



# CITY OF ANN ARBOR ENGINEERING

## 2024 MISCELLANEOUS UTILITIES PROJECTS

**HURONVIEW BLVD. (WATER MAIN) - 2023009**

**ORKNEY DR. / CULVER RD. (WATER MAIN) - 2023009**

**ANN ARBOR RAILROAD/BOARDWALK (CULVERT) - 2022037**

RFP No. 24-10

**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 CITY OF ANN ARBOR PUBLIC SERVICES AREA DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS ("STANDARDS"). THE OMISSION OF ANY STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR OF THEIR OBLIGATION TO CONSTRUCT ITEMS IN COMPLETE ACCORDANCE WITH THOSE STANDARDS.



REV.	DATE	DESCRIPTION	CHECKED	DRAWN

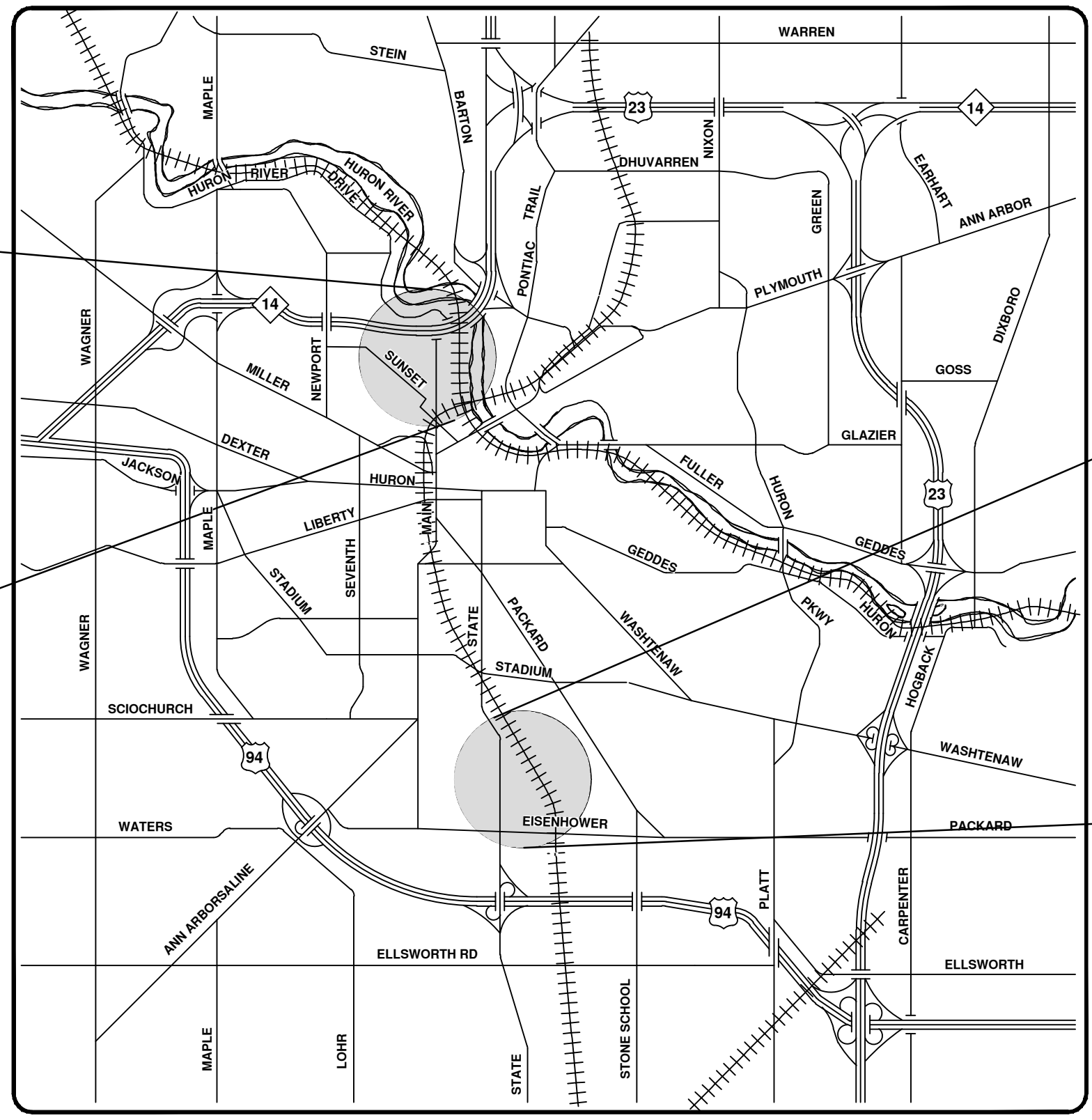
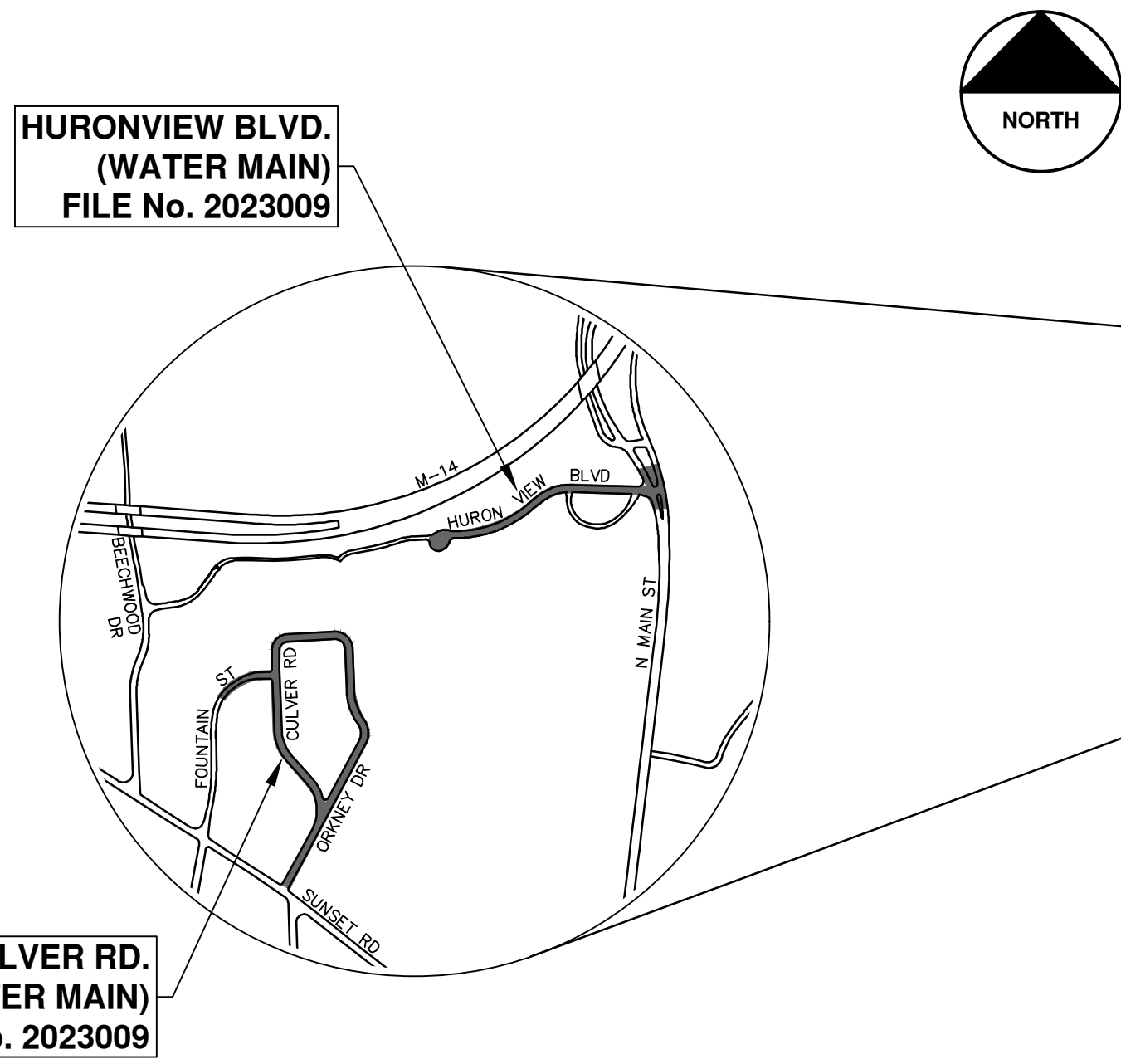
CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-0647  
www.a2gov.org



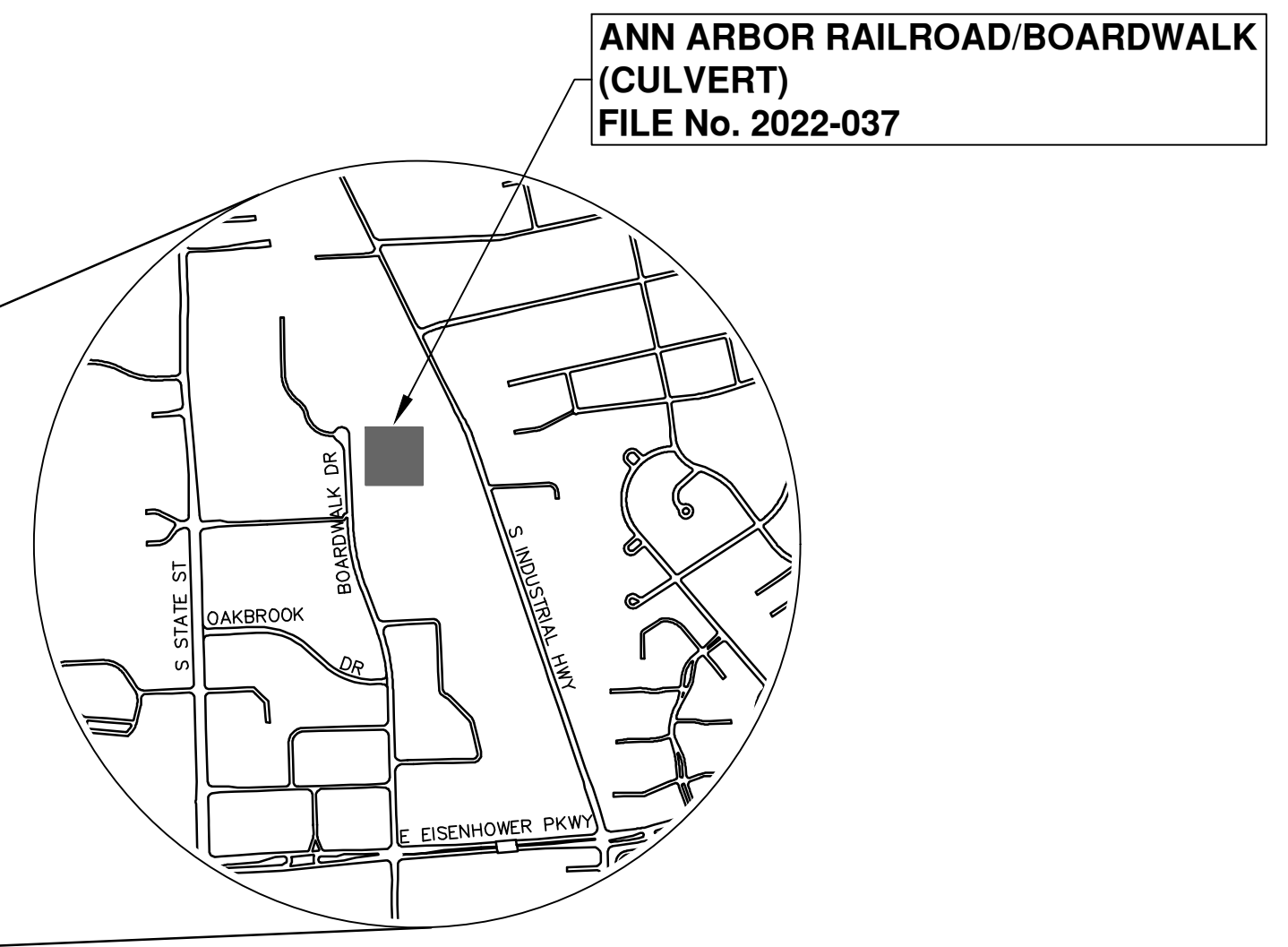
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
Water main, jack and bore, storm sewer replacements, and road resurfacing on Huron View Blvd. from N Main St. to 200 feet west of Cul-de-sac.  
Water main and trench patching on Orkney Dr, Culver Rd. and Fountain St. from Sunset St. to Fountain St.  
90-inch Storm sewer Improvements off Boardwalk Dr.

SCALE  
DRAWING No.  
2023009, 2022037

SHEET No.  
1 OF 1



VICINITY MAP



S:\Engineering\General\2023-009 2024 Misc. Utility Project\90 - Plan Sheet Sets\Bid\2023009 Overall Cover Sht.dwg - Plot Date: 2/18/2024 2:47:43 PM - \_a2 standard bw.stb - \_o2 standard bw.stb



# CITY OF ANN ARBOR ENGINEERING

## 2024 MISCELLANEOUS UTILITIES PROJECTS

### NOTES

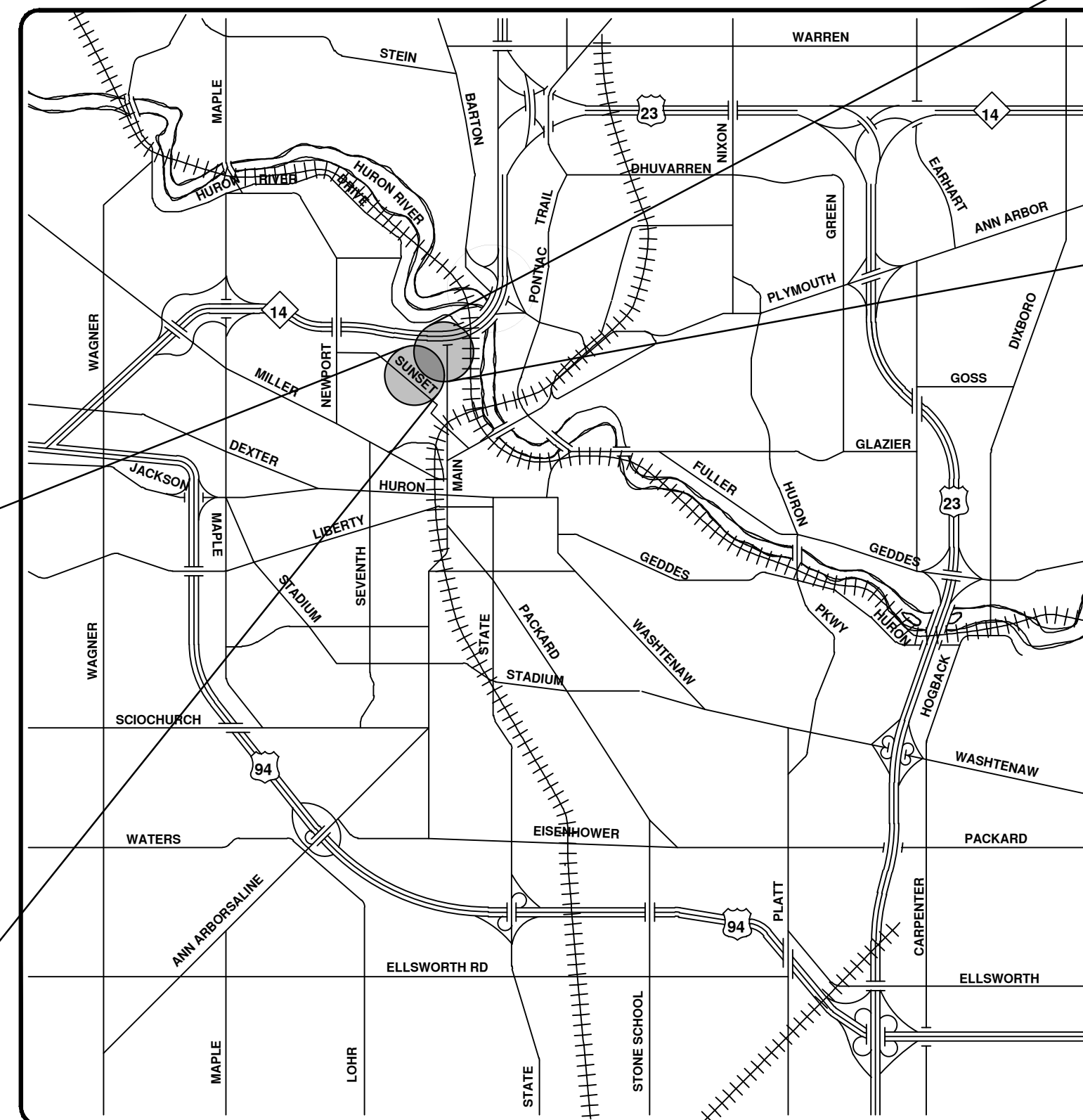
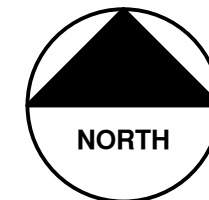
FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY 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.

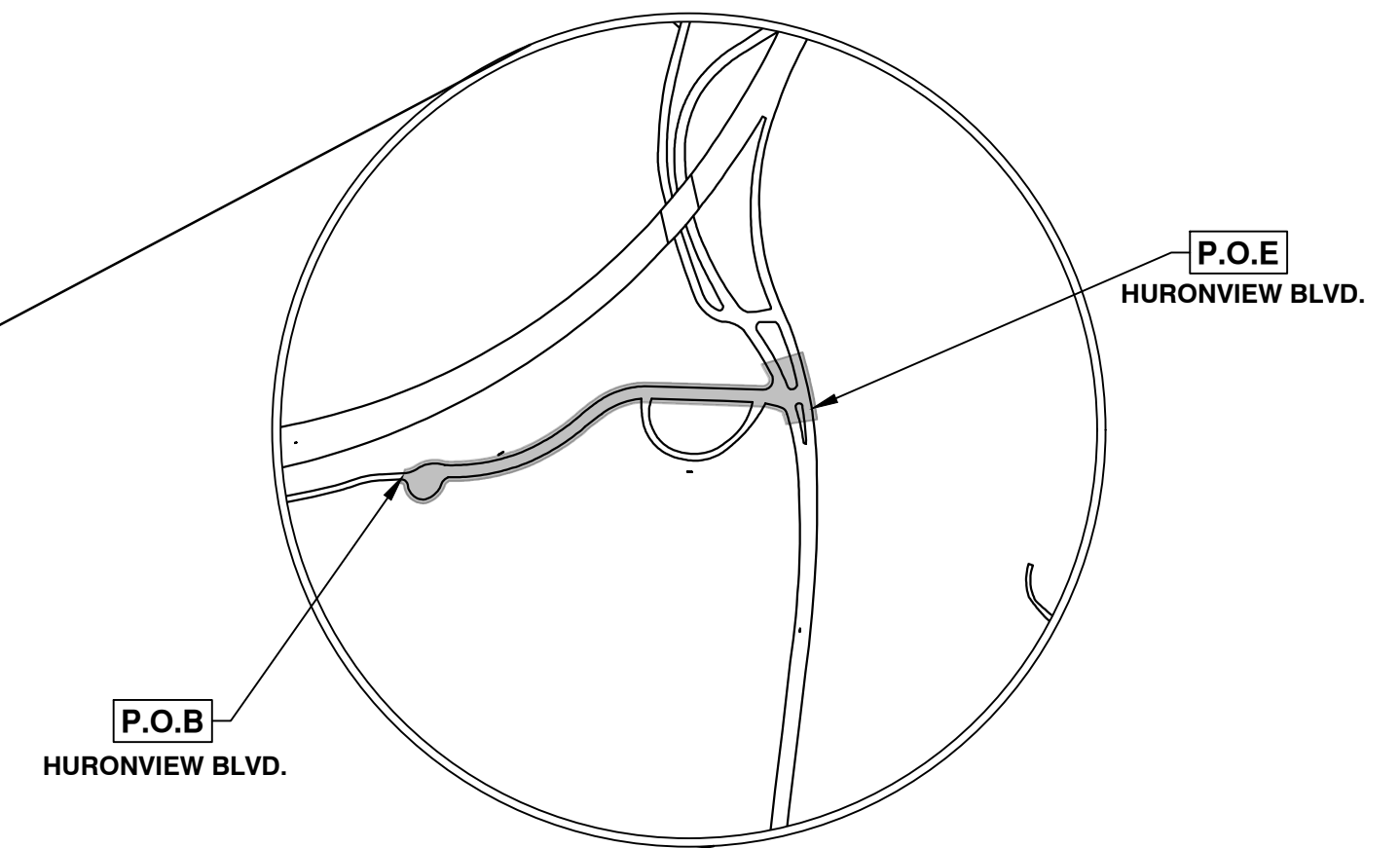
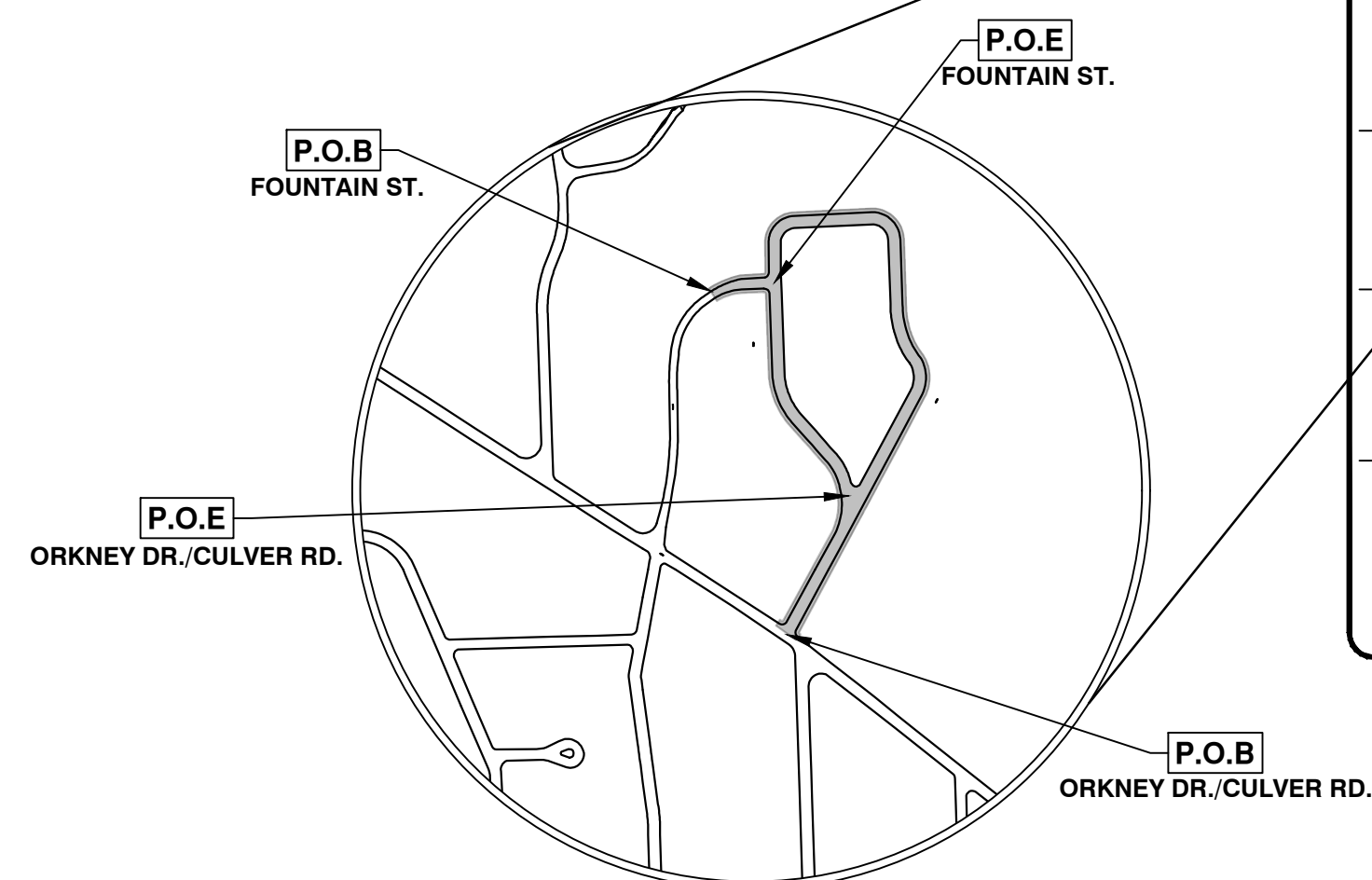
THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 2024 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE, AND THIS PROJECT'S CONTRACT DOCUMENTS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT.

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6	STANDARD WATER MAIN AND STORM SEWER DETAILS
7	STANDARD UTILITY TRENCH AND PAVING DETAILS
8-9	N. MAIN ST MAINTENANCE OF TRAFFIC
10	SUNSET DR. DETOUR MAINTENANCE OF TRAFFIC
11	HURONVIEW BLVD./N. MAIN ST. MDOT PLAN
12-13	HURONVIEW BLVD. REMOVALS
14-17	HURONVIEW BLVD. PROPOSED ROADS
18-20	HURONVIEW BLVD. DETAIL GRADES
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41	FOUNTAIN ST. WATER MAIN
42	ORKNEY CULVER FOUNTAIN WATER MAIN ADDITIONAL DETAILS
43-46	TAPR DETAILS

RFP NO. 24-10, FILE No. 2023-009



VICINITY MAP



PREPARED UNDER THE SUPERVISION OF		CITY APPROVAL	
 JOHN V. BALINT, P.E. - MI LICENSE No. 6201054062 Hubbel, Roth, & Clark, Inc.		 TRACY CRANE ANDERSON PROFESSIONAL ENGINEER No. 6201065162	
<i>John V. Balint</i> DATE 2 / 8 / 2024		<i>Tracy Anderson</i> DATE 2 / 8 / 2024	
JOHN V. BALINT, P.E. - MI LICENSE No. 6201054062 Hubbel, Roth, & Clark, Inc.		TRACY CRANE ANDERSON, P.E. - MI LICENSE No. 6201065162 PROJECT MANAGER	

5	REV.
4	DRAWN
3	CHECKED
2	DATE
1	DESCRIPTION
1	2 / 8 / 2024
1	JVB
1	N/A
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING 2024 MISCELLANEOUS UTILITIES PROJECTS COVER SHEET	
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING PROFILE: N/A SCALE: N/A DRAWING No. 2023-009-1 SHEET No. 1 OF 46	

**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.
- The location and depth of all existing utilities and service leads are to be field verified by the Contractor prior to 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 required to submit any and all necessary requests to Miss Dig for the locating and marking of any and all utilities located within the project. The Contractor shall not begin work until all utilities within the project limits have been located and marked by Miss Dig, and received confirmation from Miss Dig that all known utilities within the project limits have been located and marked.
- 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 current 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 or delay 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 concrete 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.
- MEGALUG Mechanical joint restraints by EBAA Iron, Inc and Cor-Blue T-head bolts and nuts by Birmingham Fastener shall be used at all mechanical water main joints out hydrants.
- All plugs, caps, tees, hydrants, and horizontal bends shall be provided with 3500 psi concrete thrust blocks in accordance with SD-W-2, unless otherwise indicated (art 10 Sec II.K.5).
- The Contractor shall construct, flush, and bacteriologically test the water main per Section III.L of Article 10 of the Ann Arbor 2024 Standard Specifications 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.
- "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. The Contractor shall coordinate with and deliver such appurtenances to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road, or to another location stipulated by the city. All costs associated with the delivery of such appurtenances to the city shall be considered incidental to other pay items and will not be paid for separately.
- 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.
- All structures shall receive new castings as directed by the Engineer, as specified on the standard casting schedule. The existing castings are the property of the City of Ann Arbor. 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.
- 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's purchase price for these devices, including shipping, shall be paid as an extra. Prior to payment for this item, the Contractor shall submit receipts for the Engineer's review and approval. All other costs associated with the installation of these devices shall be included in the payment for the sewer.
- 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, 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 Typical Edge Drain Trench SD-TD-4, the edge drain shall be installed at the depth as indicated on the plans, or as directed by Engineer. In no case shall the edge drain be installed at a grade less than 0.50% or at a depth of less than 2' below top of proposed pavement.
  - The limits of hma pavement removal and replacement on Sunset Rd, Orkney Dr, Culver Rd, and Fountain St are based on the smallest utility trench width permitted by the city of ann arbor standard specifications and details for the proposed water main pipe size. The area of pavement removal and replacement shown in plan, and the quantities for the replacement hma and aggregate base listed in quantity tables are based on this minimum allowable trench width. however, the overall bid quantities for hma and aggregate base have been determined based on the amount of material required to restore the resulting road structure above a utility trench with 1-on-1 side slopes.
- On site soils per the USDA Soil Survey of Washtenaw County, Michigan  
 MMF - Miami Loam - 25% to 35% Slopes  
 WAA - Wasepi Sandy Loam, 0% to 4% Slopes  
 WAWABB - Wawasee Loam, 2% to 6% Slopes

**HURONVIEW BLVD. CONTROL POINTS**

TRAVERSE POINTS			
TP#	ELEV.	NORTHING	EASTING
3050	883.94	291414.47	13290078.64
3051	862.21	291492.69	13290399.10
3052	839.21	291650.40	13290634.60
3053	807.84	291664.65	13291056.94
3054	796.87	291561.17	13291232.61
3055	802.14	291697.71	13291196.78
3056	798.87	291662.22	13291208.64

BENCHMARKS				
BM#	ELEV.	NORTHING	EASTING	DESCRIPTION
350	868.35	291478.60	13290305.46	VERTICAL MAG-NAIL SOUTH ROOT 18" POPLAR NORTH SIDE HURONVIEW BLVD. OPPOSITE OPPOSITE WEST PINE TO BUILDING355 HURONVIEW BLVD.
351	846.83	291566.94	13290591.27	MAG-NAIL IN N. FACE OF LIGHT POLE S.E. CORNER OF DRIVE TO BUILDING 355 HURONVIEW BLVD.
352	817.55	291670.52	13290917.78	MAG-NAIL NORTH FACE 14" CATALPA NORTH SIDE HURONVIEW BLVD. AT HOUSE #100.
354	802.39	291675.19	13291201.77	N.W. FACE OF LIGHT POLE S. SIDE OF HURONVIEW BLVD.
355	811.20	291625.72	13291014.66	TOP OF HUB.

**ORKNEY DR. CONTROL POINTS**

TRAVERSE POINTS			
TP#	ELEV.	NORTHING	EASTING
3003	902.64	290193.74	13289647.81
3004	863.74	290563.87	13289812.63
3005	863.80	290743.49	13289723.29
3006	866.23	290967.78	13289729.75
3007	878.10	290983.45	13289434.97

BENCHMARKS				
BM#	ELEV.	NORTHING	EASTING	DESCRIPTION
300	931.85	289818.83	13289457.85	MAG-NAIL IN W. FACE OF UTILITY POLE LOCATED AT N.E. CORNER OF ORKNEY RD. AND 15'+/- E. OF C.L. OF ORKNEY.
301	907.32	290162.85	13289622.42	PAINTED RIM ON S. EDGE OF MANHOLE LOCATED AT THE INTERSECTION OF CULVER RD. AND ORKNEY.
305	864.19	290487.29	13289793.11	PAINTED SQUARE ON N. RIM OF MANHOLE IN THE C.L. OF ORKNEY DR. 65'+/- W. OF S.W. CORNER OF HOUSE AT #1321 ORKNEY DR.
306	865.38	290694.31	13289735.03	PAINTED SQUARE ON N. RIM OF MANHOLE 9' +/- W. OF C.L. OF ORKNEY DR. LOCATED BETWEEN #1329 AND #1330 ORKNEY DR.
307	878.52	290977.45	13289432.85	PAINTED SQUARE ON N. RIM OF MANHOLE 178' +/- N. OF INTERSECTION OF FOUNTAIN ST. AND ORKNEY DR. LOCATED BETWEEN #1413 AND #1402 ORKNEY DRIVE.

**CULVER RD. CONTROL POINTS**

TRAVERSE POINTS			
TP#	ELEV.	NORTHING	EASTING
3000	931.86	289796.75	13289429.89
3008	884.74	290822.95	13289375.92
3010	911.36	290462.17	13289415.91

BENCHMARKS				
BM#	ELEV.	NORTHING	EASTING	DESCRIPTION
308	885.56	290805.37	13289393.92	PAINTED SQUARE ON S. RIM OF MANHOLE 5' +/- N.W. OF INTERSECTION OF FOUNTAIN ST. AND ORKNEY DR.

**FOUNTAIN ST. CONTROL POINTS**

TRAVERSE POINTS			
TP#	ELEV.	NORTHING	EASTING
3008	884.74	290822.95	13289375.92
3009	899.15	290737.14	13289160.81

BENCHMARKS				
BM#	ELEV.	NORTHING	EASTING	DESCRIPTION
309	889.66	290792.51	13289285.82	PAINTED SQUARE ON WESTERLY RIM OF MANHOLE ON C.L. OF FOUNTAIN ST. 100' WEST OF C.L. INTERSECTION OF FOUNTAIN ST. AND ORKNEY DR. BETWEEN HOUSE #1331 AND #1401.

HORIZONTAL DATUM: NAD83 SPC MICHIGAN SOUTH ZONE 2113  
 VERTICAL DATUM: NAVD88

**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
MDOT PERMIT	MICHIGAN DEPARTMENT OF TRANSPORTATION
* NO COST TO CONTRACTOR	

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

PERMIT	ISSUING AUTHORITY
WATER MAIN CONSTRUCTION PERMIT PERMIT NUMBER: ACT-298788	MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE)

**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		
SIGNALS		MARK MORENO (734) 794-6361
STREET LIGHTS		
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 IGNAZIAK (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	STEVEN ALLSHOUSE (734) 996-5381
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

TOTAL AREA OF PROPOSED DISTURBANCE = 1.36 AC  
 0.91 AC - HURONVIEW BLVD.  
 0.45 AC - ORKNEY DR./CULVER RD./FOUNTAIN ST.

v:\202302\_20230223\C\Sheets\Cov.dwg - \_02 standard bw.stb - Plot Date: 2/8/2024 1:34:51 PM

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

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 2024 MISCELLANEOUS UTILITIES PROJECTS  
 2023-009-2

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 2024 MISCELLANEOUS UTILITIES PROJECTS  
 2023-009-2

SHEET No. 2 OF 46

DRAWING No. 2023-009-2

NOTES

CITY OF ANN ARBOR PUBLIC SERVICES  
 301 EAST HURON STREET  
 P.O. BOX 8647  
 ANN ARBOR, MI 48107-8647  
 WWW.A2gov.ORG

CITY OF ANN ARBOR PUBLIC UTILITIES PROJECTS

2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009

**EXISTING LEGEND**

- EX = EXISTING
- BVW = BUTTERFLY VALVE IN WELL
- BVB = BUTTERFLY VALVE IN BOX
- GVW = GATE VALVE IN WELL
- GVB = GATE VALVE IN BOX
- ⊕ FIRE HYDRANT
- I GATE VALVE IN BOX
- ⊙ GATE VALVE IN WELL
- ⊙ STOP BOX
- ⊠ WATER VAULT
- ⊙ WELL
- CATCH BASIN (SQ)
- CATCH BASIN (RD)
- STORM MANHOLE
- NON-CURB CATCH BASIN (SQ)
- ) END SECTION
- SANITARY MANHOLE
- CLEAN-OUT
- POST
- ⬠ PEDESTRIAN SIGNAL SIGN
- HAND HOLE
- ⊙ ORNAMENTAL LIGHT
- ⊛ FLOOD LIGHT
- ⊙ UNKNOWN MANHOLE
- ⊙ TELEPHONE MANHOLE
- ⊠ TELEPHONE RISER
- ⊙ GAS VALVE
- GAS VENT
- ⊠ GAS BOX
- ⊠ ELECTRICAL RISER
- ⊠ TRANSFORMER
- ⊠ UTILITY POLE
- LAMP POLE
- ▽ GUY ANCHOR
- GUY POLE
- ⊙ MONITORING WELL
- ⊠ MAILBOX
- SOIL BORING
- △ TRAVERSE POINT
- + BENCH MARK
- IRON PIPE
- MON BOX

- W --- WATER MAIN
- - - - - WATER MAIN ABANDONED
- - - - - STORM SEWER
- - - - - STORM SEWER ABANDONED
- - - - - SANITARY SEWER
- - - - - SANITARY SEWER ABANDONED
- g --- GAS MAIN
- g (Dead) --- GAS MAIN (DEAD)
- o v v o --- ELECTRICAL OVER HEAD
- o v v o --- ELECTRICAL UNDER GROUND
- e duct bank --- ELECTRICAL DUCT BANK
- o h t --- TELEPHONE OVER HEAD
- t --- TELEPHONE UNDER GROUND
- t duct bank --- TELEPHONE DUCT BANK
- o h t v --- CABLE TV OVER HEAD
- t v --- CABLE TV UNDER GROUND
- fo --- FIBER OPTIC
- fo duct bank --- FIBER OPTIC DUCT BANK
- BOUNDARY
- /// /// /// BUILDING
- CENTERLINE OF DITCH
- 800 --- CENTERLINE/CROWN OF ROAD
- 799 --- CONTOUR MAJOR
- 799 --- 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
- TREE TO REMAIN & PROTECT (DECIDUOUS)  
CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREAST HEIGHT (INCHES) X 10
- ★ TREE TO REMAIN & PROTECT (CONIFEROUS)  
CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREAST HEIGHT (INCHES) X 10

**PROPOSED LEGEND**

- PROP = PROPOSED
- BVW = BUTTERFLY VALVE IN WELL
- BVB = BUTTERFLY VALVE IN BOX
- GVW = GATE VALVE IN WELL
- GVB = GATE VALVE IN BOX
- ⊕ HYDRANT (PLAN)
- ⊙ WATER GATE WELL
- ⊙ REDUCER
- I WATER GATE VALVE
- ⊙ WATER STOP BOX
- ⊠ WATER VAULT
- ⊙ INLET
- ⊠ DOUBLE INLET
- INLET JUNCTION CHAMBER
- ROUND CATCH BASIN
- STORM MANHOLE
- ➔ DRAIN ARROW
- ⊠ FLARED END SECTION
- CLEAN-OUT
- BARREL
- ▽ SIGN
- ⊠ PUSH BUTTON
- ⊠ HAND HOLE
- ⊙ CHANNELIZING DEVICE
- ⊠ TYPE III BARRICADE
- ⊠ CONSTRUCTION SIGN
- ➔ TRAFFIC FLOW ARROW

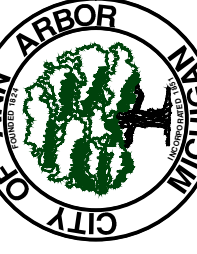
- W --- WATER MAIN (GREATER THAN 16")
- R --- WATER MAIN (LESS THAN 16")
- S --- STORM SEWER
- FO --- SANITARY SEWER
- E --- FIBER OPTIC
- CENTERLINE OF DITCH
- CENTERLINE OF ROAD
- FENCE
- GRAVEL
- SILT FENCE
- PROTECTIVE FENCE
- GUARDRAIL
- LOT/UNIT
- CURB
- TEMPORARY GRADING PERMIT
- 800 --- CONTOUR MAJOR
- 799 --- CONTOUR MINOR
- WATER EASEMENT
- STORM EASEMENT
- SANITARY EASEMENT
- R.O.W.
- LIMITS OF CONSTRUCTION
- LIMIT OF GRADING
- STONE WALL

- DETECTABLE WARNING
- ASPHALT
- CONCRETE
- HMA PAVEMENT REMOVAL, ANY DEPTH (ROAD FUND)
- HMA PAVEMENT REMOVAL, ANY DEPTH (WATER FUND)
- REMOVE CONCRETE SIDEWALK AND DRIVE, ANY THICKNESS
- WORK AREA
- X X X X X X X X · REMOVE CONCRETE CURB OR CURB AND GUTTER, ANY TYPE
- SIDEWALK
- TREE (DECIDUOUS)
- ★ TREE (CONIFEROUS)
- ⊗ TREE TO BE REMOVED (DECIDUOUS)
- ⊗ TREE TO BE REMOVED (CONIFEROUS)
- ⊗ STUMP TO BE REMOVED



Know what's below. Call before you dig.

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ANN ARBOR, MI 48106-1067  
www.aagov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
LEGEND

SCALE: N/A  
PROFILE: N/A  
DRAWING No. 2023-008-3

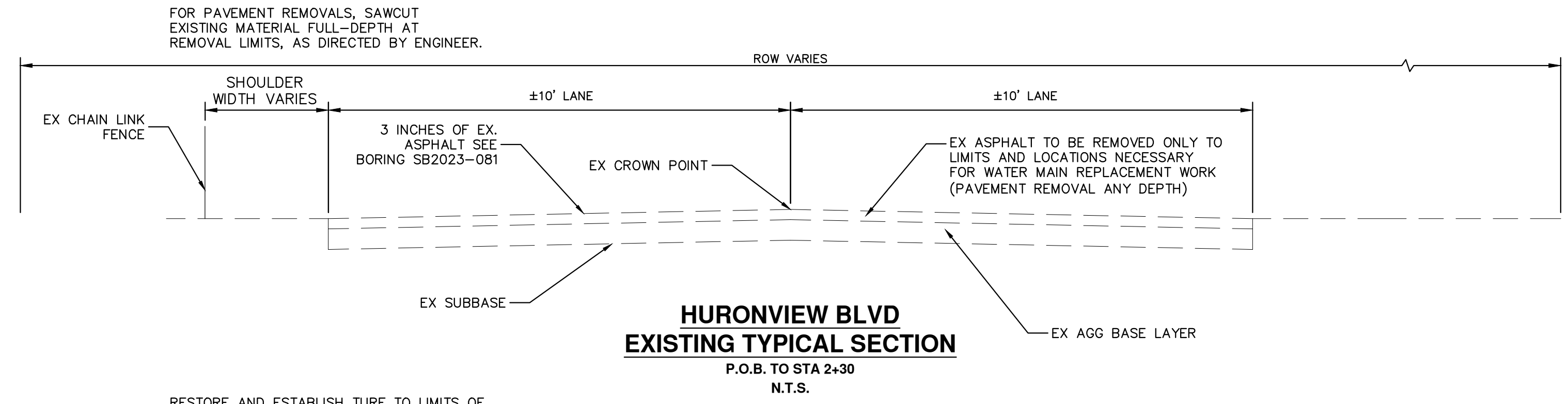
SHEET No. 3 OF 46

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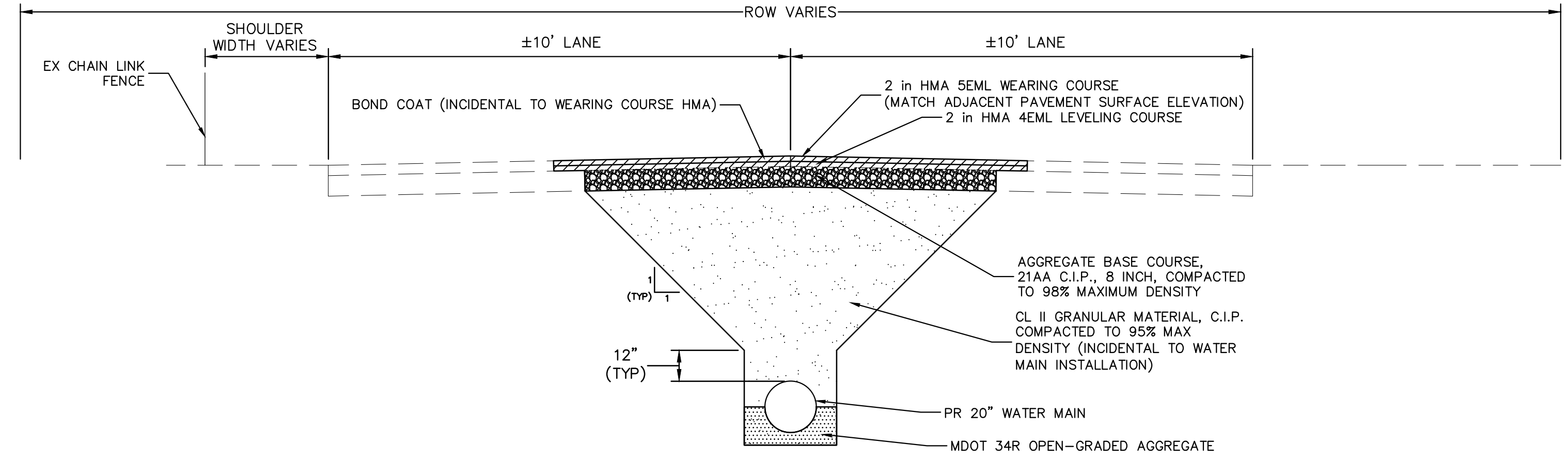
HMA APPLICATION ESTIMATE				
IDENT NO.	ITEM	APPLICATION/RATE	BINDER	REMARKS
4EML	HMA, 4EML	220 LBS/SYD	PG58-28	LEVELING
5EML	HMA, 5EML	220 LBS/SYD	PG64-22	AWI-260 MIN, WEARING
4E3	HMA, 4E3	220-275 LBS/SYD	PG58-28	BASE AND LEVELING
5E3	HMA, 5E3	165-220 LBS/SYD	PG64-22	WEARING
-	BOND COAT	0.05-0.15 GAL/SYD	-	-

NOTES:

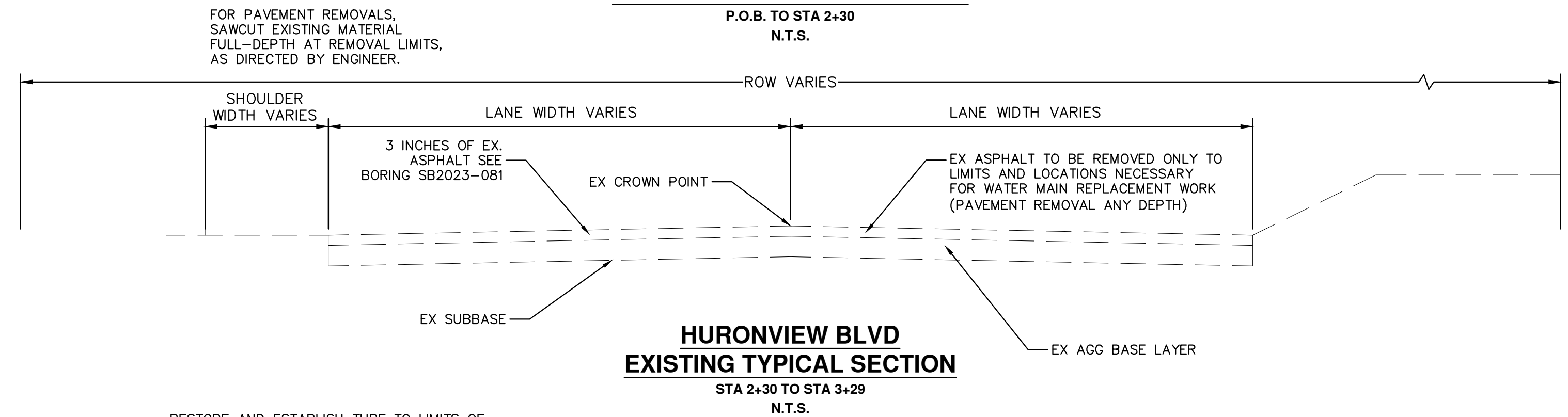
- 4E3 AND 5E3 HMA MIXES TO BE USED FOR PAVEMENT REPLACEMENT ON MDT OWNED AND OPERATED STREETS AND ROADS (N MAIN ST).
- 4EML AND 5EML HMA MIXES TO BE USED FOR HMA PAVEMENT REPLACEMENT ON ANN ARBOR OWNED AND OPERATED STREETS AND ROADS (HURONVIEW BLVD, SUNSET RD, ORKNEY DR, CULVER RD, AND FOUNTAIN ST).
- MDOT TIER 1 RAP LIMITS APPLY TO WEARING COURSE HMA MIXES.
- MDOT TIER 2 RAP LIMITS APPLY TO LEVELING AND BASE COURSE HMA MIXES.
- FURNISHING AND PLACING BOND COAT IS INCIDENTAL TO HMA PAY ITEMS.



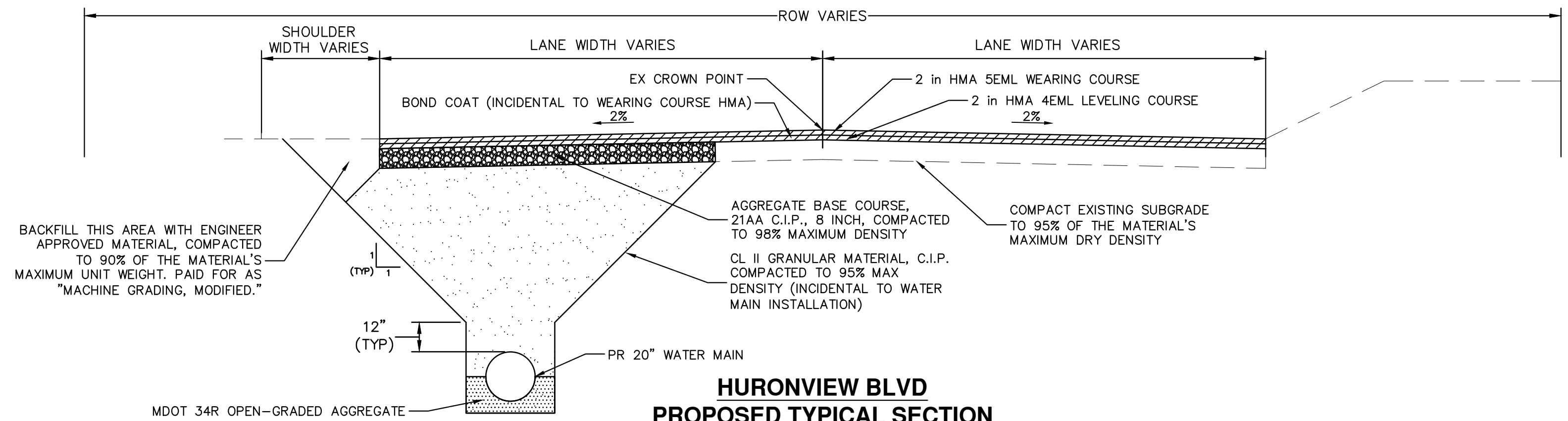
RESTORE AND ESTABLISH TURF TO LIMITS OF DISTURBANCE, PAID FOR AS CLEAN UP AND RESTORATION, SPECIAL



**HURONVIEW BLVD  
PROPOSED TYPICAL SECTION**  
P.O.B. TO STA 2+30  
N.T.S.



RESTORE AND ESTABLISH TURF TO LIMITS OF DISTURBANCE, PAID FOR AS CLEAN UP AND RESTORATION, SPECIAL



**HURONVIEW BLVD  
PROPOSED TYPICAL SECTION**  
STA 2+30 TO STA 3+29  
N.T.S.



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5				
4				
3				
2				
1		2/8/2024	NTM	JVB

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PUBLIC SERVICES  
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ANN ARBOR, MI 48106-0647  
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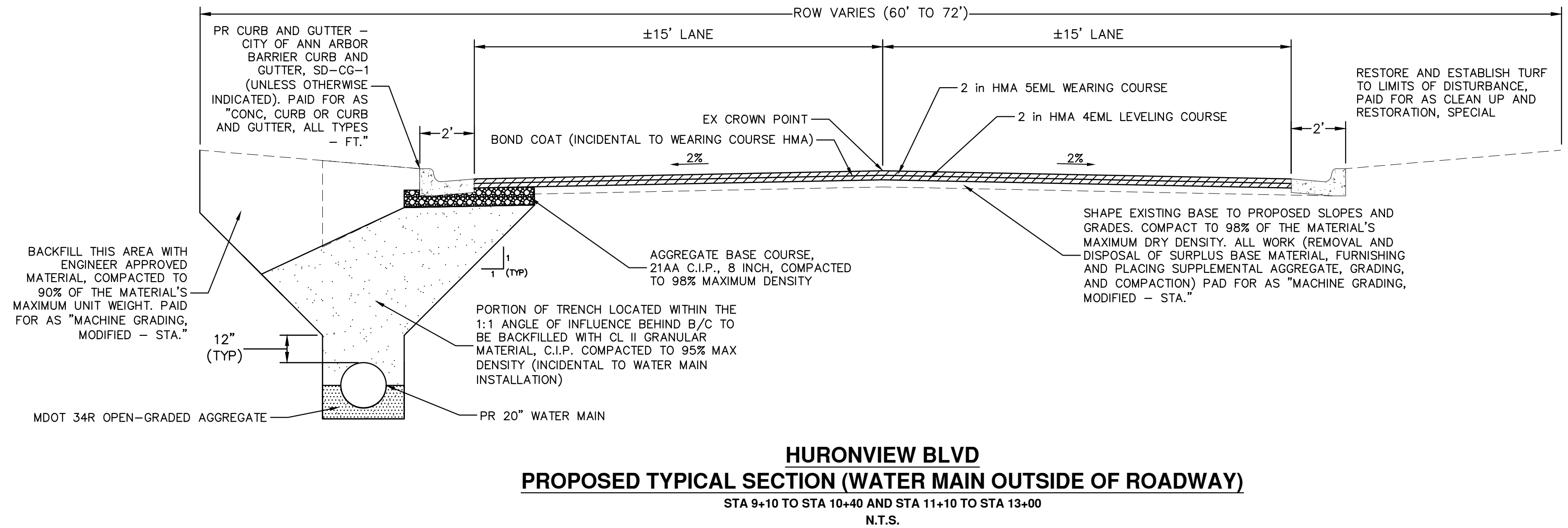
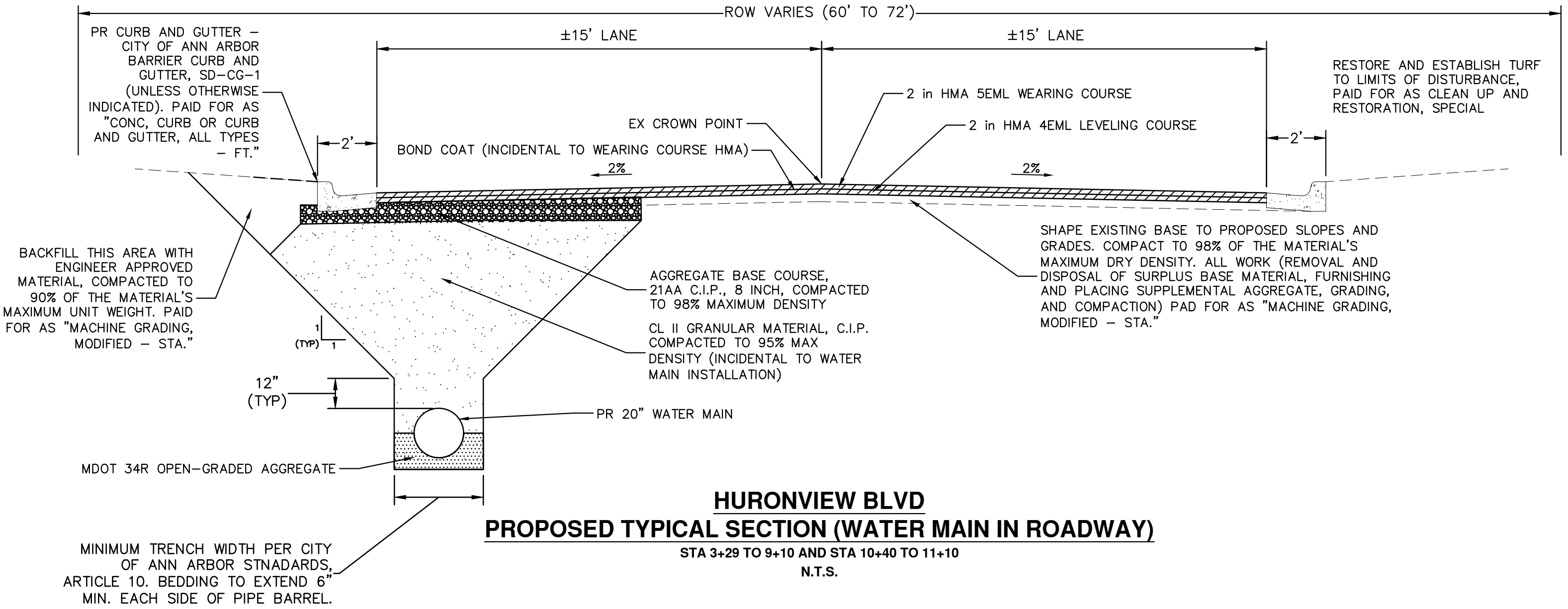
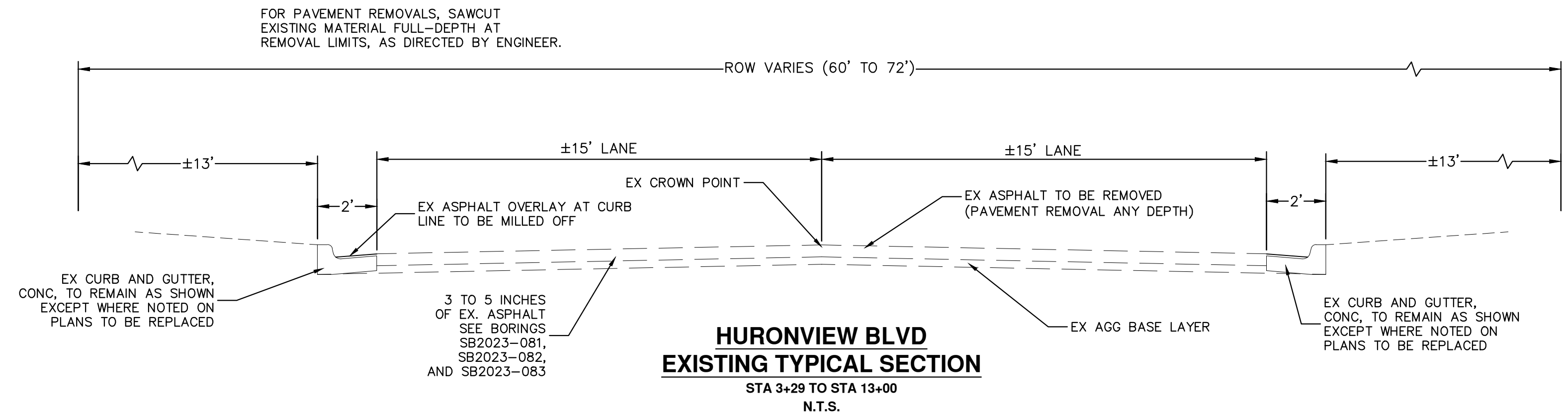
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD. TYPICAL SECTIONS

SCALE: NTS  
PROFILE: NTS  
DRAWING No. 2023-008-4

HMA APPLICATION ESTIMATE				
IDENT NO.	ITEM	APPLICATION/RATE	BINDER	REMARKS
4EML	HMA, 4EML	220 LBS/SYD	PG58-28	LEVELING
5EML	HMA, 5EML	220 LBS/SYD	PG64-22	AWI-260 MIN. WEARING
4E3	HMA, 4E3	220-275 LBS/SYD	PG58-28	BASE AND LEVELING
5E3	HMA, 5E3	165-220 LBS/SYD	PG64-22	WEARING
-	BOND COAT	0.05-0.15 GAL/SYD	-	-

NOTES:

- 4E3 AND 5E3 HMA MIXES TO BE USED FOR PAVEMENT REPLACEMENT ON MDT OWNED AND OPERATED STREETS AND ROADS (N MAIN ST).
- 4EML AND 5EML HMA MIXES TO BE USED FOR HMA PAVEMENT REPLACEMENT ON ANN ARBOR OWNED AND OPERATED STREETS AND ROADS (HURONVIEW BLVD, SUNSET RD, ORKNEY DR, CULVER RD, AND FOUNTAIN ST).
- MDOT TIER 1 RAP LIMITS APPLY TO WEARING COURSE HMA MIXES.
- MDOT TIER 2 RAP LIMITS APPLY TO LEVELING AND BASE COURSE HMA MIXES.
- FURNISHING AND PLACING BOND COAT IS INCIDENTAL TO HMA PAY ITEMS.



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5		2/8/2024	NTM	JVB
4				
3				
2				
1				

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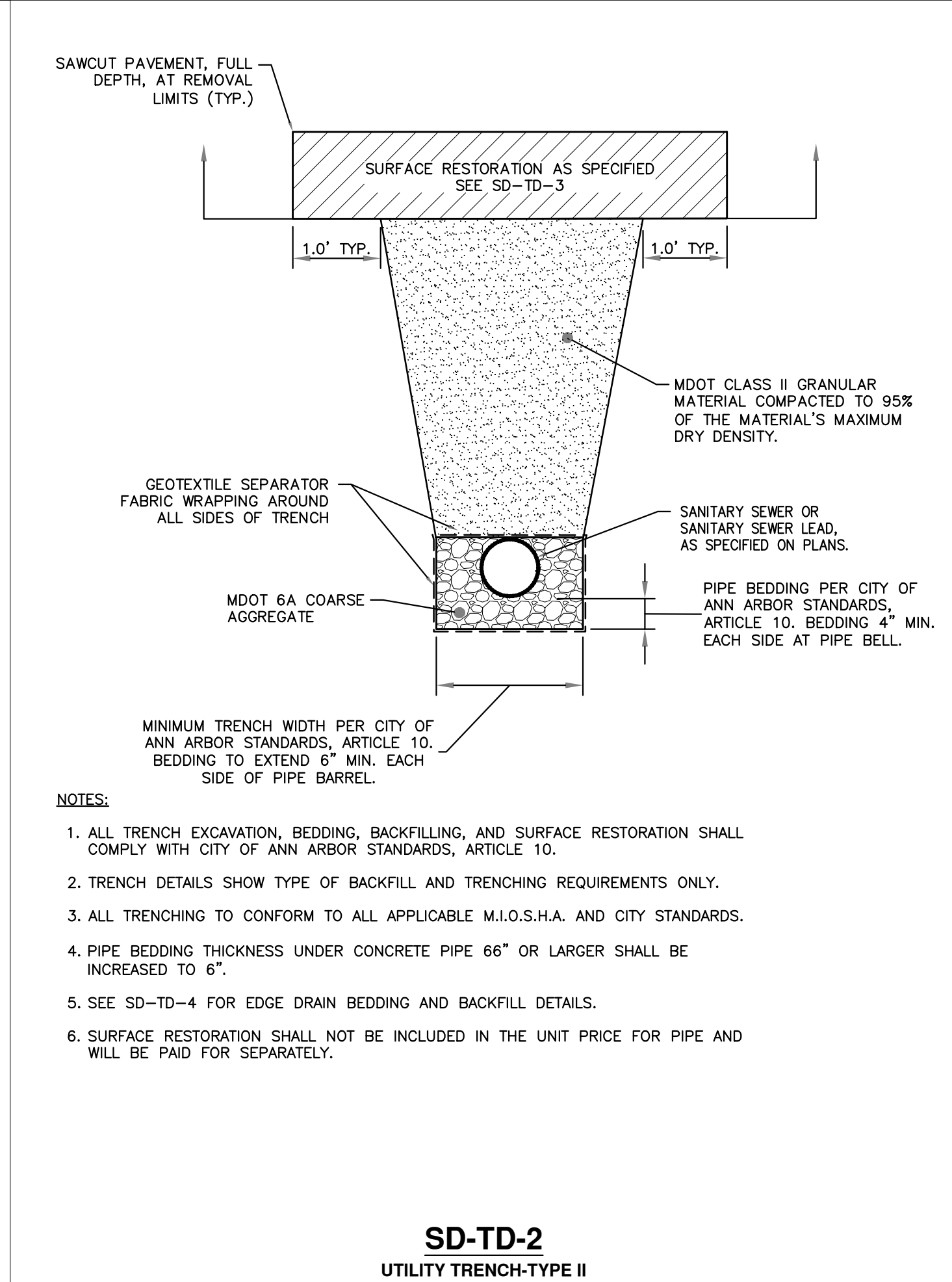
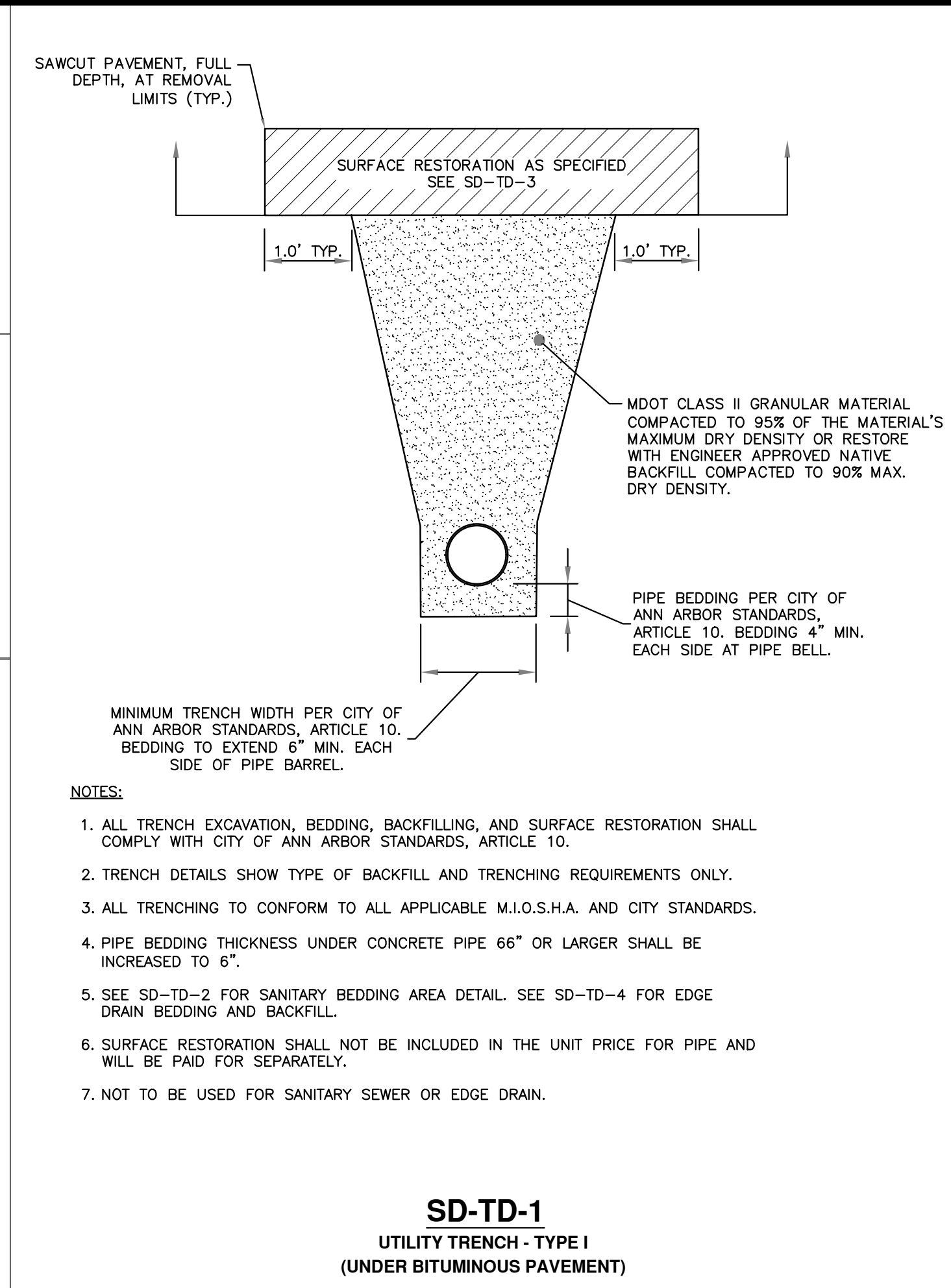
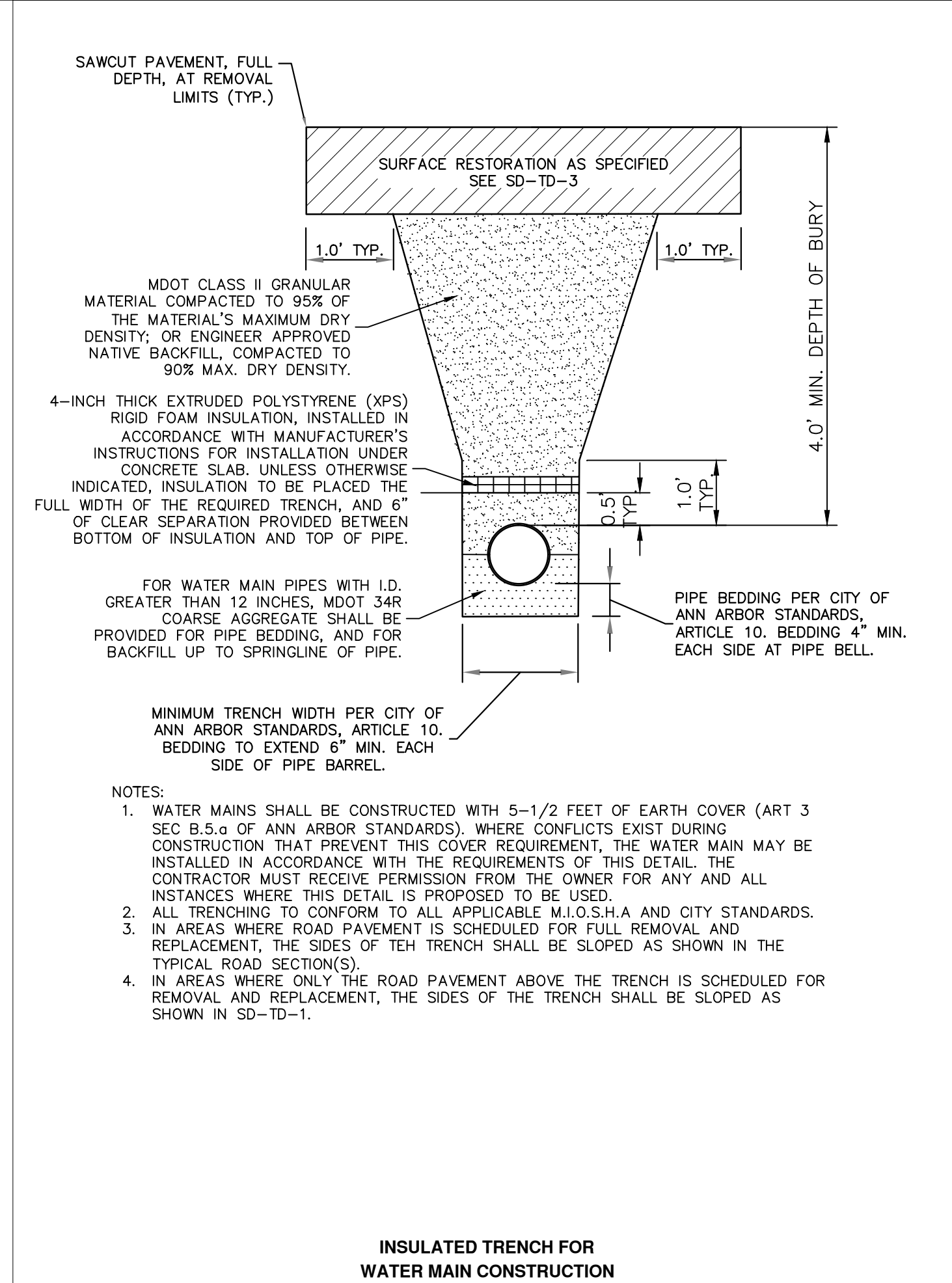
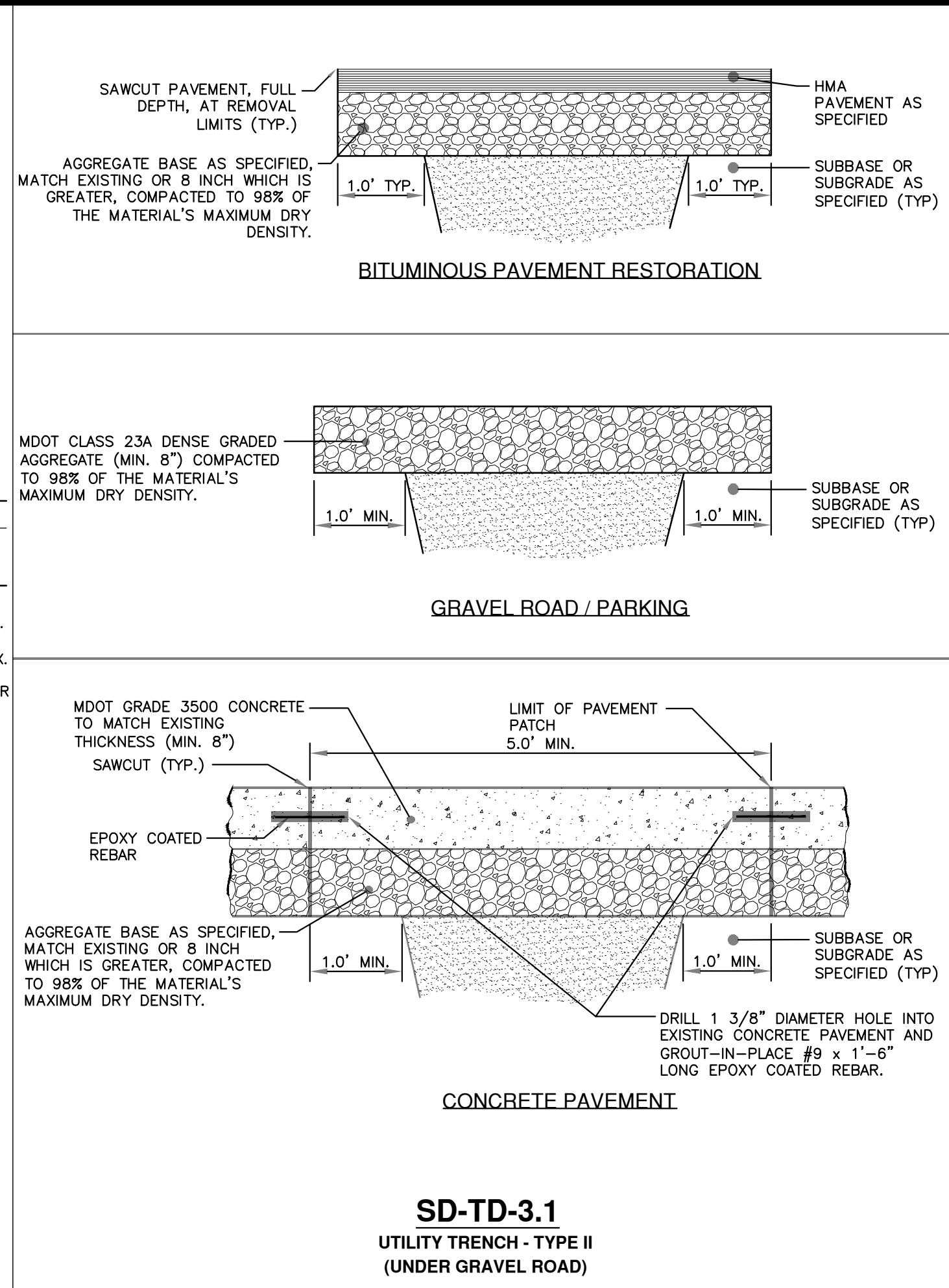
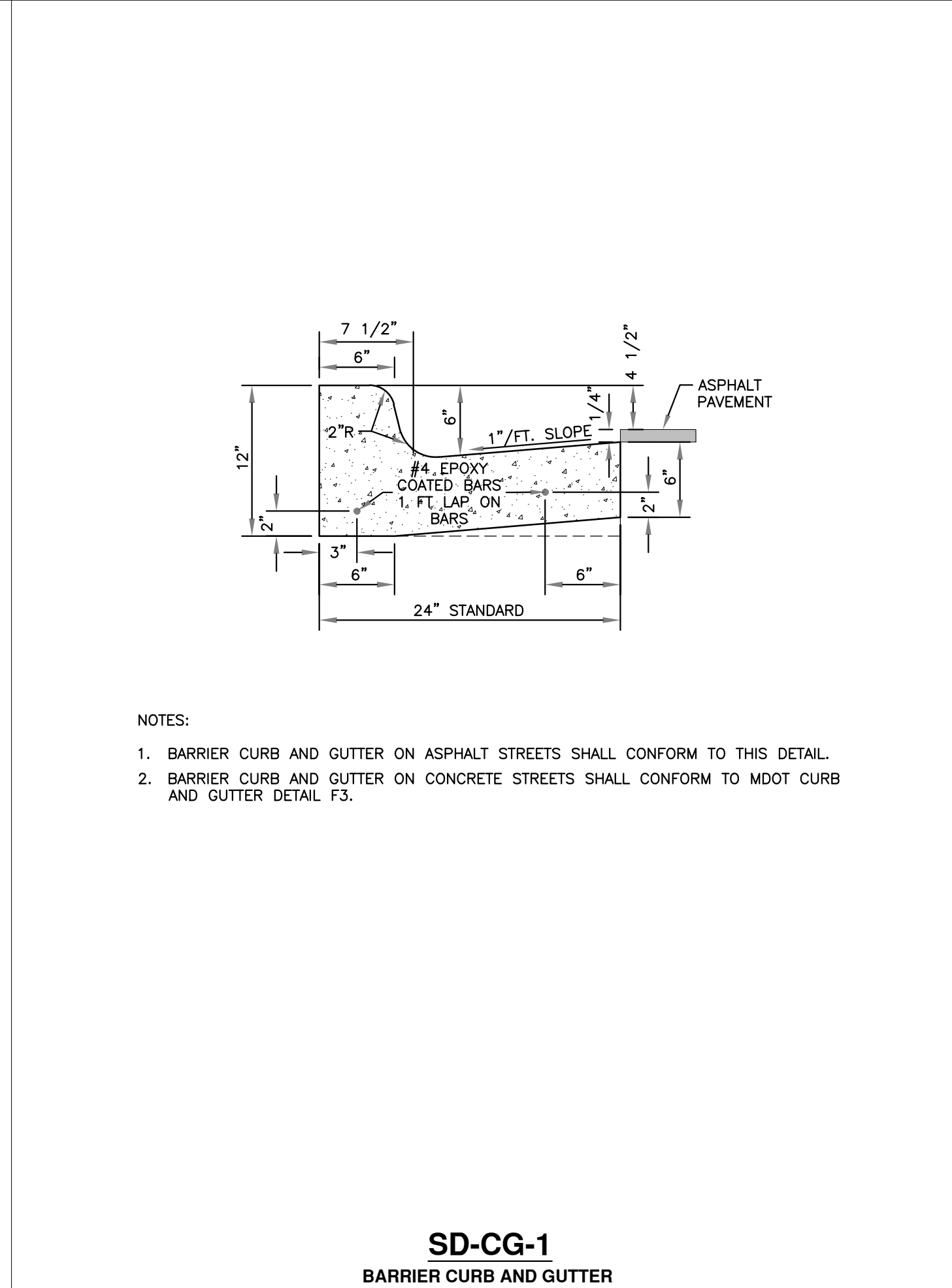
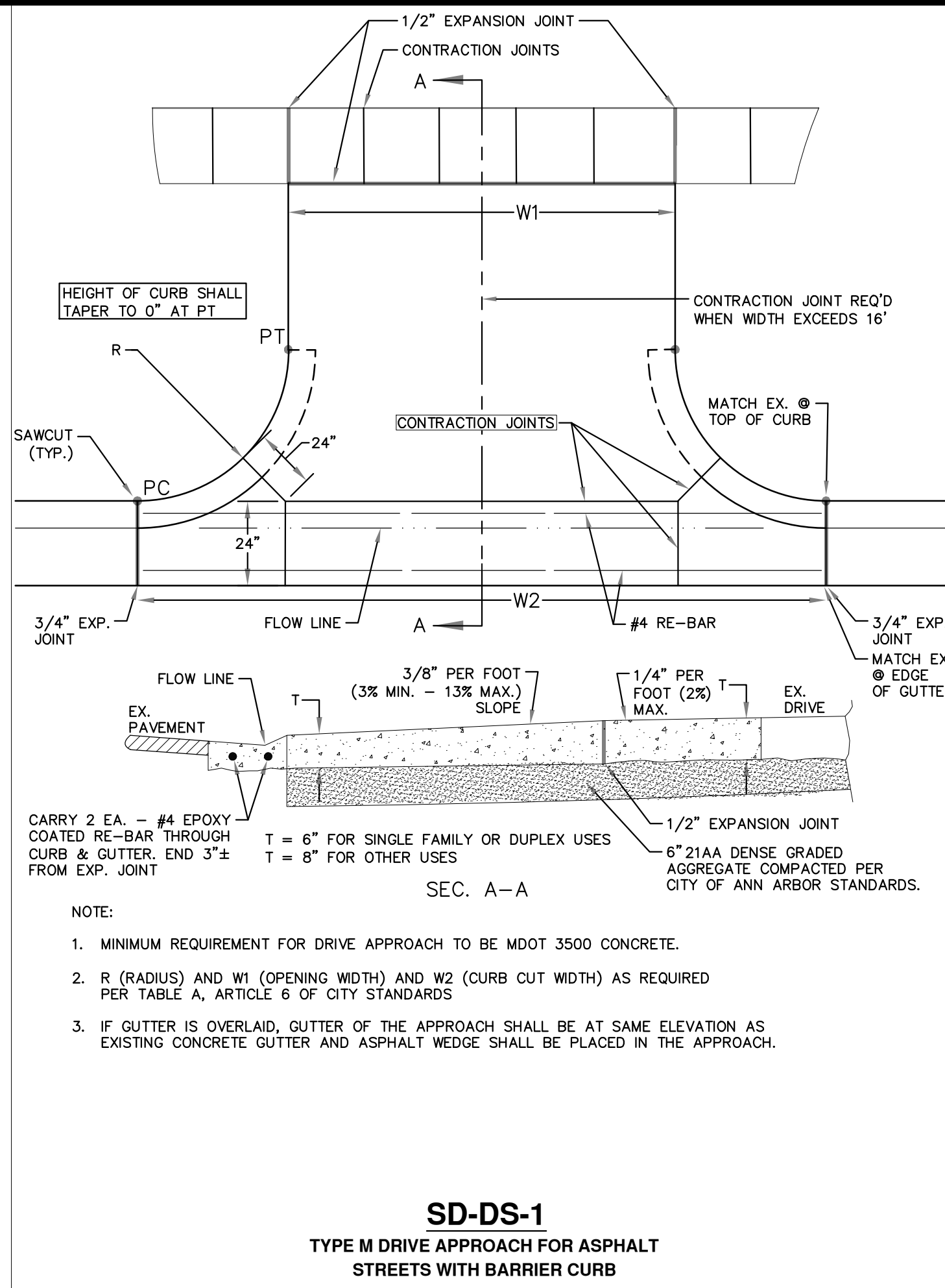


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD. TYPICAL SECTIONS

SCALE: NTS  
PROFILE: NTS  
DRAWING No. 2023-005-5



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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
STANDARD UTILITY TRENCH AND PAVING DETAILS

SCALE: NTS  
PROFILE: NTS  
DRAWING No. 2023-009-7  
SHEET No. 7 OF 46

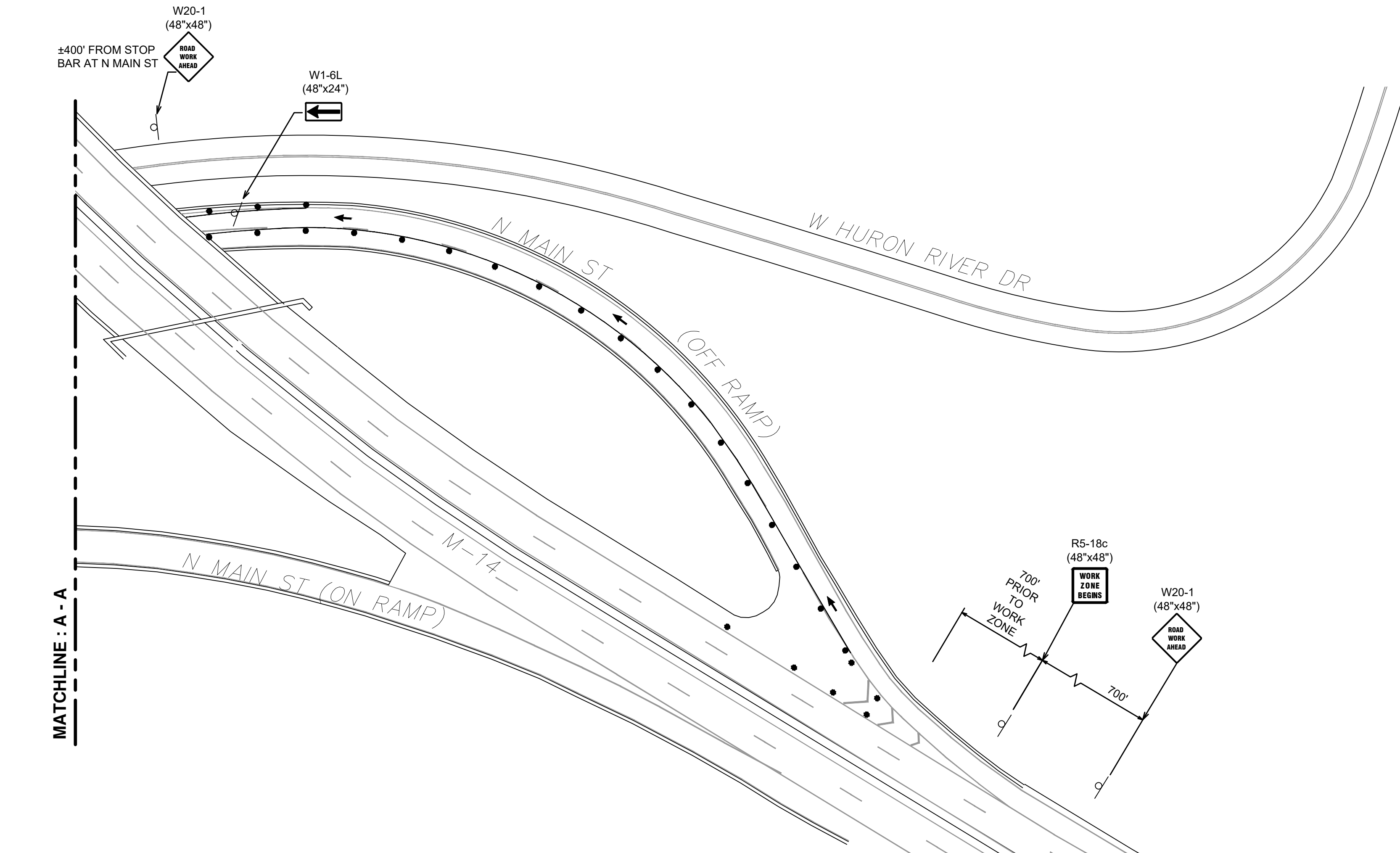
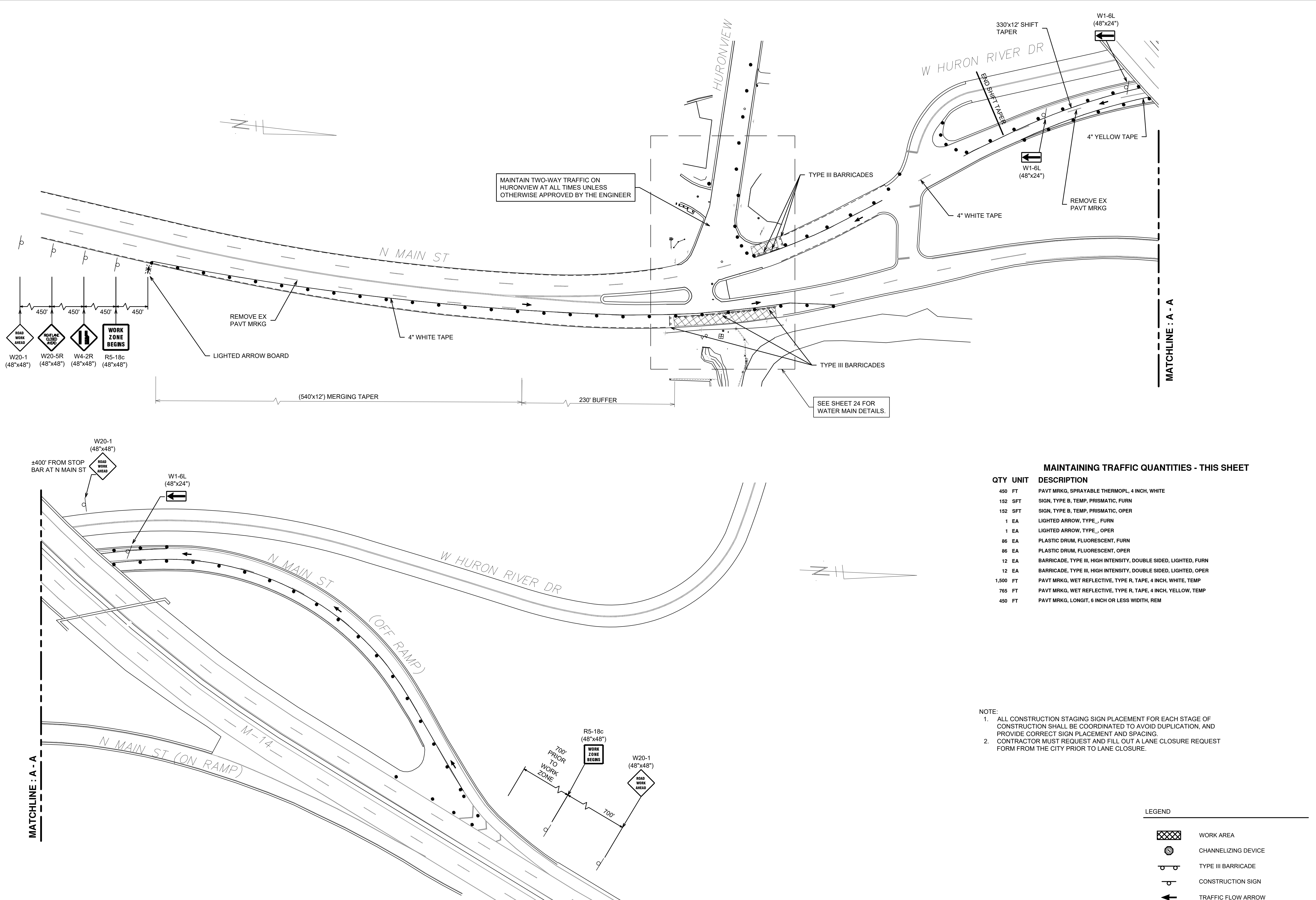
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3	REV.		
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DATE: 2/8/2024  
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CHECKED: JVB



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**MAINTAINING TRAFFIC QUANTITIES - THIS SHEET**

QTY	UNIT	DESCRIPTION
450	FT	PAVT MRKG, SPRAYABLE THERMOPL, 4 INCH, WHITE
152	SFT	SIGN, TYPE B, TEMP, PRISMATIC, FURN
152	SFT	SIGN, TYPE B, TEMP, PRISMATIC, OPER
1	EA	LIGHTED ARROW, TYPE, FURN
1	EA	LIGHTED ARROW, TYPE, OPER
86	EA	PLASTIC DRUM, FLUORESCENT, FURN
86	EA	PLASTIC DRUM, FLUORESCENT, OPER
12	EA	BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED, FURN
12	EA	BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED, OPER
1,500	FT	PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP
765	FT	PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP
450	FT	PAVT MRKG, LONGIT, 6 INCH OR LESS WIDTH, REM

- NOTE:
- ALL CONSTRUCTION STAGING SIGN PLACEMENT FOR EACH STAGE OF CONSTRUCTION SHALL BE COORDINATED TO AVOID DUPLICATION, AND PROVIDE CORRECT SIGN PLACEMENT AND SPACING.
  - CONTRACTOR MUST REQUEST AND FILL OUT A LANE CLOSURE REQUEST FORM FROM THE CITY PRIOR TO LANE CLOSURE.

LEGEND

	WORK AREA
	CHANNELIZING DEVICE
	TYPE III BARRICADE
	CONSTRUCTION SIGN
	TRAFFIC FLOW ARROW

Know what's below. Call before you dig.

5	REV.		
4			
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1			

BID SET DESCRIPTION

2/8/2024 DATE

NTM DRAWN

JVB CHECKED

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

N. MAIN ST MAINTENANCE OF TRAFFIC 1

PROFILE: N/A

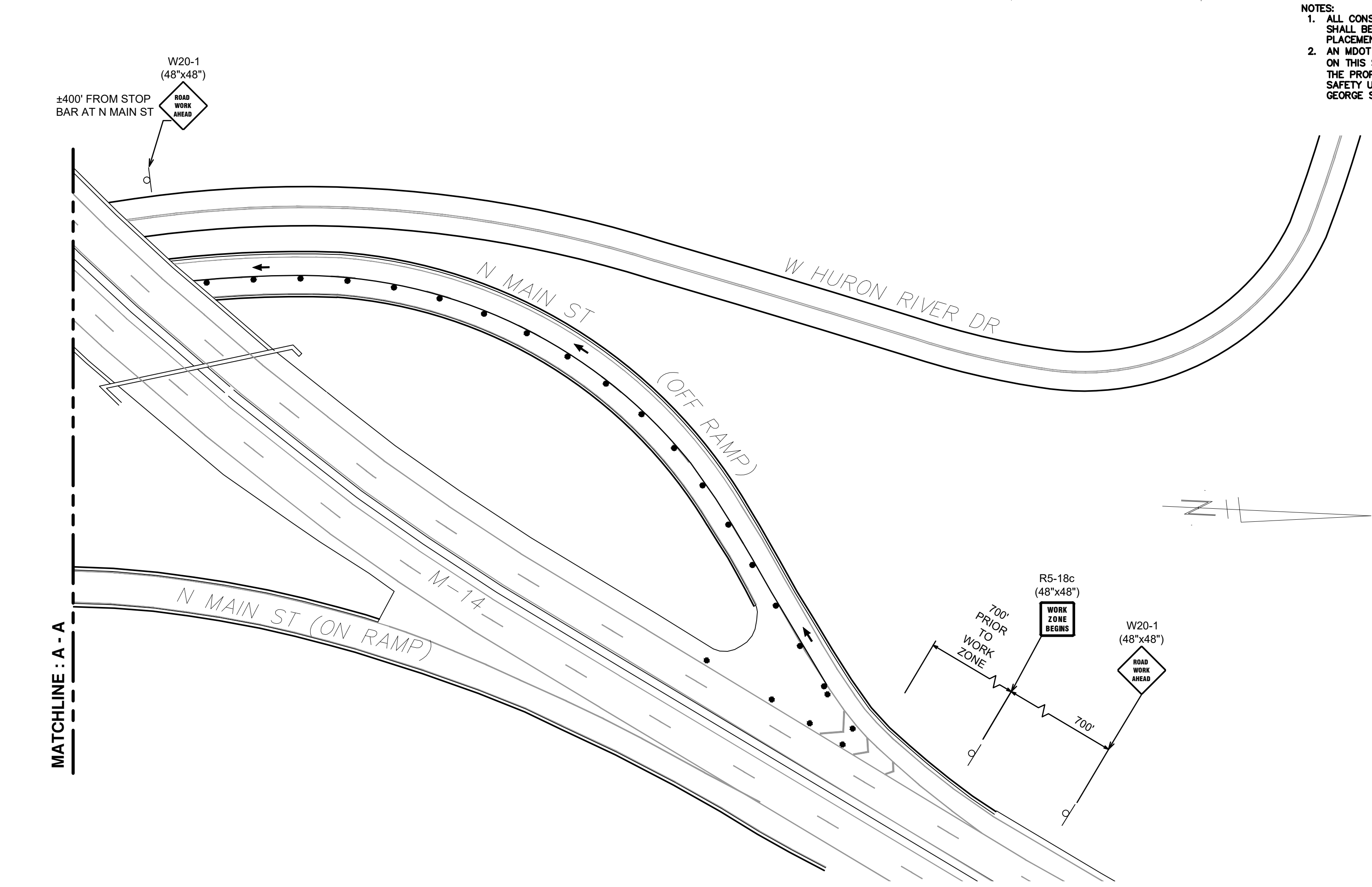
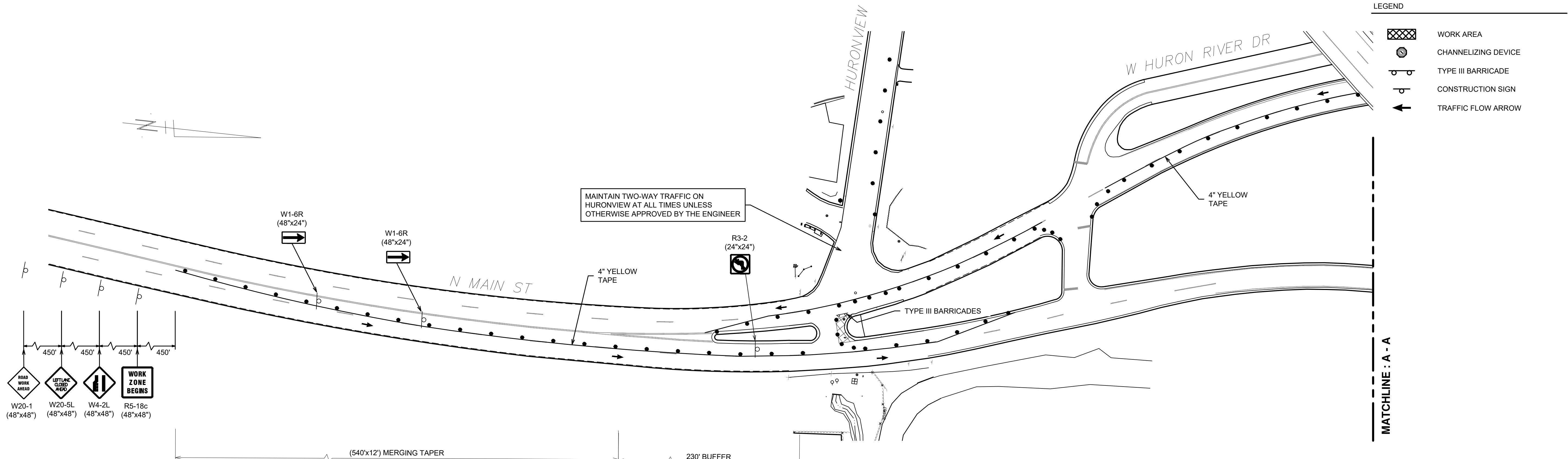
SCALE: 1" = 50'

DRAWING No. 2023-009-8

SHEET No. 8 OF 46

**© 2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009**

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**MAINTAINING TRAFFIC QUANTITIES - THIS SHEET**

QTY	UNIT	DESCRIPTION
2,000	FT	PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP
250	FT	PAVT MRKG, LONGIT, 6 INCH OR LESS WIDTH, REM

Michigan Department of Transportation 0561 (06/2023)

### MDOT LANE CLOSURE NOTIFICATION/REQUEST FORM

(FOR SHIFTS, LANE, SHOULDER, STRUCTURE AND RAMP CLOSURES)

[Clear Form](#)

TRANSPORTATION SERVICE CENTER (TSC)			DATE		
COUNTY			REQUEST NUMBER		
JOB NUMBER			REQUESTOR NAME		
PRIME CONTRACTOR			24 HOURS CONTACT		

ROUTE	DIRECTION	LOCATION OF CLOSURE (Cross Street to Cross Street, Mile point to Mile point, Exit name and Number)	WORK DESCRIPTION	DETOUR YES/NO	EXISTING NUMBER LANE	CLOSURE TYPE (Place "X" in the boxes that apply)				DURATION OF CLOSURE and TYPE (Place "X" in the boxes that apply)	RESTRICTIONS			SPEED LIMITS						
						LEFT SHOULDER	LANE NUMBER	RIGHT SHOULDER	RAMP		DATE MM/DD	TIME	DAILY RECURRING	MOVING	HEIGHT	WEIGHT	WIDTH	POSTED	WORK ZONE	WORKERS PRESENT

**DETOUR ROUTE**

**SUMMARY**

Submit form a minimum of seven (7) calendar days prior to the start of requested closures to the Engineer for approval.

NOTE: Southeast Michigan Transportation Operations Center (SEMTOC) shall be called in 'Real Time' when lane closures are beginning and when lane closures are removed in addition to providing advance notification on this Lane Closure Form. This includes shoulder closures and moving operations. Please notify SEMTOC and refer to the Main Job Number associated with the project.

Know what's below. Call Before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5				
4				
3				
2		2/8/2024	NTM	JVB
1				

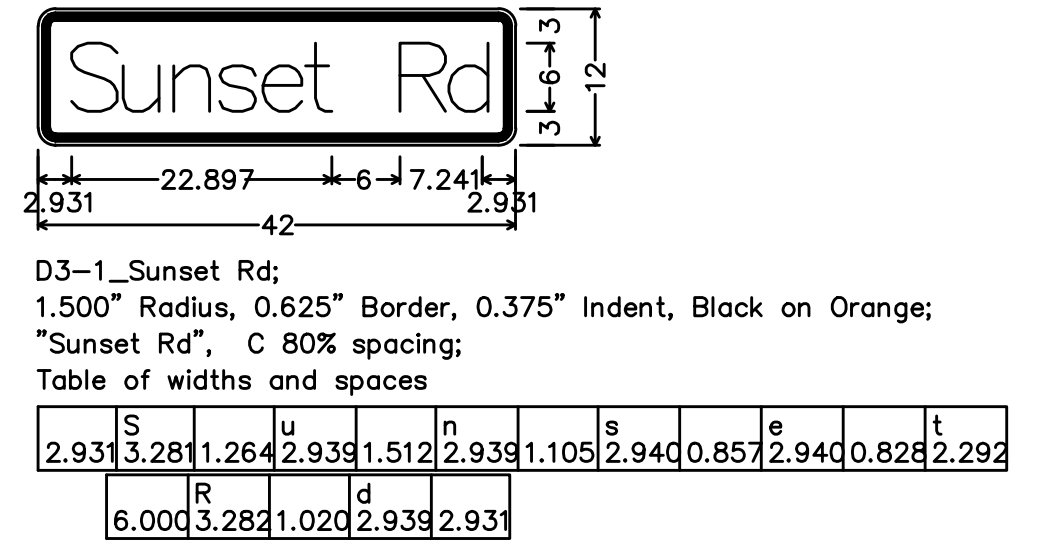
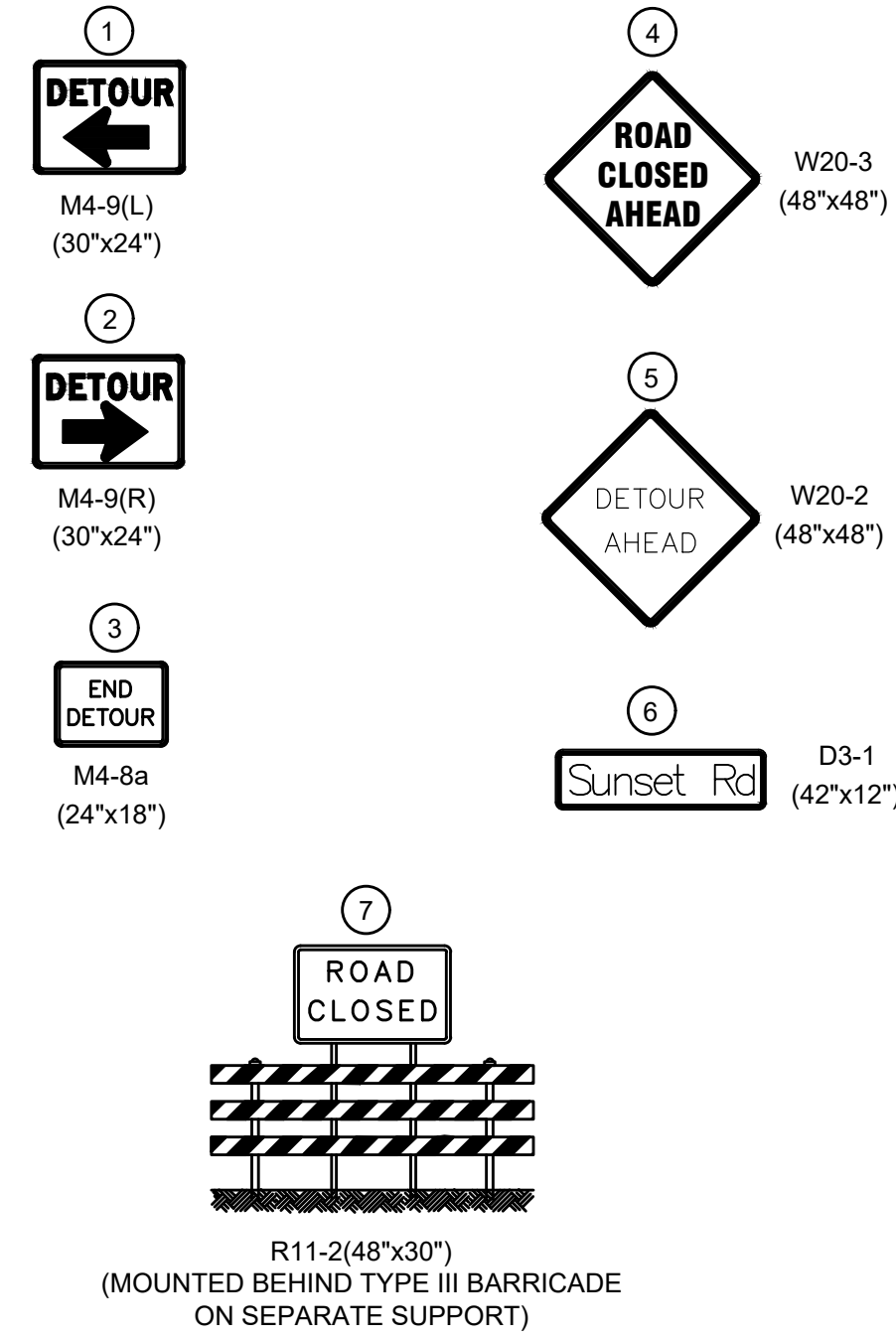
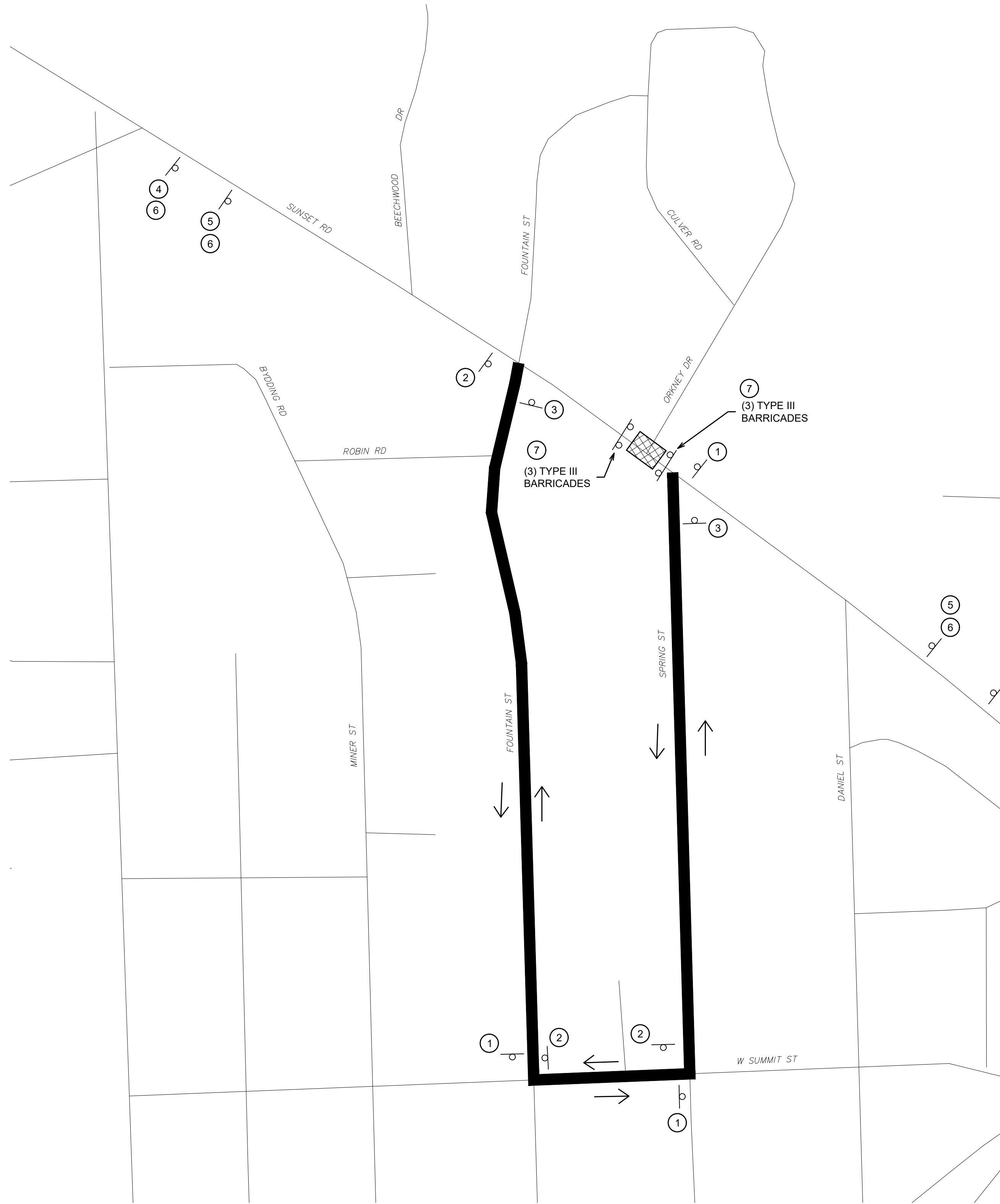
CITY OF ANN ARBOR PUBLIC SERVICES  
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 ANN ARBOR, MI 48107-8647  
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CITY OF ANN ARBOR PUBLIC SERVICES - ENGINEERING  
 2024 MISCELLANEOUS UTILITIES PROJECTS  
 N. MAIN ST MAINTENANCE OF TRAFFIC 2

SHEET No. 9 OF 46

SCALE: 1" = 50'  
 PROFILE: N/A  
 DRAWING No. 2023-009-9

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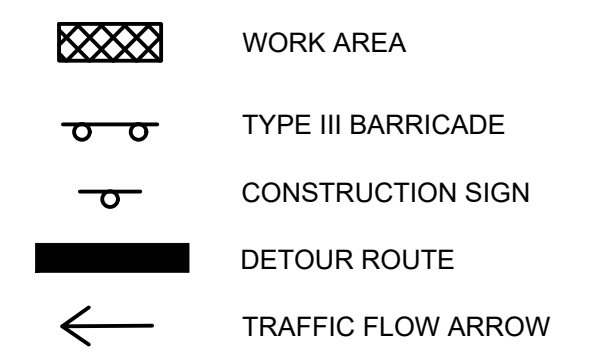
**TRAFFIC CONTROL PROJECT NOTES**

- TRAFFIC WILL BE MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH CONSTRUCTION PLANS, SPECIFICATION 02550 AND MMUTCD (LATEST EDITION).
- TEMPORARY ROAD CLOSURES ARE NOT PERMITTED WITHOUT AUTHORIZATION AND IF PERMITTED MUST HAVE THE ABILITY TO BE REMOVED WITHIN A RESPONSE TIME DEEMED ACCEPTABLE BY CITY PUBLIC SAFETY PERSONNEL.
- PROPER SIGNING IS REQUIRED BEFORE ANY WORK IN RIGHT OF WAY STARTED.
- THE CONSTRUCTION INFLUENCE AREA (C.I.A.) SHALL CONSIST OF THE WIDTH OF THE PROPOSED RIGHT OF WAY FROM THE PROJECT POINT OF BEGINNING TO THE POINT OF ENDING OR AS OTHERWISE INDICATED ON THE PLANS AND A SUFFICIENT DISTANCE BEFORE AND AFTER THE PROJECT TO WARN MOTORISTS OF THE CONSTRUCTION AHEAD OR AS OTHERWISE DESCRIBED.
- IN ADDITION TO THE LIGHTS, BARRICADES AND SIGNS SPECIFIED ON THE CONSTRUCTION PLANS, THE CONTRACTOR SHALL ALSO PROVIDE NECESSARY SIGNS, BARRICADES AND LIGHTS TO PROTECT THE TRAFFIC AND THE WORK AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE PLASTIC DRUMS WITH BATTERY OPERATED AMBER FLASHERS (ONE PER) AT PAVEMENT EDGE DROP-OFFS IN EXCESS OF 3 INCHES TO PROTECT THE TRAFFIC LANE AND THE WORK. THE DRUMS SHALL BE SPACED AT 50 FOOT MAXIMUM INTERVALS.
- TRAFFIC CHANNELING DEVICES (PLASTIC DRUMS) AND (42" FLUORESCENT CHANNELIZING DEVICES) FURNISHED BY THE CONTRACTOR FOR WORK PROTECTION SHALL BE IN ACCORDANCE WITH MAINTAINING TRAFFIC TYPICAL 101-GEN-SPACING-CHARTS FOR APPROPRIATE "D" AND "L" DISTANCES AND PER THE CURRENT VERSION OF THE MMUTCD.
- ALL SIGNS, BARRELS, AND BARRICADES TO BE REFLECTORIZED AND HAVE LIGHTS MOUNTED ON THEM.
- SIGN SPACING TO BE ADJUSTED IN FIELD TO AVOID DRIVES, ROADS AND OBSTRUCTING VIEWS FOR TURNING ONTO OR OFF OF ROAD.
- CONTRACTOR TO ADJUST SIGNS TO MATCH OPERATIONS. ALL CHANGES MUST BE APPROVED BY PROJECT ENGINEER.
- CONTRACTOR SOLELY RESPONSIBLE FOR SAFETY OF PERSONS AND VEHICLES IN WORK ZONE.
- ACCESS TO INTERSECTIONS, COMMERCIAL DRIVES AND RESIDENTIAL PROPERTIES WITHIN THE CONSTRUCTION INFLUENCE AREA (C.I.A.) SHALL BE MAINTAINED AT ALL TIMES.
- REPLACE ALL DISTURBED PAVEMENT MARKINGS IN-KIND AFTER CONSTRUCTION.

**MAINTAINING TRAFFIC QUANTITIES - ALL STAGES**

QTY	UNIT	PAY ITEM
30	EA	BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED, FURN
30	EA	BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED, OPER
200	EA	CHANNELIZING DEVICE, 42 INCH, FLUORESCENT, FURN
200	EA	CHANNELIZING DEVICE, 42 INCH, FLUORESCENT, OPER
1	LS	MINOR TRAF DEVICES
1445	FT	PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP
780	FT	PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP
100	EA	PLASTIC DRUM, FLUORESCENT, FURN
100	EA	PLASTIC DRUM, FLUORESCENT, OPER
5	EA	SIGN COVER
500	SFT	SIGN, TYPE B, TEMP, PRISMATIC, FURN
500	SFT	SIGN, TYPE B, TEMP, PRISMATIC, OPER
20	SFT	SIGN, TYPE B, TEMP, PRISMATIC, SPECIAL, FURN
20	SFT	SIGN, TYPE B, TEMP, PRISMATIC, SPECIAL, OPER
1	LS	TRAF REGULATOR CONTROL
1000	FT	PAVT MRKG, LONGIT, WATER BLASTING, 6 INCH OR LESS WIDTH, REM
1000	FT	PAVT MRKG, THERMOPL, 4 INCH WHITE

**LEGEND**



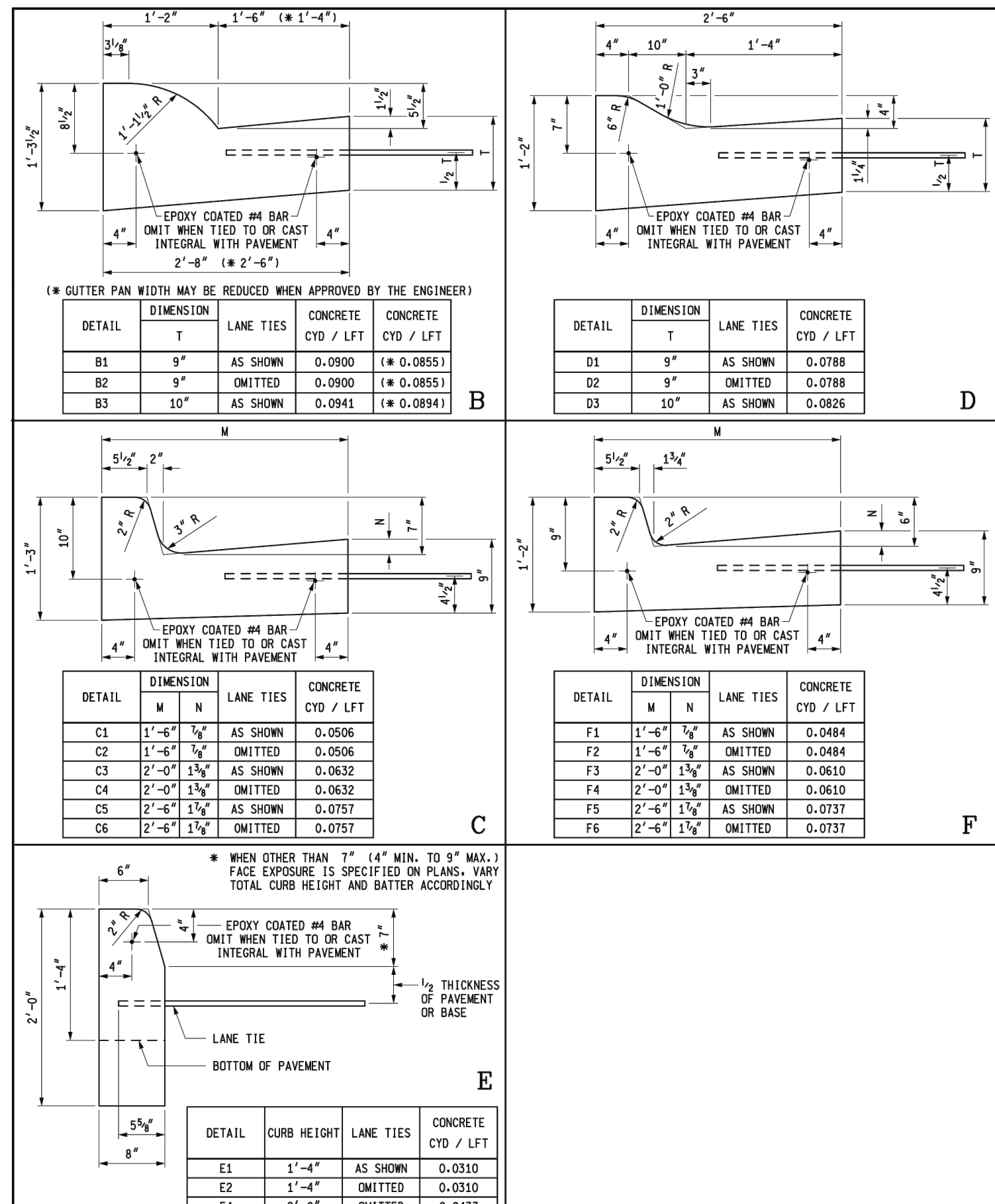
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1	BID SET	2/8/2024	NTM	JVB
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3				
5				

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PUBLIC SERVICES  
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ANN ARBOR, MI 48107-8647  
ANN ARBOR 734-794-6410  
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
2024 MISCELLANEOUS UTILITIES PROJECTS  
SUNSET DR. DETOUR MAINTENANCE OF TRAFFIC

SCALE: 1" = 200'  
PROFILE: N/A  
DRAWING No. 2023-009-10

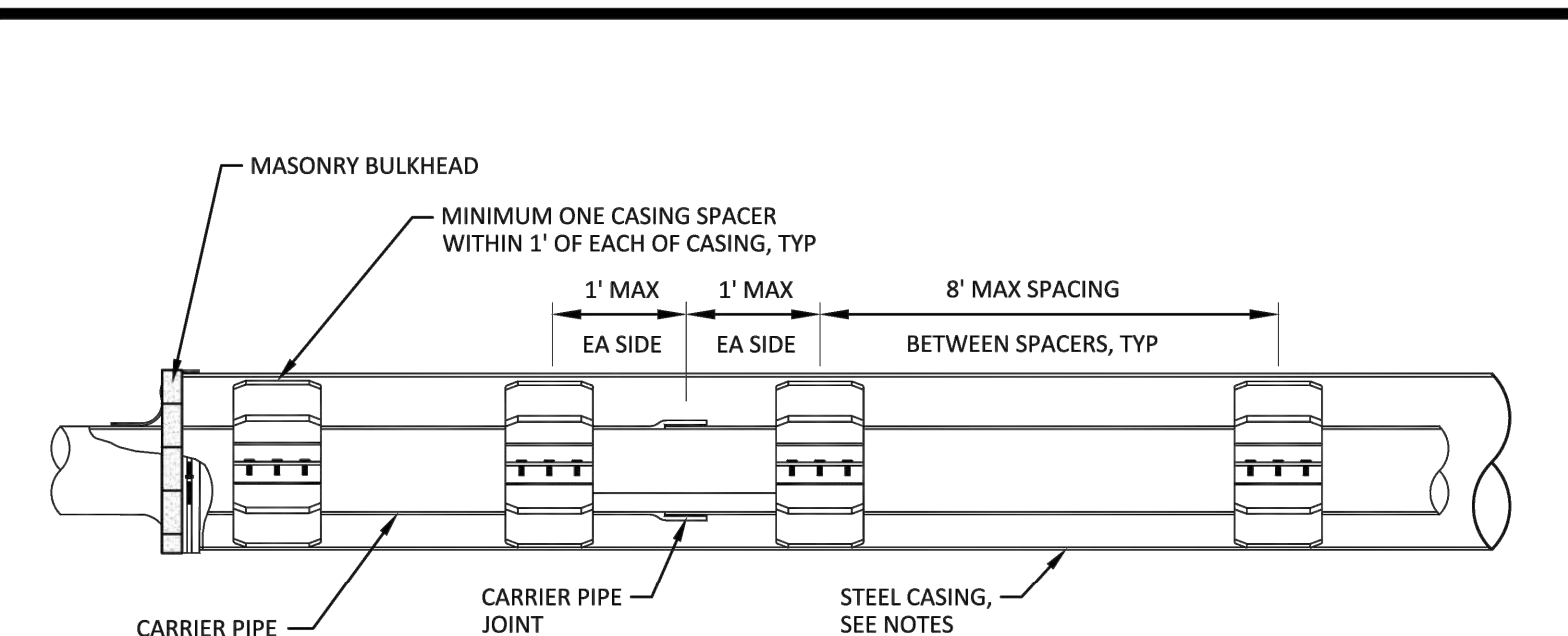


DEPARTMENT DIRECTOR  
Kirk T. Steude

PREPARED BY: *Randy U. Pyle*  
APPROVED BY: *Randy U. Pyle*  
DESIGN DIVISION: B.L.L.  
CHECKED BY: M.K.P.

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY DEVELOPMENT STANDARDS PLAN FOR  
**CONCRETE CURB AND GUTTER**

9-30-2014 2-6-2014 R-30-G SHEET 1 OF 2  
F.H.W.A. APPROVAL PLAN DATE



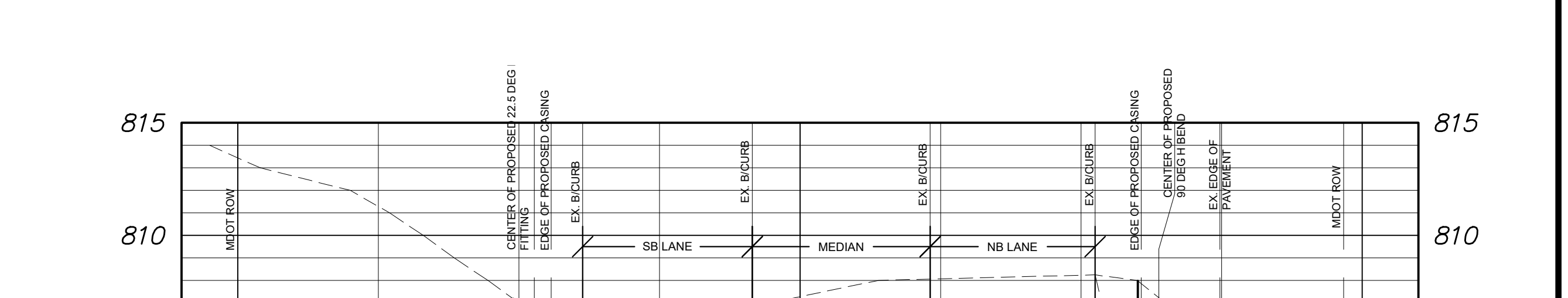
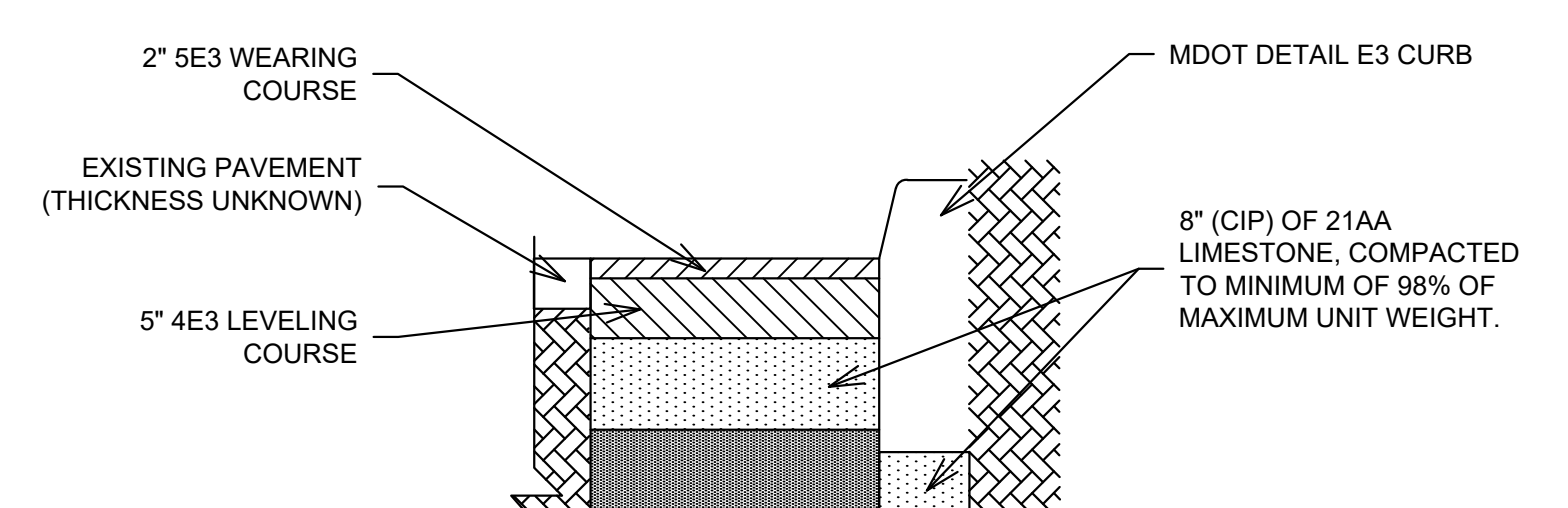
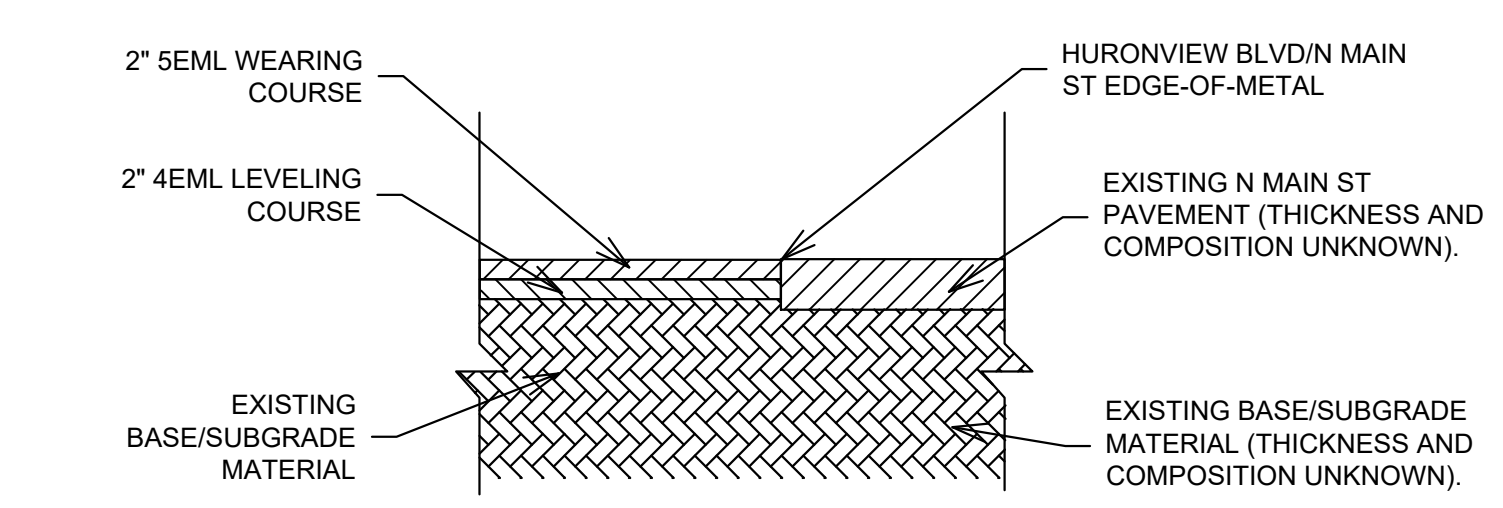
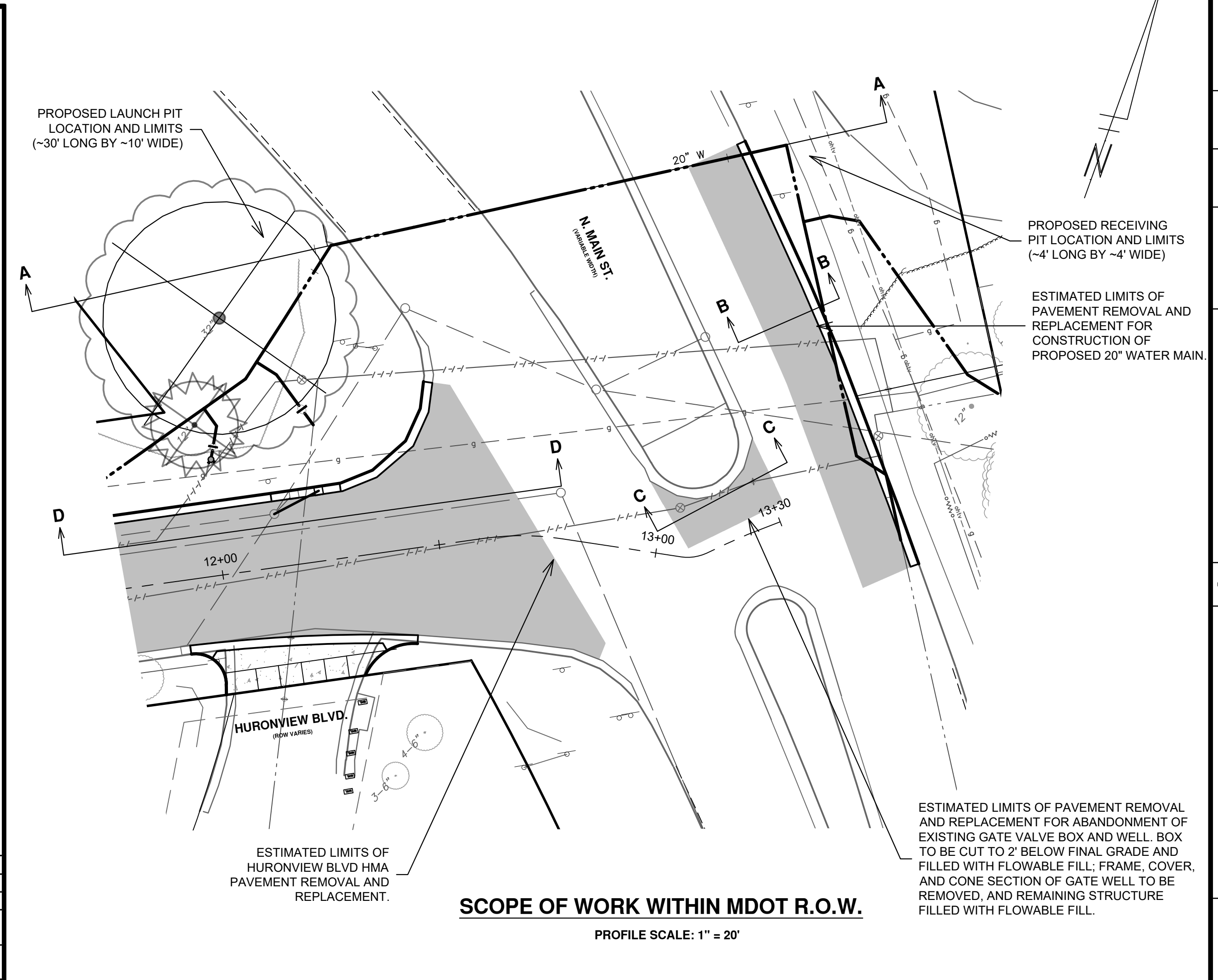
- NOTES:**
- THE AREA BETWEEN THE CASING PIPE AND WATER MAIN SHALL BE LEFT OPEN EXCEPT FOR SOLID BRICK MASONRY BULKHEAD AT EACH END, AND MANUFACTURED SPACERS WHEN REQUIRED.
  - EACH JOINT OF CASING PIPE SHALL BE WELDED TOGETHER ALONG ENTIRE CIRCUMFERENCE OF PIPE.
  - MANUFACTURED SPACERS SHALL BE USED.
  - WOOD BLOCK SPACERS ARE NOT ALLOWED.
  - BORING SHALL BE AT 90 DEGREES TO ALL CROSSINGS UNLESS OTHERWISE APPROVED. THE BORING OF THE HOLE AND INSTALLATION OF THE CASING PIPE SHALL BE SIMULTANEOUS. BORE HOLE DIAMETER SHALL ESSENTIALLY BE THE SAME AS THE OUTSIDE DIAMETER OF THE CASING PIPE TO BE INSTALLED.
  - STEEL PIPE CASING SHALL BE SMOOTH STEEL PIPE FABRICATED IN SECTIONS IN ACCORDANCE WITH ASTM A53, TYPE E OR S, GRADE B OR ASTM A139, GRADE B. LENGTHS OF CASING PIPE SHALL BE AS LONG AS PRACTICAL FOR SITE CONDITIONS.
  - JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM. JOINTS BETWEEN SECTIONS SHALL BE COMPLETELY WELDED TO THE PRECEDING SECTIONS. PRIOR TO WELDING JOINTS, THE CONTRACTOR SHALL ENSURE THAT BOTH ENDS OF THE CASING SECTIONS BEING WELDED ARE SQUARE.
  - STEEL PIPE CASING SIZE AND WALL THICKNESS SHALL BE AS SPECIFIED IN ARTICLE I OF THESE STANDARDS. VERIFY CASING SIZES PRIOR TO ORDERING AND SIZING CASING INSULATORS.
  - CASING SPACERS SHALL BE RESTRAINED-TYPE BOLTED SPACERS AND SHALL HAVE A MAXIMUM SPACING AS SHOWN, OR AS RECOMMENDED BY MANUFACTURER, WHICHEVER IS CLOSER.
  - REFER TO ARTICLE 1, XXVI CASING PIPE, FOR PIPE SIZES.

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301 EAST HURON STREET  
P.O. BOX 8647  
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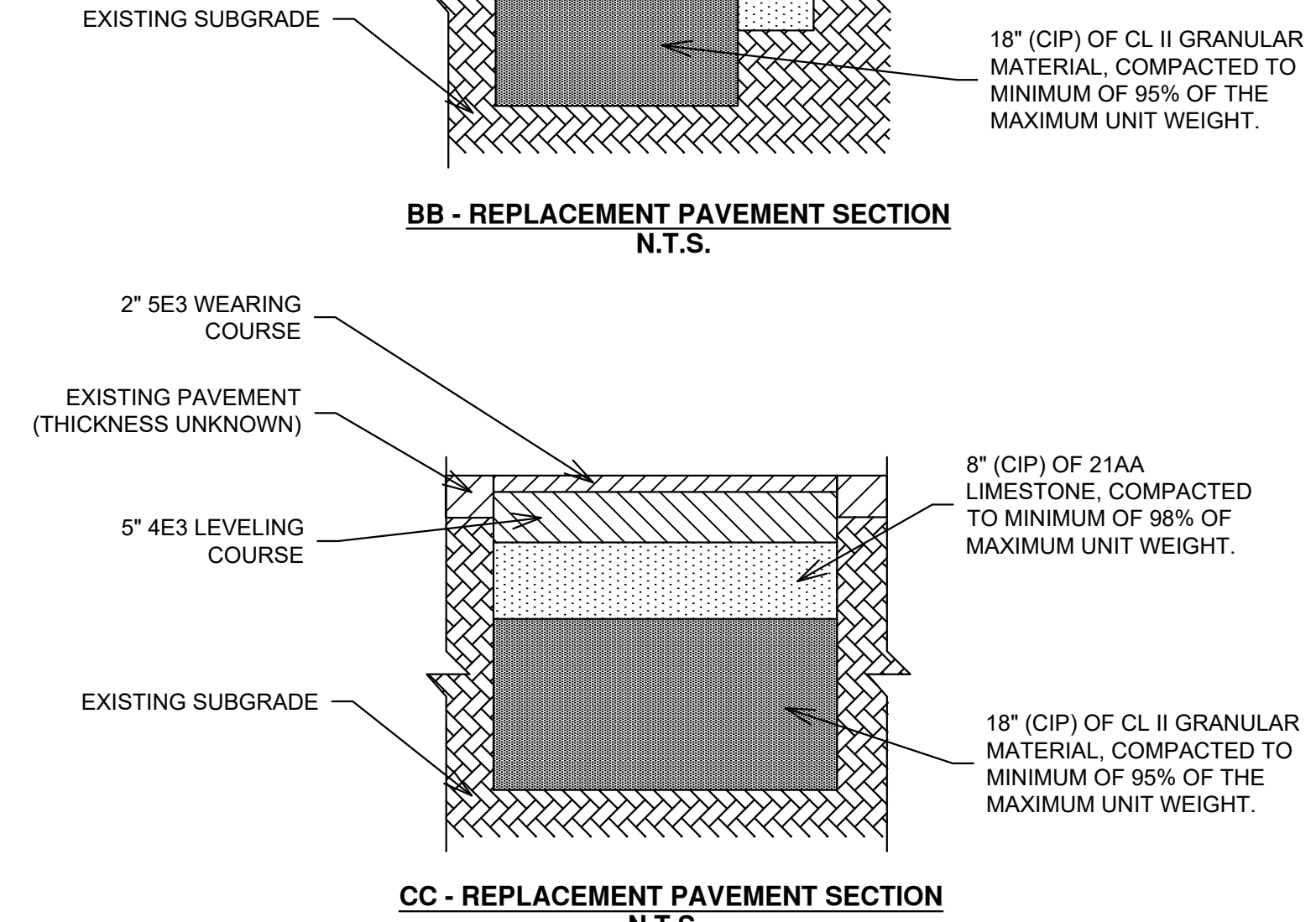
REV. NO. DATE DRAWN BY CHECKED BY

**TYPICAL PIPE CASING DETAIL**

DR. ENG. CH. ENG. DRAWING NO.  
SCALE: N.T.S. DATE 12/8/2023 SD-W-6



- NOTES:**
- EXISTING PAVEMENT AND CURB/GUTTER TO BE SAWCUT TO FULL DEPTH AT PROPOSED LIMITS OF REMOVAL.
  - ALL EXCAVATION WORK WITHIN THE LIMITS OF THE ROADWAY, AND WITHIN A 1:1 ANGLE OF INFLUENCE BEHIND THE BACK OF CURB, SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH SECTION 206 OF THE 2020 MDOT STANDARD SPECIFICATIONS CONSTRUCTION, UP TO THE BOTTOM OF THE REPLACEMENT 8-INCH-THICK (CIP) AGGREGATE BASE.
  - CL II GRANULAR MATERIAL SHALL MEET THE MATERIAL REQUIREMENTS OF GRANULAR MATERIAL CLASS II AS SET FORTH IN SECTION 902 OF THE 2020 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. PLACEMENT AND COMPACTION SHALL BE IN ACCORDANCE WITH SECTION 301 OF THE 2020 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
  - 21AA LIMESTONE SHALL MEET THE MATERIAL REQUIREMENTS OF DENSE-GRADED AGGREGATE 21AA AS SET FORTH IN SECTION 902 OF THE 2020 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. PLACEMENT AND COMPACTION SHALL BE IN ACCORDANCE WITH SECTION 302 OF THE 2020 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.



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2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD N. MAIN ST. MDOT PLAN

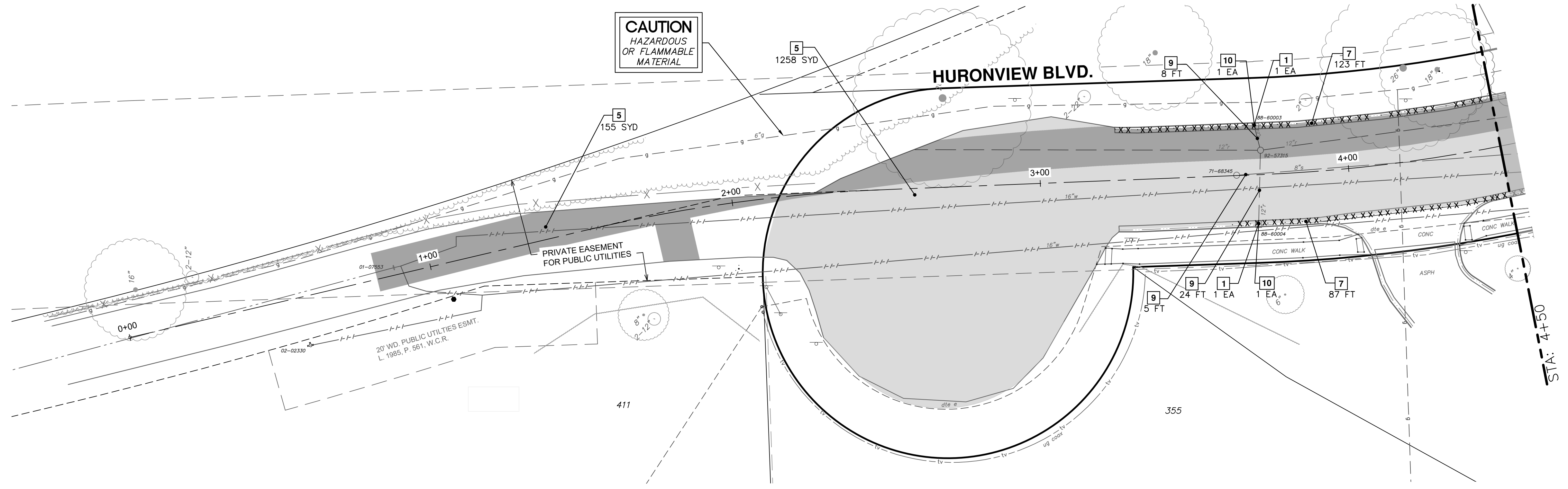
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2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD N. MAIN ST. MDOT PLAN

SCALE: 1" = 20' PROFILE: 1" = 5'  
DRAWING NO. 2023-009-11  
SHEET No. 11 OF 46

2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009



**WATER FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
230	SYD	HMA, ANY THICKNESS, REM
32	SYD	CONCRETE PAVT, ANY THICKNESS, REM
366	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM
25	SFT	SIDEWALK, SIDEWALK RAMP, & DRIVEWAY APPROACH, ANY THICK, REM

**ROAD FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
4	EA	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
2077	SYD	HMA, ANY THICKNESS, REM
147	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM

**STORM FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
64	FT	STORM SEWER PIPE, 12 IN. DIA., REM
4	EA	STORM SEWER DROP STRUCTURE, REM
10	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM

**SANITARY FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
5	FT	SANITARY SEWER PIPE, 8 IN. DIA., REM

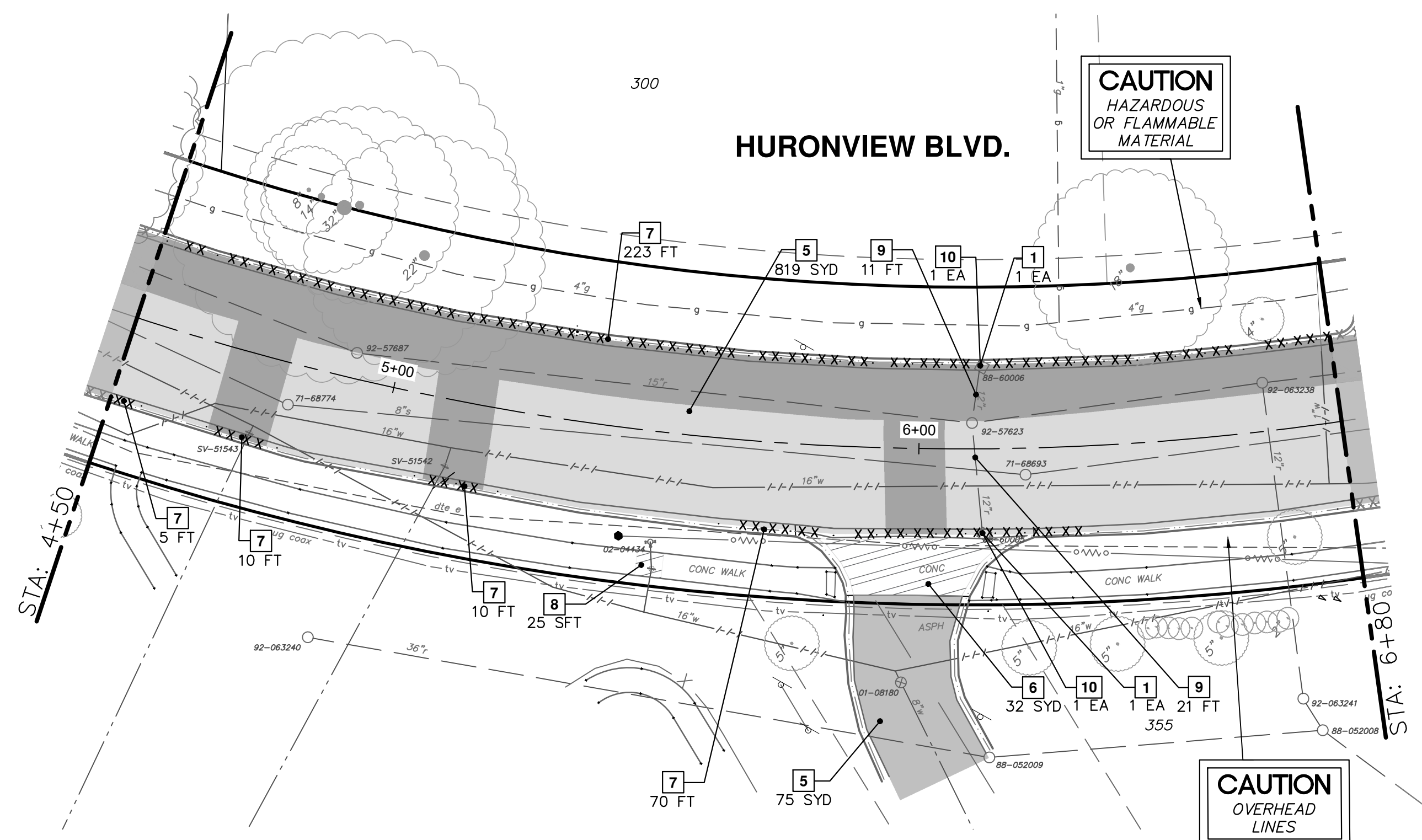
**REMOVAL KEY TABLE**

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

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

NOTES:

- ALL PAVEMENTS (HMA, CONCRETE, CURB, GUTTER, CURB AND GUTTER, ETC.) SHALL BE SAWCUT FULL DEPTH AT THE DIRECTED LIMITS OF REMOVAL.
- REMOVALS OF EXISTING WATER MAIN AND APPURTENANCES ARE SHOWN ON WATER MAIN SHEETS.
- UNLESS OTHERWISE DIRECTED, THE LIMITS OF REMOVAL FOR CONCRETE PAVEMENT, CURB, GUTTER, AND CURB & GUTTER SHALL BE AT THE NEAREST EXISTING JOINT.
- PAYMENT FOR "STORM SEWER PIPE, \_\_\_ IN. DIA., REM - FT" INCLUDES THE COMPLETE EXCAVATION AND REMOVAL OF THE ENTIRE SEWER, AND BACKFILLING AND COMPACTING THE EXCAVATION IN ACCORDANCE WITH ARTICLE II.A.A.7 OF THE 2024 ANN ARBOR STANDARDS SPECIFICATIONS.
- ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO BULKHEAD THE RESULTING HOLE LEFT IN A STRUCTURE FROM A REMOVED OR ABANDONED SEWER SHALL BE CONSIDERED INCIDENTAL TO "STORM SEWER PIPE, \_\_\_ IN. DIA., REM - FT." BULKHEAD WORK SHALL BE IN ACCORDANCE WITH ARTICLE 10, SECTION II.AA.4 OF THE ANN ARBOR 2024 STANDARD SPECIFICATIONS.
- PAYMENT FOR "CURB, GUTTER, AND CURB & GUTTER, ANY TYPE, REM - FT" SHALL INCLUDE ALL SAWCUTTING AND REMOVAL WORK REQUIRED TO PROVIDE FOR THE CONSTRUCTION OF A TYPE M DRIVEWAY OPENING IN ACCORDANCE WITH SD-DS-1.
- COMPOSITE PAVEMENT, IF ENCOUNTERED DURING REMOVAL OPERATIONS, SHALL BE REMOVED AND PAID FOR IN ACCORDANCE WITH "CONCRETE PAVT, ANY THICKNESS, REM - SYD."



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REV.	DATE	DRAWN	CHECKED
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3			
2	2/8/2024	NTM	JVB
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BID SET DESCRIPTION

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**2024 MISCELLANEOUS UTILITIES PROJECTS**

HURONVIEW BLVD. REMOVALS  
P.O.B. TO STA 6+80

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE: 1" = 20'

PROFILE: N/A

DRAWING No. 2023-009-12

**2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009**

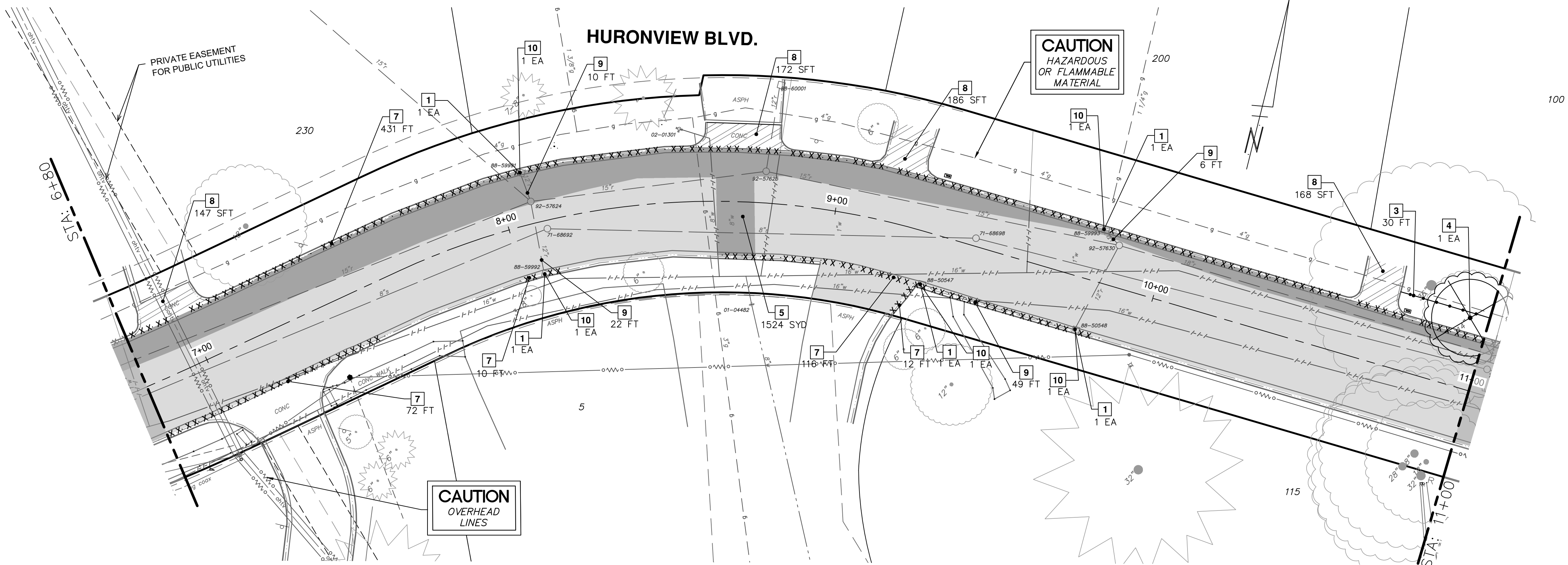
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SHEET No.

12 OF 46

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

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS



**WATER FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
150	FT	EROSION CONTROL, SILT FENCE
200	FT	TREE PROTECTION FENCE
2	EA	TREE, REM, 6 IN. - 12 IN.
1	EA	TREE, REM, 13 IN. - 19 IN.
1	EA	TREE, REM, 30 IN. - 39 IN.
154	SYD	HMA, ANY THICKNESS, REM
621	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM
673	SFT	SIDEWALK, SIDEWALK RAMP, & DRIVEWAY APPROACH, ANY THICK, REM

**ROAD FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
10	EA	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
2259	SYD	HMA, ANY THICKNESS, REM
147	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM

**STORM FUND QUANTITIES THIS SHEET**

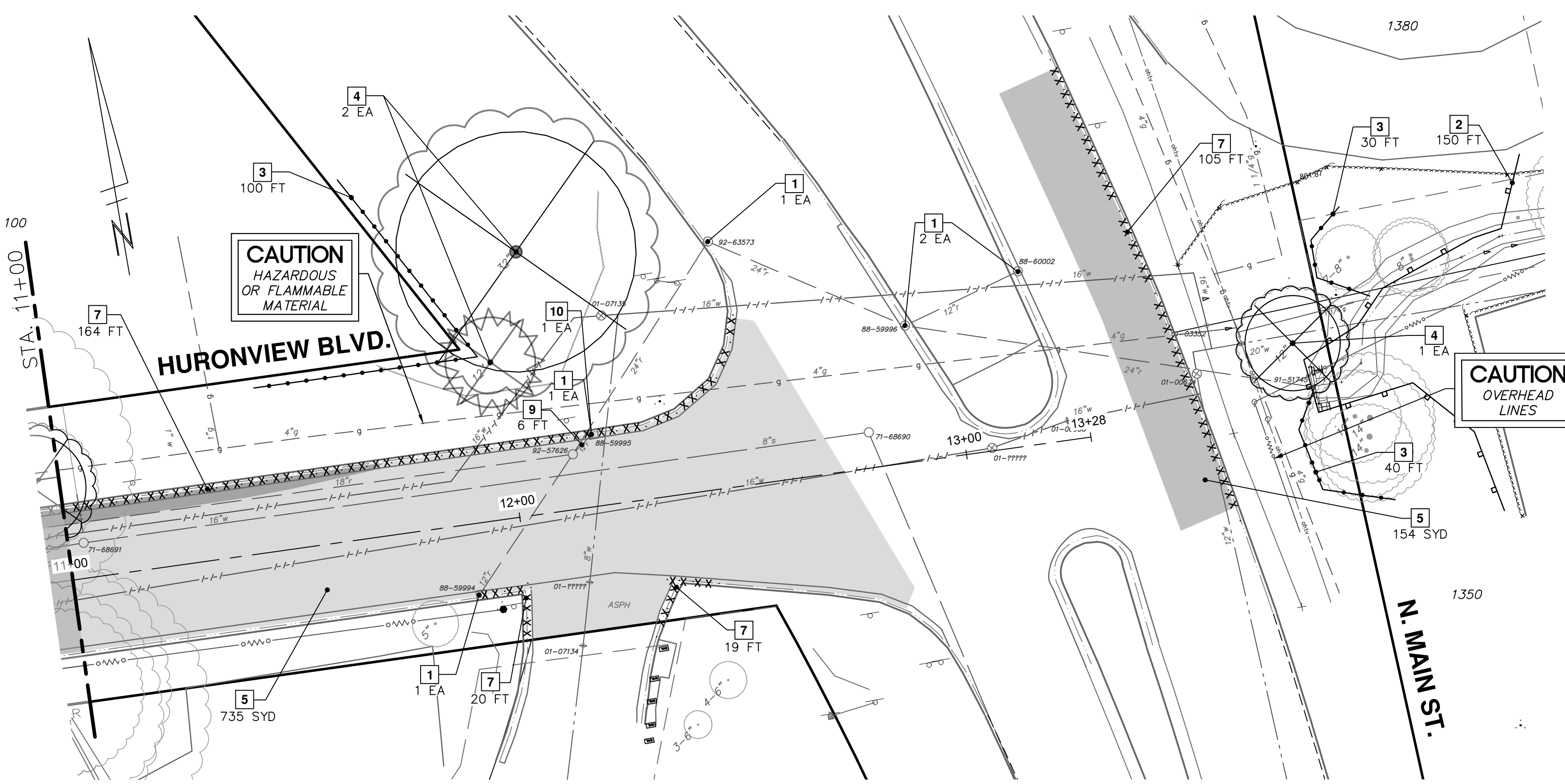
TOTAL	UNIT	DESCRIPTION
67	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM
93	FT	STORM SEWER PIPE, 12 IN. DIA., REM
3	EA	STORM SEWER STRUCTURE, REM
3	EA	STORM SEWER DROP STRUCTURE, REM

**TREE REMOVAL TABLE THIS SHEET**

TAG NO.	SIZE	SPECIES	NORTHING	EASTING
	12"	SPRUCE	291679.59	13291021.48
	32"	CATALPA	291702.74	13291031.25
	12"	BOX ELDER	291653.33	13291197.47
	14"	CATALPA	291669.46	13290916.88

**NOTES:**

1. ALL PAVEMENTS (HMA, CONCRETE, CURB, GUTTER, CURB AND GUTTER, ETC.) SHALL BE SAWCUT FULL DEPTH AT THE DIRECTED LIMITS OF REMOVAL.
2. REMOVALS OF EXISTING WATER MAIN AND APPURTENANCES ARE SHOWN ON WATER MAIN SHEETS.
3. UNLESS OTHERWISE DIRECTED, THE LIMITS OF REMOVAL FOR CONCRETE PAVEMENT, CURB, GUTTER, AND CURB & GUTTER SHALL BE AT THE NEAREST EXISTING JOINT.
4. PAYMENT FOR "STORM SEWER PIPE, \_\_\_ IN. DIA., REM - FT" INCLUDES THE COMPLETE EXCAVATION AND REMOVAL OF THE ENTIRE SEWER, AND BACKFILLING AND COMPACTING THE EXCAVATION IN ACCORDANCE WITH ARTICLE II.A.A.7 OF THE 2024 ANN ARBOR STANDARDS SPECIFICATIONS.
5. ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO BULKHEAD THE RESULTING HOLE LEFT IN A STRUCTURE FROM A REMOVED OR ABANDONED SEWER SHALL BE CONSIDERED INCIDENTAL TO "STORM SEWER PIPE, \_\_\_ IN. DIA., REM - FT." BULKHEAD WORK SHALL BE IN ACCORDANCE WITH ARTICLE 10, SECTION II.A.A.4 OF THE ANN ARBOR 2024 STANDARD SPECIFICATIONS.
6. PAYMENT FOR "CURB, GUTTER, AND CURB & GUTTER, ANY TYPE, REM - FT" SHALL INCLUDE ALL SAWCUTTING AND REMOVAL WORK REQUIRED TO PROVIDE FOR THE CONSTRUCTION OF A TYPE M DRIVEWAY OPENING IN ACCORDANCE WITH SD-DS-1.
7. COMPOSITE PAVEMENT, IF ENCOUNTERED DURING REMOVAL OPERATIONS, SHALL BE REMOVED AND PAID FOR IN ACCORDANCE WITH "CONCRETE PAVT, ANY THICKNESS, REM - SYD."
8. THE REMOVAL AND DISPOSAL OF SHRUBS, BRUSH, AND TREES LESS THAN 6 INCHES IN DIAMETER (DBH) TO COMPLETE THE PROPOSED WORK IS INCIDENTAL TO "GENERAL CONDITIONS, MAX. \$ \_\_\_ - LS" AND WILL NOT BE PAID FOR SEPARATELY.



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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2024 MISCELLANEOUS UTILITIES PROJECTS

HURONVIEW BLVD. REMOVALS

STA. 6+80 TO STA. P.O.E.

SCALE: 1" = 20'

PROFILE: N/A

DRAWING No. 2023-009-13

SHEET No. 13 OF 46

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5

4

3

2

1

REV.

DESCRIPTION

DATE

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2/8/2024

DATE

NTM

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JVB

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2/8/2024

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2023-009-13

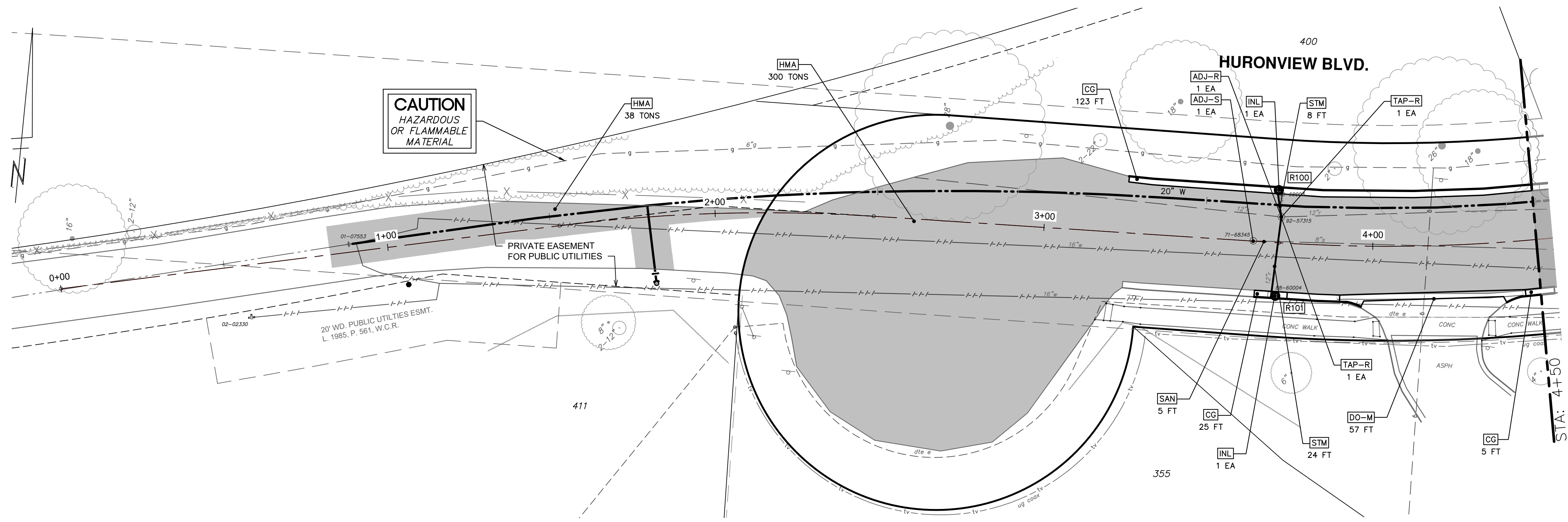
DRAWING No.

13 OF 46

SHEET No.

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**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

- NOTES:
- ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED - STA" AND "MACHINE GRADING - SYD" AND WILL NOT BE PAID FOR SEPARATELY.
  - ALL REQUIRED GRADING WORK OUTSIDE OF THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING - SYD."
  - ALL REQUIRED GRADING WORK WITHIN THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING, MODIFIED - STA."
  - ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO BULKHEAD THE RESULTING HOLE LEFT IN A STRUCTURE FROM A REMOVED OR ABANDONED SEWER SHALL BE CONSIDERED INCIDENTAL TO "STORM SEWER PIPE, 12 IN. DIA., REM - FT." BULKHEAD WORK SHALL BE IN ACCORDANCE WITH ARTICLE 10, SECTION II.AA.4 OF THE ANN ARBOR 2024 STANDARD SPECIFICATIONS.
  - ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO FIT A PROPOSED STORM SEWER TO AN EXISTING HOLE IN A STRUCTURE SHALL BE CONSIDERED INCIDENTAL TO "12 IN., CL IV RCP STORM SEWER, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.
  - STORM SEWER TAPS SHALL BE PAID FOR NEW CONNECTIONS/NEW HOLES, NOT AN EXISTING CONNECTION, AND APPLIES TO TAPPING AN EXISTING PIPE OR STRUCTURE (ANN ARBOR STANDARD SPECIFICATIONS, ARTICLE 11, SECTION S.4).
  - WORK AND PAYMENT FOR "CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY - FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.
  - WORK AND PAYMENT FOR "IN., ES VCP SANITARY SEWER, SD-TR-2 - FT" INCLUDES CONNECTIONS TO EXISTING SANITARY SEWER AND EXISTING SANITARY MANHOLES. TAP ITEMS ARE FOR NEW CONNECTIONS AND/OR NEW HOLES, NOT EXISTING.
  - ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMPS, CURBS, GUTTERS, AND GURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.

**WATER FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
155	SYD	DS_MACHINE GRADING
429	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
19	TONS	HMA, 4EML
19	TONS	HMA, 5EML
123	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES

**ROAD FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
2.39	STA	DS_MACHINE GRADING, MODIFIED
1	EA	SANITARY STRUCTURE COVER, ADJUST
1	EA	STRUCTURE COVER, ADJUST
19	SYD	AGGREGATE BASE, 8 IN. 21AA, CIP
150	TONS	HMA, 4EML
150	TONS	HMA, 5EML
20	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES
57	FT	CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY

**STORM FUND QUANTITIES - THIS SHEET**

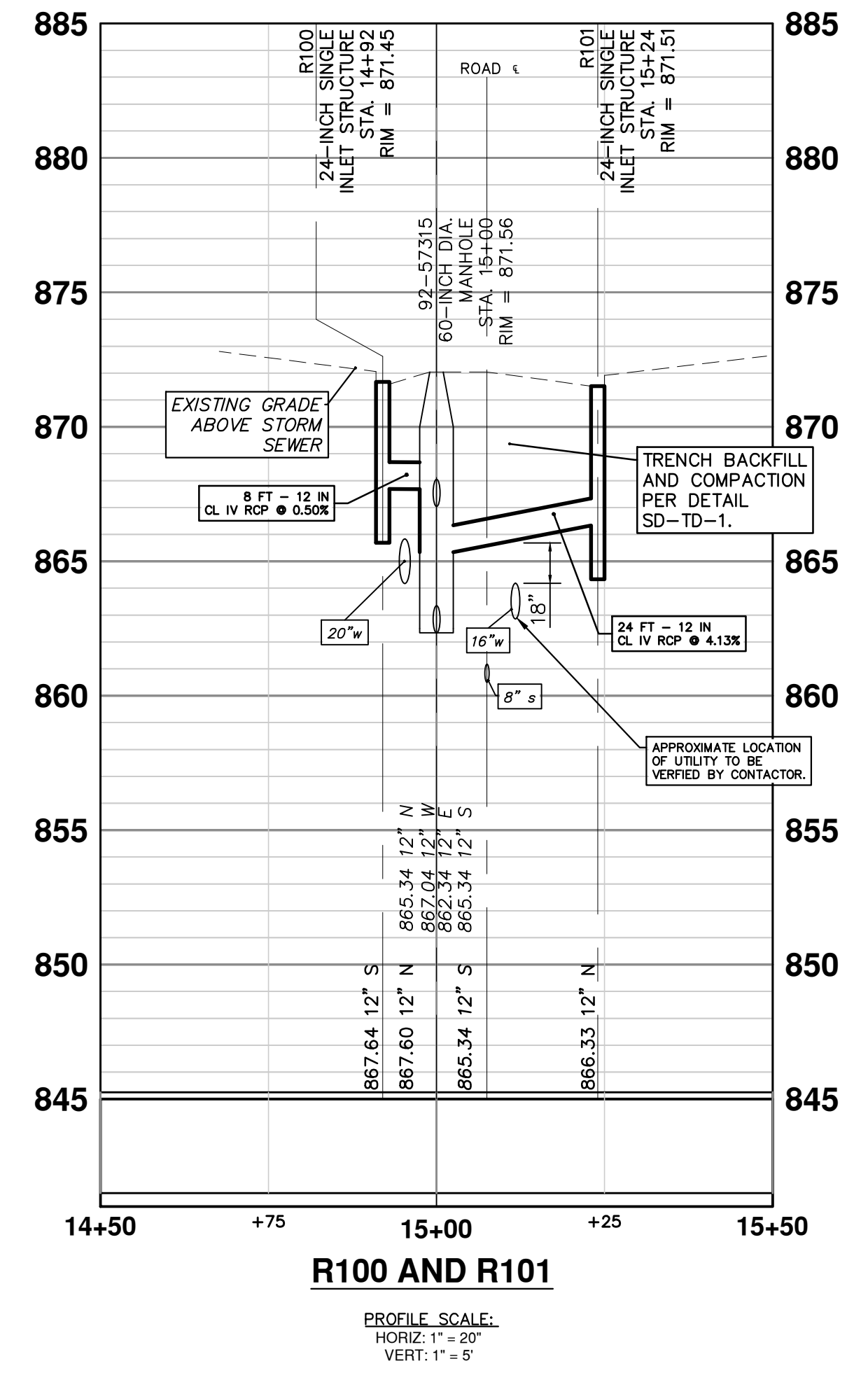
TOTAL	UNIT	DESCRIPTION
1	EA	STORM SEWER TAP, 12 IN. DIA.
32	FT	12 IN., CL IV RCP STORM SEWER, SD-TD-1
2	EA	DS_STORM SINGLE INLET, 24 IN. DIA., (0-8' DEEP)
19	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
10	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES

**SANITARY FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
5	FT	8 IN., ES VCP SANITARY SEWER, SD-TD-2
24	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP

KEY	DESCRIPTION
<b>SAN</b>	ES VCP SANITARY SEWER, SD-TD-2
<b>ADJ-S</b>	ADJUST STRUCTURE COVER - SANITARY
<b>ADJ-R</b>	ADJUST STRUCTURE COVER - STORM
<b>TAP-R</b>	UTILITY STRUCTURE TAP - STORM
<b>STM</b>	CL IV RCP STORM SEWER, SD-TD-1
<b>INL</b>	STORM SEWER SINGLE INLET STRUCTURE
<b>HMA</b>	HMA PAVEMENT - ANN ARBOR TYPICAL SECTION
<b>CG</b>	CONCRETE CURB/ CURB AND GUTTER
<b>DO-M</b>	CONCRETE DRIVEWAY OPENING - TYPE M

STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	RIM ELEVATION @ EOM	DETAIL	DIAMETER	COVER TYPE	SUMP
R100	14+92	12" S 867.64	871.45	SD-S-10	24 IN.	K	YES
R101	15+24	12" N 866.33	871.51	SD-S-10	24 IN.	K	YES



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2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD, PROPOSED ROAD  
P.O.B. TO STA. 4+50

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SCALE: 1" = 20'  
PROFILE: 1" = 5'

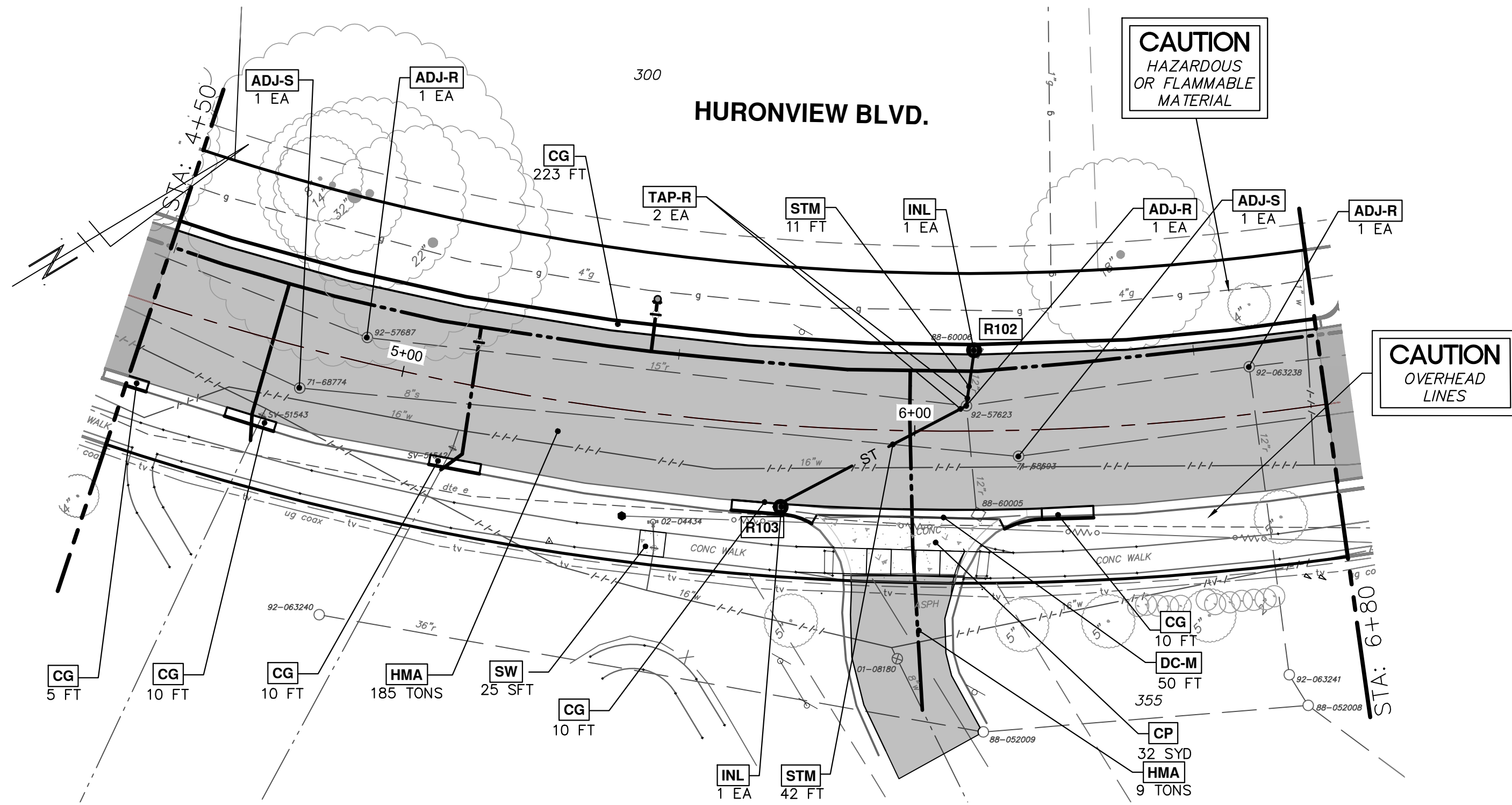
DRAWING No.  
2023-009-14

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SHEET No.

14 OF 46

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**NOTES:**

1. ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED - STA" AND "MACHINE GRADING - SYD" AND WILL NOT BE PAID FOR SEPARATELY.
2. ALL REQUIRED GRADING WORK OUTSIDE OF THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING - SYD."
3. ALL REQUIRED GRADING WORK WITHIN THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING, MODIFIED - STA."
4. ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO BULKHEAD THE RESULTING HOLE LEFT IN A STRUCTURE FROM A REMOVED OR ABANDONED SEWER SHALL BE CONSIDERED INCIDENTAL TO "STORM SEWER PIPE, \_\_\_ IN. DIA., REM - FT." BULKHEAD WORK SHALL BE IN ACCORDANCE WITH ARTICLE 10, SECTION II.AA.4 OF THE ANN ARBOR 2024 STANDARD SPECIFICATIONS.
5. ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO FIT A PROPOSED STORM SEWER TO AN EXISTING HOLE IN A STRUCTURE SHALL BE CONSIDERED INCIDENTAL TO "\_\_\_ IN., CL IV RCP STORM SEWER, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.
6. STORM SEWER TAPS SHALL BE PAID FOR NEW CONNECTIONS/NEW HOLES, NOT AN EXISTING CONNECTION, AND APPLIES TO TAPPING AN EXISTING PIPE OR STRUCTURE (ANN ARBOR STANDARD SPECIFICATIONS, ARTICLE 11, SECTION S.4).
7. WORK AND PAYMENT FOR "CONC, DRIVEWAY OPENING, TYPE M, HIGH EARLY - FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.
8. PAYMENT FOR "CONC, SIDEWALK, \_\_\_ IN. - SFT" INCLUDES CONSTRUCTING THE BASE AS SPECIFIED IN SD-DS-5.
9. THE CONSTRUCTION OF SIDEWALKS THROUGH DRIVEWAYS/APPROACHES SHALL BE CONSTRUCTED, MEASURED, AND PAID FOR AS THE INDICATED DRIVEWAY/PAVEMENT PAY ITEM.
10. ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMPS, CURBS, GUTTERS, AND GURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.

**WATER FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
76	SYD	DS_MACHINE GRADING
471	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
9	TONS	HMA, 4EML
9	TONS	HMA, SEML
32	SYD	CONC PAVT, NON-REINF, 8 IN.
248	FT	CONC, CURB OR CURB & GUTTER, ALL TYPES
25	SFT	CONC, SIDEWALK, 4 IN.

**ROAD FUND QUANTITIES - THIS SHEET**

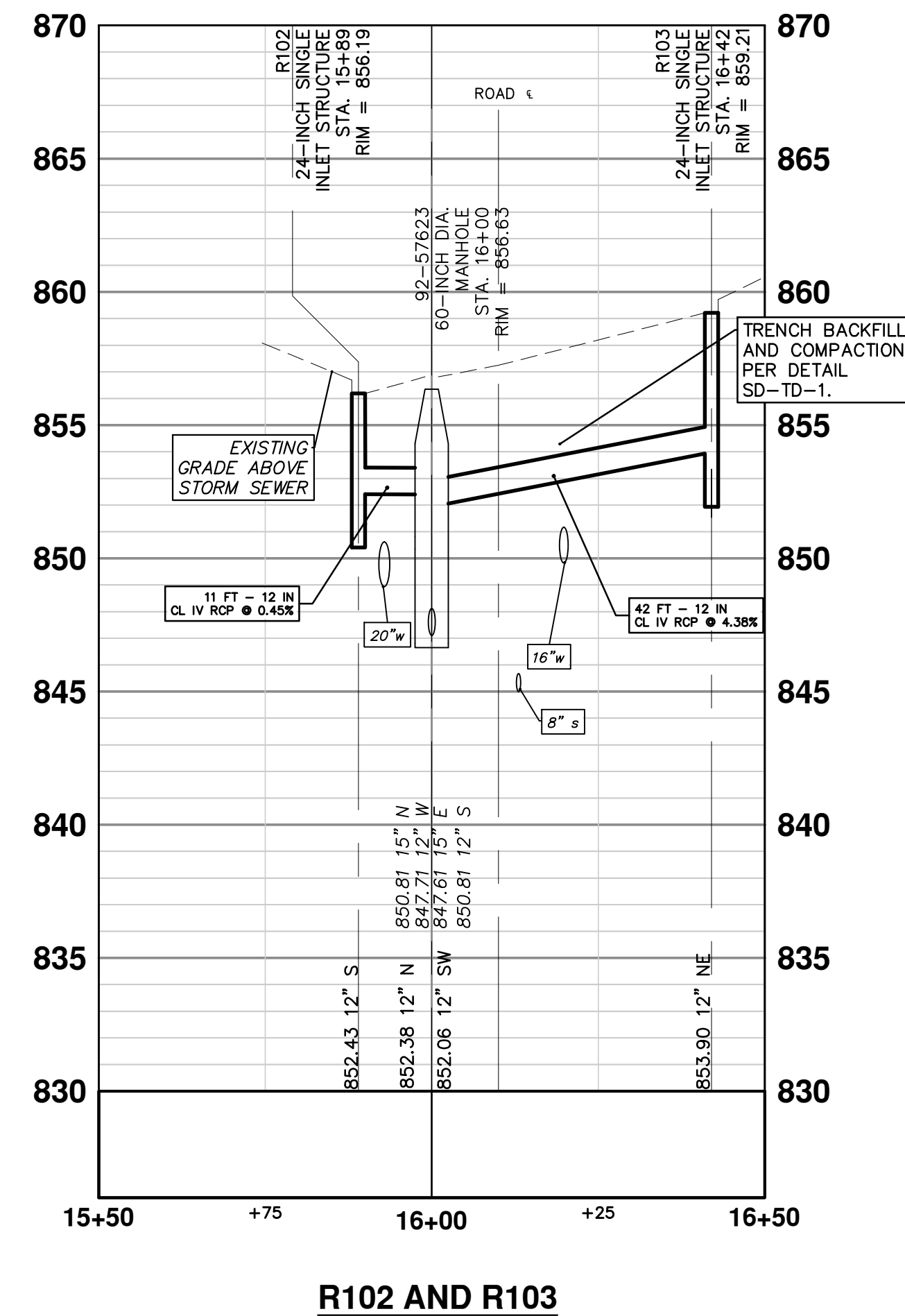
TOTAL	UNIT	DESCRIPTION
2.30	STA	DS_MACHINE GRADING, MODIFIED
2	EA	SANITARY STRUCTURE COVER, ADJUST
3	EA	STRUCTURE COVER, ADJUST
16	SYD	AGGREGATE BASE, 8 IN. 21AA, CIP
93	TONS	HMA, 4EML
93	TONS	HMA, SEML
25	FT	CONC, CURB OR CURB & GUTTER, ALL TYPES
50	FT	CONC, DRIVEWAY OPENING, TYPE M, HIGH EARLY

**STORM FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
2	EA	STORM SEWER TAP, 12 IN. DIA.
53	FT	12 IN., CL IV RCP STORM SEWER, SD-TD-1
2	EA	DS_STORM SINGLE INLET, 24 IN. DIA., (0-6" DEEP)
38	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP

CONSTRUCTION KEY	
KEY	DESCRIPTION
ADJ-S	ADJUST STRUCTURE COVER - SANITARY
ADJ-R	ADJUST STRUCTURE COVER - STORM
TAP-R	UTILITY STRUCTURE TAP - STORM
STM	CL IV RCP STORM SEWER, SD-TD-1
INL	STORM SEWER SINGLE INLET STRUCTURE
HMA	HMA PAVEMENT - ANN ARBOR TYPICAL SECTION
CP	CONCRETE PAVEMENT
CG	CONCRETE CURB/ CURB AND GUTTER
DO-M	CONCRETE DRIVEWAY OPENING - TYPE M
SW	CONCRETE SIDEWALK

STORM SEWER STRUCTURE TABLE							
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	RIM ELEVATION @ EOM	DETAIL	DIAMETER	COVER TYPE	SUMP
R102	15+89	12" S 852.43	856.19	SD-ST-3	24 IN.	K	YES
R103	16+42	12" NE 853.90	859.21	SD-ST-3	24 IN.	K	YES



**R102 AND R103**  
 PROFILE SCALE:  
 HORIZ: 1" = 20"  
 VERT: 1" = 5"

**811**  
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2/8/2024 DATE  
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 NTM DRAWN  
 BID SET DESCRIPTION  
 REV.

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2024 MISCELLANEOUS UTILITIES PROJECTS  
 HURONVIEW BLVD, PROPOSED ROAD  
 STA. 4+50 TO STA. 6+80

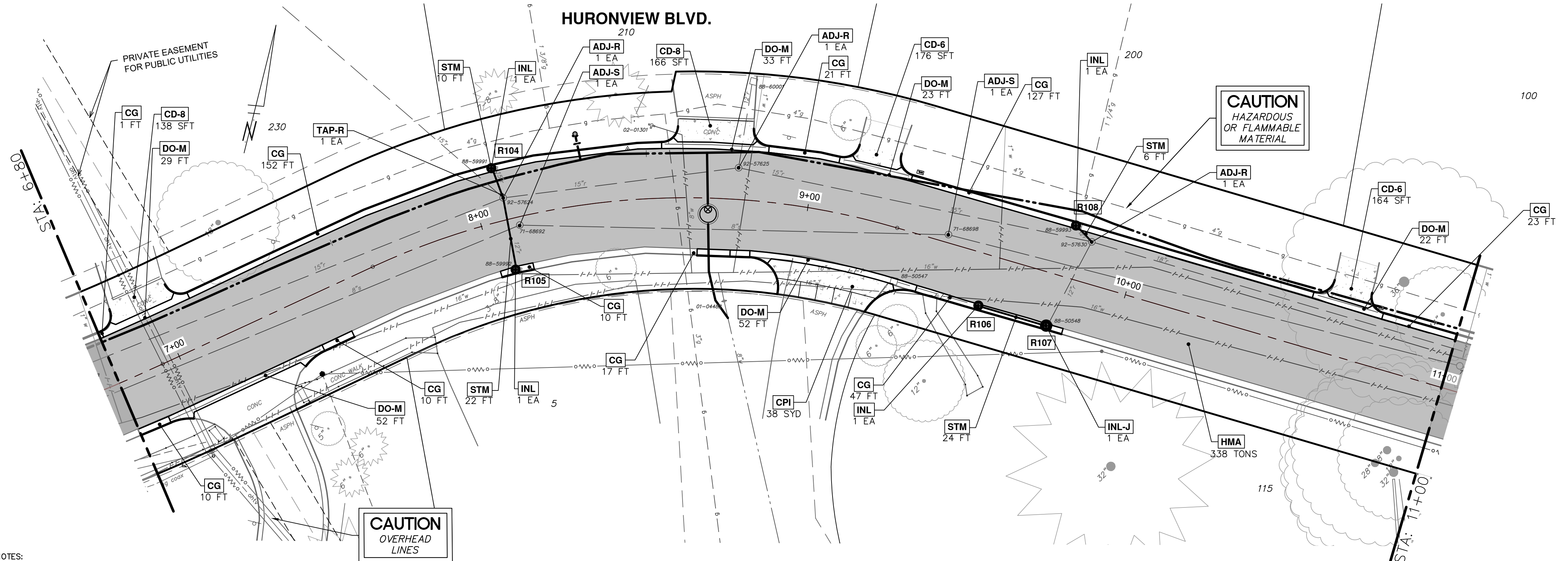
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 SCALE: 1" = 20'  
 PROFILE: 1" = 5'

2023-009-15  
 SHEET No.  
 15 OF 46



CONSTRUCTION KEY	
KEY	DESCRIPTION
ADJ-S	ADJUST STRUCTURE COVER - SANITARY
ADJ-R	ADJUST STRUCTURE COVER - STORM
TAP-R	UTILITY STRUCTURE TAP - STORM
STM	CL IV RCP STORM SEWER, SD-TD-1
INL-J	STORM SEWER INLET JUNCTION STRUCTURE
INL	STORM SEWER SINGLE INLET STRUCTURE
HMA	HMA PAVEMENT - ANN ARBOR TYPICAL SECTION
CPI	CONCRETE PAVEMENT WITH INTEGRAL CURB
CG	CONCRETE CURB/ CURB AND GUTTER
DO-M	CONCRETE DRIVEWAY OPENING - TYPE M
CD-8	CONCRETE DRIVE APPROACH - 8 INCH



**WATER FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
72	SYD	AGGREGATE BASE, 6 IN., 21AA, CIP
415	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
334	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES
107	FT	CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY
340	SFT	CONC. SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN., HIGH EARLY
304	SFT	CONC. SIDEWALK, DRIVE APPROACH, OR RAMP, 8 IN., HIGH EARLY

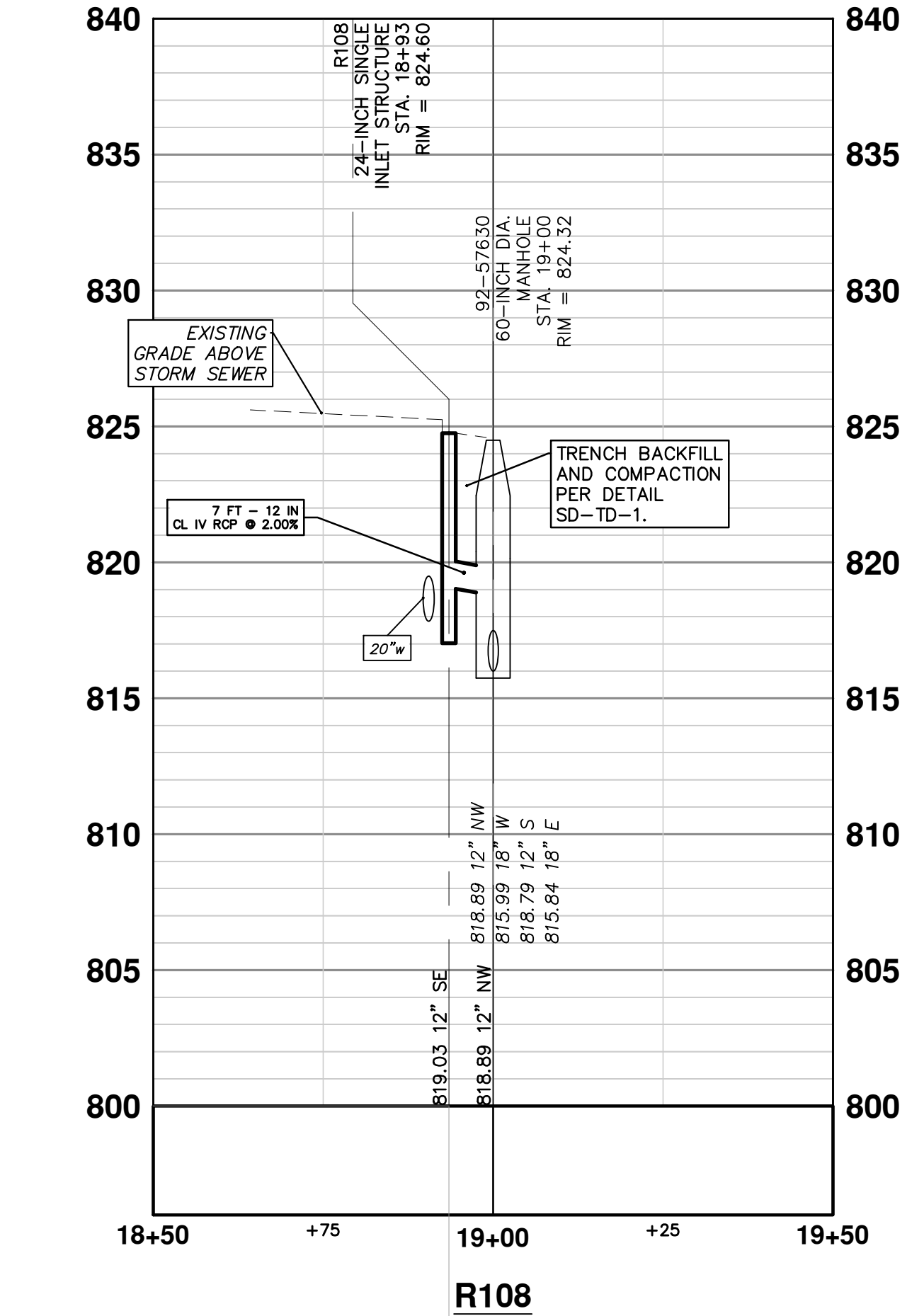
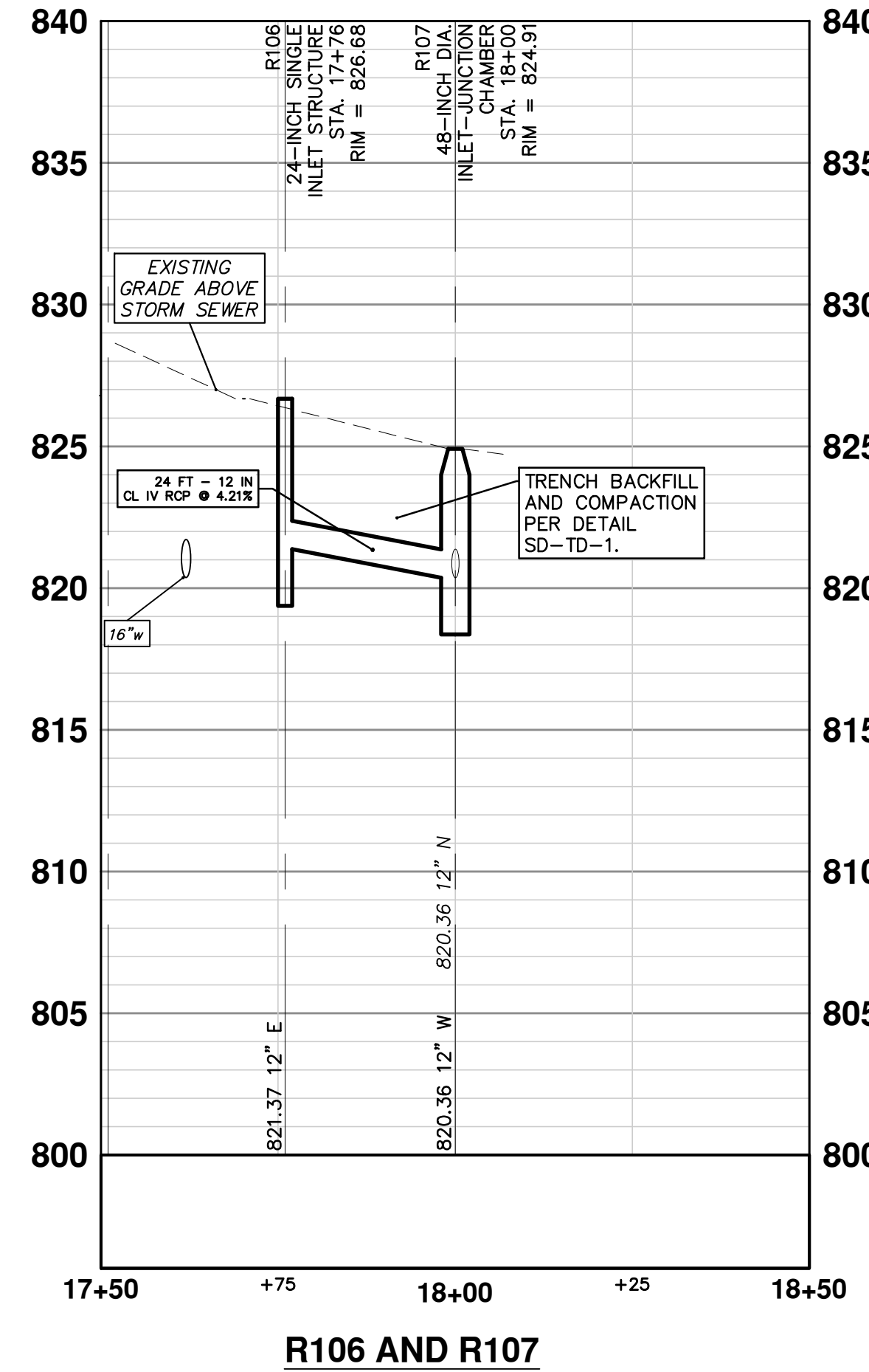
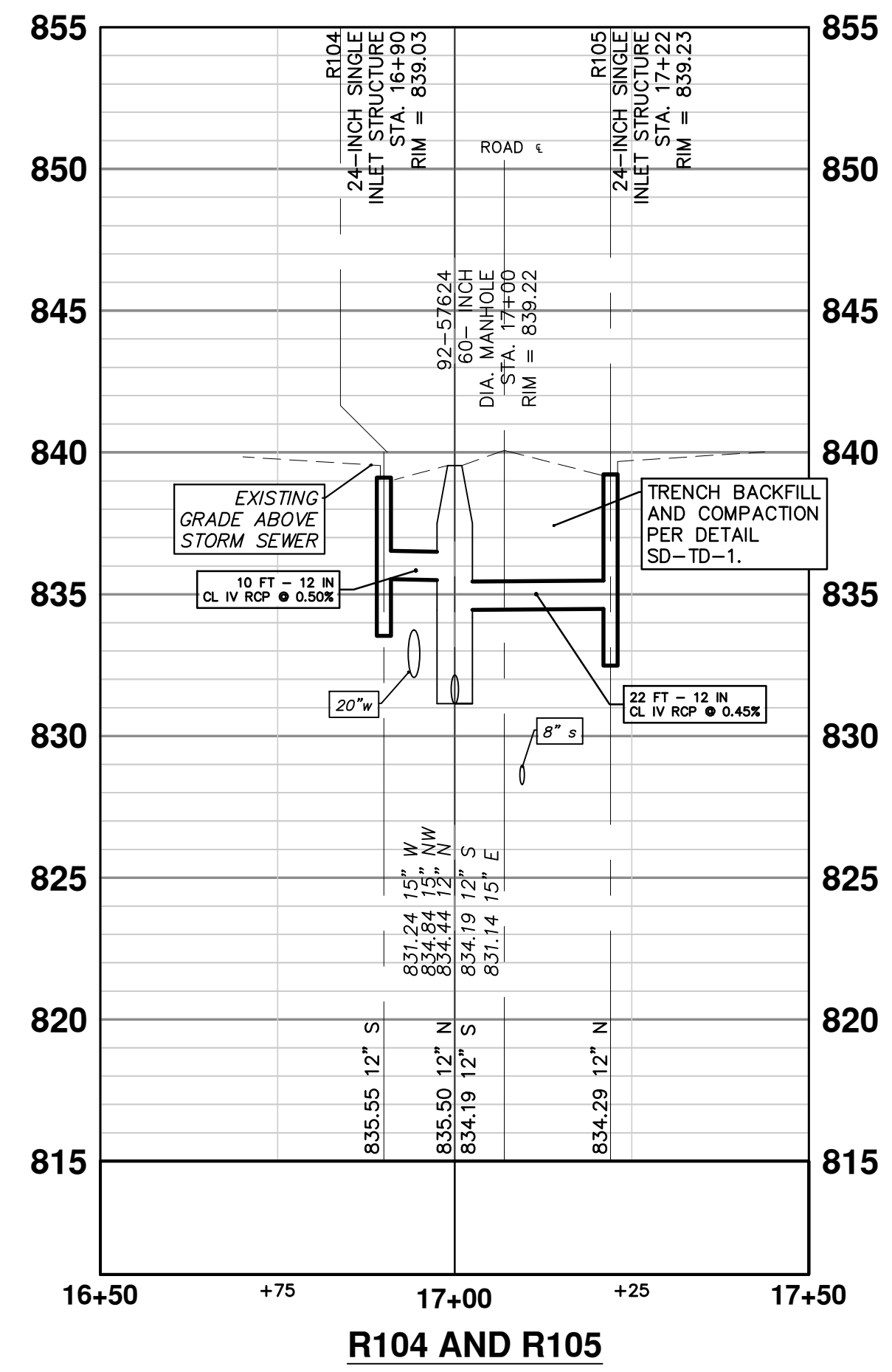
**ROAD FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
4.20	STA	DS_MACHINE GRADING, MODIFIED
2	EA	SANITARY STRUCTURE COVER, ADJUST
3	EA	STRUCTURE COVER, ADJUST
69	SYD	AGGREGATE BASE, 8 IN. 21AA, CIP
169	TON	HMA, 4EML
169	TON	HMA, 5EML
38	SYD	CONC PAVT WITH INTEGRAL CURB, NON-REINF, 8 IN.
37	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES
104	FT	CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY

**STORM FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
1	EA	STORM SEWER TAP, 12 IN. DIA.
62	FT	12 IN. CL IV RCP STORM SEWER, SD-TD-1
1	EA	DS_STORM INLET-JUNCTION, 48 IN. DIA., (0-8' DEEP)
4	EA	DS_STORM SINGLE INLET, 24 IN. DIA., (0-8' DEEP)
53	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
47	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES

- NOTES:**
- ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED STA" AND "MACHINE GRADING - SYD" AND WILL NOT BE PAID FOR SEPARATELY.
  - ALL REQUIRED GRADING WORK OUTSIDE OF THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING - SYD."
  - ALL REQUIRED GRADING WORK WITHIN THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING, MODIFIED - STA."
  - ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO BULKHEAD THE RESULTING HOLE LEFT IN A STRUCTURE FROM A REMOVED OR ABANDONED SEWER SHALL BE CONSIDERED INCIDENTAL TO "STORM SEWER PIPE, \_\_\_ IN. DIA., RCP - FT". BULKHEAD WORK SHALL BE IN ACCORDANCE WITH ARTICLE 10, SECTION II.A.A.4 OF THE ANN ARBOR 2024 STANDARD SPECIFICATIONS.
  - ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO FIT A PROPOSED FORM SEWER TO AN EXISTING HOLE IN A STRUCTURE SHALL BE CONSIDERED INCIDENTAL TO "\_\_\_ IN. CL IV RCP STORM SEWER, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.
  - STORM SEWER TAPS SHALL BE PAID FOR NEW CONNECTIONS/NEW HOLES, NOT AN EXISTING CONNECTION, AND APPLIES TO TAPPING AN EXISTING PIPE OR STRUCTURE (ANN ARBOR STANDARD SPECIFICATIONS, ARTICLE 11, SECTION S.4).
  - WORK AND PAYMENT FOR "CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY - FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.
  - PAYMENT FOR "CONC. SIDEWALK, \_\_\_ IN. - SFT" INCLUDES CONSTRUCTING THE BASE AS SPECIFIED IN SD-DS-5.
  - THE CONSTRUCTION OF SIDEWALKS THROUGH DRIVEWAYS/APPROACHES SHALL BE CONSTRUCTED, MEASURED, AND PAID FOR AS THE INDICATED DRIVEWAY/PAVEMENT PAY ITEM.
  - ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO FIT AND CONNECT A NEW STORM STRUCTURE TO AN EXISTING STORM SEWER SHALL BE CONSIDERED INCIDENTAL TO THE NEW STORM SEWER STRUCTURE, AND WILL NOT BE PAID FOR SEPARATELY (ARTICLE 11 SECTION II.2 OF THE ANN ARBOR STANDARD SPECIFICATIONS).
  - ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMP, CURBS, GUTTERS, AND CURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.



**STORM SEWER STRUCTURE TABLE**

STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	RIM ELEVATION @ EOM	DETAIL	DIAMETER	COVER TYPE	SUMP
R104	16+90	12" S 835.55	839.03	SD-ST-3	24 IN.	K	YES
R105	17+22	12" N 834.29	839.23	SD-ST-3	24 IN.	K	YES
R106	17+76	12" E 821.37	826.68	SD-ST-3	24 IN.	K	YES
R107	18+00	12" N 820.36 12" W 820.36	824.91	SD-ST-2	48 IN.	K	YES
R108	18+93.5	12" SE 819.03	824.60	SD-ST-3	24 IN.	K	YES

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

2024 MISCELLANEOUS UTILITIES PROJECTS

HURONVIEW BLVD, PROPOSED ROAD

STA. 6+80 TO STA. 11+00

SCALE: 1" = 5'

DRAWING No. 2023-009-16

SHEET No. 16 OF 46

**811**

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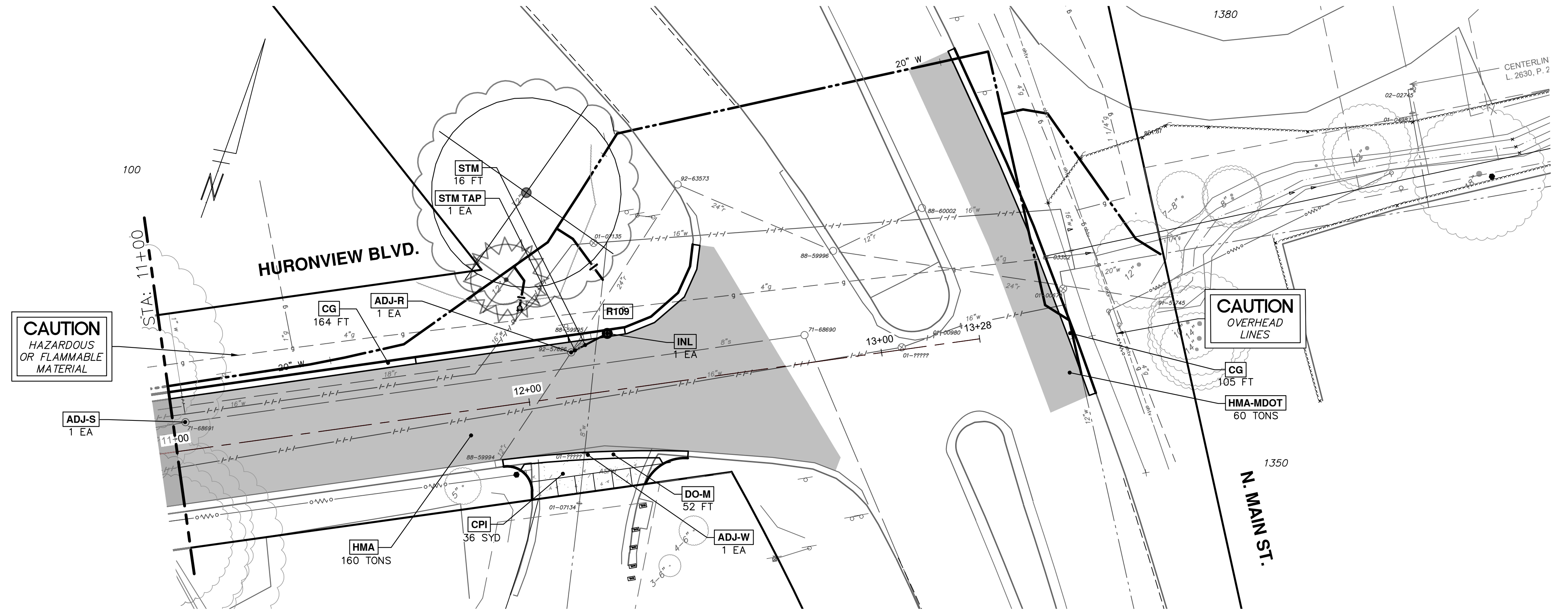
CITY OF ANN ARBOR  
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301 EAST HURON STREET  
ANN ARBOR, MI 48106-8647  
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ANN ARBOR MICHIGAN

2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009

REV.	DATE	DESCRIPTION	DRAWN	CHECKED
1	2/8/2024			
2				
3				
4				
5				

CONSTRUCTION KEY	
KEY	DESCRIPTION
ADJ-S	ADJUST STRUCTURE COVER – SANITARY
ADJ-R	ADJUST STRUCTURE COVER – SANITARY
ADJ-W	ADJUST STRUCTURE COVER – WATER
TAP-R	UTILITY STRUCTURE TAP – STORM
STM	CL IV RCP STORM SEWER, SD-TD-1
INL	STORM SEWER SINGLE INLET STRUCTURE
HMA	HMA PAVEMENT – ANN ARBOR TYPICAL SECTION
HMA-MDOT	HMA PAVEMENT – MDOT TYPICAL SECTION
CPI	CONCRETE PAVEMENT WITH INTEGRAL CURB
CG	CONCRETE CURB/ CURB AND GUTTER
DO-M	CONCRETE DRIVEWAY OPENING – TYPE M



**WATER FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
164	SYD	DS_MACHINE GRADING
82	CYD	SUBBASE, CIP
197	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
43	TON	HMA, 4E3
17	TON	HMA, 5E3
180	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES

**ROAD FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
1.84	STA	DS_MACHINE GRADING, MODIFIED
1	EA	SANITARY STRUCTURE COVER, ADJUST
1	EA	STRUCTURE COVER, ADJUST
63	SYD	AGGREGATE BASE, 8 IN. 21AA, CIP
80	TON	HMA, 4EML
80	TON	HMA, 5EML
36	SYD	CONC PAVT WITH INTEGRAL CURB, NON-REINF, 8 IN.
69	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES
52	FT	CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY
1	EA	GATE BOX, ADJUST

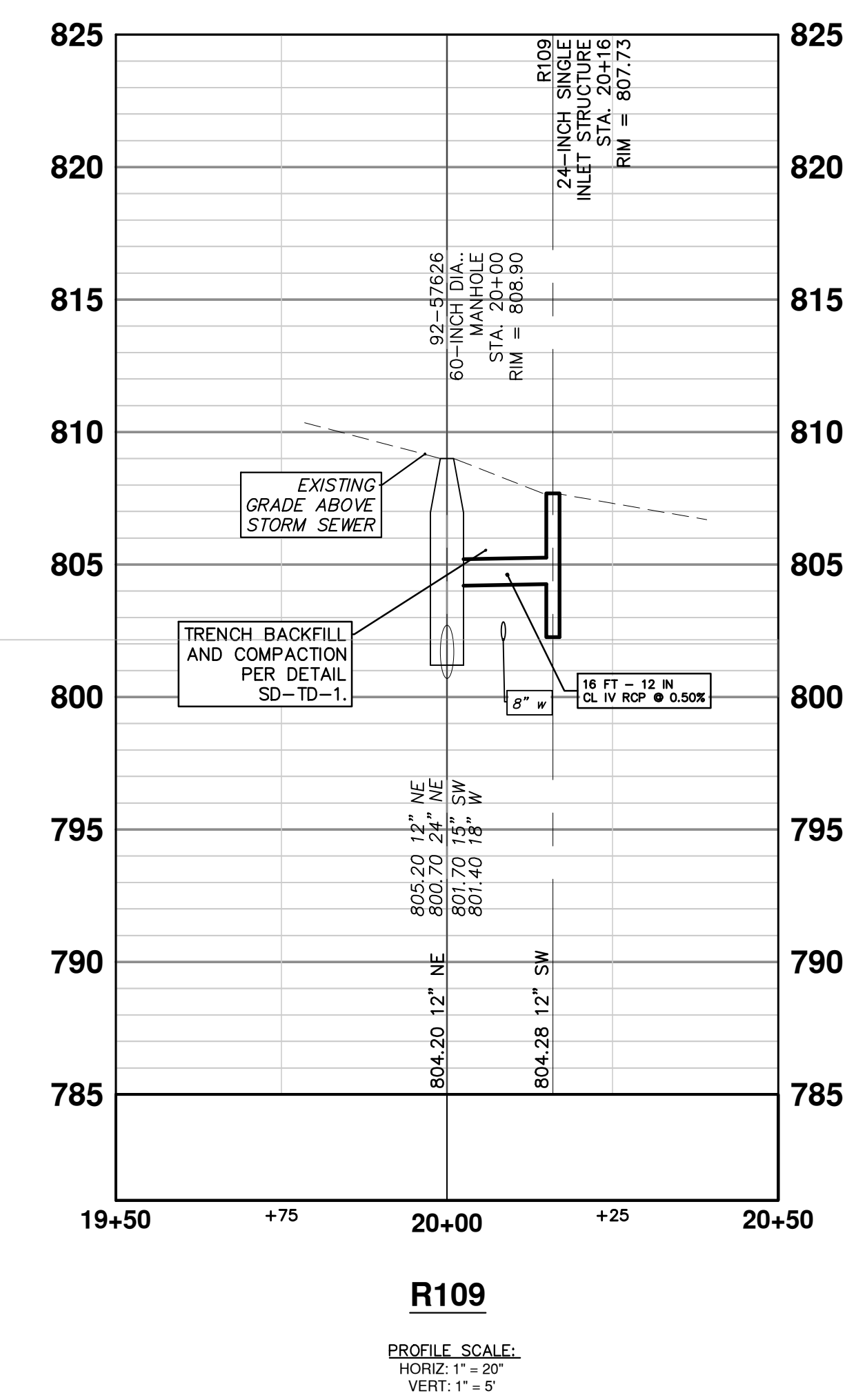
**STORM FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
1	EA	STORM SEWER TAP, 12 IN. DIA.
16	FT	12 IN., CL IV RCP STORM SEWER, SD-TD-1
1	EA	DS_STORM SINGLE INLET, 24 IN. DIA., (0-8' DEEP)
21	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
20	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES

- NOTES:
- ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED - STA" AND "MACHINE GRADING - SYD" AND WILL NOT BE PAID FOR SEPARATELY.
  - ALL REQUIRED GRADING WORK OUTSIDE OF THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING - SYD."
  - ALL REQUIRED GRADING WORK WITHIN THE HURONVIEW BLVD ROW SHALL BE MEASURED AND PAID FOR AS "MACHINE GRADING, MODIFIED - STA."
  - ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO BULKHEAD THE RESULTING HOLE LEFT IN A STRUCTURE FROM A REMOVED OR ABANDONED SEWER SHALL BE CONSIDERED INCIDENTAL TO "STORM SEWER PIPE, — IN. DIA., REM — FT." BULKHEAD WORK SHALL BE IN ACCORDANCE WITH ARTICLE 10, SECTION II.AA.4 OF THE ANN ARBOR 2024 STANDARD SPECIFICATIONS.
  - STORM SEWER TAPS SHALL BE PAID FOR NEW CONNECTIONS/NEW HOLES, NOT AN EXISTING CONNECTION, AND APPLIES TO TAPPING AN EXISTING PIPE OR STRUCTURE (ANN ARBOR STANDARD SPECIFICATIONS, ARTICLE 11, SECTION S.4).
  - WORK AND PAYMENT FOR "CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY - FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.
  - ALL CURB CUTS REQUIRED FOR FUTURE/EXISTING SIDEWALK, SPILLWAYS, ETC INCIDENTAL TO "CONC. CURB OR CURB & GUTTER, ALL TYPES - FT" AND WILL NOT BE PAID FOR SEPARATELY.
  - THE CONSTRUCTION OF SIDEWALKS THROUGH DRIVEWAYS/APPROACHES SHALL BE CONSTRUCTED, MEASURED, AND PAID FOR AS THE INDICATED DRIVEWAY/PAVEMENT PAY ITEM.
  - ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMPS, CURBS, GUTTERS, AND GURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.

**STORM SEWER STRUCTURE TABLE**

STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	RIM ELEVATION @ EOM	DETAIL	DIAMETER	COVER TYPE	SUMP
R109	20+16	12" SW 804.28	807.73	SD-ST-3	24 IN.	K	YES



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

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 2024 MISCELLANEOUS UTILITIES PROJECTS  
 HURONVIEW BLVD. PROPOSED ROAD  
 STA. 11+00 TO P.O.E.

CITY OF ANN ARBOR  
 PUBLIC SERVICES  
 301 EAST HURON STREET  
 P.O. BOX 8647  
 ANN ARBOR, MI 48107-8647  
 www.aagov.org

2023-009-17  
 SHEET No. 17 OF 46

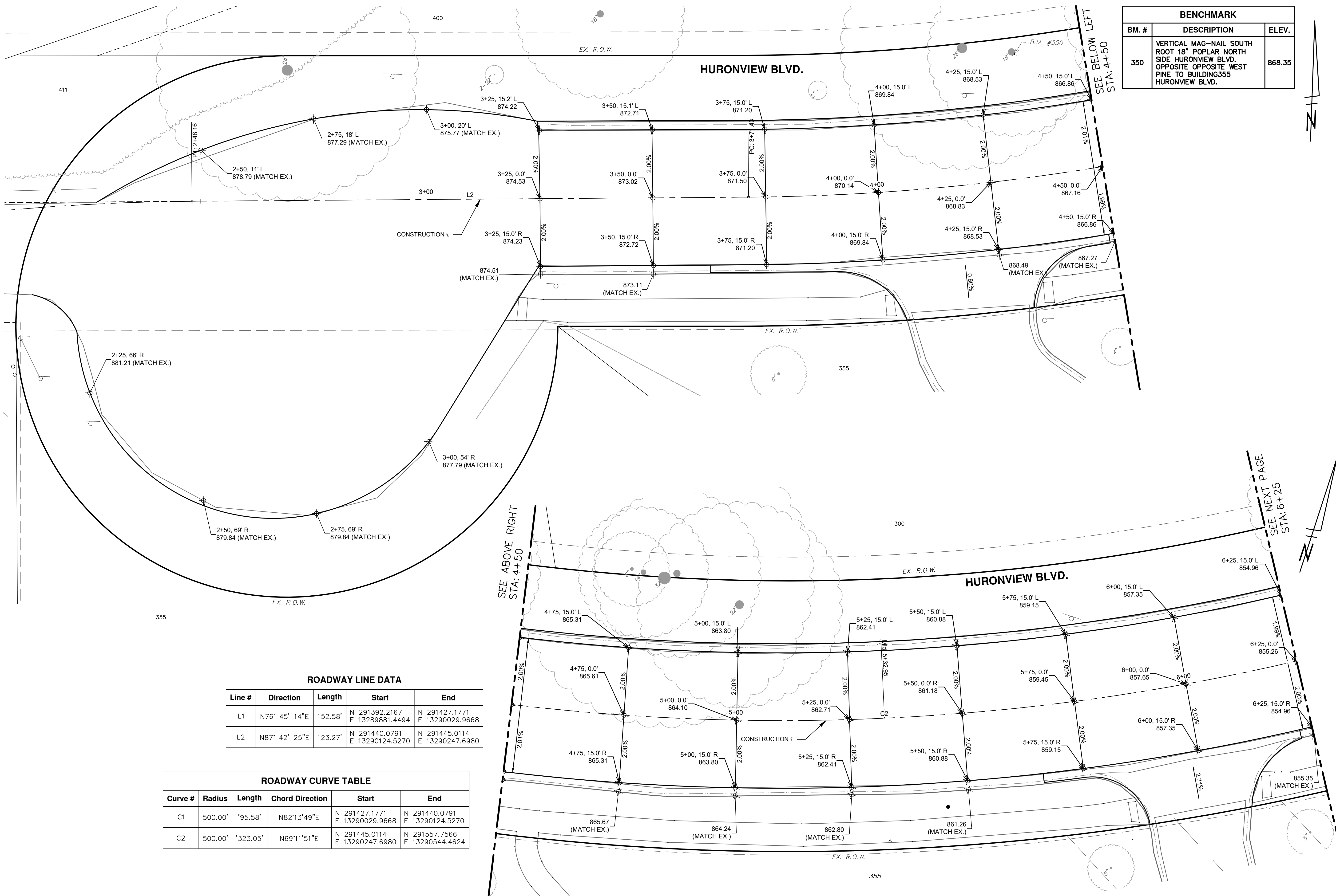
DATE: 2/8/2024  
 DRAWN: NTM  
 CHECKED: JVB

REV. 1  
 DESCRIPTION: BID SET

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BENCHMARK		
BM. #	DESCRIPTION	ELEV.
350	VERTICAL MAG-NAIL SOUTH ROOT 18" POPLAR NORTH SIDE HURONVIEW BLVD. OPPOSITE OPPOSITE WEST PINE TO BUILDING 355 HURONVIEW BLVD.	868.35

ROADWAY LINE DATA				
Line #	Direction	Length	Start	End
L1	N76° 45' 14"E	152.58'	N 291392.2167 E 13289881.4494	N 291427.1771 E 13290029.9668
L2	N87° 42' 25"E	123.27'	N 291440.0791 E 13290124.5270	N 291445.0114 E 13290247.6980

ROADWAY CURVE TABLE					
Curve #	Radius	Length	Chord Direction	Start	End
C1	500.00'	'95.58'	N82°13'49"E	N 291427.1771 E 13290029.9668	N 291440.0791 E 13290124.5270
C2	500.00'	'323.05'	N69°11'51"E	N 291445.0114 E 13290247.6980	N 291557.7566 E 13290544.4624

Know what's below. Call before you dig.

DATE: 2/8/2024  
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CHECKED: JVB

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

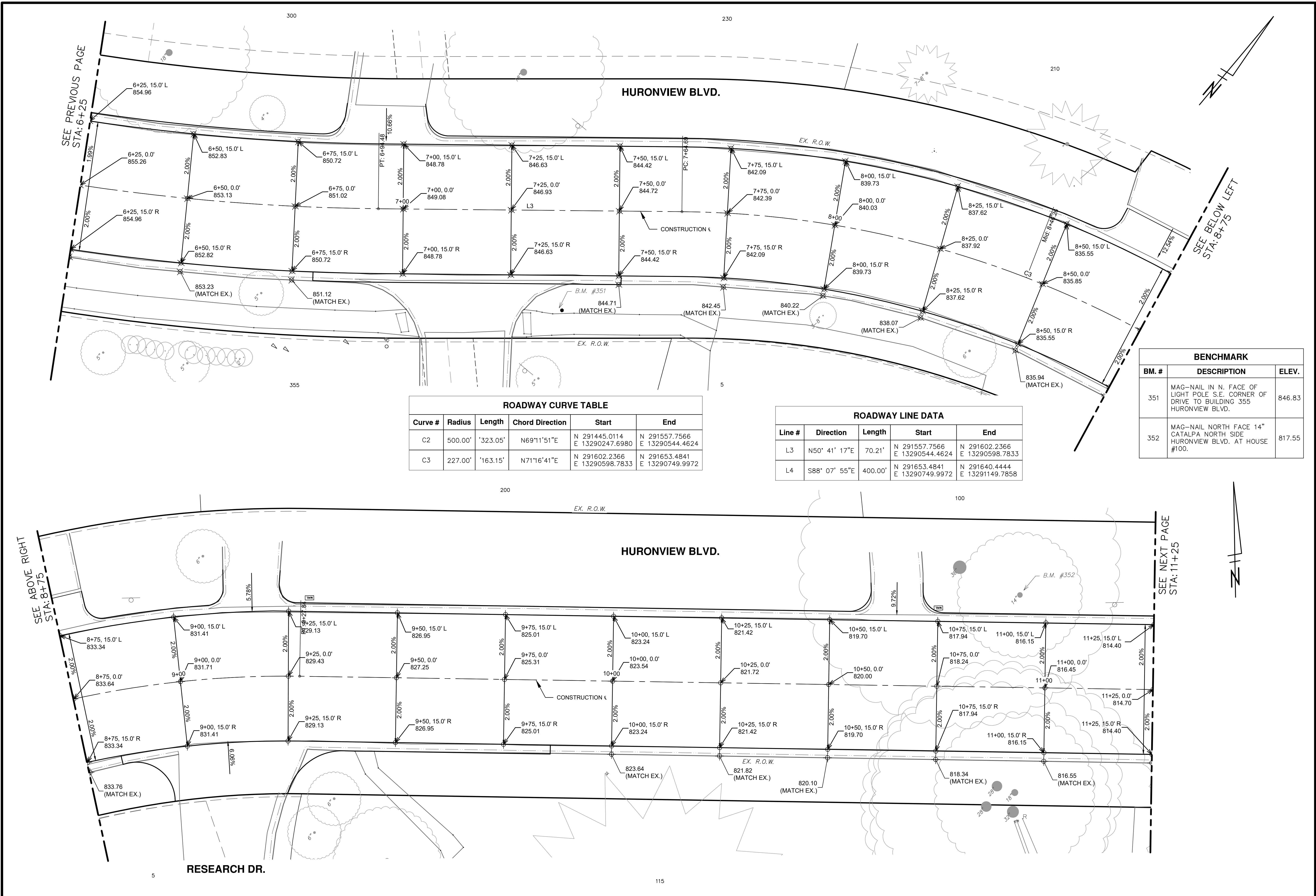
HURONVIEW BLVD. GRADING  
STA. 2+00 TO STA. 6+25

PROFILE: N/A  
SCALE: 1" = 10'

DRAWING No. 2023-009-18  
SHEET No. 18 OF 46

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ROADWAY CURVE TABLE					
Curve #	Radius	Length	Chord Direction	Start	End
C2	500.00'	323.05'	N69°11'51"E	N 291445.0114 E 13290247.6980	N 291557.7566 E 13290544.4624
C3	227.00'	163.15'	N71°16'41"E	N 291602.2366 E 13290598.7833	N 291653.4841 E 13290749.9972

ROADWAY LINE DATA				
Line #	Direction	Length	Start	End
L3	N50° 41' 17"E	70.21'	N 291557.7566 E 13290544.4624	N 291602.2366 E 13290598.7833
L4	S88° 07' 55"E	400.00'	N 291653.4841 E 13290749.9972	N 291640.4444 E 13291149.7858

BENCHMARK		
BM. #	DESCRIPTION	ELEV.
351	MAG-NAIL IN N. FACE OF LIGHT POLE S.E. CORNER OF DRIVE TO BUILDING 355 HURONVIEW BLVD.	846.83
352	MAG-NAIL NORTH FACE 14" CATALPA NORTH SIDE HURONVIEW BLVD. AT HOUSE #100.	817.55

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

HURONVIEW BLVD. GRADING

STA. 6+25 TO STA. 11+25

SCALE: 1" = 10'

PROFILE: N/A

DRAWING No. 2023-009-19

SHEET No. 19 OF 46

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

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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4				
3				
2		2/8/2024	NTM	JVB
1				

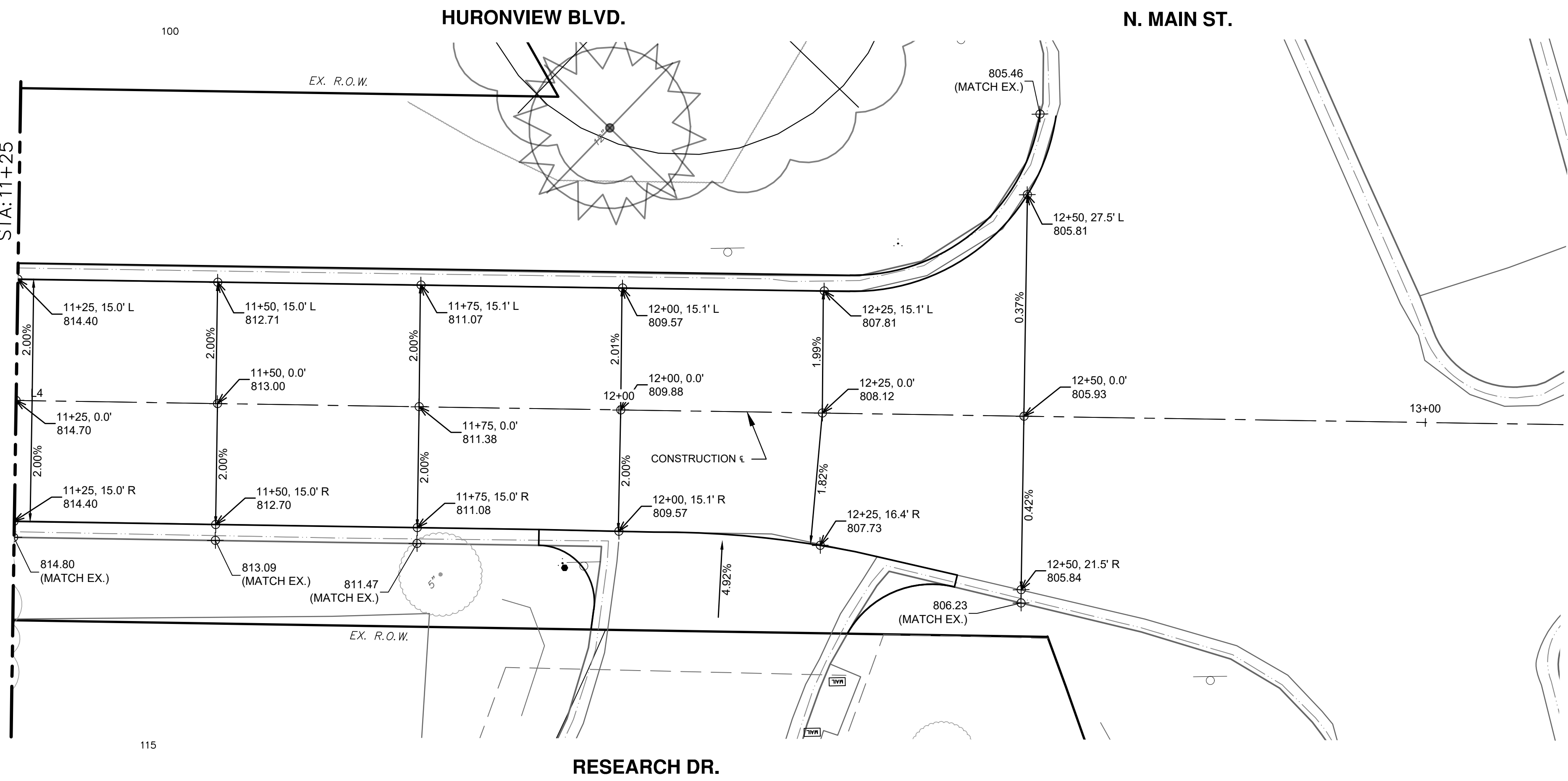
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PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48107-8647  
ANN ARBOR 734.794.6410  
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**CITY OF ANN ARBOR MICHIGAN**

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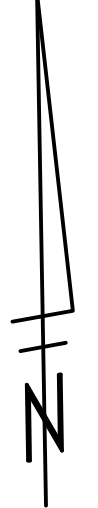
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SEE PREVIOUS PAGE  
STA: 11+25



BENCHMARK		
BM. #	DESCRIPTION	ELEV.
355	TOP OF HUB.	811.20

ROADWAY LINE DATA				
Line #	Direction	Length	Start	End
L4	S88° 07' 55"E	400.00'	N 291653.4841 E 13290749.9972	N 291640.4444 E 13291149.7858



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

HURONVIEW BLVD. GRADING  
STA. 11+25 TO P.O.E.

SCALE: 1" = 20'  
PROFILE: N/A

DRAWING No. 2023-009-20

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

5	REV.	
4		
3		
2		
1	NTM	DATE
	DRAWN	
	CHECKED	

2/8/2024

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

HURONVIEW BLVD. GRADING  
STA. 11+25 TO P.O.E.

SCALE: 1" = 20'  
PROFILE: N/A

DRAWING No. 2023-009-20

SHEET No. 20 OF 46

**WATER FUND QUANTITIES THIS SHEET**

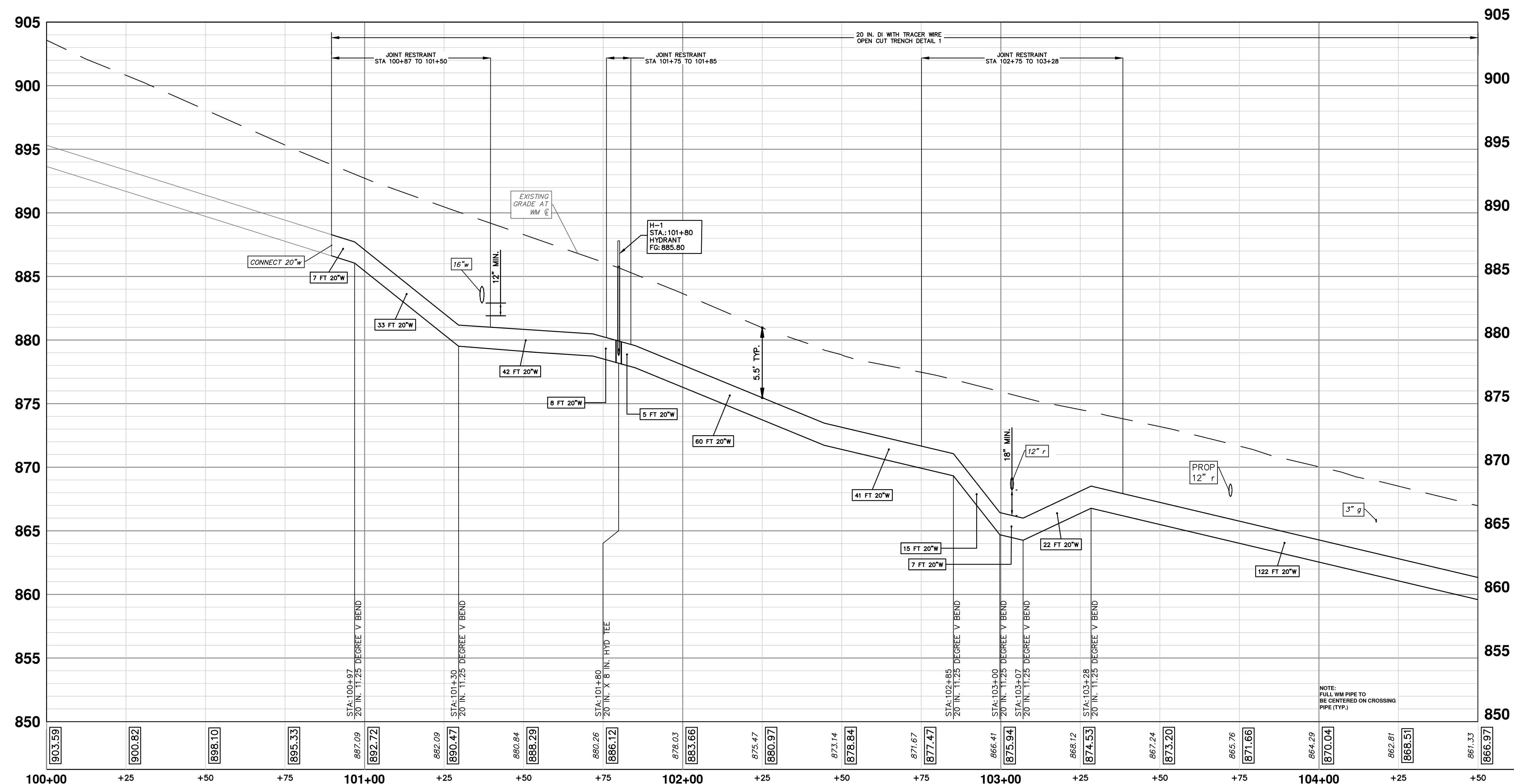
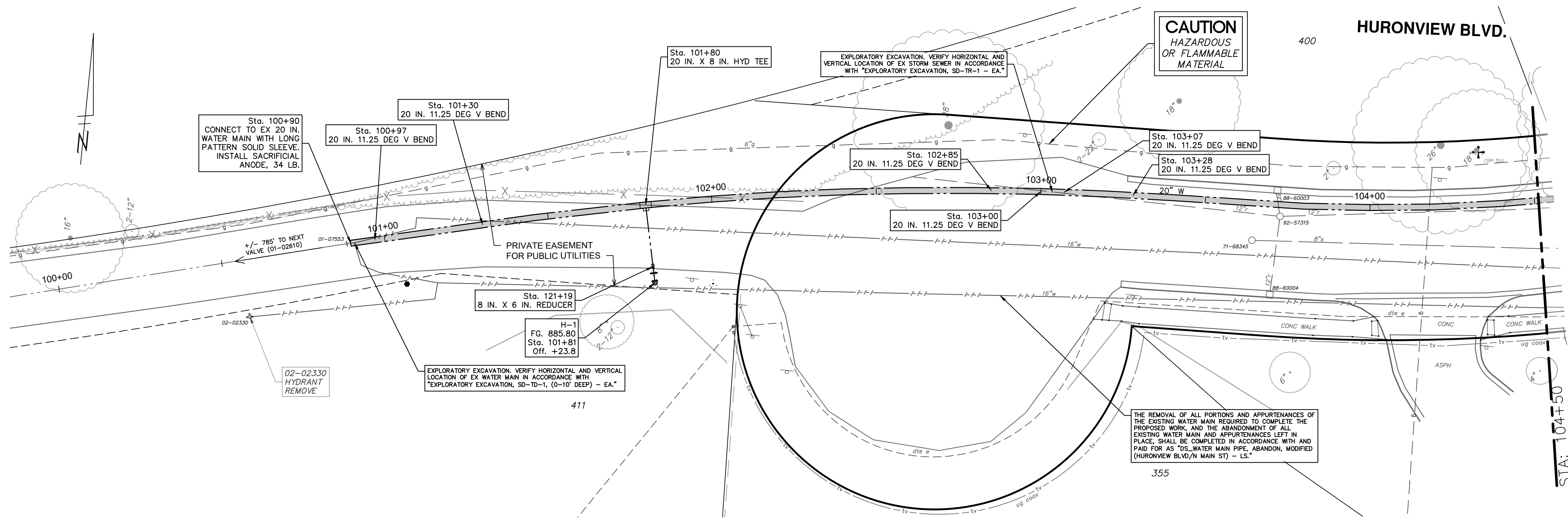
TOTAL	UNIT	DESCRIPTION
1	EA	TEMPORARY WATER MAIN LINE STOP, 20 IN.
1	EA	FIRE HYDRANT ASSEMBLY, REM
5	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
19	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
386	FT	20 IN., PC 250 DIP W/POLYWRAP, SD-TD-1
6	EA	20 IN. 11.25 DEG BEND
1	EA	8 IN. X 6 IN. DIP REDUCER
1	EA	20 IN. X 20 IN. X 8 IN. DIP TEE
1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE
1	EA	SACRIFICIAL ANODE, 34-POUND
2	EA	EXPLORATORY EXCAVATION, ST-TD-1, (0-10' DEEP)

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
H-1	HYDRANT	101+81	885.80	5.50		

**NOTES:**

- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
- THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
- A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
- FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



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**811**  
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ANN ARBOR, MI 48106-6647  
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BID SET DESCRIPTION  
REV. 1  
2  
3  
4  
5

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD. PROPOSED WATER MAIN  
P.O.B. TO STA. 104+50

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SHEET No. 21 OF 46

DRAWING No. 2023-009-21

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SCALE: 1" = 20'  
PROFILE: 1" = 5'

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

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009

**WATER FUND QUANTITIES THIS SHEET**

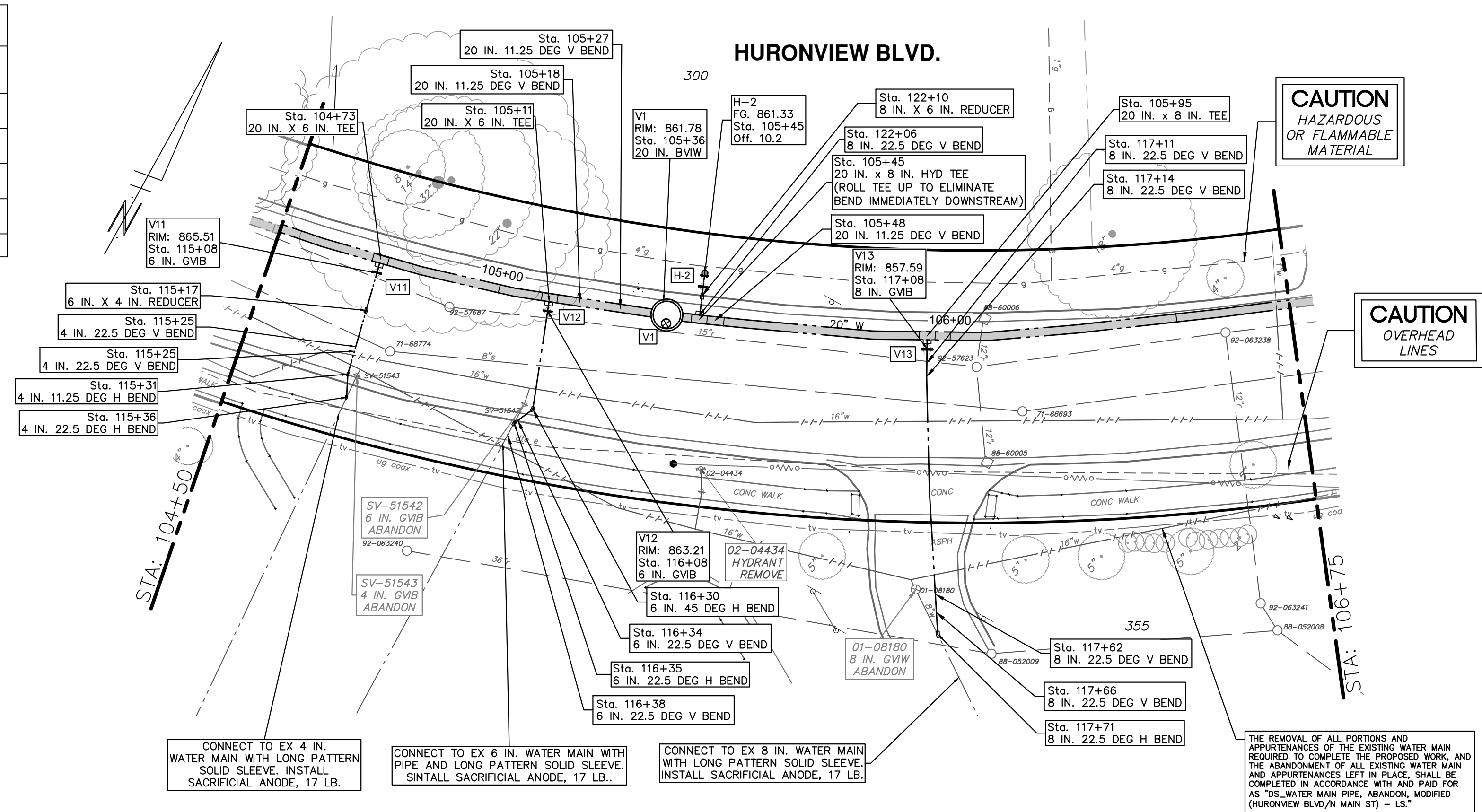
TOTAL	UNIT	DESCRIPTION
1	EA	FIRE HYDRANT ASSEMBLY, REM
1	EA	GATE VALVE IN BOX, 4 IN. DIA. ABANDON
1	EA	GATE VALVE IN BOX, 6 IN. DIA. ABANDON
1	EA	GATE VALVE IN WELL, 8 IN. DIA. ABANDON
24	FT	4 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
55	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
76	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
230	FT	20 IN., PC 250 DIP W/POLYWRAP, SD-TD-1
3	EA	4 IN. 22.5 DEG DIP BEND
1	EA	4 IN. 11.25 DEG DIP BEND
1	EA	6 IN. 45 DEG DIP BEND
3	EA	6 IN. 22.5 DEG DIP BEND
6	EA	8 IN. 22.5 DEG DIP BEND
3	EA	20 IN. 11.25 DEG DIP BEND
1	EA	6 IN. X 4 IN. DIP REDUCER
1	EA	8 IN. X 6 IN. DIP REDUCER
2	EA	20 IN. X 20 IN. X 6 IN. DIP TEE
2	FT	20 IN. X 20 IN. X 8 IN. DIP TEE
2	EA	DS_GATE VALVE IN BOX, 6 IN.
1	EA	DS_GATE VALVE IN BOX, 8 IN.
1	EA	DS_GATE VALVE IN WELL, 20 IN.
5	FT	EXCAVATE & BACKFILL FOR WATER SERVICE TAP AND LEAD
1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE
3	EA	SACRIFICIAL ANODE, 17-POUND

**WATER MAIN STRUCTURE TABLE**

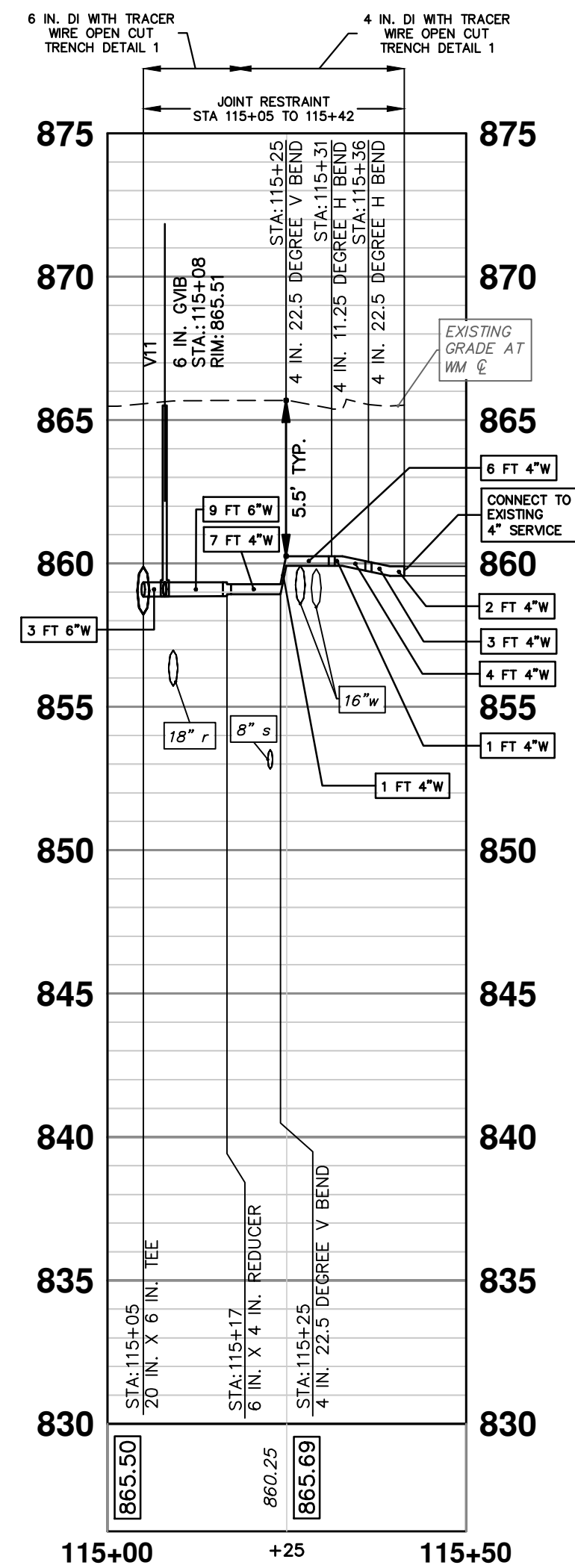
STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V1	20 in. BVIW	105+36	861.78	6.22	72 IN.	B
V11	6 in. GVB	115+08	865.53	6.18		
V12	6 in. GVB	116+08	863.20	6.39		
V13	8 in. GVB	117+08	857.58	6.58		
H-2	HYDRANT	105+45	861.33	5.50		

**NOTES:**

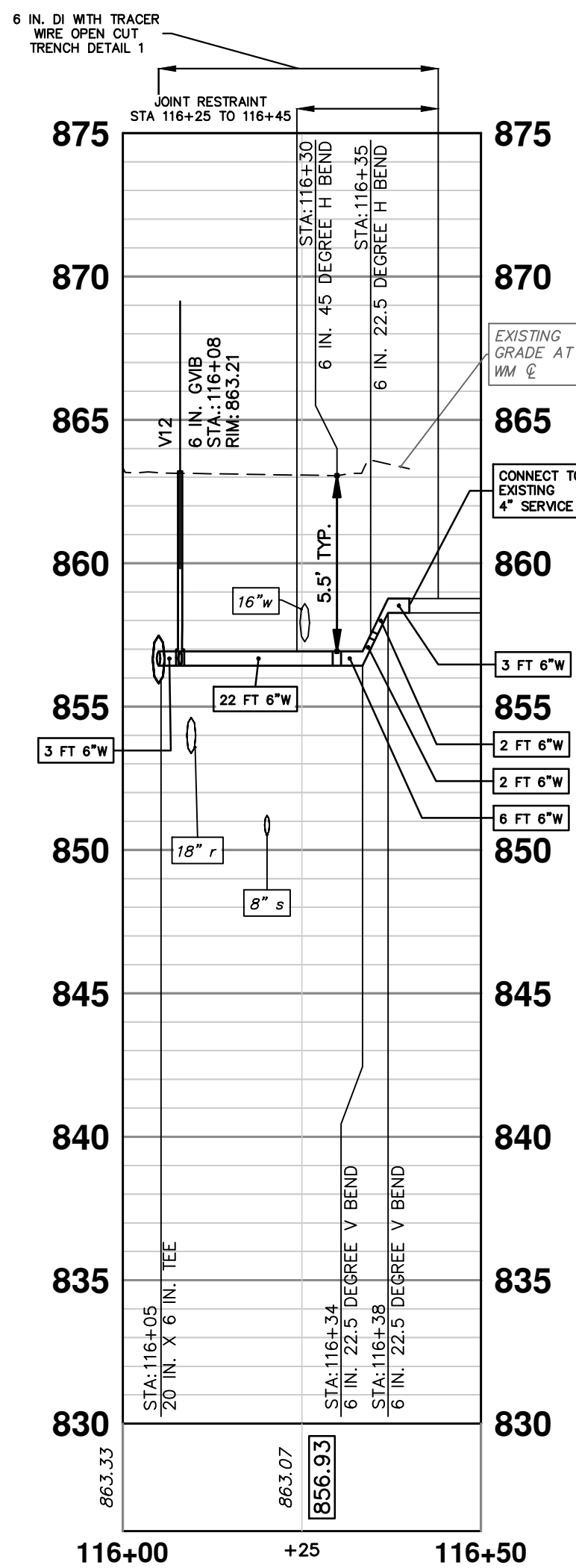
- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
- THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
- A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
- FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



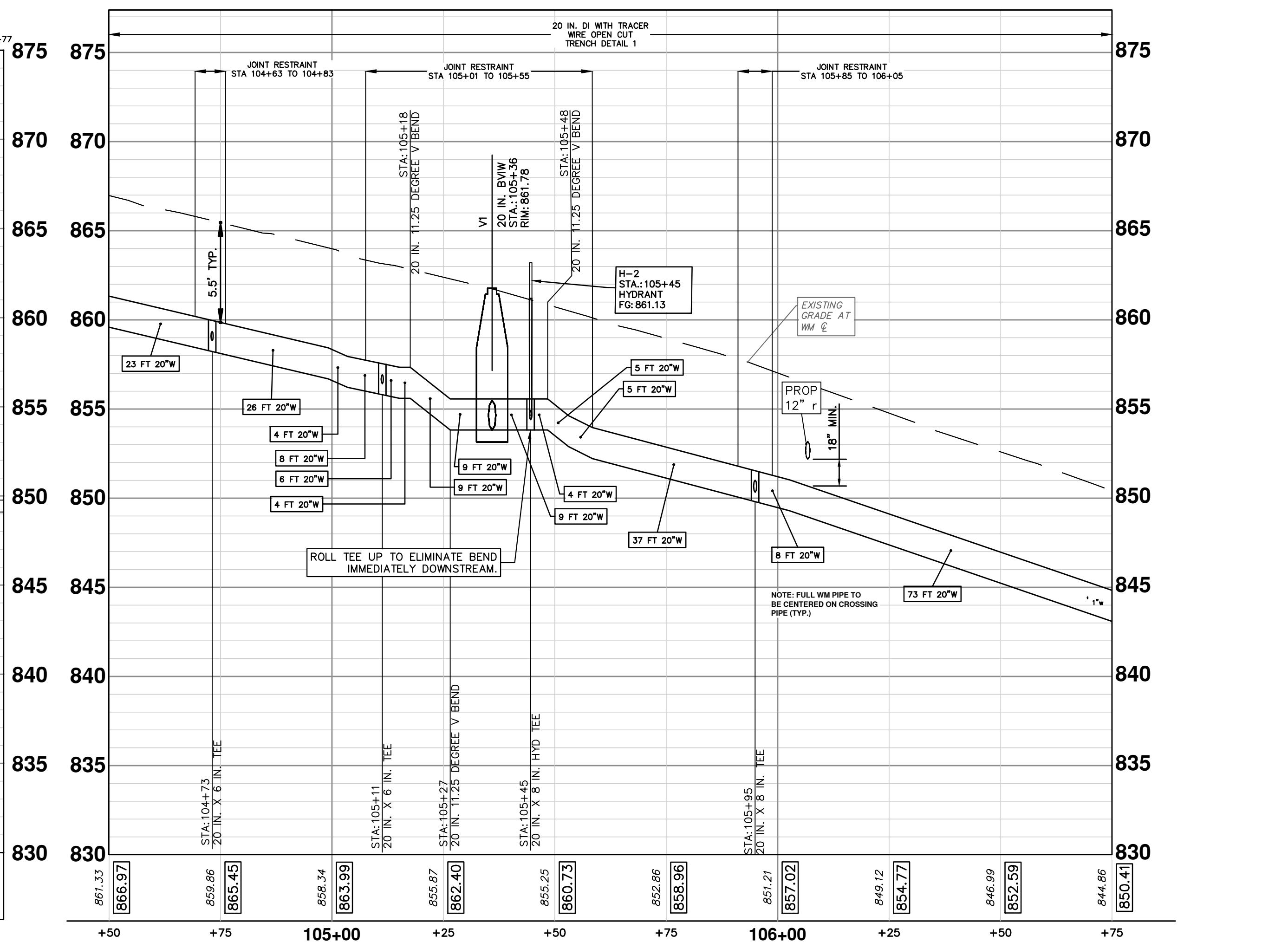
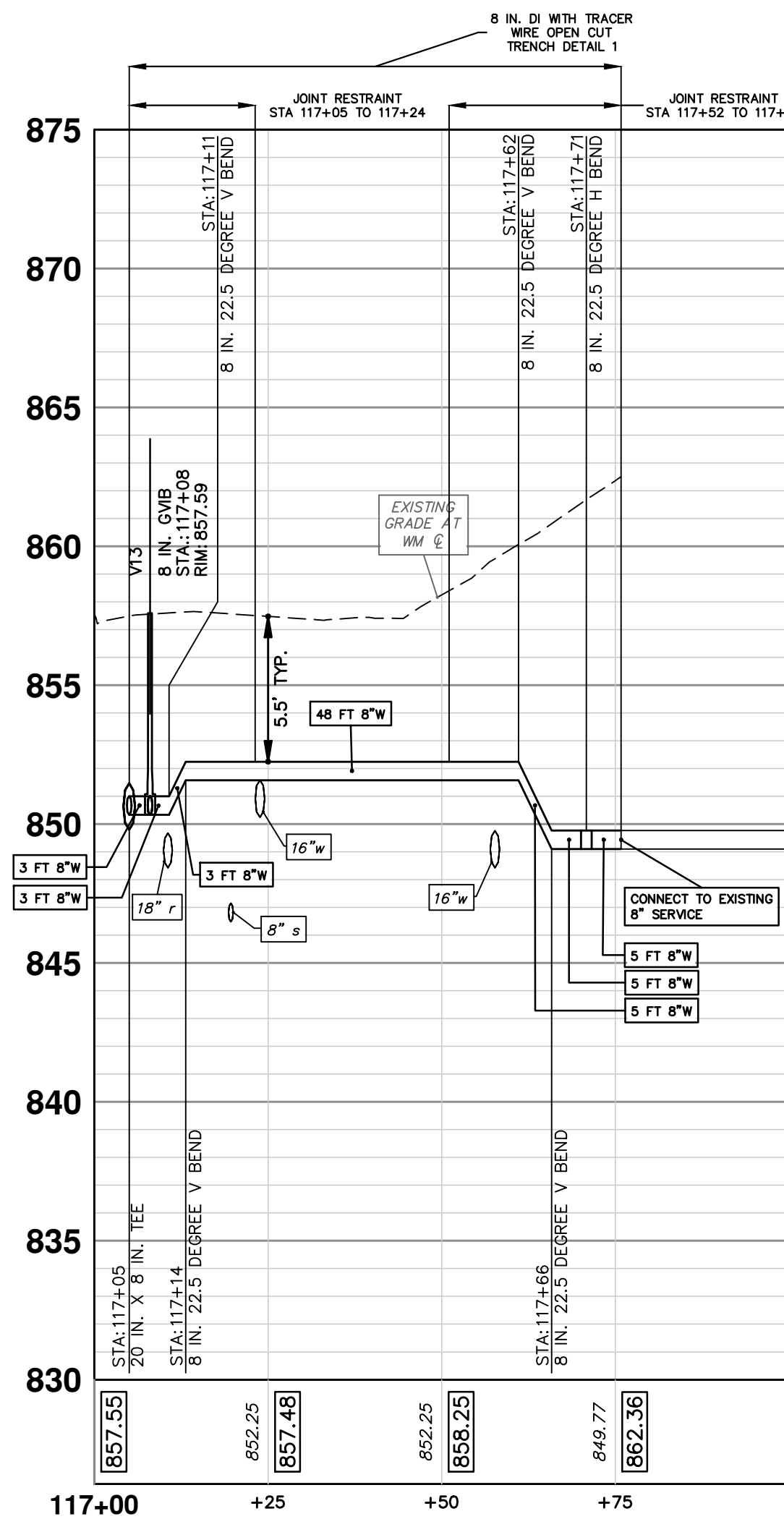
**4 IN. EXISTING WATER MAIN CONNECTION**



**6 IN. EXISTING WATER MAIN CONNECTION**



**8 IN. EXISTING WATER MAIN CONNECTION**



**CITY OF ANN ARBOR**  
PUBLIC SERVICES  
301 EAST HURON STREET  
PO BOX 866  
ANN ARBOR MI 48107-0867  
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2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD, PROPOSED WATER MAIN  
STA. 104+50 TO STA. 106+75

2023-009-22

REV.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

SCALE: 1" = 20'

PROFILE: 1" = 5'

22 OF 46

v:\202302\_20230223\C\Sheets\Watr.dwg - \_a2 standard bw.stb - Plot Date: 2/8/2024 1:38:02 PM

**WATER FUND QUANTITIES THIS SHEET**

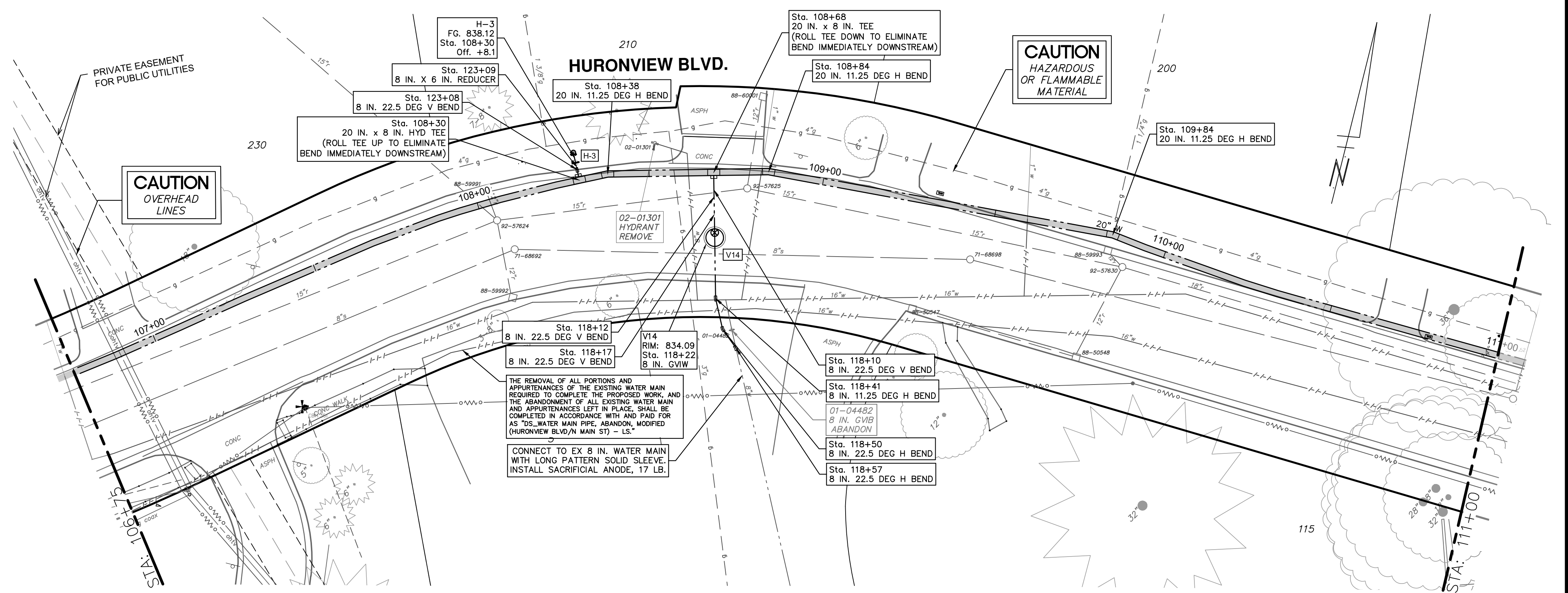
TOTAL	UNIT	DESCRIPTION
1	EA	FIRE HYDRANT ASSEMBLY, REM
1	EA	GATE VALVE IN BOX, 8 IN. DIA, ABANDON
5	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
63	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
426	FT	20 IN., PC 250 DIP W/POLYWRAP, SD-TD-1
6	EA	8 IN. 22.5 DEG DIP BEND
1	EA	8 IN. 11.25 DEG DIP BEND
3	EA	20 IN. 11.25 DEG DIP BEND
1	EA	8 IN. X 6 IN. DIP REDUCER
2	EA	20 IN. X 20 IN. X 8 IN. DIP TEE
1	EA	DS. GATE VALVE IN WELL, 8 IN.
10	FT	EXCAVATE & BACKFILL FOR WATER SERVICE TAP AND LEAD
1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE
1	EA	SACRIFICIAL ANODE, 17 POUND

**WATER MAIN STRUCTURE TABLE**

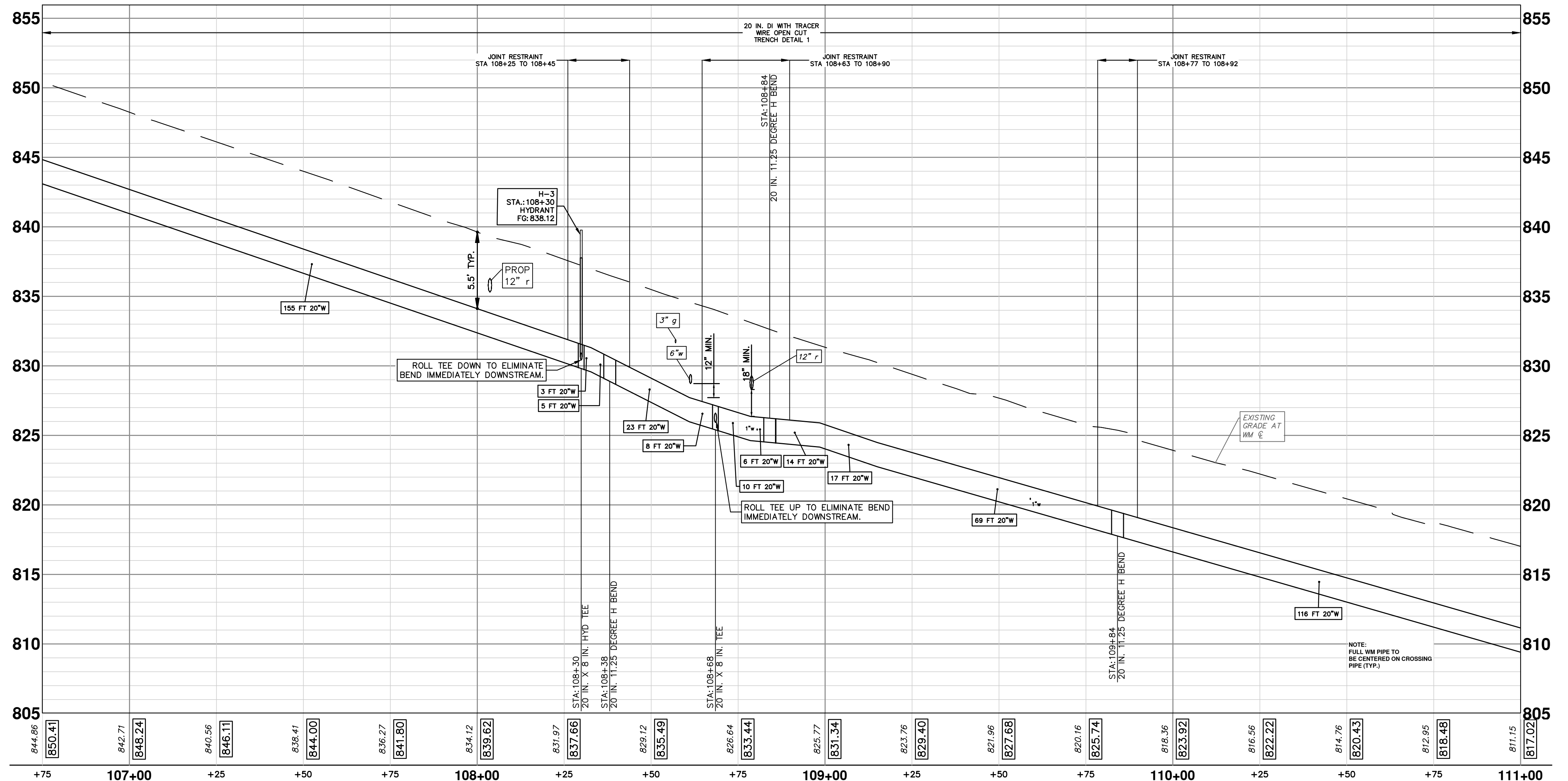
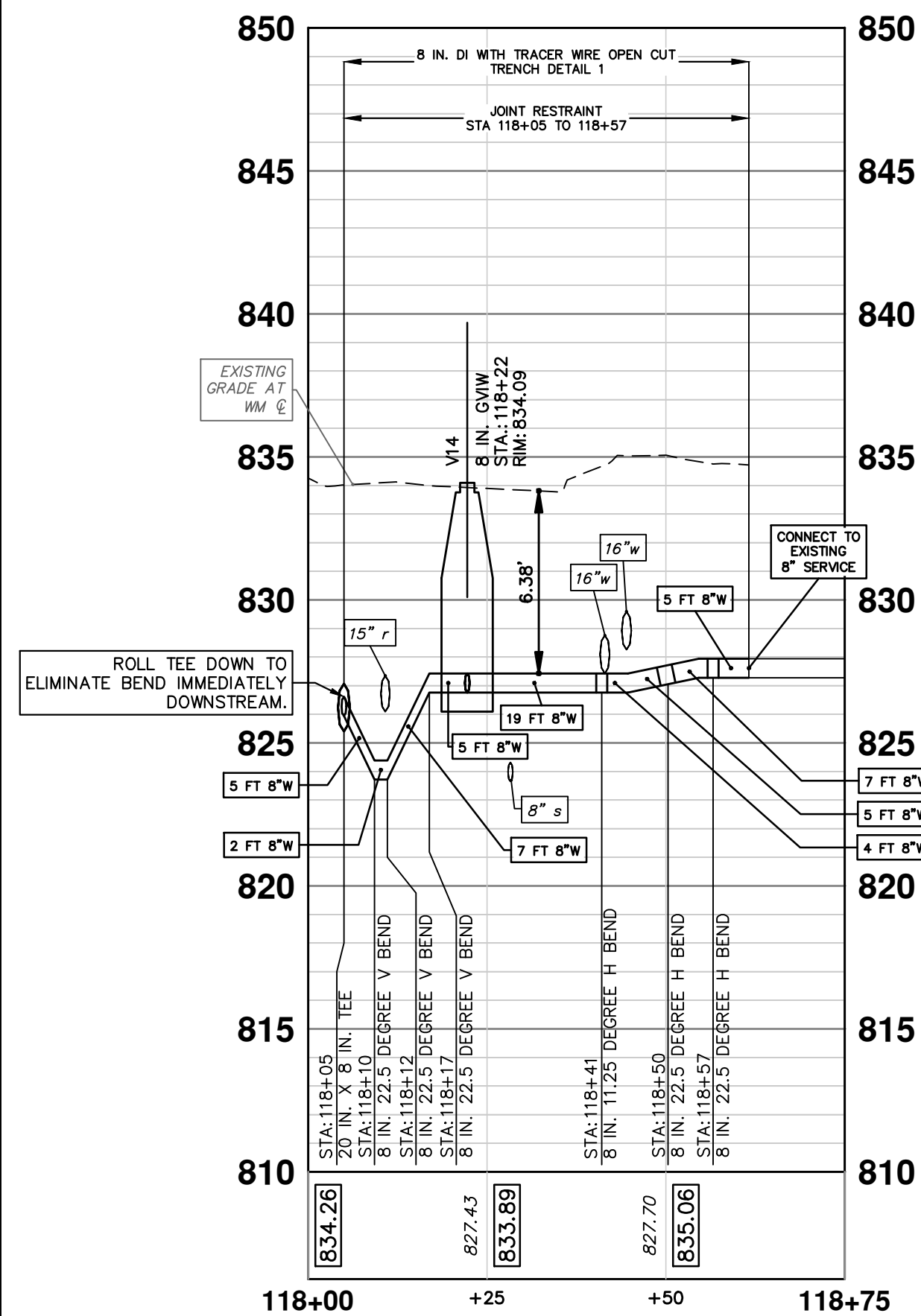
STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V14	8 in. GVW	118+22	834.10	6.67	72 IN.	B
H-3	HYDRANT	108+30	838.12	5.50		

**NOTES:**

- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
- THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
- A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
- FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



**8 IN. EXISTING WATER MAIN CONNECTION**



REV.	DATE	DESCRIPTION
1	2/8/2024	NTM
2		NTM
3		NTM
4		NTM
5		NTM

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734.794.4410  
www.a3gov.org



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
2024 MISCELLANEOUS UTILITIES PROJECTS  
HURONVIEW BLVD. PROPOSED WATER MAIN  
STA. 106+75 TO STA. 111+00

SCALE: 1" = 20'  
PROFILE: 1" = 5'  
DRAWING NO. 2023-009-23  
SHEET NO. 23 OF 46



**WATER FUND QUANTITIES THIS SHEET**

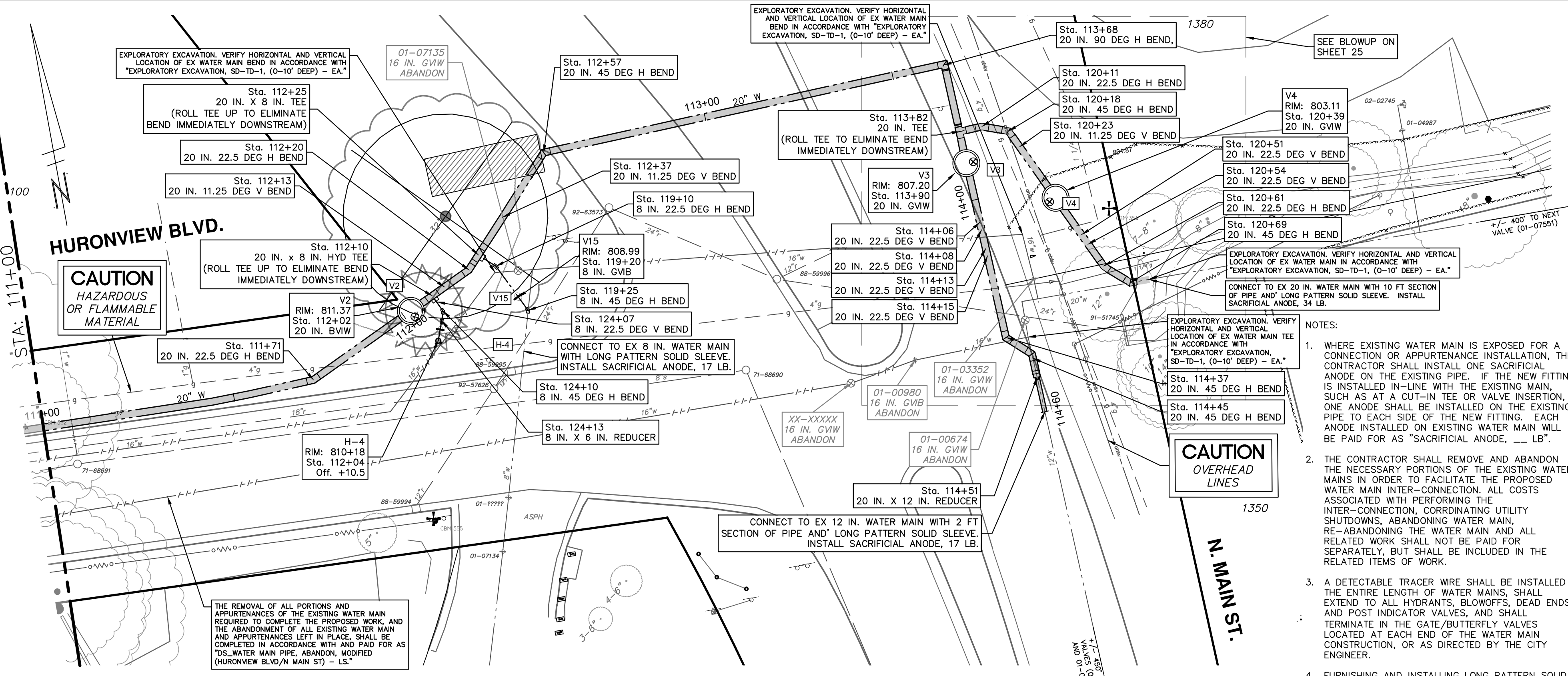
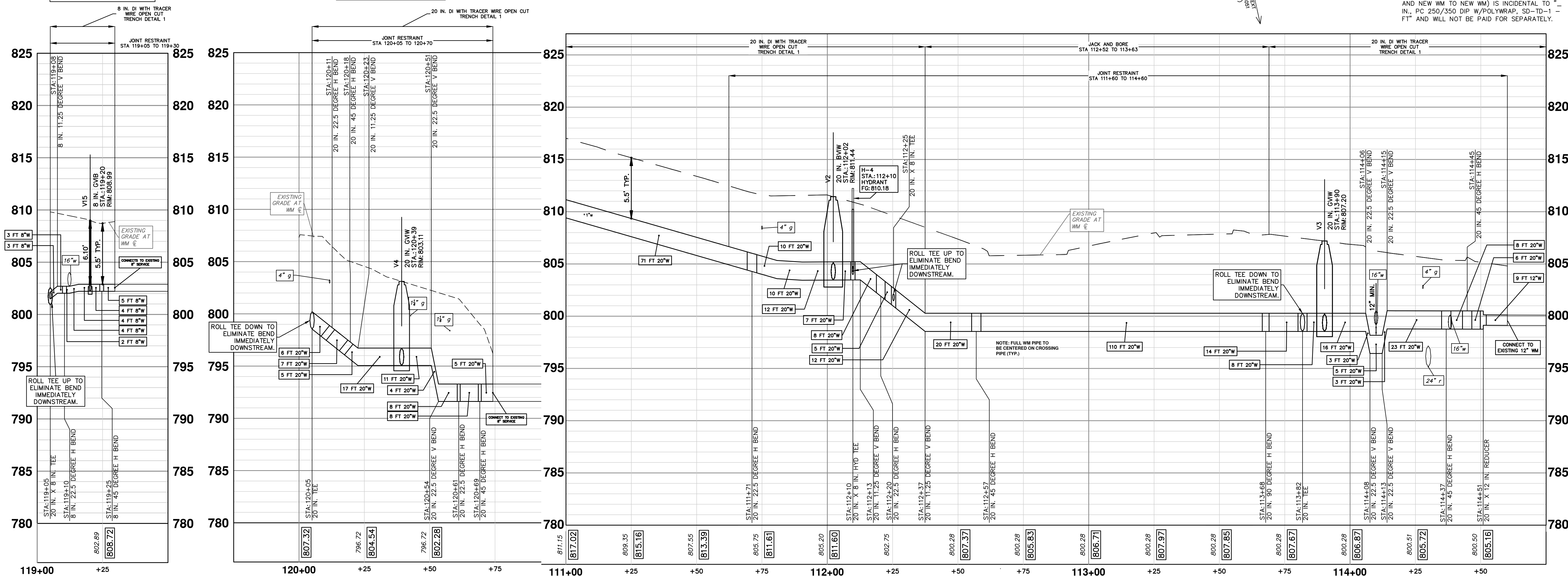
TOTAL	UNIT	DESCRIPTION	TOTAL	UNIT	DESCRIPTION
1	EA	TEMPORARY WATER MAIN LINE STOP, 12 IN.	1	EA	20 IN. X 20 IN. X 20 IN. DIP TEE
1	EA	TEMPORARY WATER MAIN LINE STOP, 20 IN.	1	EA	DS. GATE VALVE IN BOX, 8 IN.
1	EA	GATE VALVE IN BOX, 16 IN. DIA. ABANDON	1	EA	DS. GATE VALVE IN BOX, 20 IN.
4	EA	GATE VALVE IN WELL, 16 IN. DIA. ABANDON	5	FT	EXCAVATION & BACKFILL FOR WATER SERVICE TAP AND LEAD
5	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1	1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE
33	FT	8 IN., PC 250 DIP W/POLYWRAP, SD-TD-1	2	EA	SACRIFICIAL ANODE, 17-POUND
321	FT	20 IN., PC 250 DIP W/POLYWRAP, SD-TD-1	1	EA	SACRIFICIAL ANODE, 34-POUND
110	FT	DS. 20 IN., PC 250 DIP W/POLYWRAP, JACK AND BORE	4	EA	EXPLORATORY EXCAVATION, SD-TD-1, (0-10' DEEP)
2	EA	8 IN. 45 DEG DIP BEND			
2	EA	8 IN. 22.5 DEG DIP BEND			
1	EA	8 IN. 11.25 DEG DIP BEND			
1	EA	20 IN. 90 DEG DIP BEND			
5	EA	20 IN. 45 DEG DIP BEND			
11	EA	20 IN. 22.5 DEG DIP BEND			
2	EA	20 IN. 11.25 DEG DIP BEND			
1	EA	8 IN. X 6 IN. DIP REDUCER			
1	EA	20 IN. X 12 IN. DIP REDUCER			
2	EA	20 IN. X 20 IN. X 8 IN. DIP TEE			

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V2	20 in. BVW	112+03	811.37	6.04	72 IN.	B
V3	20 in. GVW	113+90	807.20	6.99	72 IN.	B
V4	20 in. GVW	120+39	803.66	6.60	72 IN.	B
V15	8 in. GVIB	119+20	808.99	6.10		
H-4	HYDRANT	112+04	810.18	5.50		

**8 IN. EXISTING WATER MAIN CONNECTION**

**20 IN. EXISTING WATER MAIN CONNECTION**



- NOTES:**
- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, 17 LB."
  - THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
  - A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS. SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
  - FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.

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

**CITY OF ANN ARBOR PUBLIC SERVICES**  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1007  
ANN ARBOR 734.794.6410  
WWW.A2GOV.ORG

**2024 MISCELLANEOUS UTILITIES PROJECTS**  
HURONVIEW BLVD. PROPOSED WATER MAIN  
STA. 111+00 TO P.O.E.

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
SCALE: 1" = 20'  
PROFILE: 1" = 5'  
DRAWING NO. 2023-009-24  
SHEET NO. 24 OF 46

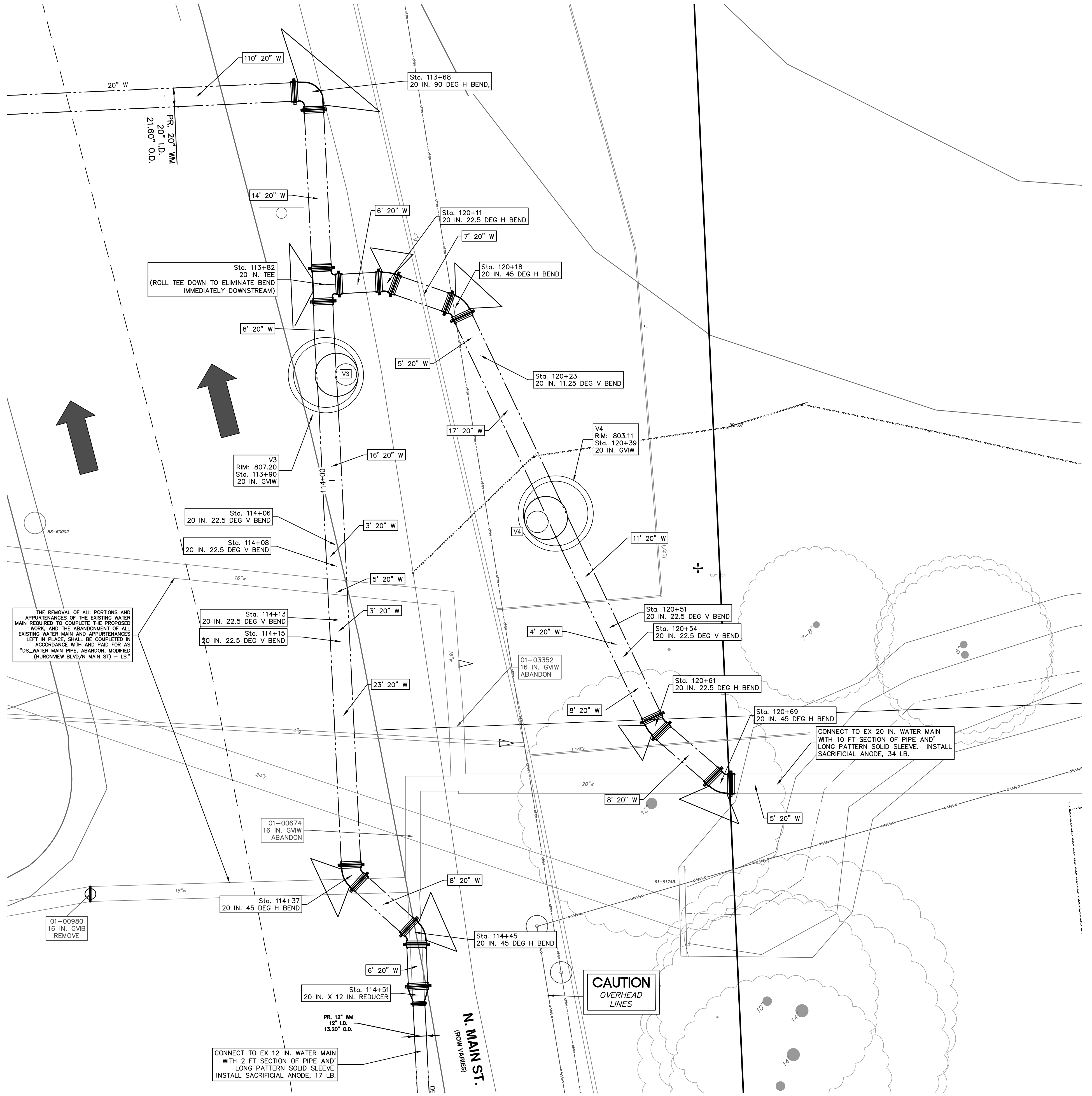
**2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009**

REV.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

2/8/2024  
NTM  
DRAWN  
JVB  
CHECKED

NOTES:

- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
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- FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/360 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

MAIN ST. PROPOSED WATER MAIN CONNECTION CLOSEUP

SCALE: 1" = 5'

PROFILE:

DRAWING No. 2023-009-25

SHEET No. 25 OF 46

**811**  
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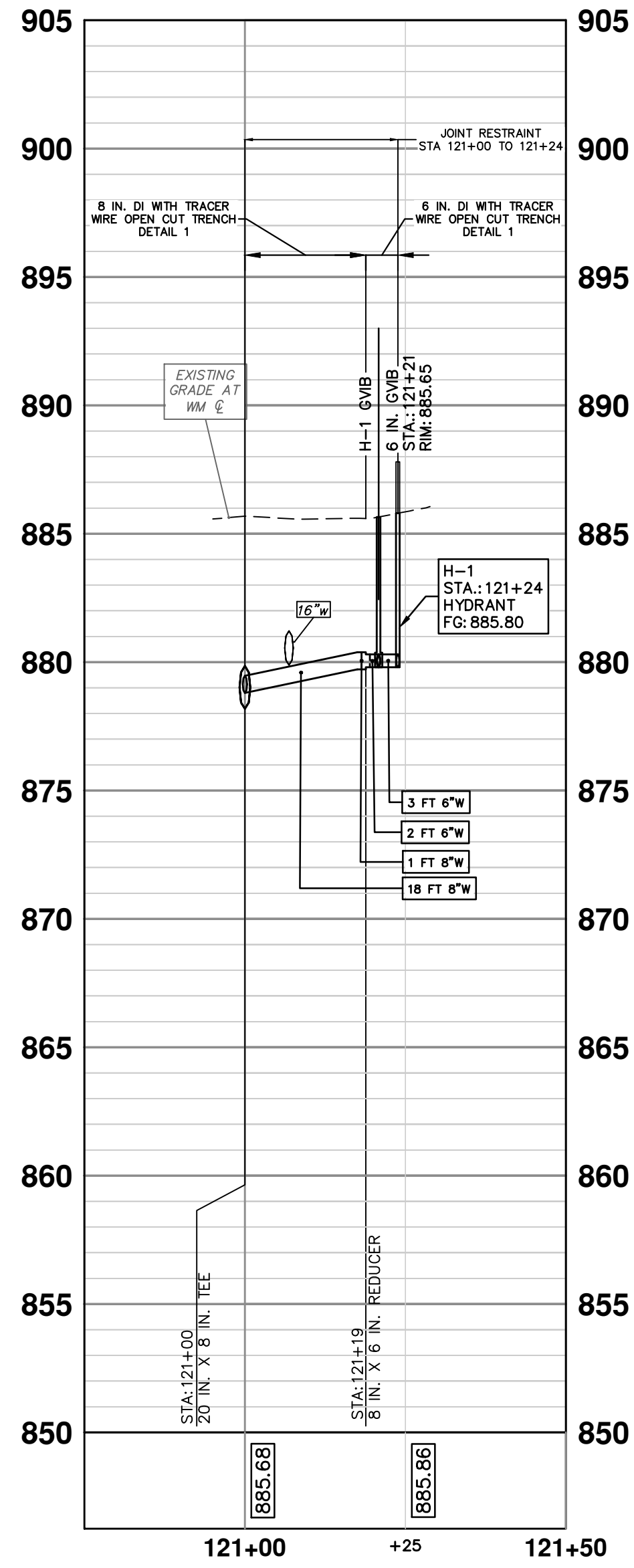
REV.	DATE	DESCRIPTION	DRAWN	CHECKED
5				
4				
3				
2	2/8/2024		NTM	JVB
1				

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
P.O. BOX 864  
ANN ARBOR MI 48107-0864  
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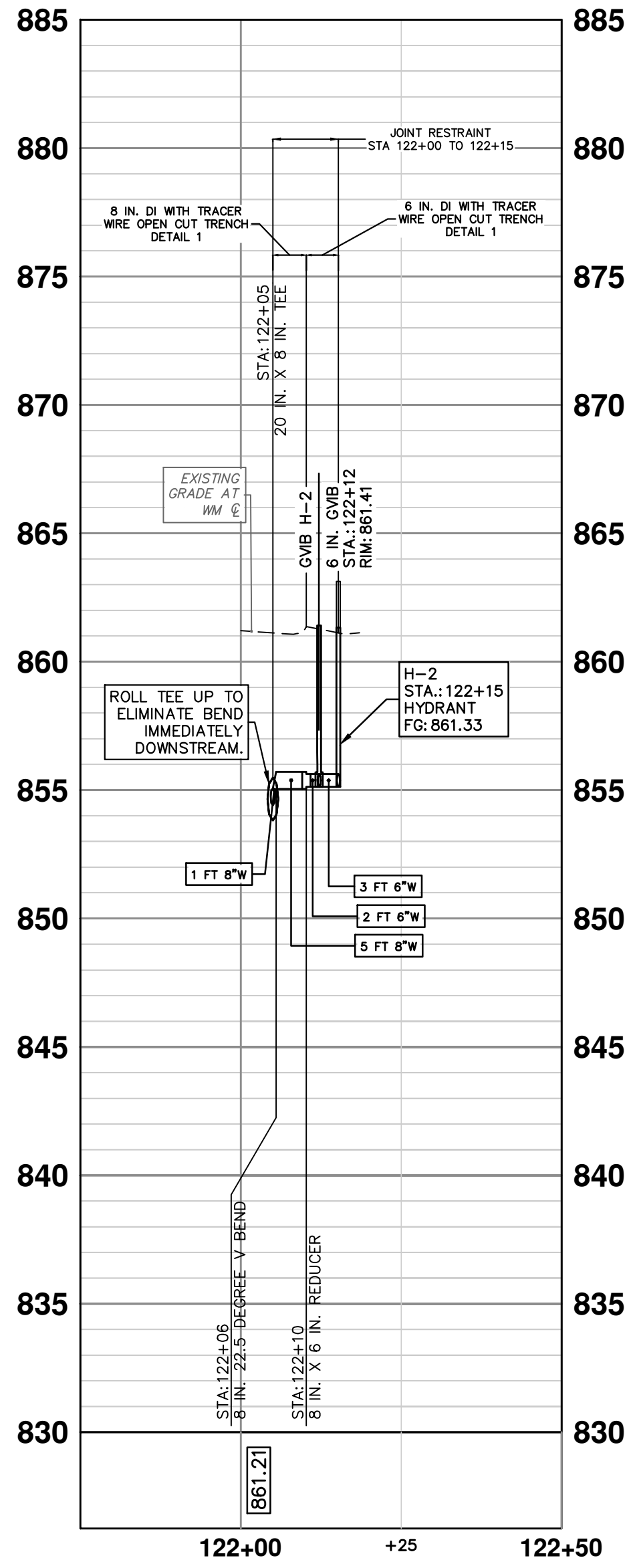
**CITY OF ANN ARBOR MICHIGAN**

© 2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009

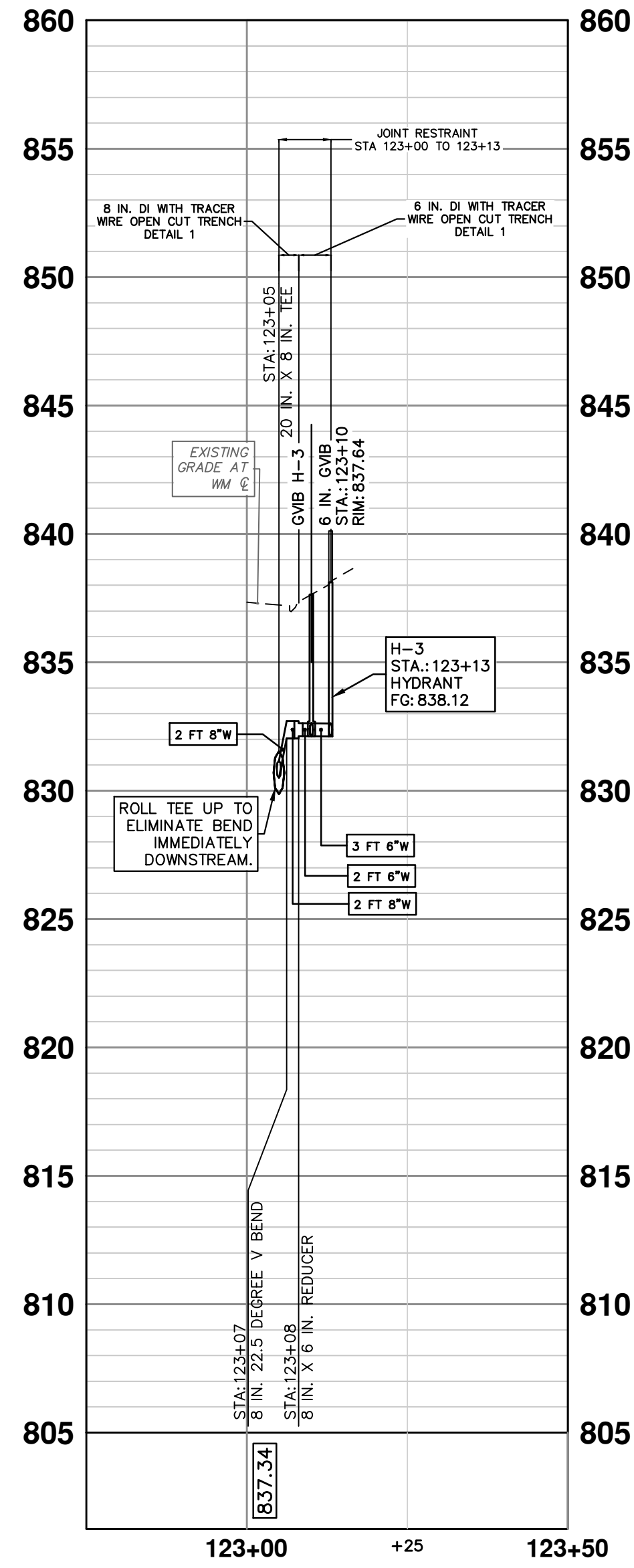
**HYDRANT 1 - HURONVIEW BLVD  
SEE SHEET 21 FOR PLAN VIEW**



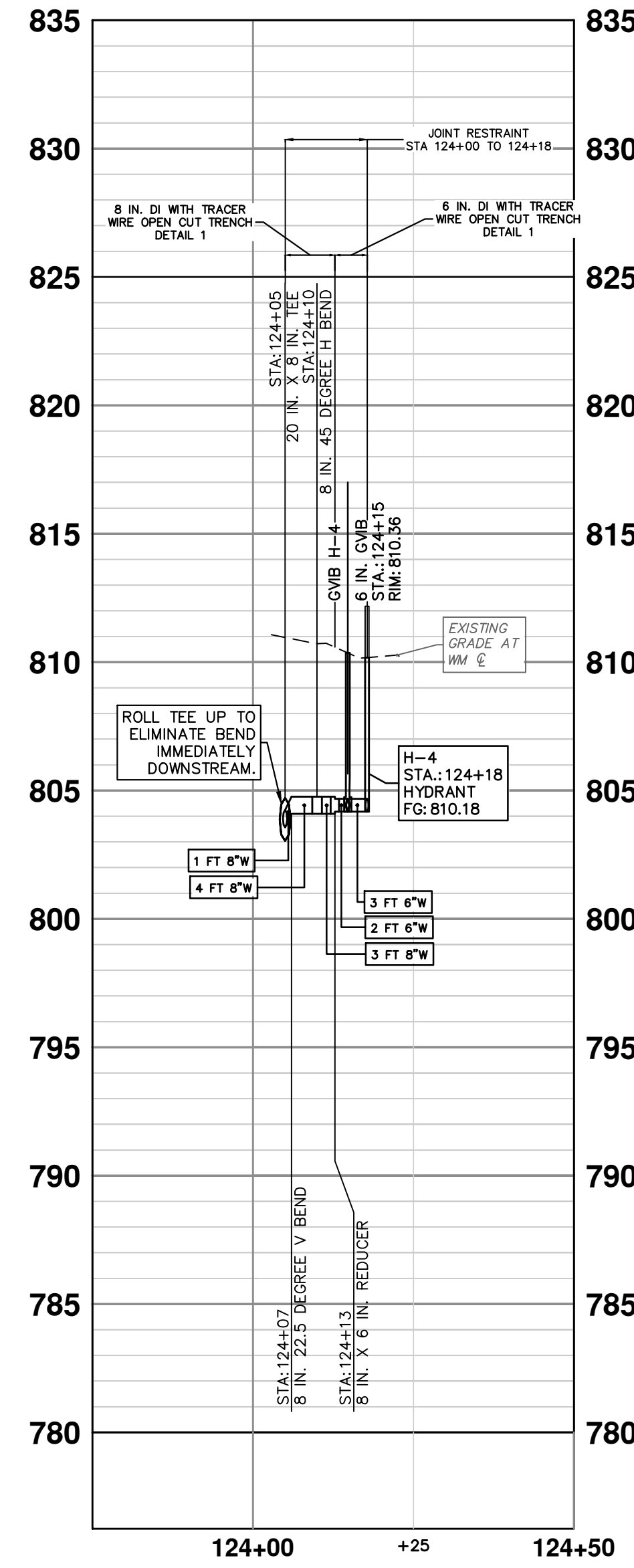
**HYDRANT 2 - HURONVIEW BLVD  
SEE SHEET 22 FOR PLAN VIEW**



**HYDRANT 3 - HURONVIEW BLVD  
SEE SHEET 23 FOR PLAN VIEW**



**HYDRANT 4 - HURONVIEW BLVD  
SEE SHEET 24 FOR PLAN VIEW**



- NOTES:
- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
  - THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
  - A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
  - FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

HURONVIEW BLVD, PROPOSED WATER  
ADDITIONAL INFORMATION

SCALE: 1" = 20'  
PROFILE: 1" = 5'

DRAWING No. 2023-009-26

SHEET No. 26 OF 46

**CITY OF ANN ARBOR**  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48107-8647  
ANN ARBOR 734.794.6410  
www.a2gov.org

**ANN ARBOR MICHIGAN**

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5				
4				
3				
2		2/8/2024	NTM	JVB
1				

Know what's below. Call before you dig.

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

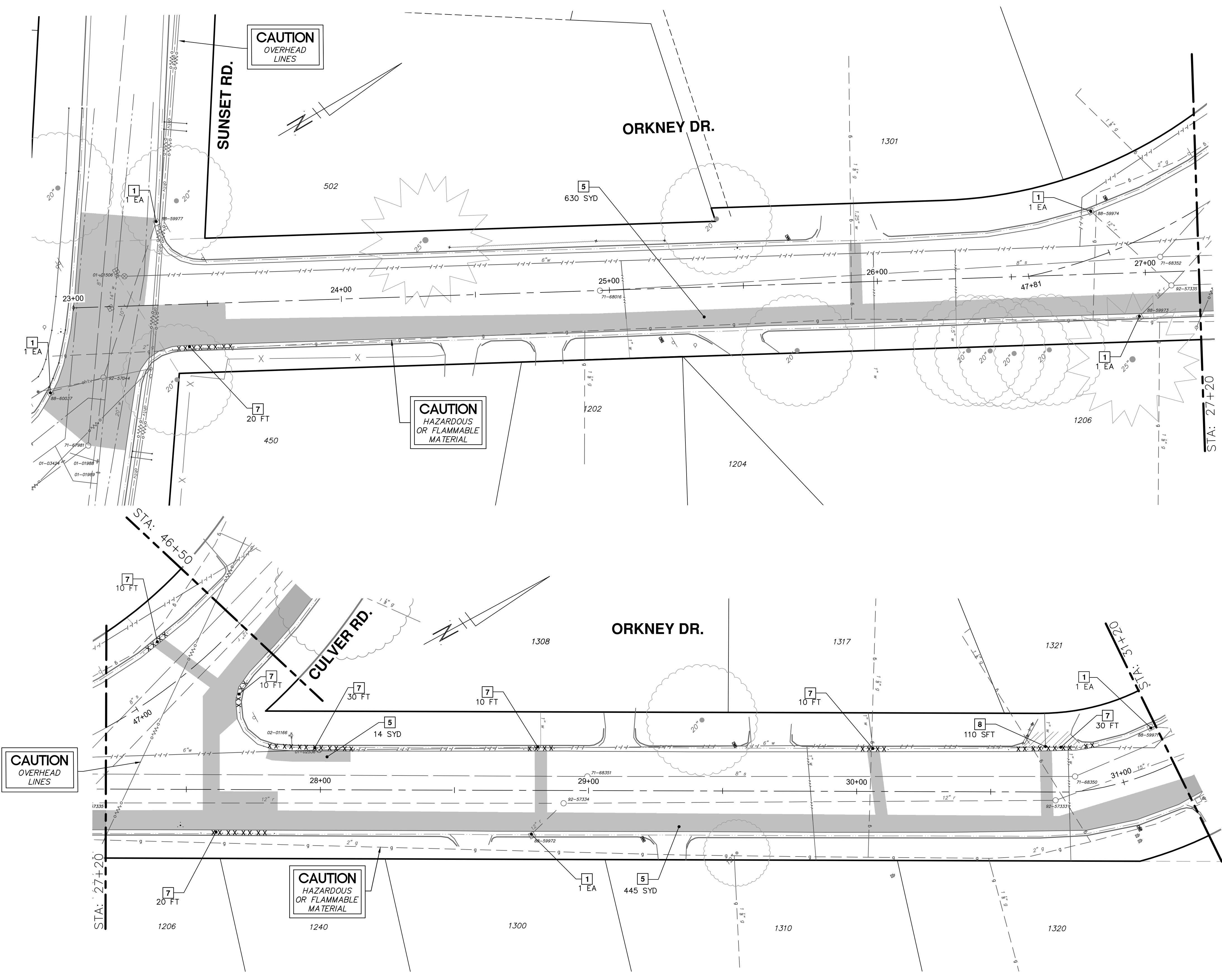
\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

NOTES:

- ALL PAVEMENTS (HMA, CONCRETE, CURB, GUTTER, CURBS AND GUTTER, ETC.) SHALL BE SAWCUT FULL DEPTH AT THE DIRECTED LIMITS OF REMOVAL.
- REMOVALS OF EXISTING WATER MAIN AND APPURTENANCES ARE SHOWN ON WATER MAIN SHEETS.
- UNLESS OTHERWISE DIRECTED, THE LIMITS OF REMOVAL FOR CONCRETE PAVEMENT, CURB, GUTTER, AND CURB & GUTTER SHALL BE AT THE NEAREST EXISTING JOINT.
- PAYMENT FOR "CURB, GUTTER, AND CURB & GUTTER, ANY TYPE, REM - FT" SHALL INCLUDE ALL SAWCUTTING AND REMOVAL WORK REQUIRED TO PROVIDE FOR THE CONSTRUCTION OF A TYPE M DRIVEWAY OPENING IN ACCORDANCE WITH SD-DS-1.
- CONTRACTOR TO USE APPROPRIATE MEASURES TO PROTECT AND AVOID DISRUPTING BRICK PAVERS.
- THE LIMITS OF HMA PAVEMENT REMOVAL AND REPLACEMENT ON SUNSET RD, ORKNEY DR, CULVER RD, AND FOUNTAIN ST ARE BASED ON THE SMALLEST UTILITY TRENCH WIDTH PERMITTED BY THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS AND DETAILS FOR THE PROPOSED WATER MAIN PIPE SIZE, THE AREA OF PAVEMENT REMOVAL AND REPLACEMENT SHOWN IN PLAN, AND THE QUANTITIES FOR REPLACEMENT HMA AND AGGREGATE BASE LISTED IN QUANTITY TABLES ARE BASED ON THIS MINIMUM ALLOWABLE TRENCH WIDTH. HOWEVER, THE OVERALL BID QUANTITIES FOR HMA AND AGGREGATE BASE HAVE BEEN DETERMINED BASED ON THE AMOUNT OF MATERIAL REQUIRED TO RESTORE THE RESULTING ROAD STRUCTURE ABOVE A UTILITY TRENCH WITH 1-ON-1 SIDE SLOPES.

WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
6	EA	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
1089	SYD	HMA, ANY THICKNESS, REM
140	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM
110	SFT	SIDEWALK, SIDEWALK RAMP, & DRIVEWAY APPROACH, ANY THICKNESS, REM



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5				
4				
3				
2				
1				

CITY OF ANN ARBOR  
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ANN ARBOR MI 48106-1647  
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CITY OF ANN ARBOR - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
ORKNEY DR, CULVER RD, REMOVAL  
P.O.B. TO STA. 31+20

SCALE: 1" = 20'  
PROFILE: N/A  
DRAWING No. 2023-009-27

SHEET No. 27 OF 46

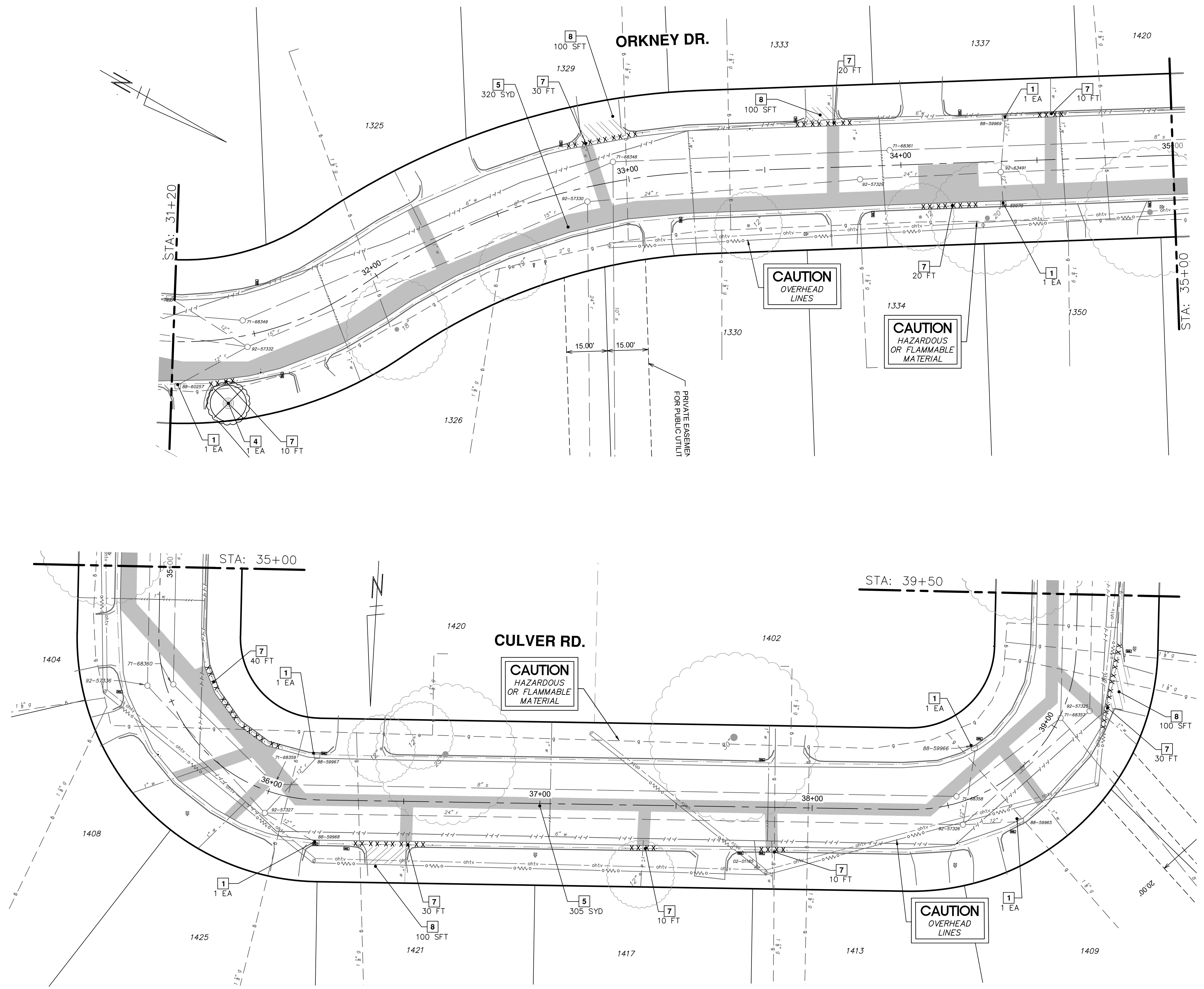
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REMOVAL KEY TABLE	
KEY	DESCRIPTION
1	INLET FILTER
2	SILT FENCE
3	PROTECTIVE FENCING
4	REMOVE TREE OR STUMP - ANY SIZE
5	HMA PAVEMENT REMOVAL, ANY THICKNESS*
6	REMOVE CONCRETE ROAD PAVEMENT - ANY THICKNESS*
7	REMOVE CONCRETE CURB, GUTTER, AND CURB AND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

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

- NOTES:
- ALL PAVEMENTS (HMA, CONCRETE, CURB, GUTTER, CURB AND GUTTER, ETC.) SHALL BE SAWCUT FULL DEPTH AT THE DIRECTED LIMITS OF REMOVAL.
  - REMOVALS OF EXISTING WATER MAIN AND APPURTENANCES ARE SHOWN ON WATER MAIN SHEETS.
  - UNLESS OTHERWISE DIRECTED, THE LIMITS OF REMOVAL FOR CONCRETE PAVEMENT, CURB, GUTTER, AND CURB & GUTTER SHALL BE AT THE NEAREST EXISTING JOINT.
  - PAYMENT FOR "CURB, GUTTER, AND CURB & GUTTER, ANY TYPE, REM" SHALL INCLUDE ALL SAWCUTTING AND REMOVAL WORK REQUIRED TO PROVIDE FOR THE CONSTRUCTION OF A TYPE M DRIVEWAY OPENING IN ACCORDANCE WITH SD-DS-1.
  - CONTRACTOR TO USE APPROPRIATE MEASURES TO PROTECT AND AVOID DISRUPTING BRICK PAVERS.
  - THE LIMITS OF HMA PAVEMENT REMOVAL AND REPLACEMENT ON SUNSET RD, ORKNEY DR, CULVER RD, AND FOUNTAIN ST ARE BASED ON THE SMALLEST UTILITY TRENCH WIDTH PERMITTED BY THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS AND DETAILS FOR THE PROPOSED WATER MAIN PIPE SIZE, THE AREA OF PAVEMENT REMOVAL AND REPLACEMENT SHOWN IN PLAN, AND THE QUANTITIES FOR REPLACEMENT HMA AND AGGREGATE BASE LISTED IN QUANTITY TABLES ARE BASED ON THIS MINIMUM ALLOWABLE TRENCH WIDTH. HOWEVER, THE OVERALL BID QUANTITIES FOR HMA AND AGGREGATE BASE HAVE BEEN DETERMINED BASED ON THE AMOUNT OF MATERIAL REQUIRED TO RESTORE THE RESULTING ROAD STRUCTURE ABOVE A UTILITY TRENCH WITH 1-ON-1 SIDE SLOPES.

WATER FUND QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
7	EA	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
1	EA	STUMP, REM
625	SYD	HMA, ANY THICKNESS, REM
210	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM
400	SFT	SIDEWALK, SIDEWALK RAMP, & DRIVEWAY APPROACH, ANY THICKNESS, REM



**811**  
Know what's below.  
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REV.

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE: 1" = 20'

DRAWING No. 2023-009-28

SHEET No. 28 OF 46

2/8/2024  
DATE

BID SET  
DESCRIPTION

2024 MISCELLANEOUS UTILITIES PROJECTS  
ORKNEY DR, CULVER RD, REMOVALS  
STA. 31+20 TO STA. 39+50

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CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1667  
www.aagov.org

2/8/2024  
DATE

BID SET  
DESCRIPTION

2024 MISCELLANEOUS UTILITIES PROJECTS; BID No. RFP No. 24-10; 2023-009

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

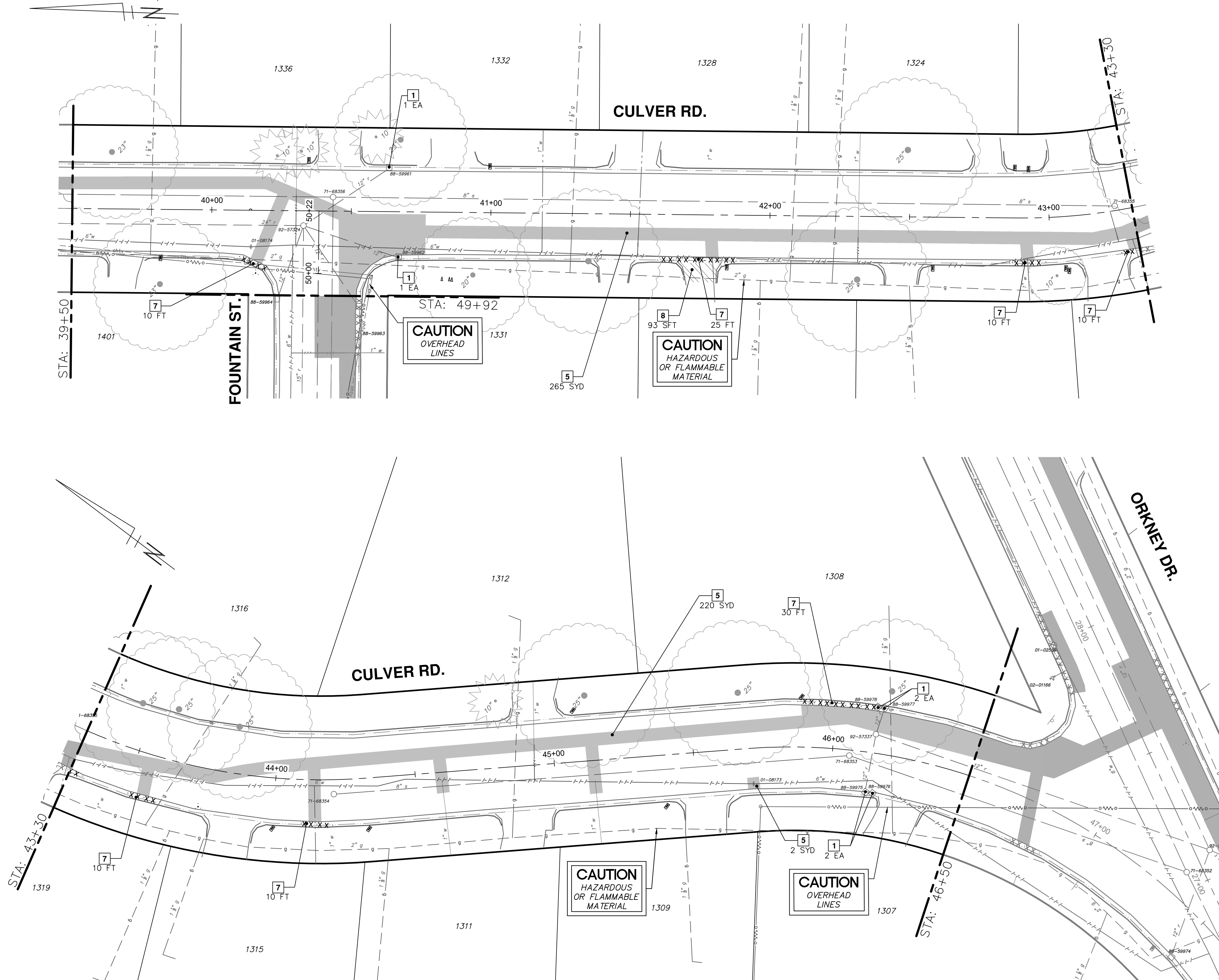
\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

NOTES:

- ALL PAVEMENTS (HMA, CONCRETE, CURB, GUTTER, CURB AND GUTTER, ETC.) SHALL BE SAWCUT FULL DEPTH AT THE DIRECTED LIMITS OF REMOVAL.
- REMOVALS OF EXISTING WATER MAIN AND APPURTENANCES ARE SHOWN ON WATER MAIN SHEETS.
- UNLESS OTHERWISE DIRECTED, THE LIMITS OF REMOVAL FOR CONCRETE PAVEMENT, CURB, GUTTER, AND CURB & GUTTER SHALL BE AT THE NEAREST EXISTING JOINT.
- PAYMENT FOR "CURB, GUTTER, AND CURB & GUTTER, ANY TYPE, REM - FT" SHALL INCLUDE ALL SAWCUTTING AND REMOVAL WORK REQUIRED TO PROVIDE FOR THE CONSTRUCTION OF A TYPE M DRIVEWAY OPENING IN ACCORDANCE WITH SD-DS-1.
- CONTRACTOR TO USE APPROPRIATE MEASURES TO PROTECT AND AVOID DISRUPTING BRICK PAVERS.
- THE LIMITS OF HMA PAVEMENT REMOVAL AND REPLACEMENT ON SUNSET RD, ORKNEY DR, CULVER RD, AND FOUNTAIN ST ARE BASED ON THE SMALLEST UTILITY TRENCH WIDTH PERMITTED BY THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS AND DETAILS FOR THE PROPOSED WATER MAIN PIPE SIZE, THE AREA OF PAVEMENT REMOVAL AND REPLACEMENT SHOWN IN PLAN, AND THE QUANTITIES FOR REPLACEMENT HMA AND AGGREGATE BASE LISTED IN QUANTITY TABLES ARE BASED ON THIS MINIMUM ALLOWABLE TRENCH WIDTH. HOWEVER, THE OVERALL BID QUANTITIES FOR HMA AND AGGREGATE BASE HAVE BEEN DETERMINED BASED ON THE AMOUNT OF MATERIAL REQUIRED TO RESTORE THE RESULTING ROAD STRUCTURE ABOVE A UTILITY TRENCH WITH 1-ON-1 SIDE SLOPES.

WATER FUND QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
6	EA	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
490	SYD	HMA, ANY THICKNESS, REM
105	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM
93	SFT	SIDEWALK, SIDEWALK RAMP, & DRIVEWAY APPROACH, ANY THICKNESS, REM



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5				
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
ORKNEY DR CULVER RD. REMOVALS  
STA. 39+50 TO P.O.E.

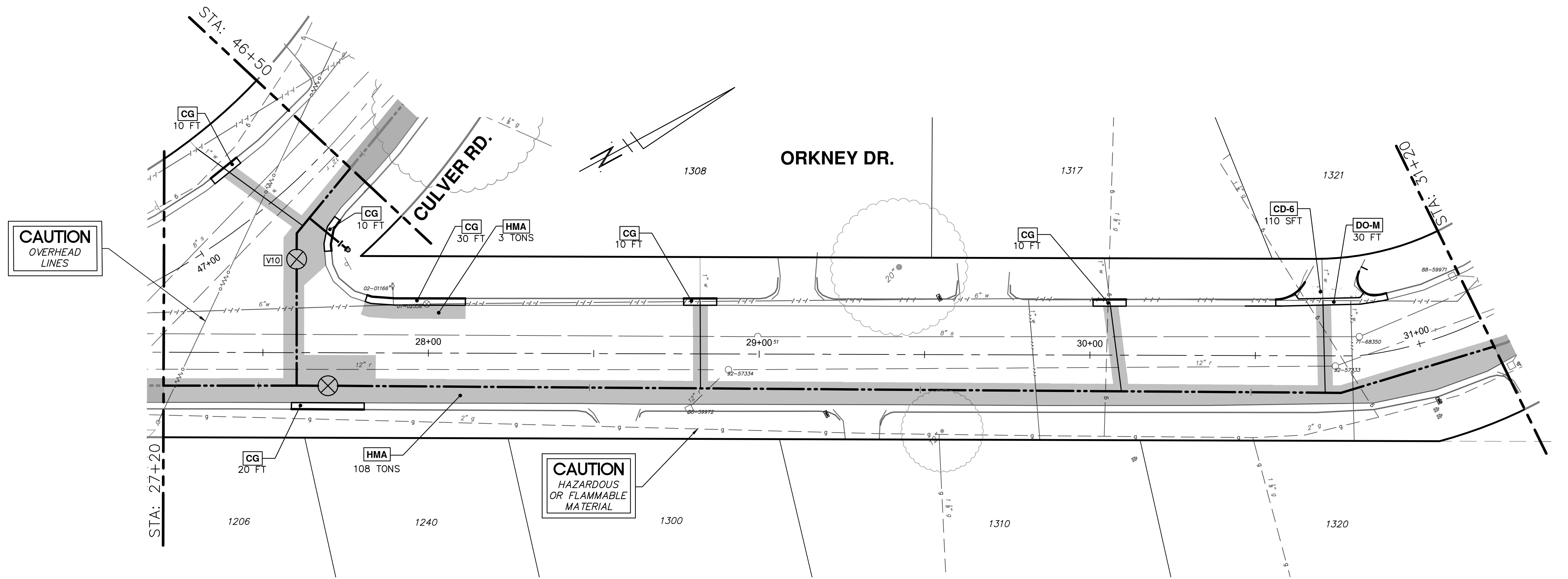
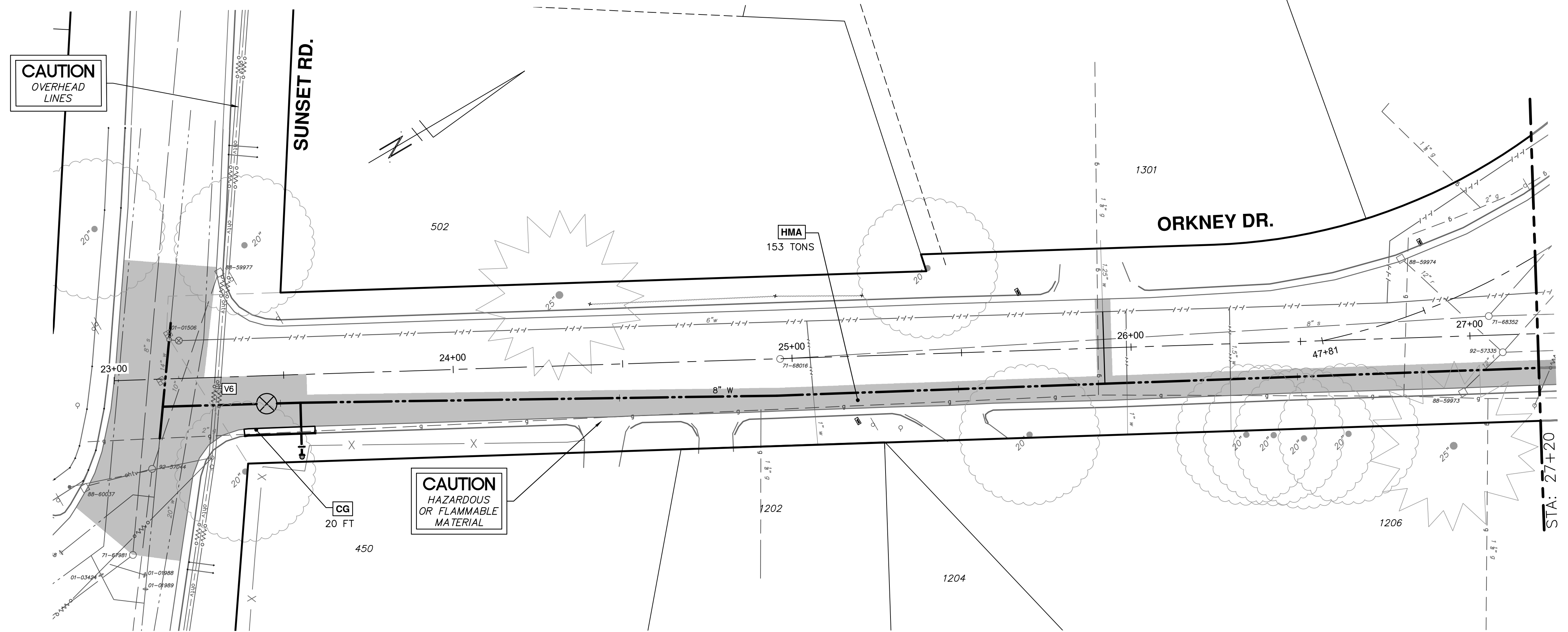
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PROFILE: N/A  
DRAWING No. 2023-009-29

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA PAVEMENT – ANN ARBOR TYPICAL SECTION
CG	CONCRETE CURB/ CURB AND GUTTER
DO-M	CONCRETE DRIVEWAY OPENING – TYPE M
CD-6	CONCRETE DRIVE APPROACH – 6 INCH
BP	REMOVE AND REPLACE BRICK PAVERS

- NOTES:
- ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED – STA" AND "MACHINE GRADING – SYD" AND WILL NOT BE PAID FOR SEPARATELY.
  - WORK AND PAYMENT FOR "CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY – FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.
  - ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMPS, CURBS, GUTTERS, AND CURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.

TOTAL	UNIT	DESCRIPTION
1128	SYD	DS_MACHINE GRADING
15	SYD	AGGREGATE BASE, 6 IN., 21AA, CIP
1113	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
132	TON	HMA, 4EML
132	TON	HMA, 5EML
110	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES
30	FT	CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY
110	SFT	CONC. SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN., HIGH EARLY



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
5				
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
ORKNEY DR CULVER RD PROPOSED ROAD  
P.O.B. TO STA. 31+20

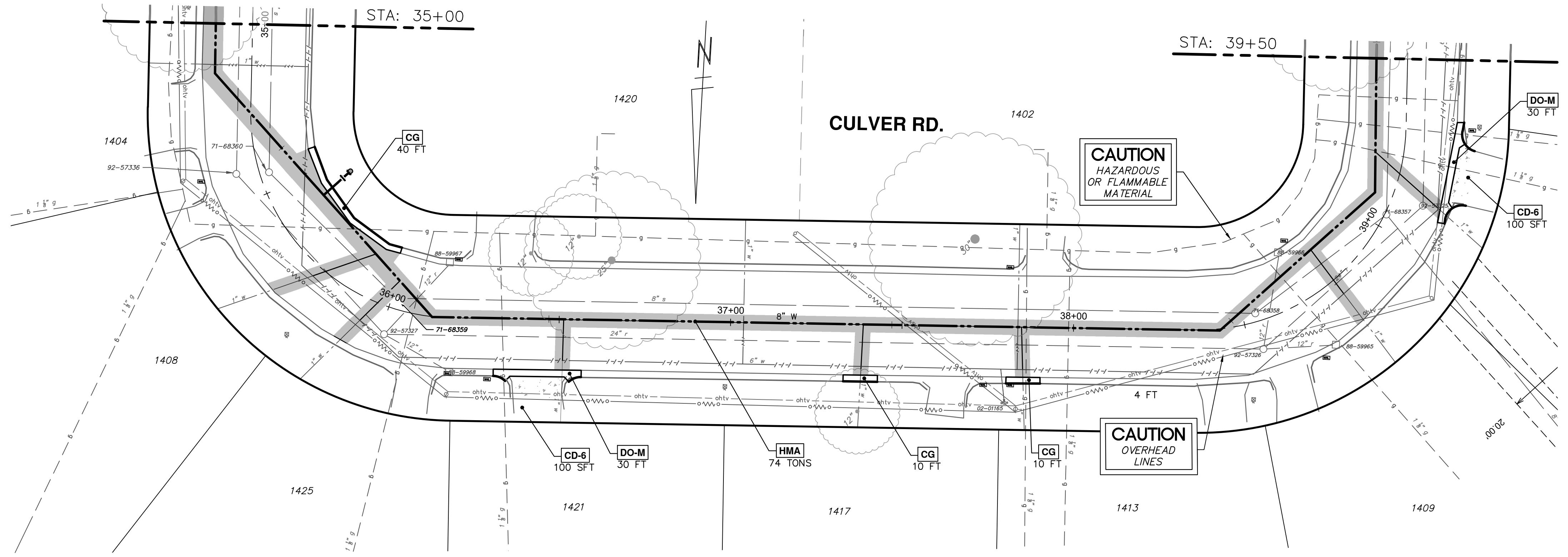
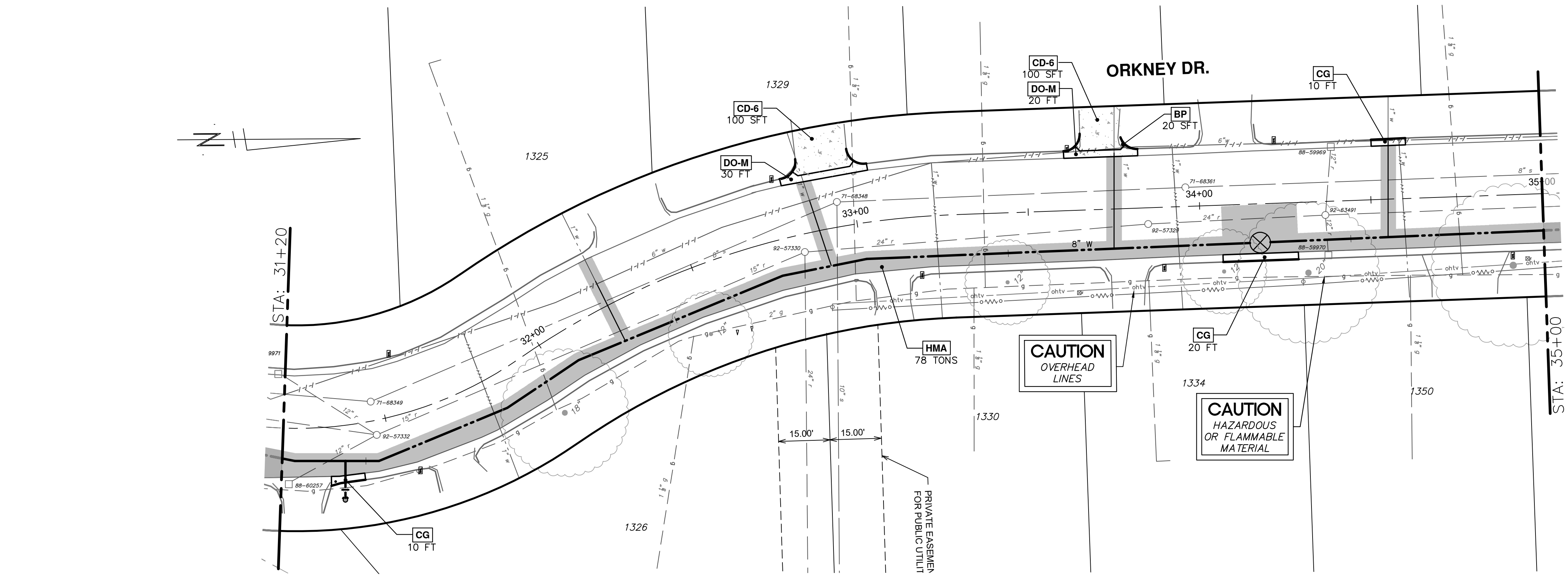
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PROFILE:  
DRAWING No. 2023-009-30

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA PAVEMENT – ANN ARBOR TYPICAL SECTION
CG	CONCRETE CURB/ CURB AND GUTTER
DO-M	CONCRETE DRIVEWAY OPENING – TYPE M
CD-6	CONCRETE DRIVE APPROACH – 6 INCH
BP	REMOVE AND REPLACE BRICK PAVERS

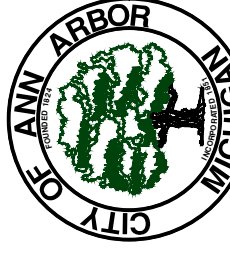
- NOTES:
1. ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED – STA" AND "MACHINE GRADING – SYD" AND WILL NOT BE PAID FOR SEPARATELY.
  2. WORK AND PAYMENT FOR "CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY – FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.
  3. ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMPS, CURBS, GUTTERS, AND CURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.

TOTAL	UNIT	DESCRIPTION
672	SYD	DS_MACHINE GRADING
44	SYD	AGGREGATE BASE, 6 IN., 21AA, CIP
716	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
76	TON	HMA, 4EML
76	TON	HMA, 5EML
100	FT	CONC. CURB OR CURB & GUTTER, ALL TYPES
110	FT	CONC. DRIVEWAY OPENING, TYPE M, HIGH EARLY
400	SFT	CONC. SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN., HIGH EARLY
20	SFT	BRICK PAVERS, SIDEWALK, REM AND REINSTALL



REV.	DATE	DESCRIPTION	DRAWN	CHECKED
1	2/8/2024	BID SET	NTM	JVB
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
ORKNEY DR CULVER RD PROPOSED ROAD  
STA 31+20 TO STA 39+50

PROFILE:  
SCALE: 1" = 20'  
DRAWING No. 2023-009-31

SHEET No. 31 OF 46

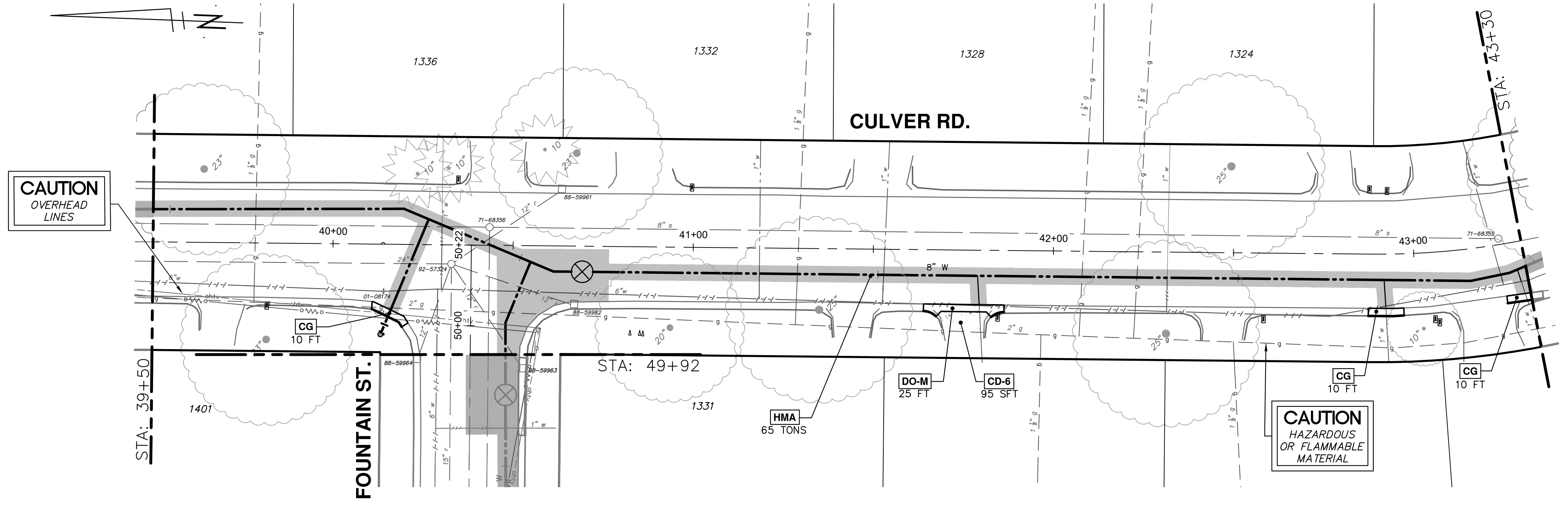
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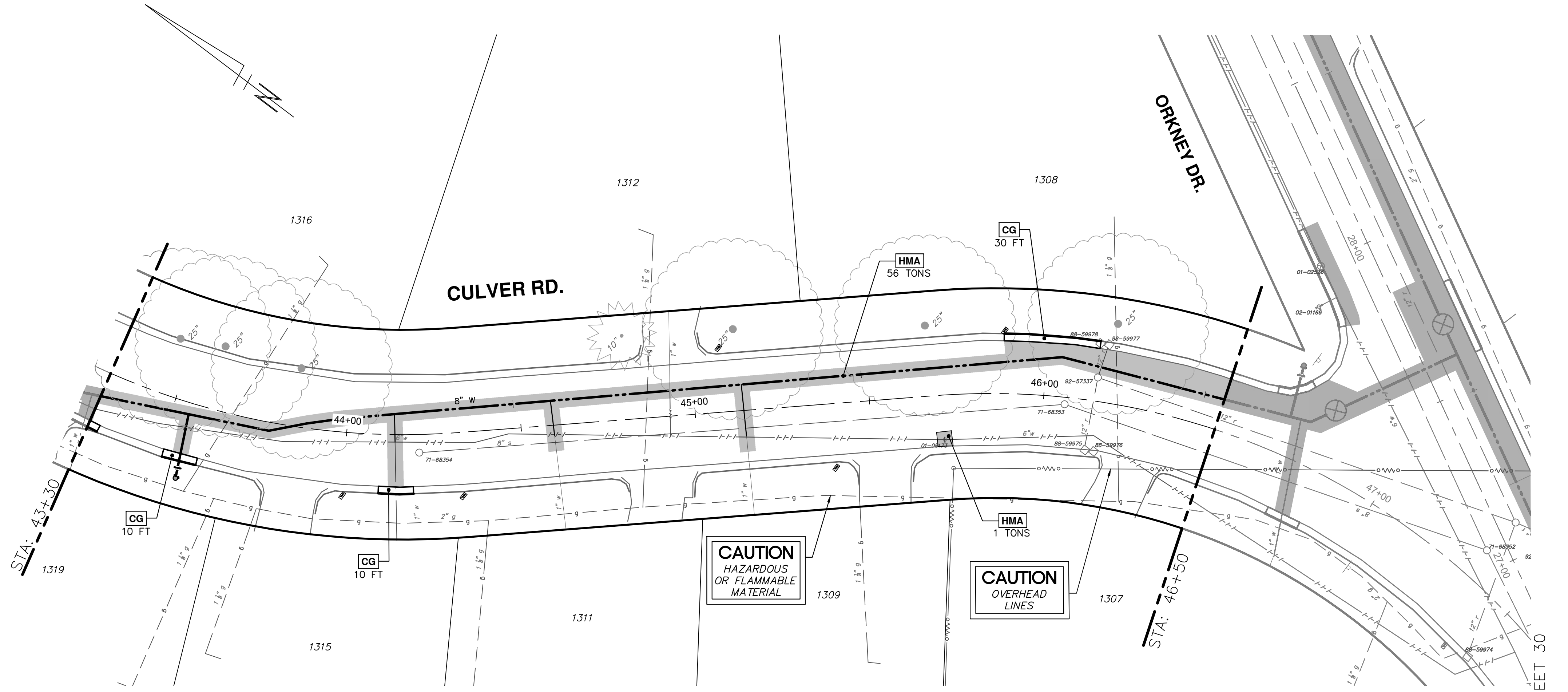
CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	HMA PAVEMENT – ANN ARBOR TYPICAL SECTION
CG	CONCRETE CURB/ CURB AND GUTTER
DO-M	CONCRETE DRIVEWAY OPENING – TYPE M
CD-6	CONCRETE DRIVE APPROACH – 6 INCH

NOTES:  
 1. ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED – STA" AND "MACHINE GRADING – SYD" AND WILL NOT BE PAID FOR SEPARATELY.  
 2. WORK AND PAYMENT FOR "CONC, DRIVEWAY OPENING, TYPE M, HIGH EARLY – FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.  
 3. ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMPS, CURBS, GUTTERS, AND CURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.



**WATER FUND QUANTITIES - THIS SHEET**

TOTAL	UNIT	DESCRIPTION
525	SYD	DS_MACHINE GRADING
11	SYD	AGGREGATE BASE, 6 IN., 21AA, CIP
514	SYD	AGGREGATE BASE, 8 IN., 21AA, CIP
61	TON	HMA, 4EML
61	TON	HMA, 5EML
80	FT	CONC, CURB OR CURB & GUTTER, ALL TYPES
25	FT	CONC, DRIVEWAY OPENING, TYPE M, HIGH EARLY
95	SFT	CONC, SIDEWALK, DRIVE APPROACH, OR RAMP, 6 IN., HIGH EARLY



SEE SHEET 30



REV	DATE	DESCRIPTION
1	2/8/2024	BID SET
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REV	DATE	DESCRIPTION
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CITY OF ANN ARBOR  
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 ANN ARBOR, MI 48106-6647  
 www.a3gov.org



**2024 MISCELLANEOUS UTILITIES PROJECTS**  
 CULVER RD. PROPOSED ROAD  
 STA. 39+50 TO STA. P.O.E.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 SCALE: 1" = 20'  
 PROFILE:  
 DRAWING No. 2023-009-32

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**WATER FUND QUANTITIES THIS SHEET**

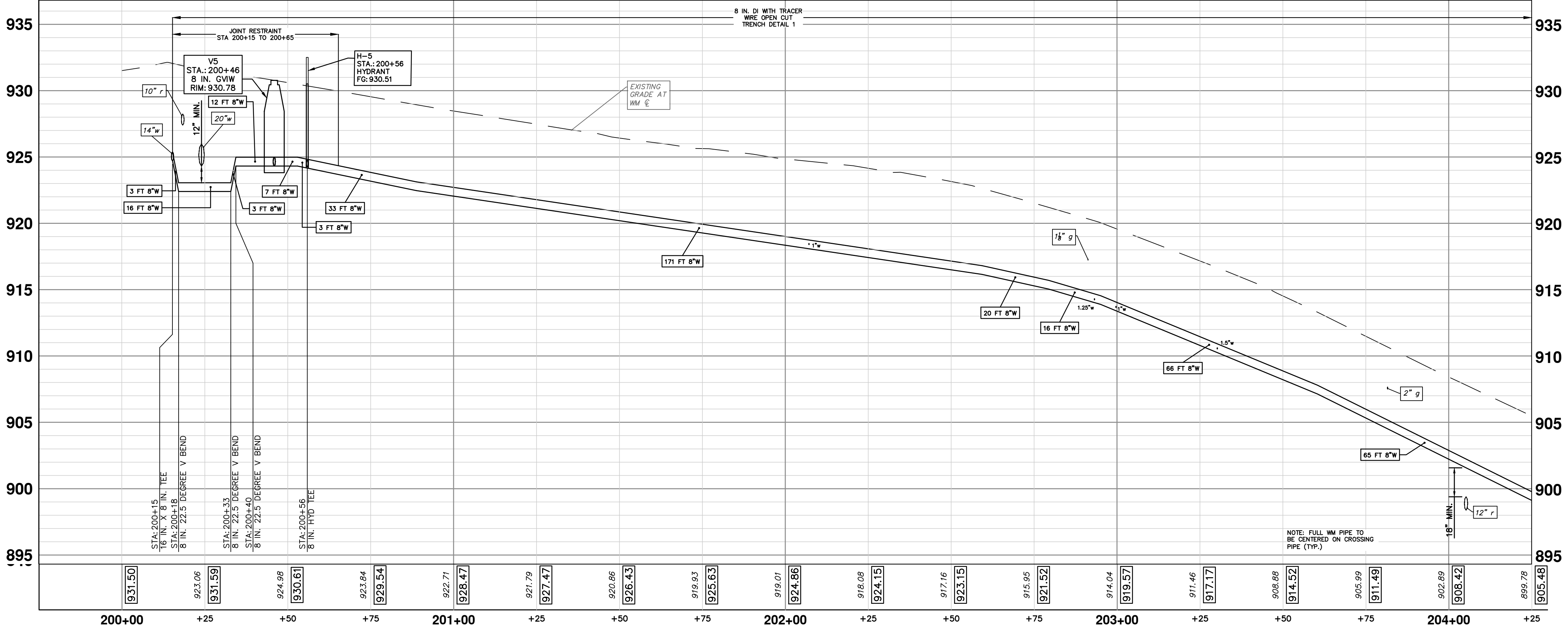
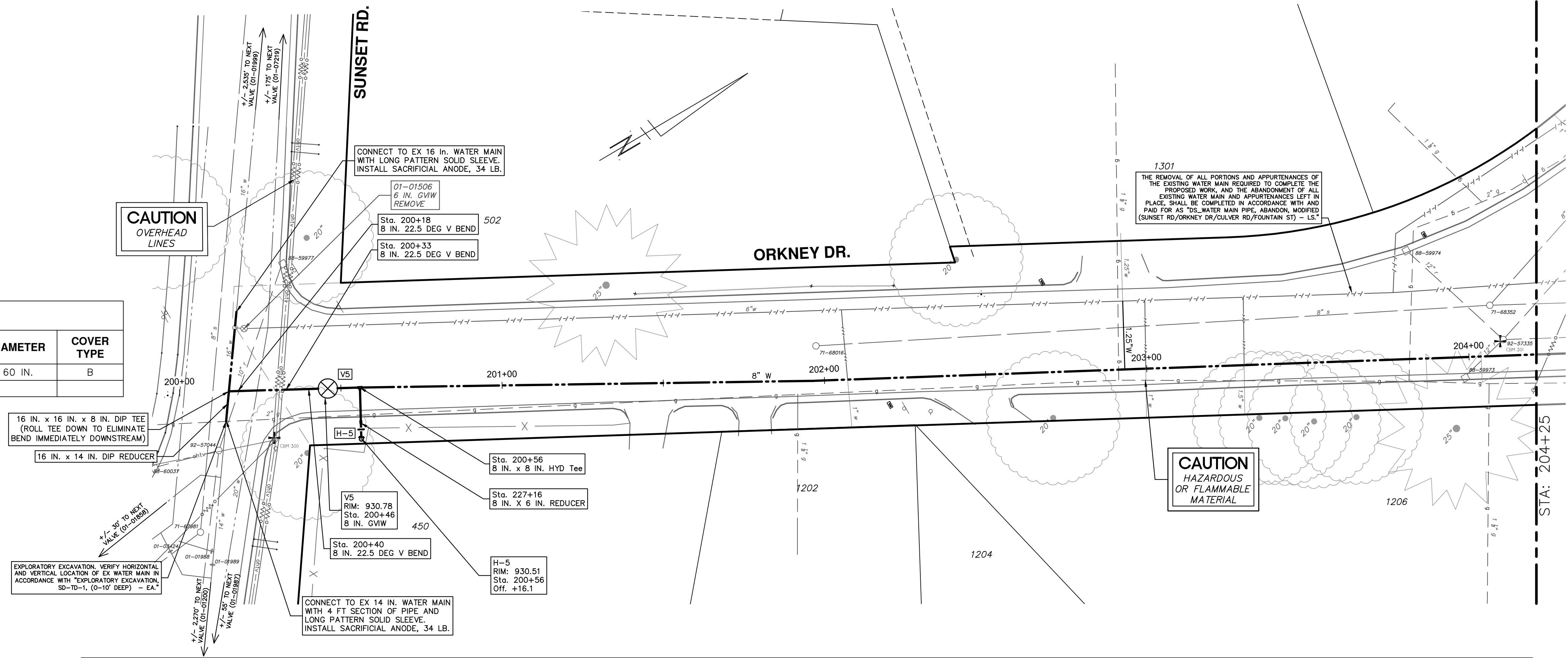
TOTAL	UNIT	DESCRIPTION
1	EA	TEMPORARY WATER MAIN LINE STOP, 14 IN.
1	EA	TEMPORARY WATER MAIN LINE STOP, 16 IN.
1	EA	GATE VALVE IN WELL, 6 IN. DIA, REM
5	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
426	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
6	FT	14 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
30	FT	16 IN., PC 250 DIP W/POLYWRAP, SD-TD-1
3	EA	8 IN. 22.5 DEG DIP BEND
1	EA	8 IN. X 6 IN. DIP REDUCER
1	EA	16 IN. X 14 IN. DIP REDUCER
1	EA	8 IN. X 8 IN. X 8 IN. DIP TEE
1	EA	16 IN. X 16 IN. X 8 IN. DIP TEE
1	EA	DS_GATE VALVE IN WELL, 8 IN.
36	FT	EXCAVATE & BACKFILL FOR WATER SERVICE TAP AND LEAD
1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE
2	EA	SACRIFICIAL ANODE, 34-POUND
1	EA	EXPLORATORY EXCAVATION, STD-TD-1, (0-10' DEEP)

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V5	8 in. GVIW	200+46	930.78	5.79	60 IN.	B
H-5	HYDRANT	200+56	930.51	5.50		

**NOTES:**

- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
- THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
- A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
- FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2024 MISCELLANEOUS UTILITIES PROJECTS**

ORKNEY DR PROPOSED WATER MAIN

P.O.B. TO STA. 204+25

SCALE: 1" = 20'

PROFILE: 1" = 5'

DRAWING No. 2023-008-33

SHEET No. 33 OF 46

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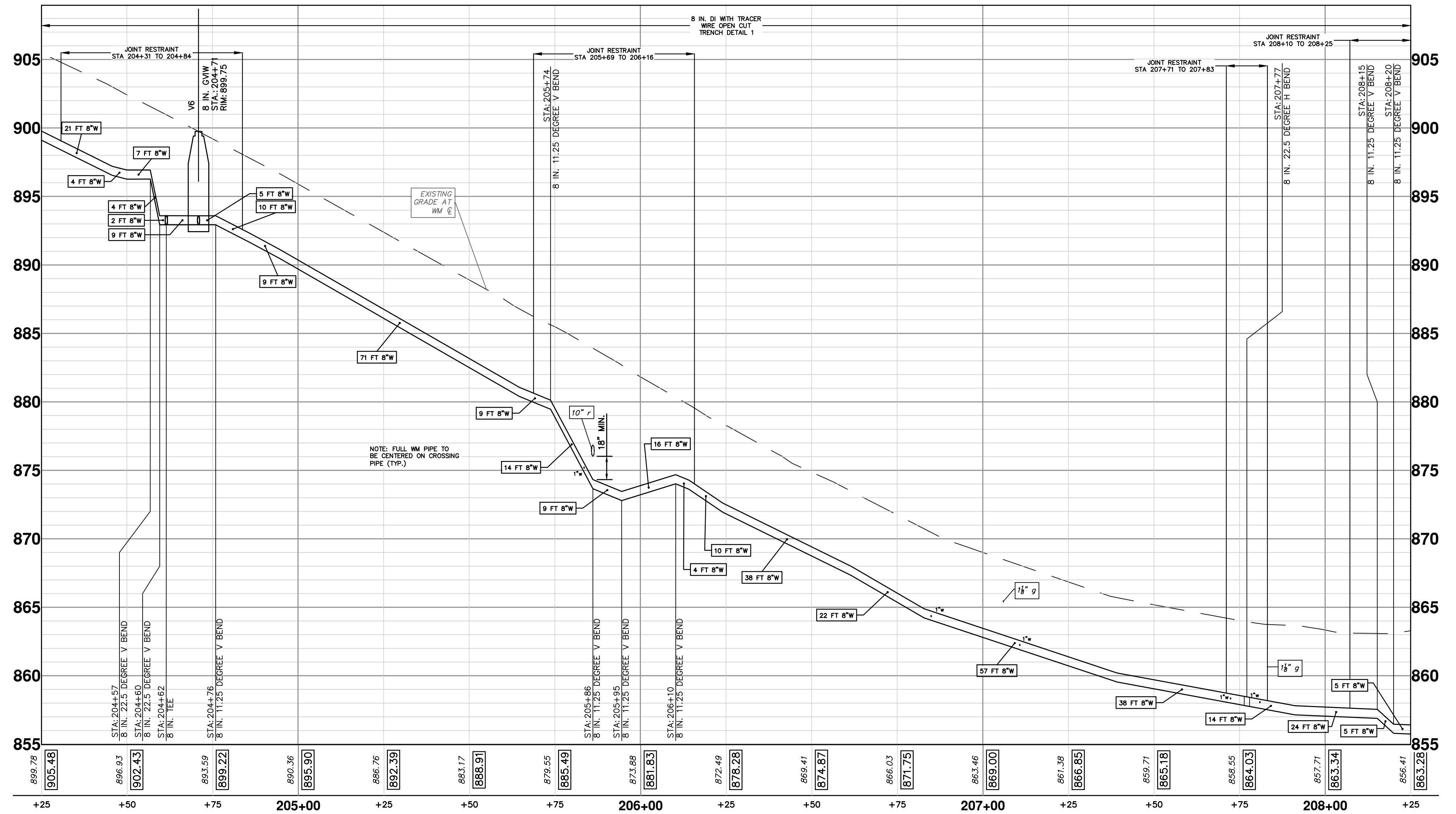
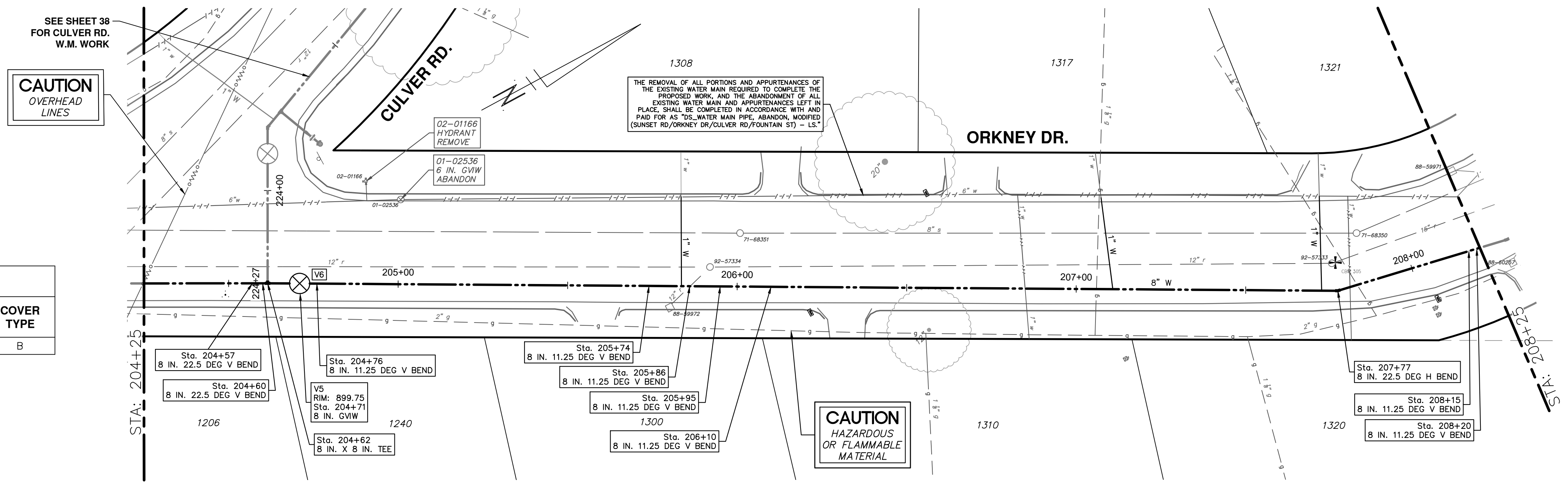
**WATER FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
1	EA	FIRE HYDRANT ASSEMBLY, REM
1	EA	GATE VALVE IN WELL, 6 IN. DIA. ABANDON
407	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
3	EA	8 IN. 22.5 DEG DIP BEND
7	EA	8 IN. 11.25 DEG DIP BEND
1	EA	8 IN. X 8 IN. X 8 IN. DIP TEE
1	EA	DS_GATE VALVE IN WELL, 8 IN.
37	FT	EXCAVATE AND BACKFILL FOR WATER SERVICE TAP AND LEAD

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V6	8 in. GVIW	204+71	899.75	6.15	60 IN.	B

- NOTES:
- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
  - THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
  - A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
  - FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



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CITY OF ANN ARBOR PUBLIC SERVICES - ENGINEERING

2024 MISCELLANEOUS UTILITIES PROJECTS

ORKNEY DR PROPOSED WATER MAIN

STA. 204+25 TO STA. 208+25

SCALE: 1" = 20' PROFILE: 1" = 5'

DRAWING No. 2023-009-34

SHEET No. 34 OF 46

2/8/2024 DATE

BID SET DESCRIPTION

REV. 1

REV. 2

REV. 3

REV. 4

REV. 5

NTM DRAWN

JVB CHECKED

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**WATER FUND QUANTITIES THIS SHEET**

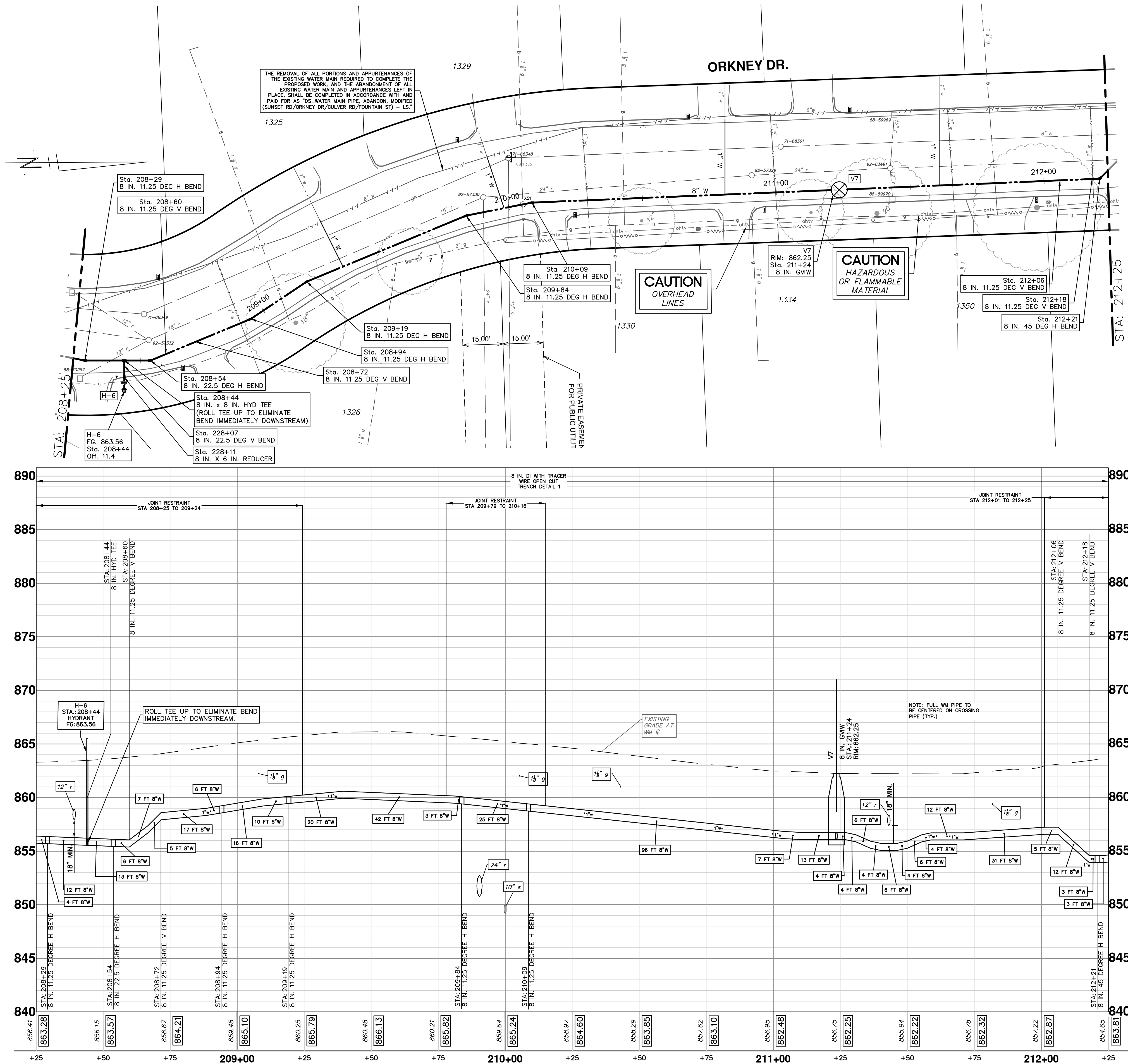
TOTAL	UNIT	DESCRIPTION
1	EA	FIRE HYDRANT ASSEMBLY, REM
5	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
413	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
1	EA	8 IN. 45 DEG DIP BEND
2	EA	8 IN. 22.5 DEG DIP BEND
9	EA	8 IN. 11.25 DEG DIP BEND
1	EA	8 IN. X 6 IN. DIP REDUCER
1	EA	8 IN. X 8 IN. X 8 IN. DIP TEE
1	EA	DS_GATE VALVE IN WELL, 8 IN.
124	FT	EXCAVATE AND BACKFILL FOR WATER SERVICE TAP AND LEAD
1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V7	8 in. GVIW	211+24	862.25	5.50	60 IN.	B
H-6	HYDRANT	208+44	863.56	5.50		

**NOTES:**

- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
- THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
- A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
- FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



REV.	DATE	DESCRIPTION
1	2/8/2024	BID SET
2		N/A
3		N/A
4		N/A
5		N/A

**CITY OF ANN ARBOR PUBLIC SERVICES**  
 301 EAST HURON STREET  
 ANN ARBOR, MI 48106-1067  
 WWW.A8GOV.ORG

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
 2024 MISCELLANEOUS UTILITIES PROJECTS  
 ORKNEY DR PROPOSED WATER MAIN  
 STA. 208+25 TO STA. 212+25

SCALE: 1" = 20'  
 PROFILE: 1" = 5'  
 DRAWING No. 2023-008-35  
 SHEET No. 35 OF 46

v:\202302\_20230223\C\Sheets\Watr.dwg - \_a02 standard bw.stb - Plot Date: 2/8/2024 1:40:13 PM

**WATER FUND QUANTITIES THIS SHEET**

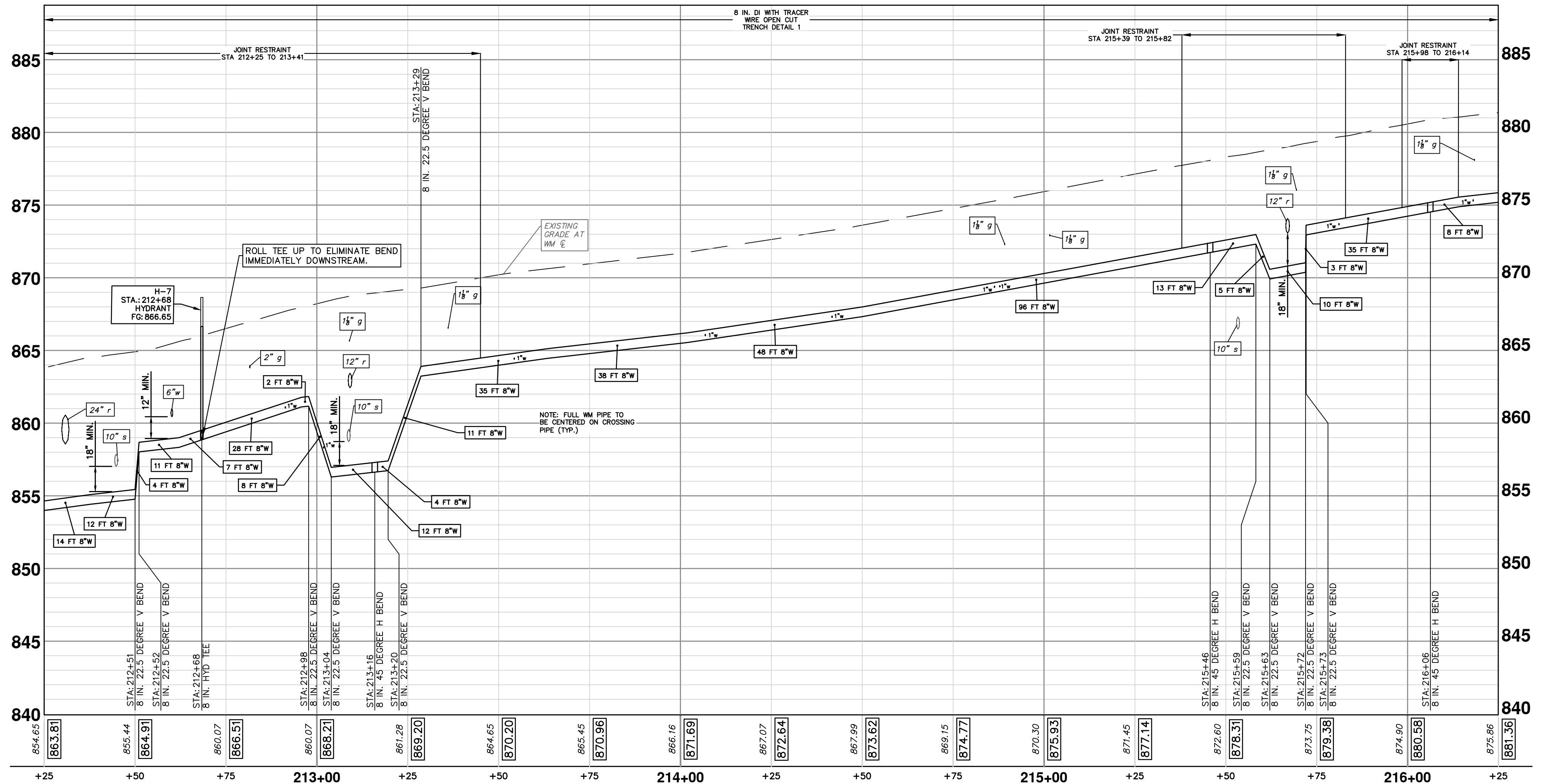
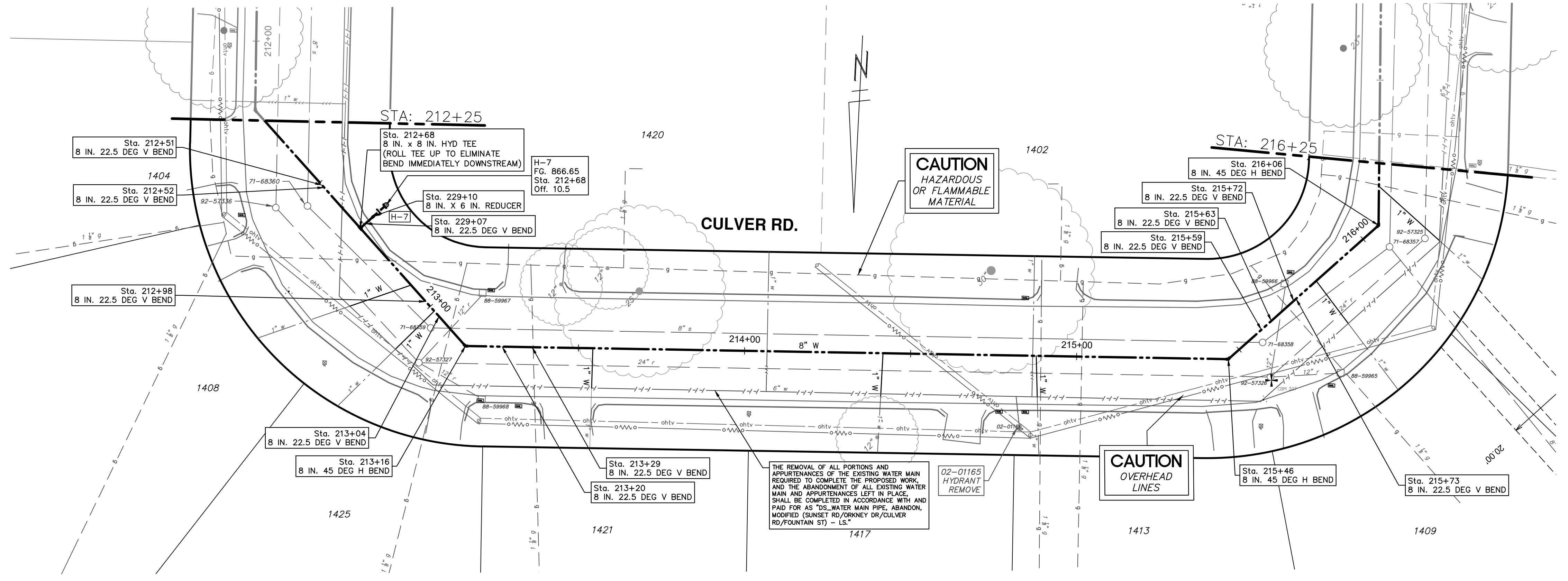
TOTAL	UNIT	DESCRIPTION
1	EA	FIRE HYDRANT ASSEMBLY, REM
5	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
410	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
3	EA	8 IN. 45 DEG DIP BEND
11	EA	8 IN. 22.5 DEG DIP BEND
1	EA	8 IN. X 6 IN. DIP REDUCER
1	EA	8 IN. X 8 IN. X 8 IN. DIP TEE
126	FT	EXCAVATE AND BACKFILL FOR WATER SERVICE TAP AND LEAD
1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
H-7	HYDRANT	212+68	866.65	5.50		

**NOTES:**

- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
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- A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
- FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



Know what's below. Call before you dig.

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PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48107-0647  
www.a3gov.org



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
2024 MISCELLANEOUS UTILITIES PROJECTS  
CULVER RD. PROPOSED WATER MAIN  
STA. 212+25 TO STA. 216+25

SCALE: 1" = 20'  
PROFILE: 1" = 5'  
DRAWING No. 2023-009-36  
SHEET No. 36 OF 46

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REV.	DATE	DESCRIPTION	DRAWN	CHECKED
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2			JVB	
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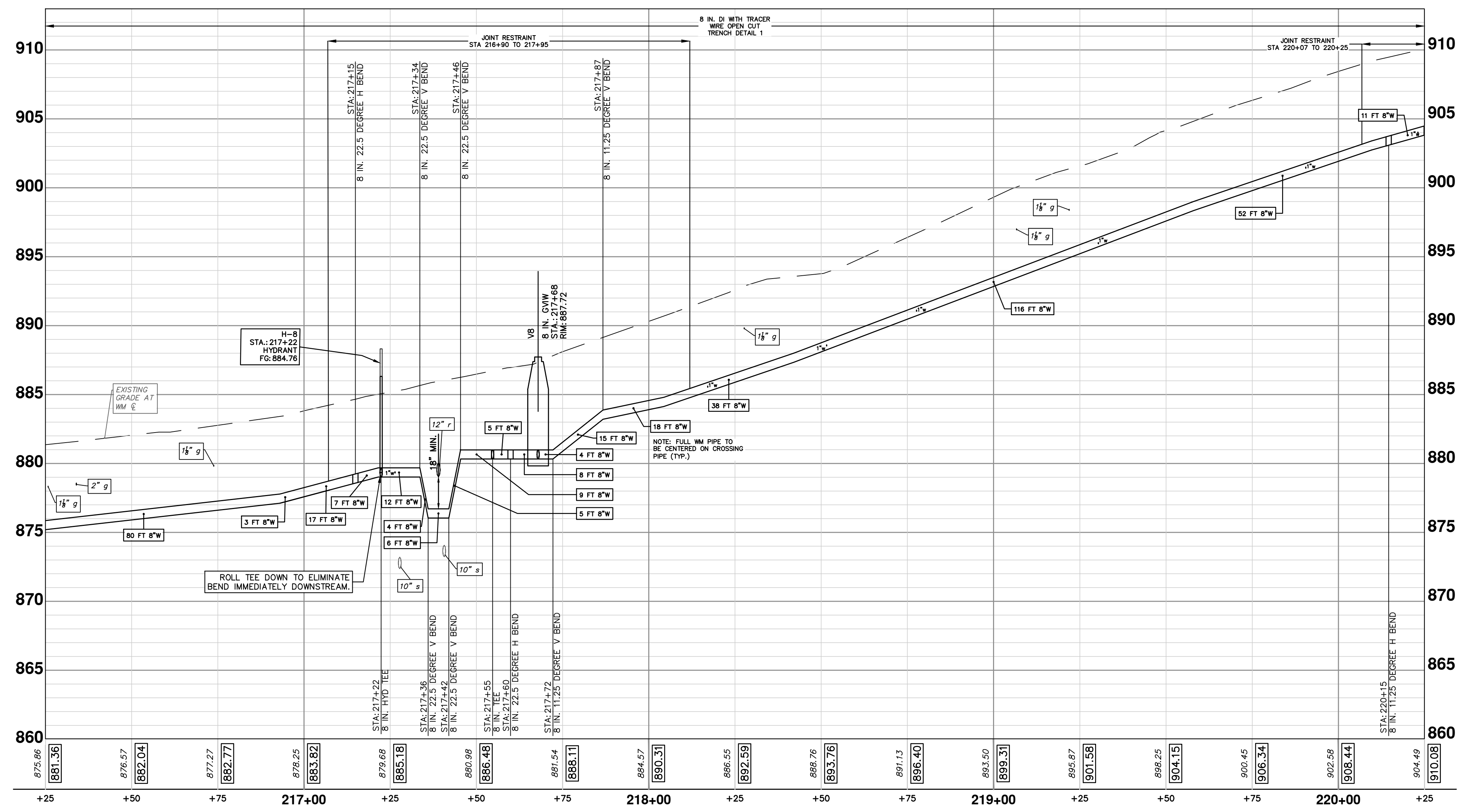
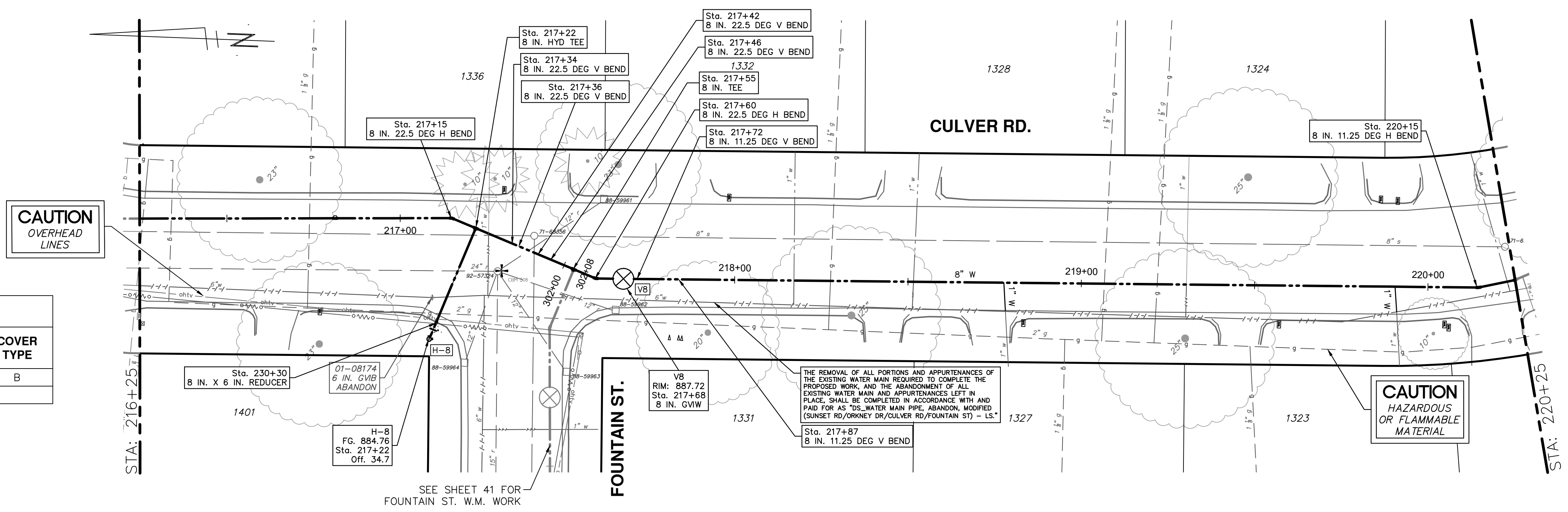
**WATER FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
1	EA	FIRE HYDRANT ASSEMBLY, REM
1	EA	GATE VALVE IN BOX, 6 IN. DIA, ABANDON
5	FT	6 IN., PC 350 DIP W/ POLYWRAP, SD-TD-1
440	FT	8 IN., PC 350 DIP W/ POLYWRAP, SD-TD-1
6	EA	8 IN. 22.5 DEG DIP BEND
3	EA	8 IN. 11.25 DEG DIP BEND
1	EA	8 IN. X 6 IN. DIP REDUCER
2	EA	8 IN. X 8 IN. X 8 IN. DIP TEE
1	E	DS_GATE VALVE IN WELL, 8 IN.
37	FT	EXCAVATE AND BACKFILL FOR WATER SERVICE TAP AND LEAD
1	EA	FIRE HYDRANT ASSEMBLY, COMPLETE

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V8	8 in. GVIW	217+68	887.72	6.73	60 IN.	B
H-8	HYDRANT	217+22	884.76	5.17		

- NOTES:
- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
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  - FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/ POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



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

REV.	DATE	DESCRIPTION
1	2/8/2024	NJM DRAWN
2		JVB CHECKED
3		
4		
5		

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 2024 MISCELLANEOUS UTILITIES PROJECTS  
 CULVER RD. PROPOSED WATER MAIN  
 STA. 216+25 TO STA. 220+25

CITY OF ANN ARBOR PUBLIC SERVICES  
 301 EAST HURON STREET  
 ANN ARBOR, MI 48107-8647  
 ANN ARBOR 734-794-4110  
 WWW.A2GOV.ORG

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 PROFILE: 1" = 5'  
 SCALE: 1" = 20'  
 DRAWING No. 2023-008-37  
 SHEET No. 37 OF 46

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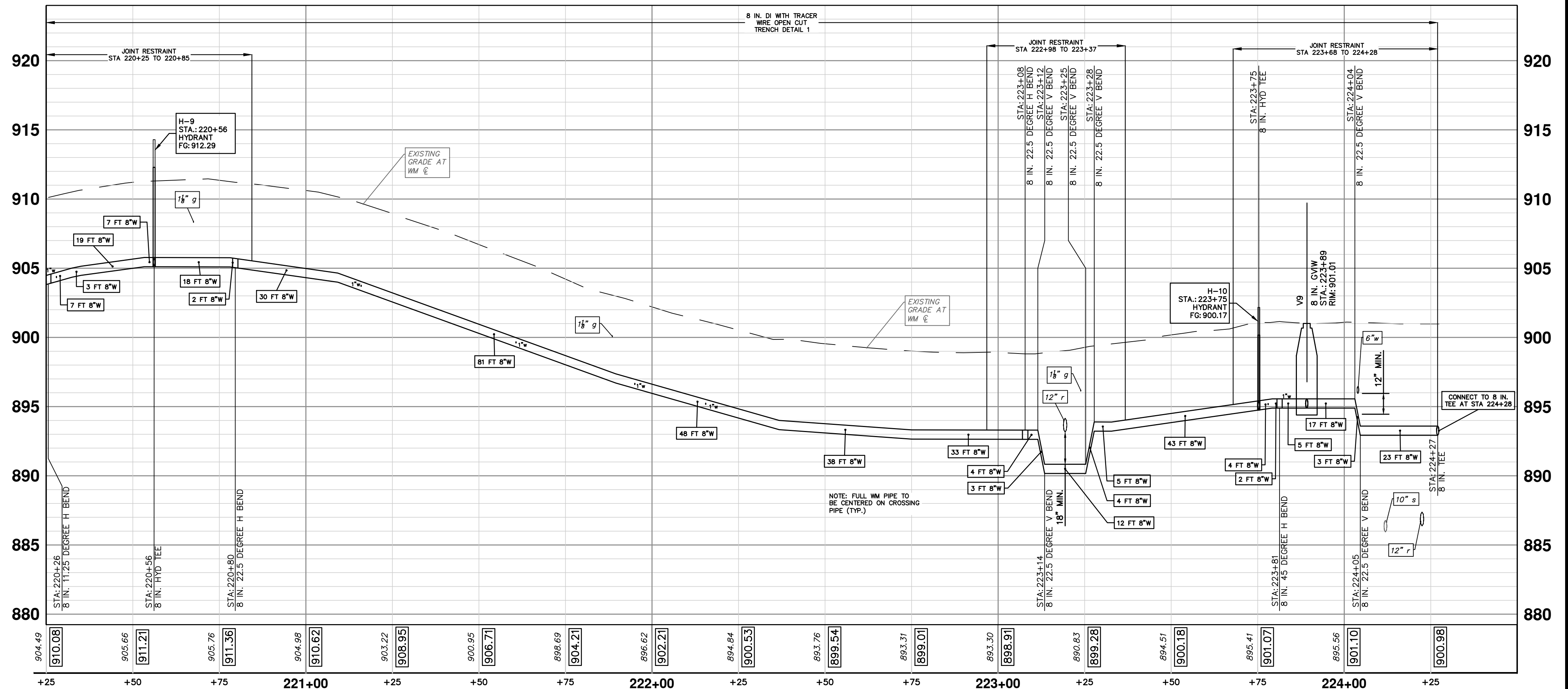
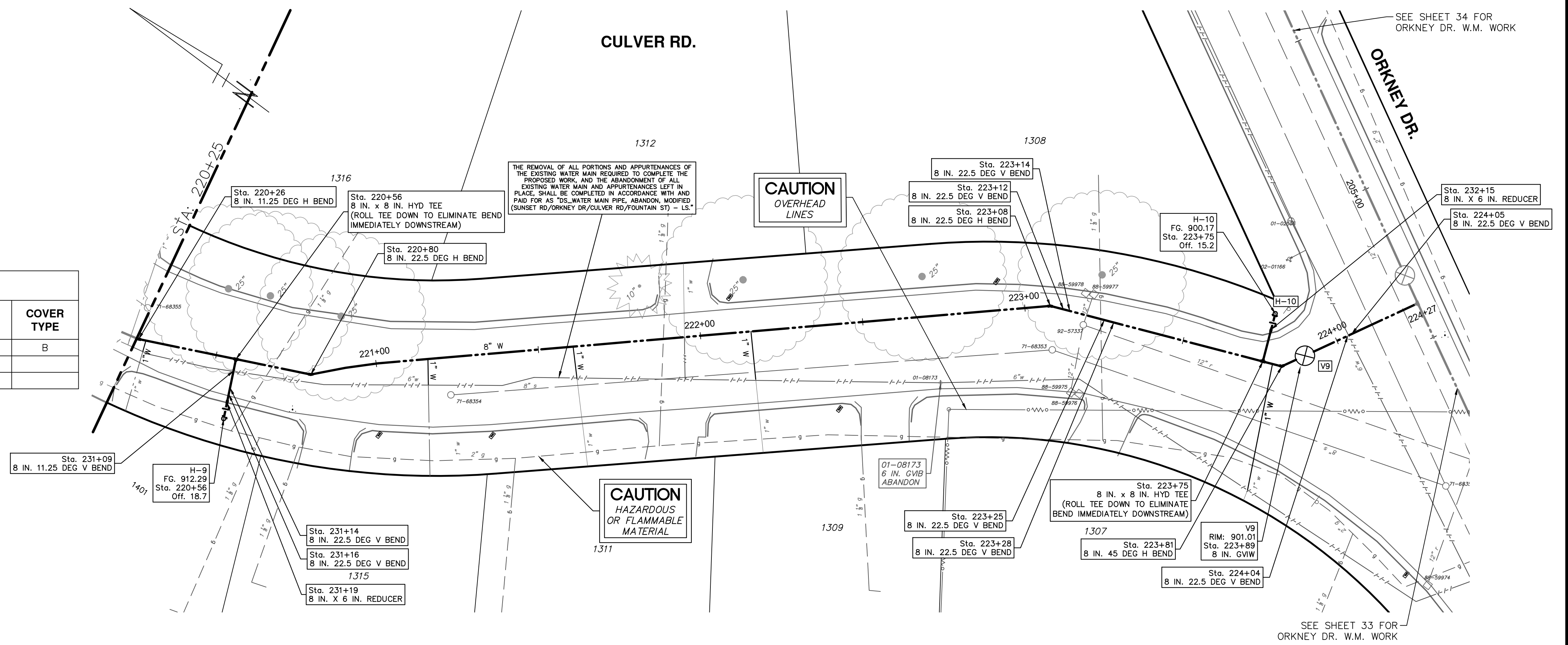
**WATER FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
1	EA	GATE VALVE IN BOX, 6 IN. DIA, ABANDON
10	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
435	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
1	EA	8 IN. 45 DEG DIP BEND
10	EA	8 IN. 22.5 DEG DIP BEND
3	EA	8 IN. 11.25 DEG DIP BEND
2	EA	8 IN. X 6 IN. DIP REDUCER
2	EA	8 IN. X 8 IN. X 8 IN. DIP TEE
1	EA	DS. GATE VALVE IN WELL, 8 IN.
49	FT	EXCAVATE AND BACKFILL FOR WATER SERVICE TAP AND LEAD
2	EA	FIRE HYDRANT ASSEMBLY, COMPLETE

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V9	8 in. GVIW	223+89	901.01	5.50	60 IN.	B
H-9	HYDRANT	220+56	912.29	5.50		
H-10	HYDRANT	223+75	900.17	5.50		

- NOTES:**
- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
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  - A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
  - FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "\_\_\_ IN., PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.



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

SEE SHEET 34 FOR ORKNEY DR. W.M. WORK

SEE SHEET 33 FOR ORKNEY DR. W.M. WORK

---

**CITY OF ANN ARBOR PUBLIC SERVICES**  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1000  
www.a3gov.org

DATE: 2/8/2024  
DRAWN: JVB  
CHECKED: [ ]  
DESCRIPTION: BID SET  
REV: [ ]

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

2024 MISCELLANEOUS UTILITIES PROJECTS

CULVER RD. PROPOSED WATER MAIN

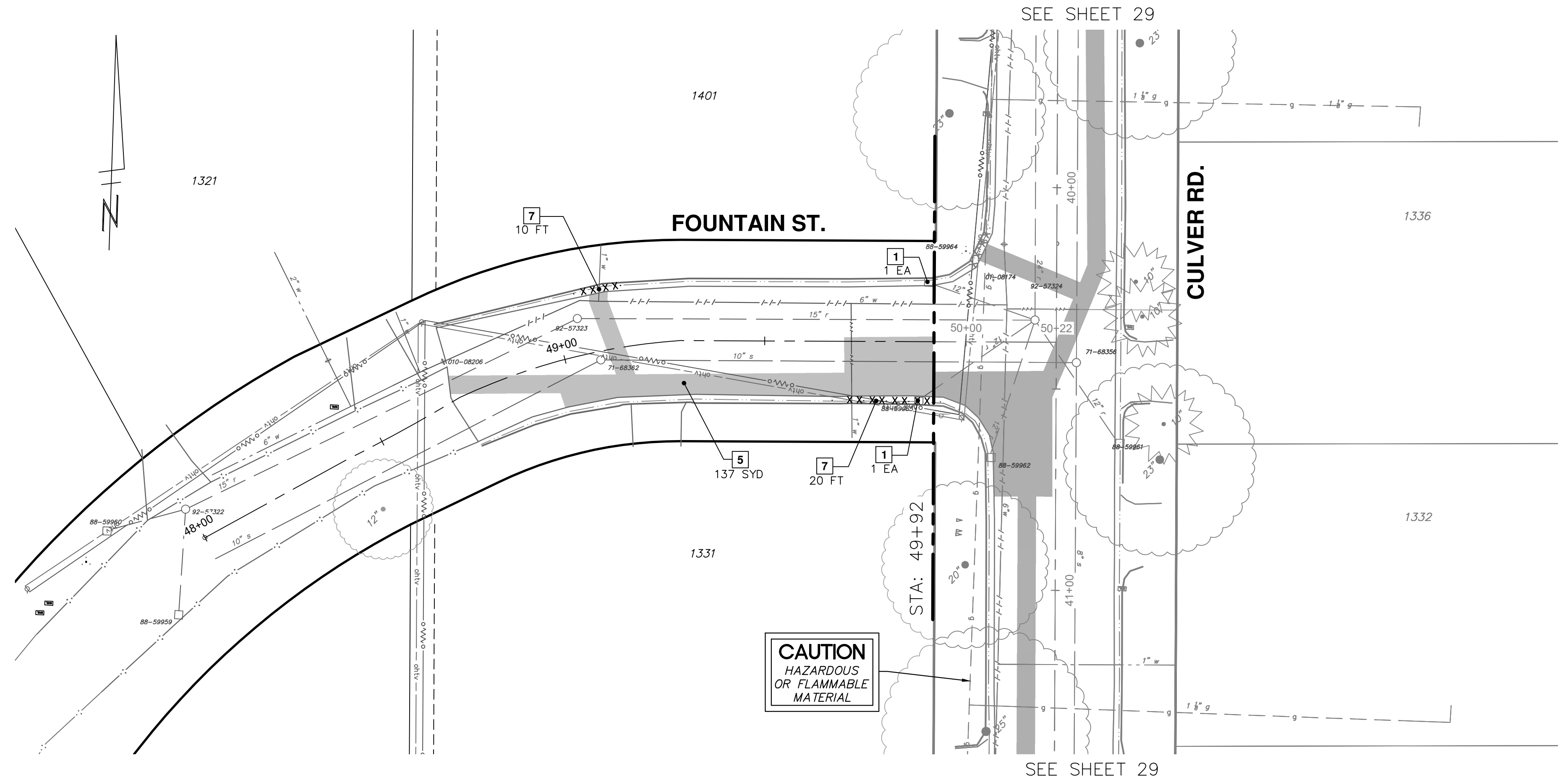
STA. 220+25 TO P.O.E.

SCALE: 1" = 20'  
PROFILE: 1" = 5'

DRAWING No. 2023-008-38

SHEET No. 38 OF 46

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- NOTES:
1. ALL PAVEMENTS (HMA, CONCRETE, CURB, GUTTER, CURB AND GUTTER, ETC.) SHALL BE SAWCUT FULL DEPTH AT THE DIRECTED LIMITS OF REMOVAL.
  2. REMOVALS OF EXISTING WATER MAIN AND APPURTENANCES ARE SHOWN ON WATER MAIN SHEETS.
  3. UNLESS OTHERWISE DIRECTED, THE LIMITS OF REMOVAL FOR CONCRETE PAVEMENT, CURB, GUTTER, AND CURB & GUTTER SHALL BE AT THE NEAREST EXISTING JOINT.
  4. PAYMENT FOR "CURB, GUTTER, AND CURB & GUTTER, ANY TYPE, REM - FT" SHALL INCLUDE ALL SAWCUTTING AND REMOVAL WORK REQUIRED TO PROVIDE FOR THE CONSTRUCTION OF A TYPE M DRIVEWAY OPENING IN ACCORDANCE WITH SD-DS-1.
  5. CONTRACTOR TO USE APPROPRIATE MEASURES TO PROTECT AND AVOID DISRUPTING BRICK PAVERS.
  6. THE LIMITS OF HMA PAVEMENT REMOVAL AND REPLACEMENT ON SUNSET RD, ORKNEY DR, CULVER RD, AND FOUNTAIN ST ARE BASED ON THE SMALLEST UTILITY TRENCH WIDTH PERMITTED BY THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS AND DETAILS FOR THE PROPOSED WATER MAIN PIPE SIZE, THE AREA OF PAVEMENT REMOVAL AND REPLACEMENT SHOWN IN PLAN, AND THE QUANTITIES FOR REPLACEMENT HMA AND AGGREGATE BASE LISTED IN QUANTITY TABLES ARE BASED ON THIS MINIMUM ALLOWABLE TRENCH WIDTH. HOWEVER, THE OVERALL BID QUANTITIES FOR HMA AND AGGREGATE BASE HAVE BEEN DETERMINED BASED ON THE AMOUNT OF MATERIAL REQUIRED TO RESTORE THE RESULTING ROAD STRUCTURE ABOVE A UTILITY TRENCH WITH 1-ON-1 SIDE SLOPES.

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

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

TOTAL	UNIT	DESCRIPTION
2	EA	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
105	SYD	HMA, ANY THICKNESS, REM
30	FT	CURB, GUTTER, & CURB AND GUTTER, ANY TYPE, REM



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 2024 MISCELLANEOUS UTILITIES PROJECTS  
 FOUNTAIN ST. REMOVALS  
 P.O.B. TO P.O.E.

SCALE: 1" = 20'  
 PROFILE: N/A  
 DRAWING No.: 2023-009-39

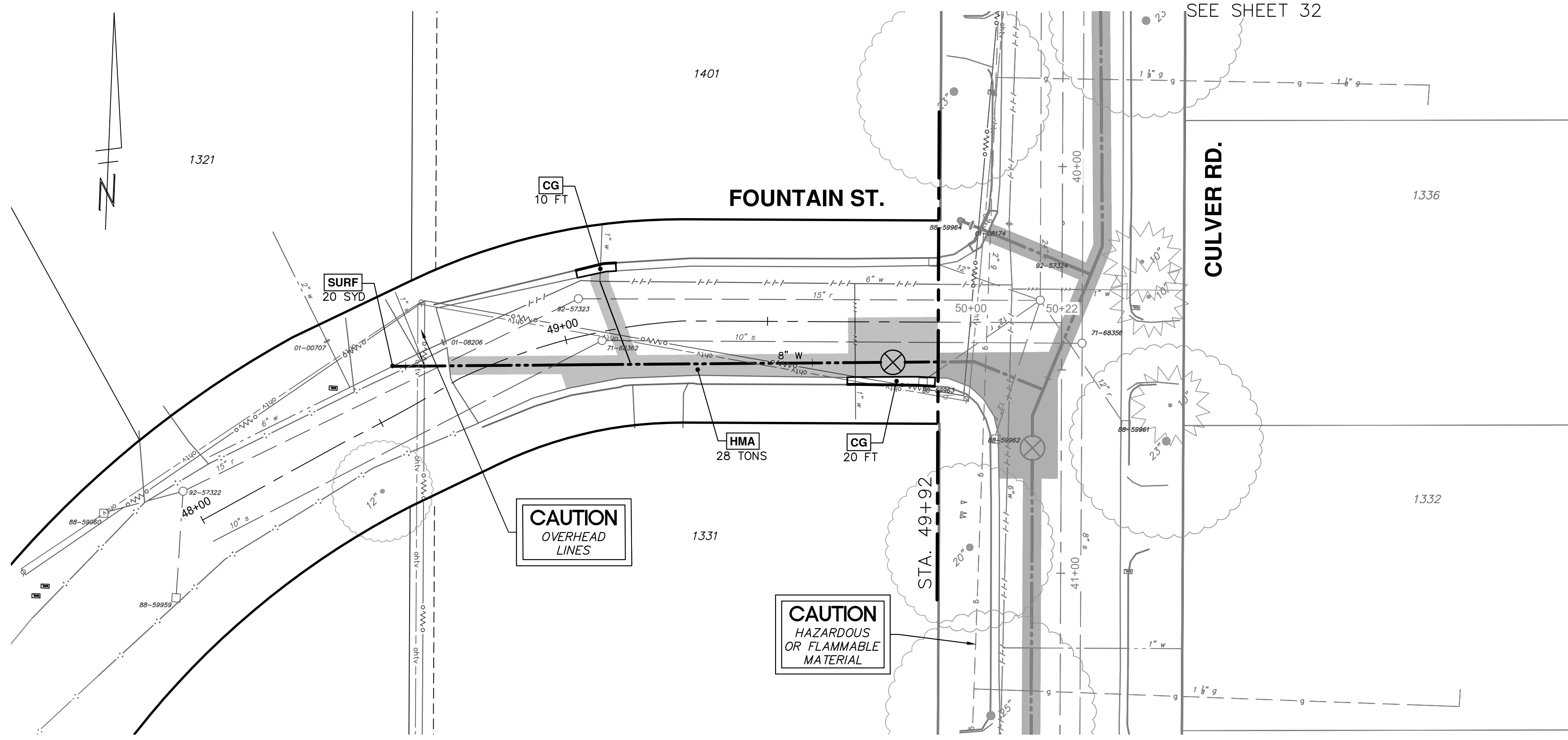
5	REV.				
4					
3					
2	BID SET	2/8/2024	DATE	NTM	DRAWN
1	DESCRIPTION			JVB	CHECKED

CITY OF ANN ARBOR  
 PUBLIC SERVICES  
 301 EAST HURON STREET  
 ANN ARBOR, MI 48106-1647  
 www.a2gov.org



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**WATER FUND QUANTITIES THIS SHEET**

TOTAL	UNIT	DESCRIPTION
117	Syd	DS_Machine Grading
117	Syd	Aggregate Base, 8 In. 21AA, CIP
20	Syd	Aggregate Surface Course, 8 In., 23A, CIP
14	Tons	HMA, 4EML
14	Tons	HMA, 5EML
30	Ft	Concrete Curb Or Curb & Gutter, All Types

**CONSTRUCTION KEY**

KEY	DESCRIPTION
<b>SURF</b>	CIP AGGREGATE SURFACE COURSE
<b>HMA</b>	HMA PAVEMENT – ANN ARBOR TYPICAL SECTION
<b>CG</b>	CONCRETE CURB/ CURB AND GUTTER

- NOTES:**
- ALL FILL, CUT, AND GRADING WORK OF EXISTING BASE AND SUBGRADE REQUIRED TO CONSTRUCT PROPOSED BASES, PAVEMENTS, AND CURB/GUTTER/CURB & GUTTER TO THE REQUIRED FINAL GRADE SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS "MACHINE GRADING, MODIFIED – STA" AND "MACHINE GRADING – SYD" AND WILL NOT BE PAID FOR SEPARATELY.
  - WORK AND PAYMENT FOR "CONC, DRIVEWAY OPENING, TYPE M, HIGH EARLY – FT" INCLUDES CONSTRUCTING THE "SPUR" FEATURES OF THE M-OPENING TO MATCH EXISTING AND/OR PROPOSED ADJACENT CURB, AND/OR PROPOSED ADJACENT CURB, AND/OR BLEND INTO EXISTING/PROPOSED ADJACENT PAVEMENT.
  - ALL NEW ROAD PAVEMENTS, DRIVEWAY PAVEMENTS, SIDEWALKS, SIDEWALK RAMPS, CURBS, GUTTERS, AND CURB & GUTTERS SHALL BE CONSTRUCTED ON AGGREGATE BASES IN ACCORDANCE WITH RESPECTIVE ANN ARBOR TYPICAL DETAILS.

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

2024 MISCELLANEOUS UTILITIES PROJECTS

FOUNTAIN ST. PROPOSED ROAD

P.O.E. TO P.O.B.

SCALE: 1" = 20'

PROFILE:

DRAWING No. 2023-009-40

SHEET No. 40 OF 46

**811**  
Know what's below.  
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5	REV.	
4		
3		
2	BID SET	
1	DESCRIPTION	

2/8/2024 DATE

NTM DRAWN

JVB CHECKED

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-6647  
www.a3gov.org

**WATER FUND QUANTITIES THIS SHEET**

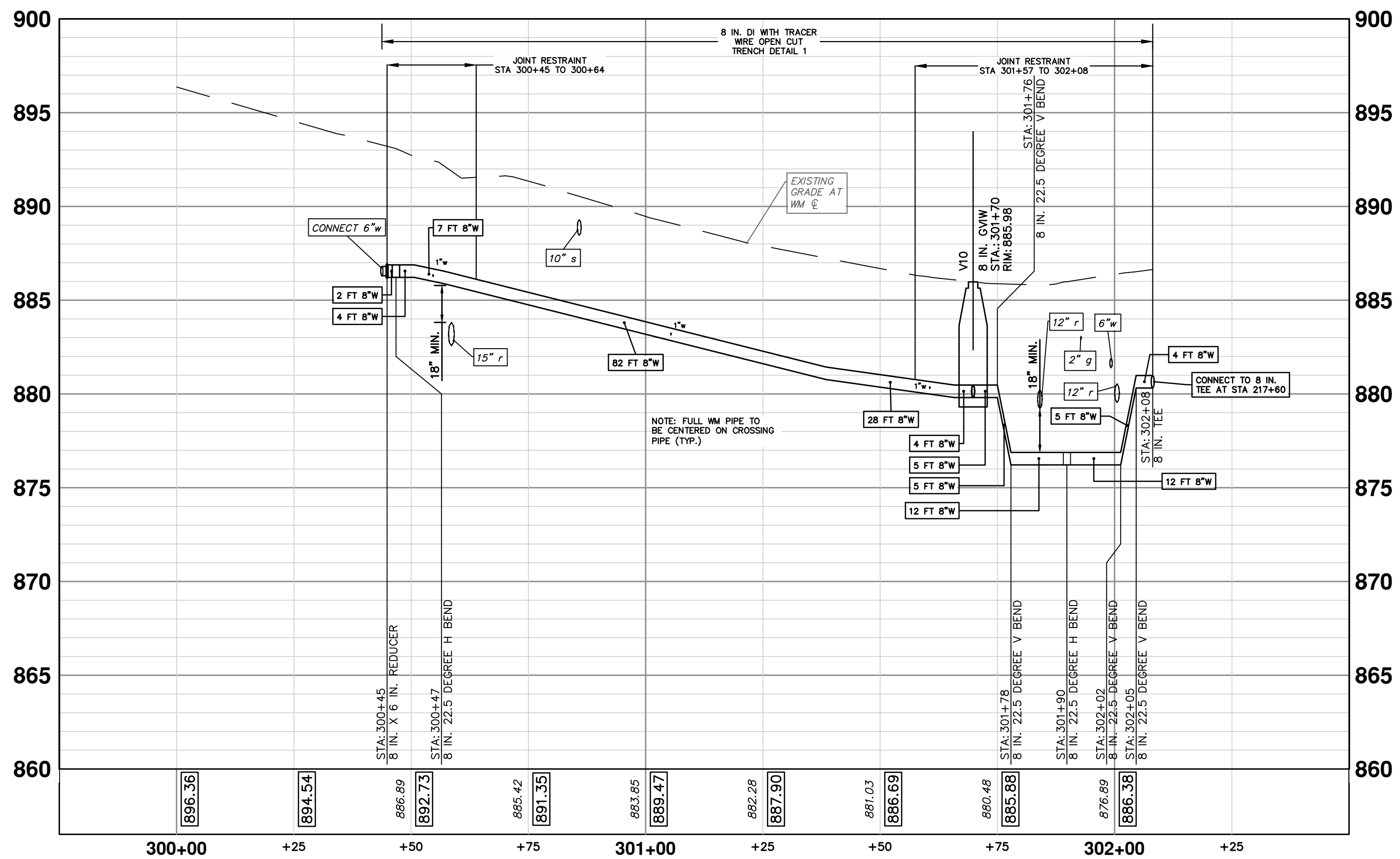
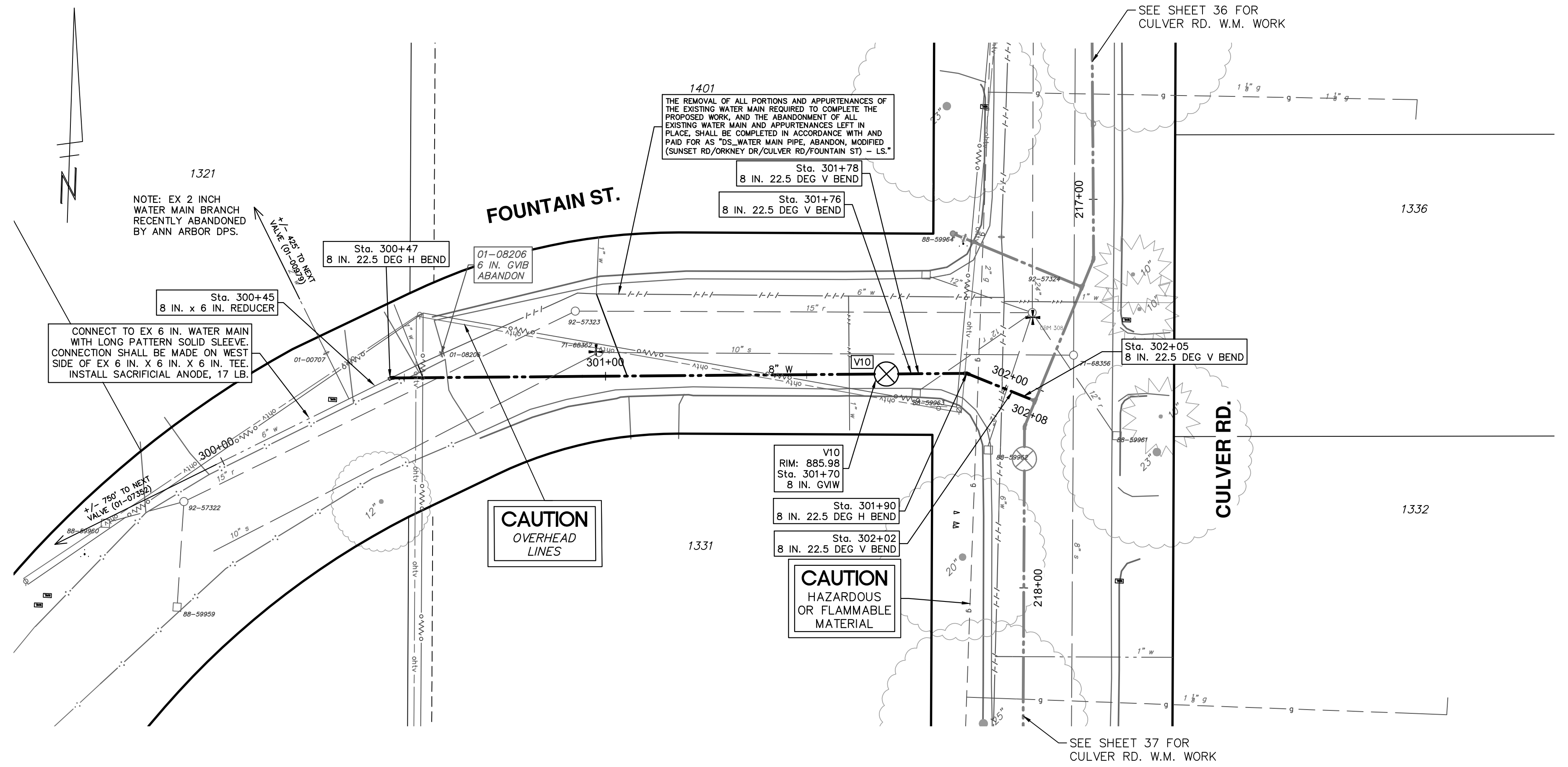
TOTAL	UNIT	DESCRIPTION
1	EA	GATE VALVE IN BOX, 6 IN. DIA, ABANDON
4	FT	6 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
170	FT	8 IN., PC 350 DIP W/POLYWRAP, SD-TD-1
6	EA	8 IN. 22.5 DEG DIP BEND
1	EA	8 IN. X 6 IN. DIP REDUCER
1	EA	DS_GATE VALVE IN WELL, 8 IN.
32	FT	EXCAVATE & BACKFILL FOR WATER SERVICE TAP AND LEAD
1	EA	SACRIFICIAL ANODE, 17-POUND

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH T/P	DIAMETER	COVER TYPE
V10	8 in. GVIW	301+70	885.98	5.50	60 IN.	B

**NOTES:**

- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, \_\_\_ LB".
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REV.	DATE	DESCRIPTION
5		
4		
3		
2		
1	2/8/2024	BID SET

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1667  
www.a3gov.org

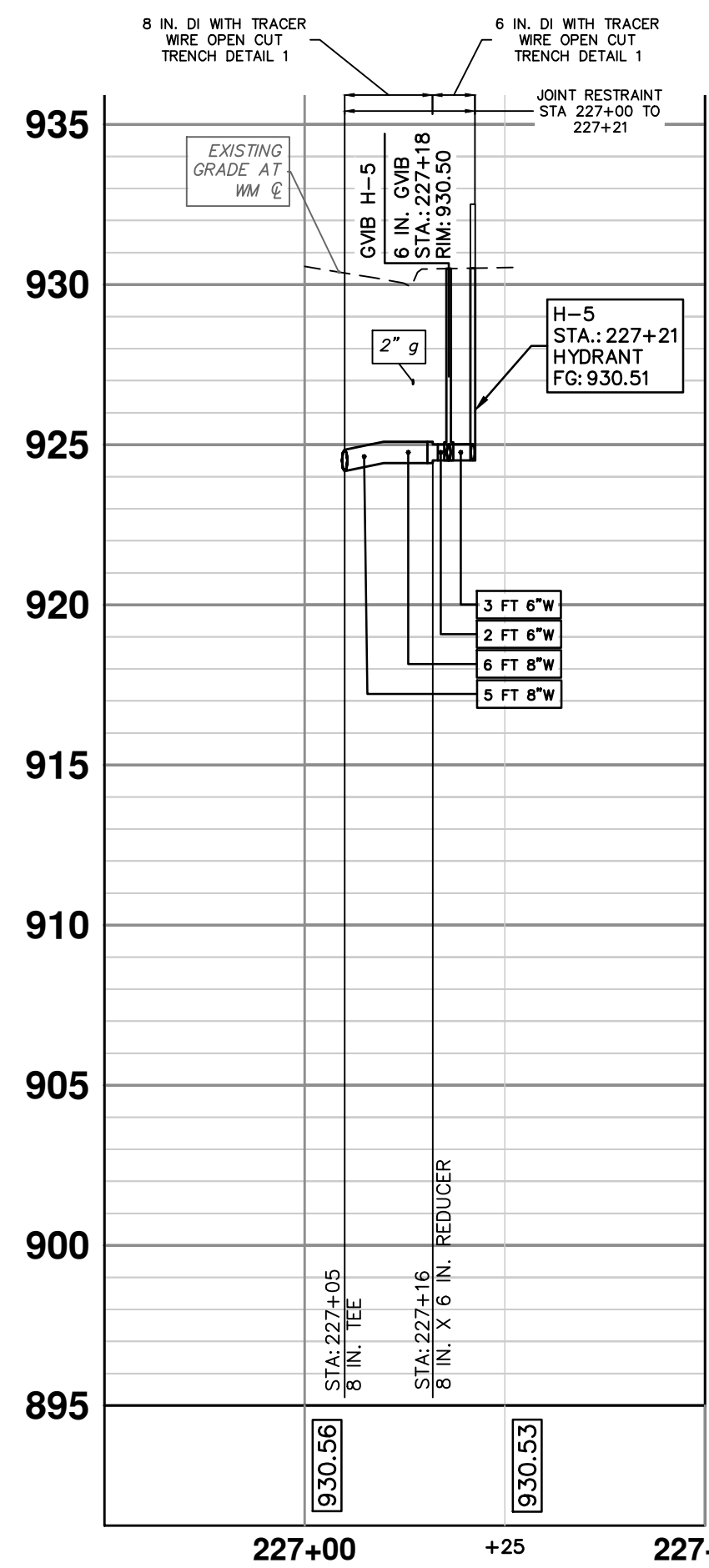


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
FOUNTAIN ST. PROPOSED WATER MAIN  
P.O.B. TO P.O.E.

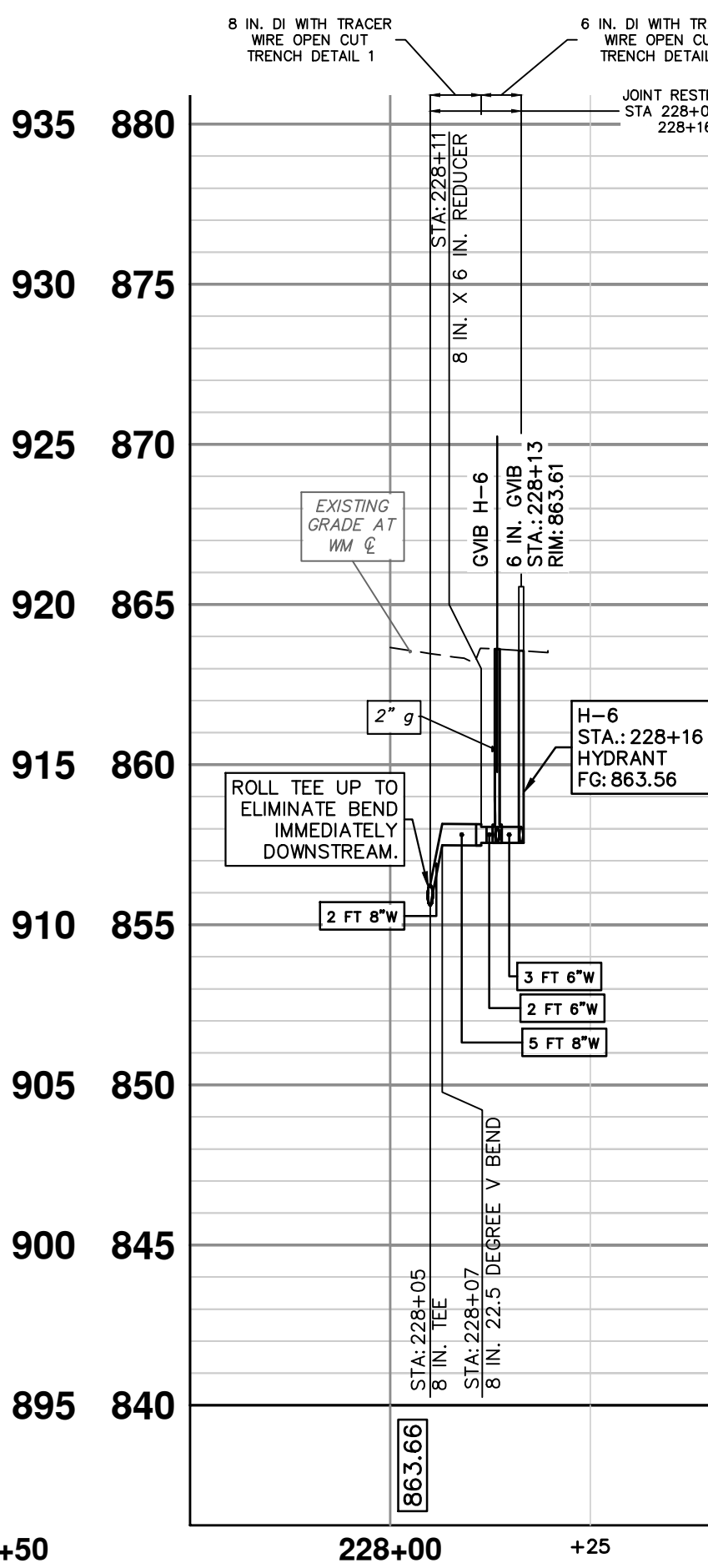
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DRAWING No.  
2023-009-41

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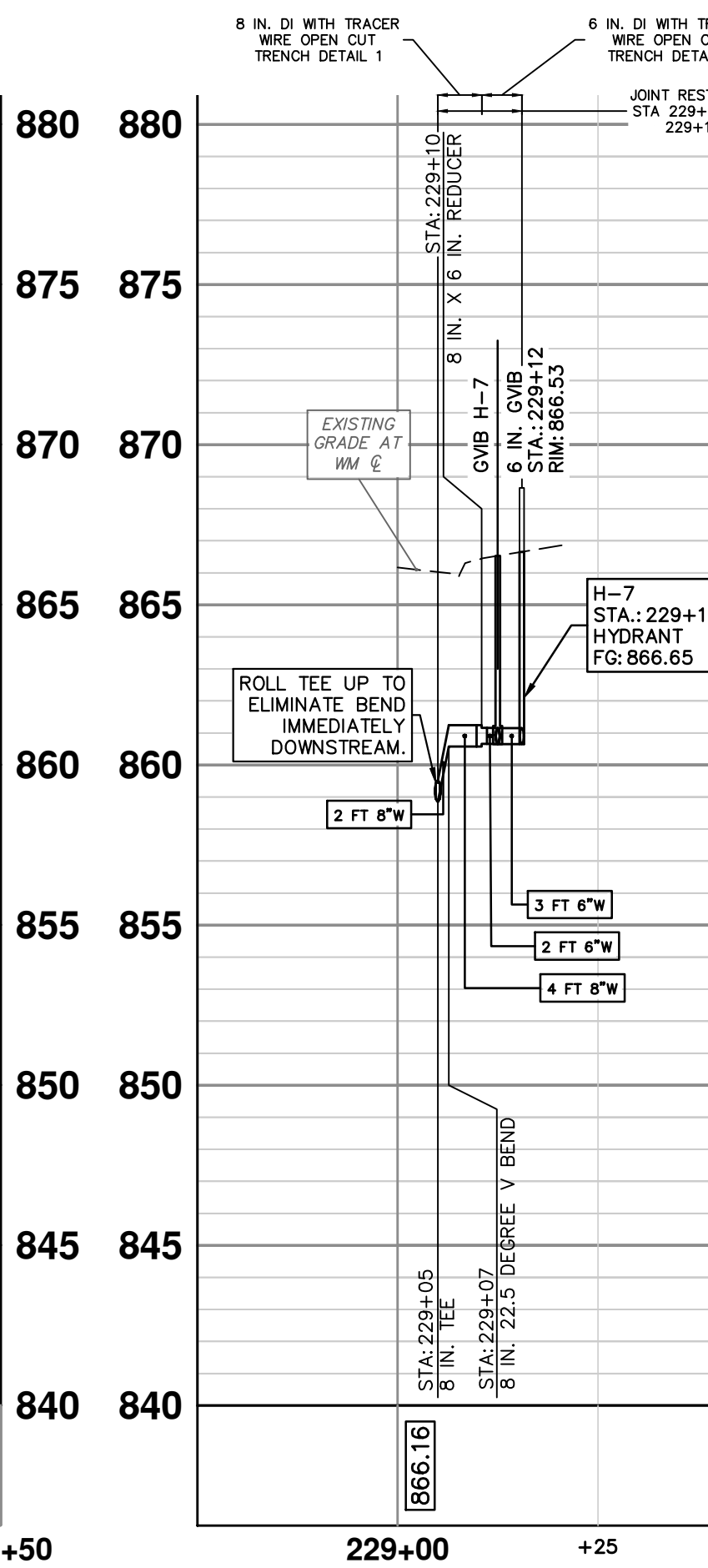
HYDRANT 5 - ORKNEY DR  
SEE SHEET 33 FOR PLAN VIEW



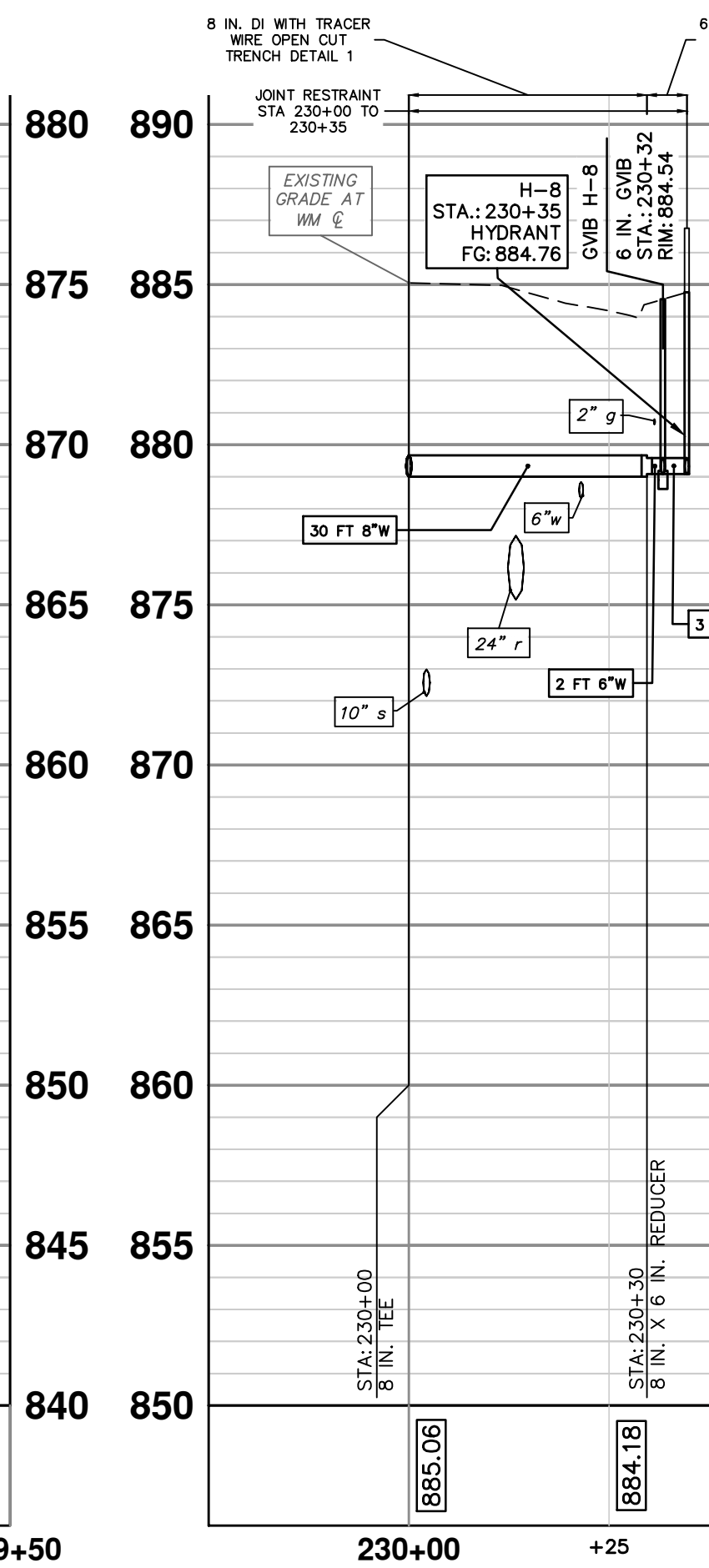
HYDRANT 6 - ORKNEY DR  
SEE SHEET 35 FOR PLAN VIEW



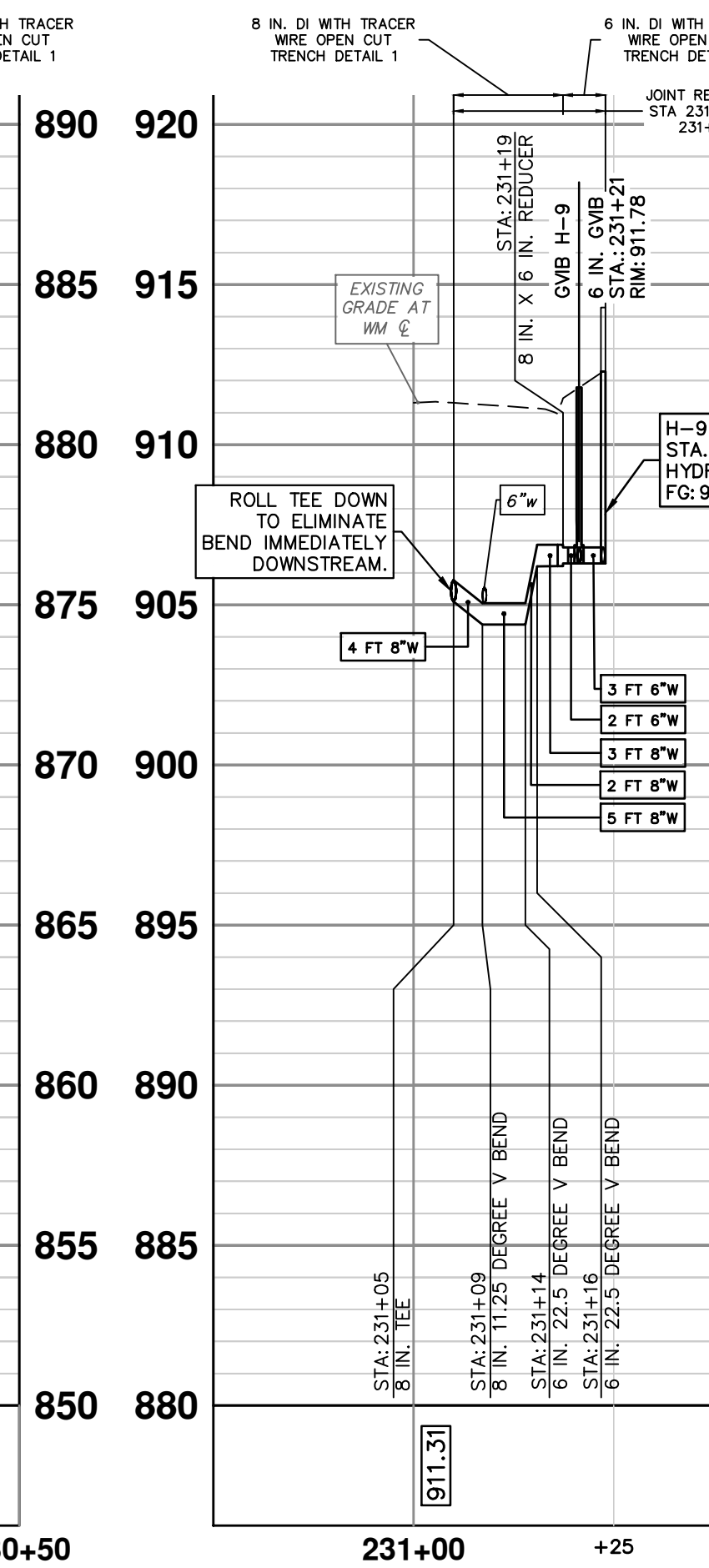
HYDRANT 7 - CULVER RD  
SEE SHEET 36 FOR PLAN VIEW



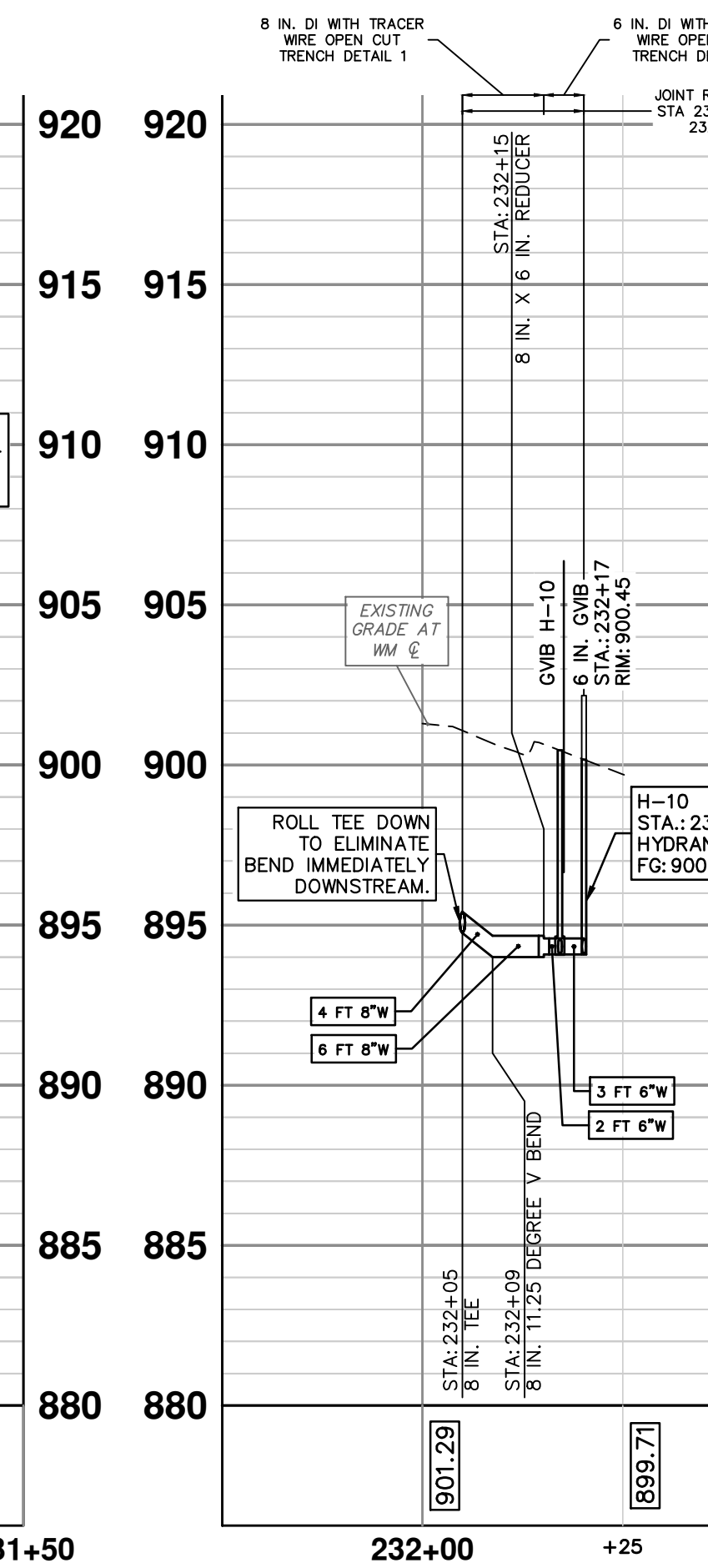
HYDRANT 8 - CULVER RD  
SEE SHEET 37 FOR PLAN VIEW



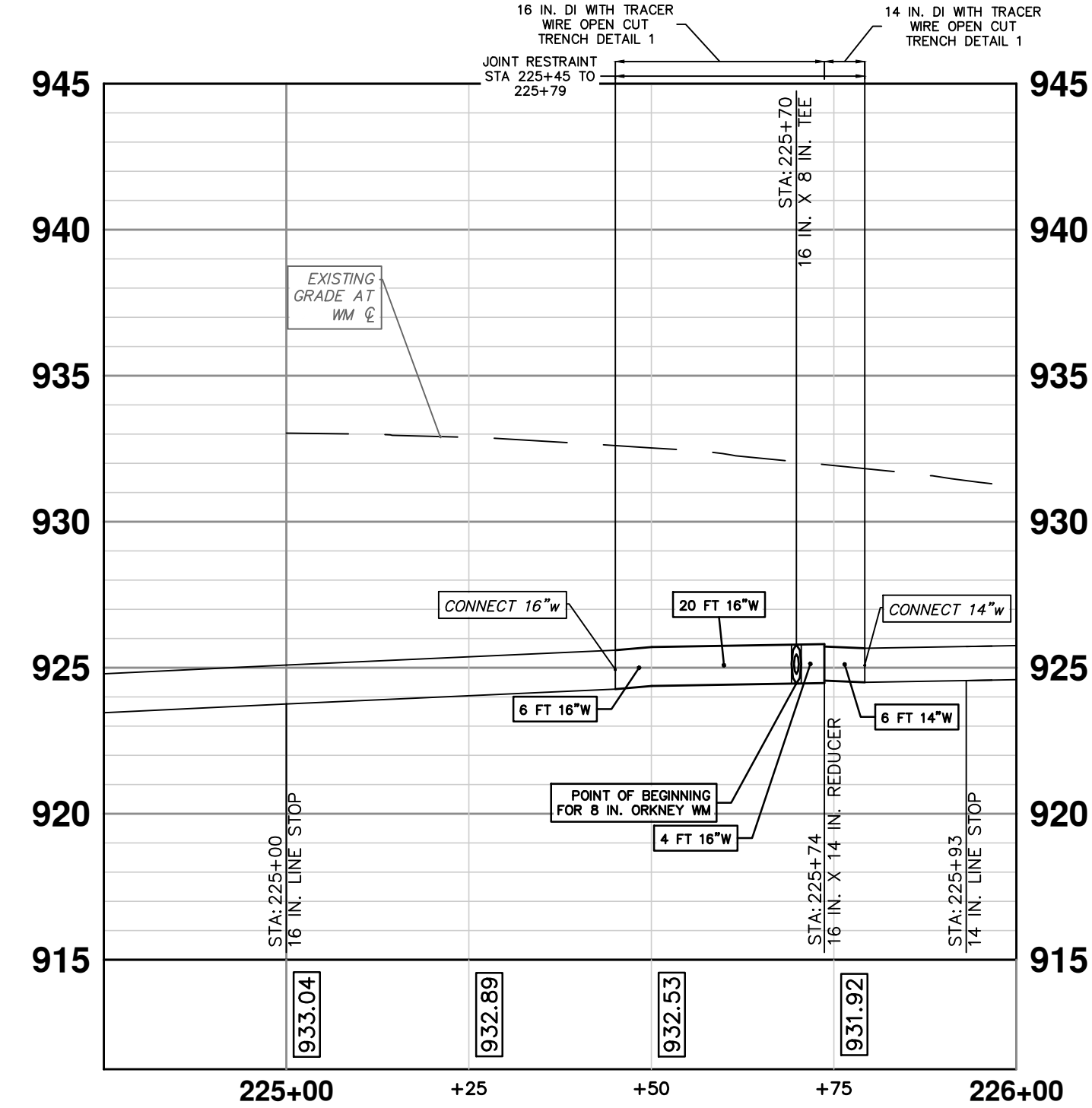
HYDRANT 9 - CULVER RD  
SEE SHEET 38 FOR PLAN VIEW



HYDRANT 10 - CULVER RD  
SEE SHEET 38 FOR PLAN VIEW



SUNSET ROAD EXISTING WATER MAIN CONNECTION  
SEE SHEET 33 FOR PLAN VIEW



- NOTES:
- WHERE EXISTING WATER MAIN IS EXPOSED FOR A CONNECTION OR APPURTENANCE INSTALLATION, THE CONTRACTOR SHALL INSTALL ONE SACRIFICIAL ANODE ON THE EXISTING PIPE. IF THE NEW FITTING IS INSTALLED IN-LINE WITH THE EXISTING MAIN, SUCH AS AT A CUT-IN TEE OR VALVE INSERTION, ONE ANODE SHALL BE INSTALLED ON THE EXISTING PIPE TO EACH SIDE OF THE NEW FITTING. EACH ANODE INSTALLED ON EXISTING WATER MAIN WILL BE PAID FOR AS "SACRIFICIAL ANODE, LB".
  - THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.
  - A DETECTABLE TRACER WIRE SHALL BE INSTALLED THE ENTIRE LENGTH OF WATER MAINS, SHALL EXTEND TO ALL HYDRANTS, BLOWOFFS, DEAD ENDS, AND POST INDICATOR VALVES, AND SHALL TERMINATE IN THE GATE/BUTTERFLY VALVES LOCATED AT EACH END OF THE WATER MAIN CONSTRUCTION, OR AS DIRECTED BY THE CITY ENGINEER.
  - FURNISHING AND INSTALLING LONG PATTERN SOLID SLEEVES FOR CONNECTIONS (NEW WM TO EX WM, AND NEW WM TO NEW WM) IS INCIDENTAL TO "IN. PC 250/350 DIP W/POLYWRAP, SD-TD-1 - FT" AND WILL NOT BE PAID FOR SEPARATELY.

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

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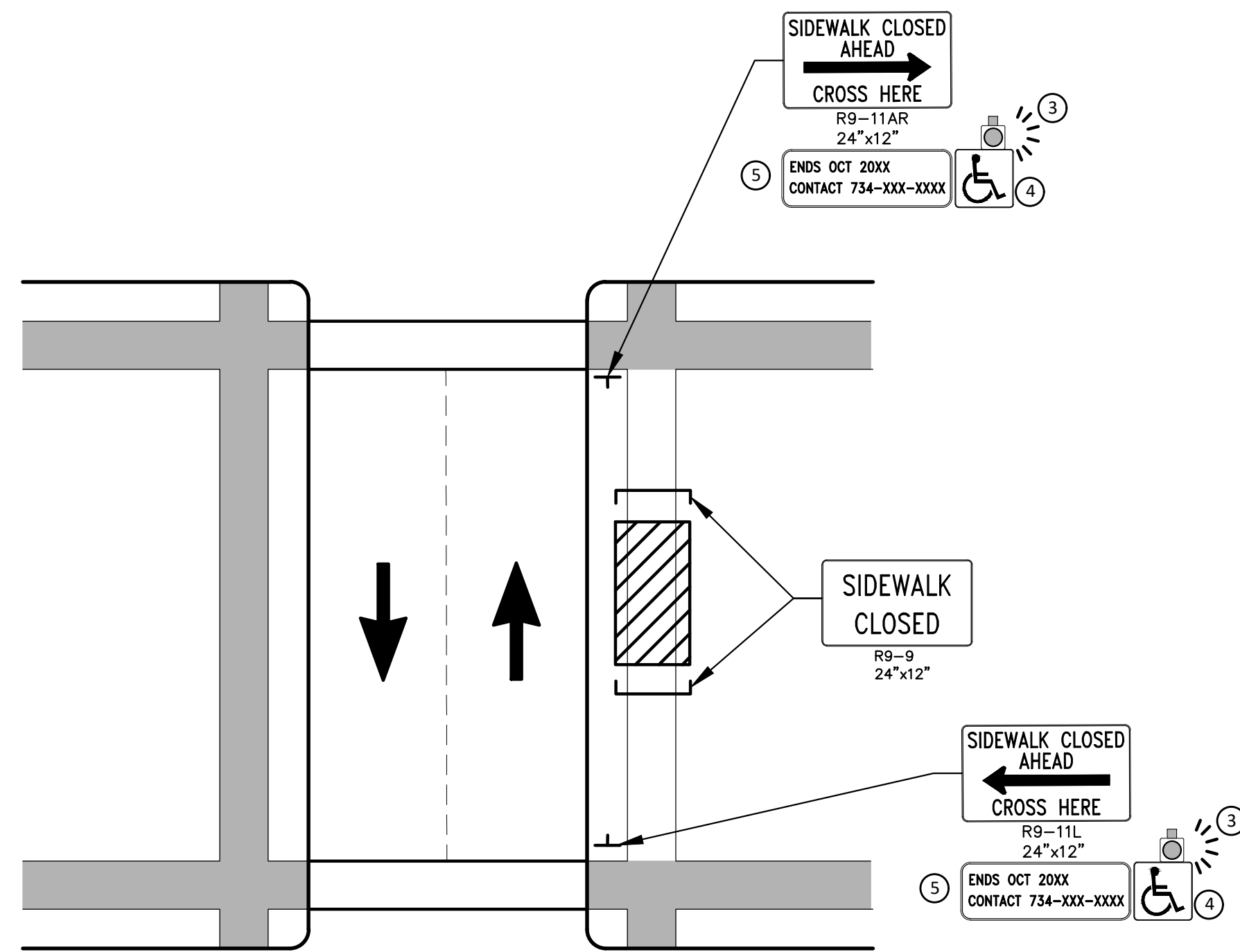
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2024 MISCELLANEOUS UTILITIES PROJECTS**  
ORKNEY, CULVER, FOUNTAIN PROPOSED WM  
ADDITIONAL DETAILS

CITY OF ANN ARBOR  
SCALE: 1" = 20'  
PROFILE: 1" = 5'

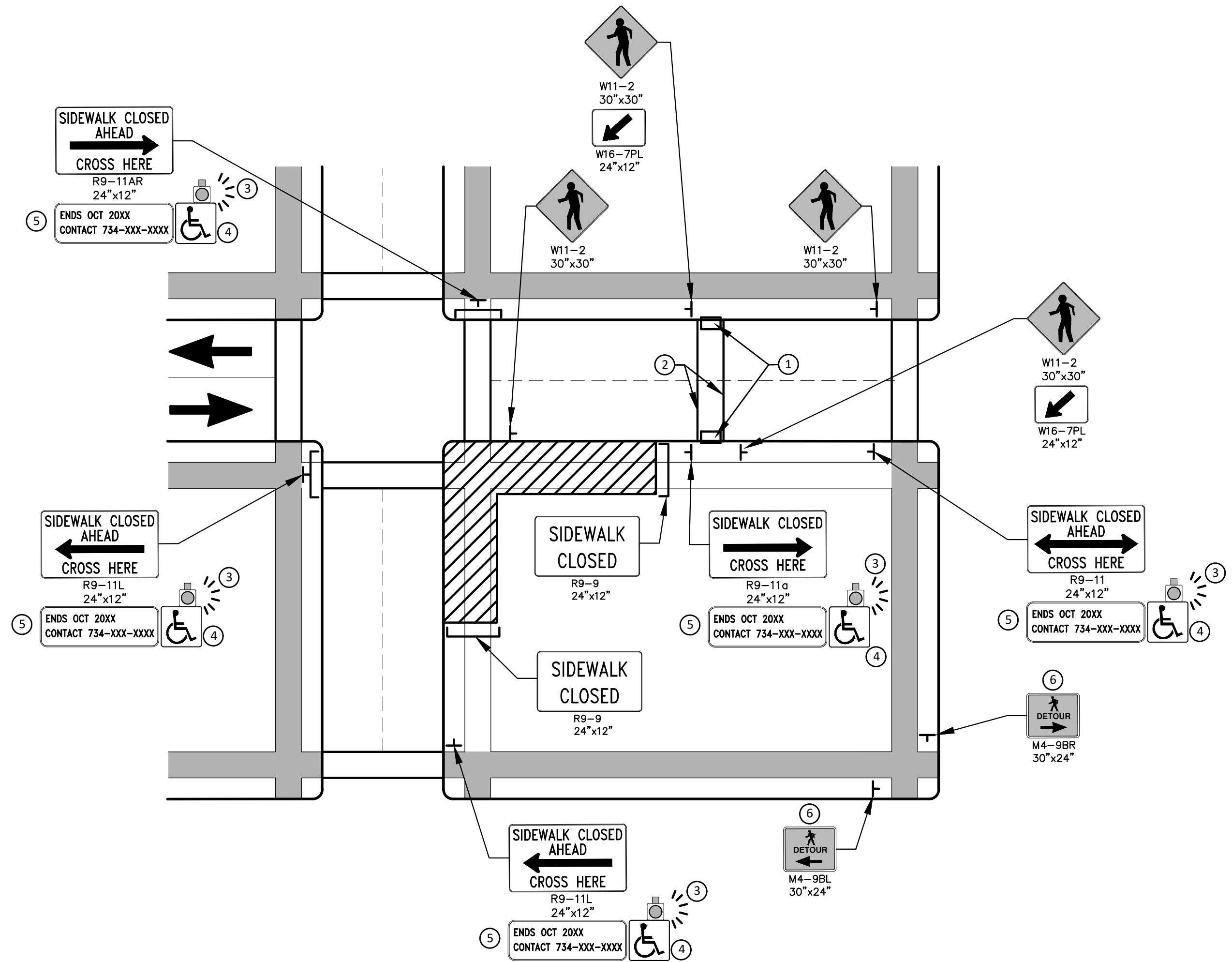
DRAWING No. 2023-008-42

SHEET No. 42 OF 46

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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



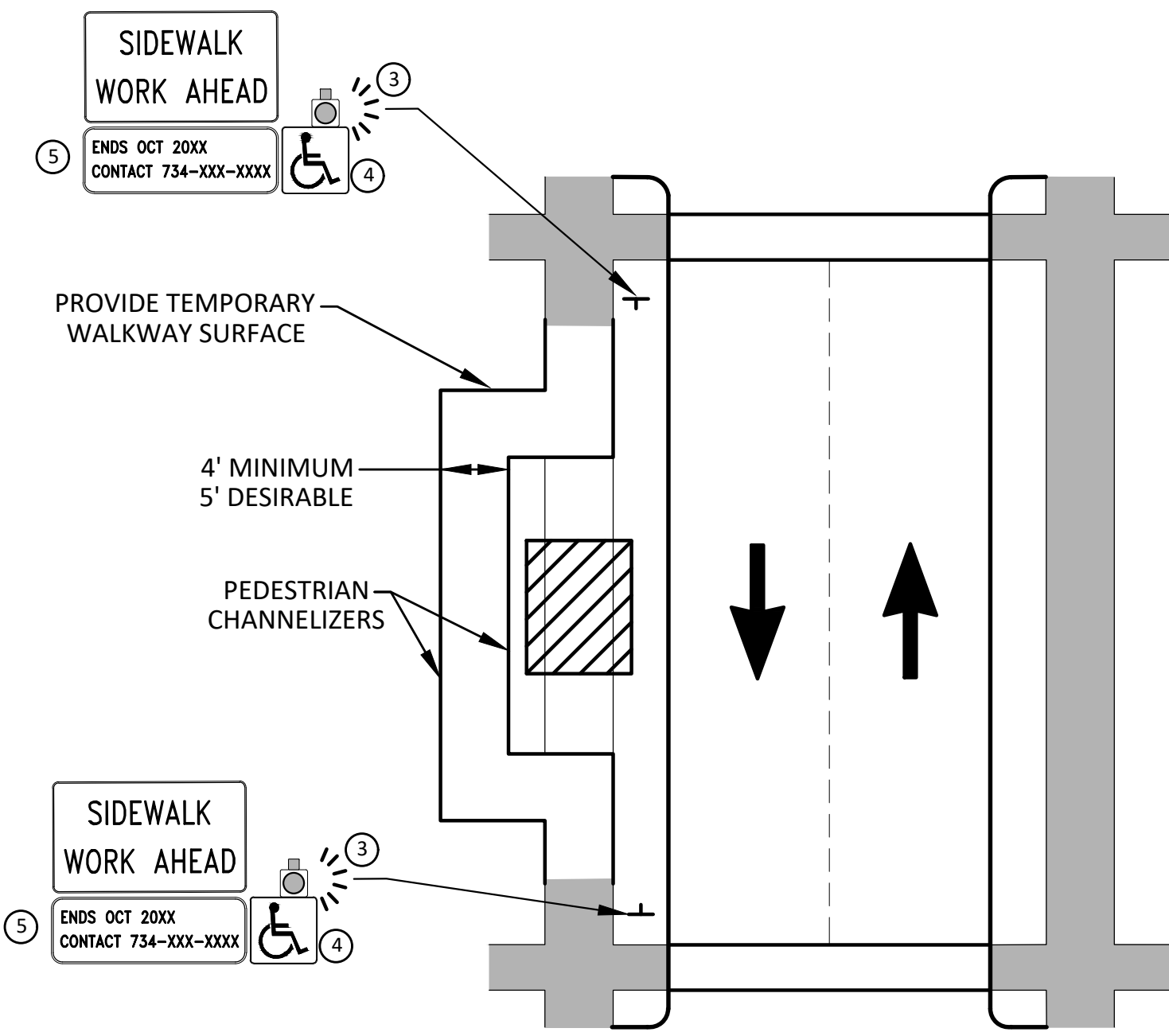
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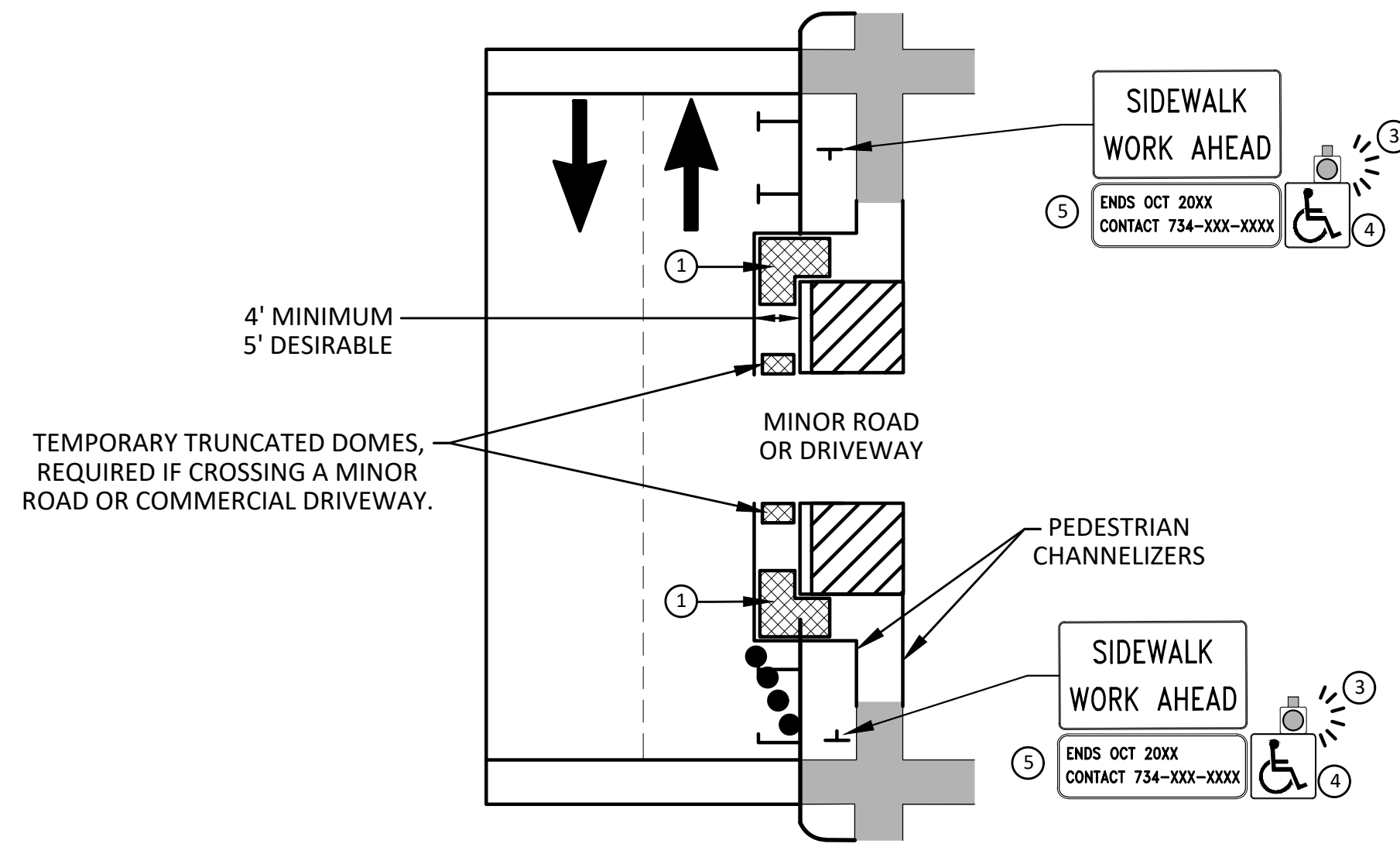
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
MAINTENANCE OF TRAFFIC ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR  
PROFILE:  
SCALE:  
DRAWING No. 2023-008-43

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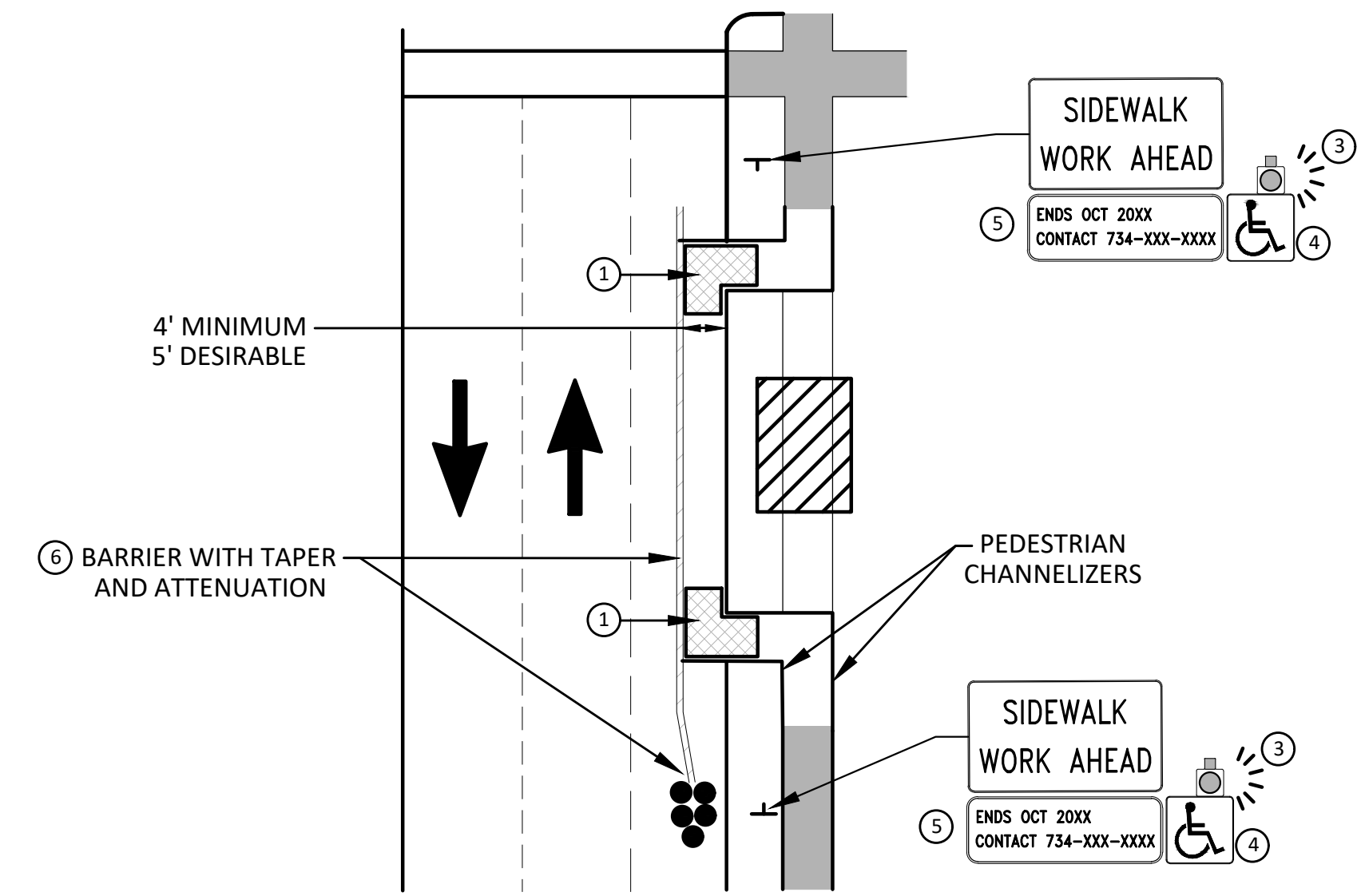


**BYPASS ON ADJACENT AVAILABLE RIGHT OF WAY**  
**BYPASS TYPE A**

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**

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

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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 A TRAFFIC CONTROL DEVICE 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. 5 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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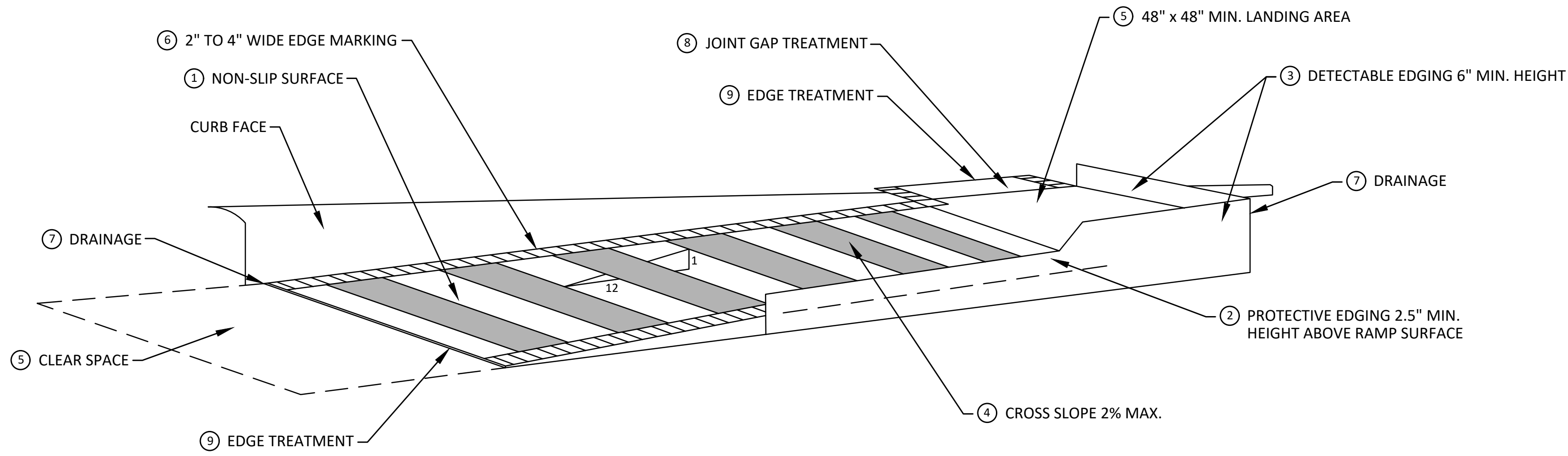
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2024 MISCELLANEOUS UTILITIES PROJECTS**  
MAINTENANCE OF TRAFFIC ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS

PROFILE:

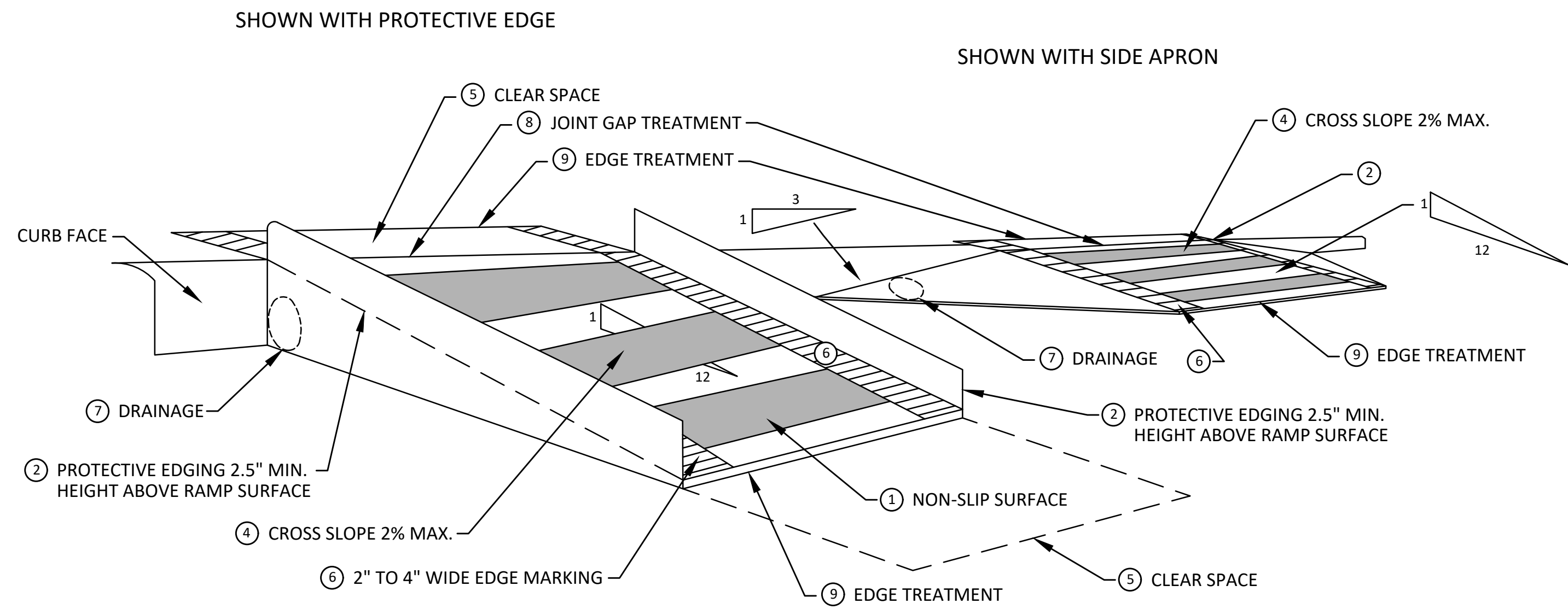
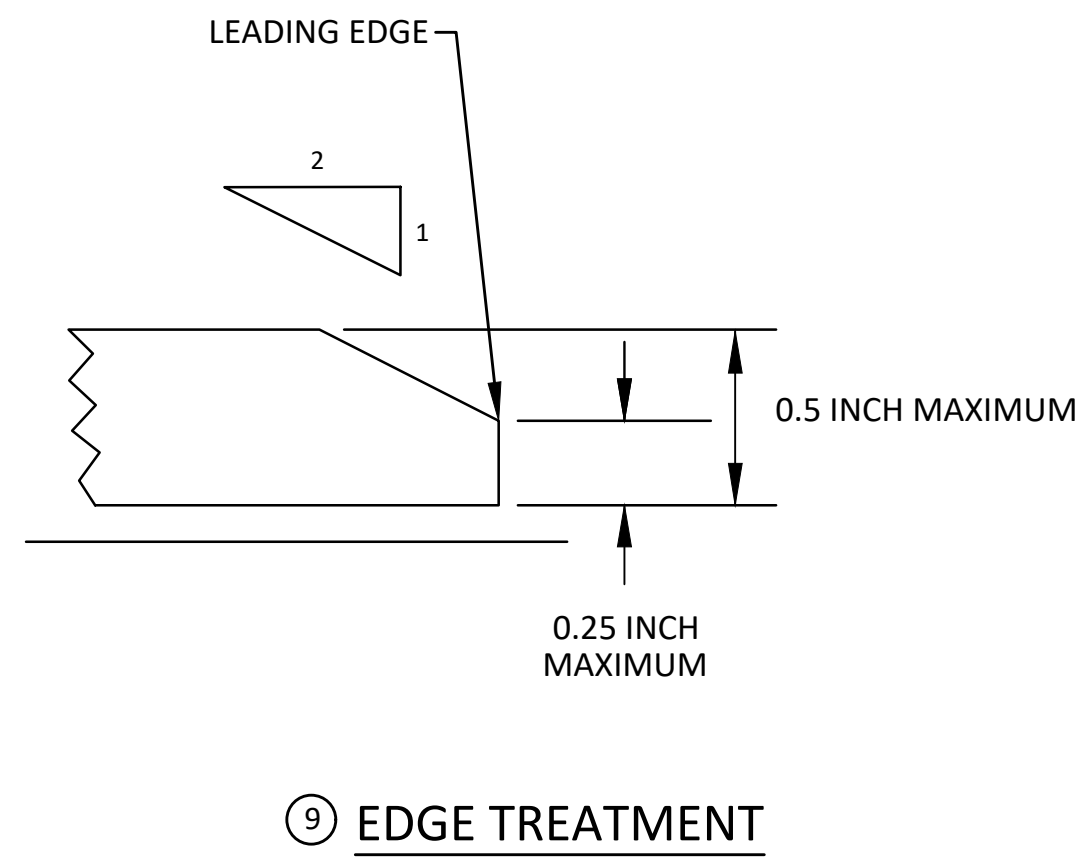
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**TEMPORARY CURB RAMP  
PARALLEL TO CURB**



**TEMPORARY CURB RAMP  
PERPENDICULAR TO CURB**

**SPECIFIC NOTES**

- 1 CURB RAMP 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 RAMP 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 RAMP 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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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2024 MISCELLANEOUS UTILITIES PROJECTS**  
MAINTENANCE OF TRAFFIC TPAR RAMPS

SCALE:   
PROFILE:   
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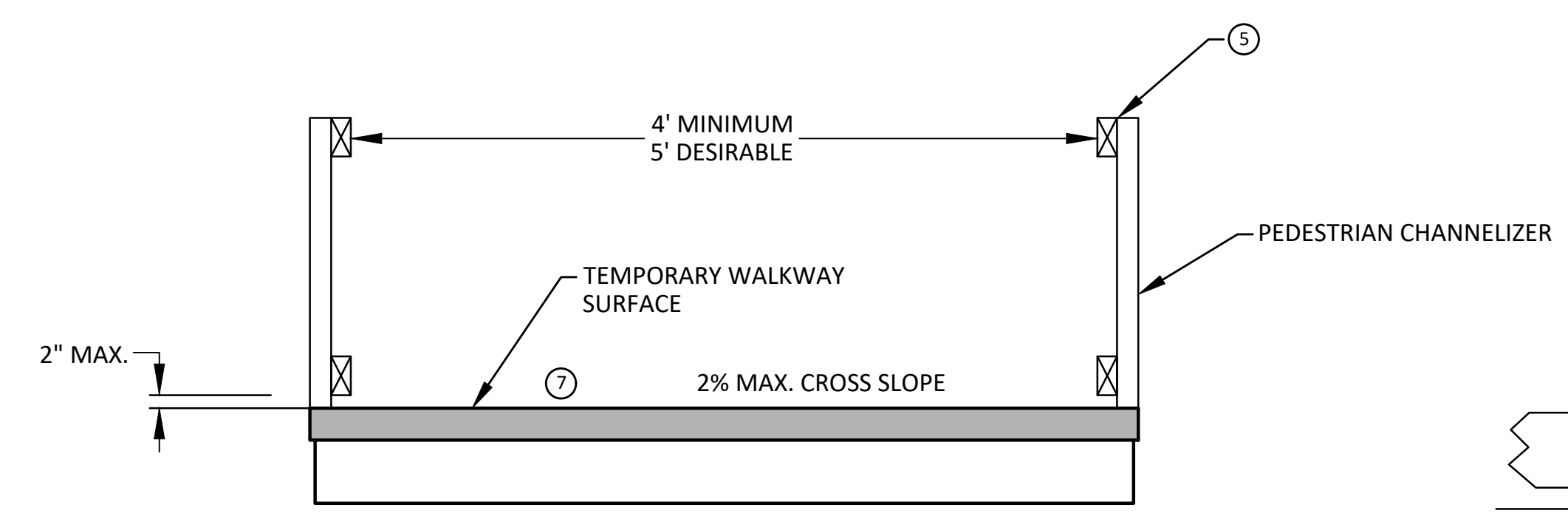
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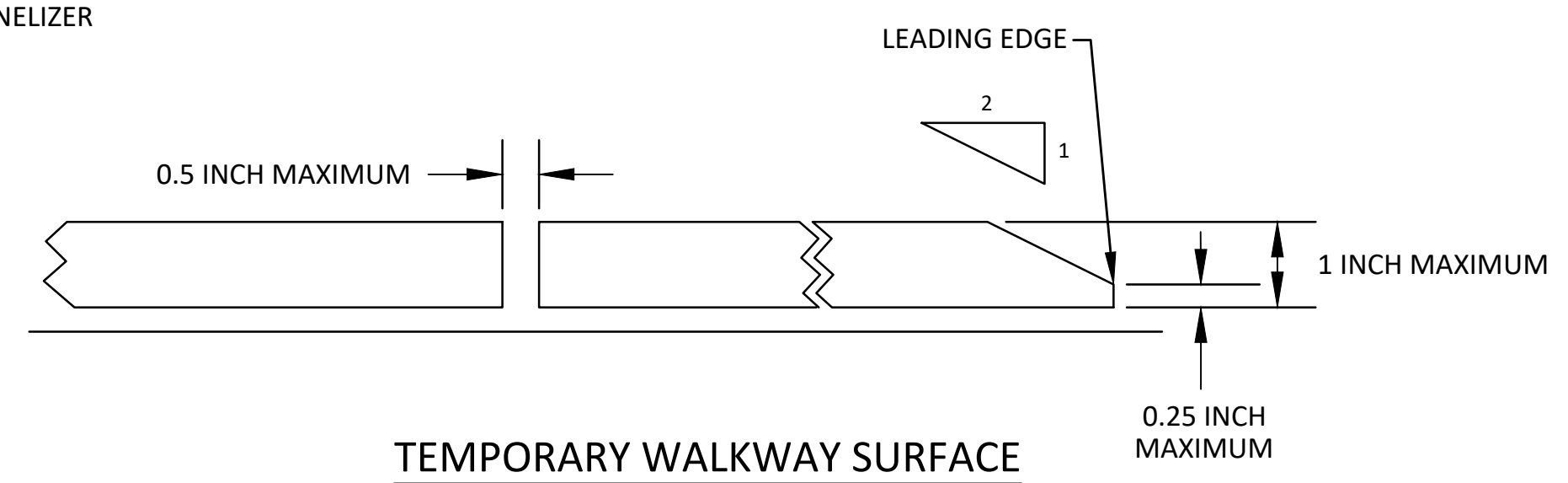


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2024 MISCELLANEOUS UTILITIES PROJECTS  
MAINTENANCE OF TRAFFIC TPAR WALKWAY DEVICES

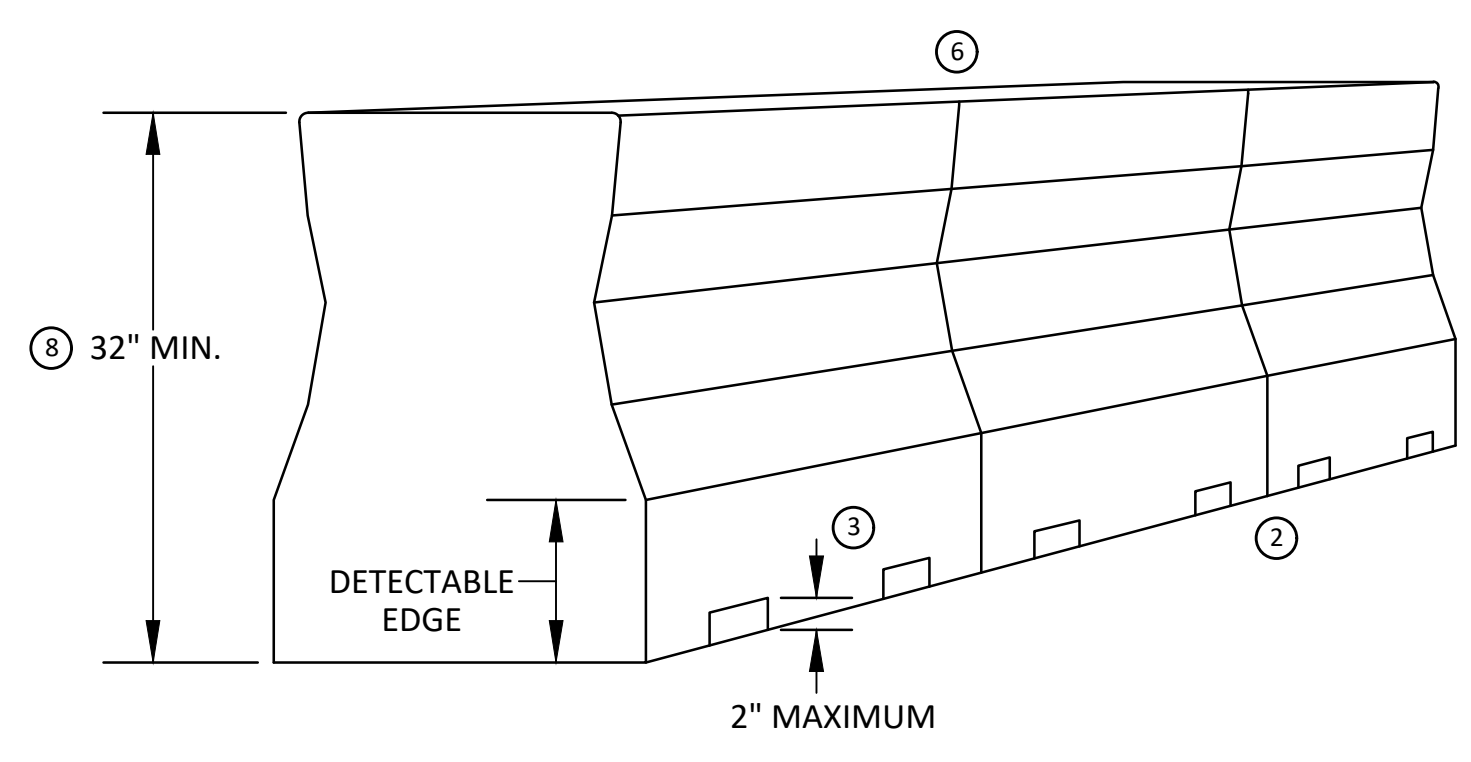
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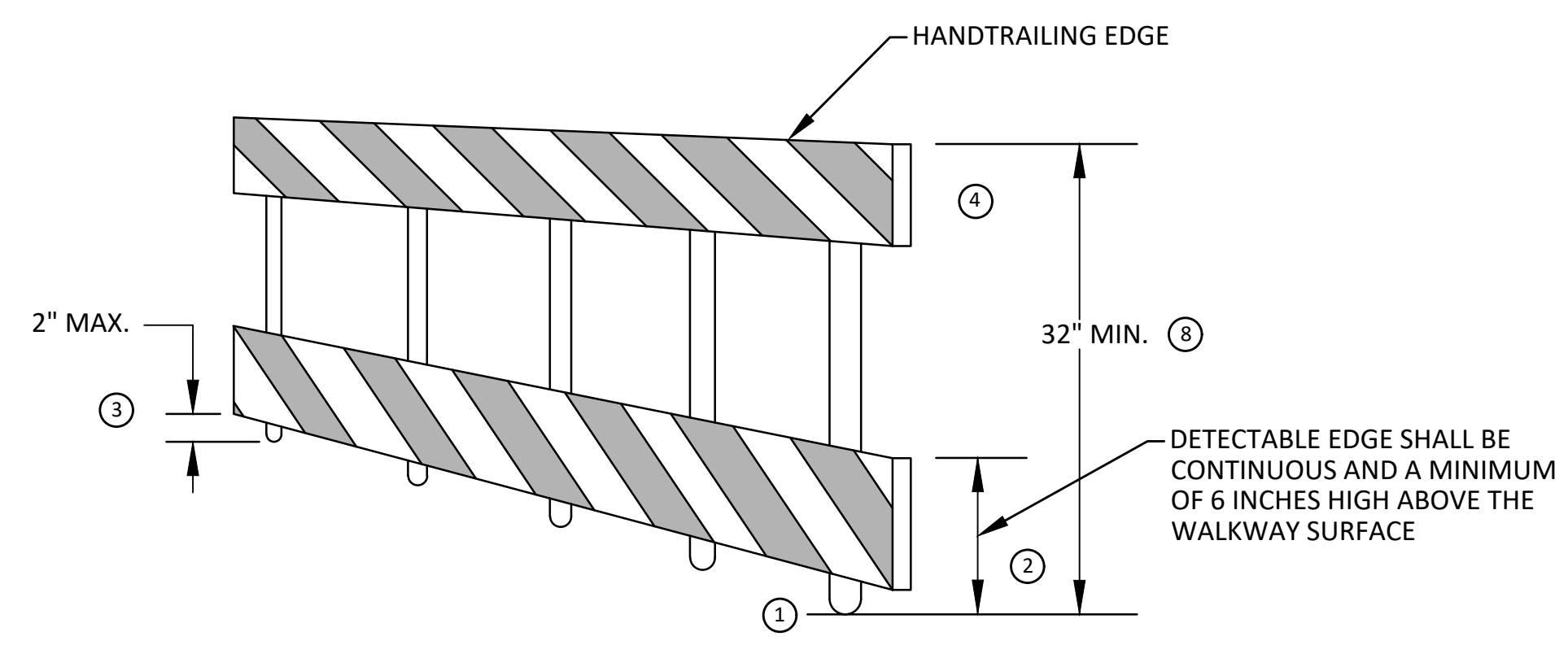
TEMPORARY PEDESTRIAN ACCESS



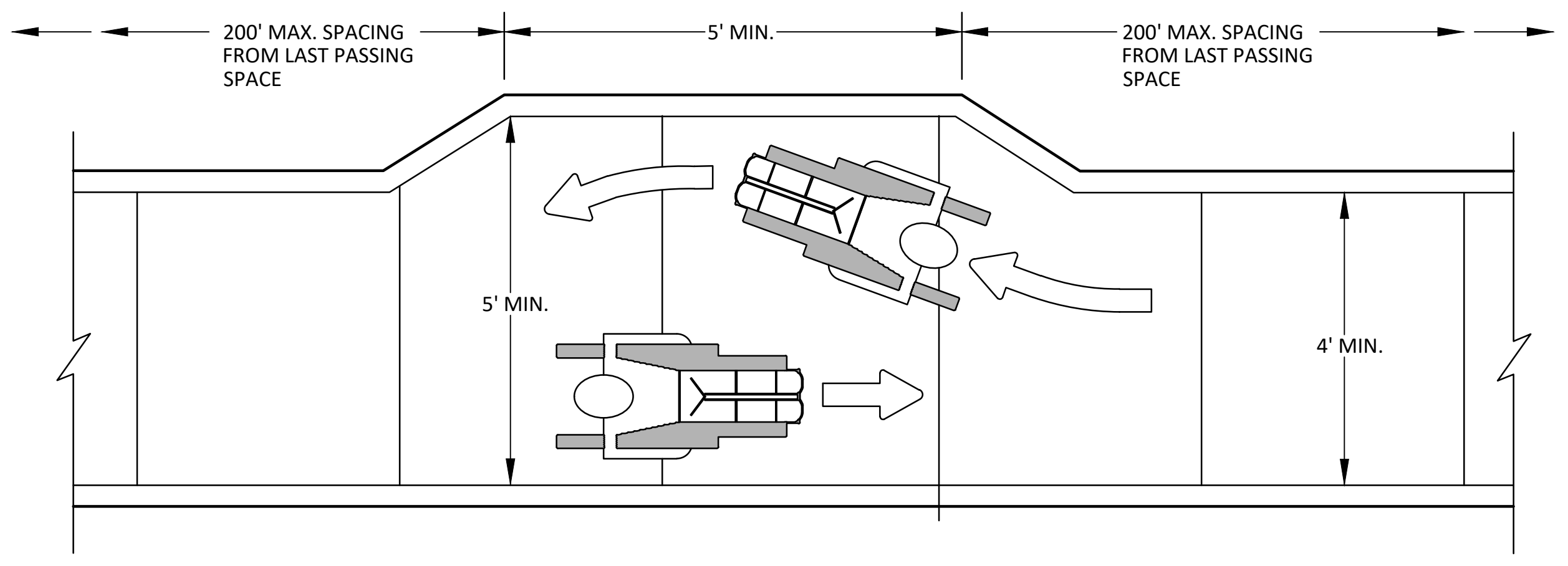
TEMPORARY WALKWAY SURFACE



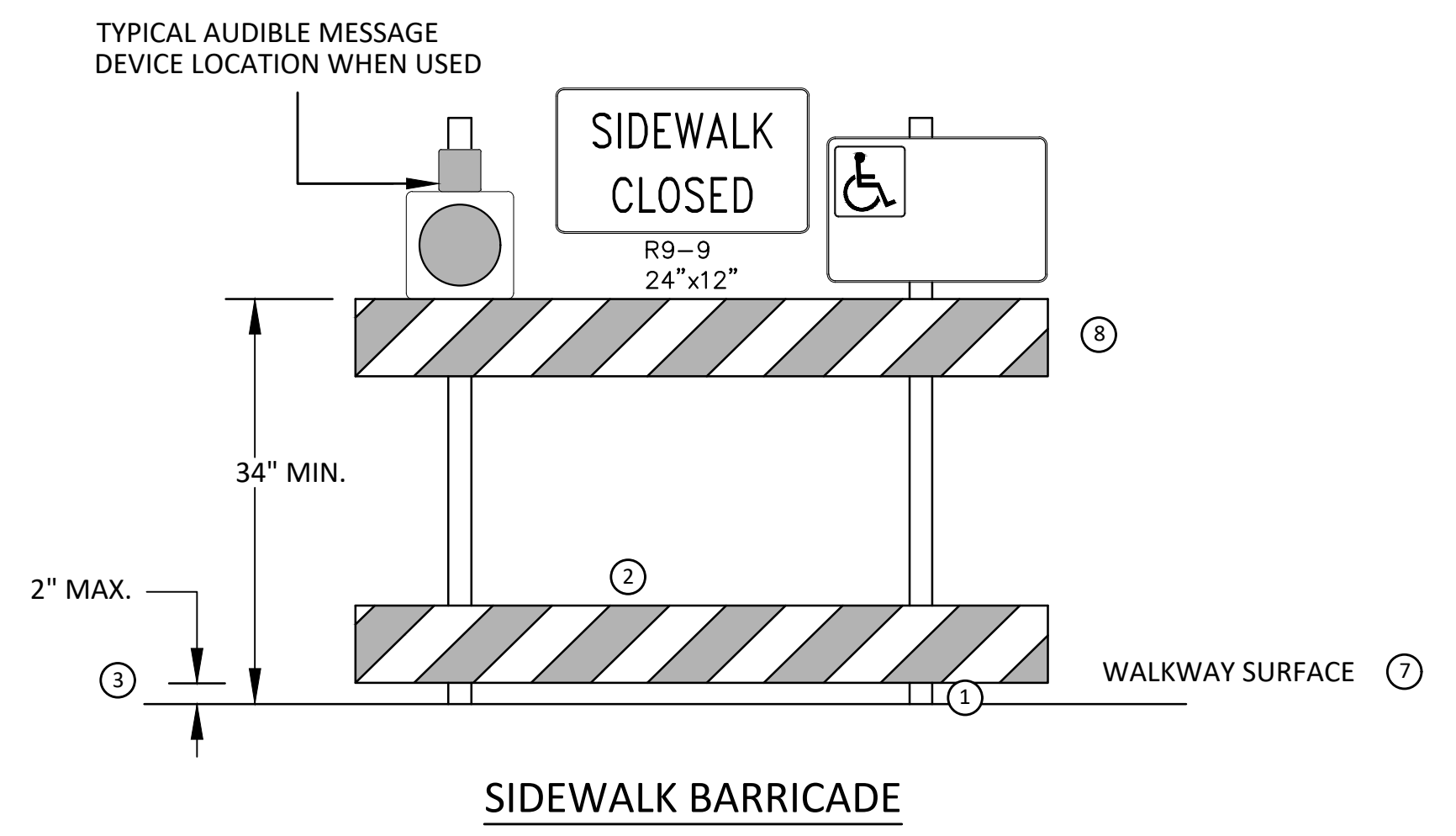
PEDESTRIAN CHANNELIZER USING A BARRIER (MINIMUM REQUIREMENTS)



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.



# CITY OF ANN ARBOR ENGINEERING

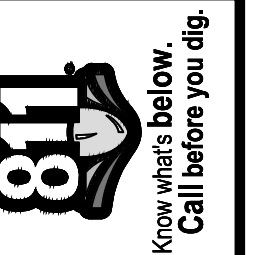
## ANN ARBOR RAILROAD / BOARDWALK CULVERT

**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 2024 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.	DESCRIPTION	DATE	DRAWN	CHECKED
2	BID SET	02/09/2024	RD	JS
1	60% PLAN REVIEW	09/13/2023	AJC	JS

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
MAINTENANCE TO THE EXISTING 90-INCH CULVERT AND ADJACENT CHANNELS UNDER THE RAILROAD

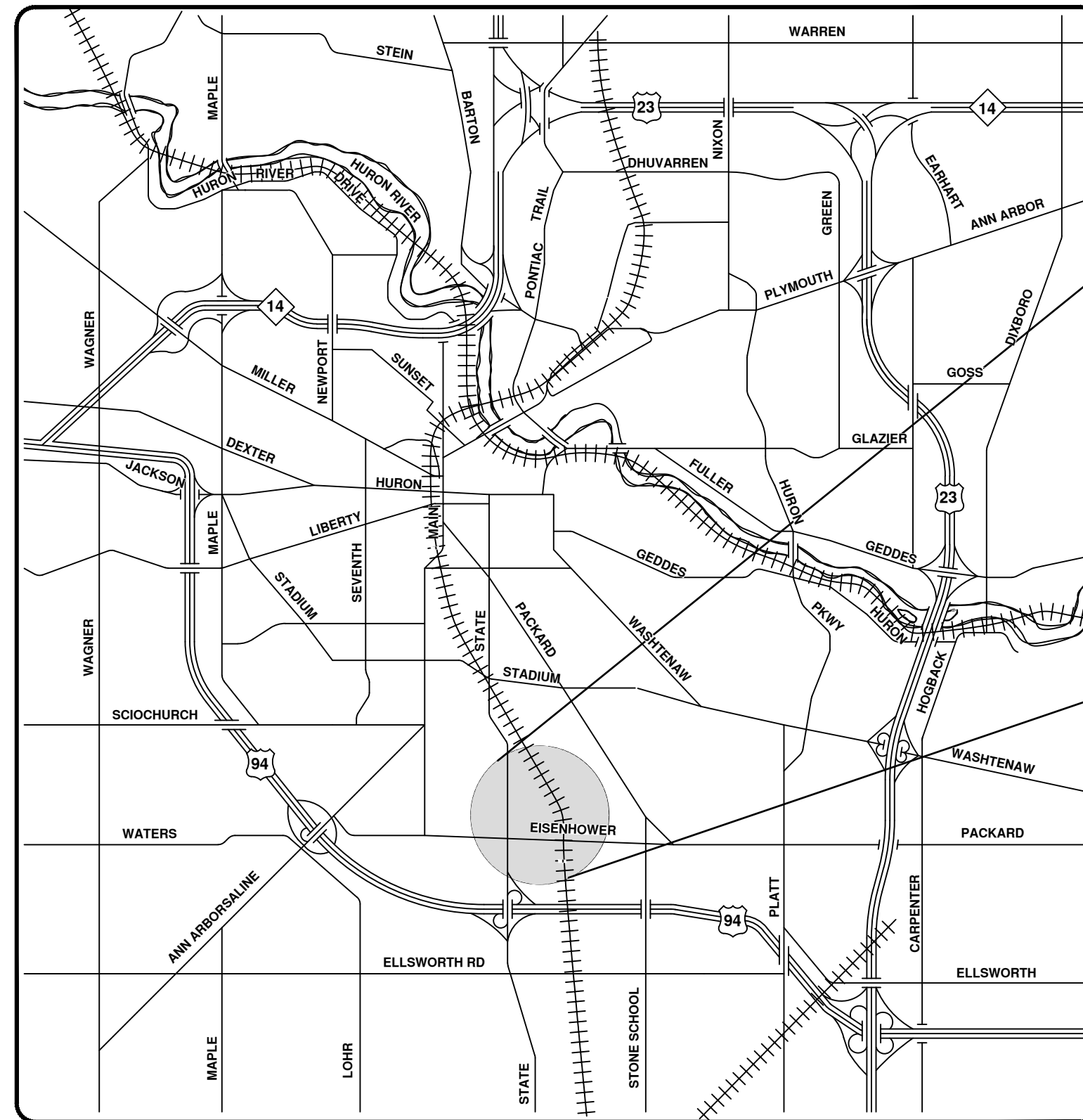
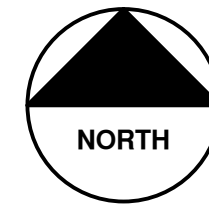
SCALE  
DRAWING No.  
2022037  
SHEET No.  
1 OF 9

© ANN ARBOR RAILROAD / BOARDWALK CULVERT; RFP No. 24-10

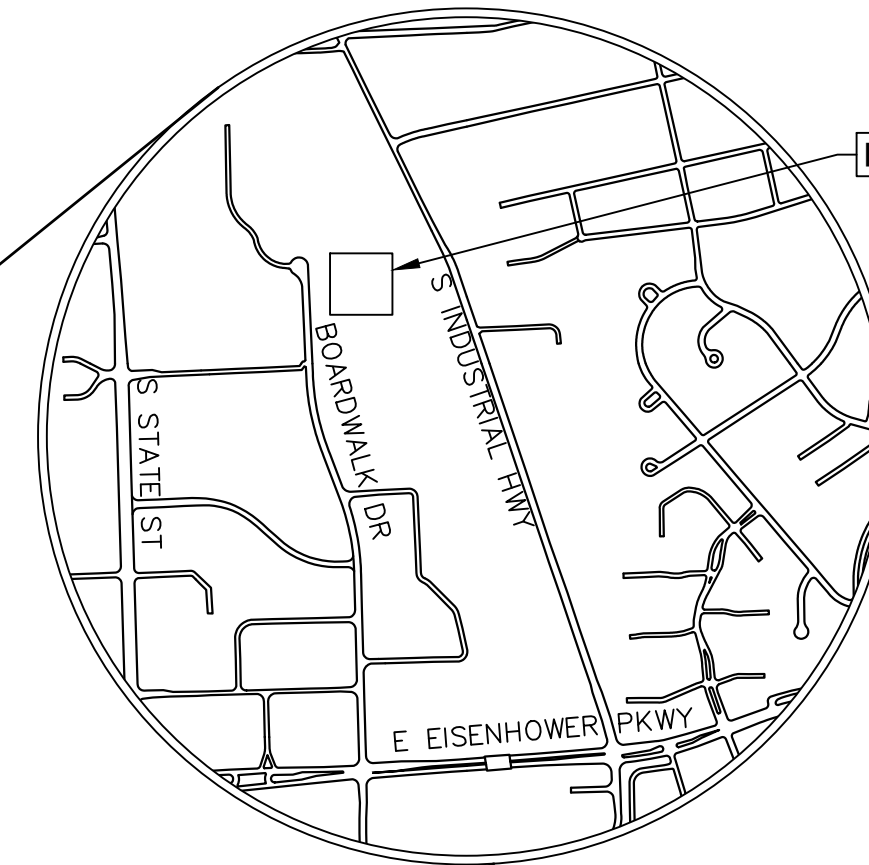
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SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	LEGEND
3	NOTES
4	TYPICAL SECTIONS
5	REMOVALS
6	SOIL EROSION & SEDIMENTATION CONTROL
7	STORM SEWER PLAN
8	CHANNEL PROFILES
9	STORM SEWER DETAILS

RFP NO. 24-10, FILE No. 2022037



VICINITY MAP



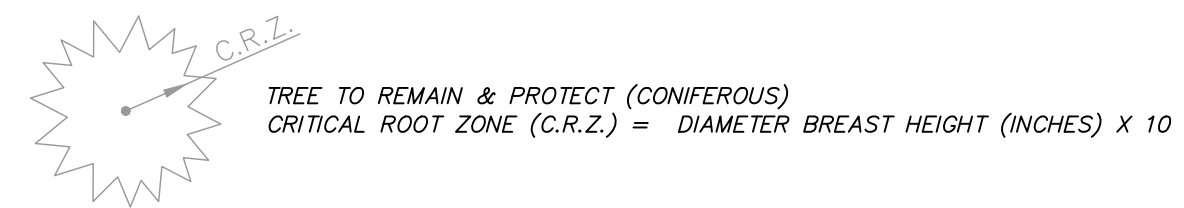
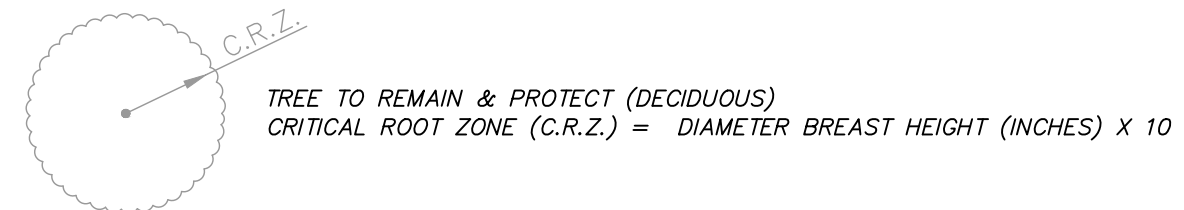
PROJECT LOCATION

PREPARED UNDER THE SUPERVISION OF		CITY APPROVAL	
 JEREMY SCHROT, P.E. PROJECT MANAGER	2 / 8 / 2024 DATE	 TRACY ANDERSON, P.E. PROJECT MANAGER	2 / 8 / 2024 DATE



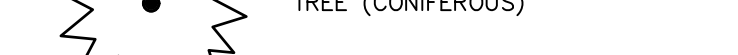
**EXISTING LEGEND**

EX = EXISTING	
FIRE HYDRANT	WATER MAIN
GATE VALVE IN BOX	WATER MAIN ABANDONED
GATE VALVE IN WELL	STORM SEWER
STOP BOX	STORM SEWER ABANDONED
WATER VAULT	SANITARY SEWER
WELL	SANITARY SEWER ABANDONED
CATCH BASIN (SQ)	GAS MAIN
CATCH BASIN (RD)	GAS MAIN (DEAD)
STORM MANHOLE	ELECTRICAL OVER HEAD
NON-CURB CATCH BASIN (SQ)	ELECTRICAL UNDER GROUND
END SECTION	ELECTRICAL DUCT BANK
SANITARY MANHOLE	TELEPHONE OVER HEAD
CLEAN-OUT	TELEPHONE UNDER GROUND
POST	TELEPHONE DUCT BANK
PEDESTRIAN SIGNAL	CABLE TV OVER HEAD
SIGN	CABLE TV UNDER GROUND
HAND HOLE	FIBER OPTIC
ORNAMENTAL LIGHT	FIBER OPTIC DUCT BANK
FLOOD LIGHT	BOUNDARY
UNKNOWN MANHOLE	BUILDING
TELEPHONE MANHOLE	CENTERLINE OF DITCH
TELEPHONE RISER	CENTERLINE/CROWN OF ROAD
GAS VALVE	CONTOUR MAJOR
GAS VENT	CONTOUR MINOR
GAS BOX	EDGE OF WATER
ELECTRICAL RISER	FLOODPLAIN
TRANSFORMER	FENCE
UTILITY POLE	GRAVEL
LAMP POLE	GUARDRAIL
GUY ANCHOR	STONE WALL
GUY POLE	R.O.W.
MONITORING WELL	TREELINE
MAILBOX	WETLAND
SOIL BORING	EDGE OF BRUSH
TRAVERSE POINT	HEDGE
BENCH MARK	
IRON PIPE	
MON BOX	



**PROPOSED LEGEND**

PROP = PROPOSED	
HYDRANT (PLAN)	WATER MAIN
WATER GATE WELL	STORM SEWER
REDUCER	SANITARY SEWER
WATER GATE VALVE	FIBER OPTIC
WATER STOP BOX	ELECTRICAL
WATER VAULT	CENTERLINE OF DITCH
INLET	CENTERLINE OF ROAD
DOUBLE INLET	FENCE
INLET JUNCTION CHAMBER	GRAVEL
ROUND CATCH BASIN	SILT FENCE
STORM MANHOLE	PROTECTIVE FENCE
DRAIN ARROW	GUARDRAIL
FLARED END SECTION	LOT/JUNIT
SANITARY MANHOLE	CURB
CLEAN-OUT	TEMPORARY GRADING PERMIT
BARREL	CONTOUR MAJOR
SIGN	CONTOUR MINOR
PUSH BUTTON	WATER EASEMENT
HAND HOLE	STORM EASEMENT
	SANITARY EASEMENT
	R.O.W.
	LIMITS OF CONSTRUCTION
	LIMIT OF GRADING
	STONE WALL



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DATE	02/09/2024	RD	RD	JS	JS	CHECKED
DATE	09/13/2023	AJC	AJC	RD	RD	DRAWN
REV.	1	60% PLAN REVIEW	DESCRIPTION			
REV.	2	BID SET				

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**ANN ARBOR RAILROAD / BOARDWALK CULVERT**  
IMPROVEMENTS PROJECT

SCALE: NTS	
DRAWING No.	2022037

J:\AA\Design\AA22004 - Ann Arbor Boardwalk Culvert\AA22004\_Cov.dwg - \_a2\_standard bw.stb - Plot Date: 2/9/2024 5:21:43 PM

**CONSTRUCTION NOTES:**

1. 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.
2. The location and depth of all existing utilities and service leads are to be field verified by the Contractor prior to construction.
3. 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.
4. The Contractor is to take special care to protect the existing water main and be responsible for maintaining consistent water service.
5. 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".
6. Trenches for new water services shall be excavated to MIOSHA and City of Ann Arbor Public Works requirements.
7. 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.
8. 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.
9. 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 Top and Lead". All concrete removals and replacements required for this work will be paid for separately.
10. All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.
11. Cor-blu bolts to be used at all mechanical water main joints at hydrants and Megalug fittings.
12. 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.
13. 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.
14. "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.

15. Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.
16. All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. The Contractor within 48 hours shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
17. Where street curbs are undermined due to construction activities, they shall be removed and replaced as directed by the Engineer.
18. 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".
19. All curb, sidewalk, driveway approach removals shall be approved by Engineer before the work is done.
20. Sawn sewer pipe connections shall be coupled with a Fernco flexible coupling and a stainless steel shear ring.
21. The location of material stock piles and on-site staging areas to be approved by the Engineer.
22. 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.
23. All structures shall receive new castings as directed by the Engineer, as specified on the standard casting schedule. The existing castings are the property of the City of Ann Arbor. 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.
24. Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.
25. Where sewer pipes of different sizes or materials are joined, Fernco flexible couplings with stainless steel shear rings shall be used. The Contractor's purchase price for these devices, including shipping, shall be paid as an extra. Prior to payment for this item, the Contractor shall submit receipts for the Engineer's review and approval. All other costs associated with the installation of these devices shall be included in the payment for the sewer.
26. 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.
27. 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".
28. In areas where edge drain cannot be installed in accordance with City of Ann Arbor Detail SD-ID-11, the edge drain shall be installed at the depth as indicated on the plans, or as directed by Engineer. In no case shall the edge drain be installed at a grade less than 0.50% or at a depth of less than 2' below top of proposed pavement.

AREA OF PROPOSED DISTURBANCE = 0.25 ACRES

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

PERMIT	ISSUING AUTHORITY
GRADING/SOIL EROSION & SEDIMENTATION CONTROL PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
RIGHT-OF-WAY PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
RIGHT-OF-WAY PERMIT (RAILROAD)	WATCO (ANN ARBOR RAILROAD)
* NO COST TO CONTRACTOR	

**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		MARK MORENO
SIGNALS		(734) 794-6361
STREET LIGHTS		
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
ANN ARBOR RAILROAD	WATCO 315 W 3RD STREET PITTSBURG, KS 66762	BRAD WALKER (620) 231-2230

**PROJECT NAME BENCHMARKS**

BM #	ELEV	DESCRIPTION
1	829.350	SET CHISELED '+' ON THE NORTH RIM OF STORM MANHOLE LOCATED IN GRAVEL LOT ± 25 FEET NORTHWEST OF METAL UTILITY POLE
2	832.000	SET RAILROAD SPIKE IN SOUTHWEST SIDE OF UTILITY POLE LOCATED AT THE WEST END OF GRAVEL LOT

**811**  
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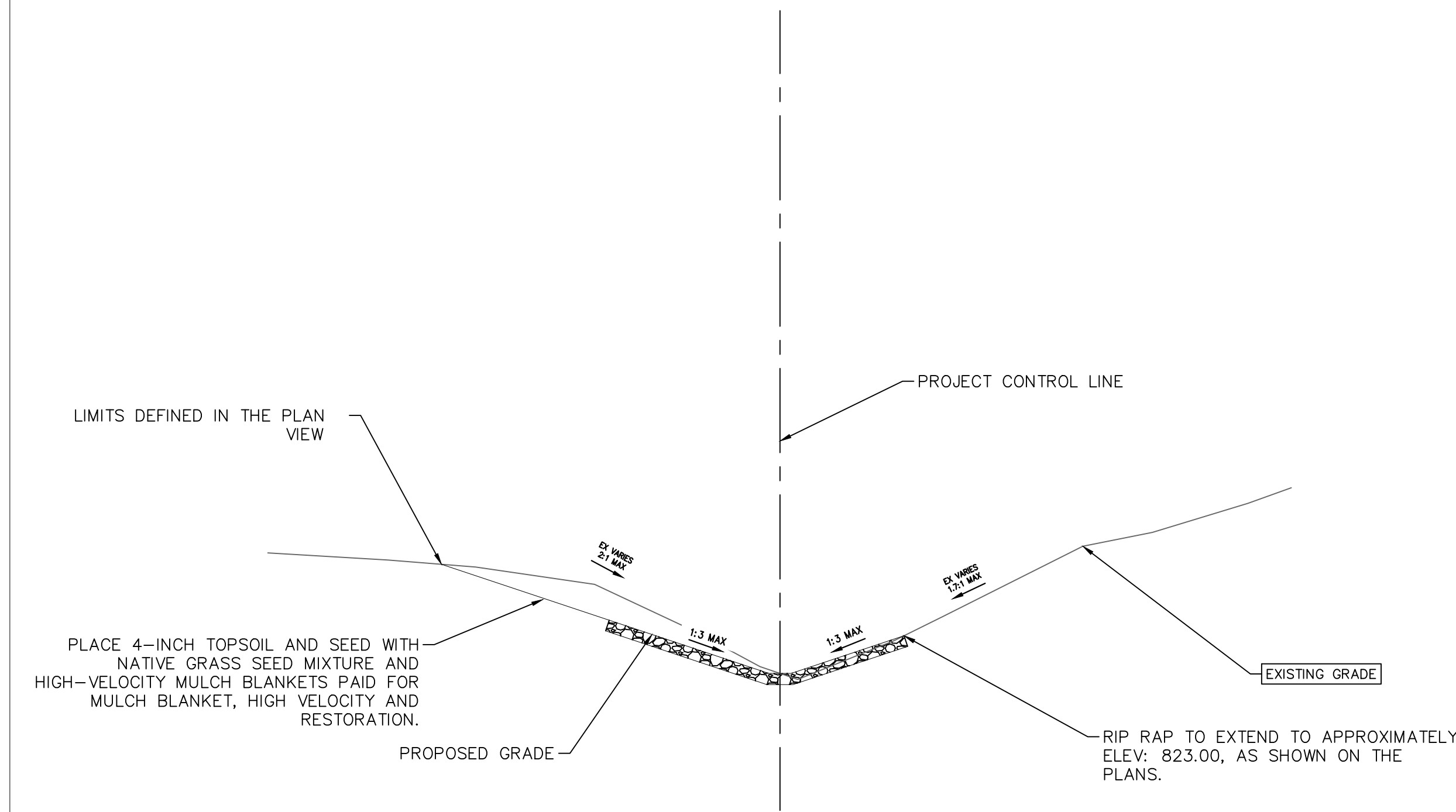
		JS	JS	CHECKED
		RD	AJC	DRAWN
	02/09/2024			DATE
	09/13/2023			DATE
	BID SET			DESCRIPTION
2	60% PLAN REVIEW			REV.
1				REV.

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**ANN ARBOR RAILROAD / BOARDWALK CULVERT**  
IMPROVEMENTS PROJECT  
STANDARD NOTES

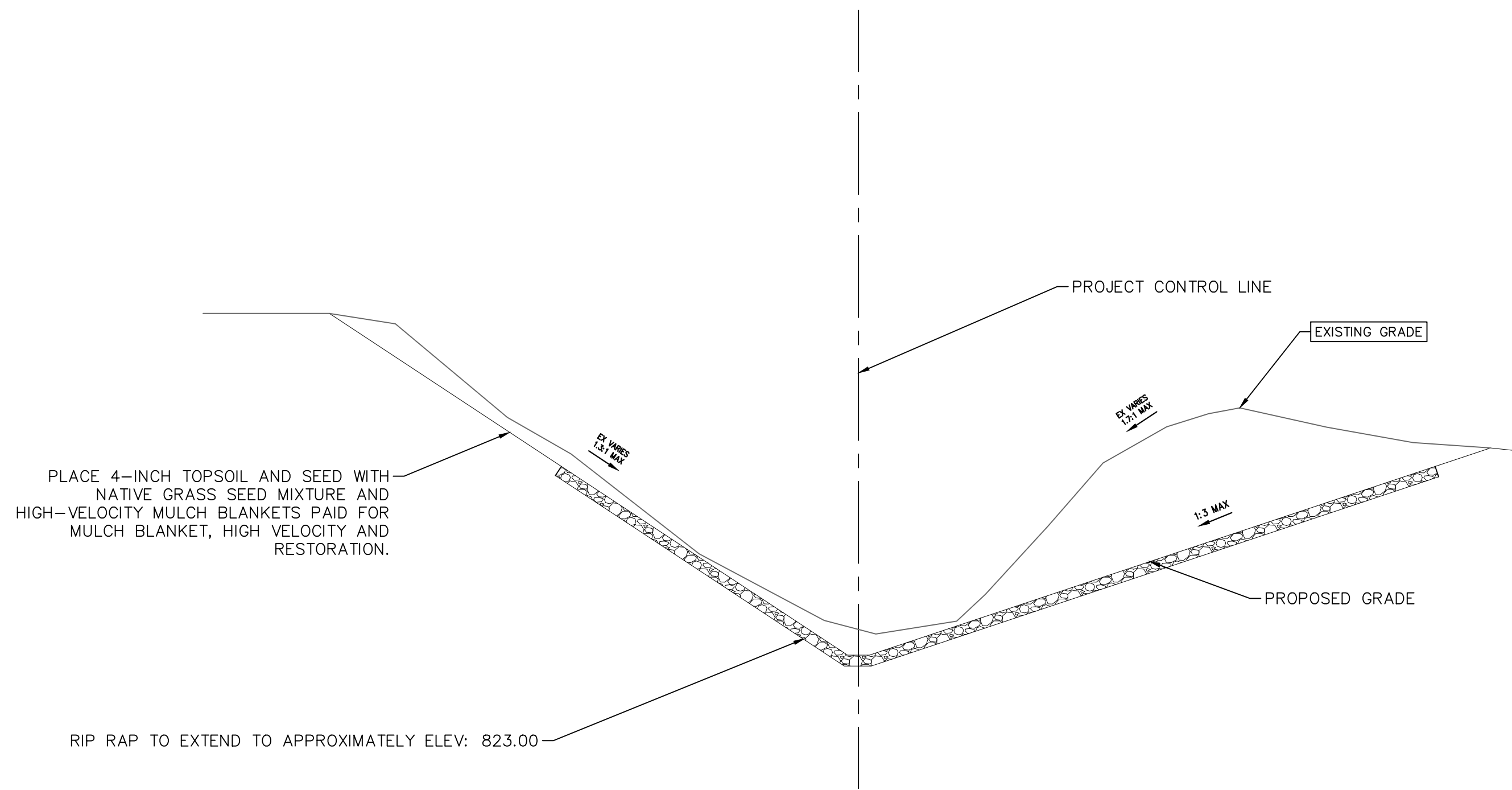
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SHEET No. 3 OF 9

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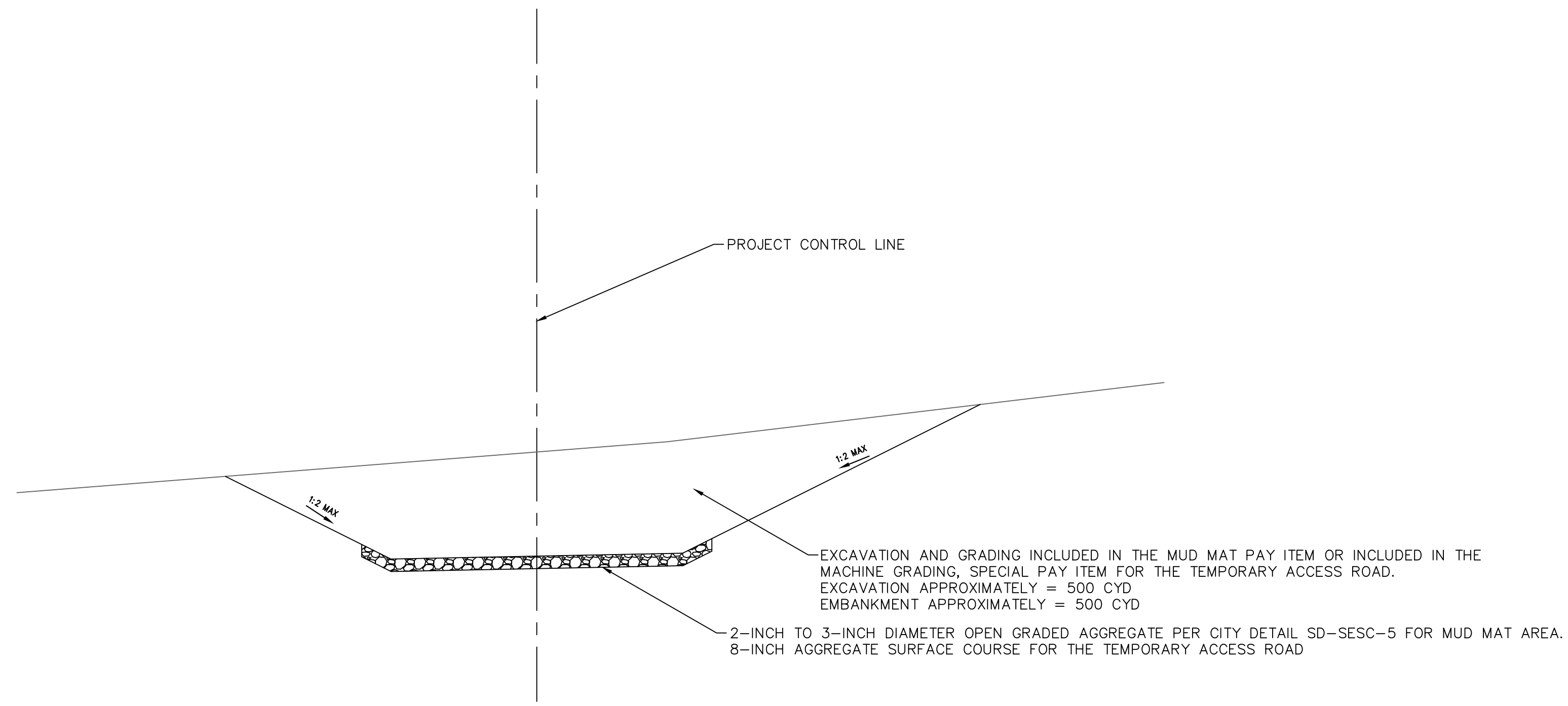
**NORTH CHANNEL**

NTS  
STA 2+53 TO STA 3+36



**SOUTH CHANNEL**

NTS  
STA 0+00 TO STA 1+08



**MUD MAT & TEMPORARY ACCESS DRIVE**

NTS  
STA 5+00 TO STA 6+62



REV	DATE	DESCRIPTION
2	02/09/2024	BID SET
1	09/13/2023	60% PLAN REVIEW

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**ANN ARBOR RAILROAD / BOARDWALK**  
IMPROVEMENTS PROJECT  
CULVERT  
TYPICAL SECTIONS

SCALE

DRAWING No. 2022037

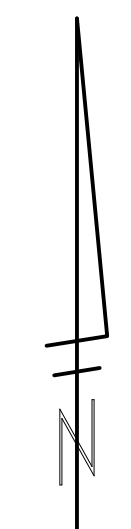
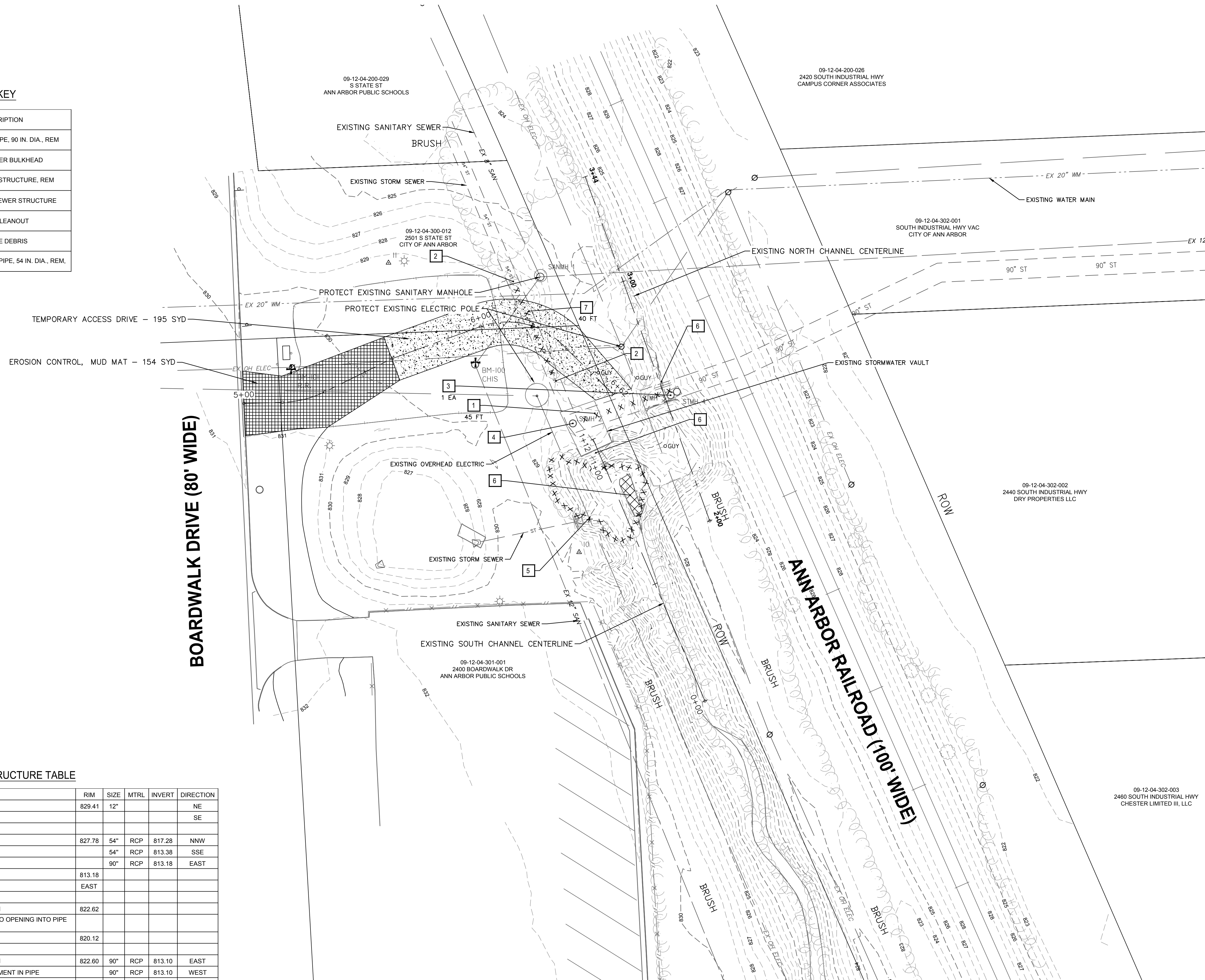
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**REMOVAL KEY**

KEY	DESCRIPTION
1	STORM SEWER PIPE, 90 IN. DIA., REM
2	STORM SEWER BULKHEAD
3	STORM SEWER STRUCTURE, REM
4	CLEAN STORM SEWER STRUCTURE
5	DITCH CLEANOUT
6	REMOVE DEBRIS
7	DS_STORM SEWER PIPE, 54 IN. DIA., REM.

**STRUCTURE TABLE**

#	TYPE	RIM	SIZE	MTRL	INVERT	DIRECTION	
1	SANITARY MANHOLE	829.41	12"			NE	
						SE	
2	STORM MANHOLE	827.78	54"	RCP	817.28	NNW	
				RCP	813.38	SSE	
				RCP	813.18	EAST	
	BOTTOM	813.18					
	FLOW DIRECTION:	EAST					
3	SQUARE CATCH BASIN	822.62					
			CB #3 & CB #4 ARE CONNECTED. THERE IS NO OPENING INTO PIPE BELOW FROM CB #3				
	TOP / PIPE	820.12					
4	SQUARE CATCH BASIN	822.60	90"	RCP	813.10	EAST	
				RCP	813.10	WEST	
	MEASUREMENT TO POSSIBLE SEDIMENT IN PIPE		90"	RCP	813.10	WEST	
	BOTTOM	813.10					
	FLOW DIRECTION:	EAST					



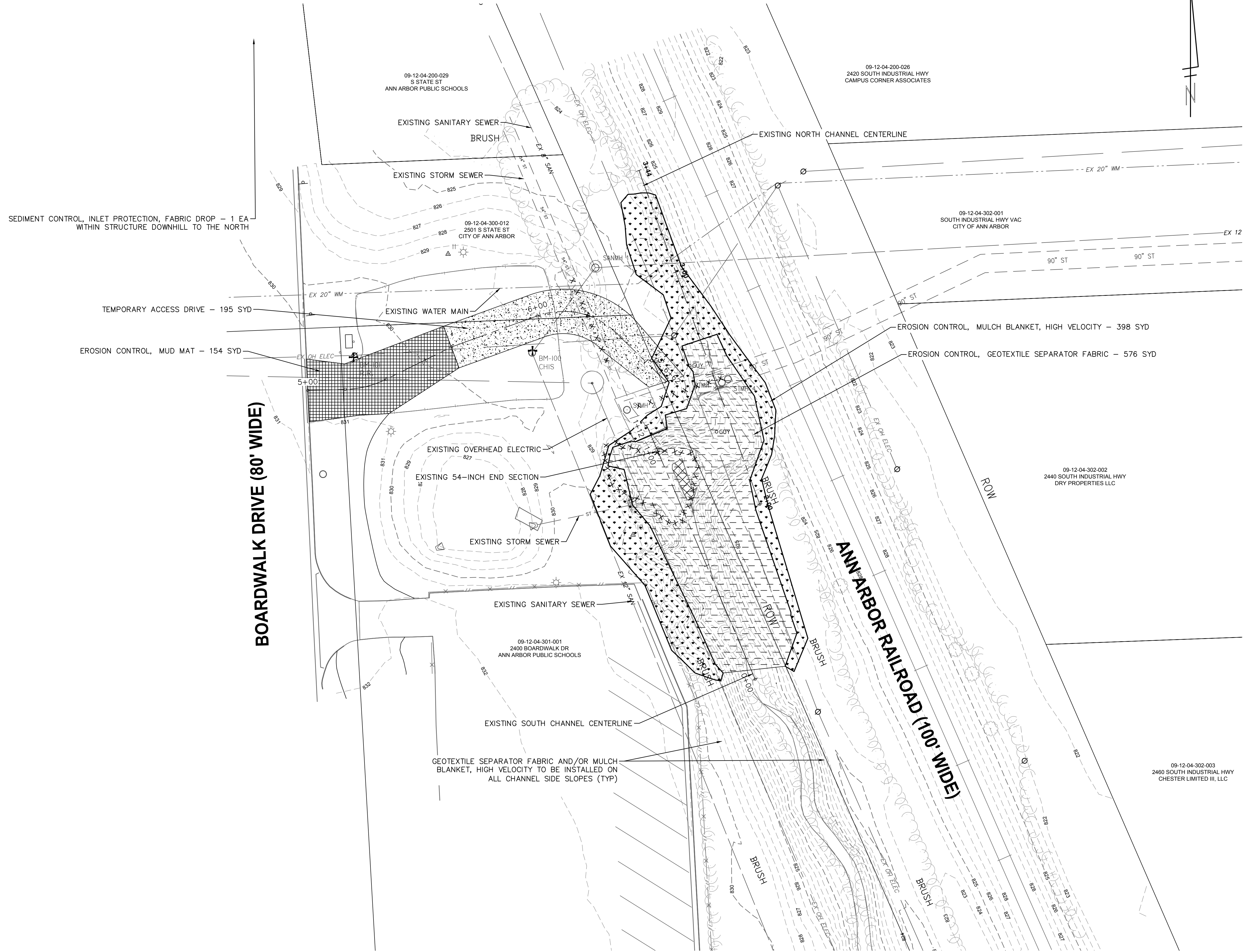
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**ANN ARBOR RAILROAD / BOARDWALK CULVERT IMPROVEMENTS PROJECT**  
 REMOVALS

SCALE PLAN: 1" = 20'  
 DRAWING No. AA22004-5

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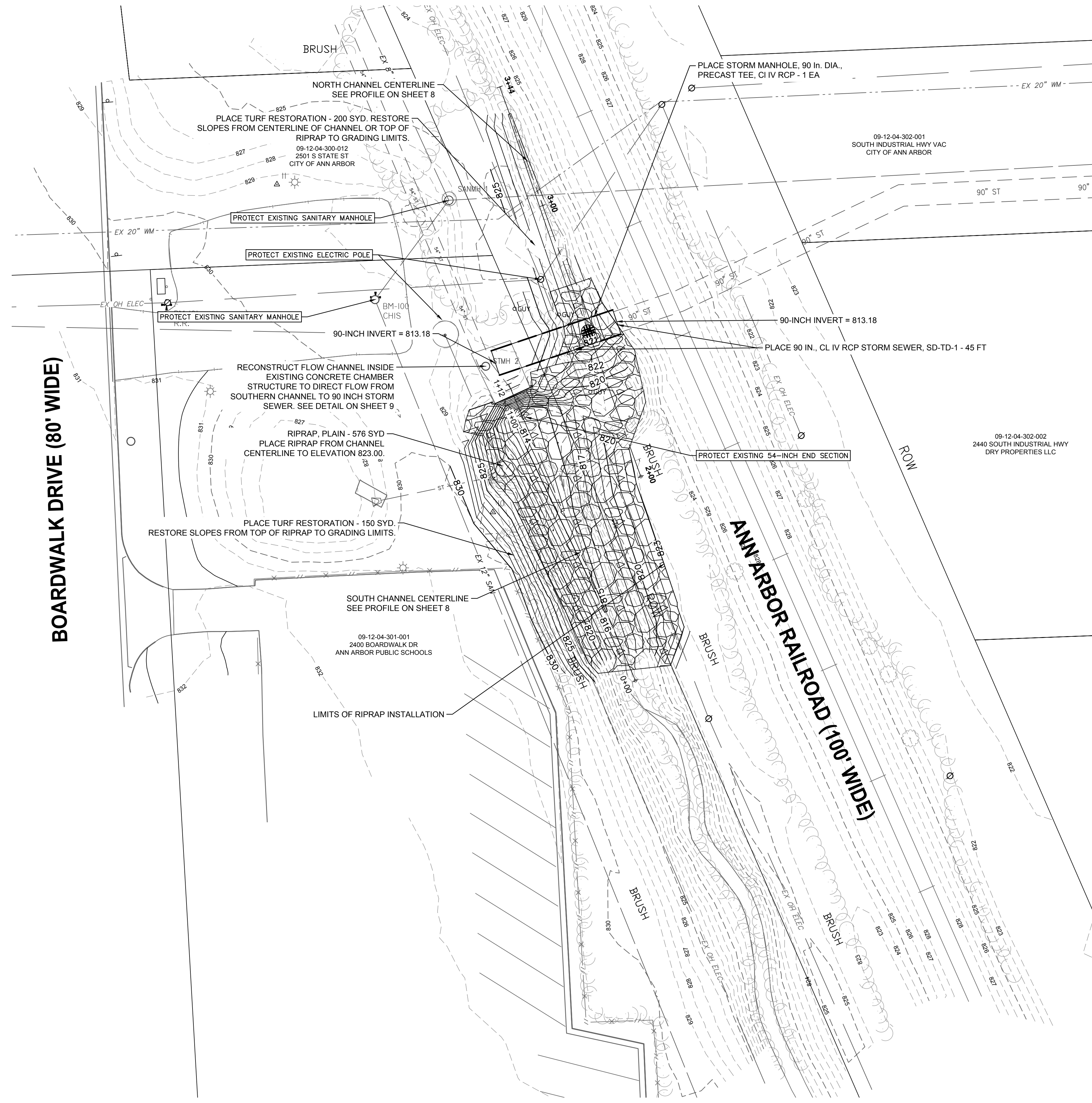


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2	BID SET	02/09/2024	RD	JS

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**ANN ARBOR RAILROAD / BOARDWALK CULVERT IMPROVEMENTS PROJECT**  
 SOIL EROSION & SEDIMENTATION CONTROL

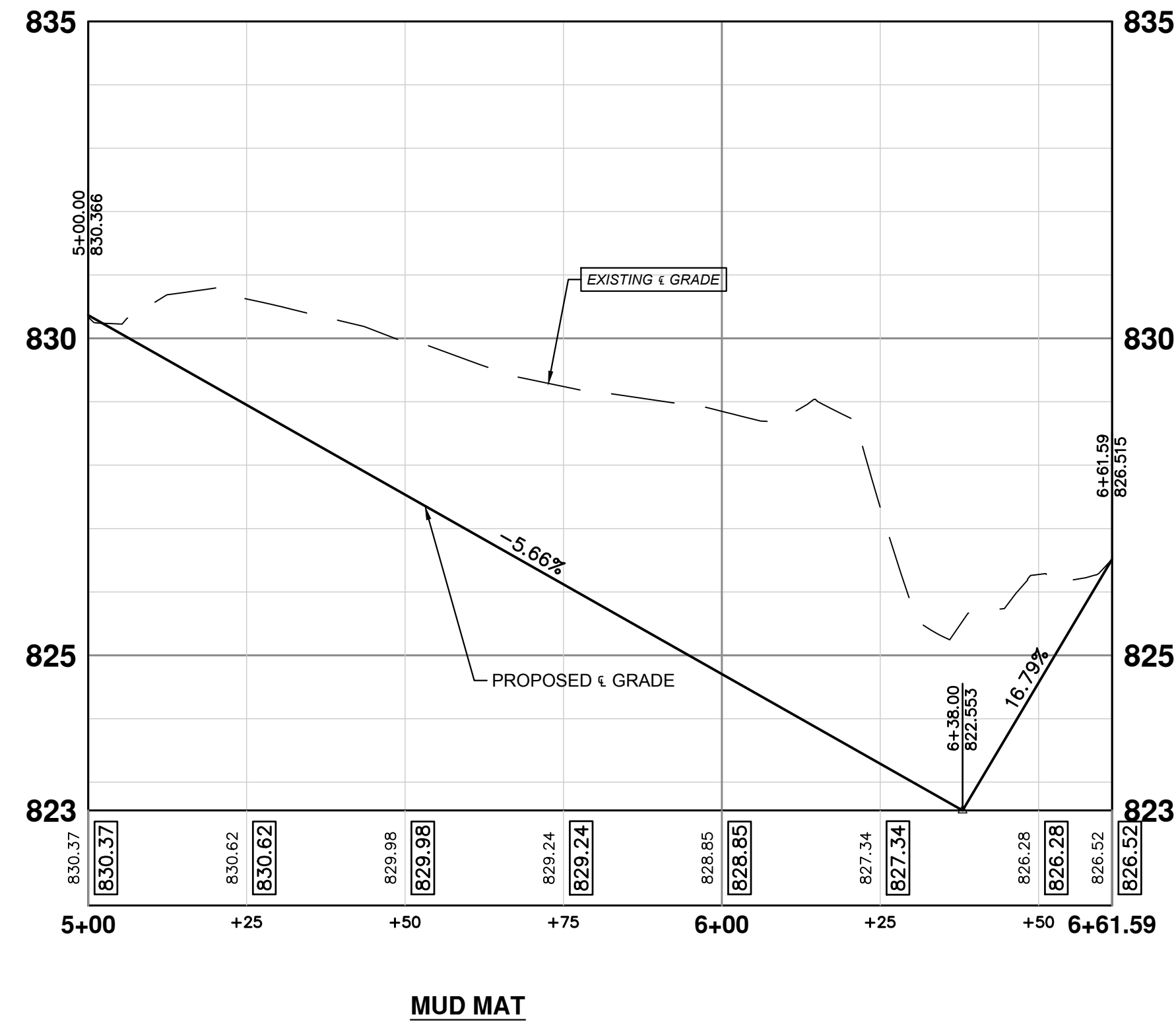
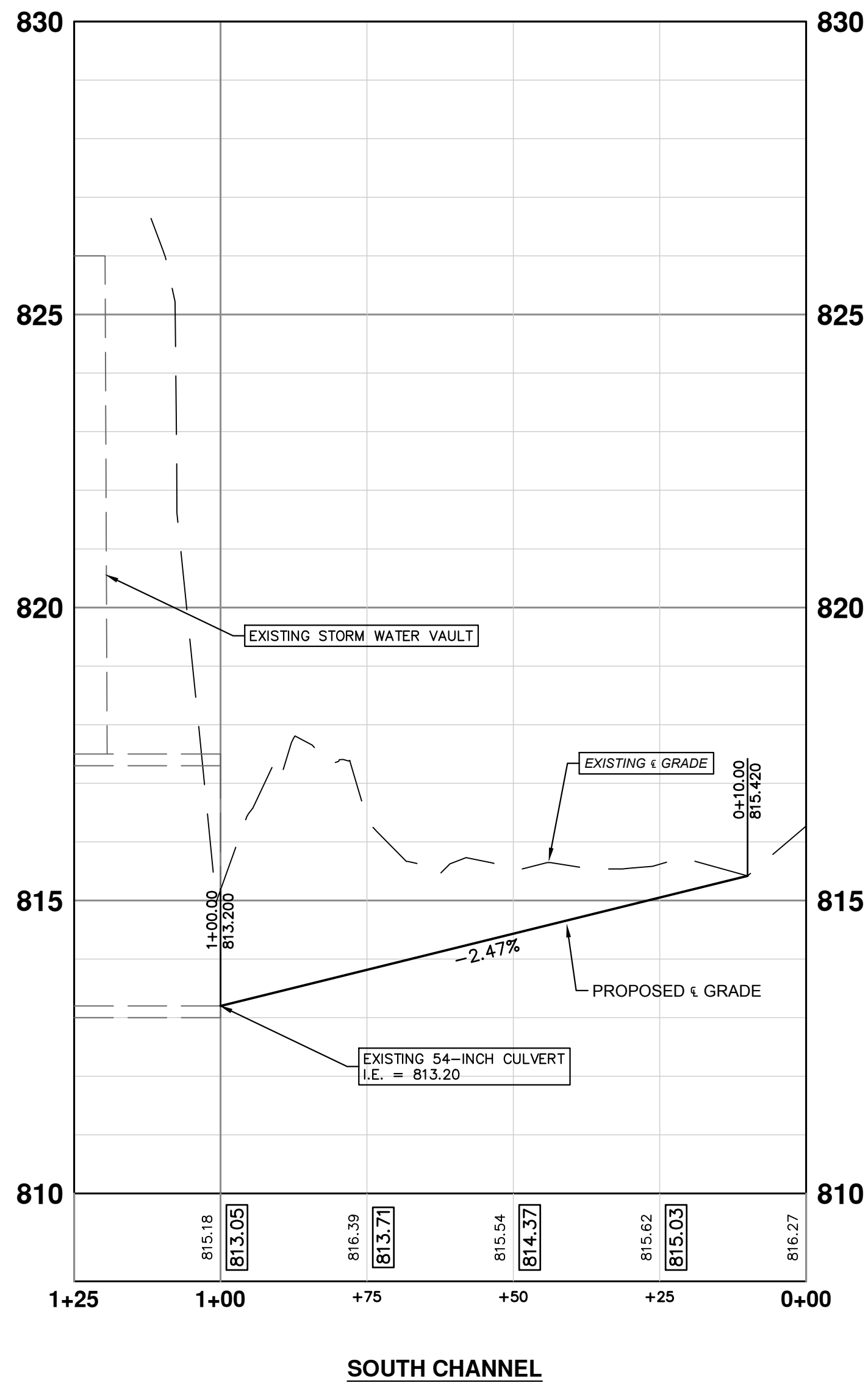
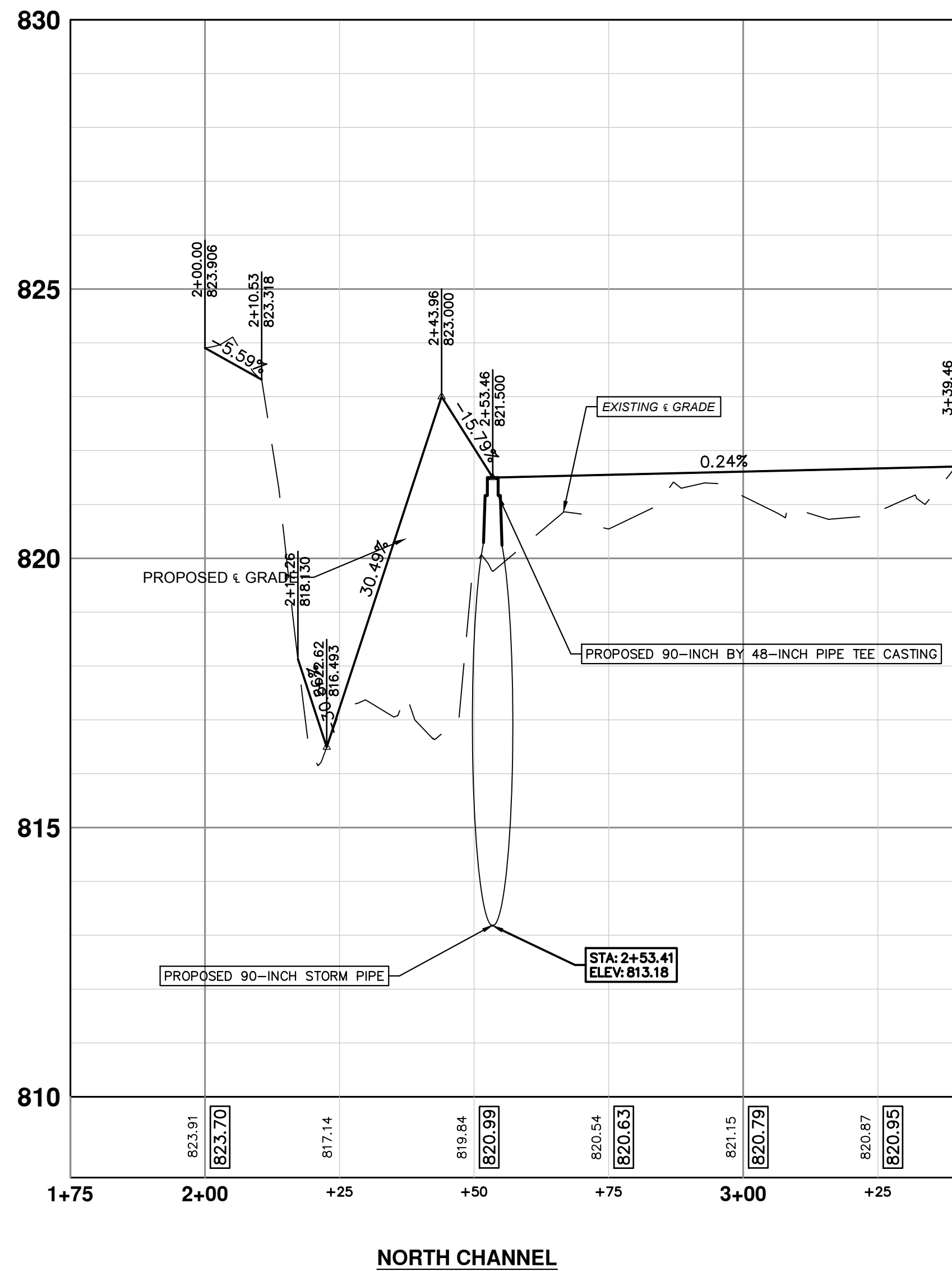
# BOARDWALK DRIVE (80' WIDE)



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
1	60% PLAN REVIEW	09/13/2023	AJC	JS
2	BID SET	02/09/2024	RD	JS

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NOTE: MUD MAT IS A PROPOSED ACCESS PATHWAY TO THE 90-INCH STORM SEWER REMOVAL AND REPLACEMENT. REMOVAL OF THE EARTH ASSOCIATED WITH THE PIPE REMOVAL WILL BE INCLUDED IN THAT REMOVAL PAY ITEM WHILE REMOVAL OF EARTH FOR THE MUD MAT INSTALLATION WILL UTILIZE MACHINE GRADING, MODIFIED

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**ANN ARBOR RAILROAD / BOARDWALK CULVERT IMPROVEMENTS PROJECT**

CHANNEL PROFILES

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

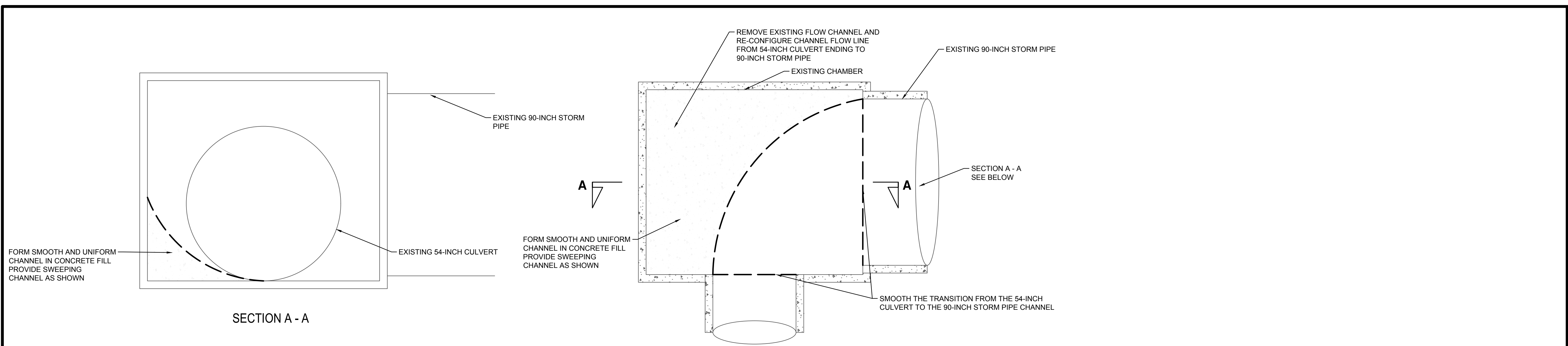
DRAWING No. **2022037**

SHEET No. **8 OF 9**

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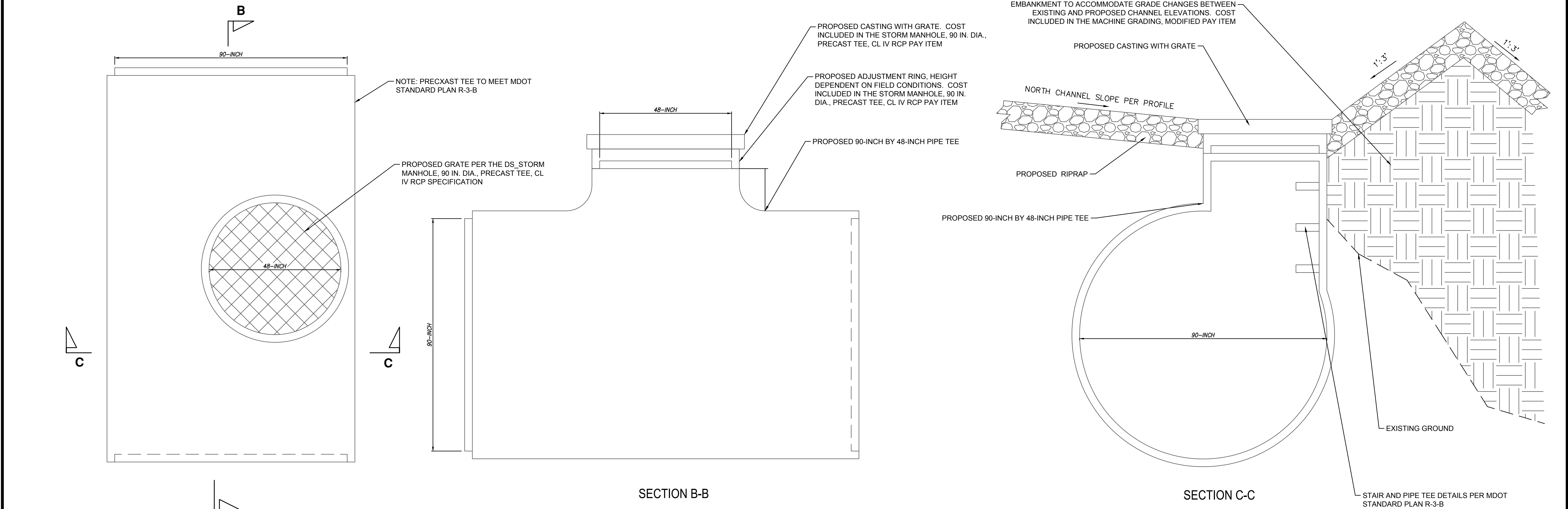
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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**EXISTING STORMWATER CHAMBER REHAB**

NTS



**STORM MANHOLE, 90 IN. DIA., PRECAST TEE, CL IV RCP**

NTS

**811**  
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2	BID SET	02/09/2024	RD	AJC	JS	JS	CHECKED
1	60% PLAN REVIEW	09/13/2023		AJC	JS	JS	CHECKED
	REV.	DATE					

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**CITY OF ANN ARBOR**

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**ANN ARBOR RAILROAD / BOARDWALK CULVERT**  
IMPROVEMENTS PROJECT  
STORM SEWER DETAILS

SCALE PLAN: #####  
DRAWING No. 2022037  
SHEET No. 9 OF 9