



CITY OF ANN ARBOR ENGINEERING

2022 MISCELLANEOUS UTILITY PROJECTS

RFP NO. 22-20, FILE NO. 2021-013

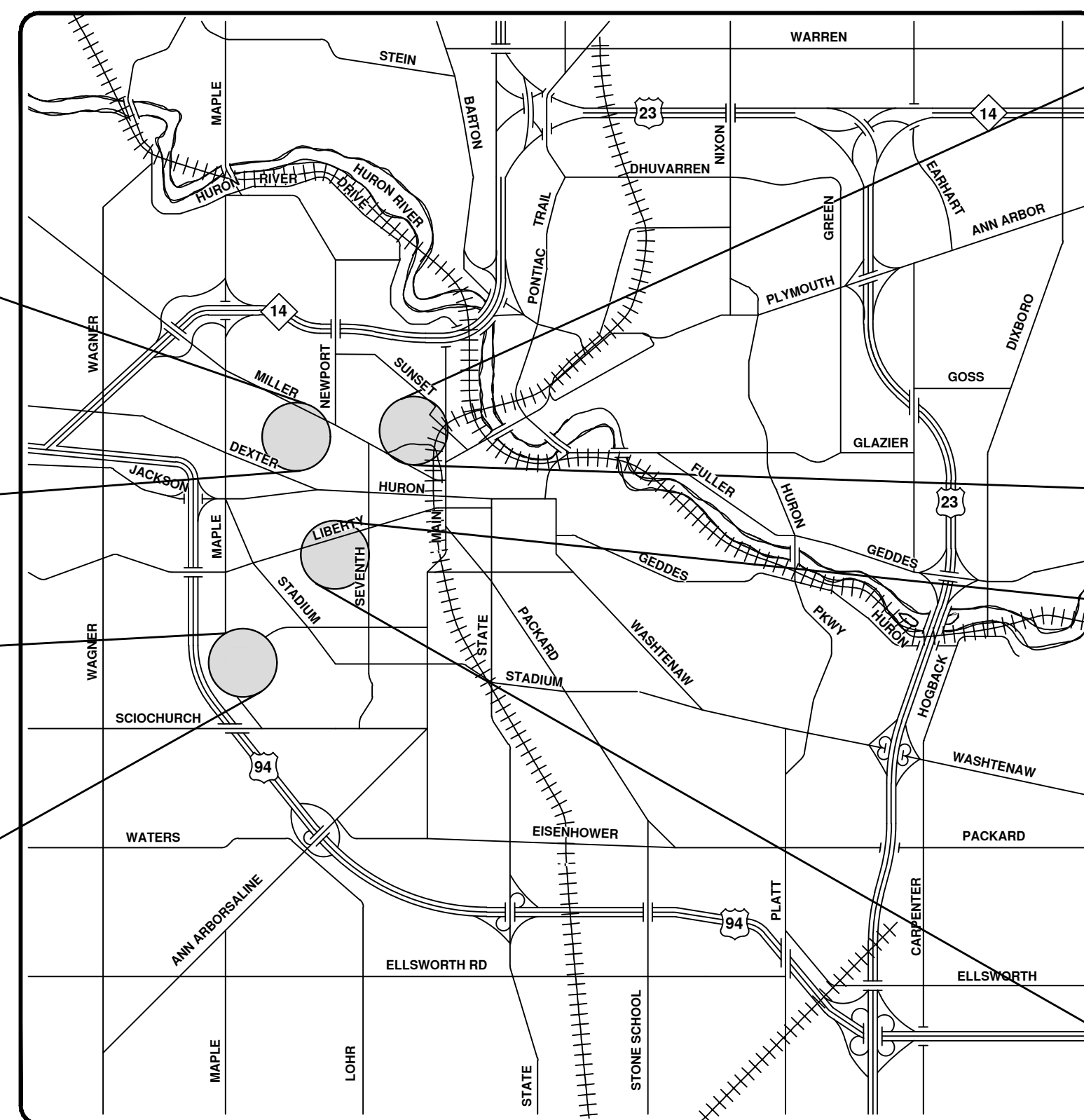
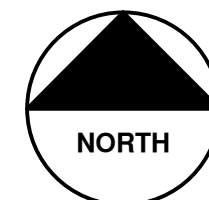
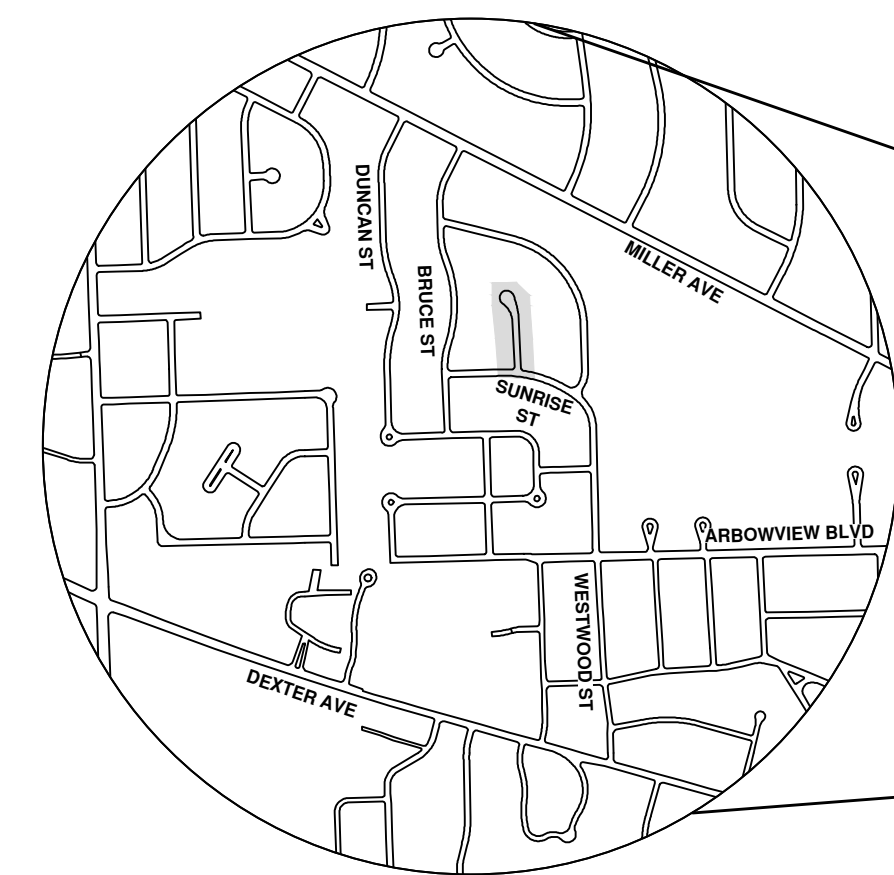
NOTES:

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

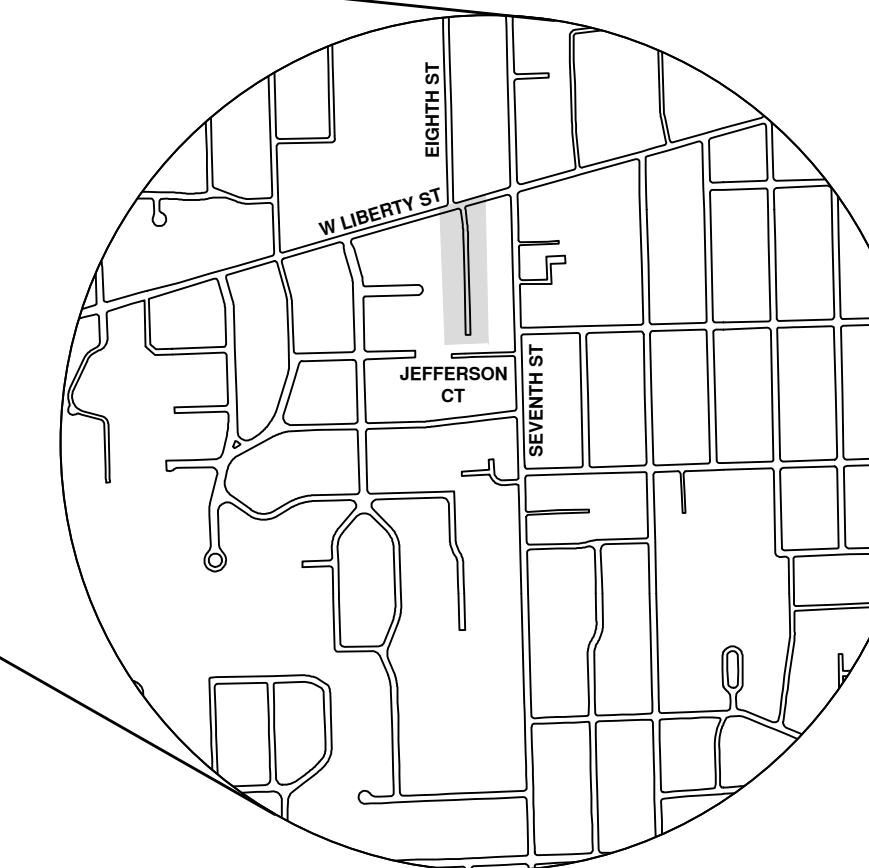
THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 1994 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, IT'S 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.

Sheet Number	Sheet Title
GENERAL	
1	COVER SHEET
2	STANDARD NOTES
3	LEGEND
TYPICAL ROAD SECTIONS	
4	ROAD CROSS-SECTIONS - DICKEN DRIVE
5	ROAD CROSS-SECTIONS - MAPLE ROAD
6	ROAD CROSS-SECTIONS - EIGHTH STREET
7	ROAD CROSS-SECTIONS - HISCOCK STREET
8	ROAD CROSS-SECTIONS - SUNSET COURT
CONSTRUCTION DETAILS	
9	STORM SEWER DETAILS
10	WATER MAIN DETAILS
11	MISCELLANEOUS DETAILS
PEDESTRIAN TRAFFIC CONTROL	
12	APR DETOUR
13	APR BYPASS
14	TPAR RAMPS
15	TPAR WALKWAY DEVICES
DICKEN DRIVE	
16	TRAFFIC CONTROL AND DETOUR PLAN
17	REMOVALS AND SITE PREP
18	WATER MAIN PLAN AND PROFILE
19	TURNAROUND PLAN
20	SIDEWALK AND ROAD PLAN
EIGHTH STREET	
21	REMOVALS AND SITE PREP
22	WATER MAIN PLAN & PROFILE STA. 0+00 TO STA. 5+00
23	WATER MAIN PLAN & PROFILE STA. 5+00 TO STA. 7+54
24	TURNAROUND PLAN
25	ROAD PLAN
HISCOCK STREET	
26	TRAFFIC CONTROL PLAN
27	REMOVALS AND SITE PREP
28	STORM SEWER PLAN & PROFILE STA. 0+00 TO STA. 2+04
29	STORM SEWER PLAN & PROFILE STA. 0+00 TO STA. 0+63
30	SIDEWALK PLAN
31	ROAD PLAN
SUNRISE COURT	
32	REMOVALS AND SITE PREP
33	WATER MAIN PLAN & PROFILE STA. 0+00 TO STA. 4+28
34	STORM SEWER PLAN AND PROFILE
35	ROAD PLAN

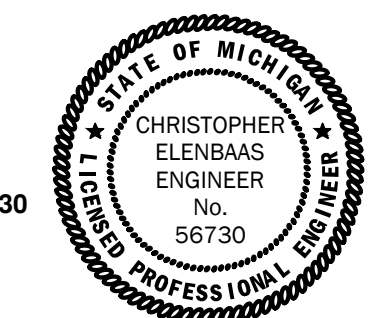


VICINITY MAP



PREPARED UNDER THE SUPERVISION OF

 CHRISTOPHER ELENBAAS, P.E. - MI LICENSE No. 56730
 PROJECT MANAGER
 DATE 02/23/2022



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

	C/E	BWA	02/24/2022
	C/E	BWA	12/14/2021
	C/E	BWA	09/23/2021
	C/E	BWA	06/15/2021
	CHECKED	DRAWN	DATE
	REV.		

CITY OF ANN ARBOR PUBLIC SERVICES
 301 EAST HURON STREET
 ANN ARBOR, MI 48106-8647
 www.aagov.org

CITY OF ANN ARBOR MICHIGAN

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

COVER SHEET

SCALE: _____

DRAWING No. _____

SHEET No. 1 OF 35

© 2022 MISC UTILITY PROJECTS; RFP NO. 22-20; 2021-013

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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 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".
- 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.
- All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.
- Cor-blu bolts to be used at all mechanical water main joints at hydrants and Megalug fittings
- The Contractor shall construct, disinfect, flush, and bacteriologically test the water main per Detailed Specification and as approved by the Engineer. All chlorinated water shall be discharged directly into an approved sanitary sewer. The Contractor shall supply all necessary hoses, fittings and the like to accomplish this work.
- Water main appurtenances, other than those specifically listed as separate pay items, which are required to complete the work, such as blow-off assemblies, concrete thrust blocks, solid sleeves and mechanical plugs, shall not be paid for separately, but shall be included in the pipe pay items.
- "No Parking" signs shall be installed by the Contractor at locations as approved or directed by the Engineer. All signs shall be installed in accordance with the detailed specifications.
- Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.
- All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. 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.
- 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. Soil erosion requirements shall apply to all staging areas.
- 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. All 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 the Trench Details detailed in the specifications or shown on Plans. Backfill for sewer and water construction shall be MDOT Granular Material, Class II, Modified.
- Existing street name, guide, and regulatory signs, and mailboxes which conflict with the proposed construction shall be removed prior to construction, stored in a manner which will prevent damage, and re-set in locations as directed by the Engineer. This work will not be paid for separately, but shall be included in "Machine Grading, Modified"
- In areas where edge drain cannot be installed in accordance with City of Ann Arbor Detail SD-TD-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.
- Plumbing permits issued by the City of Ann Arbor Planning and Development Services are required for work on private sanitary leads.
- Smaller trees (<6") and all downed trees lying within the proposed clearing limits are to be removed and disposed of.
- Contractor is responsible for removal and proper disposal of all downed trees less than 6" in diameter, live trees less than 6" in diameter, brush, shrubs and other vegetation and topsoil as required to install the sanitary sewer and related work. Removal of these items will not be paid for separately, but shall be included in the item of work "GENERAL CONDITIONS".
- Tree removal for downed trees greater than 6" in diameter shall be included in the "TREE REMOVAL" pay items.

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

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


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

PERMIT	ISSUING AUTHORITY
E.G.L.E. P.A. 399 WATER SYSTEM CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY
TEMPORARY ENTRY PERMIT	WATCO RAILROAD

CONTACT INFORMATION


PUBLIC UTILITIES	OWNER	CONTACT
WATER		
SANITARY		
STORM	CITY OF ANN ARBOR PUBLIC WORKS W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	(734) 794-6350
FORESTRY		
SIGNS SIGNALS STREET LIGHTS		(734) 794-6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 3150 E. MICHIGAN AVE, YPSILANTI TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	ANTHONY IGNASIAK (734) 397-4447
CABLE	COMCAST 27800 FRANKLIN ROAD SOUTHFIELD, MI 48034	RON SUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	JEFF LEHMAN SR (734) 996-5334
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016
FIBER OPTICS	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

PROJECT NAME BENCHMARKS		
BM #	ELEV	DESCRIPTION
1	989.19	SPIKE IN SOUTHWEST FACE OF POWER POLE
2	972.45	LAMP POST
3	859.81	BENCHTIE ON EAST FACE OF POWER POLE ON WEST SIDE OF EIGHTH ST ~150' SOUTH OF LIBERTY
4	855.86	BENCHTIE IN EAST FACE OF PGUY POLE ON THE WEST SIDE OF EIGHTH ST ON SOUTH SIDE OF DRIVE TO HOUSE #430
5	851.34	SPIKE IN NORTHWEST FACE OF POWER POLE ON WEST SIDE OF SEVENTH ST AT PROPERTY LINE OF LOTS
6	804.91	SPIKE ON POWER POLE ON SW CORNER OF SUMMIT AND HISCOCK ST
7	802.30	SPIKE ON POWER POLE @ DRIVE BETWEEN 191 & 193 HISCOCK ST
8	917.27	SPIKE ON LIGHT POLE SOUTH SIDE OF SUNRISE ST AND ~50' EAST OF SUNRISE CT
9	926.02	SPIKE EAST SIDE OF LIGHT POLE WEST SIDE OF SUNRISE CT ~300' NORTH OF SUNRISE ST



Know what's below. Call before you dig.

BID SET	02/24/2022	BWA	12/14/2021	BWA	09/23/2021	BWA	06/15/2021	BWA	DATE	CHECKED
PERMIT PLAN										
60% PLAN										
PRELIMINARY PLAN										
REV.										



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
GENERAL

STANDARD NOTES

SCALE: NTS

DRAWING No. 2021-013-2

SHEET No. 2 OF 35

EXISTING LEGEND

- FIRE HYDRANT
- 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

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

- TREE (DECIDUOUS)
- TREE (CONIFEROUS)
- SHRUB (DECIDUOUS)
- STUMP
- TREE TO REMAIN & PROTECT (DECIDUOUS)
CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10
- TREE TO REMAIN & PROTECT (CONIFEROUS)
CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10

PROPOSED LEGEND

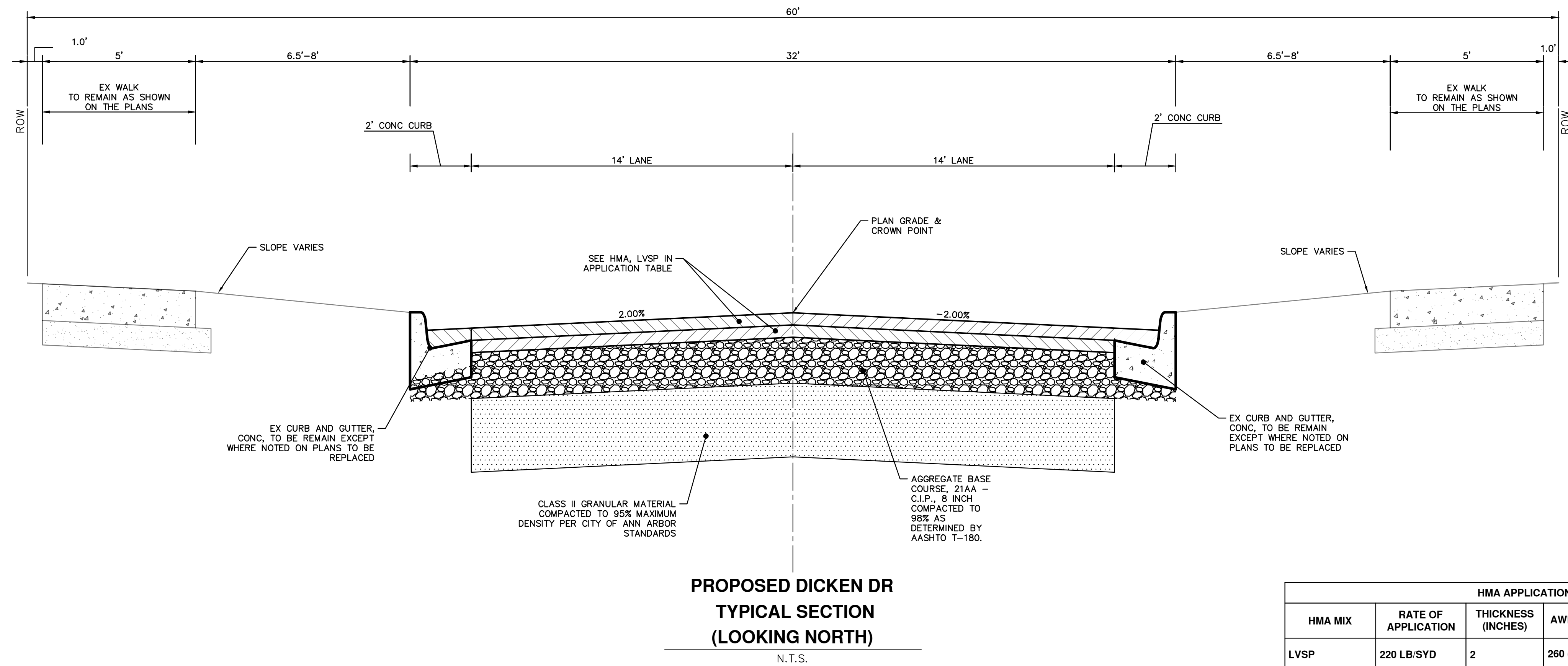
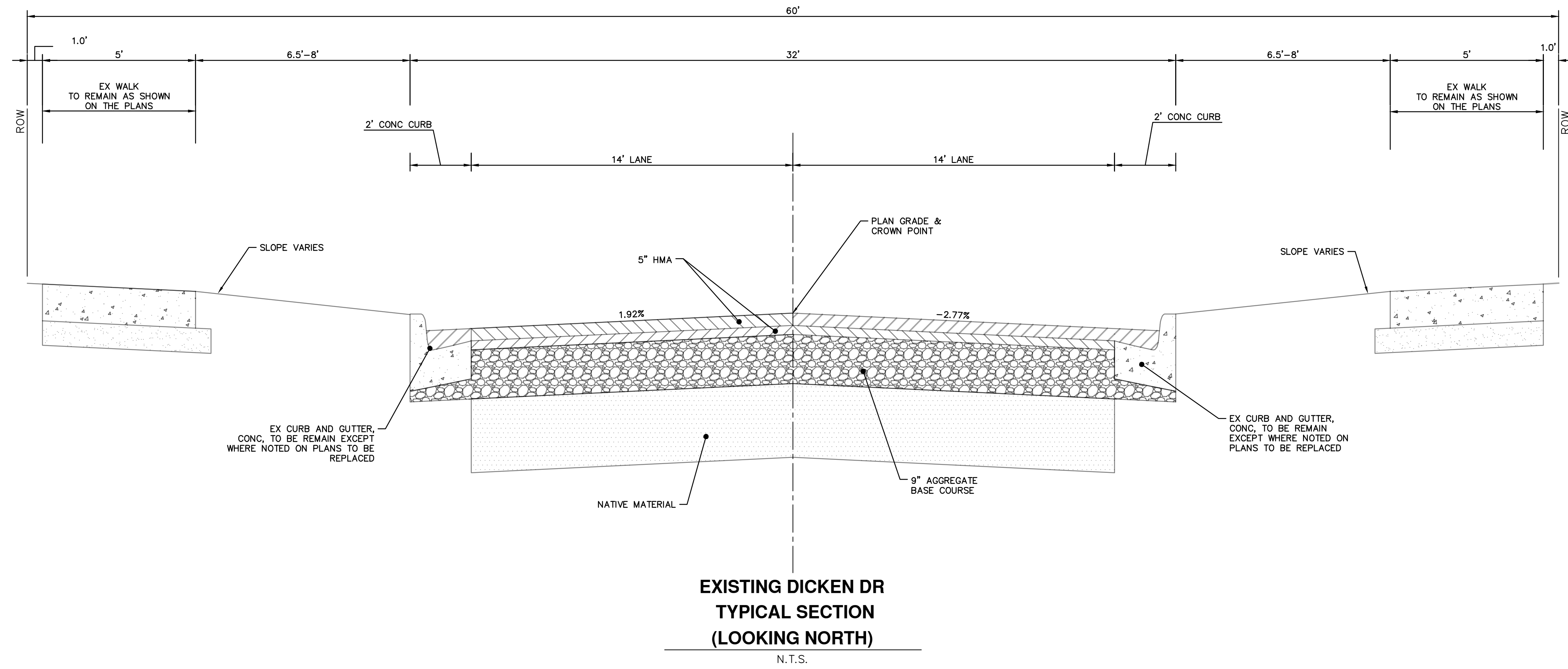
- HYDRANT (PLAN)
- WATER GATE WELL
- REDUCER
- WATER GATE VALVE
- WATER STOP BOX
- WATER VAULT
- INLET
- DOUBLE INLET
- INLET JUNCTION CHAMBER
- ROUND CATCH BASIN
- STORM MANHOLE
- DRAIN ARROW
- FLARED END SECTION
- SANITARY MANHOLE
- CLEAN-OUT
- SIGN
- PUSH BUTTON
- HAND HOLE
- WATER MAIN
- STORM SEWER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

- DETECTABLE WARNING
- ASPHALT
- CONCRETE
- 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.

	C/E	BWA	BWA	C/E	BWA	BWA	C/E	C/E	CHECKED
		02/24/2022	12/14/2021		09/23/2021	06/15/2021			DATE
		BID SET	PERMIT PLAN	60% PLAN	PRELIMINARY PLAN				DESCRIPTION
		4	3	2	1				REV.
<p>CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING</p> <p>2022 MISC UTILITY PROJECTS</p> <p>GENERAL</p> <p>LEGEND</p>									
<p>SCALE: NTS</p> <p>DRAWING No. 2021-013-3</p>									
<p>SHEET No. 3 OF 35</p>									

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HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2	260 (TOP)	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.05 - 0.15 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

TYPICAL ROAD SECTIONS

ROAD CROSS-SECTIONS - DICKEN DRIVE

SCALE: NTS

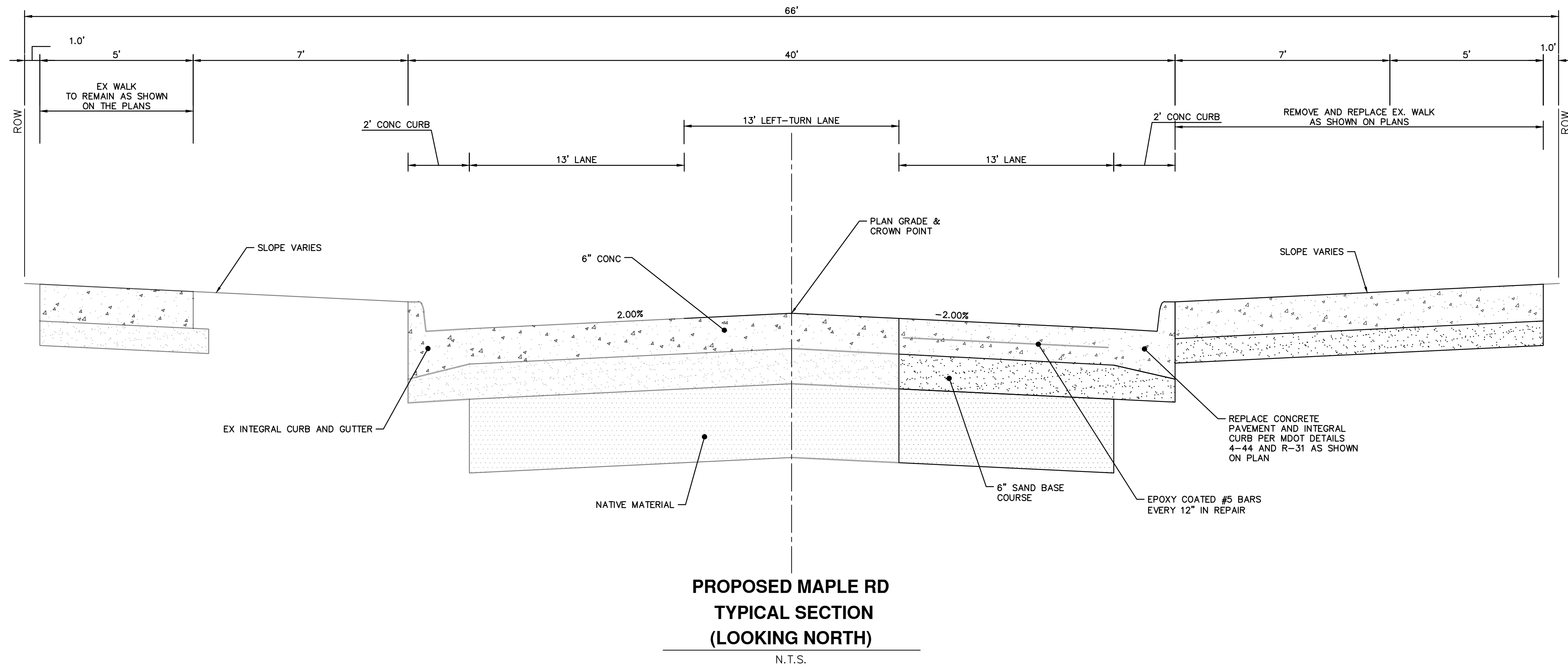
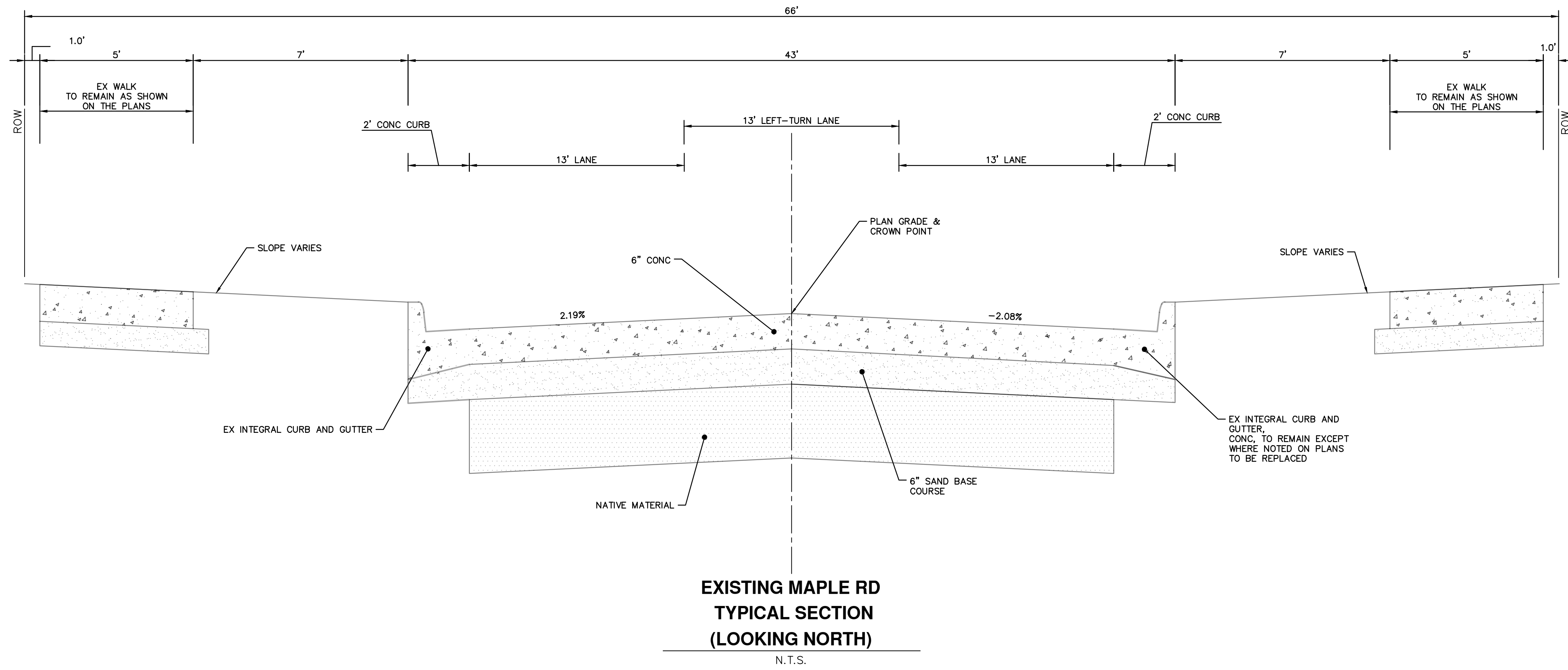
DRAWING No. **2021-013-4**

SHEET No. **4 OF 35**

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-6647
734-794-6410
www.a2gov.org

BID SET	02/24/2022	BWA	C/E
PERMIT PLAN	12/14/2021	BWA	C/E
60% PLAN	09/23/2021	BWA	C/E
PRELIMINARY PLAN	06/15/2021	BWA	C/E
REV.	DATE	DRAWN	CHECKED

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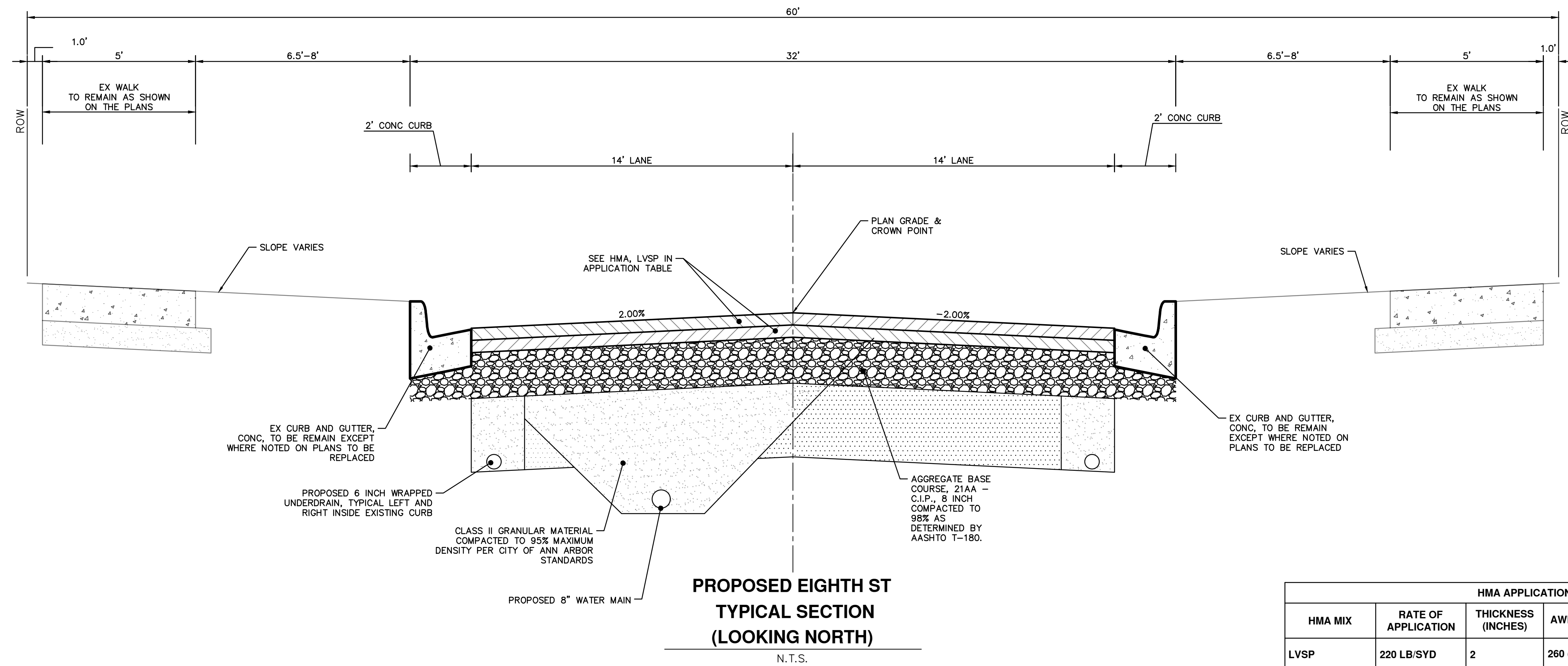
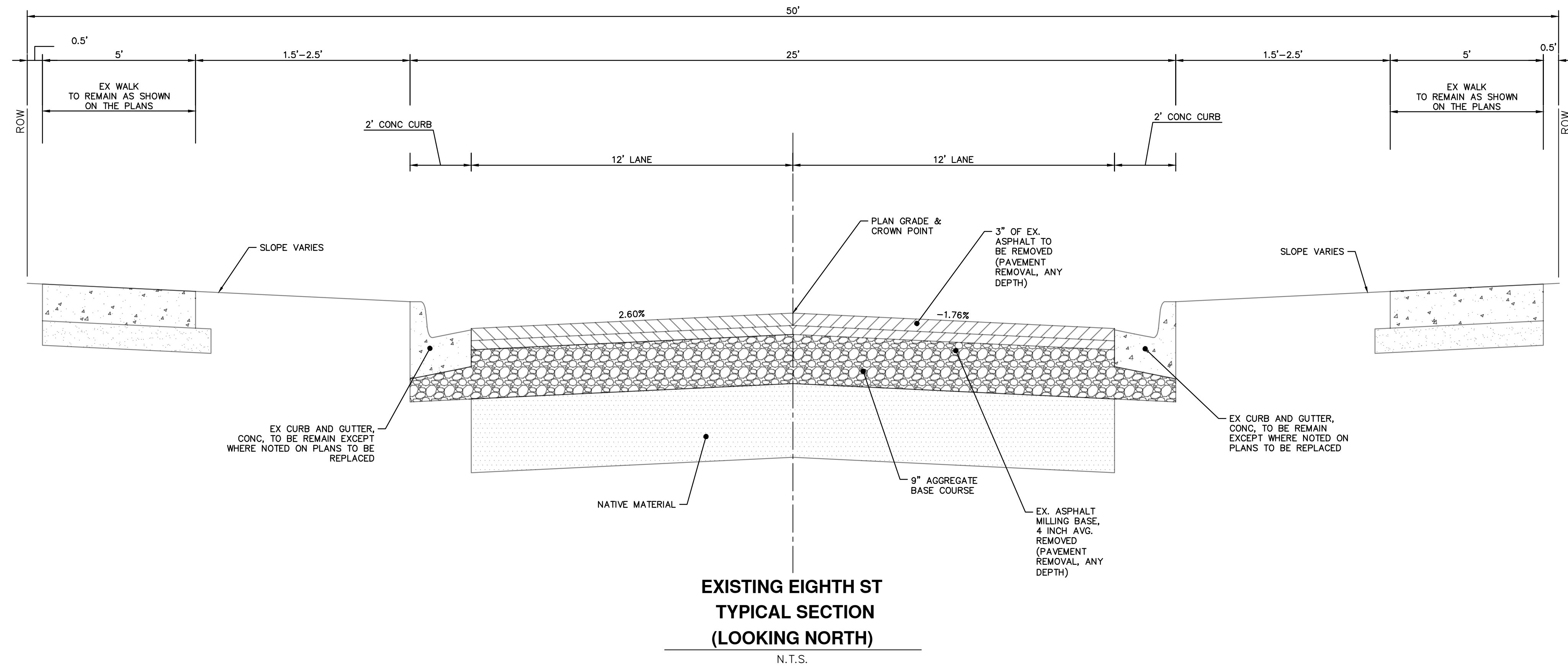
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	BID SET	02/24/2022	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
 TYPICAL ROAD SECTIONS
 ROAD CROSS-SECTIONS - MAPLE ROAD

SCALE: NTS
 DRAWING No. 2021-013-5

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HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2	260 (TOP)	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.05 - 0.15 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

TYPICAL ROAD SECTIONS

ROAD CROSS-SECTIONS - EIGHTH STREET

SCALE: NTS

DRAWING No. **2021-013-6**

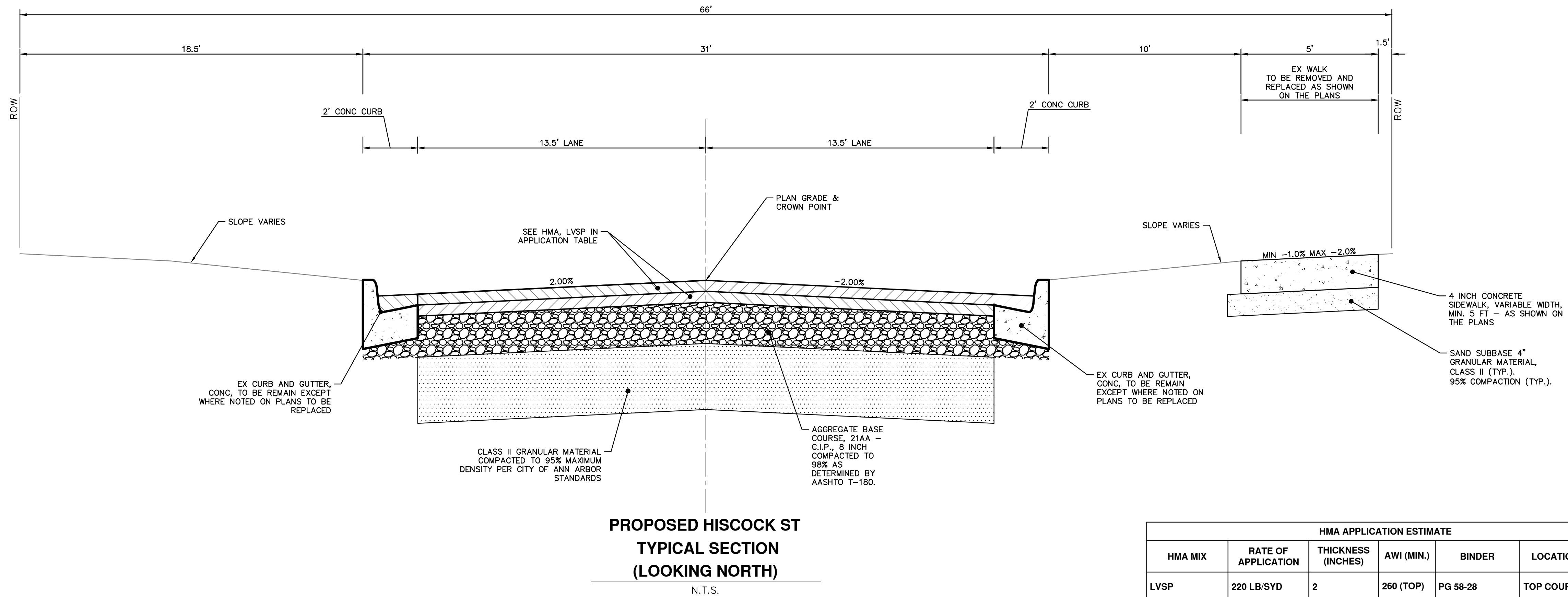
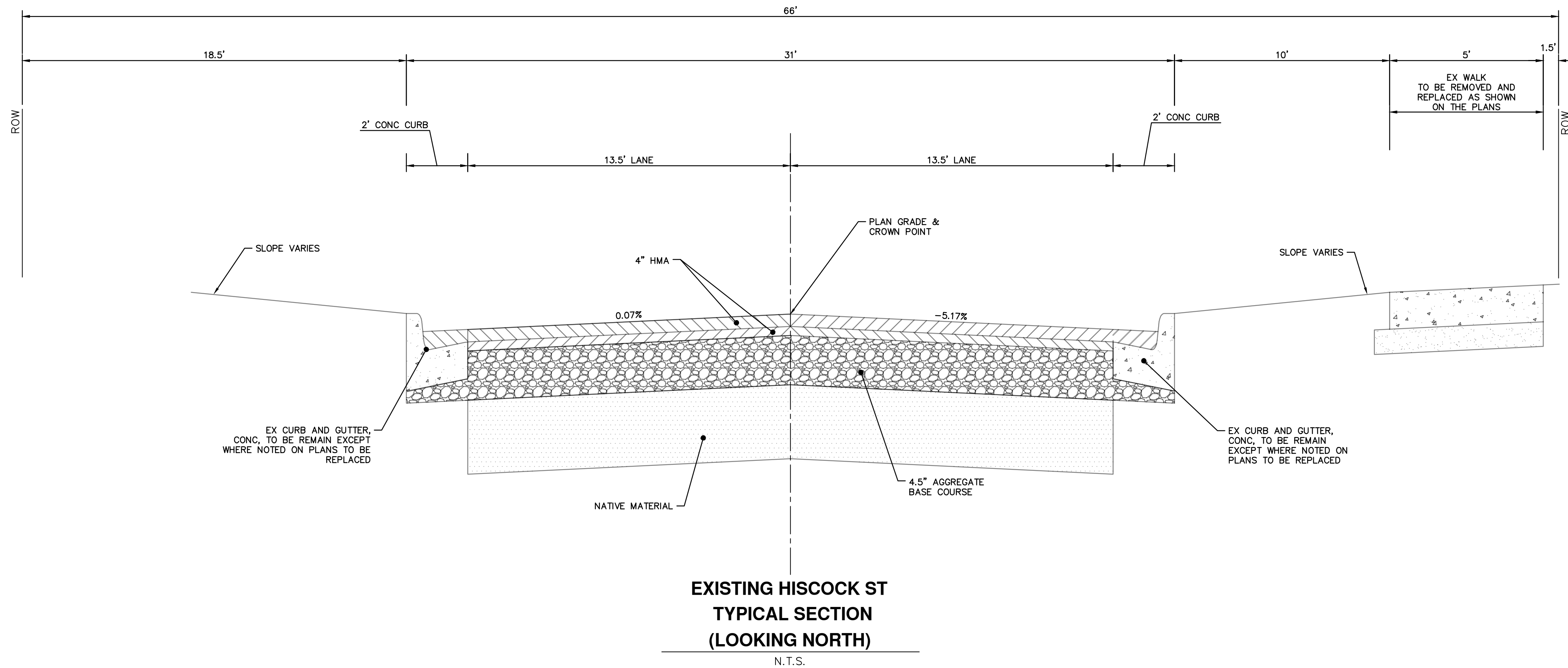
SHEET No. **6 OF 35**

BID SET	DATE	BY	CHKD	REV.	DESCRIPTION
4	02/24/2022	BWA	C/E		
3	12/14/2021	BWA	C/E		PERMIT PLAN
2	09/23/2021	BWA	C/E		60% PLAN
1	06/15/2021	BWA	C/E		PRELIMINARY PLAN
					DATE

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

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PUBLIC SERVICES
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734-794-6410
www.a2gov.org

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HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2	260 (TOP)	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.05 - 0.15 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



BID SET	BWA	C/E	REV.	DESCRIPTION
4	02/24/2022			
3	12/14/2021			PERMIT PLAN
2	09/23/2021			60% PLAN
1	06/15/2021			PRELIMINARY PLAN
				DATE

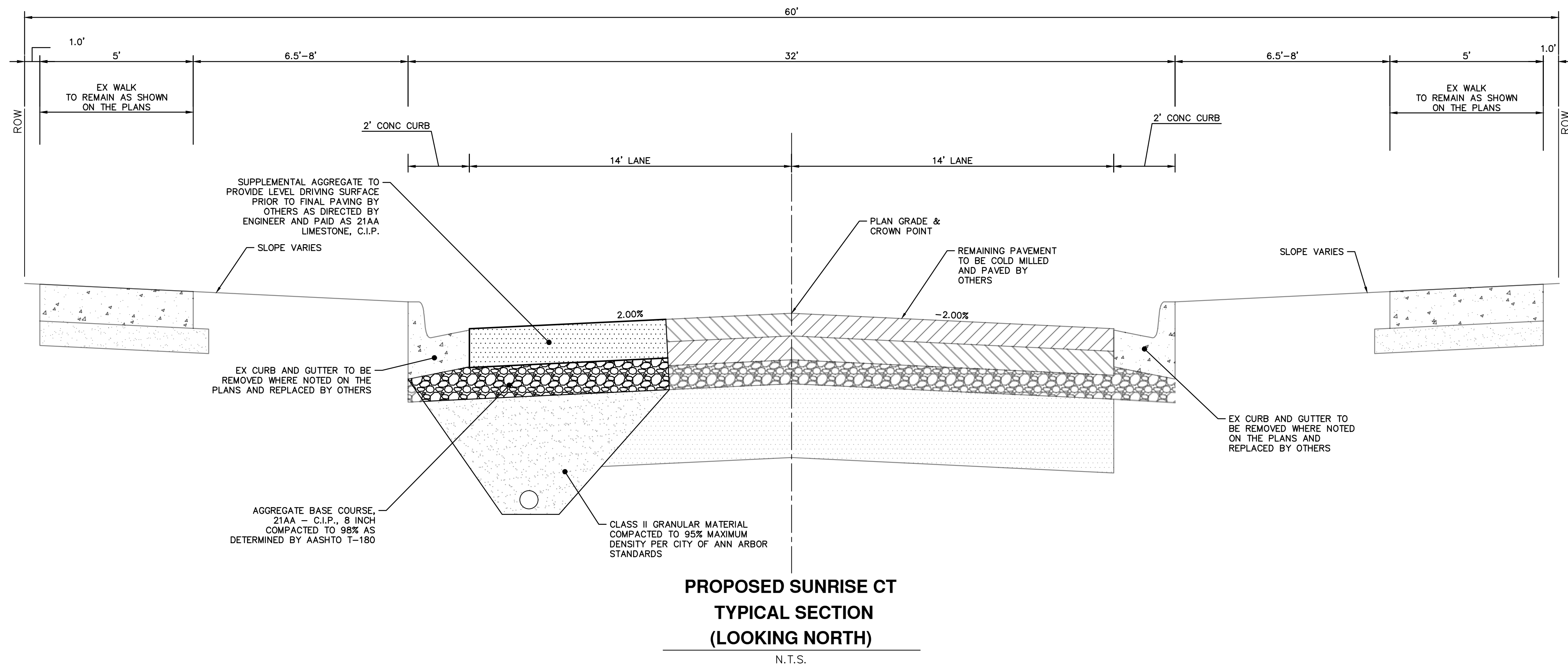
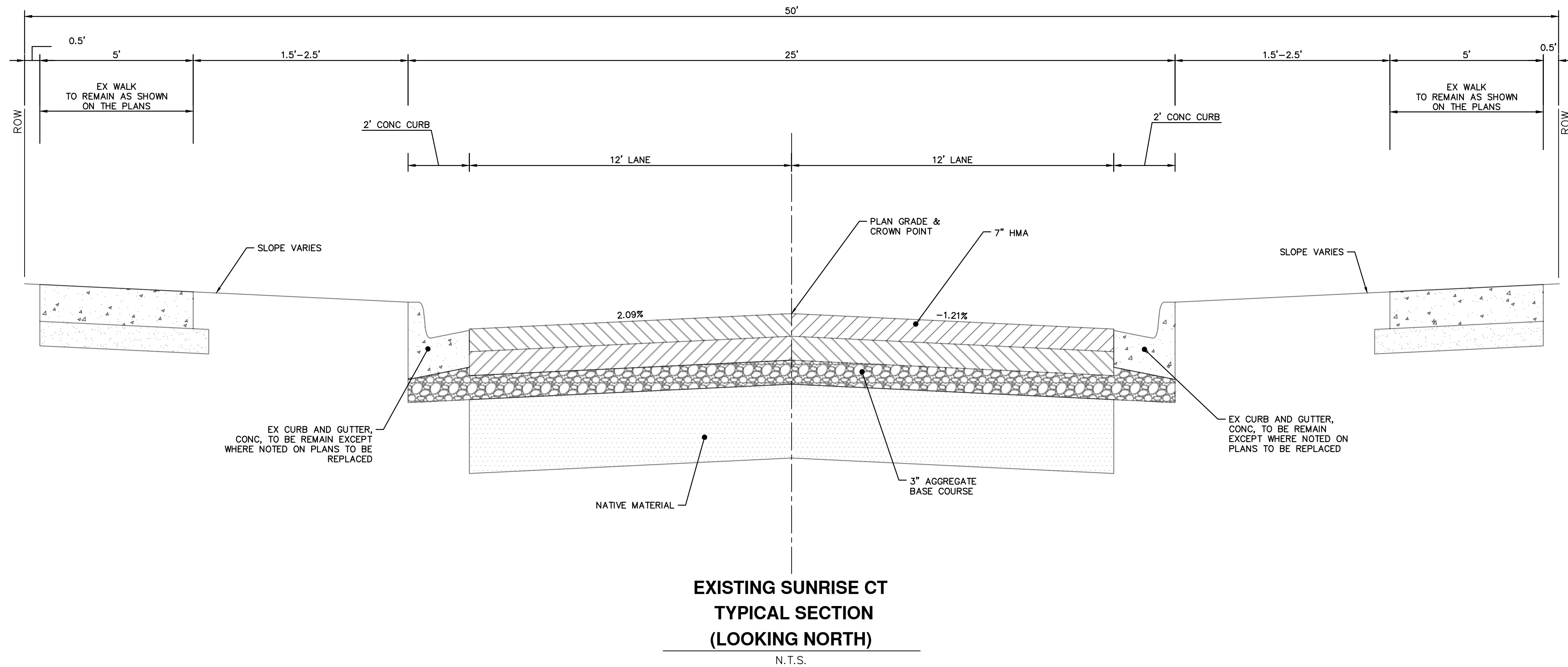
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www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
TYPICAL ROAD SECTIONS
ROAD CROSS-SECTIONS - HISCOCK STREET

SCALE: NTS
DRAWING No. 2021-013-7

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	BID SET	02/24/2022	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E

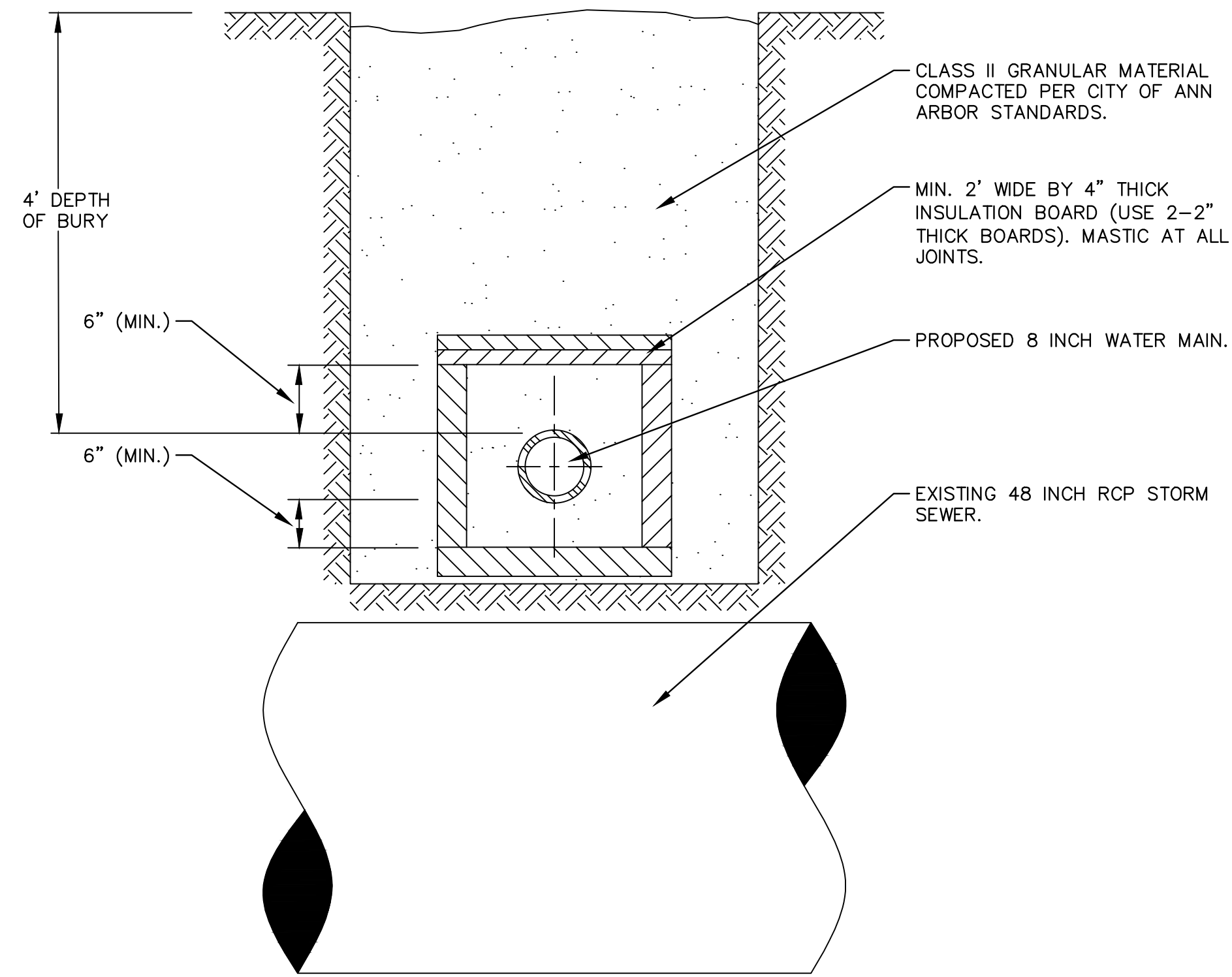
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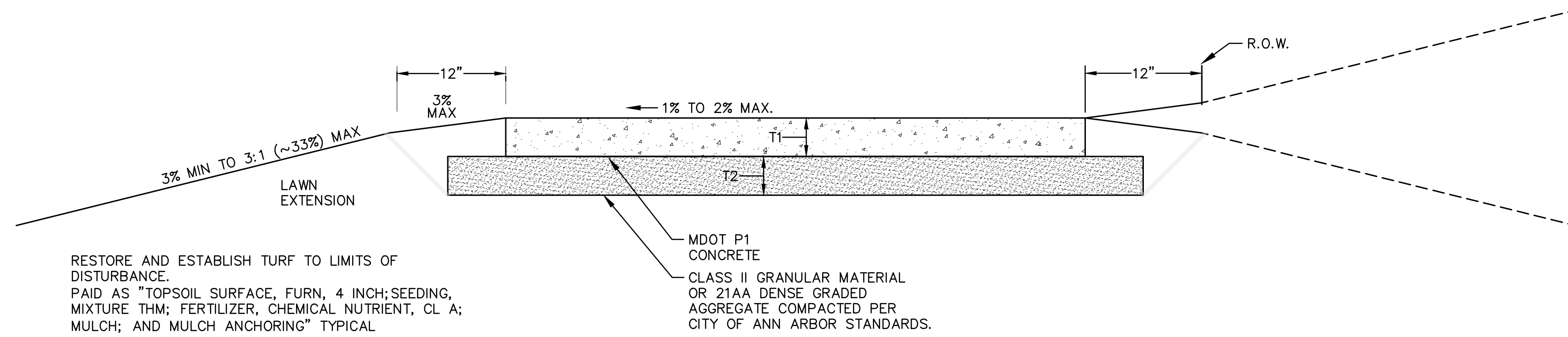
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
TYPICAL ROAD SECTIONS
ROAD CROSS-SECTIONS - SUNSET COURT
SCALE: NTS
DRAWING No. 2021-013-8

NOTES:

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



WATER MAIN INSULATION DETAIL



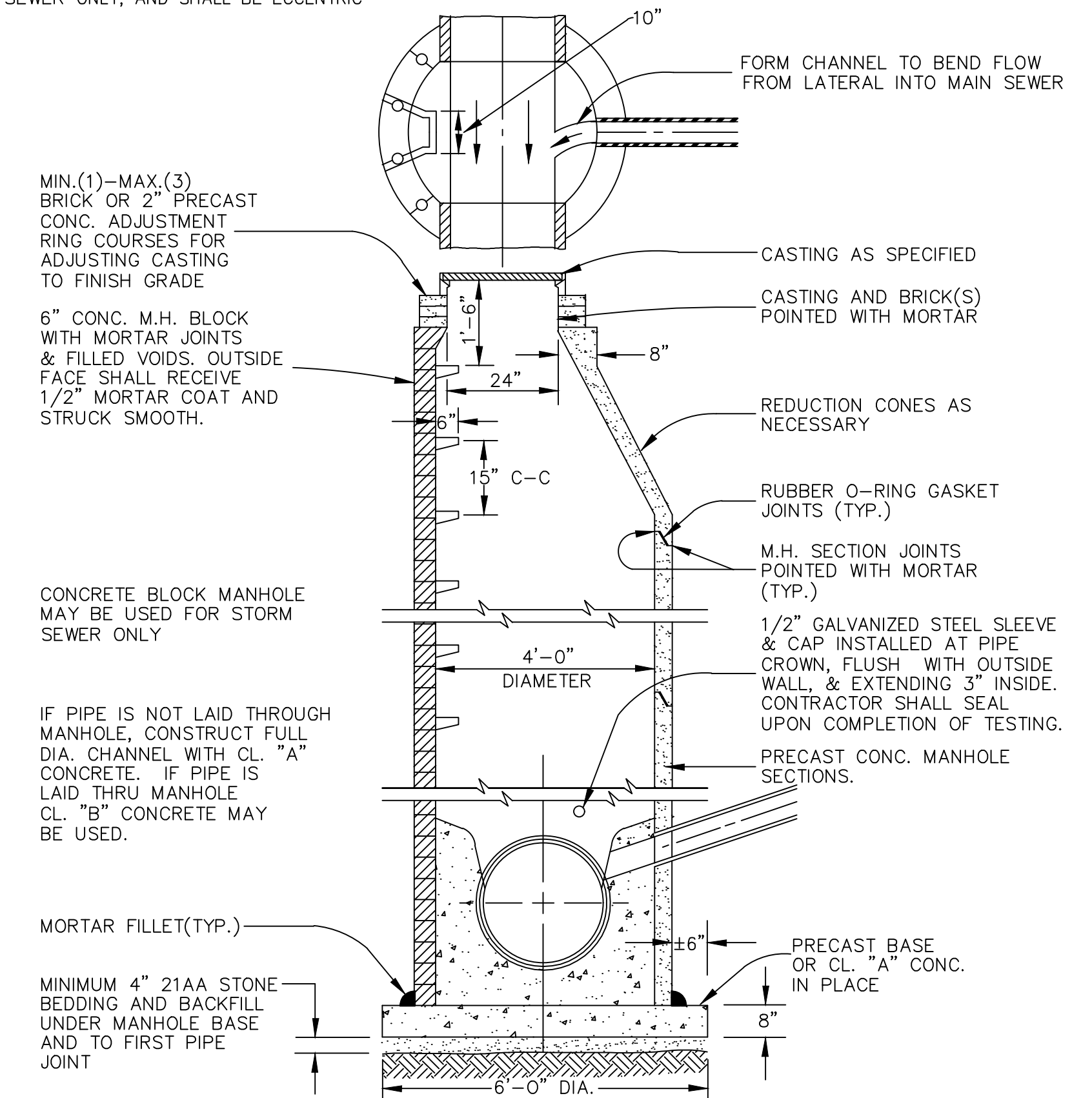
NOTES:

- SIDEWALK SHALL BE A DESIGNED AND CONSTRUCTED TO MEET ALL ADA STANDARDS AND REQUIREMENTS.
- CITY OF ANN ARBOR MINIMUM STANDARD WIDTH OF SIDEWALK IS FIVE (5) FEET.
- CONCRETE SIDEWALK THICKNESS (T1) SHALL BE A MINIMUM OF FOUR (4) INCHES.
- SIDEWALK THICKNESS (T1) SHALL BE INCREASED AT DRIVE APPROACHES TO SIX (6) INCHES FOR SINGLE-FAMILY OR DUPLEX RESIDENTIAL USES. ALL OTHER USES REQUIRE A MINIMUM EIGHT (8) INCH THICKNESS WITHIN THE DRIVE APPROACH.
- BASE THICKNESS (T2) SHALL BE A MINIMUM OF FOUR (4) INCHES.
- THICKNESS OF THE BASE (T2) SHALL BE INCREASED TO A MINIMUM OF SIX (6) INCHES WITHIN THE DRIVE APPROACH.
- IF EXISTING SUBGRADE MATERIAL IS APPROVED BY THE ENGINEER FOR USE, COMPACT THE EXISTING SUBGRADE TO 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY.
- NATIVE MATERIAL MAY BE ACCEPTABLE FOR SIDEWALK CONSTRUCTION, IF THE BASE IS STABLE AND FREE OF ORGANIC OR DELETERIOUS MATERIALS.
- SIDEWALK RAMPS SHALL BE CONSTRUCTED AT STREET INTERSECTIONS AS DIRECTED AND SHALL COMPLY WITH THE REQUIREMENTS OF MDOT DETAIL R-28 (LATEST VERSION).
- SIDEWALKS MAY MEANDER WITHIN THE RIGHT-OF-WAY TO PROTECT AND PRESERVE NATURAL FEATURES.
- EXPANSION AND CONTRACTION JOINTS SHALL BE PROVIDED PER CITY OF ANN ARBOR STANDARD DETAILS AND SPECIFICATIONS.

**SIDEWALK CROSS SECTION, SD-R-9
NOT TO SCALE**

NOTE:

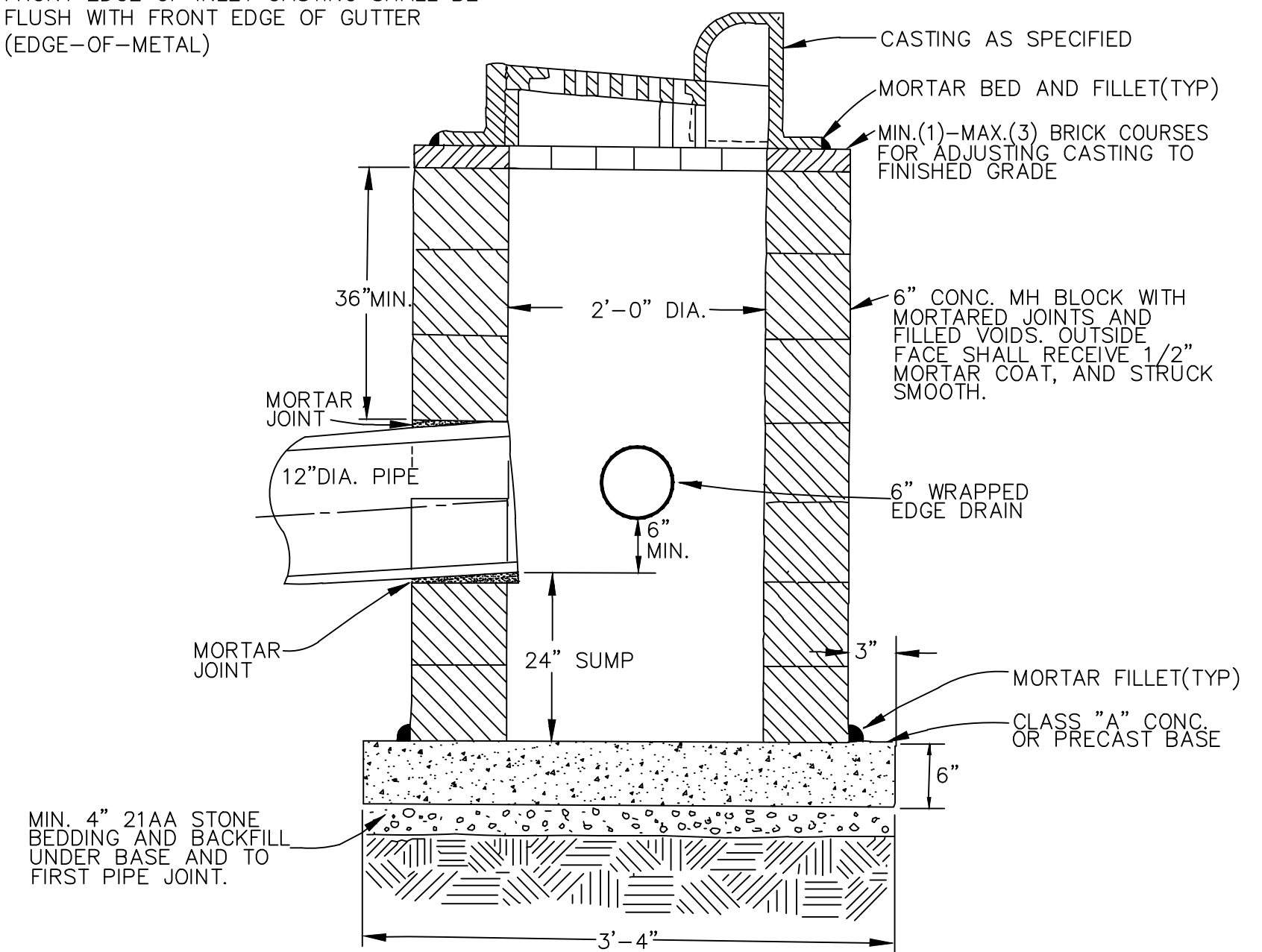
- ALL SANITARY MANHOLES SHALL BE PRECAST CONC.
- ALL MANHOLES MUST HAVE ECCENTRIC CONES—BOTH STORM AND SANITARY
- ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
- CONCRETE BLOCK MANHOLE MAY BE USED FOR STORM SEWER ONLY, AND SHALL BE ECCENTRIC



**STANDARD MANHOLE (TYPE 1) DETAIL
FOR 8" TO 30" SEWERS**

NOTE:

- MAY BE USED WITH ONLY SINGLE OUTLET PIPE, AND NO INLET PIPE
- FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)



SINGLE INLET STRUCTURE DETAIL

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Know what's below. Call before you dig.

	C/E	C/E	C/E	C/E	C/E	CHECKED
	BWA	BWA	BWA	BWA	BWA	DRAWN
02/24/2022		12/14/2021		09/23/2021		DATE
BID SET	PERMIT PLAN	60% PLAN	PRELIMINARY PLAN			REV.
4	3	2	1			



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
 2022 MISC UTILITY PROJECTS
 CONSTRUCTION DETAILS
 STORM SEWER DETAILS
 SCALE: NTS
 DRAWING No. 2021-013-9
 SHEET No. 9 OF 35

MINIMUM STANDARDS

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

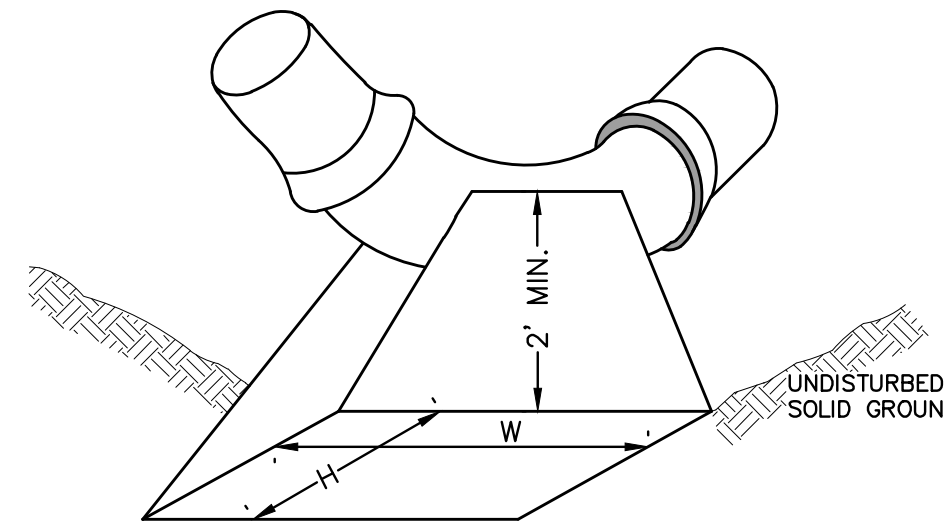
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

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

FITTINGS I.D. INCHES	PLUG TEE CROSS		BENDS								HYDRANT	
	W	H	90°		45°		22½°		11¼°		W	H
4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5
6	2.0	1.5	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5
8	2.5	2.0	3.5	2.0	2.0	2.0	2.0	1.0	1.0	1.0	2.5	2.0
12	3.5	3.0	5.5	3.0	3.5	2.5	2.0	2.0	2.0	1.0		
16	6.0	3.5	6.0	4.0	5.0	3.0	3.5	2.5	2.0	2.0		

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

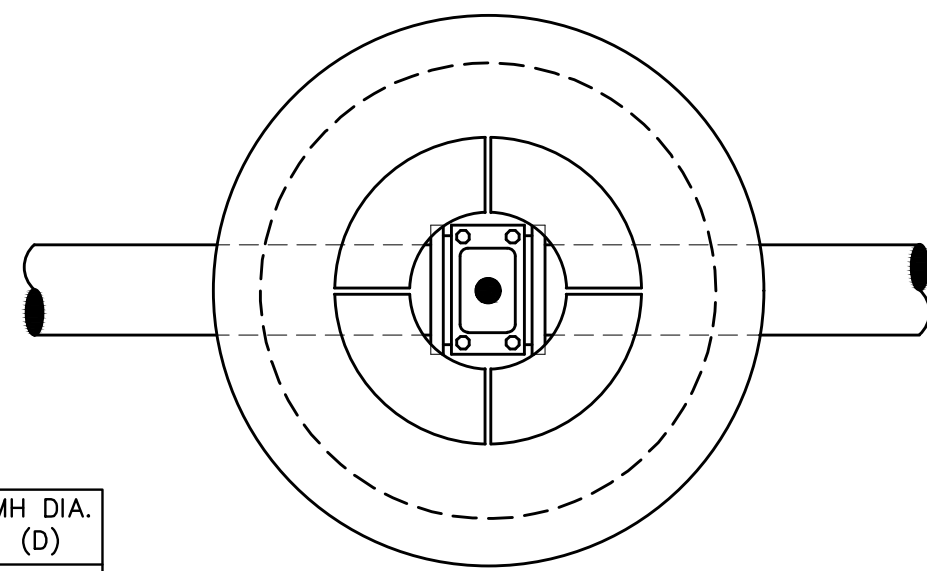
W = WIDTH IN FEET
H = HEIGHT IN FEET



NOTE:

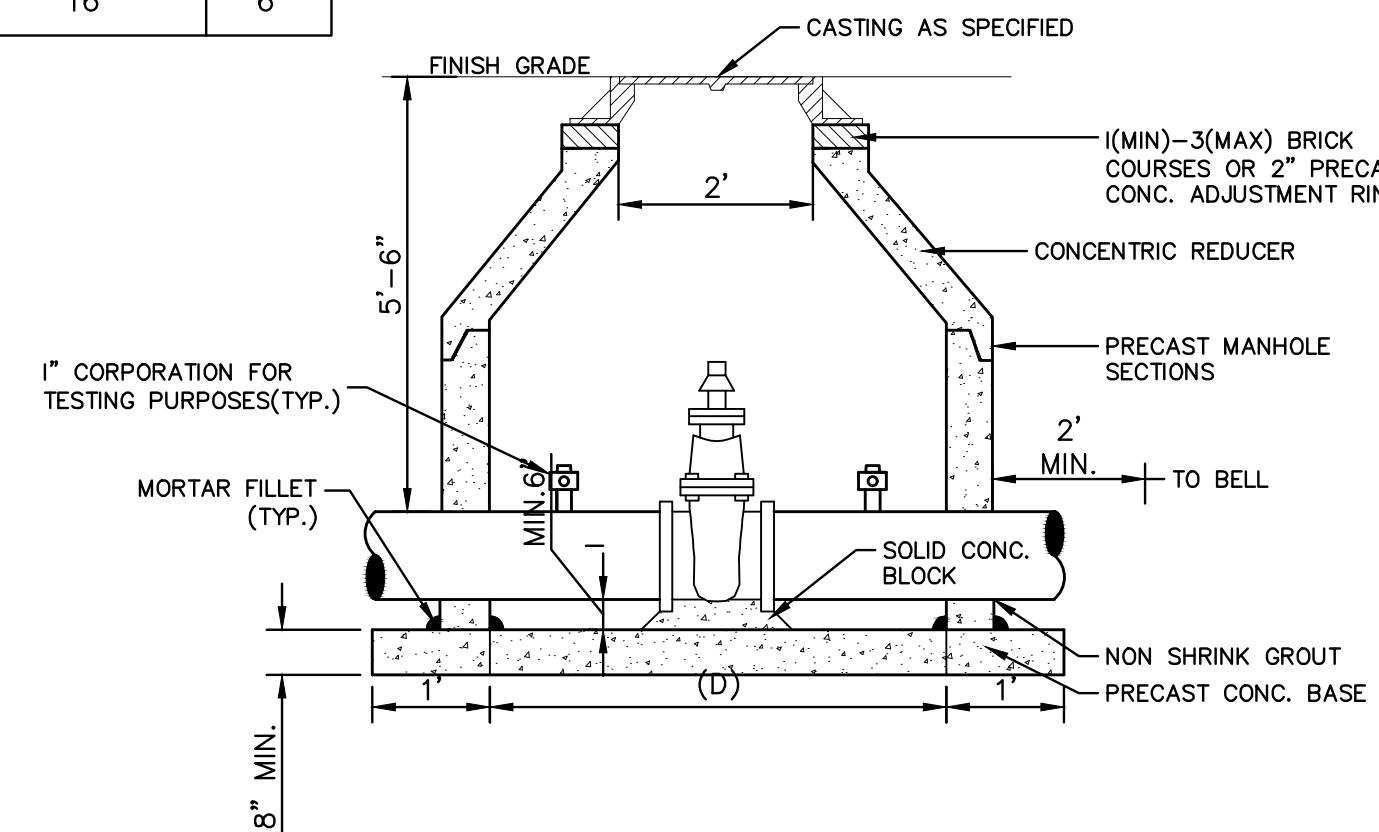
THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

THRUST BLOCK SD-W-2



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

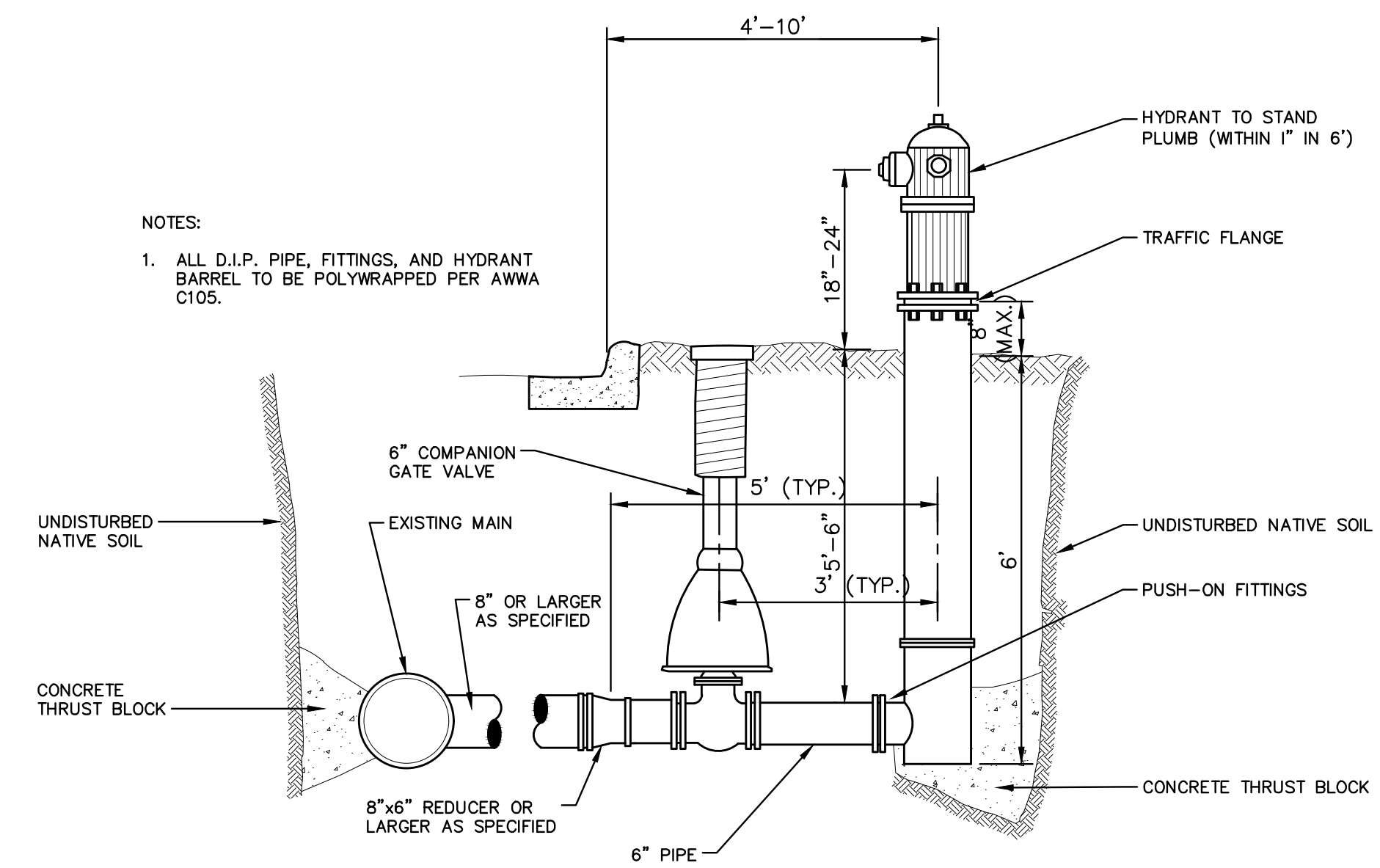
TOP VIEW



NOTES:

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

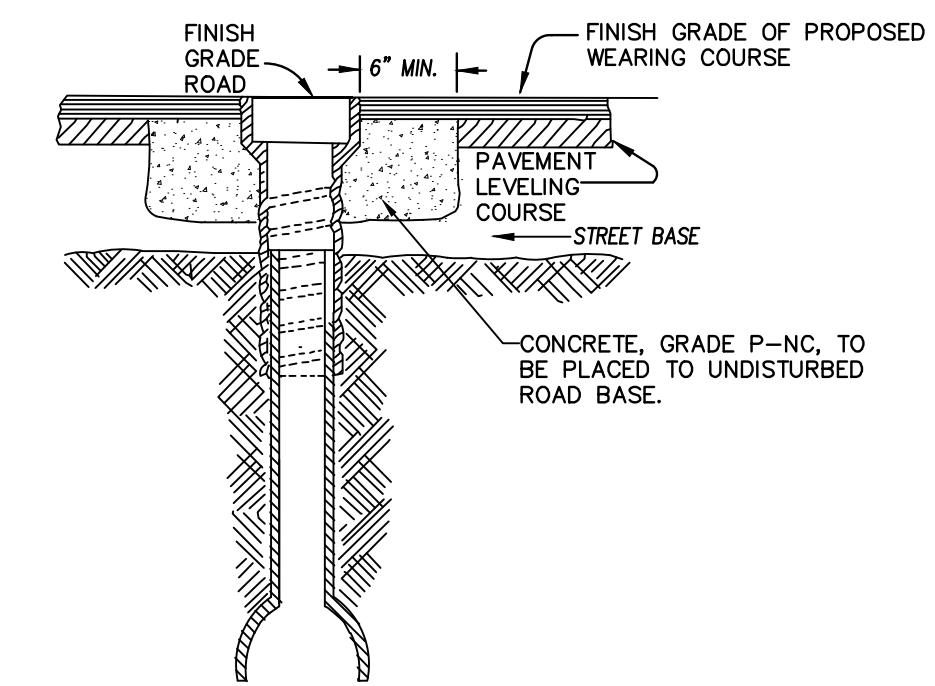
GATE WELL FOR MAIN 16" & SMALLER SD-W-3



NOTES:

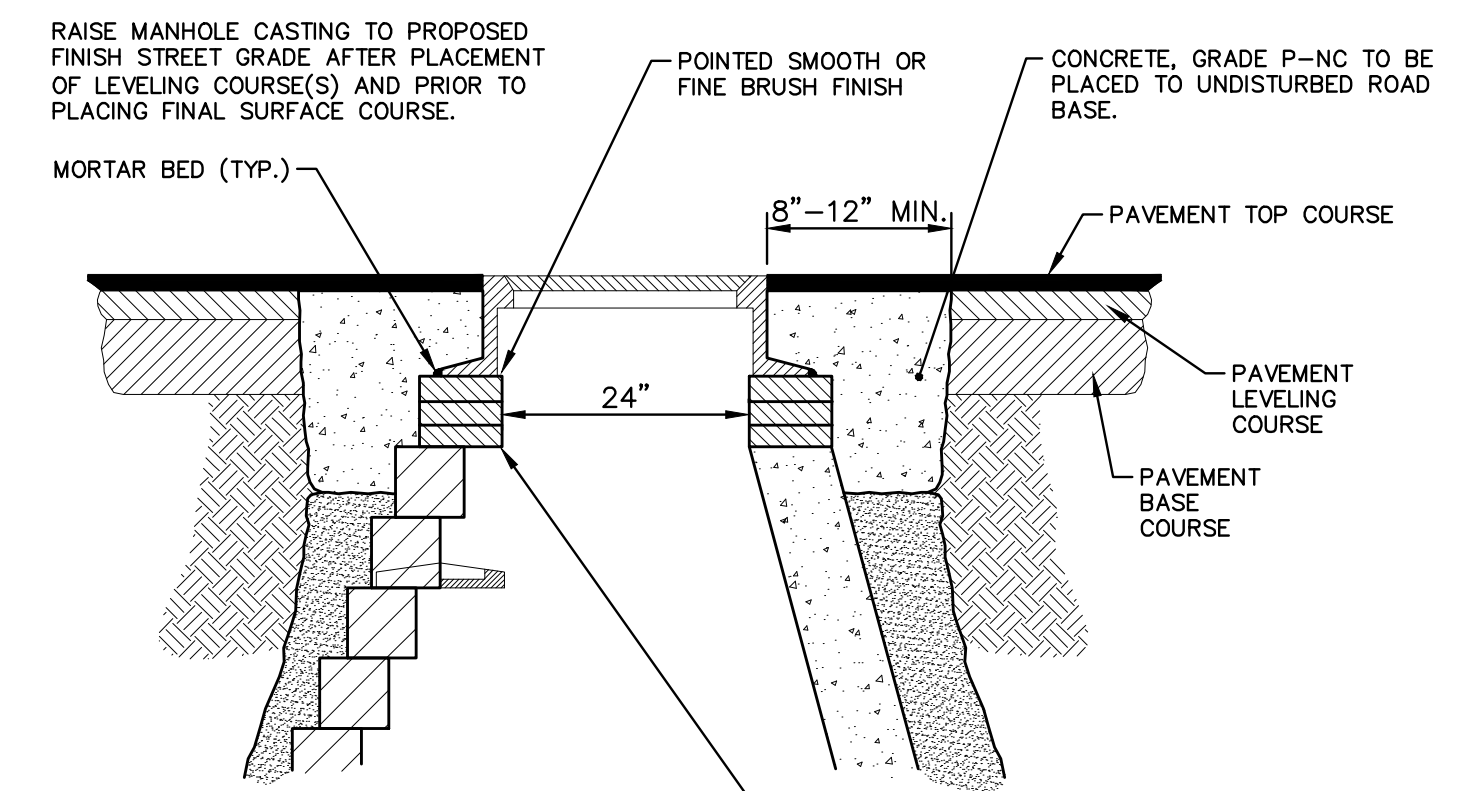
1. ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.

FIRE HYDRANT ASSEMBLY



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

WATER VALVE BOX ADJUSTMENT

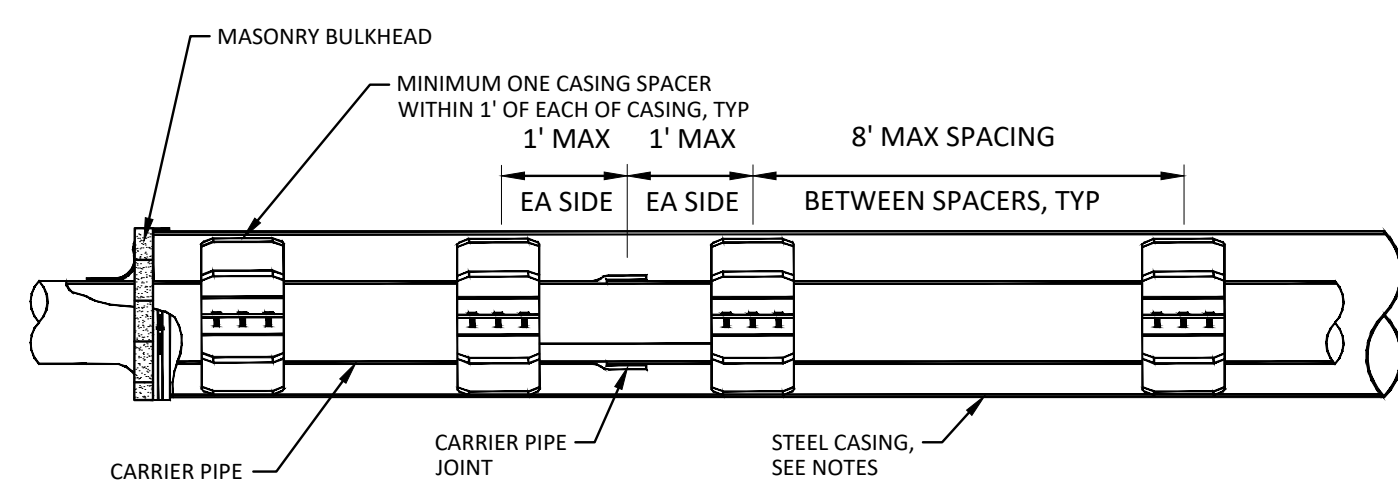


NOTE:

IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW ROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.

ADDITIONAL REPAIRS NECESSARY BEYOND 15" BELOW GRADE TO BE PAID FOR AS, "ADDITIONAL DEPTH STRUCTURE ADJUST/REPAIR"

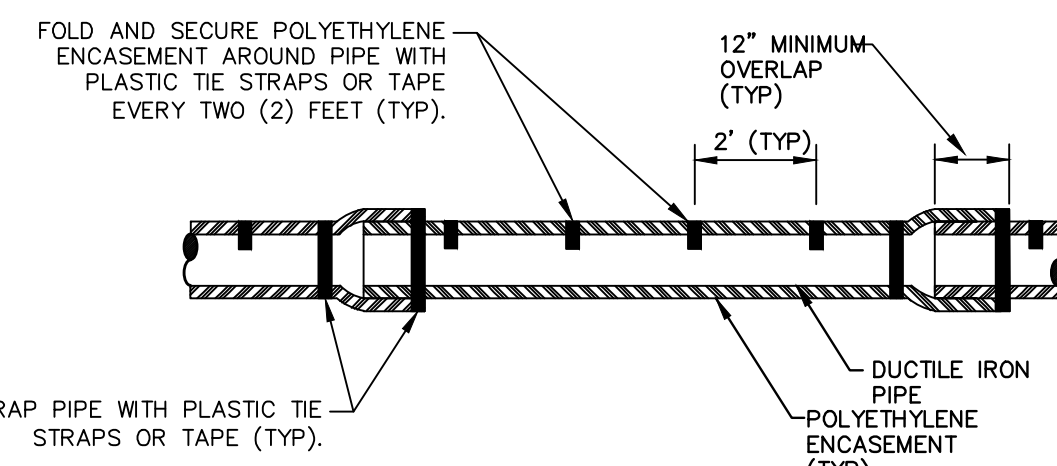
MANHOLE CASTING ADJUSTMENT SD-GU-6



NOTES:

1. THE AREA BETWEEN THE CASING PIPE AND SANITARY SEWER SHALL BE FILLED WITH FLOWABLE FILL FOLLOWING TESTING AND APPROVAL.
2. EACH JOINT OF CASING PIPE SHALL BE WELDED TOGETHER ALONG ENTIRE CIRCUMFERENCE OF PIPE.
3. MANUFACTURED SPACERS SHALL BE USED.
4. WOOD BLOCK SPACERS ARE NOT ALLOWED.
5. 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.
6. 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.
7. 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.
8. STEEL PIPE CASING SIZE AND WALL THICKNESS SHALL BE AS SPECIFIED IN THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. VERIFY CASING SIZES PRIOR TO ORDERING AND SIZING CASING INSULATORS.
9. CASING SPACERS SHALL BE RESTRAINED-TYPE BOLTED SPACERS AND SHALL HAVE A MAXIMUM SPACING AS SHOWN, OR AS RECOMMENDED BY MANUFACTURER, WHICHEVER IS CLOSER.

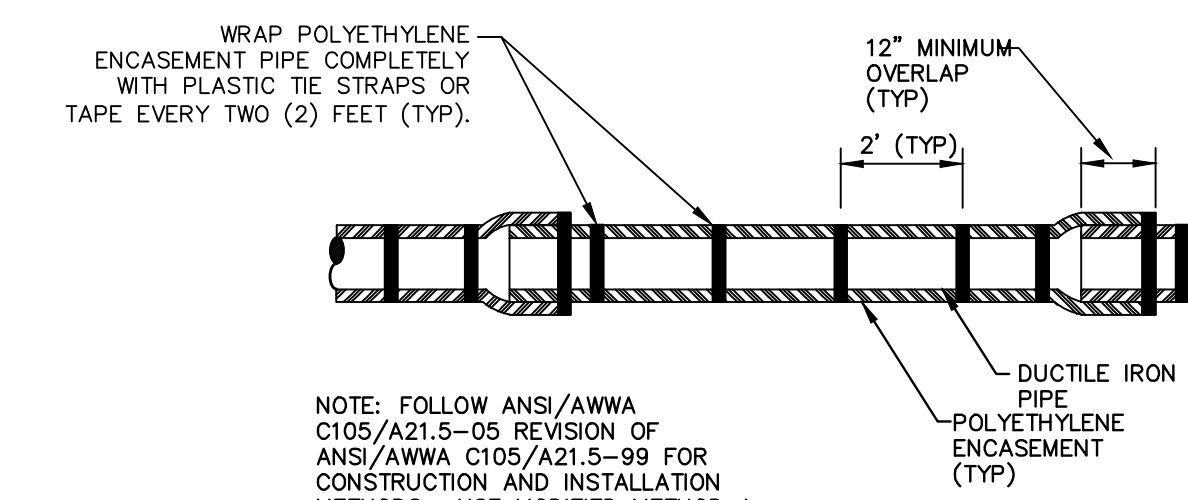
TYPICAL PIPE CASING DETAIL



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

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

POLYETHYLENE ENCASEMENT (DRY INSTALLATION)



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

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

POLYETHYLENE ENCASEMENT (WET INSTALLATION)



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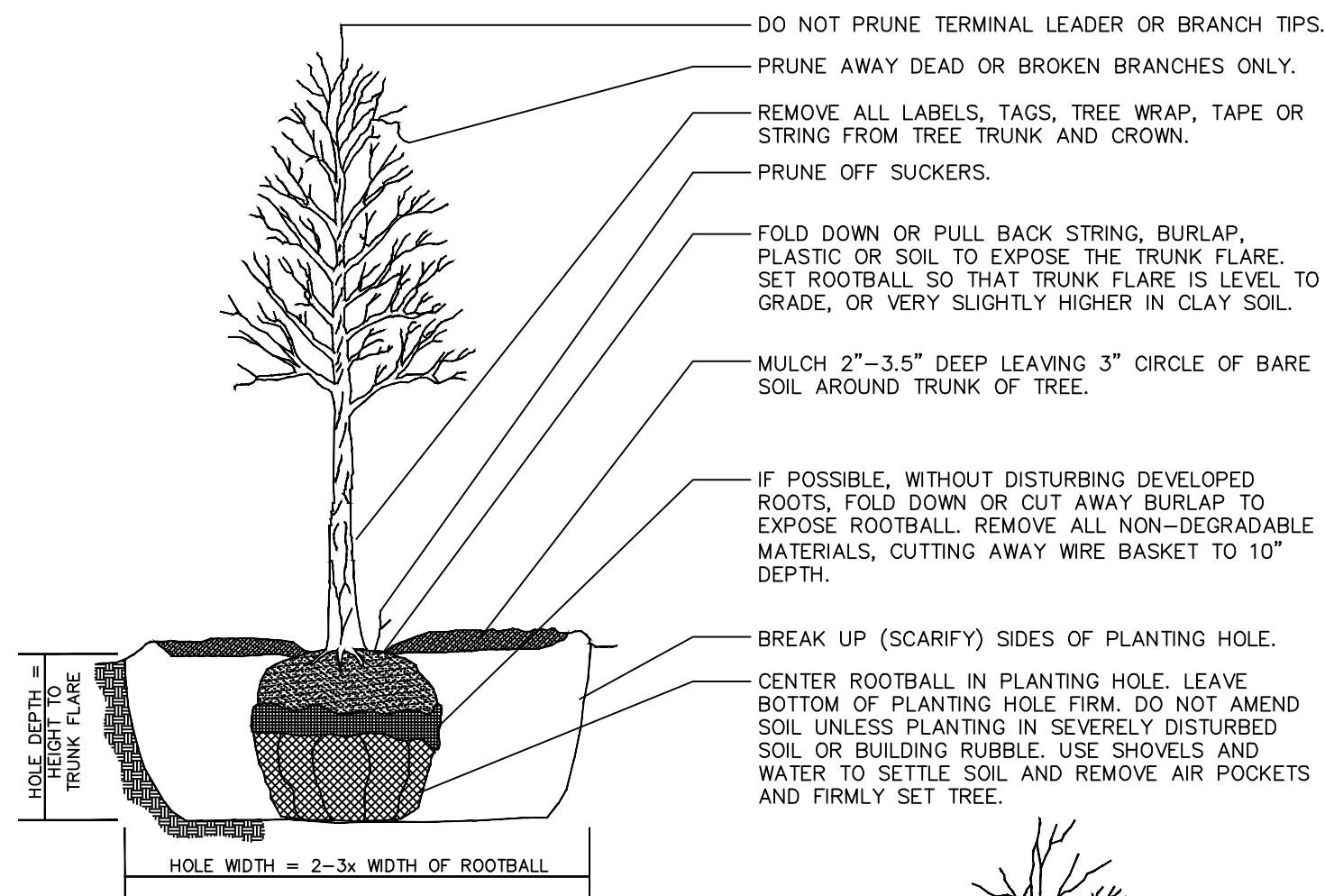
BID SET	BWA	C/E	DATE	DESCRIPTION
4	02/24/2022			
3	12/14/2021			
2	09/23/2021			
1	06/15/2021			

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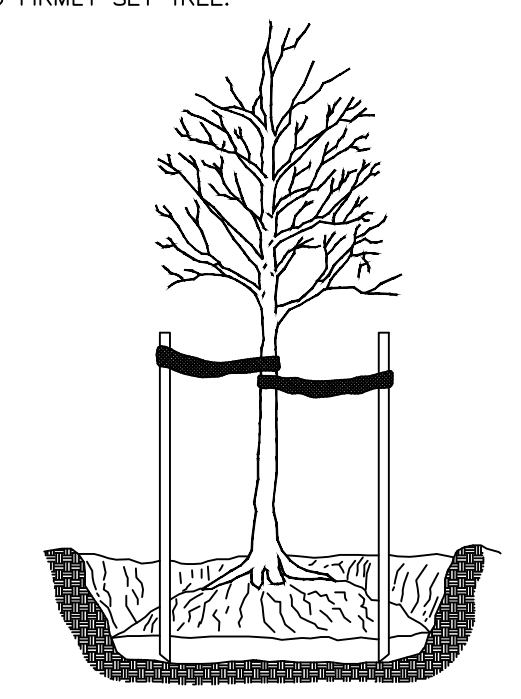
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CONSTRUCTION DETAILS
WATER MAIN DETAILS

SCALE: NTS
DRAWING No. 2021-013-10

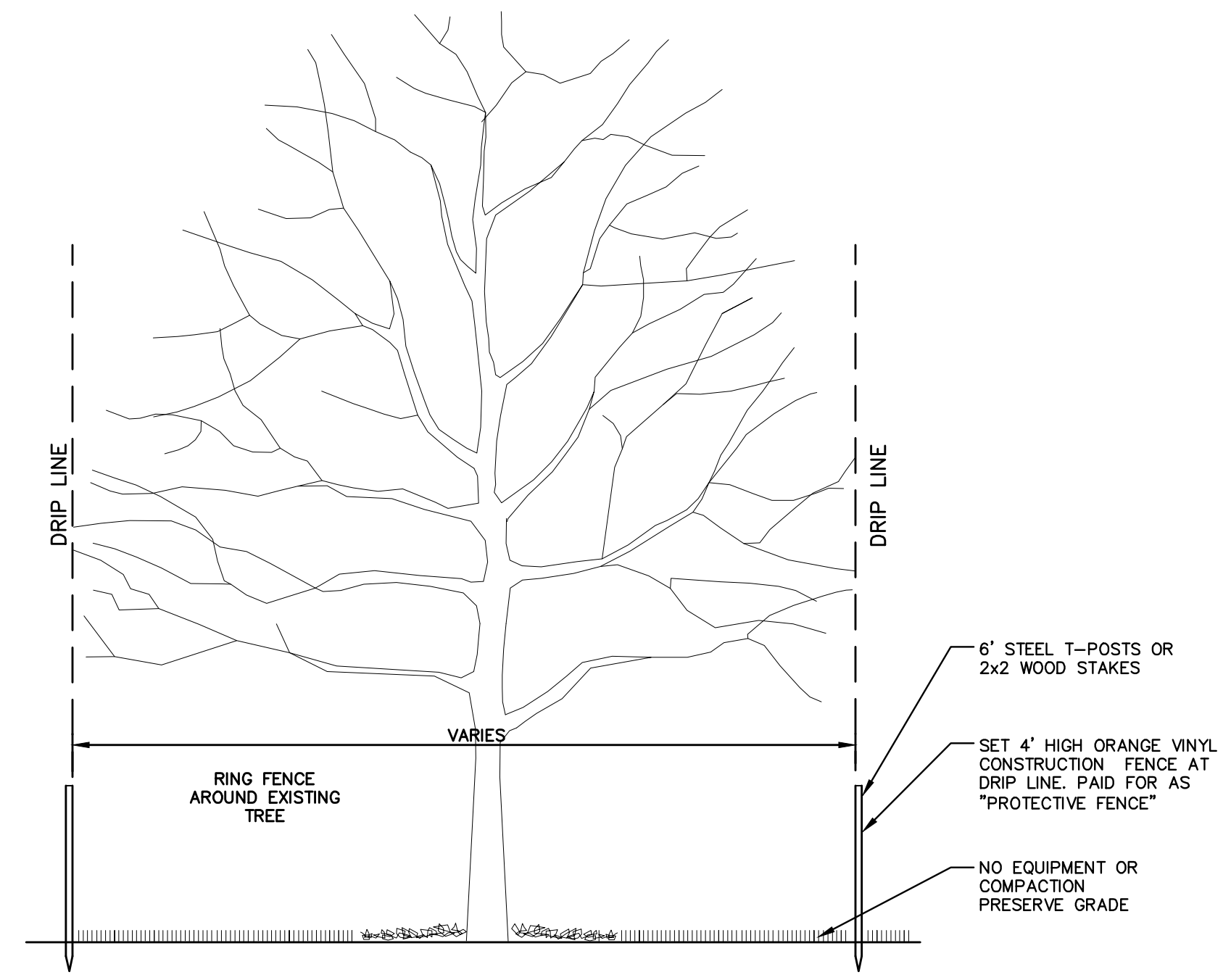


DO NOT STAKE UNLESS IN HEAVY CLAY SOIL, WINDY CONDITIONS, 3" OR GREATER DIAMETER TREE TRUNK OR LARGE CROWN. IF STAKING IS NEEDED DUE TO THESE CONDITIONS:

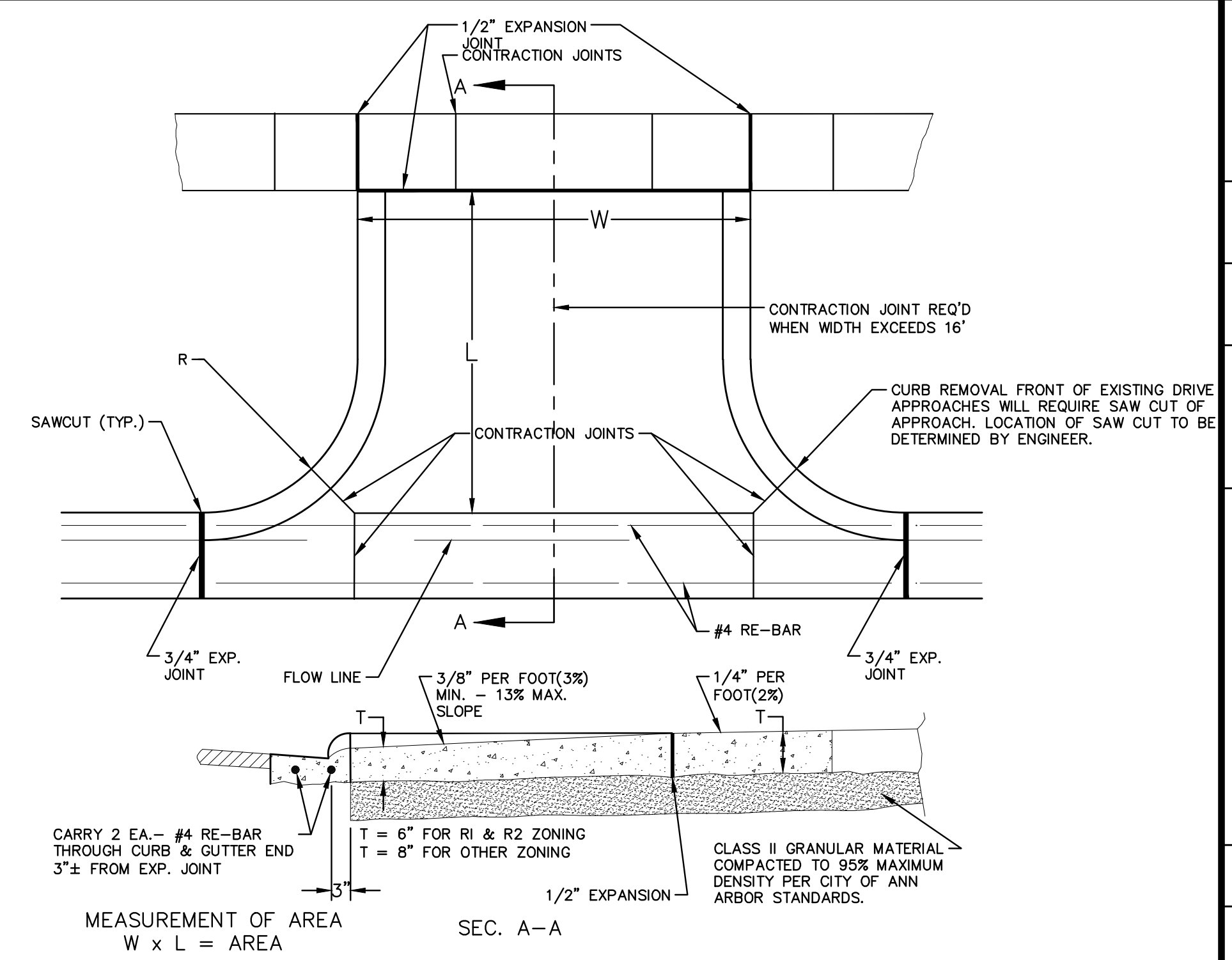
- STAKE WITH 2 x 2 HARDWOOD STAKES, OR APPROVED EQUAL, DRIVEN 6"-8" OUTSIDE OF ROOTBALL.
- LOOSELY STAKE TREE TRUNK TO ALLOW FOR TRUNK FLEXING.
- STAKE TREES JUST BELOW FIRST BRANCH WITH 2"-3" WIDE BELT-LIKE, NYLON OR PLASTIC STRAPS (2 PER TREE ON OPPOSITE SIDES OF TREE, CONNECT FROM TREE TO STAKE HORIZONTALLY. DO NOT USE ROPE OR WIRE THROUGH A HOSE.)
- REMOVE ALL STAKING MATERIALS AFTER 1 YEAR.



TREE PLANTING DETAIL

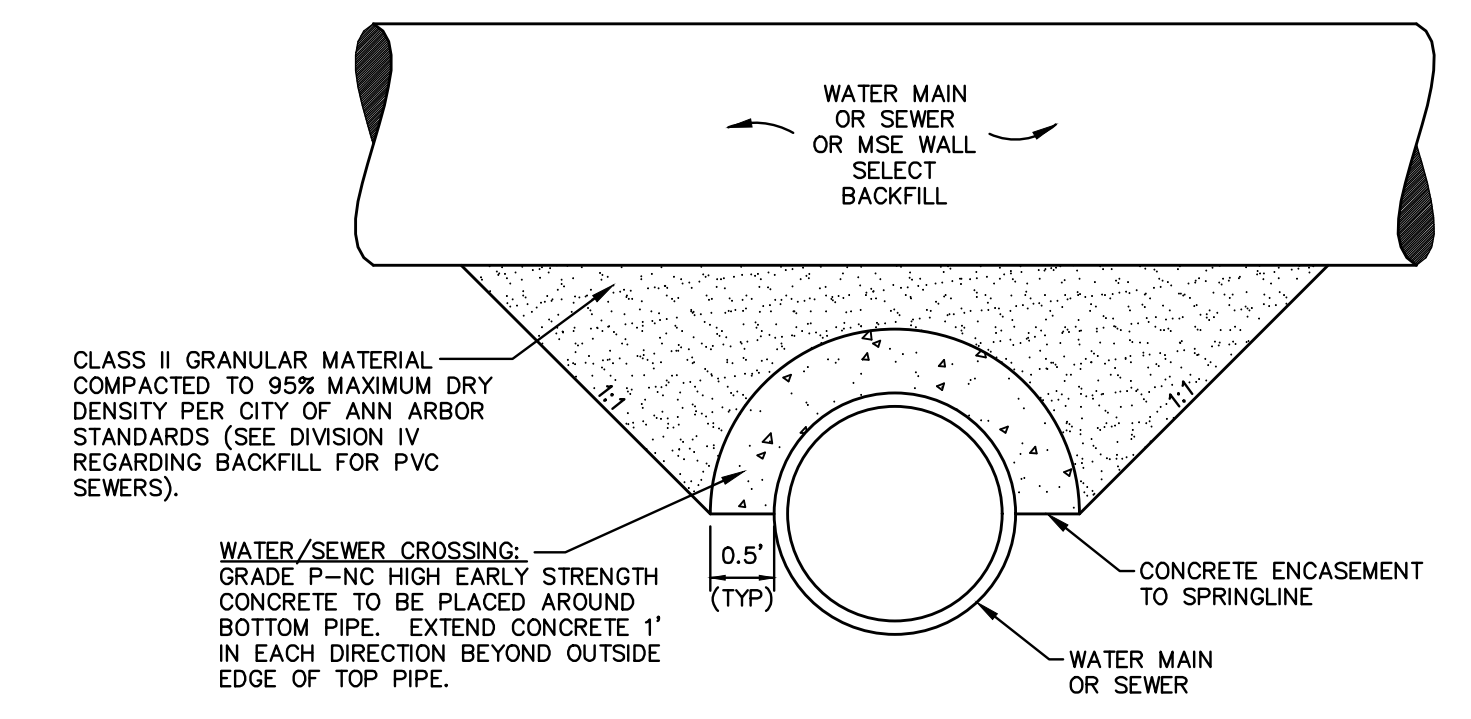


TREE PROTECTION DETAIL



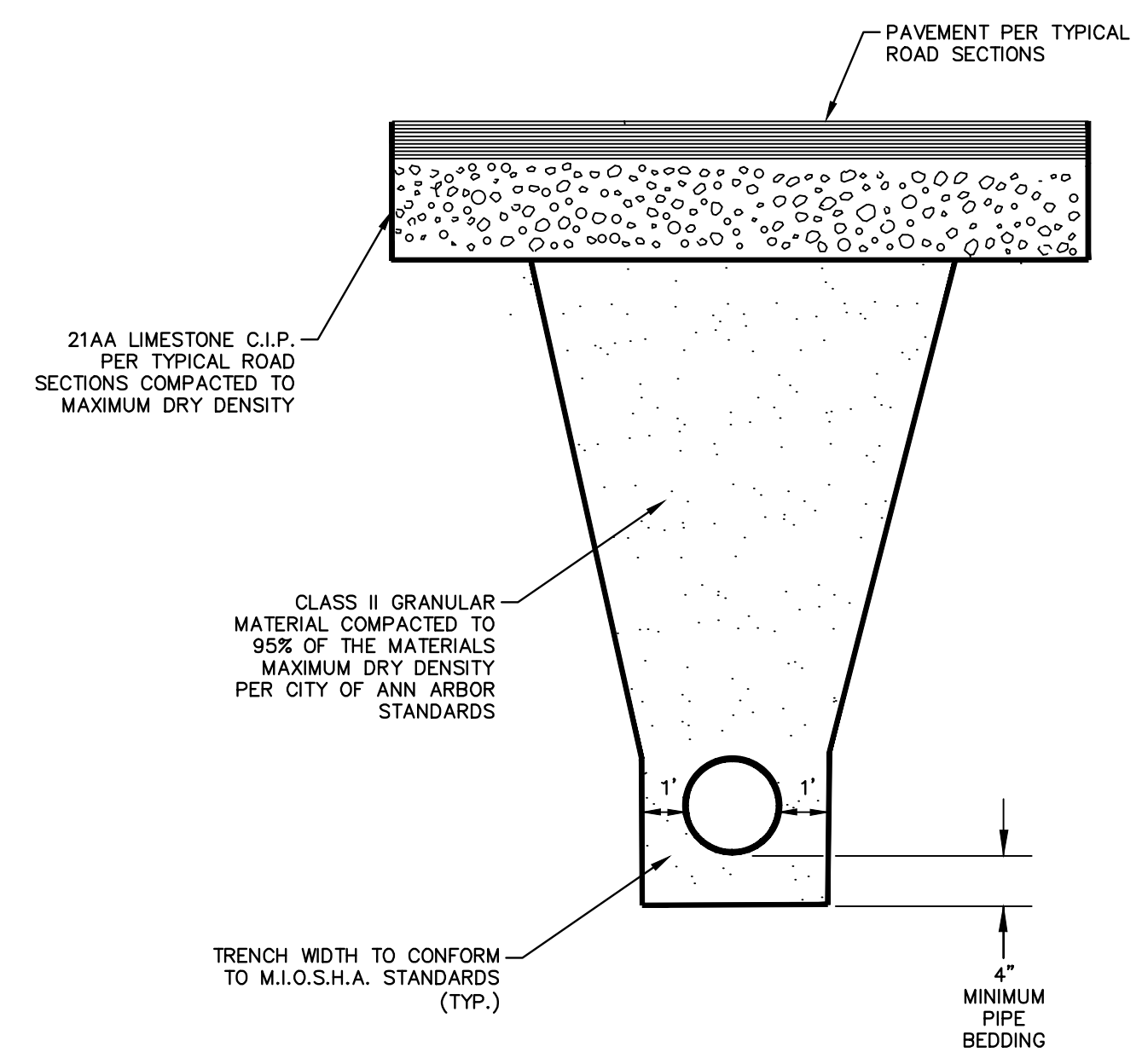
- NOTES:
1. DRIVE APPROACH TO BE CLASS 'A' CONCRETE.
 2. R(RADIUS) AND W(DRIVE WIDTH) AS REQUIRED FOR ZONING BY CITY CODE
 3. IF GUTTER IS OVERLAPPED, GUTTER OF THE APPROACH SHALL BE AT SAME ELEVATION AS EXISTING GUTTER AND ASPHALT WEDGE SHALL BE PLACED IN THE APPROACH.

TYPE 'M' DRIVE APPROACH SD-R-6



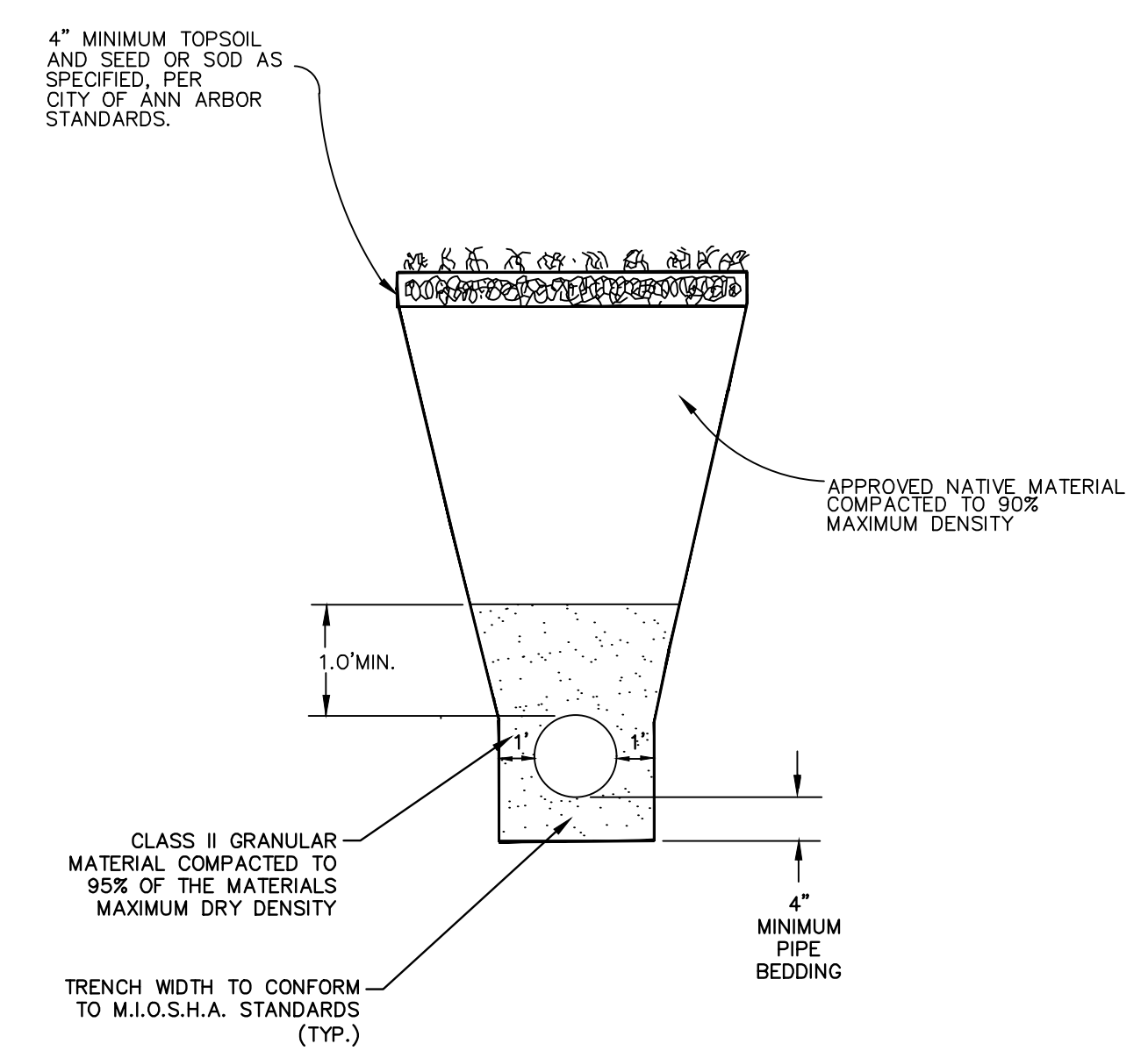
APPLIES TO: WATER AND/OR SEWER CROSSINGS WITH LESS THAN 1.5' OF VERTICAL CLEARANCE

CONCRETE UTILITY SADDLE

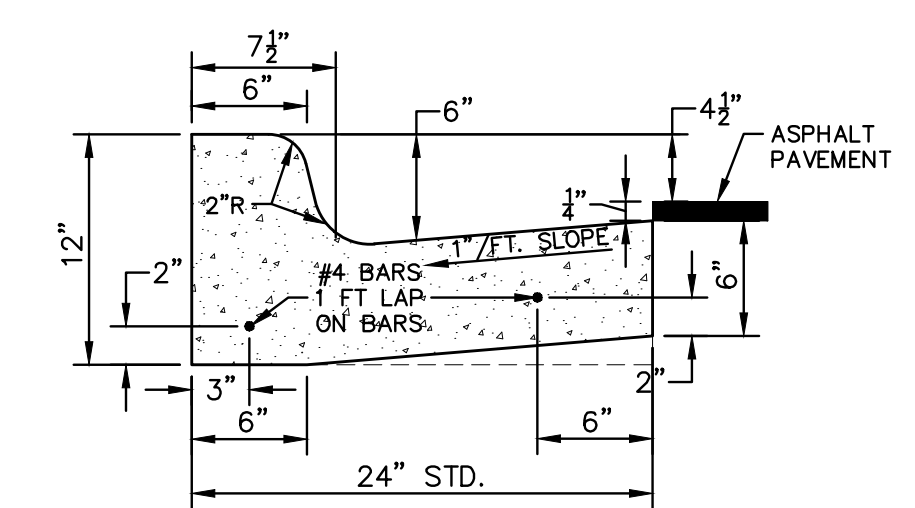


UTILITY TRENCH - TYPE I

APPLIES TO WATER MAIN AND SANITARY SEWER WITHIN INFLUENCES OF ALL PAVEMENTS.



UTILITY TRENCH - TYPE V



CURB AND GUTTER, CONC, DET F4, SPECIAL

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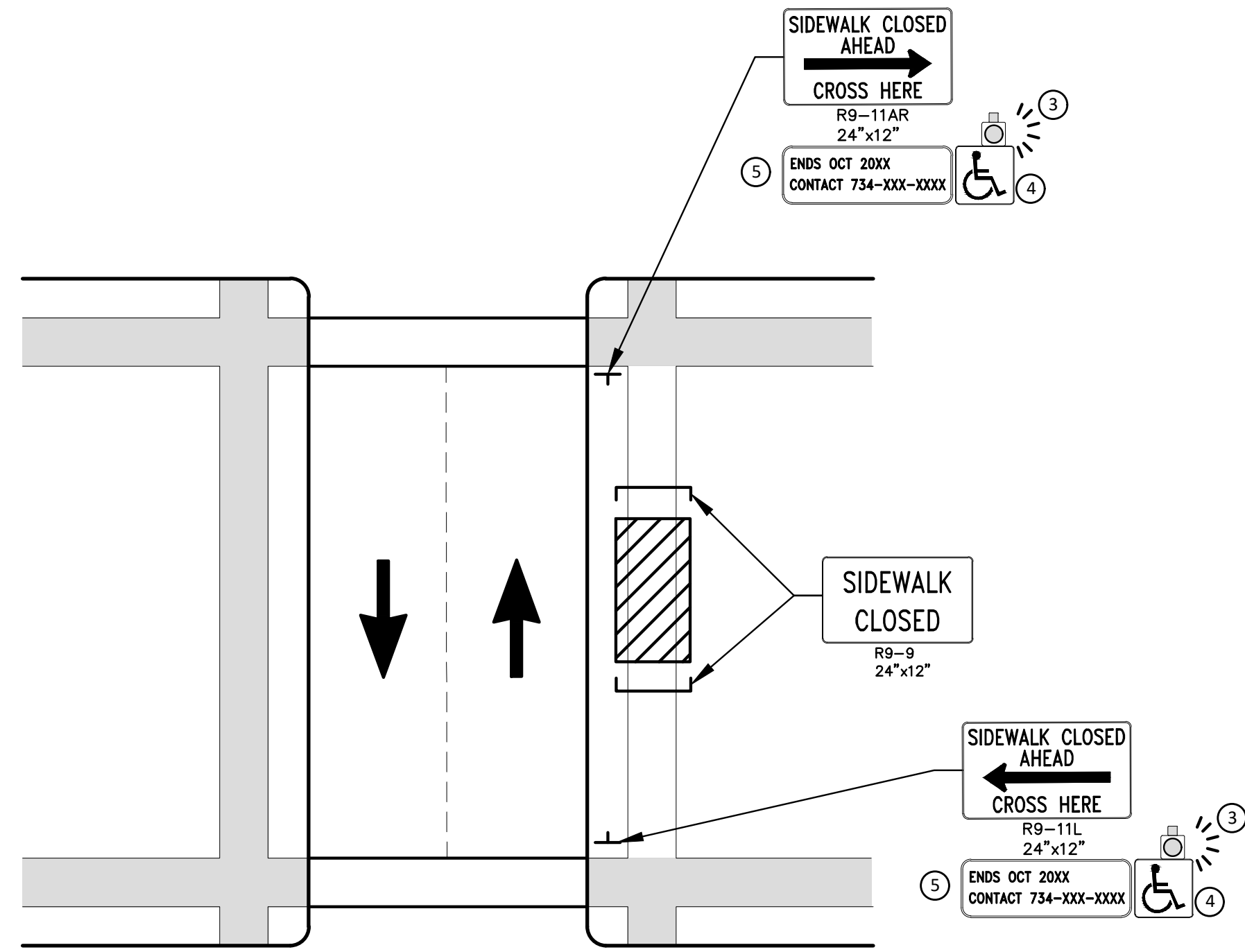
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	C/E	BWA	12/14/2021
	C/E	BWA	09/23/2021
	C/E	BWA	06/15/2021
	CHECKED	DRAWN	DATE

BID SET
 PERMIT PLAN
 60% PLAN
 PRELIMINARY PLAN

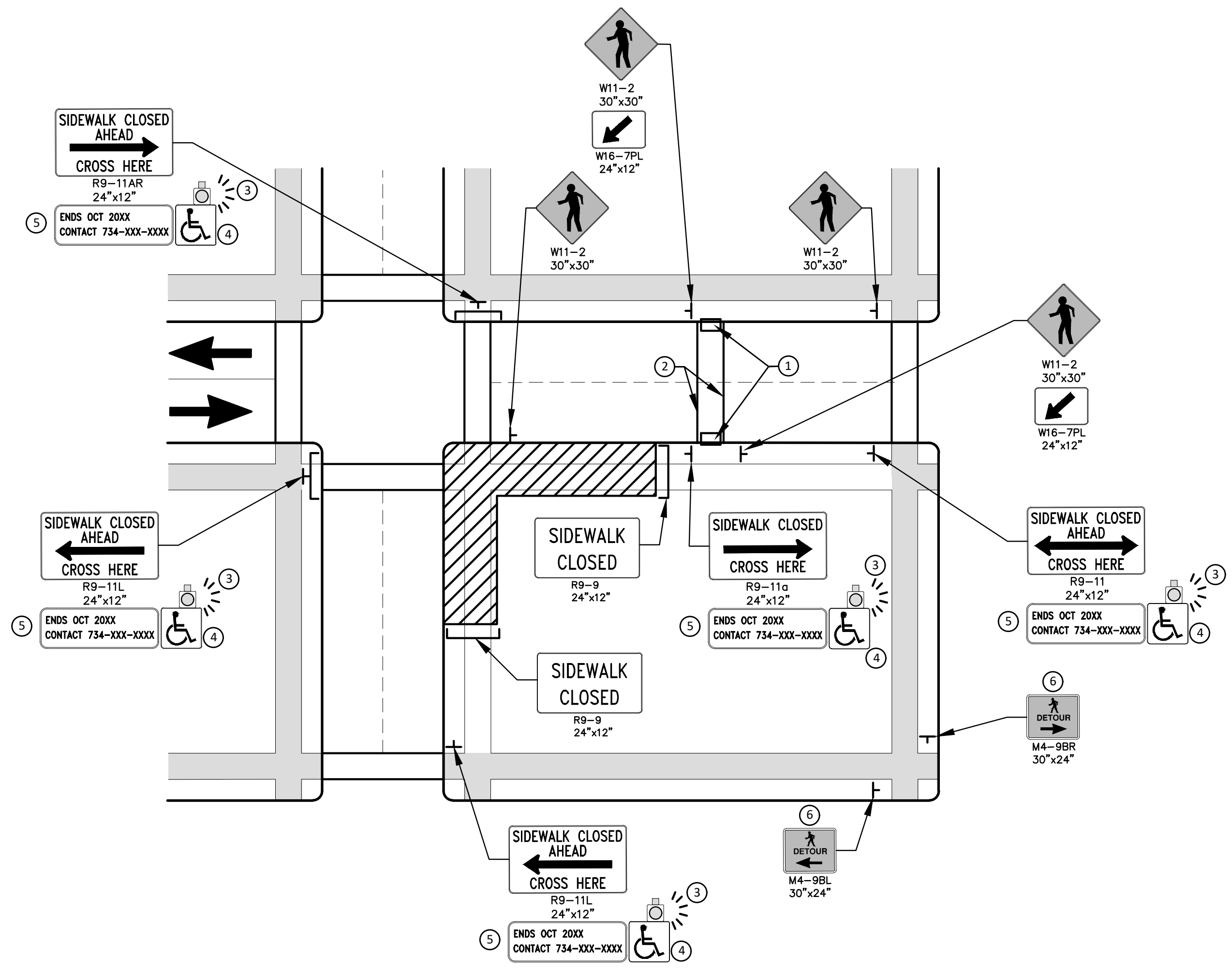
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SCALE: NTS
 DRAWING No. 2021-013-11
 SHEET No. 11 OF 35



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.

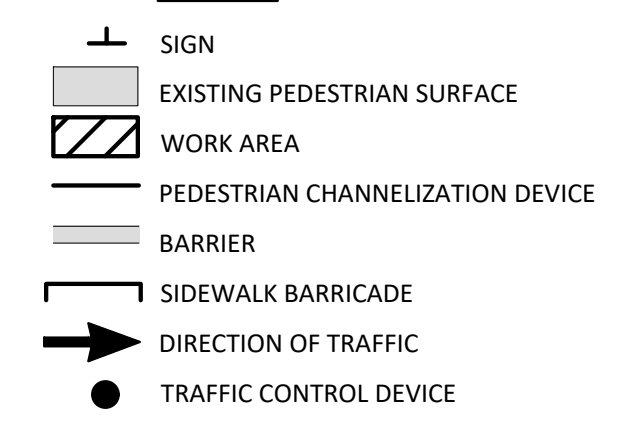
SPECIFIC NOTES

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



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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

PEDESTRIAN TRAFFIC CONTROL

APR DETOUR

SCALE: NTS

DRAWING No. 2021-013-12

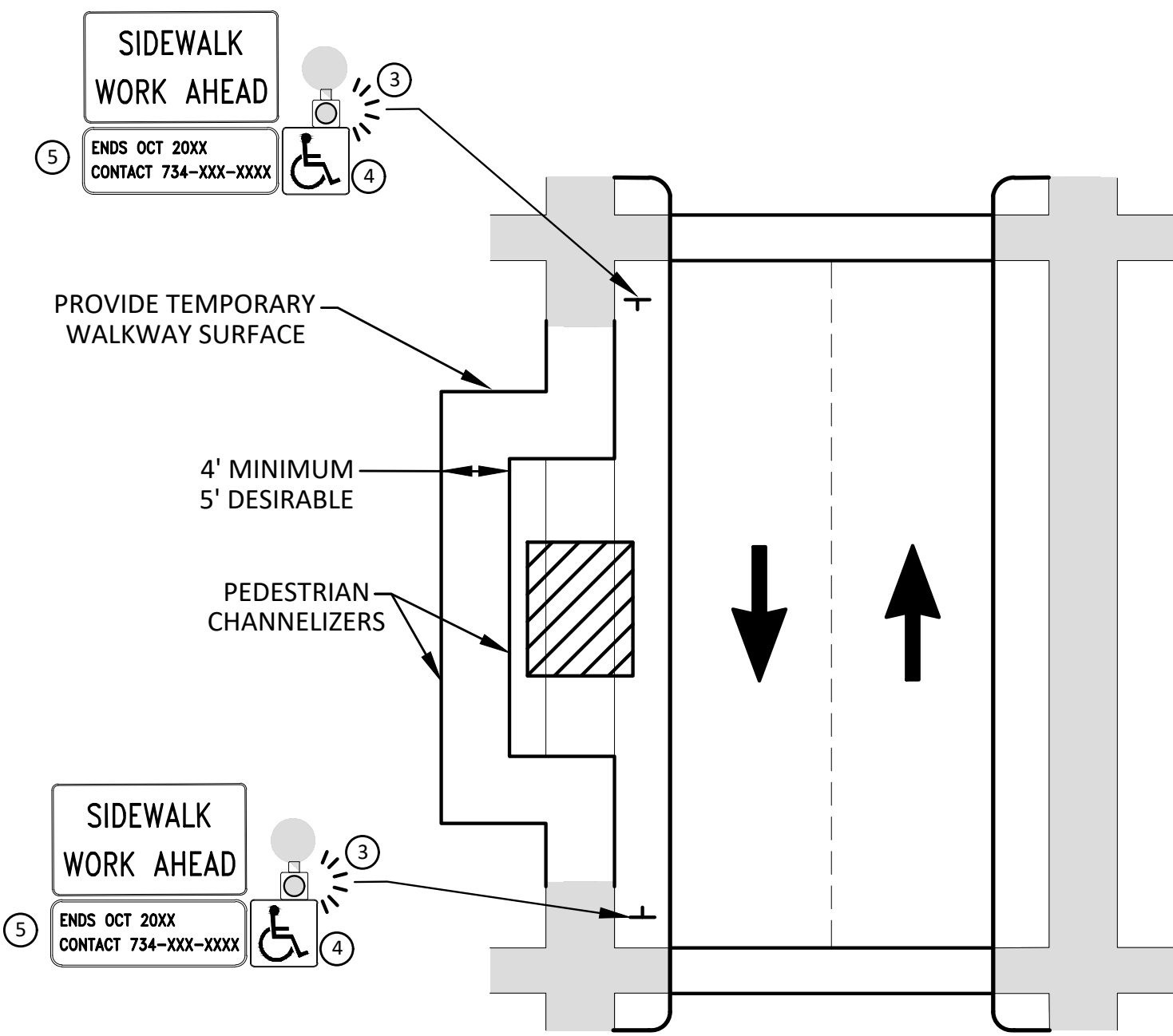
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REV.	DATE	DESCRIPTION	CHECKED	DRAWN
4	02/24/2022	BID SET	BWA	C/E
3	12/14/2021	PERMIT PLAN	BWA	C/E
2	09/23/2021	60% PLAN	BWA	C/E
1	06/15/2021	PRELIMINARY PLAN	BWA	C/E

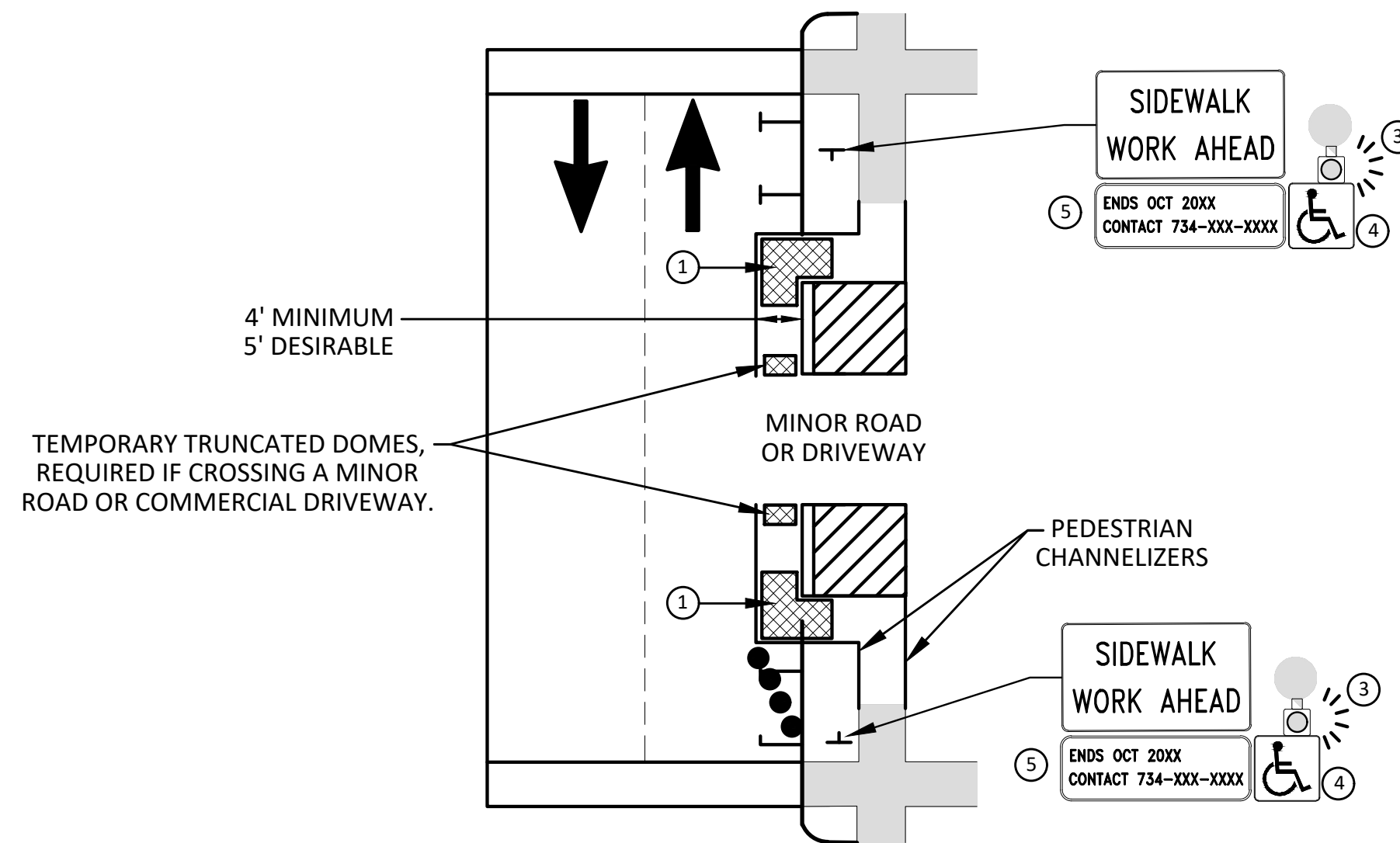
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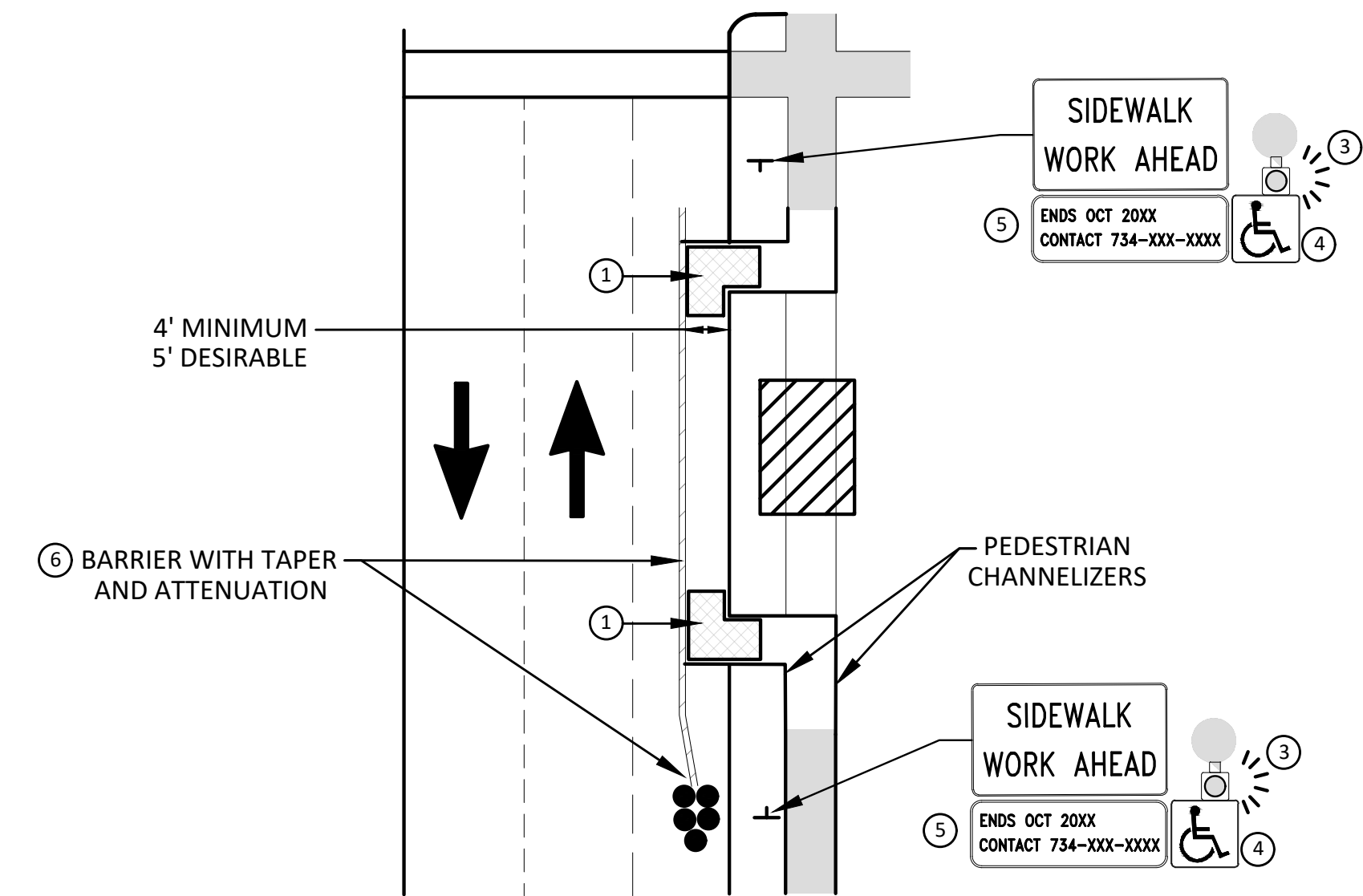


**BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY**
BYPASS TYPE A

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.

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 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 RAMP 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



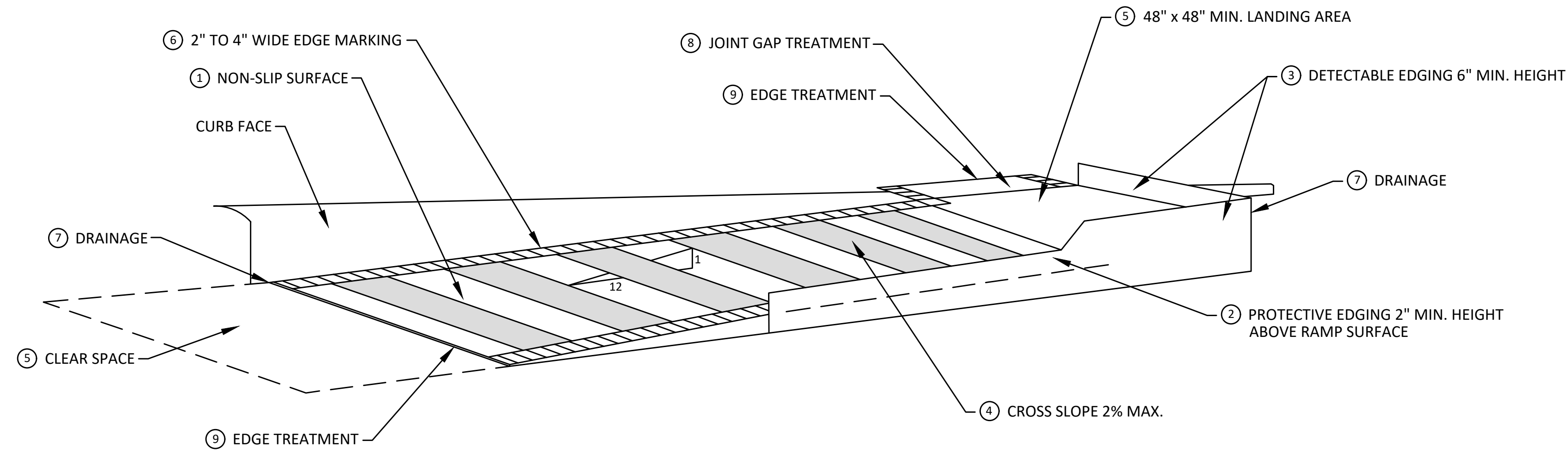
REV.	DESCRIPTION	DATE	BY	CHECKED
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3	PERMIT PLAN	12/14/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E



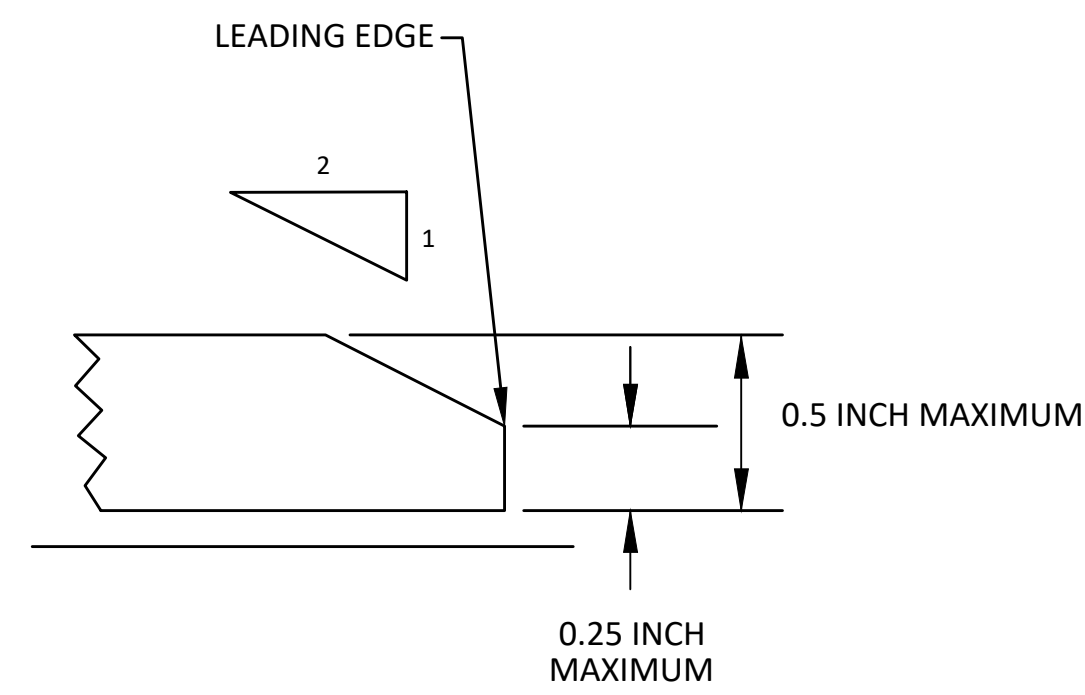
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
PEDESTRIAN TRAFFIC CONTROL
APR BYPASS

SCALE : NTS
DRAWING No. 2021-013-13

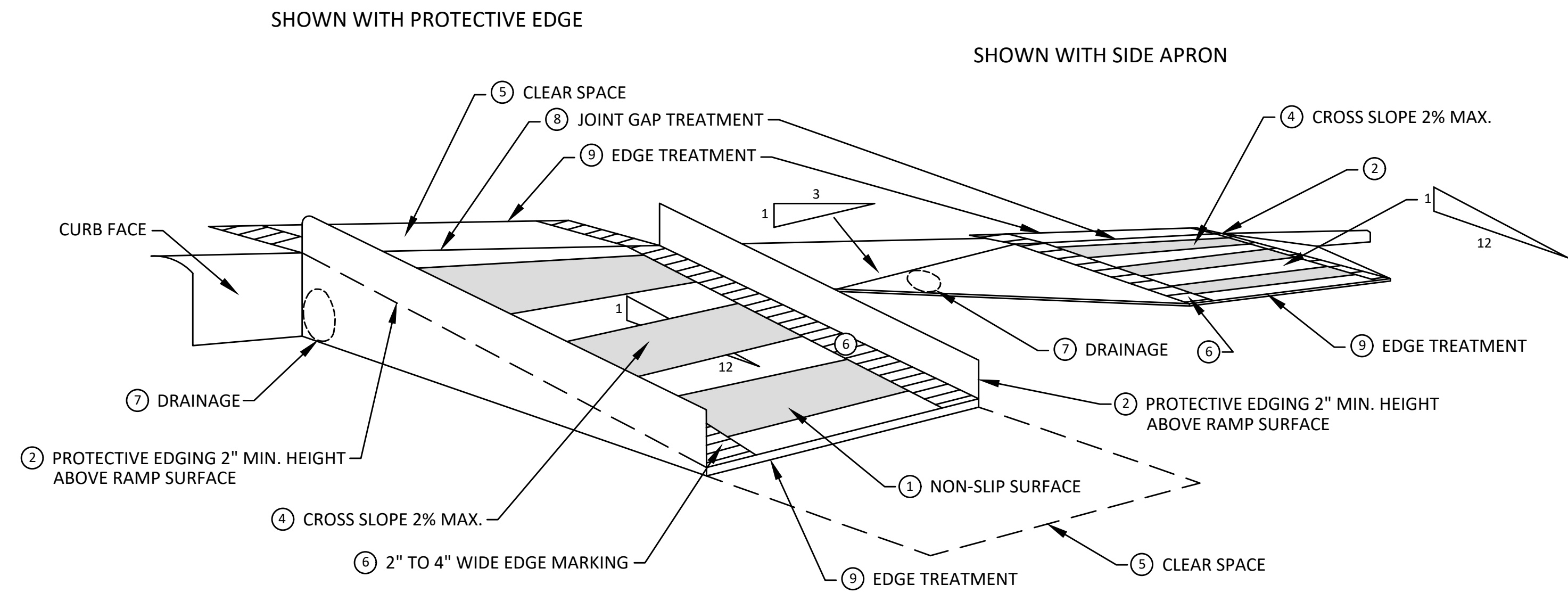
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**TEMPORARY CURB RAMP
PARALLEL TO CURB**



EDGE TREATMENT



**TEMPORARY CURB RAMP
PERPENDICULAR TO CURB**

SPECIFIC NOTES

- 1 CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.
- 2 PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- 3 DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- 4 CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.
- 5 CLEAR SPACE OF 48" x 48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- 6 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.
- 7 WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.
- 8 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
- 9 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.

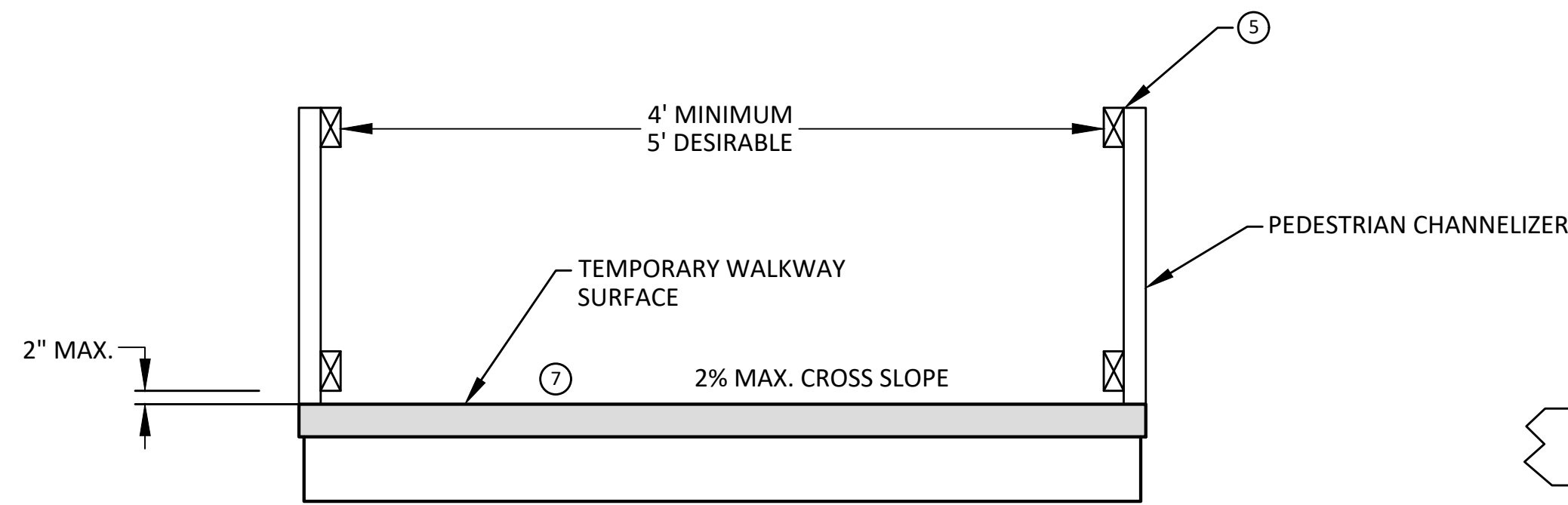


REV.	DESCRIPTION	DATE	DRAWN	CHECKED
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
4	BID SET	02/24/2022	BWA	C/E

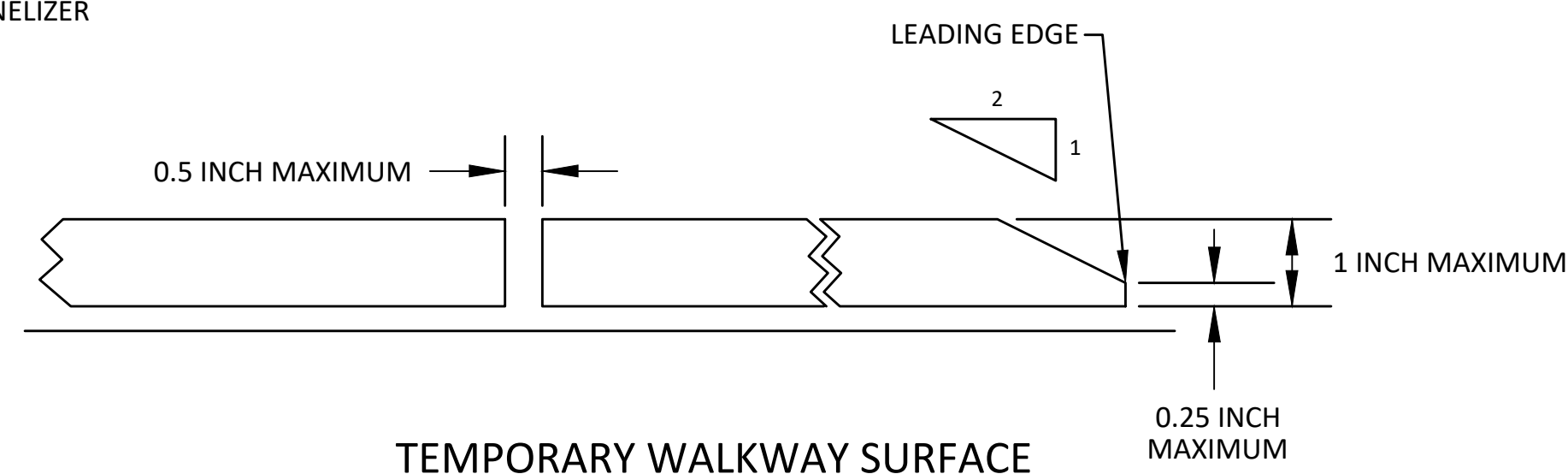


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
 PEDESTRIAN TRAFFIC CONTROL
 TP&R RAMPS
 SCALE: NTS
 DRAWING No. 2021-013-14

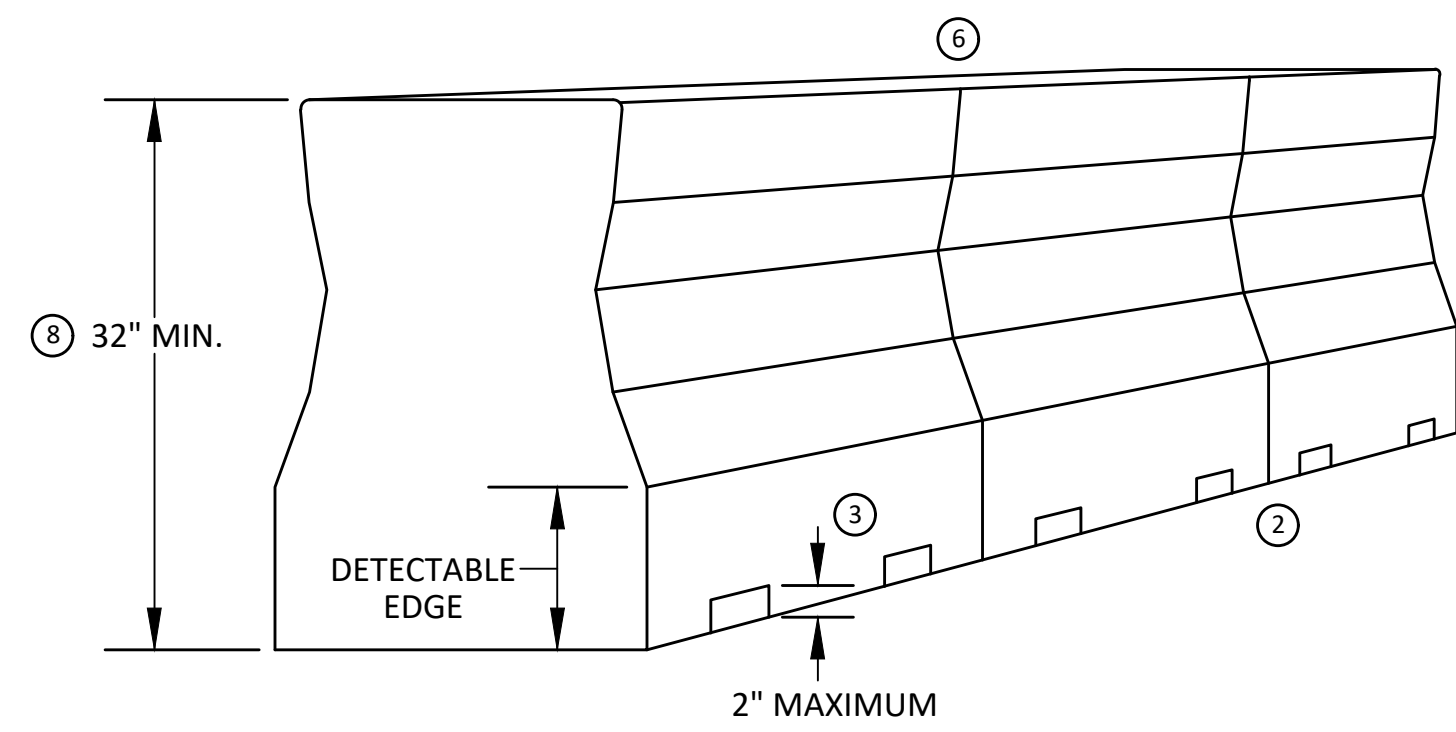
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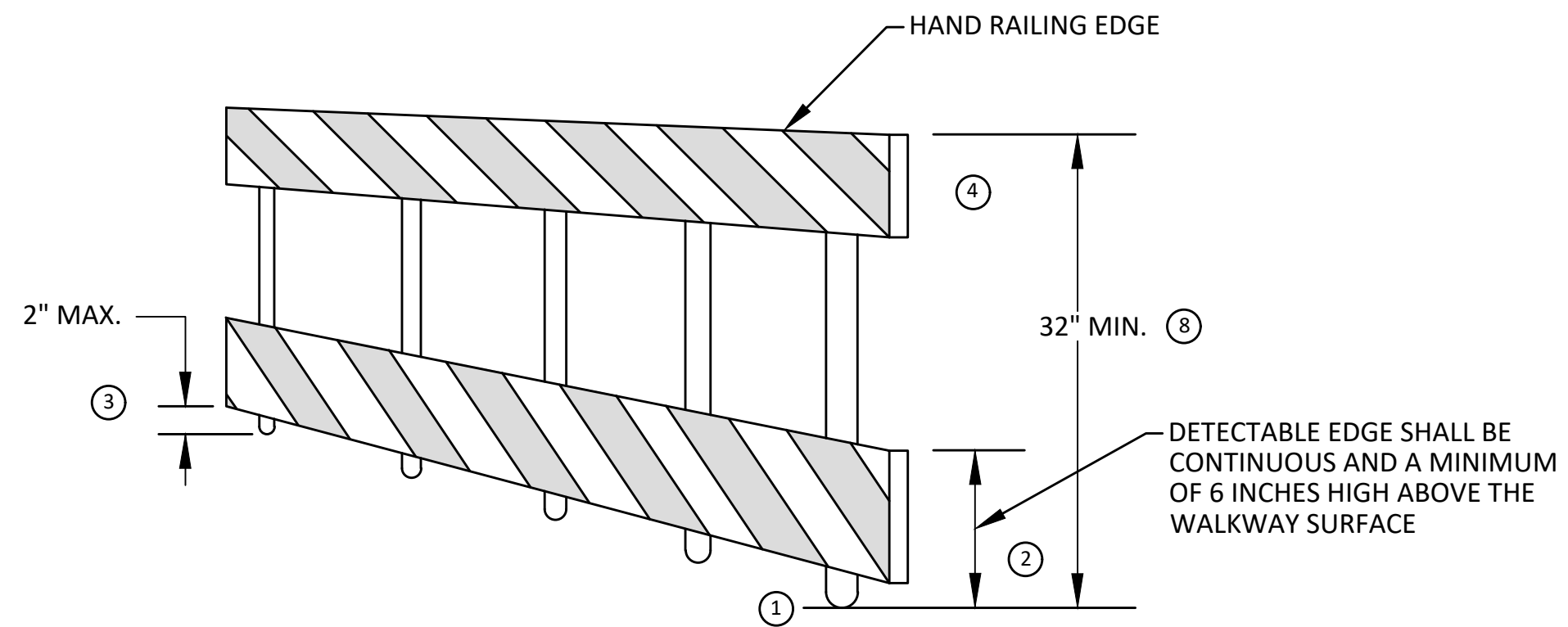
TEMPORARY PEDESTRIAN ACCESS



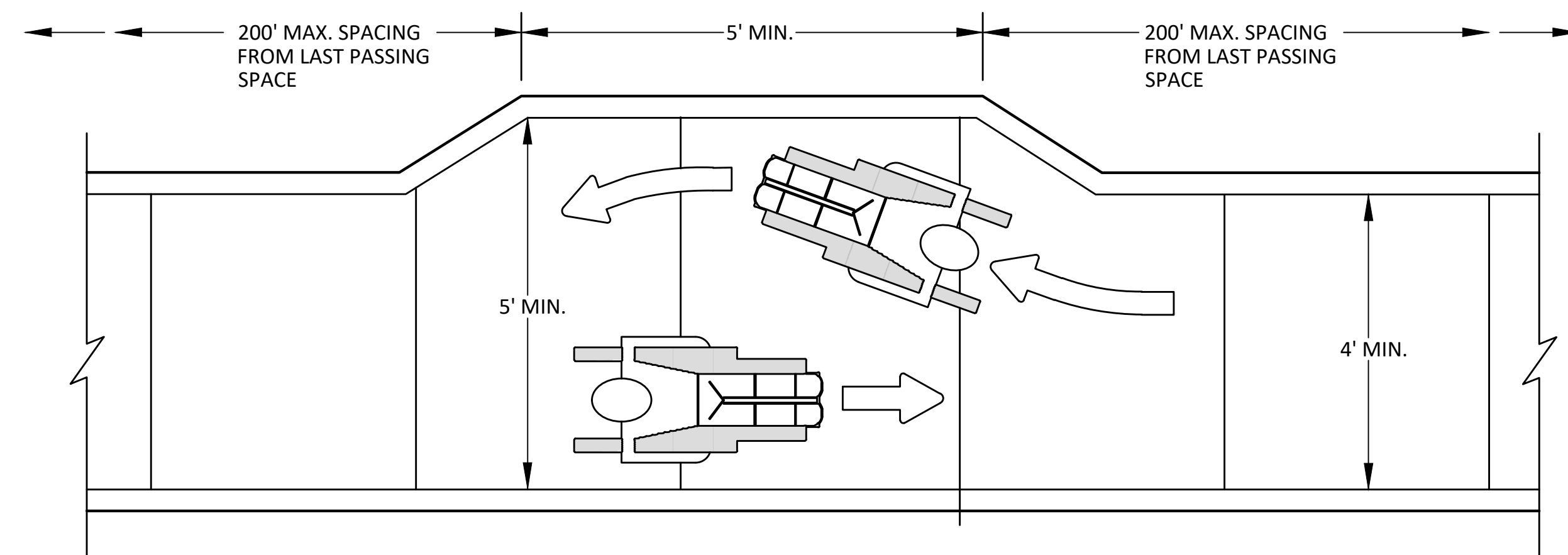
TEMPORARY WALKWAY SURFACE



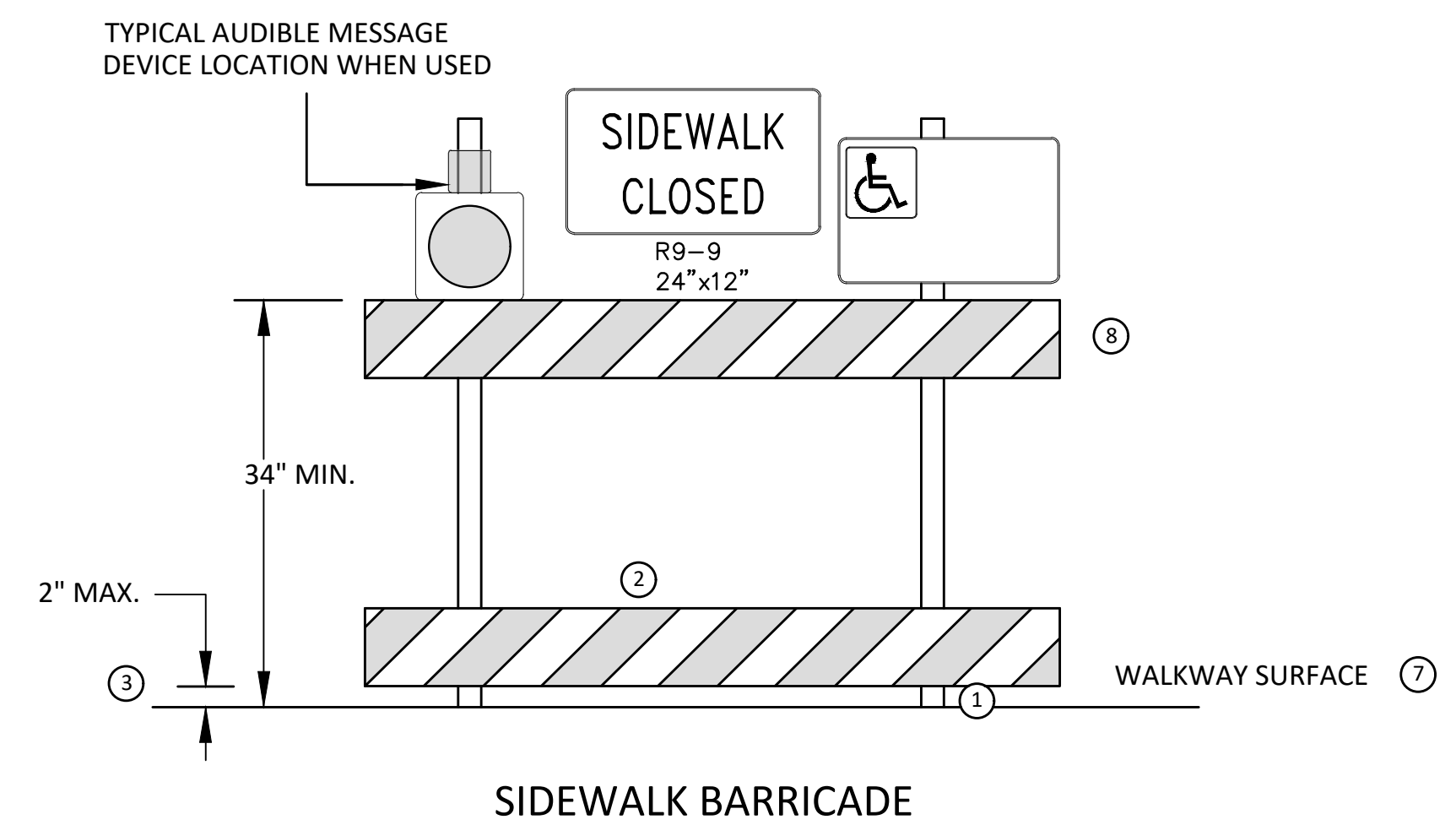
PEDESTRIAN CHANNELIZER USING A BARRIER
(MINIMUM REQUIREMENTS)



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 WHEN HAND GUIDANCE IS REQUIRED, THE TOP RAIL OR TOP SURFACE SHALL:
 - BE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY ABOVE THE DETECTABLE EDGE.
 - BE CONTINUOUS AT A HEIGHT OF 34 TO 38 INCHES ABOVE THE WALKWAY SURFACE, AND
 - BE SUPPORTED WITH MINIMAL INTERFERENCE TO THE PEDESTRIAN'S HANDS OR FINGERS.
- 5 ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.
- 6 ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE INTENDED CHANNELIZED PATH.
- 7 A WALKWAY SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED.
- 8 LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES IN HEIGHT OR GREATER.



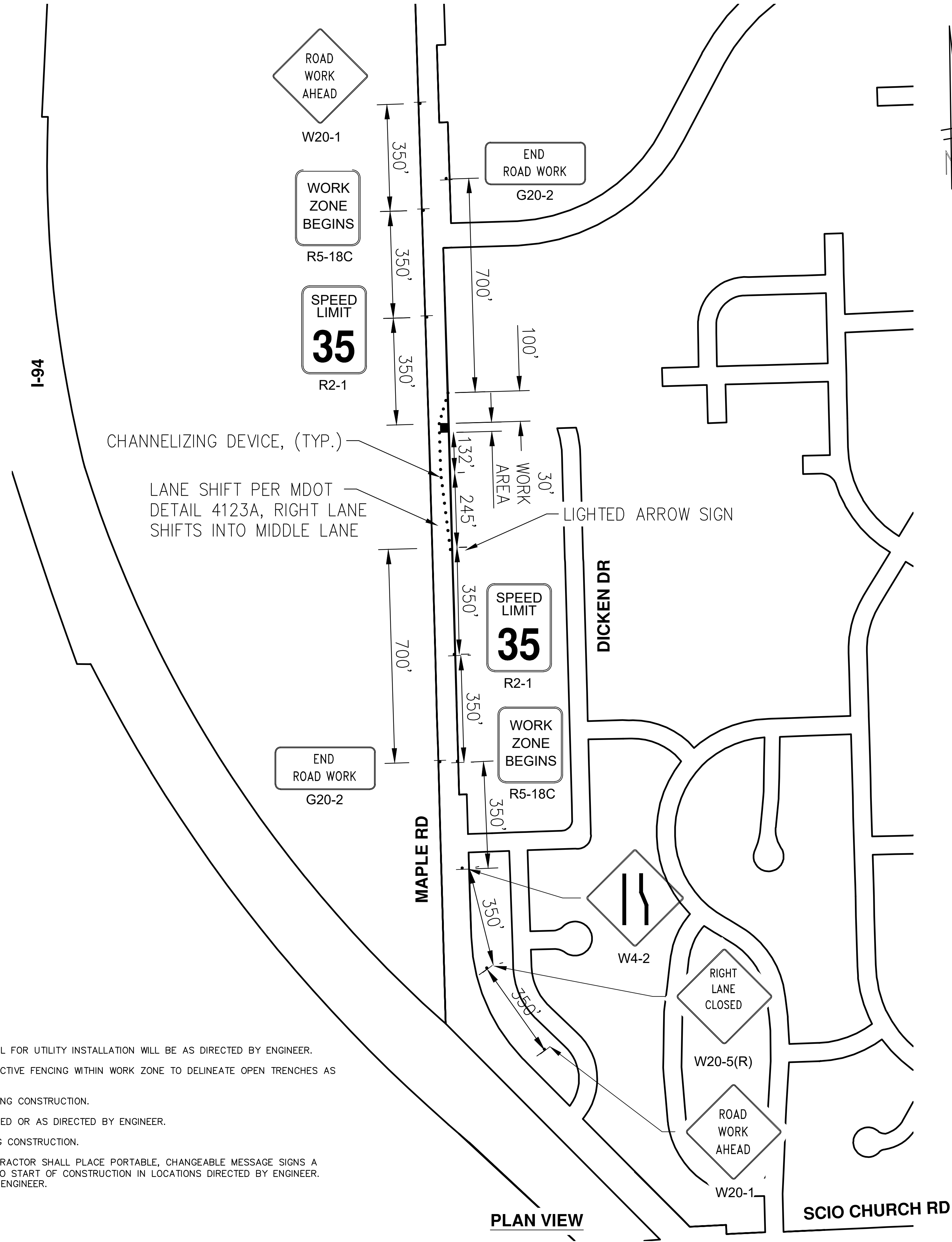
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4	BID SET	02/24/2022	BWA	C/E	CHECKED
3	PERMIT PLAN	12/14/2021	BWA	C/E	CHECKED
2	60% PLAN	09/23/2021	BWA	C/E	CHECKED
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E	CHECKED

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
PEDESTRIAN TRAFFIC CONTROL
TPAR WALKWAY DEVICES

SCALE: NTS
DRAWING No. 2021-013-15



NOTES:

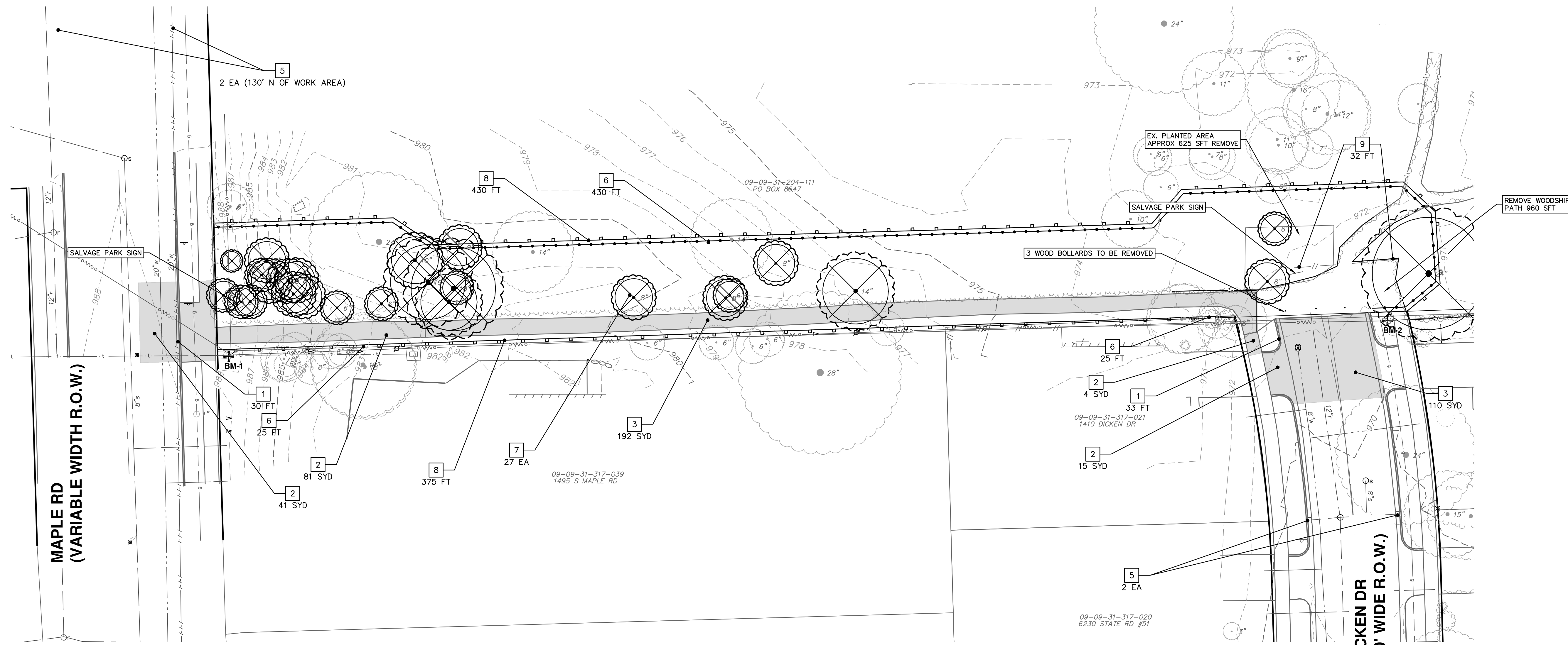
1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
2. UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
3. MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
4. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
5. MAINTAIN DRIVEWAY ACCESS DURING CONSTRUCTION.
6. IF REQUIRED BY ENGINEER, CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE SIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO START OF CONSTRUCTION IN LOCATIONS DIRECTED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.

PLAN VIEW

		CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING 2022 MISC UTILITY PROJECTS DICKEN DRIVE TRAFFIC CONTROL AND DETOUR PLAN	SCALE PLAN: 1" = 200' DRAWING No. 2021-013-16	SHEET No. 16 OF 35
CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET ANN ARBOR, MI 48106-6447 734-794-6410 www.a2gov.org	BID SET PERMIT PLAN 60% PLAN PRELIMINARY PLAN	02/24/2022 12/14/2021 09/23/2021 06/15/2021	BWA BWA BWA BWA	C/E C/E C/E C/E
		REV. DESCRIPTION		
4	4	1	1	1
REV.	REV.	DATE	DATE	DATE

Know what's below.
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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND PAVEMENT - ANY THICKNESS
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PAVEMENT REMOVAL FOR RESURFACING
5	INLET FILTER
6	PROTECTIVE FENCING
7	TREE, REM, 6" TO 24"
8	SILT FENCE
9	REMOVE FENCE

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

DICKEN DRIVE


REMOVALS AND SITE PREP

SHEET No. 17 OF 35

SCALE PLAN: 1" = 20'


PROFILE: 1" = 2'

DRAWING No. 2021-013-17



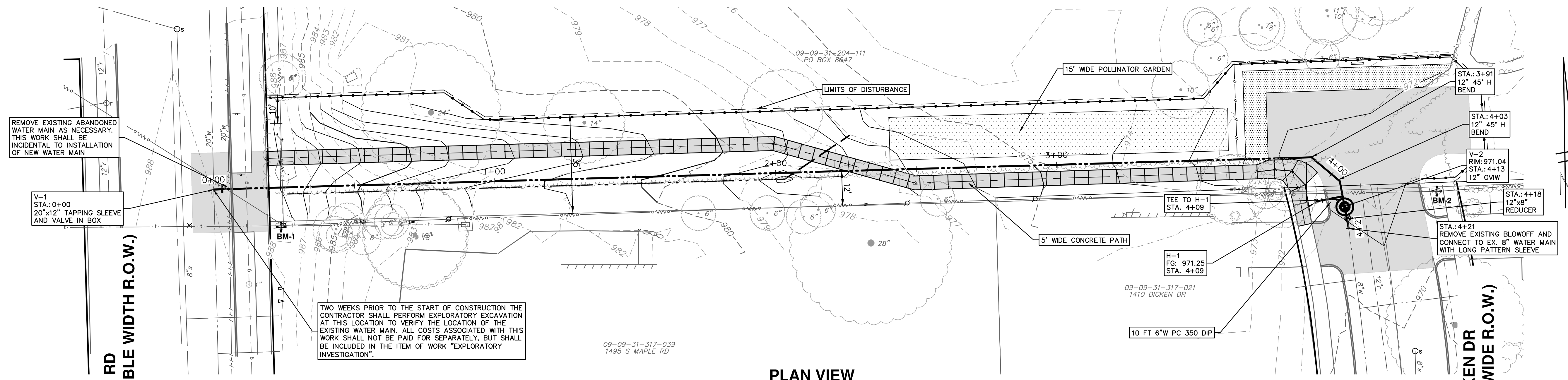
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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
4	BID SET	02/24/2022	BWA	C/E

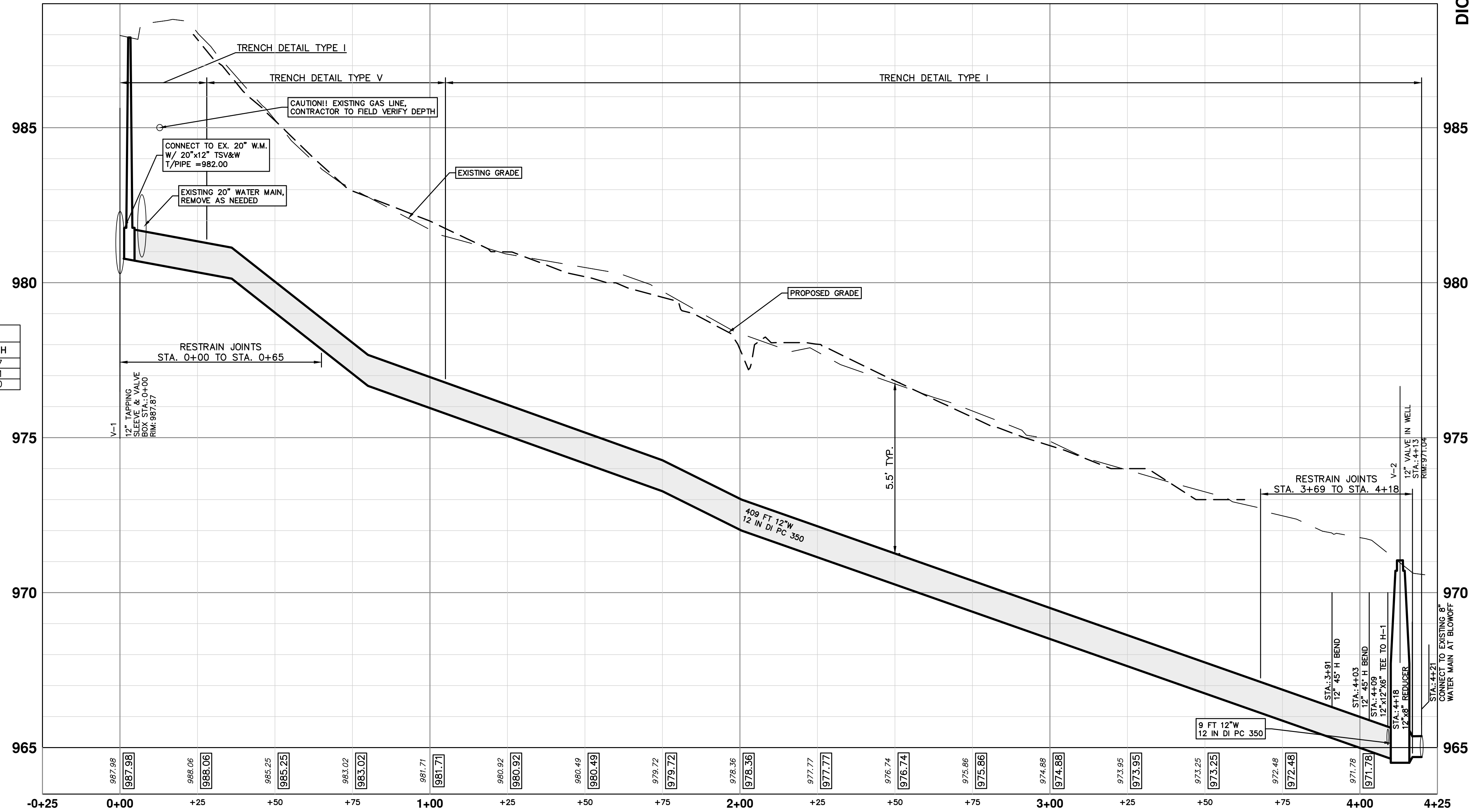


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PLAN VIEW



WATER MAIN PROFILE

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V-1	12" TSVIB	0+00	987.87	5.87
H-1	HYDRANT	4+09	971.25	5.71
V-2	12" GWIW	4+18	971.04	5.50

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

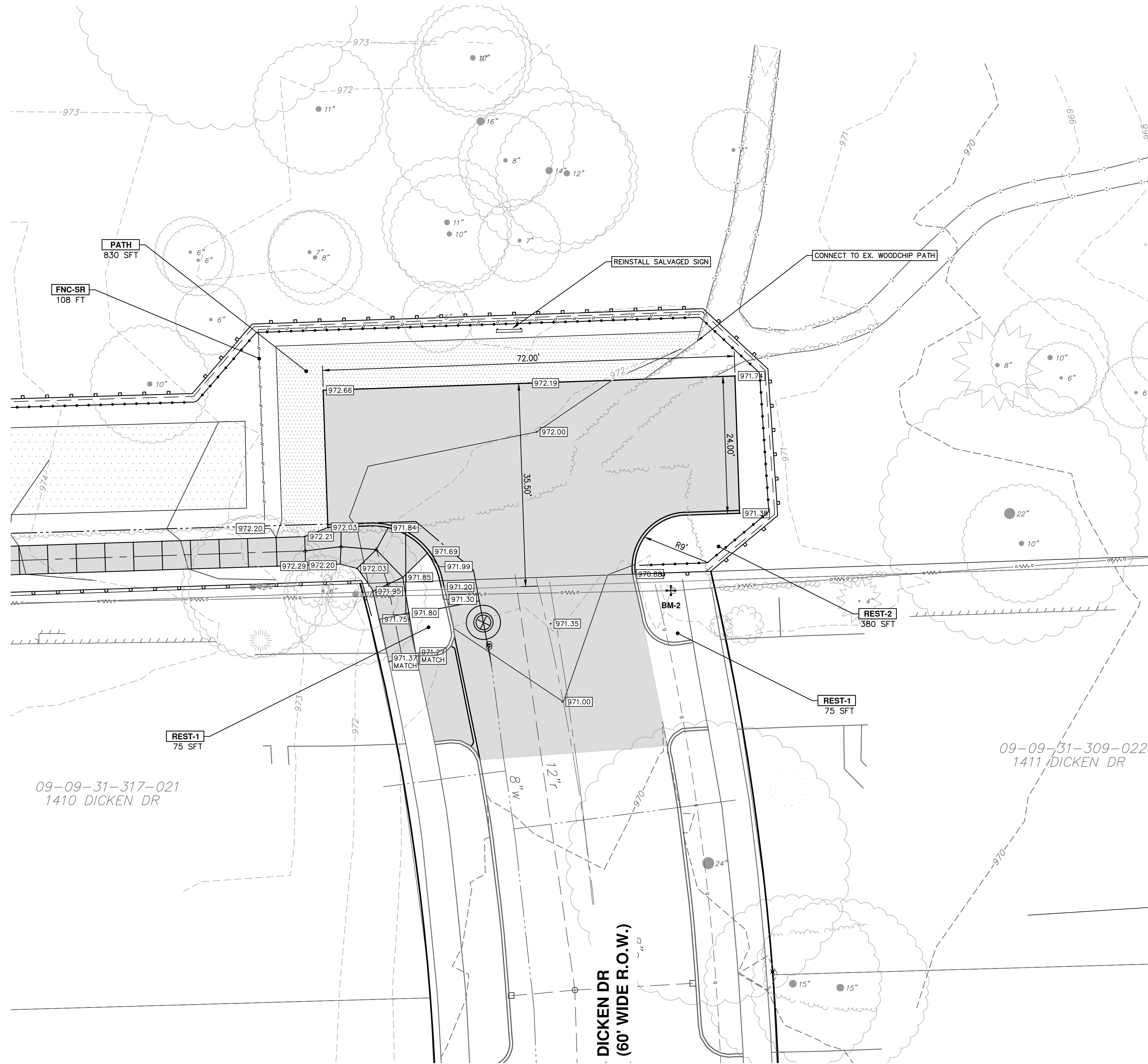
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
DICKEN DRIVE
WATER MAIN PLAN AND PROFILE

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2021-013-18
SHEET No. 18 OF 35

REV.	DESCRIPTION	DATE	CHECKED	DRAWN
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3	PERMIT PLAN	12/14/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E



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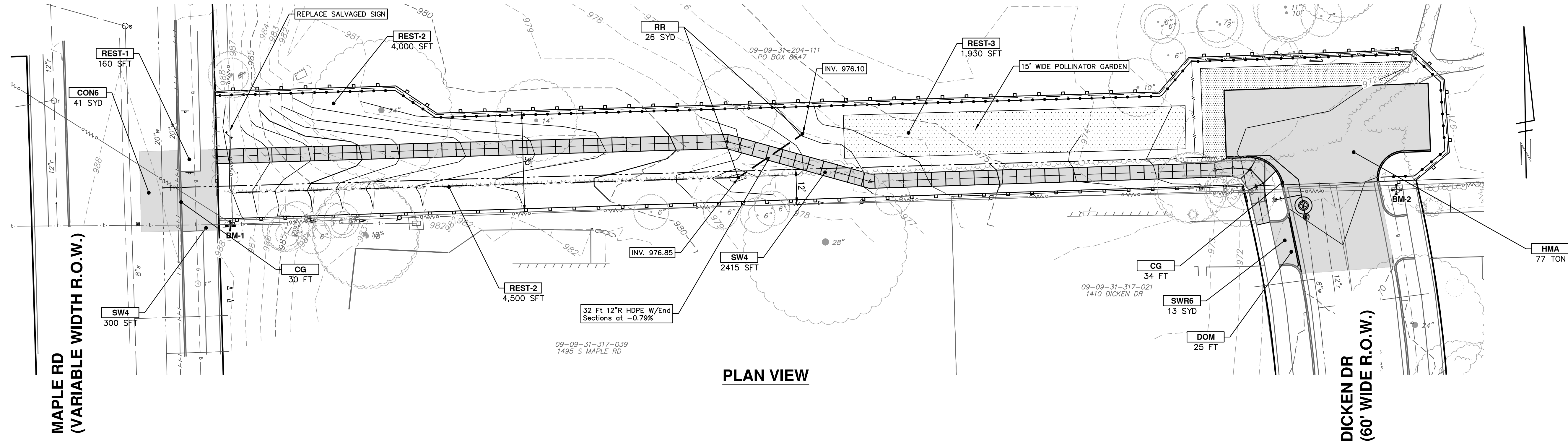
DICKEN DR
(60' WIDE R.O.W.)

PLAN VIEW

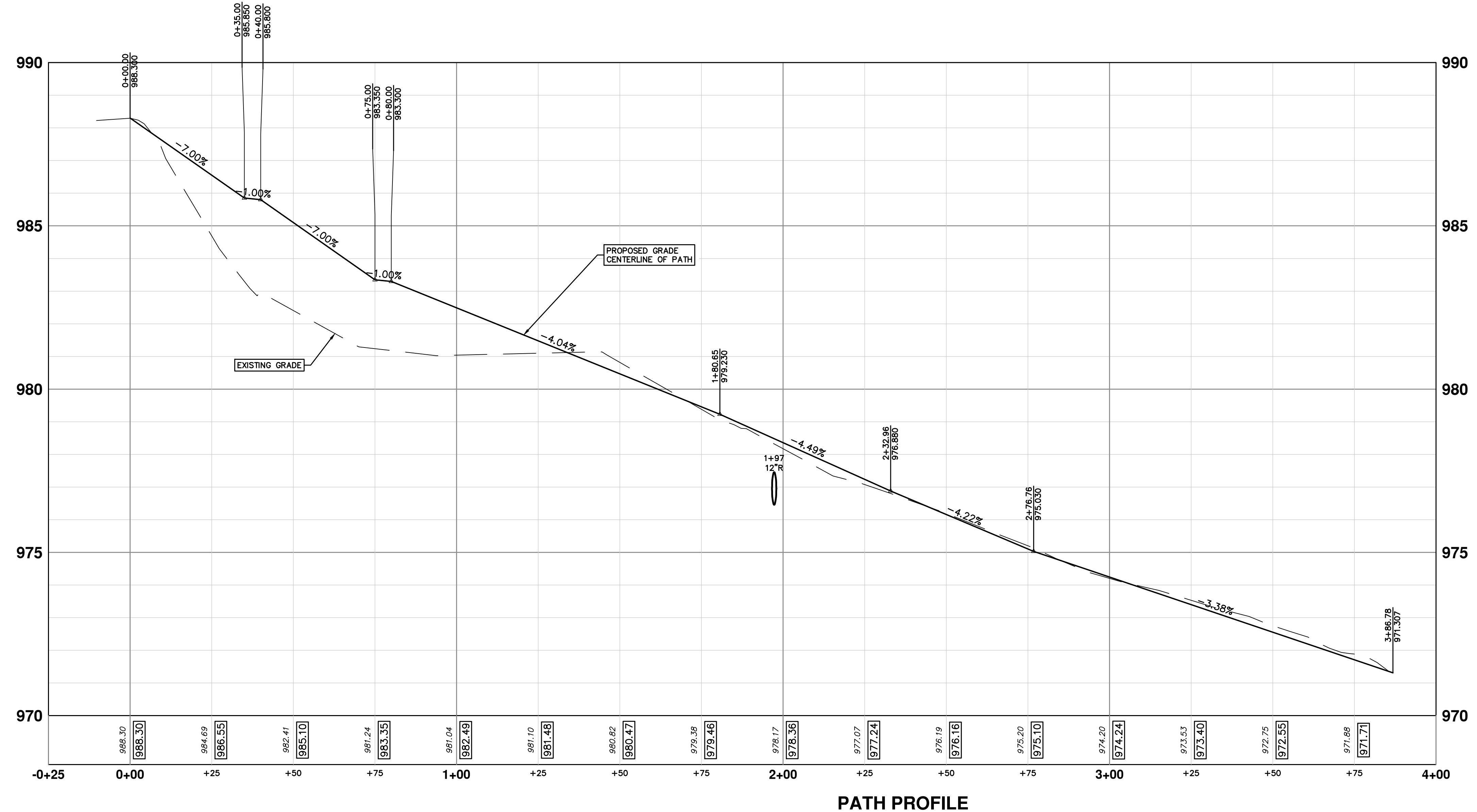
CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
CON6	6 INCH CONCRETE
SW4	4 INCH CONCRETE SIDEWALK
SW6	6 INCH CONCRETE SIDEWALK
SWR6	6 INCH CONCRETE RAMP, DRIVE APPROACH
DOM	CONCRETE TYPE M DRIVE OPENING
DOL	CONCRETE TYPE L DRIVE OPENING
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX
REST-1	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, TURF GRASS
REST-2	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, MESIC WOODLAND
REST-3	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, POLLINATOR GARDEN
FNC-SR	SPLIT RAIL FENCE
PATH	WOODCHIP PATHWAY, 4 INCH

			
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING		2022 MISC UTILITY PROJECTS	
SCALE PLAN: 1" = 10' PROFILE: 1" = 4'		BID SET: 4 PERMIT PLAN: 3 60% PLAN: 2 PRELIMINARY PLAN: 1	
SHEET No. 19 OF 35		DATE: 02/24/2022 BWA: 12/14/2021 BWA: 09/23/2021 BWA: 06/15/2021	
DRAWING No. 2021-013-19		DESCRIPTION:	
CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET ANN ARBOR, MI 48107-6647 734-794-6410 www.a2gov.org		Know what's below. Call before you dig.	

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PLAN VIEW



PATH PROFILE

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
CON6	6 INCH CONCRETE PAVEMENT
SW4	4 INCH CONCRETE SIDEWALK
SW6	6 INCH CONCRETE SIDEWALK
SWR6	6 INCH CONCRETE RAMP, DRIVE APPROACH
DOM	CONCRETE TYPE M DRIVE OPENING
REST-1	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, TURF GRASS
REST-2	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, MESIC WOODLAN
REST-3	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, POLLINATOR GARDEN
RR	RIPRAP, PLAIN

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

DICKEN DRIVE

SIDEWALK AND ROAD PLAN

SHEET No. 20 OF 35

SCALE PLAN: 1" = 20'

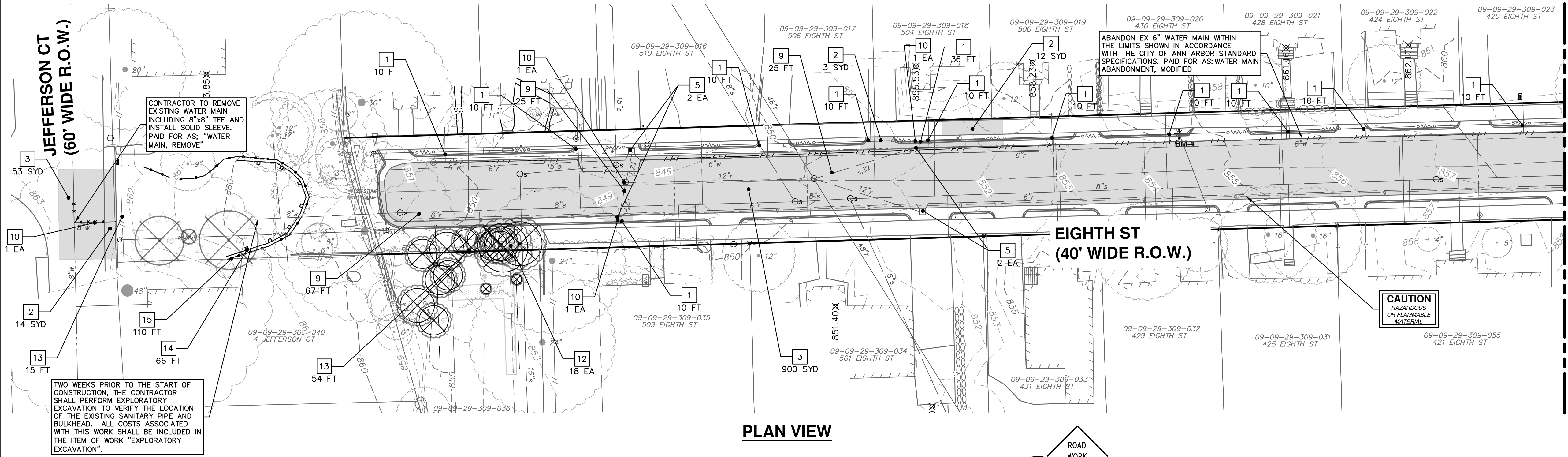
PROFILE: 1" = 2'

DRAWING No. 2021-013-20

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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2	60% PLAN	09/23/2021	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
4	BID SET	02/24/2022	BWA	C/E

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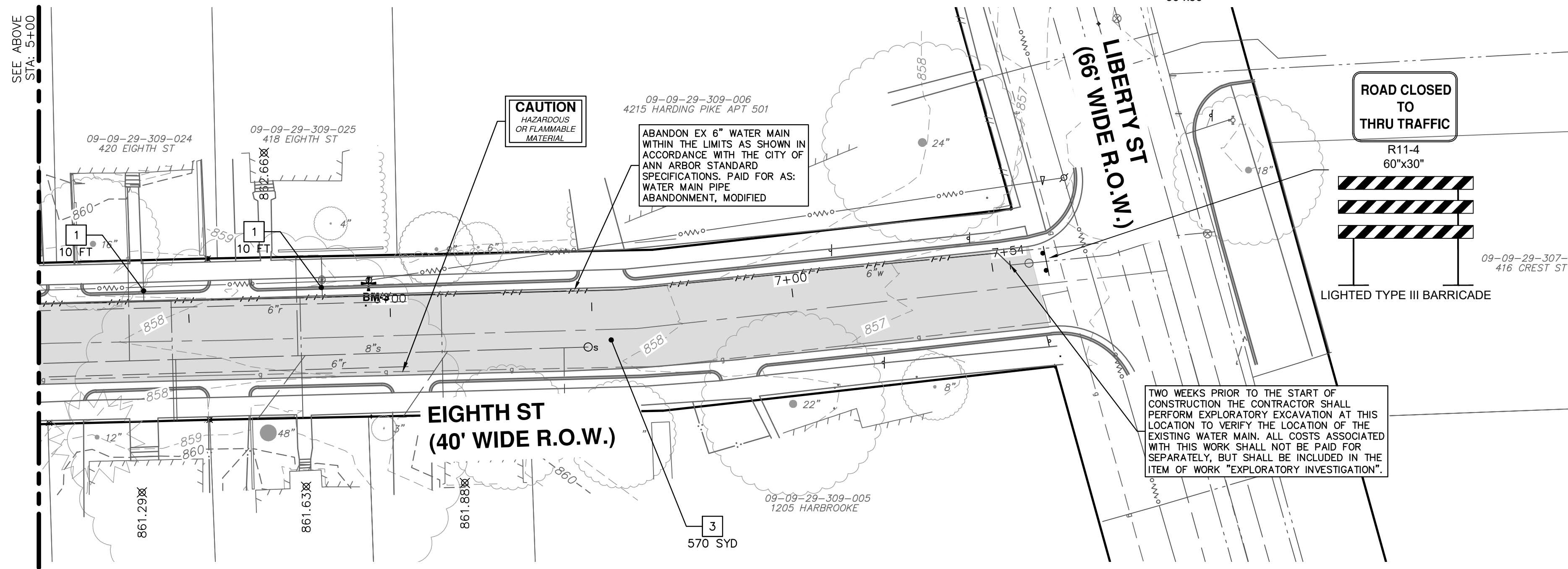


PLAN VIEW

(100' EAST OF EIGHTH ST.)

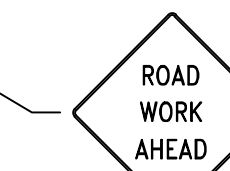


W20-1
36"x36"



PLAN VIEW

(100' EAST OF EIGHTH ST.)



W20-1
36"x36"

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
5	INLET FILTER
9	SEWER, ANY SIZE OR DEPTH, REMOVE
10	STRUCTURE, REM
12	TREE, REM, 6" TO 24"
13	REMOVE FENCE
14	SILT FENCE
15	TREE PROTECTION FENCE

*SAW CUT FULL DEPTH AT REMOVAL LIMITS

- NOTES:**
- FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
 - UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
 - MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
 - COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
 - MAINTAIN DRIVEWAY ACCESS DURING CONSTRUCTION.
 - IF REQUIRED BY ENGINEER, CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE SIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO START OF CONSTRUCTION IN LOCATIONS DIRECTED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.

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

CITY OF ANN ARBOR - ENGINEERING
2022 MISC UTILITY PROJECTS
EIGHTH STREET
REMOVALS AND SITE PREP

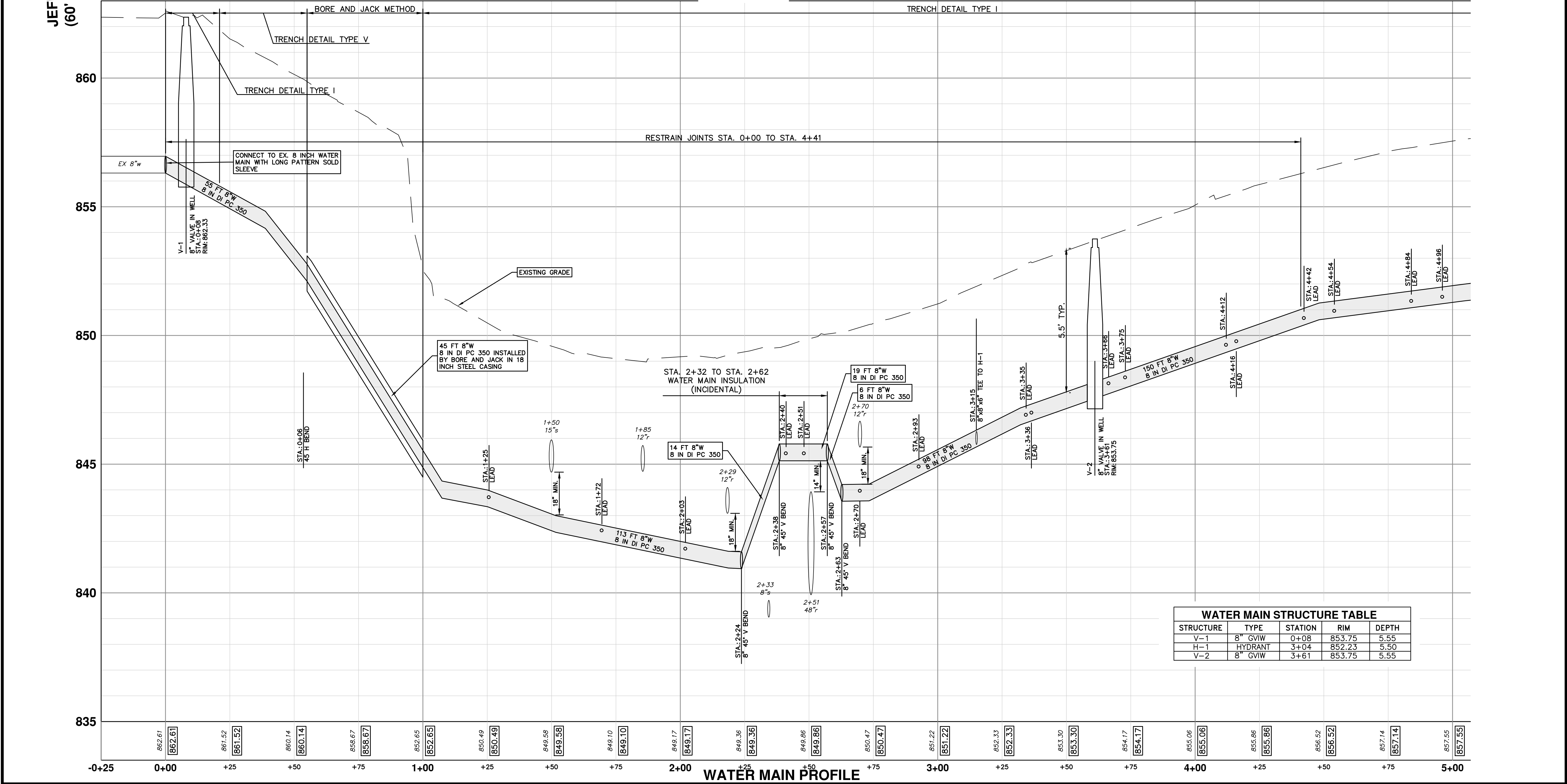
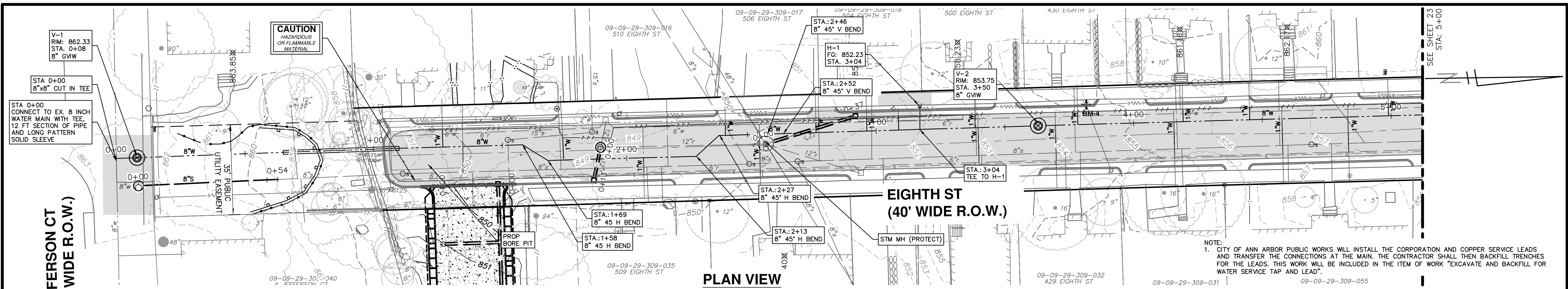
BID SET	BWA	C/E	DATE	DESCRIPTION	REV.
02/24/2022	BWA	C/E	02/24/2022	BID SET	4
12/14/2021	BWA	C/E	12/14/2021	PERMIT PLAN	3
09/23/2021	BWA	C/E	09/23/2021	60% PLAN	2
06/15/2021	BWA	C/E	06/15/2021	PRELIMINARY PLAN	1

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

DRAWING No. 2021-013-21

SHEET No. 21 OF 35



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

EIGHTH STREET

WATER MAIN PLAN & PROFILE STA. 0+00 TO STA. 5+00

811

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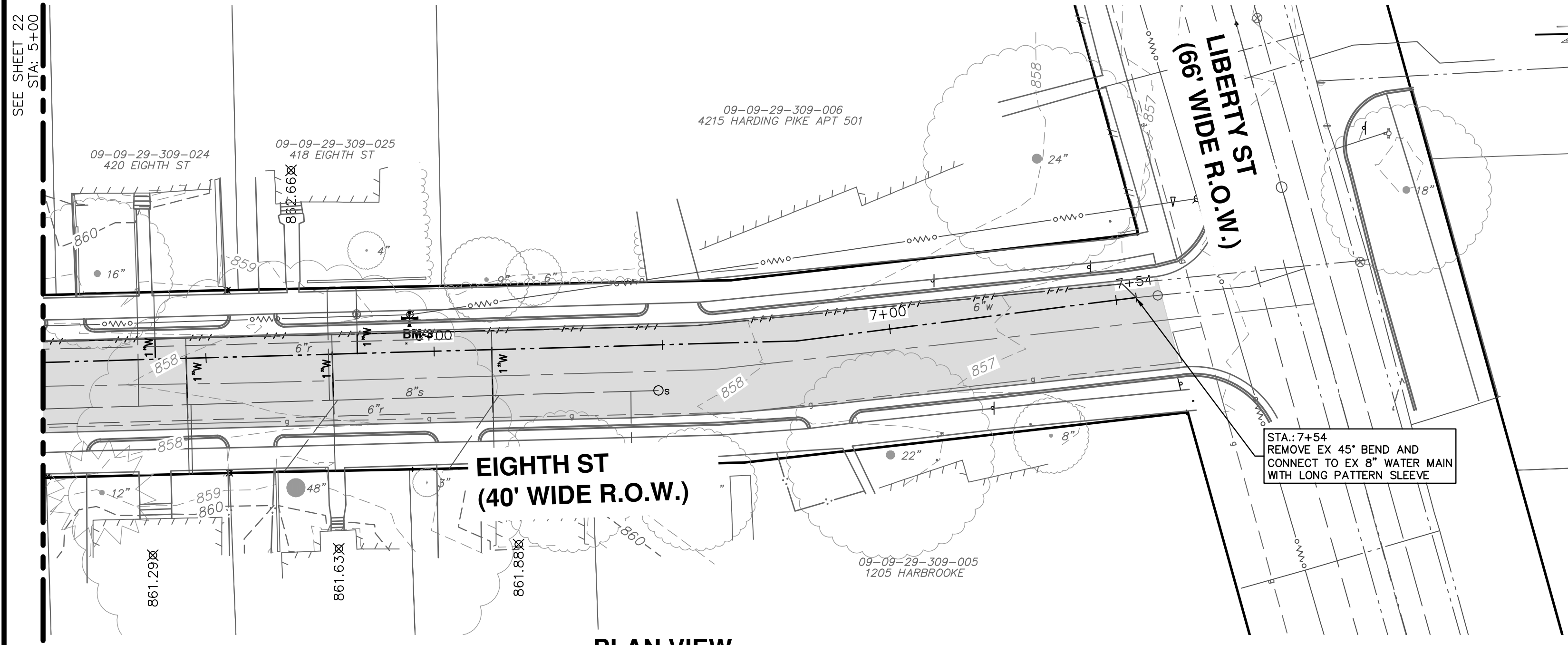
REV.	DATE	DESCRIPTION
1	06/15/2021	PRELIMINARY PLAN
2	09/23/2021	60% PLAN
3	12/14/2021	PERMIT PLAN
4	02/24/2022	BID SET

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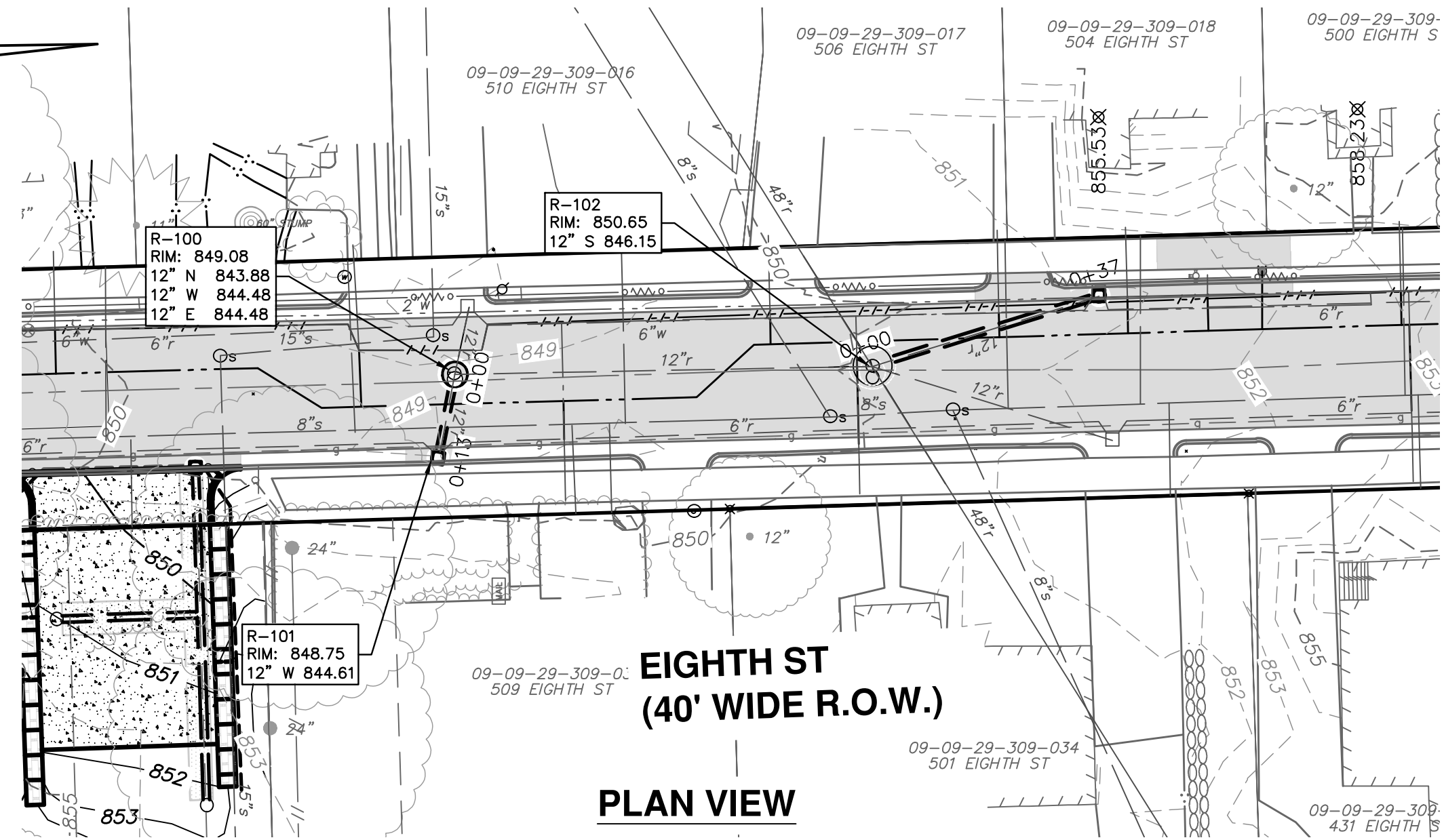
SHEET No. 22 OF 35

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

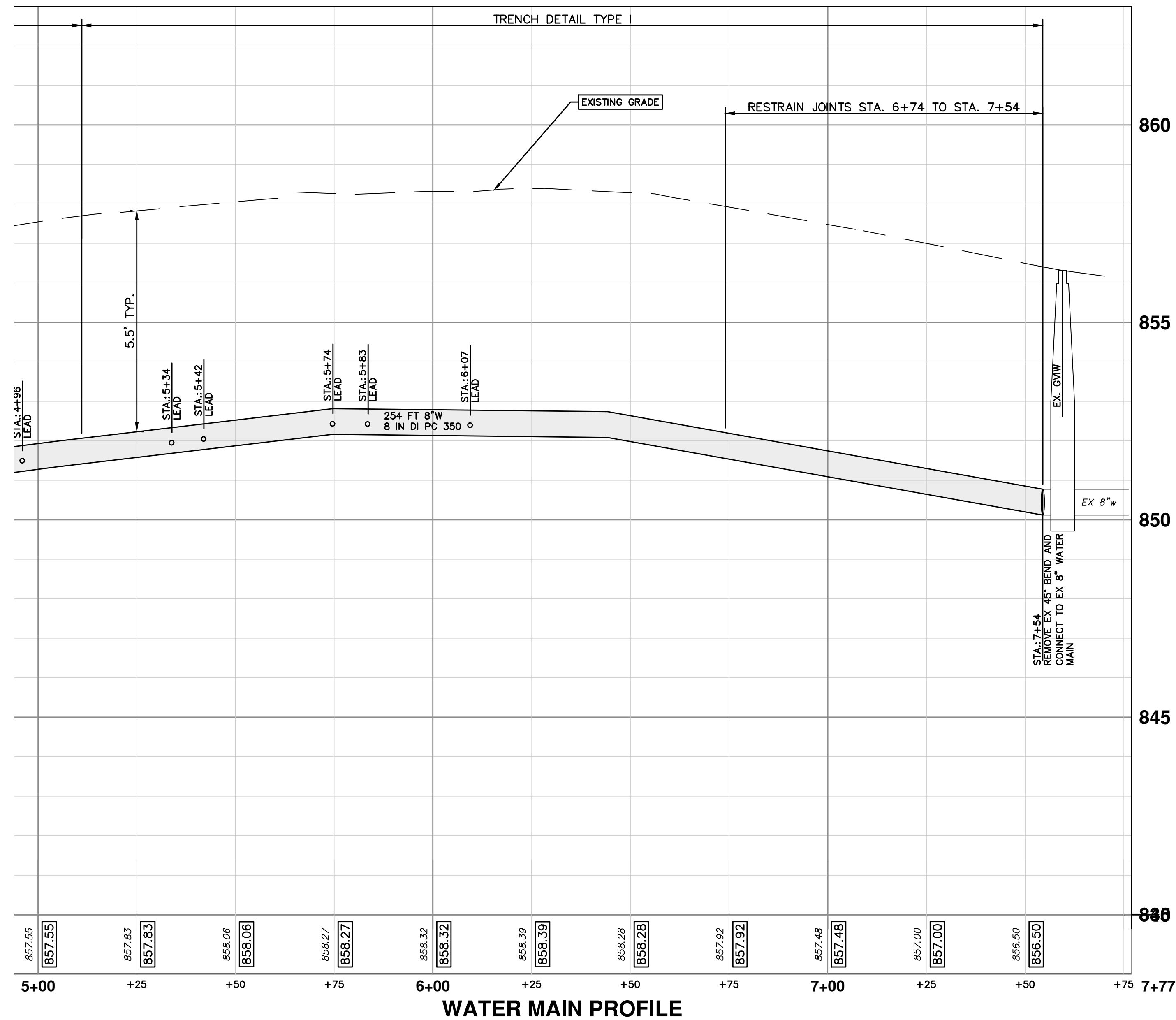
DRAWING No. 2021-013-22



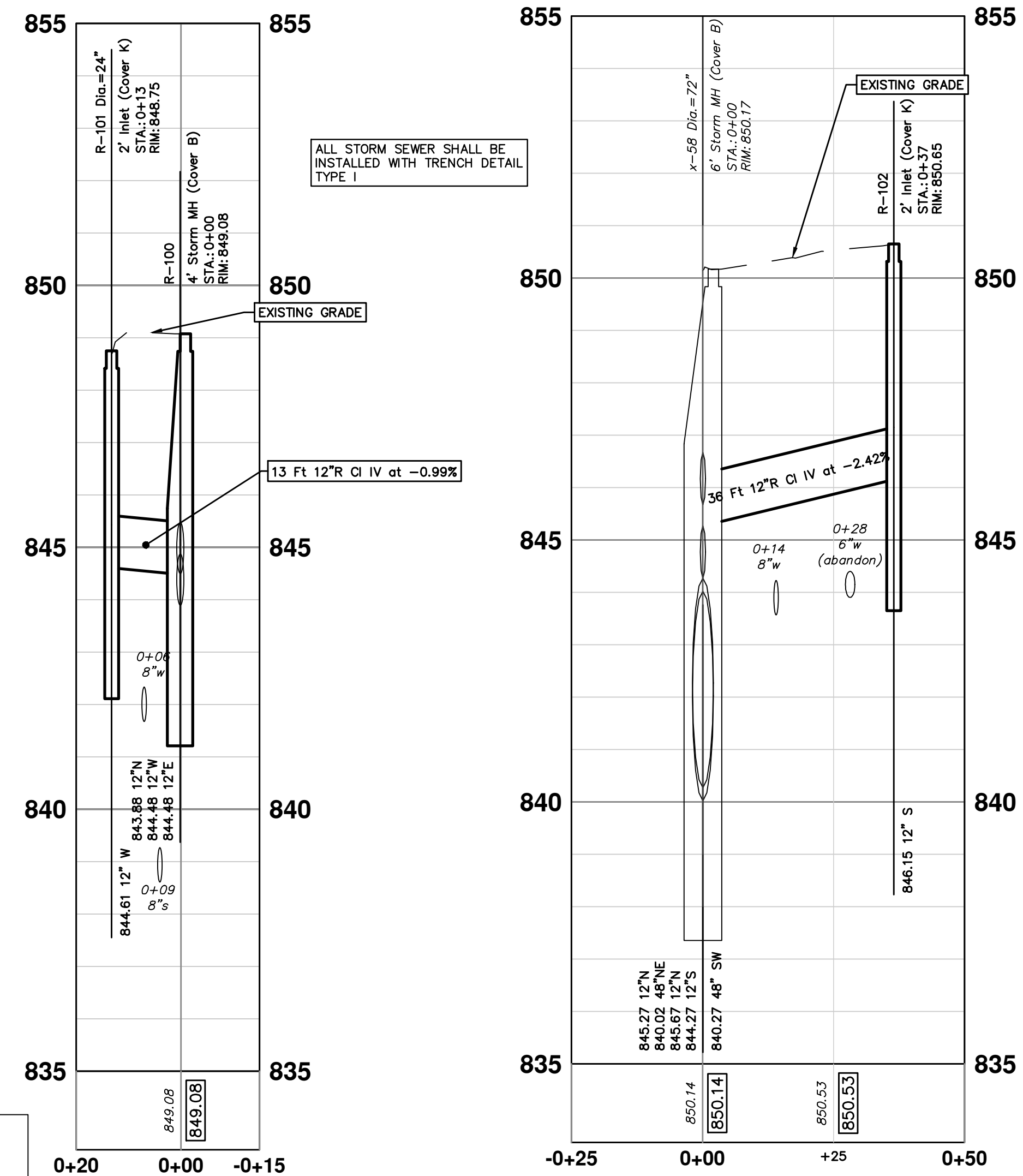
PLAN VIEW



PLAN VIEW



WATER MAIN PROFILE



STORM SEWER STRUCTURE TABLE							
STRUCTURE	STATION	INVERT ELEV. SIZE & DIRECTION	RIM ELEVATION	DEPTH	SIZE	TYPE	SUMP
R-100	0+00	12" N 843.88 12" W 844.48 12" E 844.48	849.08	7.20	48" Dia.	4' Storm MH (Cover B)	2 Ft
R-101	0+13	12" W 844.61	848.75	6.14	24" Dia.	2' Inlet (Cover K)	2 Ft
R-102	0+37	12" S 846.15	850.65	6.50	24" Dia.	2' Inlet (Cover K)	2 Ft

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE		
STRUCTURE	DEPTH (Feet)	REMOVE
92-60245	7.20	4' Storm MH (Cover B)
88-63596	6.14	2' Inlet (Cover K)
88-63595	6.50	2' Inlet (Cover K)

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

EIGHTH STREET

WATER MAIN PLAN & PROFILE STA. 5+00 TO STA. 7+54

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

SHEET No. **23 OF 35**

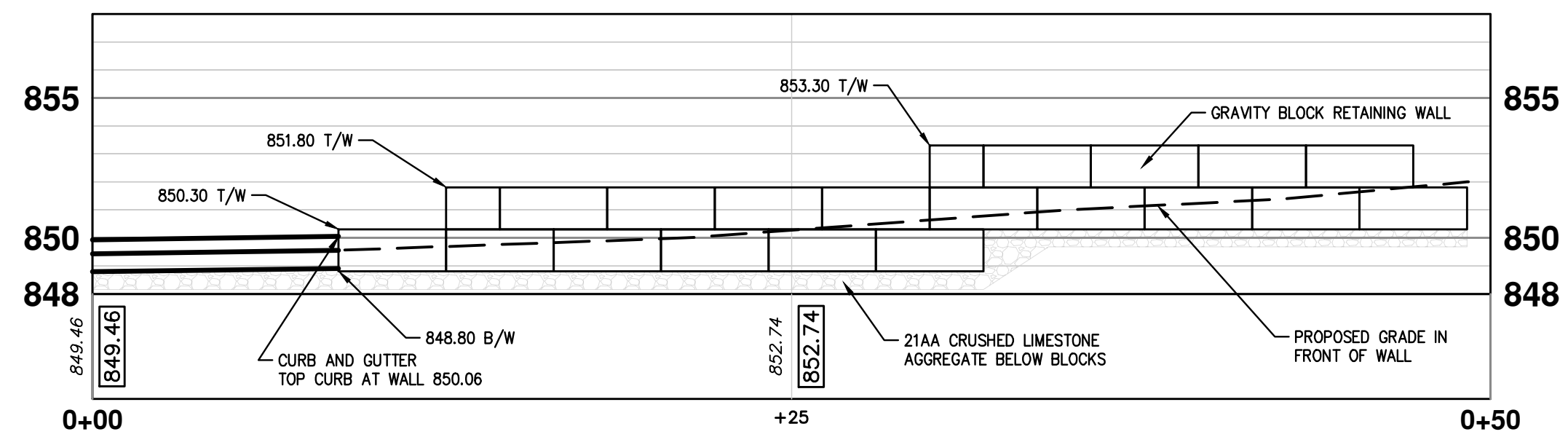
811
Know what's below. Call before you dig.

BID SET	BWA	C/E
02/24/2022	BWA	C/E
12/14/2021	BWA	C/E
09/23/2021	BWA	C/E
06/15/2021	BWA	C/E

REV.	DATE	DESCRIPTION
4		PERMIT PLAN
3		60% PLAN
2		PRELIMINARY PLAN
1		DRAWN

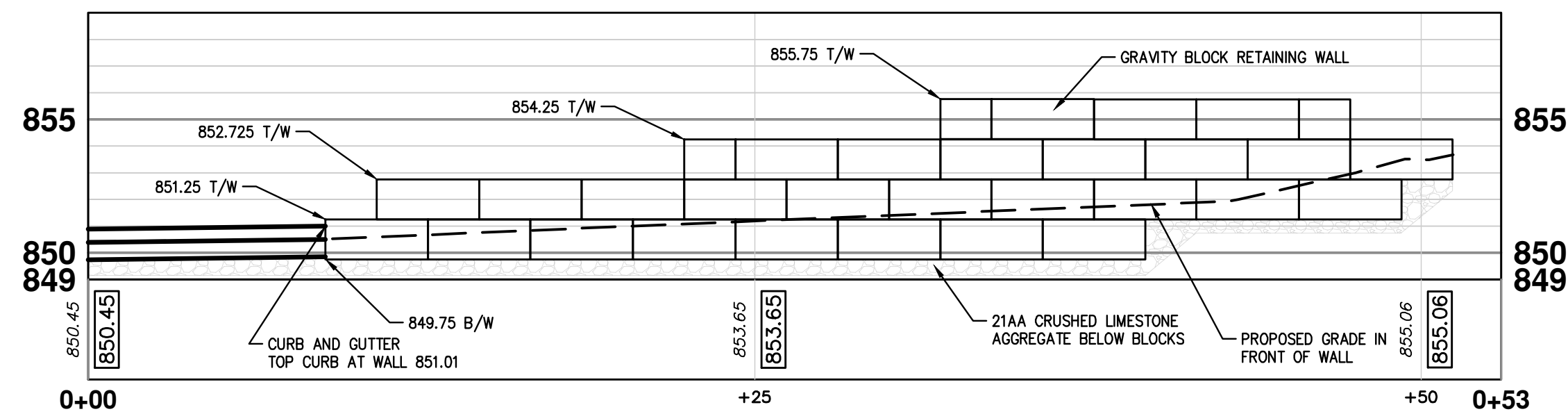
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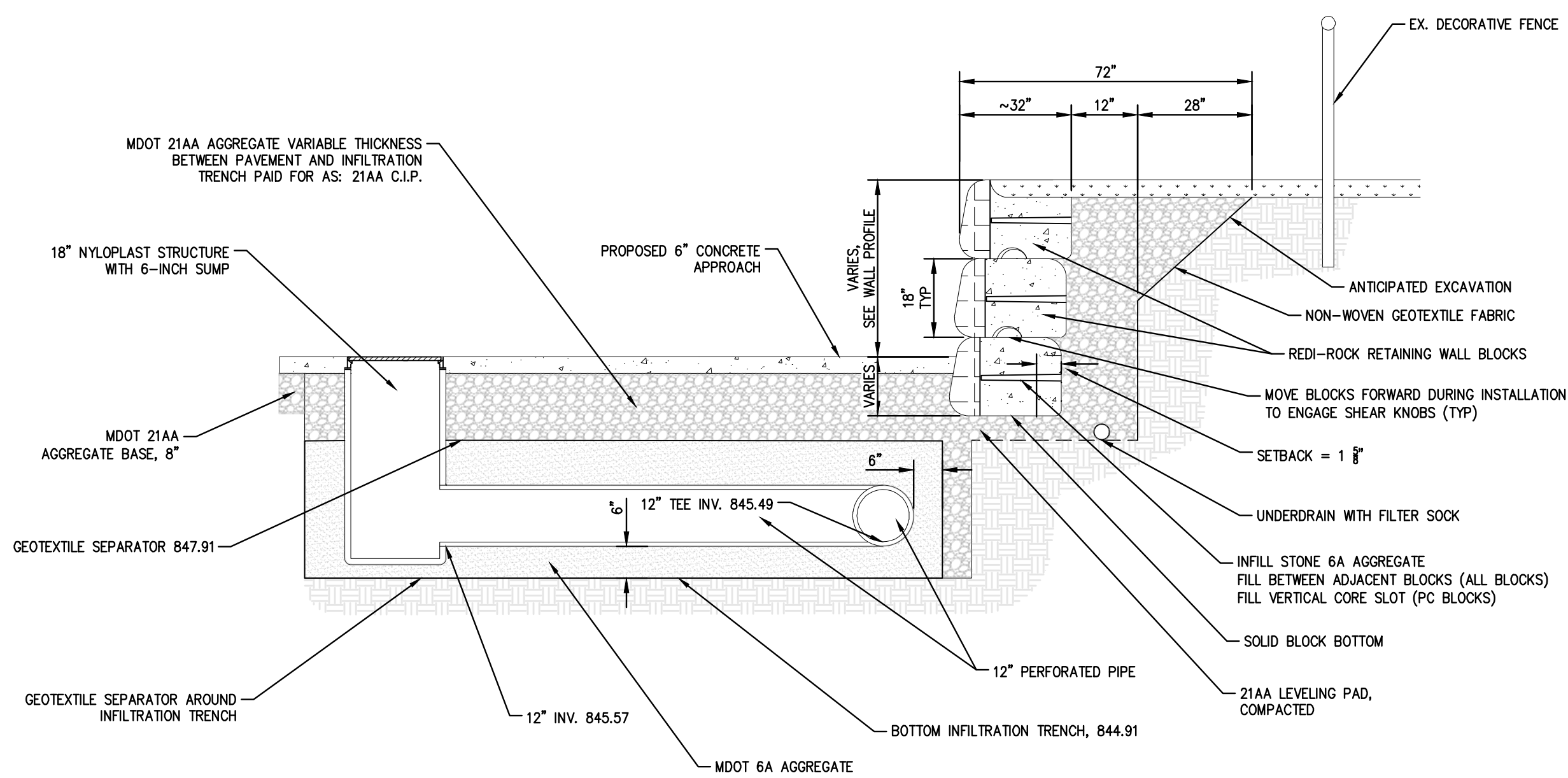
NORTH WALL PROFILE

SCALE: 1"=5'



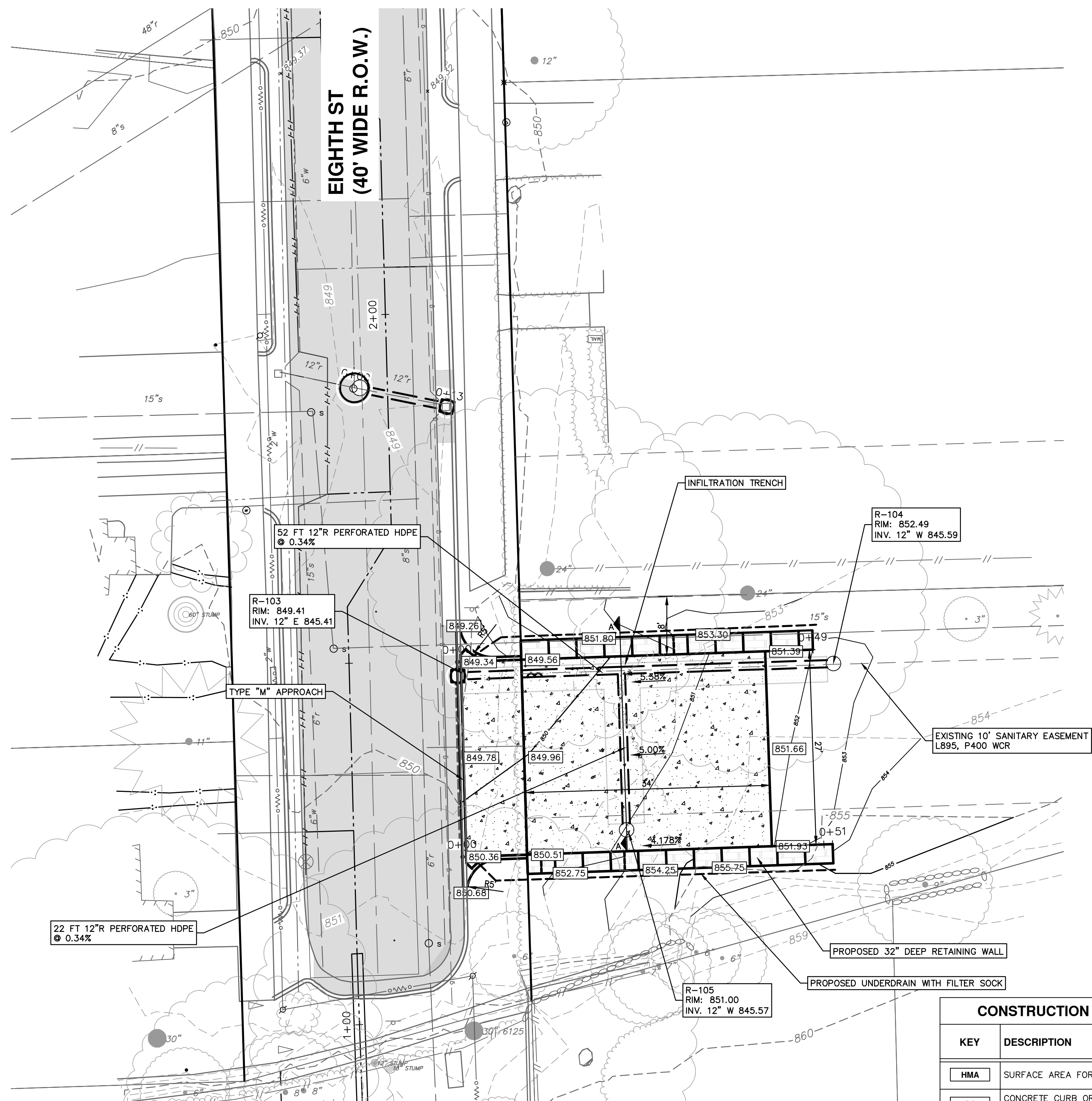
SOUTH WALL PROFILE

SCALE: 1"=5'



INFILTRATION TRENCH AND RETAINING WALL CROSS SECTION A-A AND DETAIL

SCALE: NONE



PLAN VIEW

STORM SEWER STRUCTURE TABLE							
STRUCTURE	STATION	INVERT ELEV. SIZE & DIRECTION	RIM ELEVATION	DEPTH	SIZE	TYPE	SUMP
R-103	0+00	12" E 845.41	849.41	6.00	24" Dia.	2' Inlet (Cover K)	2 Ft
R-104	0+52	12" W 845.59	852.29	6.70	18" Dia.	Nyloplast (H-20 Solid Cover)	0.5 Ft
R-105	0+22	12" N 845.57	851.00	5.43	18" Dia.	Nyloplast (H-20 Solid Cover)	0.5 Ft

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
CON6	6 INCH CONCRETE
SW4	4 INCH CONCRETE SIDEWALK
SW6	6 INCH CONCRETE SIDEWALK
SWR6	6 INCH CONCRETE RAMP, DRIVE APPROACH
DOM	CONCRETE TYPE M DRIVE OPENING
DOL	CONCRETE TYPE L DRIVE OPENING
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX
REST-1	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, TURF GRASS
REST-2	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, MESIC WOODLAND
PLNT-1	ADD PLANTINGS PER OWNER REQUEST

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2022 MISC UTILITY PROJECTS

EIGHTH STREET

TURNAROUND PLAN

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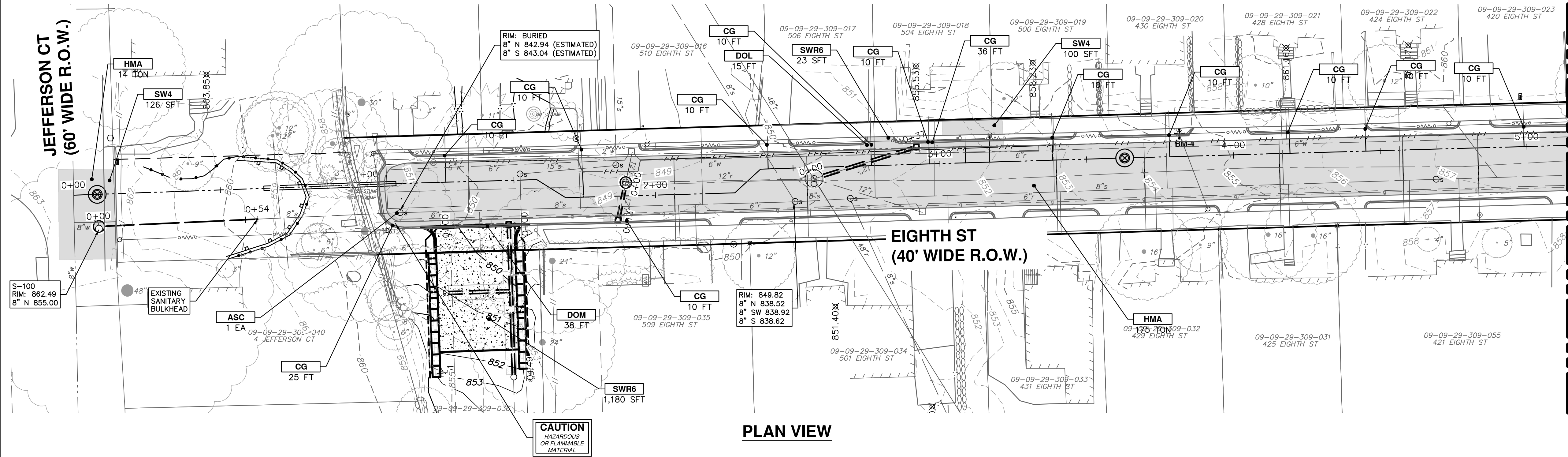
REV.	DATE	DESCRIPTION
4	02/24/2022	BID SET
3	12/14/2021	PERMIT PLAN
2	09/23/2021	60% PLAN
1	06/15/2021	PRELIMINARY PLAN

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SCALE PLAN: 1" = 10'

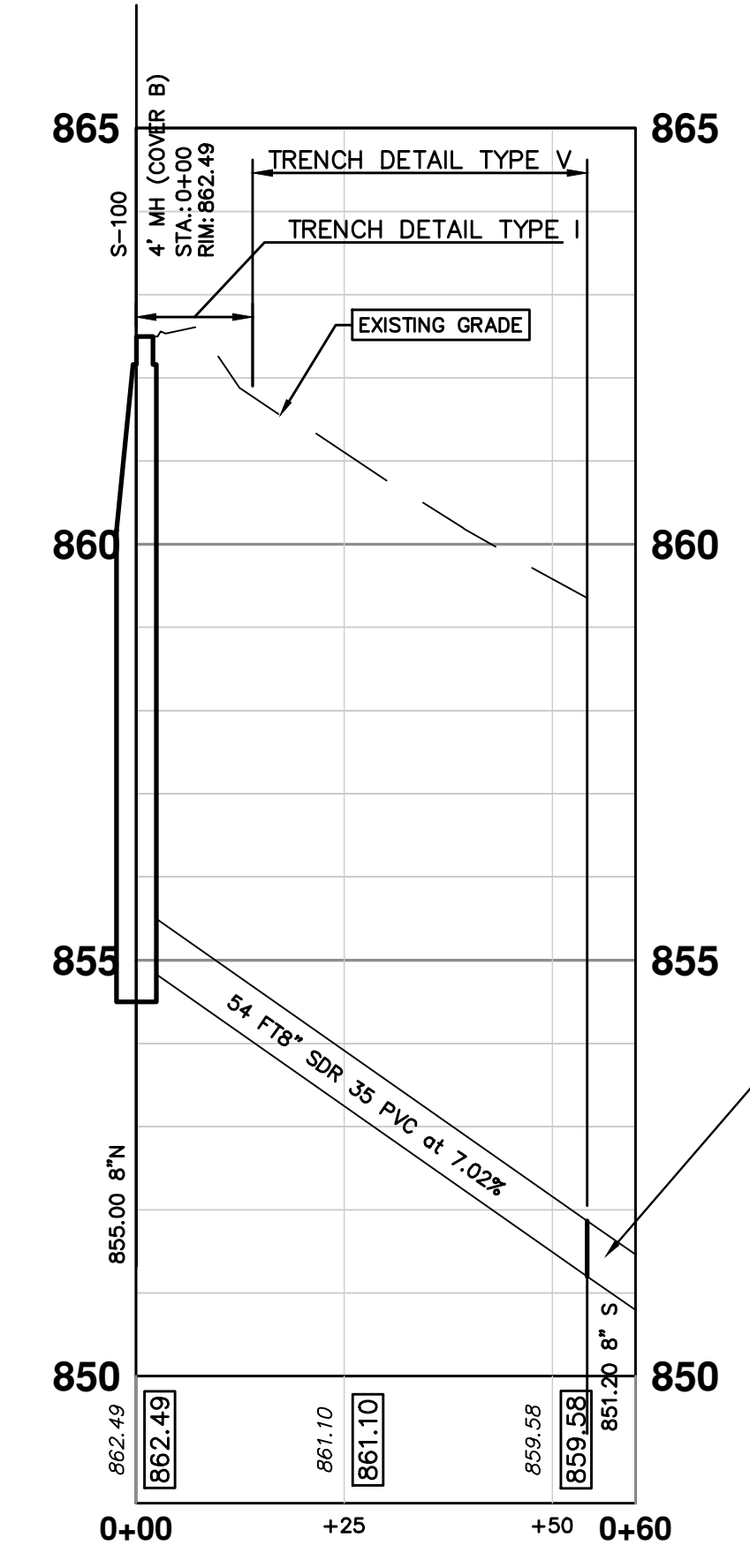
DRAWING NO. **2021-013-24**

SHEET NO. **24 OF 35**



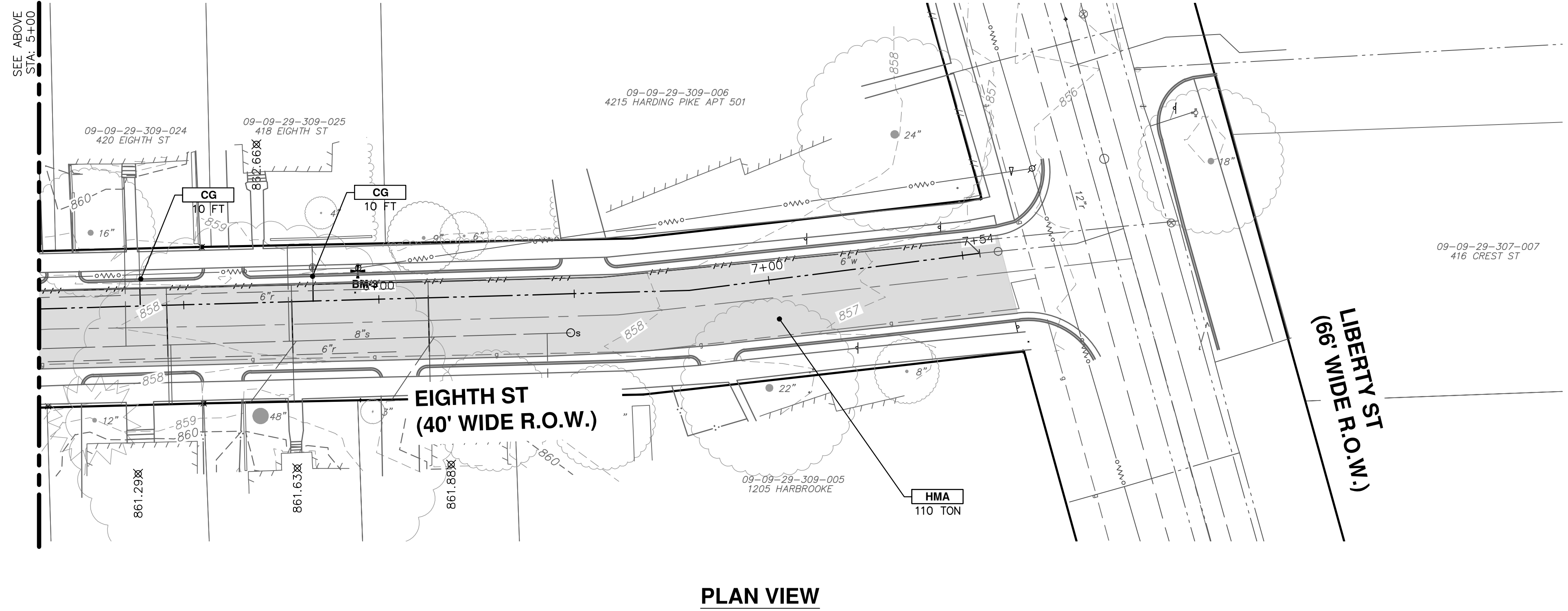
CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
SW4	4 INCH CONCRETE SIDEWALK
SWR6	6 INCH CONCRETE RAMP, DRIVE APPROACH
DOL	CONCRETE TYPE L DRIVE OPENING
DOM	CONCRETE TYPE M DRIVE OPENING
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX
PLNT-1	ADD PLANTINGS PER OWNER REQUEST

PLAN VIEW




PROFILE VIEW

SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S-100	0+00	862.49	7.49	48	4' MH	8" N 855.00	4' MH (Cover B)




PLAN VIEW



Know what's below. Call before you dig.

BID SET	DATE	DESCRIPTION	REV.
4	02/24/2022	PERMIT PLAN	3
	12/14/2021	60% PLAN	2
	09/23/2021	PRELIMINARY PLAN	1
	06/15/2021		



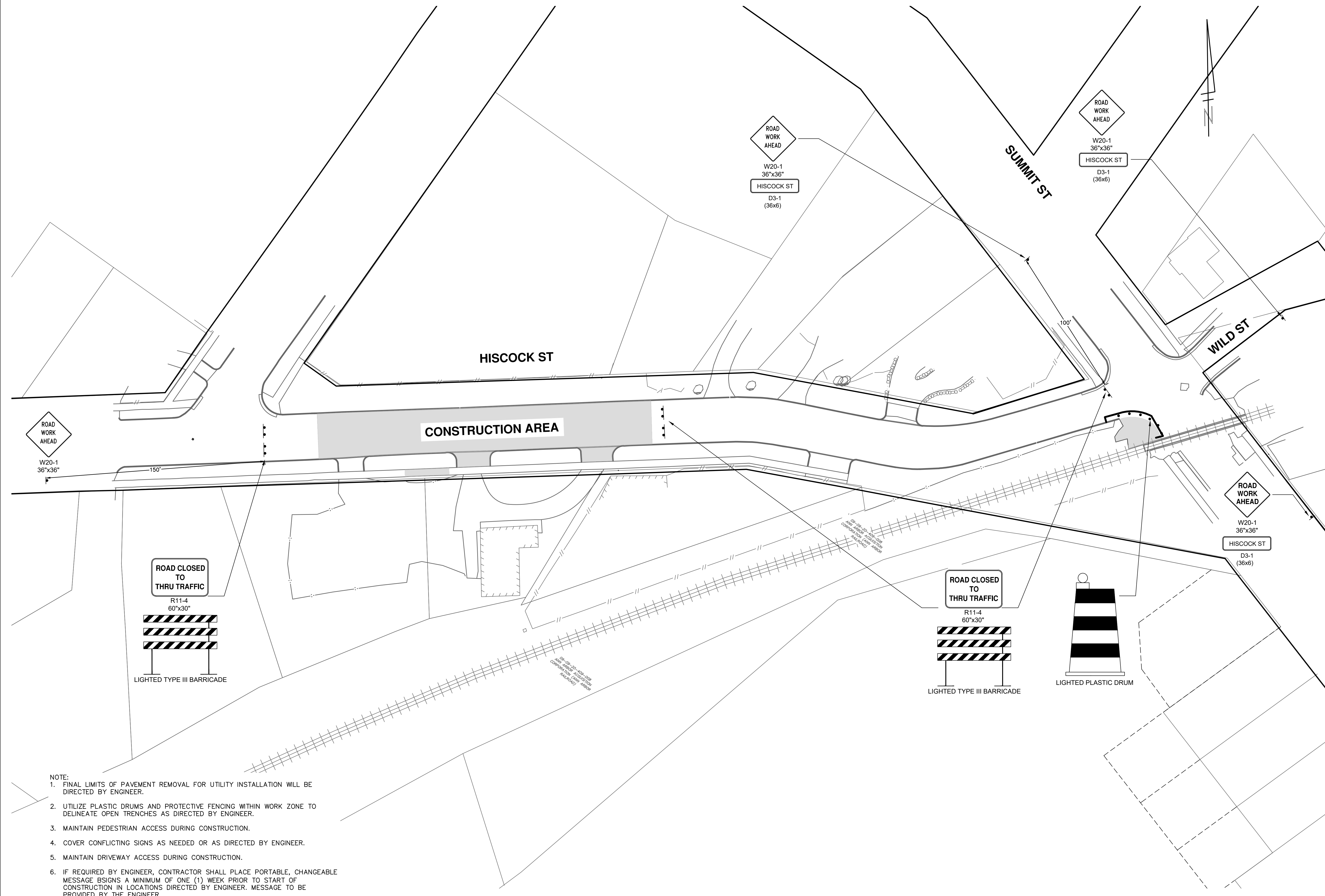
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
EIGHTH STREET
ROAD PLAN

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

DRAWING No. 2021-013-25

SHEET No. 25 OF 35

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- NOTE:
1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE DIRECTED BY ENGINEER.
 2. UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
 3. MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
 4. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
 5. MAINTAIN DRIVEWAY ACCESS DURING CONSTRUCTION.
 6. IF REQUIRED BY ENGINEER, CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE BSIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO START OF CONSTRUCTION IN LOCATIONS DIRECTED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

HISCOCK STREET

TRAFFIC CONTROL PLAN

811
Know what's below.
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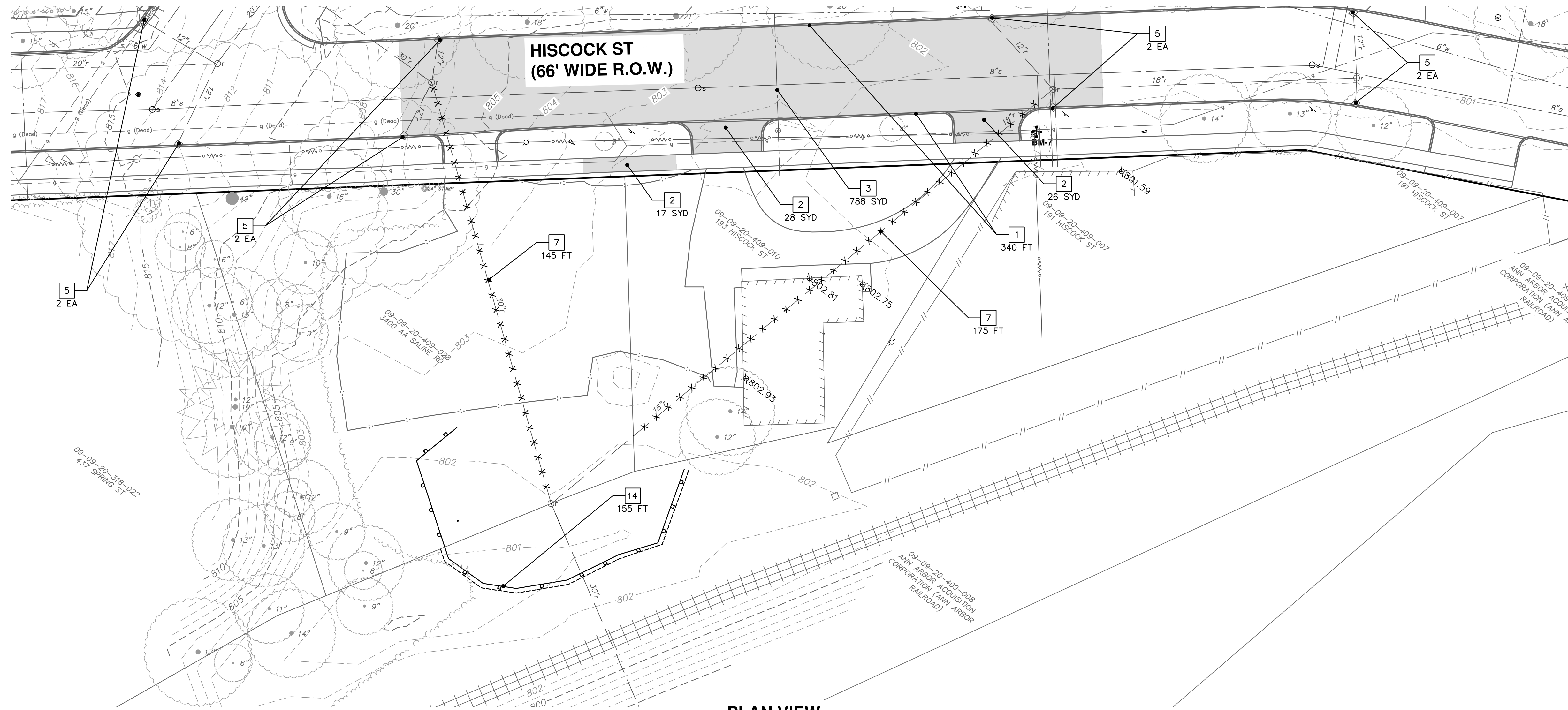
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
4	BID SET	02/24/2022	BWA	C/E

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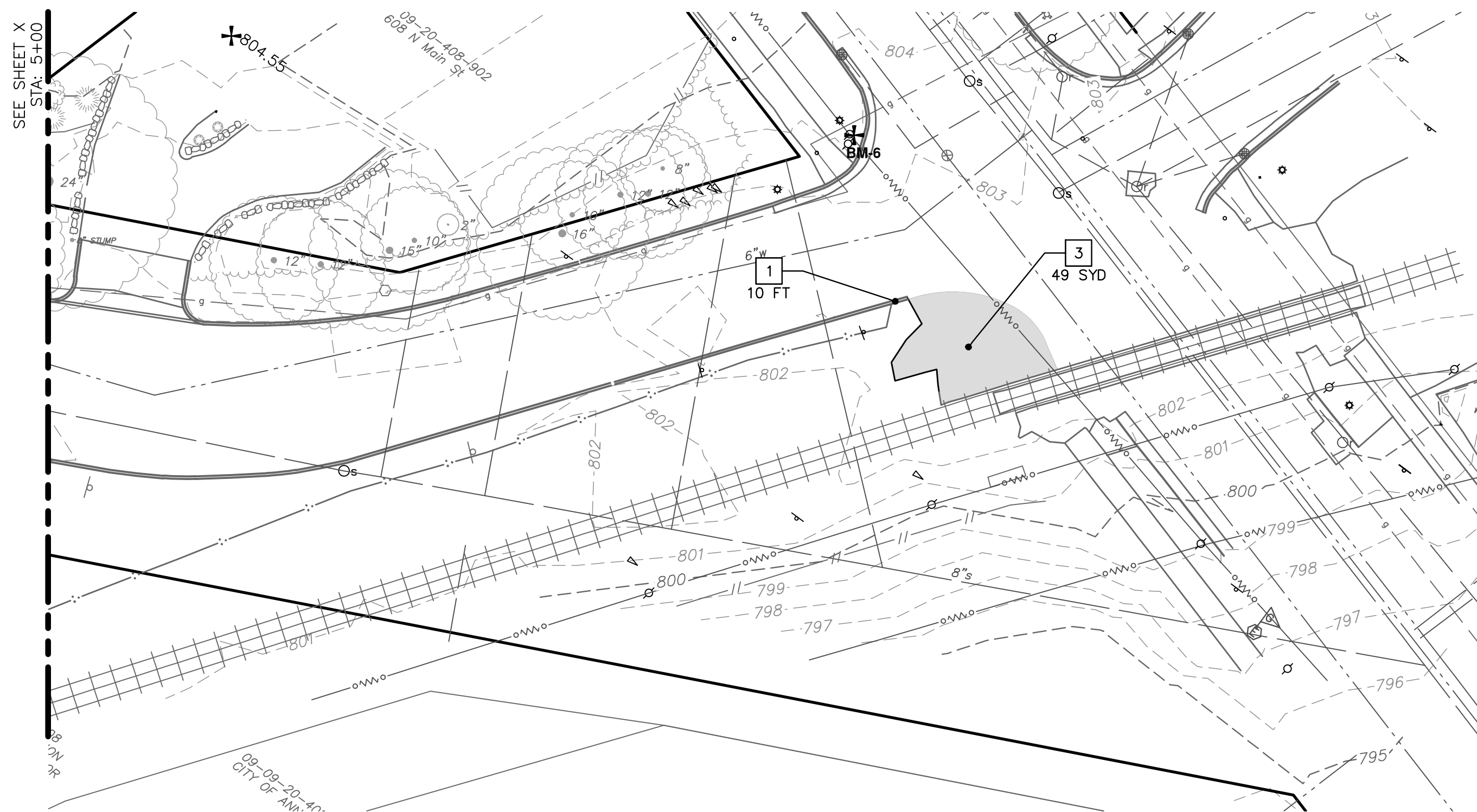
SCALE PLAN: 1" = 30'
PROFILE: 1" = 2'

DRAWING No. **2021-013-26**

SHEET No. **26 OF 35**



PLAN VIEW



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
4	PAVEMENT REMOVAL FOR RESURFACING
5	INLET FILTER
6	PROTECTIVE FENCING
7	SEWER, ANY SIZE OR DEPTH, ABANDON IN PLACE
8	SEWER, ANY SIZE OR DEPTH, ABANDON W/ FLOWABLE FILL
9	SEWER, ANY SIZE OR DEPTH, REMOVE
10	STRUCTURE, REM
11	STRUCTURE, ABANDON
12	TREE, REM, 6" TO 24"
13	TREE, REM, LARGER THAN 24"
14	SILT FENCE

*SAWCUT FULL DEPTH AT REMOVAL LIMITS



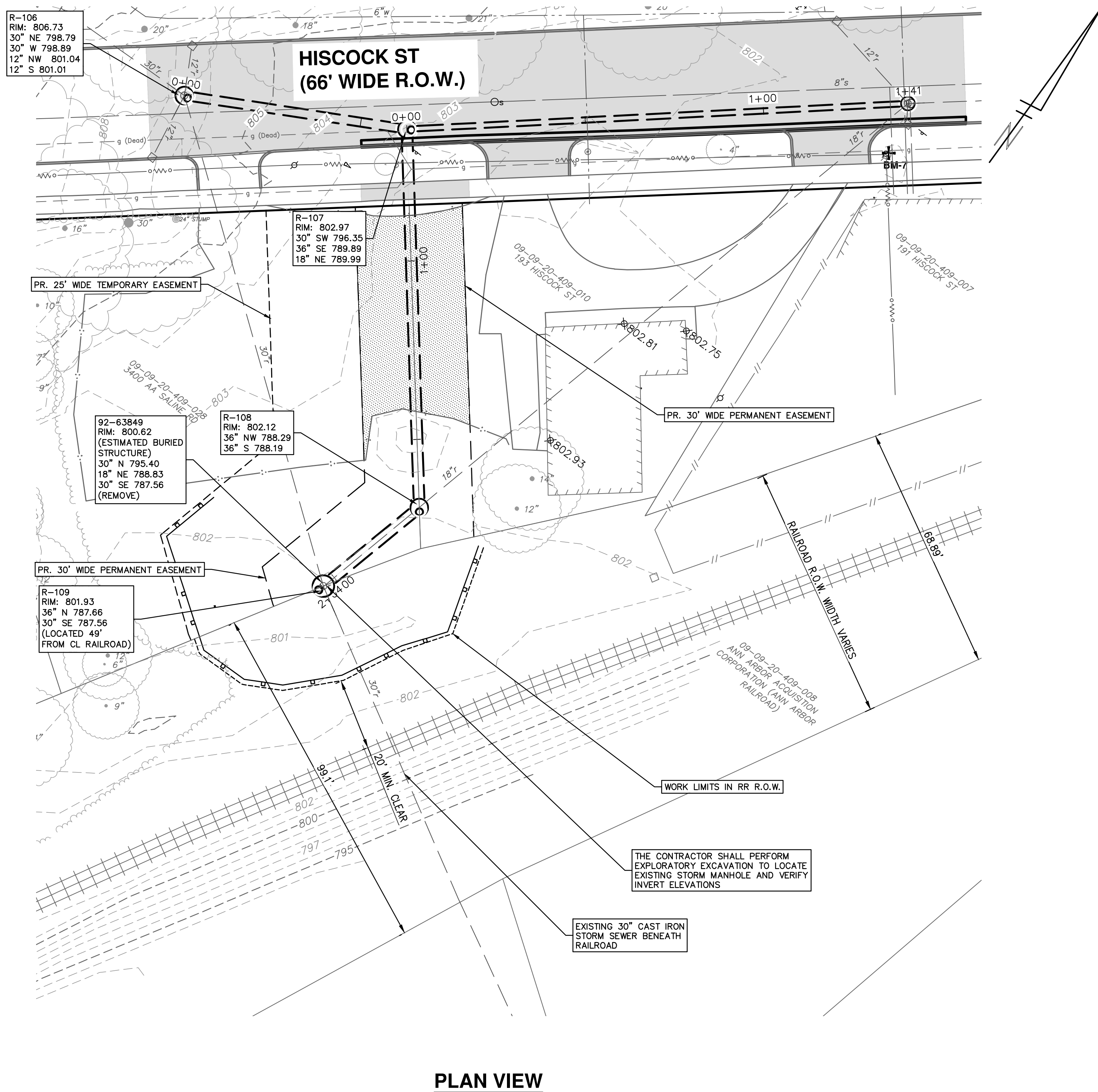
Know what's below. Call before you dig.

BID SET	C/E	DATE	REV.	DESCRIPTION
4	BWA	02/24/2022	1	PRELIMINARY PLAN
3	BWA	12/14/2021	2	60% PLAN
2	BWA	09/23/2021	3	PERMIT PLAN
1	BWA	06/15/2021	4	60% PLAN

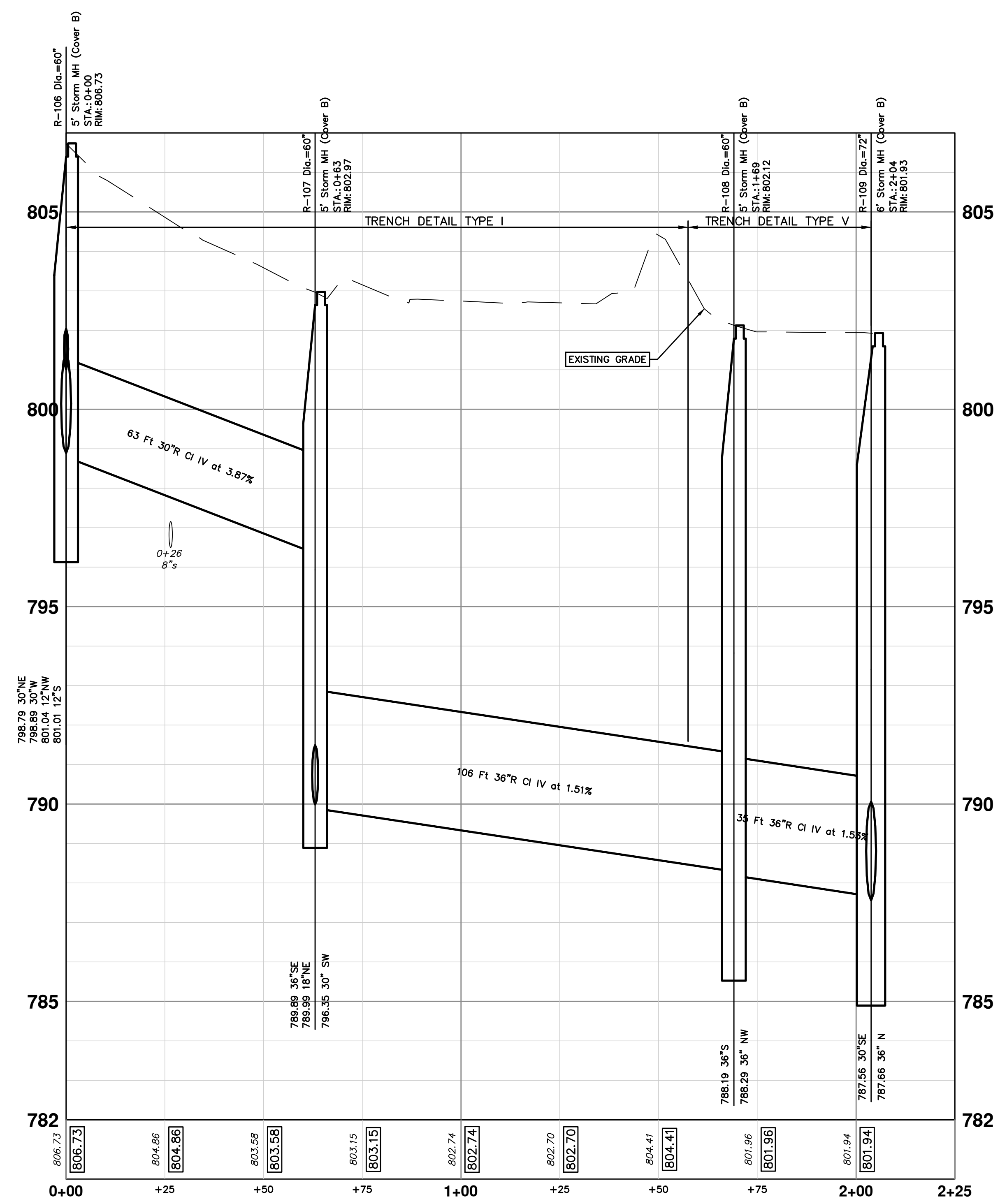
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2022 MISC UTILITY PROJECTS
HISCOCK STREET
REMOVALS AND SITE PREP



PLAN VIEW



STORM SEWER PROFILE

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE

STRUCTURE	DEPTH (Feet)	REMOVE
92-63849	13.09	6" Storm MH (Cover B)

STORM SEWER STRUCTURE TABLE

STRUCTURE	UTILITY	INVERT ELEV. SIZE & DIRECTION	RIM ELEVATION	DEPTH	SIZE	TYPE	SUMP
R-106	0+00	30° NE 798.79 30° W 798.89 12° NW 801.04 12° S 801.01	806.73	9.94	60" Dia.	5" Storm MH (Cover B)	2 Ft
R-107	0+63	30° SW 796.35 36° SE 789.89 18° NE 789.99	802.97	15.08	60" Dia.	5" Storm MH (Cover B)	2 Ft
R-108	1+69	36° NW 788.29 36° S 788.19	802.12	15.93	60" Dia.	5" Storm MH (Cover B)	2 Ft
R-109	2+04	36° N 787.66 30° SE 787.56	801.93	16.37	72" Dia.	6" Storm MH (Cover B)	2 Ft



Know what's below. Call before you dig.

REV.	DATE	DESCRIPTION	DRAWN	CHECKED
1	06/15/2021	PRELIMINARY PLAN	BWA	C/E
2	09/23/2021	60% PLAN	BWA	C/E
3	12/14/2021	PERMIT PLAN	BWA	C/E
4	02/24/2022	BID SET	BWA	C/E

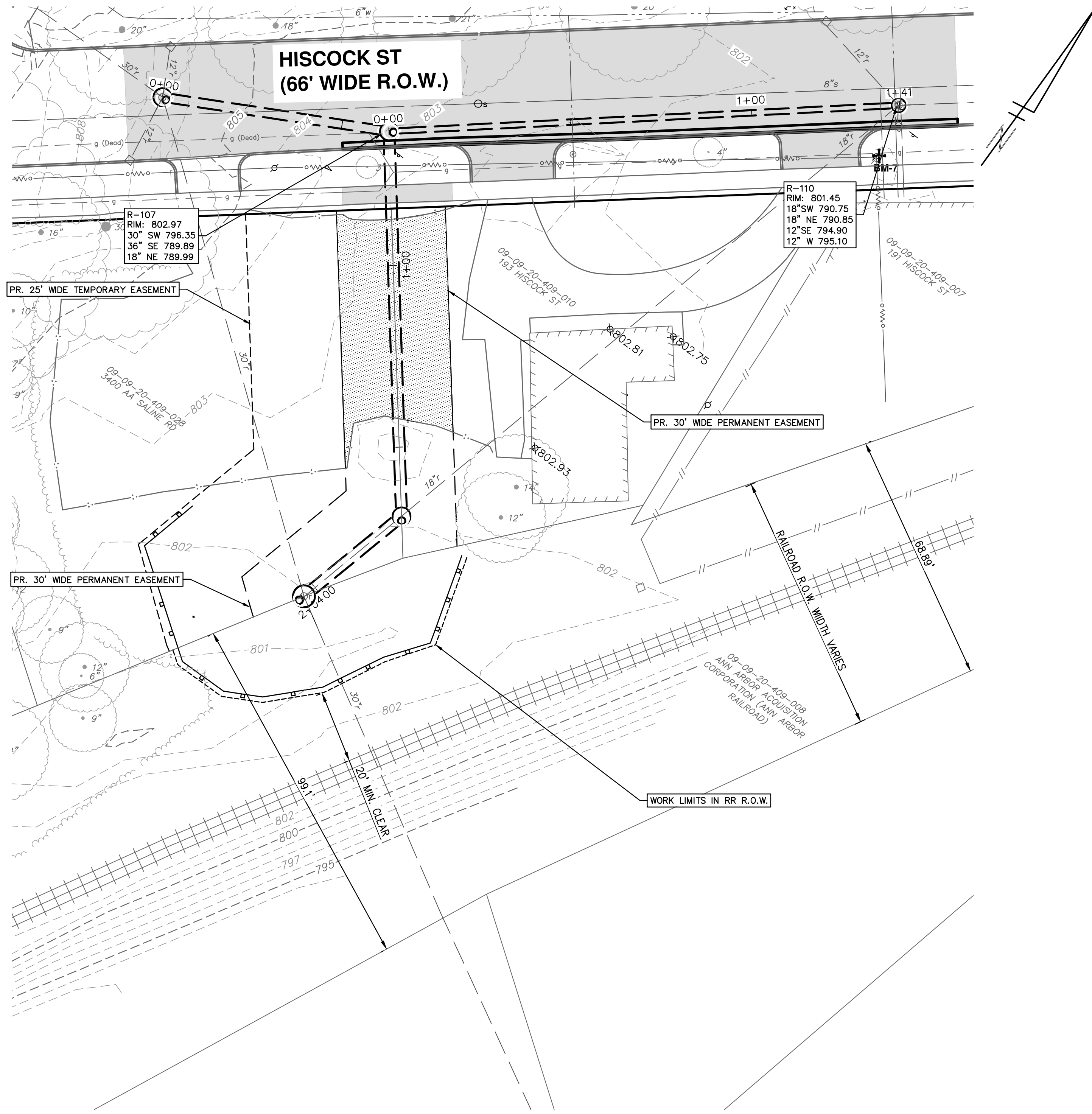
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CITY OF ANN ARBOR
MICHIGAN

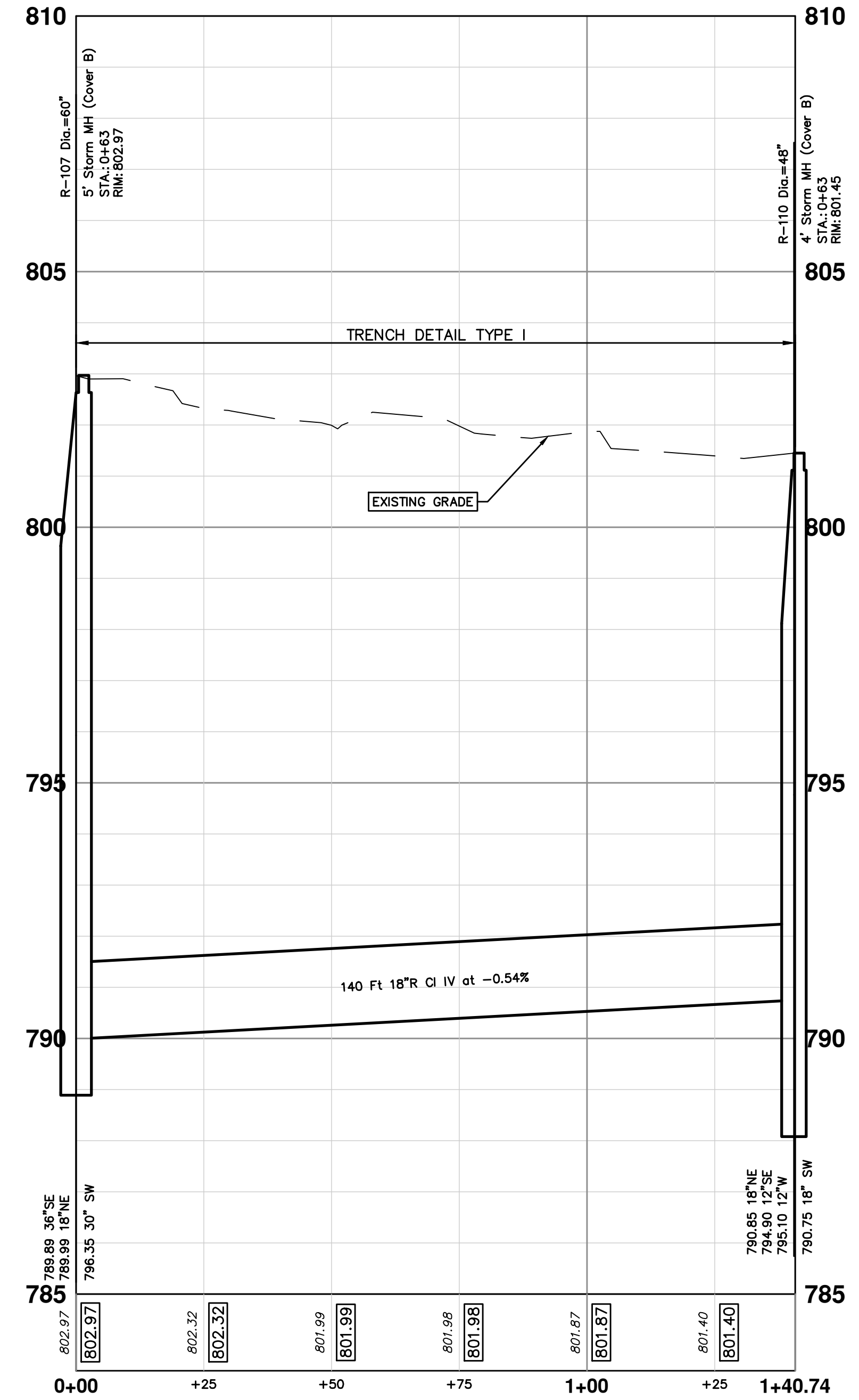
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
HISCOCK STREET
STORM SEWER PLAN & PROFILE STA. 0+00 TO STA. 2+04

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2021-013-28



PLAN VIEW

STORM SEWER STRUCTURE TABLE							
STRUCTURE	UTILITY	INVERT ELEV. SIZE & DIRECTION	RIM ELEVATION	DEPTH	SIZE	TYPE	SUMP
R-107	0+00	30" SW 796.35 36" SE 789.89 18" NE 789.99	802.97	15.08	60" Dia.	5' Storm MH (Cover B)	2 Ft
R-110	0+63	18" SW 790.75 18" NE 790.85 12" SE 794.90 12" W 795.10	801.45	12.70	48" Dia.	4' Storm MH (Cover B)	2 Ft

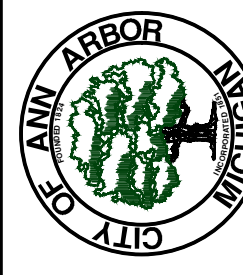


STORM SEWER PROFILE



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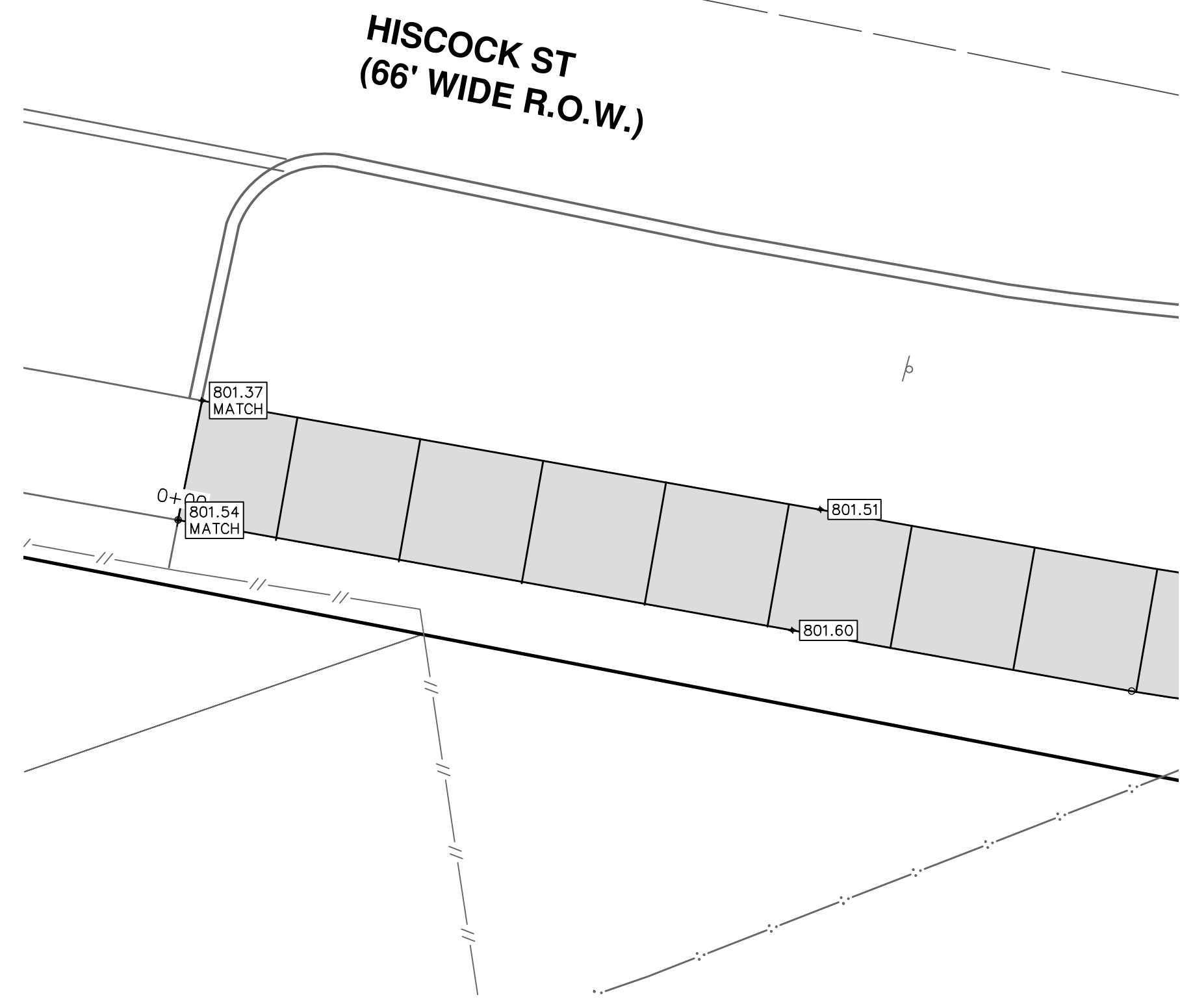
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
4	BID SET	02/24/2022	BWA	C/E



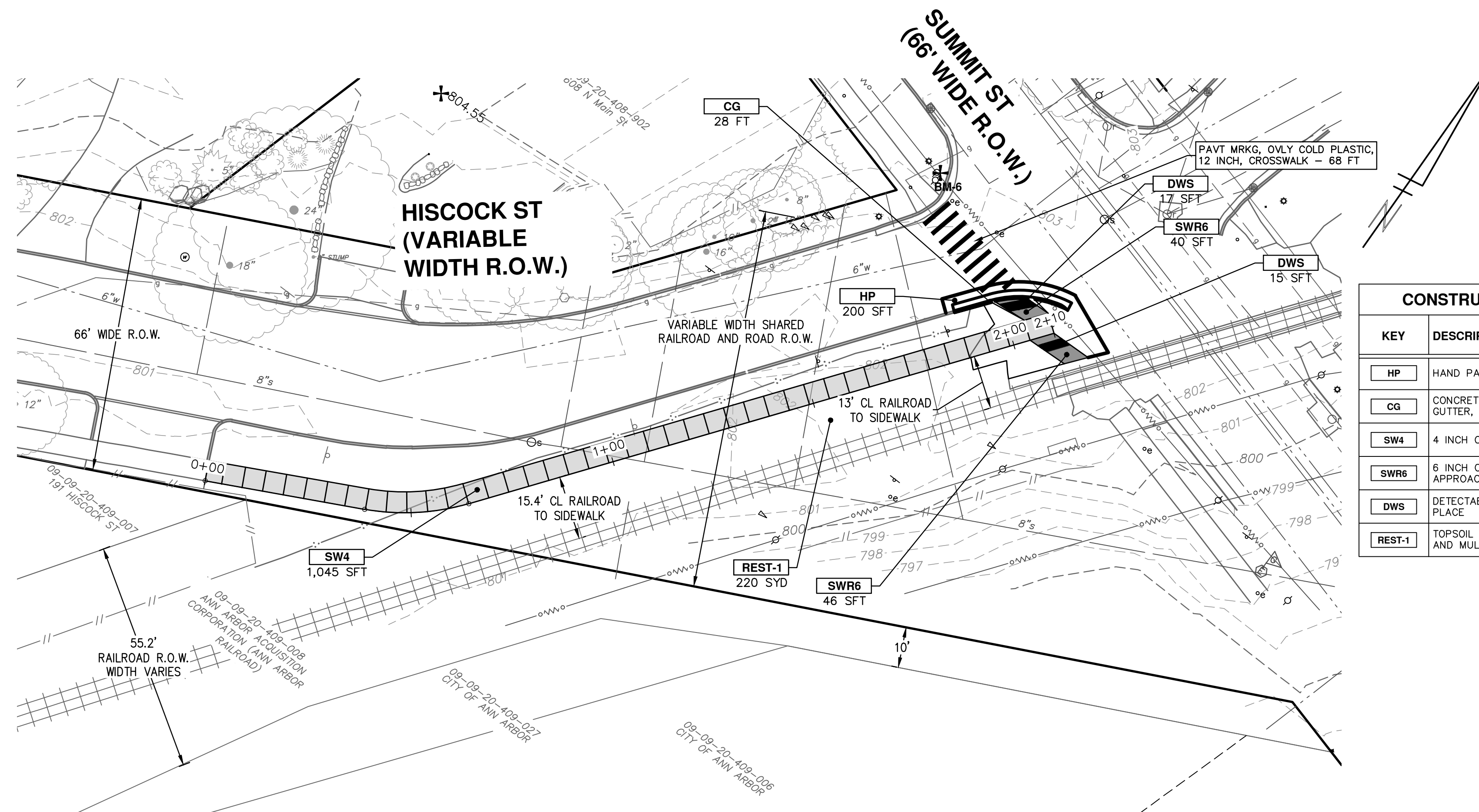
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2022 MISC UTILITY PROJECTS
 HISCOCK STREET
 STORM SEWER PLAN & PROFILE STA. 0+00 TO STA. 0+63

SCALE PLAN: 1" = 20'
 PROFILE: 1" = 2'
 DRAWING No. 2021-013-29

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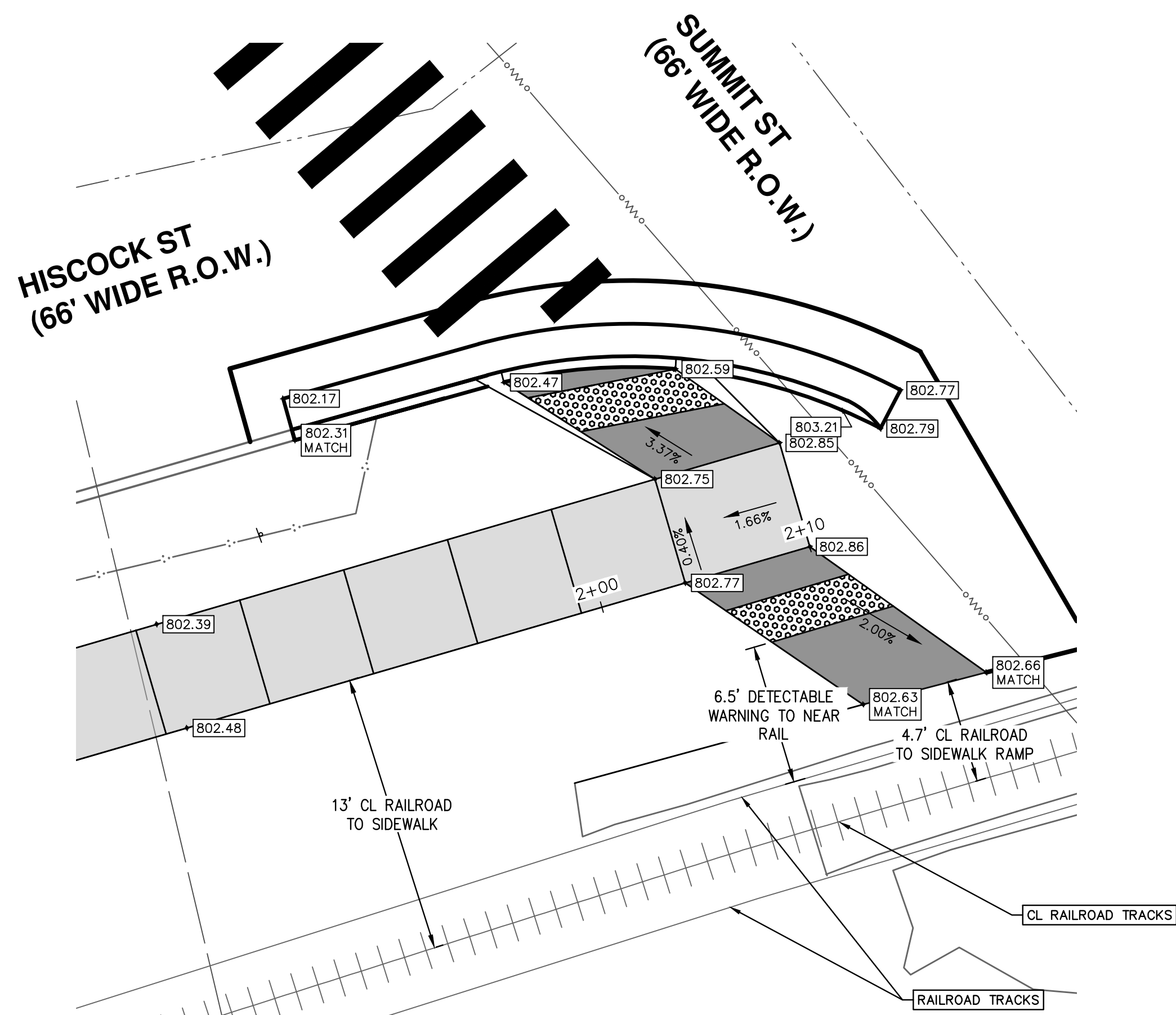


GRADING DETAIL
SCALE: 1"=5'

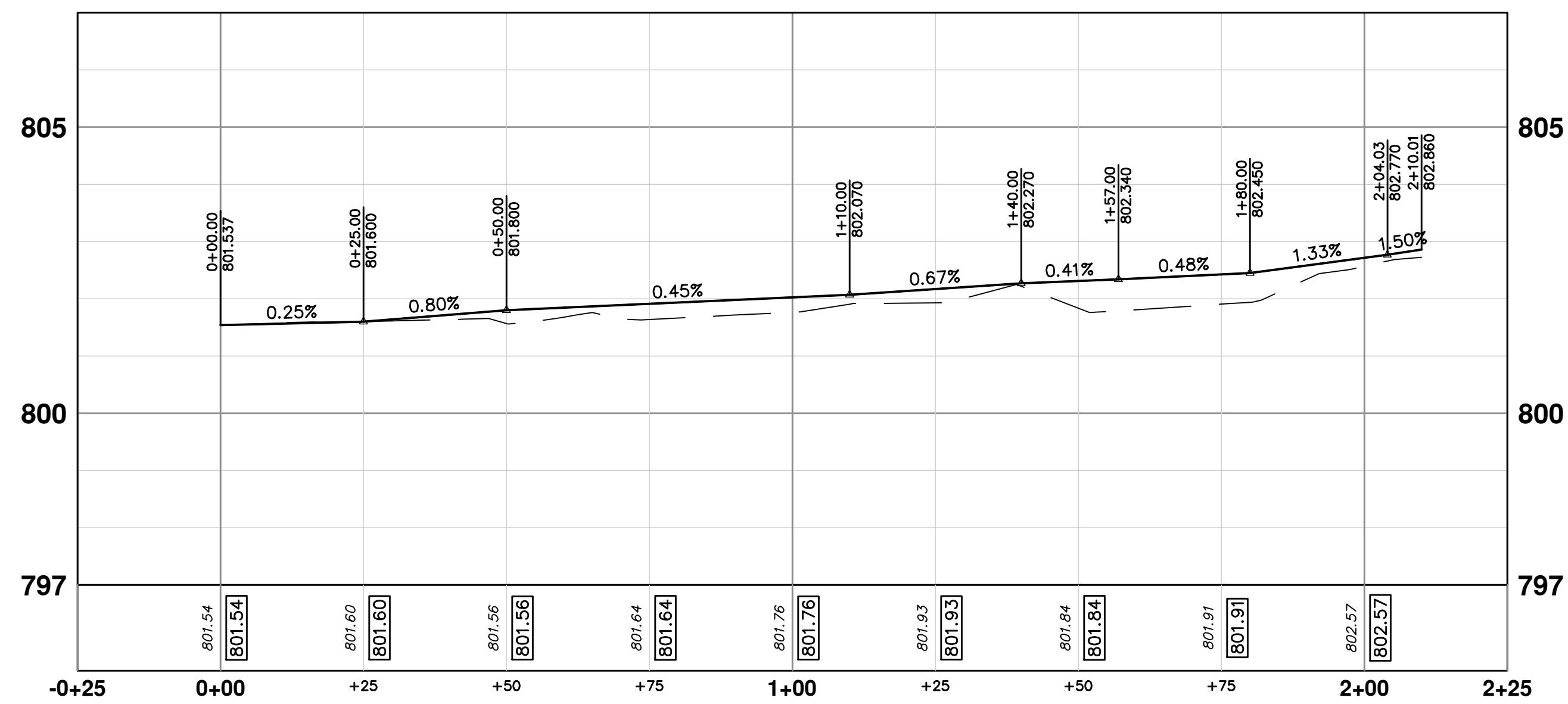


PLAN VIEW

CONSTRUCTION KEY	
KEY	DESCRIPTION
HP	HAND PATCHING
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
SW4	4 INCH CONCRETE SIDEWALK
SWR6	6 INCH CONCRETE RAMP, DRIVE APPROACH
DWS	DETECTABLE WARNING, CAST IN PLACE
REST-1	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, TURF GRASS



GRADING DETAIL
SCALE: 1"=5'



PROFILE VIEW
SCALE: 1"=20'

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

HISCOCK STREET

SIDEWALK PLAN

SHEET No. 30 OF 35

811
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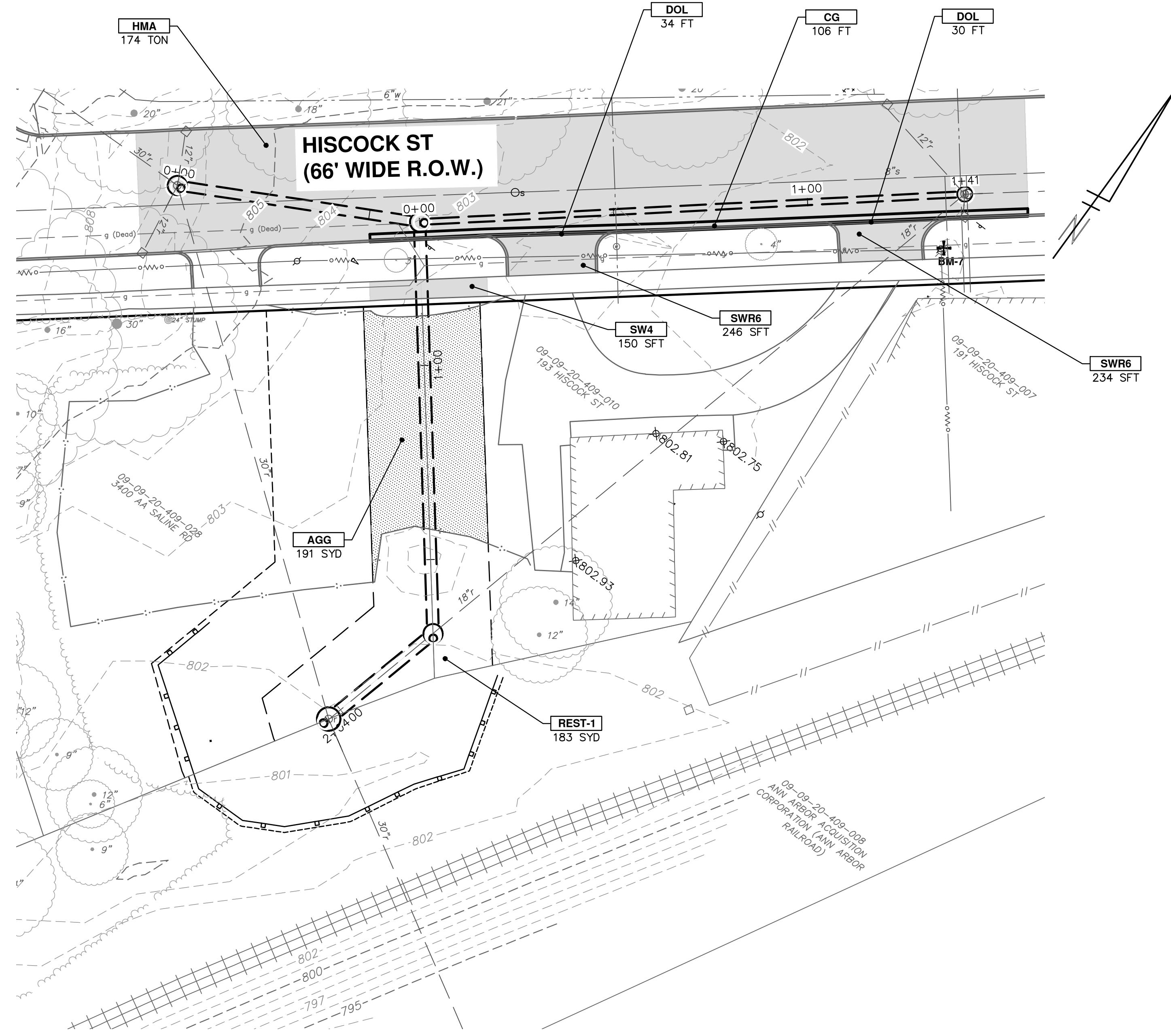
REV.	DATE	DESCRIPTION	CHECKED	DRAWN	C/E
1	06/15/2021	PRELIMINARY PLAN		BWA	C/E
2	09/23/2021	60% PLAN		BWA	C/E
3	12/14/2021	PERMIT PLAN		BWA	C/E
4	02/24/2022	BID SET		BWA	C/E

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CITY OF ANN ARBOR

SCALE PLAN: 1" = 20'

DRAWING No. 2021-013-30



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
SW4	4 INCH CONCRETE SIDEWALK
SWR6	6 INCH CONCRETE RAMP, DRIVE APPROACH
DOL	CONCRETE TYPE L DRIVE OPENING
ASC	ADJUST STRUCTURE COVER
REST-1	TOPSOIL SURFACE, 4 INCH, SEED AND MULCH, TURF GRASS
AGG	AGGREGATE SURFACE COURSE, 6 INCH, 23A

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS


HISCOCK STREET

ROAD PLAN

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

DRAWING No. **2021-013-31**

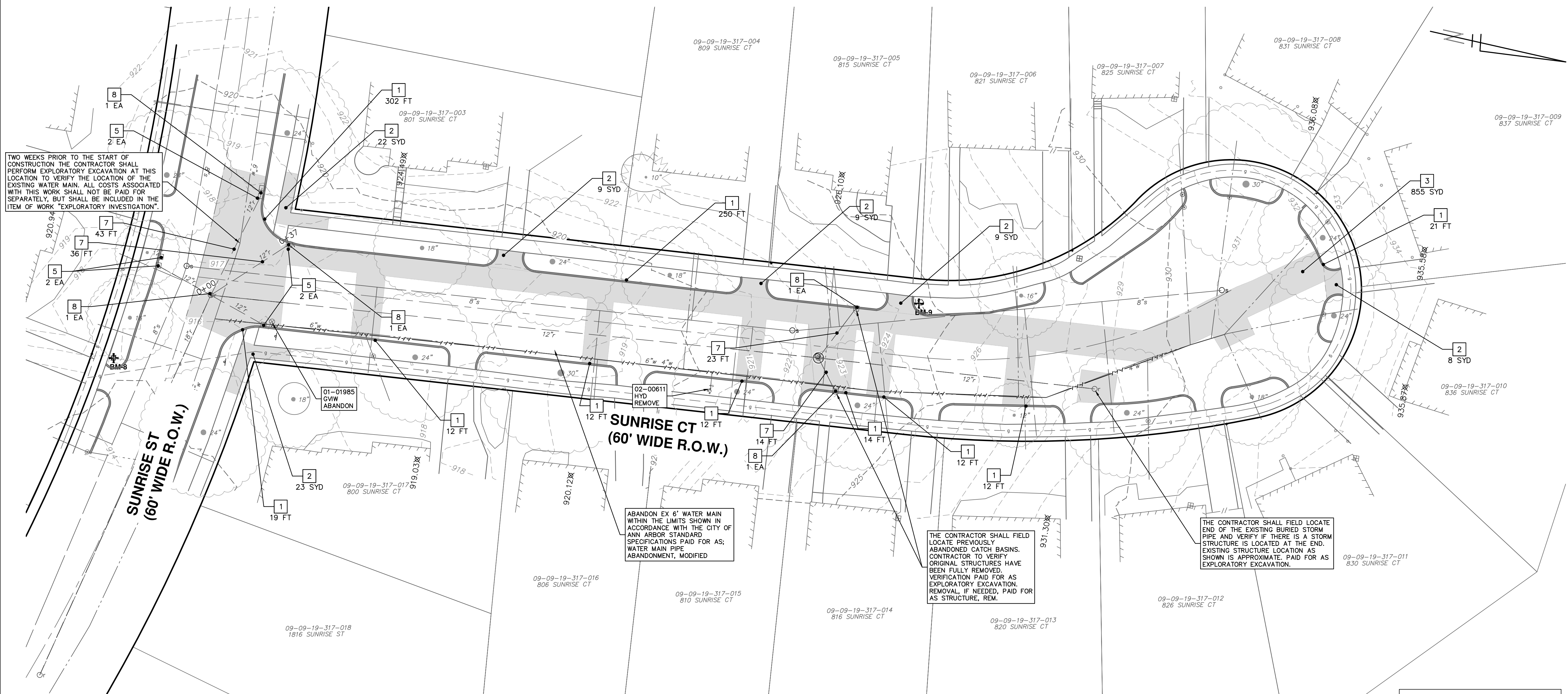
SHEET No. **31 OF 35**



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BID SET	02/24/2022	BWA	C/E
PERMIT PLAN	12/14/2021	BWA	C/E
60% PLAN	09/23/2021	BWA	C/E
PRELIMINARY PLAN	06/15/2021	BWA	C/E
DESCRIPTION	DATE	DRAWN	CHECKED
REV.			

Know what's below. Call before you dig.



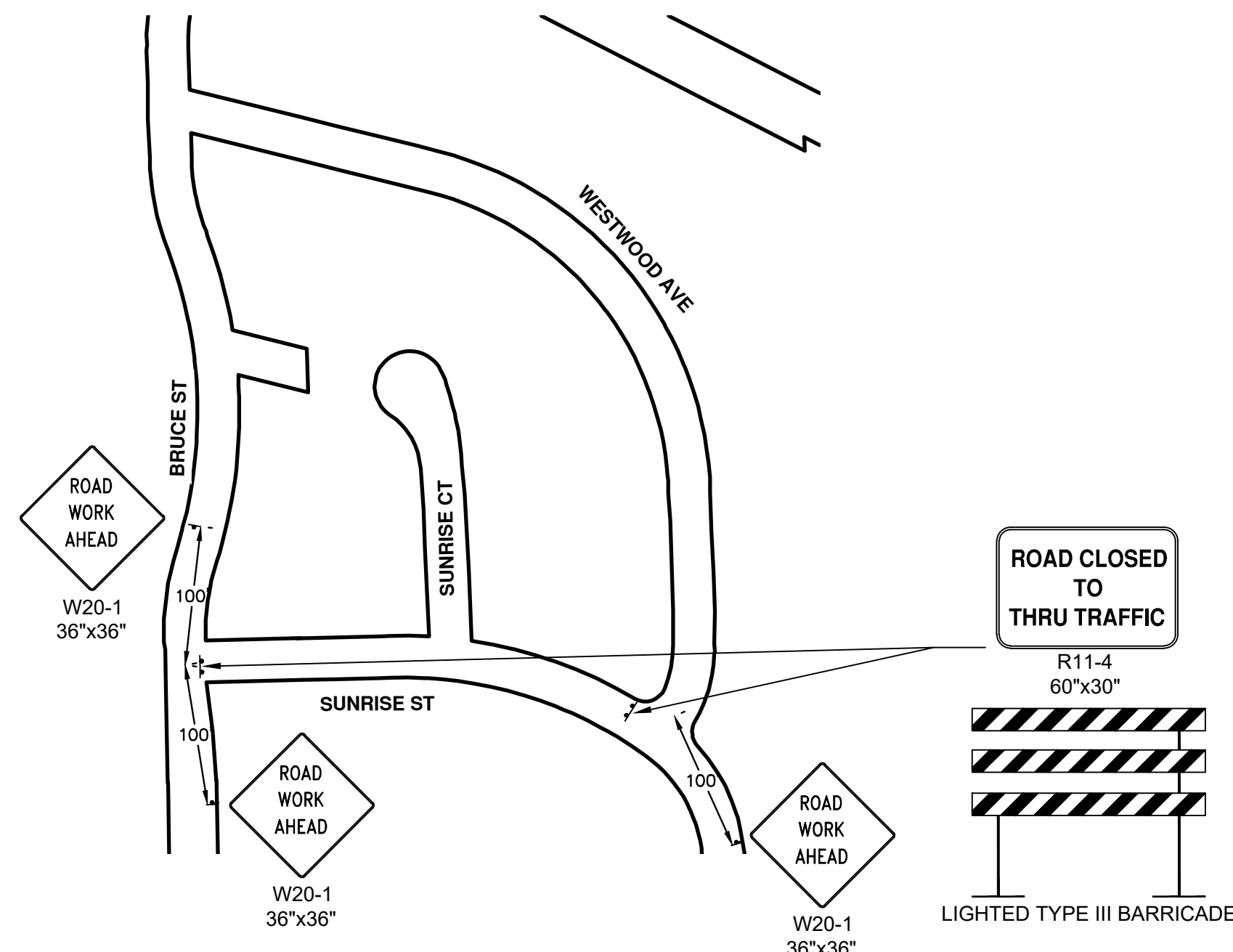
TWO WEEKS PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION TO VERIFY THE LOCATION OF THE EXISTING WATER MAIN. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY INVESTIGATION".

ABANDON EX 6" WATER MAIN WITHIN THE LIMITS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS PAID FOR AS; WATER MAIN PIPE ABANDONMENT, MODIFIED

THE CONTRACTOR SHALL FIELD LOCATE PREVIOUSLY ABANDONED CATCH BASINS. CONTRACTOR TO VERIFY ORIGINAL STRUCTURES HAVE BEEN FULLY REMOVED. VERIFICATION PAID FOR AS EXPLORATORY EXCAVATION. REMOVAL, IF NEEDED, PAID FOR AS STRUCTURE, REM.

THE CONTRACTOR SHALL FIELD LOCATE END OF THE EXISTING BURIED STORM PIPE AND VERIFY IF THERE IS A STORM STRUCTURE IS LOCATED AT THE END. EXISTING STRUCTURE LOCATION AS SHOWN IS APPROXIMATE. PAID FOR AS EXPLORATORY EXCAVATION.

- NOTE:
1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE DIRECTED BY ENGINEER.
 2. UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
 3. MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
 4. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
 5. MAINTAIN DRIVEWAY ACCESS DURING CONSTRUCTION.
 6. IF REQUIRED BY ENGINEER, CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE SIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO START OF CONSTRUCTION IN LOCATIONS DIRECTED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA PAVEMENT REMOVAL, ANY DEPTH*
5	INLET FILTER
7	SEWER, ANY SIZE OR DEPTH, REMOVE
8	STRUCTURE, REM

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

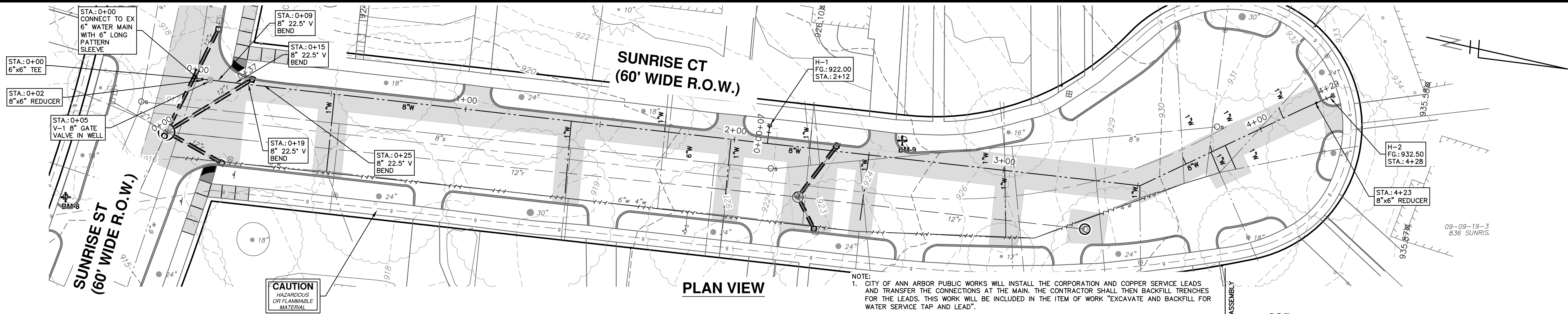
811
Know what's below. Call before you dig.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
SUNRISE COURT
REMOVALS AND SITE PREP

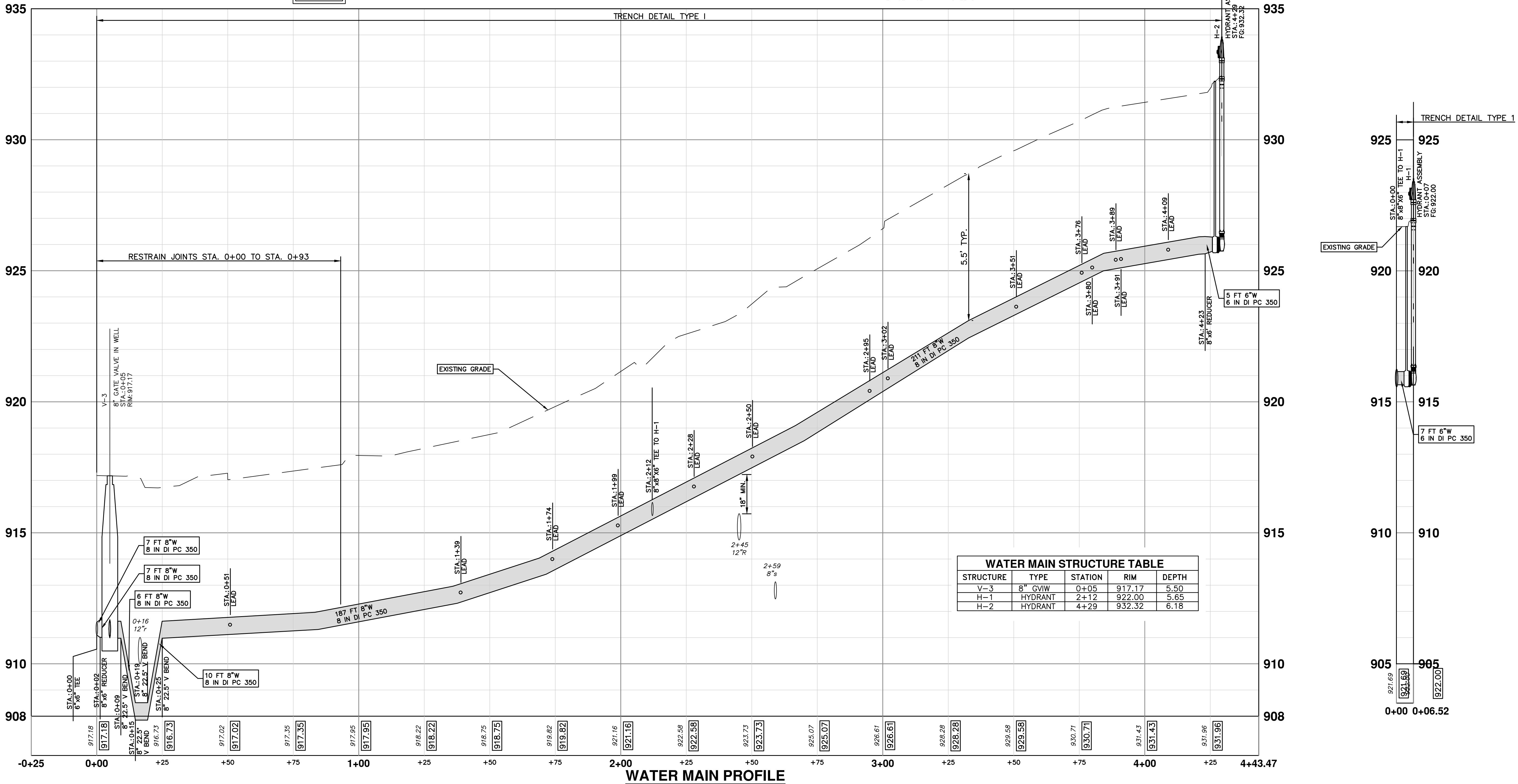
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	BID SET	02/24/2022	BWA	C/E
3	PERMIT PLAN	12/14/2021	BWA	C/E
2	60% PLAN	09/23/2021	BWA	C/E
1	PRELIMINARY PLAN	06/15/2021	BWA	C/E

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-0647
734-794-6410
www.a2gov.org

SCALE PLAN: 1" = 20'
DRAWING No. 2021-013-32
SHEET No. 32 OF 35



NOTE:
 1. CITY OF ANN ARBOR PUBLIC WORKS WILL INSTALL THE CORPORATION AND COPPER SERVICE LEADS AND TRANSFER THE CONNECTIONS AT THE MAIN. THE CONTRACTOR SHALL THEN BACKFILL TRENCHES FOR THE LEADS. THIS WORK WILL BE INCLUDED IN THE ITEM OF WORK "EXCAVATE AND BACKFILL FOR WATER SERVICE TAP AND LEAD".



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V-3	8" GVW	0+05	917.17	5.50
H-1	HYDRANT	2+12	922.00	5.65
H-2	HYDRANT	4+29	932.32	6.18

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2022 MISC UTILITY PROJECTS

SUNRISE COURT

WATER MAIN PLAN & PROFILE STA. 0+00 TO STA. 4+28

SHEET No. 33 OF 35

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

DRAWING No. 2021-013-33

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

REV.	DATE	DESCRIPTION
1	06/15/2021	PRELIMINARY PLAN
2	09/23/2021	60% PLAN
3	12/14/2021	PERMIT PLAN
4	02/24/2022	BID SET

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C:\Civil_3D\Projects\drawing\151602C-402.dwg Dwg Created: 20-Jul-21 - _a2_standard.bw.stb - Plot Date: 24-Feb-22

R-112
RIM: 916.61
12" W 911.61
12" NW 910.72
12" S 911.52
12" N 909.69
18" E 906.47
12" N 907.07

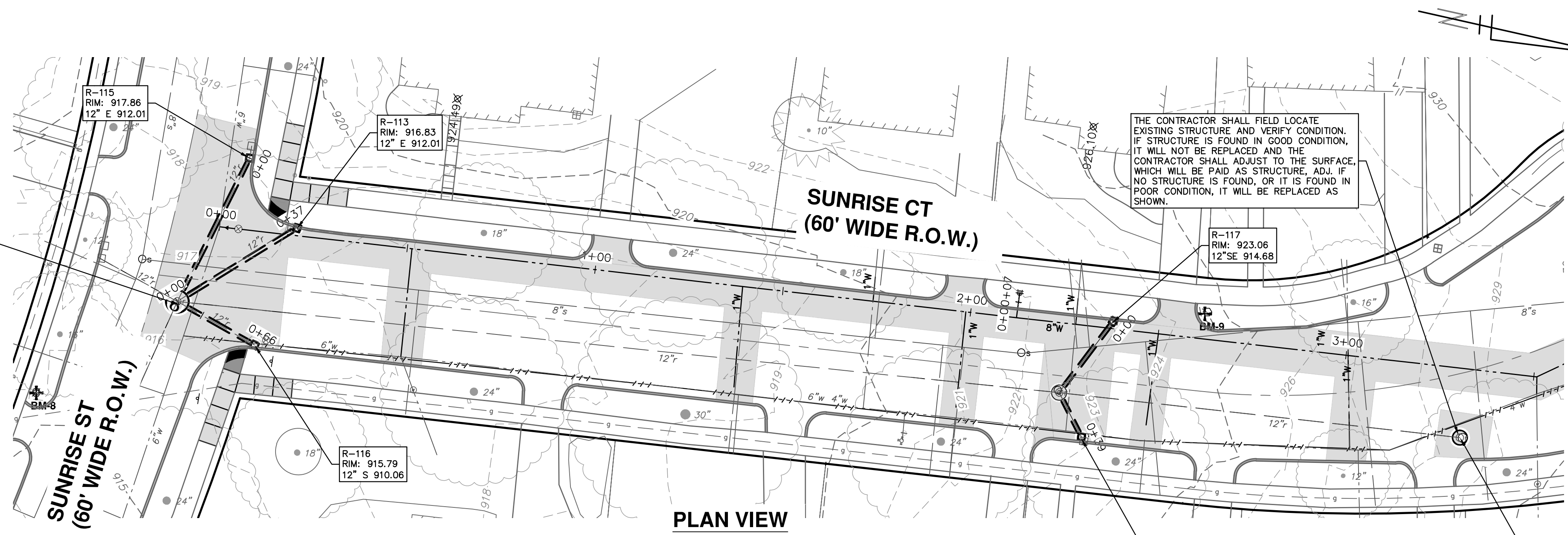
R-113
RIM: 916.83
12" E 912.01

R-116
RIM: 915.79
12" S 910.06

R-117
RIM: 923.06
12" SE 914.68

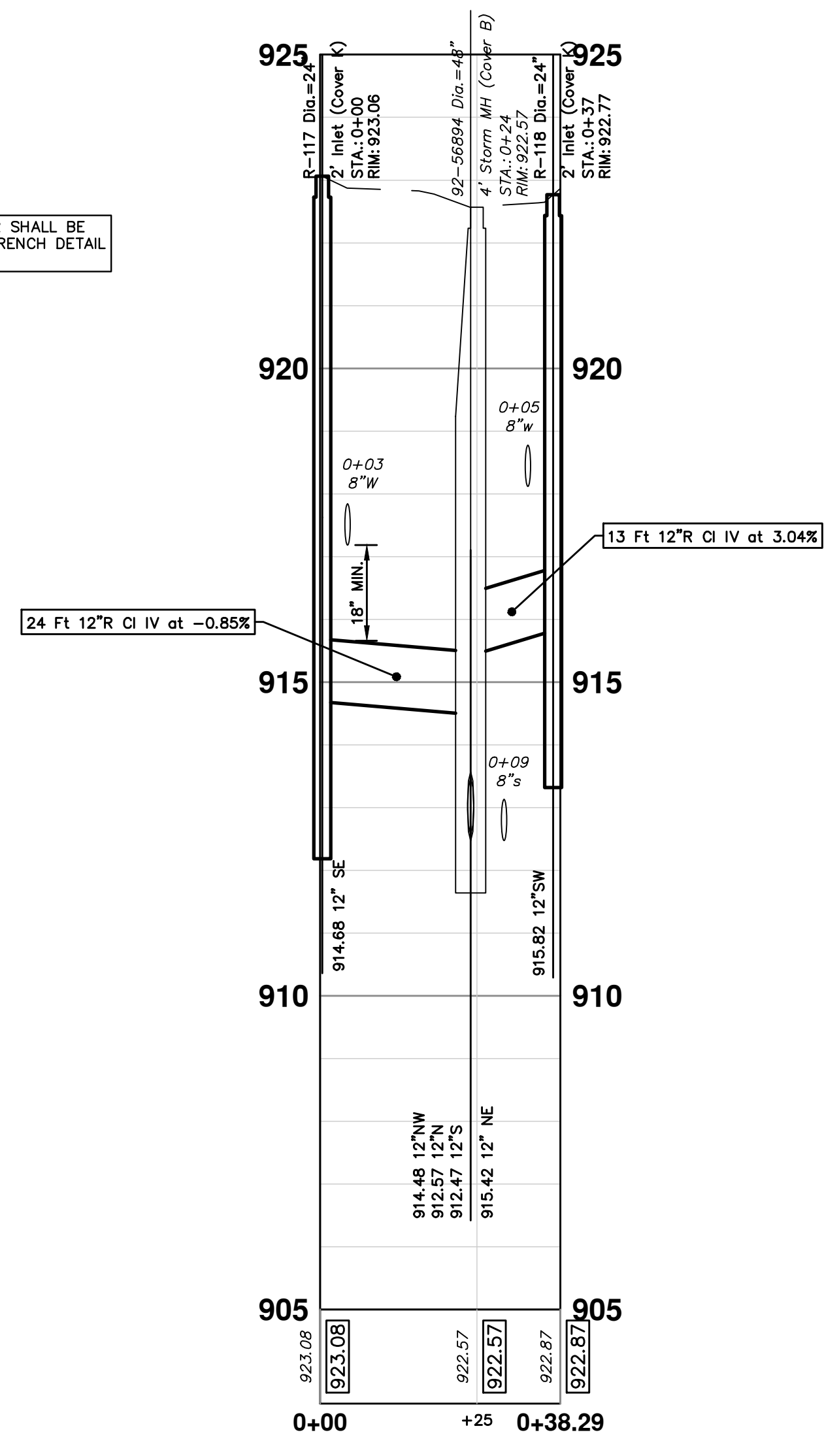
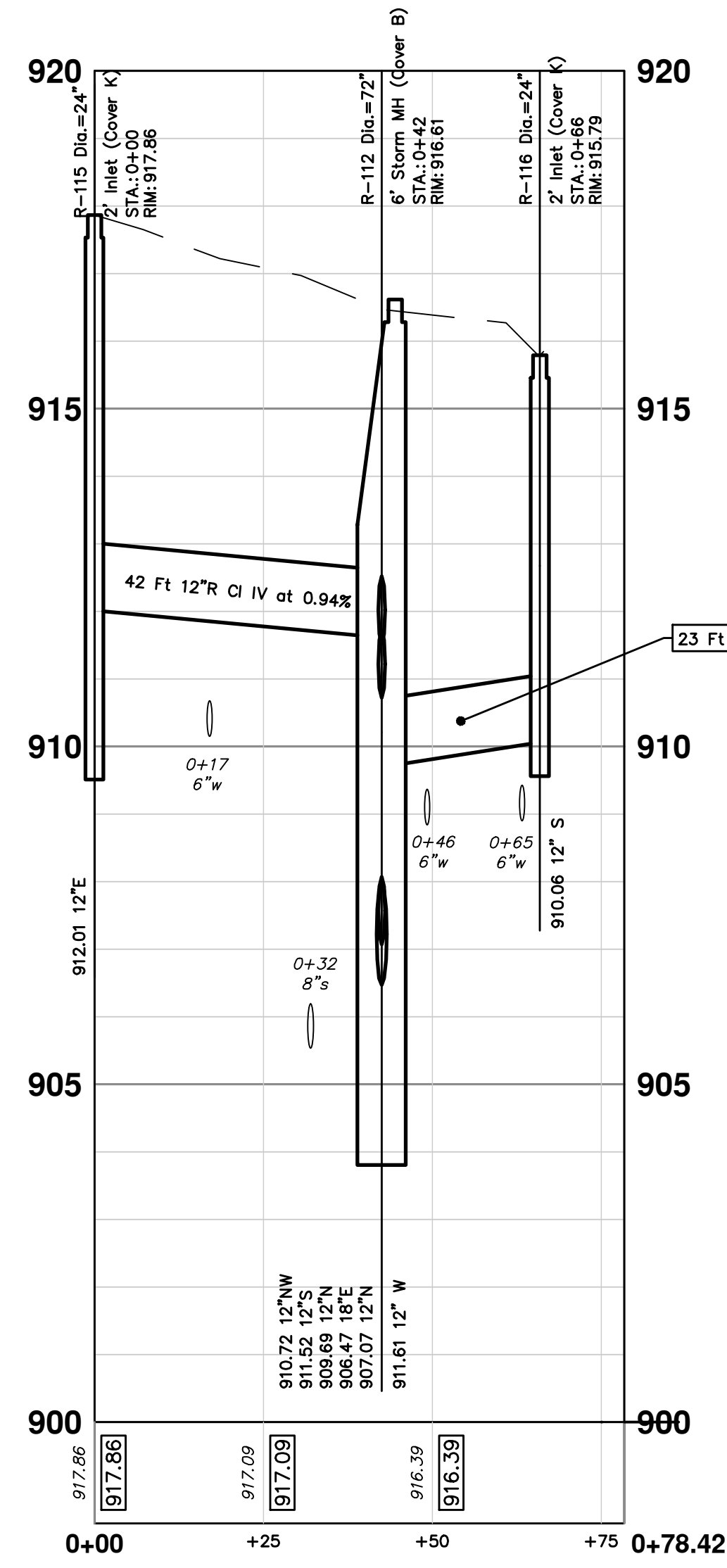
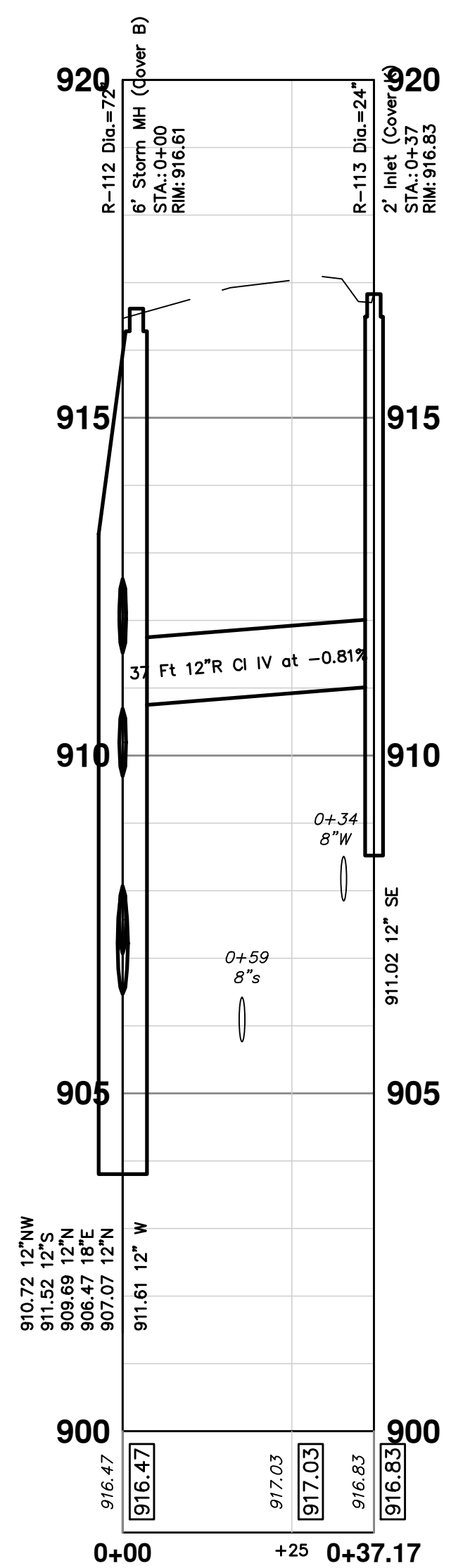
R-118
RIM: 922.77
12" SW 915.82

R-114
RIM: 928.37
12" S 915.02



STRUCTURE	STATION	INVERT ELEV. SIZE & DIRECTION	RIM ELEVATION	DEPTH	SIZE	TYPE	SIZE
R-112	0+00	12" W 911.61 12" NW 910.72 12" S 911.52 12" N 909.69 18" E 906.47 12" N 907.07	916.61	12.14	72" Dia.	6' Storm MH (Cover B)	2 Ft
R-115	0+00	12" E 912.01	917.86	7.85	24" Dia.	2' Inlet (Cover K)	2 Ft
R-113	0+37	12" SE 911.02	916.83	7.81	24" Dia.	2' Inlet (Cover K)	2 Ft
R-116	0+66	12" S 910.06	915.79	5.73	24" Dia.	2' Inlet (Cover K)	2 Ft
92-56894	0+24	12" NE 915.42 12" NW 914.48 12" N 912.57 12" S 912.47	922.57	10.26	48" Dia.	4' Storm MH (Cover B)	2 Ft
R-117	0+00	12" SE 914.68	923.06	10.38	24" Dia.	2' Inlet (Cover K)	2 Ft
R-118	0+37	12" SW 915.82	922.77	8.95	24" Dia.	2' Inlet (Cover K)	2 Ft
R-114	0+00	12" S 915.02	928.37	13.35	48" Dia.	4' Storm MH (Cover B)	2 Ft

STRUCTURE	DEPTH (Feet)	REMOVE
R-92-56895	12.14	6' Storm MH (Cover B)
88-61393	7.85	2' Inlet (Cover K)
88-61395	7.81	2' Inlet (Cover K)
88-61396	5.73	2' Inlet (Cover K)
R-110	10.38	2' Inlet (Cover K)
R-111	8.95	2' Inlet (Cover K)



STORM SEWER PROFILES



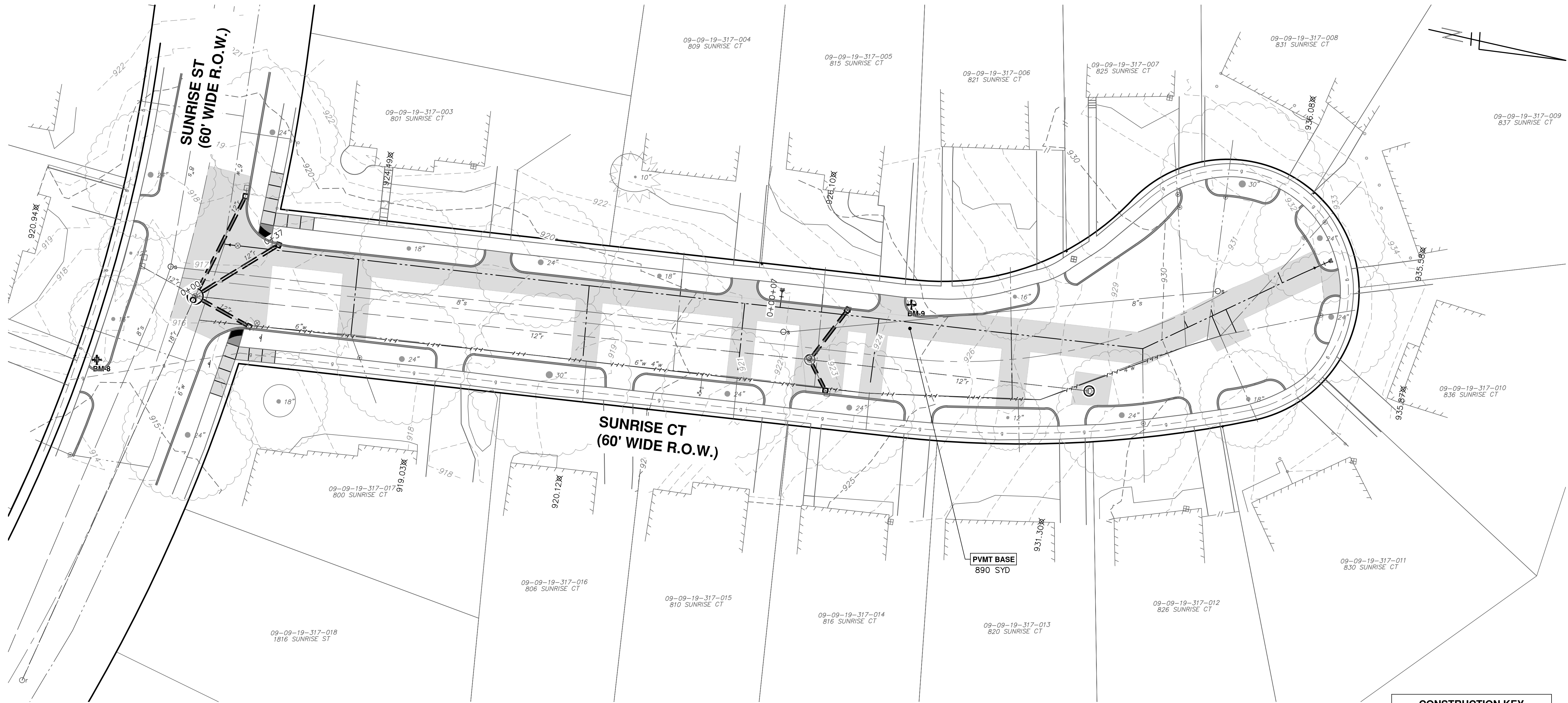
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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2022 MISC UTILITY PROJECTS
SUNRISE COURT
STORM SEWER PLAN AND PROFILE



- NOTE:
 1. FINAL PAVEMENT RESTORATION ON SUNRISE COURT TO BE PERFORMED UNDER SEPARATE CONTRACT BY OTHERS.
 2. PREPARE ROAD BASE FOR PAVING BY OTHERS INCLUDING PLACEMENT AND COMPACTION OF SUBBASE AND BASE MATERIALS.
 3. SUPPLEMENTAL AGGREGATE MATERIAL SHALL BE ADDED AS REQUIRED BY THE ENGINEER TO MAINTAIN A DRIVEABLE ROAD SURFACE. PAID FOR AS 21AA LIMESTONE, C.I.P.
 4. CONTRACTOR SHALL MAINTAIN SIDEWALK CLOSURES UNTIL RESTORATION BY OTHERS.
 5. CONTRACTOR RESPONSIBLE FOR ALL TURF RESTORATION BEYOND THE INFLUENCE OF SIDEWALK OR CURB WORK.

CONSTRUCTION KEY	
KEY	DESCRIPTION
PVTM BASE	PREPARE PAVEMENT FOR RESTORATION BY OTHERS, 8 INCH 21AA AGGREGATE CIP WITH SUPPLEMENTAL AGGREGATE AS REQUIRED FOR LEVELING DRIVING SURFACE



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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