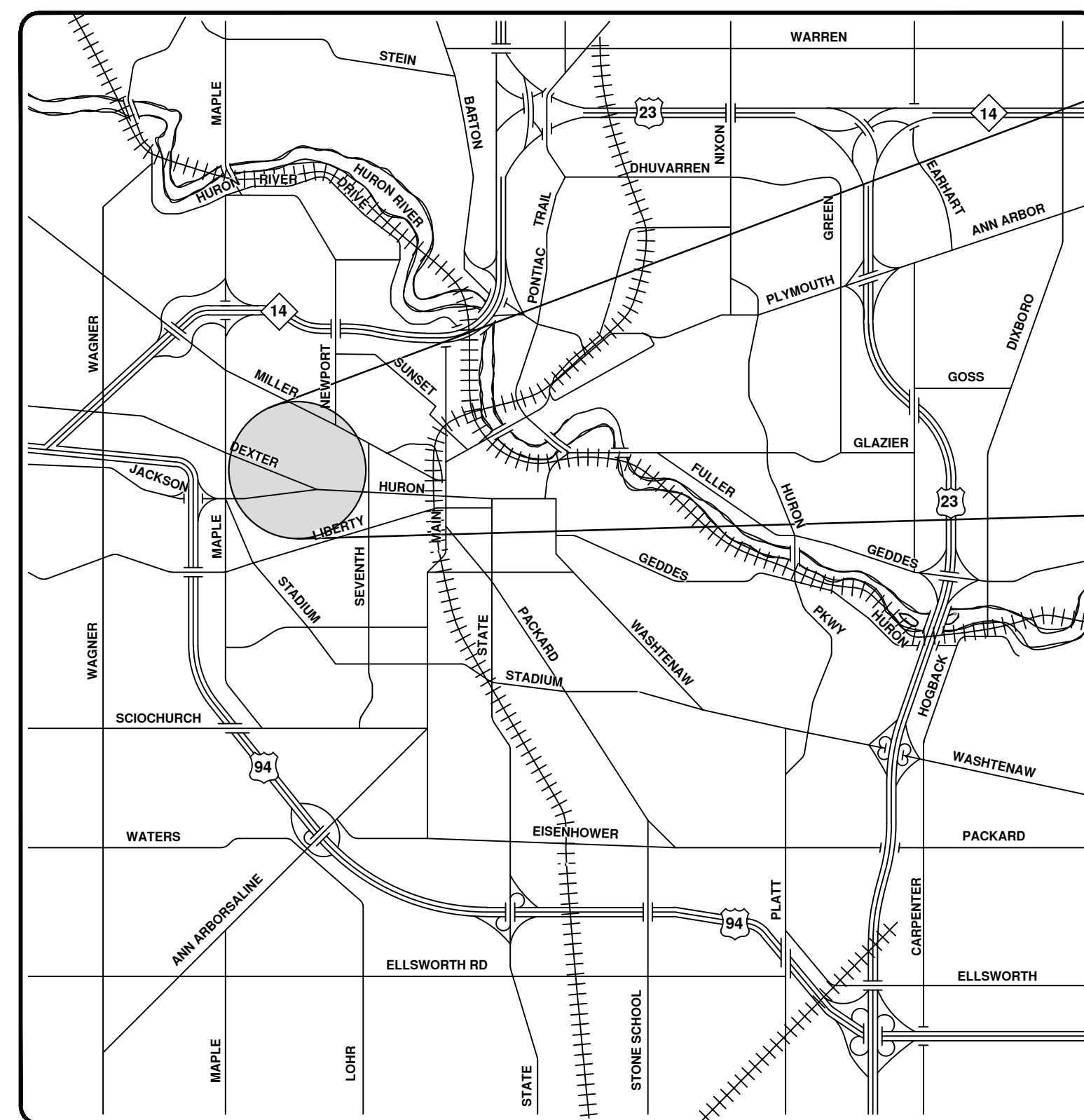
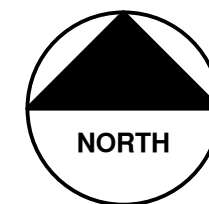




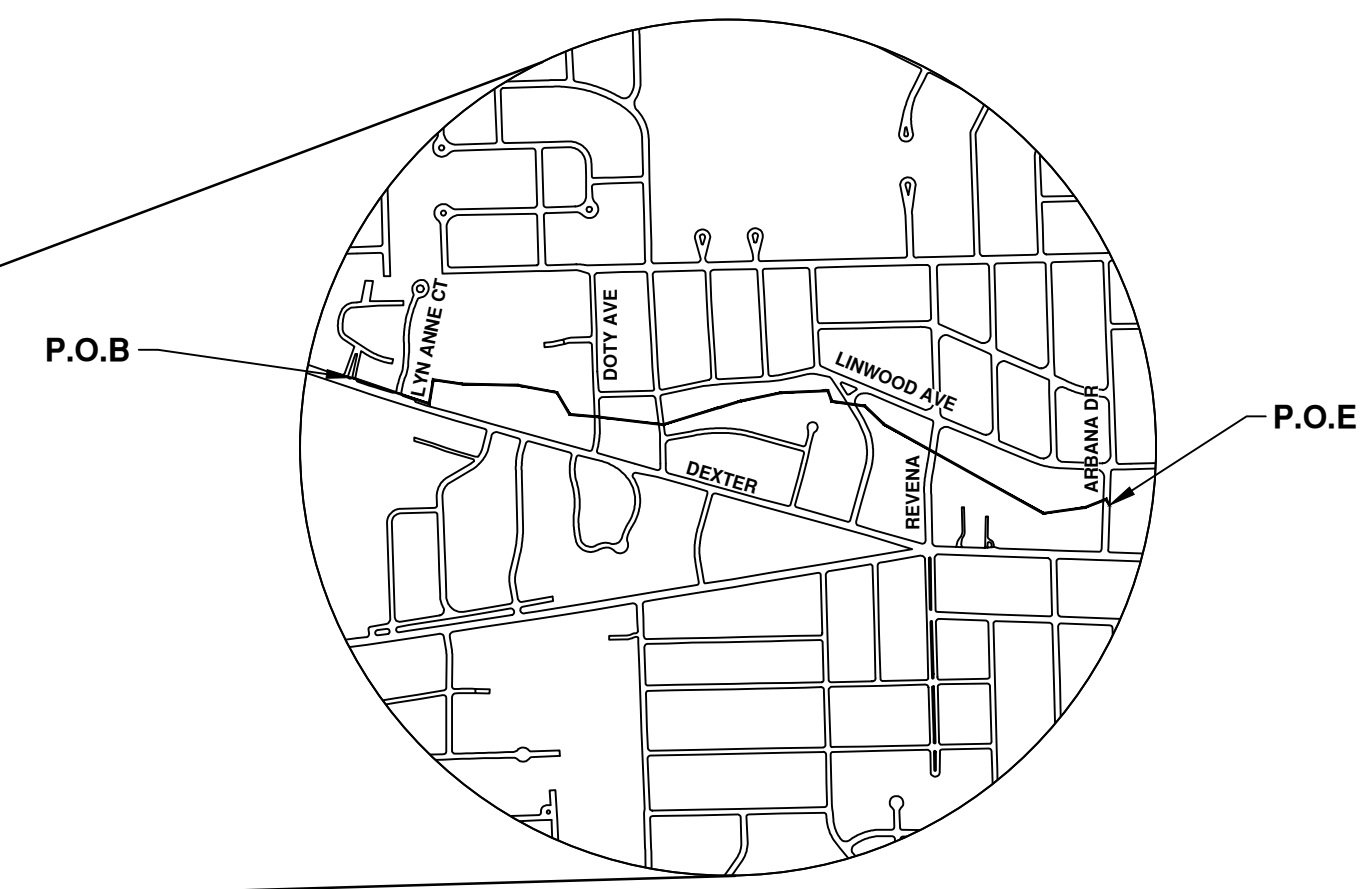
# CITY OF ANN ARBOR ENGINEERING

## HURON-WEST PARK SANITARY SEWER REPLACEMENT PHASE 2 & 3

BID No. 4654, FILE No. 2019-024



VICINITY MAP



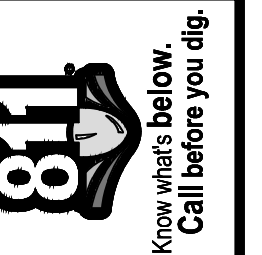
Sheet Number	Sheet Title
<b>GENERAL</b>	
1	COVER SHEET
2	STANDARD PROJECT NOTES
3	LEGEND
<b>TYPICAL ROAD SECTIONS</b>	
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5	DOTY AVE. & WESTWOOD AVE.
6	N. REVENA BLVD. & ARBANA DR.
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8	MISCELLANEOUS DETAILS I
9	MISCELLANEOUS DETAILS II
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10	OVERALL SANITARY SEWER PLAN
<b>TRAFFIC CONTROL</b>	
11	OVERALL TRAFFIC CONTROL PLAN
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19	STA. 5+00 TO STA. 10+00
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21	STA. 15+00 TO STA. 20+00
22	STA. 20+00 TO STA. 25+00
23	STA. 25+00 TO STA. 30+00
24	STA. 30+00 TO STA. 35+00
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26	STA. 40+00 TO STA. 43+83
27	EXISTING TREE TABLE I
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29	STA. 0+00 TO STA. 5+00
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38	SANITARY SEWER CONNECTIONS
39	HYDRANT INSTALLATION PLAN
40	EXISTING STRUCTURE SCHEDULES

**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.



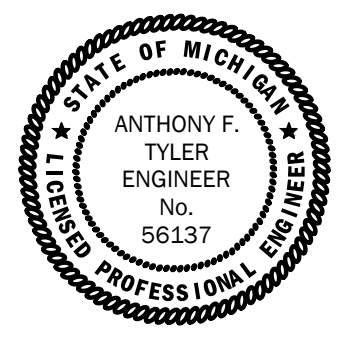
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
3	BID SET PLAN	03/16/2021	BWA	C/E
4	RE-BID SET PLAN	11/16/2023	BWA	AFT

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-8647  
www.a3gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
COVER SHEET  
SCALE  
DRAWING No. 2019-024  
SHEET No. 1 OF 40

PREPARED UNDER THE SUPERVISION OF  
*Anthony F. Tyler*  
ANTHONY F. TYLER, P.E. - MI LICENSE No. 56137  
PROJECT MANAGER  
11/16/2023  
DATE





V:\2075\active\2075151700\civil\design\drawing\151700\_G--002.dwg 1 \_a2 standard bw.stb - Plot Date: 11/16/2023 8:06:19 AM

**CONSTRUCTION NOTES:**

- Driveways and entrances to buildings, real property, and the like shall not be blocked except for short durations and only when approved by the Engineer. Vehicular and pedestrian access shall be maintained at all times. It shall be the Contractor's responsibility to coordinate all necessary driveway closures with the property owner(s) and resident(s) in the areas of construction.
- 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. PART 41 SANITARY SEWER CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY
DRAIN USE PERMIT	WASHTENAW COUNTY WATER RESOURCES COMMISSIONER

**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	BASEL DJAZNATI (248) 825-4636
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	RAFAEL J. RAMIREZ-INCIARTE (313) 597-4411
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	BRANDON R. FARON (734) 397-4017


**PROJECT NAME BENCHMARKS**

BM #	ELEV	DESCRIPTION
2	907.61	BENCHTIE IN SOUTH FACE OF POWER POLE EAST OF MAPLE RIDGE APARTMENTS
3	905.89	BENCHTIE ON EAST SIDE OF POWER POLE AT NW CORNER OF DOTY & DEXTER
4	901.94	BENCHTIE ON SW FACE OF POWER POLE ON WEST SIDE OF DOTY
5	893.42	BENCHTIE IN SE FACE OF POWER POLE OPPOSITE PARK ON W SIDE OF WESTWOOD
6	896.92	BENCHTIE IN EAST FACE OF POWER POLE S SIDE OF LINWOOD @ E END OF PARK
7	877.89	BENCHTIE ON S SIDE OF POWER POLE ON S SIDE OF LINWOOD & E OF WILDWOOD AVE
8	874.54	METAL SPIKE ON SE FACE OF POWER POLE @ SW CORNER OF LINWOOD AND N REVENA
9	857.86	BENCHTIE ON NW FACE OF POWER POLE SE CORNER OF LINWOOD & ARBANA
10	848.33	BENCHTIE ON W FACE OF POWER POLE NE OF SALVATION ARMY DRIVE & LINWOOD




Know what's below.  
Call before you dig.

	AFT	C/E	C/E	C/E	C/E	CHECKED
11/16/2023	BWA	BWA	BWA	BWA	BWA	DRAWN
03/16/2021	BWA	BWA	BWA	BWA	BWA	DATE
09/17/2020	BWA	BWA	BWA	BWA	BWA	DATE
06/15/2020	BWA	BWA	BWA	BWA	BWA	DATE



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 GENERAL  
 STANDARD PROJECT NOTES

SCALE: NTS



DRAWING No. 2019-024-2

SHEET No. 2 OF 40

**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 BREAST HEIGHT (INCHES) X 10
- TREE TO REMAIN & PROTECT (CONIFEROUS)  
CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREAST 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 EASEMENT
- 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.

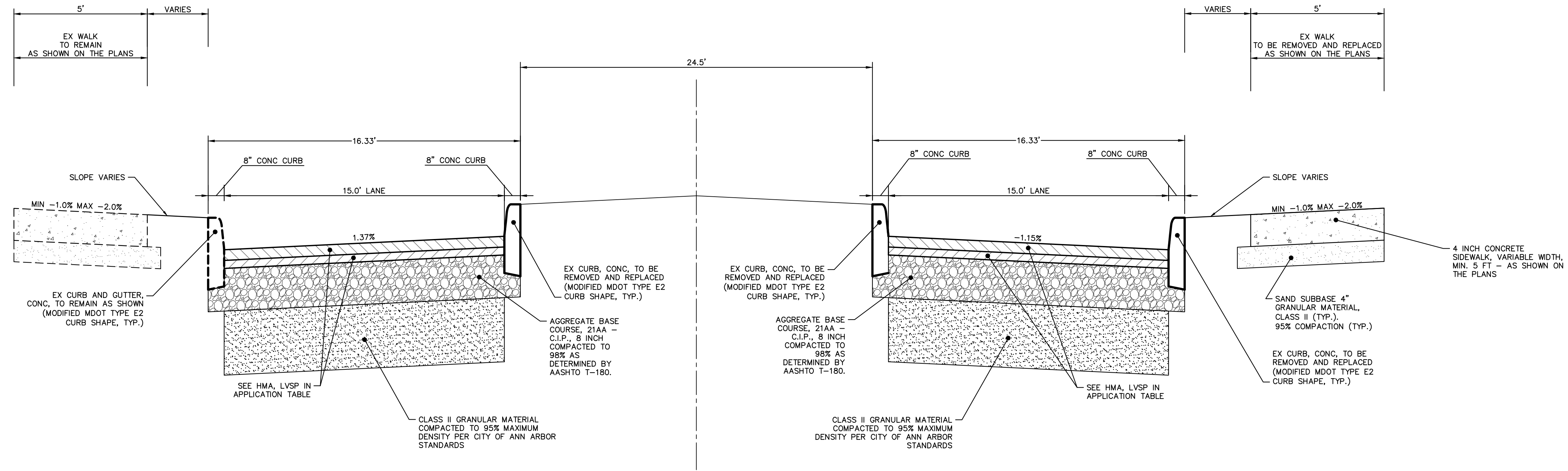
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3	03/16/2021	BWA	C/E
2	09/17/2020	BWA	C/E
1	06/15/2020	BWA	C/E

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 GENERAL LEGEND

SCALE: NTS	
DRAWING No.	2019-024-3
SHEET No.	3 OF 40



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**MAPLE RIDGE APARTMENTS  
ENTRANCE TYPICAL SECTION  
(LOOKING NORTH)**

N.T.S.

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



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E

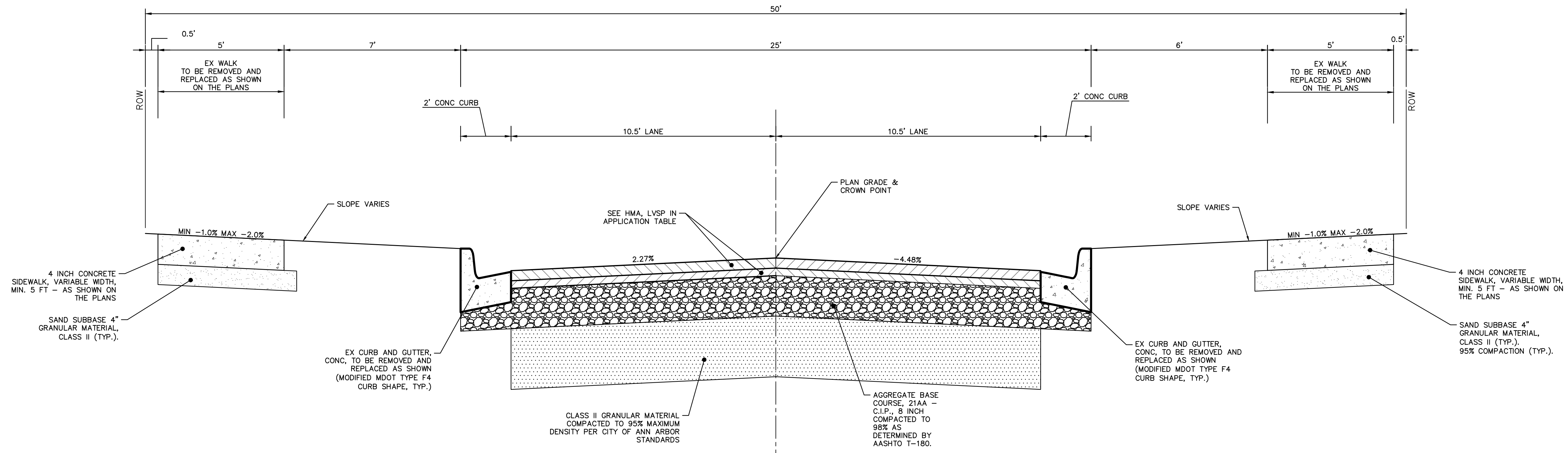
CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106  
734-764-6410  
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
TYPICAL ROAD SECTIONS  
MAPLE RIDGE APARTMENTS ENTRANCE

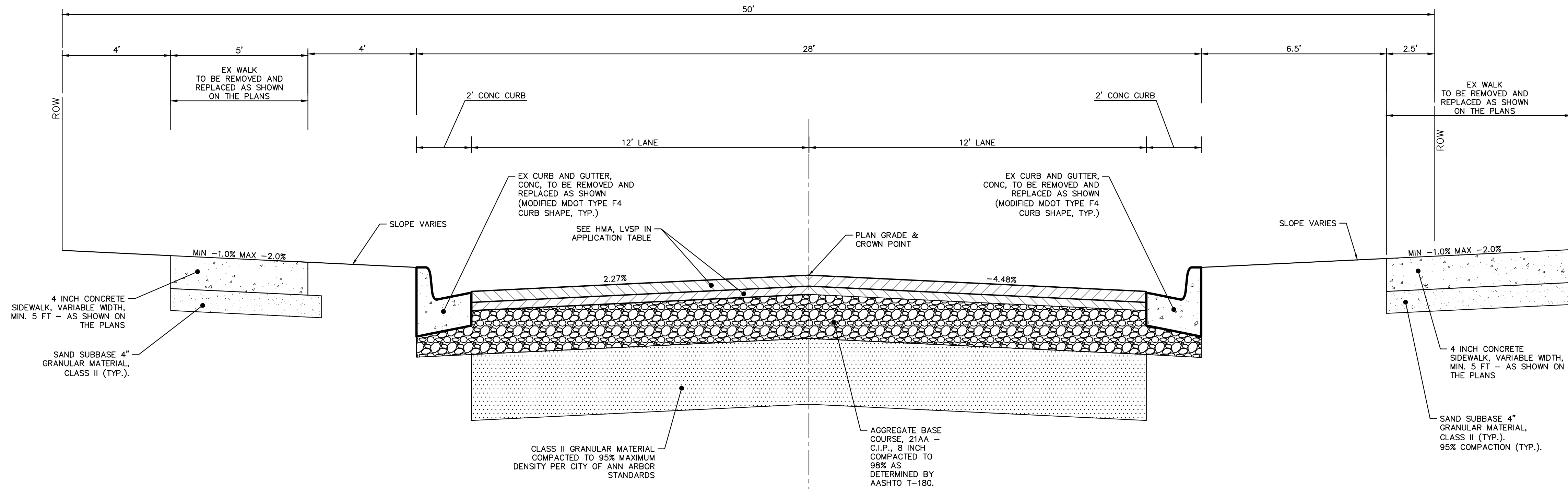


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**DOTY AVE  
TYPICAL SECTION  
(LOOKING NORTH)**  
N.T.S.

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



**WESTWOOD AVE  
TYPICAL SECTION  
(LOOKING NORTH)**  
N.T.S.



Know what's below.  
Call Before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E

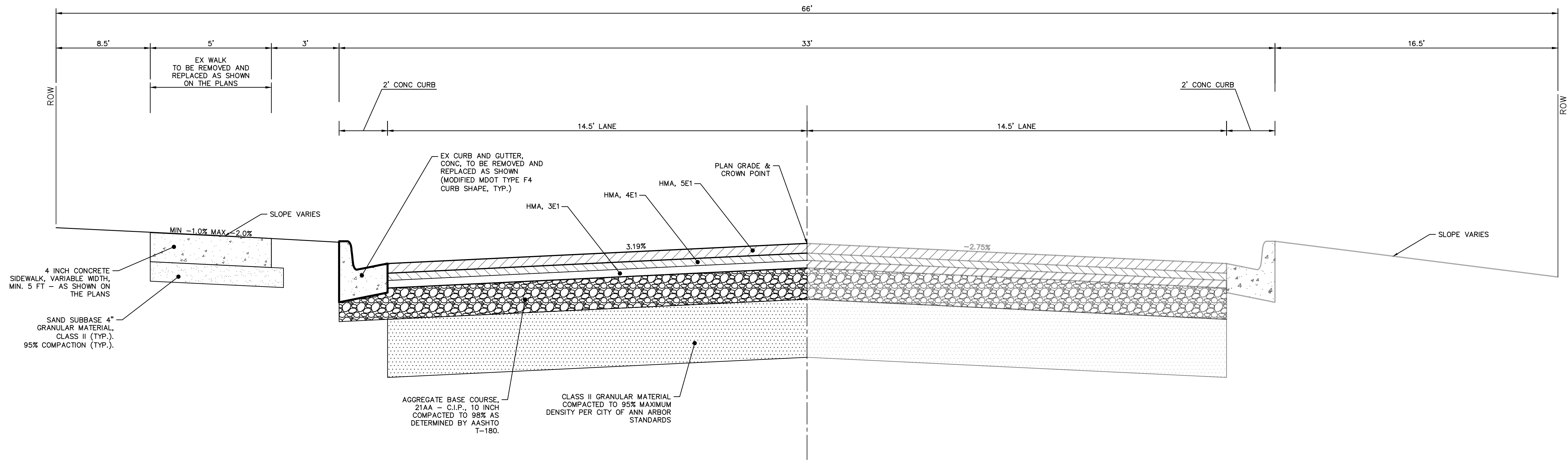
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PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106  
734-764-6410  
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
TYPICAL ROAD SECTIONS  
DOTY AVE. & WESTWOOD AVE.

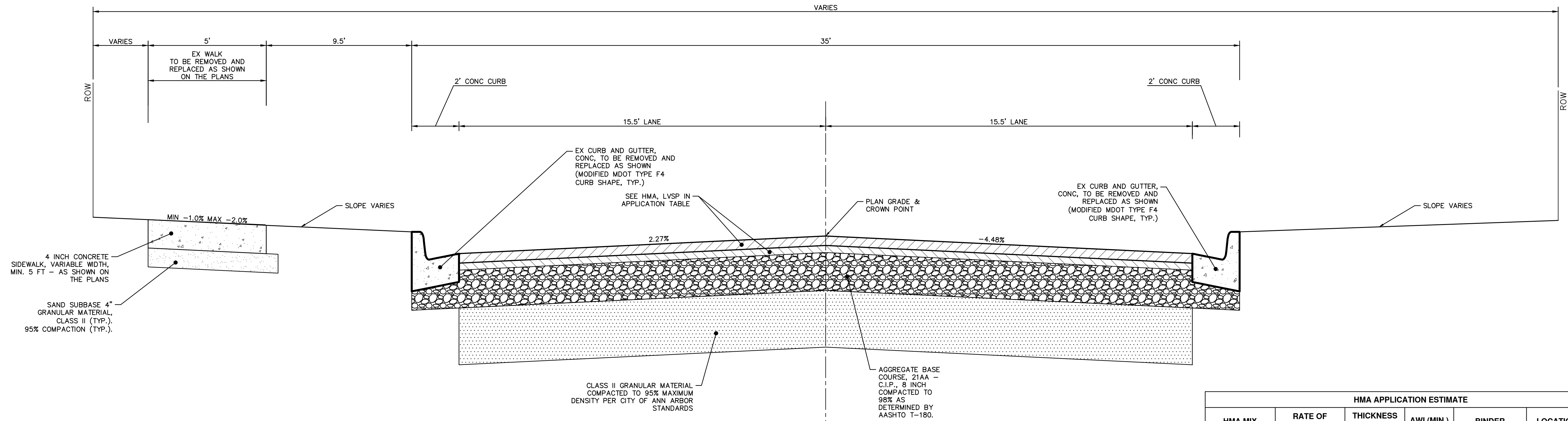
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**DEXTER AVE  
TYPICAL SECTION  
(LOOKING EAST)**  
N.T.S.

HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
HMA, 5E1	220 LB/SYD	2	260 (TOP)	PG 64-28	TOP COURSE
HMA, 4E1	220 LB/SYD	2	-	PG 64-28	LEVELING COURSE
HMA, 3E1	330 LB/SYD	3	-	PG 64-28	BASE COURSE
Bond Coat SS-1h	0.05 - 0.15 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



**ARBANA DR  
TYPICAL SECTION  
(LOOKING NORTH)**  
N.T.S.

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



Know what's below.  
Call Before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106  
734-784-6410  
www.a2gov.org



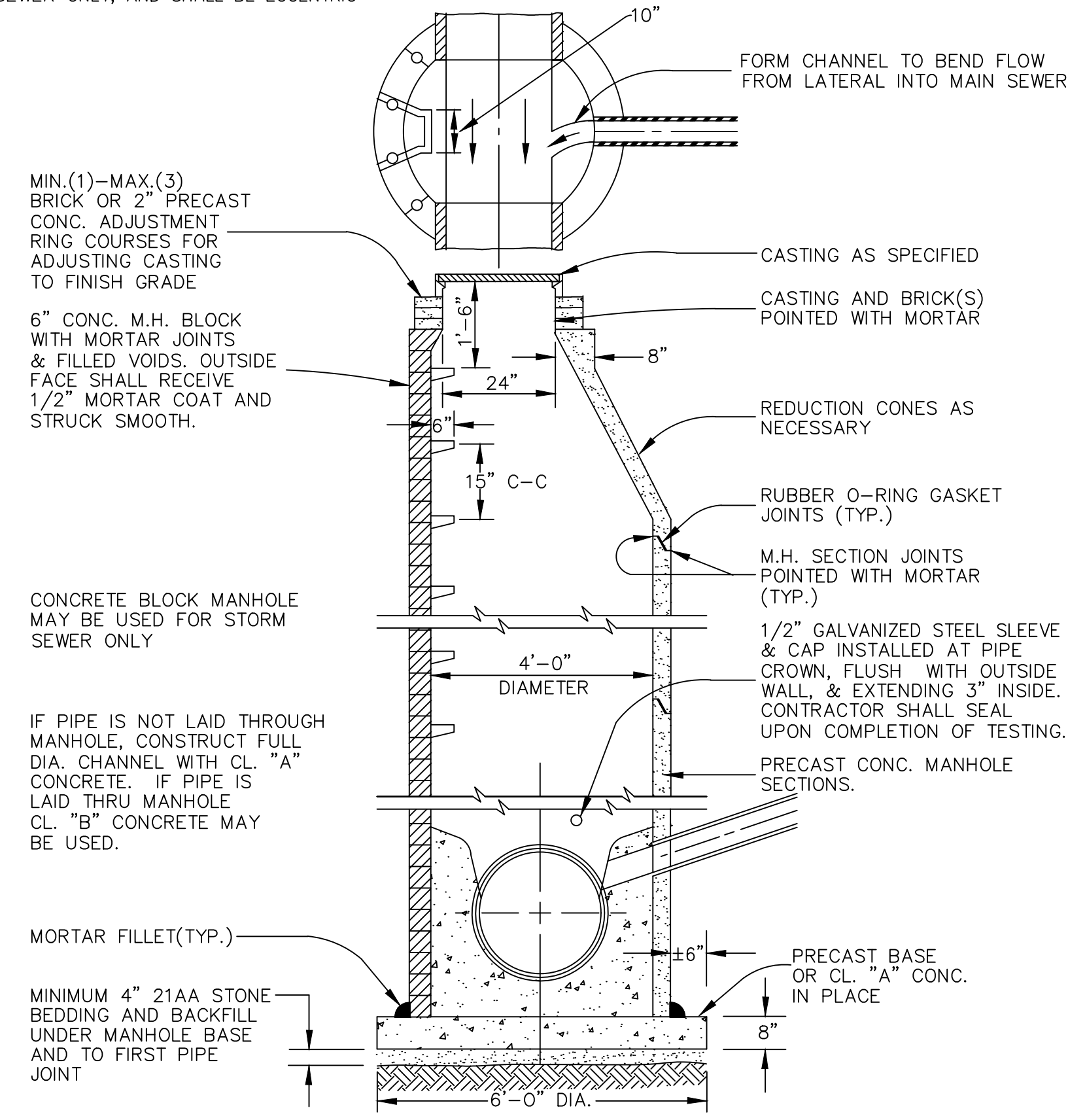
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
TYPICAL ROAD SECTIONS  
N. REVENA BLVD. & ARBANA DR.

SCALE: NTS  
DRAWING No. 2019-024-6  
SHEET No. 6 OF 40



NOTE:

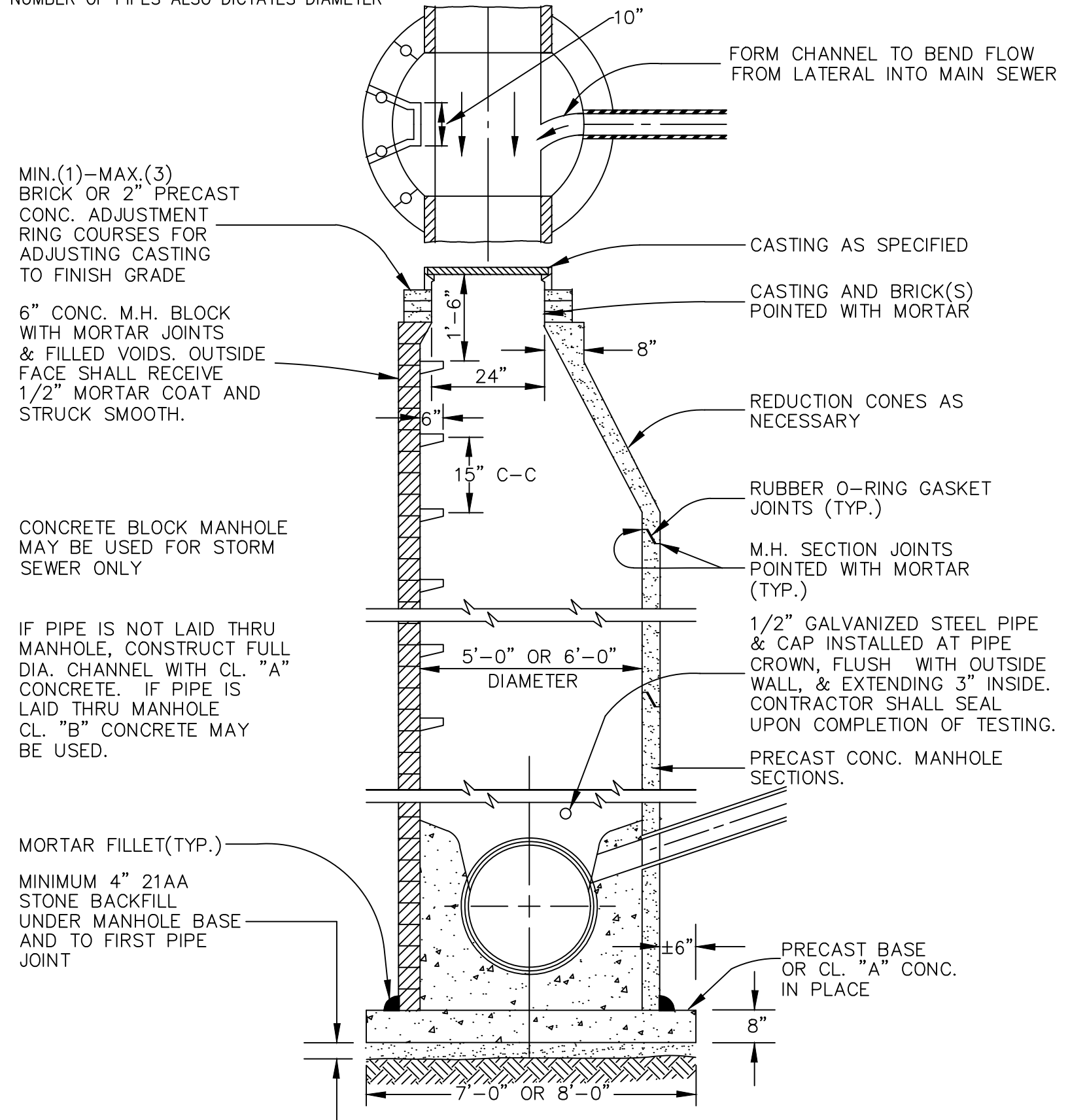
1. ALL SANITARY MANHOLES SHALL BE PRECAST CONC.
2. ALL MANHOLES MUST HAVE ECCENTRIC CONES—BOTH STORM AND SANITARY
3. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
4. CONCRETE BLOCK MANHOLE MAY BE USED FOR STORM SEWER ONLY, AND SHALL BE ECCENTRIC



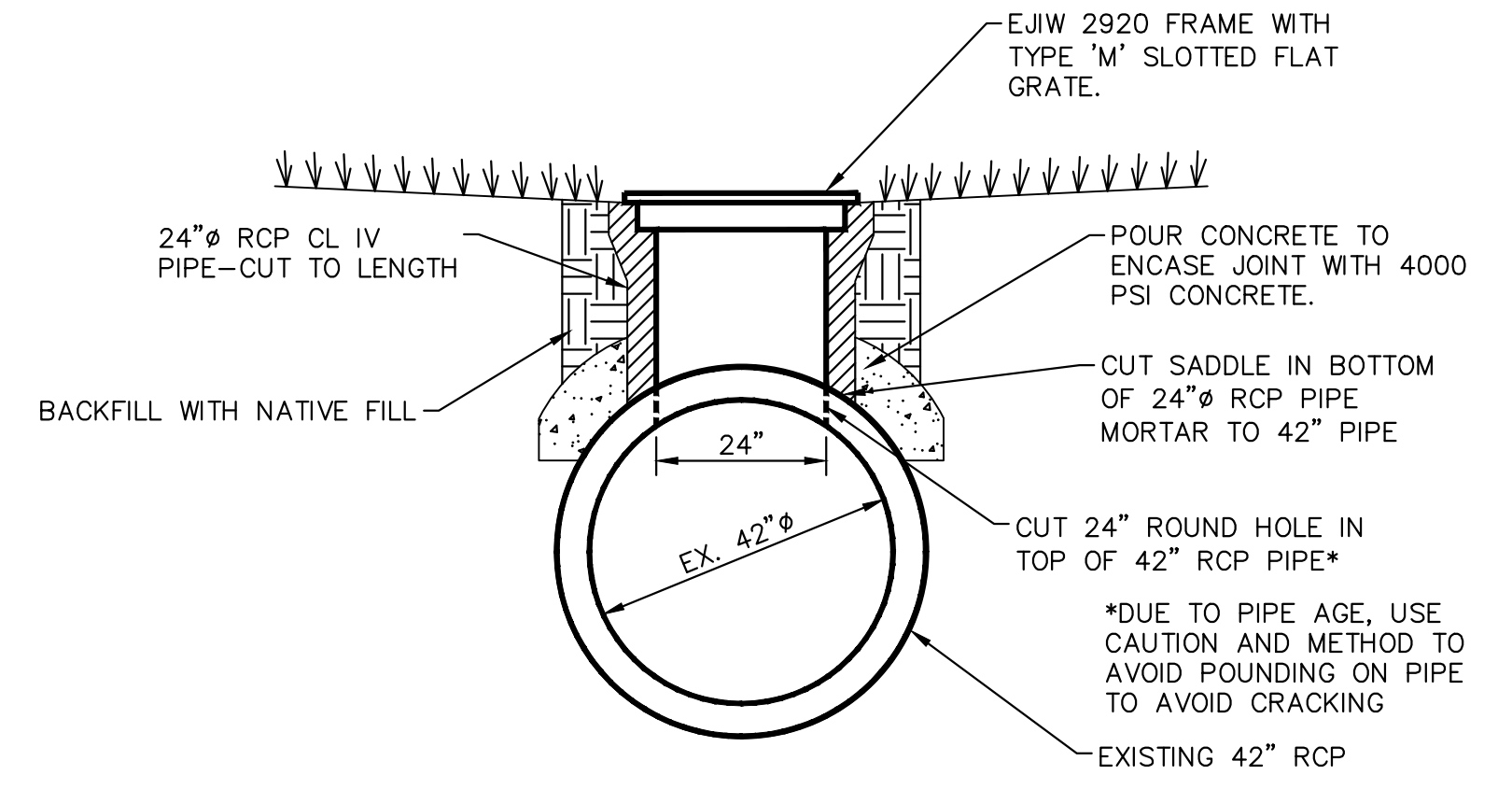
**STANDARD MANHOLE (TYPE 1) DETAIL FOR 8" TO 30" SEWERS**

NOTE:

1. ALL SANITARY MANHOLES SHALL BE PRECAST CONC.
2. PROVIDE MIN. 7" CLEAR FROM T/PIPE TO FIRST REDUCTION CONE.
3. ALL MANHOLES MUST HAVE ECCENTRIC CONES—BOTH STORM AND SANITARY.
4. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
5. CONCRETE BLOCK MANHOLE MAY BE USED FOR STORM SEWER ONLY, AND SHALL BE ECCENTRIC
6. 5" M.H. FOR 36" & 42" SEWERS 6" M.H. FOR 48" & 54" SEWERS
7. NUMBER OF PIPES ALSO DICTATES DIAMETER



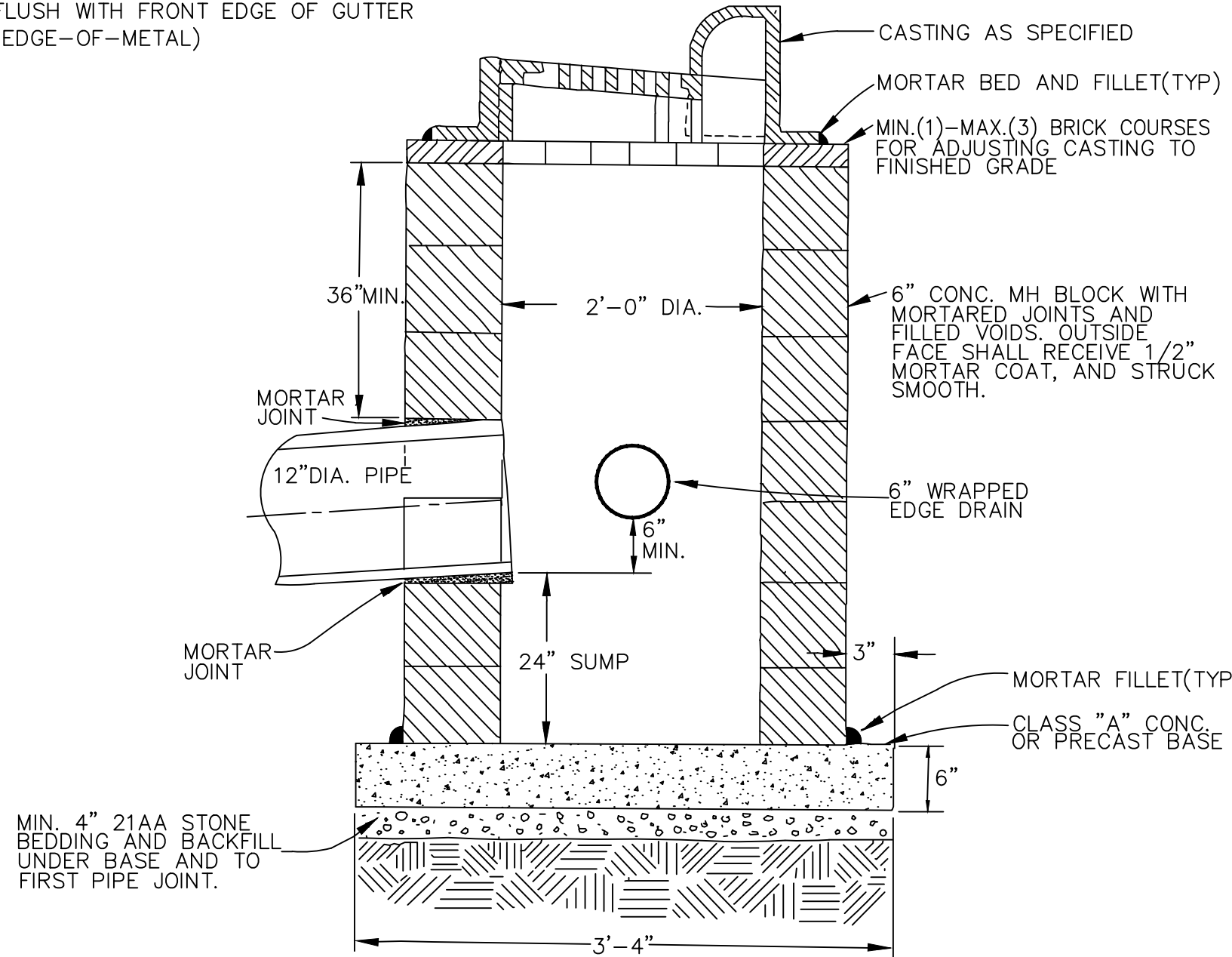
**STANDARD MANHOLE (TYPE 1) DETAIL FOR 36" TO 54" SEWERS**



**STORM SEWER INLET DETAIL FOR 285 WESTWOOD AVE.**

NOTE:

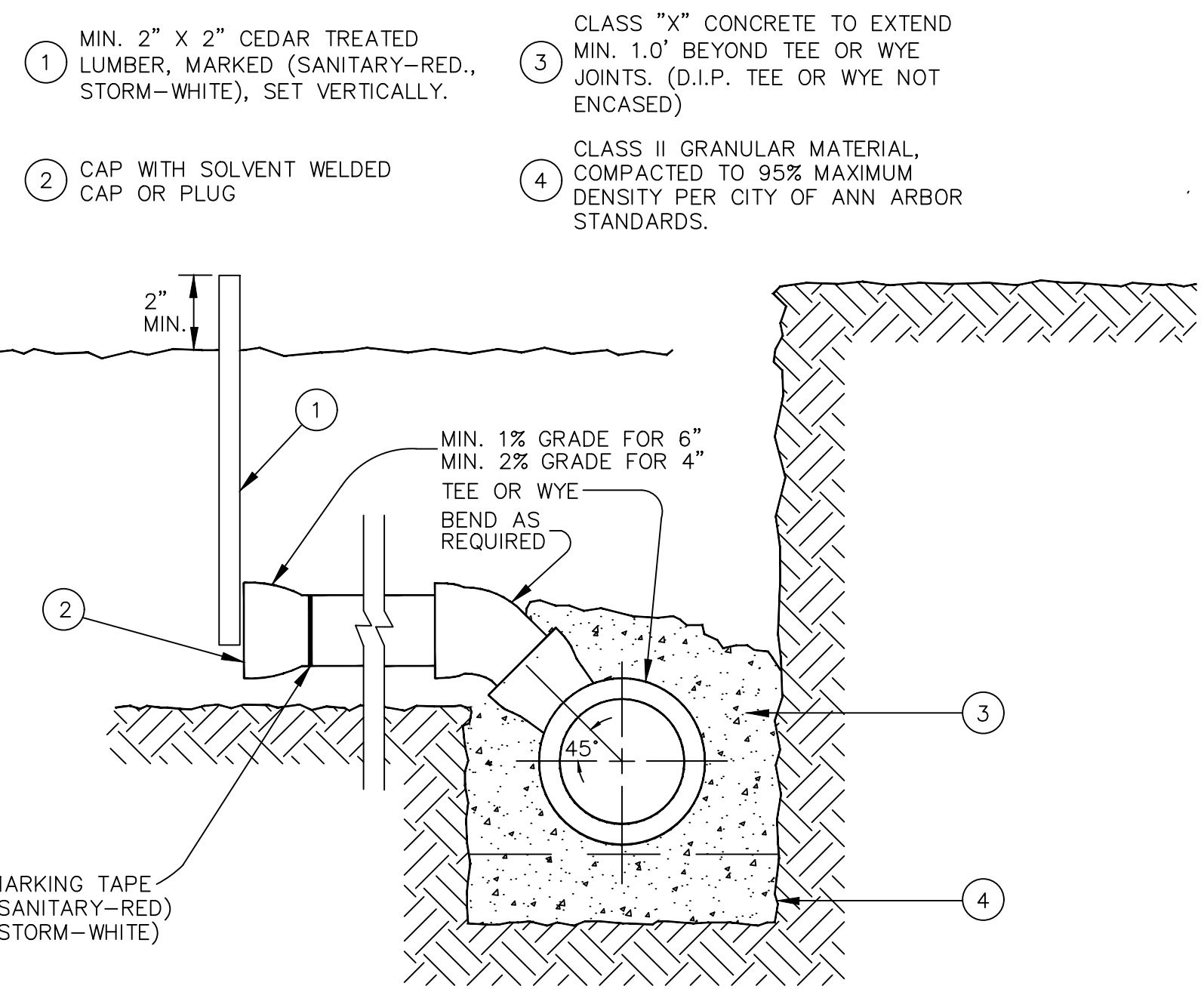
1. MAY BE USED WITH ONLY SINGLE OUTLET PIPE, AND NO INLET PIPE
2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)



**SINGLE INLET STRUCTURE DETAIL**

NOTE:

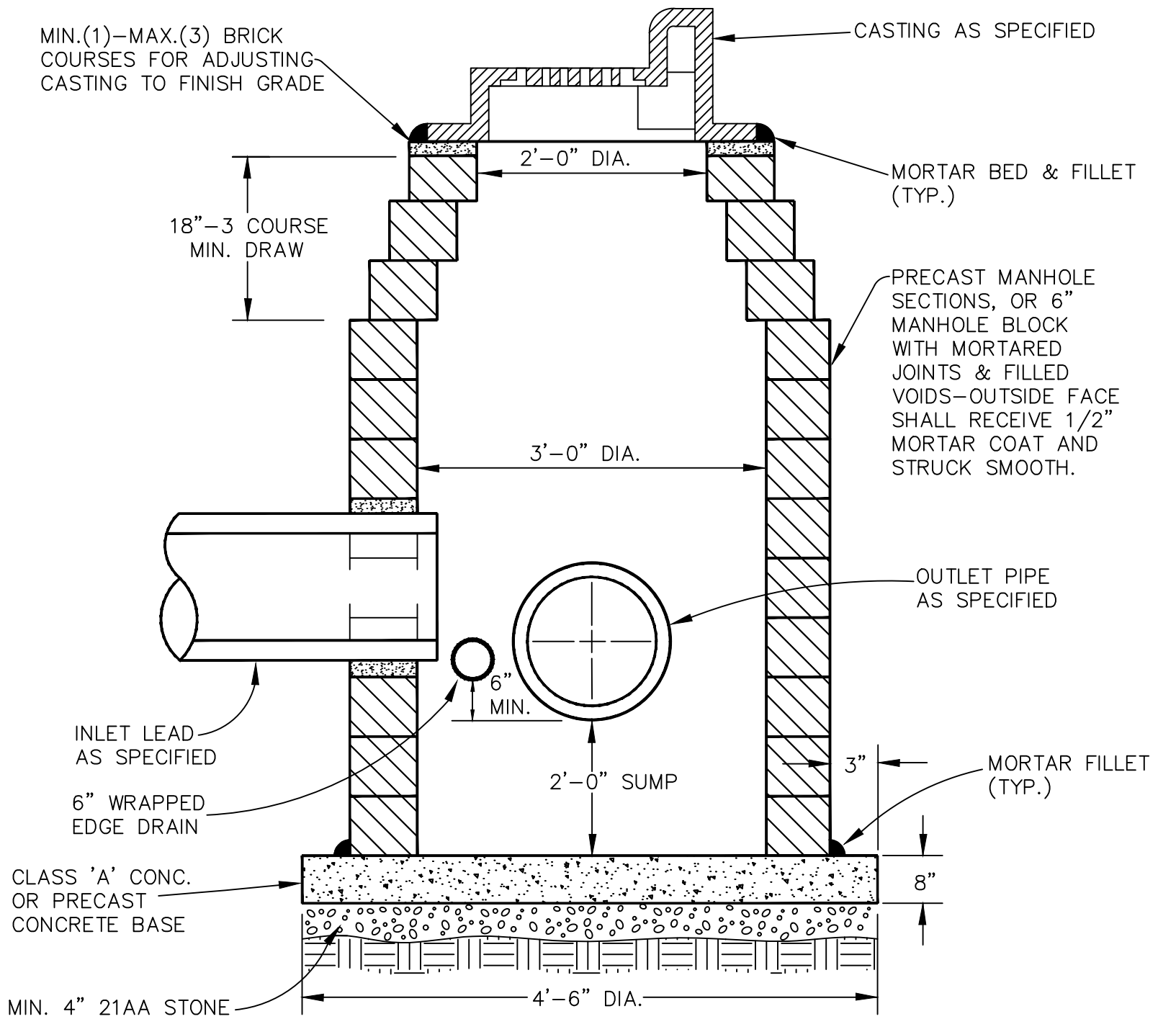
TAPS INTO EXISTING SEWERS SHALL BE DONE ONLY BY CITY UTILITIES DEPARTMENT.



**SEWER CONNECTION DETAIL**

NOTE:

1. SHALL BE USED IF SINGLE OUTLET PIPE AND SINGLE INLET PIPE.
2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL).



**INLET-JUNCTION CHAMBER DETAIL**

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 CONSTRUCTION DETAILS  
 SANITARY SEWER DETAILS  
 SCALE: NTS  
 DRAWING No. 2019-024-7  
 SHEET No. 7 OF 40



**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.

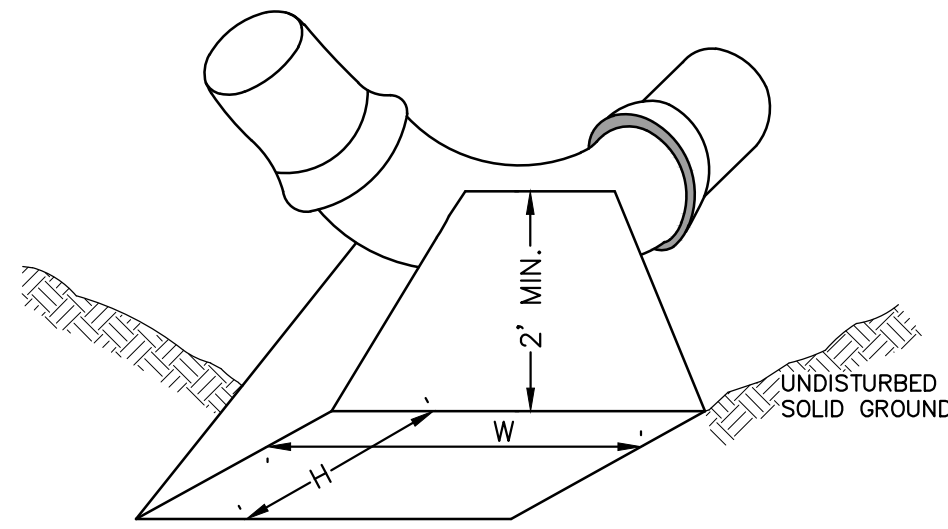
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

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.

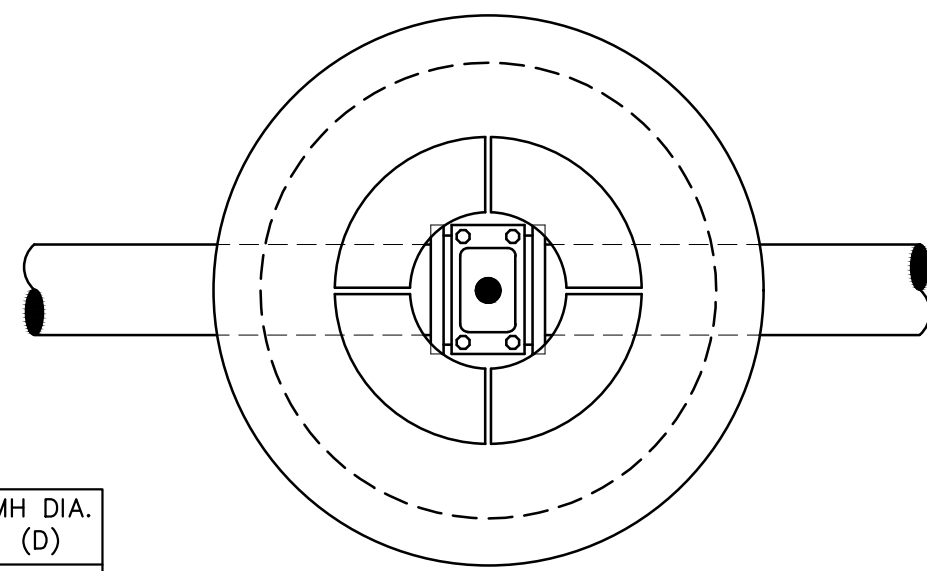
W = WIDTH IN FEET  
H = HEIGHT IN FEET



**NOTE:**

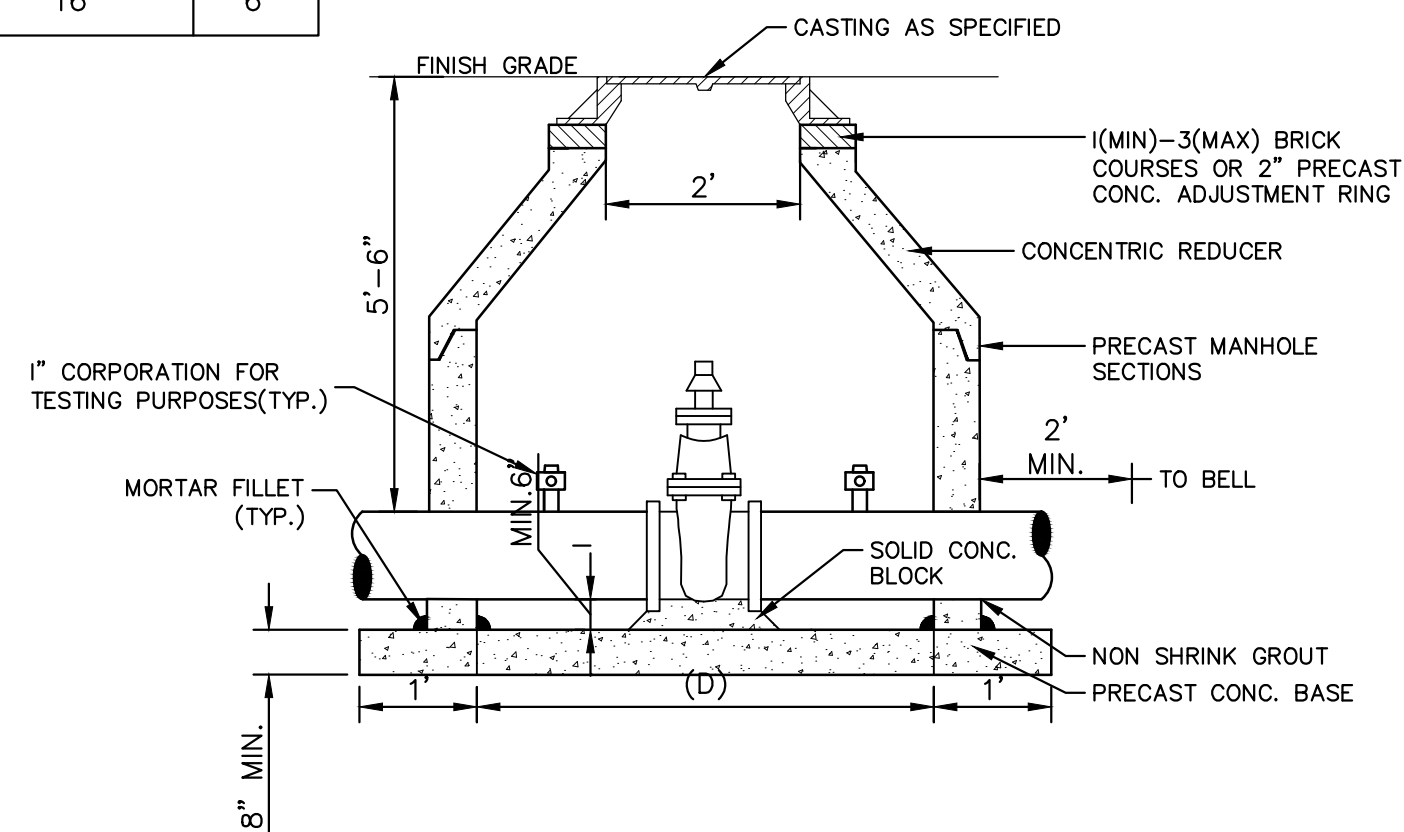
THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

**THRUST BLOCK SD-W-2**



**TOP VIEW**

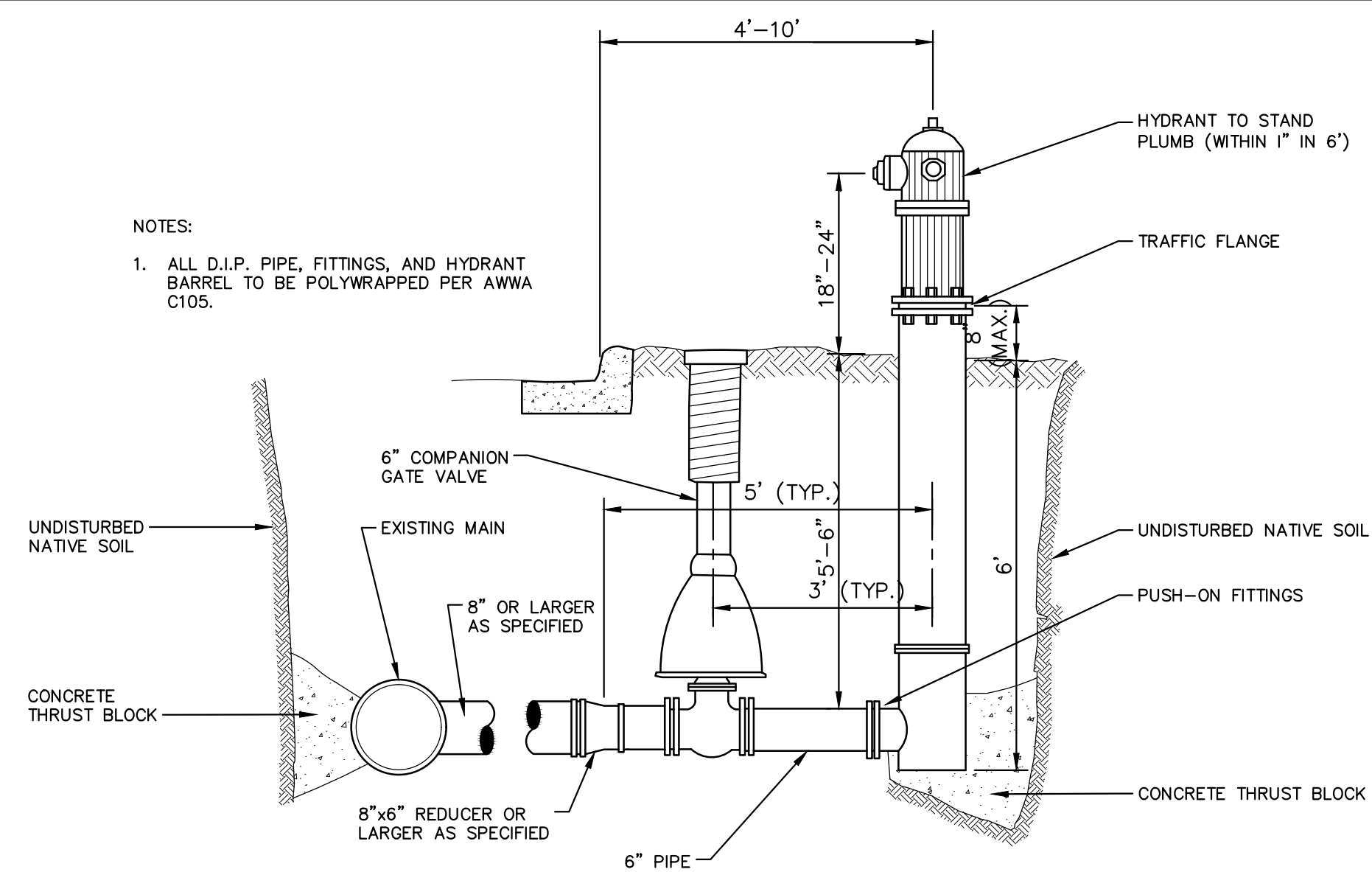
PIPE SIZE	MH DIA. (D)
12" OR LESS	5'
16"	6'



**NOTES:**

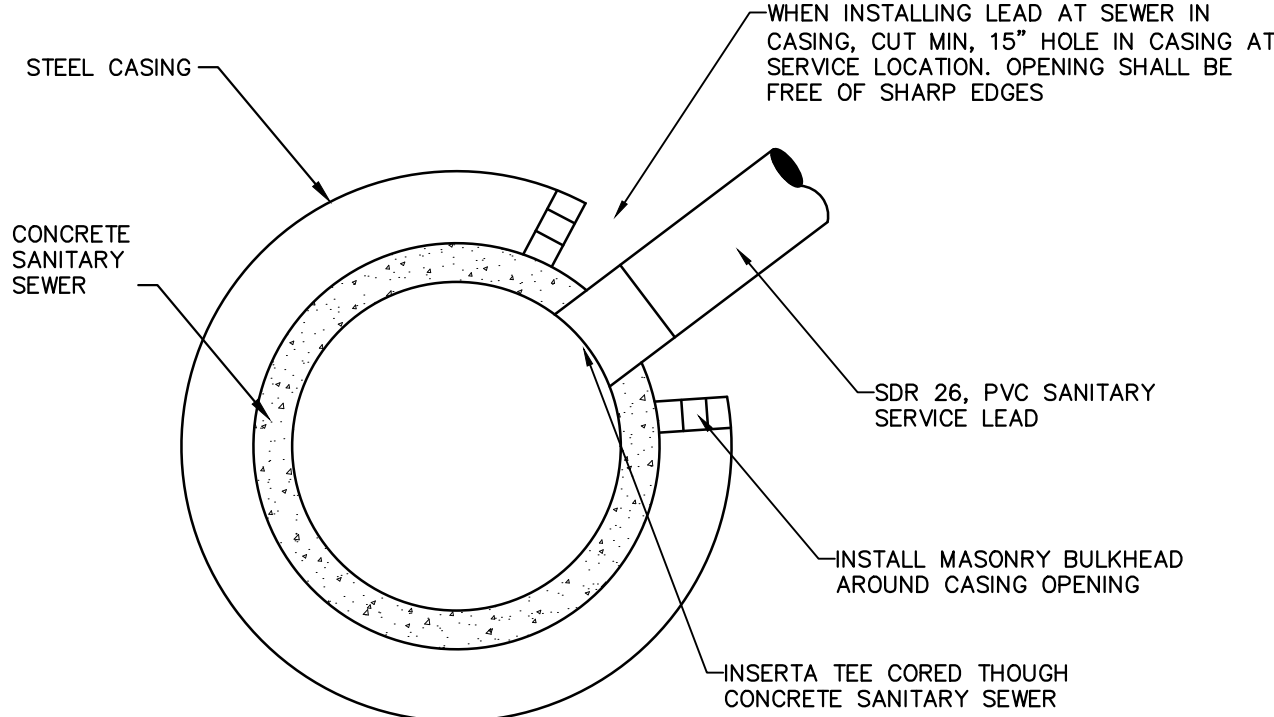
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE
2. ALL JOINTS SHALL BE MADE WATER TIGHT WITH RUBBER GASKET JOINTS
3. NO STEPS ARE PERMITTED
4. MANHOLE SECTIONS SHALL MEET ASTM C-478

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



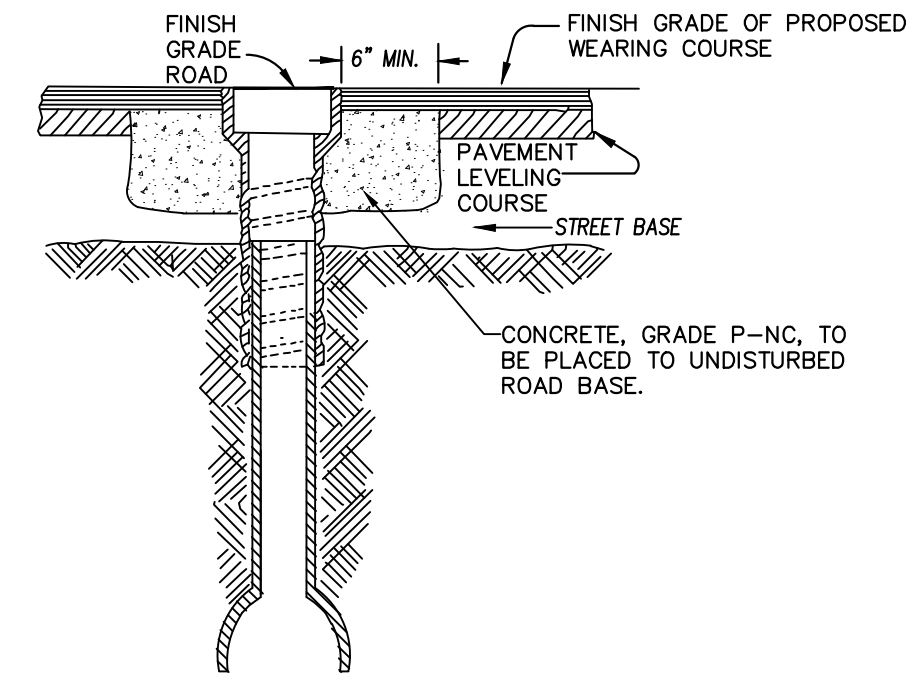
- NOTES:**
1. ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.

**FIRE HYDRANT ASSEMBLY**



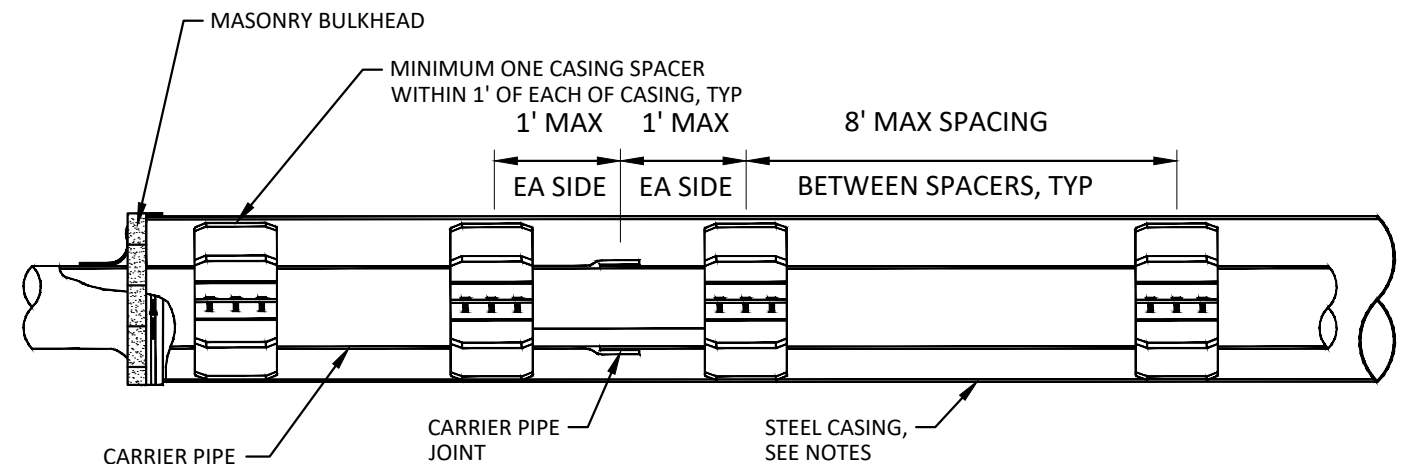
**NOTE:** SERVICE LEAD CONNECTIONS TO BE MADE PRIOR TO GROUTING CASING.

**TYPICAL SEWER CONNECTION TO CONCRETE SEWER MAIN**



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

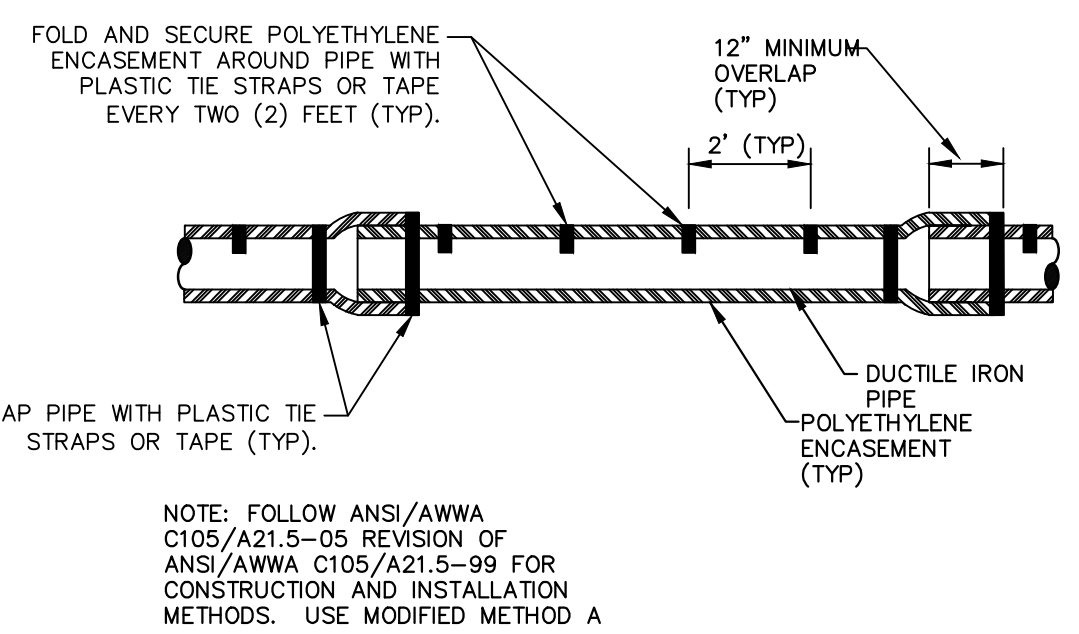
**WATER VALVE BOX ADJUSTMENT**



**NOTES:**

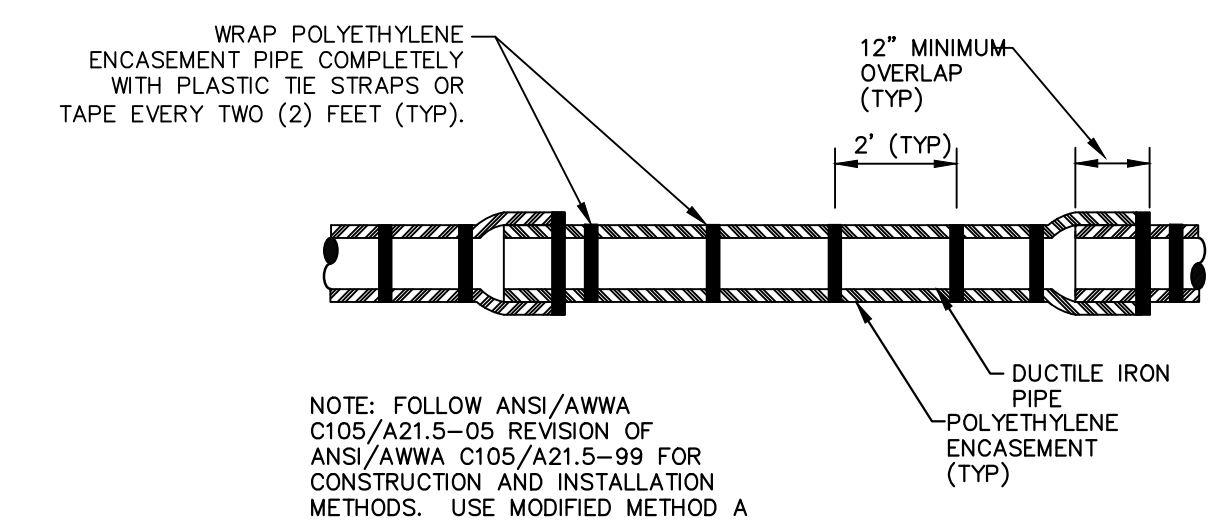
1. THE AREA BETWEEN THE CASING PIPE AND SANITARY SEWER SHALL BE FILLED WITH FLOWABLE FILL FOLLOWING TESTING AND APPROVAL.
2. EACH JOINT OF CASING PIPE SHALL BE WELDED TOGETHER ALONG ENTIRE CIRCUMFERENCE OF PIPE.
3. MANUFACTURED SPACERS SHALL BE USED.
4. WOOD BLOCK SPACERS ARE NOT ALLOWED.
5. BORING SHALL 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**



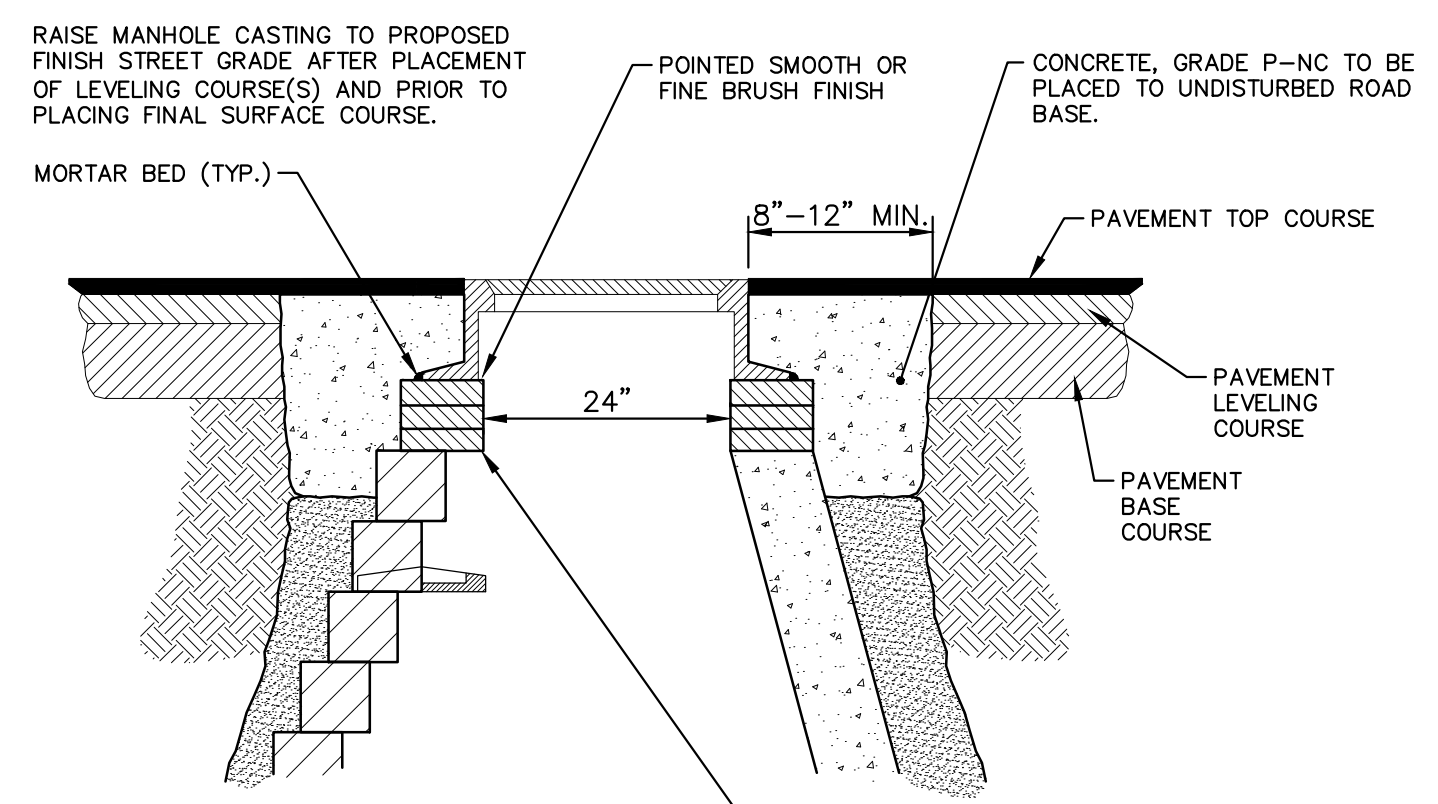
**NOTE:** FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

**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

**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 SD-GU-6**

Know what's below. Call before you dig.

REV.	DATE	DESCRIPTION
4	11/16/2023	RE-BID SET PLAN
3	03/16/2021	BID SET PLAN
2	09/17/2020	PERMIT SET PLAN
1	06/15/2020	PRELIMINARY PLAN

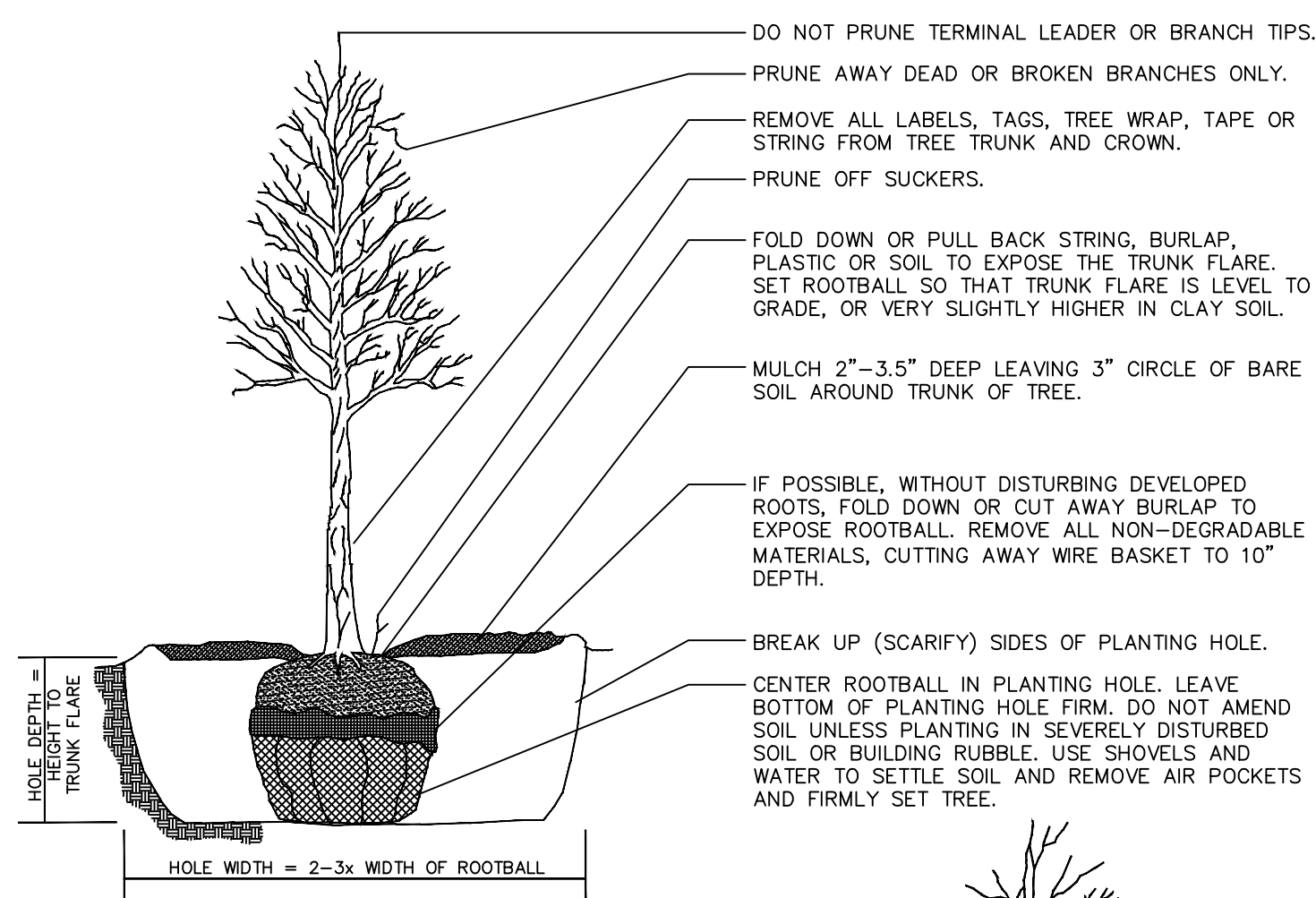
**CITY OF ANN ARBOR**  
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301 EAST HURON STREET  
ANN ARBOR, MI 48106  
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
CONSTRUCTION DETAILS  
MISCELLANEOUS DETAILS I

DRAWING No. 2019-024-8  
SHEET No. 8 OF 40



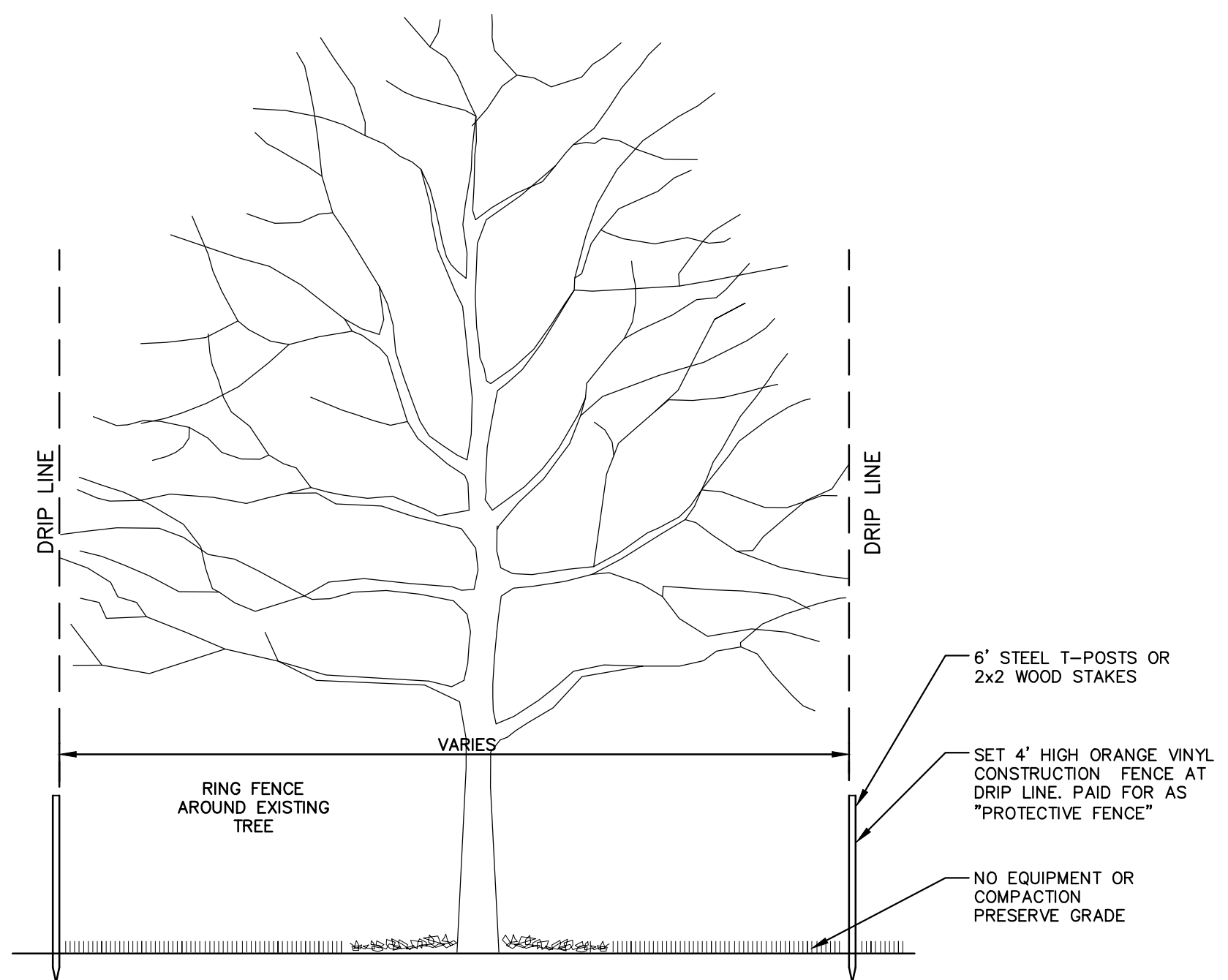
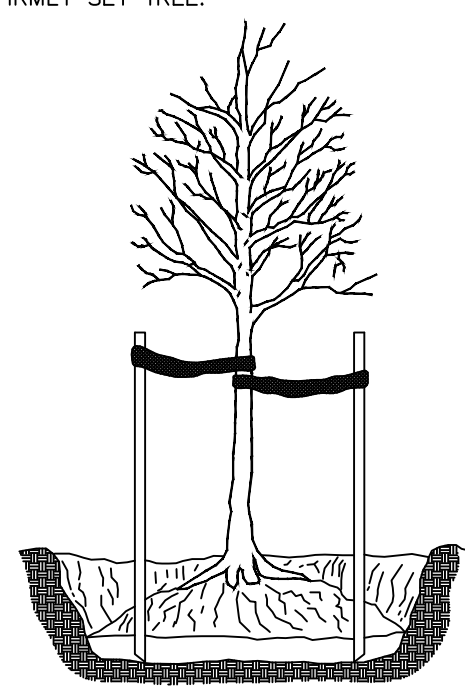
V:\2075\active\2075151700\civil\design\drawing\151700\_G-502.dwg Dwg Created: 28-Jan-21 \_o2 standard bw.stb - Plot Date: 15-Nov-23



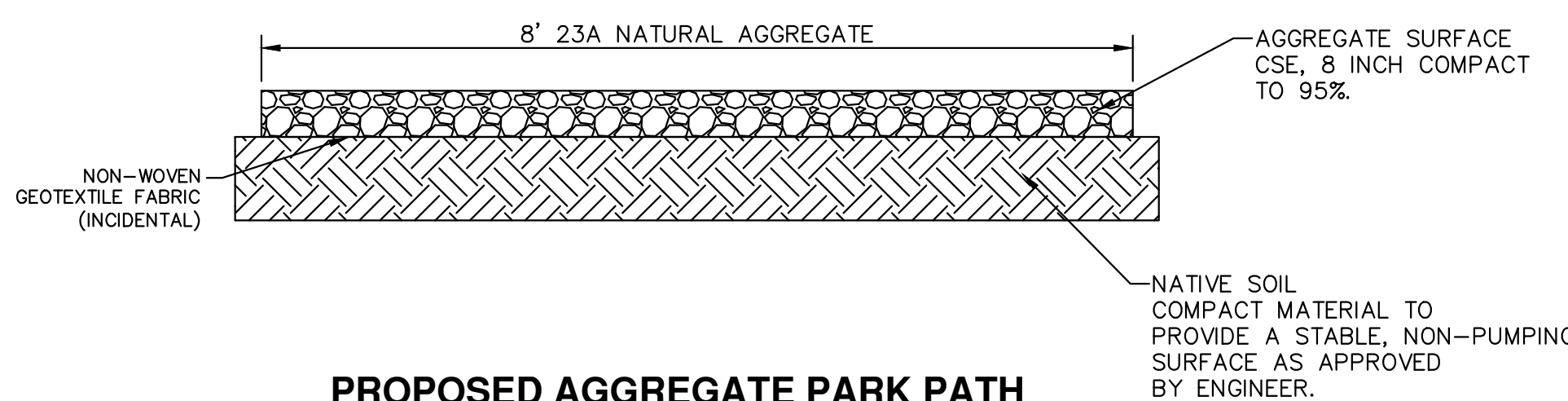
DO NOT STAKE UNLESS IN HEAVY CLAY SOIL, WINDY CONDITIONS, 3" OR GREATER DIAMETER TREE TRUNK OR LARGE CROWN. IF STAKING IS NEEDED DUE TO THESE CONDITIONS:

- 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**

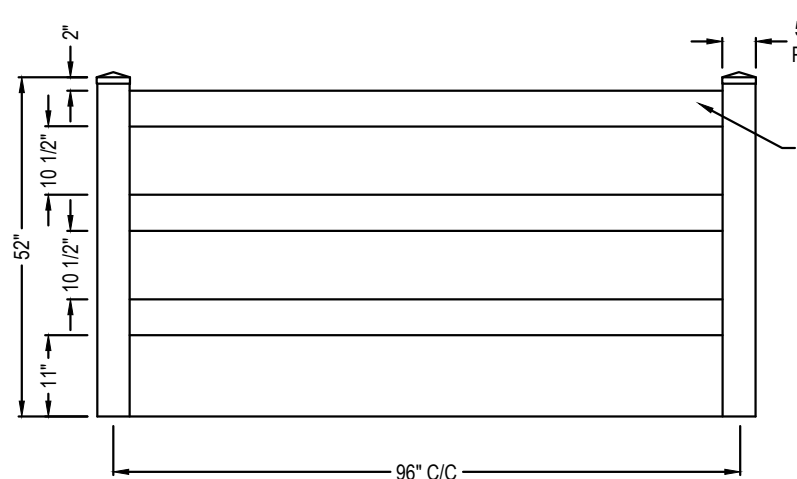


**TREE PROTECTION DETAIL**

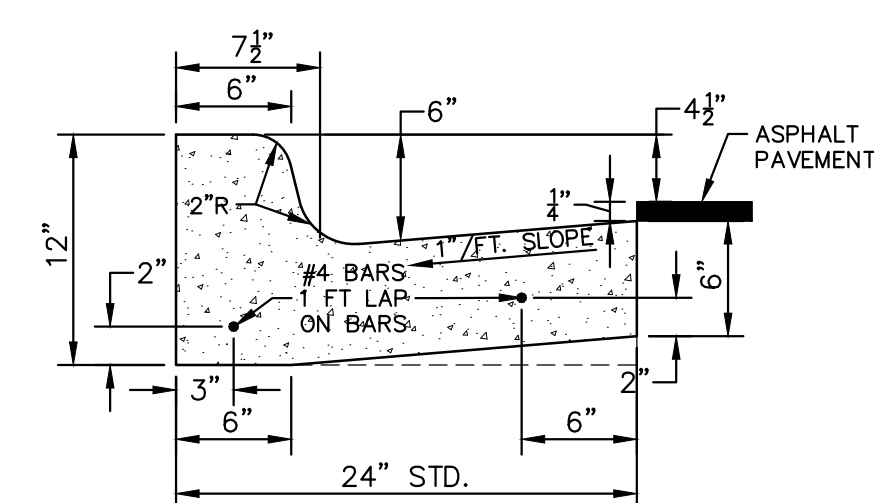


**PROPOSED AGGREGATE PARK PATH**

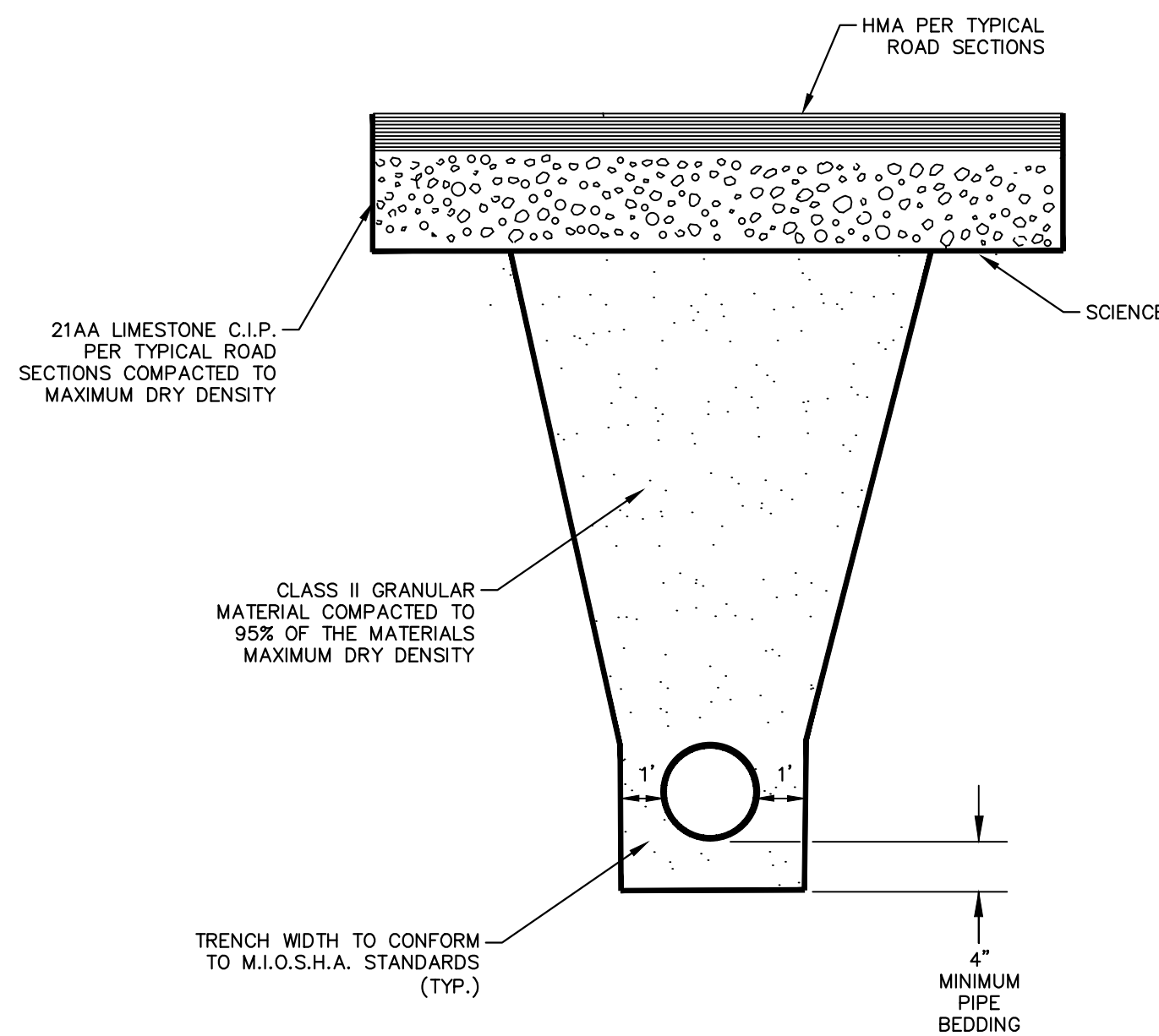
- NOTES:
1. PROPOSED PATH SHALL FOLLOW EXISTING GRADES AS CLOSE AS FEASIBLE TO PROVIDE STABLE ALL SEASON ACCESS. FINAL GRADE OF THE PATH SHALL BE APPROVED BY THE ENGINEER.
  2. EARTHWORK REQUIRED TO CONSTRUCT THE PARK PATH, INCLUDING TOP SOIL REMOVAL EXCAVATION, EMBANKMENT, GRADING AND SOIL COMPACTION SHALL BE INCLUDED IN THE ITEM OF WORK "GENERAL CONDITIONS".



**VINYL FENCE DETAIL**

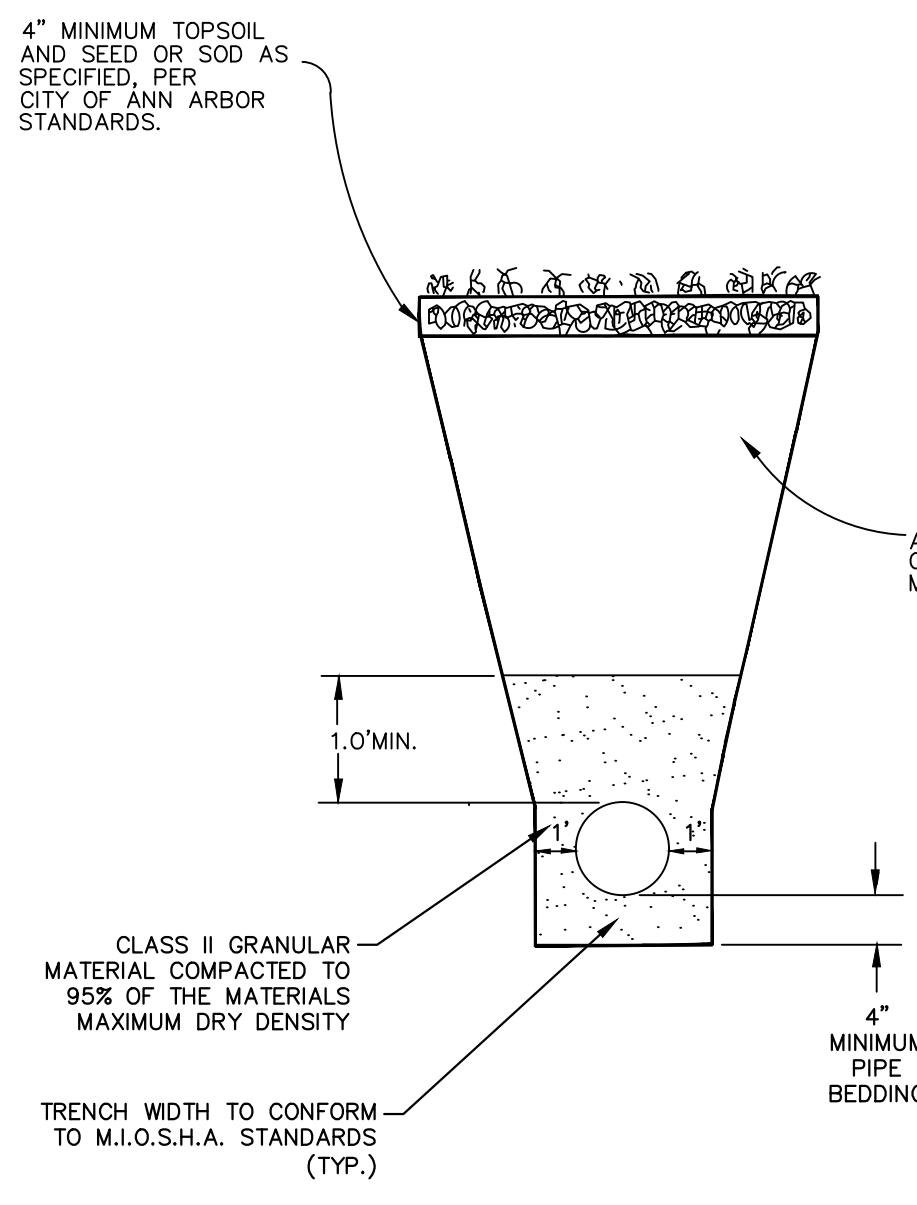


**CURB AND GUTTER, CONC, DET F4, SPECIAL**

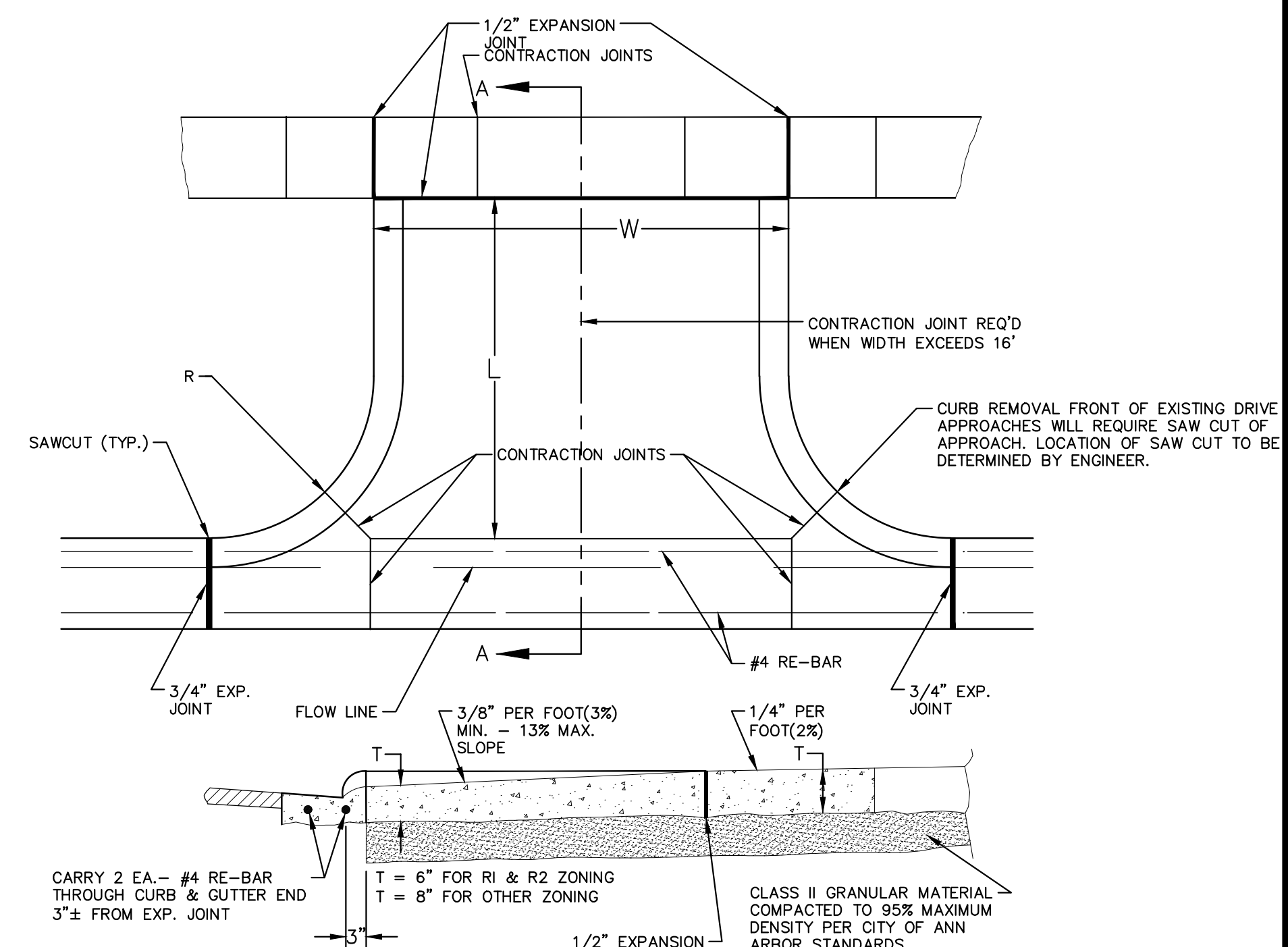


**UTILITY TRENCH - TYPE I**

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



**UTILITY TRENCH - TYPE V**

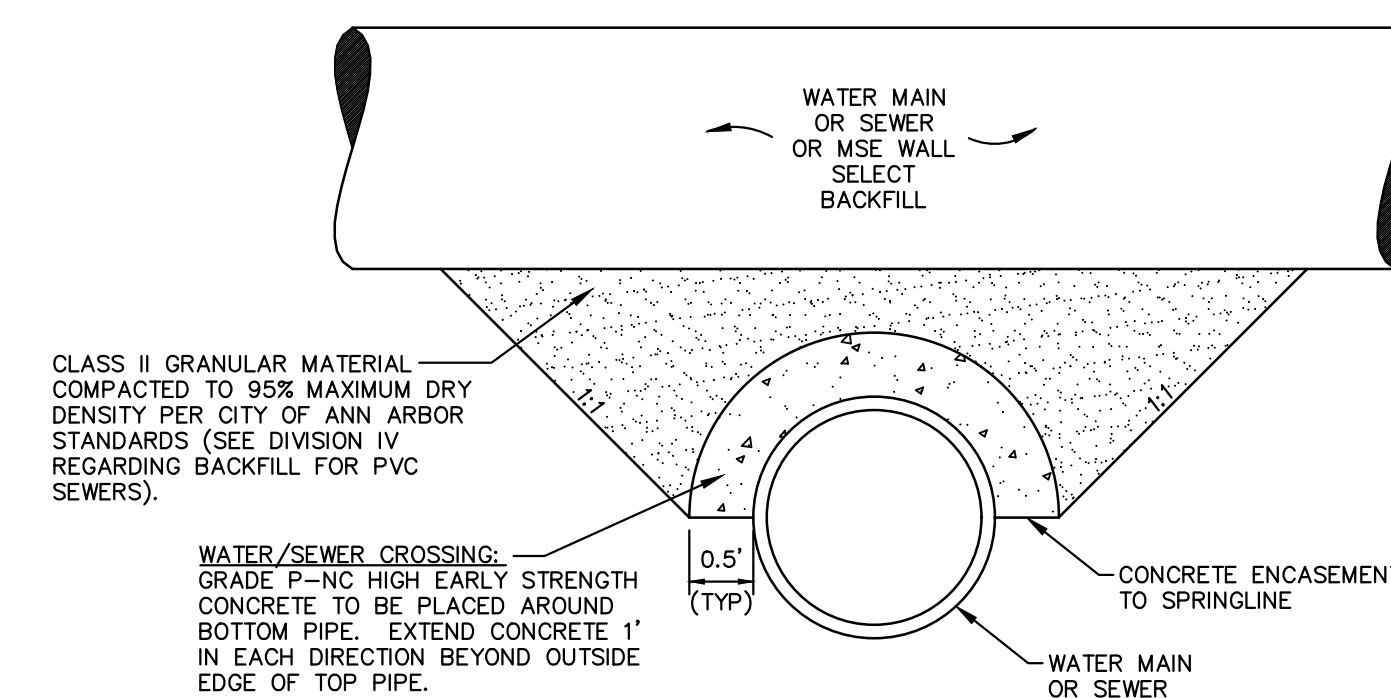


MEASUREMENT OF AREA  
 W x L = AREA  
 SEC. A-A

NOTES:

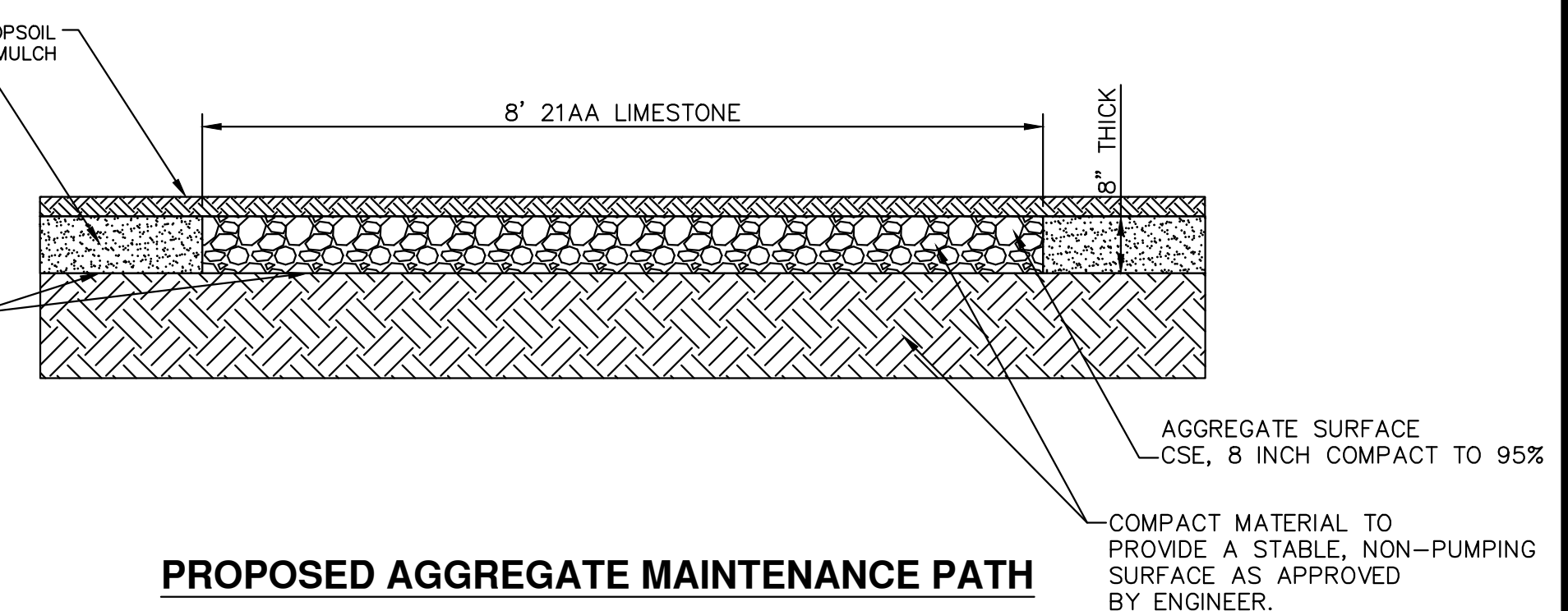
1. DRIVE APPROACH TO BE CLASS 'A' CONCRETE.
2. R(RADIUS) AND W(DRIVE WIDTH) AS REQUIRED FOR ZONING BY CITY CODE
3. IF GUTTER IS OVERLAPPED, GUTTER OF THE APPROACH SHALL BE AT SAME ELEVATION AS EXISTING GUTTER AND ASPHALT WEDGE SHALL BE PLACED IN THE APPROACH.

**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**



**PROPOSED AGGREGATE MAINTENANCE PATH**

NOTES:

1. PROPOSED PATH SHALL FOLLOW EXISTING GRADES AS CLOSE AS FEASIBLE TO PROVIDE STABLE ALL-SEASON ACCESS. FINAL GRADE OF THE PATH SHALL BE APPROVED BY THE ENGINEER.
2. UNLESS OTHERWISE NOTED ON THE DRAWINGS, EARTHWORK REQUIRED TO CONSTRUCT THE AGGREGATE MAINTENANCE PATH, INCLUDING TOP SOIL REMOVAL EXCAVATION, EMBANKMENT, GRADING AND SOIL COMPACTION, SHALL BE INCLUDED IN THE ITEM OF WORK "GENERAL CONDITIONS"

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

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E

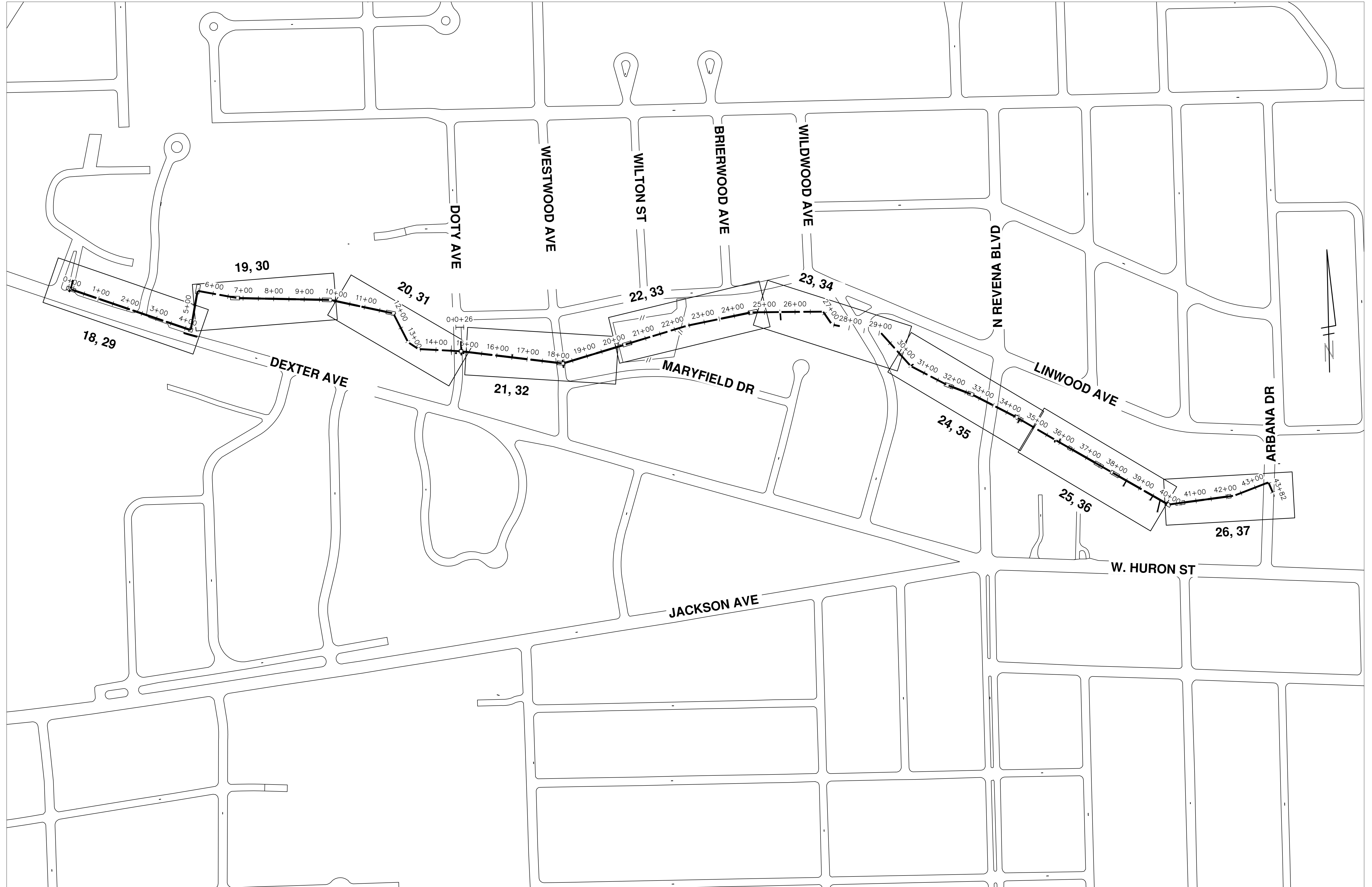
CITY OF ANN ARBOR  
 PUBLIC SERVICES  
 301 EAST HURON STREET  
 ANN ARBOR, MI 48106-6647  
 ANN ARBOR  
 734-794-6610  
 www.a2gov.org

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 CONSTRUCTION DETAILS  
 MISCELLANEOUS DETAILS II

SCALE: NTS  
 DRAWING No. 2019-024-9  
 SHEET No. 9 OF 40



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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E



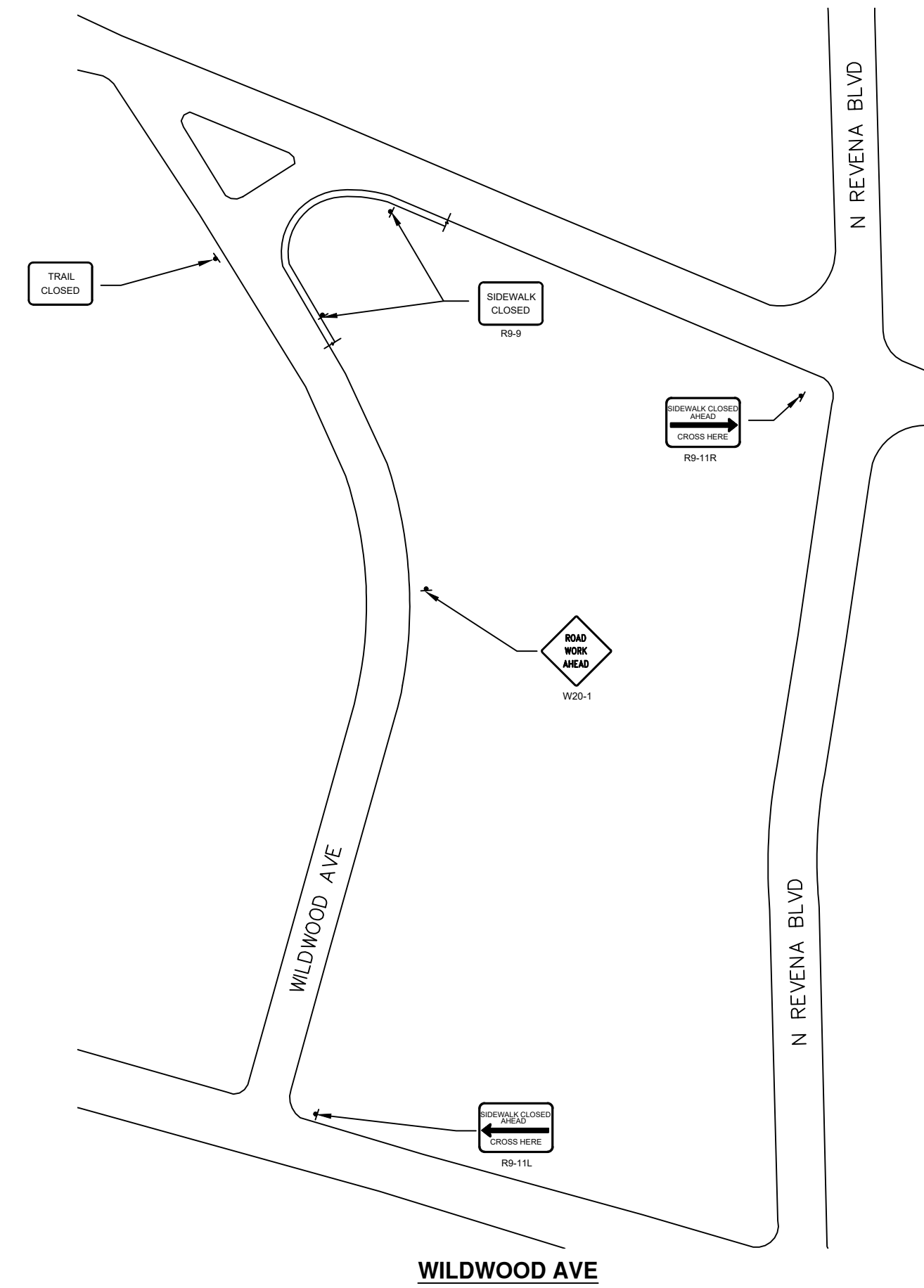
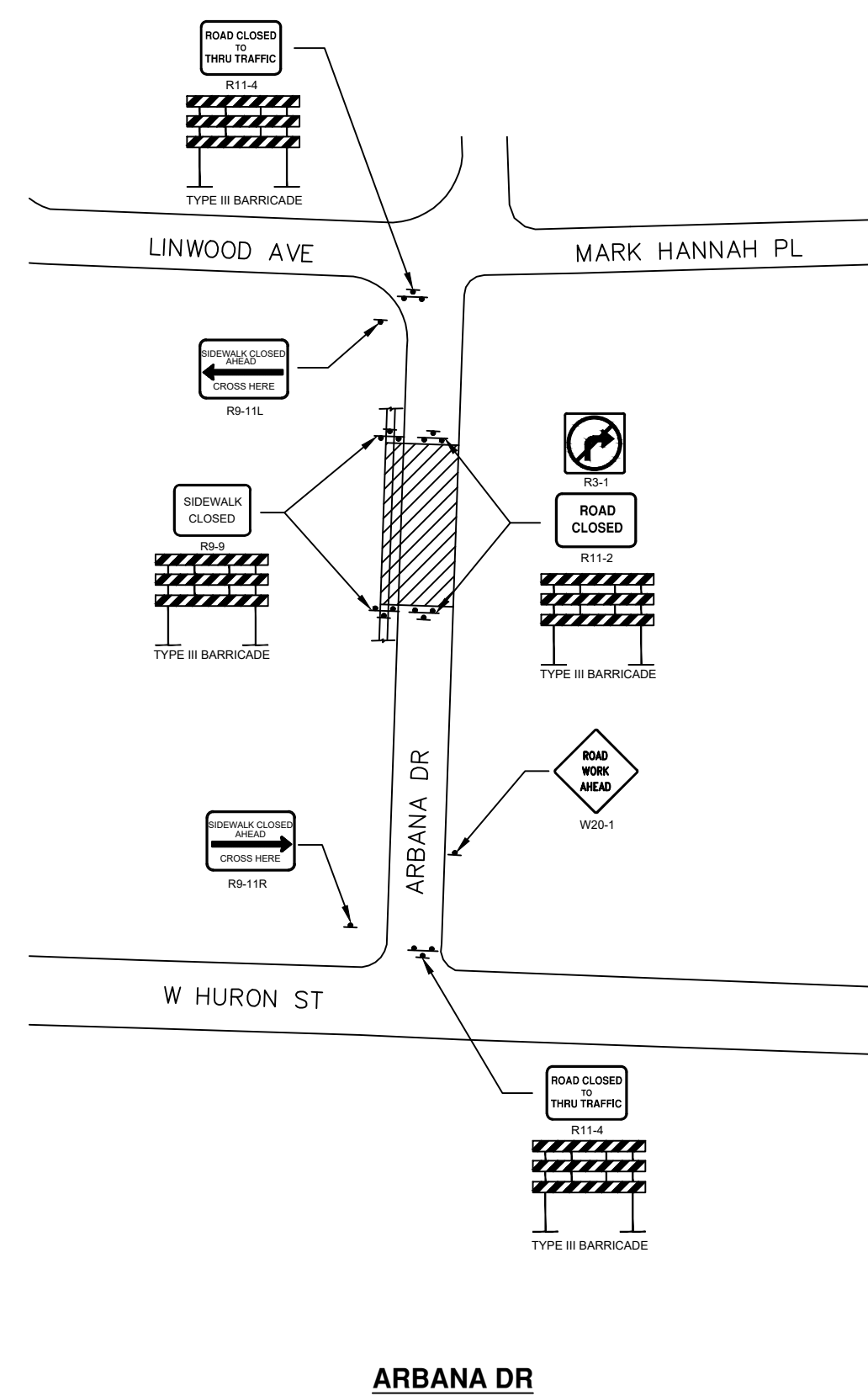
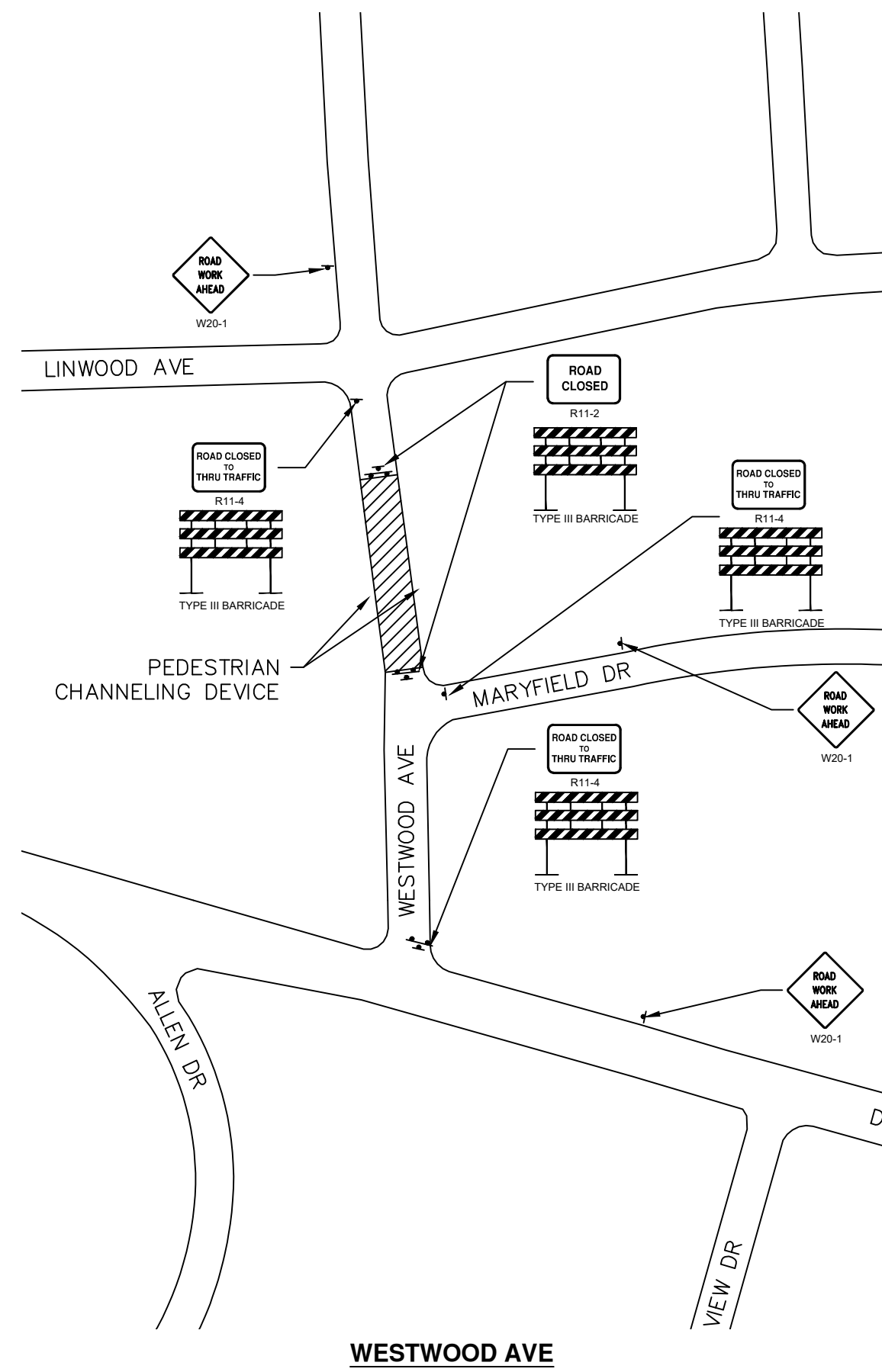
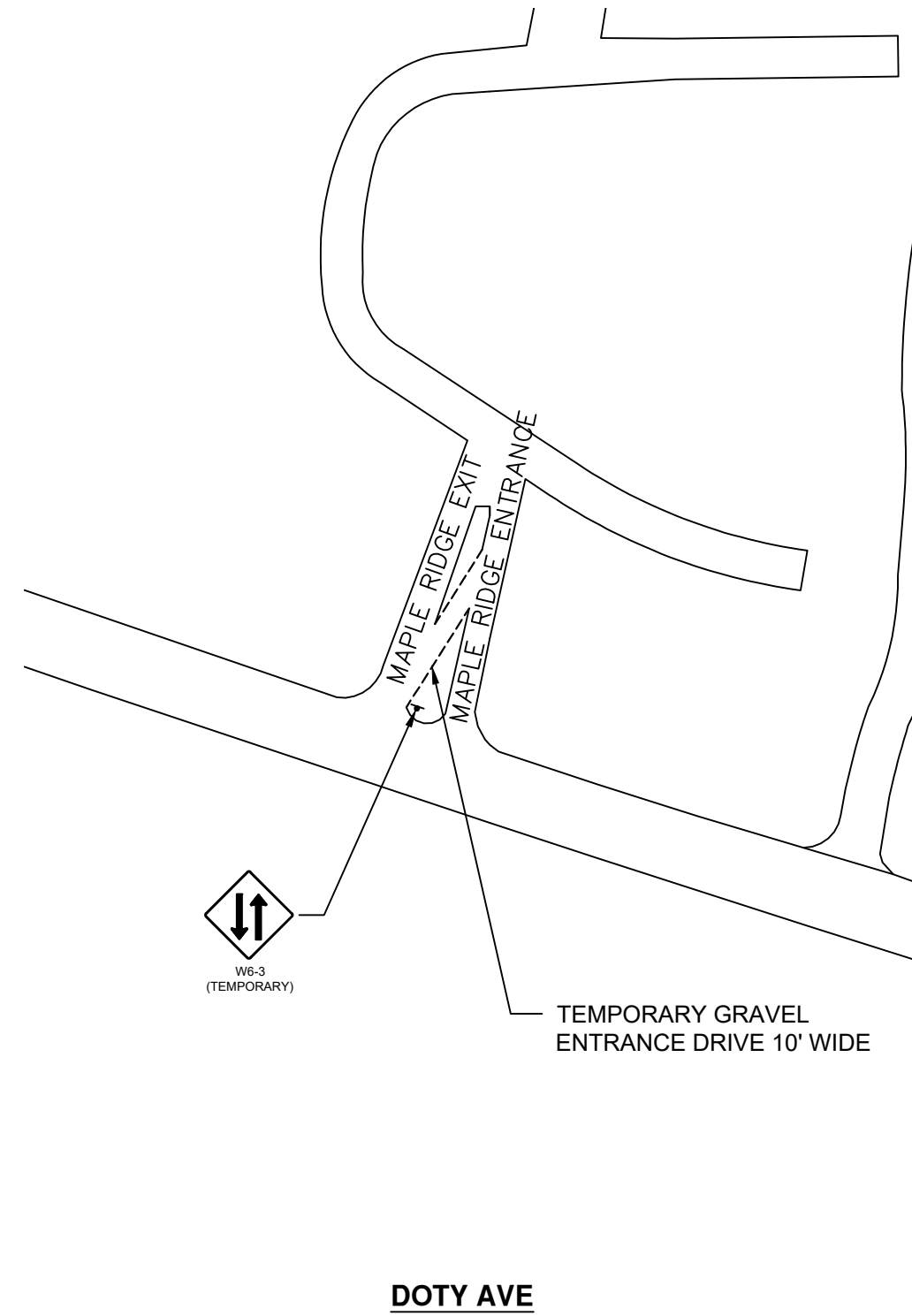
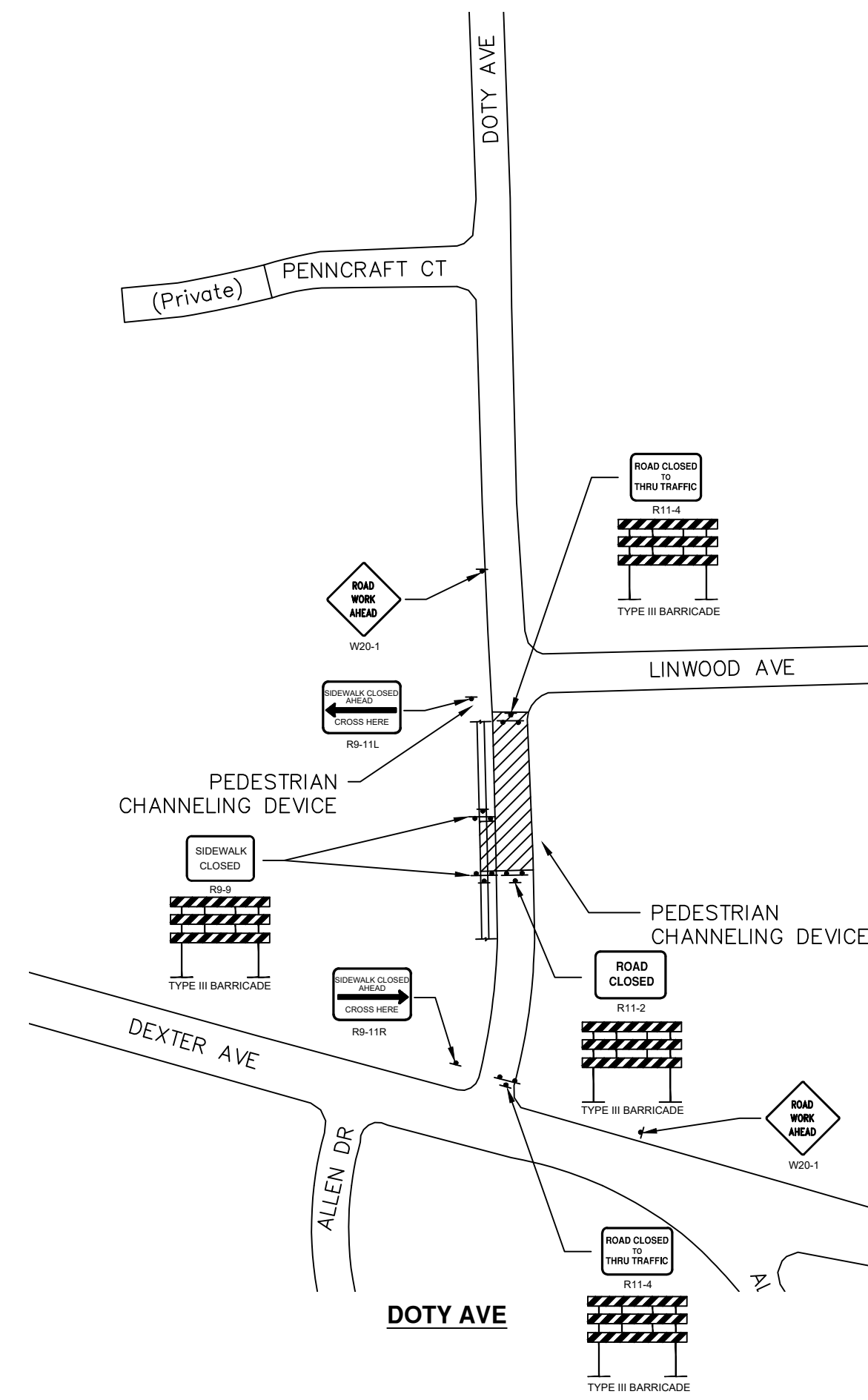
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 OVERALL PLAN  
 OVERALL SANITARY SEWER PLAN

CITY OF ANN ARBOR  
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**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. REMOVE CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
6. CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE SIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO THE START OF CONSTRUCTION IN LOCATIONS INDICATED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 TRAFFIC CONTROL  
 ROAD CROSSING DETAILS

SCALE 1" = 100'  
 DRAWING No. 2019-024-12

SHEET No.



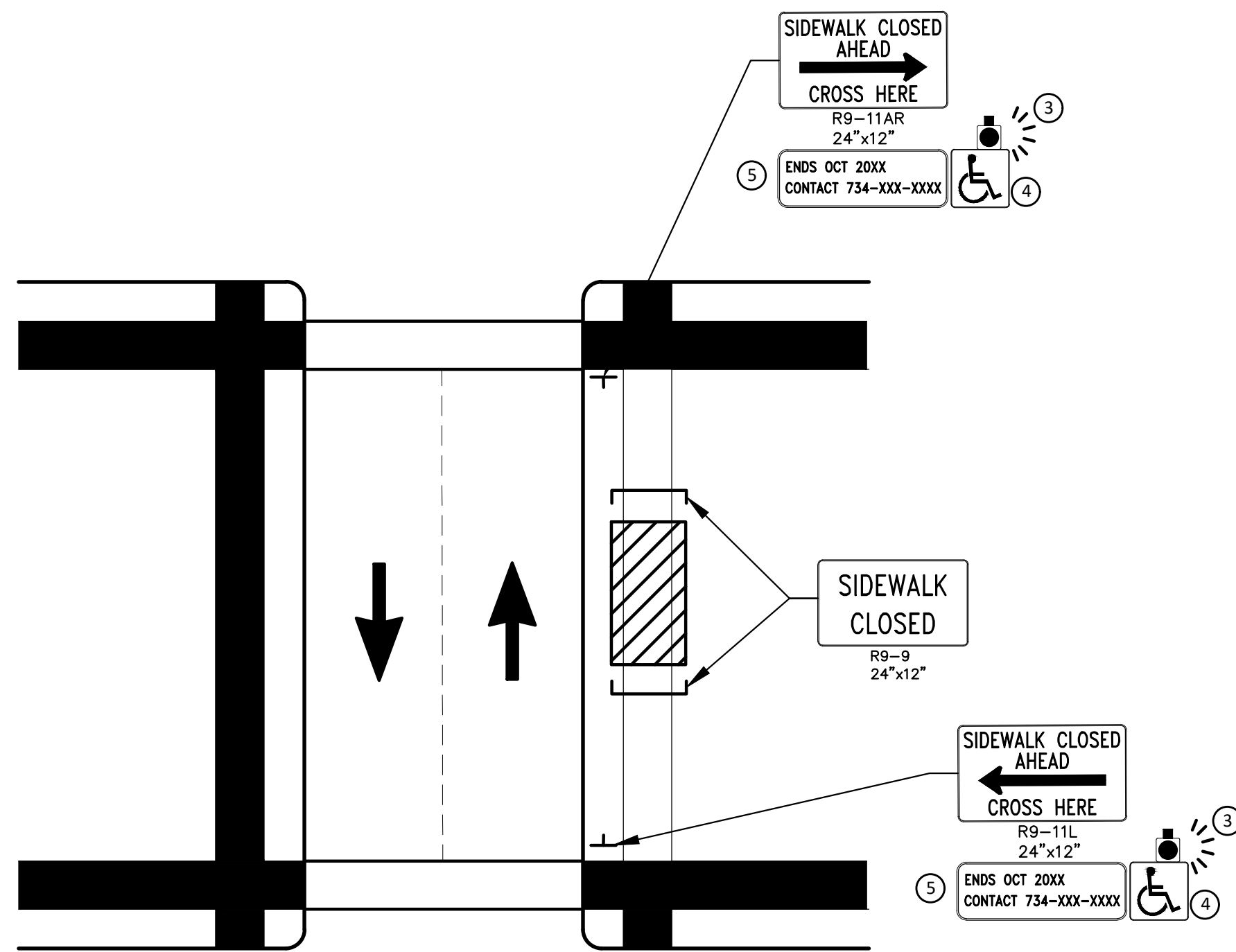
CITY OF ANN ARBOR  
 PUBLIC SERVICES  
 301 EAST HURON STREET  
 ANN ARBOR, MI 48106  
 TEL: 734-784-6410  
 WWW.A2GOV.ORG

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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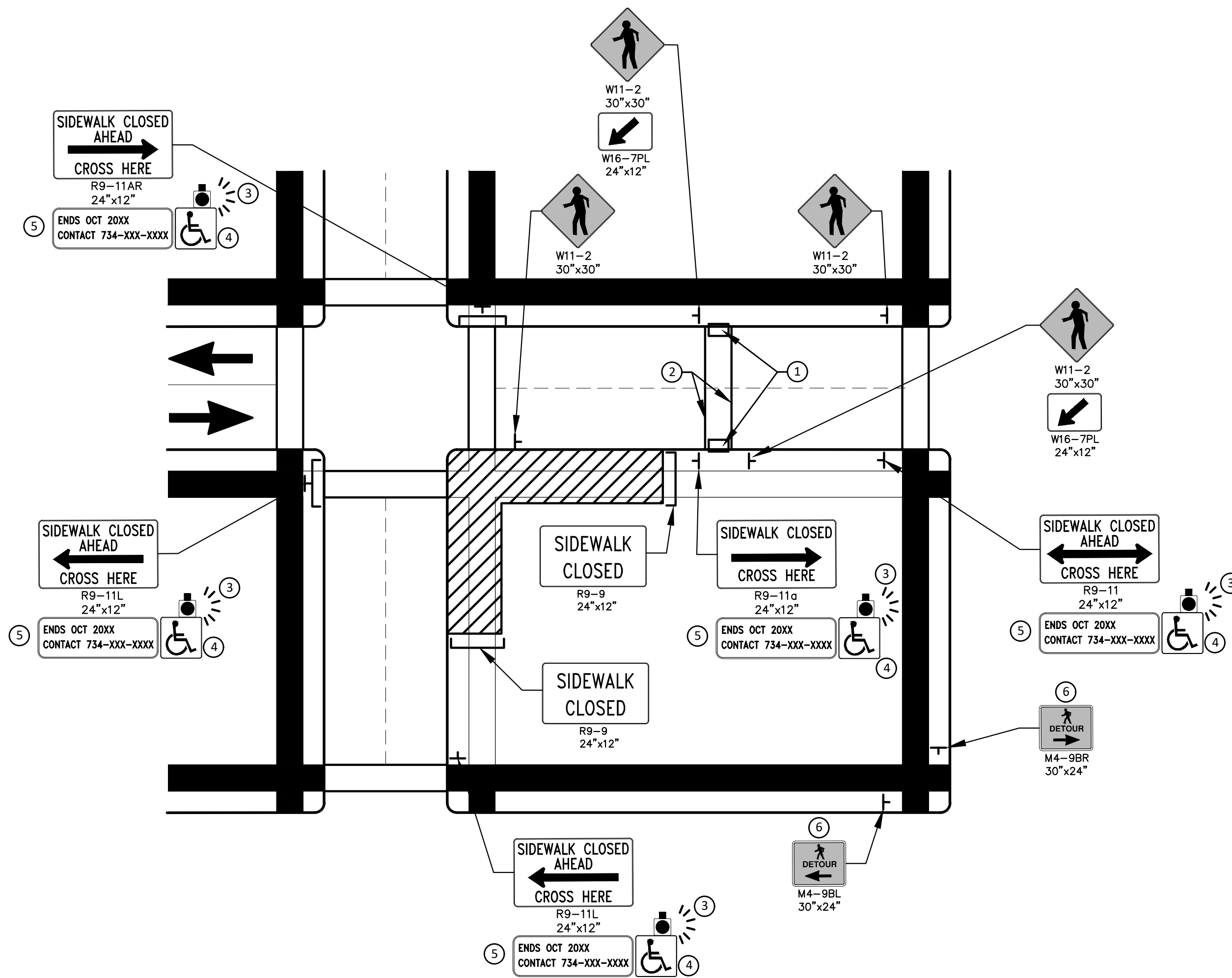




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PEDESTRIAN DETOUR USING OPPOSITE SIDE OF STREET



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

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

**HURON-WEST PARK SANITARY SEWER REPLACEMENT**

TRAFFIC CONTROL

ALTERNATE PEDESTRIAN ROUTE - DETOUR

SCALE: NTS

DRAWING No. 2019-024-13

SHEET No. 13 OF 40

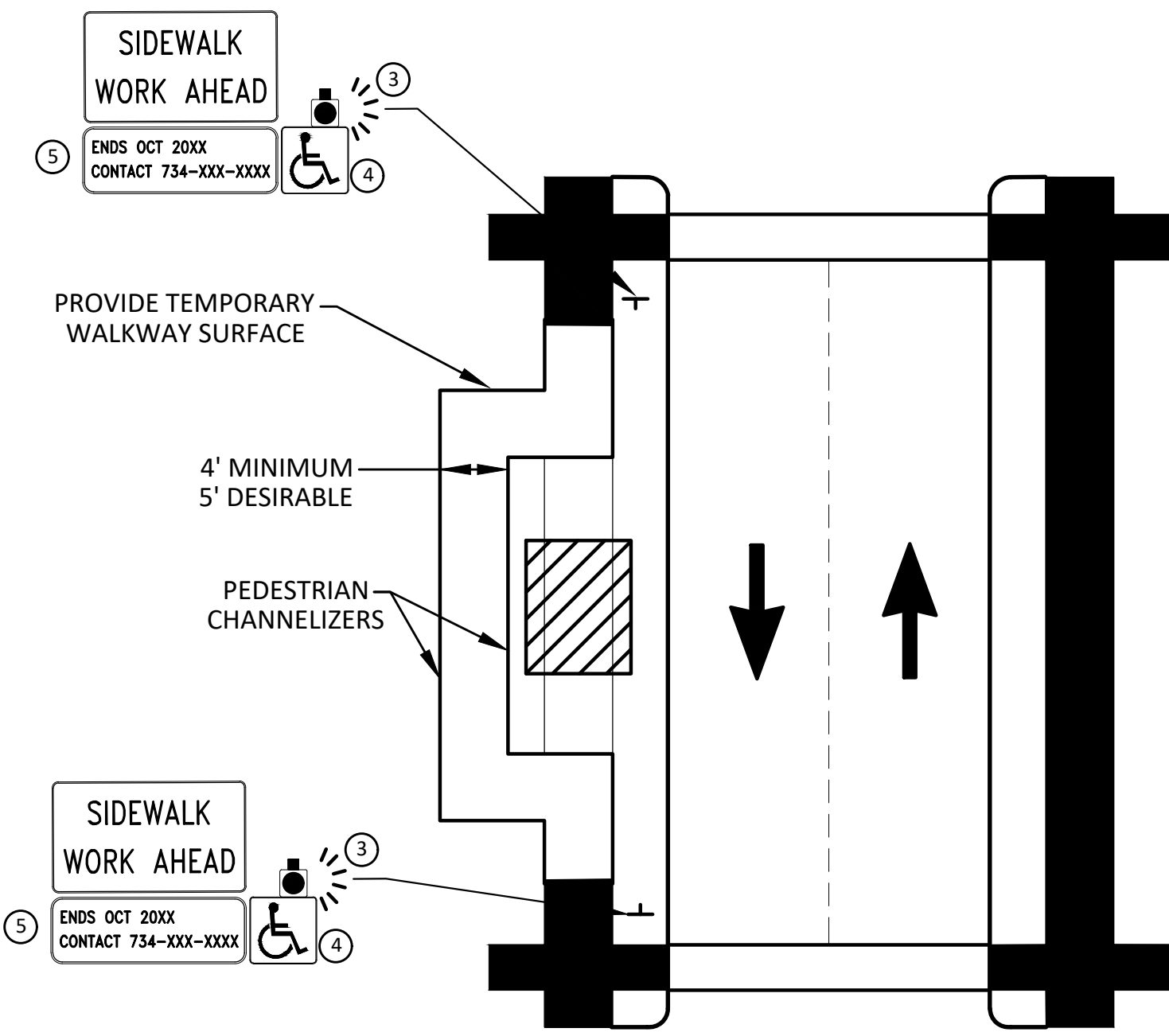
REV.	DATE	DESCRIPTION
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3	03/16/2021	BID SET PLAN
2	09/17/2020	PERMIT SET PLAN
1	06/15/2020	PRELIMINARY PLAN

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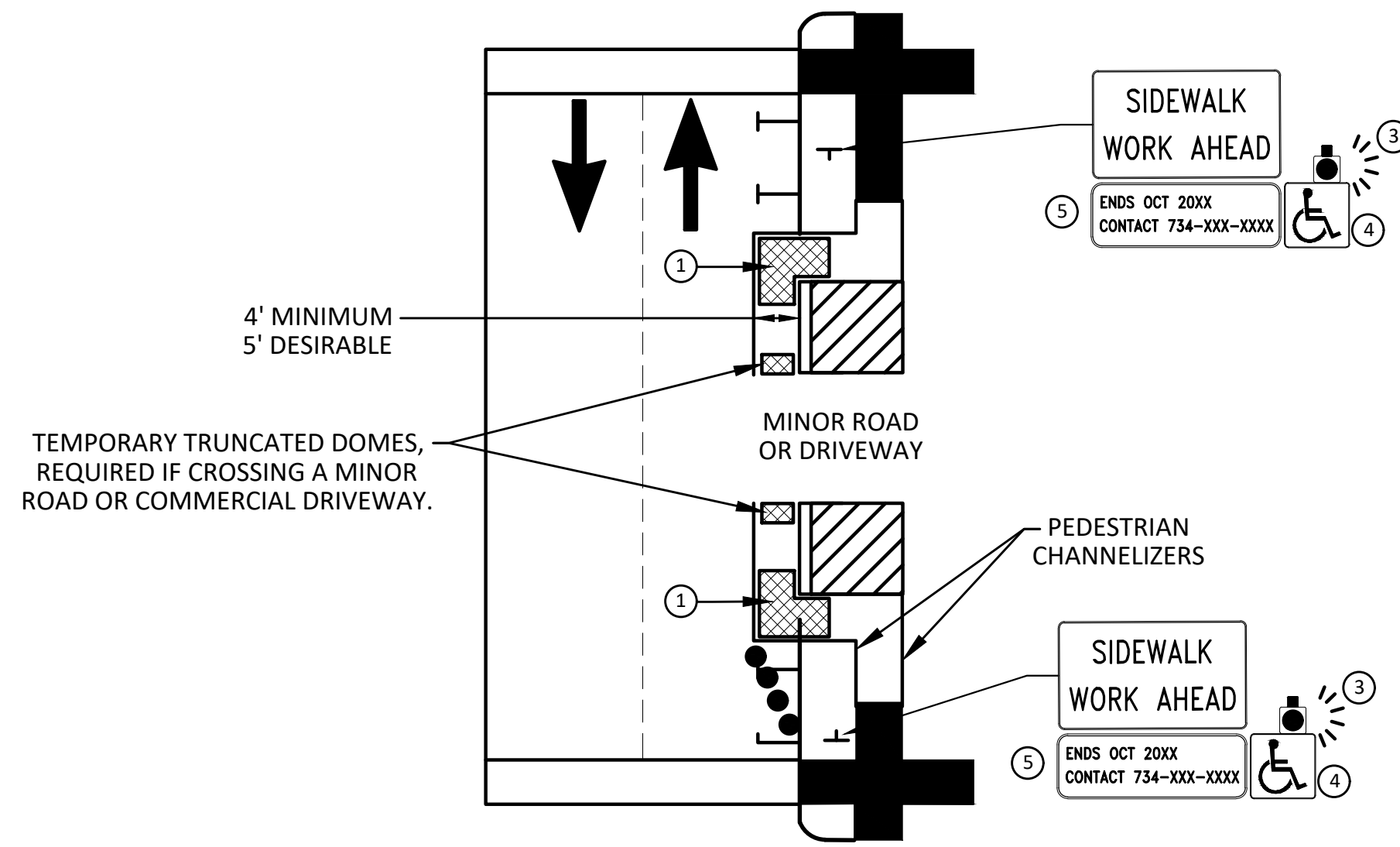


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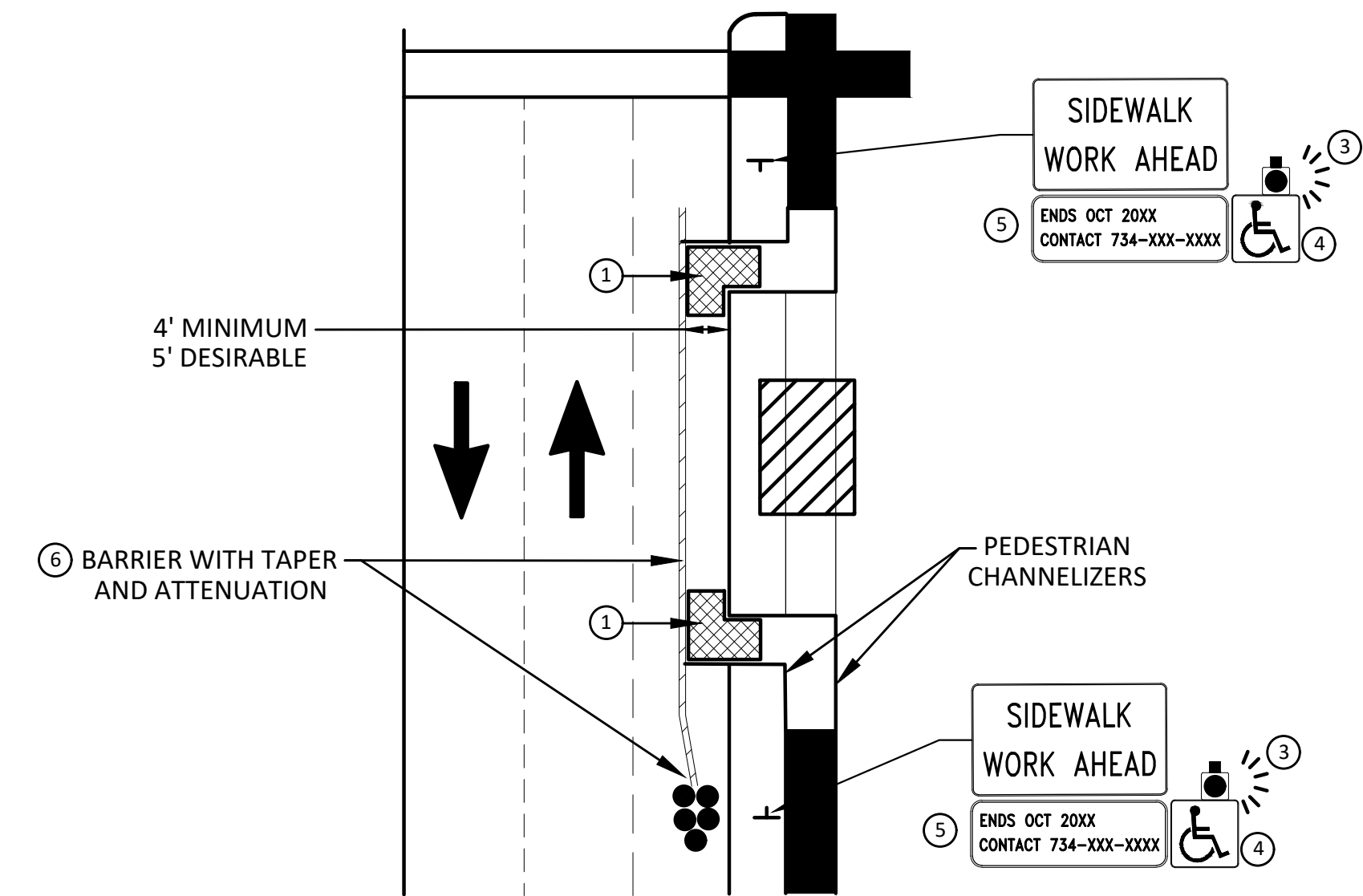


**BYPASS ON ADJACENT AVAILABLE  
RIGHT OF WAY  
BYPASS TYPE A**

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:

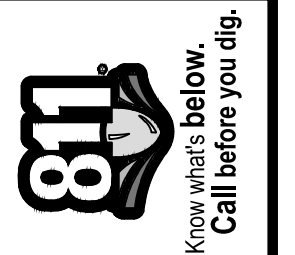
1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR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

**SPECIFIC NOTES**

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

**LEGEND**

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



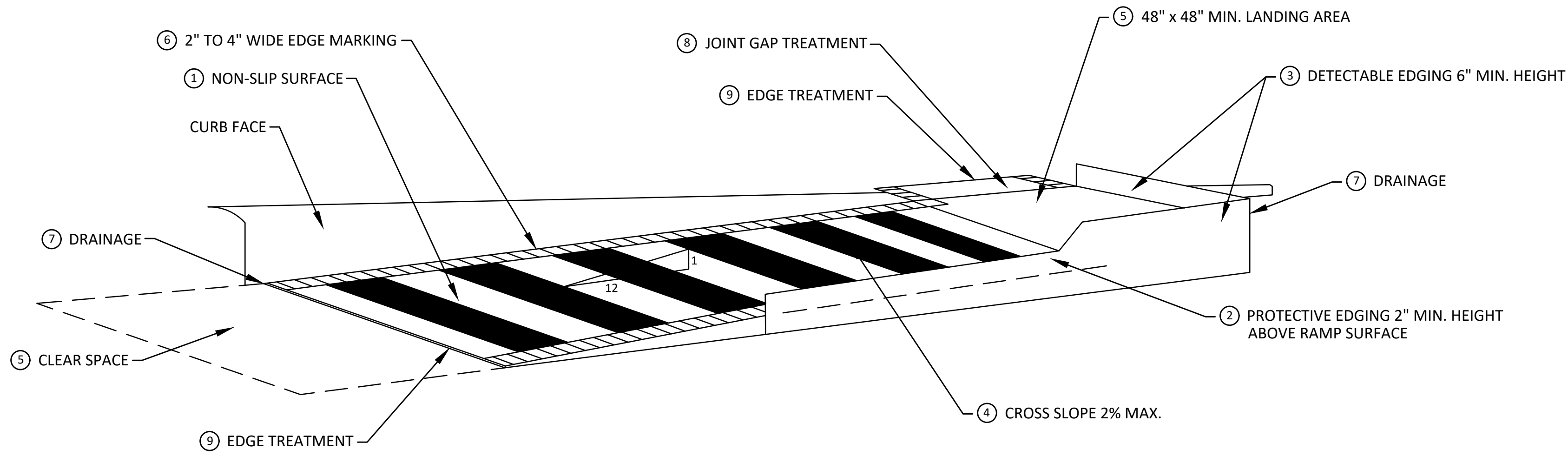
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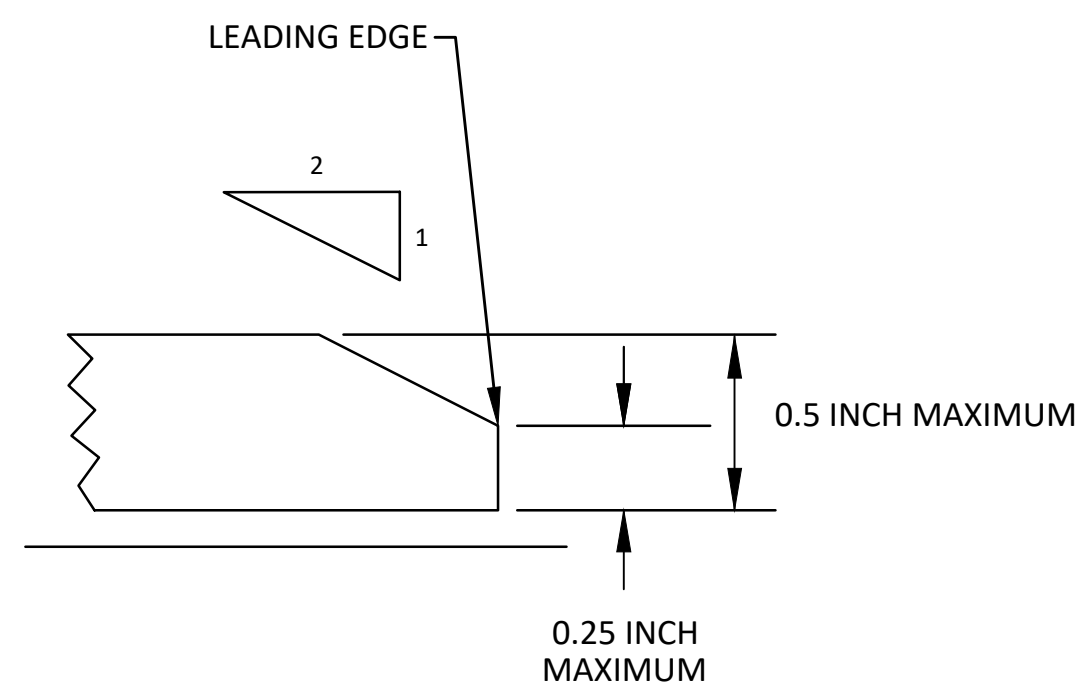
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 TRAFFIC CONTROL  
 ALTERNATE PEDESTRIAN ROUTE - BYPASS  
 SCALE: NTS  
 DRAWING No. 2019-024-14



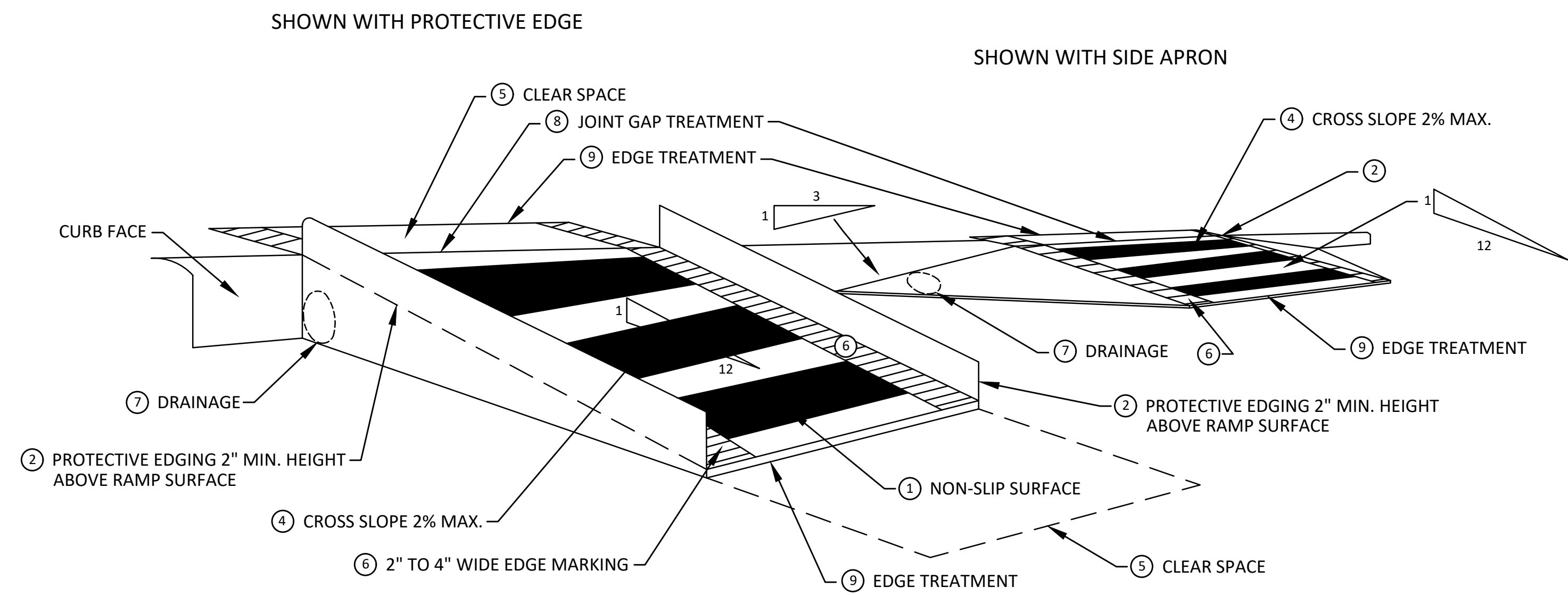
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**TEMPORARY CURB RAMP  
PARALLEL TO CURB**



**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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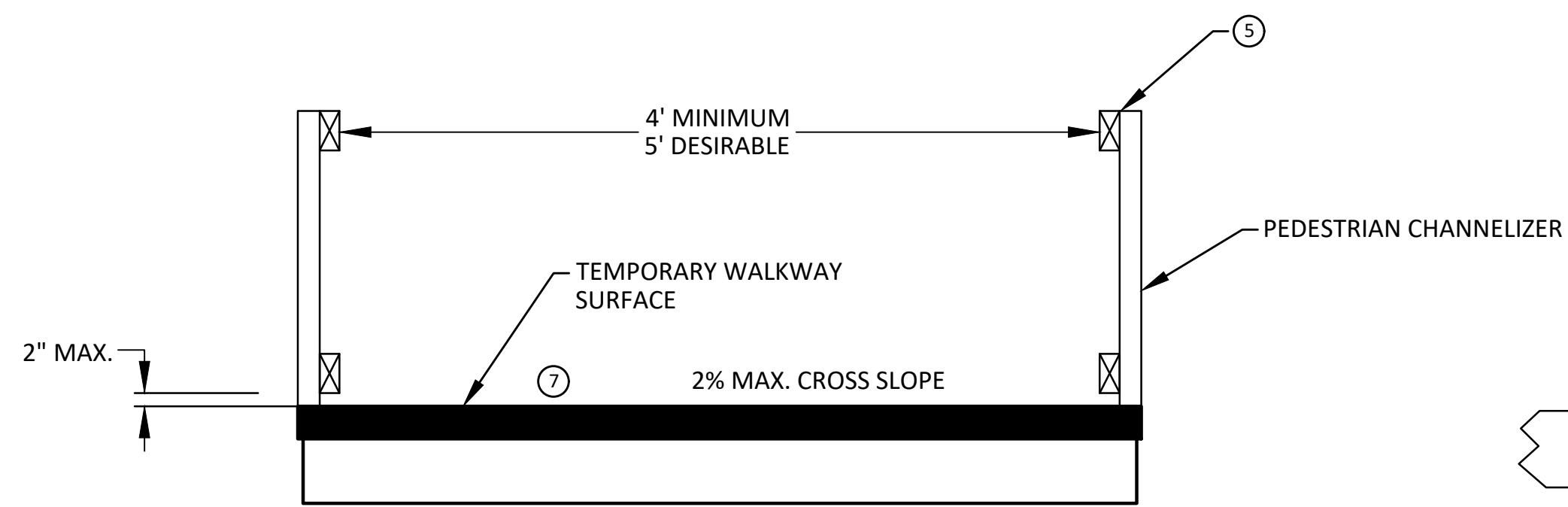
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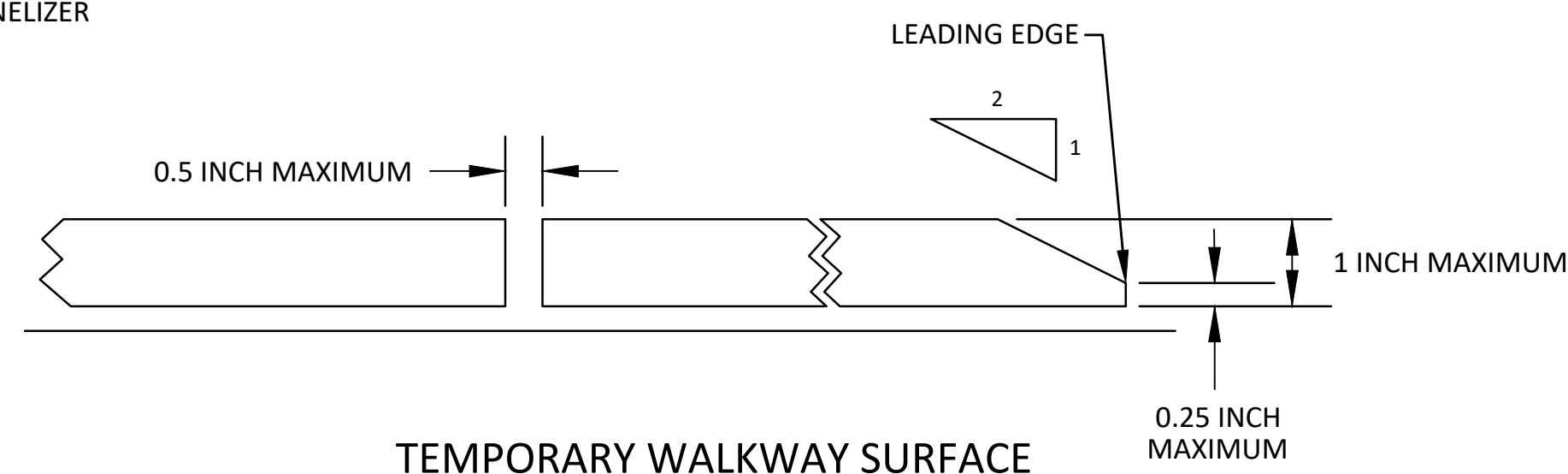
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
TRAFFIC CONTROL  
TPAR RAMPS  
SCALE: NTS  
DRAWING No. 2019-024-15



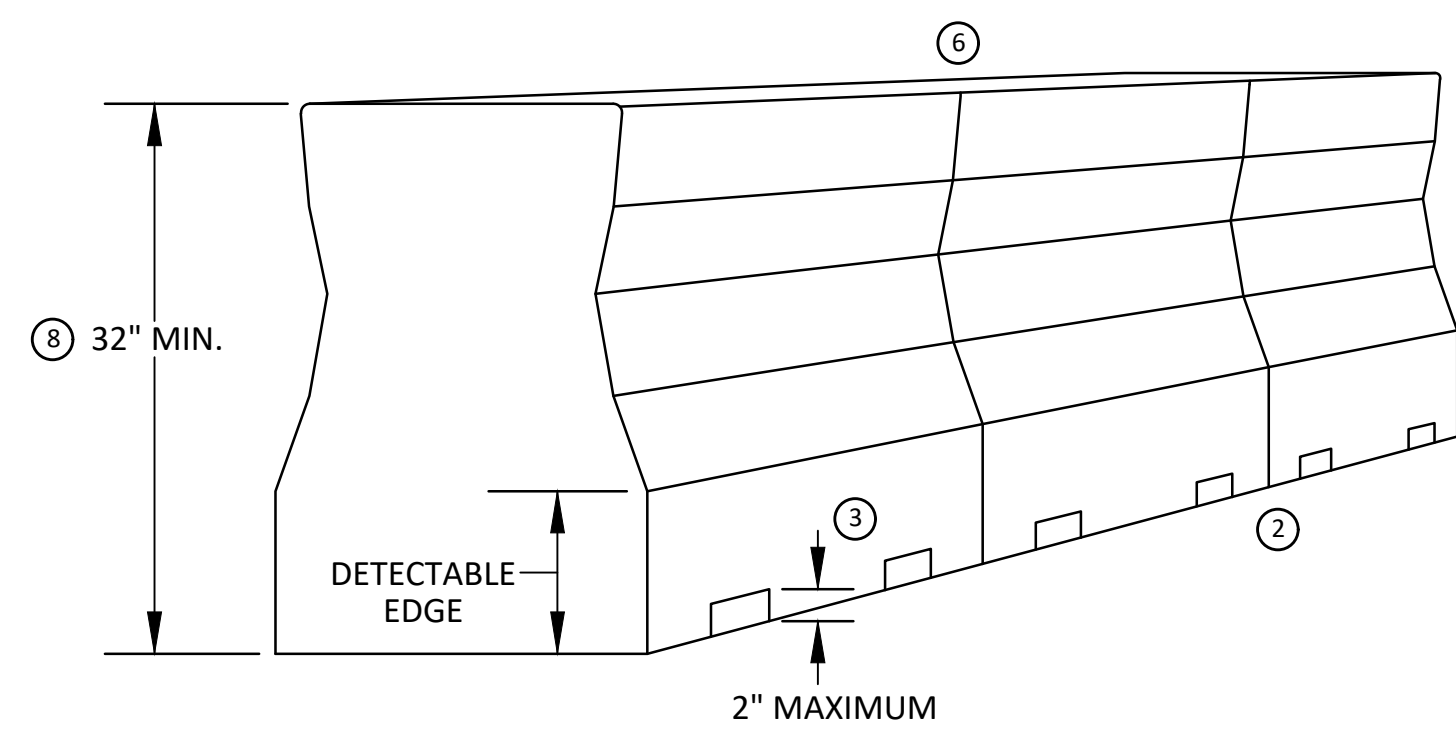
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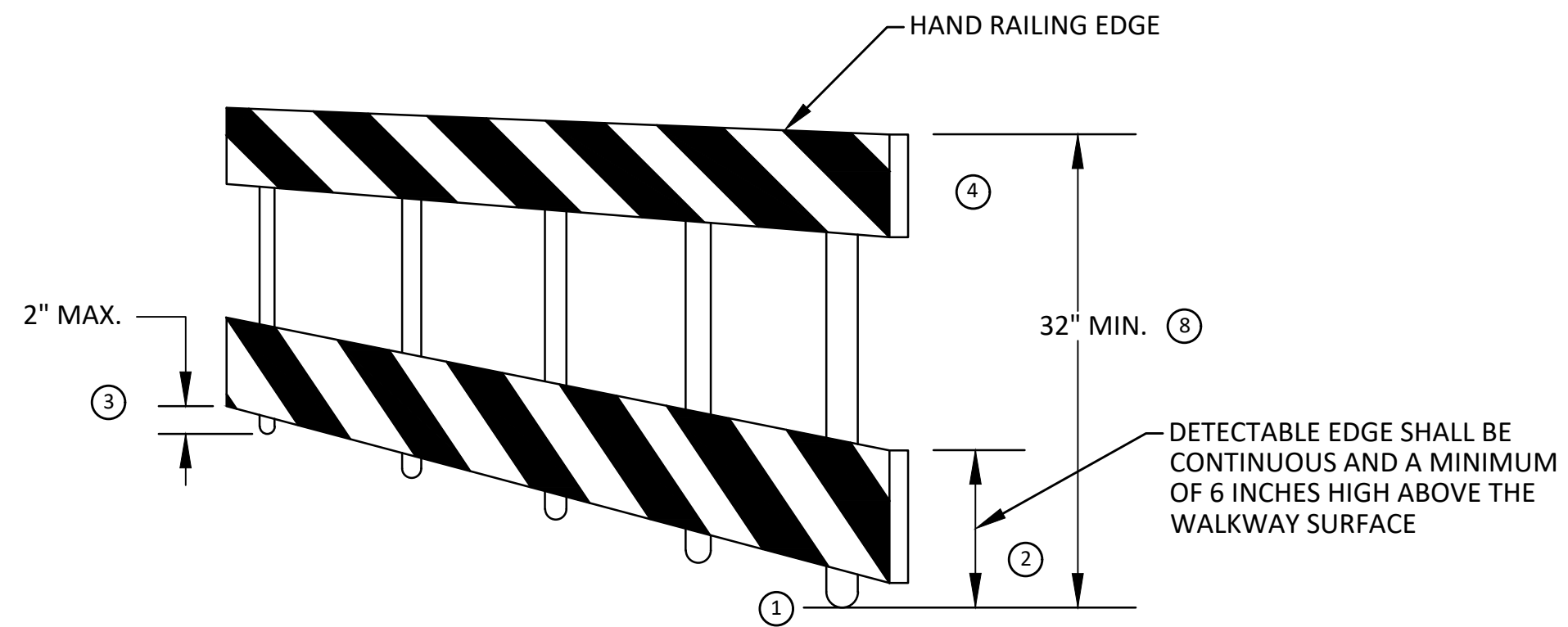
TEMPORARY PEDESTRIAN ACCESS



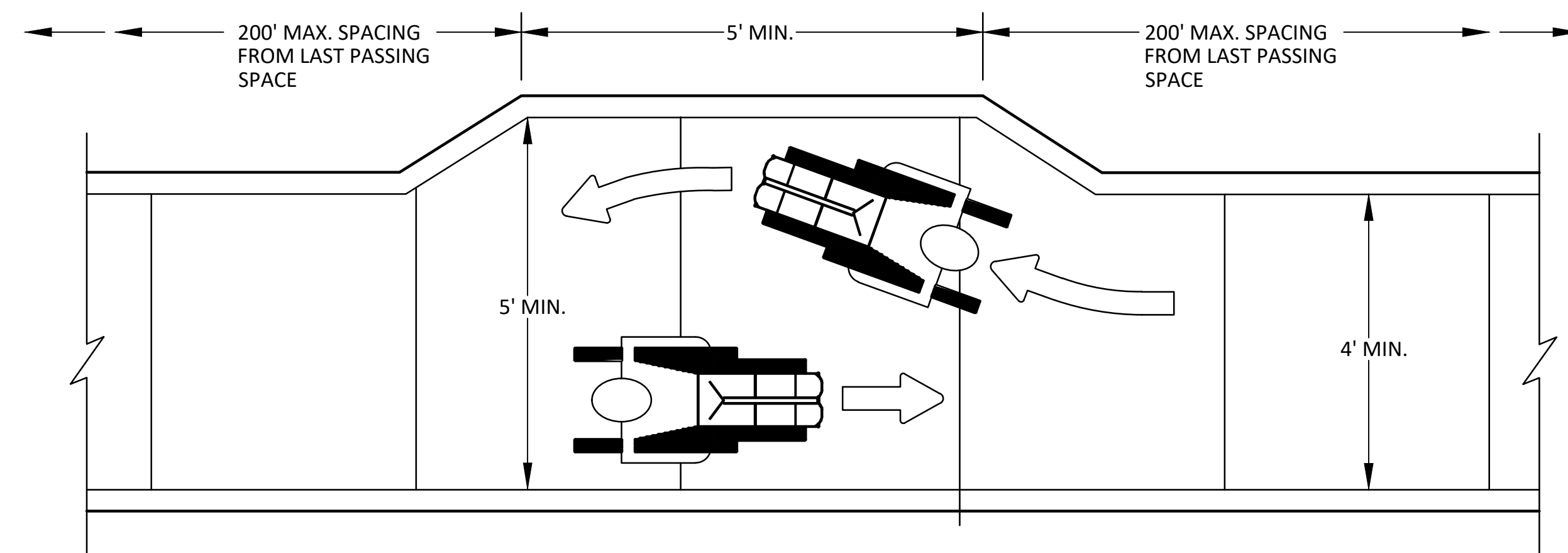
TEMPORARY WALKWAY SURFACE



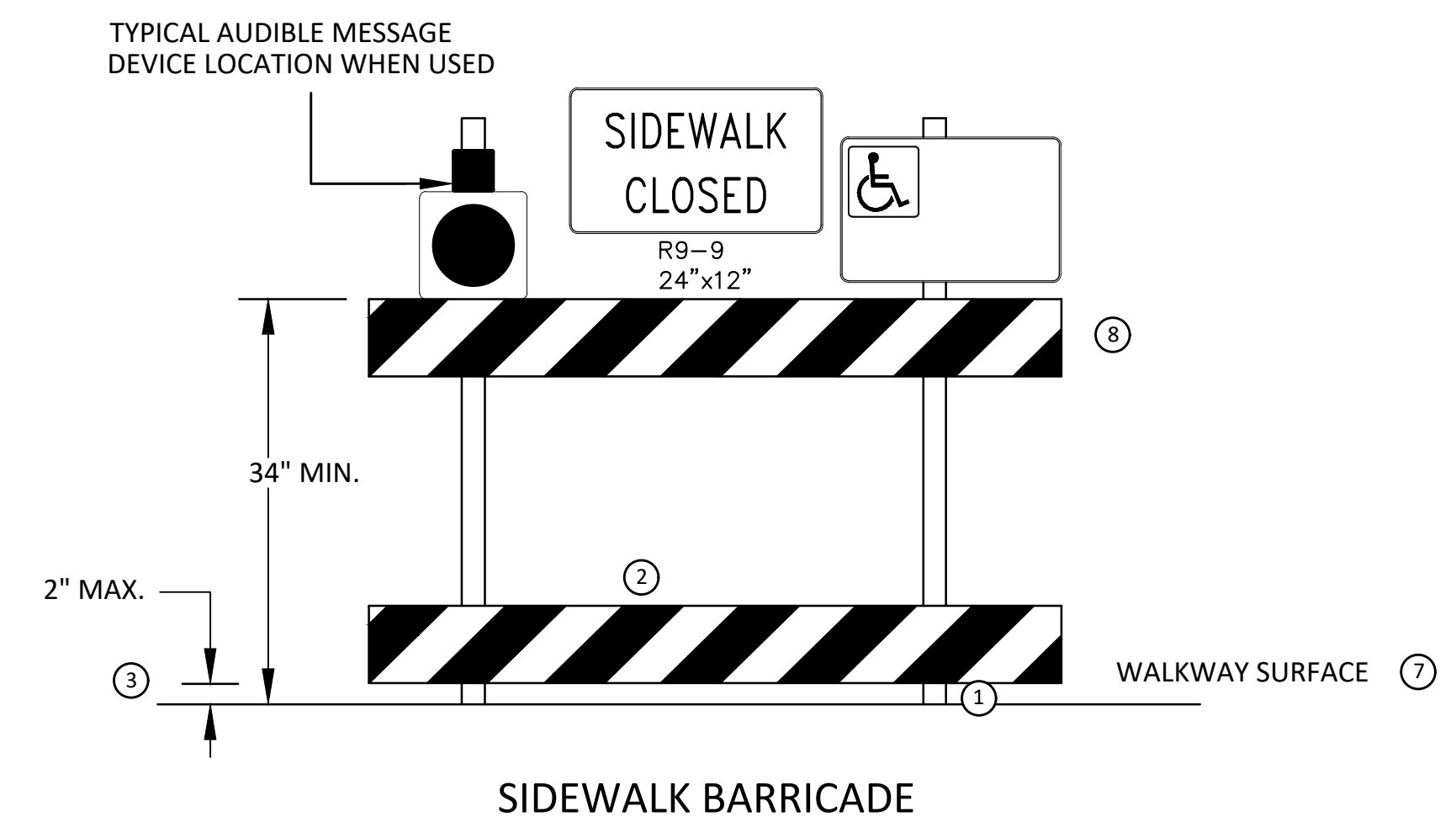
PEDESTRIAN CHANNELIZER USING A BARRIER  
(MINIMUM REQUIREMENTS)



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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TRAFFIC CONTROL  
TPAR WALKWAY DEVICES

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DRAWING No. 2019-024-16



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**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 83, 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.
- INSTALL TEMPORARY SEED AND 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 UPON BY NOVEMBER 15TH OR JUNE 30TH IS TO BE TEMPORARILY STABILIZED PER SPECIFICATIONS.

THE ESTIMATED COST OF SOIL EROSION AND SEDIMENTATION CONTROL MEASURES, TOPSOIL, SEEDING, AND MULCH = \$90,000

ESTIMATE OF EXCAVATION AND FILL FROM EXISTING TO FINAL GRADE:  
• EXCAVATION = 14,000 CY, FILL = 14,500 CY

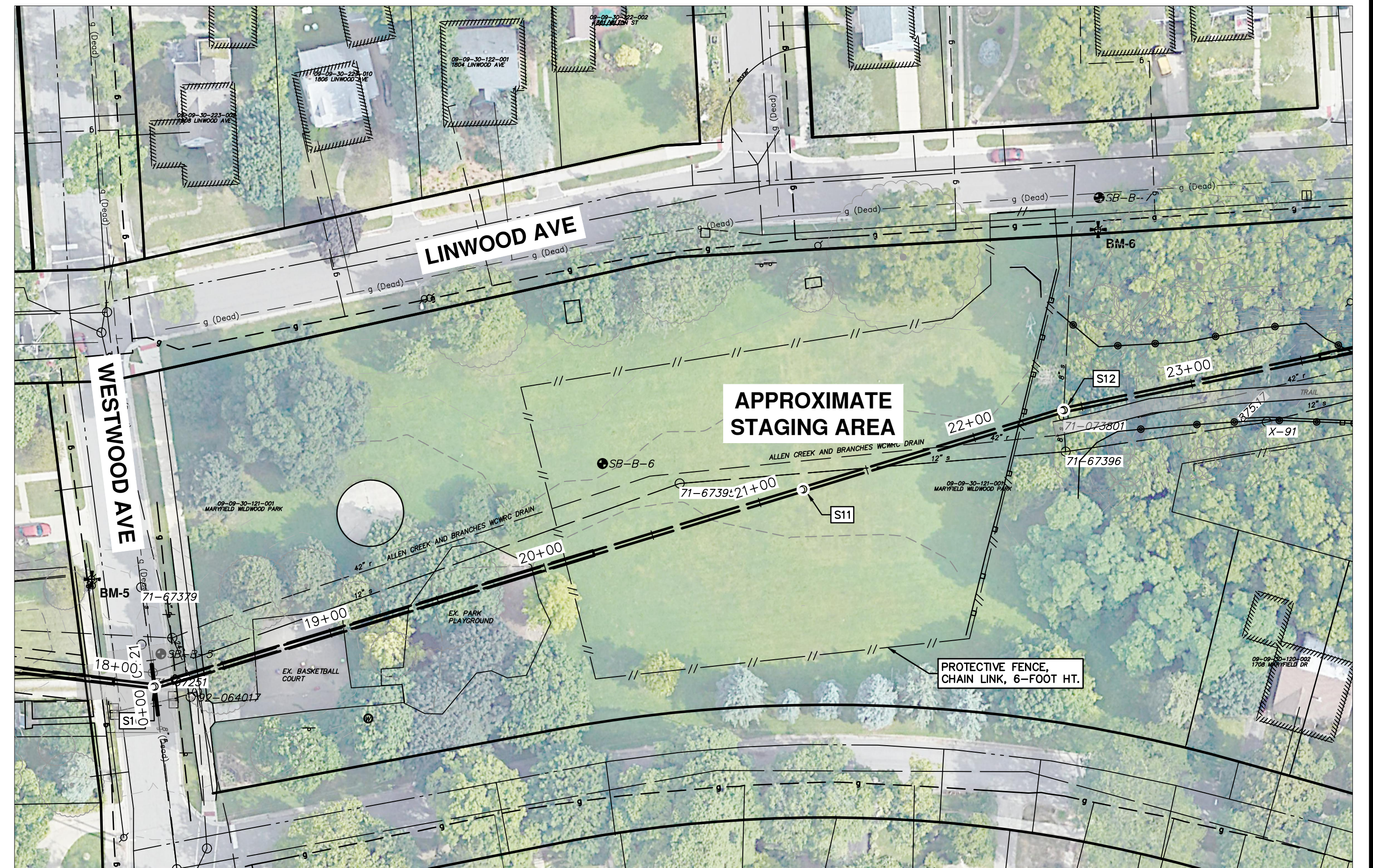
ON SITE SOILS PER THE USDA SOIL SURVEY OF WASHTENAW COUNTY, MICHIGAN:

- CPA - CONOVER-BROOKSTON LOAMS, 0 TO 2 PERCENT SLOPES
- FoB - FOX SANDY LOAM, TILL PLAIN, 2 TO 6 PERCENT SLOPES
- MdA - MATHERTON SANDY LOAM, 0 TO 4 PERCENT SLOPES
- WawabC - WAWASEE LOAM, 6 TO 12 PERCENT SLOPES

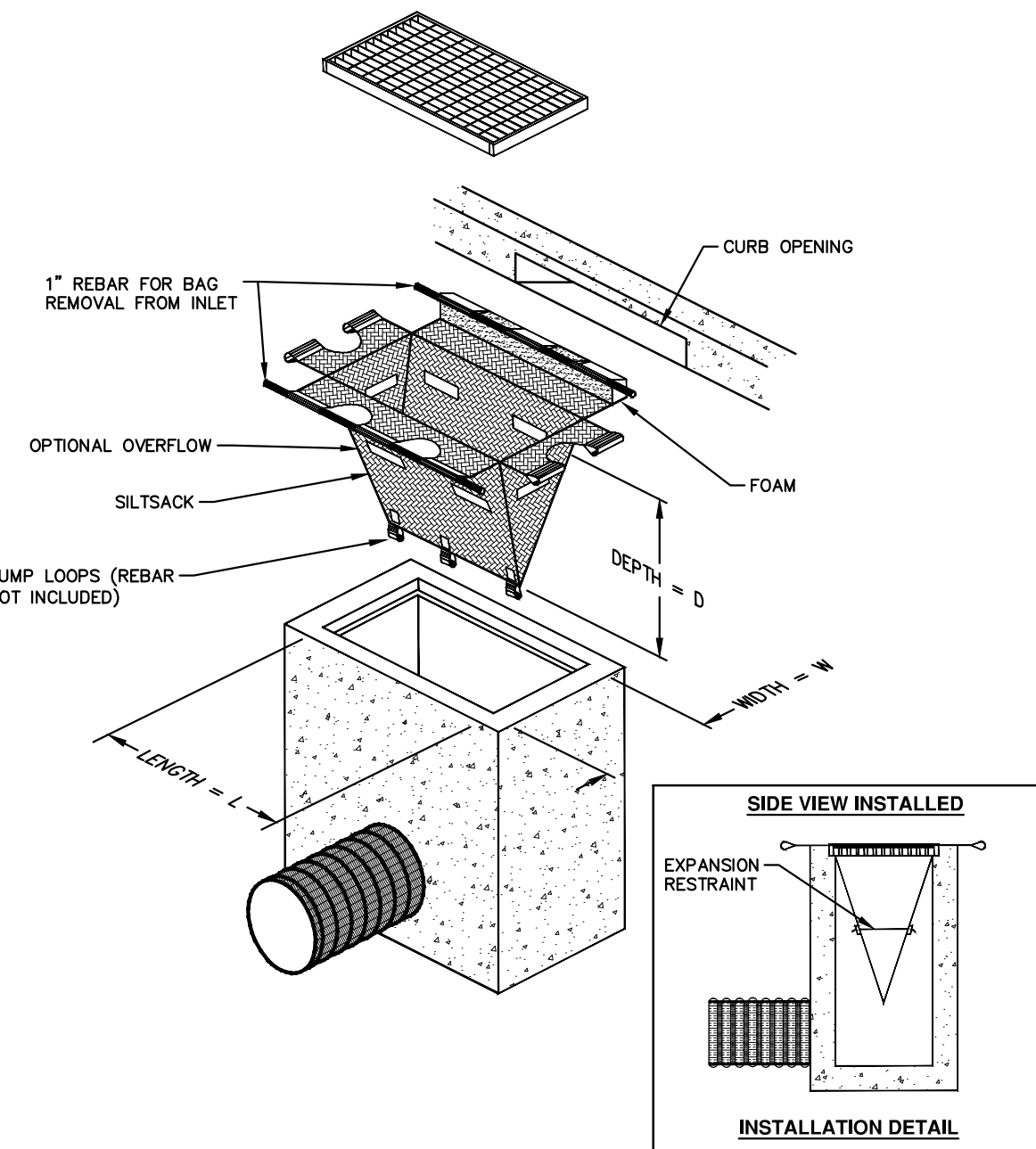
AREA OF PROPOSED DISTURBANCE = 4.44 ACRES

**GRASS SEED, FERTILIZER AND MULCH APPLICATION RATES:**

- TURF GRASS SEED APPLICATION RATE: 4 LBS / 1,000 SF  
MESIC WOODLAND SEED MIX APPLICATION RATE: 31 LBS / ACRE  
FERTILIZER APPLICATION RATE (FOR SEED): 20 LBS / 1,000 SF  
MULCH (GRAIN-FREE STRAW) APPLICATION RATE: 2 TONS / ACRE (OR 3,000 LBS STRAW TREATED WITH 100 GAL. OF ASPHALT EMULSION / ACRE



**STAGING AREA PLAN**  
SCALE: 1"=40'



**SILTSACK DETAIL**

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

**REGULAR FLOW SILTSACK**

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

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

**HI-FLOW SILTSACK**

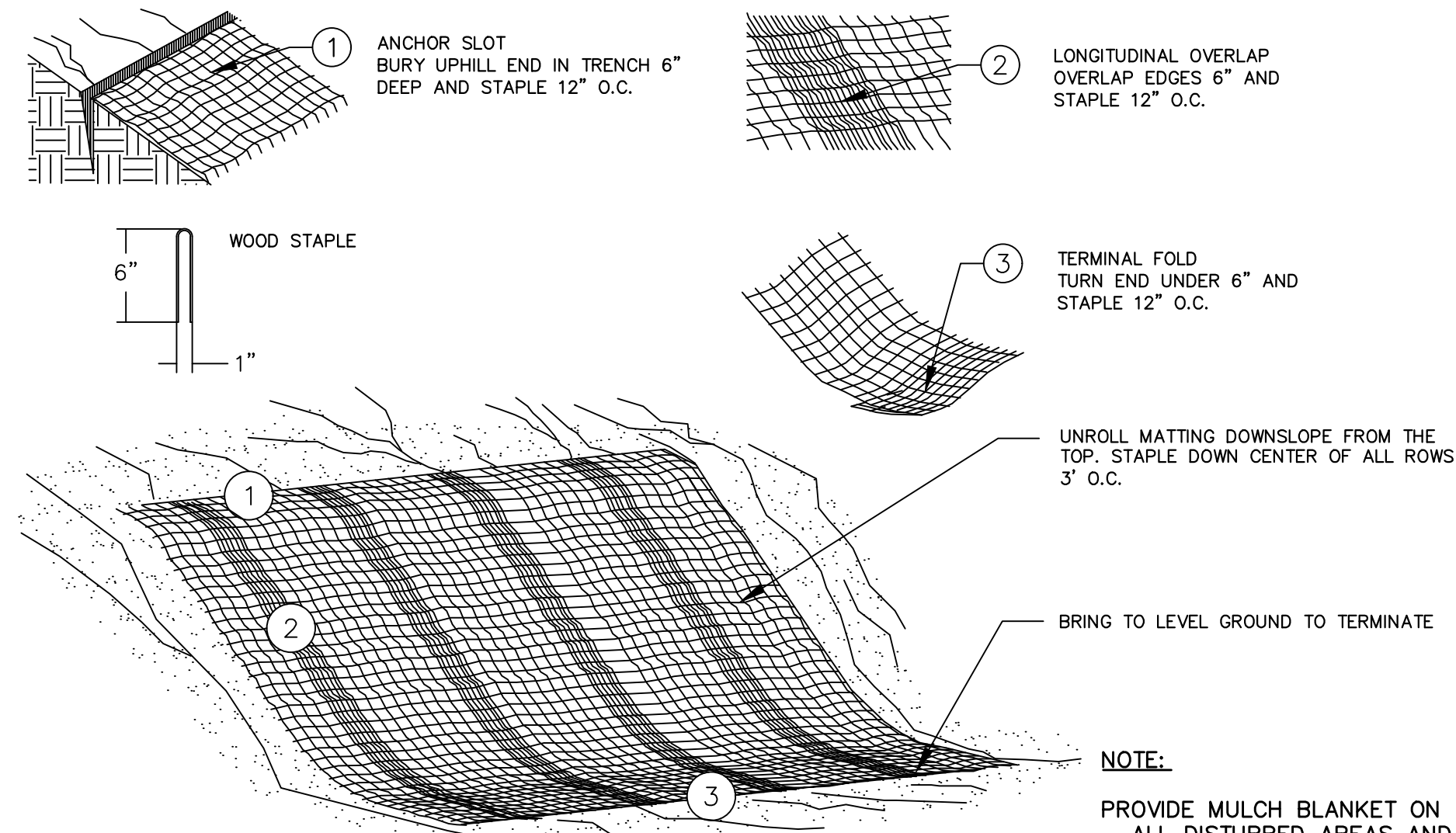
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

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

**OIL-ABSORBANT SILTSACK**

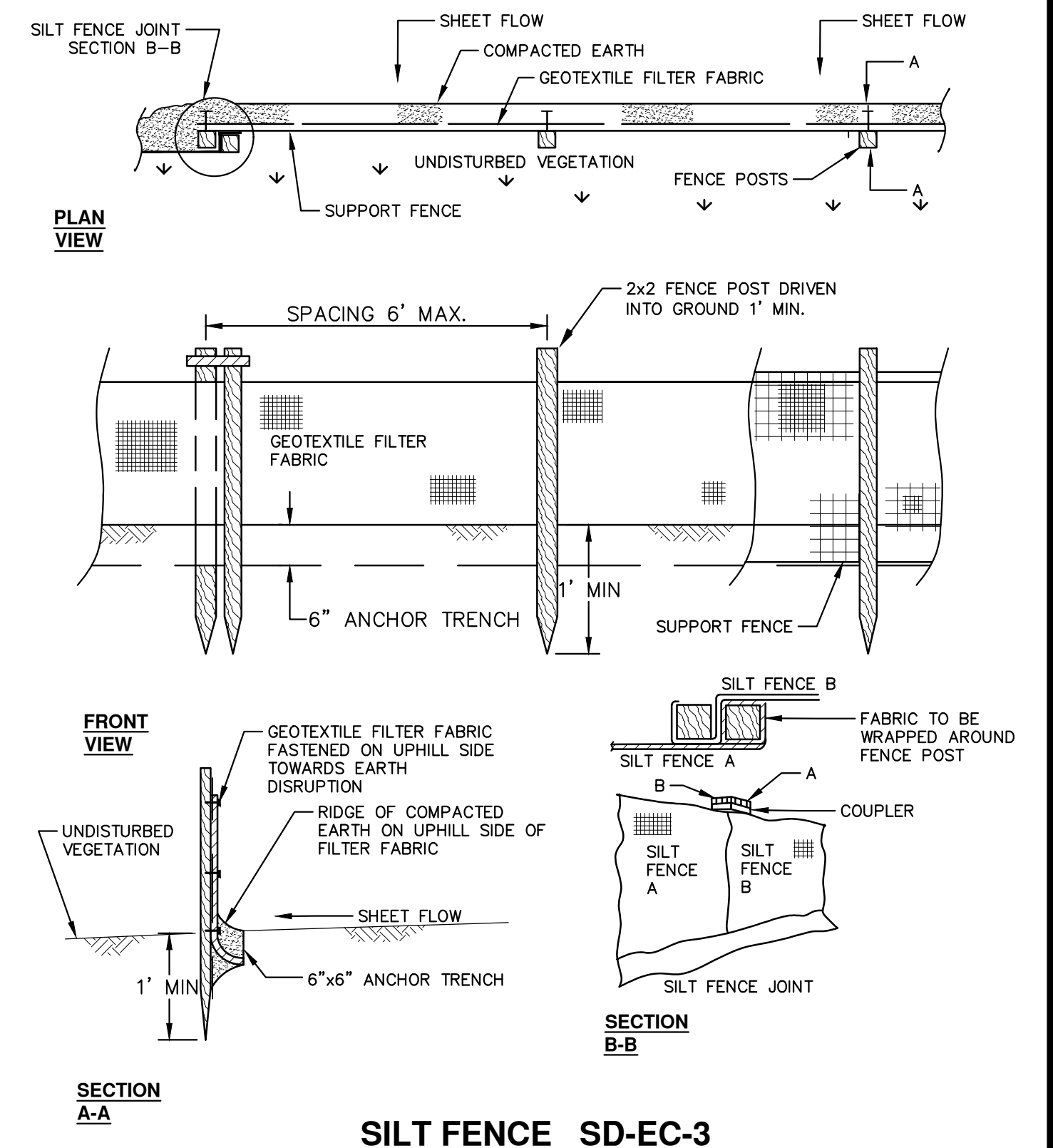
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPLILLS)

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



**MULCH BLANKET DETAIL**

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



**SILT FENCE SD-EC-3**



Know what's below.  
Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

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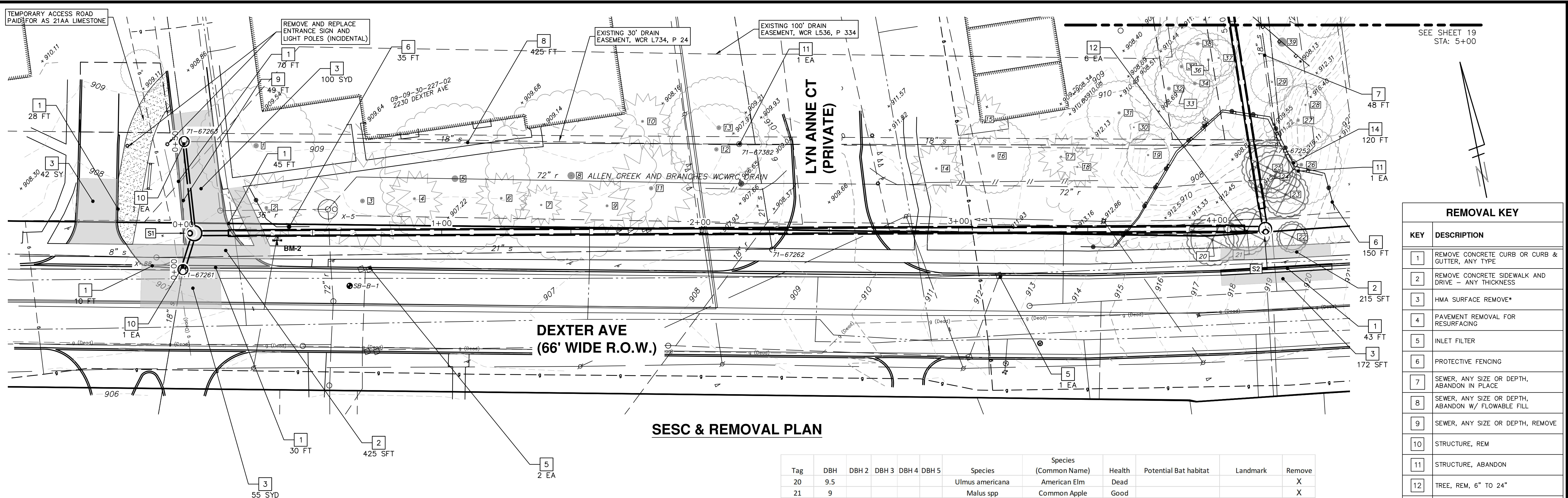


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
HURON-WEST PARK SANITARY SEWER REPLACEMENT  
SESC & REMOVAL AND RESTORATION PLAN  
SESC NOTES AND DETAILS

SCALE: NTS  
DRAWING No. 2019-024-17  
SHEET No.



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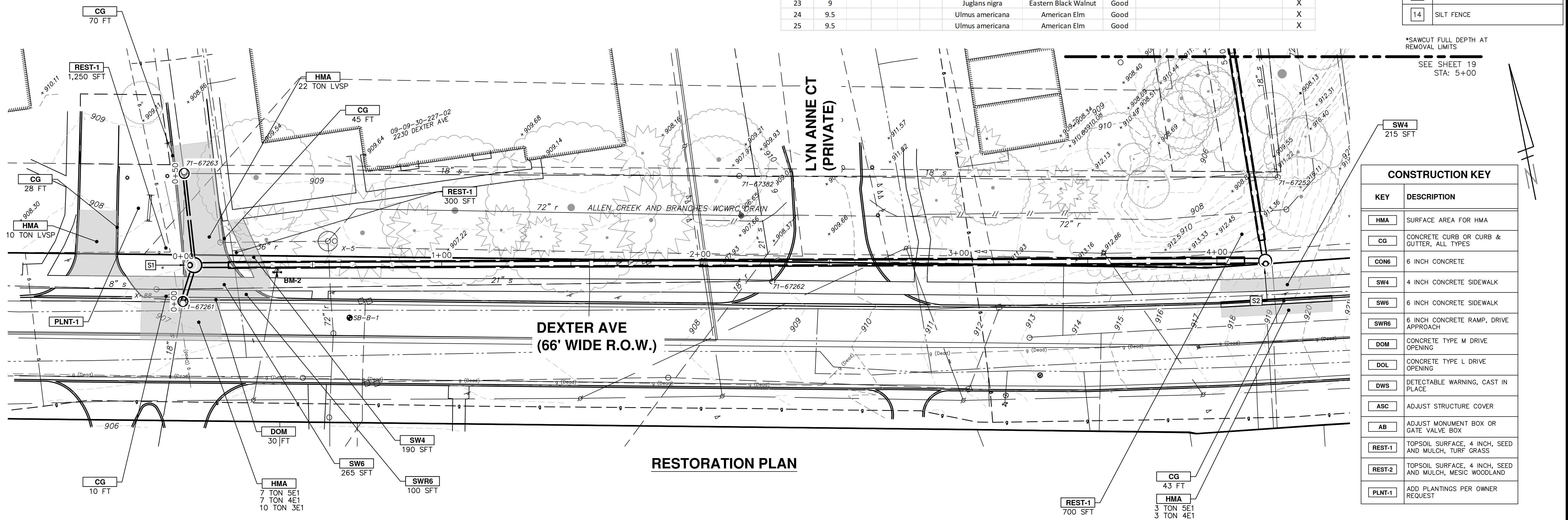


**SESC & REMOVAL PLAN**

Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	Species (Common Name)	Health	Potential Bat habitat	Landmark	Remove
20	9.5					Ulmus americana	American Elm	Dead			X
21	9					Malus spp	Common Apple	Good			X
22	5.5	3				Prunus spp	Fruit Tree	Good			X
23	9					Juglans nigra	Eastern Black Walnut	Good			X
24	9.5					Ulmus americana	American Elm	Good			X
25	9.5					Ulmus americana	American Elm	Good			X

**REMOVAL KEY**

KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA SURFACE REMOVE*
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



**RESTORATION PLAN**

**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

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

REV.	DATE	DRAWN	CHECKED	DESCRIPTION
4	11/16/2023	BWA	AFT	RE-BID SET PLAN
3	03/16/2021	BWA	CJE	BID SET PLAN
2	09/17/2020	BWA	CJE	PERMIT SET PLAN
1	06/15/2020	BWA	CJE	PRELIMINARY PLAN

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SEE SHEET 19  
STA: 5+00

SEE SHEET 19  
STA: 5+00

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

DRAWING No. 2019-024-18

SHEET No. 18 OF 40

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

**HURON-WEST PARK SANITARY SEWER REPLACEMENT**

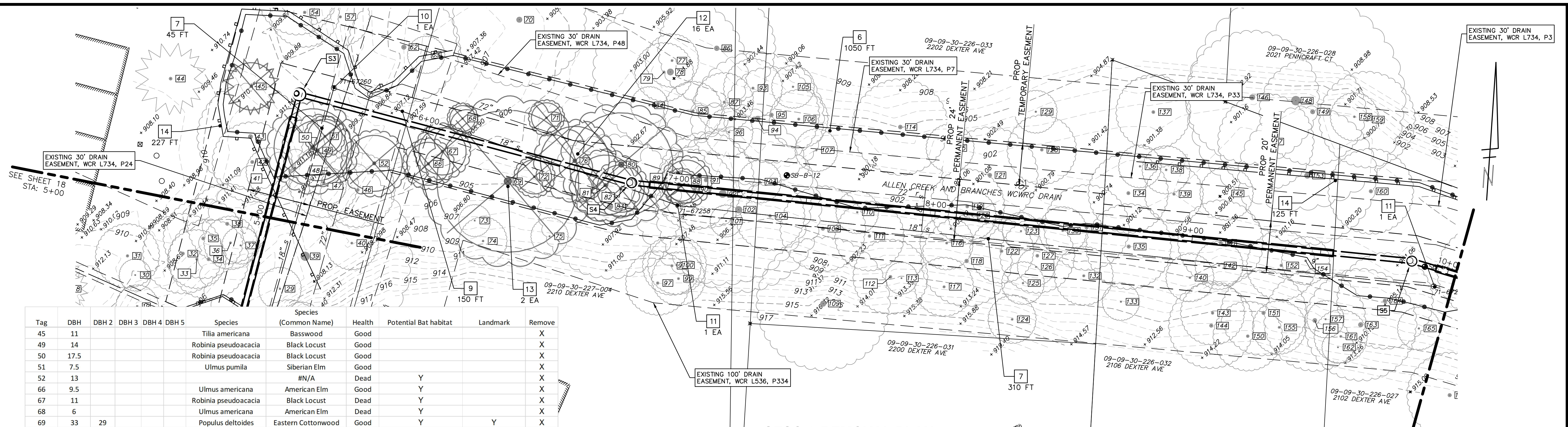
SESC & REMOVAL AND RESTORATION PLAN

STA. 0+00 TO STA. 5+00

ANN ARBOR MICHIGAN



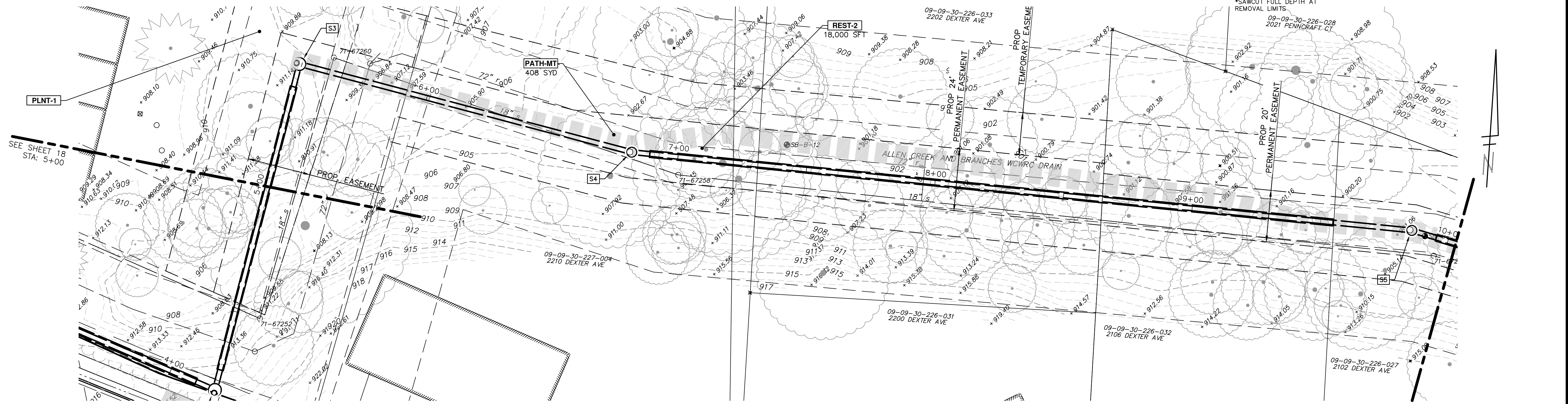
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Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	Species (Common Name)	Health	Potential Bat habitat	Landmark	Remove
45	11					Tilia americana	Basswood	Good			X
49	14					Robinia pseudoacacia	Black Locust	Good			X
50	17.5					Robinia pseudoacacia	Black Locust	Good			X
51	7.5					Ulmus pumila	Siberian Elm	Good			X
52	13					#N/A		Dead	Y		X
66	9.5					Ulmus americana	American Elm	Good	Y		X
67	11					Robinia pseudoacacia	Black Locust	Dead	Y		X
68	6					Ulmus americana	American Elm	Dead	Y		X
69	33	29				Populus deltoides	Eastern Cottonwood	Good	Y	Y	X
71	7					Ulmus americana	American Elm	Good	Y		X
72	8					Juglans nigra	Eastern Black Walnut	Good	Y		X
76	15.5					Ulmus americana	American Elm	Good	Y		X
80	24					Populus deltoides	Eastern Cottonwood	Good	Y	Y	X
81	13.5					Populus deltoides	Eastern Cottonwood	Good	Y		X
82	11					Populus deltoides	Eastern Cottonwood	Good			X
83	26.5					Populus deltoides	Eastern Cottonwood	Good		Y	X
88	5	9.5				Ulmus americana	American Elm	Good			X
89	6.5					Juglans nigra	Eastern Black Walnut	Fair			X


### SESC & REMOVAL PLAN

KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA SURFACE REMOVE*
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



### RESTORATION PLAN

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
PATH-MT	AGGREGATE MAINTENANCE PATH, 8-INCH 21AA, 8' WIDE WITH FABRIC, TOPPED WITH 2" TOPSOIL




Know what's below. Call before you dig.

REV.	DATE	DESCRIPTION
4	11/16/2023	RE-BID SET PLAN
3	03/16/2021	BID SET PLAN
2	09/17/2020	PERMIT SET PLAN
1	06/15/2020	PRELIMINARY PLAN

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

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**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
SESC & REMOVAL AND RESTORATION PLAN

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

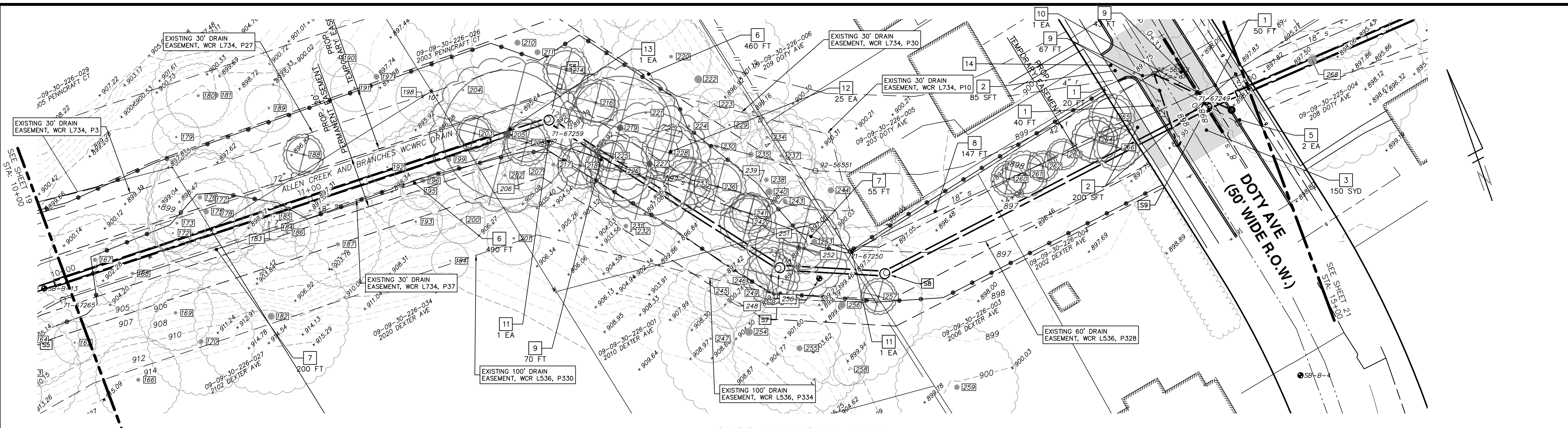
DRAWING NO. 2019-024-19

SHEET NO. 19 OF 40

STA. 5+00 TO STA. 10+00



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**SESC & REMOVAL PLAN**

KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE

2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA SURFACE REMOVE*
4	PAVEMENT REMOVAL FOR RESURFACING

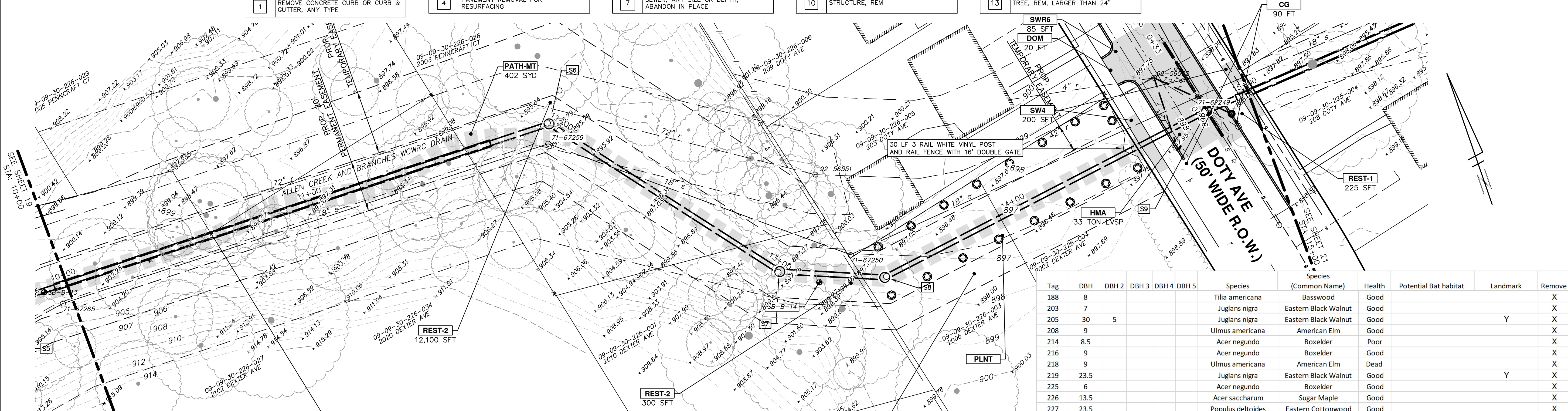
5	INLET FILTER
6	PROTECTIVE FENCING
7	SEWER, ANY SIZE OR DEPTH, ABANDON IN PLACE

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	203 DOTY AVE. DRIVEWAY TO REMAIN ACCESSIBLE DURING CONSTRUCTION
----	---

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



**RESTORATION PLAN**

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
PATH-MT	AGGREGATE MAINTENANCE PATH, 8-INCH 21AA, 8' WIDE WITH FABRIC, TOPPED WITH 2" TOPSOIL

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, MESC WOODLAND
PLNT	FLOWERING QUINCES, AT 15' SPACING (18 EACH)

Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	Species (Common Name)	Health	Potential Bat habitat	Landmark	Remove
188	8					Tilia americana	Basswood	Good			X
203	7					Juglans nigra	Eastern Black Walnut	Good			X
205	30	5				Juglans nigra	Eastern Black Walnut	Good		Y	X
208	9					Ulmus americana	American Elm	Good			X
214	8.5					Acer negundo	Boxelder	Poor			X
216	9					Acer negundo	Boxelder	Good			X
218	9					Ulmus americana	American Elm	Dead			X
219	23.5					Juglans nigra	Eastern Black Walnut	Good		Y	X
225	6					Acer negundo	Boxelder	Good			X
226	13.5					Acer saccharum	Sugar Maple	Good			X
227	23.5					Populus deltoides	Eastern Cottonwood	Good			X
228	10.5					Populus deltoides	Eastern Cottonwood	Fair			X
233	9.5					Acer negundo	Boxelder	Fair			X
236	11					Populus deltoides	Eastern Cottonwood	Poor			X
241	7.5						#N/A	Dead			X
242	11					Populus deltoides	Eastern Cottonwood	Good			X
250	11					Ulmus americana	American Elm	Dead			X
251	20					Populus deltoides	Eastern Cottonwood	Good			X
252	9.5					Ulmus americana	American Elm	Good			X
257	6.5					Acer plantanoides	Norway Maple	Good			X
260	6.5					Celtis occidentalis	Hackberry	Good			X
261	4.5	9				Tsuga canadensis	Eastern Hemlock	Fair			X
262	6					Prunus serrulata	East Asian Cherry	Good			X
263	6	6				Prunus serrulata	East Asian Cherry	Good			X
264	9	8	5			Tsuga canadensis	Eastern Hemlock	Good			X
265	10					Tsuga canadensis	Eastern Hemlock	Dead			X



Know what's below.  
Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CUE
2	PERMIT SET PLAN	09/17/2020	BWA	CUE
1	PRELIMINARY PLAN	06/15/2020	BWA	CUE

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

**HURON-WEST PARK SANITARY SEWER REPLACEMENT**

**SESC & REMOVAL AND RESTORATION PLAN**


SCALE PLAN: 1" = 20'

PROFILE: 1" = 20'

DRAWING NO: 2019-024-20

SHEET NO. 20 OF 40

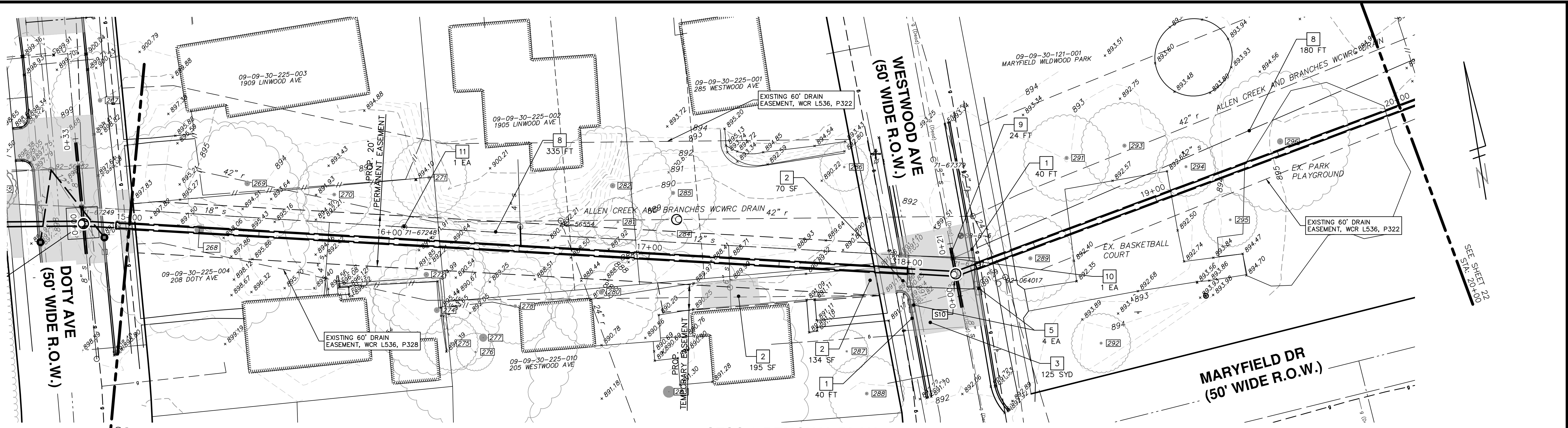
STA. 10+00 TO STA. 15+00



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ANN ARBOR  
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**SESC & REMOVAL PLAN**

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE

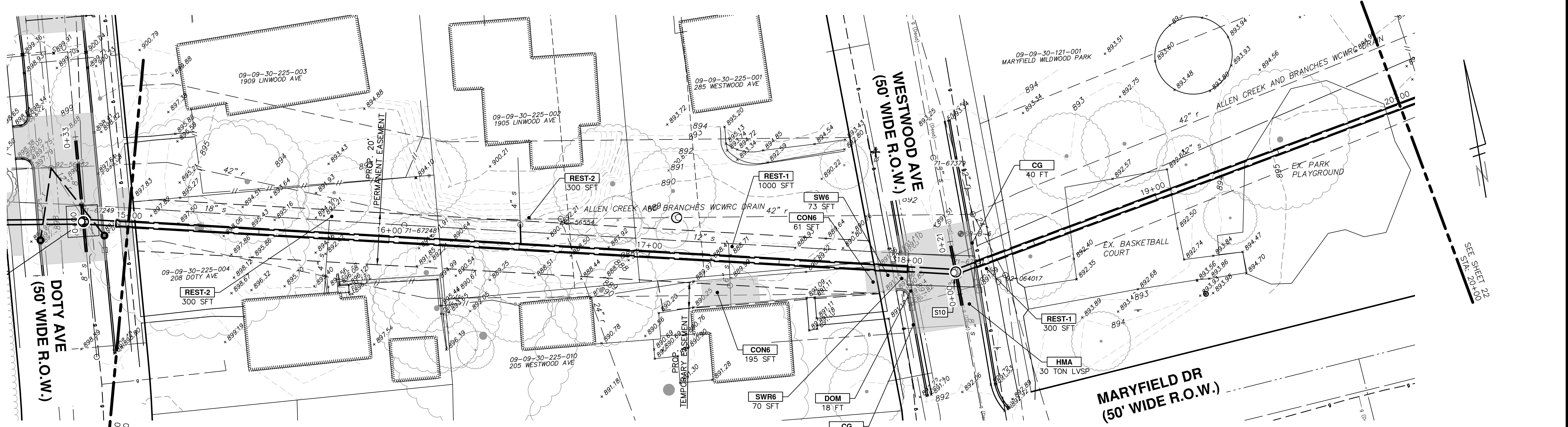
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA SURFACE REMOVE*
4	PAVEMENT REMOVAL FOR RESURFACING

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"

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



**RESTORATION PLAN**

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

\*FULL DEPTH RESTORATION

Know what's below. Call before you dig.

11/16/2023  
03/16/2021  
09/17/2020  
06/15/2020

RE-BID SET PLAN  
BID SET PLAN  
PERMIT SET PLAN  
PRELIMINARY PLAN

AFT  
BWA  
BWA  
BWA  
BWA

C/E  
C/E  
C/E  
C/E

CHECKED  
DRAWN

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'

PROFILE: 1" = 4'

HURON-WEST PARK SANITARY SEWER REPLACEMENT

SESC & REMOVAL AND RESTORATION PLAN

DRAWING No. 2019-024-21

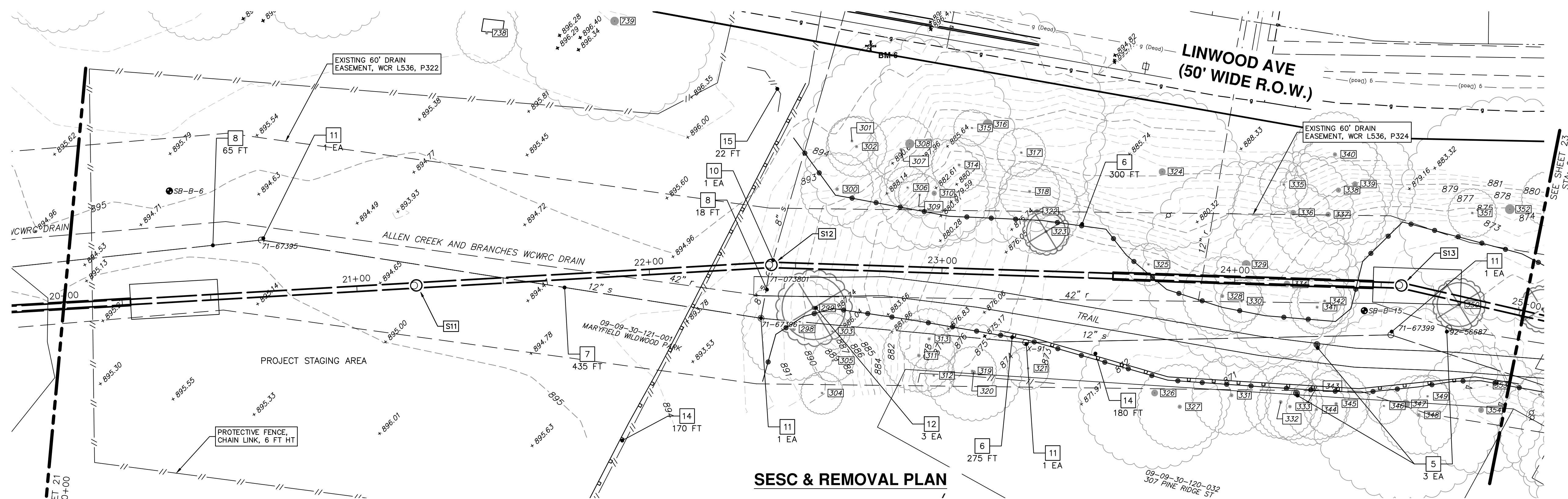
SHEET No. 21 OF 40

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PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106  
ANN ARBOR  
734-764-6410  
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STA. 15+00 TO STA. 20+00



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**SESC & REMOVAL PLAN**

Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	Species (Common Name)	Health	Potential Bat habitat	Landmark	Remove
299	13					Acer plantanoides	Norway Maple	Good			X
323	8					Ulmus americana	American Elm	Good			X
350	8.5					Ulmus americana	American Elm	Good			X

KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS

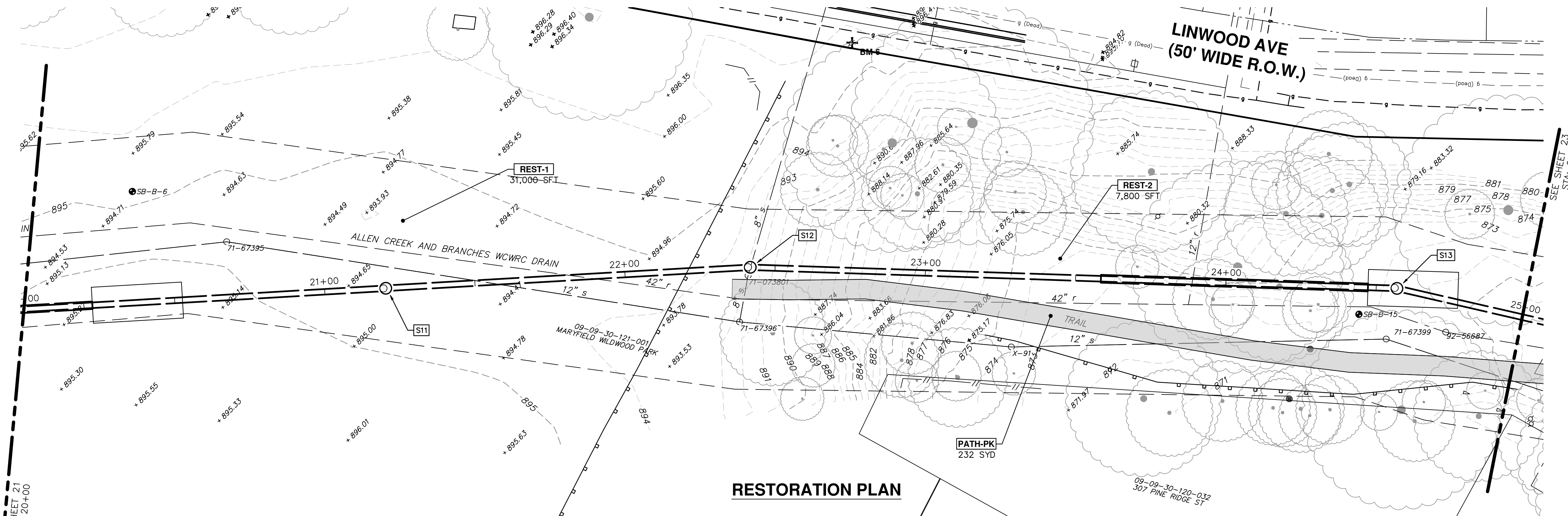
3	HMA SURFACE REMOVE*
4	PAVEMENT REMOVAL FOR RESURFACING
5	INLET FILTER
6	PROTECTIVE FENCING

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

15	REMOVE AND REPLACE BACKSTOP, INCIDENTAL
----	---

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



**RESTORATION PLAN**

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

PATH-PK	AGGREGATE PARK PATH, 8 INCH 23A, 8' WIDE WITH FABRIC
---------	--



Know what's below.  
Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

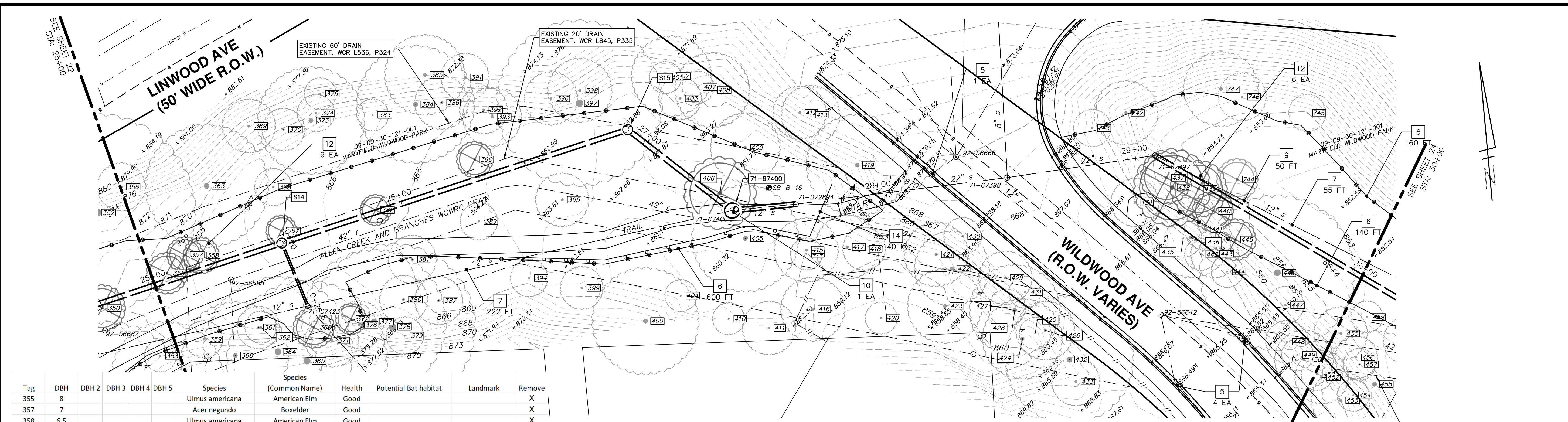


**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
**SESC & REMOVAL AND RESTORATION PLAN**

SCALE PLAN: 1" = 20'  
 PROFILE: 1" = 4'  
 DRAWING No. 2019-024-22  
 SHEET No. 22 OF 40  
 STA. 20+00 TO STA. 25+00



V:\2075\active\2075151700\civil\design\drawing\151700C-105.dwg Dwg Created: 9-Jun-20 -- a2 standard bw.stb -- Plot Date: 15-Nov-23



Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	Species (Common Name)	Health	Potential Bat habitat	Landmark	Remove
355	8					Ulmus americana	American Elm	Good			X
357	7					Acer negundo	Boxelder	Good			X
358	6.5					Ulmus americana	American Elm	Good			X
366	7.5					Acer plantanoides	Norway Maple	Good			X
367	6					Acer plantanoides	Norway Maple	Good			X
372	6					Acer plantanoides	Norway Maple	Good			X
382	6					Ulmus americana	American Elm	Good			X
390	6.5					Acer plantanoides	Norway Maple	Good			X
406	14	13				Acer plantanoides	Norway Maple	Good			X
437	9.5					Acer plantanoides	Norway Maple	Good			X
438	14.5					Acer plantanoides	Norway Maple	Good			X
439	10.5					Acer plantanoides	Norway Maple	Good			X
440	8					Acer plantanoides	Norway Maple	Good			X
445	8					Acer plantanoides	Norway Maple	Good			X
744	8					Acer plantanoides	Norway Maple	Good			X

### SESC & REMOVAL PLAN

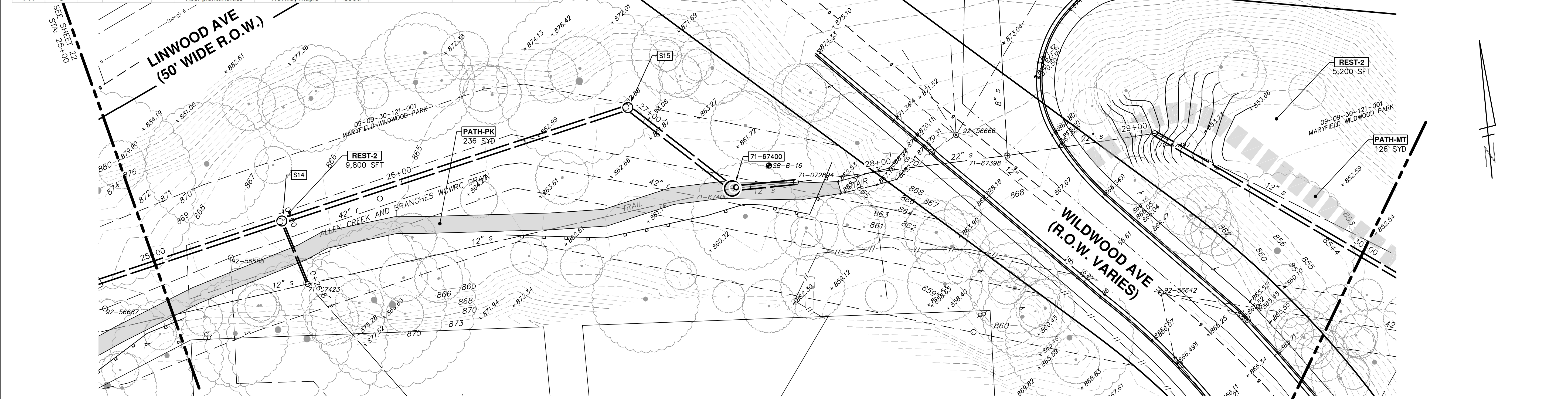
REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA SURFACE REMOVE*

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



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


### RESTORATION PLAN

PATH-PK	AGGREGATE PARK PATH, 8 INCH 23A, 8' WIDE WITH FABRIC
PATH-MT	AGGREGATE MAINTENANCE PATH, 8-INCH 21AA, 8' WIDE WITH FABRIC, TOPPED WITH 2" TOPSOIL



Know what's below.  
Call before you dig.

REV.	DATE	DESCRIPTION
4	11/16/2023	RE-BID SET PLAN
3	03/16/2021	BID SET PLAN
2	09/17/2020	PERMIT SET PLAN
1	06/15/2020	PRELIMINARY PLAN



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
**SESC & REMOVAL AND RESTORATION PLAN**

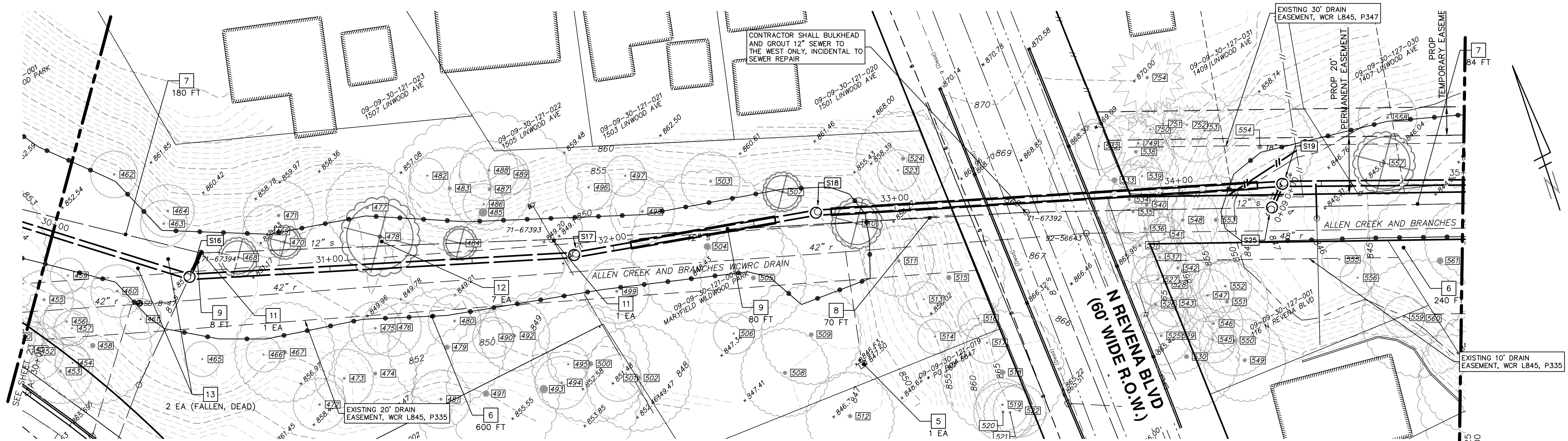
SCALE PLAN: 1" = 20'  
 PROFILE: 1" = 4'

DRAWING No. **2019-024-23**  
 SHEET No. **23 OF 40**

STA. 25+00 TO STA. 30+00



V:\2075\active\2075151700\civil\design\drawing\151700C-106.dwg Dwg Created: 20-Dec-21 - \_g2 standard bw.stb - Plot Date: 15-Nov-23



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA SURFACE REMOVE*

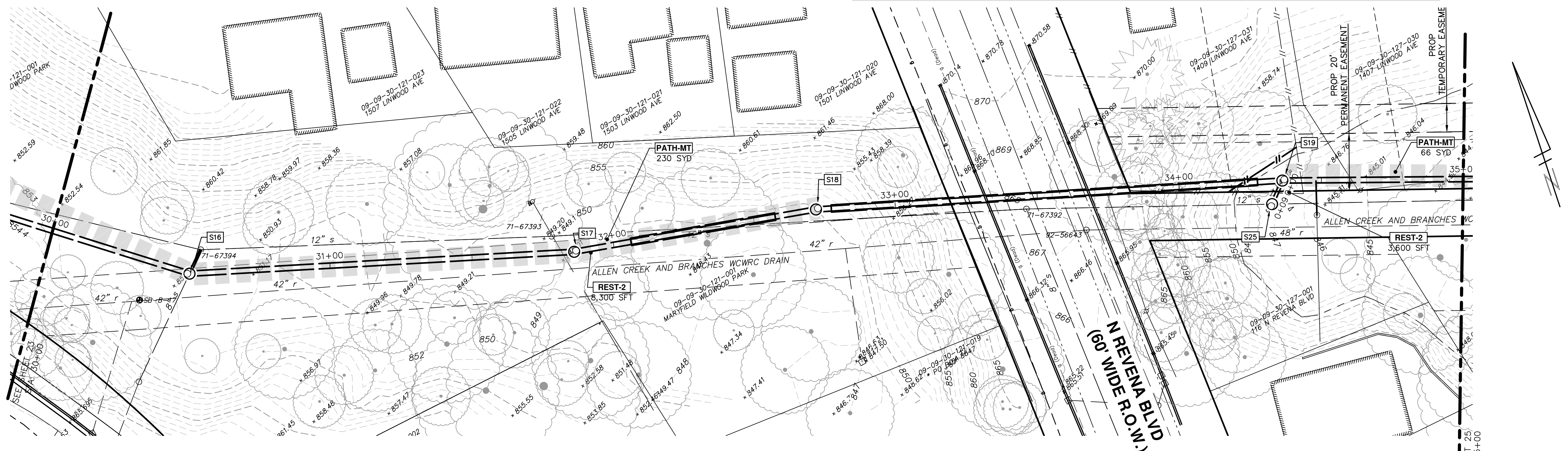
4	PAVEMENT REMOVAL FOR RESURFACING
5	INLET FILTER
6	PROTECTIVE FENCING
7	SEWER, ANY SIZE OR DEPTH, ABANDON IN PLACE
8	SEWER, ANY SIZE OR DEPTH, ABANDON W/ FLOWABLE FILL

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"

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS

**SESC & REMOVAL PLAN**

Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	Species (Common Name)	Health	Potential Bat habitat	Landmark	Remove
468	7					Acer plantanoides	Norway Maple	Good			X
470	6					Acer plantanoides	Norway Maple	Good			X
478	13.5					Acer plantanoides	Norway Maple	Good			X
484	6					Acer plantanoides	Norway Maple	Good			X
507	6.5					Acer plantanoides	Norway Maple	Good			X
510	9					Acer plantanoides	Norway Maple	Good			X
557	10.5					Pinus strobus	Eastern White Pine	Good			X




**RESTORATION PLAN**

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
PATH-MT	AGGREGATE MAINTENANCE PATH, 8-INCH 21AA, 8' WIDE WITH FABRIC, TOPPED WITH 2" TOPSOIL



Know what's below.  
Call before you dig.

REV.	DATE	DRAWN	CHECKED	DESCRIPTION
4	11/16/2023	BWA	AFT	RE-BID SET PLAN
3	03/16/2021	BWA	CJE	BID SET PLAN
2	09/17/2020	BWA	CJE	PERMIT SET PLAN
1	06/15/2020	BWA	CJE	PRELIMINARY PLAN

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48107-8647  
ANN ARBOR 734-784-4410  
www.a2gov.org



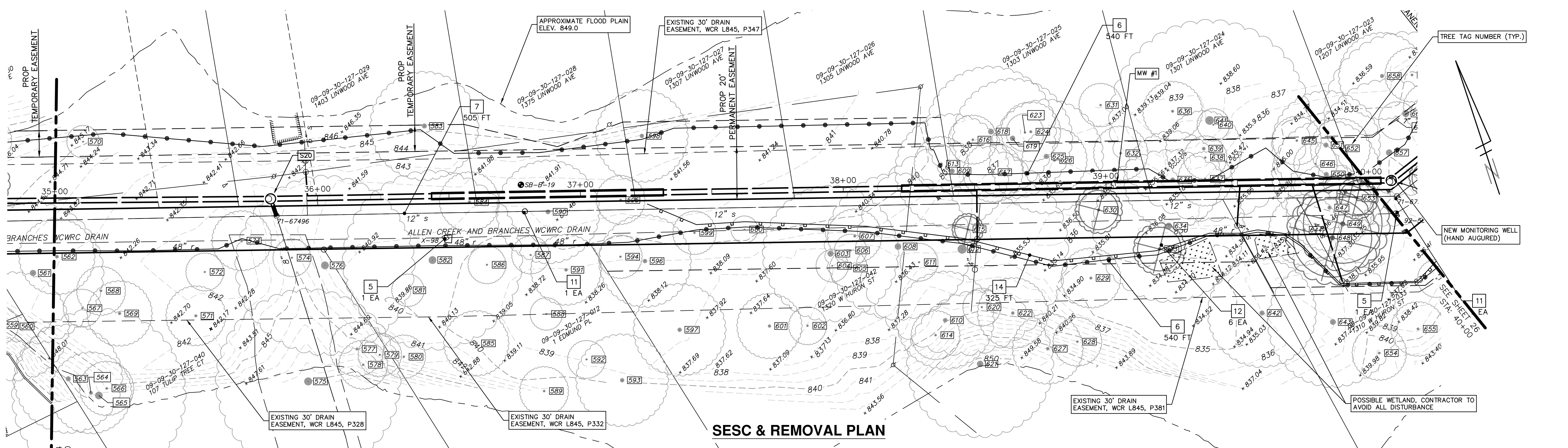
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
**SESC & REMOVAL AND RESTORATION PLAN**

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

DRAWING No. 2019-024-24

SHEET No. 24 OF 40





**SESC & REMOVAL PLAN**

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS

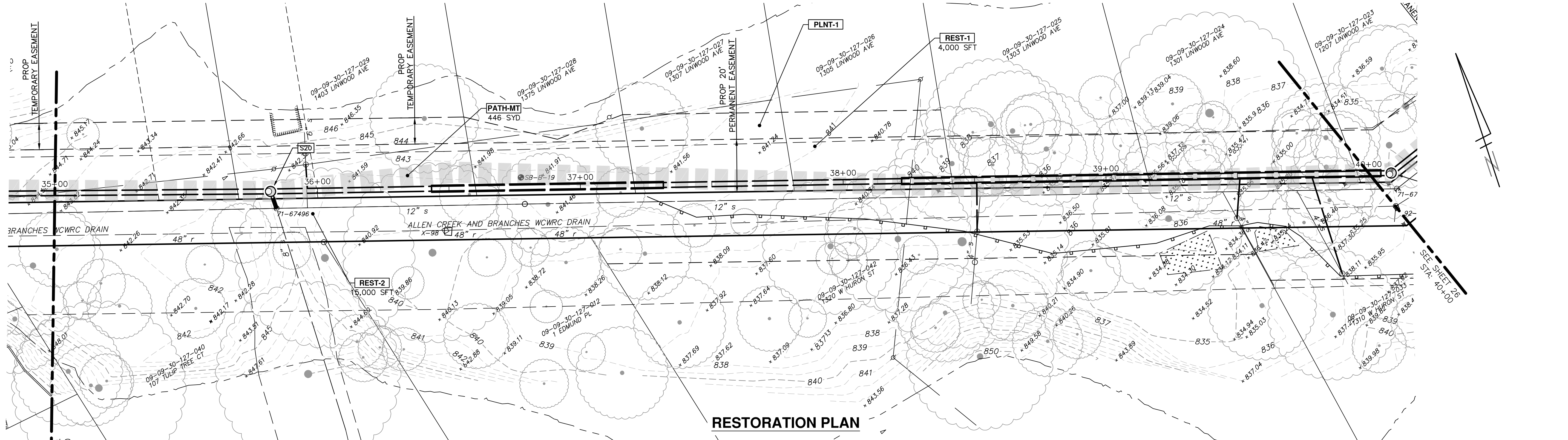
3	HMA SURFACE REMOVE*
4	PAVEMENT REMOVAL FOR RESURFACING
5	INLET FILTER
6	PROTECTIVE FENCING

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

Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	Species (Common Name)	Health	Potential Bat habitat	Landmark	Remove
615	6					Acer negundo	Boxelder	Good			X
630	9					Ulmus americana	American Elm	Good			X
633	10					Tilia americana	Basswood	Good			X
648	10.5	17.5				Acer negundo	Boxelder	Good		Y	X
649	17.5					Acer negundo	Boxelder	Good		Y	X
653	8					Acer plantanoides	Norway Maple	Good			X



**RESTORATION PLAN**

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

**PATH-MT** AGGREGATE MAINTENANCE PATH, 8-INCH 21AA, 8' WIDE WITH FABRIC, TOPPED WITH 2" TOPSOIL



Know what's below.  
Call before you dig.

REV.	DATE	DESCRIPTION
4	11/16/2023	RE-BID SET PLAN
3	03/16/2021	BID SET PLAN
2	09/17/2020	PERMIT SET PLAN
1	06/15/2020	PRELIMINARY PLAN



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
**SESC & REMOVAL AND RESTORATION PLAN**

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

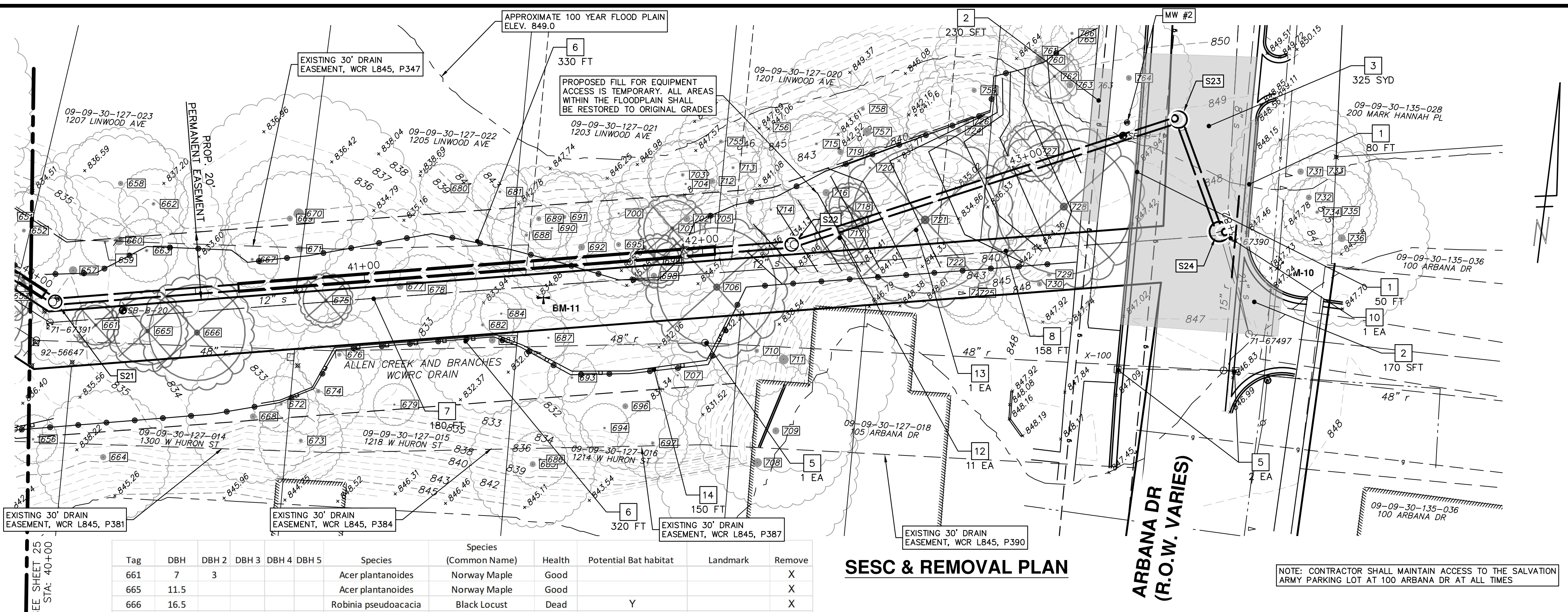
DRAWING No. **2019-024-25**  
 SHEET No. **25 OF 40**



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	HMA SURFACE REMOVE*
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

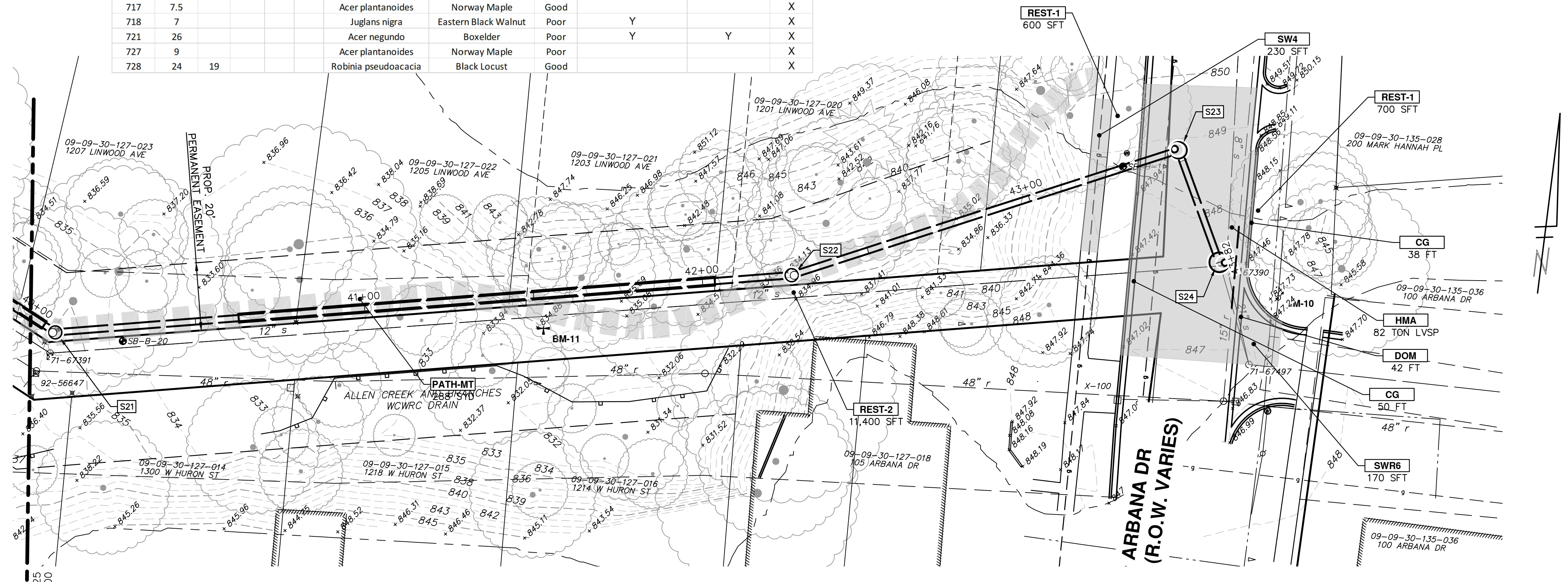
CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
CON6	6 INCH CONCRETE
SW4	4 INCH CONCRETE SIDEWALK
SW6	6 INCH CONCRETE SIDEWALK
SWR6	6 INCH CONCRETE RAMP, DRIVE APPROACH
DOM	CONCRETE TYPE M DRIVE OPENING
DOL	CONCRETE TYPE L DRIVE OPENING
DWS	DETECTABLE 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, MESC WOODLAND
PATH-MT	AGGREGATE MAINTENANCE PATH, 8-INCH 21AA, 8' WIDE WITH FABRIC, TOPPED WITH 2" TOPSOIL




**SESC & REMOVAL PLAN**

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO THE SALVATION ARMY PARKING LOT AT 100 ARBANA DR AT ALL TIMES

Tag	DBH	DBH 2	DBH 3	DBH 4	DBH 5	Species	(Common Name)	Health	Potential Bat habitat	Landmark	Remove
661	7	3				Acer plantanoides	Norway Maple	Good			X
665	11.5					Acer plantanoides	Norway Maple	Good			X
666	16.5					Robinia pseudoacacia	Black Locust	Dead	Y		X
675	8					Juglans nigra	Eastern Black Walnut	Poor			X
699	7.5					Acer negundo	Boxelder	Poor			X
701	10					Ulmus americana	American Elm	Good			X
706	21					Ulmus americana	American Elm	Dead	Y		X
717	7.5					Acer plantanoides	Norway Maple	Good			X
718	7					Juglans nigra	Eastern Black Walnut	Poor	Y		X
721	26					Acer negundo	Boxelder	Poor	Y	Y	X
727	9					Acer plantanoides	Norway Maple	Poor			X
728	24	19				Robinia pseudoacacia	Black Locust	Good			X




**RESTORATION PLAN**



Know what's below.  
Call before you dig.

REV.	DATE	DESCRIPTION
1	06/15/2020	PRELIMINARY PLAN
2	09/17/2020	PERMIT SET PLAN
3	03/16/2021	BID SET PLAN
4	11/16/2023	RE-BID SET PLAN



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
**SESC & REMOVAL AND RESTORATION PLAN**

STA. 40+00 TO STA. 43+83  
DRAWING No. 2019-024-26  
SHEET No. 26 OF 40



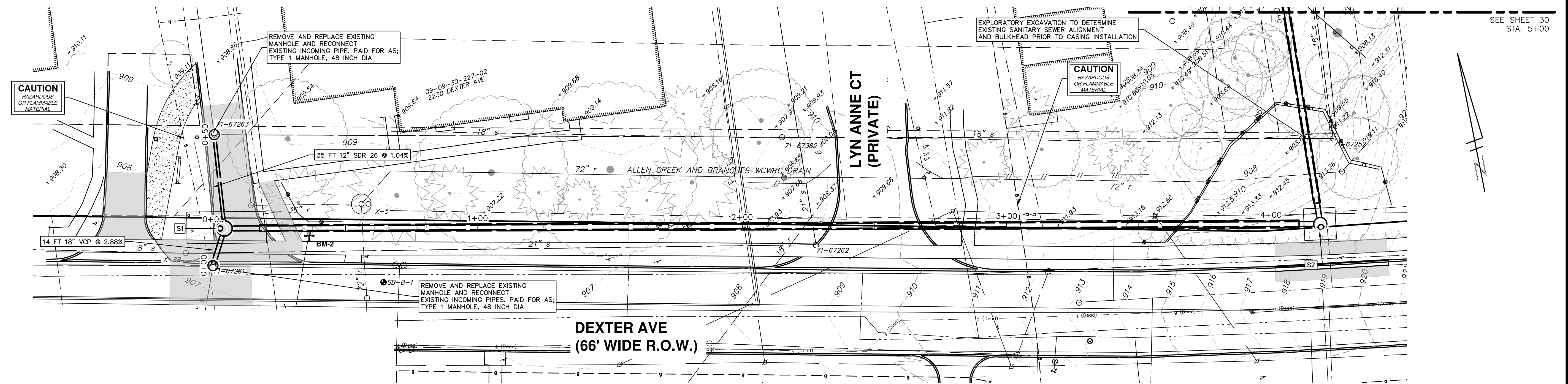






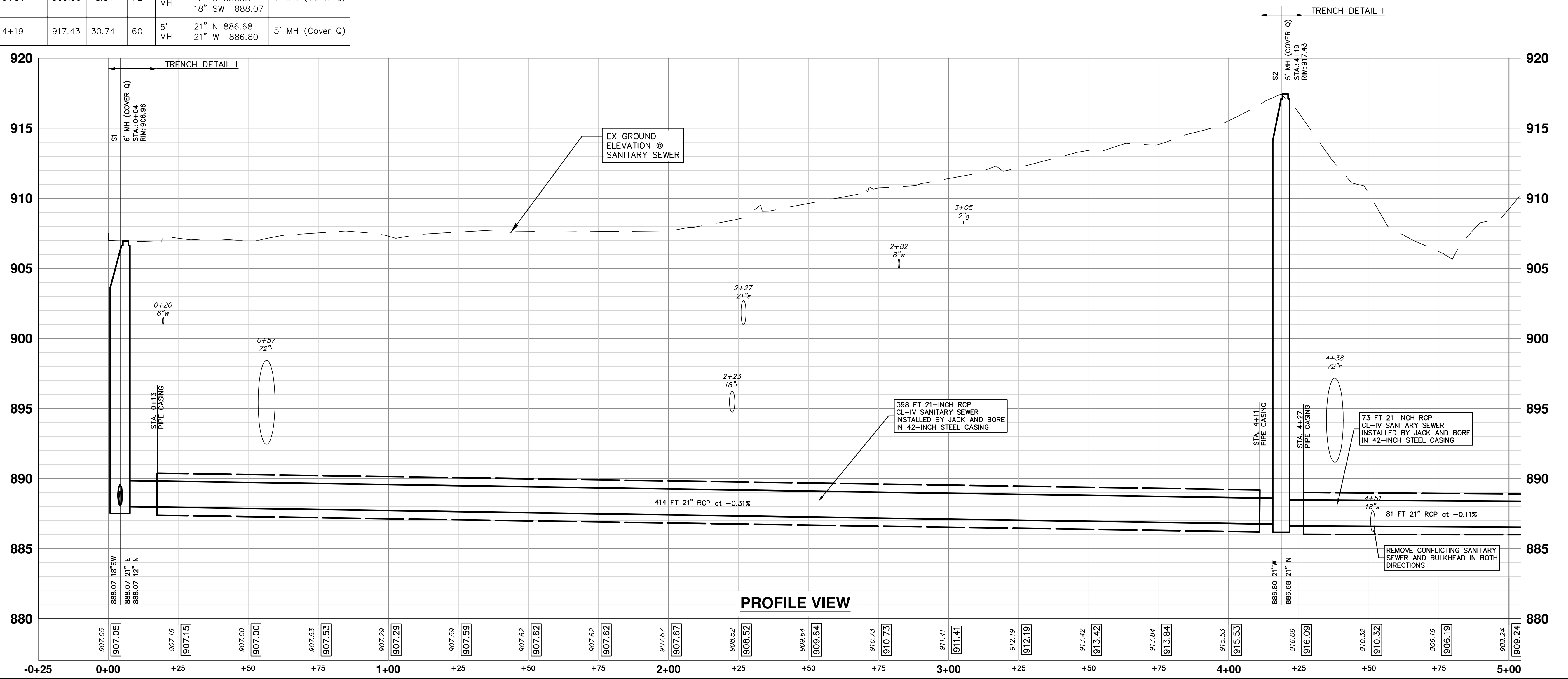


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SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS
S1	0+04	906.96	18.94	72	6' MH	21" E 888.07 12" N 888.07 18" SW 888.07
S2	4+19	917.43	30.74	60	5' MH	21" N 886.68 21" W 886.80

PLAN VIEW



PROFILE VIEW



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

**HURON-WEST PARK SANITARY SEWER REPLACEMENT**

PLAN AND PROFILE

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

DRAWING No. 2019-024-29

SEE SHEET 30  
STA: 5+00

REVISIONS:

REV.	DATE	DESCRIPTION
1	06/15/2020	PRELIMINARY PLAN
2	09/17/2020	PERMIT SET PLAN
3	03/16/2021	BID SET PLAN
4	11/16/2023	RE-BID SET PLAN

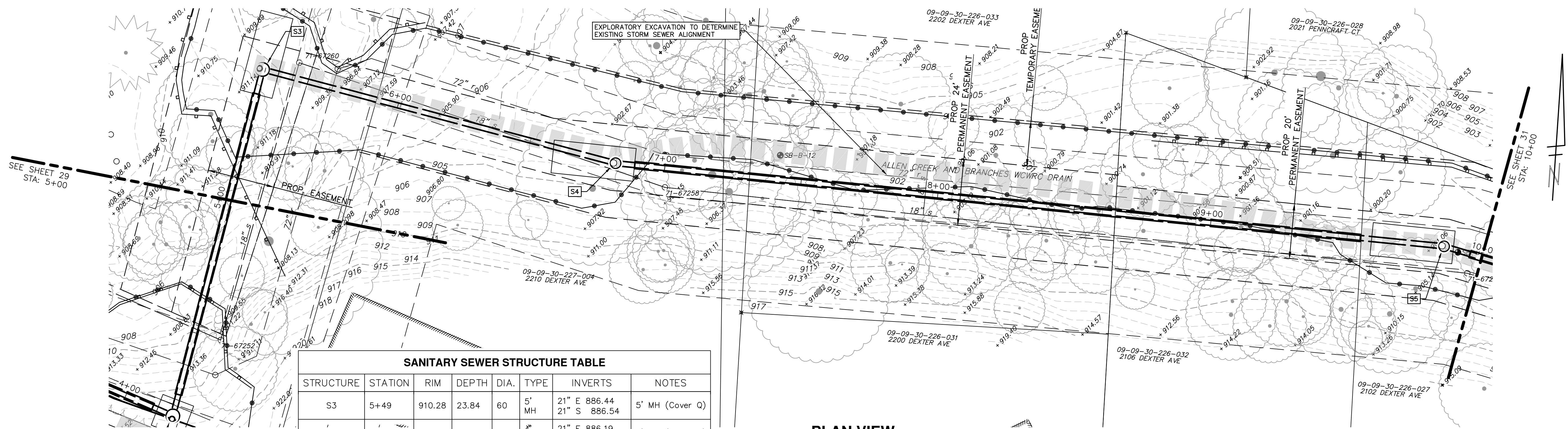
Author: BWA  
Checker: BWA  
Reviewer: BWA  
Date: 11/16/2023

SHEET No. 29 OF 40

STA. 0+00 TO STA. 5+00



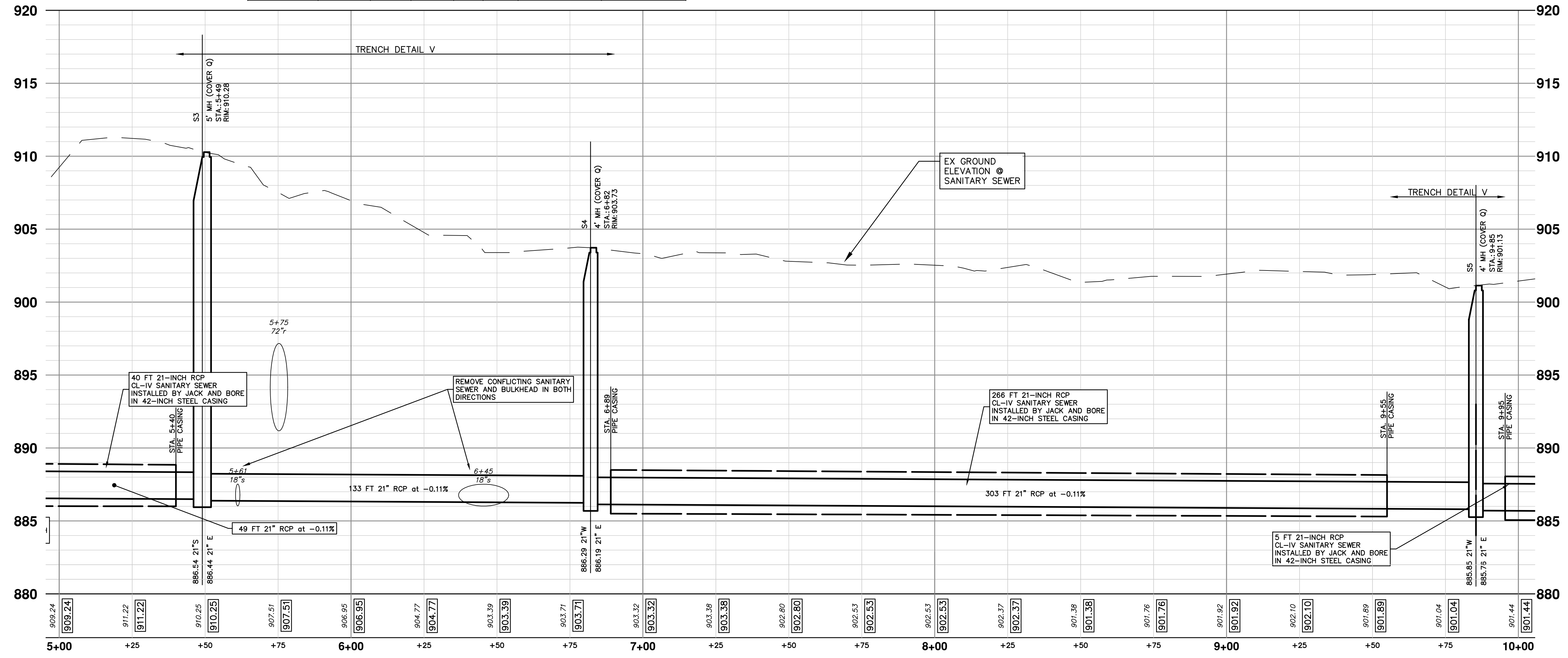
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**SANITARY SEWER STRUCTURE TABLE**

STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S3	5+49	910.28	23.84	60	5' MH	21" E 886.44 21" S 886.54	5' MH (Cover Q)
S4	6+82	903.73	17.54	48	4' MH	21" E 886.19 21" W 886.29	4' MH (Cover Q)
S5	9+85	901.13	15.37	48	4' MH	21" E 885.76 21" W 885.85	4' MH (Cover Q)

**PLAN VIEW**




**PROFILE VIEW**



Know what's below.  
Call before you dig.

REV.	DATE	DRAWN	CHECKED	DESCRIPTION
4	11/16/2023	BWA	AFT	RE-BID SET PLAN
3	03/16/2021	BWA	CJE	BID SET PLAN
2	09/17/2020	BWA	CJE	PERMIT SET PLAN
1	06/15/2020	BWA	CJE	PRELIMINARY PLAN



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 PLAN AND PROFILE  
 STA. 5+00 TO STA. 10+00

SCALE PLAN: 1" = 20'

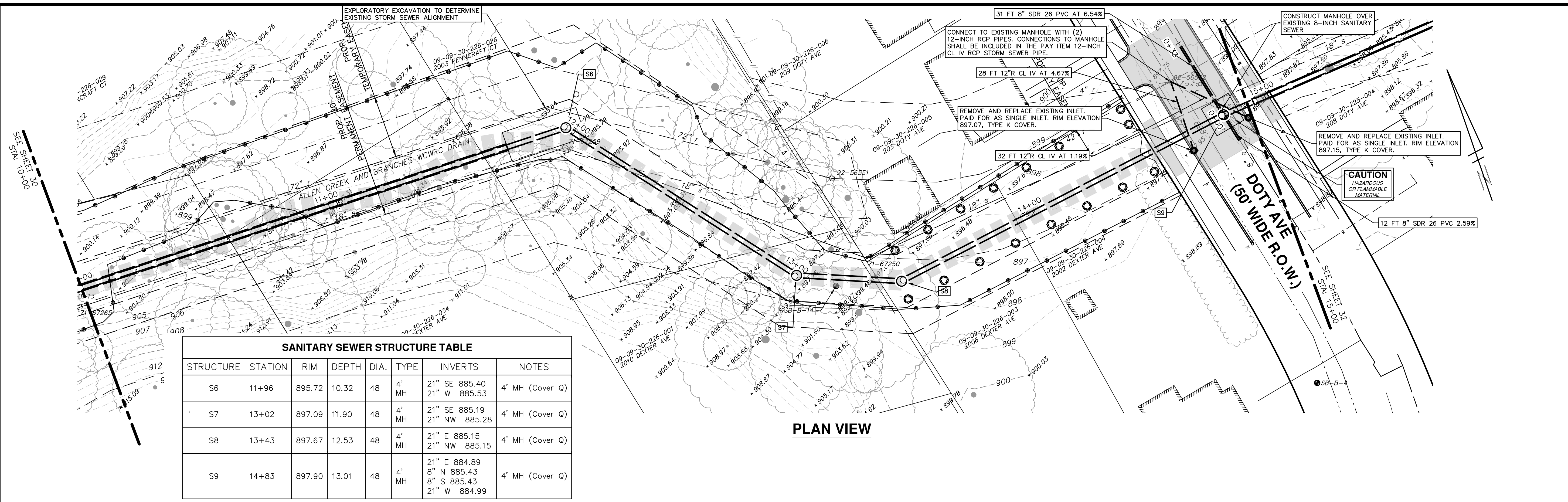
PROFILE: 1" = 4'

DRAWING No. 2019-024-30

SHEET No. 30 OF 40

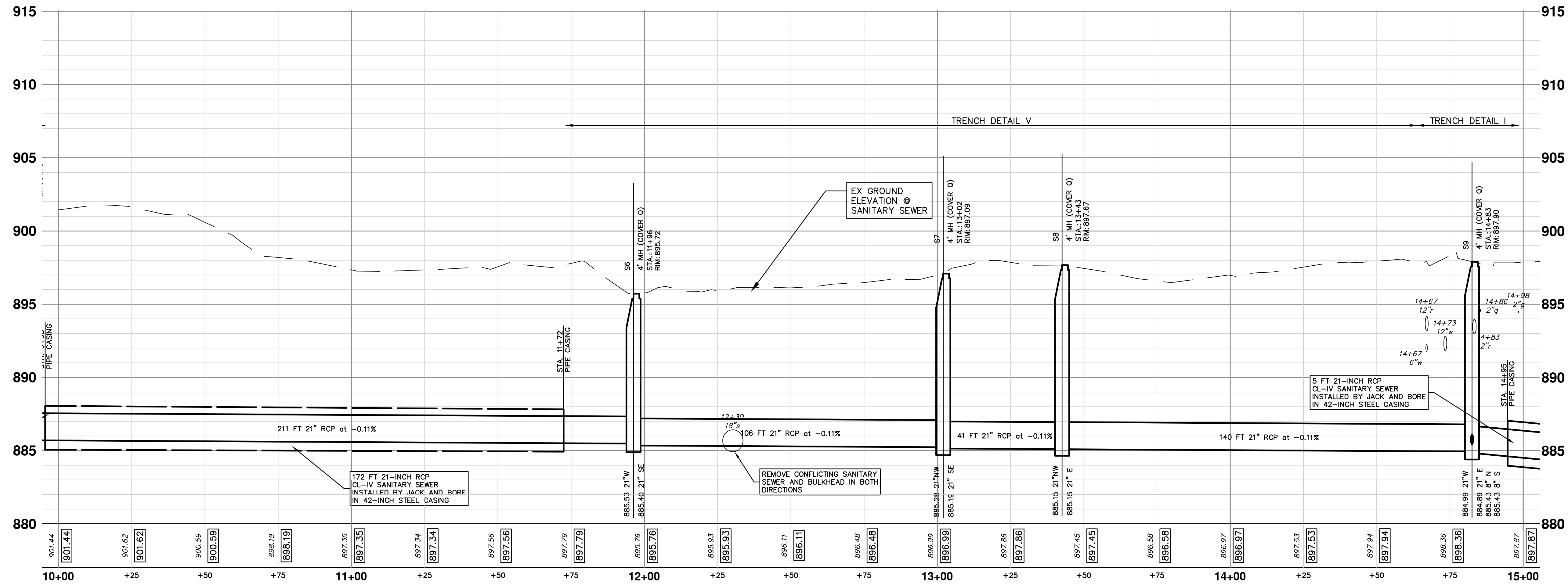


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SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S6	11+96	895.72	10.32	48	4' MH	21" SE 885.40 21" W 885.53	4' MH (Cover Q)
S7	13+02	897.09	11.90	48	4' MH	21" SE 885.19 21" NW 885.28	4' MH (Cover Q)
S8	13+43	897.67	12.53	48	4' MH	21" E 885.15 21" NW 885.15	4' MH (Cover Q)
S9	14+83	897.90	13.01	48	4' MH	21" E 884.89 8" N 885.43 8" S 885.43 21" W 884.99	4' MH (Cover Q)

PLAN VIEW




PROFILE VIEW



Know what's below.  
Call before you dig.

REV.	DATE	DESCRIPTION	DRAWN	CHECKED
4	11/16/2023	RE-BID SET PLAN	BWA	AFT
3	03/16/2021	BID SET PLAN	BWA	CJE
2	09/17/2020	PERMIT SET PLAN	BWA	CJE
1	06/15/2020	PRELIMINARY PLAN	BWA	CJE



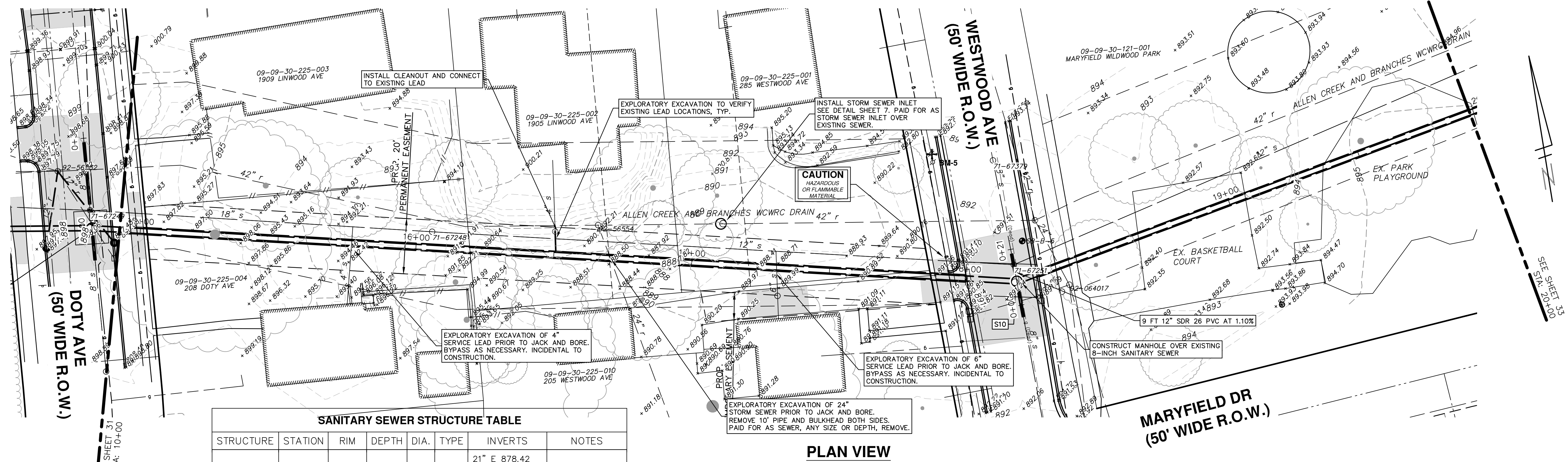
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 PLAN AND PROFILE  
 STA. 10+00 TO STA. 15+00

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

DRAWING No.  
**2019-024-31**

SHEET No.  
**31 OF 40**

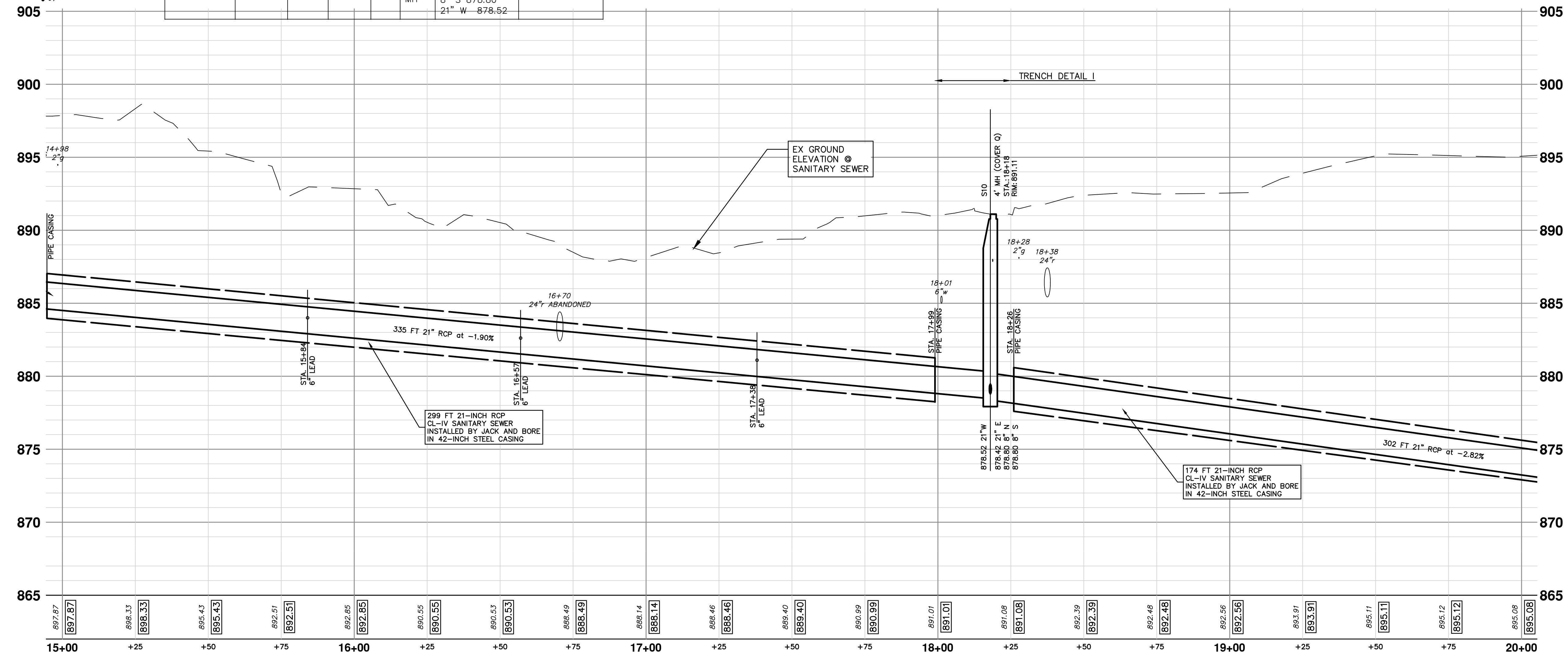





**SANITARY SEWER STRUCTURE TABLE**

STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S10	18+18	891.11	12.69	48	4' MH	21" E 878.42 8" N 878.80 8" S 878.80 21" W 878.52	4' MH (Cover Q)

**PLAN VIEW**




**PROFILE VIEW**



Know what's below.  
Call Before you dig.

REV.	DATE	DRAWN	CHECKED	DESCRIPTION
4	11/16/2023	BWA	AFT	RE-BID SET PLAN
3	03/16/2021	BWA	CJE	BID SET PLAN
2	09/17/2020	BWA	CJE	PERMIT SET PLAN
1	06/15/2020	BWA	CJE	PRELIMINARY PLAN

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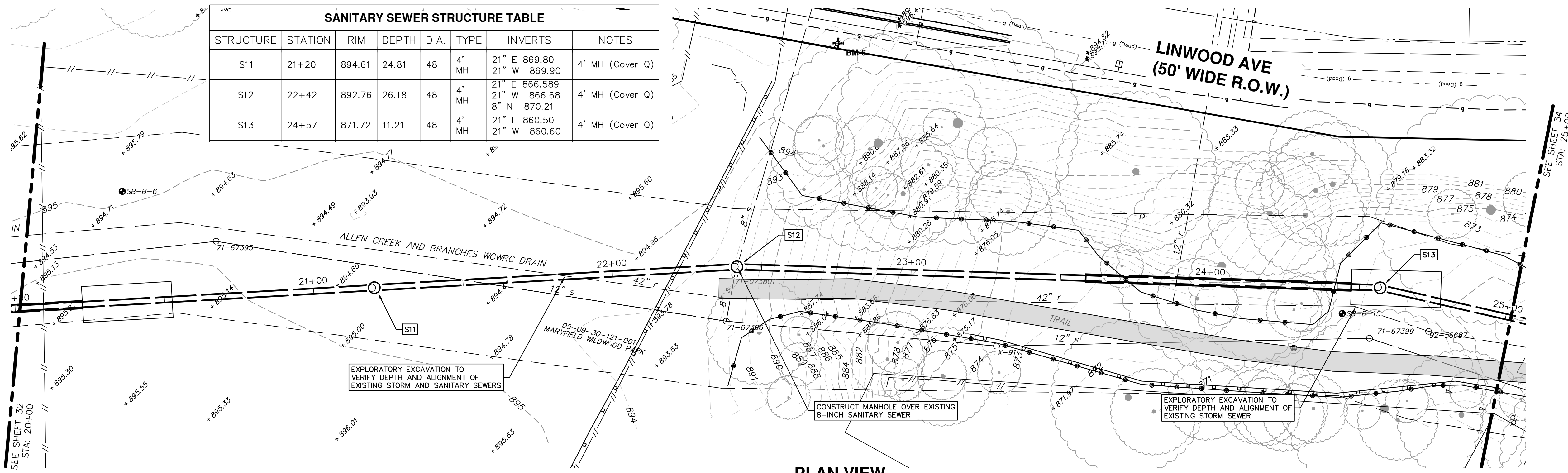
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
PLAN AND PROFILE  
STA. 15+00 TO STA. 20+00

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

DRAWING No. 2019-024-32  
SHEET No. 32 OF 40

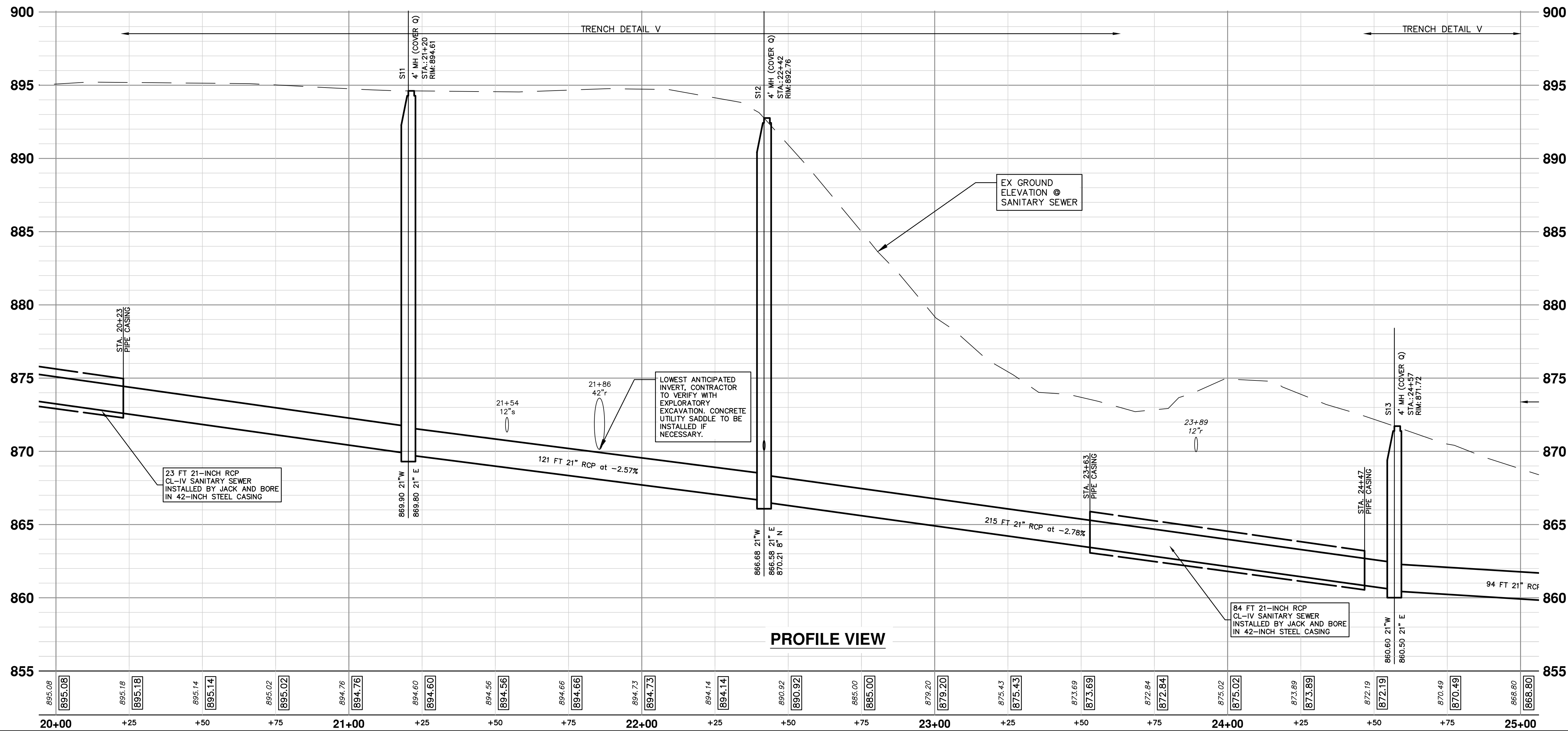


V:\2075\active\2075151700\civil\design\drawing\151700C-204.dwg Dwg Created: 10-Dec-20 - \_a2\_standard bw.stb - Plot Date: 15-Nov-23



SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S11	21+20	894.61	24.81	48	4' MH	21" E 869.80 21" W 869.90	4' MH (Cover Q)
S12	22+42	892.76	26.18	48	4' MH	21" E 866.589 21" W 866.68 8" N 870.21	4' MH (Cover Q)
S13	24+57	871.72	11.21	48	4' MH	21" E 860.50 21" W 860.60	4' MH (Cover Q)

PLAN VIEW



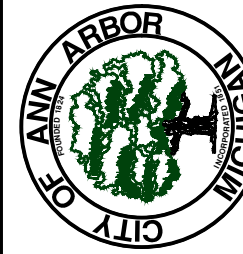
PROFILE VIEW



Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E

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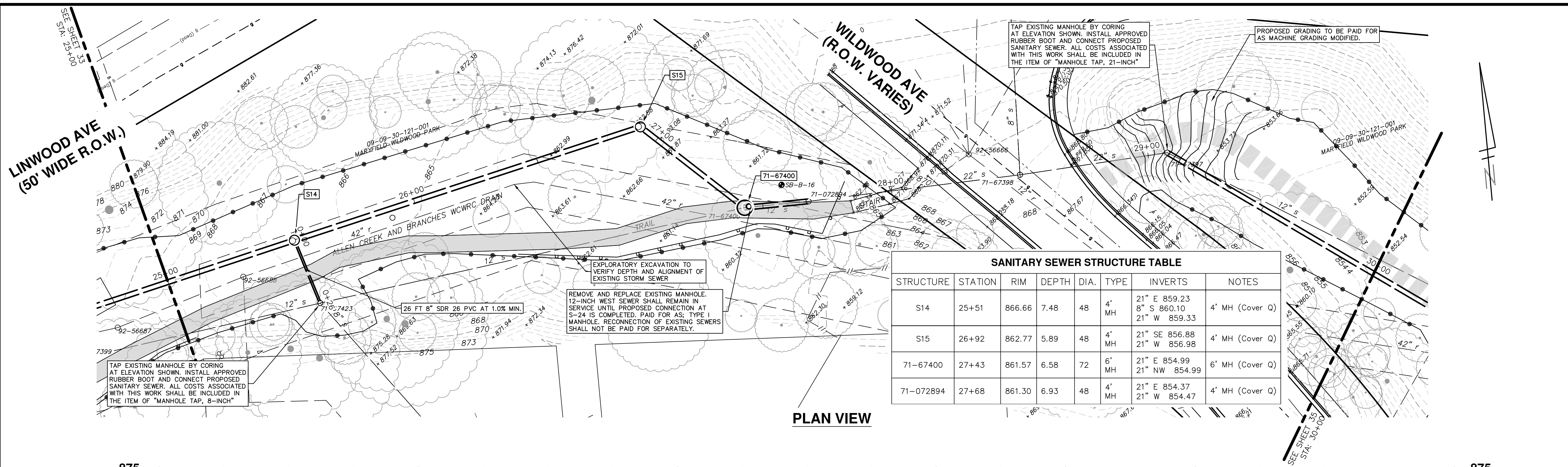


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
HURON-WEST PARK SANITARY SEWER REPLACEMENT  
PLAN AND PROFILE  
STA. 20+00 TO STA. 25+00

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'  
DRAWING No. 2019-024-33

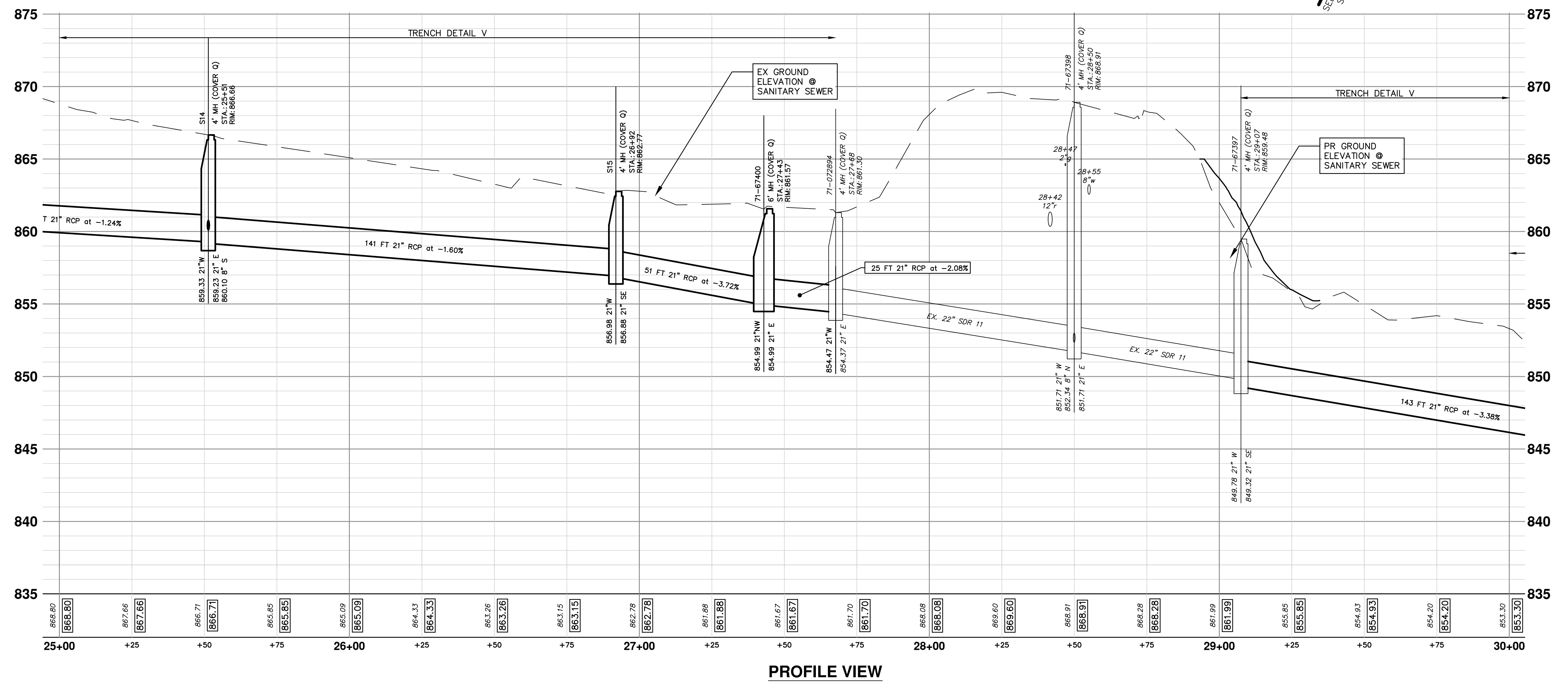


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**SANITARY SEWER STRUCTURE TABLE**

STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S14	25+51	866.66	7.48	48"	4' MH	21" E 859.23 8" S 860.10 21" W 859.33	4' MH (Cover Q)
S15	26+92	862.77	5.89	48"	4' MH	21" SE 856.88 21" W 856.98	4' MH (Cover Q)
71-67400	27+43	861.57	6.58	72"	6' MH	21" E 854.99 21" NW 854.99	6' MH (Cover Q)
71-072894	27+68	861.30	6.93	48"	4' MH	21" E 854.37 21" W 854.47	4' MH (Cover Q)



Know what's below.  
Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

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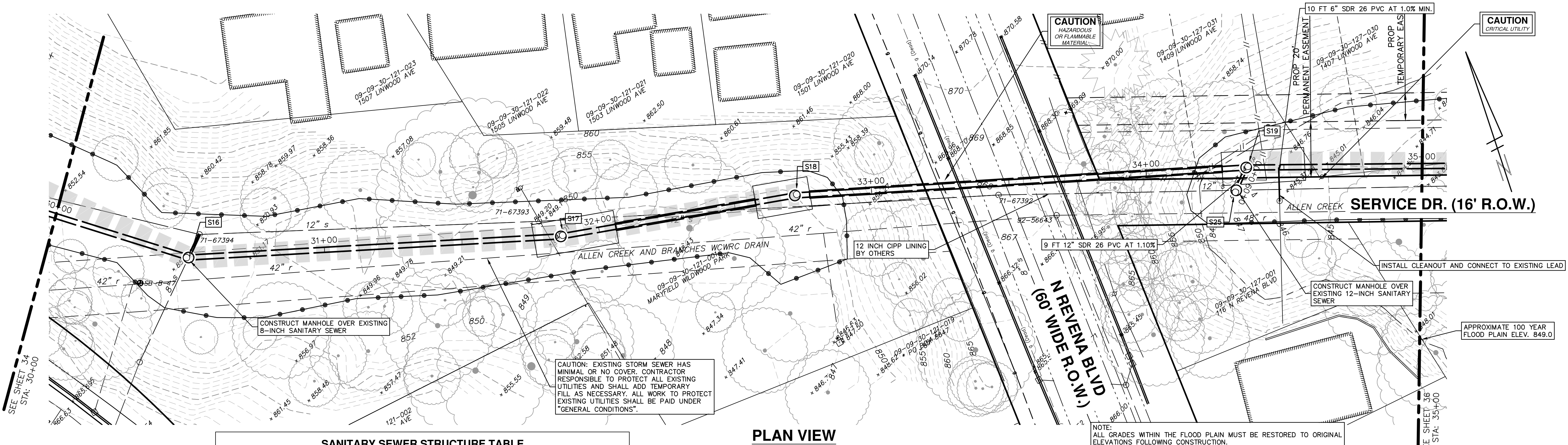
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
PLAN AND PROFILE  
STA. 25+00 TO STA. 30+00

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

DRAWING No. 2019-024-34  
SHEET No. 34 OF 40

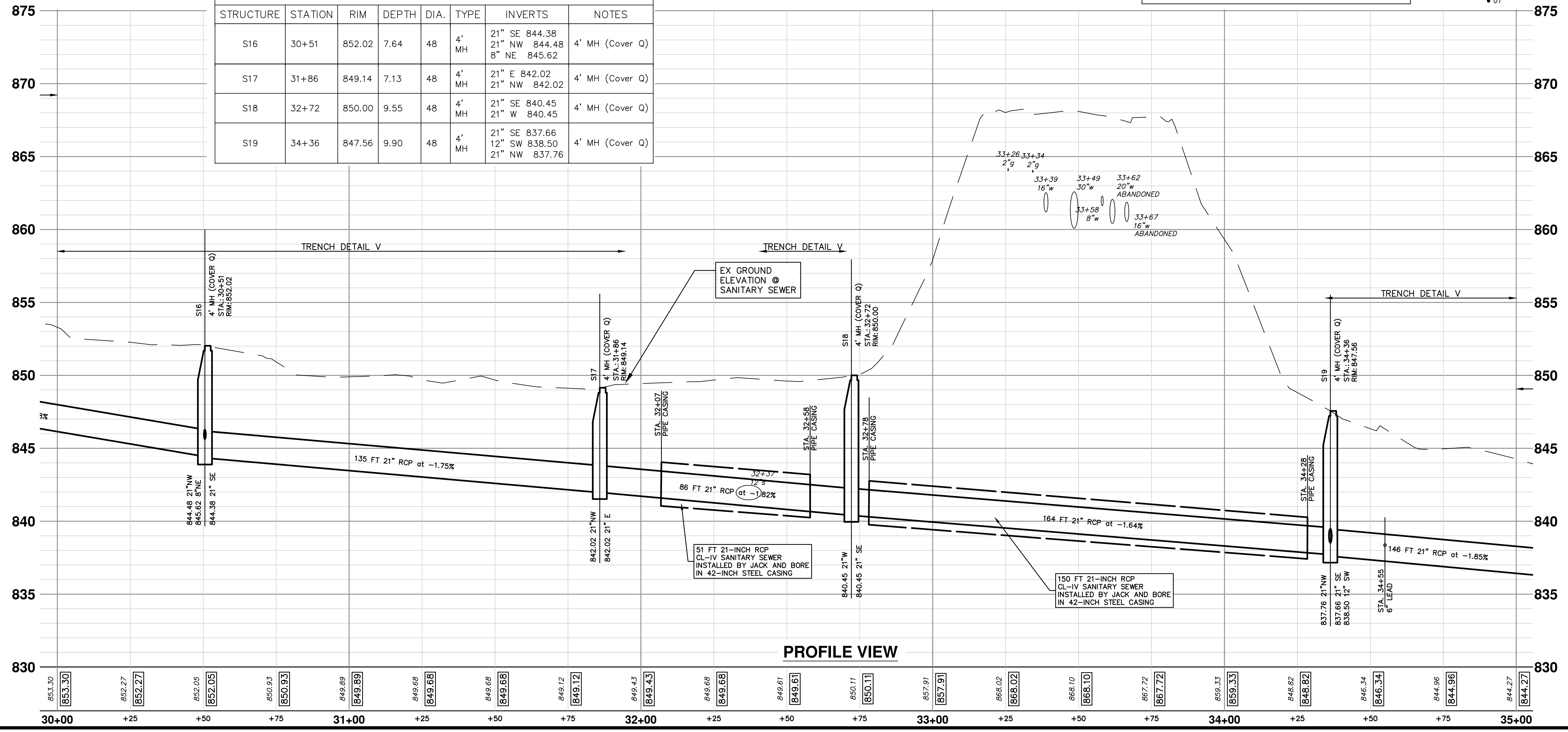


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PLAN VIEW

SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S16	30+51	852.02	7.64	48	4' MH	21" SE 844.38 21" NW 844.48 8" NE 845.62	4' MH (Cover Q)
S17	31+86	849.14	7.13	48	4' MH	21" E 842.02 21" NW 842.02	4' MH (Cover Q)
S18	32+72	850.00	9.55	48	4' MH	21" SE 840.45 21" W 840.45	4' MH (Cover Q)
S19	34+36	847.56	9.90	48	4' MH	21" SE 837.66 12" SW 838.50 21" NW 837.76	4' MH (Cover Q)




PROFILE VIEW



Know what's below.  
Call before you dig.

REV.	DATE	DESCRIPTION	DRAWN	CHECKED
4	11/16/2023	RE-BID SET PLAN	BWA	AFT
3	03/16/2021	BID SET PLAN	BWA	CUE
2	09/17/2020	PERMIT SET PLAN	BWA	CUE
1	06/15/2020	PRELIMINARY PLAN	BWA	CUE

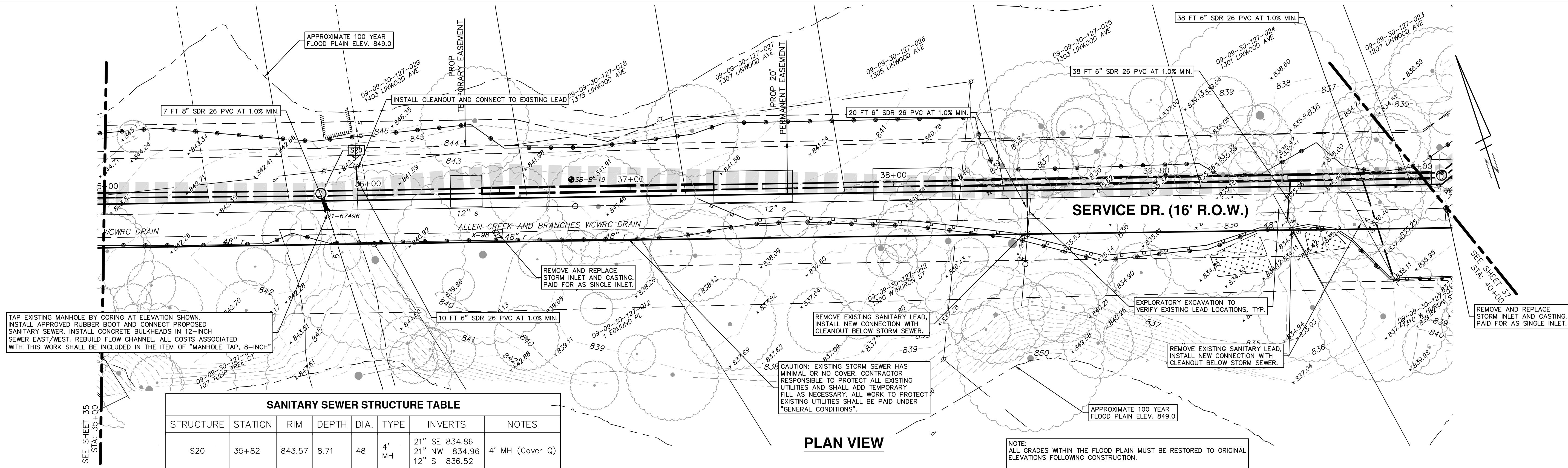
CITY OF ANN ARBOR  
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ANN ARBOR, MI 48107-8647  
ANN ARBOR@ANNARBOR.MICHIGAN.GOV  
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HURON-WEST PARK SANITARY SEWER REPLACEMENT  
PLAN AND PROFILE  
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'  
DRAWING No. 2019-024-35  
SHEET No. 35 OF 40

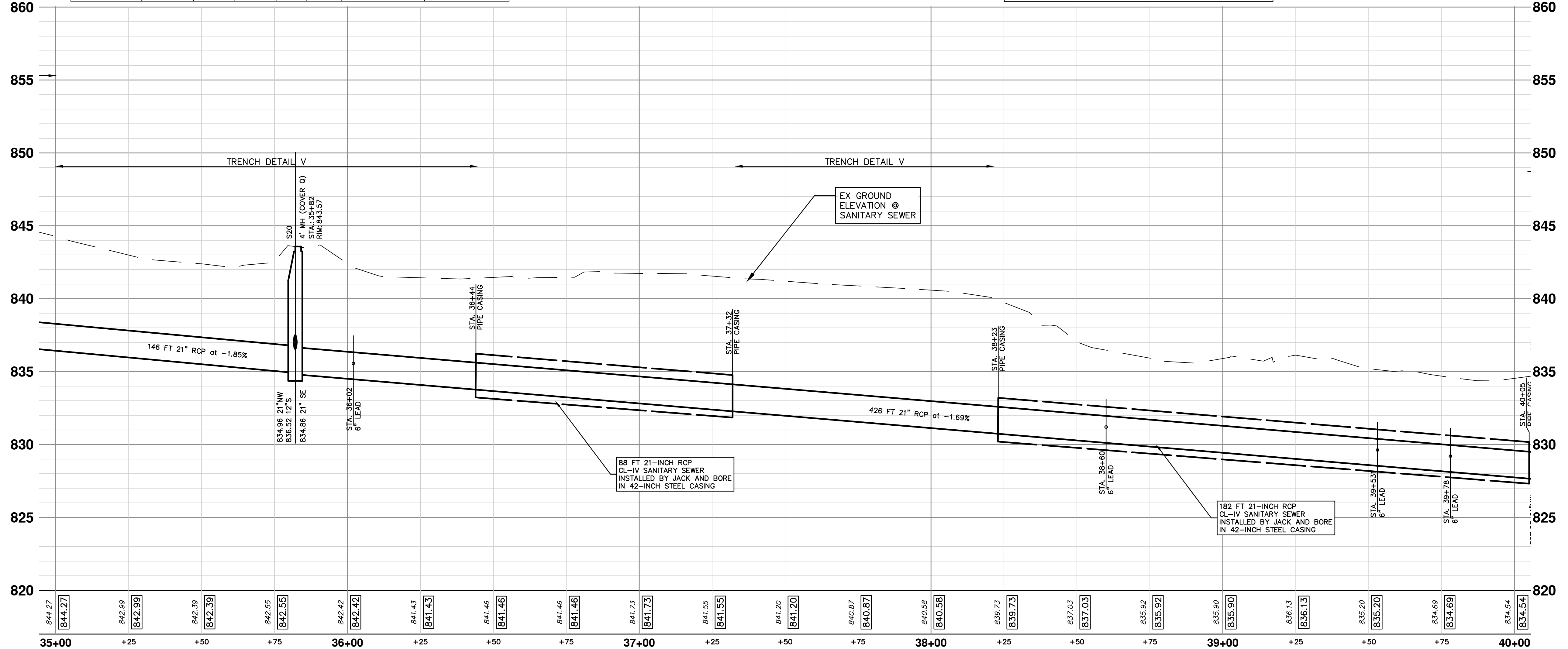


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**SANITARY SEWER STRUCTURE TABLE**

STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S20	35+82	843.57	8.71	48	4' MH	21" SE 834.86 21" NW 834.96 12" S 836.52	4' MH (Cover Q)




**PROFILE VIEW**



Know what's below.  
Call before you dig.

REV.	DATE	DESCRIPTION
4	11/16/2023	RE-BID SET PLAN
3	03/16/2021	BID SET PLAN
2	09/17/2020	PERMIT SET PLAN
1	06/15/2020	PRELIMINARY PLAN



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**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 PLAN AND PROFILE  
 STA. 35+00 TO STA. 40+00

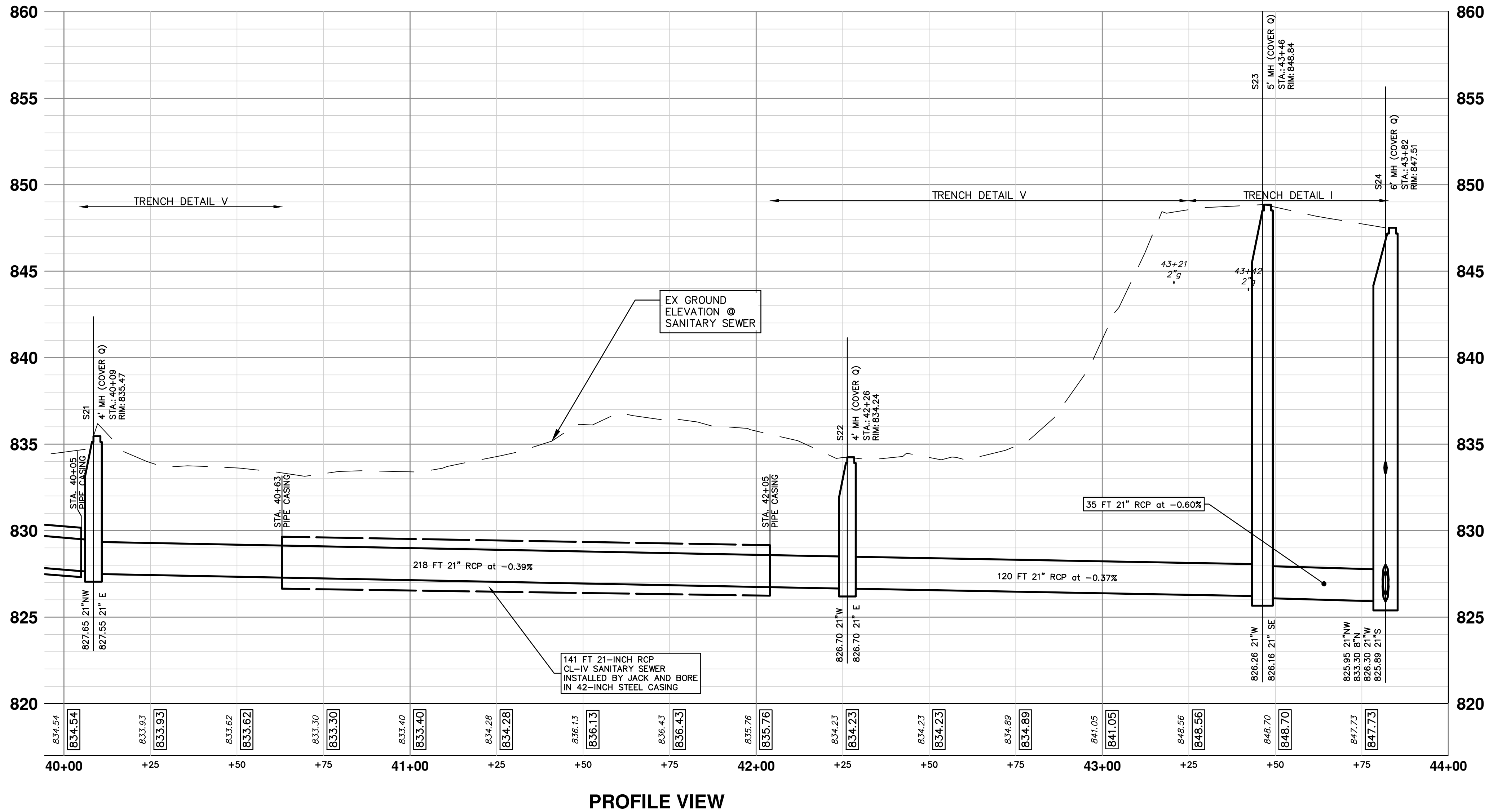
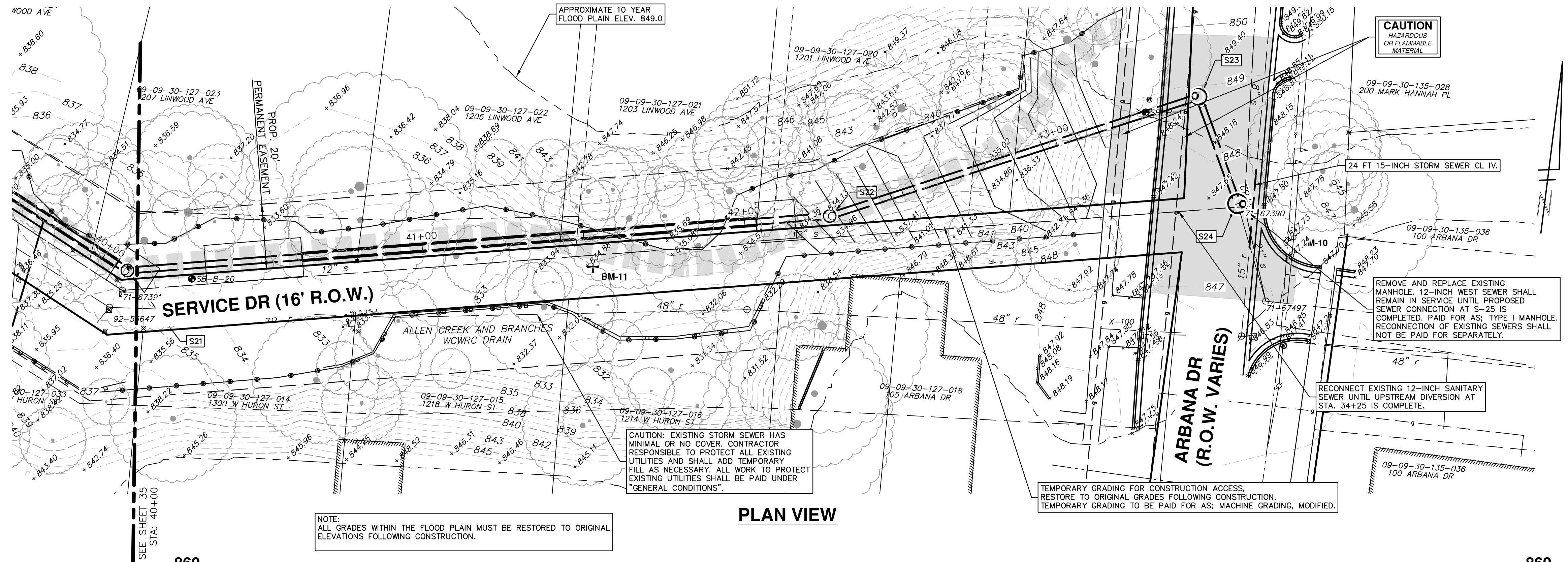
SCALE PLAN: 1" = 20'  
 PROFILE: 1" = 4'

DRAWING No.  
**2019-024-36**

SHEET No.  
**36 OF 40**



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SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S21	40+09	835.47	7.92	48	4' MH	21" E 827.55 21" NW 827.65	4' MH (Cover Q)
S22	42+26	834.24	7.54	48	4' MH	21" E 826.70 21" W 826.70	4' MH (Cover Q)
S23	43+46	848.84	22.68	60	5' MH	21" SE 826.16 21" W 826.26	5' MH (Cover Q)
S24	43+82	847.51	21.62	72	6' MH	21" NW 825.95 8" N 833.30 21" W 826.30 21" S 825.89	6' MH (Cover Q)

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

RE-BID SET PLAN 11/16/2023  
 BID SET PLAN 03/16/2021  
 PERMIT SET PLAN 09/17/2020  
 PRELIMINARY PLAN 06/15/2020

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**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 PLAN AND PROFILE

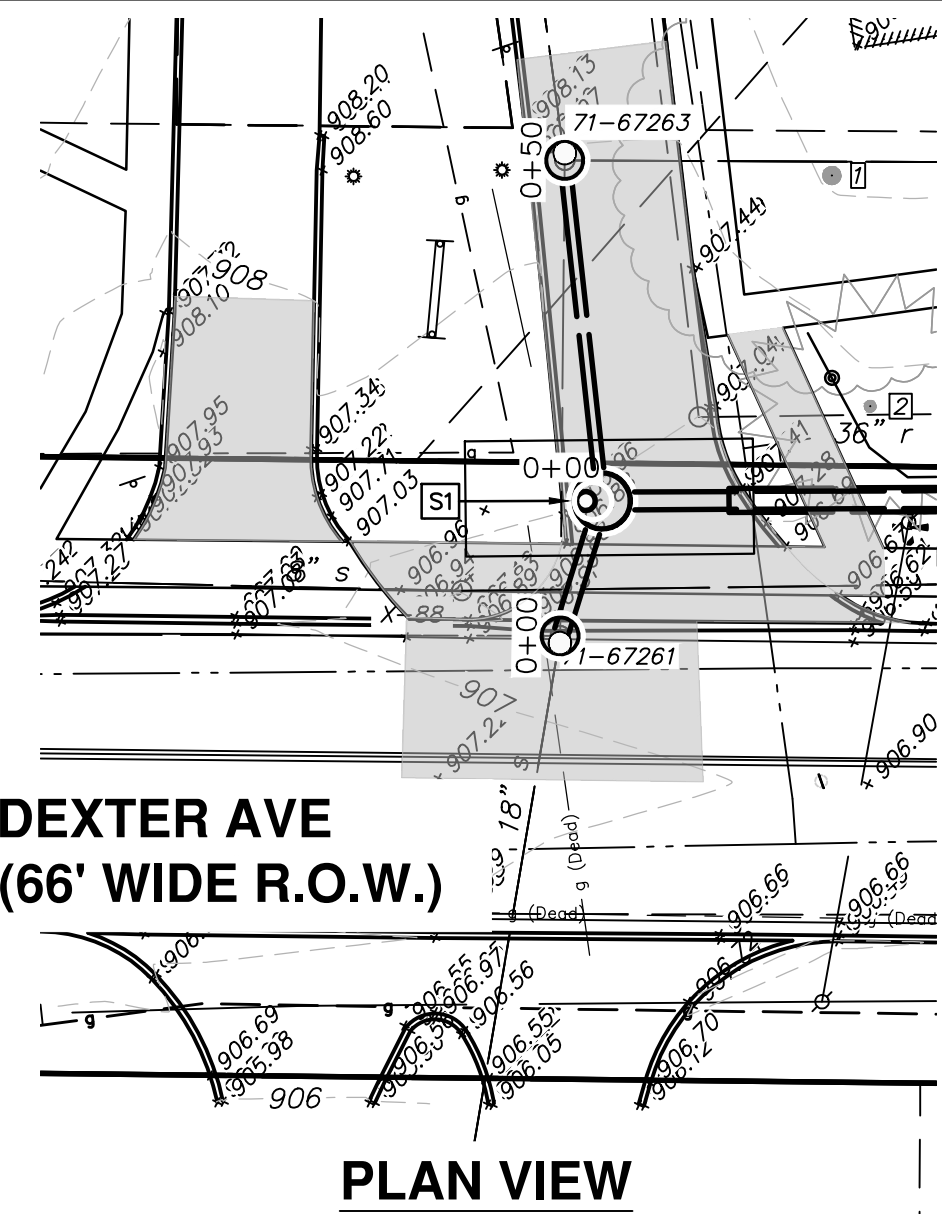
STA. 40+00 TO STA. 43+83

SHEET No. 37 OF 40

DRAWING No. 2019-024-37



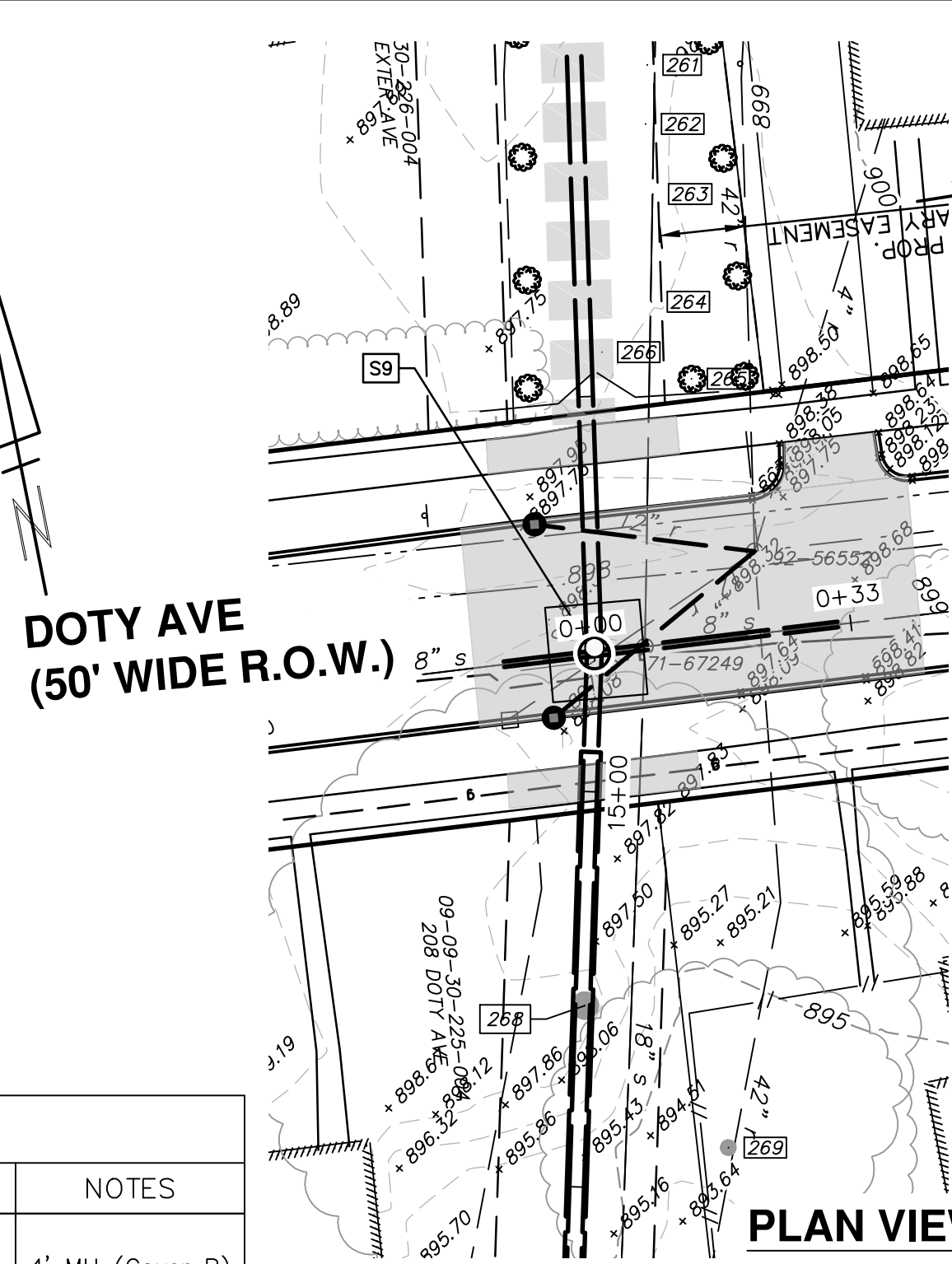
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**DEXTER AVE  
(66' WIDE R.O.W.)**

**PLAN VIEW**

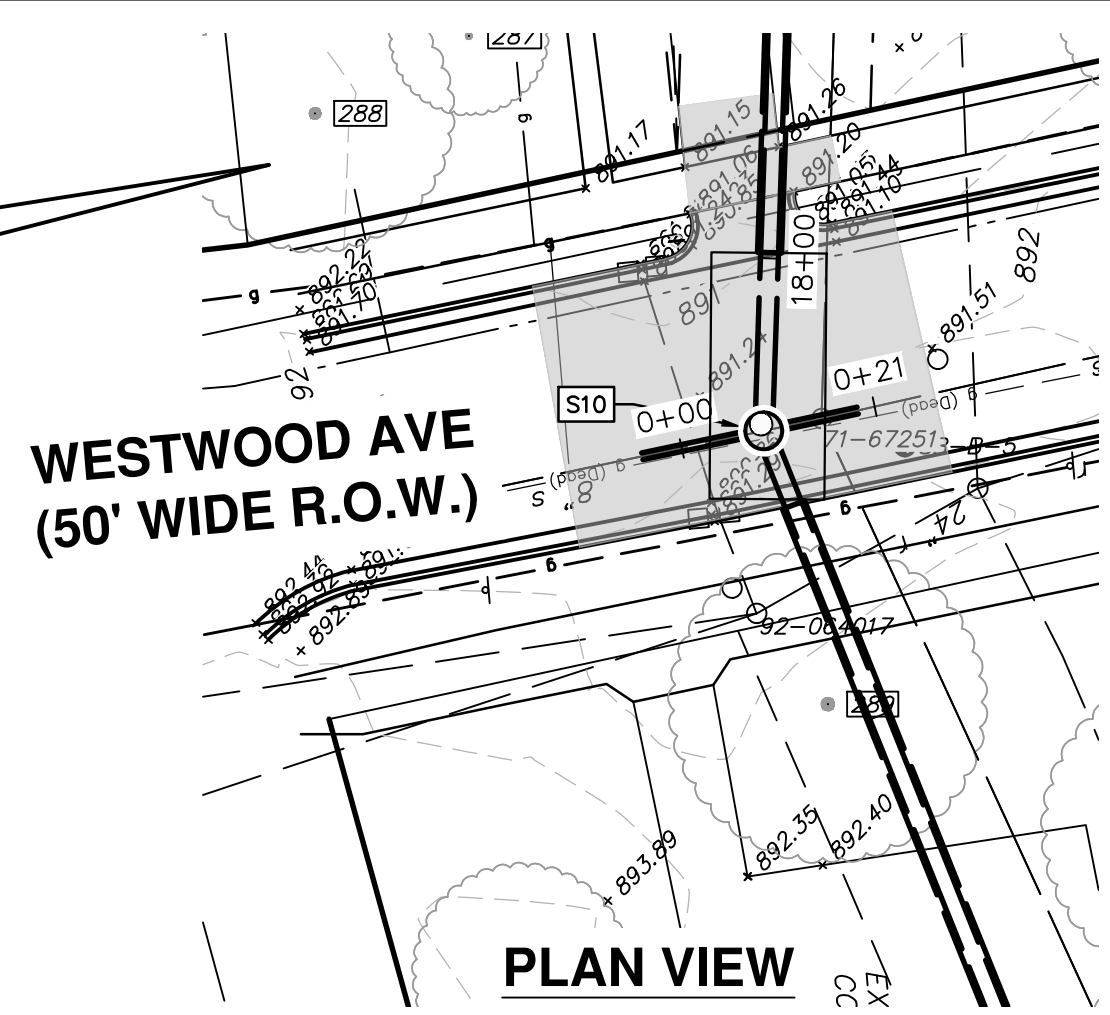
SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
71-67263	0+00	907.96	20.87	48	4' MH	18" E 887.09 12" S 888.44 12" N 890.09	4' MH (Cover B)
S1	0+04	906.96	18.94	72	6' MH	21" E 888.07 12" N 888.07 18" SW 888.07	6' MH (Cover Q)
71-67261	4+69	906.78	18.30	48	4' MH	18" NE 888.47 18" SW 890.78 8" W 895.00	4' MH (Cover B)



**DOTY AVE  
(50' WIDE R.O.W.)**

**PLAN VIEW**

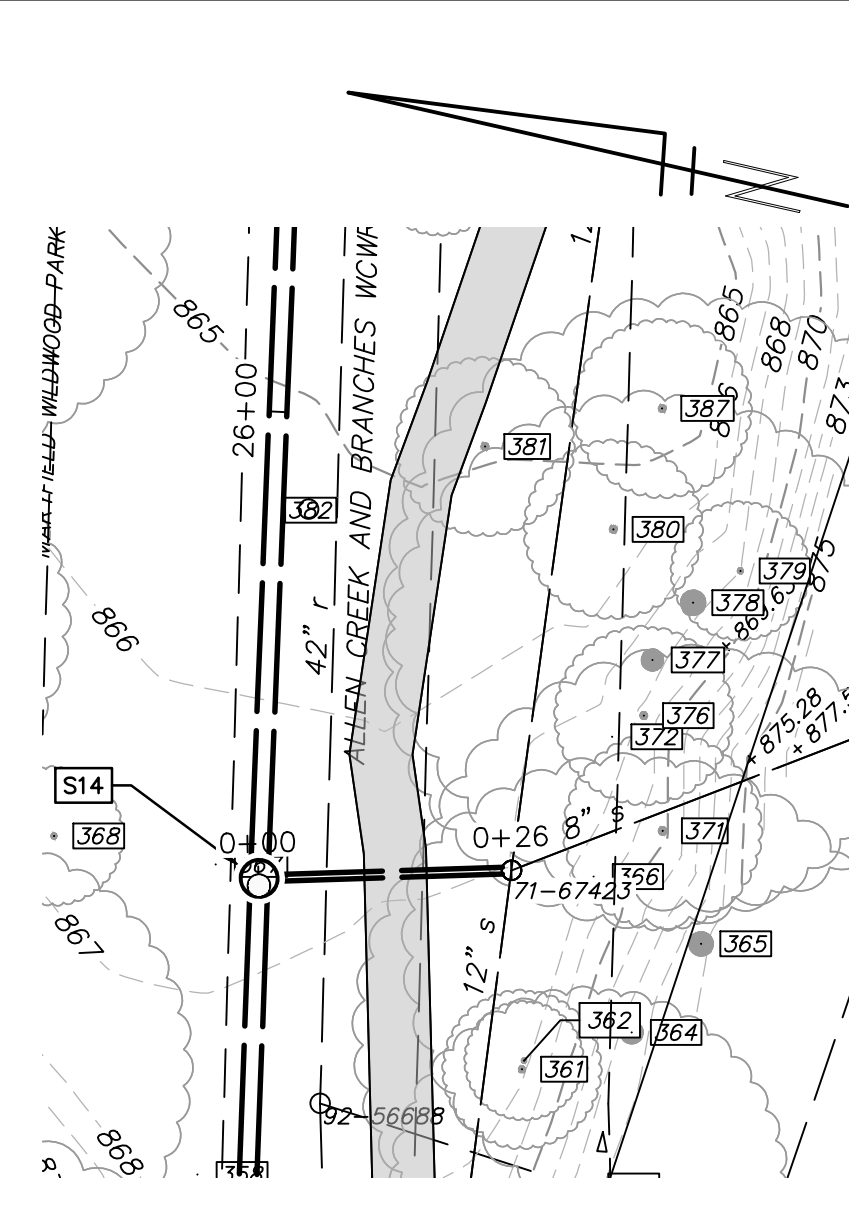
SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S9	14+83	897.90	13.01	48	4' MH	21" E 884.89 8" N 885.43 8" S 885.43 21" W 884.99	4' MH (Cover Q)



**WESTWOOD AVE  
(50' WIDE R.O.W.)**

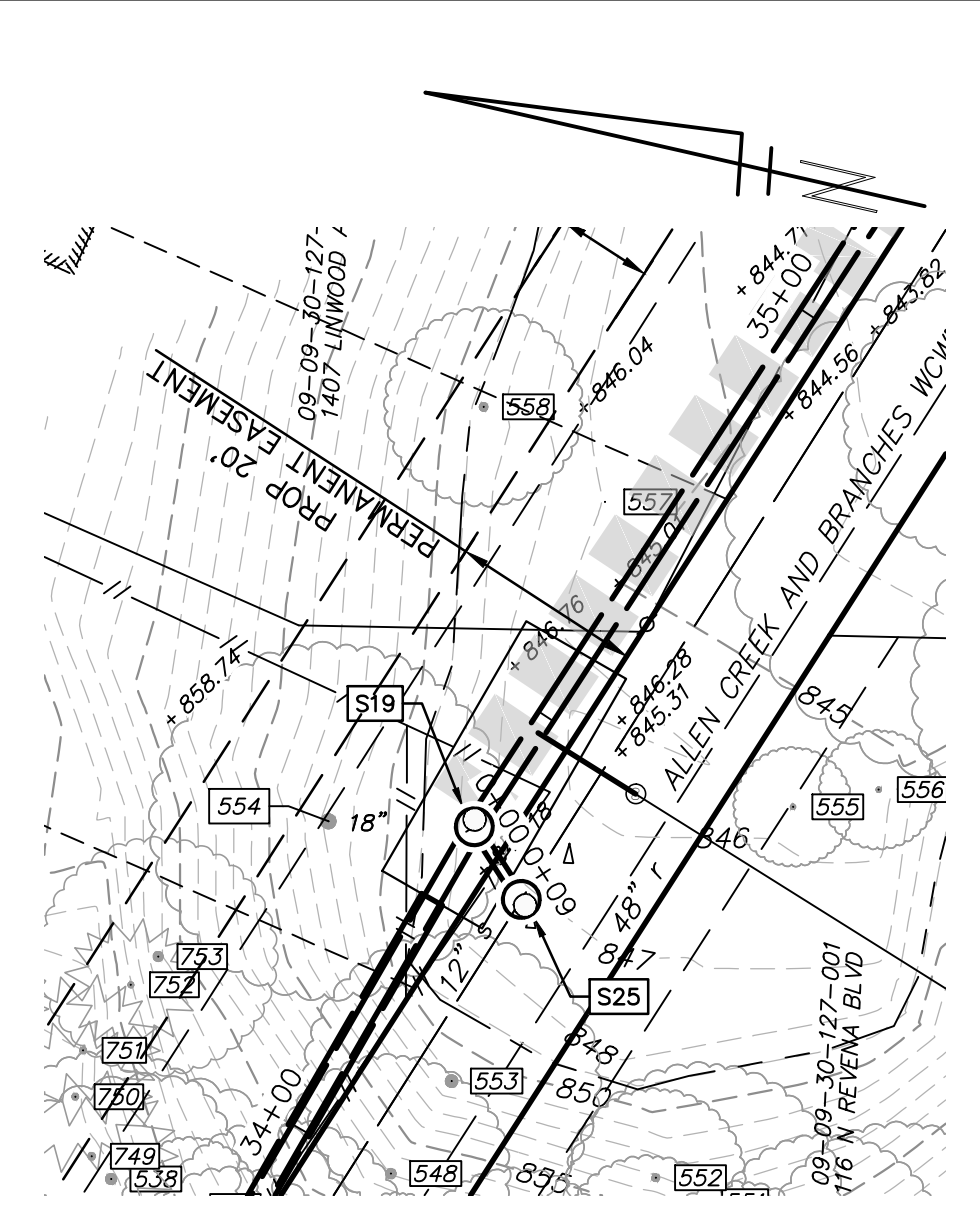
**PLAN VIEW**

SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S10	18+18	891.11	12.69	48	4' MH	21" E 878.42 8" N 878.80 8" S 878.80 21" W 878.52	4' MH (Cover Q)

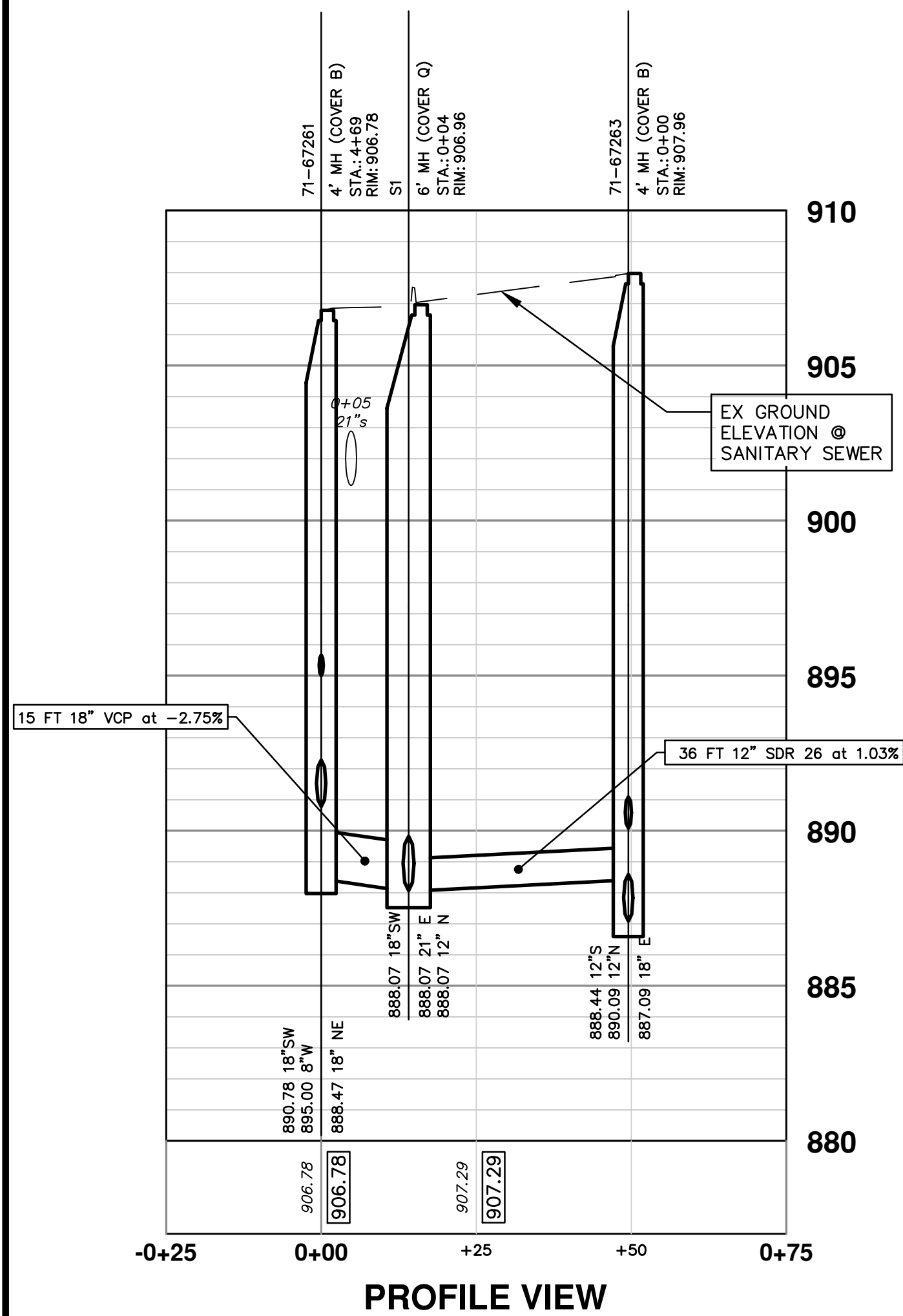


**PLAN VIEW**

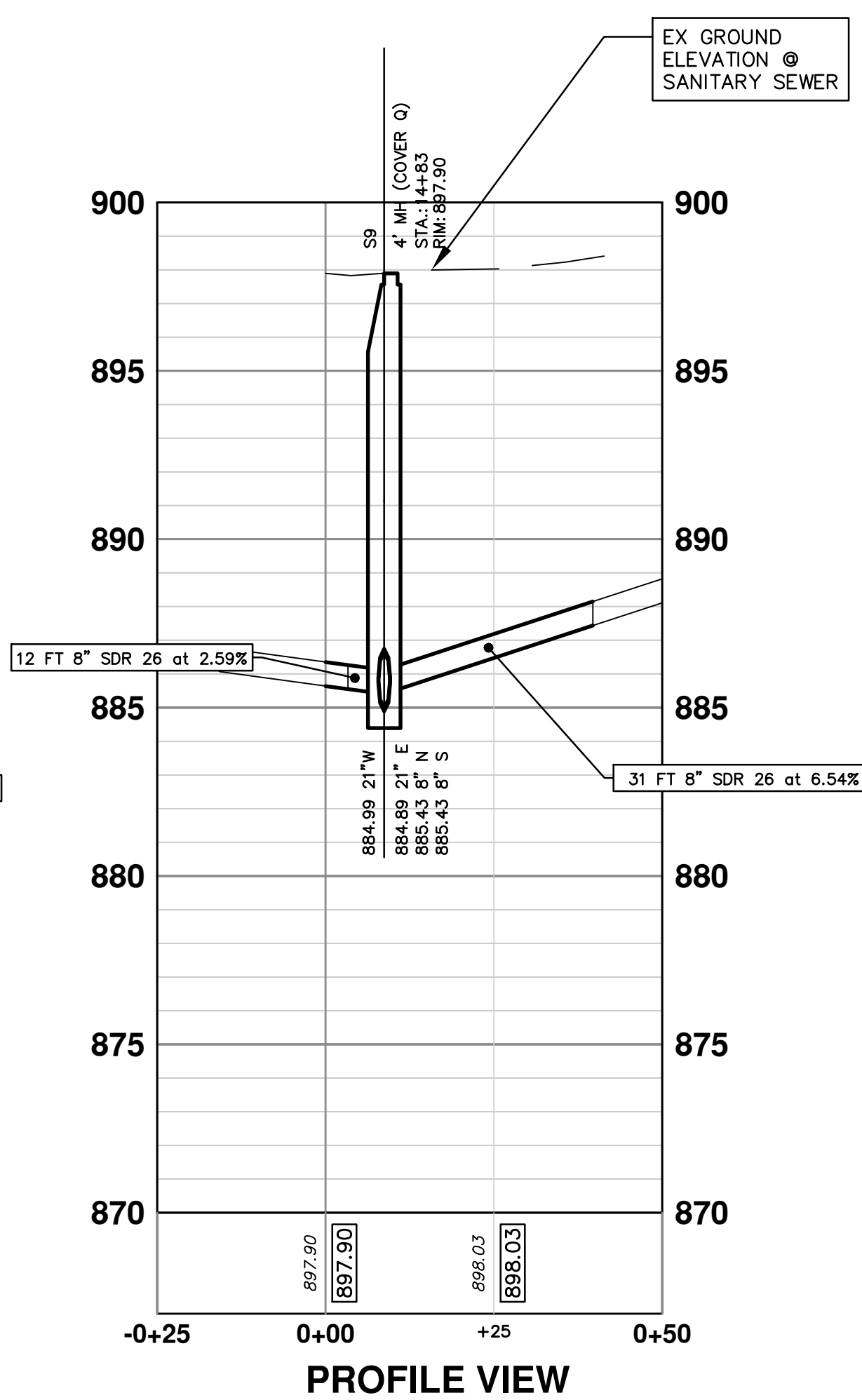
SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S18	32+72	850.00	9.55	48	4' MH	21" SE 840.45 21" W 840.45	4' MH (Cover Q)
S25	0+09	847.18	8.54	48	4' MH	12" NE 838.64 12" SW 838.74	4' MH (Cover B)



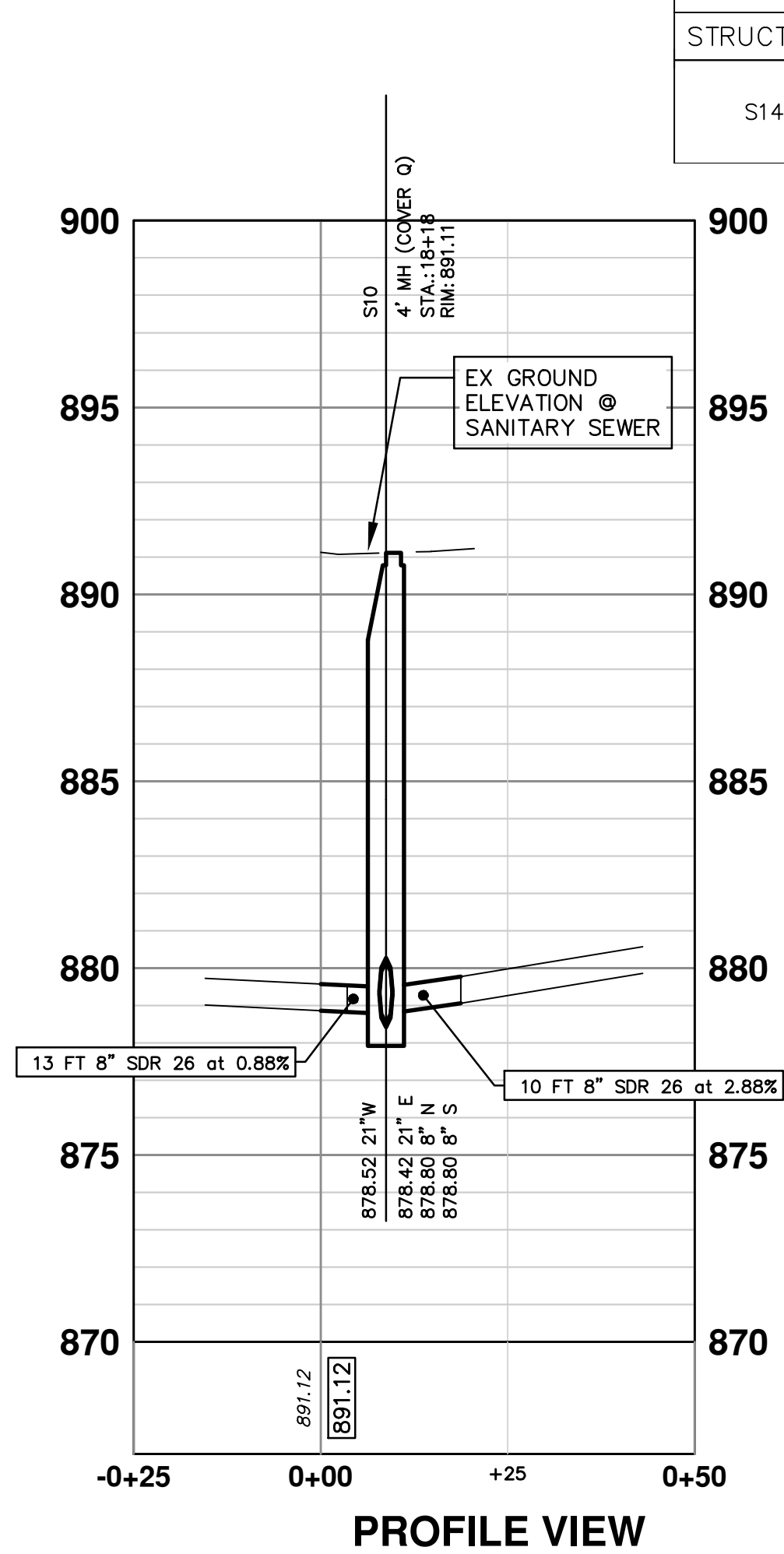
**PLAN VIEW**



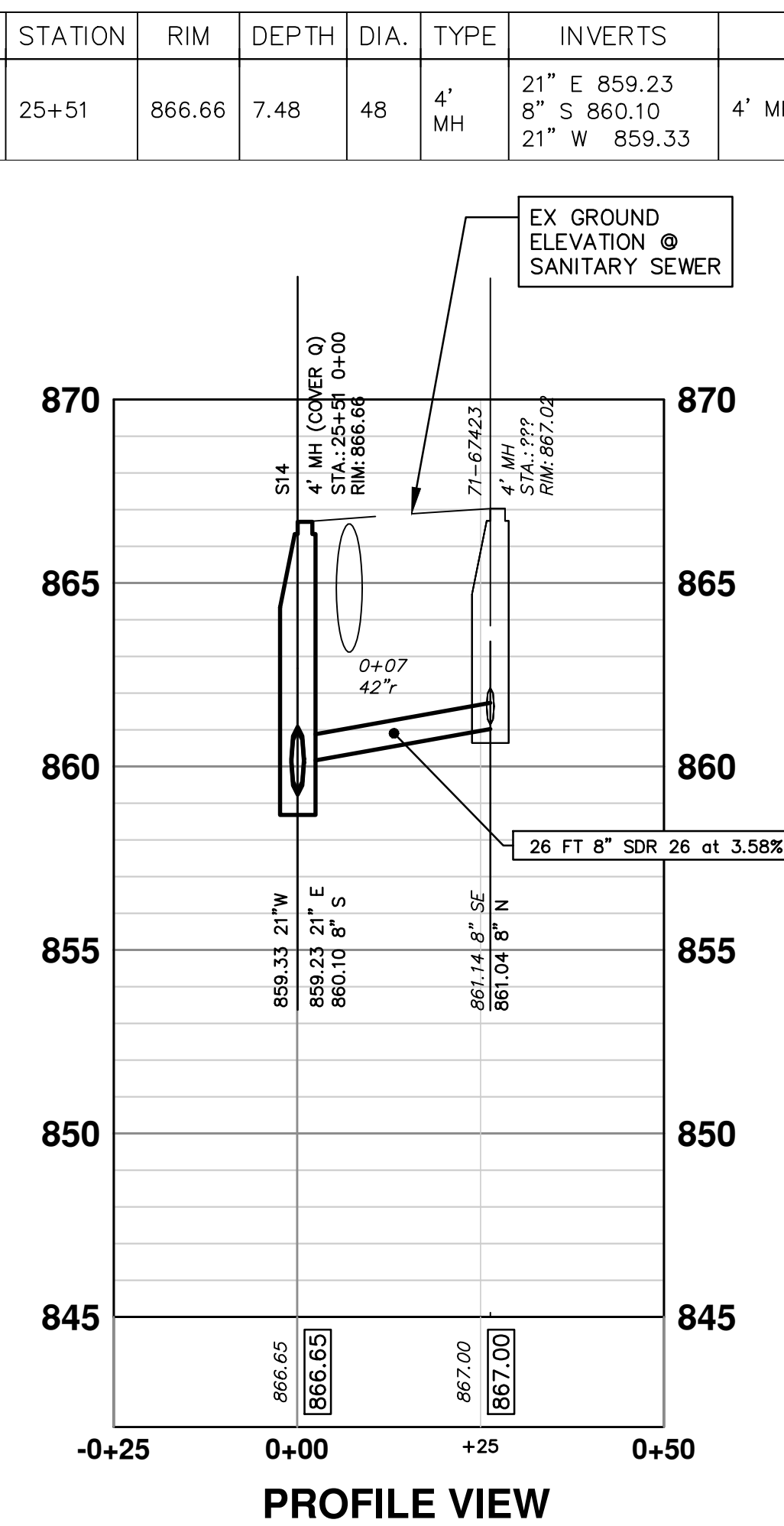
**PROFILE VIEW**



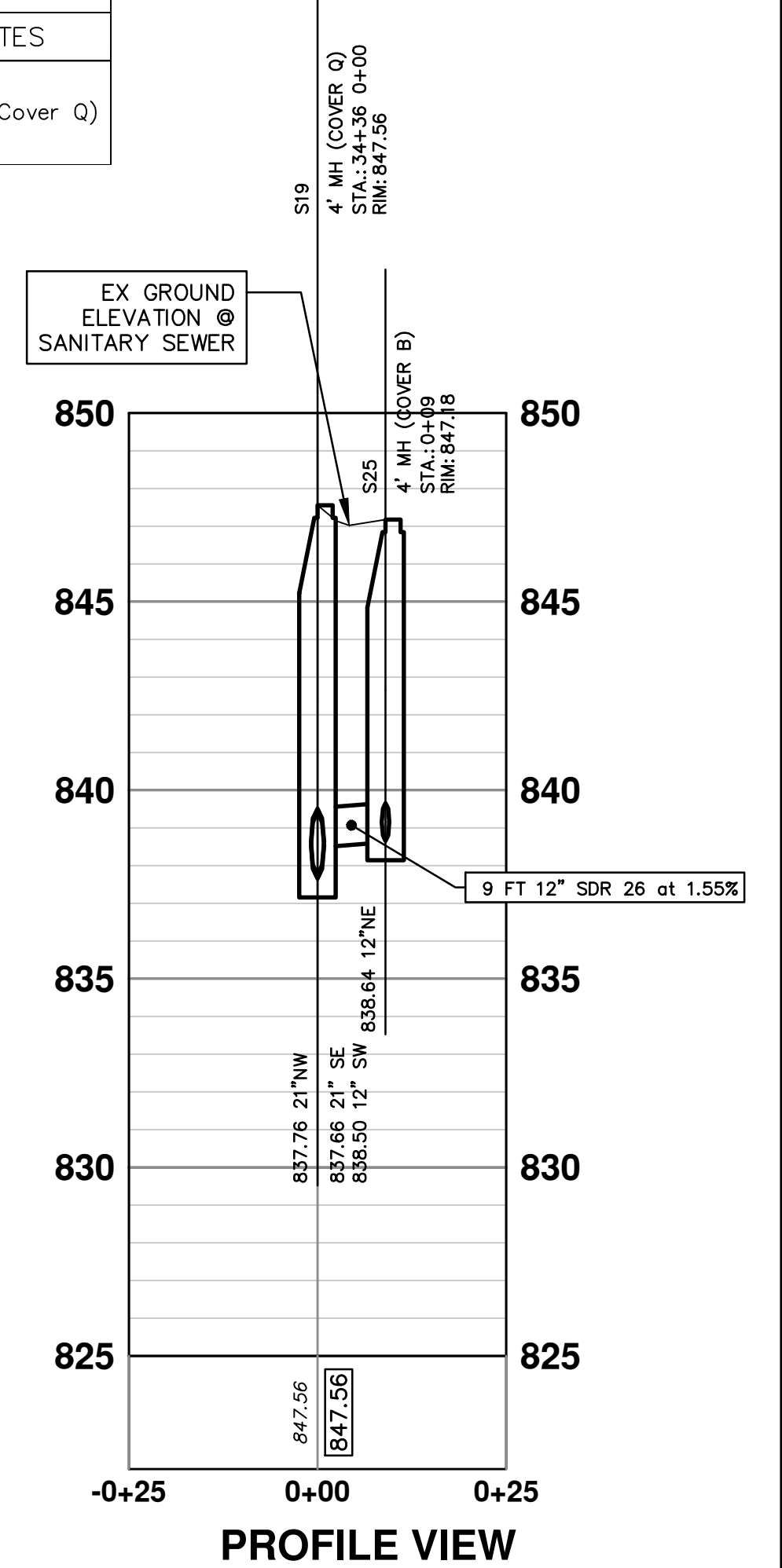
**PROFILE VIEW**



**PROFILE VIEW**

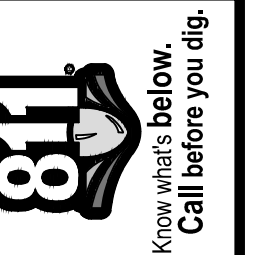


**PROFILE VIEW**



**PROFILE VIEW**

SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
S14	25+51	866.66	7.48	48	4' MH	21" E 859.23 8" S 860.10 21" W 859.33	4' MH (Cover Q)



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

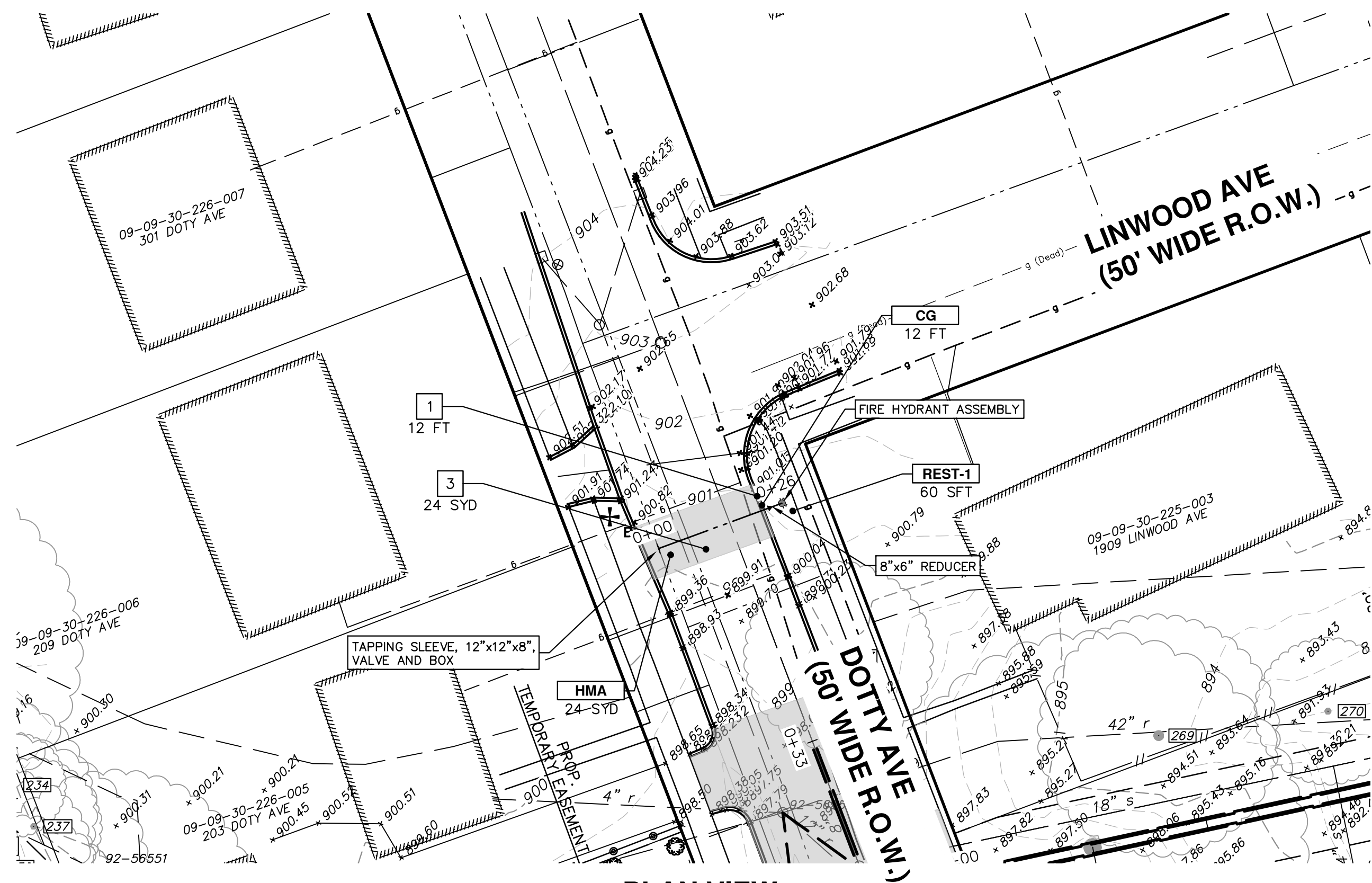
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ANN ARBOR, MI 48107-8647  
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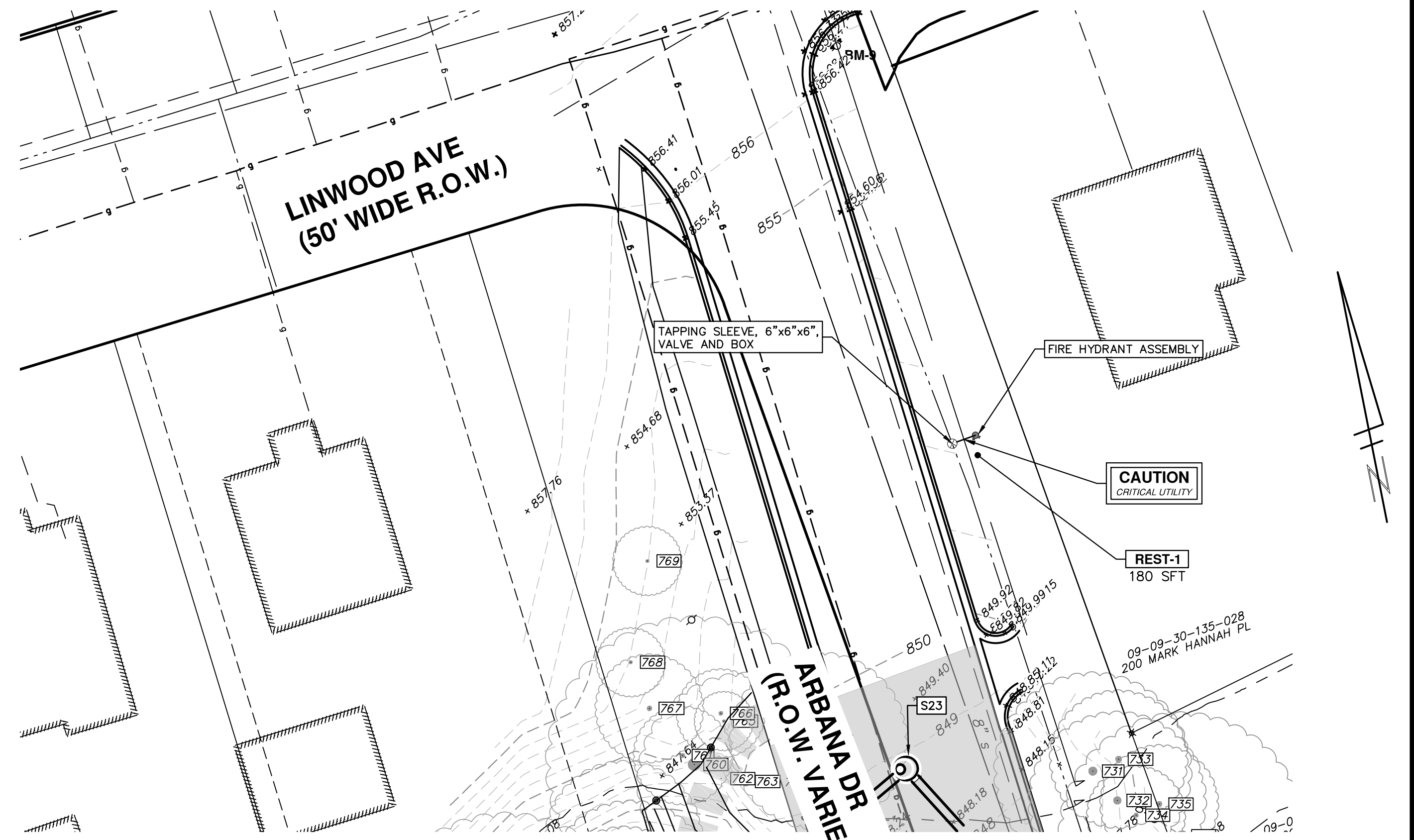
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**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
PLAN AND PROFILE  
SANITARY SEWER CONNECTIONS  
SCALE PLAN: #####  
PROFILE: 1" = 4'  
DRAWING NO.: 2019-024-38  
SHEET NO.: 38 OF 40



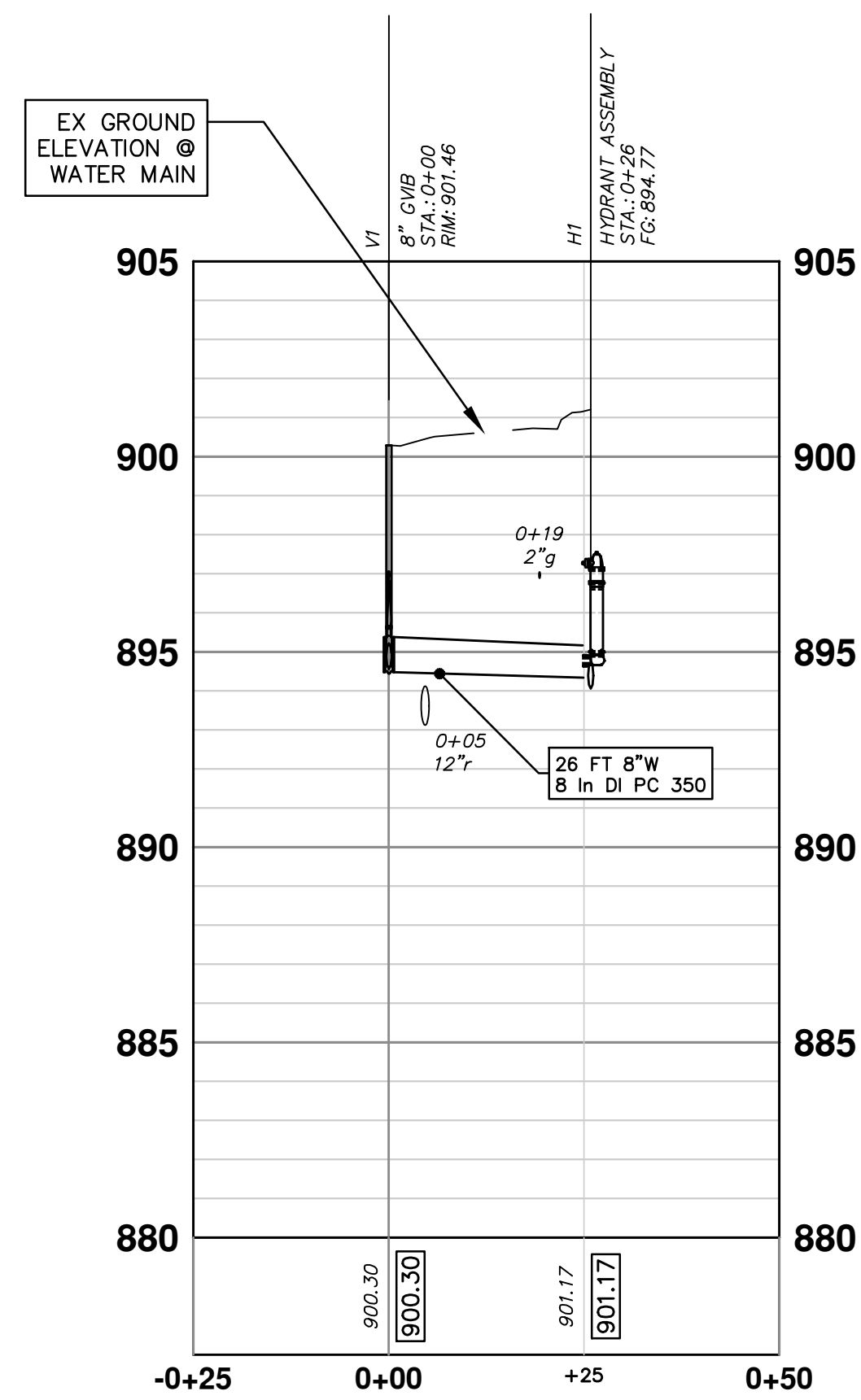
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PLAN VIEW



PLAN VIEW



PROFILE VIEW

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ALL TYPES
CON6	6 INCH CONCRETE

3	HMA SURFACE REMOVE*
4	PAVEMENT REMOVAL FOR RESURFACING
5	INLET FILTER
6	PROTECTIVE FENCING

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


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

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

\*FULL DEPTH RESTORATION


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.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	C/E
2	PERMIT SET PLAN	09/17/2020	BWA	C/E
1	PRELIMINARY PLAN	06/15/2020	BWA	C/E



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**HURON-WEST PARK SANITARY SEWER REPLACEMENT**  
 PLAN AND PROFILE  
 HYDRANT INSTALLATION PLAN

DRAWING No. 2019-024-39  
 SHEET No. 39 OF 40



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SANITARY STRUCTURE TABLE						SANITARY STRUCTURE TABLE					
STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP	STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
71-67249	4' MH	889.44	18"E 884.30 8"N 888.50 8"S 888.50 18"W 884.50	124 LF OF 18" @ 2.66% 59 LF OF 8" @ 0.00% 59 LF OF 8" @ 0.00% 147 LF OF 18" @ 0.22%	0'	x-73	4' MH	827.39	21"N 825.50	41 LF OF 21" @ 91.45%	0'
71-67250	4' MH	886.54	18"E 884.82 18"NW 884.92	147 LF OF 18" @ 0.22% 124 LF OF 18" @ 0.00%	0'	x-74	4' MH	834.03	8"S 833.30	205 LF OF 8" @ 5.46%	0'
71-67251	4' MH	924.58	12"E 879.50 8"S 0.24 8"N 0.67 12"W -0.50	250 LF OF 12" @ 2.54% 88 LF OF 8" @ 0.65% 39 LF OF 8" @ 2.61% 211 LF OF 12" @ 0.00%	0'	x-75	4' MH	853.07	8"S 852.34	106 LF OF 8" @ 0.00%	0'
71-67252	4' MH	887.82	18"N 886.21 18"W 886.21	105 LF OF 18" @ 0.18% 208 LF OF 18" @ 0.00%	0'	x-76	4' MH	861.87	8"NW 861.14	103 LF OF 8" @ 0.00%	0'
71-67260	4' MH	887.63	18"E 886.02 18"S 886.02	141 LF OF 18" @ 0.00% 105 LF OF 18" @ 0.18%	0'	x-78	4' MH	870.94	8"S 870.21	112 LF OF 8" @ 0.00%	0'
71-67262	4' MH	903.84	21"N 901.00 21"W 901.90	127 LF OF 21" @ 0.45% 238 LF OF 21" @ 0.34%	0'	x-79	4' MH	0.39	8"N -0.33	88 LF OF 8" @ 0.65%	0'
71-67376	4' MH	902.32	21"S 900.43	127 LF OF 21" @ 0.45%	0'	x-80	4' MH	0.39	8"S -0.33	39 LF OF 8" @ 2.61%	0'
71-67392	4' MH	841.53	12"SE 839.94 8"S 840.76 12"NW 839.94	238 LF OF 12" @ 1.35% 92 LF OF 8" @ 0.00% 167 LF OF 12" @ 0.00%	0'	x-81	4' MH	889.23	8"S 888.50	59 LF OF 8" @ 0.00%	0'
71-67394	4' MH	847.45	12"SE 844.30 21"SW 845.50 12"NW 844.30	123 LF OF 12" @ 0.00% 51 LF OF 21" @ 0.00% 145 LF OF 12" @ 3.79%	0'	x-82	4' MH	889.23	8"N 888.50	59 LF OF 8" @ 0.00%	0'
71-67395	4' MH	874.23	12"E 873.15 12"W 873.15	173 LF OF 12" @ 2.09% 250 LF OF 12" @ 2.54%	0'	x-85	4' MH	1.02	18"NE -0.88	91 LF OF 18" @ 0.00%	0'
71-67396	4' MH	870.75	12"E 869.54 8"N 870.00 12"W 869.54	91 LF OF 12" @ 0.00% 16 LF OF 8" @ 1.34% 173 LF OF 12" @ 2.09%	0'	x-86	4' MH	0.74	18"SW -0.88	91 LF OF 18" @ 0.00%	0'
71-67400	4' MH	856.50	12"E 855.42 12"W 855.42	25 LF OF 12" @ 4.24% 168 LF OF 12" @ 2.90%	0'	x-87	4' MH	899.63	12"S 898.55	195 LF OF 12" @ 4.35%	0'
71-67423	4' MH	861.91	12"E 860.29 8"SE 861.14 12"W 860.29	168 LF OF 12" @ 2.90% 103 LF OF 8" @ 0.00% 96 LF OF 12" @ 0.00%	0'	x-88	4' MH	904.34	21"W 902.38 21"E 901.10	173 LF OF 21" @ 0.28% 238 LF OF 21" @ 0.34%	0'
71-67496	4' MH	841.23	12"SE 836.72 8"S 840.32 12"NW 836.72	426 LF OF 12" @ 0.00% 88 LF OF 8" @ 0.00% 238 LF OF 12" @ 1.35%	0'	x-89	4' MH	903.79	21"E 901.90	173 LF OF 21" @ 0.28%	0'
71-073801	4' MH	870.94	8"N 870.21 8"S 870.21	112 LF OF 8" @ 0.00% 16 LF OF 8" @ 1.34%	0'	x-91	4' MH	870.62	12"E 869.54 12"W 869.54	125 LF OF 12" @ 0.00% 91 LF OF 12" @ 0.00%	0'
x-48	4' MH	891.32	18"E 887.09 12"N 890.09	215 LF OF 18" @ 0.00% 195 LF OF 12" @ 4.35%	0'	x-92	4' MH	847.39	21"NE 845.50	51 LF OF 21" @ 0.00%	0'
x-49	4' MH	888.75	18"E 886.21 18"W 887.09	208 LF OF 18" @ 0.00% 215 LF OF 18" @ 0.00%	0'	x-93	4' MH	841.49	8"N 840.76	92 LF OF 8" @ 0.00%	0'
x-52	4' MH	931.97	18"E -0.75 18"W 886.02	294 LF OF 18" @ 0.00% 141 LF OF 18" @ 0.00%	0'	x-96	4' MH	841.05	8"N 840.32	88 LF OF 8" @ 0.00%	0'
x-53	4' MH	0.86	18"E -0.75 18"W -0.75	197 LF OF 18" @ 0.00% 294 LF OF 18" @ 0.00%	0'	71-67261	4' MH	906.78	18"SW 890.78 21"N 888.47	91 LF OF 18" @ 0.00% 14 LF OF 21" @ 2.88%	0'
x-54	4' MH	930.82	18"SE 884.92 18"W -0.75	124 LF OF 18" @ 0.00% 197 LF OF 18" @ 0.00%	0'	71-67263	4' MH	907.96	12"N 890.09 21"S 888.44 18"E 887.09	194 LF OF 12" @ 0.00% 35 LF OF 21" @ 1.04% 215 LF OF 18" @ 0.00%	0'
x-57	4' MH	926.69	12"E -0.50 18"W 881.00	211 LF OF 12" @ 0.00% 124 LF OF 18" @ 2.66%	0'	71-67397	4' MH	859.48	21"W 849.78 21"SE 849.32	58 LF OF 21" @ 3.36% 143 LF OF 21" @ 3.38%	0'
x-61	4' MH	871.08	12"E 860.29 12"W 869.54	96 LF OF 12" @ 0.00% 125 LF OF 12" @ 0.00%	0'	71-67398	4' MH	868.91	21"W 851.71 8"N 852.34 21"E 851.71	82 LF OF 21" @ 3.23% 106 LF OF 8" @ 0.00% 58 LF OF 21" @ 3.36%	0'
x-64	4' MH	898.19	12"E -0.50 12"W 854.37	82 LF OF 12" @ 0.00% 25 LF OF 12" @ 4.24%	0'	71-072894	4' MH	861.30	21"NW 854.47 21"E 854.37	106 LF OF 21" @ 2.28% 82 LF OF 21" @ 3.23%	0'
x-65	4' MH	895.71	12"E -0.50 8"N 852.34 12"W -0.50	58 LF OF 12" @ 0.00% 106 LF OF 8" @ 0.00% 82 LF OF 12" @ 0.00%	0'						
x-66	4' MH	893.37	12"SE 849.78 12"W -0.50	145 LF OF 12" @ 3.79% 58 LF OF 12" @ 0.00%	0'						
x-68	4' MH	845.59	12"SE 839.94 12"NW 844.30	167 LF OF 12" @ 0.00% 123 LF OF 12" @ 0.00%	0'						
x-71	4' MH	838.09	12"E 830.90 12"NW 836.72	348 LF OF 12" @ 1.32% 426 LF OF 12" @ 0.00%	0'						
x-72	4' MH	856.11	21"S 852.89 8"N 844.45 12"W 826.30	41 LF OF 21" @ 91.45% 205 LF OF 8" @ 5.46% 348 LF OF 12" @ 1.32%	0'						

STORM STRUCTURE TABLE						STORM STRUCTURE TABLE					
STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP	STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
92-56551	4' CB Cover K	899.80	72"SE -3.00 72"NW -3.00	61 LF OF 72" @ 0.00% 104 LF OF 72" @ 0.00%	2'	x-28	Unknown	863.09	72"SE 851.60 42"W 858.65	252 LF OF 72" @ 0.00% 860 LF OF 42" @ 11227.89%	2'
92-56552	4' CB Cover K	898.22	12"SE 892.72 12"S 892.95	32 LF OF 12" @ 1.20% 28 LF OF 12" @ 1.07%	2'	x-34	4' CB Cover K	872.74	12"N 868.40	108 LF OF 12" @ 20.31%	2'
92-56554	Unknown	884.90	42"E 880.42 24"S 882.42 42"W 880.42	145 LF OF 42" @ 0.00% 214 LF OF 24" @ 0.00% 48 LF OF 42" @ 0.00%	0'	x-35	4' CB Cover K	891.47	12"S 889.80	108 LF OF 12" @ 20.31%	2'
92-56642	4' CB Cover K	866.31	12"NW 864.07 72"NW 851.60	100 LF OF 12" @ 4.37% 252 LF OF 72" @ 0.00%	2'	x-38	Unknown	927.47	24"S 885.36	29 LF OF 24" @ 0.34%	0'
92-56666	Unknown	860.94	12"SE 859.71	100 LF OF 12" @ 4.37%	0'	x-41	Unknown	884.80	24"N 882.42	214 LF OF 24" @ 0.00%	0'
92-56687	Unknown	867.99	42"E 863.90 42"W 863.90	52 LF OF 42" @ 0.00% 26 LF OF 42" @ 0.00%	2'	x-42	Unknown	894.33	12"NW 893.10	32 LF OF 12" @ 1.20%	0'
92-56688	4' CB Cover K	868.28	42"W 863.90	52 LF OF 42" @ 0.00%	2'	x-43	Unknown	894.48	12"N 893.25	28 LF OF 12" @ 1.07%	0'
92-064017	Unknown	887.84	24"N 885.46	29 LF OF 24" @ 0.34%	0'	x-44	Unknown	941.44	18"SW 894.73	80 LF OF 18" @ 0.00%	0'
x-4	4' CB Cover K	907.00	36"E 894.70	42 LF OF 36" @ 0.00%	2'	x-45	Unknown	896.53	18"NE 894.73	80 LF OF 18" @ 0.00%	0'
x-5	8' MH Cover B	907.57	72"NE 892.37 72"S 892.44 36"W 894.70	34 LF OF 72" @ 180.26% 36 LF OF 72" @ 0.00% 42 LF OF 36" @ 0.00%	2'	x-46	Unknown	899.38	72"N 892.44	36 LF OF 72" @ 0.00%	0'
x-6	Unknown	912.52	72"SW 862.31	34 LF OF 72" @ 180.26%	0'	x-47	Unknown	942.82	72"E 891.17	50 LF OF 72" @ 0.00%	0'
x-8	Unknown	942.82	72"W 891.17	50 LF OF 72" @ 0.00%	2'						
x-9	Unknown	942.82	72"N 891.17	109 LF OF 72" @ 0.00%	0'						
x-10	4' CB Cover K	907.33	72"S 891.17	109 LF OF 72" @ 0.00%	2'						
x-20	4' CB Cover K	892.21	42"E 880.42	48 LF OF 42" @ 0.00%	2'						
x-21	Unknown	928.62	42"W 880.42	145 LF OF 42" @ 0.00%	2'						
x-22	Unknown	877.10	42"E 870.14 42"W 872.88	185 LF OF 42" @ 0.00% 811 LF OF 42" @ 366.22%	2'						
x-23	Unknown	917.82	42"W 870.14	185 LF OF 42" @ 0.00%	2'						
x-24	Unknown	911.27	42"E 863.90	26 LF OF 42" @ 0.00%	2'						



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
4	RE-BID SET PLAN	11/16/2023	BWA	AFT
3	BID SET PLAN	03/16/2021	BWA	CJE
2	PERMIT SET PLAN	09/17/2020	BWA	CJE
1	PRELIMINARY PLAN	06/15/2020	BWA	CJE

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CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1647  
734-794-6410  
www.a2gov.org



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SHEET No. 40 OF 40