

ADDENDUM No. 1

RFP No. 23-05

2023 Miscellaneous Utility Projects

Due: February 16, 2023 at 10:00 AM (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. **This Addendum includes 8 pages herein and a revised plan set with 44 pages.**

The Proposer is to acknowledge receipt of this Addendum No. 1, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment D - Prevailing Wage Declaration of Compliance**
- **Attachment E - Living Wage Declaration of Compliance**
- **Attachment G - Vendor Conflict of Interest Disclosure Form**
- **Attachment H - Non-Discrimination Declaration of Compliance**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the RFP documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Section/Page(s)	Change
Replace Plan Set in its entirety	Minor quantity revisions throughout Added stormwater curb drain on Sheet 33 Revisions to water main profile at Towner on Sheet 28 Added sanitary sewer replacement along N 7th on Sheet 40
Replace Bid Form, 15 to 18	Quantity updates to reflect plan changes
New Content, DS-113 to DS-114	Curb Drain Specification

II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: Is there any video available for the sanitary sewer on 7th street?

Answer 1: Yes, the sewer video is available at the following link:
<https://ohm.filegenius.com/downloadPublic/9gpant7db8btspm>

Question 2: Will the City or OHM be providing inspection?

Answer 2: The City will utilize their internal staff for inspection.

Question 3: In the past, delays, weather, or material shortages have pushed portions of work on the miscellaneous utility projects into the following spring. Is this something the City and OHM will work with the contractor on if it occurs?

Answer 3: If any delays are anticipated due to shortages, please include details within the proposal documentation submitted to the City. Unanticipated delays will be addressed in accordance with the contract documents.

Question 4: Have valves outside the limits of our watermain construction been exercised to verify that they still operate? If so, could this information be shared?

Answer 4: Valves have been operated and some locations may require temporary line stops. Locations with potentially inadequate isolation include the 12-inch water main on Towner, the 6-inch water main on Heather Way and 12-inch water main on Arlington.

Question 5: Is there any planned replacement or new construction for electric or gas distribution within our work zones?

Answer 5: No

E. Schedule of Pricing/Cost – 20 Points

Company: _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
201	Project Supervision, Max 50,000	LSUM	1	\$ _____	\$ _____
202	General Conditions, Max \$100,000	LSUM	1	\$ _____	\$ _____
203	Digital Audio Visual Coverage	LSUM	1	\$ _____	\$ _____
204	Minor Traffic Devices, Max \$15,000	LSUM	1	\$ _____	\$ _____
205	Traffic Control, North Seventh, Max \$5,000	LSUM	1	\$ _____	\$ _____
206	"No Parking" Signs	Ea	85	\$ _____	\$ _____
207	Certified Payroll and Compliance and Reporting	LSUM	1	\$ _____	\$ _____
208	Allowance for Unforeseen Site Conditions	Dir	40,000	\$ _____	\$ _____
209	Remove Concrete Curb or Curb and Gutter, Any Thickness	Ft	3,508	\$ _____	\$ _____
210	Remove Concrete Sidewalk and Pavement, Any Thickness	Syd	409	\$ _____	\$ _____
211	HMA Pavement Removal, Any Depth	Syd	15,556	\$ _____	\$ _____
212	Sewer, Less than 24 inch, Remove	Ft	226	\$ _____	\$ _____
213	Sewer, Any Size/Depth, Abandon in Place	Ft	600	\$ _____	\$ _____
214	Gate Valve-in-Box, Abandonment	Ea	5	\$ _____	\$ _____
215	Gate Valve-in-Well, Abandonment	Ea	6	\$ _____	\$ _____
216	Structure, Remove	Ea	24	\$ _____	\$ _____
217	Water Main, Remove	Ft	55	\$ _____	\$ _____
218	Fire Hydrant, Remove	Ea	5	\$ _____	\$ _____
219	Machine Grading	Syd	15,782	\$ _____	\$ _____

220	Subgrade Undercutting-Type II	Cyd	186	\$ _____	\$ _____
221	21AA Limestone, CIP	Cyd	2,257	\$ _____	\$ _____
222	HMA, 5EL	Ton	4,059	\$ _____	\$ _____
223	HMA Hand Patching	Ton	37	\$ _____	\$ _____
224	HMA, Crush and Shape	Syd	1,740	\$ _____	\$ _____
225	Concrete Curb or Curb and Gutter, All Types	Ft	3,463	\$ _____	\$ _____
226	4 inch Concrete Sidewalk	Sft	550	\$ _____	\$ _____
227	6 inch Concrete Sidewalk, Ramp or Drive Approach	Syd	361	\$ _____	\$ _____
228	8 inch Concrete Pavement	Sft	141	\$ _____	\$ _____
229	Concrete Type M Drive Opening	Ft	525	\$ _____	\$ _____
230	Detectable Warning Surface	Ft	15	\$ _____	\$ _____
231	Barricade Type III, Lighted, Furnish and Operate	Ea	15	\$ _____	\$ _____
232	Temporary Sign, Type B, Furnish and Operate	Sft	427	\$ _____	\$ _____
233	Pedestrian Type II Barricade, Temp	Ea	4	\$ _____	\$ _____
234	Temporary Sign, Type B, Furnish and Operate, Special	Sft	100	\$ _____	\$ _____
235	Channeling Device, 42 inch, Furnish and Operate	Ea	125	\$ _____	\$ _____
236	Temporary Water Main Line Stop, 8 inch or Less	Ea	2	\$ _____	\$ _____
237	Temporary Water Main Line Stop, 10 inch or 12 inch	Ea	2	\$ _____	\$ _____
238	Lighted Arrow Board, Furnish and Operate	Ea	2	\$ _____	\$ _____
239	Sacrificial Anode, 17 lb	Ea	5	\$ _____	\$ _____
240	Sacrificial Anode, 32 lb	Ea	3	\$ _____	\$ _____
241	6 inch Wrapped Underdrain	Ft	710	\$ _____	\$ _____

242	Water Main, Abandon at Easy St.	Ea	1	\$ _____	\$ _____
243	Water Main, Abandon at Glendaloch Rd.	Ea	1	\$ _____	\$ _____
244	Water Main, Abandon at Carmel St.	Ea	1	\$ _____	\$ _____
245	Water Main, Abandon at Provincial Dr.	Ea	1	\$ _____	\$ _____
246	Protective Fencing	Ft	15	\$ _____	\$ _____
247	Exploratory Excavation (0-10' deep)	Ea	5	\$ _____	\$ _____
248	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	Ft	216	\$ _____	\$ _____
249	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	Ft	41	\$ _____	\$ _____
250	Pavt Mrkg, Polyurea, 4 inch, White	Ft	25	\$ _____	\$ _____
251	6 inch Curb Drain, HDPE DR17, Tr Det I	Ft	138	\$ _____	\$ _____
252	Curb Drain Tap	Ea	2	\$ _____	\$ _____
253	Curb Drain Cleanout	Ea	1	\$ _____	\$ _____
305	8 inch SDR 26 PVC Pipe, Tr Det I	Ft	10	\$ _____	\$ _____
320	12 inch CL IV RCP Storm Sewer Pipe, Tr Det I	Ft	221	\$ _____	\$ _____
335	8 inch SDR 26 PVC Tee	Ea	1	\$ _____	\$ _____
353	6 inch SDR 35 Sanitary Sewer Pipe, Tr Det I	Ft	60	\$ _____	\$ _____
361	Type I Manhole Add'l Depth	Ft	8	\$ _____	\$ _____
367	Single Inlet w/ 2 foot Sump	Ea	21	\$ _____	\$ _____
401	6 inch PC 350 DIP w/polywrap, Tr Det I	Ft	133	\$ _____	\$ _____
402	8 inch PC 350 DIP w/polywrap, Tr Det I	Ft	5,214	\$ _____	\$ _____
405	12 inch PC 350 DIP w/polywrap, Tr Det I	Ft	42	\$ _____	\$ _____
410	8" 11.25 deg bend	Ea	30	\$ _____	\$ _____

411	8" 22.5 deg bend	Ea	26	\$ _____	\$ _____
412	8" 45 deg bend	Ea	17	\$ _____	\$ _____
413	8"x6" reducer	Ea	5	\$ _____	\$ _____
430	6"x6" Tee	Ea	1	\$ _____	\$ _____
431	8"x6" Tee	Ea	7	\$ _____	\$ _____
432	8"x8" Tee	Ea	3	\$ _____	\$ _____
433	12"x8" Tee	Ea	3	\$ _____	\$ _____
440	Fire Hydrant Assembly	Ea	8	\$ _____	\$ _____
442	6" Gate Valve in Box	Ea	2	\$ _____	\$ _____
443	8" Gate Valve in Box	Ea	3	\$ _____	\$ _____
444	12" Gate Valve in Box	Ea	2	\$ _____	\$ _____
446	8" Gate Valve in Well	Ea	12	\$ _____	\$ _____
450	6"x6" Tapping Sleeve and Valve in Box	Ea	1	\$ _____	\$ _____
460	Excavate and Backfill for Water Service Lead	Ft	1,058	\$ _____	\$ _____
563	Structure Covers	Lb	40,500	\$ _____	\$ _____
566	Adjust Structure Cover	Ea	53	\$ _____	\$ _____
702	Erosion Control, Inlet Filter	Ea	37	\$ _____	\$ _____
891	Clean Up and Restoration, Special, Max \$25,000	LSUM	1	\$ _____	\$ _____
892	N Seventh Landscaping Allowance	Dir	15,000	\$ _____	\$ _____
893	Irrigation System, Protection and Maintenance	Dir	4,000	\$ _____	\$ _____

ESTIMATED TOTAL

\$ _____

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
CURB DRAIN

OHM:CJE

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2/9/23

Description

The work shall consist of installing stormwater curb drain and cleanouts, providing connections for individual home sump pump discharges, and making connections to existing storm drainage system.

Materials

Curb drain pipe shall be 6-inch HDPE, DR17 with green stripe or approved equivalent. HDPE curb drain pipe shall meet AWWA C906 and ASTM D3350 standards. All HDPE pipe used for curb drain purposes will be ductile iron pipe size (DIPS).

HDPE pipe must be produced from resins meeting the requirements of ASTM D1248 designation PE4710, ASTM D3350 cell classification 445474C, and will meet the requirements of AWWA C906. Material taken from HDPE pipe will meet the minimum stability requirements of ASTM D3350. Pipe will be legibly marked at intervals of no more than five feet with the manufacturer's name, trademark, pipe size, HDPE cell classification, appropriate legend such as DR 11, ASTM D3035, AWWA C906, date of manufacture and point of origin. Pipe not marked as indicated above will be rejected.

HDPE fittings shall be made from material meeting the same requirements as the pipe. Fittings shall be molded or fabricated by the manufacturer of the pipe. Where applicable, fittings shall meet the requirements of AWWA C906. Molded fittings shall be manufactured in accordance with either ASTM D2683 (socket fused) or ASTM D3261 (butt fused) and shall be marked accordingly.

Connections to the curb drain from sump pump discharge lines shall be made with thermally welded HDPE saddles. Saddle size shall match existing discharge line size and as directed by the Engineer. Transition from HDPE to existing discharge line shall be with stainless steel reinforced Fernco couplings or approved equivalent.

Construction Methods

Curb drain runs shall be installed using trenching (open cut) construction methods as shown on the plans and in accordance with the standard trench details. A minimum grade of one-half (1/2) inch per ten (10) feet of run shall be maintained for each curb drain section. Bellies and non-sloped sections will not be allowed.

An approved tracing/locating wire (12 gauge wire w/ green HDPE coating) is required to be placed during installation. Tracer wire shall be placed intact (no cutting or splicing) from the cleanout, where it is to be coiled around the end of the pipe to the storm water connection, below ground level, where it is to be wrapped around a self-tapping screw into the wall of the structure.

Contractor shall install a cleanout for video inspection and cleaning purposes on the upstream end of the 6-inch HDPE curb drain, as directed by the Engineer. This work will include installing a long sweep 90-degree elbow (6-inch, fabricated) with a threaded, removable end cap and sufficient magnets securely fastened (using both glue and screw, or other mechanical connector) to the cap to allow for ease in locating with a magnetic locating device. The top of cleanout cap

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
CURB DRAIN

OHM:CJE

2 of 2

2/9/23

will be installed at a depth of 4 inches below the existing ground surface. The maximum distance between cleanouts or an existing stormwater structure shall not exceed 300 feet.

All HDPE Pipe and Fittings shall be fused as outlined in ASTM D2657, Standard Practice for Heat Fusion Joining Polyolefin Pipe and Fittings.

Butt-fusion joining of pipe and fittings shall be performed in accordance with the procedures recommended by the manufacturer. Electrofusion coupling can be used where appropriate. These couplings must have a pressure rating greater than or equal to the pipe or fitting being joined. Installation must be by a trained person, with current certifications documented and available to the engineer.

The pipe supplier shall be consulted to obtain machinery and expertise for the joining by butt fusion or Electrofusion of polyethylene pipe and fittings. No fusion pipe or fittings shall be installed by any contractor unless they are adequately trained and qualified in the techniques involved.

Following curb drain installation, water shall be placed into the curb drain through the cleanout and televised (by contractor) to determine if any bellies or non-sloped sections exist. Copies of these videos will be provided to construction management team for review, and each installation must be approved before payment can be made on the corresponding invoice.

If bellies or non-sloped sections are found, they shall be corrected and televised again to gain approval. Corrections may include, but are not limited to, exposing the pipe, re-grading, and adding or removing backfill around or below the pipe.

Measurement and Payment

Completed work, as described, will be measured, and paid for at Contract unit prices for the following Contract (pay) items:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
6 inch Curb Drain, HDPE DR17, Tr Det I	Foot
Curb Drain Tap.....	Each
Curb Drain Cleanout.....	Each

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in this Detailed Specification.

Measurement and payment for pipe installation shall be made per linear foot of installed pipe by measuring the distance from center of cleanout cap to the connection point of downstream storm water structures.

Connection to existing sump pump discharge piping shall be incidental to the Curb Drain Tap pay item. Up to five (5) feet of HDPE or PVC pipe shall be included to make the proper connection.



CITY OF ANN ARBOR ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

NOTES

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 1994 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE, AND THIS PROJECT'S CONTRACT DOCUMENTS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT.



REV 03	ADDENDUM 1	2-9-2023			
REV 02	BID SET	1-19-2023			
REV 01	EGLE PERMIT SUBMITTAL	11-18-2022	BY	BY	CHECKED
			DATE	DATE	
			DESCRIPTION		

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-0667
www.a2gov.org



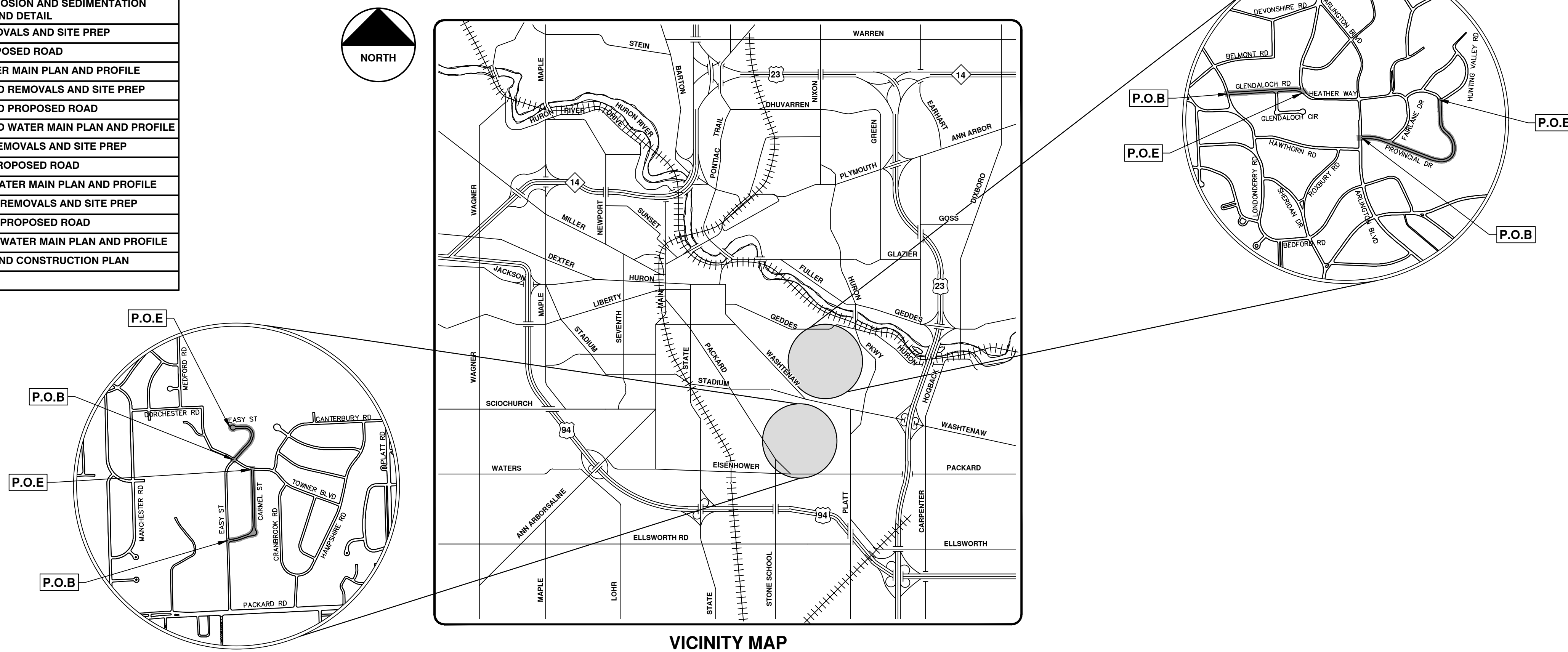
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
COVER SHEET
SCALE
DRAWING No. 2022-28-1
SHEET No. 1 OF 44

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SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	NOTES
3	LEGEND
4-6	TYPICAL SECTIONS
7	STANDARD WATER MAIN DETAILS
8	STANDARD STORM SEWER AND TRENCH DETAILS
9	STANDARD MISCELLANEOUS DETAILS
10	STANDARD SOIL EROSION AND SEDIMENTATION CONTROL NOTES AND DETAIL
11	EASY STREET REMOVALS AND SITE PREP
12	EASY STREET PROPOSED ROAD
13-14	EASY STREET WATER MAIN PLAN AND PROFILE
15-16	GLENDALOCH ROAD REMOVALS AND SITE PREP
17-18	GLENDALOCH ROAD PROPOSED ROAD
19-21	GLENDALOCH ROAD WATER MAIN PLAN AND PROFILE
22-23	CARMEL STREET REMOVALS AND SITE PREP
24-25	CARMEL STREET PROPOSED ROAD
26-28	CARMEL STREET WATER MAIN PLAN AND PROFILE
29-31	PROVINCIAL DRIVE REMOVALS AND SITE PREP
32-34	PROVINCIAL DRIVE PROPOSED ROAD
35-39	PROVINCIAL DRIVE WATER MAIN PLAN AND PROFILE
40	7TH ST REMOVAL AND CONSTRUCTION PLAN
41-44	TAPR DETAILS

BID No. RFP NO. 23-05, FILE No. 2022-28



VICINITY MAP

PREPARED UNDER THE SUPERVISION OF

CHRISTOPHER ELENBAAS, P.E.
PROJECT MANAGER, OHM ADVISORS

2/9/2023
DATE

P:\0000_0100\0028220090_GOPE_Local_Streets_WW_&_Resurf\Drawings\Civil\Misc\220090LEC_NOT.dwg - a2_standard.bw.stb - Plot Date: 2/9/2023 7:42:10 AM

CONSTRUCTION NOTES:

- Driveways and entrances to buildings, real property, and the like shall not be blocked except for short durations and only when approved by the Engineer. Vehicular and pedestrian access shall be maintained at all times. It shall be the Contractor's responsibility to coordinate all necessary driveway closures with the property owner(s) and resident(s) in the areas of construction.
- Location and depth of utilities as depicted on the plans is approximate and shown according to the best information available. It is the Contractor's responsibility to excavate ahead and adjust depth of conflict utilities accordingly. Any damage to utilities is the Contractor's responsibility to avoid and/or repair as necessary.
- The Contractor is to take special care to protect the existing water main and be responsible for maintaining consistent water service.
- During non-working hours no trench shall remain open; any open trench shall be properly secured with protective fencing. This work shall be included in the item of work "General Conditions".
- Trenches for new water services shall be excavated to MIOSHA and City of Ann Arbor Public Works requirements.
- City of Ann Arbor Public Works will install the corporation and copper service lead(s) to transfer the connection(s). If an existing water service is found to be failing or is not copper, the lead will be replaced to the curb box by Public Works.
- For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with the City of Ann Arbor Public Works.
- The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All pavement removals and replacements required for this work will be paid for separately.
- All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.
- Cor-blu bolts to be used at all mechanical water main joints at hydrants and Megalug fittings
- The Contractor shall construct, flush, and bacteriologically test the water main per Detailed Specification "Water Main Installation and Testing" and as approved by the Engineer. All chlorinated water shall be discharged directly into an approved sanitary sewer. The Contractor shall supply all necessary hoses, fittings and the like to accomplish this work.
- Water main fittings, other than those specifically listed as separate pay items, which are required to complete the work, such as blow-off assemblies, concrete thrust blocks, solid sleeves and mechanical plugs, shall not be paid for separately, but shall be included in the pipe pay items.
- "No Parking" signs shall be installed by the Contractor at locations as approved or directed by the Engineer. All signs shall be installed in accordance with the detailed specifications.
- Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.
- All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. As directed by the Engineer, the Contractor shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road within 48 hours. Otherwise, the Contractor shall dispose of properly.
- Where street curbs are undermined due to construction activities, they shall be removed and replaced as directed by the Engineer.
- The Contractor shall be responsible for the continuous maintenance of the temporary road surface and soil erosion control measures within the construction area until the full completion of the project. This work shall be included in the item of work "General Conditions".
- All curb, sidewalk, driveway approach removals shall be approved by Engineer before the work is done.
- Sawed sewer pipe connections shall be coupled with a Fernco flexible coupling and a stainless steel shear ring.
- The location of material stock piles and on-site staging areas to be approved by the Engineer.
- For mainline paving, the width of the mat for each pass of the paver shall be not less than 10.5' or greater than 15', as directed by the Engineer. The Engineer will direct the layout of the longitudinal joints during construction.
- Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.
- Where sewer pipes of different sizes or materials are joined, Fernco flexible couplings with stainless steel shear rings shall be used. The Contractor shall backfill trenches for water services in accordance with trench details specified on the plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All concrete removals and replacements required for this work will be paid for separately.
- Where sewer and water main are to be removed & replaced or added, all pipe shall be installed using Trench Detail detailed in the specifications or shown on Plans. Backfill for sewer and water construction shall be MDOT Granular Material, Class II, Modified.
- Existing street name, guide, and regulatory signs, and mailboxes which conflict with the proposed construction shall be removed prior to construction, stored in a manner which will prevent damage, and re-set in locations as directed by the Engineer. This work will not be paid for separately, but shall be included in "Machine Grading, Modified"
- In areas where edge drain cannot be installed in accordance with City of Ann Arbor Details, Inlet structures shall include two 5-foot sections of wrapper underdrain. Payment for underdrain shall be included in payment for the inlets.

PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION.

PERMIT	ISSUING AUTHORITY
LANE CLOSURE PERMIT*	CITY OF ANN ARBOR ENGINEERING
"NO PARKING" SIGNS PERMIT*	CITY OF ANN ARBOR ENGINEERING
GRADING/SOIL EROSION & SEDIMENTATION CONTROL PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
RIGHT-OF-WAY PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
* NO COST TO CONTRACTOR	

PERMITS REQUIRED TO BE OBTAINED BY THE CITY OF ANN ARBOR PRIOR TO THE BEGINNING OF CONSTRUCTION.

PERMIT	ISSUING AUTHORITY
EGLE WATER MAIN CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

CONTACT INFORMATION

PUBLIC UTILITIES	OWNER	CONTACT
WATER		
SANITARY		
STORM	CITY OF ANN ARBOR PUBLIC WORKS W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	(734) 794-6350
FORESTRY		
SIGNS SIGNALS STREET LIGHTS		MARK MORENO (734) 794-6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 3150 E. MICHIGAN AVE, YPSILANTI TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	ANTHONY IGNASIAK (734) 397-4447
CABLE	COMCAST 27800 FRANKLIN ROAD SOUTHFIELD, MI 48034	RON SOUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	MARC GOODSELL (313) 405-0574
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016
FIBER OPTIC	WINDSTREAM 1295 S LINDEN ROAD, SUITE B FLINT, MI 48532	GREG SERICH (810) 244-3500
STREET LIGHTING	DTE ENERGY 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	LANCE ALLEY (734) 397-4188

CARMEL CONTROL POINTS

TRAVERSE POINTS			
TP #	ELEV	NORTHING	EASTING
109	814.84	N42° 14' 51.04"	W83° 42' 30.12"
110	813.81	N42° 14' 51.66"	W83° 42' 25.21"
111	815.47	N42° 14' 56.65"	W83° 42' 25.24"
112	814.41	N42° 15' 00.90"	W83° 42' 25.69"
113	814.86	N42° 14' 54.27"	W83° 42' 25.61"

BENCHMARKS				
BM #	ELEV	NORTHING	EASTING	DESCRIPTION
209	815.97	N42° 14' 50.88"	W83° 42' 30.48"	FOUND R.R. TIE E/FACE LT POLE W/SIDE EASY @ S E.B. LINE OF CARMEL.
210	814.40	N42° 14' 53.20"	W83° 42' 25.03"	SET COTTON SPINDLE IN W/FACE UTIL/LT POLE ON E/SIDE OF CARMEL IN FRONT OF HOUSE #2649
211	816.15	N42° 14' 56.35"	W83° 42' 25.09"	SET COTTON SPINDLE IN W/FACE LT POLE E/SIDE OF CARMEL IN FRONT OF HOUSE #2591
212	815.20	N42° 15' 00.95"	W83° 42' 25.60"	SET COTTON SPINDLE IN W/FACE LT POLE N/SIDE OF TOWNER #9 NE OF TP#112

PROVINCIAL CONTROL POINTS

TRAVERSE POINTS			
TP #	ELEV	NORTHING	EASTING
114	872.18	N42° 15' 54.11"	W83° 42' 24.94"
115	865.80	N42° 15' 53.17"	W83° 42' 21.06"
116	853.83	N42° 15' 52.21"	W83° 42' 16.37"
117	843.33	N42° 15' 50.67"	W83° 42' 12.60"
118	837.15	N42° 15' 51.15"	W83° 42' 09.17"
119	849.52	N42° 15' 53.72"	W83° 42' 08.55"
120	866.67	N42° 15' 55.57"	W83° 42' 10.92"
121	875.03	N42° 15' 57.02"	W83° 42' 10.45"
122	873.33	N42° 15' 58.81"	W83° 42' 11.14"

BENCHMARKS				
BM #	ELEV	NORTHING	EASTING	DESCRIPTION
214	872.87	N42° 15' 54.03"	W83° 42' 24.96"	SET COTTON SPINDLE IN E/FACE LT POLE NE/QUAD OF PROVINCIAL & ARLINGTON
215	863.14	N42° 15' 53.15"	W83° 42' 19.33"	SET COTTON SPINDLE IN S/FACE OF LT POLE ON NE/QUAD OF PROVINCIAL & FAIRLANE
216	856.18	N42° 15' 52.45"	W83° 42' 17.11"	SET COTTON SPINDLE IN S/FACE OF LT POLE ON N/SIDE OF PROVINCIAL
217	843.73	N42° 15' 50.61"	W83° 42' 12.11"	SET COTTON SPINDLE IN W/FACE OF PWR POLE ON S/SIDE OF PROVINCIAL WEST OF BADER PARK WALK
218	839.09	N42° 15' 51.61"	W83° 42' 08.05"	SET COTTON SPINDLE IN W/FACE OF LT POLE ON E/SIDE OF PROVINCIAL IN FRONT OF HOUSE #2940
219	956.94	N42° 15' 54.16"	W83° 42' 09.82"	SET COTTON SPINDLE IN E/FACE OF LT POLE ON W/SIDE OF PROVINCIAL IN FRONT OF HOUSE #3003
220	864.75	N42° 15' 55.27"	W83° 42' 10.24"	SET COTTON SPINDLE IN W/FACE OF UTIL POLE ON E/SIDE OF PROVINCIAL IN FRONT OF HOUSE #3020
221	873.88	N42° 15' 56.47"	W83° 42' 10.41"	SET COTTON SPINDLE IN W/FACE OF LT POLE ON E/SIDE OF PROVINCIAL IN FRONT OF HOUSE #3030
222	873.86	N42° 15' 58.47"	W83° 42' 10.49"	SET COTTON SPINDLE IN W/FACE OF LT POLE ON SE/QUAD OF PROVINCIAL & HUNTING VALLEY

EASY CONTROL POINTS


TRAVERSE POINTS			
TP #	ELEV	NORTHING	EASTING
100	820.04	N42° 15' 01.83"	W83° 42' 29.43"
101	827.55	N42° 15' 03.50"	W83° 42' 26.70"
102	836.80	N42° 15' 05.54"	W83° 42' 25.37"
103	841.22	N42° 15' 06.17"	W83° 42' 27.06"
104	848.78	N42° 15' 06.33"	W83° 42' 29.68"

BENCHMARKS				
BM #	ELEV	NORTHING	EASTING	DESCRIPTION
200	820.70	N42° 15' 02.03"	W83° 42' 28.42"	SET COTTON SPINDLE ON N/FACE OF WD LT POLE LOCATED ON SE/QUAD OF EASY & TOWNER
201	824.27	N42° 15' 02.75"	W83° 42' 27.50"	SET COTTON SPINDLE ON N/FACE OF WD UTIL POLE LOCATED ON S/SIDE OF EASY NEAR HOUSE #2407
202	831.42	N42° 15' 03.98"	W83° 42' 25.94"	SET COTTON SPINDLE ON N/FACE OF WD LT POLE LOCATED ON SE/SIDE OF EASY NEAR HOUSE #2401
203	843.09	N42° 15' 06.57"	W83° 42' 27.49"	SET COTTON SPINDLE ON S/FACE OF WD LT POLE LOCATED ON N/SIDE OF EASY NEAR HOUSE #2317
204	848.31	N42° 15' 05.89"	W83° 42' 29.04"	ARROW ON HYD LOCATED ON SE/SIDE OF CUL-DE-SAC NEAR HOUSE #2306

GLENDALOCH CONTROL POINTS


TRAVERSE POINTS			
TP #	ELEV	NORTHING	EASTING
105	887.58	N42° 15' 59.66"	W83° 42' 49.53"
106	904.80	N42° 16' 00.21"	W83° 42' 44.83"
107	893.16	N42° 16' 00.02"	W83° 42' 40.10"
108	865.74	N42° 16' 00.31"	W83° 42' 35.28"

BENCHMARKS				
BM #	ELEV	NORTHING	EASTING	DESCRIPTION
205	896.67	N42° 16' 00.10"	W83° 42' 46.95"	SET COTTON SPINDLE ON S/FACE LT POLE N/SIDE OF GLENDALOCH ACROSS FROM HOUSE #2200
206	905.75	N42° 16' 00.75"	W83° 42' 43.47"	SET SW COR OF CONC PAD STEP AT FRONT DOOR OF HOUSE #2239 N/SIDE OF GLENDALOCH
207	894.17	N42° 16' 00.39"	W83° 42' 40.29"	SET COTTON SPINDLE IN S/FACE LT POLE N/SIDE OF GLENDALOCH AT E OF GLENDALOCH CIR
208	870.88	N42° 16' 00.03"	W83° 42' 36.63"	SET COTTON SPINDLE IN N/FACE LT POLE SW/QUAD OF GLENDALOCH & HEATHER



Know what's below.
Call before you dig.

REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	DRAWN
REV 01	EGLE PERMIT SUBMITTAL	11-18-2022	DATE	
REV.			DESCRIPTION	




CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

NOTES

SCALE: NTS

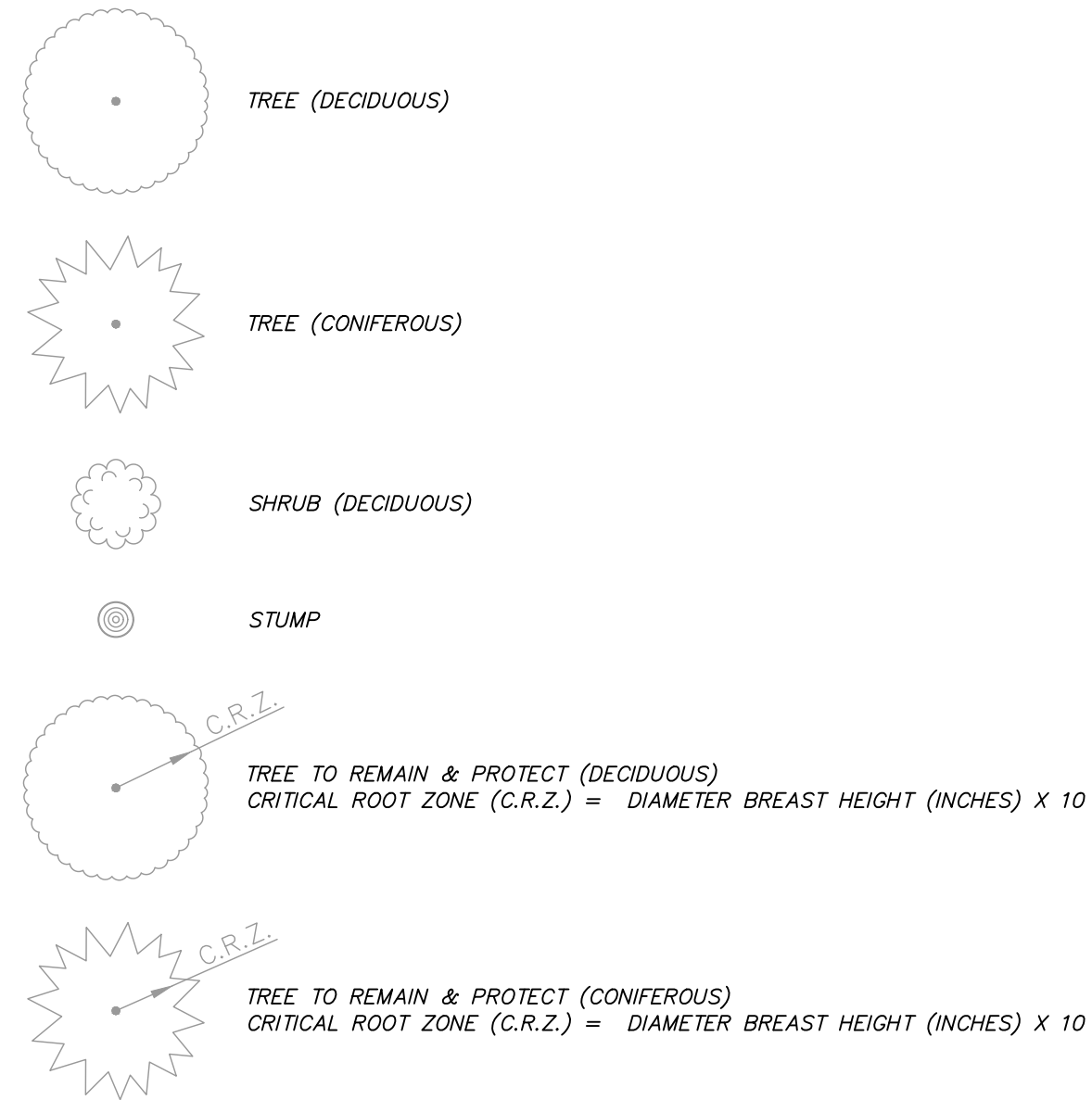


DRAWING NO. 2022-28-2

SHEET No. 2 OF 44

EXISTING LEGEND

EX = EXISTING		WATER MAIN
		WATER MAIN ABANDONED
		STORM SEWER
		STORM SEWER ABANDONED
		SANITARY SEWER
		SANITARY SEWER ABANDONED
		GAS MAIN
		GAS MAIN (DEAD)
		ELECTRICAL OVER HEAD
		ELECTRICAL UNDER GROUND
		ELECTRICAL DUCT BANK
		TELEPHONE OVER HEAD
		TELEPHONE UNDER GROUND
		TELEPHONE DUCT BANK
		CABLE TV OVER HEAD
		CABLE TV UNDER GROUND
		FIBER OPTIC
		FIBER OPTIC DUCT BANK
		BOUNDARY
		BUILDING
		CENTERLINE OF DITCH
		CENTERLINE/CROWN OF ROAD
		CONTOUR MAJOR
		CONTOUR MINOR
		EDGE OF WATER
		FLOODPLAIN
		FENCE
		GRAVEL
		GUARDRAIL
		STONE WALL
		R.O.W.
		TREELINE
		WETLAND
		EDGE OF BRUSH
		HEDGE
		TREE (DECIDUOUS)
		TREE (CONIFEROUS)
		SHRUB (DECIDUOUS)
		STUMP



PROPOSED LEGEND

PROP = PROPOSED		HYDRANT (PLAN)
		REDUCER
		WATER STOP BOX
		INLET
		DOUBLE INLET
		ROUND CATCH BASIN
		STORM MANHOLE
		FLARED END SECTION
		CLEAN-OUT
		BARREL
		SIGN
		HAND HOLE
		STORM SEWER
		ELECTRICAL
		CENTERLINE OF ROAD
		GRAVEL
		PROTECTIVE FENCE
		LOT/JUNIT
		TEMPORARY GRADING PERMIT
		CONTOUR MINOR
		STORM EASEMENT
		R.O.W.
		LIMIT OF GRADING
		DETECTABLE WARNING
		CONCRETE
		TREE (DECIDUOUS)
		TREE TO BE REMOVED (DECIDUOUS)
		TREE TO BE REMOVED (CONIFEROUS)
		STUMP TO BE REMOVED

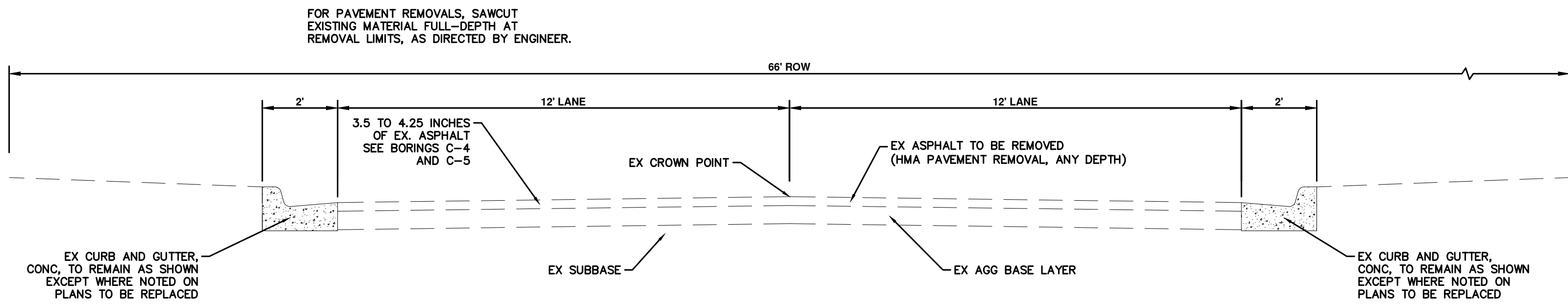


REV	DATE	BY	CHECKED
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1-19-2023			
11-18-2022			

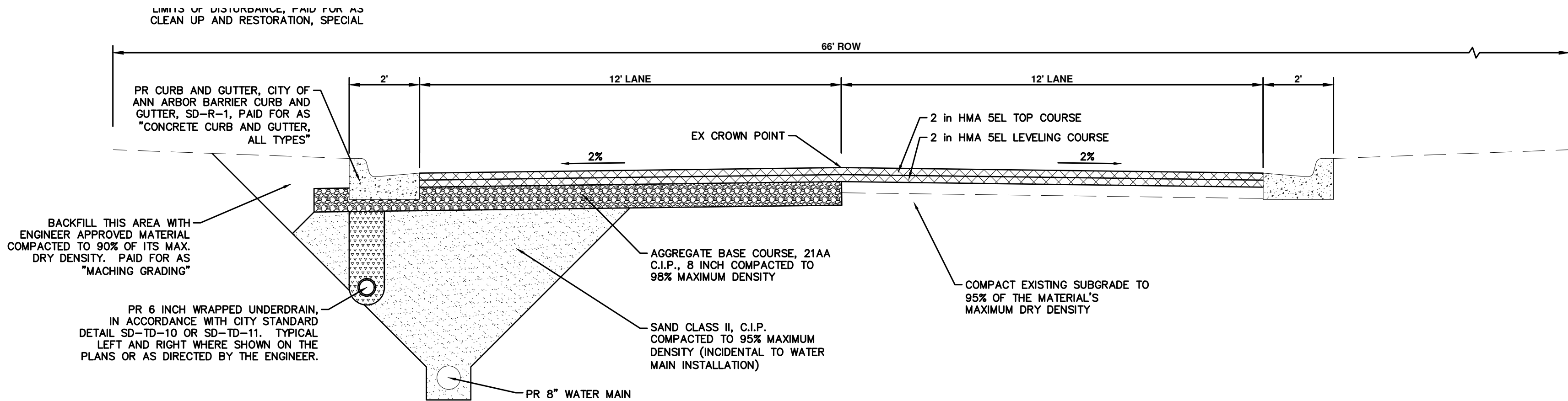
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 PUBLIC SERVICES
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 ANN ARBOR, MI 48106-6647
 ANN ARBOR
 734/794-4410
 www.aagov.org

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 2023 MISCELLANEOUS UTILITY PROJECTS
 LEGEND
 SCALE: NTS
 DRAWING No. 2022-28-3

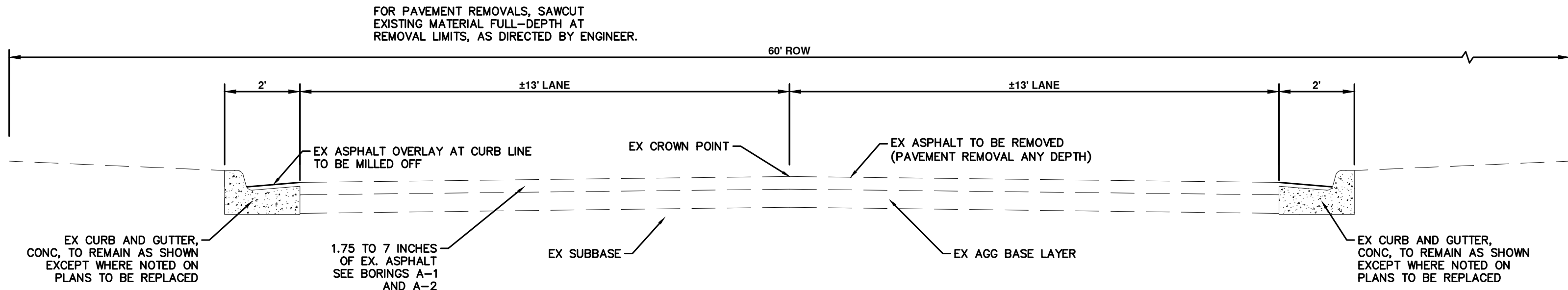
P:\0000_0100\0028220090_GOPE_Local_Streets_WM_&_Resurf\Drawings\Civil\Typicals\220090TYP.dwg Dwg Created: 19-Jan-23 - a2 standard bw.stb - Plot Date: 9-Feb-23



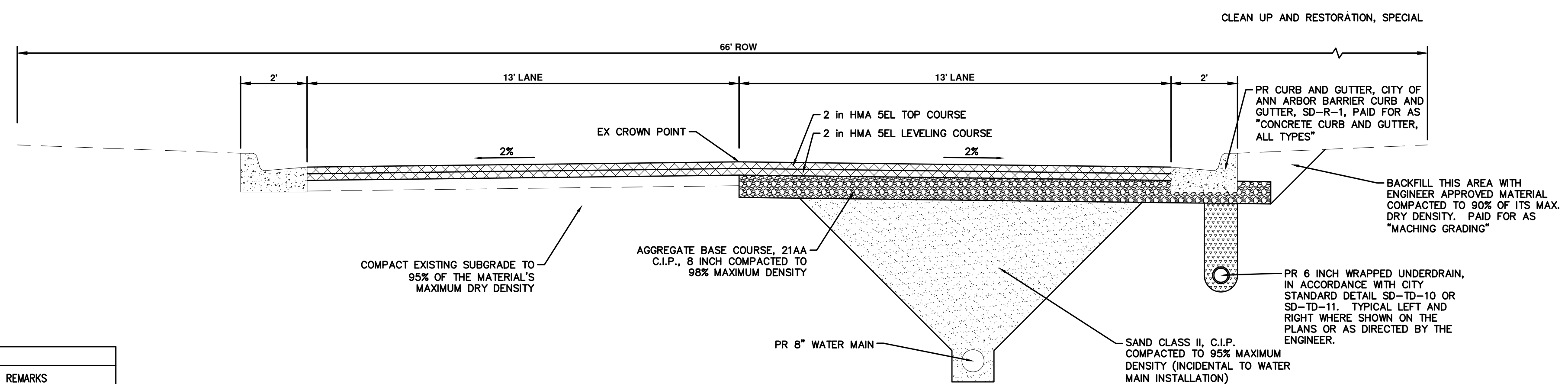
**EASY STREET
EXISTING TYPICAL SECTION**
P.O.B. TO P.O.E.
N.T.S.



**EASY STREET
PROPOSED TYPICAL SECTION**
STA 0+05 TO P.O.E.
N.T.S.




**GLENDALOCH ROAD
EXISTING TYPICAL SECTION**
P.O.B. TO P.O.E.
N.T.S.



**GLENDALOCH ROAD
PROPOSED TYPICAL SECTION**
P.O.B. TO P.O.E.
N.T.S.


HMA APPLICATION ESTIMATE				
IDNT NO.	ITEM	RATE (LBS/SYD)	PERFORMANCE GRADE	REMARKS
SEL	HMA, SEL	220	58-28	LEVELING
SEL	HMA, SEL	220	58-28	ANI-260 MIN. WEARING
	* BOND COAT	0.05-0.15 GAL		

NOTE: MDOT TIER 1 RAP LIMITS APPLIES TO WEARING COURSE



Know what's below.
Call before you dig.

	2-9-2023 1-19-2023 11-18-2022
REV 03 ADDENDUM 1	BY
REV 02 BID SET	BY
REV 01 EGLE PERMIT SUBMITTAL	DATE
REV.	CHECKED
DESCRIPTION	



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**2023 MISCELLANEOUS
UTILITY PROJECTS**

EASY ST AND GLENDALOCH TYPICAL SECTIONS

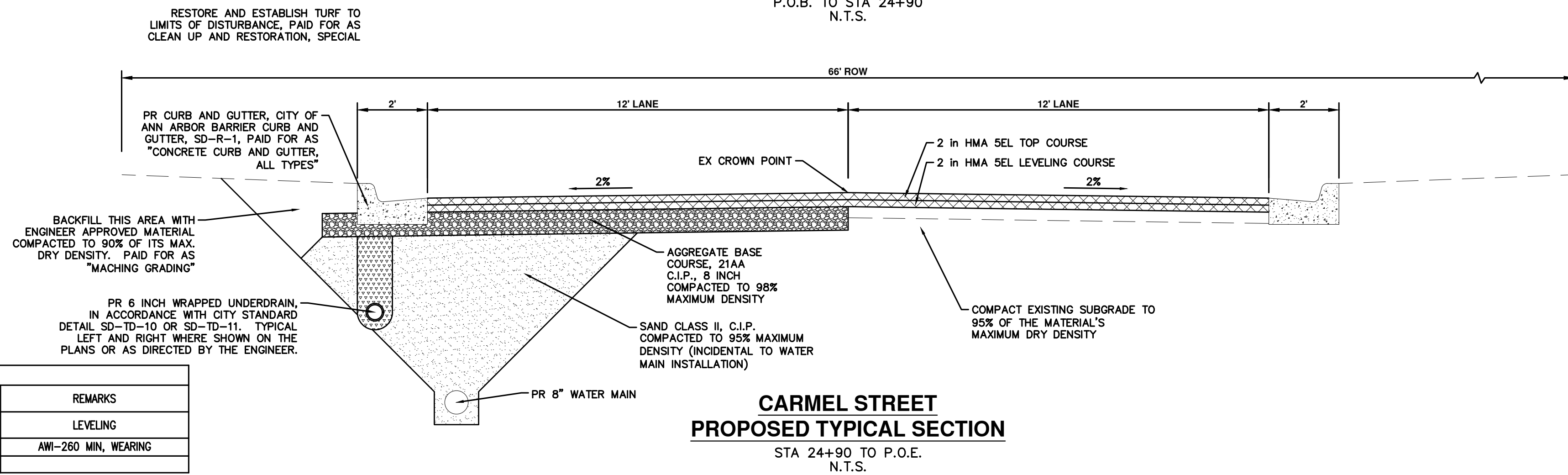
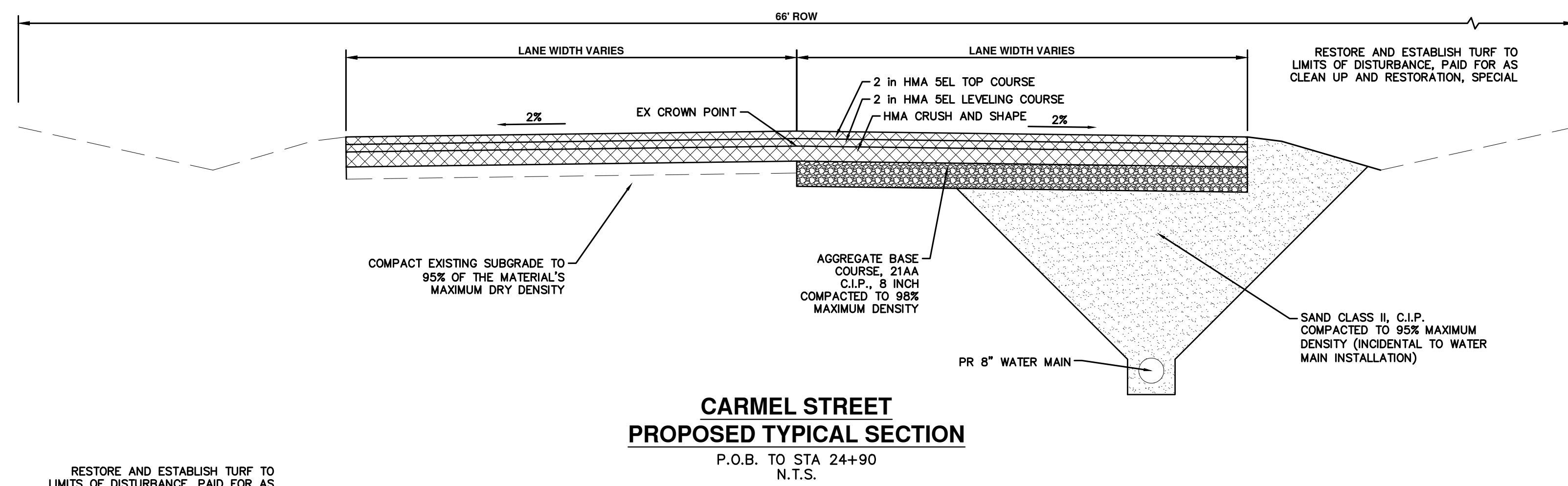
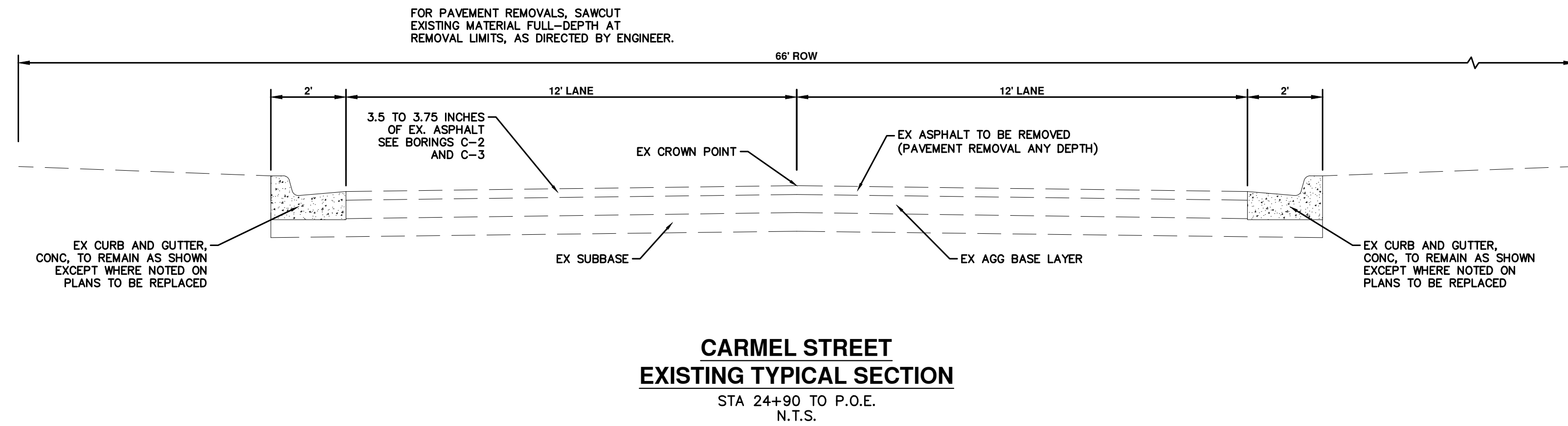
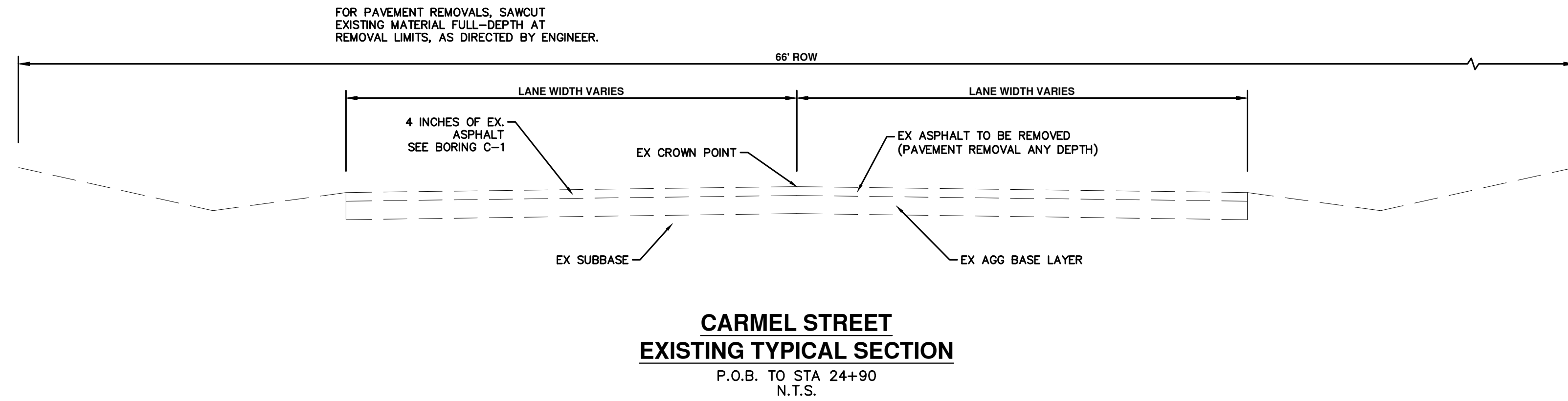
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 25'
PROFILE: 1" = 4'

DRAWING No. 2022-28-4

SHEET No. 4 OF 44

P:\0000_0100\0028220090_GOPE_Local_Streets_WM_&_Resurf\Drawings\Civil\Typicals\220090TYP.dwg Dwg Created: 19-Jan-23 - _a2_standard bw.stb - Plot Date: 9-Feb-23



HMA APPLICATION ESTIMATE				
IDENT NO.	ITEM	RATE (LBS/SYD)	PERFORMANCE GRADE	REMARKS
SEL	HMA, SEL	220	58-28	LEVELING
SEL	HMA, SEL	220	58-28	AWI-260 MIN, WEARING
	* BOND COAT	0.05-0.15 GAL		

NOTE: MDOT TIER 1 RAP LIMITS APPLIES TO WEARING COURSE



REV.	DATE	BY	CHECKED	DESCRIPTION
2-9-2023				
1-19-2023				
11-18-2022				

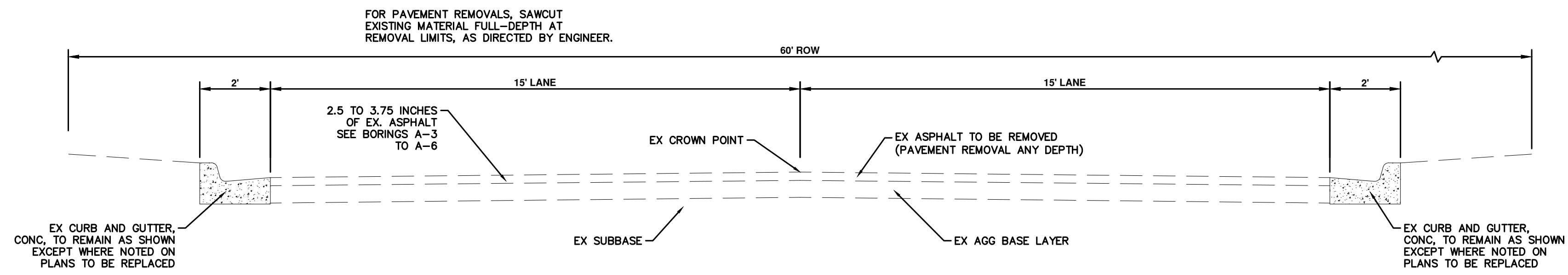
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS
UTILITY PROJECTS
CARMEL ST TYPICAL SECTIONS

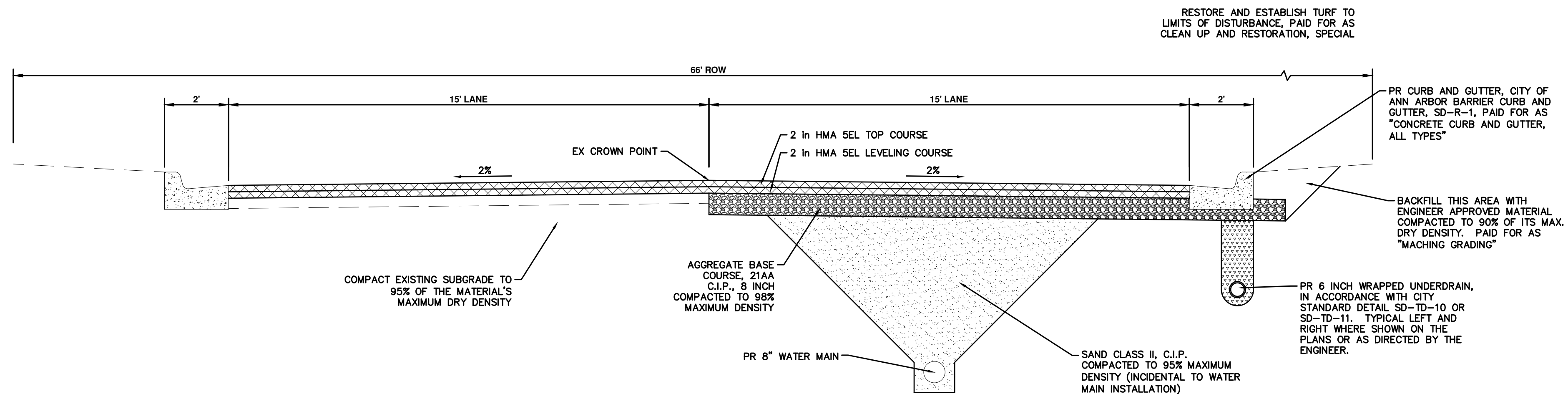
SCALE PLAN: 1" = 25'
PROFILE: 1" = 4'
DRAWING No. 2022-28-5

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**PROVINCIAL DRIVE
EXISTING TYPICAL SECTION**

P.O.B. TO P.O.E.
N.T.S.



**PROVINCIAL DRIVE
PROPOSED TYPICAL SECTION**

P.O.B. TO P.O.E.
N.T.S.

HMA APPLICATION ESTIMATE				
IDENT NO.	ITEM	RATE (LBS/SYD)	PERFORMANCE GRADE	REMARKS
SEL	HMA, SEL	220	58-28	LEVELING
SEL	HMA, SEL	220	58-28	AWI-260 MIN, WEARING
	* BOND COAT	0.05-0.15 GAL		

NOTE: MDOT TIER 1 RAP LIMITS APPLIES TO WEARING COURSE



REV.	DATE	BY	CHECKED	DESCRIPTION
REV 03	2-9-2023			ADDENDUM 1
REV 02	1-19-2023			BID SET
REV 01	11-18-2022			PERMIT SUBMITTAL

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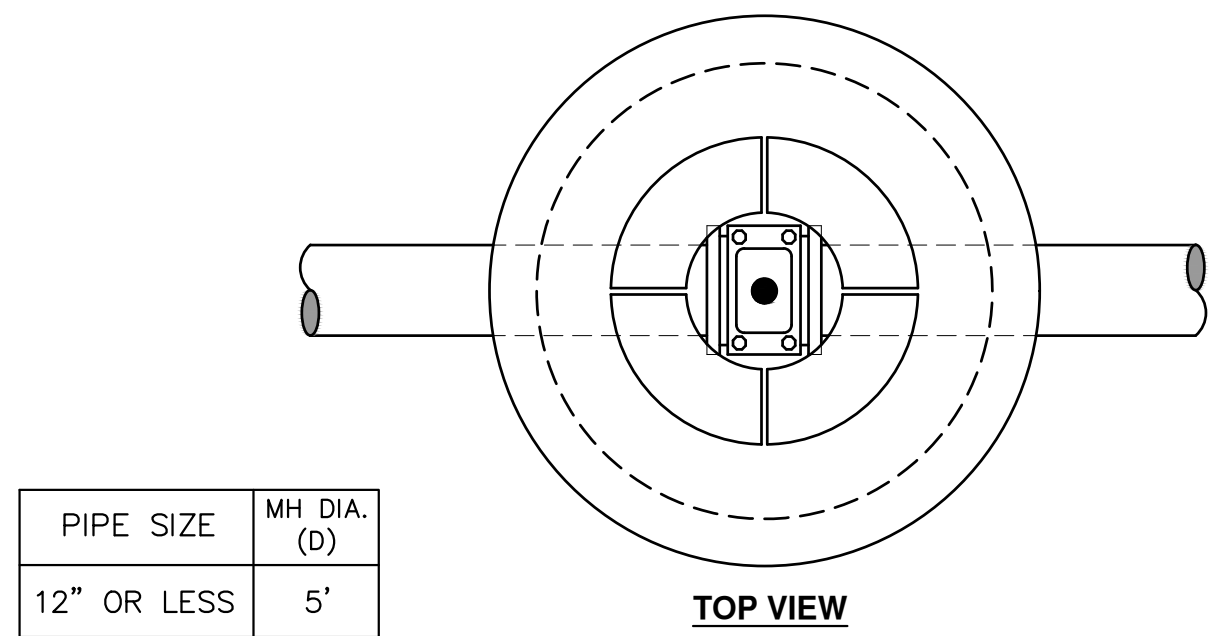


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS
UTILITY PROJECTS
PROVINCIAL DR TYPICAL SECTIONS

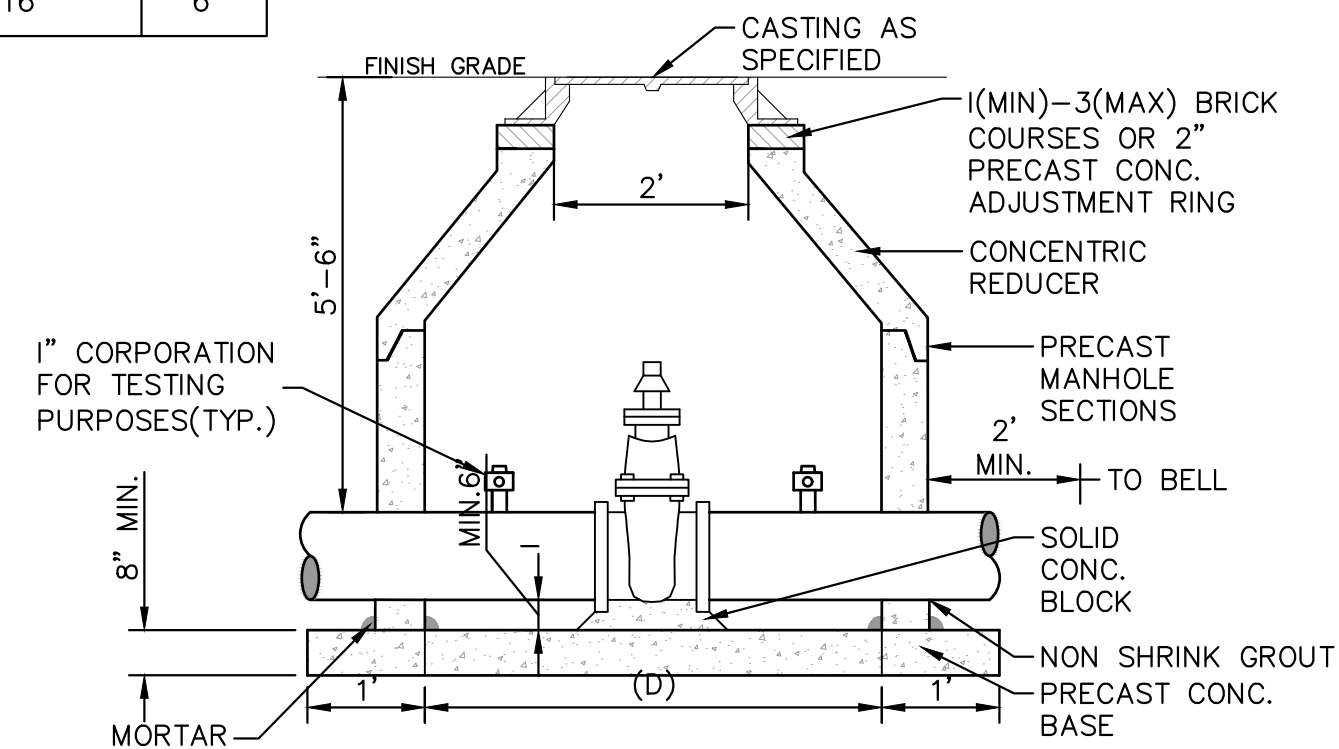
SCALE PLAN: 1" = 25'
PROFILE: 1" = 4'
DRAWING No. 2022-28-6

SHEET No.

P:\0000_0100\0028220090_GCOPE_Local_Streets_WM_&_Resurf\Drawings\Civil\Details\AA_Standard_Details.dwg Dwg. Created: 12-Jan-23 - 9:52:23 AM - Plot Date: 9-Feb-23



PIPE SIZE	MH DIA. (D)
12" OR LESS	5'
16"	6'



- NOTES:
- ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE
 - ALL JOINTS SHALL BE MADE WATER TIGHT WITH RUBBER GASKET JOINTS
 - NO STEPS ARE PERMITTED
 - MANHOLE SECTIONS SHALL MEET ASTM C-478

GATE WELL FOR MAIN 16" & SMALLER SD-W-3

MINIMUM STANDARDS

THE MDOT GRADE PI OR P-NC CONCRETE AT THE FITTING FACE SHALL EXTEND TO WITHIN 2 INCHES OF THE BELL AND SHALL EXTEND FROM THE FITTING FACE A MINIMUM OF 2 FEET TO THE UNDISTURBED SOLID GROUND.

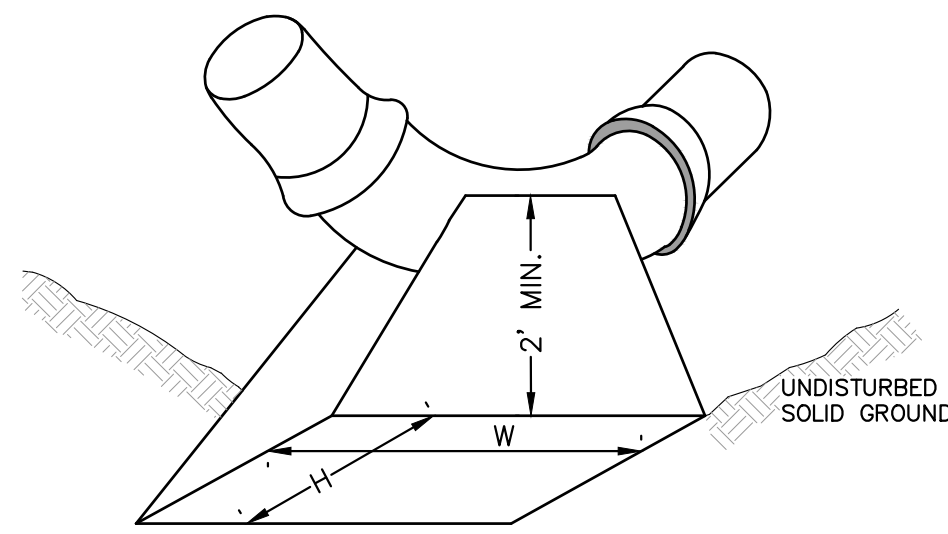
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

IF THERE ISN'T SUFFICIENT SPACE FOR THE INSTALLATION OF THE THRUST BLOCK WITHOUT INTERFERENCE WITH OTHER SERVICES, ANOTHER ARRANGEMENT SATISFACTORY TO THE ENGINEER SHALL BE USED.

FITTINGS I.D.	PLUG TEE CROSS		BENDS				HYDRANT	
	W	H	90°	45°	22 1/2°	11 1/4°	W	H
4	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5
6	2.0	1.5	2.0	2.0	2.0	1.0	1.0	2.5
8	2.5	2.0	3.5	2.0	2.0	1.0	1.0	2.0
12	3.5	3.0	5.5	3.0	3.5	2.5	2.0	1.0
16	6.0	3.5	6.0	4.0	5.0	3.0	3.5	2.0

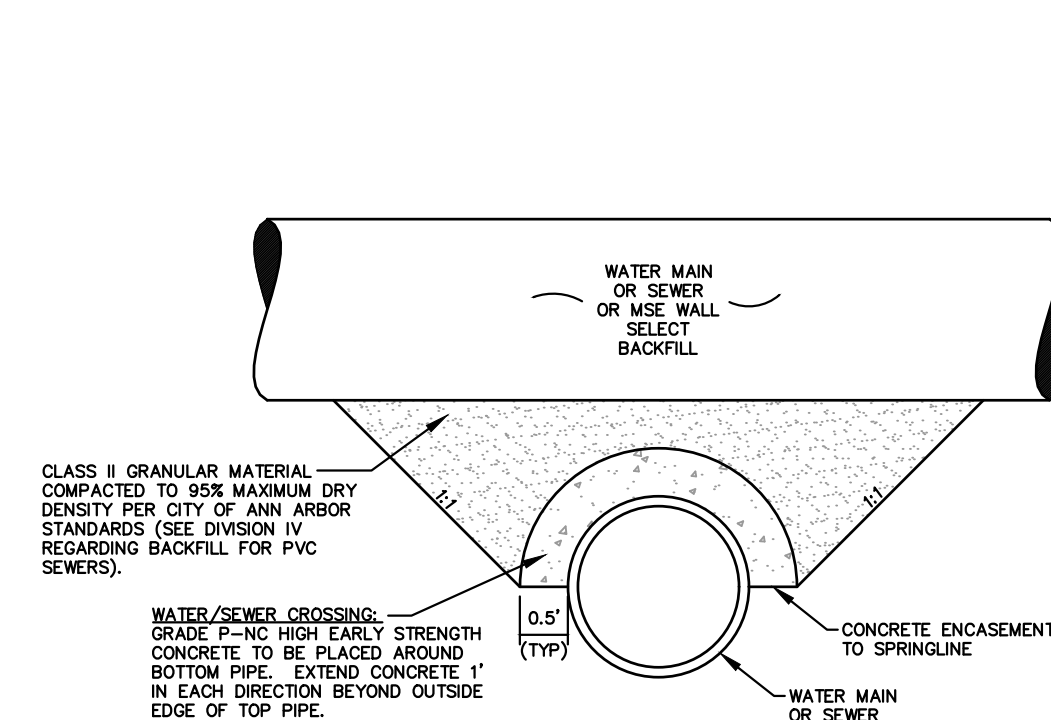
FOR FITTING SIZES LARGER THAN 16", THRUST BLOCK DIMENSIONS SHALL BE AS SPECIFIED BY ENGINEER.

W = WIDTH IN FEET
H = HEIGHT IN FEET



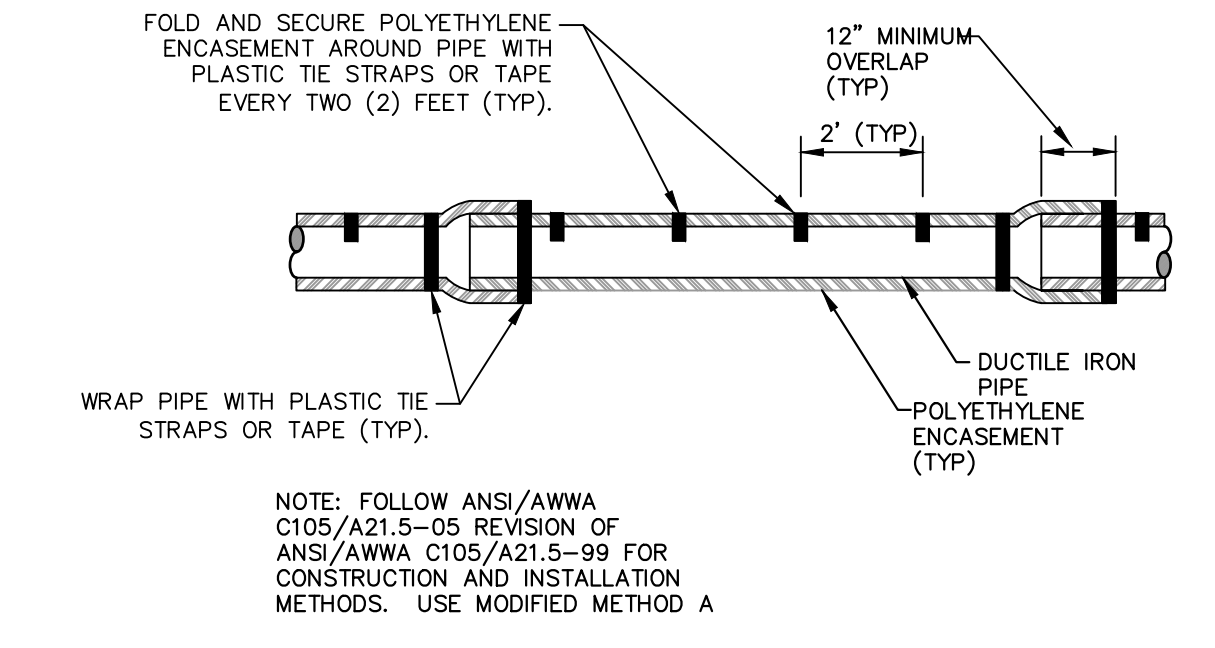
- NOTES:
- THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

THRUST BLOCK SD-W-2



CONCRETE UTILITY SADDLE

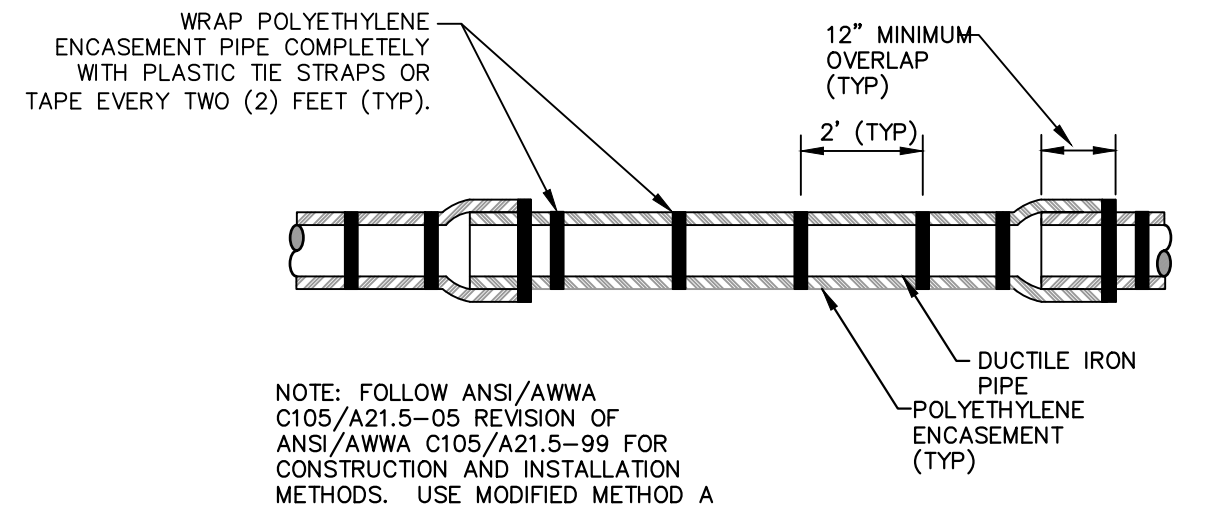
APPLIES TO: WATER AND/OR SEWER CROSSINGS WITH LESS THAN 1.5' OF VERTICAL CLEARANCE



POLYETHYLENE ENCASEMENT (DRY INSTALLATION)

NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

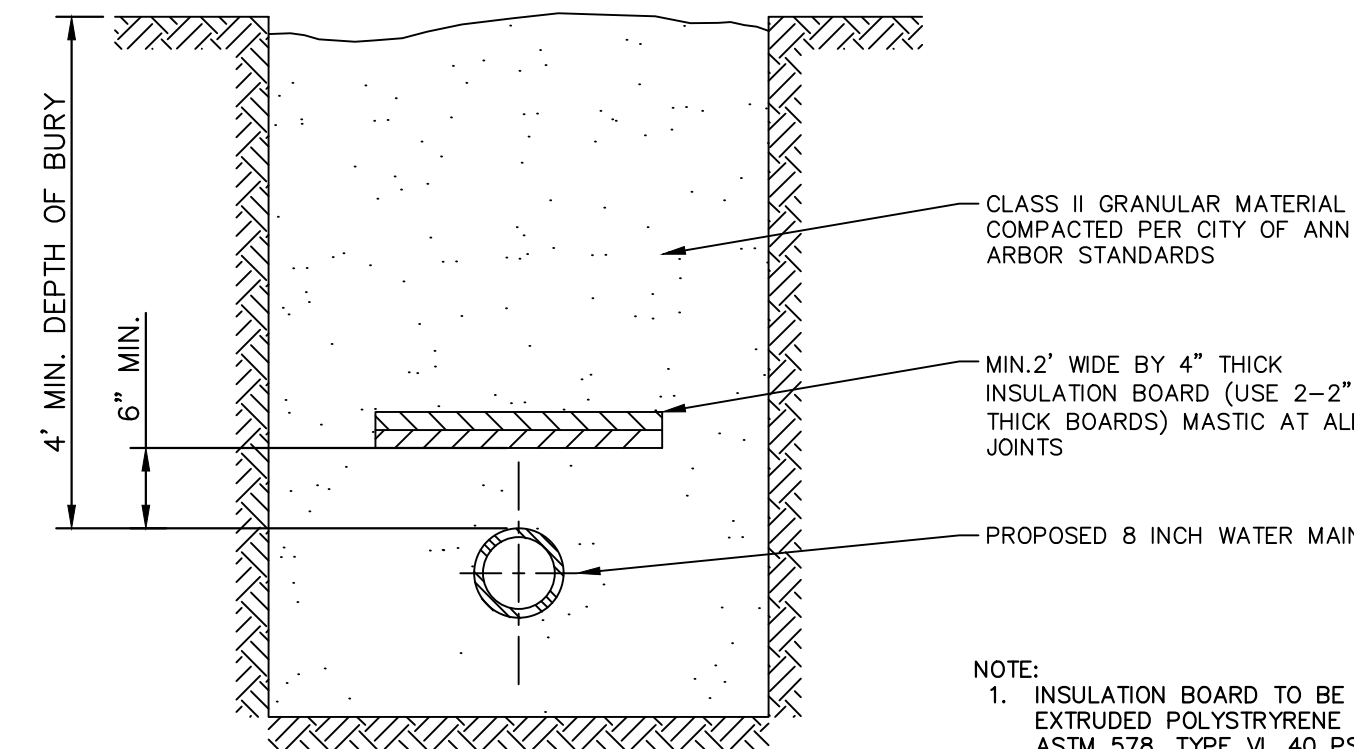
APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS



POLYETHYLENE ENCASEMENT (WET INSTALLATION)

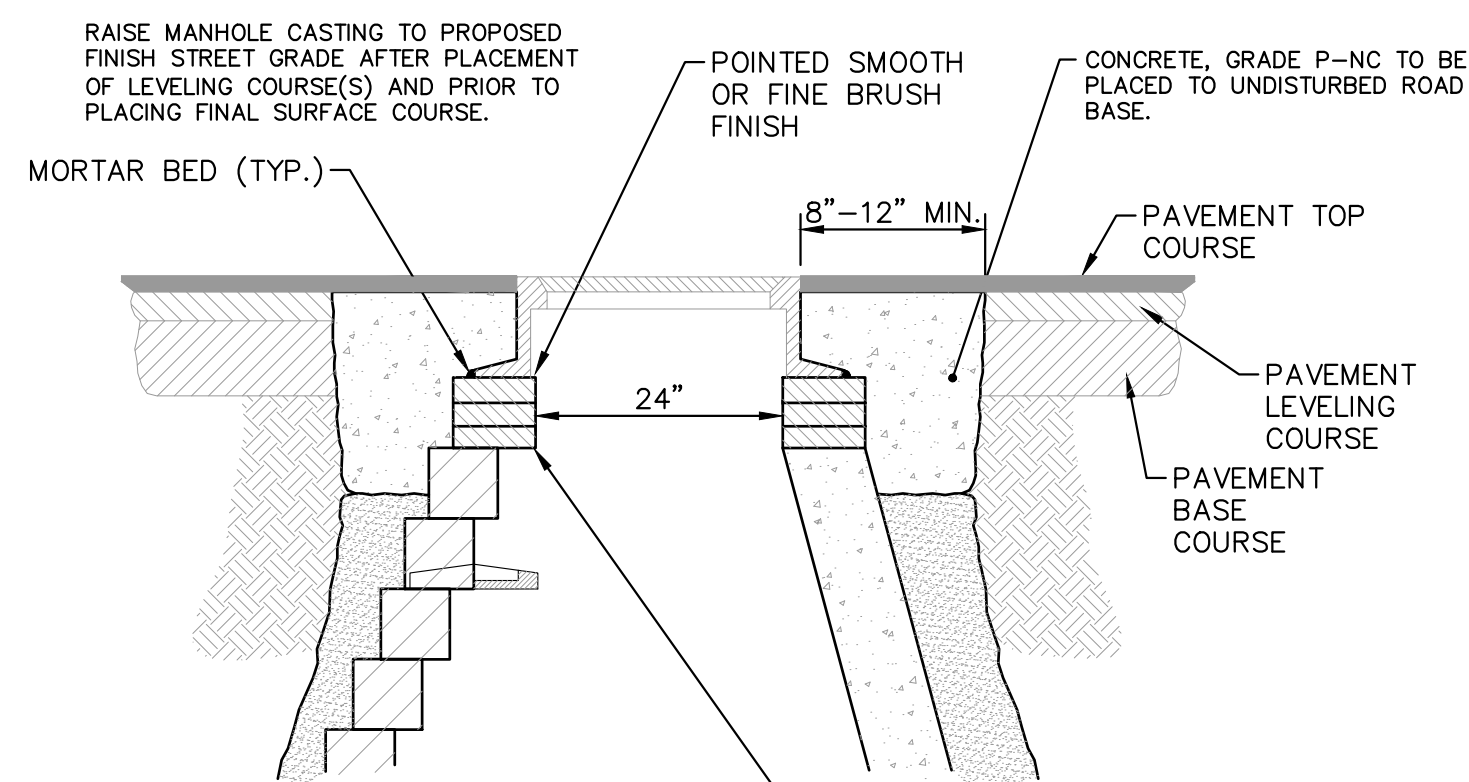
NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS



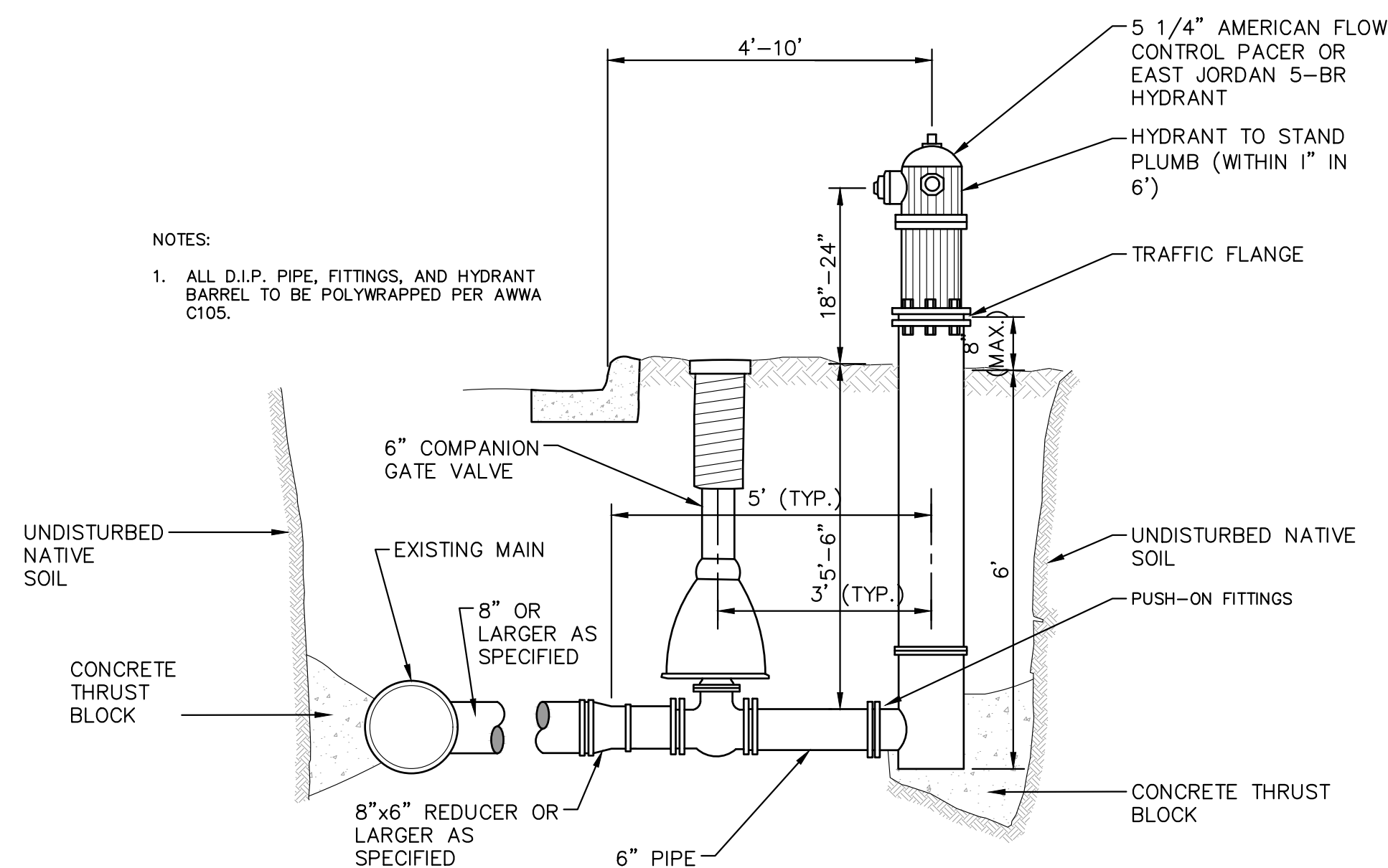
- NOTE:
- INSULATION BOARD TO BE CLOSED CELL, EXTRUDED POLYSTYRENE FOAM MEETING ASTM 578, TYPE VI, 40 PSI COMPRESSING STRENGTH (ASTM D1621) 0.1% MAX. WATER ABSORPTION (ASTM C272).
 - OVERLAP ALL INSULATION BOARD JOINTS

WATER MAIN INSULATION DETAIL



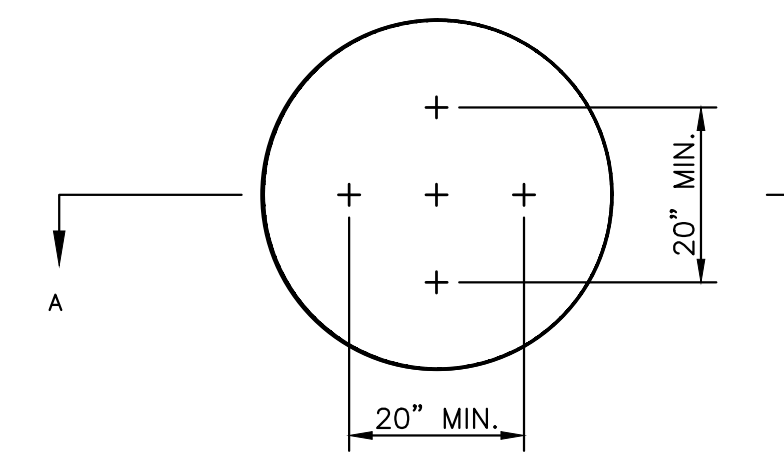
- NOTE:
- IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW ROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.
- ADDITIONAL REPAIRS NECESSARY BEYOND 15" BELOW GRADE TO BE PAID FOR AS "ADDITIONAL DEPTH STRUCTURE ADJUST/REPAIR"

MANHOLE CASTING ADJUSTMENT SD-GU-6

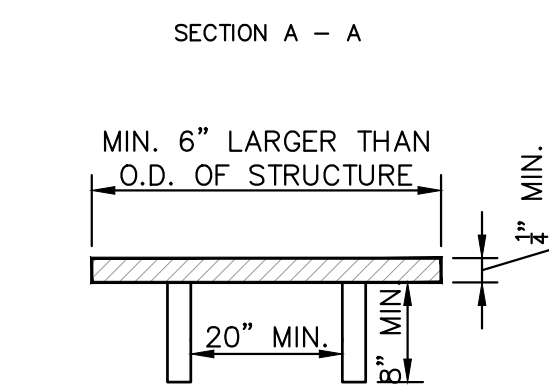


- NOTES:
- ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.

FIRE HYDRANT ASSEMBLY SD-W-1

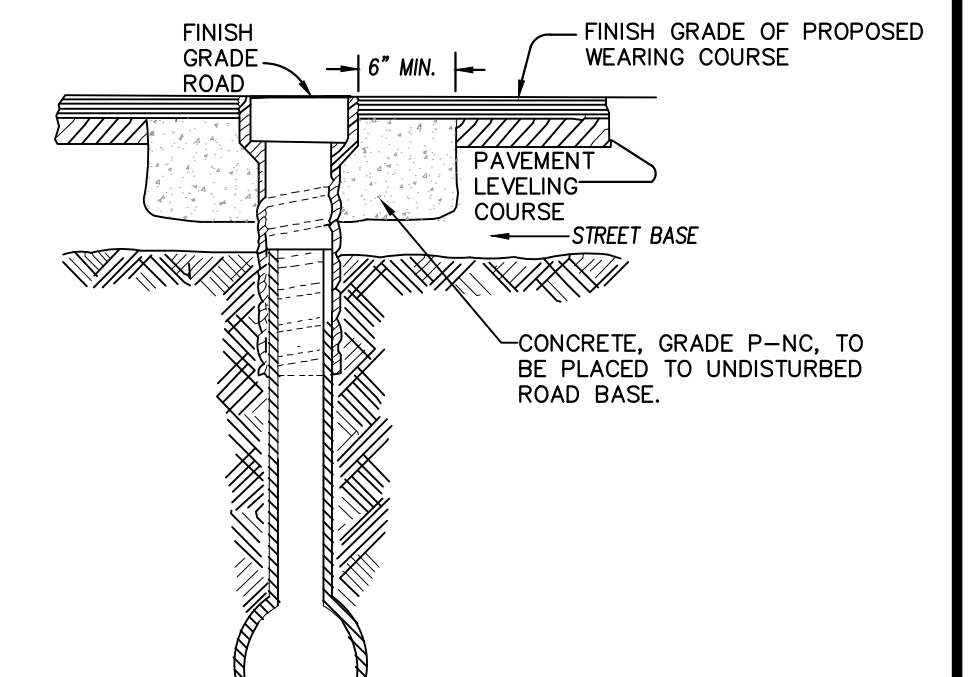


NOTE: PLATE MAY BE CIRCULAR, SQUARE OR RECTANGULAR



1/4" MIN. THICKNESS AND SUFFICIENT TO CARRY THE CONSTRUCTION LOAD.

STRUCTURE PLATE SD-GU-8



- NOTE:
- RAISE CASTING TO PROPOSED FINISH STREET GRADE AFTER PLACEMENT OF LEVELING COURSE(S) AND PRIOR TO PLACING FINAL SURFACE COURSE

WATER VALVE BOX ADJUSTMENT



NO.	DATE	DESCRIPTION	REV.

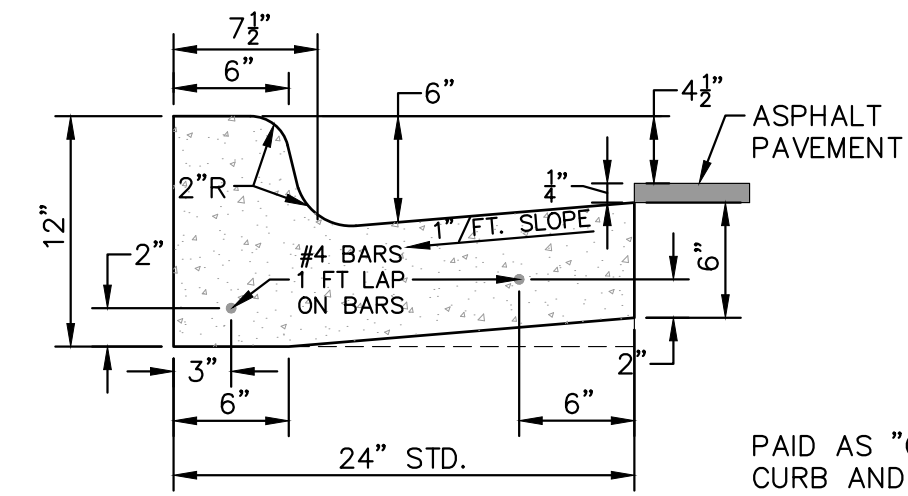
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ANN ARBOR, MI 48106-1667
www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
STANDARD WATER MAIN DETAILS

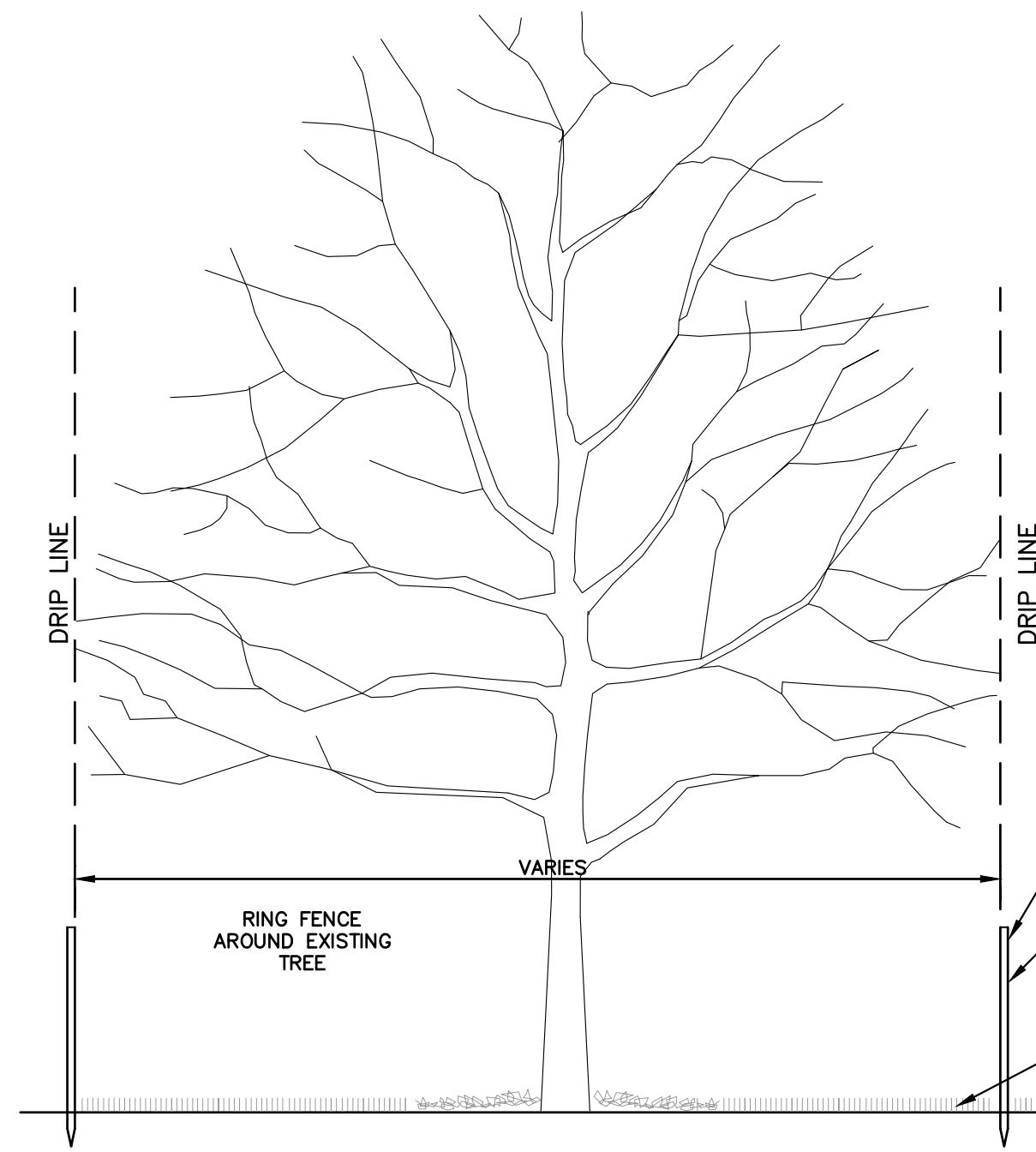
SCALE: NTS
DRAWING No. 2022-28

P:\0000_0100\0028220090_GOPE_Local_Streets_WM_&_Resurf\Drawings\Civil\Details\AA_Standard_Details.dwg Dwg Created: 12-Jan-23 - _g2 standard bw.stb - Plot Date: 9-Feb-23

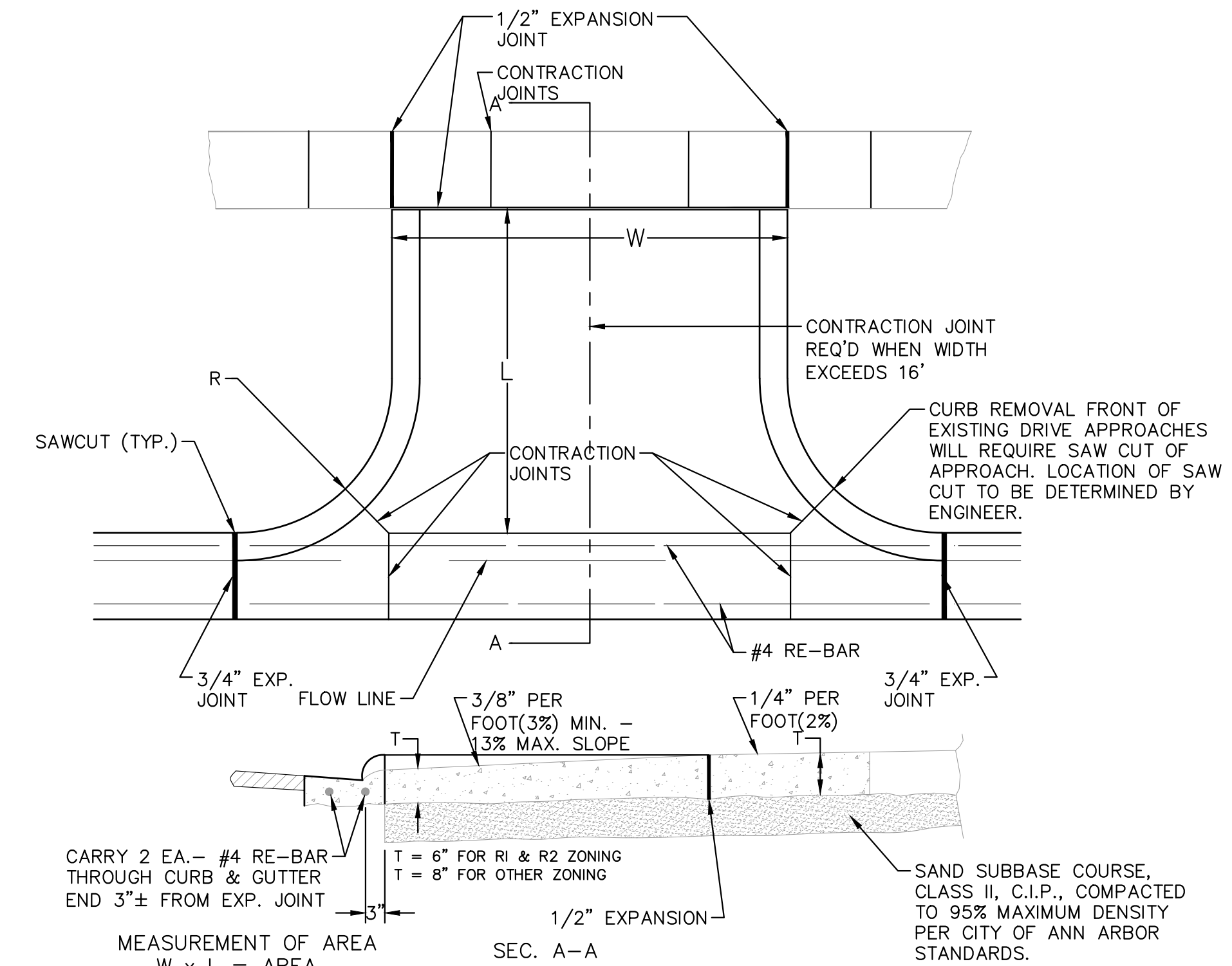


PAID AS "CONCRETE CURB OR CURB AND GUTTER - ALL TYPES" OR "CONCRETE CURB" OR "CURB AND GUTTER - ALL TYPES (HIGH EARLY)"

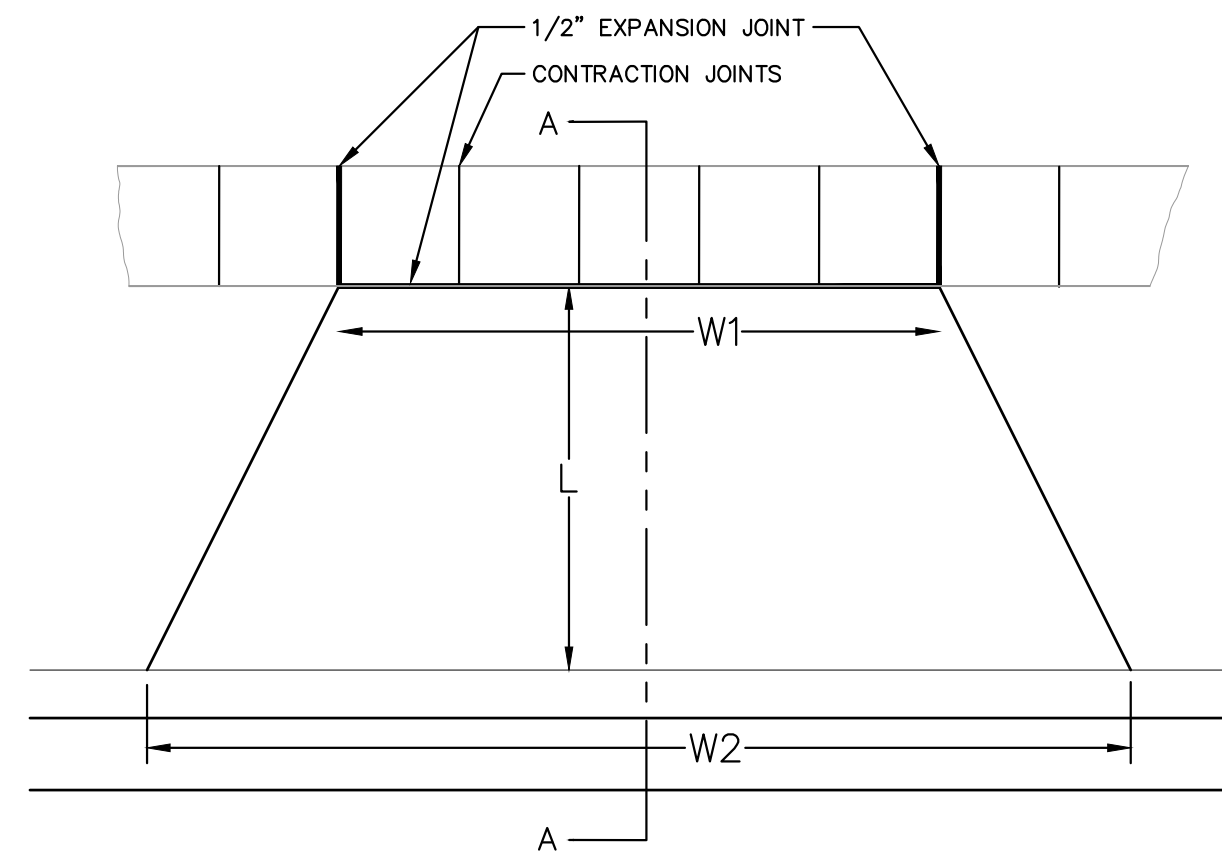
CURB AND GUTTER, CONC, DET F4, SPECIAL



TREE PROTECTION DETAIL



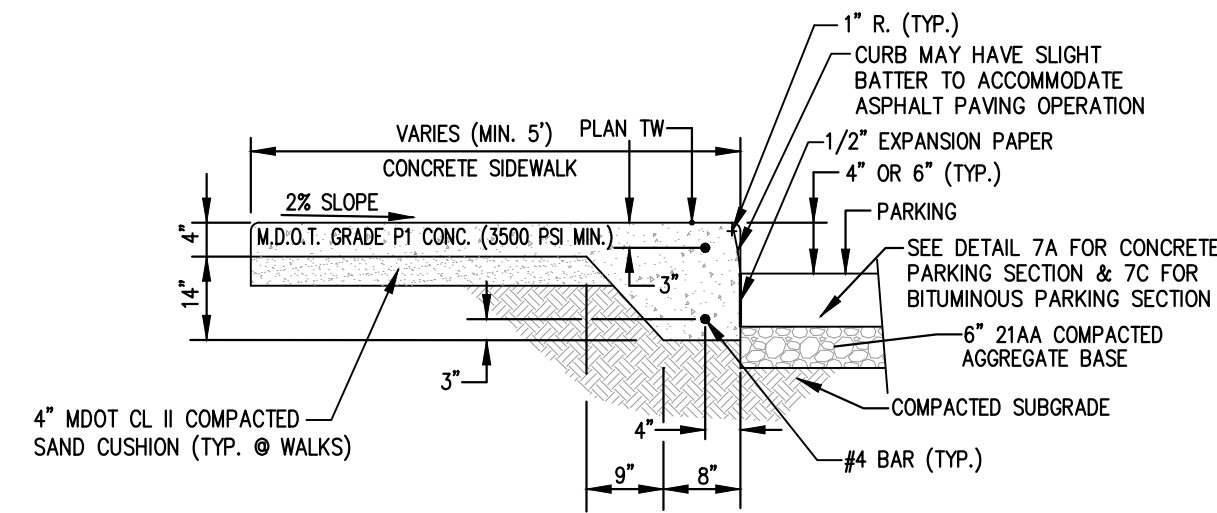
TYPE 'M' DRIVE APPROACH



T = 6" FOR SINGLE FAMILY OR DUPLEX USES
T = 8" FOR OTHER USES

6" CLASS II GRANULAR MATERIAL OR 21AA DENSE GRADED AGGREGATE, COMPACTED PER CITY OF ANN ARBOR STANDARDS.

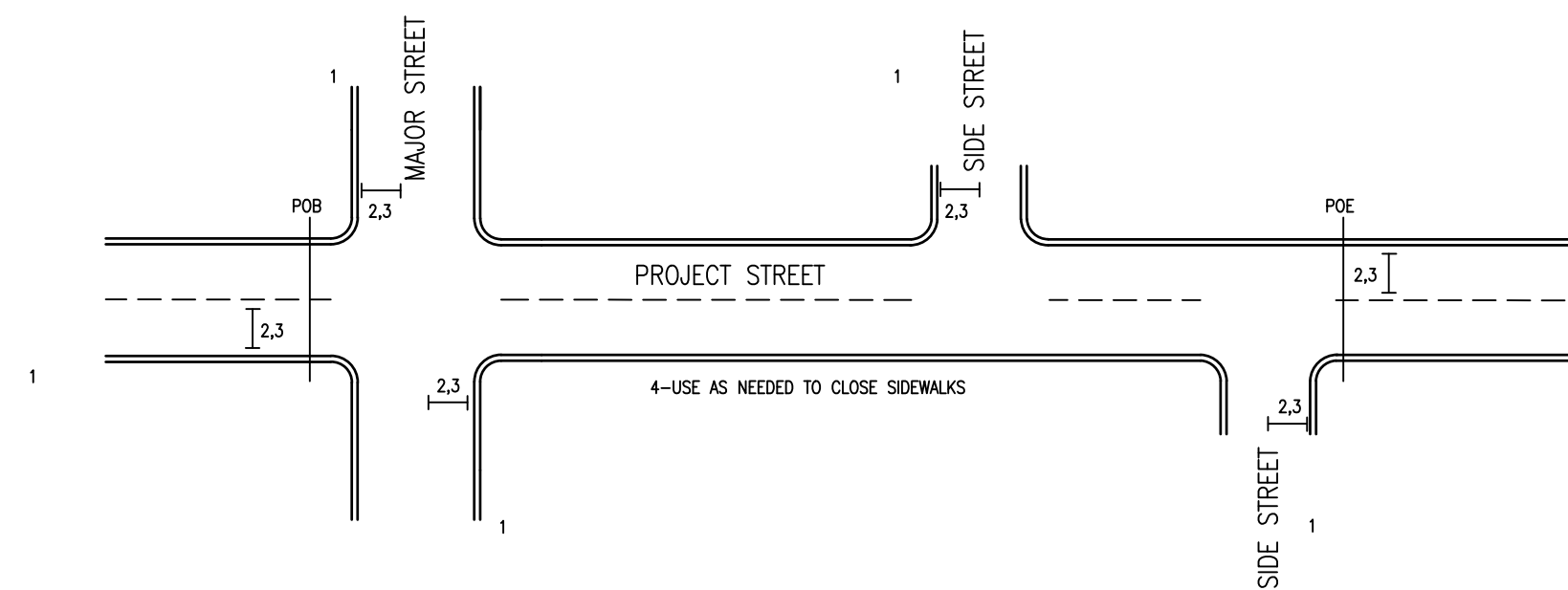
TYPE 'L' DRIVE APPROACH



TYPICAL CONCRETE PAVEMENT INTEGRAL WALK/CURB

MEASUREMENT OF AREA
W x L = AREA
SEC. A-A

NOTE:
1. DRIVE APPROACH TO BE CLASS 'A' CONCRETE.
2. R (RADIUS) AND W (DRIVE WIDTH) AS REQUIRED FOR ZONING BY CITY CODE
3. IF GUTTER IS OVERLAID, GUTTER OF THE APPROACH SHALL BE AT SAME ELEVATION AS EXISTING GUTTER AND ASPHALT WEDGE SHALL BE PLACED IN THE APPROACH.



TYPICAL ROAD CLOSURES

SIGN LEGEND			
ID NUMBER	SIGN	SIGN DESIGNATION	SIZE
2		TYPE III BARRICADE	5'x4' (MIN.)
3		R11-4	60x30
4		R9-9	24x12

- NOTE:
- MINIMUM REQUIREMENT FOR DRIVE APPROACH TO BE MDOT 3500 CONCRETE.
 - R (RADIUS) AND W1 (OPENING WIDTH) AND W2 (CURB CUT WIDTH) AS REQUIRED PER TABLE A, ARTICLE 6 OF CITY STANDARDS
 - IF GUTTER IS OVERLAID, GUTTER OF THE APPROACH SHALL BE AT SAME ELEVATION AS EXISTING CONCRETE GUTTER AND ASPHALT WEDGE SHALL BE PLACED IN THE APPROACH.



REV.	DESCRIPTION	DATE	DRAWN	CHECKED

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-0667
www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
STANDARD MISCELLANEOUS DETAILS

SCALE: NTS
DRAWING No. 2022-28-9
SHEET No.

P:\0000_0100\0028220090_GOPE_Local_Streets_WM_&_Resurf\Drawings\Civil\Details\AA_Standard_Details.dwg Dwg. Created: 12-Jan-23 - _a2 standard bw.stb = Plot Date: 9-Feb-23

GENERAL
NOTIFY THE CITY OF ANN ARBOR SOIL EROSION CONTROL OFFICE 48 HOURS PRIOR TO BEGINNING WORK ON THE PROJECT. PHONE: 734-794-6265.

1. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER AT ALL TIMES DURING CONSTRUCTION. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE AS DIRECTED AND APPROVED BY THE ENGINEER.
2. ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE CITY OF ANN ARBOR, THE LAWS OF THE STATE OF MICHIGAN, AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. DAILY, OR AFTER ANY STORM EVENT, INSPECTIONS OF EROSION CONTROL MEASURES SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE ENGINEER TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE WITHOUT DELAY, AND WITHOUT ADDITIONAL COST TO THE CITY OF ANN ARBOR.
4. EROSION AND SEDIMENTATION FROM WORK ON THE SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS, ROADWAYS OR WATERWAYS.
5. ALL MUD/SOIL TRACKED ONTO ROADWAYS FROM THE SITE DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. IF SO ORDERED, THE CONTRACTOR SHALL PROVIDE AND OPERATE A VACUUM-TYPE STREET SWEEPER, AT NO ADDITIONAL COST TO THE CITY OF ANN ARBOR.
6. RESTORATION OF ALL DISTURBED AREAS, INCLUDING PLACEMENT OF TOPSOIL, SEED, FERTILIZER AND MULCH AND/OR SOD SHALL BE PERFORMED WITHIN FIVE (5) DAYS OF THE COMPLETION OF FINAL GRADE.
7. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
8. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
9. PROPER DUST CONTROL SHALL BE MAINTAINED DURING CONSTRUCTION BY USE OF WATER TRUCKS AND/OR OTHER METHODS APPROVED BY THE ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME MEASURES UPON AUTHORIZED COMPLETION OF THE PROJECT. FINAL COMPLETION OF PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.

11. THE CONTRACTOR SHALL NOT GRADE INTO ADJACENT PROPERTIES. SILT AND PROTECTIVE FENCE SHALL BE INSTALLED AND MAINTAINED TO PREVENT GRADING, EROSION AND SEDIMENTATION INTO THE ADJACENT PROPERTIES.
12. TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.

SEQUENCE OF EROSION CONTROL MEASURES:

1. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER, A SEQUENCE OF CONSTRUCTION WITH RESPECT TO THE SOIL EROSION CONTROL MEASURES FOR REVIEW, COMMENT AND APPROVAL. THIS SCHEDULE IS TO INCLUDE INSPECTION AND REPAIR OF ALL TEMPORARY EROSION CONTROL MEASURES DAILY AND WITHIN 24 HOURS OF A STORM EVENT.

SAMPLE SOIL EROSION AND SEDIMENTATION CONTROL INSTALLATION MINIMUM REQUIREMENTS:

- 1.1. INSTALL SILT FENCE, TREE PROTECTION FENCING, MUD MATS, INLET FILTERS ON EXISTING DRAINAGE FEATURES, AND ALL OTHER TEMPORARY SOIL EROSION CONTROLS, PRIOR TO ANY CLEARING OR EARTH MOVING OPERATION.
- 1.2. STRIP AND STOCKPILE TOPSOIL. STABILIZE STOCKPILE AS REQUIRED.
- 1.3. INSTALL WATER MAINS, STORM AND SANITARY SEWERS, AND OTHER ENCLOSED DRAINAGE FEATURES. NEW INLET FILTERS SHALL BE INSTALLED IMMEDIATELY FOLLOWING INSTALLATION OF NEW DRAINAGE INLETS.
- 1.4. PERFORM MACHINE GRADING OPERATIONS AND CONSTRUCT PAVEMENTS (MAINLINE, SIDEWALKS, DRIVES, ETC.).
- 1.5. CONTINUALLY MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES, AS REQUIRED TO ALLOW DRAINAGE AND SEDIMENT REMOVAL. REMOVE ANY ACCUMULATED SEDIMENT IMMEDIATELY.
- 1.6. COMPLETE ALL FINE GRADING.
- 1.7. TEMPORARY SEED AND INSTALL EROSION CONTROL BLANKET IN ALL DISTURBED AREAS.
- 1.8. REFER TO LANDSCAPE PLANTING PLANS FOR PERMANENT SITE STABILIZATION.
- 1.9. CLEAN OUT STORM SEWER SYSTEMS.
- 1.10. REMEDY ANY NOTED DEFECTS TO THE SATISFACTION OF THE CITY OF ANN ARBOR'S SOIL EROSION AND SEDIMENTATION CONTROL OFFICIAL.
- 1.11. ALL TEMP. SOIL EROSION CONTROL MEASURES MUST BE REMOVED, WITH ENGINEERS APPROVAL, PRIOR TO FINAL INSPECTION

NOTE: THIS SEQUENCE IS FOR INFORMATION ONLY. IT IS INTENDED TO SHOW THE SEQUENCE OF CONSTRUCTION WITH RESPECT TO THE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THEIR OWN DETAILED CONSTRUCTION SEQUENCE AND SCHEDULE TO THE ENGINEER FOR REVIEW, COMMENT, AND APPROVAL.

TEMPORARY SEEDING:

1. SEED IN ACCORDANCE WITH PROJECT DRAWINGS AND SPECIFICATIONS.
2. ANY DISTURBED AREA NOT PAVED, SEEDED, MULCHED, SODDED OR BUILT UPON BY NOVEMBER 15TH OR JUNE 30TH IS TO BE TEMPORARILY STABILIZED PER SPECIFICATIONS.

THE ESTIMATED COST OF SOIL EROSION AND SEDIMENTATION CONTROL MEASURES, TOPSOIL, SEEDING, AND MULCH = \$35,000.

EASY STREET

- MoC - MORLEY LOAM - 6% TO 12% SLOPES

GLENDALOCH ROAD

- WwabB - WAWASEE LOAM - 2% TO 6% SLOPES
- WwabC - WAWASEE LOAM - 6% TO 12% SLOPES

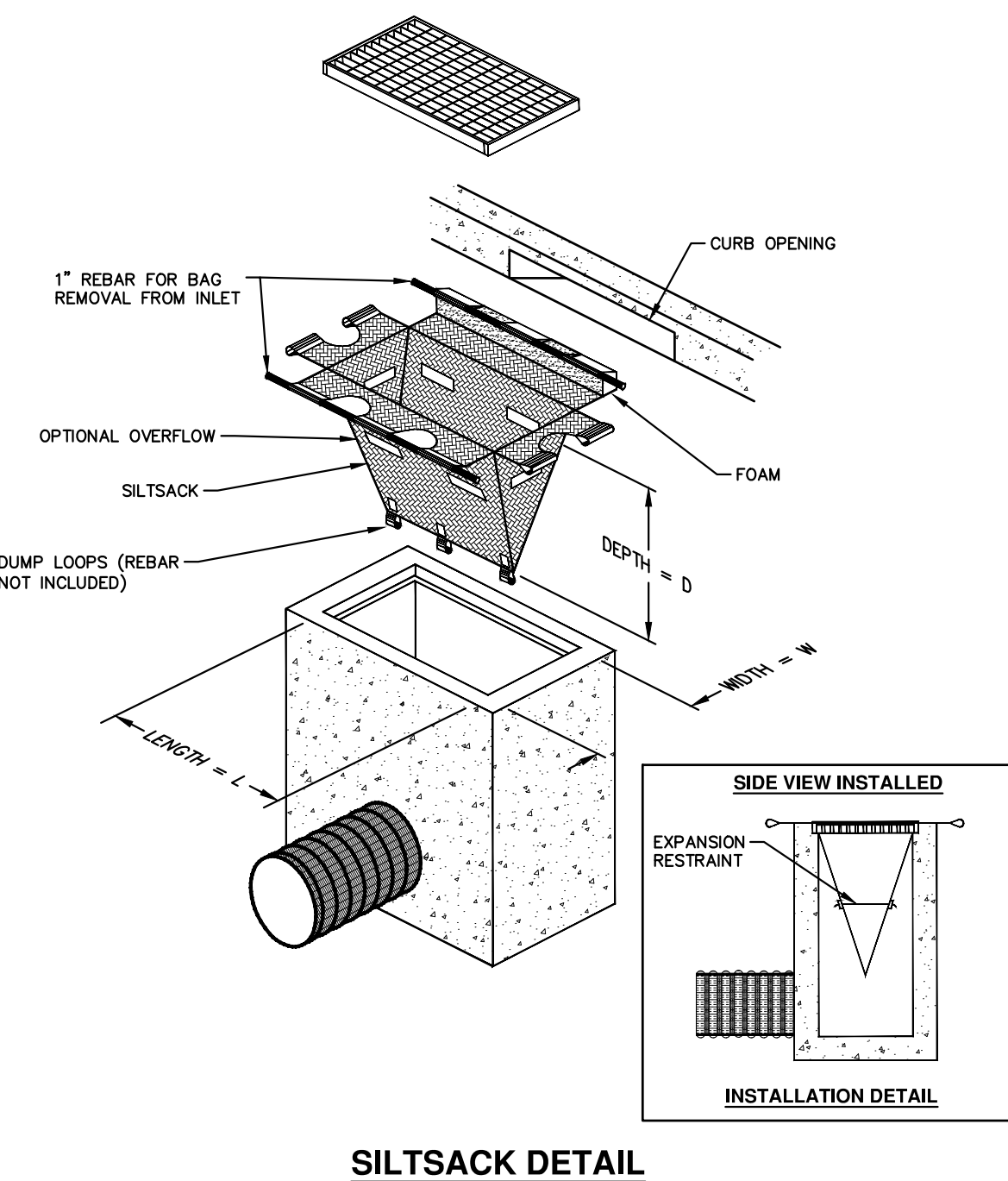
CARMEL STREET

- MoC - MORLEY LOAM - 6% TO 12% SLOPES
- BnB - BOYER LOAMY SAND - 1% TO 6% SLOPES
- WgA - WASEPI SANDY LOAM - 0% TO 4% SLOPES

PROVINCIAL DRIVE

- BnB - BOYER LOAMY SAND - 1% TO 6% SLOPES
- SpC - SPRINKS LOAMY SAND - 6% TO 12% SLOPES
- WwabB - WAWASEE LOAM - 2% TO 6% SLOPES
- WwabC - WAWASEE LOAM - 6% TO 12% SLOPES

AREA OF PROPOSED DISTURBANCE	
EASY STREET	- 0.67 ac
GLENDALOCH ROAD	- 0.81 ac
CARMEL STREET	- 1.0 ac
PROVINCIAL DRIVE	- 1.96 ac



NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.

REGULAR FLOW SILTSACK

(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	REQUIRED VALUE	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL./MIN./SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC-1

HI-FLOW SILTSACK

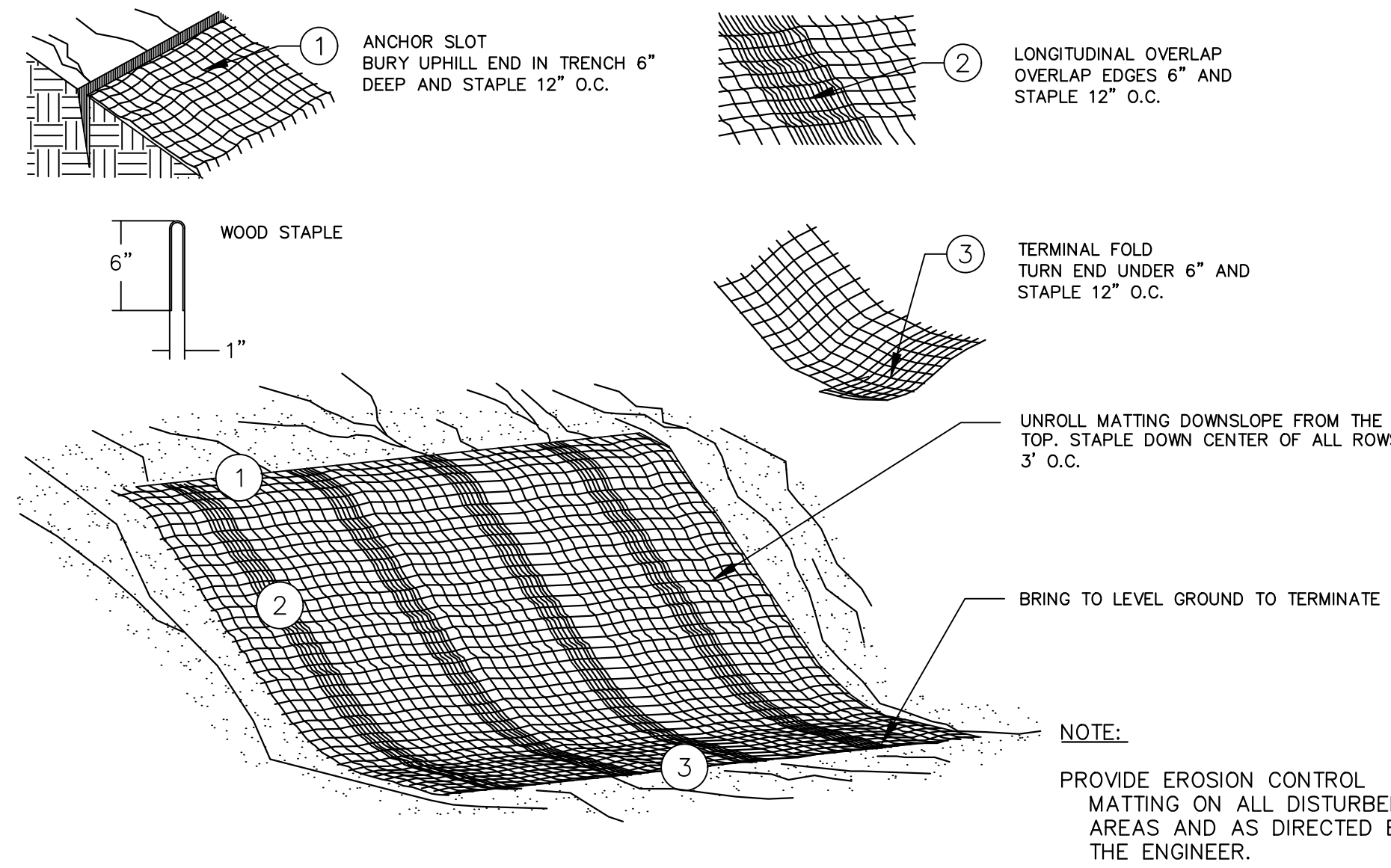
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	REQUIRED VALUE	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL./MIN./SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC-1

OIL-ABSORBANT SILTSACK

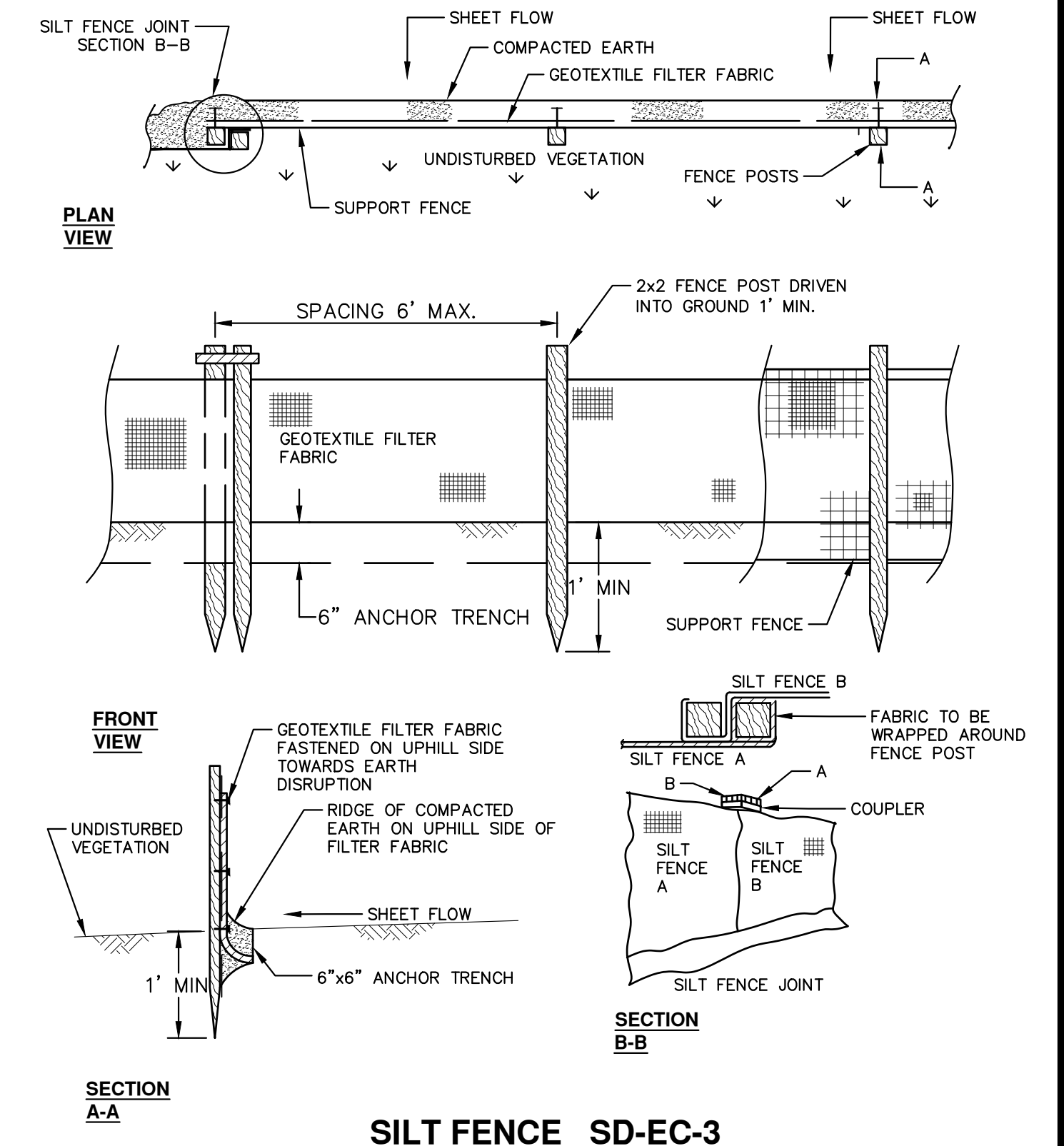
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS THAT THE CONTRACTOR INSTALL THE REBAR AS SHOWN IN THIS DETAIL TO PROVIDE A FULLY FUNCTIONING UNIT. ALL COSTS ASSOCIATED WITH FURNISHING, CLEANING AS MANY TIMES AS REQUIRED, DISPOSAL OF SEDIMENT, AND REMOVING THE INLET FILTER WHEN NO LONGER NEEDED IS INCLUDED IN THE ITEM OF WORK AND WILL NOT BE PAID FOR SEPARATELY.

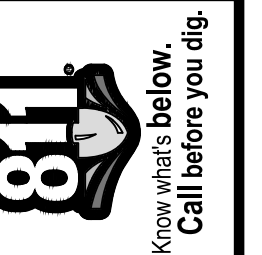


MULCH BLANKET DETAIL

APPLIES TO ALL AREAS TO BE PERMANENTLY RESTORED WITH GRASS. SEE LANDSCAPE PLANS FOR MORE DETAILS.

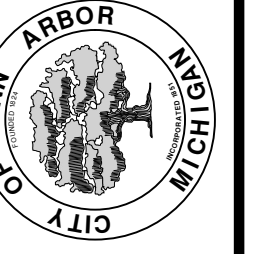


SILT FENCE SD-EC-3



REV.	DESCRIPTION	DATE	DRAWN	CHECKED

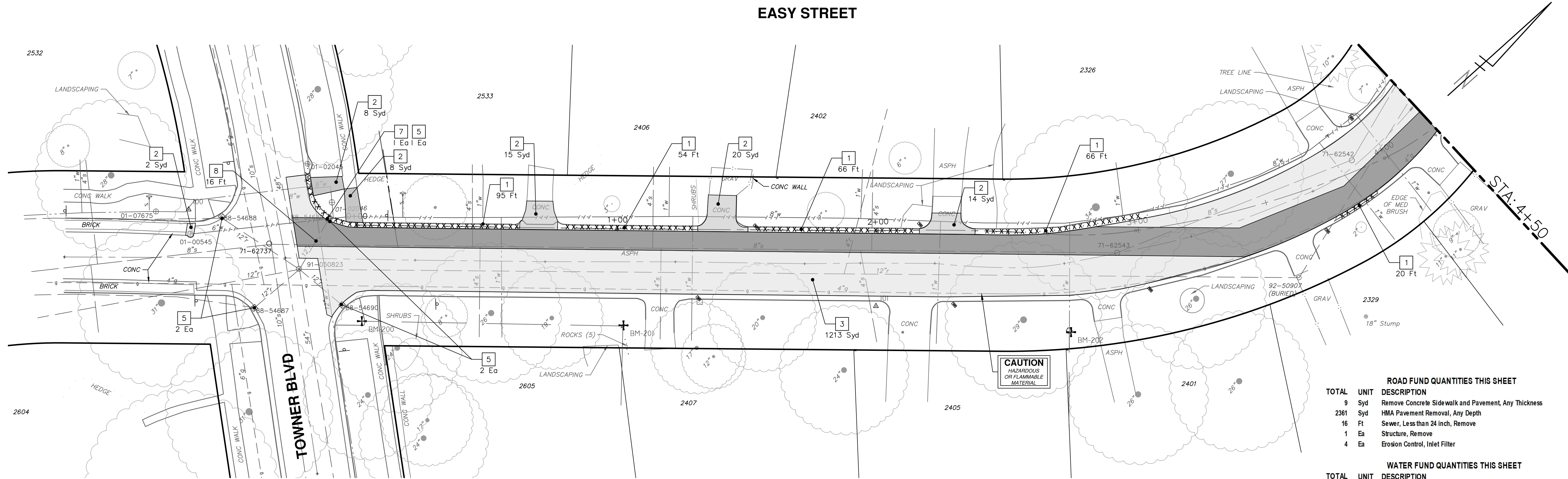
CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-1007
734-794-4410
www.a2gov.org



2023 MISCELLANEOUS UTILITY PROJECTS
STANDARD SOIL EROSION AND SEDIMENTATION CONTROL NOTES AND DETAIL

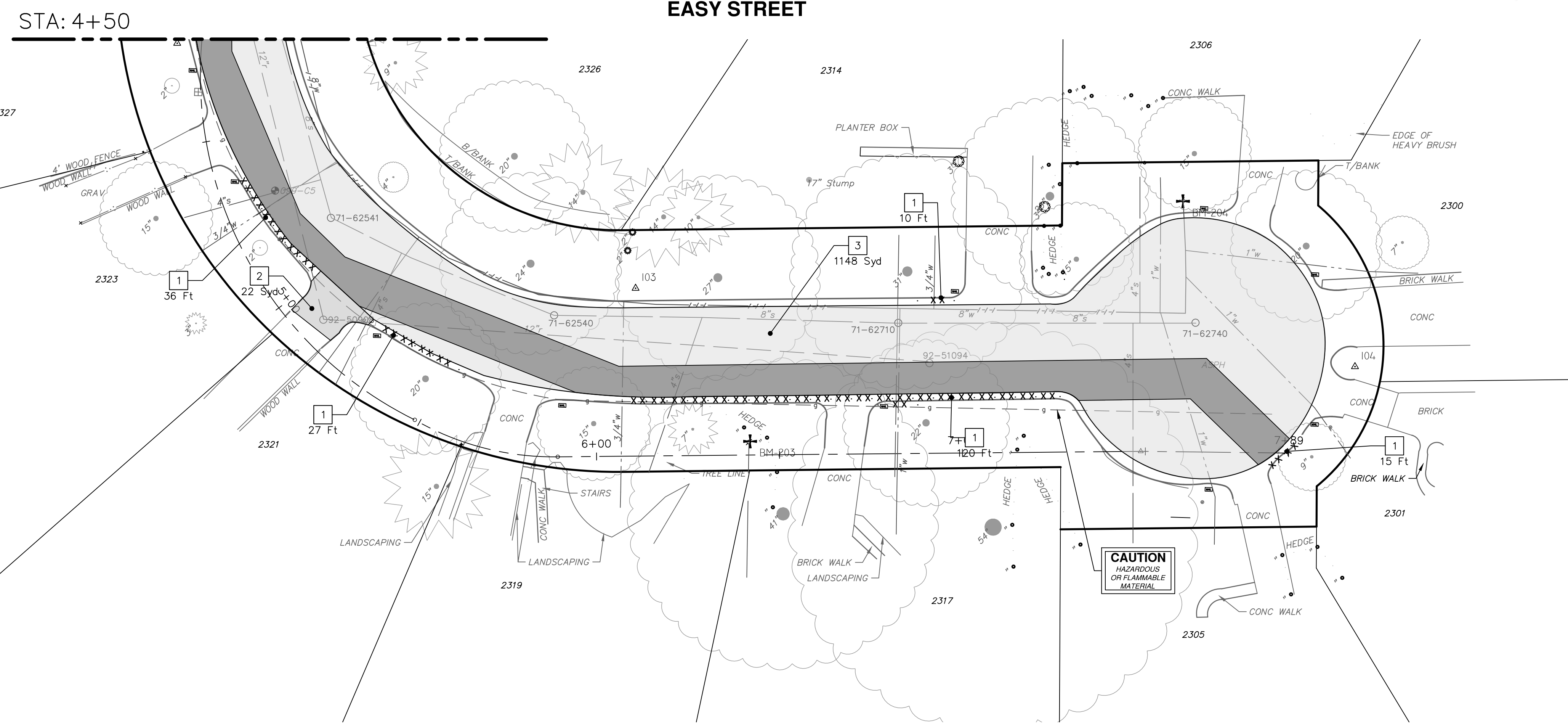
CITY OF ANN ARBOR - ENGINEERING
SCALE: NTS
DRAWING No. 2022-28-10

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ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
9	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness
2381	Syd	HMA Pavement Removal, Any Depth
16	Ft	Sewer, Less than 24 inch, Remove
1	Ea	Structure, Remove
4	Ea	Erosion Control, Inlet Filter


WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
506	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
99	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE

* SAWCUT FULL DEPTH AT REMOVAL LIMITS


NOTES:
 1. PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 2. WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).



Know what's below. Call Before you dig.

REV	DATE	BY	CHECKED
REV 01	11-18-2022	BY	DRAWN
REV 02	1-19-2023	BY	DRAWN
REV 03	2-9-2023	BY	CHECKED

CITY OF ANN ARBOR
 PUBLIC SERVICES
 301 EAST HURON STREET
 P.O. BOX 8647
 ANN ARBOR, MI 48106-8647
 www.a2gov.org



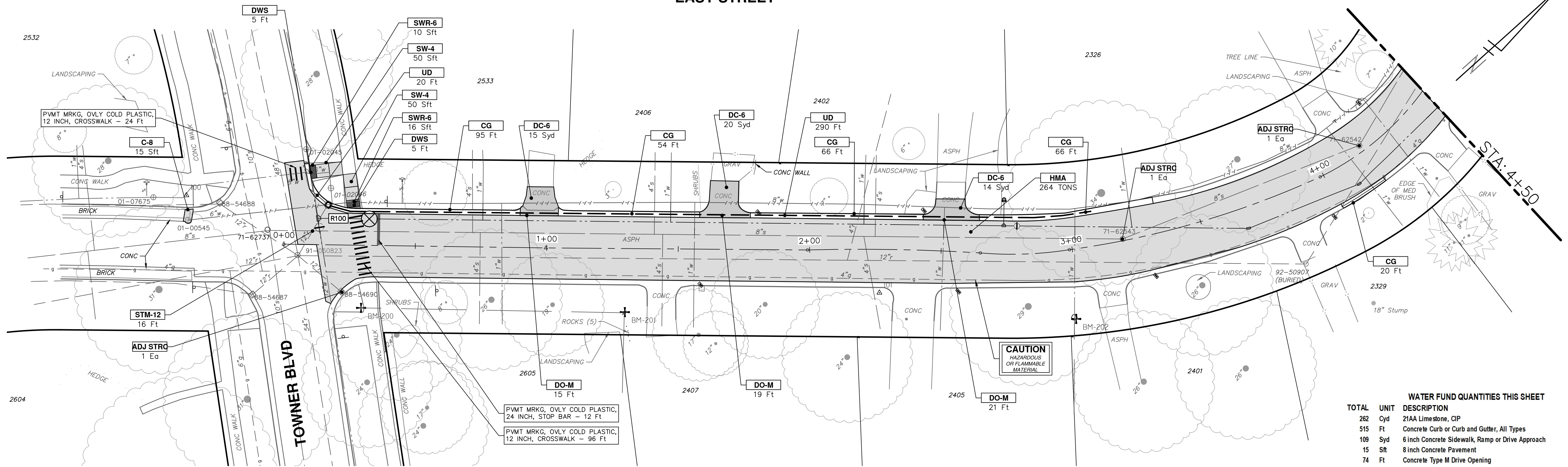
2023 MISCELLANEOUS UTILITY PROJECTS
 EASY STREET REMOVALS - P.O.B. TO P.O.E.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
 SCALE PLAN: 1" = 20'

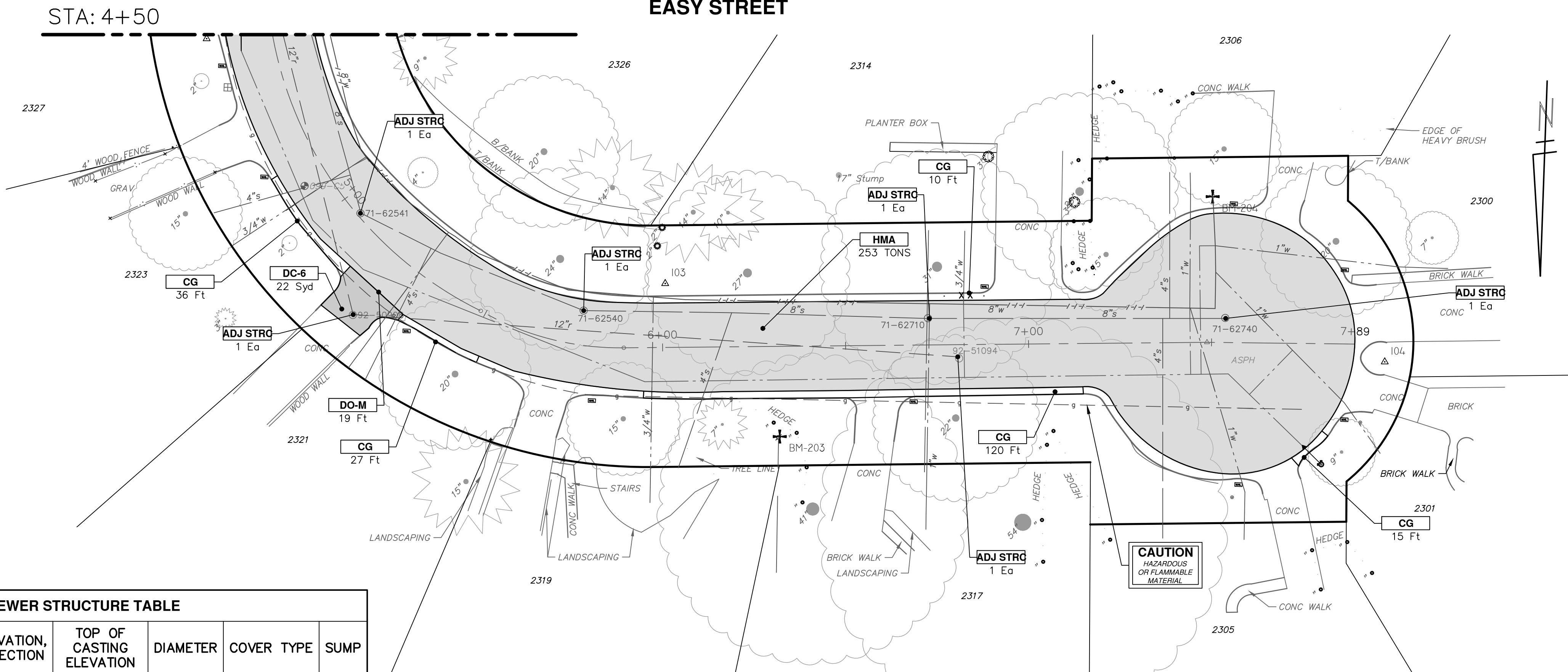
DRAWING No. 2022-28-11
 SHEET No. 11 OF 44

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EASY STREET



EASY STREET



WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
262	Cyd	21AA Limestone, CIP
515	Ft	Concrete Curb or Curb and Gutter, All Types
109	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach
15	Sft	8 inch Concrete Pavement
74	Ft	Concrete Type M Drive Opening

ROAD FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
1175	Syd	Machine Grading
262	Cyd	21AA Limestone, CIP
546	Ton	HMA, 5EL
100	Sft	4 inch Concrete Sidewalk
10	Ft	Detectable Warning Surface
310	Ft	6 inch Wrapped Underdrain
120	Ft	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk
12	Ft	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar
16	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det I
1	Ea	Single Inlet w/ 2 foot Sump
4000	Lb	Structure Covers
8	Ea	Adjust Structure Cover

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE/TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-8	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SWR-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DO-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET I
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER

STORM SEWER STRUCTURE TABLE

STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
R100	0+17	12" S 814.85 6" W 815.26 6" NE 815.26	819.30	24"	K	YES



REV.	DATE	BY	CHECKED	DESCRIPTION
2-9-2023				REV 03 ADDENDUM 1
1-19-2023				REV 02 BID SET
11-18-2022				REV 01 EFILE PERMIT SUBMITTAL

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
PO BOX 86407
ANN ARBOR MI 48108-6647
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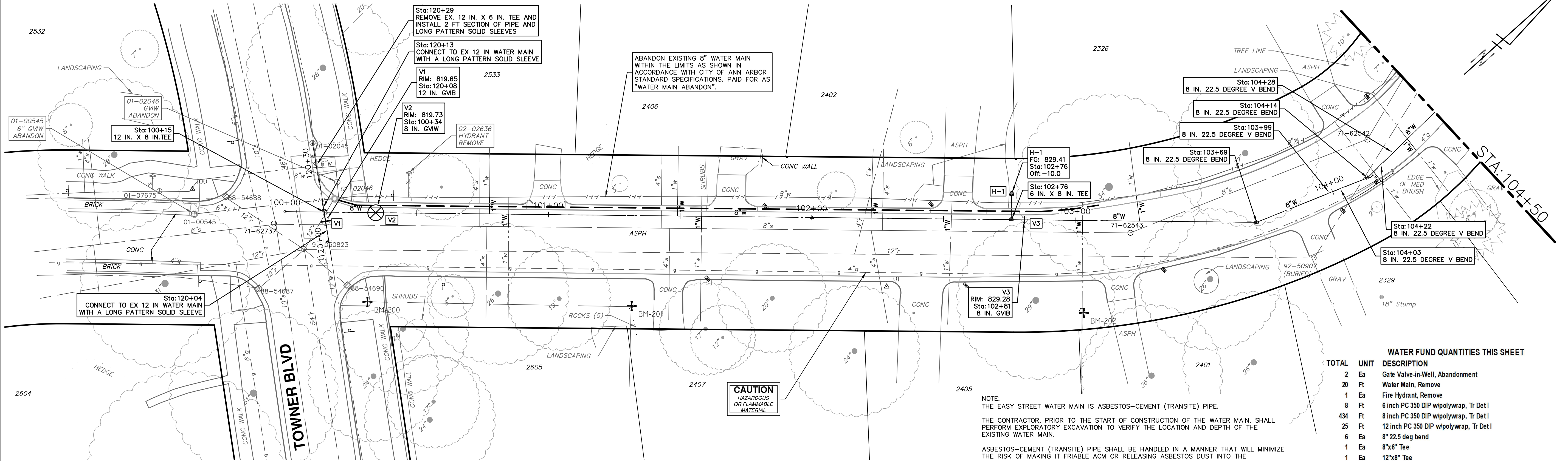


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
EASY STREET PROPOSED ROAD - P.O.B. TO P.O.E.

SCALE PLAN: 1" = 20'
DRAWING No. 2022-28-12
SHEET No. 12 OF 44

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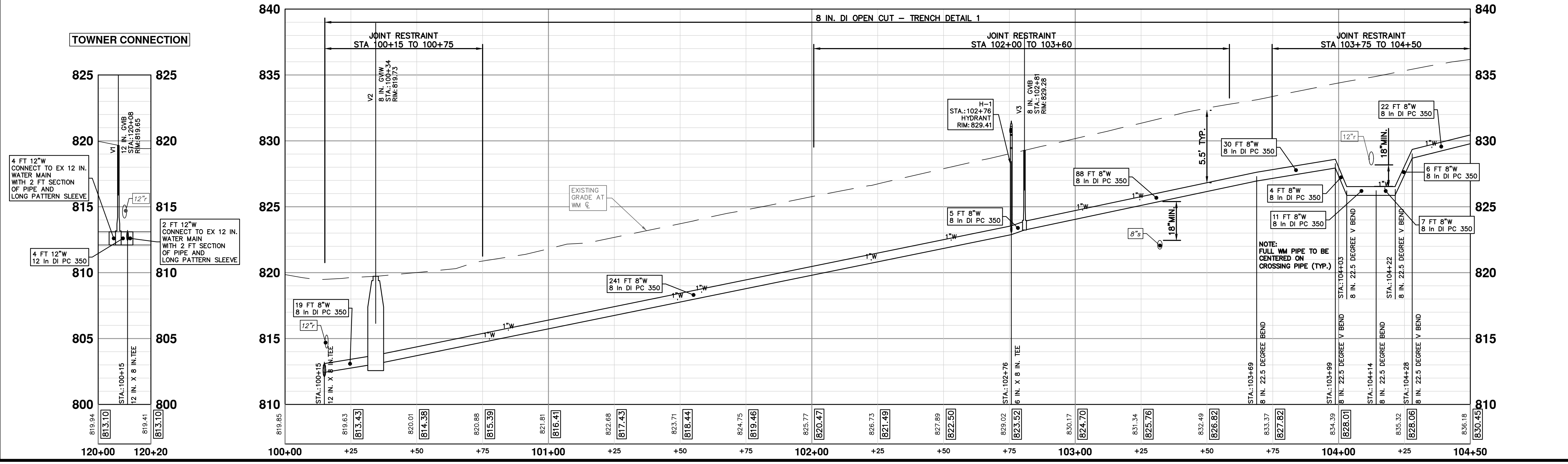
EASY STREET



STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
V2	8 in. G.W.V.	100+34	819.73	6.66	48"	B
H-1	HYDRANT	102+76	829.41	6.36		
V3	8 in. G.V.B.	102+81	829.28	6.04		
V1	12 in. G.V.B.	120+08	819.65	7.55		

TOTAL	UNIT	DESCRIPTION
2	EA	Gate Valve-in-Well, Abandonment
20	FT	Water Main, Remove
1	EA	Fire Hydrant, Remove
8	FT	6 inch PC 350 DIP w/polywrap, Tr Det I
434	FT	8 inch PC 350 DIP w/polywrap, Tr Det I
25	FT	12 inch PC 350 DIP w/polywrap, Tr Det I
6	EA	8" 22.5 deg bend
1	EA	8"x6" Tee
1	EA	12"x8" Tee
1	EA	Fire Hydrant Assembly
1	EA	8" Gate Valve in Box
1	EA	12" Gate Valve in Box
1	EA	8" Gate Valve in Well
57	FT	Excavate and Backfill for Water Service Lead

NOTE:
THE EASY STREET WATER MAIN IS ASBESTOS-CEMENT (TRANSITE) PIPE.
THE CONTRACTOR, PRIOR TO THE START OF CONSTRUCTION OF THE WATER MAIN, SHALL PERFORM EXPLORATORY EXCAVATION TO VERIFY THE LOCATION AND DEPTH OF THE EXISTING WATER MAIN.
ASBESTOS-CEMENT (TRANSITE) PIPE SHALL BE HANDLED IN A MANNER THAT WILL MINIMIZE THE RISK OF MAKING IT FRAGILE ACM OR RELEASING ASBESTOS DUST INTO THE ENVIRONMENT.
AT THE START OF WORK INVOLVING ASBESTOS-CEMENT PIPE, THE CONTRACTOR SHALL ENSURE THAT:
1. THE ASBESTOS-CEMENT PIPE SHALL BE EXPOSED WITH MINIMAL DISTURBANCE.
2. MECHANICAL EXCAVATION SHALL NOT BE USED WITHIN SIX INCHES OF THE ASBESTOS-CEMENT PIPE.
3. THE SOIL WITHIN SIX INCHES OF THE ASBESTOS-CEMENT PIPE SHALL BE UNCOVERED BY HAND OF WITH A SHOVEL.
4. ONCE THE PIPE HAS BEEN EXPOSED, AN ASSESSMENT BY THE ENGINEER AND CONTRACTOR SHALL BE MADE BEFORE PROCEEDING TO DETERMINE WHETHER THE ASBESTOS-CEMENT PIPE IS DAMAGED, CRACKED OR BROKEN.
ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK 8" PC350 DIP W/ POLYWRAP, TR DET 1



Know what's below. Call before you dig.

REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	DRAWN
REV 01	FELE PERMIT SUBMITTAL	11-18-2022	DATE	

CITY OF ANN ARBOR
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ANN ARBOR MI 48106-8647
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CITY OF ANN ARBOR - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

SCALE PLAN: 1" = 20'

PROFILE: 1" = 4'

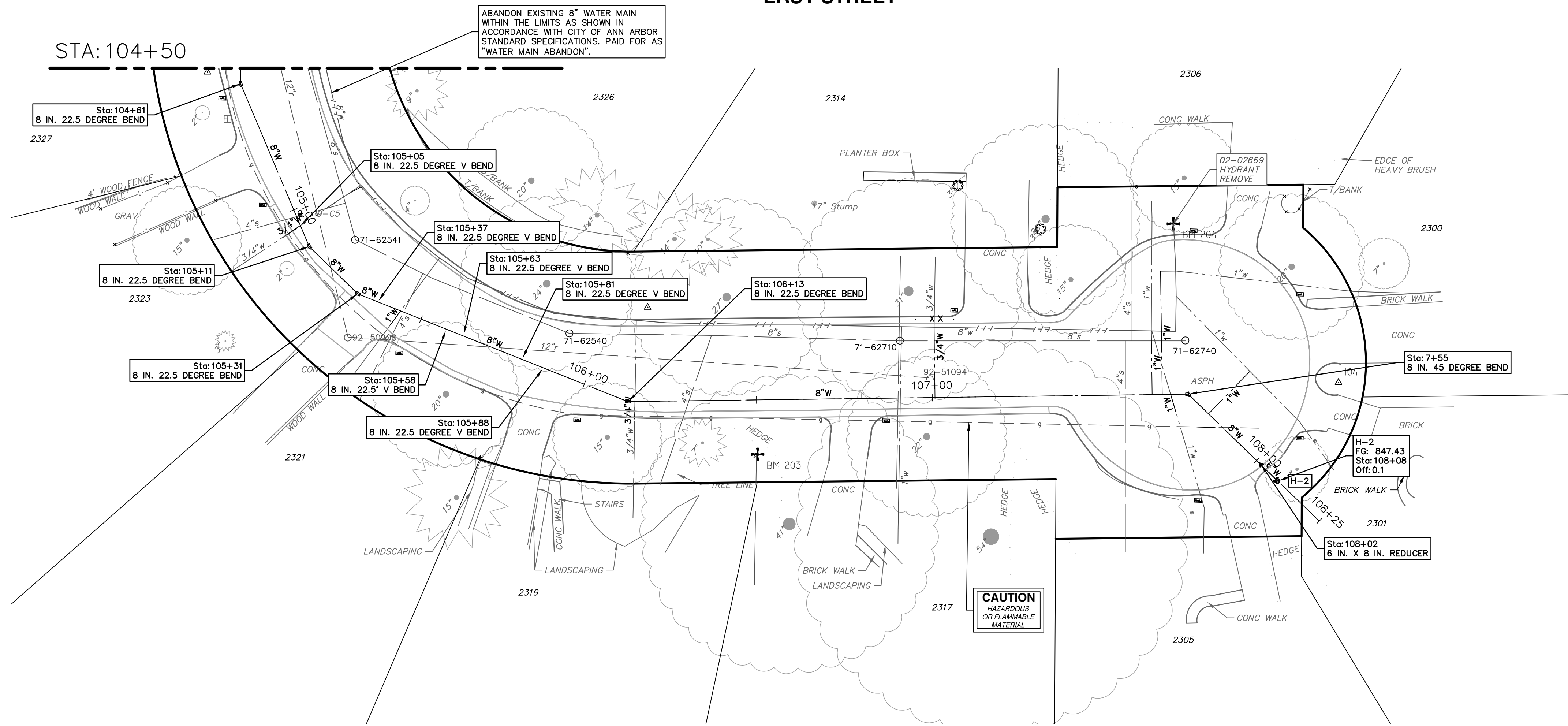
EASY STREET WATER MAIN - P.O.B. TO STA 104+50

DRAWING NO. 2022-28-13

SHEET NO. 13 OF 44

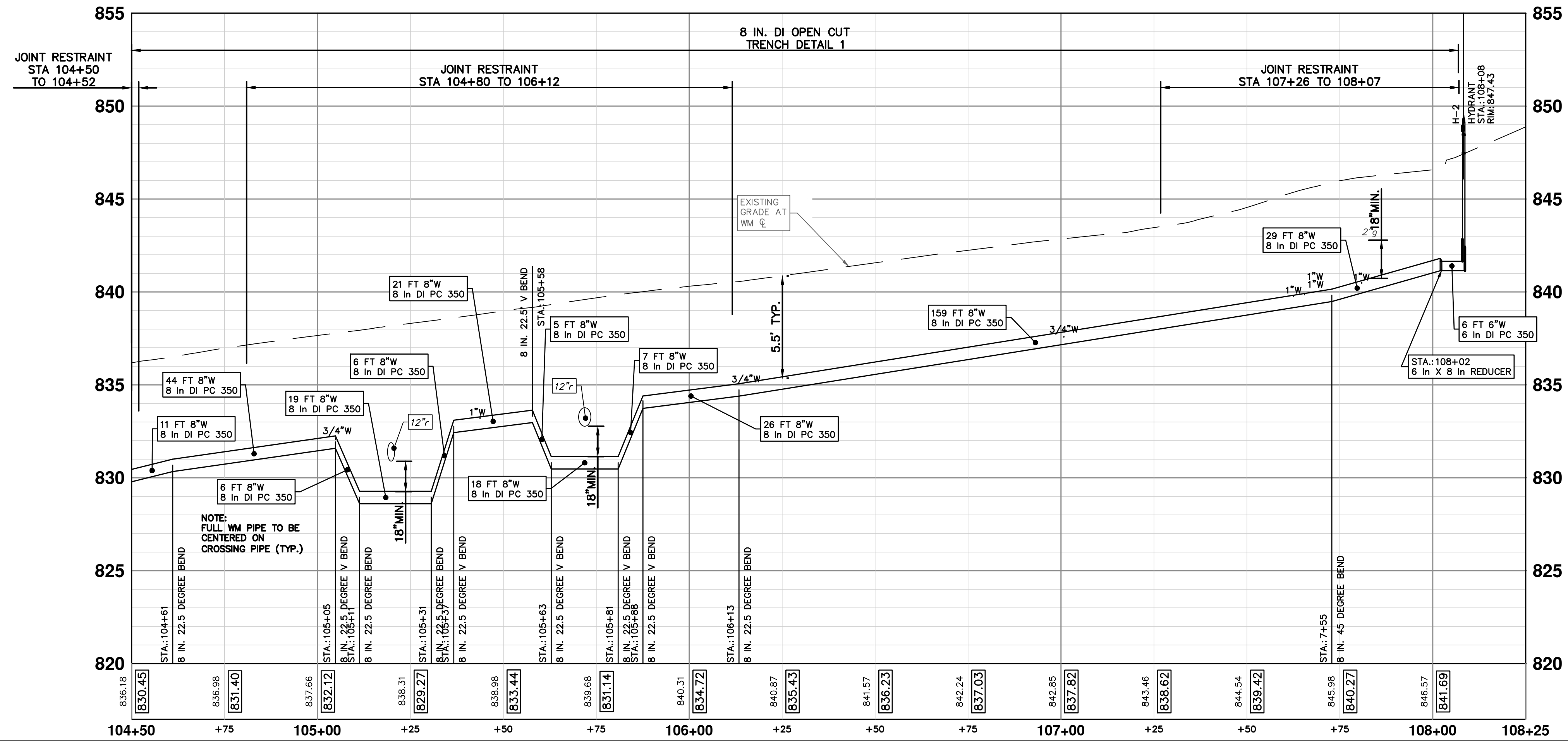
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EASY STREET



WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
1	Ea	Fire Hydrant, Remove
2	Ft	6 inch PC 350 DIP w/polywrap, Tr Det I
355	Ft	8 inch PC 350 DIP w/polywrap, Tr Det I
10	Ea	8" 22.5 deg bend
1	Ea	8" 45 deg bend
1	Ea	8"x6" reducer
1	Ea	Fire Hydrant Assembly
158	Ft	Excavate and Backfill for Water Service Lead



WATER MAIN STRUCTURE TABLE

STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
H-2	HYDRANT	108+08	847.43	6.23		

NOTE:
THE EASY STREET WATER MAIN IS ASBESTOS-CEMENT (TRANSITE) PIPE.
THE CONTRACTOR, PRIOR TO THE START OF CONSTRUCTION OF THE WATER MAIN, SHALL PERFORM EXPLORATORY EXCAVATION TO VERIFY THE LOCATION AND DEPTH OF THE EXISTING WATER MAIN.
ASBESTOS-CEMENT (TRANSITE) PIPE SHALL BE HANDLED IN A MANNER THAT WILL MINIMIZE THE RISK OF MAKING IT FRAGILE ACM OR RELEASING ASBESTOS DUST INTO THE ENVIRONMENT.
AT THE START OF WORK INVOLVING ASBESTOS-CEMENT PIPE, THE CONTRACTOR SHALL ENSURE THAT:
1. THE ASBESTOS-CEMENT PIPE SHALL BE EXPOSED WITH MINIMAL DISTURBANCE.
2. MECHANICAL EXCAVATION SHALL NOT BE USED WITHIN SIX INCHES OF THE ASBESTOS-CEMENT PIPE.
3. THE SOIL WITHIN SIX INCHES OF THE ASBESTOS-CEMENT PIPE SHALL BE UNCOVERED BY HAND OF WITH A SHOVEL.
4. ONCE THE PIPE HAS BEEN EXPOSED, AN ASSESSMENT BY THE ENGINEER AND CONTRACTOR SHALL BE MADE BEFORE PROCEEDING TO DETERMINE WHETHER THE ASBESTOS-CEMENT PIPE IS DAMAGED, CRACKED OR BROKEN.
ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK 8" PC350 DIP W/ POLYWRAP, TR DET 1

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

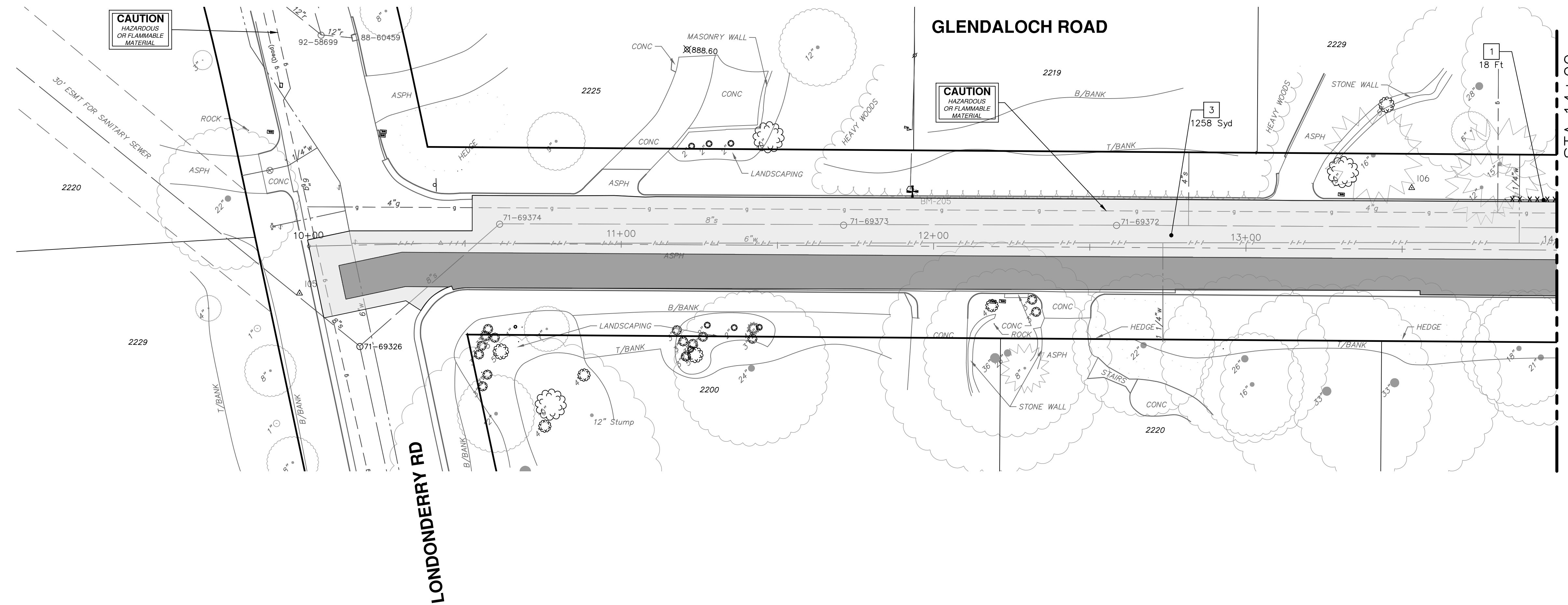
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
EASY STREET WATER MAIN - STA 104+50 TO P.O.E.

SCALE PLAN: 1" = 20'
PROFILE: 1" = 4'

DRAWING NO. 2022-28-14
SHEET NO. 14 OF 44

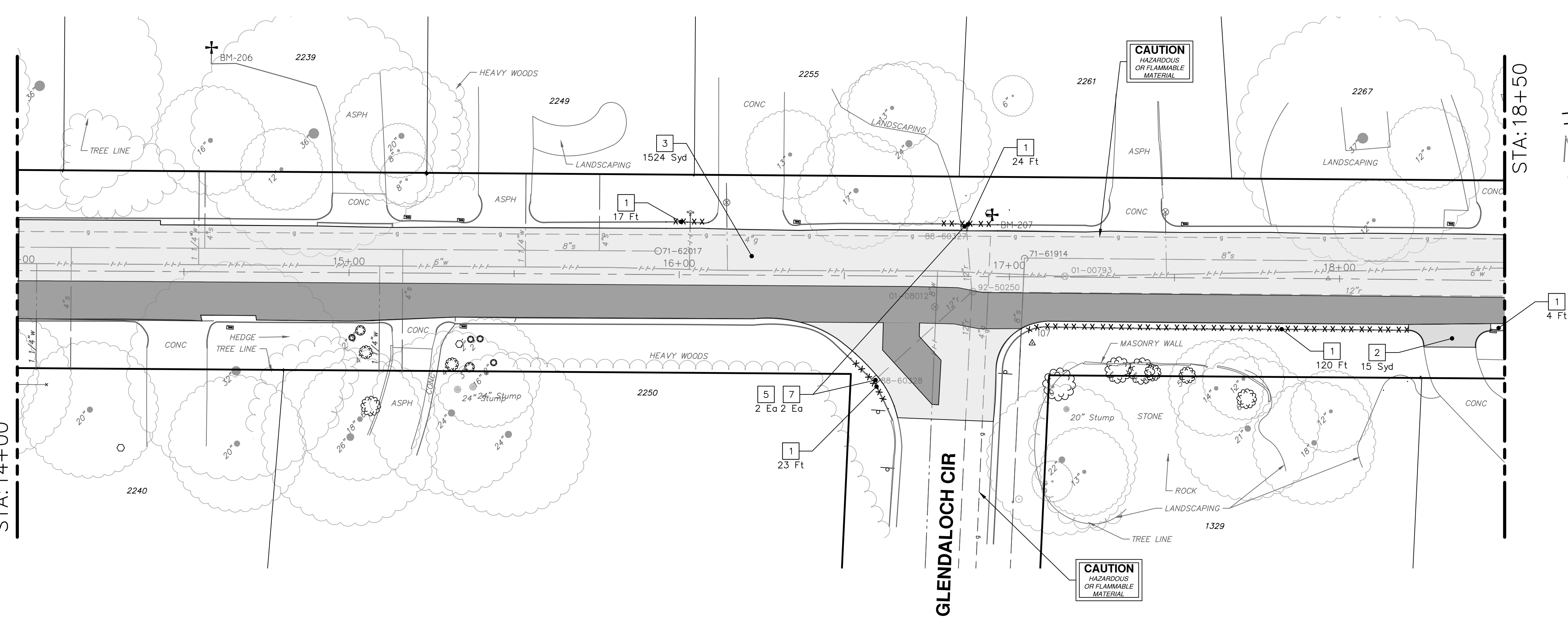
REV	DATE	BY	DESCRIPTION
REV 03	2-9-2023		ADDENDUM 1
REV 02	1-19-2023		BID SET
REV 01	11-18-2022		PERMIT SUBMITTAL

CITY OF ANN ARBOR
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301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR MI 48106-8647
www.a2gov.org



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE

- NOTES:
- PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 - WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).
 - CURB OVERLAY TO BE MILLED OFF, PAID AS "HMA PAVEMENT REMOVAL, ANY DEPTH"



ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
65	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
2782	Syd	HMA Pavement Removal, Any Depth
10	Ft	Sewer, Less than 24 inch, Remove
2	Ea	Structure, Remove
3	Ea	Erosion Control, Inlet Filter

WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
141	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

GLENDALOCH ROAD REMOVALS - P.O.B. TO STA 18+50

SCALE PLAN: 1" = 20'

DRAWING No. 2022-28-15

SHEET No. 15 OF 44

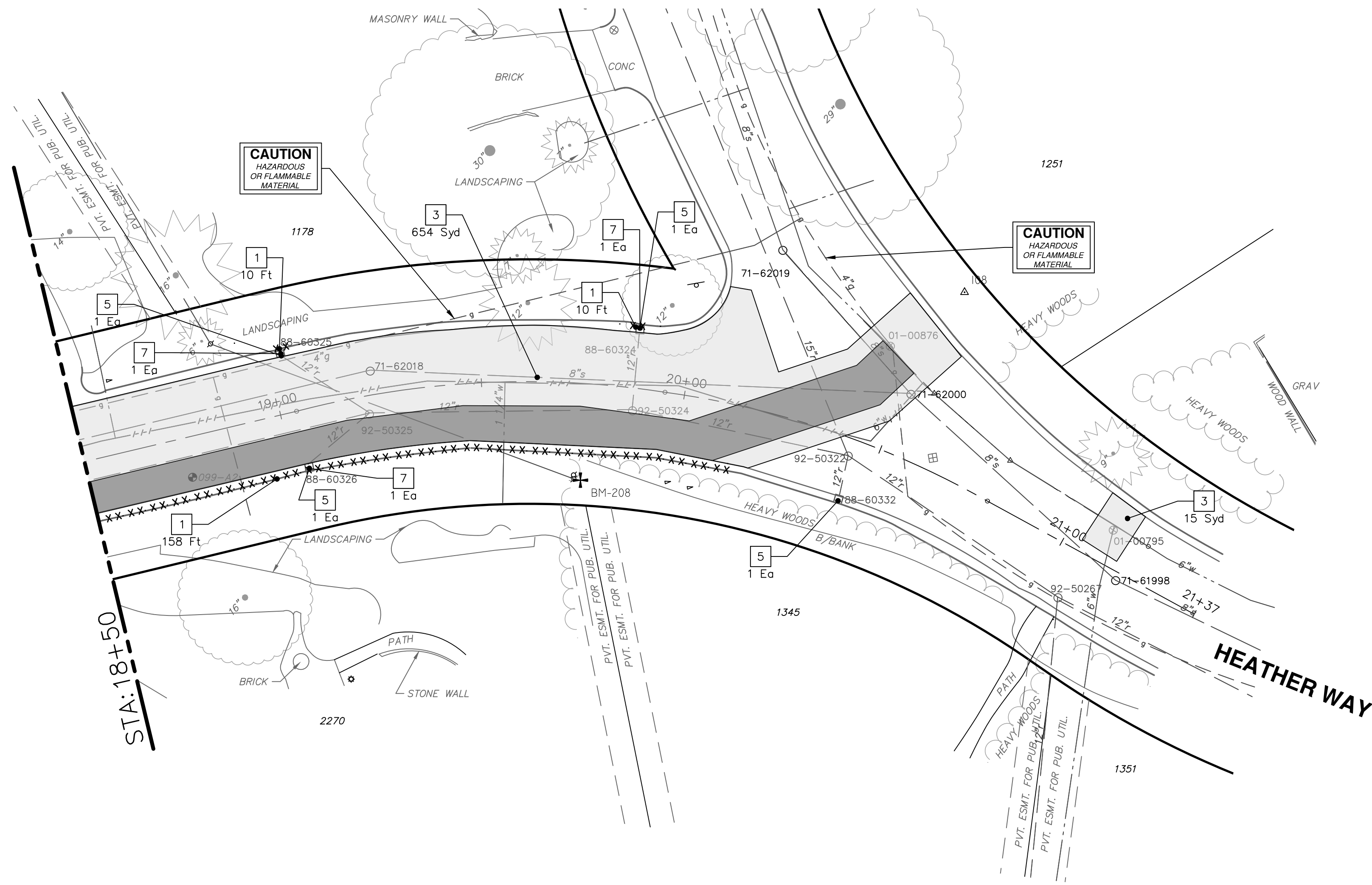
811
Know what's below. Call before you dig.

REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	DRAWN
REV 01	EGL PERMIT SUBMITTAL	11-18-2022	DATE	

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GLENDALOCH ROAD



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE

- * SAWCUT FULL DEPTH AT REMOVAL LIMITS
- NOTES:
- PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 - WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).
 - CURB OVERLAY TO BE MILLED OFF, PAID AS "HMA PAVEMENT REMOVAL, ANY DEPTH"

ROAD FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
20	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
654	Syd	HMA Pavement Removal, Any Depth
20	Ft	Sewer, Less than 24 inch, Remove
3	Ea	Structure, Remove
4	Ea	Erosion Control, Inlet Filter

WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
158	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
15	Syd	HMA Pavement Removal, Any Depth



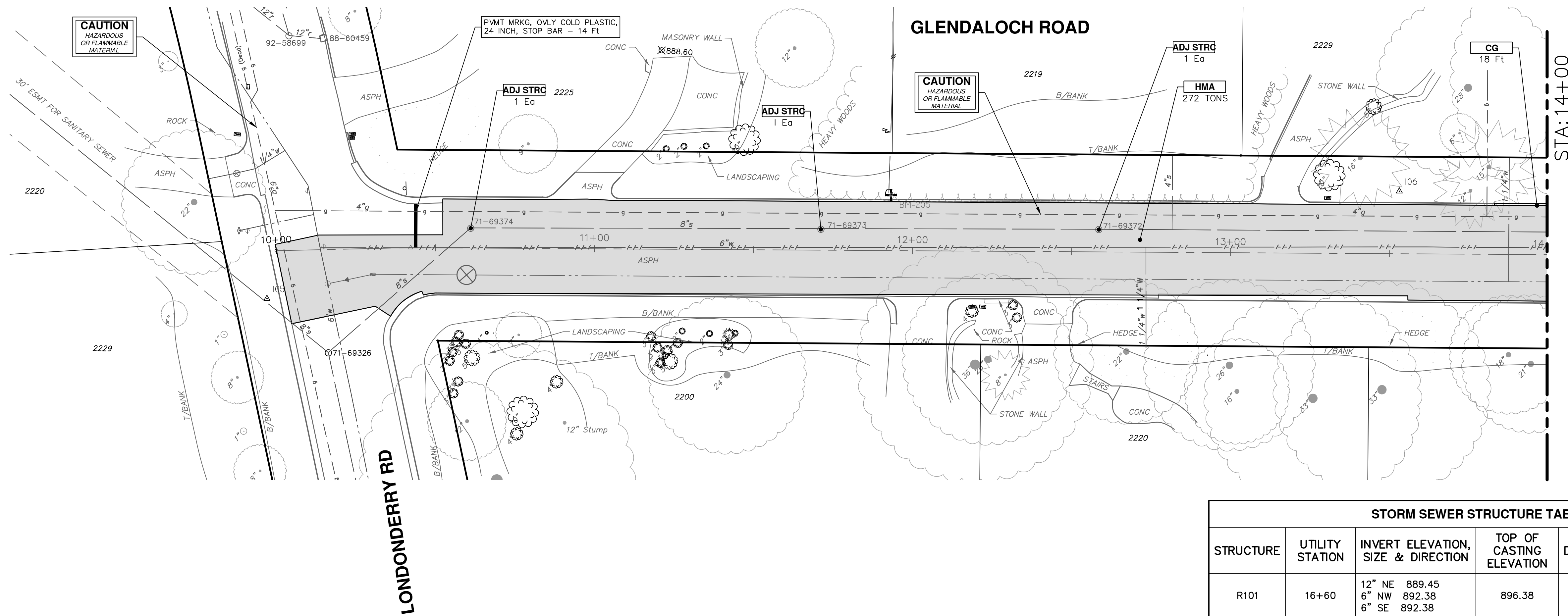
REV.	DATE	DESCRIPTION	BY	CHECKED
REV 03	2-9-2023	ADDENDUM 1		
REV 02	1-19-2023	BID SET		
REV 01	11-18-2022	PERMIT SUBMITTAL		

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
GLENDALOCH ROAD REMOVALS - STA 18+50 TO P.O.E.

SCALE PLAN: 1" = 20'
DRAWING No. 2022-28-16

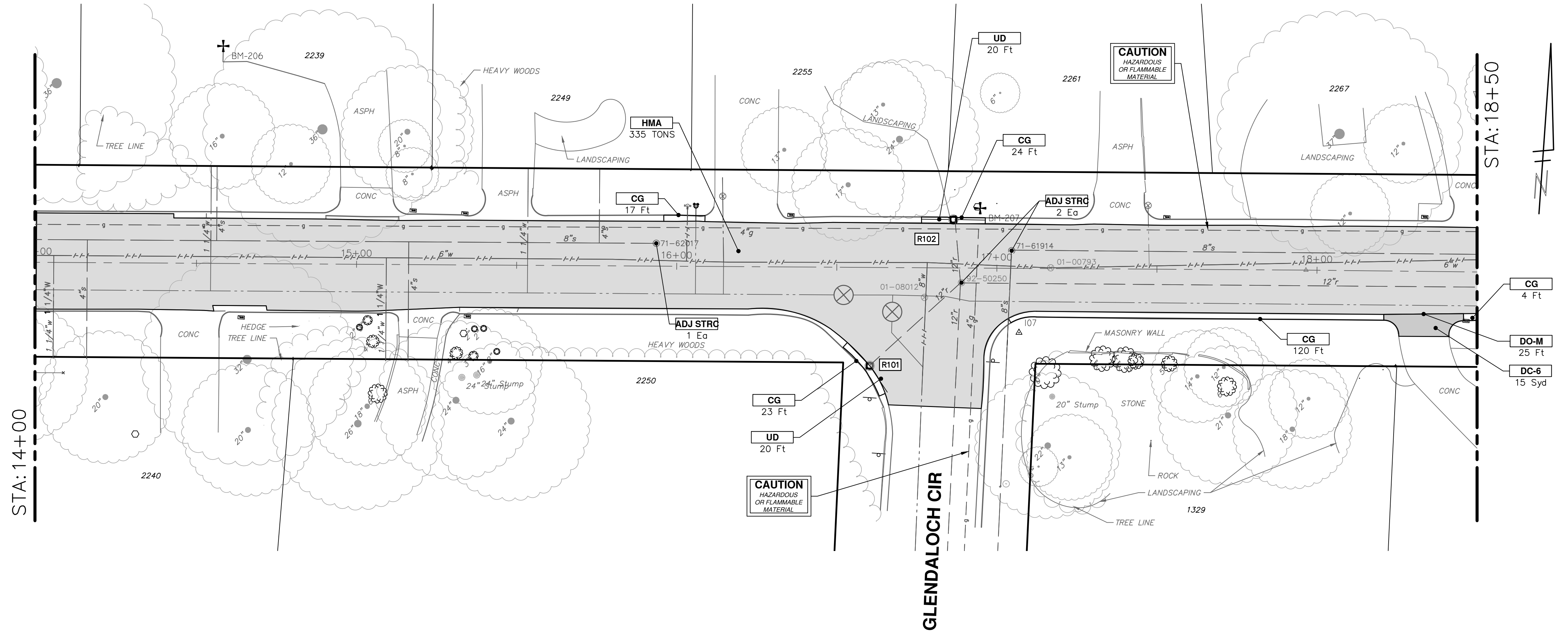
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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE/TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-8	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SWR-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DO-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET 1
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER


NOTE: CURB OVERLAY TO BE MILLED OFF, PAID AS "HMA PAVEMENT REMOVAL, ANY DEPTH"

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
R101	16+60	12" NE 889.45 6" NW 892.38 6" SE 892.38	896.38	24"	K	YES
R102	16+86	12" S 886.64 6" E 889.37 6" W 889.37	893.37	24"	K	YES



ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
2775	Syd	Machine Grading
643	Ton	HMA, SEL
65	Ft	Concrete Curb or Curb and Gutter, All Types
40	Ft	6 inch Wrapped Underdrain
14	Ft	Pavt Mrkg, Only Cold Plastic, 24 inch, Stop Bar
10	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det I
2	Ea	Single Inlet w/ 2 foot Sump
4000	Lb	Structure Covers
6	Ea	Adjust Structure Cover

WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
370	Cyd	21A Limestone, CIP
141	Ft	Concrete Curb or Curb and Gutter, All Types
15	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach
25	Ft	Concrete Type M Drive Opening



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2-9-2023
1-19-2023
11-18-2022

REV 03 ADDENDUM 1
REV 02 BID SET
REV 01 EFILE PERMIT SUBMITTAL

BY
BY
DATE

CHECKED
DRAWN
DESCRIPTION

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'

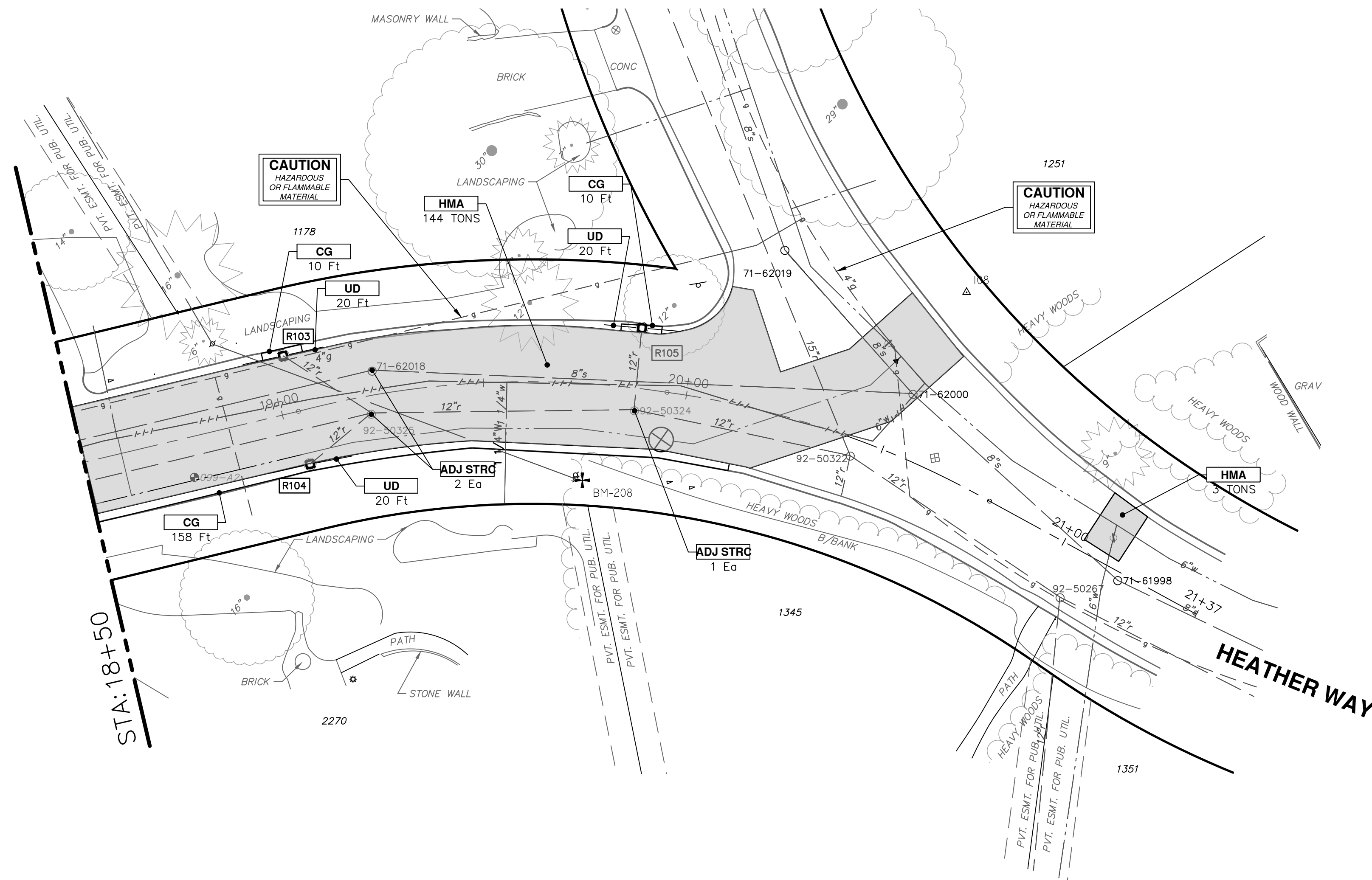
DRAWING No. 2022-28-17

SHEET No. 17 OF 44

2023 MISCELLANEOUS UTILITY PROJECTS

GLENALLOCH ROAD PROPOSED ROAD - P.O.B. TO STA 18+50

GLENDALOCH ROAD



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE/TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-8	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SWR-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DO-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET 1
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER

NOTE: CURB OVERLAY TO BE MILLED OFF, PAID AS "HMA PAVEMENT REMOVAL, ANY DEPTH"

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
R103	19+04	12" SE 868.72 6" E 869.92 6" W 869.92	873.92	24"	K	YES
R104	19+04	12" NE 868.52 6" E 869.78 6" W 869.78	873.78	24"	K	NO
R105	19+87	12" S 861.98 6" E 862.23 6" W 862.23	865.25	24"	K	YES

ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
654	Syd	Machine Grading
88	Cyd	21AA Limestone, CIP
155	Ton	HMA, SEL
20	Ft	Concrete Curb or Curb and Gutter, All Types
60	Ft	6 inch Wrapped Underdrain
20	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det 1
3	Ea	Single Inlet w/ 2 foot Sump
3000	Lb	Structure Covers
3	Ea	Adjust Structure Cover

WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
158	Ft	Concrete Curb or Curb and Gutter, All Types



REV.	DATE	BY	CHECKED	DESCRIPTION
2-9-2023				REV 03 ADDENDUM 1
1-19-2023				REV 02 BID SET
11-18-2022				REV 01 EFILE PERMIT SUBMITTAL

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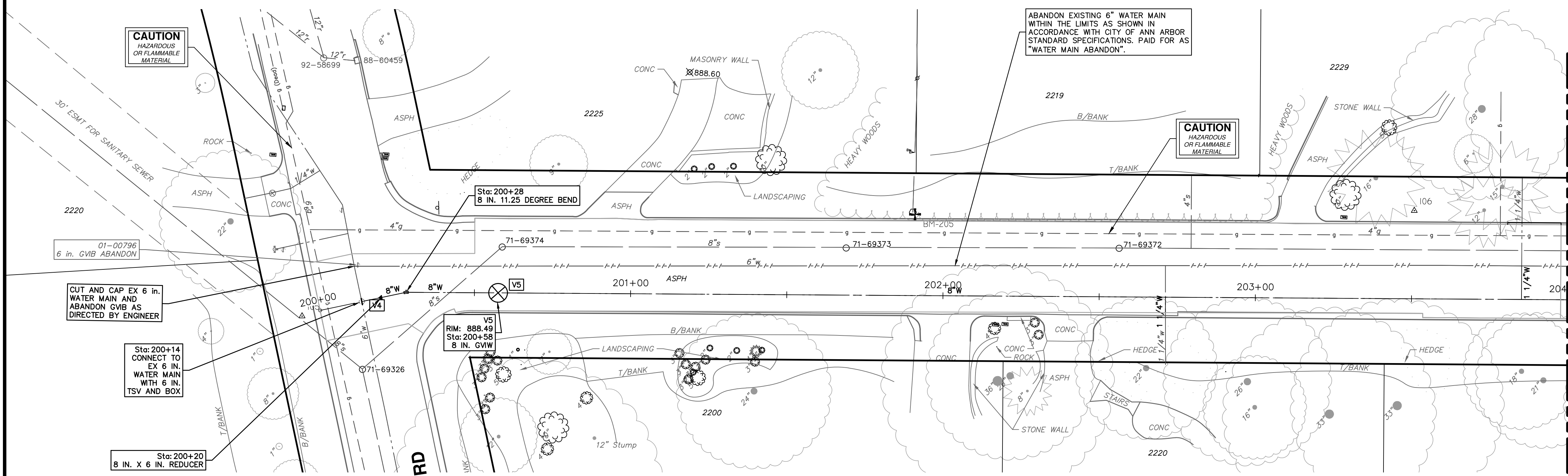
2023 MISCELLANEOUS UTILITY PROJECTS
GLENDALOCH ROAD PROPOSED ROAD - STA 18+50 TO P.O.E.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
SCALE PLAN: 1" = 20'
DRAWING No. 2022-28-18

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GLENDALOCH ROAD

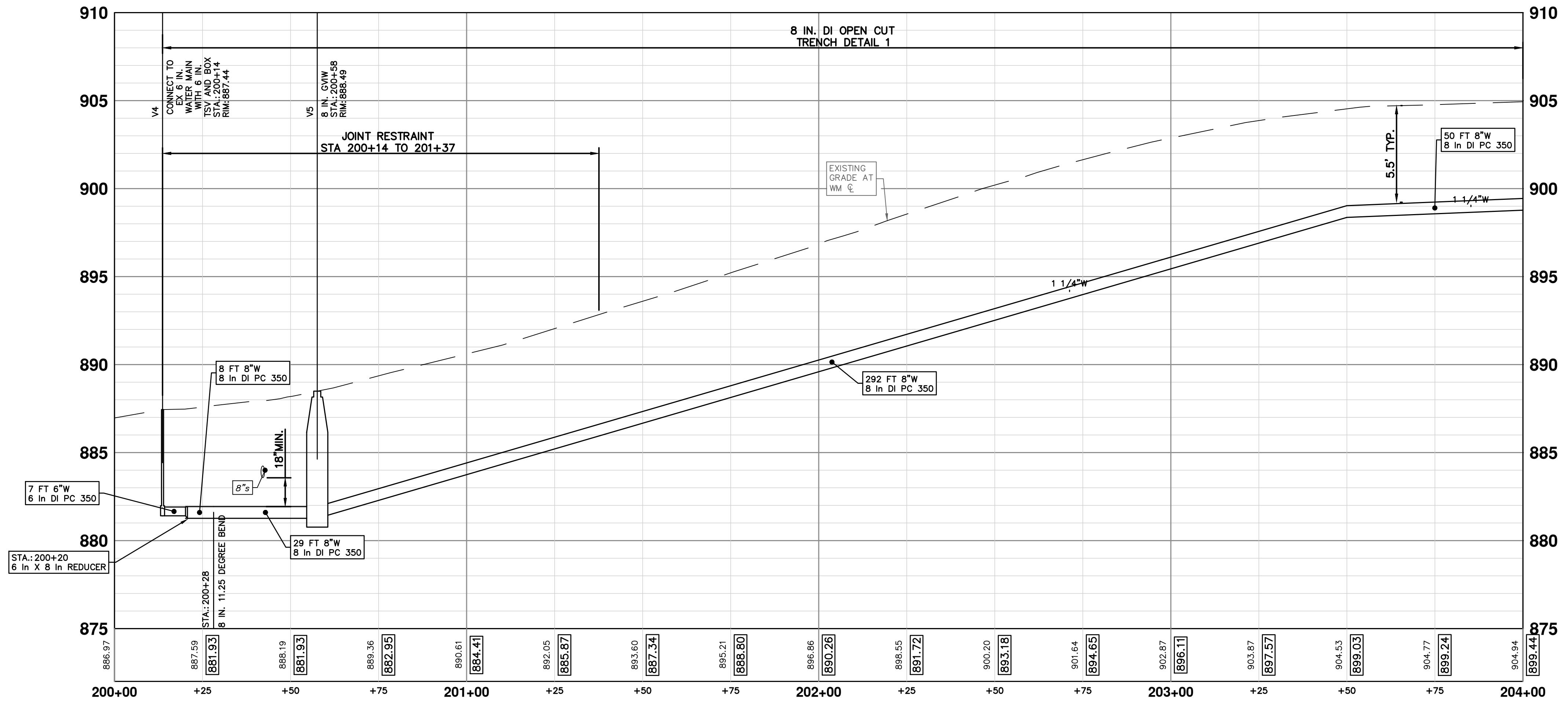



WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
1	Ea	Gate Valve-in-Box, Abandonment
5	Ft	Water Main, Remove
7	Ft	6 inch PC 350 DIP wipolywrap, Tr Det I
378	Ft	8 inch PC 350 DIP wipolywrap, Tr Det I
1	Ea	8" 11.25 deg bend
1	Ea	8"x6" reducer
1	Ea	8" Gate Valve in Well
1	Ea	6"x6" Tapping Sleeve and Valve in Box
20	Ft	Excavate and Backfill for Water Service Lead
600	Lb	Structure Covers

WATER MAIN STRUCTURE TABLE

STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
V4	CONNECT TO EX 6 in. WATER MAIN WITH 6 in. TSV AND BOX	200+14	887.44	6.04		
V5	8 in. GVIW	200+58	888.49	7.23	48"	B






Know what's below.
Call before you dig.

	DATE		BY		CHECKED
REV 03 ADDENDUM 1	2-9-2023		BY		CHECKED
REV 02 BID SET	1-19-2023		BY		CHECKED
REV 01 EFILE PERMIT SUBMITTAL	11-18-2022		BY		CHECKED
REV			BY		CHECKED

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'

PROFILE: 1" = 4'

DRAWING No.
2022-28-19

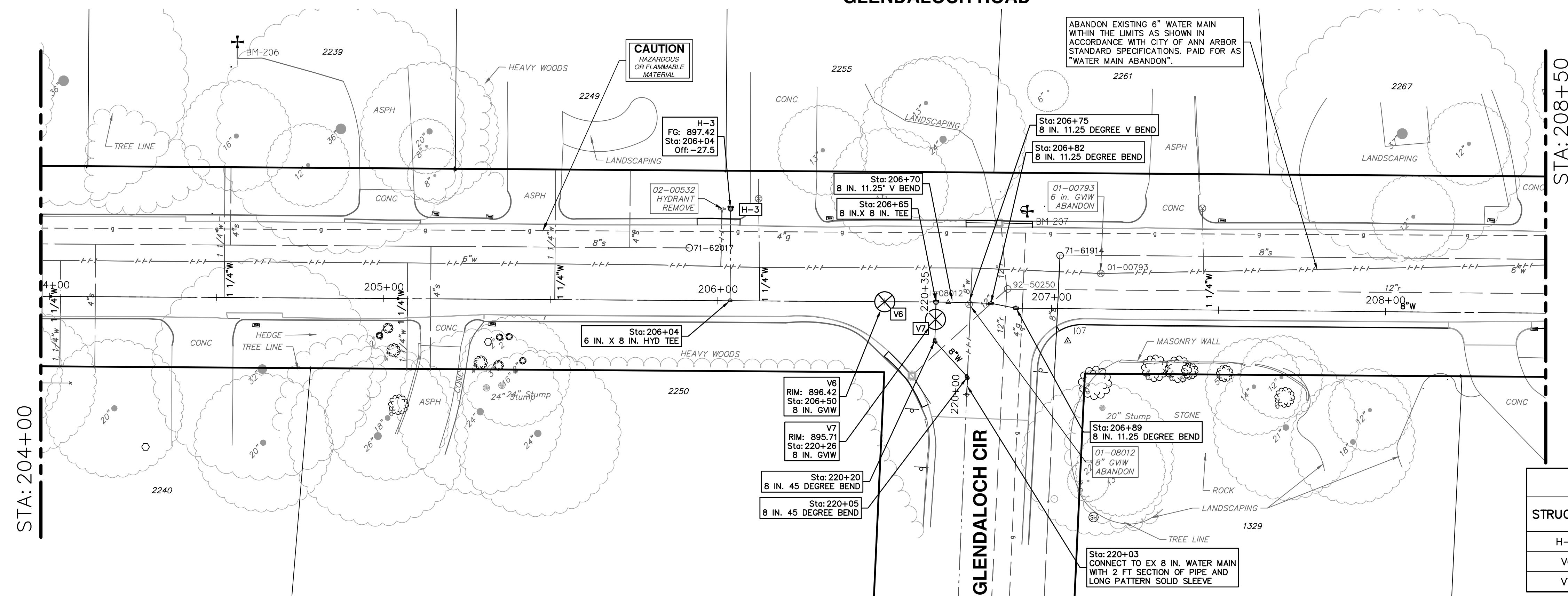
SHEET No.
19 OF 44

2023 MISCELLANEOUS UTILITY PROJECTS

GLENDALOCH ROAD WATER MAIN- P.O.B. TO STA 18+50

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GLENDALOCH ROAD

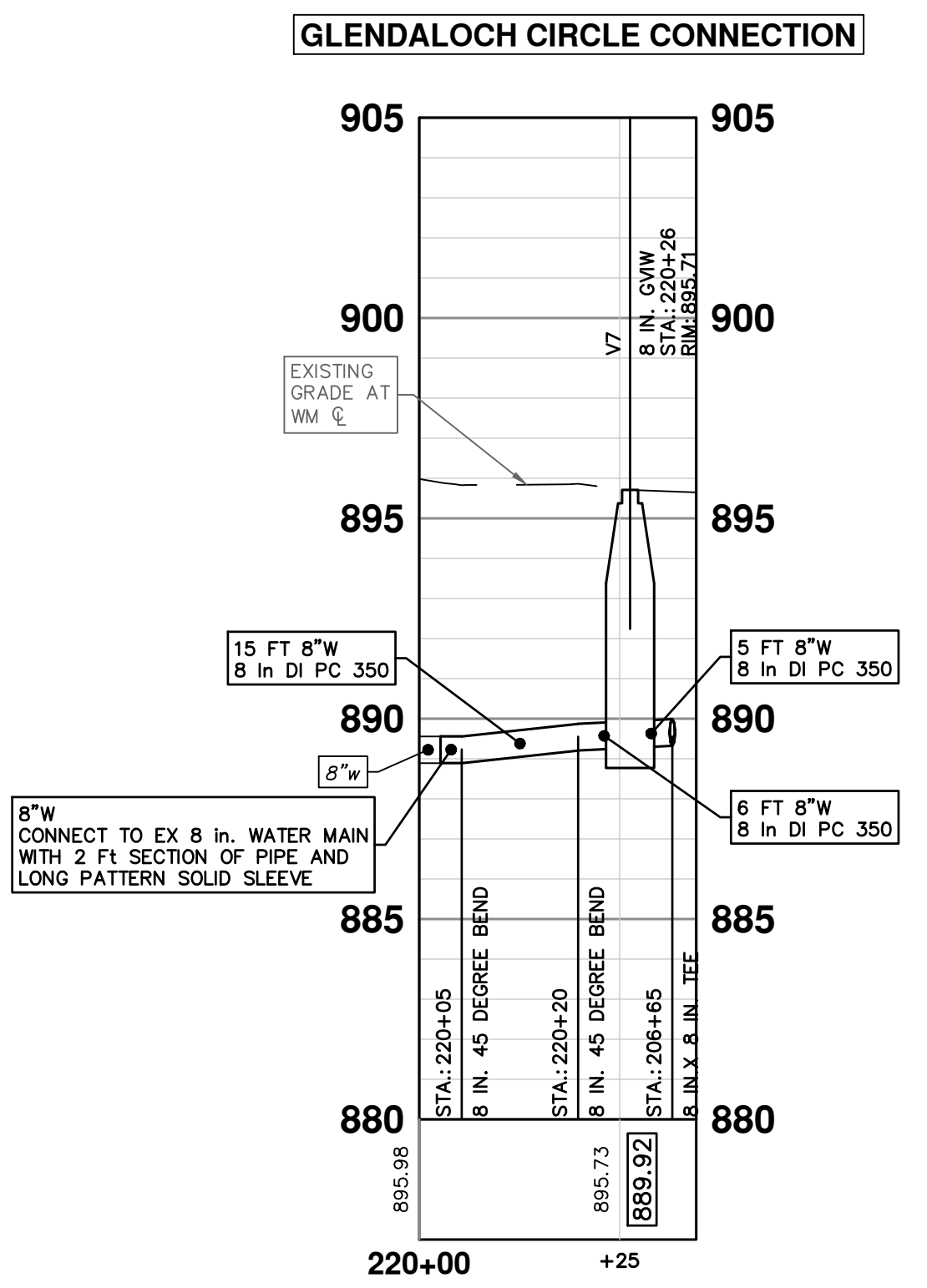
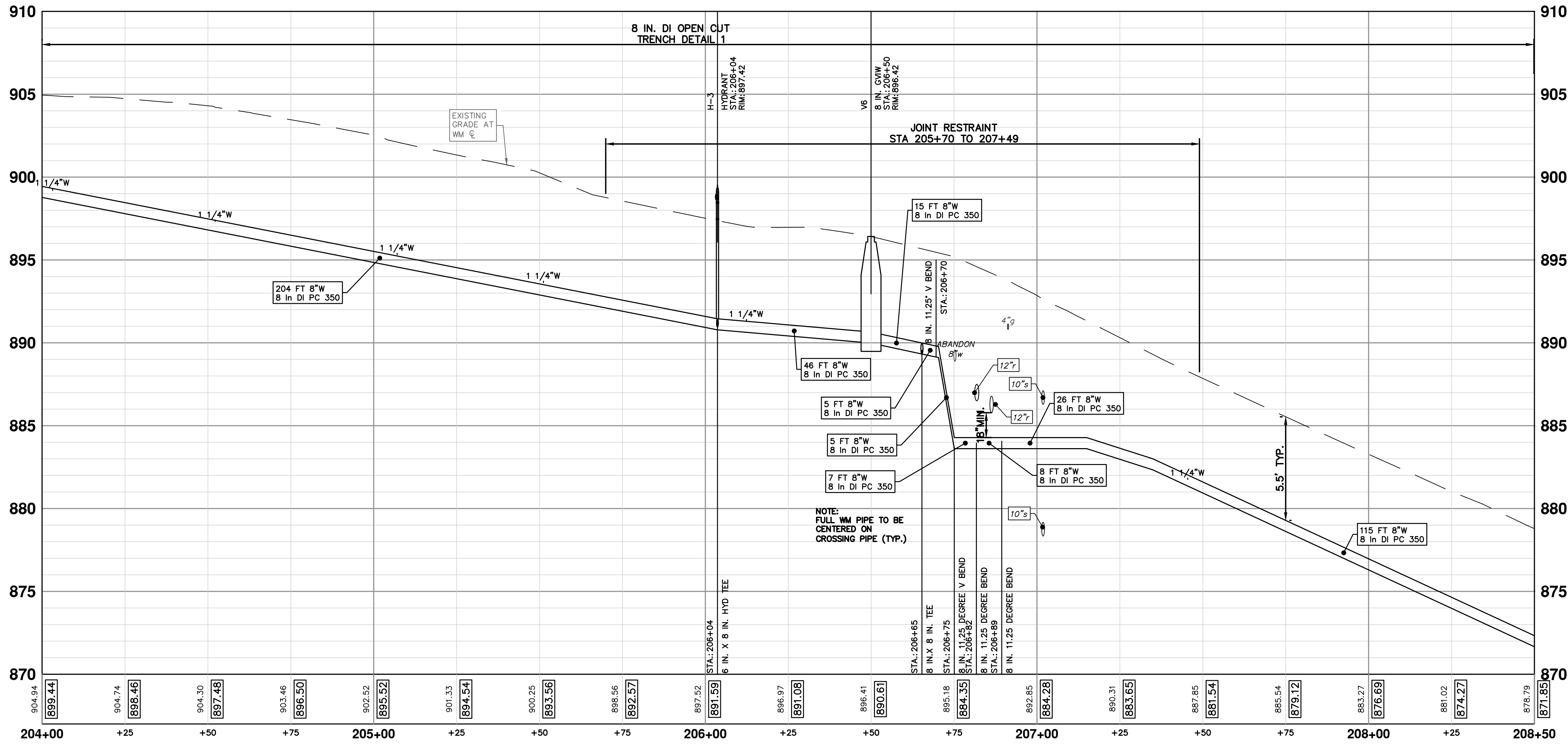


WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
2	Ea	Gate Valve-in-Well, Abandonment
10	Ft	Water Main, Remove
1	Ea	Fire Hydrant, Remove
26	Ft	6 inch PC 350 DIP w/polywrap, Tr Det I
488	Ft	8 inch PC 350 DIP w/polywrap, Tr Det I
4	Ea	8" 11.25 deg bend
2	Ea	8" 45 deg bend
1	Ea	8"x6" Tee
1	Ea	8"x8" Tee
1	Ea	Fire Hydrant Assembly
2	Ea	8" Gate Valve in Well

WATER MAIN STRUCTURE TABLE

STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
H-3	HYDRANT	206+04	897.42	6.51		
V6	8 in. GVIW	206+50	896.42	6.43	48"	B
V7	8 in. GVIW	220+26	895.71	6.44	48"	B



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

2-9-2023
1-19-2023
11-18-2022

REV. 03 ADDENDUM 1
REV. 02 BID SET
REV. 01 EGGLE PERMIT SUBMITTAL

DATE
BY
CHECKED

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'
PROFILE: 1" = 4'

2023 MISCELLANEOUS UTILITY PROJECTS

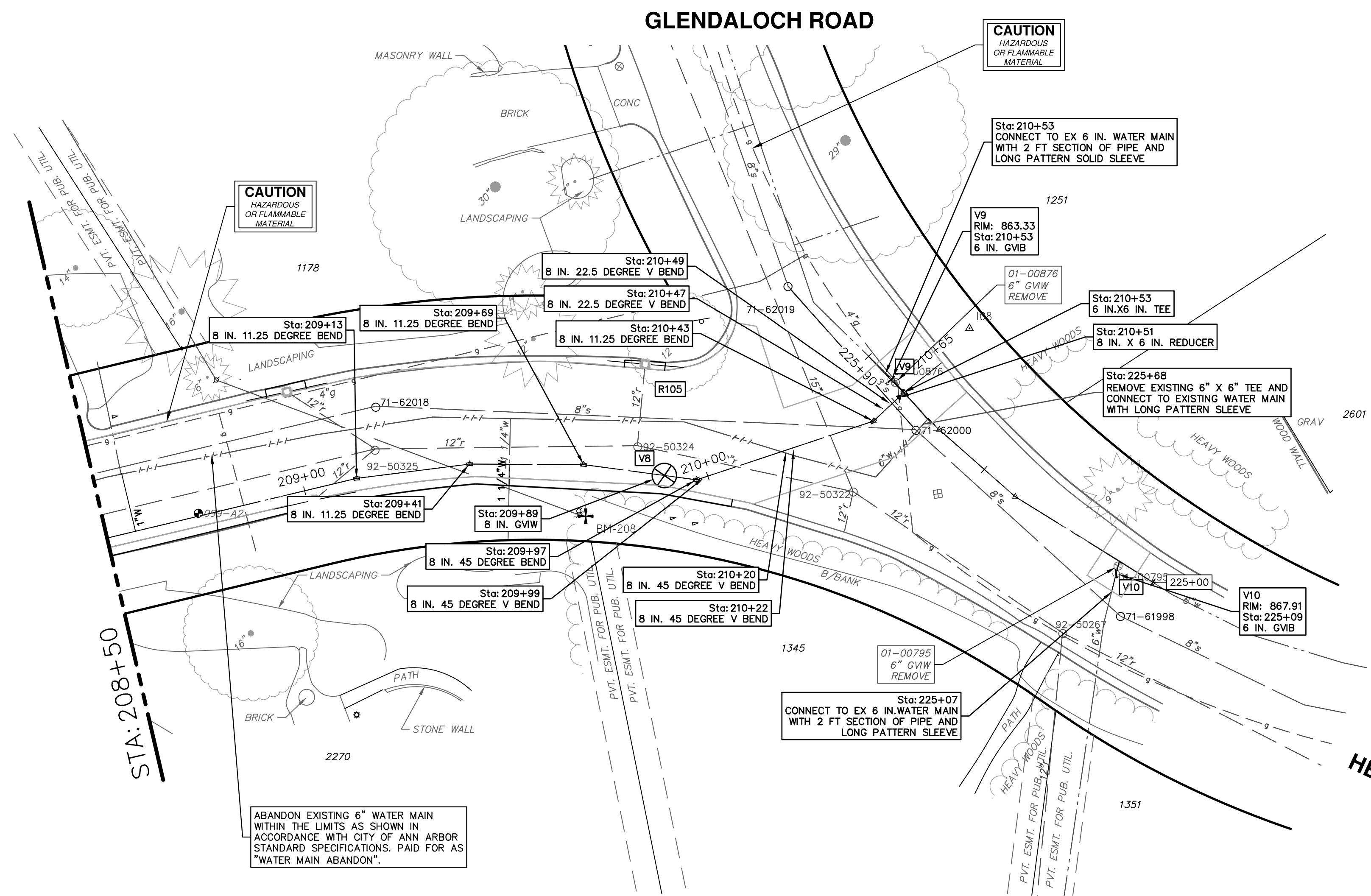
DRAWING NO. 2022-28-20

SHEET NO. 20 OF 44

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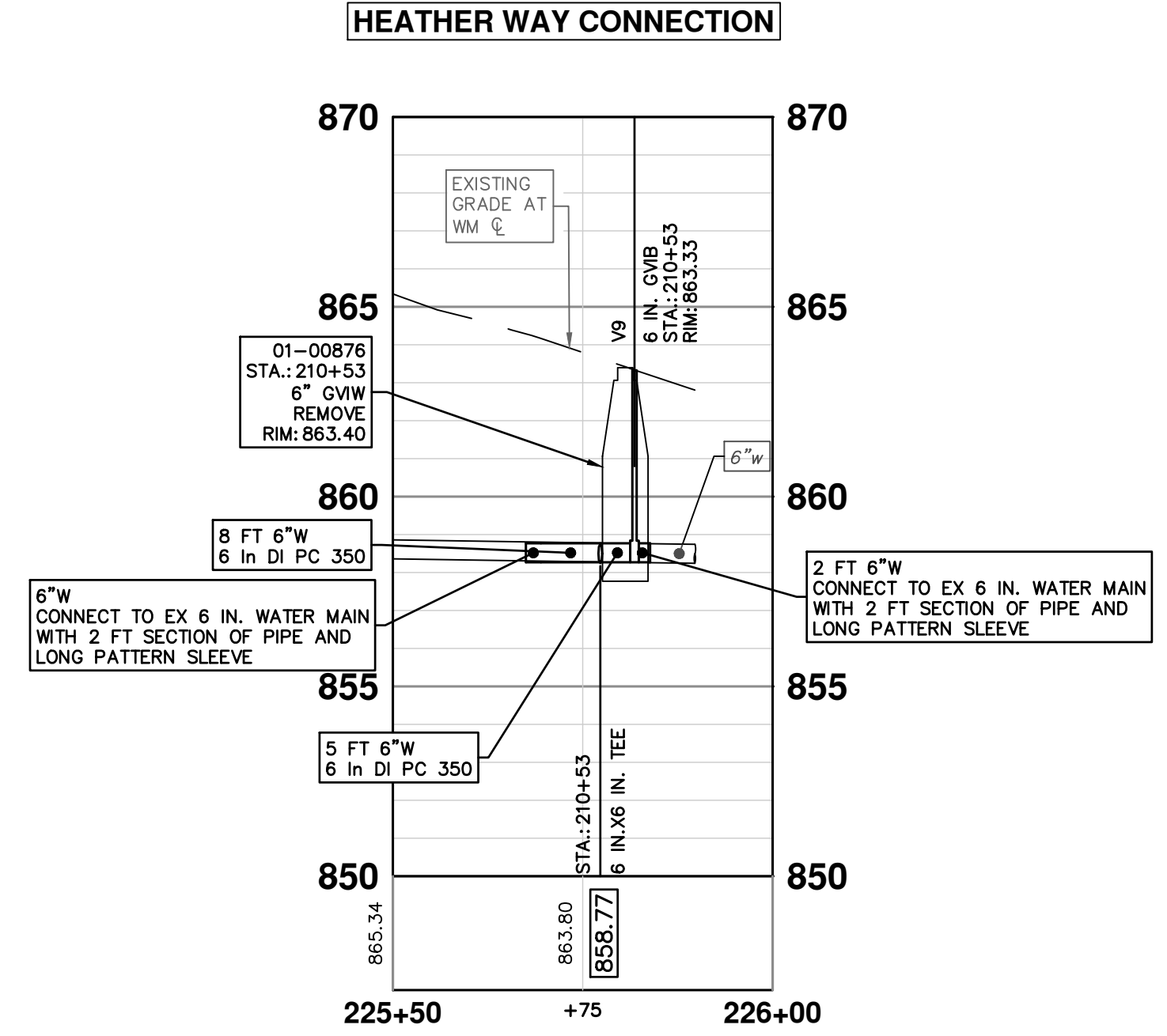
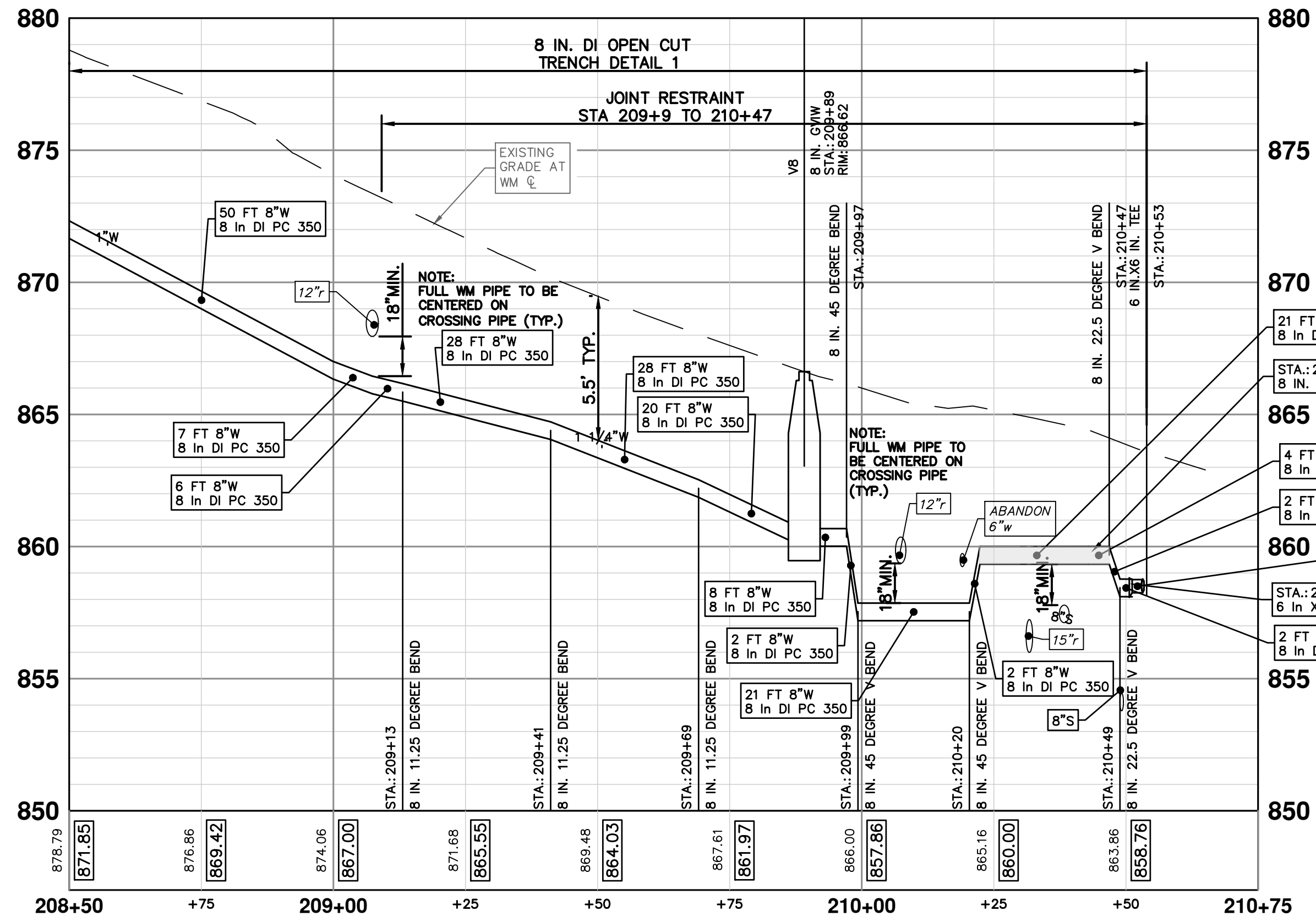
GLENDALOCH ROAD WATER MAIN - STA 204+00 TO STA 208+50

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STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
V8	8 in. GVW	209+89	866.62	6.65	48"	B
V9	6 in. GVIB	210+53	863.33	5.06		
V10	6 in. GVIB	225+09	867.91	6.18		

TOTAL	UNIT	DESCRIPTION
2	Ea	Structure, Remove
20	Ft	Water Main, Remove
20	Ft	6 inch PC 350 DIP w/polywrap, Tr Det I
203	Ft	8 inch PC 350 DIP w/polywrap, Tr Det I
4	Ea	8" 11.25 deg bend
2	Ea	8" 22.5 deg bend
4	Ea	8" 45 deg bend
1	Ea	8"x6" reducer
1	Ea	6"x6" Tee
2	Ea	6" Gate Valve in Box
1	Ea	8" Gate Valve in Well
45	Ft	Excavate and Backfill for Water Service Lead
800	Lb	Structure Covers



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

GLENDALOCH ROAD WATER MAIN - STA 18+50 TO P.O.E.

SHEET No. 21 OF 44

SCALE PLAN: 1" = 20'

PROFILE: 1" = 4'

DRAWING No. 2022-28-21

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

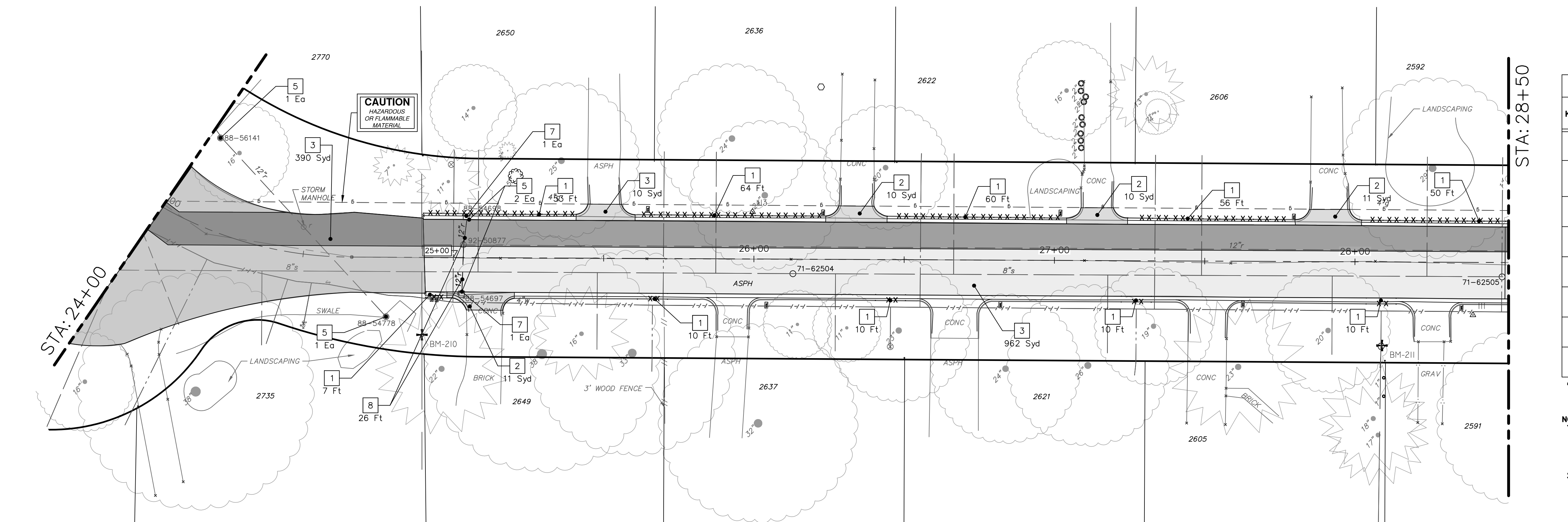
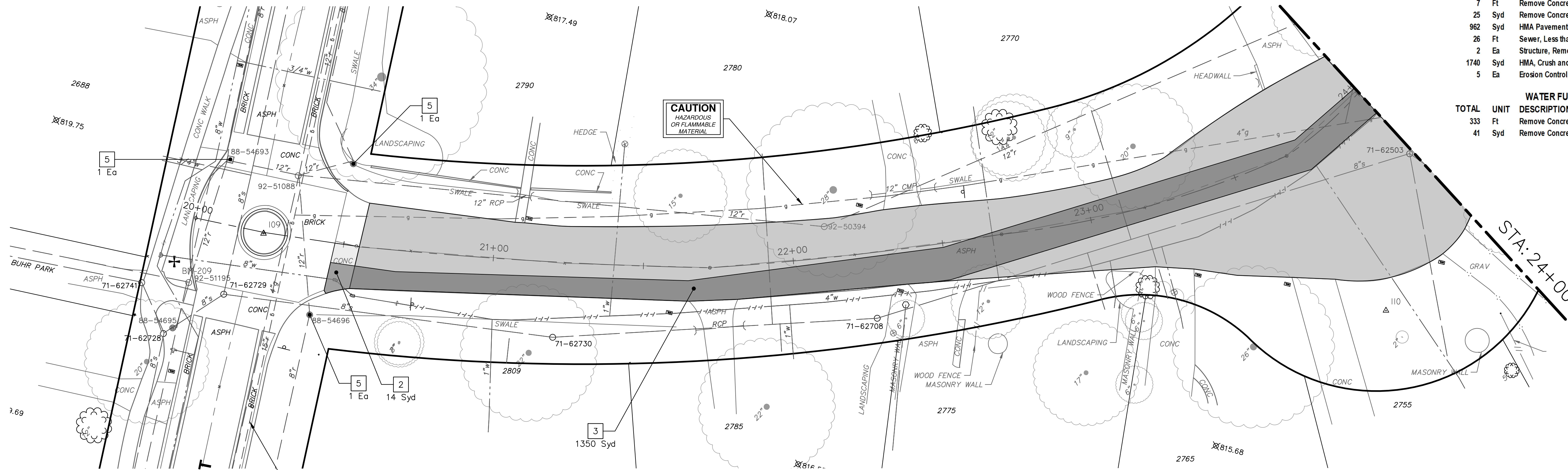
REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	DRAWN
REV 01	EGLE PERMIT SUBMITTAL	11-18-2022	DATE	

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CARMEL STREET

CARMEL STREET



ROAD FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
7	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
25	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness
962	Syd	HMA Pavement Removal, Any Depth
26	Ft	Sewer, Less than 24 inch, Remove
2	Ea	Structure, Remove
1740	Syd	HMA, Crush and Shape
5	Ea	Erosion Control, Inlet Filter

WATER FUND QUANTITIES THIS SHEET

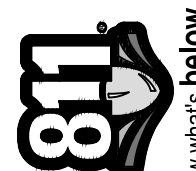
TOTAL	UNIT	DESCRIPTION
333	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
41	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness

REMOVAL KEY

KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE


* SAWCUT FULL DEPTH AT REMOVAL LIMITS

NOTES:
 1. PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 2. WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).



Know what's below. Call before you dig.

REV 03 ADDENDUM 1	2-9-2023	BY	CHECKED	
REV 02 BID SET	1-19-2023	BY	DRAWN	
REV 01 ELEC PERMIT SUBMITTAL	11-18-2022	DATE		
DESCRIPTION				



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

CARMEL STREET PROPOSED ROAD - P.O.B. TO STA 28+50

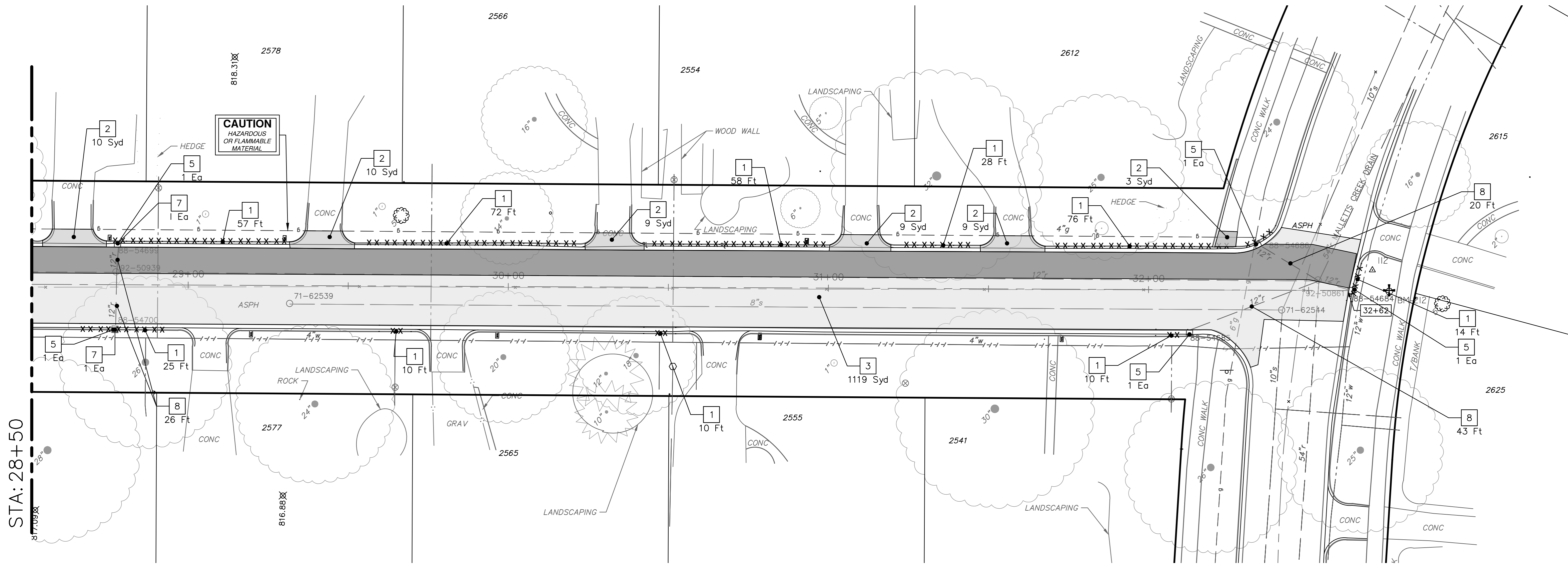
SCALE PLAN: 1" = 20'

DRAWING NO. 2022-28-22

SHEET No. 22 OF 44

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CARMEL STREET



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE

- * SAWCUT FULL DEPTH AT REMOVAL LIMITS
- NOTES:
 1. PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 2. WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).

ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
15	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
1119	Syd	HMA Pavement Removal, Any Depth
89	Ft	Sewer, Less than 24 inch, Remove
2	EA	Structure, Remove
3	EA	Erosion Control, Inlet Filter

WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
345	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
50	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness

STA: 28+50

TOWNER BLVD

811
Know what's below. Call Before you dig.

REV	DESCRIPTION	DATE	DRAWN	CHECKED
REV 01	EFILE PERMIT SUBMITTAL	11-18-2022	BY	
REV 02	BID SET	1-19-2023	BY	
REV 03	ADDENDUM 1	2-9-2023	BY	

CITY OF ANN ARBOR
 PUBLIC SERVICES
 301 EAST HURON STREET
 ANN ARBOR, MI 48106-6647
 ANN ARBOR 734.794.4410
 www.a2gov.org

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS
 CARMEL STREET PROPOSED ROAD- STA 28+50 TO P.O.E.

SCALE PLAN: 1" = 20'

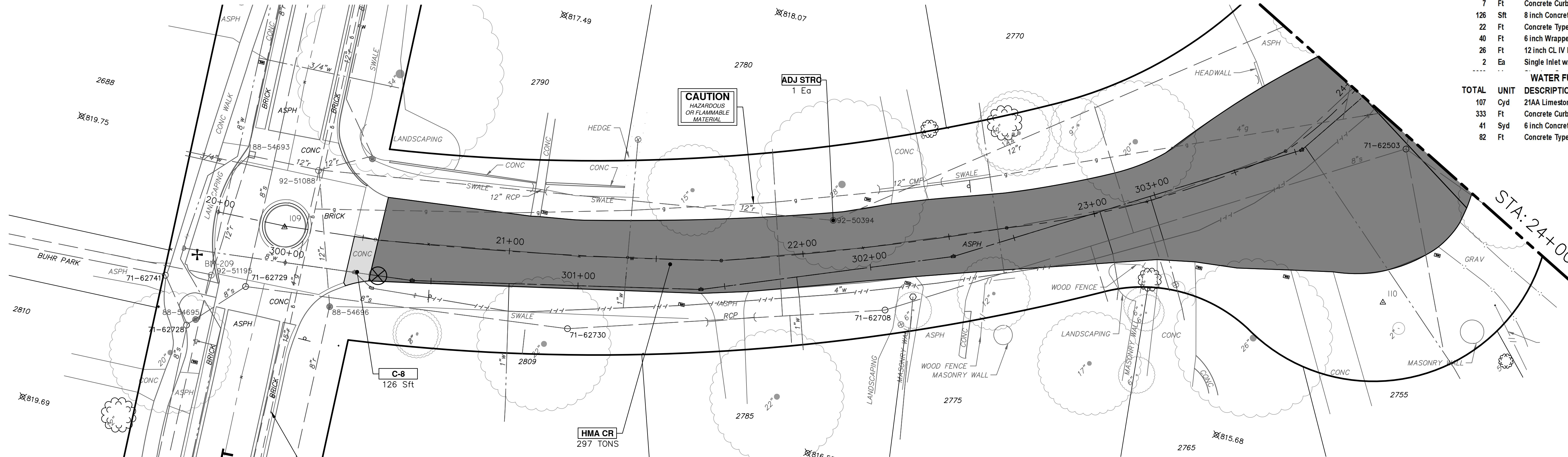
DRAWING No. 2022-28-23

SHEET No.

23 OF 44

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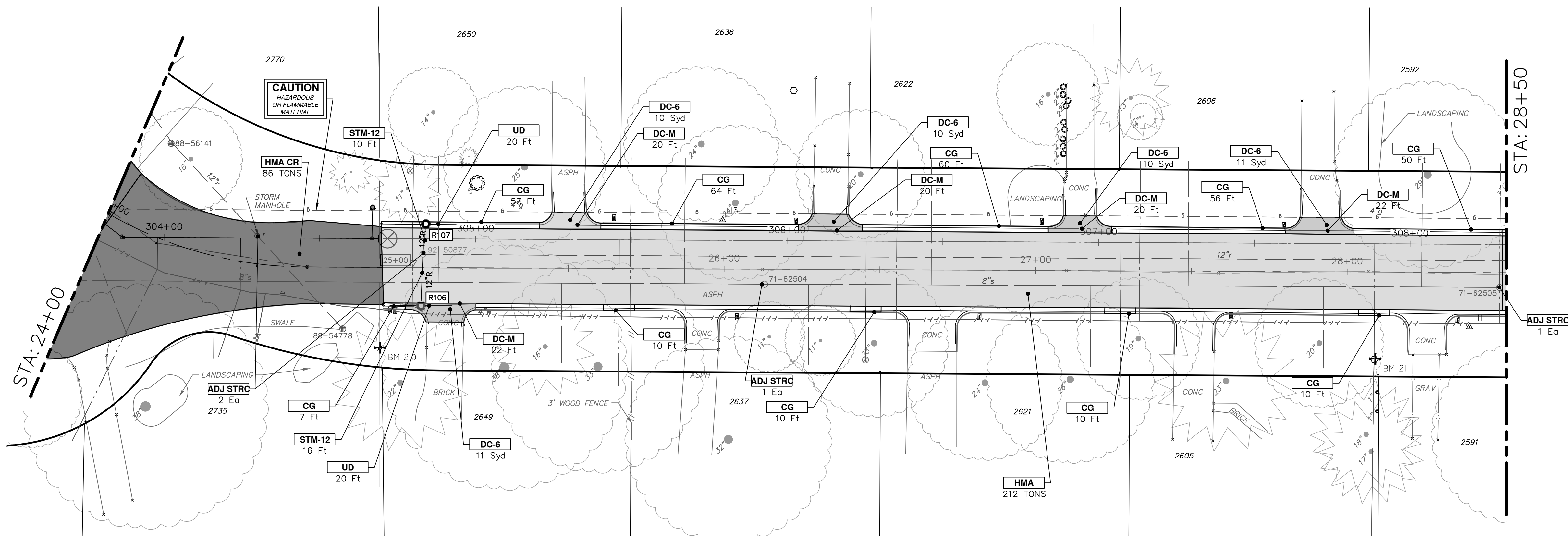
CARMEL STREET



ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
2702	Syd	Machine Grading
625	Ton	HMA, 5EL
7	Ft	Concrete Curb or Curb and Gutter, All Types
126	Sft	8 inch Concrete Pavement
22	Ft	Concrete Type M Drive Opening
40	Ft	6 inch Wrapped Underdrain
26	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det 1
2	Ea	Single Inlet w/ 2 foot Sump
.....
WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
107	Cyd	21AA Limestone, CIP
333	Ft	Concrete Curb or Curb and Gutter, All Types
41	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach
82	Ft	Concrete Type M Drive Opening

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
R106	25+03	12" W 809.51 6" N 810.02 6" S 810.02	813.77	24"	K	YES
R107	25+04	12" E 809.26 6" N 809.87 6" S 809.87	813.62	24"	K	YES

CARMEL STREET



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE, TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-8	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SWR-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DO-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET 1
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER

Know what's below. Call before you dig.

REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	CHECKED
REV 01	EGL PERMIT SUBMITTAL	11-18-2022	BY	CHECKED
REV.	DESCRIPTION	DATE	BY	DRAWN

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SCALE PLAN: 1" = 20'

DRAWING NO.
2022-28-24

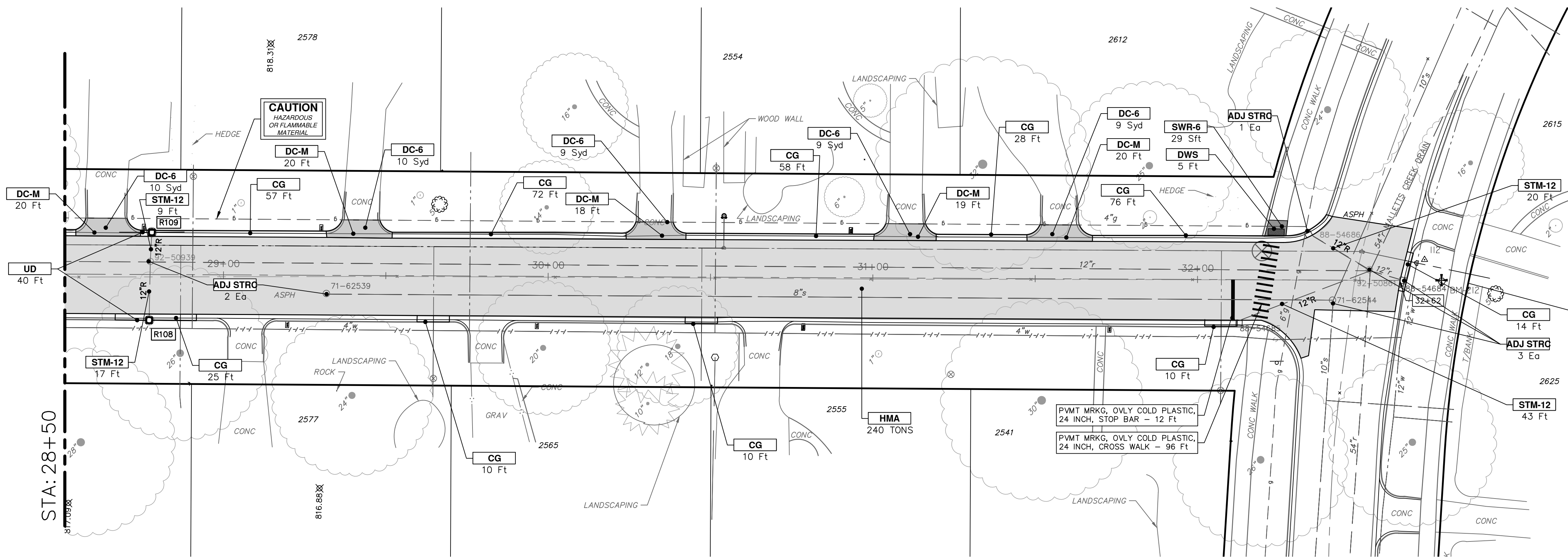
SHEET No.
24 OF 44

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

CARMEL STREET PROPOSED ROAD - P.O.B. TO STA 28+50

CARMEL STREET



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE/TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-6	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SWR-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DO-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET 1
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER


TOWNER BLVD

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
92-50861	32+53	12" SW 808.49 54" NW 805.66 12" SE 808.44 12" N 809.42 54" E 805.44 12" S 806.11	813.57	24"	K	YES
R108	28+77	12" W 809.81 V.I.F. 6" N 811.01 6" S 811.01	815.01	24"	K	YES
R109	28+78	12" E 810.07 6" N 811.81 6" S 811.81	814.44	24"	K	YES

ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
1101	Syd	Machine Grading
256	Ton	HMA, SEL
15	Ft	Concrete Curb or Curb and Gutter, All Types
4	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach
5	Ft	Detectable Warning Surface
40	Ft	6 inch Wrapped Underdrain
96	Ft	Pavt Mrkg, Ovlv Cold Plastic, 12 inch, Crosswalk
89	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det 1
2	Ea	Single Inlet w/ 2 foot Sump
3000	Lb	Structure Covers
5	Ea	Adjust Structure Cover


WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
124	Cyd	21AA Limestone, CIP
345	Ft	Concrete Curb or Curb and Gutter, All Types
51	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach
97	Ft	Concrete Type M Drive Opening

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Know what's below.
Call Before you dig.

REV 03 ADDENDUM 1	2-9-2023	BY	CHECKED	
REV 02 BID SET	1-19-2023	BY	DRAWN	
REV 01 EFILE PERMIT SUBMITTAL	11-18-2022	DATE		



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2023 MISCELLANEOUS UTILITY PROJECTS

CARMEL STREET PROPOSED ROAD- STA 28+50 TO P.O.E.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

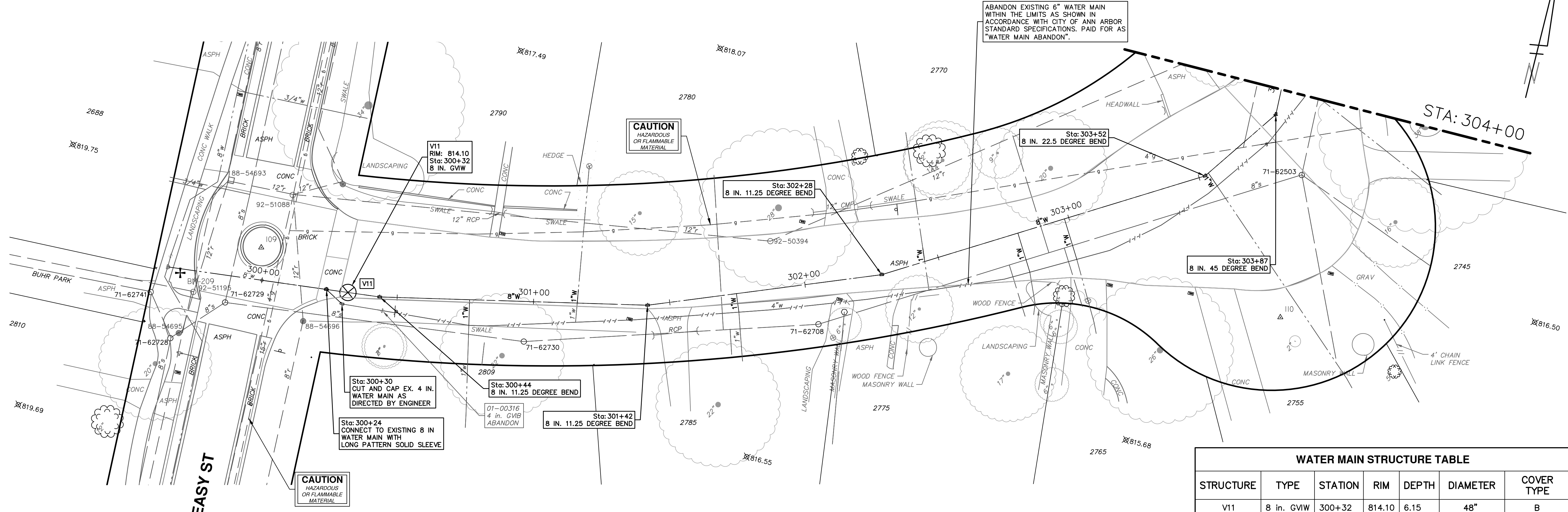
SCALE PLAN: 1" = 20'

DRAWING No. 2022-28-25

SHEET No. 25 OF 44

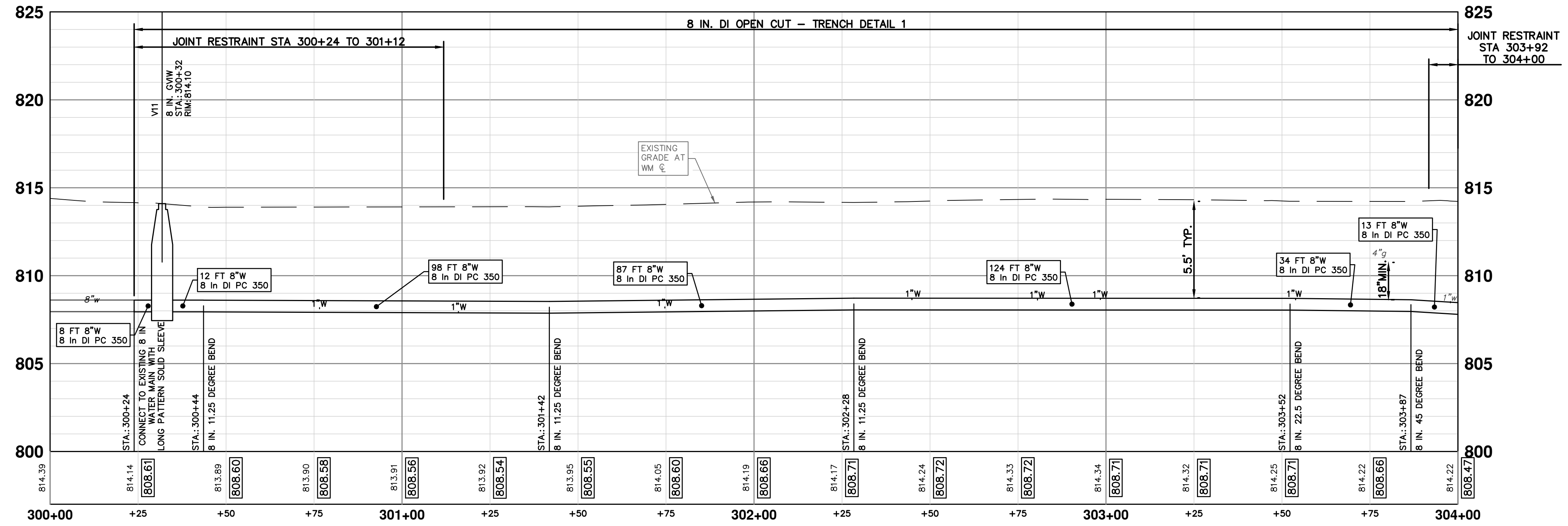
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CARMEL STREET



STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
V11	8 in. G.V.W.	300+32	814.10	6.15	48"	B

TOTAL	UNIT	DESCRIPTION
1	Ea	Gate Valve-in-Box, Abandonment
376	Ft	8 inch PC 350 DIP w/polywrap, Tr Det1
3	Ea	8" 11.25 deg bend
1	Ea	8" 22.5 deg bend
1	Ea	8" 45 deg bend
1	Ea	8" Gate Valve in Well
69	Ft	Excavate and Backfill for Water Service Lead
400	Lb	Structure Covers



Know what's below. Call before you dig.

REV	DATE	BY	CHECKED
REV 01	11-18-2022	BY	CHECKED
REV 02	1-19-2023	BY	DRAWN
REV 03	2-9-2023	BY	DRAWN

DESCRIPTION: REV 01: EGGLE PERMIT SUBMITTAL; REV 02: BID SET; REV 03: ADDENDUM 1

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

CARMEL STREET WATER MAIN- P.O.B. TO STA 304+00

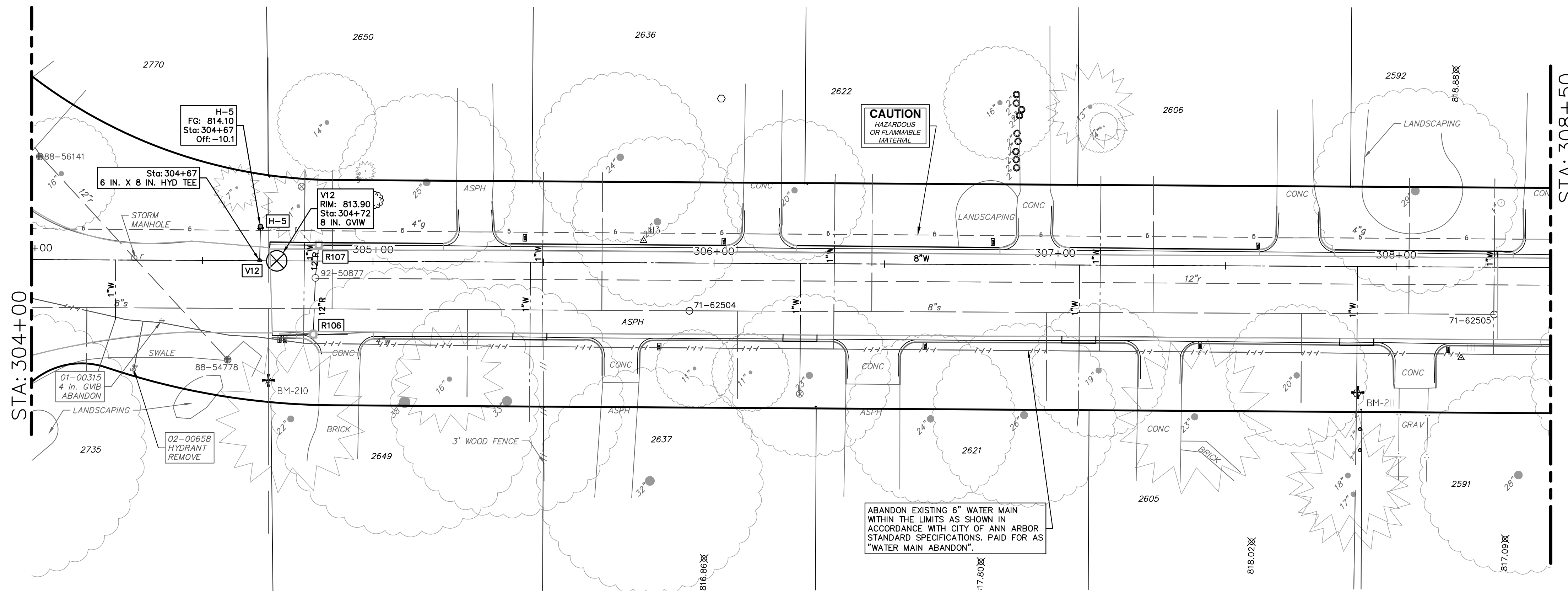
SCALE PLAN: 1" = 20'
PROFILE: 1" = 4'

DRAWING No. 2022-28-26

SHEET No. 26 OF 44

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CARMEL STREET



WATER FUND QUANTITIES THIS SHEET

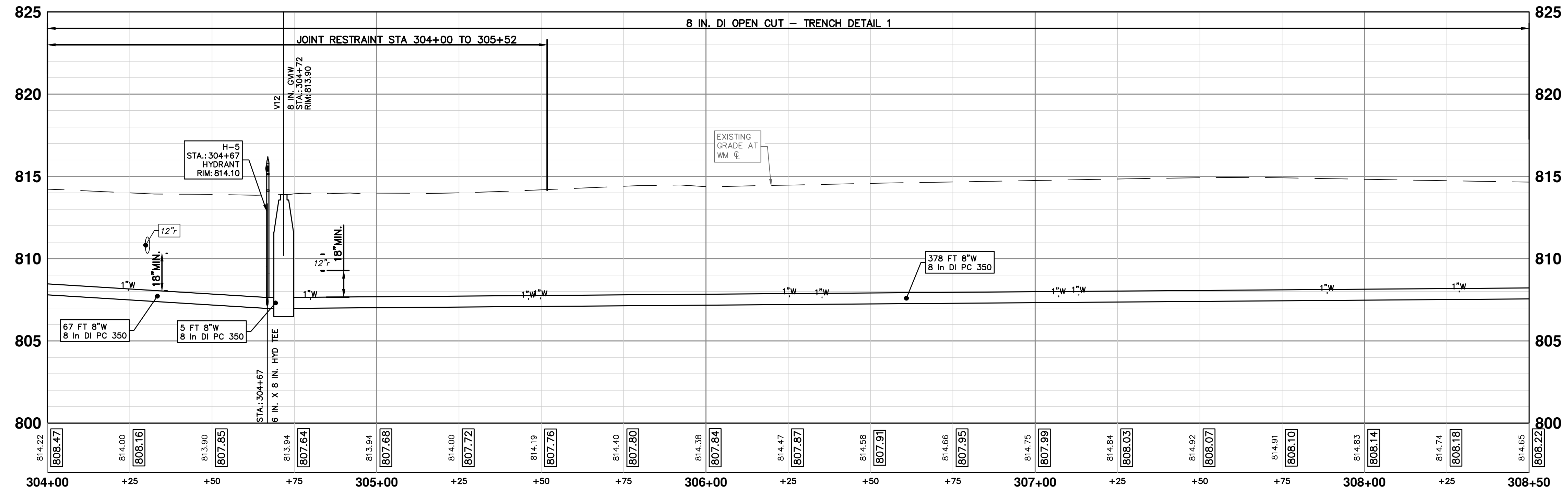
TOTAL	UNIT	DESCRIPTION
1	Ea	Gate Valve-in-Box, Abandonment
1	Ea	Fire Hydrant, Remove
10	Ft	6 inch PC 350 DIP w/polywrap, Tr Det I
450	Ft	8 inch PC 350 DIP w/polywrap, Tr Det I
1	Ea	8"x6" Tee
1	Ea	Fire Hydrant Assembly
1	Ea	8" Gate Valve in Well
142	Ft	Excavate and Backfill for Water Service Lead
400	Lb	Structure Covers

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

ABANDON EXISTING 6" WATER MAIN
WITHIN THE LIMITS AS SHOWN IN
ACCORDANCE WITH CITY OF ANN ARBOR
STANDARD SPECIFICATIONS. PAID FOR AS
"WATER MAIN ABANDON".

WATER MAIN STRUCTURE TABLE

STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
H-5	HYDRANT	304+67	814.10	27.75		
V12	8 in. G.W.	304+72	813.90	6.92	48"	B



811
Know what's below.
Call Before you dig.

2-9-2023
1-19-2023
11-18-2022

REV 03 ADDENDUM 1
REV 02 BID SET
REV 01 EGGLE PERMIT SUBMITTAL

DATE
BY
CHECKED

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'
PROFILE: 1" = 4'

2023 MISCELLANEOUS UTILITY PROJECTS

CARMEL STREET WATER MAIN - STA 304+00 TO STA 308+50

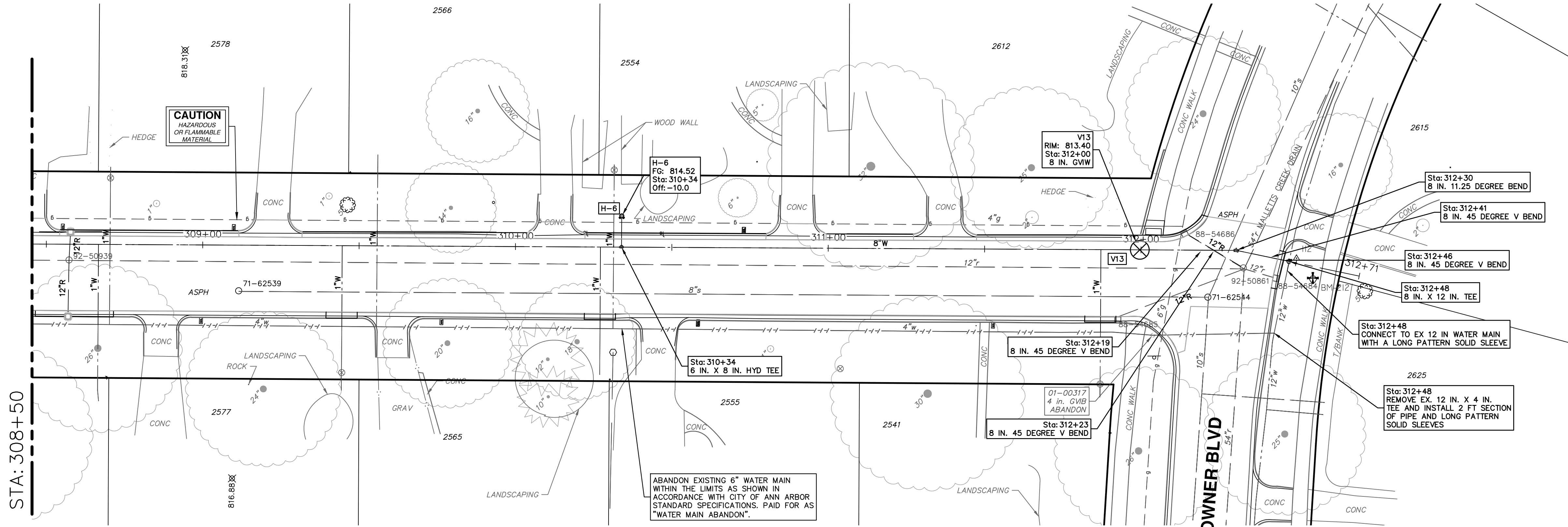
DRAWING No. 2022-28-27

SHEET No. 27 OF 44

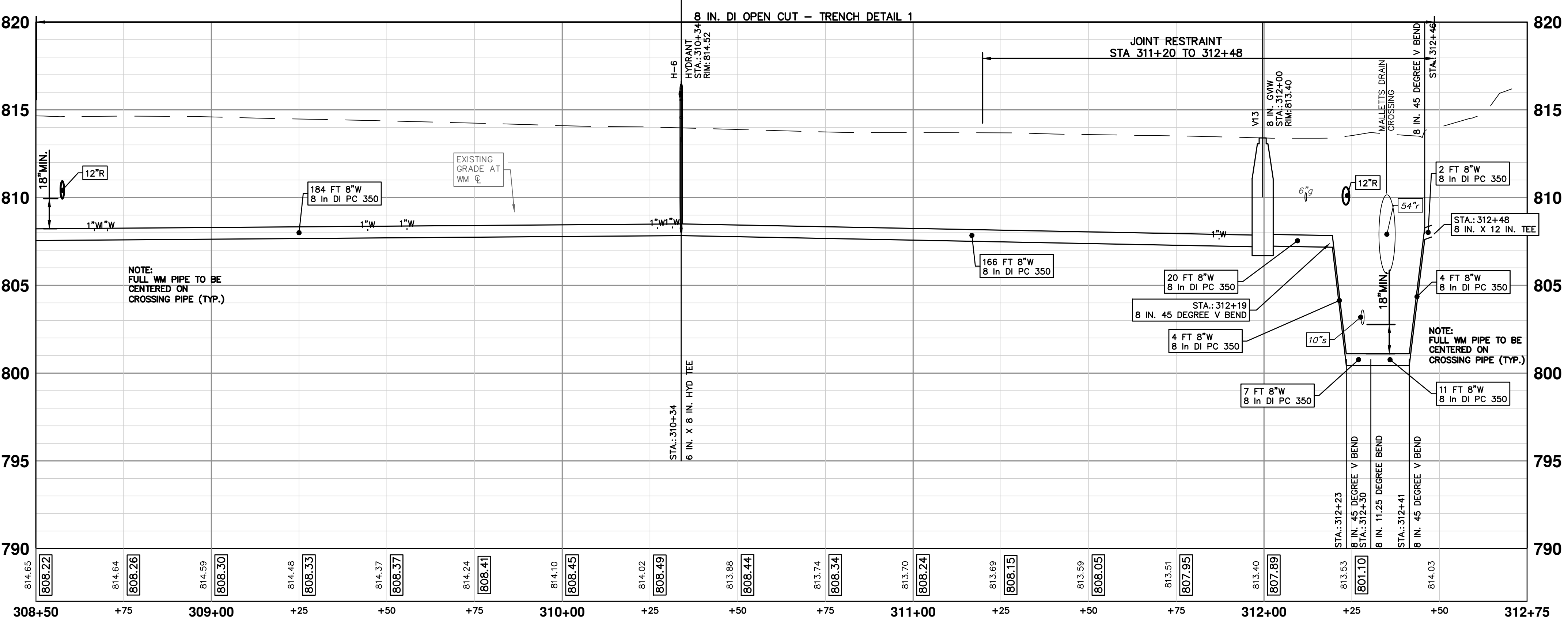
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CARMEL STREET




STA: 308+50



STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
H-6	HYDRANT	310+34	814.52	38.75		
V13	8 in. GVW	312+00	813.40	6.21	48"	B


TOTAL	UNIT	DESCRIPTION
1	Ea	Gate Valve-in-Box, Abandonment
10	Ft	6 inch PC 350 DIP w/polywrap, Tr Det I
398	Ft	8 inch PC 350 DIP w/polywrap, Tr Det I
5	Ft	12 inch PC 350 DIP w/polywrap, Tr Det I
1	Ea	8" 11.25 deg bend
4	Ea	8" 45 deg bend
1	Ea	8"x8" Tee
1	Ea	12"x8" Tee
1	Ea	Fire Hydrant Assembly
1	Ea	8" Gate Valve in Well
125	Ft	Excavate and Backfill for Water Service Lead
400	Lb	Structure Covers

NOTE:
 1. CONTRACTOR TO FULLY SUPPORT MALLETTS CREEK DRAIN WHILE EXCAVATION FOR WATER MAIN. CONTRACTOR TO PROVIDE SUPPORT PLANS WCWRC AT PRECONSTRUCTION MEETING FOR APPROVAL.
 2. CONTACT THE WASHTENAW COUNTY WATER RESOURCES COMMISSIONER'S OFFICE AT LEAST ONE WEEK PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION OF DRAIN CROSSING WORK.



Know what's below.
Call before you dig.

REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	DRAWN
REV 01	EGLE PERMIT SUBMITTAL	11-18-2022	DATE	
REV.	DESCRIPTION			



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2023 MISCELLANEOUS UTILITY PROJECTS

CARMEL STREET WATER MAIN- STA 308+50 TO P.O.E.

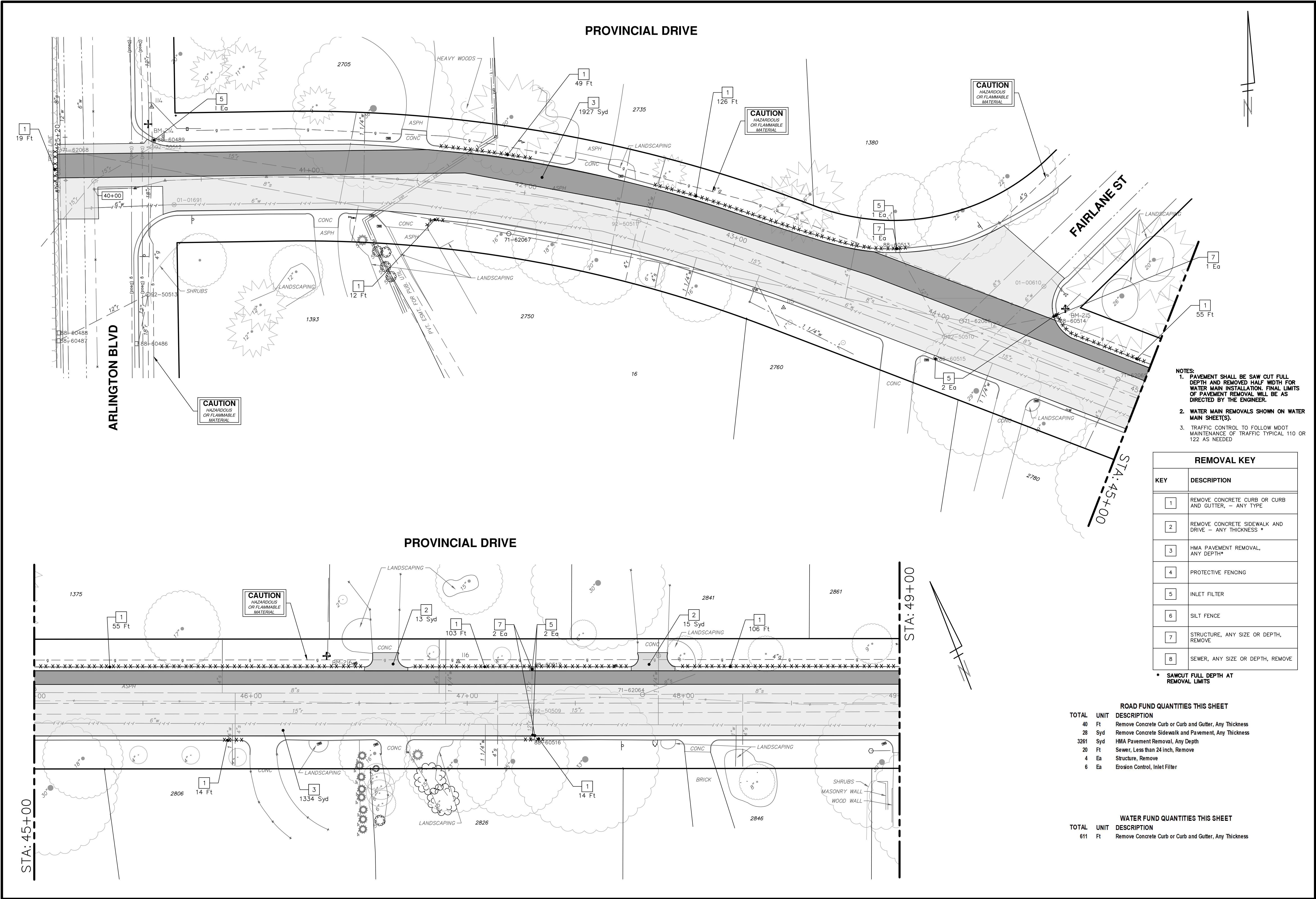
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'
 PROFILE: 1" = 4'

DRAWING NO. 2022-28-28

SHEET No. 28 OF 44

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- NOTES:**
- PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 - WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).
 - TRAFFIC CONTROL TO FOLLOW MDOT MAINTENANCE OF TRAFFIC TYPICAL 110 OR 122 AS NEEDED.

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE

* SAWCUT FULL DEPTH AT REMOVAL LIMITS

ROAD FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
40	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
28	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness
3261	Syd	HMA Pavement Removal, Any Depth
20	Ft	Sewer, Less than 24 inch, Remove
4	Ea	Structure, Remove
6	Ea	Erosion Control, Inlet Filter

WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
611	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness



REV.	DATE	BY	CHECKED
2-9-2023			
1-19-2023			
11-18-2022			

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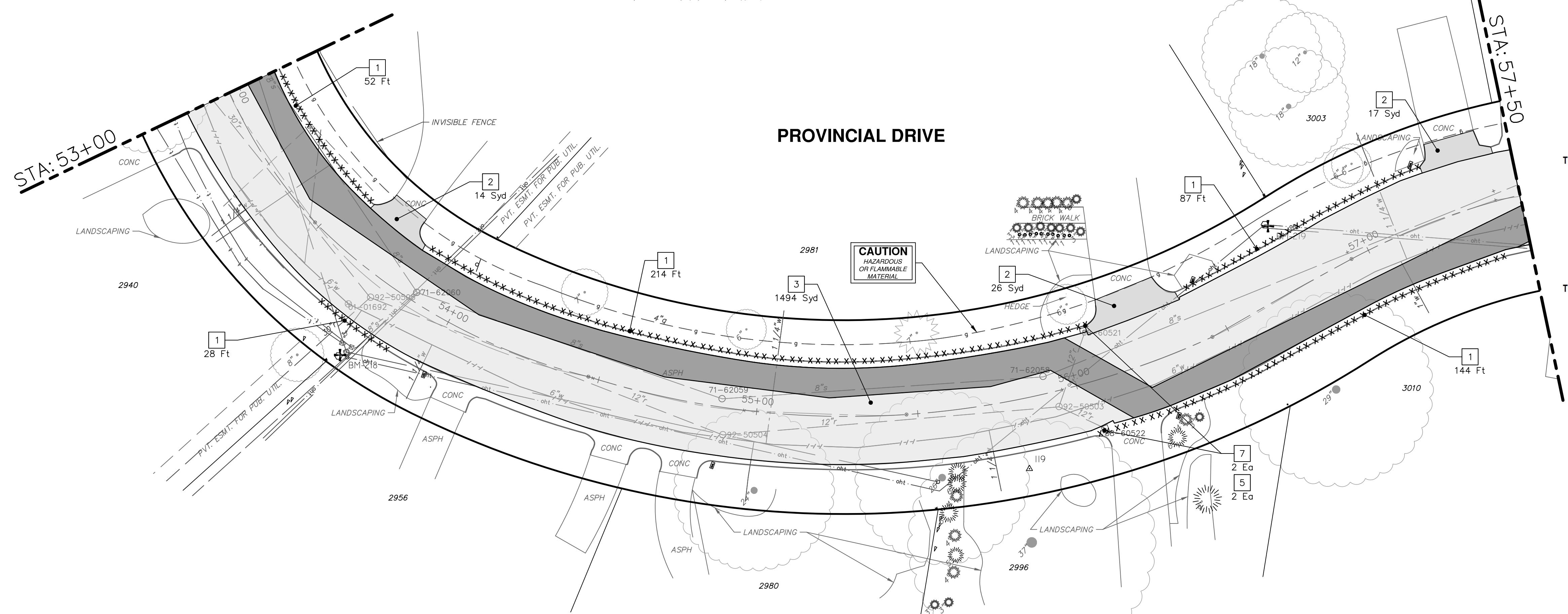
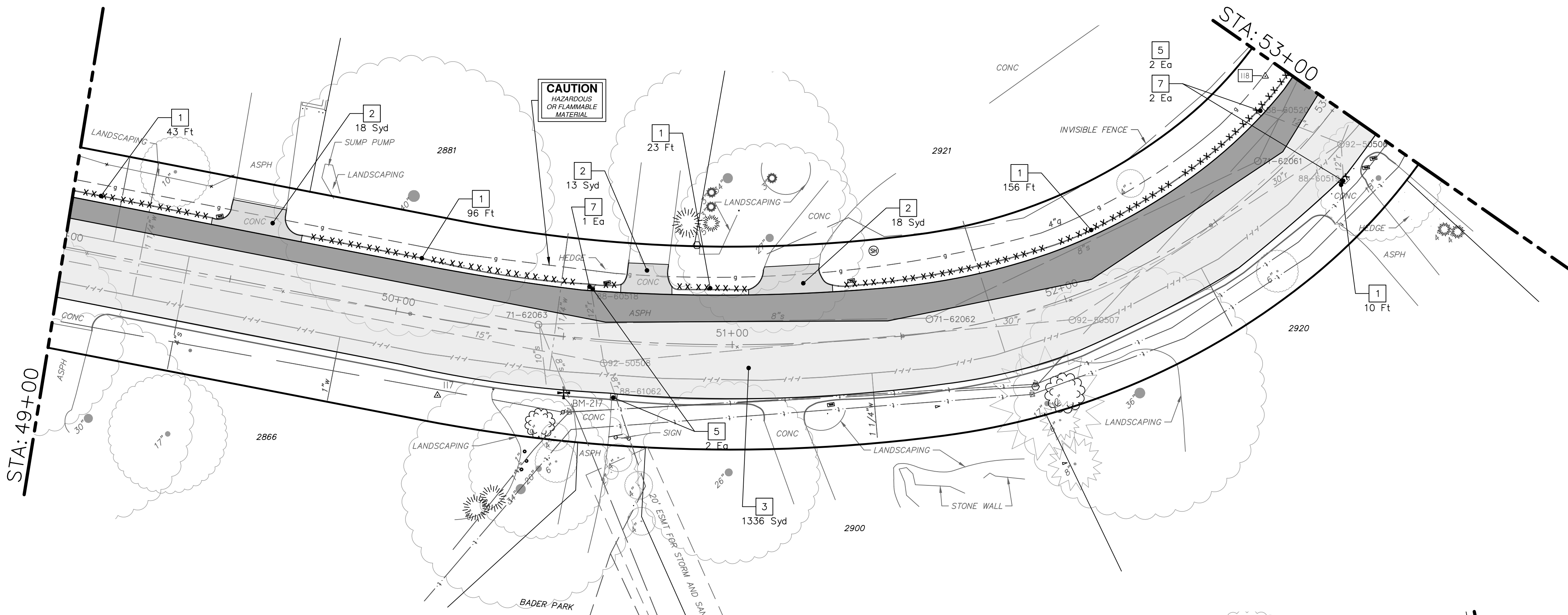


CITY OF ANN ARBOR - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
PROVINCIAL DRIVE REMOVALS- P.O.B. TO STA 49+00

SCALE PLAN: 1" = 20'
DRAWING No. 2022-28-29
SHEET No.

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PROVINCIAL DRIVE



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE

* SAWCUT FULL DEPTH AT REMOVAL LIMITS

- NOTES:
- PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 - WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).

ROAD FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
125	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
43	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness
2830	Syd	HMA Pavement Removal, Any Depth
25	Ft	Sewer, Less than 24 inch, Remove
5	Ea	Structure, Remove
2	Ea	Erosion Control, Inlet Filter

WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
728	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
64	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness



REV.	DATE	BY	CHECKED
2-9-2023			
1-19-2023			
11-18-2022			

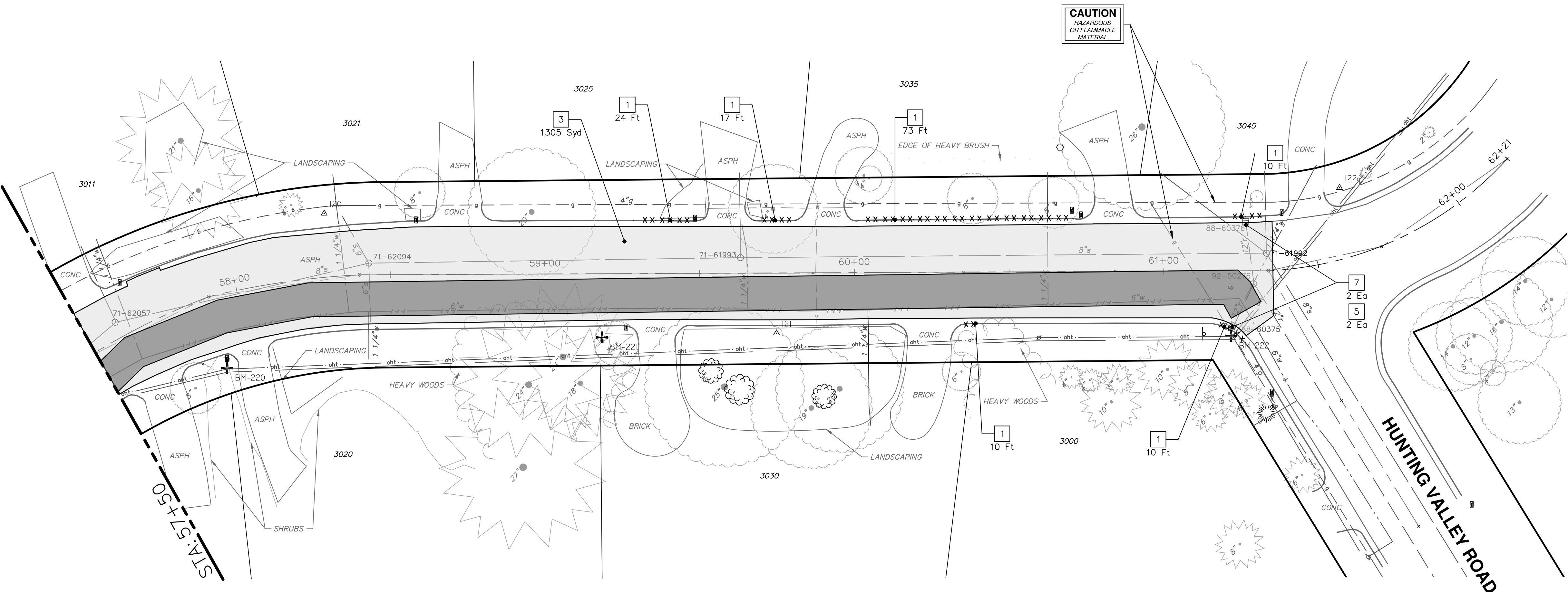
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
PROVINCIAL DRIVE REMOVALS - STA 49+00 TO STA 57+50

SCALE PLAN: 1"=40'
DRAWING No. 2022-28-30

PROVINCIAL DRIVE



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS *
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PROTECTIVE FENCING
5	INLET FILTER
6	SILT FENCE
7	STRUCTURE, ANY SIZE OR DEPTH, REMOVE
8	SEWER, ANY SIZE OR DEPTH, REMOVE

- * SAWCUT FULL DEPTH AT REMOVAL LIMITS
- NOTES:
 1. PAVEMENT SHALL BE SAW CUT FULL DEPTH AND REMOVED HALF WIDTH FOR WATER MAIN INSTALLATION. FINAL LIMITS OF PAVEMENT REMOVAL WILL BE AS DIRECTED BY THE ENGINEER.
 2. WATER MAIN REMOVALS SHOWN ON WATER MAIN SHEET(S).

TOTAL	UNIT	DESCRIPTION
134	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
1305	Syd	HMA Pavement Removal, Any Depth
10	Ft	Sewer, Less than 24 inch, Remove
2	Ea	Structure, Remove
2	Ea	Erosion Control, Inlet Filter

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1"=50'

DRAWING No. 2022-28-31

SHEET No. 31 OF 44

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE REMOVALS - STA 57+50 TO P.O.E.

REV. DATE BY CHECKED

REV 01 EGGLE PERMIT SUBMITTAL 11-18-2022 DATE DRAWN

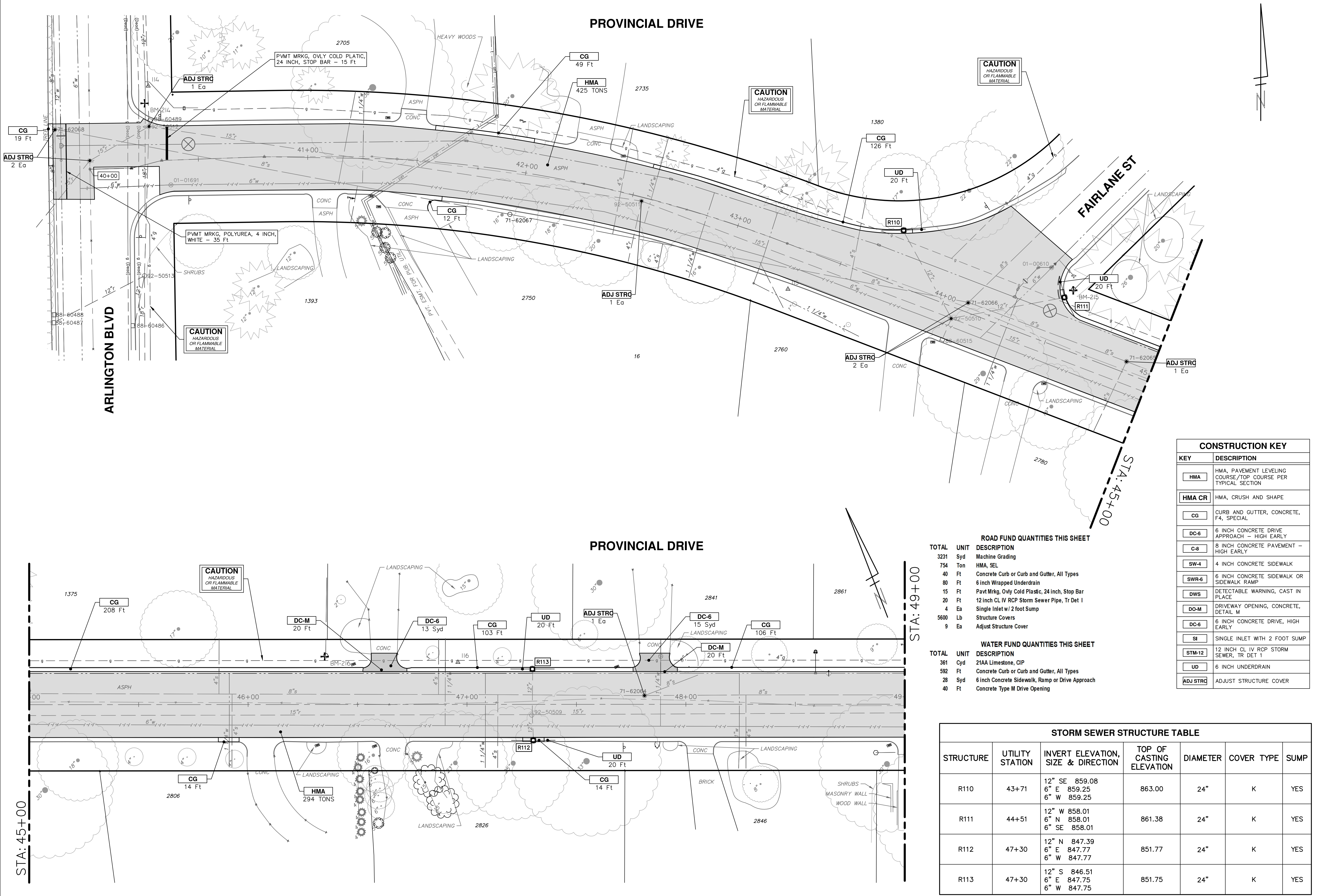
REV 02 BID SET 1-19-2023 BY DRAWN

REV 03 ADDENDUM 1 2-9-2023 BY CHECKED

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PROVINCIAL DRIVE

PROVINCIAL DRIVE

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE/TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-8	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SWR-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DO-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET 1
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER

ROAD FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
3231	Syd	Machine Grading
754	Ton	HMA, 5EL
40	Ft	Concrete Curb or Curb and Gutter, All Types
80	Ft	6 inch Wrapped Underdrain
15	Ft	Pavt Mrkg, Ovlly Cold Platic, 24 inch, Stop Bar
20	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det 1
4	Ea	Single Inlet w/ 2 foot Sump
5600	Lb	Structure Covers
9	Ea	Adjust Structure Cover

WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
361	Cyd	21AA Limestone, CIP
592	Ft	Concrete Curb or Curb and Gutter, All Types
28	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach
40	Ft	Concrete Type M Drive Opening

STORM SEWER STRUCTURE TABLE

STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
R110	43+71	12" SE 859.08 6" E 859.25 6" W 859.25	863.00	24"	K	YES
R111	44+51	12" W 858.01 6" N 858.01 6" SE 858.01	861.38	24"	K	YES
R112	47+30	12" N 847.39 6" E 847.77 6" W 847.77	851.77	24"	K	YES
R113	47+30	12" S 846.51 6" E 847.75 6" W 847.75	851.75	24"	K	YES

Know what's below. Call Before you dig.

REV 03 ADDENDUM 1 2-9-2023
REV 02 BID SET 1-19-2023
REV 01 EGGLE PERMIT SUBMITTAL 11-18-2022

DATE BY CHECKED
DRAWN BY

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE PROPOSED ROAD- P.O.B. TO STA 49+00

SCALE PLAN: 1" = 20'

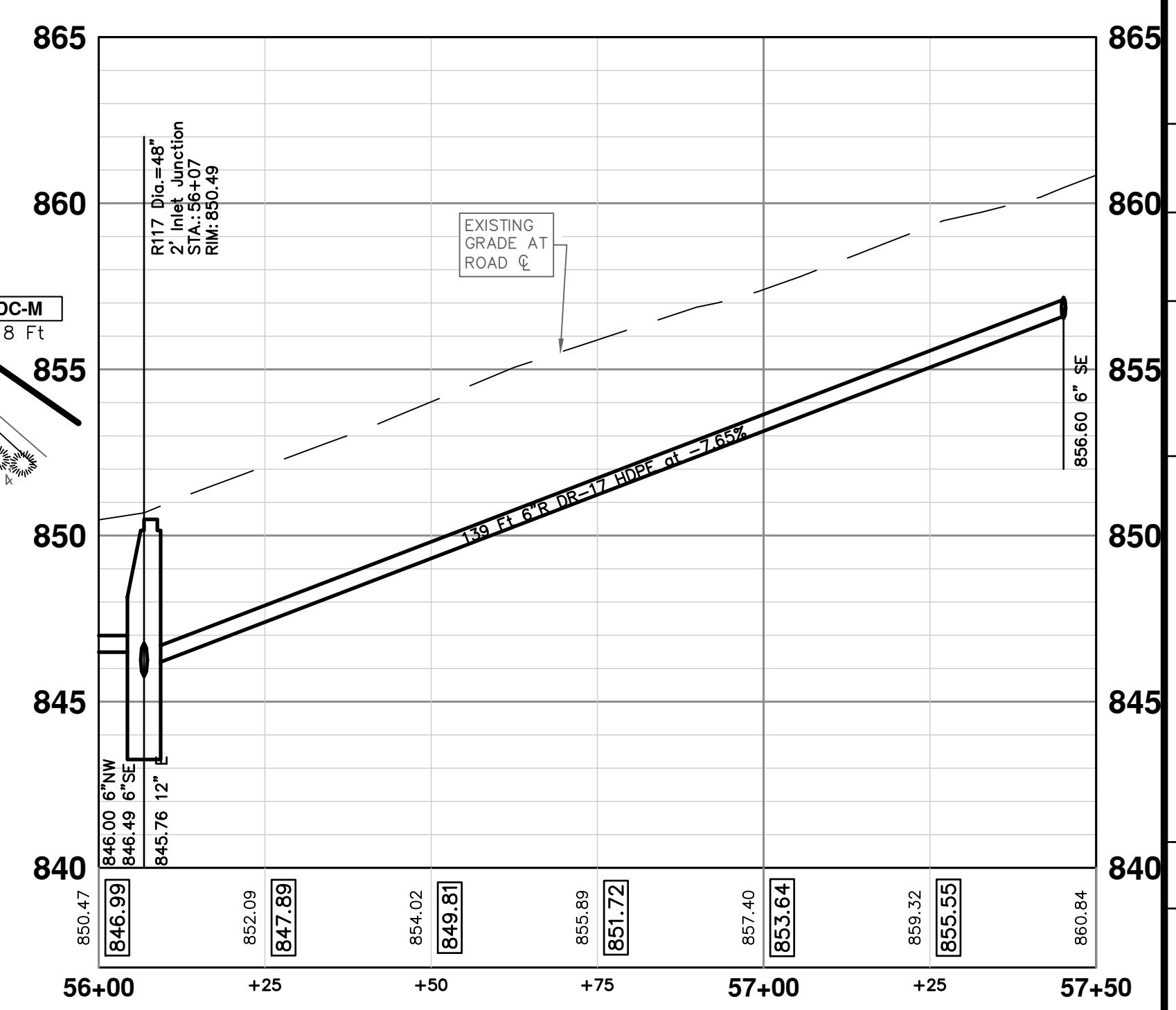
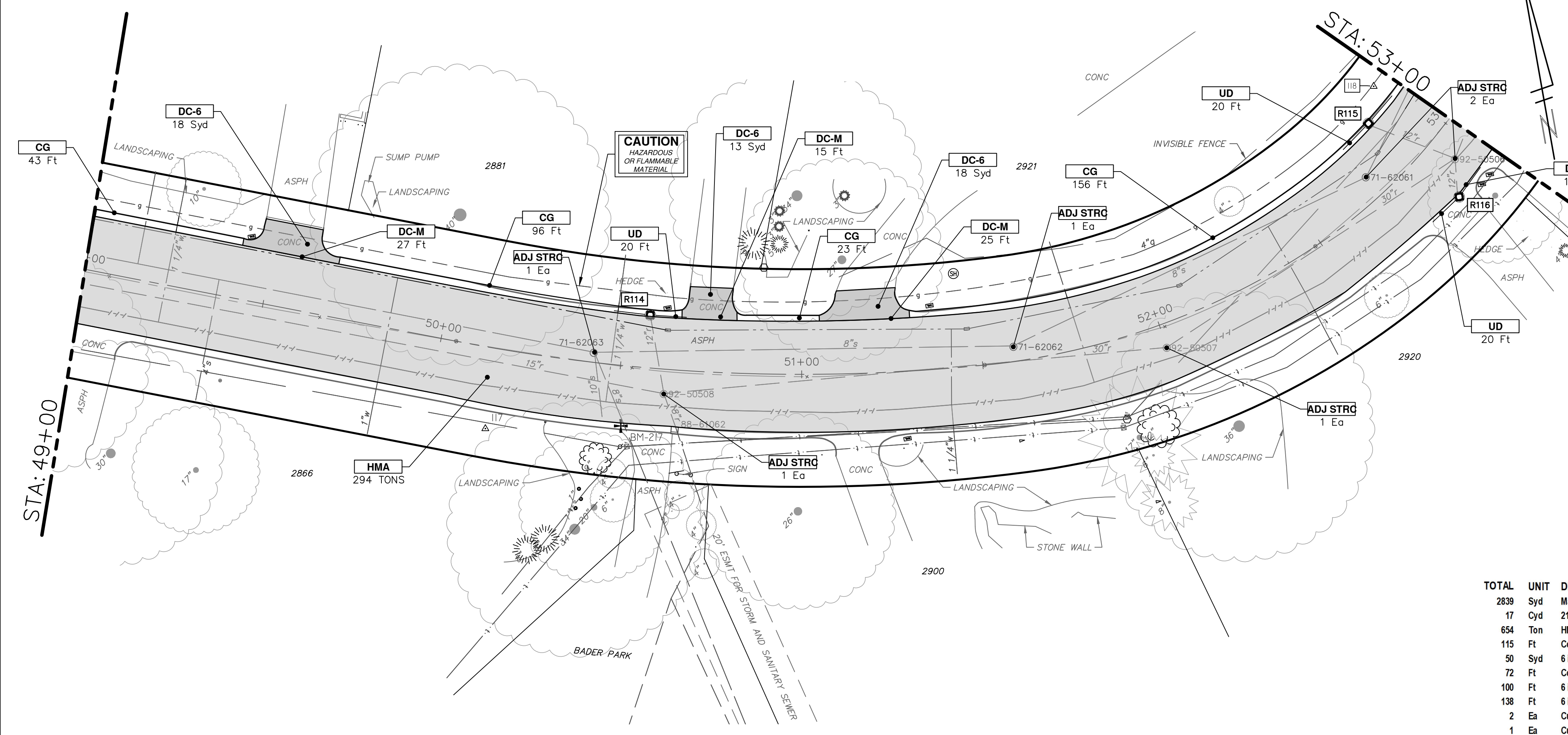
DRAWING No. 2022-28-32

SHEET No. 32 OF 44

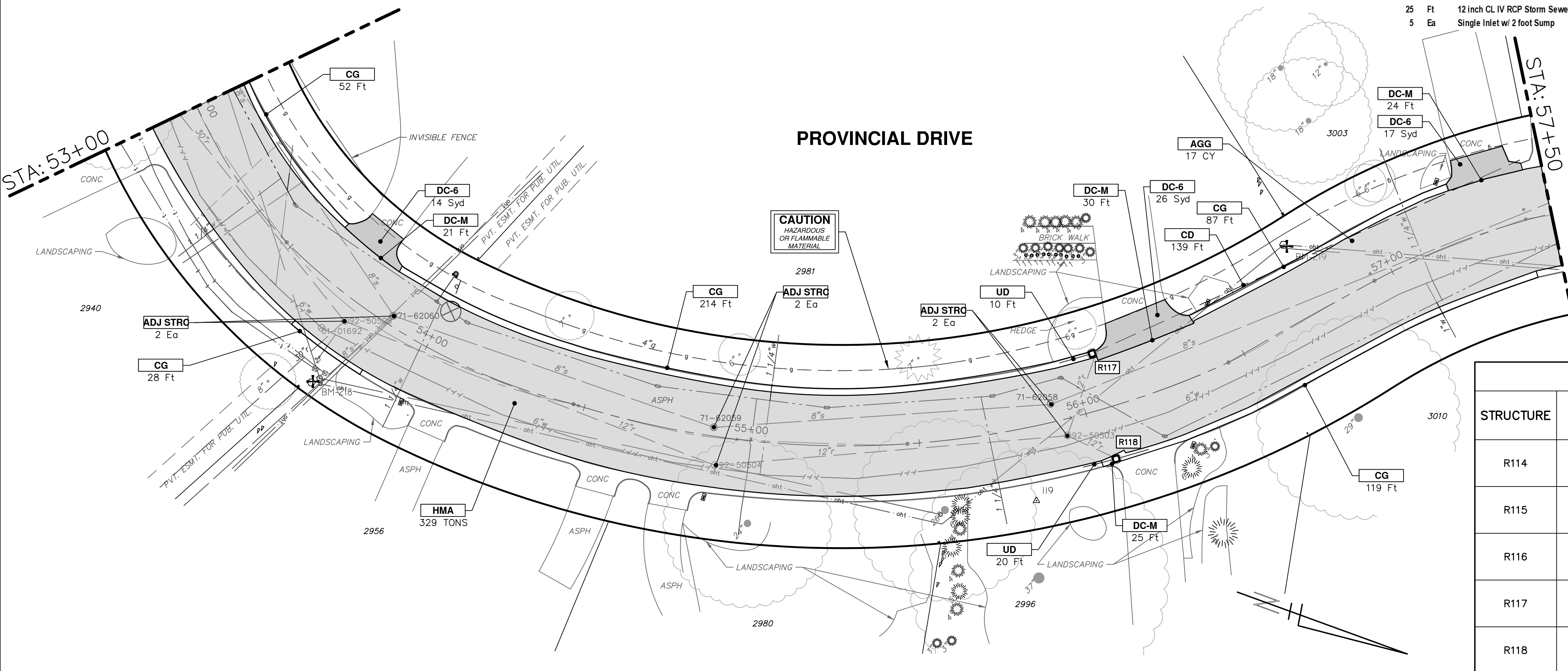
ANN ARBOR PUBLIC SERVICES
301 EAST HURON STREET
P.O. BOX 86607
ANN ARBOR MI 48108-6647
www.a2gov.org

P:\0000_01000\0028220090_GOPE_Local_Streets_WM_&_Resurf\Drawings\Civil\Plans_Const\220090CON_PROVINCIAL.dwg Dwg Created: 3-Feb-23 - _a2_standard bw.stb - Plot Date: 9-Feb-23

PROVINCIAL DRIVE



ROAD FUND QUANTITIES THIS SHEET			WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION	TOTAL	UNIT	DESCRIPTION
2839	Syd	Machine Grading	316	Cyd	21AA Limestone, CIP
17	Cyd	21AA Limestone, CIP	703	Ft	Concrete Curb or Curb and Gutter, All Types
654	Ton	HMA, 5EL	63	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach
115	Ft	Concrete Curb or Curb and Gutter, All Types	113	Ft	Concrete Type M Drive Opening
50	Syd	6 inch Concrete Sidewalk, Ramp or Drive Approach			
72	Ft	Concrete Type M Drive Opening			
100	Ft	6 inch Wrapped Underdrain			
138	Ft	6 inch Curb Drain, HDPE DR17, Tr Det 1			
2	Ea	Curb Drain Tap			
1	Ea	Curb Drain Cleanout			
25	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det 1			
5	Ea	Single Inlet w/ 2 foot Sump			



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE/TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-8	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SW-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DC-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET 1
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER
CD	CURB DRAIN
AGG	AGGREGATE

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
R114	50+57	12" S 836.04 6" E 837.31 6" W 837.31	841.31	24"	K	YES
R115	52+83	12" SE 830.35 6" NE 831.82 6" SW 831.82	835.82	24"	K	YES
R116	52+85	12" N 832.17 6" NE 832.18 6" SW 832.18	835.93	24"	K	YES
R117	56+07	12" E 845.76 6" NW 846.00 6" SE 846.49	850.49	24"	K	YES
R118	56+05	12" S 845.23 6" NW 846.58 6" SE 846.58	850.58	24"	K	YES

Know what's below. Call before you dig.

REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	DRAWN
REV 01	EGLF PERMIT SUBMITTAL	11-18-2022	DATE	

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE PROPOSED ROAD - STA 49+00 TO STA 57+50

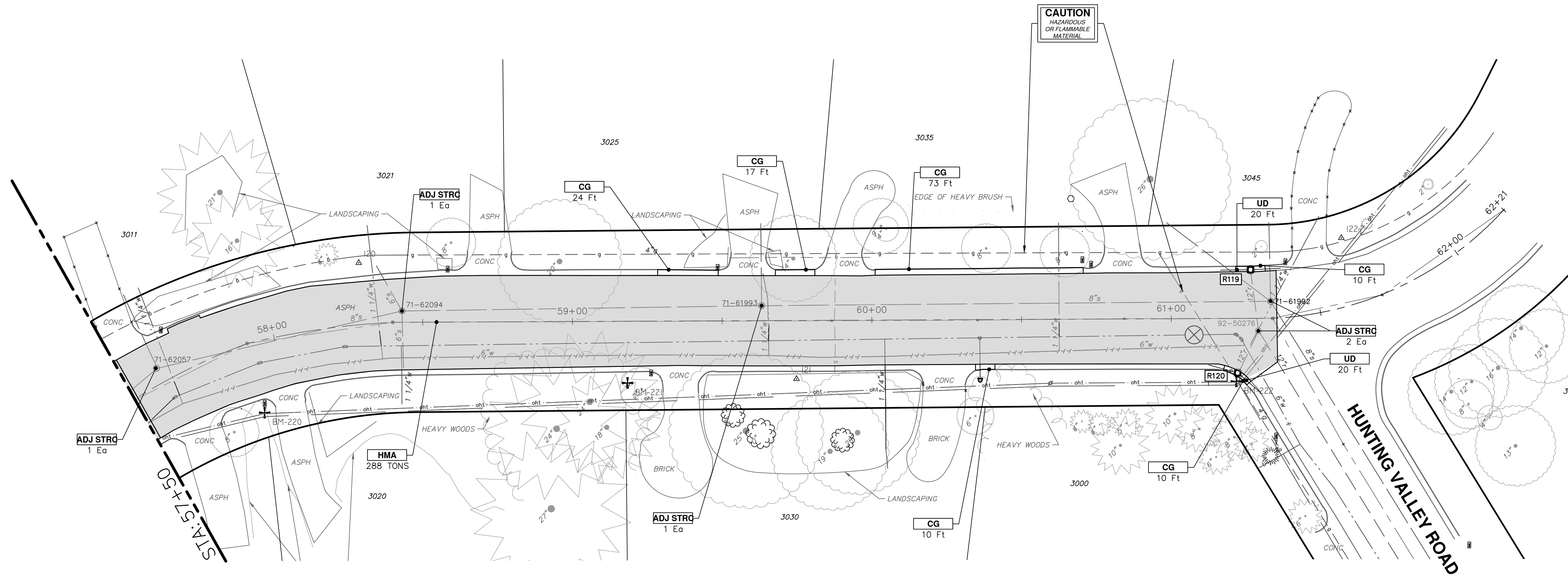
SCALE PLAN: 1"=40'

DRAWING NO. 2022-28-33

SHEET No. 33 OF 44

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PROVINCIAL DRIVE



ROAD FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
1305	Syd	Machine Grading
302	Ton	HMA, SEL
134	Ft	Concrete Curb or Curb and Gutter, All Types
40	Ft	6 inch Wrapped Underdrain
15	Ft	12 inch CL IV RCP Storm Sewer Pipe, Tr Det 1
2	Ea	Single Inlet w/ 2 foot Sump
3000	Lb	Structure Covers
5	Ea	Adjust Structure Cover

WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
290	Cyd	21AA Limestone, CIP
10	Ft	Concrete Curb or Curb and Gutter, All Types

STORM SEWER STRUCTURE TABLE

STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DIAMETER	COVER TYPE	SUMP
R119	61+27	12" E 867.35 6" N 869.16 6" S 869.16	873.16	24"	K	YES
R120	61+22	12" NW 867.35 6" NE 868.78 6" S 868.78	872.78	24"	K	YES

CONSTRUCTION KEY

KEY	DESCRIPTION
HMA	HMA, PAVEMENT LEVELING COURSE/TOP COURSE PER TYPICAL SECTION
HMA CR	HMA, CRUSH AND SHAPE
CG	CURB AND GUTTER, CONCRETE, F4, SPECIAL
DC-6	6 INCH CONCRETE DRIVE APPROACH - HIGH EARLY
C-8	8 INCH CONCRETE PAVEMENT - HIGH EARLY
SW-4	4 INCH CONCRETE SIDEWALK
SWR-6	6 INCH CONCRETE SIDEWALK OR SIDEWALK RAMP
DWS	DETECTABLE WARNING, CAST IN PLACE
DO-M	DRIVEWAY OPENING, CONCRETE, DETAIL M
DC-6	6 INCH CONCRETE DRIVE, HIGH EARLY
SI	SINGLE INLET WITH 2 FOOT SUMP
STM-12	12 INCH CL IV RCP STORM SEWER, TR DET 1
UD	6 INCH UNDERDRAIN
ADJ STRC	ADJUST STRUCTURE COVER

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1"=50'

DRAWING No. 2022-28-34

SHEET No. 34 OF 44

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE PROPOSED ROAD - STA 57+50 TO P.O.E.

REV. 01 EGGLE PERMIT SUBMITTAL DESCRIPTION

REV. 02 BID SET

REV. 03 ADDENDUM 1

DATE: 11-18-2022

DATE: 1-19-2023

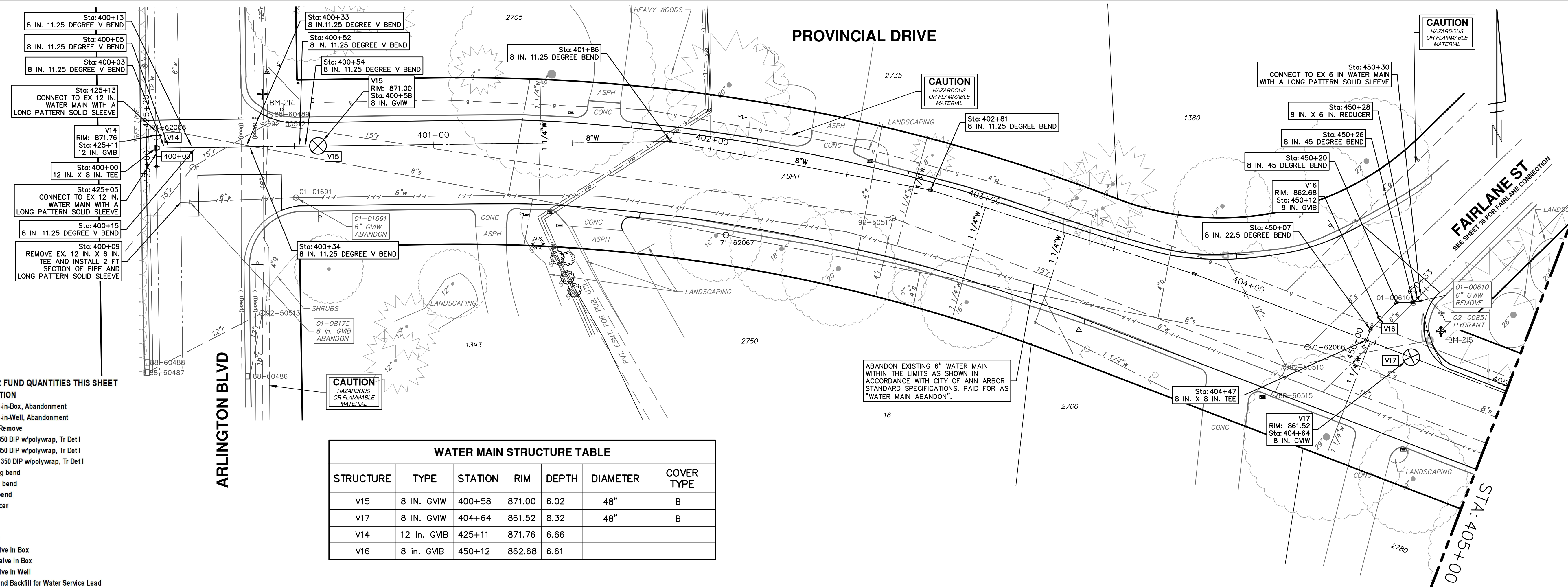
DATE: 2-9-2023

BY: [Signature]

CHECKED: [Signature]

CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 86670 ANN ARBOR MI 48108-8667 www.aagov.org

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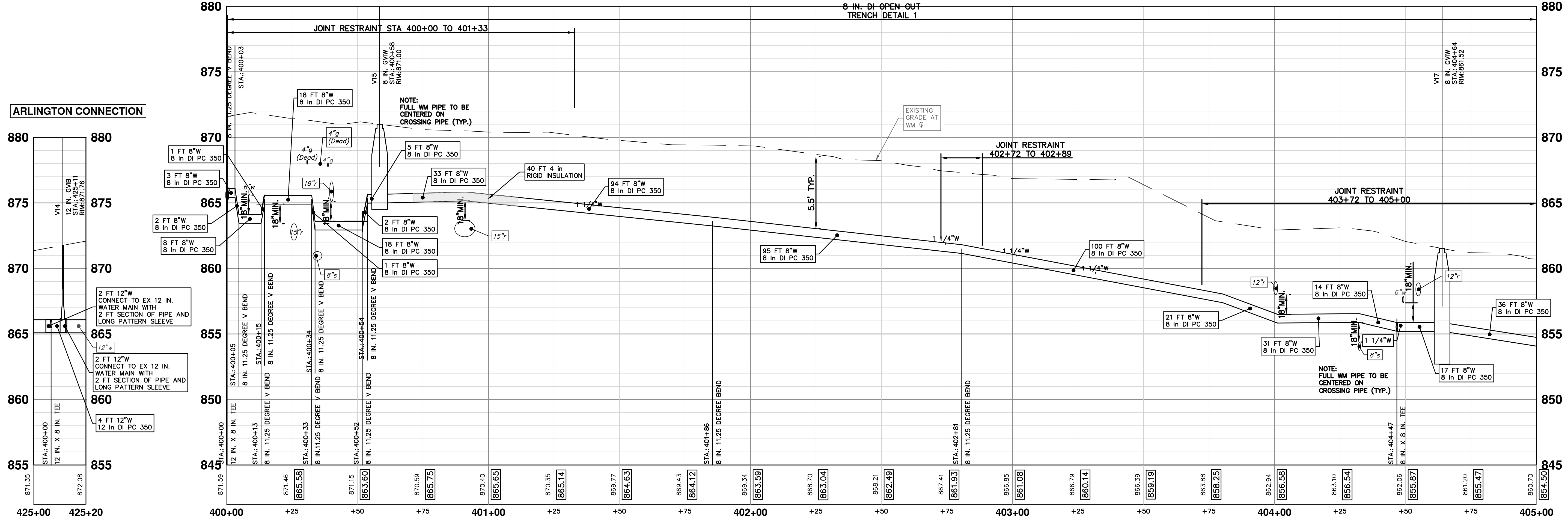


WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
1	Ea	Gate Valve-in-Box, Abandonment
1	Ea	Gate Valve-in-Well, Abandonment
1	Ea	Structure, Remove
5	Ft	6 inch PC 350 DIP w/polywrap, Tr Det I
511	Ft	8 inch PC 350 DIP w/polywrap, Tr Det I
12	Ft	12 inch PC 350 DIP w/polywrap, Tr Det I
10	Ea	8" 11.25 deg bend
1	Ea	8" 22.5 deg bend
2	Ea	8" 45 deg bend
1	Ea	8"x6" reducer
1	Ea	8"x8" Tee
1	Ea	8"x8" Tee
1	Ea	12"x8" Tee
1	Ea	8" Gate Valve in Box
1	Ea	12" Gate Valve in Box
2	Ea	8" Gate Valve in Well
54	Ft	Excavate and Backfill for Water Service Lead

WATER MAIN STRUCTURE TABLE

STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
V15	8 IN. GVW	400+58	871.00	6.02	48"	B
V17	8 IN. GVW	404+64	861.52	8.32	48"	B
V14	12 in. GVIB	425+11	871.76	6.66		
V16	8 in. GVIB	450+12	862.68	6.61		



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Know what's below.
Call before you dig.

REV.	DATE	BY	CHECKED	DESCRIPTION
REV 03	2-9-2023			ADDENDUM 1
REV 02	1-19-2023			BID SET
REV 01	11-18-2022			FEEL PERMIT SUBMITTAL

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE WATER MAIN - P.O.B. TO STA 405+00

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'

PROFILE: 1" = 4'

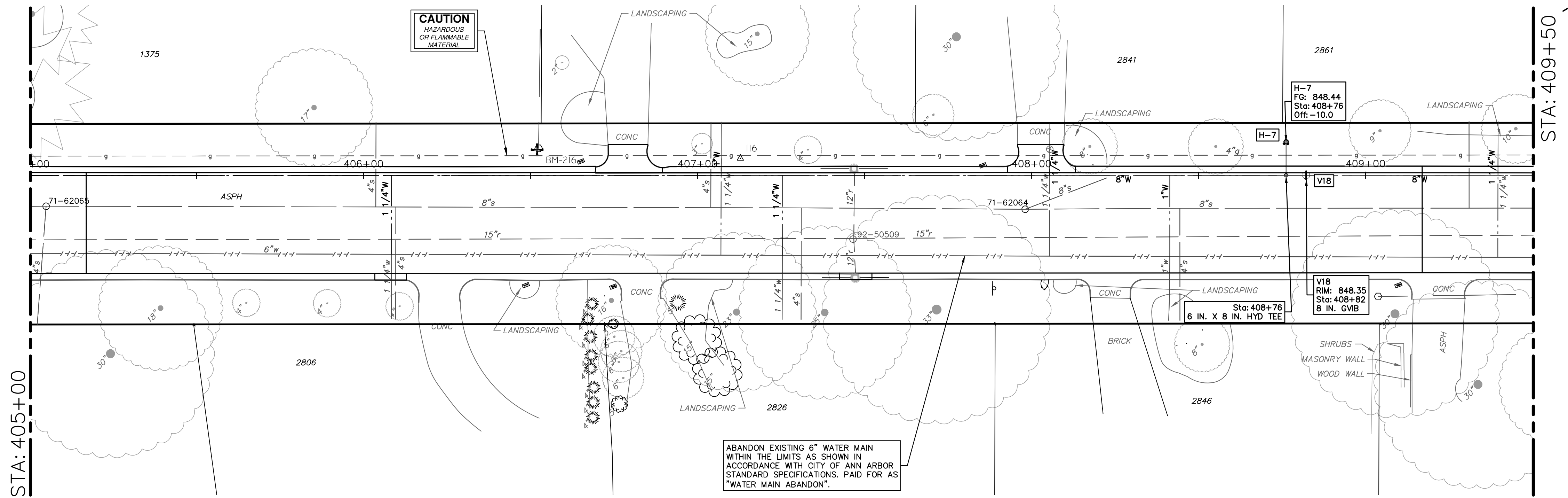
DRAWING NO. 2022-28-35

SHEET NO. 35 OF 44

PROVINCIAL DRIVE WATER MAIN - P.O.B. TO STA 405+00

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PROVINCIAL DRIVE

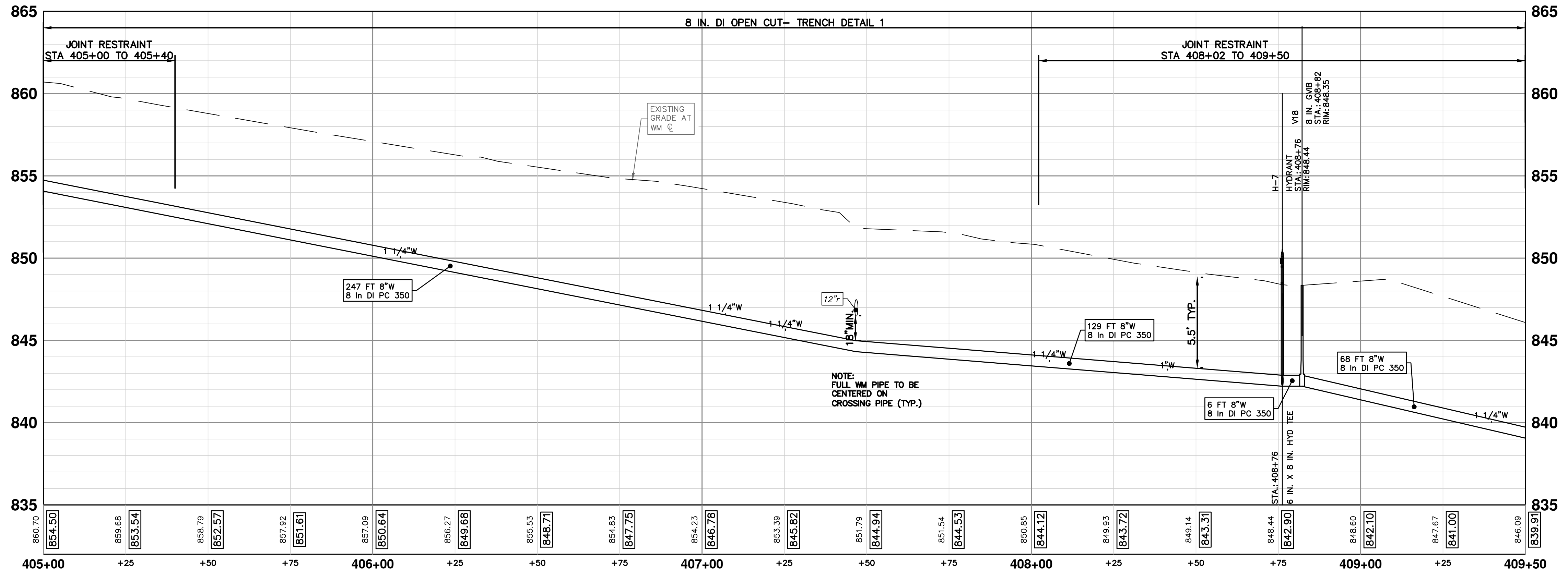
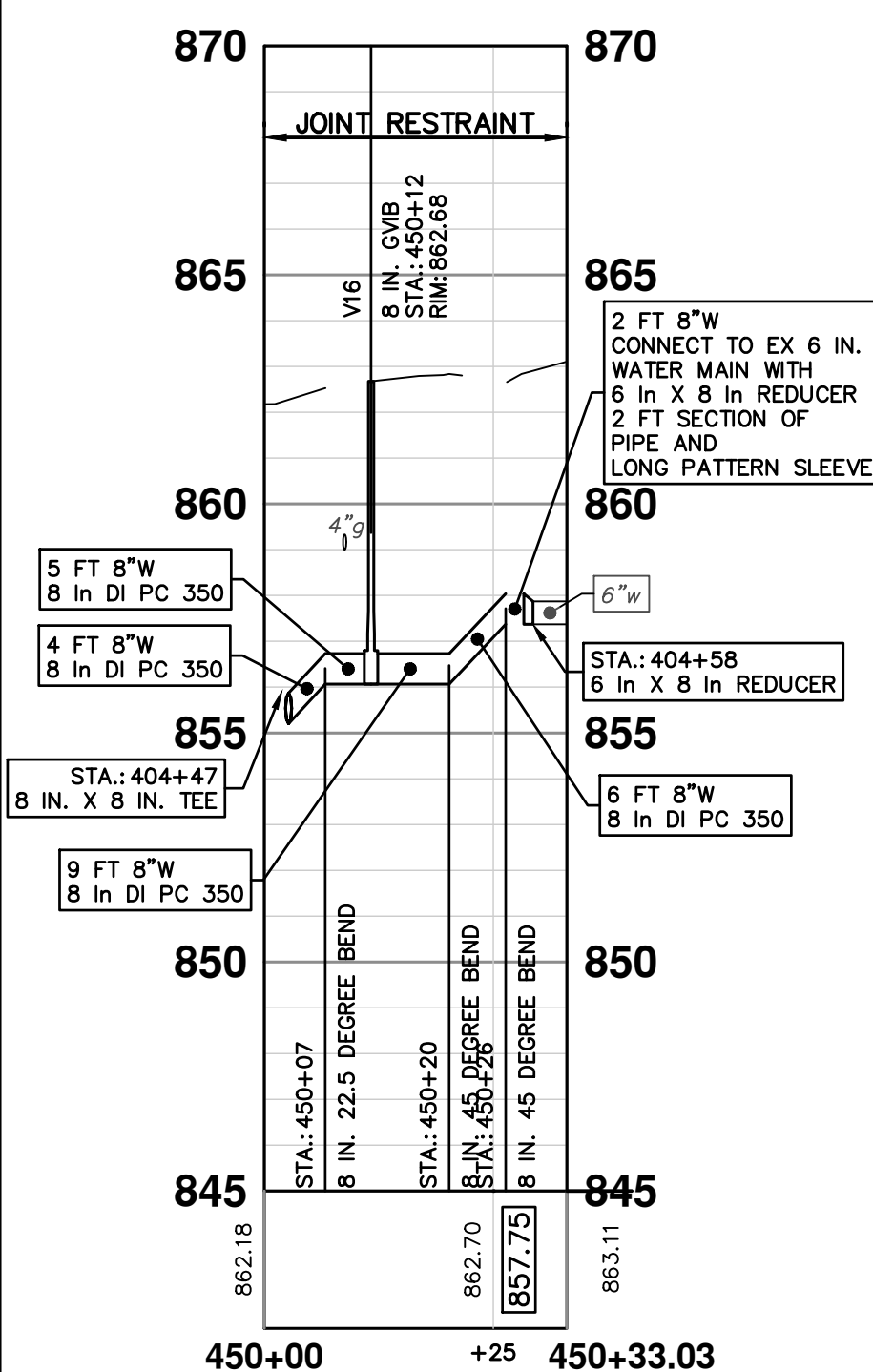


STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
H-7	HYDRANT	408+76	848.44	6.19		
V18	8 in. GVB	408+82	848.35	6.13		

TOTAL	UNIT	DESCRIPTION
10	Ft	6 inch PC 350 DIP w/polywrap, Tr Detl
450	Ft	8 inch PC 350 DIP w/polywrap, Tr Detl
1	Ea	8"x6" Tee
1	Ea	Fire Hydrant Assembly
1	Ea	8" Gate Valve in Box
90	Ft	Excavate and Backfill for Water Service Lead
200	Lb	Structure Covers

ABANDON EXISTING 6" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN ABANDON".

FAIRLANE CONNECTION
SEE SHEET 35 FOR PLAN VIEW



NOTE:
FULL WM PIPE TO BE
CENTERED ON
CROSSING PIPE (TYP.)

CITY OF ANN ARBOR
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ANN ARBOR, MI 48106-6647
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811
Know what's below.
Call Before you dig.

REV.	DATE	BY	CHECKED	DESCRIPTION
REV 03	2-9-2023			ADDENDUM 1
REV 02	1-19-2023			BID SET
REV 01	11-18-2022			EGLE PERMIT SUBMITTAL

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE WATER MAIN - STA 405+00 TO STA 409+50

SCALE PLAN: 1"=30'

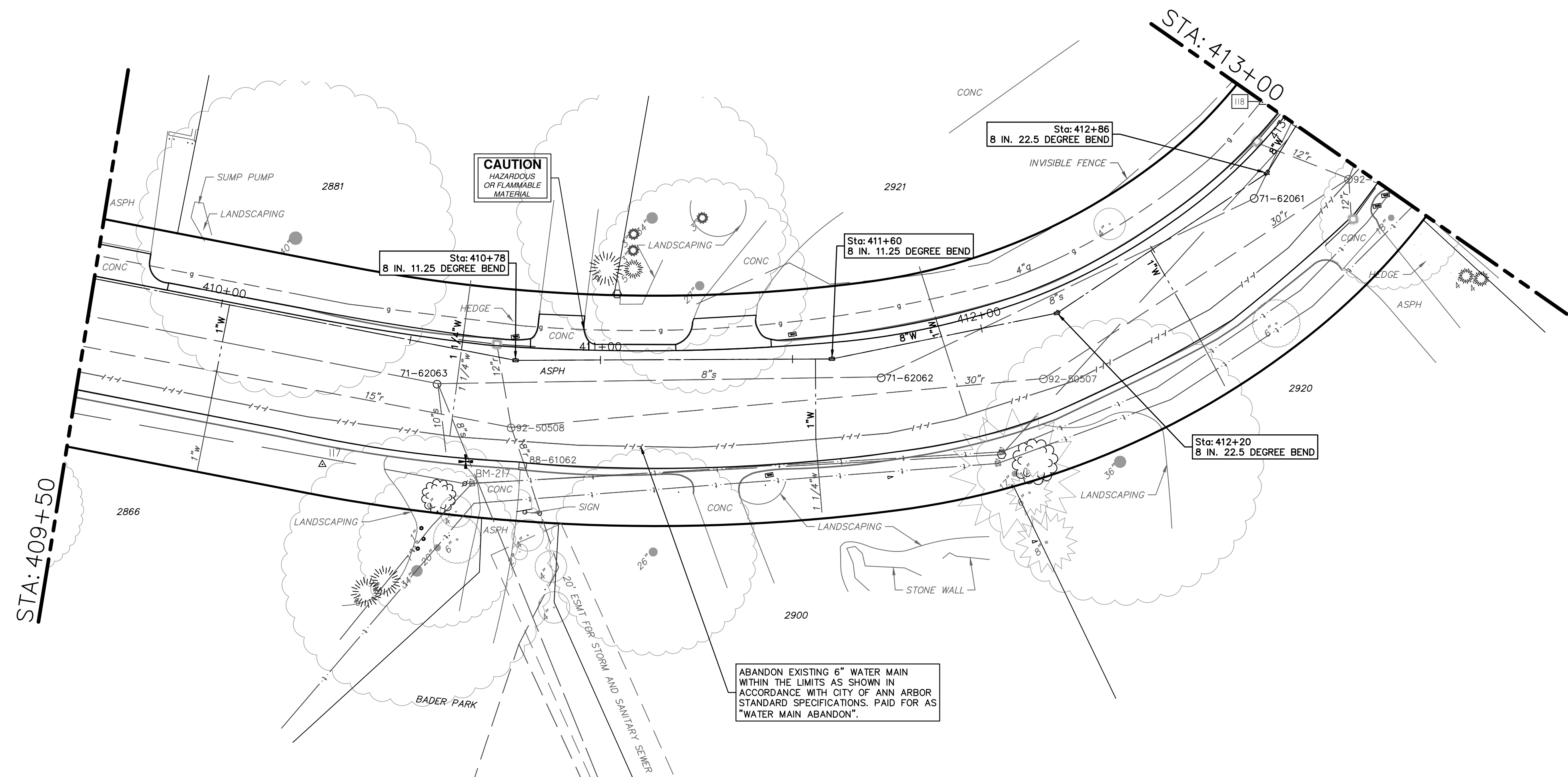
PROFILE: 1"=4'

DRAWING NO. 2022-28-36

SHEET NO. 36 OF 44

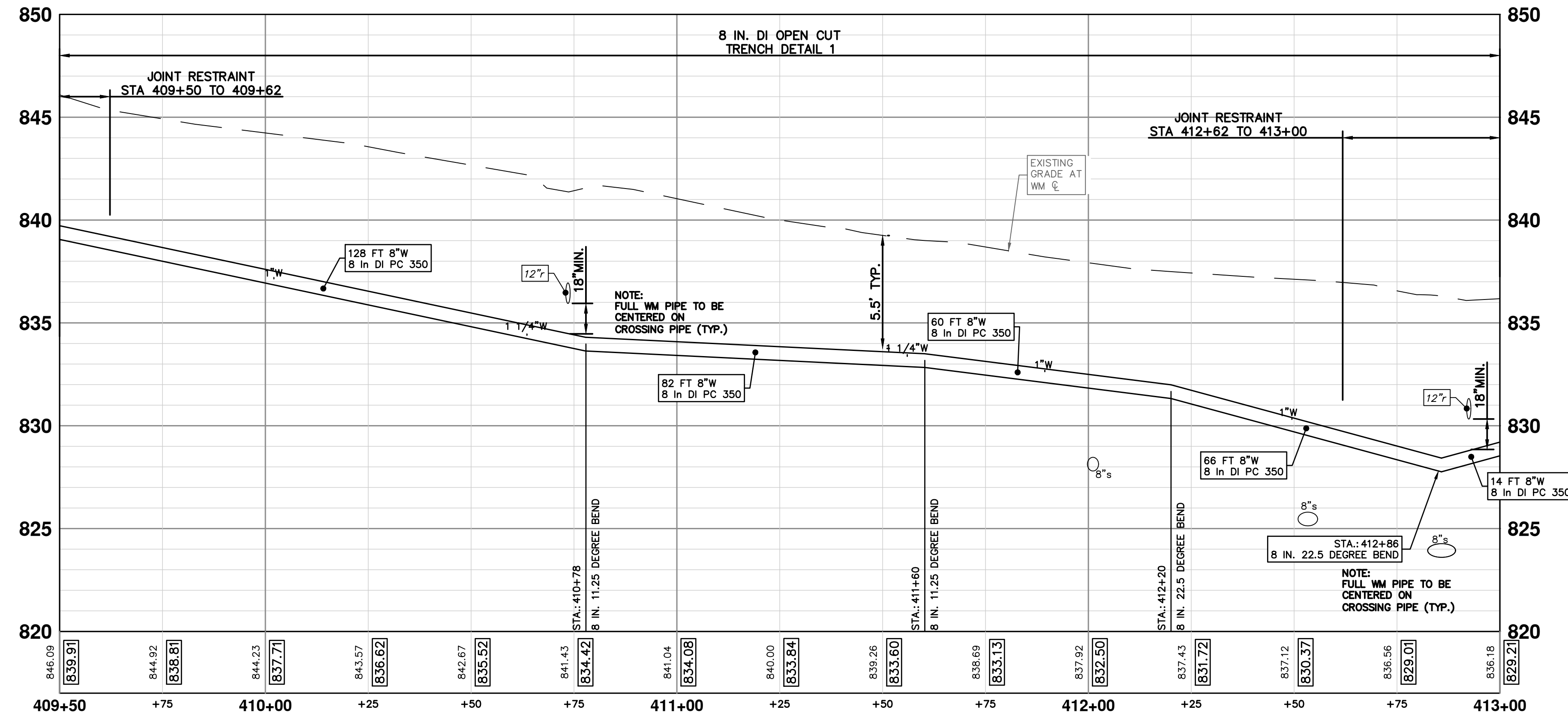
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PROVINCIAL DRIVE



WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
350	Ft	8 inch PC 350 DIP w/polywrap, Tr Det1
2	Ea	8" 11.25 deg bend
2	Ea	8" 22.5 deg bend
89	Ft	Excavate and Backfill for Water Service Lead



811
Know what's below.
Call Before you dig.

2-9-2023
1-19-2023
11-18-2022

DATE

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REV. 03 ADDENDUM 1
REV. 02 BID SET
REV. 01 EGGLE PERMIT SUBMITTAL

DESCRIPTION

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE WATER MAIN- STA 409+50 TO STA 413+00

SCALE PLAN: 1"=20'

PROFILE: 1"=4'

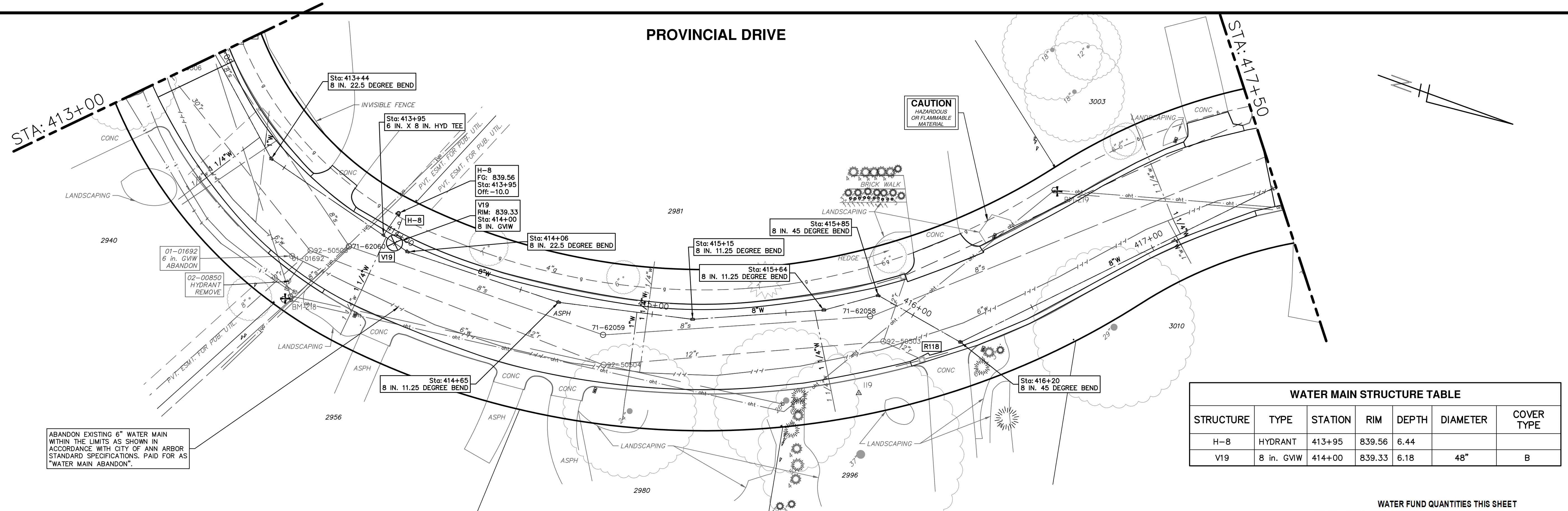
DRAWING No.
2022-28-37

SHEET No.

37 OF 44

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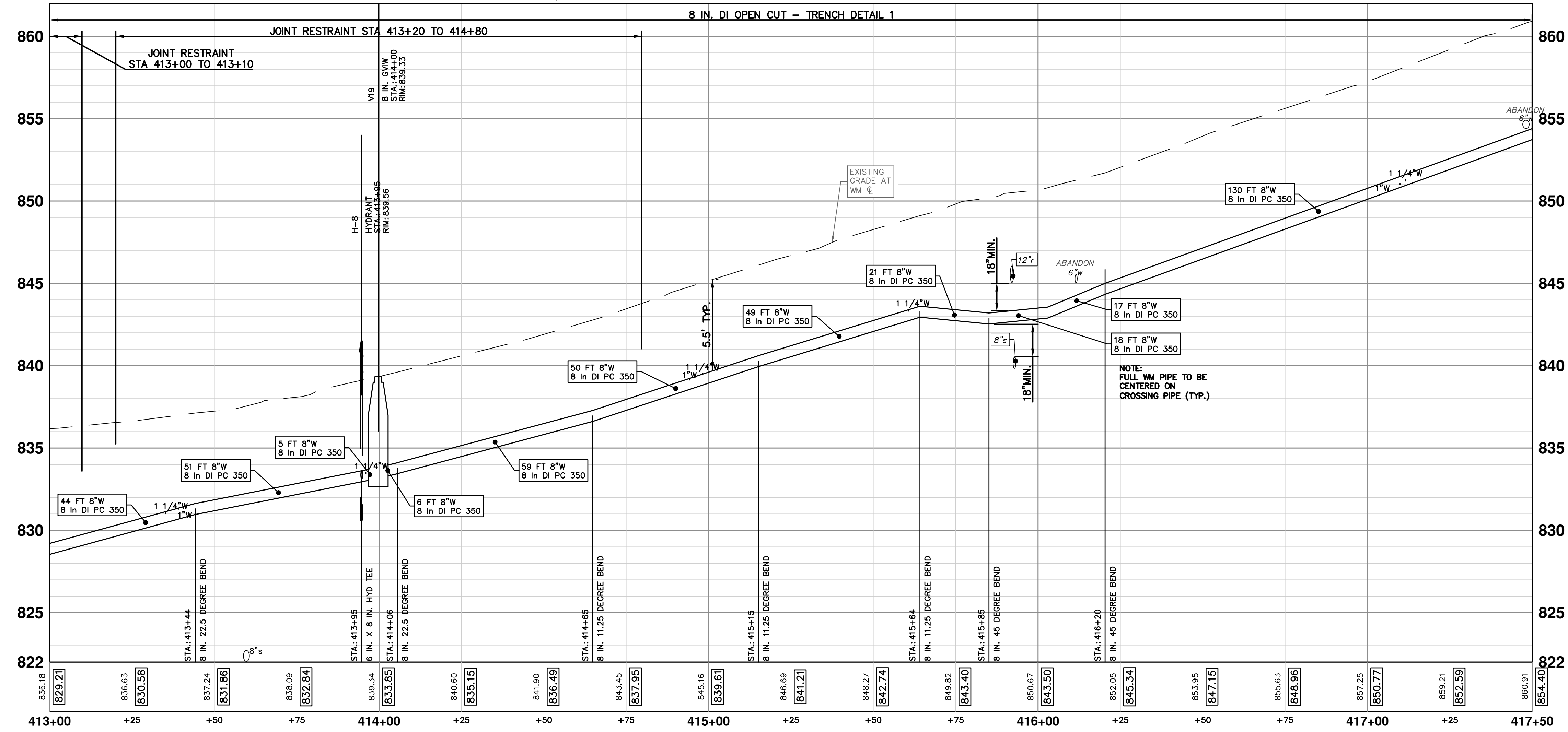
PROVINCIAL DRIVE



ABANDON EXISTING 6" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN ABANDON".

STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
H-8	HYDRANT	413+95	839.56	6.44		
V19	8 in. GVW	414+00	839.33	6.18	48"	B

TOTAL	UNIT	DESCRIPTION
1	Ea	Gate Valve-in-Well, Abandonment
1	Ea	Fire Hydrant, Remove
10	Ft	6 inch PC 350 DIP w/polywrap, Tr Det I
450	Ft	8 inch PC 350 DIP w/polywrap, Tr Det I
3	Ea	8" 11.25 deg bend
2	Ea	8" 22.5 deg bend
2	Ea	8" 45 deg bend
1	Ea	8"x6" Tee
1	Ea	Fire Hydrant Assembly
1	Ea	8" Gate Valve in Well
124	Ft	Excavate and Backfill for Water Service Lead



Know what's below. Call before you dig.

REV 03	ADDENDUM 1	2-9-2023	BY	CHECKED
REV 02	BID SET	1-19-2023	BY	DRAWN
REV 01	EFILE PERMIT SUBMITTAL	11-18-2022	DATE	
REV.	DESCRIPTION			

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE WATER MAIN- STA 413+00 TO STA 417+50

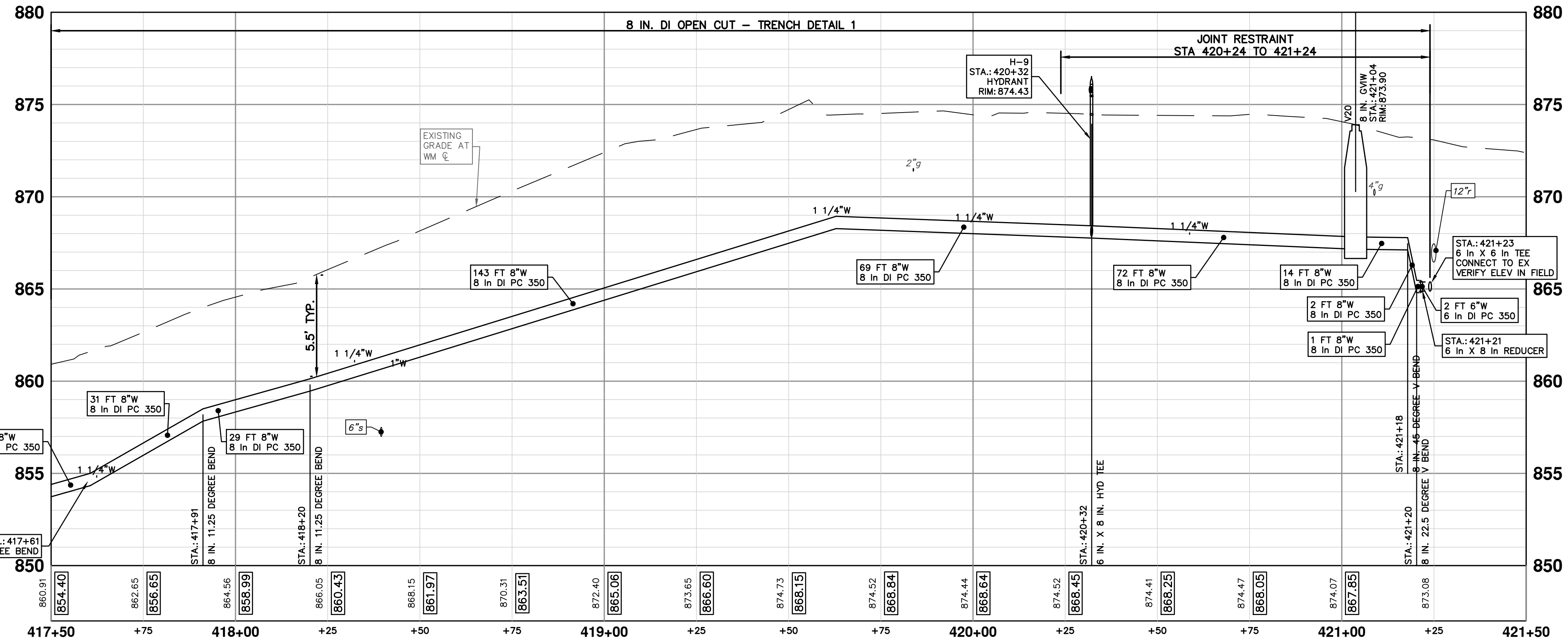
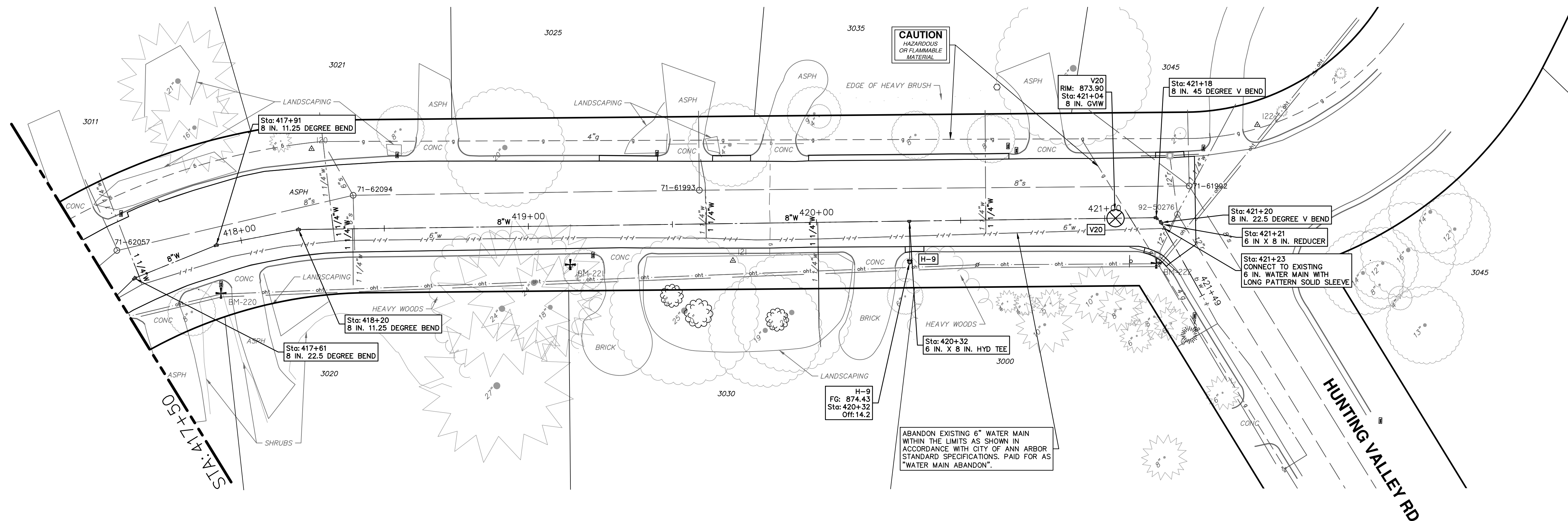
SCALE PLAN: 1"=20'
PROFILE: 1"=4'

DRAWING NO.
2022-28-38

SHEET NO.
38 OF 44

P:\0000_0100\0028220090_GOPE_Local_Streets_WM_&_Resurf\Drawings\Civil\Plans\220090WM_PROVINCIAL.dwg Dwg Created: 1-Feb-23 --_02_standard_bw.stb -- Plot Date: 9-Feb-23

PROVINCIAL DRIVE



WATER MAIN STRUCTURE TABLE						
STRUCTURE	TYPE	STATION	RIM	DEPTH	DIAMETER	COVER TYPE
H-9	HYDRANT	420+32	874.43	6.58		
V20	8 in. GVIW	421+04	873.90	6.75	48"	B

WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
25	Ft	6 inch PC 350 DIP w/polywrap, Tr Detl
371	Ft	8 inch PC 350 DIP w/polywrap, Tr Detl
2	Ea	8" 11.25 deg bend
2	Ea	8" 22.5 deg bend
1	Ea	8" 45 deg bend
1	Ea	8"x6" reducer
1	Ea	8"x6" Tee
1	Ea	Fire Hydrant Assembly
1	Ea	8" Gate Valve in Well
31	Ft	Excavate and Backfill for Water Service Lead
400	Lb	Structure Covers

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1"=20' PROFILE: 1"=4'

DRAWING NO. 2022-28-39

SHEET No. 39 OF 44

2023 MISCELLANEOUS UTILITY PROJECTS

PROVINCIAL DRIVE WATER MAIN - STA 417+50 TO P.O.E.

811 Know what's below. Call Before you dig.

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REV	DATE	BY	CHECKED
REV 01	11-18-2022	BY	CHECKED
REV 02	1-19-2023	BY	CHECKED
REV 03	2-9-2023	BY	CHECKED

P:\0000_0100\0028221050_N7th_Sewer_Abandon_Lead_Dwg\Drawings\Civil\Plans_Const\22105000N.dwg Dwg Created: 9-Feb-23 -_c2_standard bw.stb - Plot Date: 9-Feb-23



QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
1	LSUM	Traffic Control, North Seventh, Max \$5,000
20	Ft	Remove Concrete Curb or Curb and Gutter, Any Thickness
50	Syd	Remove Concrete Sidewalk and Pavement, Any Thickness
267	Syd	HMA Pavement Removal, Any Thickness
10	Ft	Sewer, Less than 24 inch, Remove
600	Ft	Sewer, Any Size/Depth, Abandon in Place
60	Cyd	21AA Limestone, CIP
124	Ton	HMA, SEL
20	Ft	Concrete Curb or Curb and Gutter, All Types
450	Sft	4 inch Concrete Sidewalk
15	Ft	Protective Fencing
10	Ft	8 inch SDR 26 PVC Pipe, Tr Det I
1	Ea	8 inch SDR 26 PVC Tee
60	Ft	6 inch SDR 35 Sanitary Sewer Pipe, Tr Det I

REMOVAL KEY

KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	PAVEMENT REMOVAL, ANY DEPTH
4	PROTECTIVE FENCING
5	INLET FILTER
6	FILL WITH CROUT AND ABANDON 12-INCH SANITARY SEWER
7	SILT FENCE
8	REMOVE AND SALVAGE BRICK PAVERS
9	SALVAGE AND REPLACE LANDSCAPING
10	REMOVE 8 INCH SANITARY SEWER

401 N 7TH STREET LATERAL REMOVAL AND ABANDONMENT PLAN

SCALE:1"=40'

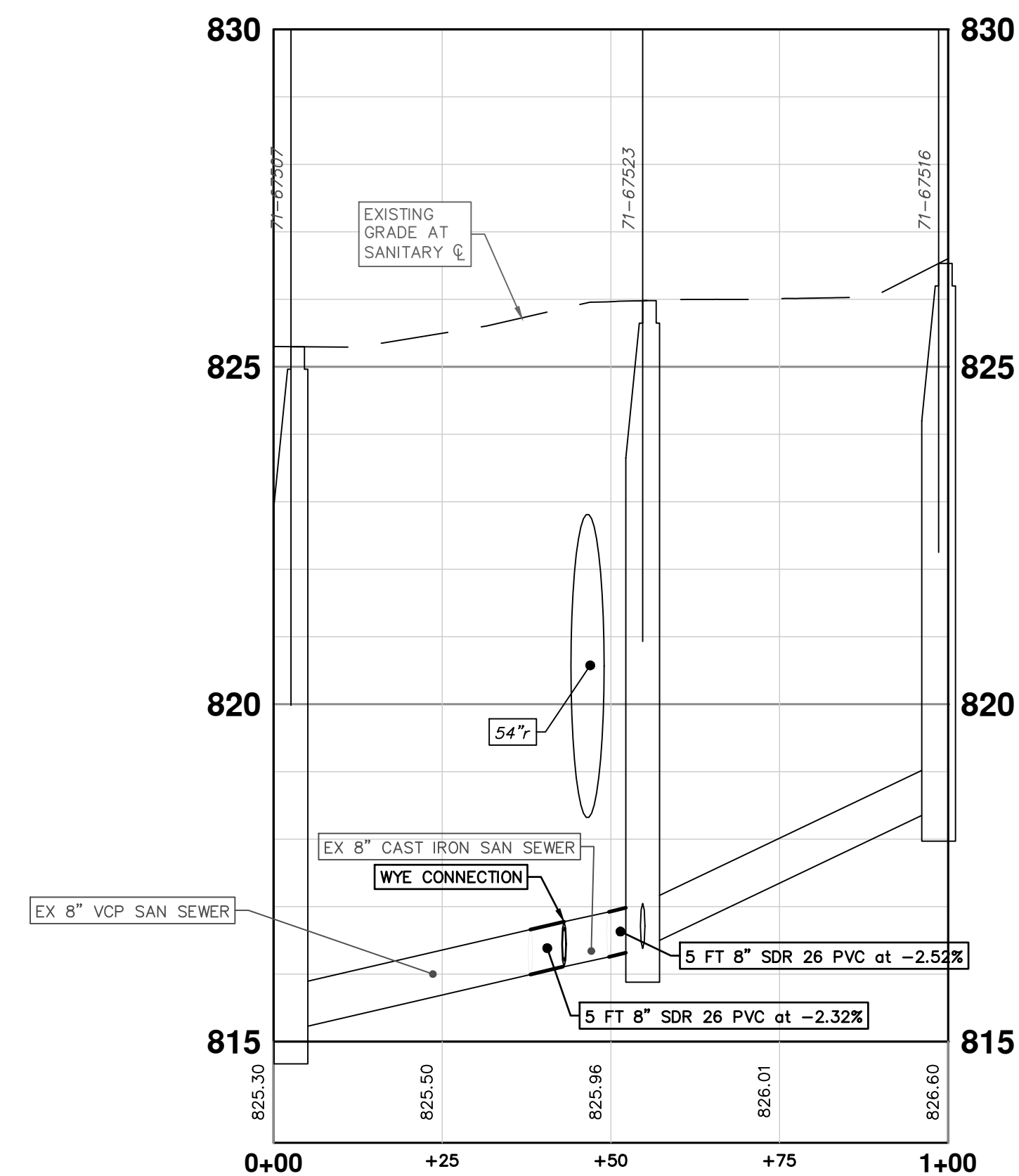
CONSTRUCTION KEY

KEY	DESCRIPTION
HMA	PLACE HMA, SEL. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
TURF RES	TURF RESTORATION
SAN CO	6" PVC SANITARY SEWER CLEANOUT
SAN	8 INCH SANITARY SEWER



401 N 7TH STREET LATERAL CONSTRUCTION PLAN

SCALE:1"=20'



- NOTES:**
- A LICENSED PLUMBER MUST MAKE CONNECTIONS TO HOUSE SERVICE AT HOUSE AND AT SANITARY SEWER MAIN.
 - A BUILDING PERMIT SHALL BE OBTAINED FROM THE CITY OF ANN ARBOR.
 - TRAFFIC CONTROL SHALL FOLLOW MD-21A.
 - A CITY OF ANN ARBOR ROW PERMIT REQUIRED.

CITY OF ANN ARBOR
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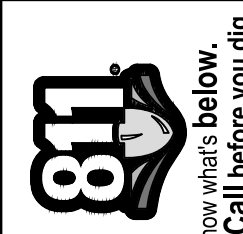


CITY OF ANN ARBOR - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
7TH ST
REMOVAL AND CONSTRUCTION PLAN

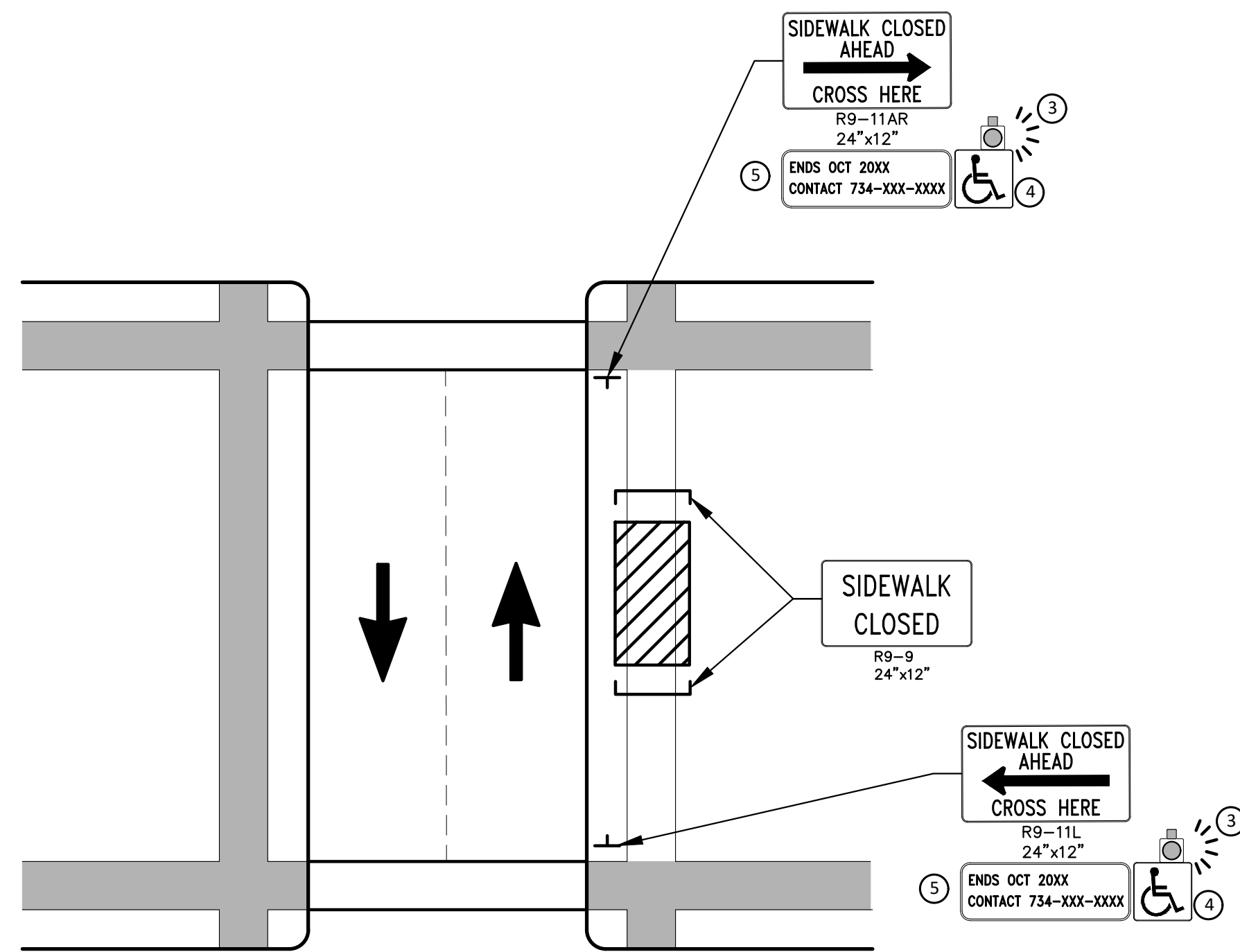
SCALE PLAN: 1" = 40'
DRAWING No. 2022-28-40

SHEET No. 40 OF 44

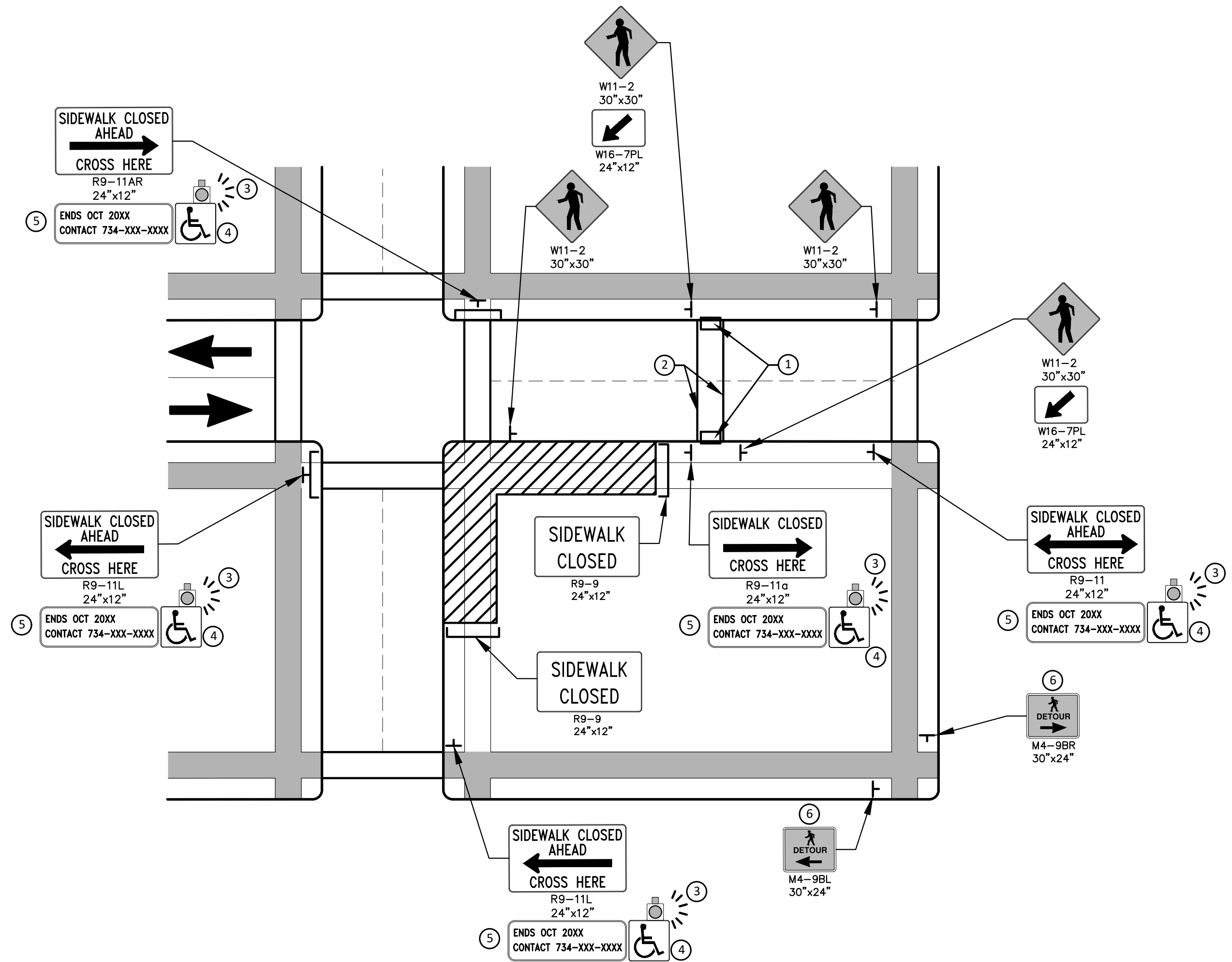
REV.	DATE	BY	CHECKED	DESCRIPTION
REV 03	2-9-2023			ADDENDUM 1
REV 02	1-19-2023			BID SET
REV 01	11-18-2022			EGLE PERMIT SUBMITTAL



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PEDESTRIAN DETOUR USING OPPOSITE SIDE OF STREET



OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS
(FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK)

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, THE CONTRACTOR SHALL PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED. PROVIDE A FIRM, STABLE, AND SLIP RESISTANT TEMPORARY WALKWAY SURFACE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED BY THE CITY OF ANN ARBOR. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE THIS WORK WITH THE ENGINEER A MINIMUM OF 72 HOURS (NOT INCLUDING WEEKENDS & HOLIDAYS) PRIOR TO THE BEGINNING OF WORK THAT REQUIRES A SIDEWALK CLOSURE.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN THE ENGINEER DETERMINES THAT THE CONTRACTOR'S OPERATIONS OR PLACEMENT OF TRAFFIC CONTROL DEVICES HAS CAUSED A SITUATION THAT THE VISIBILITY OF IS REDUCED ENOUGH TO CREATE A HAZARD, THE TRAFFIC CONTROL DEVICES SHALL BE DELINEATED WITH FLAGS OR OTHER ENGINEER-APPROVED DEVICES AT NO ADDITIONAL COST TO THE PROJECT.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS AS SHOWN ON THE PROJECT PLANS.

SPECIFIC NOTES

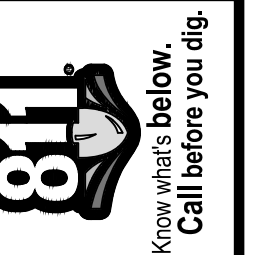
1. TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
2. TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
3. AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHALL BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHALL BE POSTED AND AN ALTERNATE ROUTE SHALL BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
5. TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHALL INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
6. PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHALL BE USED IF THE PEDESTRIAN DETOUR IS IN A LOCATION OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.

PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES

1. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MMUTCD, PART 6.
2. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES AND COMMERCIAL PROPERTIES AT ALL TIMES. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.
3. IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH, A 5 FOOT BY 5 FOOT PASSING SPACE SHALL BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE SMOOTH AND CONTINUOUS FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES, EQUIPMENT, OR CONSTRUCTION OPERATIONS.
4. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP-OFFS, THEN CRASH WORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF NCHRP 350 AND THE MMUTCD SHALL BE USED.
5. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.
6. THE CONTRACTOR'S OPERATIONS SHALL NOT OCCUPY SIDEWALKS EXCEPT WHERE PROPER PROTECTION AND A TPAR HAVE BEEN PROVIDED.
7. WHEN DIRECTED BY THE ENGINEER, OR STATED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN TRAFFIC CONTROL PLAN FOR REVIEW AND WRITTEN APPROVAL BY THE ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC. NO WORK SHALL BE ALLOWED TO BEGIN UNTIL THIS PLAN IS APPROVED BY THE ENGINEER IN WRITING.
8. PROVISION OF THE TPAR AND ALL OF ITS ELEMENTS, INCLUDING BUT NOT LIMITED TO, CREATION OF THE TEMPORARY PEDESTRIAN CONTROL PLAN, SIGNS, CHANNELIZING DEVICES, BARRICADES, TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "MINOR TRAF DEVICES."

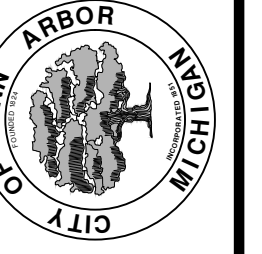
LEGEND

- SIGN
- EXISTING PEDESTRIAN SURFACE
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- BARRIER
- SIDEWALK BARRICADE
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DEVICE



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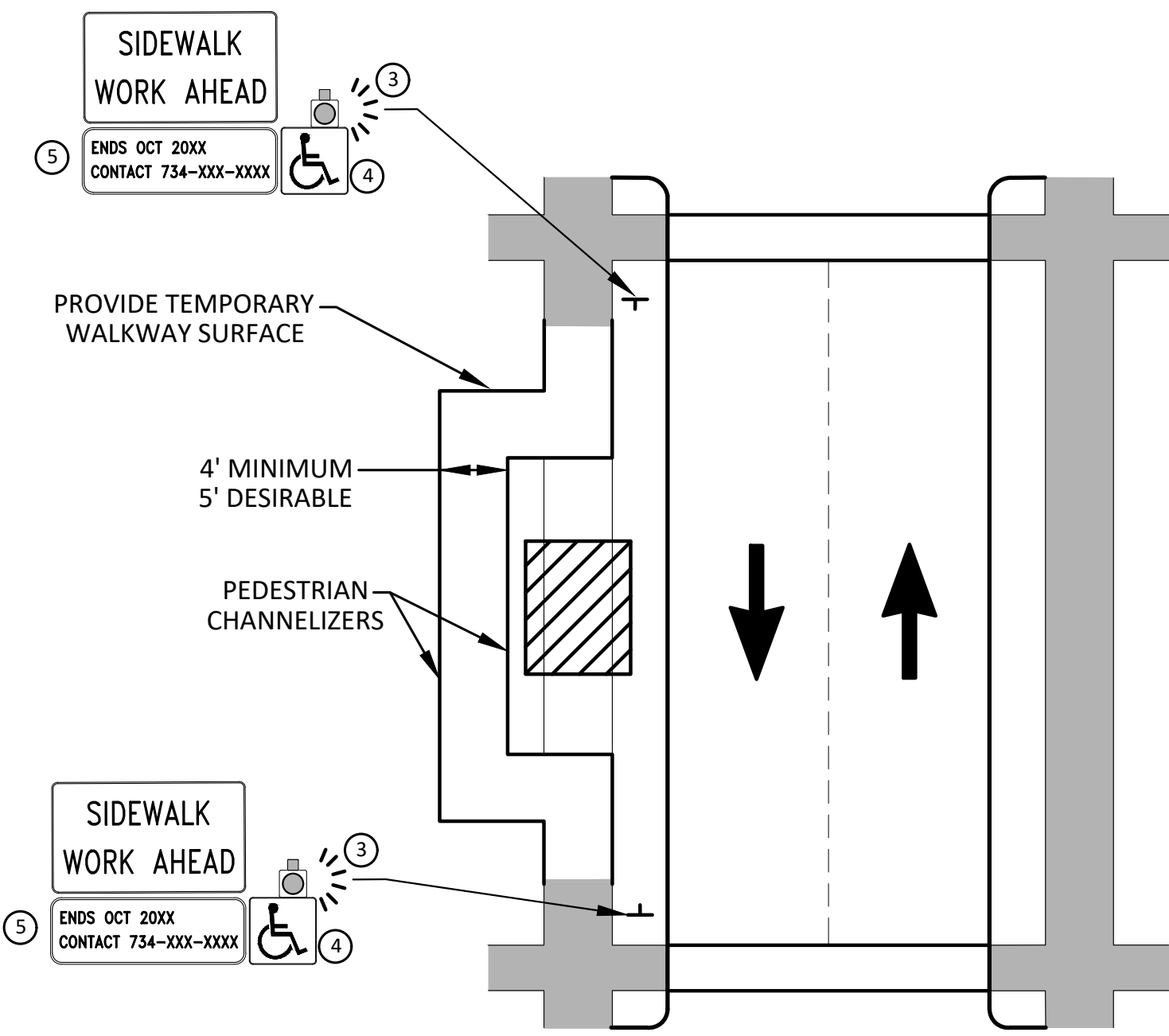
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TAPR DETAILS - ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

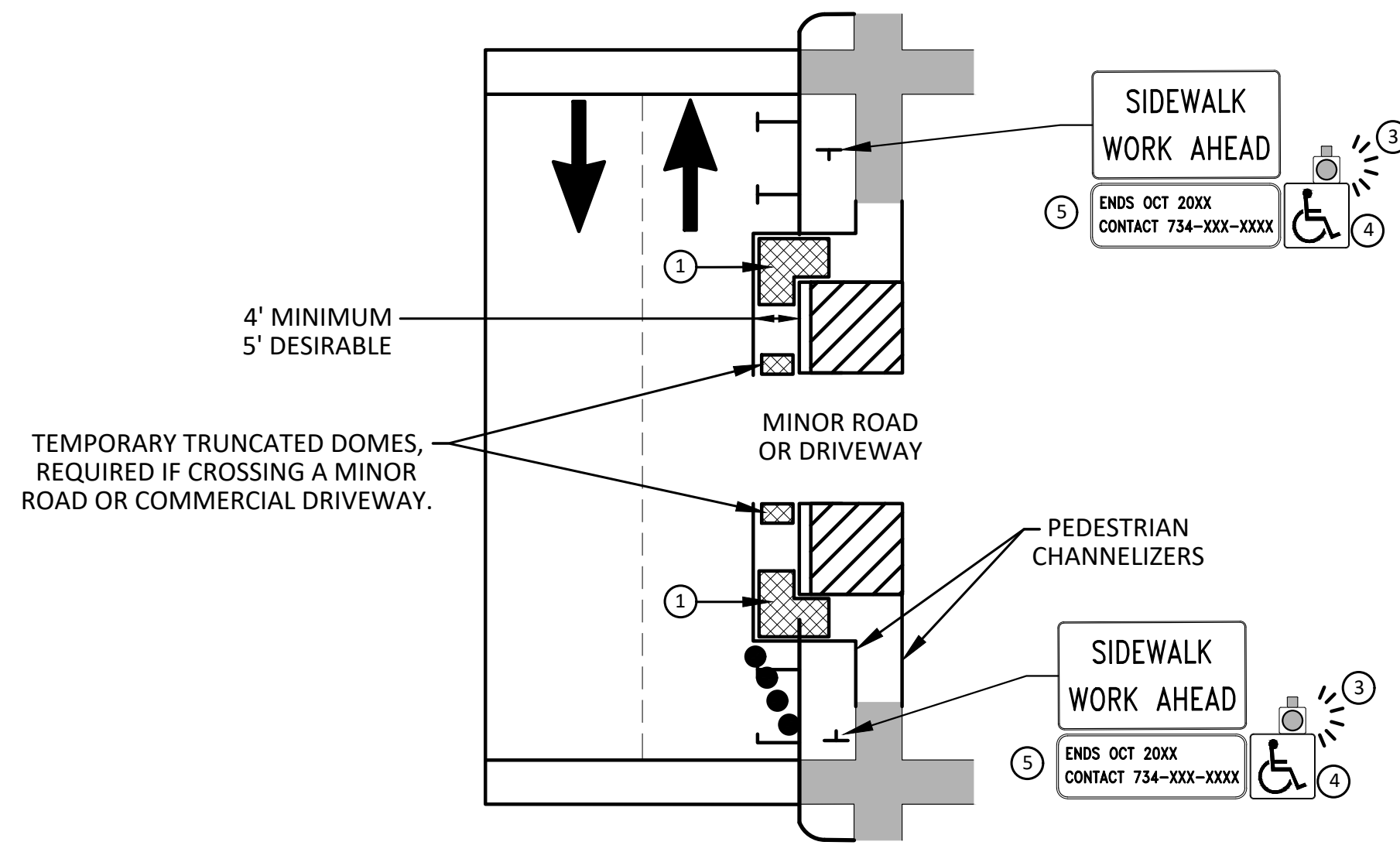
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DRAWING No. 2022-28-41

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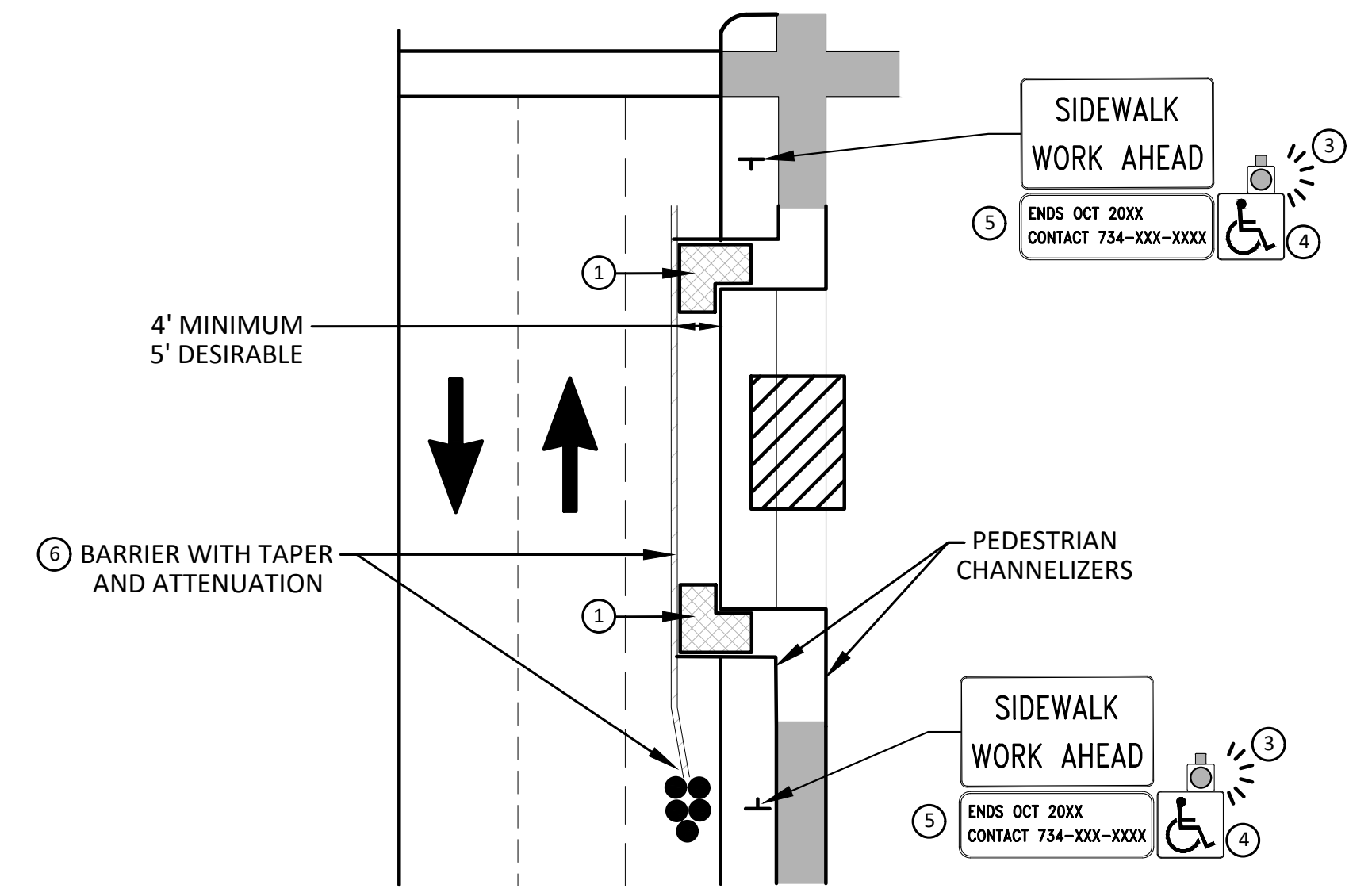


**BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY
BYPASS TYPE A**

NOTE: MAY ONLY BE USED ON ROADWAY WITH POSTED
SPEED OF 45 MPH OR LESS.



**SIDEWALK BYPASS USING PARKING OR
SHOULDER ON LOW SPEED ROADWAY
BYPASS TYPE B**



**SIDEWALK BYPASS USING
SHOULDER OR PARKING LANE ON
HIGH SPEED ROADWAY
BYPASS TYPE C**

GENERAL NOTES

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SPECIFIC NOTES

- 1 TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
- 2 S DEVICE TAPER 25 FEET LONG, RECOMMENDED WHEN THE CLOSED AREA WAS USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- 3 AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHOULD BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
- 4 THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHALL BE POSTED AND AN ALTERNATE ROUTE SHALL BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
- 5 TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHALL INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
- 6 SEE MMUTCD FOR GUIDANCE ON PLACEMENT AND USAGE OF BARRIER.

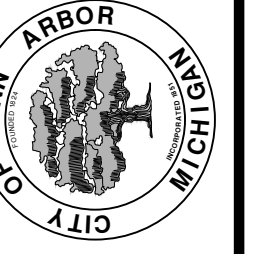
LEGEND

- ⊕ SIGN
- ▨ EXISTING PEDESTRIAN SURFACE
- ▨ WORK AREA
- ▨ PEDESTRIAN CHANNELIZATION DEVICE
- ▨ BARRIER
- ▨ SIDEWALK BARRICADE
- ➔ DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DEVICE



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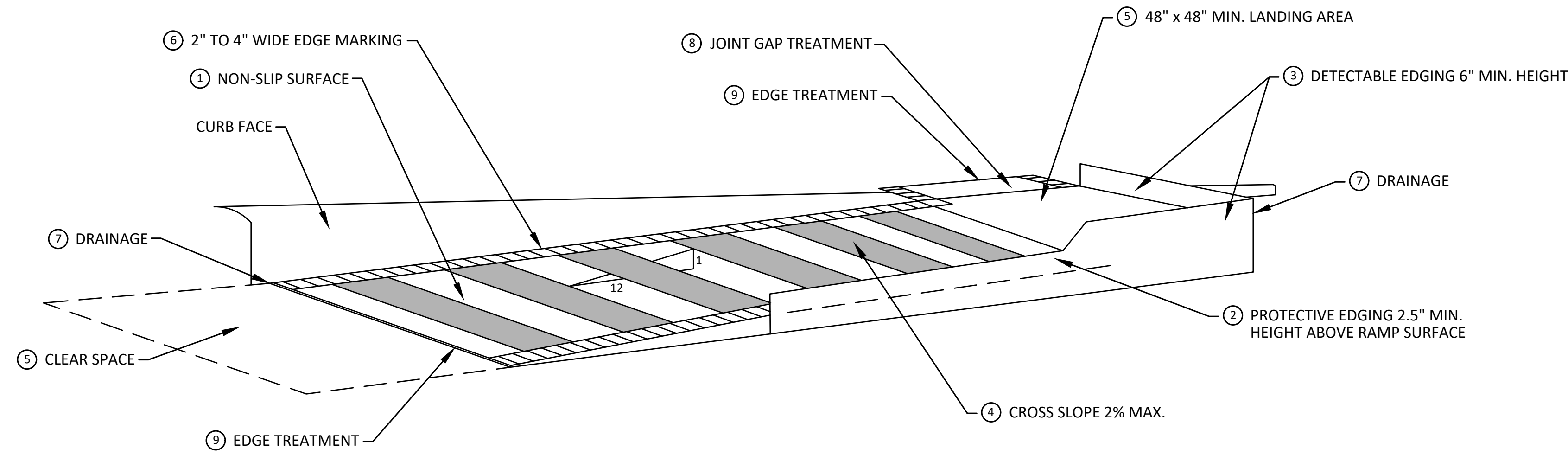
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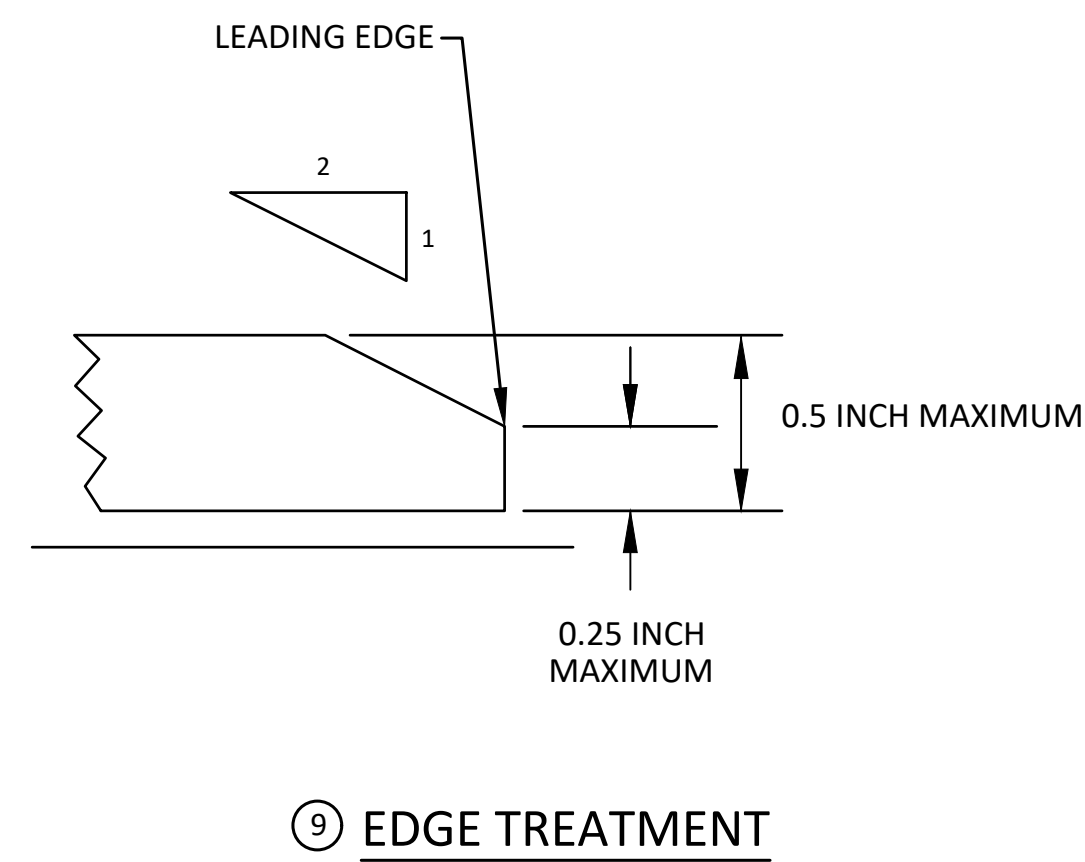
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2023 MISCELLANEOUS UTILITY PROJECTS
TAPR DETAILS - ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS

SCALE: N.T.S.
DRAWING No. 2022-28-42

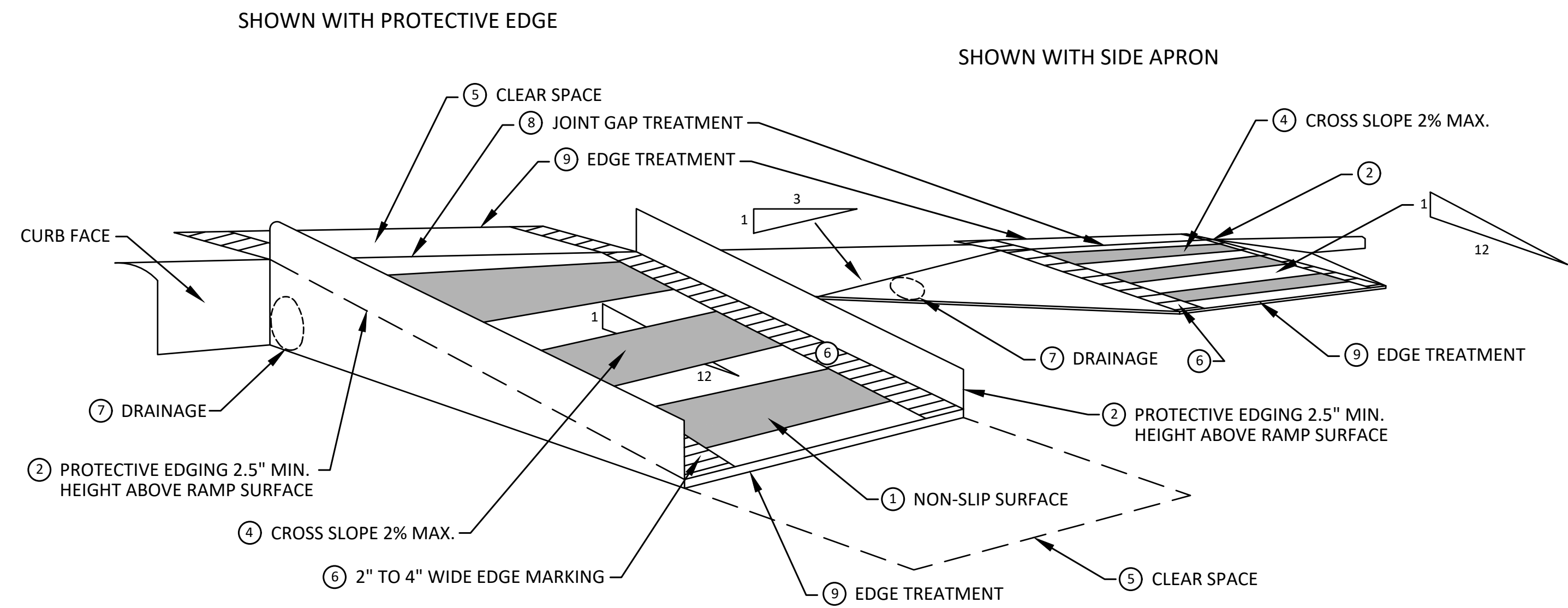
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**TEMPORARY CURB RAMP
PARALLEL TO CURB**



EDGE TREATMENT



**TEMPORARY CURB RAMP
PERPENDICULAR TO CURB**

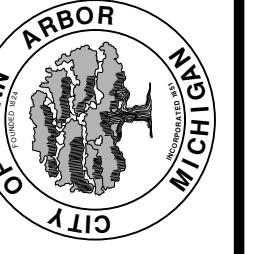
SPECIFIC NOTES

- 1 CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. PROTECTIVE EDGING WITH A 2.5" MIN. HEIGHT ABOVE THE RAMP SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- 2 DETECTABLE EDGING ANYTIME A HANDRAIL IS REQUIRED, AND ANYTIME THE PATH CHANGES DIRECTION. THIS INCLUDES A TURN ONTO THE RAMP FROM THE PATH. DETECTABLE EDGING MUST BEGIN A MAXIMUM OF 2.5' ABOVE THE RAMP SURFACE, AND EXTEND AT LEAST 6" ABOVE THE RAMP SURFACE. CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- 3 CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.
- 4 CLEAR SPACE OF 48" x 48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- 5 THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR, 2" TO 4" WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
- 6 WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.
- 7 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
- 8 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2" HEIGHT.



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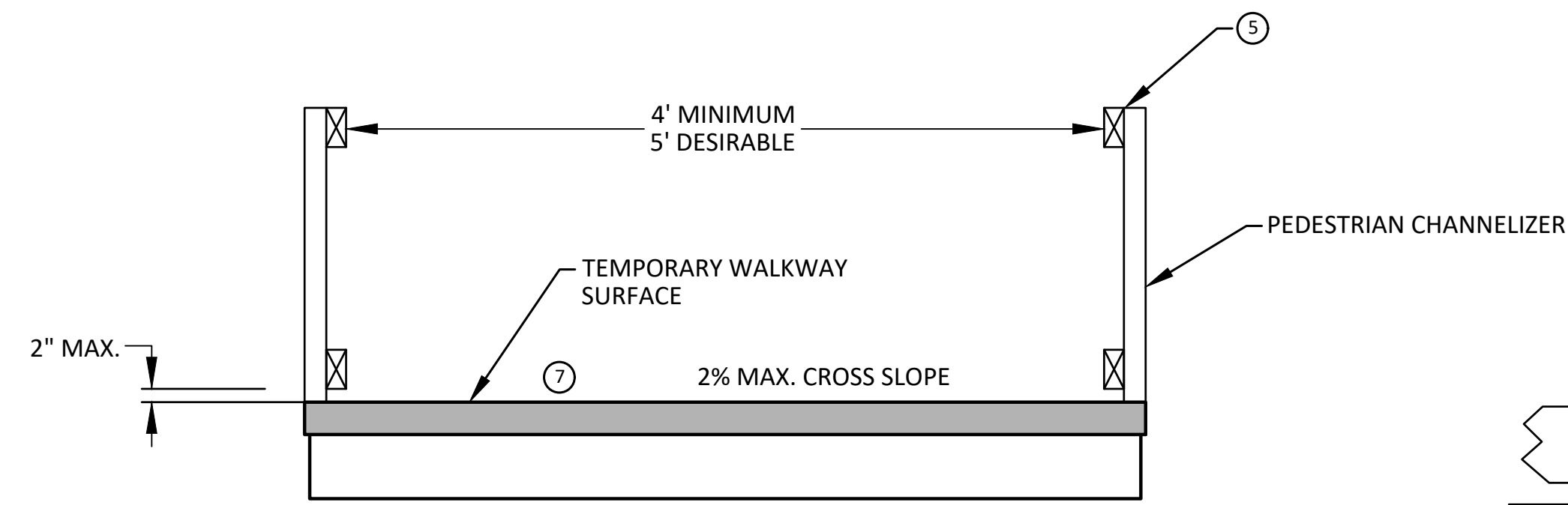
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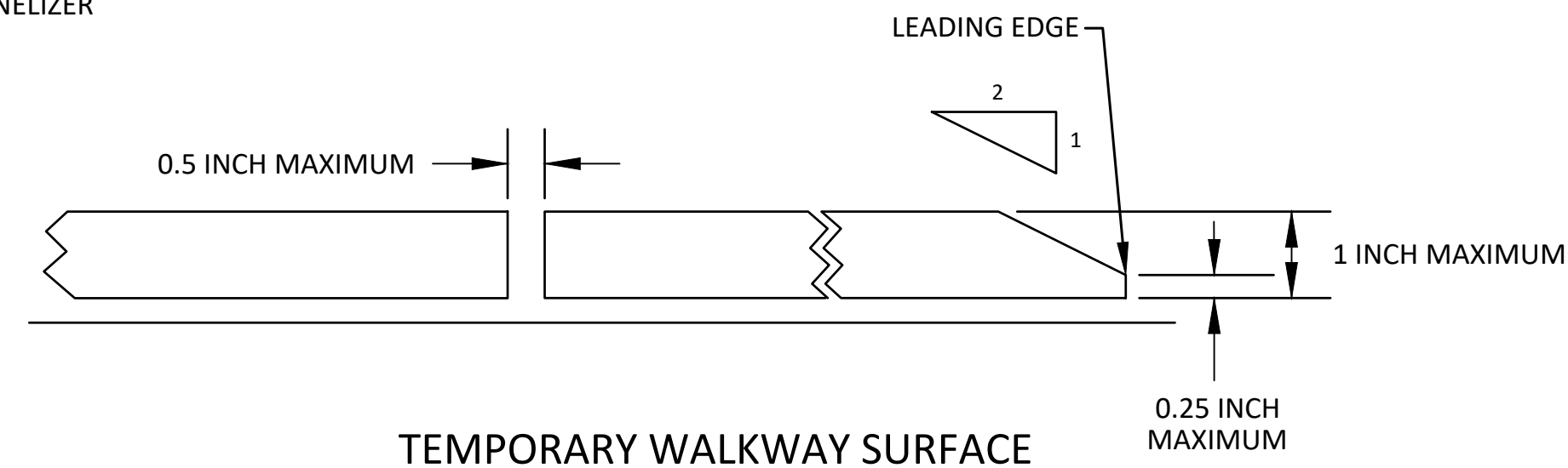
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TAPR DETAILS - TPAR RAMPS

SCALE : N.T.S.
DRAWING No. 2022-28-43

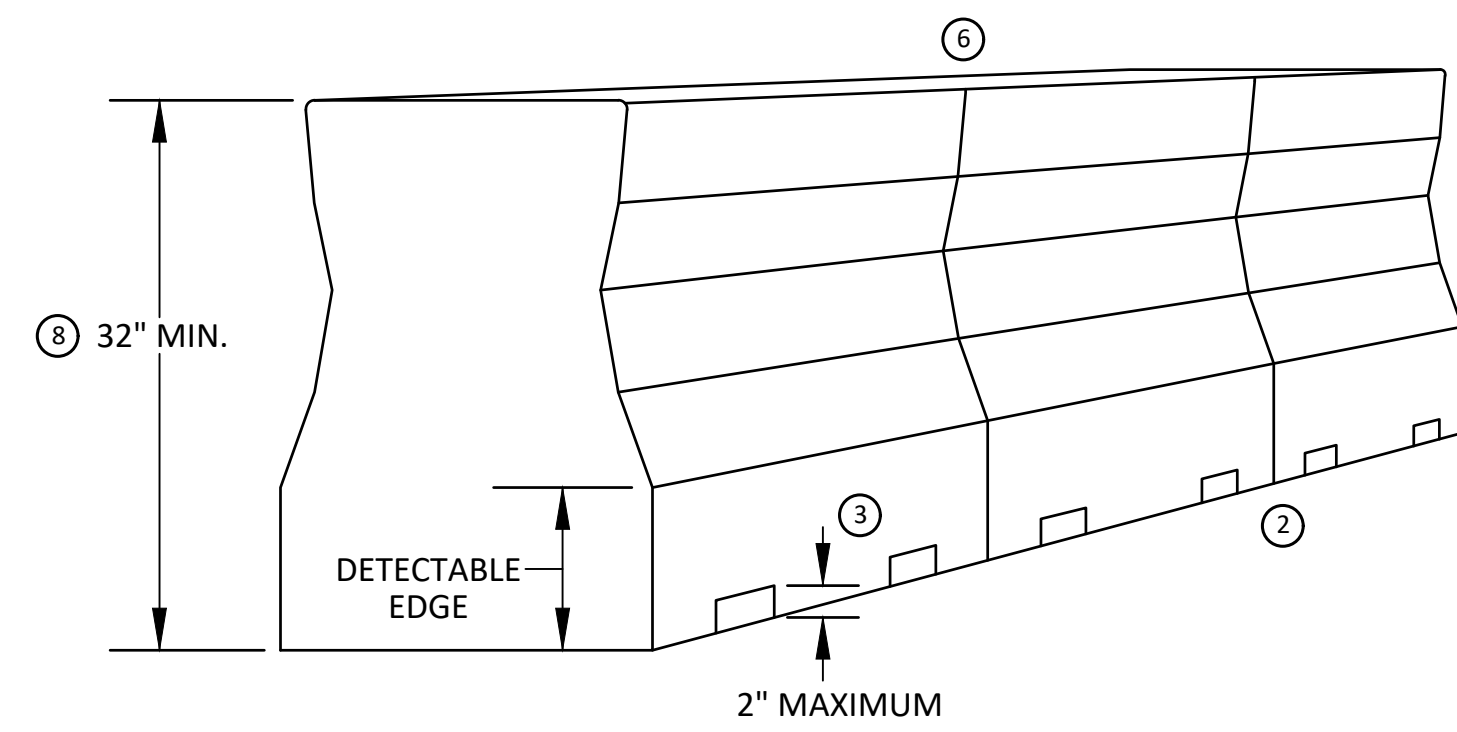
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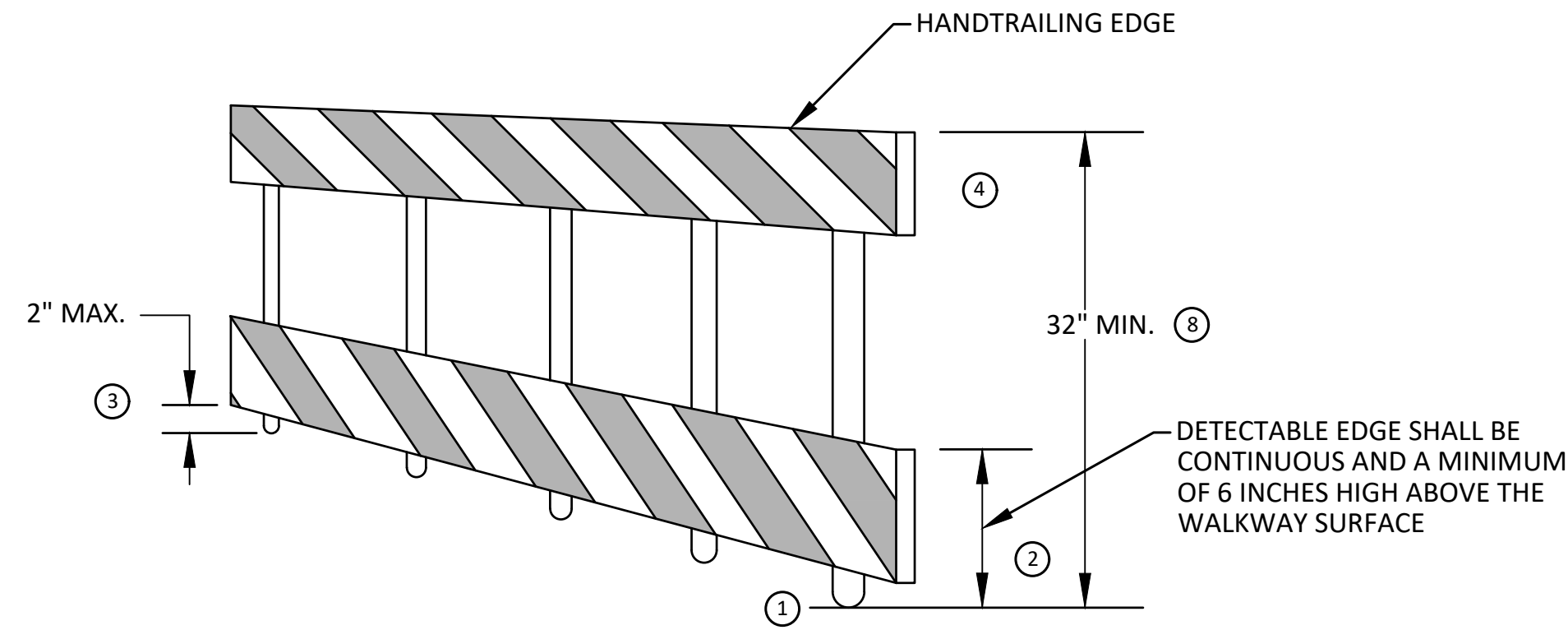
TEMPORARY PEDESTRIAN ACCESS



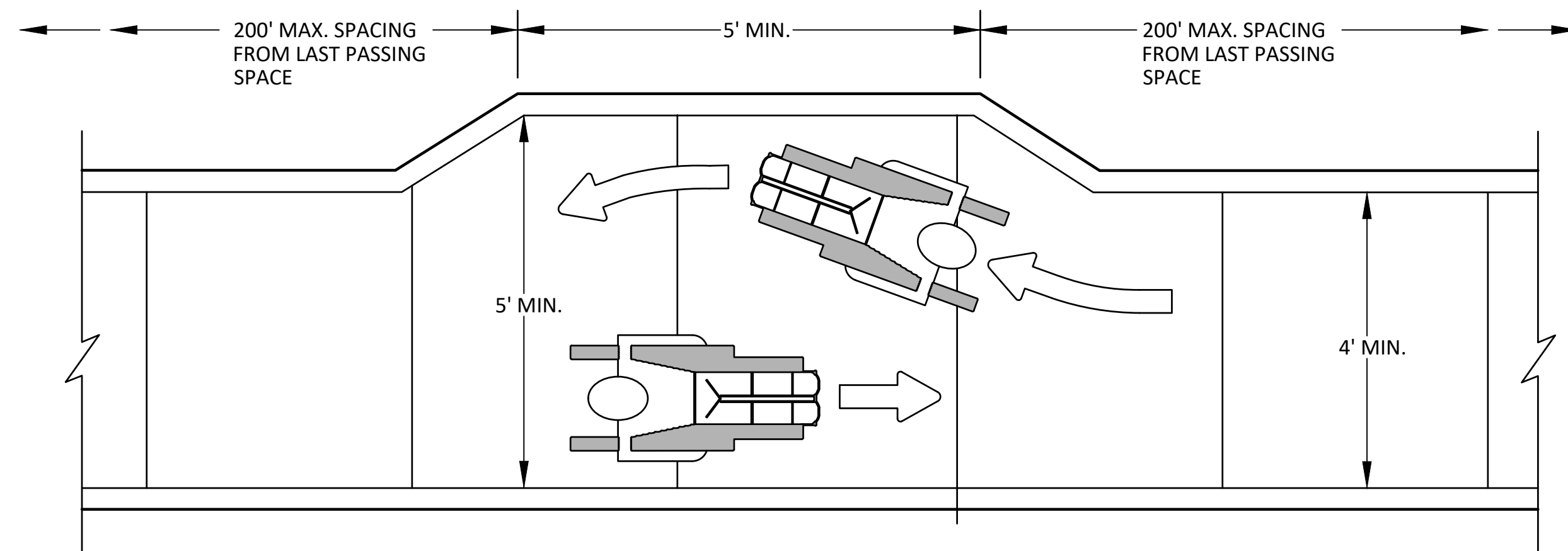
TEMPORARY WALKWAY SURFACE



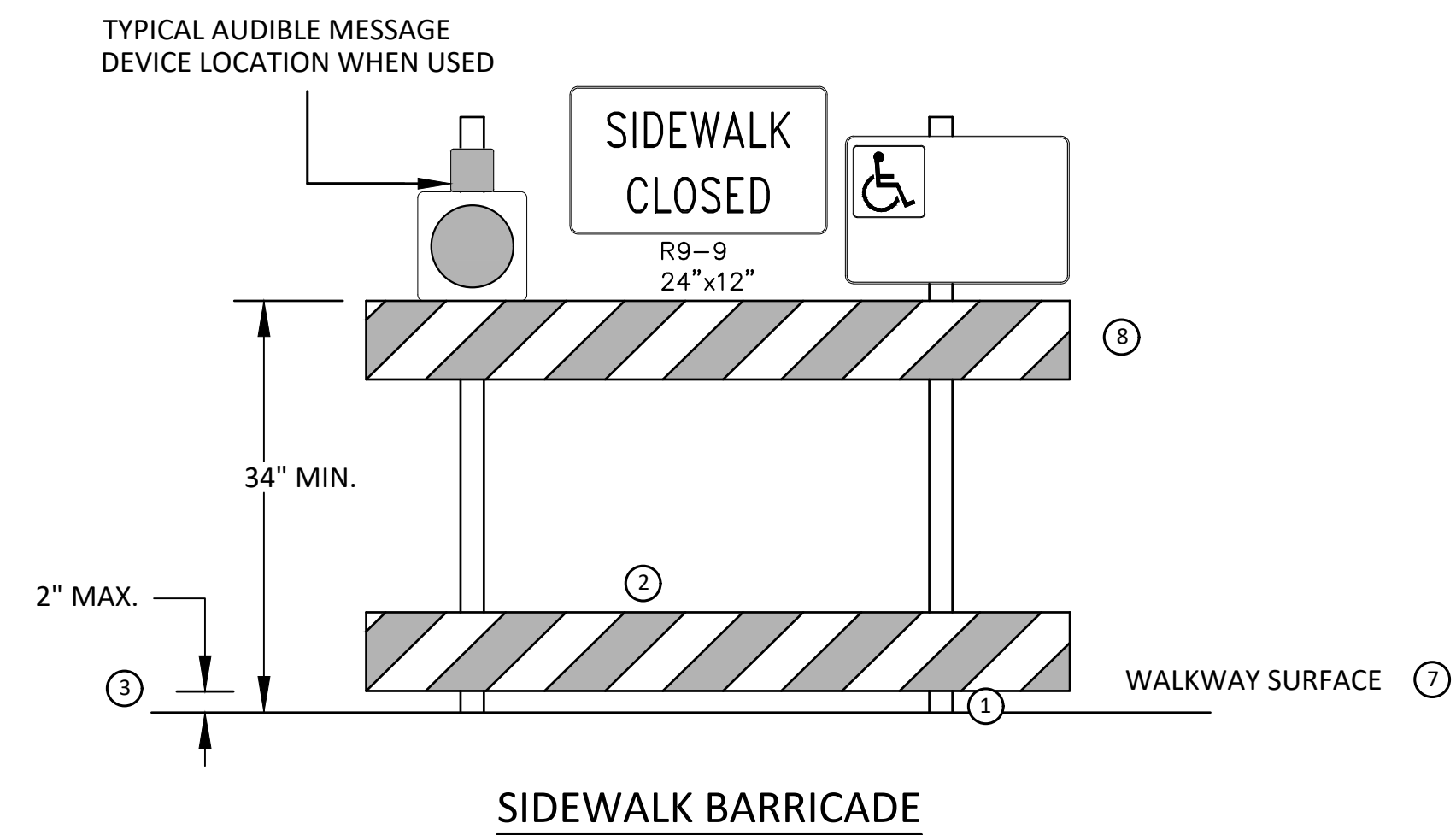
PEDESTRIAN CHANNELIZER USING A BARRIER
(MINIMUM REQUIREMENTS)



PEDESTRIAN CHANNELIZER
(MINIMUM REQUIREMENTS)



NARROW TEMPORARY PEDESTRIAN ACCESS ROUTE PASSING DETAIL



SIDEWALK BARRICADE

GENERAL NOTES

RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4 INCHES INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27 INCHES ABOVE THE WALKWAY SURFACE.

ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIER'S APPLICATION.

BARRICADES SHALL BE PLACED CONTINUOUSLY ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE BEING CLOSED.

SPECIFIC NOTES

1 ANY TRIPPING HAZARD IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED BEHIND OR INTERNAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHALL NOT EXTEND INTO THE 48 INCH MINIMUM WALKWAY CLEAR SPACE AND SHALL NOT EXCEED 0.5 INCHES IN HEIGHT ABOVE THE WALKWAY SURFACE.

2 DETECTABLE EDGES SHALL BE CONTINUOUS AND A MINIMUM OF 6 INCHES IN HEIGHT ABOVE WALKWAY SURFACE AND HAVE COLOR MARKINGS CONTRASTING WITH THE WALKWAY SURFACE.

3 DEVICES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2 INCHES IS ALLOWED FOR DRAINAGE PURPOSES.

4 PROVIDE A HANDRAIL ON BOTH SIDES OF THE RAMP IF THE RAMP IS NOT EXPOSED TO VEHICLE TRAFFIC AND HAS A TOTAL RISE GREATER THAN 6 INCHES, AND A LENGTH GREATER THAN 72 INCHES.

- ENSURE THE HANDRAIL IS 1.25 AND 1.5 INCHES WIDE AND CONFIGURED TO BE A "GRASPABLE" CROSS-SECTION.

SEE CONSTRUCTION SUBSECTION 2.A FOR ADDITIONAL DETAILS.

WHEN THE RAMP IS EXPOSED TO TRAFFIC, IN LIEU OF HANDRAILS, USE A PROTECTIVE EDGE 2.5 INCHES MINIMUM HEIGHT ABOVE THE RAMP SURFACE OR 1:10 FLARE ON BOTH SIDES OF THE RAMP.

5 ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.

6 ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE INTENDED CHANNELIZED PATH.

7 A WALKWAY SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED.

8 LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES IN HEIGHT OR GREATER.



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TAPR DETAILS - TPAR WALKWAY DEVICES

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