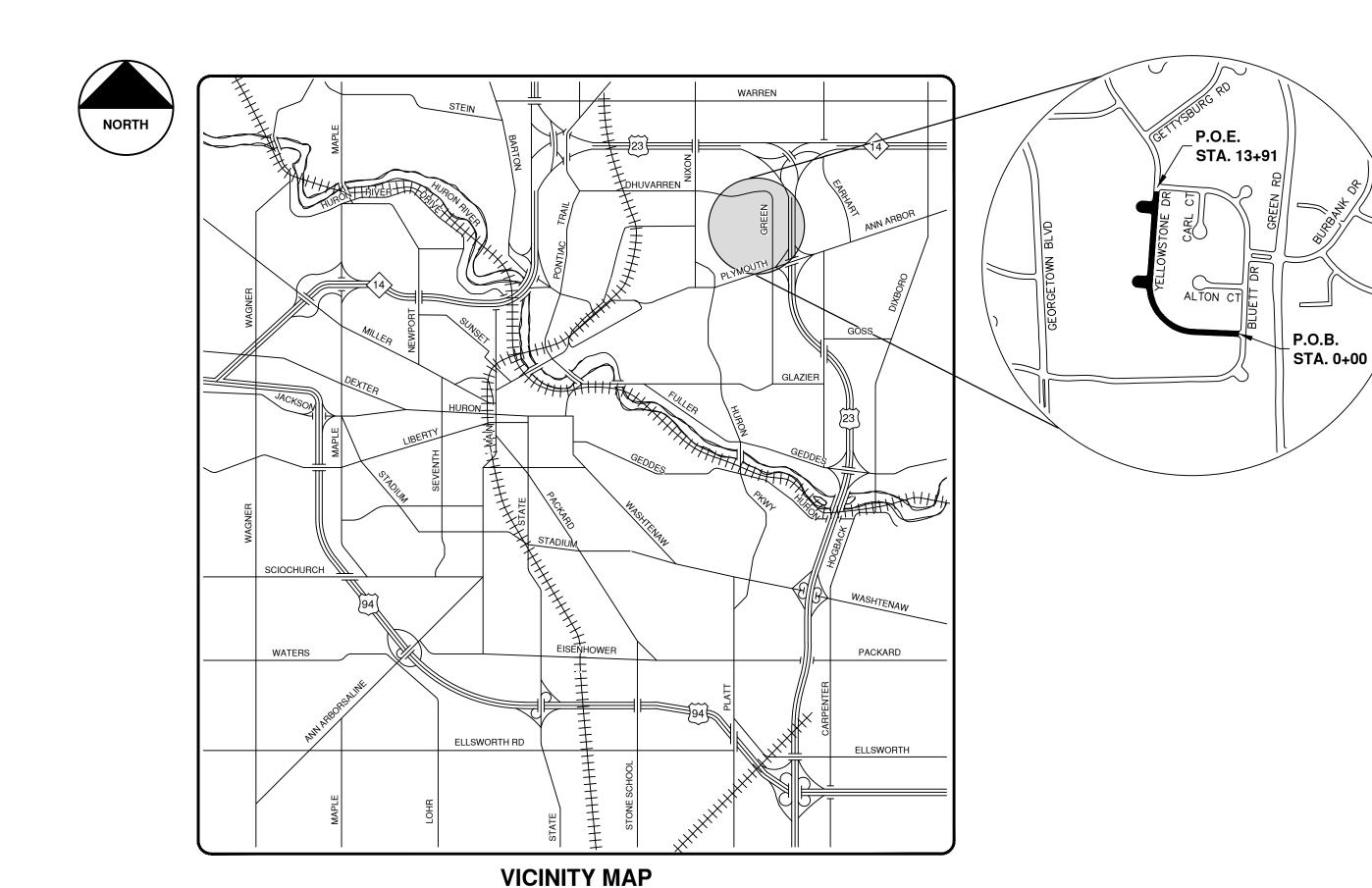


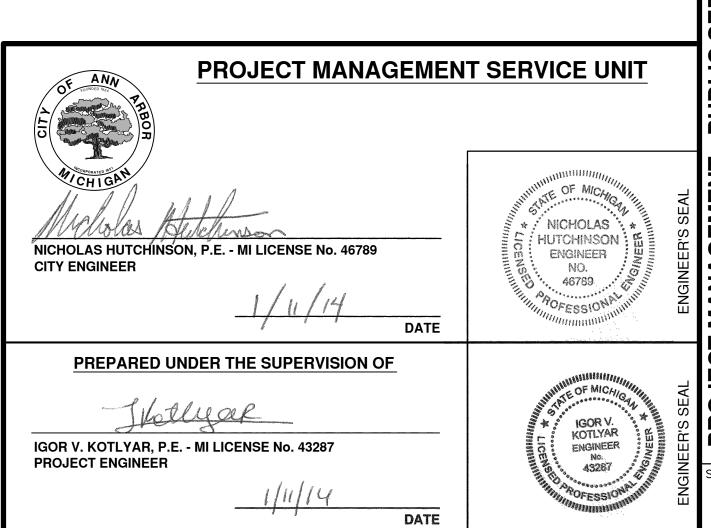
# CITY OF ANN ARBOR PROJECT MANAGEMENT

# YELLOWSTONE WATER MAIN

BID No. ITB-4327, FILE No. 2013026

HEET LIST TABLE
SHEET TITLE
COVER SHEET
NOTES AND CASTING SCHEDULES
NOTES, LEGENDS, BENCHMARKS AND CONTACTS
ROAD SECTION, TRENCH DETAIL AND INLET FILTER DETAIL
TRAFFIC CONTROL
REMOVALS
WATERMAIN PLAN & PROFILE
STORM SEWER PLAN AND PROFILE
ROAD GRADING





PROPOSED STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	RIM	DEPTH	TYPE	INVERTS	
R1	50+70	921.32	6.50	Construct Double Inlet	12" SW 916.82	
R2	54+83	926.34	6.50	Construct Single Inlet	12" S 921.84	
R3	57+88	934.52	6.50	Construct Single Inlet	12" NW 930.02	
R4	61+05	930.05	6.50	Construct Double Inlet Str.	12" W 925.55	
R5	62+07	931.17	10.04	Construct 6' Mh Over Existing 36" Storm Sewer	12" W 926.13	
R6	62+07	930.73	6.50	Construct Single Inlet	12" E 926.23	
TAP r03	61+06	930.60	10.00	Tap Existing Mh	12" E 925.45 12" W 922.80 12" E 924.15 24" N 922.60	
TAP r22	50+76	921.64	10.20	Tap Existing Mh	12" NE 916.72 12" N 915.54 12" S 913.74 36" E 913.44 36" W 913.69	
TAP r27	57+92	935.41	7.49	Tap Existing Mh	12" SE 929.92	
TAP r34	54+76	926.66	12.35	Tap Existing Mh	12" N 921.47 36" SE 916.31 36" NW 917.31 12" SW 919.06 12" NE 919.61	

EXISTING SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS
s1		922.15	13.30	48	MH	8" W 910.85
s2	52+94.63	924.08	12.90	48	MH	8" W 913.23 8" E 913.18
s3	53+74.26	925.36	13.60	48	МН	8" W 913.91 8" E 913.76
s4	54+56.32	926.27	13.65	48	МН	8" NW 916.57 8" E 914.62
s5	55+64.62	928.88	11.80	48	МН	8" NW 919.13 8" SE 919.08
s6	56+73.69	931.99	12.25	48	МН	8" N 921.74 8" SE 921.79
s7	57+81.85	935.42	13.10	48	МН	8" W 925.12 8" S 924.32
s8	57+82.02	936.36	11.50	48	МН	8" W 926.86 8" E 926.86
s9	59+22.48	935.53	11.35	48	МН	8" N 926.18
s10	60+91.55	930.69	12.50	48	МН	8" S 921.99 8" N 920.19
s11	62+60.35	931.79	14.45	48	МН	8" S 919.35 8" W 919.39 8" N 919.34
s12	62+59.88	932.69	12.75	48	МН	8" E 921.94
s13		932.78	18.25	48	МН	8" S 918.33 8" N 918.23 8" E 916.53
s14		935.01	16.50	48	МН	8" S 920.51

		31/(1101)				
r	01	61+06	930.04	7.39	СВ	12" S 924.65
rC	02	61+03	930.05	7.40	СВ	12" N 924.65
rc		61+06	930.60	10.00	MH	12" W 924.65 12" E 924.15 12" W 922.80
rC	04	62+71	932.10	12.80	МН	24" N 922.60 24" S 921.30 12" SW 924.10 12" NW 924.20
rc	05	63+92	932.68	14.80	МН	24" N 921.40 24" S 920.33 12" NW 924.88 12" NE 925.18
						48" N 920.33 48" E 919.88
rC	06	61+04	930.87	5.00	СВ	12" E −0.50
rC	7	61+05	929.89	7.37	СВ	12" W 924.52 12" E 924.52
rC	18	62+29	931.34	8.30	СВ	12" NE 925.04
rC	09	63+01	931.32	8.79	СВ	12" SE 924.52
r1	10	63+98	932.14	8.10	СВ	12" SE 926.04
ri	11		932.57	8.20	СВ	12" SW 926.37
r1	12	63+93	931.45	14.30	МН	48" W 919.40 12" S 924.45 12" N 925.05 48" E 919.15
r1	13	63+82	931.08	8.05	СВ	12" N 925.03
r1	14		930.88	7.30	СВ	12" S 925.58
r1	15		935.25	14.60	МН	12" N 922.70 48" S 922.65
r1	16	50+05	924.15	12.65	СВ	24" N 913.50
r1	7	50+05	922.00	11.70	МН	24" S 912.55 12" E 914.90 36" W 912.85 36" N 912.30
r1	18	50+06	919.86	11.10	СВ	36" S 910.76
r1	19	50+16	922.24	110.00	СВ	12" E 814.24
r2	20		921.82	8.10	СВ	12" W 915.72
r2	21	52+44	923.47	10.70	МН	36" W 914.82 36" E 914.77
r2	22	50+76	921.64	10.20	МН	36" W 913.69 12" S 913.74 12" N 915.54 36" E 913.44
r2	?3	50+77	921.23	8.75	СВ	12" E 914.48
r2	24	50+74	921.23	8.75	CB	12" W 914.48 12" N 914.48
r2	25	50+78	921.33	7.32	СВ	12" E 916.01
r2	26	50+75	921.31	7.30	СВ	12" W 916.01 12" S 916.01
r2	27	57+92	935.41	18.60	МН	12" W 918.81 12" SW 926.31 12" SE 928.51 12" NW 926.31 36" S 918.91
r2	?8	57+93	936.49	20.20	МН	12" NW 918.39 12" E 918.29
r2	29	58+42	1.25	3.75	СВ	12" SE -0.50
$r^3$	30	57+55	933.95	7.80	СВ	12" NE 928.15
r	31	57+88	934.52	8.00	СВ	12" NW 928.52
r3	32	58+23	935.31	9.90	СВ	12" SE 927.41
r3	33	54+75	926.26	9.00	СВ	12" NE 919.26 12" SW 919.06
	34	54+76	926.66	12.35	МН	12" NE 919.61 36" NW 917.31
7.5						36" SE 916.31

EXISTING STORM SEWER STRUCTURE TABLE

DEPTH

TYPE

INVERTS

RIM

UTILITY

STATION

STRUCTURE

WATER MAIN STRUCTURE TABLE					
STRUCTURE	TYPE	STATION	RIM	DEPTH	
w1	ABANDON GVIW	0+06	921.88	4.86	
h1	ABANDON HYDRANT	0+06	922.29	6.86	
H2	INSTALL F.H. ASSEMBLY	0+08	925.91	8.08	
H1	INSTALL F.H. ASSEMBLY	0+09	922.15	8.00	
W2	8" GVIW	0+38	921.73	6.26	
W3	8" GVIB	3+98	925.30	6.24	

	WATER MAIN STRUCT	TURE TAB	LE	
STRUCTURE	TYPE	STATION	RIM	DEPTH
H4	INSTALL F.H. ASSEMBLY	0+08	933.53	8.00
w2	Abandon GVIW	7+12	933.19	5.67
h2	ABANDON HYDRANT	7+21	934.00	6.53
w3	Abandon GVIW	7+83	935.74	6.37
W4	8" GVIB	7+83	934.94	7.11
W5	8" GVIB	9+67	933.25	6.17

WATER MAIN STRUCTURE TABLE					
TYPE	STATION	RIM	DEPTH		
INSTALL F.H. ASSEMBLY	1+37	933.11	8.00		
8" GVIB	12+30	931.22	6.22		
Abandon GVIB	12+61	932.53	6.84		
Abandon GVIW	13+52	932.25	5.86		
8" GVIW	13+59	932.22	6.17		
	TYPE INSTALL F.H. ASSEMBLY 8" GVIB Abandon GVIB Abandon GVIW	TYPE STATION  INSTALL F.H. ASSEMBLY 1+37  8" GVIB 12+30  Abandon GVIB 12+61  Abandon GVIW 13+52	TYPE       STATION       RIM         INSTALL F.H. ASSEMBLY       1+37       933.11         8" GVIB       12+30       931.22         Abandon GVIB       12+61       932.53         Abandon GVIW       13+52       932.25		

### **CONSTRUCTION SEQUENCE:**

The Contractor shall review the Traffic Maintenance Plans of the Contract Documents and note that they are required to maintain access at all times to residences solely accessed off of Yellowstone Dr. Leave 10 feet of existing pavement for access road during utility installation, final removal limits of pavement as directed by Engineer. The driveways are to be maintained at all times. During crossing of drives with utilities and road building, residents must be notified by the contractor at least a day in advance so vehicles can be moved prior to the closure. Drives are to be temporarily put back as soon as possible, and opened for resident use at the end of each day. The Contractor may choose to adjust the limits or sequencing of construction in order to complete the work more efficiently. However, changes to the stages and phases shown in the plans must be approved in writing by the Engineer prior to construction and must assure that access is maintained as described

- 1. Installation of traffic control devices, and maintenance of traffic plan. Installation of portable, changeable message signs with messages as directed by the Engineer one week prior to construction. Installation of Soil Erosion Control Devices.
- 2. Removal of pavement and concrete items on east side leaving a minimum of 10 feet of existing pavement for access lane on the side detailed on Maintenance of Traffic Plan or as directed by Engineer. Access lane to be open and free of obstructions at end of each day.
- 3. Install 8 inch water main.
- 4. With passing pressure test, schedule and make connection of 8" main to existing 8" main. With placement of agua swab during water main placement flush and remove 8 inch swab from water main.
- 5. Test water main per City Detailed Specification for Water Main Testing.
- 6. Once bacteriological samples have passed schedule with Field Operations and transfer water services to new 8" Water Main.
- 7. Schedule and finish the remaining water main connections and abandon the old main.
- 8. Place edge drain and construct road cross section for east half of road. Proposed agaregate base will be used as access road during storm placement. Aggregate base will be ramped at driveways and be maintained at all times. Any areas of base that become contaminated or deficient will be removed and replaced as directed by Engineer.
- 9. Removal of hma and concrete items on west side of Yellowstone. Install storm sewer improvements as indicated on plans. Clean and video inspect storm per City of Ann Arbor Standards.
- 10. Finish installation of road cross section and edge drain on west half of Yellowstone. This work is to take place behind storm sewer installation.
- 11. Grade aggregate base for curb, prep driveways and sidewalk and install concrete items on both sides of street. Pre pour meeting required to discuss resident parking during cure time. Drive approaches to be placed same day as curb or no later than next day. Only one side of sidewalk to be removed and replaced at a time. Pedestrian traffic to be maintained on one side of Yellowstone at all times.
- 12. Topsoil, seed and install mulch blankets at all disturbed areas.
- 13. Fine grade aggregate and place hma leveling course.
- 14. Adjust structures in road to finish grade.
- 15. Schedule and pave wearing course.
- 16. Place permanent pavement markings 17. Remove soil erosion control and construction signage.
- Open road to normal traffic.

## **SOIL EROSION CONTROL NOTES:**

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

- 1. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER AT ALL TIMES DURING CONSTRUCTION. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE AS DIRECTED AND APPROVED BY THE ENGINEER.
- 2. ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE CITY OF ANN ARBOR. 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.
- 3. DAILY, OR AFTER ANY STORM EVENT, INSPECTIONS OF EROSION CONTROL MEASURES SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE ENGINEER TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE WITHOUT DELAY, AND WITHOUT ADDITIONAL COST TO THE CITY OF ANN ARBOR.
- 4. EROSION AND SEDIMENTATION FROM WORK ON THE SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS, ROADWAYS OR WATERWAYS.
- 5. ALL MUD/DIRT 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.
- 6. RESTORATION OF ALL DISTURBED AREAS, INCLUDING PLACEMENT OF TOPSOIL, SEED, FERTILIZER AND MULCH AND/OR SOD SHALL BE PERFORMED WITHIN FIVE (5) DAYS OF THE COMPLETION OF FINAL
- 7. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
- 8. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- 9. PROPER DUST CONTROL SHALL BE MAINTAINED DURING CONSTRUCTION BY USE OF WATER TRUCKS AND/OR DUST PALLATIVE AS REQUIRED.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME MEASURES UPON AUTHORIZED COMPLETION OF THE PROJECT. FINAL COMPLETION OF PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
- 11. THE CONTRACTOR SHALL NOT GRADE INTO ADJACENT PROPERTIES. SILT AND PROTECTIVE FENCE SHALL BE INSTALLED AND MAINTAINED TO PREVENT GRADING, EROSION AND SEDIMENTATION INTO THE ADJACENT PROPERTIES.
- 12. TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.

#### SEQUENCE OF EROSION CONTROL MEASURES:

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

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

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

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.





SHEET No.

#### GENERAL NOTES

- 1. Driveways and entrances to buildings, real property, and the like shall not be blocked except for short durations and only when approved by the Engineer. Vehicular and pedestrian access shall be maintained at all times. It shall be the Contractor's responsibility to coordinate all necessary driveway closures with the property owner(s) and resident(s) in the areas of construction.
- 2. The location and depth of all existing utilities and service leads are to be field verified by the Contractor prior to construction.
- 3.During non—working hours no more than ten (10) feet of trench shall remain open; any open trench shall be properly secured with protective fencing. This work shall be included in the items of work being undertaken and will not be paid for separately.
- 4. The location of material stock piles and on-site staging areas shall be approved by the Engineer.
- 5. For mainline HMA Paving, the width of the mat for each pass of the paver shall be not less than 10.5, nor greater than 16, except as noted in the plans and as directed by the Engineer. The Engineer will direct the layout of all HMA Longitudinal Joints during construction.
- 6. Trenches for transferring water services shall be excavated to MIOSHA and City of Ann Arbor Field Services requirements.
- 7.City of Ann Arbor Field Services will install the corporation and copper service lead(s) to transfer the connection(s). If an existing water service is found to be failing or is not copper, the lead will be replaced to the curb box by Field Services.
- 8. For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with City of Ann Arbor Field Services.
- 9.Cor-blu bolts to be used at all mechanical water main joints at hydrants and Megalug fittings.
- 10. Some storm sewer may unavoidably become damaged during construction, or it may be determined by the Engineer that existing storm sewer needs to be replaced. In either case the Engineer may direct the sewer to be removed and replaced The removal of the existing sewer and/or drainage structures shall be included in the contract work items "Sewer, Any Size or Depth, Rem" or "Dr Structure, Any Size or Depth, Rem", and the replacement sewer shall be installed and paid for at the corresponding contract unit price, if contained within the contract, for the various types and sizes of sewer to be replaced.
- 11. Where existing sewer and/or drainage structures are to be removed, they shall be properly disposed of off-site and the excavation shall be backfilled with MDOT Class II Granular Material compacted to 95% of its max. dry density. This work shall be included in the contract items "Sewer Pipe Abandonment" and/or "Sewer Structure Abandonment."
- 12. All Structures shall receive new castings as directed by the Engineer, either Type B, Type K, or as specified on the Standard Casting Schedule. The existing castings are the property of the City of Ann Arbor. The Contractor shall deliver to City of Ann Arbor Field Operations and Maintenance Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- 13. All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. The Contractor shall deliver to the City of Ann Arbor Field Operations and Maintenance Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- 14. Payment for drainage structure sumps where specified shall be included in the payment for the various drainage structures sizes and/or types.
- 15. Where 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.
- 16. Where storm sewer is to be removed and replaced or added, all pipe shall be installed using the utility trench details shown elsewhere in the plan sheets and/or detailed in the specifications. Trench Details I and V require the use of MDOT Class II Granular Material.
- 17. If the Contractor encounters existing edge drain(s) during construction of the proposed edge drains, inlet leads, or catch basins, it shall be capped at each end to prevent material from entering the pipe. The cost of this work will not be paid for separately, but shall be included in the particular item of work being performed when existing edge drain(s) are encountered.
- 18. In areas where edge drain cannot be installed in accordance with the details, the edge drain shall be installed at the depth as indicated on the plans, or as directed by the Engineer. In no case shall the edge drain be installed at a grade less than 0.50% or at a depth less than 3.25' below the top of pavement.
- 19. "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 contract documents.
- 20. Existing street name signs, guide, bus stop, and regulatory signs 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 "Minor Traffic Control, Modified."
- 21. All curb, sidewalk, driveway approach removals shall be approved by the Engineer before the work is performed.
- 22.Place 4" (minimum) thickness Class II Granular Material compacted to 95% of its max. dry density under concrete sidewalk as shown on the details. This work shall not be paid for separately, but shall be included in "4" Concrete Sidewalk."
- 23.Place 6" (minimum) Class II Granular Material compacted to 95% of its max. dry density under drive approaches. This work shall not be paid for separately, but shall be included in "6" Concrete Sidewalk, Ramp, Drive Approach.'
- 24. Prior to placing the adjacent paving pass on the leveling and wearing courses of HMA, the Contractor shall cut and remove 6" to 8" of the previously placed pavement by means of a coulter wheel. The Engineer reserves the right to reject any method(s) for cutting the pavement that does not provide a satisfactory edge as determined by the Engineer. Any method(s) employed by the Contractor shall be completely effective. The cut edge shall have a uniform bead of Craftco Joint Adhesive applied. The removal of this HMA material, cleaning the HMA surface and pavement edge, and condition of the resulting edge must be approved by the Engineer prior to proceeding with the placement of the succeeding pass of HMA. The base course of HMA will only have its edges tacked in accordance with standard paving practices. All costs associated with complying with these requirements will not be paid for separately, but shall be considered to be included in the items of work "HMA, Pavement" or "HMA, Approach."
- 25. A uniform coat(s) of curing compound shall be applied according to the Standard Specifications and Special Provisions regardless of the difficulty involved. The Contractor shall take care to prevent overspray when applying curing compound. Several different methods may need to be developed to protect various situations, but all methods used to prevent overspray of the curing compound shall be completely effective. Methods used shall be approved by the Engineer prior to use, however approval of a method does not guarantee success or acceptability. No additional compensation shall be made for complying with these requirements.
- 26. All right-of-way (ROW) trees need tree protection fence at the edge of the critical root zone (critical root zone is 1 foot for every 1" in diameter. Where the critical root zone meets sidewalk or curb, the tree protection fence should be located at teh edge of sidewalk and the edge of the curb line.
- 27. No equipment, supplies or debris may be placed within the critical root zone of any ROW tree.
- 28.No root greater than 2" in diameter shall be cut. If contractor encounters a root greater then 2" in diameter they must contact City of Ann Arbor Forestry Field Operations as 734.794.66364 for evaluation. Work at the site where the tree root is located must be suspended until Forestry has completed the evaluation.
- 29.If a tree is damaged (including roots) due to construction, a canopy loss fee must be paid which is equal to \$190per diameter inch of the damaged tree.
- 30. All Tree roots that are approved to be cut must be flush cut. Roots that are ripped, torn or jagged are not acceptable.

### **IPERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR IPRIOR TO THE BEGINNING OF CONSTRUCTION.**

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

\* NO COST TO CONTRACTOR

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

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

## CONTACT INFORMATION

PUBLIC UTILITIES	OWNER	CONTACT
WATER		DAN WOODEN (734) 794-6350
SANITARY	CITY OF ANN ARBOR	MARK COZART (734) 794-6350
STORM	FIELD OPERATIONS SERVICE UNIT W.R. WHEELER SERVICE CENTER	KEVIN ERNST (734) 794-6350
FORESTRY	4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	
SIGNS SIGNALS STREET LIGHTS		CHUCK FOJTIK (734) 794–6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 17150 ALLEN ROAD MELVINDALE, MI 48122	JAY WILLIAMS (313) 380-7303
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	CLAY COMBEE (734) 397-4112
CABLE	COMCAST 27800 FRANLKIN ROAD SOUTHFIELD, MI 48034	RON SUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	(734) 996–2135
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016

BM#	<b>ELEV</b>	DESCRIPTION
1	923.998	ATOP STEAMER VALVE OF HYD SW CORNER OF BLUETT DR AND YELLOWSTONE EAST INTERSECTION
2	923.060	SE LAG BOLT OF LIGHT POLE N SIDE OF YELLOWSTONE @ HOUSE #3306
3	925.482	SW BOLT OF LP N SIDE YELLOWSTONE @ HOUSE #3318
4	928.110	SE BOLT OF LP N SIDE YELLOWSTONE @ HOUSE #3322
5	936.006	SE BOLT OF LP N SIDE YELLOWSTONE @ HOUSE #3334
6	935.661	ATOP STEAMER VALVE OF HYD @ SW CORNER OF YELLOWSTONE AND CULDESAC ACROSS THE STREET FROM HOUSE #3334
7	932.256	SW BOLT OF LP E SIDE YELLOWSTONE @ HOUSE #3348
8	932.494	SW BOLT OF LP E SIDE YELLOWSTONE @ HOUSE #3360
9	934.214	ATOP STEAMER VALVE OF HYD SE SIDE OF INTERSECTION OF BLUETT AND YELLOWSTONE (NORTHERLY INTERSECTION)

-Ò-	FIRE HYDRANT		WATER MAIN
I	GATE VALVE IN BOX		STORM SEWER
8	GATE VALVE IN WELL	<u>s</u>	SANITARY SEWER
W	STOP BOX		GAS MAIN
W	WATER VAULT		ELECTRICAL OVER HEAD
0	WELL		ELECTRICAL UNDER GROUND
	CATCH BASIN (SQ)		BOUNDARY
<b>#</b>	CATCH BASIN (RD)		BUILDING
Ø	STORM MANHOLE		CENTERLINE OF DITCH
	NON-CURB CATCH BASIN (SQ)		CENTERLINE/CROWN OF ROA
<b>⑤</b>	SANITARY MANHOLE		EDGE OF WATER
<b>@</b>	CLEAN-OUT	—//—//—//—	FENCE
•	POST	:::	GRAVEL
ф	PEDESTRIAN SIGNAL		STONE WALL
_	SIGN		R.O.W.
	HAND HOLE		TREELINE
*	ORNAMENTAL LIGHT		WETLAND
짞	FLOOD LIGHT		
?	UNKNOWN MANHOLE		
(P)	TELEPHONE MANHOLE	•	TREE (DECIDUOUS)
⊠τ	TELEPHONE RISER		
9	GAS VALVE	Ν Λ 4	
8	GAS VENT	ZN/Z	
$\boxtimes$	GAS BOX	<b>&gt; •  &gt;</b>	TREE (CONIFEROUS)
ΣE	ELECTRICAL RISER	Z	
$\boxtimes$	TRANSFORMER	VVV	
Ø	UTILITY POLE		STUMP
0	LAMP POLE	ربه	
Δ	GUY ANCHOR	(ر <sub>د ب</sub> ې)	SHRUB (DECIDUOUS)
φ	GUY POLE	<b>~</b>	
(M)	MONITORING WELL		

#### PROPOSED LEGEND

■ MAILBOX

SOIL BORING

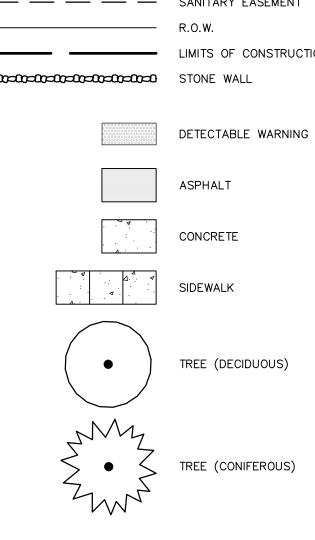
+ BENCH MARK

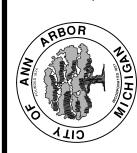
• IRON PIPE

MON BOX

A TRAVERSE POINT

PH	OPOSED LEGEND		
+	HYDRANT (PLAN)	w	WATER MAIN
8	WATER GATE WELL		STORM SEWER
•	REDUCER	<u> </u>	SANITARY SEWER
ı	WATER GATE VALVE		CENTERLINE OF DITCH
(()	WATER STOP BOX		CENTERLINE OF ROAD
W	WATER VAULT	////	FENCE
	INLET		SILT FENCE
	DOUBLE INLET		LOT/UNIT
	INLET JUNCTION CHAMBER		STAGE LINE
	ROUND CATCH BASIN		CURB
0	STORM MANHOLE		TEMPORARY GRADING PERM
	DRAIN ARROW		WATER EASMENT
$\nabla$	FLARED END SECTION		STORM EASEMENT
0	SANITARY MANHOLE		SANITARY EASEMENT
©	CLEAN-OUT		R.O.W.
•	BARREL		LIMITS OF CONSTRUCTION
<del></del>	SIGN	احزاحزاحزاحزاحزاحزاحزاحز	STONE WALL
	PUSH BUTTON		
			DETECTABLE WARNING





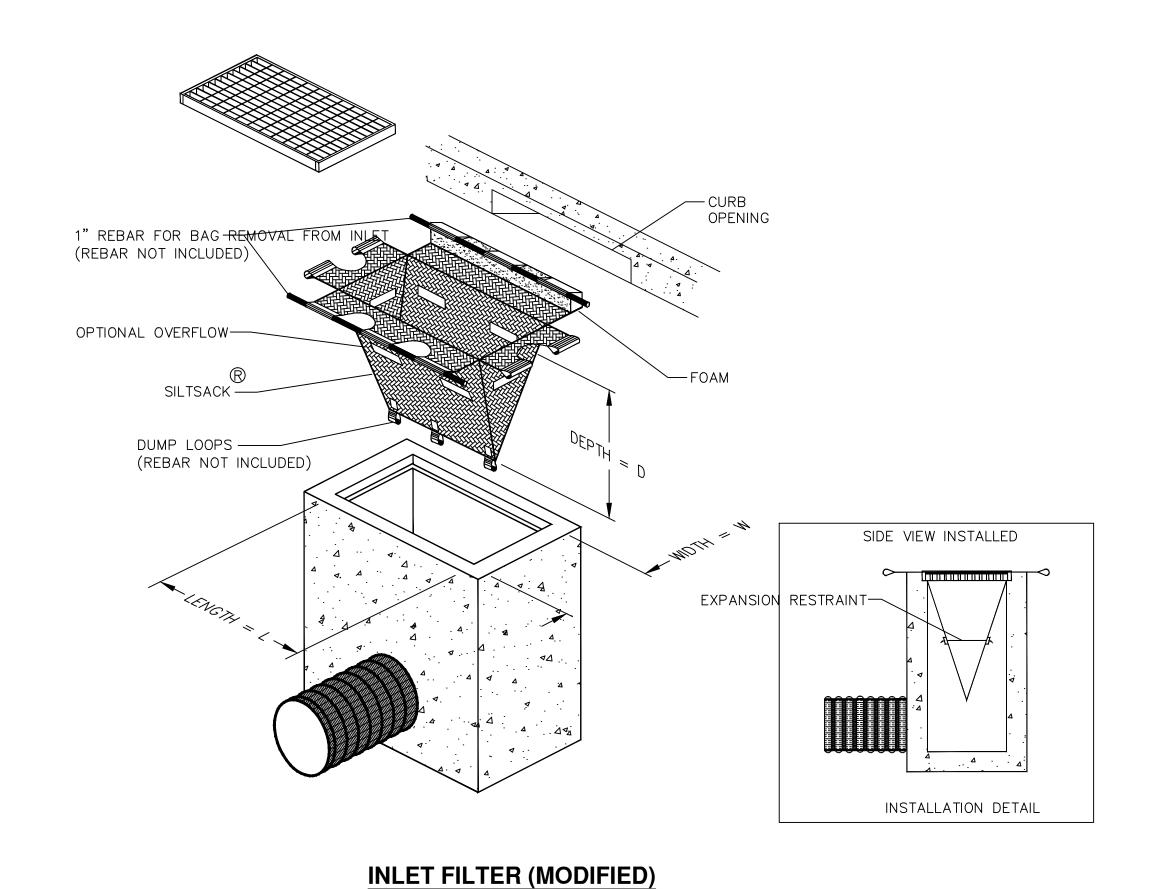
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PROJECT MANAGEMENT - PUBLIC

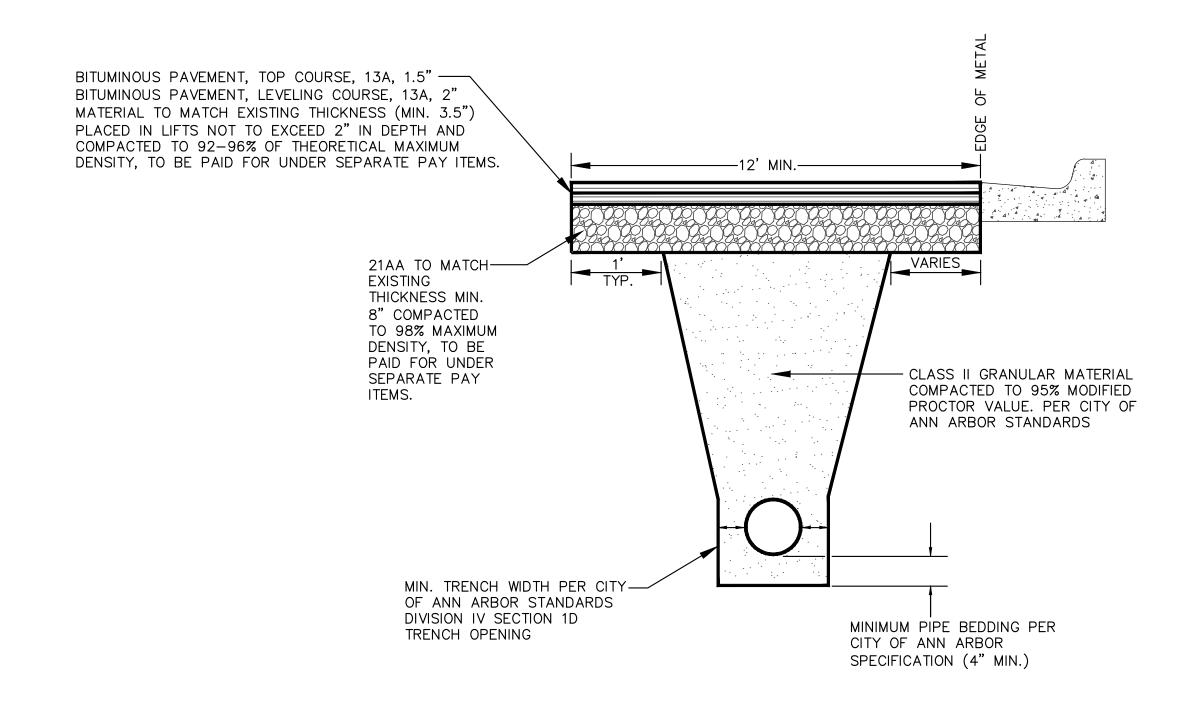
SHEET No.

#### YELLOWSTONE - HMA APPLICATION ESTIMATE

нма міх	RATE OF APPLICATION	THICKNESS (INCHES)	AWI	BINDER	LOCATION/NOTES
13A	170 LB/SYD	1.5	260	PG 64-28	TOP COURSE
13A	226 LB/SYD	2.0	-	PG 64-28	LEVELING COURSE
Bond Coat SS-1h	0.05 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



NOT TO SCALE



NOTE: DENSITY TESTING PER CITY OF ANN ARBOR SPECIFICATION

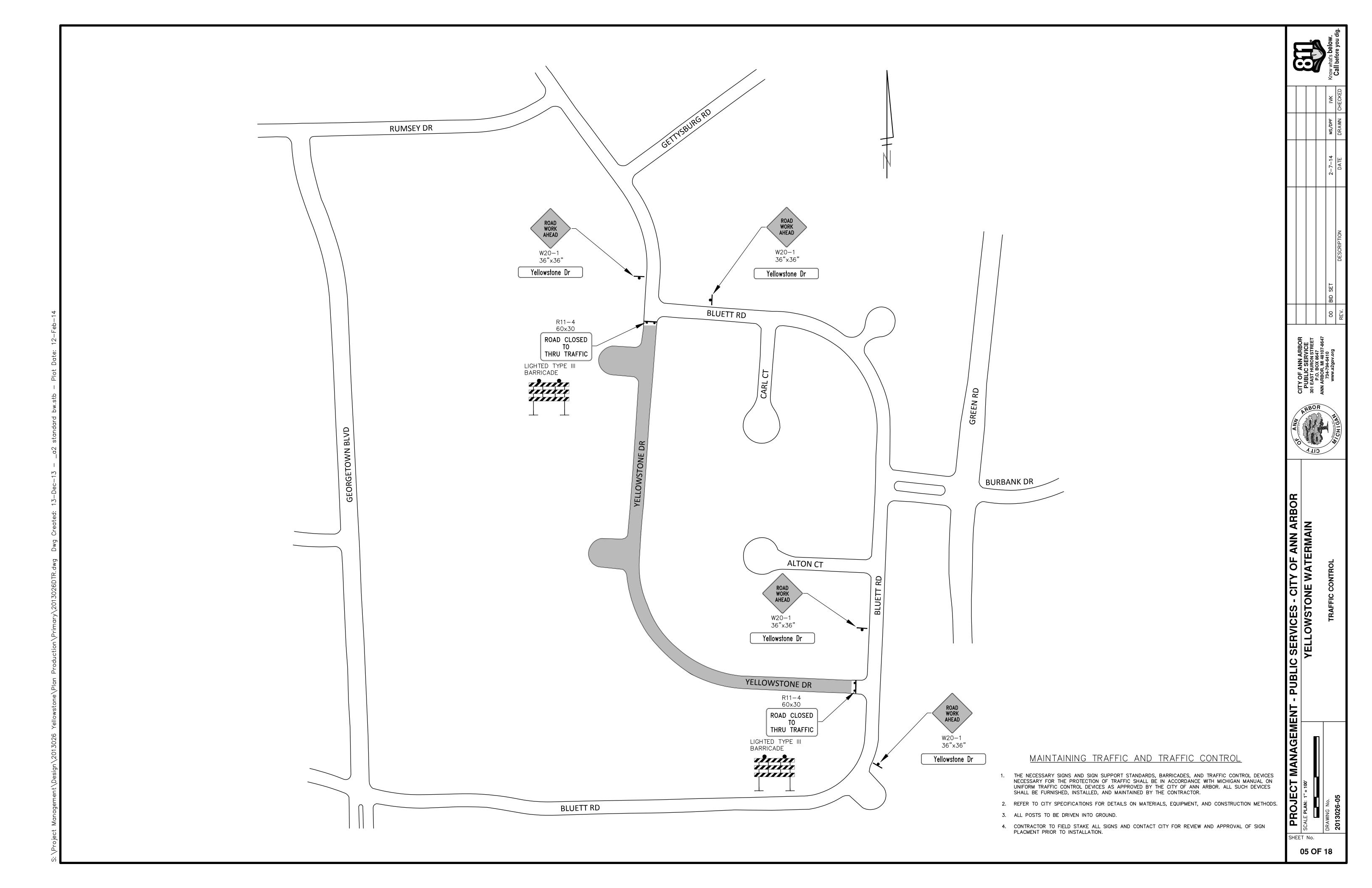
NOTE: TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY.

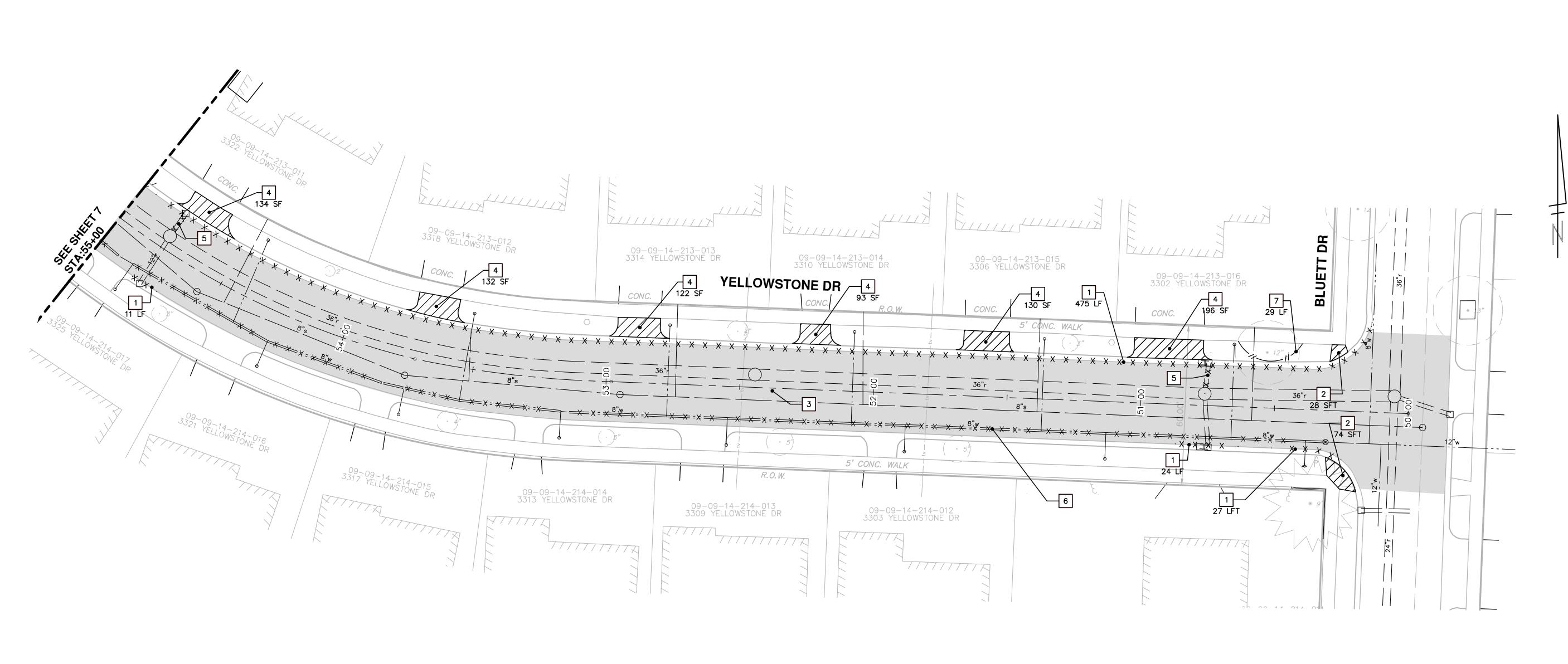
NOTE: ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS

UTILITY TRENCH - TYPE I MODIFIED

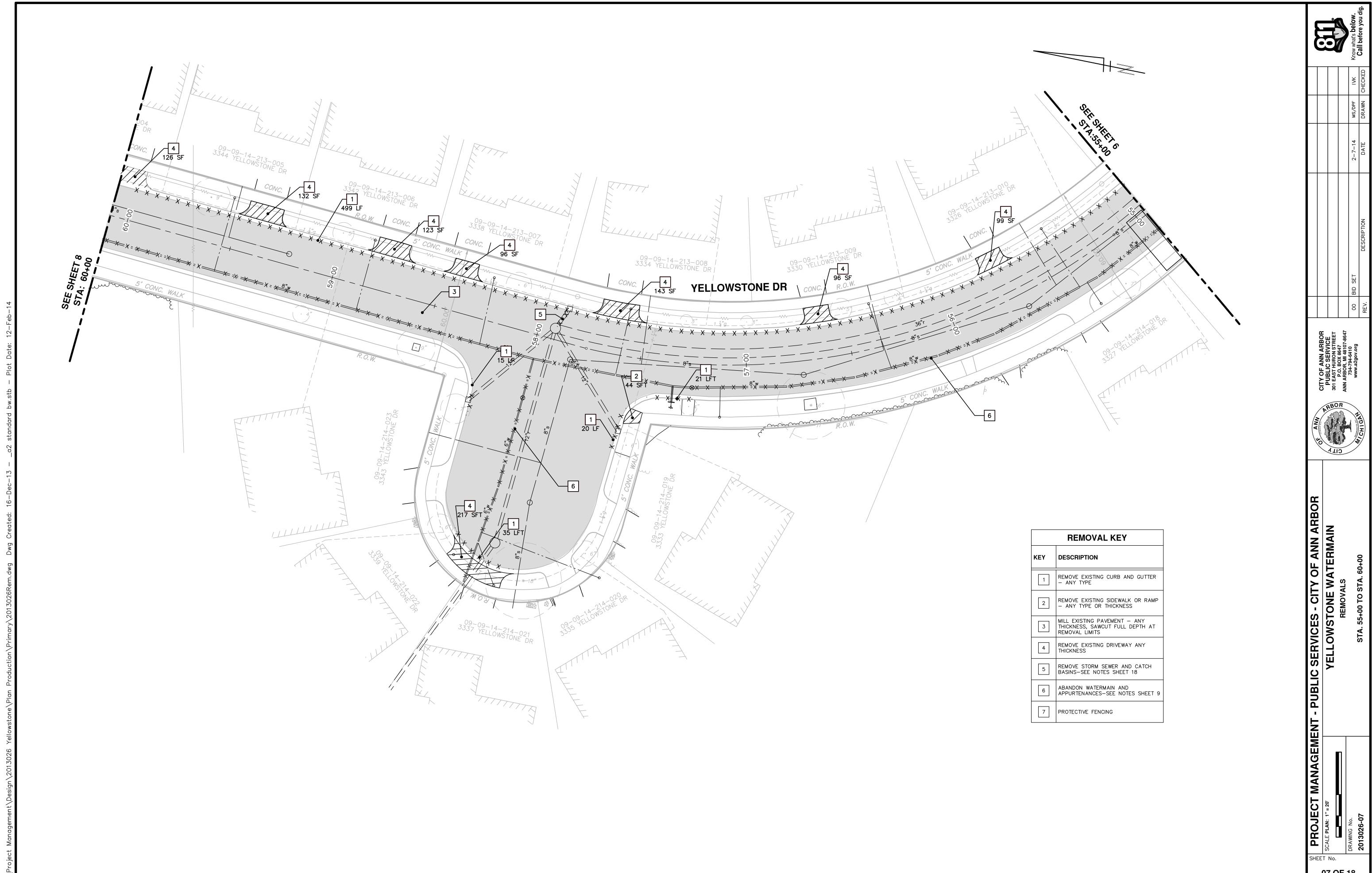
NOT TO SCALE

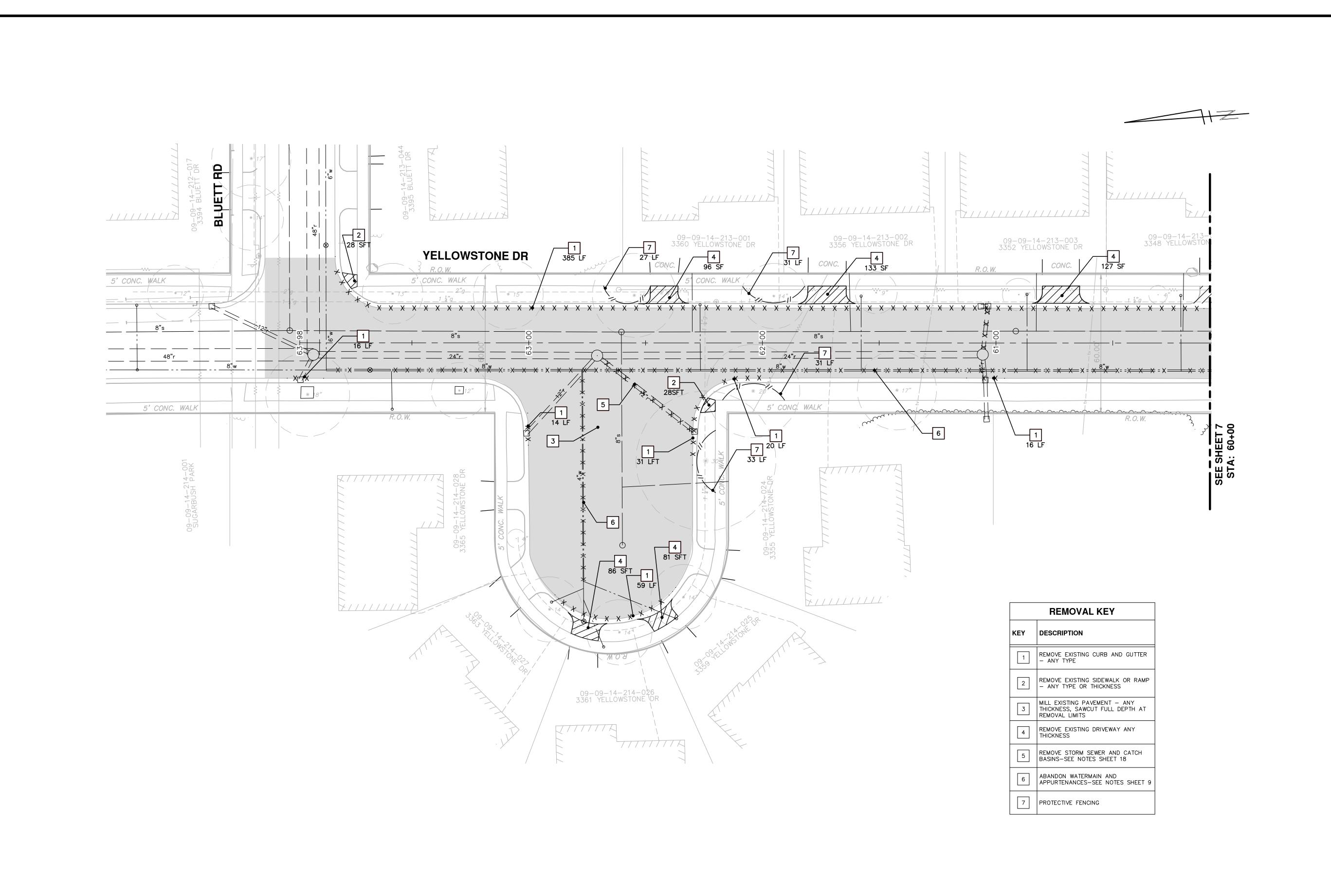
OF ANN ARBOR PROJECT MANAGEMENT - PUBLIC SERVICES - CIT SHEET No.





REMOVAL KEY						
DESCRIPTION						
REMOVE EXISTING CURB AND GUTTER  - ANY TYPE						
REMOVE EXISTING SIDEWALK OR RAMP  - ANY TYPE OR THICKNESS						
MILL EXISTING PAVEMENT — ANY THICKNESS, SAWCUT FULL DEPTH AT REMOVAL LIMITS						
REMOVE EXISTING DRIVEWAY ANY THICKNESS						
REMOVE STORM SEWER AND CATCH BASINS—SEE NOTES SHEET 18						
ABANDON WATERMAIN AND APPURTENANCES—SEE NOTES SHEET 9						
PROTECTIVE FENCING						





PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

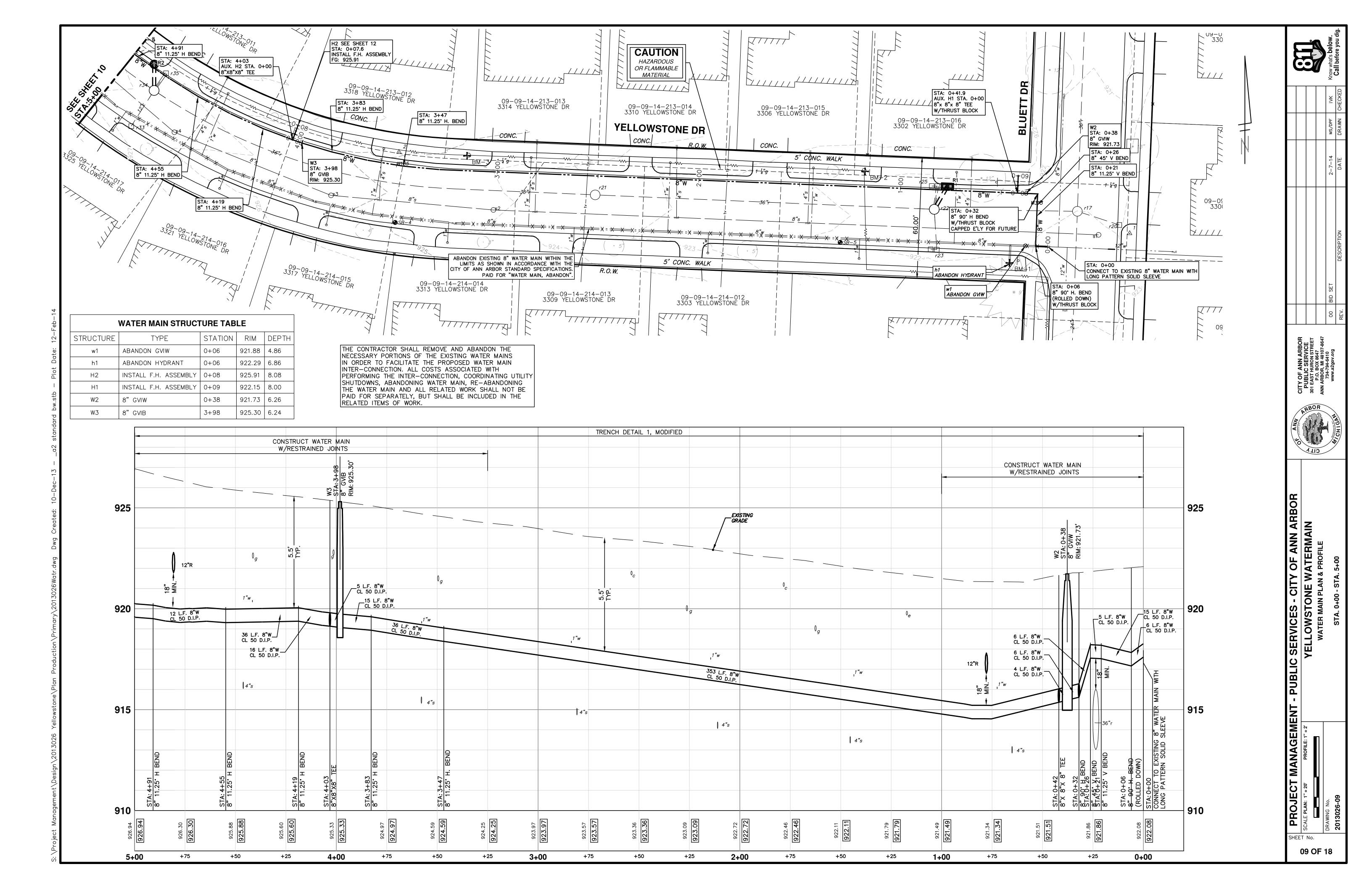
SCALE PLAN: 1" = 20"

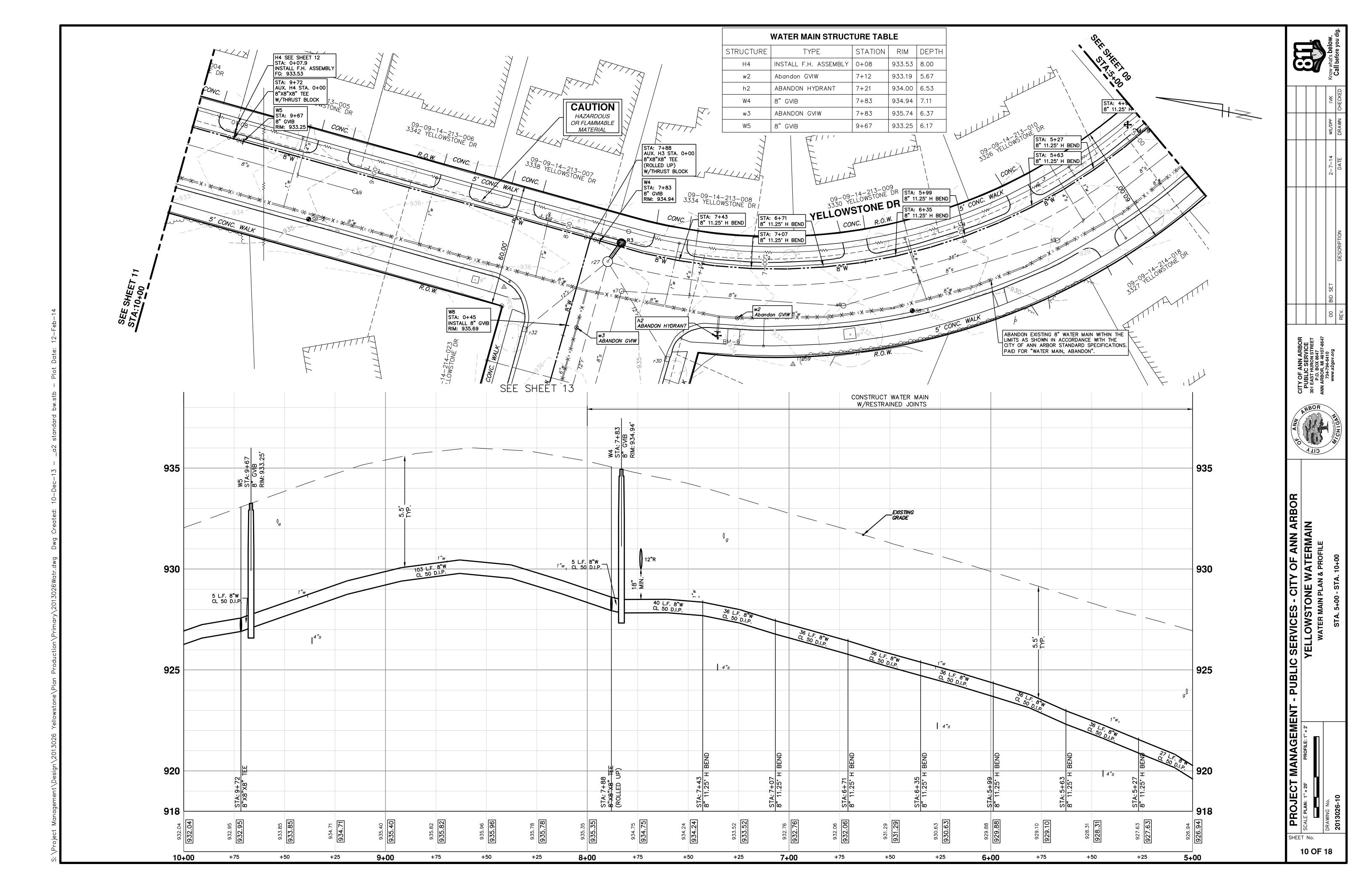
YELLOWSTONE WATERMAIN

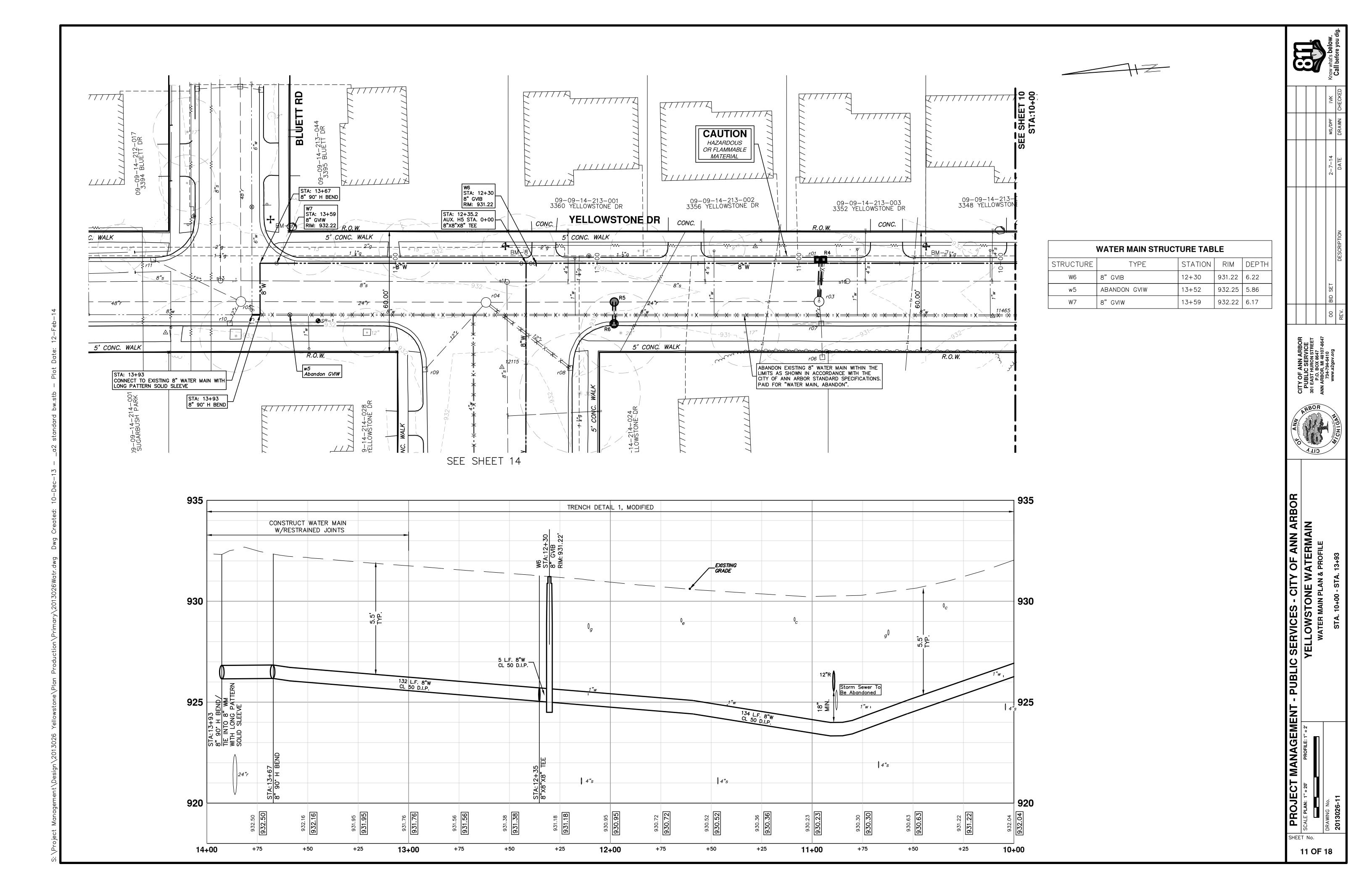
REMOVALS

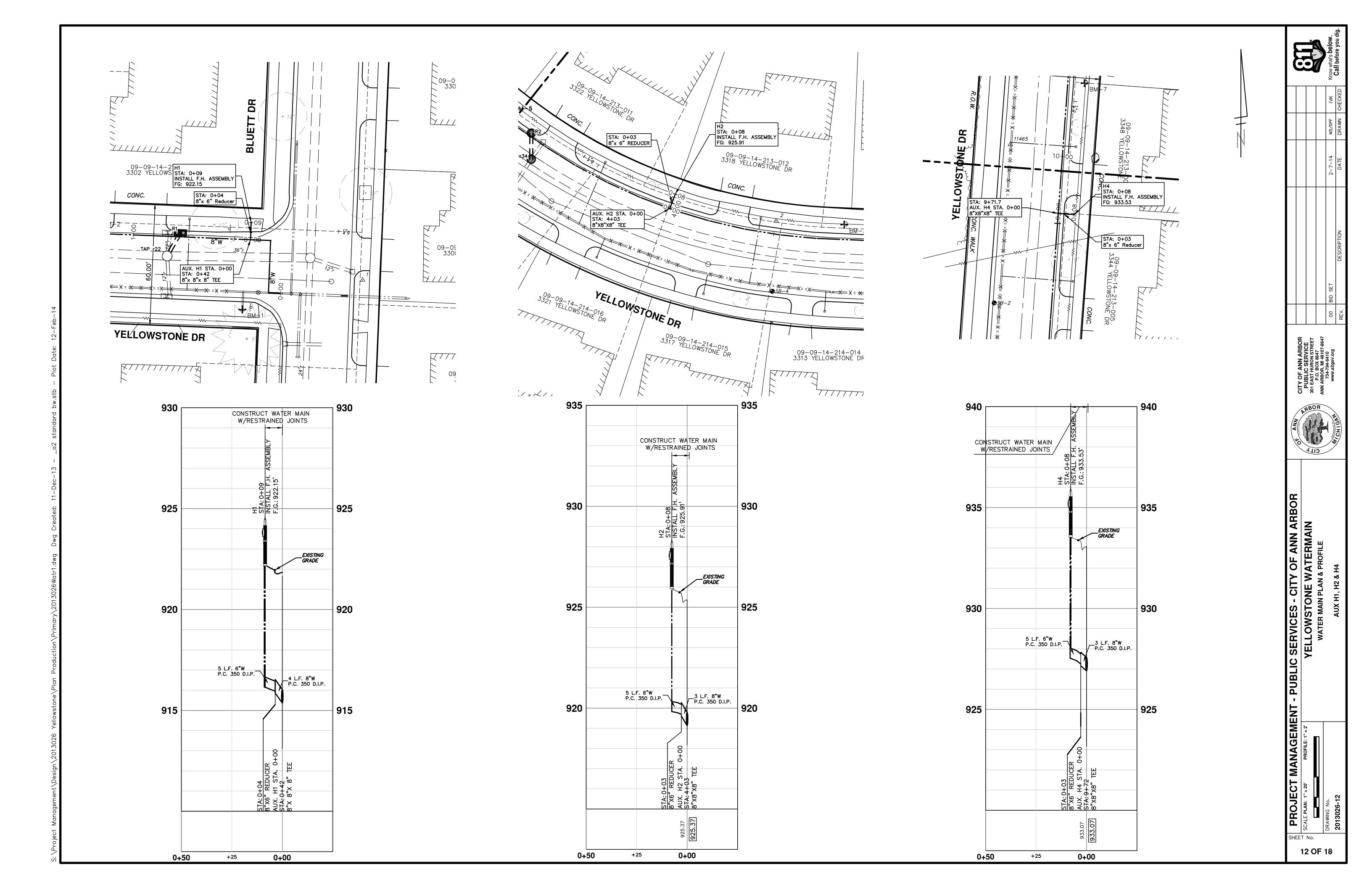
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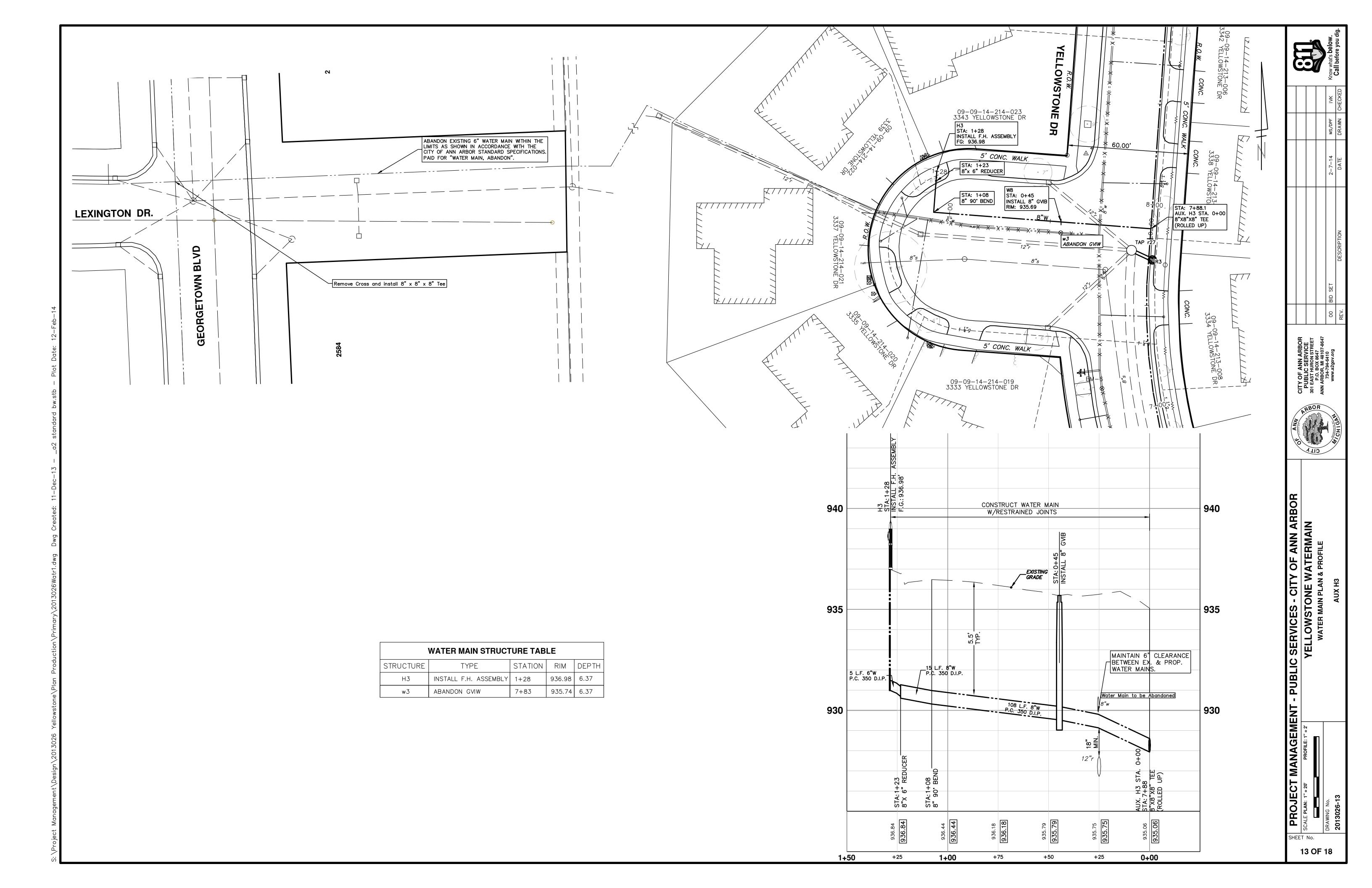
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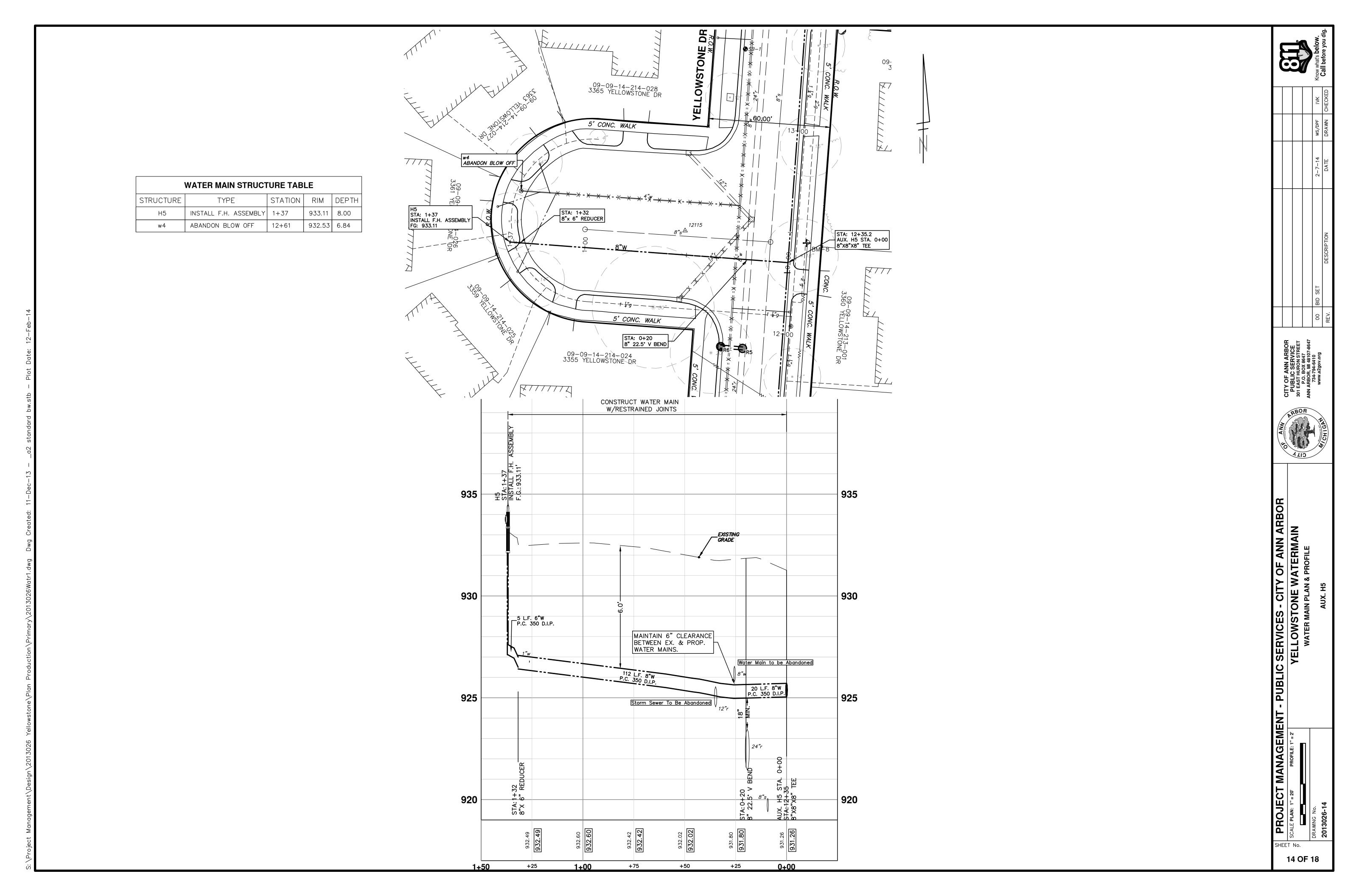


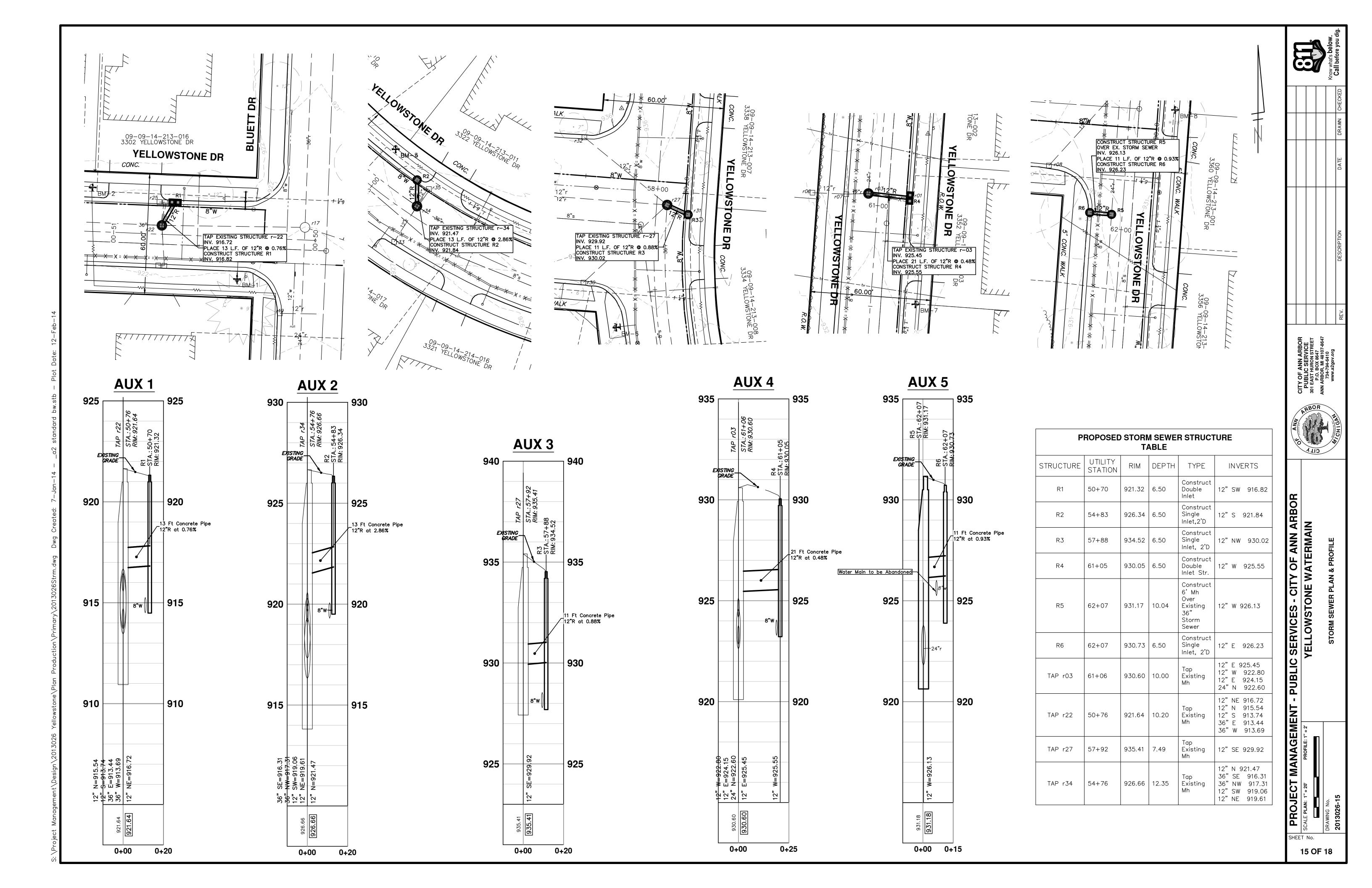


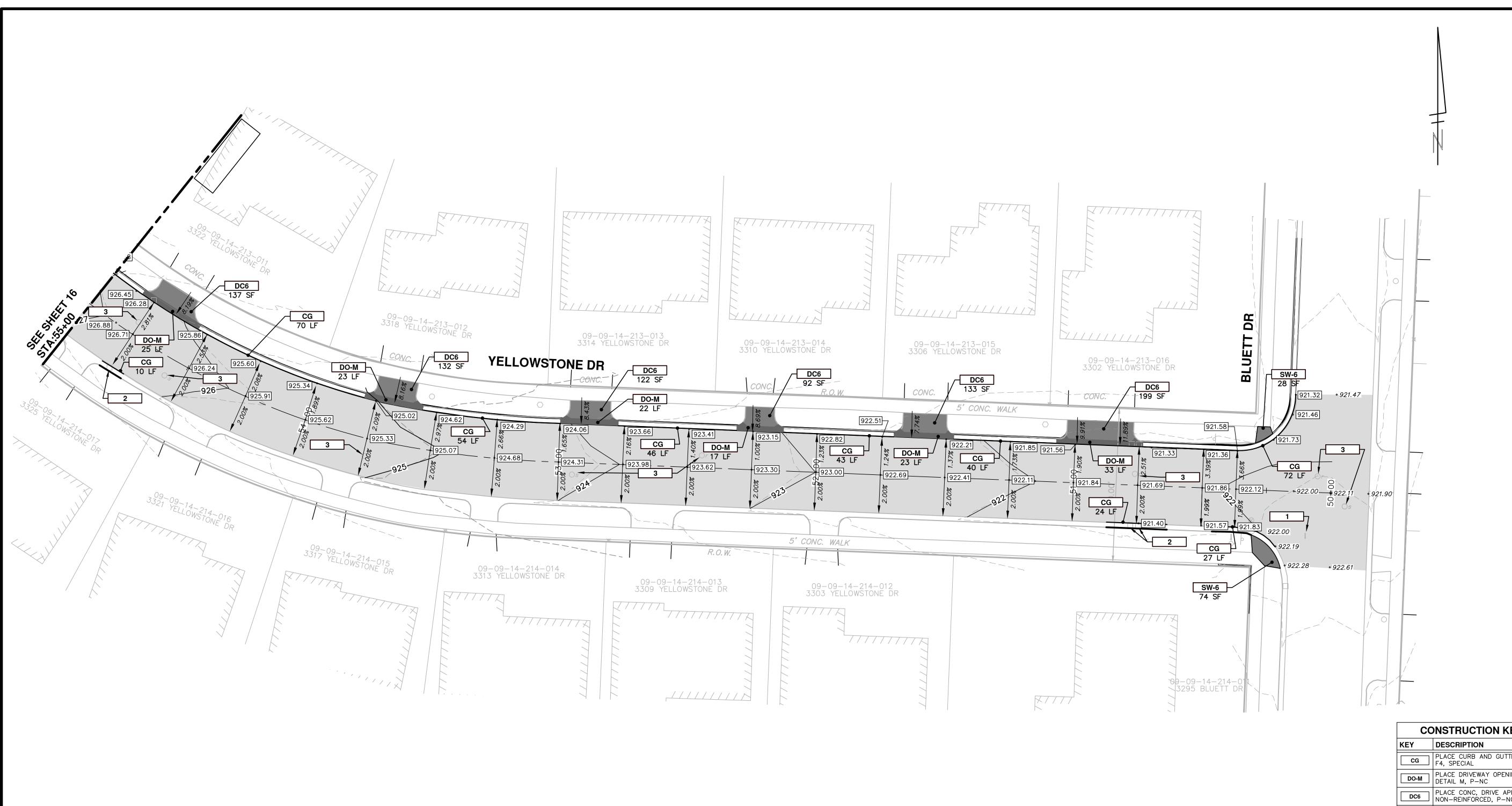












CONSTRUCTION KEY					
KEY	DESCRIPTION				
CG	PLACE CURB AND GUTTER, CON F4, SPECIAL				
DO-M	PLACE DRIVEWAY OPENING, CON DETAIL M, P-NC				
DC6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INC				
SW6	PLACE 6" CONC. ADA RAMP WIDETECTABLE WARNING STRIP				
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.				
2	ADJUST INLET STRUCTURE COVE				
3	ADJUST MANHOLE COVER				

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

SCALE PLAN: 1" = 20'

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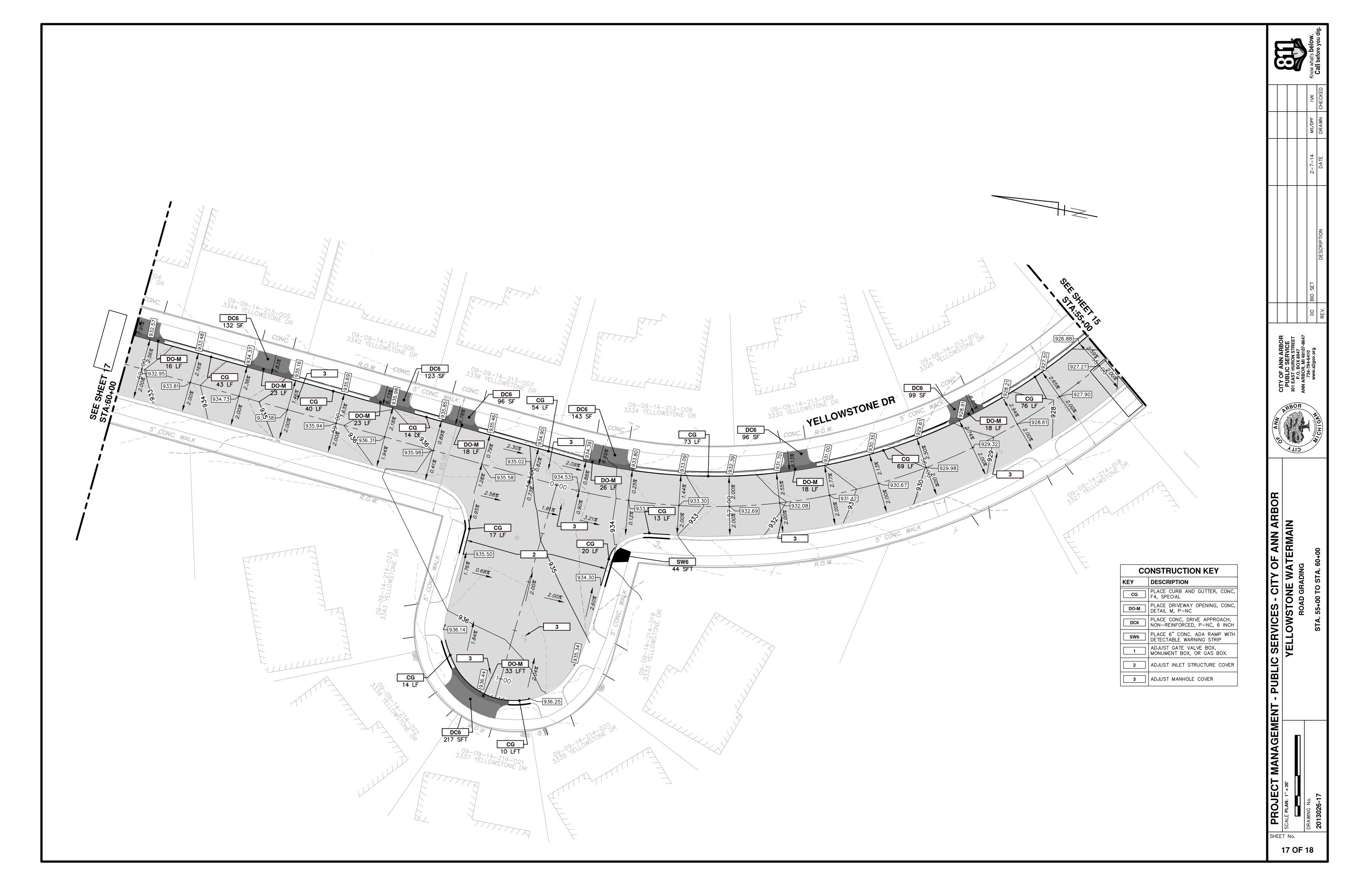
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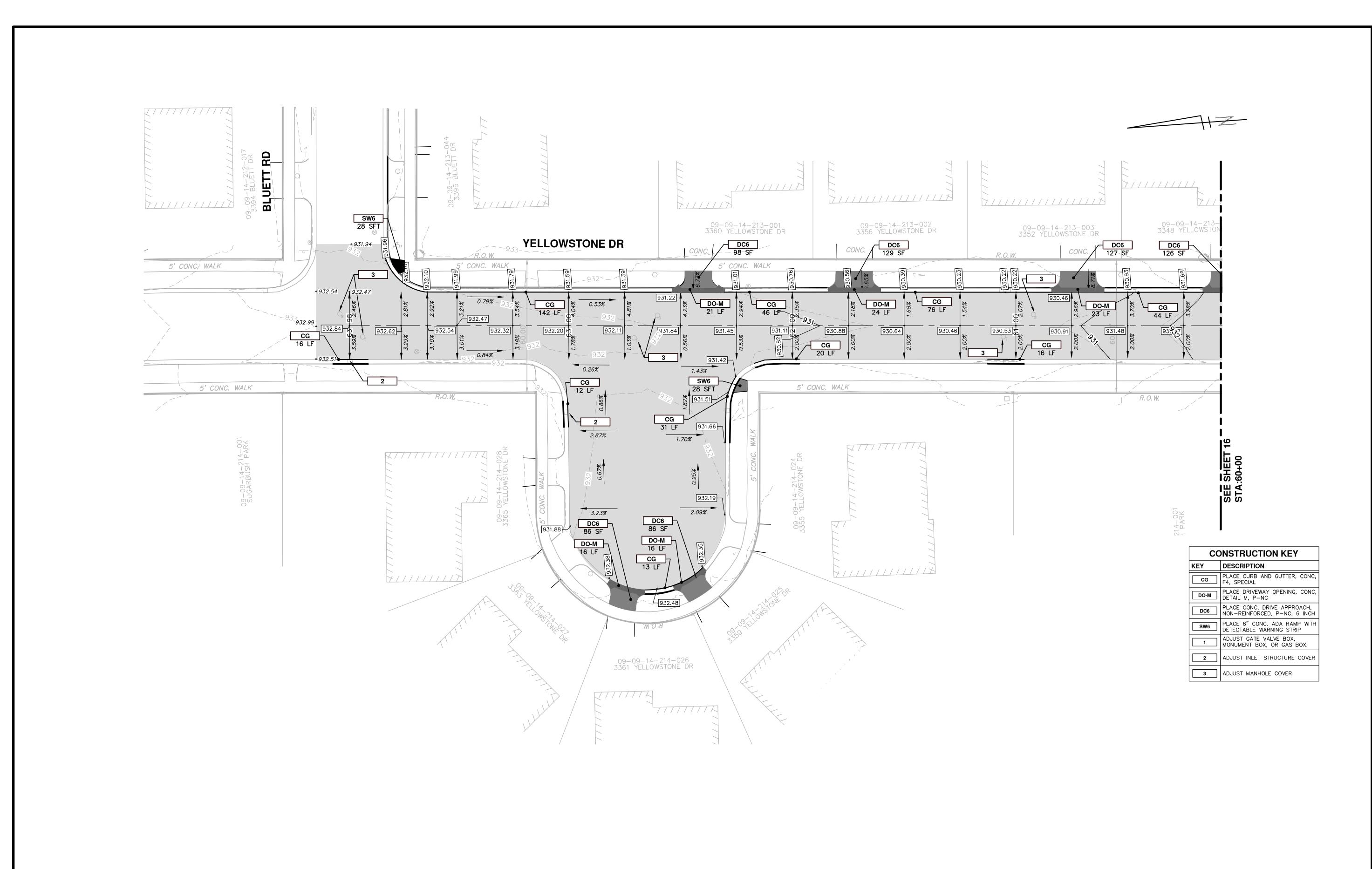
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ROAD GRADING





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SCALE PLAN: 1" = 20'

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ROAD GRADING

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