

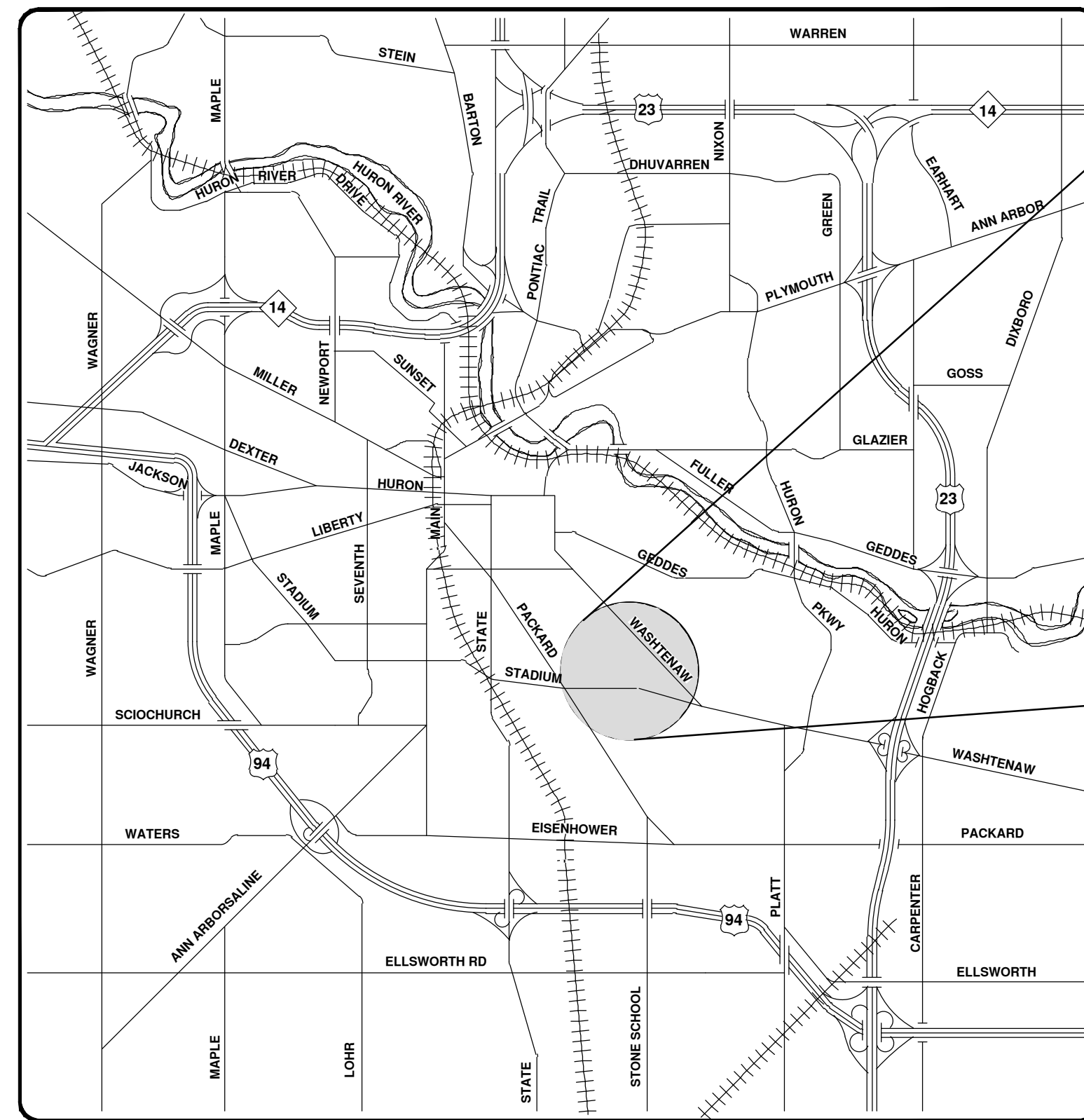
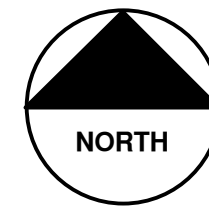


# CITY OF ANN ARBOR PROJECT MANAGEMENT

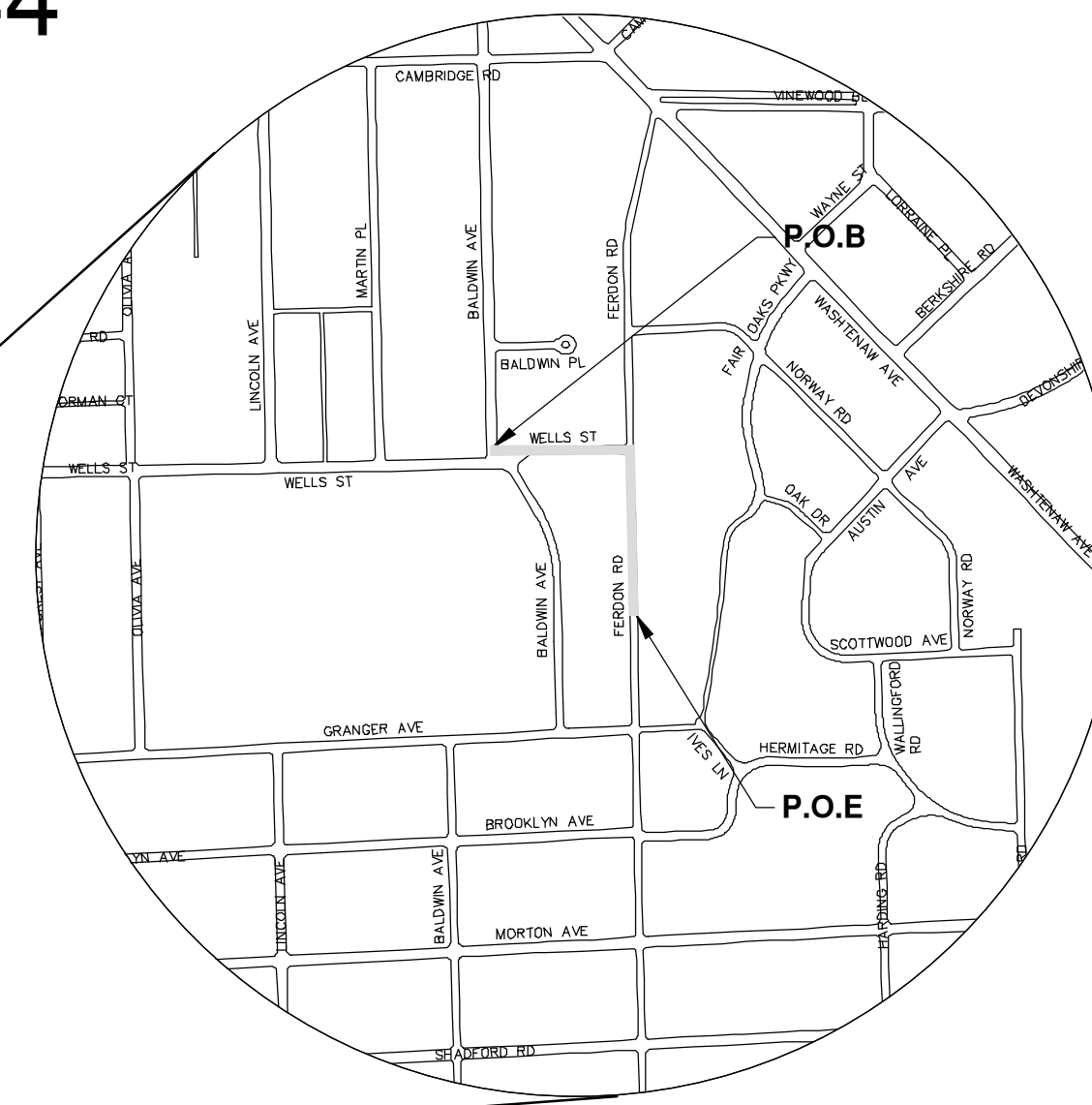
## FERDON WELLS STORM SEWER REHABILITATION PROJECT

BID No. ITB-4433, FILE No. 2014044

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
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5	MAINTENANCE OF TRAFFIC
6	REMOVALS
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VICINITY MAP



**NOTES**

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 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.

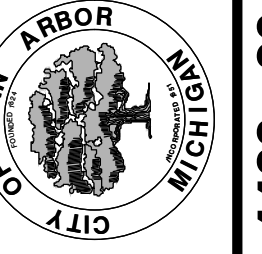
THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

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.



REV.	DATE	DESCRIPTION
00	4-1-16	OUT FOR BID
		AMW DRAWN
		CEC/DPF CHECKED

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1607  
734-764-4410  
www.a2gov.org



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

THIS PROJECT CONSISTS OF STORM WATER CONVEYANCE SYSTEM IMPROVEMENTS, INCLUDING PIPE ABANDONMENT OF CROSS-CITY STORM SEWER AND REALIGNMENT OF STORM SEWERS WITHIN THE FERDON ROAD AND WELLS STREET RIGHTS-OF-WAY.

**PROJECT MANAGEMENT SERVICE UNIT**

PREPARED UNDER THE SUPERVISION OF

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

3/23/2016  
DATE

SCALE	
DRAWING No.	2014044-1
SHEET No.	1 OF 10

SANITARY SEWER STRUCTURE TABLE							
STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS	NOTES
71-69029	0+08 -6' (LT)	860.19	8.75	48	4' MH	8" E 851.44	
71-69050	8+60 -75' (LT)	879.10	6.90	48	4' MH	8" S 872.20	
71-69051	8+59 250' (RT)	876.59	6.50	48	4' MH	8" N 870.09	
71-69053	5+90 226' (RT)	865.12	10.20	48	4' MH	8" NW 854.92	
71-69054	4+78 45' (RT)	862.41	8.20	48	4' MH	8" SE 854.21 8" W 854.21	
71-69055	3+61 6' (RT)	861.02	6.95	48	4' MH	8" E 854.12 8" N 854.52 8" W 854.07	
71-69056	7+80 4' (RT)	875.92	7.40	48	4' MH	8" W 868.52	
71-69057	6+00 4' (RT)	864.86	8.70	48	4' MH	8" E 856.26 8" W 856.16	
71-69058	4+26 6' (RT)	861.25	6.30	48	4' MH	8" E 855.05 8" W 854.95	TO BE REMOVED
71-69059	4+00 5' (RT)	860.92	5.90	48	4' MH	8" N 855.02 8" E 855.02 8" S 855.02	
71-69060	4+08 -336' (LT)	866.18	6.90	48	4' MH	8" S 859.28	

STORM SEWER STRUCTURE TABLE						
STRUCTURE	STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
88-52831	2+88 3' RT	12" E 856.45	860.10	5.65	48" Dia.	
88-52832	3+84 -21' LT	12" SE 857.56	859.86	4.30	24" Dia.	
88-52833	4+03 -6' LT	12" NE 858.14	860.44	4.30	24" Dia.	
88-52834	4+42 -14' LT	12" W 858.40	860.90	4.50	24" Dia.	
88-52835	4+61 -11' LT	12" W 859.18	861.23	4.05	48" Dia.	
88-52836	5+14 23' RT	12" W 859.83	862.23	2.40	24" Dia.	
88-52837	3+55 15' RT	12" W 858.54	861.05	4.51	24" Dia.	
88-52982	10+64 14' RT	12" S 873.63	876.57	4.94	24" Dia.	REMOVE EXISTING STRUCTURE
88-52983	10+63 -6' LT	12" SW 873.96	876.98	5.02	24" Dia.	REMOVE EXISTING STRUCTURE
92-58314	3+55 0'	12" SE 855.14 12" NW 855.34 12" E 856.84 12" E 856.84 12" W 855.34 36" W 850.84 30" N 851.04	860.84	10.00	72" Dia.	
92-58315	0+00 0'	36" E 849.87	859.92	12.05	72" Dia.	
92-58316	10+66 0' RT	12" NE 872.68 24" E 868.48 24" W 868.43	877.08	8.65	48" Dia.	REMOVE EXISTING STRUCTURE
92-58317	4+08 0'	30" S 851.95 12" SW 857.65 30" N 851.95 12" E 857.55 12" E 857.45	860.85	8.90	72" Dia.	REMOVE EXISTING STRUCTURE
92-58323	3+55 175' RT	12" E 859.80 12" NW 858.80	864.10	5.30	48" Dia.	
Structure - (13)	5+74 171' RT	24" E 861.81 12" W 861.11	865.16	6.05	48" Dia.	

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
Structure - (87)	Ex Watr Hyd	3+90 -31' (LT)	861.04	5.75
01-02193	Ex Watr GVW	4+25 -4' (LT)	861.19	5.30
01-00131	Ex Watr GVW	4+83 19' (RT)	862.35	5.70
02-04200	Ex Watr Hyd	8+33 -14' (LT)	878.04	5.75
02-02194	Ex Watr GVW	8+69 -6' (LT)	878.79	6.00


**EXISTING LEGEND**

- ⊕ FIRE HYDRANT
- I 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

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

**PROPOSED LEGEND**

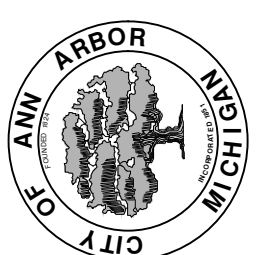
- ⊕ HYDRANT (PLAN)
- ⊙ WATER GATE WELL
- ▼ REDUCER
- I WATER GATE VALVE
- ⊙ WATER STOP BOX
- ⊠ WATER VAULT
- INLET
- ⊠ DOUBLE INLET
- INLET JUNCTION CHAMBER
- ROUND CATCH BASIN
- STORM MANHOLE
- ⊠ DRAIN ARROW
- ⊠ FLARED END SECTION
- SANITARY MANHOLE
- CLEAN-OUT
- BARREL
- ⊕ SIGN
- PUSH BUTTON
- ⊠ HAND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



Know what's below.  
Call before you dig.

REV.	DATE	DRAWN	CHECKED	AMW
00	4-1-16	CEC/DFP		
OUT FOR BID	DESCRIPTION			

**CITY OF ANN ARBOR**  
 PUBLIC SERVICES  
 301 EAST HURON STREET  
 ROOM 300 ANN ARBOR MI 48106-8647  
 ANN ARBOR MI 48106-8647  
 www.a2gov.org



**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**FERDON WELLS STORM SEWER REHABILITATION PROJECT**  
 LEGEND AND EXISTING STRUCTURE TABLES

SCALE: N/A  
 DRAWING No. 2014044-2  
 SHEET No. 2 OF 10

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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 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 ITEM OF WORK "GENERAL CONDITIONS".
- "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.
- WHERE STREET CURBS ARE UNDERMINED DUE TO CONSTRUCTION ACTIVITIES, THEY SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUOUS MAINTENANCE OF THE TEMPORARY ROAD SURFACE AND SOIL EROSION CONTROL MEASURES WITHIN THE CONSTRUCTION AREA UNTIL THE FULL COMPLETION OF THE PROJECT. THIS WORK SHALL BE INCLUDED IN THE ITEM OF WORK "GENERAL CONDITIONS".
- ALL CURB, SIDEWALK, DRIVEWAY APPROACH REMOVALS SHALL BE APPROVED BY ENGINEER BEFORE THE WORK IS DONE.
- SAWED SEWER PIPE CONNECTIONS SHALL BE COUPLED WITH A FERNCO FLEXIBLE COUPLING AND A STAINLESS STEEL SHEAR RING.
- THE LOCATION OF MATERIAL STOCK PILES AND ON-SITE STAGING AREAS TO BE APPROVED BY THE ENGINEER.
- FOR MAINLINE PAVING, THE WIDTH OF THE MAT FOR EACH PASS OF THE PAVER SHALL BE NOT LESS THAN 10.5' OR GREATER THAN 15'. AS DIRECTED BY THE ENGINEER. THE ENGINEER WILL DIRECT THE LAYOUT OF THE LONGITUDINAL JOINTS DURING CONSTRUCTION.
- ALL STRUCTURES SHALL RECEIVE NEW CASTINGS AS DIRECTED BY THE ENGINEER, AS SPECIFIED ON THE STANDARD CASTING SCHEDULE. THE EXISTING CASTINGS ARE THE PROPERTY OF THE CITY OF ANN ARBOR. THE CONTRACTOR SHALL DELIVER TO CITY OF ANN ARBOR FIELD OPERATIONS AND MAINTENANCE FACILITY AT THE W.R. WHEELER SERVICE CENTER LOCATED AT 4251 STONE SCHOOL ROAD.
- PAYMENT FOR DRAINAGE STRUCTURE SUMPS, WHERE SPECIFIED, SHALL BE INCLUDED IN THE PAYMENT FOR THE VARIOUS DRAINAGE STRUCTURE SIZES AND OR TYPES.
- WHERE SEWER PIPES OF DIFFERENT 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 MDDT 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 "MINOR TRAFFIC CONTROL".
- 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.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING NECESSARY WATER MAIN SHUT OFFS. ALL RESIDENTS WITHIN THE AFFECTED AREA SHALL BE NOTIFIED 48 HOURS PRIOR TO THE SHUT DOWN.

**SOIL EROSION & SEDIMENT CONTROL GENERAL NOTES:**

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 SOIL EROSION CONTROL MEASURES 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/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.
- 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, AND INLET FILTERS ON EXISTING DRAINAGE FEATURES PRIOR TO ANY CLEARING OR EARTH MOVING OPERATION.
  - STRIP AND STOCKPILE TOPSOIL. STABILIZE STOCKPILE AS REQUIRED.
  - INSTALL STORM SEWERS, AND OTHER ENCLOSED DRAINAGE FEATURES. NEW INLET FILTERS SHALL BE INSTALLED IMMEDIATELY FOLLOWING INSTALLATION OF NEW DRAINAGE INLETS.
  - CONTINUALLY MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES, AS REQUIRED TO ALLOW DRAINAGE AND SEDIMENT REMOVAL. REMOVE ANY ACCUMULATED SEDIMENT IMMEDIATELY.
  - COMPLETE ALL GRADING AND FINE GRADING.
  - TEMPORARY SEED AND INSTALL EROSION CONTROL BLANKET IN ALL DISTURBED AREAS.
  - CLEAN OUT STORM SEWER SYSTEMS.
  - REMOVE ALL TEMPORARY SOIL EROSION CONTROL MEASURES UPON FINAL INSPECTION AND APPROVAL BY THE ENGINEER.
  - REMEDY ANY NOTED DEFECTS TO THE SATISFACTION OF THE CITY OF ANN ARBOR'S SOIL EROSION AND SEDIMENTATION CONTROL OFFICIAL.

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 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	

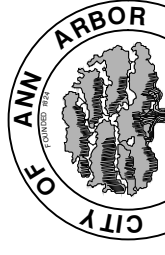
**CONTACT INFORMATION**

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

BM #	ELEV	DESCRIPTION
1	864.37	RR spike in W face of utility pole on Baldwin. SE corner of Baldwin and Wells.
2	861.94	Cotton Gin spike in W face of utility pole on Bladwin. NE corner of Baldwin and Wells.
4	879.40	Cotton Gin spike in N face of utility pole on Ferdon. SW corner of Wells and Ferdon.
6	878.16	RR spike in E face of utility pole on W side of Ferdon @ hse 1216



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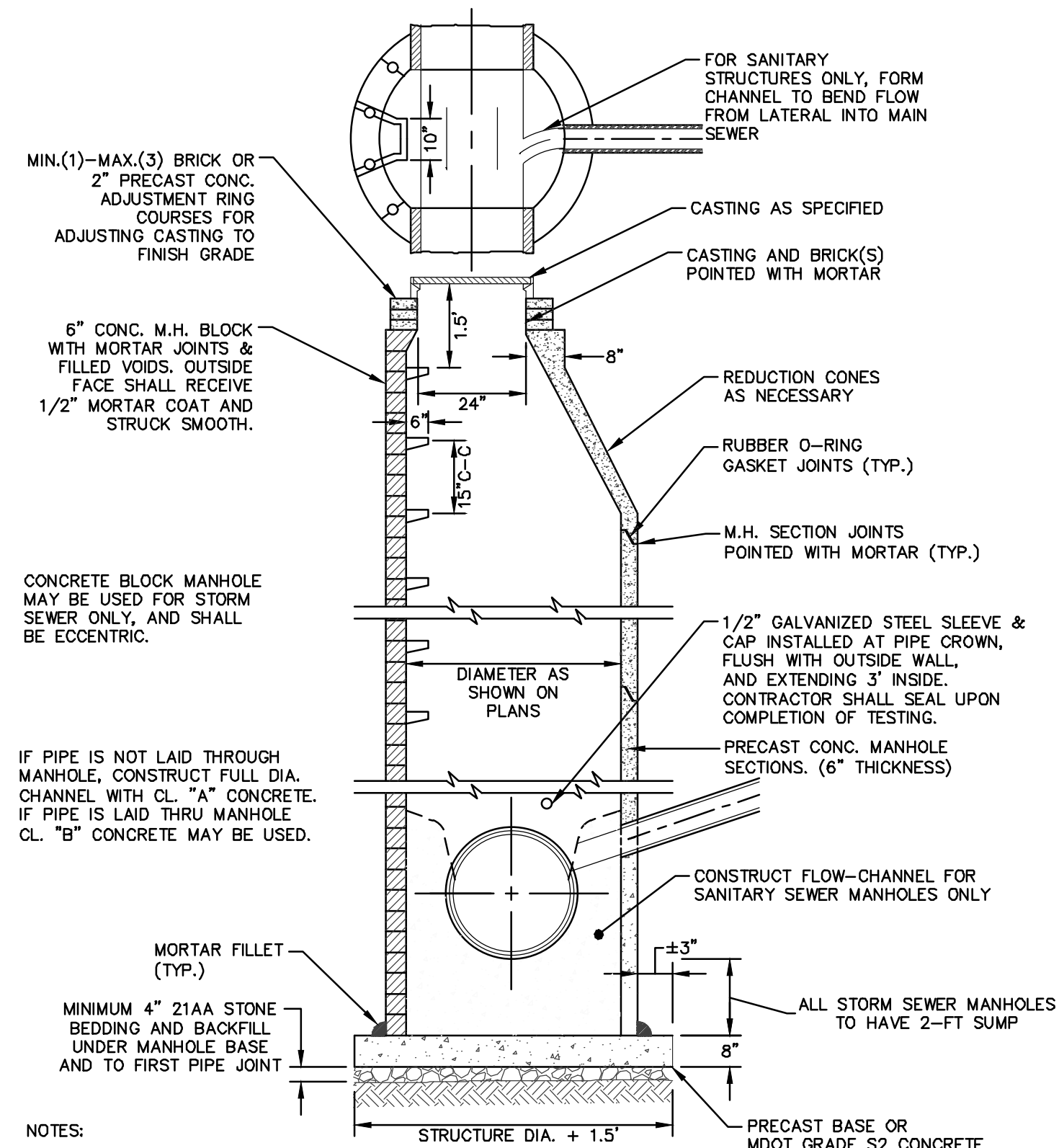
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**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**FERDON WELLS STORM SEWER REHABILITATION PROJECT**  
NOTES, BENCHMARKS AND CONTACTS

SCALE: N/A  
DRAWING No. 2014044-3

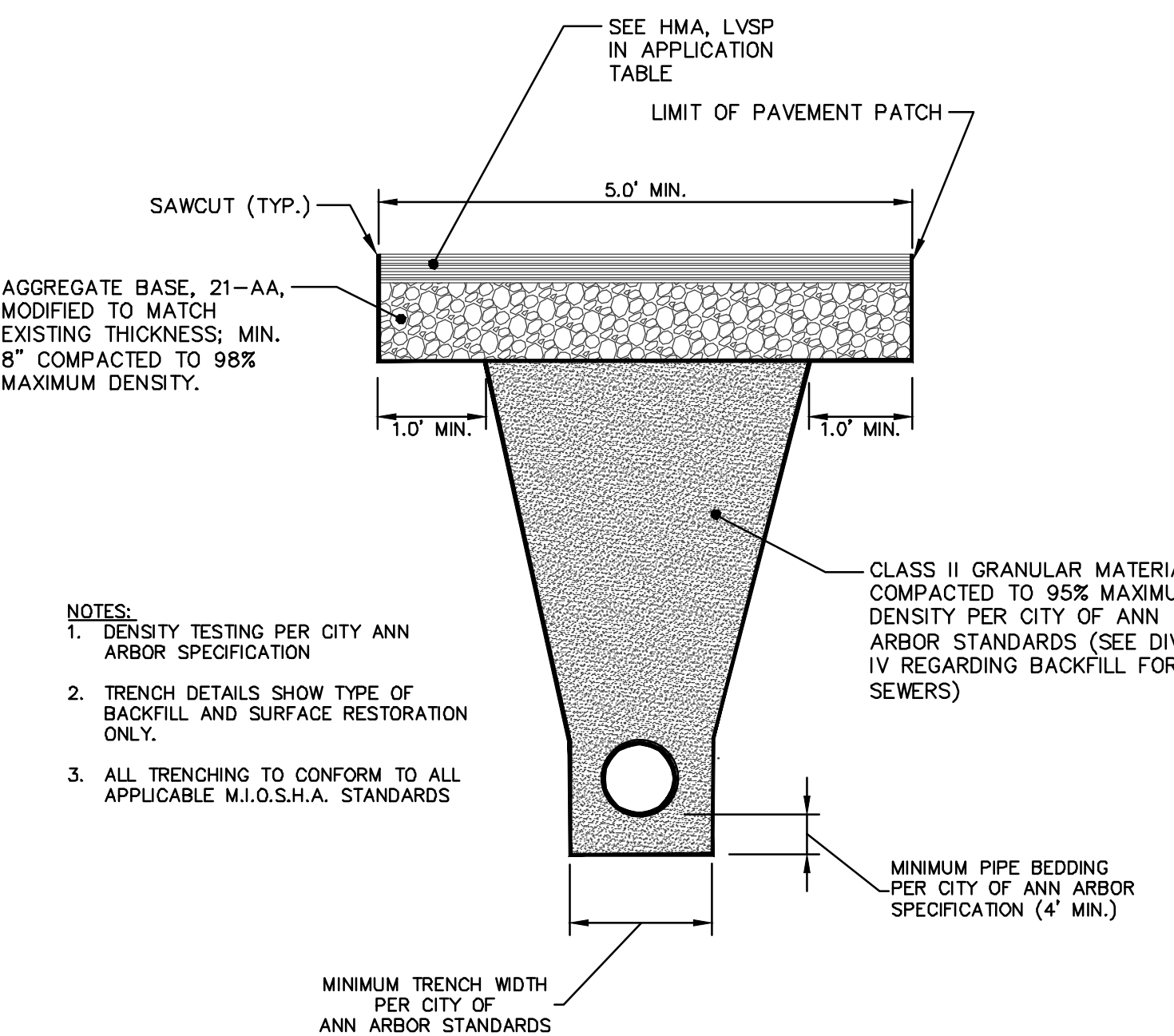
SHEET No. 3 OF 10

S:\Project Management\Design\2014044 Ferdon-Wells\Plan Production\Primary\2014044DET.dwg Dwg Created: 15-Apr-15 - 9:2 standard bw.stb - Plot Date: 31-Mar-16



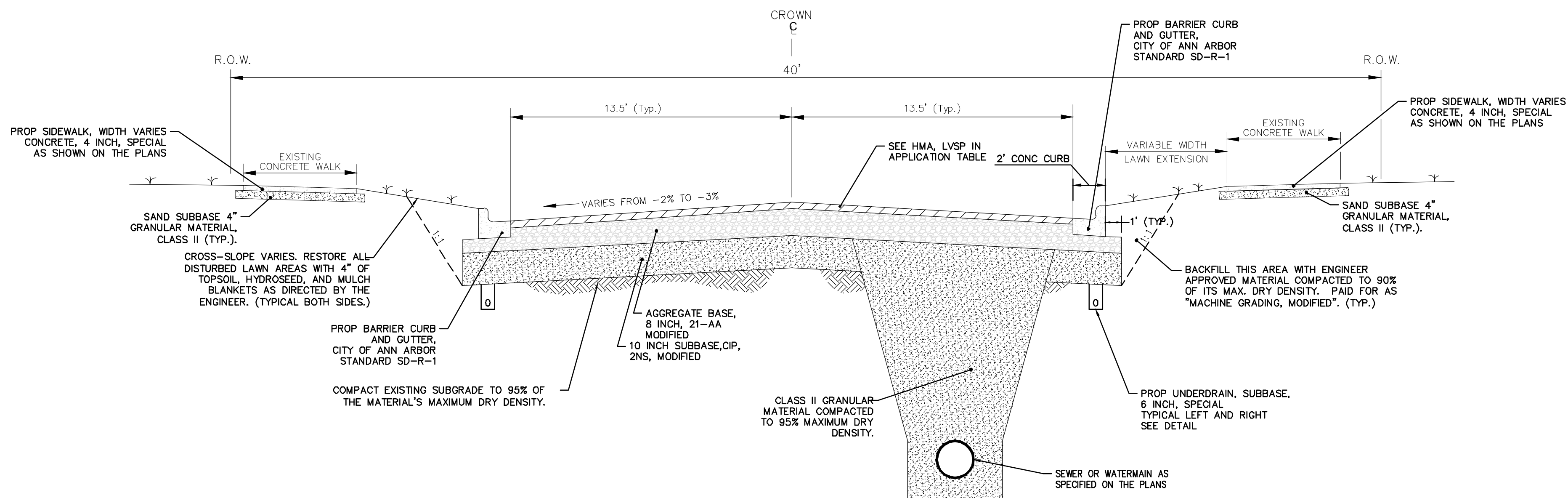
- NOTES:
1. ALL SANITARY MANHOLES SHALL BE PRECAST CONCRETE.
  2. ALL MANHOLES MUST HAVE ECCENTRIC CONES - BOTH STORM AND SANITARY
  3. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
  4. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.

**STANDARD MANHOLE (TYPE I)**



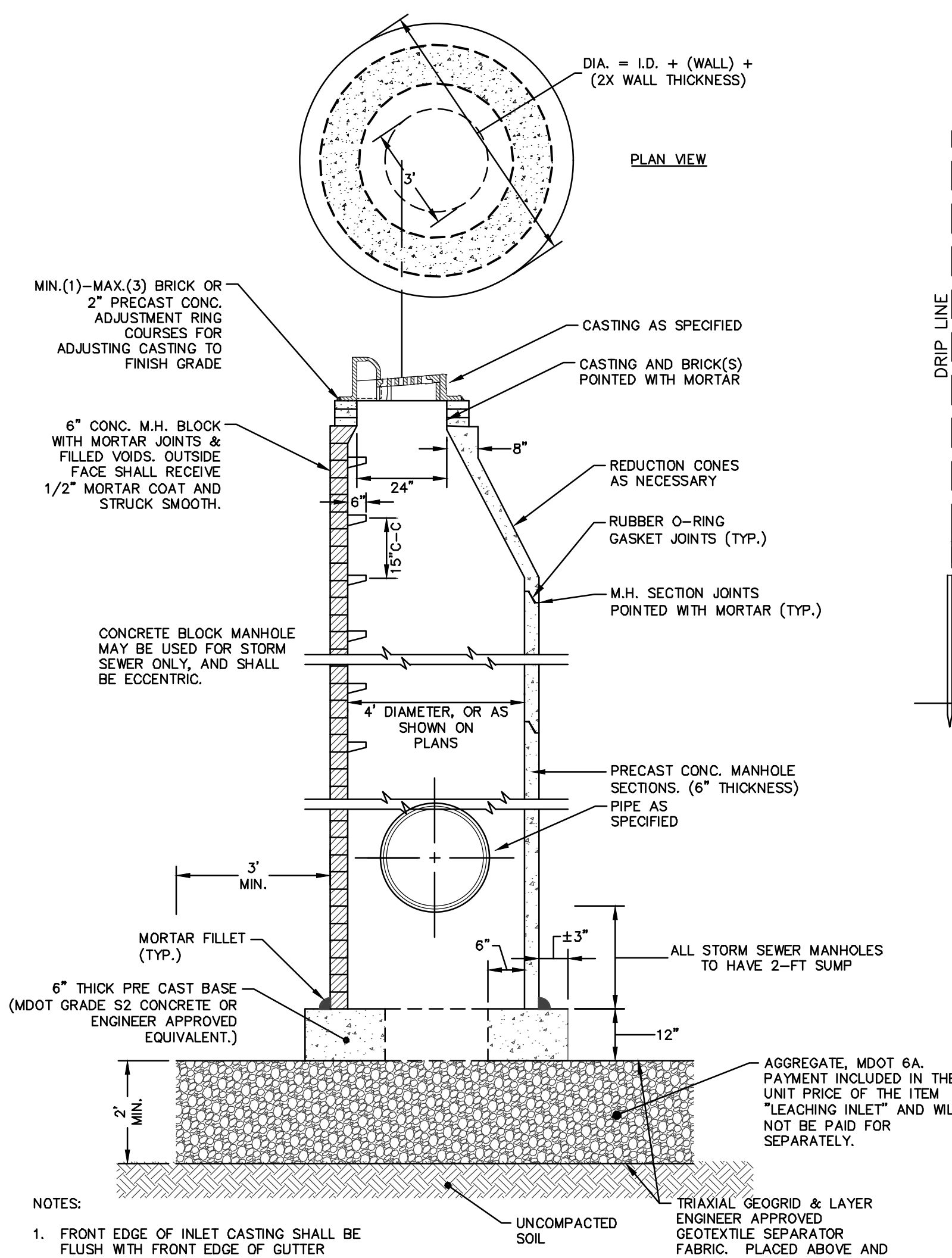
- NOTES:
1. DENSITY TESTING PER CITY ANN ARBOR SPECIFICATION
  2. TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY.
  3. ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS

**UTILITY TRENCH-TYPE I SD-TD-1 (MODIFIED)**  
(UNDER BITUMINOUS SURFACE)



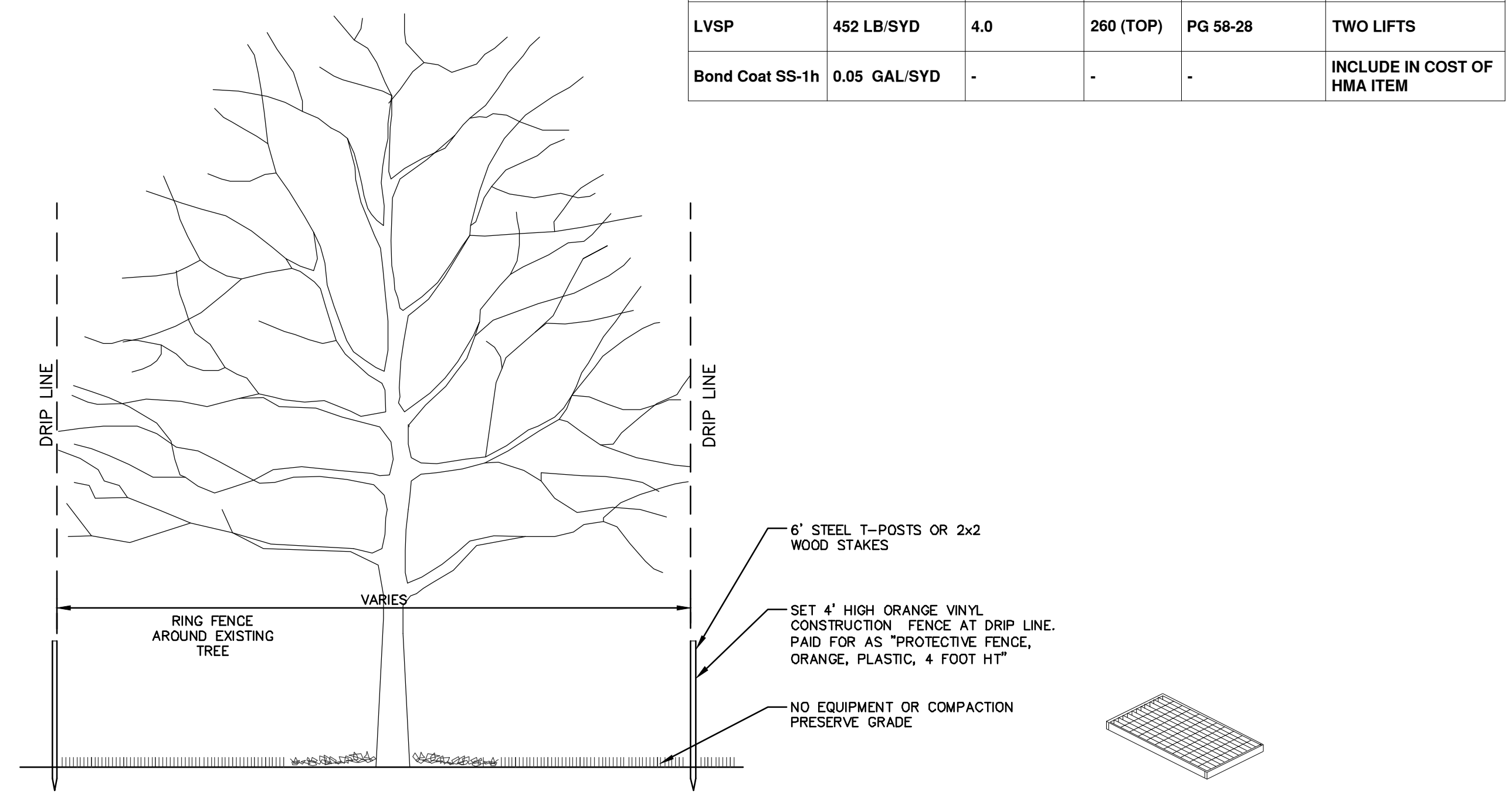
**PRROPOSED TYPICAL CROSS SECTION**

FERDON ROAD & WELLS STREET - HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	452 LB/SYD	4.0	260 (TOP)	PG 58-28	TWO LIFTS
Bond Coat SS-1h	0.05 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

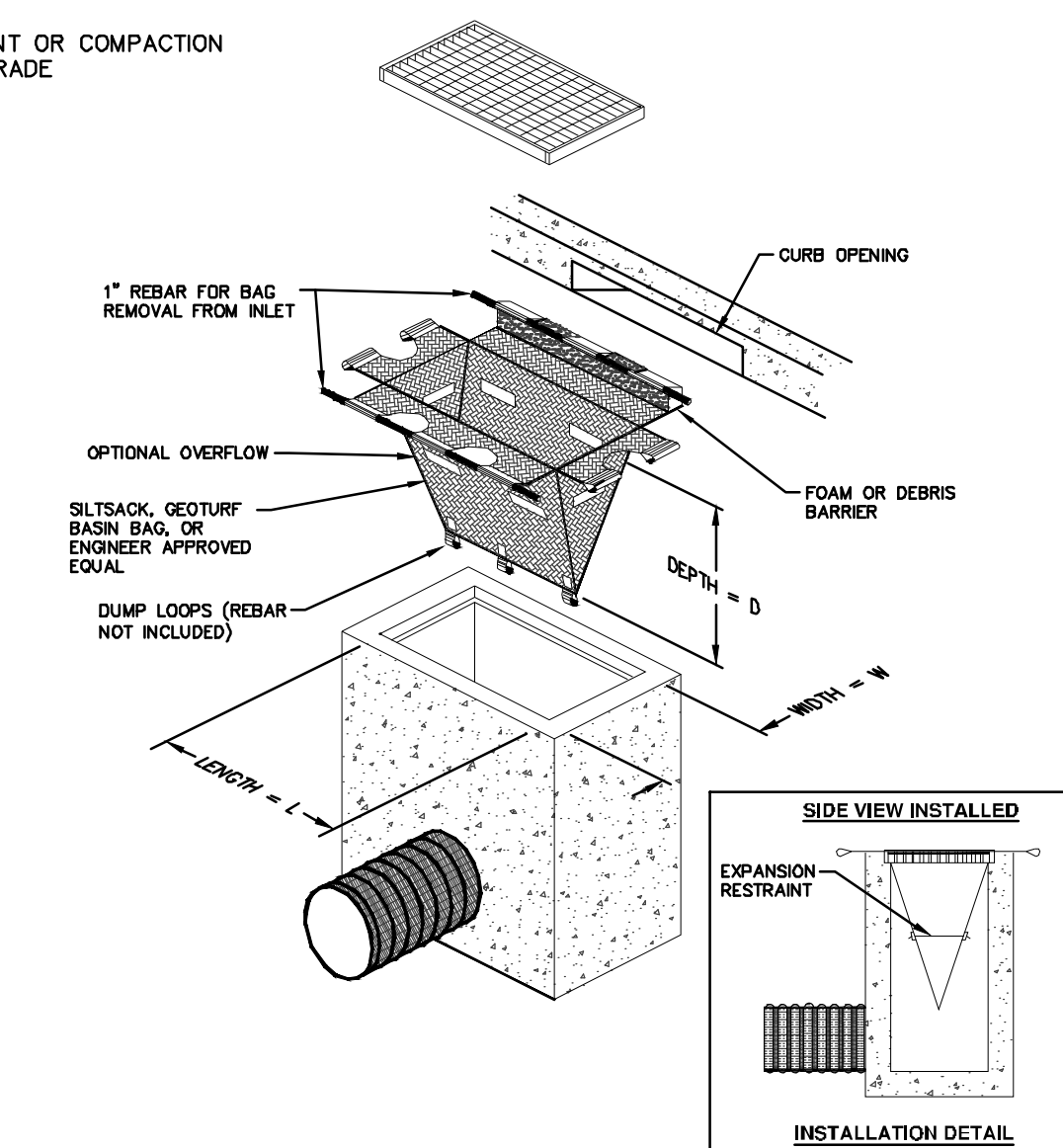


- NOTES:
1. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)
  2. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.

**LEACHING INLET STRUCTURE**



**TREE PROTECTION DETAIL**



**INLET PROTECTION DETAIL**

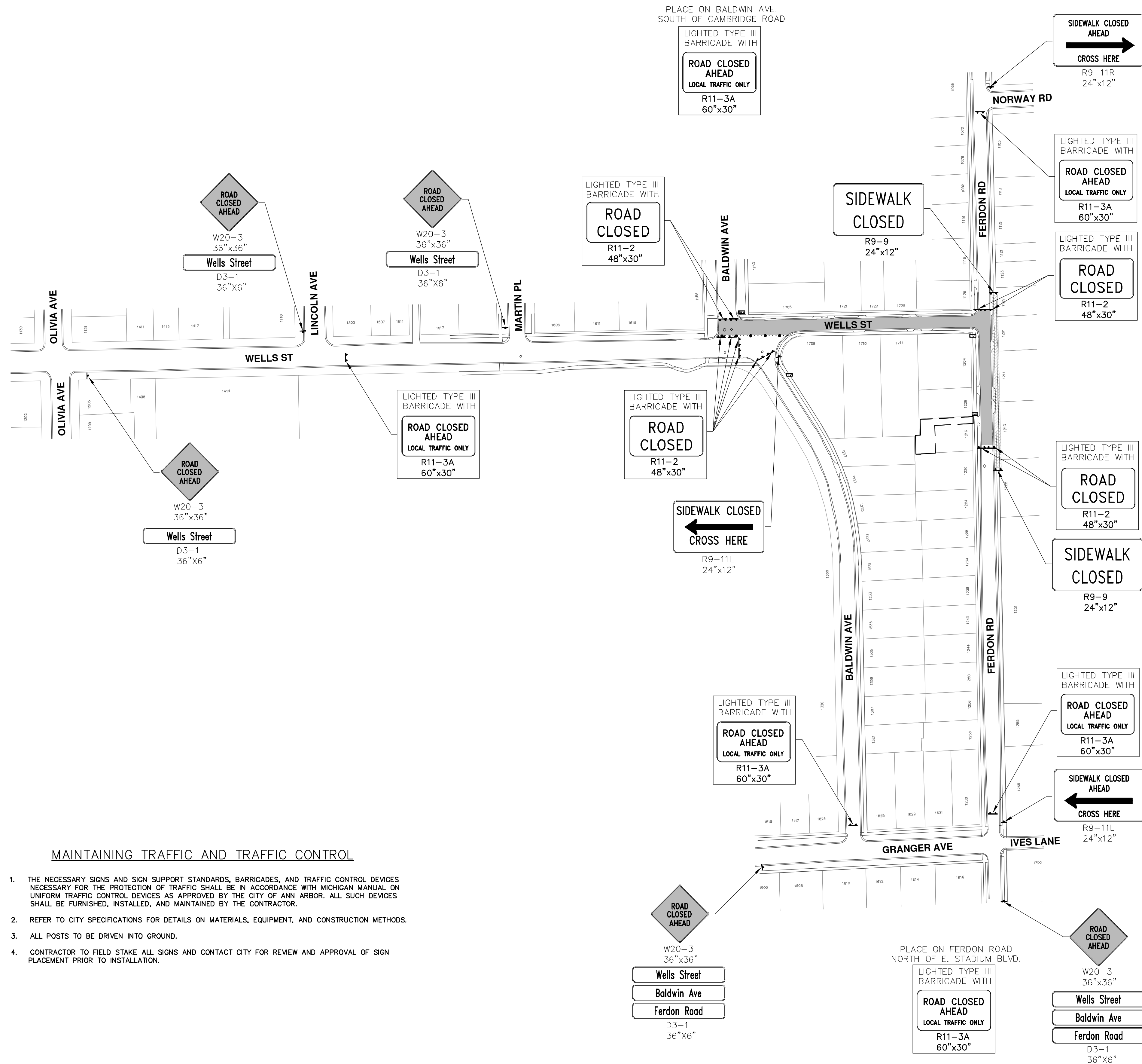
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**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**FERDON WELLS STORM SEWER REHABILITATION PROJECT**  
DETAILS

SCALE: N/A  
DRAWING No. 2014044-4  
SHEET No. 4 OF 10



**MAINTAINING TRAFFIC AND TRAFFIC CONTROL**

1. THE NECESSARY SIGNS AND SIGN SUPPORT STANDARDS, BARRICADES, AND TRAFFIC CONTROL DEVICES NECESSARY FOR THE PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS APPROVED BY THE CITY OF ANN ARBOR. ALL SUCH DEVICES SHALL BE FURNISHED, INSTALLED, AND MAINTAINED BY THE CONTRACTOR.
2. REFER TO CITY SPECIFICATIONS FOR DETAILS ON MATERIALS, EQUIPMENT, AND CONSTRUCTION METHODS.
3. ALL POSTS TO BE DRIVEN INTO GROUND.
4. CONTRACTOR TO FIELD STAKE ALL SIGNS AND CONTACT CITY FOR REVIEW AND APPROVAL OF SIGN PLACEMENT PRIOR TO INSTALLATION.



**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**FERDON WELLS STORM SEWER REHABILITATION PROJECT**  
 MAINTENANCE OF TRAFFIC

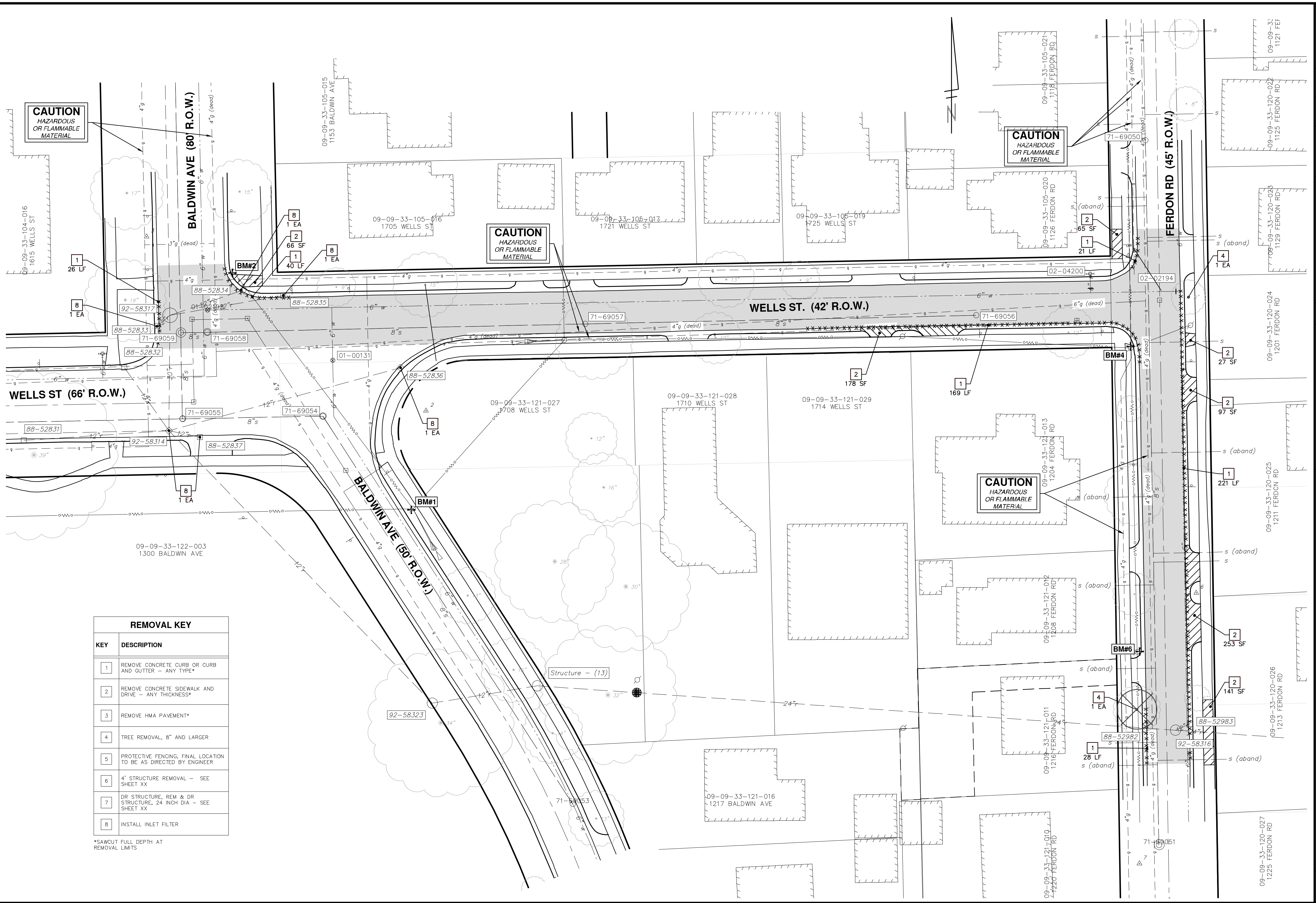
SCALE PLAN: 1:100  
 DRAWING No. 2014044-5

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		OUT FOR BID		


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 ANN ARBOR TEL 734-784-8410  
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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 REMOVAL, 8" AND LARGER
5	PROTECTIVE FENCING, FINAL LOCATION TO BE AS DIRECTED BY ENGINEER
6	4' STRUCTURE REMOVAL - SEE SHEET XX
7	DR STRUCTURE, REM & DR STRUCTURE, 24 INCH DIA - SEE SHEET XX
8	INSTALL INLET FILTER

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



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00	OUT FOR BID	4-1-16	AMW	

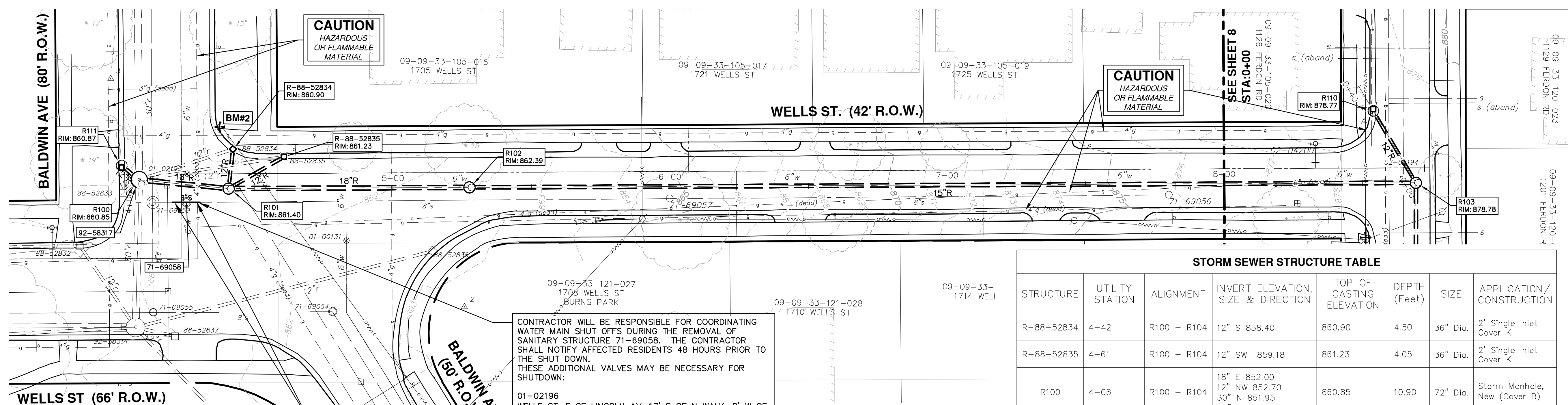


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**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**FERDON WELLS STORM SEWER REHABILITATION PROJECT**  
REMOVALS

SCALE PLAN: 1" = 20'  
DRAWING No. **2014044-6**  
SHEET No. **6 OF 10**

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**STORM SEWER STRUCTURE TABLE**

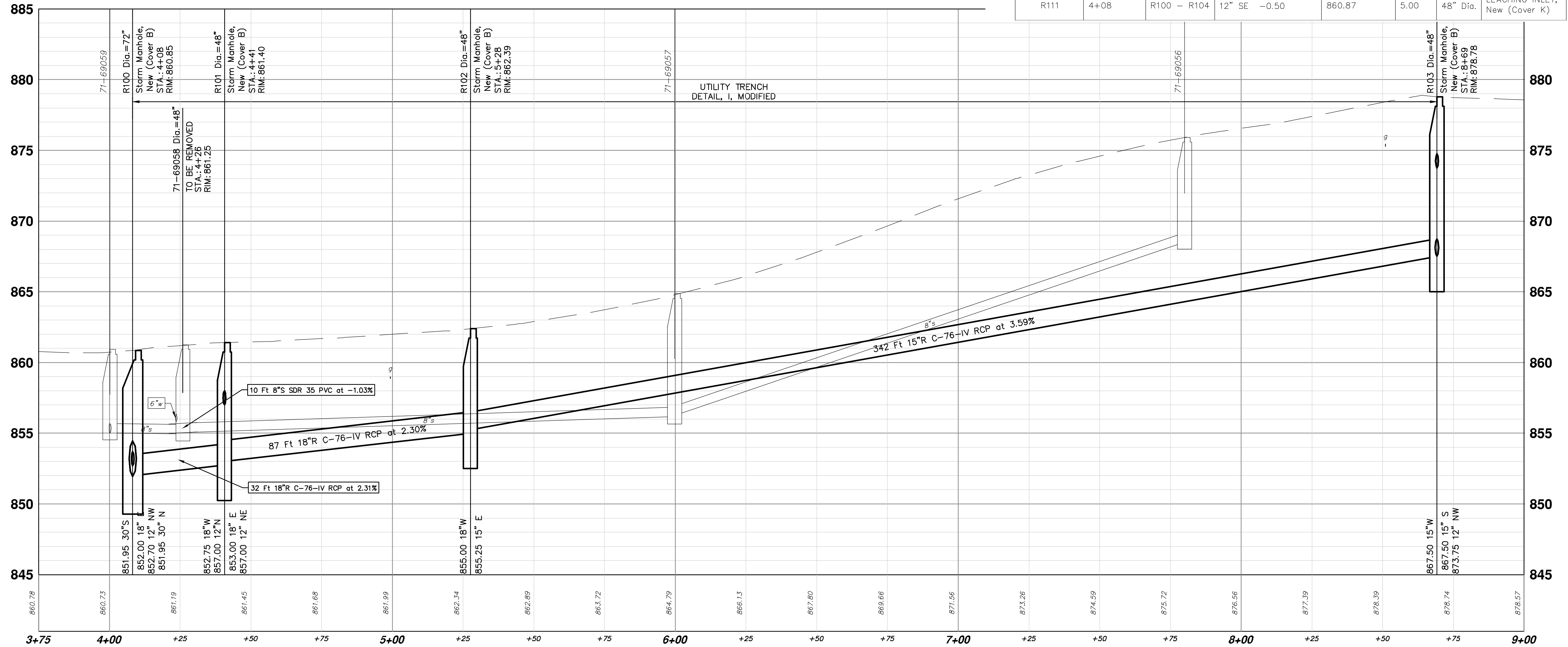
STRUCTURE	UTILITY STATION	ALIGNMENT	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION / CONSTRUCTION
R-88-52834	4+42	R100 - R104	12" S 858.40	860.90	4.50	36" Dia.	2' Single Inlet Cover K
R-88-52835	4+61	R100 - R104	12" SW 859.18	861.23	4.05	36" Dia.	2' Single Inlet Cover K
R100	4+08	R100 - R104	18" E 852.00 12" NW 852.70 30" N 851.95 30" S 851.95	860.85	10.90	72" Dia.	Storm Manhole, New (Cover B)
R101	4+41	R100 - R104	18" E 853.00 12" NE 857.00 18" N 852.75 12" N 857.00	861.40	10.65	48" Dia.	Storm Manhole, New (Cover B)
R102	5+28	R100 - R104	15" E 855.25 18" W 855.00	862.39	9.39	48" Dia.	Storm Manhole, New (Cover B)
R111	4+08	R100 - R104	12" SE -0.50	860.87	5.00	48" Dia.	LEACHING INLET, New (Cover K)


CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WATER MAIN SHUT OFFS DURING THE REMOVAL OF SANITARY STRUCTURE 71-69058. THE CONTRACTOR SHALL NOTIFY AFFECTED RESIDENTS 48 HOURS PRIOR TO THE SHUT DOWN. THESE ADDITIONAL VALVES MAY BE NECESSARY FOR SHUTDOWN:

01-02196  
WELLS ST, E OF LINCOLN AV, 17' S OF N WALK, 8' W OF E WALK.

01-00126  
BALDWIN AV, S OF CAMBRIDGE RD, 22' S OF N WALK, 24' W OF E WALK, 30' W OF EPL, 36' N OF SPL.


**R100 - R104**





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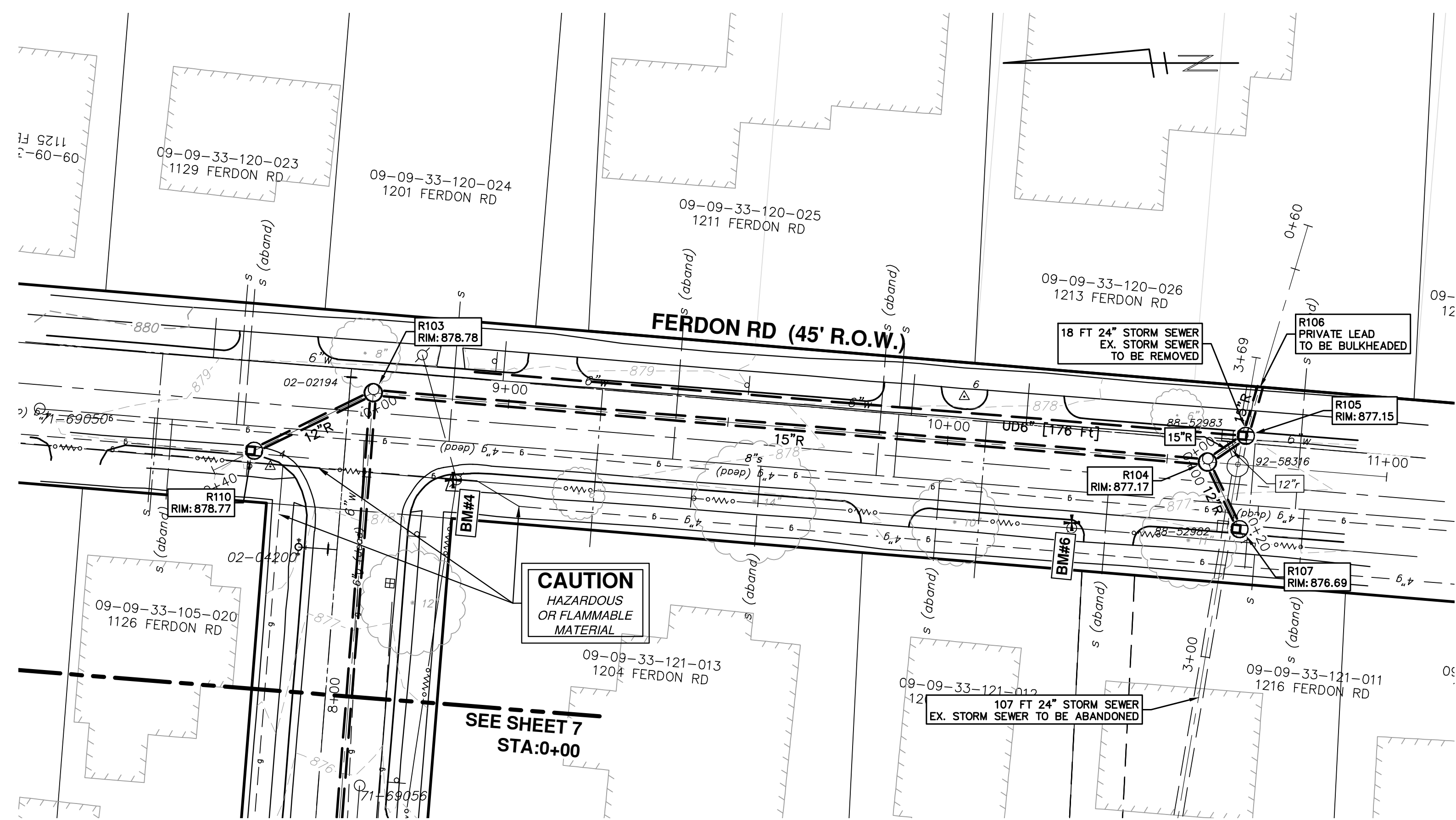
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**FERDON WELLS STORM SEWER**  
**REHABILITATION PROJECT**  
STORM SEWER PLAN & PROFILE  
R100 - R103

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

DRAWING No.  
**2014044-7**

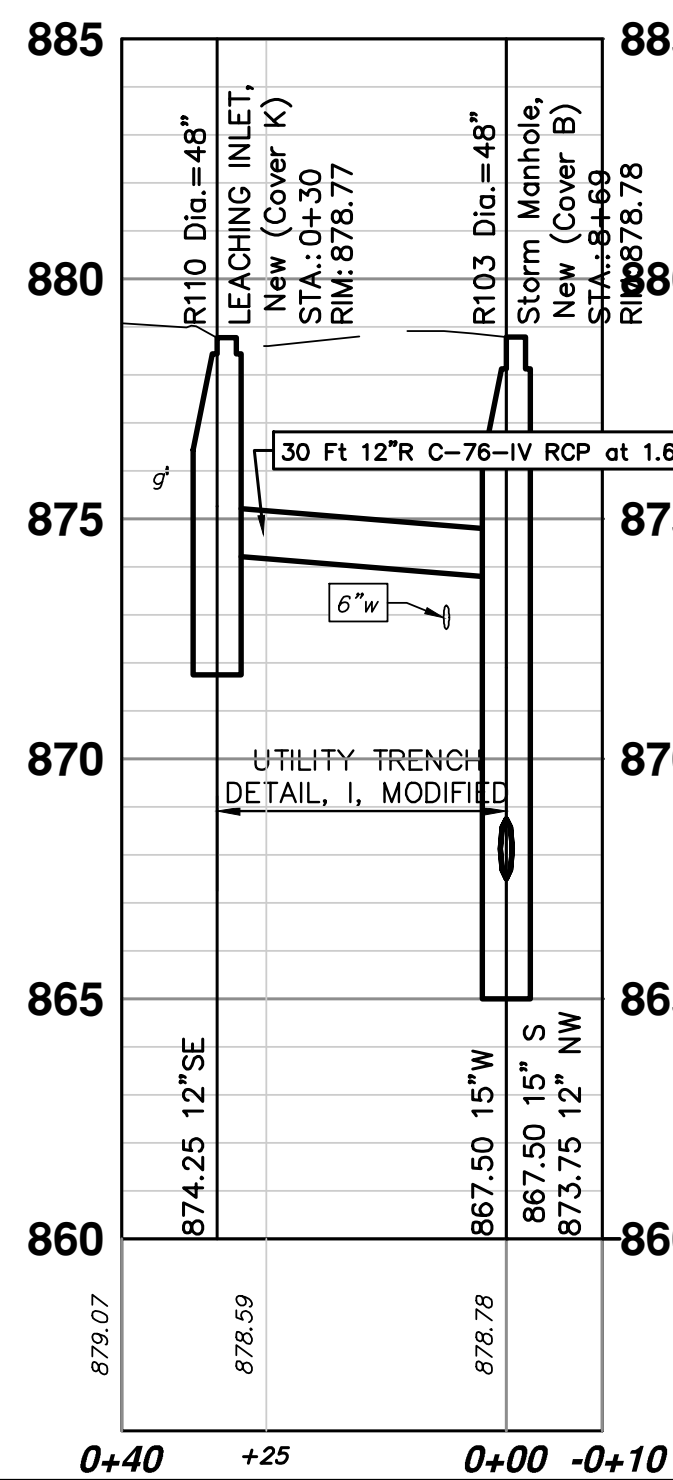
SHEET No.  
**7 OF 10**

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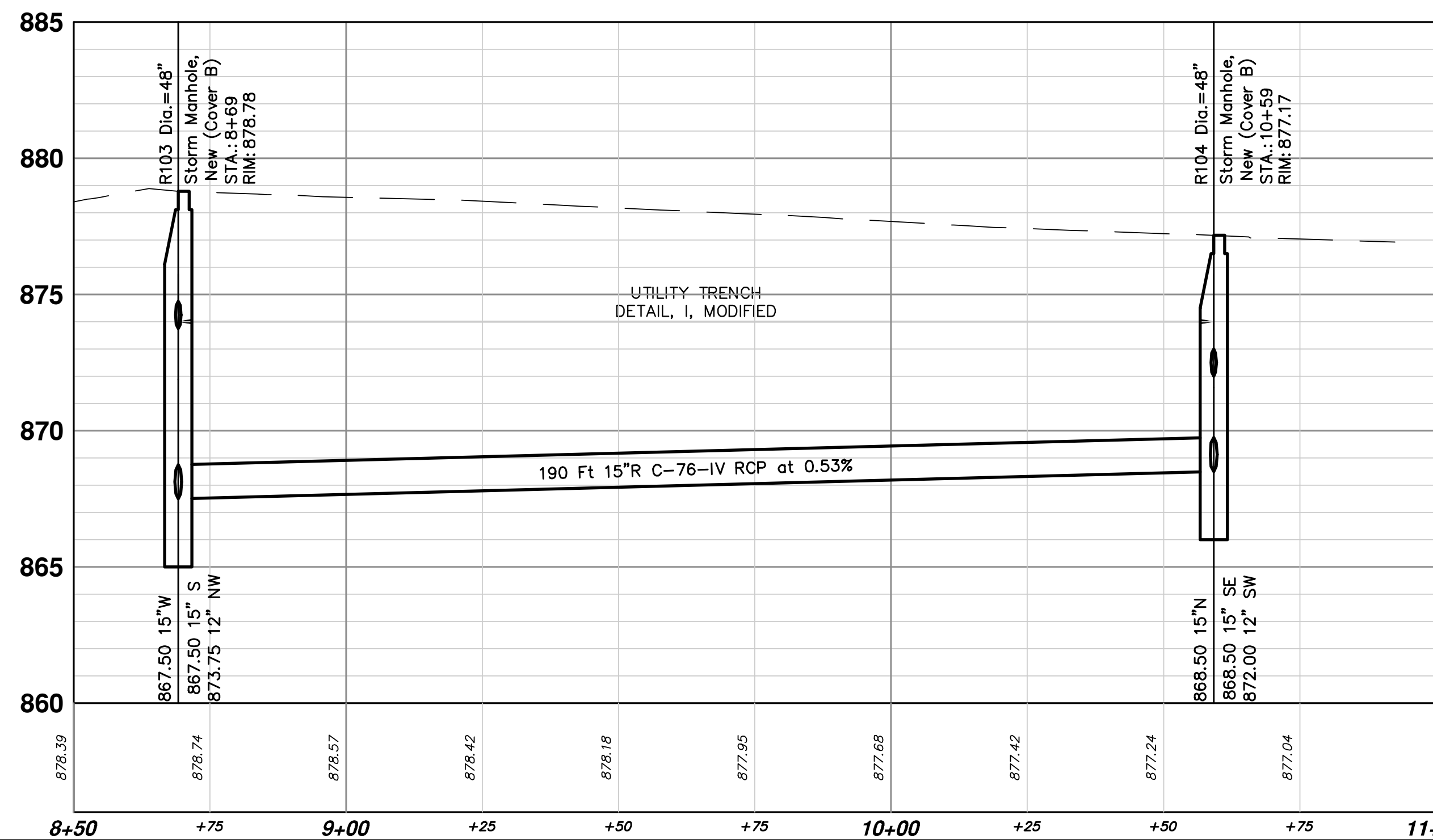


STORM SEWER STRUCTURE TABLE							
STRUCTURE	UTILITY STATION	ALIGNMENT	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
R103	8+69	R100 - R104	15" S 867.50 12" NW 873.75 15" W 867.50	878.78	13.28	48" Dia.	Storm Manhole, New (Cover B)
R104	10+59	R100 - R104	15" SE 868.50 12" SW 872.00 15" N 868.50	877.17	10.67	48" Dia.	Storm Manhole, New (Cover B)
R105	0+11	R104 - R105	15" E 868.75 6" N 873.33 15" NW 868.75	877.15	10.40	48" Dia.	LEACHING INLET, New (Cover K)
R107	0+17	R104 - R107	12" NE 873.00	876.69	5.69	48" Dia.	LEACHING INLET, New (Cover K)
R110	0+30	R103 - R110	12" SE 874.25	878.77	6.52	48" Dia.	LEACHING INLET, New (Cover K)

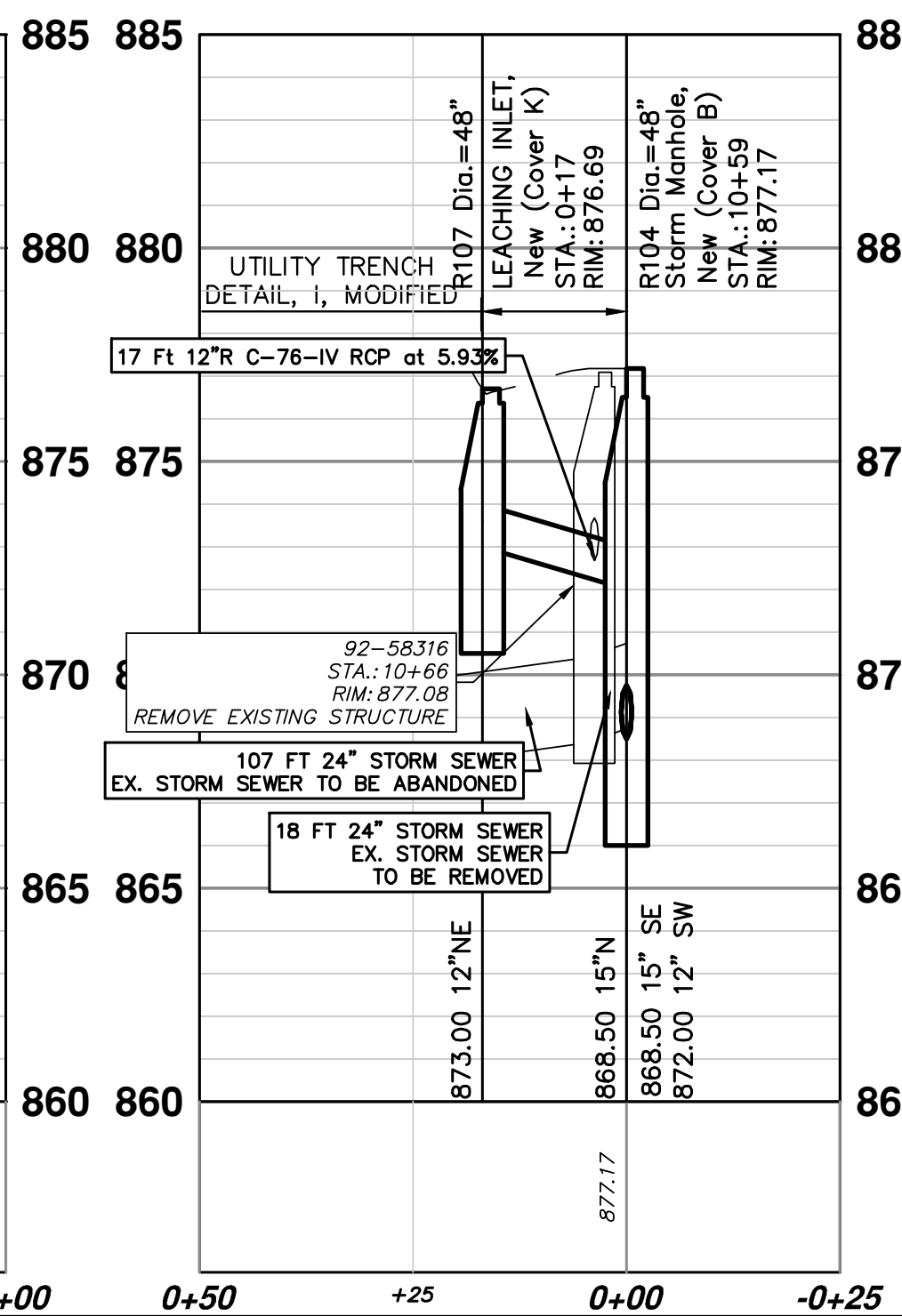
R103 - R110



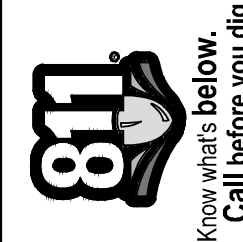
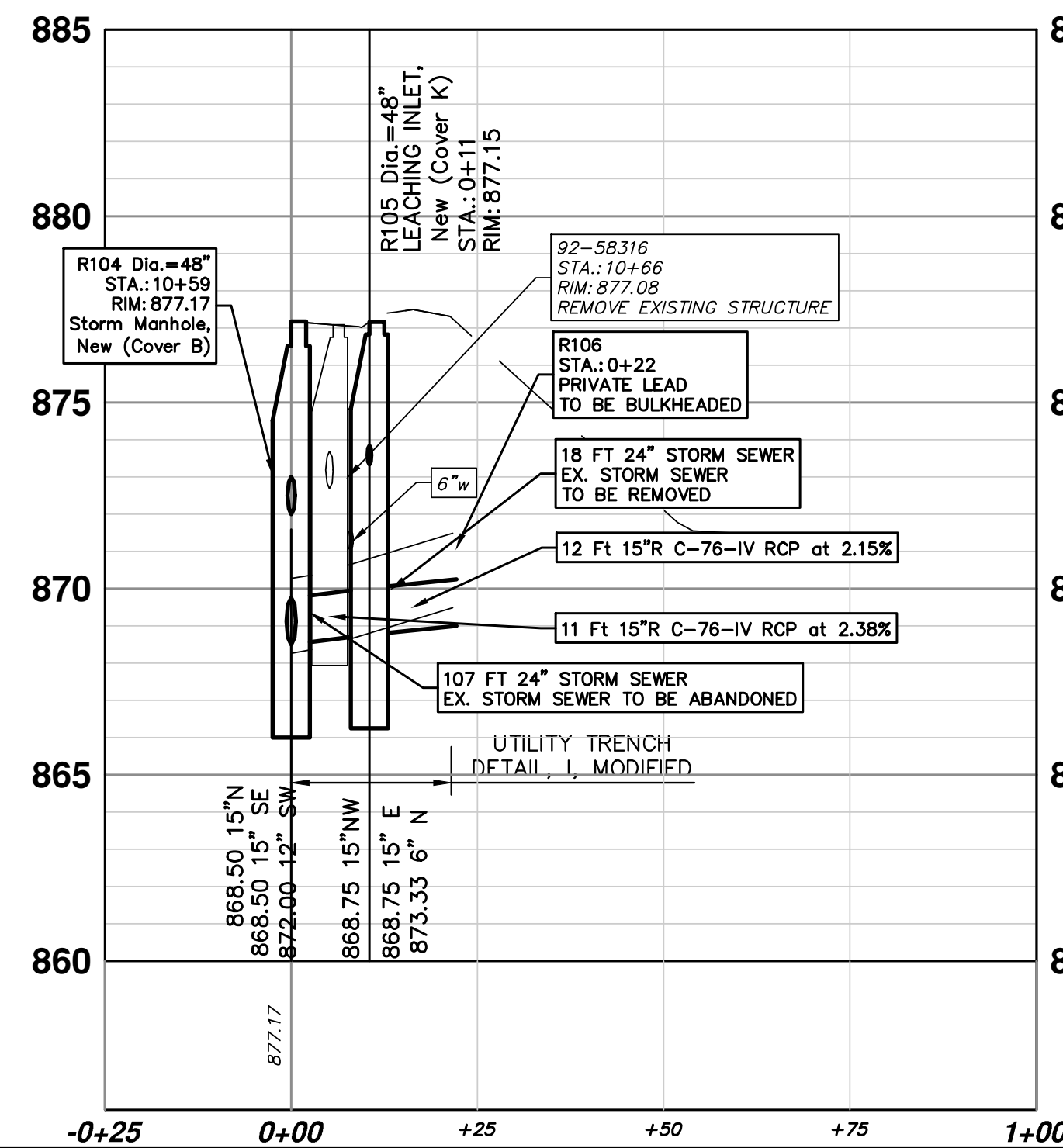
R100 - R104



R104 - R107



R104 - R105



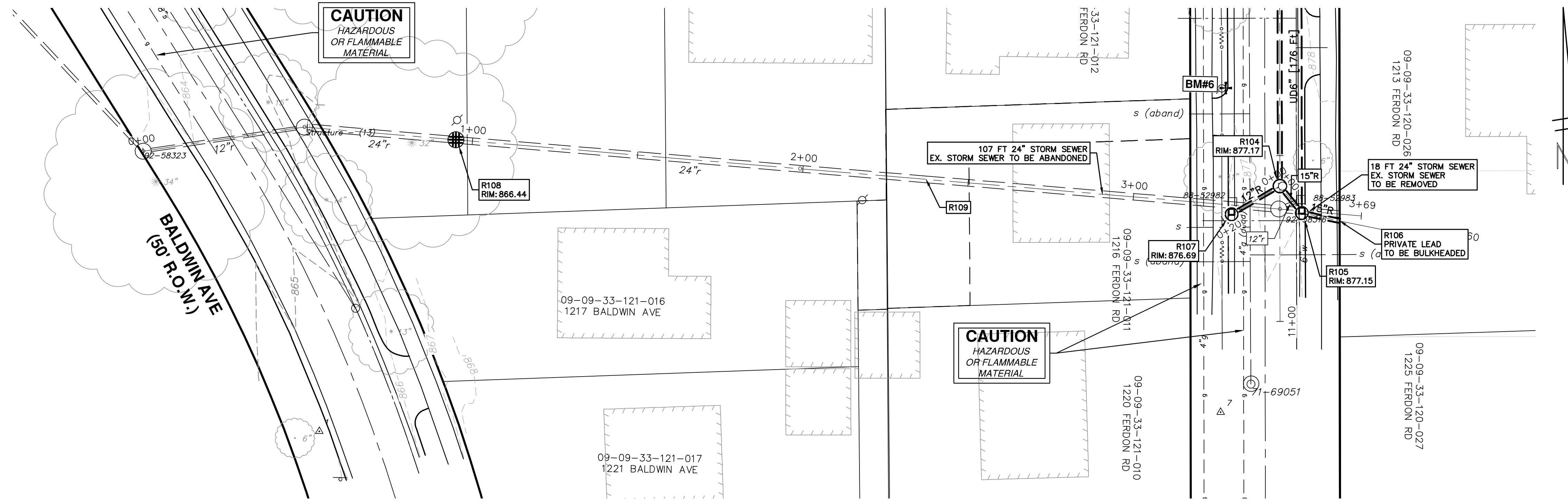
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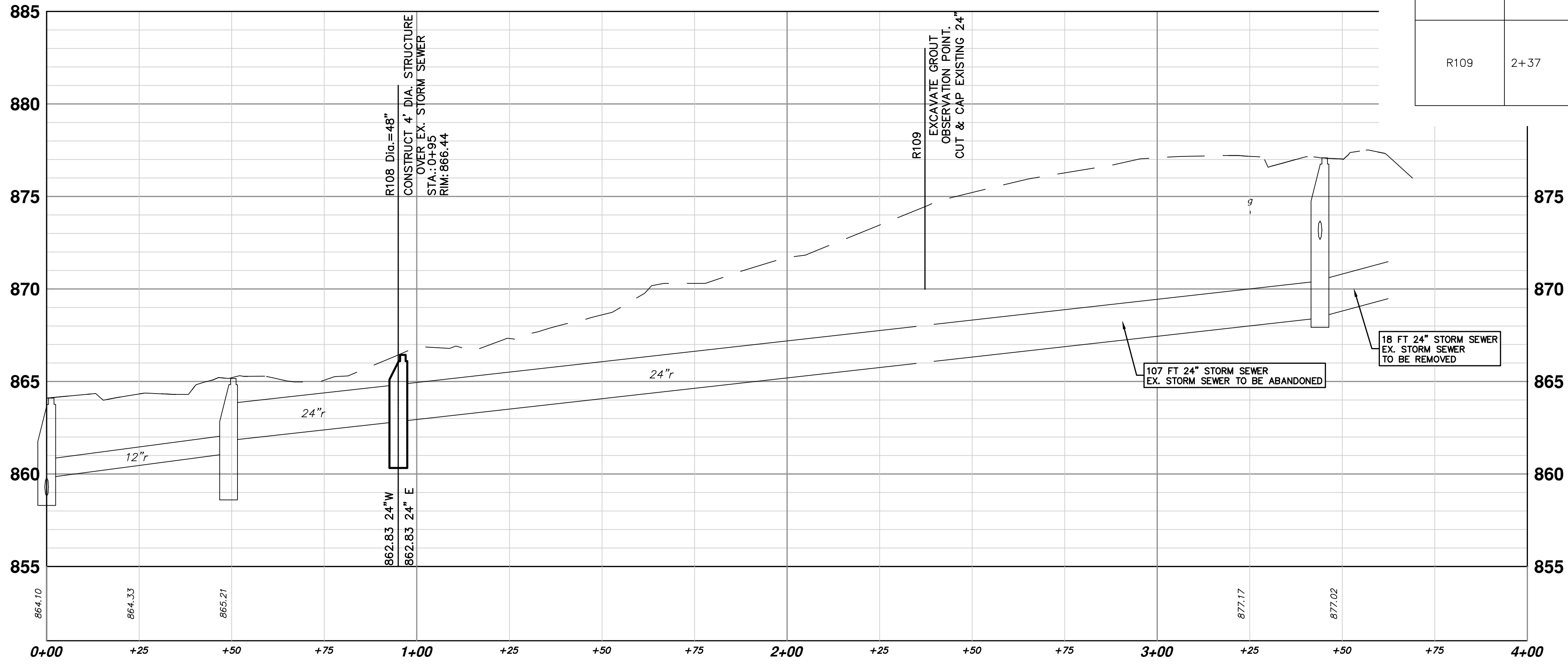
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FERDON WELLS STORM SEWER  
REHABILITATION PROJECT  
STORM SEWER PLAN & PROFILE  
R103 - R104, R104 - R105, R104 - R107

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING NO.: 2014044-8  
SHEET NO. 8 OF 10





**R108 - R109**



STORM SEWER STRUCTURE TABLE							
STRUCTURE	UTILITY STATION	ALIGNMENT	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/ CONSTRUCTION
R108	0+95	R108 - R109	24" E 862.83 24" W 862.83	866.44	5.60	48" Dia.	CONSTRUCT 4' DIA. STRUCTURE OVER EX. STORM SEWER
R109	2+37	R108 - R109	24" E 866.03 24" W 866.03	874.45	n/a	n/a	EXCAVATE GROUT OBSERVATION POINT. CUT & CAP EXISTING 24"

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

**FERDON WELLS STORM SEWER REHABILITATION PROJECT**

STORM SEWER PLAN & PROFILE

R108 - R109

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

DRAWING No. 2014044-9

SHEET No. 9 OF 10

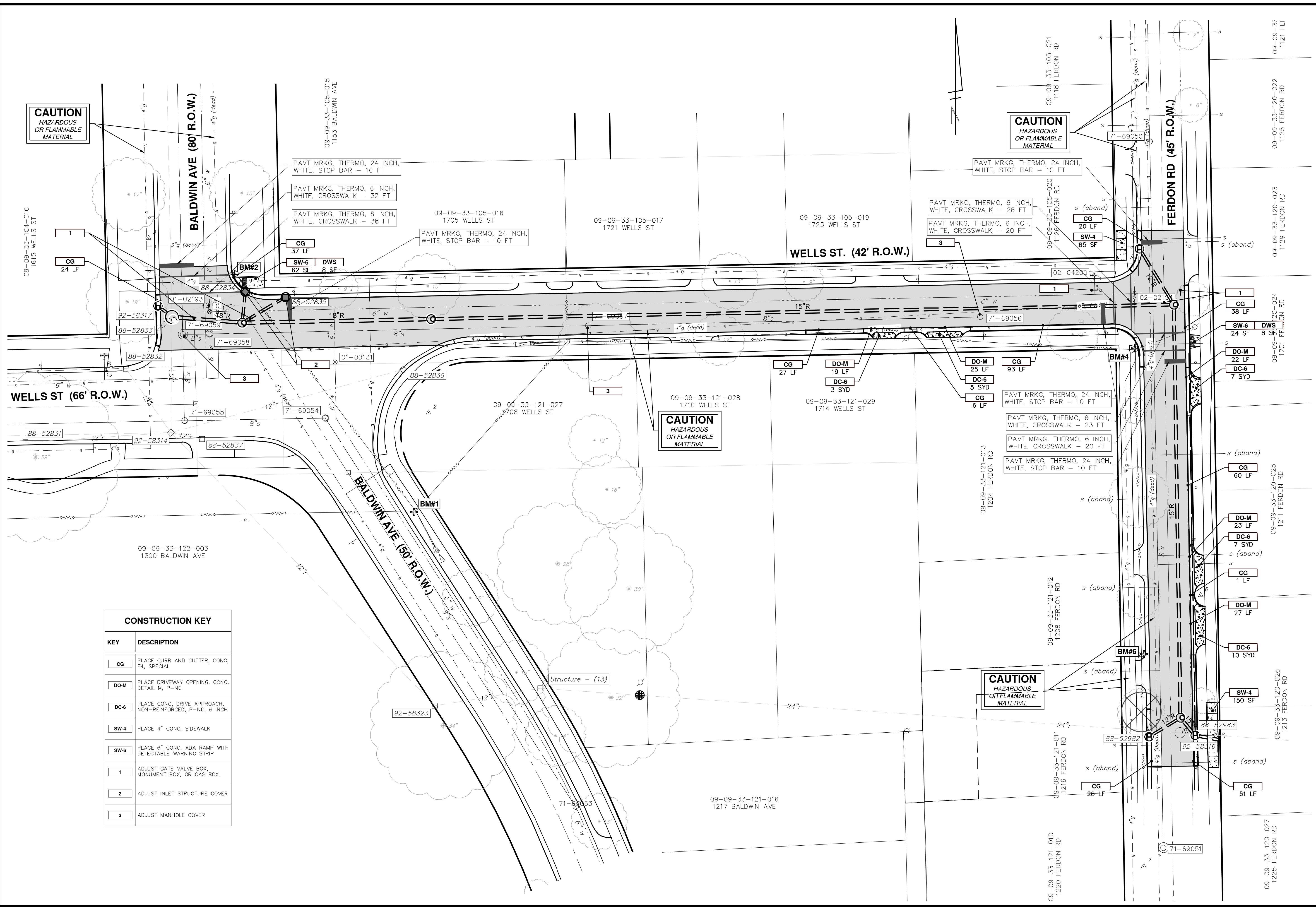
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**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

CONSTRUCTION KEY	
KEY	DESCRIPTION
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
SW-4	PLACE 4" CONC. SIDEWALK
SW-6	PLACE 6" CONC. ADA RAMP WITH DETECTABLE WARNING STRIP
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST INLET STRUCTURE COVER
3	ADJUST MANHOLE COVER

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

**FERDON WELLS STORM SEWER REHABILITATION PROJECT**

ROAD PLANS

SCALE PLAN: 1" = 20'

DRAWING No. **2014044-10**

SHEET No. **10 OF 10**

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