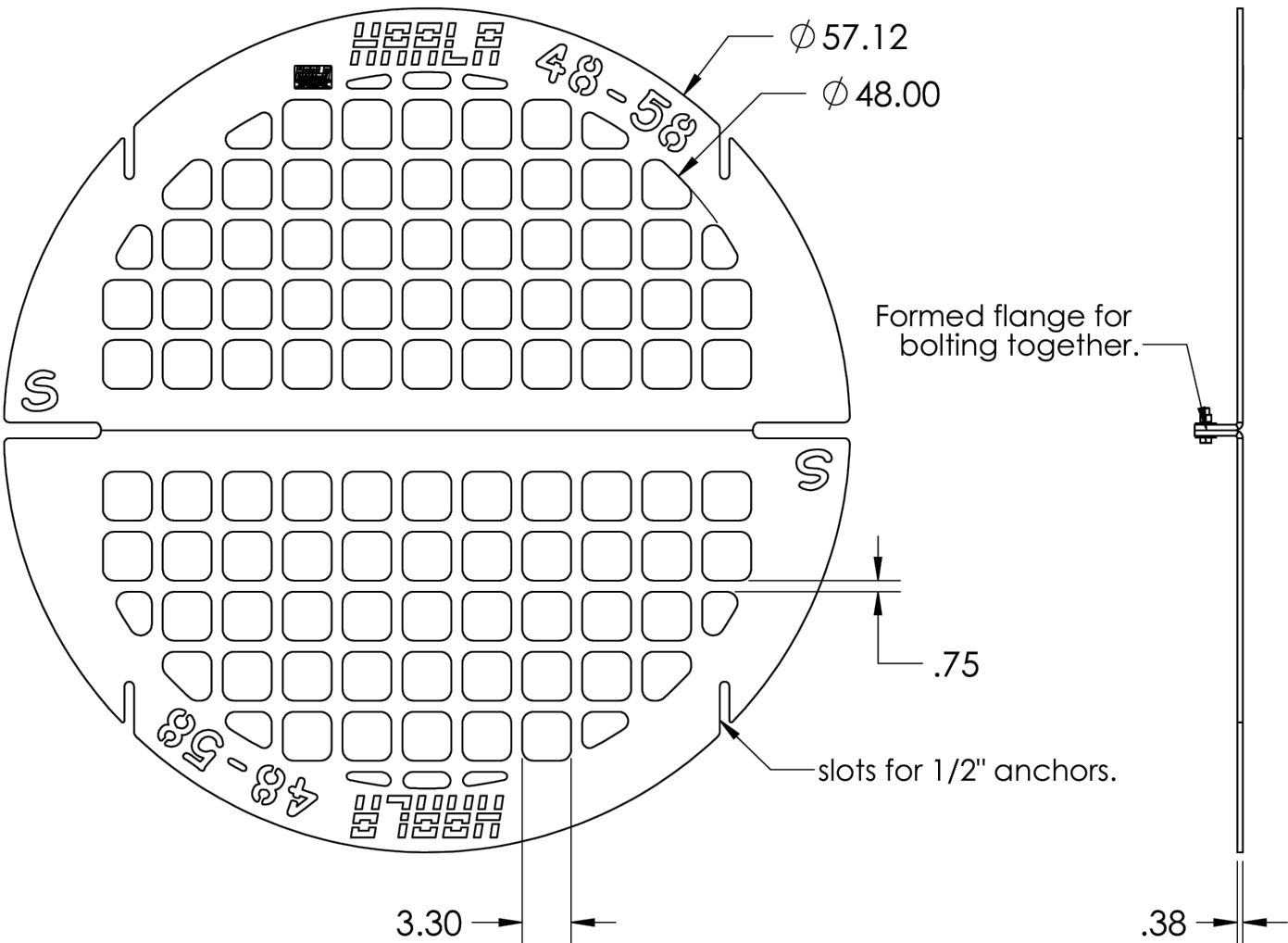
RIP-RAP DETAIL

NOT TO SCALE



**CLEANOUT IN
PAVEMENT/CONC AREA**

NOT TO SCALE



Notes:

- Unit is made from A36 steel and is hot dip galvanized after fabrication per ASTM A123.
- Open area: 7.01 sq ft

 H.A.A.L.A. INDUSTRIES SLEEPY EYE, MN 607-794-6821	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF H.A.A.L.A. INDUSTRIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF H.A.A.L.A. INDUSTRIES IS PROHIBITED.		Part # PS48-58S Desc. Pond Skimmer 48-58 Std	
	TOTAL WT:	385	*DIMENSIONS ARE IN INCHES	
	WEIGHT:	184.23	DRAWN BY: Coreb S. 10/26/2010 Title: PS48-58S	
	PNBR:	Gdovr2603	REVISED:	gdsr168 6/29/2022 REV: A 1 "DO NOT SCALE DRAWING" SHEET 3 OF 3

SLOPE STABILIZATION SEED MIX					PLANT SCHEDULE					ZONING CALCULATIONS					NOTES - SITE - GENERAL		NOTES - SITE - PLANTING	
Grasses, Sedges & Rushes					PLS Oz/lb	Seeds/lb ft				50-8.4-B: Tree Canopy Requirement					1. THE SURVEY FOR THIS PROJECT HAS BEEN REFORMATTED FOR USE IN AND FOR PREPARATION OF THESE DOCUMENTS. CONTRACTORS SHALL OBTAIN OFFICIAL SIGNED COPY AND BECOME FAMILIAR WITH IT, EXISTING CONDITIONS, AND SITE CONTEXT PRIOR TO CONSTRUCTION. SEE PROJECT MANUAL FOR SURVEY COMPANY CONTACT INFORMATION. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER FOR RESOLUTION IMMEDIATELY. THE LANDSCAPE ARCHITECT IS NOT RESPONSIBLE FOR INCONSISTENCIES ASSOCIATED WITH PREPARATION OR DOCUMENTATION OF THE SURVEY. 2. THE GEOTECHNICAL INVESTIGATION AND REPORT FOR THIS PROJECT HAS BEEN REFERENCED DURING PREPARATION OF THESE DOCUMENTS. CONTRACTORS SHALL OBTAIN OFFICIAL SIGNED COPY AND BECOME FAMILIAR WITH IT PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER FOR RESOLUTION IMMEDIATELY. THE LANDSCAPE ARCHITECT IS NOT RESPONSIBLE FOR INCONSISTENCIES ASSOCIATED WITH PREPARATION OR DOCUMENTATION OF THE REPORT. 3. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING MEANS AND METHODS FOR CONSTRUCTION. THESE DRAWINGS MAY INDICATE A LIMITS OF PROPOSED IMPROVEMENTS, LIMITS OF SITE DEMOLITIONS, ETC., FOR DELINEATION OF EXPECTED EXTENTS OF DISTURBANCE. HOWEVER, FINAL IMPACT SHALL BE DETERMINED IN THE FIELD. SHOULD LIMITS OF DISTURBANCE EXCEED BOUNDARIES DEFINED IN DRAWINGS, THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY FOR RESOLUTION. 4. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL WORK DISTURBED BY THE CONSTRUCTION OUTSIDE OF LIMIT LINES DEFINED ON DRAWINGS OR THOUGH HIS/HER MEANS AND METHODS TO CONDITION BETTER THAN OR EQUAL TO THE EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. 5. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS, REQUIREMENTS, ORDINANCES, AND CODES. 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL NECESSARY PERMITS FOR WORK INCLUDING BUT NOT LIMITED TO THOSE REQUIRED FOR WORK IN ROW AND ON ANY UTILITY CONNECTIONS OR ABANDONMENT PRIOR TO THE START OF CONSTRUCTION. 7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL TRAFFIC CONTROL INCLUDING SIGNAGE, BARRIERS, FLAG PERSONNEL AND ANY ADDITIONAL REQUIREMENTS OF THE LOCAL ROAD COMMISSION OR MUNICIPALITY. CONTRACTOR SHALL FOLLOW MOST RECENT EDITION OF MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.		LEGEND - SITE - PLANTING ○ DECIDUOUS TREE ⚙ EVERGREEN TREE ▨ SHRUBS / PERENNIALS	
Forbs					PLS Oz/lb	Seeds/lb ft				50-8.4-D: Interior Parking Lot Landscaping								
Temporary Grass Cover					Oz/lb	Seeds/lb ft				Parking Lot Size: 269,200 Sft								
Arundo donax					Seed Oz/lb	112.00	36.67				Required: Proposed: Notes:							
Total Temp Grasses					646.00	51.42				1 Tree per Acre for Sites over 1 Acre in Size								

Section 7 Comments for Rare Species Review #5710

20 acres - hardscape elements and stormwater

Laurie Davis
Hurley & Stewart
2800 South 11th Street
Kalamazoo, MI 49009

January 14, 2026

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 not 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 not 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 not 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

Laurie Davis
Hurley & Stewart
2800 South 11th Street
Kalamazoo, MI 49009

January 14, 2026

Re: Rare Species Review #5710 – 20 acres - hardscape elements and stormwater

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

Although several at-risk species and/or natural communities have been documented within 1.5 miles of the project location it is unlikely 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 #5710

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>Erynnis persius persius</i>	Persius dusky wing		T	G5T1T3	S3	H	1986	1989
Plant	<i>Baptisia lactea</i>	White or prairie false indigo		T	G4Q	S3	D	1978	1978
Plant	<i>Bouteloua curtipendula</i>	Side-oats grama grass		E	G5	S1	H	1838-07-23	1838-07-23
Plant	<i>Coreopsis palmata</i>	Prairie coreopsis		E	G5	S2	H	1838-07-23	1838-07-23
Plant	<i>Panax quinquefolius</i>	Ginseng		T	G3G4	S2S3	H	1838-07-27	1838-07-27

Comments for Table 1

All of the above EO's are historical and/or far removed from the project area, no concerns.

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>Bombus auricomus</i>	Black and gold bumble bee		SC	G5	S2	B	2020-07-21	2021-08-04
Animal	<i>Bombus fervidus</i>	Yellow bumble bee		SC	G3G4	S3	E	2021-08-04	2021-08-04
Animal	<i>Mesomphix cupreus</i>	Copper button		SC	G5	S1	H		
Plant	<i>Angelica venenosa</i>	Hairy angelica		SC	G5	S3	D	2021-06-17	2021-06-17
Plant	<i>Linum sulcatum</i>	Furrowed flax		SC	G5	S2S3	H	1838	1838-08-01

Comments for Table 2

All of the above EO's are historical and/or far removed from the project area, no concerns.

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