



CITY OF ANN ARBOR ENGINEERING

DUNMORE, WAVERLY, WELDON, HARTFORD WATER MAIN REPLACEMENT

NOTES

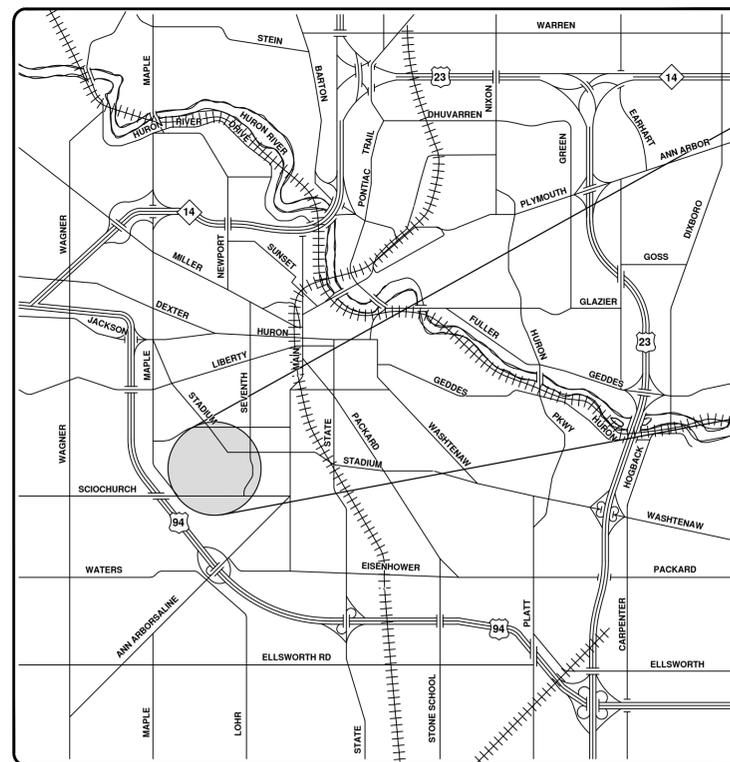
FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY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

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

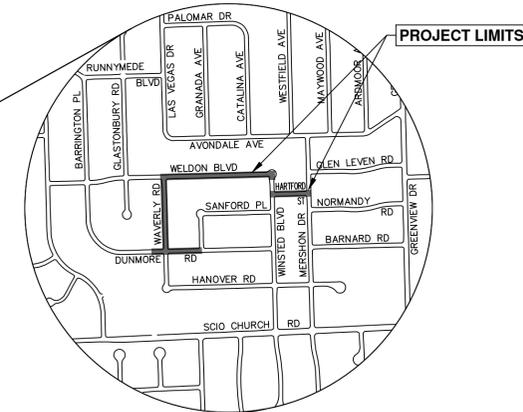
THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 1994 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE, AND THIS PROJECT'S CONTRACT DOCUMENTS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE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

BID No. 4650, FILE No. 2018033

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VICINITY MAP



PREPARED UNDER THE SUPERVISION OF

Igor V. Kotlyar
IGOR V. KOTLYAR, P.E. - MI LICENSE No. 43287
PROJECT ENGINEER



12 / 07 / 2020
DATE



REV.	DATE	DESCRIPTION
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CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-8647
734.794.6410
www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SHEET No. 1 OF 36

R:\2018033 Dunmore Waverly Weldon WM\Plan Production\2018033Cov.dwg - _a2 standard bw.stb - Plot Date: 12/7/2020 3:33:58 PM

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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.

1. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER AT ALL TIMES DURING CONSTRUCTION. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE AS DIRECTED AND APPROVED BY THE ENGINEER.
2. ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE CITY OF ANN ARBOR, CHAPTER 55 ANN ARBOR UNIFIED DEVELOPMENT CODE, CITY OF ANN ARBOR STANDARDS DIVISION VII, THE LAWS OF THE STATE OF MICHIGAN, AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. DAILY, OR AFTER ANY STORM EVENT, INSPECTIONS OF EROSION CONTROL MEASURES SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE ENGINEER TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE WITHOUT DELAY, AND WITHOUT ADDITIONAL COST TO THE CITY OF ANN ARBOR.
4. EROSION AND SEDIMENTATION FROM WORK ON THE SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS, ROADWAYS OR WATERWAYS.
5. ALL MUD/SOIL TRACKED ONTO ROADWAYS FROM THE SITE DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. IF SO ORDERED, THE CONTRACTOR SHALL PROVIDE AND OPERATE A VACUUM-TYPE STREET SWEEPER, AT NO ADDITIONAL COST TO THE CITY OF ANN ARBOR.
6. RESTORATION OF ALL DISTURBED AREAS, INCLUDING PLACEMENT OF TOPSOIL, SEED, FERTILIZER AND MULCH AND/OR SOD SHALL BE PERFORMED WITHIN FIVE (5) DAYS OF THE COMPLETION OF FINAL GRADE.
7. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
8. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
9. PROPER DUST CONTROL SHALL BE MAINTAINED DURING CONSTRUCTION BY USE OF WATER TRUCKS AND/OR DUST PALLIATIVE AS REQUIRED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME MEASURES UPON AUTHORIZED COMPLETION OF THE PROJECT. FINAL COMPLETION OF PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
11. THE CONTRACTOR SHALL NOT GRADE INTO ADJACENT PROPERTIES. SILT AND PROTECTIVE FENCE SHALL BE INSTALLED AND MAINTAINED TO PREVENT GRADING, EROSION AND SEDIMENTATION INTO THE ADJACENT PROPERTIES.
12. TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.

SEQUENCE OF EROSION CONTROL MEASURES:

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

SAMPLE SOIL EROSION AND SEDIMENTATION CONTROL INSTALLATION MINIMUM REQUIREMENTS:

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

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

TEMPORARY SEEDING:

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

CONSTRUCTION NOTES:

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

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

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

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

PERMIT	ISSUING AUTHORITY
M.D.E.Q. WATER MAIN CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

CONTACT INFORMATION

PUBLIC UTILITIES	OWNER	CONTACT
WATER		DAN WOODEN (734) 794-6350 DWOODEN@A2GOV.ORG
SANITARY		TRAVIS CONLEY (734) 794-6350 TCONLEY@A2GOV.ORG
STORM	CITY OF ANN ARBOR PUBLIC WORKS W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	PAT MAINO (734) 794-6350 PMAINO@A2GOV.ORG
FORESTRY		MATT WALDSMITH (734) 794-6350 MWALDSMITH@A2GOV.ORG
SIGNS SIGNALS STREET LIGHTS		CHUCK FOJTIK (734) 794-6361 CFOJTIK@A2GOV.ORG
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 3150 E. MICHIGAN AVE, YPSILANTI TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	ANTHONY IGNASIAK (734) 397-4447
CABLE	COMCAST 27800 FRANKLIN ROAD SOUTHFIELD, MI 48034	RON SUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	SHAWN BURNSIDE (734) 996-5322 (313) 683-7349(MOBILE)
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016
FIBER OPTIC	WINDSTREAM 1295 S LINDEN ROAD, SUITE B FLINT, MI 48532	GREG SERICH (810) 244-3500
STREET LIGHTING	DTE ENERGY 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	LANCE ALLEY (734) 397-4188

DUNMORE RD., WAVERLY RD., WELDON BLVD. BENCHMARKS

BM #	ELEV	DESCRIPTION
1	931.926	SET RR SPIKE IN SE SIDE OF L.P. @ NW CORNER OF DUNMORE AND SANFORD PL.
2	932.894	SET RR SPIKE IN SE SIDE OF L.P. @ NW CORNER OF DUNMORE AND WAVERLY
3	942.002	SET RR SPIKE IN E. SIDE OF L.P. ON W. SIDE OF WAVERLY BETWEEN HSE NO. 1718 AND 1726.
4	947.703	SET RR SPIKE IN NE SIDE OF L.P. @ SW CORNER OF WAVERLY AND WELDON.
5	942.332	SET RR SPIKE IN N. SIDE OF L.P. ON S. SIDE OF WELDON BETWEEN HSE NO. 1807 AND 1811.
6	937.595	SET RR SPIKE IN N. SIDE OF L.P. ON S. SIDE OF WELDON BETWEEN HSE NO. 1719 AND 1725.
7	938.772	SET RR SPIKE IN S'LY SIDE OF L.P. AT BEND IN WELDON/WINSTED, BETWEEN HSE NO. 1601 AND 1700.
8	935.861	SET RR SPIKE IN E'LY SIDE OF L.P. @ NW CORNER OF WINSTED AND SANFORD PL.
9	940.428	SET RR SPIKE IN N SIDE OF L.P. ON S. SIDE OF HARTFORD AT APPROX. MID-BLOCK BETWEEN WINSTED AND MERSHON.
10	945.405	SET RR SPIKE IN W'LY SIDE OF L.P. @ NE CORNER OF MERSHON AND NORMANDY.
11	947.151	SET RR SPIKE IN NW SIDE OF L.P. @ SE CORNER OF MERSHON AND GLEN LEVEN.

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CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-8647
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT**

SCALE: NTS
DRAWING No. 2018033-2

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
- e duct bank* ELECTRICAL DUCT BANK
- oh t* TELEPHONE OVER HEAD
- t* TELEPHONE UNDER GROUND
- t duct bank* TELEPHONE DUCT BANK
- oh tv* CABLE TV OVER HEAD
- tv* CABLE TV UNDER GROUND
- fo* FIBER OPTIC
- fo duct bank* FIBER OPTIC DUCT BANK
- BOUNDARY
- BUILDING
- CENTERLINE OF DITCH
- CENTERLINE/CROWN OF ROAD
- 800 CONTOUR MAJOR
- 799 CONTOUR MINOR
- EDGE OF WATER
- FLOODPLAIN
- FENCE
- GRAVEL
- GUARDRAIL
- STONE WALL
- R.O.W.
- TREELINE
- WETLAND
- EDGE OF BRUSH
- HEDGE

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

PROPOSED LEGEND

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

- DETECTABLE WARNING
- ASPHALT
- CONCRETE
- SIDEWALK
- TREE (DECIDUOUS)
- TREE (CONIFEROUS)
- TREE TO BE REMOVED (DECIDUOUS)
- TREE TO BE REMOVED (CONIFEROUS)
- STUMP TO BE REMOVED



Know what's below.
Call Before you dig.

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

DUNMORE, WAVERLY, WELDON, HARTFORD

WATER MAIN REPLACEMENT

LEGEND

SCALE: NTS

DRAWING No. 2018033-3

SHEET No. 3 OF 36

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

SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	LOCATION	STATION	INVERTS	RIM	DEPTH	SIZE	TYPE
71-64200	Dunmore Rd	11+48	8" W 921.24 8" E 921.19 8" N 921.24	930.66	9.47	48	4' MH
71-64201	Dunmore Rd	9+85	8" E 921.75	930.98	9.23	48	4' MH
71-64203	Dunmore Rd	8+54	10" S 921.84 10" W 921.94 8" N 921.94	931.71	9.87	48	4' MH
71-64131	Hartford St	6+04	8" E 922.44 8" S 922.29 8" N 922.34	935.60	13.31	48	4' MH
71-64130	Hartford St	8+94	8" S 932.29 8" W 932.19 6" NE 937.19	944.32	12.13	48	4' MH
71-64129	Mershon Dr	7+14	8" N 936.60	944.43	7.83	48	4' MH
71-64247	Waverly Rd	10+51	8" S 933.81	945.23	11.42	48	4' MH
71-64123	Weldon Blvd	19+41	8" S 923.55 8" W 923.55 4" E 925.35	937.04	13.49	48	4' MH
71-64125	Weldon Blvd	15+85	8" E 926.99 8" W 927.04	937.19	10.20	48	4' MH
71-64175	Weldon Blvd	12+65	8" E 932.09 8" W 932.09	942.94	10.85	48	4' MH
71-64177	Weldon Blvd	9+32	8" E 937.51	946.86	9.35	48	4' MH

WATER MAIN STRUCTURE TABLE			
STRUCTURE	LOCATION	STATION	TYPE
01-07394	Dunmore Rd	11+08	6in GATE VALVE
01-00539	Dunmore Rd	8+09	6in GATE VALVE
01-00537	Dunmore Rd	6+70	6in GATE VALVE
01-07400	Dunmore Rd	11+31	8in GATE VALVE
01-02185	Waverly Rd	5+39	6in GATE VALVE
01-08915	Waverly Rd	11+48	6in GATE VALVE
01-08914	Weldon Blvd	10+19	6in GATE VALVE
01-02190	Weldon Blvd	8+98	6in GATE VALVE
01-00853	Hartford St	8+66	6in GATE VALVE
01-07401	Dunmore Rd	11+58	8in GATE VALVE
01-07404	Winsted Blvd	4+16	8in GATE VALVE

STORM SEWER STRUCTURE TABLE							
STRUCTURE	LOCATION	STATION	INVERTS	TOP OF CASTING ELEVATION	DEPTH	SIZE	TYPE
88-52118	Hartford St	8+80	12" SW 938.72	943.94	5.22	12" Dia.	12" Drop Structure
88-52119	Hartford St	6+31	6" NW 930.54 12" SW 930.04	935.07	5.03	12" Dia.	12" Drop Structure
88-52120	Hartford St	6+31	12" W 928.88	935.24	6.36	12" Dia.	12" Drop Structure
88-52121	Weldon Blvd	19+03	6" SW 932.33 12" NE 931.83	935.88	6.05	12" Dia.	12" Drop Structure
88-52122	Weldon Blvd	18+84	12" S 930.75	935.92	5.17	12" Dia.	12" Drop Structure
88-52123	Weldon Blvd	17+43	12" NE 928.93	935.40	6.47	12" Dia.	12" Drop Structure
88-52124	Weldon Blvd	17+44	6" NW 930.40 6" NE 930.40 12" SE 929.91	935.19	5.28	12" Dia.	12" Drop Structure
88-52125	Weldon Blvd	15+35	6" SW 933.19 12" NE 932.69	937.12	4.43	12" Dia.	12" Drop Structure
88-52126	Weldon Blvd	15+36	6" NW 933.28 12" S 932.78	937.28	4.50	12" Dia.	12" Drop Structure
88-52306	Waverly Rd	8+79	12" SE 934.67	940.27	5.60	12" Dia.	12" Drop Structure
88-52307	Waverly Rd	8+77	12" SW 935.50 6" NE 935.75	940.53	5.03	12" Dia.	12" Drop Structure
88-52308	Weldon Blvd	10+19	12" SE 941.61	946.01	4.40	12" Dia.	12" Drop Structure
88-52309	Weldon Blvd	10+19	12" NE 941.86	945.99	4.13	12" Dia.	12" Drop Structure
88-52310	Weldon Blvd	13+27	6" W 936.40 12" S 935.90	940.86	4.96	12" Dia.	12" Drop Structure
88-52311	Weldon Blvd	13+25	12" NE 935.13	940.82	5.69	12" Dia.	12" Drop Structure
88-52312	Dunmore Rd	11+59	12" SW 926.81	930.21	3.40	12" Dia.	12" Drop Structure
88-52313	Dunmore Rd	11+27	12" S 926.94	930.19	3.25	12" Dia.	12" Drop Structure
88-52314	Dunmore Rd	11+11	12" SE 926.70	930.19	3.49	12" Dia.	12" Drop Structure
88-52315	Dunmore Rd	11+41	12" N 927.42 6" SE 927.67 6" SW 927.67	930.19	2.77	12" Dia.	12" Drop Structure
88-52316	Dunmore Rd	11+76	12" SW 926.89 6" NE 927.39	930.73	3.84	12" Dia.	12" Drop Structure
88-52317	Waverly Rd	6+05	12" SW 927.44 6" NE 928.74	931.67	4.23	12" Dia.	12" Drop Structure
88-52318	Waverly Rd	6+07	12" S 927.66 6" NW 928.16	931.36	3.70	12" Dia.	12" Drop Structure
88-52319	Dunmore Rd	8+16	12" SE 927.25	931.15	3.90	12" Dia.	12" Drop Structure
88-52324	Dunmore Rd	7+03	12" N 926.86 12" S 926.86	931.91	7.05	36" Dia.	3" JUNCTION Cover K
88-52325	Dunmore Rd	7+05	12" S 927.76 12" N 927.76	931.95	6.19	36" Dia.	3" JUNCTION Cover K
88-52326	Dunmore Rd	8+16	12" NE 927.14	931.31	4.17	12" Dia.	12" Drop Structure
92-52358x	Weldon Blvd	15+43	12" W 929.39 12" N 932.04 12" SW 932.34 12" E 929.39	937.54	8.15	48" Dia.	4' MH Cover B
92-52359x	Weldon Blvd	17+53	12" W 927.48 12" NW 928.88 12" SW 928.88 12" E 927.48	935.87	8.39	48" Dia.	4' MH Cover B



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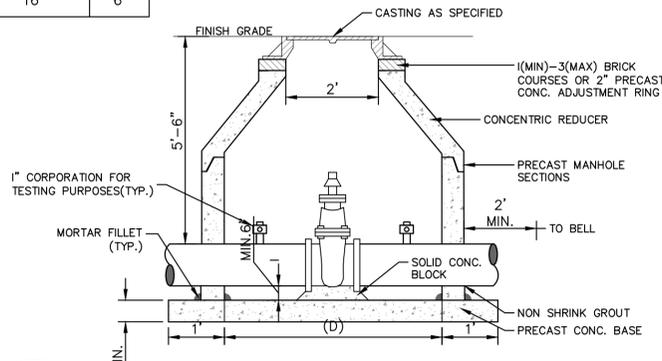
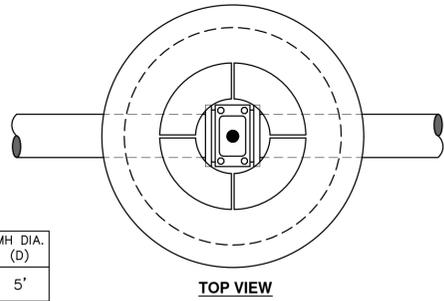


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
EXISTING STRUCTURE TABLES

SCALE: N/A
DRAWING No. 2018033-4

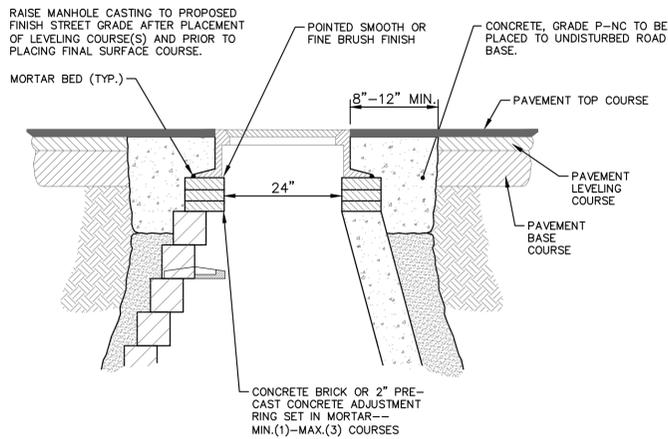
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT TO BID	12-07-20	DF/KB	IVK

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



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.

MANHOLE CASTING ADJUSTMENT SD-GU-6

MINIMUM STANDARDS

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

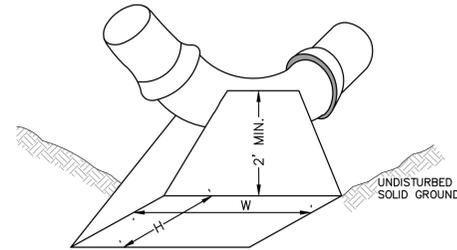
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

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

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

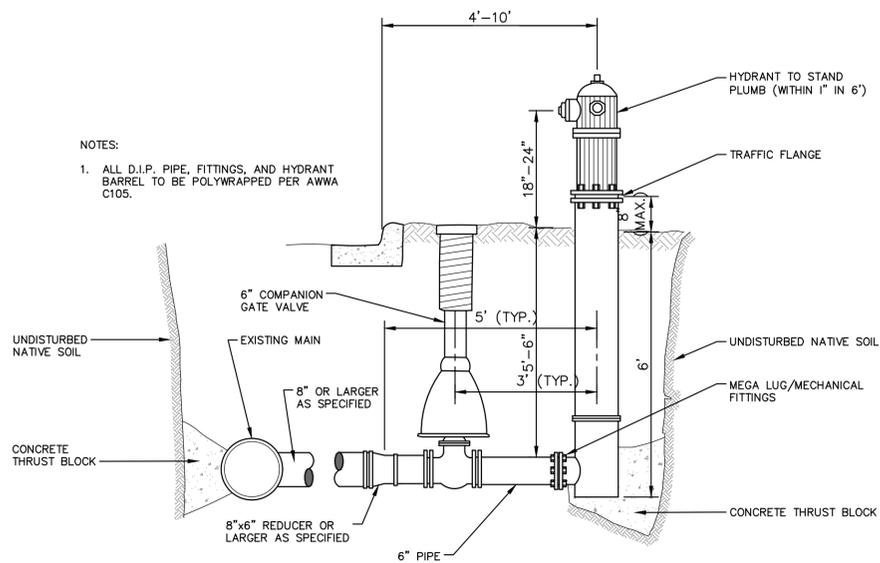
FOR FITTING SIZES LARGER THAN 16", THRUST BLOCK DIMENSIONS SHALL BE AS SPECIFIED BY ENGINEER.

W = WIDTH IN FEET
H = HEIGHT IN FEET



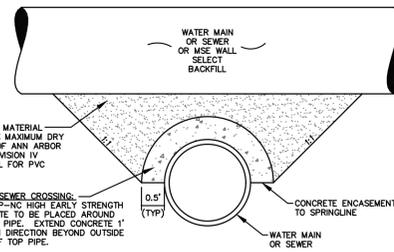
NOTE:
THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

THRUST BLOCK SD-W-2



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

FIRE HYDRANT ASSEMBLY

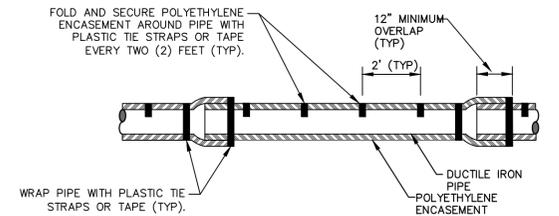


CLASS II GRANULAR MATERIAL COMPACTED TO 95% MAXIMUM DRY DENSITY PER CITY OF ANN ARBOR STANDARDS (SEE DIVISION IV REGARDING BACKFILL FOR PVC SEWERS).

WATER/SEWER CROSSING: GRADE P-NC HIGH EARLY STRENGTH CONCRETE TO BE PLACED AROUND BOTTOM PIPE. EXTEND CONCRETE 1' IN EACH DIRECTION BEYOND OUTSIDE EDGE OF TOP PIPE.

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

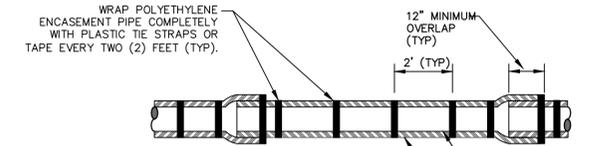
CONCRETE UTILITY SADDLE



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

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

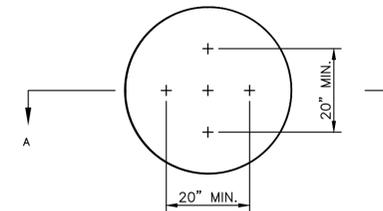
POLYETHYLENE ENCASUREMENT (DRY INSTALLATION)



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

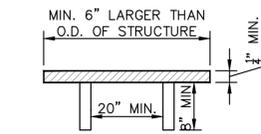
APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS

POLYETHYLENE ENCASUREMENT (WET INSTALLATION)



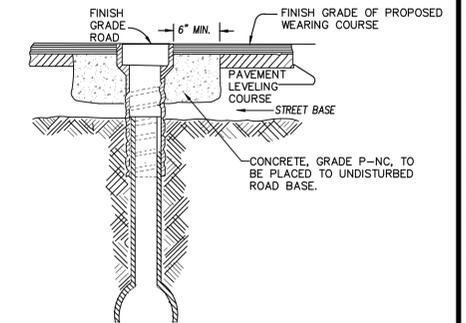
NOTE: PLATE MAY BE CIRCULAR, SQUARE OR RECTANGULAR

SECTION A - A



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

STRUCTURE PLATE SD-GU-8



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

WATER VALVE BOX ADJUSTMENT



IVK	CHECKED
DFKB	DRAWN
DATE	12-07-20
REV.	00
DESCRIPTION	OUT TO BID

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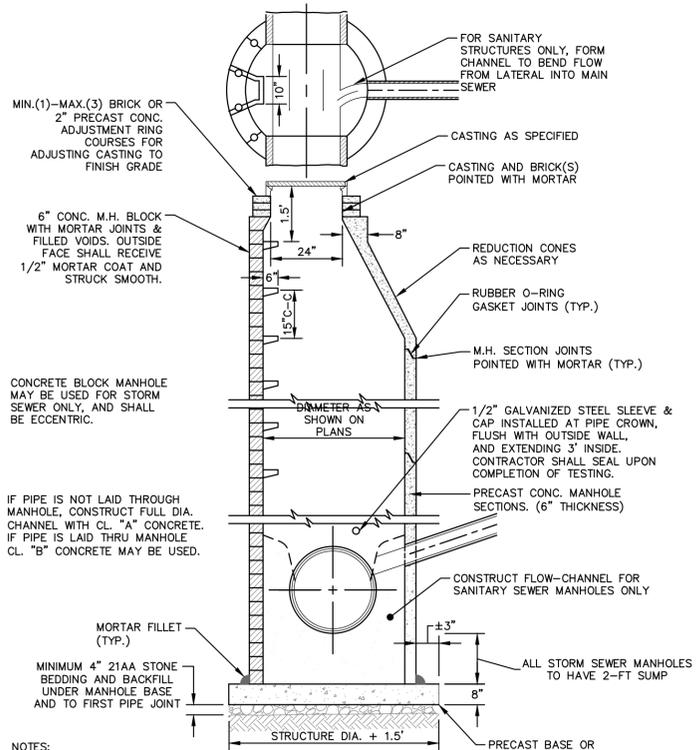


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
WATER MAIN DETAILS

SCALE: N.T.S.
DRAWING No. 2018033-5

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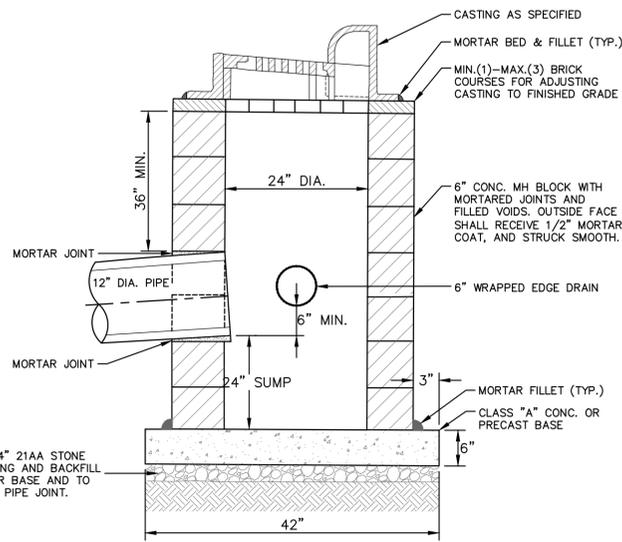
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NOTES:

1. ALL SANITARY MANHOLES SHALL BE PRECAST CONCRETE.
2. ALL MANHOLES MUST HAVE ECCENTRIC CONES - BOTH STORM AND SANITARY
3. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
4. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.

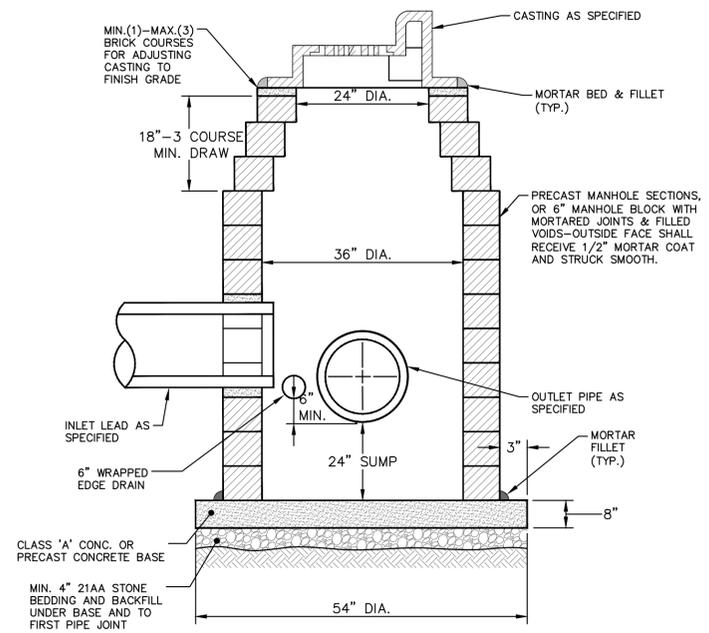
STANDARD MANHOLE (TYPE I)



NOTES:

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)

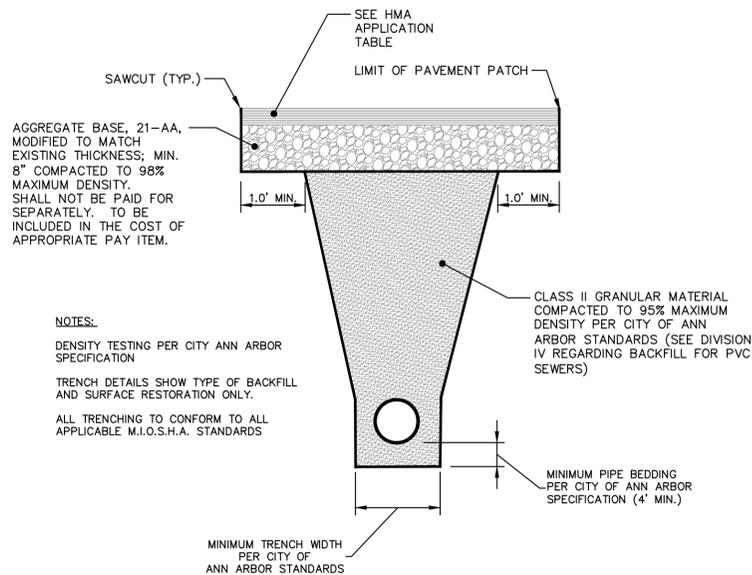
SINGLE INLET STRUCTURE SD-S-10



NOTES:

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)

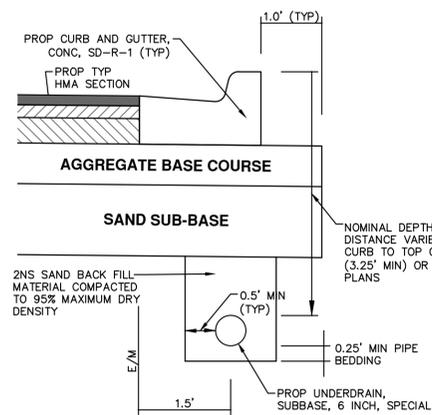
INLET-JUNCTION CHAMBER SD-S-9



NOTES:

- DENSITY TESTING PER CITY ANN ARBOR SPECIFICATION
- TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY.
- ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS

**UTILITY TRENCH-TYPE I SD-TD-1 (MODIFIED)
(UNDER HMA PAVEMENT)**



NOTES:

- IN AREAS WHERE EDGE DRAIN CANNOT BE INSTALLED IN ACCORDANCE WITH THE DETAIL, 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.
- FOR PAVEMENT BASE AND SUBBASE THICKNESS, SEE TYPICAL PAVEMENT CROSS-SECTION(S)
- TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY
- ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS

**TRENCH DETAIL FOR UNDER DRAIN
(UNDER HMA PAVEMENT)**



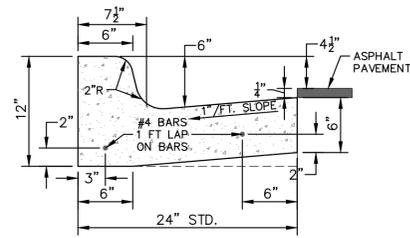
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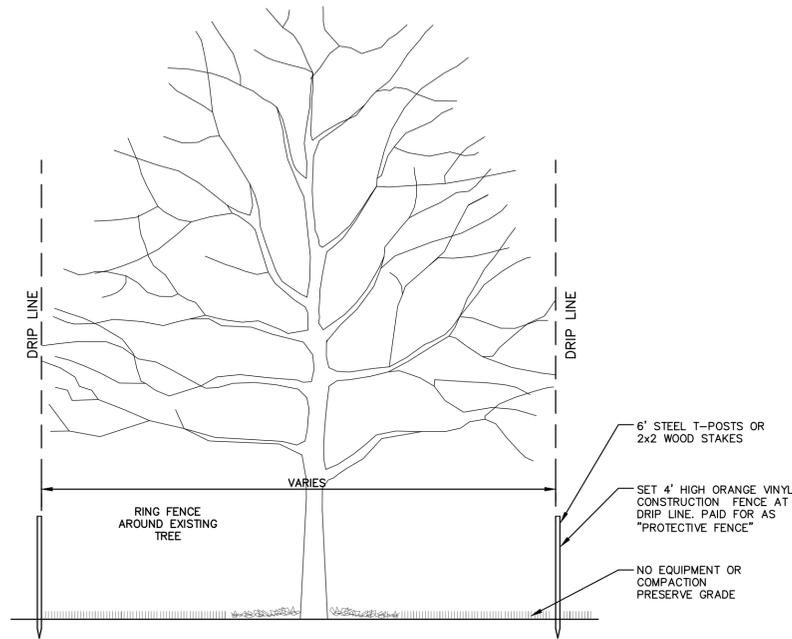


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
STORM SEWER AND TRENCH DETAILS

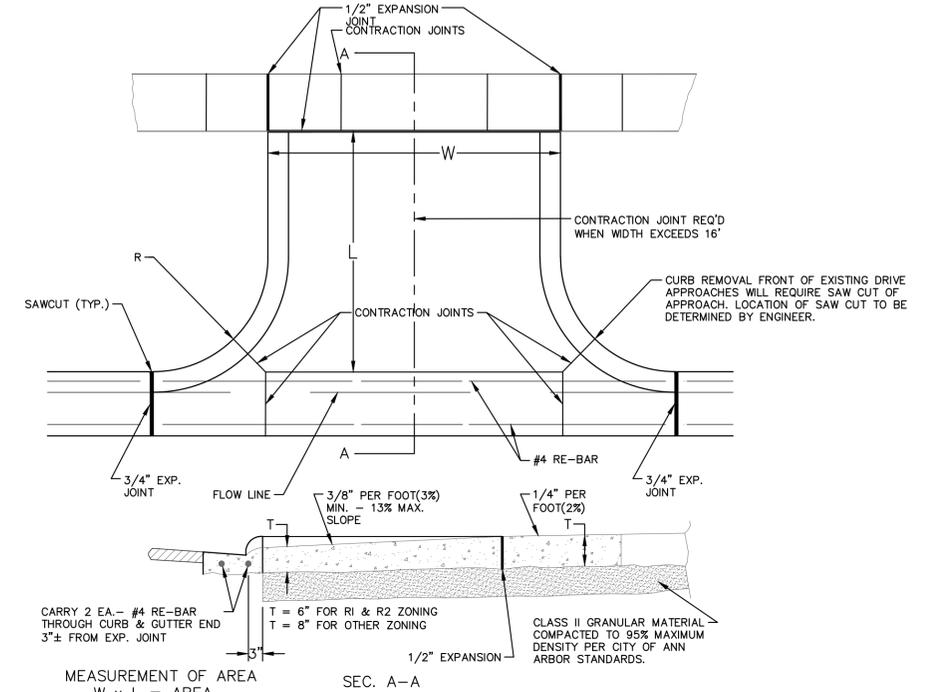
SCALE: N.T.S.
DRAWING No. 2018033-6
SHEET No. 6 OF 36



CURB AND GUTTER, CONC, DET F4, SPECIAL
NO SCALE



TREE PROTECTION DETAIL



MEASUREMENT OF AREA
 $W \times L = \text{AREA}$

NOTE:

1. DRIVE APPROACH TO BE CLASS 'A' CONCRETE.
2. R(RADIUS) AND W(DRIVE WIDTH) AS REQUIRED FOR ZONING BY CITY CODE
3. IF GUTTER IS OVERLAYED, 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



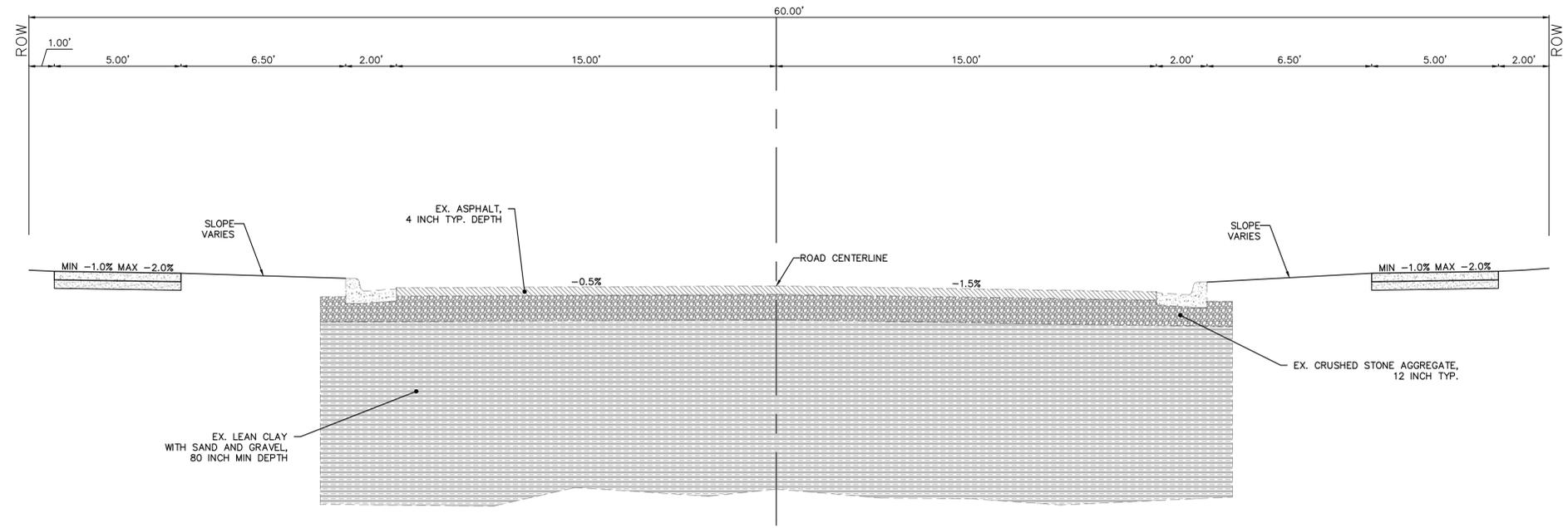
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				IVK
				CHECKED

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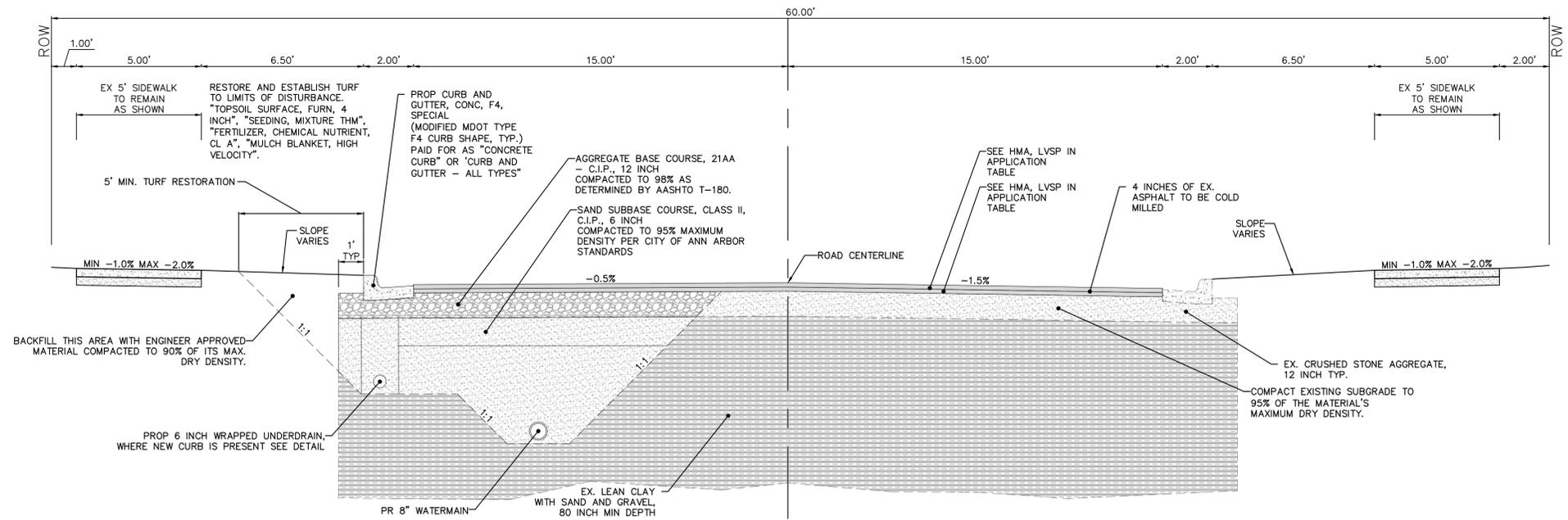
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
MISC. DETAILS

SCALE: N.T.S.
DRAWING No. 2018033-7

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**DUNMORE ROAD
EXISTING TYPICAL SECTION**



**DUNMORE ROAD
PROPOSED TYPICAL SECTION**

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



Know what's below. Call Before you dig.

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ANN ARBOR 734.794.4410
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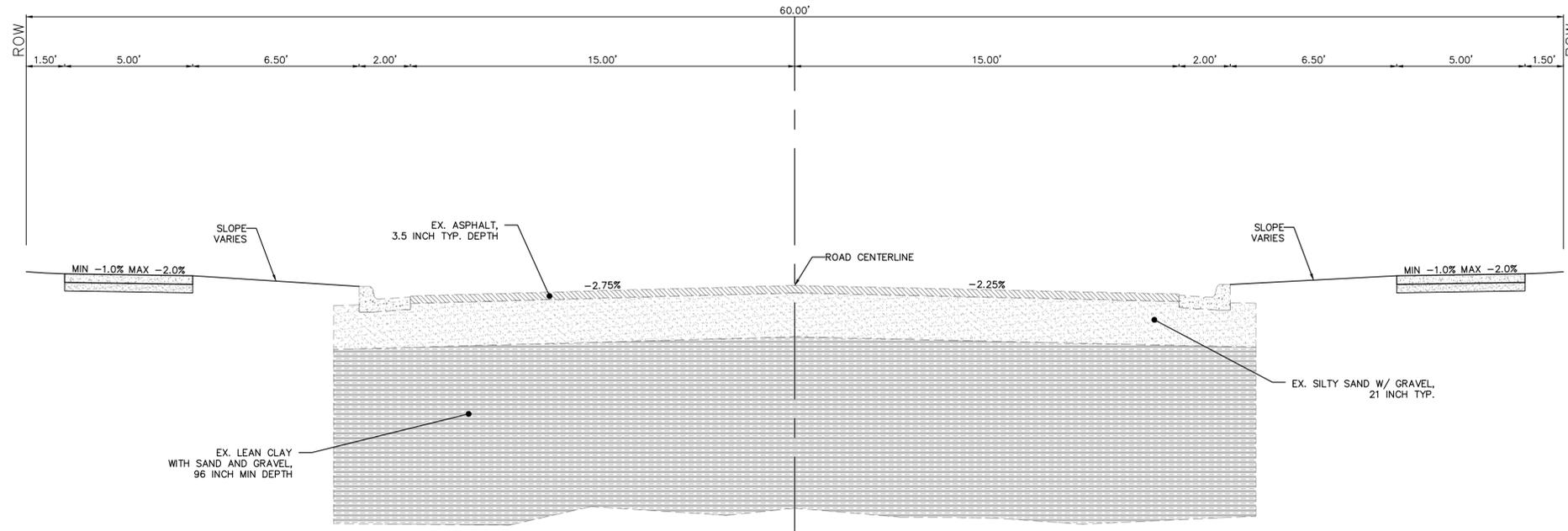


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
DUNMORE EX & PR TYP SECTIONS

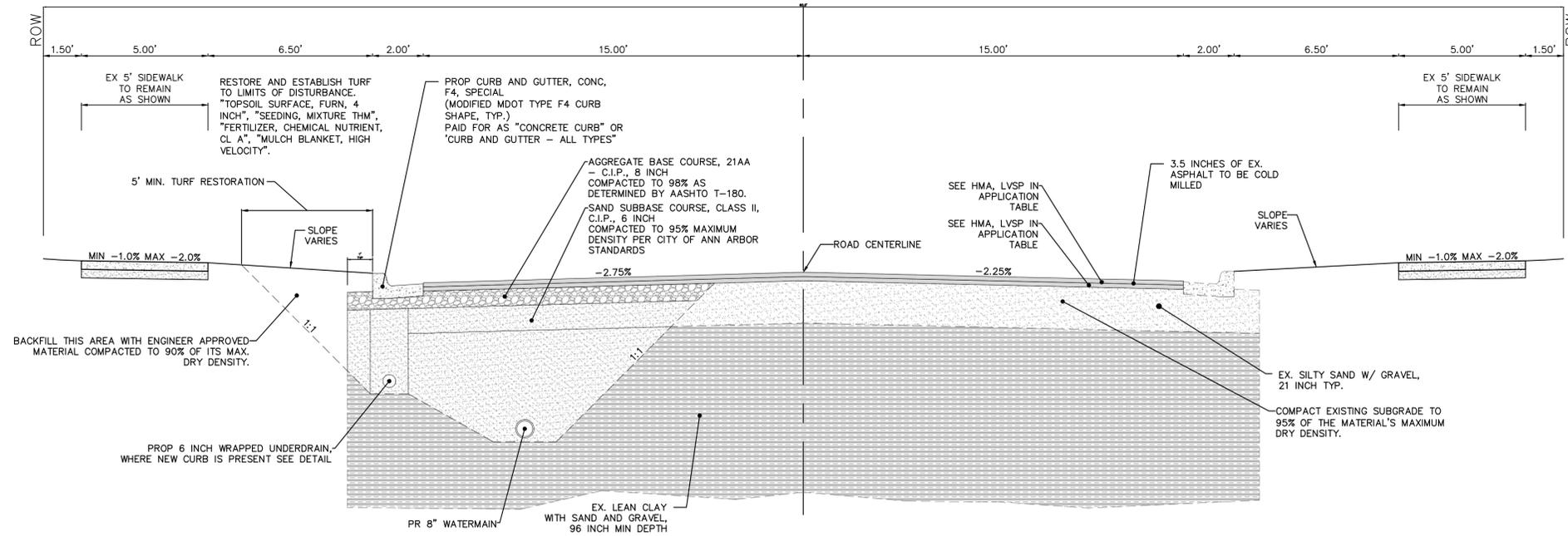
SCALE: NTS
DRAWING No. 2018033-8

SHEET No.

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**WAVERLY ROAD
EXISTING TYPICAL SECTION**



**WAVERLY ROAD
PROPOSED TYPICAL SECTION**

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



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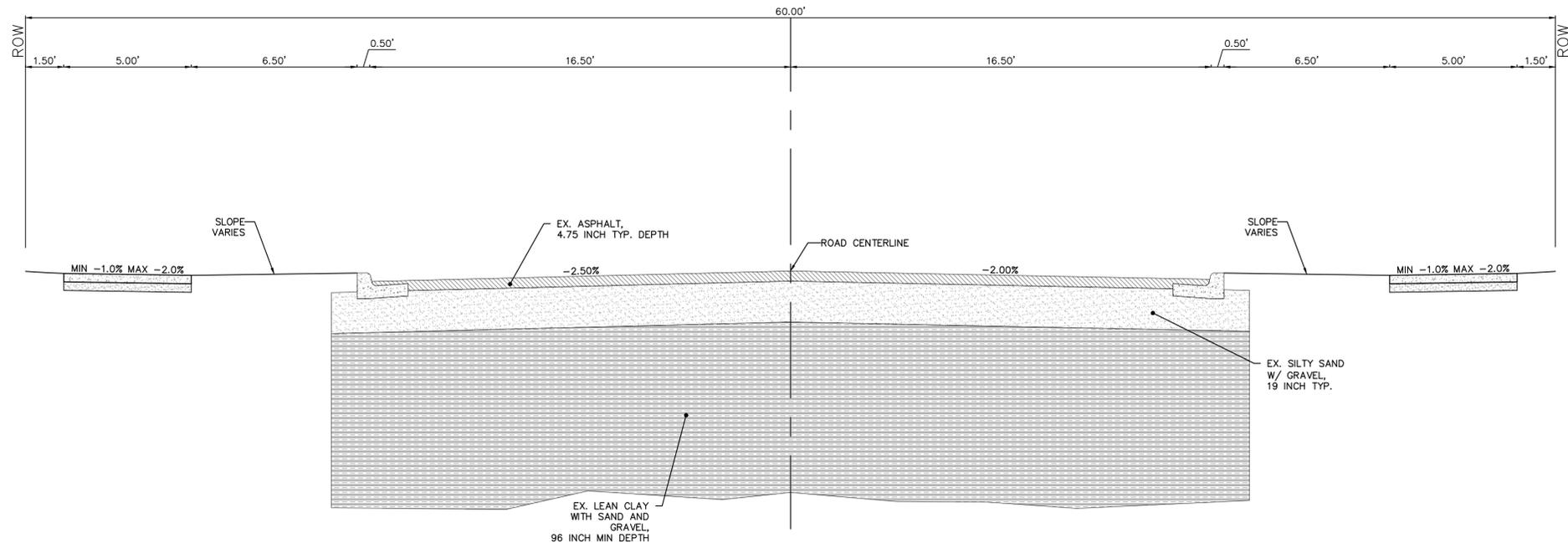


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
WAVERLY EX & PR TYP SECTIONS

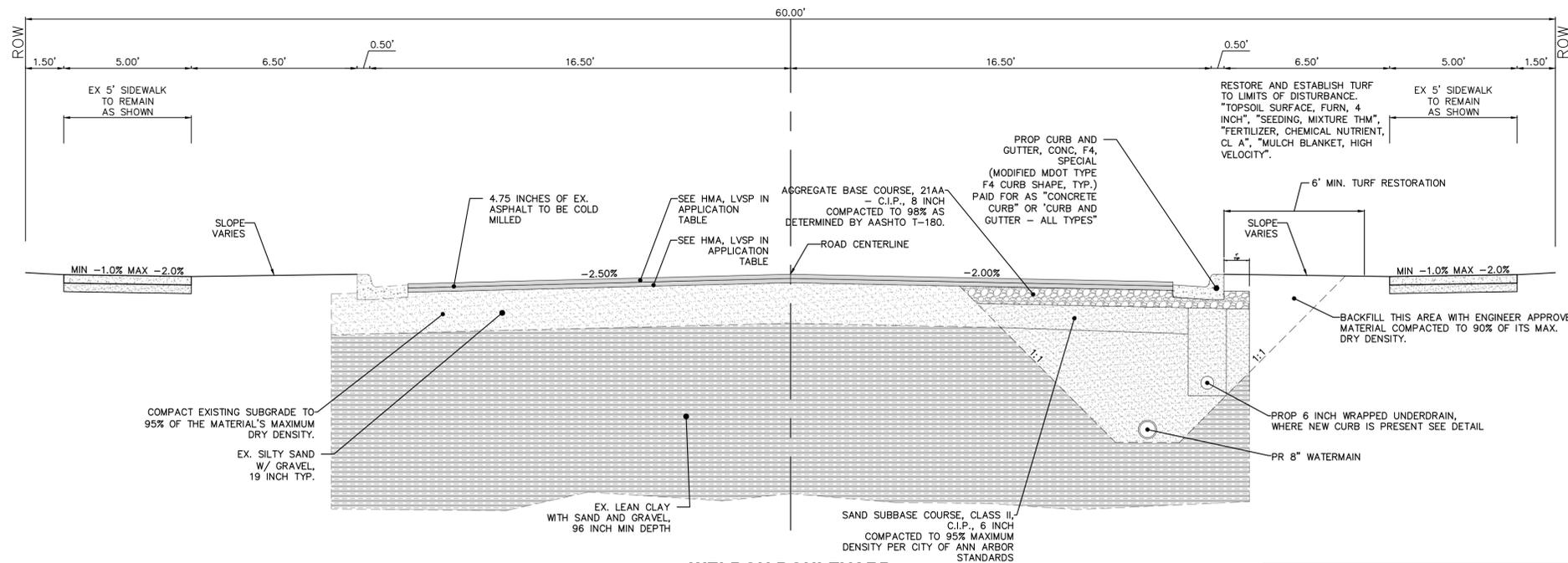
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DRAWING No. 2018033-9

SHEET No.

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**WELDON BOULEVARD
EXISTING TYPICAL SECTION**



**WELDON BOULEVARD
PROPOSED TYPICAL SECTION**

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



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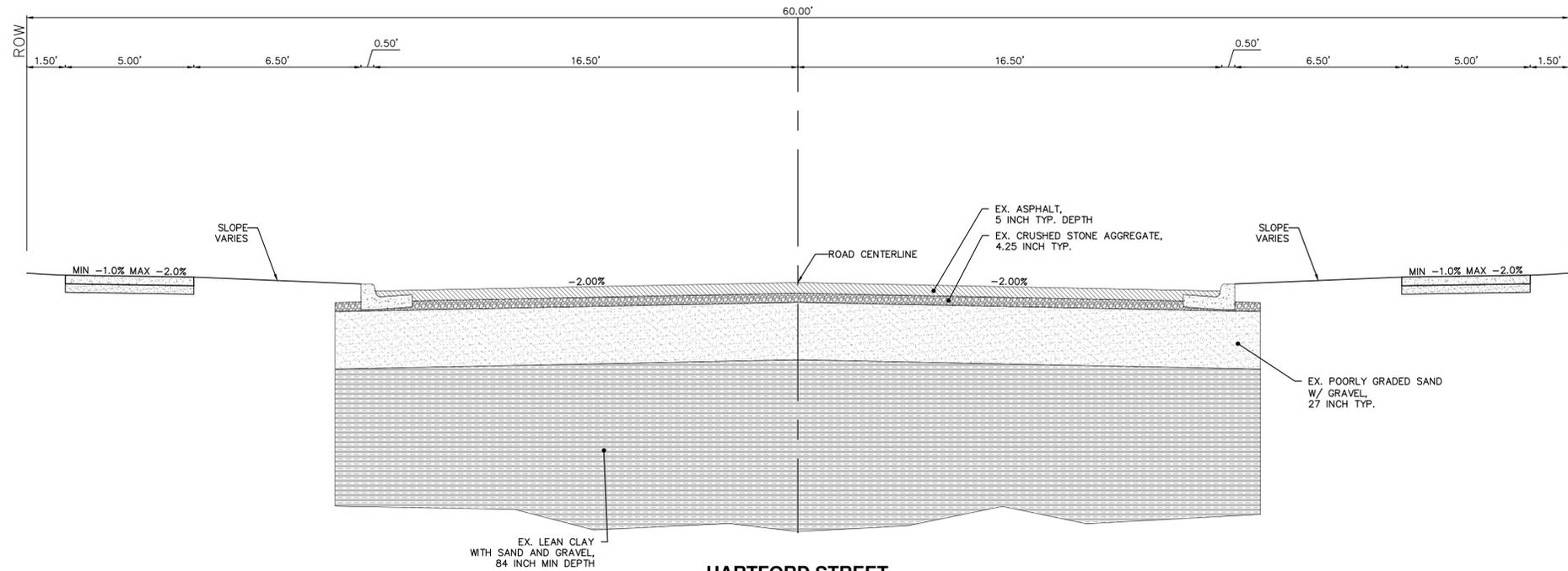
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT

SCALE: NTS
DRAWING No.
2018033-10

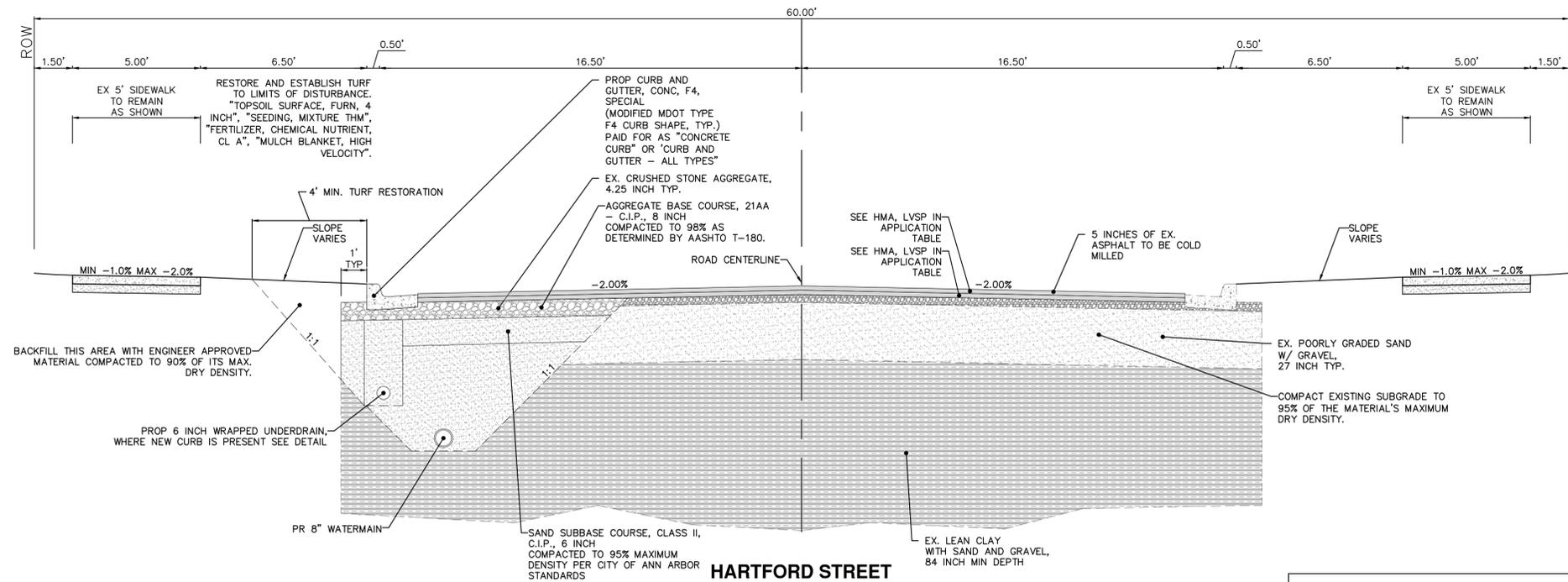
SHEET No.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT TO BID	12-07-20	DF/KB	IVK

R:\20180333 Dunmore Waverly Weldon WM\Plan Production\20180333Det2.dwg Dwg Created: 7-Dec-20 -- _a2 standard bw.stb -- Plot Date: 7-Dec-20



**HARTFORD STREET
EXISTING TYPICAL SECTION**



**HARTFORD STREET
PROPOSED TYPICAL SECTION**

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



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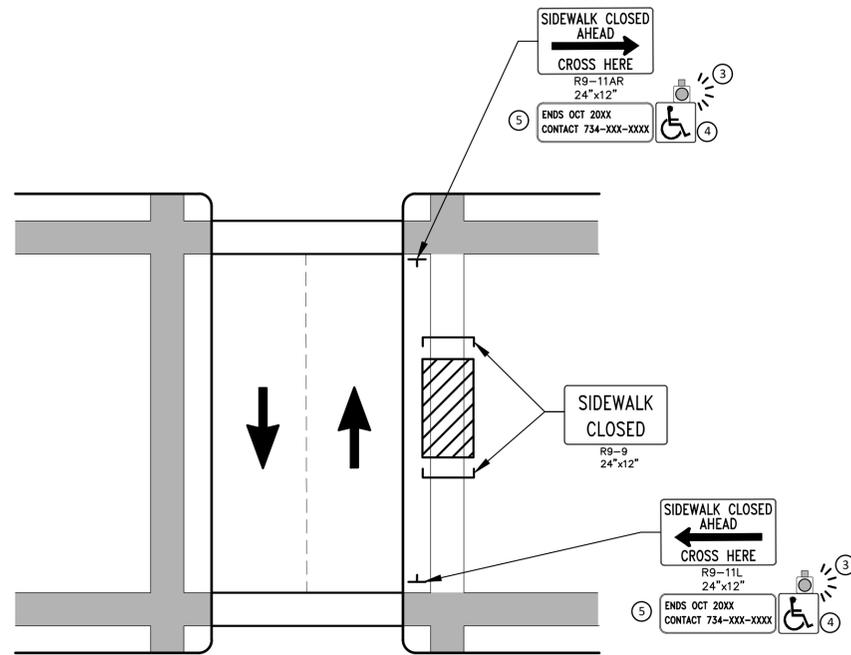


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DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
HARTFORD EX & PR TYP. SECTIONS

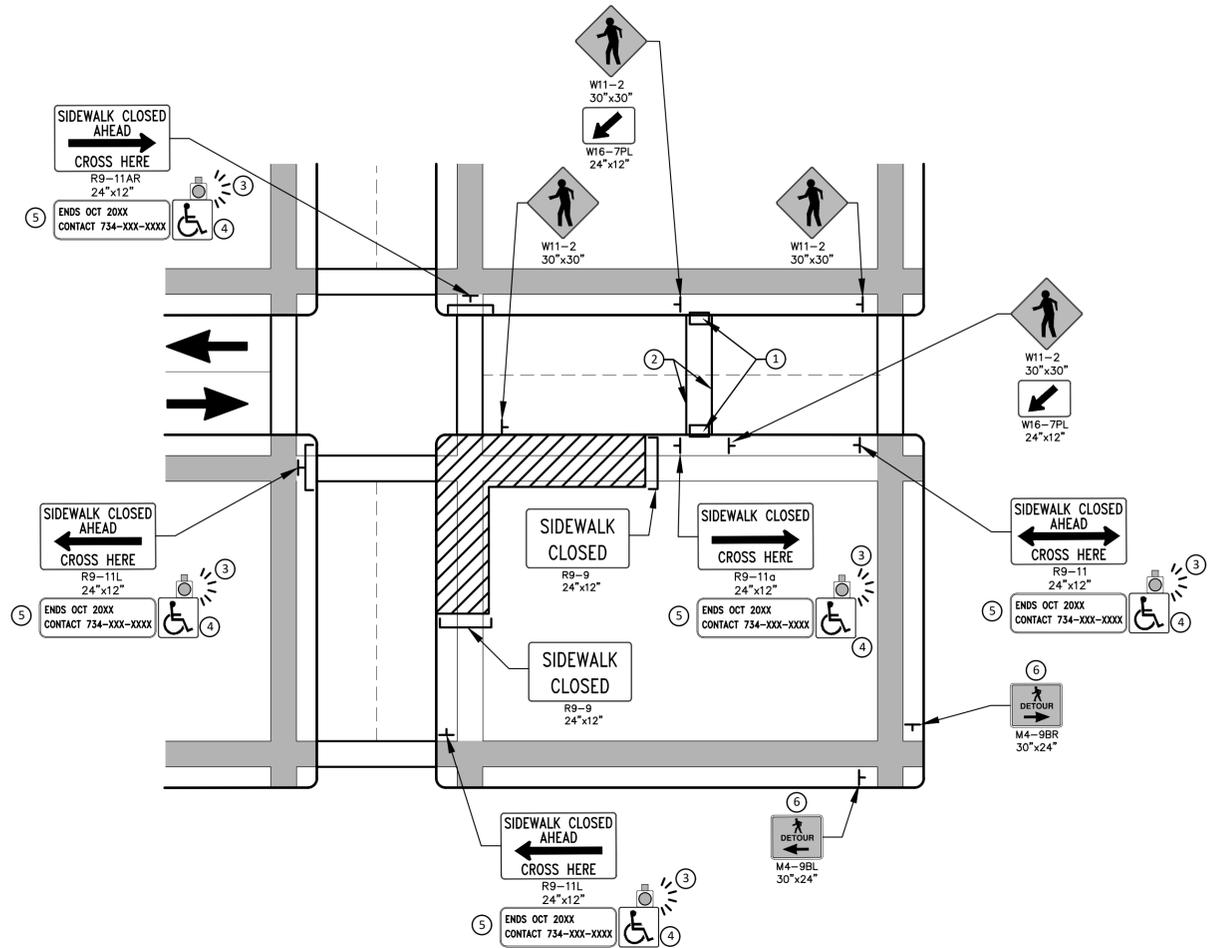
SCALE: NTS
DRAWING No. 2018033-11

SHEET No.

R:\20180333 Dunmore Waverly Weldon\Plan Production\20180333Det1.dwg Dwg Created: 18-Aug-20 - _a2 standard bw.stb - Plot Date: 7-Dec-20



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."



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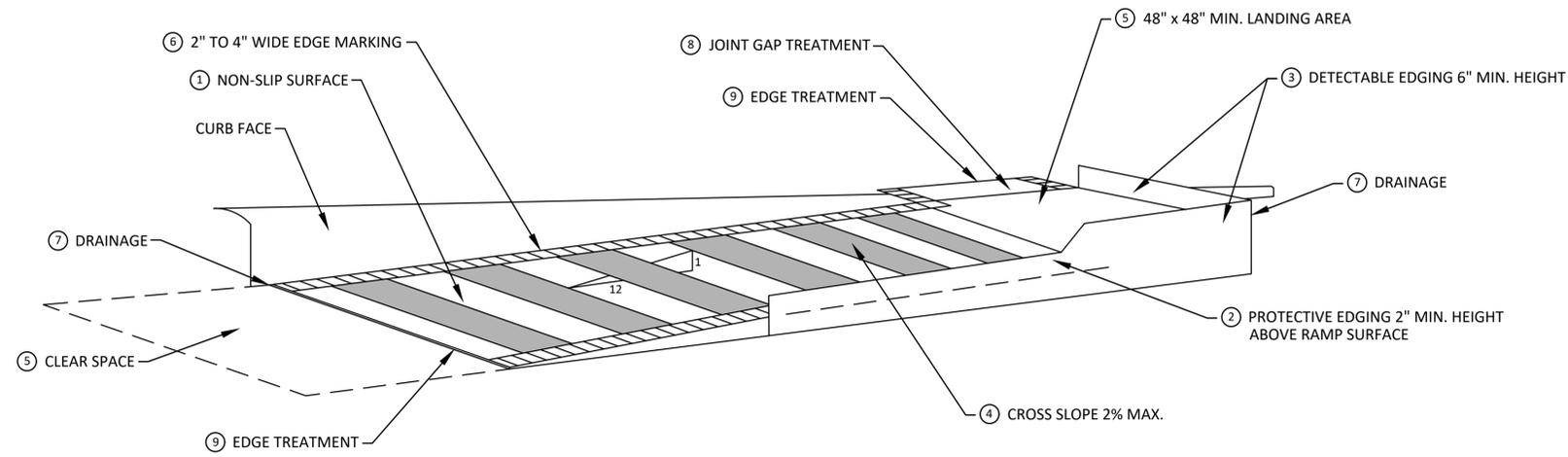
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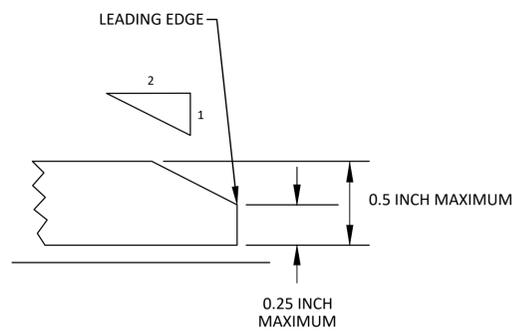
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

SCALE: N.T.S.
DRAWING No. 2018033-13

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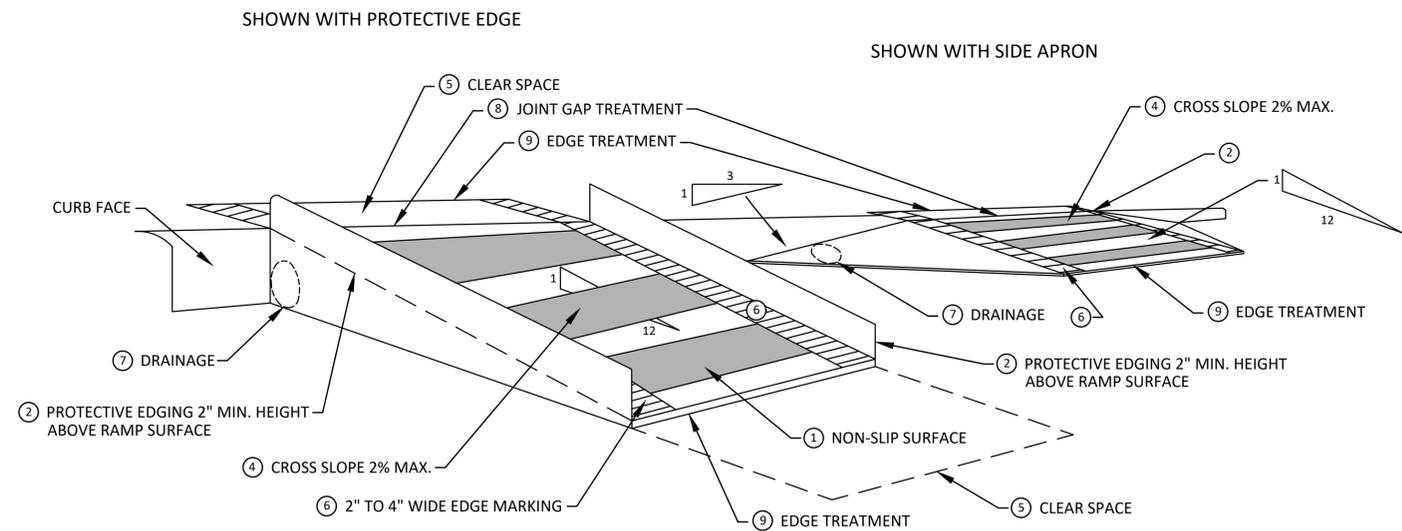
**TEMPORARY CURB RAMP
PARALLEL TO CURB**



EDGE TREATMENT

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.



**TEMPORARY CURB RAMP
PERPENDICULAR TO CURB**



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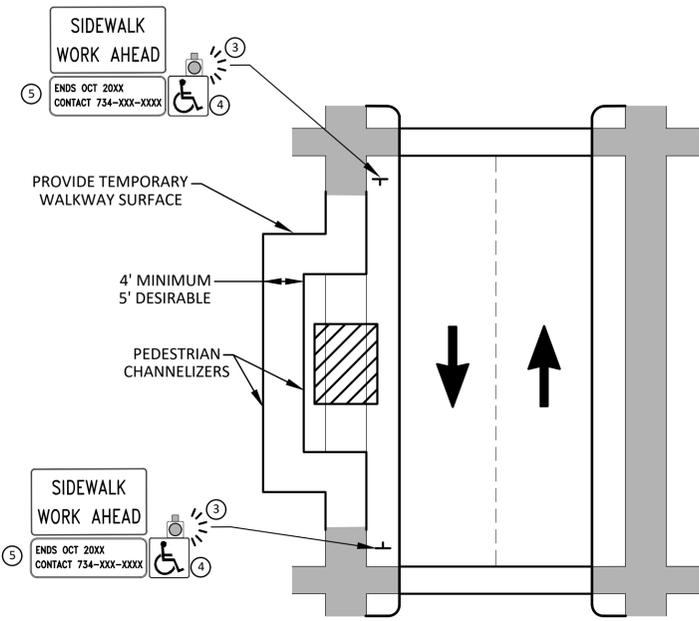
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
TPAR RAMPS

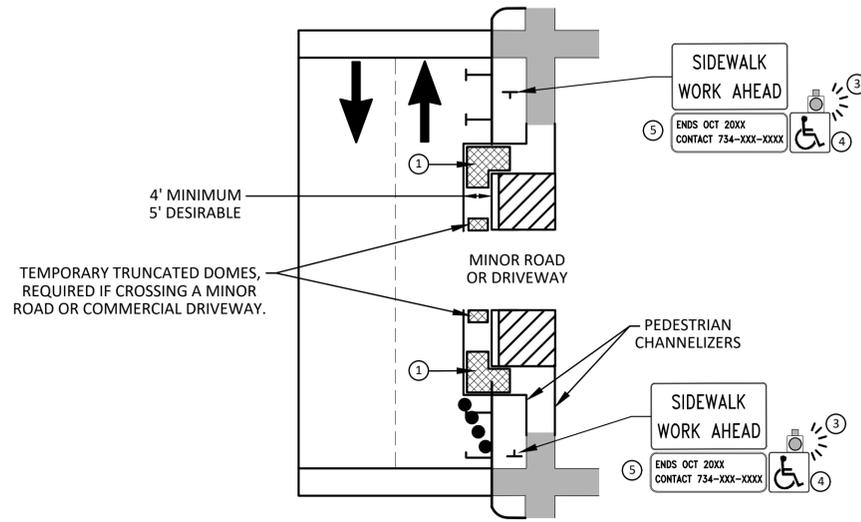
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DRAWING No. 2018033-14

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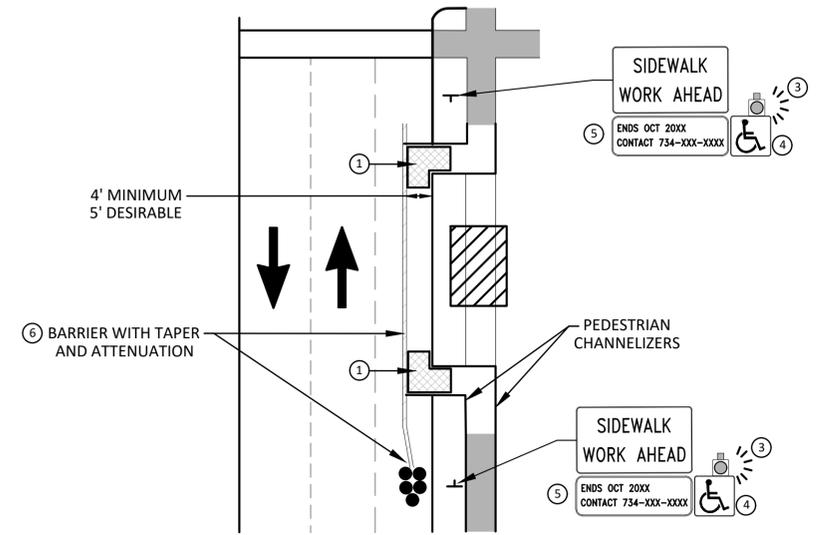


**BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY
BYPASS TYPE A**

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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

SPECIFIC NOTES

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

LEGEND

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



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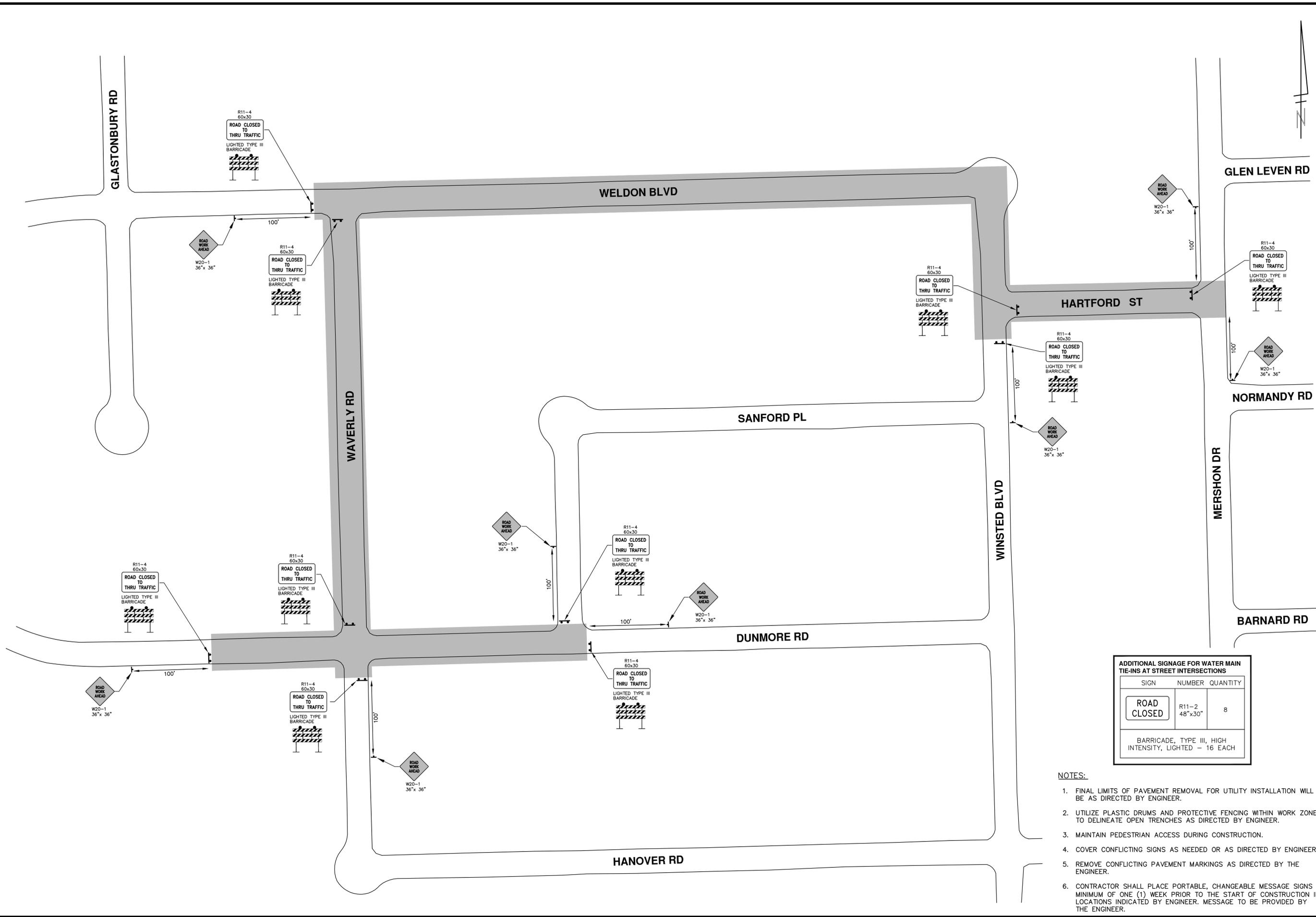
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DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS

SCALE: N.T.S.
DRAWING No. 2018033-15

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ADDITIONAL SIGNAGE FOR WATER MAIN TIE-INS AT STREET INTERSECTIONS

SIGN	NUMBER	QUANTITY
ROAD CLOSED	R11-2 48"x30"	8
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED - 16 EACH		

- 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

DUNMORE, WAVERLY, WELDON, HARTFORD

WATER MAIN REPLACEMENT

TRAFFIC CONTROL

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Know what's below.
Call before you dig.

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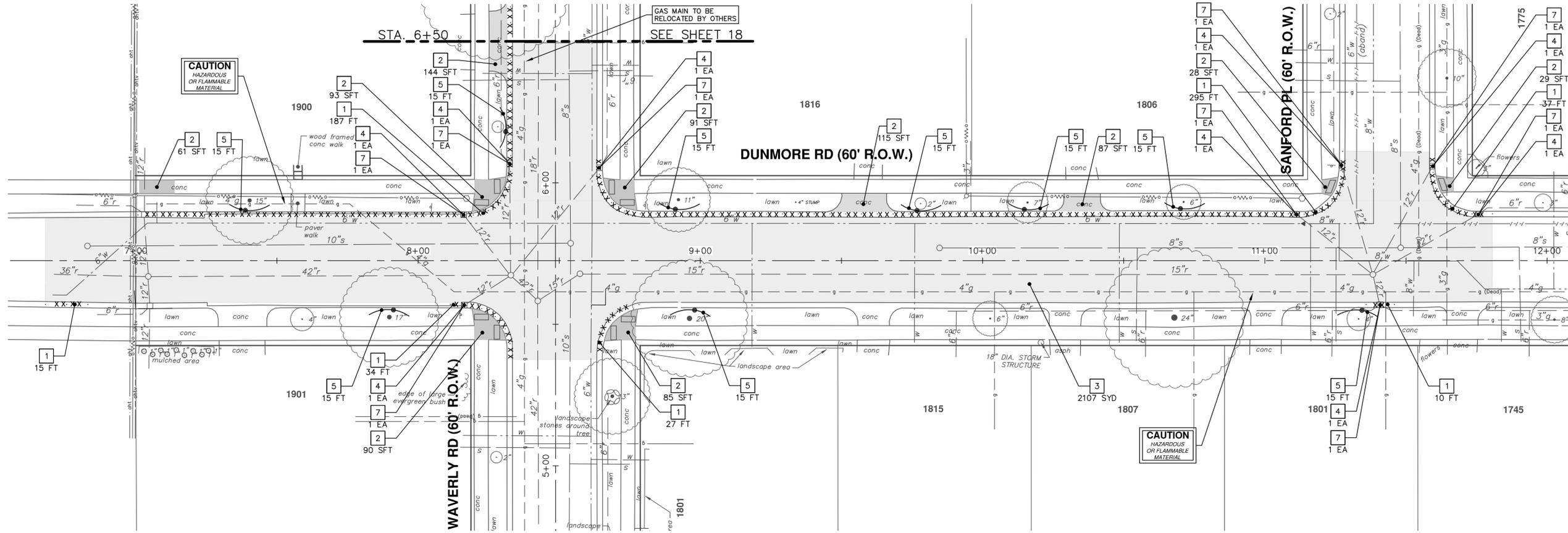
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CITY OF ANN ARBOR MICHIGAN

SCALE PLAN: 1" = 150'

DRAWING No. 2018033-16

SHEET No. 16 OF 36



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

*SAWCUT FULL DEPTH AT REMOVAL LIMITS



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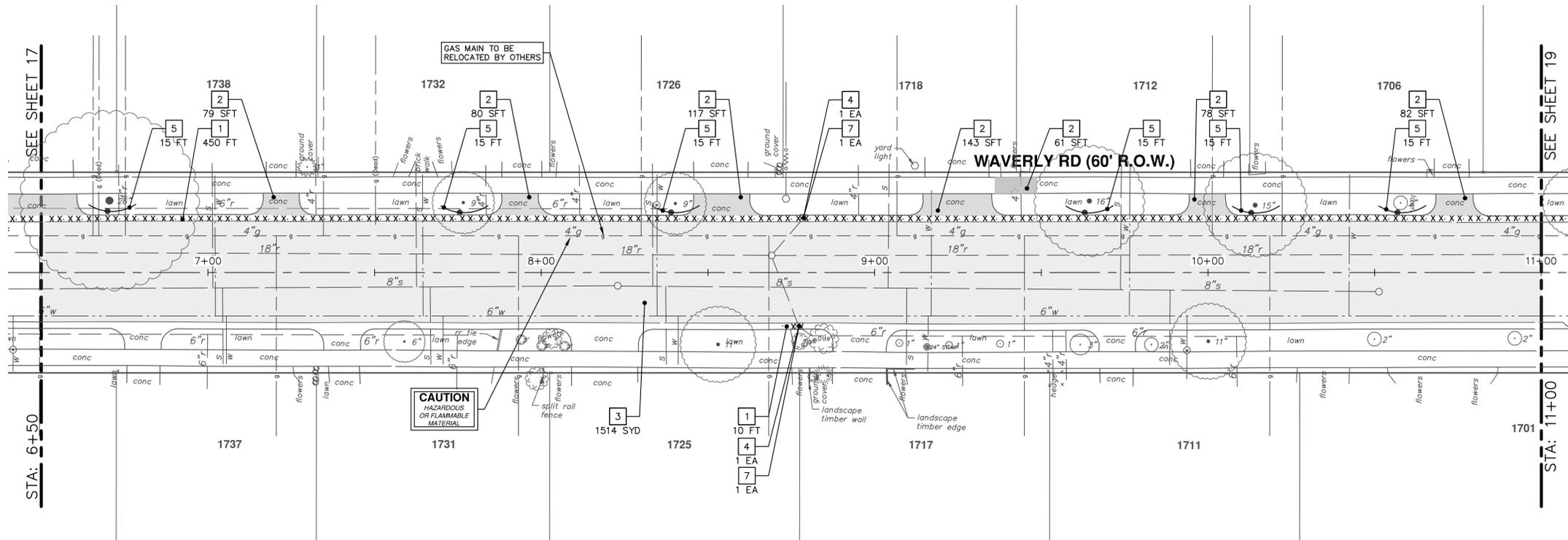


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
REMOVALS
DUNMORE ROAD

SCALE: 1" = 20'
DRAWING No. 2018033-17

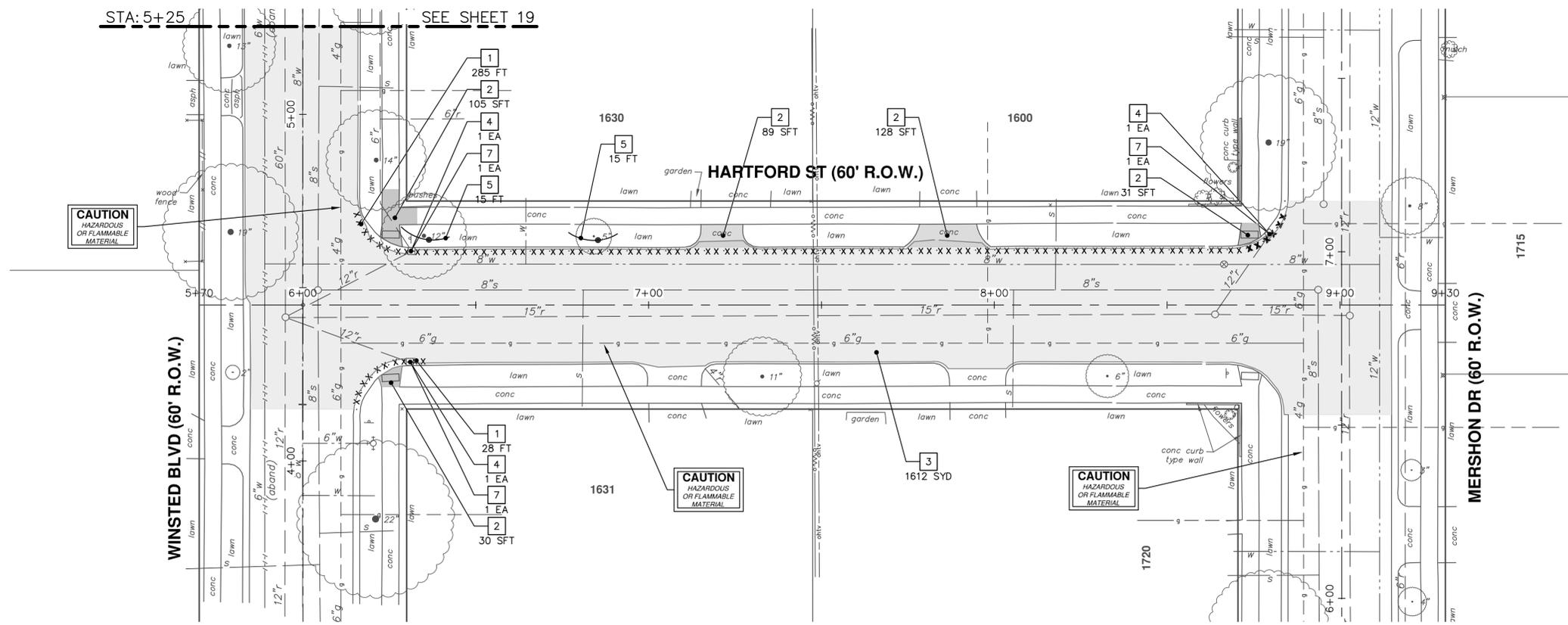
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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT. REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER
7	DR STRUCTURE, REM

*SAWCUT FULL DEPTH AT REMOVAL LIMITS

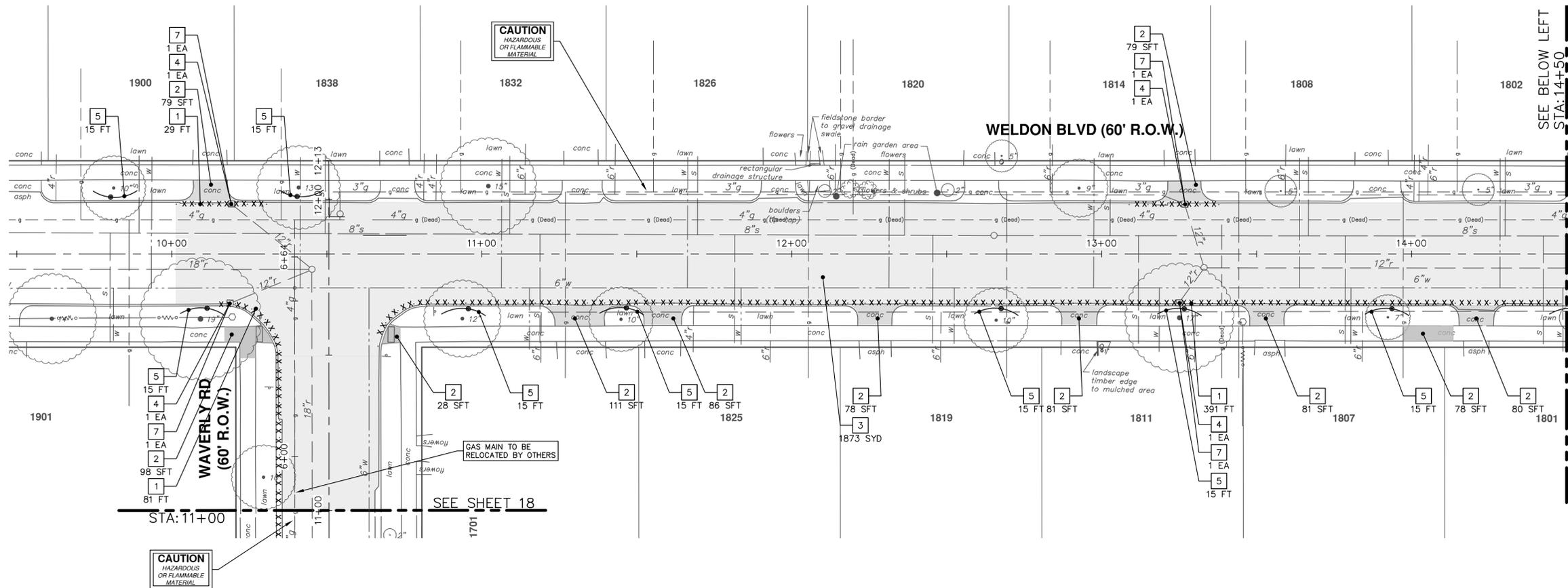


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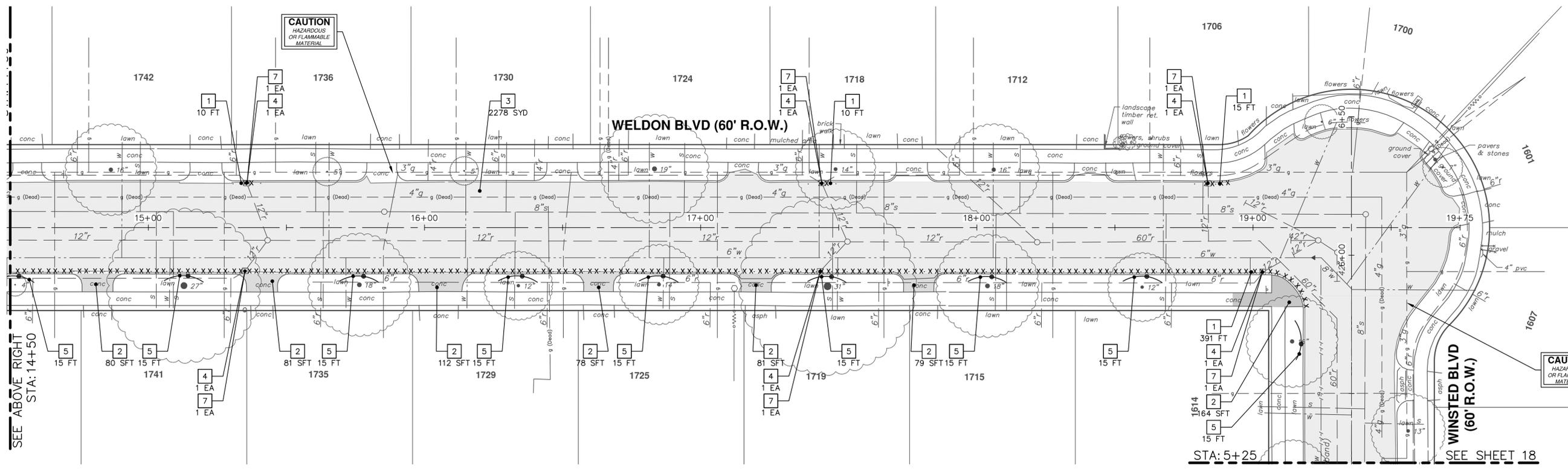
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DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
 REMOVALS
 WAVERLY ROAD AND HARTFORD STREET

SCALE: 1" = 20'
 DRAWING No. 2018033-18
 SHEET No.



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

*SAWCUT FULL DEPTH AT REMOVAL LIMITS



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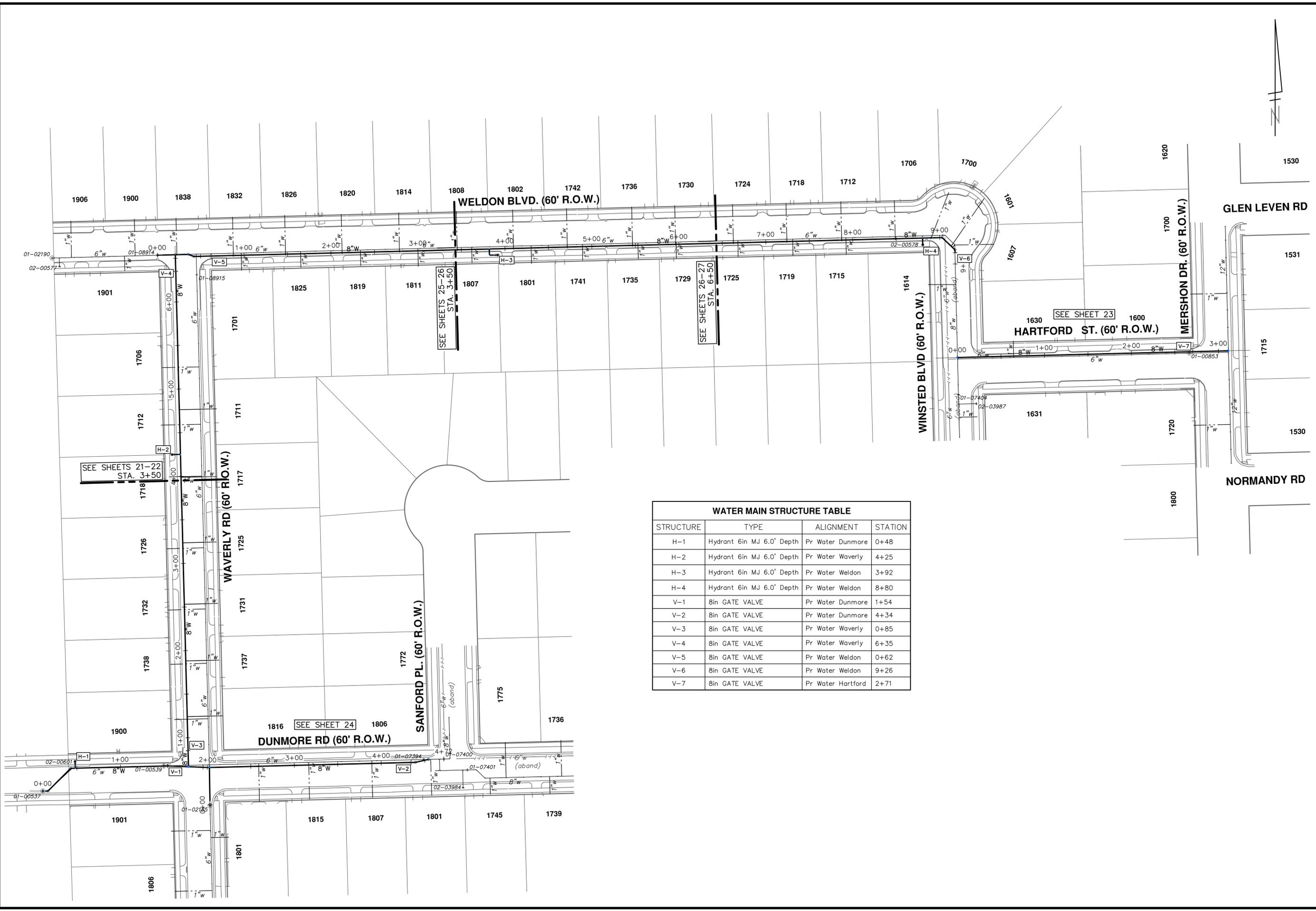
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DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
REMOVALS
WELDON BLVD

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SHEET No. **19 OF 36**

DRAWING No. **2018033-19**

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SEE SHEETS 21-22
STA. 3+50

SEE SHEETS 25-26
STA. 3+50

SEE SHEETS 26-27
STA. 6+50

SEE SHEET 23

SEE SHEET 24

WATER MAIN STRUCTURE TABLE			
STRUCTURE	TYPE	ALIGNMENT	STATION
H-1	Hydrant 6in MJ 6.0' Depth	Pr Water Dunmore	0+48
H-2	Hydrant 6in MJ 6.0' Depth	Pr Water Waverly	4+25
H-3	Hydrant 6in MJ 6.0' Depth	Pr Water Weldon	3+92
H-4	Hydrant 6in MJ 6.0' Depth	Pr Water Weldon	8+80
V-1	8in GATE VALVE	Pr Water Dunmore	1+54
V-2	8in GATE VALVE	Pr Water Dunmore	4+34
V-3	8in GATE VALVE	Pr Water Waverly	0+85
V-4	8in GATE VALVE	Pr Water Waverly	6+35
V-5	8in GATE VALVE	Pr Water Weldon	0+62
V-6	8in GATE VALVE	Pr Water Weldon	9+26
V-7	8in GATE VALVE	Pr Water Hartford	2+71

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
 OVERALL WATER MAIN LAYOUT

SCALE PLAN: 1" = 50'

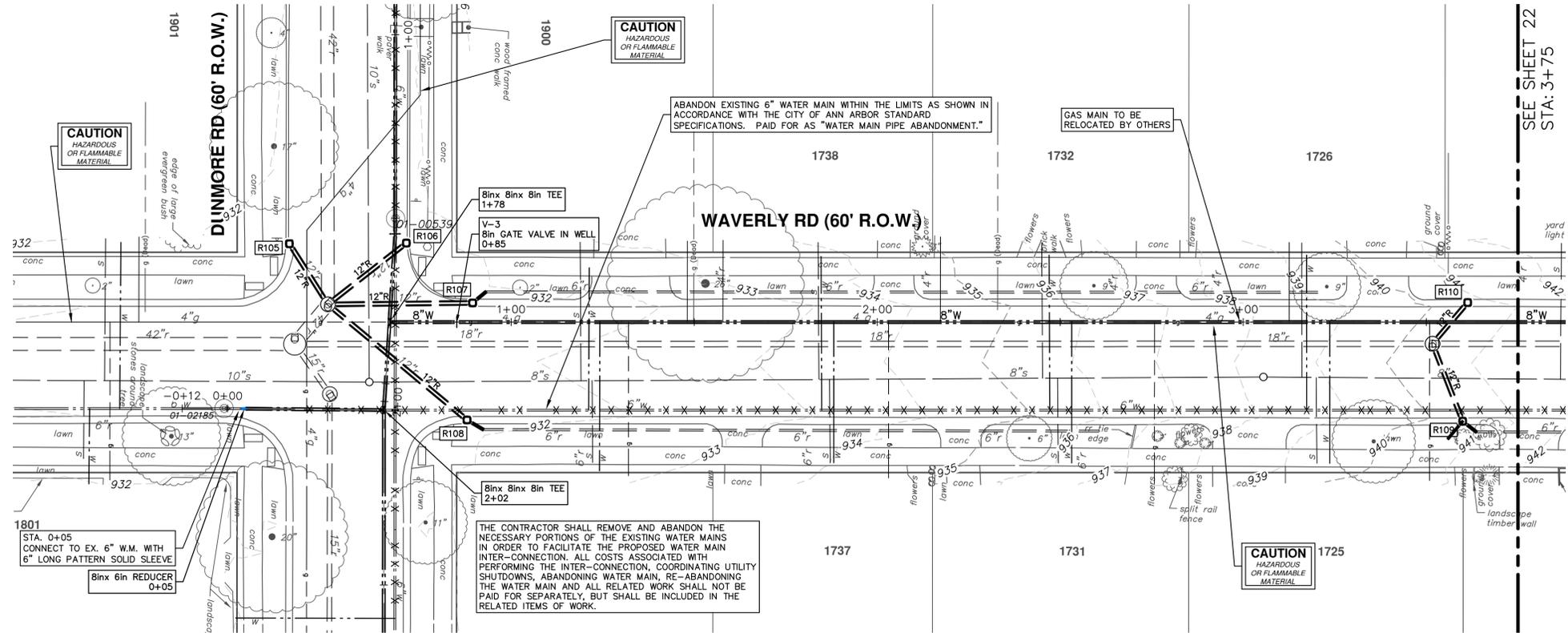
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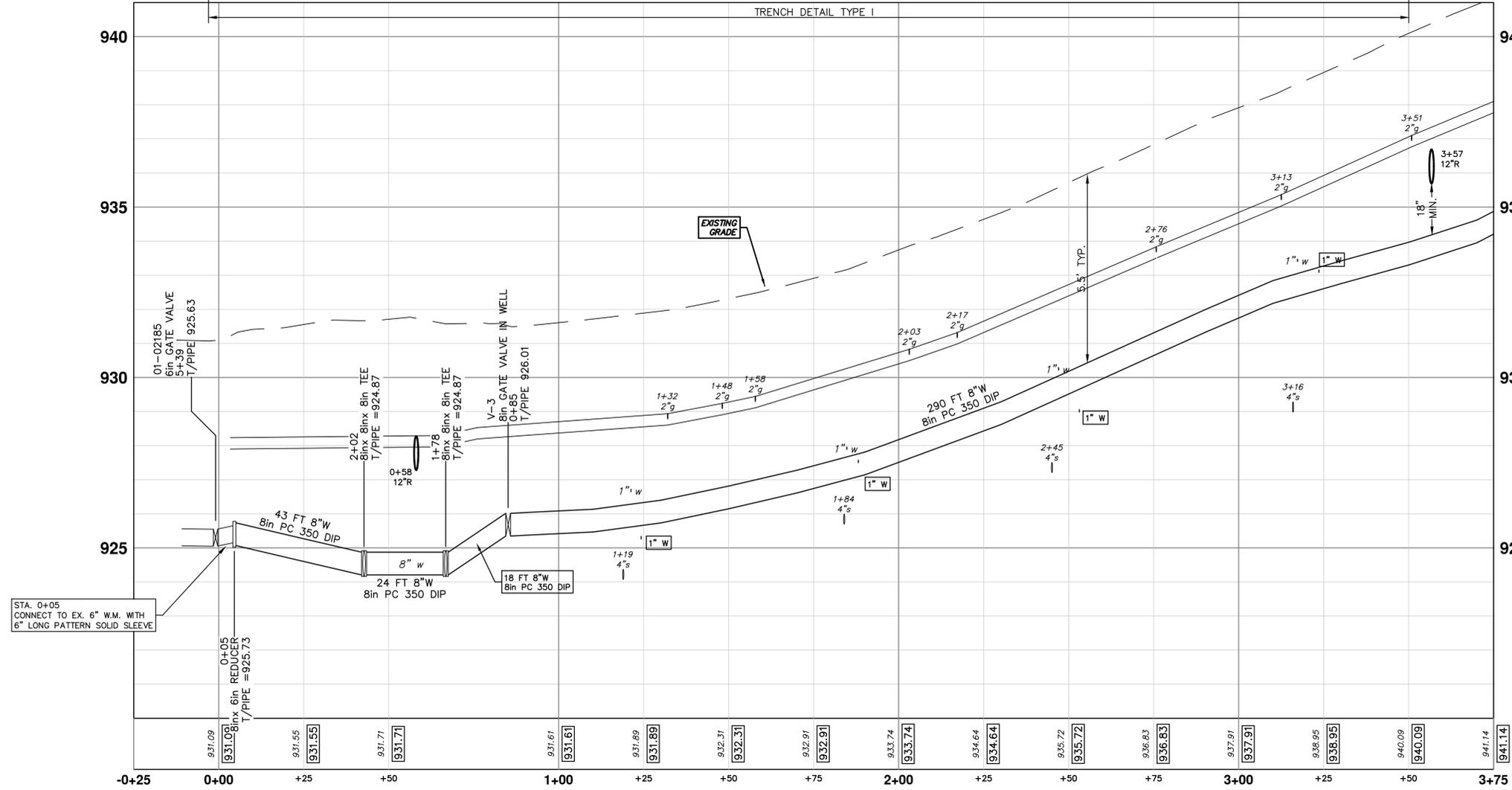
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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V-3	8in GATE VALVE IN WELL	0+85		925.68



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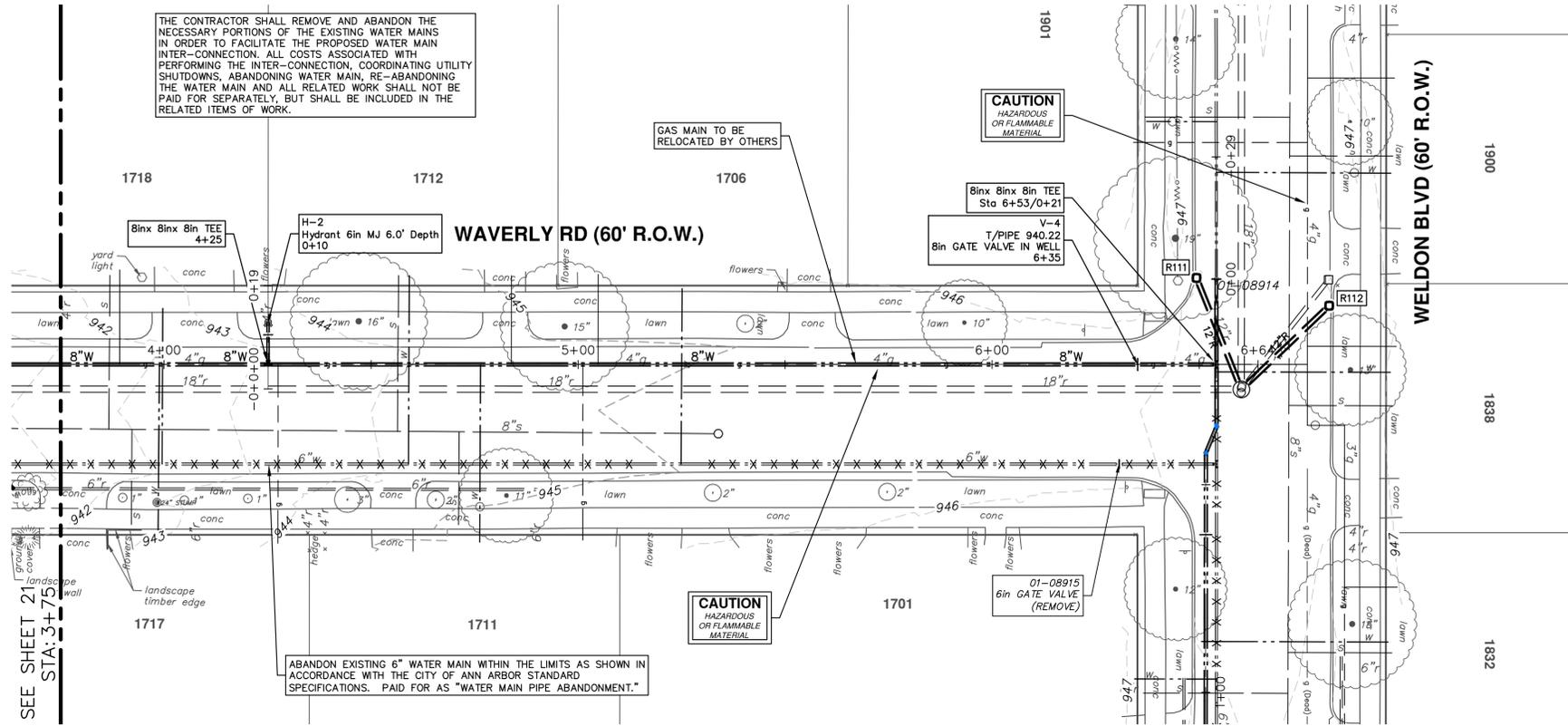
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
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WATER MAIN REPLACEMENT

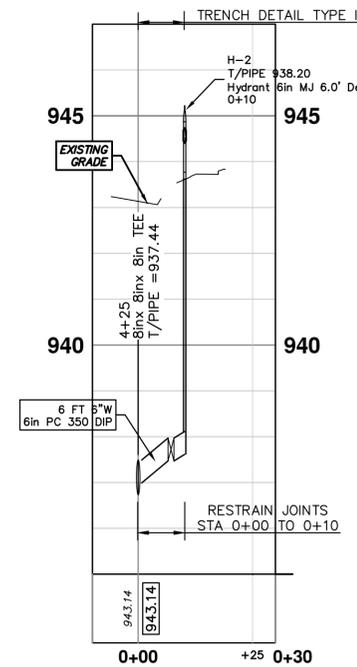
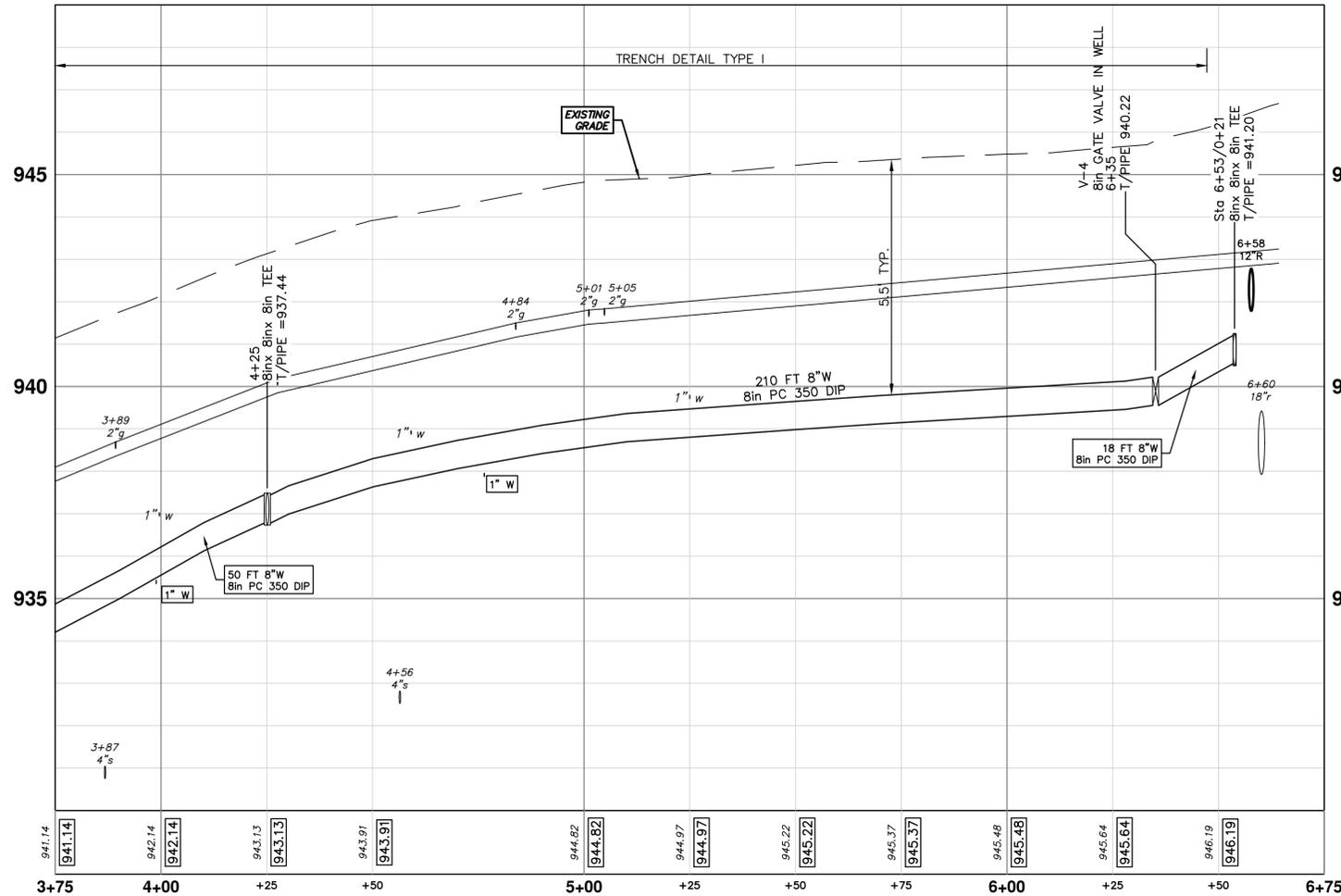
WATER MAIN PLAN AND PROFILE
WAVERLY ROAD STA. 0+00 - STA. 3+75

SHEET No. 21 OF 36

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2018033-21



STRUCTURE	TYPE	STATION	RLM	DEPTH
V-4	8in GATE VALVE IN WELL	6+35		939.89
H-2	Hydrant 6in MJ 6.0' Depth	0+10		937.86



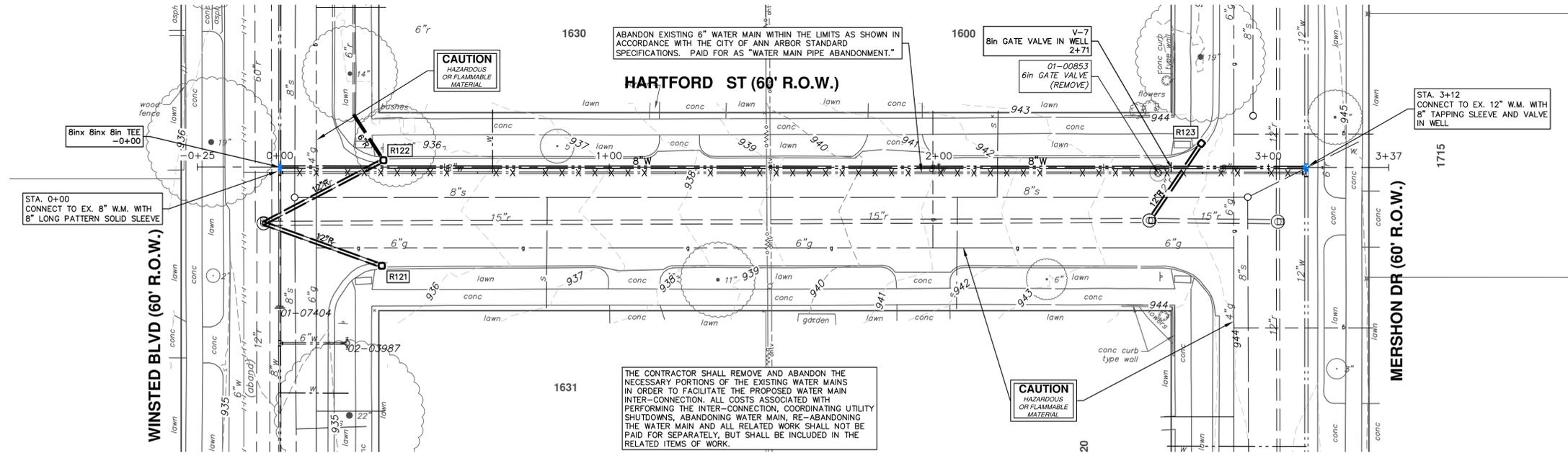
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 WATER MAIN PLAN AND PROFILE
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 SHEET No. 22 OF 36

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00	12-07-20	OUT TO BID	DF/KB	IVK



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WATER MAIN PLAN AND PROFILE
HARTFORD STREET STA. 0+00 - STA. 3+12

SHEET No. 23 OF 36

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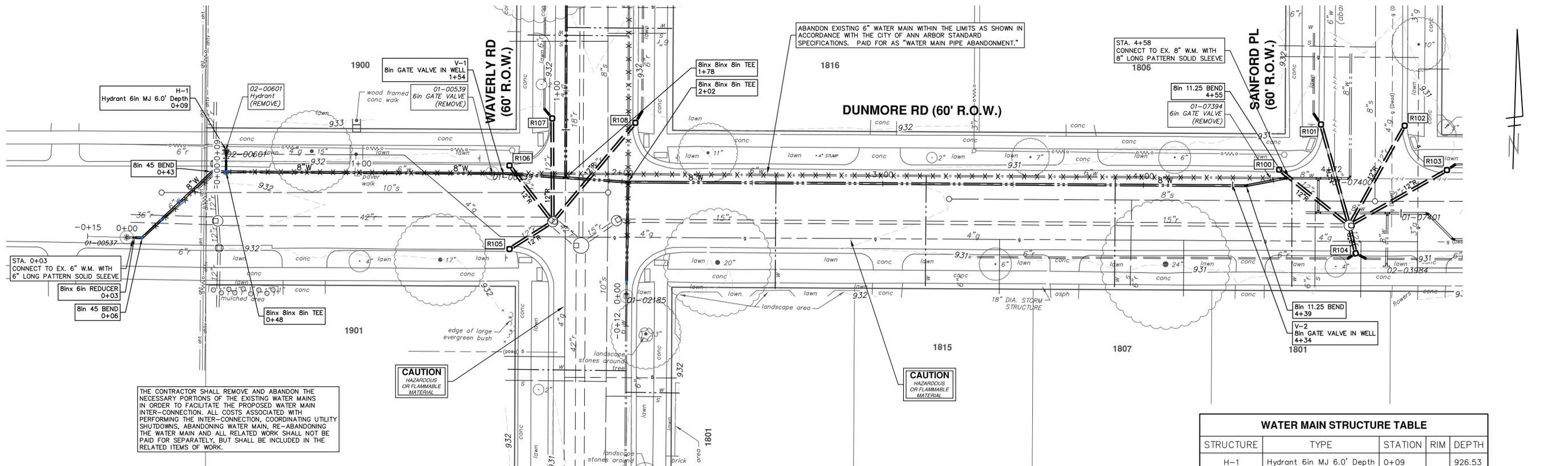
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SCALE PLAN: 1" = 20'
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REV.	DATE	DESCRIPTION
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02		IVK
03		CHECKED

R:\20180333 Dunmore Waverly Weldon WM\Plan Production\20180333Wtr.dwg Dwg Created: 7-Dec-20 - _a2 standard bw.stb - Plot Date: 7-Dec-20

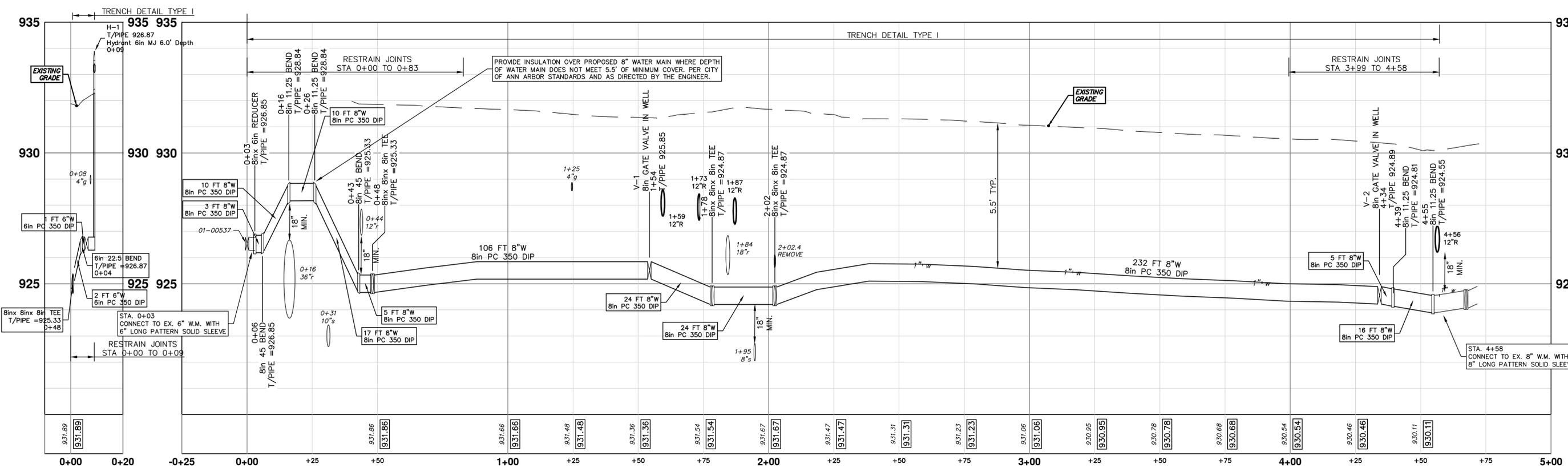


THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.

CAUTION
HAZARDOUS OR FLAMMABLE MATERIAL

CAUTION
HAZARDOUS OR FLAMMABLE MATERIAL

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H-1	Hydrant 6in MJ 6.0' Depth	0+09		926.53
V-2	8in GATE VALVE IN WELL	4+34		924.56
V-1	8in GATE VALVE IN WELL	1+54		925.51



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REV.	DATE	DESCRIPTION
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01		DF/KB
02		IVK
03		CHECKED

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WATER MAIN REPLACEMENT
WATER MAIN PLAN AND PROFILE
DUNMORE ROAD STA. 0+00 - STA. 4+58

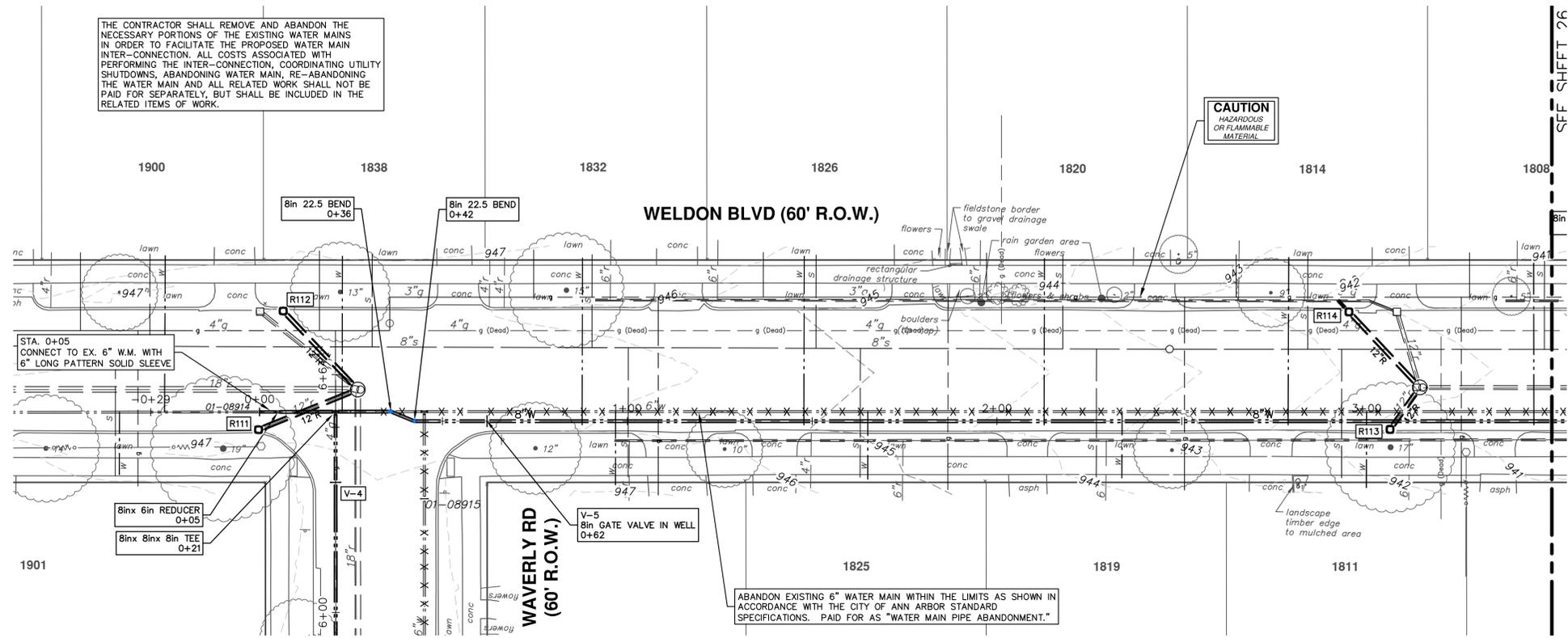
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PROFILE: 1" = 2'

DRAWING NO. 2018033-24

SHEET NO. 24 OF 36

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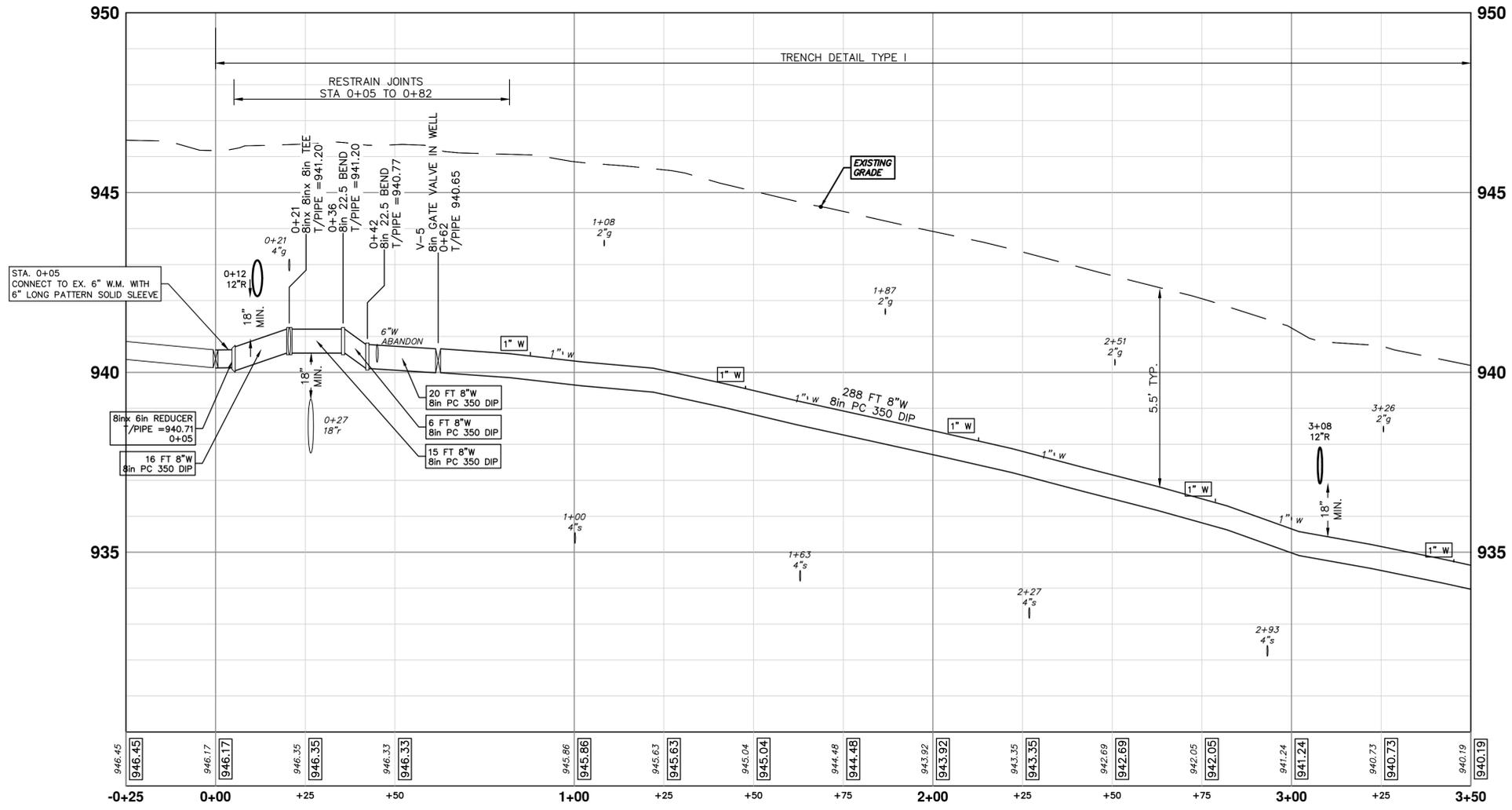


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CAUTION
HAZARDOUS
OR FLAMMABLE
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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V-5	8in GATE VALVE IN WELL	0+62		940.32



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WATER MAIN PLAN AND PROFILE
WELDON BLVD. STA. 0+00 - STA. 3+50

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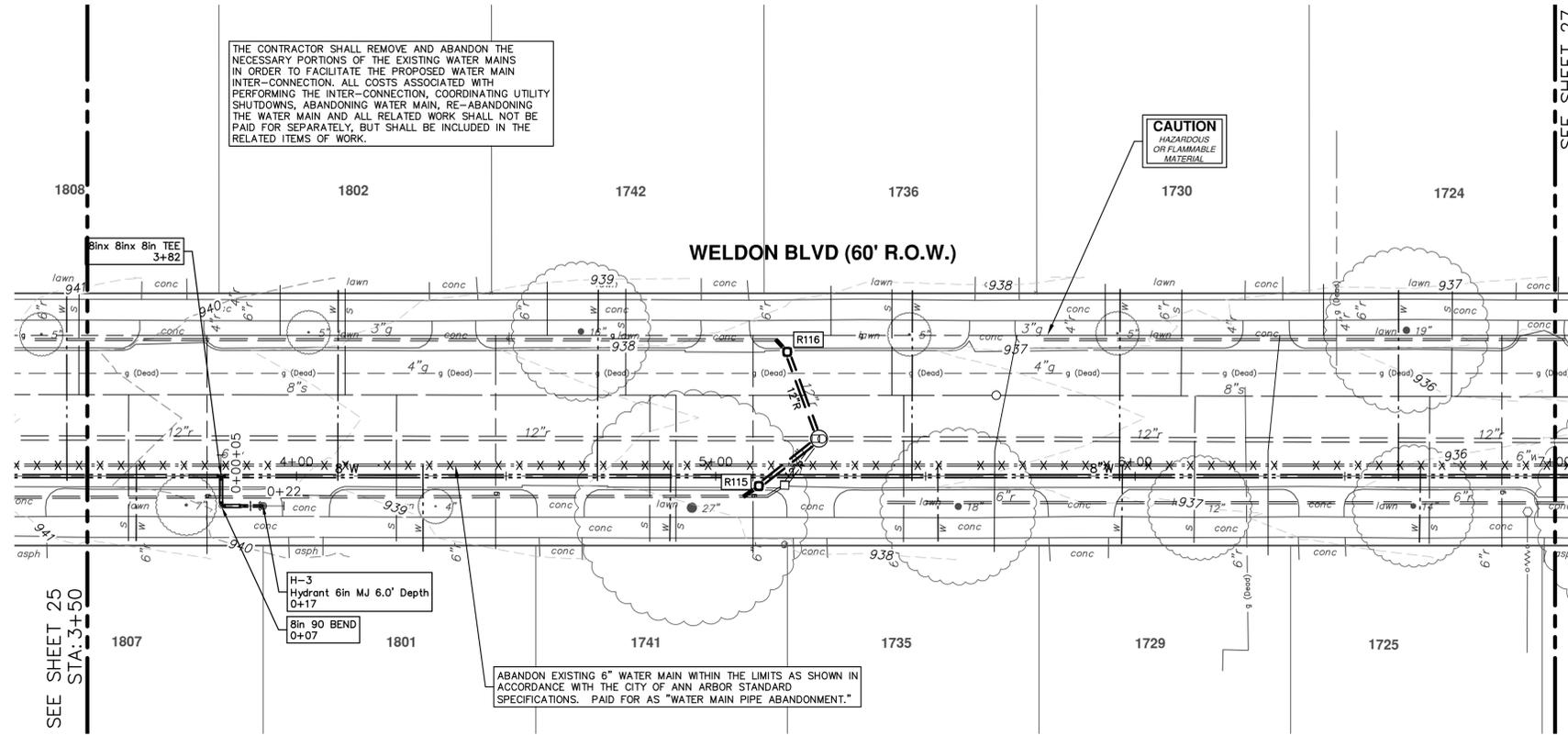
DRAWING No.
20180333-25

SHEET No.
25 OF 36

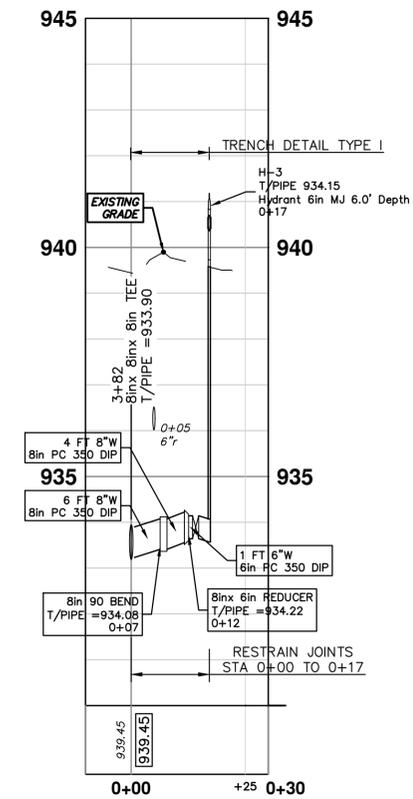
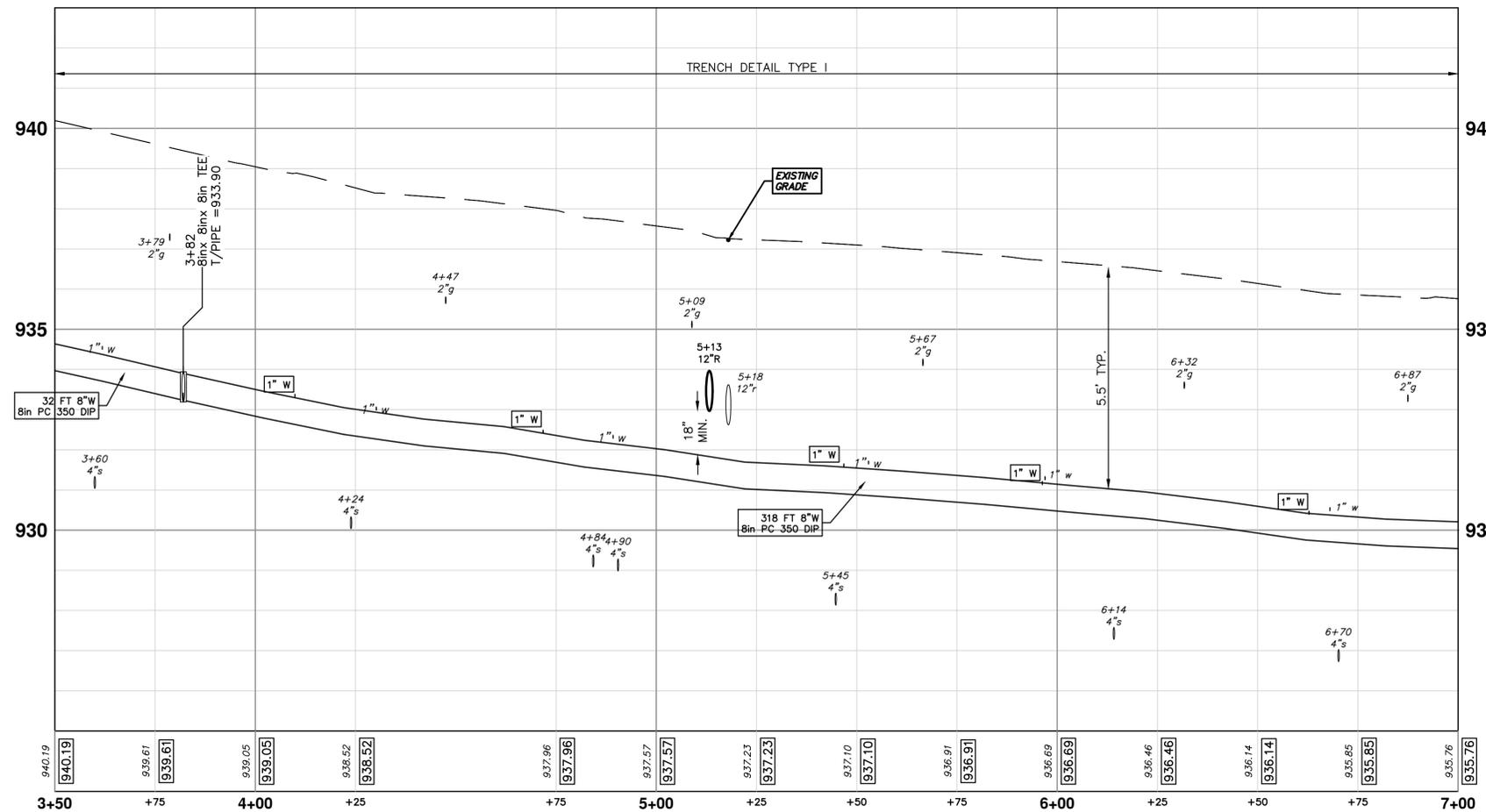
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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H-3	Hydrant 6in MJ 6.0' Depth	0+17		933.82



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WELDON BLVD STA. 3+50 - STA. 7+00

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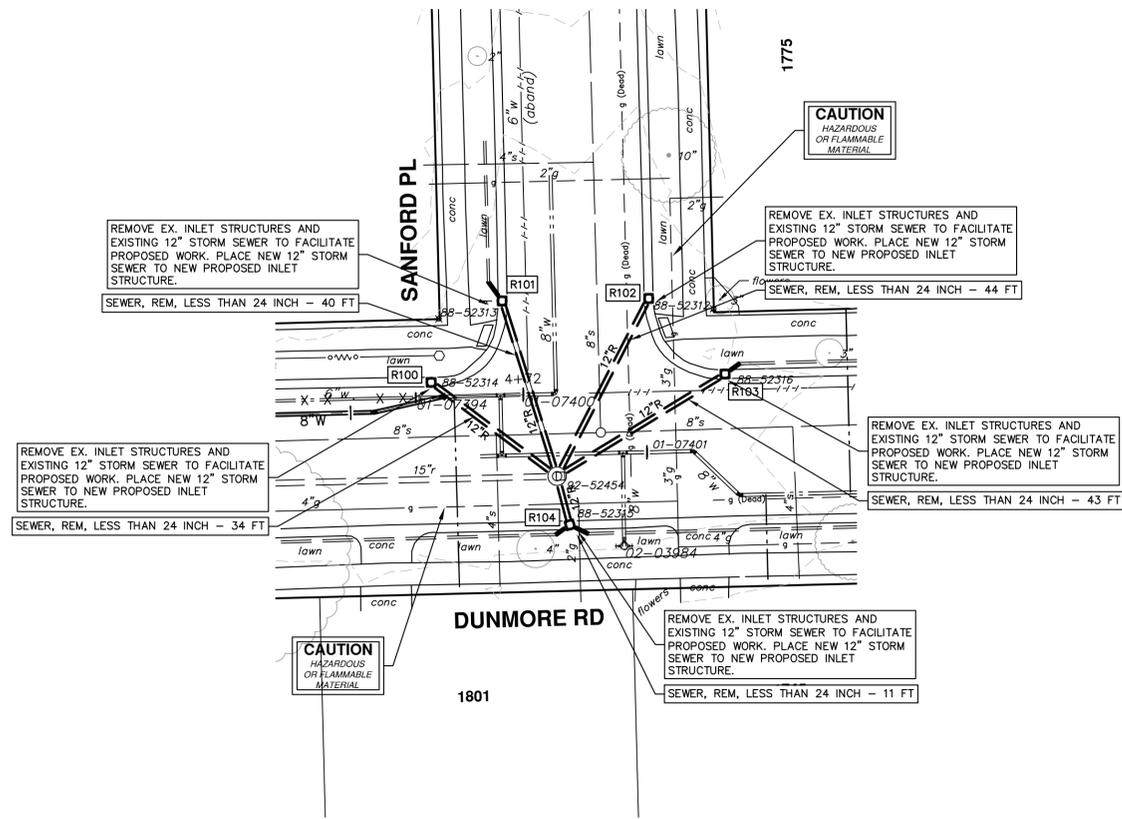
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SHEET No. 26 OF 36

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT TO BID	12-07-20	DF/KB	IVK

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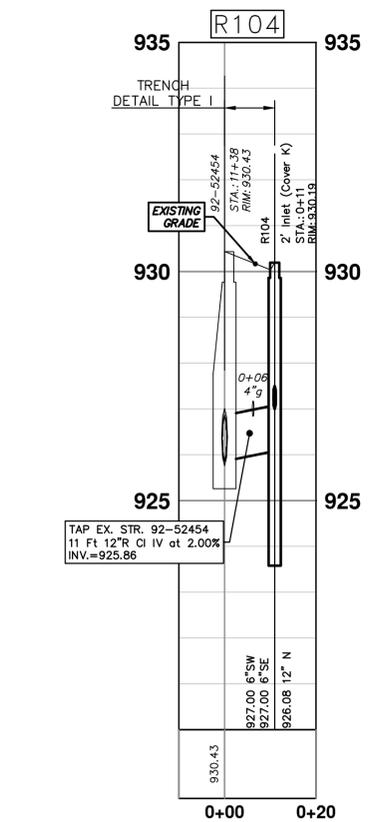
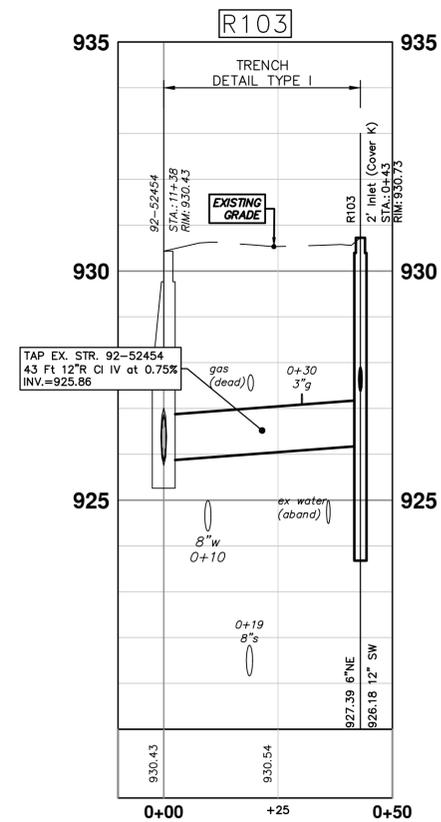
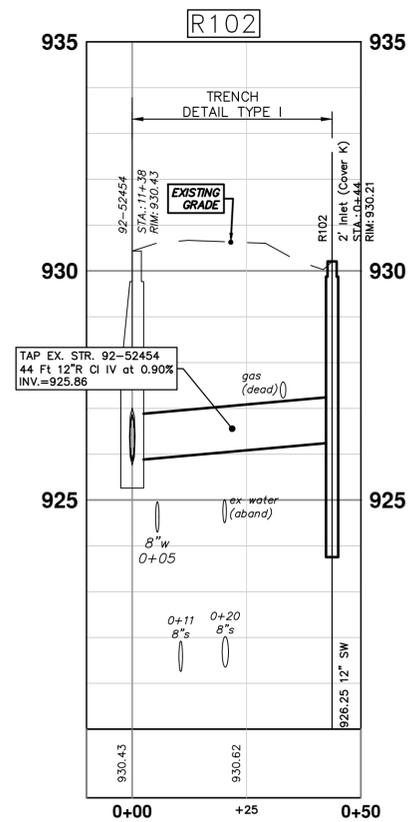
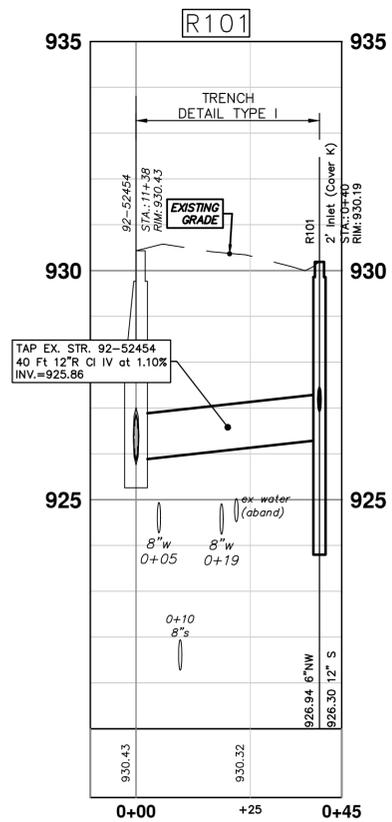
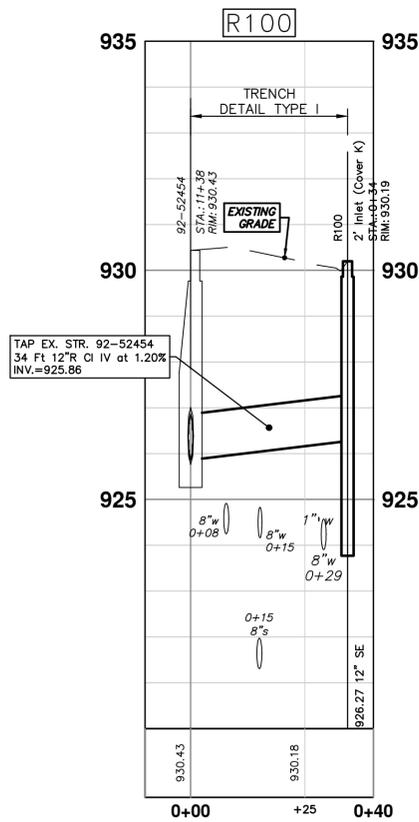


PROPOSED STORM STRUCTURE TABLE

STRUCTURE	STATION	TYPE	RIM	INVERTS	PIPE	SUMP
R100	0+34	2' Inlet (Cover K)	930.19	12"SE 926.27	34 LF OF 12" @ 1.20%	2'
R101	0+40	2' Inlet (Cover K)	930.19	6"NW 926.94 12"S 926.30	5 LF OF 6" @ 35.01% 40 LF OF 12" @ 1.10%	2'
R102	0+44	2' Inlet (Cover K)	930.21	12"SW 926.25	44 LF OF 12" @ 0.90%	2'
R103	0+43	2' Inlet (Cover K)	930.73	6"NE 927.39 12"SW 926.18	4 LF OF 6" @ 48.44% 43 LF OF 12" @ 0.75%	2'
R104	0+11	2' Inlet (Cover K)	930.19	6"SW 927.00 6"SE 927.00 12"N 926.08	4 LF OF 6" @ 47.96% 5 LF OF 6" @ 40.29% 11 LF OF 12" @ 2.00%	2'

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE

STRUCTURE	DEPTH (Feet)	REMOVE
88-52315	2.77	12" Drop Structure
88-52313	3.25	12" Drop Structure
88-52314	3.49	12" Drop Structure
88-52312	3.40	12" Drop Structure
88-52316	3.84	12" Drop Structure



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WATER MAIN REPLACEMENT

STORM SEWER PLAN AND PROFILE

DUNMORE RD R100 - R104

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

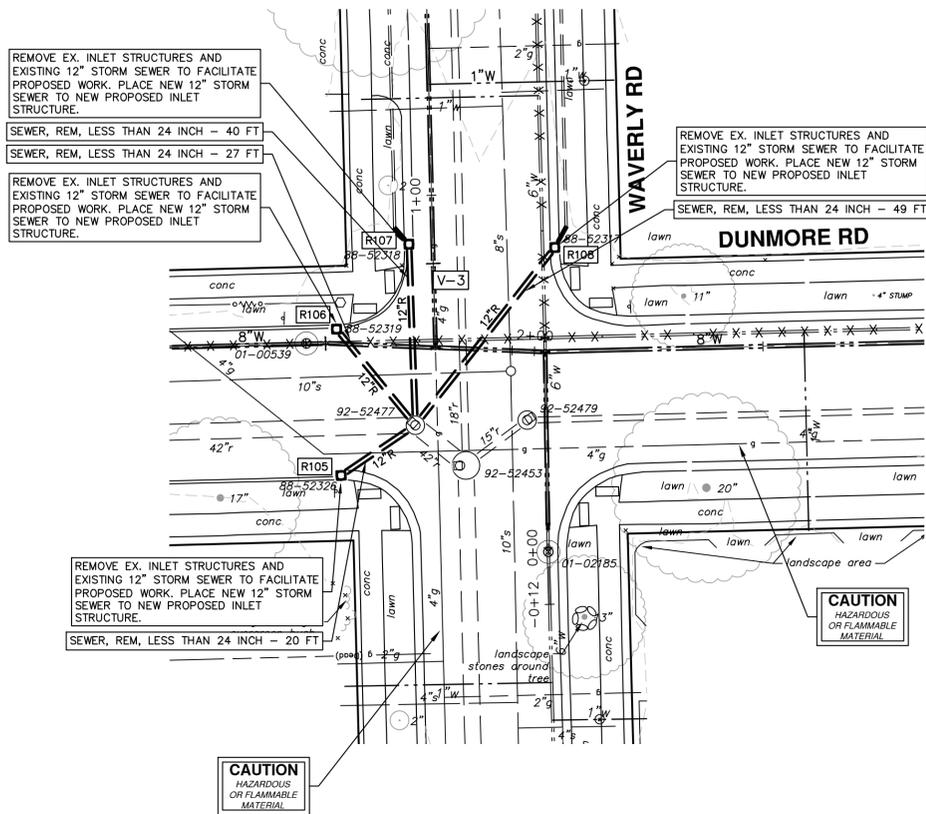
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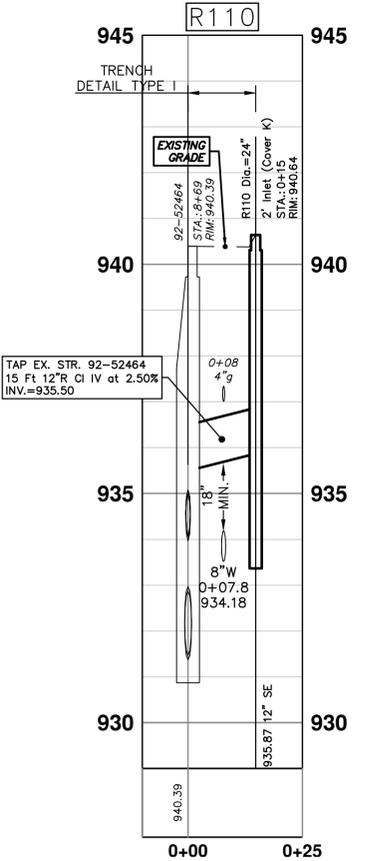
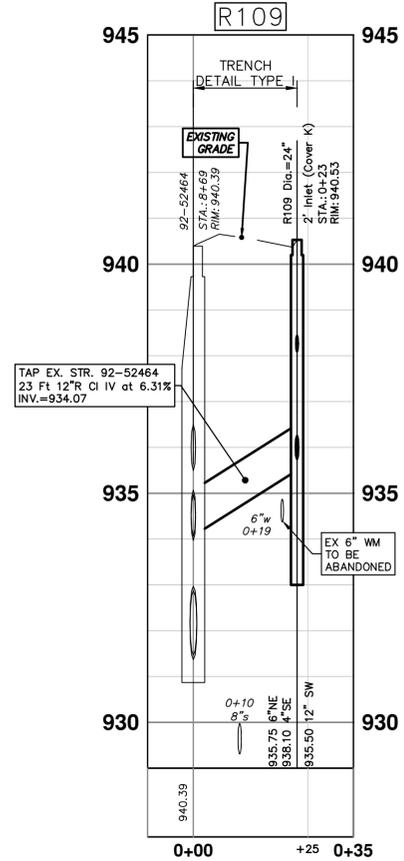
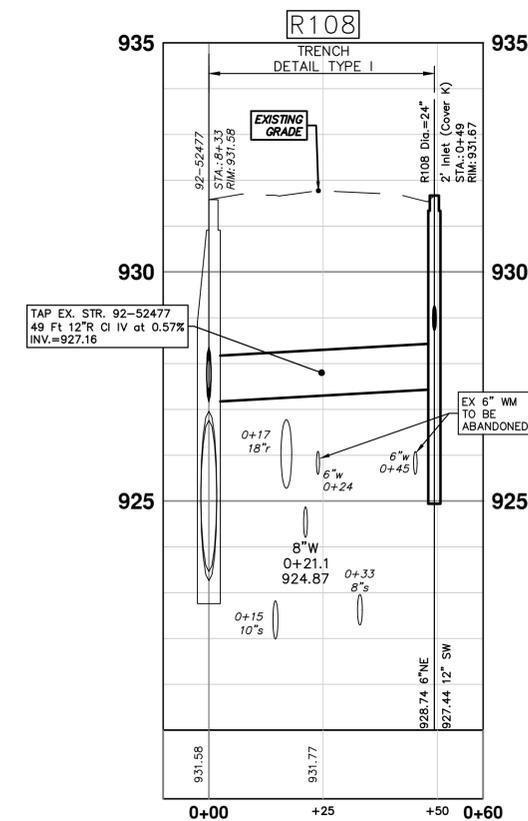
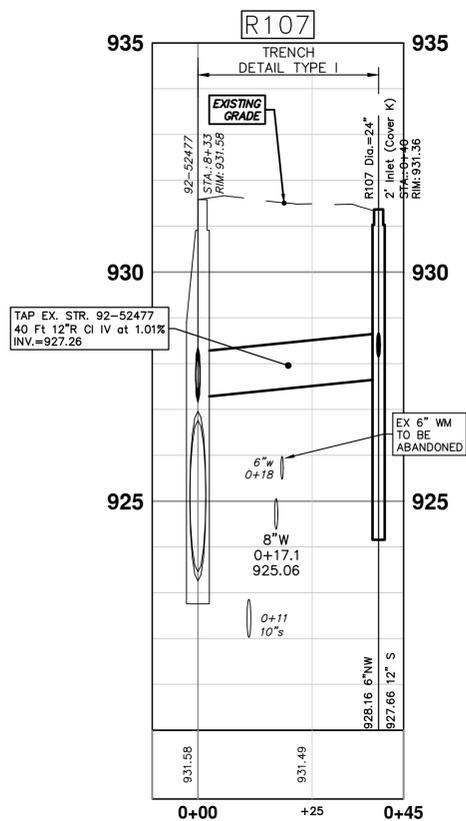
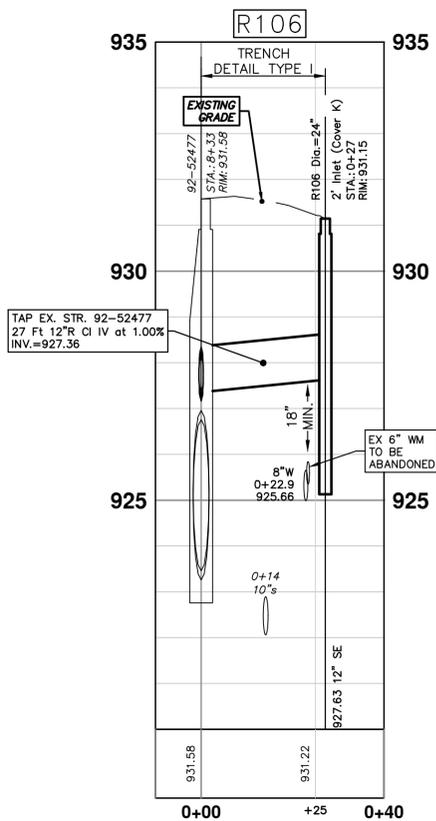
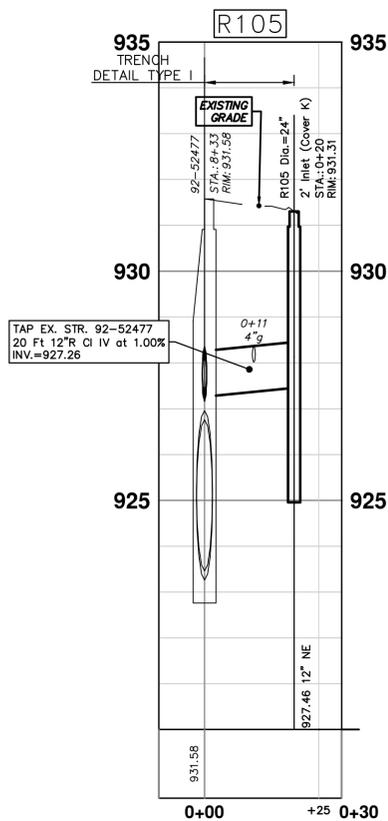
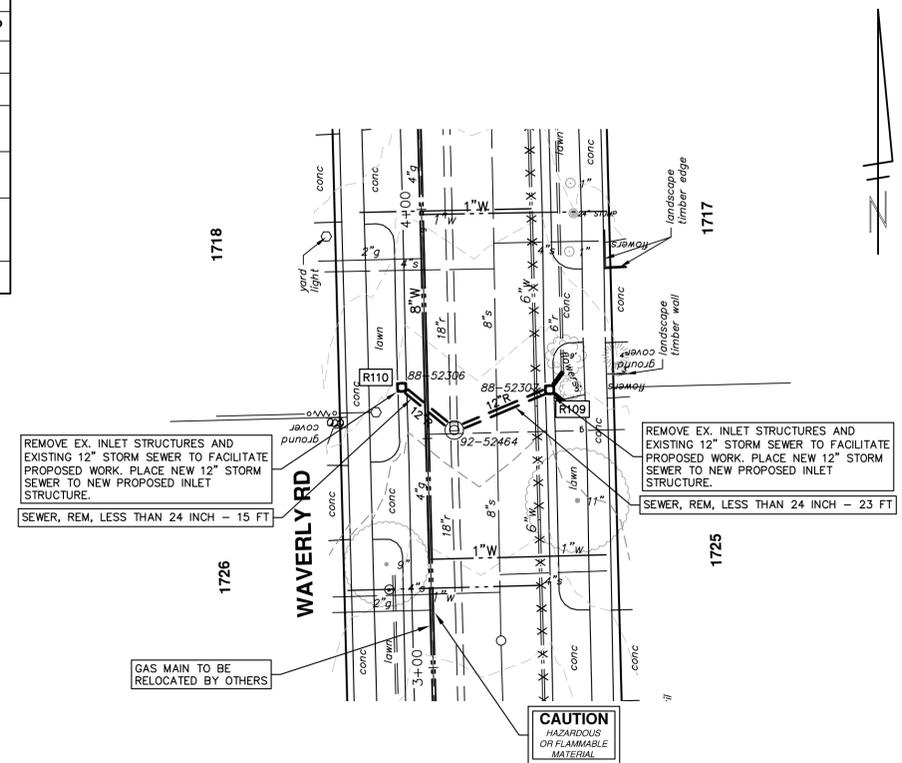
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DATE 12-07-20
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DESCRIPTION



PROPOSED STORM STRUCTURE TABLE						
STRUCTURE	STATION	TYPE	RIM	INVERTS	PIPE	SUMP
R105	0+20	2' Inlet (Cover K)	931.31	12"NE 927.46	20 LF OF 12" @ 1.00%	2'
R106	0+27	2' Inlet (Cover K)	931.15	12"SE 927.63	27 LF OF 12" @ 1.00%	2'
R107	0+40	2' Inlet (Cover K)	931.36	6"NW 928.16 12"S 927.66	5 LF OF 6" @ 34.33% 40 LF OF 12" @ 1.01%	2'
R108	0+49	2' Inlet (Cover K)	931.67	6"NE 928.74 12"SW 927.44	6 LF OF 6" @ 39.25% 49 LF OF 12" @ 0.57%	2'
R109	0+23	2' Inlet (Cover K)	940.53	6"NE 935.75 4"SE 938.10 12"SW 935.50	5 LF OF 6" @ 3.17% 6 LF OF 4" @ 1.00% 23 LF OF 12" @ 6.31%	2'
R110	0+15	2' Inlet (Cover K)	940.64	12"SE 935.87	15 LF OF 12" @ 2.50%	2'

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE		
STRUCTURE	DEPTH (Feet)	REMOVE
88-52306	5.60	12" Drop Structure
88-52307	5.03	12" Drop Structure
88-52319	3.90	12" Drop Structure
88-52326	4.17	12" Drop Structure
88-52318	3.70	12" Drop Structure
88-52317	4.23	12" Drop Structure



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 STORM SEWER PLAN AND PROFILE
 DUNMORE RD - WAVERLY RD R105 - R110

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

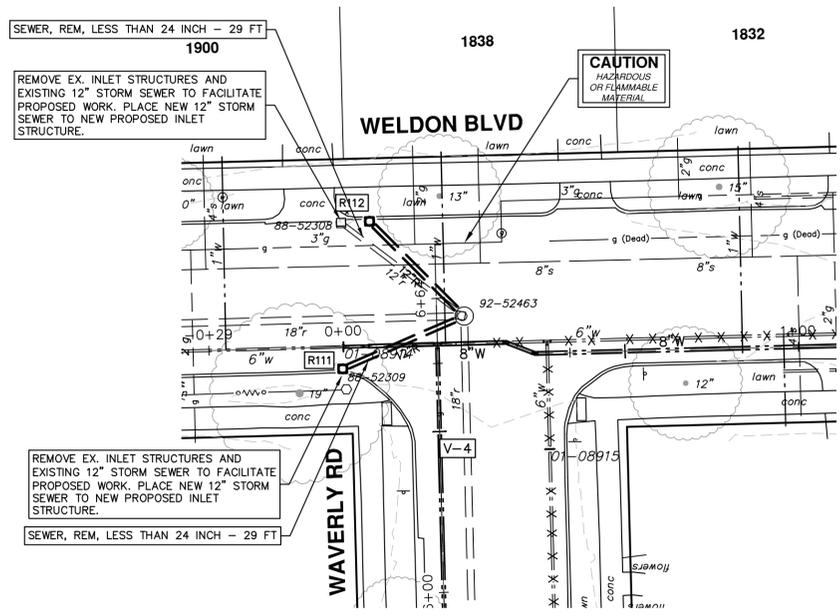
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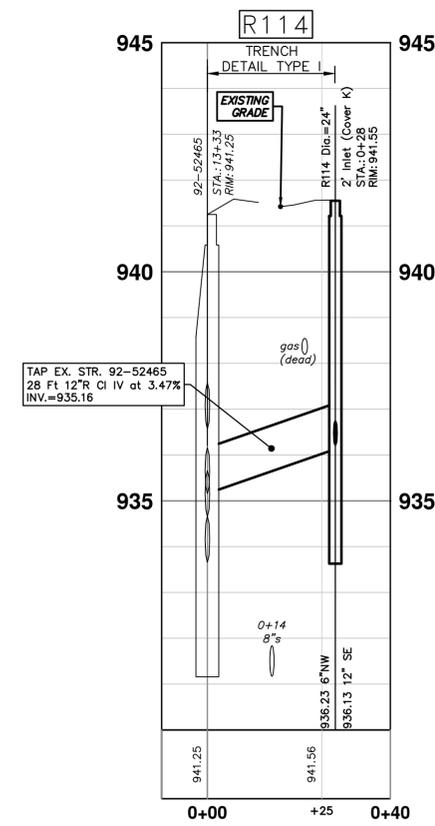
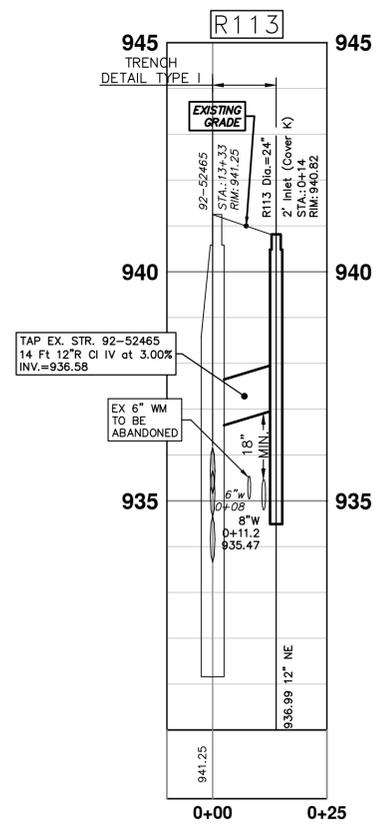
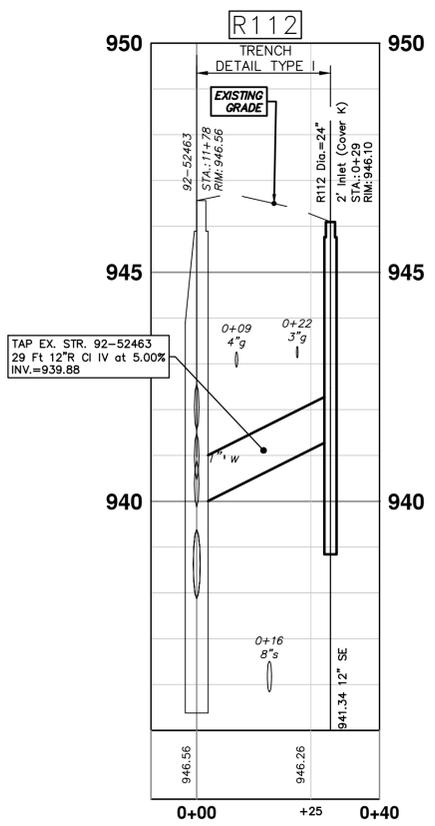
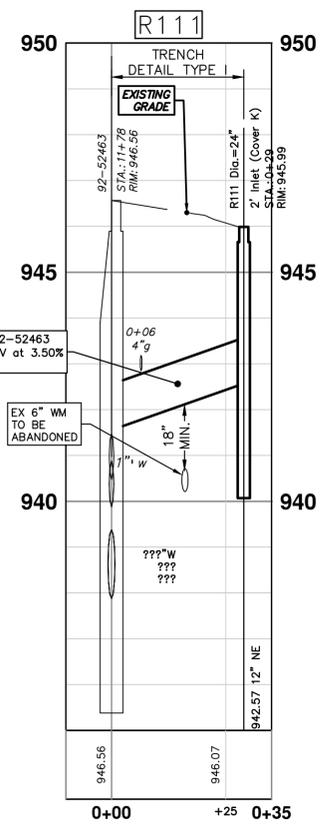
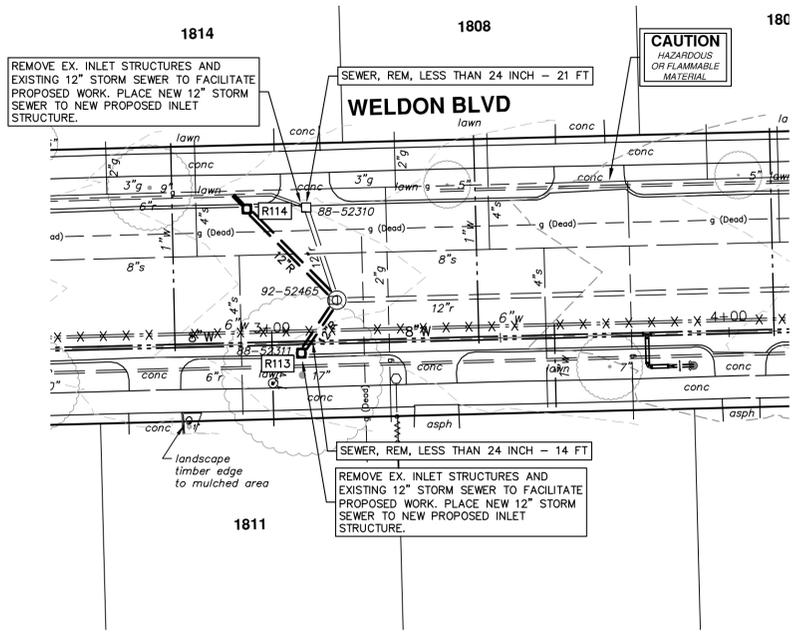


PROPOSED STORM STRUCTURE TABLE

STRUCTURE	STATION	TYPE	RIM	INVERTS	PIPE	SUMP
R111	0+29	2' Inlet (Cover K)	945.99	12"NE 942.57	29 LF OF 12" @ 3.50%	2'
R112	0+29	2' Inlet (Cover K)	946.10	12"SE 941.34	29 LF OF 12" @ 5.00%	2'
R113	0+14	2' Inlet (Cover K)	940.82	12"NE 936.99	14 LF OF 12" @ 3.00%	2'
R114	0+28	2' Inlet (Cover K)	941.55	6"NW 936.23 12"SE 936.13	4 LF OF 6" @ 3.14% 28 LF OF 12" @ 3.47%	2'

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE

STRUCTURE	DEPTH (Feet)	REMOVE
88-52308	4.40	12" Drop Structure
88-52311	5.69	12" Drop Structure
88-52310	4.96	12" Drop Structure
88-52309	4.13	12" Drop Structure





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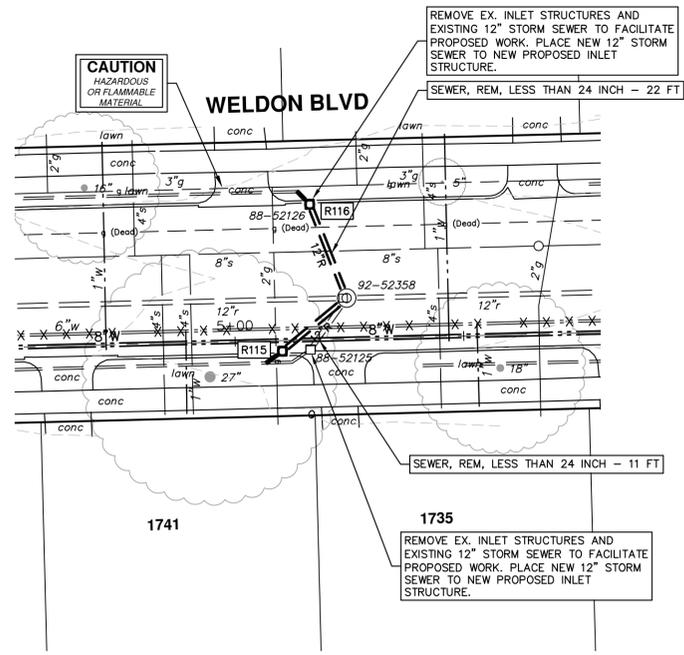
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 STORM SEWER PLAN AND PROFILE
 WELDON BLVD R111 - R114

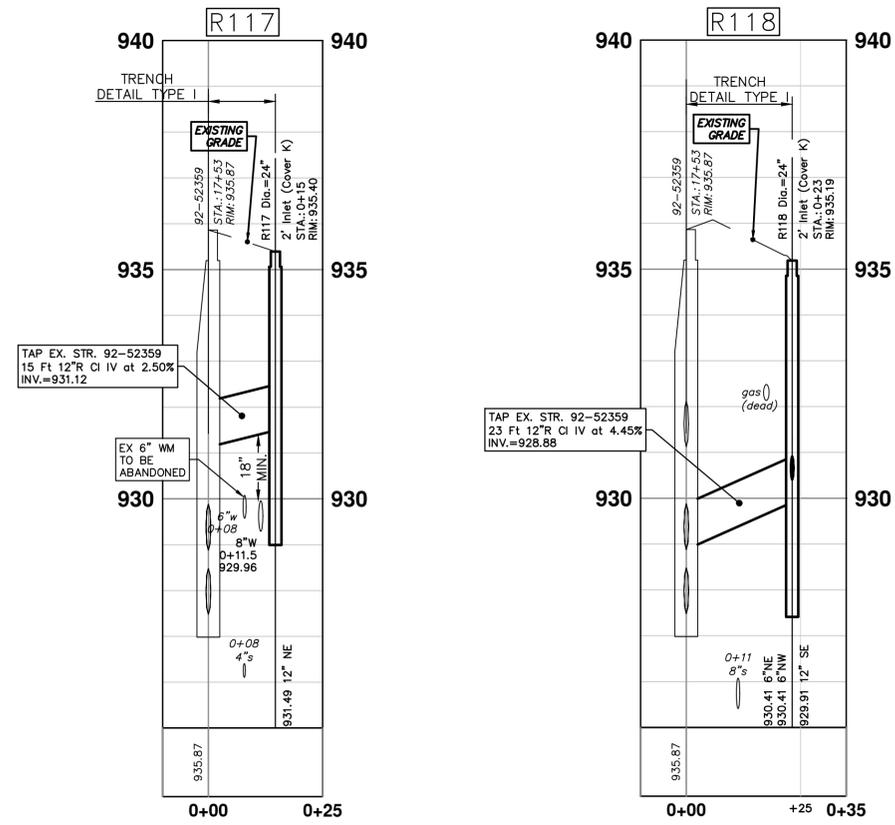
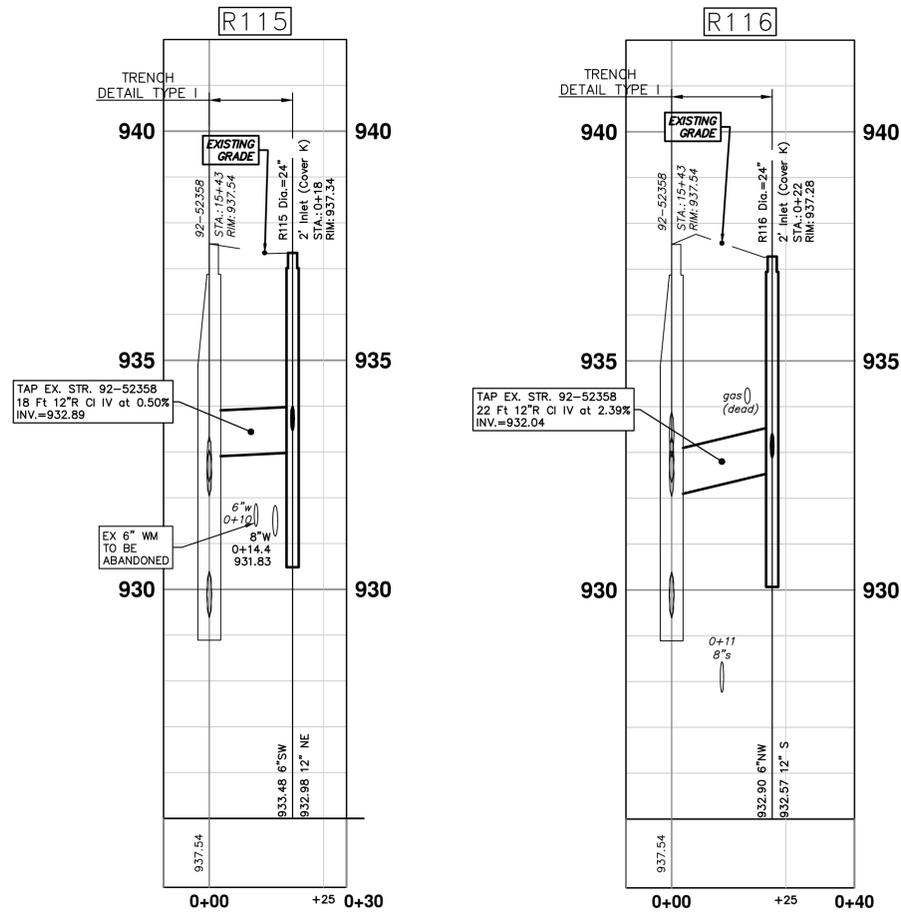
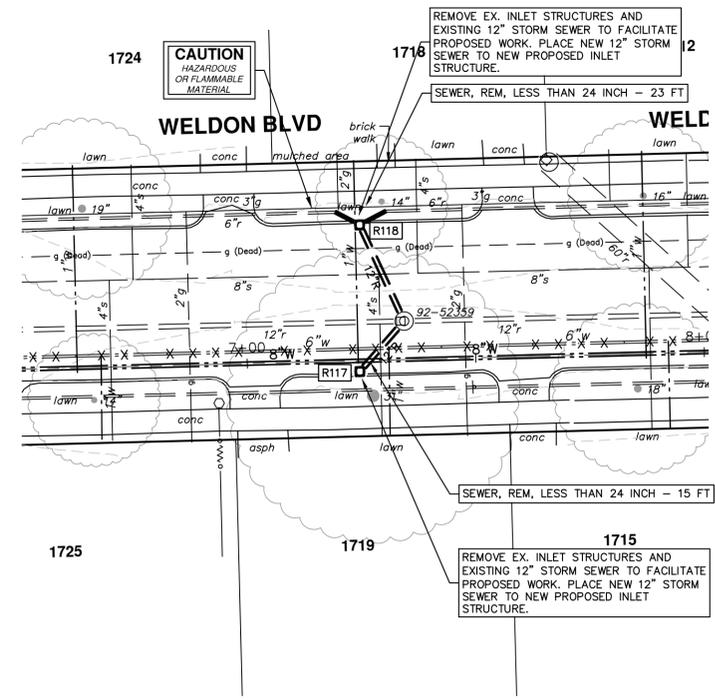
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 PROFILE: 1" = 2'
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 SHEET No. 30 OF 36

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PROPOSED STORM STRUCTURE TABLE						
STRUCTURE	STATION	TYPE	RIM	INVERTS	PIPE	SUMP
R115	0+18	2' Inlet (Cover K)	937.34	6"SW 933.48 12"NE 932.98	4 LF OF 6" @ 1.00% 18 LF OF 12" @ 0.50%	2'
R116	0+22	2' Inlet (Cover K)	937.28	6"NW 932.90 12"S 932.57	4 LF OF 6" @ 3.11% 22 LF OF 12" @ 2.39%	2'
R117	0+15	2' Inlet (Cover K)	935.40	12"NE 931.49	15 LF OF 12" @ 2.50%	2'
R118	0+23	2' Inlet (Cover K)	935.19	6"NE 930.41 6"NW 930.41 12"SE 929.91	6 LF OF 6" @ 0.19% 6 LF OF 6" @ 0.17% 23 LF OF 12" @ 4.45%	2'

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE		
STRUCTURE	DEPTH (Feet)	REMOVE
88-52125	4.43	12" Drop Structure
88-52126	4.50	12" Drop Structure
88-52124	5.28	12" Drop Structure
88-52123	6.47	12" Drop Structure



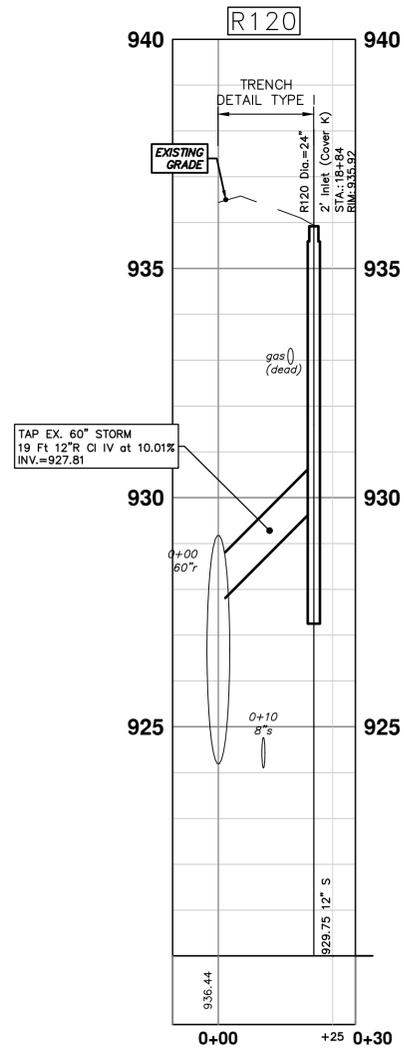
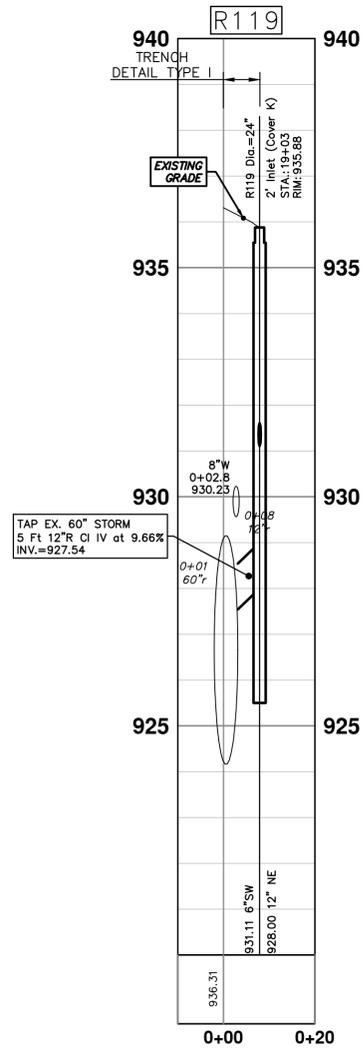
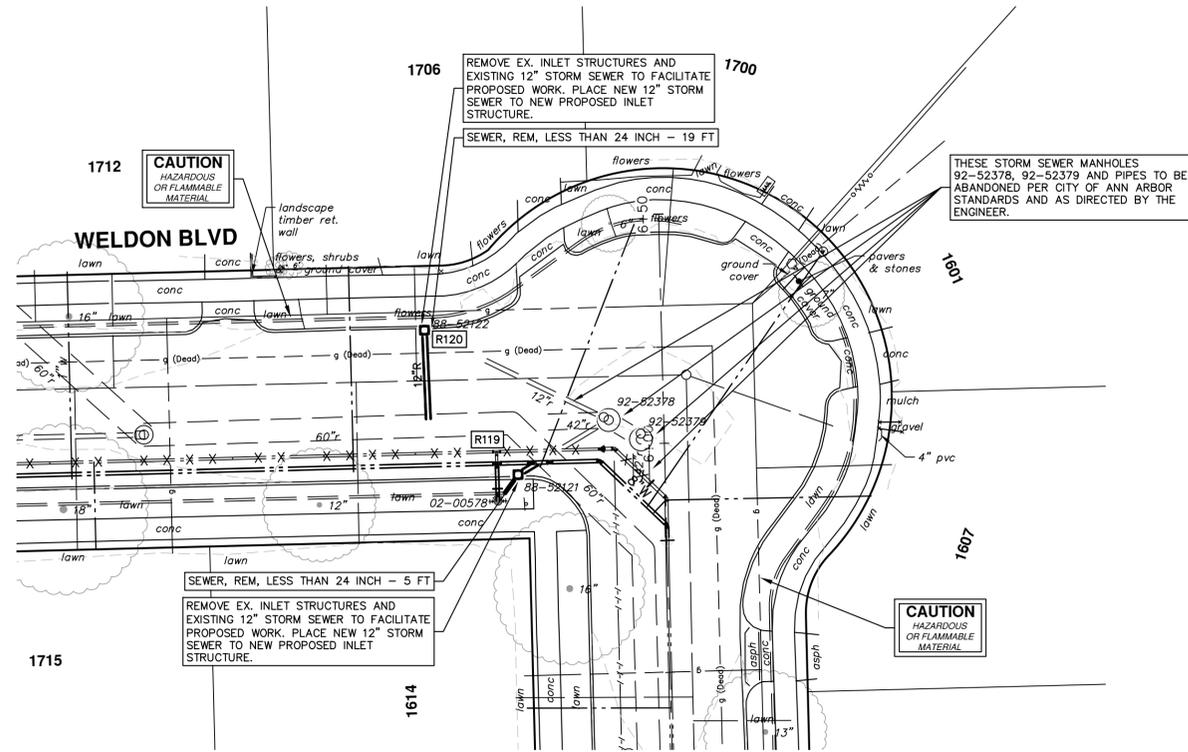
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STORM SEWER PLAN AND PROFILE
WELDON BLVD R115 - R118

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2018033-31

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT TO BID	12-07-20	DFKB	IVK



STRUCTURE	STATION	TYPE	RIM	INVERTS	PIPE	SUMP
R119	19+03	2' Inlet (Cover K)	935.88	6"SW 931.11 12"NE 928.00	5 LF OF 6" @ 0.35% 5 LF OF 12" @ 9.66%	2'
R120	18+84	2' Inlet (Cover K)	935.92	12"S 929.75	19 LF OF 12" @ 10.01%	2'

STRUCTURE	DEPTH (Feet)	REMOVE
88-52121	6.05	12" Drop Structure
88-52122	5.17	12" Drop Structure

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 WATER MAIN REPLACEMENT
 STORM SEWER PLAN AND PROFILE
 WELDON BLVD R119 - R120

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

DRAWING No. **2018033-32**

SHEET No. **32 OF 36**

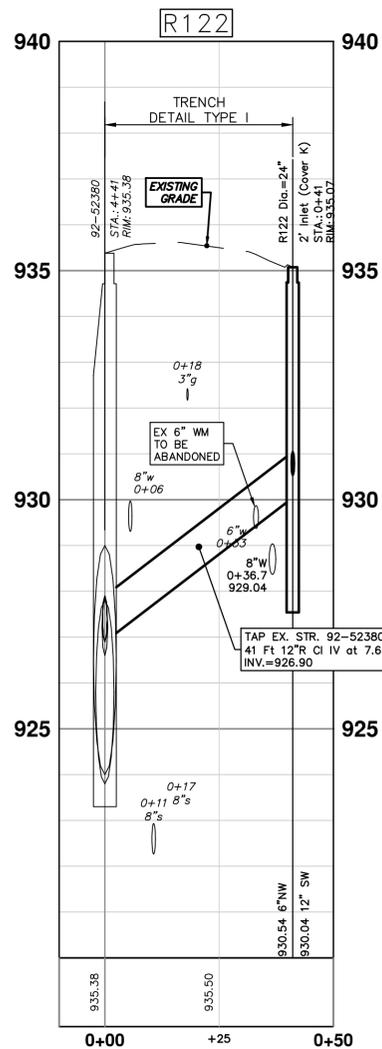
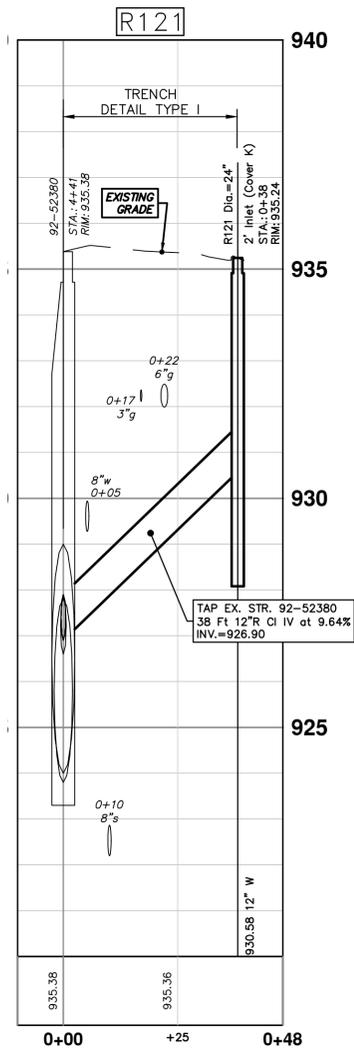
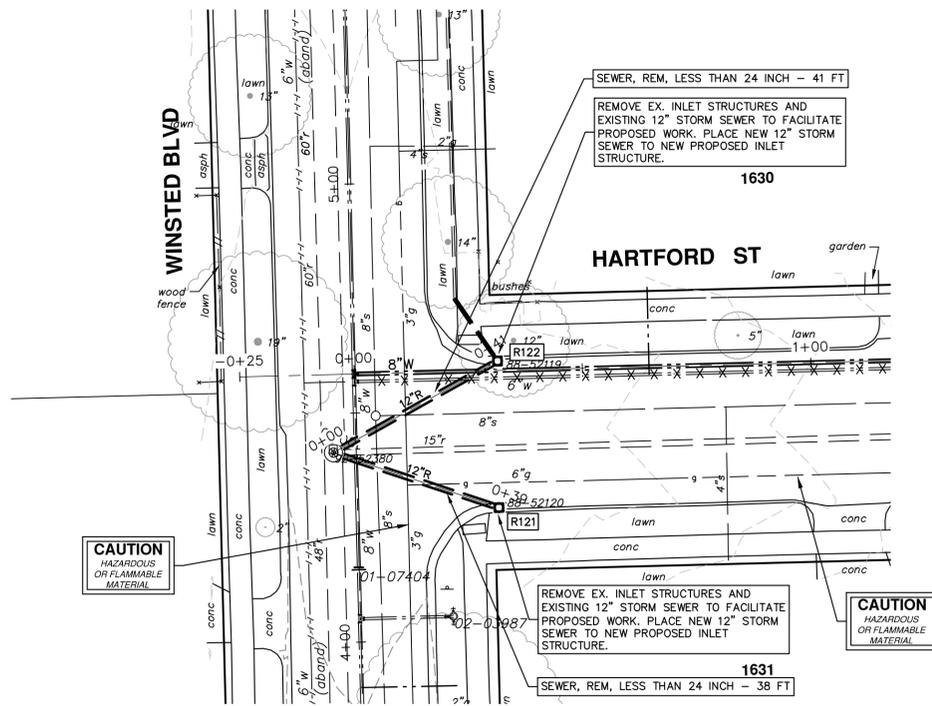
811
 Know what's below.
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REV.	DATE	DESCRIPTION	DRAWN	CHECKED
00	12-07-20	OUT TO BID	DF/KB	IWK

R:\20180333 Dunmore Waverly Weldon\Plan Production\20180333Strm.dwg Dwg Created: 21-Oct-20 - _a2 standard bw.stb - Plot Date: 7-Dec-20

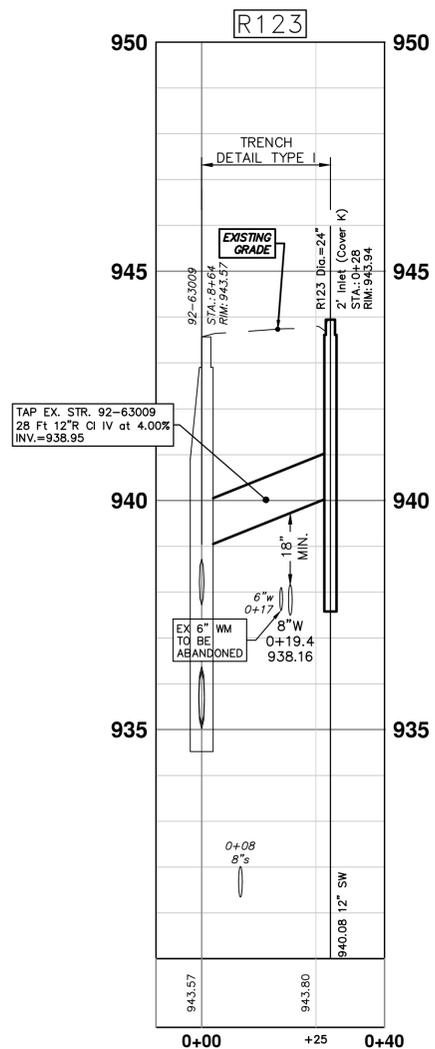
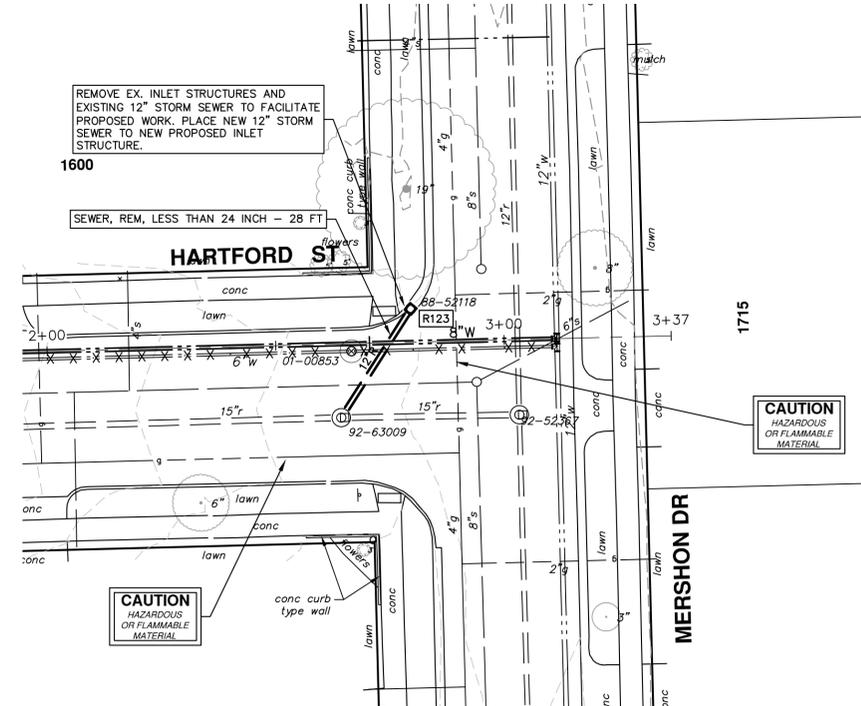


PROPOSED STORM STRUCTURE TABLE

STRUCTURE	STATION	TYPE	RIM	INVERTS	PIPE	SUMP
R121	0+38	2' Inlet (Cover K)	935.24	12"W 930.58	38 LF OF 12" @ 9.64%	2'
R122	0+41	2' Inlet (Cover K)	935.07	6"NW 930.54 12"SW 930.04	16 LF OF 6" @ 1.50% 41 LF OF 12" @ 7.64%	2'
R123	0+28	2' Inlet (Cover K)	943.94	12"SW 940.08	28 LF OF 12" @ 4.00%	2'

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE

STRUCTURE	DEPTH (Feet)	REMOVE
88-52119	5.03	12" Drop Structure
88-52120	6.36	12" Drop Structure
88-52118	5.22	12" Drop Structure



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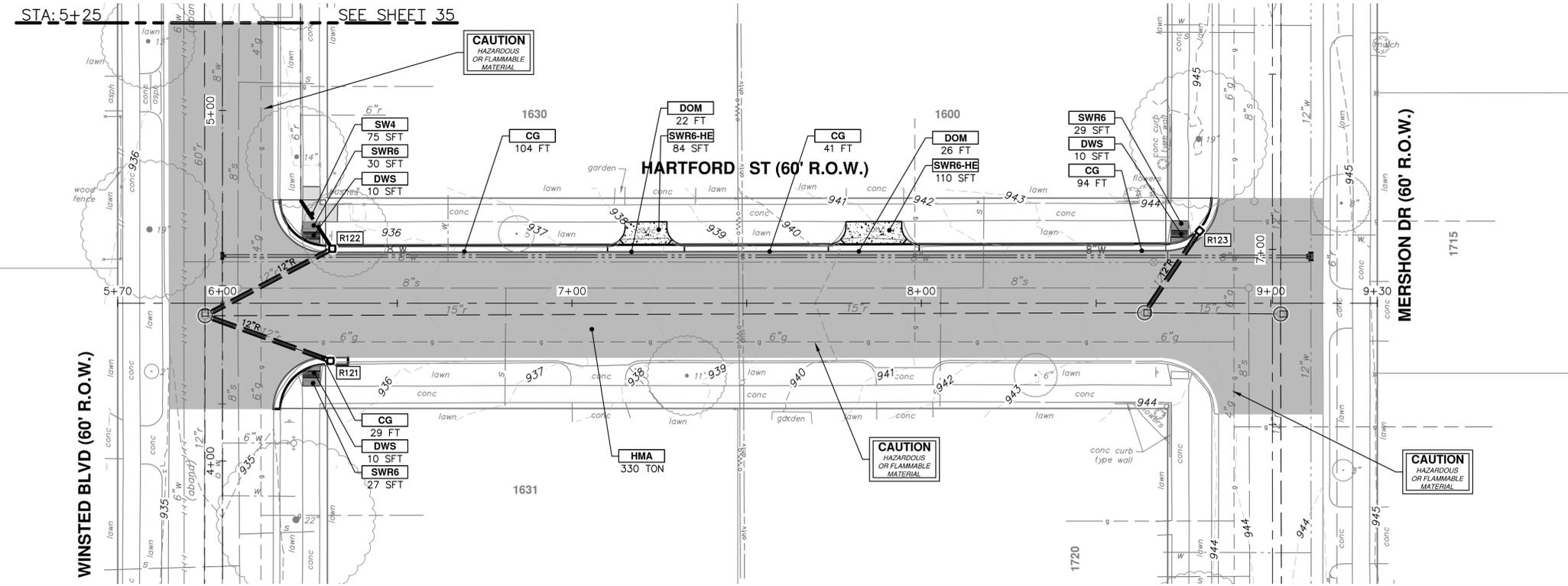
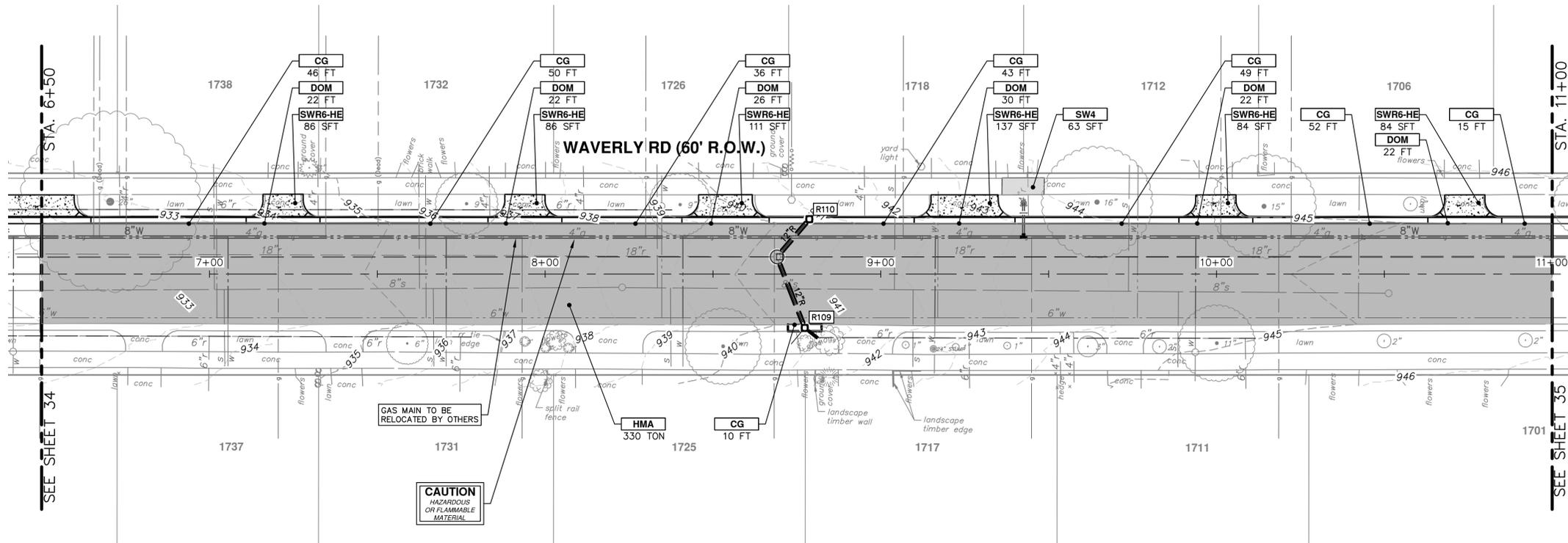
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
DUNMORE, WAVERLY, WELDON, HARTFORD
WATER MAIN REPLACEMENT
STORM SEWER PLAN AND PROFILE
HARTFORD STREET R121 - R123

SCALE PLAN: 1" = 20' PROFILE: 1" = 2'
DRAWING No. 2018033-33
SHEET No. 33 OF 36

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT TO BID	12-07-20	DF/KB	IVK



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

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

DUNMORE, WAVERLY, WELDON, HARTFORD

WATER MAIN REPLACEMENT

ROAD: WAYERLY RD AND HARTFORD STREET

SCALE: 1" = 20'

DRAWING No. 2018033-36

SHEET No. 36 OF 36

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