



# CITY OF ANN ARBOR PROJECT MANAGEMENT

## MAXWELL, WAKEFIELD, LUTZ 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.

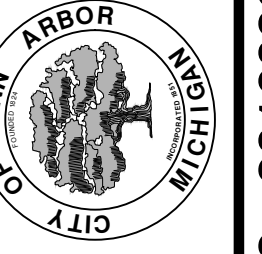
THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

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.



01	BID SET	JKA	JKA	AMW	AMW	CHECKED
00	INTERNAL CITY REVIEW					
	REV.	DATE	DESCRIPTION			

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

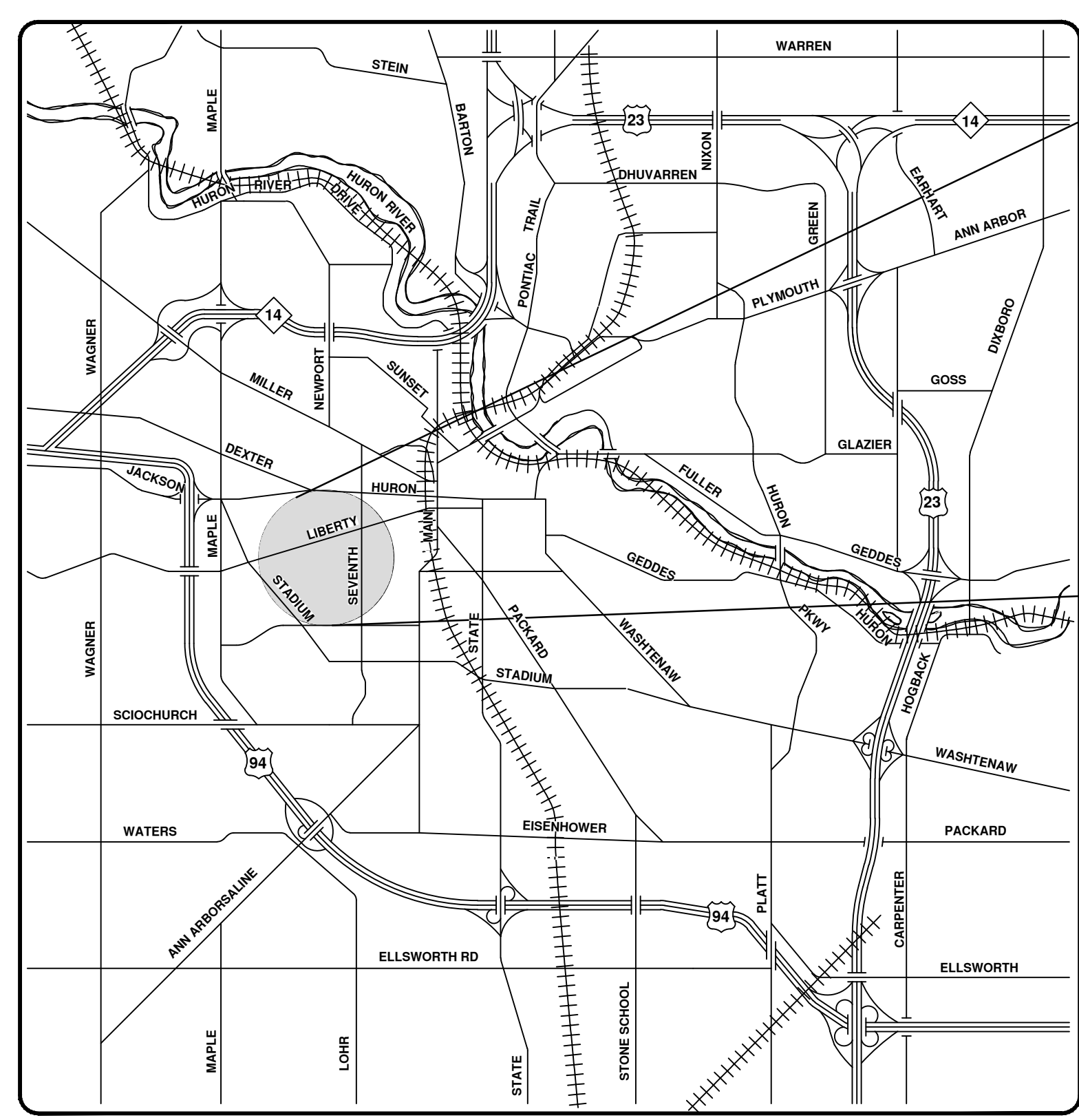
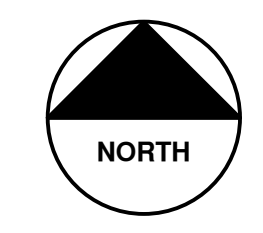


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

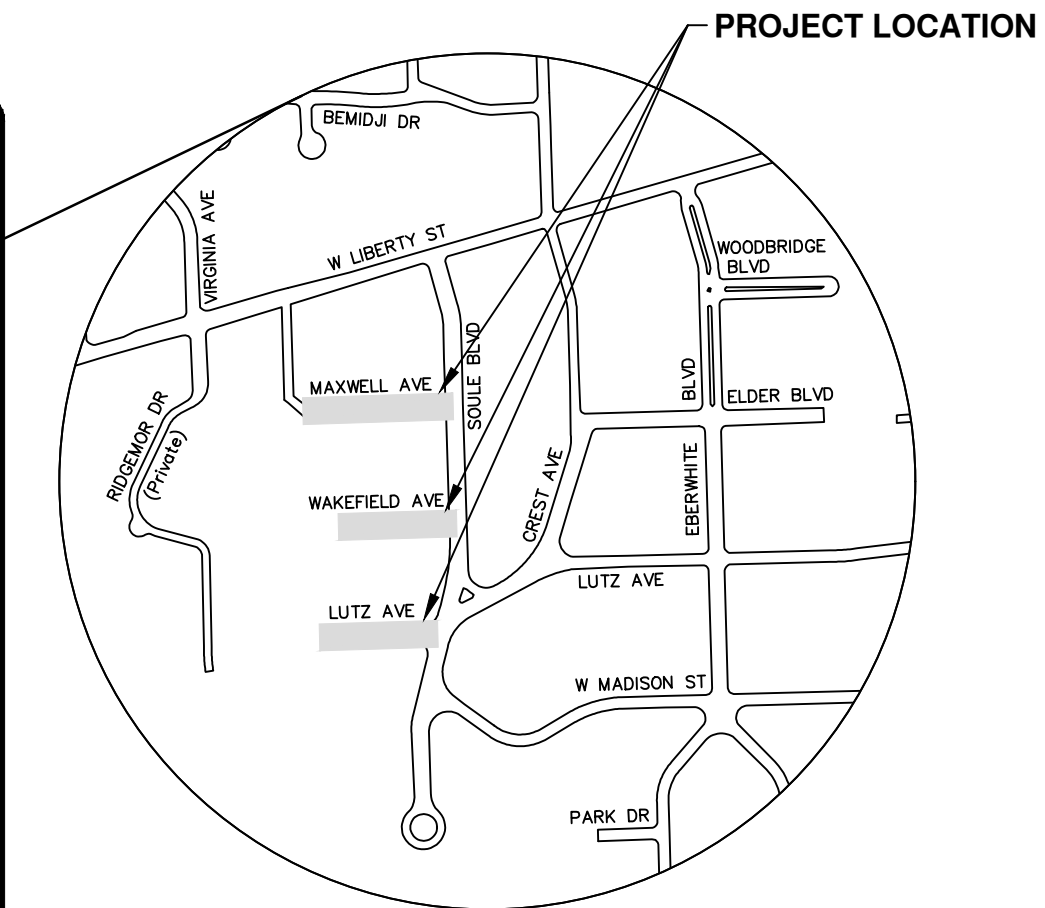
SCALE  
DRAWING No.  
2016039-1  
SHEET No.  
1 OF 17

BID No. 4472, FILE No. 2016039

SHEET LIST TABLE	
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16 - 17	ROADWAY PLANS



VICINITY MAP



PROJECT LOCATION

**PROJECT MANAGEMENT SERVICE UNIT**

PREPARED UNDER THE SUPERVISION OF

*Anne M. Warrow*  
ANNE WARROW, P.E. - MI LICENSE No. 48239  
PROJECT MANAGER

3/17/2017  
DATE

### EXISTING LEGEND

	FIRE HYDRANT
	GATE VALVE IN BOX
	GATE VALVE IN WELL
	STOP BOX
	WATER VAULT
	WELL
	CATCH BASIN (SQ)
	CATCH BASIN (RD)
	STORM MANHOLE
	NON-CURB CATCH BASIN (SQ)
	END SECTION
	SANITARY MANHOLE
	CLEAN-OUT
	POST
	PEDESTRIAN SIGNAL
	SIGN
	HAND HOLE
	ORNAMENTAL LIGHT
	FLOOD LIGHT
	UNKNOWN MANHOLE
	TELEPHONE MANHOLE
	TELEPHONE RISER
	GAS VALVE
	GAS VENT
	GAS BOX
	ELECTRICAL RISER
	TRANSFORMER
	UTILITY POLE
	LAMP POLE
	GUY ANCHOR
	GUY POLE
	MONITORING WELL
	MAILBOX
	SOIL BORING
	TRAVERSE POINT
	BENCH MARK
	IRON PIPE
	MON BOX

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

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

### PROPOSED LEGEND

	HYDRANT (PLAN)
	WATER GATE WELL
	REDUCER
	WATER GATE VALVE
	WATER STOP BOX
	WATER VAULT
	INLET
	DOUBLE INLET
	INLET JUNCTION CHAMBER
	ROUND CATCH BASIN
	STORM MANHOLE
	DRAIN ARROW
	FLARED END SECTION
	SANITARY MANHOLE
	CLEAN-OUT
	SIGN
	PUSH BUTTON
	HAND HOLE

	WATER MAIN
	STORM SEWER
	SANITARY SEWER
	FIBER OPTIC
	ELECTRICAL
	CENTERLINE OF DITCH
	CENTERLINE OF ROAD
	FENCE
	GRAVEL
	SILT FENCE
	PROTECTIVE FENCE
	GUARDRAIL
	LOT/UNIT
	CURB
	TEMPORARY GRADING PERMIT
	CONTOUR MAJOR
	CONTOUR MINOR
	WATER 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



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301 EAST HURON STREET  
PO BOX 8647  
ANN ARBOR MI 48108-0867  
www.a2gov.org

## PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

### MAXWELL, WAKEFIELD, LUTZ

### WATER MAIN REPLACEMENT

LEGEND

SCALE: N/A
DRAWING No. 2016039-2
SHEET No. 2 OF 17

R:\2016039 Maxwell Wakefield Lutz WM\Plan Production\2016039Cov.dwg Plot Date: 3/17/2017 10:42:16 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".
- Trenches for new water services shall be excavated to MIOASHA and City of Ann Arbor Field Services requirements.
- City of Ann Arbor Public Services 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 staff.
- For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with the City of Ann Arbor Public Works.
- The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All concrete removals and replacements required for this work will be paid for separately.
- All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.
- Cor-blw bolts to be used at all mechanical water main joints at hydrants and Megalug fittings
- The Contractor shall construct, flush, and bacteriologically test the water main per Detailed Specification "Water Main Installation and Testing" and as approved by the Engineer. All chlorinated water shall be discharged directly into an approved sanitary sewer. The Contractor shall supply all necessary hoses, fittings and the like to accomplish this work.
- Water main fittings, other than those specifically listed as separate pay items, which are required to complete the work, such as blow-off assemblies, concrete thrust blocks, solid sleeves and mechanical plugs, shall not be paid for separately, but shall be included in the pipe pay items.
- "No Parking" signs shall be installed by the Contractor at locations as approved or directed by the Engineer. All signs shall be installed in accordance with the detailed specifications.

- Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.
- All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. The Contractor within 48 hours shall deliver to City of Ann Arbor Field Operations and Maintenance 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.
- 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 Field Operations and Maintenance Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.
- Where sewer pipes of different sizes or materials are joined, Fernco flexible couplings with stainless steel shear rings shall be used. The Contractor's purchase price for these devices, including shipping, shall be paid as an extra. Prior to payment for this item, the Contractor shall submit receipts for the Engineer's review and approval. All other costs associated with the installation of these devices shall be included in the payment for the sewer.
- Where sewer and water main are to be removed & replaced or added, all pipe shall be installed using Trench Detail detailed in the specifications or shown on Plans. Backfill for sewer and water construction shall be MDOT Granular Material, Class II, Modified.
- Existing street name, guide, and regulatory signs, and mailboxes which conflict with the proposed construction shall be removed prior to construction, stored in a manner which will prevent damage, and re-set in locations as directed by the Engineer. This work will not be paid for separately, but shall be included in "Machine Grading, Modified"
- In areas where edge drain cannot be installed in accordance with City of Ann Arbor Detail SD-TD-11, the edge drain shall be installed at the depth as indicated on the plans, or as directed by Engineer. In no case shall the edge drain be installed at a grade less than 0.50% or at a depth of less than 2' below top of proposed pavement.

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

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

**SEQUENCE OF EROSION CONTROL MEASURES:**

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

**SAMPLE SOIL EROSION AND SEDIMENTATION CONTROL INSTALLATION MINIMUM REQUIREMENTS:**

- INSTALL SILT FENCE, TREE PROTECTION FENCING, MUD MATS, INLET FILTERS ON EXISTING DRAINAGE FEATURES, AND ALL OTHER TEMPORARY SOIL EROSION CONTROLS, PRIOR TO ANY CLEARING OR EARTH MOVING OPERATION.
- 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.
- TEMPORARY SEED AND INSTALL EROSION CONTROL BLANKET IN ALL DISTURBED AREAS.
- REFER TO LANDSCAPE PLANTING PLANS FOR PERMANENT SITE STABILIZATION.
- CLEAN OUT STORM SEWER SYSTEMS.
- REMEDY ANY NOTED DEFECTS TO THE SATISFACTION OF THE CITY OF ANN ARBOR'S SOIL EROSION AND SEDIMENTATION CONTROL OFFICIAL.
- ALL TEMP. SOIL EROSION CONTROL MEASURES MUST BE REMOVED, WITH ENGINEERS APPROVAL, PRIOR TO FINAL INSPECTION

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

**TEMPORARY SEEDING:**

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

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

- WawabB - WAWASEE LOAM, 2 TO 6 PERCENT SLOPES; THIS SOIL CONSISTS OF VERY DEEP, WELL DRAINED SOILS FORMED IN TILL ON MORAINS AND TILL PLAINS.
- WawabC - WAWASEE LOAM, 6 TO 12 PERCENT SLOPES; THIS SOIL CONSISTS OF VERY DEEP, WELL DRAINED SOILS FORMED IN TILL ON MORAINS AND TILL PLAINS.

IMPERVIOUS PROJECT AREA	
PRIOR TO CONSTRUCTION = 0.85 ACRES	POST CONSTRUCTION = 0.85 ACRES

AREA OF PROPOSED DISTURBANCE = 0.20 ACRES	
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**PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION.**

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


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

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

**CONTACT INFORMATION**

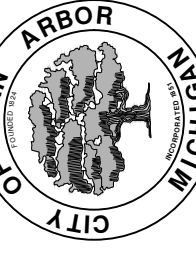
PUBLIC UTILITIES	OWNER	CONTACT
WATER		DAN WOODEN (734) 794-6350
SANITARY		PAT MAINO (734) 794-6350
STORM	CITY OF ANN ARBOR FIELD OPERATIONS SERVICE UNIT W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	PAT MAINO (734) 794-6350
FORESTRY		MATT WALDSMITH (734) 794-6350
SIGNS SIGNALS STREET LIGHTS		CHUCK FOJTIK (734) 794-6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 3150 E. MICHIGAN AVE, YPSILANTI TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	CLAY COMBEE (734) 397-4112
CABLE	COMCAST 27800 FRANKLIN ROAD SOUTHFIELD, MI 48034	RON SUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	(734) 996-2135
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016

BM #	ELEV	DESCRIPTION
1	883.515	SET RR SPIKE IN S'LY SIDE OF L.P. @ N.W. CORNER OF SOULE AND LUTZ
2	887.149	SET RR SPIKE IN S. SIDE OF U.P. ON N. SIDE OF LUTZ IN FRONT OF HSE # 1406
3	906.489	STEAMER VALVE ON FIRE HYD. NEAR S.E. CORNER OF ZION LUTHERAN CHURCH
4	891.727	SET RR SPIKE IN N. SIDE OF L.P. ON S. SIDE OF WAKEFIELD AT DRIVE FOR HSE NO. 1405
5	886.544	SET R.R. SPIKE IN S.E. SIDE OF L.P. @ N.W. CORNER OF SOULE AND WAKEFIELD
6	898.131	SET RR SPIKE IN S.E. SIDE OF L.P. @ N.W. CORNER OF MAXWELL AND SOULE
7	901.309	SET RR SPIKE IN N. SIDE OF L.P. ON S. SIDE OF MAXWELL
8	904.587	TOP, E. SIDE OF CONC. BASE FOR L.P. IN ZION LUTHERAN CHURCH PARKING LOT. POLE IS NORTHERN MOST ONE.



Know what's below. Call before you dig.

AMW	AMW	JKA	JKA
CHECKED	DRAWN	DATE	DATE
01	00	3/17/17	12/12/16
BID SET	INTERNAL CITY REVIEW	REV.	DESCRIPTION



**CITY OF ANN ARBOR PUBLIC SERVICES**  
301 EAST HURON STREET  
PO BOX 8640  
ANN ARBOR MI 48106-8647  
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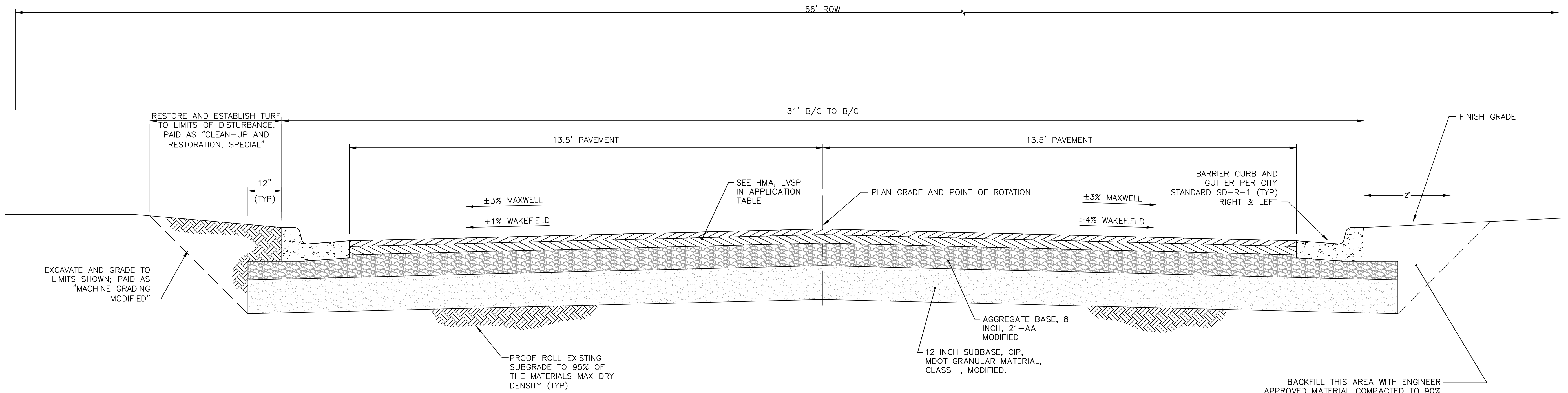
**PROJECT MANAGEMENT - CITY OF ANN ARBOR**  
**MAXWELL, WAKEFIELD, LUTZ**  
**WATER MAIN REPLACEMENT**

STANDARD NOTES

SCALE: N/A  
DRAWING No. 2016039-3  
SHEET No. 3 OF 17



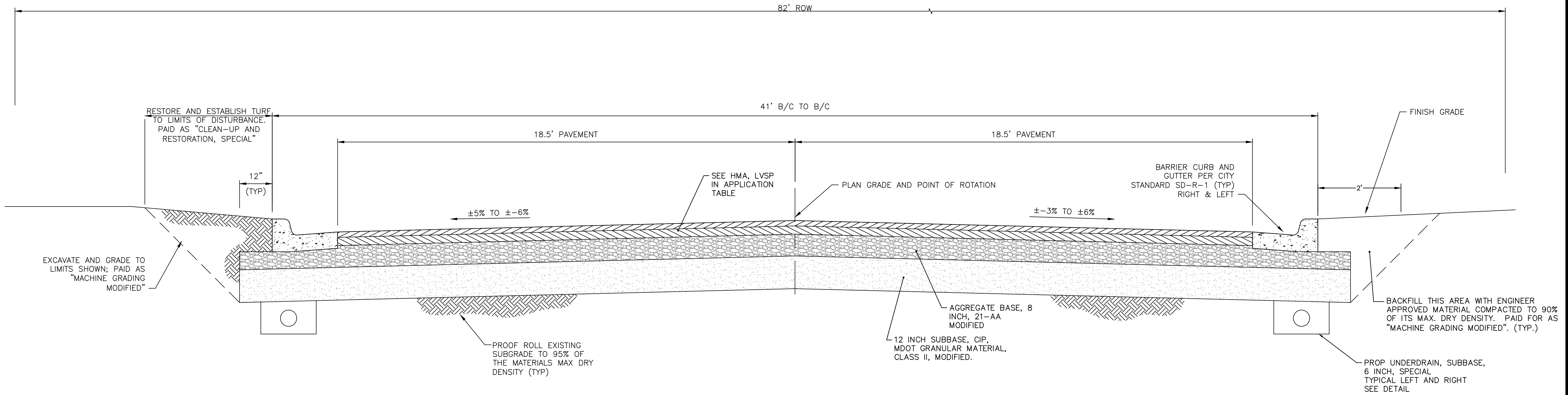
R:\2016039 Maxwell Wakefield Lutz WM\Plan Production\2016039DET.dwg Dwg Created: 17-Mar-17 - \_a2 standard b.w.stb - Plot Date: 17-Mar-17



HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	283 LB/SYD	2.5	260	PG-58-28	TOP COURSE
LVSP	283 LB/SYD	2.5	-	PG-58-28	LEVELING COURSE
Bond Coat SS-1h	0.05 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

**TYPICAL PROPOSED MAXWELL AVE. & WAKEFIELD AVE. ROAD SECTION**

NTS



**TYPICAL PROPOSED LUTZ AVE. ROAD SECTION**

NTS



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
01	BID SET	3/17/17	JKA	AMW
00	INTERNAL CITY REVIEW	12/12/16	JKA	AMW

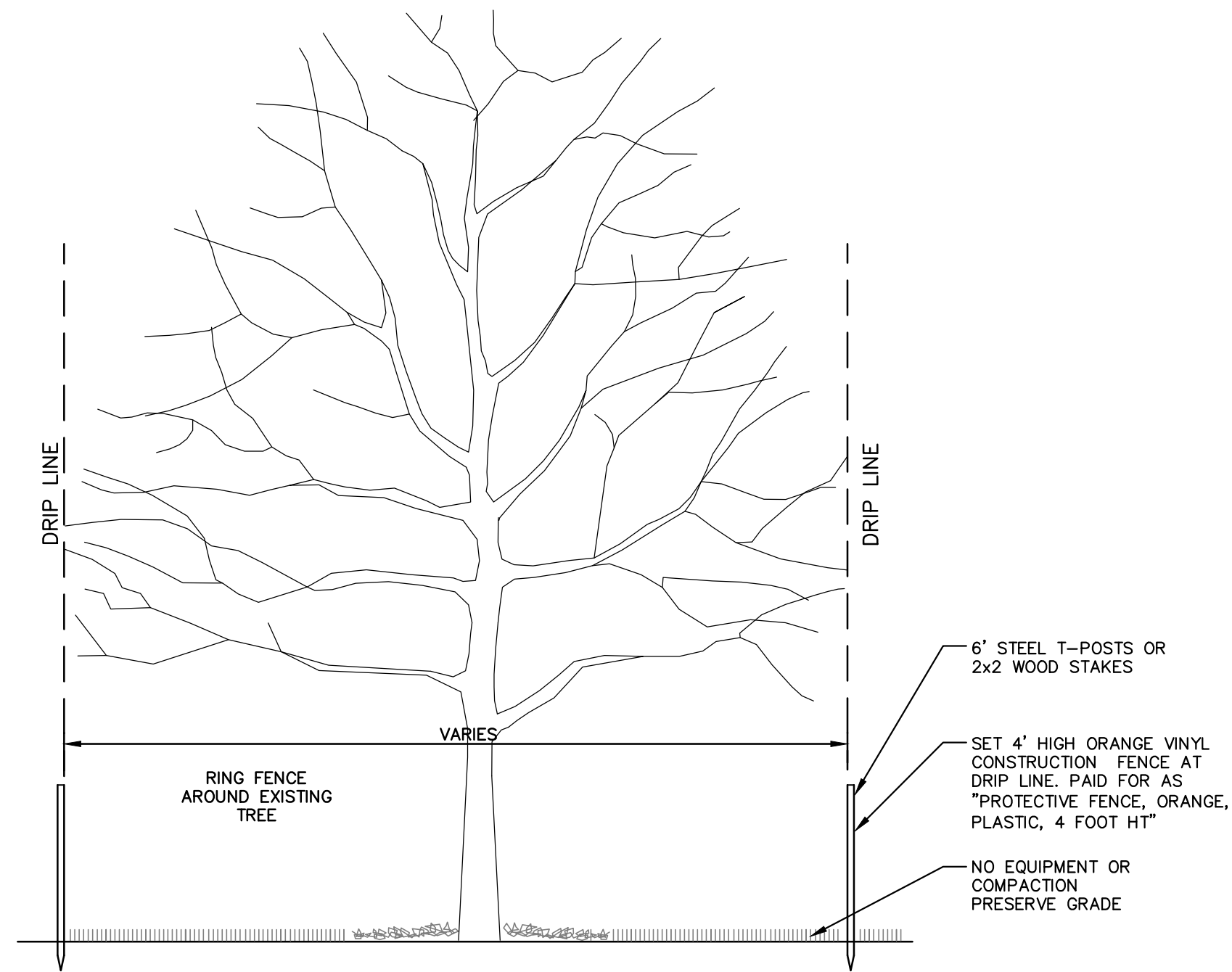
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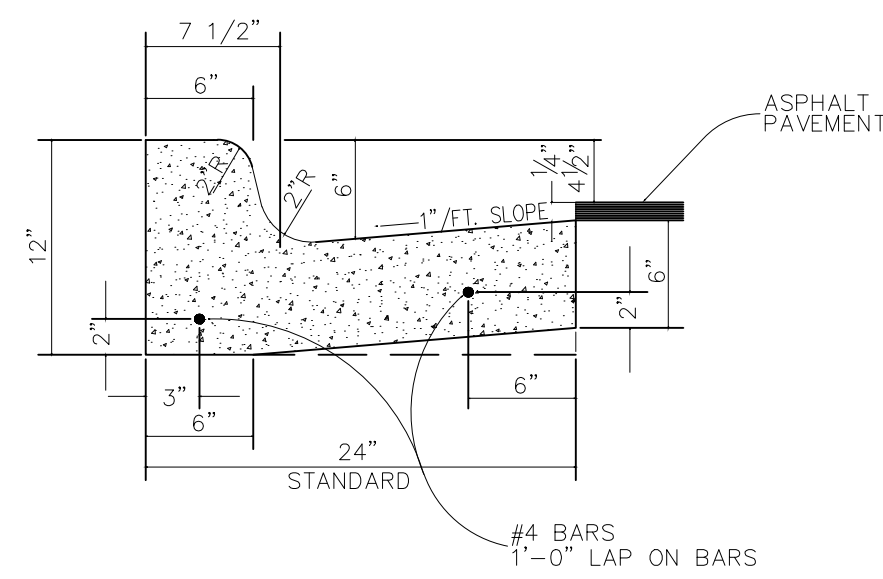
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR  
MAXWELL, WAKEFIELD, LUTZ  
WATER MAIN REPLACEMENT  
#####  
TYPICAL ROAD CROSS SECTION

SCALE: NTS  
DRAWING No. 2016039-4  
SHEET No.

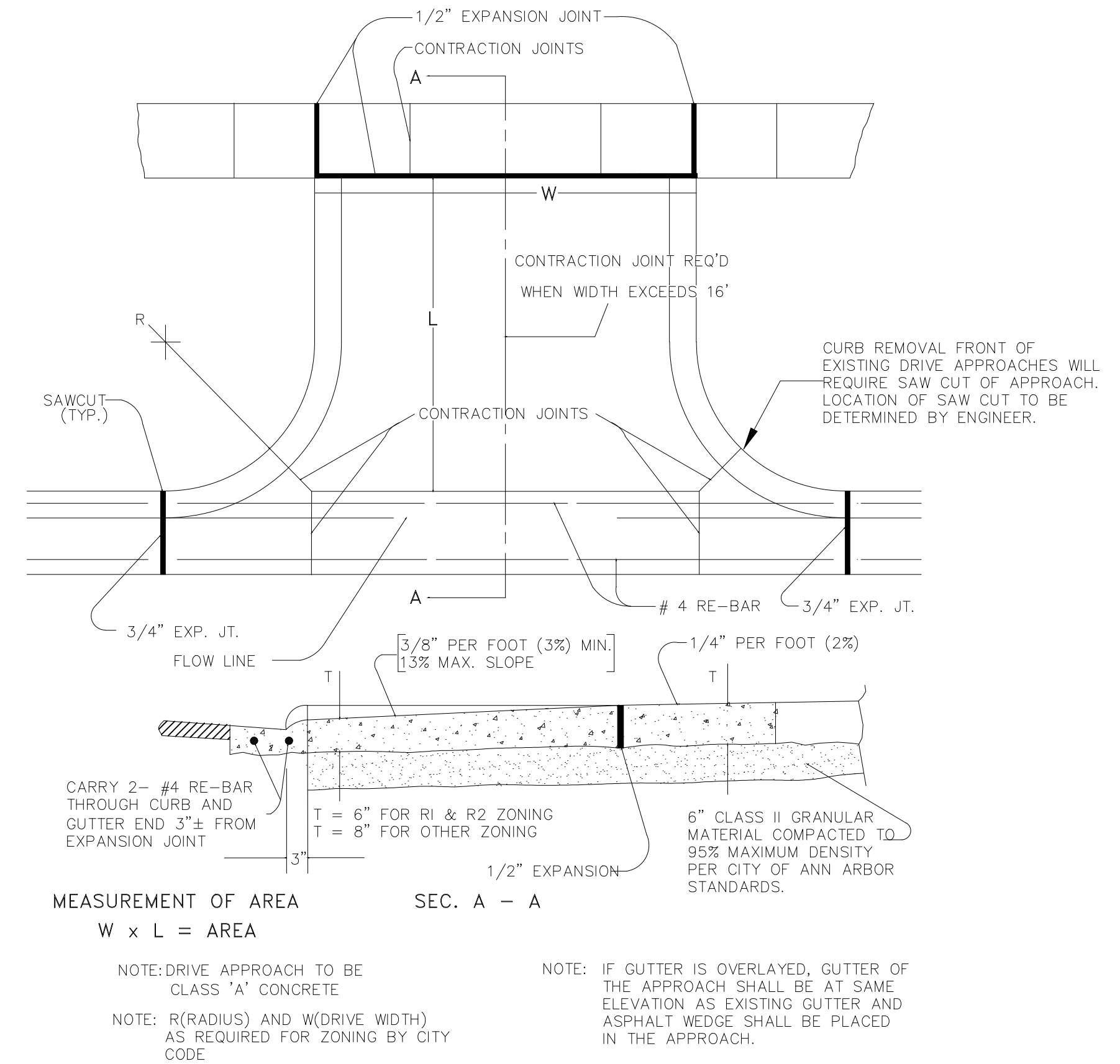
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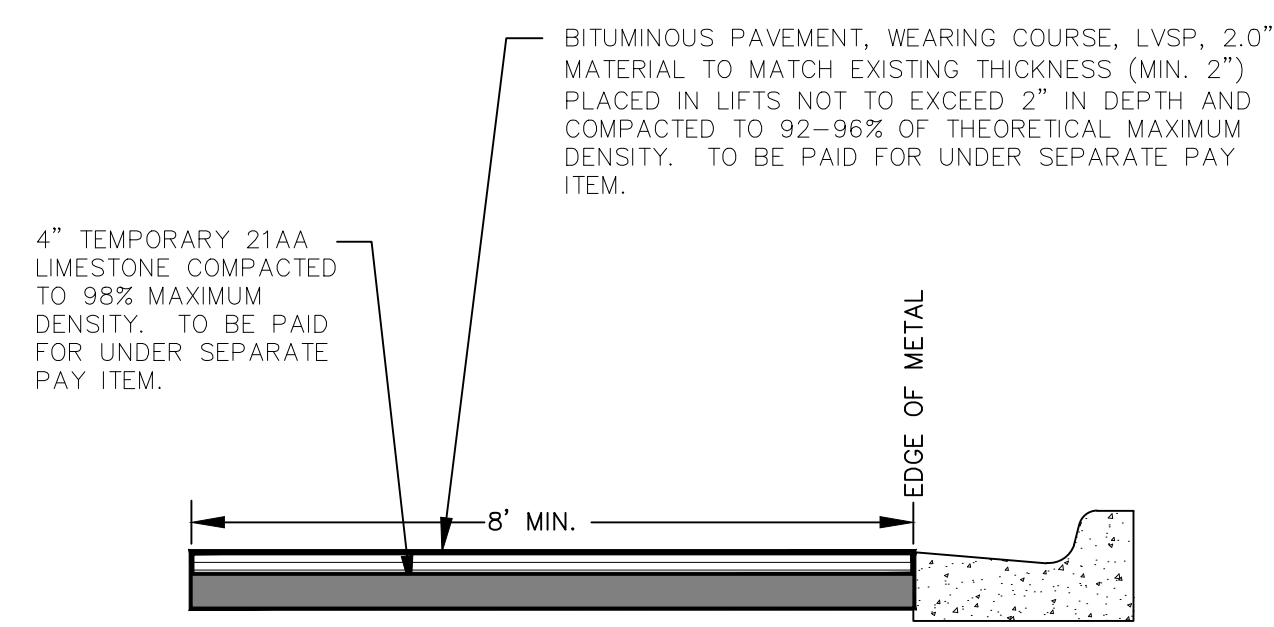
**TREE PROTECTION DETAIL**



**CURB, CONC, DET F4**  
NO SCALE

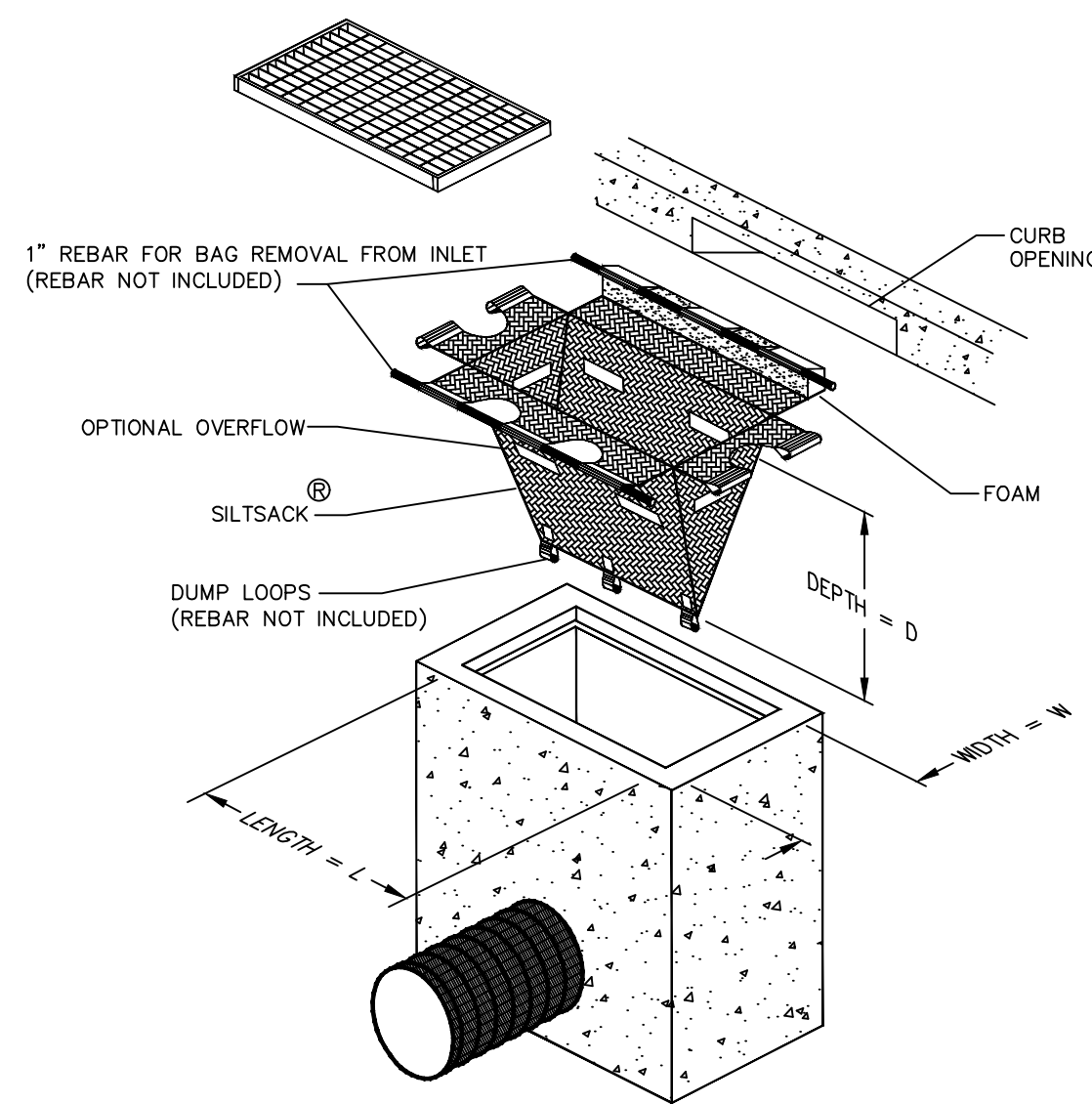


**TYPE "M" DRIVE APPROACH**



**TEMPORARY PATCH**

**TEMPORARY PATCH**



**INLET FILTER (MODIFIED)**

**SILTSACK®**  
SPECIFICATIONS  
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)

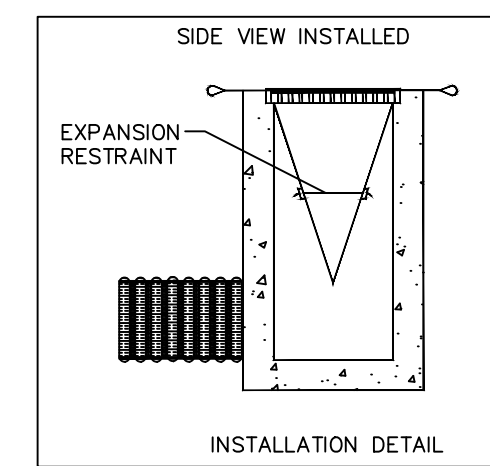
PROPERTIES	REQUIRED VALUE	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	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

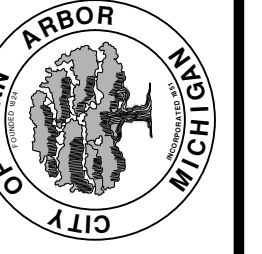
**OIL-ABSORBANT SILTSACK®**  
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLow INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK WITH A WOVEN PILLow INSERT.

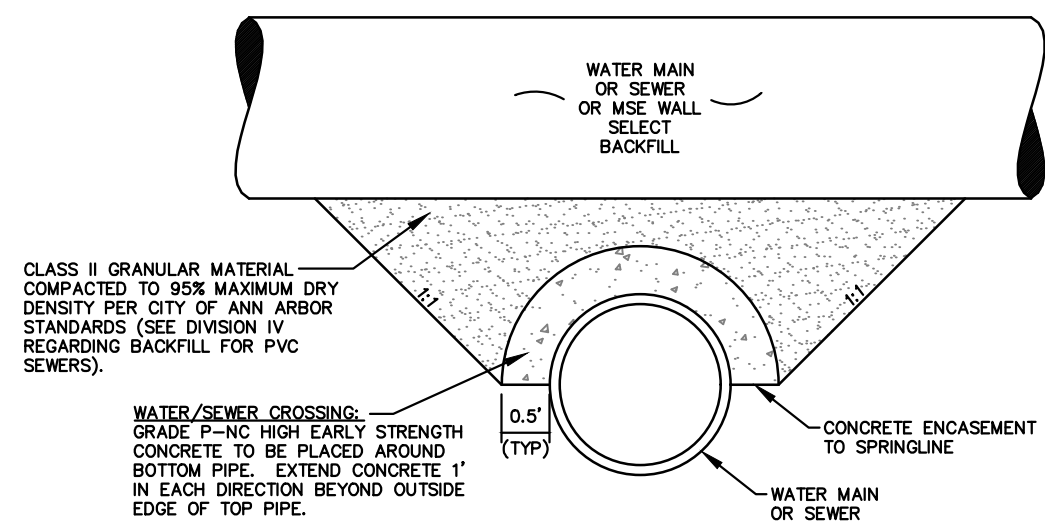


REV.	DESCRIPTION	DATE	DRAWN	CHECKED
01	BID SET	3/17/17	JKA	AMW
00	INTERNAL CITY REVIEW	12/12/16	JKA	AMW

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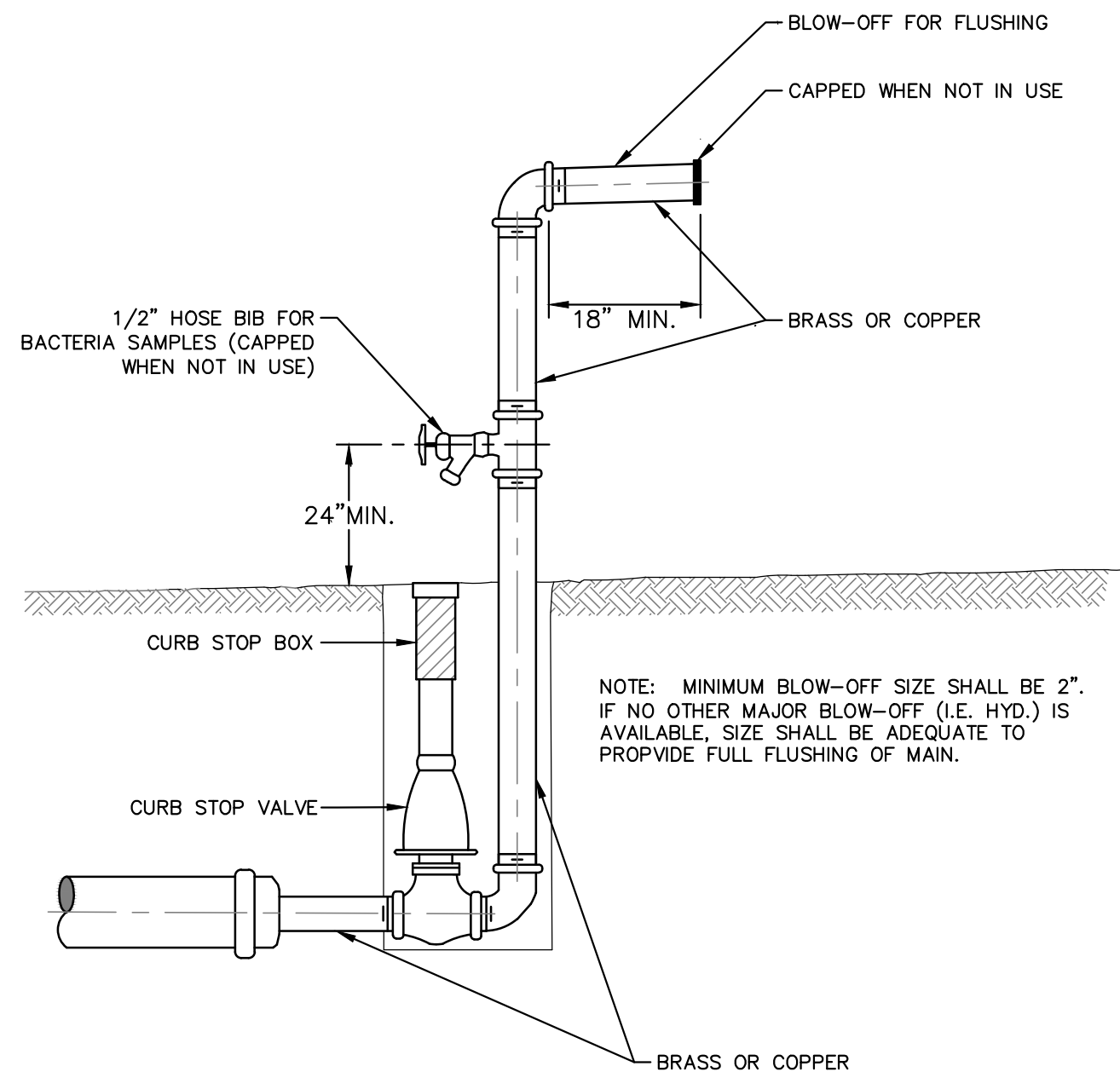


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR  
MAXWELL, WAKEFIELD, LUTZ  
WATER MAIN REPLACEMENT  
#####  
ROAD DETAILS  
SCALE: NTS  
DRAWING No. 2016039-5



APPLIES TO WATER AND/OR SEWER CROSSINGS WITH LESS THAN 1.5' OF VERTICAL CLEARANCE - SEE PLANS FOR LOCATIONS

### CONCRETE UTILITY SADDLE

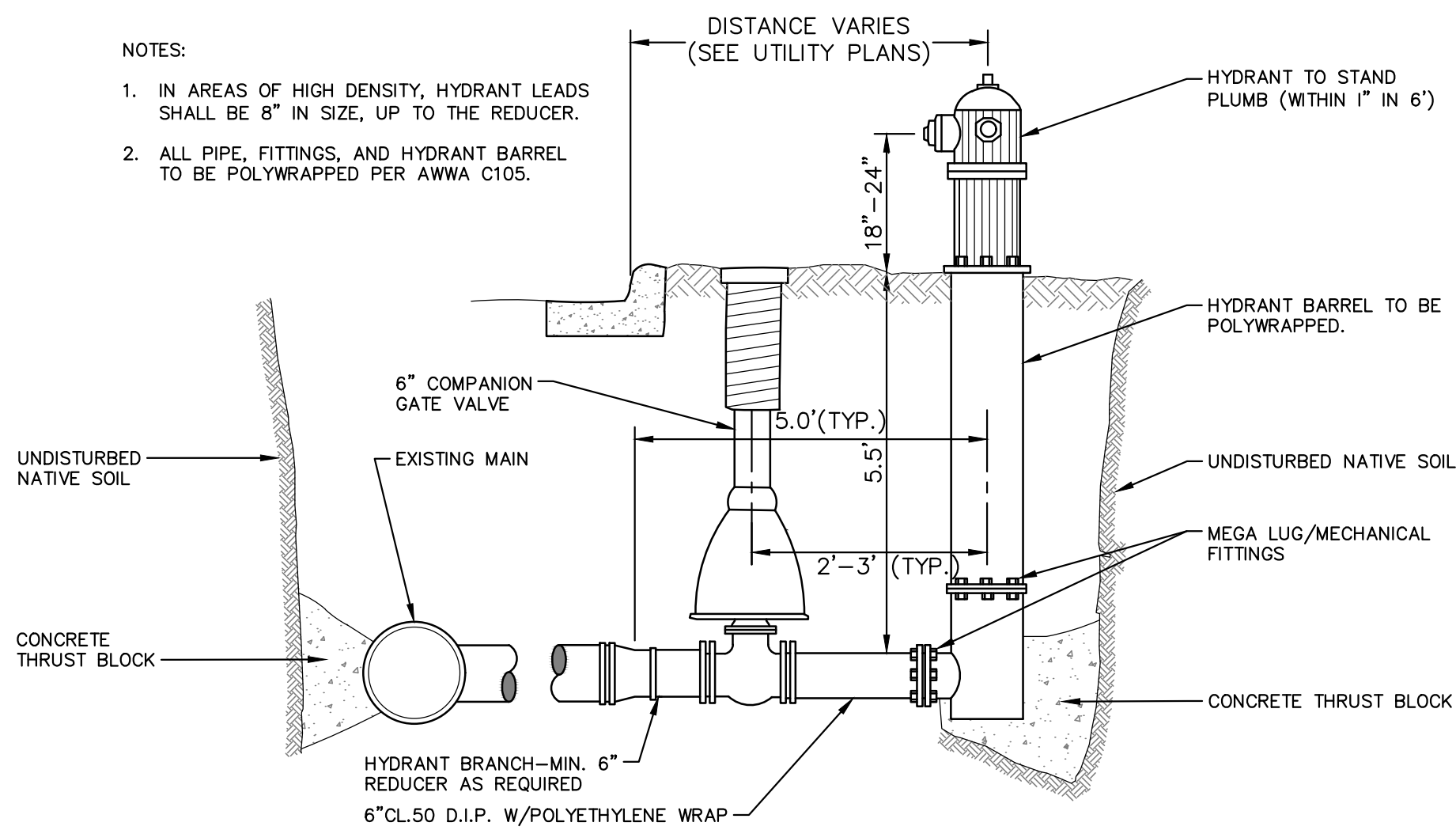


NOTE: MINIMUM BLOW-OFF SIZE SHALL BE 2". IF NO OTHER MAJOR BLOW-OFF (I.E. HYD.) IS AVAILABLE, SIZE SHALL BE ADEQUATE TO PROVIDE FULL FLUSHING OF MAIN.

### TEMPORARY TESTING BLOW OFF SD-W-7

NOTES:

1. IN AREAS OF HIGH DENSITY, HYDRANT LEADS SHALL BE 8" IN SIZE, UP TO THE REDUCER.
2. ALL PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.



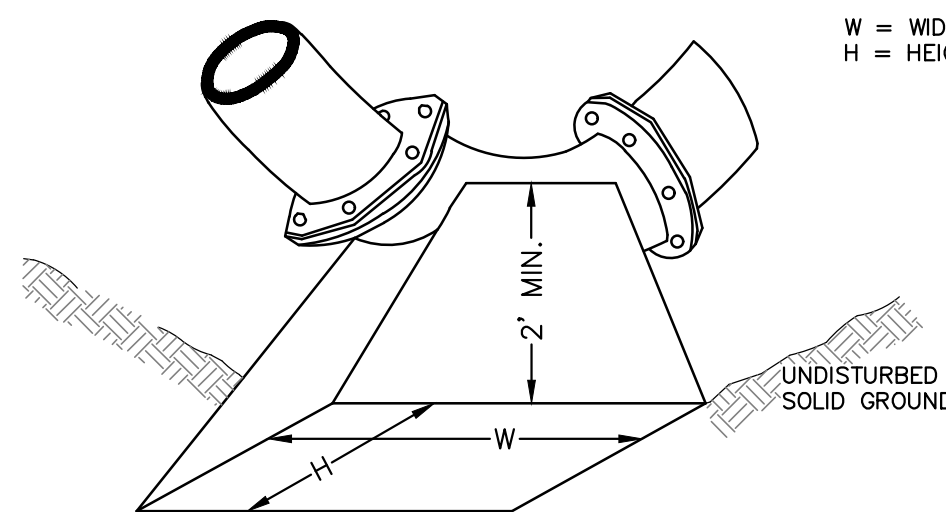
### FIRE HYDRANT ASSEMBLY SD-W-1

### MINIMUM STANDARDS

REACTION BACKING: The Class "A" 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 reaction backing (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, i.e. encasement.

Fittings I.D.	Plug Tee Cross		Bends								Hydrant	
	W	H	90°		45°		22½°		11¼°		W	H
2.5	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1
6	2	1.5	2	2	2	2	2	2	2	2	2	1.5
8	2.5	2	3.5	2	2	2	2	2	2	2	2.5	2
12	3.5	3	5.5	3	3.5	2.5	2	2	2	2	2	2
16	6	3.5	6	4	5	3	3.5	2.5	2	2	2	2
20	8	4	12	4	6	4	4	3	3	2	2	2
24	11	4	17	4	9	4	6	4	3.5	2	2	2
30	11	4	17	4	9	4	6	4	3.5	2	2	2

W = WIDTH IN FEET  
H = HEIGHT IN FEET



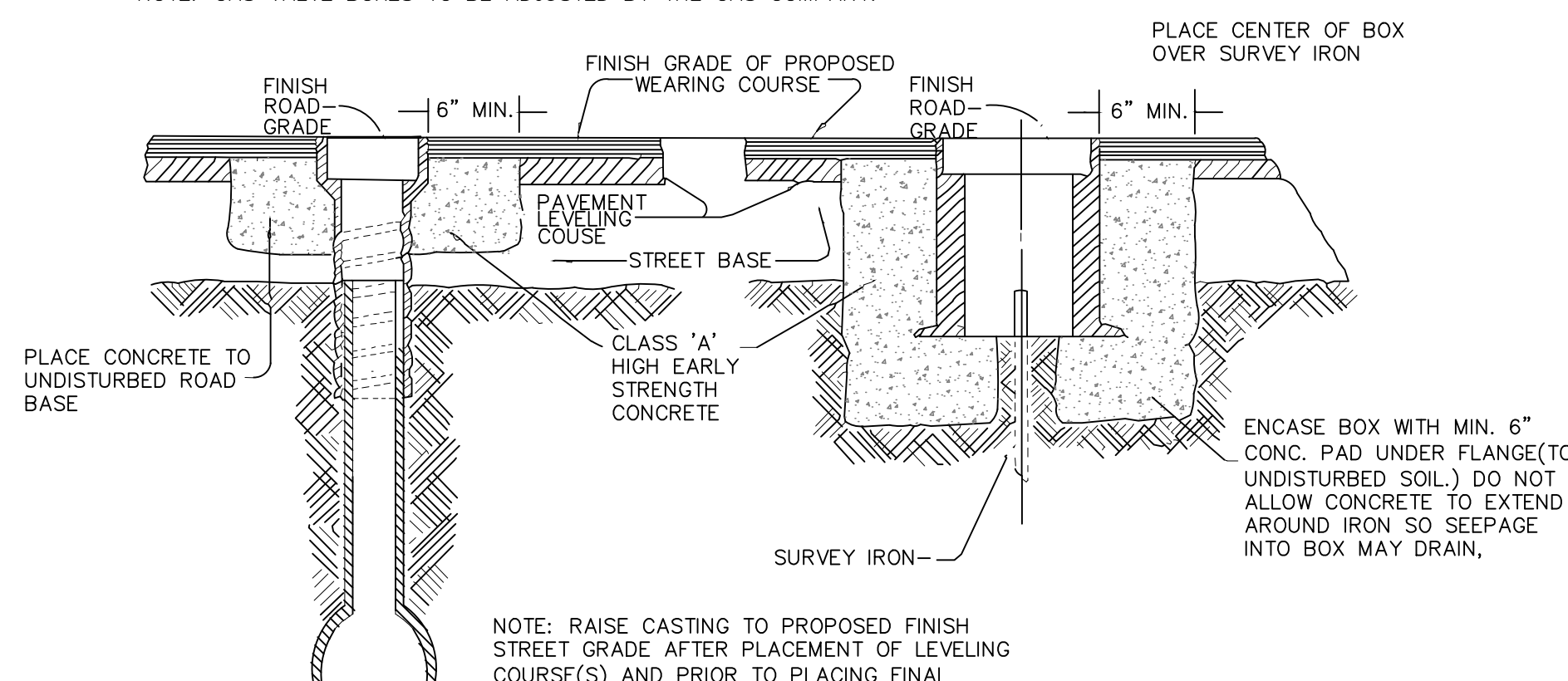
NOTE:

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

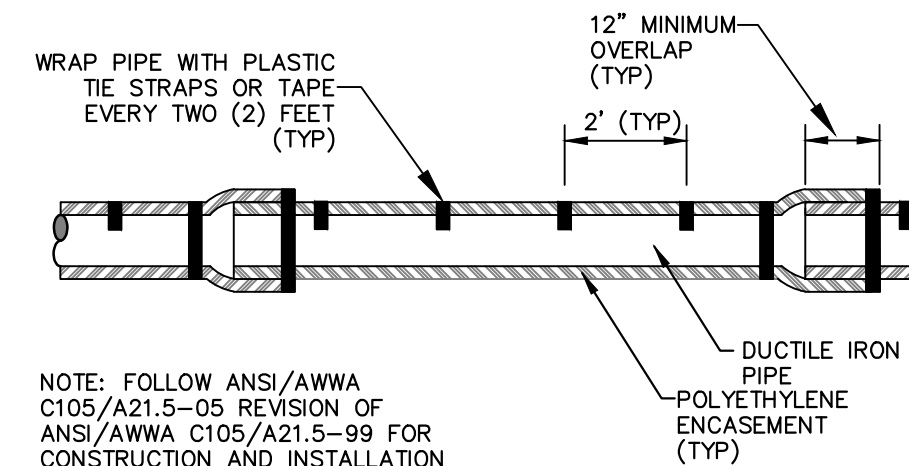
### THRUST BLOCK

### WATER OR GAS VALVE BOX ADJUSTMENT

NOTE: GAS VALVE BOXES TO BE ADJUSTED BY THE GAS COMPANY.



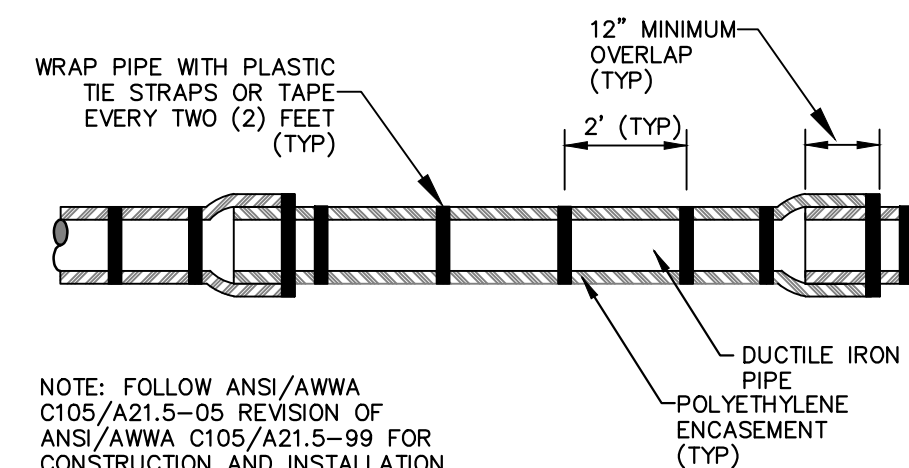
### VALVE/MONUMENT BOX ADJUSTMENT



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

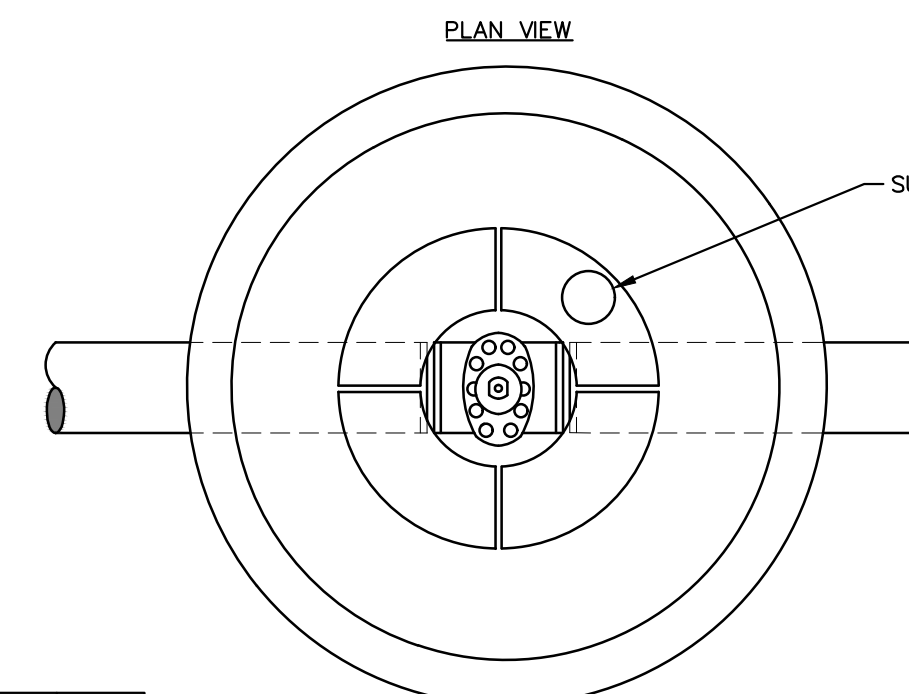
### POLYETHYLENE ENCASUREMENT (DRY INSTALLATION)



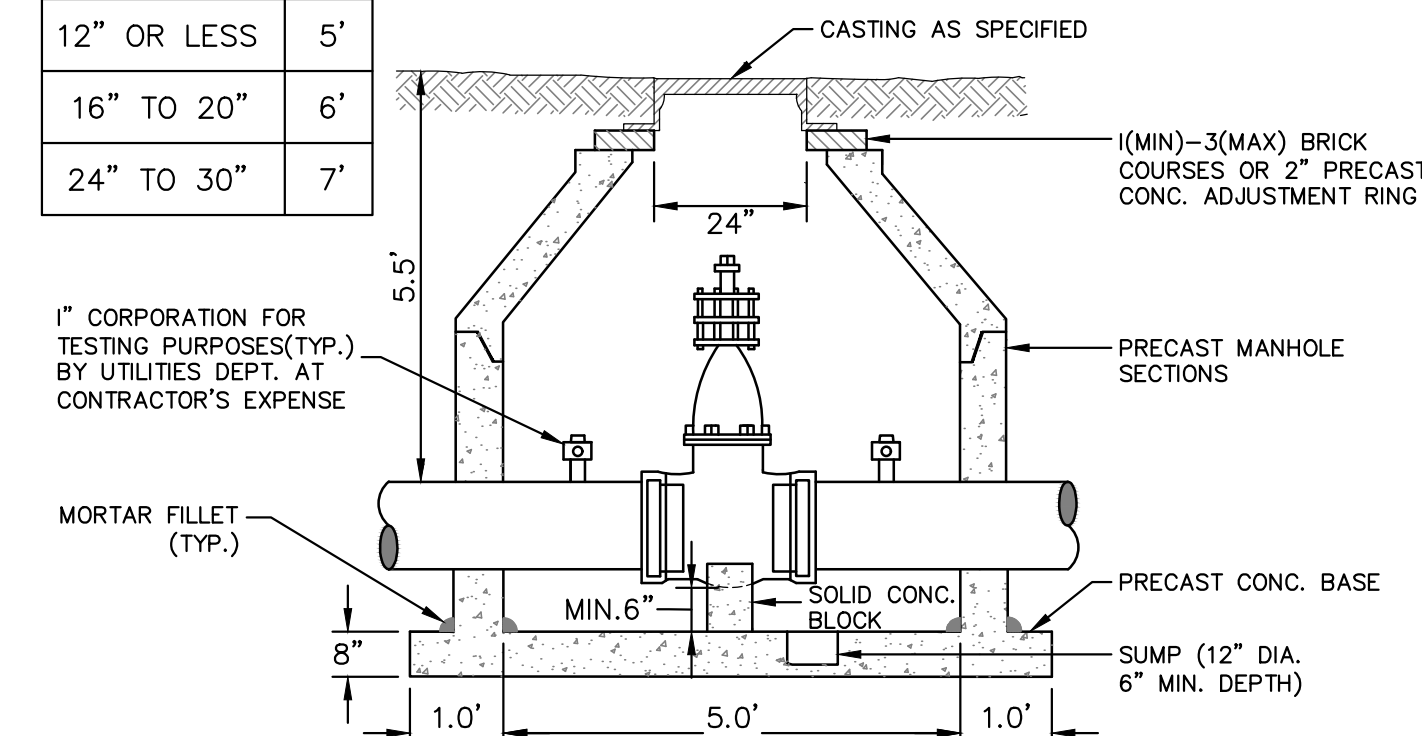
NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

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

### POLYETHYLENE ENCASUREMENT (WET INSTALLATION)



PIPE SIZE	MH DIA.
12" OR LESS	5'
16" TO 20"	6'
24" TO 30"	7'



NOTES:

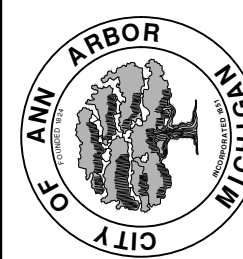
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
2. ALL JOINTS MADE WATER TIGHT WITH RUBBER GASKET JOINTS.
3. NO STEPS PERMITTED

### GATE WELL FOR MAIN



REV.	DATE	DESCRIPTION
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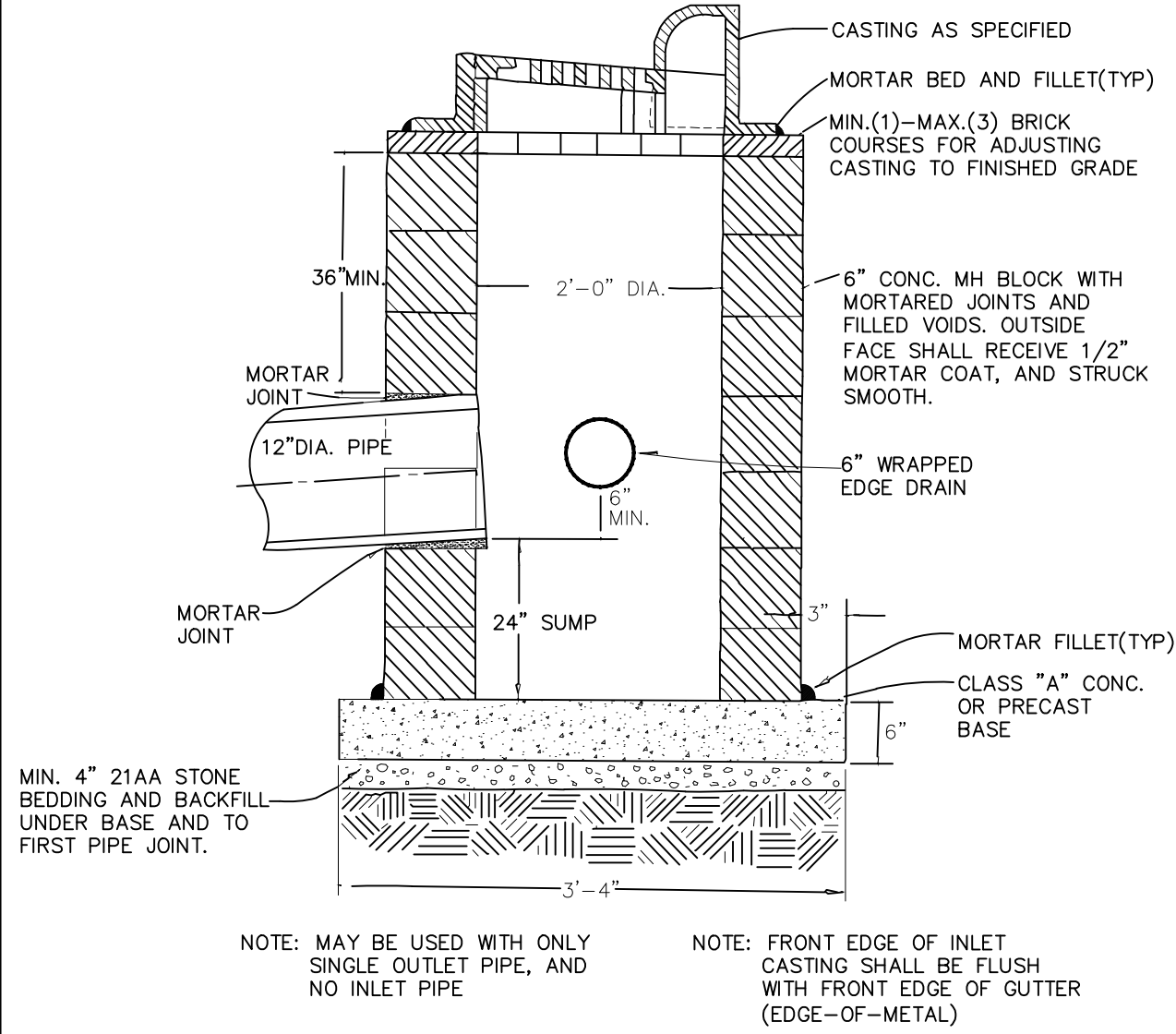


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR  
MAXWELL, WAKEFIELD, LUTZ  
WATER MAIN REPLACEMENT  
#####  
WATER MAIN DETAILS

SCALE: NTS  
DRAWING No. 2016039-6  
SHEET No. 6 OF 17



R:\20160339 Maxwell Wakefield Lutz WM\Plan Production\20160339DET.dwg Dwg Created: 17-Mar-17 - \_a2 standard bw.stb - Plot Date: 17-Mar-17



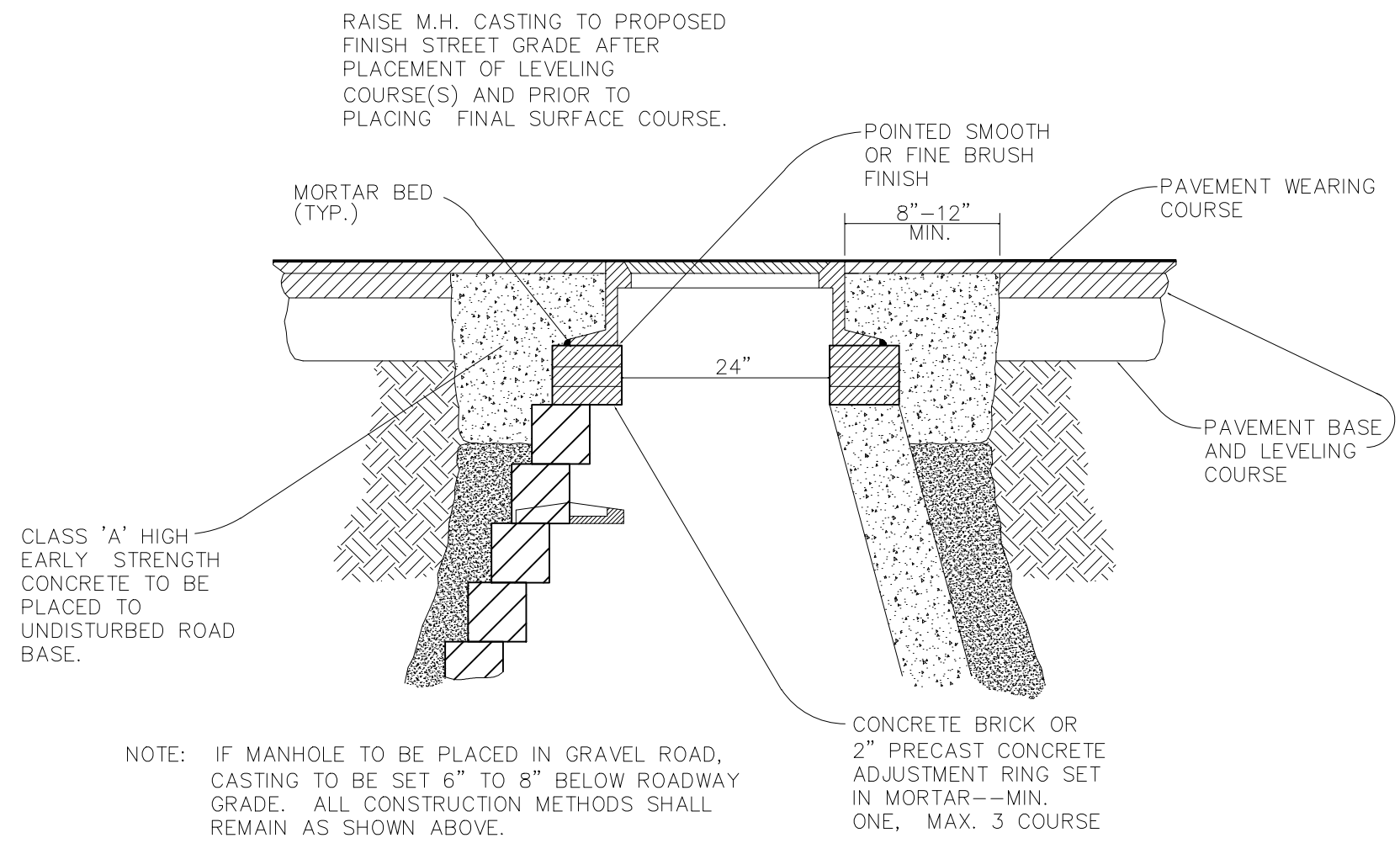
**SINGLE INLET STRUCTURE**

TYPE OF CASTING	NEEHAH FOUNDRY	EAST JORDAN IRON WORKS
Barrier Curb Inlet for 24 and 30 inch curb	R-3013B, Type S grate (500 Pounds)	7045, Type M1 grate (490 Pounds)
Barrier Curb Inlet for 18 inch curb		7210, Type M2 grate (490 Pounds)
*Manhole Frame & Cover	R-1642, Type C Cover (380 Pounds)	1040, Type A Cover (400 Pounds)
**Watertight Manhole Frame and Cover	N/A	1040-WT (400 Pounds)
Monument Box	N/A	8360 (100 Pounds)

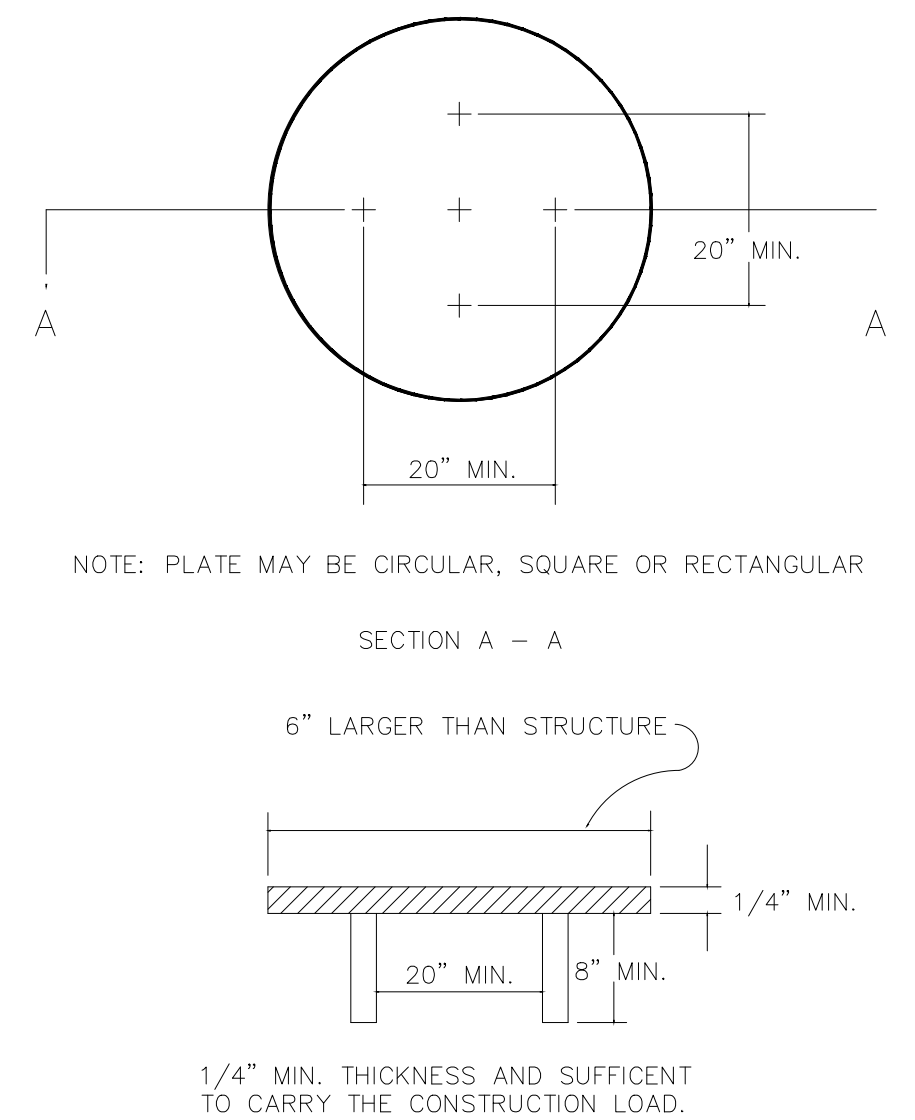
\*Frames and covers must have machined bearing surfaces. Covers must have two (2) 1" vent holes located opposite each other and 6" from the edge of the cover. Each cover shall have "Sewer", "S" or "Water", "W" cast in the surface, whichever is applicable.

\*\*Frames and covers must have machined bearing surfaces. Each cover shall have "Sewer", "S" or "Water", "W" cast in the surface, whichever is applicable.

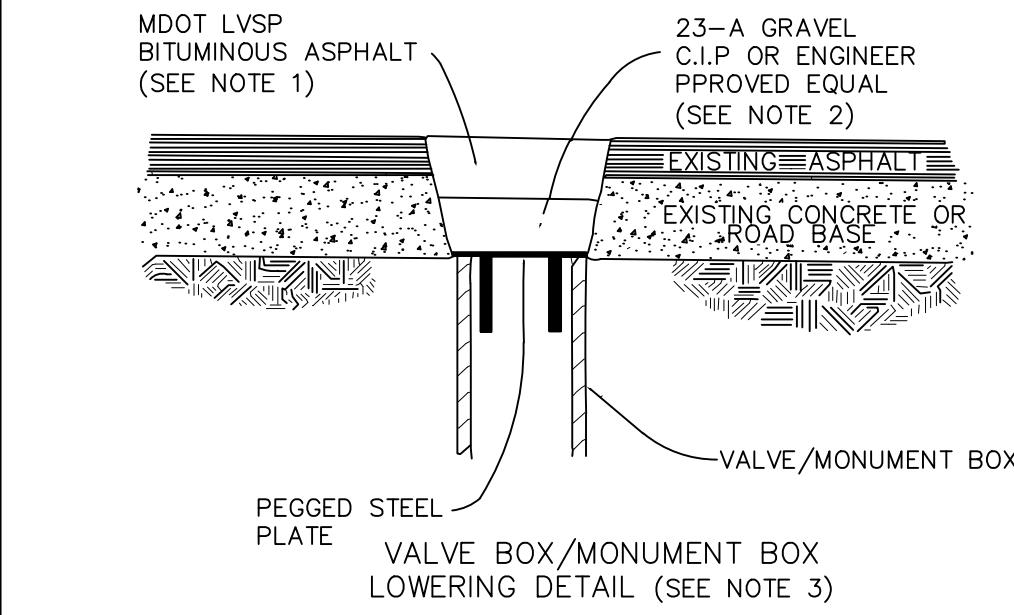
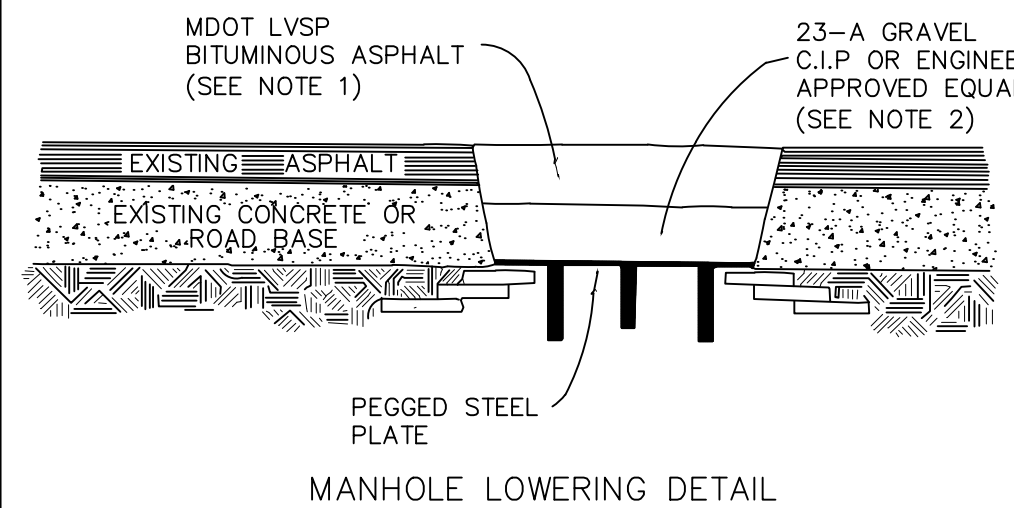
**STANDARD CASTING SCHEDULE**



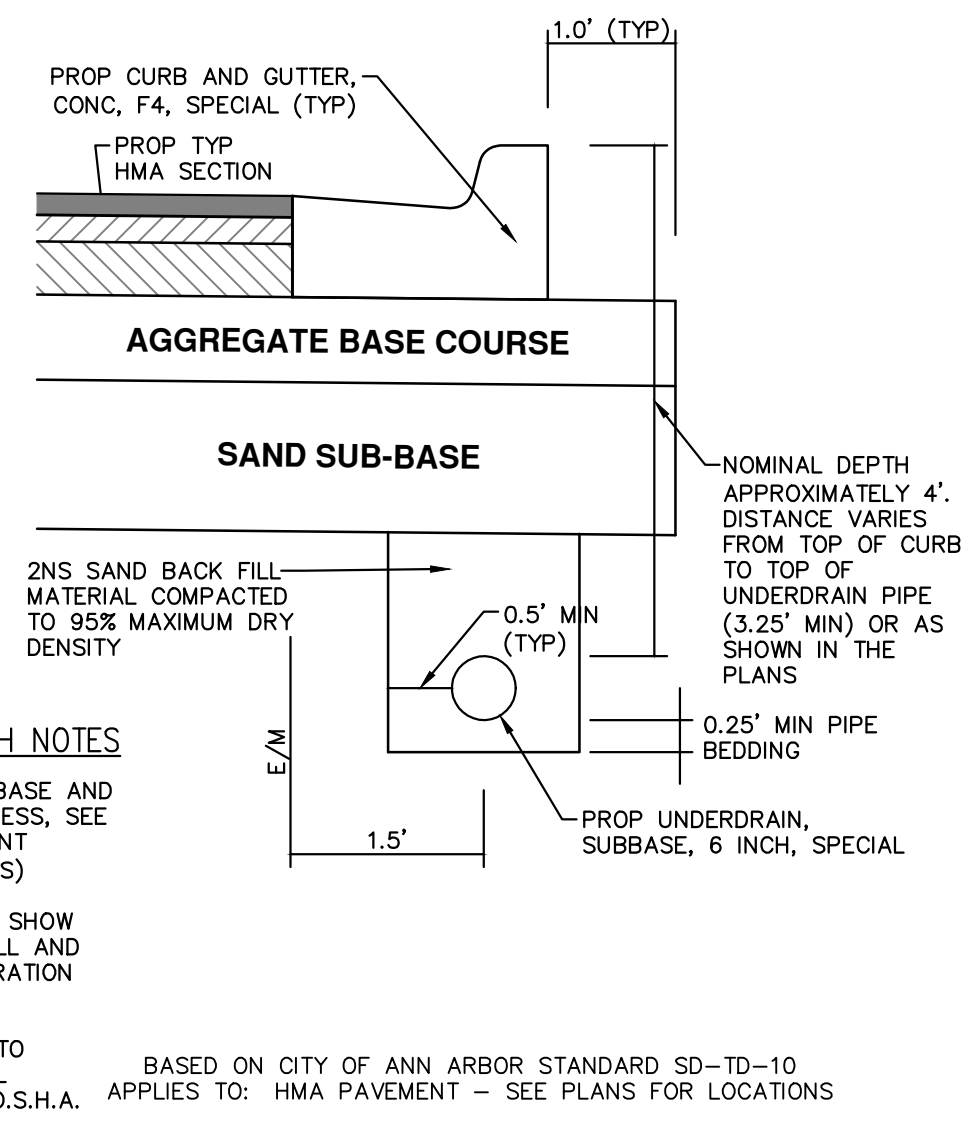
**MANHOLE CASTING ADJUSTMENT**



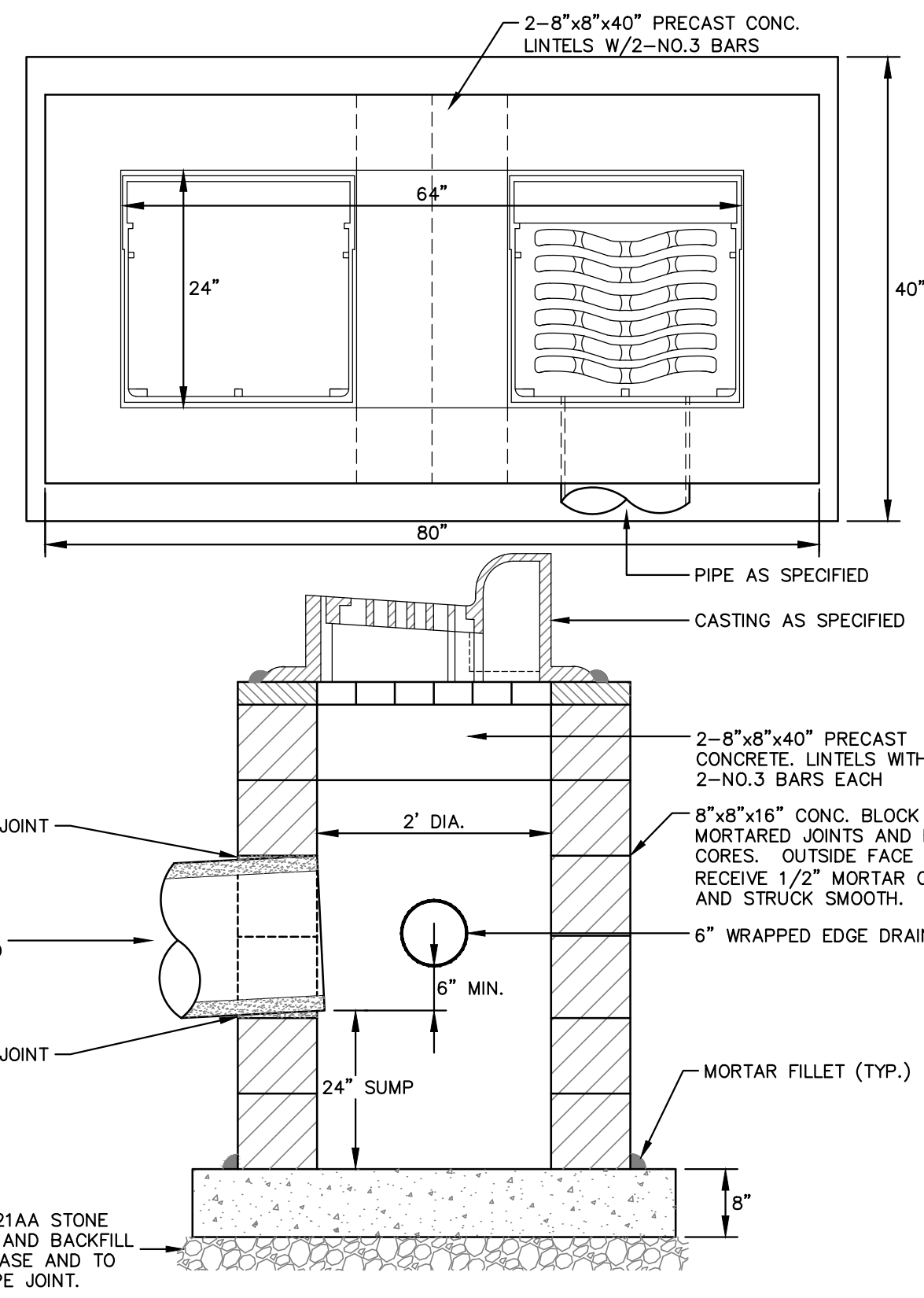
**STRUCTURE PLATE**



**MANHOLE & VALVE/MONUMENT BOX LOWERING**



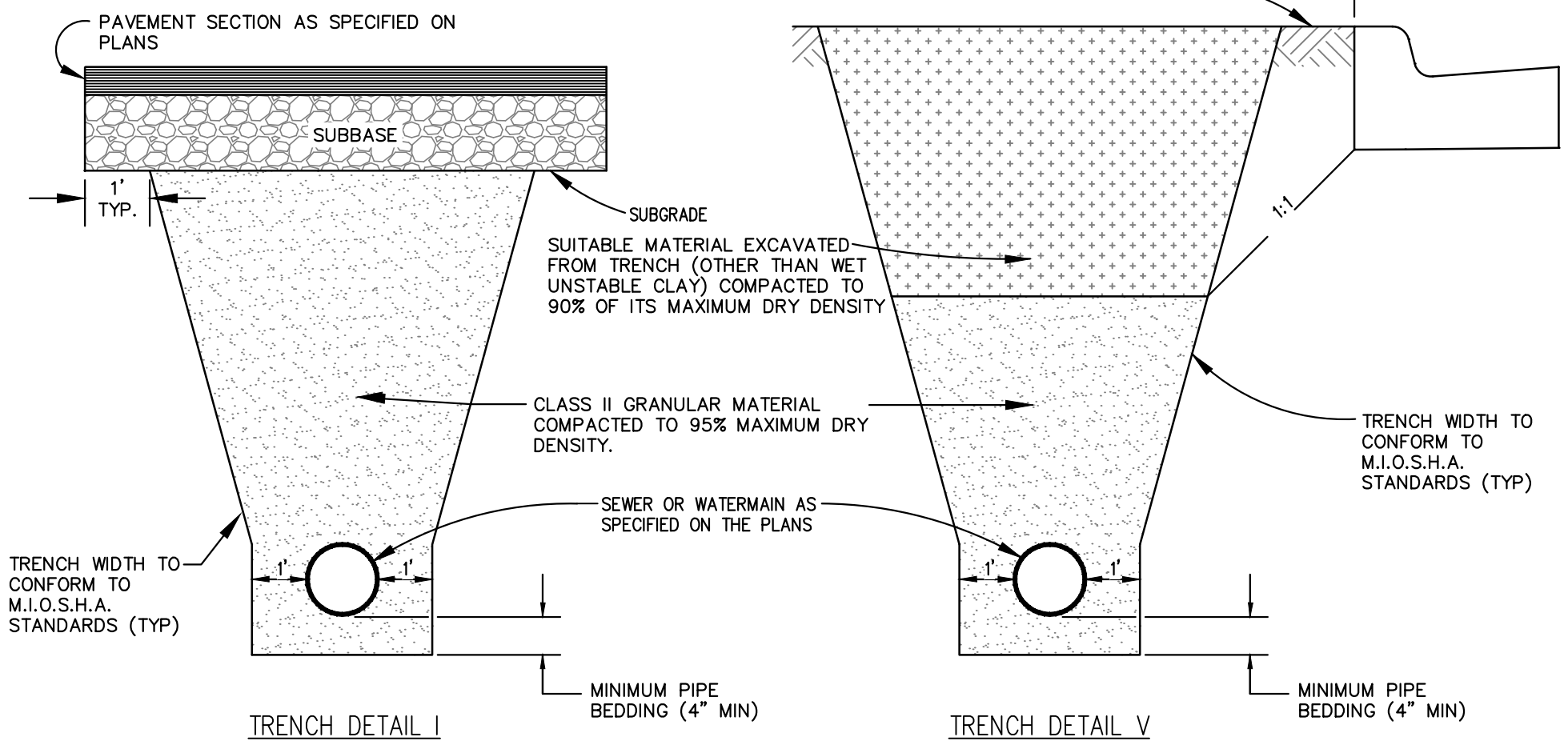
**TRENCH DETAIL FOR UNDERDRAIN (UNDER HMA PAVEMENT)**



**DOUBLE INLET STRUCTURE SD-S-11**

**UTILITY TRENCH DETAILS**

**UTILITY TRENCH NOTES**  
NOTE: TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY.  
NOTE: ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS



**TRENCH DETAIL I**

**TRENCH DETAIL V**

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

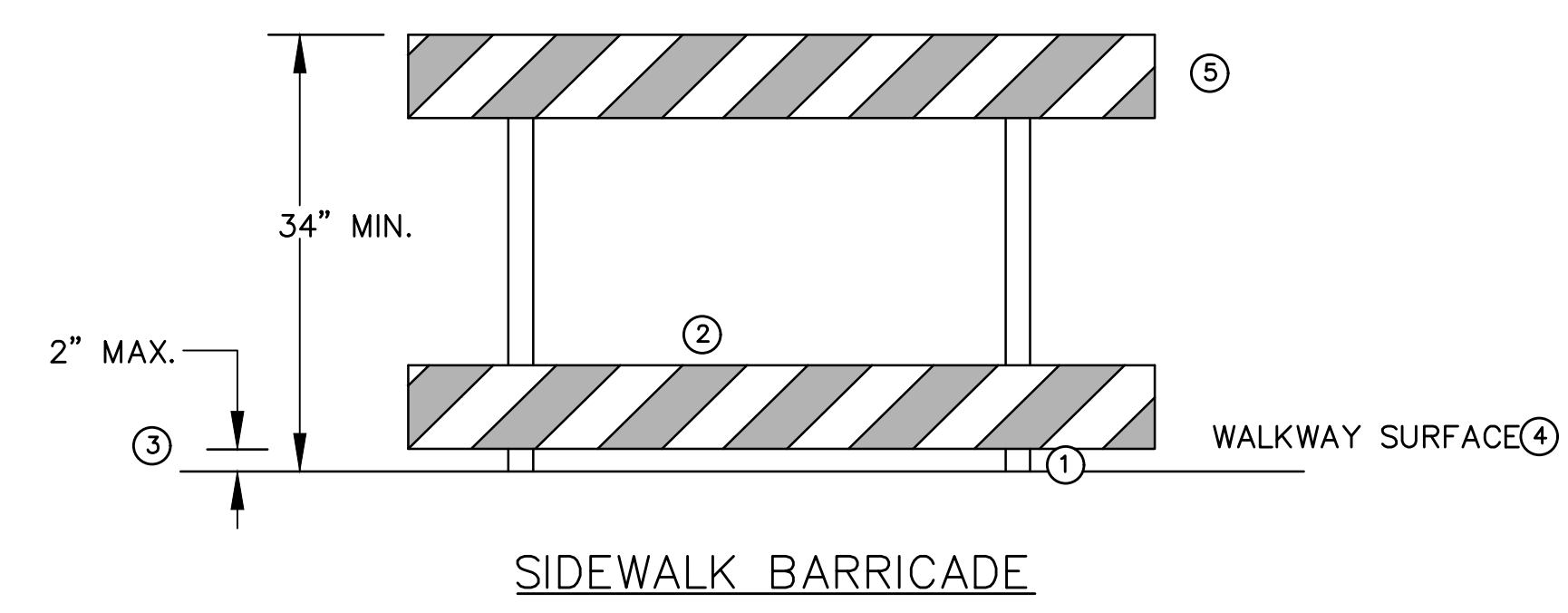
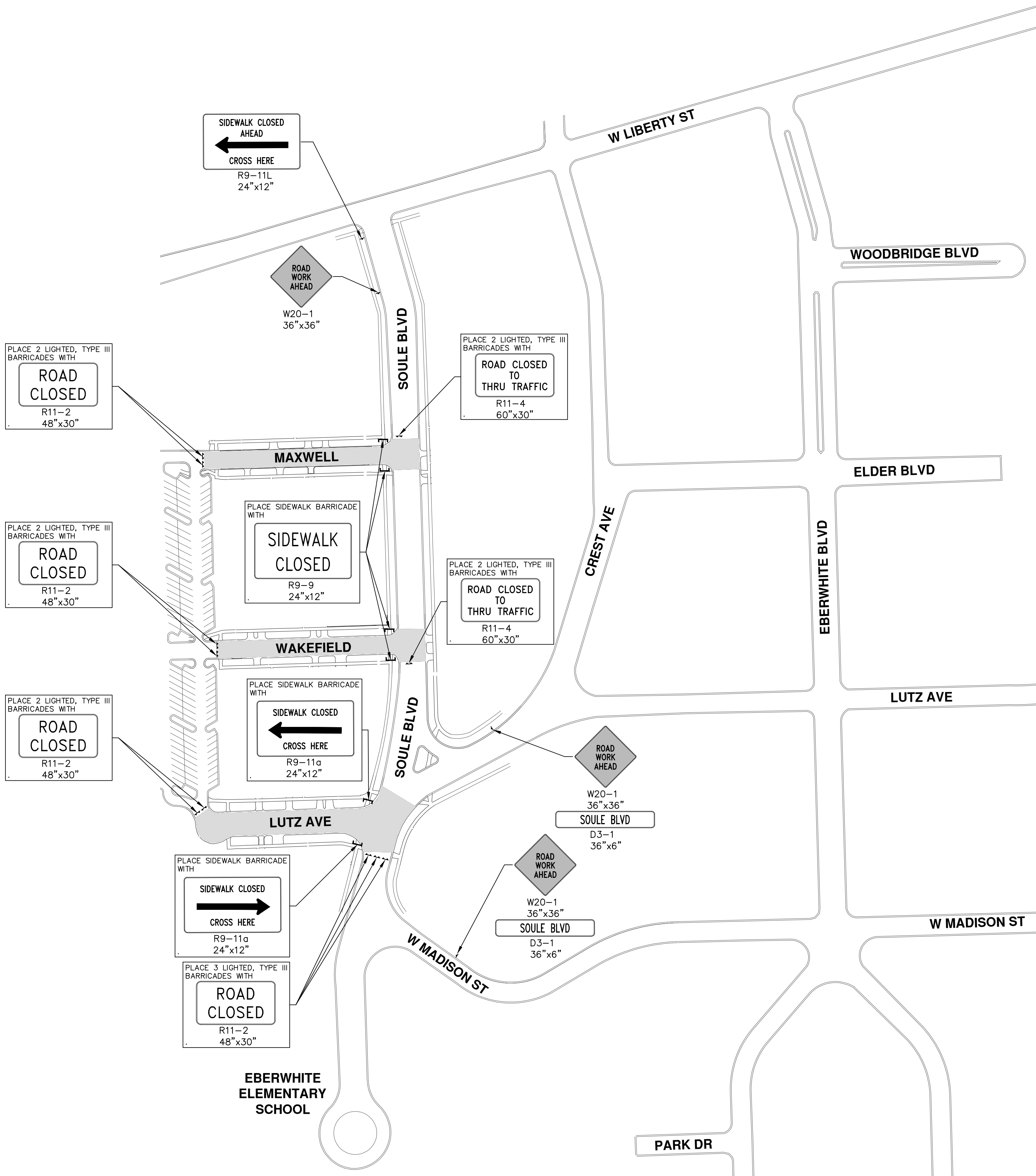
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00	INTERNAL CITY REVIEW	JKA	12/12/16	DATE	DRAWN	CHECKED

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**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**MAXWELL, WAKEFIELD, LUTZ**  
**WATER MAIN REPLACEMENT**  
#####  
STORM SEWER DETAILS

SCALE: NTS  
DRAWING No. 2016039-7  
SHEET No. 7 OF 17

R:\2016039 Maxwell Wakefield Lutz WM\Plan Production\2016039MTRF.dwg Dwg Created: 16-Mar-17 - \_02 standard bw.stb - Plot Date: 17-Mar-17

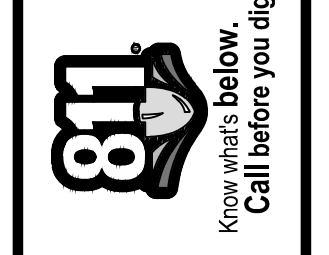


**GENERAL NOTES**

- 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 CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIERS APPLICATION.
- BARRICADES SHALL BE PLACED ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE.
- WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, 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. 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.
- 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 A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO TRAFFIC (BIKES, PEDESTRIANS) IS REDUCED ENOUGH TO CAUSE HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
- 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.

**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 6 INCHES MIN. HIGH 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 A WALKWAY SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT.
- ⑤ LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES HIGH OR GREATER.



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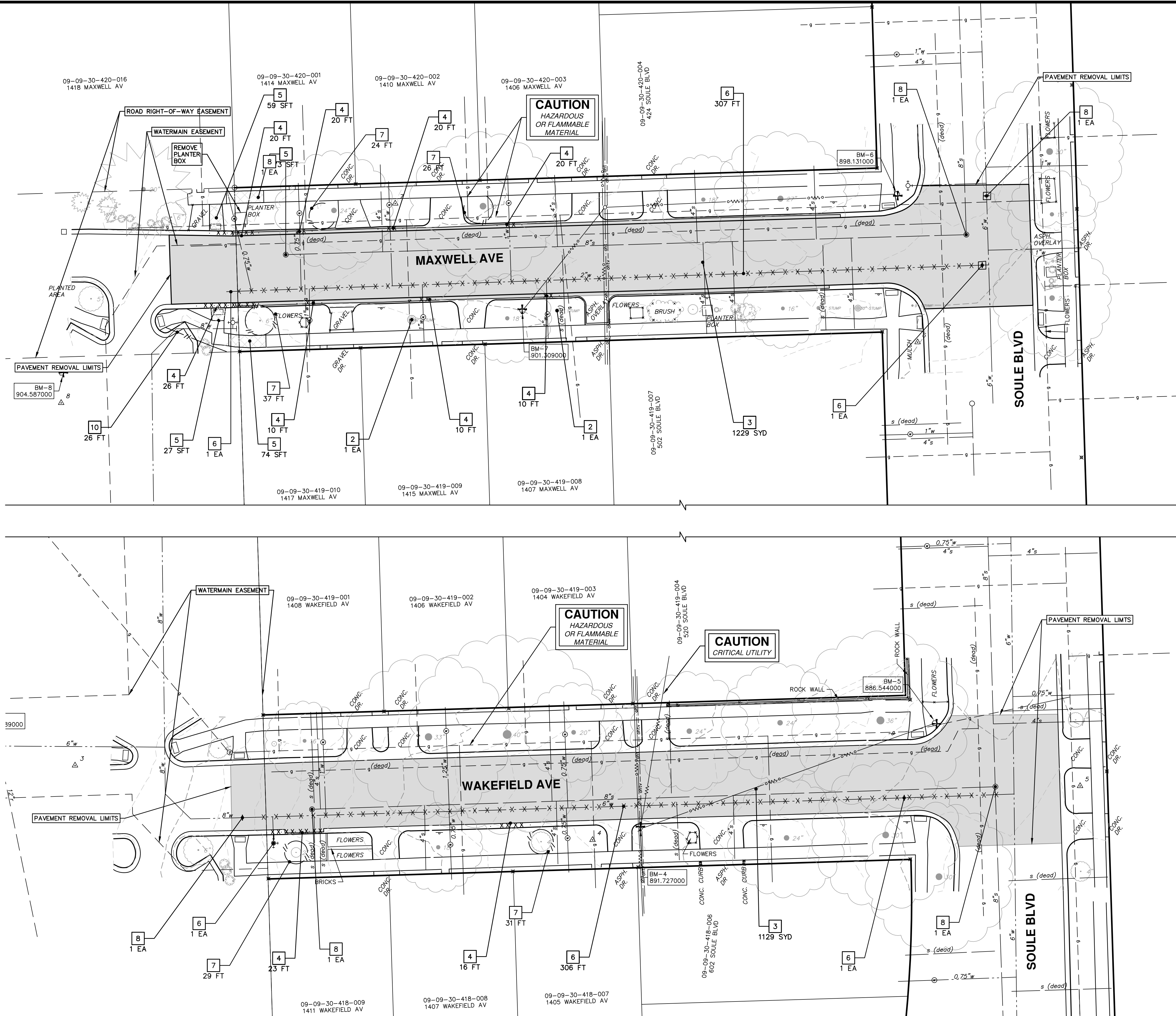


**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**MAXWELL, WAKEFIELD, LUTZ**  
**WATER MAIN REPLACEMENT**  
TRAFFIC CONTROL

SCALE PLAN: 1" = 100'  
DRAWING No. 2016039-8



R:\2016039 Maxwell Wakefield Lutz WM\Plan Production\2016039REM.dwg Dwg Created: 17-Mar-17 - a2 standard bw.stb - Plot Date: 17-Mar-17



REMOVAL KEY	
KEY	DESCRIPTION
1	TREE REMOVAL, 8" AND LARGER
2	STUMP REMOVAL, 8" AND LARGER
3	REMOVE HMA PAVEMENT*
4	REMOVE CONCRETE CURB OR CURB AND GUTTER - ANY TYPE*
5	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS*
6	ABANDON WATER MAIN PIPE AND APPURTENANCES - SEE NOTES SHEETS 10-13
7	PROTECTIVE FENCE
8	ADJUST STRUCTURE COVER
9	INLET FILTER
10	SILT FENCE
11	DR STRUCTURE, REM

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS

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00 INTERNAL CITY REVIEW JKA AMW  
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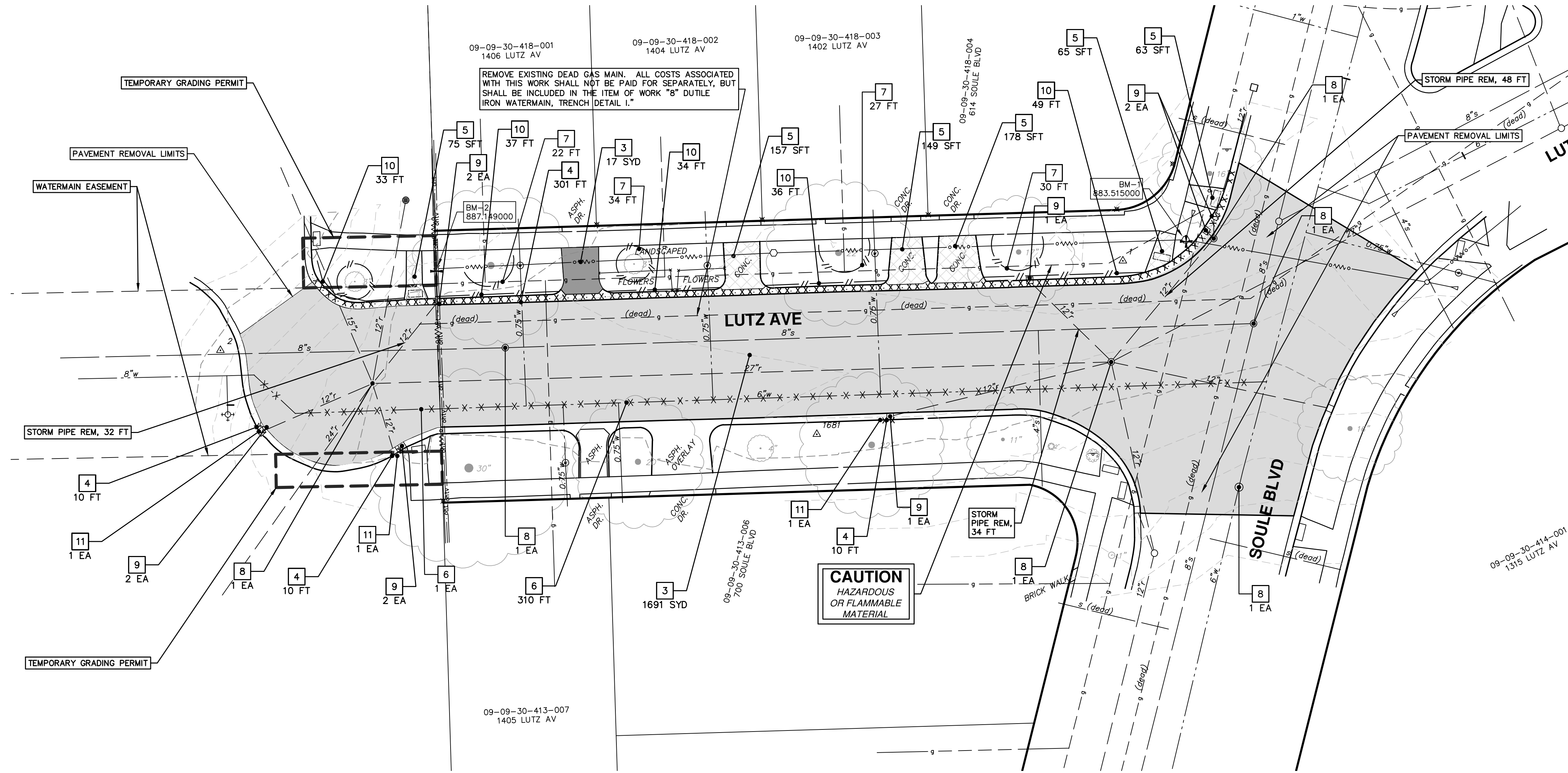
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**CITY OF ANN ARBOR**

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**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
SCALE PLAN: 1" = 20'  
SHEET No. **9 OF 17**

**MAXWELL, WAKEFIELD, LUTZ**  
**WATER MAIN REPLACEMENT**  
REMOVALS  
MAXWELL AVE. AND WAKEFIELD AVE.  
DRAWING No. **2016039-9**



REMOVAL KEY	
KEY	DESCRIPTION
1	TREE REMOVAL, 8" AND LARGER
2	STUMP REMOVAL, 8" AND LARGER
3	REMOVE HMA PAVEMENT*
4	REMOVE CONCRETE CURB OR CURB AND GUTTER - ANY TYPE*
5	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS*
6	ABANDON WATER MAIN PIPE AND APPURTENANCES - SEE NOTES SHEETS 10-13
7	PROTECTIVE FENCE
8	ADJUST STRUCTURE COVER
9	INLET FILTER
10	SILT FENCE
11	DR STRUCTURE, REM

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
 SCALE PLAN: 1" = 20'  
 DRAWING No. **2016039-10**

**MAXWELL, WAKEFIELD, LUTZ**  
**WATER MAIN REPLACEMENT**  
 REMOVALS  
 LUTZ AVE

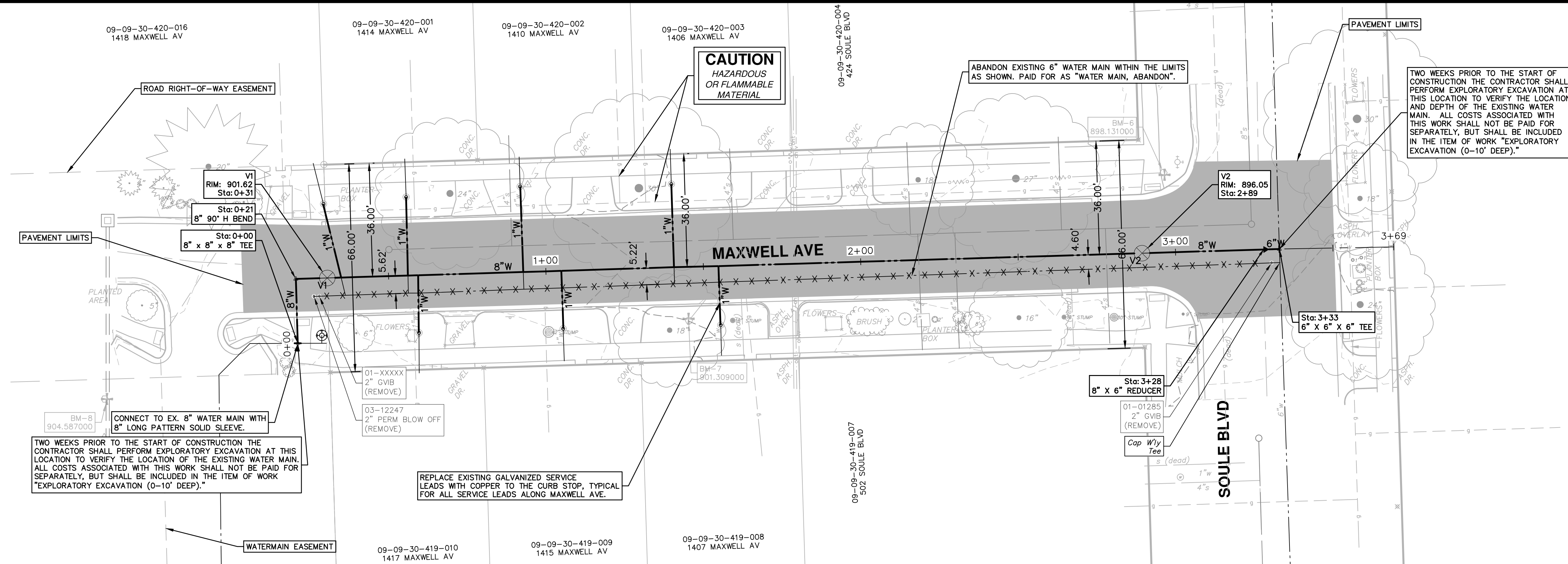
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SHEET No. **10 OF 17**

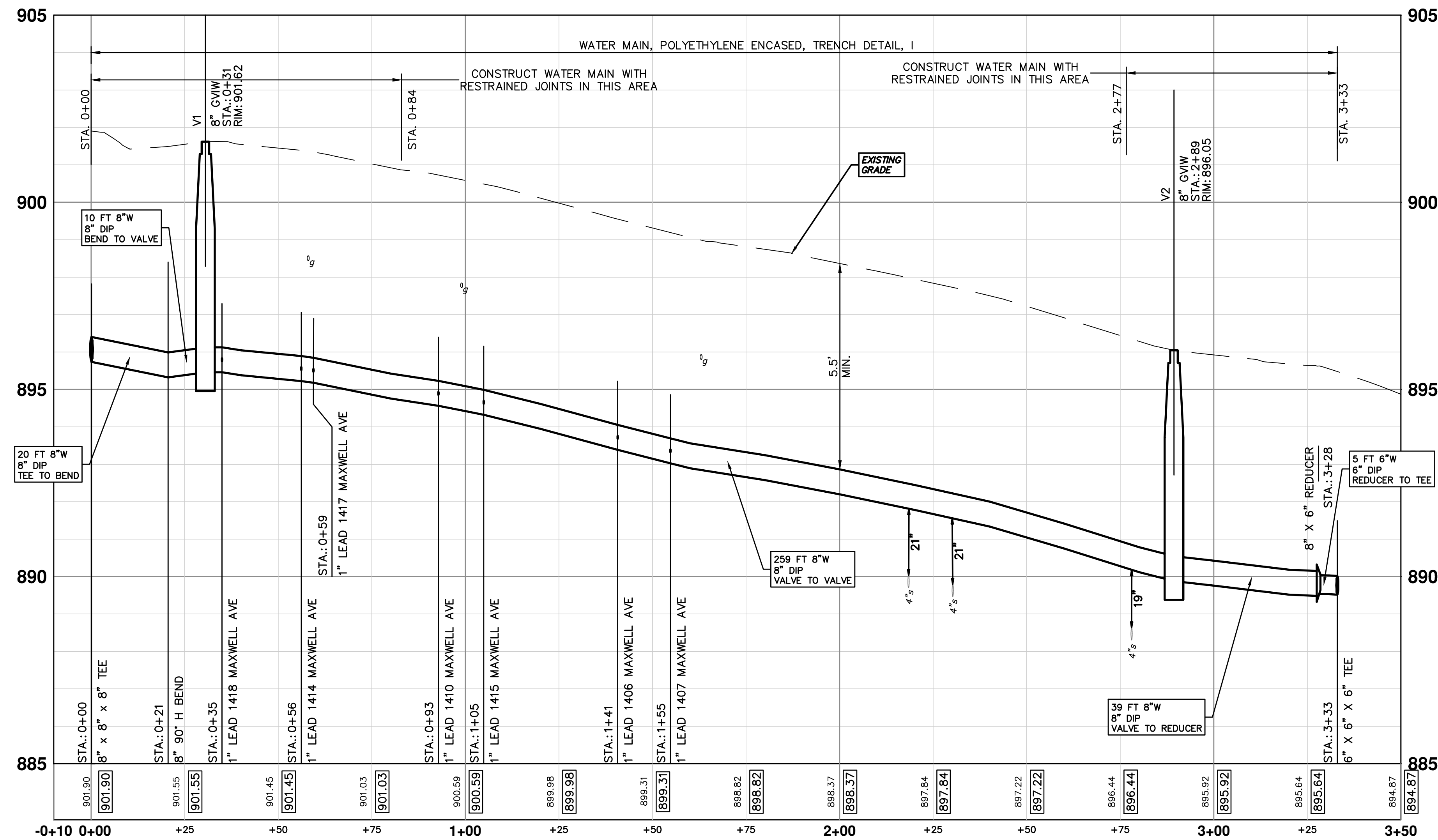
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TWO WEEKS PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION TO VERIFY THE LOCATION AND DEPTH OF THE EXISTING WATER MAIN. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY EXCAVATION (0-10' DEEP)."

REPLACE EXISTING GALVANIZED SERVICE LEADS WITH COPPER TO THE CURB STOP, TYPICAL FOR ALL SERVICE LEADS ALONG MAXWELL AVE.

TWO WEEKS PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION TO VERIFY THE LOCATION AND DEPTH OF THE EXISTING WATER MAIN. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY EXCAVATION (0-10' DEEP)."



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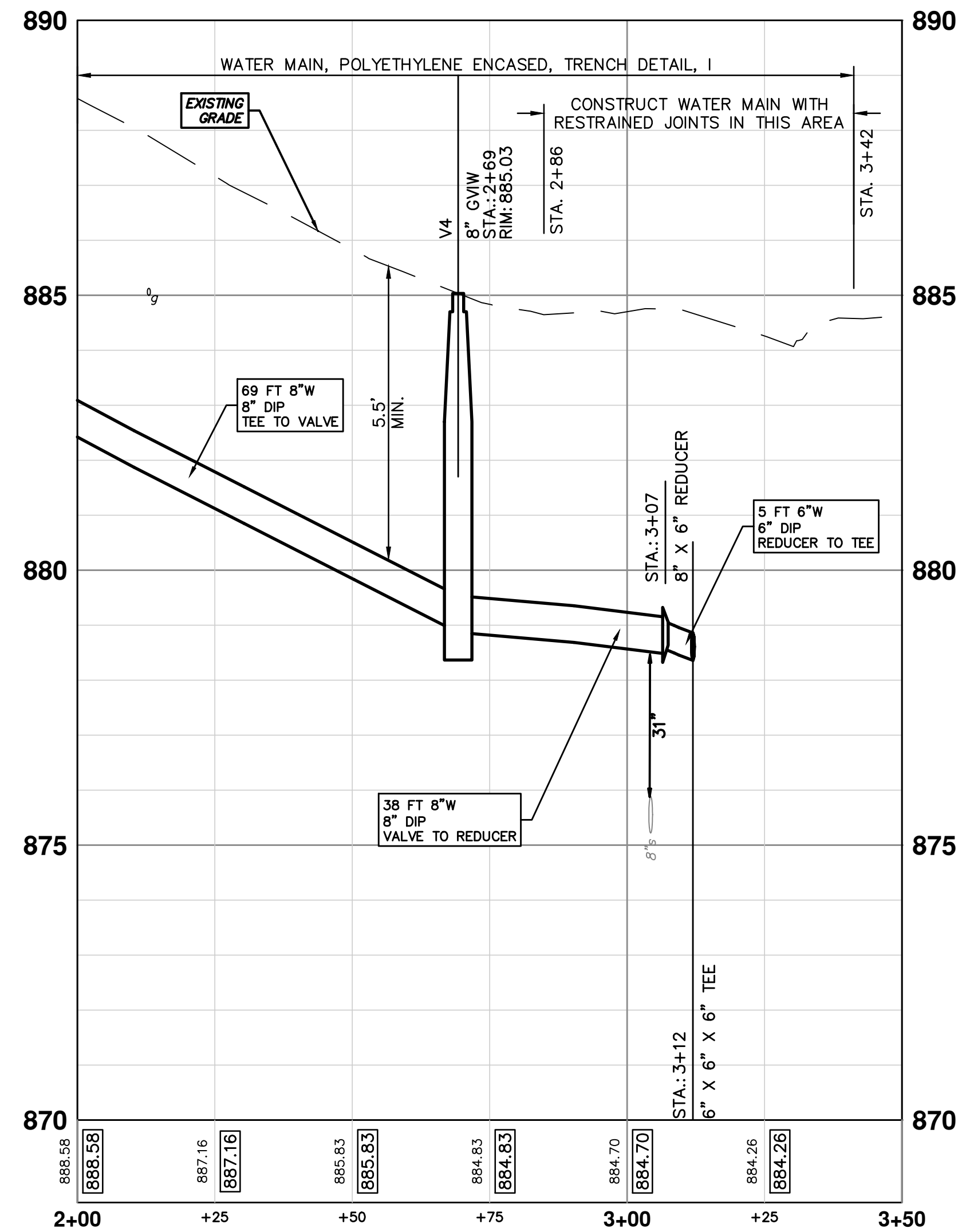
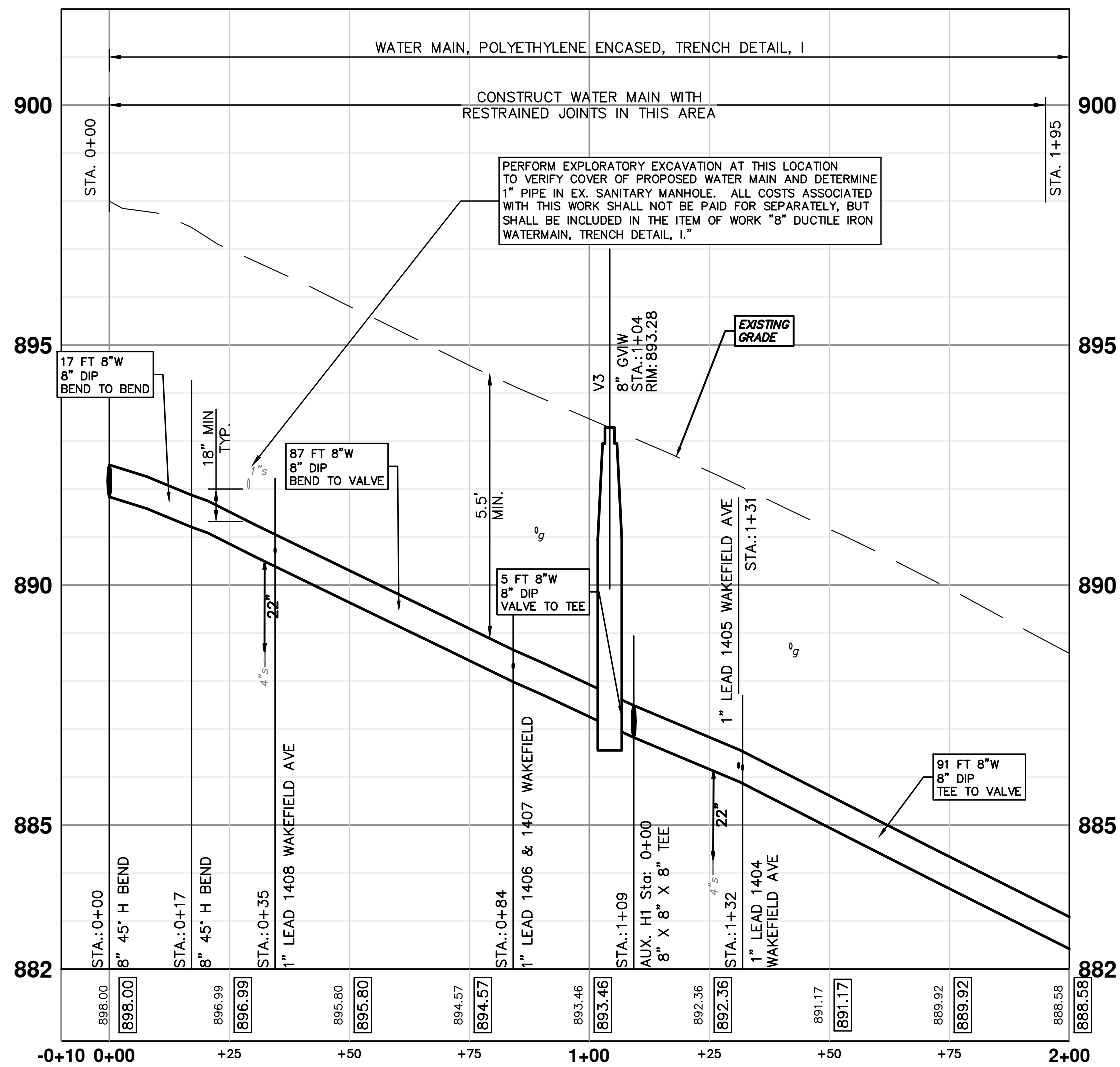
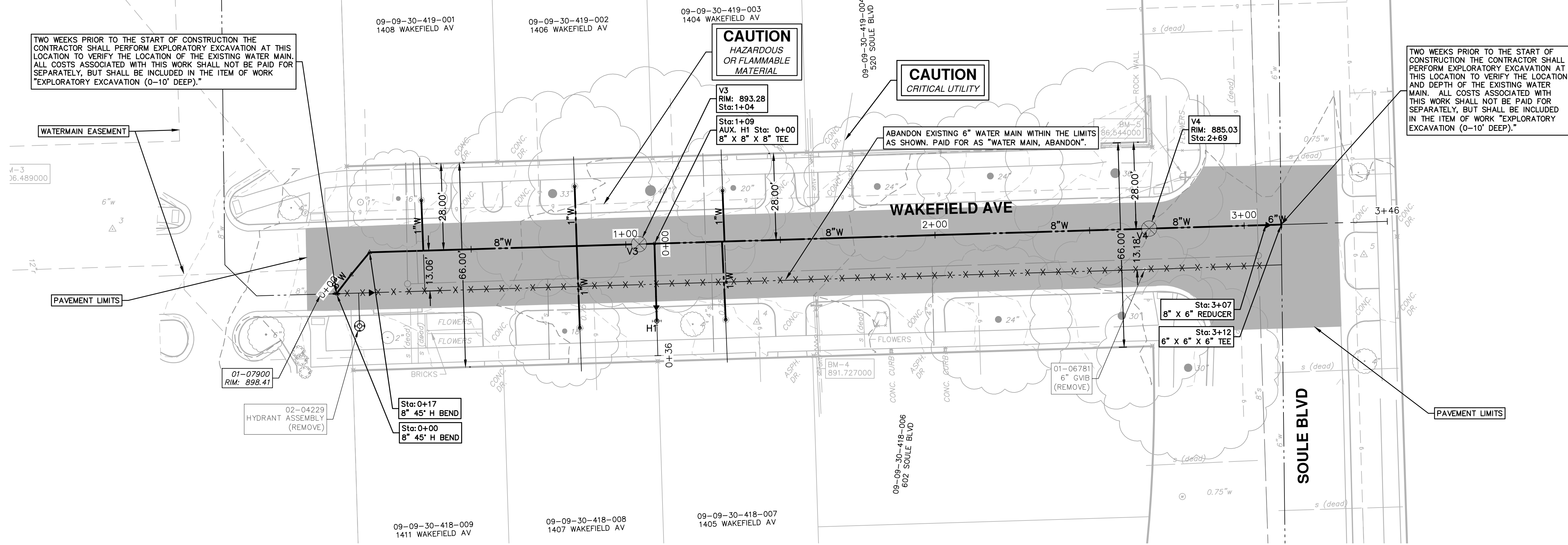


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR  
MAXWELL, WAKEFIELD, LUTZ  
WATER MAIN REPLACEMENT  
WATER MAIN PLAN AND PROFILE  
MAXWELL AVE.

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING NO.  
2016039-11



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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V3	8" GVW	1+04	893.28	6.22
V4	8" GVW	2+69	885.03	6.17

TWO WEEKS PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION TO VERIFY THE LOCATION OF THE EXISTING WATER MAIN. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY EXCAVATION (0-10' DEEP)."

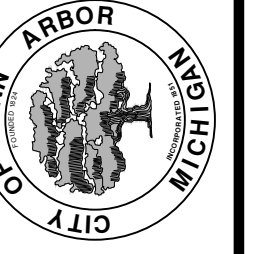
**CAUTION**  
HAZARDOUS OR FLAMMABLE MATERIAL

**CAUTION**  
CRITICAL UTILITY

TWO WEEKS PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION TO VERIFY THE LOCATION AND DEPTH OF THE EXISTING WATER MAIN. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY EXCAVATION (0-10' DEEP)."

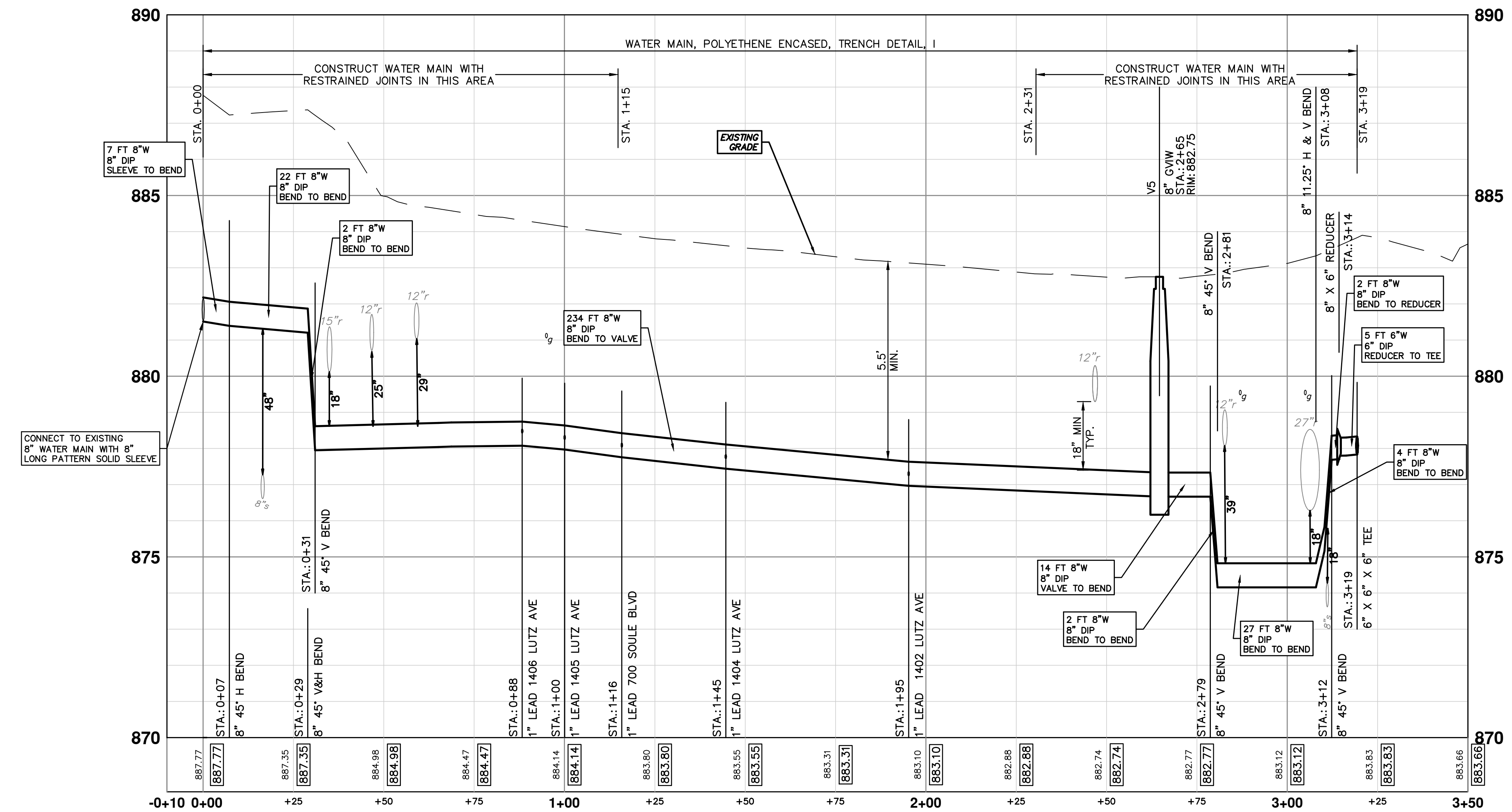
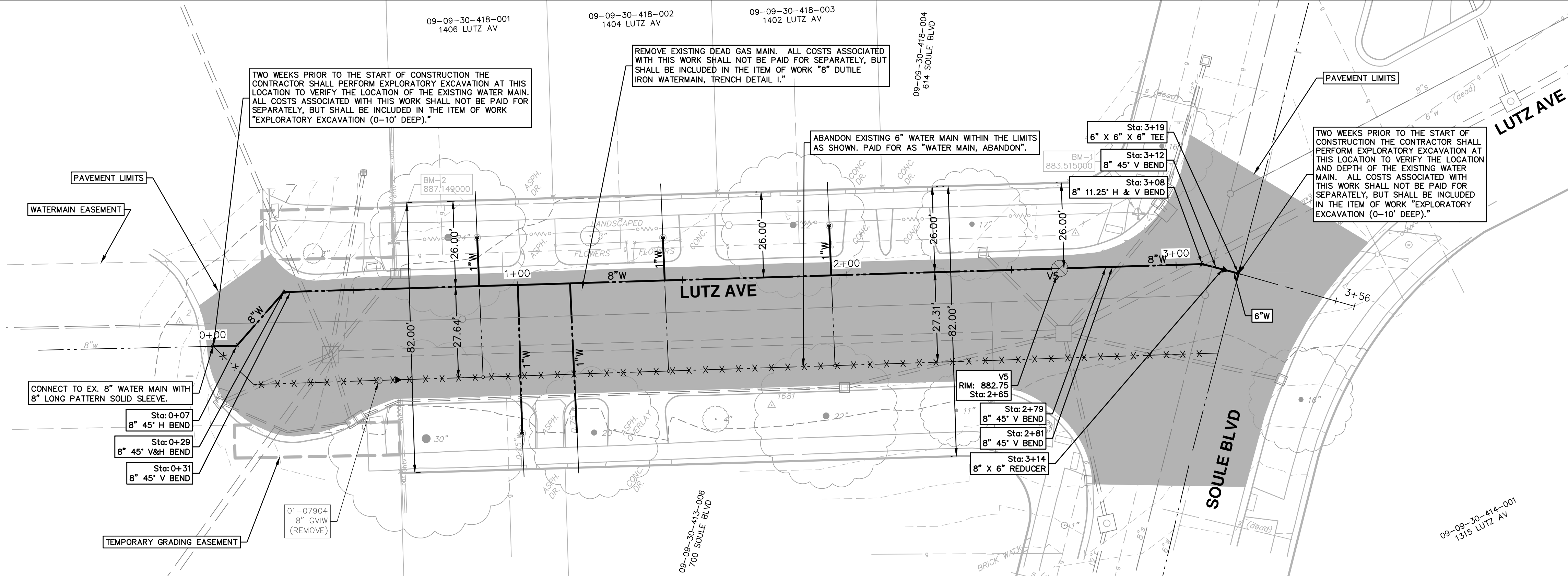


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**MAXWELL, WAKEFIELD, LUTZ**  
**WATER MAIN REPLACEMENT**  
WATER MAIN PLAN AND PROFILE  
WAKEFIELD AVE.

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No. 2016039-12



STRUCTURE	TYPE	STATION	RIM	DEPTH
V5	8" GVW	2+65	882.75	6.08

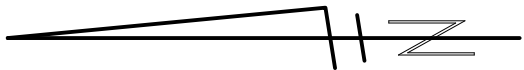
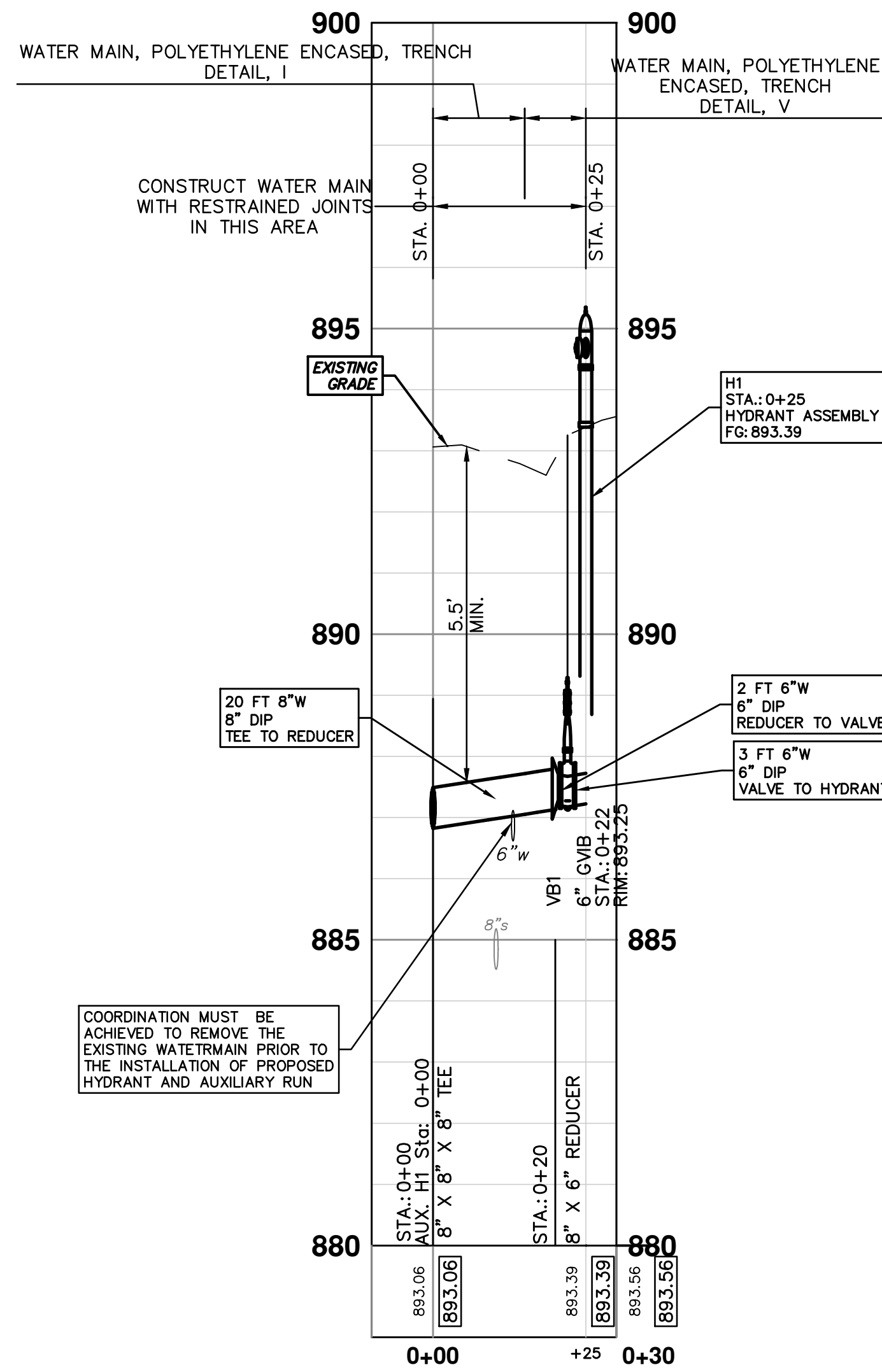
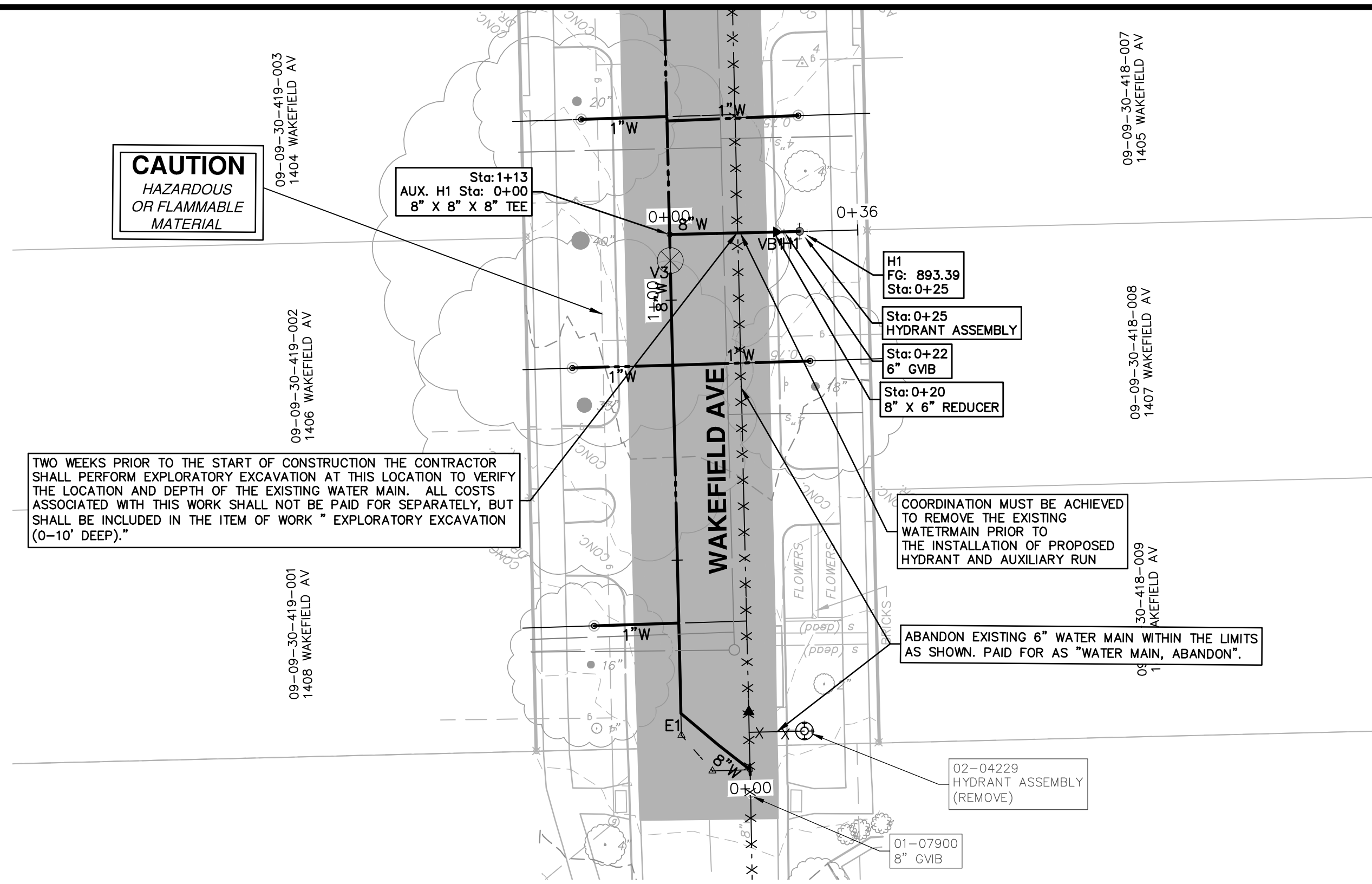
**811**  
Know what's below. Call before you dig.

01 BID SET 3/17/17 JKA  
00 INTERNAL CITY REVIEW 12/12/16 DATE  
REV. DESCRIPTION

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**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
MAXWELL, WAKEFIELD, LUTZ  
WATER MAIN REPLACEMENT  
WATER MAIN PLAN AND PROFILE  
LUTZ AVE.

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No. 2016039-13  
SHEET No. 13 OF 17



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	FG	DEPTH
H1	HYDRANT ASSEMBLY	0+25	893.39	6.16

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
VB1	6" GVB	0+22	893.25	6.08



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
01	BID SET	3/17/17	JKA	AMW
00	INTERNAL CITY REVIEW	12/12/16	JKA	AMW

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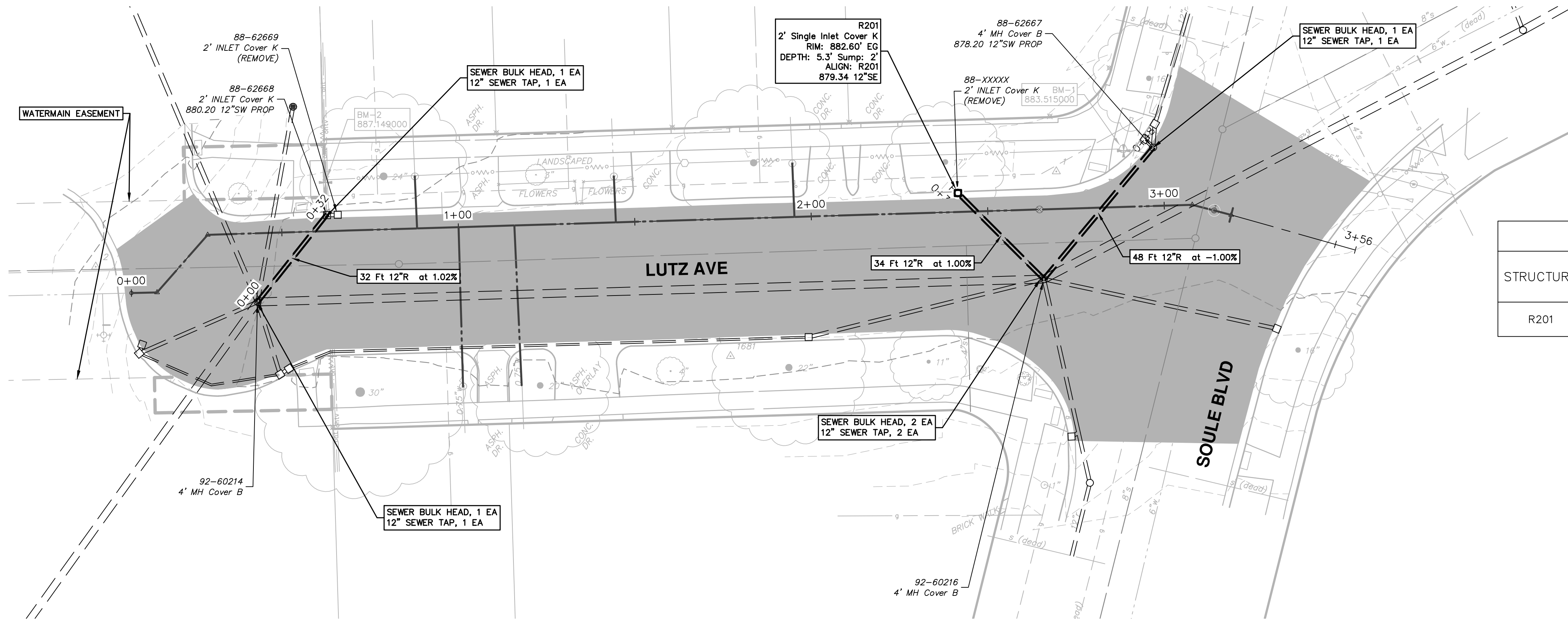


**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**MAXWELL, WAKEFIELD, LUTZ**  
**WATER MAIN REPLACEMENT**  
WATER MAIN PLAN AND PROFILE  
HYDRANT ASSEMBLY H1

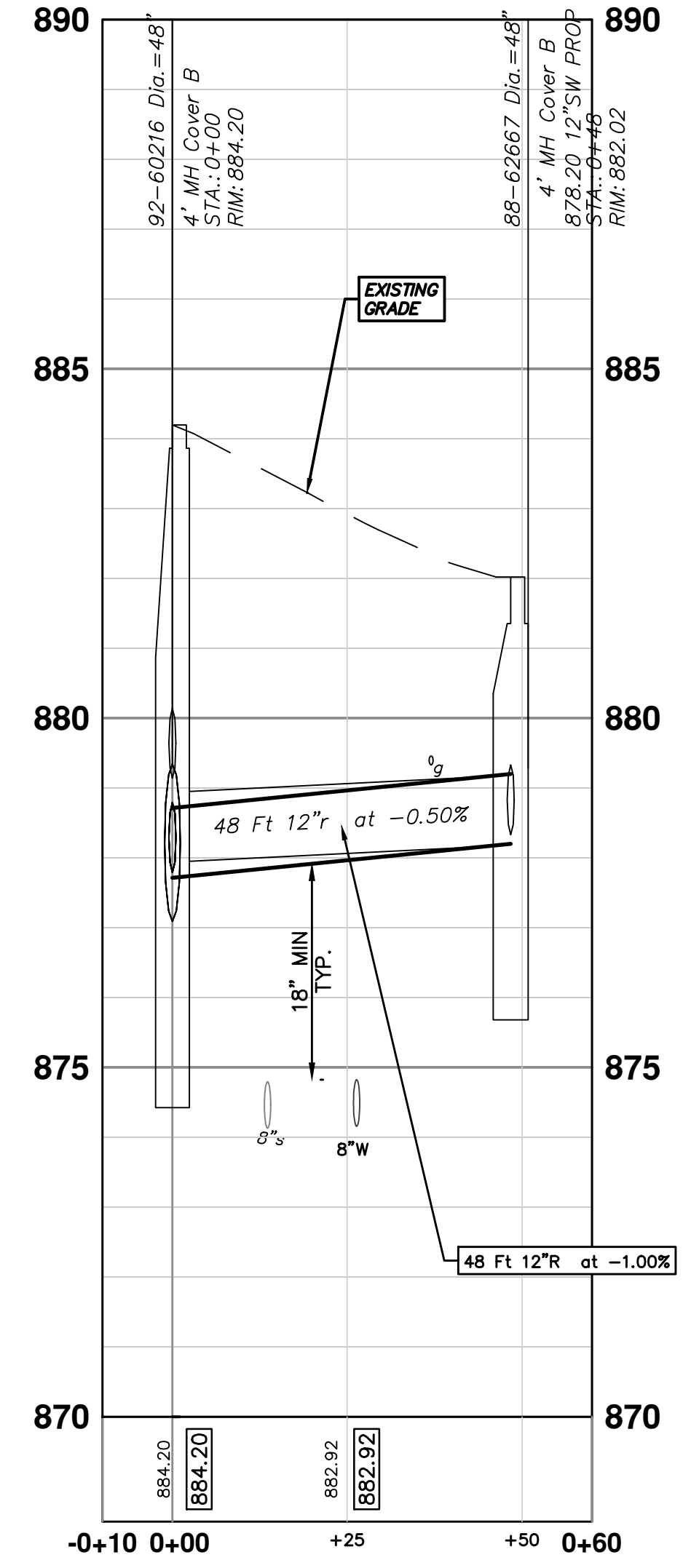
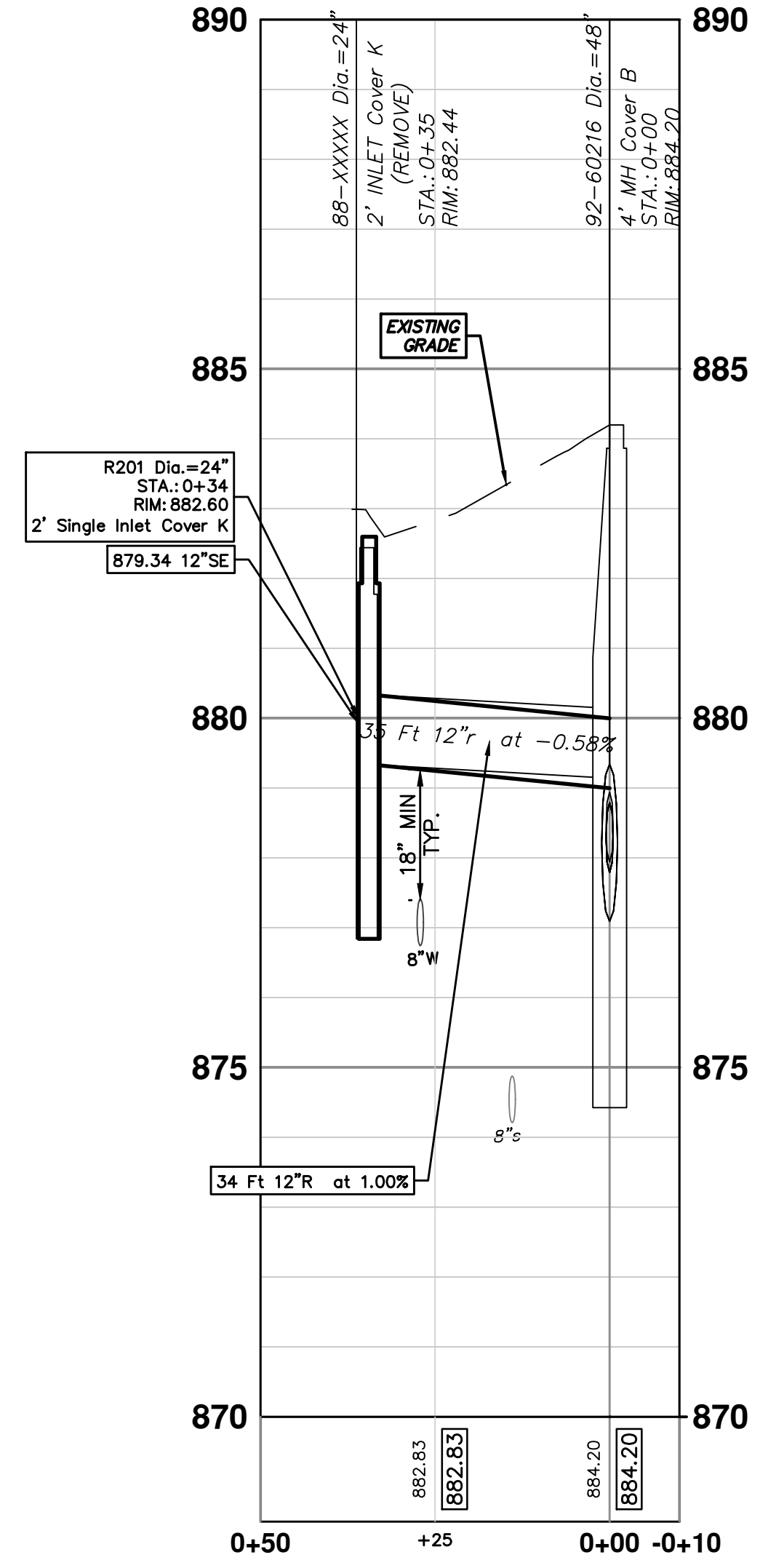
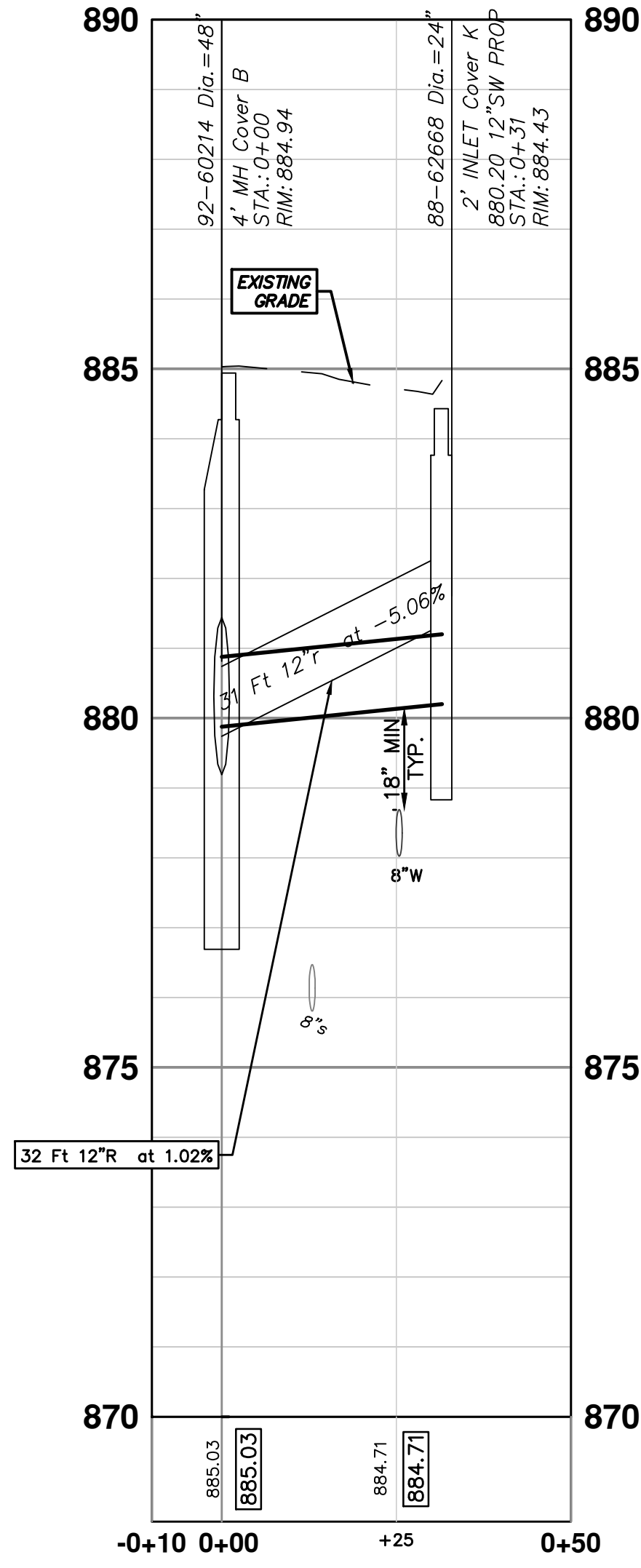
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No.  
2016039-14



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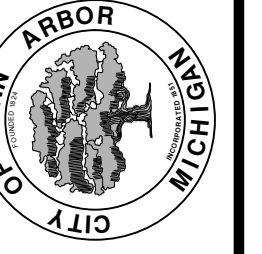


STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
R201	0+34	12" SE 879.34	882.60	5.26	24" Dia.	2' Single Inlet Cover K



REV.	DATE	DESCRIPTION
01	3/17/17	BID SET
00	12/12/16	INTERNAL CITY REVIEW

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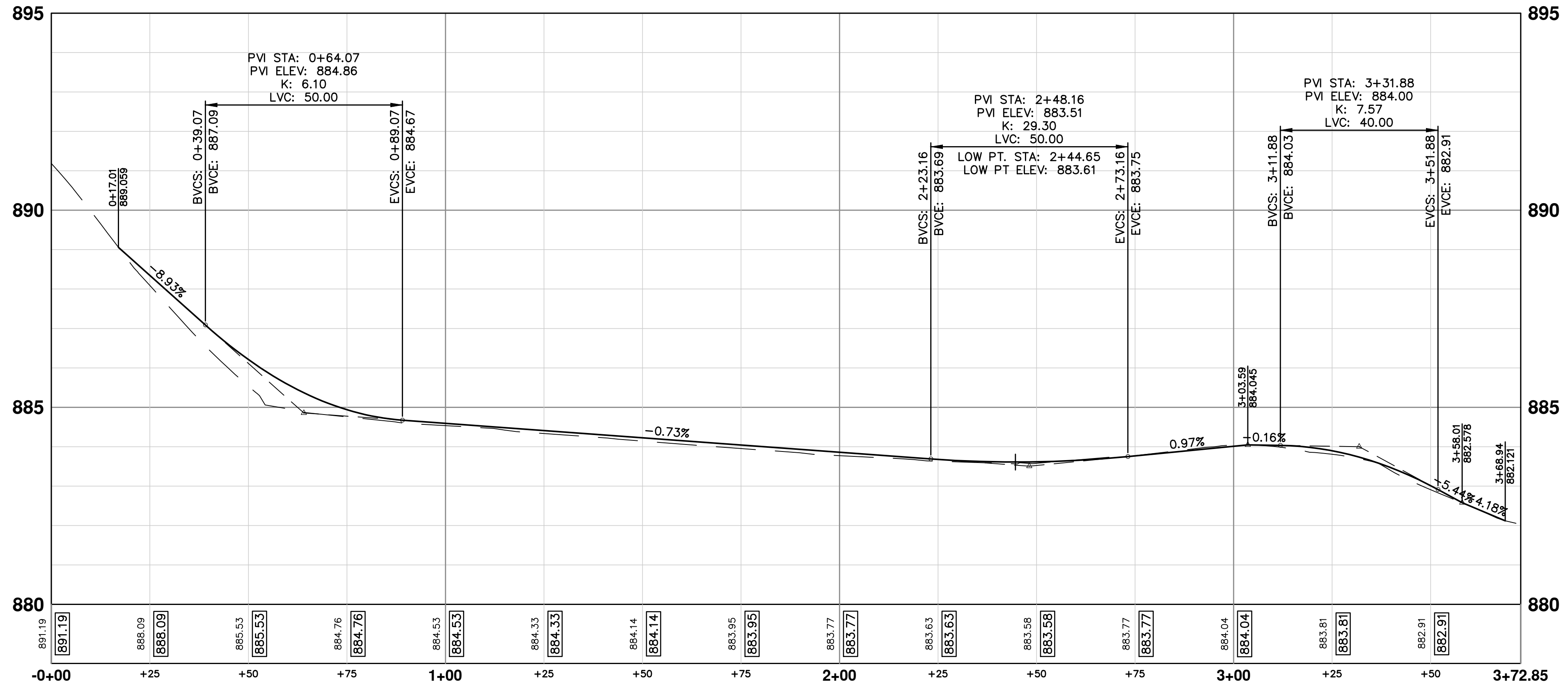
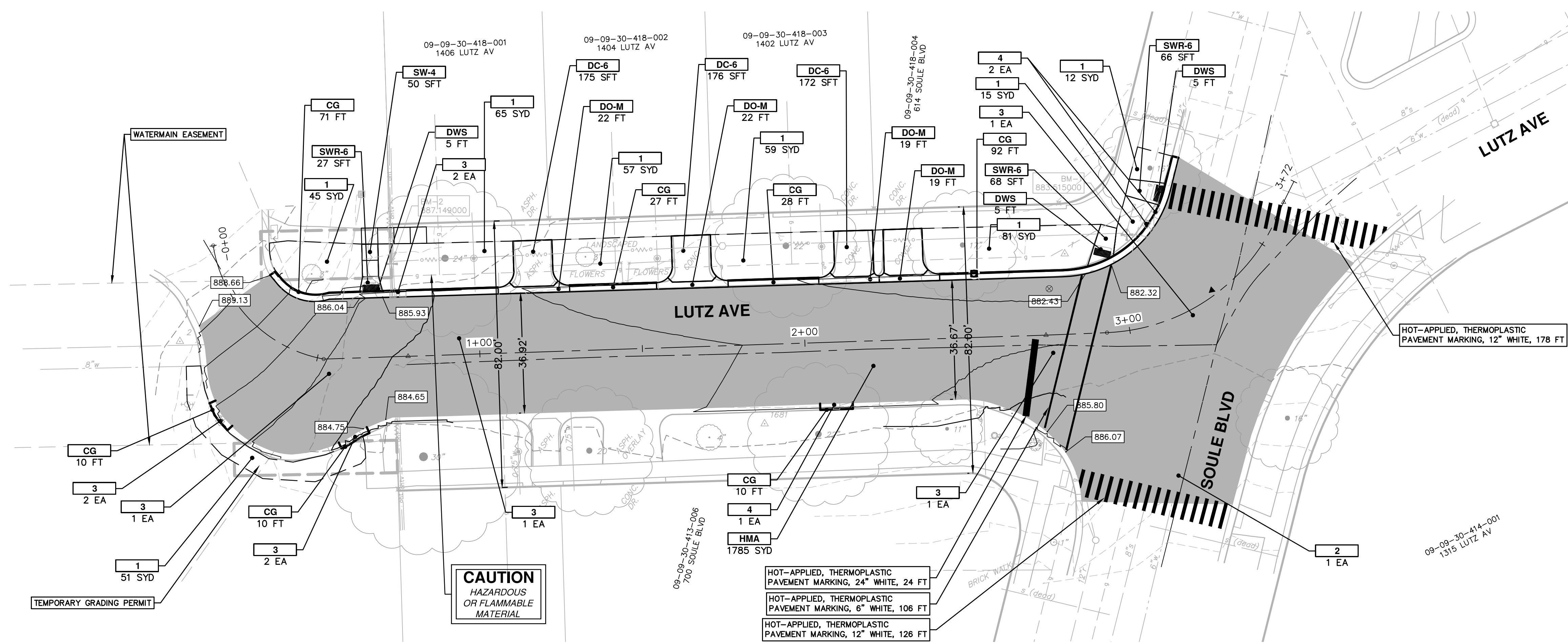


**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**MAXWELL, WAKEFIELD, LUTZ WATER MAIN REPLACEMENT**  
STORM PLAN AND PROFILE  
LUTZ AVE.

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'  
DRAWING No. 2016039-15



R:\2016039 Maxwell Wakefield Lutz WM\Plan Production\2016039PPRD.dwg Dwg Created: 17-Mar-17 - \_a2 standard bw.stb - Plot Date: 17-Mar-17



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CURB AND GUTTER, CONC
DO-M	DRIVEWAY OPENING, CONC, DET M
DC-6	DRIVEWAY, NONREINF CONC, 6 INCH
SW-4	SIDEWALK, CONC, 4 INCH
SW-6	SIDEWALK, CONC, 6 INCH
SWR-6	SIDEWALK RAMP, CONC, 6 INCH
DWS	DETECTABLE WARNING SURFACE
ABO	ADJUST BY OTHERS
1	SLOPE RESTORATION
2	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
3	ADJUST STRUCTURE COVER
4	DR STRUCTURE, 24 INCH DIA & DR STRUCTURE COVER, TYPE K.

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

DATE: 3/17/17  
DRAWN: JKA  
CHECKED: AMW

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**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
MAXWELL, WAKEFIELD, LUTZ  
WATER MAIN REPLACEMENT  
ROADWAY PLANS  
LUTZ AVE.

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No. 2016039-17

SHEET No. 17 OF 17