



# CITY OF ANN ARBOR ENGINEERING

### NOTES

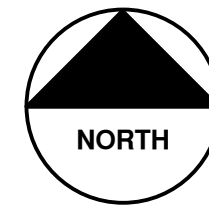
FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY 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.

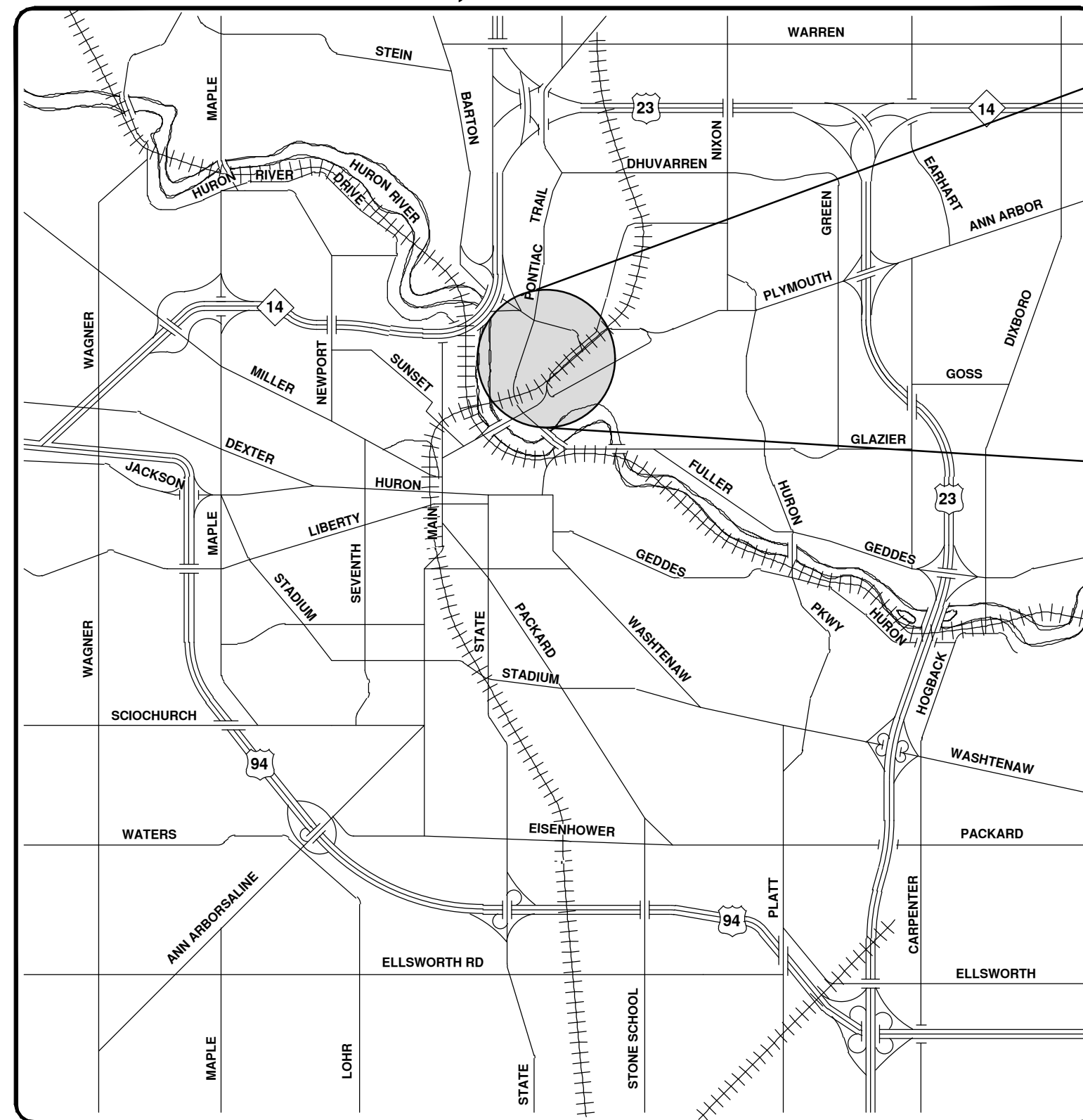
THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 1994 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE, AND THIS PROJECT'S CONTRACT DOCUMENTS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE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

# LONGSHORE INDIANOLA OTTAWA ARGO AMHERST WATERMAIN

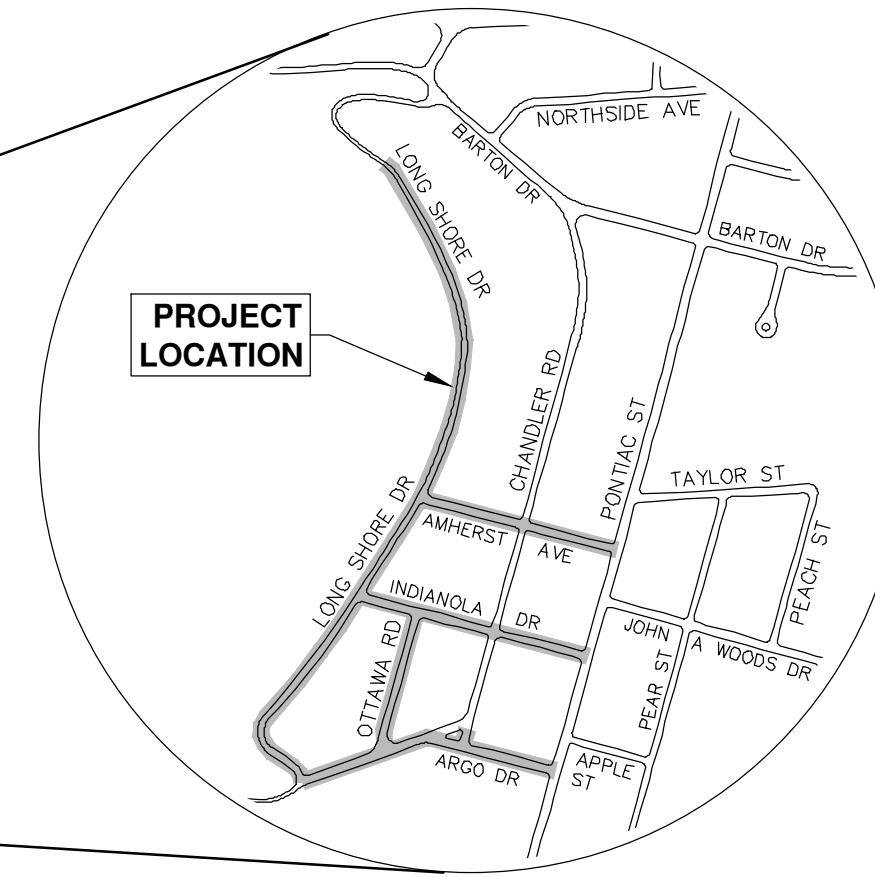
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ITB 4565, FILE No. 2018019



VICINITY MAP



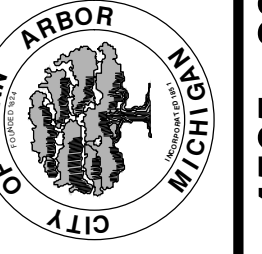
PROJECT LOCATION

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REV.	DATE	DESCRIPTION	DRAWN	CHECKED
00	1-23-19	OUT FOR BID	CC/DF/RB	JKA

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-8647  
734-794-4410  
www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

PREPARED UNDER THE SUPERVISION OF  
*Jane K. Allen*  
JANE KATHERINE ALLEN, P.E. - MI LICENSE No. 57254  
PROJECT MANAGER  
1 / 23 / 2019  
DATE



SCALE  
DRAWING No.  
2018019-1  
SHEET No.  
1 OF 54

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**CONSTRUCTION NOTES:**

- Driveways and entrances to buildings, real property, and the like shall not be blocked except for short durations and only when approved by the Engineer. Vehicular and pedestrian access shall be maintained at all times. It shall be the Contractor's responsibility to coordinate all necessary driveway closures with the property owner(s) and resident(s) in the areas of construction.
- The location and depth of all existing utilities and service leads are to be field verified by the Contractor prior to construction.
- Location and depth of utilities as depicted on the plans is approximate and shown according to the best information available. It is the Contractor's responsibility to excavate ahead and adjust depth of conflict utilities accordingly. Any damage to utilities is the Contractor's responsibility to avoid and/or repair as necessary.
- The Contractor is to take special care to protect the existing water main and be responsible for maintaining consistent water service.
- During non-working hours no trench shall remain open; any open trench shall be properly secured with protective fencing. This work shall be included in the item of work "General Conditions".
- Trenches for new water services shall be excavated to MIOSHA and City of Ann Arbor Public Works requirements.
- City of Ann Arbor Public Works will install the corporation and copper service lead(s) to transfer the connection(s). If an existing water service is found to be failing or is not copper, the lead will be replaced to the curb box by Public Works.
- For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with the City of Ann Arbor Public Works.
- The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All concrete removals and replacements required for this work will be paid for separately.
- All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.
- Cor-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 Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- Where street curbs are undermined due to construction activities, they shall be removed and replaced as directed by the Engineer.
- The Contractor shall be responsible for the continuous maintenance of the temporary road surface and soil erosion control measures within the construction area until the full completion of the project. This work shall be included in the item of work "General Conditions".
- All curb, sidewalk, driveway approach removals shall be approved by Engineer before the work is done.
- Sawed sewer pipe connections shall be coupled with a Fernco flexible coupling and a stainless steel shear ring.
- The location of material stock piles and on-site staging areas to be approved by the Engineer.
- For mainline paving, the width of the mat for each pass of the paver shall be not less than 10.5' or greater than 15', as directed by the Engineer. The Engineer will direct the layout of the longitudinal joints during construction.
- All structures shall receive new castings as directed by the Engineer, as specified on the standard casting schedule. The existing castings are the property of the City of Ann Arbor. The Contractor shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.
- Where sewer pipes of different sizes or materials are joined, Fernco flexible couplings with stainless steel shear rings shall be used. 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 PALLATIVE AS REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME MEASURES UPON AUTHORIZED COMPLETION OF THE PROJECT. FINAL COMPLETION OF PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
- THE CONTRACTOR SHALL NOT GRADE INTO ADJACENT PROPERTIES. SILT AND PROTECTIVE FENCE SHALL BE INSTALLED AND MAINTAINED TO PREVENT GRADING, EROSION AND SEDIMENTATION INTO THE ADJACENT PROPERTIES.
- TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.

**SEQUENCE OF EROSION CONTROL MEASURES:**

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

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

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

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

**TEMPORARY SEEDING:**

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

**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**

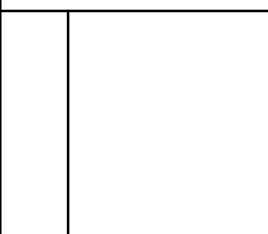
PUBLIC UTILITIES	OWNER	CONTACT
WATER		
SANITARY		
STORM	CITY OF ANN ARBOR PUBLIC WORKS W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	(734) 794-6350
FORESTRY		
SIGNS SIGNALS STREET LIGHTS		(734) 794-6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 3150 E. MICHIGAN AVE, YPSILANTI TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	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

LONGSHORE / INDIANOLA / OTTAWA / ARGO / AMHERST BENCHMARKS		
BM #	ELEV	DESCRIPTION
3	835.50	SET CHISELED "X" ON NORTH FLANGE BOLT OF HYDRANT IN CURB ISLAND AT CHANDLER ROAD AND ARGO DRIVE
5	843.40	SET SPIKE IN WEST FACE OF POWER POLE IN THE SOUTHEAST QUADRANT OF ARGO DRIVE AND PONTIAC TRAIL
7	826.93	SET RAILROAD SPIKE IN NORTH FACE OF POWER POLE ON THE SOUTH SIDE OF ARGO DRIVE, FIRST POLE WEST OF OTTAWA ROAD
9	844.49	SET RAILROAD SPIKE IN WESTERLY FACE OF POWER POLE ON THE EAST SIDE OF LONGSHORE DRIVE, FIRST POLE SOUTH OF HOUSE #1516
11	847.75	SET SPIKE IN WEST FACE OF POWER POLE BETWEEN HOUSE #1604 AND #1606 ON THE EAST SIDE OF LONGSHORE DRIVE
14	843.45	SET SPIKE IN WEST FACE OF POWER POLE BETWEEN HOUSE #1810 AND #1812 ON THE EAST SIDE OF LONGSHORE DRIVE
16	841.13	SET CHISELED "X" ON EASTERLY FLANGE BOLT OF HYDRANT AT HOUSE #2000 LONGSHORE DRIVE
17	839.90	SET SPIKE IN WEST FACE OF POWER POLE BETWEEN HOUSE #1502 AND #1508 ON THE EAST SIDE OF OTTAWA ROAD
19	837.21	SET SPIKE IN NORTH FACE OF POWER POLE IN THE NORTHWEST QUADRANT OF INDIANOLA AVENUE AND CHANDLER ROAD
21	845.64	SET CHISELED "X" ON EASTERLY FLANGE BOLT OF HYDRANT IN THE SOUTHWEST QUADRANT OF INDIANOLA AVENUE AND PONTIAC TRAIL
24	850.36	SET RAILROAD SPIKE IN NORTH FACE OF POWER POLE BETWEEN HOUSE #806 AND #1607 ON THE SOUTH SIDE OF AMHERST AVENUE
25	850.48	SET CHISELED "X" ON NORTHERLY FLANGE BOLT OF HYDRANT IN THE NORTHEAST QUADRANT OF AMHERST AVENUE AND CHANDLER ROAD



DATE	1-23-19
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DRAWN	CC/DF/RG

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-8647  
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CITY OF ANN ARBOR - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN

NOTES  
SCALE: NTS  
DRAWING No. 2018019-2

SHEET No.


### EXISTING LEGEND

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

	WATER MAIN
	WATER MAIN ABANDONED
	STORM SEWER
	STORM SEWER ABANDONED
	SANITARY SEWER
	SANITARY SEWER ABANDONED
	GAS MAIN
	GAS MAIN (DEAD)
	ELECTRICAL OVER HEAD
	ELECTRICAL UNDER GROUND
	ELECTRICAL DUCT BANK
	TELEPHONE OVER HEAD
	TELEPHONE UNDER GROUND
	TELEPHONE DUCT BANK
	CABLE TV OVER HEAD
	CABLE TV UNDER GROUND
	FIBER OPTIC
	FIBER OPTIC DUCT BANK
	BOUNDARY
	BUILDING
	CENTERLINE OF DITCH
	CENTERLINE/CROWN OF ROAD
	CONTOUR MAJOR
	CONTOUR MINOR
	EDGE OF WATER
	FLOODPLAIN
	FENCE
	GRAVEL
	GUARDRAIL
	STONE WALL
	R.O.W.
	TREELINE
	WETLAND
	EDGE OF BRUSH
	HEDGE
	TREE (DECIDUOUS)
	TREE (CONIFEROUS)
	SHRUB (DECIDUOUS)
	STUMP
	TREE TO REMAIN & PROTECT (DECIDUOUS) CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10
	TREE TO REMAIN & PROTECT (CONIFEROUS) CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10

### PROPOSED LEGEND

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

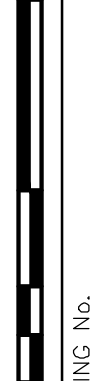


**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**

LEGEND

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00	1-23-19	OUT FOR BID	JKA	CC/DF/RB

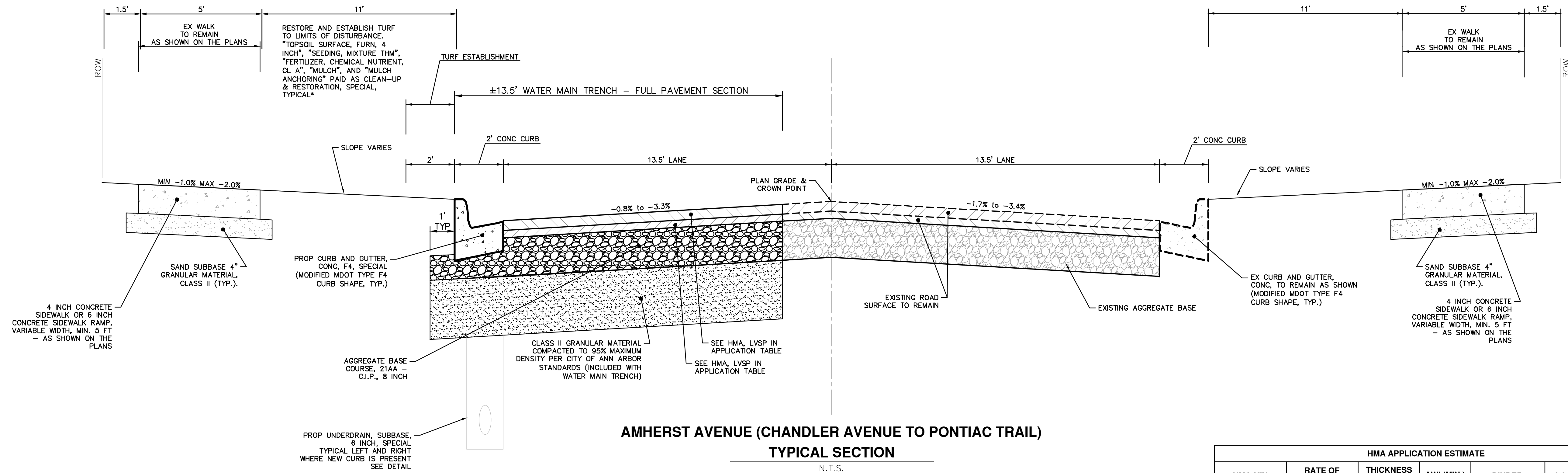
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DRAWING No. **2018019-3**

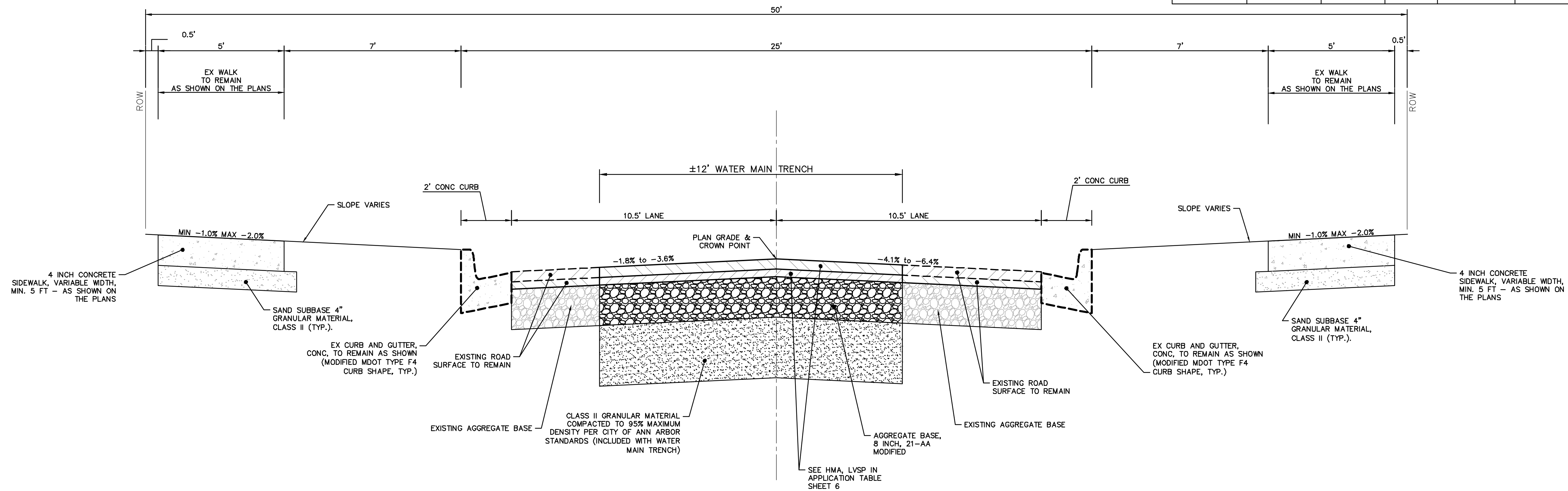
SHEET No. **3 OF 54**

R:\2018019 Longshore Dr WM\Plan Production\2018019Det.dwg Dwg Created: 22-Jan-19 - 02 standard bw.stb - Plot Date: 23-Jan-19



**AMHERST AVENUE (CHANDLER AVENUE TO PONTIAC TRAIL)**  
TYPICAL SECTION  
N.T.S.

HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2	260 (TOP)	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



**OTTAWA ROAD**  
TYPICAL SECTION  
N.T.S.



REV.	DATE	DESCRIPTION
00	1-23-19	OD OUT FOR BID
		CC/DF/RS
		JKA
		CHECKED
		DRAWN

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-8647  
ANN ARBOR PHONE: 800-864-7347  
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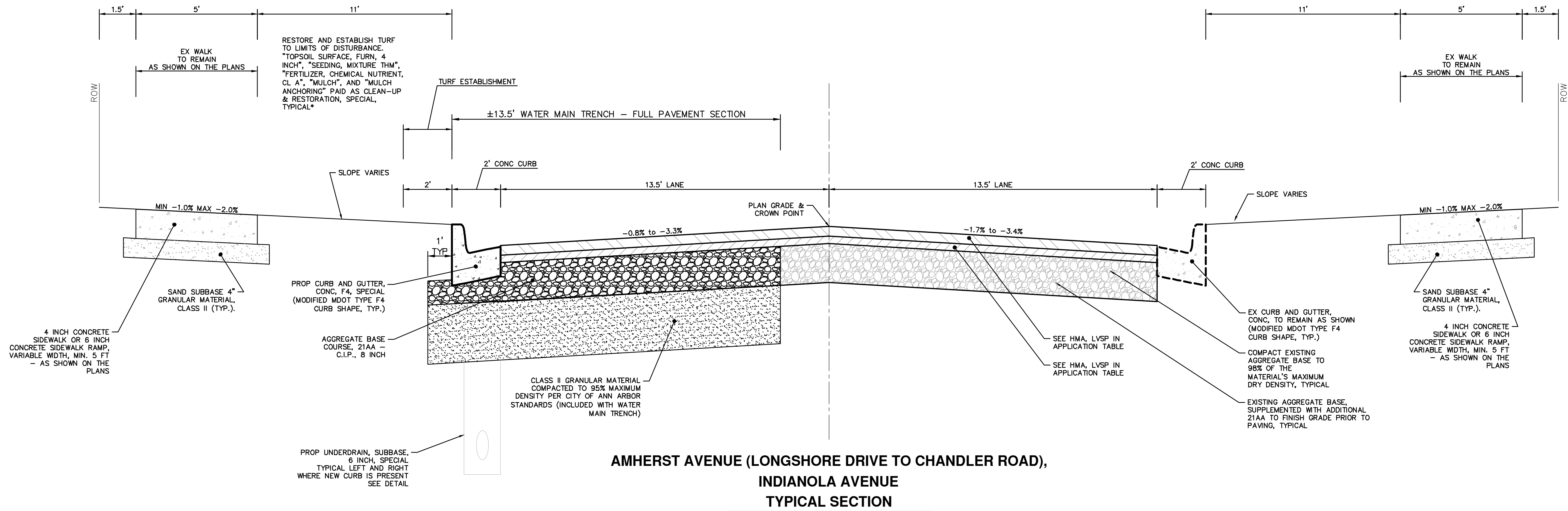


CITY OF ANN ARBOR - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
TYPICAL PROPOSED ROAD SECTIONS

SCALE: NTS  
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SHEET No.

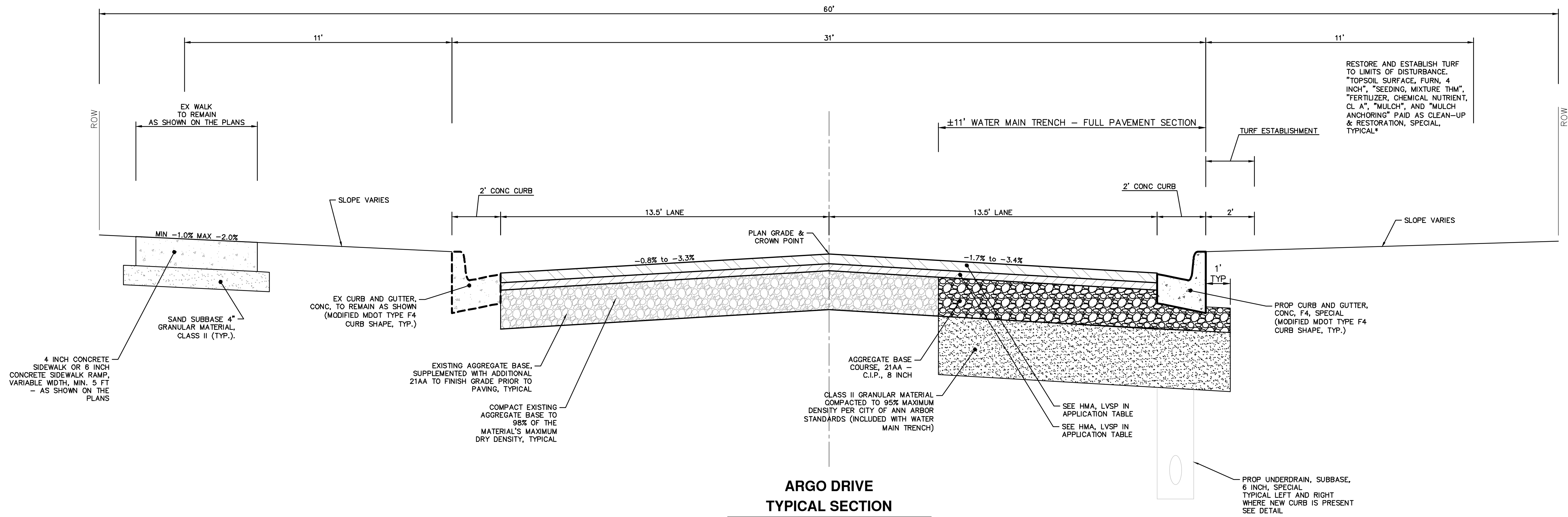


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**AMHERST AVENUE (LONGSHORE DRIVE TO CHANDLER ROAD),  
INDIANOLA AVENUE  
TYPICAL SECTION**

N.T.S.



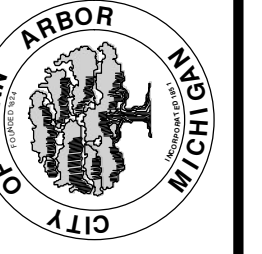
**ARGO DRIVE  
TYPICAL SECTION**

N.T.S.



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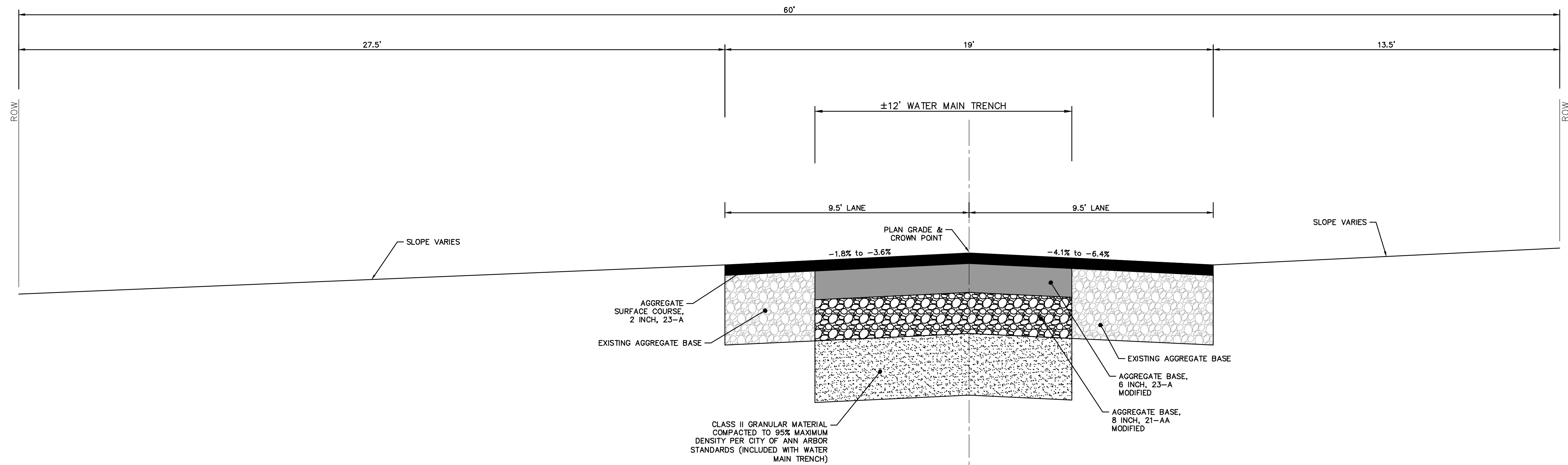
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**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**  
TYPICAL PROPOSED ROAD SECTIONS

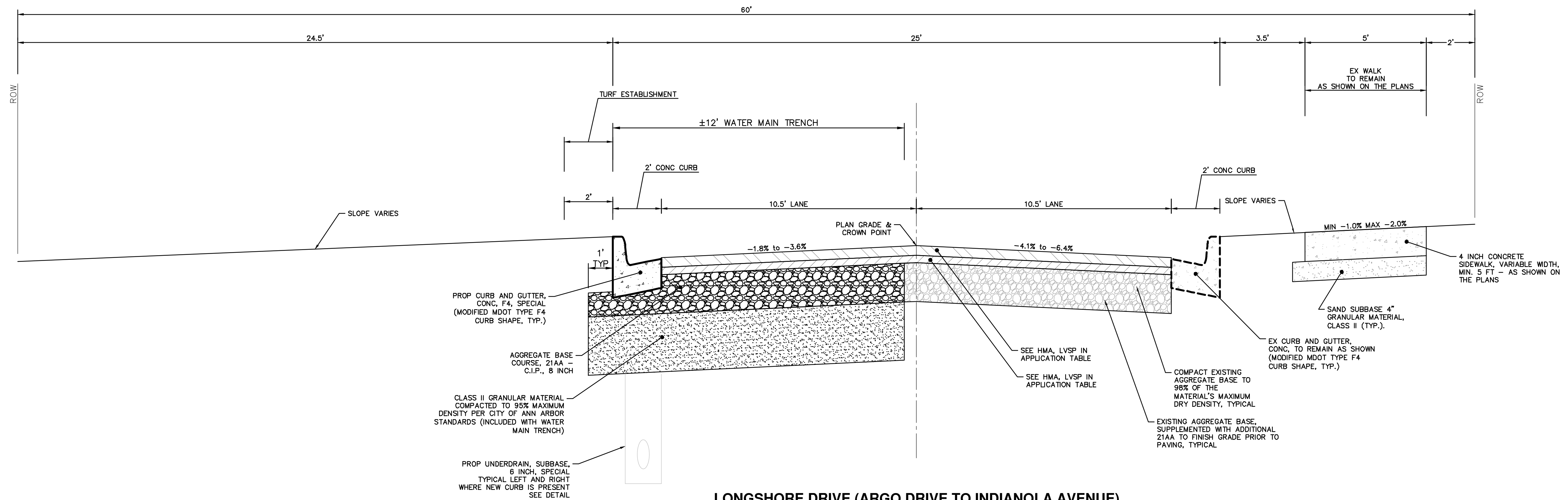
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DRAWING No. 2018019-5

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**LONGSHORE DRIVE (INDIANOLA AVENUE TO BARTON DRIVE)**  
TYPICAL SECTION

N.T.S.



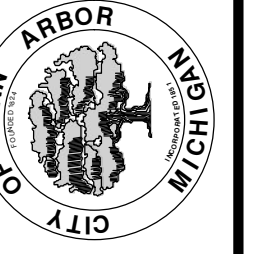
**LONGSHORE DRIVE (ARGO DRIVE TO INDIANOLA AVENUE)**  
TYPICAL SECTION

N.T.S.



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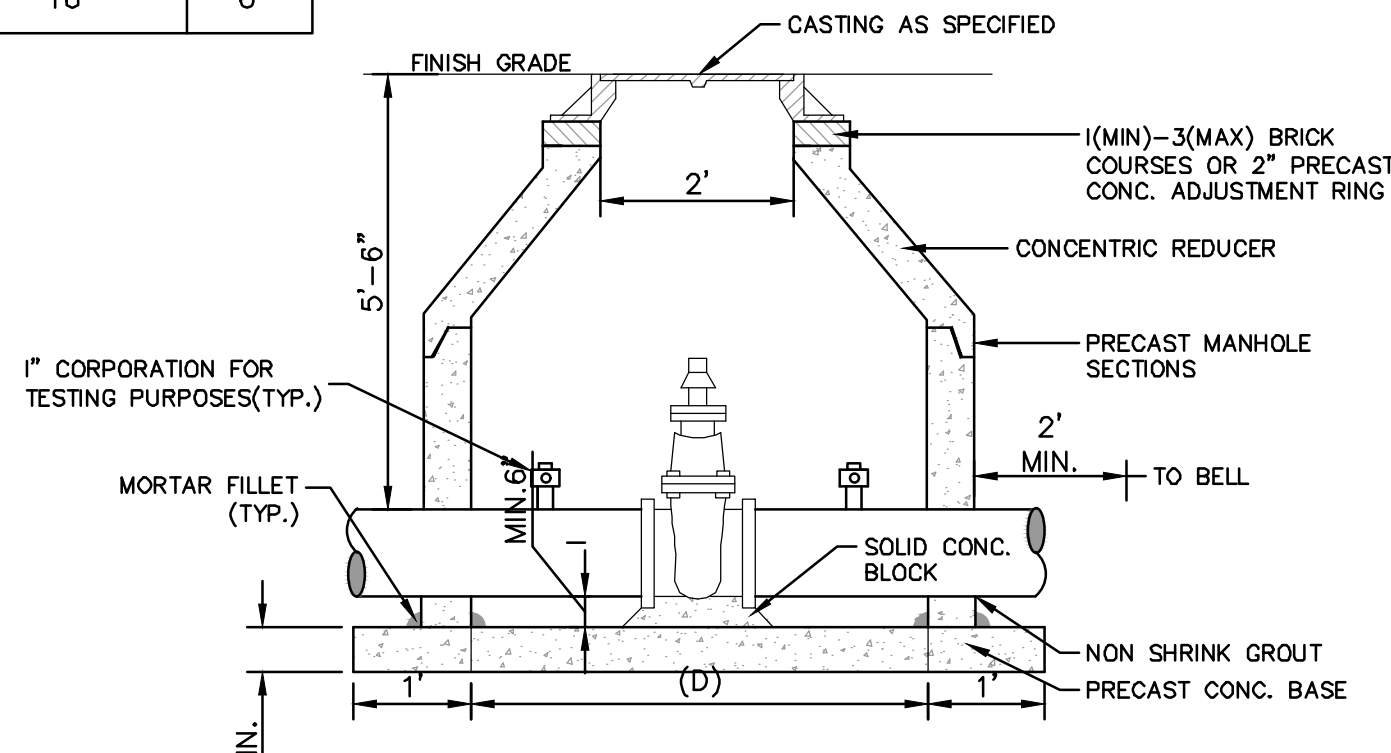
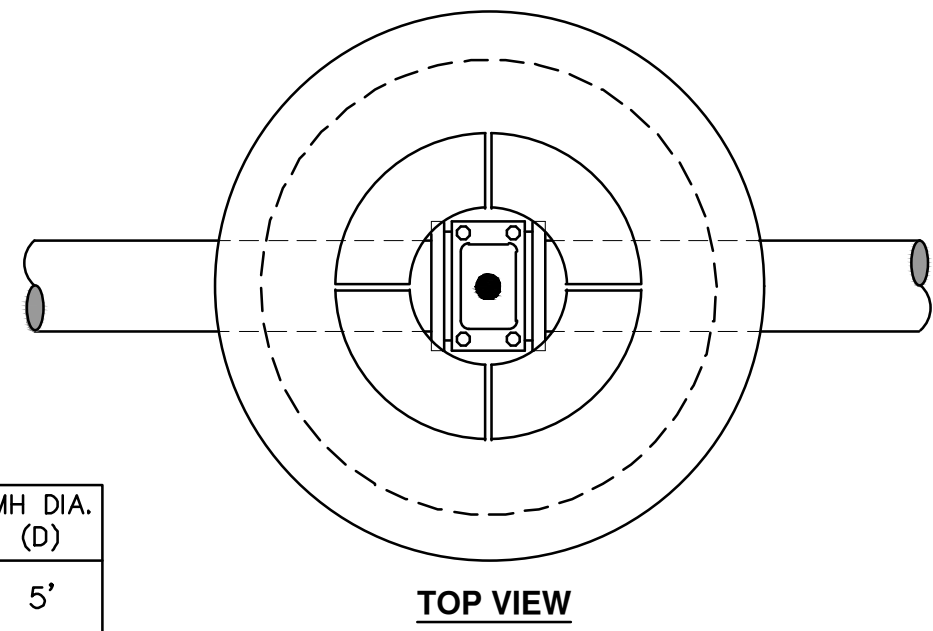
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**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**  
TYPICAL PROPOSED ROAD SECTIONS

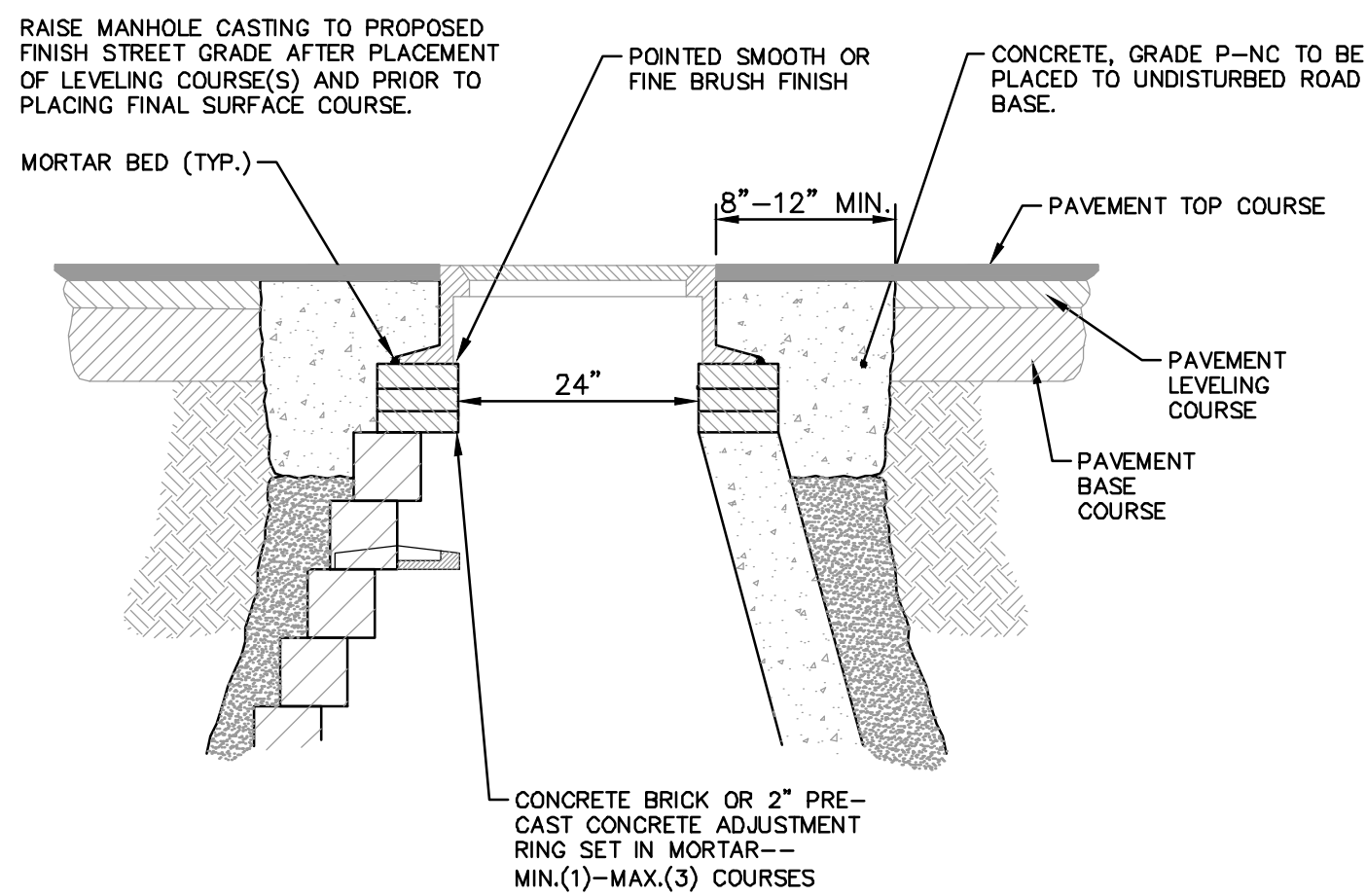
SCALE: NTS  
DRAWING No. 2018019-6

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.

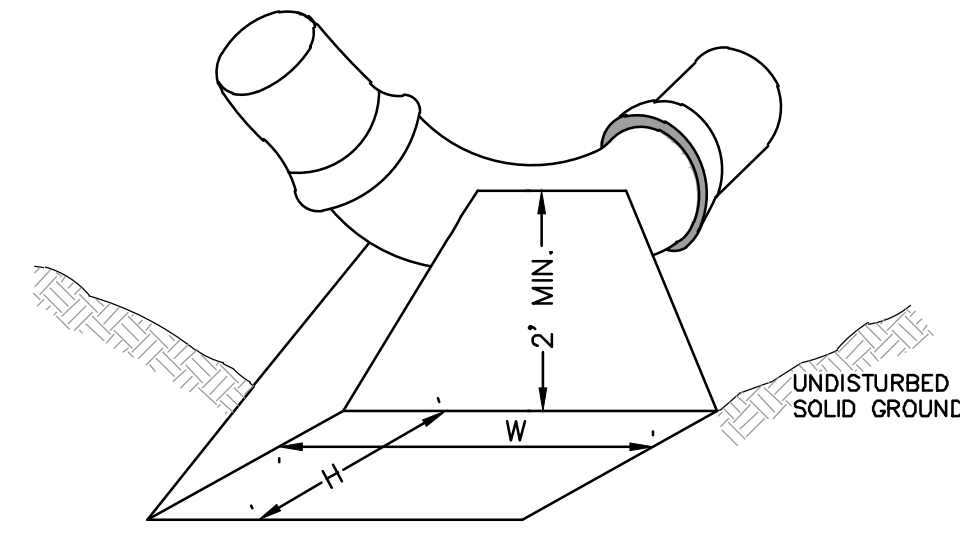
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

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°	22½°	11¼°	W	H
INCHES	W	H	W	H	W	H	W	H
4	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5
6	2.0	1.5	2.0	2.0	2.0	1.0	1.0	2.5
8	2.5	2.0	3.5	2.0	2.0	1.0	1.0	2.5
12	3.5	3.0	5.5	3.0	3.5	2.5	2.0	1.0
16	6.0	3.5	6.0	4.0	5.0	3.0	2.5	2.0

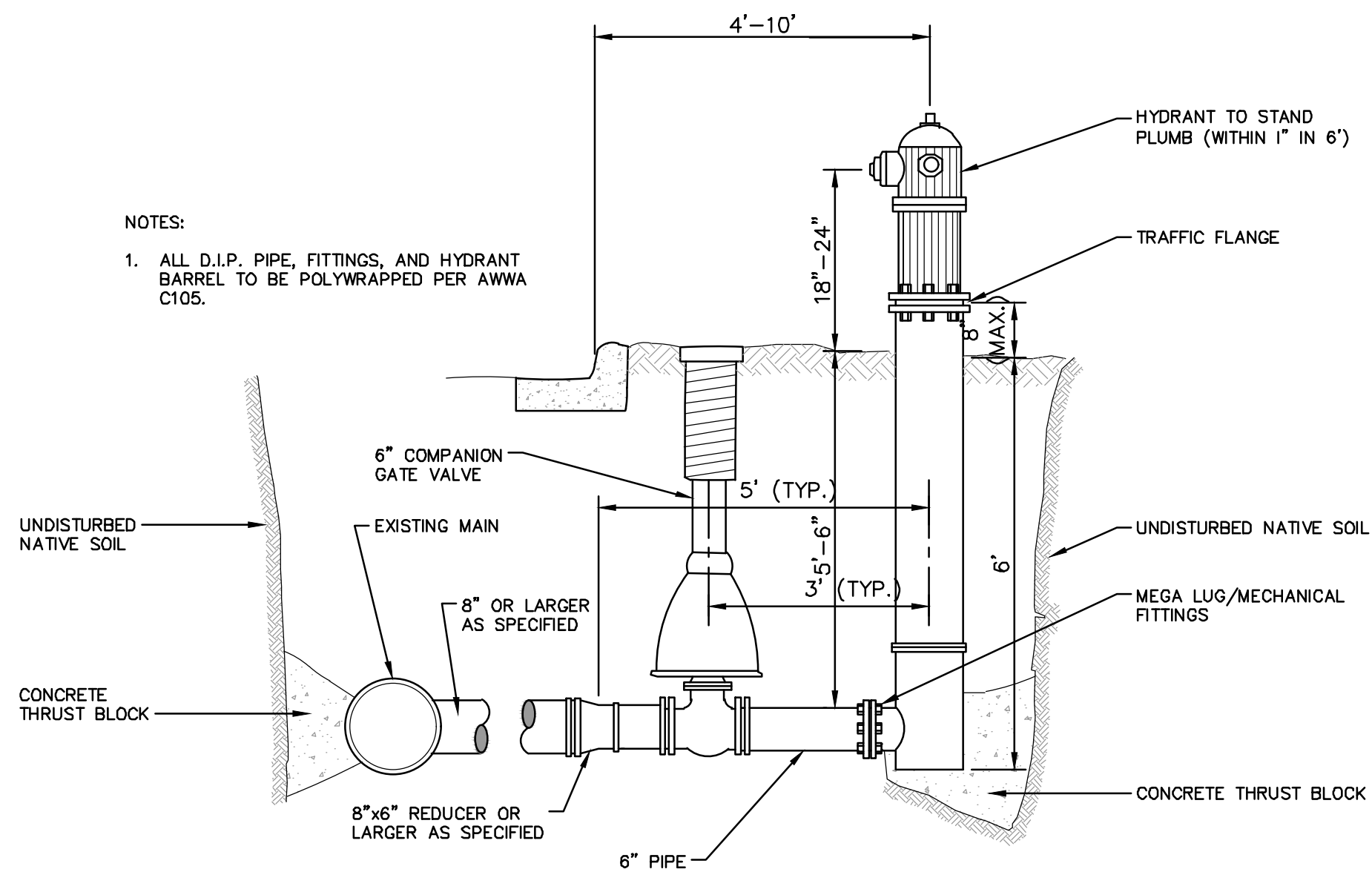
FOR FITTING SIZES LARGER THAN 16", THRUST BLOCK DIMENSIONS SHALL BE AS SPECIFIED BY ENGINEER.

W = WIDTH IN FEET  
H = HEIGHT IN FEET



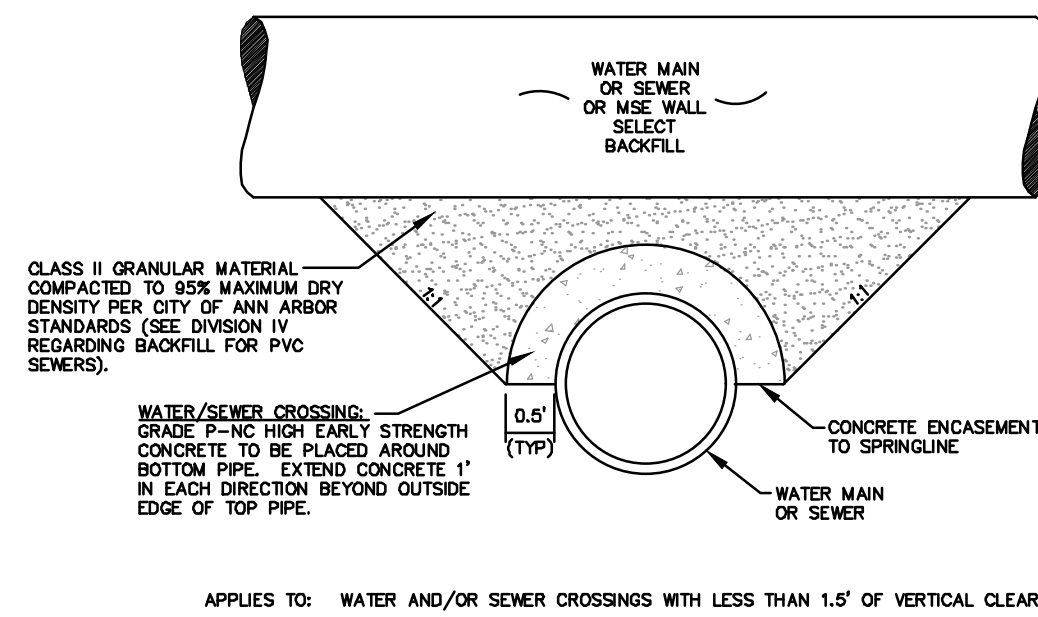
NOTE:  
THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

**THRUST BLOCK SD-W-2**



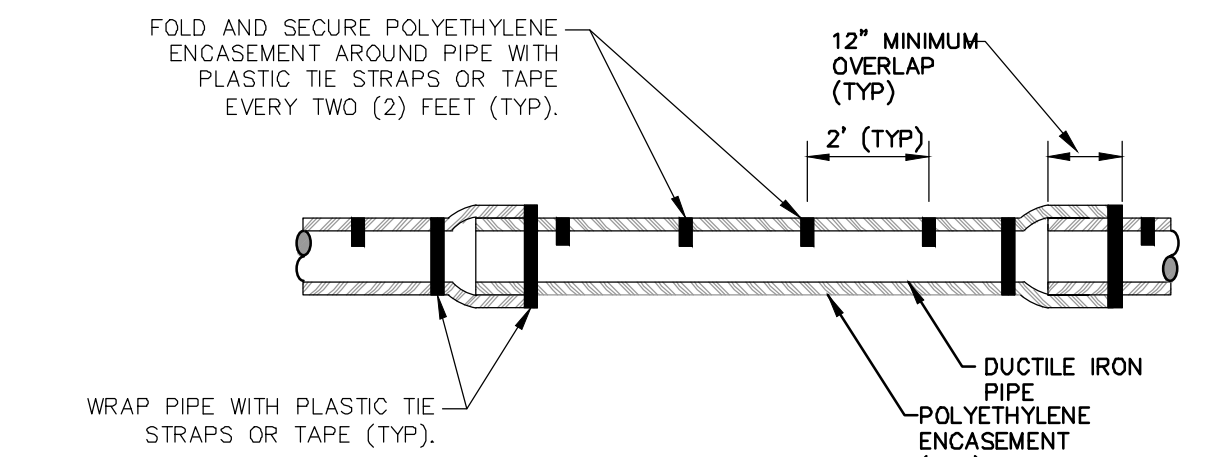
- NOTES:
1. ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWA C105.

**FIRE HYDRANT ASSEMBLY**



**CONCRETE UTILITY SADDLE**

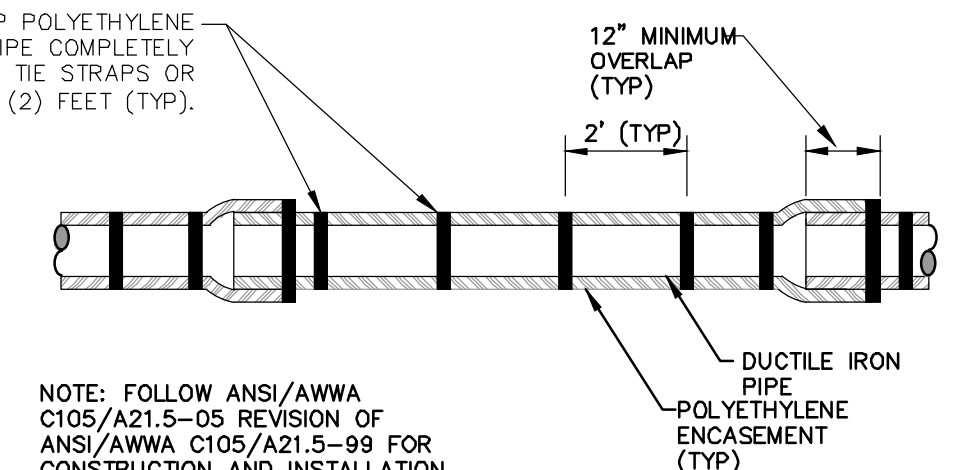
APPLIES TO: WATER AND/OR SEWER CROSSINGS WITH LESS THAN 1.5' OF VERTICAL CLEARANCE



**POLYETHYLENE ENCASEMENT (DRY INSTALLATION)**

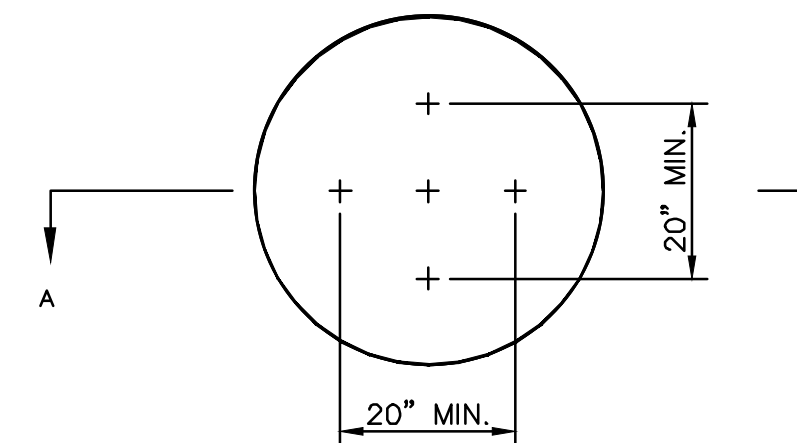
NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

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

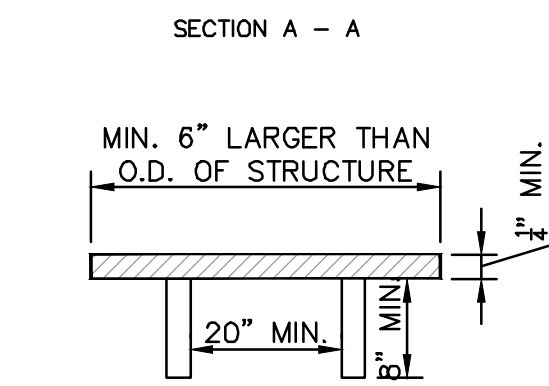


**POLYETHYLENE ENCASEMENT (WET INSTALLATION)**

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

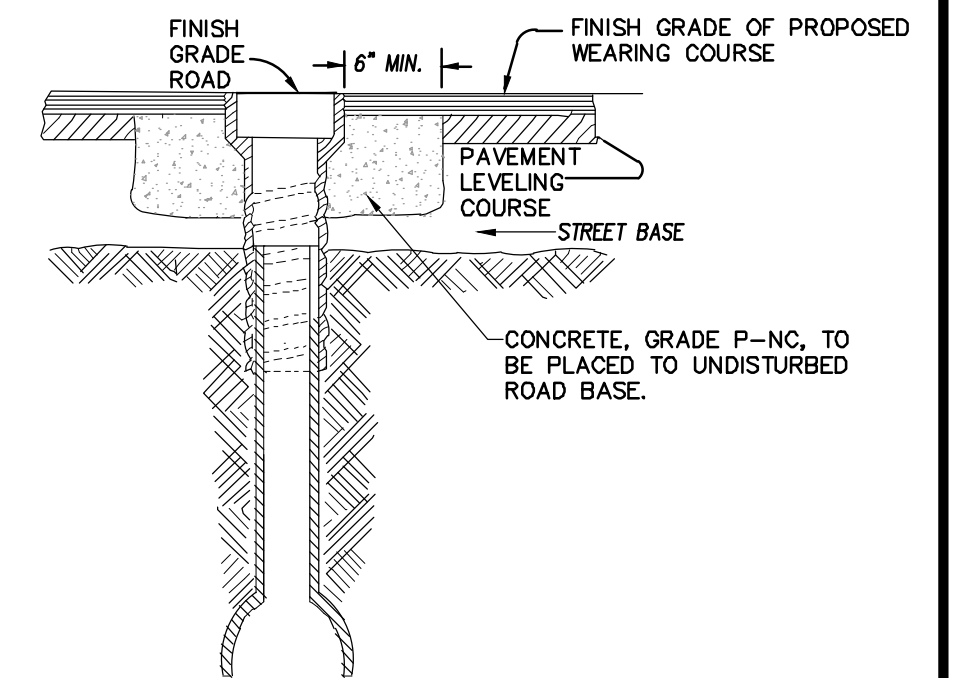


NOTE: PLATE MAY BE CIRCULAR, SQUARE OR RECTANGULAR



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**

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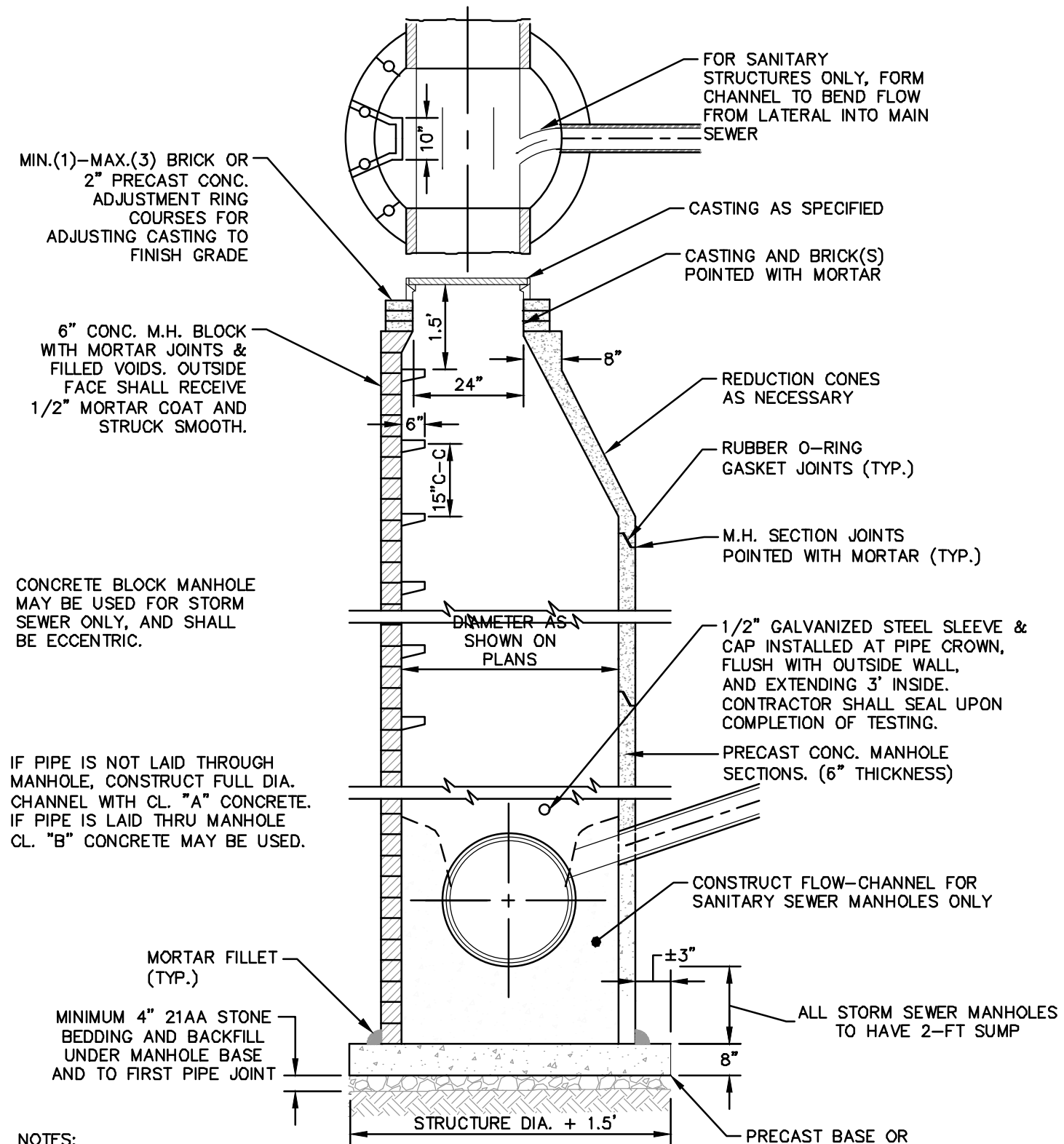
**811** Know what's below. Call before you dig.

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
WATER MAIN DETAILS

SCALE: NTS  
DRAWING No. 2018019-7  
SHEET No. 7 OF 54

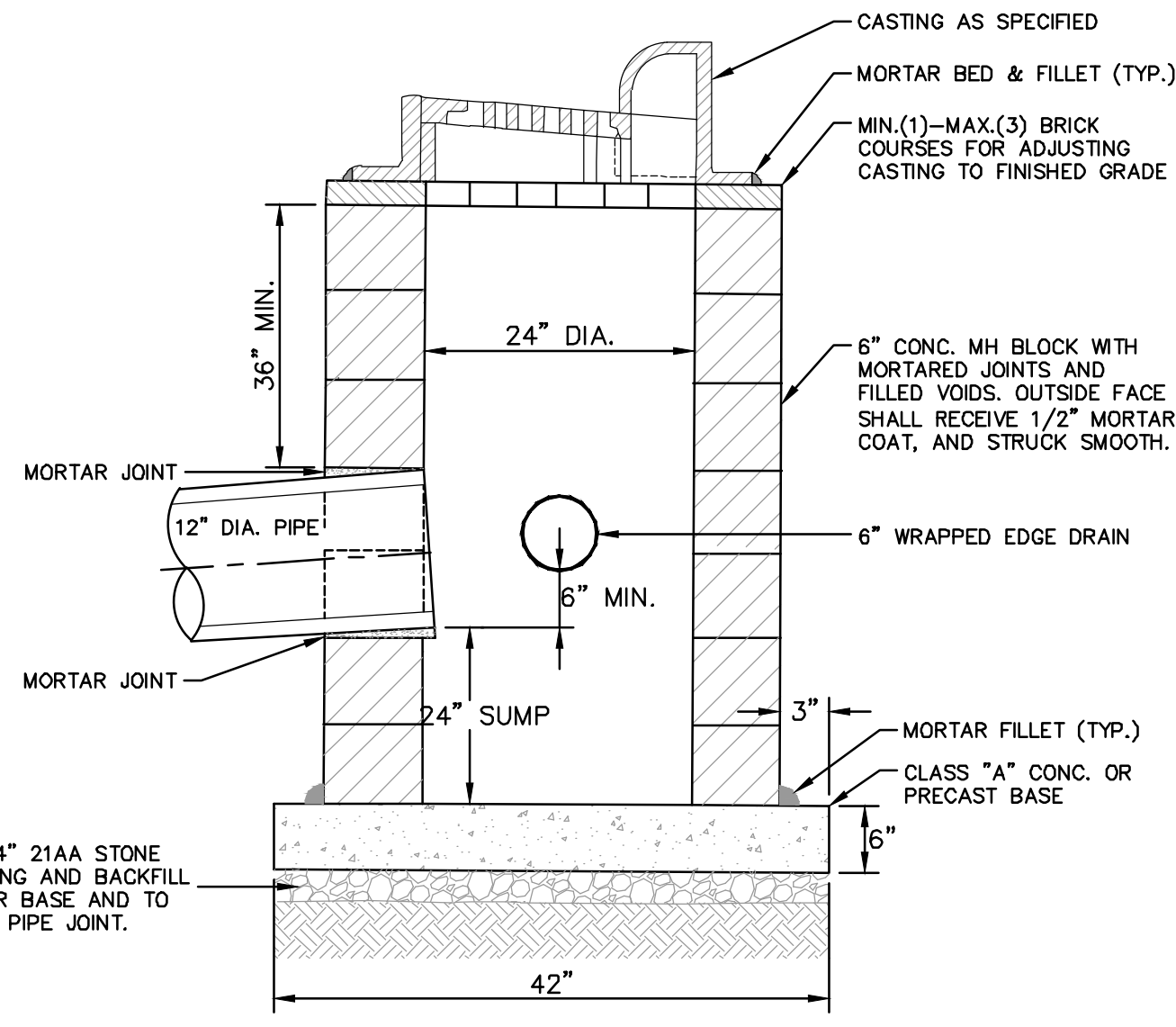
DATE	1-23-19	DESCRIPTION	REV.
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DATE	1-23-19	DESCRIPTION	REV.
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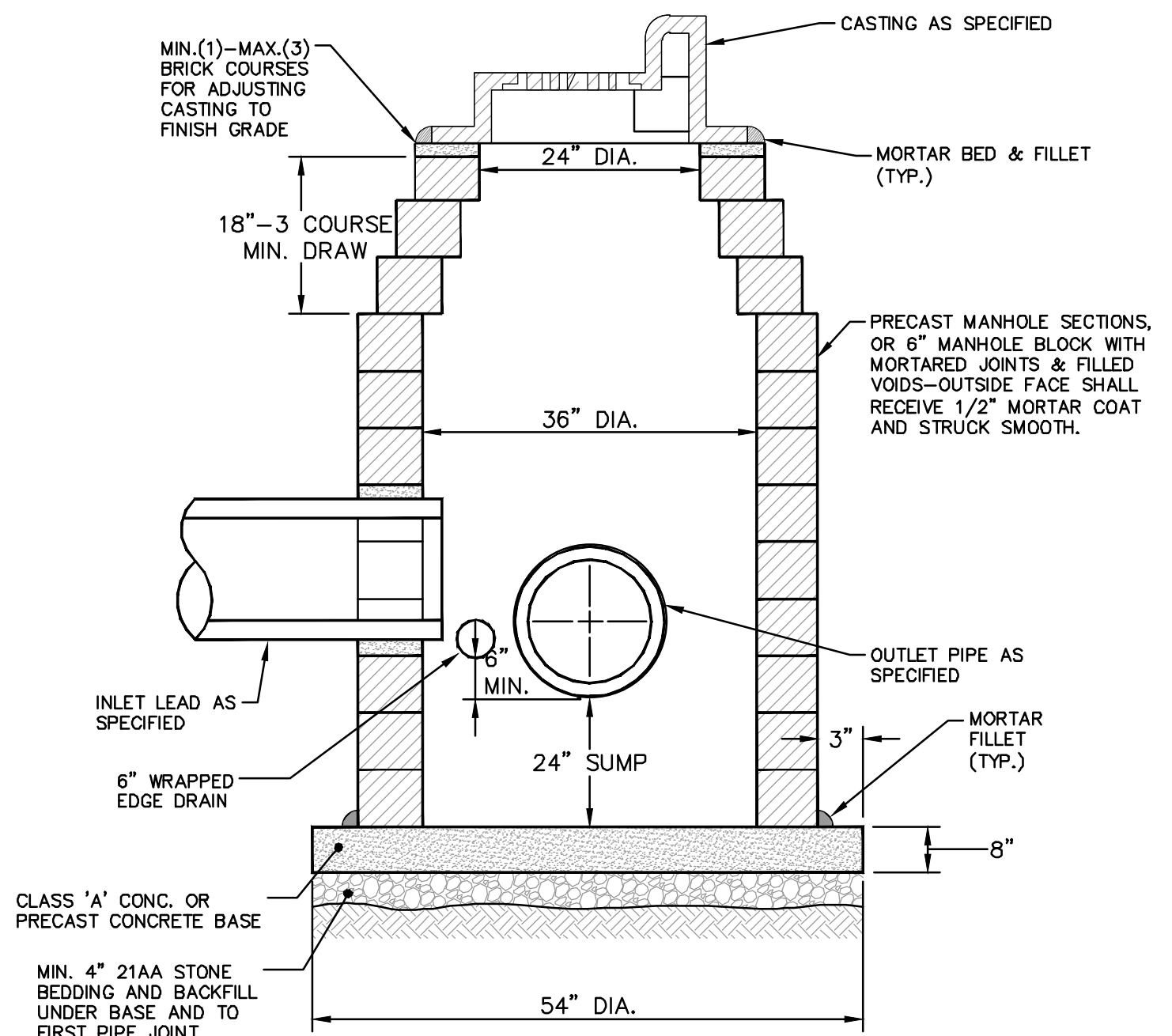
- NOTES:
1. ALL SANITARY MANHOLES SHALL BE PRECAST CONCRETE.
  2. ALL MANHOLES MUST HAVE ECCENTRIC CONES - BOTH STORM AND SANITARY
  3. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
  4. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.

**STANDARD MANHOLE (TYPE I)**



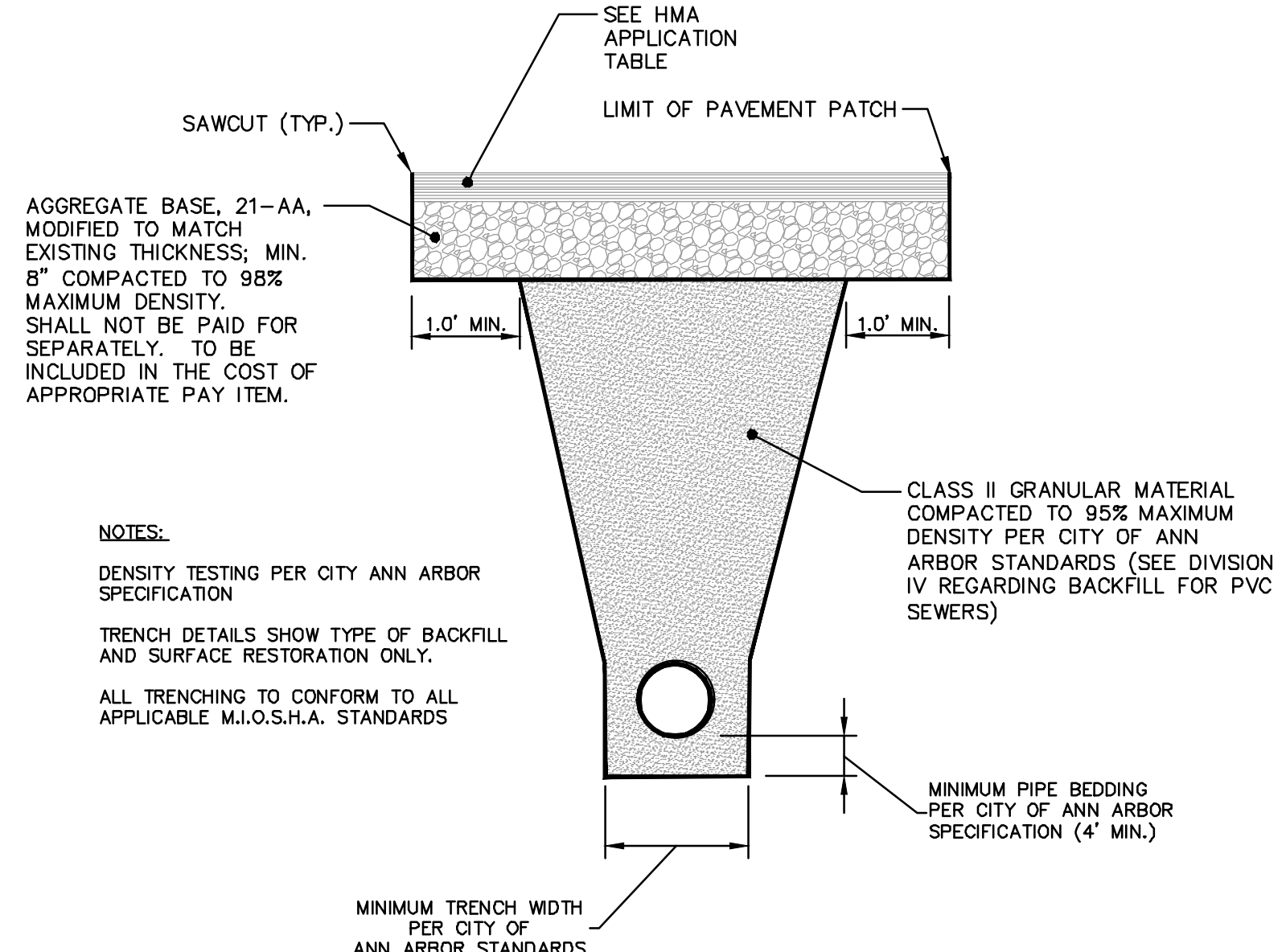
- NOTES:
1. MAY BE USED WITH ONLY SINGLE OUTLET PIPE, AND NO INLET PIPE
  2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

**SINGLE INLET STRUCTURE SD-S-10**



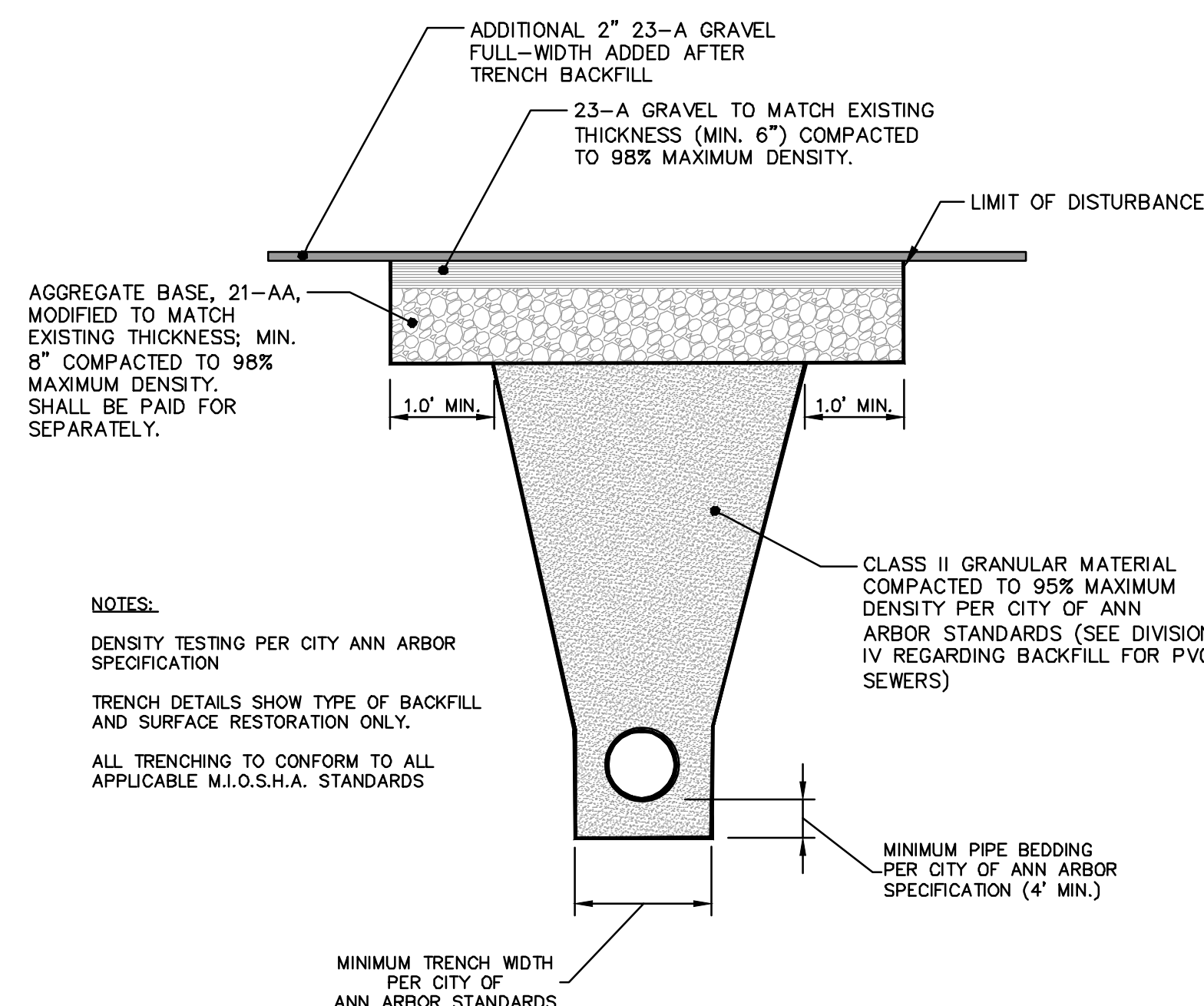
- NOTES:
1. SHALL BE USED IF SINGLE OUTLET PIPE AND SINGLE INLET PIPE.
  2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

**INLET-JUNCTION CHAMBER SD-S-9**



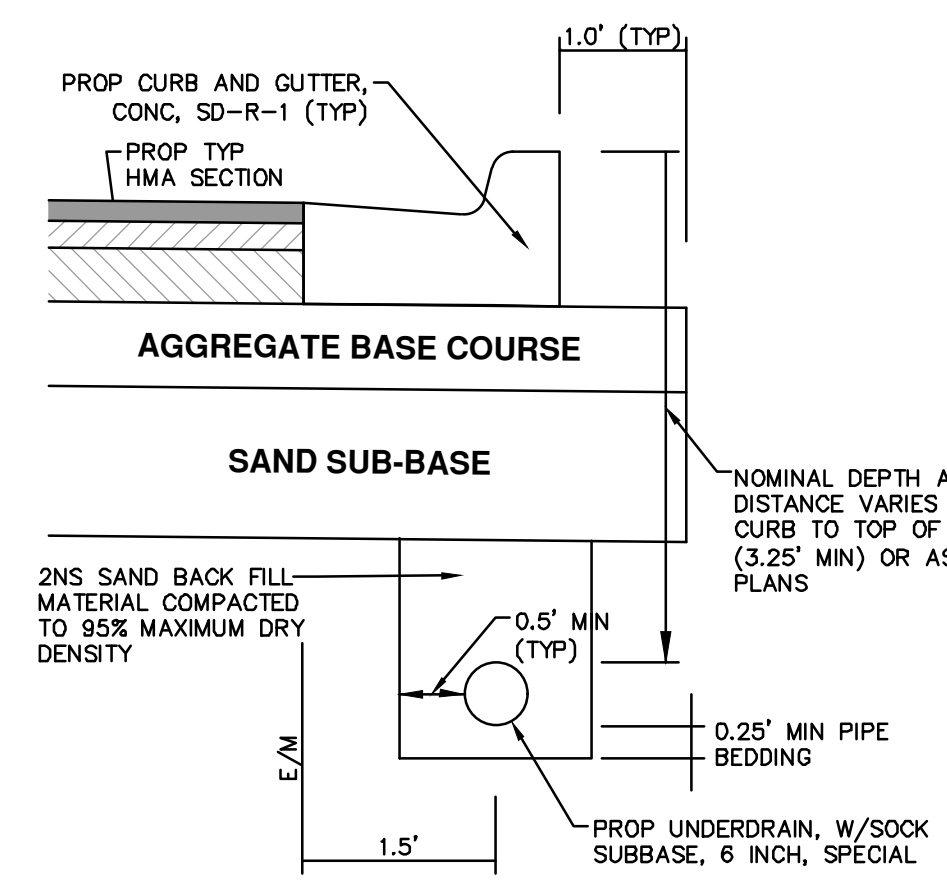
- NOTES:
- DENSITY TESTING PER CITY ANN ARBOR SPECIFICATION
- TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY.
- ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS

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



- NOTES:
- 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 II SD-TD-2 (MODIFIED)**  
(UNDER GRAVEL ROAD)



- 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**  
**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**  
STORM SEWER AND TRENCH DETAILS

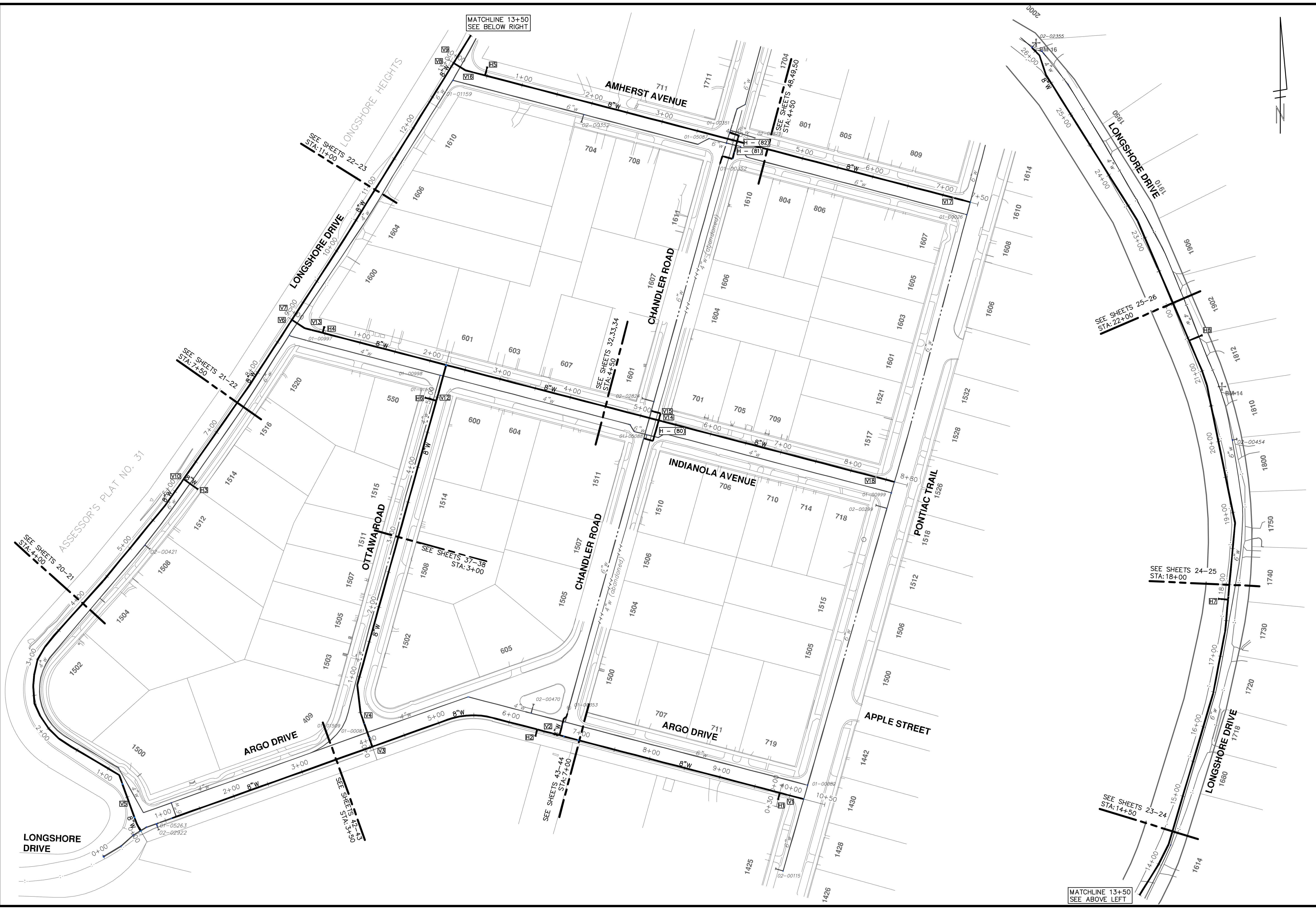
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SHEET No. 8 OF 54








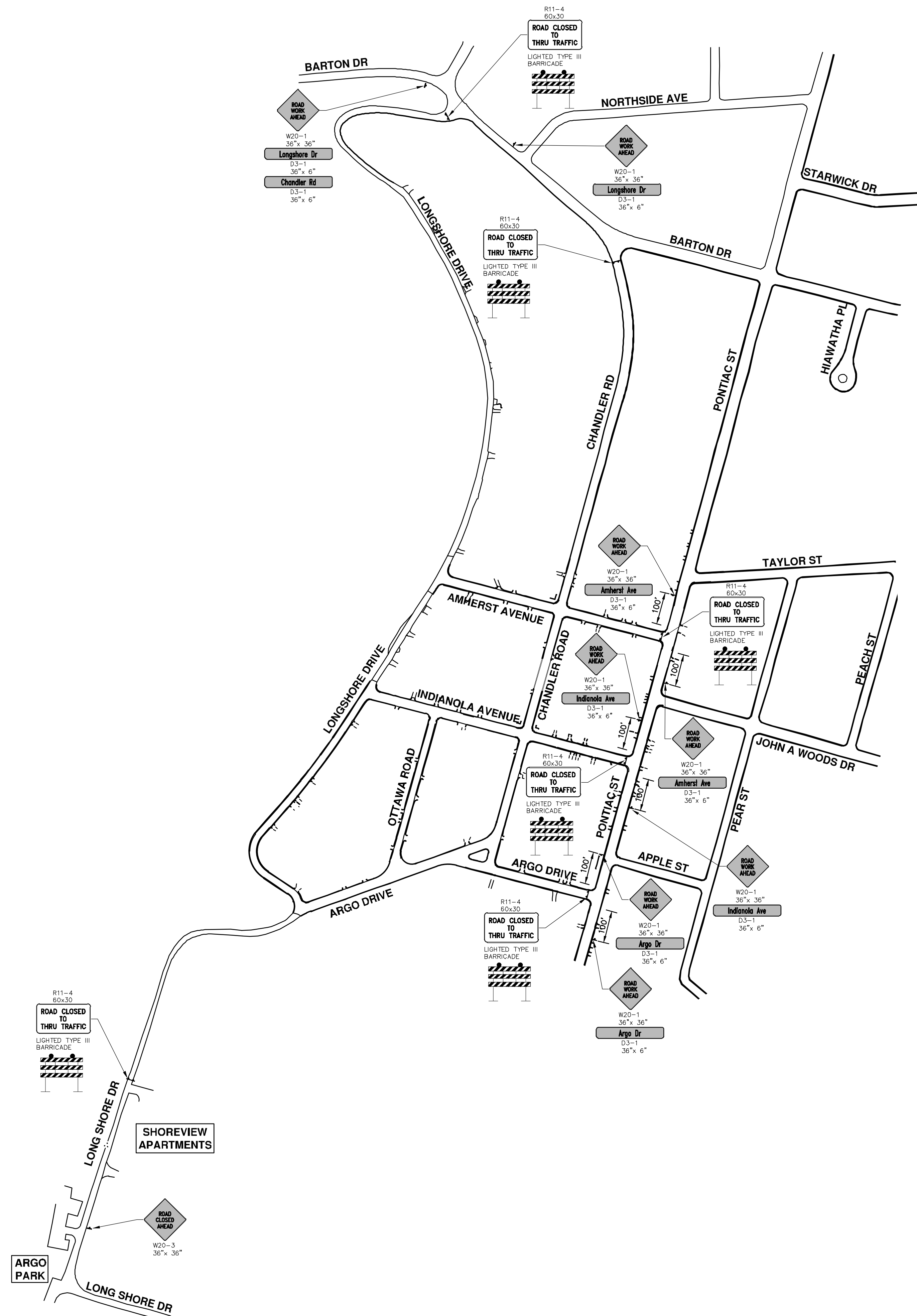
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		<b>CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING</b> <b>LONGSHORE INDIANOLA OTTAWA</b> <b>ARGO AMHERST WATERMAIN</b> OVERALL WATER MAIN LAYOUT	
SCALE PLAN: 1" = 60' DRAWING No.: 2018019-10		SHEET No.: 10 OF 54	
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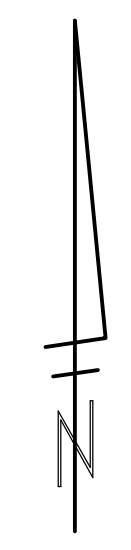


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SIGN	NUMBER	QUANTITY
ROAD CLOSED	R11-2 48"x30"	8
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED - 24 EACH		

- 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**  
**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**  
 TRAFFIC CONTROL OVERALL

SCALE PLAN: 1" = 150'  
 DRAWING No. 2018019-11

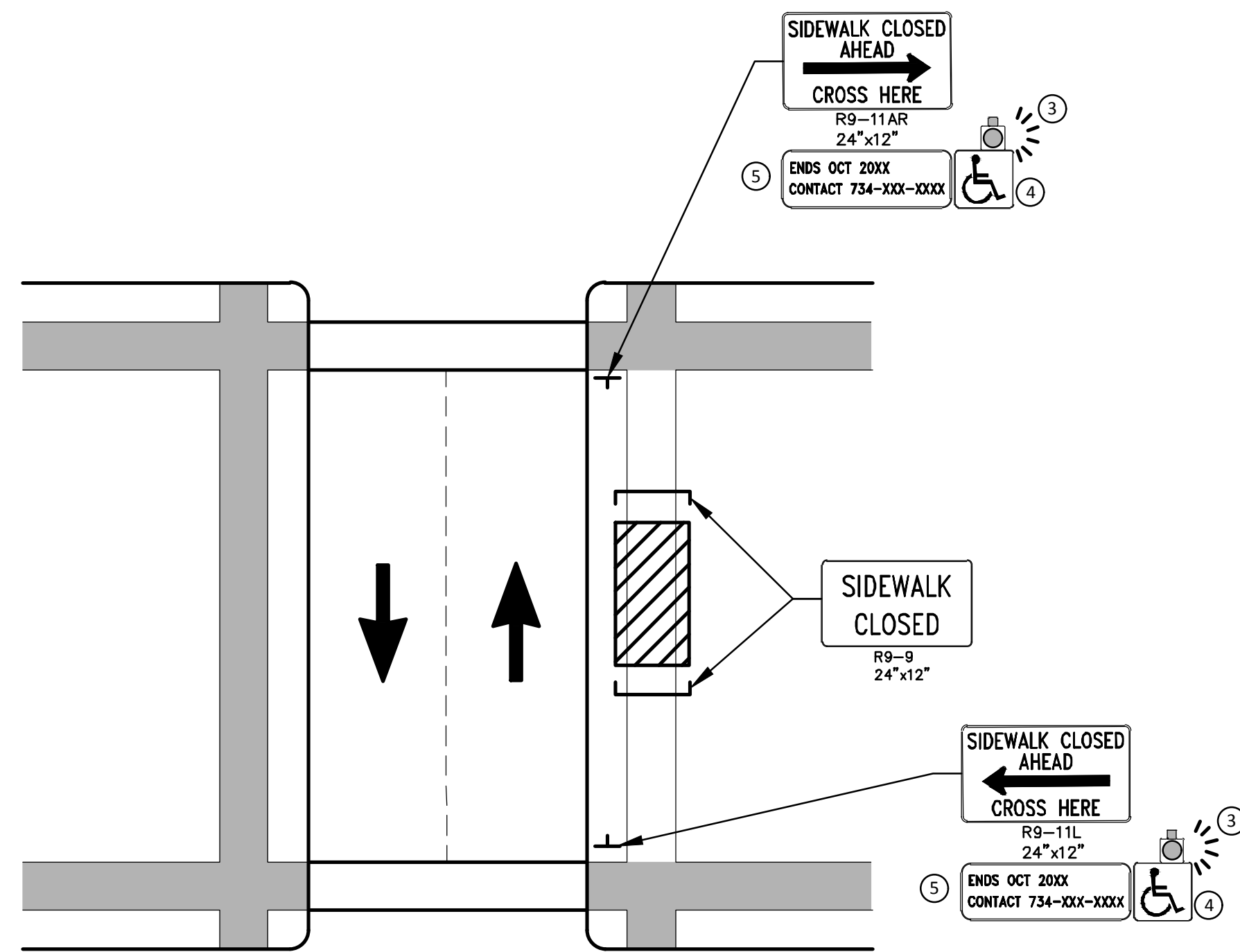
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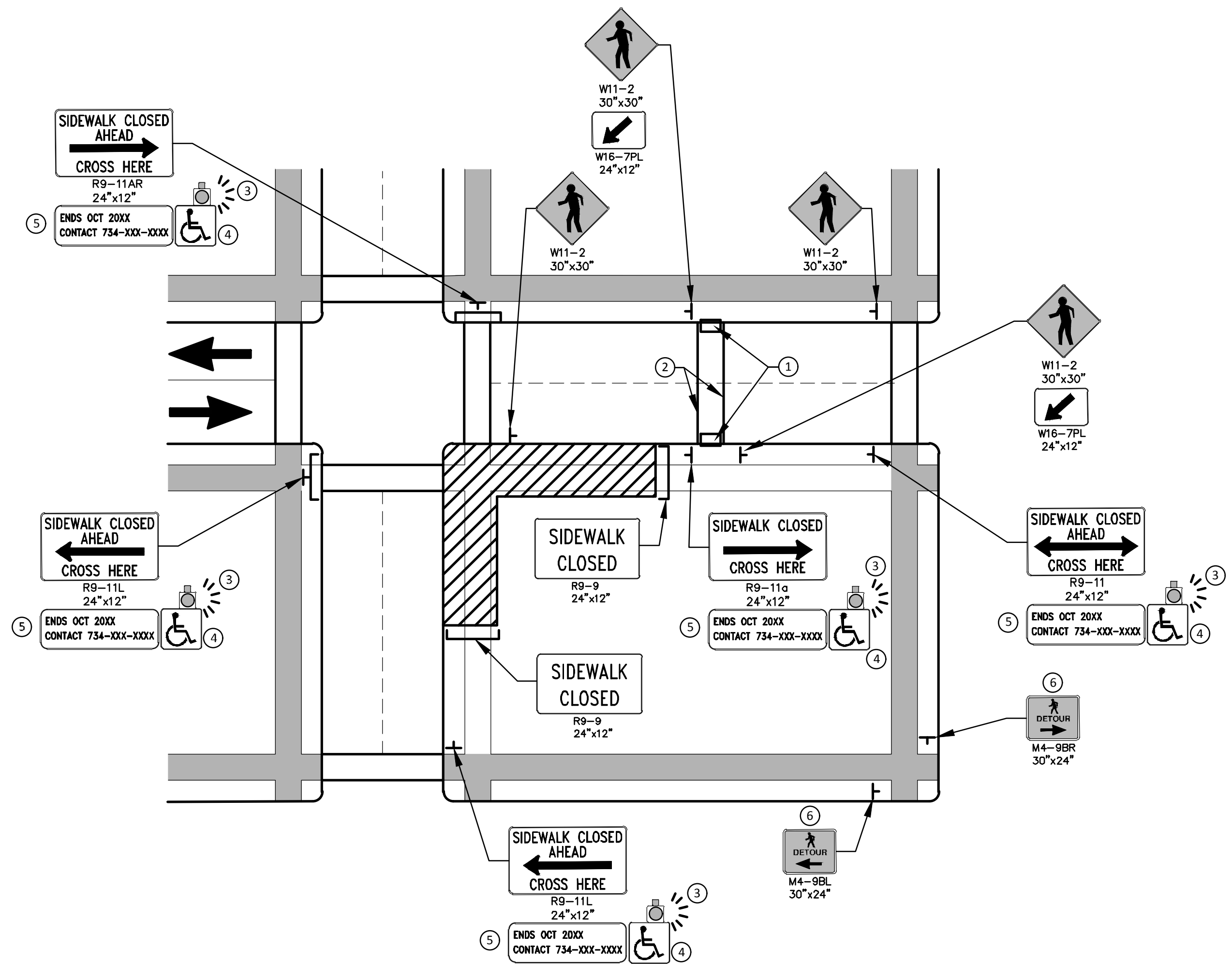
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SHEET No. 11 OF 54

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PEDESTRIAN DETOUR USING OPPOSITE SIDE OF STREET



OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS  
(FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK)

**GENERAL NOTES**

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

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

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

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

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

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

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

**SPECIFIC NOTES**

1. TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
2. TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
3. AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHALL BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHALL BE POSTED AND AN ALTERNATE ROUTE SHALL BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
5. TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHALL INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
6. PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHALL BE USED IF THE PEDESTRIAN DETOUR IS IN A LOCATION OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.

**PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES**

1. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MMUTCD, PART 6.
2. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES AND COMMERCIAL PROPERTIES AT ALL TIMES. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.
3. IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH, A 5 FOOT BY 5 FOOT PASSING SPACE SHALL BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE SMOOTH AND CONTINUOUS FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES, EQUIPMENT, OR CONSTRUCTION OPERATIONS.
4. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP-OFFS, THEN CRASH WORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF NCHRP 350 AND THE MMUTCD SHALL BE USED.
5. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.
6. THE CONTRACTOR'S OPERATIONS SHALL NOT OCCUPY SIDEWALKS EXCEPT WHERE PROPER PROTECTION AND A TPAR HAVE BEEN PROVIDED.
7. WHEN DIRECTED BY THE ENGINEER, OR STATED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN TRAFFIC CONTROL PLAN FOR REVIEW AND WRITTEN APPROVAL BY THE ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC. NO WORK SHALL BE ALLOWED TO BEGIN UNTIL THIS PLAN IS APPROVED BY THE ENGINEER IN WRITING.
8. PROVISION OF THE TPAR AND ALL OF ITS ELEMENTS, INCLUDING BUT NOT LIMITED TO, CREATION OF THE TEMPORARY PEDESTRIAN CONTROL PLAN, SIGNS, CHANNELIZING DEVICES, BARRICADES, TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "MINOR TRAF DEVICES."

**LEGEND**

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



REV.	DESCRIPTION	DATE	BY	CHECKED

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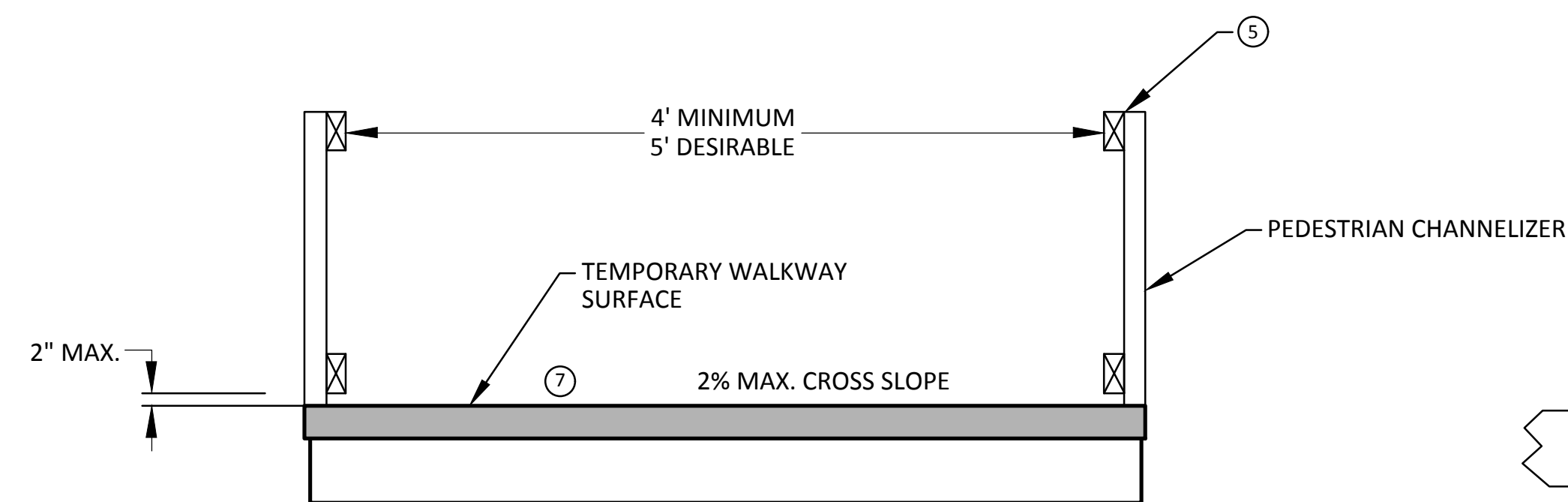


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

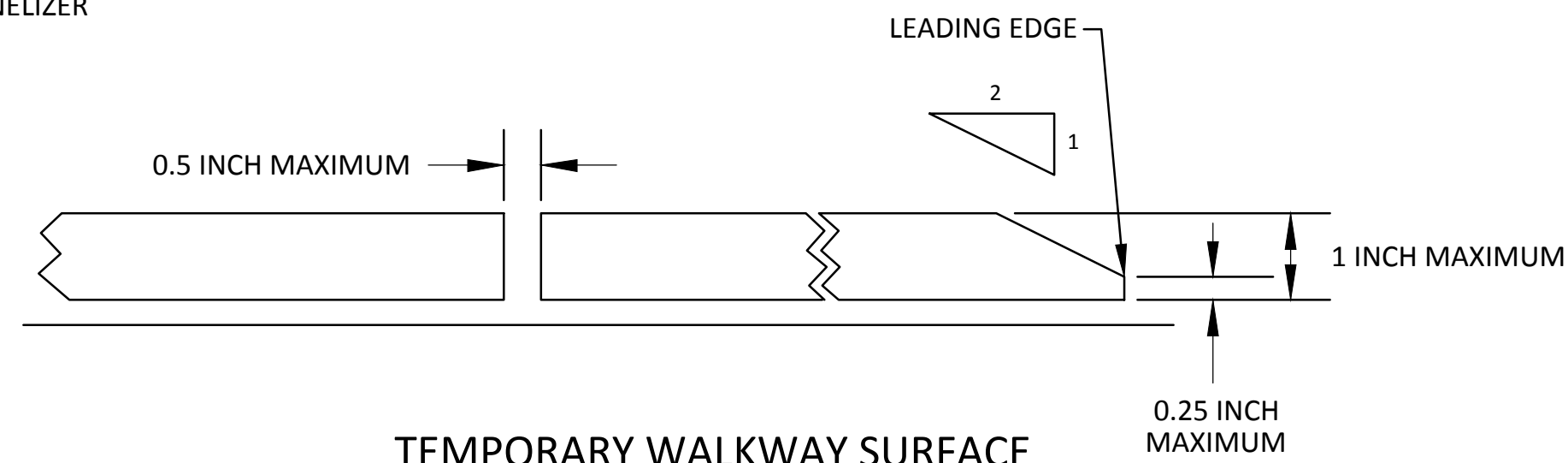
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DRAWING No. 2018019-12



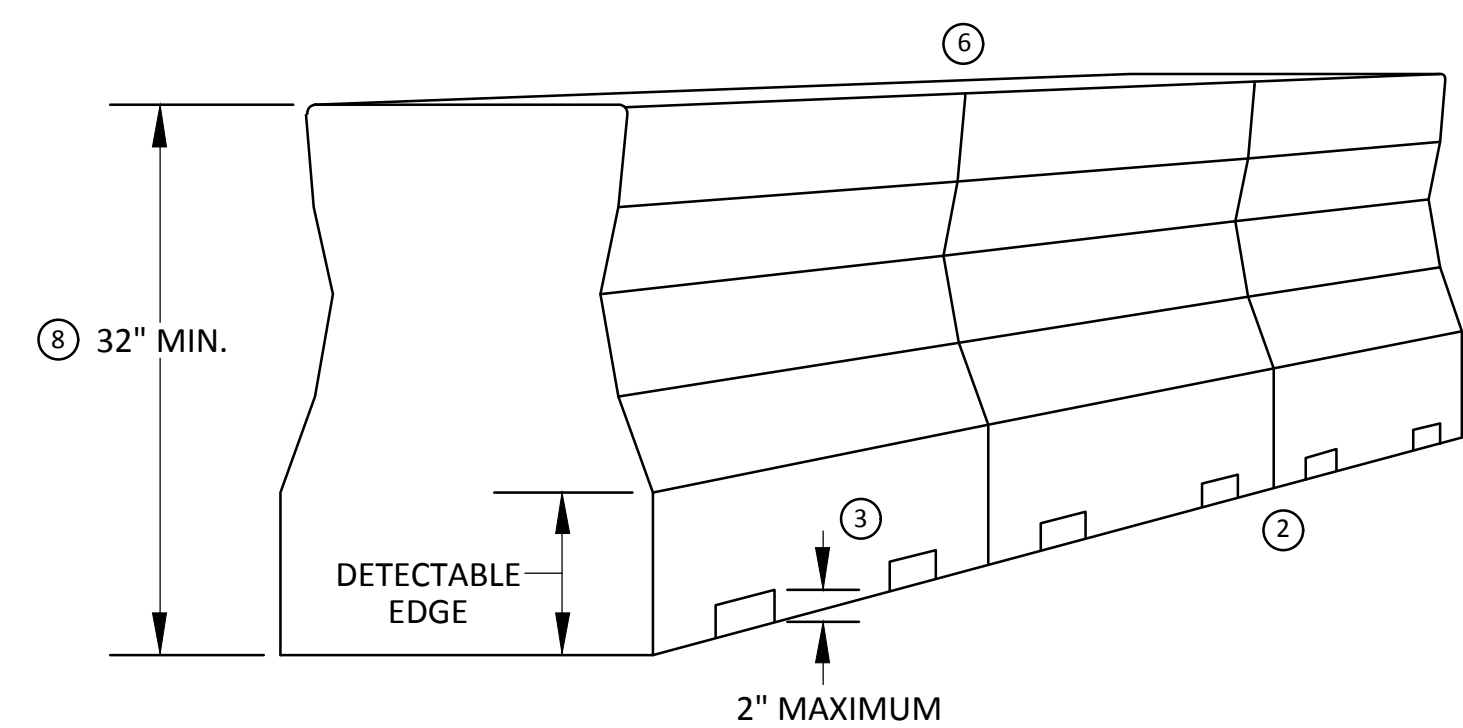
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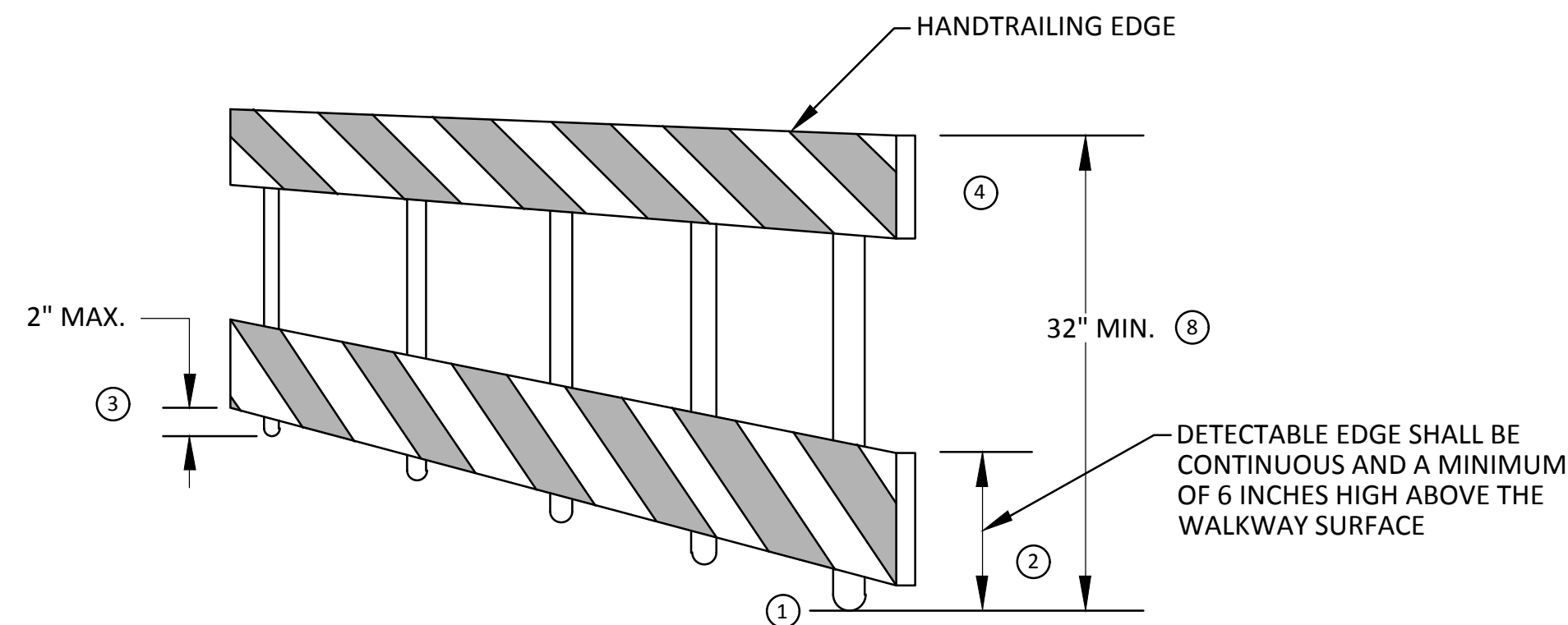
TEMPORARY PEDESTRIAN ACCESS



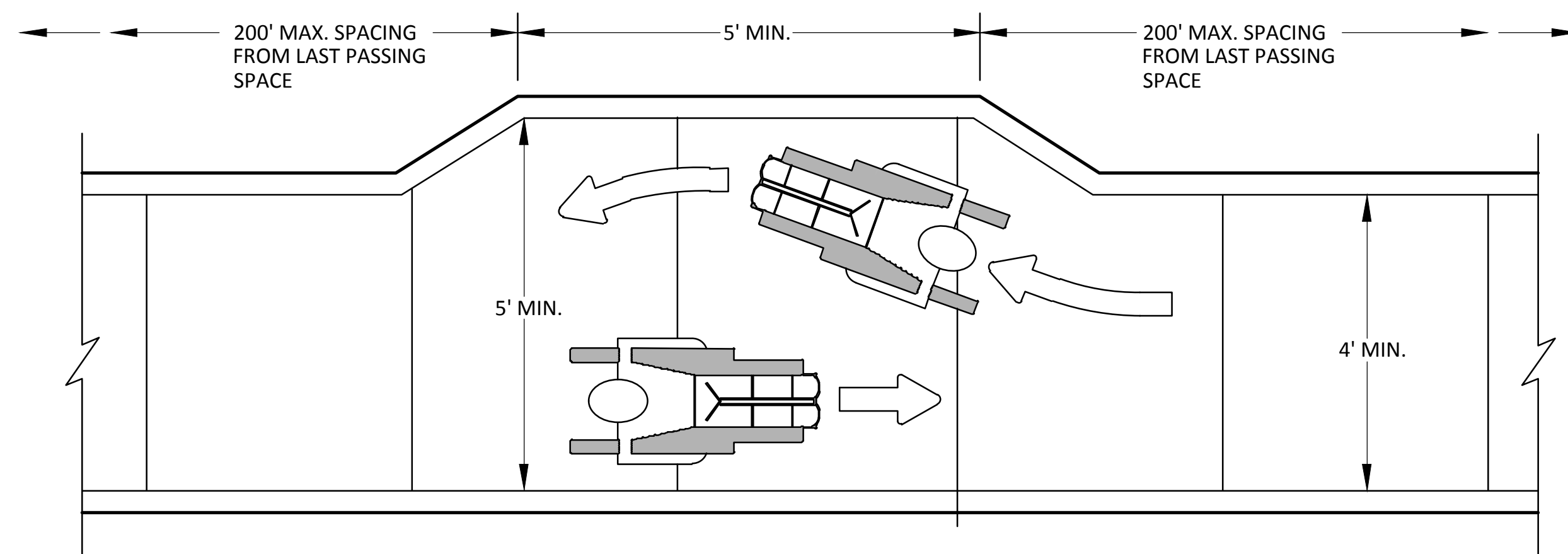
TEMPORARY WALKWAY SURFACE



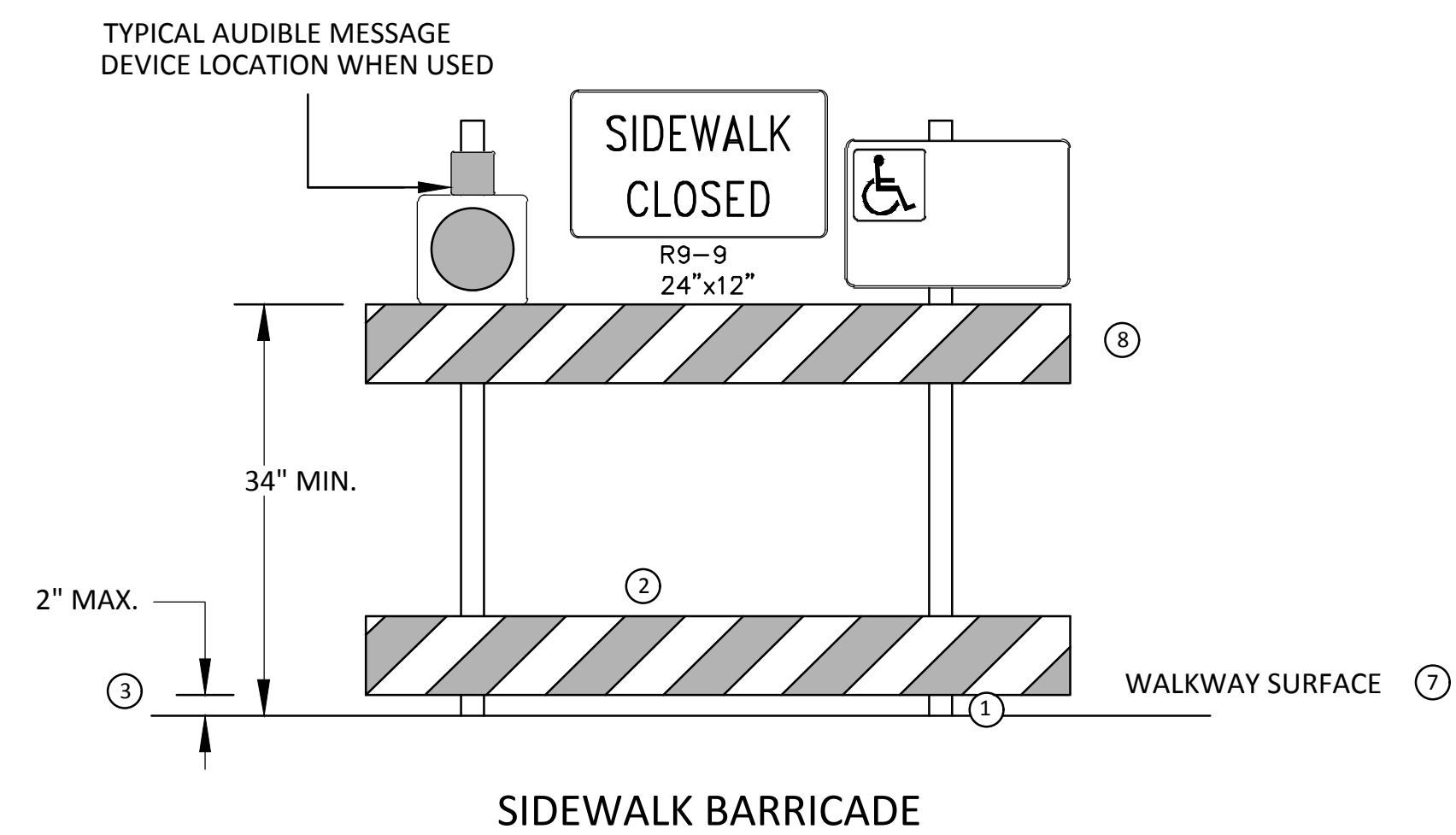
PEDESTRIAN CHANNELIZER USING A BARRIER  
(MINIMUM REQUIREMENTS)



PEDESTRIAN CHANNELIZER  
(MINIMUM REQUIREMENTS)



NARROW TEMPORARY PEDESTRIAN ACCESS ROUTE PASSING DETAIL



SIDEWALK BARRICADE

GENERAL NOTES

RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4 INCHES INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27 INCHES ABOVE THE WALKWAY SURFACE.

ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIER'S APPLICATION.

BARRICADES SHALL BE PLACED CONTINUOUSLY ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE BEING CLOSED.

SPECIFIC NOTES

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

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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
TPAR WALKWAY DEVICES

SCALE: N.T.S.  
DRAWING No. 2018019-13

SHEET No.

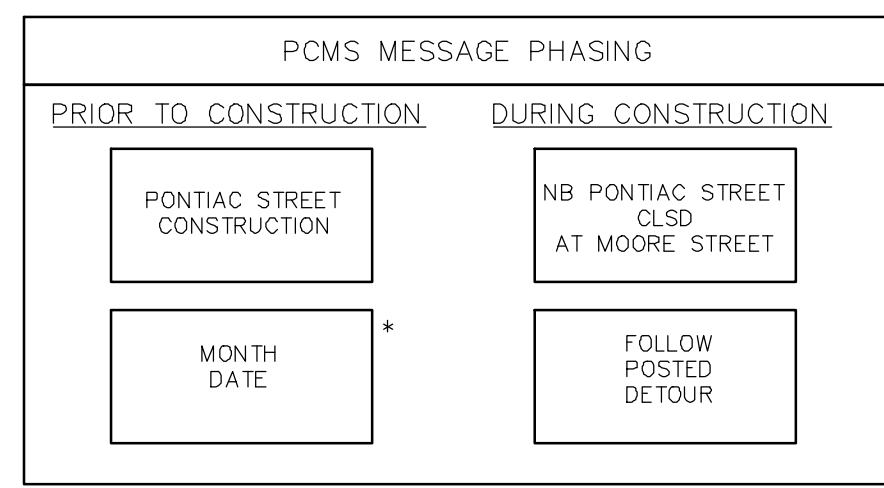


REV.	DESCRIPTION	DATE	DATE	BY	CHECKED
00	COPY TO NEXT LINE AND EDIT THE TEXT				

**DETOUR CONSTRUCTION NOTES:**

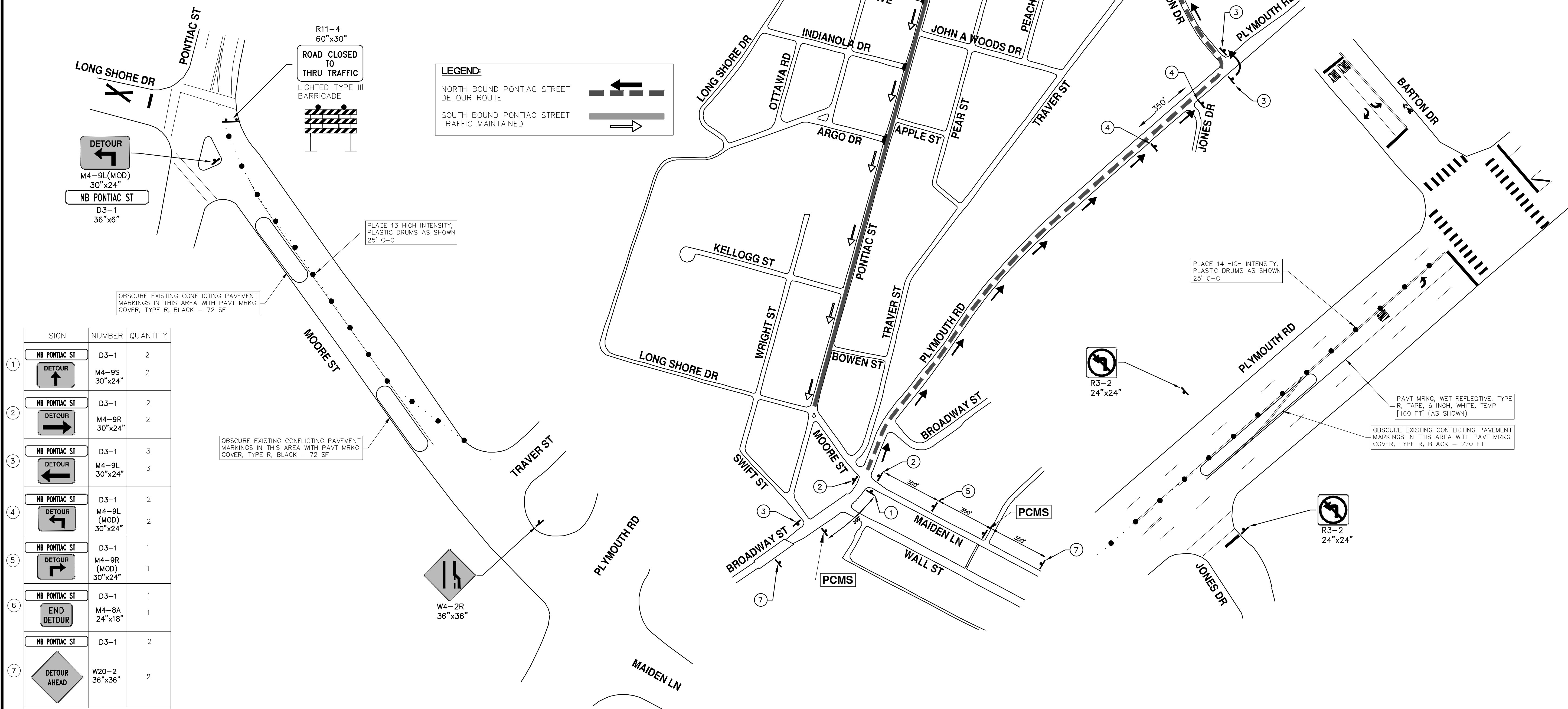
1. DEPENDING ON THE DETOUR ROUTE THAT IS PUT IN PLACE, CONFLICTING SIGNS MAY BE PRESENT. PRIOR TO THE ORDERING OR PLACEMENT OF ANY SIGNS, MEET WITH THE ENGINEER TO VERIFY THE EXACT NUMBER AND LOCATION OF THE SIGNS TO BE PLACED. THE ENGINEER AND THE CONTRACTOR SHALL WORK TOGETHER TO ELIMINATE ALL CONFLICTS.
2. THE CITY RESERVES THE RIGHT TO ORDER ADDITIONAL SIGNS AND PLACE THEM INTO SERVICE IN ORDER TO SAFELY MAINTAIN TRAFFIC. ADJUSTMENTS IN THE UNIT PRICE FOR THESE ITEMS OF WORK SHALL NOT BE ALLOWED FOR THESE OCCURRENCES.
3. THE CONTRACTOR SHALL COORDINATE HIS OPERATIONS WITH THOSE OF THE CITY OF ANN ARBOR'S SIGNS AND SIGNALS UNIT DURING THE COURSE OF THE DETOUR ROUTE ESTABLISHMENT TO EFFECTIVELY AND SAFELY MAINTAIN TRAFFIC. DO NOT ERECT ANY SIGNS UNTIL ITS LOCATION AND PROPOSED DATE OF INSTALLATION IS APPROVED BY THE ENGINEER.
4. THE DETOUR IS TO BE IN PLACE DURING AMHERST AVE., INDIANOLA AVE., AND ARGO AVE. WATER MAIN CONNECTIONS AT PONTIAC ST. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR WILL CLOSE AND DETOUR NORTH BOUND PONTIAC STREET TRAFFIC. SEE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION STAGING, SEQUENCING, CLOSURE AND DETOUR LIMITATIONS, AND OTHER DETAILS.
5. REFERENCE THE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION SEQUENCING" FOR ADDITIONAL PROJECT REQUIREMENTS. THE CONTRACTOR'S ATTENTION IS SPECIFICALLY DIRECTED TO THE SECTION OF SAME SPECIAL PROVISION REGARDING COORDINATION WITH THE CITY SIGNS AND SIGNALS UNIT FOR MODIFICATIONS TO TRAFFIC SIGNALS FOR THE DETOUR.
6. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN SIGNS AS SHOWN ON THE PLANS OR OTHERWISE DIRECTED BY THE ENGINEER.
7. CONSTRUCTION WARNING SIGNS SHALL HAVE AN ORANGE, HIGH-INTENSITY, REFLECTORIZED BACKGROUND.
8. SIGNS SHALL CONFORM TO THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. THE CONTRACTOR SHALL DRIVE ALL SIGNS INTO EXPOSED GROUND OR INSERT INTO A BORED HOLE IN PAVEMENT AS NECESSARY TO PERMANENTLY SECURE. ALL HOLES IN PAVEMENT SHALL BE FILLED WITH ENGINEER-APPROVED MORTAR WHEN THE SIGN IS REMOVED AND NO LONGER NEEDED. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE PAY ITEM "SIGN, TYPE B, TEMP, PRISMATIC, FURN" OR "SIGN, TYPE B, TEMP, PRISMATIC, FURN, SPECIAL".

10. ADVANCE WARNING SIGNS SHALL BE PROVIDED WITH TWO (2) TYPE A FLASHING LIGHTS AND ONE (1) DAY-GLOW ORANGE FLAG.
11. CITY TO BE NOTIFIED A MINIMUM OF 7 DAYS PRIOR TO IMPLEMENTING NORTH BOUND PONTIAC STREET DETOUR. MESSAGE BOARDS TO BE PLACED 7 DAYS PRIOR TO IMPLEMENTATION OF DETOUR.



NOTE: PCMS LOCATIONS AND MESSAGES WILL BE AS DIRECTED BY THE ENGINEER. TO BE PLACED ONE WEEK PRIOR TO CONSTRUCTION.

\* THE CONTRACTOR SHALL PLACE THE APPROPRIATE DATE AS APPROVED BY THE ENGINEER.



SIGN	NUMBER	QUANTITY
NB PONTIAC ST DETOUR	D3-1	2
DETOUR	M4-9S 30"x24"	2
NB PONTIAC ST DETOUR	D3-1	2
DETOUR	M4-9R 30"x24"	2
NB PONTIAC ST DETOUR	D3-1	3
DETOUR	M4-9L 30"x24"	3
NB PONTIAC ST DETOUR	D3-1	2
DETOUR	M4-9L (MOD) 30"x24"	2
NB PONTIAC ST DETOUR	D3-1	1
DETOUR	M4-9R (MOD) 30"x24"	1
NB PONTIAC ST END DETOUR	D3-1	1
END DETOUR	M4-8A 24"x18"	1
NB PONTIAC ST DETOUR AHEAD	D3-1	2
DETOUR AHEAD	W20-2 36"x36"	2

SIGN, PORTABLE, CHANGEABLE MESSAGE - 2 EACH  
VERIFY EXACT QUANTITY AND LOCATION WITH ENGINEER PRIOR TO ORDERING

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

DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

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DESCRIPTION: TRAFFIC CONTROL  
REV.:

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CITY OF ANN ARBOR - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN

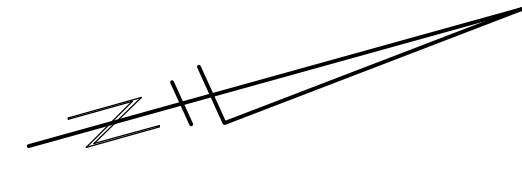
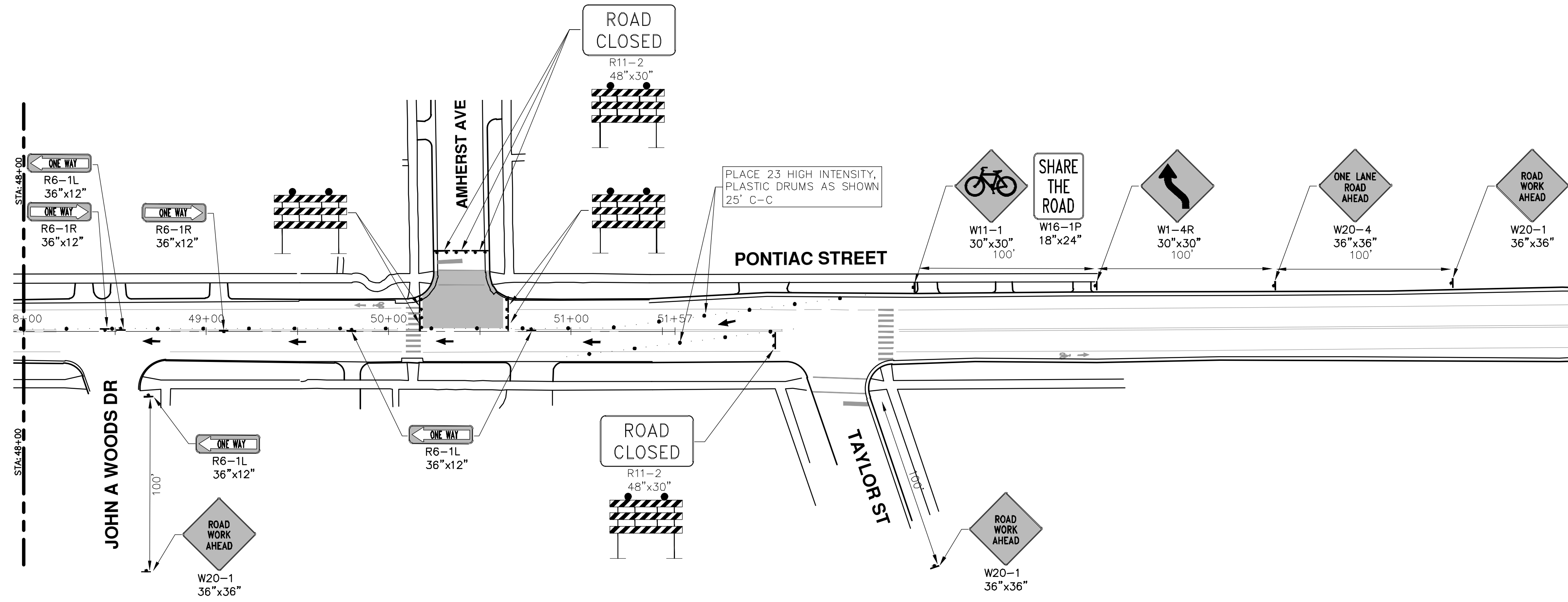
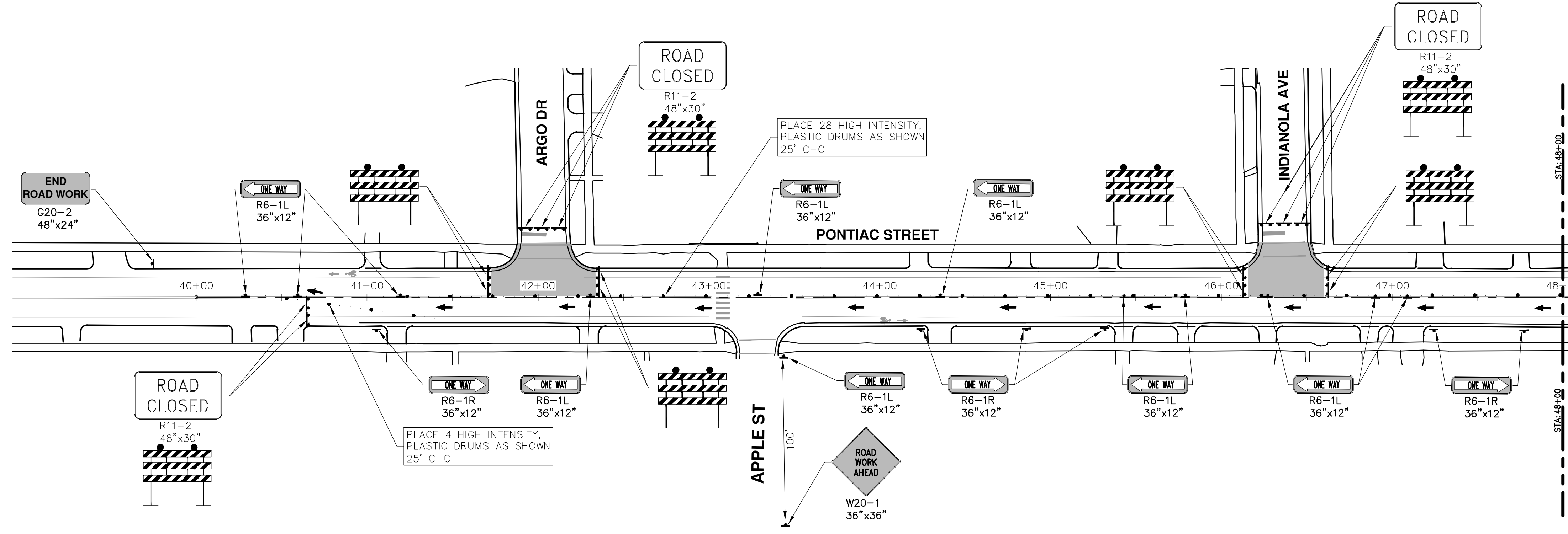
TRAFFIC CONTROL  
NORTH BOUND PONTIAC STREET DETOUR

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SCALE PLAN: 1" = 300'

DRAWING No.: 2018019-14  
SHEET No.: 14 OF 54

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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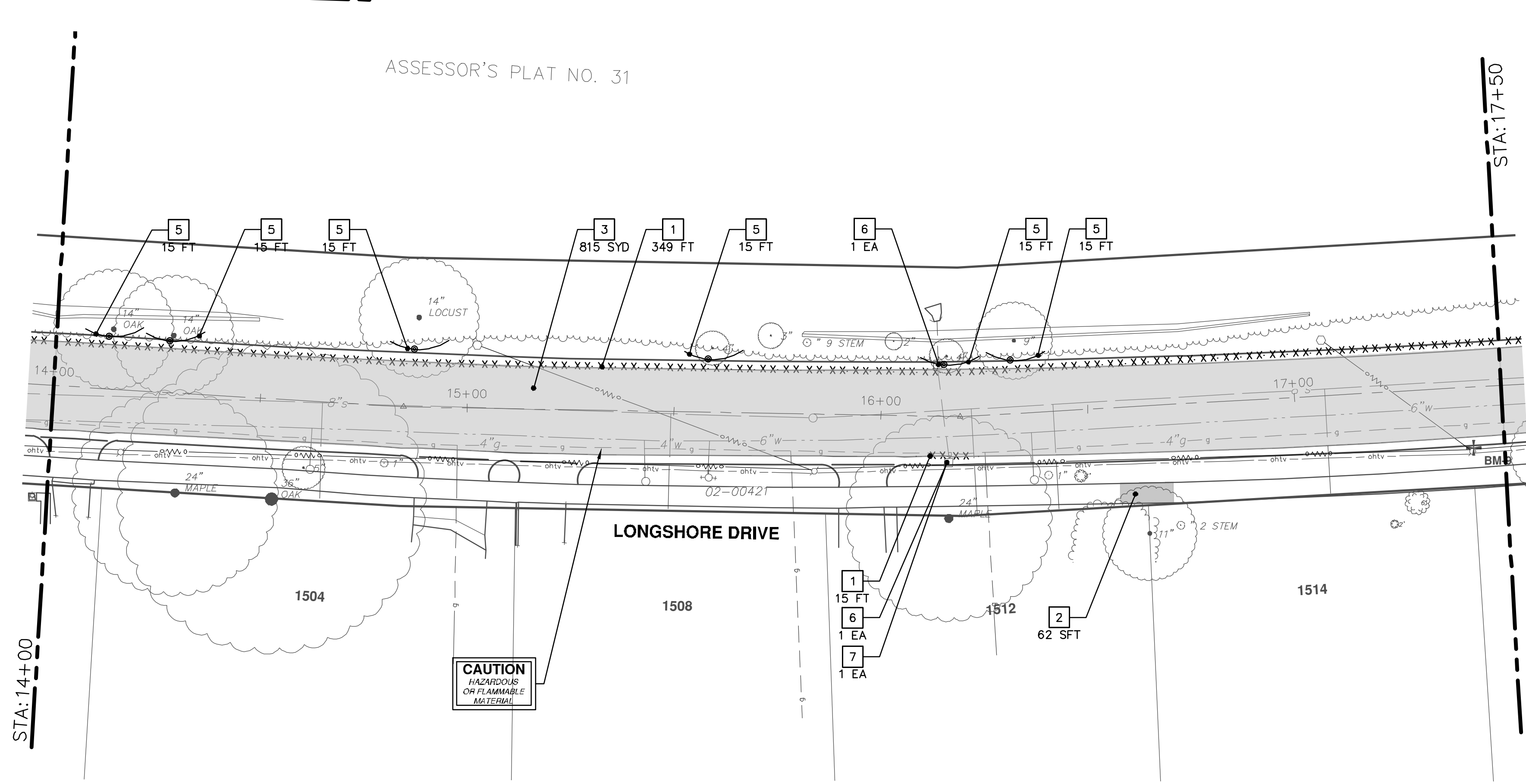
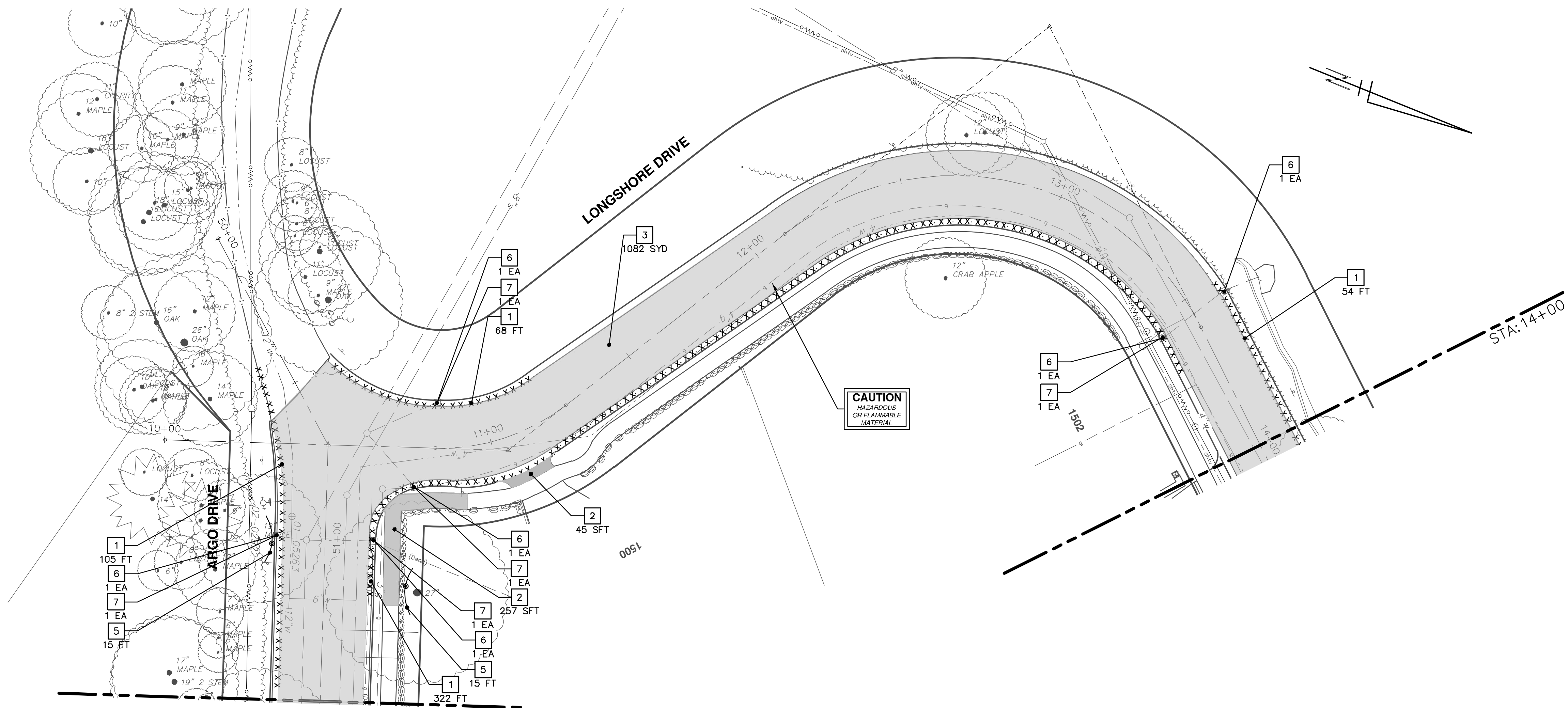
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CITY OF ANN ARBOR - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
TRAFFIC CONTROL  
WATER MAIN CONNECTION AT PONTIAC STREET

DRAWING No.  
2018019-15

R:\2018019 Longshore Dr WM\Plan Production\2018019Rem-Longshore.dwg Dwg Created: 22-Jan-19 -- a2 standard bw.stb -- Plot Date: 23-Jan-19



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

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

DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

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LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
REMOVALS - STA. 10+00 - STA. 17+50

REV. 1  
DESCRIPTION  
REV. 1

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ANN ARBOR  
MICHIGAN

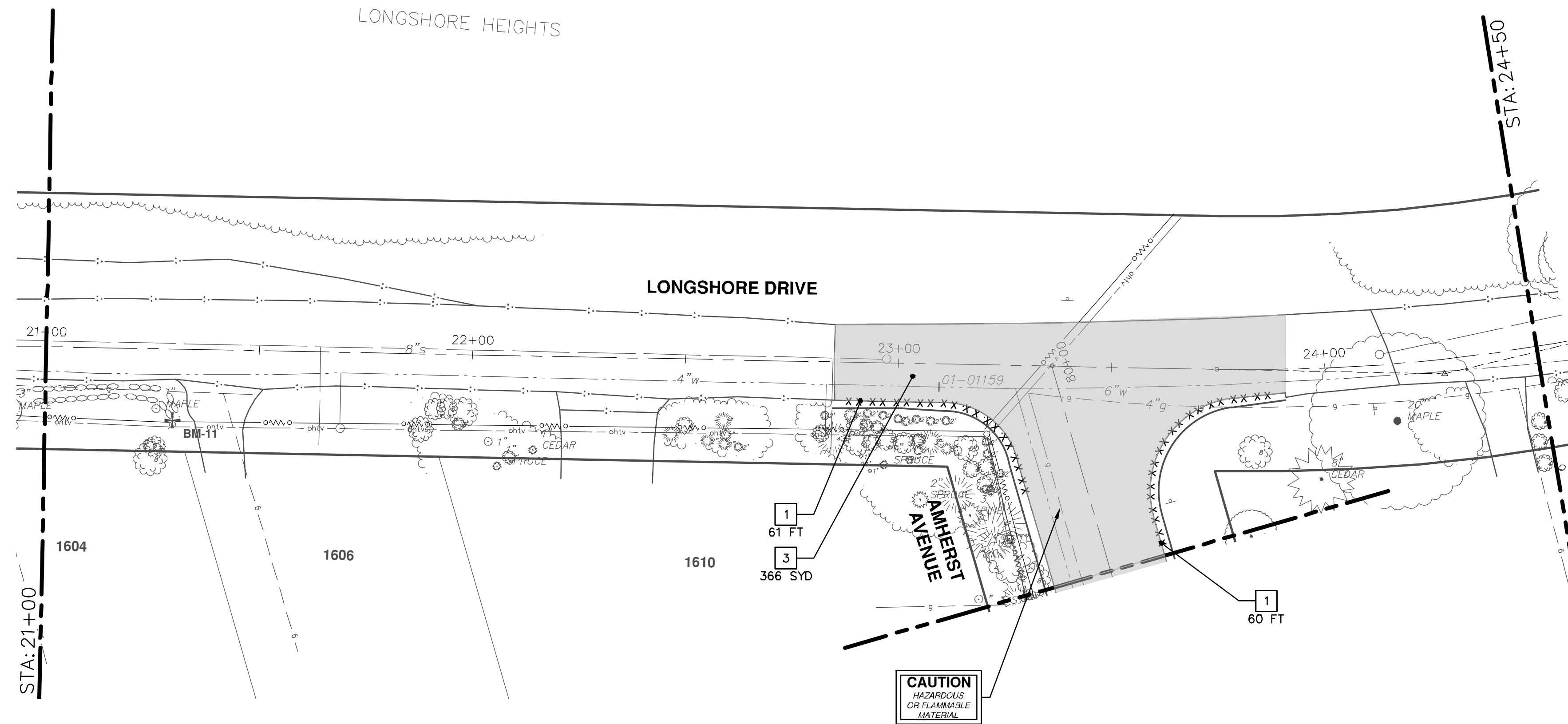
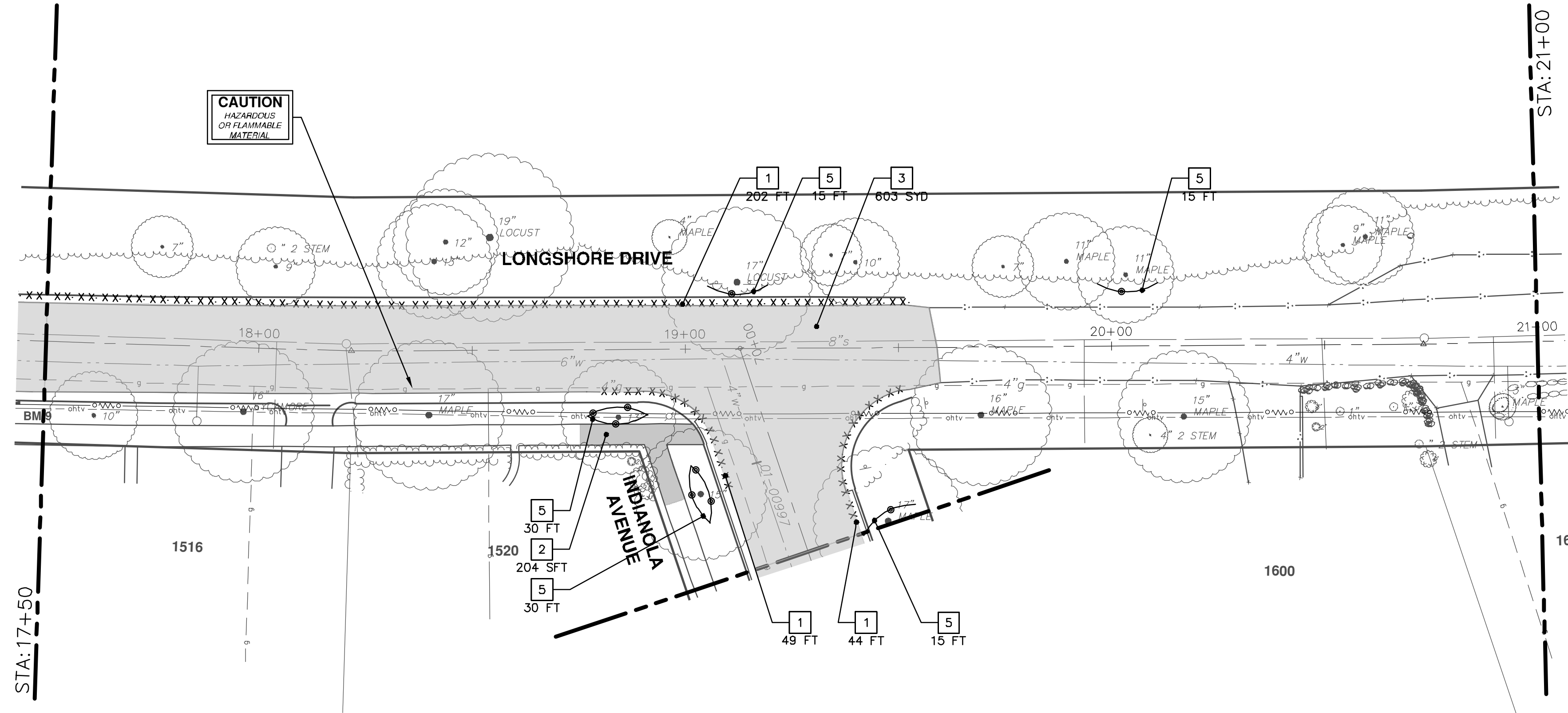
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
REMOVALS - STA. 10+00 - STA. 17+50

SCALE: 1" = 20'  
DRAWING No. 2018019-16  
SHEET No. 16 OF 54



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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS



REV.	DATE	DESCRIPTION	BY	CHECKED
00	1-23-19		CC/DF/RB	JKA
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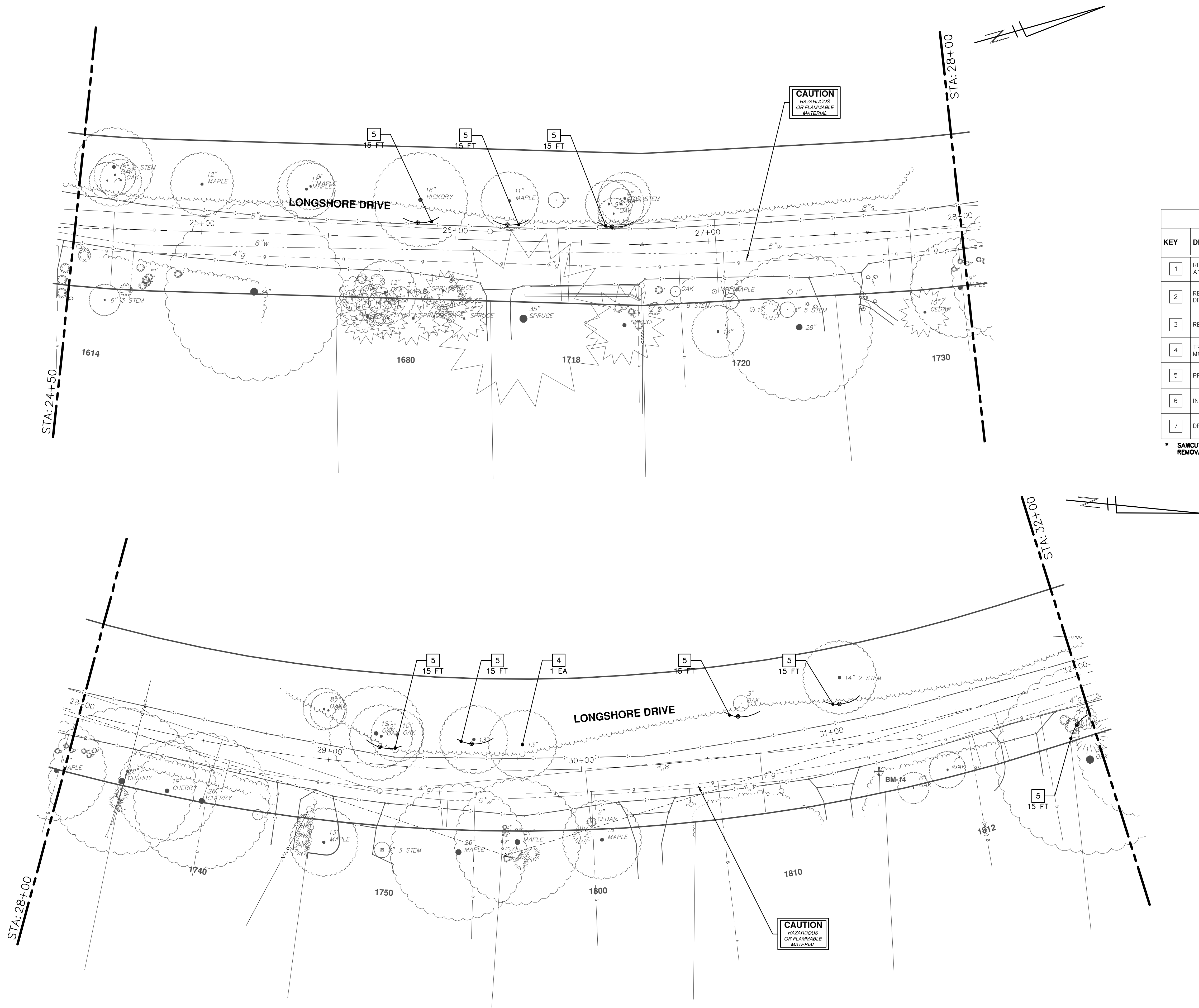
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CITY OF ANN ARBOR - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
REMOVALS - STA. 17+50 - STA. 24+50

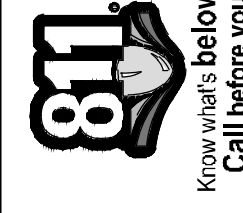
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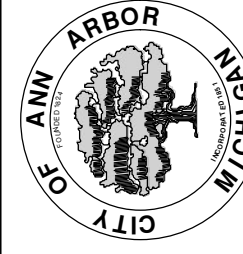
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KEY	DESCRIPTION
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2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS



REV.	DATE	DESCRIPTION
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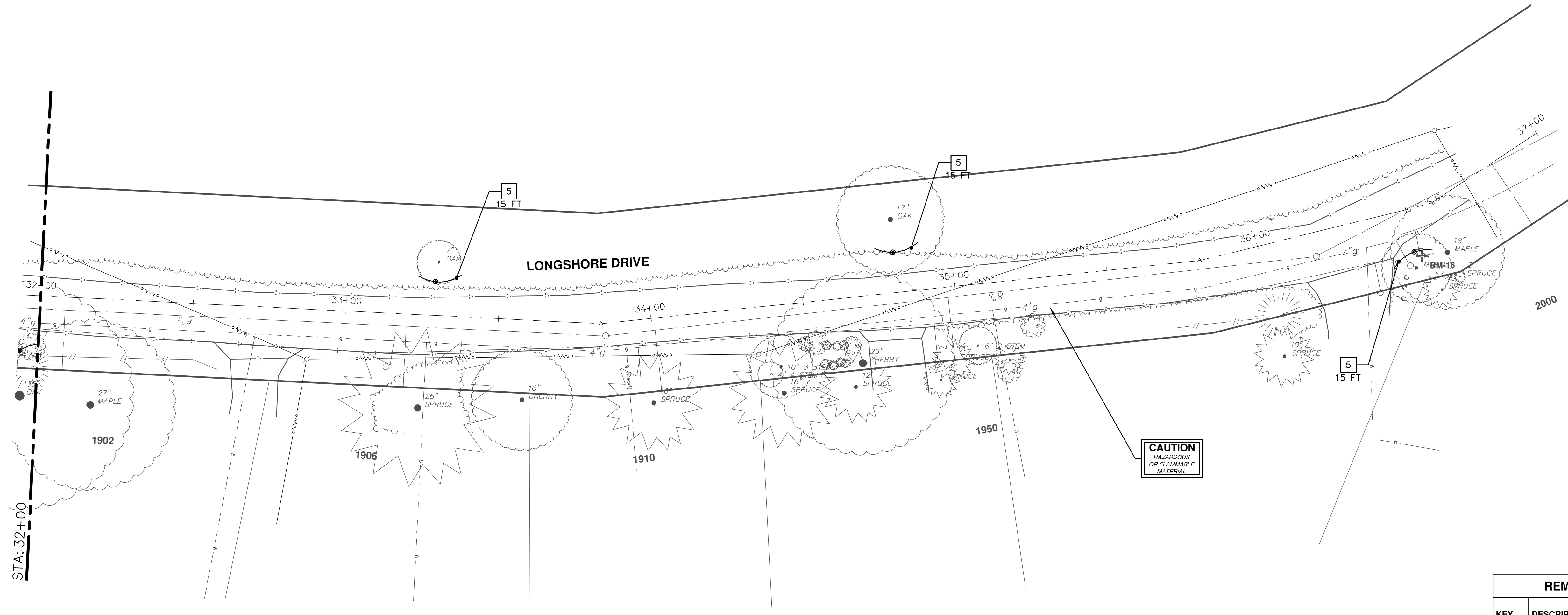


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LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
REMOVALS - STA. 24+50 - STA. 32+00

SCALE: 1" = 20'  
DRAWING No.  
2018019-18

SHEET No.

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**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

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LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN

LONGSHORE DRIVE  
REMOVALS - STA. 32+00 - P.O.E.

SCALE: 1" = 20'


DRAWING No.  
**2018019-19**

SHEET No.  
**19 OF 54**



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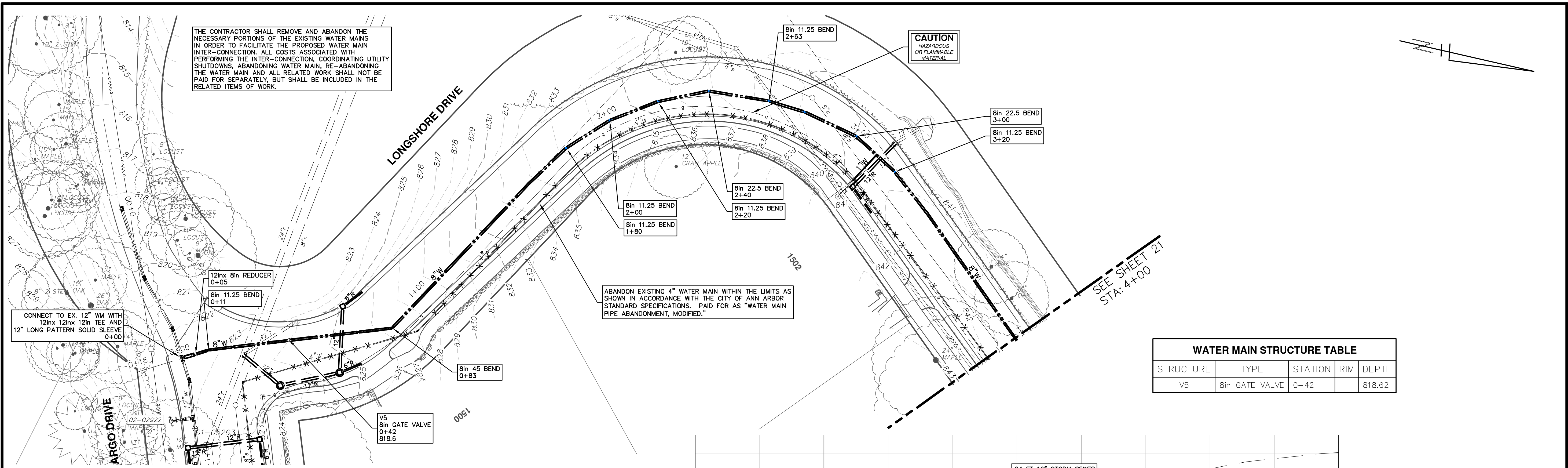
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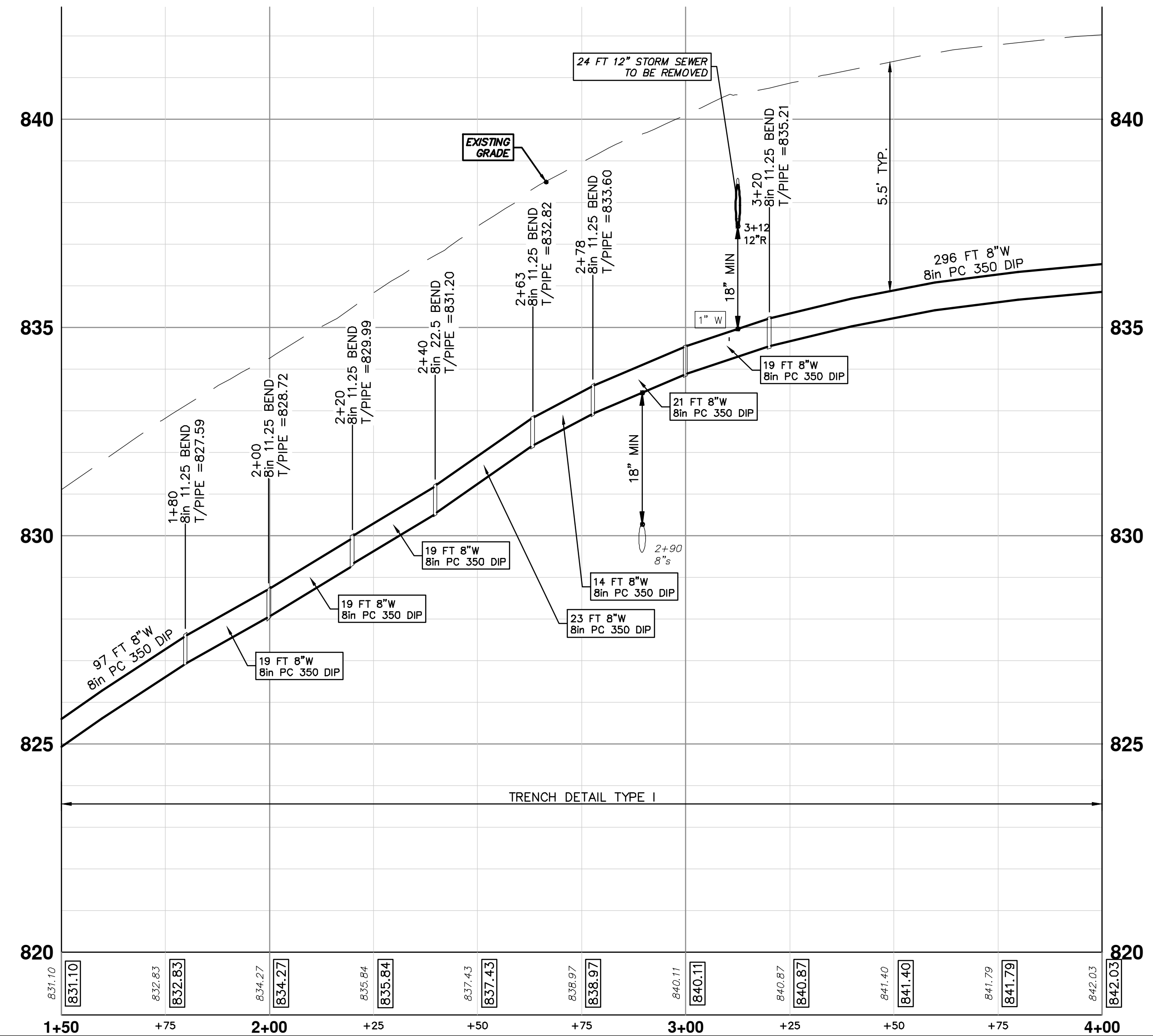
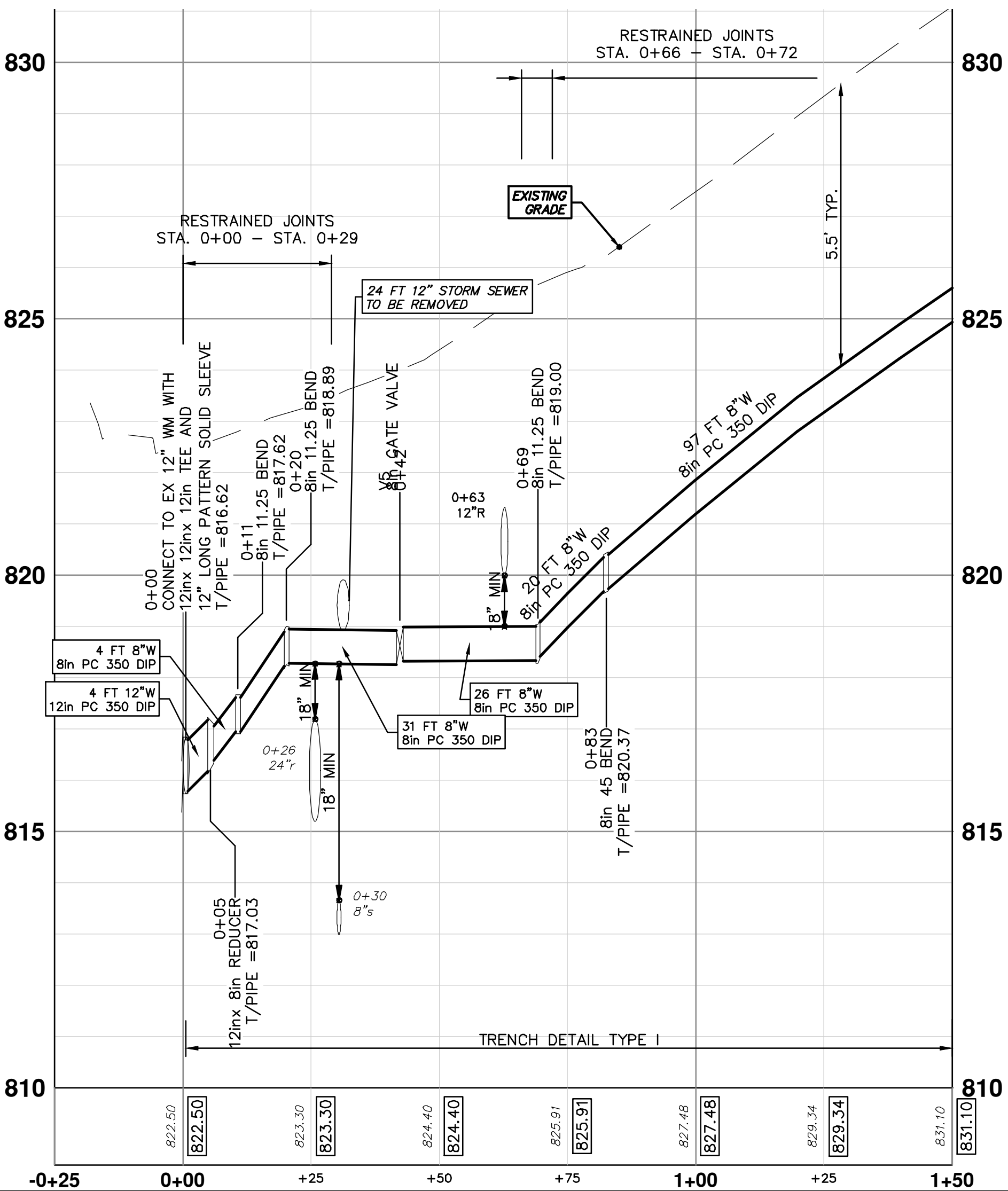
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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V5	8in GATE VALVE	0+42		818.62





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REV.	DD	OUT FOR BID	DATE	1-23-19	CC/DF/RB	JKA	CHECKED		
			DESCRIPTION						



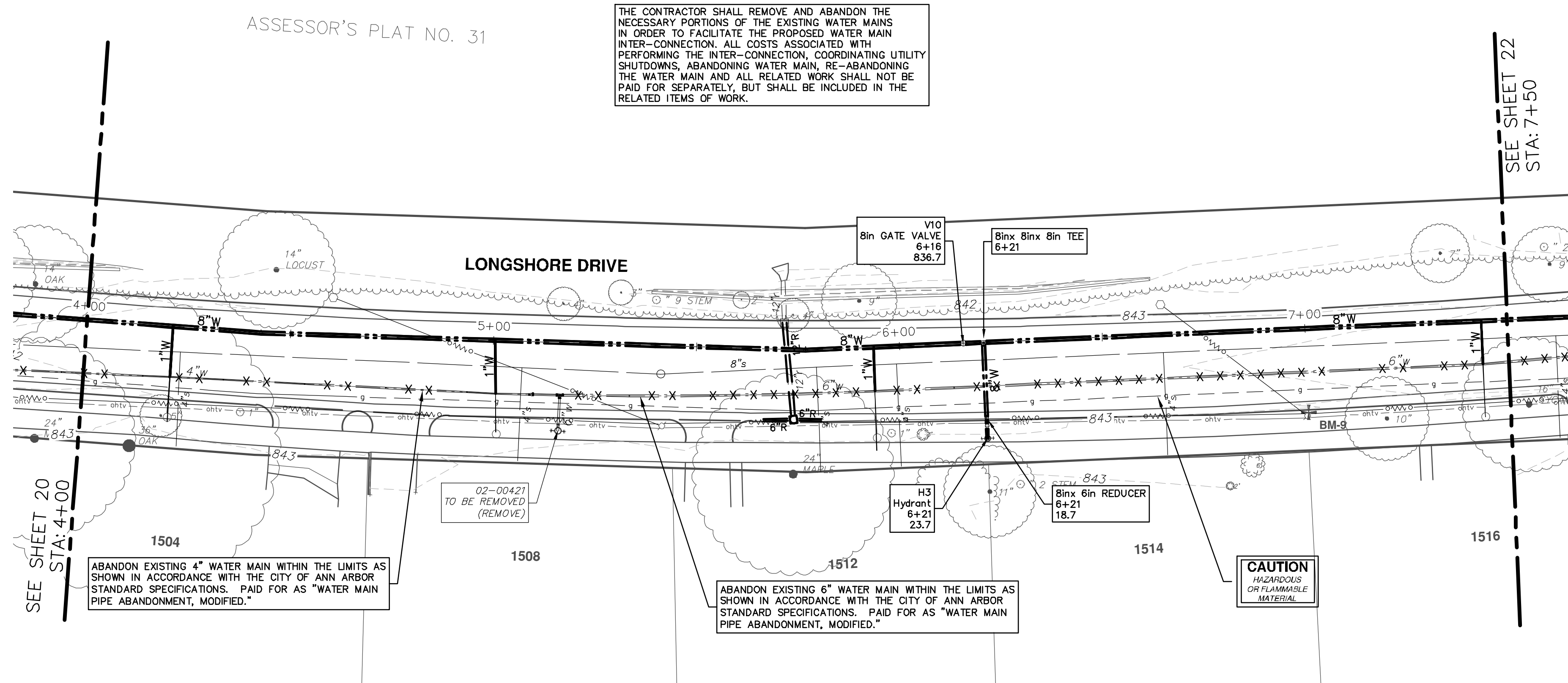
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**  
 LONGSHORE DRIVE  
 WATER MAIN - STA. 0+00 - STA. 4+00

SHEET No. **20 OF 54**

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

DRAWING No. **2018019-20**





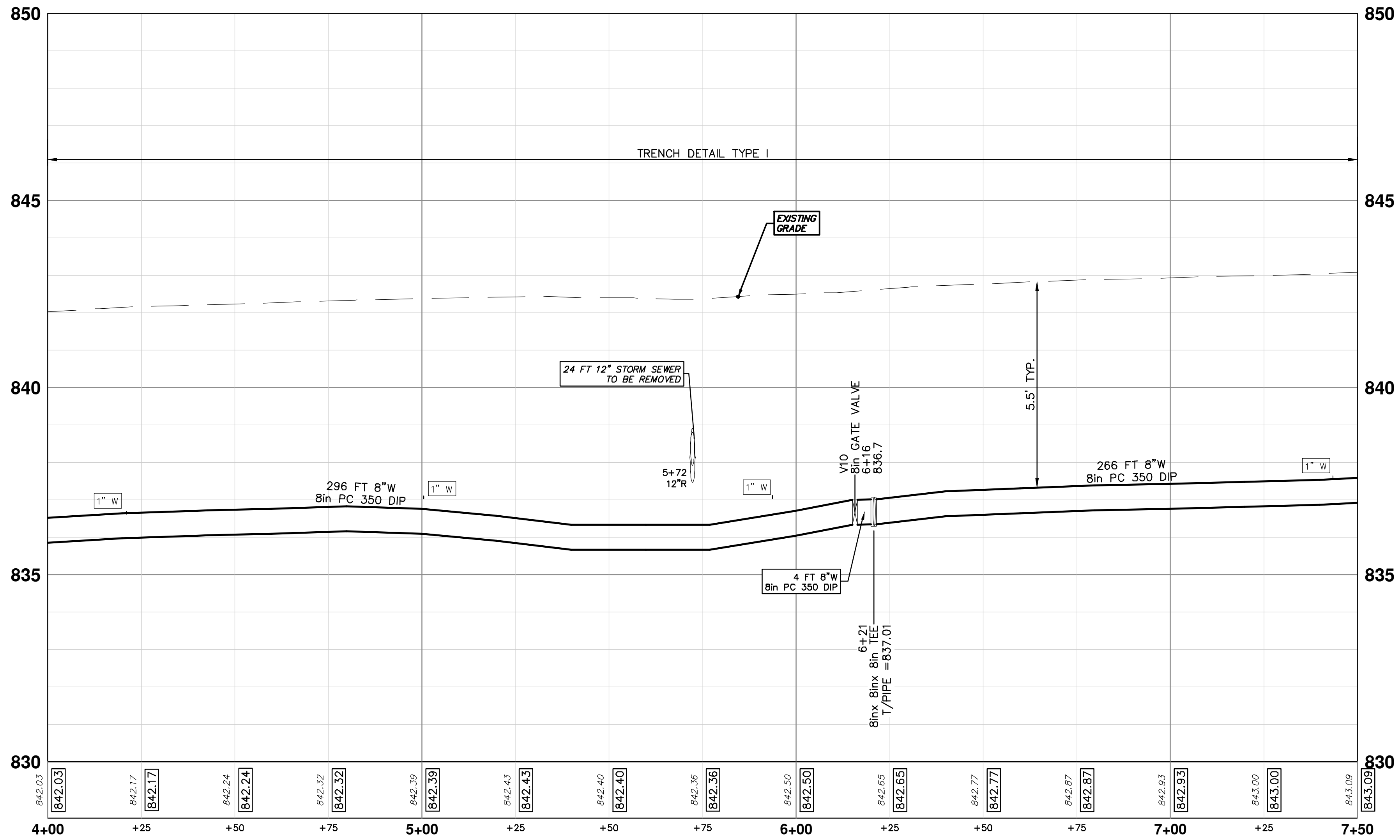
THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND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

ABANDON EXISTING 4" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

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

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H3	Hydrant	6+21		839.87
V10	8in GATE VALVE	6+16		836.67



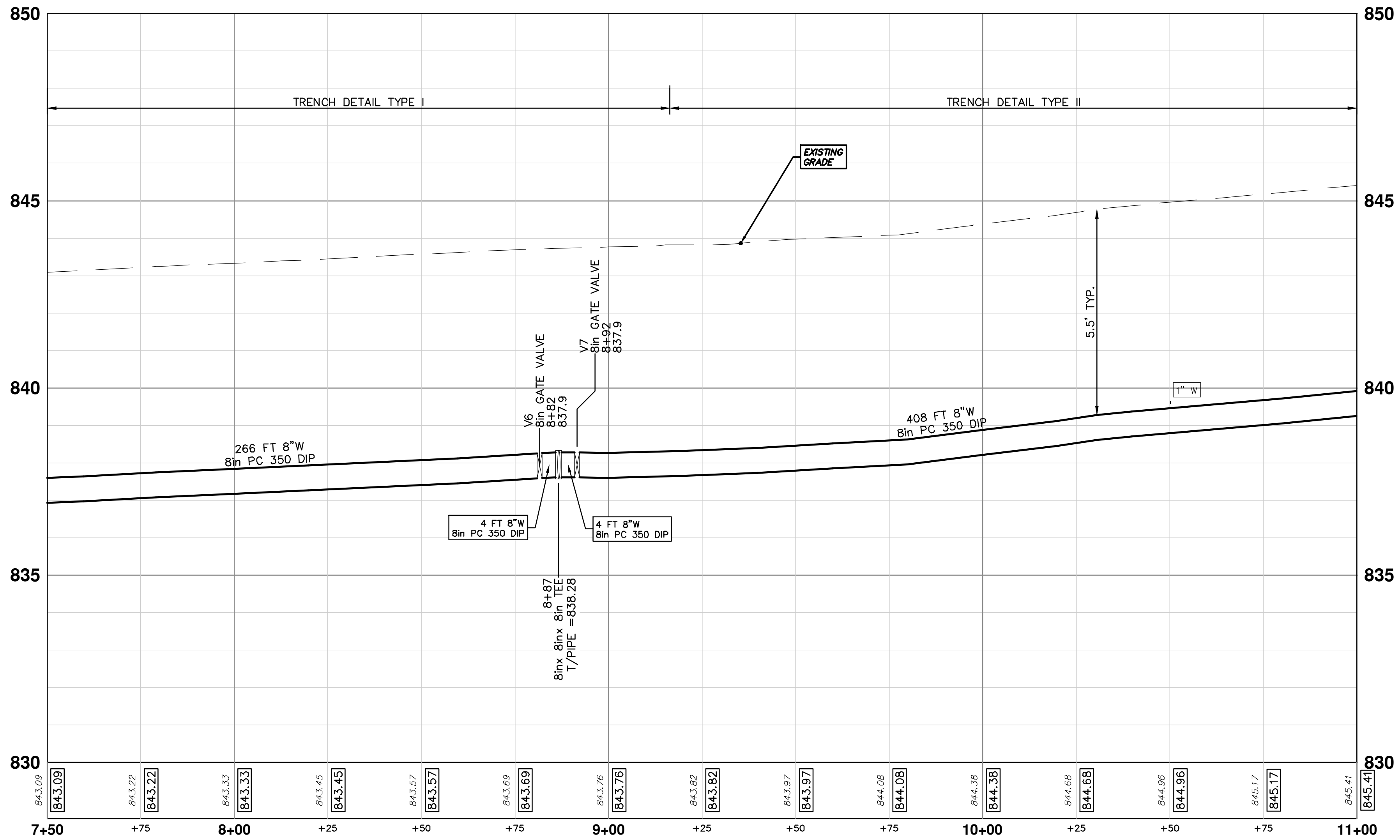
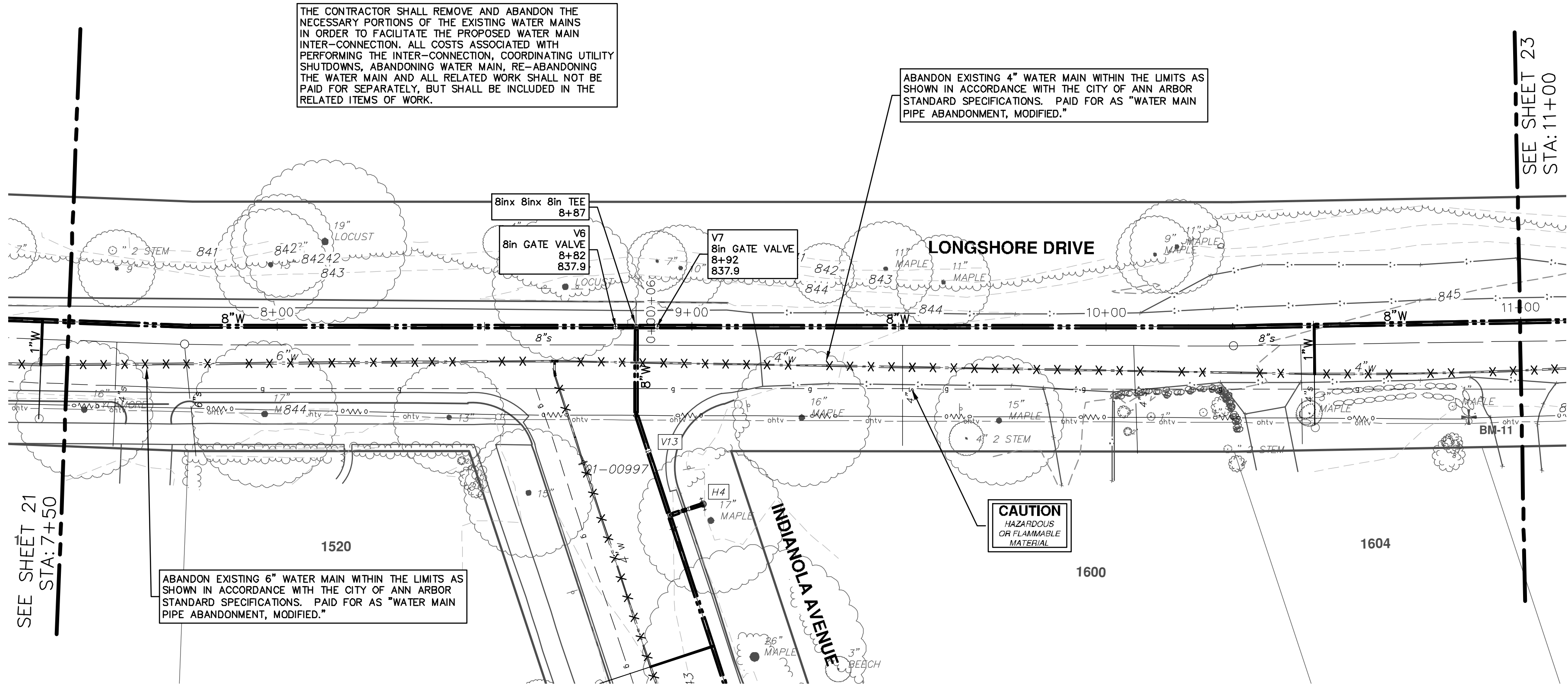
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
WATER MAIN - STA. 4+00 - STA. 7+50

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No.  
2018019-21



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V7	8in GATE VALVE	8+92		837.94
V6	8in GATE VALVE	8+82		837.92

**811**  
Know what's below.  
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		DRAWN
		CHECKED

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

**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**

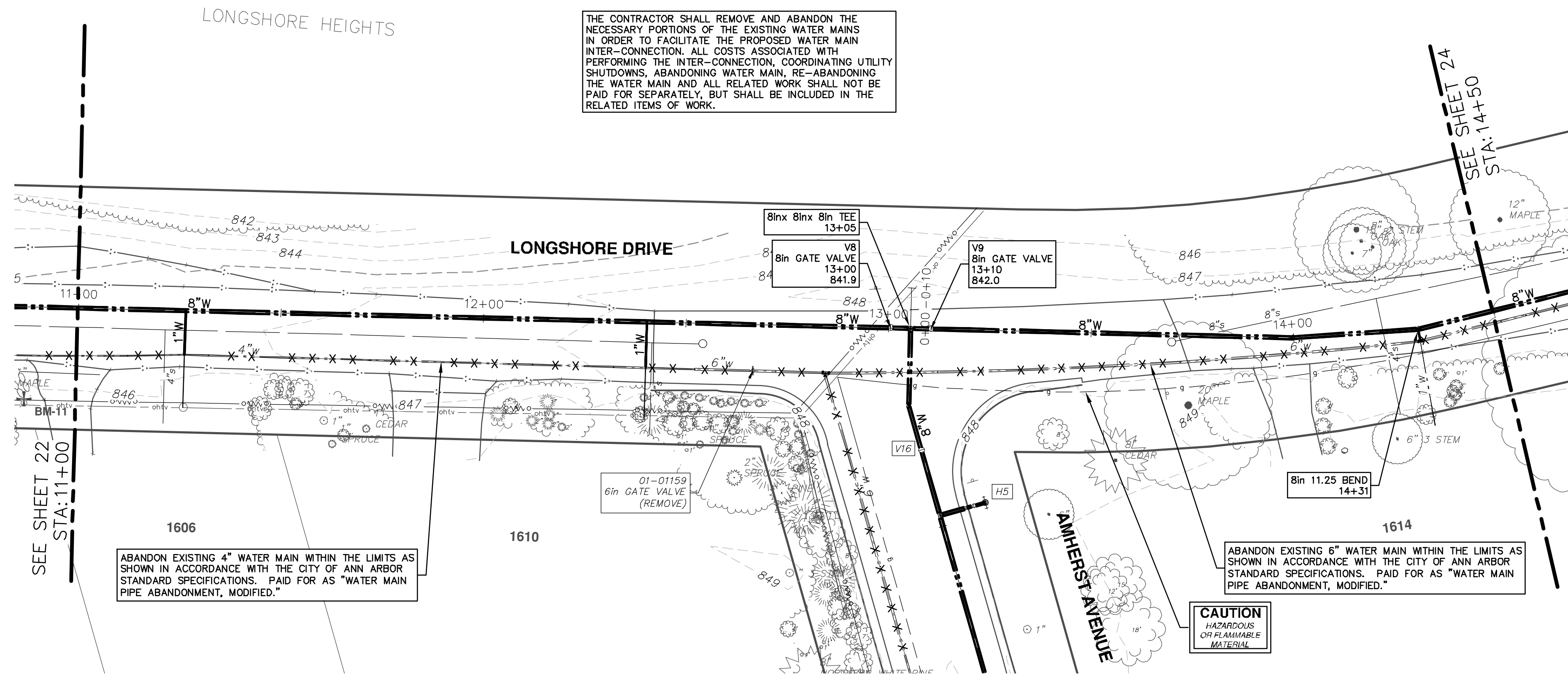
LONGSHORE DRIVE  
WATER MAIN - STA. 7+50 - STA. 11+00

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

DRAWING No. **2018019-22**

SHEET No. **22 OF 54**

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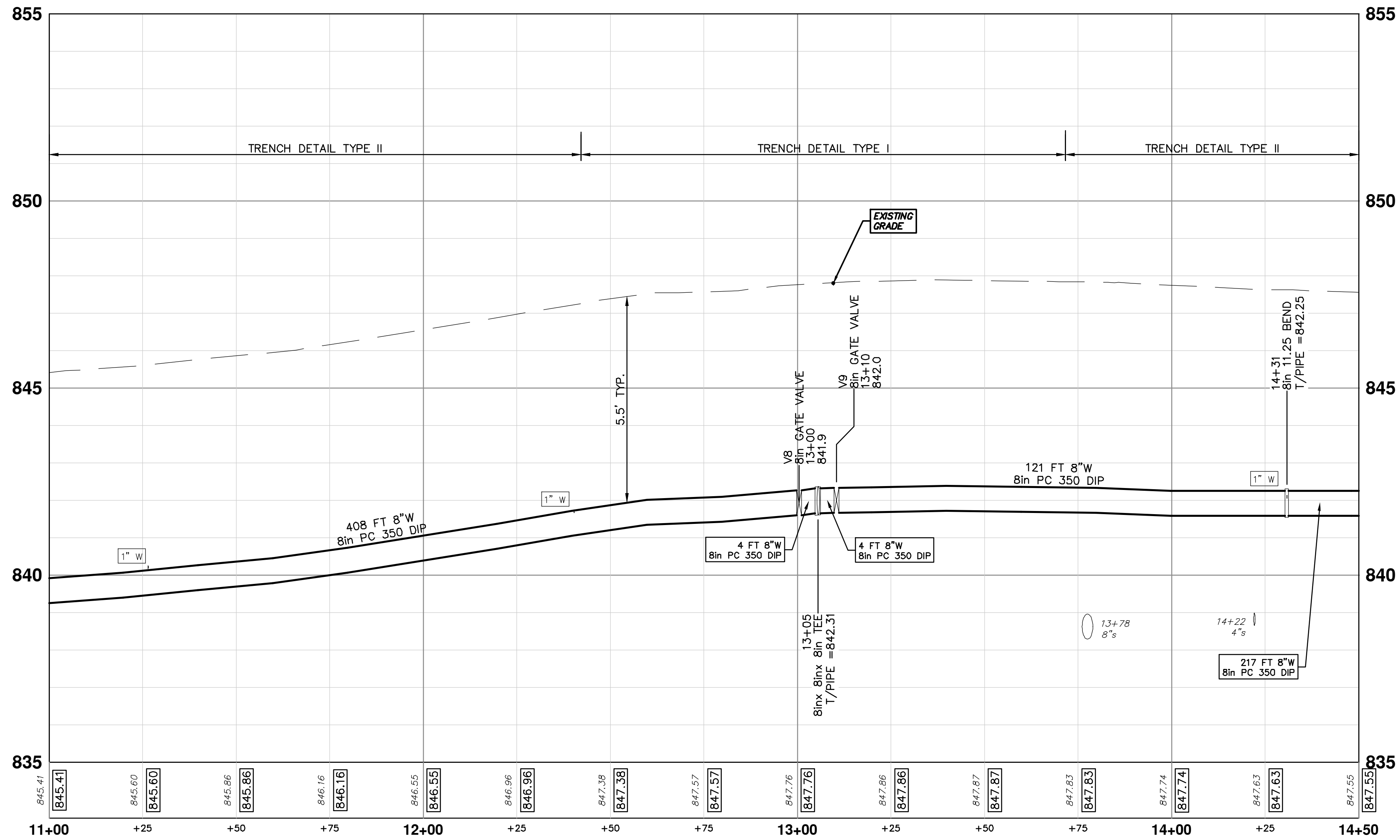
THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND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

ABANDON EXISTING 4" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

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

CAUTION  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V8	8in GATE VALVE	13+00		841.94
V9	8in GATE VALVE	13+10		842.00



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	1-23-19	JKA	

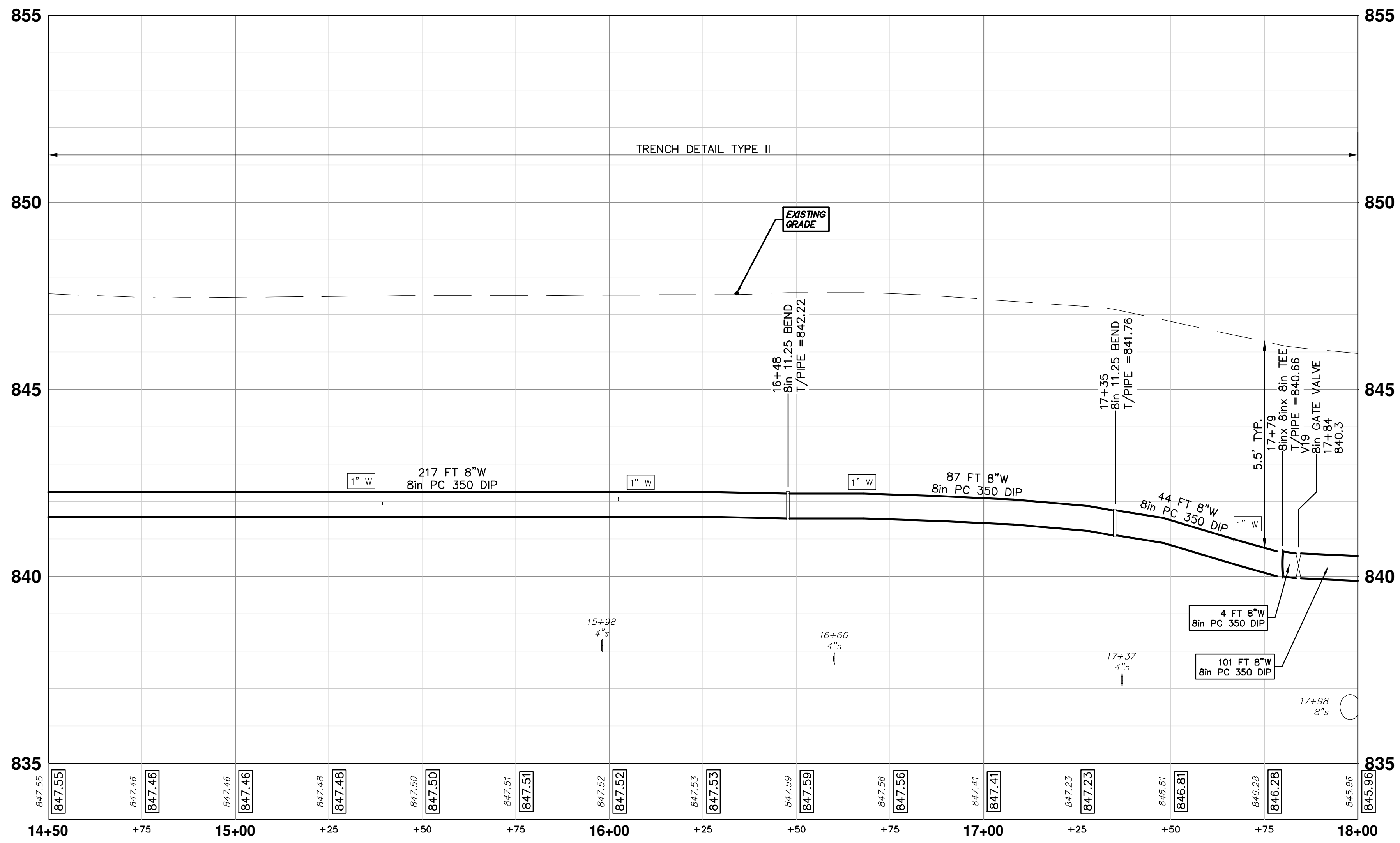
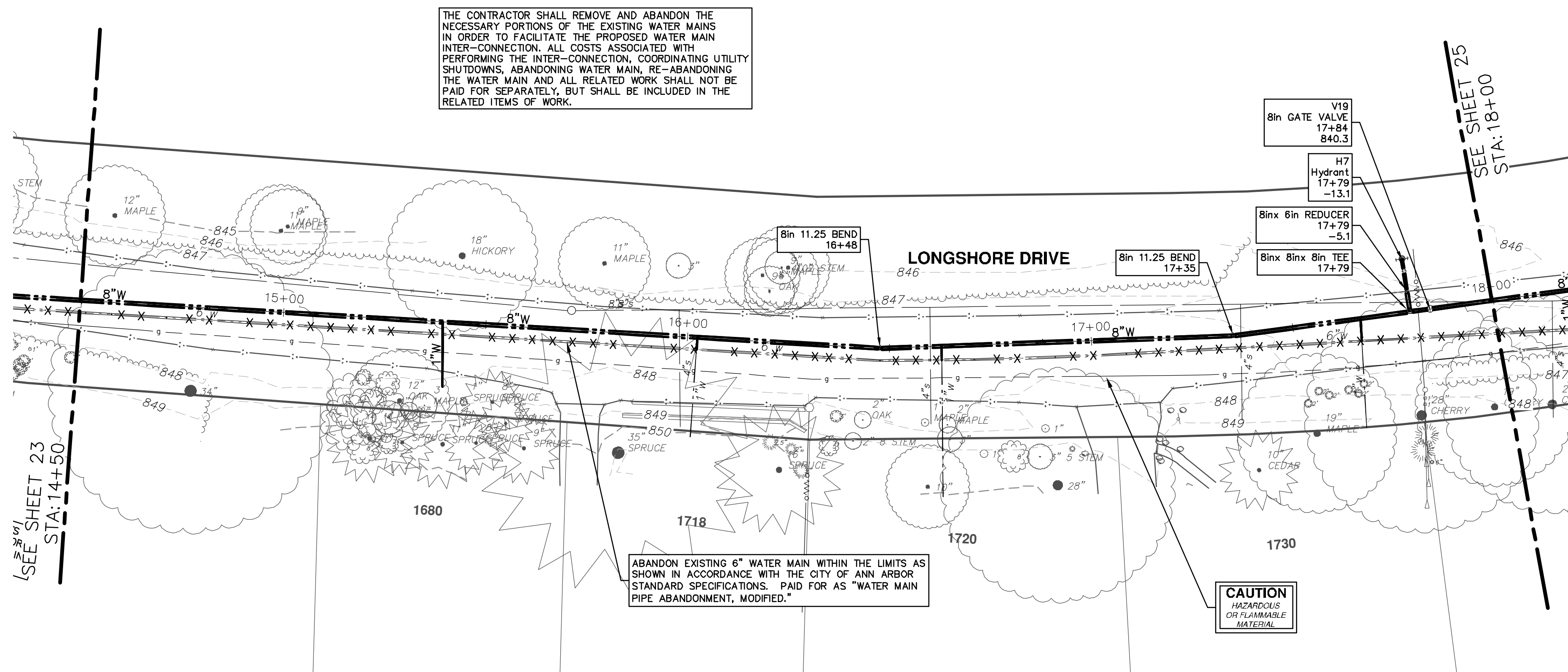
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
WATER MAIN - STA. 11+00 - STA. 14+50

SHEET No. 23 OF 54  
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No. 2018019-23





STRUCTURE	TYPE	STATION	RIM	DEPTH
H7	Hydrant	17+79	840.98	
V19	8in GATE VALVE	17+84	840.28	

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00	OUT FOR BID	1-23-19	JKA	

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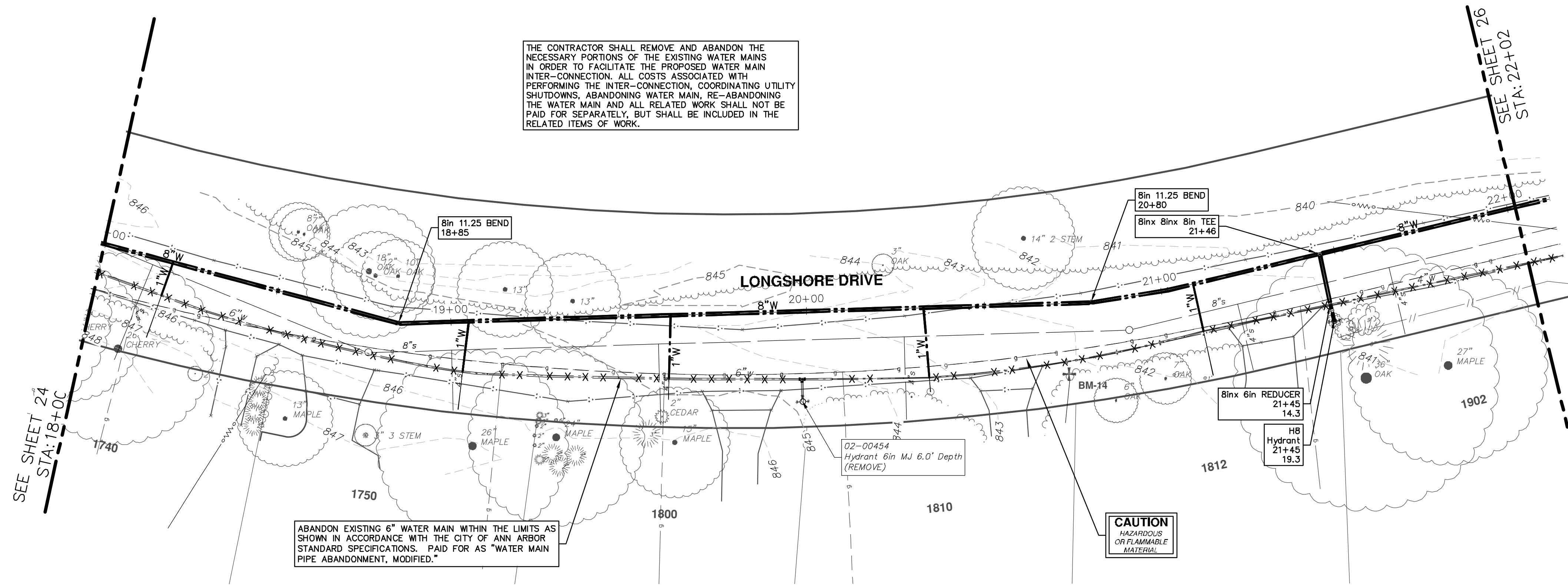
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
WATER MAIN - STA. 14+50 - STA. 18+00

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

DRAWING No.  
2018019-24

SHEET No.  
24 OF 54

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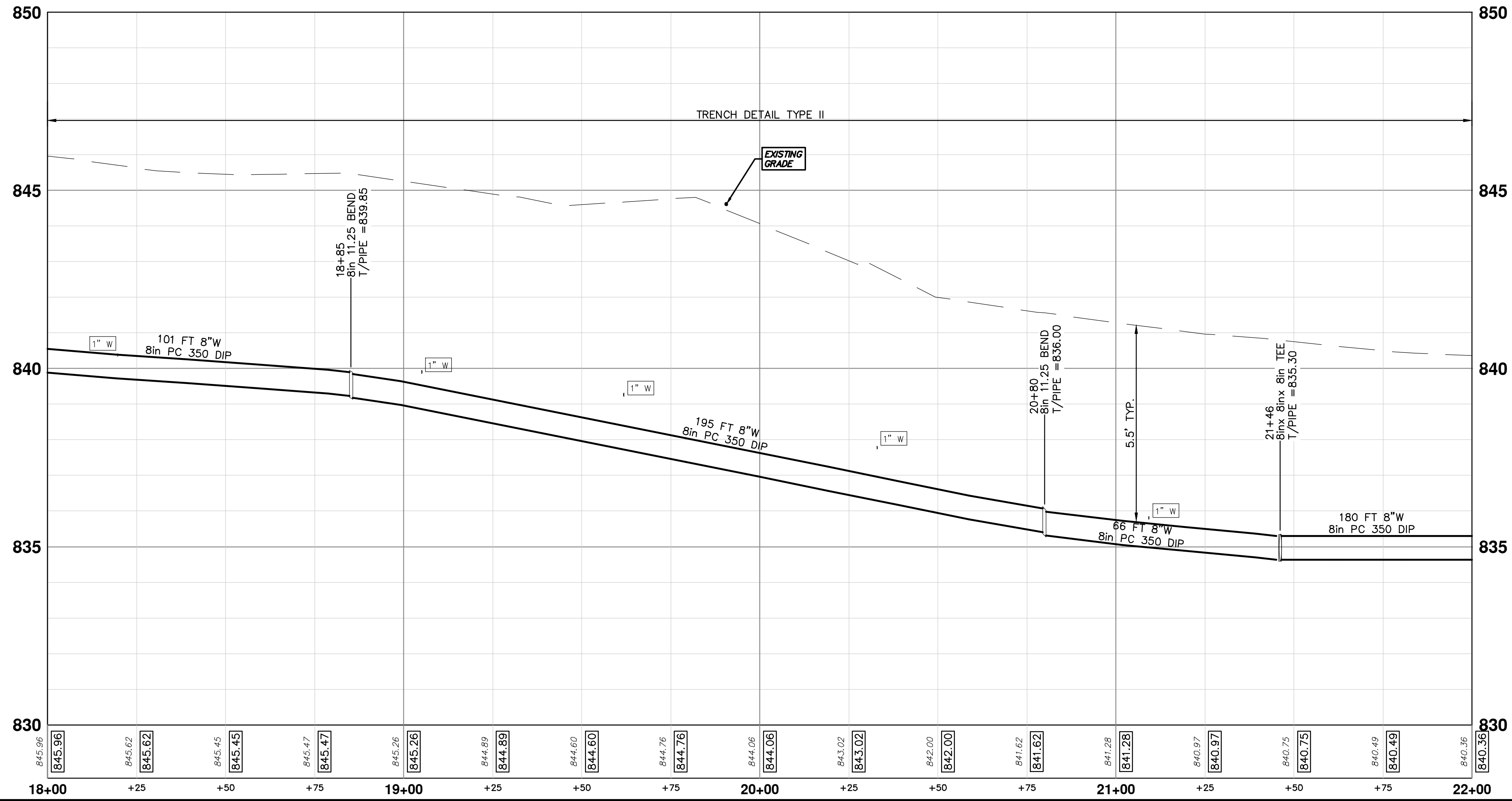


ABANDON EXISTING 6" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

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

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H8	Hydrant	21+45		835.27



**811**  
Know what's below.  
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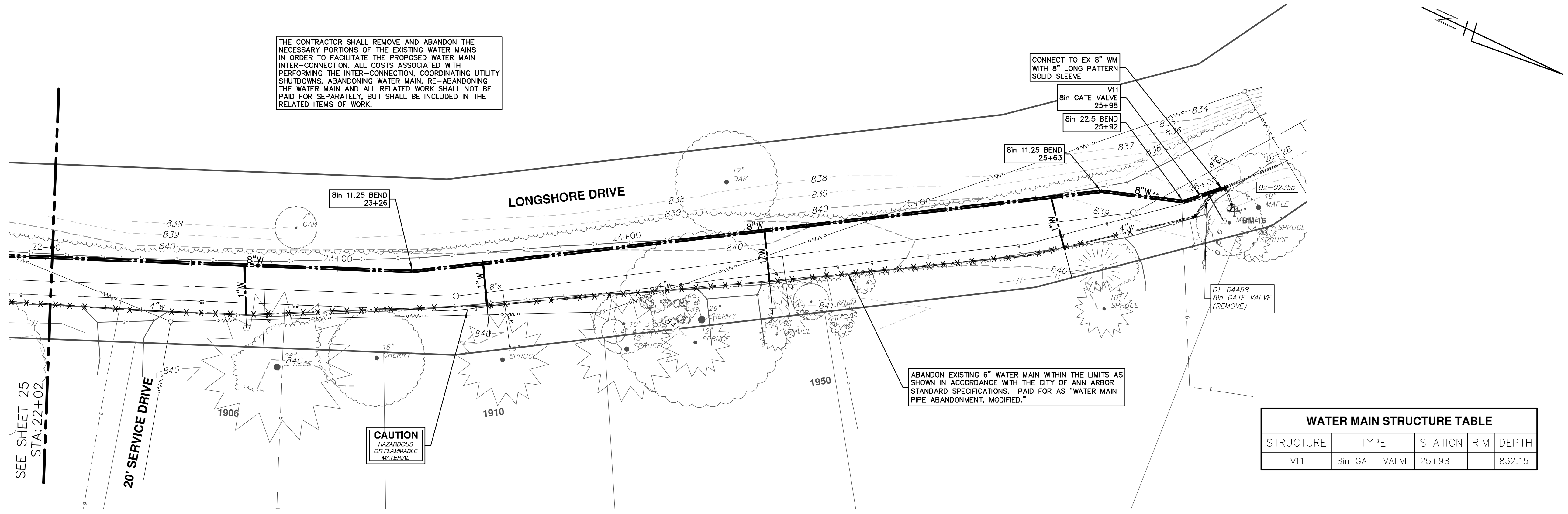
DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
WATER MAIN - STA. 18+00 - STA. 22+00

SHEET No. 25 OF 54

DRAWING No. 2018019-25  
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

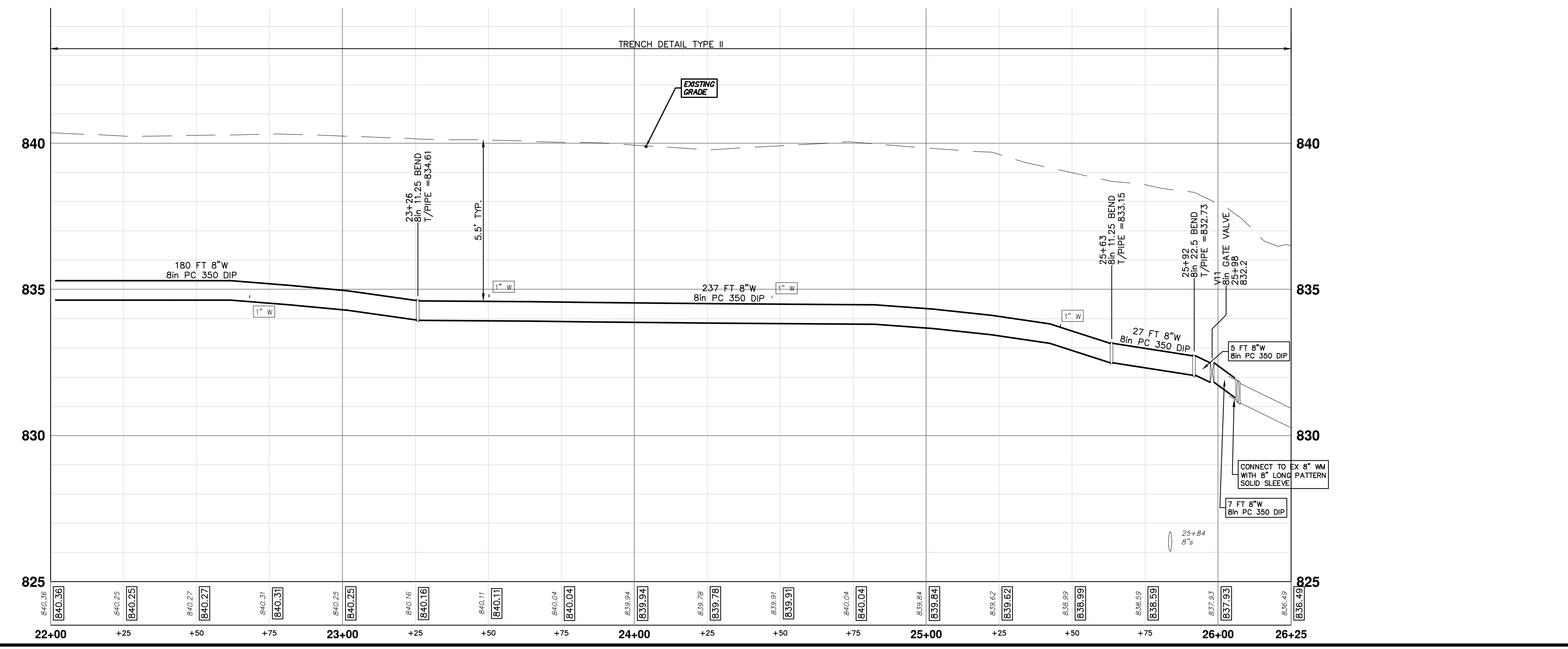
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THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING 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.

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

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V11	8in GATE VALVE	25+98		832.15



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

DATE: 1-23-19  
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REV. DESCRIPTION

DD OUT FOR BID  
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

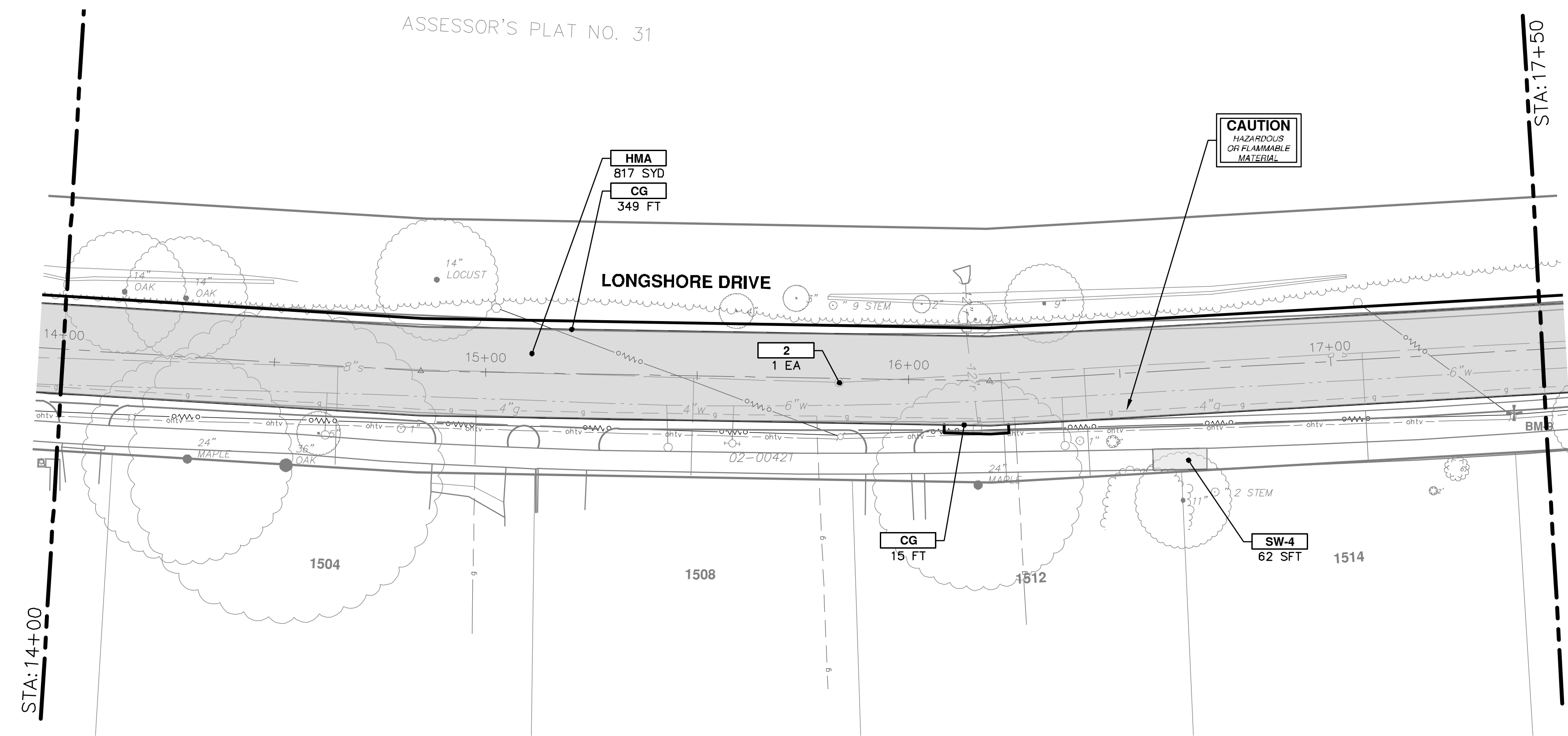
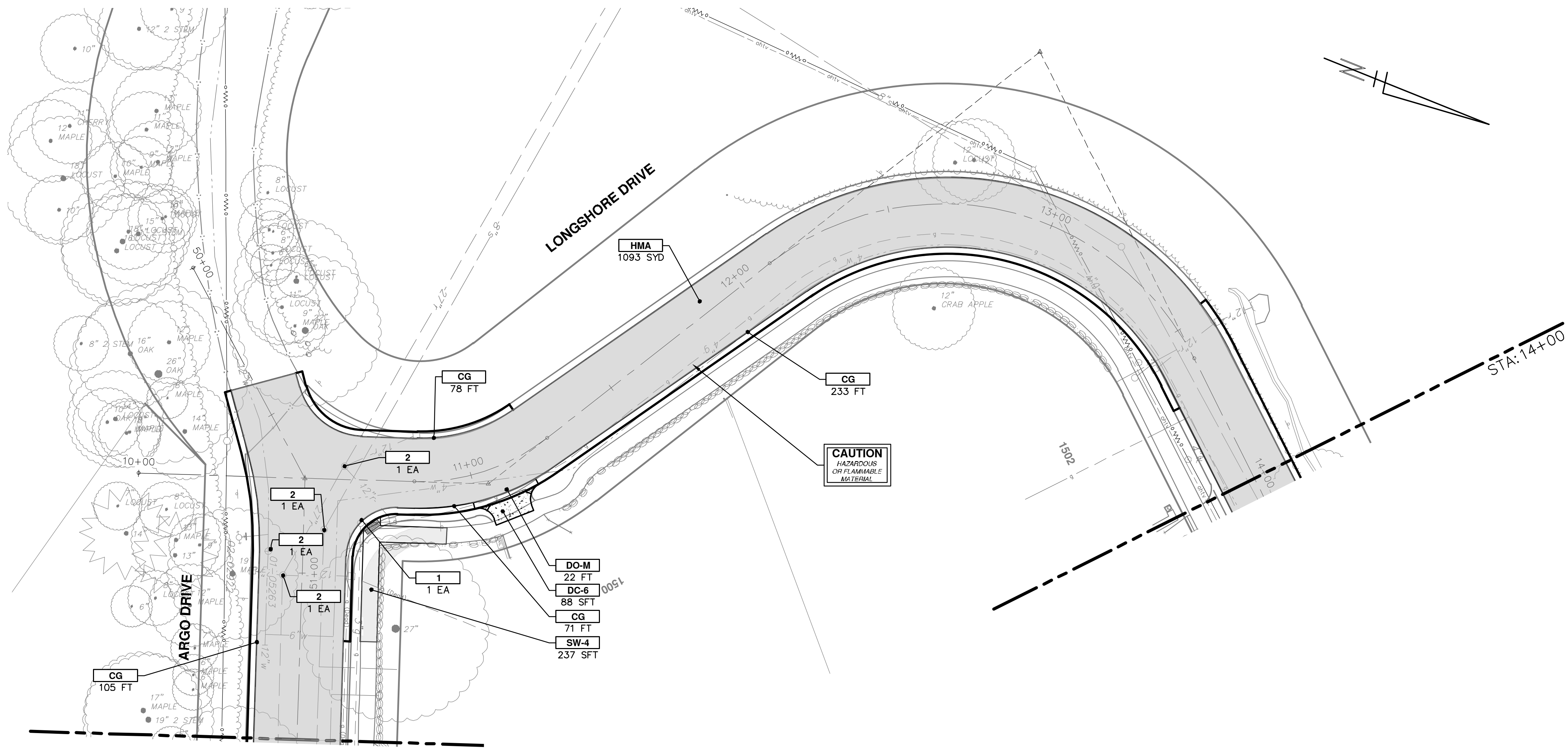
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
WATER MAIN - STA. 22+00 - STA. 26+25

---

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

DRAWING No. 2018019-26  
SHEET No. 26 OF 54





CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP, PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL.
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC.
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED.
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED.
DWS	DETECTABLE WARNING, CAST IN PLACE.
ABO	ADJUST BY OTHERS.
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER.

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

DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

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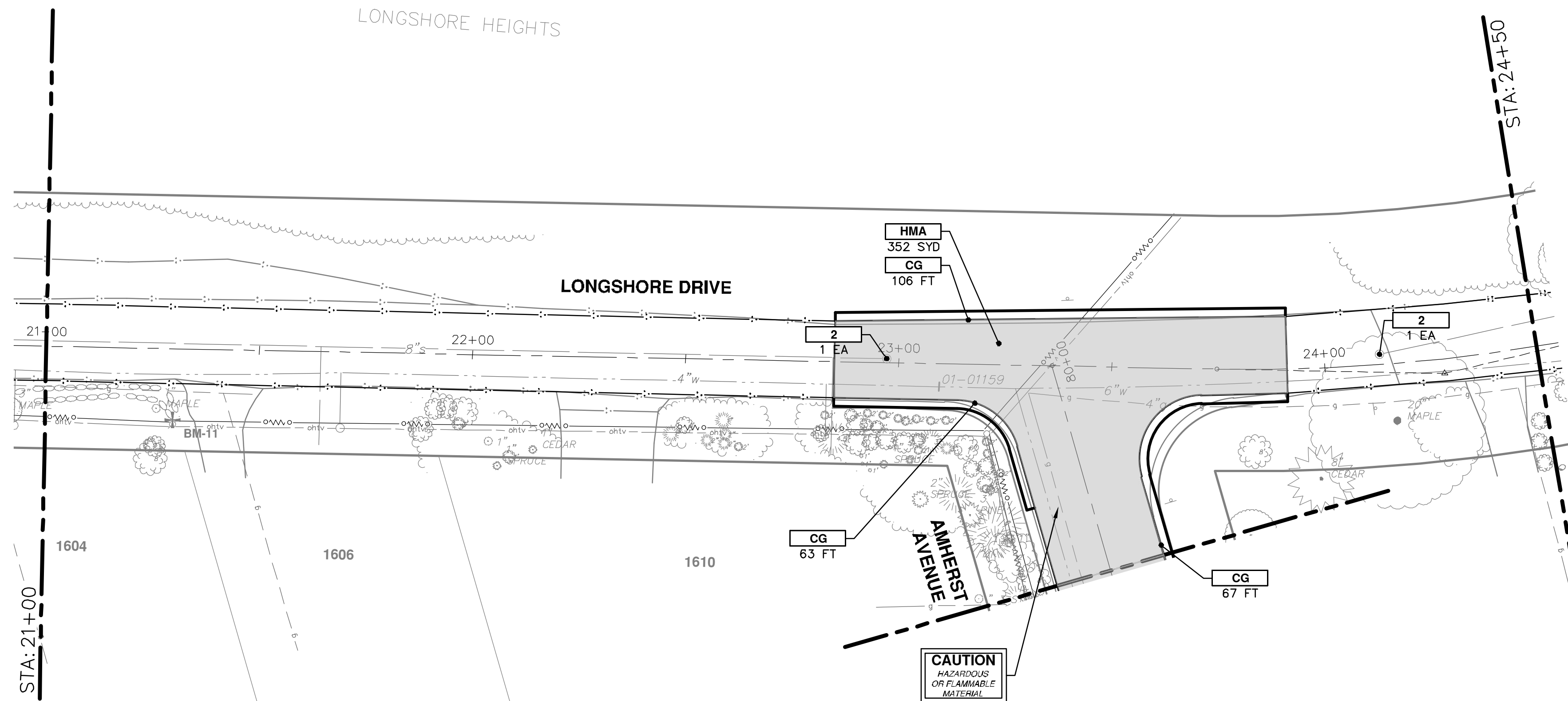
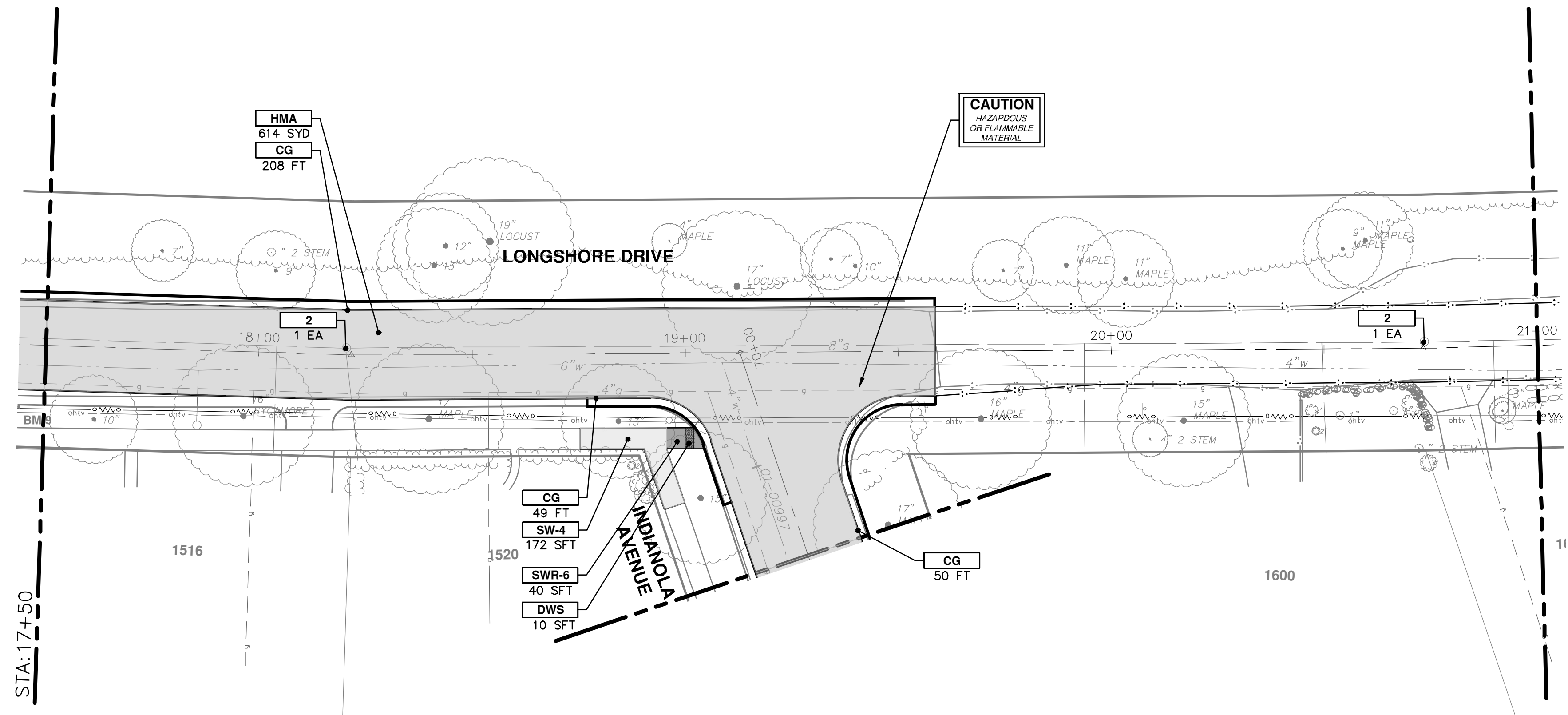
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REV. DESCRIPTION

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CITY OF ANN ARBOR - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
ROAD - STA. 10+00 - STA. 17+50

SCALE: 1" = 20'  
DRAWING No.: 2018019-27  
SHEET No.: 27 OF 54



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



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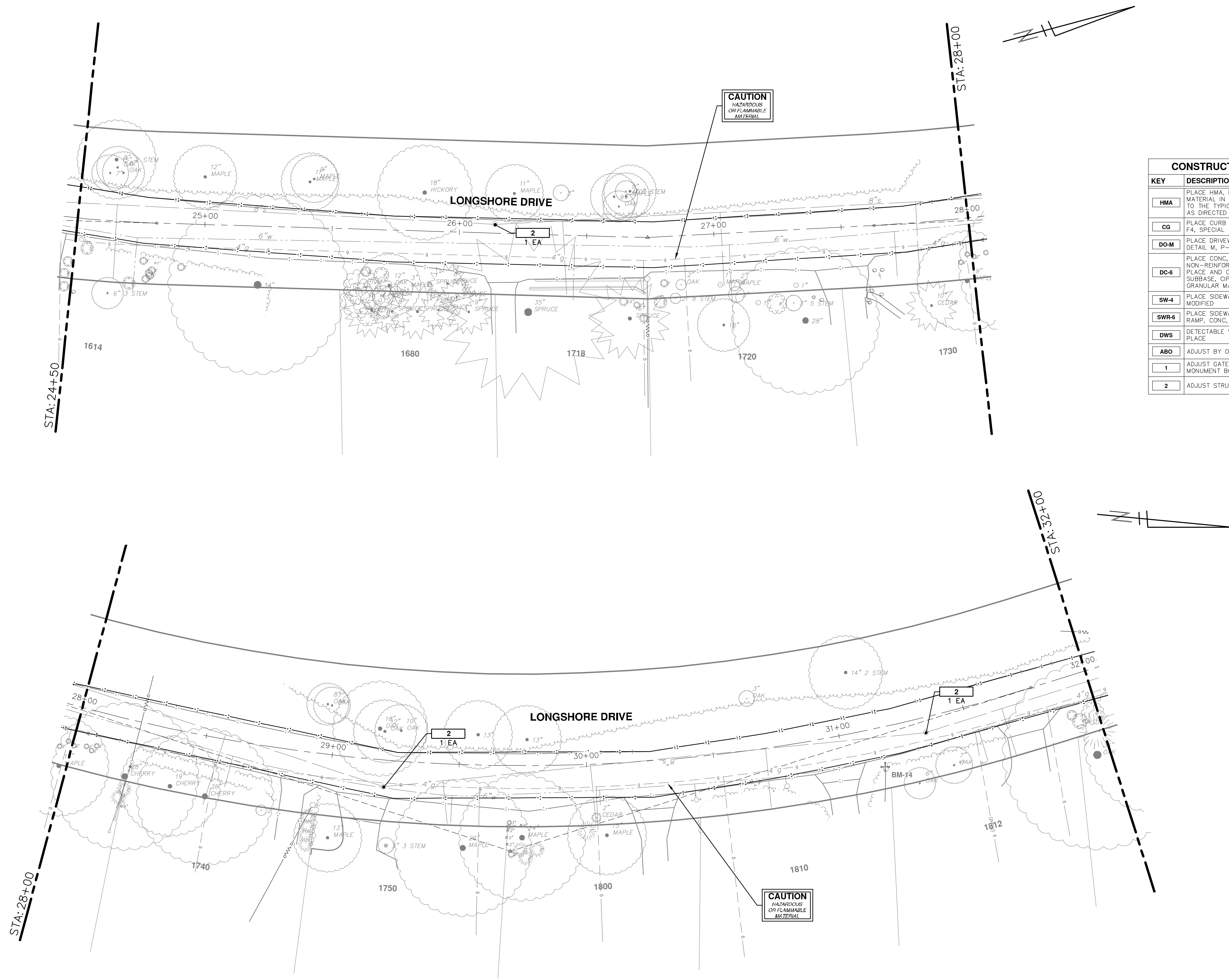


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
ROAD - STA. 17+50 - STA. 24+50

SCALE: 1" = 20'  
DRAWING No.  
2018019-28

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	1-23-19	CC/DF/RB	JKA

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

**LONGSHORE INDIANOLA OTTAWA**

**ARGO AMHERST WATERMAIN**

LONGSHORE DRIVE  
ROAD - STA. 24+50 - STA. 32+00

SCALE: 1" = 20'

DRAWING No. **2018019-29**

SHEET No. **29 OF 54**

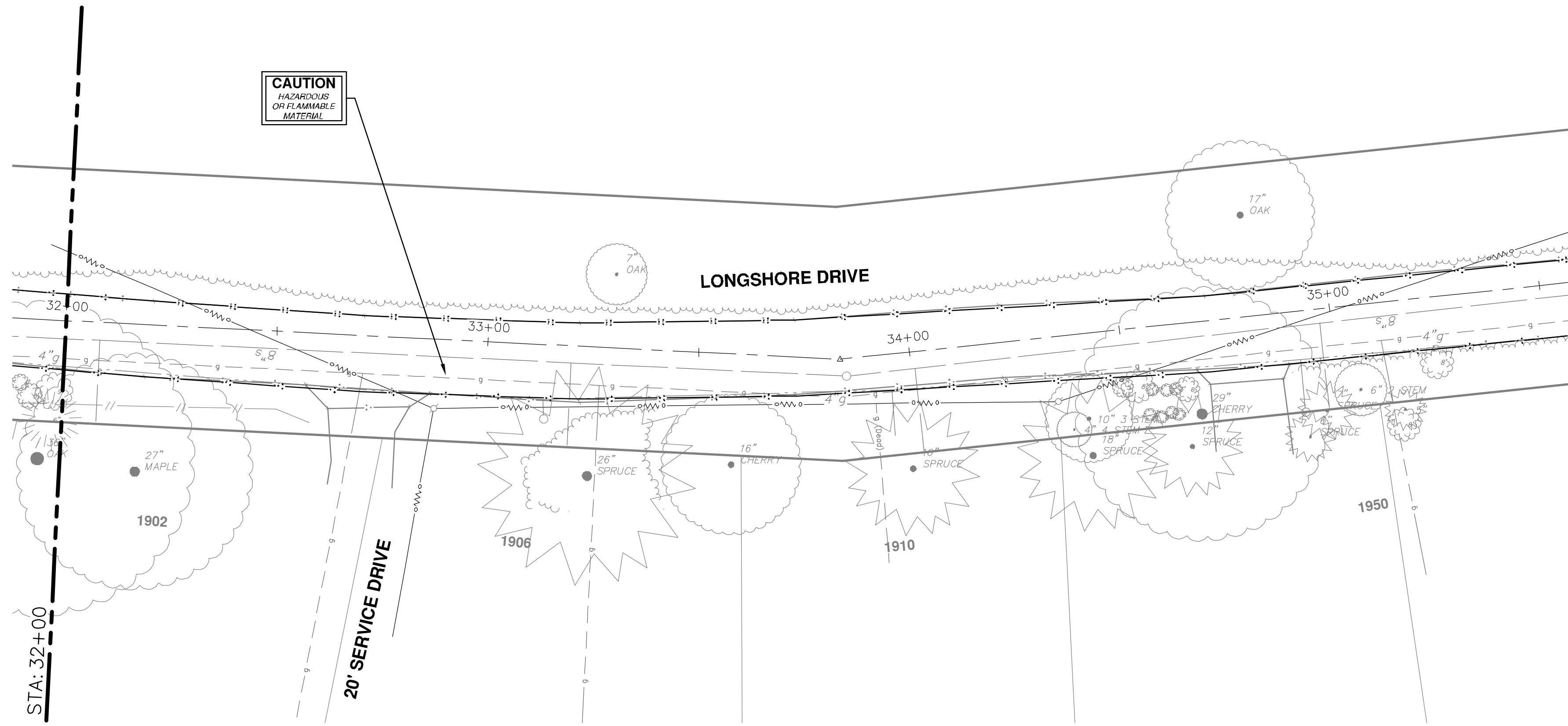
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1-23-19	DATE	DRAWN
OD	OUT FOR BID	DESCRIPTION
REV.		

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**ANN ARBOR**  
MICHIGAN





CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC. F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC. DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	1-23-19	CC/DF/RB	JKA

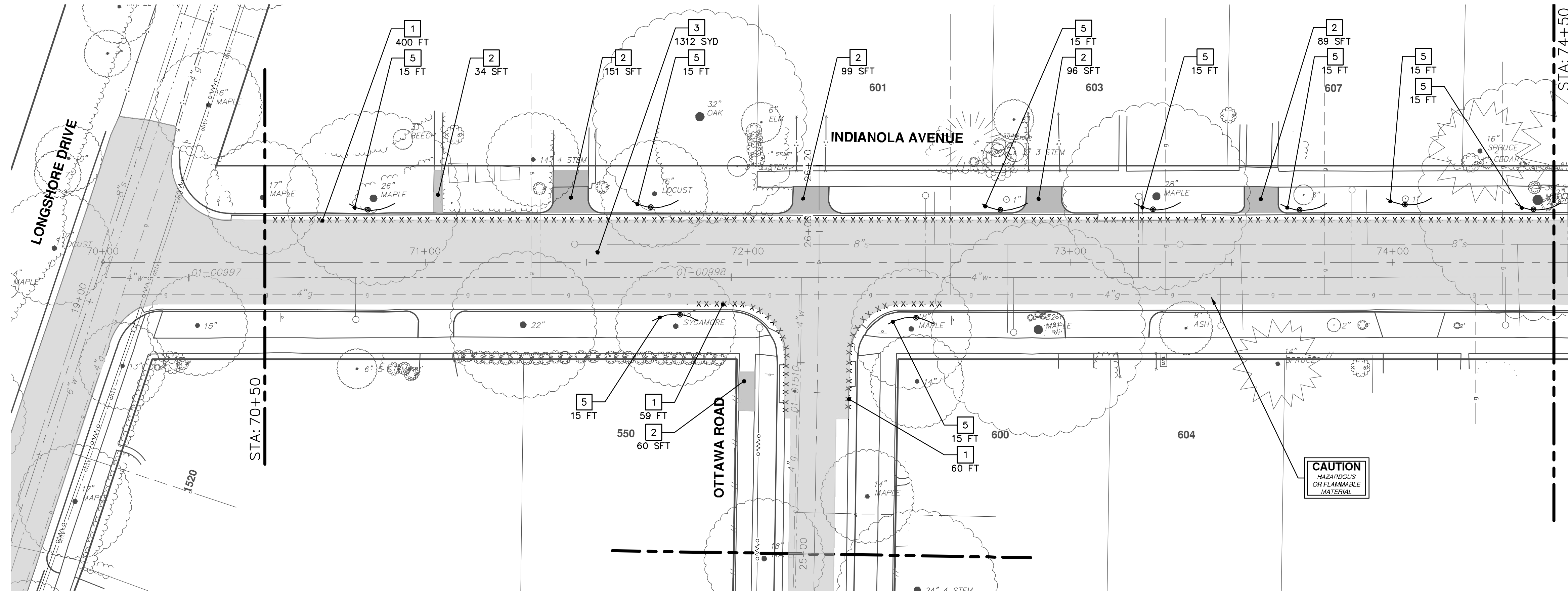
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LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
LONGSHORE DRIVE  
ROAD - STA. 32+00 - P.O.E.

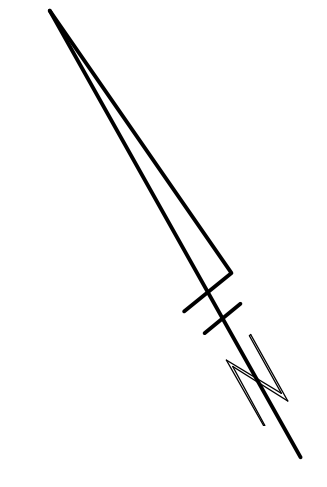
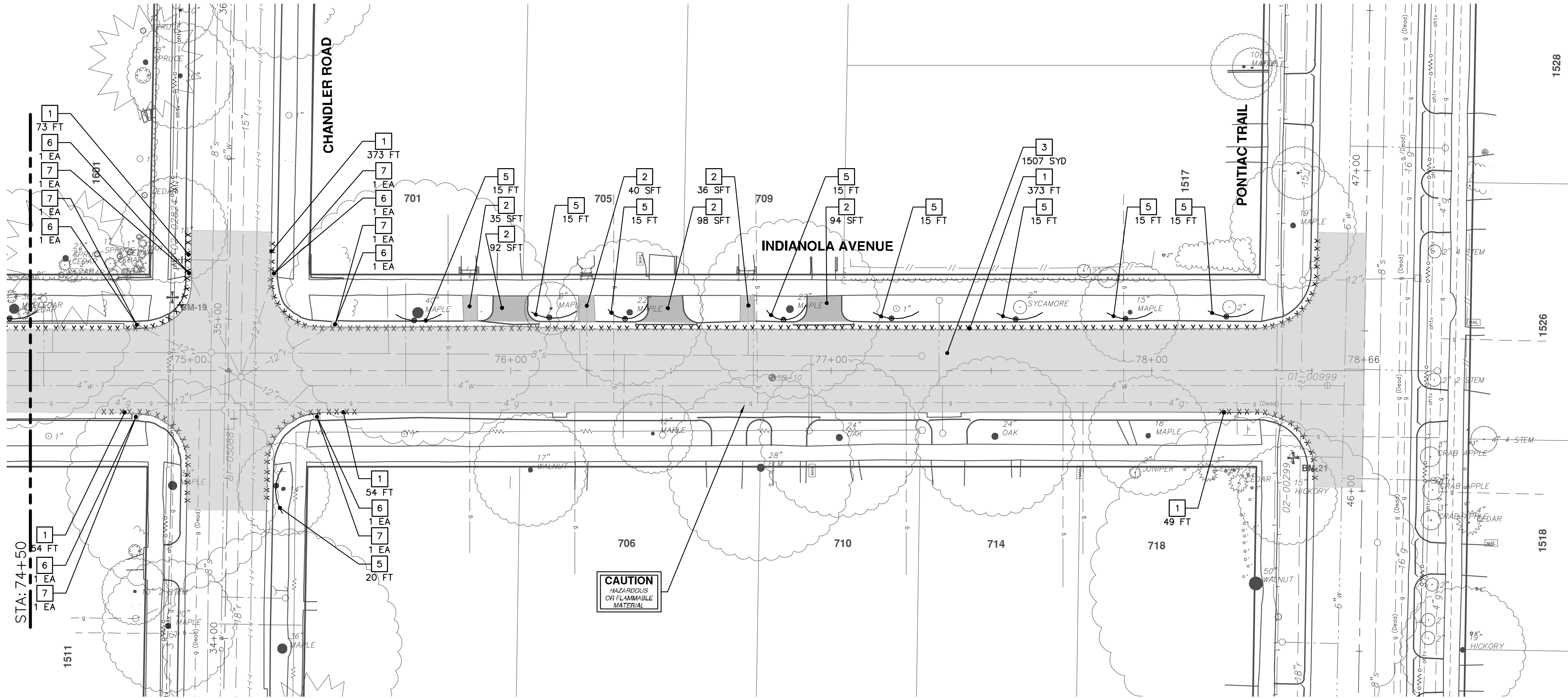
SCALE: 1" = 20'  
DRAWING No.  
2018019-30

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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 6" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

• SAWCUT FULL DEPTH AT REMOVAL LIMITS



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

**LONGSHORE INDIANOLA OTTAWA**

**ARGO AMHERST WATERMAIN**

**INDIANOLA AVENUE**

**REMOVALS**

SCALE: 1" = 20'

DRAWING No. **2018019-31**

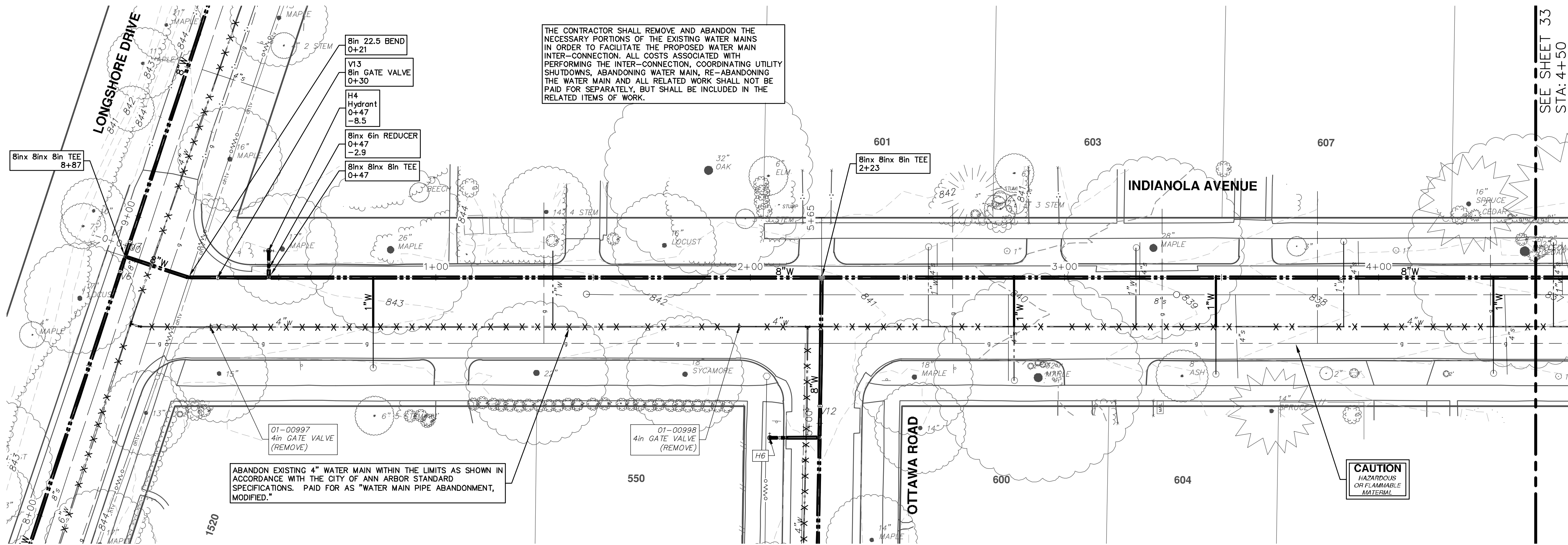
SHEET No. **31 OF 54**

REV.	DATE	DESCRIPTION	
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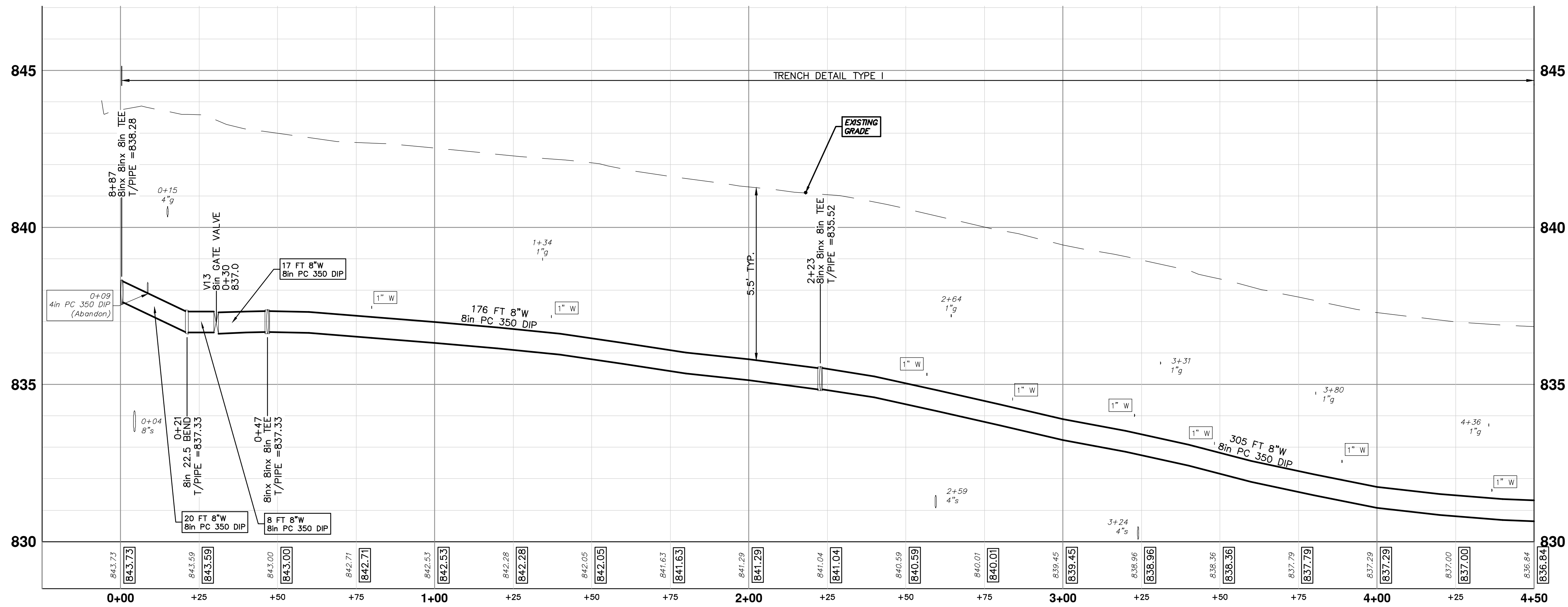


THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND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

ABANDON EXISTING 4" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

**CAUTION**  
HAZARDOUS OR FLAMMABLE MATERIAL

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V13	8in GATE VALVE	0+30		836.97
H4	Hydrant	0+47		837.71



REV.	DATE	DESCRIPTION	DRAWN	CHECKED
01	1-23-19	OUT FOR BID	JKA	

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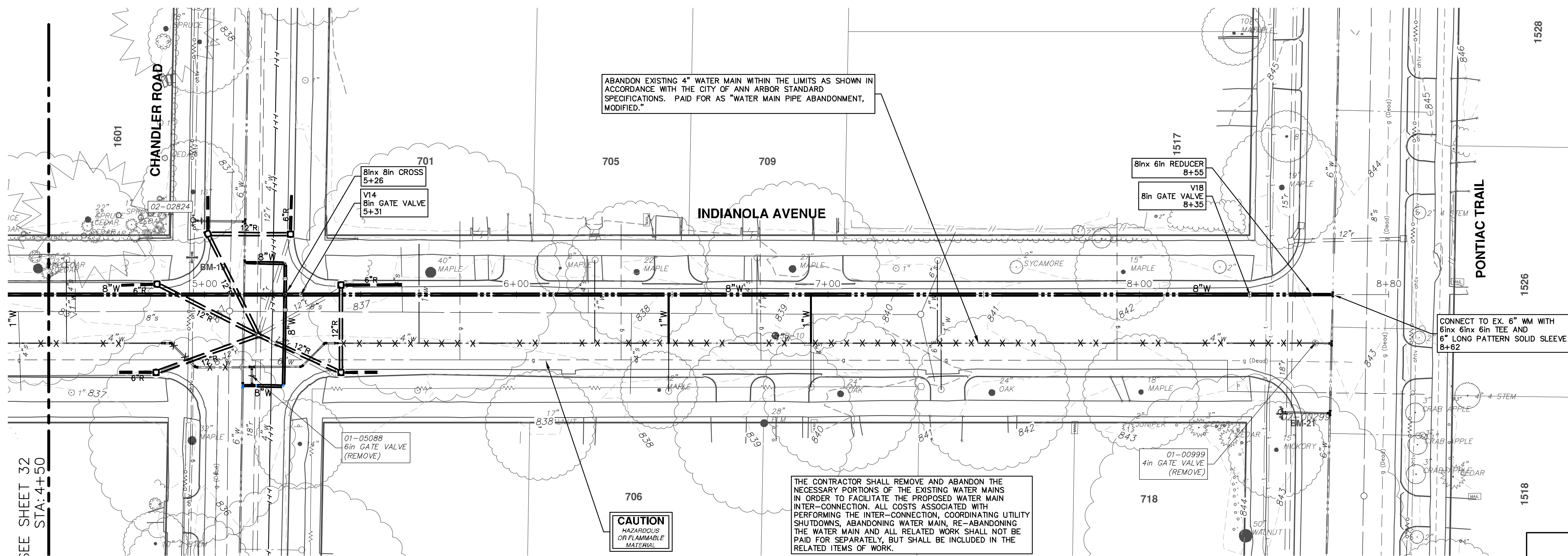


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
INDIANOLA AVENUE  
WATER MAIN - STA 0+00 - STA. 4+50

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING NO.  
2018019-32



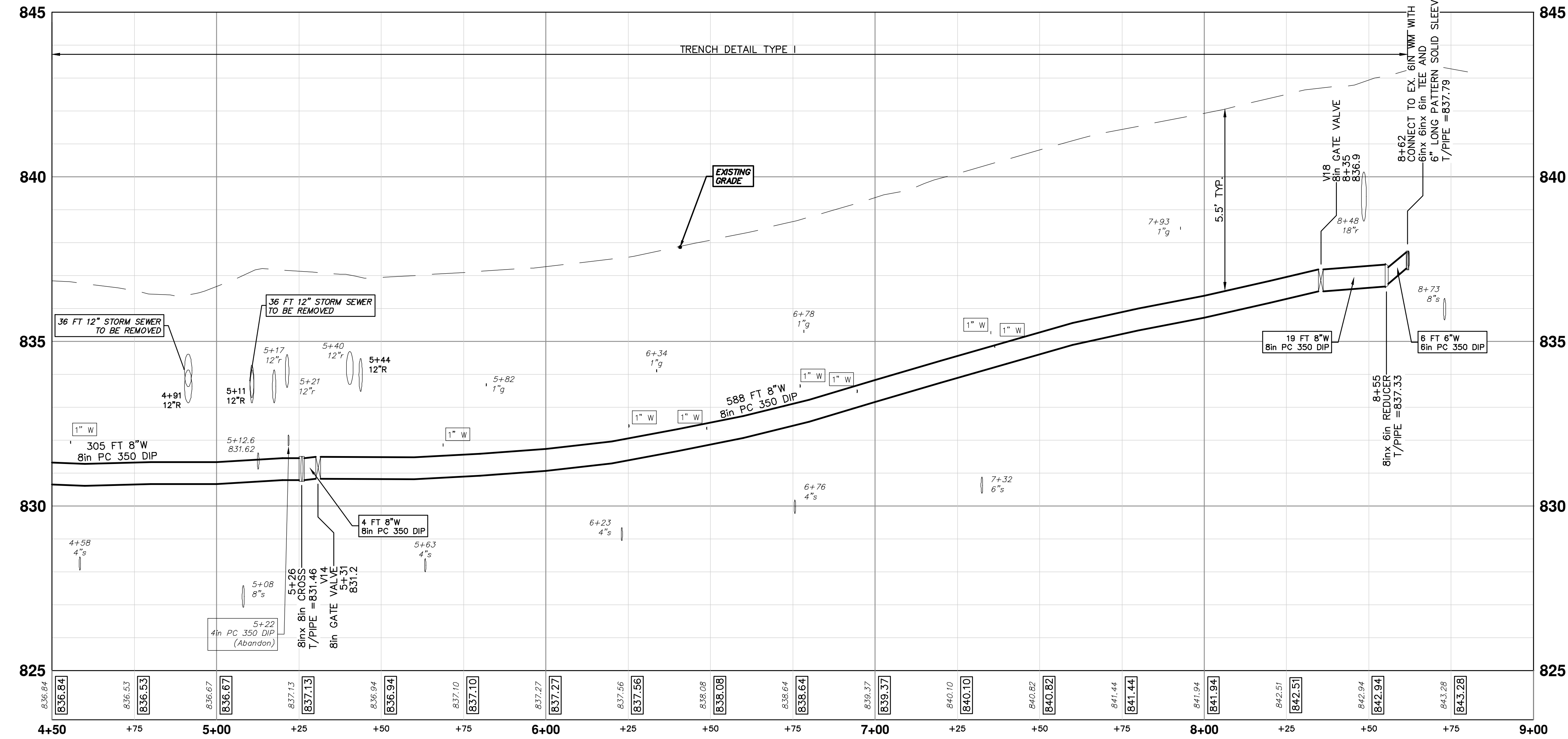
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ABANDON EXISTING 4" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

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

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V14	8in GATE VALVE	5+31		831.16
V18	8in GATE VALVE	8+35		836.85

**811**  
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LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
INDIANOLA AVENUE  
WATER MAIN - STA 4+50 - STA. 8+80

SHEET No. **33 OF 54**

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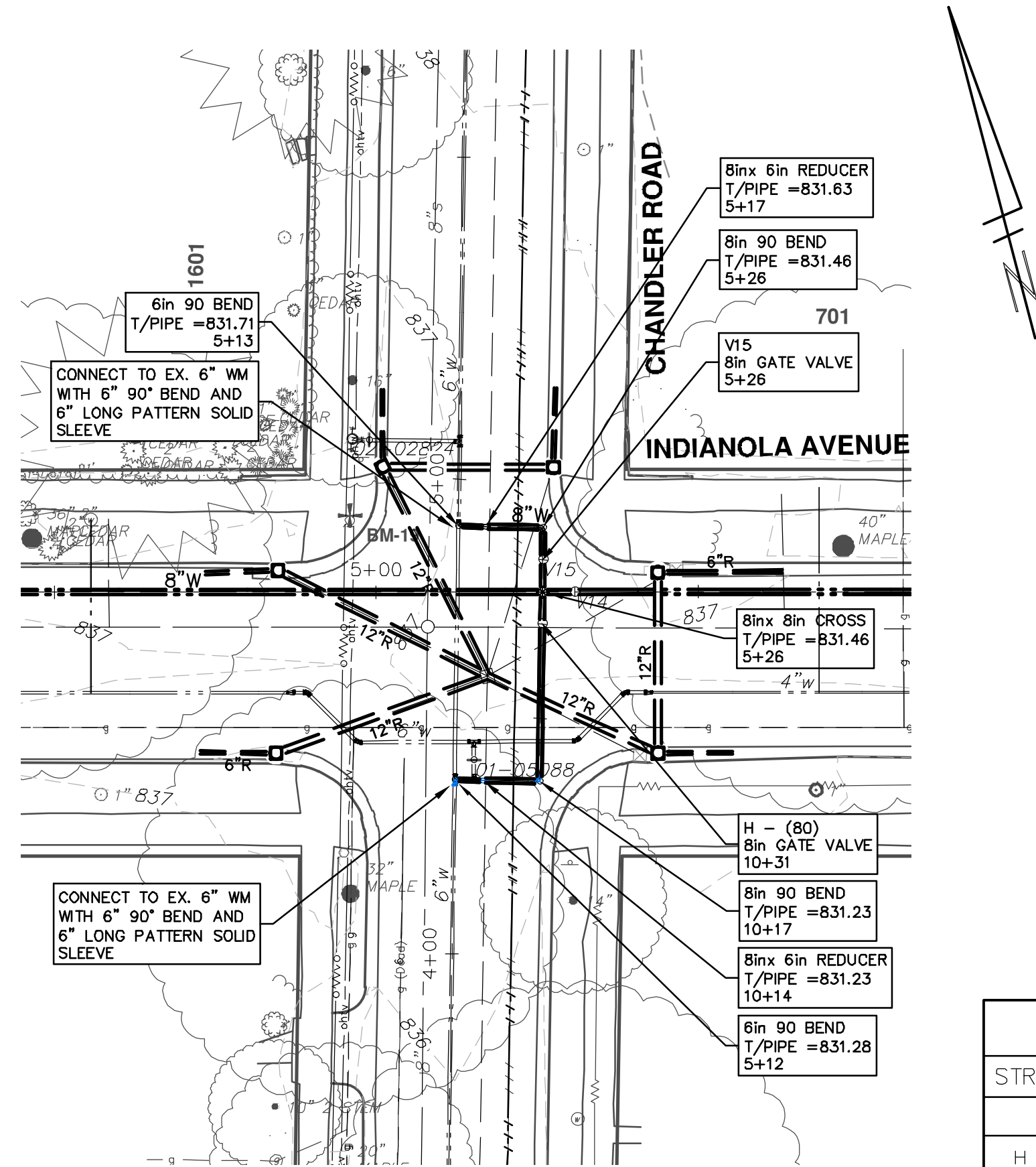
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

DRAWING No. **2018019-33**

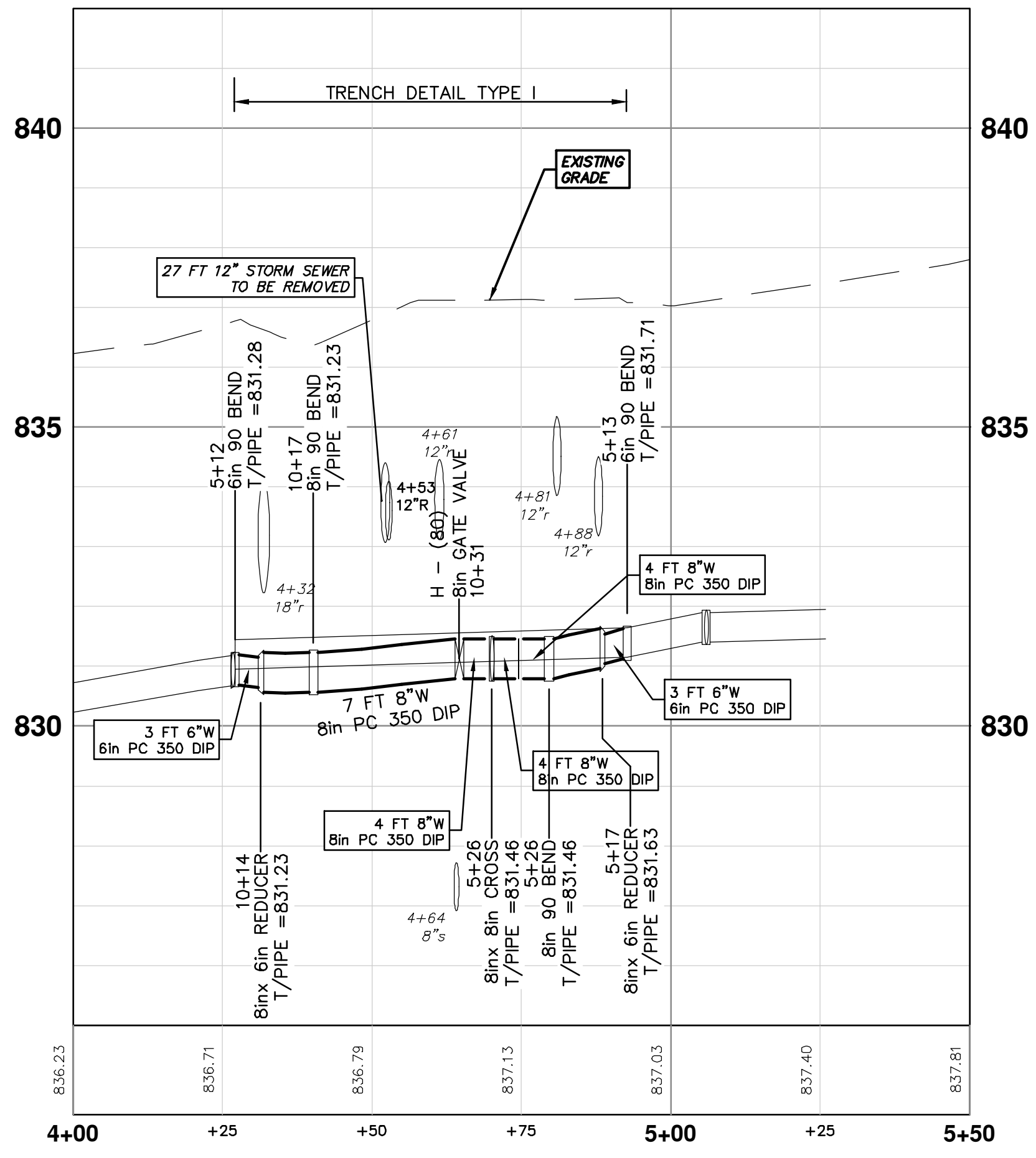
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REV.	DATE	DESCRIPTION	DRAWN	CHECKED
01	1-23-19	OUT FOR BID	JKA	
02			CC/DF/RB	

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.



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V15	8in GATE VALVE	5+26		831.12
H - (80)	8in GATE VALVE	10+31		831.12



REV.	DATE	DESCRIPTION
00	1-23-19	OUT FOR BID
		CC/DF/RG
		JKA
		CHECKED

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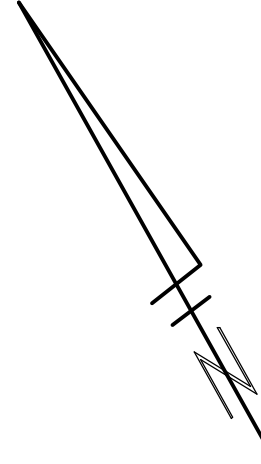
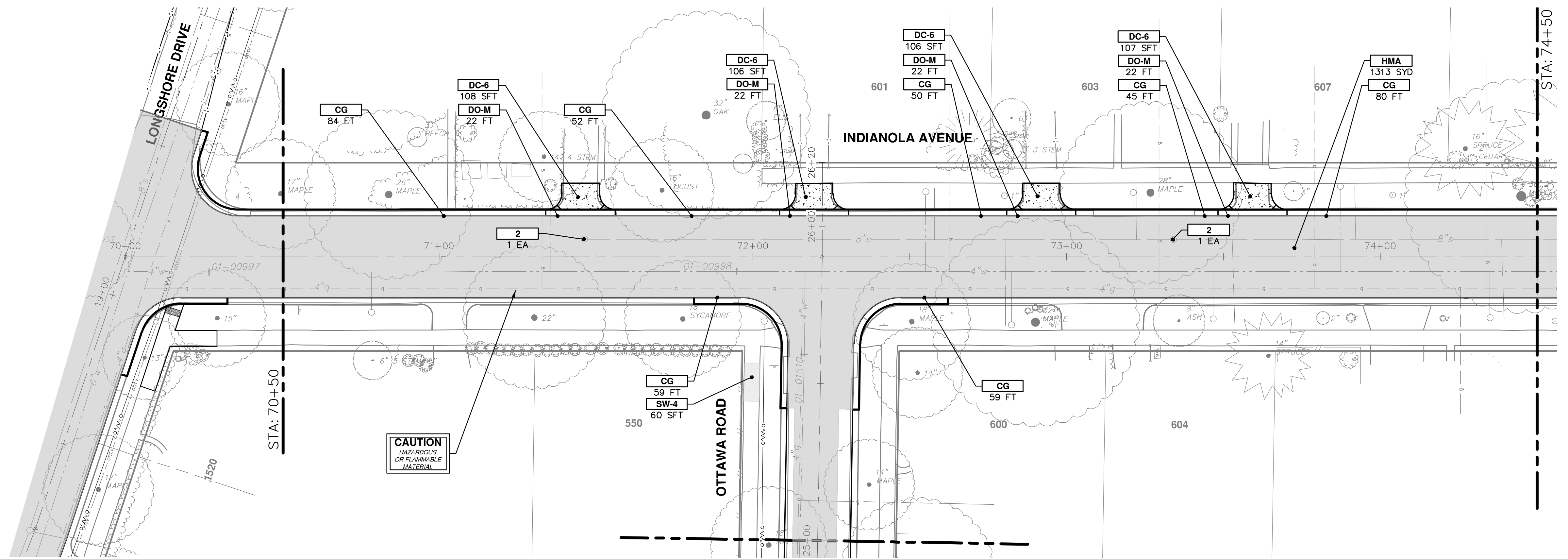


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LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
INDIANOLA AVENUE  
WATER MAIN - CHANDLER ROAD CONNECTION

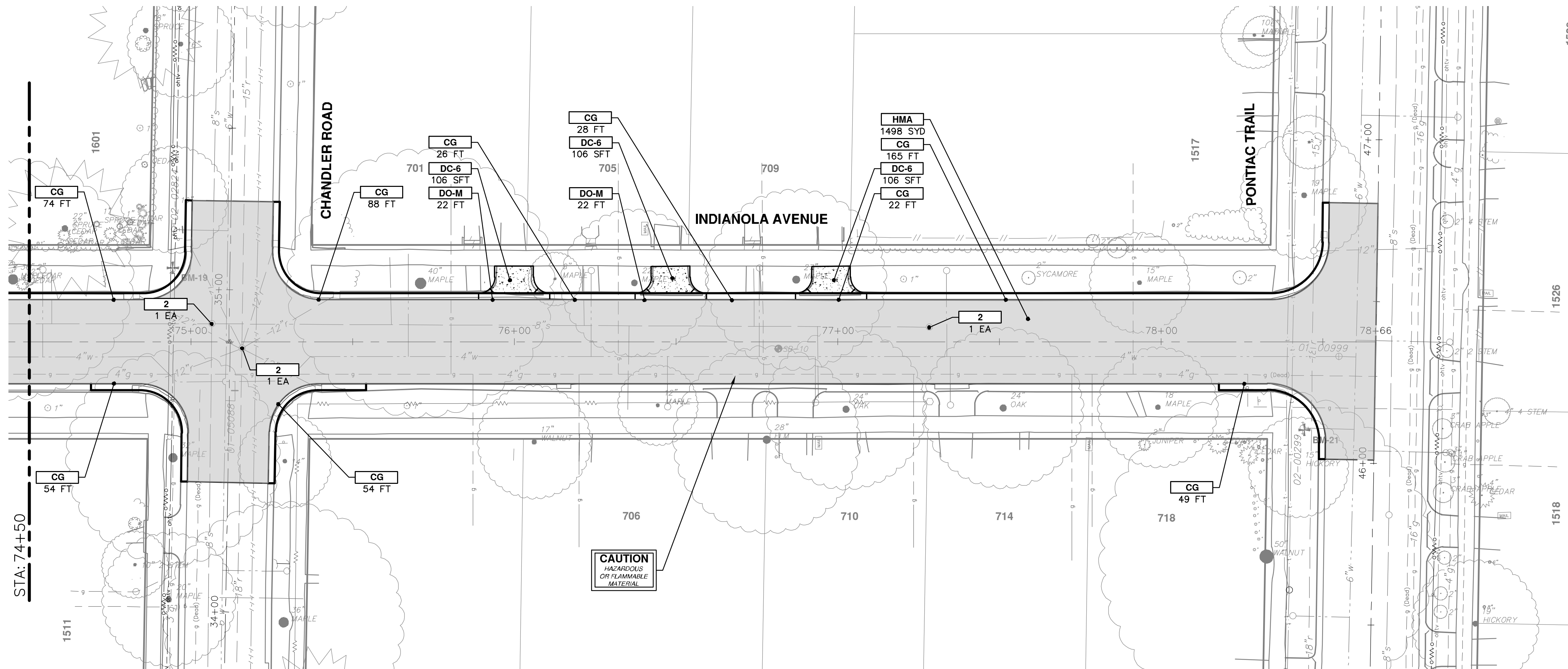
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PROFILE: 1" = 2'  
DRAWING No. 2018019-34



R:\2018019 Longshore Dr WM\Plan Production\2018019Prd-Indianola.dwg Dwg Created: 22-Jan-19 - \_a2\_standard bw.stb - Plot Date: 23-Jan-19

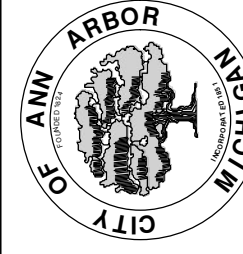


CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC. F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC. DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH. SUBBASE, CP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC. 4 INCH. MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC. 6 INCH. MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



REV.	DESCRIPTION	DATE	BY	CHECKED
01	OUT FOR BID	1-23-19	JKA	
02			CC/DF/KS	

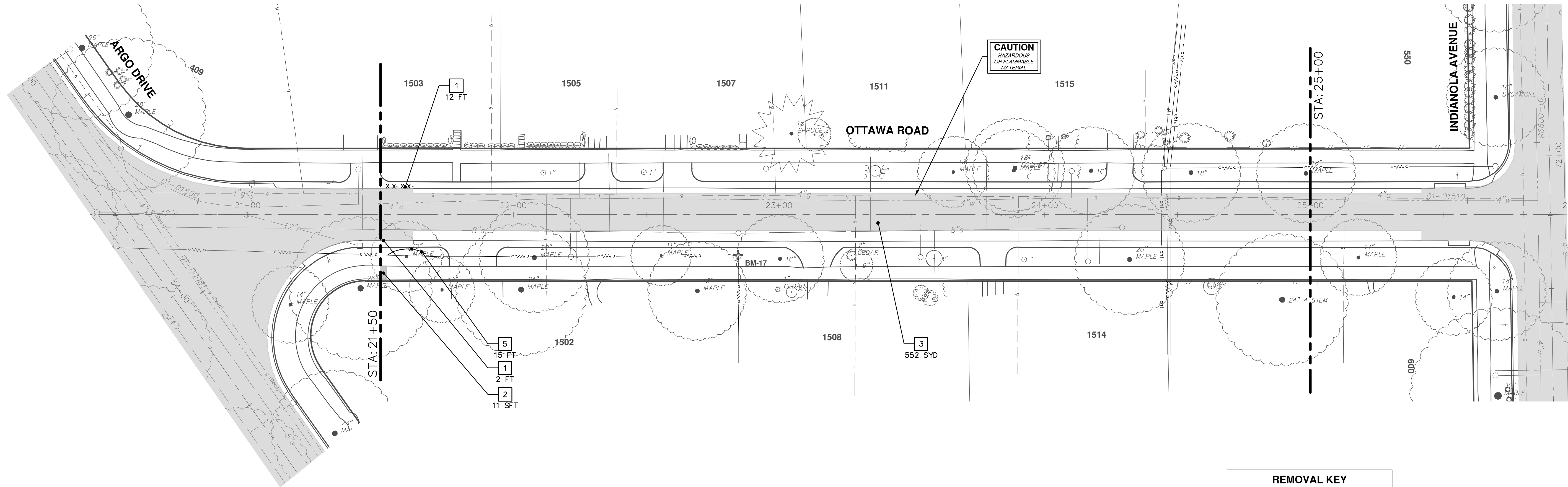
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ANN ARBOR, MI 48106-8647  
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www.a2gov.org



CITY OF ANN ARBOR - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
INDIANOLA AVENUE  
ROAD

SCALE: 1" = 20'  
DRAWING No. 2018019-35





REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

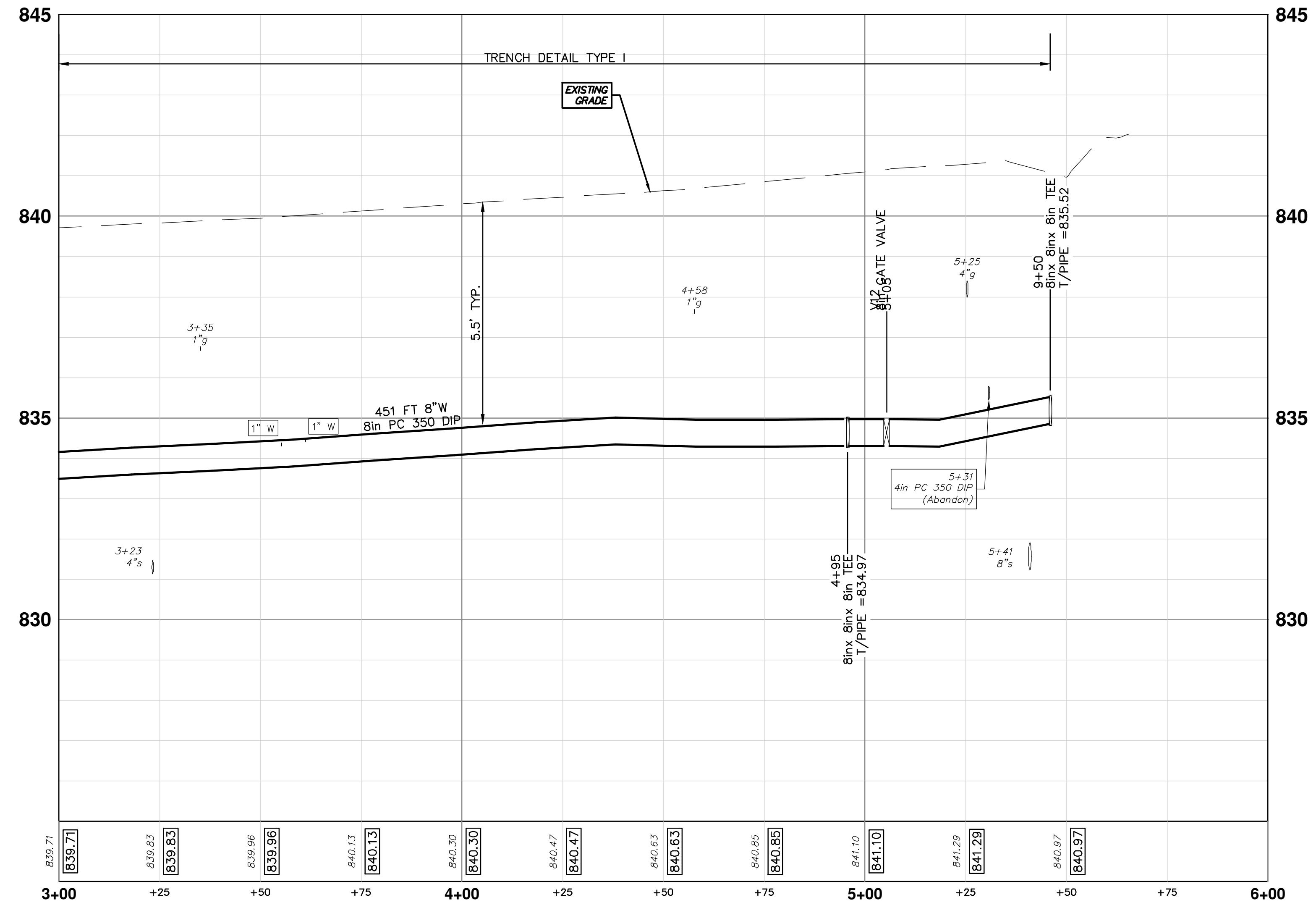
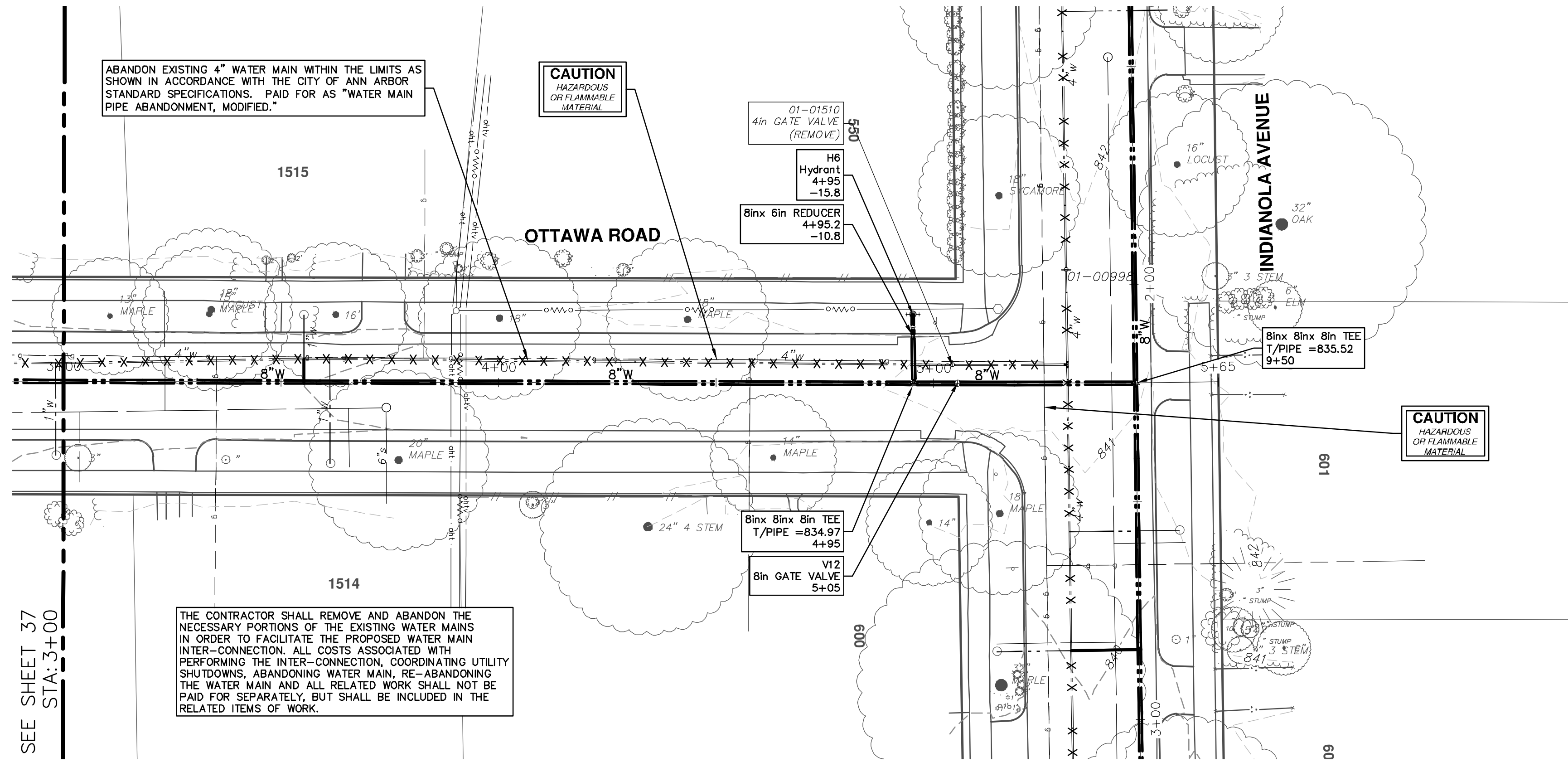
\* SAWCUT FULL DEPTH AT REMOVAL LIMITS



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	1-23-19	CC/DF/RB	JKA







WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V12	8in GATE VALVE	5+05		834.64
H6	Hydrant	4+95		835.66

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

LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN

OTTAWA ROAD  
WATER MAIN - STA. 3+00 - STA. 5+46

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

DRAWING No. 2018019-38

SHEET No. 38 OF 54

**811**  
Know what's below.  
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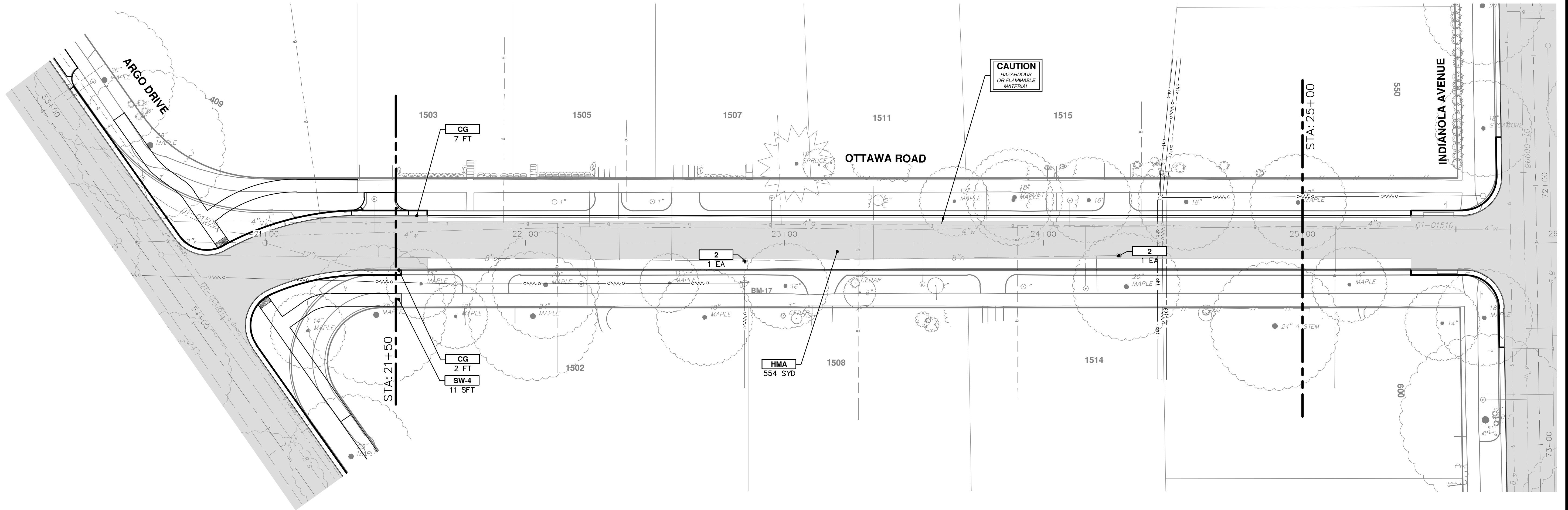
ANN ARBOR MICHIGAN

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734-794-4410  
www.a3gov.org

REV.	DATE	DESCRIPTION
00	1-23-19	OUT FOR BID
		CC/DF/RB
		JKA
		DRAWN
		CHECKED



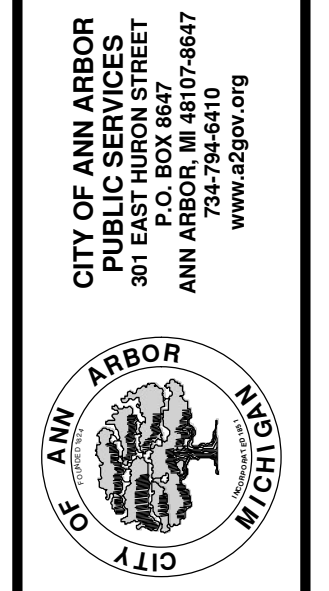
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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 LONGSHORE INDIANOLA OTTAWA  
 ARGO AMHERST WATERMAIN  
 OTTAWA ROAD  
 ROAD

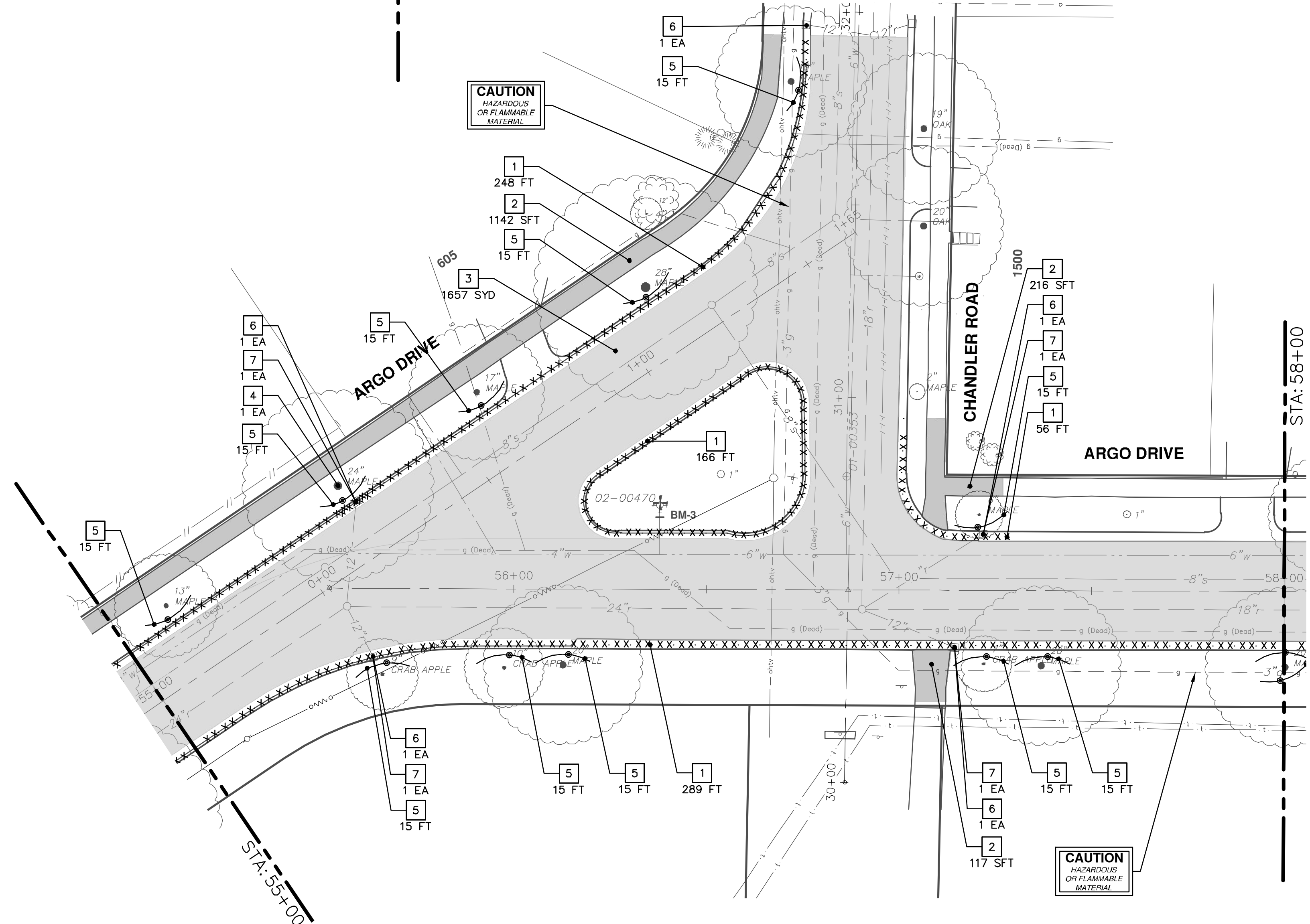
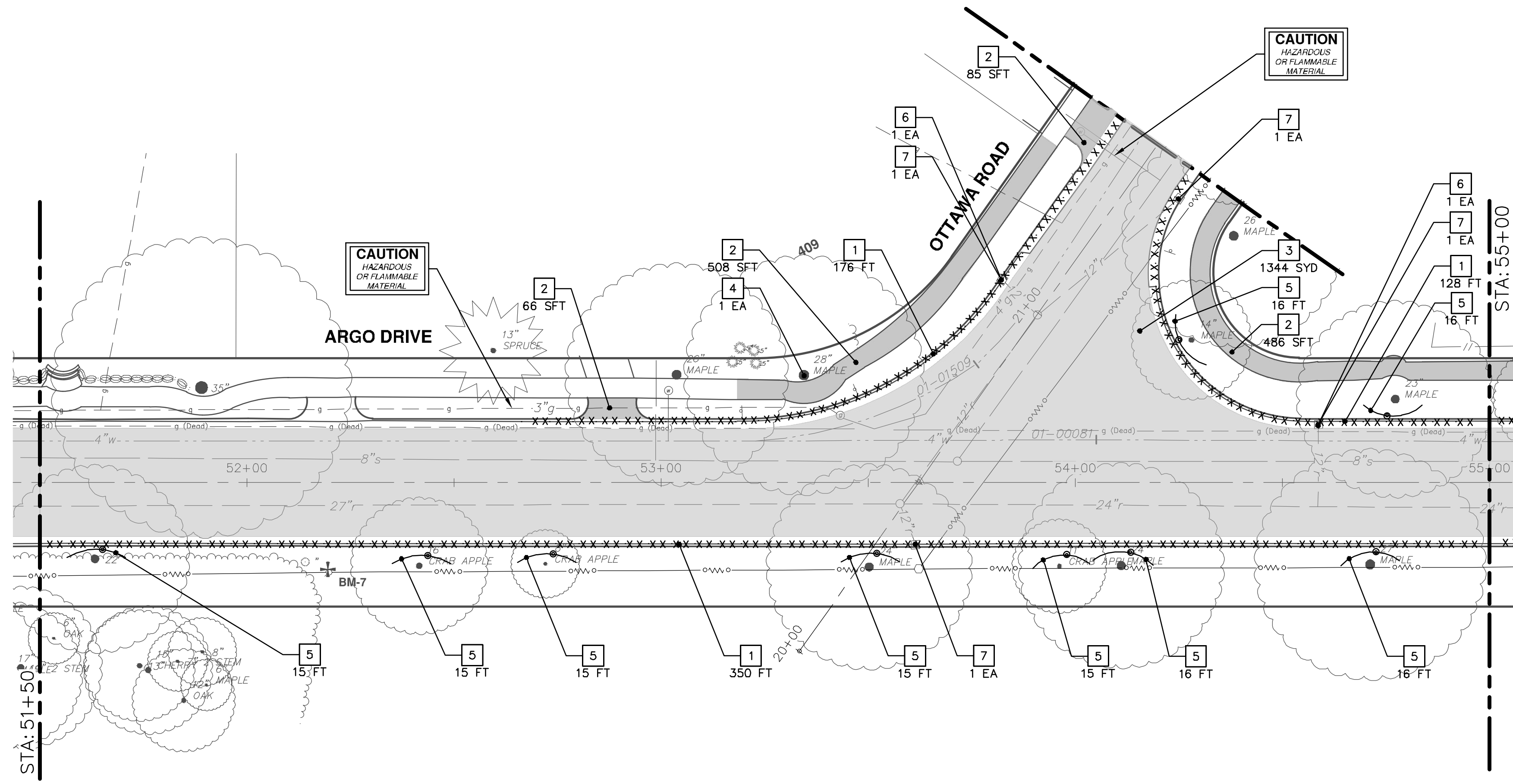
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 DRAWING No. 2018019-39



REV.	DATE	DESCRIPTION	BY	CHECKED
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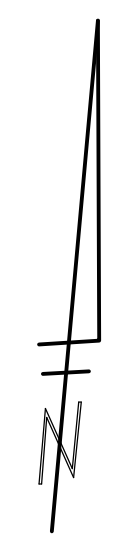


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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS



**811**  
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REV.      DESCRIPTION      DATE      DRAWN      CHECKED

00      OUT FOR BID      1-23-19      JKA      JKA

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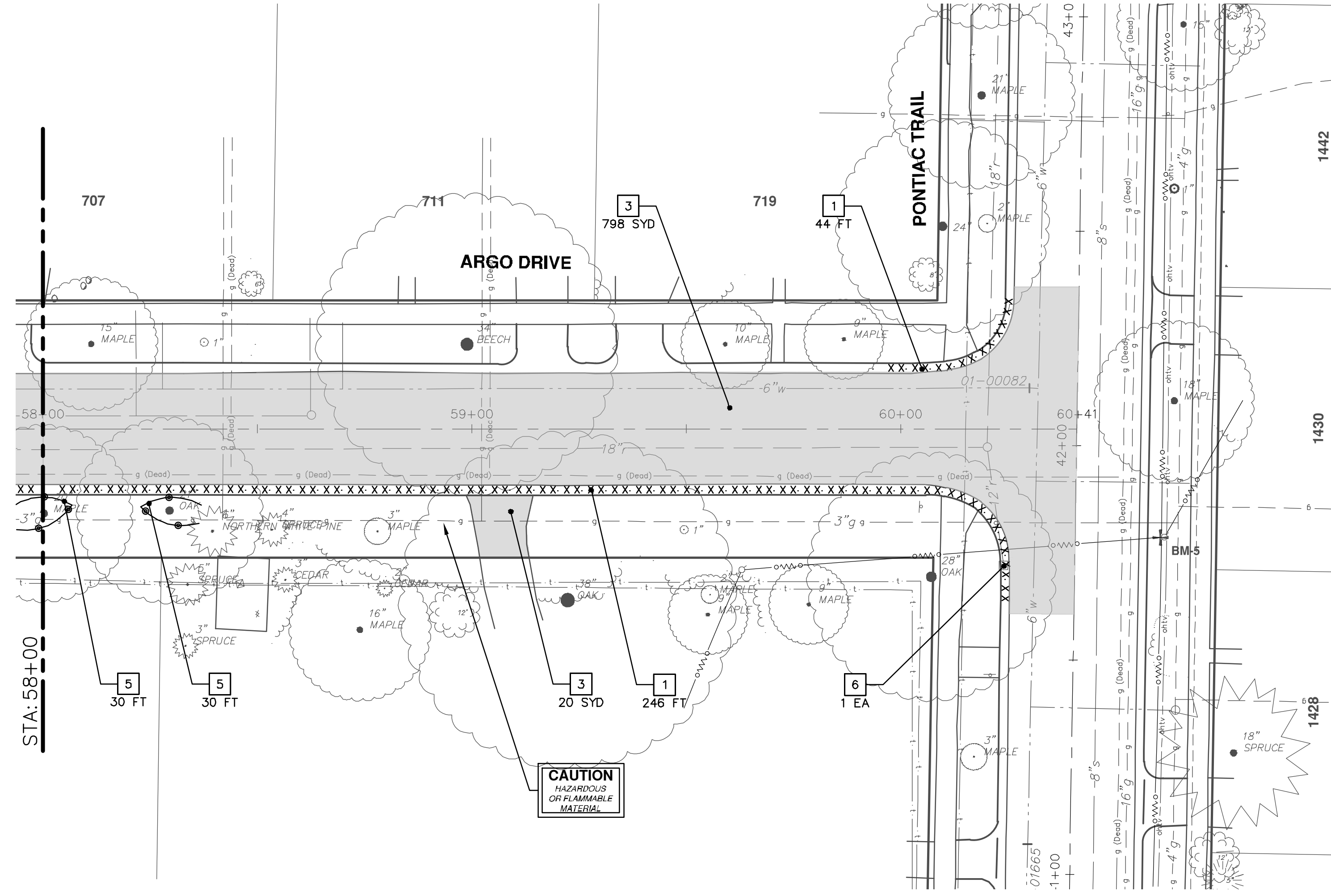
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN

REMOVALS - STA. 51+50 - STA. 58+00

DRAWING No. 2018019-40

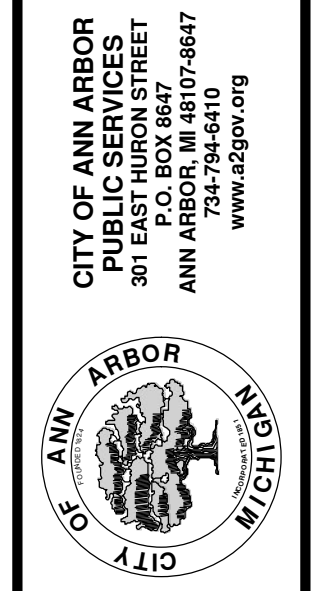
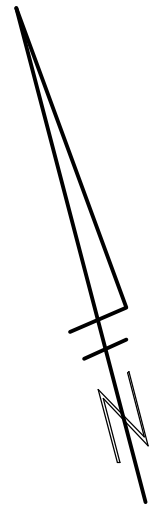
SHEET No. 40 OF 54

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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS



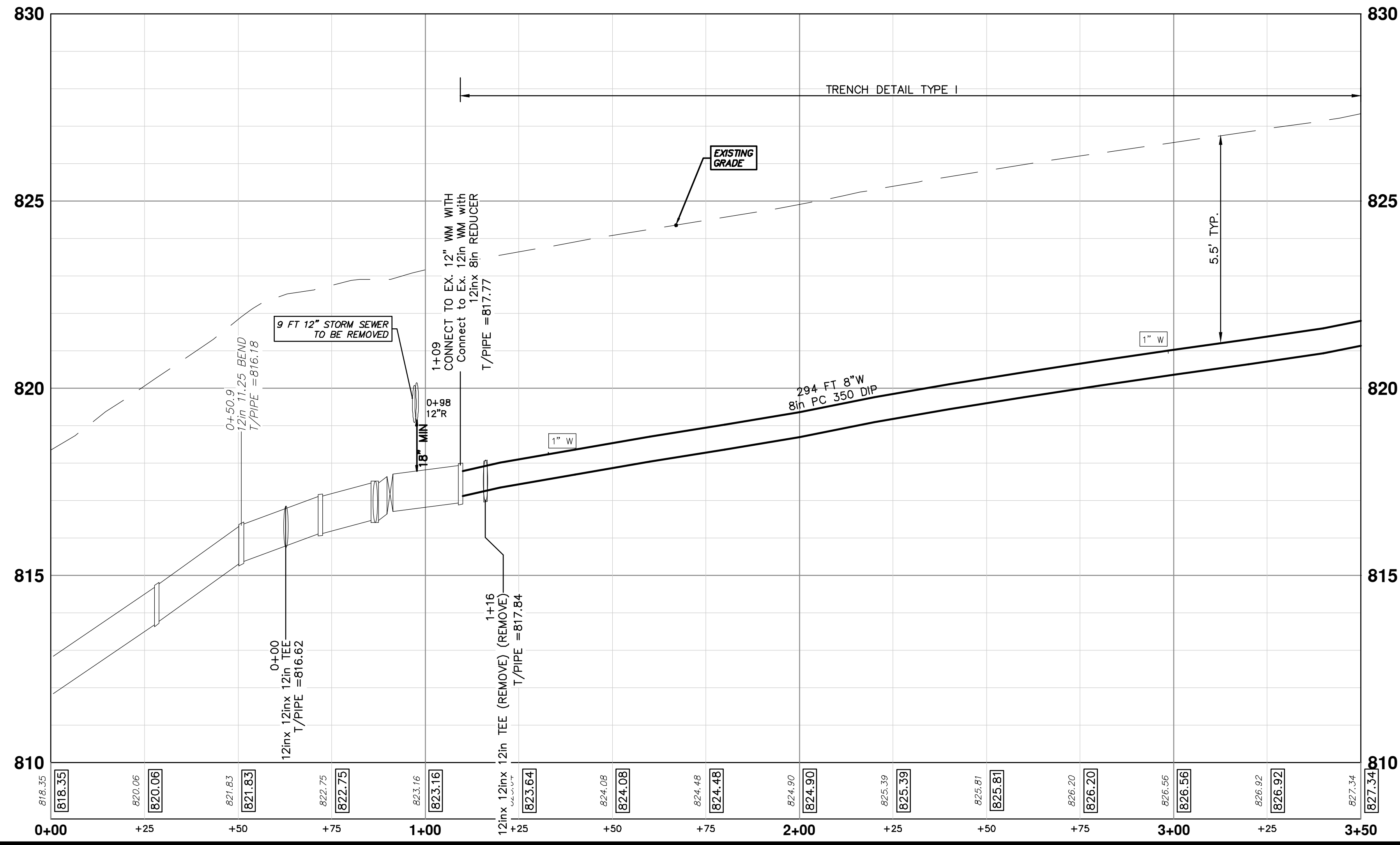
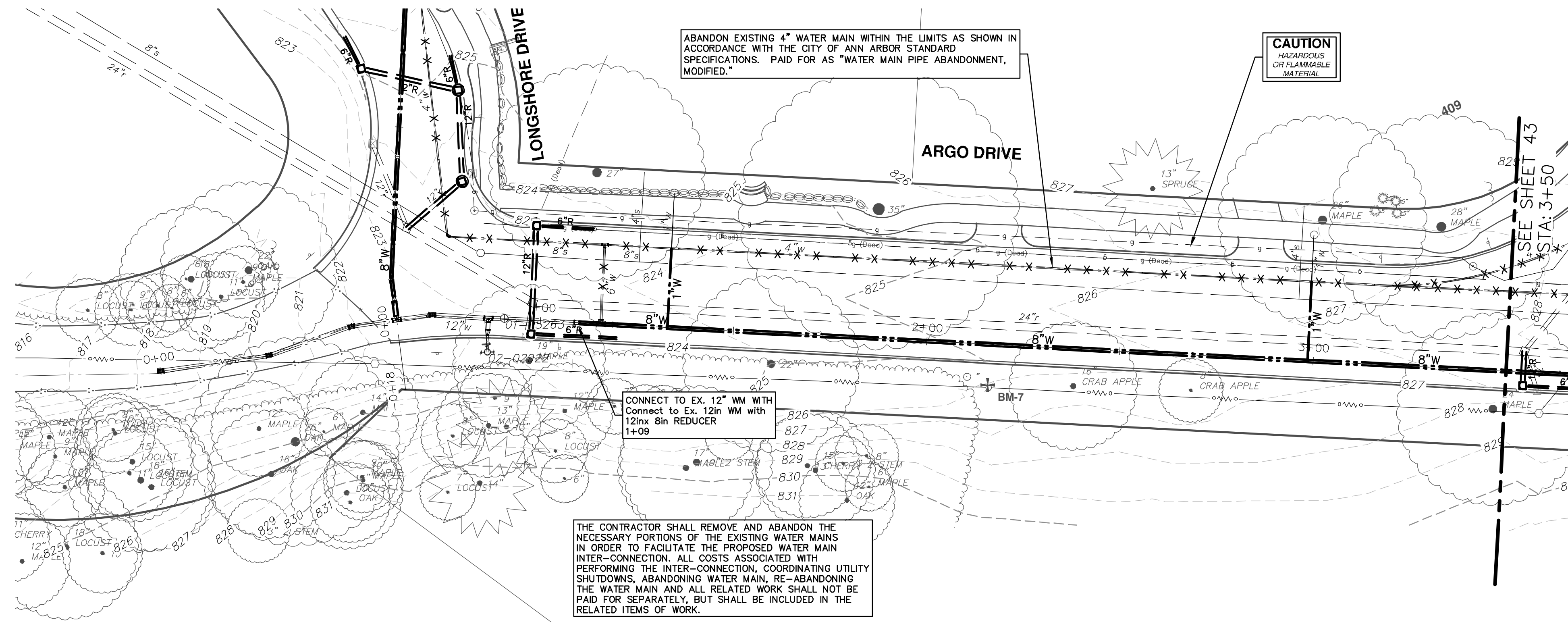
REV.	DESCRIPTION
00	OUT FOR BID
01	DATE

CHECKED	DRAWN	DATE	DESCRIPTION
JKA	CC/DF/KS	1-23-19	





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DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

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REV. DESCRIPTION

OD OUT FOR BID

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**CITY OF ANN ARBOR**  
MICHIGAN

---

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

**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATER MAIN**

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

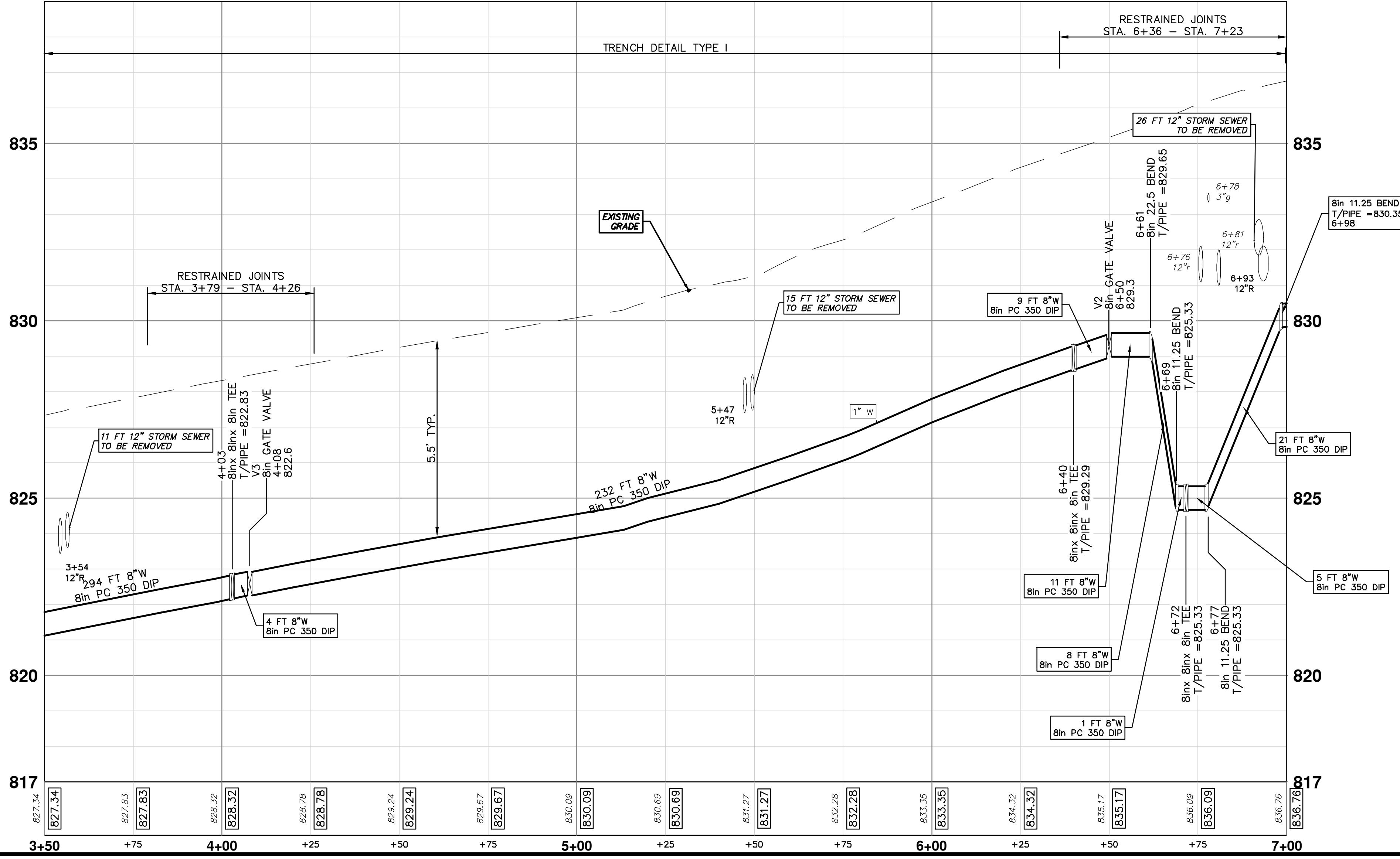
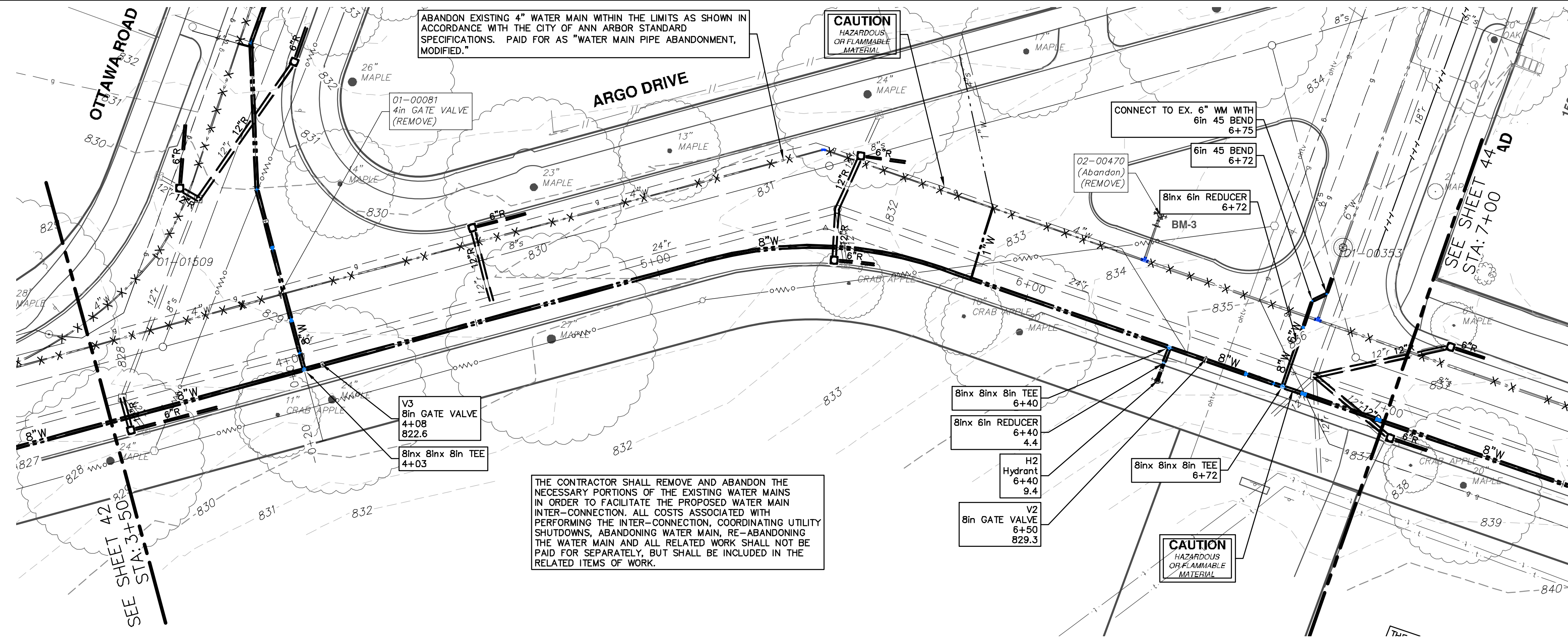
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**2018019-42**

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SHEET No.:

**42 OF 54**

R:\2018019 Longshore Dr WM\Plan Production\2018019Wtr2.dwg Dwg Created: 22-Jan-19 - \_a2 standard bw.stb - Plot Date: 23-Jan-19



WATER MAIN STRUCTURE TABLE			
STRUCTURE	TYPE	STATION	DEPTH
V2	8in GATE VALVE	6+50	829.30
V3	8in GATE VALVE	4+08	822.59
H2	Hydrant	6+40	829.84

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

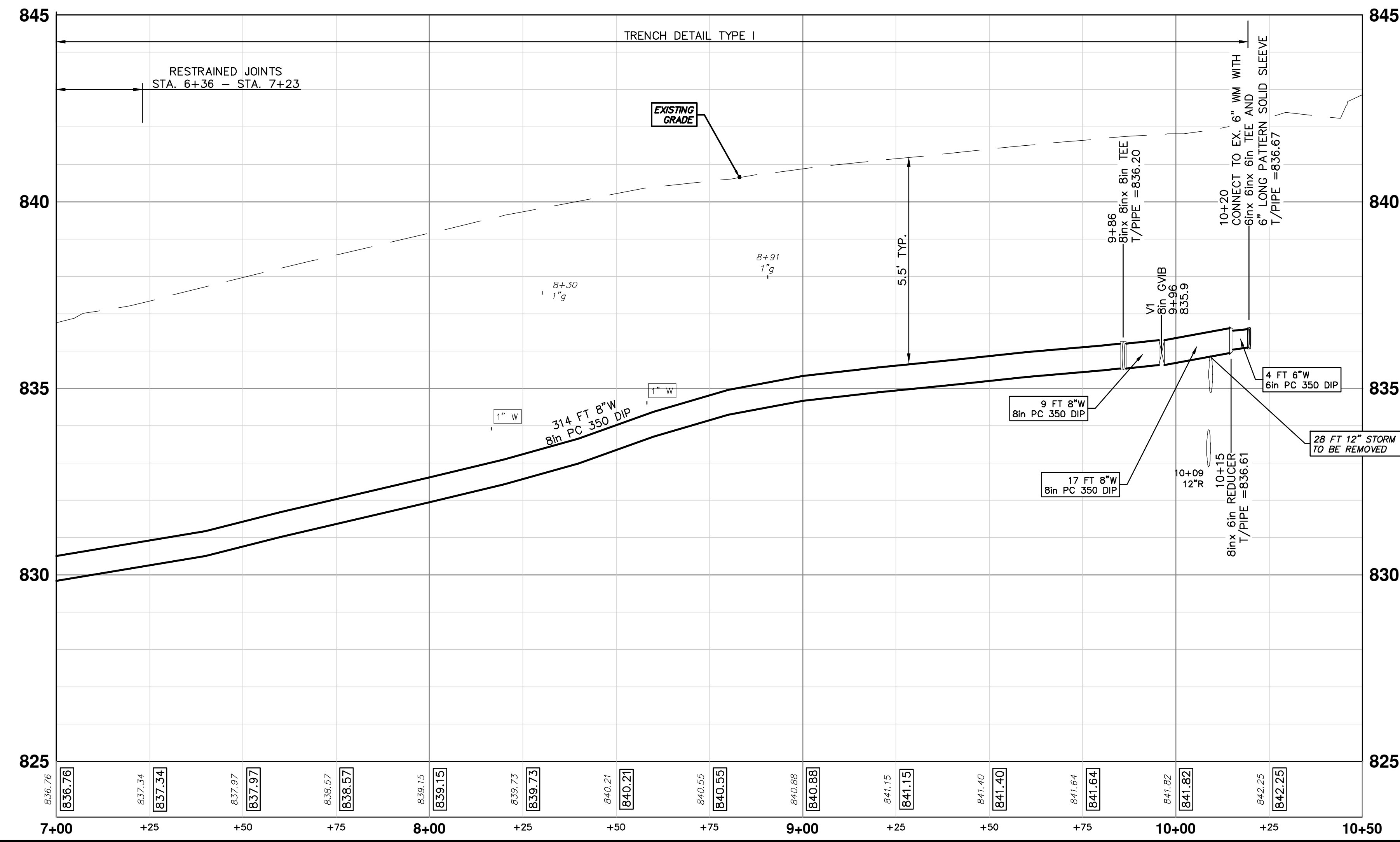
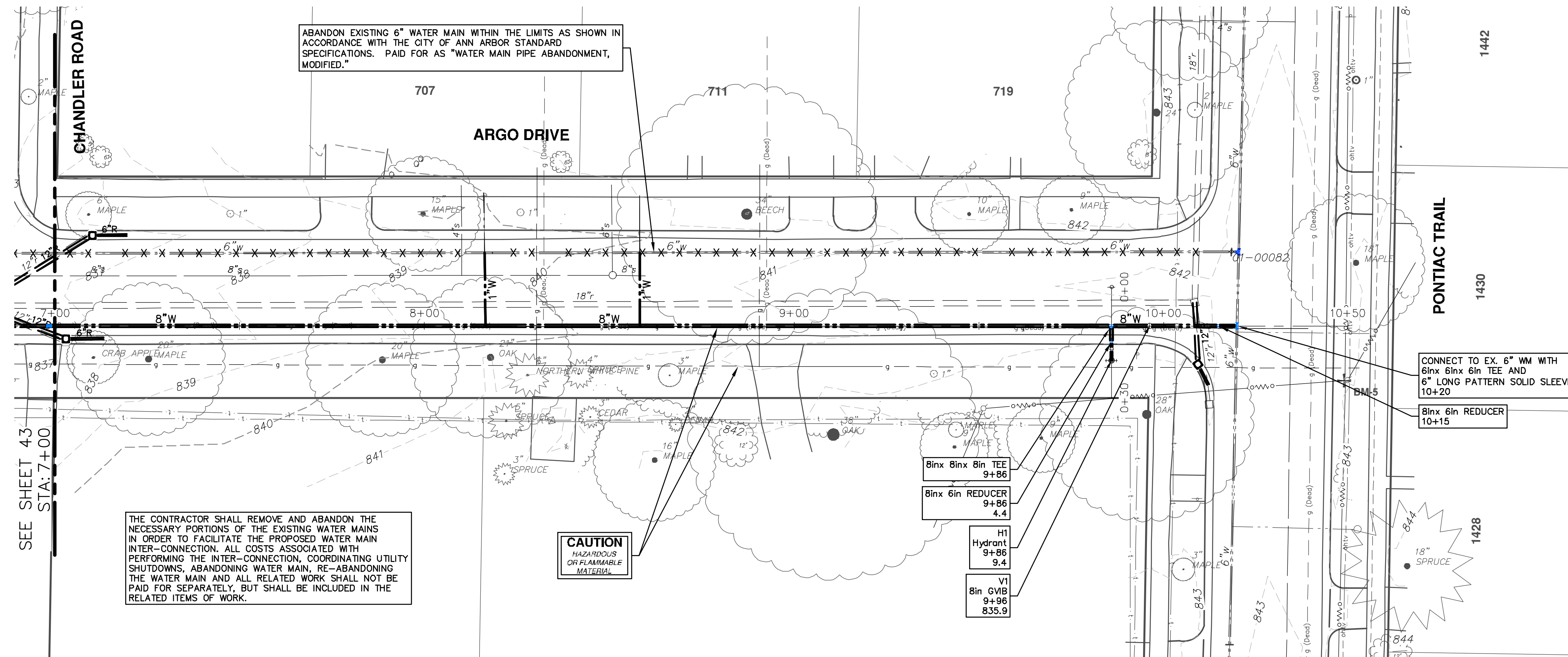
DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
ARGO DRIVE  
WATER MAIN - STA. 3+50 - STA. 7+00

SHEET No. 43 OF 54

DRAWING No. 2018019-43  
PROFILE: 1" = 2'  
SCALE PLAN: 1" = 20'





WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V1	8in GVB	9+96		835.95
H1	Hydrant	9+86		836.42

**811**  
Know what's below.  
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DATE: 1-23-19  
DRAWN: JKA  
CHECKED: CC/DF/RB

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REV. DESCRIPTION

DD OUT FOR BID

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**CITY OF ANN ARBOR**  
ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
ARGO DRIVE  
WATER MAIN - STA. 7+00 - STA. 10+20

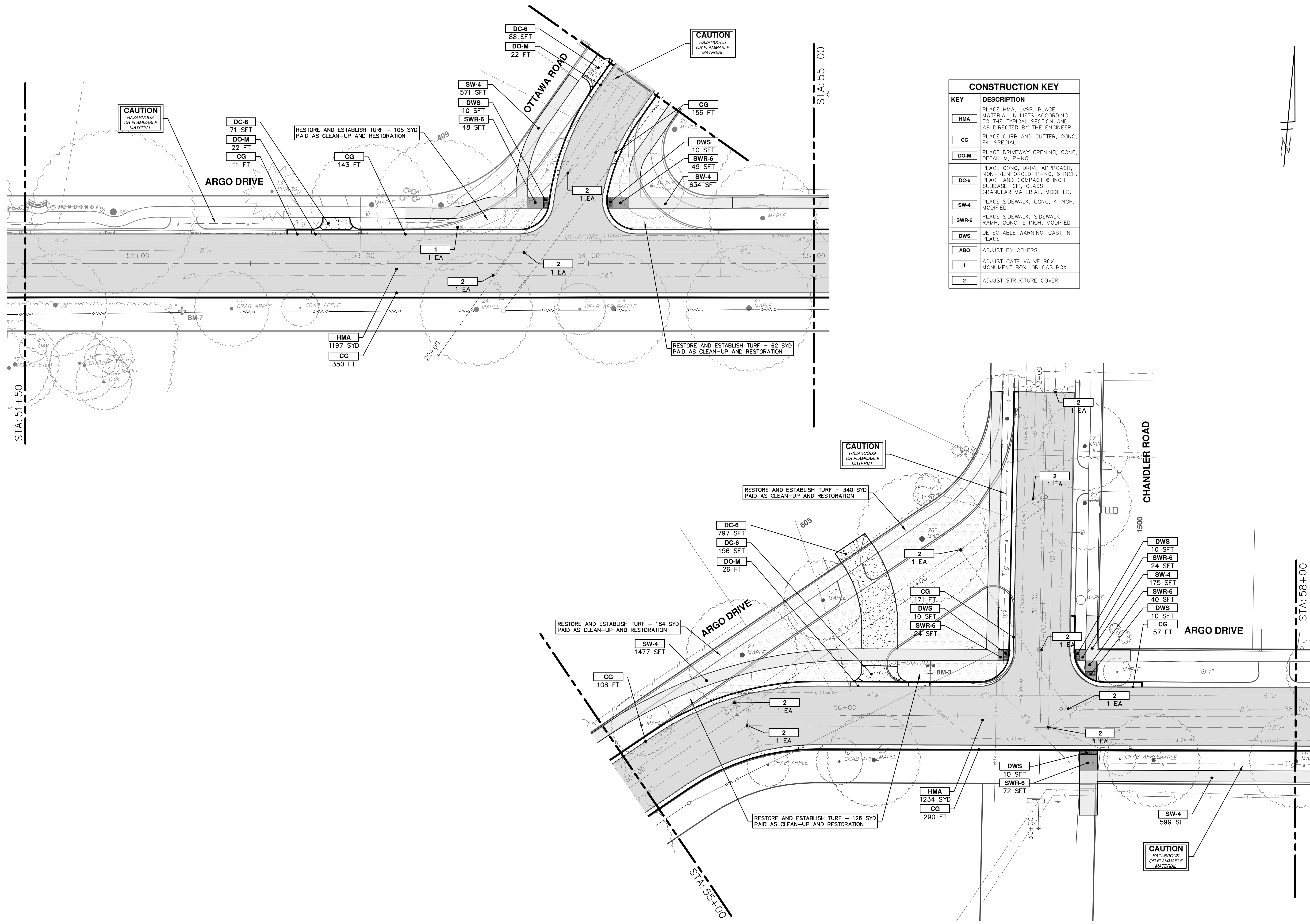
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SHEET No. 44 OF 54

DRAWING No. 2018019-44  
PROFILE: 1" = 2'  
SCALE PLAN: 1" = 20'



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**CONSTRUCTION KEY**

KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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


LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN

ROAD - STA. 51+50 - STA. 58+00

SCALE: 1" = 20'

DRAWING No. 2018019-45

SHEET No. 45 OF 54

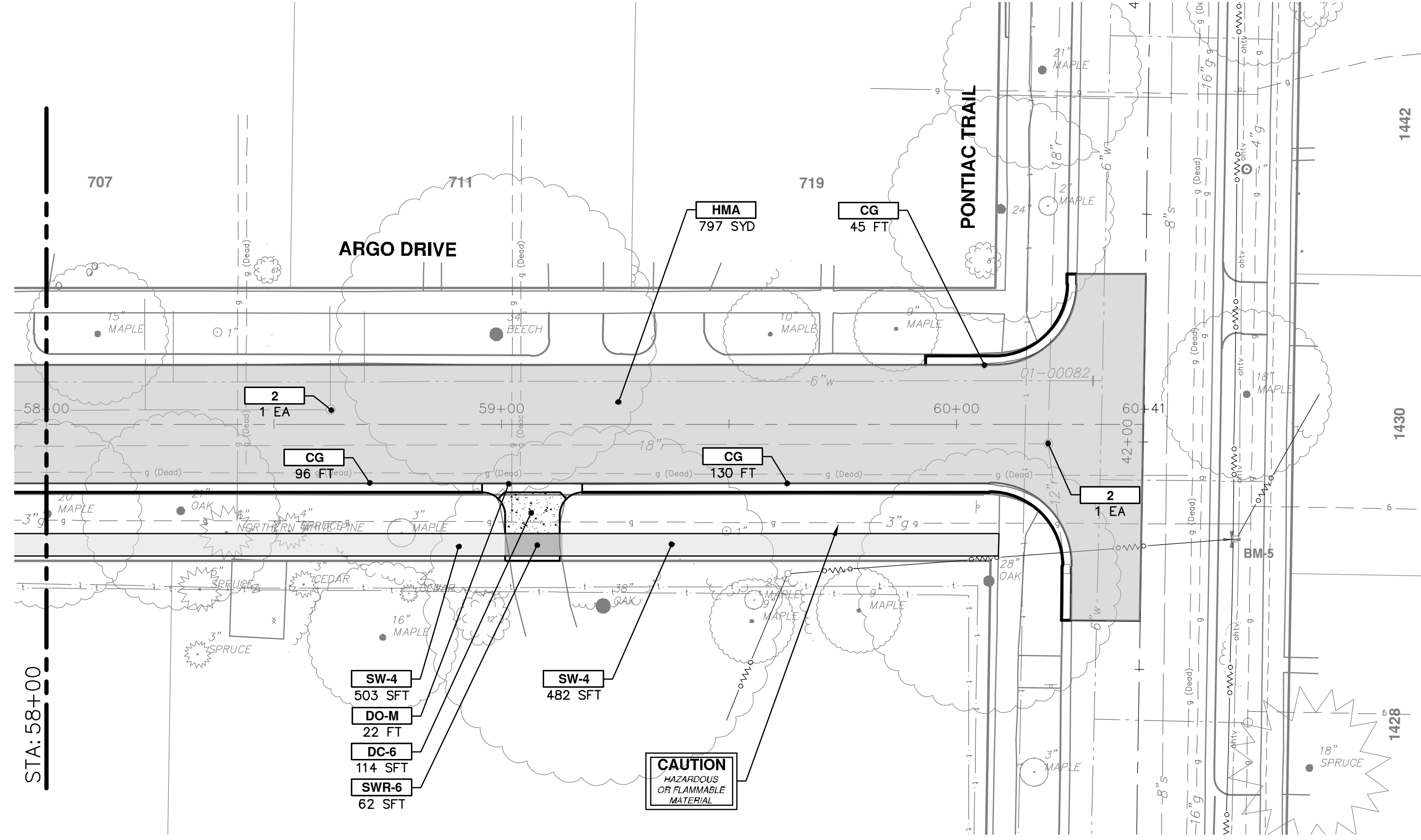


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ANN ARBOR FAX 800-864-7347  
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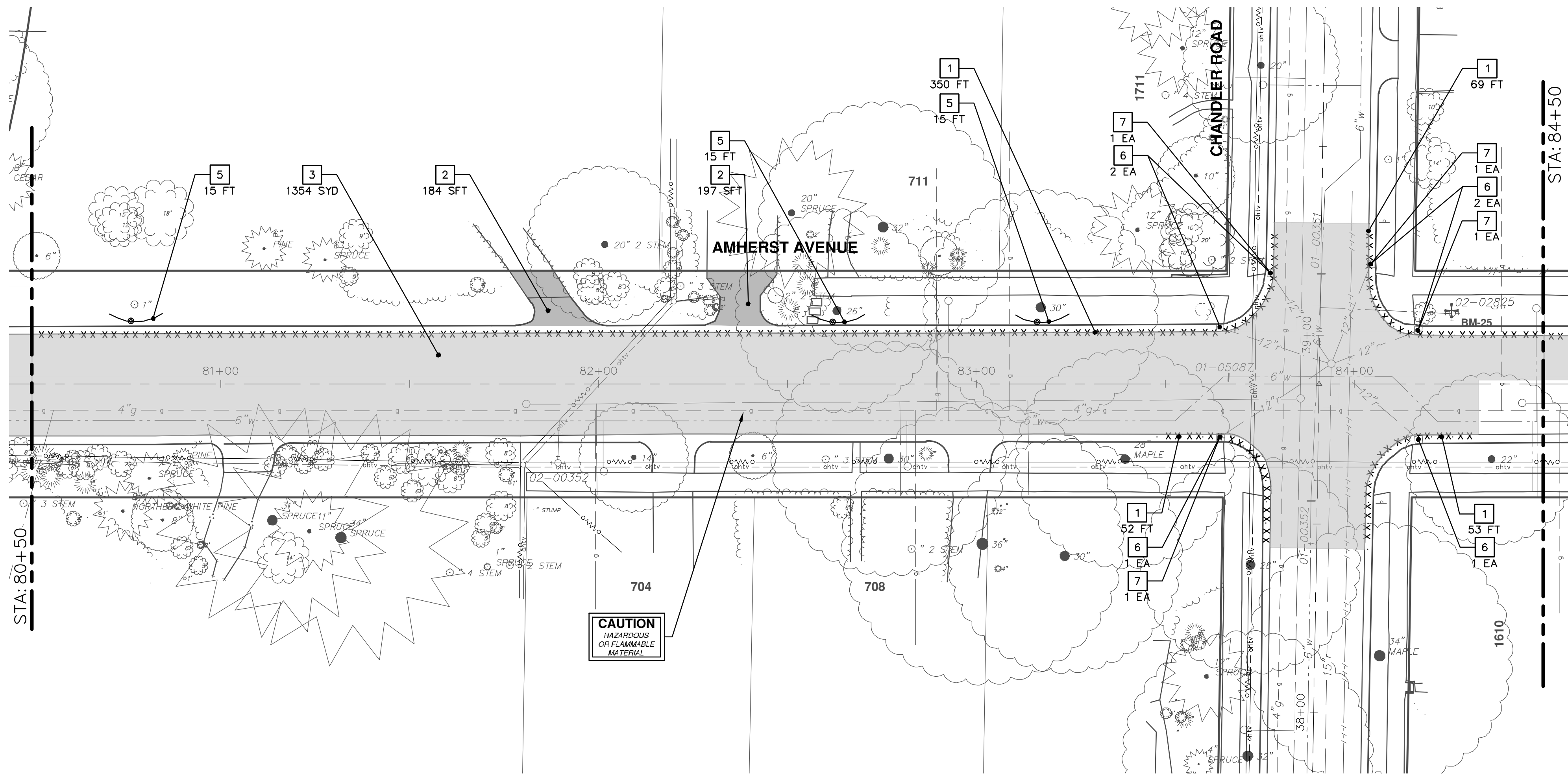
REV. DESCRIPTION

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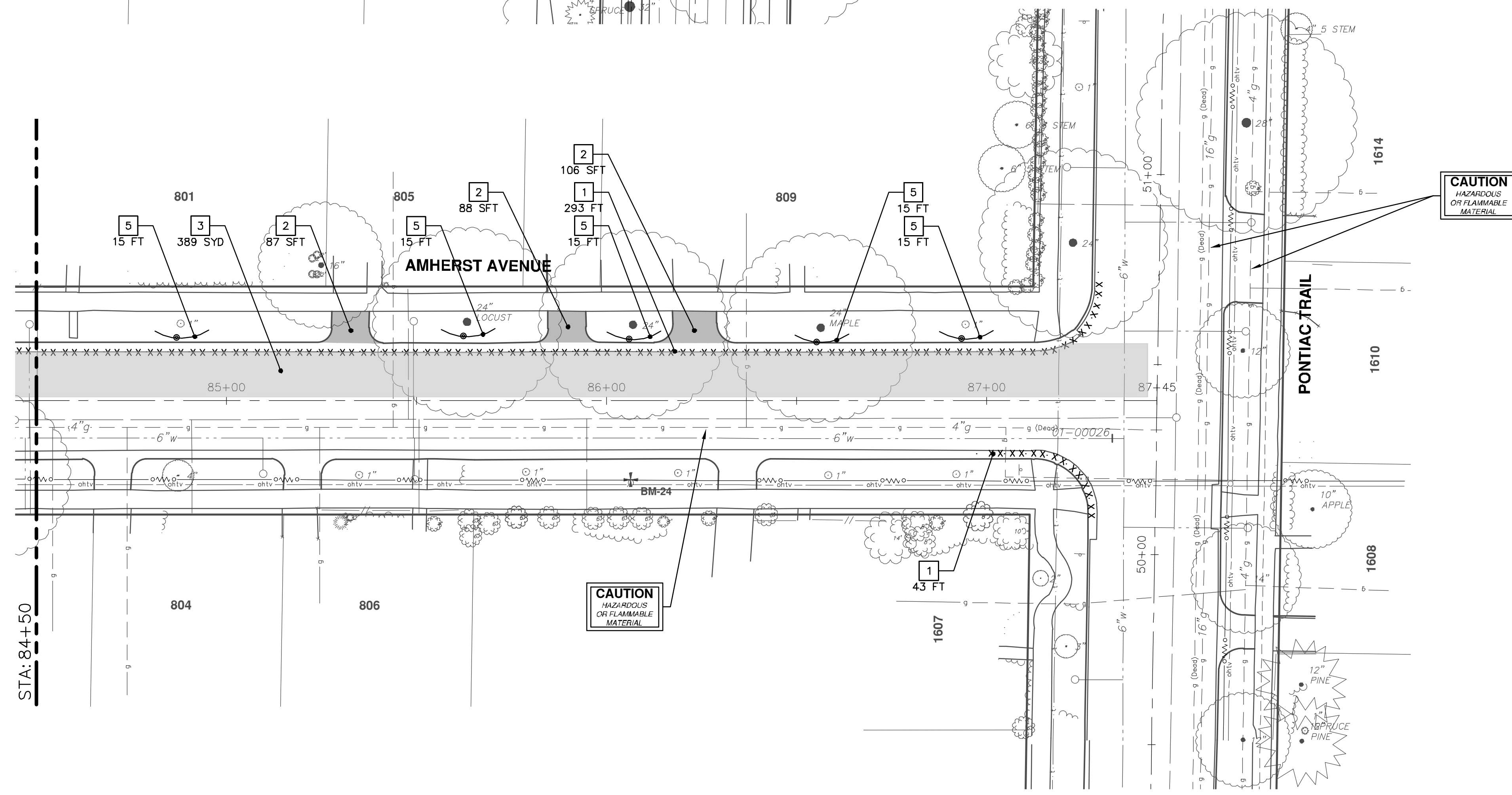


CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NG, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM

• SAWCUT FULL DEPTH AT REMOVAL LIMITS



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

DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

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REV. DESCRIPTION

OD: 1-23-19  
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
AMHERST DRIVE  
REMOVALS

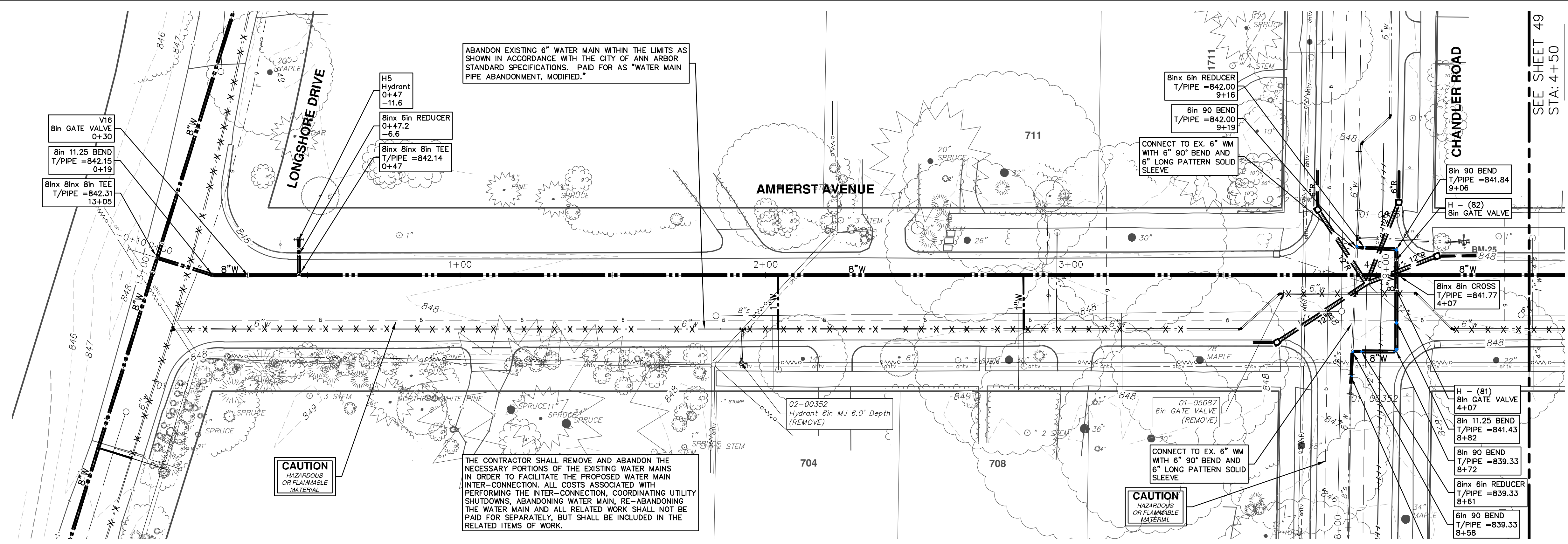
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SHEET No. 47 OF 54

SCALE: 1" = 20'  
DRAWING No. 2018019-47



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**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

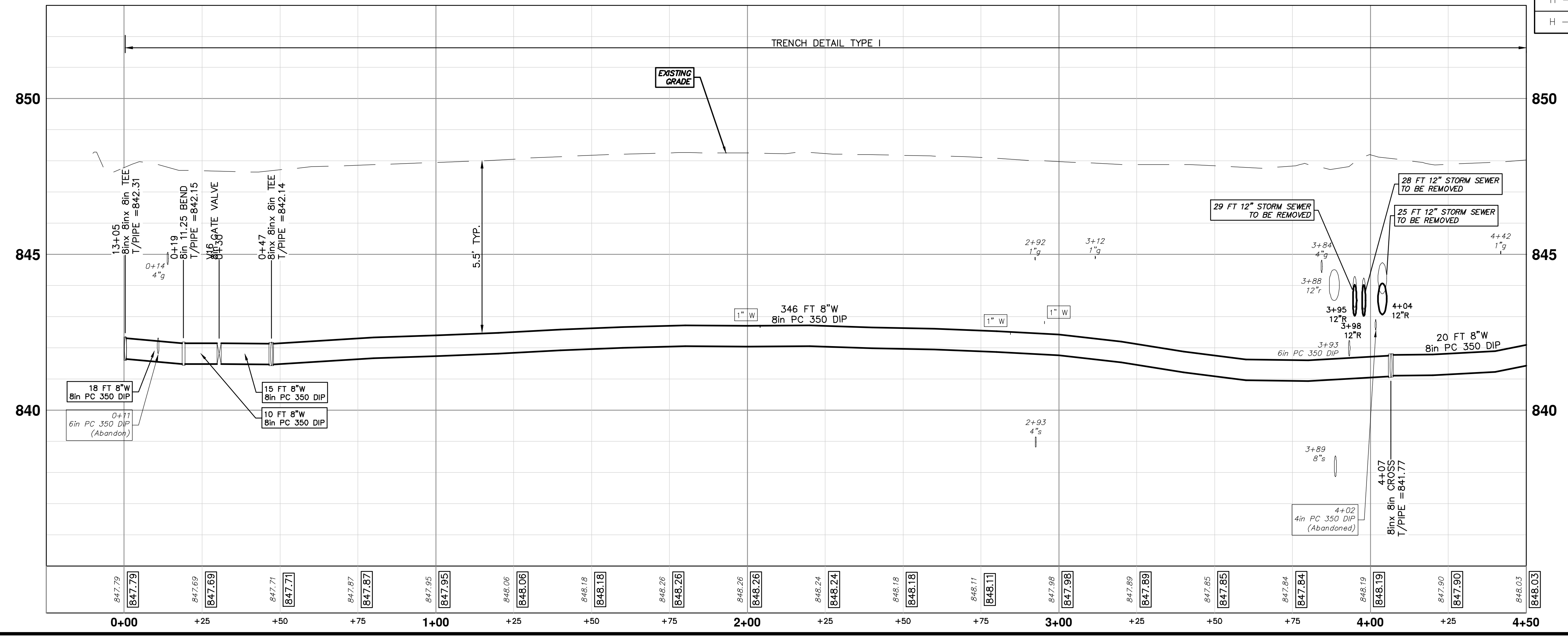
THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAINS INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND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

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

SEE SHEET 49  
STA. 4+50

**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH
H5	Hydrant	0+47		842.81
V16	8in GATE VALVE	0+30		841.81
H - (81)	8in GATE VALVE	4+07		841.43
H - (82)	8in GATE VALVE	9+02		841.51



**811**  
Know what's below.  
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
AMHERST DRIVE  
WATER MAIN - STA. 0+00 - STA. 4+50

SHEET No. **48 OF 54**

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

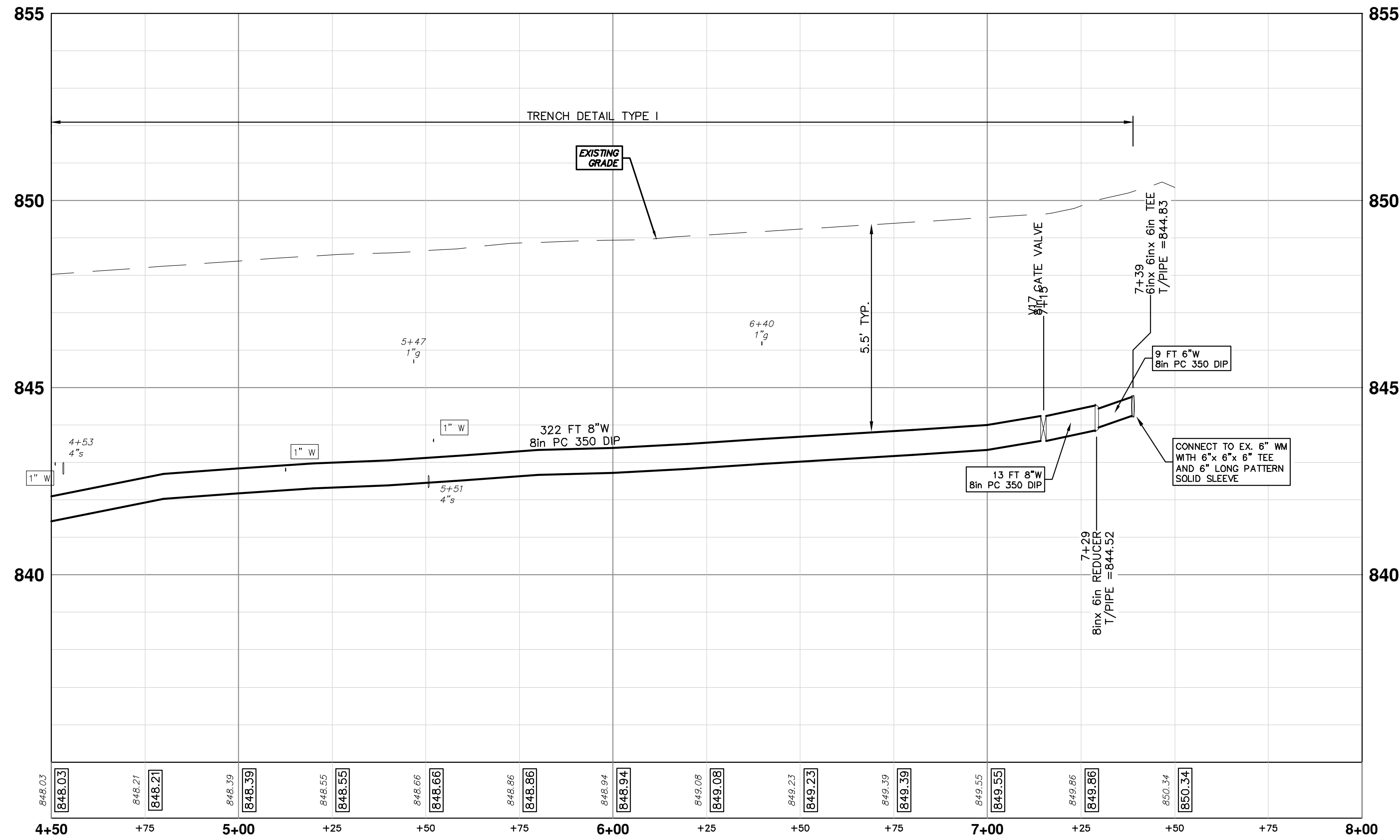
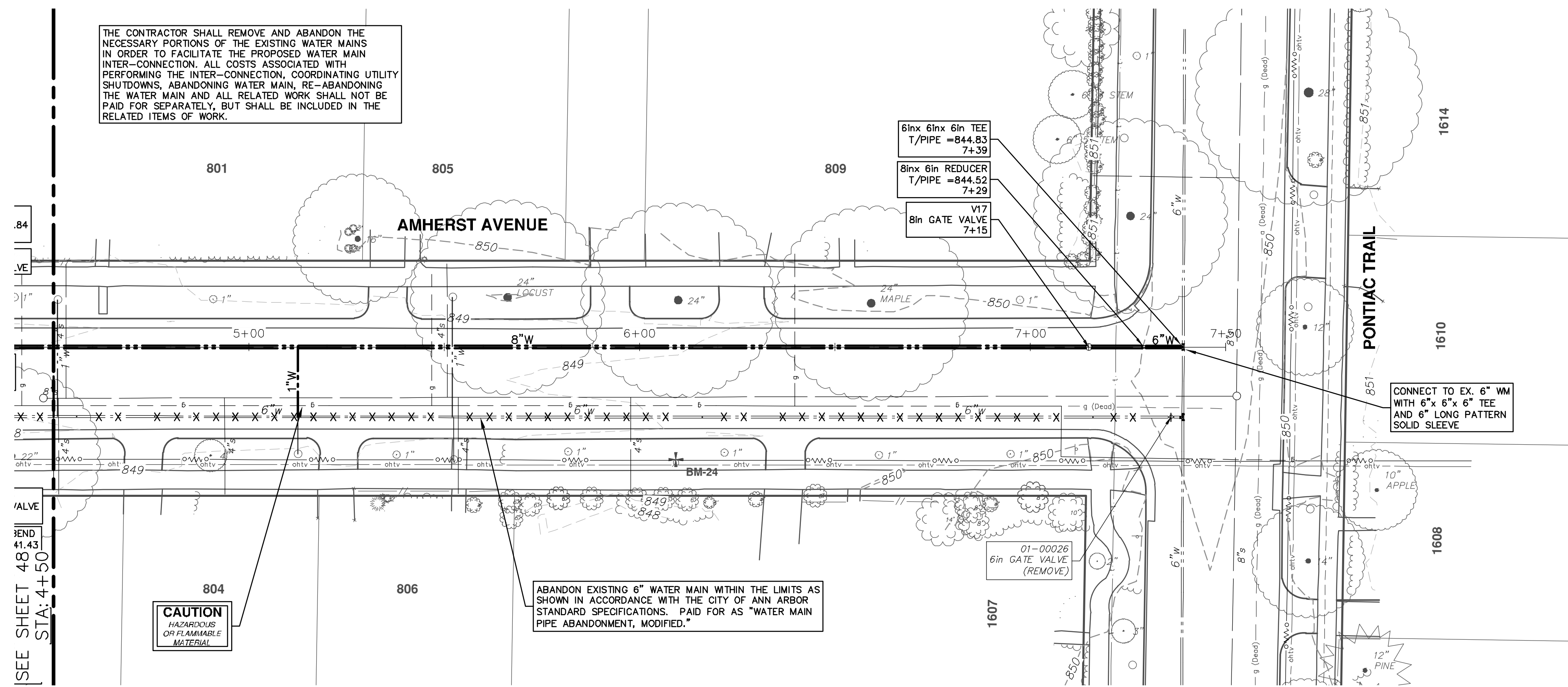
DRAWING No. **2018019-48**

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REV. DATE DESCRIPTION

1-23-19  
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DRAWN CHECKED

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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V17	8in GATE VALVE	7+15		843.91

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.

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

**CAUTION**  
HAZARDOUS OR FLAMMABLE MATERIAL

**811**  
Know what's below.  
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DATE: 1-23-19  
DRAWN: JKA  
CHECKED: [ ]

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

**LONGSHORE INDIANOLA OTTAWA**

**ARGO AMHERST WATERMAIN**

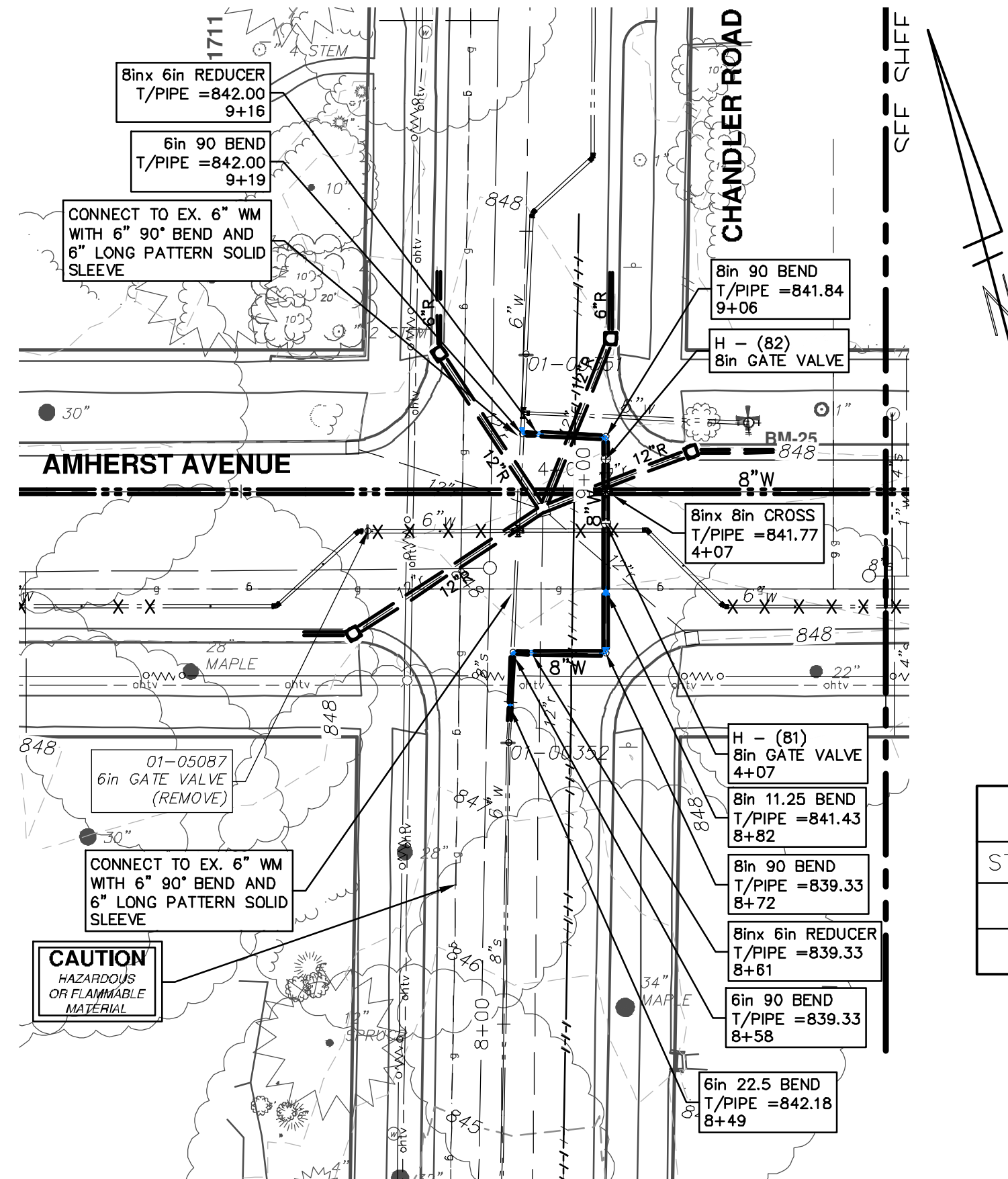
AMHERST DRIVE  
WATER MAIN - STA. 4+50 - STA. 7+39

SHEET No. **49 OF 54**

DRAWING No. **2018019-49**

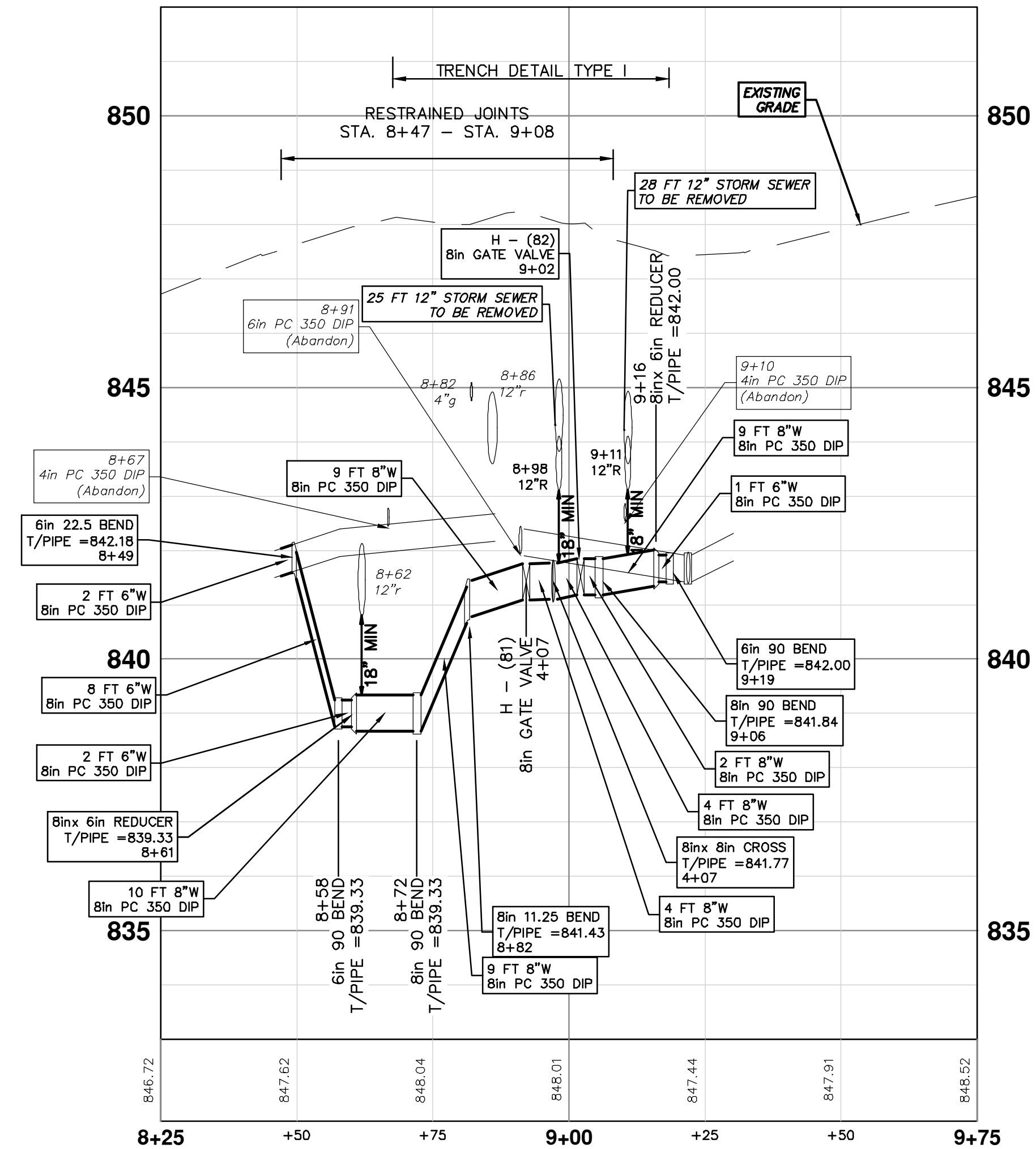


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THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING 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.

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H - (81)	8in GATE VALVE	4+07		841.43
H - (82)	8in GATE VALVE	9+02		841.51



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

DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

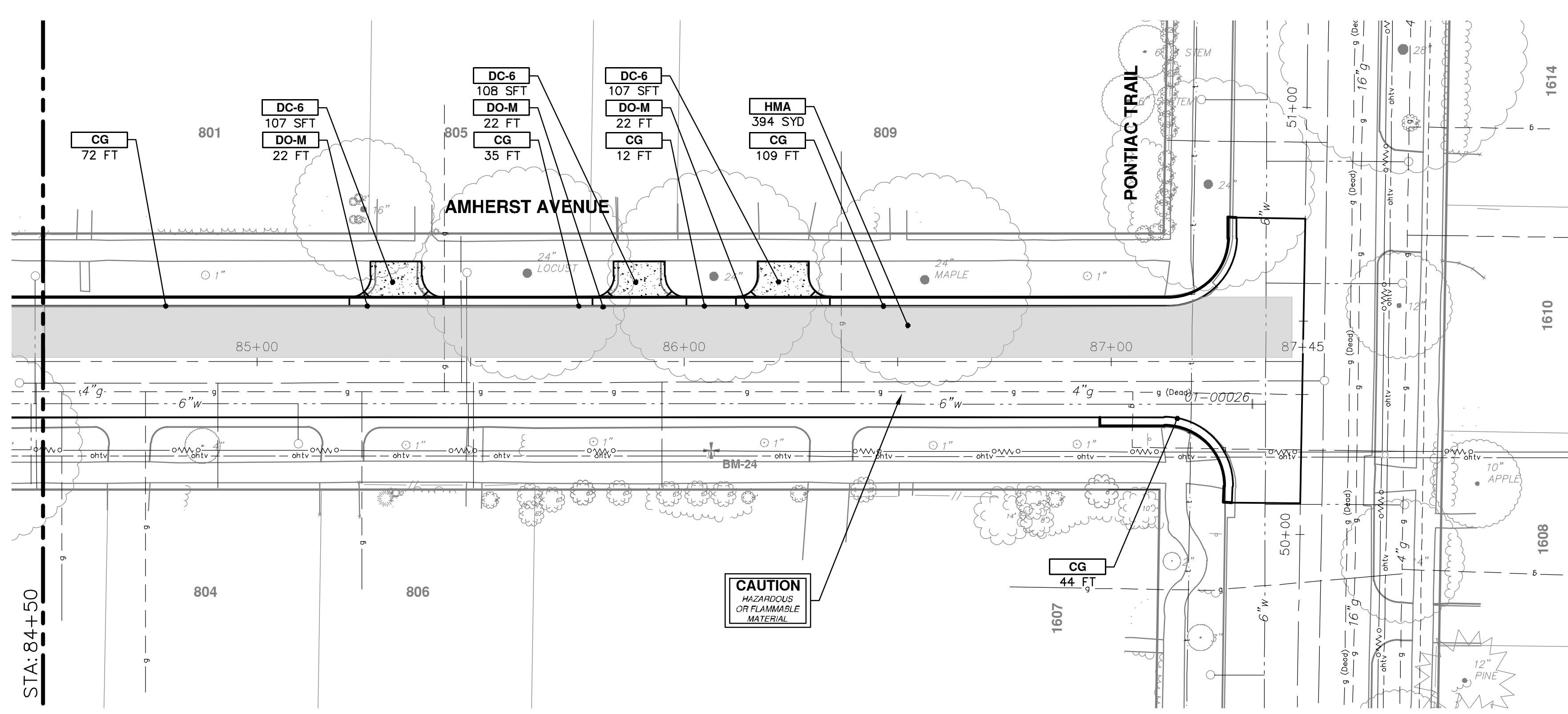
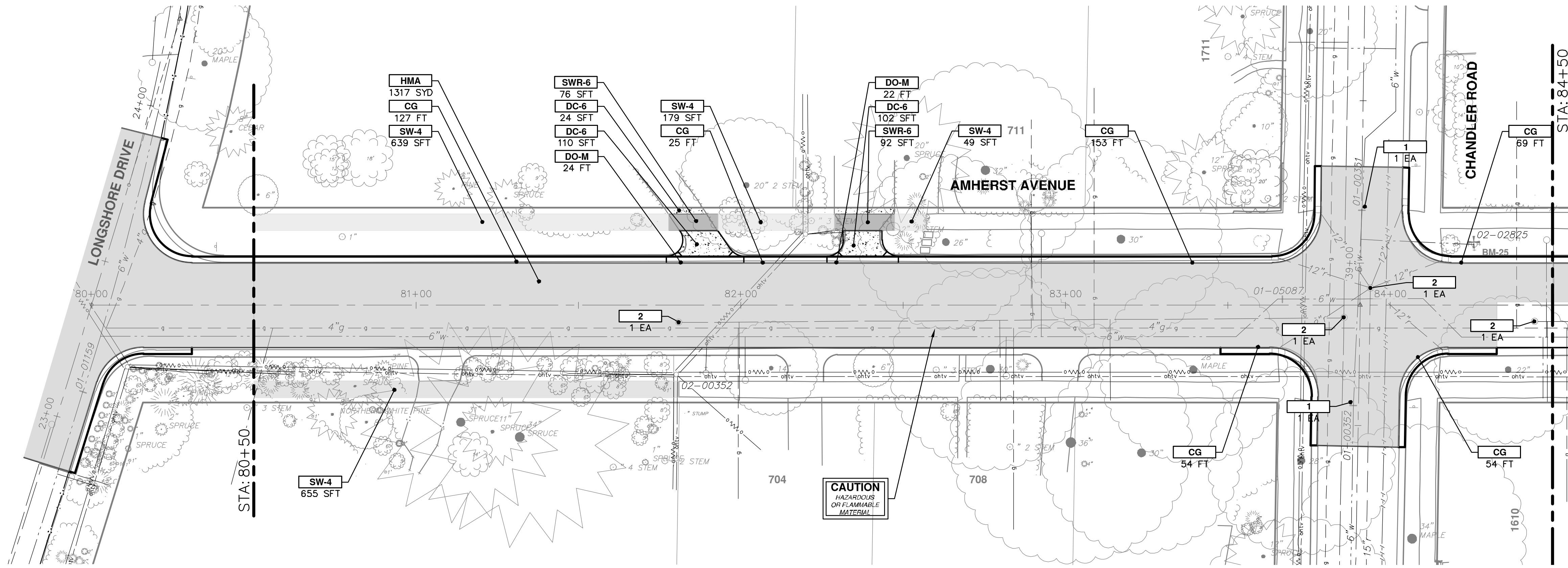
**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**  
 AMHERST DRIVE  
 WATER MAIN - CHANDLER ROAD CONNECTION

SHEET No. **50 OF 54**

DRAWING No. **2018019-50**  
 SCALE PLAN: 1" = 20'  
 PROFILE: 1" = 2'



R:\2018019 Longshore Dr WM\Plan Production\2018019Prd-Amherst.dwg Dwg Created: 22-Jan-19 - \_a2 standard bw.stb - Plot Date: 23-Jan-19



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC. F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC. DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

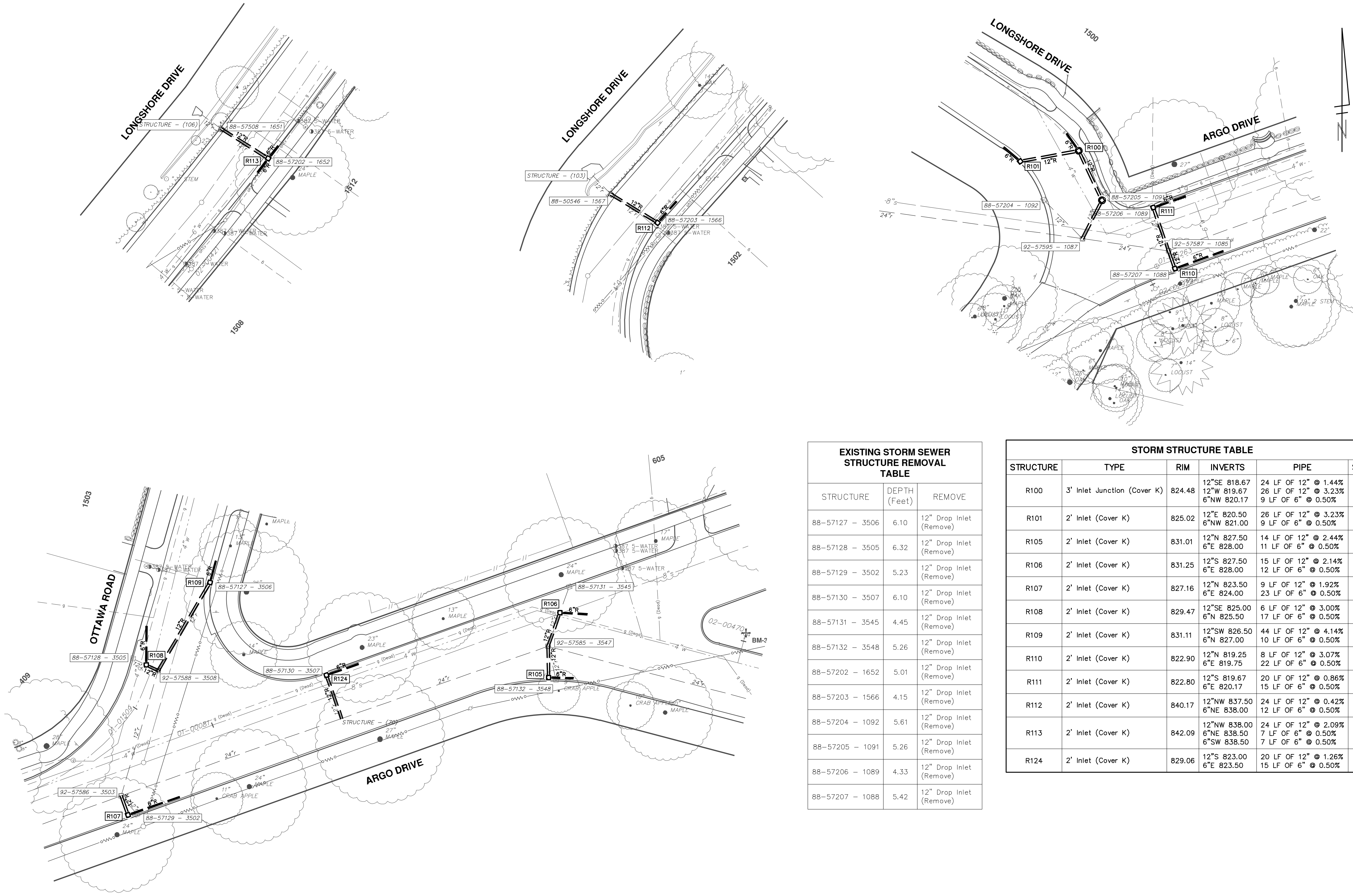
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DESCRIPTION: OUT FOR BID  
REV.:

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN  
AMHERST DRIVE  
ROAD

DRAWING No. 2018019-51  
SHEET No. 51 OF 54

R:\2018019 Longshore Dr WM\Plan Production\2018019Strm.dwg Dwg Created: 22-Jan-19 10:02:00 Plot Date: 23-Jan-19



EXISTING STORM SEWER STRUCTURE REMOVAL TABLE		
STRUCTURE	DEPTH (Feet)	REMOVE
88-57127 - 3506	6.10	12" Drop Inlet (Remove)
88-57128 - 3505	6.32	12" Drop Inlet (Remove)
88-57129 - 3502	5.23	12" Drop Inlet (Remove)
88-57130 - 3507	6.10	12" Drop Inlet (Remove)
88-57131 - 3545	4.45	12" Drop Inlet (Remove)
88-57132 - 3548	5.26	12" Drop Inlet (Remove)
88-57202 - 1652	5.01	12" Drop Inlet (Remove)
88-57203 - 1566	4.15	12" Drop Inlet (Remove)
88-57204 - 1092	5.61	12" Drop Inlet (Remove)
88-57205 - 1091	5.26	12" Drop Inlet (Remove)
88-57206 - 1089	4.33	12" Drop Inlet (Remove)
88-57207 - 1088	5.42	12" Drop Inlet (Remove)

STORM STRUCTURE TABLE					
STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R100	3' Inlet Junction (Cover K)	824.48	12"SE 818.67 12"W 819.67 6"NW 820.17	24 LF OF 12" @ 1.44% 26 LF OF 12" @ 3.23% 9 LF OF 6" @ 0.50%	2'
R101	2' Inlet (Cover K)	825.02	12"E 820.50 6"NW 821.00	26 LF OF 12" @ 3.23% 9 LF OF 6" @ 0.50%	2'
R105	2' Inlet (Cover K)	831.01	12"N 827.50 6"E 828.00	14 LF OF 12" @ 2.44% 11 LF OF 6" @ 0.50%	2'
R106	2' Inlet (Cover K)	831.25	12"S 827.50 6"E 828.00	15 LF OF 12" @ 2.14% 12 LF OF 6" @ 0.50%	2'
R107	2' Inlet (Cover K)	827.16	12"N 823.50 6"E 824.00	9 LF OF 12" @ 1.92% 23 LF OF 6" @ 0.50%	2'
R108	2' Inlet (Cover K)	829.47	12"SE 825.00 6"N 825.50	6 LF OF 12" @ 3.00% 17 LF OF 6" @ 0.50%	2'
R109	2' Inlet (Cover K)	831.11	12"SW 826.50 6"N 827.00	44 LF OF 12" @ 4.14% 10 LF OF 6" @ 0.50%	2'
R110	2' Inlet (Cover K)	822.90	12"N 819.25 6"E 819.75	8 LF OF 12" @ 3.07% 22 LF OF 6" @ 0.50%	2'
R111	2' Inlet (Cover K)	822.80	12"S 819.67 6"E 820.17	20 LF OF 12" @ 0.86% 15 LF OF 6" @ 0.50%	2'
R112	2' Inlet (Cover K)	840.17	12"NW 837.50 6"NE 838.00	24 LF OF 12" @ 0.42% 12 LF OF 6" @ 0.50%	2'
R113	2' Inlet (Cover K)	842.09	12"NW 838.00 6"NE 838.50 6"SW 838.50	24 LF OF 12" @ 2.09% 7 LF OF 6" @ 0.50% 7 LF OF 6" @ 0.50%	2'
R124	2' Inlet (Cover K)	829.06	12"S 823.00 6"E 823.50	20 LF OF 12" @ 1.26% 15 LF OF 6" @ 0.50%	2'

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

DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

DESCRIPTION: STORM SEWER

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
LONGSHORE INDIANOLA OTTAWA  
ARGO AMHERST WATERMAIN

REV. 1  
OUT FOR BID  
DATE: 1-23-19  
DRAWN: JKA  
CHECKED: JKA

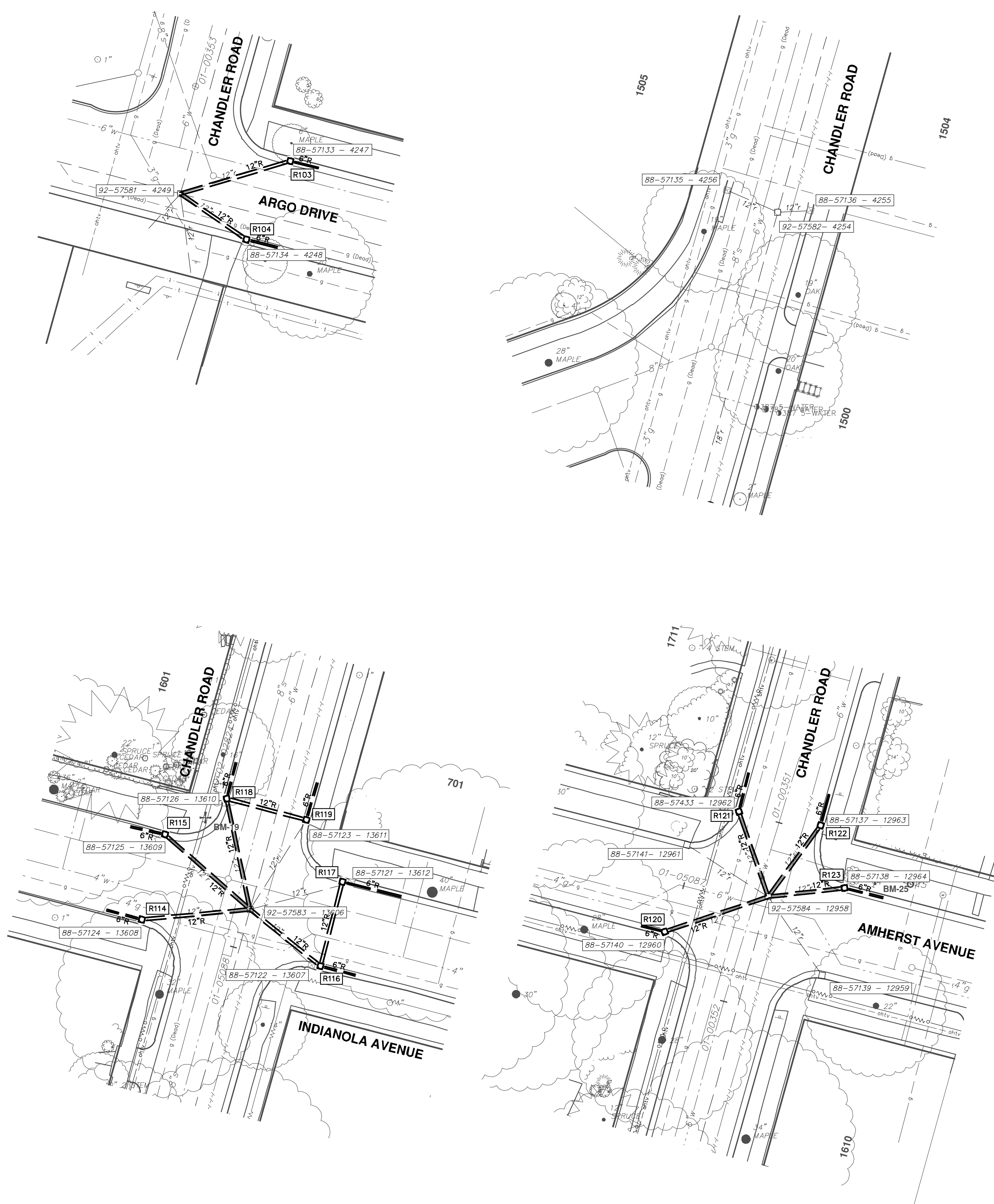
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SCALE PLAN: 1" = 20'

DRAWING No. 2018019-52  
SHEET No. 52 OF 54





EXISTING STORM SEWER STRUCTURE REMOVAL TABLE		
STRUCTURE	DEPTH (Feet)	REMOVE
88-57121 - 13612	4.90	12" Drop Inlet (Remove)
88-57122 - 13607	4.60	12" Drop Inlet (Remove)
88-57123 - 13611	4.50	12" Drop Inlet (Remove)
88-57124 - 13608	4.30	12" Drop Inlet (Remove)
88-57125 - 13609	4.30	12" Drop Inlet (Remove)
88-57126 - 13610	4.50	12" Drop Inlet (Remove)
88-57133 - 4247	5.40	12" Drop Inlet (Remove)
88-57134 - 4248	6.00	12" Drop Inlet (Remove)
88-57137 - 12963	5.20	12" Drop Inlet (Remove)
88-57138 - 12964	4.30	12" Drop Inlet (Remove)
88-57140 - 12960	4.85	12" Drop Inlet (Remove)
88-57433 - 12962	4.85	12" Drop Inlet (Remove)

STORM STRUCTURE TABLE					
STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R102	2' Inlet (Cover K)	841.65	12"N 833.00 6"S 833.50	17 LF OF 12" @ 1.00% 6 LF OF 6" @ 0.50%	2'
R103	2' Inlet (Cover K)	836.23	12"W 831.50 6"E 818.49	37 LF OF 12" @ 1.63% 9 LF OF 6" @ 0.50%	2'
R104	2' Inlet (Cover K)	836.72	12"NW 831.25 6"E 831.75	26 LF OF 12" @ 1.36% 10 LF OF 6" @ 0.50%	2'
R114	2' Inlet (Cover K)	835.84	12"E 833.33 6"W 833.83	35 LF OF 12" @ 0.94% 12 LF OF 6" @ 0.50%	2'
R115	2' Inlet (Cover K)	836.09	12"SE 833.17 6"W 833.67	36 LF OF 12" @ 0.47% 11 LF OF 6" @ 0.50%	2'
R116	2' Inlet (Cover K)	836.30	12"NW 833.33 12"N 833.33 6"E 833.83	29 LF OF 12" @ 1.14% 28 LF OF 12" @ 0.61% 12 LF OF 6" @ 0.50%	2'
R117	2' Inlet (Cover K)	836.90	12"S 833.50 6"E 834.00	28 LF OF 12" @ 0.61% 19 LF OF 6" @ 0.50%	2'
R118	2' Inlet (Cover K)	836.27	12"S 833.33 12"E 833.33 6"N 833.83	36 LF OF 12" @ 0.91% 27 LF OF 12" @ 0.64% 12 LF OF 6" @ 0.50%	2'
R119	2' Inlet (Cover K)	836.90	12"W 833.50 6"N 834.00	27 LF OF 12" @ 0.64% 12 LF OF 6" @ 0.50%	2'
R120	2' Inlet (Cover K)	847.50	12"E 843.33 6"W 843.83	35 LF OF 12" @ 0.94% 8 LF OF 6" @ 0.50%	2'
R121	2' Inlet (Cover K)	847.86	12"S 843.25 6"N 843.75	29 LF OF 12" @ 0.86% 13 LF OF 6" @ 0.50%	2'
R122	2' Inlet (Cover K)	847.87	12"SW 843.25 6"N 843.75	29 LF OF 12" @ 0.88% 10 LF OF 6" @ 0.50%	2'
R123	2' Inlet (Cover K)	847.52	12"W 843.25 6"E 843.75	25 LF OF 12" @ 1.00% 13 LF OF 6" @ 0.50%	2'

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
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ARGO AMHERST WATERMAIN

SCALE PLAN: 1" = 20'  
DRAWING No. 2018019-53

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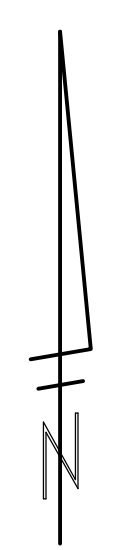
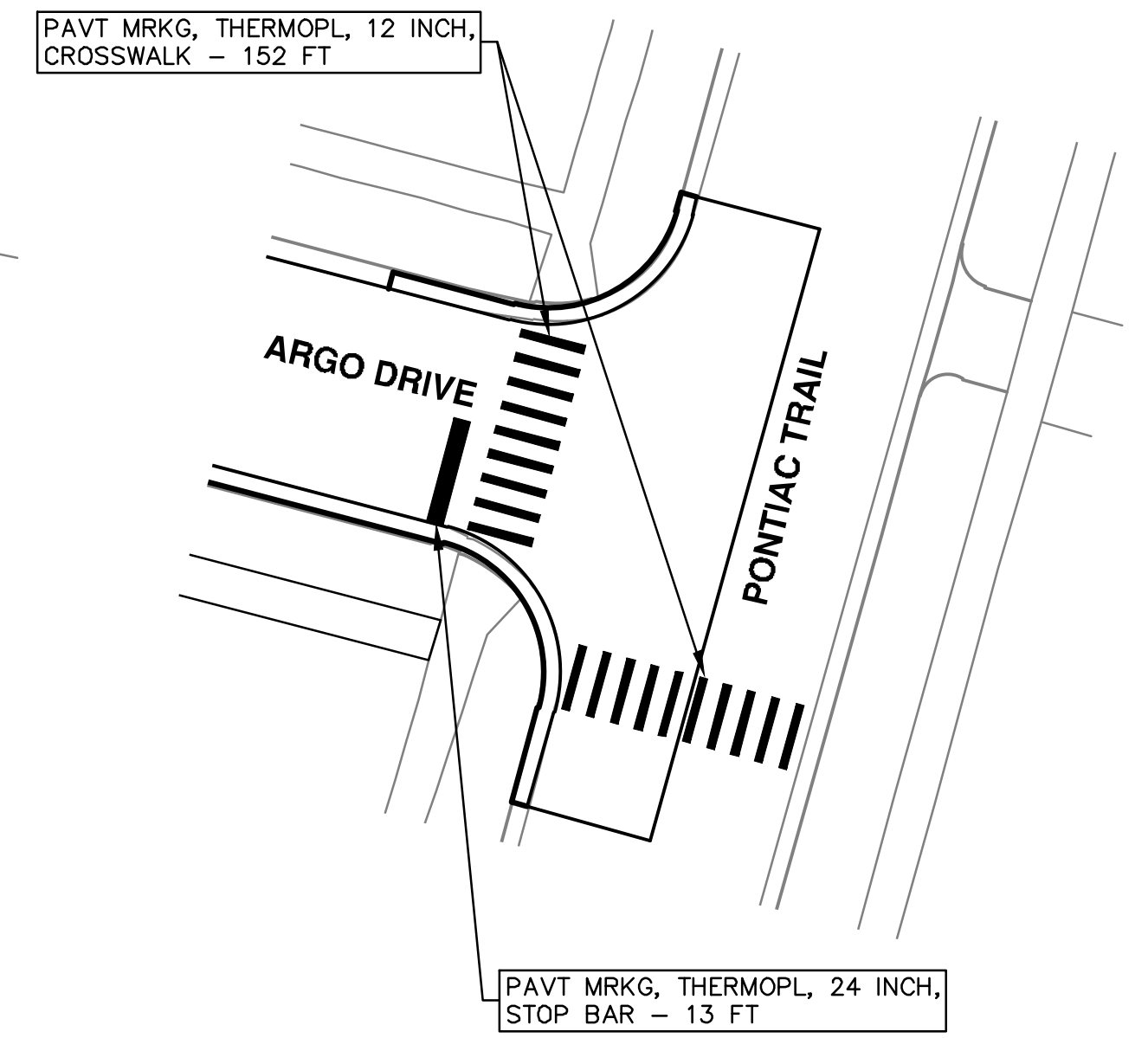
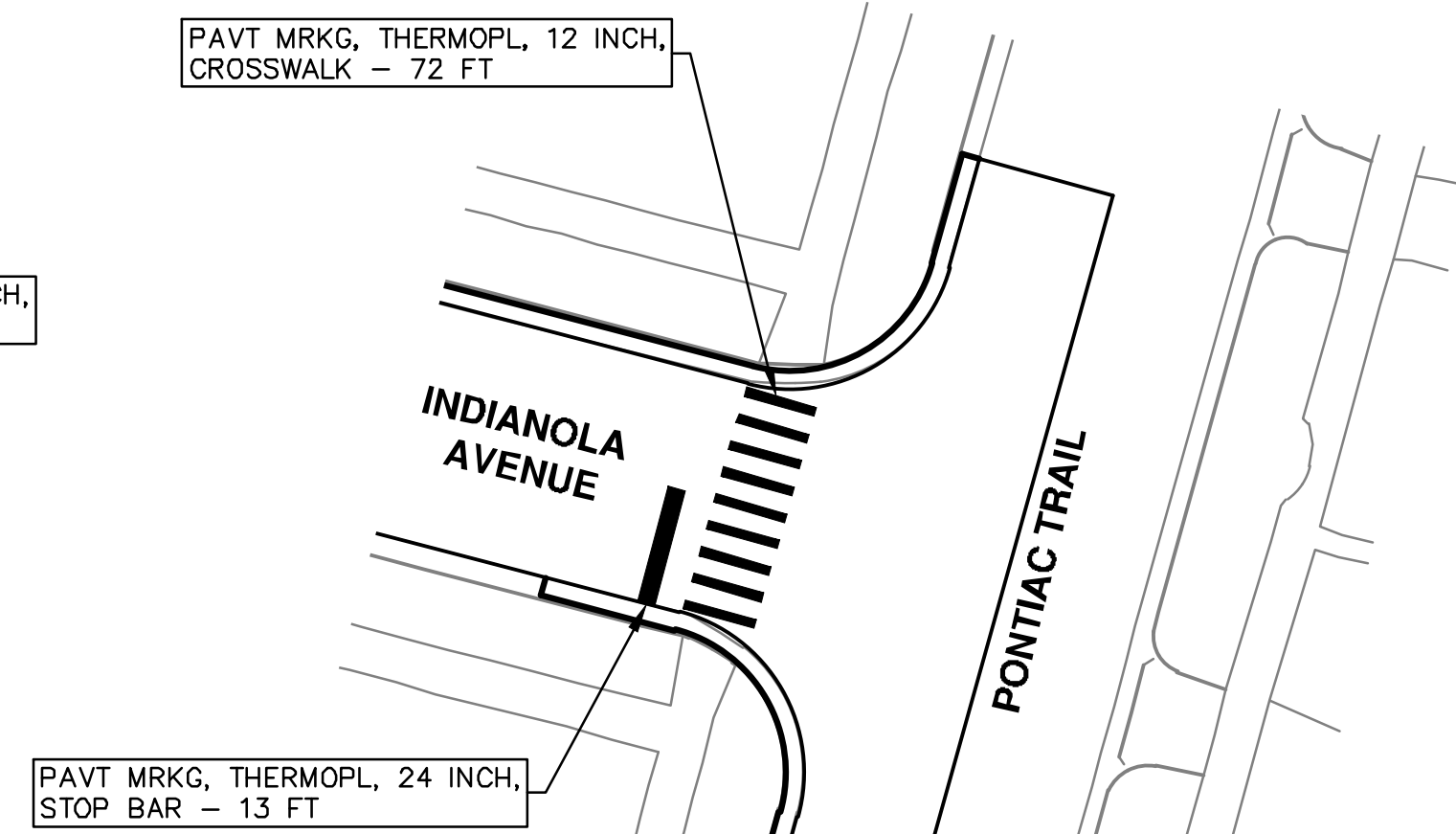
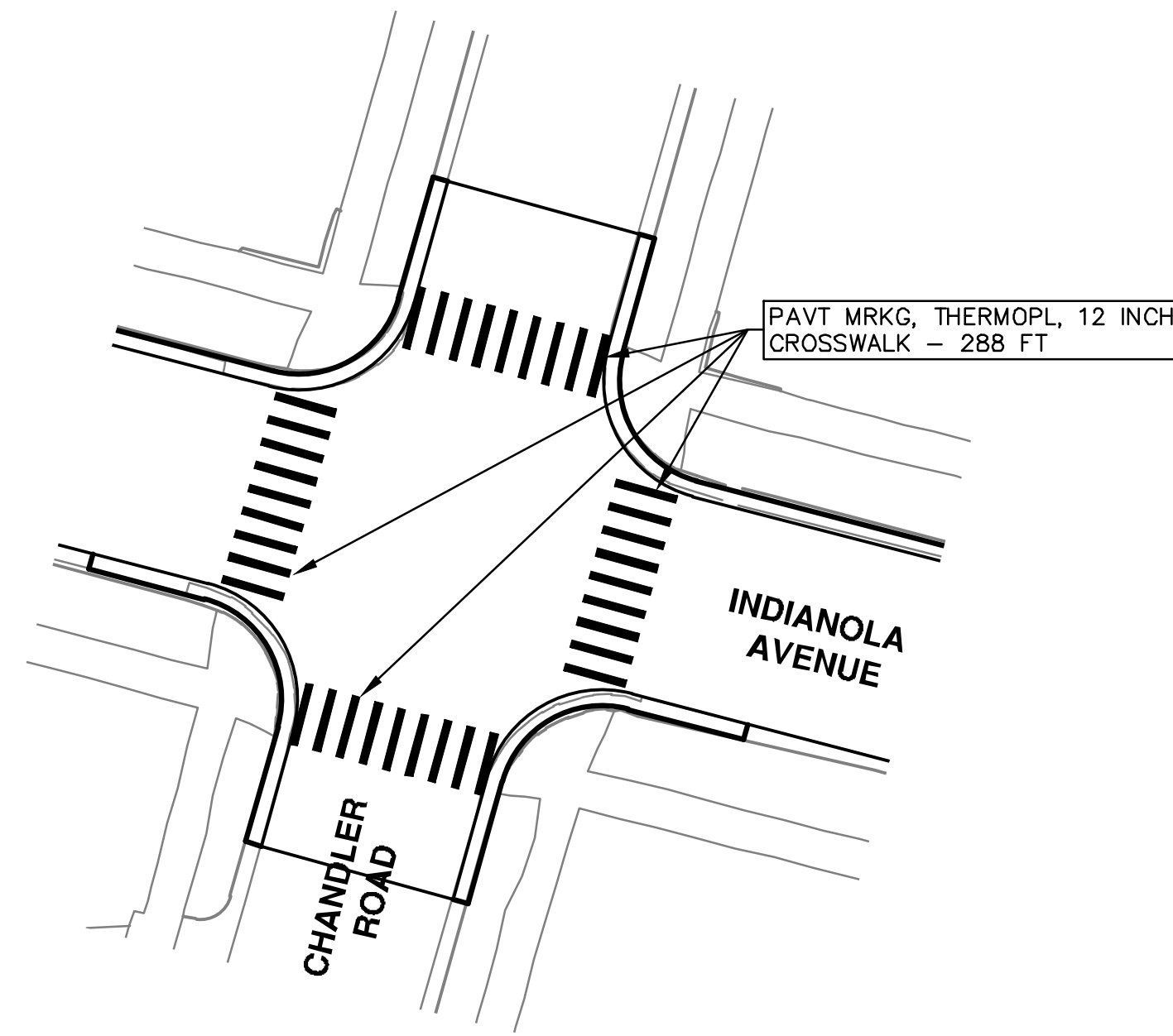
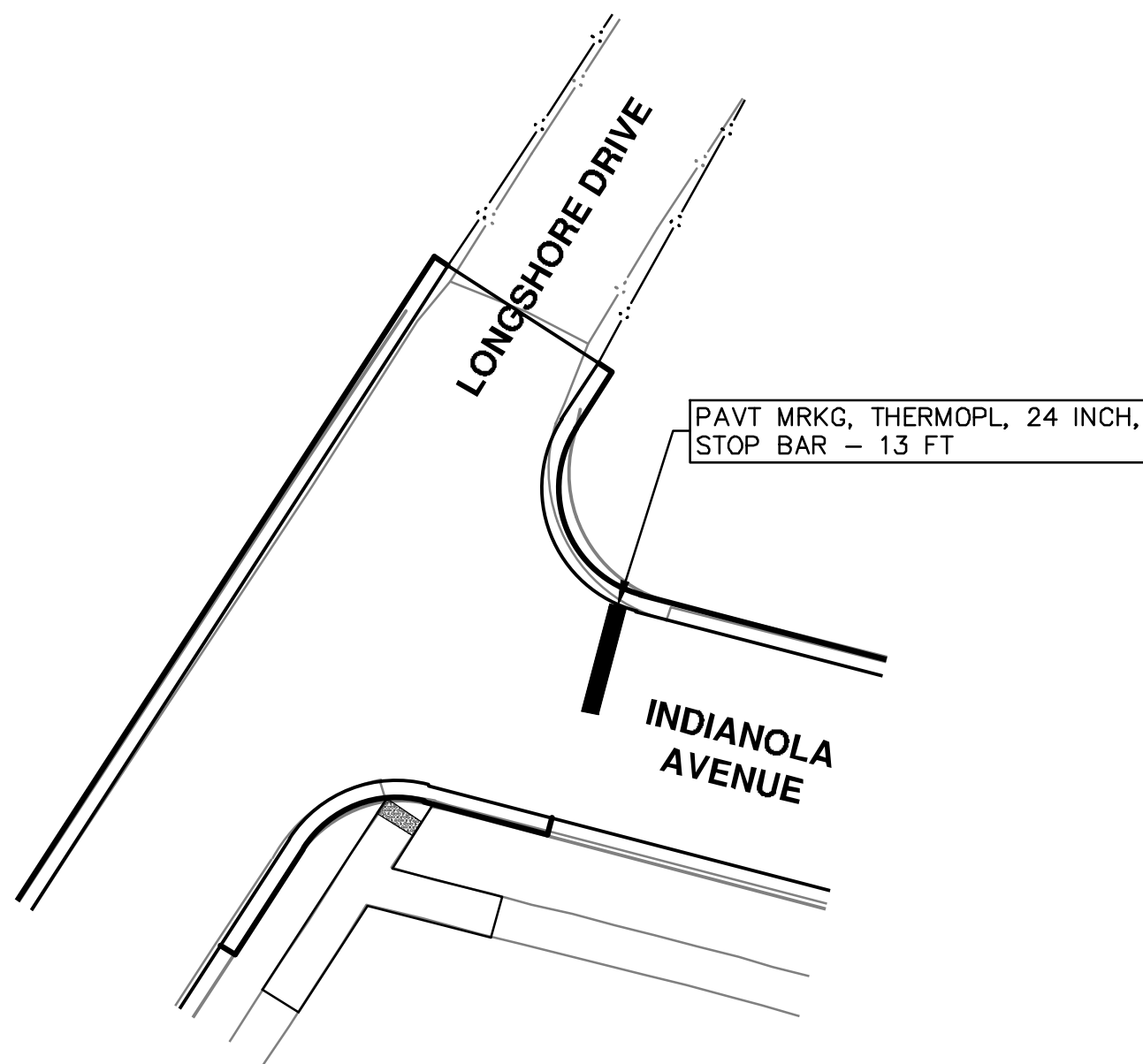
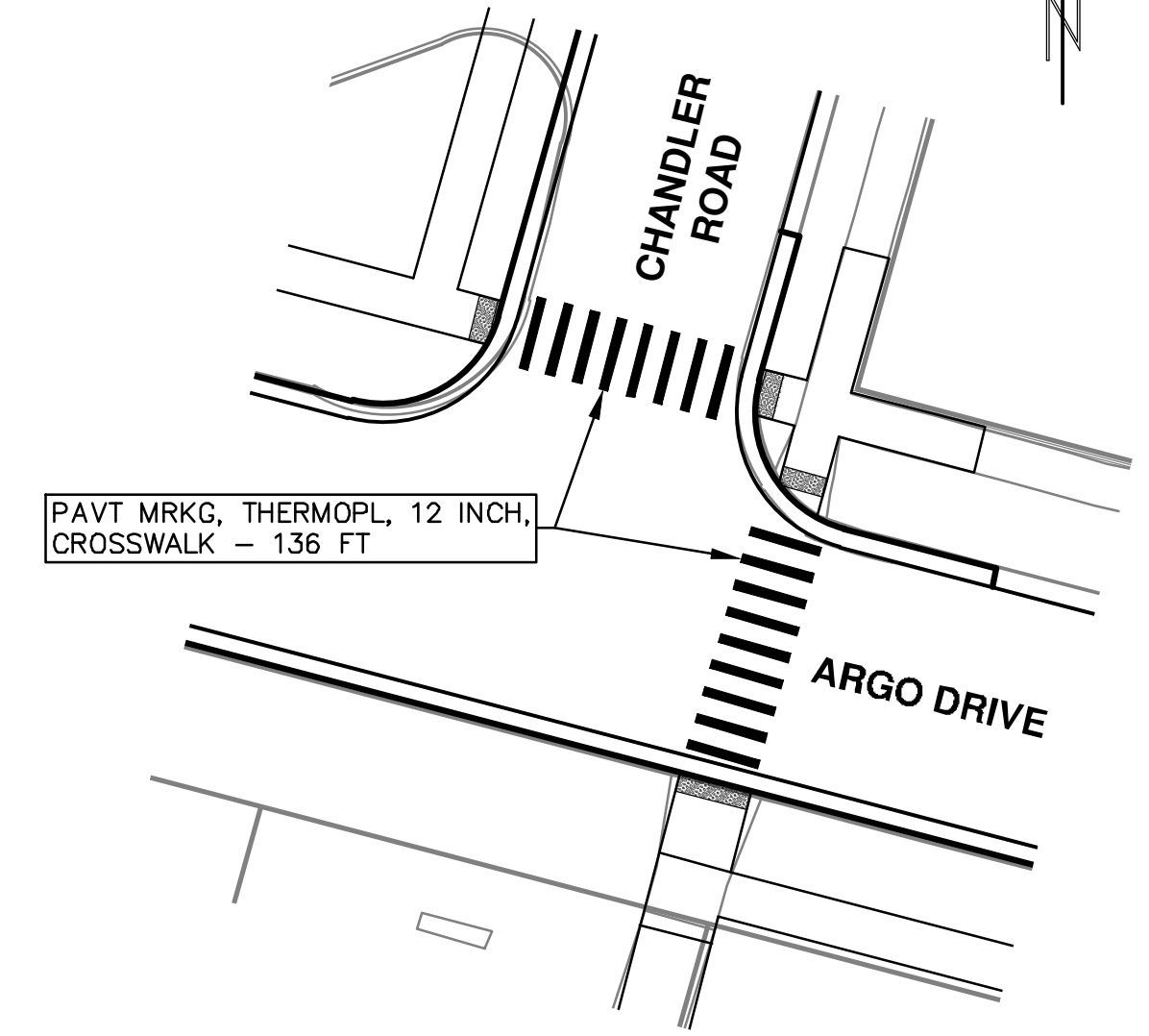
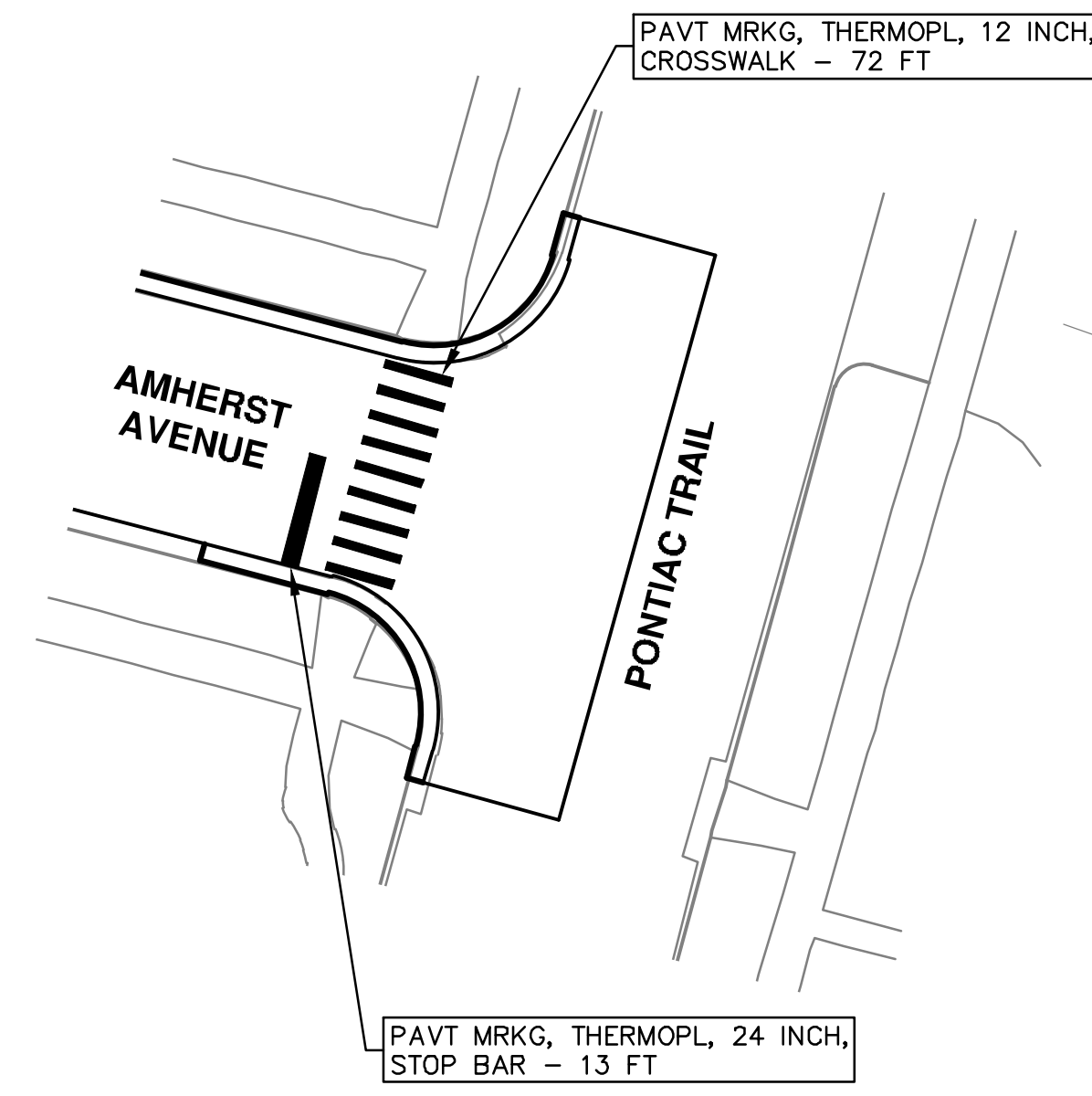
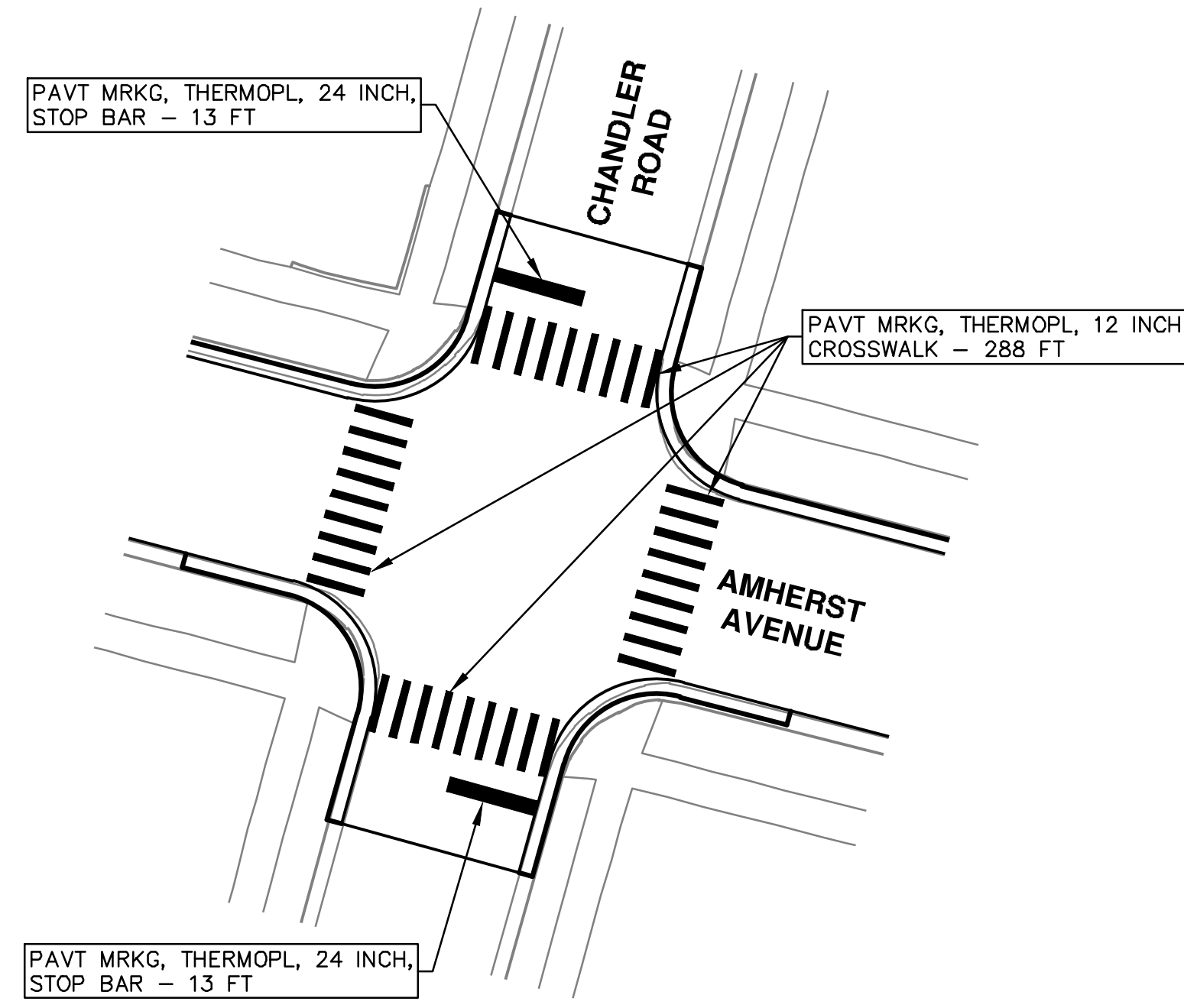
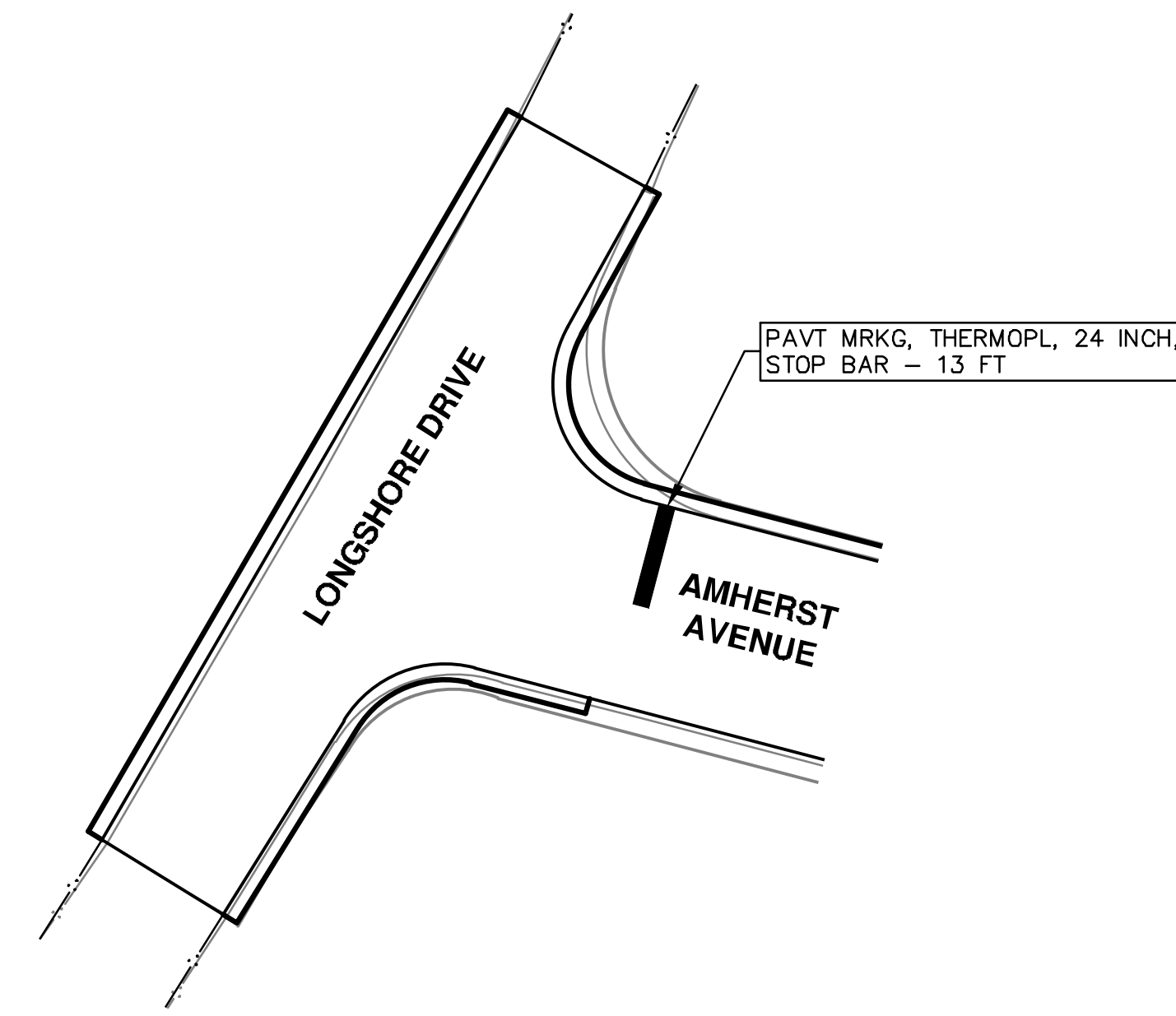
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			CC/DF/KS	

SHEET No. 53 OF 54



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			CC/DF/RB	
			DRAWN	

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**LONGSHORE INDIANOLA OTTAWA**  
**ARGO AMHERST WATERMAIN**

PAVEMENT MARKINGS

SCALE PLAN: 1" = 20'  
DRAWING No. 2018019-54