

**PUBLIC UTILITIES**

AT&T  
337 N. ABBOTT, RM. 201  
EAST LANSING, MI 48823  
517.337.3660

TELEPHONE

CONSUMERS ENERGY  
530 W. WILLOW ST.  
P.O. BOX 30162  
LANSING, MI 48909  
517.373.6100

GAS  
ELECTRIC

COMCAST  
1070 TROWBRIDGE ROAD  
EAST LANSING, MI 48823  
517.332.1012

CABLE TV

MERIDIAN TOWNSHIP  
5151 MARSH RD.  
OKEMOS, MI 48864  
517.853.4440

WATER MAINS  
SANITARY SEWER  
PATHWAYS

WOLVERINE PIPE LINE  
8105 VALLEYWOOD LANE  
PORTAGE, MI 49024-5251  
231.323.2491

PETROLEUM PIPELINE

INGHAM COUNTY DRAIN  
COMMISSIONER  
707 BUHL ST.  
MASON, MI 48854  
517.676.8395

DRAINS  
STORM SEWER

INGHAM COUNTY ROAD DEPT  
301 BUSH ST.  
MASON, MI 48854  
517.676.9722

PUBLIC ROADS AND  
RIGHTS OF WAY

MICHIGAN DEPARTMENT OF TRANSPORTATION -  
1700 PORT LANSING RD  
LANSING, MI 48854  
517.335.3754

PUBLIC ROADS AND  
RIGHTS OF WAY

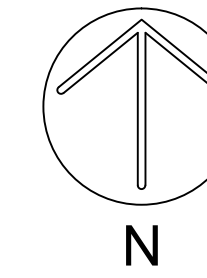
**SOIL EROSION & SEDIMENTATION CONTROL NOTES**

- All soil erosion and sediment control (SESC) work shall conform to the standards and specifications of the Ingham County Drain Commissioner's Office and Meridian Township.
- Daily inspections shall be made by the contractor for effectiveness of SESC measures. Any necessary repairs shall be performed without delay.
- Erosion of any sediment from work on the site shall be contained on-site and not allowed to collect on any off-site areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes, ponds, and wetlands.
- The Contractor shall apply temporary SESC measures when required and as directed on these plans. The Contractor shall remove temporary measures as soon as permanent stabilization of slopes, ditches, and other changes have been established.
- Staging the work shall be done by the Contractor as directed in these plans and as required to ensure progressive stabilization of disturbed earth.
- Soil erosion control practice shall be established in the early stages of construction by the Contractor. Sedimentation control practices shall be applied as a perimeter defense against any transporting of soil off the site.
- The Contractor shall preserve natural vegetation as much as possible.
- Vegetative stabilization of all disturbed areas shall be established within 15 days of completion of the final grading.

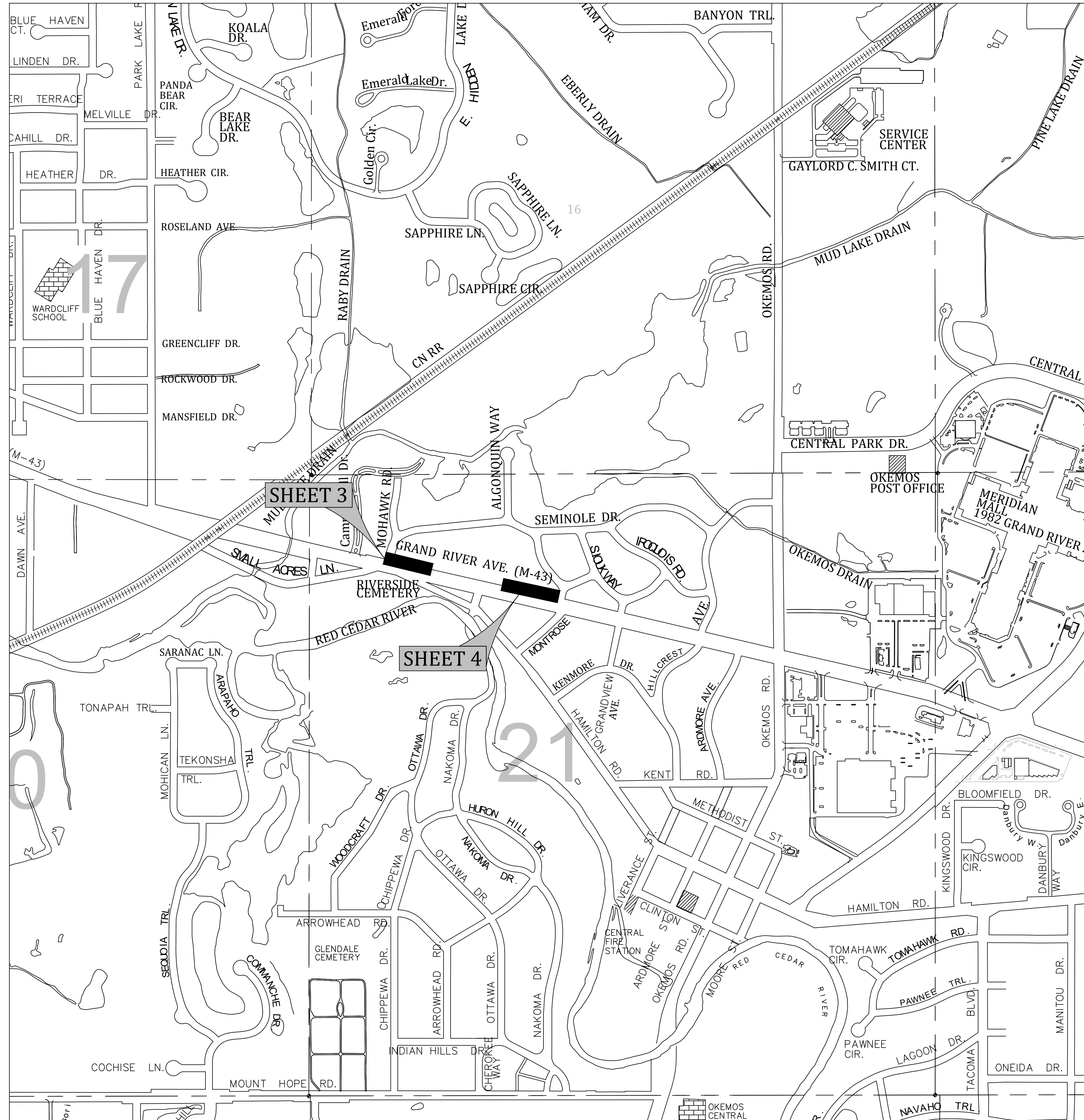
**SOILS:**

GRAND RIVER AVENUE  
CE - CERESCO SOIL - FINE SANDY LOAM

**GRAND RIVER AVENUE  
GATE VALVE REPLACEMENT 2021  
CONSTRUCTION PLANS**  
for  
**MERIDIAN TOWNSHIP  
INGHAM COUNTY, MICHIGAN**



**Call 811 before you dig.**



**STANDARD CONSTRUCTION NOTES**

- The Contractor shall notify the Charter Township of Meridian, Department of Public Works, Office of Engineering 517-853-4440 a minimum of 72 hours prior to the start of construction of public utilities or of construction within the public right-of-way.
- All construction shall conform to the current standards and specifications of the Charter Township of Meridian which are included as part of these plans in effect at the time of construction.
- After the completion of construction of public utilities or construction within public right-of-way, the contractor must request a final inspection. Any punchlist items resulting from the final inspection must be resolved prior to final release and acceptance.
- The existing utilities indicated on the plans are in accordance with available information. It shall be the contractor's obligation to verify the exact location of all existing utilities, which might affect this job.
- The contractor shall notify "MISS DIG" 1-800-482-7171 at least 72 hours prior to the start of construction.
- The contractor shall at all times be aware of inconvenience caused to the abutting property owners and the general public. Where the contractor does not remedy undue inconveniences, the Charter Township of Meridian, upon four hours notice, reserves the right to perform the work and deduct the cost therefore from the money due the contractor.
- A Registered Land Surveyor provided by the contractor at the contractor's expense shall replace all property irons and monuments disturbed or destroyed by the contractor's operations.
- Contractor shall provide Owner and Township Engineer a copy of written permission to use private property for storage of equipment and materials or for his construction operations.
- Trench backfill under existing or proposed roadways, driveways, and parking areas, shall be sand or gravel placed in 12" layers (maximum) and consolidated to 95% of maximum density as measured by modified proctor unless otherwise noted.
- Trees and shrubs are to be protected during construction and bored where necessary.
- Existing fences shall be removed and restored to their original condition or better where in conflict with construction.
- Driveways, culverts, ditches, drain tile, tile fields, drainage structures, etc., that are disturbed by the contractor's operations shall be immediately restored.
- All established lawn areas disturbed by the contractor's operations shall be resodded with matching sod. All other areas shall be seeded and mulched. Seeding and mulching shall be done in accordance with the General Specifications.
- All ditch slopes shall have established vegetation and be protected from erosion.
- All utility poles in close proximity to construction shall be supported in a manner satisfactory to the utility owner.
- Onsite parking and sanitary facilities shall be provided for construction workers. The facilities shall be constructed and operated (with minimal impact to the surrounding area) to the satisfaction of the Township.

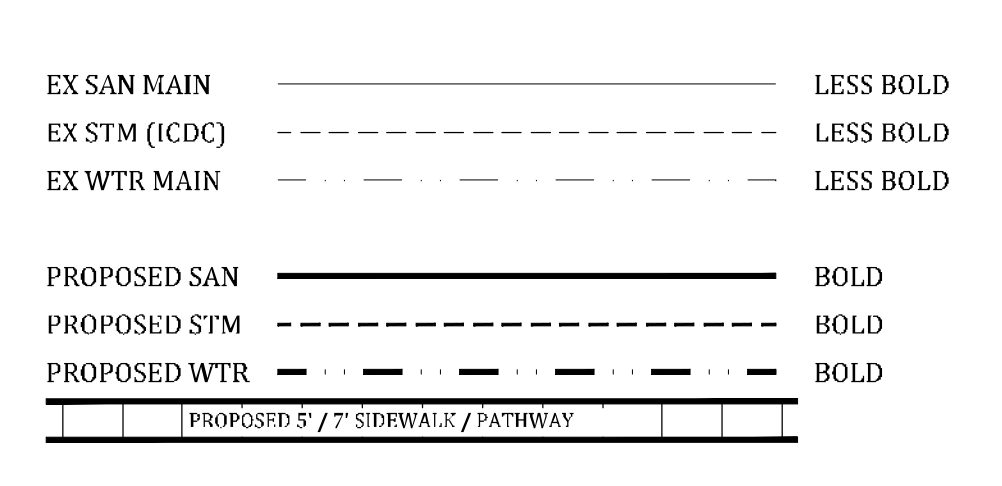
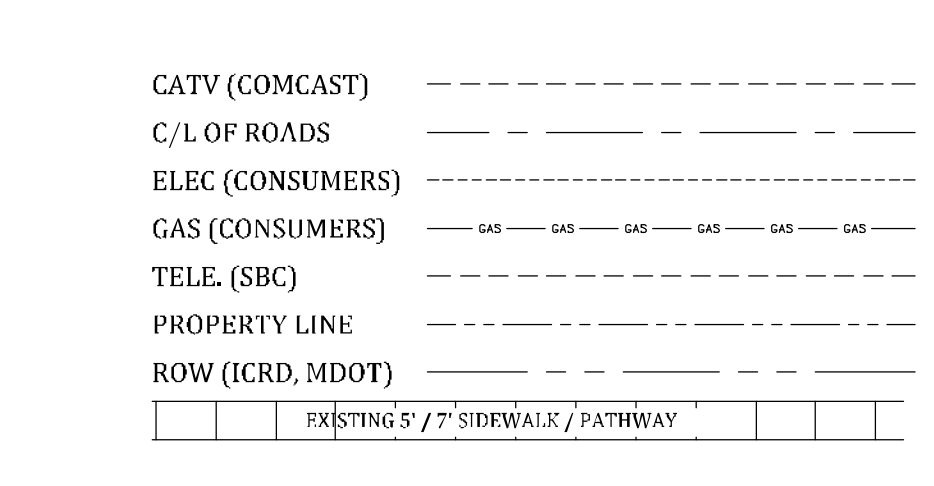
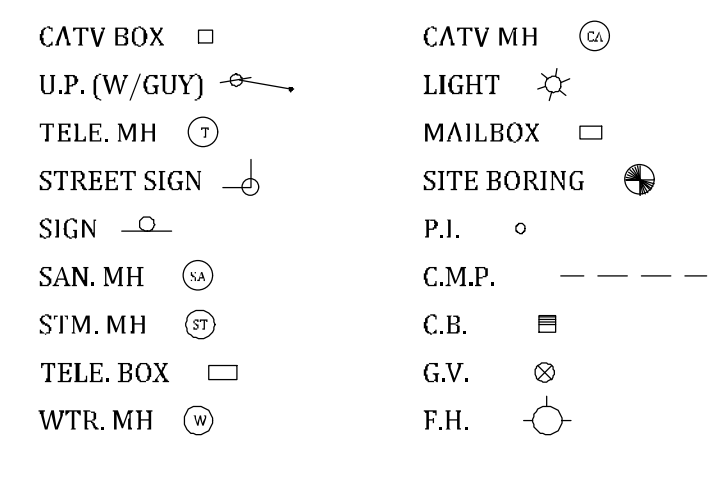
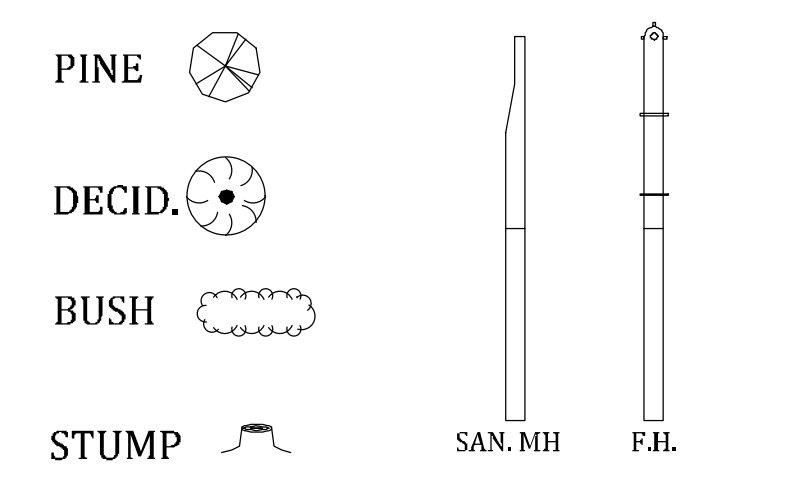
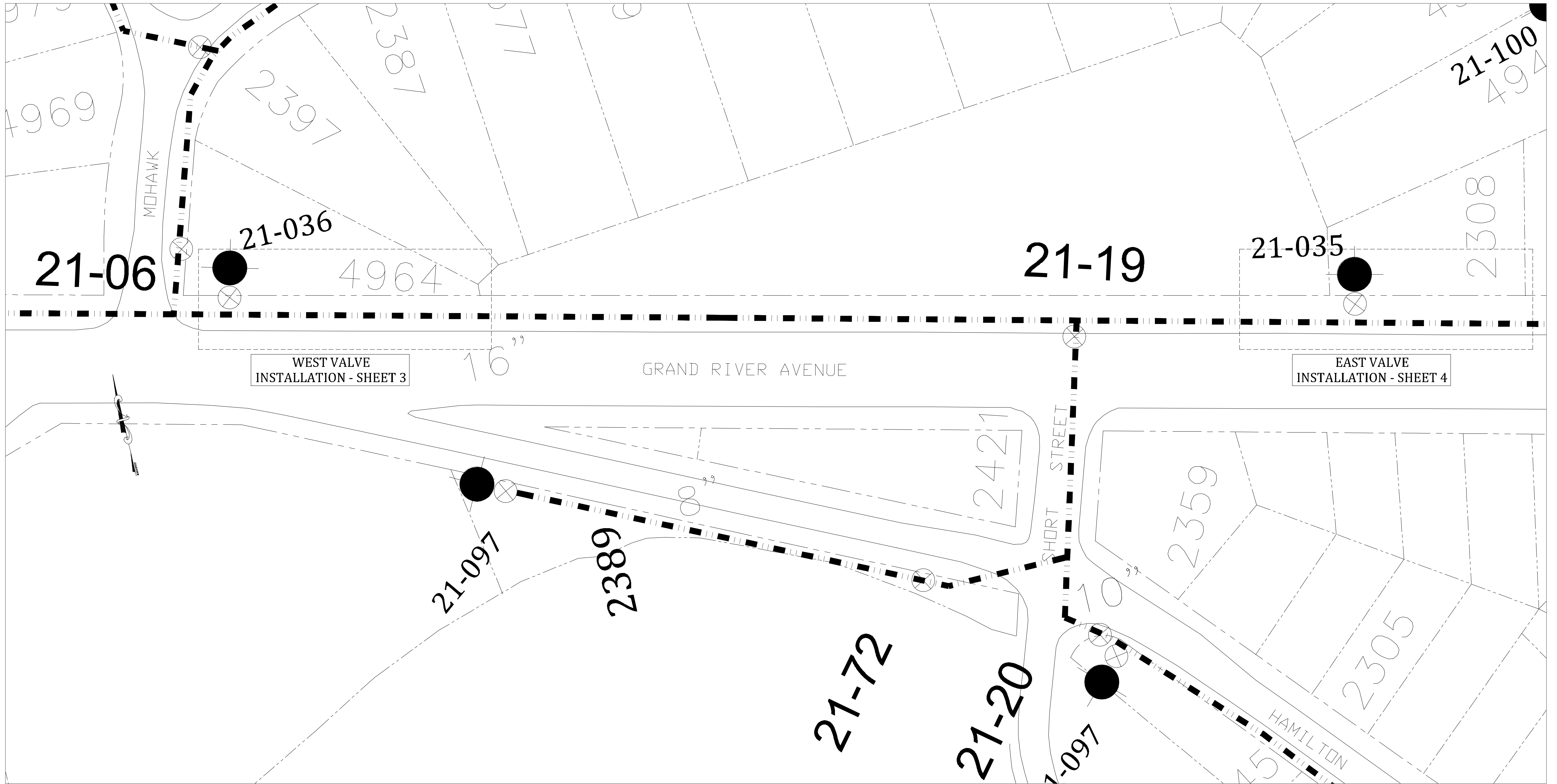
**WATER MAIN NOTES**

- Hydrant elevations and gate well tap elevations shall be set to existing ground elevations unless otherwise directed by the Township Engineer.
- All water mains shall be constructed with 5 feet of cover below finish grade, unless otherwise indicated on the plans.
- Connection to the existing water main shall not be made until after the successful completion of pressure and bacteriological tests. Pressure testing shall be performed in accordance with AWWA C600. Additionally, all corporation stops for proposed house services shall be installed prior to pressure testing. Disinfection and bacteriological testing shall be in accordance with the AWWA C651. Before the mains are chlorinated, they shall be thoroughly flushed. All mains shall be chlorinated for a period of at least twenty-four (24) hours. Chlorine shall be added in sufficient quantity to give a 50-ppm residual of free chlorine after a twenty-four (24) hour period. After completion of the chlorine procedure, the main shall be flushed. Then water samples shall be taken from the main for bacteriological tests. If the tests should result in unsafe conditions, the chlorinating shall be repeated by the Contractor. Two consecutive passing samples at least 24 hours apart must be obtained before the main can be connected to the existing water system.
- All valves shall be counter-clock wise open.
- All fire hydrants shall be EJIW 5BR (54915) Traffic Type with breakaway flange or approved equal.
- Hydrants shall be painted OSHA red.
- Two brass wedges shall be installed at each joint on ductile iron pipe.
- Polyethylene encasement of pipes will be required in all areas. The encasement shall be V-Bio® Enhanced Polyethylene Encasement, in accordance with ANSI/AWWA C105/A21.5, installed per the manufacturer's instructions.
- For existing lines: service taps, shut off valves, and service line extensions to the property shall be made by Township Department of Public Works personnel for connections 2" and smaller.
- Where water mains must dip under a storm sewer or sanitary sewer, the sections which are deeper than normal shall be kept to a minimum length by the use of 45, 22½ or 11½ degree bends properly restrained.
- All manhole covers shall bear the legend "Meridian Water" with tree logo, where available.
- Lead content requirements for all pipes, piping fittings, plumbing fittings, and fixtures that are used for potable water shall comply with NSF/ANSI 372 Standard.
- All mechanical joints and fittings shall be restrained using MEGALUG® style restraints, or approved equal. All exposed metal components of the restrained-joint system shall be treated with a corrosion resistant coating, including: the collar, breakaway bolts, wedges, and connecting nuts and bolts.

**SHEET INDEX**

SHT #	TITLE
1	COVER SHEET
2	WATER MAIN LAYOUT
3	GRAND RIVER WTR PLAN (WEST)
4	GRAND RIVER WTR PLAN (EAST)
5	WATER MAIN DETAIL SHEET

RECOMMENDED CONSTRUCTION SCHEDULING & SEQUENCING	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
	INSTALL SESC MEASURES											
EXCAVAGTE												
INSTALL LINE STOP												
INSTALL GATE VALVES AND WATER MAIN												
SITE STABILIZATION												

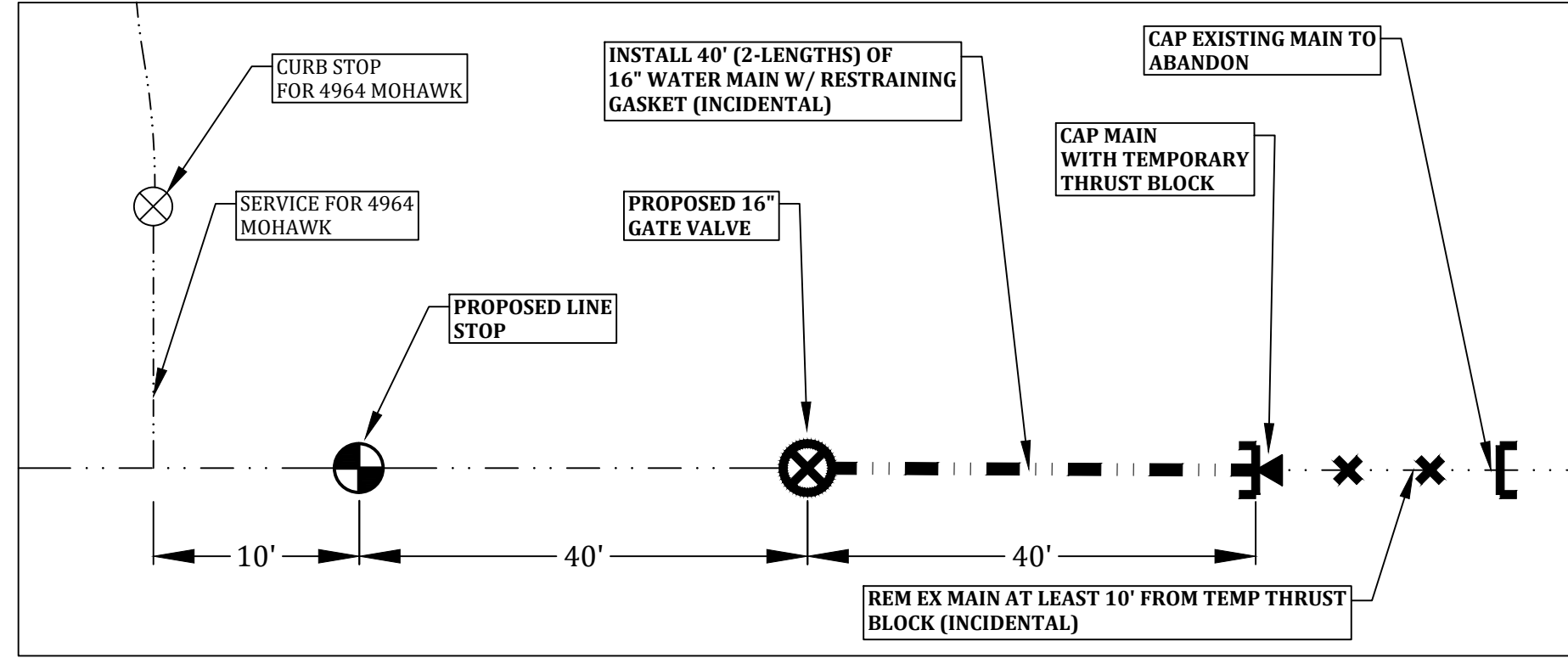


**Call 811 before you dig.**

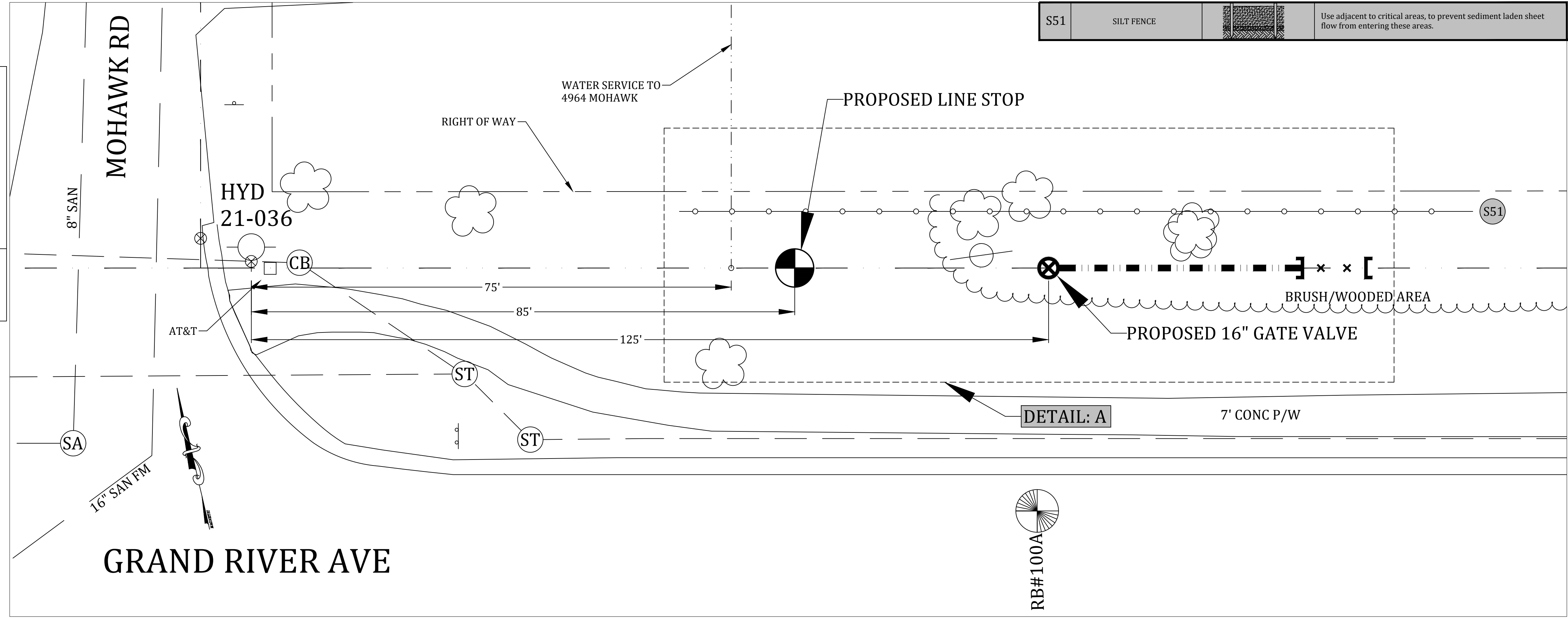
WOLVERINE PIPE LINE COMPANY 219-844-9510

<b>Meridian Charter Township</b> Ingham County, Michigan Water Main System		<b>REVISIONS:</b> DATE: 12/15/21 BY: NN COMMENTS: 2021 Re-bid.	
<b>GRAND RIVER AVE (M-43)</b> WATER MAIN LAYOUT		SCALE: 1" = 40' HOR 1" = 3' VERT	PAGE: 2 OF 5
DRAWN BY: MH 08/05/21 CHECKED BY:		FILE:	

S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
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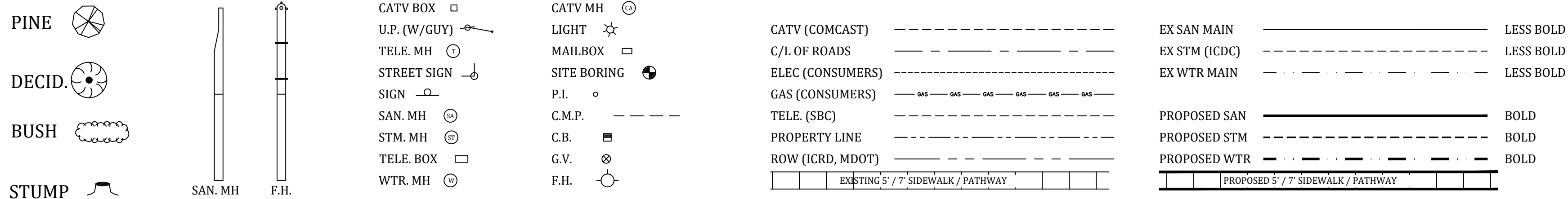
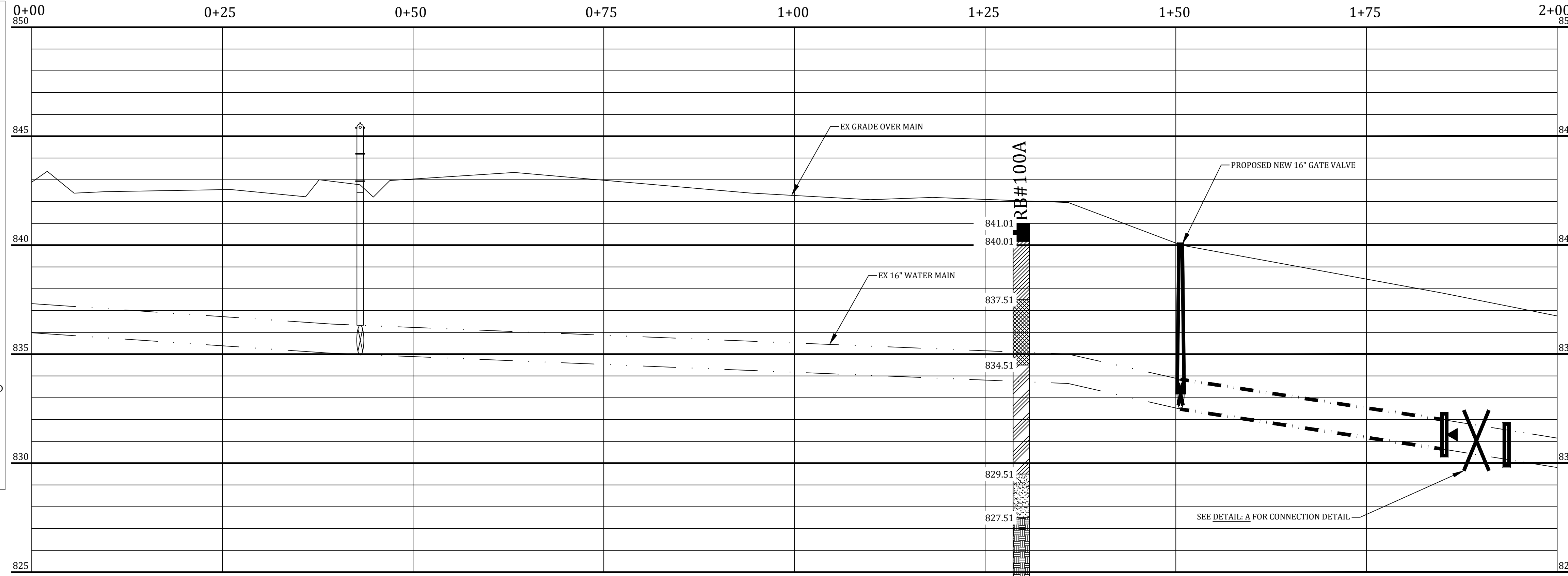
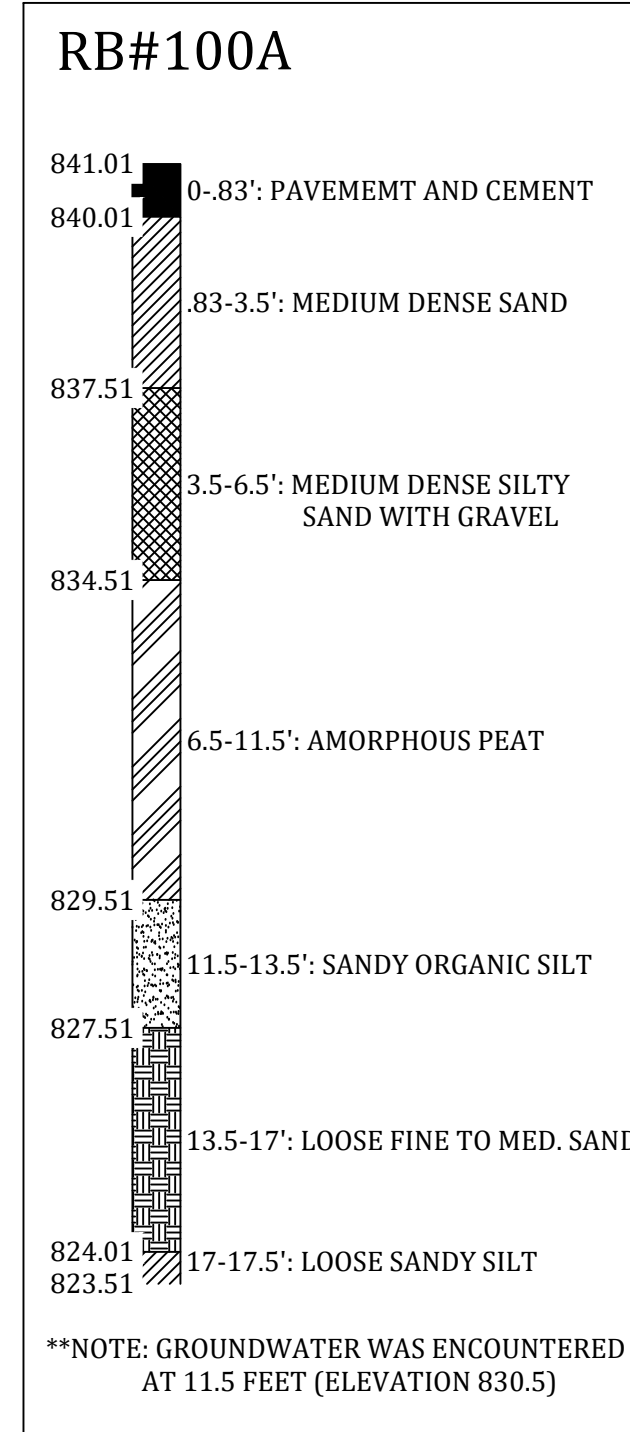


**DETAIL: A**



**SUGGESTED PROCEDURE:**

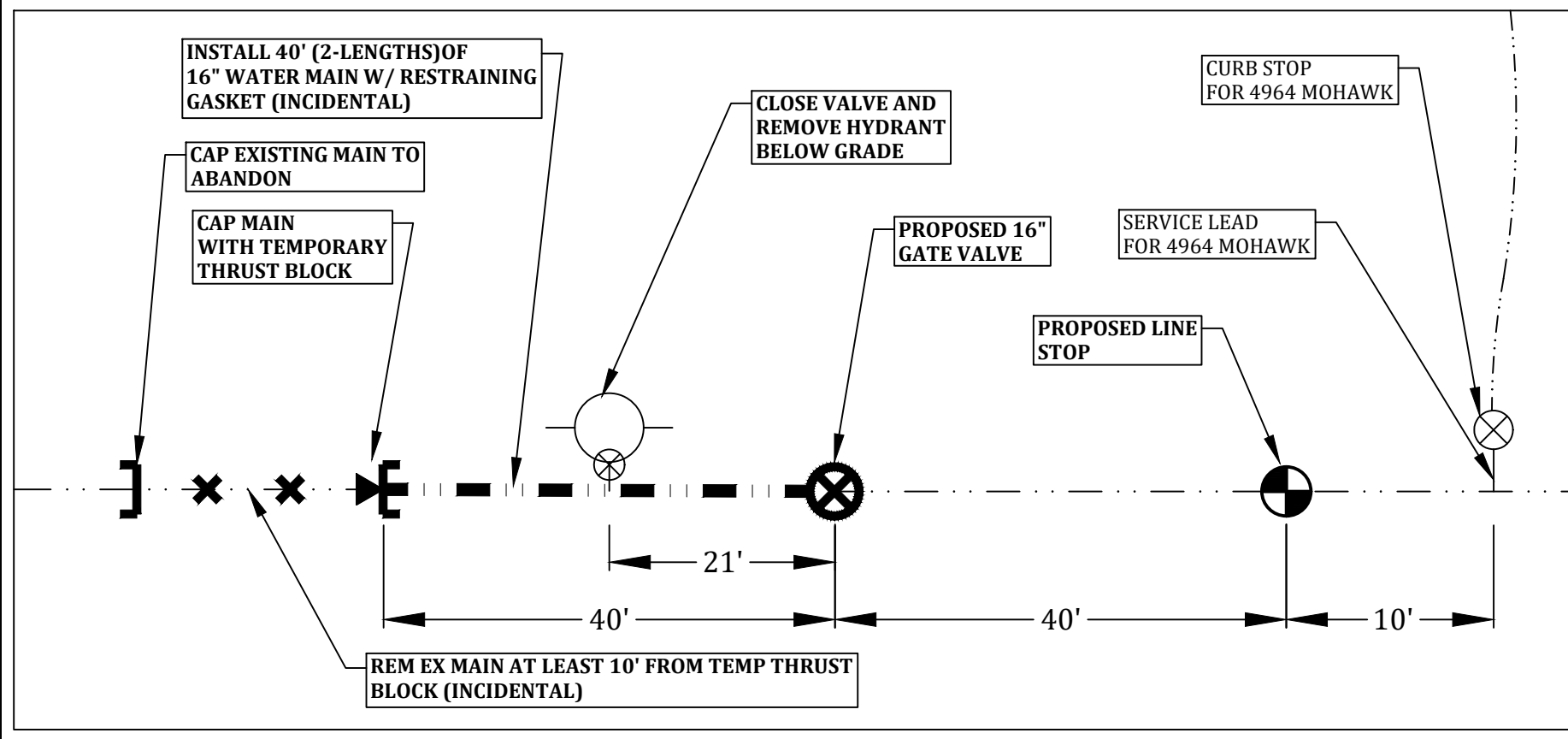
1. CONTACT TOWNSHIP WATER DEPARTMENT TO SHUT OFF VALVE 21-19
2. INSERT 16" LINE STOP IN MAIN 85' EAST OF HYDRANT 21-036 [DETAIL A]
3. INSERT 16" LINE STOP IN MAIN 61' EAST OF HYDRANT 21-035 (IN FRONT OF 2308 GRAND RIVER AVE) [DETAIL B]
4. RELEASE PRESSURE USING A HYDRANT AND DRAIN WATER MAIN TO LOCAL WETLAND OR OTHER TOWNSHIP APPROVED LOCATION
5. INSTALL NEW 16" GATE VALVE 125' EAST OF HYDRANT 21-036
6. REMOVE 50' OF EXISTING MAIN AND INSTALL 40' OF PIPE CONTINUING EAST OF NEW VALVE. USE A RESTRAINING GASKET BETWEEN PIPE SEGMENTS [DETAIL A]
7. INSTALL TEMPORARY CAP ON NEW PIPE WITH TEMPORARY THRUST BLOCK [DETAIL A]
8. ABANDON MAIN EAST OF NEWLY INSTALLED PIPE USING A CAP [DETAIL A]
9. CLOSE VALVE FOR HYDRANT 21-035 AND REMOVE HYDRANT BELOW GRADE
10. INSTALL NEW 16" GATE VALVE 26' EAST OF HYDRANT 21-035 [DETAIL B]
11. REMOVE 50' OF EXISTING MAIN AND INSTALL 40' OF PIPE CONTINUING WEST OF NEW VALVE. USE A RESTRAINING GASKET BETWEEN PIPE SEGMENTS [DETAIL B]
12. INSTALL TEMPORARY CAP ON NEW PIPE WITH TEMPORARY THRUST BLOCK [DETAIL B]
13. PRESSURE TEST NEWLY INSTALLED 16" MAIN, THEN CHLORINATE, FLUSH, AND SAMPLE PER STANDARD REQUIREMENTS
14. ABANDON MAIN WEST OF NEWLY INSTALLED PIPE USING A CAP OR PLUG [DETAIL B]
15. BACKFILL AND REMOVE LINE STOPS AT BOTH ENDS OF WORK AREA, LEAVING ALL VALVES CLOSED
16. GRADE AND STABILIZE SITE



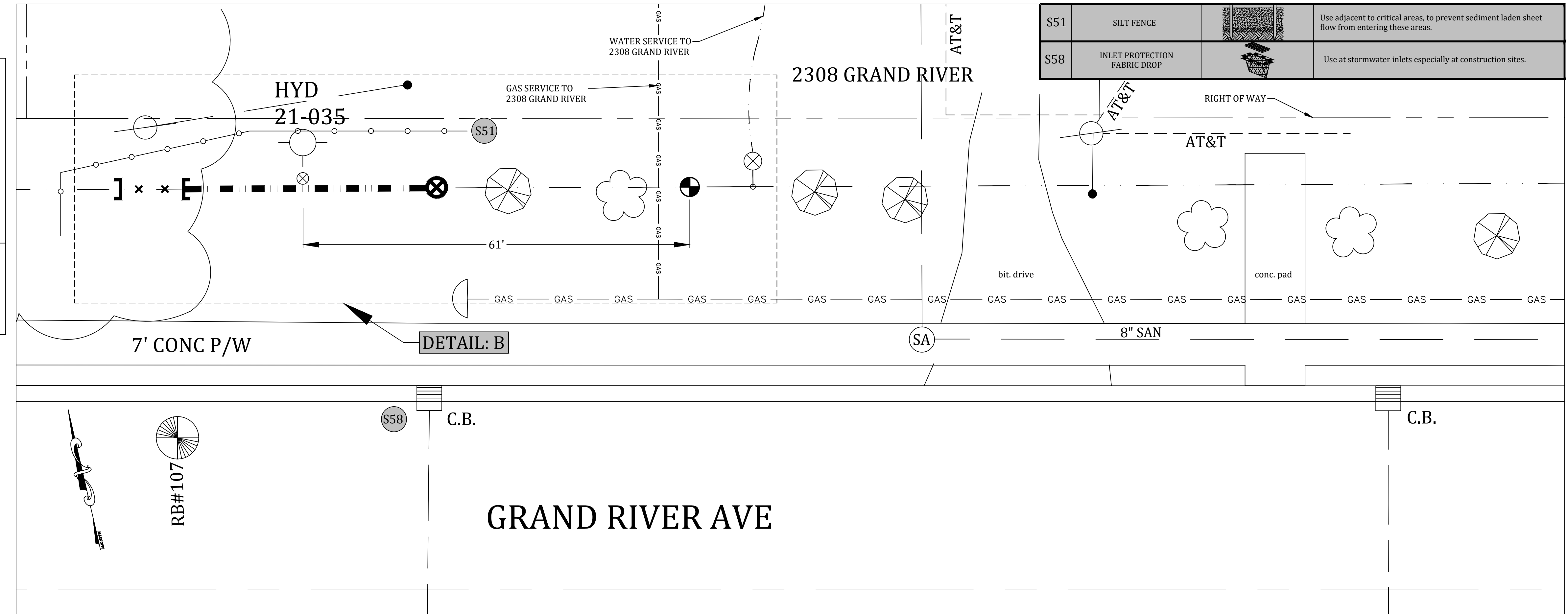
**Call 811 before you dig.**

WOLVERINE PIPE LINE COMPANY 219-844-9510

<p>Meridian Charter Township Ingham County, Michigan Water Main System</p>		REVISIONS:	
		DATE:	BY:
<p>GRAND RIVER AVE (M-43) WATER PLAN (WEST)</p>		12/15/21	NN
		COMMENTS:	
		2021 Re-bid.	
SCALE:	PAGE:	FILE:	
1" = 10' HOR	3 OF 5		
1" = 3' VERT			
DRAWN BY: MH 08/05/21	CHECKED BY:		

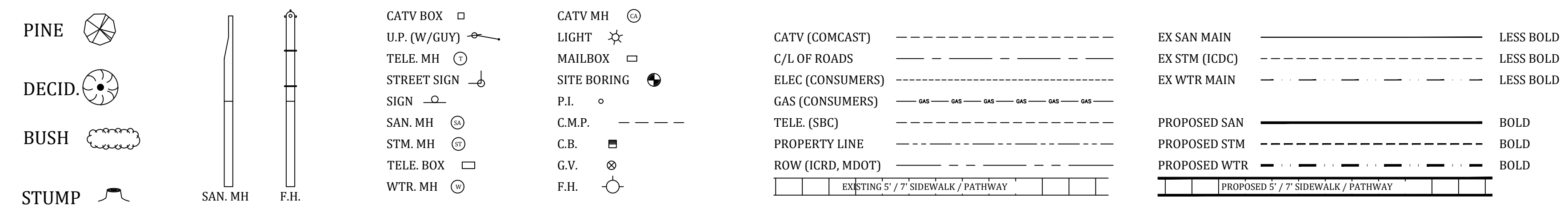
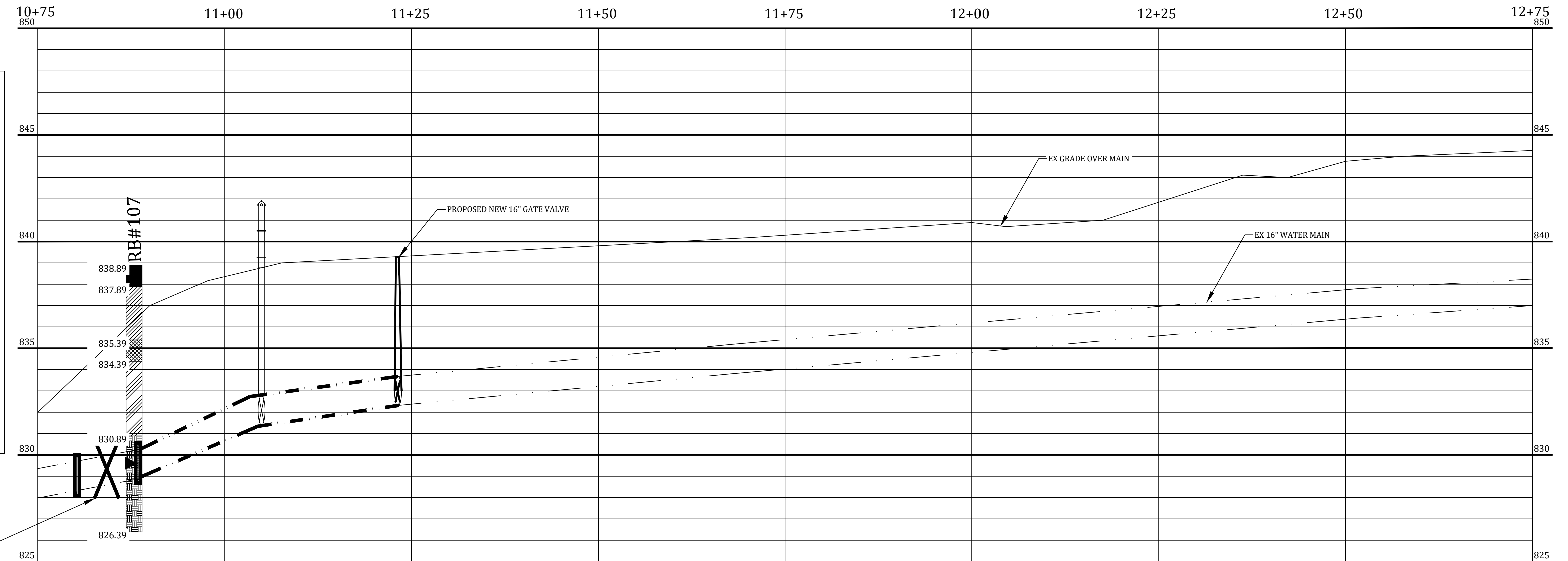
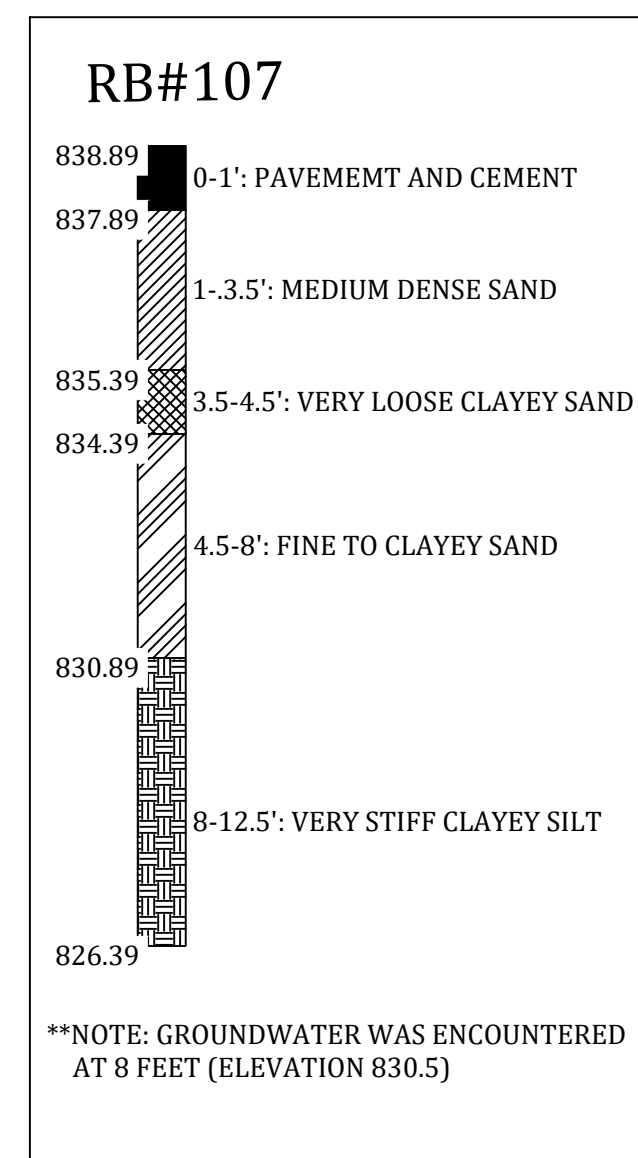


DETAIL: B



SUGGESTED PROCEDURE:

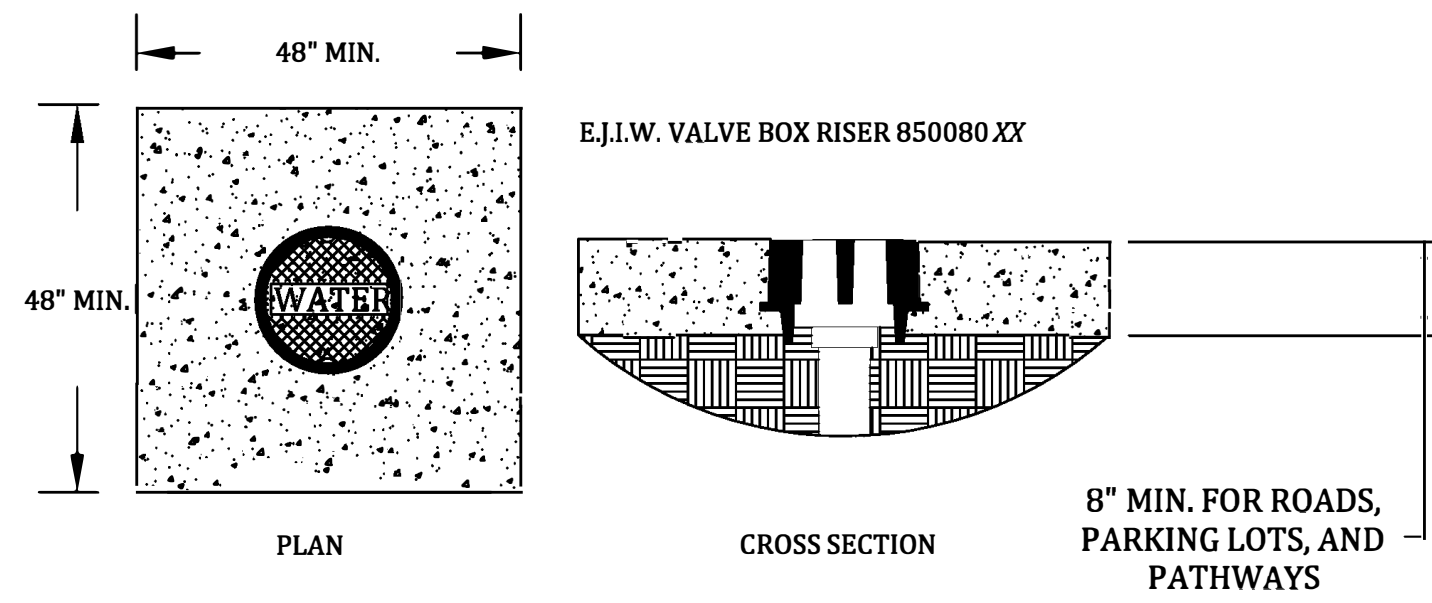
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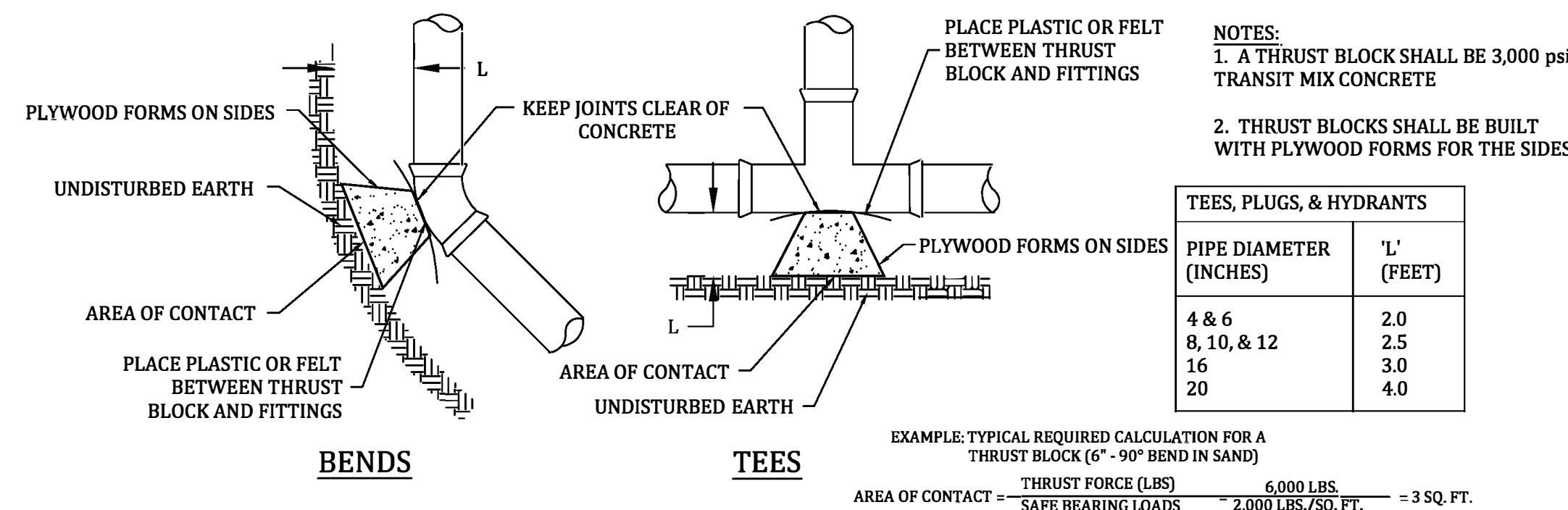
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WOLVERINE PIPE LINE COMPANY 219-844-9510

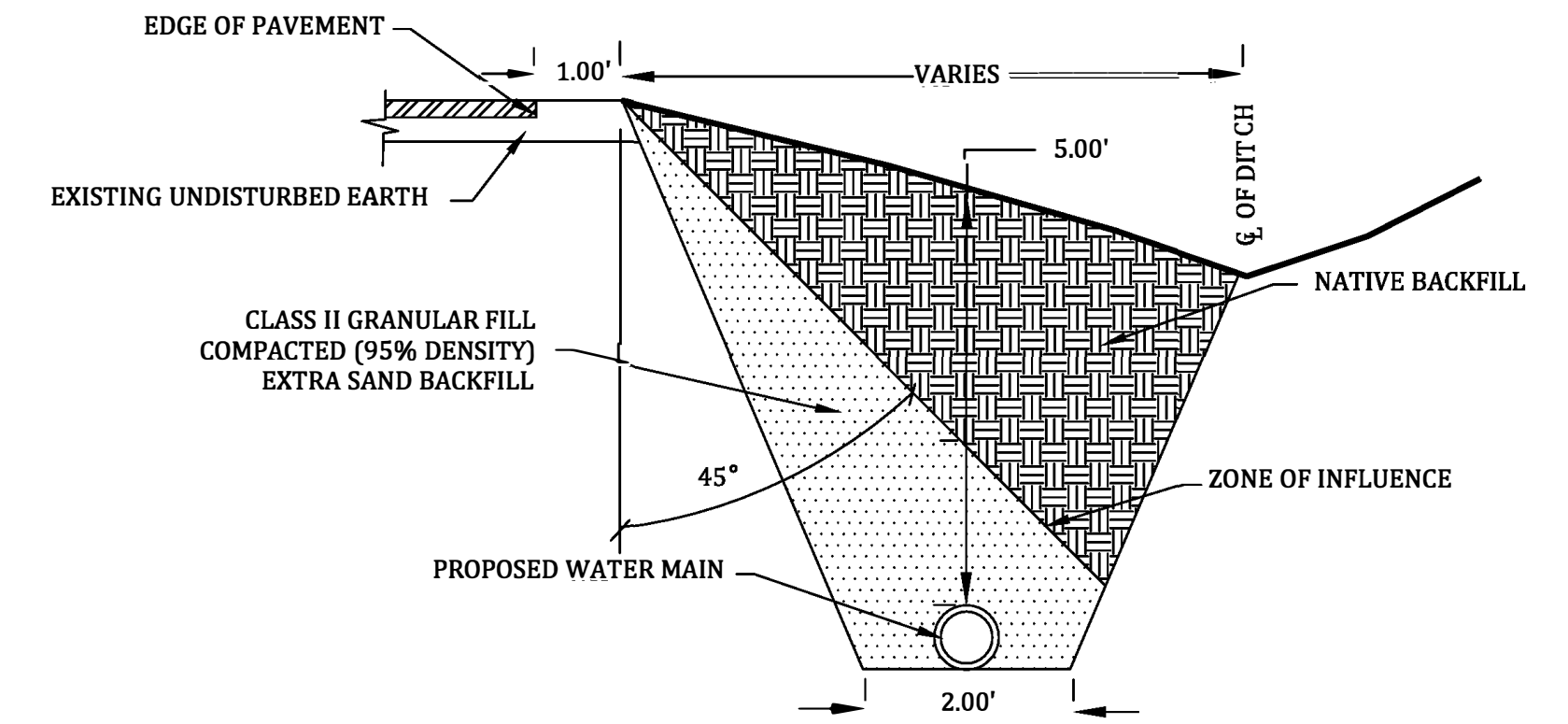
Meridian Charter Township Ingham County, Michigan Water Main System		REVISIONS:	
DATE:	BY:	DATE:	BY:
12/15/21	NN	2021 Re-Bid.	
GRAND RIVER AVE (M-43) WATER PLAN (EAST)		SCALE:	PAGE:
DRAWN BY: MH 08/05/21		1" = 10' HOR 1" = 3' VERT	4 OF 5
CHECKED BY:		FILE:	



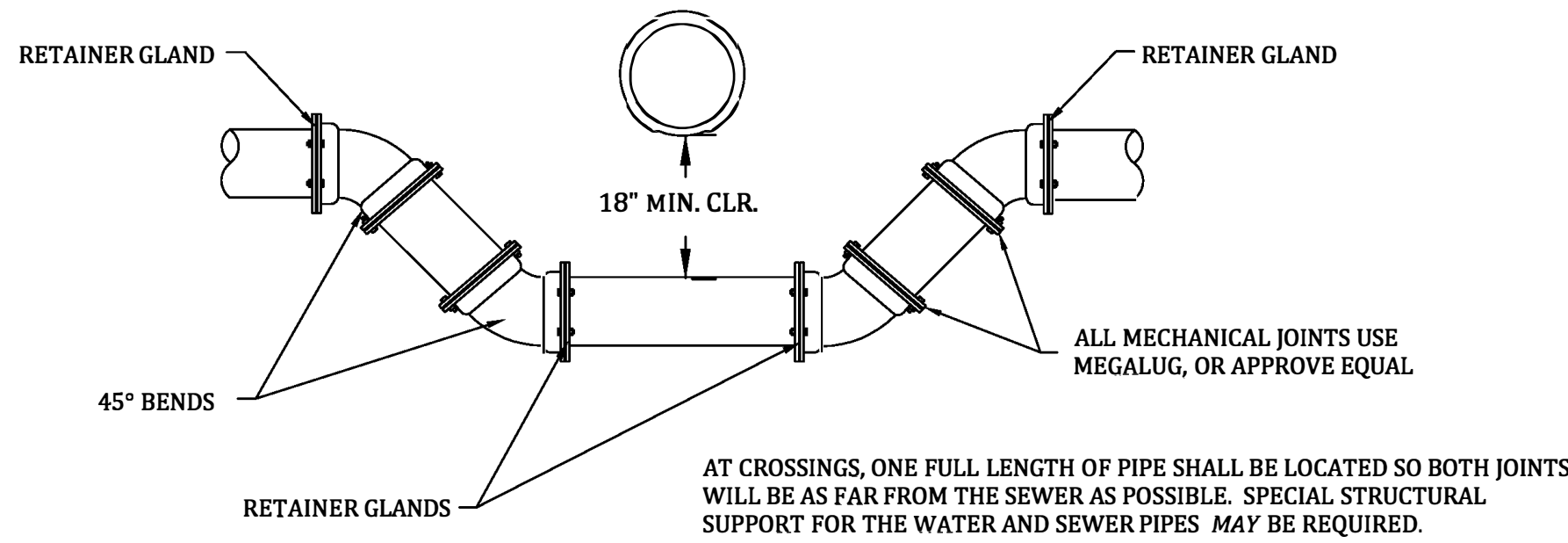
**VALVES & CURB STOP BOXES IN CONCRETE**



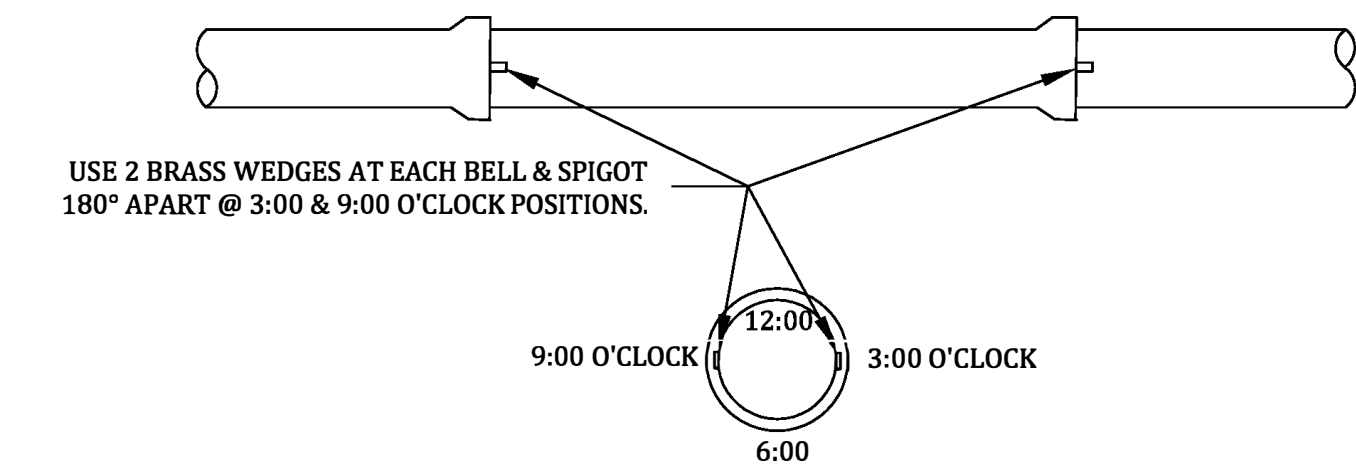
**THRUST BLOCK PLAN VIEWS**



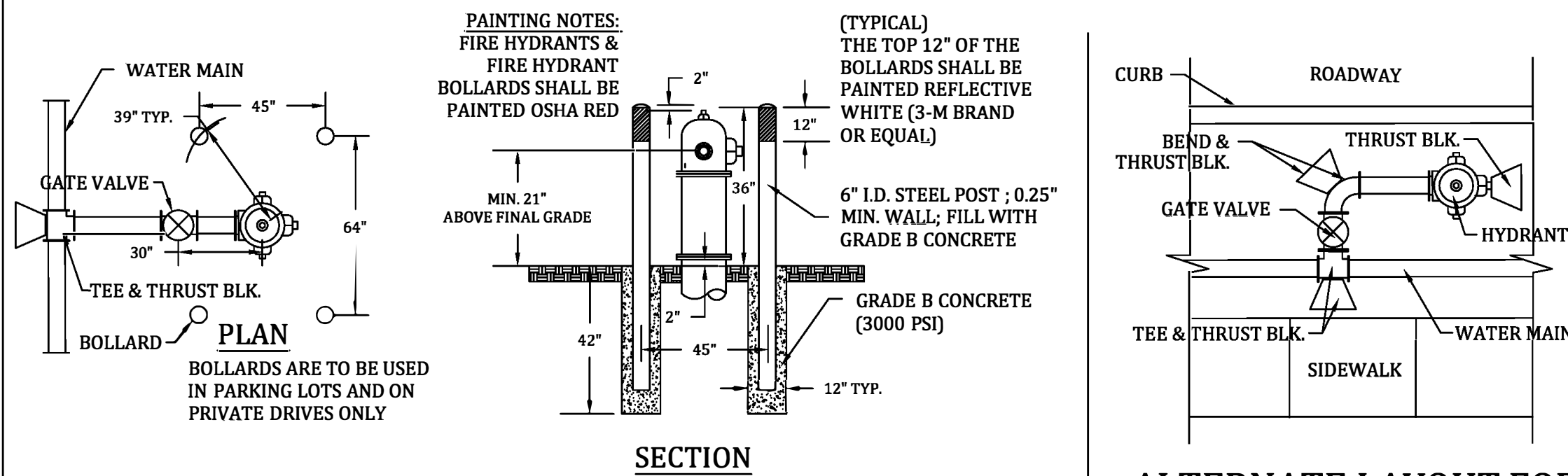
**TYPE-1 TRENCH CROSS SECTION**



**LOWERING WATER MAIN CROSS SECTION**

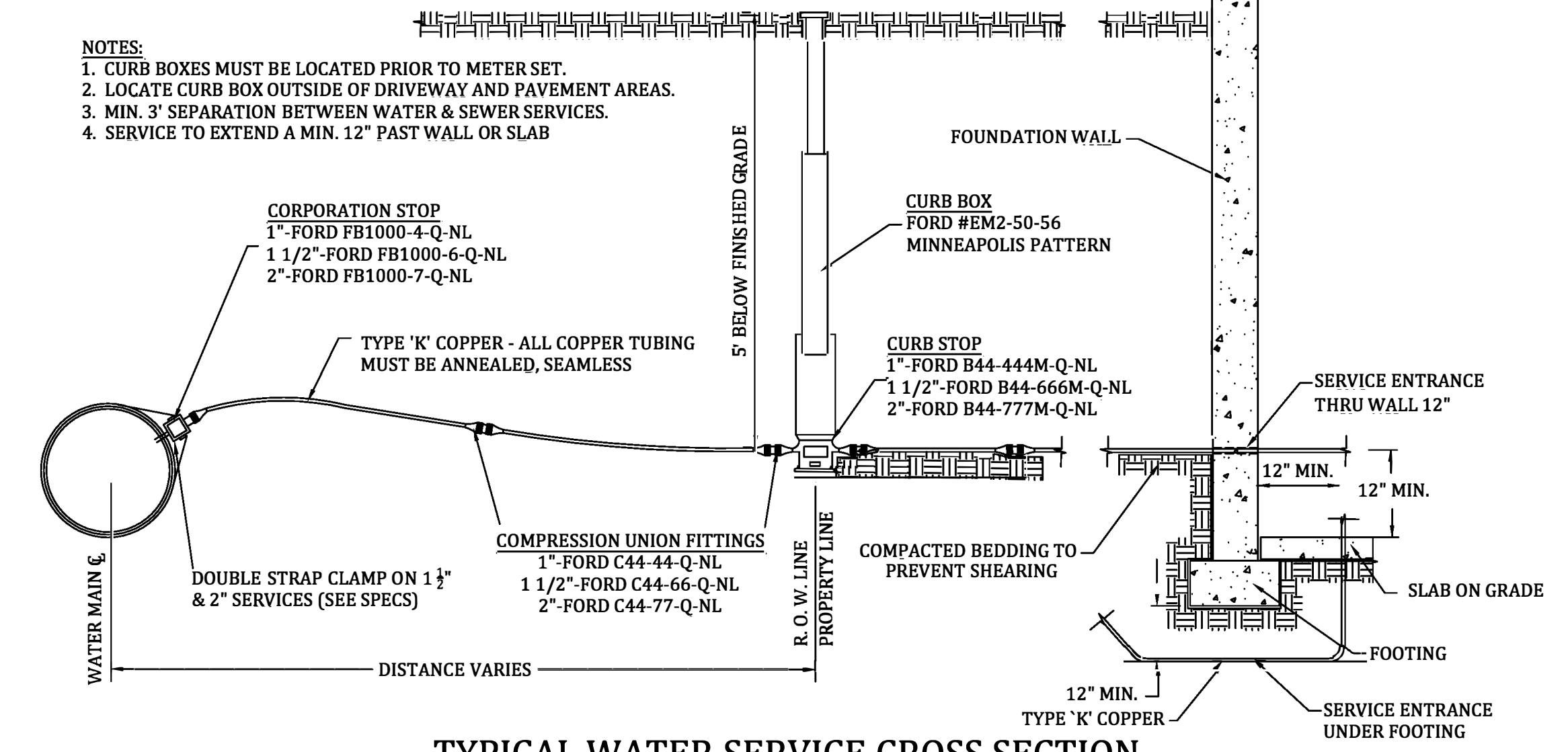


**WATER MAIN JOINT DETAILS**



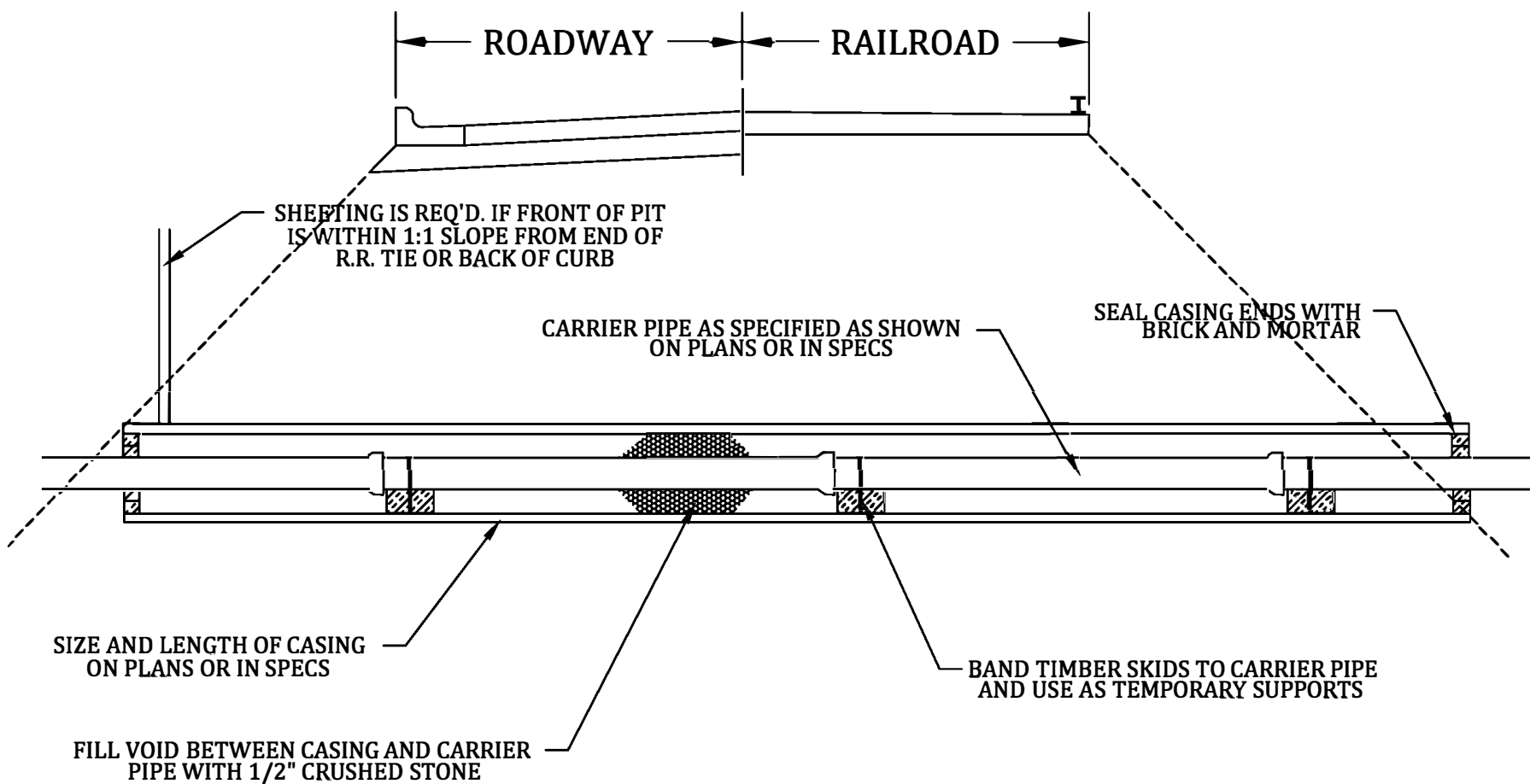
**BOLLARDS AROUND FIRE HYDRANT**

**ALTERNATE LAYOUT FOR CONFINED AREAS**



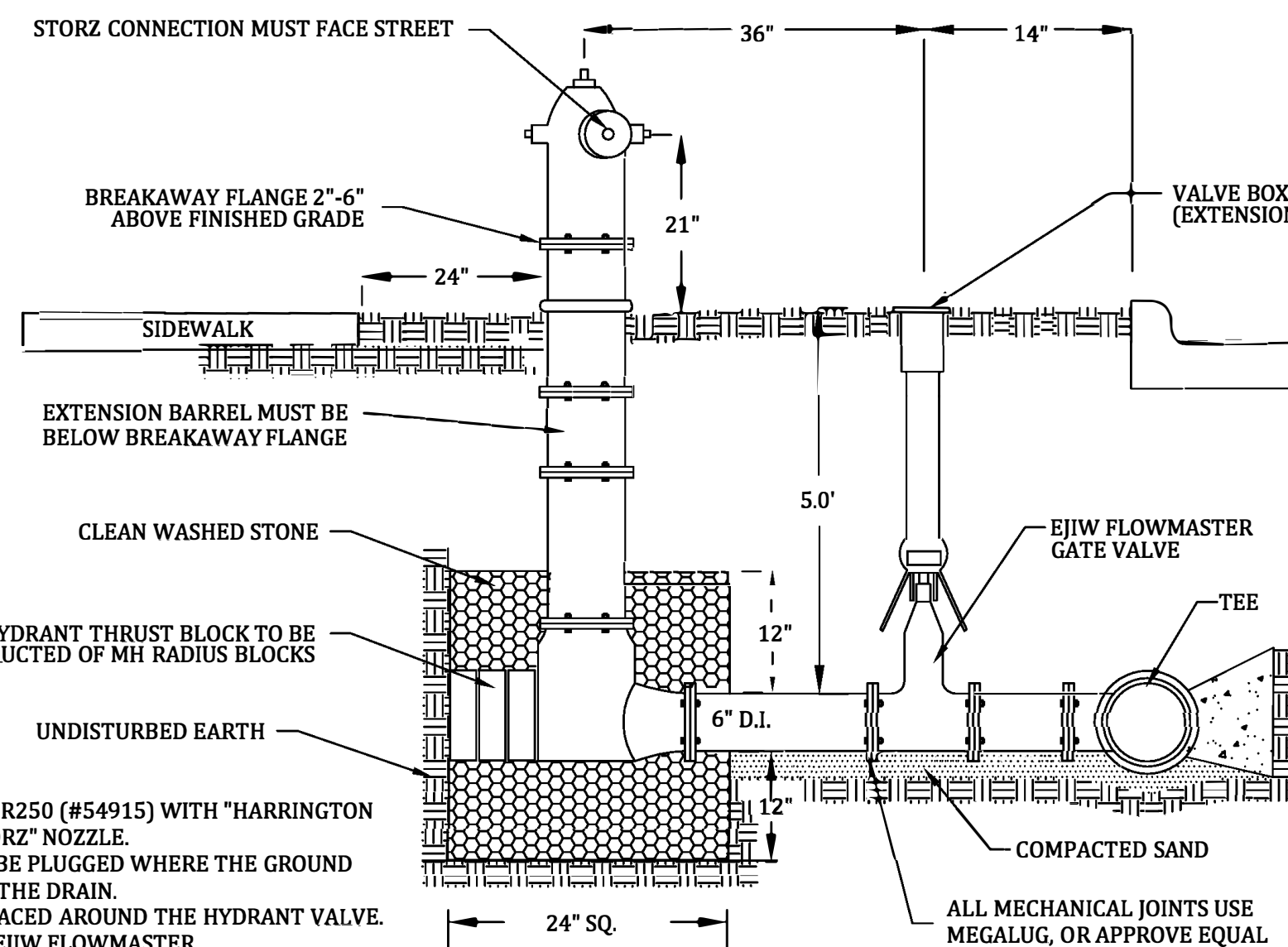
**TYPICAL WATER SERVICE CROSS SECTION**

- NOTES:  
 1. WORK IN ROADS AND IN RAILROAD RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AGENCY'S REQUIREMENTS.  
 2. CASING PIPE SHALL BE ASTM 139, GRADE B OR ASTM A-53, GRADE B OR API 5-L, GRADE B OR API GRADE B WITH 0.375" MINIMUM WALL THICKNESS.



**CASING INSTALLATION DETAIL FOR ROADS & RAILROADS**

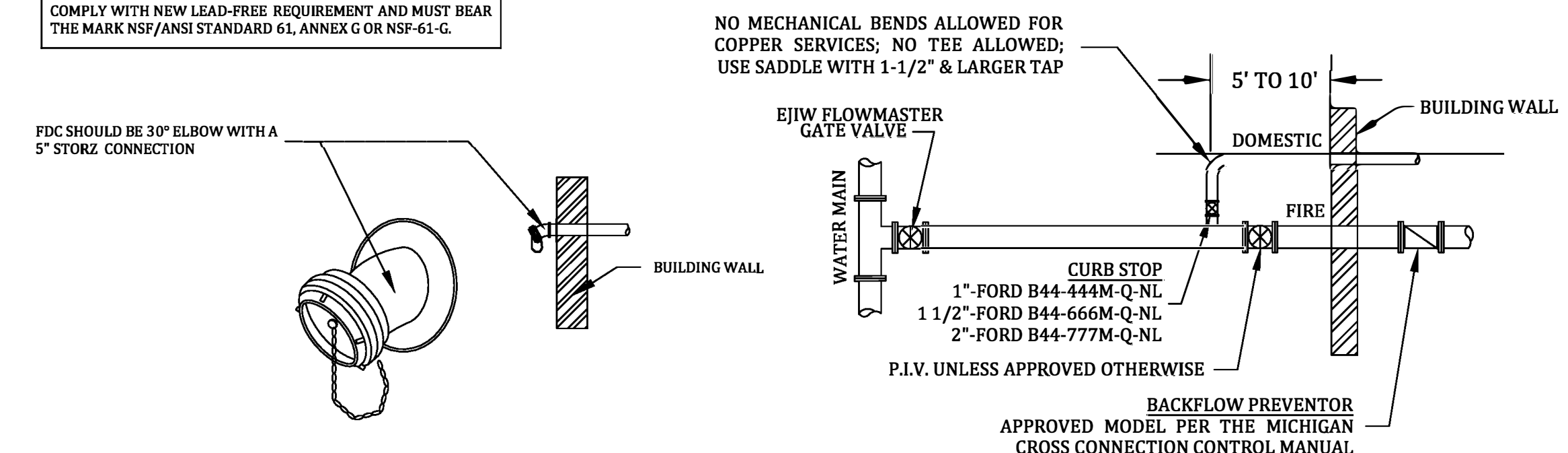
CASING AND CARRIER PIPE TO BE INSTALLED BY METHOD OTHER THAN OPEN CUT



**TYPICAL HYDRANT ASSEMBLY DETAIL**

- NOTES:  
 1. HYDRANT TO BE EJIW 5BR250 (#54915) WITH "HARRINGTON INTEGRAL HYDRANT STORZ" NOZZLE.  
 2. HYDRANT DRAIN SHALL BE PLUGGED WHERE THE GROUND WATER LEVEL IS ABOVE THE DRAIN.  
 3. STONE SHALL NOT BE PLACED AROUND THE HYDRANT VALVE.  
 4. GATE VALVES SHALL BE EJIW FLOWMASTER.

NOTE: ALL WATER PIPES, PING FITTINGS, PLUMBING FITTINGS AND FIXTURES THAT ARE USED FOR POTABLE WATER MUST COMPLY WITH NEW LEAD-FREE REQUIREMENT AND MUST BEAR THE MARK NSF/ANSI STANDARD 61, ANNEX G OR NSF-61-G.



**FIRE PROTECTION VALVING PLAN VIEW**

Meridian Charter Township  
 Ingham County, Michigan  
 Public Works Department

**STANDARD DETAILS FOR WATER DISTRIBUTION SYSTEM**

DRAWN BY: CHECKED BY:

REVISIONS:		COMMENTS:
DATE:	BY:	
01/13/07	IG	Add Fire Hydrant Bollards
03/31/09	IG	Clarify Curb Stop Models
01/12/10	IG	Clarify PIV
10/22/12	IG	Clarify Water Service Make & Size
06/13/14	IG	Clarify Curb Box Manufacturer & Model
10/13/17	IG	Water Crossing Note - Full Length Pipe
01/10/20	NN	Reorganize
04/02/21	NN	Add 30° Elbow & Storz to FDC

SCALE: NTS PAGE: 5 OF 5 FILE: Water Detail Sheet 2021.dwg