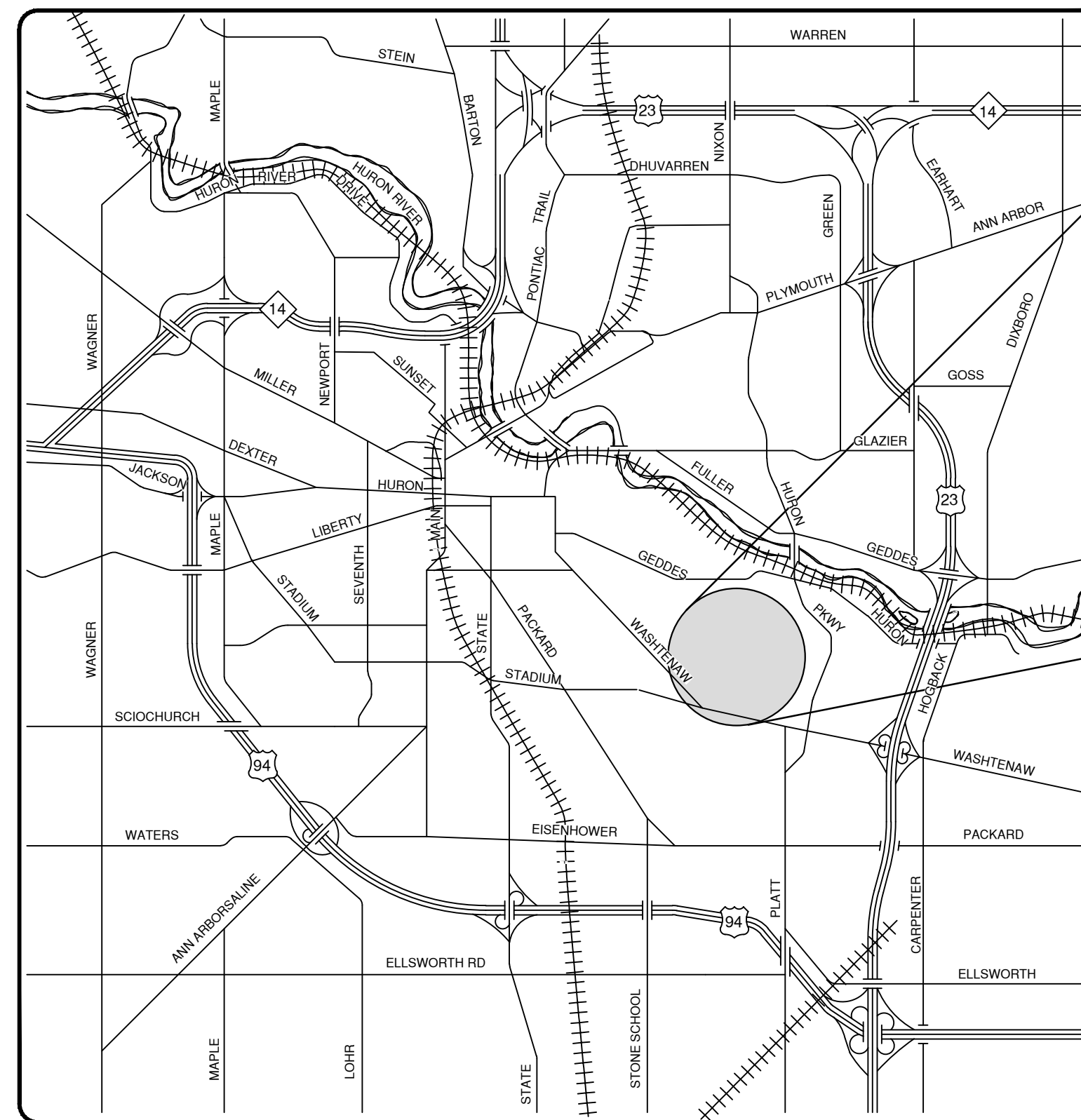
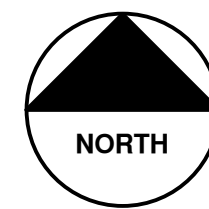




CITY OF ANN ARBOR PROJECT MANAGEMENT

BELMONT ROAD SANITARY SEWER

BID No. 4299, FILE No. 2013029



VICINITY MAP

Sheet List Table	
Sheet Number	Sheet Title
1	Cover Sheet
2	Notes & Legend
3	Details
4	Sanitary Sewer Plan & Profile
5	Traffic Control

NOTES:

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

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 (GAS), TELEPHONE (TEL), ELECTRICAL POWER (PWR), CABLE TV (CTV) AND FIBER OPTIC LINES (FIBER) 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.

PROJECT MANAGEMENT SERVICE UNIT

Nicholas Hutchinson
 NICHOLAS HUTCHINSON, P.E. - MI LICENSE No. 46789
 PROJECT MANAGER

7/24/2013
DATE

PREPARED UNDER THE SUPERVISION OF

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

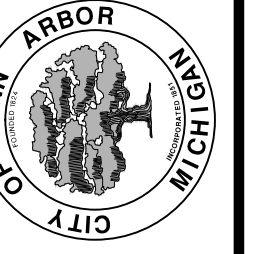
7/24/2013
DATE

ENGINEER'S SEAL



REV.	DATE	DESCRIPTION
01	7-24-13	OUT FOR BID
00	7-8-13	REVIEW

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



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

PROJECT DESCRIPTION
WORK TO BE DONE INCLUDES THE INSTALLATION OF APPROXIMATELY 196 FEET OF SANITARY SEWER PIPE, INCLUDING REPLACEMENT OF HMA PAVEMENT AND ALL RELATED WORK.

DRAWING No. 2013029 - 1

SHEET No. 1 TO 5

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© BELMONT ROAD SANITARY SEWER; BID No. 4299, FILE No. 2013029

s:\project management\Design\2013029 belmont\plan production\Primary\2013029COV.dwg Dwg Created: 5-Jul-13 - _a2_standard bw.stb - Plot Date: 24-Jul-13

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
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. SANITARY SEWER CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

CONTACT INFORMATION		
PUBLIC UTILITIES	OWNER	CONTACT
WATER		DAN WOODEN (734) 794-6350
SANITARY		MARK COZART (734) 794-6350
STORM	CITY OF ANN ARBOR FIELD OPERATIONS SERVICE UNIT W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	KEVIN ERNST (734) 794-6350
FORESTRY		BILL MEEKS (734) 794-6350
SIGNS SIGNALS STREET LIGHTS		CHUCK FOJTK (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 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

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".
- The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. All concrete removals and replacements required for this work will be paid for separately.
- "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.

CONSTRUCTION SEQUENCE:

The Contractor shall review the Traffic Control Plan of the Contract Documents and note that access to residences off of Belmont Road must be maintained at all times. Plans indicate leaving 10 feet of existing pavement for access road. The driveways are to be maintained at all times. During crossing of drives with utilities and road building, residents must be notified 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 recommended stages and phases must be approved in writing by the Engineer prior to construction and must assure that access is maintained as described above. Work must be scheduled between the hours of 9am to 3pm and allow lane to be reopened at end of each day or as directed by Engineer.

- Installation of traffic control devices.
- Install Soil Erosion Control Devices.
- Removal of pavement
- Install 8" Sanitary Sewer, Manhole & 6" lead in Belmont Road.
- The sanitary sewer shall be tested in accordance with the City of Ann Arbor's Public Services Department Standard Specifications.(PSDSS) The Video inspection of the sanitary sewer & lead shall be performed after the successful completion of the air and mandrel tests. This work needs to be completed before placement of HMA.
- 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. Pedestrian traffic to be maintained on one side of Belmont at all times.
- Topsoil, seed, and install mulch blankets at all disturbed areas.
- Fine grade aggregate and place hma base and leveling courses.
- Adjust structures in road to finish grade.
- Schedule and pave wearing course for entire project Stage 1 and 2.
- Place permanent pavement markings
- Remove soil erosion control and construction signage.
- Open road to normal traffic.

- The location of material stock piles and on-site staging areas to be approved by the Engineer.
- Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.
- 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 "General Conditions"

SOIL EROSION CONTROL NOTES:

GENERAL

- The contractor shall implement and maintain the soil erosion control measures as shown on the plans at all times during construction on this project. Any modifications or additions to the soil erosion control measures due to construction or changed conditions shall be compiled with as required or directed by the owner, project engineer, or the City of Ann Arbor. The contractor is required to obtain a Soil Erosion Control Permit anytime the disturbed area exceeds 1 acre.
- All soil erosion and sedimentation control work shall conform to the permit requirements of the City of Ann Arbor, Chapter 63, and the laws of the State of Michigan.
- Daily or after storm events inspections shall be made by the contractor. Periodic inspections may be made by the owner/project 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 Owner.
- 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 or waterways.
- All mud/dirt tracked onto roads from the site due to construction, shall be promptly removed by the contractor. If so ordered, the Contractor shall employ a mechanical street sweeper at no additional cost to the Owner.
- Restoration of all disturbed areas, including placement of topsoil, seed, fertilizer and mulch and/or sod shall be done within 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 chloride as required or as directed by Engineer.
- The contractor shall be responsible for maintaining all temporary soil erosion control measures and removal of some upon authorized completion of the project. Completion of project will not be authorized until all site work and utility construction is complete and all soils are stabilized.

SEQUENCE OF EROSION CONTROL MEASURES:

- Install silt fence, tree protection fencing and inlet filters on existing storm inlets prior to any clearing or earth moving operation.
- Contractor to continually maintain erosion and sedimentation control measures, as required to allow drainage and sediment removal. Remove any accumulated sediment.
- Strip and clear - maintain erosion control measures around temporary stock piles.
- Rough grade
- Ensure all soil is stabilized. Remove all temporary soil erosion control measures.

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.

ROADS:

- During construction, all roads shall be protected from unvegetated areas washing onto road surface by placement of silt fence behind curb or a 10 foot wide straw mulch bank behind curb or other approved method and/or as shown on the plans.
- During construction of any portion of the project, adjoining roads shall be maintained free of dirt, silt and construction debris. Contractor required to use vacuum sweeper equipment for cleaning construction site and adjoining roads. The use of broom sweeper is not permitted.

CATCH BASIN/MANHOLE PROTECTION:

- Protect storm sewer catch basins with approved inlet filters.

EXISTING LEGEND

⊕ FIRE HYDRANT	--- W ---	WATER MAIN
GATE VALVE IN BOX	--- R ---	STORM SEWER
⊗ GATE VALVE IN WELL	--- S ---	SANITARY SEWER
⊙ STOP BOX	-----	GAS MAIN
⊠ WATER VAULT	-----	ELECTRICAL OVER HEAD
⊙ WELL	-----	ELECTRICAL UNDER GROUND
⊠ CATCH BASIN (SQ)	-----	BOUNDARY
⊠ CATCH BASIN (RD)	//////	BUILDING
⊙ STORM MANHOLE	-----	CENTERLINE OF DITCH
⊠ NON-CURB CATCH BASIN (SQ)	-----	CENTERLINE/CROWN OF ROAD
⊙ SANITARY MANHOLE	-----	EDGE OF WATER
⊙ CLEAN-OUT	///	FENCE
● POST	---	GRAVEL
⊕ PEDESTRIAN SIGNAL	-----	STONE WALL
▲ SIGN	-----	R.O.W.
⊠ HAND HOLE	-----	TREELINE
✱ ORNAMENTAL LIGHT	-----	WETLAND
✱ FLOOD LIGHT	○	TREE (DECIDUOUS)
⊙ UNKNOWN MANHOLE	○	TREE (CONIFEROUS)
⊙ TELEPHONE MANHOLE	⊙	STUMP
⊙ GAS VALVE	⊙	SHRUB (DECIDUOUS)
⊙ 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	⊙	

PROPOSED LEGEND

⊕ HYDRANT (PLAN)	--- W ---	WATER MAIN
⊙ WATER GATE WELL	--- R ---	STORM SEWER
▼ REDUCER	--- S ---	SANITARY SEWER
WATER GATE VALVE	-----	CENTERLINE OF DITCH
⊙ WATER STOP BOX	-----	CENTERLINE OF ROAD
⊠ WATER VAULT	///	FENCE
■ INLET	⊠	SILT FENCE
■ DOUBLE INLET	⊠	LOT/UNIT
⊙ INLET JUNCTION CHAMBER	-----	STAGE LINE
● ROUND CATCH BASIN	=====	CURB
● STORM MANHOLE	-----	TEMPORARY GRADING PERMIT
↖ DRAIN ARROW	-----	WATER EASMENT
▽ FLARED END SECTION	-----	STORM EASEMENT
○ SANITARY MANHOLE	-----	SANITARY EASEMENT
○ CLEAN-OUT	///	R.O.W.
● BARREL	-----	LIMITS OF CONSTRUCTION
▲ SIGN	-----	STONE WALL
⊙ PUSH BUTTON	-----	
	■	DETECTABLE WARNING
	■	ASPHALT
	■	CONCRETE
	■	SIDEWALK
	○	TREE (DECIDUOUS)
	○	TREE (CONIFEROUS)

BELMONT ROAD SANITARY SEWER BENCH MARKS

BM #	ELEV	DESCRIPTION
1	880.41	E. RIM SANITARY MH IN FRONT OF HSE #2235 BELMONT
2	862.26	HYDRANT STEAMER VALVE ON S. SIDE OF BELMONT @ #2254
3	883.97	SPIKE ON E. FACE POWER POLE, N.W. CORNER OF BELMONT & LONDONDERRY
4	889.08	E. RIM OF M.H. IN FRONT OF #2228 BELMONT. CENTER LINE OF ROAD.

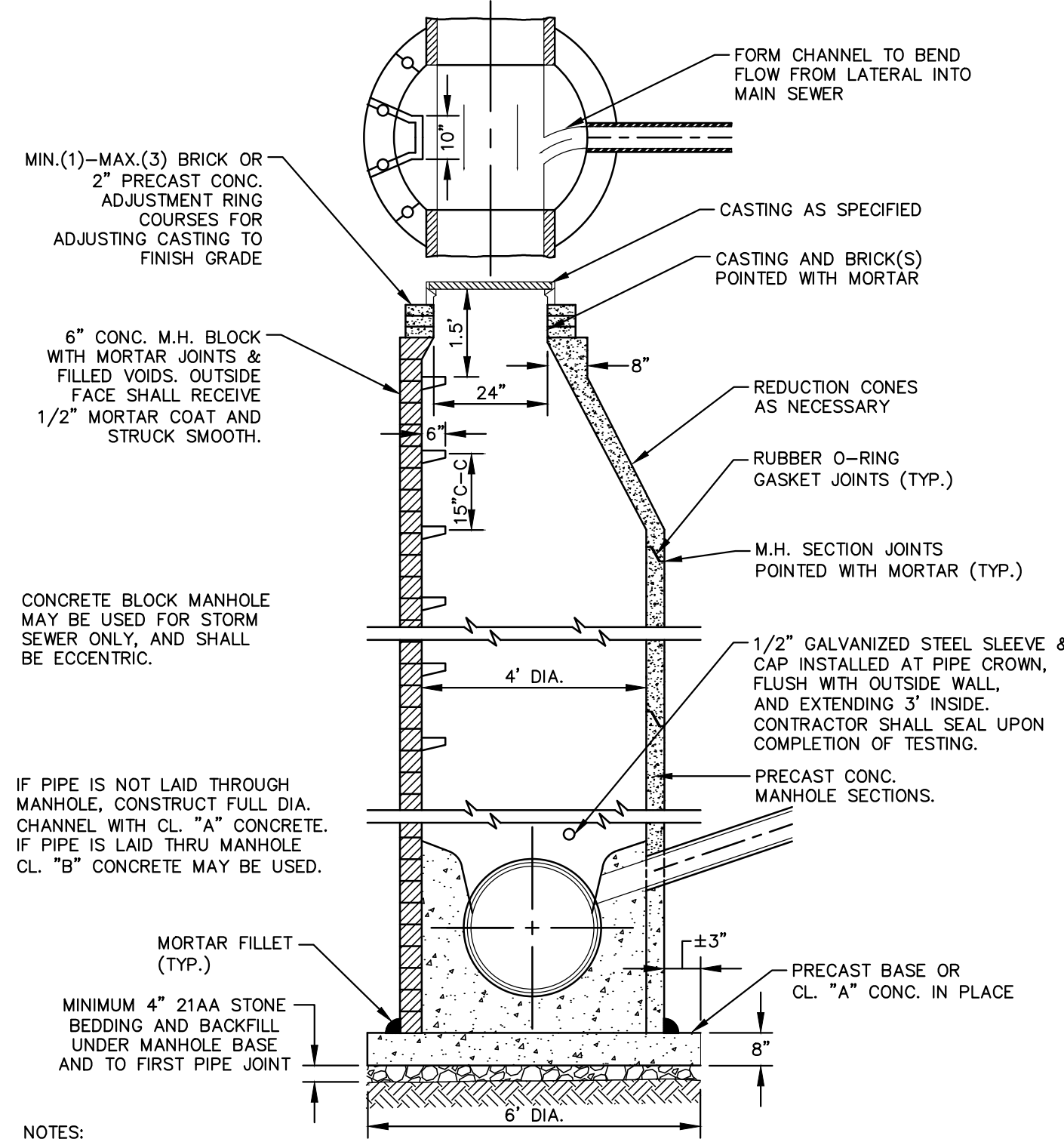
CITY OF ANN ARBOR PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106
734.794.4410
www.aagov.org

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
BELMONT ROAD SANITARY SEWER

SCALE: NTS
DRAWING No. 2013029-2
SHEET No. 2 OF 5

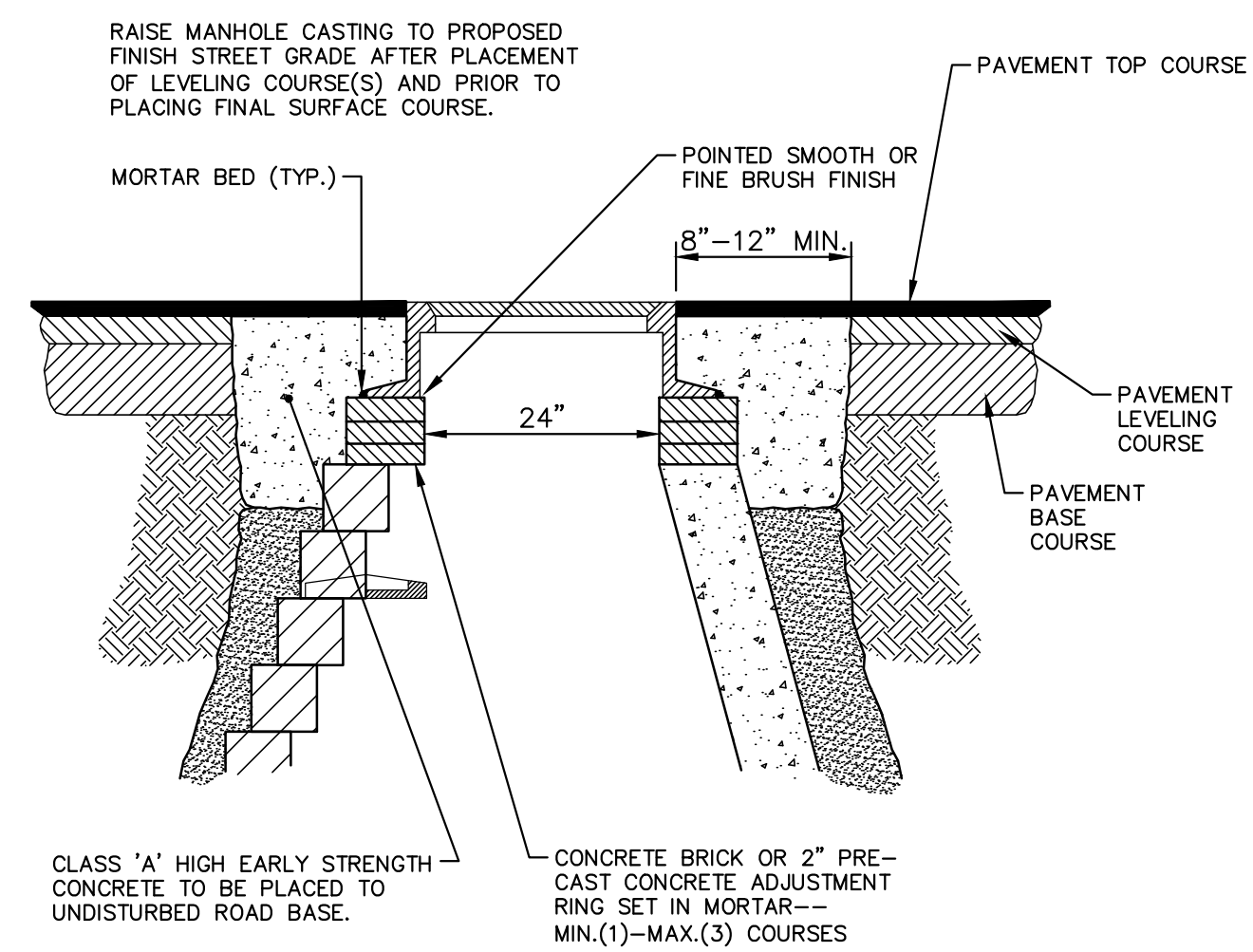
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		7-24-13	7-8-13		
01	00	OUT FOR BID	REVIEW		REV.

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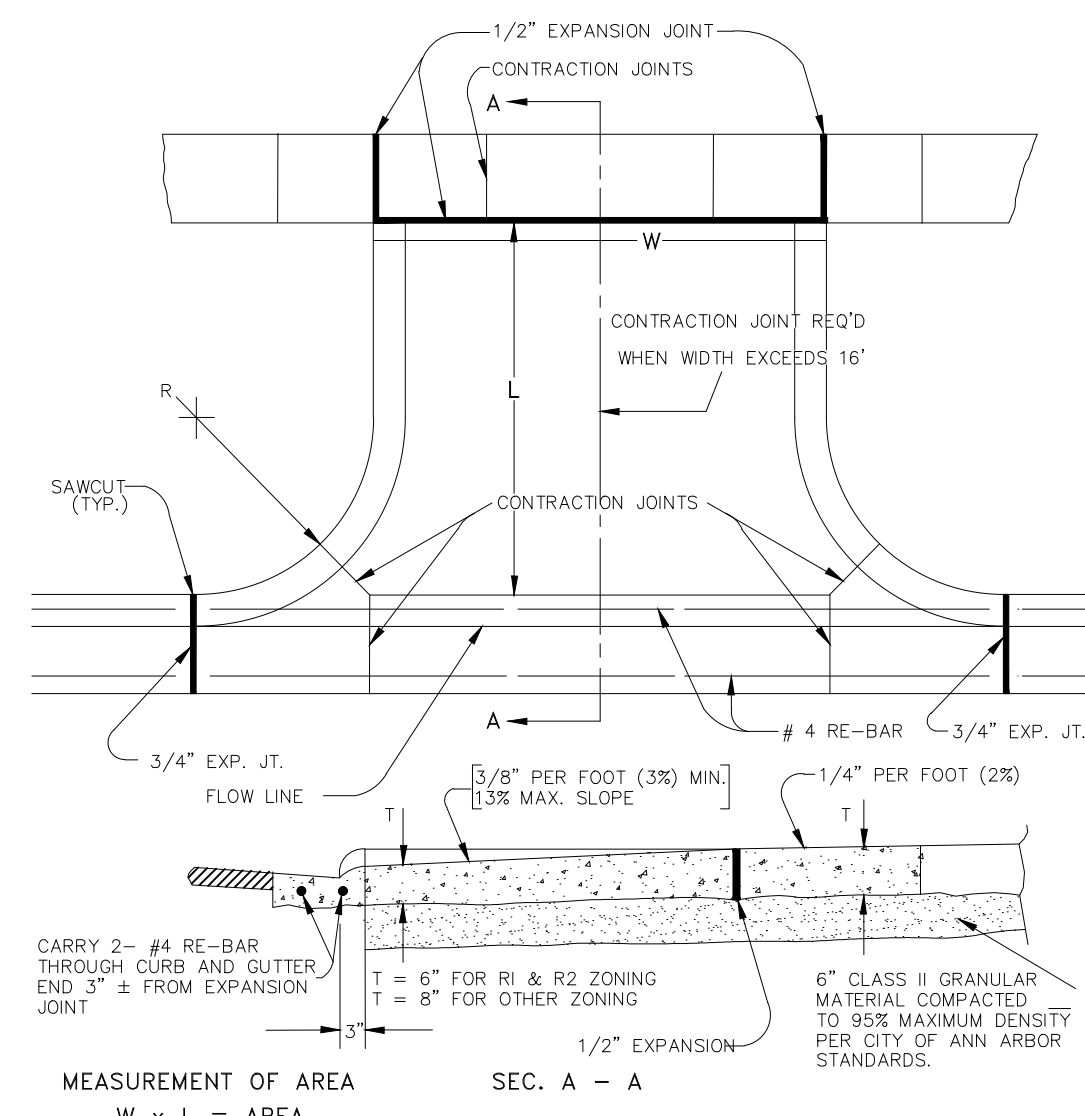
- NOTES:
1. ALL SANITARY MANHOLES SHALL BE PRECAST CONCRETE.
 2. ALL MANHOLES MUST HAVE ECCENTRIC CONES - BOTH STORM AND SANITARY
 3. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
 4. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.

STANDARD MANHOLE (TYPE 1) SD-S-1



NOTE:
IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW BROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.

MANHOLE CASTING ADJUSTMENT SD-GU-6

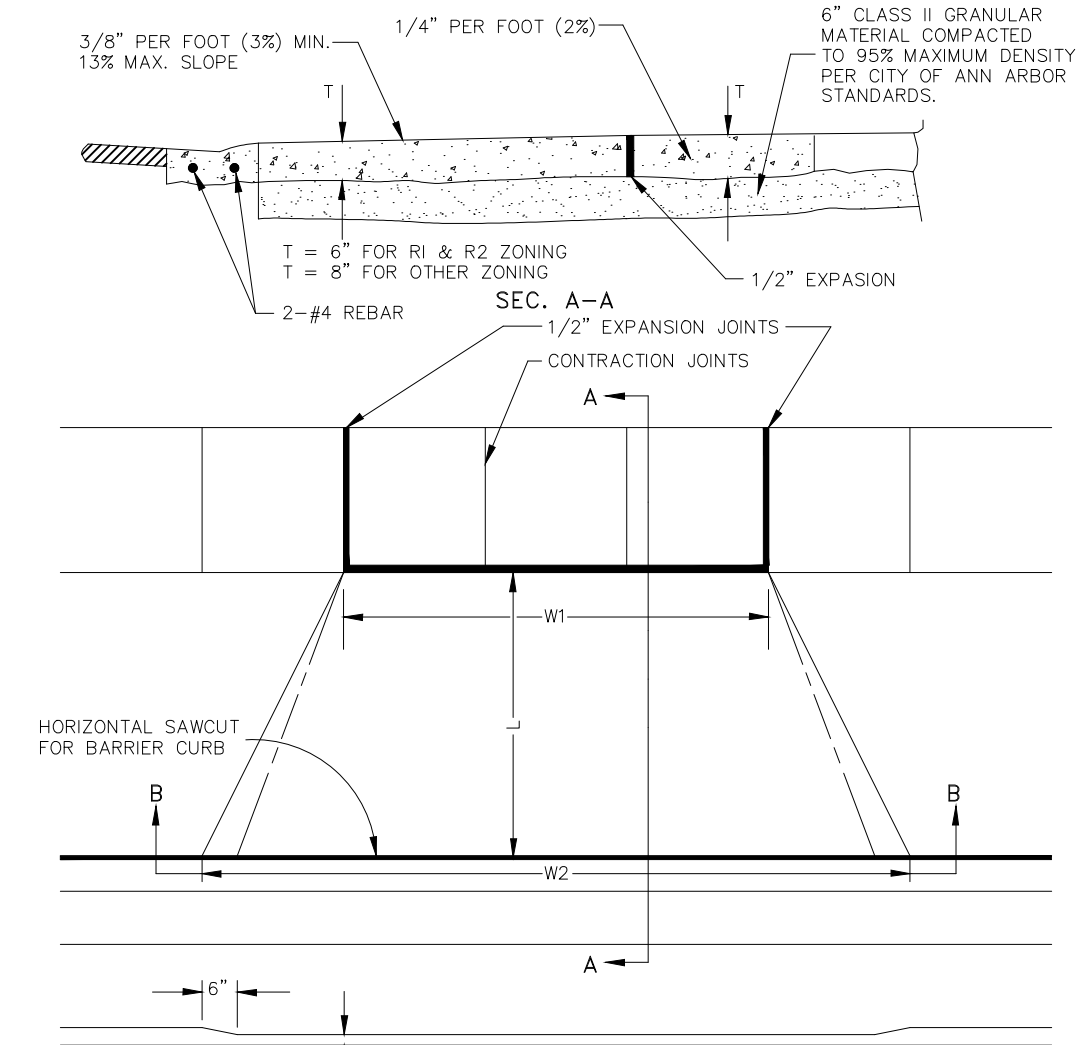


MEASUREMENT OF AREA
W x L = AREA

NOTE: DRIVE APPROACH TO BE CLASS 'A' CONCRETE.

NOTE: (RADIUS) AND (DRIVE WIDTH) AS REQUIRED FOR ZONING BY CITY CODE.

TYPE 'M' DRIVE APPROACH

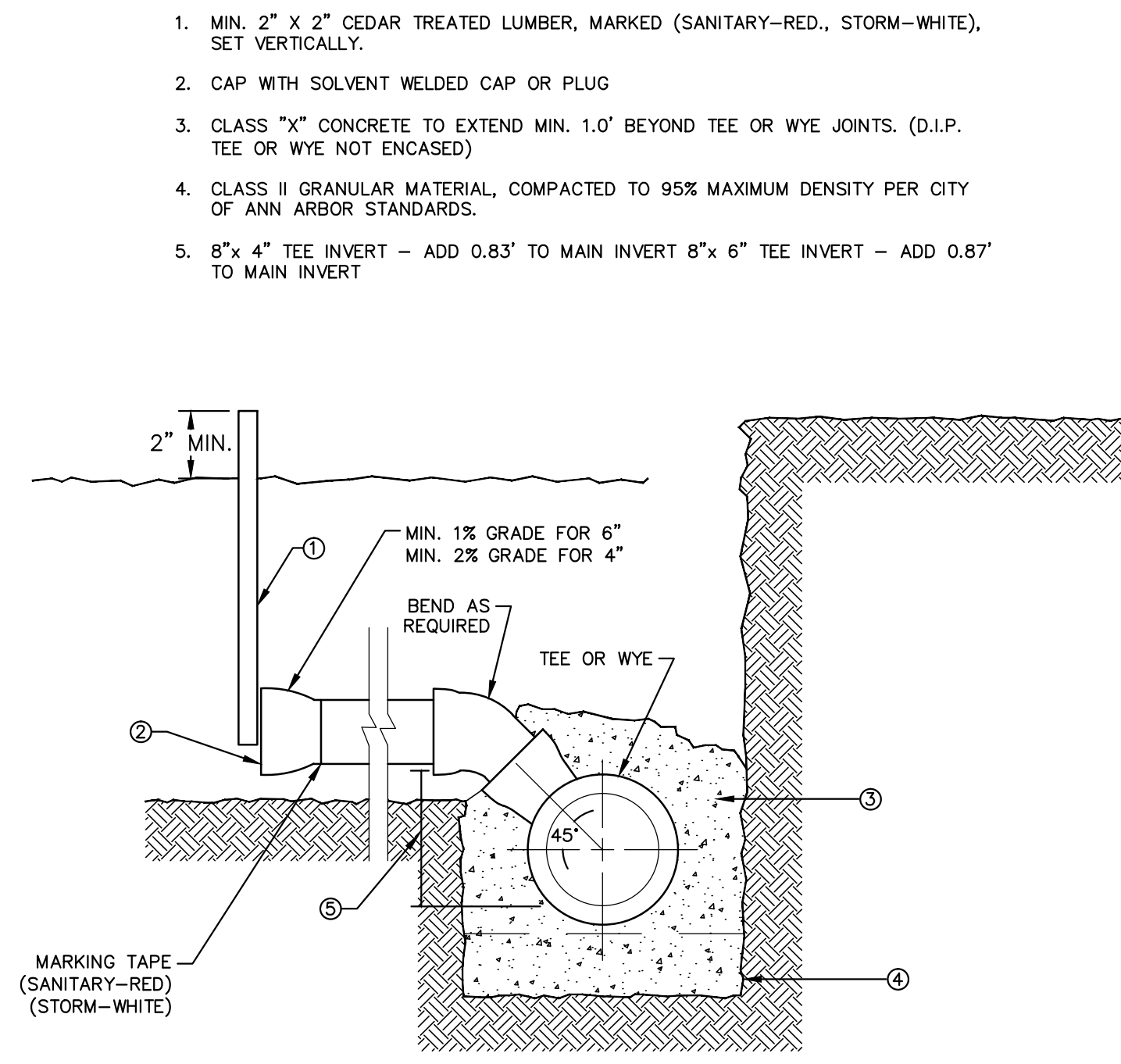


NOTE: W1 (DRIVE OPENING WIDTH) AND W2 (CURB CUT WIDTH) AS REQUIRED FOR ZONING BY CITY CODE.

MEASUREMENT OF AREA:
1/2 (W1+W2) X L = AREA

NOTE: DRIVE APPROACH TO BE CLASS 'A' CONCRETE

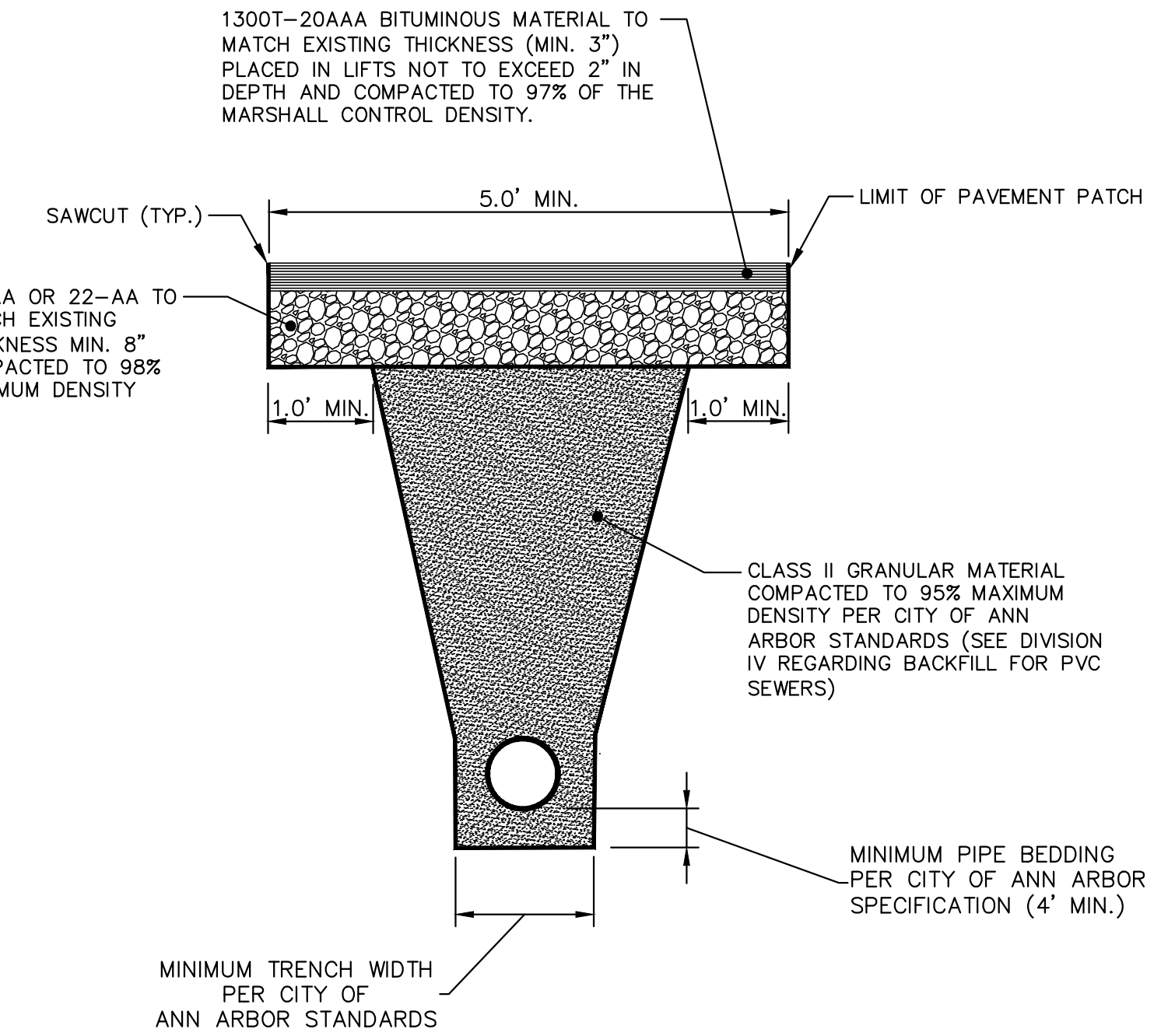
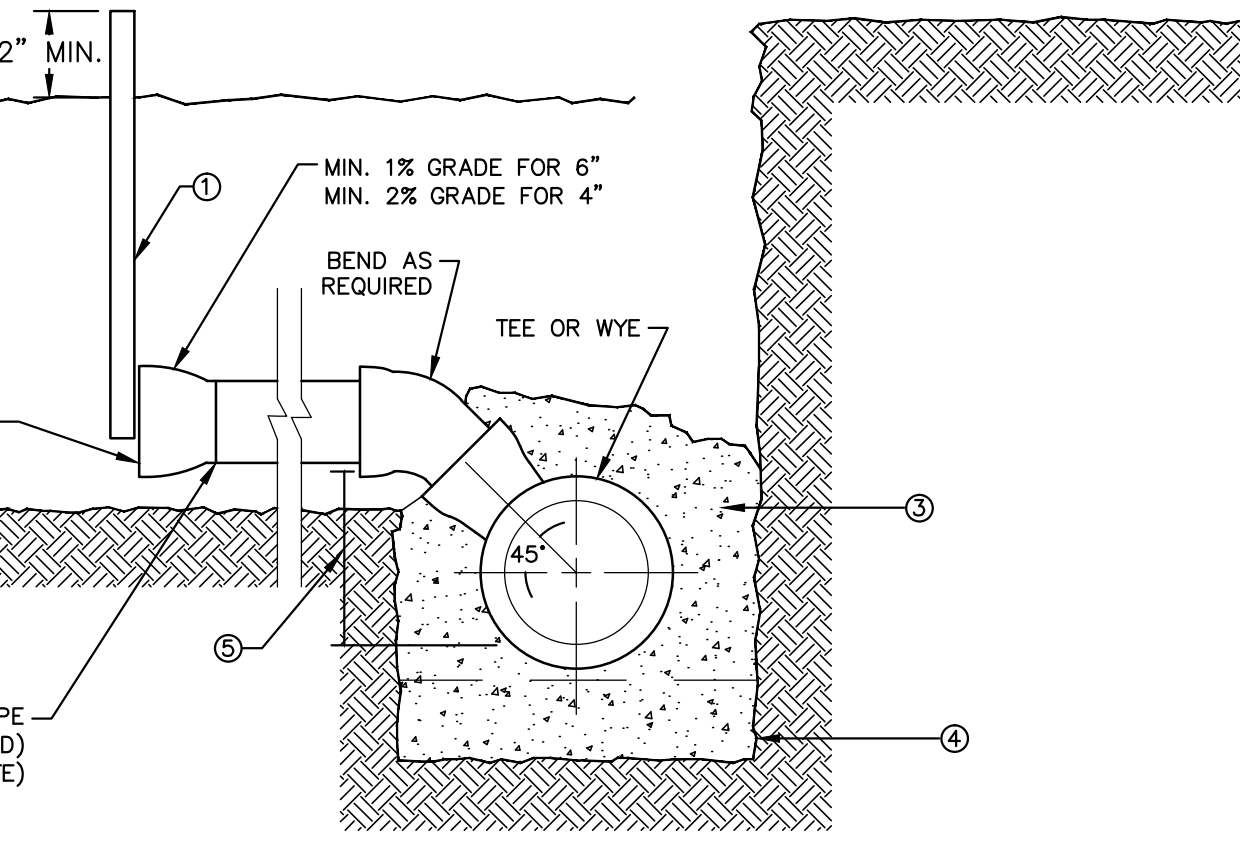
TYPE 'L' DRIVE APPROACH



NOTES:
TAPS INTO EXISTING SEWERS SHALL BE DONE ONLY BY CITY UTILITIES DEPARTMENT.

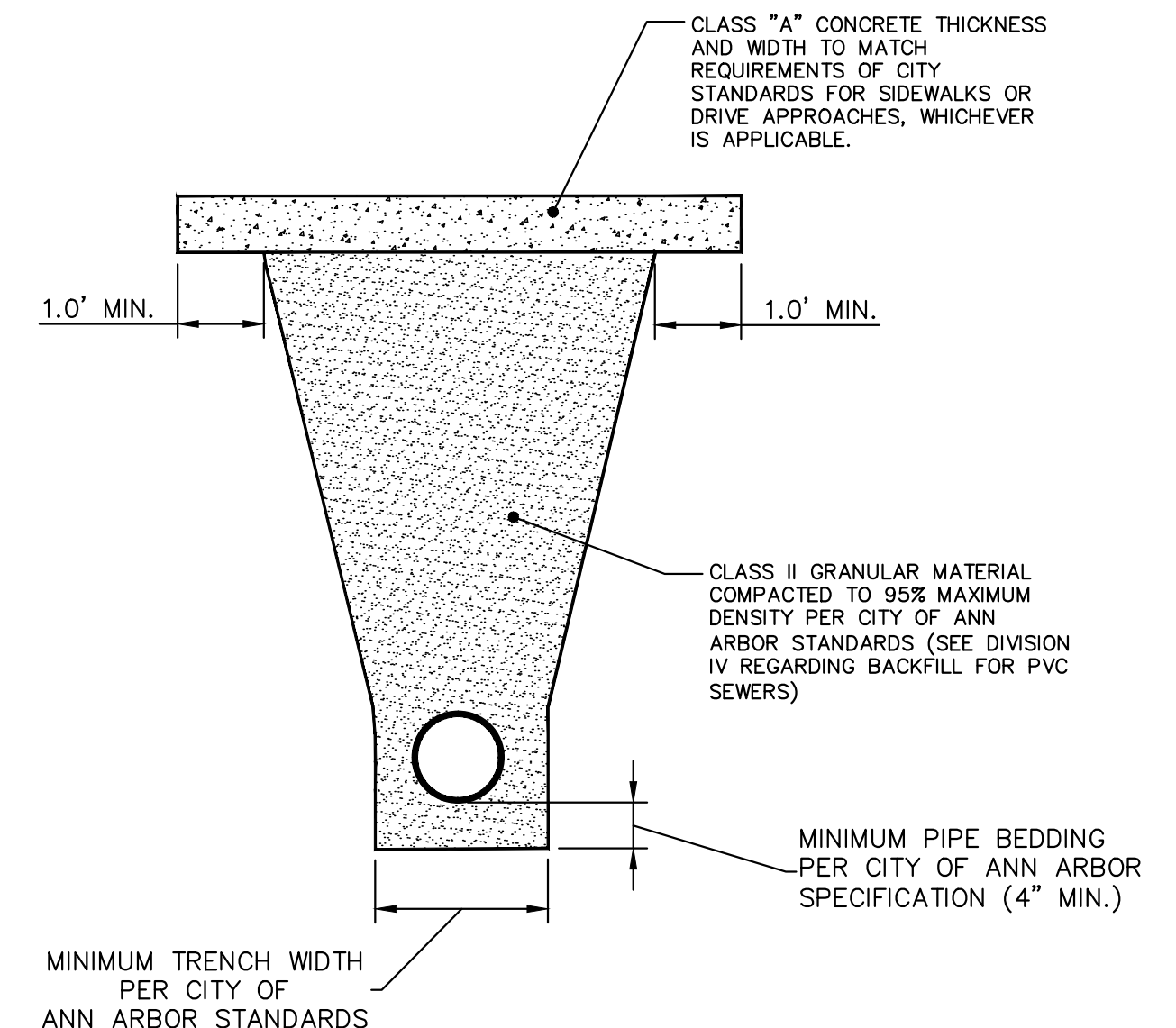
SEWER CONNECTION

1. MIN. 2" x 2" CEDAR TREATED LUMBER, MARKED (SANITARY-RED., STORM-WHITE), SET VERTICALLY.
2. CAP WITH SOLVENT WELDED CAP OR PLUG
3. CLASS "X" CONCRETE TO EXTEND MIN. 1.0' BEYOND TEE OR WYE JOINTS. (D.I.P. TEE OR WYE NOT ENCASED)
4. CLASS II GRANULAR MATERIAL, COMPACTED TO 95% MAXIMUM DENSITY PER CITY OF ANN ARBOR STANDARDS.
5. 8"x 4" TEE INVERT - ADD 0.83' TO MAIN INVERT 8"x 6" TEE INVERT - ADD 0.87' TO MAIN INVERT



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

TRENCH DETAIL-TYPE I (MODIFIED) (UNDER BITUMINOUS SURFACE)



NOTES:
1. DENSITY TESTING PER CITY ANN ARBOR SPECIFICATIONS.
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

TRENCH DETAIL-TYPE VII (MODIFIED) (UNDER SIDEWALK OR DRIVE APPROACH)

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

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PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR MI 48106-1500
www.aagov.org

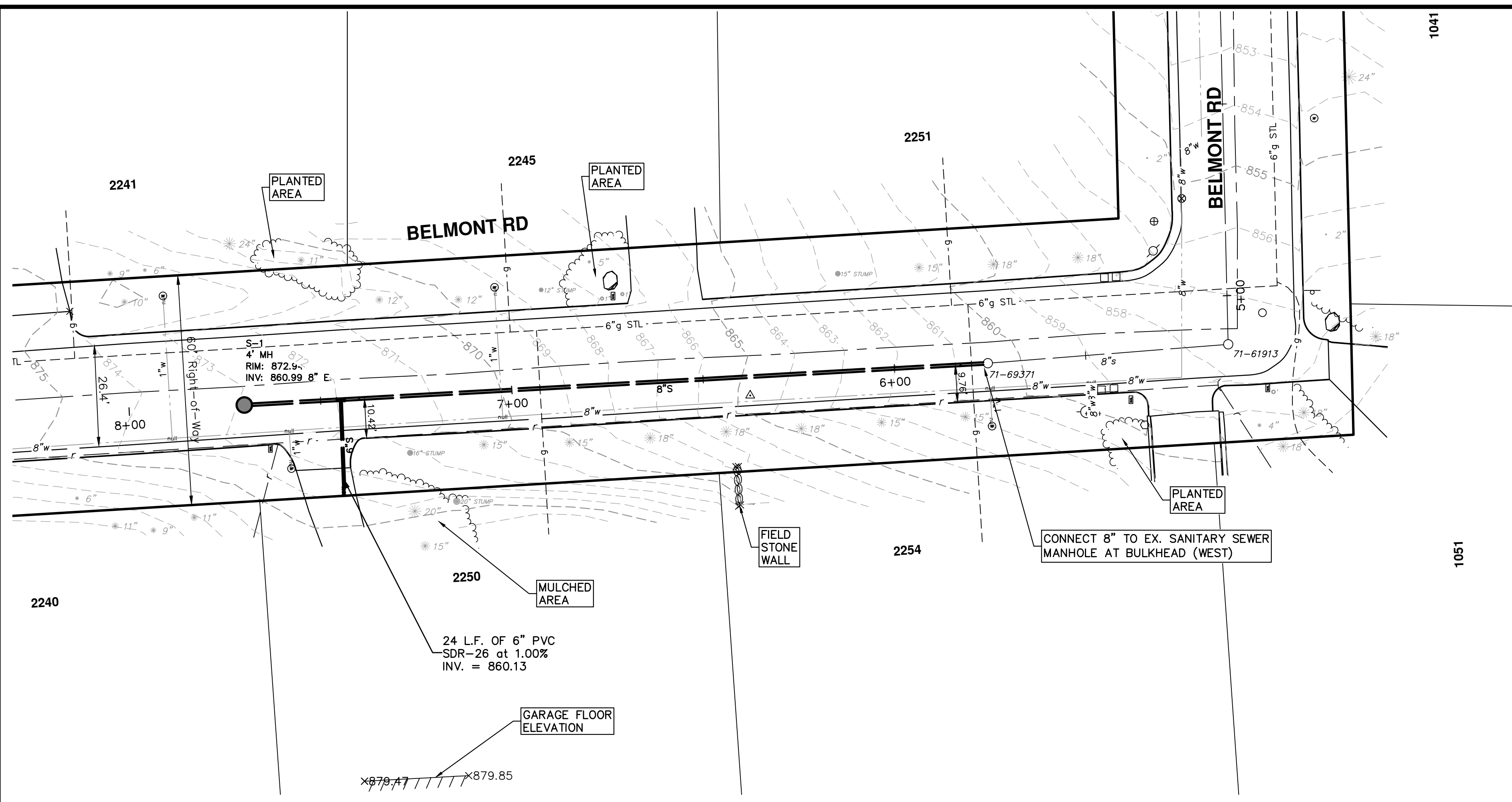
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
BELMONT ROAD SANITARY SEWER

DETAILS

SCALE: NTS
DRAWING No. 2013029 - 3
SHEET No. 3 OF 5

REV.	DATE	DESCRIPTION
01	7-24-13	OUT FOR BID
00	7-8-13	REVIEW
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		CHECKED

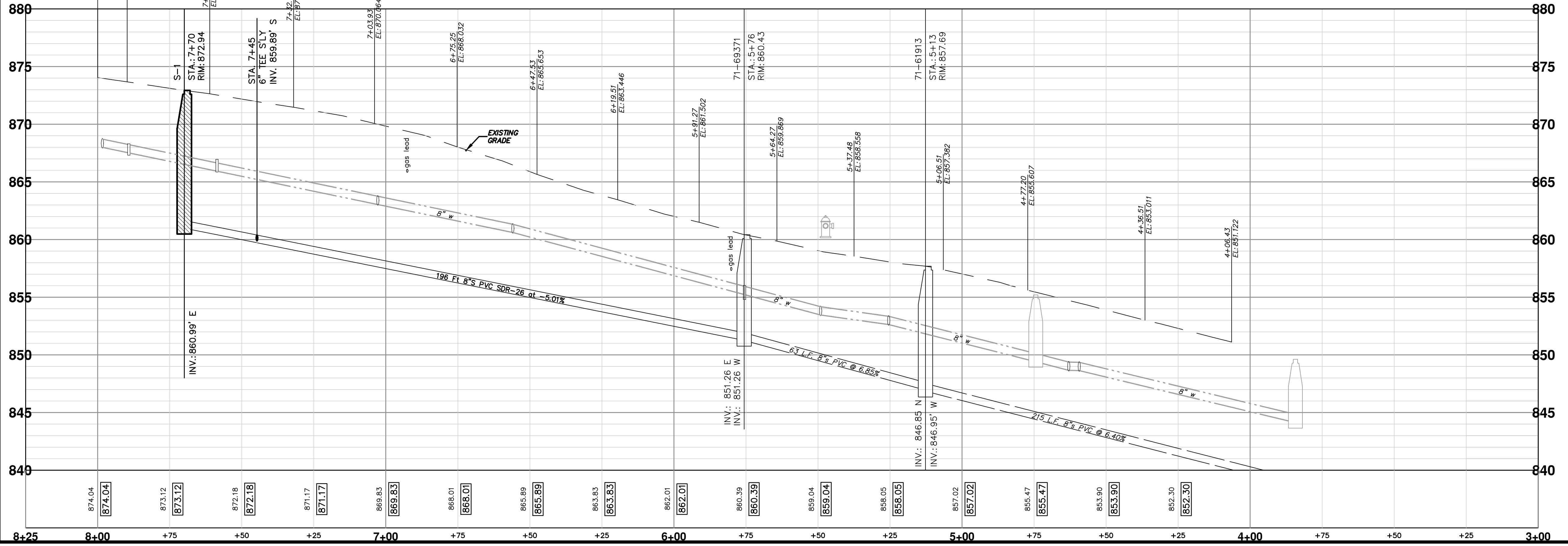
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STATION	SIZE	LENGTH	SLOPE	MATERIAL	INVERT at MAIN	INVERT at PROP LINE
7+45	6"	24'	1.00%	PVC SDR	859.89	860.13

STRUCTURE	STATION	RIM	DEPTH	DIA.	TYPE	INVERTS
71-61913	5+13	857.69	10.84	48	EX MH	8" W 846.95 8" N 846.85
71-69371	5+76	860.43	9.17	48	EX MH	8" E 851.26 8" W 851.26
S-1	7+70	872.94	11.95	48	4' MH	8" E 860.99

BELMONT ROAD - SANITARY EXTENSION



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
BELMONT ROAD SANITARY SEWER
 SCALE PLAN: 1" = 20'
 PROFILE: 1" = 5'

811
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01	7-24-13	OUT FOR BID	DPF	AMW
00	7-8-13	REVIEW	CD/DPF	AMW

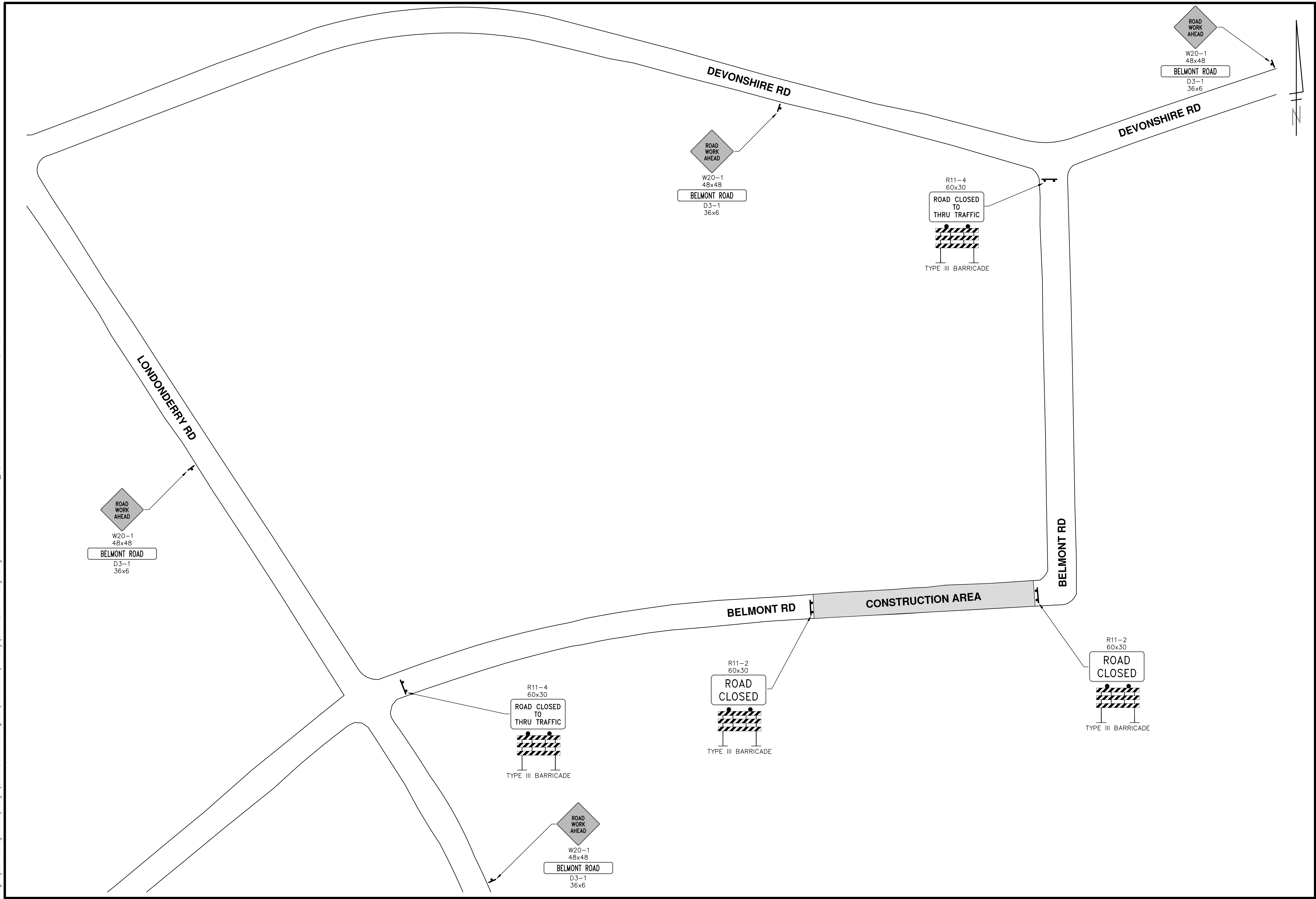
CITY OF ANN ARBOR
 PUBLIC SERVICE
 301 EAST HURON STREET
 P.O. BOX 8647
 ANN ARBOR MI 48106-0867
 www.a2gov.org

CITY OF ANN ARBOR
 PUBLIC SERVICE
 301 EAST HURON STREET
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PLAN & PROFILE

DRAWING No. **2013029 - 4**
 SHEET No. **4 OF 5**

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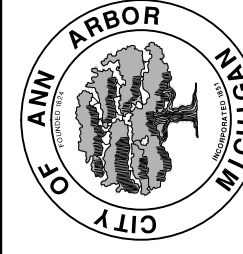


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
BELMONT ROAD SANITARY SEWER
 TRAFFIC CONTROL

SCALE PLAN: 1" = 50'


DRAWING No. **2013029 - 5**

SHEET No. **5 OF 5**



CITY OF ANN ARBOR
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00	REVIEW	7-8-13	CC/DPF	AMW



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