



CITY OF ANN ARBOR ENGINEERING

2019 MISC UTILITY PROJECTS

ITB 4556, FILE No. 2018025

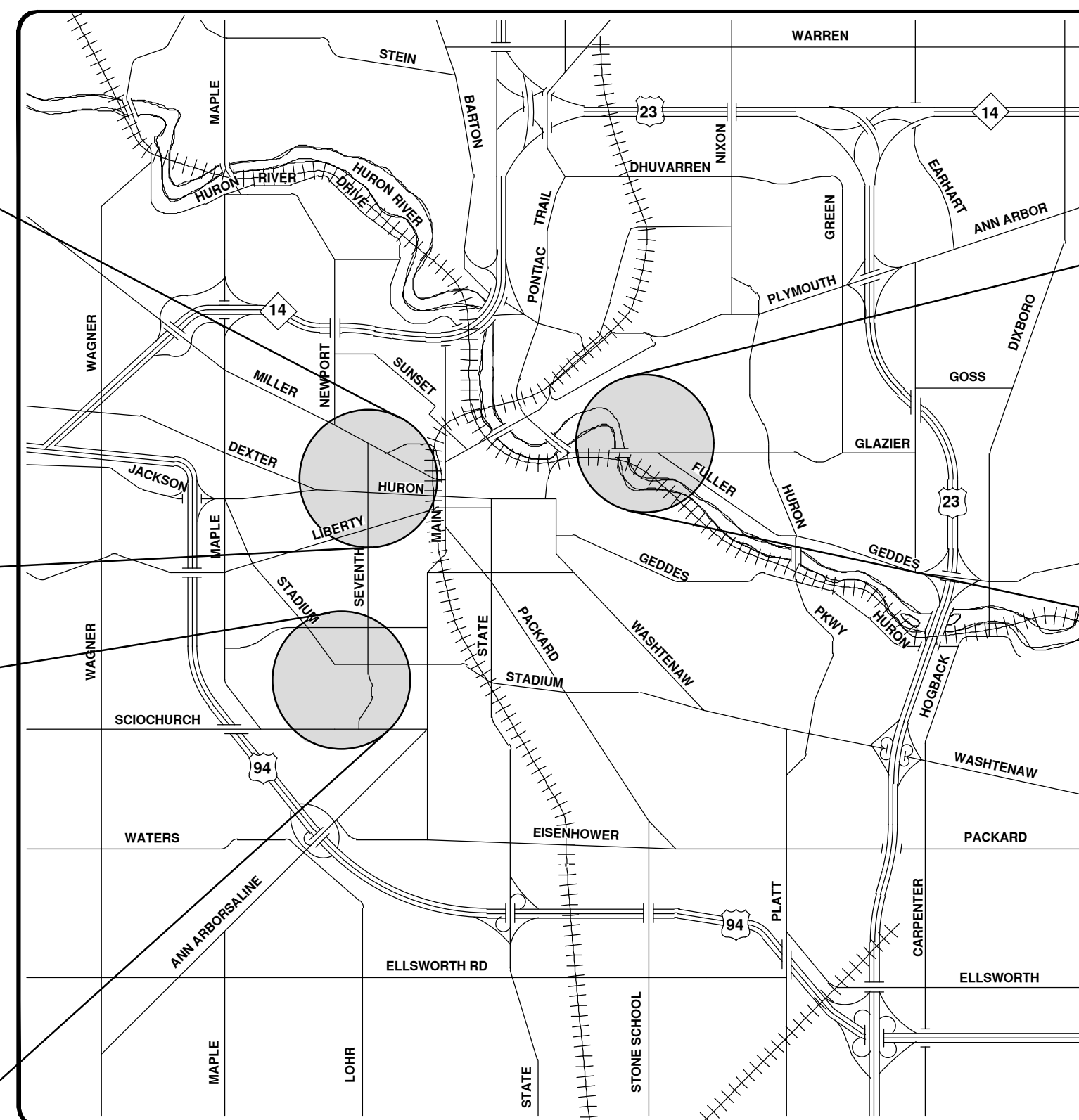
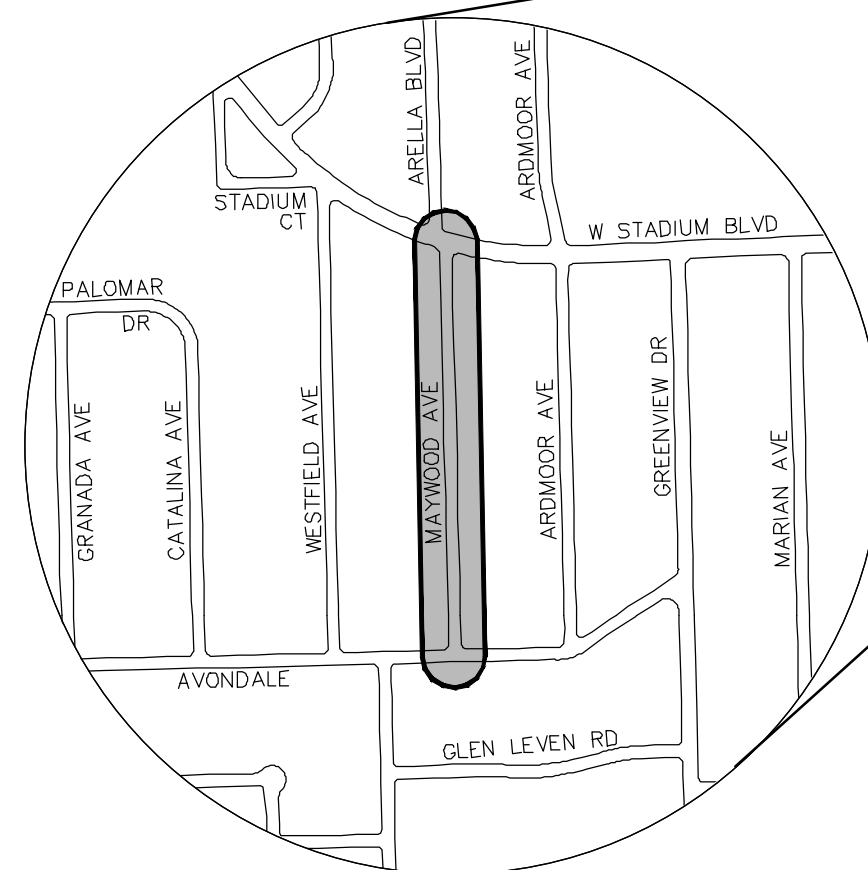
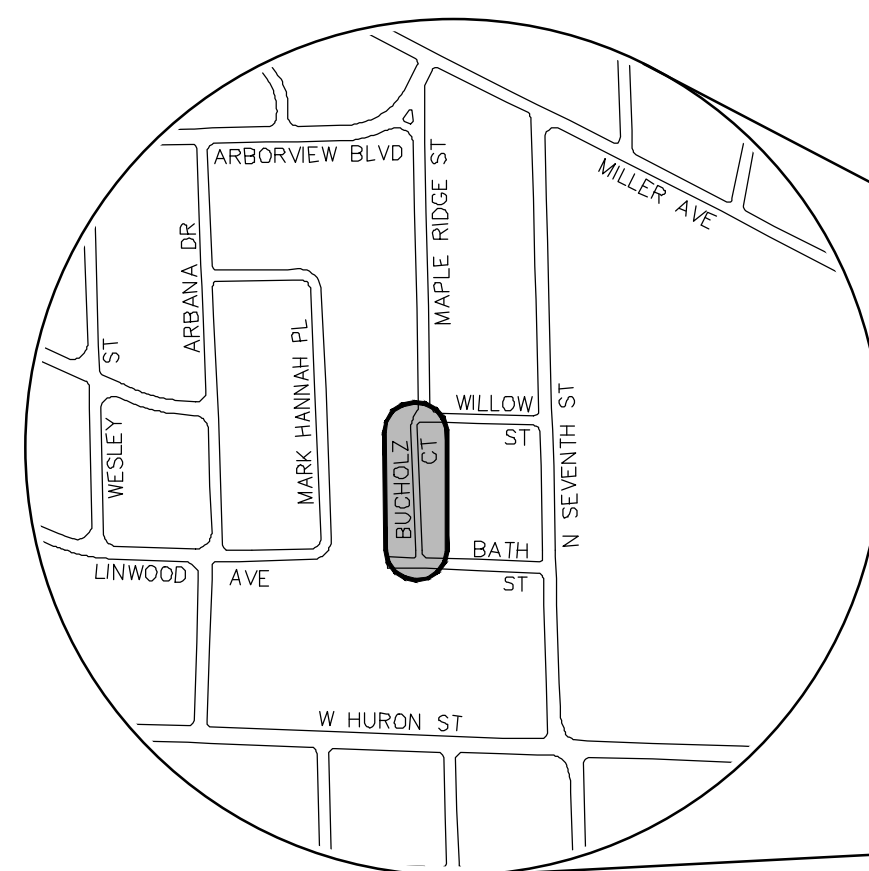
NOTES

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

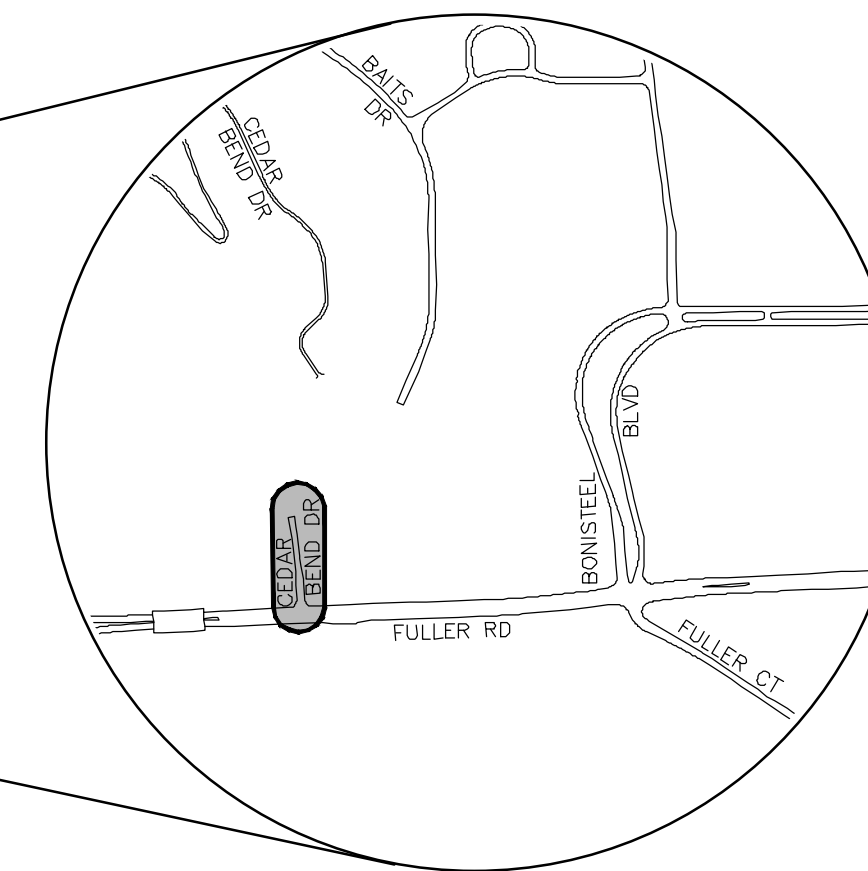
THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

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

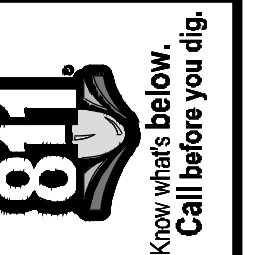
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VICINITY MAP

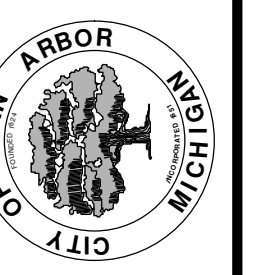


R:\2018025 Misc Utility 2019\Plan Production\2018025Cov.dwg - _a2 standard bw.stb - Plot Date: 3/1/2019 10:09:05 AM



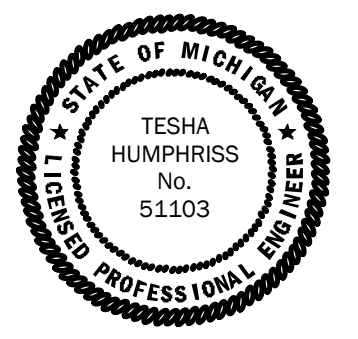
REV.	DATE	DESCRIPTION	DRAWN	CHECKED
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CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-1500
734.754.5410
www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

PREPARED UNDER THE SUPERVISION OF
Tesha Humphris
TESHA HUMPHRIS, P.E. - MI LICENSE No. 51103
PROJECT MANAGER
3/1/2019
DATE



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".
- Trenches for new water services shall be excavated to MIOSHA and City of Ann Arbor Public Works requirements.
- City of Ann Arbor Public Works will install the corporation and copper service lead(s) to transfer the connection(s). If an existing water service is found to be failing or is not copper, the lead will be replaced to the curb box by Public Works.
- For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with the City of Ann Arbor Public Works.
- The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All 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.
- Cor-blu bolts to be used at all mechanical water main joints at hydrants and Megalug fittings
- The Contractor shall construct, flush, and bacteriologically test the water main per Detailed Specification "Water Main Installation and Testing" and as approved by the Engineer. All chlorinated water shall be discharged directly into an approved sanitary sewer. The Contractor shall supply all necessary hoses, fittings and the like to accomplish this work.
- Water main fittings, other than those specifically listed as separate pay items, which are required to complete the work, such as blow-off assemblies, concrete thrust blocks, solid sleeves and mechanical plugs, shall not be paid for separately, but shall be included in the pipe pay items.
- "No Parking" signs shall be installed by the Contractor at locations as approved or directed by the Engineer. All signs shall be installed in accordance with the detailed specifications.
- Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.
- All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. 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.
- 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, 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.

GENERAL

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

- THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER AT ALL TIMES DURING CONSTRUCTION. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE AS DIRECTED AND APPROVED BY THE ENGINEER.
- ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE CITY OF ANN ARBOR, CITY ORDINANCE CHAPTER 63, CITY OF ANN ARBOR STANDARDS DIVISION VII, THE LAWS OF THE STATE OF MICHIGAN, AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- DAILY, OR AFTER ANY STORM EVENT, INSPECTIONS OF EROSION CONTROL MEASURES SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE ENGINEER TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE WITHOUT DELAY, AND WITHOUT ADDITIONAL COST TO THE CITY OF ANN ARBOR.
- EROSION AND SEDIMENTATION FROM WORK ON THE SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS, ROADWAYS OR WATERWAYS.
- ALL MUD/SOIL TRACKED ONTO ROADWAYS FROM THE SITE DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. IF SO ORDERED, THE CONTRACTOR SHALL PROVIDE AND OPERATE A VACUUM-TYPE STREET SWEEPER, AT NO ADDITIONAL COST TO THE CITY OF ANN ARBOR, WITHIN FOUR (4) HOURS OF BEING SO ORDERED.
- RESTORATION OF ALL DISTURBED AREAS, INCLUDING PLACEMENT OF TOPSOIL, SEED, FERTILIZER AND MULCH AND/OR SOD SHALL BE PERFORMED WITHIN FIVE (5) DAYS OF THE COMPLETION OF FINAL GRADE.
- CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
- SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- PROPER DUST CONTROL SHALL BE MAINTAINED DURING CONSTRUCTION BY USE OF WATER TRUCKS AND/OR DUST PALLIATIVE AS REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME MEASURES UPON AUTHORIZED COMPLETION OF THE PROJECT. FINAL COMPLETION OF PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
- THE CONTRACTOR SHALL NOT GRADE INTO ADJACENT PROPERTIES. SILT AND PROTECTIVE FENCE SHALL BE INSTALLED AND MAINTAINED TO PREVENT GRADING, EROSION AND SEDIMENTATION INTO THE ADJACENT PROPERTIES.
- TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.

SEQUENCE OF EROSION CONTROL MEASURES:

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

SAMPLE SOIL EROSION AND SEDIMENTATION CONTROL INSTALLATION MINIMUM REQUIREMENTS:

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

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

TEMPORARY SEEDING:

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

CEDAR BEND DRIVE BENCHMARKS		
BM #	ELEV	DESCRIPTION
1	780.536	RR SPIKE IN E. SIDE OF U.P. ON E. SIDE OF CEDAR BEND DRIVE, 2ND POLE N. OF FULLER RD. BK 1116 PG 40.
2	776.316	TOP, S. SIDE OF CONC. BASE FOR SIGNAL POLE AT NE CORNER OF CEDAR BEND DRIVE AND FULLER ROAD.

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
M.D.E.Q. WATER MAIN CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
M.D.E.Q. SANITARY SEWER CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

CONTACT INFORMATION

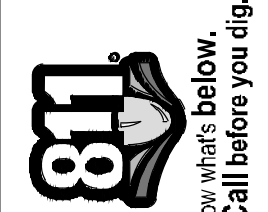
PUBLIC UTILITIES	OWNER	CONTACT
WATER		
SANITARY		
STORM	CITY OF ANN ARBOR PUBLIC WORKS W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	(734) 794-6350
FORESTRY		
SIGNS SIGNALS STREET LIGHTS		CHUCK FOJTIK (734) 794-6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 3150 E. MICHIGAN 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

BUCHOLZ COURT BENCHMARKS

BM #	ELEV	DESCRIPTION
1	857.876	LAG SCREW IN W. FACE OF PP @ SE CORNER OF ARBANA DRIVE AND MARK HANNAH, BK 1112A PG 27
2	852.679	STEAMER VALVE ON FIRE HYDRANT, BK 1112A PG 28
3	849.550	SET RR SPIKE IN N. SIDE OF U.P. ON S. SIDE OF BATH STREET IN FRONT OF HSE NO. 1011
4	845.396	SET RR SPIKE IN E. SIDE OF U.P. ON W. SIDE OF BUCHOLZ CT. BETWEEN HSE NO. 301 AND 303.

MAYWOOD AVENUE BENCHMARKS

BM #	ELEV	DESCRIPTION
1	967.339	TOP, S. SIDE OF CONC. BASE FOR L.P. @ N.E. CORNER OF STADIUM AND ARELLA/MAYWOOD.
2	966.448	SET RR SPIKE IN E. SIDE OF U.P. ON W. SIDE OF MAYWOOD BETWEEN HSE NO. 1402 AND 1611 STADIUM BLVD.
3	962.504	TOP OF SE ANCHOR BOLT FOR L.P. ON W. SIDE OF MAYWOOD BETWEEN HSE NO. 1476 AND 1406.
4	960.651	TOP OF SE ANCHOR BOLT FOR L.P. ON W. SIDE OF MAYWOOD IN FRONT OF HSE NO. 1496.
5	956.842	TOP OF SE ANCHOR BOLT FOR L.P. ON W. SIDE OF MAYWOOD IN FRONT OF HSE NO. 1500.
6	948.232	SET RR SPIKE IN S. SIDE OF L.P. @ N.E. CORNER OF AVONDALE AND MAYWOOD.



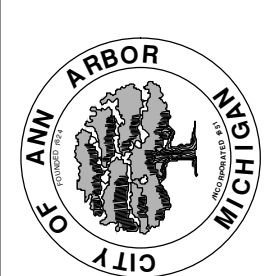
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3-1-19	DATE

DD	REV.

	DESCRIPTION

	OUT FOR BID

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106
734-794-8410
www.aagov.org



STANDARD NOTES

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2019 MISC UTILITY PROJECTS

SCALE: NTS
DRAWING No. 2018025-2

SHEET No.

2 OF 31

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.

REV.	DATE	DESCRIPTION	DRAWN	CHECKED
00	3-1-19	OUT FOR BID	CC/DF/RB	TH

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

LEGEND

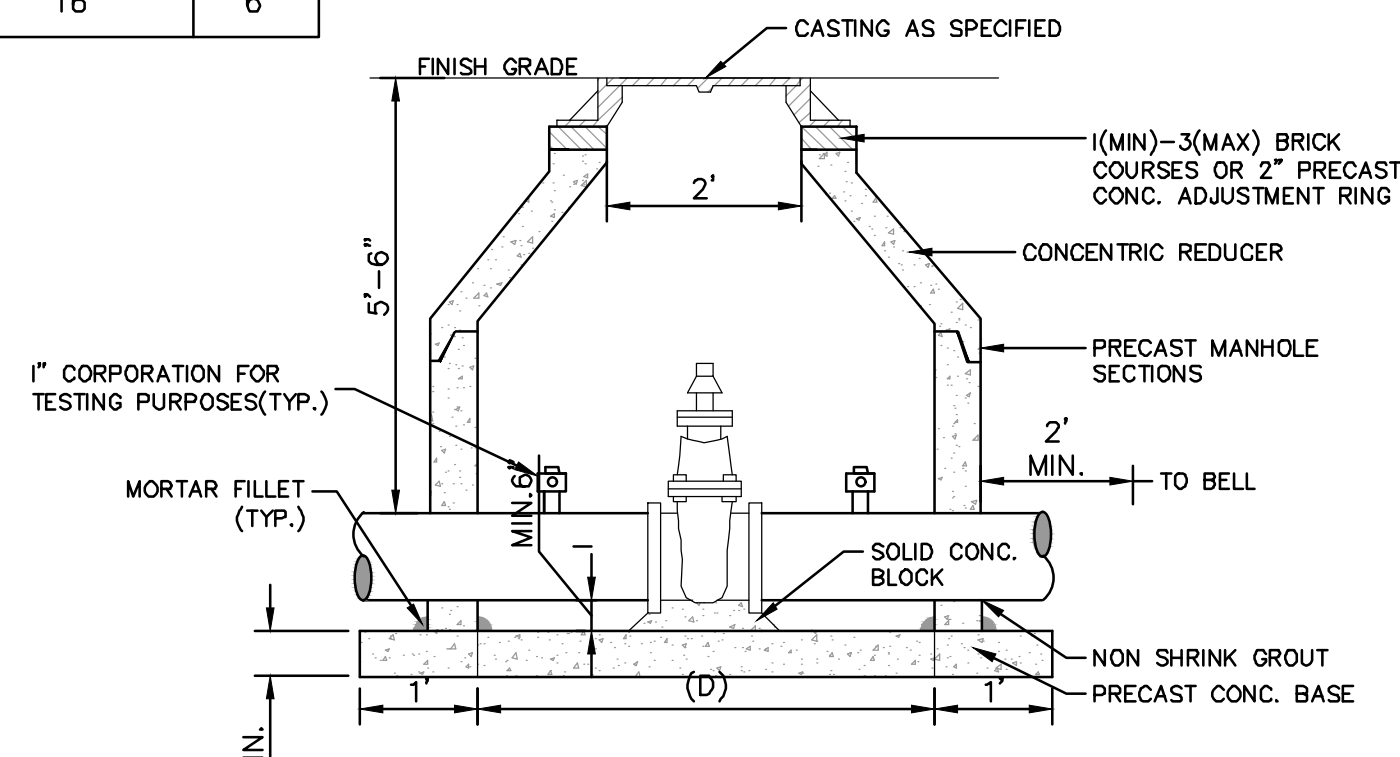
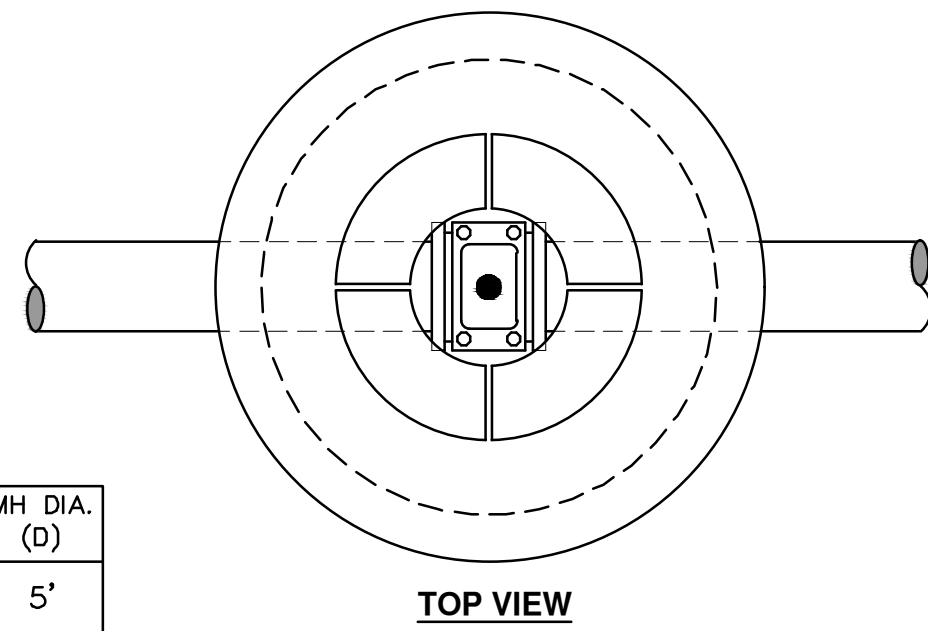
SCALE: NTS

DRAWING No. 2018025-3

SHEET No. 3 OF 31

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-1647
ANN ARBOR FAX 810-28647
ANN ARBOR TEL 734-784-4410
www.a2gov.org

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



- 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

MINIMUM STANDARDS

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

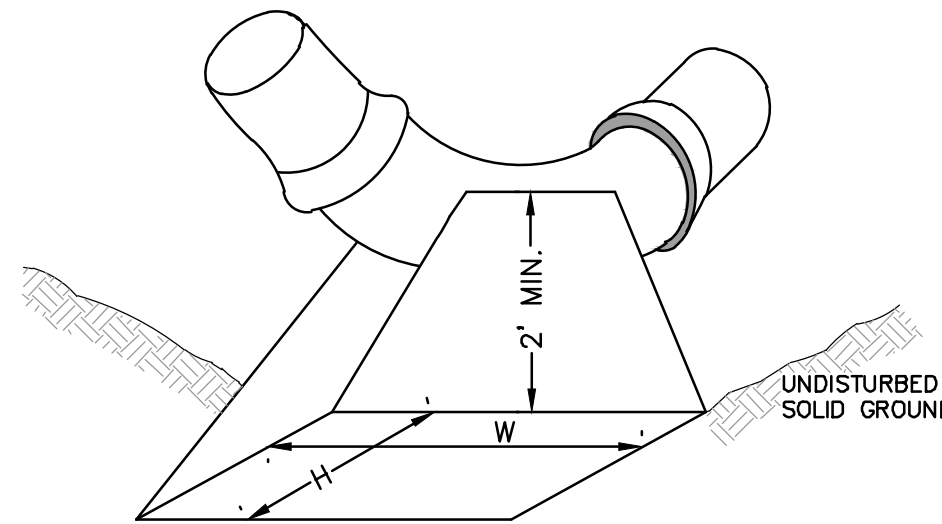
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

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

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

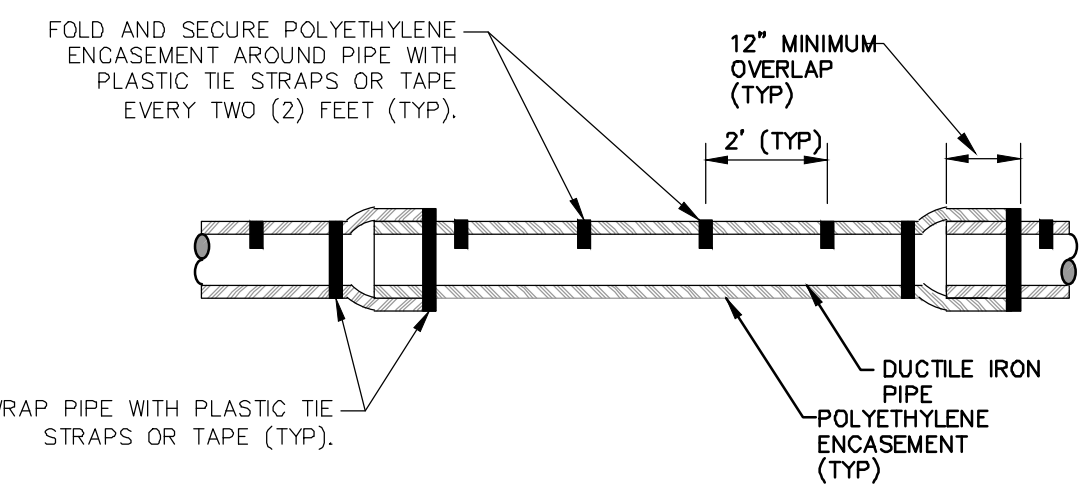
FOR FITTING SIZES LARGER THAN 16", THRUST BLOCK DIMENSIONS SHALL BE AS SPECIFIED BY ENGINEER.

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.

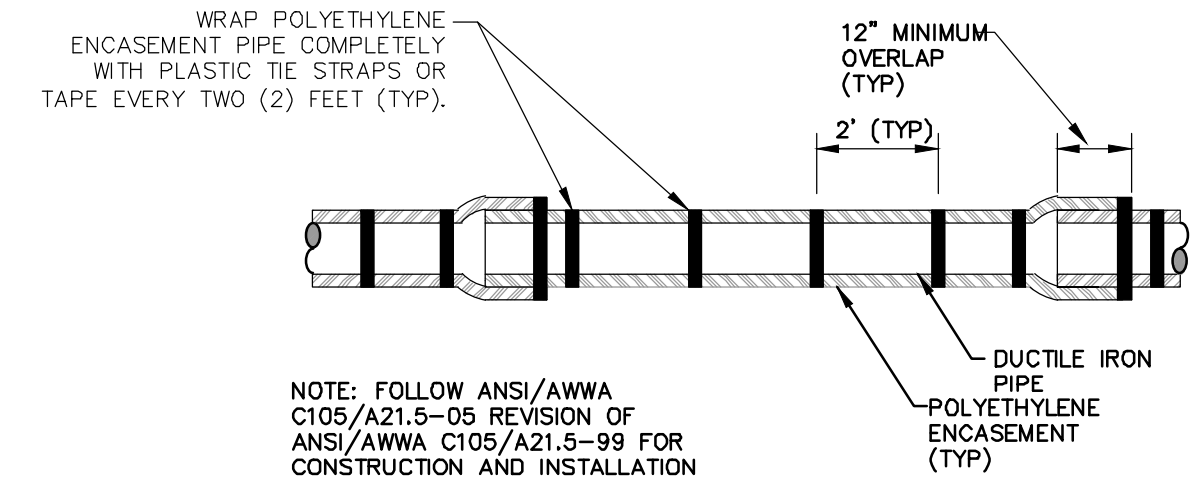
THRUST BLOCK



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

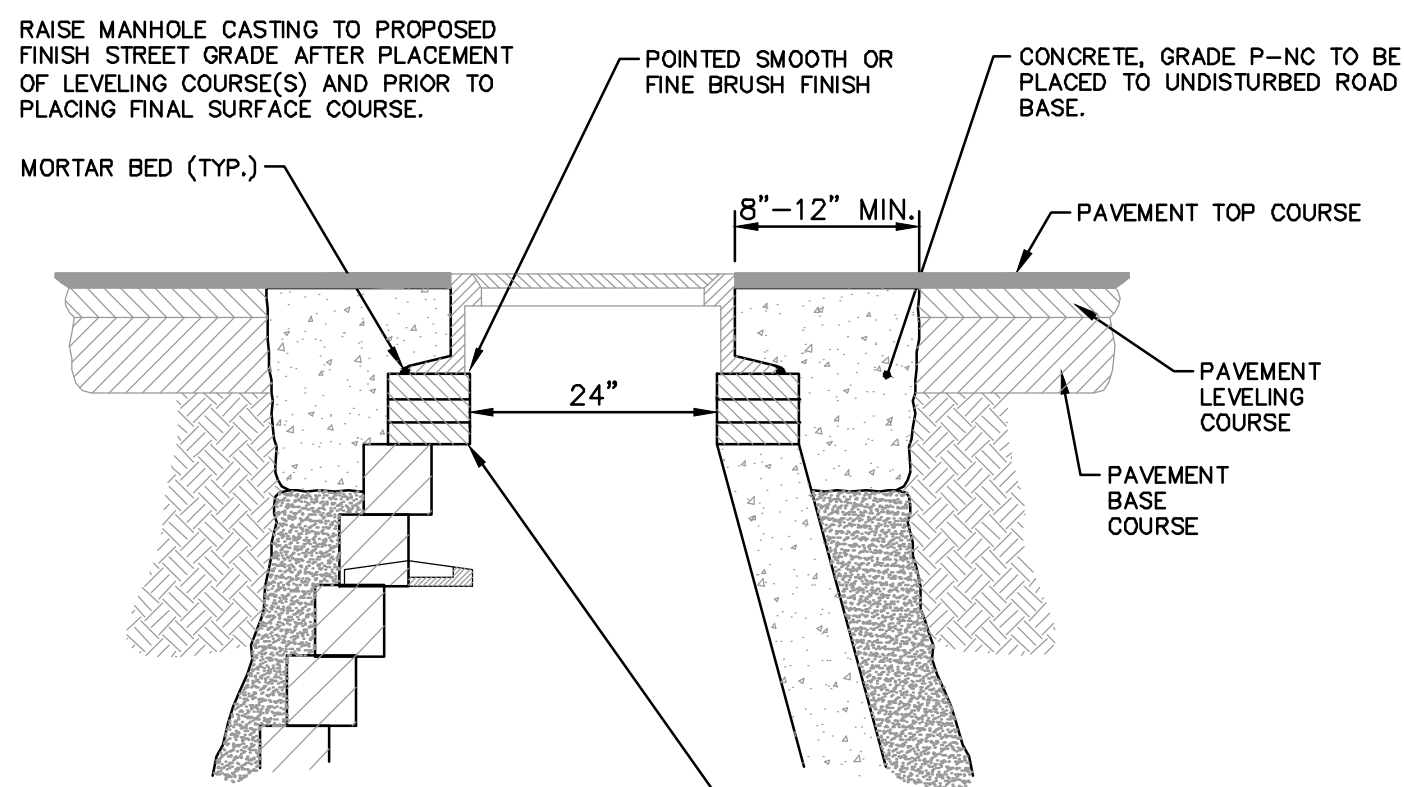
POLYETHYLENE ENCASEMENT (DRY INSTALLATION)



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

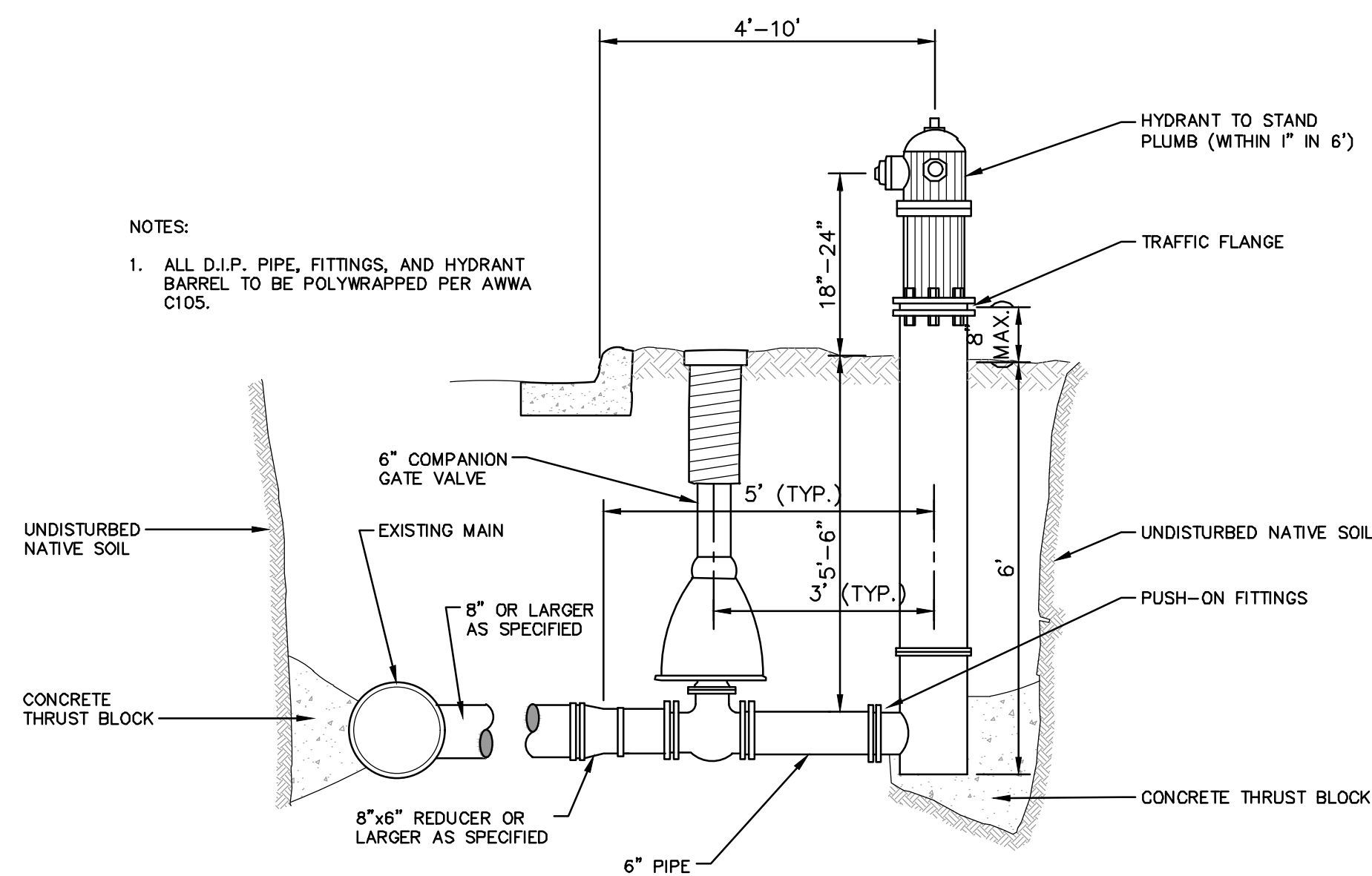
APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN
SEE PLANS FOR LOCATIONS

POLYETHYLENE ENCASEMENT (WET INSTALLATION)



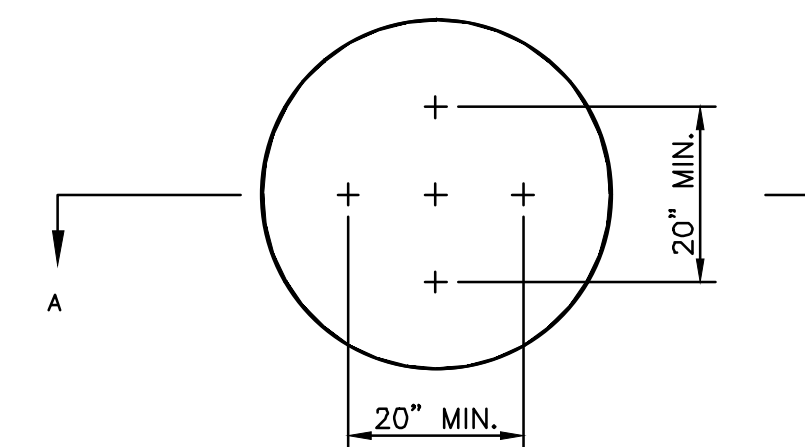
NOTE:
IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW ROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.
ADDITIONAL REPAIRS NECESSARY BEYOND 15" BELOW GRADE TO BE PAID FOR AS "ADDITIONAL DEPTH STRUCTURE ADJUST/REPAIR"

MANHOLE CASTING ADJUSTMENT

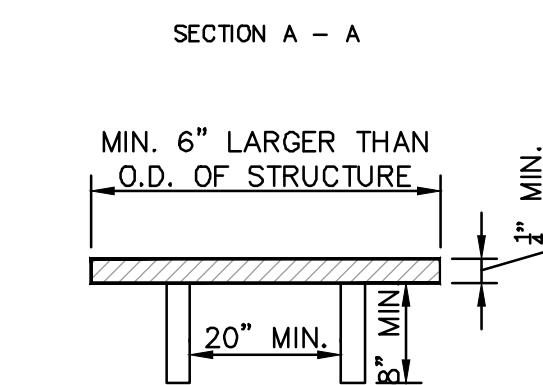


NOTES:
1. ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.

FIRE HYDRANT ASSEMBLY

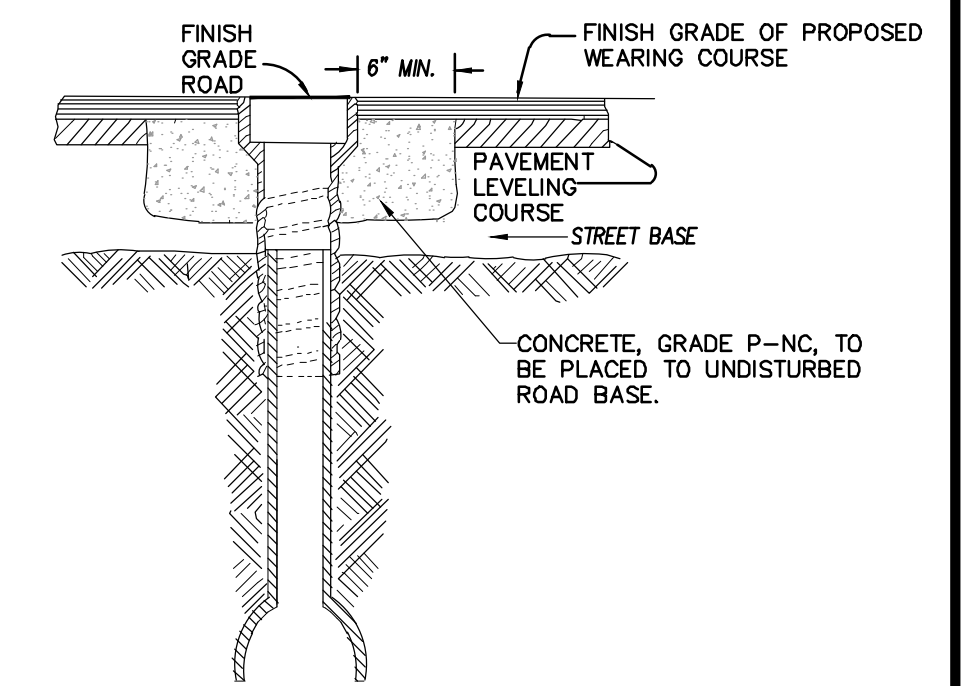


NOTE: PLATE MAY BE CIRCULAR, SQUARE OR RECTANGULAR



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

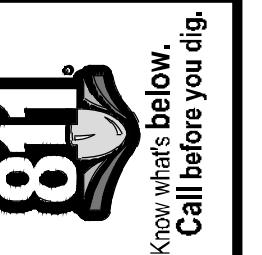
STRUCTURE PLATE



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

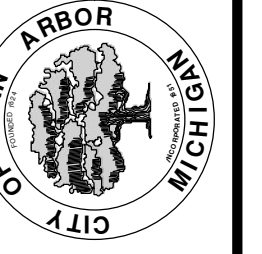
WATER VALVE BOX ADJUSTMENT

R: \2018025 Misc Utility 2019\Plan Production\2018025De12.dwg Dwg Created: 27-Feb-19 --_a2 standard bw.stb -- Plot Date: 1-Mar-19



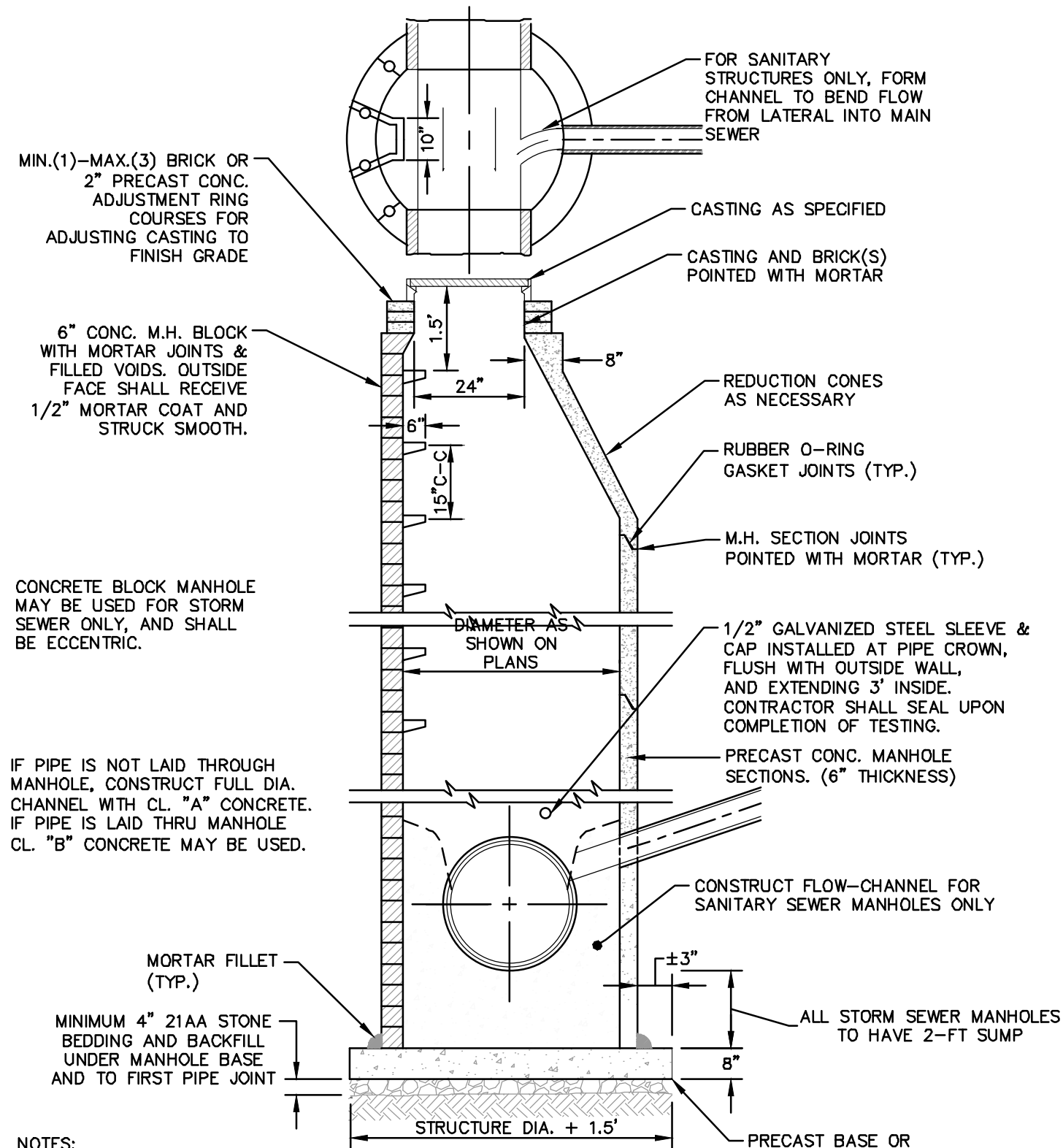
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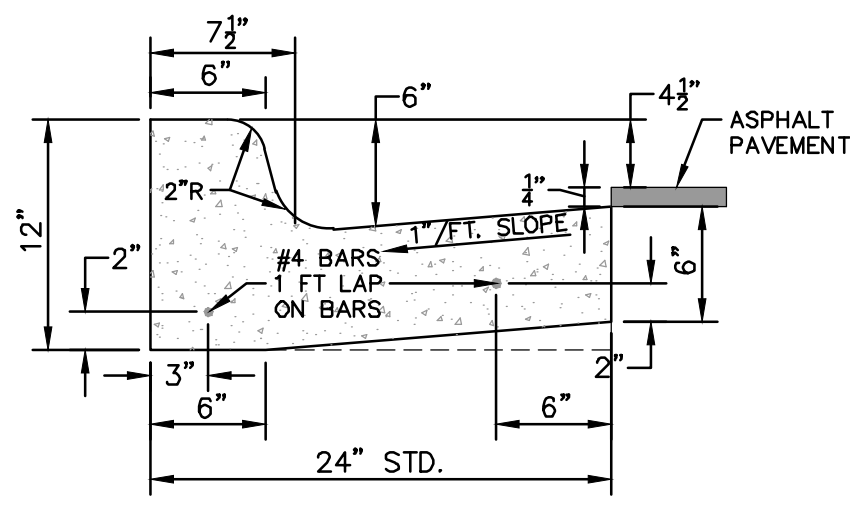


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WATER MAIN DETAILS

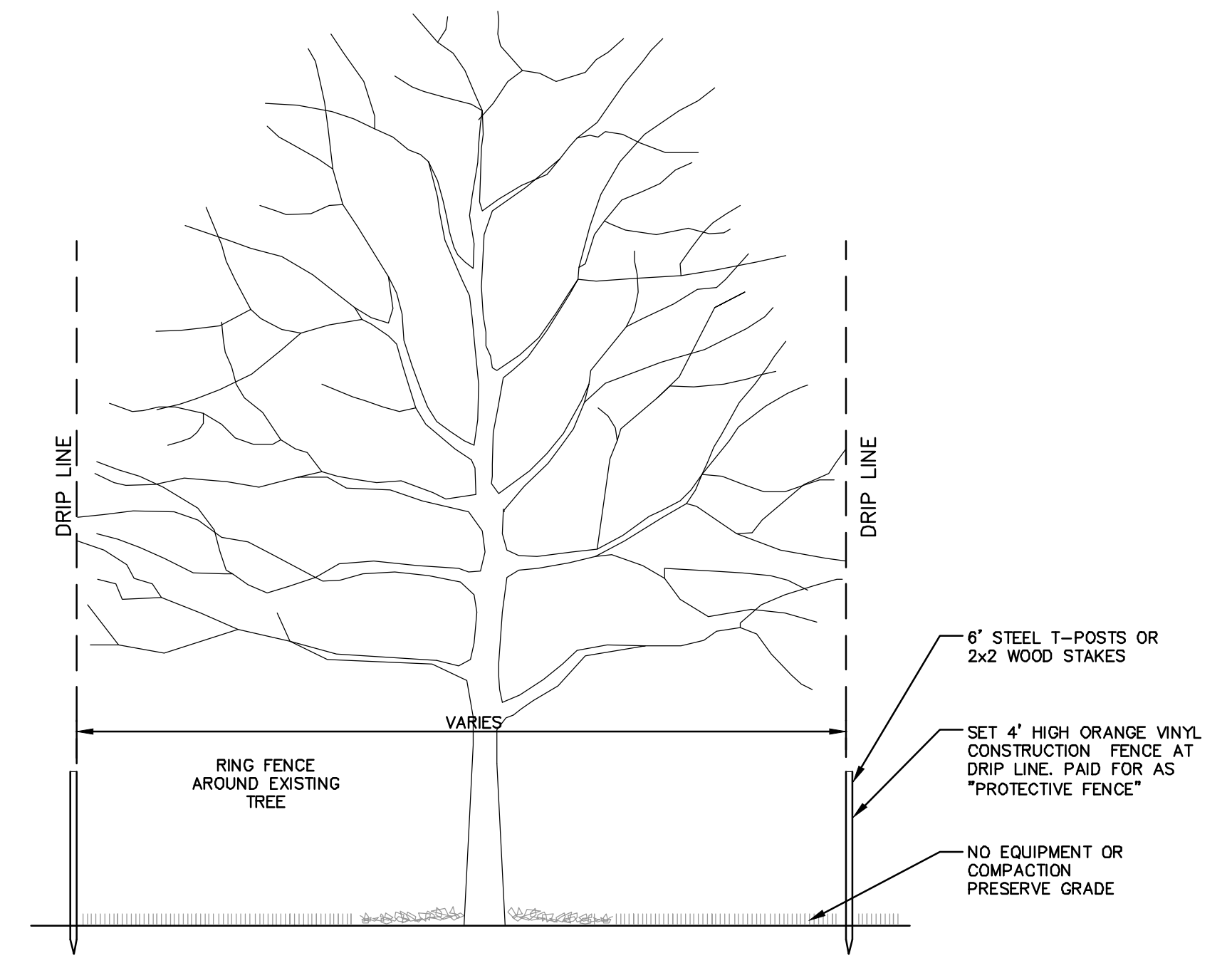
SCALE: NTS
DRAWING No. 2018025-4
SHEET No.



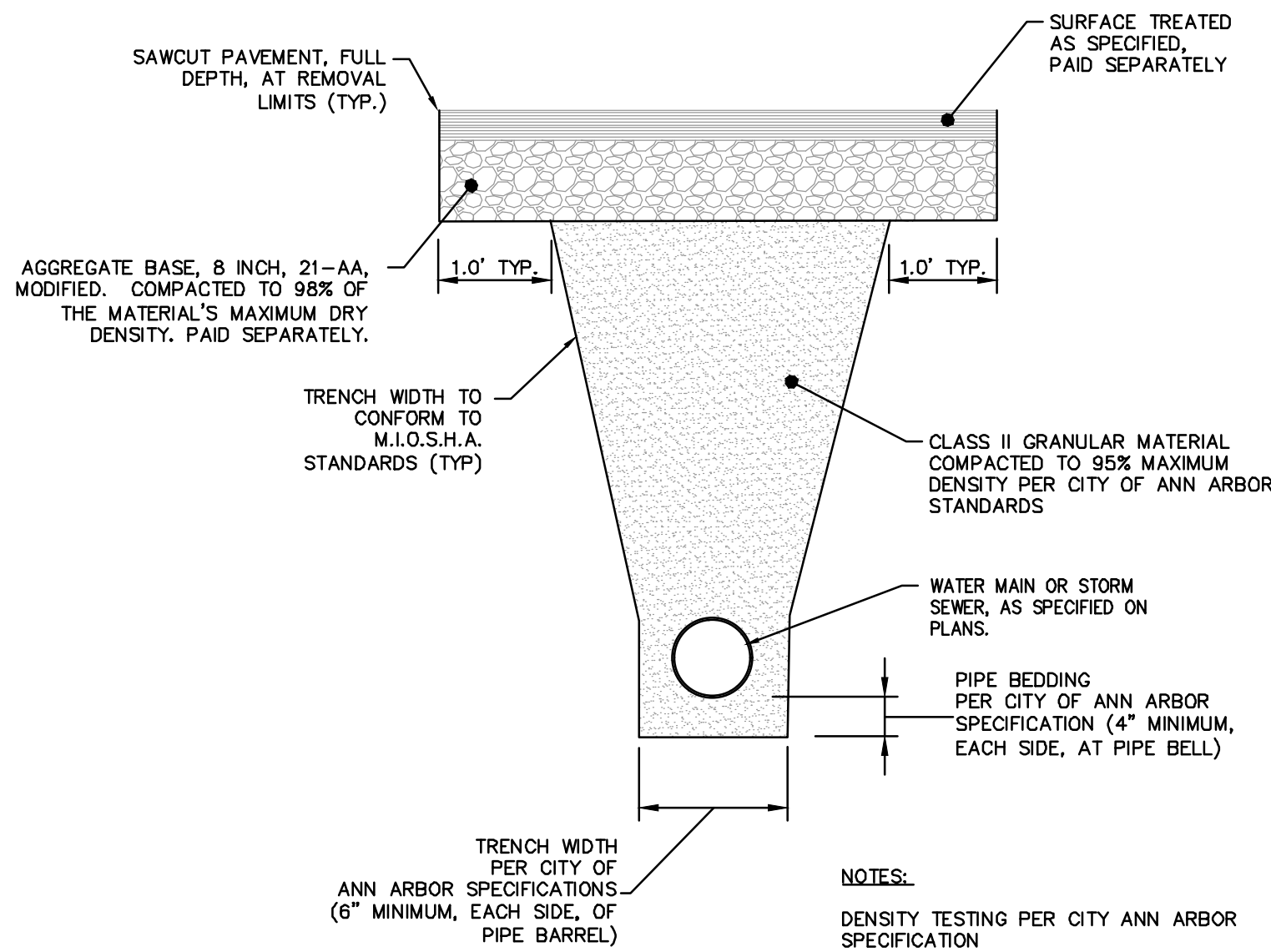
STANDARD MANHOLE (TYPE I)



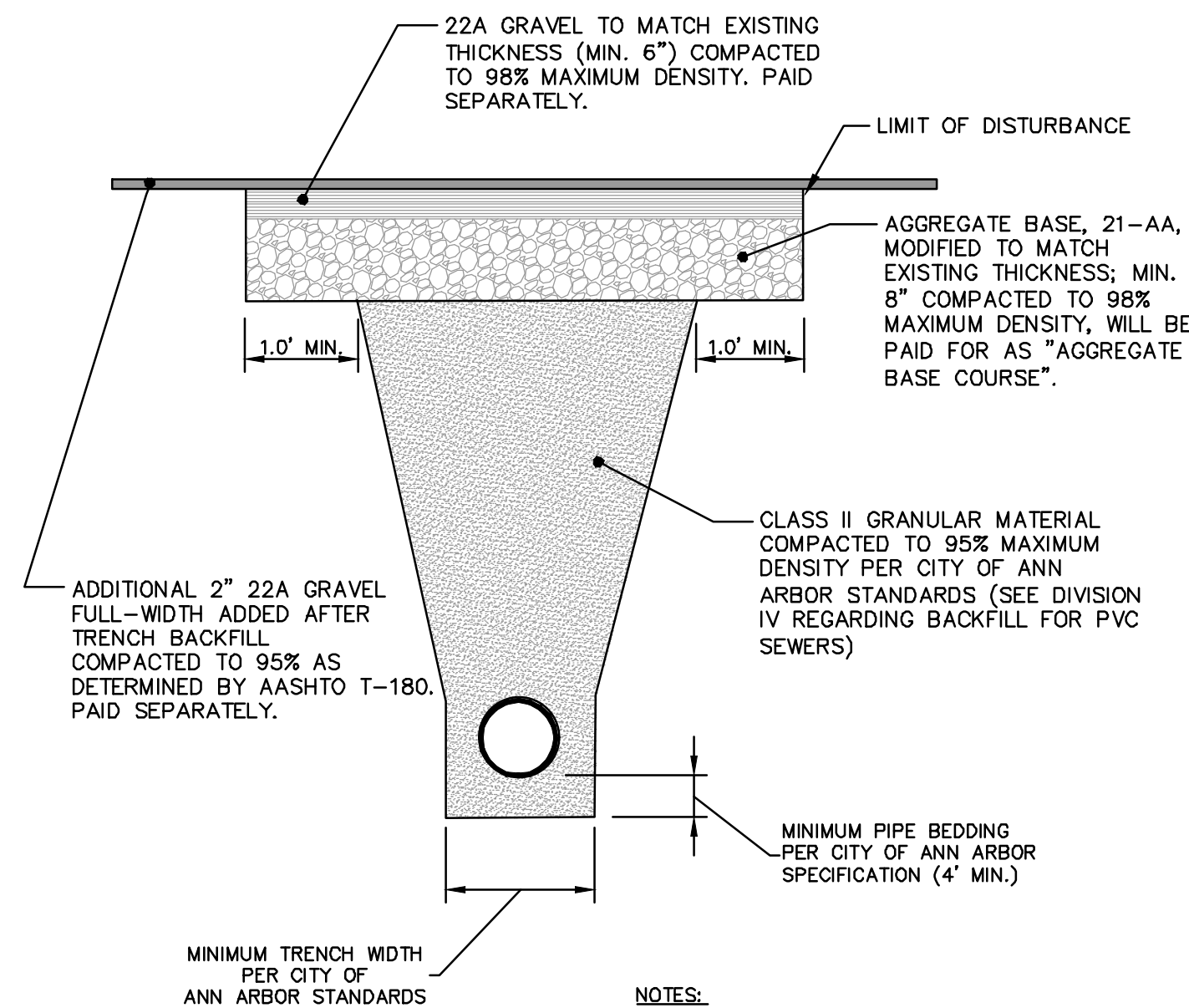
CURB AND GUTTER, CONC, DET F4, SPECIAL



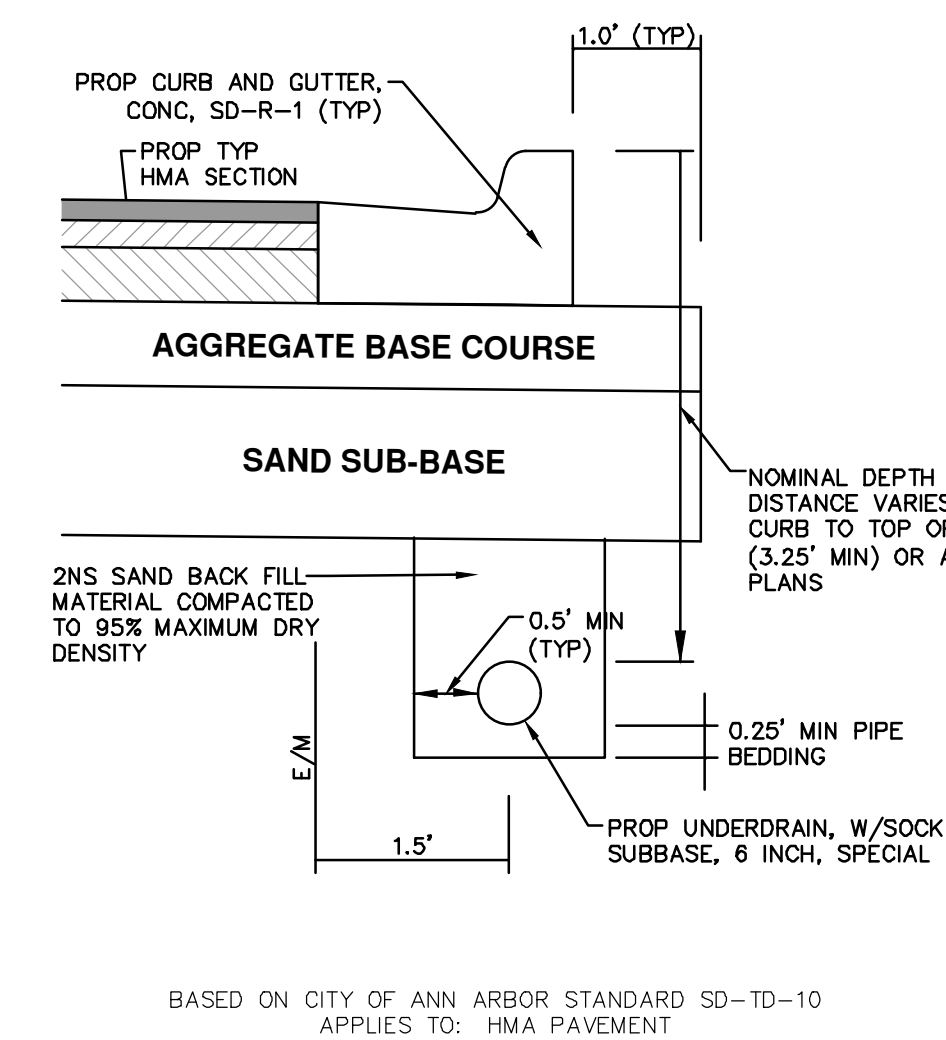
TREE PROTECTION DETAIL



TRENCH DETAIL - TYPE I, SD-TD-1, MODIFIED

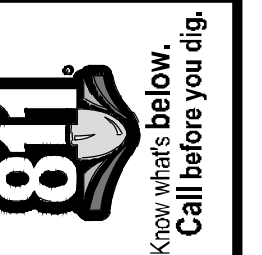


UTILITY TRENCH-TYPE II, SD-TD-2, (MODIFIED) (UNDER GRAVEL ROAD)



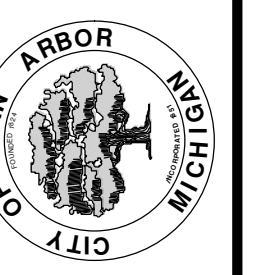
TRENCH DETAIL FOR UNDER DRAIN (UNDER HMA PAVEMENT)

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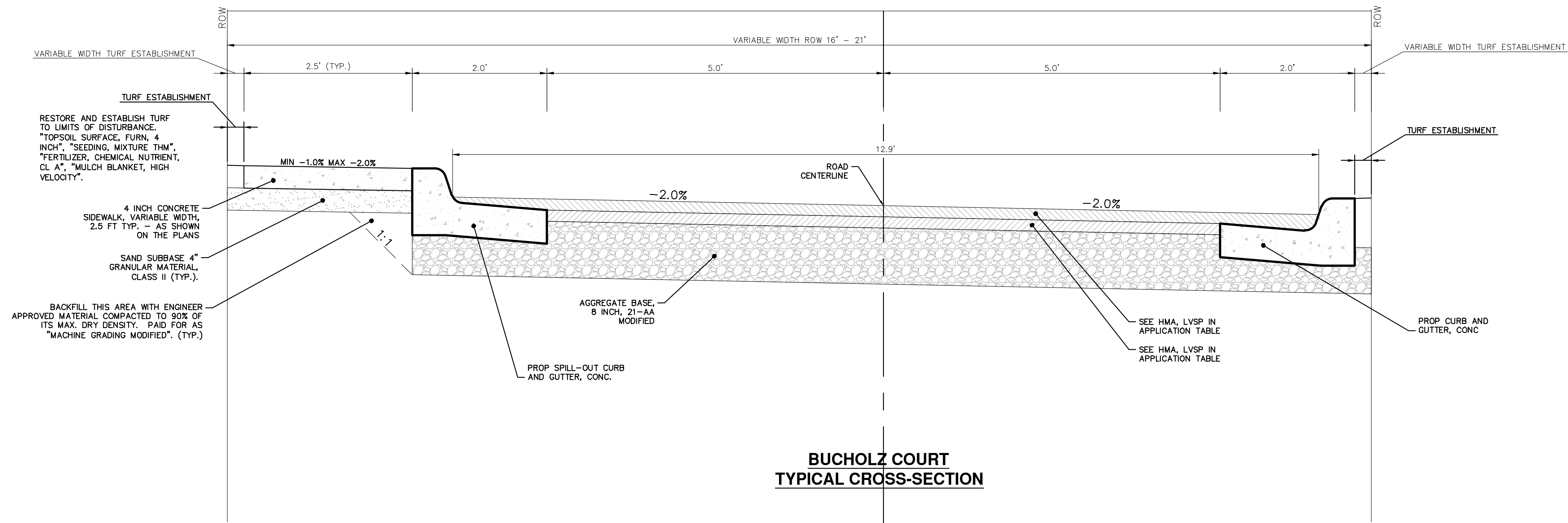
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2019 MISC UTILITY PROJECTS
STORM SEWER, TRENCH AND MISC DETAILS

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SHEET No.

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HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2.0	260 (TOP)	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2.0	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



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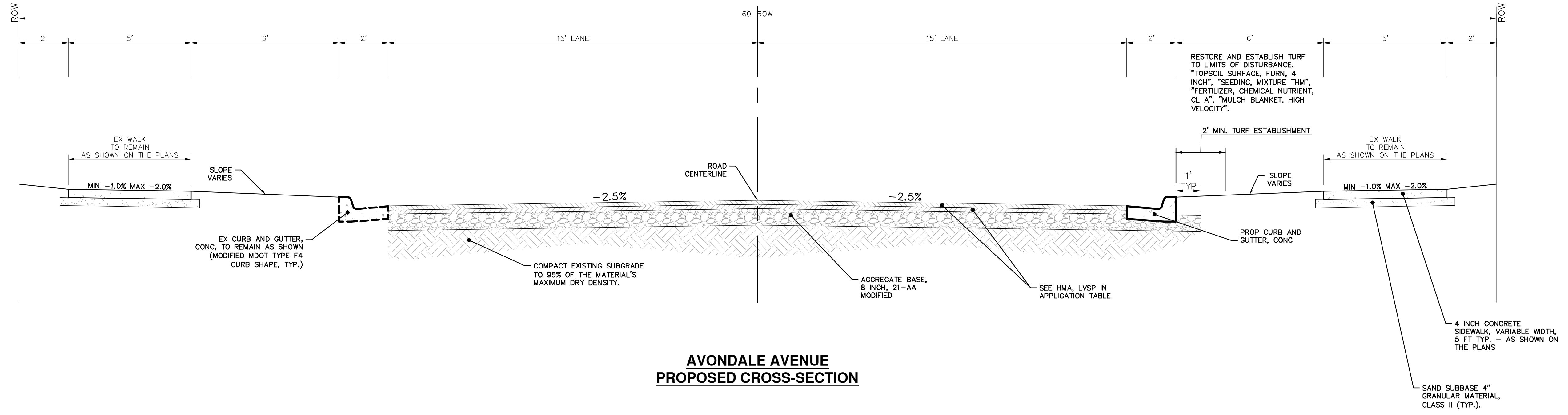
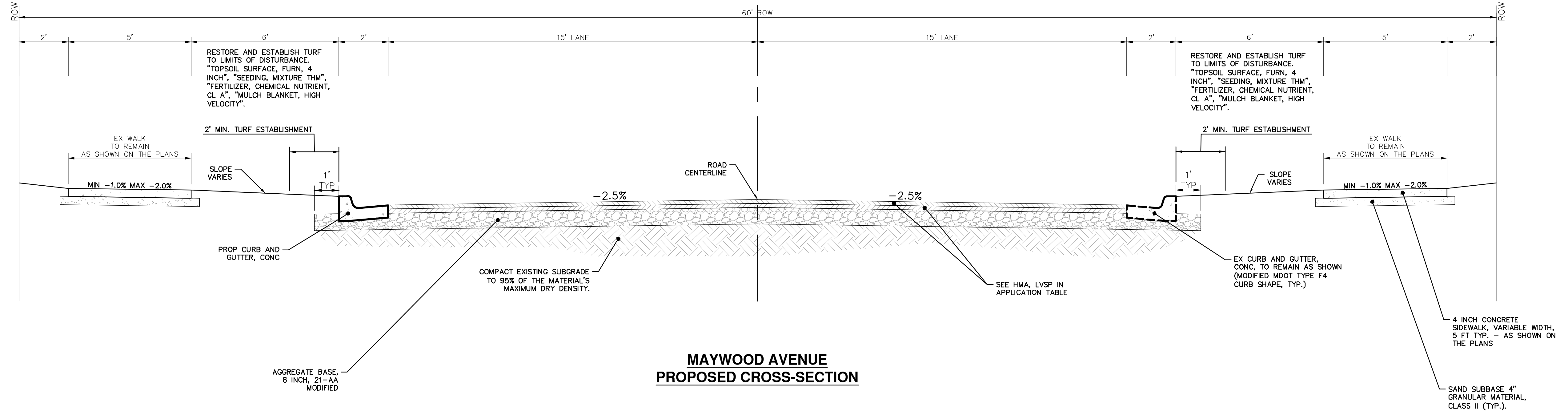
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2019 MISC UTILITY PROJECTS
TYPICAL SECTIONS
BUCHHOLZ COURT

SCALE: NTS

DRAWING No. **2018025-6**

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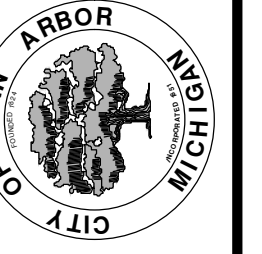


HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2.0	260 (TOP)	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2.0	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



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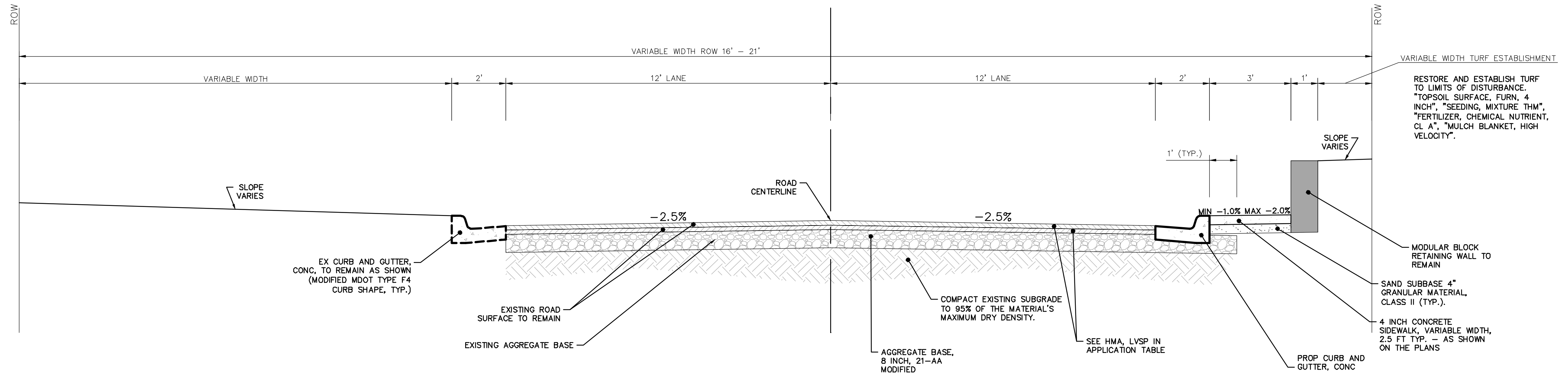
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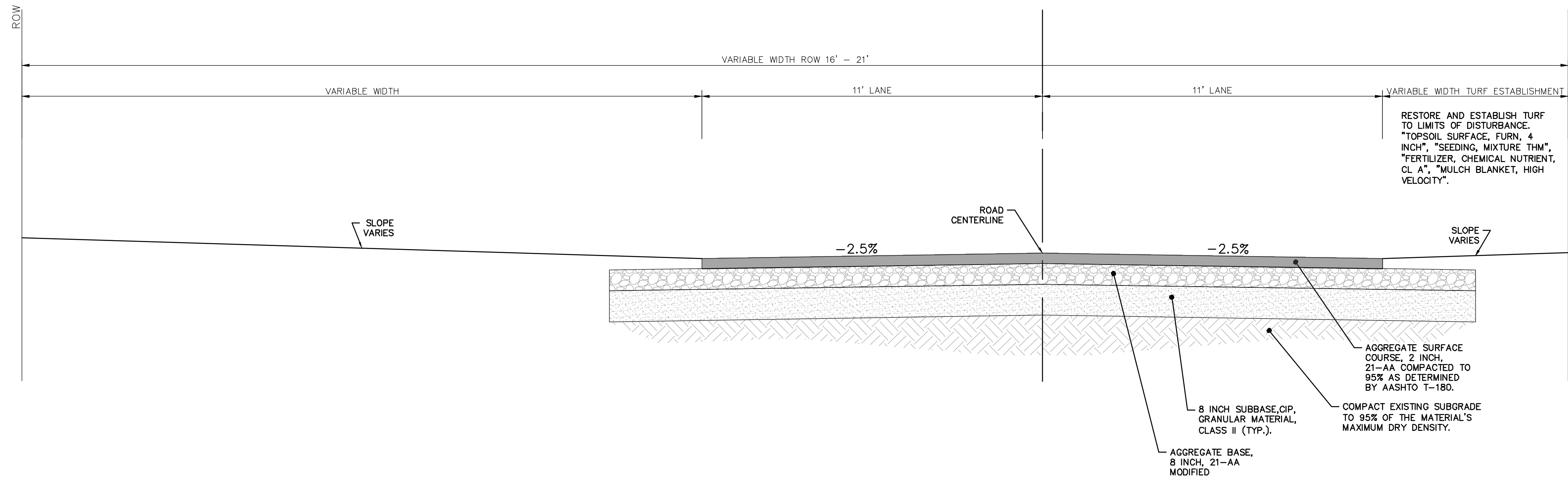
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2019 MISC UTILITY PROJECTS
TYPICAL SECTIONS
MAYWOOD AVENUE & AVONDALE AVENUE

SCALE: NTS
DRAWING No. 2018025-7

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**CEDAR BEND DRIVE
PROPOSED PAVED CROSS-SECTION**



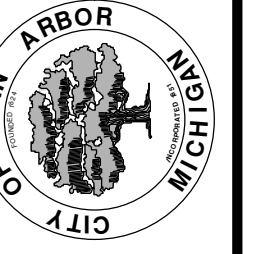
**CEDAR BEND DRIVE
PROPOSED GRAVEL CROSS-SECTION**

HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2.0	260 (TOP)	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2.0	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



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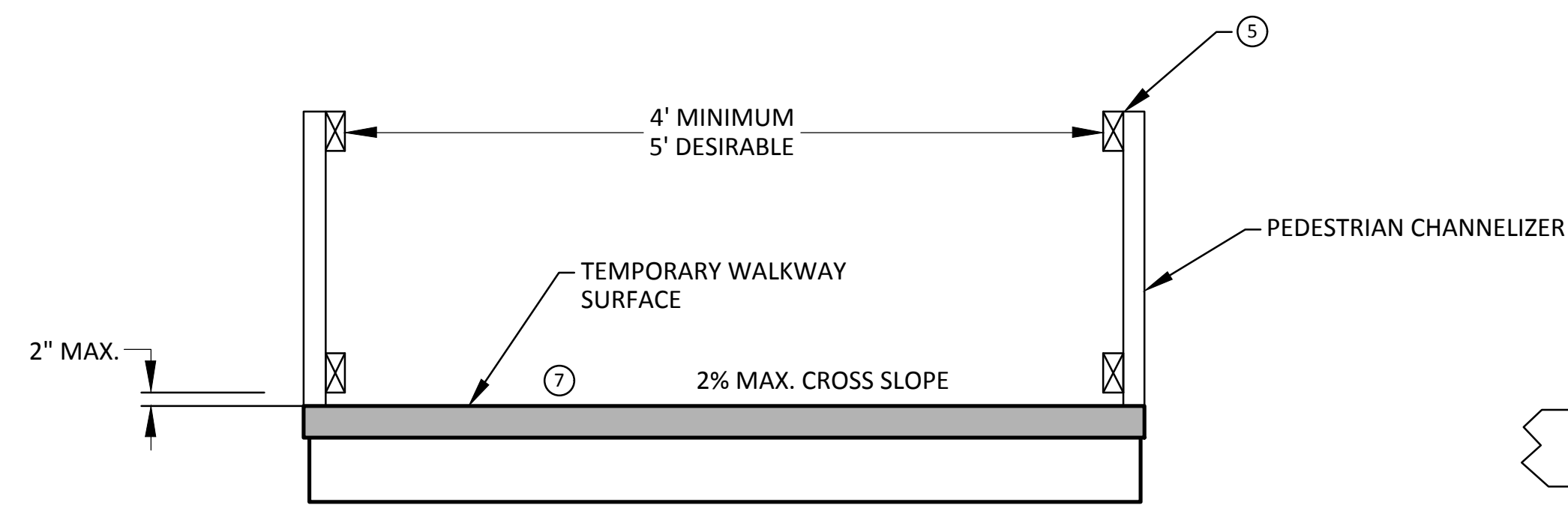
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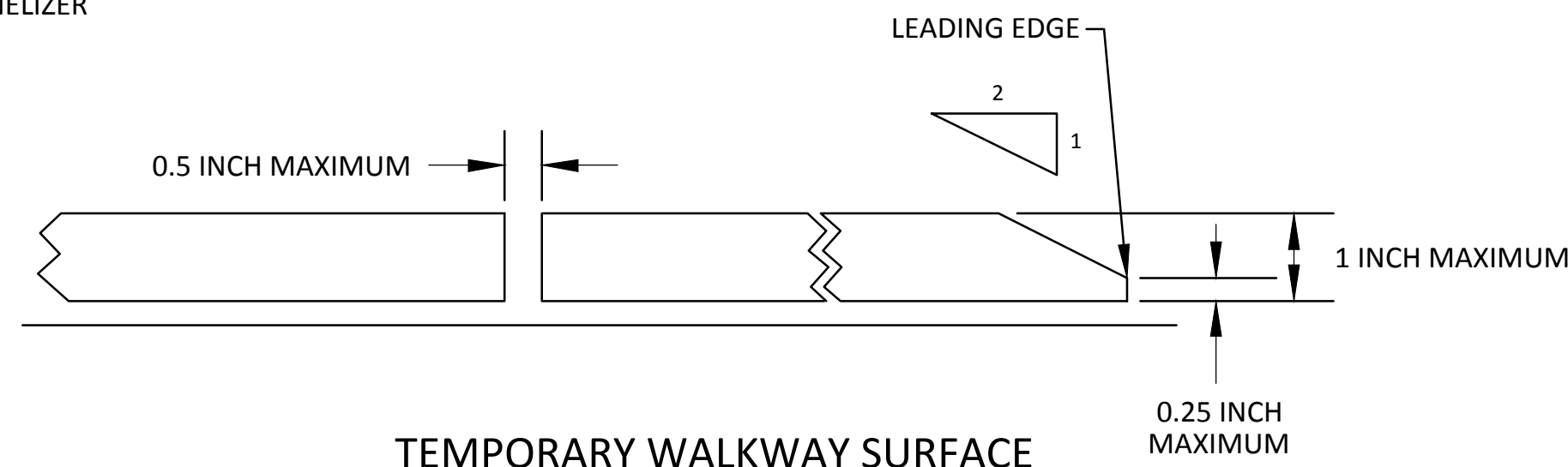
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TYPICAL SECTIONS
CEDAR BEND DRIVE

SCALE: NTS
DRAWING No. 2018025-8

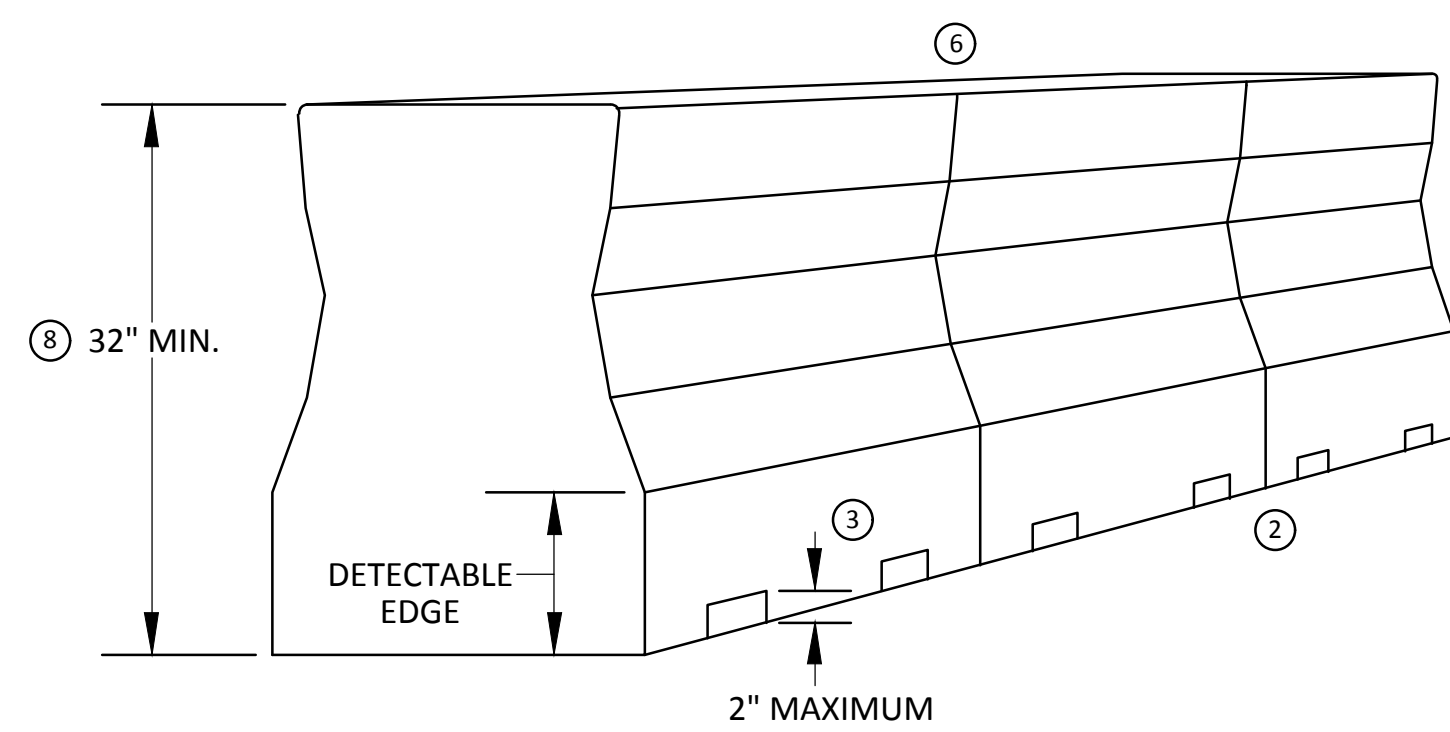
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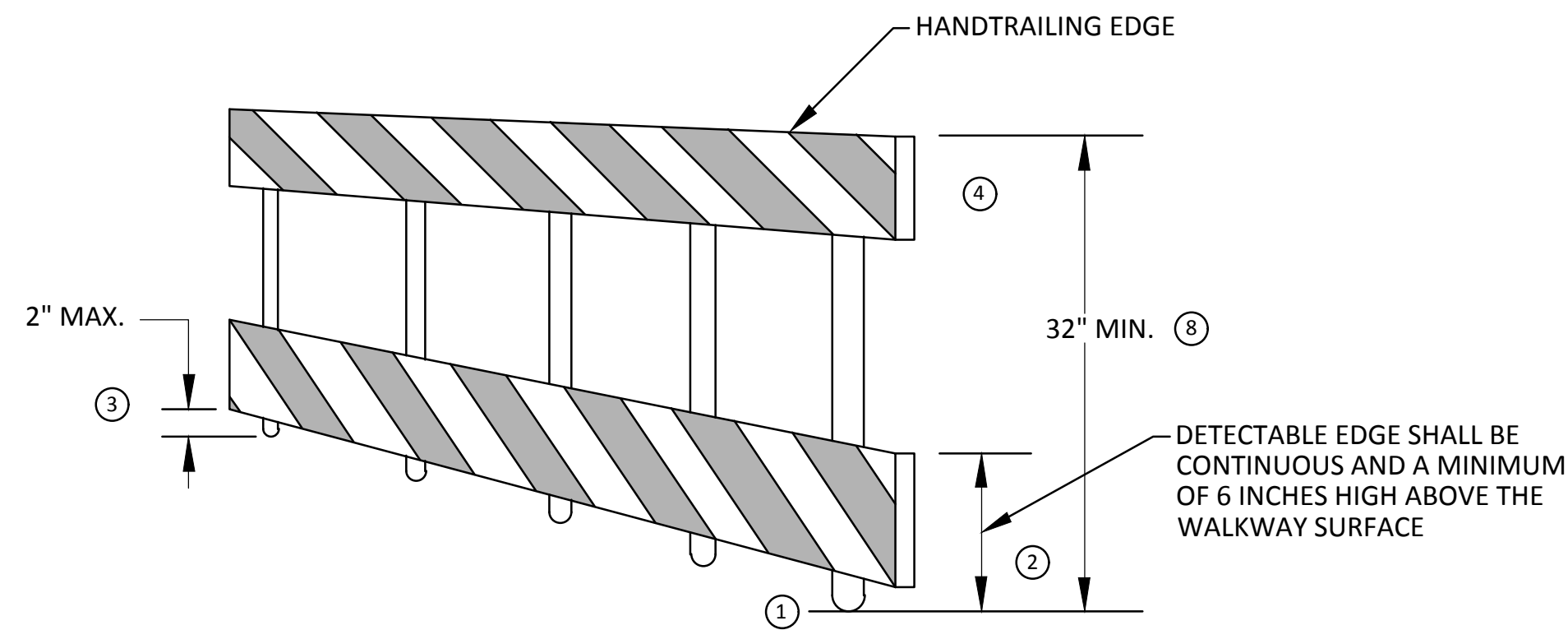
TEMPORARY PEDESTRIAN ACCESS



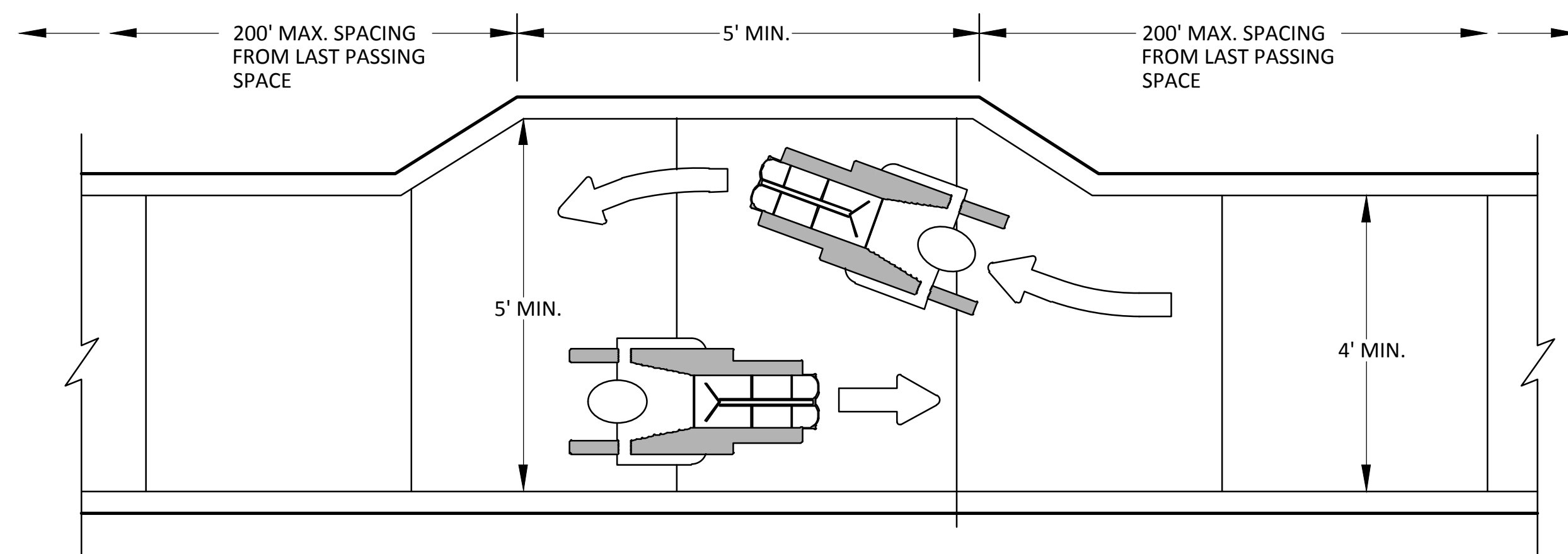
TEMPORARY WALKWAY SURFACE



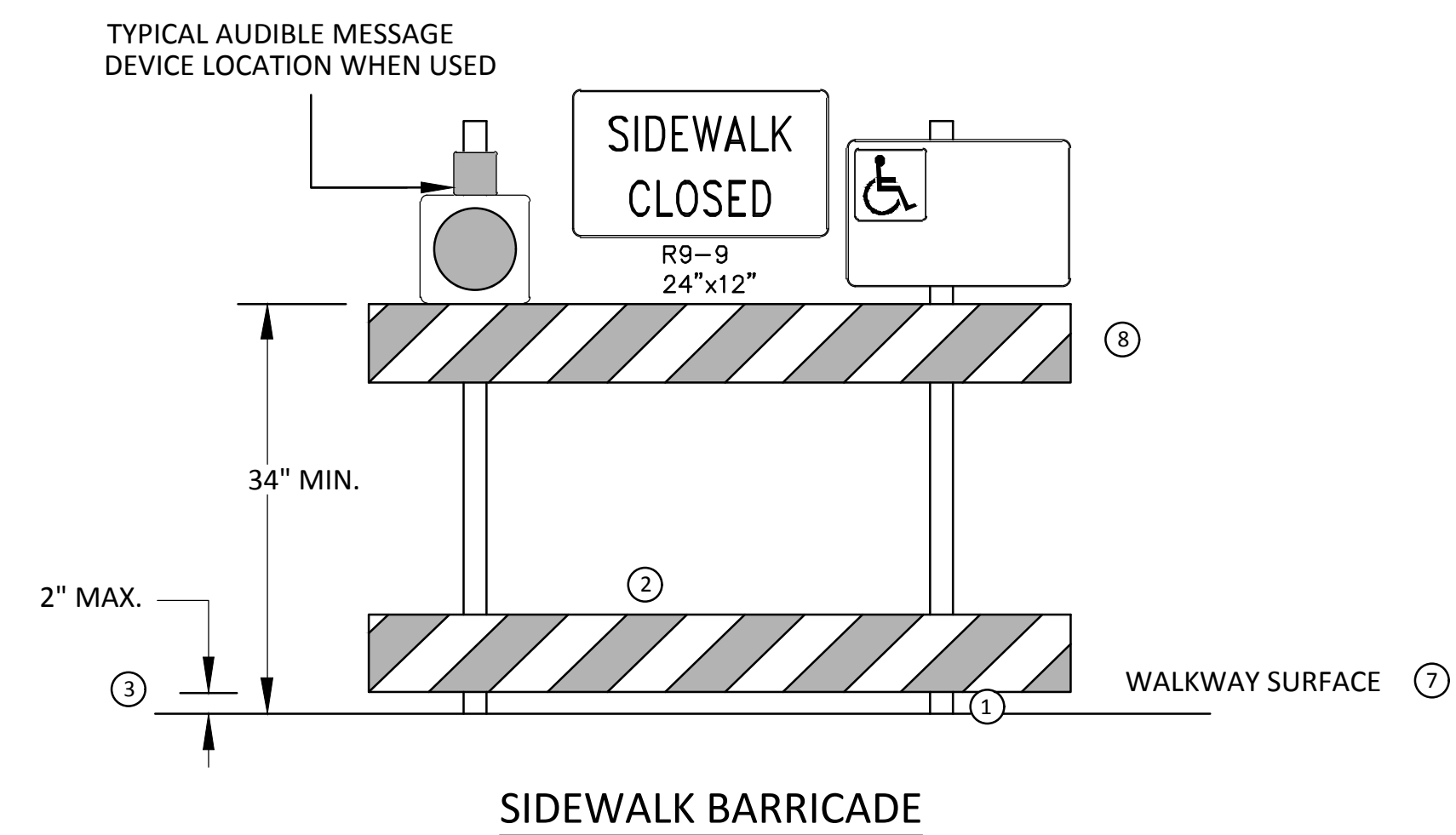
PEDESTRIAN CHANNELIZER USING A BARRIER
(MINIMUM REQUIREMENTS)



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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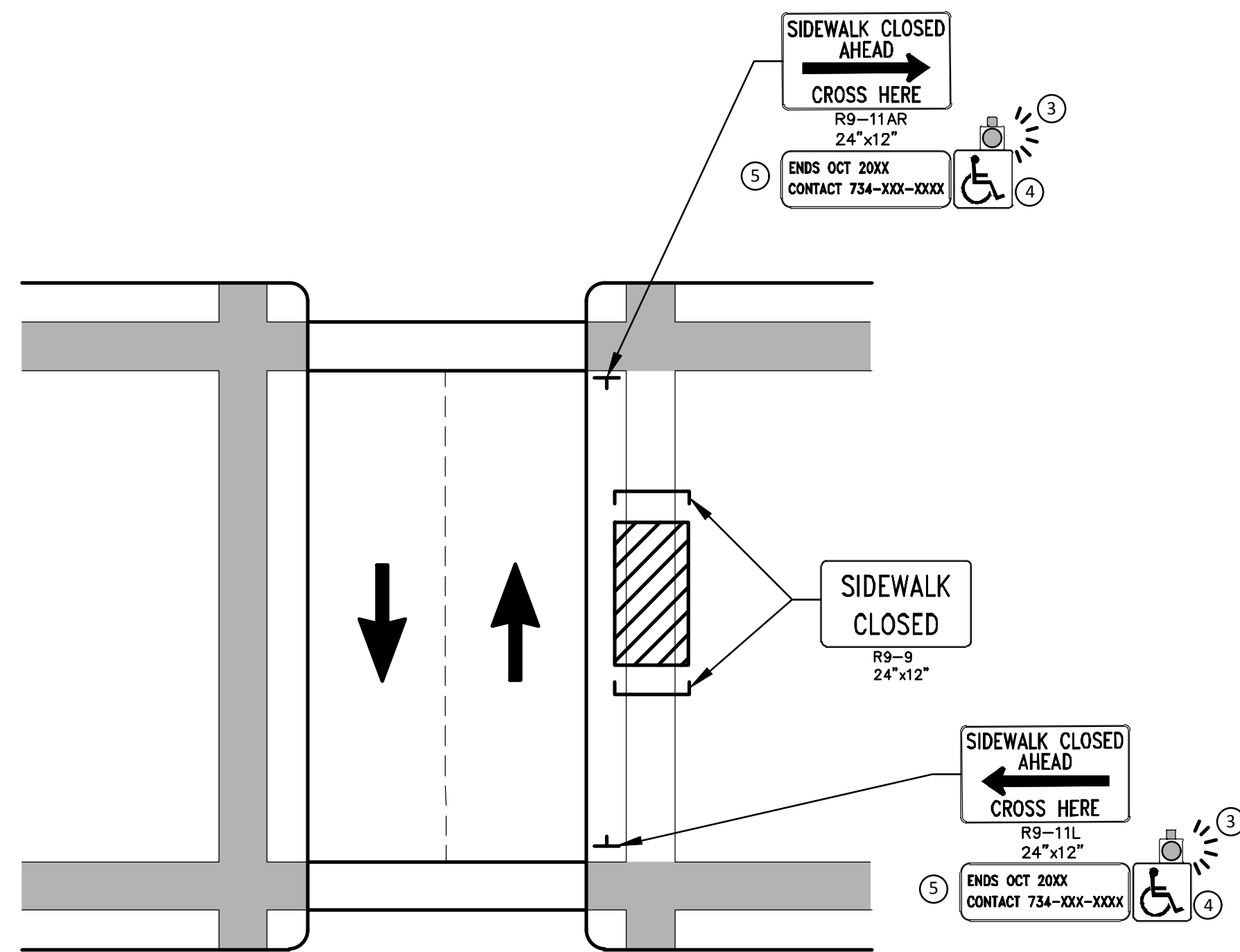
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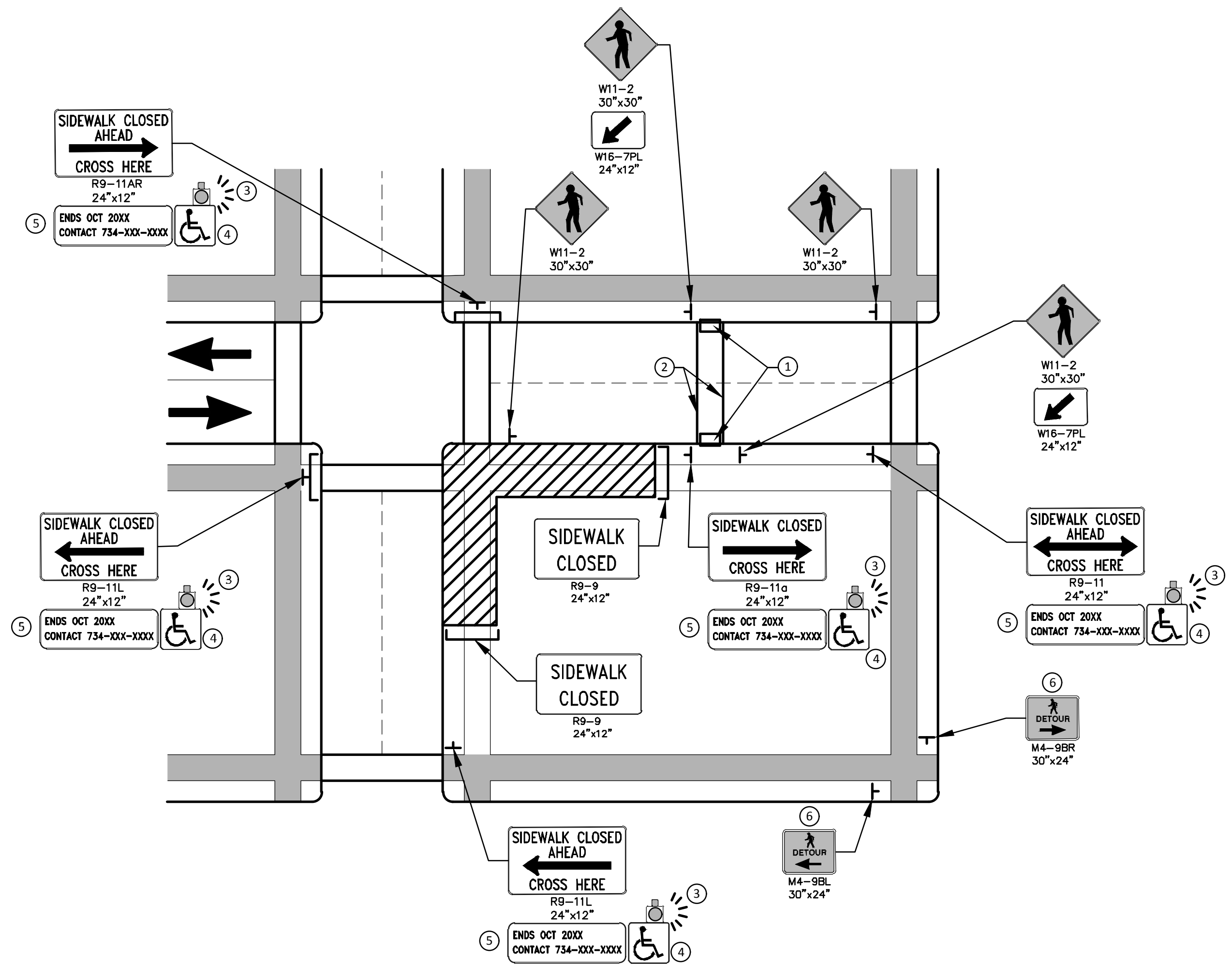
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2019 MISC UTILITY PROJECTS
TPAR WALKWAY DEVICES

SCALE: N.T.S.
DRAWING No. 2018025-9

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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

811
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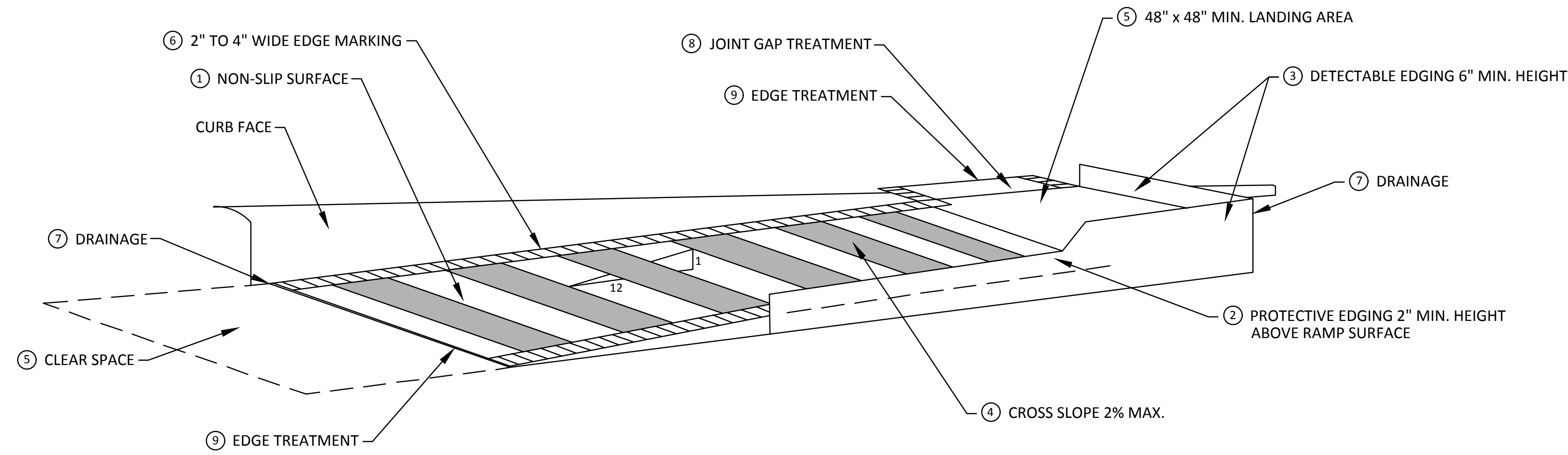
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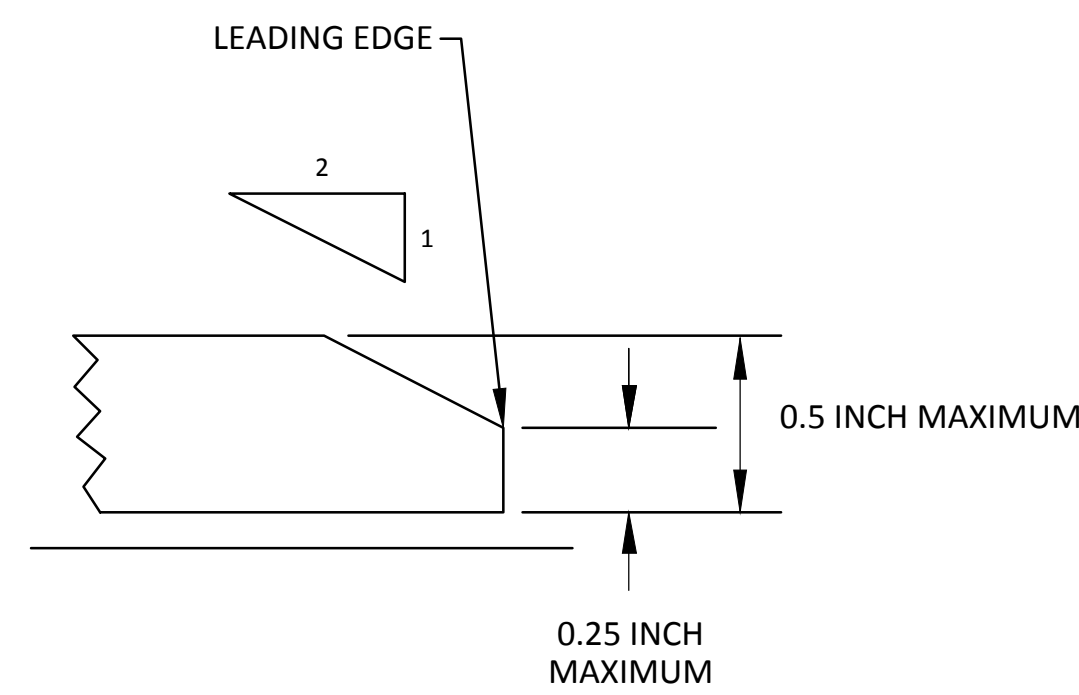
2019 MISC UTILITY PROJECTS
ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

SCALE: N.T.S.
DRAWING No. 2018025-10
SHEET No. 10 OF 31

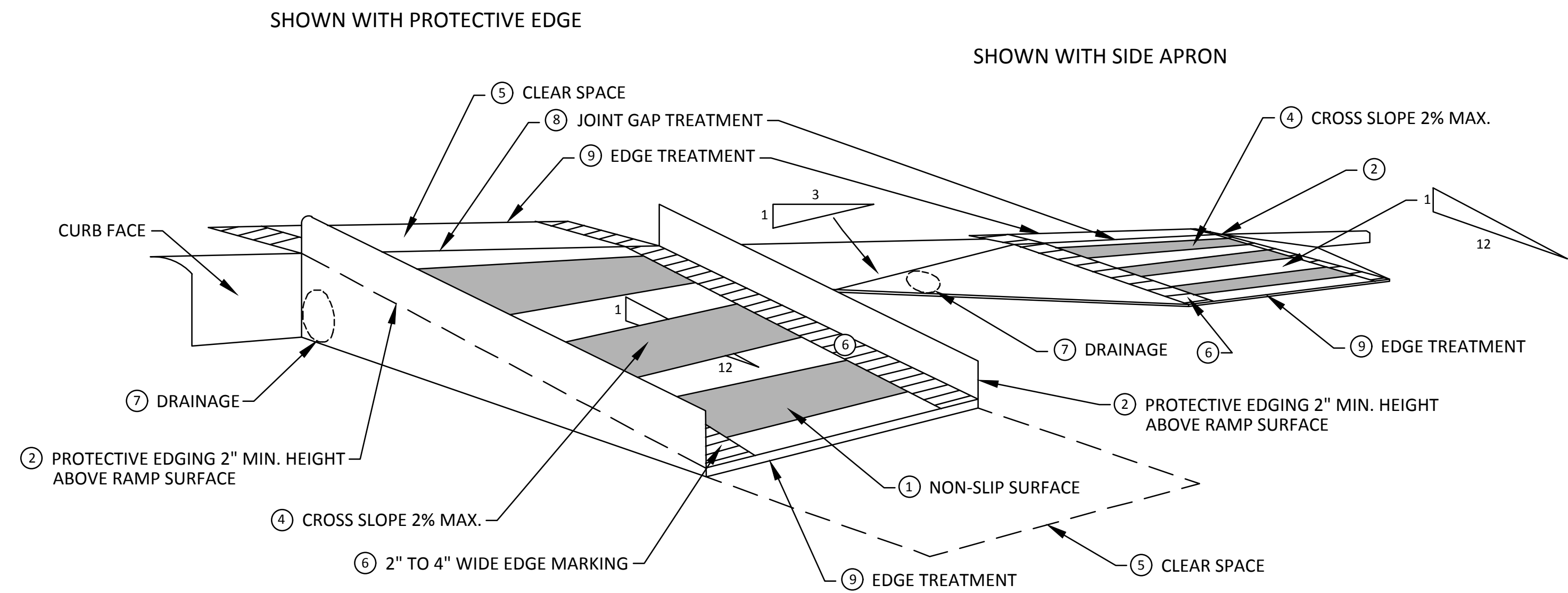
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**TEMPORARY CURB RAMP
PARALLEL TO CURB**



9 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.



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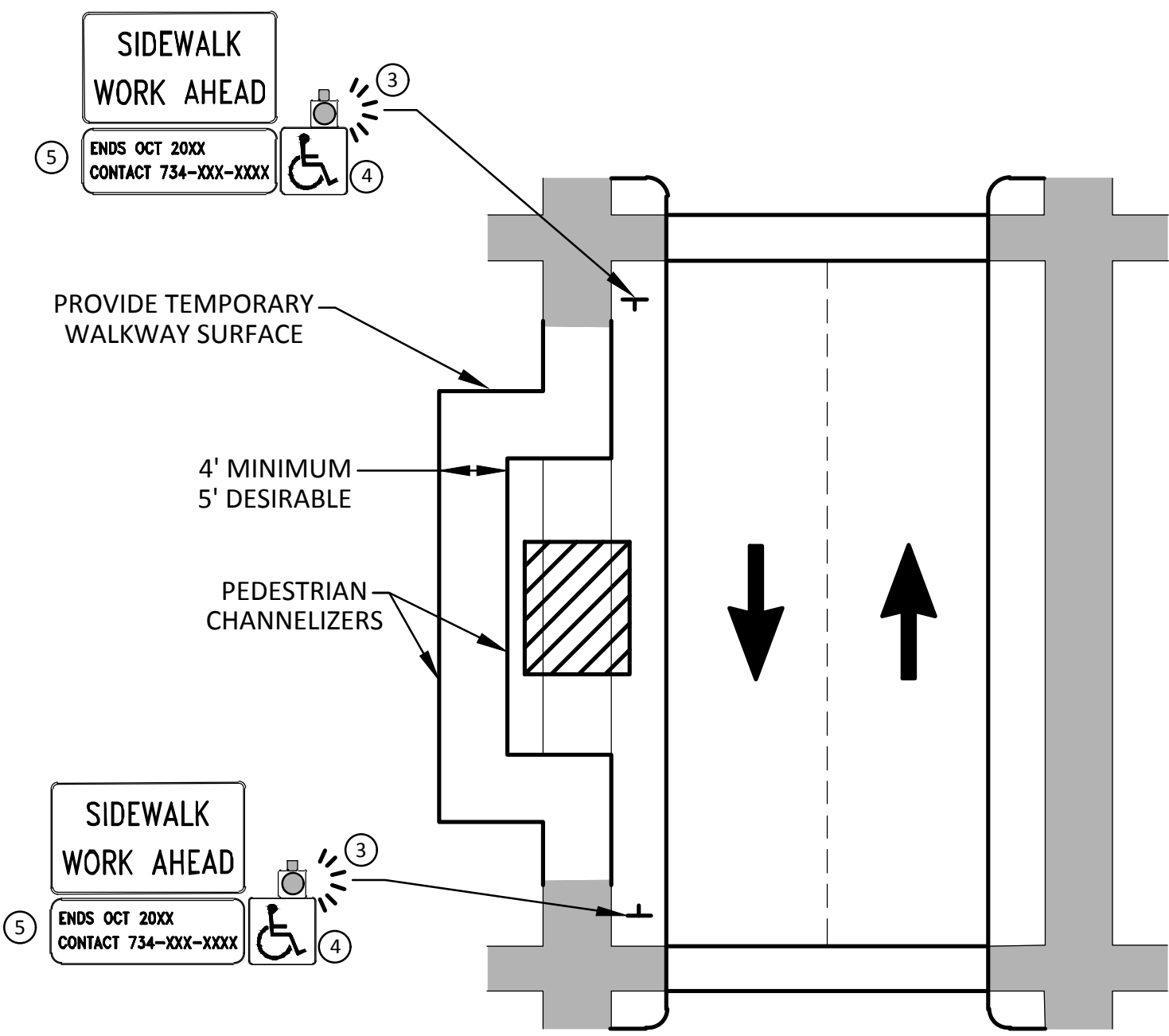
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2019 MISC UTILITY PROJECTS
TPAR RAMPS

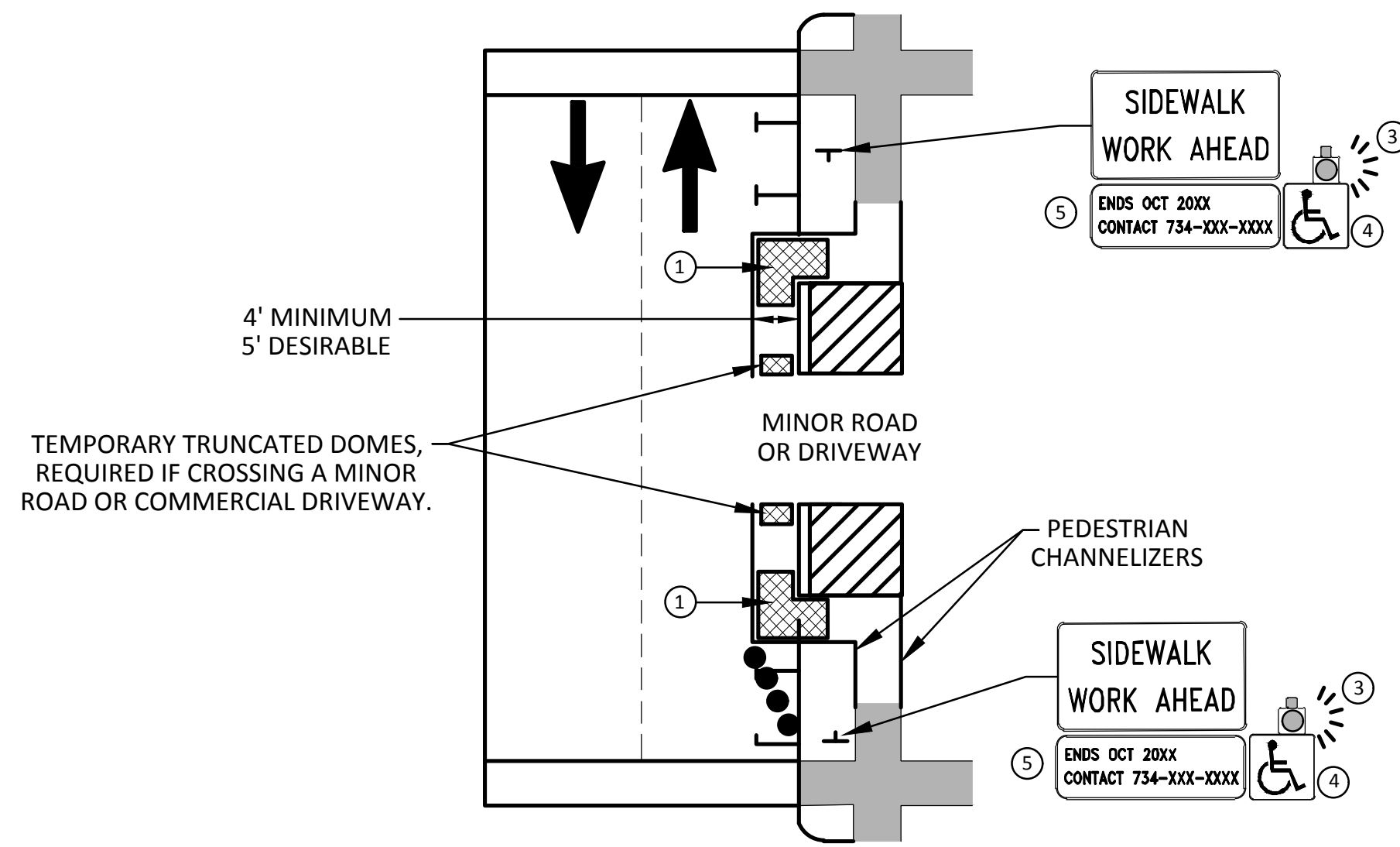
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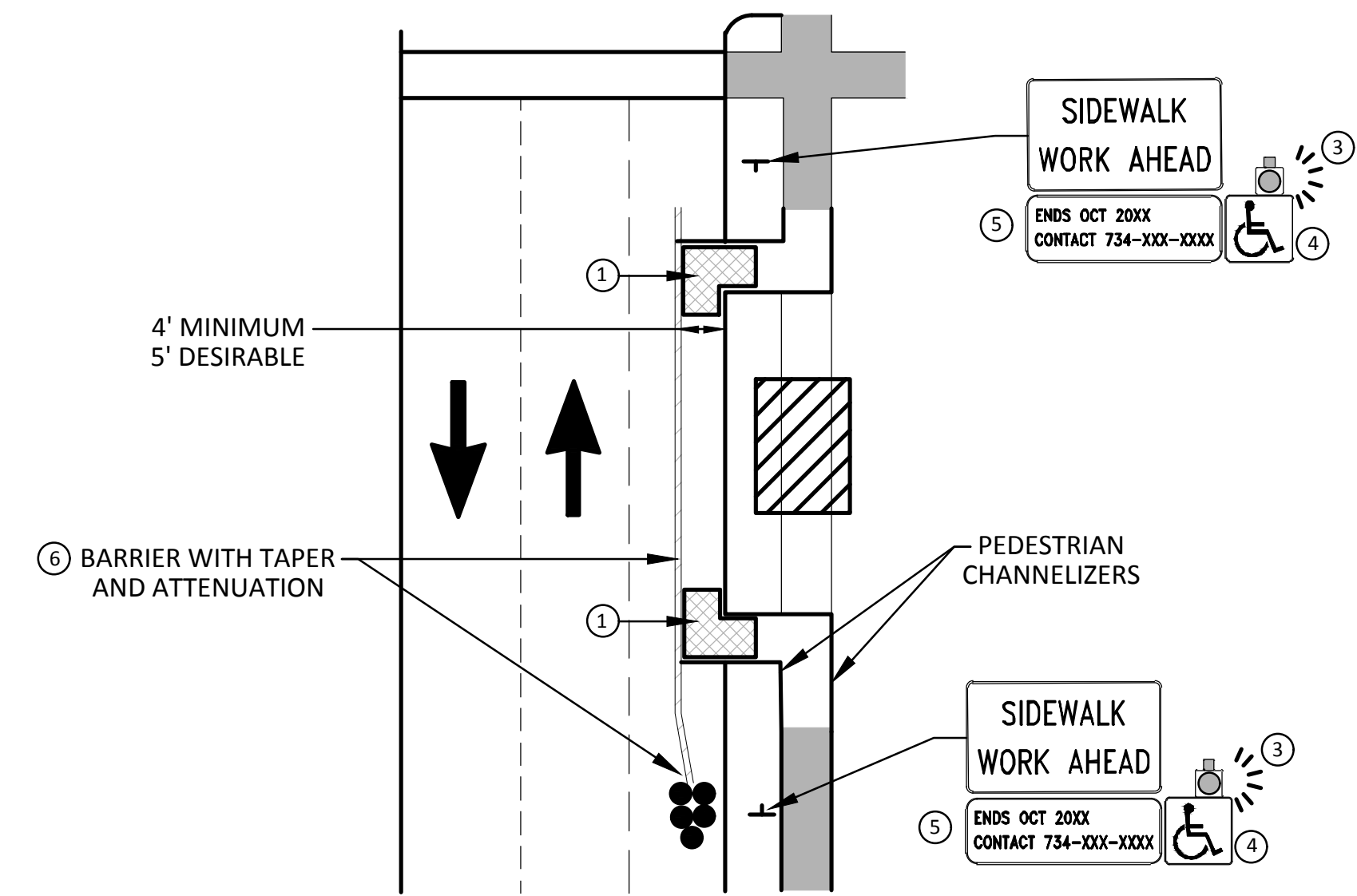


**BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY**
BYPASS TYPE A

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.

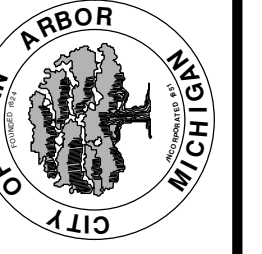
LEGEND

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



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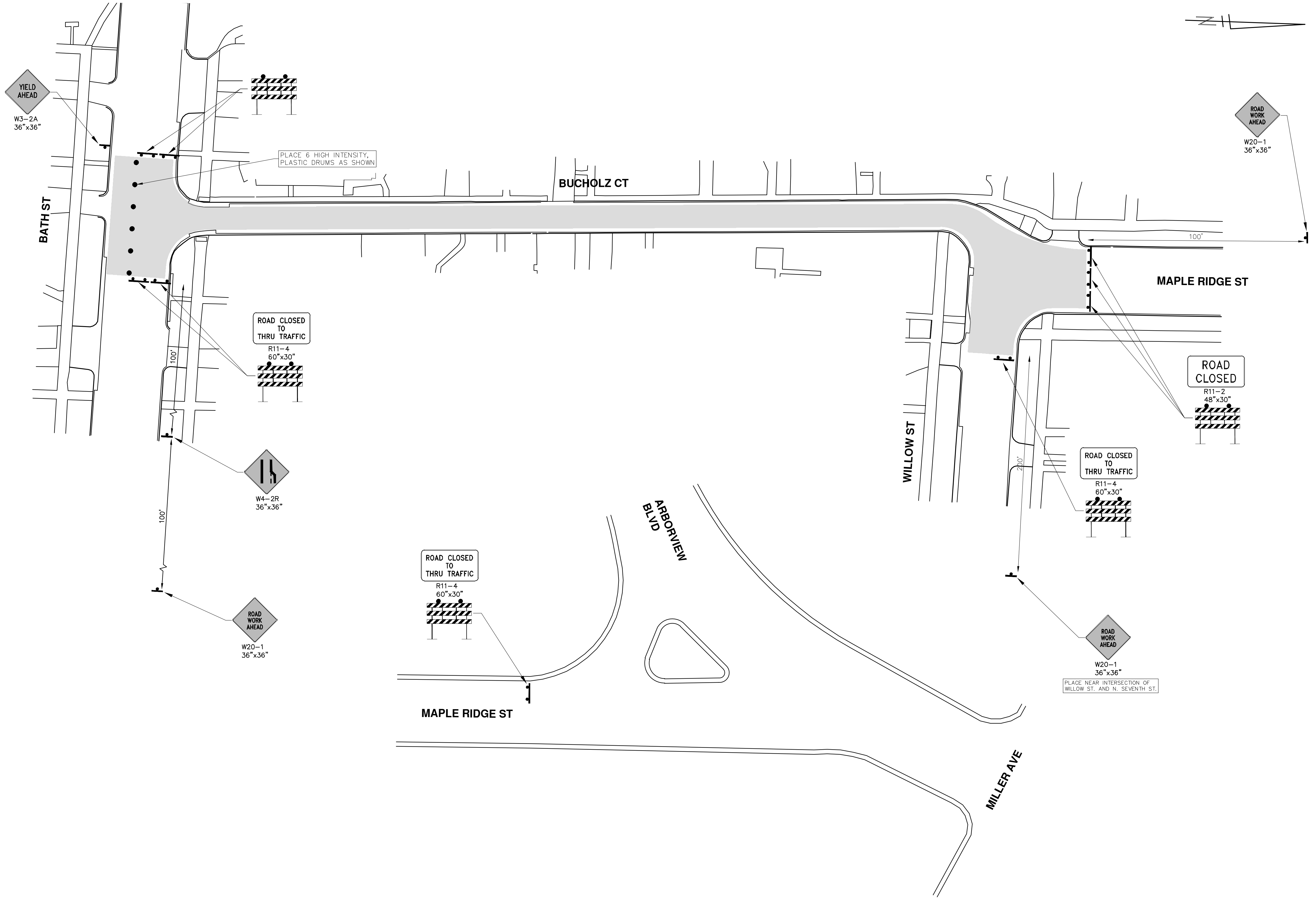
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2019 MISC UTILITY PROJECTS
ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS

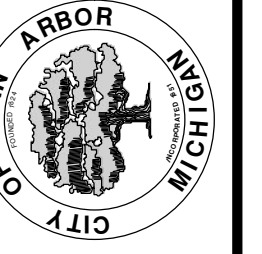
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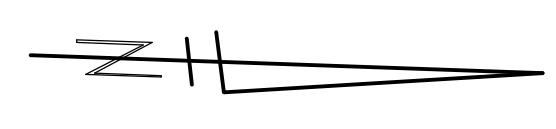
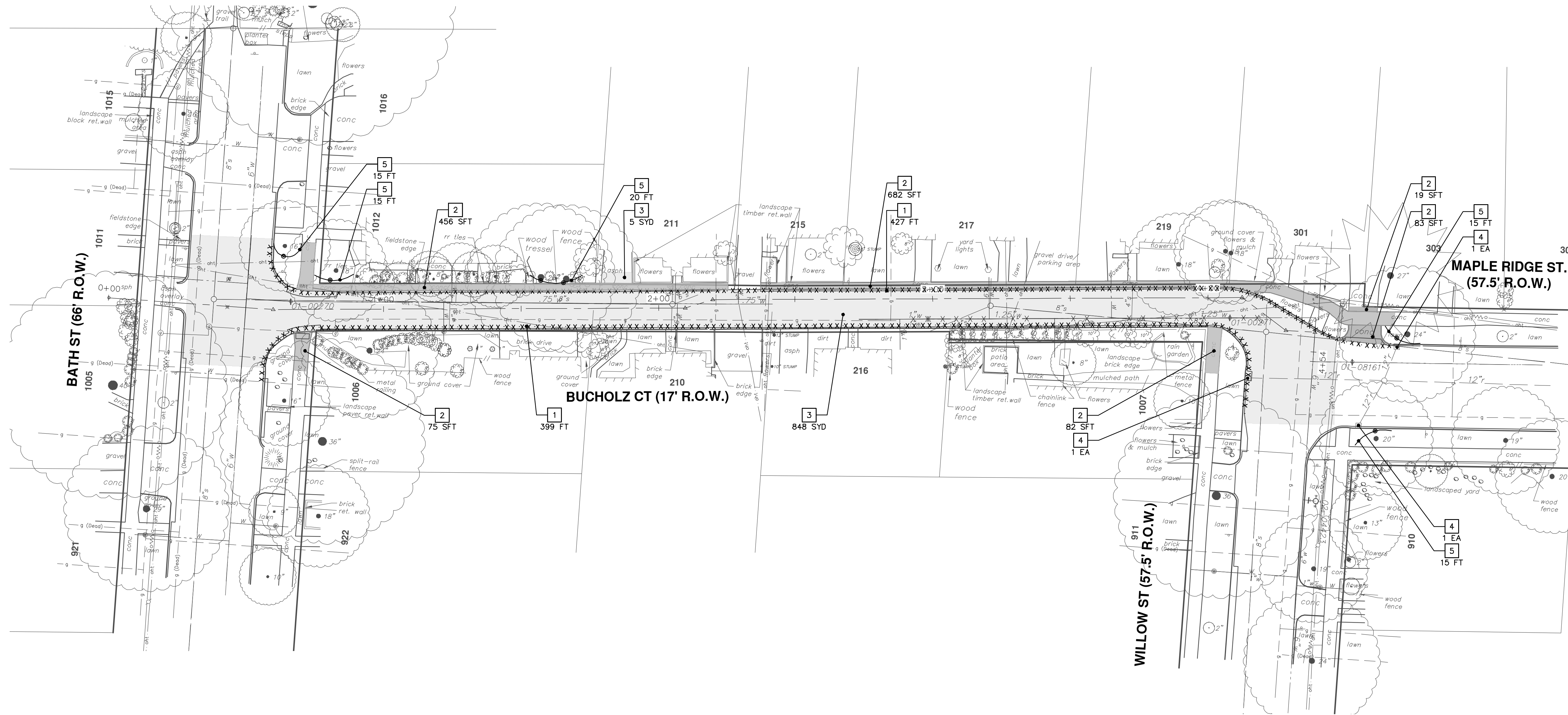
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2019 MISC UTILITY PROJECTS
BUCHOLZ CT
 MAINTENANCE OF TRAFFIC

SCALE PLAN: 1" = 20'
 DRAWING No. 2018025-13



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER
7	DR STRUCTURE, REM

*SAWOUT FULL DEPTH AT REMOVAL LIMITS

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

BUCHOLZ CT

REMOVALS

SCALE PLAN: 1" = 20'

DRAWING No. **2018025-14**

SHEET No. **14 OF 31**

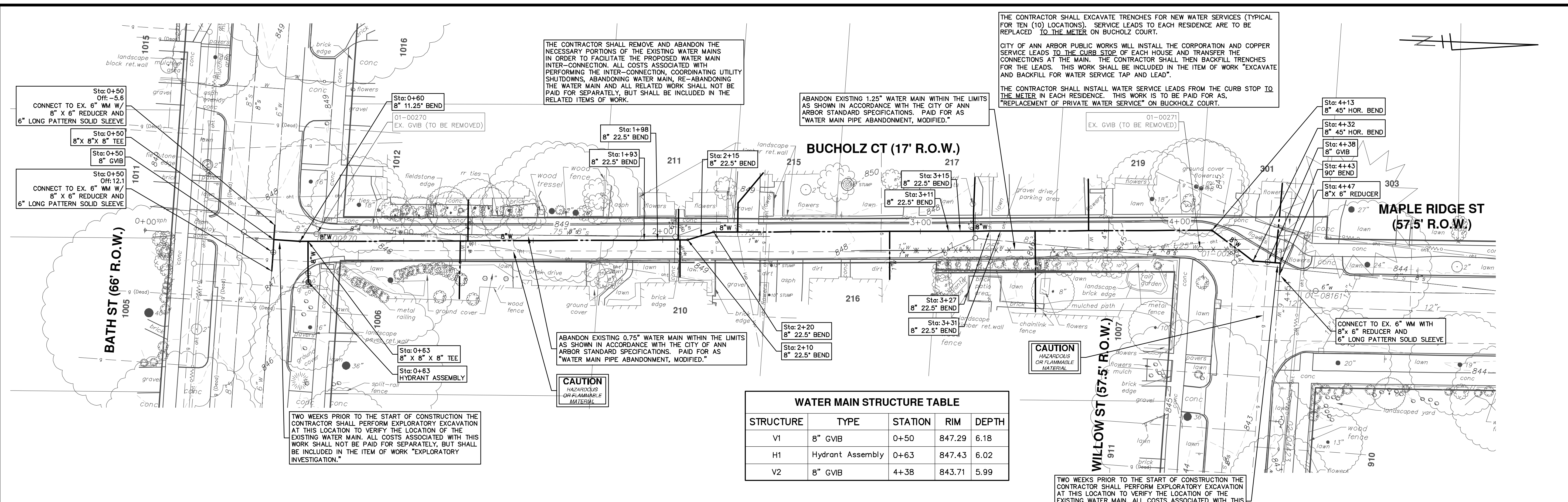
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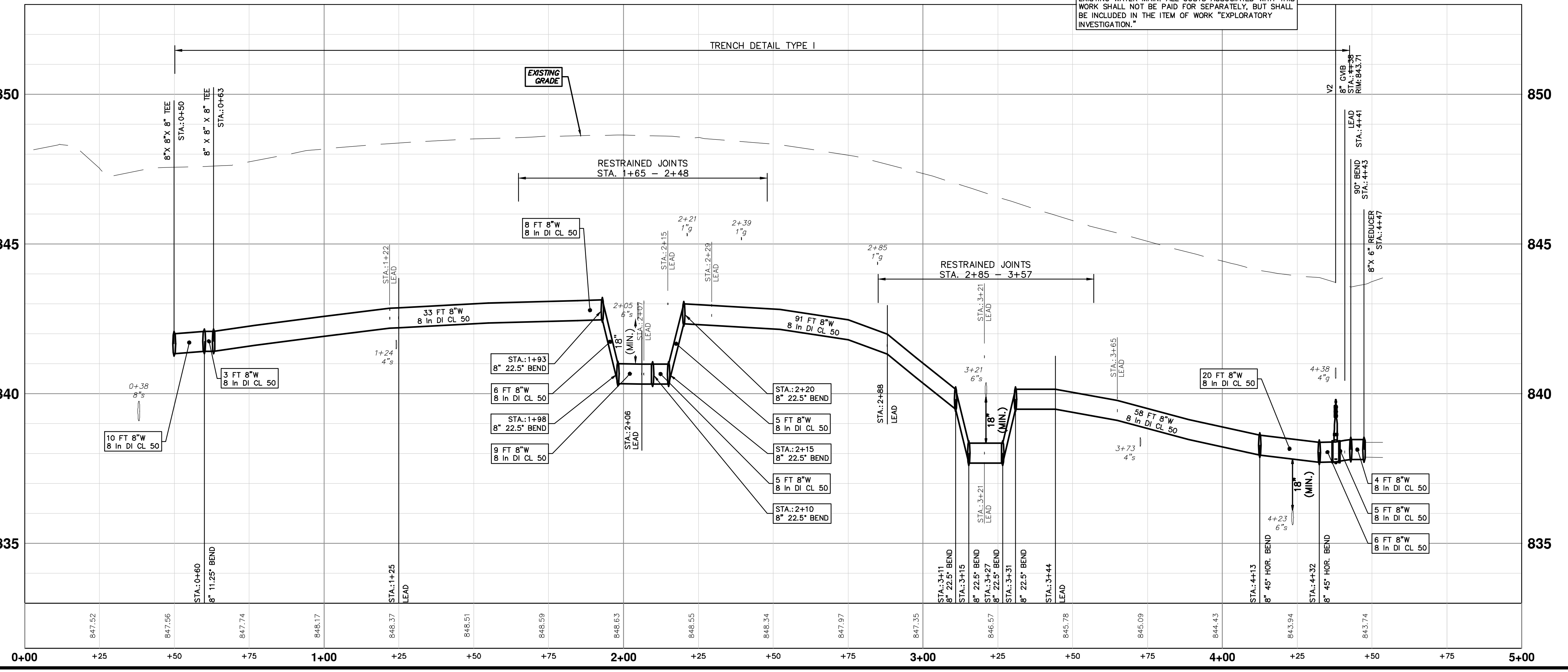
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MICHIGAN

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WATER MAIN STRUCTURE TABLE

STRUCTURE	TYPE	STATION	RIM	DEPTH
V1	8" GVB	0+50	847.29	6.18
H1	Hydrant Assembly	0+63	847.43	6.02
V2	8" GVB	4+38	843.71	5.99



THE CONTRACTOR SHALL EXCAVATE TRENCHES FOR NEW WATER SERVICES (TYPICAL FOR TEN (10) LOCATIONS). SERVICE LEADS TO EACH RESIDENCE ARE TO BE REPLACED TO THE METER ON BUCHOLZ COURT.

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

THE CONTRACTOR SHALL INSTALL WATER SERVICE LEADS FROM THE CURB STOP TO THE METER IN EACH RESIDENCE. THIS WORK IS TO BE PAID FOR AS "REPLACEMENT OF PRIVATE WATER SERVICE" ON BUCHOLZ COURT.

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2019 MISC UTILITY PROJECTS
BUCHOLZ CT
WATER MAIN - STA. 0+50 - STA. 4+43

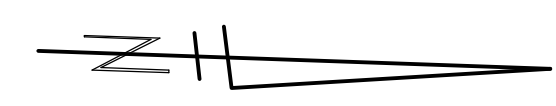
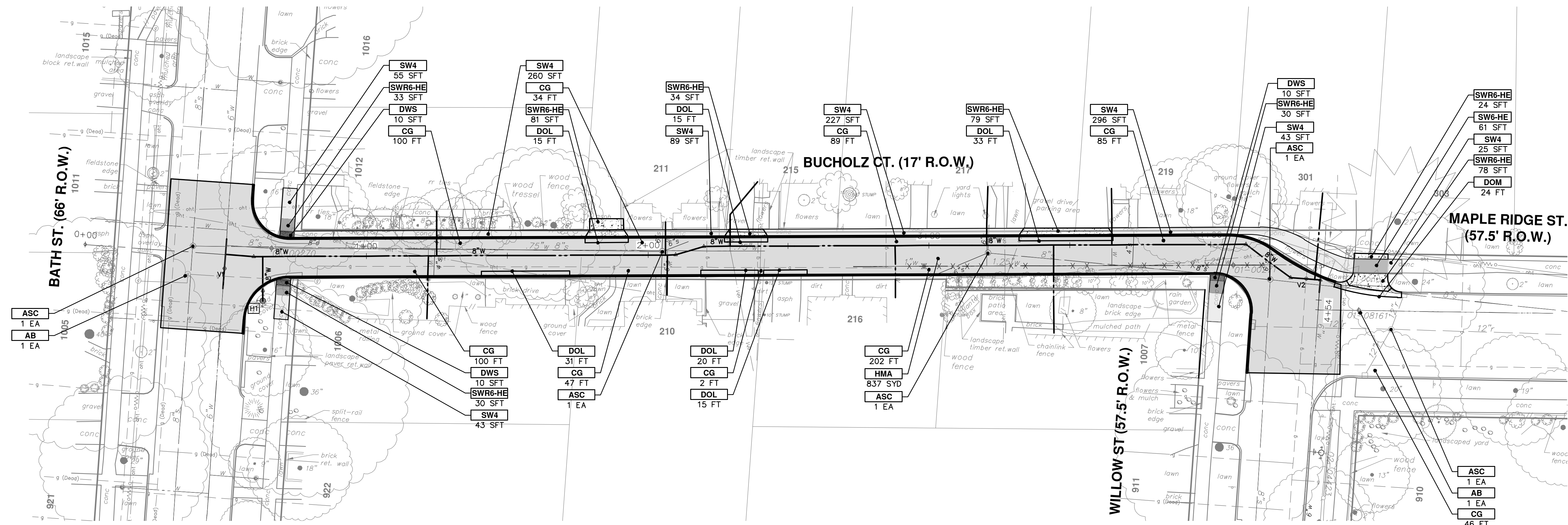
SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'

DRAWING NO. 2018025-15

SHEET NO. 15 OF 31

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY
DOL	CONCRETE TYPE L DRIVE OPENING- HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

BUCHOLZ CT
ROAD

SCALE PLAN: 1" = 20'

DRAWING No. 2018025-16

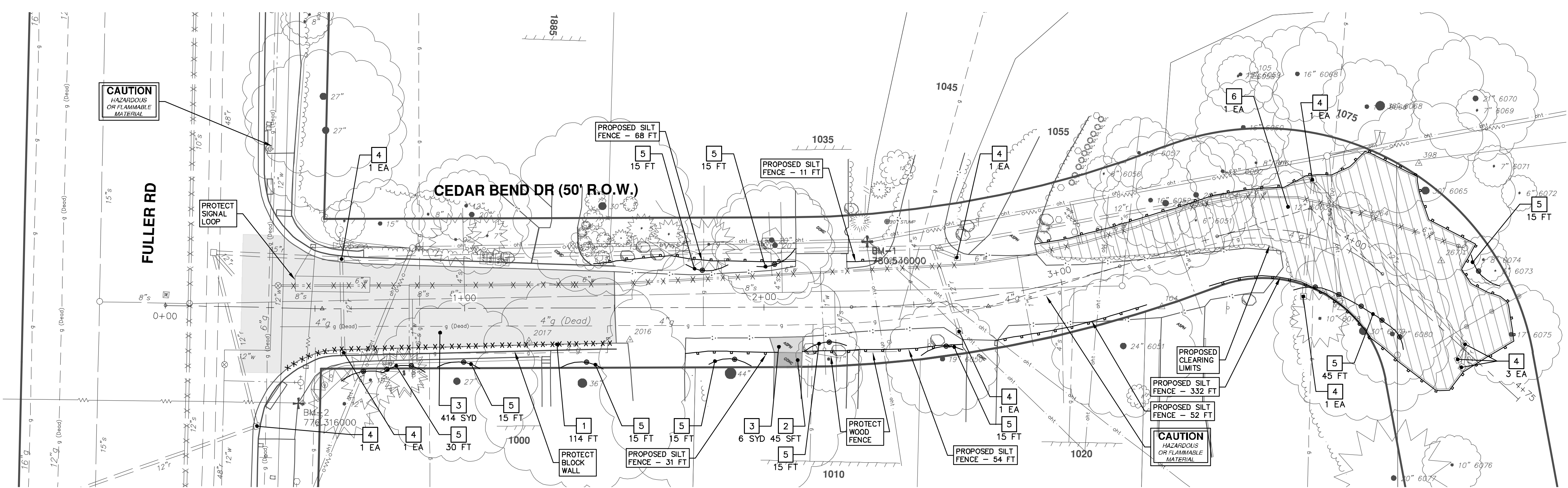
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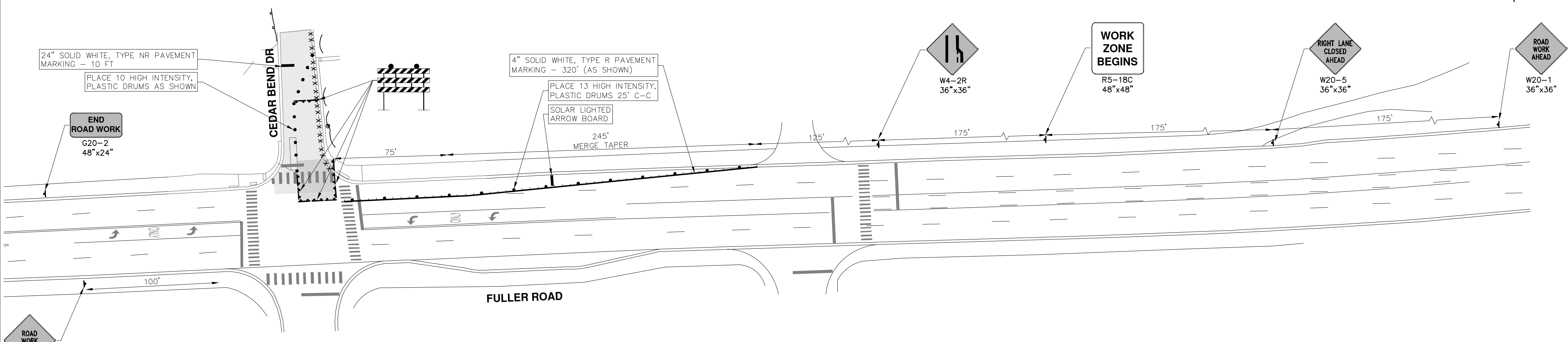
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SCALE: 1" = 20'

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER
7	DR STRUCTURE, REM

*SAWCUT FULL DEPTH AT REMOVAL LIMITS



SCALE: 1" = 40'

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

CEDAR BEND DRIVE

REMOVALS AND MAINTENANCE OF TRAFFIC

SCALE PLAN: SEE ABOVE

DRAWING No. **2018025-17**

SHEET No. **17 OF 31**

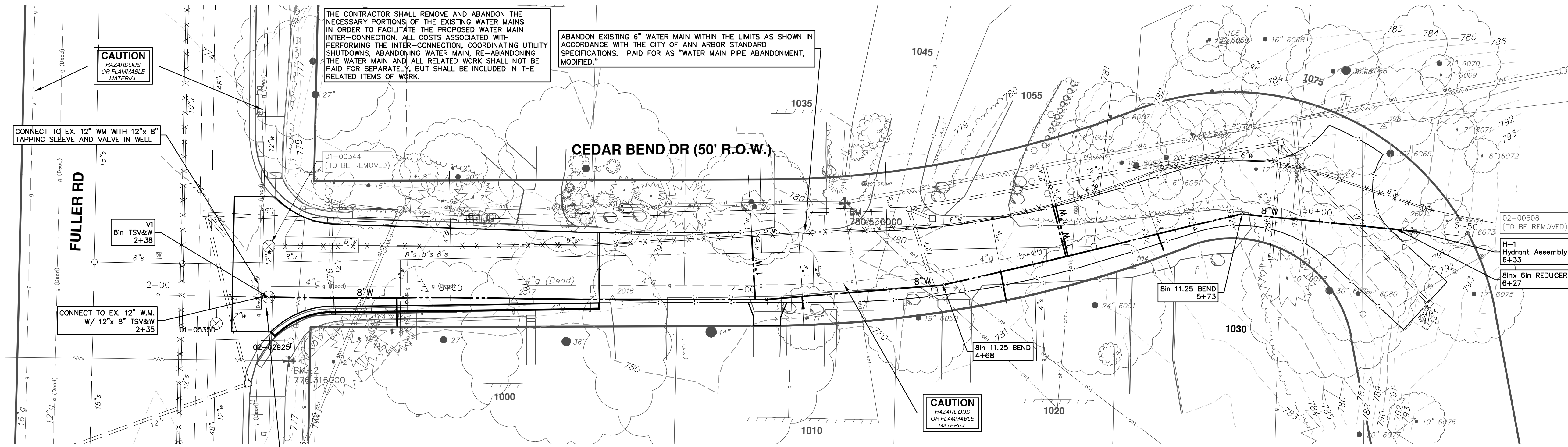
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CITY OF ANN ARBOR MICHIGAN

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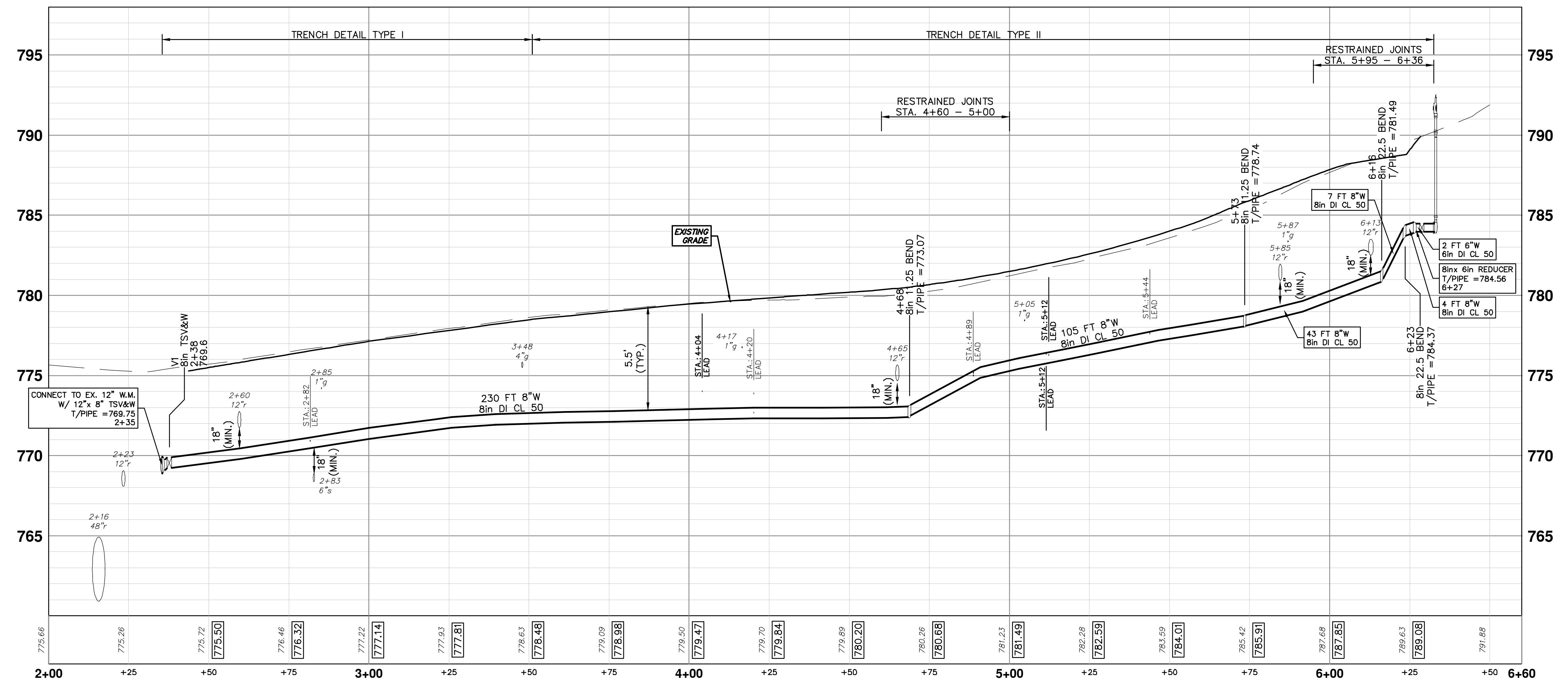



TWO WEEKS PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION TO VERIFY THE LOCATION OF THE EXISTING WATER MAIN. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY INVESTIGATION."

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

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.

STRUCTURE	TYPE	STATION	RIM	DEPTH
H-1	Hydrant Assembly	6+33		784.73
V1	8in TSV&W	2+38		769.55






Know what's below.
Call before you dig.

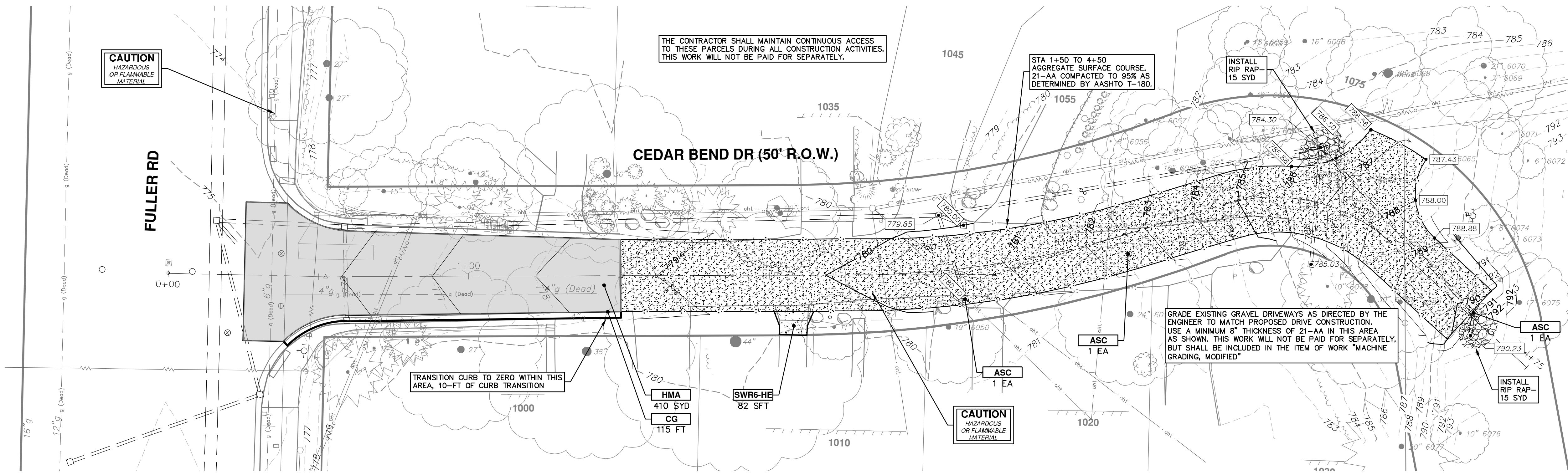
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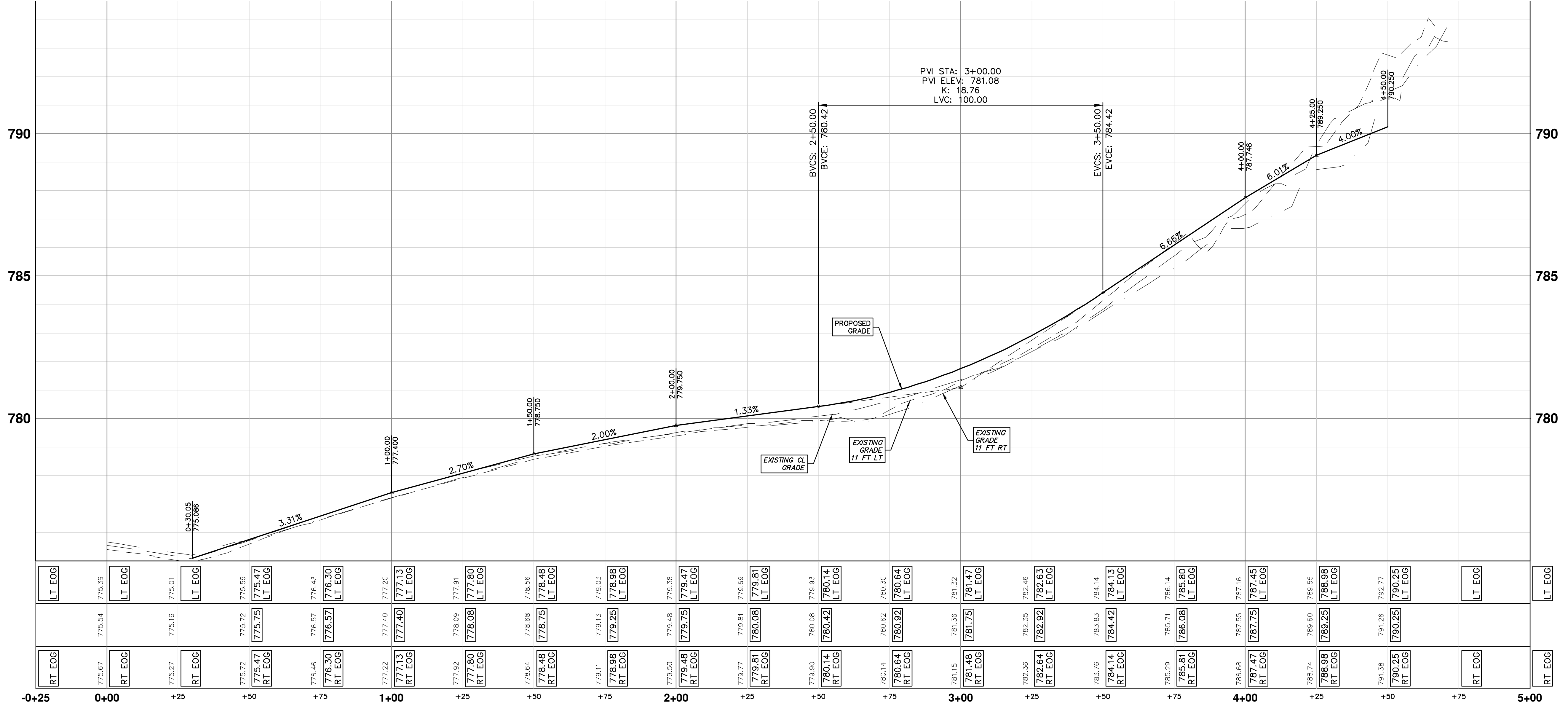



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
 2019 MISC UTILITY PROJECTS
 CEDAR BEND DRIVE
 WATER MAIN

SHEET No. **18 OF 31**
 SCALE PLAN: 1" = 20'
 PROFILE: 1" = 4'
 DRAWING No. **2018025-18**



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY
DOL	CONCRETE TYPE L DRIVE OPENING- HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX





Know what's below.
Call before you dig.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'

PROFILE: 1" = 2'

SHEET No. 19 OF 31

2019 MISC UTILITY PROJECTS

CEDAR BEND DRIVE

ROAD

DRAWING No. 2018025-19

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ANN ARBOR MICHIGAN

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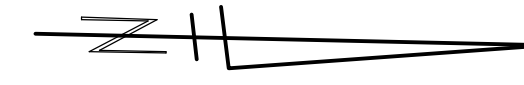
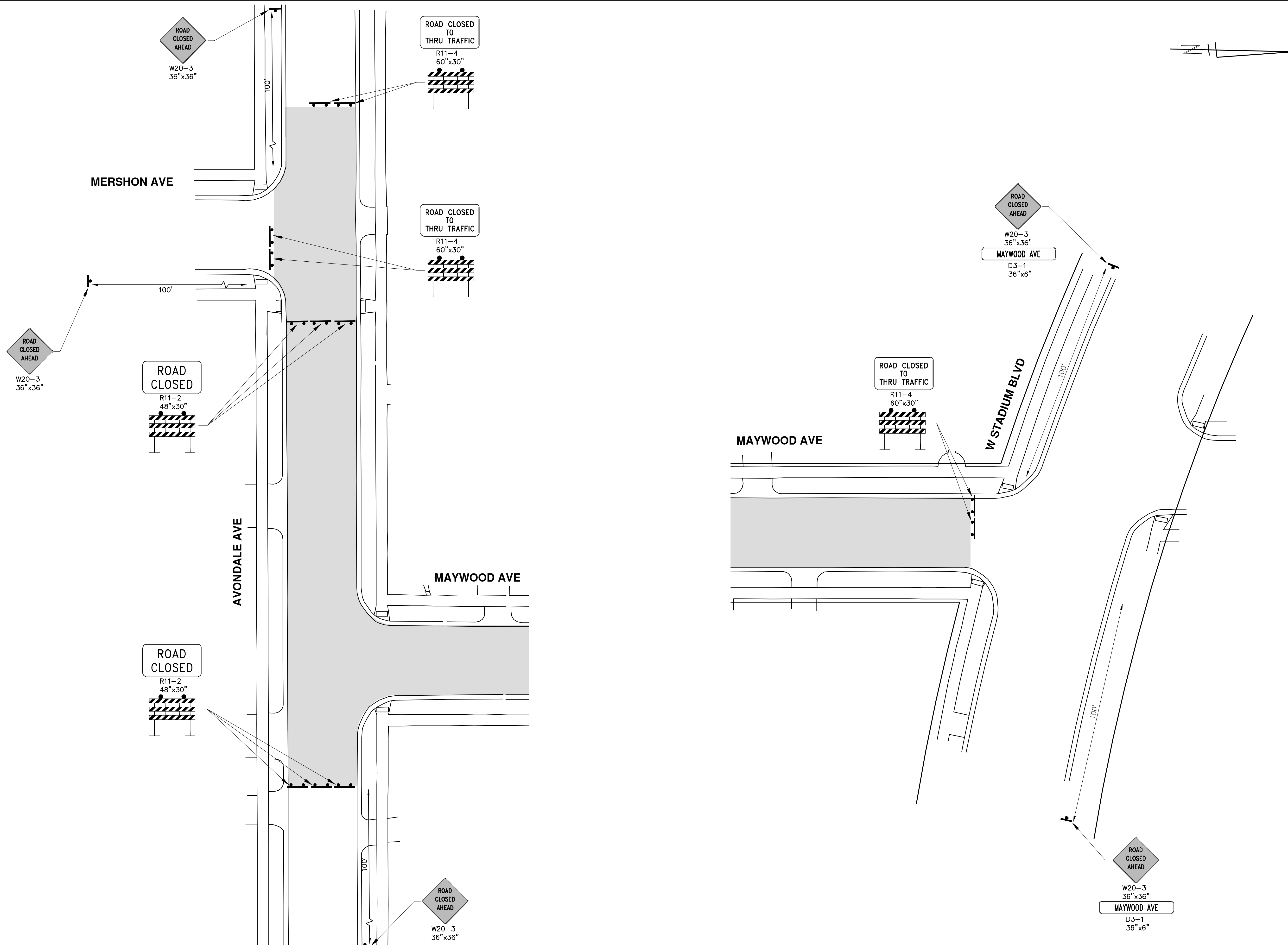
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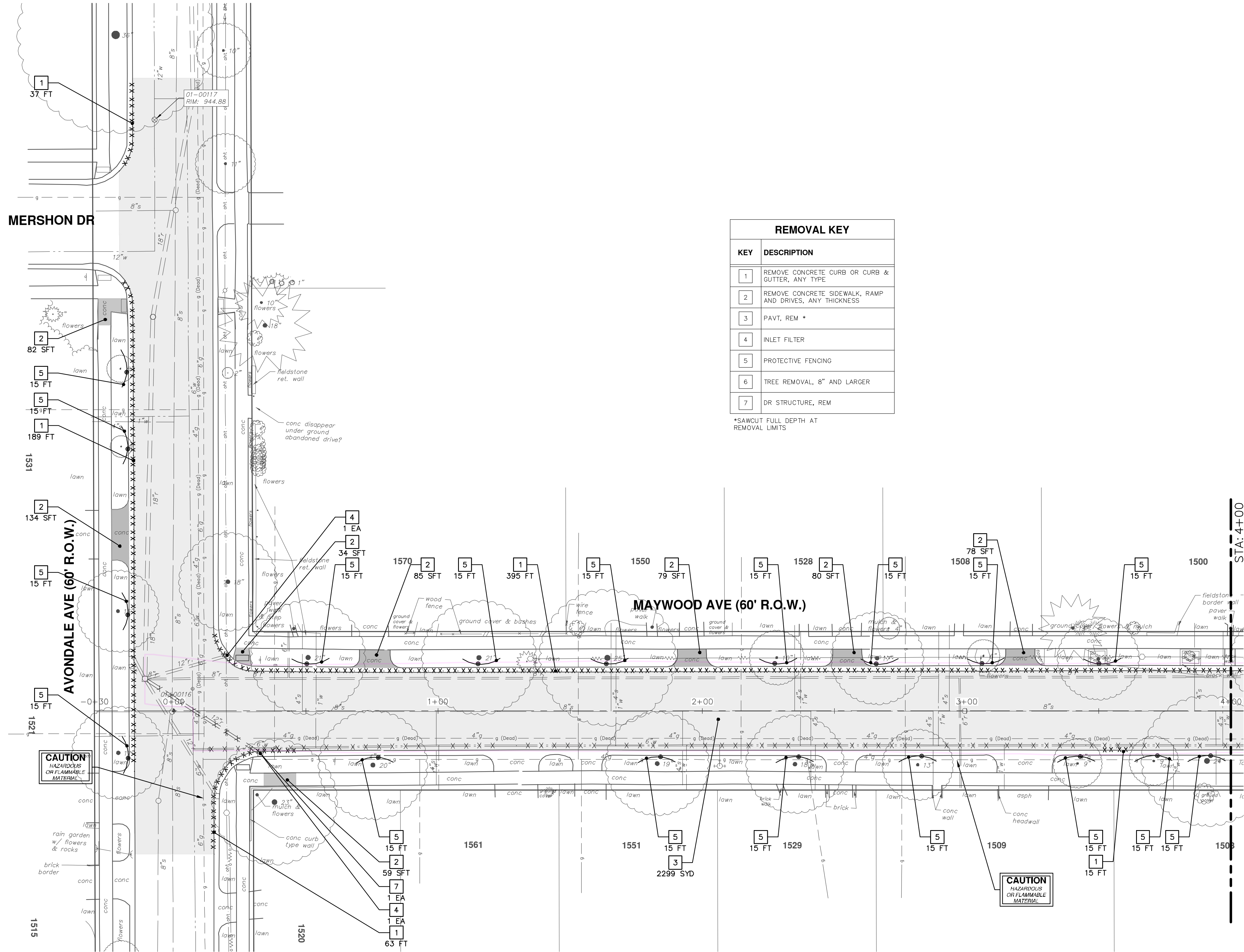
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING 2019 MISC UTILITY PROJECTS MAYWOOD AVENUE MAINTENANCE OF TRAFFIC	
SCALE: 1" = 20' 	DRAWING No. 2018025-20
SHEET No. 20 OF 31	CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET ANN ARBOR, MI 48106-8647 ANN ARBOR FAX 810-58647 ANN ARBOR TEL 734-764-4410 www.a2gov.org
REV. DD 3-1-19 DATE	DESCRIPTION CC/DF/KB TH DRAWN CHECKED





REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER
7	DR STRUCTURE, REM

*SAWCUT FULL DEPTH AT REMOVAL LIMITS



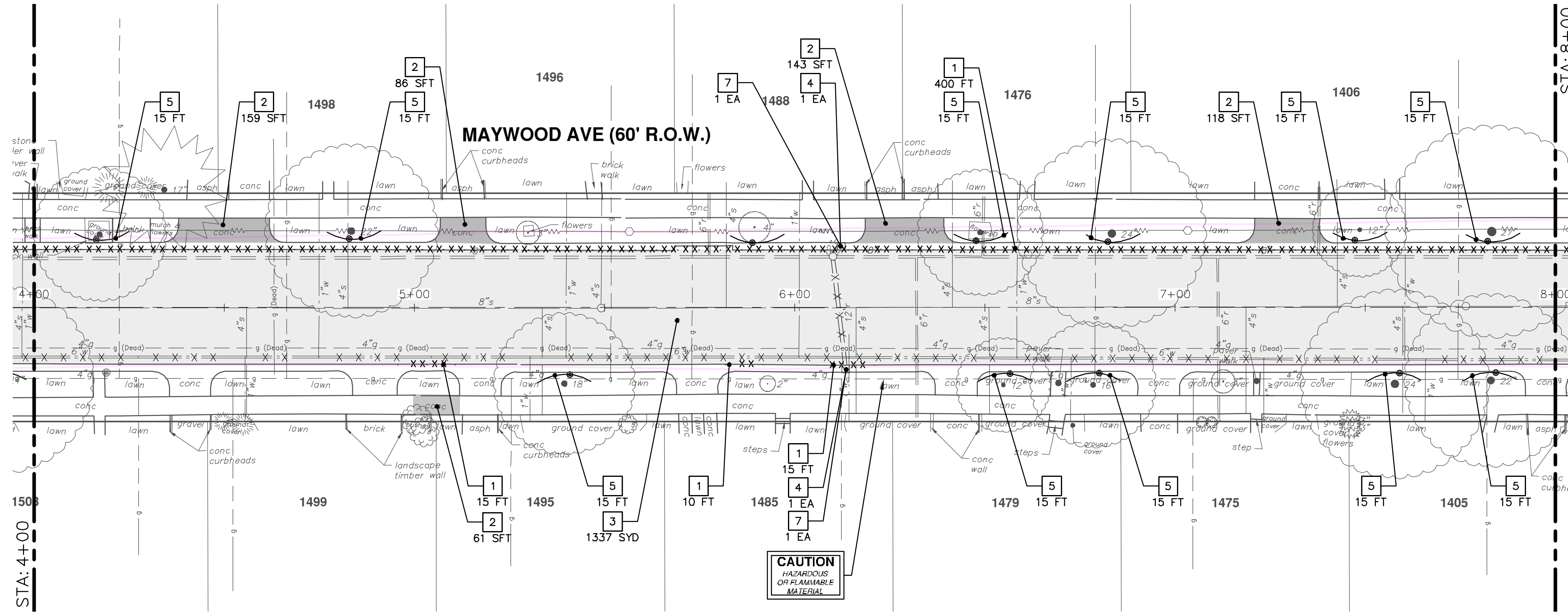
REV.	DESCRIPTION	DATE	TH	CHECKED
00	OUT FOR BID	3-1-19	CC/DF/KB	
				DRAWN
				CHECKED

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PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-0647
ANN ARBOR 811: 734-754-4410
www.811.org



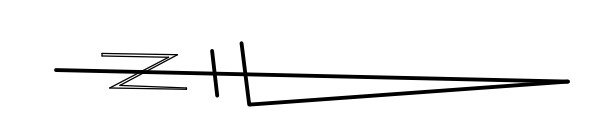
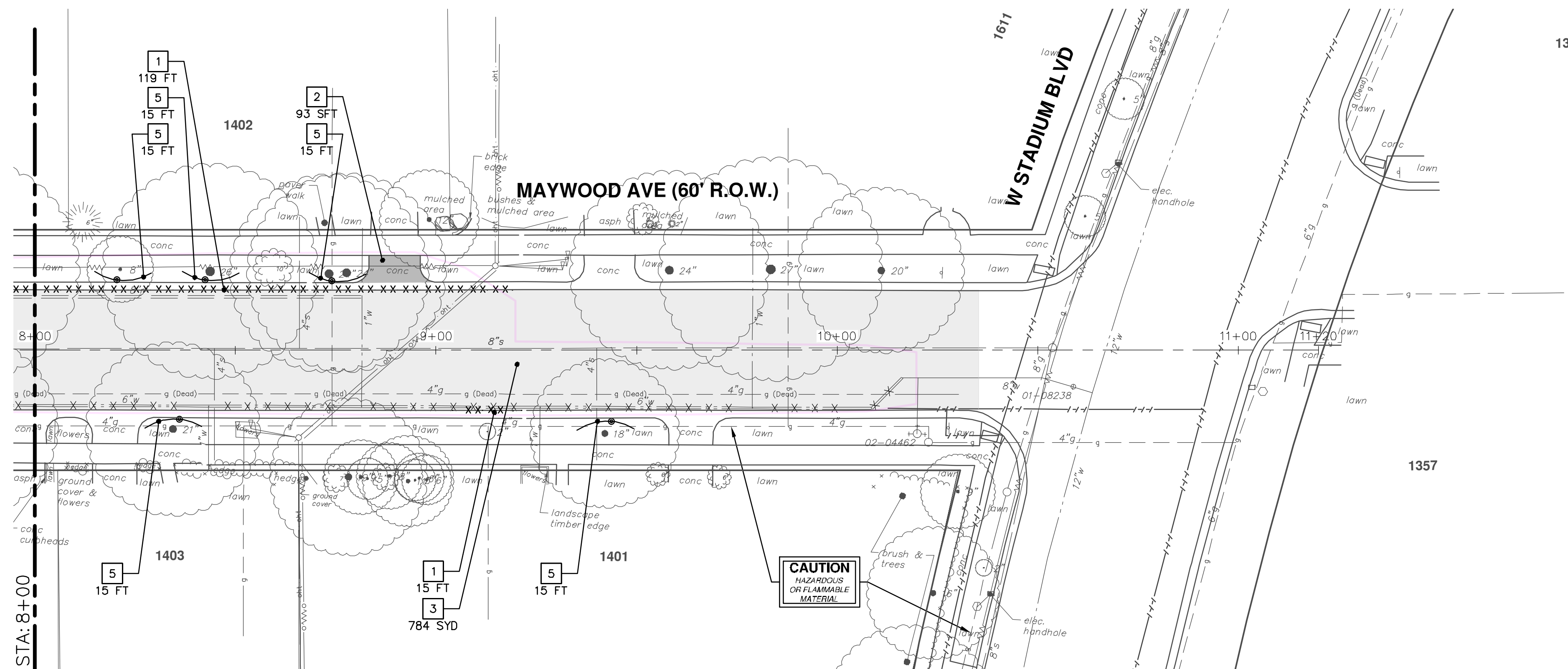
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2019 MISC UTILITY PROJECTS
MAYWOOD AVENUE
REMOVALS - STA. 0+00 - STA. 8+00

SCALE: 1" = 20'
DRAWING No. 2018025-21



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER
7	DR STRUCTURE, REM

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

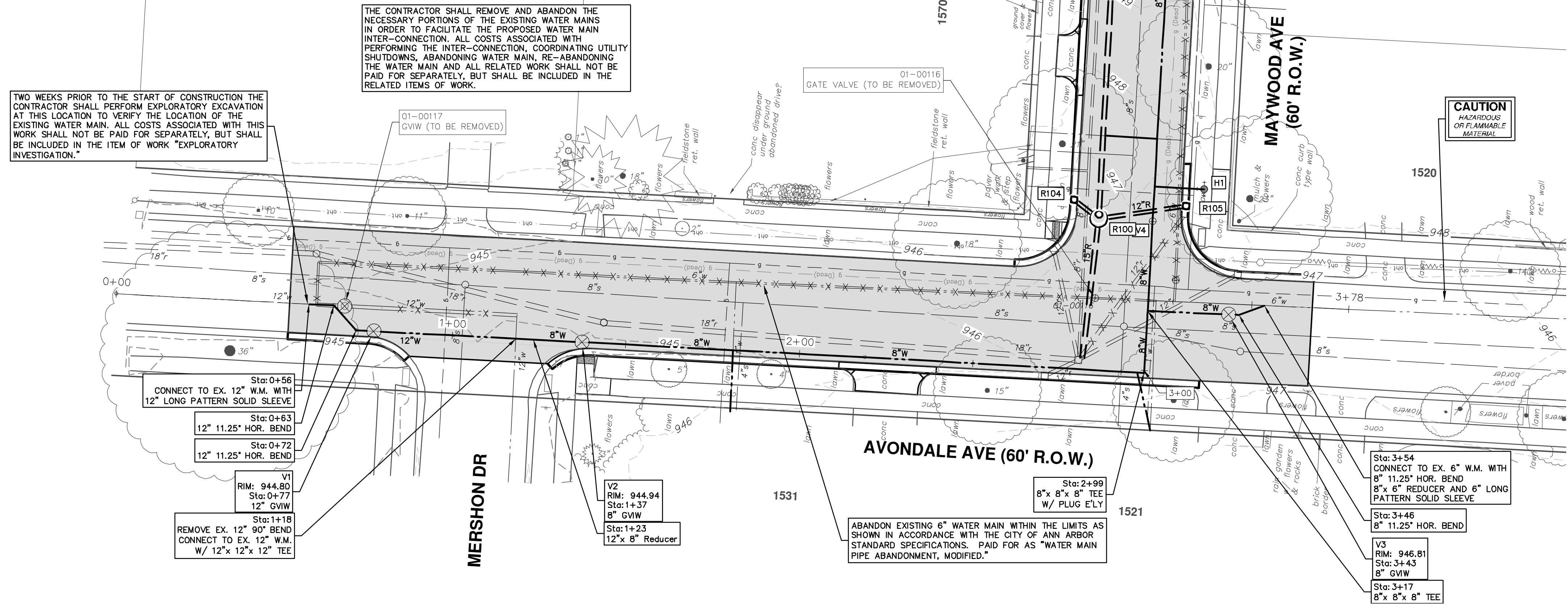


NO.	DATE	DESCRIPTION	BY	CHECKED
1	3-1-19		CC/DF/RB	
2			CC/DF/RB	
3			CC/DF/RB	
4			CC/DF/RB	
5			CC/DF/RB	
6			CC/DF/RB	
7			CC/DF/RB	

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CITY OF ANN ARBOR - ENGINEERING
2019 MISC UTILITY PROJECTS
MAYWOOD AVENUE
REMOVALS - STA. 8+00 - P.O.E.

SHEET No. 22 OF 31
SCALE: 1" = 20'
DRAWING No. 2018025-22

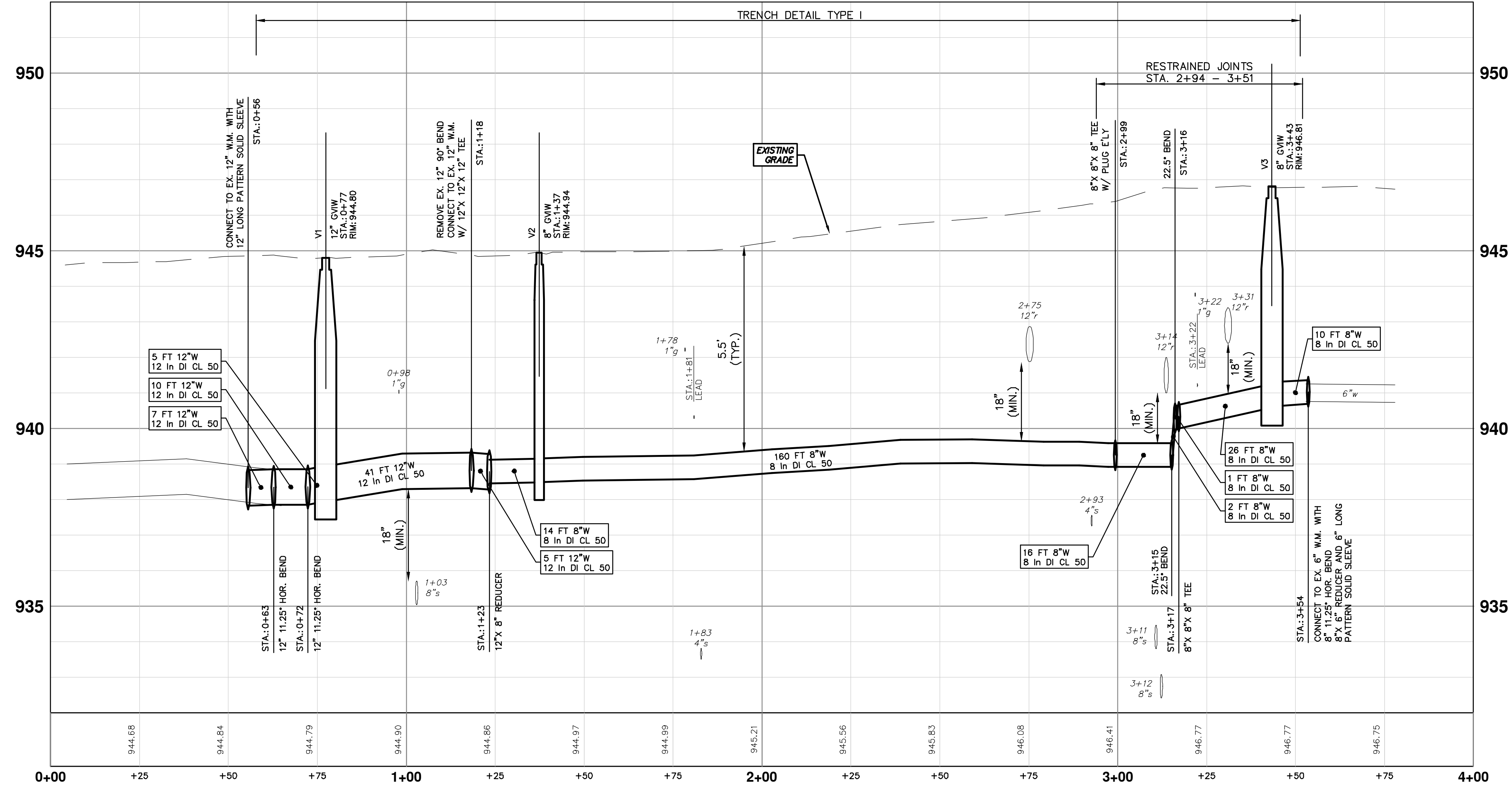


TWO WEEKS PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION TO VERIFY THE LOCATION OF THE EXISTING WATER MAIN. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY INVESTIGATION."

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.

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

STRUCTURE	TYPE	STATION	RIM	DEPTH
V1	12" GVIW	0+77	944.80	6.86
V2	8" GVIW	1+37	944.94	6.45
V3	8" GVIW	3+43	946.81	6.23



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

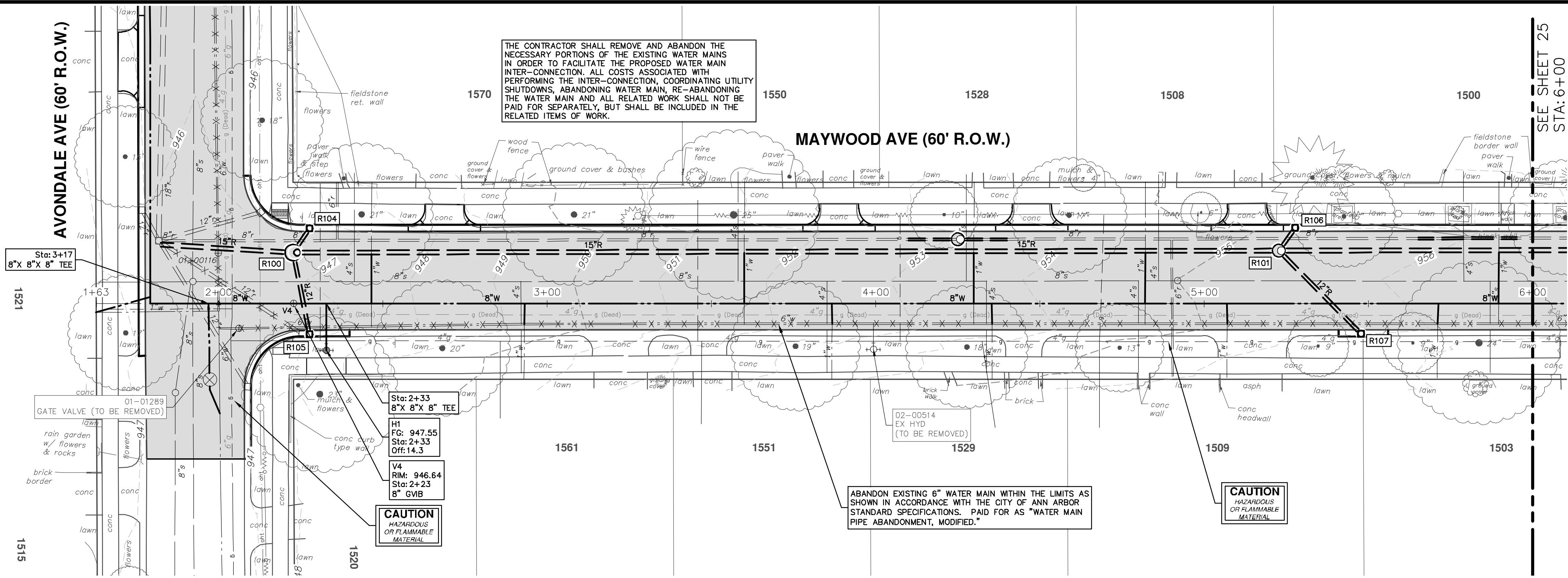
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2019 MISC UTILITY PROJECTS
MAYWOOD AVENUE
WATER MAIN - AVONDALE AVE. - STA. 1+00 - STA. 3+50

SHEET No. **23 OF 31**

DRAWING No. **2018025-23**

R:\2018025 Misc Utility 2019\Plan Production\2018025 Maywood Wtr.dwg Dwg Created: 27-Feb-19 - a2_standard bw.stb - Plot Date: 1-Mar-19



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.

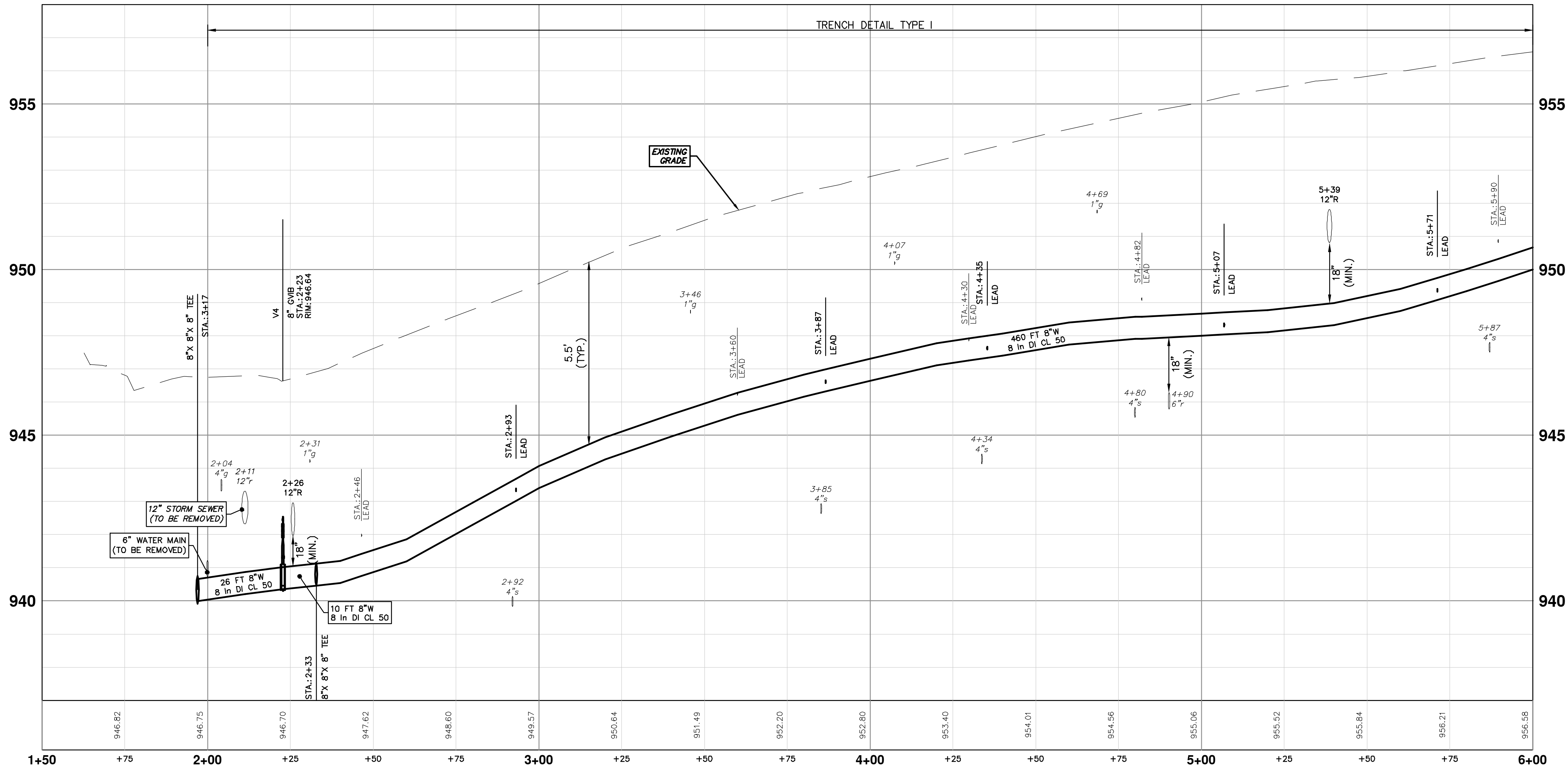
MAYWOOD AVE (60' R.O.W.)

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

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

SEE SHEET 25
STA: 6+00

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V4	8" GVB	2+23	946.64	6.28
H1	Hydrant Assembly	2+33	947.55	6.68



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Know what's below.
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DATE: 3-1-19
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CHECKED: []

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

MAYWOOD AVENUE

WATER MAIN - STA. 2+00 - STA. 6+00

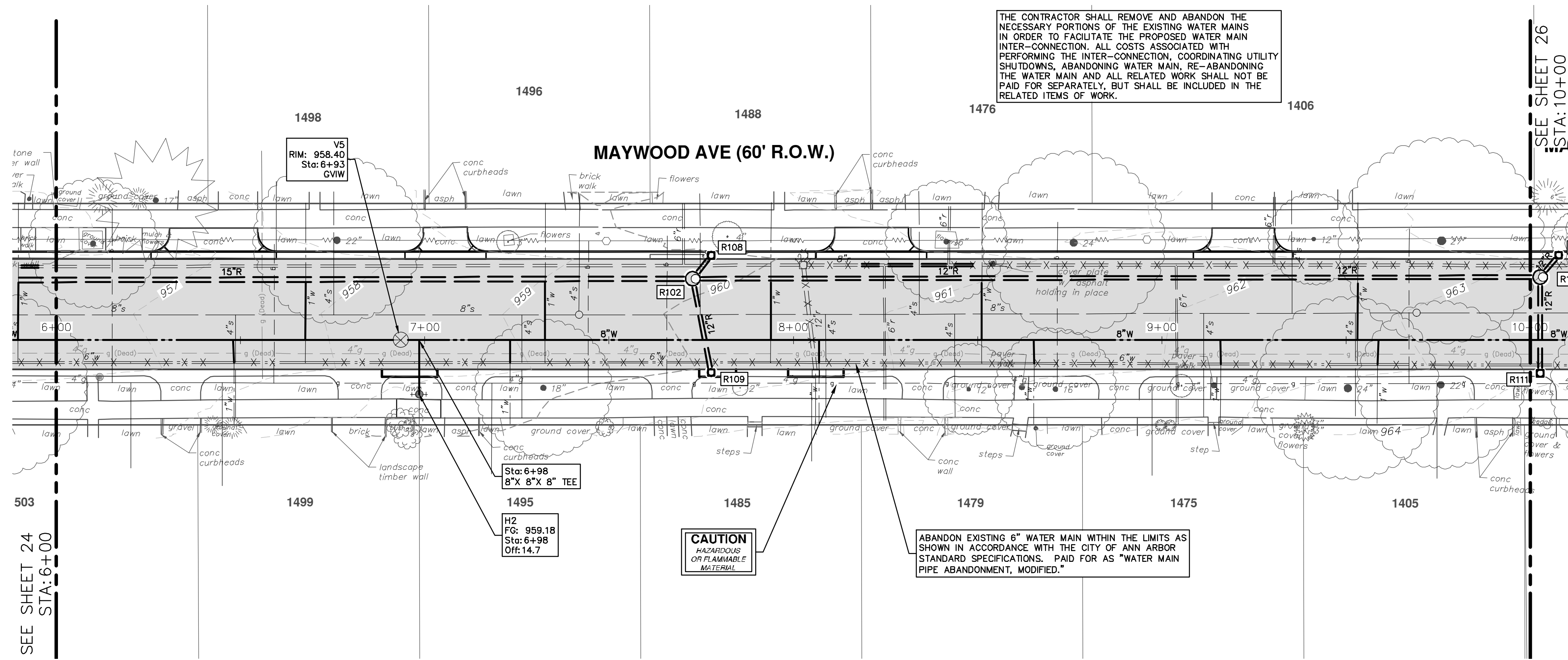
ANN ARBOR MICHIGAN

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

DRAWING No. 2018025-24

SHEET No. 24 OF 31

R:\2018025 Misc Utility 2019\Plan Production\2018025 Maywood Wtr.dwg Dwg Created: 27-Feb-19 - a2_standard bw.sb - Plot Date: 1-Mar-19



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.

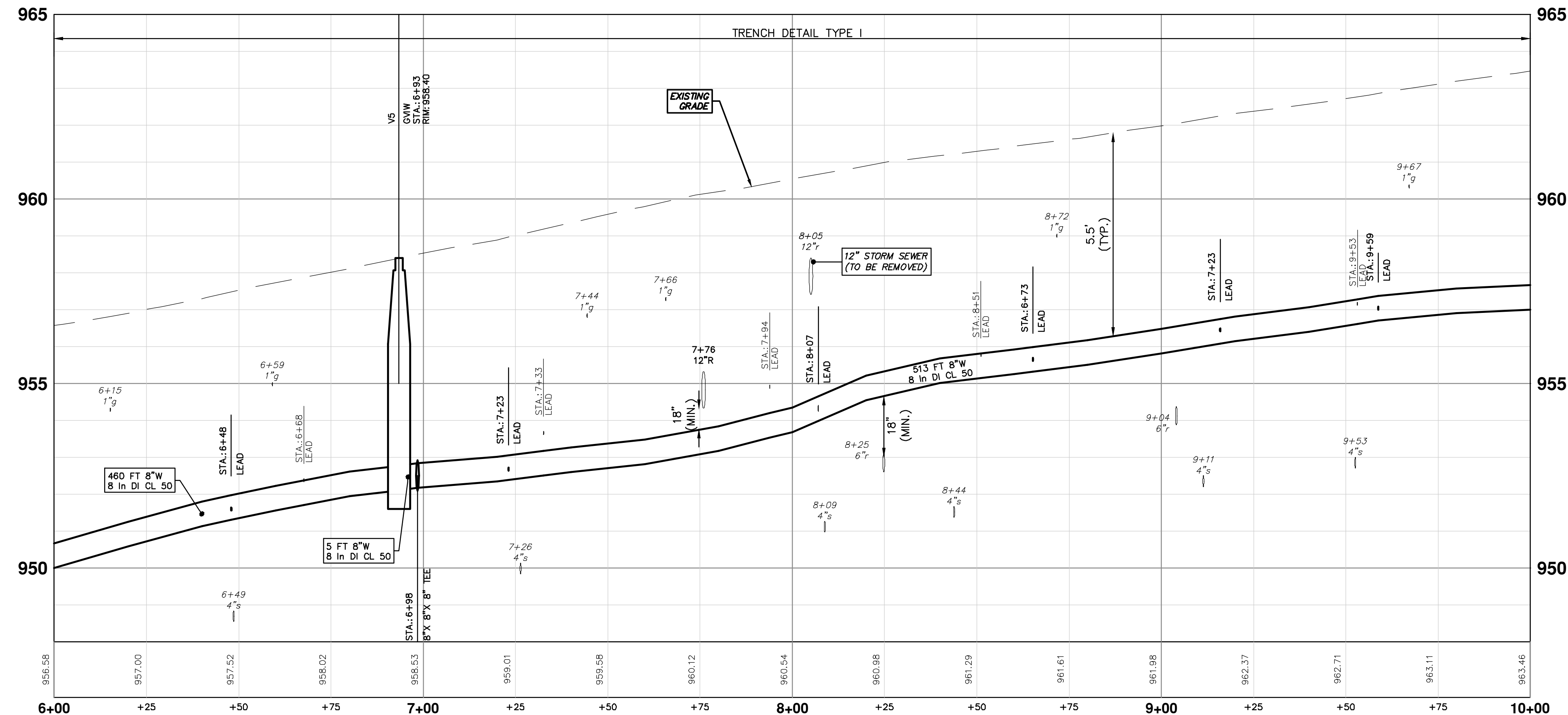
CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

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

SEE SHEET 26
STA: 10+00

SEE SHEET 24
STA: 6+00

STRUCTURE	TYPE	STATION	RIM	DEPTH
V5	GVW	6+93	958.40	6.29
H2	Hydrant Assembly	6+98	959.18	7.01



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Know what's below.
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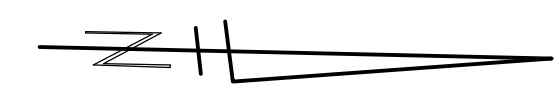
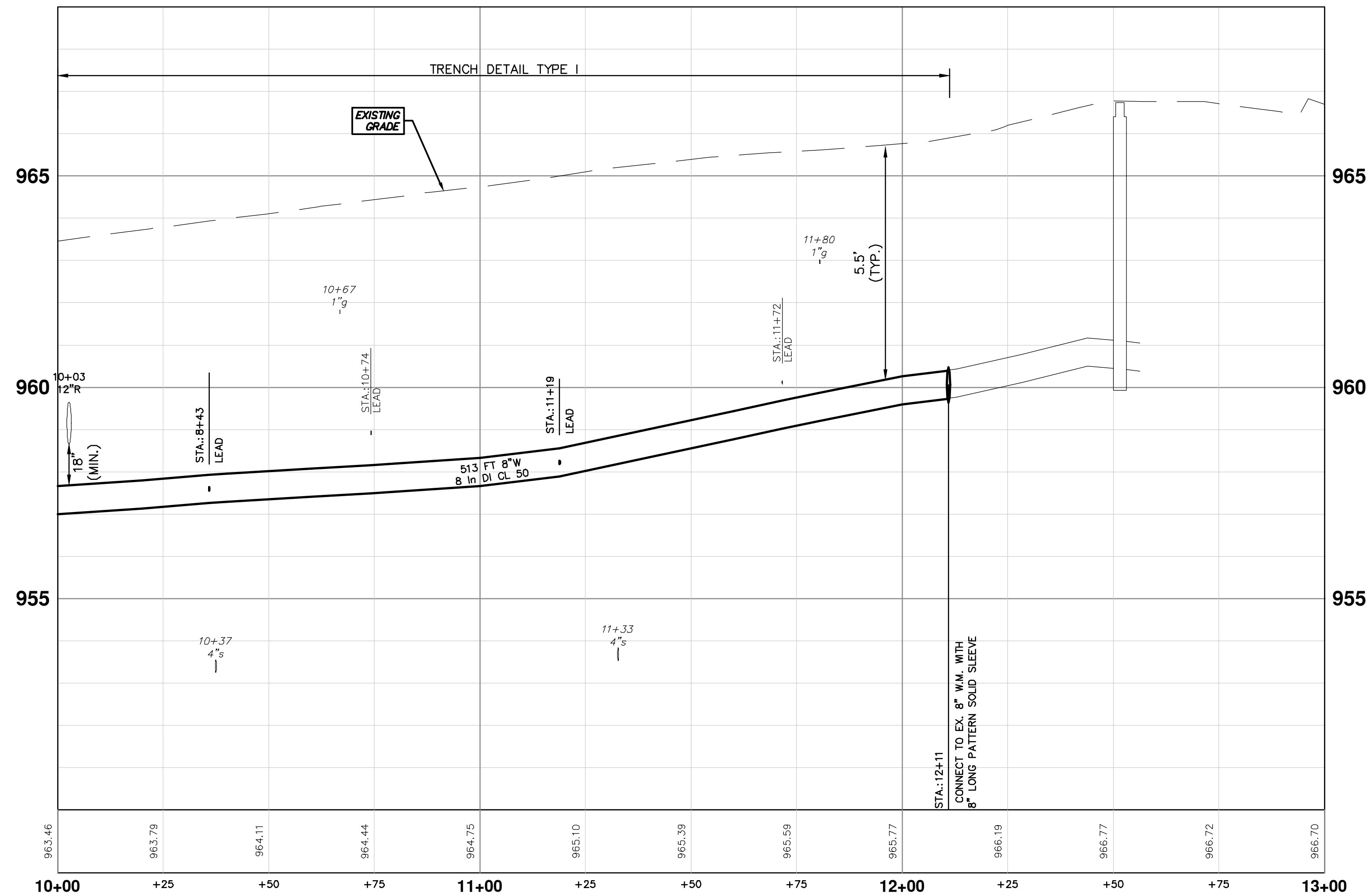
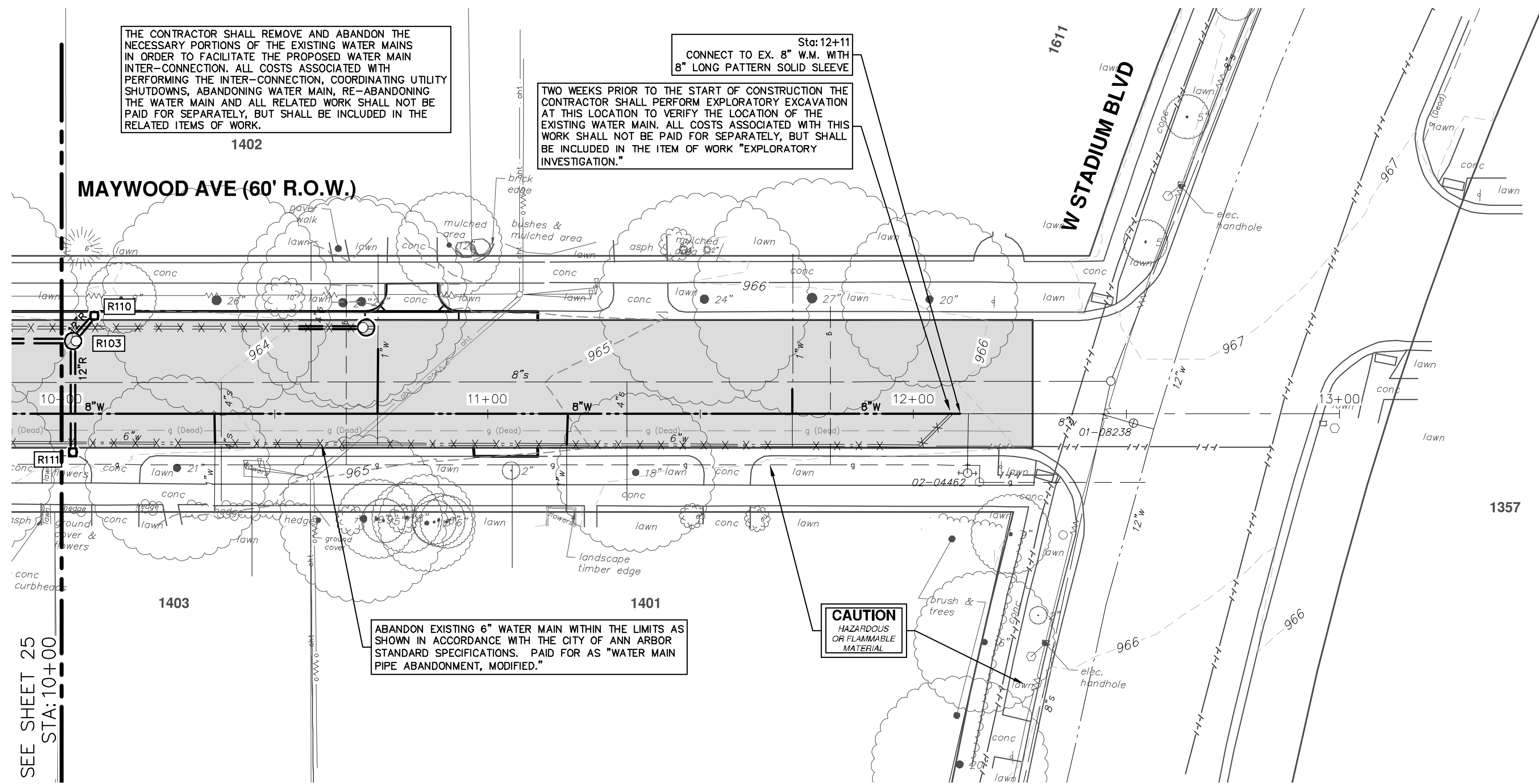
DATE: 3-1-19
DRAWN: CC/DF/AB
TH: []
CHECKED: []

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2019 MISC UTILITY PROJECTS
MAYWOOD AVENUE
WATER MAIN - STA. 6+00 - STA. 10+00

SHEET No. 25 OF 31

DRAWING No. 2018025-25
SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

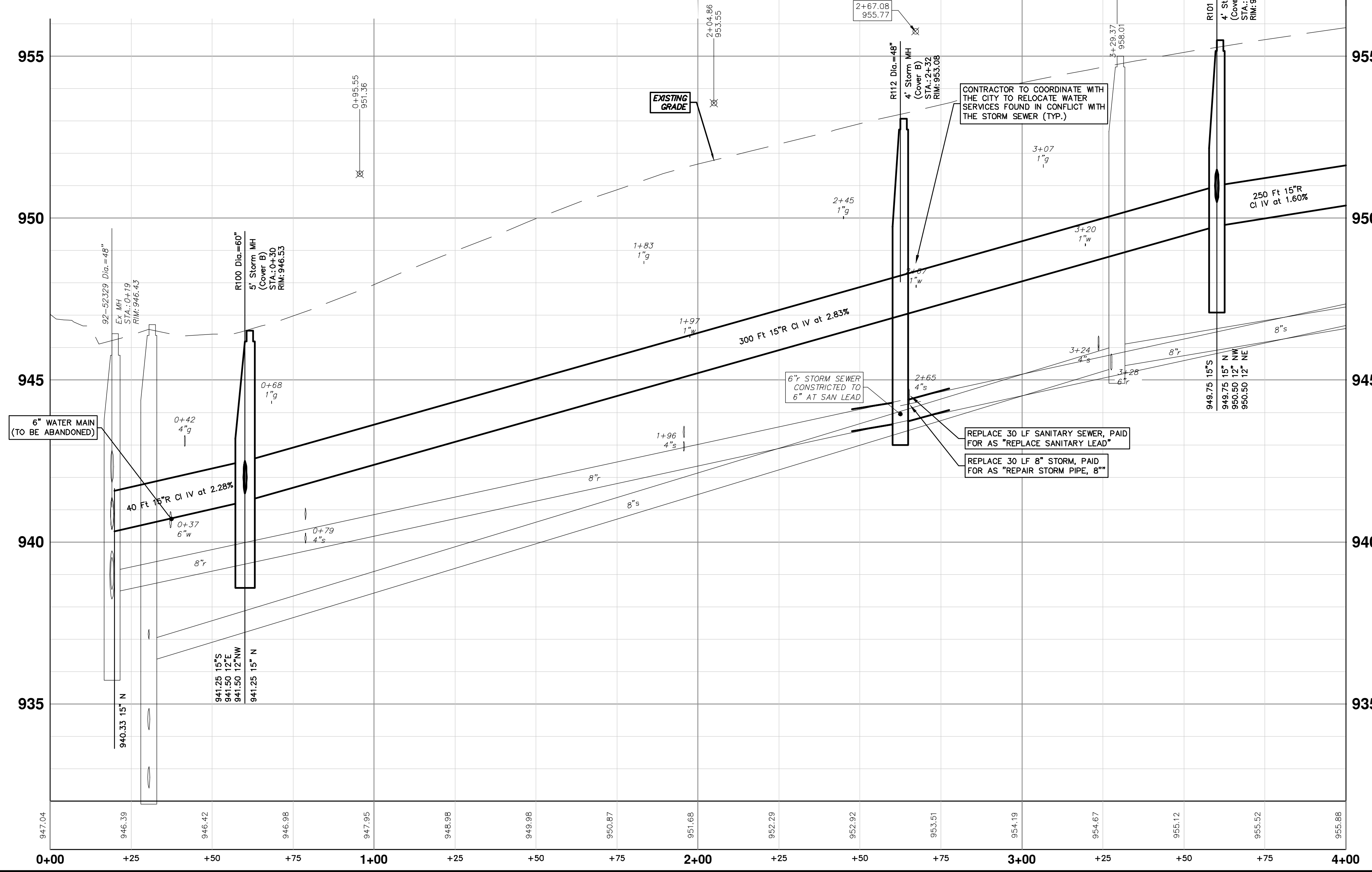
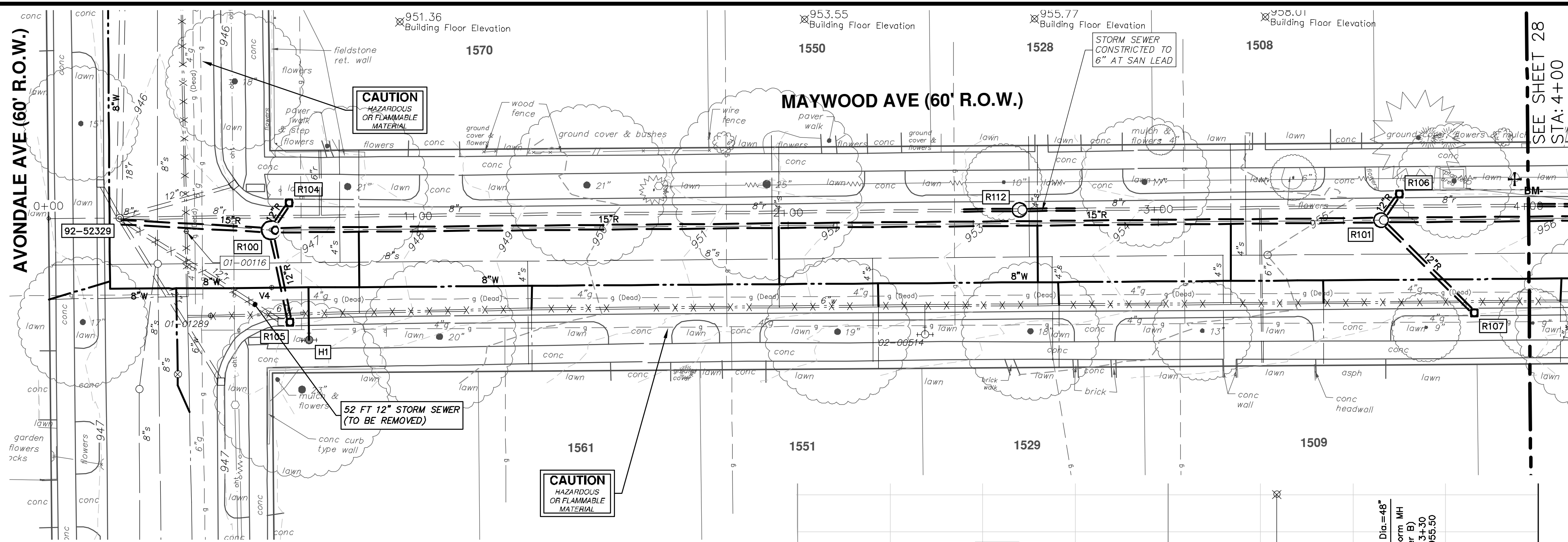
SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'

MAYWOOD AVENUE
WATER MAIN - STA. 10+00 - STA. 12+11

DRAWING No.
2018025-26

SHEET No.
26 OF 31

R:\2018025 Misc Utility 2019\Plan Production\2018025 Maywood Strm.dwg Dwg Created: 1-Mar-19 - _02 standard bw.stb - Plot Date: 1-Mar-19



STORM STRUCTURE TABLE					
STRUCTURE	UTILITY STATION	TYPE	TOP OF CASTING ELEVATION	SIZE DIRECTION INVERT ELEV.	PIPE
92-52329	0+19 0.0'	Ex MH	946.43	8"N 938.43 137 LF OF 18" @ 1.08% 12"SW 941.83 12"N 940.38 12"NE 940.38 12"NE 938.53	54 LF OF 8" AT 2.17% 11 LF OF 12" @ 0.75% 52 LF OF 12" @ 1.74% 52 LF OF 12" @ 5.51% 52 LF OF 12" @ 11.01%
Ex. MH 92-52329	-0+10 -11.0' LT	Prop. 15" Storm Tap	941.65	15"N 940.33	40 LF OF 15" @ 2.28%
R100	0+30 -8.5' LT	5' Storm MH (Cover B)	946.53	15"S 941.25 12"E 941.50 12"NW 941.50 15"N 941.25	40 LF OF 15" AT 2.28% 25 LF OF 12" AT 2.96% 9 LF OF 12" AT 5.61% 300 LF OF 15" @ 2.83%
R101	3+30 -9.1' LT	4' Storm MH (Cover B)	955.50	15"S 949.75 15"N 949.75 12"NW 950.50 12"NE 950.50	300 LF OF 15" AT 2.83% 250 LF OF 15" @ 1.60% 9 LF OF 12" @ 5.82% 36 LF OF 12" @ 1.41%
R104	0+35 -15.9' LT	2' Inlet (Cover K)	946.59	12"SE 942.00	9 LF OF 12" @ 5.61%
R105	0+35 16.3' RT	2' Inlet (Cover K)	946.74	12"W 942.25	25 LF OF 12" @ 2.96%
R106	3+35 -16.1' LT	2' Inlet (Cover K)	955.41	12"SE 950.00	9 LF OF 12" AT 5.82%
R107	3+55 16.1' RT	2' Inlet (Cover K)	955.94	12"SW 951.00	36 LF OF 12" AT 1.41%
R112	2+32 -12.6' LT	4' Storm MH (Cover B)	953.08	8"N 943.67 8"S 943.67	15 LF OF 8" AT 2.74% 15 LF OF 8" AT 1.60%

Know what's below.
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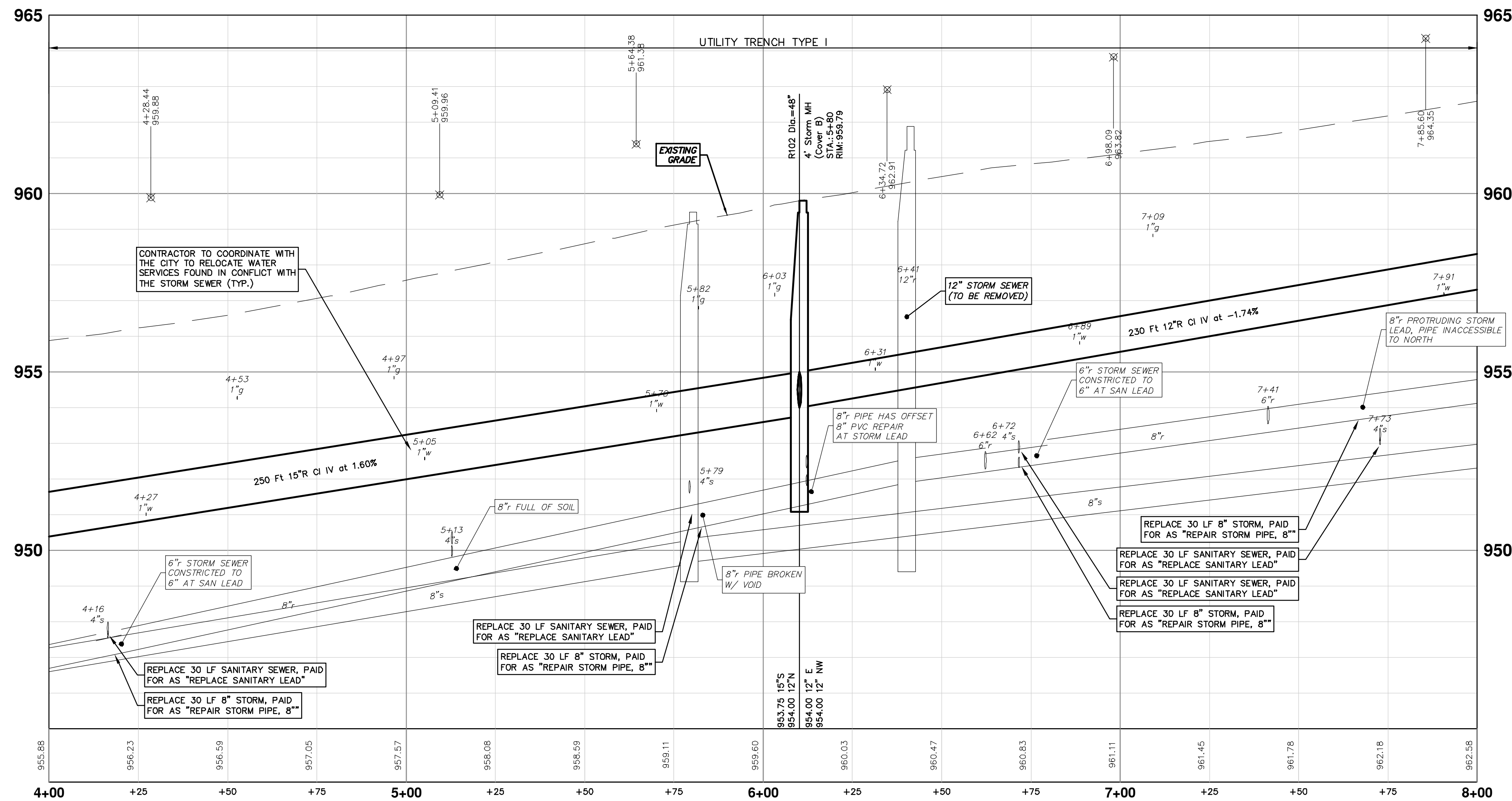
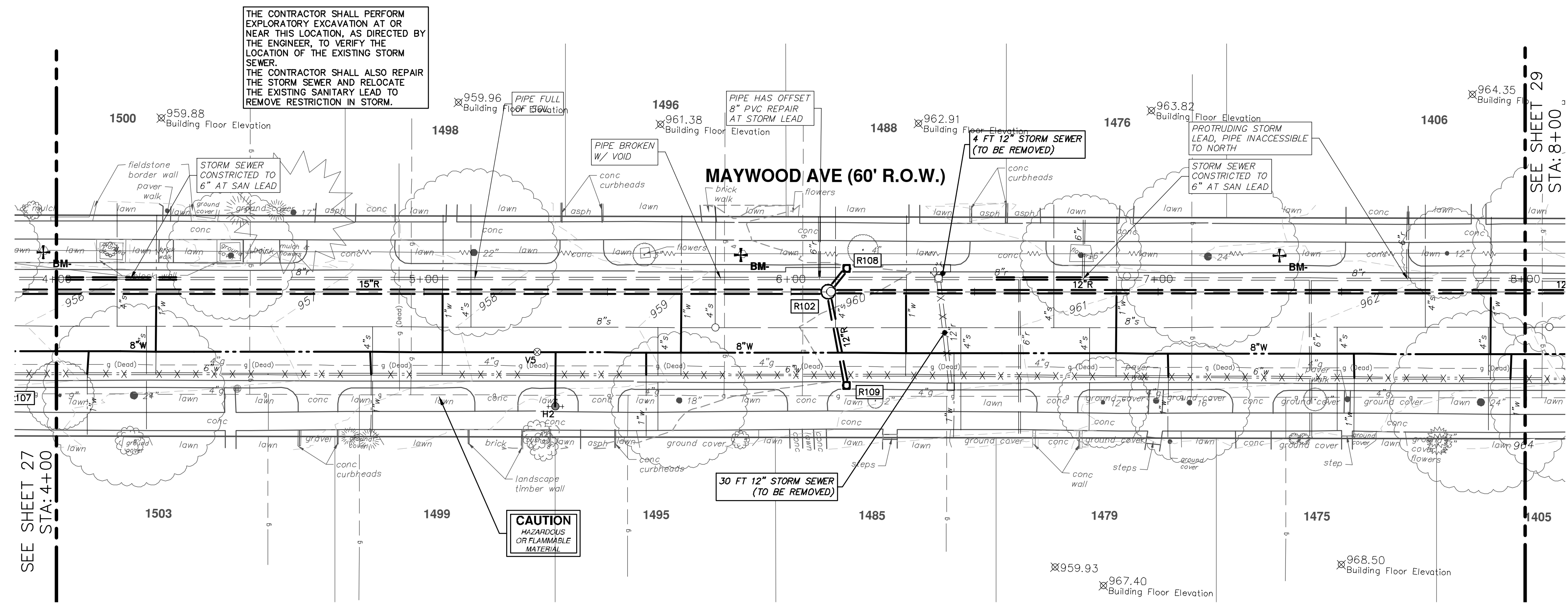
REV.	DATE	DRAWN	CHECKED	TH	CC/DF/RB	3-1-19	DESCRIPTION
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2019 MISC UTILITY PROJECTS
 MAYWOOD AVENUE
 STORM SEWER - STA. 0+00 - STA. 4+00

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

DRAWING No.
2018025-27

SHEET No.
27 OF 31



STORM STRUCTURE TABLE

STRUCTURE	UTILITY STATION	TYPE	TOP OF CASTING ELEVATION	SIZE DIRECTION INVERT ELEV.	PIPE
R102	5+80 -9.6' LT	4' Storm MH (Cover B)	959.79	15"S 953.75 12"N 954.00 12"E 954.00 12"NW 954.00	250 LF OF 15" AT 1.60% 230 LF OF 12" AT 1.74% 26 LF OF 12" @ 1.93% 8 LF OF 12" @ 6.19%
R108	5+85 -16.0' LT	2' Inlet (Cover K)	959.66	12"SE 954.50	8 LF OF 12" AT 6.19%
R109	5+85 15.8' RT	2' Inlet (Cover K)	960.27	12"W 954.50	26 LF OF 12" AT 1.93%

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PUBLIC SERVICES
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ANN ARBOR MI 48106-8647
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www.aagov.org

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2019 MISC UTILITY PROJECTS
MAYWOOD AVENUE
STORM SEWER - STA. 4+00 - STA. 8+00

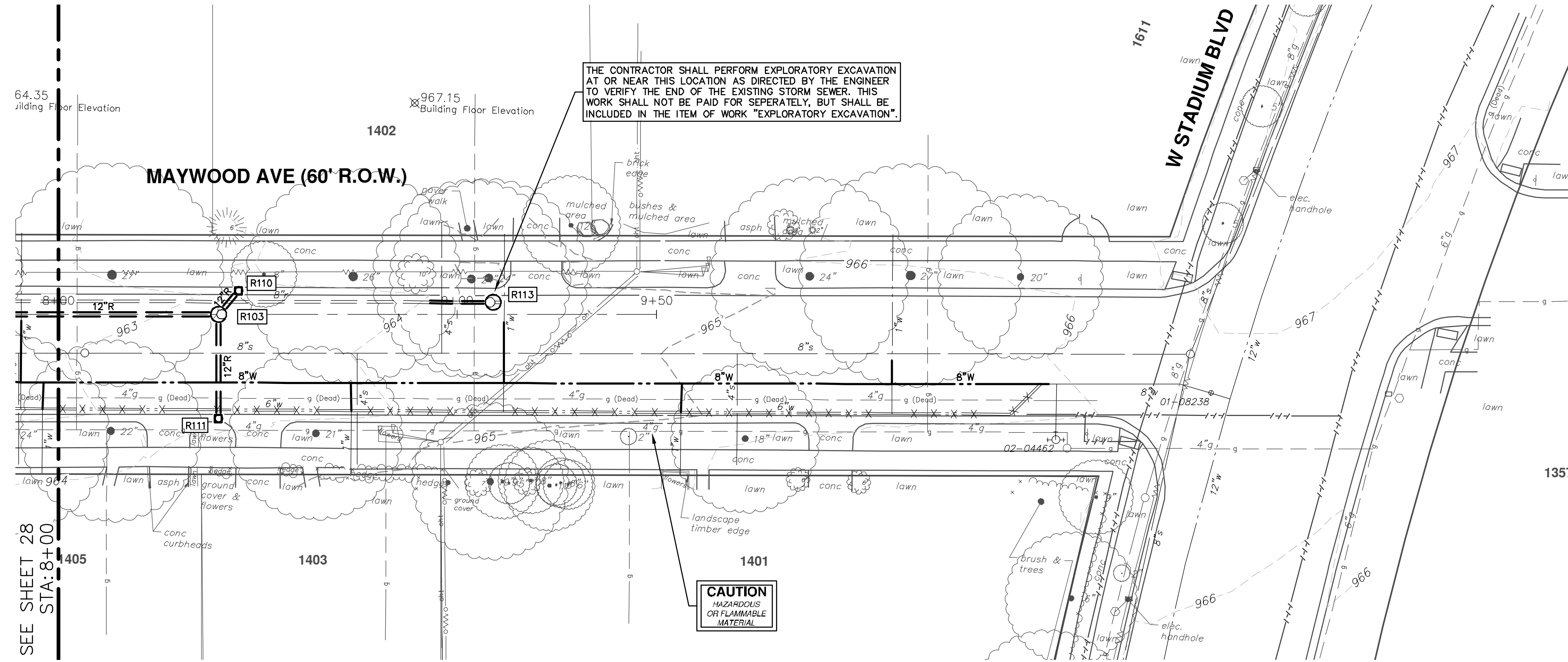
SHEET No. 28 OF 31

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2018025-28

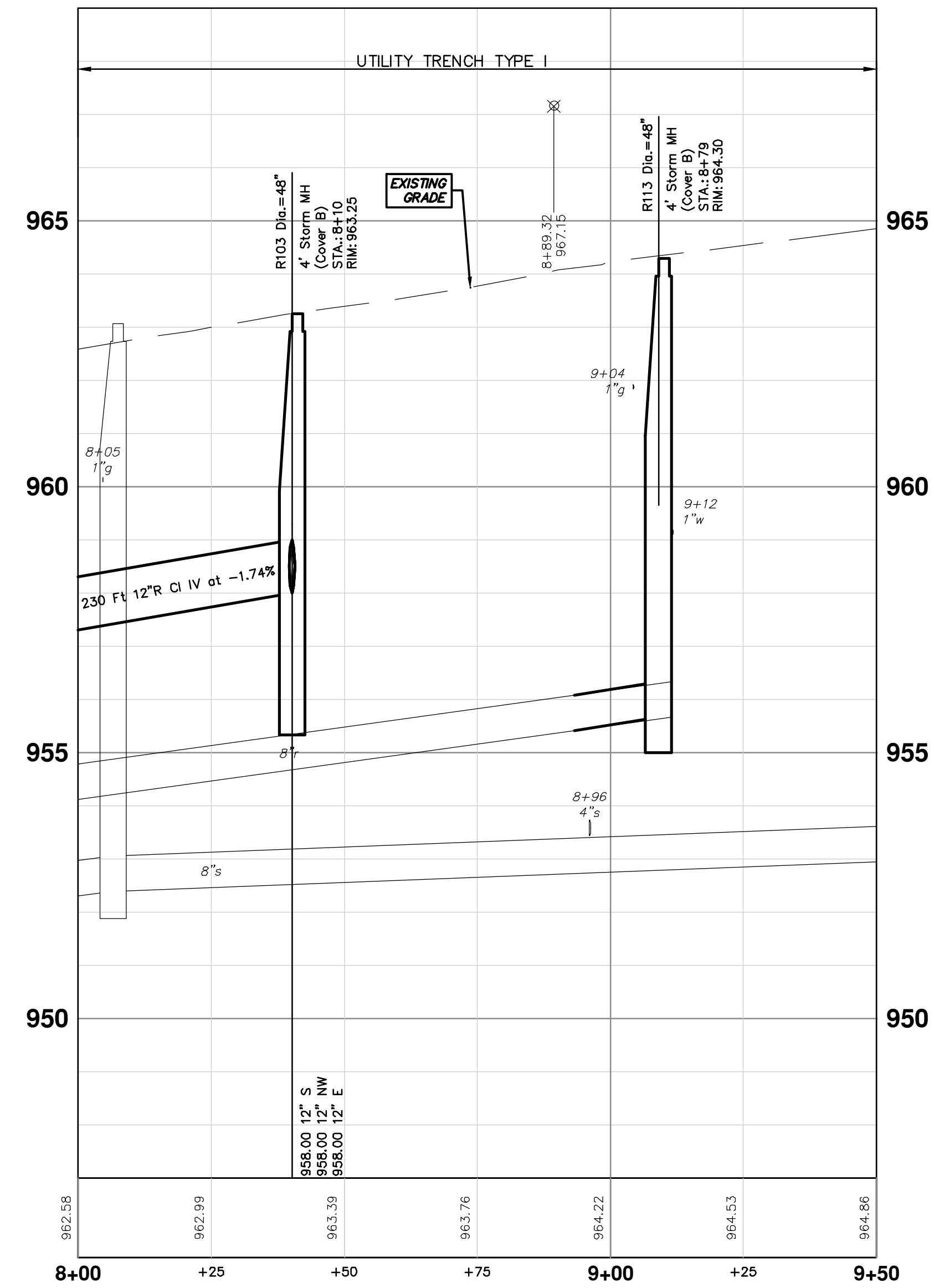
REV. DATE DRAWN CHECKED

REV.	DATE	DRAWN	CHECKED
00	3-1-19	CC/DF/KBJ	TH

R:\2018025 Misc Utility 2019\Plan Production\2018025 Maywood Storm.dwg Dwg Created: 1-Mar-19 - 02 standard bw.stb - Plot Date: 1-Mar-19



THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT OR NEAR THIS LOCATION AS DIRECTED BY THE ENGINEER TO VERIFY THE END OF THE EXISTING STORM SEWER. THIS WORK SHALL NOT BE PAID FOR SEPERATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY EXCAVATION".



STORM STRUCTURE TABLE					
STRUCTURE	UTILITY STATION	TYPE	TOP OF CASTING ELEVATION	SIZE DIRECTION INVERT ELEV.	PIPE
R103	8+10 -10.1' LT	4' Storm MH (Cover B)	963.25	12"S 958.00 12"NW 958.00 12"E 958.00	230 LF OF 12" @ 1.74% 8 LF OF 12" @ 3.23% 26 LF OF 12" @ 3.83%
R110	8+15 -16.0' LT	2' Inlet (Cover K)	963.34	12"SE 958.25	8 LF OF 12" AT 3.23%
R111	8+10 16.0' RT	2' Inlet (Cover K)	963.70	12"W 959.00	26 LF OF 12" AT 3.83%
R113	8+79 -13.2' LT	4' Storm MH (Cover B)	964.30	8"S 955.66	16 LF OF 8" AT 1.61%

Know what's below.
Call Before you dig.

REV.	DATE	DESCRIPTION	TH	CHECKED
00	3-1-19	OUT FOR BID	CC/DF/KB	TH

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

MAYWOOD AVENUE

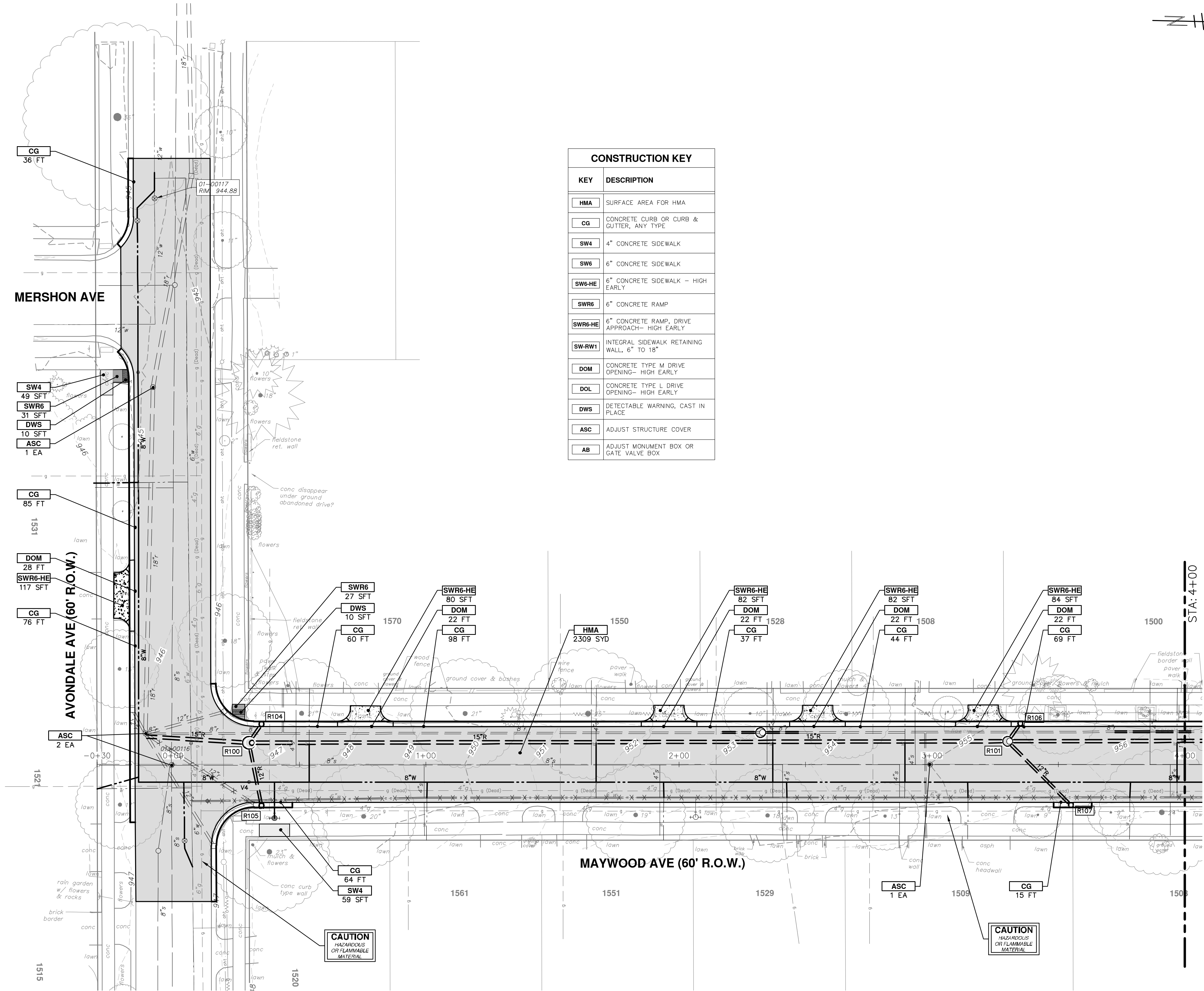
STORM SEWER - STA. 8+00 - STA. 9+04

SHEET No. **29 OF 31**

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

DRAWING No. **2018025-29**

R: \2018025 Misc Utility 2019\Plan Production\2018025 Maywood Prd.dwg Dwg Created: 27-Feb-19 - _c2 standard bw.stb - Plot Date: 1-Mar-19



KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY
DOL	CONCRETE TYPE L DRIVE OPENING- HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2019 MISC UTILITY PROJECTS

MAYWOOD AVENUE

ROAD - STA. 0+00 - 8+00

811
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CITY OF ANN ARBOR

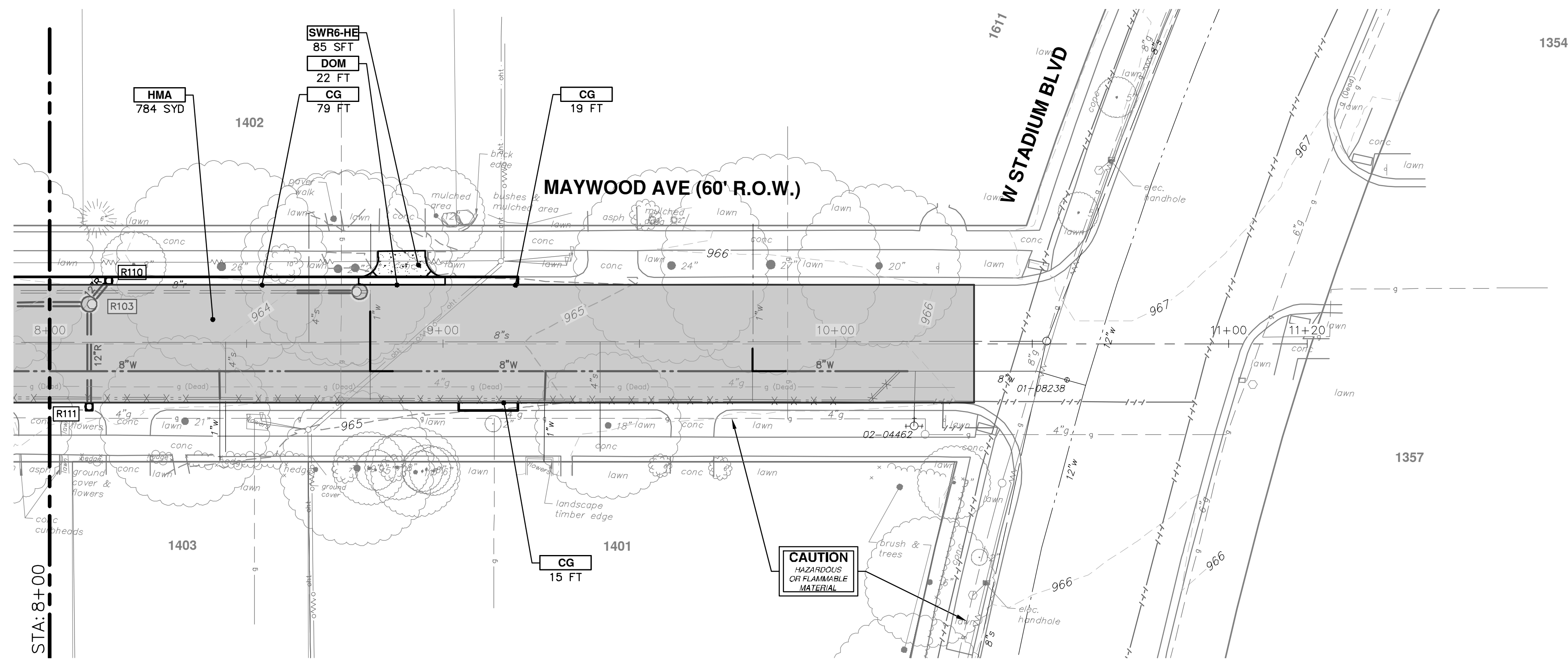
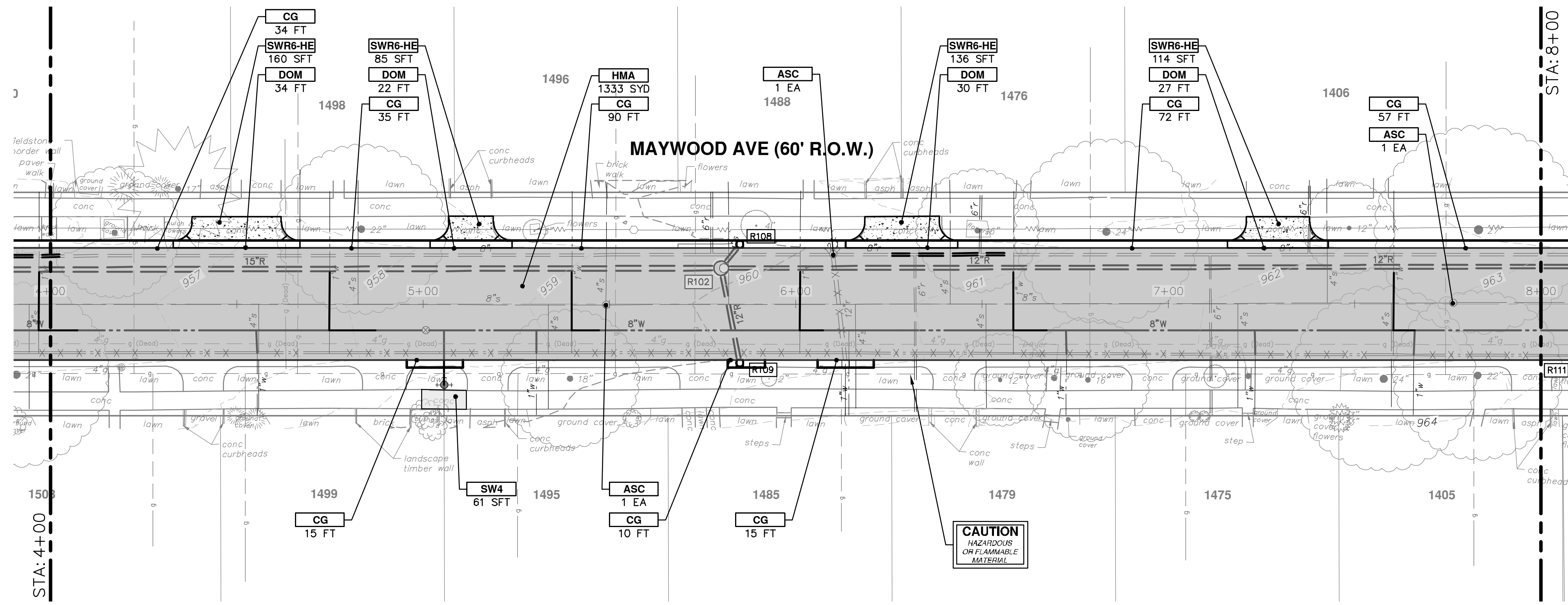
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00	3-1-19	DATE	CC/DF/KB	TH
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SHEET No. **30 OF 31**

SCALE: 1" = 20'

DRAWING No. **2018025-30**

R: \2018025 Misc Utility 2019\Plan Production\2018025 Maywood Prd.dwg Dwg Created: 27-Feb-19 - _o2_standard.bw.stb - Plot Date: 1-Mar-19



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY
DOL	CONCRETE TYPE L DRIVE OPENING- HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX



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PUBLIC SERVICES
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
2019 MISC UTILITY PROJECTS
MAYWOOD AVENUE
ROAD - STA. 8+00 - P.O.E.

SCALE: 1" = 20'
DRAWING No.
2018025-31