

**Notice of an Electronically Conducted
Regular Meeting of the Charter Township of Union
Planning Commission**

Notice is hereby given that the Charter Township of Union Planning Commission will conduct a regular meeting electronically on Tuesday, October 19, 2021 at 7:00 p.m., consistent with the emergency declarations and direction from state and county health officials to slow the spread of the COVID-19 virus and the Open Meetings Act (Public Act 267 of 1976, as amended)."

There will be no in-person attendance in the Township Hall Board Room (2010 S. Lincoln Rd., Mt. Pleasant, MI 48858), although some Planning Commission members and Township staff may choose to participate from this location.

All interested persons may attend and participate. The public may participate in the meeting by computer and smart phone using the following link to the electronic meeting location: <https://us02web.zoom.us/j/89751444718> (Meeting ID: "897 5144 4718" Passcode "038923"). The moderator will open public access to the electronic meeting space at 6:55 p.m.

To participate via telephone conference call, please call (312) 626-6799. Enter "897 5144 4718" and the "#" sign at the "Meeting ID" prompt. Lastly, re-enter the "#" sign again at the "Participant ID" prompt to join the meeting.

The meeting agenda, packet of materials relating to the meeting, and instructions for connecting to the meeting electronically are available on the Township's website under "Minutes and Board Packets" at <http://www.uniontownshipmi.com/>.

Questions and comments will be received during the public comment sections of the meeting. For participants accessing via computer or smartphone to indicate a desire to address the Planning Commission, please use the "Raise Your Hand" button at the bottom center of the screen. To raise your hand for telephone dial-in participants, press "star" and then the number "nine" (*9). The Chair will call on you by the last three digits of your phone number to invite any comment, at which time you will be unmuted by the meeting moderator.

If there are a large number of participants, the Chair may choose to call on individuals by name or telephone number. Please speak clearly and provide your name and address before making your comments. Please note that the meeting moderator will control the muting and unmuting of participants during public comment.

Written comments to the Planning Commission may also be delivered to the drop box at the Township Hall. Comments received prior to 3:00 p.m. on the day of the meeting will be read aloud to the Planning Commission.

Persons with disabilities needing assistance to participate should call the Township office at (989) 772-4600. Persons requiring speech or hearing assistance may contact the Township through the Michigan Relay Center at 711. A minimum of one (1) business day of advance notice will be necessary for accommodation.

**Instructions to Participate in an Electronically Conducted
Regular Meeting of the Charter Township of Union
Planning Commission**

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Raise Your Hand for Citizen Participation During the Public Comment Periods

Questions and comments will be received during the public comment sections of the meeting. For participants accessing via computer or smartphone to indicate a desire to address the Planning Commission, please **click on the “Raise Your Hand” icon** near the bottom of your screen.



Click “Lower Hand” to lower it if needed. The host will be notified that you have raised your hand. The Mute/Unmute function will be controlled by the meeting moderator.

To raise your hand for telephone dial-in participants, press “star” and then the number “nine” (*9).

The Chair will call on you by the last three digits of your phone number to invite any comment, at which time you will be unmuted by the meeting moderator.

Do I need to download the Zoom app to access the meeting? No. Use of the Zoom app is recommended, but you will have options to “download & run Zoom” or “join from your browser” when you click on the link to join the meeting.

Can I Use Bluetooth Headset? Yes, if the Bluetooth device is compatible with the computer or mobile device that you are using.

Do I have to have a webcam to join on Zoom? While you are not required to have a webcam to join a Zoom Meeting, you will not be able to transmit video of yourself. You will continue to be able to listen and speak during public comment and view the webcam video of other participants.

Leaving the Meeting: Click the “Leave Meeting” link at the bottom right corner of the screen at any time to leave the meeting.



Planning Commission
Regular Electronic Meeting. Instructions for access will be posted and available on website
(uniontownshipmi.com) home page
October 19, 2021
7:00 p.m.

1. CALL MEETING TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

4. APPROVAL OF AGENDA

5. APPROVAL OF MINUTES

-September 21, 2021

6. CORRESPONDENCE / BOARD REPORTS / PRESENTATIONS

A. Thering updates from Board of Trustees

B. Buckley updates from ZBA

C. Darin updates from Sidewalk and Pathways

D. Coyne/Zion Lutheran Church – Proposal to increase the maximum height allowed for Solar Energy Facilities

7. PUBLIC COMMENT: Restricted to (3) minutes regarding items not on this agenda

8. NEW BUSINESS

A. PSUP21-18 County Jail – Sheriff’s Office – Final Site Plan Application

a. Updates from staff and the applicant

b. Commission deliberation and action (approval, denial, or approval with conditions)

9. OTHER BUSINESS

10. EXTENDED PUBLIC COMMENT: Restricted to 5 minutes regarding any issue

11. FINAL BOARD COMMENT

12. ADJOURNMENT

CHARTER TOWNSHIP OF UNION
Planning Commission
Regular - Electronic Meeting Minutes

A regular-electronic meeting of the Charter Township of Union Planning Commission was held on September 21, 2021, as a virtual meeting through the Zoom meeting platform.

Meeting was called to order at 7:05 p.m.

Roll Call

Present:

Albrecht (location: City of Lexington, Sanilac County, MI)
Buckley (location: Union Township, Isabella County, MI)
Fuller (location: Union Township, Isabella County, MI)
LaBelle (location: Union Township, Isabella County, MI)
Lapp (location: Union Township, Isabella County, MI)
Shingles (location: City of Mt. Pleasant, Isabella County, MI)
Squatrito (location: City of Mt. Pleasant, Isabella County, MI)
Thering (location: Union Township, Isabella County, MI)

Excused:

Darin

Others Present

Rodney Nanney, Community and Economic Development Director; Peter Gallinat, Zoning Administrator; Tera Green, Administrative Assistant

Approval of Agenda

Fuller moved **Lapp** supported to approve the agenda with one amendment to eliminate item 6.D. **Vote: Ayes: 7. Nays: 0. Motion Carried**

Approval of Minutes

Lapp moved **Albrecht** supported to approve the regular meeting minutes from August 17, 2021, as presented. **Vote: Ayes: 7. Nays: 0. Motion carried.**

Commissioner Shingles arrived at 7:10 p.m.

Correspondence / Reports/ Presentations

- A. Board of Trustees updates by Thering – No updates given
- B. ZBA updates by Buckley –Gave updates on the September 1st ZBA meeting.
- C. Sidewalks and Pathway Prioritization updates by Darin – No updates given.

Public Comment

Open 7:20 p.m.

No comments were offered.

Closed 7:21 p.m.

New Business

A. PSUP21-03 Breanne Moeggenberg – Special Use Permit application

- a. Introduction
- b. Public Hearing
- c. Updates from staff and the applicant
- d. Commission deliberation and action (recommend approval, denial, or approval with conditions to the Board of Trustees, or postpone action)

Introduction by Nanney, Community and Economic Development Director, of the PSUP21-03 Breanne Moeggenberg – Special Use Permit application for a Group Day Care Home (7-12 Children).

Public Hearing

Open: 7:24 p.m.

No public comments were offered

Closed: 7:25 p.m.

The applicant, Breanne Moeggenberg, expressed the urgency to receive approval of the Special Use Permit and was available for questions from the commissioners. The Chair read each of the Zoning Ordinance standards that apply to the special use. Discussion held.

LaBelle moved **Thering** supported to recommend to the Township Board of Trustees to approve the PSUP21-03 special use permit application from Breanne Moeggenberg for a group day care home at 611 S. Bamber Road (parcel number 14-004-40-004-01) on approximately 1.71 acres of land in the southeast quarter of Section 4 and in the AG zoning district, subject to the following conditions:

1. Parking and fence improvements to be completed by December 31, 2021.
2. A copy of state documentation approving the transfer of Aunt Bree's Day Care from 3769 S. Shepherd Road to 611 S. Bamber Road be provided to the Zoning Administrator prior to operation of the facility at this location.

Roll Call Vote: Ayes: Albrecht, Buckley, Fuller, LaBelle, Lapp, Shingles, Squattrito and Thering. Nays: 0. Motion carried.

B. PTXT21-01 Zoning Ordinance Text Amendments

- a. Introduction and updates from the staff
- b. Public hearing
- c. Commission deliberation and action (recommend approval, denial, approval with conditions to the Board of Trustees, or postpone action)

Nanney gave updates on the PTXT21-01 Proposed Zoning Ordinance text amendments.

Public Hearing

Open: 8:02 p.m.

Nanney shared a conversation he had with Jim McBryde, President of the Middle Michigan Development Corporation, who is excited for the proposal that allows for some additional employment center activities in the Business Districts.

Closed: 8:05 p.m.

Buckley moved **Lapp** supported to recommend to the Township Board of Trustees that the PTXT21-01 Zoning Ordinance text amendments to section 2 (Definitions), 3 (Zoning Districts and Maps), 4 (Schedule of Regulations), 6 (Standards Applicable to Specific Land Uses), 7 (General Provisions), 9 (Parking, Loading, and Access Management), 11 (Signs), 12 (Nonconformities), and 14 (Administrative Procedures) of the Zoning Ordinance No. 20-06 be adopted as submitted.

Roll Call Vote: Ayes: Albrecht, Buckley, Fuller, LaBelle, Lapp, Shingles, Squattrito and Thering. Nays: 0. Motion carried.

C. Adoption of the 2022 Planning Commission meeting calendar

Fuller moved **Buckley** supported to approve the adoption of the 2022 Planning Commission meeting calendar. **Roll Call Vote: Ayes: Albrecht, Buckley, Darin, Fuller, LaBelle, Lapp, Shingles and Squattrito. Nays: 0. Motion carried.**

Extended Public Comments

Open – 8:20 p.m.

No comments were offered.

Closed – 8:21 p.m.

Final Board Comment

N/A

Adjournment – Chairman Squattrito adjourned the meeting at 8:24 p.m.

APPROVED BY:

(Recorded by Tera Green)

Doug LaBelle – Secretary
Stan Shingles – Vice Secretary



Board Expiration Dates

Planning Commission Board Members (9 Members) 3 year term			
#	F Name	L Name	Expiration Date
1-BOT Representative	James	Thering	11/20/2024
2-Chair	Phil	Squatrito	2/15/2023
3-Vice Chair	Ryan	Buckley	2/15/2022
4-Secretary	Doug	LaBelle II	2/15/2022
5 - Vice Secretary	Stan	Shingles	2/15/2024
6	Tera	Albrecht	2/15/2024
7	Mike	Darin	2/15/2022
8	Alex	Fuller	2/15/2023
9	Jessica	Lapp	2/15/2023
Zoning Board of Appeals Members (5 Members, 2 Alternates) 3 year term			
#	F Name	L Name	Expiration Date
1- PC Rep	Ryan	Buckley	2/15/2022
2 - Chair	Andy	Theisen	12/31/2022
3 - Vice Chair	Liz	Presnell	12/31/2022
4 - Secretary	Judy	Lannen	12/31/2022
5 -	vacant seat		12/31/2022
Alt. #1	Brandon	LaBelle	12/31/2022
Alt. #2	vacant seat		2/15/2021
Board of Review (3 Members) 2 year term			
#	F Name	L Name	Expiration Date
1	Doug	LaBelle II	12/31/2022
2	Sarvjit	Chowdhary	12/31/2022
3	Bryan	Neyer	12/31/2022
Alt #1	Randy	Golden	12/31/2022
Construction Board of Appeals (3 Members) 2 year term			
#	F Name	L Name	Expiration Date
1	Colin	Herron	12/31/2021
2	Richard	Jakubiec	12/31/2021
3	Andy	Theisen	12/31/2021
Hannah's Bark Park Advisory Board (2 Members from Township) 2 year term			
1	Mark	Stuhldreher	12/31/2022
2	John	Dinse	12/31/2021
Chippewa River District Library Board 4 year term			
1	Ruth	Helwig	12/31/2023
2	Lynn	Laskowsky	12/31/2021



Board Expiration Dates

EDA Board Members (11 Members) 4 year term			
#	F Name	L Name	Expiration Date
1-BOT Representative	Bryan	Mielke	11/2024
2	Thomas	Kequom	4/14/2023
3	James	Zalud	4/14/2023
4	Richard	Barz	2/13/2025
5	Robert	Bacon	1/13/2023
6	Marty	Figg	6/22/2022
7	Sarvjit	Chowdhary	1/20/2022
8	Cheryl	Hunter	6/22/2023
9	Jeff	Sweet	2/13/2025
10	vacant seat		2/13/2021
11	David	Coyne	3/26/2022
Mid Michigan Area Cable Consortium (2 Members)			
#	F Name	L Name	Expiration Date
1	Kim	Smith	12/31/2022
2	vacant seat		
Cultural and Recreational Commission (1 seat from Township) 3 year term			
#	F Name	L Name	Expiration Date
1	Robert	Sommerville	12/31/2022
Sidewalks and Pathways Prioritization Committee (2 year term -PC Appointments)			
#	F Name	L Name	Expiration Date
1 - BOT Representative	Kimberly	Rice	11/20/2024
2 - PC Representative	Mike	Darin	8/15/2022
3 - Township Resident	Jeff	Siler	8/15/2021
4 - Township Resident	Jeremy	MacDonald	10/17/2022
5 - Member at large	Phil	Hertzler	8/15/2021
Mid Michigan Aquatic Recreational Authority (2 seat from Township) 3 year term			
#	F Name	L Name	Expiration Date
1 - City of Mt. Pleasant	John	Zang	12/31/2023
2 - City of Mt. Pleasant	Judith	Wagley	12/31/2022
1 -Union Township	Stan	Shingles	12/31/2023
2 - Union Township	Allison	Chiodini	12/31/2022
1- Mt. Pleasant Schools	Lisa	Diaz	12/31/2021

Charter Township of Union
Dual Axis Tracker Presentation
October 19, 2021



CONTENTS

- Tracker Data Sheets
- Description of Dual Axis Tracker
- Tracker Stamped Drawing
- Description of tracker behavior and tilt angles.
- Production breakdown and footprint of tracker relative to fixed ground mount

This packet will be accompanied by a brief presentation and Q & A session at the October 19 meeting

SunAction 42 Panel Dual Axis Tracker Datasheet



Capturing Maximum Energy

The PST-2AL Dual Axis Tracker is the premium choice in modern technology. Thanks to our patented **Real-Time Sensors** that allow for optimum solar energy generation due to the ability to follow the sun at its maximum irradiation point both vertically and horizontally.

Advantages

- Produces 30-40% more power than traditional fixed arrays.
- High reliability and low maintenance
- No wasted energy
- No in-field welding

Benefits

- Real Time Sensing
- Low voltage DC motors which require low maintenance and minimum downtime
- Magnesium Alloy Coated Steel
- Can accommodate any commercially available solar module
- Can be installed on any terrain
- Easy electrical plug and play connection
- Company support during the lifetime of the tracker (Operation & Troubleshooting)

COMPATIBILITY

The PST-2AL is compatible with all commercially available modules on the market. The PST-2AL performs optimally throughout the entire day producing more energy per hour than single axis and fixed tilt. The increase in production can be up to 45% higher yields.

Technical Report by
Black & Veatch



SunAction 42 Panel Dual Axis Tracker Datasheet

Our most powerful Dual Axis Tracker



Tracking Type	Dual Axis
Model	PST-2AL
Module Area (Max)	85m ² [42 modules 72-cell] or [49 modules 60-cell]
System Weight	1,970kg, without modules & foundation
Tracking Axis	Dual Axis: azimuth & vertical
Tracking Range of Motion	Azimuth: -135° to +135° Vertical: 0° to 60°
Azimuth Rotation	Slew drive
Vertical Tilt	Linear actuator
Power Supply to Controller	100-240VAC / 50 - 60Hz
Materials	Magnesium Alloy Coated Steel/ Hot Dip Galvanized
Solar Tracking Method	Real-Time Solar Sensor
Max Wind Speed	Standard 47m/s (105MPH)
Safety Mode (Automatic horizontal)	•Wind Mode •Less than 3,000 lux
(Tilted Position)	•Snow Mode
Temperature Range	-25 to 55°C (-13 to 131°F)

*The above specifications could vary according to local conditions

COMPONENTS

The PST-2AL utilizes our Power of Four components that offer unlimited flexibility and help increase production. With increase in design, they deliver great results and require minimal maintenance.



Control Box



Real Time Sensor



Slew Drive



Linear Actuator

Experience the PST-2AL

Watch Video



Sun Action Trackers

3660 Thousand Oaks, Suite 316 | San Antonio, Texas 78247

Main: +1-210-503-6101

Email: info@sat-energy.com

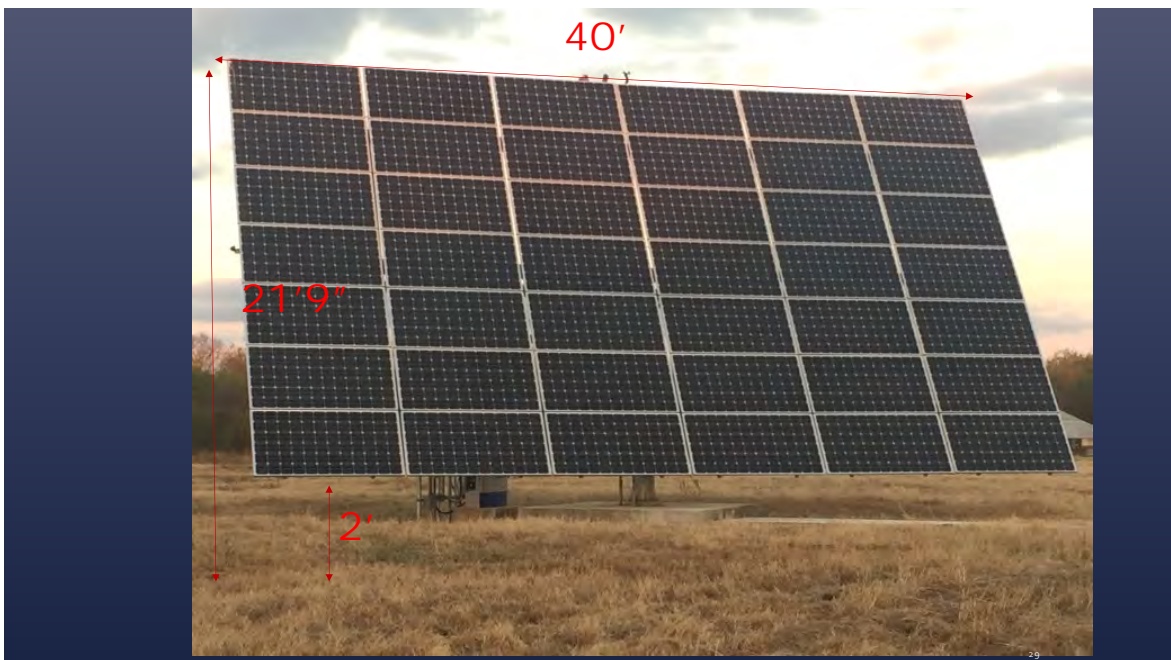
www.sat-energy.com

Tracker Description

The SunAction PST-2AL 42 panel Dual Axis Tracker (hereby referred to as tracker) is the largest dual axis tracking solar array widely available to solar installers today. A detailed search of other dual axis tracking system manufacturers revealed that most can only accommodate up to 24 commercial grade solar panels. This tracker kit is engineered and prefabricated to accommodate 42 72-cell solar panels, which is the industry standard size for large, high production panels.

The tracker will deliver 35% higher kilowatt hour (kWh) production in the Mount Pleasant region than a fixed tilt ground mounted array. They achieve this by following the sun throughout the day and utilizing a linear actuator to adjust the tilt of the solar array to always be optimally tilted towards the sun. They have a 270 degree field of rotation, beginning at 45 degrees NE in the morning and completing at 315 degrees NW in the evening. The tracker is mounted to a single down post, which is connected to concrete pad. That pad is engineered for site specific factors such as soil compression bearing and seismic factors.

This newly developed technology has led to the most powerful and efficient single unit solar application on the market today. These trackers came about through the necessity for a large amount of power production with a small lateral footprint and are subsequently taller than the height restrictions in certain jurisdictions. At it's maximum tilt, the 42 Panel Dual Axis tracker is 21 feet 9 inches above grade.



Stamped Load Specs 42 Panel Dual Axis Tracker

DUAL AXIS TRACKER; MODEL PST-2AL

DESIGN PARAMETERS:

1. BUILDING CODE	IBC 2015
2. GRAVITY LOAD SUMMARY	
A. DEAD + COLLATERAL	3.0 PSF
3. SNOW LOAD	
A. GROUND SNOW LOAD (Pg)	10.0 PSF
B. THERMAL FACTOR (Ct)	1.2
C. IMPORTANCE FACTOR (Is)	0.8
D. EXPOSURE FACTOR (Ce)	0.9
4. WIND	
A. DESIGN WIND SPEED (STOW CONDITION)	105 MPH
B. DESIGN WIND SPEED (OPERATIONAL)	56 MPH
C. RISK CATEGORY	I
D. EXPOSURE CLASSIFICATION	C
E. DIRECTIONALITY FACTOR "Kd"	0.85
F. TOPOGRAPHIC FACTOR "Kzt"	1.0
G. VELOCITY EXPOSURE COEFF. "Kz"	0.85

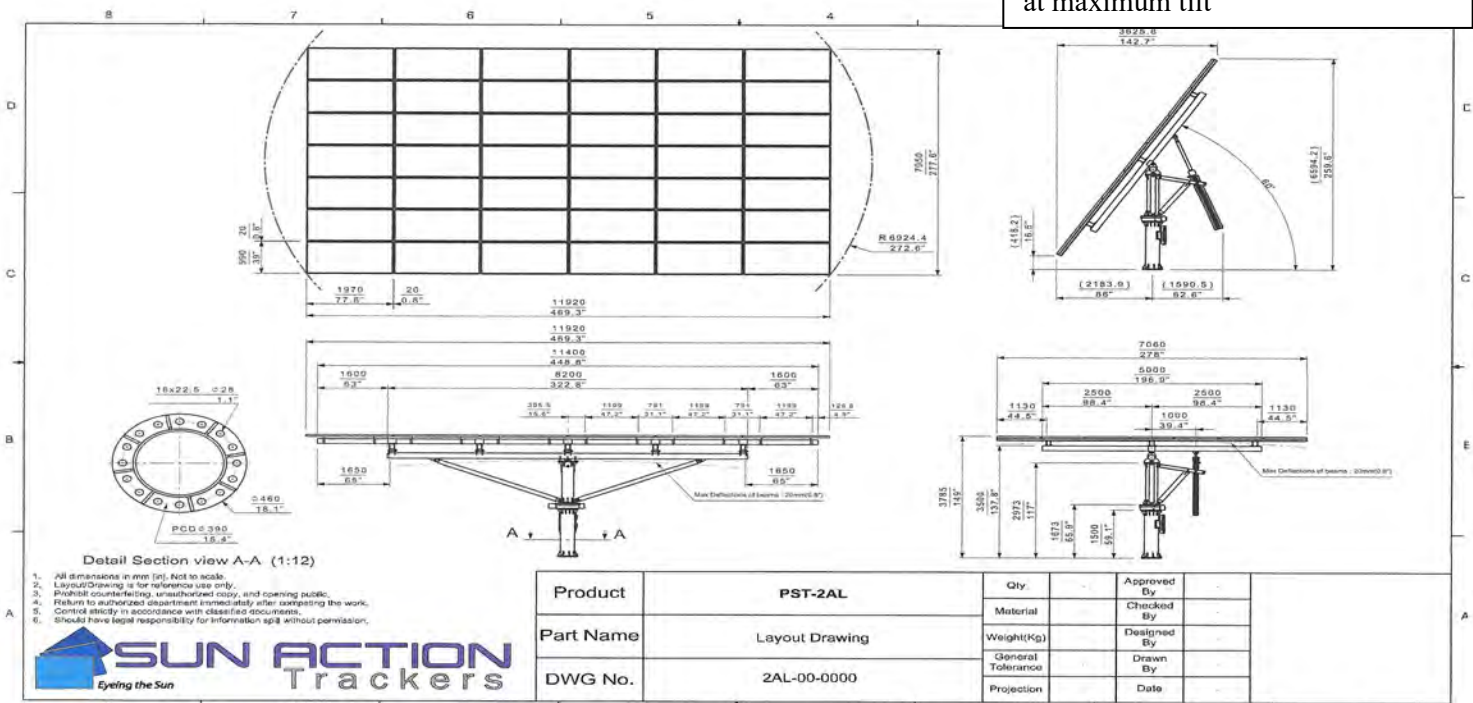


Gilbert L. Leyendecker, P.E.
Sun Action Trackers, LLC

THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THIS PAGE CERTIFIES THAT THE DUAL AXIS TRACKER (PST-2AL) SHOWN AT THE ATTACHED DRAWING HAS BEEN ANALYZED, AND DESIGNED TO SUPPORT THE ABOVE NOTED DESIGN LOADS, INACCORDANCE AND CONSISTENT WITH THE DESIGN REQUIREMENTS ESTABLISHED IN THE ASCE 7-10 DESIGN STANDARD.

Dimensional Layout 42 Panel Dual Axis Tracker

Height from Grade: 259.6" 21'9"
at maximum tilt



Detail Section view A-A (1:12)

1. All dimensions in mm (in). Not to scale.
2. Layout/Drawing is for reference use only.
3. Prohibit counterfeiting, unauthorized copy, and opening public.
4. Return to authorized department immediately after completing the work.
5. Control strictly in accordance with classified documents.
6. Should have legal responsibility for information sps without permission.



Product	PST-2AL	Qty.	Approved By
Part Name	Layout Drawing	Material	Checked By
DWG No.	2AL-00-0000	Weight(Kg)	Designed By
		General Tolerance	Drawn By
		Projection	Date

Height from Grade: 149" 12'5"
when flat

THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF SUN ACTION TRACKERS, LLC. ANY REPRODUCTION IN PART OR IN WHOLE WITHOUT WRITTEN PERMISSION IS PROHIBITED.

Behavior and Tilt of the Dual Axis Tracker

_ - Will be demonstrated during brief presentation October 19.

Production Comparison:

- 42 400Watt (W) 72 cell panels = 16,800W or 16.8KW DC

*16.8KiloWatts (KW) is the DC (Power) nameplate rating of panels

* 400W 72 cell panels are industry standard



42 Panel Dual Axis Tracker: 31,375 kilowatt hours (kWh)(Energy) annually



42 Panel Fixed Tilt Ground Mount: 23,133 kWh annually
70' lateral footprint

Charter Township of Union

APPLICATION FOR SITE PLAN REVIEW

 Minor Site Plan

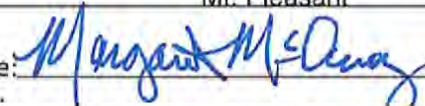
 Preliminary Site Plan

 Final Site Plan

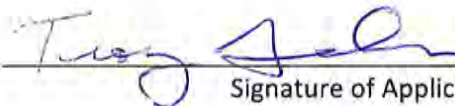
A Completed Application will contain all the information required per the Zoning Ordinance, Section 14.2 (Site Plan Review).

Name of Proposed Development/Project		Isabella Sheriff's Office and Correction Facility	
Common Description of Property & Address (if issued)		5270 E. Remus Road, Mount Pleasant, MI 48858	
Applicant's Name(s)		ROWE Professional Services Company	
Phone/Fax numbers	(989) 772-2138	Email	tgrunder@rowepsc.com
Address	127 S. Main Street	City:	Mt. Pleasant
		Zip:	48858

Legal Description:	<input type="checkbox"/> Attached	<input checked="" type="checkbox"/> Included on Site Plan	Tax Parcel ID Number(s):	14-024-10-001-02 and 14-024-10-002-00	
Existing Zoning:	R-2A	Land Acreage:	44.58	Existing Use(s):	Vacant Agricultural Field
ATTACHED: Letter describing the project and how it conforms to Section 14.2.S. (Standards for Site Plan Approval)					

Firm(s) or Individuals(s) who prepared site plan(s)	1. Name: ROWE Professional Services Co. Phone: 772-2138 Email: tgrunder@rowepsc.com 2. Address: 127 S. Main Street City: Mt. Pleasant State: Zip: 48858 Contact Person: Troy R. Grunder, P.E. Phone 772-2138
Legal Owner(s) of Property. All persons having legal interest in the property must sign this application. Attach a separate sheet if more space is needed.	1. Name: Isabella County Phone: (989) 772-0911 Address: 200 N. Main Street City: Mt. Pleasant State: Zip: 48858 Signature:  Interest in Property: owner 2. Name: Phone: Address: City: State: Zip: Signature: Interest in Property:

I do hereby affirm that all the statements, signatures, descriptions, exhibits submitted on or with this application are true and accurate to the best of my knowledge and that I am authorized to file this application and act on behalf of all the owners of the property. False or inaccurate information placed upon this plan may be cause for revocation of any permits issued pursuant to site plan approval and/or removal of work installed. Approval of this plan shall not constitute the right to violate any provisions of the Zoning Ordinance or other applicable codes and ordinances.


 Signature of Applicant

8/24/21
 Date

Office Use Only

Application Received By: _____ Fee Paid: \$ _____

Date Received: _____ Escrow Deposit Paid: \$ _____

Preliminary Site Plan Review Procedure

Each preliminary site plan application shall be made by filing one (1) completed and signed copy of the required application form, the required fee and any required escrow deposit, one (1) large (up to 24-inch by 36-inch maximum) printed site plan set, and eleven (11) paper copies and one (1) digital copy in .PDF format of the complete set of application materials and reduced 11-inch by 17-inch site plan sets at the Township Hall.

Effect of Preliminary Site Plan Approval

Approval of a preliminary site plan by the Planning Commission shall indicate its general acceptance of the proposed layout of buildings, streets, drives, parking areas, and other facilities and areas in accordance with the standards for preliminary site plan approval specified in subsection 14.2(S). The Planning Commission may, at its discretion and with appropriate conditions attached, authorize limited work to begin for soils exploration, incidental site clearing, and other preliminary site work as specified in the authorization.

Outside Agency Approvals

The applicant shall be responsible for obtaining all necessary permits or approvals from applicable outside agencies, prior to final site plan approval.

Final Site Plan Review Procedure

Each final site plan application shall be made by filing one (1) completed and signed copy of the required application form, the required fee and any required escrow deposit, one (1) large (up to 24-inch by 36-inch maximum) printed site plan set, and eleven (11) paper copies and one (1) digital copy in .PDF format of the complete set of application materials and reduced 11-inch by 17-inch site plan sets at the Township Hall.

Effect of Final Site Plan Approval

Approval of a final site plan by the Planning Commission constitutes the final zoning approval for the project and allows for issuance of a building permit to begin site work or construction, provided all other construction and engineering requirements have been met.

Minor Site Plan Review Procedure

A minor site plan application shall be made by filing one (1) completed and signed copy of the required application form, the required fee, and two (2) paper copies and one (1) digital copy in .PDF format of the complete set of application materials and site plans, at a maximum sheet size of 11 inches by 17 inches, at the Township Hall. The Zoning Administrator shall review the application materials and site plan for completeness, accuracy, and compliance with all applicable requirements and standards of this Ordinance and other Township ordinances.

The minor site plan shall be approved by the Zoning Administrator upon determination that all required information for the type of site plan has been provided per subsection 14.2(P), the site plan satisfies the applicable standards for site plan approval per subsection 14.2(S); and the site plan conforms to all other applicable requirements and standards of this Ordinance and other Township ordinances.

CHARTER TOWNSHIP OF UNION

SITE PLAN REVIEW HAZARDOUS SUBSTANCES REPORTING FORM

This form must be completed and submitted as part of the site plan for facilities which may use, store, or generate hazardous substances or polluting materials (including petroleum-based products)

Name of business: Isabella Sheriff's Office and Correction Facility

Name of business owner(s): Isabella County

Street and mailing address: 200 N. Main Street, Mt. Pleasant, MI 48858

Telephone: (989) 772-0911

Fax: _____

Email: _____

I affirm that the information submitted is accurate.

Owner(s) signature and date: Margaret McAvoy 08/24/2021
Margaret McAvoy

Information compiled by: ROWE Professional Services Company

Section 14.2 Site Plan Review (excerpts)

A. Purpose and Scope.

The purposes of this Section are to establish uniform requirements of procedure for review of site plans for new development in the Township; to confirm compliance with this Ordinance and other Township ordinances prior to the start of construction; and to ensure that development in the Township is consistent with the adopted policies of the Township's Master Plan.

B. Authority.

Flexible standards have been established to ensure that the type of review and amount of required information is proportional to the project's scale and intensity. The Planning Commission shall have the authority to review and take action on preliminary site plan and final site plan applications and the Zoning Administrator shall have authority to review and take action on minor site plan applications, all in accordance with this Section and Ordinance.

1. Preliminary site plan. Requirements for a preliminary site plan are intended to allow for review of the general character of the proposed use(s), general site layout, and location of structures and other site improvements; and to confirm that the overall development can conform to Ordinance requirements.
2. Final site plan. A final site plan is a set of engineering, architectural, and/or landscape design drawings that satisfy all applicable requirements of this Ordinance and outside agencies with jurisdiction, which are prepared by registered design professionals based on an approved preliminary site plan and depict all planned building, pedestrian access, parking, grading, drainage, infrastructure, exterior lighting, and other site improvement details for a given lot and development project.
3. Minor site plan. The reduced information requirements for a minor site plan submittal, as specified in Section 14.2(P) (Required Site Plan Information), are intended to allow for administrative review of a limited range of low intensity projects that do not include significant engineering or design details.

C. Site Plan Approval Required.

No permits shall be issued, no construction of or addition to any structure shall take place, and no land use for which site plan approval is required shall be established or expanded until all required site plans have been approved in accordance with this Section and Ordinance. Except as permitted in accordance with this Section, no grading, grubbing, cutting of trees or other vegetation, excavation, landfilling, or construction of improvements shall commence for any development for which site plan approval is required until all required site plans have been approved in accordance with the following:

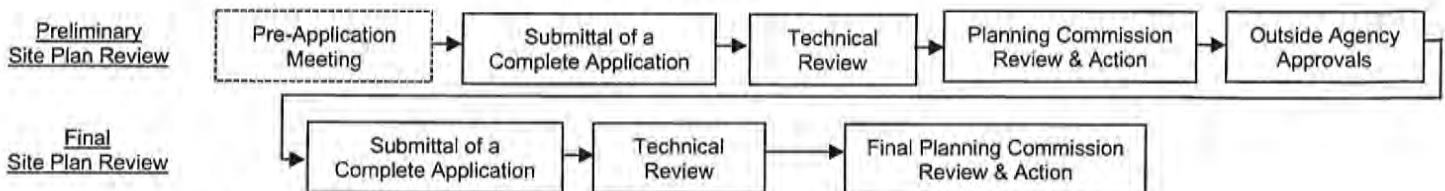
Site Plan Approval Required	Type of Approval Required			
	Preliminary Site Plan	Final Site Plan	Minor Site Plan	Exempt
Adult foster care large group homes, group child day care homes, and home-based limited businesses subject to special use permit approval in the zoning district per Section 3.			✓	
All other land uses subject to special use permit approval in the zoning district, and all land uses for which site plan approval is otherwise required by provisions of this Ordinance.	✓	✓		
Farm-based tourism and entertainment activities (agri-tourism), public stables, permanent auction facilities, and religious institutions as allowed in the Agricultural (AG) District per Section 3.	✓	✓		
Private off-road courses as allowed in the Agricultural (AG) District per Section 3.			✓	
Customary agricultural operations, private stables, and greenhouses as allowed in the Agricultural (AG) and Rural Residential (R-1) zoning districts per Section 3, provided that the structures and improvements shall conform to all applicable Ordinance standards.				✓
Construction, relocation or alteration of a two family (duplex) dwelling, detached single family dwelling or customary accessory structures on a single lot, provided that the structures and improvements shall conform to all applicable Ordinance standards.				✓

Site Plan Approval Required	Type of Approval Required			
	Preliminary Site Plan	Final Site Plan	Minor Site Plan	Exempt
Home occupations that conform to the requirements of Section 6.19.				✓
Family day care homes, adult foster care family homes and small group homes, and child foster family homes and family group homes, as licensed by the State of Michigan.				✓
Multiple-family residential buildings and uses, independent or dependent senior housing, assisted living facilities, nursing homes; homes for the aged, and religious institutions as allowed in the Residential Districts per Section 3.	✓	✓		
All land uses allowed in the Business Districts and Industrial Districts per Section 3.	✓	✓		
All planned unit development (PUD) projects, as approved by the Township Board in accordance with Section 3.18.	✓	✓		
Construction or expansion of buildings, equipment storage yards, and associated above-ground site improvements occupied by or intended for occupancy by essential services in any zoning district.	✓	✓		
The improvement, expansion, extension or abandonment of public or private overhead or underground utility lines or easements.				✓
Any development which would, if approved, provide for the establishment of more than one principal use or building on a lot.	✓	✓		
Establishment or alteration of a condominium subdivision of an existing building into separate units in accordance with the Condominium Act and Section 5.1 of this Ordinance provided that no new construction or alteration of existing buildings or site improvements are proposed or required, and compliance with the requirements and standards of this Ordinance will not be affected.			✓	
Establishment or alteration of any other condominium subdivision in accordance with the Condominium Act and Section 5.1.	✓	✓		
A change in use for an existing multiple-family, mixed use or non-residential building where the Zoning Administrator has determined that no new construction or alteration of the building or site improvements are required and compliance with the requirements and standards of this Ordinance will not be affected.			✓	
Any other change in use for an existing multiple-family, mixed use or non-residential building.	✓	✓		
Expansion of an existing multiple-family, mixed use or non-residential principal building of up to ten percent (10%) of the gross floor area, and any alterations that affect the exterior appearance, pedestrian access or function of the building without a floor area increase.			✓	
Expansion of an existing multiple-family, mixed use or non-residential principal building exceeding ten percent (10%) of the gross floor area.	✓	✓		
Relocation of a multiple-family, mixed use or non-residential building.	✓	✓		
Establishment or alteration of a multiple-family, mixed use or non-residential accessory use or structure where the Zoning Administrator has determined that compliance with the requirements and standards of this Ordinance will not be affected.			✓	
Any other establishment or alteration of any other multiple-family, mixed use or non-residential accessory use or structure,	✓	✓		
Expansion of any multiple-family, mixed use or non-residential off-street parking facility by up to 2,750 square feet.			✓	

Site Plan Approval Required	Type of Approval Required			
	Preliminary Site Plan	Final Site Plan	Minor Site Plan	Exempt
Expansion of any multiple-family, mixed use or non-residential off-street parking facility exceeding 2,750 square feet.	✓	✓		
Construction, extension or alteration of a private road, as authorized by Ord. No. 2009-09, that is located outside of a subdivision plat.	✓	✓		
Incidental changes during construction due to unanticipated site constraints or outside agency requirements, and minor landscaping changes or species substitutions, consistent with an approved final site plan.			✓	
Incidental building modifications that do not significantly alter the facade, height or floor area of a multiple-family, mixed use or non-residential building.			✓	
Changes to a site required to comply with State Construction Code requirements.			✓	
Sidewalk or pedestrian pathway construction, or barrier-free improvements.			✓	
Construction of fences, exterior lighting improvements, or installation of screening around a waste receptacle, mechanical unit or similar equipment for a multiple-family, mixed use or non-residential use.			✓	
Re-occupancy of an existing multiple-family, mixed use or non-residential building that has been vacant for more than 365 calendar days, provided that no variances to the requirements of this Ordinance are required and the proposed use will be conducted within a completely enclosed building, and will not require access changes or other substantial modifications to the existing site.			✓	

1. Extraction operations. For extraction operations as authorized under the Township's Extraction Ordinance No. 20-01, Planning Commission approval of an Extraction Permit and associated mining and reclamation plans shall also constitute site plan approval for the use under this Ordinance.
2. Mobile home parks. Construction, expansion or alteration of a mobile housing park shall be subject to preliminary plan approval in accordance with Section 3.12 and the procedures and standards established under Section 11 of the Mobile Home Commission Act (Public Act 96 of 1987, as amended), as summarized below:
 - a. The preliminary plan shall include the location, layout, general design, and general description of the project. The preliminary plan shall not include detailed construction plans.
 - b. In preparing the preliminary plan and when reviewing the plan, the developer and Planning Commission shall generally follow the review procedure outlined in this Section for preliminary site plan approval, where applicable, except where pre-empted by requirements of the Mobile Home Commission Act or Manufactured Housing Rules.
 - c. Pursuant to Section 11 of the Mobile Home Commission Act, the Planning Commission shall take action on the preliminary plan within 60 days after the Township officially receives the plan.

D. Summary of the Site Plan Review Processes.



NOTE: Applicant may combine preliminary and Final Site Plan Review, per Section 14.2(M)

P. Required Site Plan Information.

The following minimum information shall be included with any application for site plan approval, except where the Township Planner, Zoning Administrator or Planning Commission determines that an item of information is not applicable or necessary for review of the site plan:

Minimum Site Plan Information	Minor Site Plan	Preliminary Site Plan	Final Site Plan
SITE PLAN DESCRIPTIVE INFORMATION			
Name, address, and other contact information for the applicant and property owners, along with proof of ownership and signed consent if applicant is not the owner.	●	●	●
Name, address, and other contact information of the firm or individual preparing the site plan. Site plans prepared by an architect, community planner, engineer, landscape architect or land surveyor shall bear the individual's professional seal.	●	●	●
A final site plan shall be prepared and sealed by an architect, engineer, landscape architect or land surveyor registered in the State of Michigan.			●
Location, address(es), and tax identification number(s) of subject parcel(s); dimensions of the site, and the gross and net land area.	●	●	●
Legal description(s) of the subject parcel(s).		●	●
Legal description of the proposed development site and any non-contiguous open space area(s), if different from the subject parcel(s), with lot line angles or bearings indicated on the plan. Dimensions, angles, and bearings shall be based upon a boundary survey prepared by a registered surveyor.		●	●
Details of existing and proposed covenants or other restrictions imposed upon land or buildings, including bylaws, deed restrictions, and articles of incorporation for a cooperative, condominium, or homeowners' association.			●
Description of applicant's intentions regarding selling or leasing of all or portions of land, dwelling units or building spaces.		●	●
Residential projects: Gross and net dwelling unit density, lot area per dwelling unit, and a schedule of the number, sizes (bedrooms, floor areas), and types of dwellings.		●	●
A detailed use statement describing proposed use(s); including land or building areas for each use, number of units, number of anticipated employees, or other applicable information to verify Ordinance compliance.	●	●	●
SITE PLAN DATA AND NOTES			
Minor site plans shall be drawn to a scale appropriate for the sheet size and of such accuracy that the Zoning Administrator can readily interpret the plan.	●		
Preliminary and final site plans shall be drawn to an engineer's scale not greater than 1:50 and legible at the required sheet size. For a large development shown in sections on multiple sheets, one overall composite sheet shall be provided for clarity.		●	●
Vicinity map showing the general location of the site, map scale, north arrow, initial plan date, and any revision date(s).	●	●	●
Existing zoning classification(s) for the subject parcel(s) and surrounding parcels (including across road rights-of-way).		●	●
Owners' names, existing uses, and location of structures, drives, and improvements on surrounding parcels (including across rights-of-way).		●	●
Identification of all adjacent property in which the applicant(s), developer(s), or owner(s) have an ownership interest.		●	●
Dimensions of all property boundaries and interior lot lines.	●	●	●
Calculations for parking, lot coverage, total ground floor area, and other applicable Ordinance requirements.	●	●	●

Minimum Site Plan Information	Minor Site Plan	Preliminary Site Plan	Final Site Plan
EXISTING CONDITIONS			
Location of existing structures, fences, and driveways on the subject property, with notes regarding their preservation or alteration.	●	●	●
Location of existing walls, signs, utility poles and towers, pipelines, excavations, bridges, culverts, and other site features on the subject property, with notes regarding their preservation or alteration.		●	●
SITE PLAN DETAILS			
Delineation of required yards, and other setback areas and open space.	●	●	●
Identification of general location(s) and area(s) of each development phase; and the planned construction program and schedule for each development phase.		●	●
Location, width, purpose, and description of all existing and proposed easements and rights-of-way on or adjacent to the site.	●	●	●
Location, type, area, height, and lighting specifications of proposed signs.	●		●
An exterior lighting plan with all existing and proposed lighting locations, heights from grade, specifications, lamps types, and methods of shielding.	●		●
Location, area, and dimensions of any outdoor sales, display or storage areas.	●	●	●
Location of proposed outdoor waste receptacle enclosures; with size, elevation, and vertical cross-section showing materials and dimensions; indication how recycling will be implemented.		●	●
BUILDING DESIGN AND ORIENTATION			
Location, outline, ground floor area, and height of proposed structures; and of existing structures to remain on-site.	●	●	●
Dimensions, number of floors, and gross and net floor area of proposed principal buildings; and of existing principal buildings to remain on-site.		●	●
Separation distances between adjacent buildings, and between buildings and adjacent lot boundaries.		●	●
Detailed exterior building façade elevation drawings for all proposed dwellings, principal buildings, and additions, drawn to an appropriate scale and indicating types, colors, and dimensions of finished wall materials.		●	●
Finished floor elevations and contact grade elevations for proposed principal buildings and existing principal buildings to remain on-site, referenced to a common datum acceptable to the Township Engineer.			●
ACCESS AND CIRCULATION			
Locations, layout, surface type, centerlines, road pavement and right-of-way widths, and indication of public or private road status for all existing and proposed roads and access drives serving the site.		●	●
Conceptual locations, layout, and surface type for all parking lots, sidewalks, and pedestrian pathways within and accessing the site.	●	●	●
Locations and dimensions of vehicle access points, and distances between adjacent or opposing driveways and road intersections.	●	●	●
Details of the location, width, and paving of proposed sidewalks and pedestrian ways, including alignment, cross section, connections to existing or planned off-site facilities, and easement or right-of-way dedications.	●		●
Parking space dimensions, pavement markings, and traffic control signage.	●	●	●

Minimum Site Plan Information	Minor Site Plan	Preliminary Site Plan	Final Site Plan
Parking space angles; maneuvering aisle, island, and median dimensions; surface type; fire lanes; drainage patterns; location of loading areas; and typical cross-section showing surface, base, and sub-base materials.		●	●
Identification of proposed names for new public or private roads serving the site.		●	●
Spot elevations for existing roads on and adjacent to the subject parcel(s), including surface elevations at intersections with the internal roads and drives serving the proposed development; curve-radii and road grades; location and details of curbs, and turning lanes; and typical road cross sections showing surface, base, and sub-base materials and dimensions.			●
NATURAL FEATURES AND OPEN SPACE AREAS			
A general description and preliminary delineation of existing natural features on and abutting the site.		●	●
Details of all existing natural features on the site; indications of features to be preserved, removed, or altered; and any mitigation measures as may be required by Township ordinance or state statute.			●
Outdoor open space and recreation areas; location, area, and dimensions.		●	●
Description of the organization that will own and maintain open space and recreation areas, and a long-term maintenance plan for such areas.			●
SCREENING AND LANDSCAPING			
General layout of proposed landscaping and screening improvements; including plantings, topographic changes, and similar features.	●	●	●
A detailed landscape plan, including location, size, quantity and type of proposed plant materials and any existing plant materials to be preserved.			●
Planting list for all landscape materials, with the method of installation, botanical and common name, quantity, size, and height at planting.			●
Landscape maintenance plan, including notes regarding replacement of dead or diseased plant materials.			●
Proposed fences, walls, and other screening devices, including typical cross section, materials, and height above grade.	●	●	●
Screening methods for any waste receptacle areas, ground-mounted generators, transformers, mechanical (HVAC) units, and similar devices.	●	●	●
UTILITIES, STORMWATER MANAGEMENT, AND GRADING			
General layout of existing and proposed water supply systems, sanitary sewerage or septic systems, and stormwater management facilities.		●	●
Details of the location, layout, and size or capacity of the existing and proposed potable water supply and sewage treatment and disposal facilities serving the site, including line sizes, inverts, hydrants, flow patterns, manholes, and catch basins.			●
Location, size, and slope of proposed detention or retention ponds; and location and size of underground tanks and drain lines where applicable.			●
Calculations for capacity of stormwater management and drainage facilities.			●
Location and size of existing and proposed telephone, gas, electric, and similar utility lines and surface-mounted equipment.			●
General areas of intended filling or cutting.		●	●
Directional arrows showing existing and proposed drainage patterns on the lot.	●		●

Minimum Site Plan Information	Minor Site Plan	Preliminary Site Plan	Final Site Plan
A detailed grading plan, with details of proposed filling or cutting, existing and proposed topography at a minimum of two (2) foot contour levels, stormwater runoff drainage patterns, and a general description of grades within 100 feet of the site. All finished contour lines are to be connected to existing contour lines within the site or at the parcel boundaries.			●
Locations, dimensions, and materials of proposed retaining walls, with fill materials and typical vertical sections.		●	●
Description of measures to control soil erosion and sedimentation during construction operations, and until permanent groundcover is established.			●
Other information as requested by the Township Planner, Zoning Administrator or Planning Commission to verify compliance with the standards and conditions imposed by this Ordinance, the policies of the Township Master Plan, and other applicable Township ordinances or state statutes.	●	●	●

Q. Expiration and Extension of Site Plan Approval.

Site plan approvals shall expire and may be extended in accordance with the following:

1. Expiration of preliminary site plan approval. Approval of a preliminary site plan shall be valid for a period of 545 calendar days from the date of approval and shall expire and be of no effect unless an application for final site plan approval for all or part of the area included in the approved preliminary site plan is filed with the Township Clerk within that time period.
2. Expiration of final site plan approval. A final site plan shall expire and be of no effect unless construction has begun on the property and is diligently pursued in conformance with the approved final site plan within 545 calendar days of the final site plan approval.
3. Extension of preliminary or final site plan approval. The Planning Commission may, at its discretion and upon written request and showing of good cause by the applicant, grant an extension of a preliminary or final site plan approval for up to 365 calendar days, provided that site conditions have not changed in a way that would affect the character, design or use of the site, and that the approved site plan remains in conformance with applicable provisions of this Ordinance.
4. Expiration of Minor Site Plan Approval. A minor site plan shall expire and be of no effect unless, within 365 calendar days of approval, appropriate permits have been approved, construction has begun on the property, and such work is diligently pursued in conformance with the approved minor site plan. No extensions of minor site plan approval shall be granted by the Zoning Administrator.

R. Phasing of Development.

The applicant may divide the development into two (2) or more phases. Phasing shall be subject to the following requirements:

1. In the case of a phased development, the preliminary site plan shall cover the entire property involved and shall clearly indicate the location, size, and character of each phase.
2. In the case of a phased development, a final site plan shall be submitted for review and approval for each phase.
3. A phase shall not be dependent upon subsequent phases for safe and convenient vehicular and pedestrian access, adequate utility services, or open spaces and recreation facilities, and shall be capable of substantial occupancy, operation, and maintenance upon completion of construction and development.
4. The Township Planner or Planning Commission may require the applicant to post an acceptable performance guarantee to ensure that vehicular and pedestrian ways, utility services, open space and recreation facilities, and other amenities and infrastructure planned for later phases of the development are completed in a timely fashion.

S. Standards for Site Plan Approval.

In reviewing a minor, preliminary or final site plan, the Zoning Administrator or Planning Commission shall determine that the following standards are met, as applicable to the type of site plan:

Standards for Site Plan Approval	Minor Site Plan	Preliminary Site Plan	Final Site Plan
The applicant is legally authorized to apply for site plan approval, and all required information has been provided.	●	●	●
The proposed development conforms to the applicable standards and conditions imposed by this Ordinance and other applicable Township ordinances.	●	●	●
The final site plan is consistent with the policies of the Master Plan and other adopted Township planning documents, and with the approved preliminary site plan.			●
The proposed development will be harmonious with and not harmful, injurious, or objectionable to the environment or land uses in surrounding area.	●	●	●
The proposed development respects natural topography, floodways, and floodplains; and minimizes the amount and extent of cutting and filling.		●	●
Organic, wet, or other soils that are not suitable for development will be undisturbed or modified in such fashion as to make development feasible.		●	●
The movement of the vehicular and pedestrian traffic within the site and in relation to access streets and sidewalks will be safe and convenient.	●	●	●
The proposed development is adequately coordinated with improvements serving the area, and with other existing or planned development in the vicinity.		●	●
Satisfactory and harmonious relationships will exist between the proposed development and the existing and planned development of contiguous lands and the surrounding area, including provisions for proper extensions of public roads and sidewalks through the development in accordance with the Township ordinances.		●	●
Development phases are in logical sequence so that any phase will not depend upon a subsequent phase for access, utilities, drainage or erosion control.		●	●
The plan, including all engineering drawings, meets Township standards for fire and police protection, water supply, sewage disposal or treatment, storm drainage, and other public facilities and services.			●
The drainage plan conforms to applicable drainage and stormwater management standards, and any proposed improvements are adequate to handle anticipated stormwater runoff and accommodate upstream drainage without causing undue runoff on to neighboring property or overloading of area watercourses.			●
Proposed screening, buffering, and landscaping improvements are adequate for the location and intended purpose and conform to the standards of this Ordinance.	●		●
Exterior lighting conforms to Ordinance requirements and standards, and will not adversely affect adjacent or neighboring properties or traffic on adjacent roads.	●		●
The parking layout and vehicular circulation patterns and access points to the site are adequate to serve the proposed uses and will not adversely affect the flow of traffic on adjacent roads or create pedestrian-vehicle conflicts.	●		●
Grading or filling will not destroy or adversely affect the character of the property, adjacent properties or the surrounding area.			●
Erosion will be controlled during and after construction and will not adversely affect adjacent or neighboring property or public facilities or services.			●
The plan meets applicable standards of governmental agencies with jurisdiction, and necessary outside agency approvals have been obtained or are assured.	●		●

PERMIT INFORMATION CHECKLIST FOR FINAL SITE PLANS

Michigan.gov/EGLEpermits

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has prepared a list of key questions to help identify what EGLE permits, licenses, or approvals of a permit-like nature may be needed. By contacting the appropriate offices indicated, you will help reduce the possibility that your project or activity will be delayed due to the untimely discovery of additional permitting requirements later in the construction process. While this list covers the existence of permits and approvals required from EGLE, it is not a comprehensive list of all legal responsibilities. A useful way to learn whether other requirements will apply is to go through the Self-Environmental Assessment in the Michigan Guide to Environmental, Health, and Safety Regulations, online at: Michigan.gov/EHSGuide. Please call the Environmental Assistance Center at 800-662-9278 to talk with any of the EGLE programs noted below. [insertions and edits by Union Township]

How Do I Know that I Need a State of Michigan, County or Local Permit or Approval?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1) Will your business involve the installation or construction of any process equipment that has the potential to emit air contaminants (e.g. dry sand blasting, boilers, standby generators)? Air Quality Permit to Install, Air Quality Division (AQD), <u>Permit Section</u>	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
2) Does the project involve renovating or demolishing all or portions of a building? Notification is required for asbestos removal and required for all demolitions even if the structure never contained asbestos. Asbestos Notification, AQD, <u>Asbestos Program</u> , 517-284-6777	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
3) Please consult the <u>Permitting at the Land and Water Interface Decision Tree document</u> to evaluate whether your project needs a land and water management permit (i.e., Does the project involve filling, dredging, placement of structures, draining, or use of a wetland?). Land and Water Featured Programs (Water Resources Division - WRD) - <u>Joint Permit Application</u> , 517-284-5567:		
a. Does the project involve construction of a building or septic system in a designated Great Lakes high risk erosion area?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
b. Does the project involve dredging, filling, grading, or other alteration of the soil, vegetation, or natural drainage, or placement of permanent structures in a designated environmental area?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
c. Does the project propose any development, construction, silvicultural activities or contour alterations within a designated critical dune area?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
d. Does the project involve construction of a dam, weir or other structure to impound flow?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
4) Does the project involve an earth change activity (including land balancing, demolition involving soil movement, and construction) or does the project involve construction which will disturb one or more acres that come into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water? Union Township and Isabella County	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>
5) Does the project involve the construction or alteration of a water supply system? Union Township Public Services Department and <u>Drinking Water & Environmental Health Division (DWEHD)</u> , 517-284-6524	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>
6) Does the project involve construction or alteration of any sewage collection or treatment facility? Union Township Public Services Department and WRD, Part 41 Construction Permit Program (staff), 906-228-4527, or <u>EGLE District Office</u>	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>
7) Public Swimming Pool Construction (Spas/Hot Tubs) Permits: Will your business involve the construction or modification of a public swimming pool, spa or hot tub? Union Township and <u>Public Swimming Pool Program</u> , 517-284-6541, or <u>EGLE District Office</u>	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
8) Does the project involve the construction or modification of a campground? Union Township and <u>DWEHD,Campgrounds program</u> , 517-284-6529	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>

9) Does the project involve construction of a facility that landfills, transfers, or processes of any type of solid non-hazardous waste on-site, or places industrial residuals/sludge into or onto the ground? Materials Management Division (MMD), <u>Solid Waste</u> , 517-284-6588, or <u>EGLE District Office</u>	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
10) Does the project involve the construction of an on-site treatment, storage, or disposal facility for hazardous waste? MMD, Hazardous Waste Section, <u>Treatment, Storage and Disposal</u> , 517-284-6562	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
Who Regulates My Drinking (Potable) Water Supply?		
11) I am buying water from the municipal water supply system Contact the Union Township Public Services Dept.	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>
12) I have a Non-Community Water Supply (Type II) <u>Guide</u> , <u>Contact (District or County) Local Health Department</u> , 517-485-0660	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
13) I am a community water supply (Type I) <u>Community Water Supply</u> , <u>DWEHD District Office Community Water Supply Program</u> , 517-284-6512	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
14) Do you desire to develop a <u>withdrawal of over 2,000,000 gallons of water per day</u> from any source including groundwater, inland surface water, or the Great Lakes and their connecting waterways? WRD, Great Lakes Shorelands Unit, Water Use Program, 517-284-5563	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
Who Regulates My Wastewater Discharge System?		
15) NPDES: Does the project involve the discharge of any type of wastewater to a storm sewer, drain, lake, stream, or other surface water? WRD, <u>EGLE District Office</u> , or <u>National Pollutant Discharge Elimination (NPDES) Permit Program</u> , 517-284-5568	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
16) Does the facility have industrial activity that comes into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water? WRD, <u>Permits Section</u> , or <u>EGLE District Office</u> , 517-284-5588	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
17) Does the project involve the discharge of wastewaters into or onto the ground (e.g. subsurface disposal or irrigation)? WRD, <u>Groundwater Permits Program</u> , 517-290-2570	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
18) Does the project involve the drilling or deepening of wells for waste disposal? <u>Oil, Gas and Minerals Division (OGMD)</u> , 517-284-6841	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
What Operational Permits Are Relevant to My Operation and Air Emissions?		
19) Renewable Operating Permit: Does your facility have the potential to emit any of the following: 100 tons per year or more of any criteria pollutant; 10 tons per year or more of any hazardous air pollutant; or 25 tons per year or more of any combination of hazardous air pollutants? AQD, <u>Permit Section</u> , 517-284-6634	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
20) Does your facility have an electric generating unit that sells electricity to the grid and burns a fossil fuel? AQD, <u>Acid Rain Permit Program</u> , 517-780-7843	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
What Operational Permits Are Relevant to My Waste Management?		
21) Does the project involve landfilling, transferring, or processing of any type of solid non-hazardous waste on-site, or placing industrial residuals/sludge into or onto the ground? <u>MMD</u> , 517-284-6588 or <u>EGLE District Office</u>	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
22) Does the project involve the on-site treatment, storage, or disposal of hazardous waste? MMD, <u>Hazardous and Liquid Waste</u> , 517-284-6562	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
23) Does the project require a site identification number (EPA number) for regulated waste activities (used oil, liquid waste, hazardous waste, universal waste, PCBs)? (<u>Hazardous Waste Program Forms & License Applications</u>) MMD, <u>EGLE District Office</u> , 517-284-6562	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>

24) Does the project involve the receipt, possession, manufacture, use, storage, transport, transfer, release, or disposal of radioactive material in any form? MMD, <u>Radioactive Material and Standards Unit</u> , 517-284-6581	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
25) Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background? MMD <u>Radioactive Material and Standards Unit</u> , 517-284-6581	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
26) Does the project involve the generation of medical waste or a facility that treats medical waste prior to its disposal? MMD, <u>Medical Waste Regulatory Program</u> , 517-284-6594	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
What Sector-Specific Permits May be Relevant to My Business?		
Transporters	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
27) Does the project involve the <i>transport</i> of some other facility's non-hazardous liquid waste? MMD, <u>Transporter Program</u> , 517-284-6562	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
28) Does the project involve the <i>transport</i> of hazardous waste? MMD, <u>Transporter Program</u> , 517-284-6562	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
29) Do you engage in the business of transporting bulk water for drinking or household purposes (except for your own household use)? DWEHD, <u>Water Hauler Information</u> , 517-284-6527	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
30) Does the project involve <i>transport</i> of septic tank, cesspool, or dry well contents or the discharge of septage or sewage sludge into or onto the ground? DWEHD, <u>Septage Program</u> , 517-284-6535	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
31) Do you store, haul, shred or process <i>scrap tires</i> ? MMD, <u>Scrap Tire Program</u> , 517-284-6586	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
Sectors	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
32) Is the project a <i>dry cleaning</i> establishment utilizing perchloroethylene or a flammable solvent in the cleaning process? AQD, <u>Dry Cleaning Program</u> , 517-284-6780	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
33) Does your <i>laboratory</i> test potable water as required for compliance and monitoring purposes of the Safe Drinking Water Act? <u>Laboratory Services Certifications</u> , 517-284-5424	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
34) Does the project involve the operation of a <i>public swimming pool</i> ? DWEHD, <u>Public Swimming Pools Program</u> , 517-284-6529	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
35) Does the project involve the operation of a <i>campground</i> ? Union Township and DWEHD, <u>Campgrounds</u> , 517-284-6529	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
What Permits Do I Need to Add Chemicals to Lakes and Streams?		
36) Are you applying a chemical treatment for the purpose of aquatic nuisance control (pesticide/herbicide etc.) in a water body (i.e. lake, pond or river)? WRD, <u>Aquatic Nuisance Control</u> , 517-284-5593	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
37) Are you applying materials to a water body for a water resource management project (i.e. mosquito control treatments, dye testing, or fish reclamation projects)? WRD, <u>Surface Water Assessment Section</u> , 517-331-5228	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>

Why would I be subject to Oil, Gas and Mineral Permitting?	
38) Do you want to operate a central production facility (applies to oil and gas production facilities where products of diverse ownership are commingled)? OGMD, <u>Petroleum Geology and Production Unit</u> , 517-284-6826	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
39) Does the project involve the removal of sand from a sand dune area within two (2) miles of a Great Lakes shoreline? OGMD, Minerals and Mapping Unit, <u>Sand Dune Mining Program</u> , 517-284-6826	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
40) Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background? MMD, <u>Radioactive Protection Programs</u> , 517-284-6581	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<u>Petroleum & Mining</u> , OGMD, 517-284-6826	
41) Does the project involve the diversion and control of water for the mining and processing of low-grade iron ore?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
42) Does the project involve the surface or open-pit mining of metallic mineral deposits?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
43) Does the project involve the mining of nonferrous mineral deposits at the surface or in underground mines?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
44) Does the project involve mining coal?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
45) Does the project involve changing the status or plugging of a mineral well?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
46) Does the project involve the drilling or deepening of wells for brine production, solution mining, storage, or as test wells?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>

Contact **Union Township** and EGLE Permits & Bonding, OGMD, 517-284-6841



**Site Plan Review Process:
Contact Information for
Outside Agencies**

Required Agency Contact Information

Mt. Pleasant Fire Department

Lt. Brad Doepker
804 E. High St.
Mt. Pleasant, MI 48858
Office: 989-779-5122
Cell Phone: 989-506-1442.
Email: bdoepker@mt-pleasant.org

Isabella County Drain Office – Stormwater Management

Timothy A. Warner, Project Manager
Rm 140, 200 N. Main Street
Mt. Pleasant, MI 48858
Ph# (989) 772-0911, ext. 222
Fax# (989) 779-8785
Email: twarner@isabellacounty.org

Charter Township of Union Department of Public Services

Kim Smith, Public Works Department Director
5228 South Isabella Road
Mt. Pleasant, MI 48858
Phone (989) 772-4600 ext. 224
Fax (989) 773-1988
ksmith@uniontownshipmi.com

Isabella County Road Commission

Patrick J. Gaffney, PE, Engineer Superintendent
2261 E. Remus Rd.
Mt. Pleasant, MI 48858
989-773-7131 x115
989-772-2371 fax
pgaffney@isabellaroads.com

Isabella County Transportation Commission

Rick Collins, Executive Director
2100 E. Transportation Dr.
Mt. Pleasant, MI 48858
Phone 989-773-6766
Fax 989-773-1873
rcollins@ictcbus.com

Optional Agency Contact Information

Michigan Transportation Department (Only required when work done in M-20 ROW) *

Ben Burrows
Mt. Pleasant TSC
1212 Corporate Drive
Mount Pleasant, MI 48858
989-775-6104 ext. 305
burrowsb@michigan.gov

City of Mt. Pleasant - Division of Public Works (Only required for Mt Pleasant city water/sewer) *

Stacie Tewari, P.E., LEED® AP
City Engineer
1303 N. Franklin Avenue
Mt. Pleasant, MI 48858
Phone: 989.779.5404
Fax: 989.772.6250
stewari@mt-pleasant.org

Isabella County Soil Erosion & Sedimentation Control

200 N. Main St.
Mt. Pleasant, MI 48858
989-317-4061

Central Michigan District Health Department

2012 E. Preston
Mt. Pleasant, MI 48858
989-773-5921

DTE

111 E. Pickard St.
Mt Pleasant, MI 48858
989-772-9061

Miss Dig

1-800-482-7171

FSPR
 30 Sept. 2021
 IA Project: 20190905



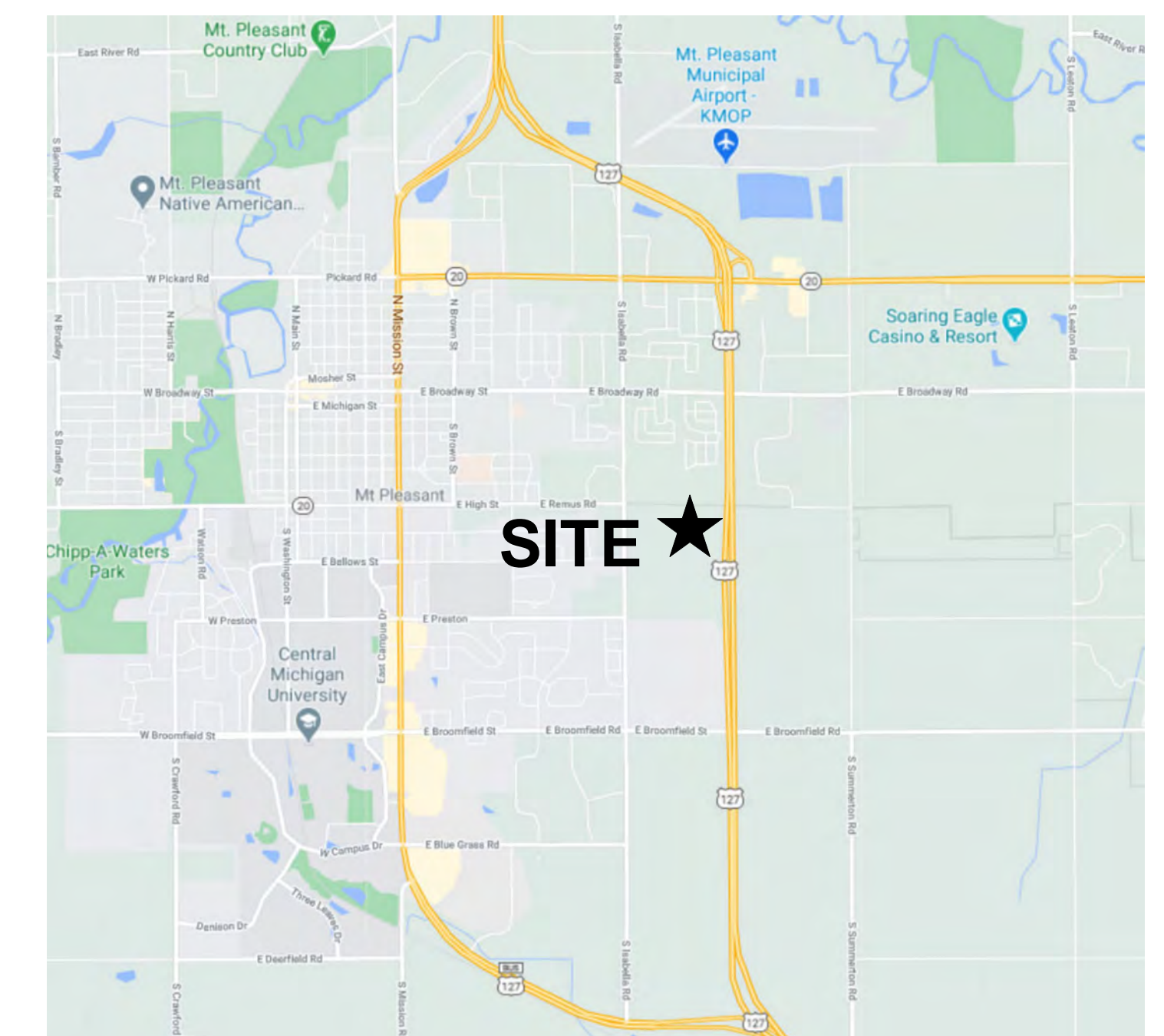
Isabella Sheriff's Office and Correction Facility

5270 East Remus Road
 Mount Pleasant, MI 48858

COVER SHEET - INDEX	
SHEET NUMBER	SHEET NAME
000	PROJECT COVER SHEET
001	PROJECT LOCATION
002	OVERALL SITE PERSPECTIVE
003	FLOOR PLANS
004	EXTERIOR MATERIAL - AERIAL VIEW
005	EXTERIOR MATERIAL - MAIN ENTRY
006	EXTERIOR ELEVATION
007	EXTERIOR ELEVATION
AS1-0	ARCHITECTURAL SITE PLAN
C100	CIVIL LEGEND
C101	CIVIL NOTES
C102	CIVIL DETAILS
C103	CIVIL DETAILS
C104	CIVIL DETAILS
C105	CIVIL DETAILS
C106	TYPICAL CROSS SECTIONS
C200	OVERALL SITE PLAN
C201	SITE PLAN
C202	GRADING PLAN
C203	GRADING POINT TABLES
C204	UTILITY PLAN
C205	REMUS ROAD PLAN
C206	REMUS ROAD PROFILE
C207	REMUS ROAD PLAN
C208	REMUS ROAD PROFILE
C209	WATER MAIN PLAN AND PROFILE
C210	WATER MAIN PLAN AND PROFILE
C211	WATER MAIN PLAN AND PROFILE
LP1-0	OVERALL SITE LANDSCAPE PLAN
LP1.1	SITE AERIAL PLAN
E100	FINAL SITE CALCULATIONS AND FIXTURE CUTSHEET
E101	FINAL SITE CALCULATIONS
E102	FINAL SITE CALCULATIONS
E103	FINAL SITE CALCULATIONS
E104	FINAL SITE CALCULATIONS

Integrated Architecture
 840 Ottawa Avenue NW
 Grand Rapids, MI 49503
 616.574.0220 P
 www.intarch.com

Aventure Architects
 212 NORTH 25TH STREET
 MILWAUKEE, WI 53233
 www.avarch.com



Owner:
 Isabella County
 200 N. Main St. Suite 205
 Mount Pleasant, MI 48858
 989.317.4058 P
 989.621.7352 C

Architect:
 Integrated Architecture
 4090 Lake Drive SE
 Grand Rapids, MI 49546
 616.574.0220 P
 616.574.0953 F

Design Architect:
 Venture Architects
 212 North 25th Street
 Milwaukee, WI 53233
 414.271.3359 P

Food Service & Laundry:
 Stewart Design
 2934 Fish Hatchery Road
 Suite 212
 Milwaukee WI 53713
 608.271.8554 P

Building Height and Area	
Two Floors	
Overall Height	25'-4"
First Floor Jail Area	39,706 NSF
First Floor Administration Area	15,475 NSF
First Floor Receiving/Maint. Area	4,221 NSF
Ground Floor Area	59,406 GSF
Second Floor Jail Area	8,978 NSF
Second Floor Area	16,852 GSF

Construction Manager:
 Clark Construction
 3535 Moores River Drive
 Lansing, MI 48911
 517.881.0401 C
 517.346.5691 P

Civil Engineer:
 Rowe Services
 127 S Main St
 Mt. Pleasant, MI 48858
 989.772.2138 P

Structural Engineer:
 JDH Engineering
 3000 Ivanrest SW
 Suite B
 Grandville, MI 49418
 616.531.6020 P

Technology & Security:
 CommTech Design
 6581 Belding Rd
 Suite 101
 Rockford, MI 49341
 616.433.7210 P
 616.446.4545 C

Isabella Sheriff's Office and
 Correction Facility

FSPR
 30 Sept. 2021
 IA Project: 20190905



E PICKARD ROAD

E BROADWAY RD

E REMUS RD

PROJECT SITE

S ISABELLA ROAD

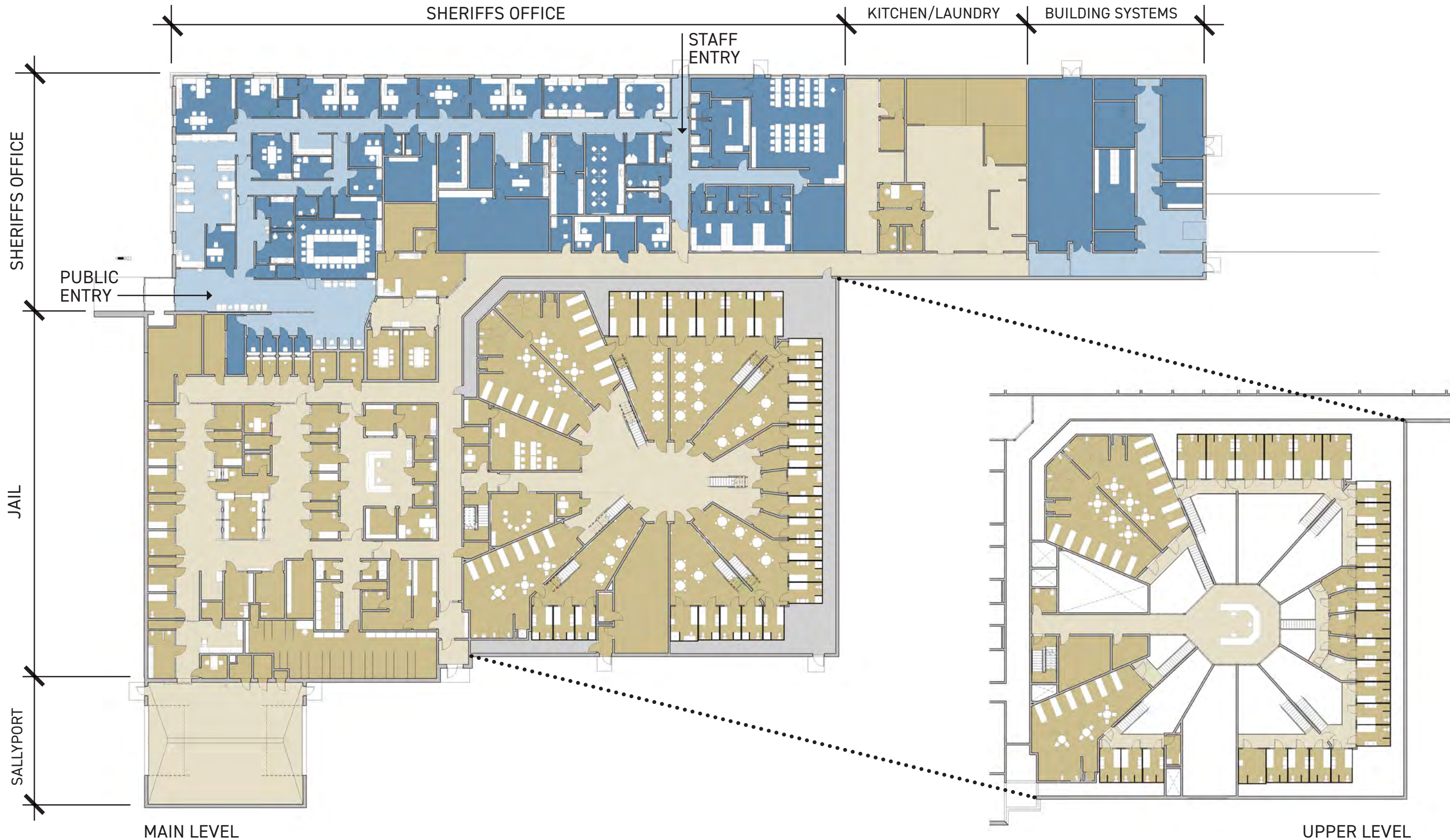
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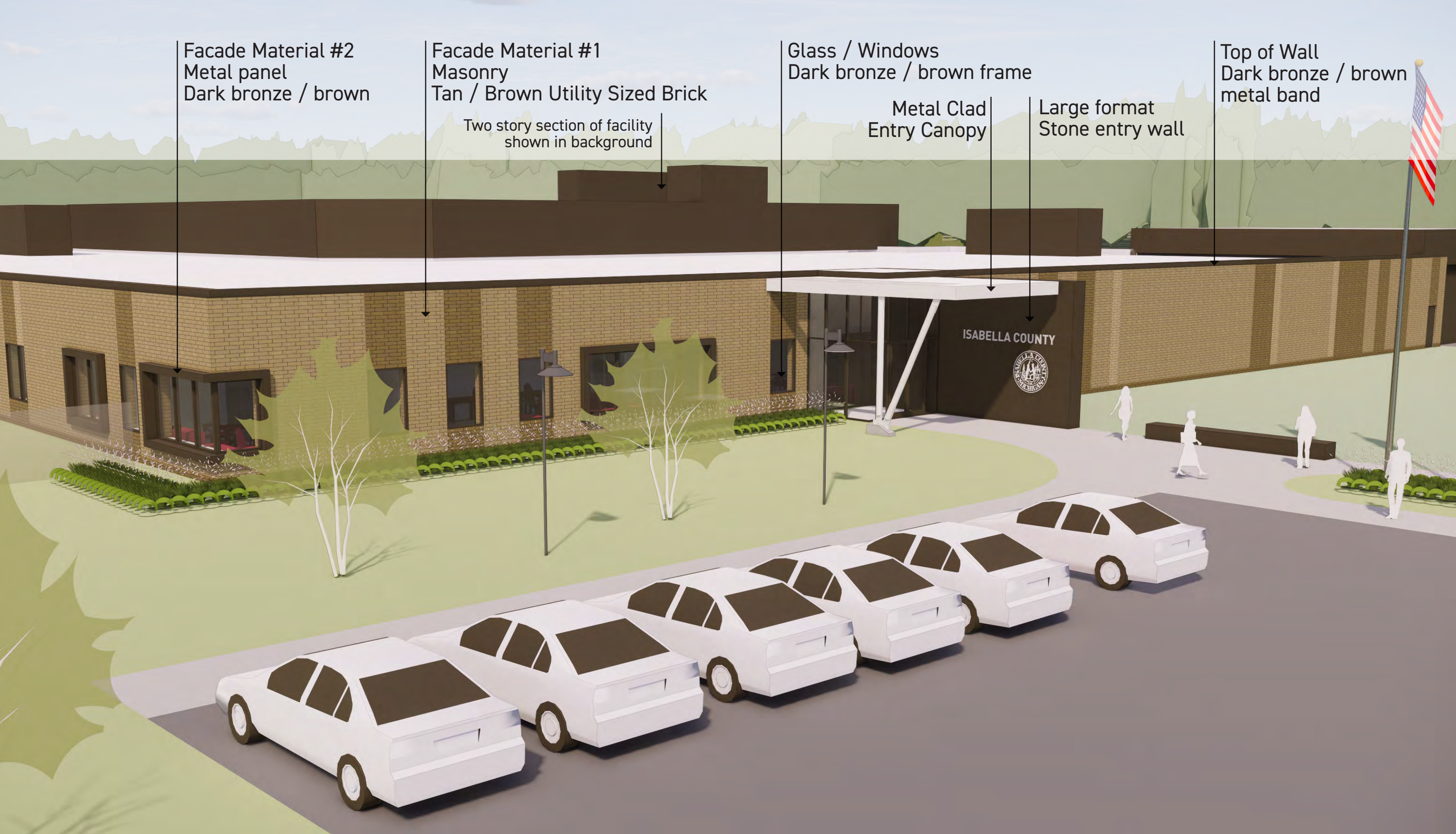


E REMUS RD

S ISABELLA ROAD

127





Facade Material #2
Metal panel
Dark bronze / brown

Facade Material #1
Masonry
Tan / Brown Utility Sized Brick


Glass / Windows
Dark bronze / brown frame

Top of Wall
Dark bronze / brown
metal band

Two story section of facility
shown in background

Metal Clad
Entry Canopy

Large format
Stone entry wall

ISABELLA COUNTY


Facade Material #2
Metal panel
Dark bronze / brown

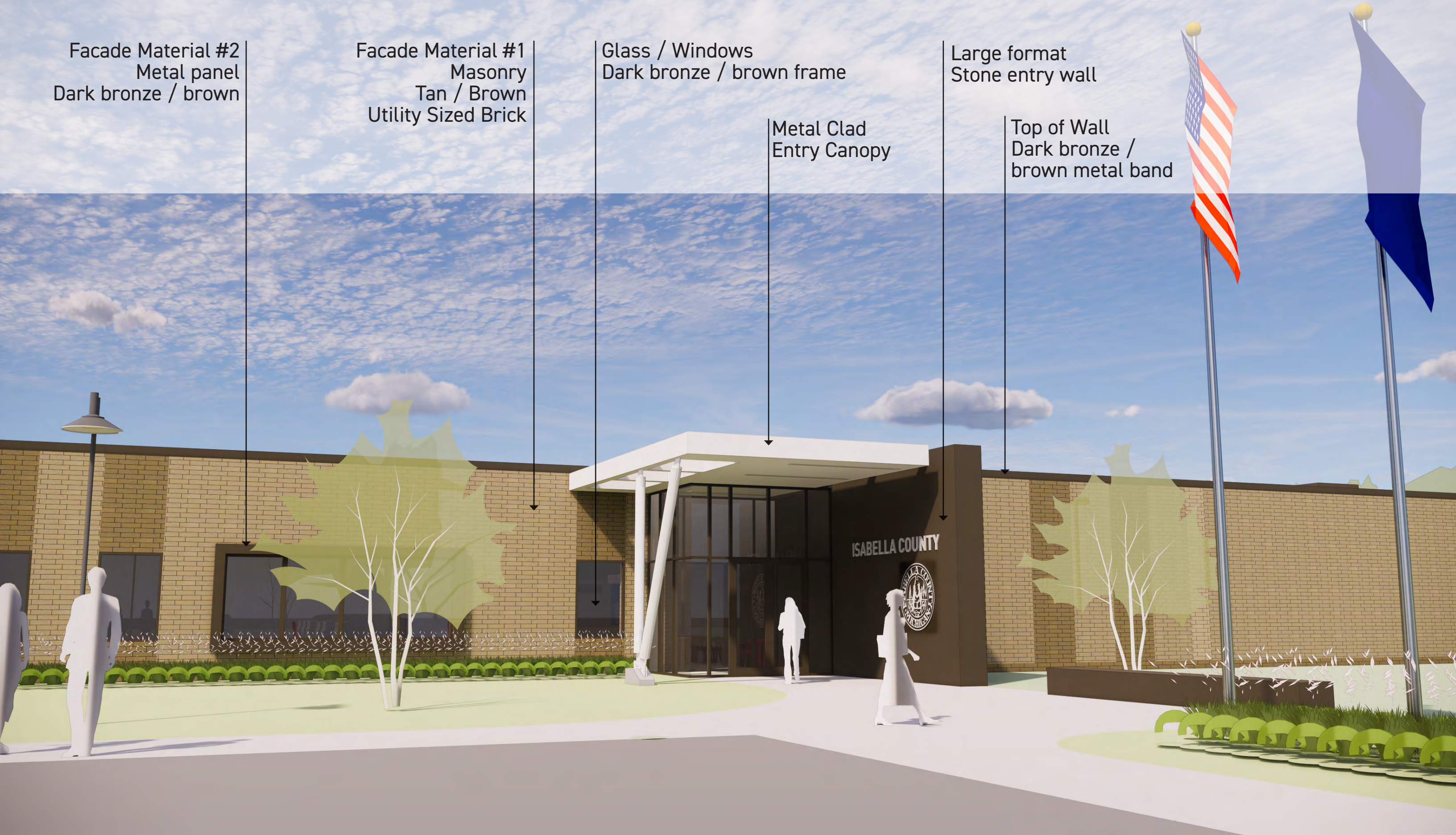
Facade Material #1
Masonry
Tan / Brown
Utility Sized Brick

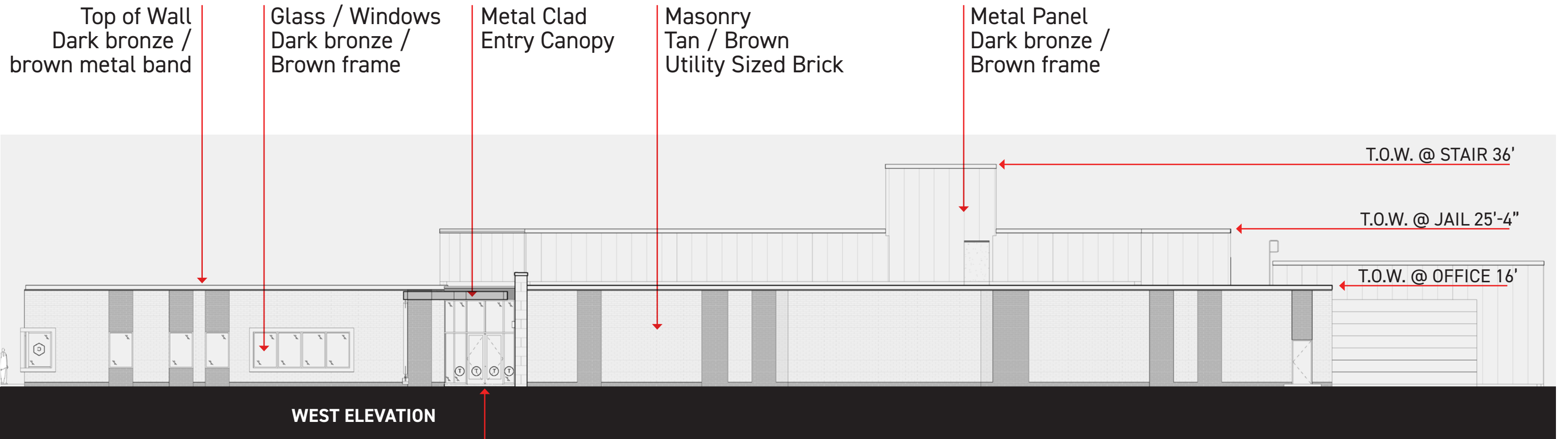
Glass / Windows
Dark bronze / brown frame

Large format
Stone entry wall

Metal Clad
Entry Canopy

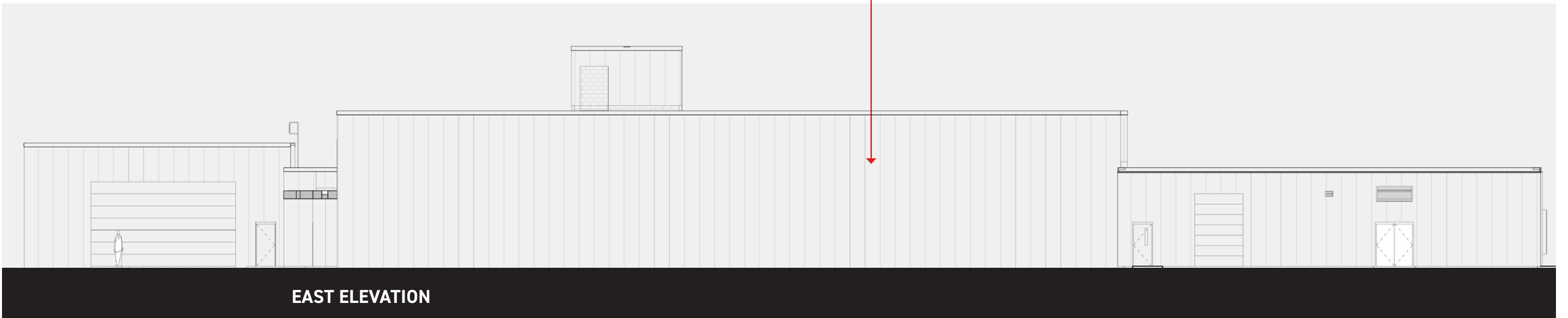
Top of Wall
Dark bronze /
brown metal band

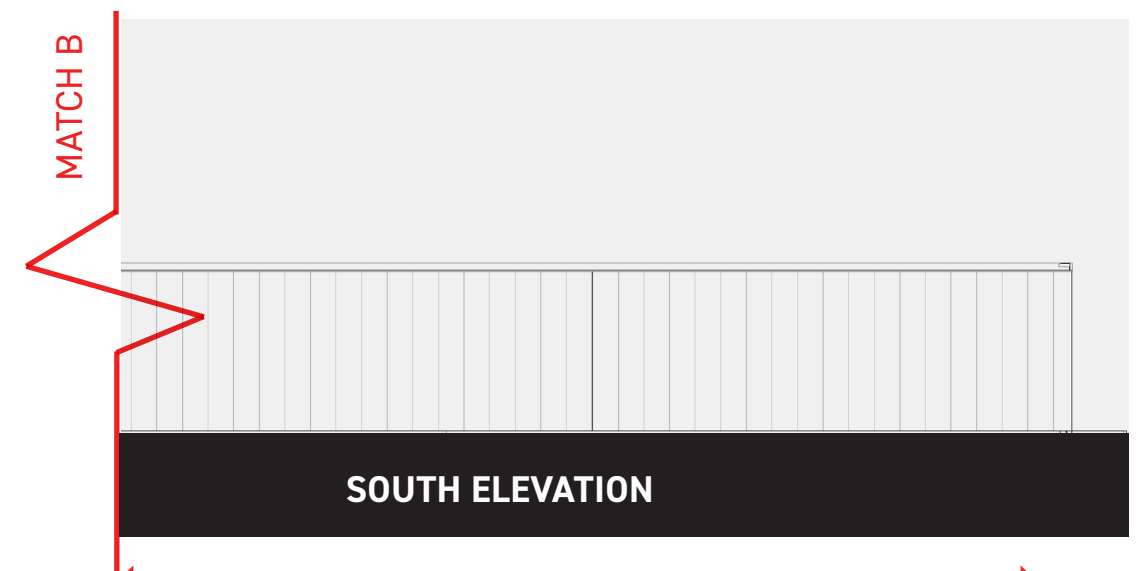
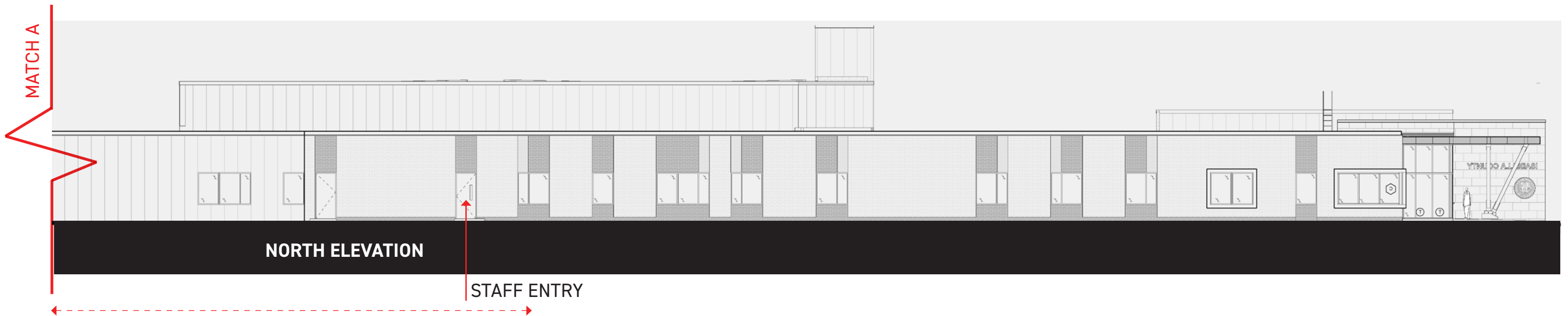




PUBLIC
ENTRY

Metal Panel
Dark bronze /
Brown





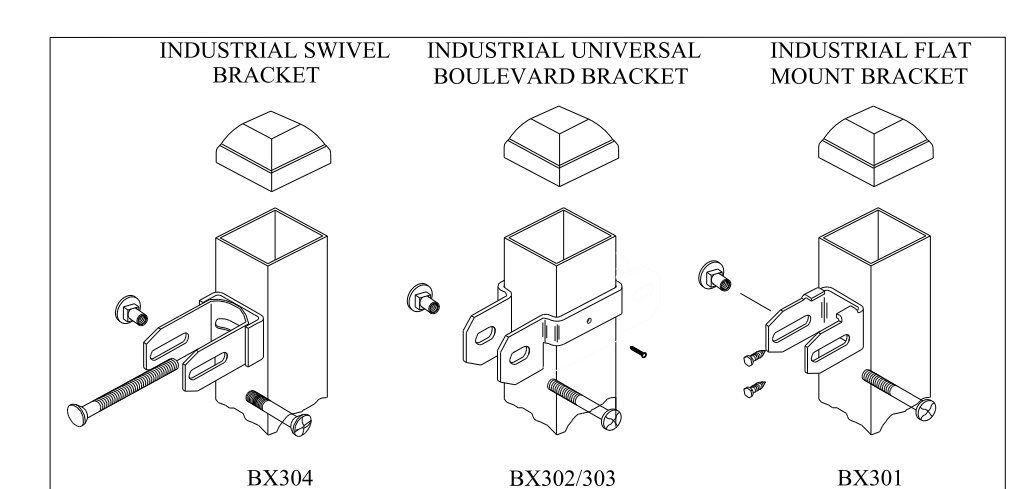
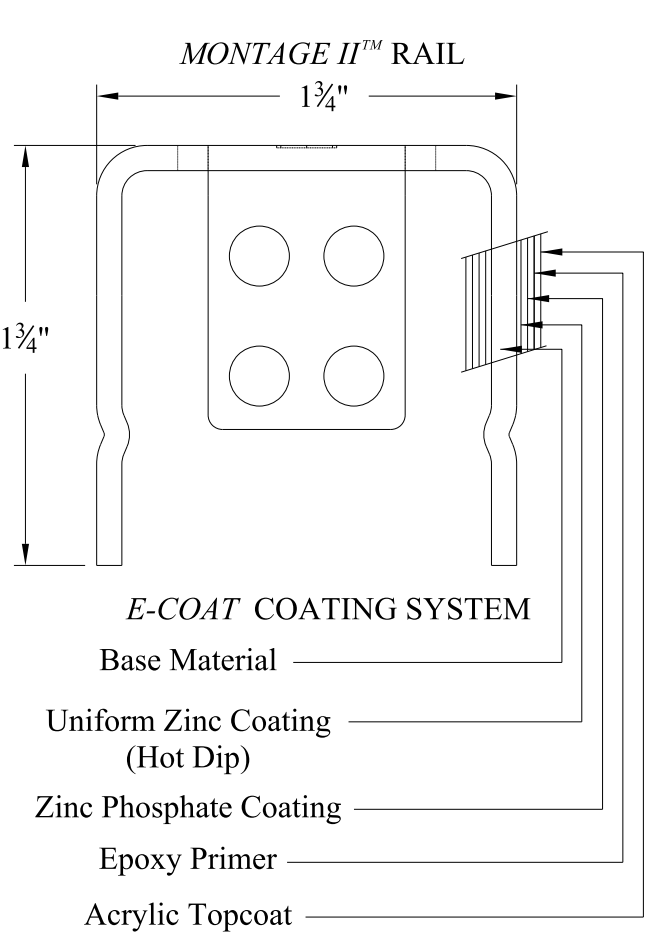
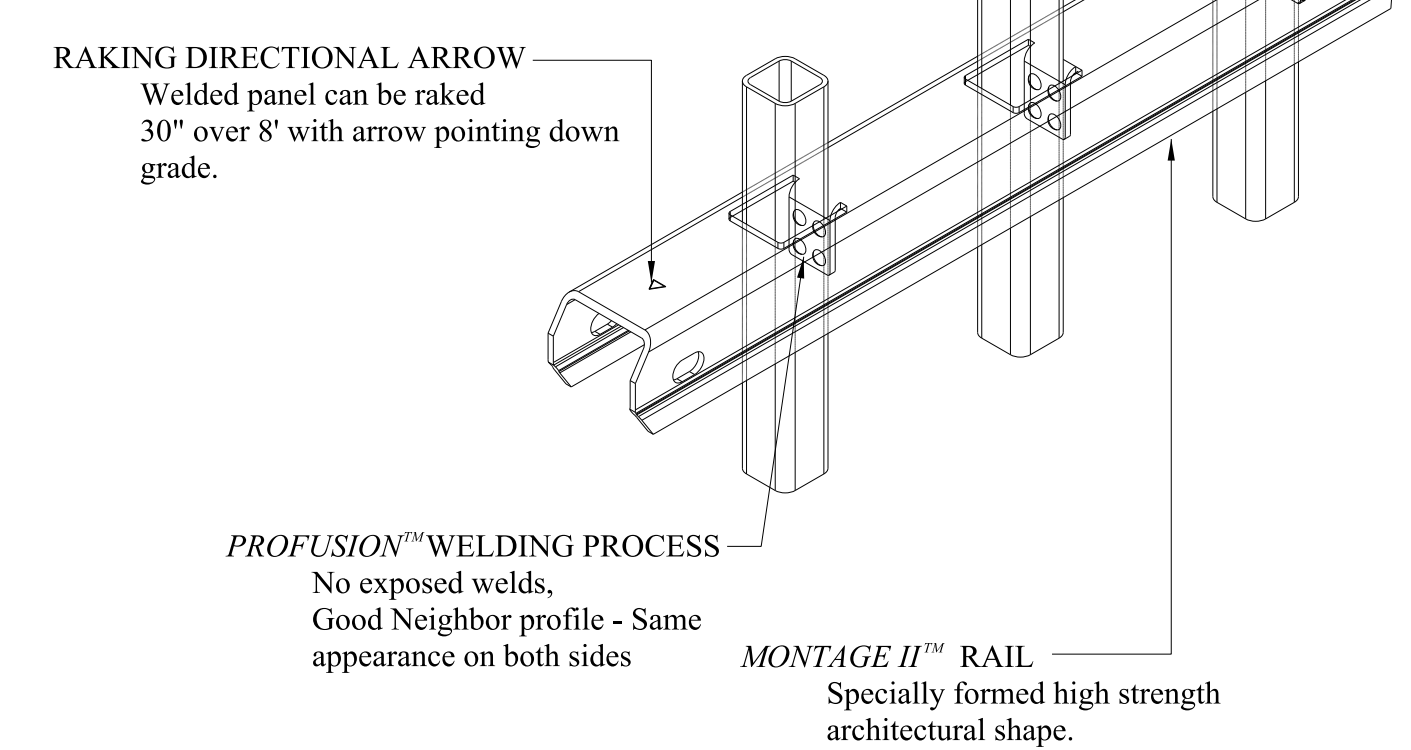
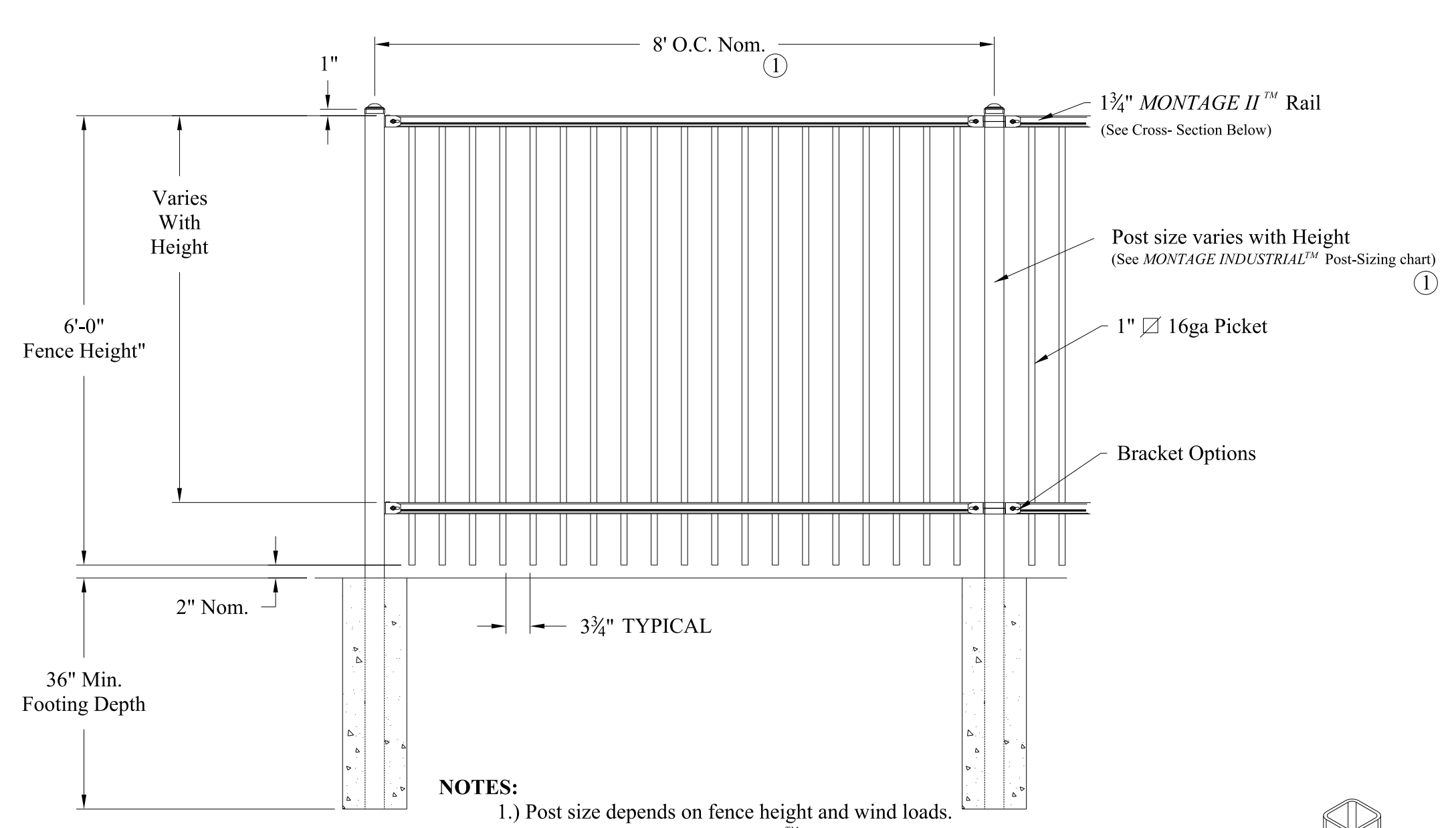
PRELIMINARY NOT FOR CONSTRUCTION

Isabella Sheriff's Office and Correction Facility

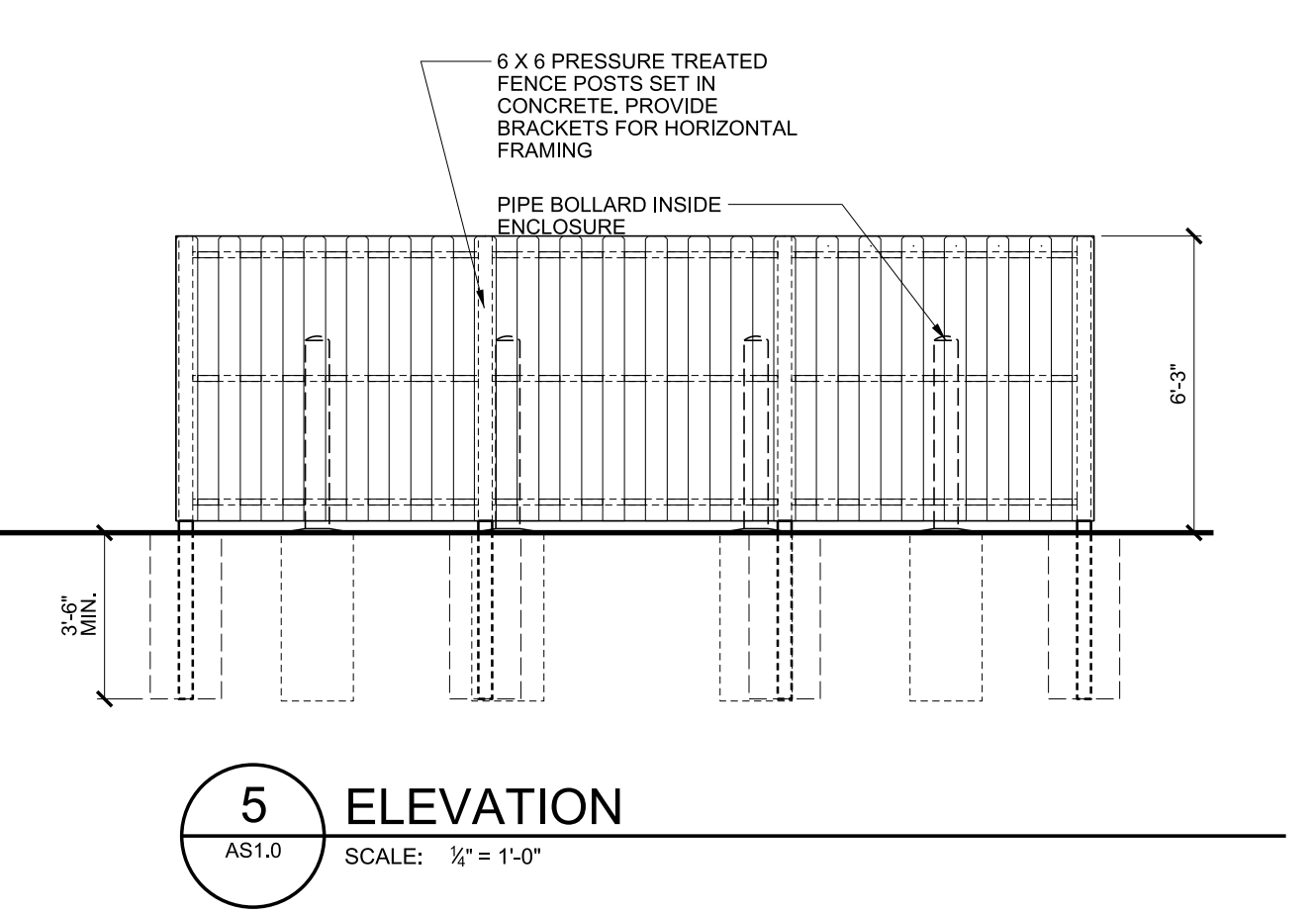
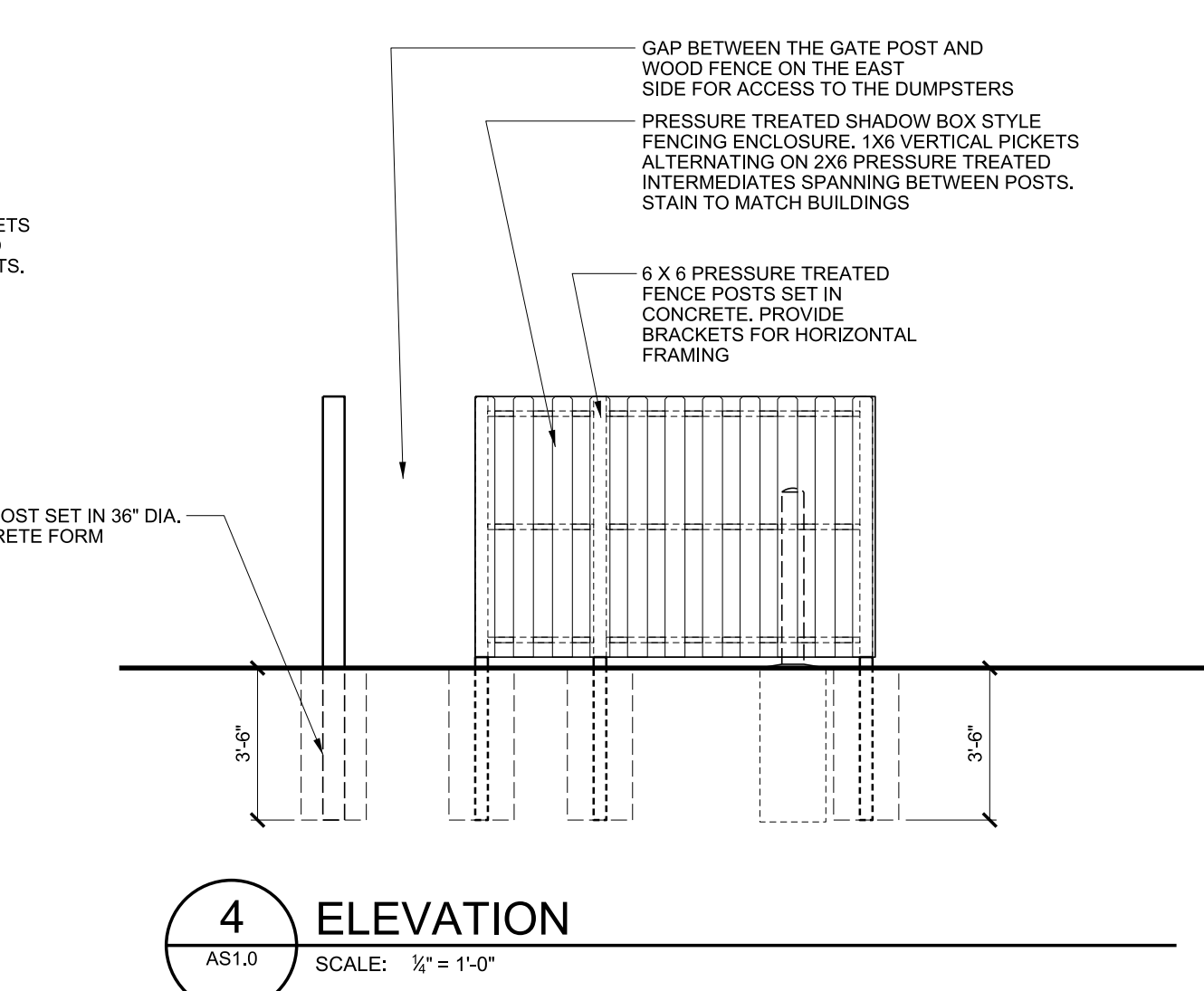
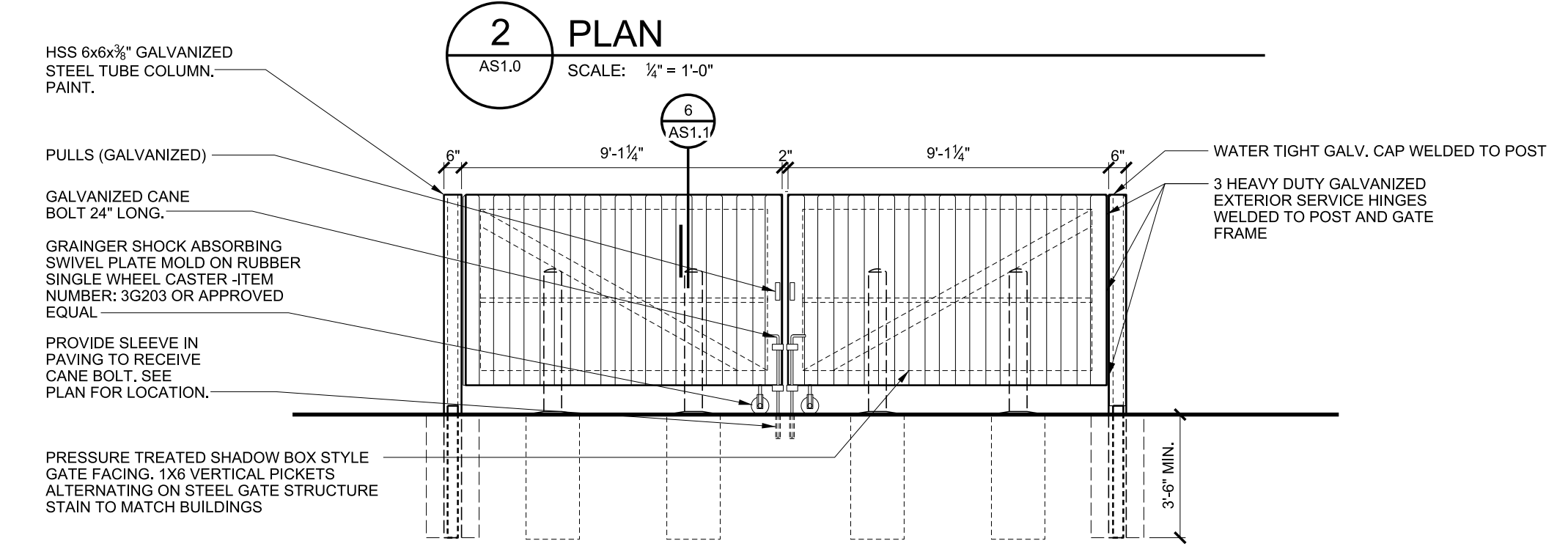
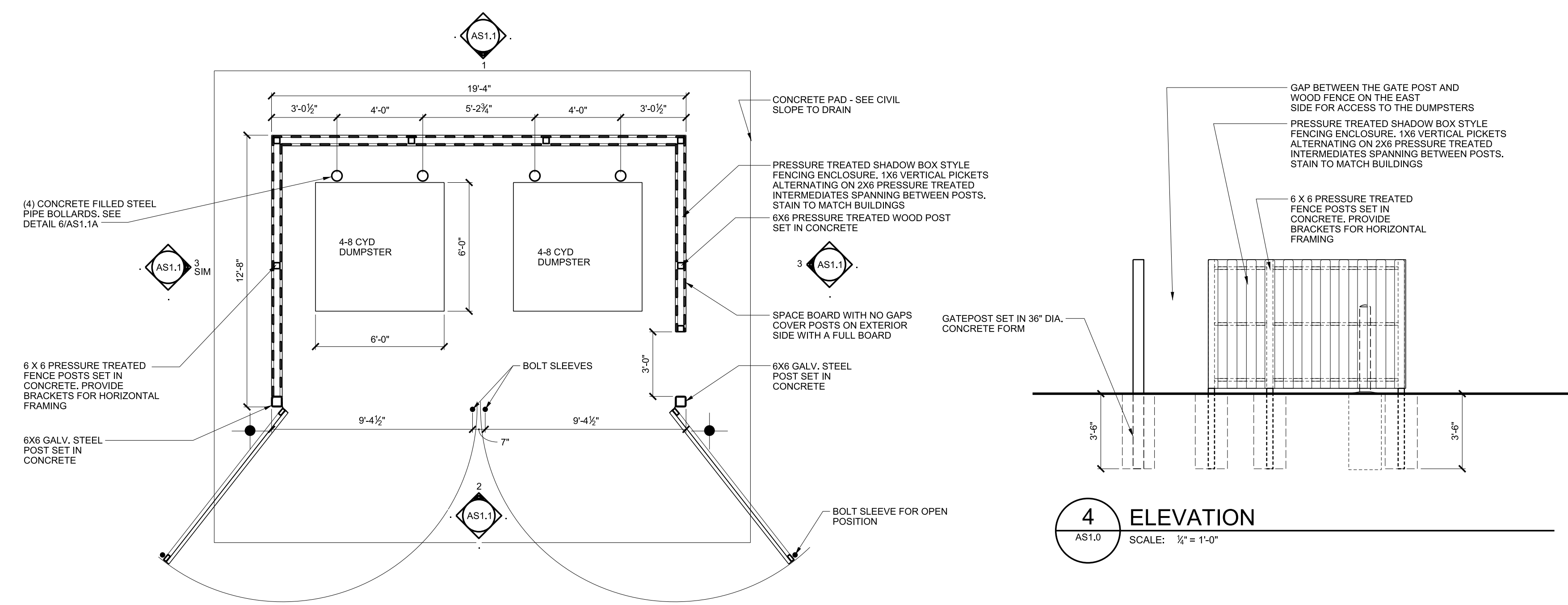
SPR	24 Aug 2021
PSPR	11 May 2021
Design	KAB
PM / PA	DD/CS/EK
Drawn	KAB
IA Project Number	20190905

ARCHITECTURAL SITE PLAN

A103



Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.



GENERAL CONSTRUCTION NOTES

EMERGENCY CONTACTS
BEFORE BEGINNING WORK ON THE PROJECT, THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH THE NAMES AND TELEPHONE NUMBERS OF EMERGENCY CONTACTS. AT LEAST ONE PERSON REPRESENTING THE CONTRACTOR SHALL BE AVAILABLE TO RESPOND TO EMERGENCIES THROUGHOUT THE LIFE OF THE PROJECT, 24 HOURS A DAY, 7 DAYS A WEEK.

UNDERGROUND UTILITY IDENTIFICATION AND LOCATION
THE CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171 OR 811) A MINIMUM OF THREE WORK DAYS IN ADVANCE OF BEGINNING EXCAVATION. THE CONTRACTOR IS RESPONSIBLE TO IDENTIFY AND NOTIFY UTILITY AGENCIES WITHIN THE PROJECT AREA WHICH DO NOT PARTICIPATE IN THE MISS DIG NOTIFICATION PROGRAM.

PUBLIC UTILITIES
EXISTING UTILITIES ARE SHOWN BASED UPON RECORDS AND LOCATIONS PROVIDED BY UTILITY AGENCIES. THE INFORMATION SHOWN IS CONSIDERED APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR. UNLESS THE PLANS SPECIFICALLY SHOW THAT EXISTING UTILITIES ARE TO BE MOVED, THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN EXISTING UTILITIES.

VERIFICATION OF UNDERGROUND UTILITIES
THE CONTRACTOR SHALL EXCAVATE AND LOCATE ALL EXISTING UTILITIES IN THE PROJECT AREA IN ADVANCE OF CONSTRUCTION TO VERIFY THEIR ACTUAL LOCATION. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL MAKE SUCH CHANGES TO GRADE AND ALIGNMENT OF PROPOSED WORK AS DIRECTED BY THE ENGINEER TO AVOID CONFLICTS, AT NO INCREASE IN COST TO THE OWNER.

UTILITY SERVICE
UNLESS SPECIFICALLY PROVIDED OTHERWISE IN THE CONTRACT DOCUMENTS, ALL EXISTING UTILITIES ARE TO REMAIN IN SERVICE DURING THE PROJECT.

SOIL BORINGS / PAVEMENT CORES
IF PROVIDED ON THE PLANS OR IN THE CONTRACT DOCUMENTS, LOGS OF SOIL BORINGS OR PAVEMENT CORES REPRESENT THE SUBSURFACE CONDITIONS ENCOUNTERED AT SPECIFIC POINTS. THE INFORMATION IS PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY.

MAINTAINING TRAFFIC
LOCAL AND EMERGENCY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES WITHIN THE PROJECT AREA.

WHEN EXCAVATION, FRESH CONCRETE, OR OTHER CONSTRUCTION WORK WILL RESULT IN THE CLOSURE OF A STREET OR DRIVEWAY FOR A PERIOD OF TIME, THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL AFFECTED RESIDENTS AND BUSINESSES IN ADVANCE.

THE CONTRACTOR SHALL NOTIFY EMERGENCY RESPONSE AGENCIES IN ADVANCE OF ROAD CLOSURES OR THE ESTABLISHMENT OF DETOURS.

SCHEDULE
THE CONTRACTOR SHALL COMPLETE ALL WORK IN AN EXPEDITIOUS MANNER AND SHALL NOT STOP WORK ON THE PROJECT ONCE BEGUN.

SURVEY CORNERS, BENCHMARKS, AND CONTROL POINTS
THE CONTRACTOR SHALL PRESERVE ALL GOVERNMENT CORNERS, PROPERTY CORNERS, BENCHMARKS, SURVEY CONTROL POINTS AND OTHER SURVEY POINTS WITHIN THE PROJECT AREA. WHERE CORNERS, BENCHMARKS, OR SURVEY POINTS ARE ENCOUNTERED WHICH WILL BE DISTURBED BY THE CONTRACTOR'S ACTIVITIES, A LICENSED SURVEYOR SHALL WITNESS THE POINT BEFORE DISTURBANCE AND SHALL RE-SET THE POINT FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PAY THE SURVEYOR TO WITNESS AND TO RE-SET THE POINTS.

PROTECTION OF TREES, SHRUBS, AND LANDSCAPING
ALL TREES, SHRUBS, AND LANDSCAPING WITHIN THE CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED TREES, SHRUBS, AND LANDSCAPING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION SIGNING AND BARRICADING
THE CONTRACTOR SHALL PROTECT HAZARDOUS AREAS WITH BARRICADES. BARRICADES LEFT IN PLACE AFTER SUNSET SHALL BE LIGHTED.

THE CONTRACTOR SHALL PROVIDE SUITABLE SANDBAGS OR OTHER SUITABLE MEASURES FOR ANCHORING OF TEMPORARY SIGNS AND BARRICADES, TO PREVENT THEIR TIPPING OR DISPLACEMENT BY WIND OR AIR FLOW FROM VEHICLES.

THE CONTRACTOR SHALL PROVIDE SIGNING, BARRICADES, TRAFFIC REGULATORS, CONES, AND OTHER TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER STREETS OR ROADS IN THE PROJECT AREA, THE CURRENT MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL COVER OR REMOVE TEMPORARY SIGNS DURING PERIODS WHEN THEY ARE NOT APPROPRIATE.

TURF ESTABLISHMENT
ALL DISTURBED AREAS WHICH ARE NOT TO BE SURFACED WITH PAVEMENT, AGGREGATE OR OTHER APPROVED SURFACES SHALL BE ESTABLISHED WITH TURF.

TURF AREAS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE.

DISTURBED AREAS SHALL BE SURFACED WITH THREE INCHES OF SCREENED TOPSOIL.

THE CONTRACTOR IS RESPONSIBLE TO ESTABLISH TURF WHICH IS SUBSTANTIALLY FREE OF BARE SPOTS AND FREE OF WEEDS. THE GROUND SURFACE IN TURF AREAS SHALL BE SMOOTH AND PROVIDE A NATURAL TRANSITION TO ADJACENT, UNDISTURBED AREAS.

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE WATERING, WEEDING, RESEEDING, AND REWORKING AS NECESSARY TO ESTABLISH TURF AREAS TO THE REQUIRED STANDARD.

ADA COMPLIANCE
ALL PROPOSED CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA), AND APPLICABLE GUIDELINES OR STANDARDS. WHERE EXISTING CONDITIONS AND/OR THE REQUIREMENTS OF THE PLANS WILL RESULT IN FINISHED CONDITIONS THAT DO NOT MEET THE ADA REQUIREMENTS, GUIDELINES, OR STANDARDS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO REMOVE AND REPLACE WORK DETERMINED TO BE NOT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS, GUIDELINES, OR STANDARDS.

BACKFILL AND EMBANKMENT
BACKFILL OF AN EXCAVATION UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE, SHALL BE SAND, MEETING THE REQUIREMENTS OF GRANULAR MATERIAL CLASS III AS DESCRIBED IN THE CURRENT MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE SAND BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

BACKFILL OF AN EXCAVATION WHICH IS NOT UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE MAY BE SUITABLE EXCAVATED MATERIAL OR OTHER SOIL, WHICH IS FREE OF ORGANIC MATTER, STONES AND ROCKS, ROOTS, BROKEN CONCRETE, FROZEN MATERIAL, OR DEBRIS. THE BACKFILL SHALL BE COMPACTED TO AT LEAST 90% OF ITS MAXIMUM UNIT WEIGHT.

THE CONTRACTOR SHALL INDICATE THE SOURCE OF SAND USED FOR BACKFILL TO THE ENGINEER, AND PROVIDE THE ENGINEER WITH THE RESULTS OF A GRADATION TEST PERFORMED ON A SAMPLE OF THE SAND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF USING SAND FROM OTHER SOURCES.

EMBANKMENT USED TO BUILD THE SUBGRADE TO REQUIRED ELEVATION SHALL BE SUITABLE SOIL EXCAVATED FROM THE PROJECT SITE, OR FURNISHED BY THE CONTRACTOR FROM OTHER SOURCES. SUITABLE SOIL IS FREE FROM ORGANIC MATTER, ROCKS AND STONES, FROZEN MATERIAL, BROKEN CONCRETE, AND DEBRIS.

EMBANKMENT CONSTRUCTED OF GRANULAR SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 10 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

EMBANKMENT CONSTRUCTED OF COHESIVE SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 10 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

DENSITY TESTING
THE MAXIMUM UNIT WEIGHT OF SAND AND OTHER GRANULAR SOILS WILL BE DETERMINED BY THE ONE POINT CONE TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

THE MAXIMUM UNIT WEIGHT OF COHESIVE SOILS WILL BE DETERMINED BY THE ONE POINT PROCTOR TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

DRAINAGE

THE CONTRACTOR SHALL MAINTAIN DRAINAGE OF THE PROJECT AREA AND ADJACENT AREAS. WHERE EXISTING DRAINAGE FACILITIES ARE DISTURBED OR BLOCKED BY CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY PROVISIONS FOR DRAINAGE.

WHERE CONSTRUCTION HAS DISTURBED EXISTING DITCHES, SWALES, OR OTHER DRAINAGE FACILITIES, THE CONTRACTOR SHALL RESTORE THEM TO THEIR GRADES AND DIMENSIONS WHICH EXISTED PRIOR TO THE BEGINNING OF CONSTRUCTION, UNLESS DIRECTED OTHERWISE.

DRAINAGE SHALL NOT BE ROUTED ONTO ADJACENT PROPERTIES NOR ALLOWED TO DRAIN ONTO ADJACENT PROPERTIES AT AN INCREASED RATE, AS A RESULT OF THE CONTRACTOR'S WORK.

PARKING LOT PROJECTS

ADJUSTING STRUCTURES
WHERE CASTINGS FOR MANHOLES, CATCH BASINS, INLETS, VALVE BOXES, AND MONUMENT BOXES ARE TO BE ADJUSTED TO MEET A NEW PAVEMENT SURFACE ELEVATION, THE FINAL ADJUSTMENT SHALL NOT BE COMPLETED UNTIL ALL PAVEMENT COURSES HAVE BEEN PLACED EXCEPT THE FINAL COURSE. THE FINAL ADJUSTMENT SHALL BE COMPLETED JUST PRIOR TO PLACEMENT OF THE FINAL COURSE OF PAVEMENT.

THE MATERIALS AND PROCEDURES FOR ADJUSTING STRUCTURES SHALL MEET THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION OVER THE ROAD AND UTILITIES.

SUBGRADE PREPARATION
TOPSOIL, PEAT, AND ORGANIC MATERIAL SHALL BE EXCAVATED AND REMOVED.

SOFT AND YIELDING SOILS SHALL BE REMOVED OR DRIED IF THE RESULT OF EXCESSIVE MOISTURE CONTENT.

PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENT ON A SUBGRADE, THE SUBGRADE SHALL BE PROOF-ROLLED TO DETERMINE THE SUITABILITY OF THE SUBGRADE. THE CONTRACTOR SHALL DRIVE A HEAVY PIECE OF WHEELED CONSTRUCTION EQUIPMENT OVER THE SUBGRADE WHILE THE ENGINEER IS OBSERVING. THE CONSTRUCTION OF FILLS, SUBBASE, OR PAVEMENTS SHALL NOT PROCEED UNTIL THE SUBGRADE HAS BEEN DEMONSTRATED TO BE FREE OF SOFT AREAS.

THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE MOISTURE CONTENT OF SUBGRADE SOILS WITHIN A SUITABLE RANGE TO ALLOW FOR COMPACTION TO THE REQUIRED DENSITY. WHEN THE SOIL IS TOO DRY, THE CONTRACTOR SHALL ADD WATER. WHEN THE SOIL IS TOO WET, THE CONTRACTOR SHALL PROVIDE DRAINAGE OR AERATE THE SOIL.

THE SURFACE OF THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT, PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENTS.

CURB AND GUTTERS
THE CONTRACTOR SHALL DETERMINE THE LOCATION AND DIMENSIONS OF CURB OPENINGS FOR DRIVEWAYS, RAMPS, AND DRAINAGE STRUCTURES.

HOT MIX ASPHALT (HMA) PAVING
PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE SHALL BE SWEEPED TO REMOVE ALL DIRT AND DEBRIS.

A BITUMINOUS BOND COAT SHALL BE APPLIED TO PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE AND ALLOWED TO CURE PRIOR TO CONSTRUCTING THE NEW PAVEMENT COURSE.

HMA PAVEMENT SHALL NOT BE PLACED WHEN THE SURFACE BEING OVERLAID IS WET, OR WHEN RAIN IS FORECAST OR THREATENING.

DRIVEWAY CONSTRUCTION

DRIVEWAY SLOPES SHALL NOT EXCEED 10%, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE ON THE PLANS OR DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS WITH SUITABLE NOTICE BEFORE REMOVING AND REPLACING AN EXISTING DRIVEWAY.

SIDEWALK CONSTRUCTION

SIDEWALKS SHALL BE CONSTRUCTED TO PROVIDE POSITIVE DRAINAGE OF THE SIDEWALK AND ADJACENT SURFACES.

EXCEPT WHERE NECESSARY TO PROVIDE POSITIVE DRAINAGE OR MEET EXISTING SURFACES, SIDEWALK SHALL BE CONSTRUCTED WITH A CROSS SLOPE SLOPED TOWARD THE STREET.

SIDEWALK CROSS SLOPES SHALL NOT EXCEED 2%.

IN TURF AREAS, THE SURFACE OF THE SIDEWALK SHALL BE ABOUT 1/4 INCH HIGHER THAN THE ADJACENT GROUND SURFACES, EXCEPT WHERE NECESSARY TO PROVIDE POSITIVE DRAINAGE OR MEET EXISTING SIDEWALKS, CURBS, OR PAVEMENTS.

SIDEWALK SHALL BE CONSTRUCTED ON A SAND BASE, COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN SIDEWALK FORMS HAVE BEEN SET AND THE SAND BASE PREPARED. CONCRETE SHALL NOT BE PLACED UNTIL THE ENGINEER HAS OBSERVED THE FORMS. CONCRETE DELIVERY SHALL BE SCHEDULED TO ALLOW SUFFICIENT TIME FOR ADJUSTMENT OF THE FORMS, IN THE EVENT THAT ADJUSTMENT IS NECESSARY.

THE CONTRACTOR SHALL PROTECT FRESH CONCRETE FROM DAMAGE BY THE WEATHER, TRAFFIC, OR VANDALISM. DAMAGED CONCRETE SHALL BE REPLACED BY THE CONTRACTOR'S EXPENSE.

ALL SIDEWALK ADJACENT TO PARKING SPACES IN HMA PARKING AREA SHALL BE 7 FEET WIDE.

SANITARY SEWER CONSTRUCTION NOTES

ALL DESIGN AND CONSTRUCTION STANDARDS FOR SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH CURRENT CHARTER TOWNSHIP OF UNION STANDARDS.

THE NEW SANITARY SEWER SHALL NOT BE CONNECTED TO THE EXISTING SEWER UNTIL APPROVED BY THE ENGINEER.

AT LEAST TEN FEET OF HORIZONTAL AND EIGHTEEN INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE SEWER AND EXISTING WATER MAINS.

MANHOLES SHALL BE LOCATED NEAR PROPERTY LINES, WHEN POSSIBLE.

MANHOLES SHALL BE CONSTRUCTED FROM PRECAST CONCRETE MANHOLE SECTIONS, MEETING ASTM C443. MANHOLE JOINTS SHALL BE MADE WITH RUBBER O-RING GASKETS. THE SECTION BETWEEN THE TOP OF THE PRECAST CONE AND THE BOTTOM OF THE CASTING SHALL BE CONSTRUCTED OF PRECAST GRADE RINGS, OF TOTAL THICKNESS SO THAT THE MANHOLE CASTING IS PLACED AT THE PROPER FINAL ELEVATION, EXCEPT THAT THE TOTAL THICKNESS SHALL NOT EXCEED TEN INCHES.

MANHOLE STEPS SHALL BE EQUALLY SPACED AT 15 INCHES. THE DISTANCE FROM THE TOP STEP TO THE TOP OF THE MANHOLE CASTING SHALL NOT EXCEED 16 INCHES.

THE CONTRACTOR SHALL CONDUCT A LOW PRESSURE AIR TEST ON ALL SANITARY SEWERS LESS THAN 24 INCHES IN DIAMETER. THE AIR TEST SHALL MEET THE REQUIREMENTS OF ASTM C 924 FOR CONCRETE PIPE AND ASTM F1471 FOR PLASTIC PIPE. IN AREAS WHERE GROUNDWATER IS OVER THE PIPE, THE TEST PRESSURE SHALL BE INCREASED EQUAL TO THE HYDRAULIC PRESSURE EXERTED BY THE WATER OVER THE PIPE, AS DETERMINED BY THE ENGINEER.

STORM SEWER CONSTRUCTION NOTES

DRAINAGE STRUCTURES SHALL BE CONSTRUCTED FROM PRECAST CONCRETE MANHOLE SECTIONS, MEETING ASTM C478.

SUMPS IN DRAINAGE STRUCTURES AND PIPELINES SHALL BE FREE OF SEDIMENT AND DEBRIS AT THE TIME OF ACCEPTANCE BY THE OWNER.

WATER MAIN CONSTRUCTION NOTES

ALL DESIGN AND CONSTRUCTION STANDARDS FOR WATER MAIN CONSTRUCTION SHALL COMPLY WITH CURRENT CHARTER TOWNSHIP OF UNION STANDARDS.

HYDRANTS, VALVES, AND OTHER MATERIALS SHALL MEET THE OWNER'S STANDARDS, WITH REGARD TO MANUFACTURER AND MODEL, AND DETAILS SUCH AS OPENING DIRECTION, HYDRANT COLOR, HYDRANT CONFIGURATION, AND HYDRANT THREAD PATTERN.

CHARTER TOWNSHIP OF UNION STANDARD WATER MAIN MATERIALS:	
HYDRANT	EAST JORDAN IRON WORKS, BR5; WITH ONE 4 INCH PUMPER NOZZLE AND TWO 2 1/2 INCH PUMPER NOZZLES; NPT THREADS; COLOR: RED
VALVES	RESILIENT WEDGE GATE VALVES (MUELLER OR EAST JORDAN), OPENS COUNTER CLOCKWISE

NEW WATER MAIN SHALL NOT BE CONNECTED TO THE EXISTING WATER MAIN WITHOUT THE APPROVAL OF THE OWNER.

AT LEAST TEN FEET OF HORIZONTAL AND EIGHTEEN INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND SEWERS (STORM OR SANITARY).

THE DEPTH OF BURY SHOWN ON THE PLANS SHALL BE PROVIDED, AS A MINIMUM, OVER THE TOP OF THE WATER MAIN PIPE TO THE FINISHED GROUND OR PAVEMENT SURFACE. UNLESS SPECIFICALLY DIRECTED OTHERWISE ON THE DRAWINGS, THE DEPTH OF BURY SHOWN ON THE PLANS SHALL BE MAINTAINED BETWEEN THE BOTTOM OF DITCHES AND THE TOP OF THE PIPE.

ALL BENDS, TEES, PLUGS, HYDRANTS, VALVES, AND OTHER FITTINGS WHERE THRUST MAY OCCUR SHALL BE RESTRAINED APPROPRIATELY BY THRUST BLOCKS OR JOINT RESTRAINT.

HYDRANTS SHOULD BE LOCATED NEAR PROPERTY LINES, WHERE POSSIBLE.

EXISTING WATER VALVES SHALL BE OPERATED ONLY BY THE WATER DEPARTMENT'S PERSONNEL.

THE SHUTTING DOWN OF EXISTING WATER MAINS TO ALLOW FOR COMPLETING THE CONTRACTOR'S WORK SHALL BE SCHEDULED IN ADVANCE BY THE CONTRACTOR WITH THE OWNER. THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO AFFECTED WATER CUSTOMERS IN AT LEAST A DAY IN ADVANCE OF ANY SCHEDULED SERVICE DISRUPTIONS.

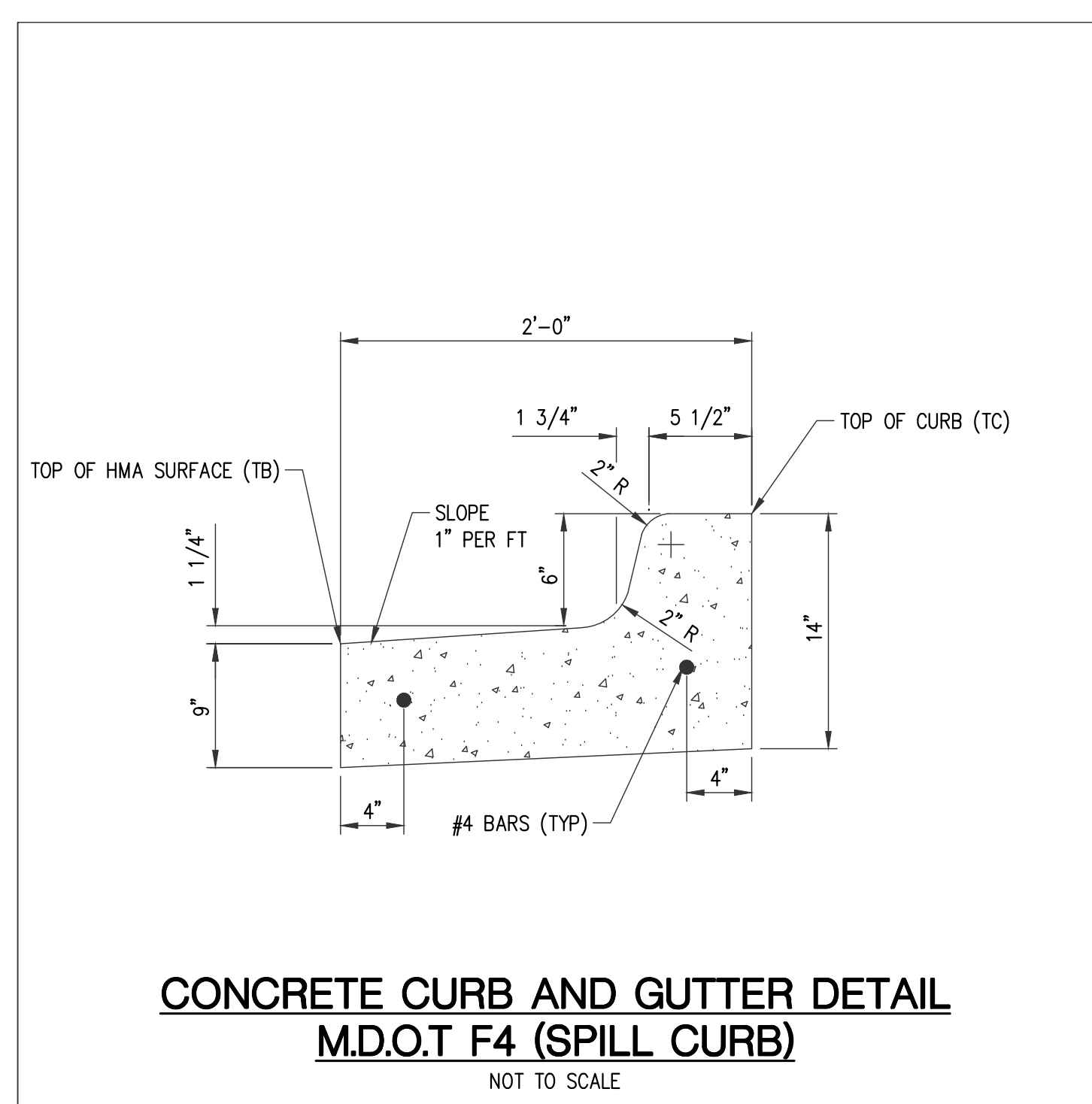
THE CONTRACTOR SHALL EXPOSE EXISTING MAINS TO VERIFY THE SIZE, MATERIALS, AND ANY FITTINGS NECESSARY BEFORE SHUTTING DOWN EXISTING WATER MAINS FOR NEW CONNECTIONS. ALL FITTINGS, PARTS, AND EQUIPMENT NECESSARY TO COMPLETE THE PROPOSED CONNECTIONS TO THE EXISTING MAIN SHALL BE AVAILABLE AT THE SITE BEFORE THE EXISTING MAIN IS SHUT DOWN.

THE COMPLETED WATER MAIN SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE. THE TEST PRESSURE SHALL BE 150 PSI. THE TEST DURATION SHALL BE 2 HOURS. THE CONTRACTOR SHALL CONDUCT SUCH PRELIMINARY TESTING TO EXPEL AIR AND VERIFY THAT THERE ARE NO LEAKS IN THE PIPELINE. THE TEST SHALL BE WITNESSED BY THE ENGINEER OR OWNER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR OWNER AT LEAST 24 HOURS IN ADVANCE OF THE TIME FOR TESTING.

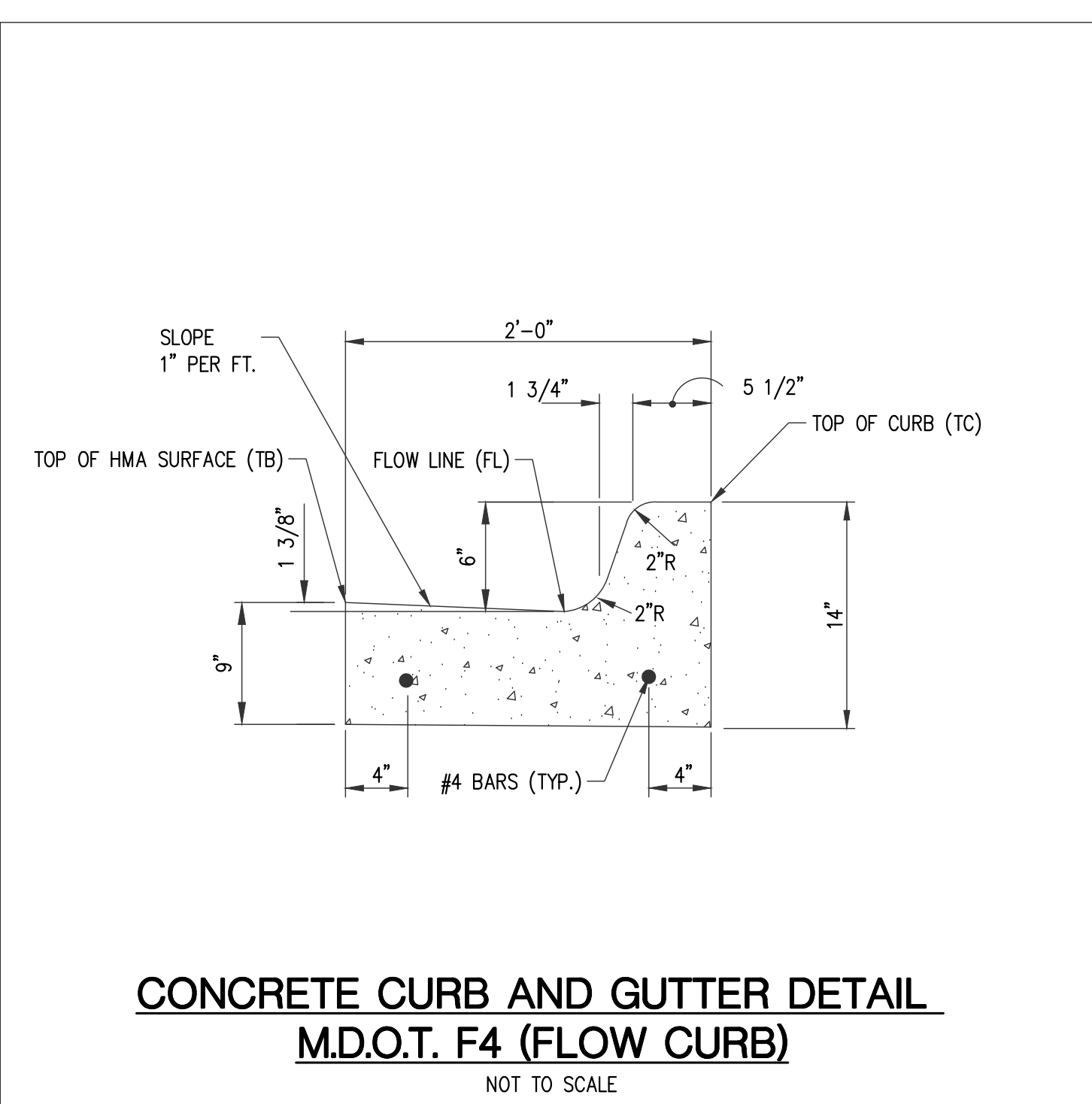


Know what's below.
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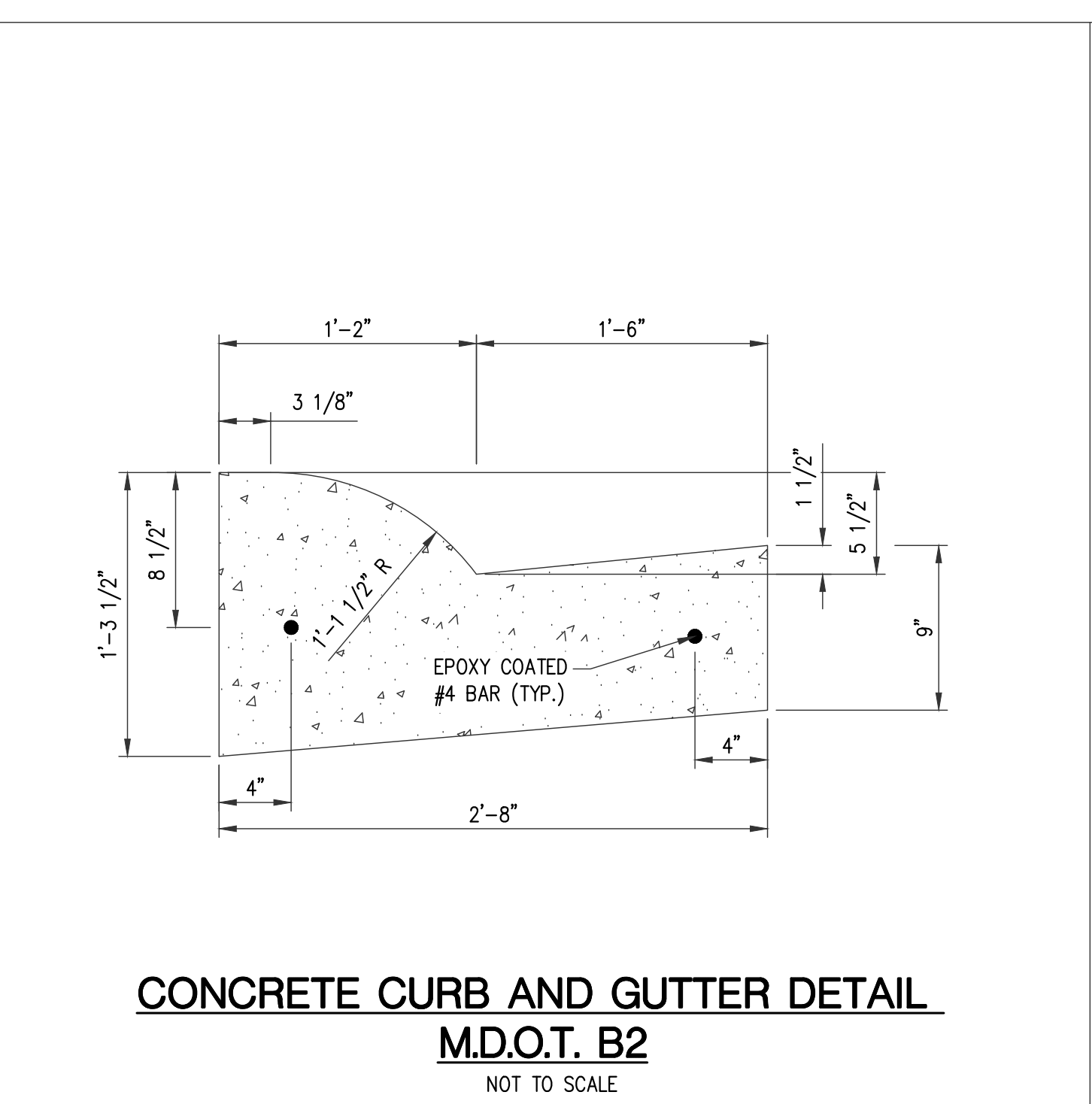
C101



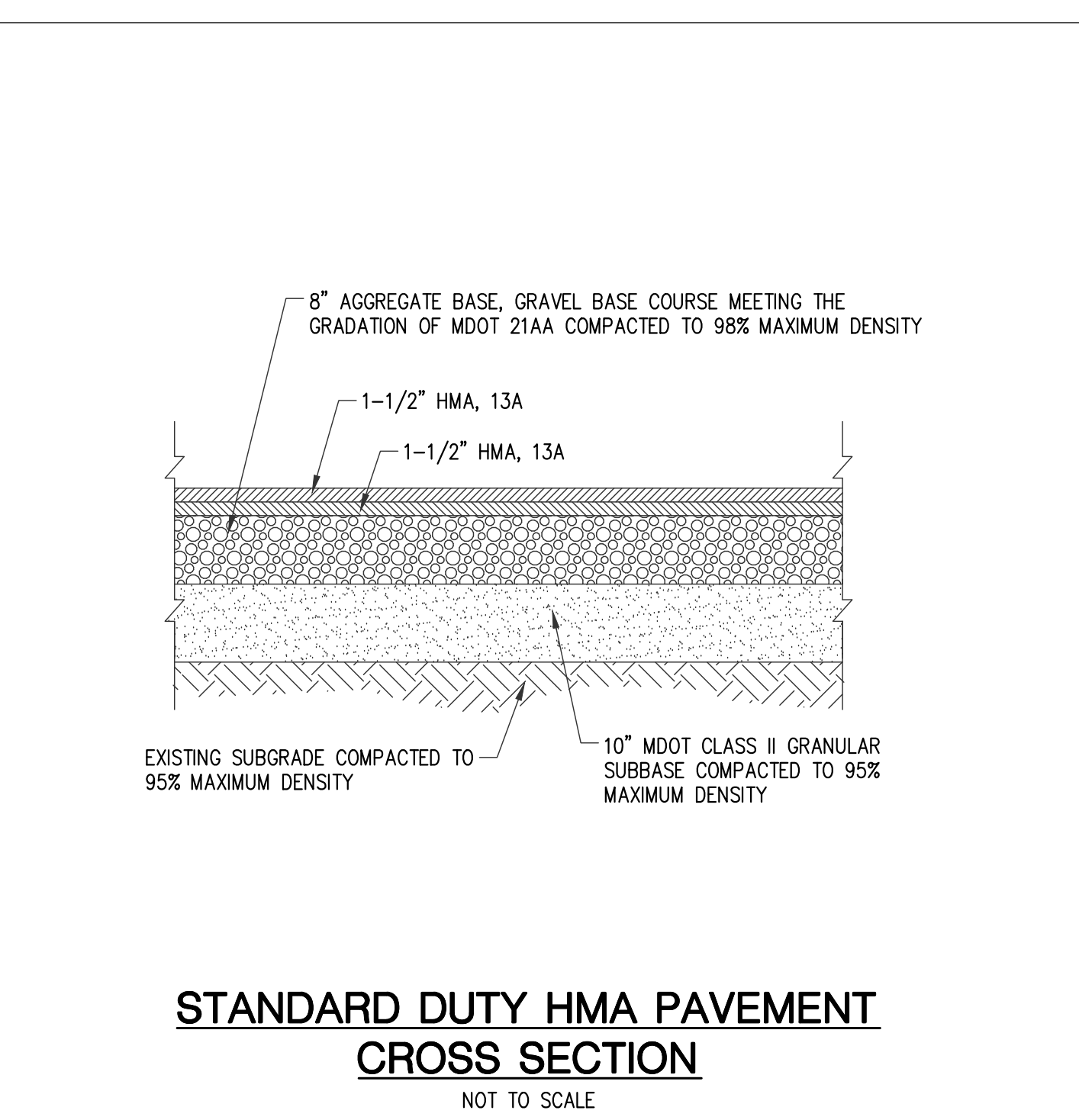
**CONCRETE CURB AND GUTTER DETAIL
M.D.O.T F4 (SPILL CURB)**
NOT TO SCALE



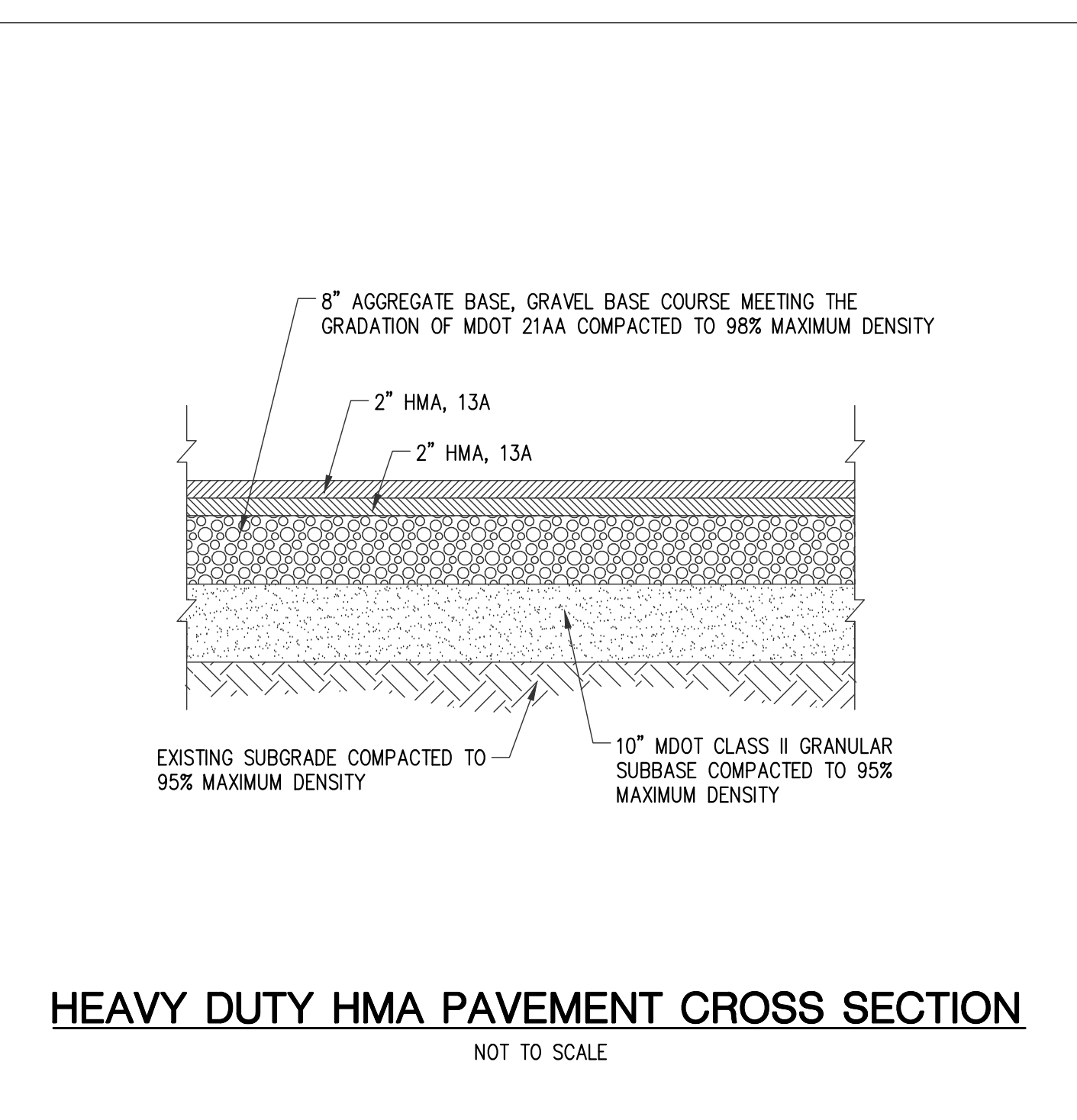
**CONCRETE CURB AND GUTTER DETAIL
M.D.O.T. F4 (FLOW CURB)**
NOT TO SCALE



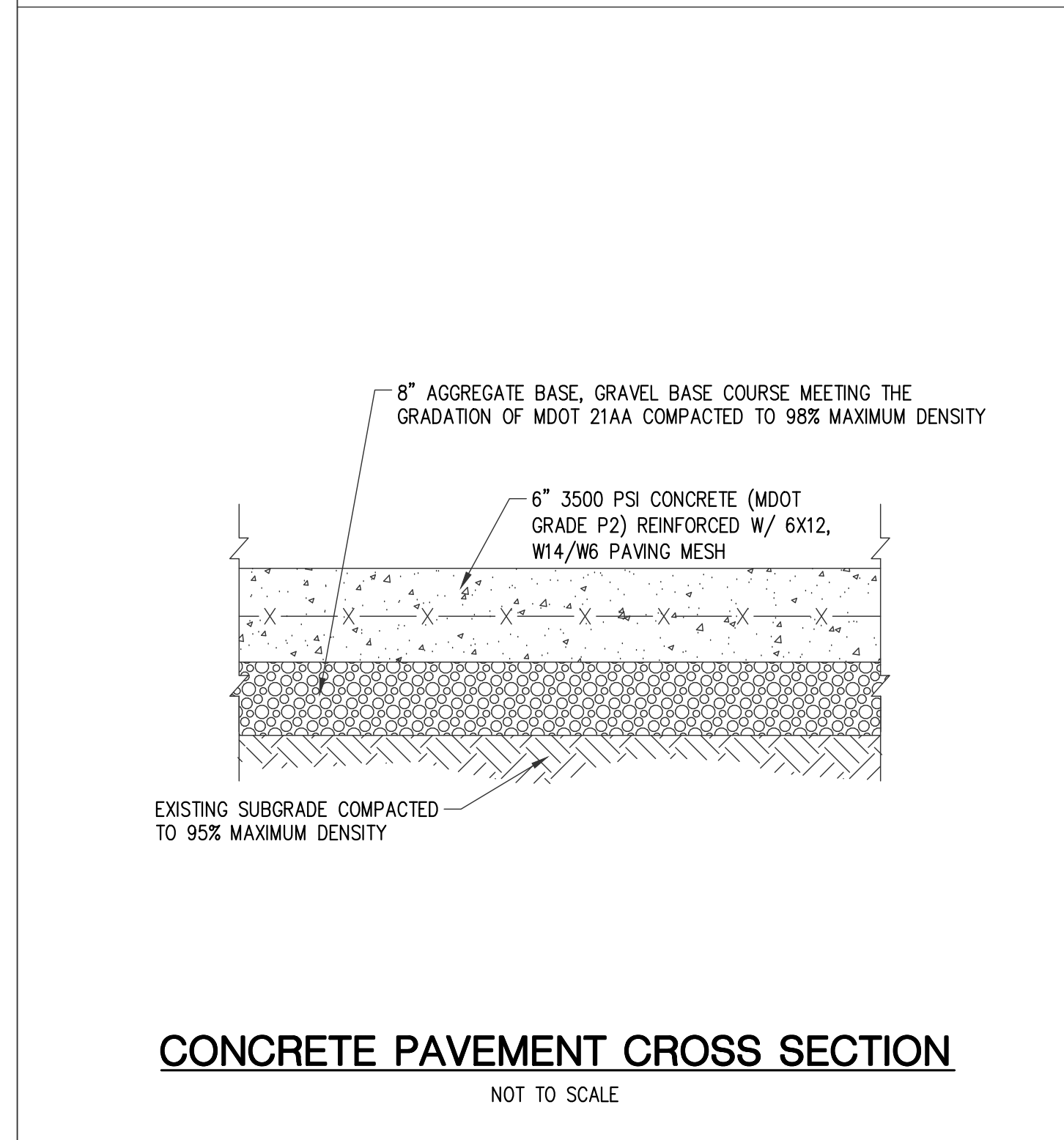
**CONCRETE CURB AND GUTTER DETAIL
M.D.O.T. B2**
NOT TO SCALE



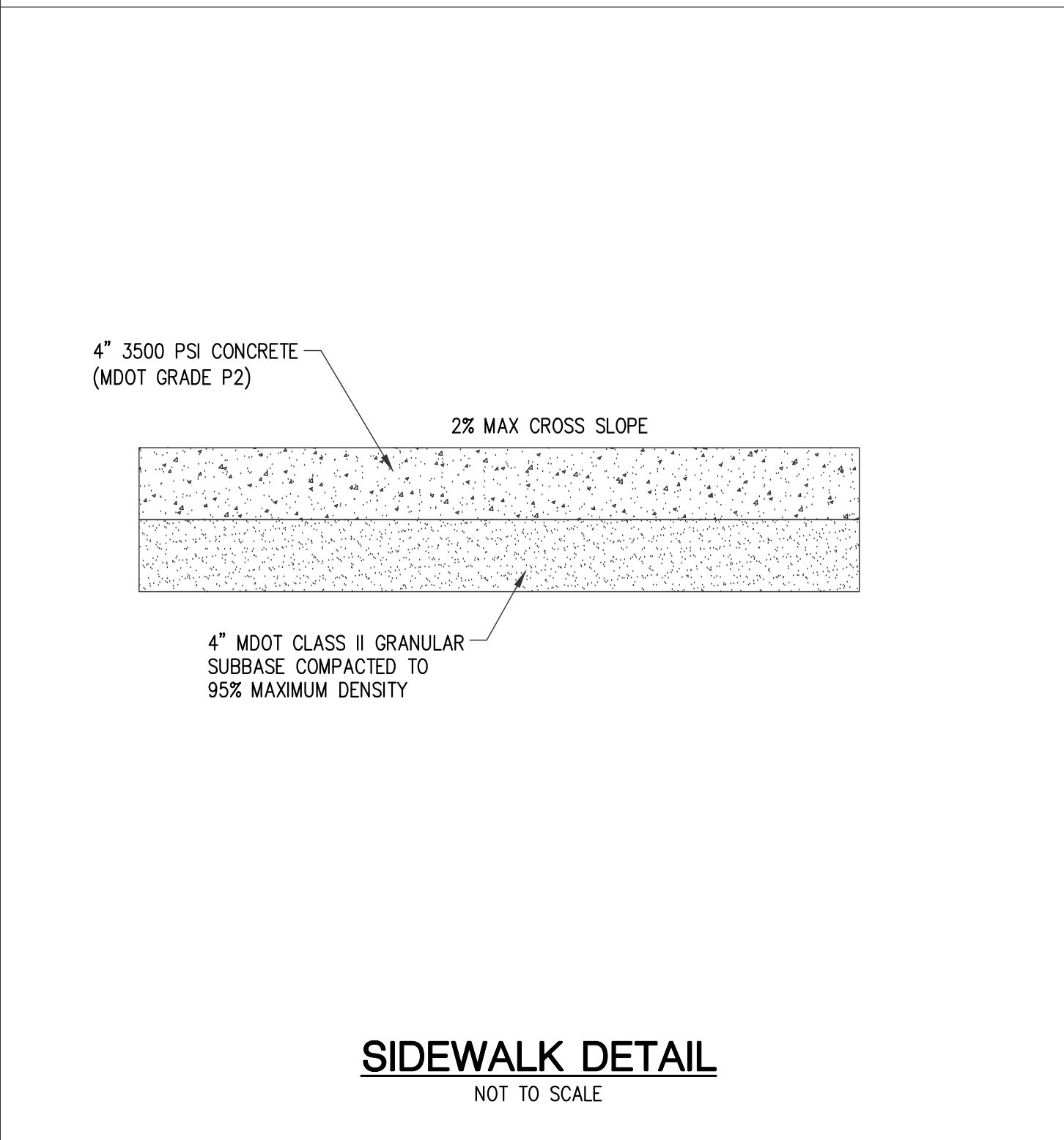
**STANDARD DUTY HMA PAVEMENT
CROSS SECTION**
NOT TO SCALE



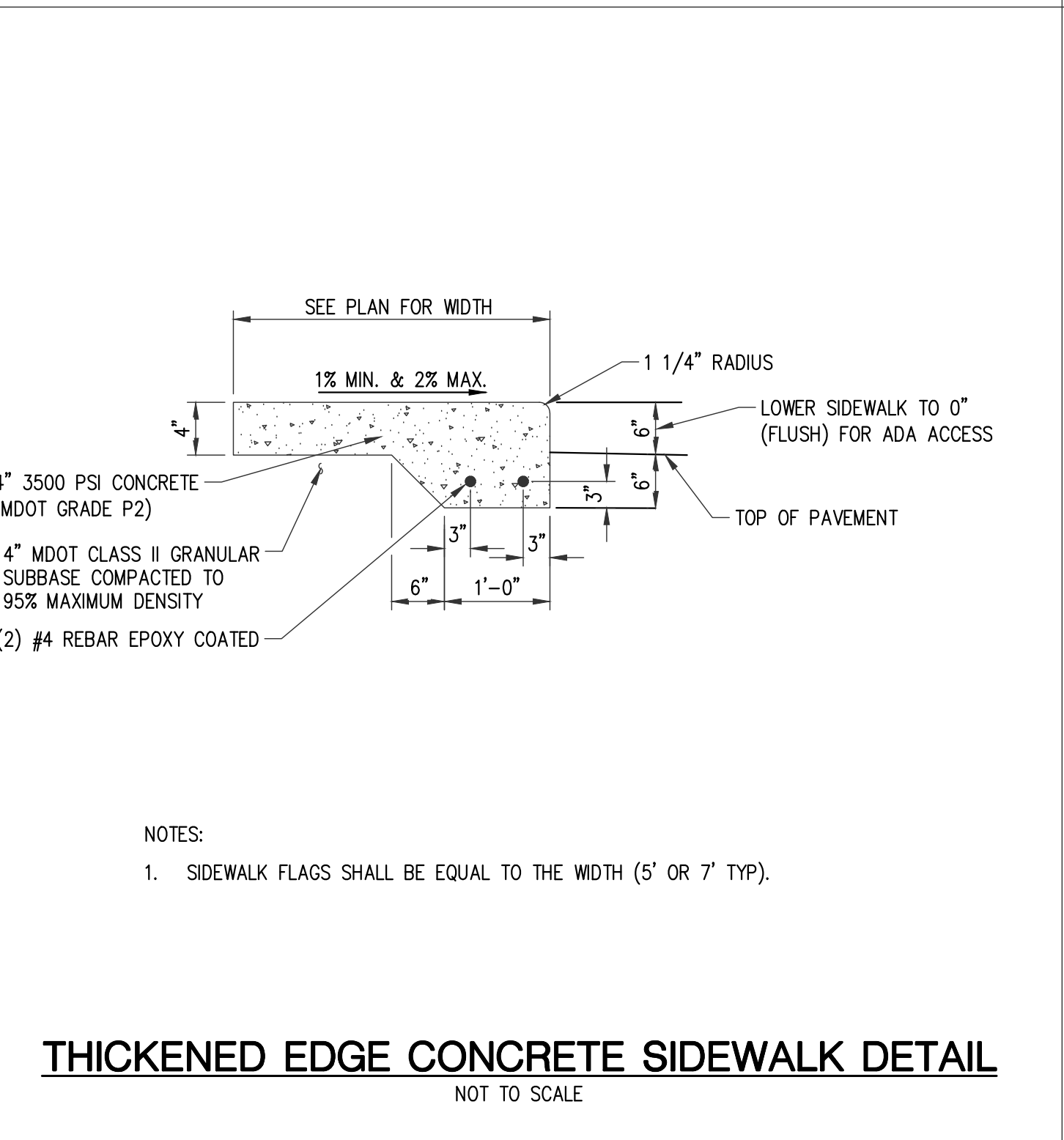
HEAVY DUTY HMA PAVEMENT CROSS SECTION
NOT TO SCALE



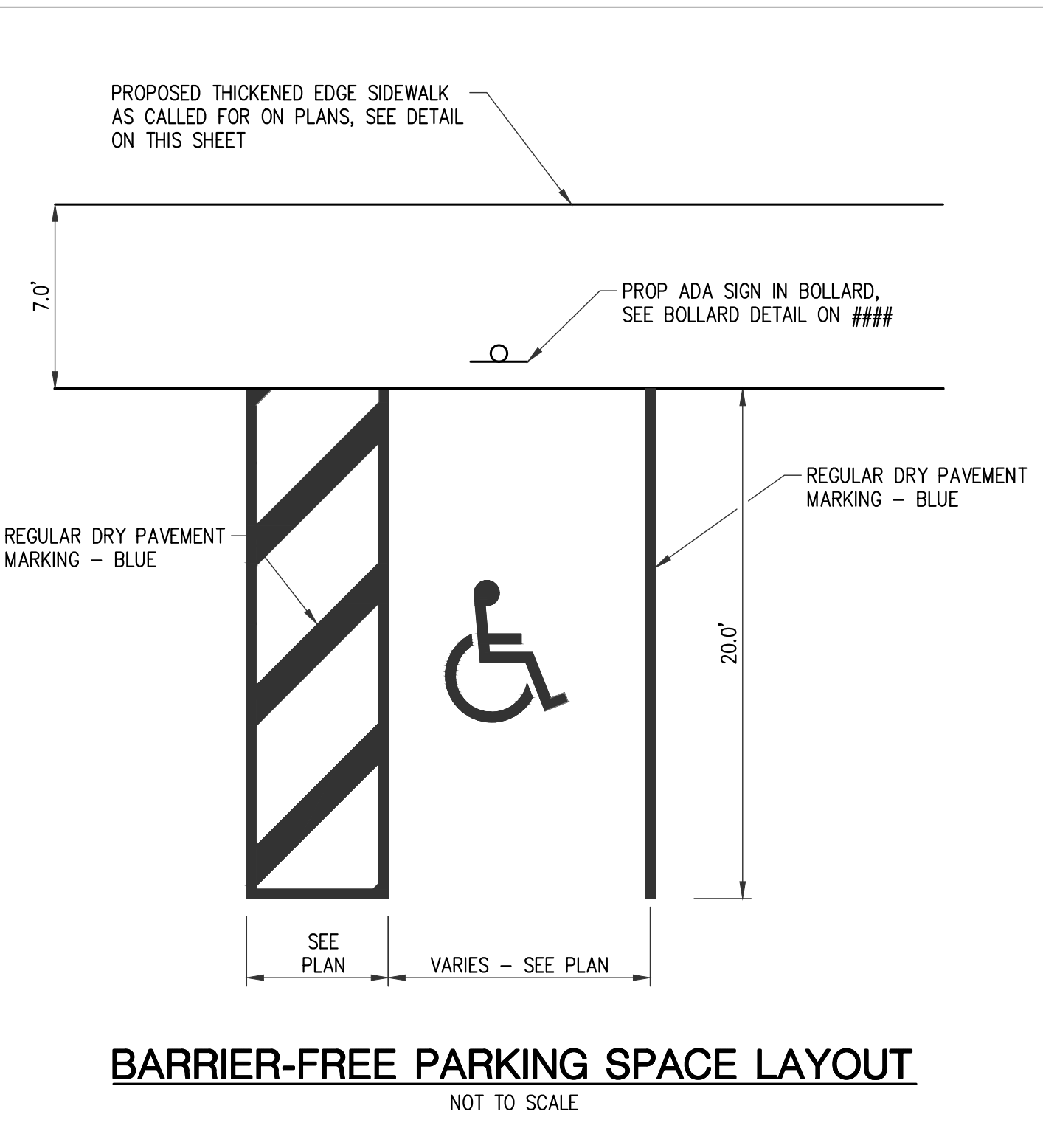
CONCRETE PAVEMENT CROSS SECTION
NOT TO SCALE



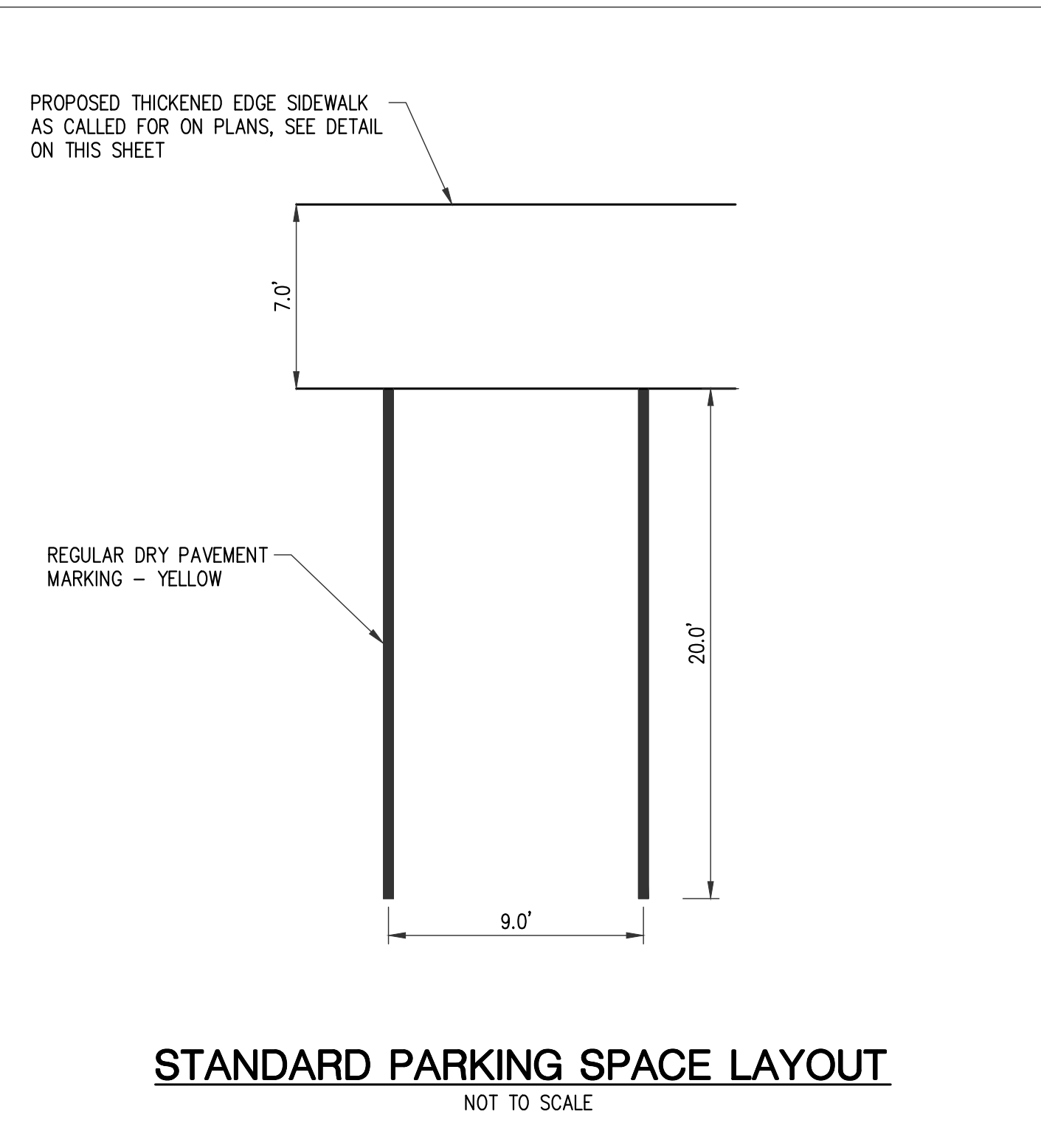
SIDEWALK DETAIL
NOT TO SCALE



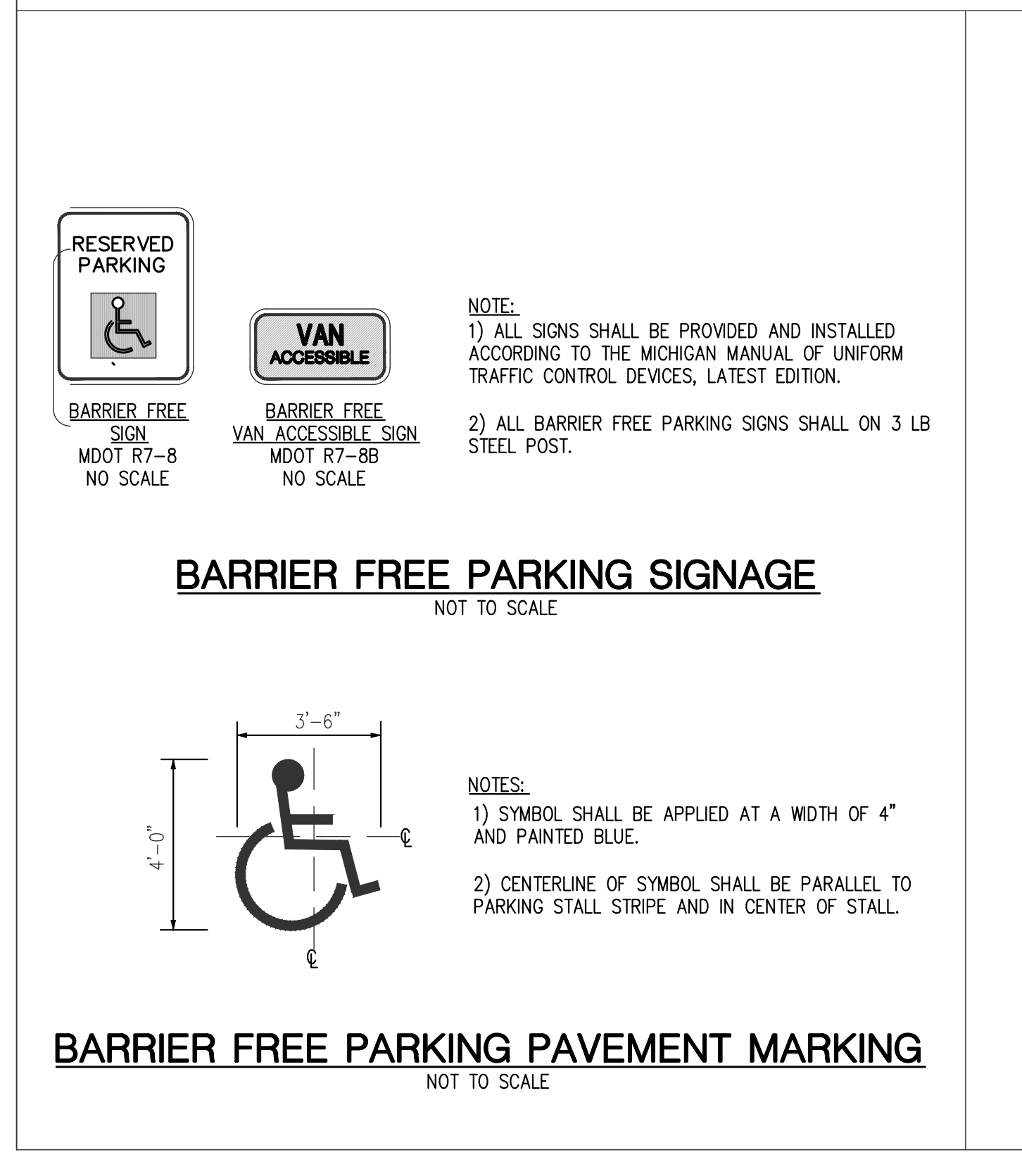
THICKENED EDGE CONCRETE SIDEWALK DETAIL
NOT TO SCALE



BARRIER-FREE PARKING SPACE LAYOUT
NOT TO SCALE

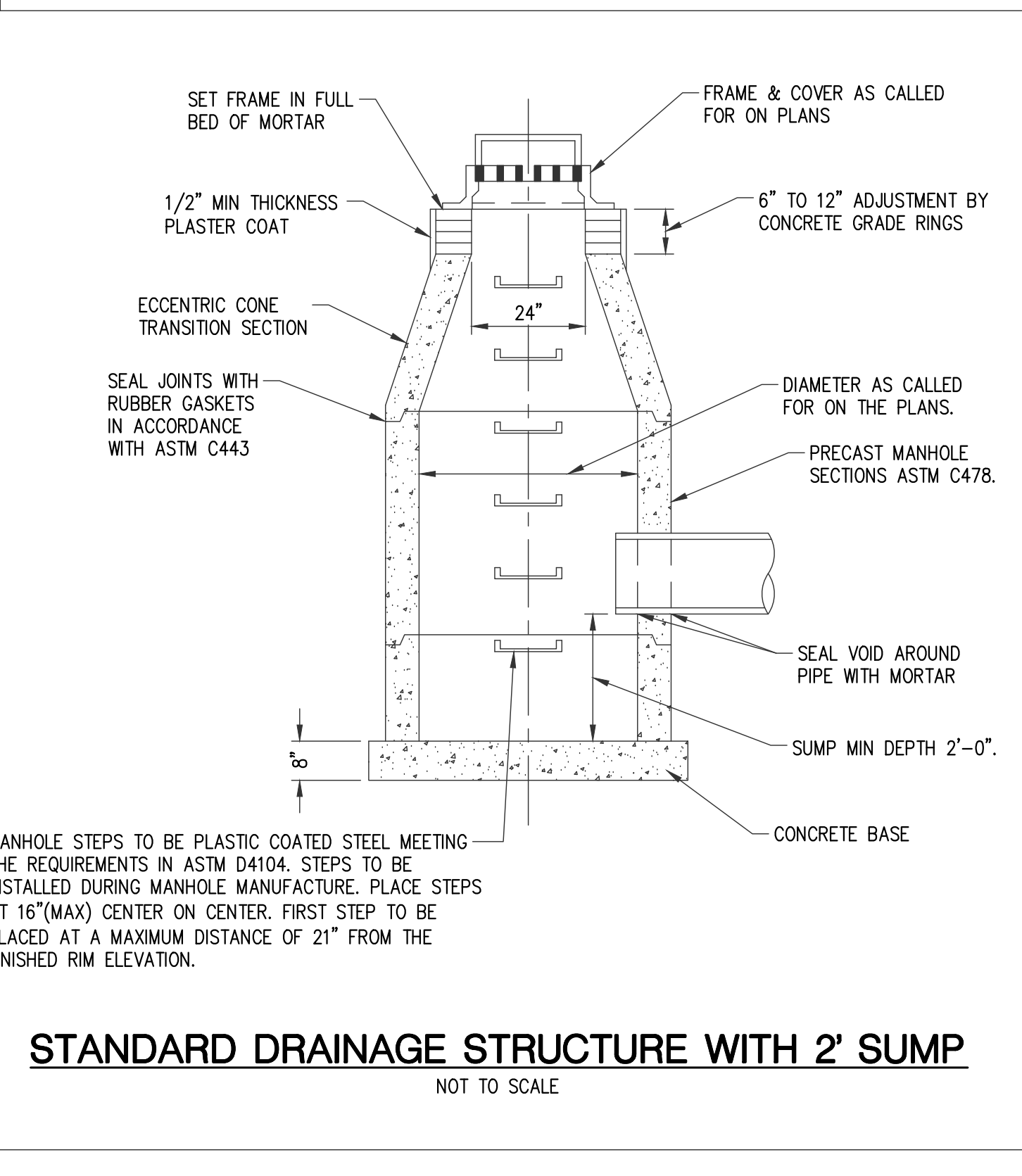


STANDARD PARKING SPACE LAYOUT
NOT TO SCALE

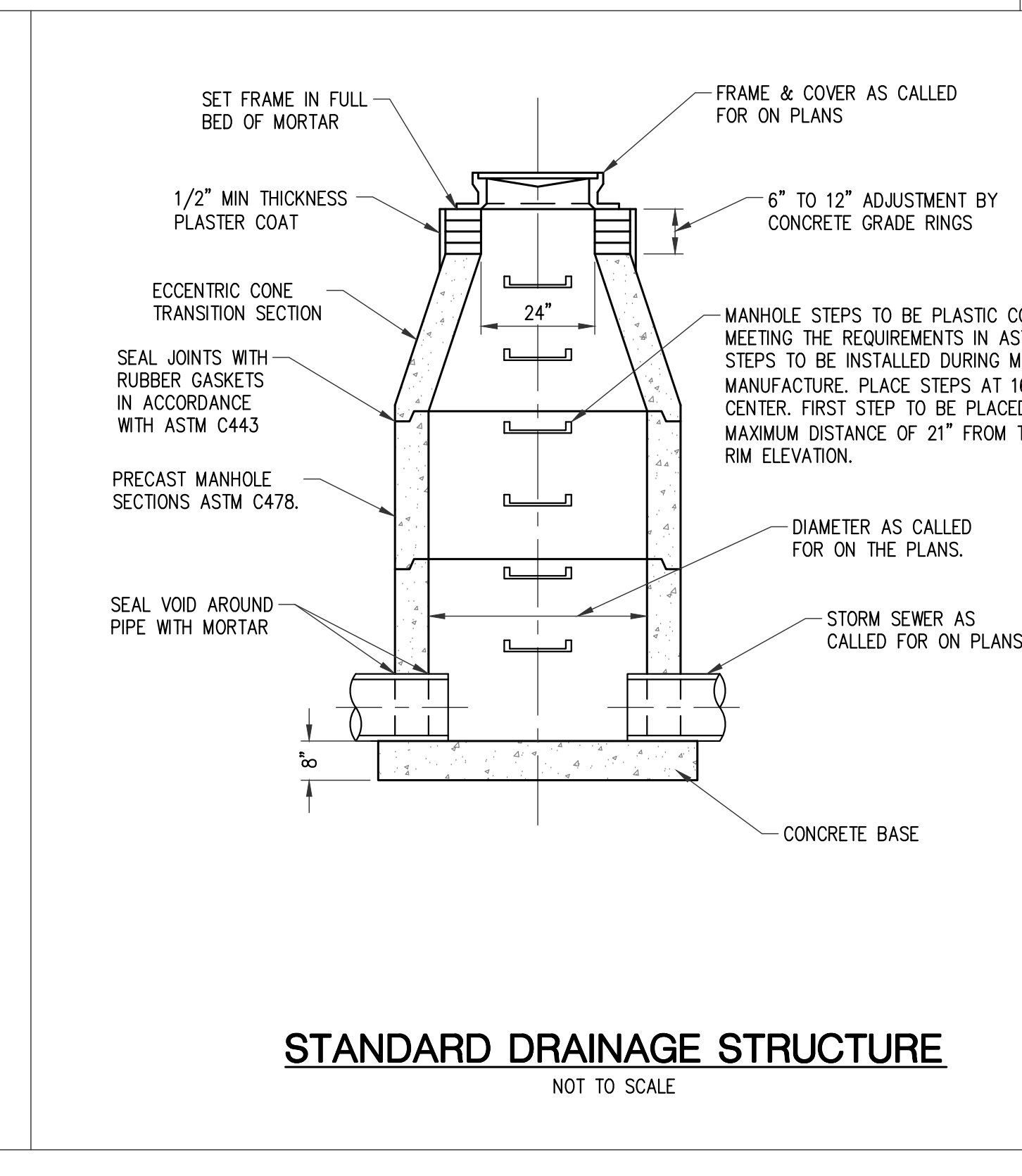


BARRIER FREE PARKING SIGNAGE
NOT TO SCALE

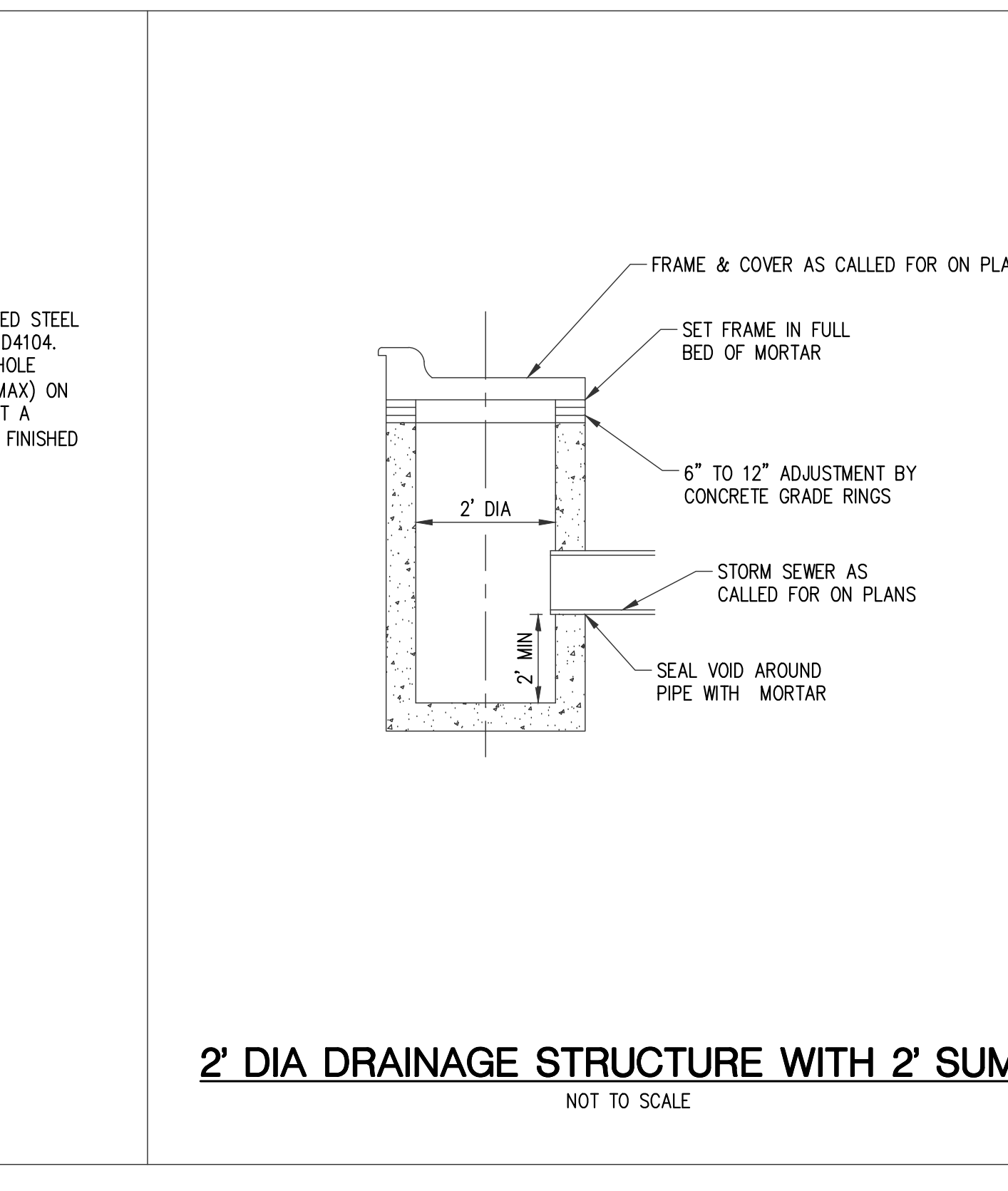
BARRIER FREE PARKING PAVEMENT MARKING
NOT TO SCALE



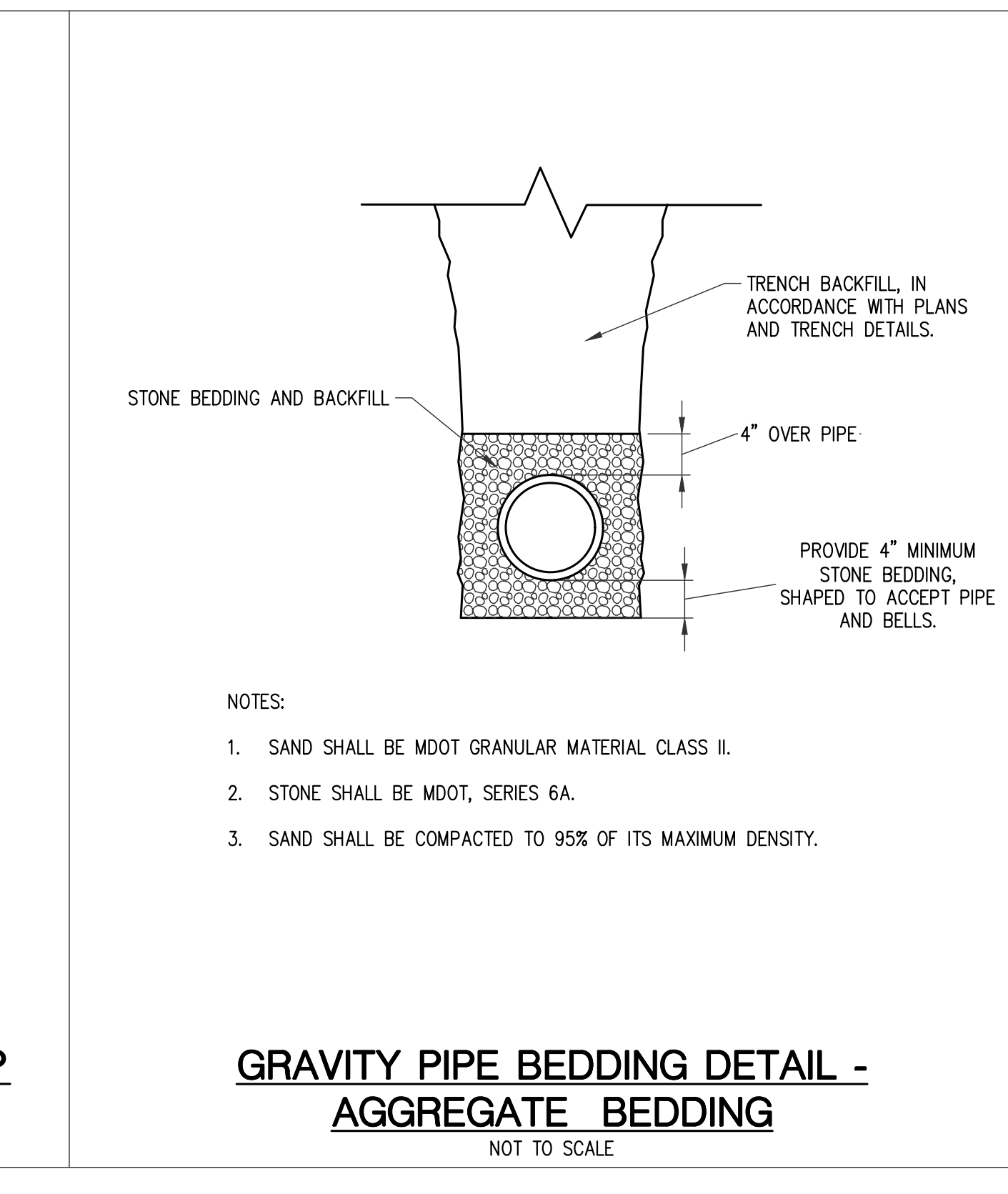
STANDARD DRAINAGE STRUCTURE WITH 2' SUMP
NOT TO SCALE



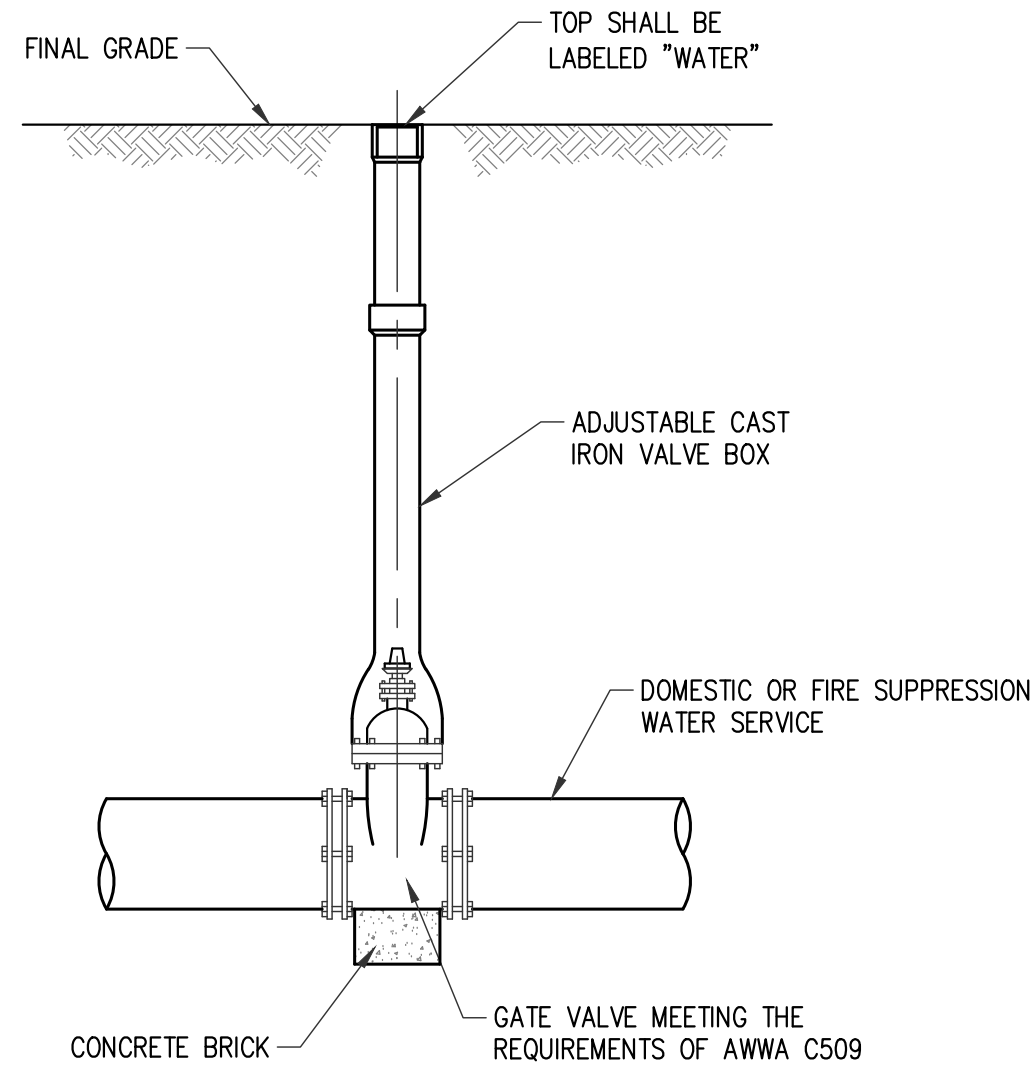
STANDARD DRAINAGE STRUCTURE
NOT TO SCALE



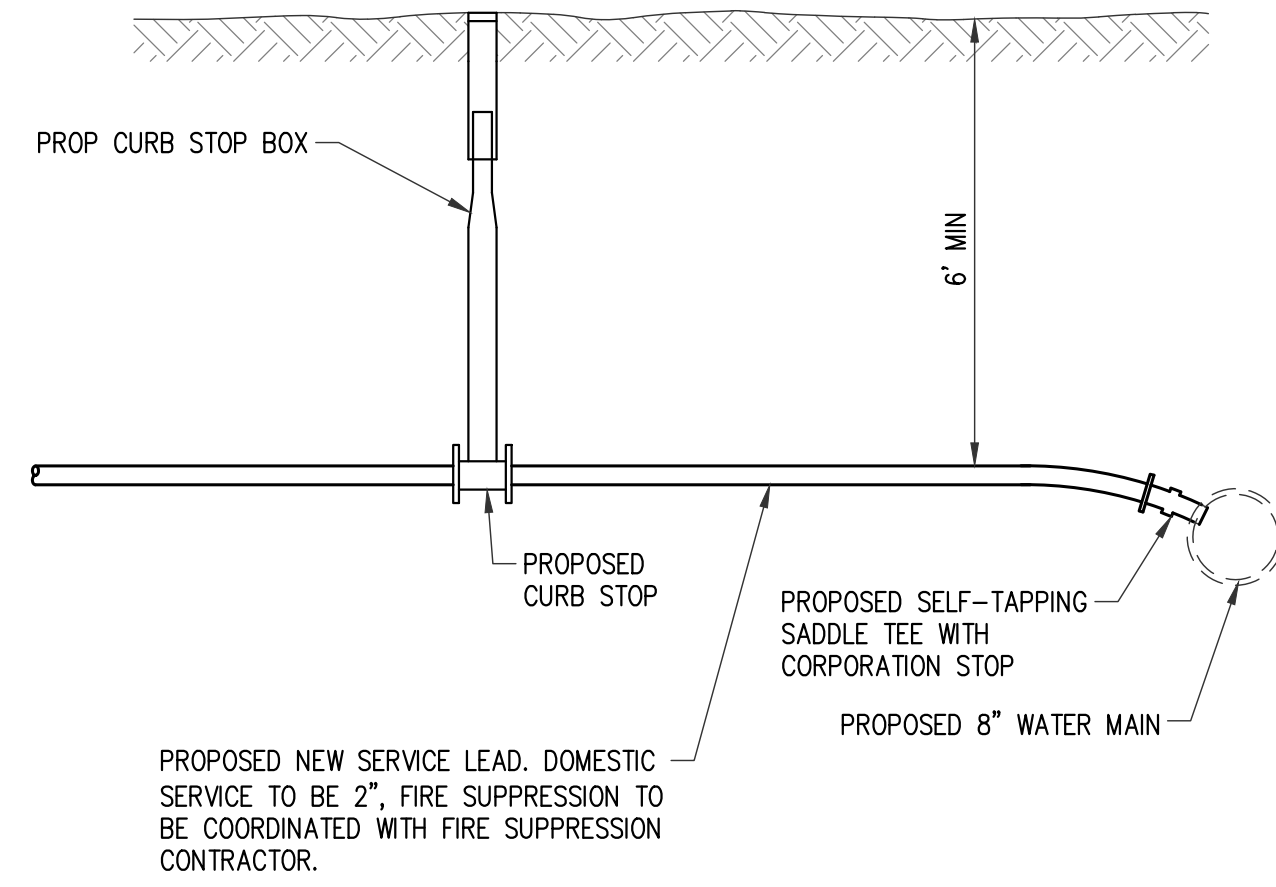
2' DIA DRAINAGE STRUCTURE WITH 2' SUMP
NOT TO SCALE



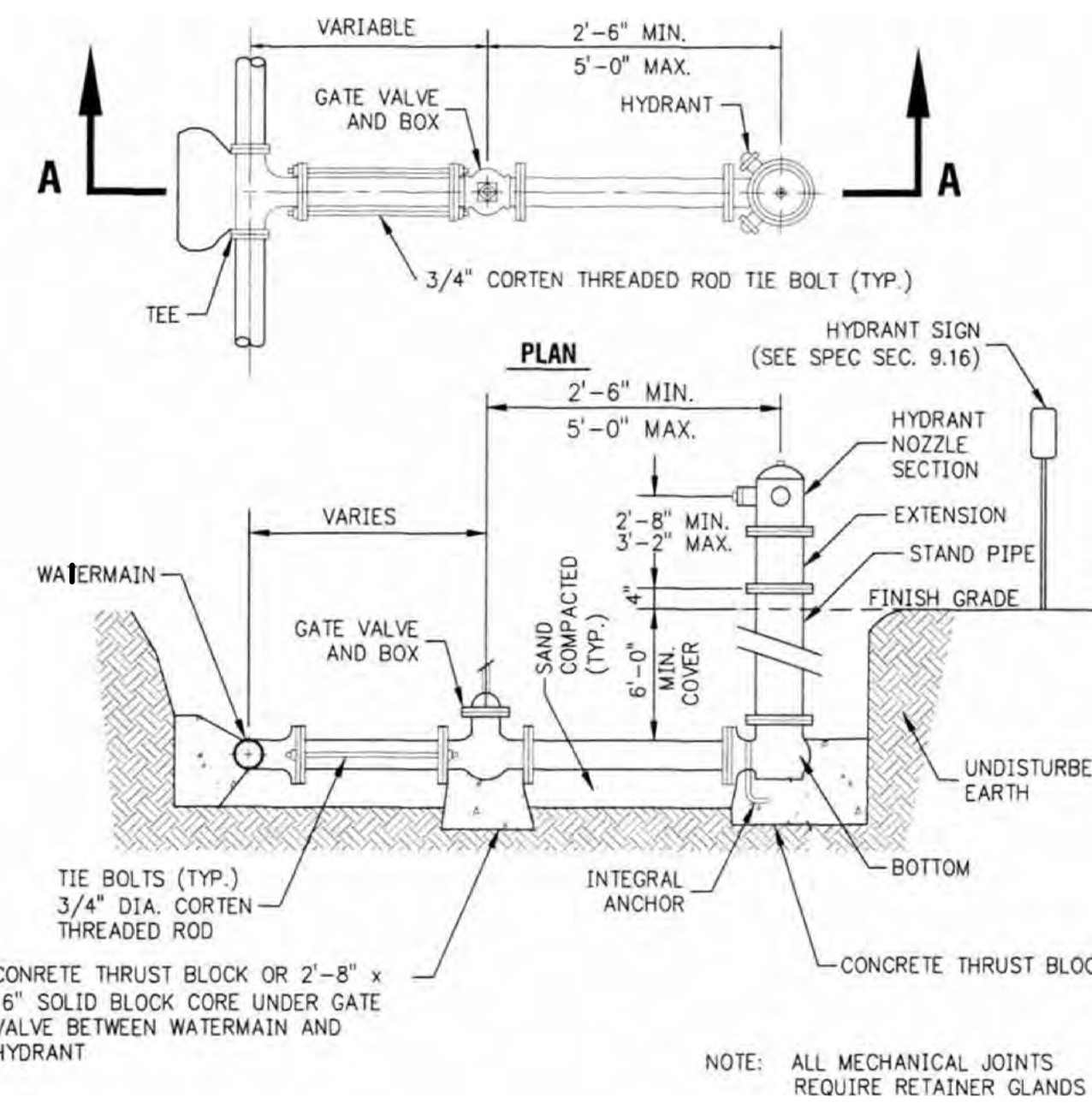
**GRAVITY PIPE BEDDING DETAIL -
AGGREGATE BEDDING**
NOT TO SCALE



WATER VALVE AND BOX DETAIL
NOT TO SCALE



DOMESTIC WATER SERVICE DETAIL
NOT TO SCALE



HYDRANT ASSEMBLY DETAIL
NOT TO SCALE

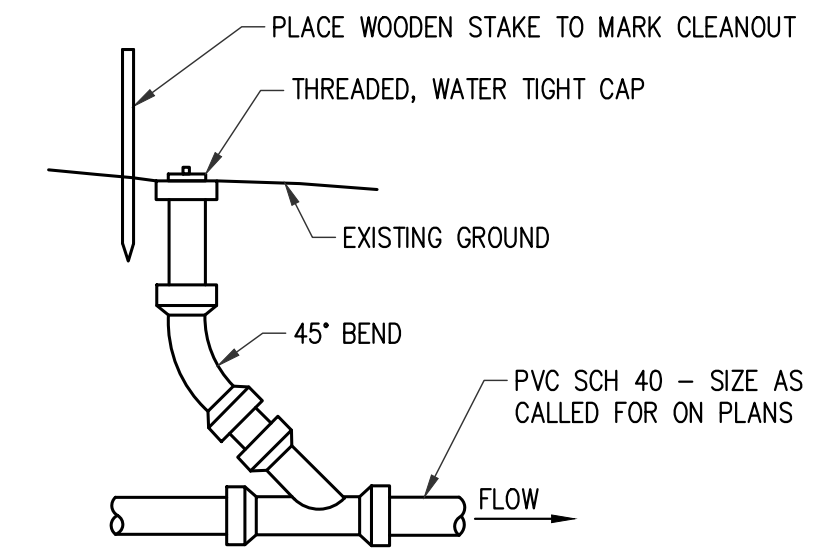
MINIMUM PIPE RESTRAINT SCHEDULE FOR GROUND BURIED PRESSURE PIPES (SEE NOTE 1)

LENGTH (IN FEET) OF RESTRAINT REQUIRED (SEE NOTE 2)

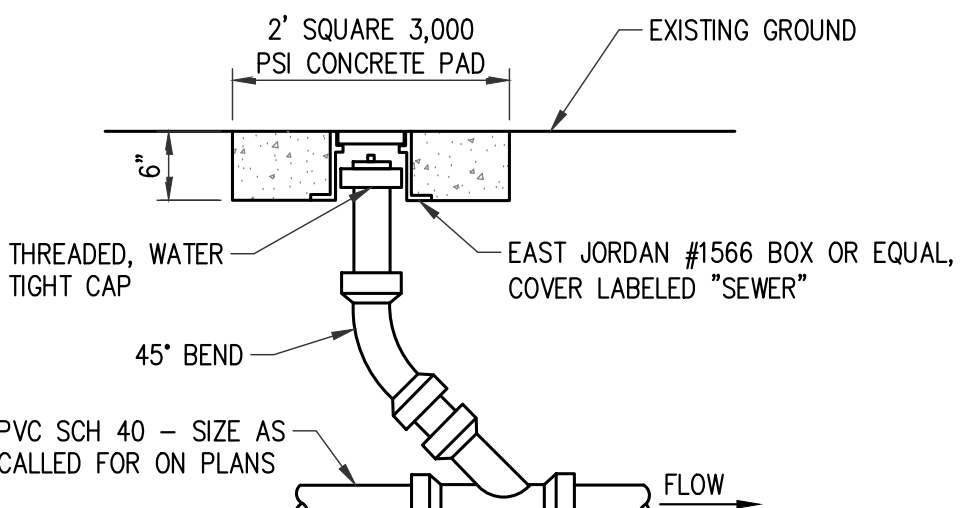
PIPE DIAMETER	DEFLECTION ANGLE	22 1/2"	33 3/4"	45"	56 1/4"	67 1/2"	78 3/4"	90" TEE OR DEAD END
6"	3	6	11	16	23	29	37	
8"	4	8	15	22	31	41	50	
10"	5	11	18	28	38	49	61	
12"	6	13	22	33	45	59	73	
14"	7	14	25	37	52	68	84	
16"	8	16	28	42	59	77	95	
18"	8	18	31	47	66	86	107	
20"	9	20	35	53	73	95	118	
24"	11	23	40	61	85	111	138	
30"	13	29	50	75	105	136	170	
36"	15	34	59	88	123	160	199	
42"	17	39	67	101	141	184	228	
48"	19	43	75	113	157	206	255	

- NOTES:
- THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE + WATER HAMMER.) FOR OTHER TEST PROCEDURES, ALL VALUES ARE TO BE INCREASED OR DECREASED PROPORTIONALLY.
 - IN EACH DIRECTION FROM POINT OF DEFLECTION OR TERMINATION EXCEPT FOR A TEE AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE TEE IS MEASURED.
 - IF THE RODS ARE USED, PLACE 2 RODS 5/8 INCH DIAMETER MINIMUM FOR WATER MAIN 6 INCH TO 10 INCH AND 4 RODS 5/8 INCH DIAMETER MINIMUM FOR 12 INCH AND LARGER.

PIPE RESTRAINT SCHEDULE
NOT TO SCALE



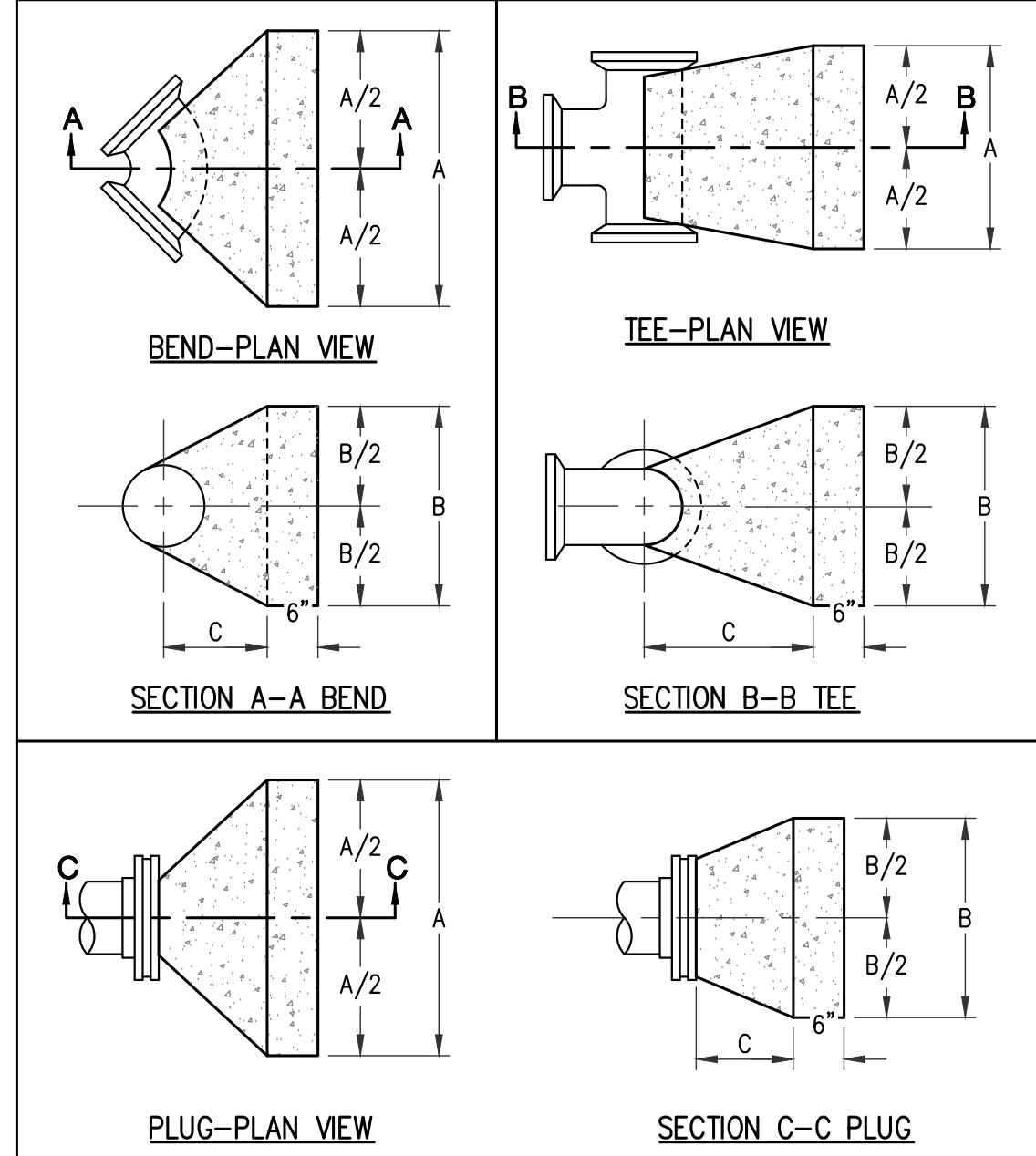
FOR GRASS AREAS



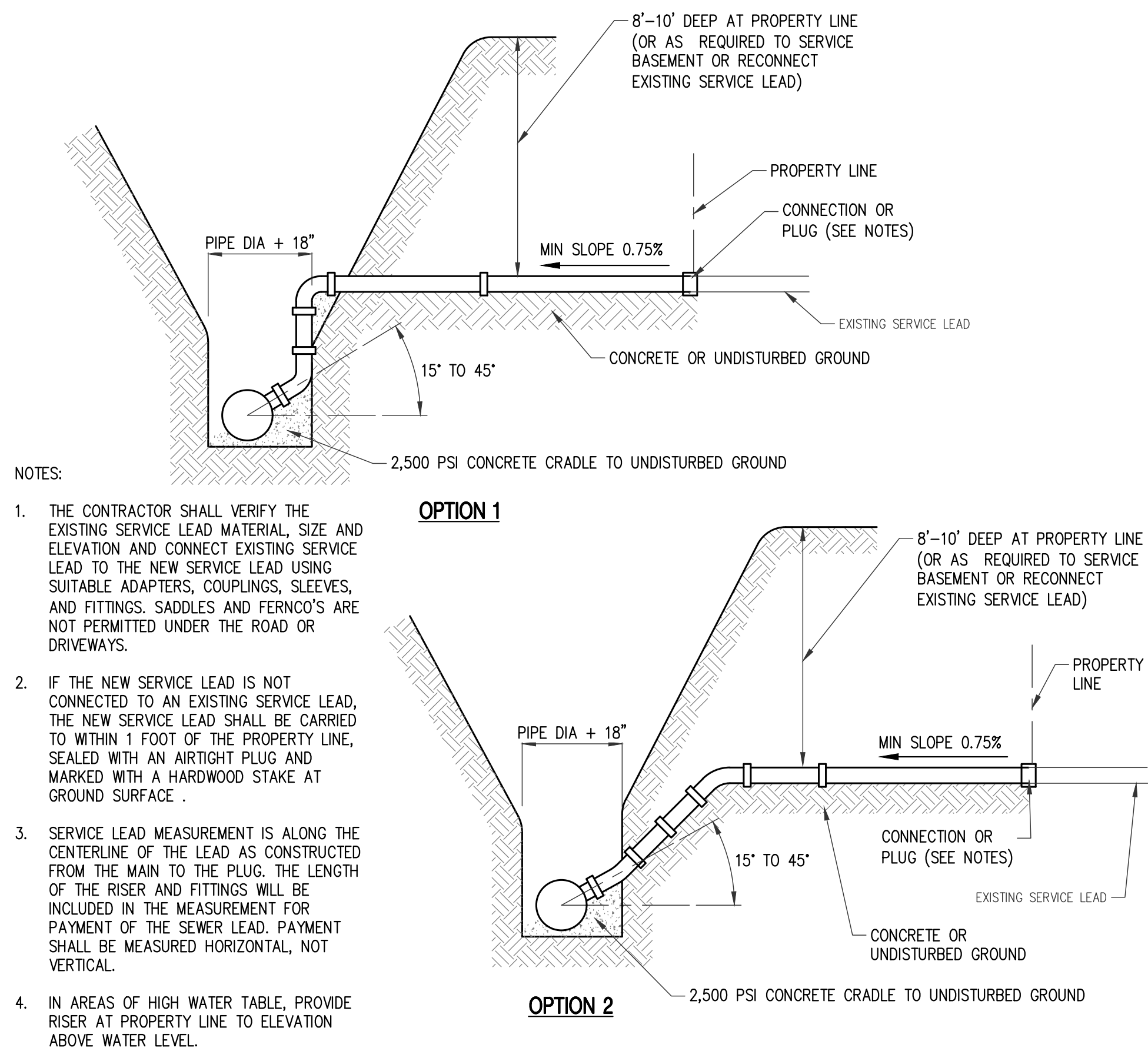
FOR PAVEMENT AREAS

CLEANOUT RISER DETAIL
NOT TO SCALE

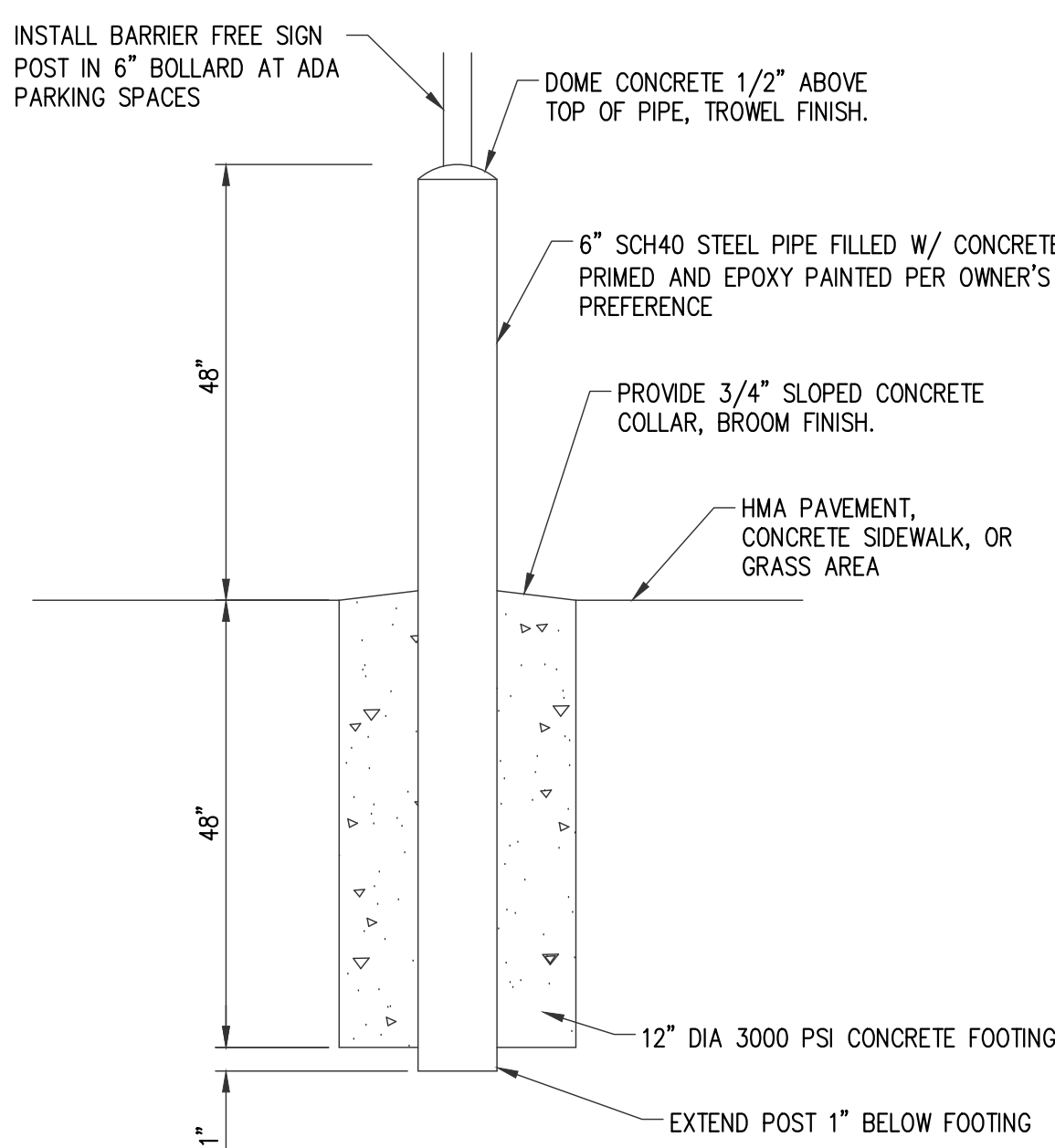
DIA. OF PIPE OR BRANCH OF TEE	90° BEND			45° BEND			22 1/2° BEND			PLUGS, HYDRANTS AND TEE		
	A	B	C	A	B	C	A	B	C			
6"	2'-0"	2'-0"	0'-9"	2'-0"	1'-0"	0'-9"	2'-0"	1'-0"	0'-9"	2'-0"	2'-0"	1'-0"
8"	3'-0"	2'-0"	1'-0"	2'-6"	2'-0"	1'-3"	2'-0"	1'-0"	1'-0"	3'-0"	2'-0"	1'-9"
12"	4'-0"	3'-0"	1'-6"	3'-0"	3'-0"	1'-6"	2'-0"	2'-0"	1'-6"	4'-0"	3'-0"	2'-0"
16"	6'-0"	4'-0"	1'-6"	4'-0"	4'-0"	1'-6"	3'-0"	3'-0"	1'-6"	6'-0"	4'-0"	2'-0"
24"	8'-0"	6'-0"	2'-0"	5'-0"	5'-0"	2'-0"	4'-0"	4'-0"	2'-0"	8'-0"	6'-0"	2'-6"



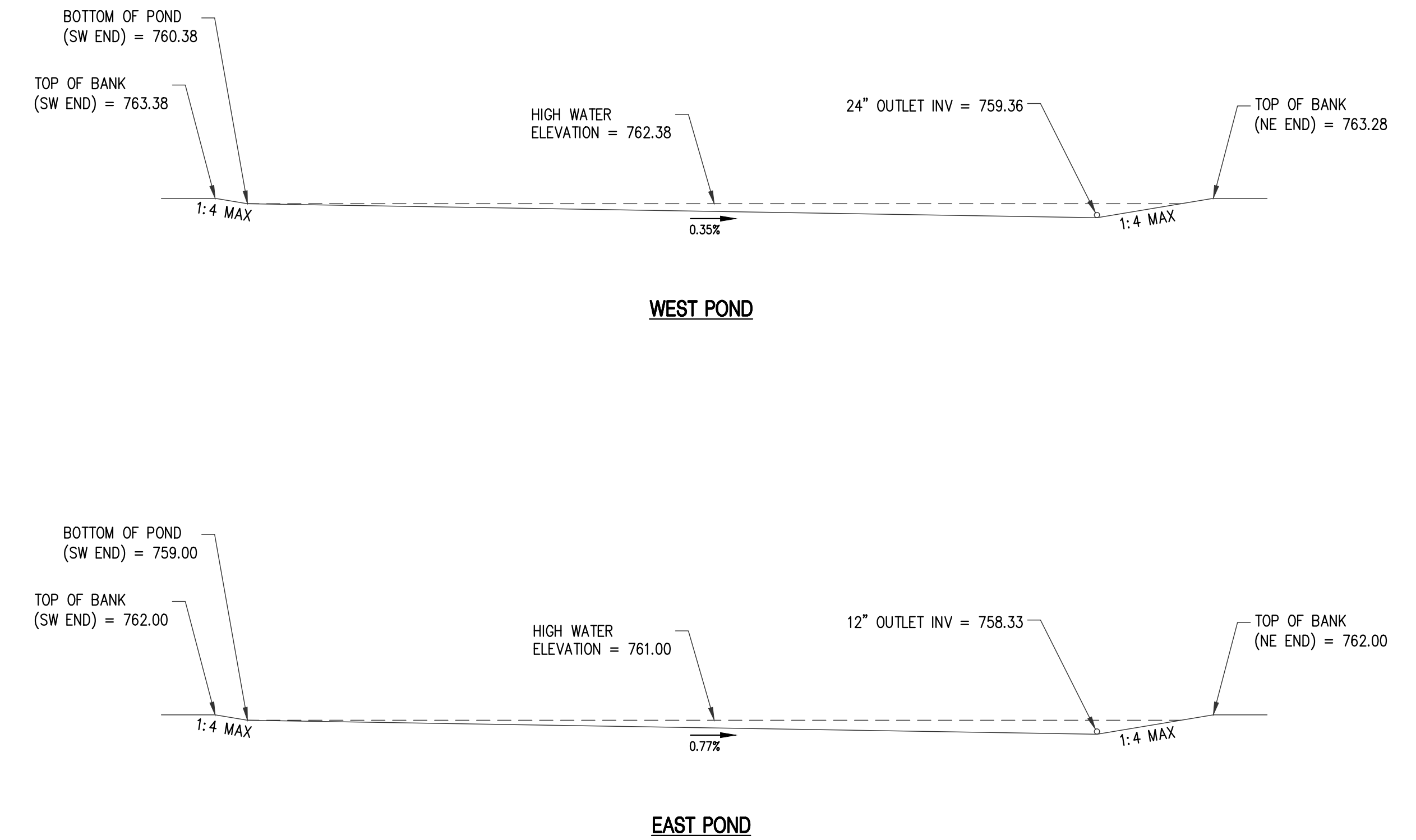
THRUST BLOCK DETAILS
NOT TO SCALE



SERVICE LEAD AND RISER DETAIL
NOT TO SCALE

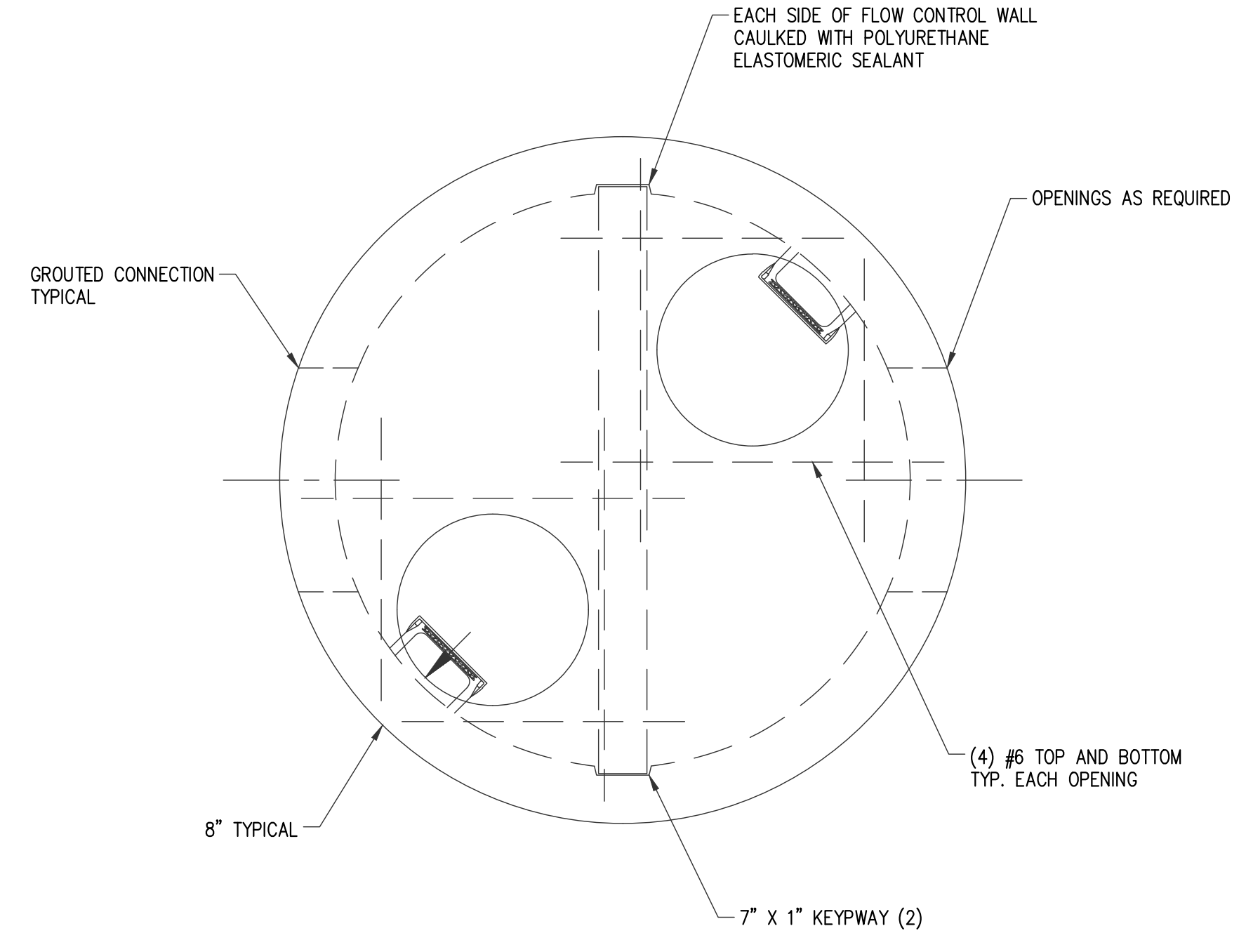


BOLLARD DETAIL
NOT TO SCALE

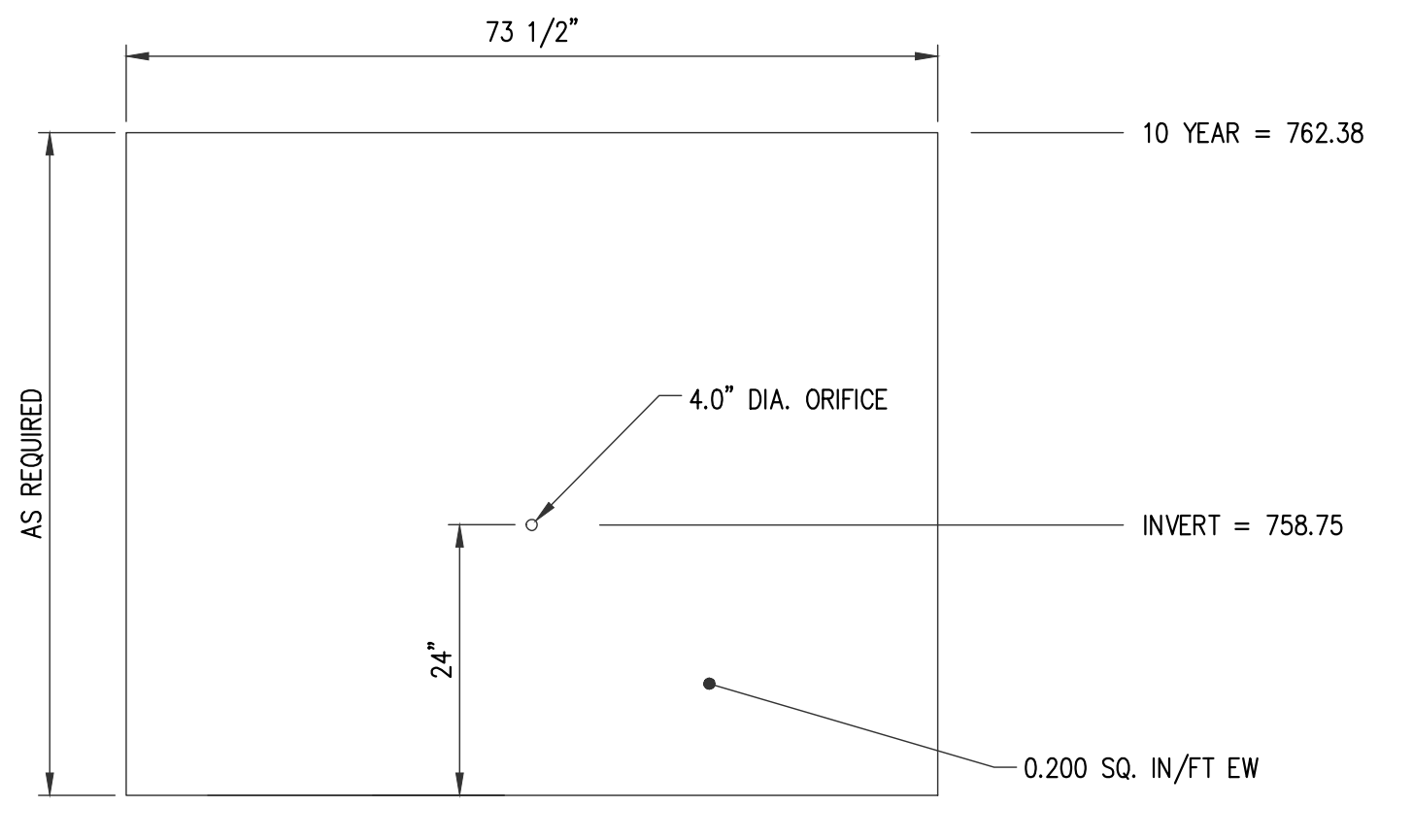


DETENTION POND BOTTOM PROFILE
NOT TO SCALE

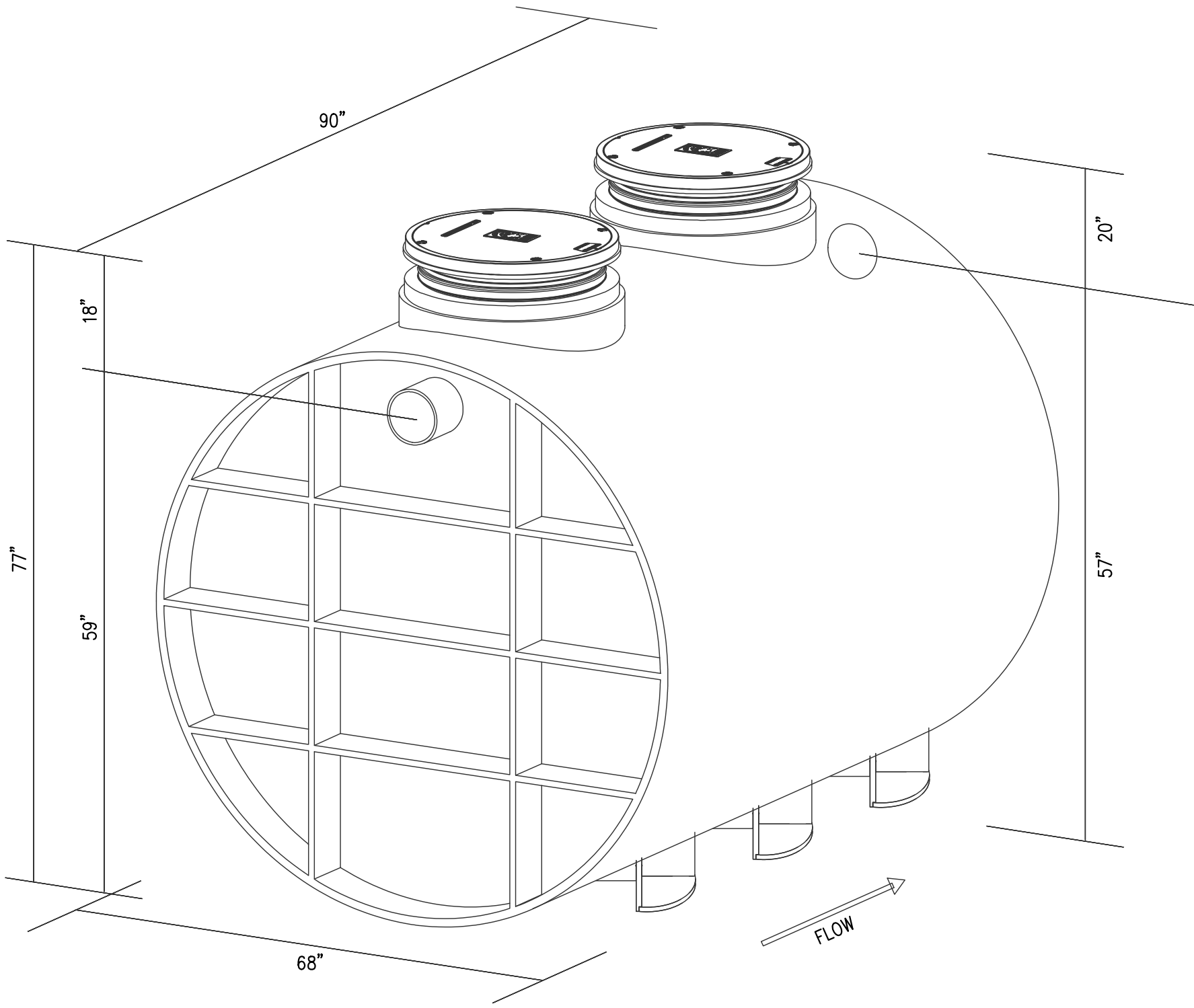
NOTES:
1) MANHOLE SECTIONS TO BE MANUFACTURED TO ASTM C-478 SPECIFICATIONS AND IN ACCORDANCE WITH NORTHERN CONCRETE PIPE, INC. (800-222-9918)
2) REINFORCING SHOWN FOR SCHEMATIC ONLY. ALL STEEL AREAS ARE MINIMUMS.
3) CONTRACTOR TO SEAL BETWEEN PRECAST WALL & BASE WITH BUTYL ROPE.



TOP VIEW

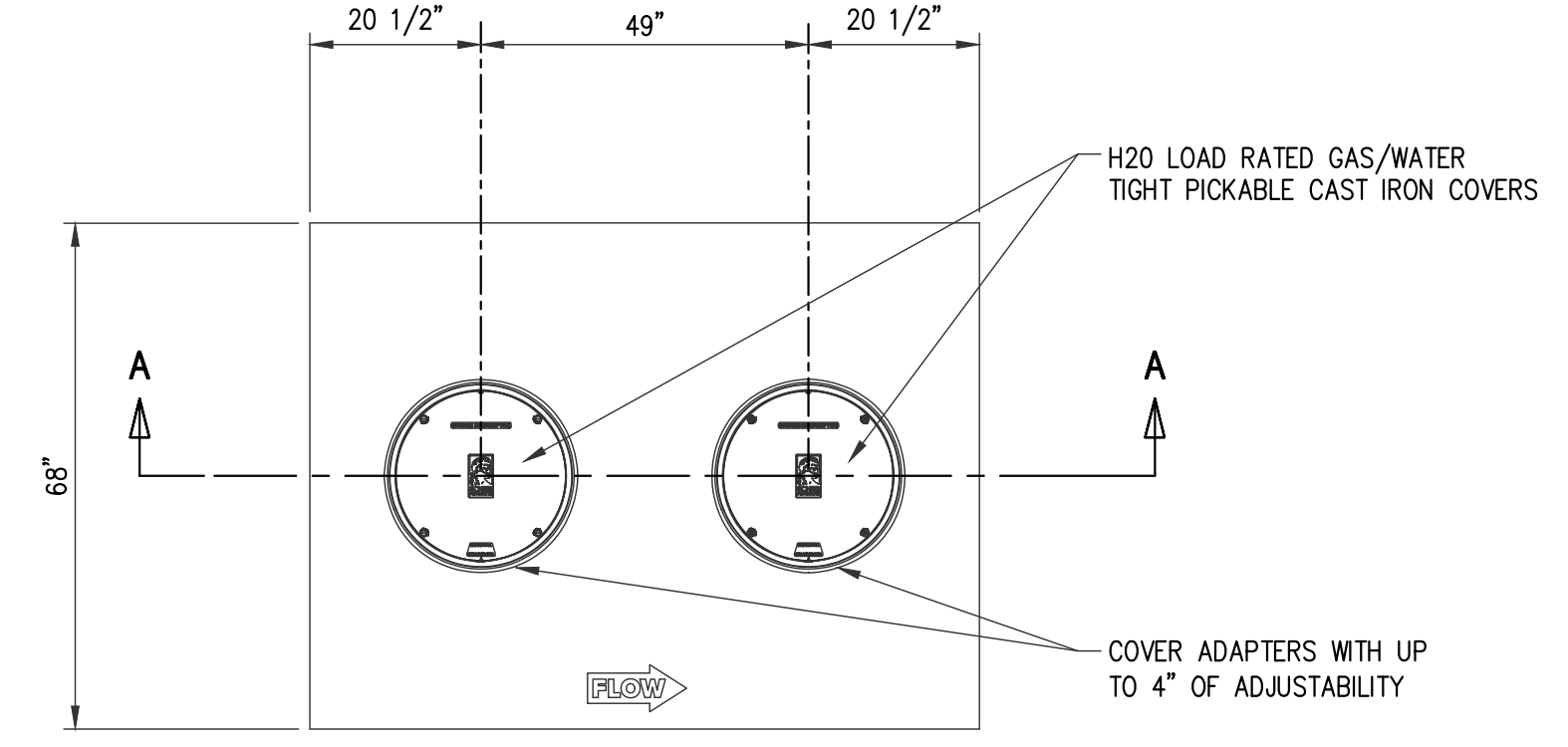


DRAINAGE STRUCTURE #14 WEIR WALL SIDE VIEW

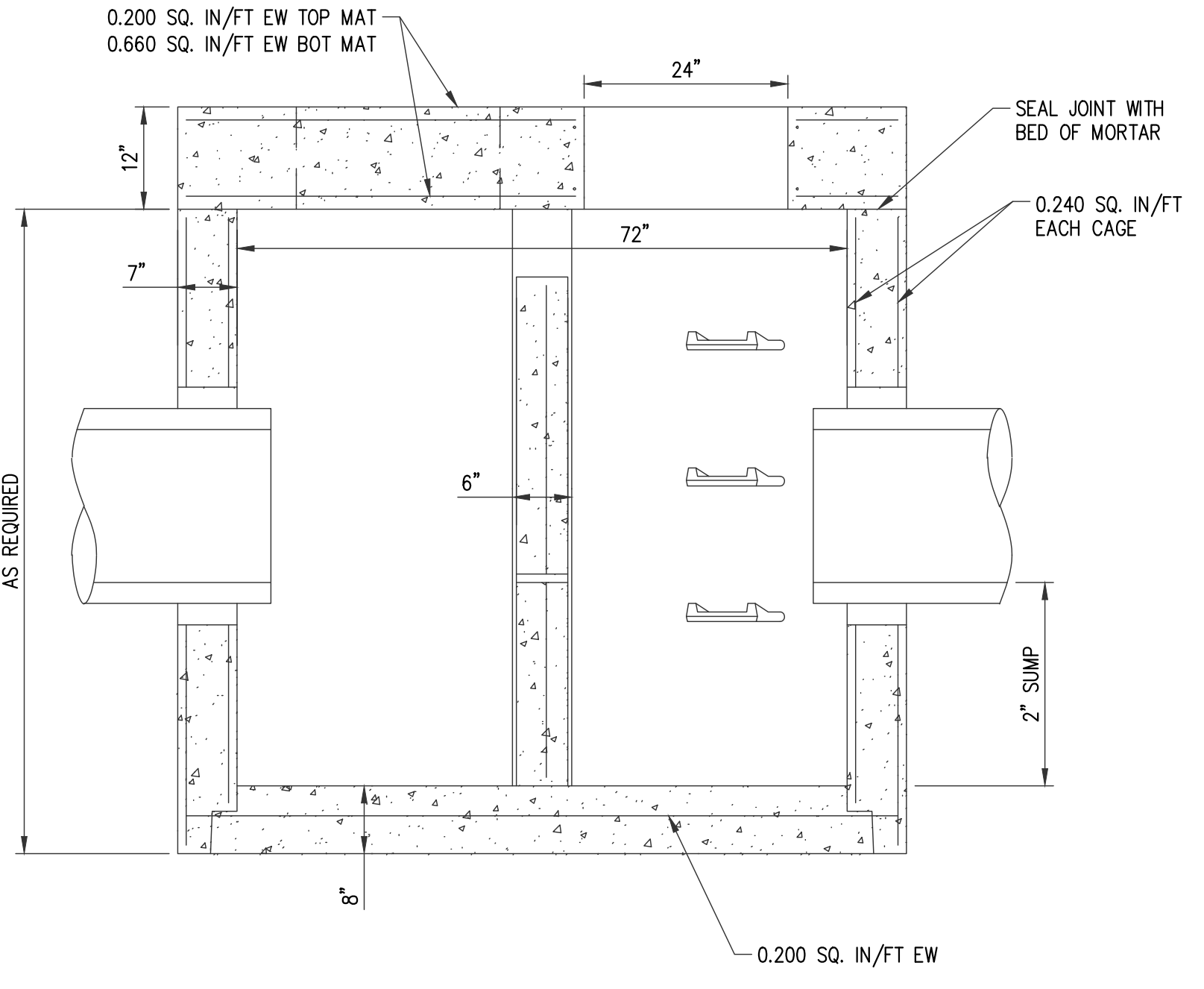


OUTLET END VIEW

NOTES:
1) 6" PLAIN END SCH. 40 INLET/OUTLET
2) UNIT WEIGHT - WITH COMPOSITE COVER: 1,400 LBS; WITH CAST IRON COVERS: 1,516 LBS.
3) MAXIMUM OPERATING TEMPERATURE: 150° F CONTINUOUS
4) CAPACITIES
LIQUID: 1,010 GAL.; GREASE (FACTORY RATING): 6,547 LBS. @ 100 GPM / 4,451 LBS. @ 200 GPM; SOLIDS: 103 GAL.

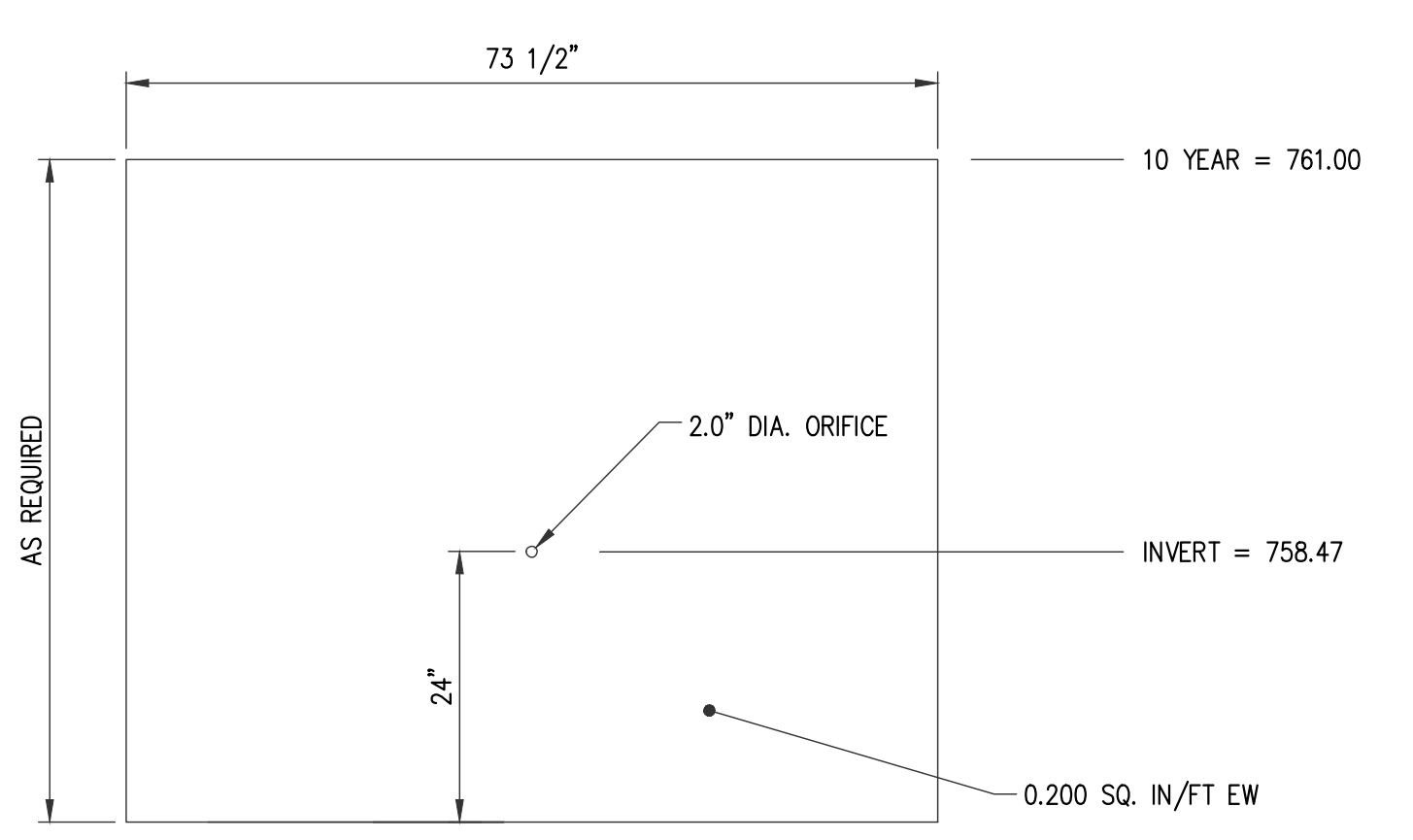


TOP VIEW

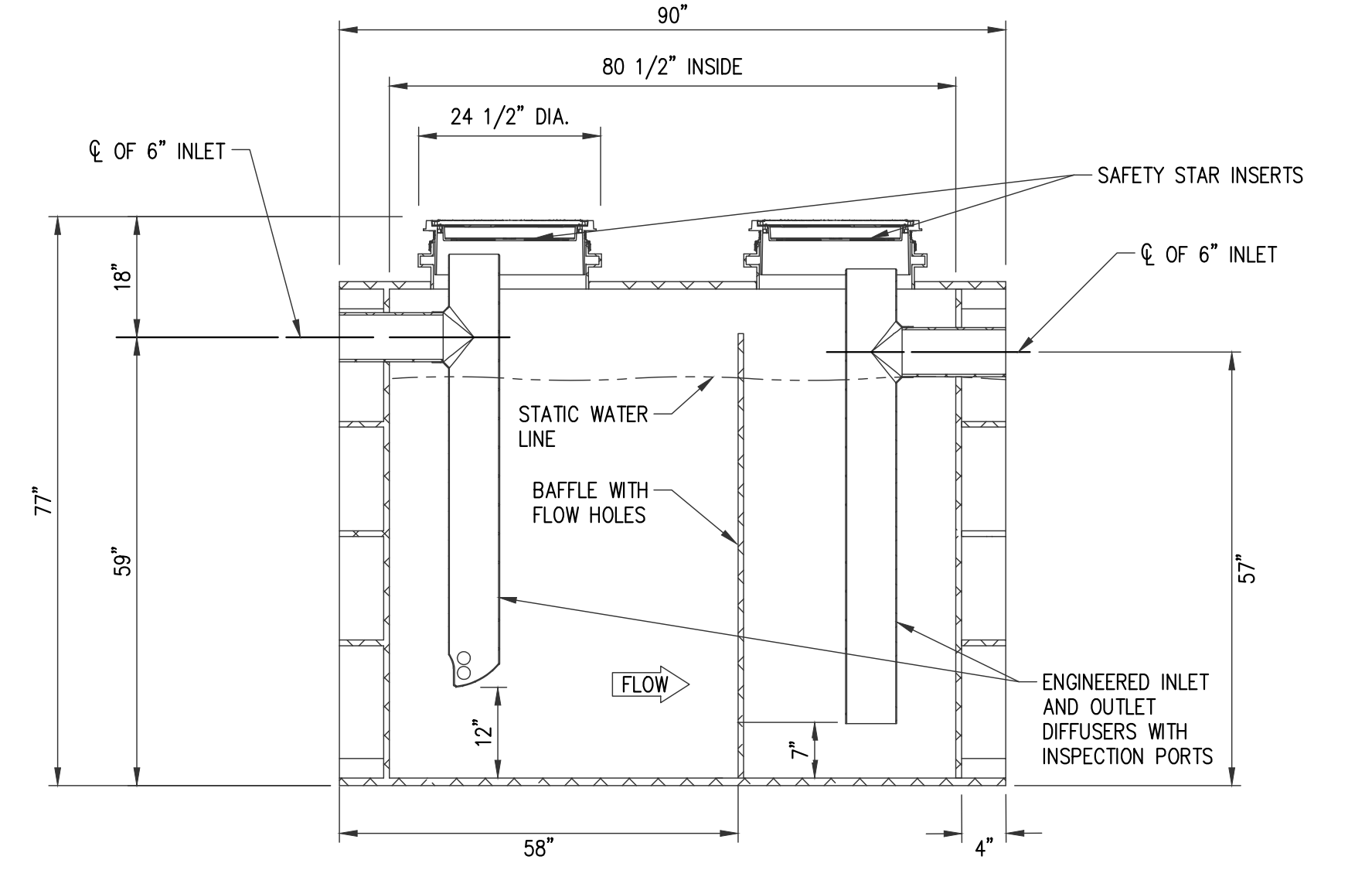


CROSS SECTION VIEW

72" PRECAST OUTLET CONTROL STRUCTURE W/ OVERFLOW
NOT TO SCALE



DRAINAGE STRUCTURE #24 WEIR SIDE VIEW

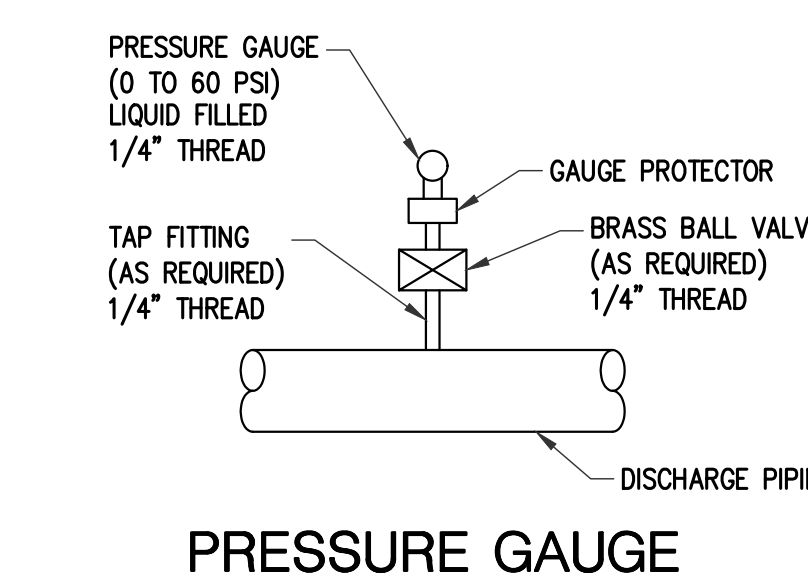
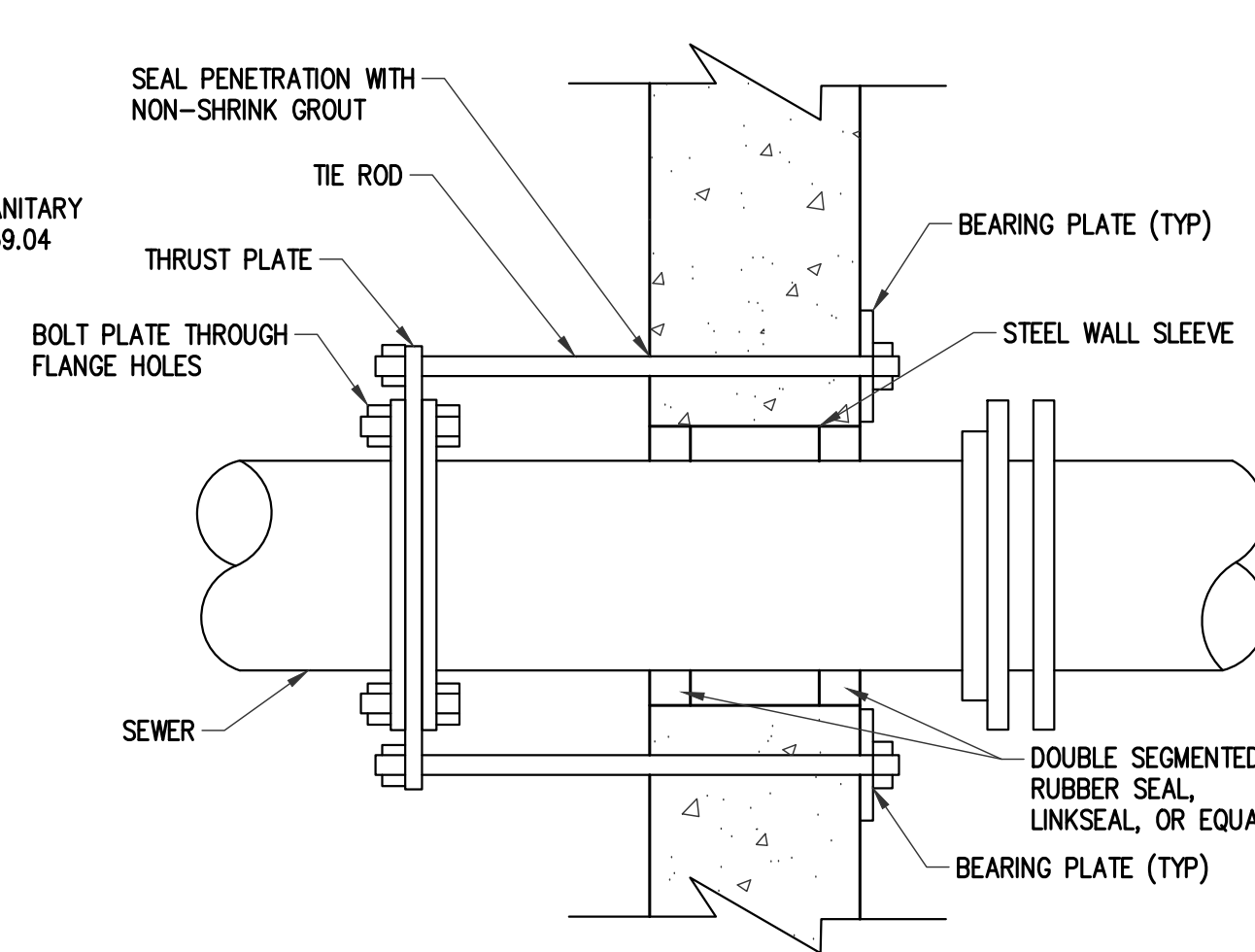
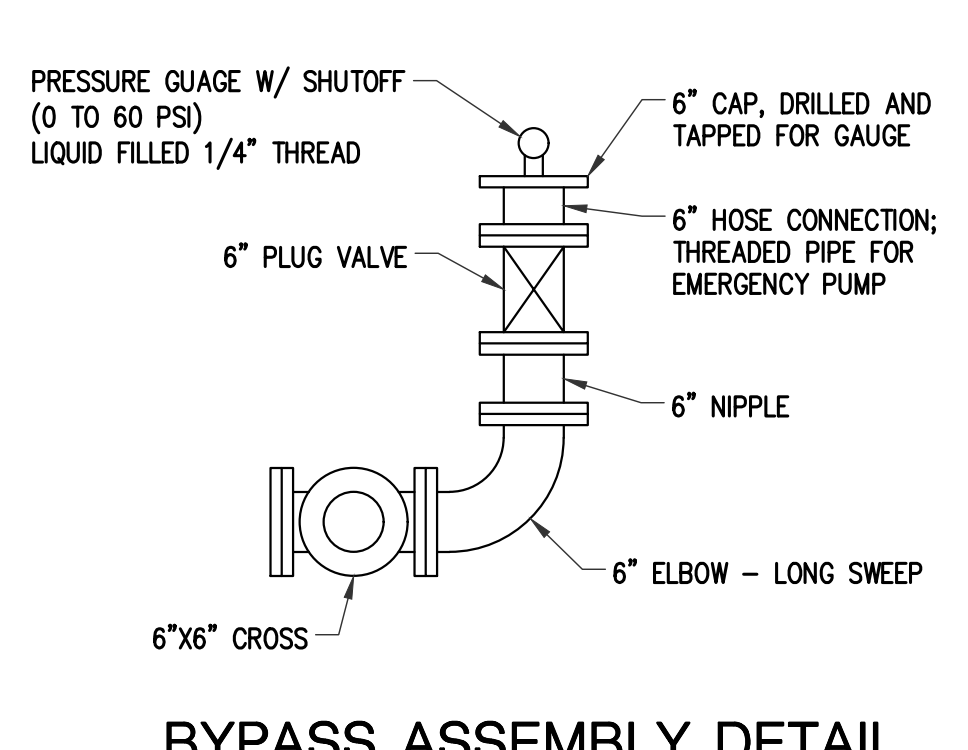
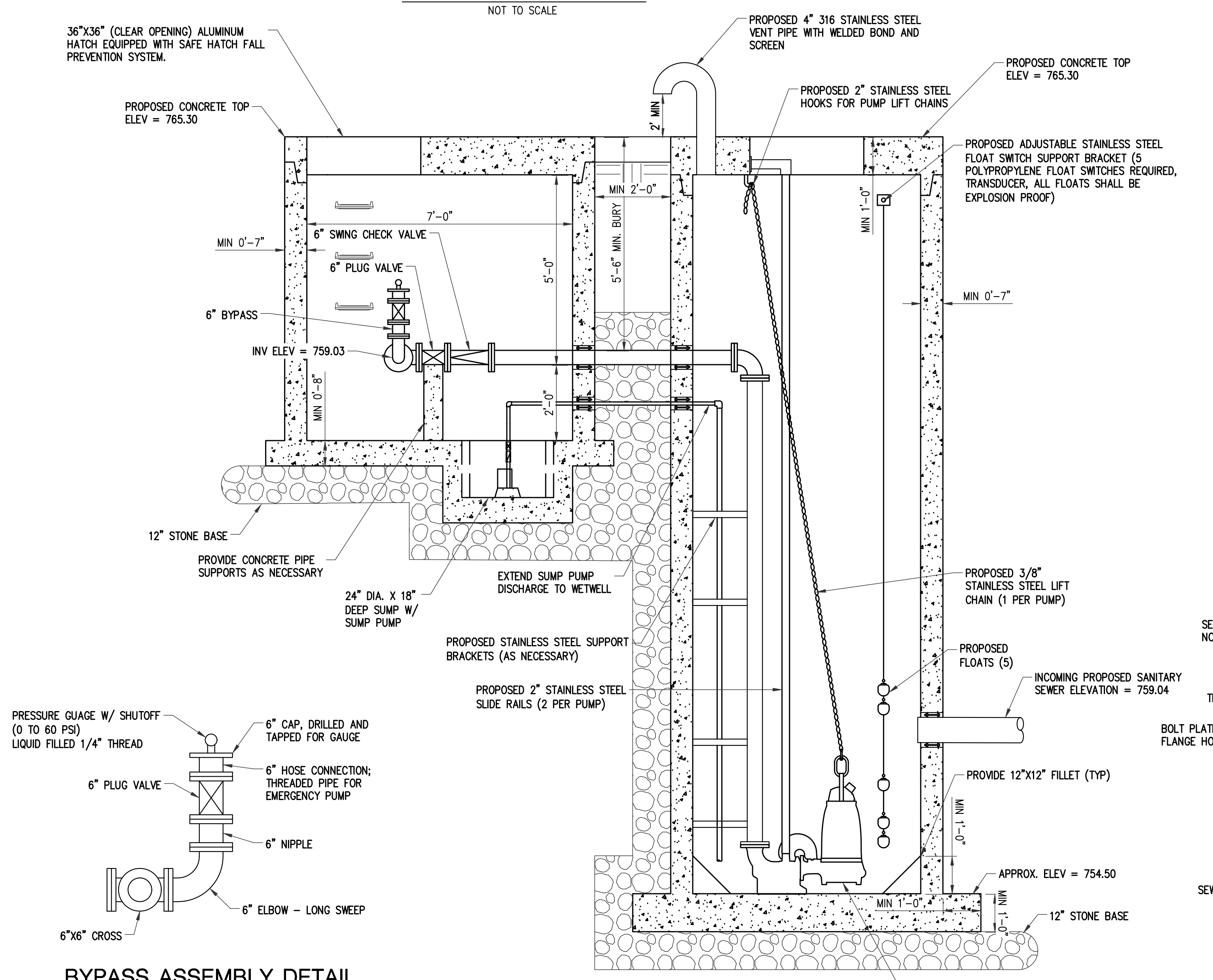
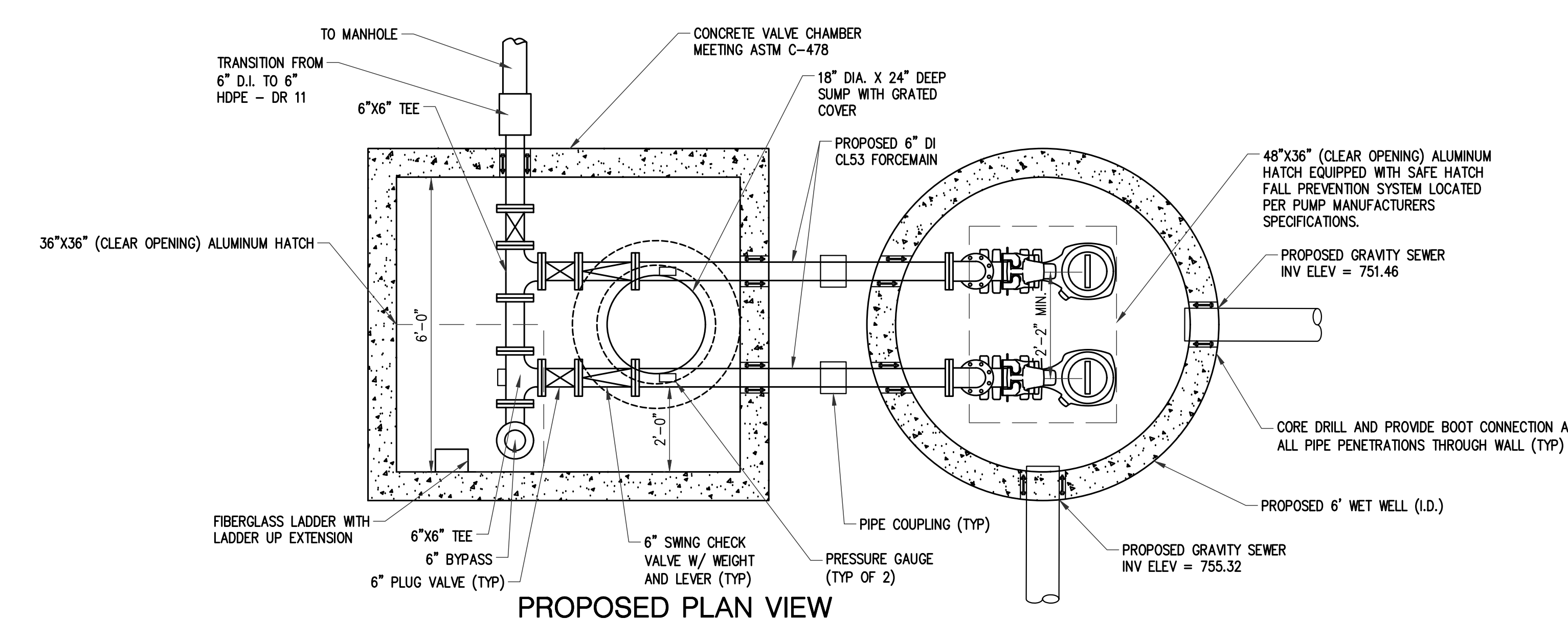


SECTION A-A

SCHIER GGI-1000 GREASE INTERCEPTOR
NOT TO SCALE



Know what's below.
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GENERAL NOTES

1. ALL INFLUENT AND EFFLUENT PIPING SHALL BE PLACED ON A BED OF 6A COMPACTED CRUSHED LIMESTONE. STONE SHALL EXTEND A MINIMUM OF 12\"/>
- 2. PRIOR TO ORDERING WET WELL AND VALVE VAULT, THE CONTRACTOR SHALL SUBMIT BUOYANCY CALCS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN MICHIGAN FOR APPROVAL. WATER LEVEL SHALL BE ASSUMED TO BE AT GROUND SURFACE.
- 3. WET WELL AND VALVE VAULT SHALL BE PRECAST CONCRETE MEETING ASTM C478 AND C443. MANUFACTURER SHALL SUBMIT STEEL CALCULATIONS. JOINTS SHALL BE PERFORMED FLEXIBLE JOINT PER ASTM C-990 AND EXTERNAL BANDS PER C-877. ALL PARTS OF WET WELL AND VALVE VAULT SHALL BE HS-20 RATED.
- 4. CORE DRILL AND PROVIDE LINK SEAL TYPE CONNECTION AT EACH PIPE PENETRATION THROUGH WETWELL OR VALVE VAULT (TYPICAL ALL PENETRATIONS).
- 5. ALL HATCHES SHALL BE RATED FOR HS-20 LOADING AND HAVE PADLOCK HASPS. HATCHES SHALL BE CAST INTEGRAL TO THE TOP SECTION. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING HATCHES PER HS-20 LOADING REQUIREMENTS. CONTRACTOR SHALL COORDINATE LOCATION WITH PUMP SUPPLIER TO ALLOW FOR REMOVAL OF PUMPS.
- 6. FLOOR OF WETWELL SHALL BE SLOPED TO CENTER OF STRUCTURE. CONSTRUCT 12\"/>
- 7. ALL CONCRETE STRUCTURES SHALL BE DESIGNED FOR HS-20 LOADING (TRAFFIC).
- 8. BASE OF VALVE VAULT (FLOOR) SHALL BE INTEGRALLY CAST TO THE FIRST WALL SECTION.
- 9. ALL INTERIOR PIPING SHALL BE DUCTILE IRON CL-53 WITH FLANGED FITTINGS. ALL EXTERIOR DUCTILE IRON PIPING SHALL HAVE MECHANICAL JOINT CONNECTIONS. CONTRACTOR TO TRANSITION TO EXISTING PIPE SIZE/MATERIAL OUTSIDE VALVE VAULT.
- 10. DO NOT MOUNT FLOATS IN DIRECT FLOW LINE.
- 11. ALL PIPING SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS.
- 12. ONE OF THE PUMPS WILL BE SUPPLIED WITH A FLYGT MIXED FLUSH VALVE (OR EQUAL) INSTALLED.
- 13. CHECK VALVES SHALL BE WEIGHT AND LEVER TYPE.
- 14. CONTRACTOR SHALL PROVIDE ONE GRIP EYE SIZED TO MATCH THE LIFTING CHAIN PROVIDED.
- 15. CONTRACTOR RESPONSIBLE FOR ANY DEWATERING REQUIRED FOR COMPLETION OF PROJECT.

SUBMERSIBLE SEWAGE PUMP DATA

PUMPS: TBD
DESIGN POINT: CAPABLE OF 220 GPM @ 16.2 FEET TDH
MAXIMUM SPEED: 500-1750 RPM
MAX. HORSEPOWER: 5.5 HORSEPOWER
POWER: 230 VOLT, 3 PHASE
MOTOR TYPE: EXPLOSION PROOF
CONTROL SYSTEM: INTERNAL TRANSDUCER (PRIMARY), FLOATS (5) (BACKUP)

- NOTES:**
1. THE PROPOSED PUMPS ARE BASED ON FLYGT PUMPS AS PROVIDED BY KENNEDY INDUSTRIES. LOCAL CONTACT IS JIM BAKOS (989) 412-3978. MODEL NUMBERS AND IMPELLERS SHALL BE VERIFIED WITH THE SUPPLIER.
 2. PROVIDE ONE SPARE FLOAT.

PUMP OPERATION SCHEDULE

Level Setting (beginning at bottom)	Operation	Elevation Level	Sensor
1	Low Water Alarm / Redundant Off	755.00	Transducer
2	All Pumps Off	755.50	Transducer
3	Lead Pump On	757.50	Transducer
4	Lag Pump On	758.50	Transducer
5	High Water Alarm / All Pumps On	759.50	Transducer

- NOTES:**
- LEVEL SETTINGS SHOWN ARE FOR INFORMATION ONLY. THESE MAY BE ADJUSTED DURING STARTUP BY THE ENGINEER. THE STATION WILL BE CONTROLLED WITH A LEVEL TRANSDUCER AND BACKED UP WITH THE FIVE FLOATS. THE NORMAL PUMP OPERATING RANGE SHALL BE FROM 755.50 TO 758.50.

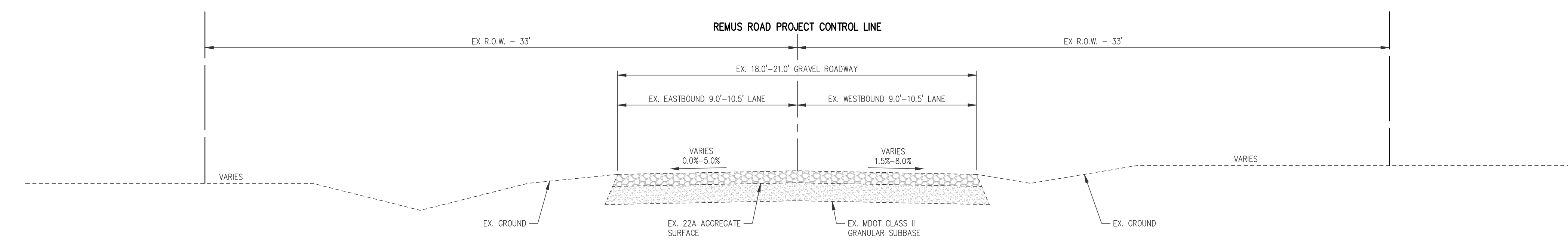
NOTES

- 1.) NUTS FOR TIE RODS SHALL CONFORM TO ASST. A-194, GRADE 2H.
- 2.) RESTRAINT RODS SHALL CONFORM TO ASST. A-183, GRADE B7.
- 3.) FILL WALL SLEEVES SOLID WITH A NON-SHRINK, NON-METALLIC GROUT AT ALL LOCATIONS.
- 4.) OUTSIDE OF THE STRUCTURE AT THE LOCATION OF THE ROD PENETRATIONS SHALL BE DAMPROOFED WITH MASTIC TYPE WATERPROOFING.
- 5.) ALL BOLTS, NUTS, RODS, AND WASHERS SHALL BE STAINLESS STEEL.
- 6.) CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ENGINEER'S APPROVAL.
- 7.) DETAIL SHALL BE USED AT ALL THREE VALVE VAULT PENETRATIONS.

PRELIMINARY NOT FOR CONSTRUCTION

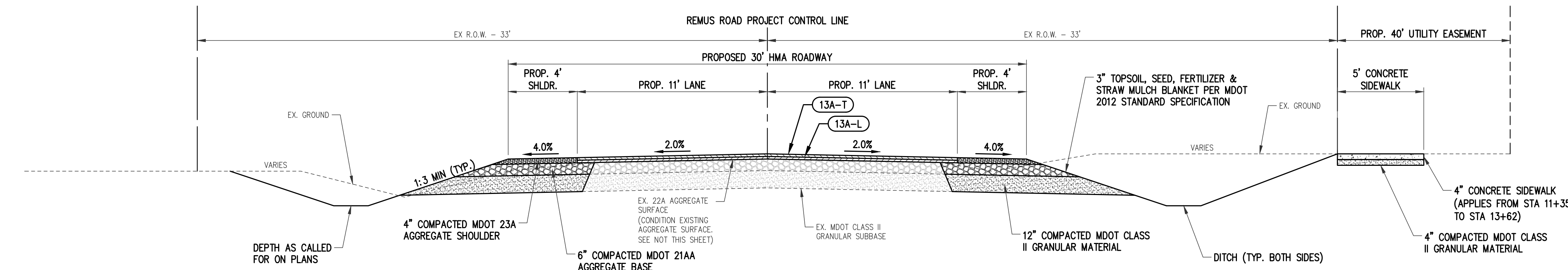
Isabella Sheriff's Office and Correction Facility

5/11/21 - PSPR
9/30/21 - FSPR
REVISED



EXISTING TYPICAL CROSS SECTION - REMUS ROAD

NOT TO SCALE
TO APPLY FROM:
STA 8+50 TO STA 20+00 (P.O.E.)



PROPOSED TYPICAL CROSS SECTION - REMUS ROAD

NOT TO SCALE
TO APPLY FROM:
STA 8+50 TO STA 20+00 (P.O.E.)

HMA APPLICATION CHART						
IDENT NO	ITEM	HMA PAVEMENT	RATE OF APPLICATION	ESTIMATED THICKNESS	PERFORMANCE GRADE	COMMENTS
13A-T	HMA, 13A	HMA, 13A	165#/SYD	1.50"	58-28	TOP COURSE (AWI=260 MINIMUM)
13A-L	HMA, 13A	HMA, 13A	165#/SYD	1.50"	58-28	LEVELING COURSE
-	HMA BOND COAT	-	0.05-0.15 GAL	-	-	NOT A PAY ITEM; FOR INFORMATION ONLY

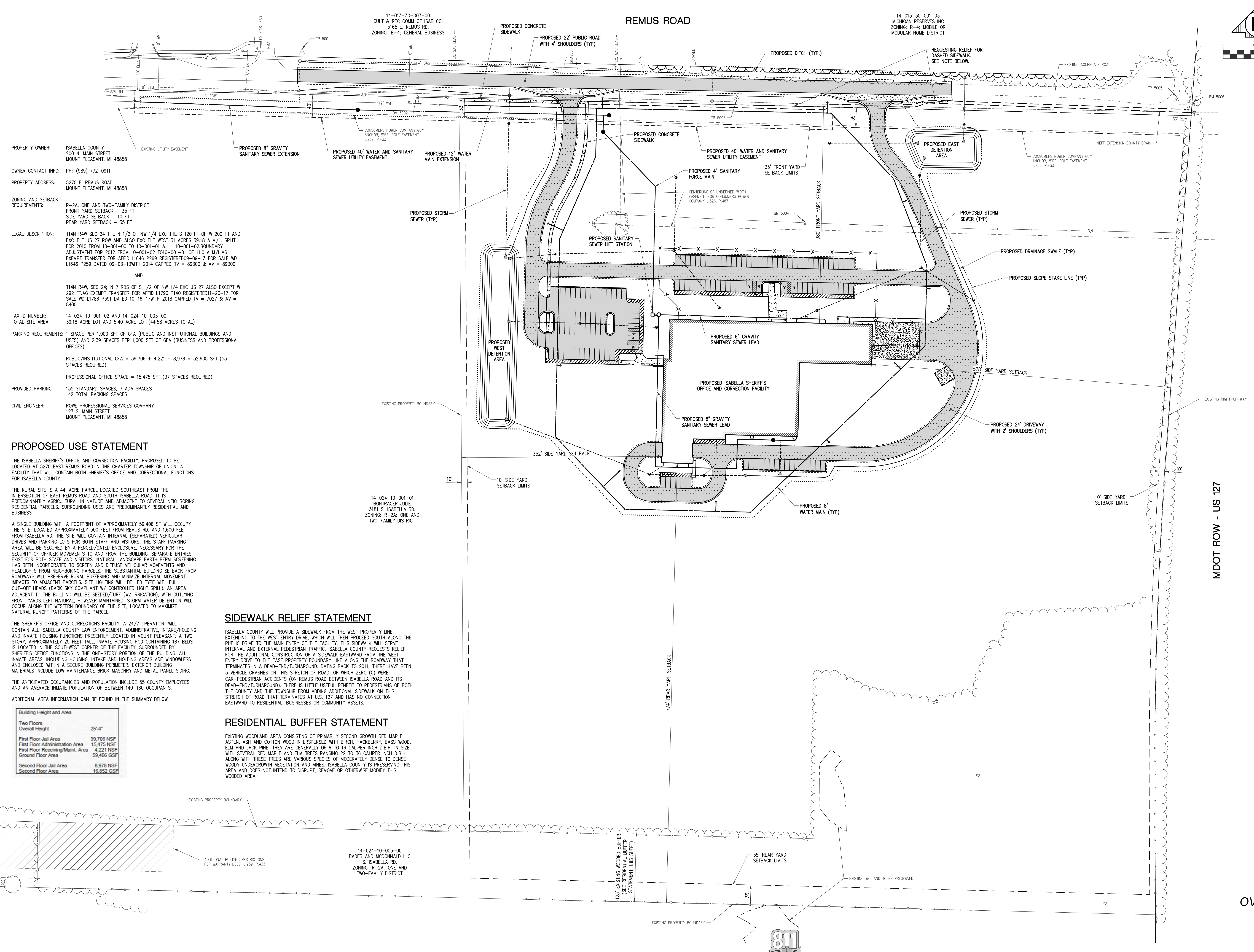
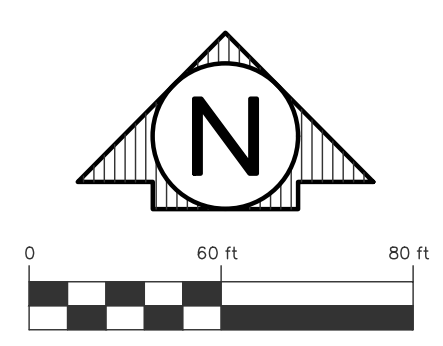
AGGREGATE BASE CONDITIONING NOTE:
CONTRACTOR TO CONDITION EXISTING AGGREGATE SURFACE PRIOR TO FINE GRADING. SHAPE THE FINISHED SURFACE OF THE EXISTING AGGREGATE BASE COURSE TO WITHIN +/- 1/2 INCH OF THE GRADE AND CROSS SECTION SHOWN ON THE PLANS. PROVIDE ADDITIONAL AGGREGATE TO ADDRESS IRREGULARITIES AND OBTAIN THE REQUIRED GRADE OR CROSS SECTION.
TO CORRECT SURFACE IRREGULARITIES OR TO ADD MORE MATERIAL, MIX THE LOOSE AND COMPACTED MATERIALS TO AT LEAST 2 INCHES DEEP AND RECOMPACT. COMPACT THE AGGREGATE BASE AS SPECIFIED IN SPECIFICATION SECTION 01 45 16.02 DENSITY AND AGGREGATE TESTING.

Design TRG
PM / PA TRG
Drawn TAK
IA Project Number 20190905



TYPICAL CROSS SECTIONS

C106



PROPERTY OWNER: ISABELLA COUNTY
200 N. MAIN STREET
MOUNT PLEASANT, MI 48858

OWNER CONTACT INFO: PH: (989) 772-0911

PROPERTY ADDRESS: 5270 E. REMUS ROAD
MOUNT PLEASANT, MI 48858

ZONING AND SETBACK REQUIREMENTS:
R-2A, ONE AND TWO-FAMILY DISTRICT
FRONT YARD SETBACK - 35 FT
SIDE YARD SETBACK - 10 FT
REAR YARD SETBACK - 35 FT

LEGAL DESCRIPTION: T14N R4W SEC 24 THE N 1/2 OF NW 1/4 EXC THE S 120 FT OF W 200 FT AND EXC THE US 27 ROW AND ALSO EXC THE WEST 31 ACRES 39.18 A M/L SPLIT FOR 2010 FROM 10-001-00 TO 10-001-01 & 10-001-02 BOUNDARY ADJUSTMENT FOR 2012 FROM 10-001-02 TO 10-001-01 OF 11.0 A M/L AC EXEMPT TRANSFER FOR AFFID L1646 P269 REGISTERED 09-13 FOR SALE WD L1646 P259 DATED 09-03-13 WITH 2014 CAPPED TV = 89300 & AV = 89300 AND
T14N R4W, SEC 24; N 7 RDS OF S 1/2 OF NW 1/4 EXC US 27 ALSO EXCEPT W 292 FT AG EXEMPT TRANSFER FOR AFFID L1790 P140 REGISTERED 11-20-17 FOR SALE WD L1786 P391 DATED 10-16-17 WITH 2018 CAPPED TV = 7027 & AV = 8400

TAX ID NUMBER: 14-024-10-001-02 AND 14-024-10-003-00
TOTAL SITE AREA: 39.18 ACRE LOT AND 5.40 ACRE LOT (44.58 ACRES TOTAL)

PARKING REQUIREMENTS: 1 SPACE PER 1,000 SFT OF GFA (PUBLIC AND INSTITUTIONAL BUILDINGS AND USES) AND 2.39 SPACES PER 1,000 SFT OF GFA (BUSINESS AND PROFESSIONAL OFFICES)

PUBLIC/INSTITUTIONAL GFA = 39,706 + 4,221 + 8,978 = 52,905 SFT (53 SPACES REQUIRED)

PROFESSIONAL OFFICE SPACE = 15,475 SFT (37 SPACES REQUIRED)

PROVIDED PARKING: 135 STANDARD SPACES, 7 ADA SPACES
142 TOTAL PARKING SPACES

CIVIL ENGINEER: ROWE PROFESSIONAL SERVICES COMPANY
127 S. MAIN STREET
MOUNT PLEASANT, MI 48858

PROPOSED USE STATEMENT

THE ISABELLA SHERIFF'S OFFICE AND CORRECTION FACILITY, PROPOSED TO BE LOCATED AT 5270 EAST REMUS ROAD IN THE CHARTER TOWNSHIP OF UNION, A FACILITY THAT WILL CONTAIN BOTH SHERIFF'S OFFICE AND CORRECTIONAL FUNCTIONS FOR ISABELLA COUNTY.

THE RURAL SITE IS A 44-ACRE PARCEL LOCATED SOUTHEAST FROM THE INTERSECTION OF EAST REMUS ROAD AND SOUTH ISABELLA ROAD. IT IS PREDOMINANTLY AGRICULTURAL IN NATURE AND ADJACENT TO SEVERAL NEIGHBORING RESIDENTIAL PARCELS. SURROUNDING USES ARE PREDOMINANTLY RESIDENTIAL AND BUSINESS.

A SINGLE BUILDING WITH A FOOTPRINT OF APPROXIMATELY 59,406 SF WILL OCCUPY THE SITE, LOCATED APPROXIMATELY 500 FEET FROM REMUS RD. AND 1,600 FEET FROM ISABELLA RD. THE SITE WILL CONTAIN INTERNAL (SEPARATED) VEHICULAR DRIVES AND PARKING LOTS FOR BOTH STAFF AND VISITORS. THE STAFF PARKING AREA WILL BE SECURED BY A FENCED/GATED ENCLOSURE, NECESSARY FOR THE SECURITY OF OFFICER MOVEMENTS TO AND FROM THE BUILDING. SEPARATE ENTRIES EXIST FOR BOTH STAFF AND VISITORS. NATURAL LANDSCAPE EARTH BERM SCREENING HAS BEEN INCORPORATED TO SCREEN AND DIFFUSE VEHICULAR MOVEMENTS AND HEADLIGHTS FROM NEIGHBORING PARCELS. THE SUBSTANTIAL BUILDING SETBACK FROM ROADWAYS WILL PRESERVE RURAL BUFFERING AND MINIMIZE INTERNAL MOVEMENT IMPACTS TO ADJACENT PARCELS. SITE LIGHTING WILL BE LED TYPE WITH FULL CUT-OFF HEADS (DARK SKY COMPLIANT W/ CONTROLLED LIGHT SPILL). AN AREA ADJACENT TO THE BUILDING WILL BE SEEDED/TURF (W/ IRRIGATION), WITH OUTLYING FRONT YARDS LEFT NATURAL, HOWEVER MAINTAINED. STORM WATER DETENTION WILL OCCUR ALONG THE WESTERN BOUNDARY OF THE SITE, LOCATED TO MAXIMIZE NATURAL RUNOFF PATTERNS OF THE PARCEL.

THE SHERIFF'S OFFICE AND CORRECTIONS FACILITY, A 24/7 OPERATION, WILL CONTAIN ALL ISABELLA COUNTY LAW ENFORCEMENT, ADMINISTRATIVE, INTAKE/HOLDING AND INMATE HOUSING FUNCTIONS PRESENTLY LOCATED IN MOUNT PLEASANT. A TWO STORY, APPROXIMATELY 25 FEET TALL, INMATE HOUSING POD CONTAINING 187 BEDS IS LOCATED IN THE SOUTHWEST CORNER OF THE FACILITY, SURROUNDED BY SHERIFF'S OFFICE FUNCTIONS IN THE ONE-STORY PORTION OF THE BUILDING. ALL INMATE AREAS, INCLUDING HOUSING, INTAKE AND HOLDING AREAS ARE WINDOWLESS AND ENCLOSED WITHIN A SECURE BUILDING PERIMETER. EXTERIOR BUILDING MATERIALS INCLUDE LOW MAINTENANCE BRICK MASONRY AND METAL PANEL SIDING.

THE ANTICIPATED OCCUPANCIES AND POPULATION INCLUDE 55 COUNTY EMPLOYEES AND AN AVERAGE INMATE POPULATION OF BETWEEN 140-160 OCCUPANTS.

ADDITIONAL AREA INFORMATION CAN BE FOUND IN THE SUMMARY BELOW:

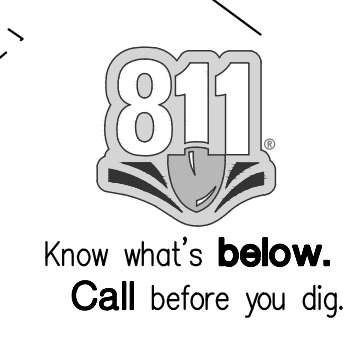
Building Height and Area	
Two Floors Overall Height	25'-4"
First Floor Jail Area	39,706 NSF
First Floor Administration Area	15,475 NSF
First Floor Receiving/Maint. Area	4,221 NSF
Ground Floor Area	59,406 GSF
Second Floor Jail Area	6,978 NSF
Second Floor Area	16,652 GSF

SIDEWALK RELIEF STATEMENT

ISABELLA COUNTY WILL PROVIDE A SIDEWALK FROM THE WEST PROPERTY LINE, EXTENDING TO THE WEST ENTRY DRIVE, WHICH WILL THEN PROCEED SOUTH ALONG THE PUBLIC DRIVE TO THE MAIN ENTRY OF THE FACILITY. THIS SIDEWALK WILL SERVE INTERNAL AND EXTERNAL PEDESTRIAN TRAFFIC. ISABELLA COUNTY REQUESTS RELIEF FOR THE ADDITIONAL CONSTRUCTION OF A SIDEWALK EASTWARD FROM THE WEST ENTRY DRIVE TO THE EAST PROPERTY BOUNDARY LINE ALONG THE ROADWAY THAT TERMINATES IN A DEAD-END/TURNAROUND. DATING BACK TO 2011, THERE HAVE BEEN 3 VEHICLE CRASHES ON THIS STRETCH OF ROAD, OF WHICH ZERO (0) WERE CAR-PEDESTRIAN ACCIDENTS (ON REMUS ROAD BETWEEN ISABELLA ROAD AND ITS DEAD-END/TURNAROUND). THERE IS LITTLE USEFUL BENEFIT TO PEDESTRIANS OF BOTH THE COUNTY AND THE TOWNSHIP FROM ADDING ADDITIONAL SIDEWALK ON THIS STRETCH OF ROAD THAT TERMINATES AT U.S. 127 AND HAS NO CONNECTION EASTWARD TO RESIDENTIAL, BUSINESSES OR COMMUNITY ASSETS.

RESIDENTIAL BUFFER STATEMENT

EXISTING WOODLAND AREA CONSISTING OF PRIMARILY SECOND GROWTH RED MAPLE, ASPEN, ASH AND COTTON WOOD INTERSPERSED WITH BIRCH, HACKBERRY, BASS WOOD, ELM AND JACK PINE. THEY ARE GENERALLY OF 6 TO 18 CALIPER INCH D.B.H. IN SIZE WITH SEVERAL RED MAPLE AND ELM TREES RANGING 22 TO 36 CALIPER INCH D.B.H. ALONG WITH THESE TREES ARE VARIOUS SPECIES OF MODERATELY DENSE TO DENSE WOODY UNDERGROWTH VEGETATION AND VINES. ISABELLA COUNTY IS PRESERVING THIS AREA AND DOES NOT INTEND TO DISRUPT, REMOVE OR OTHERWISE MODIFY THIS WOODED AREA.



CURB AND GUTTER LEGEND

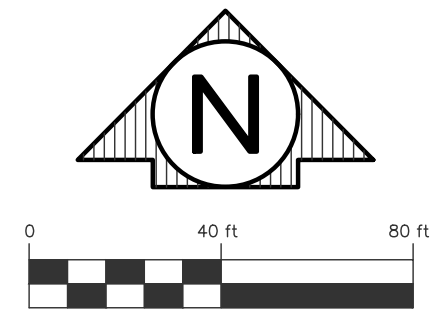
- PROPOSED MOOT F4 CURB AND GUTTER
- PROPOSED SPILL CURB AND GUTTER
- PROPOSED LOW BACK/DUB DOWN CURB AND GUTTER

SIDEWALK LEGEND

- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED THICKENED EDGE SIDEWALK

HOT MIX ASPHALT (HMA) PAVEMENT LEGEND

- PROPOSED STANDARD DUTY HMA PAVEMENT
- PROPOSED HEAVY DUTY HMA PAVEMENT
- PROPOSED HMA APPROACH



Integrated Architecture
840 Ottawa Avenue NW
Grand Rapids, MI 49503
616.574.0220 P
616.574.0553 F
www.intarch.com



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8/18/21 - PERMITS
8/24/21 - FSPR
9/30/21 - FSPR
REVISED

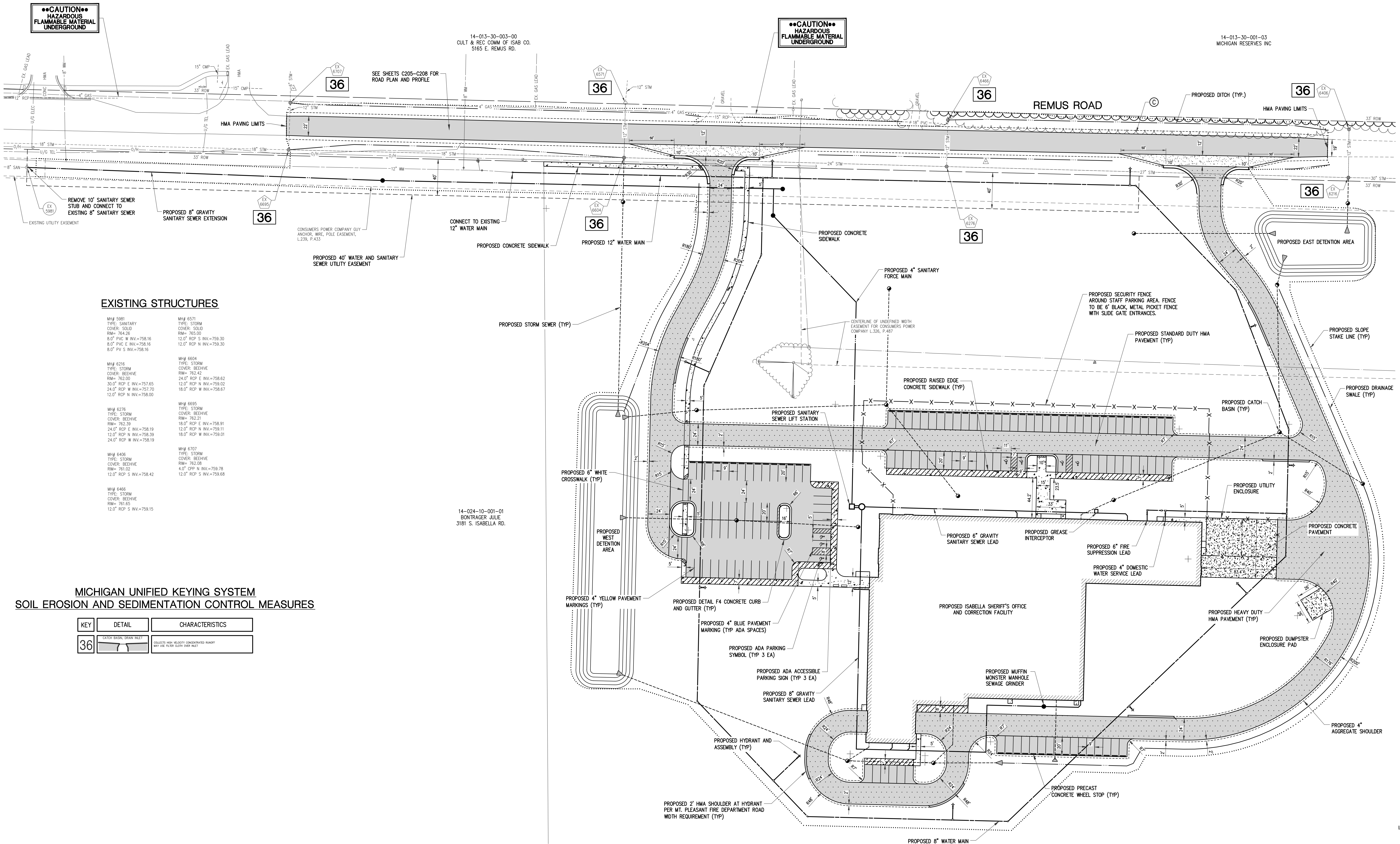
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PM / PA TRG
Drawn TAK
IA Project Number 20190905

SITE PLAN



Know what's below.
Call before you dig.

C201



EXISTING STRUCTURES

- M# 5981
TYPE: SANITARY
COVER: SOLID
RM# = 764.26
8.0" PVC W INV.=758.16
8.0" PVC E INV.=758.16
8.0" PV S INV.=758.16
- M# 6276
TYPE: STORM
COVER: BEEHIVE
RM# = 762.00
30.0" RCP E INV.=757.65
24.0" RCP W INV.=757.70
12.0" RCP N INV.=758.00
- M# 6276
TYPE: STORM
COVER: BEEHIVE
RM# = 762.39
24.0" RCP E INV.=758.19
12.0" RCP N INV.=758.39
24.0" RCP W INV.=758.19
- M# 6406
TYPE: STORM
COVER: BEEHIVE
RM# = 761.02
12.0" RCP S INV.=758.42
- M# 6466
TYPE: STORM
COVER: BEEHIVE
RM# = 761.65
12.0" RCP S INV.=759.15
- M# 6571
TYPE: STORM
COVER: SOLID
RM# = 765.00
12.0" RCP S INV.=759.30
12.0" RCP N INV.=759.30
- M# 6604
TYPE: STORM
COVER: BEEHIVE
RM# = 762.42
24.0" RCP E INV.=758.62
12.0" RCP N INV.=759.02
18.0" RCP W INV.=758.67
- M# 6695
TYPE: STORM
COVER: RESERVE
RM# = 762.21
18.0" RCP E INV.=758.31
12.0" RCP N INV.=759.11
18.0" RCP W INV.=759.01
- M# 6707
TYPE: STORM
COVER: BEEHIVE
RM# = 762.38
4.0" CP N INV.=759.78
12.0" RCP S INV.=759.68

**MICHIGAN UNIFIED KEYING SYSTEM
SOIL EROSION AND SEDIMENTATION CONTROL MEASURES**

KEY	DETAIL	CHARACTERISTICS
36		COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER (SLURRY OVER TIME)

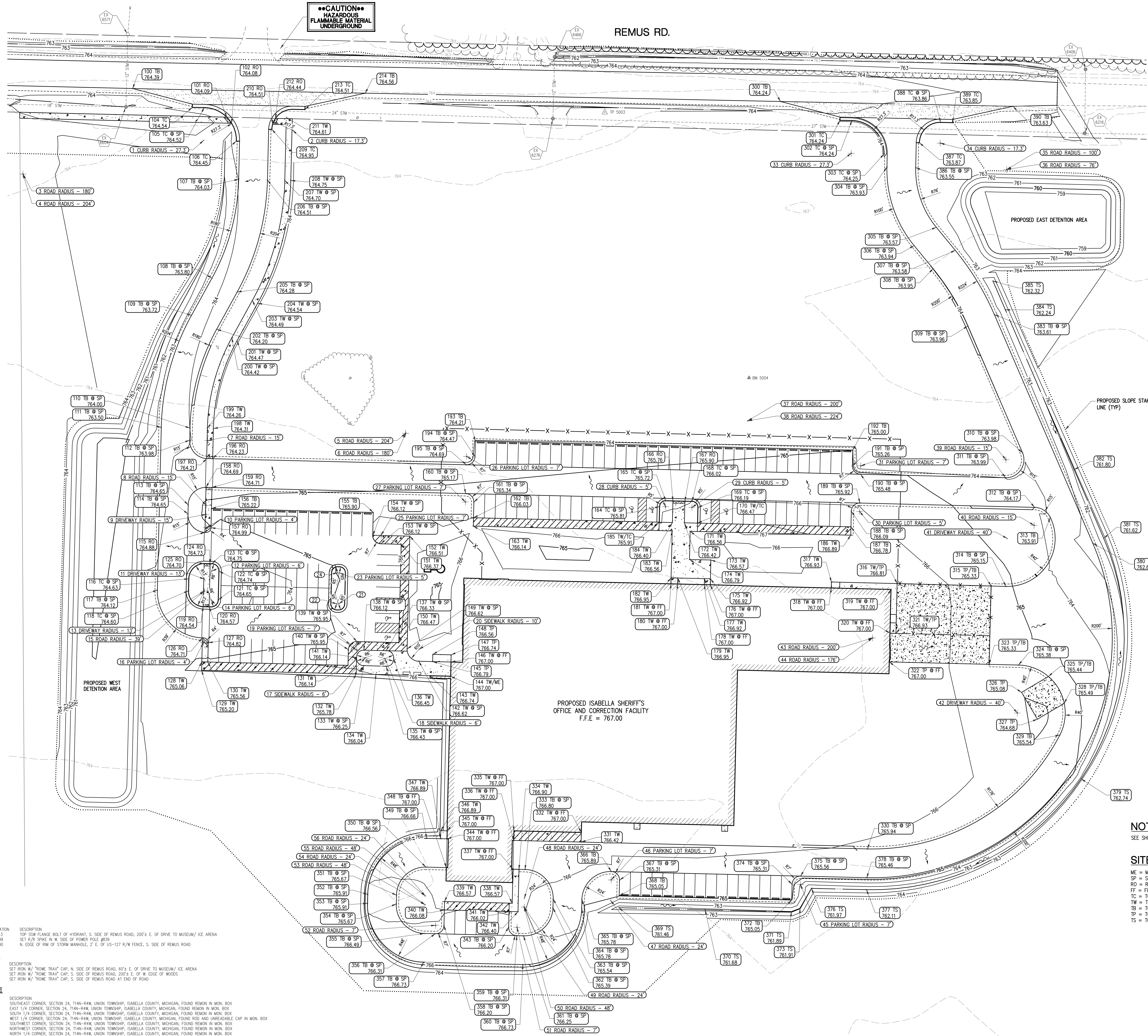
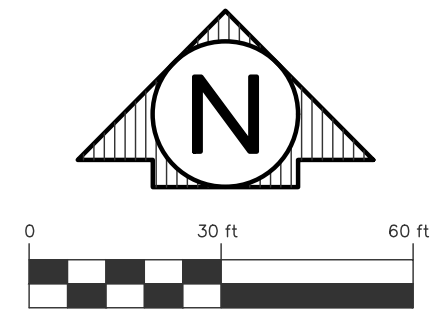
14-013-30-003-00
CULT & REC COMM OF ISAB CO.
5165 E. REMUS RD.

14-013-30-001-03
MICHIGAN RESERVES INC

14-024-10-001-01
BONTRAGER JULIE
3181 S. ISABELLA RD.

••CAUTION••
HAZARDOUS
FLAMMABLE MATERIAL
UNDERGROUND

REMUS RD.



NOTES
SEE SHEETS C206 AND C208 FOR ROAD PROFILES AND GRADING

SITE GRADING LEGEND

- ME = MATCH EXISTING
- SP = SPRING POINT
- RO = RAMP OPENING
- FF = FINISHED FLOOR
- TC = TOP OF CURB
- TW = TOP OF SIDEWALK
- TP = TOP OF BITUMINOUS PAVEMENT
- TS = TOP OF CONCRETE PAVEMENT
- IS = TOP OF SWALE

BENCHMARK DATA TABLE

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM 5002	764500	13023388	766.13	TOP SW FLANGE BOLT OF HYDRANT, S. SIDE OF REMUS ROAD, 200' E. OF DRIVE TO MUSEUM/ ICE ARENA
BM 5004	764277	13024069	764.89	SET R/R SPIKE IN W. SIDE OF POWER POLE #89
BM 5006	764489	13024753	762.90	N. EDGE OF RM OF STORM MANHOLE, 2' E. OF US-127 R/W FENCE, S. SIDE OF REMUS ROAD

TRAVERSE POINT DATA TABLE

NUMBER	NORTHING	EASTING	DESCRIPTION
TP 5001	7649379.7460	13022184.6300	SET IRON W/ "ROWE TRAV" CAP, N. SIDE OF REMUS ROAD, 60' E. OF DRIVE TO MUSEUM/ ICE ARENA
TP 5003	764498.9290	13023968.9820	SET IRON W/ "ROWE TRAV" CAP, S. SIDE OF REMUS ROAD, 200' E. OF W. EDGE OF WOODS
TP 5005	764495.5510	13024722.6630	SET IRON W/ "ROWE TRAV" CAP, S. SIDE OF REMUS ROAD AT END OF ROAD

SECTION CORNER DATA TABLE

NUMBER	NORTHING	EASTING	DESCRIPTION
SCOR M9 65	759138.5790	13027752.3650	SOUTHEAST CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND REMON IN MON. BOX
SCOR M9 66	760778.1070	13027752.6160	EAST 1/4 CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND REMON IN MON. BOX
SCOR L9 67	759200.5640	13025105.8660	SOUTH 1/4 CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND REMON IN MON. BOX
SCOR K8 68	761903.4090	13022479.7890	WEST 1/4 CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND ROAD AND UNREADEABLE CAP IN MON. BOX
SCOR K9 69	759205.9450	13022479.7890	SOUTHWEST CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND REMON IN MON. BOX
SCOR K7 76	764556.6320	13022472.2850	NORTHWEST CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND REMON IN MON. BOX
SCOR L7 87	764492.7640	13025085.5360	NORTH 1/4 CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND REMON IN MON. BOX
SCOR M7 86	764428.6370	13022753.4600	NORTHEAST CORNER, SECTION 24, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, FOUND REMON IN MON. BOX

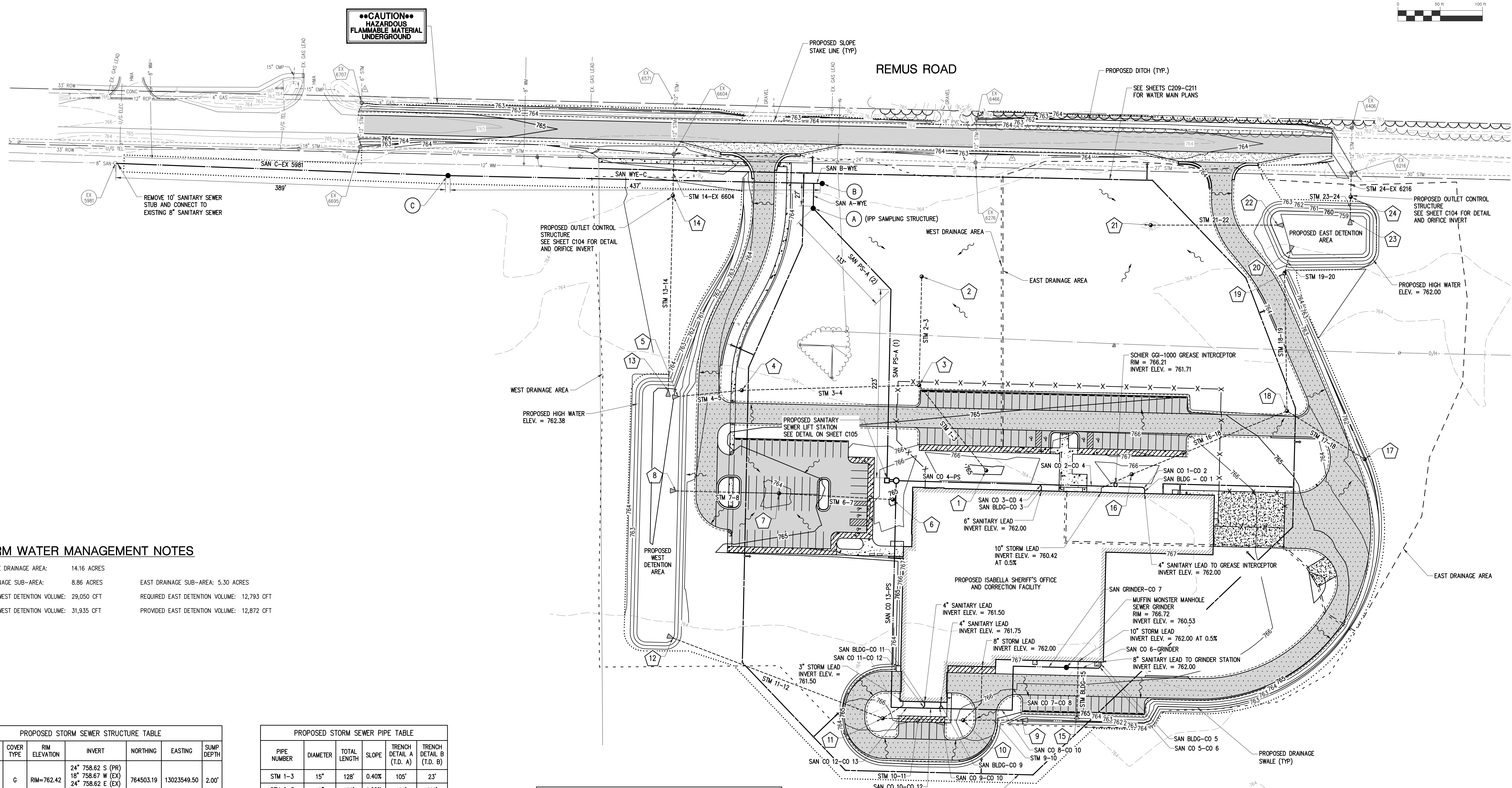
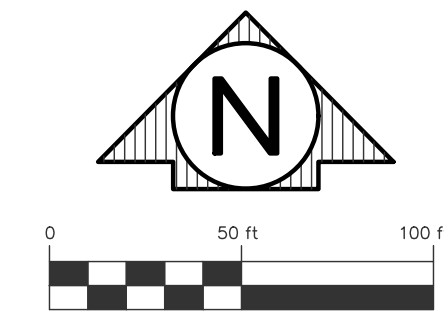


GRADING POINTS				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
100	TB	764518.48	13023555.11	764.39
101	RO	764494.57	13023633.59	764.09
102	RO	764489.48	13023637.60	764.08
104	TC	764502.76	13023604.81	764.54
105	TC @ SP	764502.56	13023614.81	764.52
106	TC	764474.58	13023641.60	764.45
107	TB @ SP	764442.85	13023643.51	764.03
108	TB @ SP	764360.35	13023621.24	763.80
109	TB @ SP	764329.33	13023604.16	763.72
110	TB @ SP	764235.26	13023602.92	764.00
111	TB @ SP	764235.83	13023578.92	763.50
112	TB @ SP	764225.19	13023602.68	763.98
113	TB @ SP	764171.21	13023601.38	764.65
114	TB @ SP	764163.62	13023601.20	764.65
115	RO	764148.29	13023615.34	764.88
116	TC @ SP	764109.59	13023601.90	764.63
117	TB @ SP	764100.22	13023575.67	764.12
118	TC @ SP	764099.59	13023601.67	764.60
119	RO	764086.31	13023613.85	764.54
120	RO	764086.18	13023618.85	764.57
121	TC @ SP	764092.00	13023626.49	764.65
122	TC @ SP	764115.99	13023627.07	764.74
123	TC @ SP	764122.13	13023621.21	764.75
124	RO	764122.17	13023619.71	764.73
125	RO	764122.28	13023614.71	764.70
126	RO	764060.31	13023613.23	764.71
127	RO	764056.19	13023618.13	764.82
128	TW	764040.31	13023612.75	765.06
129	TW	764033.31	13023612.58	765.20
130	TW	764040.13	13023617.75	765.56
131	TW	764037.34	13023734.71	766.14
132	TW	764030.22	13023741.54	765.78
133	TW @ SP	764037.18	13023747.68	766.25
134	TW	764029.82	13023758.04	766.04
135	TW @ SP	764036.61	13023766.67	766.43
136	TW	764042.93	13023772.86	766.45
137	TW @ SP	764049.60	13023766.50	766.33
138	TW @ SP	764050.07	13023748.04	766.12
139	TW @ SP	764057.12	13023742.19	765.95
140	TW @ SP	764050.38	13023735.12	765.95
141	TW	764043.80	13023741.87	766.14
142	TW @ SP	764040.80	13023793.81	766.62
143	TW	764028.74	13023803.25	766.74
144	TW/ME	764028.33	13023820.37	767.00
145	TP	764040.53	13023805.37	766.79
146	TW @ FF	764040.16	13023820.65	767.00
147	TP	764046.16	13023820.80	766.74
148	TP	764046.52	13023805.51	766.56
149	TW @ SP	764051.04	13023784.05	766.62
150	TW	764056.34	13023777.21	766.47

GRADING POINTS				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
151	TW	764138.38	13023779.18	766.37
152	TW	764145.17	13023786.31	766.51
153	TW @ SP	764138.89	13023762.15	766.12
154	TW @ SP	764145.80	13023755.48	766.12
155	TB	764164.92	13023755.79	765.90
156	TB	764168.15	13023620.82	765.22
157	RO	764152.16	13023620.43	764.99
158	RO	764185.84	13023616.24	764.69
159	RO	764185.73	13023621.24	764.71
160	TB @ SP	764180.66	13023832.90	765.17
161	TB @ SP	764173.49	13023839.73	765.34
162	TB @ SP	764160.44	13023839.42	766.03
163	TW	764153.50	13023839.25	766.14
164	TC @ SP	764169.78	13023994.69	765.81
165	TC @ SP	764174.65	13023999.80	765.72
166	RO	764174.51	13024005.80	765.76
167	RO	764174.27	13024015.80	765.90
168	TC @ SP	764174.13	13024021.80	766.02
169	TC @ SP	764169.01	13024026.68	766.19
170	TW/TC	764156.01	13024026.36	766.47
171	TW	764149.16	13024020.20	766.56
172	TW	764156.28	13024015.37	766.42
173	TW	764125.26	13024037.46	766.57
174	TW	764125.69	13024019.64	766.79
175	TW	764109.57	13024037.09	766.92
176	TW @ FF	764104.58	13024036.97	767.00
177	TW	764109.69	13024032.09	766.92
178	TW @ FF	764104.70	13024031.97	767.00
179	TW	764110.23	13024009.93	766.95
180	TW @ FF	764105.23	13024009.81	767.00
181	TW @ FF	764105.36	13024004.14	767.00
182	TW	764110.36	13024004.26	766.95
183	TW	764149.52	13024005.20	766.56
184	TW	764156.52	13024005.37	766.40
185	TW/TC	764156.78	13023994.37	765.91
186	TW	764145.95	13024154.16	766.89
187	TB	764152.94	13024154.32	766.78
188	TB @ SP	764165.94	13024154.64	766.09
189	TB @ SP	764172.77	13024161.81	765.92
190	TB @ SP	764196.76	13024162.38	765.48
191	TB @ SP	764203.93	13024155.55	765.26
192	TB	764216.93	13024155.86	765.00
193	TB	764224.48	13023840.95	764.21
194	TB @ SP	764211.48	13023840.64	764.47
195	TB @ SP	764204.65	13023833.48	764.69
196	RO	764209.73	13023621.81	764.23
197	RO	764209.85	13023616.81	764.21
198	TW	764234.91	13023622.42	764.31
199	TW	764235.03	13023617.42	764.26
200	TW @ SP	764310.65	13023637.83	764.42

GRADING POINTS				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
201	TW @ SP	764308.24	13023642.21	764.47
202	TB @ SP	764317.75	13023625.19	764.20
203	TW @ SP	764341.78	13023654.97	764.49
204	TW @ SP	764339.37	13023659.35	764.54
205	TB @ SP	764348.77	13023642.26	764.28
206	TB @ SP	764442.27	13023667.50	764.51
207	TW @ SP	764441.93	13023682.00	764.70
208	TW @ SP	764441.81	13023686.99	764.75
209	TC	764484.46	13023671.18	764.95
210	RO	764488.65	13023671.87	764.51
211	TW	764494.38	13023683.25	764.61
212	RO	764493.60	13023674.22	764.44
213	TC	764500.91	13023698.84	764.51
214	TB	764514.60	13023749.12	764.56
300	TB	764507.67	13024095.48	764.24
301	TC	764491.96	13024145.17	764.24
302	TC @ SP	764491.76	13024155.17	764.24
303	TC @ SP	764463.87	13024181.92	764.25
304	TB @ SP	764453.00	13024184.37	763.93
305	TB @ SP	764402.72	13024225.60	763.57
306	TB @ SP	764387.49	13024207.05	763.94
307	TB @ SP	764383.45	13024241.41	763.58
308	TB @ SP	764368.22	13024222.86	763.95
309	TB @ SP	764320.44	13024251.95	763.96
310	TB @ SP	764214.79	13024297.44	763.98
311	TB @ SP	764193.86	13024283.31	763.99
312	TC @ SP	764169.13	13024307.58	764.17
313	TB	764160.69	13024320.69	763.91
314	TB @ SP	764103.21	13024283.62	765.15
315	TP/TB	764103.55	13024271.28	765.33
316	TW/TP	764105.59	13024192.87	766.81
317	TW	764106.90	13024138.05	766.93
318	TW @ FF	764101.90	13024137.93	767.00
319	TW @ FF	764100.71	13024187.75	767.00
320	TW @ FF	764064.22	13024186.88	767.00
321	TW/TP	764064.10	13024191.88	766.93
322	TP @ FF	764040.23	13024186.30	767.00
323	TP/TB	764038.23	13024269.64	765.33
324	TB @ SP	764037.64	13024294.08	765.38
325	TP/TB	764028.11	13024319.05	765.44
326	TP	764014.87	13024296.68	765.08
327	TP	763992.49	13024309.92	764.68
328	TP/TB	764005.73	13024332.29	765.49
329	TB	763979.25	13024328.63	765.54
330	TB @ SP	763884.28	13024168.15	765.94
331	TW	763890.01	13023929.21	766.42
332	TW @ FF	763898.01	13023929.40	767.00
333	TB @ SP	763867.13	13023882.47	766.80
334	TW	763867.25	13023877.40	766.90
335	TW @ FF	763899.36	13023873.17	767.00

GRADING POINTS				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
336	TW @ FF	763891.36	13023872.98	767.00
337	TW @ FF	763867.37	13023872.40	767.00
338	TW	763839.04	13023871.72	766.57
339	TW	763840.39	13023815.25	766.57
340	TW	763833.42	13023815.11	766.08
341	TW	763832.11	13023869.06	766.02
342	TW	763831.92	13023876.55	766.40
343	TB @ SP	763819.10	13023868.75	766.20
344	TW @ FF	763892.70	13023817.33	767.00
345	TW @ FF	763899.36	13023817.49	767.00
346	TW	763899.49	13023812.15	766.89
347	TW	763892.83	13023811.99	766.89
348	TB @ FF	763868.70	13023816.75	767.00
349	TB @ SP	763893.11	13023800.33	766.66
350	TB @ SP	763899.70	13023799.75	766.56
351	TB @ SP	763845.73	13023775.19	765.67
352	TB @ SP	763846.35	13023751.20	765.91
353	TB @ SP	763838.95	13023751.01	765.91
354	TB @ SP	763838.35	13023775.00	765.67
355	TB @ SP	763813.79	13023798.42	766.49
356	TB @ SP	763813.57	13023807.60	766.31
357	TB @ SP	763789.79	13023797.84	766.73
358	TB @ SP	763820.40	13023814.77	766.20
359	TB @ SP	763811.94	13023875.58	766.31
360	TB @ SP	763787.81	13023880.57	766.73
361	TB @ SP	763811.80	13023881.14	766.25
362	TB @ SP	763835.22	13023905.71	765.39
363	TB @ SP	763842.56	13023905.89	765.54
364	TB @ SP	763834.64	13023929.71	765.78
365	TB @ SP	763841.98	13023929.88	765.78
366	TB	763865.40	13023954.41	765.89
367	TB @ SP	763858.24	13023961.28	765.31
368	TB	763845.24	13023960.97	765.05
369	TS	763835.24	13023960.73	761.46
370	TS	763833.52	13024032.71	761.68
371	TS	763831.79	13024104.69	761.89
372	TB	763841.79	13024104.93	765.05
373	TS	763834.55	13024111.83	761.91
374	TB @ SP	763854.78	13024105.24	765.31
375	TB @ SP	763861.61	13024112.41	765.56
376	TS	763851.39	13024121.46	761.97
377	TS	763850.29	13024167.34	762.11
378	TB @ SP	763860.29	13024167.58	765.46
379	TS	763942.69	13024346.39	762.74
380				



STORM WATER MANAGEMENT NOTES

ENTIRE SITE DRAINAGE AREA: 14.16 ACRES
WEST DRAINAGE SUB-AREA: 8.86 ACRES
EAST DRAINAGE SUB-AREA: 5.30 ACRES
REQUIRED WEST DETENTION VOLUME: 29,050 CFT
REQUIRED EAST DETENTION VOLUME: 12,793 CFT
PROVIDED WEST DETENTION VOLUME: 31,935 CFT
PROVIDED EAST DETENTION VOLUME: 12,872 CFT

STRUCT NO.	DIA.	COVER TYPE	RIM ELEVATION	INVERT	NORTHING	EASTING	SUMP DEPTH
EX 6604	N/A	G	RIM=762.42	24" 758.62 S (PR) 18" 758.67 W (EX) 24" 758.62 E (EX) 12" 759.02 N (EX)	764503.19	13023549.50	2.00'
EX 6216	N/A	G	RIM=763.69	12" 758.33 S (PR) 30" 757.65 E (EX) 24" 757.70 W (EX) 12" 758.00 N (EX)	764481.19	13024349.41	2.00'
1	48"	G	RIM=765.74	15" 761.65 NW (PR)	764129.85	13023918.29	2.00'
2	48"	G	RIM=765.70	12" 762.17 S (PR)	764358.80	13023842.17	2.00'
3	48"	G	RIM=762.72	15" 761.14 SE (PR) 12" 760.89 W (PR) 21" 760.89 W (PR)	764230.52	13023839.10	2.00'
4	48"	G	RIM=764.92	21" 760.26 E (PR) 21" 760.26 W (PR)	764224.54	13023629.63	2.00'
6	48"	G	RIM=764.75	15" 761.04 W (PR)	764095.56	13023807.99	2.00'
7	48"	G	RIM=763.60	15" 760.50 E (PR) 15" 760.50 W (PR)	764102.87	13023673.76	2.00'
10	48"	G	RIM=765.46	18" 761.25 E (PR) 18" 761.25 W (PR) 10" 761.28 NE (PR)	763835.07	13023891.17	2.00'
11	48"	G	RIM=765.26	18" 760.96 E (PR) 18" 760.96 W (PR) 10" 761.17 NE (PR)	763837.38	13023796.07	2.00'
14	48"	G	RIM=764.40	24" 758.75 S (PR) 24" 758.75 N (PR)	764454.35	13023548.35	2.00'
16	48"	G	RIM=765.08	18" 760.16 E (PR) 10" 760.20 SW (PR)	764125.39	13024090.15	2.00'
17	48"	G	RIM=764.23	18" 759.89 NW (PR)	764143.29	13024365.25	2.00'
18	48"	G	RIM=763.70	18" 759.57 SE (PR) 18" 759.57 N (PR) 18" 759.57 W (PR)	764200.10	13024273.45	2.00'
19	48"	G	RIM=763.47	18" 759.08 S (PR) 18" 759.08 N (PR)	764362.82	13024270.72	2.00'
21	48"	G	RIM=763.12	12" 759.60 E (PR)	764419.55	13024112.55	2.00'
24	48"	G	RIM=763.75	12" 758.47 S (PR) 12" 758.47 N (PR)	764452.88	13024348.73	2.00'

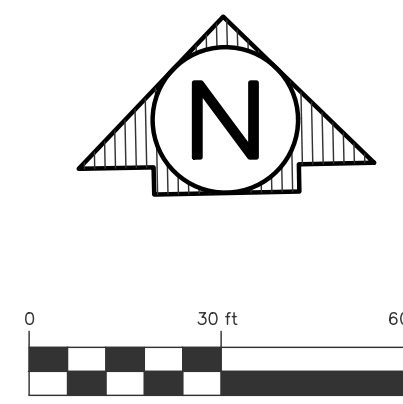
PIPE NUMBER	DIAMETER	TOTAL LENGTH	SLOPE	TRENCH DETAIL A (T.D. A)	TRENCH DETAIL B (T.D. B)
STM 1-3	15"	128'	0.40%	105'	23'
STM 2-3	12"	128'	1.00%	129'	???
STM 3-4	21"	210'	0.30%	210'	0'
STM 4-5	21"	76'	0.34%	15'	61'
STM 6-7	15"	134'	0.40%	15'	119'
STM 7-8	15"	122'	0.41%	19'	103'
STM 9-10	18"	70'	0.30%	34'	36'
STM 10-11	18"	95'	0.30%	56'	39'
STM 11-12	18"	265'	0.22%	228'	37'
STM 13-14	24"	231'	0.27%	231'	0'
STM 16-18	18"	198'	0.30%	49'	149'
STM 17-18	18"	108'	0.30%	0'	108'
STM 18-19	18"	163'	0.30%	0'	163'
STM 19-20	18"	27'	0.30%	27'	0'
STM 21-22	12"	150'	0.40%	114'	36'
STM 23-24	12"	27'	0.50%	27'	0'
STM BLDG-15	10"	65'	0.49%	9'	56'

STRUCT NO.	DIA.	END OF PIPE INVERT	END OF PIPE NORTHING	END OF PIPE EASTING
5	21"	21" 760.00	764217.17	13023554.47
8	15"	15" 760.00	764105.79	13023551.80
9	18"	18" 761.46	763835.24	13023960.73
12	18"	18" 760.38	763932.24	13023548.20
13	24"	24" 759.36	764223.88	13023542.91
15	10"	10" 761.68	763839.07	13024025.32
20	18"	18" 759.00	764389.08	13024277.56
22	12"	12" 759.00	764419.55	13024282.50
23	12"	12" 758.60	764426.36	13024348.10

PIPE NUMBER	DIAMETER	TOTAL LENGTH	SLOPE	TRENCH DETAIL A (T.D. A)	TRENCH DETAIL B (T.D. B)	SEWER TYPE
SAN A-WYE	6"	30'	0.68%	30'	0'	FORCEMAIN
SAN B-WYE	8"	10'	0.40%	10'	0'	GRAVITY
SAN BLDG-CO 3	6"	5'	16.40%	5'	0'	GRAVITY
SAN BLDG-CO 5	8"	5'	1.00%	5'	0'	GRAVITY
SAN BLDG-CO 9	4"	5'	22.21%	5'	0'	GRAVITY
SAN BLDG-CO 11	4"	5'	21.61%	5'	0'	GRAVITY
SAN BLDG - CO 1	6"	5'	1.00%	5'	0'	GRAVITY
SAN C-EX 5981	8"	393'	0.40%	393'	0'	GRAVITY
SAN CO 1-CO 2	6"	3'	1.00%	3'	0'	GRAVITY
SAN CO 2-CO 4	6"	122'	1.00%	122'	0'	GRAVITY
SAN CO 3-CO 4	6"	3'	14.42%	3'	0'	GRAVITY
SAN CO 4-PS	8"	166'	1.00%	166'	0'	GRAVITY
SAN CO 5-CO 6	8"	4'	1.00%	4'	0'	GRAVITY
SAN CO 6-GRINDER	8"	38'	1.00%	38'	0'	GRAVITY
SAN CO 7-CO 8	8"	52'	1.00%	15'	37'	GRAVITY
SAN CO 8-CO 10	8"	87'	1.00%	49'	38'	GRAVITY
SAN CO 9-CO 10	4"	3'	33.70%	3'	0'	GRAVITY
SAN CO 10-CO 12	8"	19'	1.00%	19'	0'	GRAVITY
SAN CO 11-CO 12	4"	3'	32.29%	3'	0'	GRAVITY
SAN CO 12-CO 13	8"	37'	1.00%	37'	0'	GRAVITY
SAN CO 13-PS	8"	264'	1.00%	264'	0'	GRAVITY
SAN GRINDER-CO 7	8"	63'	1.00%	63'	0'	GRAVITY
SAN PS-A (1)	6"	223'	0.63%	187'	36'	FORCEMAIN
SAN PS-A (2)	6"	133'	0.63%	133'	0'	FORCEMAIN
SAN WYE-C	8"	432'	0.40%	396'	36'	GRAVITY

STRUCT NO.	DIA.	COVER TYPE	RIM ELEVATION	INVERT	NORTHING	EASTING
A	48"	Q	RIM=763.85	6" 761.47 N (PVC Pipe)	764439.34	13023714.06
B	48"	Q	RIM=764.70	8" 761.51 W (PR)	764468.65	13023724.68
C	48"	Q	RIM=764.60	8" 759.74 W (PR) 8" 759.74 E (PR)	764477.99	13023282.87





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 Grand Rapids, MI 49503
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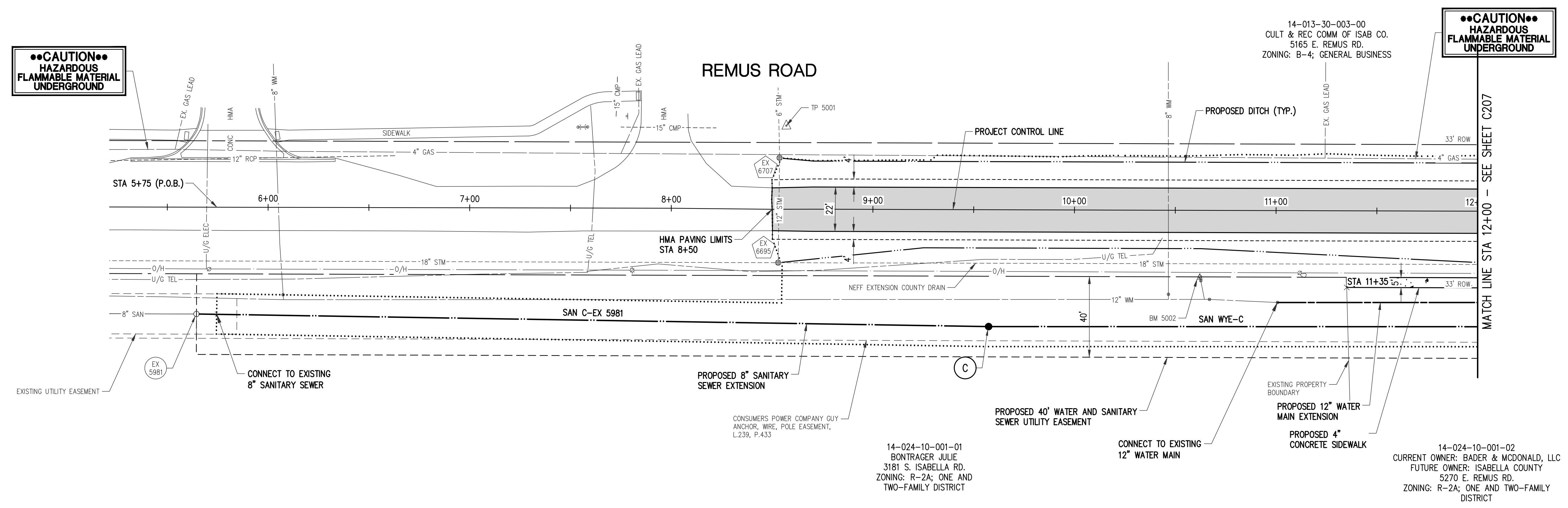


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Isabella Sheriff's Office and
Correction Facility

5/11/21 - PSPR
 8/24/21 - FSPR
 9/30/21 - FSPR
 REVISED

Design TRG
 PM / PA TRG
 Drawn TAK
 IA Project Number 20190905



CAUTION
 HAZARDOUS
 FLAMMABLE MATERIAL
 UNDERGROUND

CAUTION
 HAZARDOUS
 FLAMMABLE MATERIAL
 UNDERGROUND

14-013-30-003-00
 CULT & REC COMM OF ISAB CO.
 5165 E. REMUS RD.
 ZONING: B-4; GENERAL BUSINESS

14-024-10-001-01
 SONTRAGER, JULIE
 3181 S. ISABELLA RD.
 ZONING: R-2A; ONE AND
 TWO-FAMILY DISTRICT

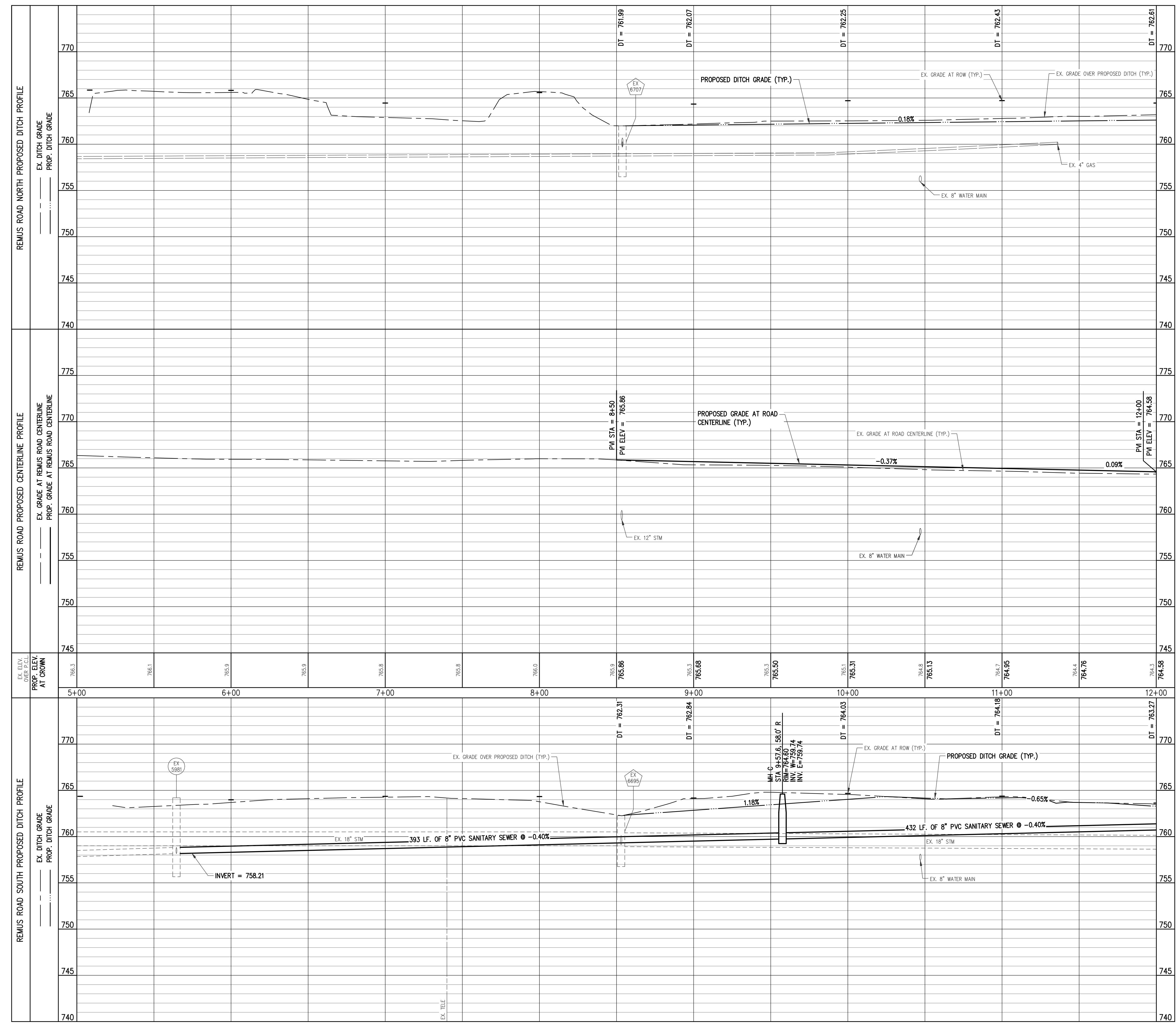
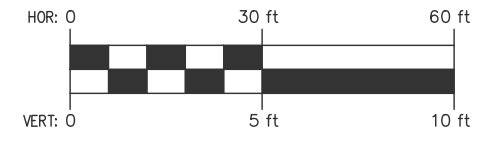
14-024-10-001-02
 CURRENT OWNER: BADER & MCDONALD, LLC
 FUTURE OWNER: ISABELLA COUNTY
 5270 E. REMUS RD.
 ZONING: R-2A; ONE AND TWO-FAMILY
 DISTRICT

ROAD PLAN



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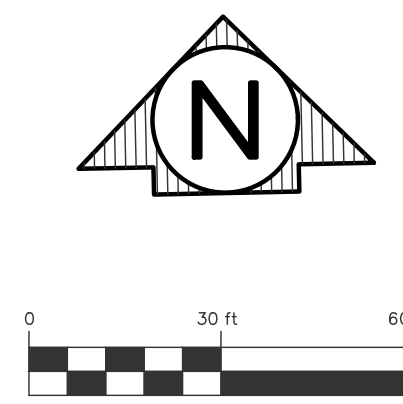
5/11/21 - PSPP
8/24/21 - FSPR
9/30/21 - FSPR
REVISED

Design TRG
PM / PA TRG
Drawn TAK
IA Project Number 20190905

ROAD PROFILE



C206



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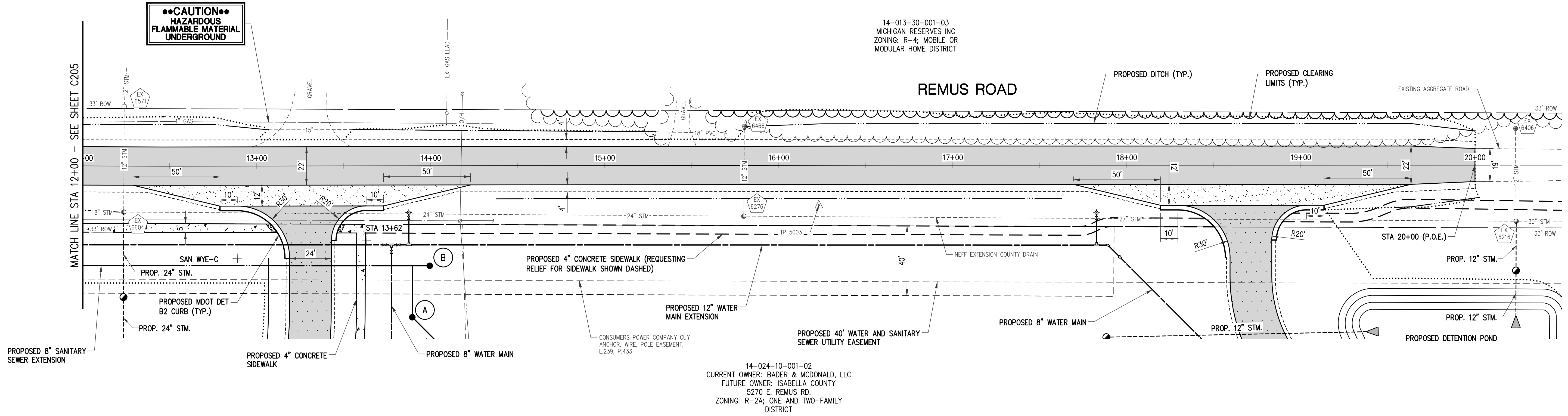


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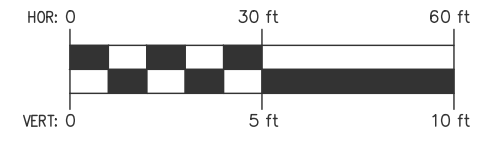
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 8/24/21 - FSPR
 9/30/21 - FSPR
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 Drawn TAK
 IA Project Number 20190905



ROAD PLAN

C207



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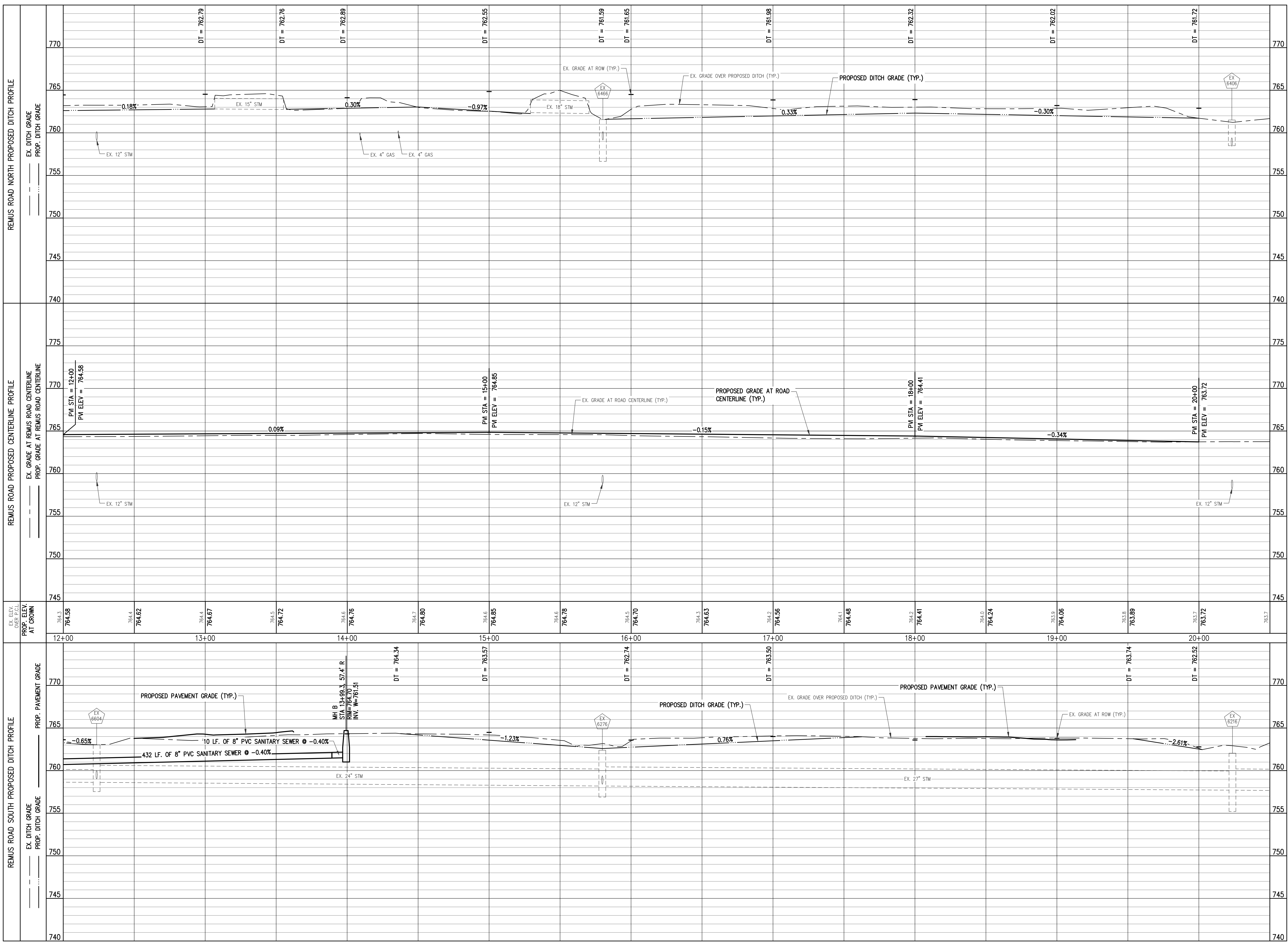
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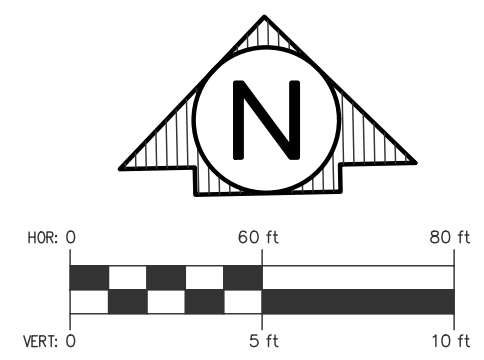
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8/24/21 - FSPR
9/30/21 - FSPR
REVISED

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PM / PA TRG
Drawn TAK
IA Project Number 20190905

ROAD PROFILE

C208





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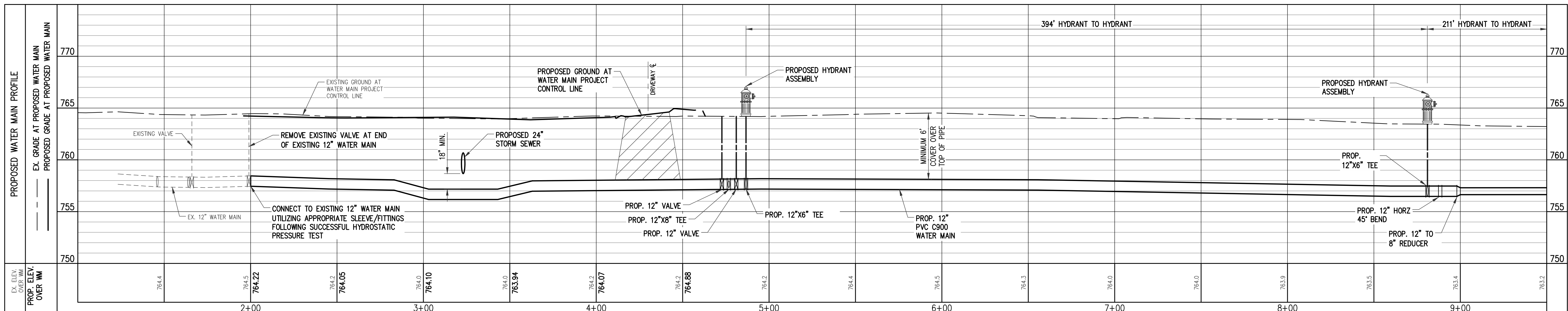
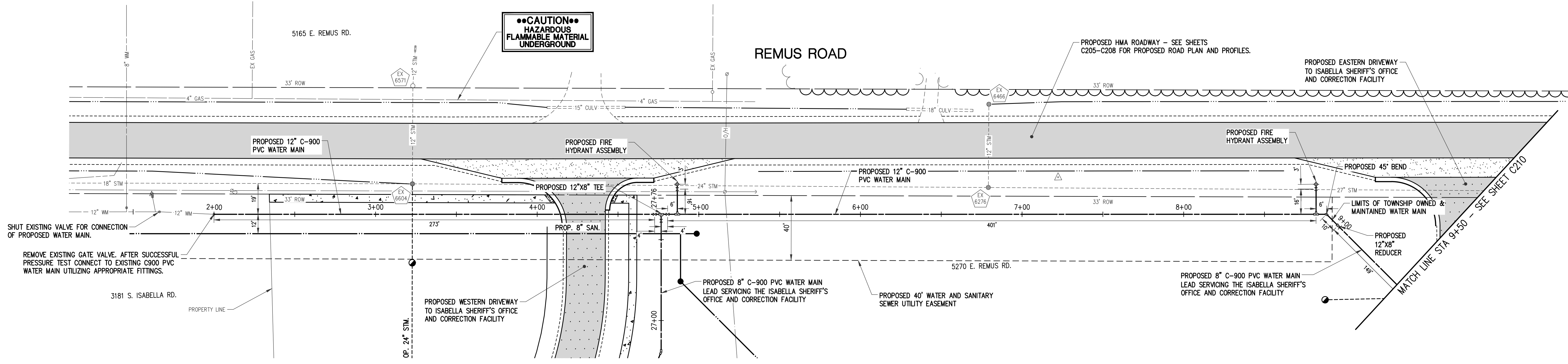
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Isabella Sheriff's Office and Correction Facility

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8/18/21 - PERMITS
8/24/21 - FSPR
9/30/21 - FSPR
REVISED

Design TRG
PM / PA TRG
Drawn TAK
IA Project Number 20190905



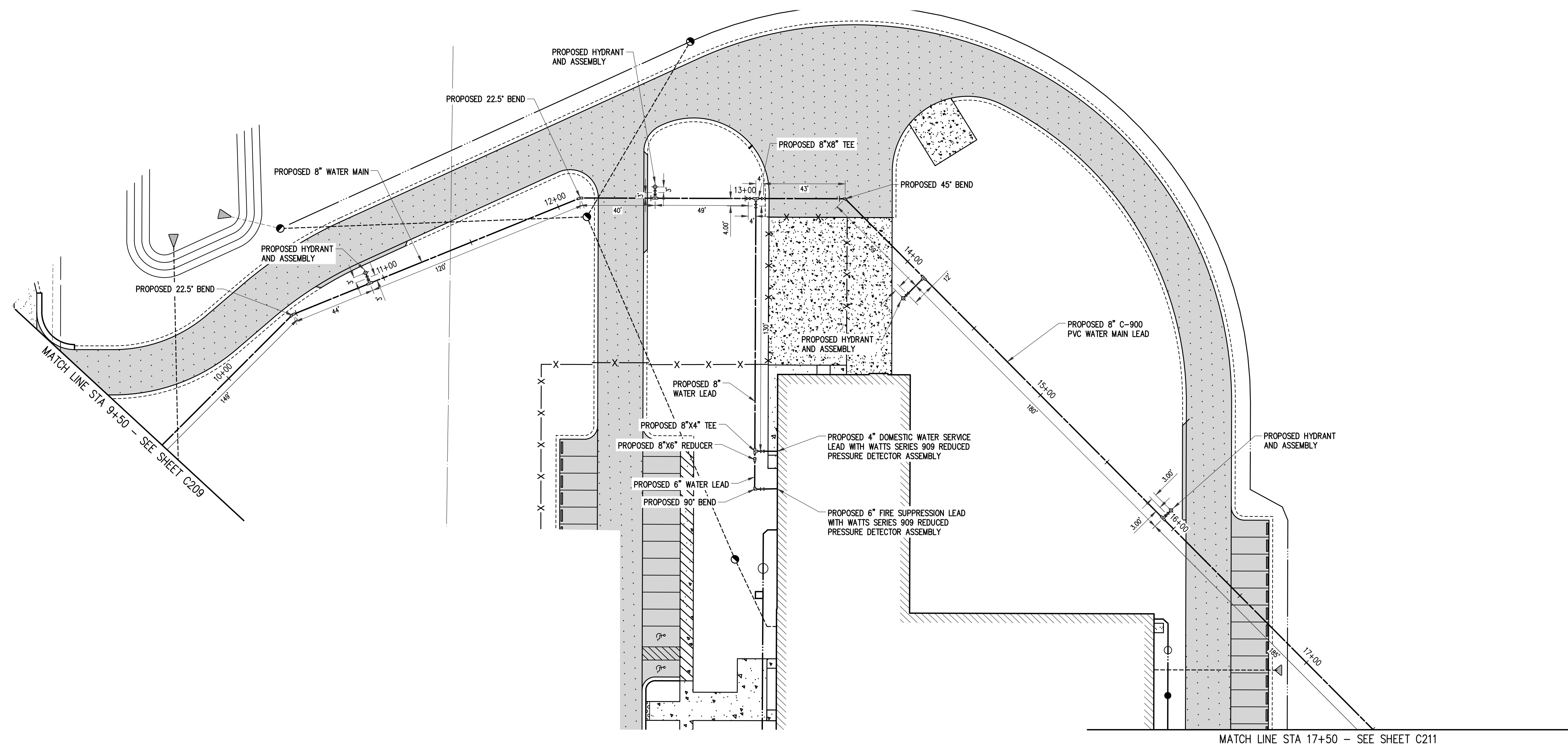
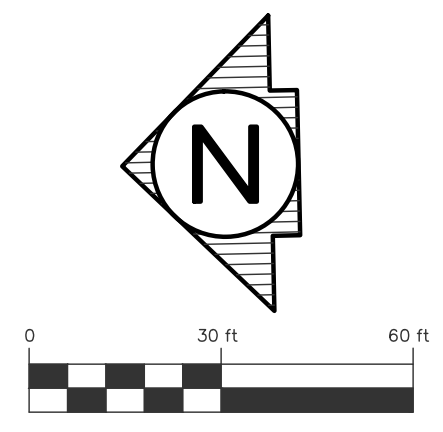
WATER MAIN FITTINGS		
STATION	OFFSET	DESCRIPTION
4+72.69	0.00'	12" GATE VALVE AND BOX
4+76.69	0.00'	12"x8" TEE
4+80.69	0.00'	12" GATE VALVE AND BOX
4+86.63	15.56' L	6" GATE VALVE AND BOX
4+86.64	18.56' L	FIRE HYDRANT
4+86.69	0.00'	12"x6" HYDRANT LEAD TEE
8+81.85	15.56' L	6" GATE VALVE AND BOX
8+81.86	18.56' L	FIRE HYDRANT
8+81.91	0.00'	12"x6" HYDRANT LEAD TEE
8+88.40	0.00'	12" 45° BEND
8+98.40	0.00' L	12"x8" REDUCER



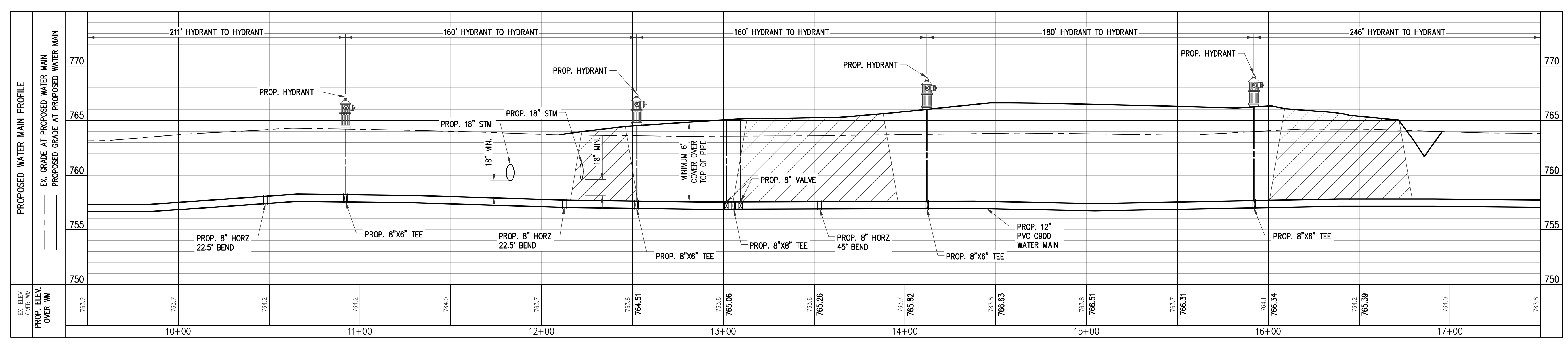
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WATER MAIN
PLAN & PROFILE

C209



WATER MAIN FITTINGS		
STATION	OFFSET	DESCRIPTION
10+47.94	0.00'	8" 22.5' BEND
10+92.07	6.00' L	FIRE HYDRANT
10+92.07	3.00' L	6" GATE VALVE AND BOX
10+92.07	0.00'	8" X 6" HYDRANT LEAD TEE
12+12.45	0.00'	8" 22.5' BEND
12+52.21	6.02' L	FIRE HYDRANT
12+52.21	3.02' L	6" GATE VALVE AND BOX
12+52.21	0.00'	8"x6" HYDRANT LEAD TEE
13+01.69	0.00'	8" GATE VALVE AND BOX
13+05.69	0.00'	8"x6" TEE
13+05.69	4.10' R	8" GATE VALVE AND BOX
13+09.69	0.00'	8" GATE VALVE AND BOX
13+53.05	0.00'	8" 45' BEND
14+12.18	12.36' R	6" GATE VALVE AND BOX
14+12.18	15.36' R	FIRE HYDRANT
14+12.18	0.00'	8"x6" HYDRANT LEAD TEE
14+14.22	128.40' R	8"x4" TEE
14+17.04	125.57' R	4" GATE VALVE AND BOX
14+17.40	131.58' R	8"x6" REDUCER
14+28.46	142.68' R	6" 90' BEND
14+31.23	139.78' R	6" GATE VALVE AND BOX
15+92.15	6.00' L	FIRE HYDRANT
15+92.15	3.00' L	6" GATE VALVE AND BOX
15+92.15	0.00'	8"x6" HYDRANT LEAD TEE



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www.rpsinc.com

Isabella Sheriff's Office and Correction Facility

5/11/21 - PSPP
8/24/21 - FSPR
9/30/21 - FSPR
REVISED

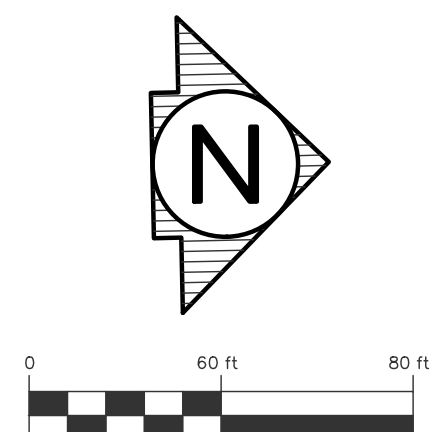
Design: TRG
PM / PA: TRG
Drawn: TAK
IA Project Number: 20190905

WATER MAIN
PLAN & PROFILE

C210



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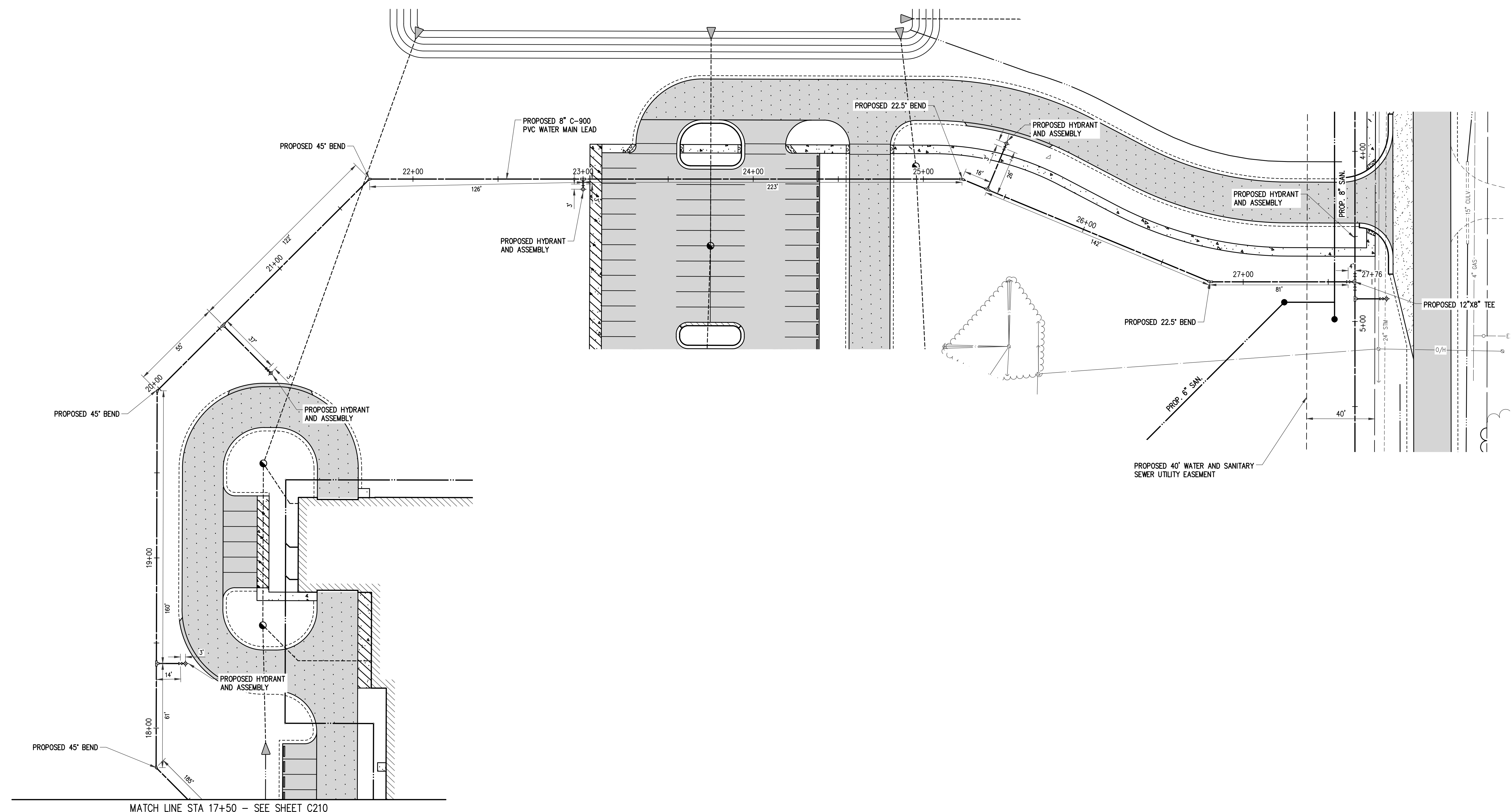
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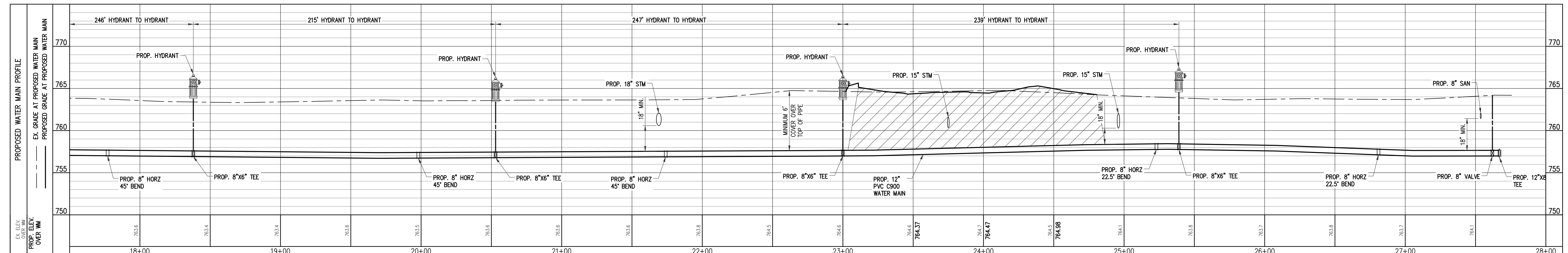
Isabella Sheriff's Office and Correction Facility

5/11/21 - PSPR
 8/24/21 - FSPR
 9/30/21 - FSPR
 REVISED

Design TRG
 PM / PA TRG
 Drawn TAK
 IA Project Number 20190905



WATER MAIN FITTINGS		
STATION	OFFSET	DESCRIPTION
17+76.79	0.00'	8" 45° BEND
18+37.97	17.09' R	FIRE HYDRANT
18+37.97	14.09' R	6" GATE VALVE AND BOX
18+37.97	0.00'	8" X 6" HYDRANT LEAD TEE
19+98.22	0.00'	8" 45° BEND
20+52.83	39.79' R	FIRE HYDRANT
20+52.83	36.79' R	6" GATE VALVE AND BOX
20+52.83	0.00'	8"x6" HYDRANT LEAD TEE
21+74.45	0.00'	8" 45° BEND
23+00.00	6.02' R	FIRE HYDRANT
23+00.01	3.02' R	6" GATE VALVE AND BOX
23+00.02	0.02' R	8"x6" HYDRANT LEAD TEE
25+22.71	0.00'	8" 22.5° BEND
25+38.86	26.25' L	6" GATE VALVE AND BOX
25+38.86	0.00'	8"x6" HYDRANT LEAD TEE
25+38.87	29.20' L	FIRE HYDRANT
26+80.56	0.00'	8" 22.5° BEND
27+61.71	0.00'	8" GATE VALVE AND BOX



WATER MAIN
 PLAN & PROFILE

C211



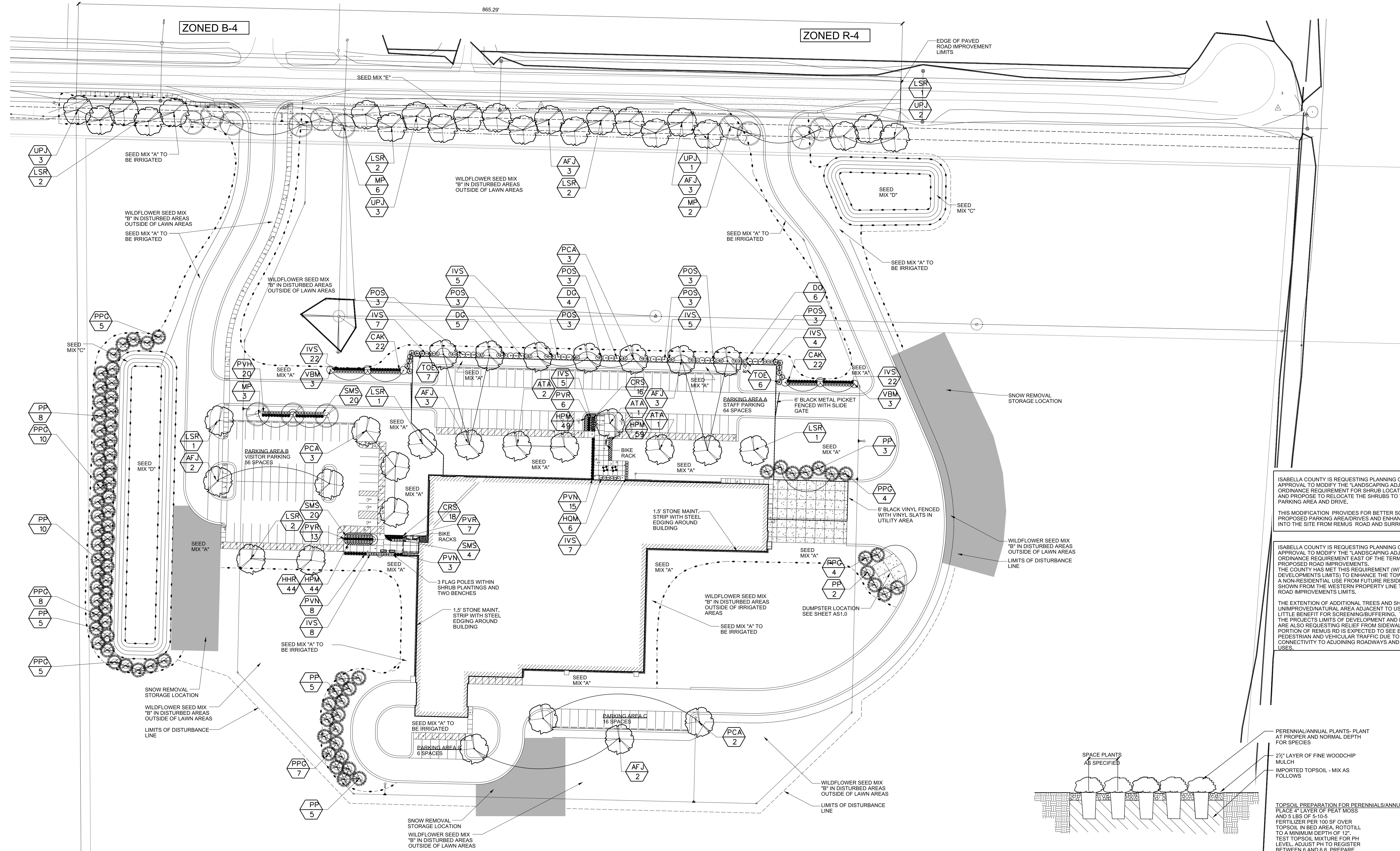
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Isabella Sheriff's Office and Correction Facility

Resubmittal FSPR	30 Sept 2021
FSPR	24 Aug 2021
FSPR	11 May 2021
Design Development	24 Nov. 2020
Schematic Design	12 Nov. 2020
Design	KAB
PM / PA	DD/CS/EK
Drawn	KAB
IA Project Number	20190905

SITE LANDSCAPE PLAN

LP1.0



SECTION 10 - LANDSCAPING AND SCREENING

SECTION 10.3 - SPECIFIC LANDSCAPING REQUIREMENTS FOR ZONING DISTRICTS

C. REQUIREMENTS FOR NON-RESIDENTIAL USES IN RESIDENTIAL OR AGRICULTURAL DISTRICT

- GENERAL SITE LANDSCAPING**
ALL DEVELOPED PORTIONS OF THE SITE SHALL CONFORM TO THE GENERAL SITE REQUIREMENTS IN SECTION 10.2, SUB-SECTION A.
- LANDSCAPING ADJACENT TO ROADS, SECTION 10.2, SUB-SECTION B**
REQUIRED: DECIDUOUS STREET TREES 1 PER 40 L.F. OF ROAD FRONTAGE. ORNAMENTAL TREES 1 PER 100 L.F. OF ROAD FRONTAGE AND SHRUBS 8 PER 40 L.F. OF ROAD FRONTAGE.
PROPOSED LENGTH OF IMPROVED LOT FRONTAGE = 865.29'. PER REQUIREMENT, DRIVEWAY OPENINGS ARE SUBTRACTED FROM ROAD FRONTAGE LENGTH 865.29' - 46' TWO DRIVE OPENINGS @ 20' PER DRIVE = 809.29'
TOTAL LENGTH OF IMPROVED LOT FRONTAGE = 809.29'
PROVIDED 22 DECIDUOUS TREES, 10 ORNAMENTAL TREES, 82 SHRUBS ARE PROVIDED AND ARE MOVED TO SURROUNDING PARKING AREA TO MEET THE SCREENING AND ENHANCEMENT INTENT OF THE ORDINANCE.
- BERM REQUIREMENTS**
NONE NEEDED FOR PARKING, PARKING IS MORE THAN 40 FEET FROM THE ROAD RIGHT OF WAY.
- SCREENING**
SCREENING IN THE FORM OF A LANDSCAPED BERM, GREENBELT, OR WALL SHALL BE REQUIRED WHENEVER A NON-RESIDENTIAL USE ADJACENT DIRECTLY UPON LAND ZONED FOR RESIDENTIAL PURPOSES.
PROVIDE 27 TREES ALONG THE WEST SIDE OF PROPERTY WHICH WILL SCREEN THE WESTERN PARKING AREA AND HEADLIGHT GLARE MITIGATION.
PROVIDE 8 EVERGREEN TREES ALONG THE SOUTHERN EDGE OF RETENTION BASIN FOR HEADLIGHT GLARE MITIGATION.
PROVIDE 5 EVERGREEN TREES ALONG THE NORTHERN EDGE OF RETENTION BASIN FOR HEADLIGHT GLARE MITIGATION.
PROVIDE 17 EVERGREEN TREES ALONG THE TURN AROUND LOOP AT THE BULLY PAST AREA FOR HEADLIGHT GLARE MITIGATION.
SCREENING OF EQUIPMENT
PROVIDE 7 EVERGREEN TREES ALONG THE NORTHERN EDGE OF THE UTILITY COURTYARD.
PROVIDE 6 EVERGREEN TREES TO SCREEN AROUND THE DUMPSTER ENCLOSURE.
- PARKING LOT LANDSCAPING**
A MINIMUM OF ONE (1) DECIDUOUS SHADE TREE SHALL BE PLANTED WITHIN THE PARKING LOT FOR EVERY FIVE (5) PARKING SPACES. THE LOT PROVIDED 14 DECIDUOUS TREES FOR PARKING LOT "A", TOTAL PARKING SPACES = 14, TOTAL TREES NEEDED = 12.8
PROVIDED 12 DECIDUOUS TREES FOR PARKING LOT "B", TOTAL PARKING SPACES = 9, TOTAL TREES NEEDED = 4.2
PROVIDED 4 DECIDUOUS TREES FOR COMBINED PARKING AREA "C", TOTAL COMBINED PARKING = 27, TOTAL TREES NEEDED = 11.2
OFF STREET PARKING AREAS CONTAINING GREATER THAN TEN (10) SPACES SHALL INCORPORATE AT LEAST THIRTY (30) SF OF INTERIOR PARKING LOT LANDSCAPING PARKING SPACE
PROVIDE 265 SF OF INTERIOR PARKING LOT LANDSCAPING IN PARKING LOT "A", TOTAL REQUIRED = 1,020 SF
PROVIDE 2,000 SF OF INTERIOR PARKING LOT LANDSCAPING IN PARKING LOT "B", TOTAL REQUIRED = 1,680 SF
PROVIDE 510 SF OF INTERIOR PARKING LOT LANDSCAPING IN PARKING LOT "C", TOTAL REQUIRED = 480 SF

SECTION 10.7 - MODIFICATIONS TO LANDSCAPE REQUIREMENTS

- MODIFICATIONS TO LANDSCAPING ADJACENT TO ROADS - WHERE THE PARKING AND VEHICULAR CIRCULATION IS SUCH THAT THE REQUIRED LANDSCAPING WOULD NOT ENHANCE THE SITE OR PROVIDE THE DESIRED SCREENING EFFECT, WE ARE REQUESTING TO RELOCATE THE 163 SHRUBS TO SURROUNDING PARKING AREA TO MEET THE SCREENING AND ENHANCEMENT INTENT OF THE ORDINANCE.
TOTAL PROPOSED SHRUBS TO SURROUND PARKING AREA AND ALONG DRIVES = 162

ISABELLA COUNTY IS REQUESTING PLANNING COMMISSION APPROVAL TO MODIFY THE "LANDSCAPING ADJACENT TO ROADS" ORDINANCE REQUIREMENT FOR SHRUB LOCATION ALONG THE ROAD AND PROPOSE TO RELOCATE THE SHRUBS TO THE PROPOSED STAFF PARKING AREA AND DRIVE.

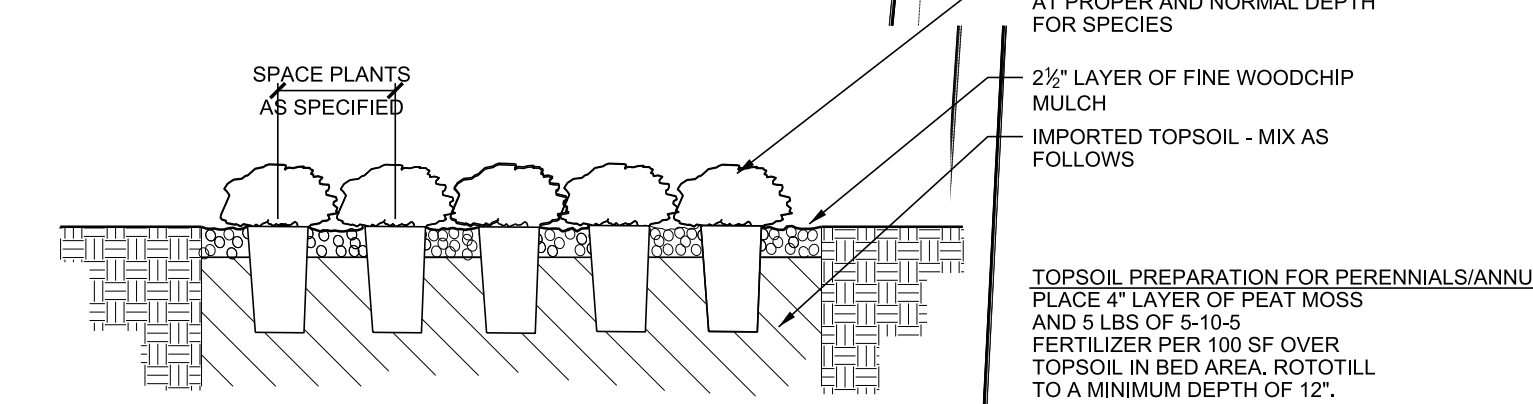
THIS MODIFICATION PROVIDES FOR BETTER SCREENING OF THE PROPOSED PARKING AREAS AND ENHANCING THE QUALITY OF VIEWS INTO THE SITE FROM REMUS ROAD AND SURROUNDING LAND USES.

ISABELLA COUNTY IS REQUESTING PLANNING COMMISSION APPROVAL TO MODIFY THE "LANDSCAPING ADJACENT TO ROADS" ORDINANCE REQUIREMENT EAST OF THE TERMINUS OF THE PROPOSED ROAD IMPROVEMENTS.

THE COUNTY HAS MET THIS REQUIREMENT (WITHIN THE PROJECT DEVELOPMENT LIMITS) TO ENHANCE THE TOWNSHIP AND SCREEN A NON-RESIDENTIAL USE FROM FUTURE RESIDENTIAL USES AS SHOWN FROM THE WESTERN PROPERTY LINE TO THE PROPOSED ROAD IMPROVEMENTS LIMITS.

THE EXTENSION OF ADDITIONAL TREES AND SHRUBS IN THIS UNIMPROVED/RESIDENTIAL AREA ADJACENT TO US-127 PROVIDES LITTLE BENEFIT FOR SCREENING PURPOSES. THIS AREA IS OUTSIDE THE PROJECTS LIMITS OF DEVELOPMENT AND IN AN AREA THAT WE ARE ALSO REQUESTING RELIEF FROM SCREENING. THIS DEADWOOD PORTION OF REMUS RD IS EXPECTED TO SEE EXTREMELY MINIMAL PEDESTRIAN AND VEHICULAR TRAFFIC DUE TO THE LACK OF CONNECTIVITY TO ADJOINING ROADWAYS AND SURROUNDING LAND USES.

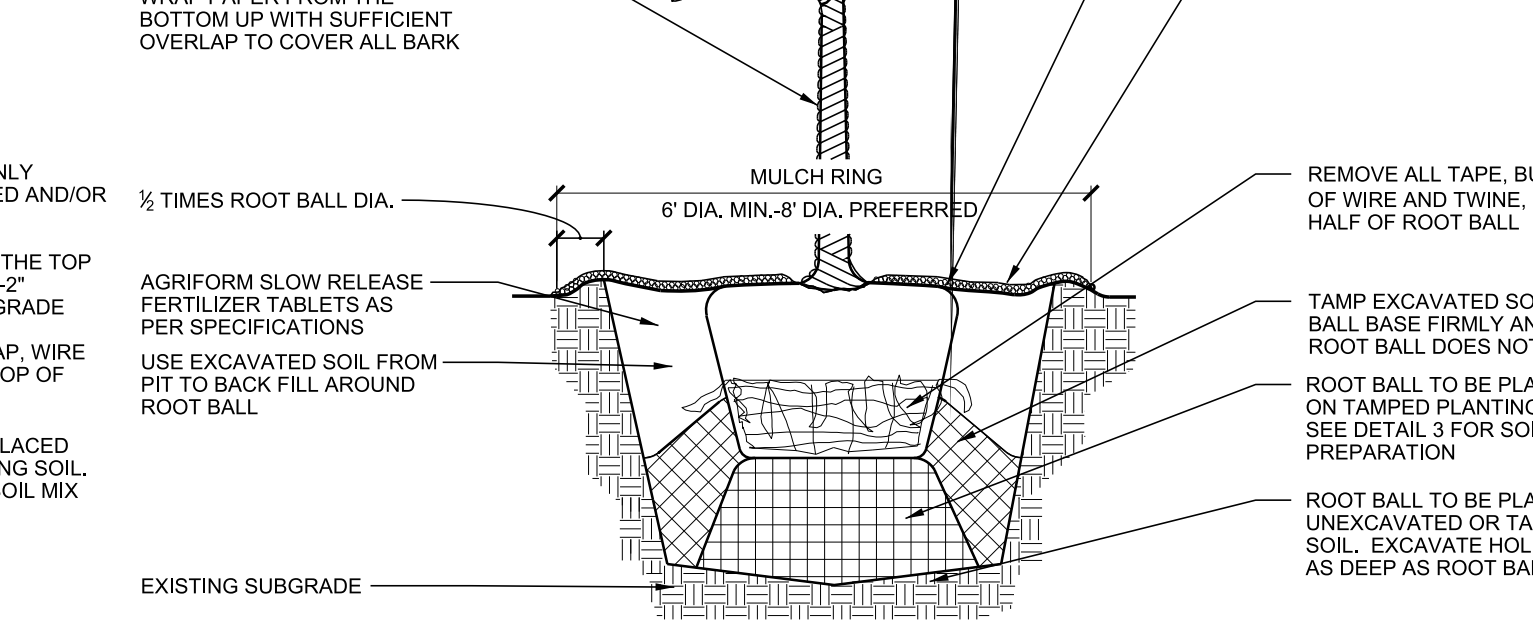
- GENERAL STANDARDS FOR LANDSCAPING:**
- REQUIRED VEGETATION: ALL AREAS NOT COVERED BY BUILDINGS, PARKING AREAS, DRIVEWAYS, WALKWAYS, PEDESTRIAN PLAZAS OR OTHER PEDESTRIAN ORIENTED IMPROVED SURFACES OR WATER SURFACES SHALL BE PLANTED WITH LIVING VEGETATION, INCLUDING CANOPY TREES, SHRUBBERY AND GROUND COVERS.
 - TOPSOIL: TOPSOIL SHALL BE INSTALLED WITH A MINIMUM DEPTH OF FOUR (4) INCHES FOR LAWN AREAS, AND TWELVE (12) TO FIFTEEN (15) WITHIN PLANTING BEDS.
 - THE TOPSOIL WITHIN THE LIMITS OF DISTURBANCE OF A CONSTRUCTION SITE SHALL BE AMENDED WITH ORGANIC SOIL ADDITIVES AS RECOMMENDED BY A LANDSCAPE SOILS TEST PRIOR TO BEING REINSTALLED IN ACCORDANCE WITH BEST LANDSCAPE PRACTICES.
 - LANDSCAPE SOILS THAT HAVE BEEN COMPACTED DURING CONSTRUCTION ACTIVITIES SHALL BE LOOSENED AND AERATED TO A DEPTH OF AT LEAST SIX (6) INCHES.
 - STABILIZATION: ALL LANDSCAPE PLANTING AREAS SHALL BE STABILIZED AND MAINTAINED WITH SEED, SOIL, GROUND COVERS, MULCHES OR OTHER APPROVED MATERIALS TO PREVENT SOIL EROSION AND ALLOW RAINWATER INFILTRATION.
 - PLANTING BEDS: BARK USED AS MULCH SHALL BE MAINTAINED AT A MINIMUM DEPTH OF THREE (3) INCHES. PLANTING BEDS SHALL BE EDGED WITH PLASTIC METAL BRICK OR STONE IN RESIDENTIAL ZONE DISTRICTS AND METAL IN ALL OTHER ZONE DISTRICTS.
 - TIMING OF PLANTING: ALL REQUIRED PLANT MATERIAL SHALL BE PLANTED PRIOR TO ISSUING A BUILDING CERTIFICATE OF OCCUPANCY.
 - COMPLETION OF IMPROVEMENTS: TREE STAKES, GUY WIRES AND TREE WRAP SHALL BE REMOVED AFTER COMPLETION OF THE INITIAL GROWING SEASON.
 - THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE AREAS, INCLUDING VEGETATION IN THE PUBLIC RIGHT-OF-WAY.
 - PLANT MATERIALS, INCLUDING LAWN SHALL BE MAINTAINED IN A SUBSTANTIALLY WEED FREE, HEALTHY GROWING CONDITION, NEAT AND ORDERLY APPEARANCE IN ACCORDANCE WITH THE APPROVED SITE PLAN.
 - PLANTS SHALL BE CONTROLLED BY PRUNING, TRIMMING, OR OTHER SUITABLE METHODS SO THAT THEY DO NOT INTERFERE WITH PUBLIC UTILITIES, RESTRICT PEDESTRIAN OR VEHICULAR ACCESS, OR CONSTITUTE A TRAFFIC HAZARD.
 - UNHEALTHY, WITHERED, SEVERELY PRUNED, DISEASED OR DEAD PLANTS SHALL BE REPLACED WITHIN ONE (1) YEAR OR THE NEXT APPROPRIATE PLANTING PERIOD, WHICHEVER COMES FIRST.
 - PRIORITY SHALL BE GIVEN TO PRESERVING AND PROTECTING SIGNIFICANT TREES THAT PROVIDE SCREENING, BUFFERING, WILDLIFE HABITAT AND/OR LINKAGES TO WILDLIFE HABITAT.



1 PERENNIAL / ANNUAL PLANTING DETAIL
LP1-0 NOT TO SCALE:



2 SHRUB PLANTING DETAIL
LP1-0 NOT TO SCALE:



3 TREE PLANTING DETAIL
LP1-0 NOT TO SCALE:

PLANT PALETTE AND PLANT SIZES

KEY	QUAN	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AFJ	16	ACER FREEMANI 'JEFFERSREY'	AUTUMN BLAZE MAPLE	2.5" CAL.B & B	SINGLE STEM STRAIGHT LEADER/TREE FORM
ATA	4	ACER TRUNCATUM X A. PLAT 'JFS-KW202'	CRIMSON SUNSET MAPLE	2.5" CAL.B & B	SINGLE STEM STRAIGHT LEADER/TREE FORM
LSR	12	LIQUIDAMBAR STYRACIFLUA ROTUNDOLOBA	ROTUNDOLOBA SWEETGUM	2.5" CAL.B & B	SINGLE STEM STRAIGHT LEADER/TREE FORM
MP	13	MALUS PRARIFRERE	PRAIRIEFIRE CRABAPPLE	2.5" CAL.B & B	SINGLE STEM STRAIGHT LEADER/TREE FORM
PCA	8	PYRUS CALLERYANA 'AMSTOCKAT'	ARISTOCRAT PEAR	2.5" CAL.B & B	SINGLE STEM STRAIGHT LEADER/TREE FORM
PP	38	PICEA PUNGENS	COLORADO SPRUCE	8' TALL B & B	TREES TO BE SHEARED SYMMETRICALLY
PPG	38	PICEA PUNGENS GLAUCA	COLORADO BLUE SPRUCE	8' TALL B & B	TREES TO BE SHEARED SYMMETRICALLY
UPJ	9	ULMUS PROPIONIA 'JFS-BIEBERICH'	EMERALD SUNSHINE ELM	2.5" CAL.B & B	SINGLE STEM STRAIGHT LEADER/TREE FORM
CRS	34	COREOPSIS 'RED SATIN'	RED SATIN THREADLEAF COREOPSIS	#1 POT	SPACE 2 O.C.
CAK	44	CALAMAGROSTIS ACUT. 'KARL FORSTER'	KARL FORSTER FEATHER REED GRASS	#1 POT	SPACE 3 O.C.
DS	21	DIERVILLA 'S229844'	KODIAK ORANGE BUSH HONEYSUCKLE	30" TALL'S GALLON	SPACE 3'-4" O.C.
HHR	44	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	#1 POT	SPACE 14" O.C.
HPM	162	HEMEROCALLIS 'PARDON ME'	PARDON ME DAYLILY	#1 POT	SPACE 14" O.C.
HOM	6	HYDRANGEA OLERIFOLIA 'MUNCHKIN'	MUNCHKIN OKALEAF HYDRANGEA	30" TALL'S GALLON	SPACE 3 O.C.
IVS	84	ITEA VIRGINICA 'SMNVDFC'	SCENTLANDIA SWEETSPICE	30" TALL'S GALLON	SPACE 3 O.C.
POS	15	PHYSCARPUS OPIULUS 'SMPTW'	TRIVY WINE NINEBARK	30" TALL'S GALLON	SPACE 4" O.C.
PVN	20	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCHGRASS	#1 POT	SPACE 2.5" O.C.
PVN	26	PANICUM VIRGATUM 'NORTHWIND'	NORTHWIND SWITCHGRASS	#1 POT	SPACE 2.5" O.C.
PVR	26	PANICUM VIRGATUM 'RUBY RIBBONS'	RUBY RIBBONS SWITCHGRASS	#1 POT	SPACE 2.5" O.C.
SPS	44	SPIRAEA MEDIA 'SMSMBC'	DOUBLE PLAY BLUE KAZOO SPIRAEA	30" TALL'S GALLON	SPACE 2.5" O.C.
TOE	13	THALIA OCCIDENTALIS 'EMERALD'	EMERALD ARBOVITAE	5' TALL'S B&B	SPACE 3 O.C.
VBM	6	VIBURNUM X BURKWOODII 'MOHAWK'	MOHAWK VIBURNUM	5 GALLON	SPACE 5 O.C.

- SEED MIXES FOR TURF GRASS**
- SEED MIX "A" - KENTUCKY BLUEGRASS/RED FESCUE MIX - FOR IRRIGATED LAWNS
- SEED MIXES FOR SITE FROM NATIVE CONNECTIONS:**
- SEED MIX "B" - DRY SHORTGRASS PRAIRIE MIX
 - SEED MIX "C" - SLOPE STABILIZATION MIX
 - SEED MIX "D" - STORMWATER MIX
- SEED MIX FOR SITE FROM MDOOT**
- SEED MIX "E" - GEOTURF SEED MIXTURE MDOOT ROADSIDE

EXISTING WOODLAND AREA CONSISTING OF PRIMARILY SECOND-GROWTH RED MAPLE, ASPEN, ASH, AND COTTON WOOD INTERSPERSED WITH BIRCH, HACKBERRY, BASS WOOD, ELM AND JACK PINE. THEY ARE GENERALLY 6" TO 16" CALIPER INCH D.B.H. IN SIZE WITH SEVERAL RED MAPLE AND ELM RANGING 22" TO 36" CALIPER INCH D.B.H. ALONG WITH THESE TREES ARE VARIOUS SPECIES OF MODERATELY DENSE TO DENSE WOODY UNDERGROWTH VEGETATION AND VINES. ISABELLA COUNTY IS PRESERVING THIS AREA AND DOES NOT INTEND TO DISRUPT, REMOVE OR OTHERWISE MODIFY THIS WOODED AREA.

EXISTING WOODLAND AREA CONSISTING OF PRIMARILY SECOND-GROWTH RED MAPLE, ASPEN, ASH, AND COTTON WOOD INTERSPERSED WITH BIRCH, HACKBERRY, BASS WOOD, ELM AND JACK PINE. THEY ARE GENERALLY 6" TO 16" CALIPER INCH D.B.H. IN SIZE WITH SEVERAL RED MAPLE AND ELM RANGING 22" TO 36" CALIPER INCH D.B.H. ALONG WITH THESE TREES ARE VARIOUS SPECIES OF MODERATELY DENSE TO DENSE WOODY UNDERGROWTH VEGETATION AND VINES. ISABELLA COUNTY IS PRESERVING THIS AREA AND DOES NOT INTEND TO DISRUPT, REMOVE OR OTHERWISE MODIFY THIS WOODED AREA.

SITE LANDSCAPE PLAN
SCALE: 1" = 50'-0"

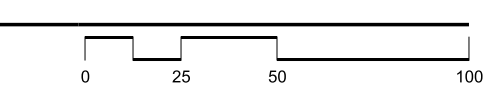




PHOTO 1887



PHOTO 1890



PHOTO 1892



PHOTO 1897



PANORAMIC VIEW OF SOUTHERN PROPERTY BORDER

APPROXIMATE SCALE: 1"=100'



PANORAMIC VIEW OF SOUTHERN PROPERTY BORDER



PHOTO 1901



PHOTO 1902



PHOTO 1914

EXISTING WOODLAND AREA CONSISTING OF PRIMARILY SECOND GROWTH RED MAPLE, ASPEN, ASH, AND COTTON WOOD INTERSPERSED WITH BIRCH, HACKBERRY, BASS WOOD, ELM AND JACK PINE. THEY ARE GENERALLY OF 6 TO 16 CALIPER INCH D.B.H. IN SIZE WITH SEVERAL RED MAPLE AND ELM RANGING 22 TO 36 CALIPER INCH D.B.H. ALONG WITH THESE TREES ARE VARIOUS SPECIES OF MODERATELY DENSE TO DENSE WOODY UNDERGROWTH VEGETATION AND VINES. ISABELLA COUNTY IS PRESERVING THIS AREA AND DOES NOT INTEND TO DISRUPT, REMOVE OR OTHERWISE MODIFY THIS WOODED AREA.

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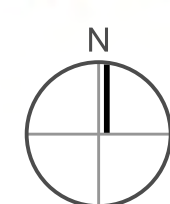
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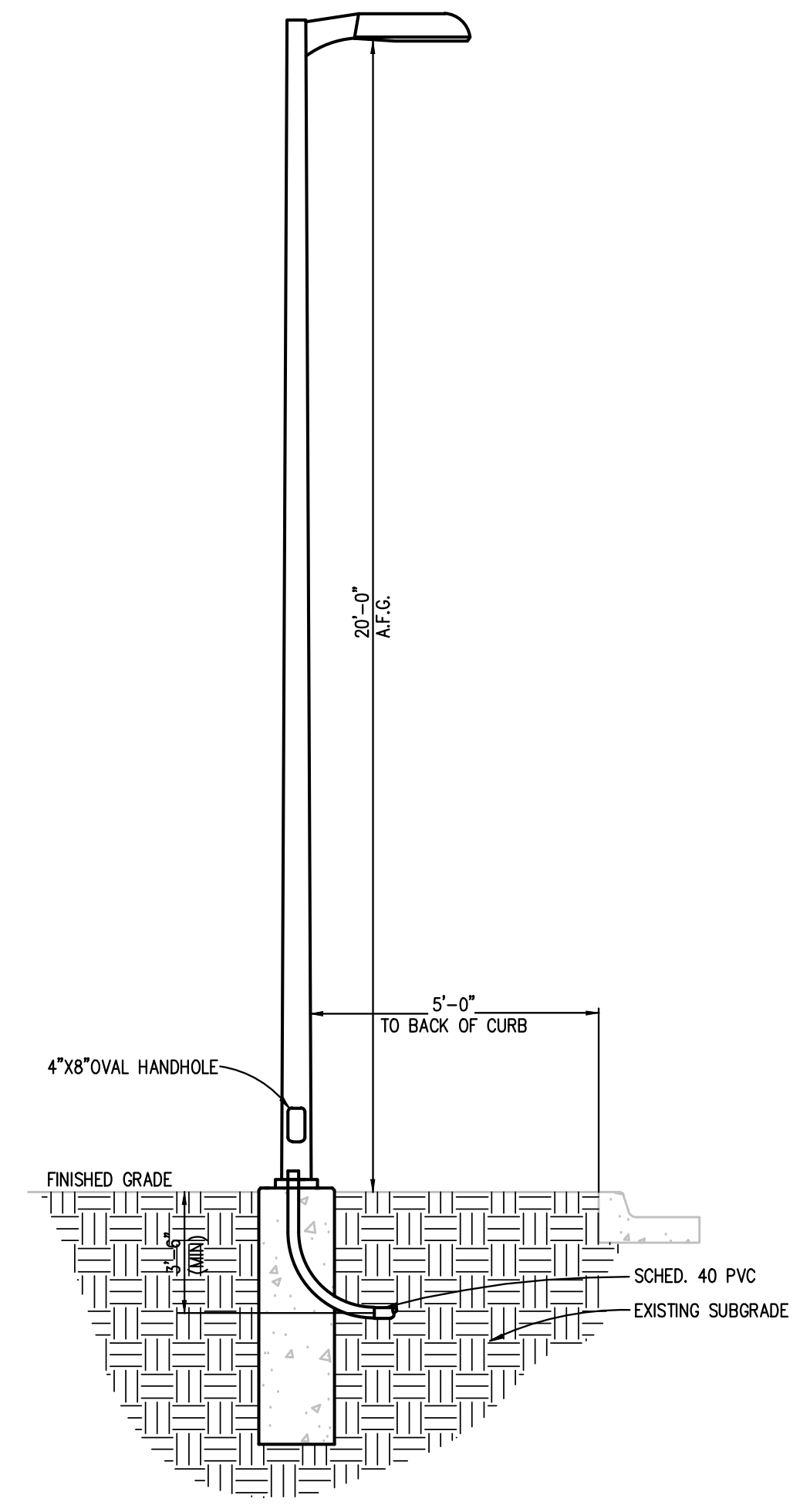
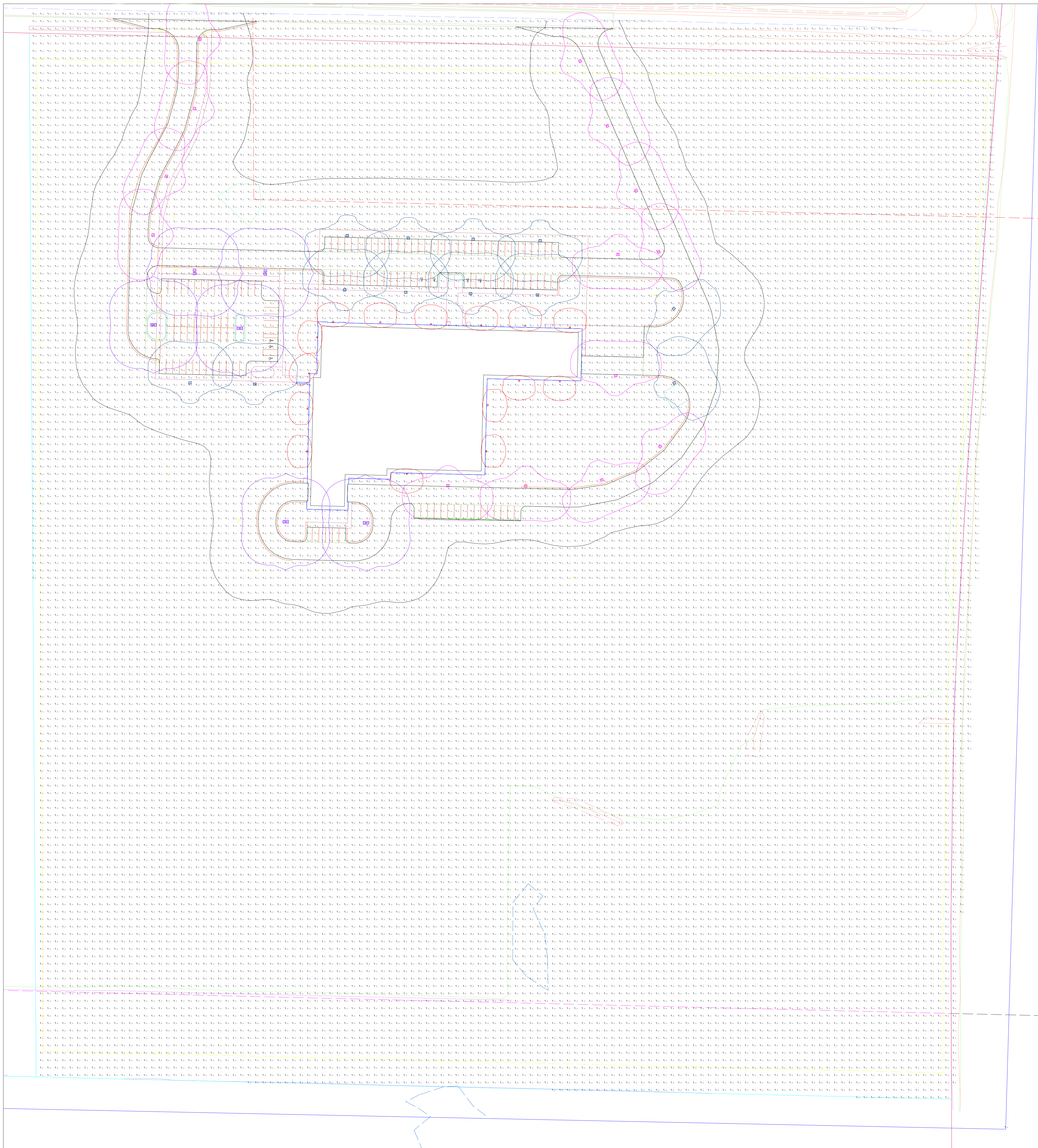
Resubmitted FSFR	30 Sept 2021
SFR	24 Aug 2021
Design	KAB
PM / PA	DD/CS/ER
Drawn	KAB
IA Project Number	20190905

SITE AERIAL
PLAN

LP1.1



SITE AERIAL PLAN
NOT TO SCALE



LIGHTING POLE DETAIL
NO SCALE

D-Series Size 1 LED Area Luminaire OL1 / OL2

Specifications
EPA: 1.01 ft (0.31m)
Length: 33" (813mm)
Width: 13" (330mm)
Height H1: 7-1/2" (190mm)
Height H2: 3-1/2" (91mm)
Weight (max): 27 lbs (12.3kg)

Introduction
The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficiency, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAR2 PIRHN DBBXD

Series	LEDs	Color Temperature	Distribution	Mounting	Voltage
DSX1 LED	Forward optics	30K 3000K	T15 Spot (short)	MVOLT	208V 277V/480V/575V
	P1 P1	40K 4000K	T35 Spot (short)	T35	
	P2 P2	50K 5000K	T25 Spot (short)	T25	
	P3 P3	50K 5000K	T25 Spot (medium)	T25	
Related optics	TYPED-OL1	T15 Spot (short)	T35 Spot (short)	Backlight control	LED: Left corner only
P10 P10	TYPED-OL2	T15 Spot (short)	T35 Spot (short)	Backlight control	LED: Right corner only
P11 P11	TYPED-OL2	T15 Spot (short)	T35 Spot (short)	Backlight control	LED: Forward view

Control options

Shipped installed	Other options	Finish
NLTAR2 High flow, medium beam spread 8-15 mounting height, ambient sensor enabled (see page 10)	PIR High flow, medium beam spread 8-15 mounting height, ambient sensor enabled (see page 10)	DBBXD Dark bronze
PIRHN Medium high beam spread 8-15 mounting height, ambient sensor enabled (see page 10)	HS House-side aimed 1-2 mounting height, ambient sensor enabled (see page 10)	DBBXD Black
PIR Medium high beam spread 8-15 mounting height, ambient sensor enabled (see page 10)	DF Double-face (DS, 24, 40V)	DBBXD White
PIRHN Medium high beam spread 8-15 mounting height, ambient sensor enabled (see page 10)	LW Left corner spot	DBBXD Textured dark bronze
PIRHN Medium high beam spread 8-15 mounting height, ambient sensor enabled (see page 10)	HW High corner spot	DBBXD Textured black
DSX1 0-10V dimming wires pulled outside (see page 10) with ambient sensor enabled (see page 10)	HA 50° ambient sensor	DBBXD Textured natural aluminum
DSX1 0-10V dimming wires pulled outside (see page 10) with ambient sensor enabled (see page 10)	Shipped separately	DBBXD Textured silver
DSX1 0-10V dimming wires pulled outside (see page 10) with ambient sensor enabled (see page 10)	ES External gear-head	

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WDGE3 LED Architectural Wall Sconce OL2

Specifications
Depth (D1): 9"
Depth (D2): 1.5"
Height: 9"
Width: 18"
Weight: 19.5 lbs (not including options)

Introduction
The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectangular design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with Light@AIR wireless controls, the WDGE family provides additional energy savings and code compliance. WDGE3 has been designed to deliver up to 12,000 lumens through a precision refractive lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

WDGE LED Family Overview

Luminaire	Standard Efficacy	Cold Efficacy	Sensor	Lumens (6000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	—	—	1,200	2,000	—	—	—	—
WDGE2 LED	10W	10W	Standard / Edge	1,200	2,000	3,000	4,000	6,000	—
WDGE3 LED	15W	15W	Standard / Edge	2,000	3,000	6,000	12,000	20,000	—
WDGE4 LED	—	—	Standard / Edge	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information EXAMPLE: WDGE3 LED P3 40K 70CRI R3 MVOLT SRM DBBXD

Series	Package	Color Temperature	CR	Distribution	Mounting	Shipped separately
WDGE3 LED	P1	30K 3000K	70CRI	R2 Type 2	MVOLT	AWES 3/8" x 1/8" Architectural wall spacer
	P2	40K 4000K	80CRI	R3 Type 3	SRM	SRM Surface-mounted wall spacer
	P3	50K 5000K	80CRI	R3 Type 3	SRM	SRM Surface-mounted wall spacer

Options

Option	Standard Sensors/Controls	Finish
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Dark bronze
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Black
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Textured natural aluminum
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Textured black
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Textured silver
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Textured dark bronze
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Textured black
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Textured natural aluminum
EWBH Emergency battery backup, CE compliant	PIR	DBBXD Textured silver

Accessories

WDGE3-DBBXD WDGE3 18" x 9" Architectural Wall Sconce (open hole)
WDGE3-SRM WDGE3 Surface-mounted wall spacer (open hole)

NOTES
1 34V and 480V not available with sensor/control.
2 PE not available in 480V and with sensor/control.
3 DMG option not available with sensor/control.
4 Not qualified for DUC. Not available for use with battery backup or sensor/control.

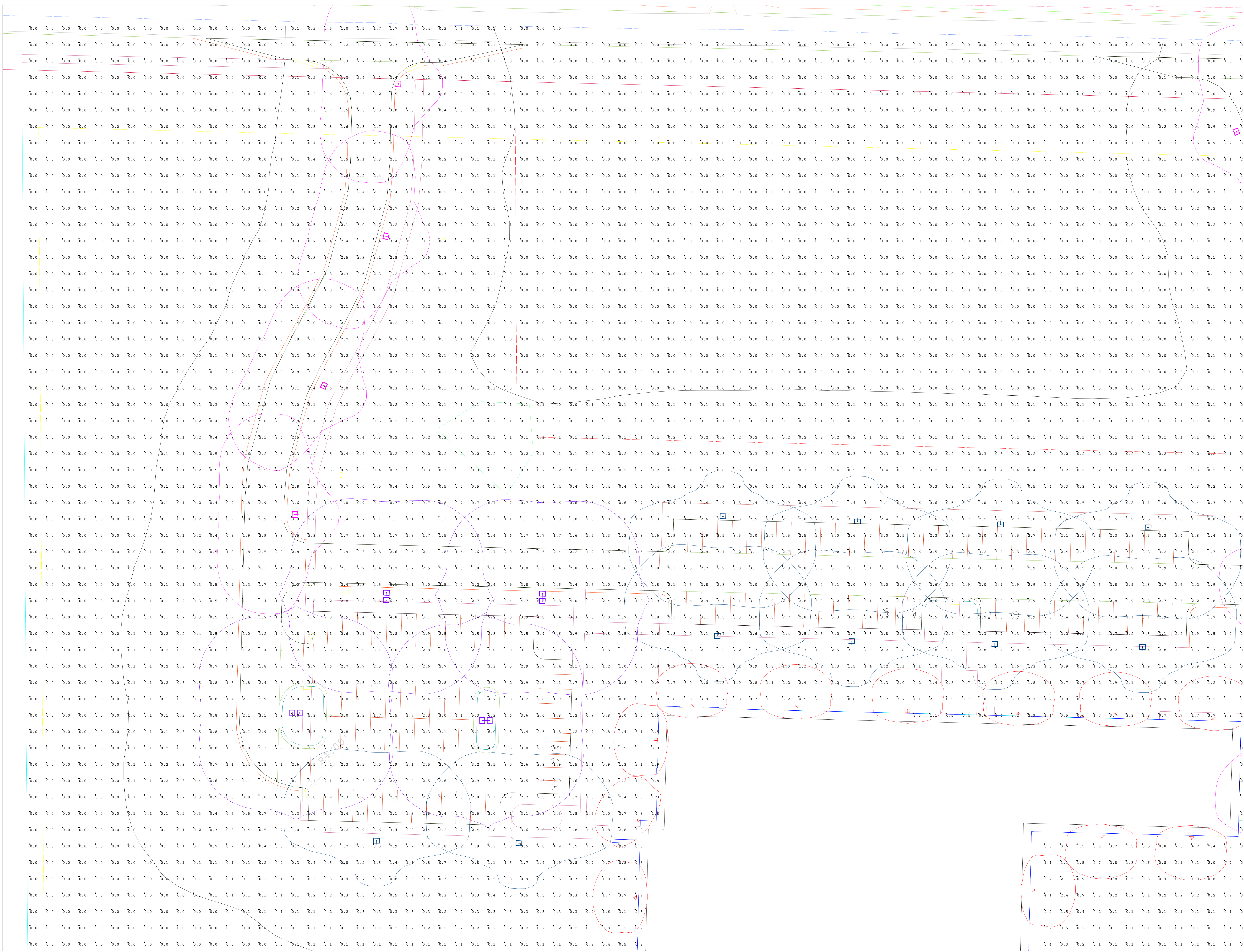
LITHONIA LIGHTING One Lithonia Way • Conyers, Georgia 30012 • Phone 1-800-705-SERV (5378) • www.lithonia.com
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CALCULATION SUMMARY

LABEL	UNITS	AVG	MAX	MIN	MAX/MIN
Ground_Planar	Fc	0.29	6.3	0.0	N.A.
Drives and Lots	Fc	2.31	6.2	0.5	12.4

LIGHTING FIXTURE SCHEDULE

TYPE	QTY	LLF	WATTS	LUMENS	DESCRIPTION / NOTES	MOUNTING HEIGHT
OL3	15	0.900	22.55	3214	WDGE2 P3 40K 80CRI VW	15 FT
OL2 B-B	6	0.900	125	14181	DSX1 P4 40K T4M BACK-BACK	20 FT
OL2	12	0.900	125	14181	DSX1 P4 40K T4M	20 FT
OL1	14	0.900	125	14496	DSX1 P4 40K T3S	20 FT



PRELIMINARY NOT FOR CONSTRUCTION



Integrated Architecture
840 Ottawa Avenue NW
Grand Rapids, MI 49503
www.intarch.com

Aventure Architects
210 NORTH ZEEB STREET
MUSKEGON, MI 49623
www.avarch.com

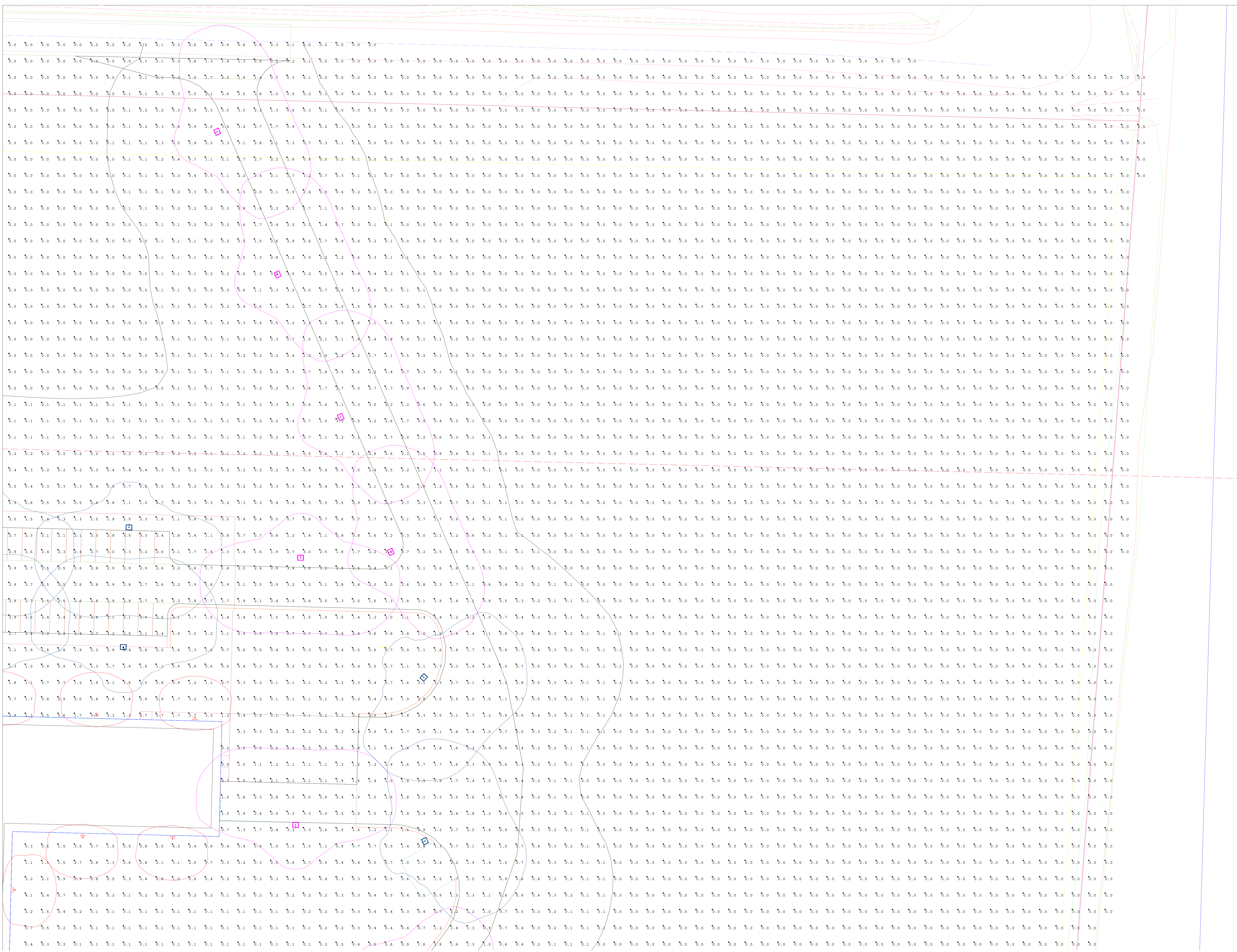
PBA
Peter Basso Associates Inc.
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48068-3276
Tel: 248-878-5656
Fax: 248-878-0007
www.PeterBassoAssociates.com
PBA Project No. 20020-0050

Isabella Sheriffs Office and
Correction Facility
5270 East River Road
Mount Pleasant, MI 48858

Design	SPR	08.24.2021
PMPA	TLC	
Drawn	PM/PA	
	DMN	
IA Project Number		200020.00

FINAL SITE CALCULATIONS

E101



Integrated Architecture
 840 Ottawa Avenue NW
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 616.574.0220 P
 www.intarch.com

Aventure Architects
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 PBA Project No. 2020-0050

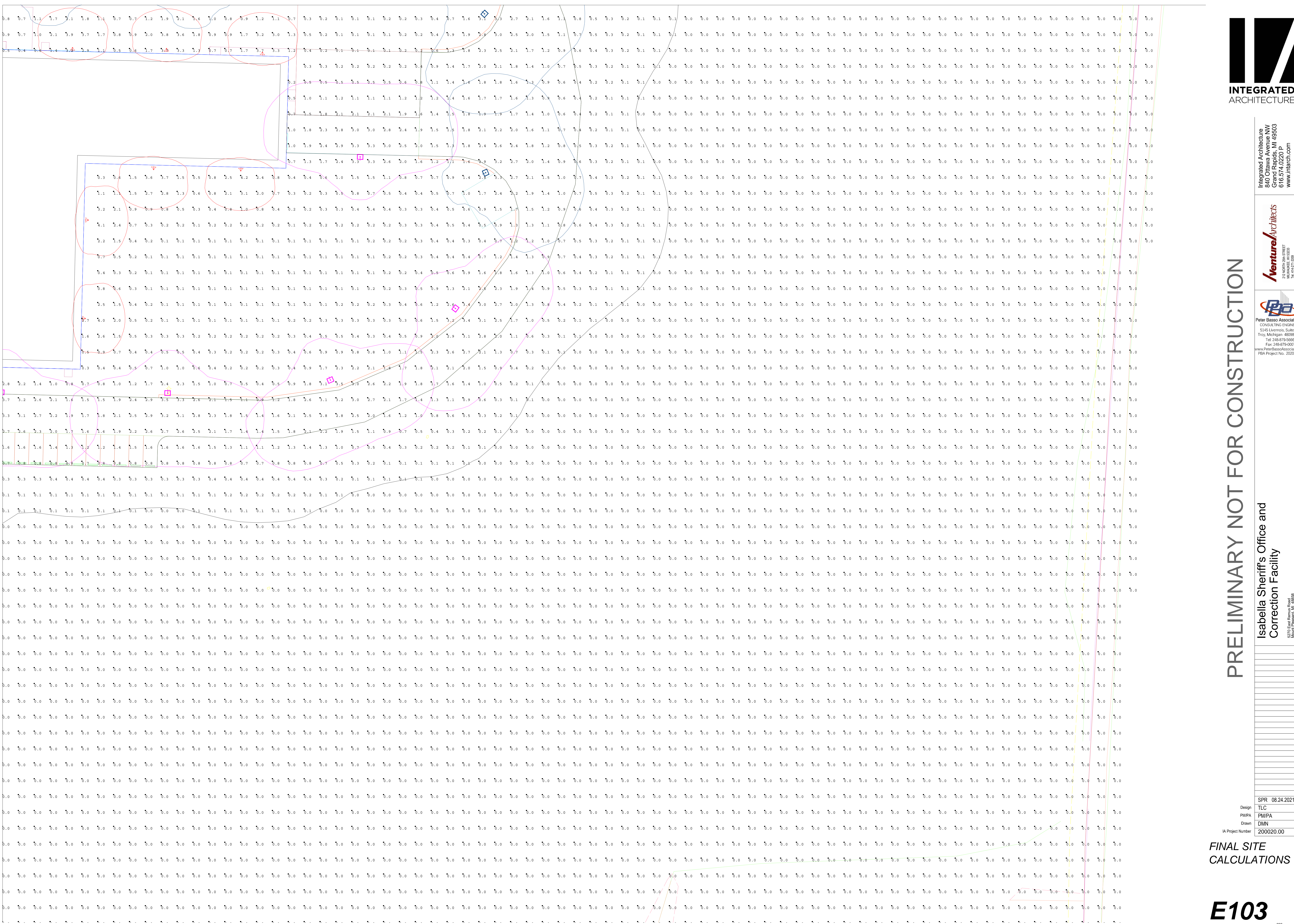
PRELIMINARY NOT FOR CONSTRUCTION

Isabella Sheriff's Office and
 Correction Facility
 5270 East River Road
 Mount Pleasant, MI 48858

Design: TLC
 PMPA: PM/PA
 Drawn: DMN
 IA Project Number: 200020.00

FINAL SITE
 CALCULATIONS

E102



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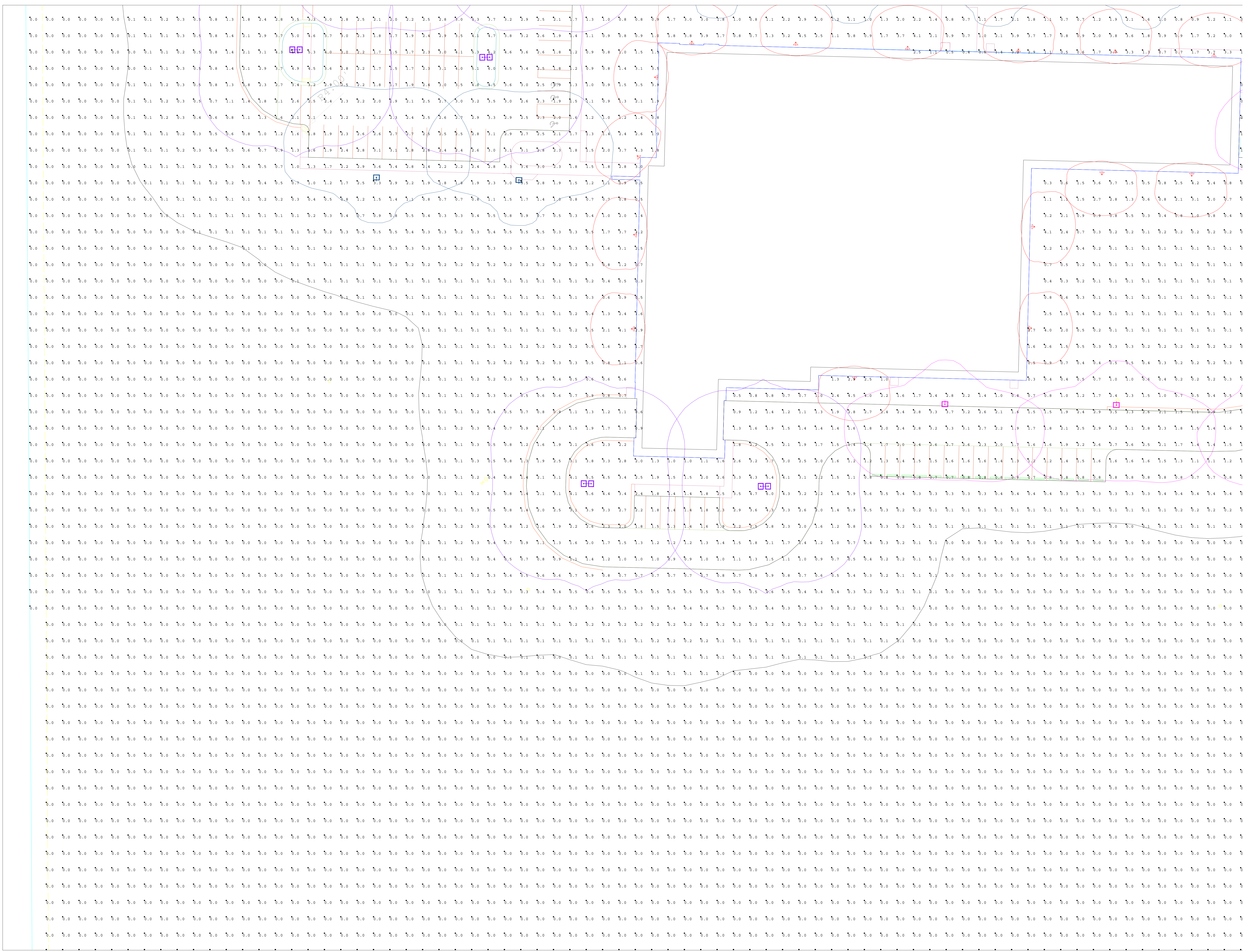
PRELIMINARY NOT FOR CONSTRUCTION

Isabella Sheriffs Office and
 Correction Facility
 5270 East River Road
 Mount Pleasant, MI 48858

Design: TLC
 PMPA: PM/PA
 Drawn: DMN
 IA Project Number: 200020.00

FINAL SITE
 CALCULATIONS

E103



PRELIMINARY NOT FOR CONSTRUCTION



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PBA Project No. 2020-0050

Isabella Sheriffs Office and
Correction Facility
5270 East River Road
Morris Farms, MI 48868

SPR 08.24.2021
Design TLC
PMPA PM/PA
Drawn DMN
IA Project Number 200020.00

FINAL SITE
CALCULATIONS

E104

Remus Road Between Isabella and Deadend

Created on August 19, 2021

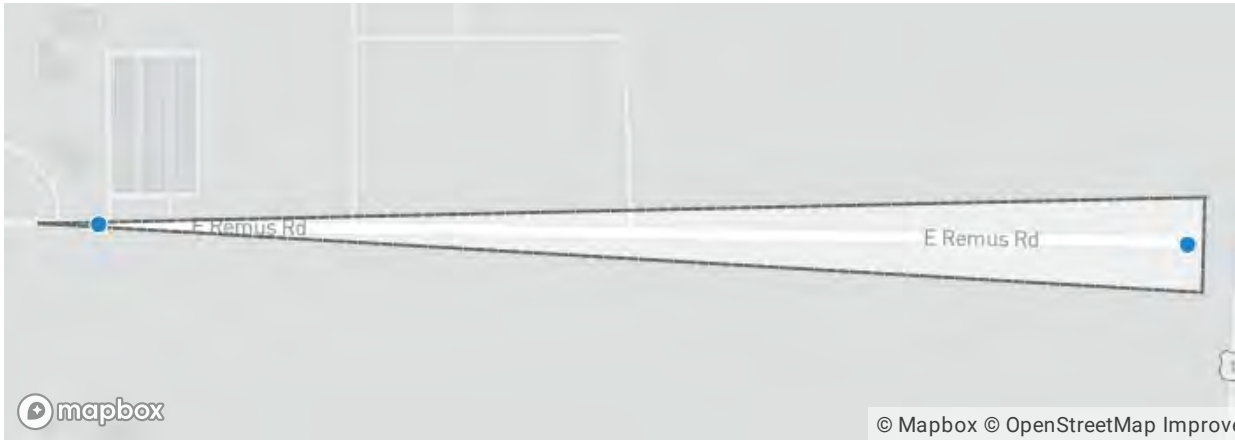
Created by Michael Main

Data extents: February 3, 2019 to July 13, 2021



Applied Filters

Shape: Polygon Crash Date & Time ≤ ≥ 01/01/2011 - 08/16/2021



Total Crashes	3	Fatal Crashes	0
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Summary	Crash Level	
Property Damage Crashes	3	100.00%
Total Crashes	3	100.00%
Non Traffic Crashes	1	33.33%
+ 2 more	0	0%

Injuries	People Level	
No Injury (0)	3	60.00%
+ 4 more	0	0%

Alcohol Involved	Crash Level	
No	3	100.00%
Yes	0	0.00%

Drug Involved	Crash Level	
No	2	66.67%
Yes	1	33.33%

Distracted Driver Involved	Crash Level	
	3	100.00%

No	3	100.00%
Yes	0	0.00%

Truck/Bus Involved	Crash Level	
No	3	100.00%
Yes	0	0.00%

Bicycle Involved	Crash Level	
No	3	100.00%
Yes	0	0.00%

Pedestrian Involved	Crash Level	
No	3	100.00%
Yes	0	0.00%

Motorcycle Involved	Crash Level	
No	3	100.00%
Yes	0	0.00%

Young Driver Age	Crash Level	
None	2	66.67%
18 - 20	1	33.33%
+ 4 more	0	0%

Elderly Driver Age	Crash Level	
None	3	100.00%
+ 4 more	0	0%



FINAL SITE PLAN REPORT

TO:	Planning Commission	DATE:	October 2, 2021
FROM:	Peter Gallinat – Zoning Administrator Community and Economic Development	ZONING:	R2-A, One- and Two-Family District
PROJECT:	PSPR 21-18 Final Site Plan Application for the new Isabella County Jail and Sheriff’s Office.		
PARCELS:	PID 14-024-10-001-02 & -003-00		
OWNER(S):	Isabella County (purchase agreement); Bader & McDonald LLC		
LOCATION:	Approximately 44.58 acres on the south side of E. Remus Rd. in the NW 1/4 of Section 24.		
EXISTING USE:	Vacant; primarily open farmland with some woodlands to the south	ADJACENT ZONING:	R-4 (Mobile or Modular Home District), B-4 (General Business), R-2A, and the US-127 right-of-way.
FUTURE LAND USE DESIGNATION: Residential areas are intended to “promote single-family homes on a variety of lot sizes.”			
ACTION REQUESTED: To review the PSPR 21-18 final site plan dated September 30, 2021 for the new Isabella County Jail and Sheriff’s Office located on the south side of E. Remus Rd. east of S. Isabella Rd. in the NW quarter of Section 24 and in the R2-A (One- and Two-Family) District.			

Background Information

Following review of the public hearing record and the Planning Commission’s recommendation, the Board of Trustees took action during their 6/23/2021 regular meeting to adopt the following motion to grant a conditional approval of the required special use permit for this project:

Hauck moved Bills supported to concur with the Planning Commission's recommendation and approve the PSUP 21-01 Special Use Permit for the new Isabella County Jail and Sheriff's Office on approximately 44.58 acres of land (parcel numbers 14-024-10-001-02 & -003-00) on the south side of E. Remus Rd. east of S. Isabella Rd. in the northwest quarter of Section 24 and in the R-2A (One- and Two-Family) zoning district, subject to the following conditions:

- 1. A final site plan is approved for the new Isabella County Jail and Sheriff's Office.**
- 2. Township Public Services Department approval of municipal water and municipal sanitary sewer service extensions to the site.**
- 3. Completion of the roadway paving as proposed on the plan, and additional width, surface, and turnaround area improvements along the remaining length of E. Remus Rd. to US-127.**

Site Plan Approval Process

Per Section 14.2.C. of the Zoning Ordinance, both preliminary and final site plan approvals are required for this project. Per Section 14.2.J., preliminary site plan approval by the Planning Commission “shall indicate its general acceptance of the proposed layout of buildings, streets, drives, parking areas, and other facilities and areas.” Planning Commission approval of a final site plan “constitutes the final zoning approval for the project and allows for issuance of a building permit to begin site work or construction, provided all other construction and engineering requirements have been met” (Section 14.2.L.). Documentation of applicable outside agency permits and approvals will be required as part of a final site plan application.

Final Site Plan Review Comments

The following comments are based on the standards for preliminary site plan approval and specific elements of the proposed site plan:

1. **Section 14.2.P. (Required Site Plan Information).** The site plan substantially conforms to the minimum Section 14.2.P. information requirements for a final site plan, with the exception of some details as noted elsewhere in this report.
2. **Section 8 (Environmental Performance Standards).** The applicant has confirmed on the completed Hazardous Substances Reporting Form that no hazardous substances are expected to be used, stored or generated on-site. **CONFORMS**
3. **Section 3.6. – Dimensional Standards.** The proposed building conforms to the 35-foot maximum height requirement, and the perimeter yard setback dimensions on the site plan conform to the minimum requirements of the R2-A District. **CONFORMS**
4. **Section 9 (Parking, Loading, and Access Management).** The parking calculations and arrangement of proposed parking and loading facilities on the site plan generally conform to the requirements of Section 9. The required bicycle parking facilities for visitors and employees has also been added per the requirements of Section 9.1.C.5. (Bicycle Parking). **CONFORMS**
5. **Section 8.2. - Exterior Lighting.** The exterior lighting information is sufficient for final site plan approval and the proposed exterior lighting fully conforms to Section 8.2 standards. **CONFORMS**
6. **Section 10. – Landscaping and Screening.** The updated landscaping and screening plan details conform to the minimum requirements of Section 10. Descriptions have been added for the existing woodlands along the south side of the site that provides part of the required screening from the residential area to the south. New plantings are coordinated with anticipated snowplowing patterns. The number of proposed ornamental trees, deciduous trees, and shrub plantings to match what is required per Section 10 standards. The applicant has requested a modification per Section 10.7 to allow the required shrub plantings to be grouped around the parking lot to screen headlight glare. Staff has no objection to the requested modification. **CONFROMS**

7. **Section 7.10 (Sidewalks and Pathways).** The applicant has proposed to provide a new public sidewalk along the western eastern entry points of the site's frontage along E. Remus Rd. A new internal sidewalk into the site to the public building from the western entrance has been proposed as well.

The remainder of the required sidewalk across the E. Remus Rd. frontage to US-127 per the Sidewalk and Pathway Ordinance No. 2009-03 is shown on the plans with a dashed line to indicate the portion that the Applicant has requested a temporary waiver from construction due to lack of pedestrian related car accidents on the road.

On the 2011 Greater Mt. Pleasant Area Non-Motorized Plan map, this road frontage is identified for improvement with a regional off-road bike/walking trail that would utilize a proposed new bridge of US-127 to connect to activities to the east. However, there are no current plans to construct the required freeway crossing to make this possible. Staff has no objection to the request for temporary relief from construction as presented. Approval of the final site plan would also grant approval of this temporary relief.

8. **E. Remus Rd. access improvements.** Just over 1,000 linear feet of new road paving is proposed to be completed within the E. Remus Rd. right-of-way to accommodate vehicular access to the new facility. Beyond the new end of pavement would remain about 500 feet of unimproved road with a poorly defined turnaround area adjacent to US-127. One of the conditions of the special use permit as approved by the Board of Trustees is: *"Completion of the roadway paving as proposed on the (preliminary site) plan, and additional width, surface, and turnaround area improvements along the remaining length of E. Remus Rd. to US-127."*

The applicant made a statement to Staff on 10/12/2021 that the Road Commission has "signed off" on the existing section of road to confirm that it meets Road Commission standards, but no documentation of compliance with this condition has been provided on the revised site plan or as part of the submittal. The following road access-related details will need to be addressed on a revised final site plan:

- Add the necessary documentation and details for the planned additional width, surface, and turnaround area improvements along the remaining length of E. Remus Rd. to US-127 consistent with current county Road Commission requirements to provide a durable two-way driving surface and shoulders, effective roadway and roadside drainage, and a modern turnaround area suitable for fire trucks.
9. **Outside agency approvals.** The applicant shall be responsible for obtaining all necessary permits or approvals from applicable outside agencies, prior to final site plan approval. Documentation of approvals have been received from the Mt. Pleasant Fire Department, Isabella County Transportation Commission, and Storm Water approval from the Isabella County Drain office. Remaining outside agencies for which documentation of permits or approvals are still needed include the Township Public Services Department, Isabella County Road Commission, and State of Michigan.
- Copies of all outside agency permits and approval letters will need to be submitted to Peter Gallinat, Zoning Administrator prior to issuance of a building permit.

Objective

The Planning Commission shall review the application materials and site plan, together with any reports and recommendations. The Planning Commission shall identify and evaluate all relevant factors and shall then take action by motion to approve the site plan, to approve the site plan with conditions, to deny the site plan application, or to postpone further consideration of the site plan to a date certain in accordance with Section 14.2.H. of the Zoning Ordinance.

Key Findings

1. The Board of Trustees approved a special use permit to allow the County Jail and Sherriff's office to be constructed, subject to conditions that have not been fully satisfied with the final site plan submittal.
2. With the exception of a few details, the site plan conforms to the minimum Section 14.2.P. information requirements for a final site plan.
3. The Section 14.2.S. standard for final site plan approval related to documentation of outside agency permits and approvals has not been met.

Recommendations

Based on the above findings and following the required public hearing, I would have no objection to a Planning Commission action to approve the PSPR 21-18 final site plan dated September 30, 2021 for the new Isabella County Jail and Sheriff's Office located on the south side of E. Remus Rd. east of S. Isabella Rd. in the northwest quarter of Section 24 and in the R2-A (One- and Two-Family) District, subject to the following conditions:

1. The proposed temporary relief from sidewalk construction and proposed landscaping modification are approved as presented on the final site plan.
2. Provide the remaining documentation of outside agencies permits or approvals from the Township Public Services Department, Isabella County Road Commission, and State of Michigan to the Zoning Administrator prior to issuance of a building permit.
3. Provide the required documentation of compliance with the condition of the approved special use permit for "*Completion of the...additional width, surface, and turnaround area improvements along the remaining length of E. Remus Rd. to US-127*" to the Zoning Administrator prior to issuance of a building permit.

Please contact me at (989) 772-4600 ext. 232, or via email at rnanney@uniontownshipmi.com, with any questions about this information.

Respectfully submitted,

Rodney C. Nanney, AICP

Community and Economic Development Director

Draft Motions: PSPR 21-18 Isabella County Jail and Sheriff's Office
Final Site Plan Review Application

MOTION TO APPROVE:

Motion by _____, supported by _____, to approve the PSPR 21-18 final site plan from Isabella County for the new Isabella County Jail and Sheriff's Office on approximately 44.58 acres of land (parcel numbers 14-024-10-001-02 & -003-00) on the south side of E. Remus Rd. in the northwest quarter of Section 24 and in the R2-A (One- and Two-Family) zoning district, finding that the September 30, 2021 site plan fully conforms to all applicable Zoning Ordinance requirements for final site plan approval, including Sections 14.2.P. (Required Site Plan information) and 14.2.S. (Standards for Site Plan Approval).

MOTION TO APPROVE WITH CONDITIONS:

Motion by _____, supported by _____, to approve the PSPR 21-18 final site plan from Isabella County for the new Isabella County Jail and Sheriff's Office on approximately 44.58 acres of land (parcel numbers 14-024-10-001-02 & -003-00) on the south side of E. Remus Rd. in the northwest quarter of Section 24 and in the R2-A (One- and Two-Family) zoning district, finding that the September 30, 2021 site plan can comply with applicable Zoning Ordinance requirements for final site plan approval, including Sections 14.2.P. (Required Site Plan information) and 14.2.S. (Standards for Site Plan Approval), subject to the following condition(s):

1. The proposed temporary relief from sidewalk construction and proposed landscaping modification are approved as presented on the final site plan.
2. Provide the remaining documentation of outside agencies permits or approvals from the Township Public Services Department, Isabella County Road Commission, and State of Michigan to the Zoning Administrator prior to issuance of a building permit.
3. Provide the required documentation of compliance with the condition of the approved special use permit for "Completion of the...additional width, surface, and turnaround area improvements along the remaining length of E. Remus Rd. to US-127" to the Zoning Administrator prior to issuance of a building permit.

MOTION TO POSTPONE ACTION:

Motion by _____, supported by _____, to postpone action on the PSPR 21-18 final site plan from Isabella County for the new Isabella County Jail and Sheriff's Office on approximately 44.58 acres of land (parcel numbers 14-024-10-001-02 & -003-00) until _____, 2021 for the following reasons:

Draft Motions: PSPR 21-18 Isabella County Jail and Sheriff's Office
Final Site Plan Review Application

MOTION TO DENY:

Motion by _____, supported by _____, to deny the PSPR 21-18 final site plan from Isabella County for the new Isabella County Jail and Sheriff's Office on approximately 44.58 acres of land (parcel numbers 14-024-10-001-02 & -003-00) on the south side of E. Remus Rd. in the northwest quarter of Section 24 and in the R2-A (One- and Two-Family) zoning district, finding that the September 30, 2021 site plan does not comply with applicable Zoning Ordinance requirements, including Sections 14.2.P. (Required Site Plan information) and 14.2.S. (Standards for Site Plan Approval), for the following reasons:
