

# ERIE COUNTY MEDICAL CENTER ACCESS ROAD WATER LINE REPLACEMENT

OFFICE OF ISSUE:  
ONE TOWNE CENTRE  
501 JOHN JAMES AUDUBON PARKWAY  
AMHERST, NEW YORK 14228  
EMAIL: RWBUFF@ROBSONWOESE.COM  
T 716.636.1800  
F 716.636.1856

04-19-2011



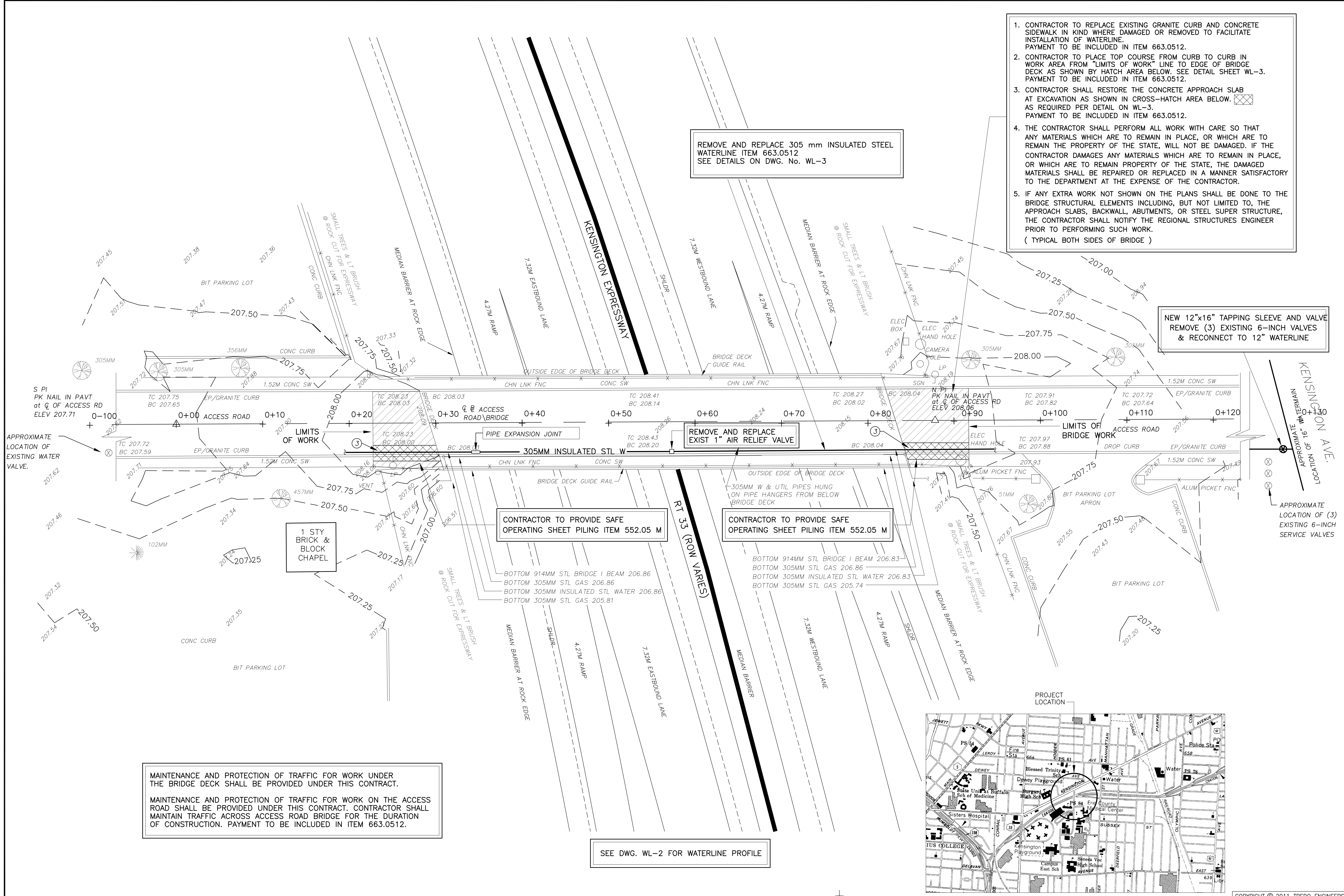
DRAWING LIST	
WL-1	WATERLINE PLAN
WL-2	WATERLINE PROFILE, PIPE ELEVATION AND DEFLECTION CHART
WL-3	TYPICAL DETAILS, GENERAL NOTES, QUANTITIES AND OPERATION NOTES
WL-4	TRAFFIC PLAN
WL-5	TRAFFIC CONTROL DIAGRAMS
WL-6	GRIDER STREET RAMP CLOSURE DETAILS
E-1	ELECTRICAL - NEW WORK
E-2	ELECTRICAL - DETAILS

PROGRESS PRINT  
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CONSTRUCTION

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1. CONTRACTOR TO REPLACE EXISTING GRANITE CURB AND CONCRETE SIDEWALK IN KIND WHERE DAMAGED OR REMOVED TO FACILITATE INSTALLATION OF WATERLINE. PAYMENT TO BE INCLUDED IN ITEM 663.0512.
2. CONTRACTOR TO PLACE TOP COURSE FROM CURB TO CURB IN WORK AREA FROM "LIMITS OF WORK" LINE TO EDGE OF BRIDGE DECK AS SHOWN BY HATCH AREA BELOW. SEE DETAIL SHEET WL-3. PAYMENT TO BE INCLUDED IN ITEM 663.0512.
3. CONTRACTOR SHALL RESTORE THE CONCRETE APPROACH SLAB AT EXCAVATION AS SHOWN IN CROSS-HATCH AREA BELOW. AS REQUIRED PER DETAIL ON WL-3. PAYMENT TO BE INCLUDED IN ITEM 663.0512.
4. THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE STATE, WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN PROPERTY OF THE STATE, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE DEPARTMENT AT THE EXPENSE OF THE CONTRACTOR.
5. IF ANY EXTRA WORK NOT SHOWN ON THE PLANS SHALL BE DONE TO THE BRIDGE STRUCTURAL ELEMENTS INCLUDING, BUT NOT LIMITED TO, THE APPROACH SLABS, BACKWALL, ABUTMENTS, OR STEEL SUPER STRUCTURE, THE CONTRACTOR SHALL NOTIFY THE REGIONAL STRUCTURES ENGINEER PRIOR TO PERFORMING SUCH WORK.  
( TYPICAL BOTH SIDES OF BRIDGE )

NEW 12"x16" TAPPING SLEEVE AND VALVE  
REMOVE (3) EXISTING 6-INCH VALVES  
& RECONNECT TO 12" WATERLINE

REMOVE AND REPLACE 305 mm INSULATED STEEL  
WATERLINE ITEM 663.0512  
SEE DETAILS ON DWG. No. WL-3

REMOVE AND REPLACE  
EXIST 1" AIR RELIEF VALVE

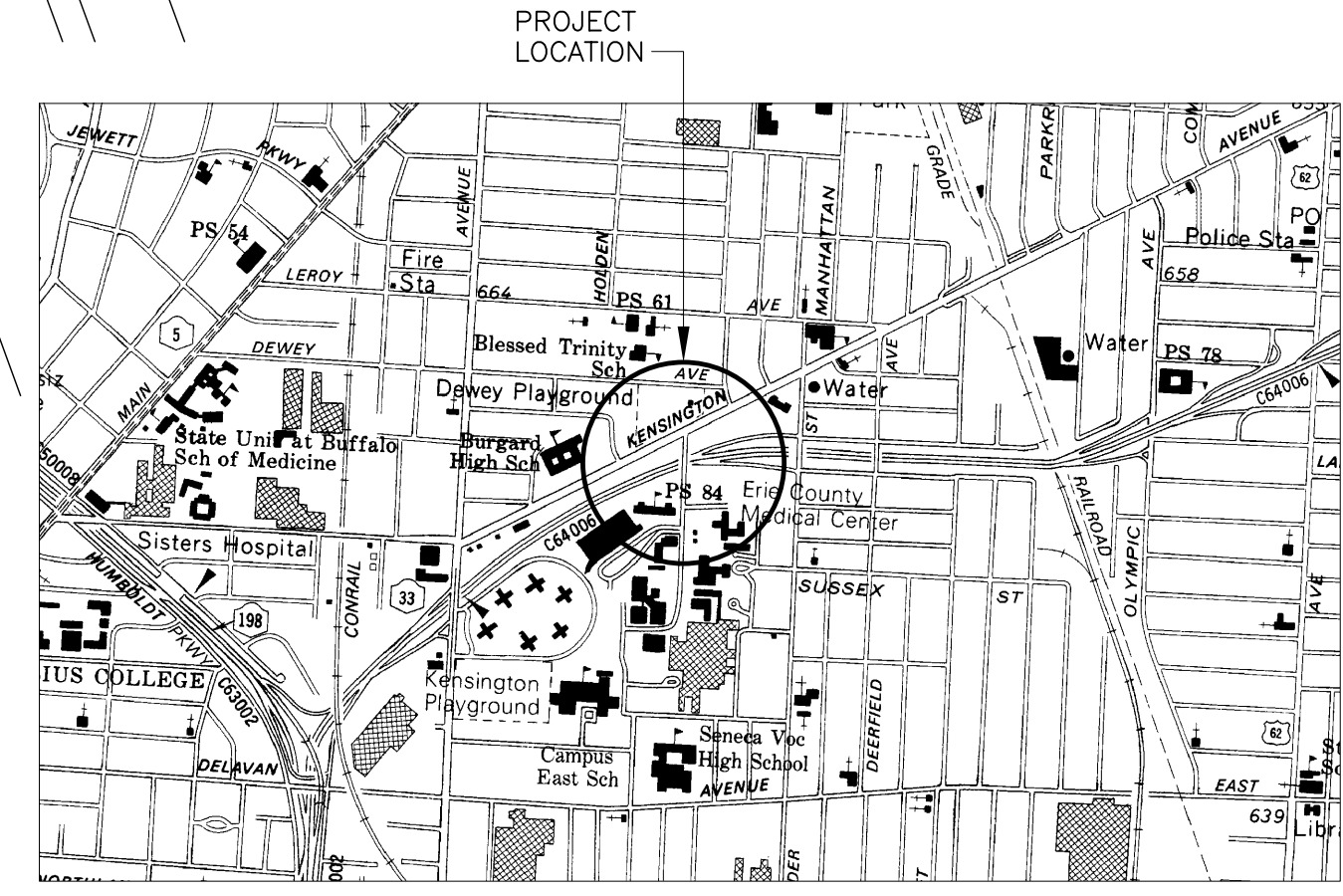
CONTRACTOR TO PROVIDE SAFE  
OPERATING SHEET PILING ITEM 552.05 M

CONTRACTOR TO PROVIDE SAFE  
OPERATING SHEET PILING ITEM 552.05 M

MAINTENANCE AND PROTECTION OF TRAFFIC FOR WORK UNDER  
THE BRIDGE DECK SHALL BE PROVIDED UNDER THIS CONTRACT.

MAINTENANCE AND PROTECTION OF TRAFFIC FOR WORK ON THE ACCESS  
ROAD SHALL BE PROVIDED UNDER THIS CONTRACT. CONTRACTOR SHALL  
MAINTAIN TRAFFIC ACROSS ACCESS ROAD BRIDGE FOR THE DURATION  
OF CONSTRUCTION. PAYMENT TO BE INCLUDED IN ITEM 663.0512.

SEE DWG. WL-2 FOR WATERLINE PROFILE



WATERLINE PLAN  
1 : 200

PROJECT LOCATION MAP  
NOT TO SCALE

**NOTE:**  
BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN ON THIS DRAWING  
IS FOR INFORMATION ONLY. REFER TO SURVEY(S) PROVIDED BY  
MARQUIS ENGINEERING P.C. , DATED DECEMBER 2004.

**RobsonWoese INC**  
CONSULTING ENGINEERS

Albany Buffalo Rochester Syracuse  
RWJOB#13100

OFFICE OF ISSUE:  
ONE TOWNE CENTRE  
501 JOHN JAMES AUDUBON PARKWAY  
AMHERST, NY 14228  
EMAIL: RWB@RWROBSONWOESE.COM  
T 716.636.1800  
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**tredo**  
ENGINEERS

85 River Rock Drive,  
Suite 101  
Buffalo, New York 14207  
716.876.7147 ph  
716.876.0667 fax

**E C M C**

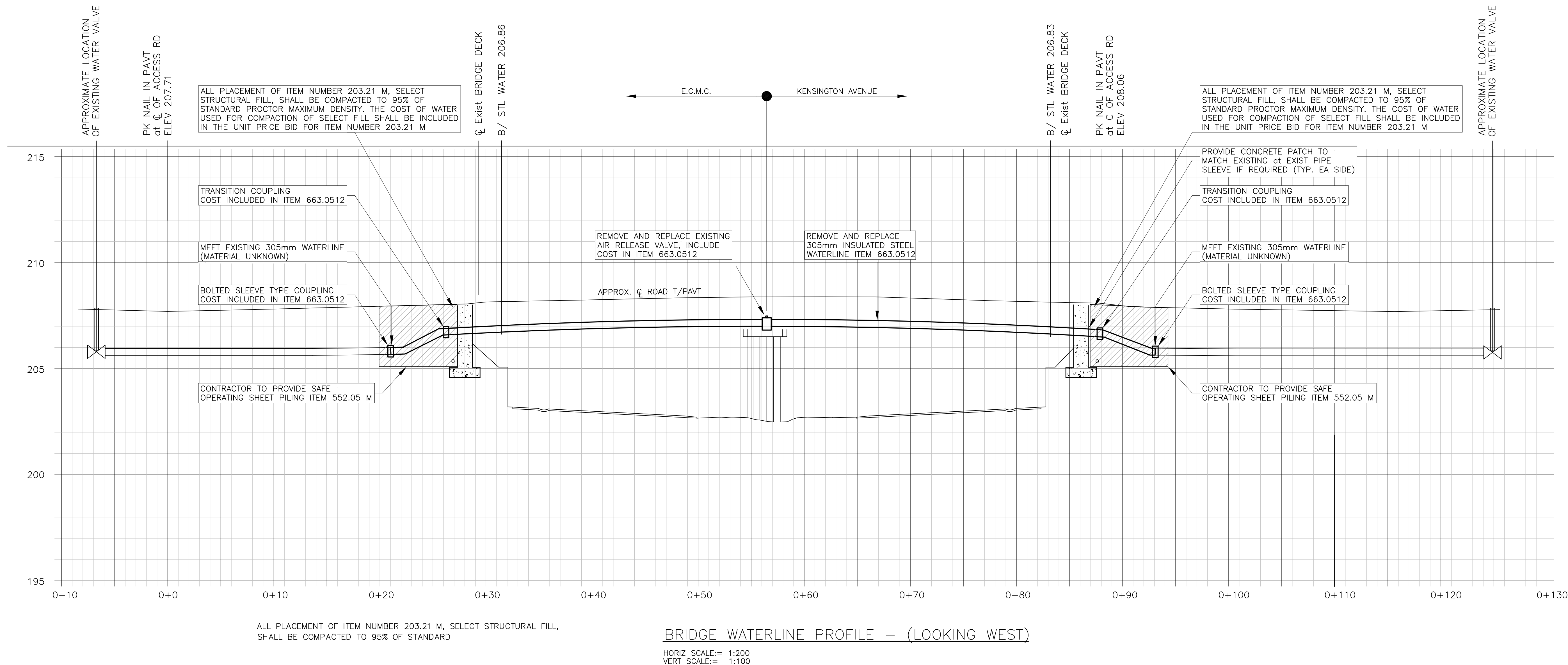
ERIE COUNTY MEDICAL CENTER  
ACCESS ROAD OVERPASS  
WATER MAIN REPLACEMENT

IN PROGRESS	04.15.11	
NO.	REVISIONS	DATE
JOB NO. 13100		
DESIGNED BY AVM		
CHECKED BY MJE		
SCALE 1 : 200		
DATE 02/25/2011		
DRAWING TITLE		
WATERLINE PLAN		
DRAWING NO.		
WL-1		

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NOTES:

1. PROVIDE CLASS A CONCRETE THRUST BLOCKS ACCORDING TO DETAILS SHOWN ON DWG WL-3.
2. THE CONTRACTOR IS ADVISED THAT THE DEPTH OF THE EXISTING UTILITIES ARE APPROXIMATE. THE DEPTH OF THE EXISTING WATERLINE WILL NEED TO BE FIELD VERIFIED.
3. MECHANICAL JOINT FITTINGS WILL BE REQUIRED AT EACH PIPE JOINT. JOINTS TO BE TORQUED AS PER MANUFACTURERS RECOMMENDATIONS. COST OF FITTINGS, BOLTS, AND RETAINING GLANDS TO BE PAID FOR UNDER ITEM 663.0512.
4. ALL WELDING SHALL BE DONE AS REQUIRED BY SCM AND AWWA C206 CODE.
5. THE CONTRACTOR SHALL VERIFY THE EXISTING WATERLINE PIPE MATERIAL AND DIAMETER AND PROVIDE SUBMITTAL TO THE ENGINEER OF THE APPROPRIATE MECHANICAL RESTRAINT GLAND.
6. CARRIER PIPE SHALL BE 12 NPS STEEL PRESSURE WATER PIPE COMPLYING WITH THE REQUIREMENTS OF AWWA C 200. PIPE INTERIOR SHALL BE COATED WITH COAL TAR ENAMEL AND SHALL COMPLY WITH THE REQUIREMENTS OF AWWA STANDARD C 203.
7. EXPANSION JOINT DESIGNED TO CARRY COLD WATER AT 200 PSI MAXIMUM INTERNAL PRESSURE. EXPANSION JOINT AS SUPPLIED BY DRESSER MFG. DIVISION OF BRADFORD, PA OR SMITH-BLAIR CO. OF SAN FRANCISCO, CA. OR OTHER APPROVED EQUIVALENT.
8. THE STEEL WATER MAIN SHALL BE FACTORY INSULATED WITH 75 mm POLYURETHANE INSULATION. INSULATION SHALL BE CARRIED AROUND ALL STEEL PIPE AND EXPANSION JOINTS, EXCEPT THAT INSULATION AT EXPANSION JOINTS SHALL NOT RESTRICT OR INTERFERE WITH LONGITUDINAL PIPE MOVEMENT.

9. PROTECTIVE JACKET- ALL STRAIGHT SECTIONS OF THE INSULATED PIPING SYSTEM SHALL BE FILAMENT WOUND, POLYESTER RESIN/FIBERGLASS REINFORCEMENT COMPOSITE DIRECTLY APPLIED ON THE INSULATING FOAM. THERMOPLASTIC CASING MATERIAL SHALL NOT BE ALLOWED. ALL FITTINGS OF THE INSULATED PIPING SYSTEM SHALL BE PREFABRICATED TO MINIMIZE FIELD JOINTS AND JACKETED IN A CHOPPED SPRAY UP, POLYESTER RESIN/FIBERGLASS- REINFORCED COMPOSITE, DIRECTLY APPLIED ONTO THE INSULATING FOAM TO A THICKNESS RELATED TO THE FILIMENT-WOUND JACKET THICKNESS.
10. ALL PIPE AND APPURTENANCES SHALL COMPLY WITH APPLICABLE CODES OF THE "STANDARD SPECIFICATIONS OF FABRICATED ELECTRONICALLY WELDED STEEL PIPE" OF THE AMERICAN WATER WORKS ASSOCIATION NO. C-200-91 OR LATEST REVISION THEREOF.
11. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND SHALL SHOW THE LOCATION, SIZE, MANUFACTURER'S NAME AND IDENTIFICATION NUMBER OF ALL COMPONENT PARTS. THE ENGINEER MAY TAKE NO EXCEPTION TO THESE SHOP DRAWINGS IF THEY ARE IN CONFORMANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS, RETURN THE SHOP DRAWINGS TO THE CONTRACTOR FOR CORRECTIONS, OR REJECT THE SHOP DRAWINGS. IF THE SHOP DRAWINGS ARE RETURNED FOR CORRECTIONS OR REJECTED, THE CONTRACTOR SHALL RESUBMIT SHOP DRAWINGS WHICH ARE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND THE ENGINEERS COMMENTS.
12. CONTRACTOR TO PROVIDE STEEL SLEEVE AT BRIDGE ABUTMENTS TO ALLOW FREE LONGITUDINAL MOVEMENT OF WATER MAIN.

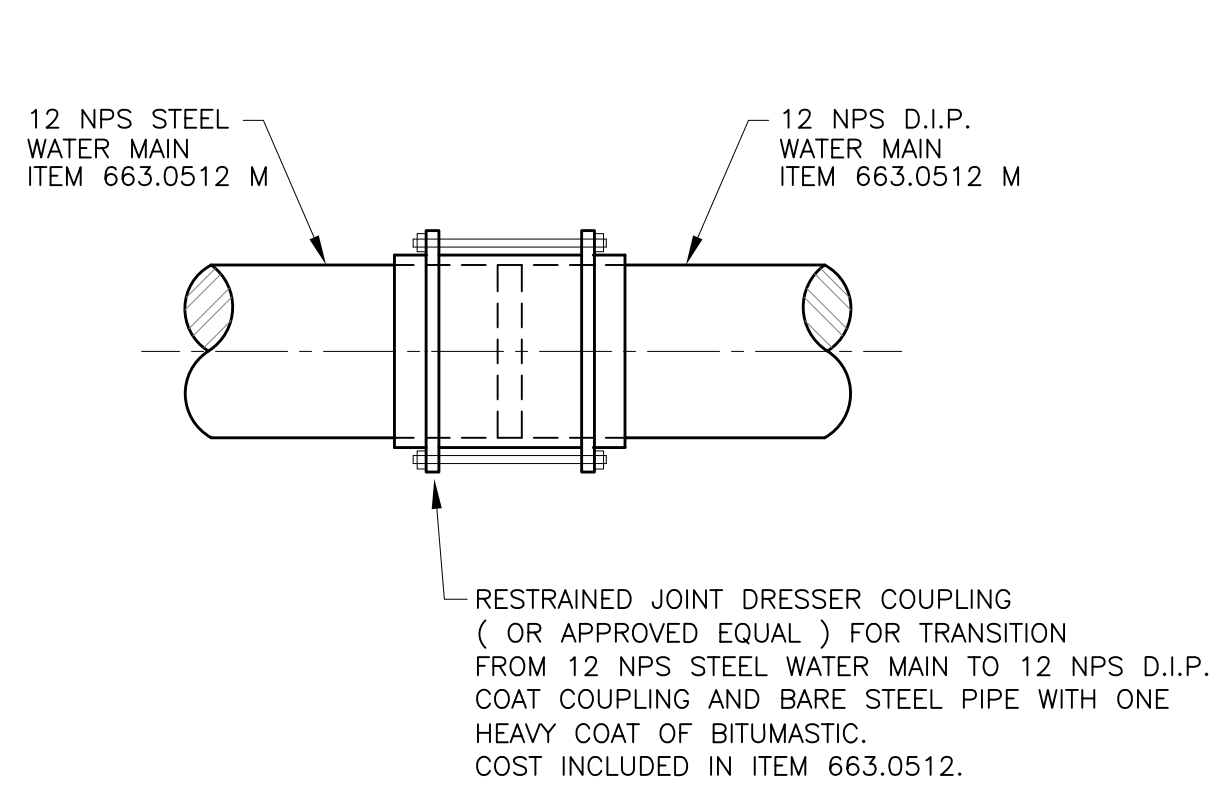
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NO.	REVISIONS	DATE
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DESIGNED BY	AVM	
CHECKED BY	MJE	
SCALE	AS NOTED	
DATE	02/25/2011	

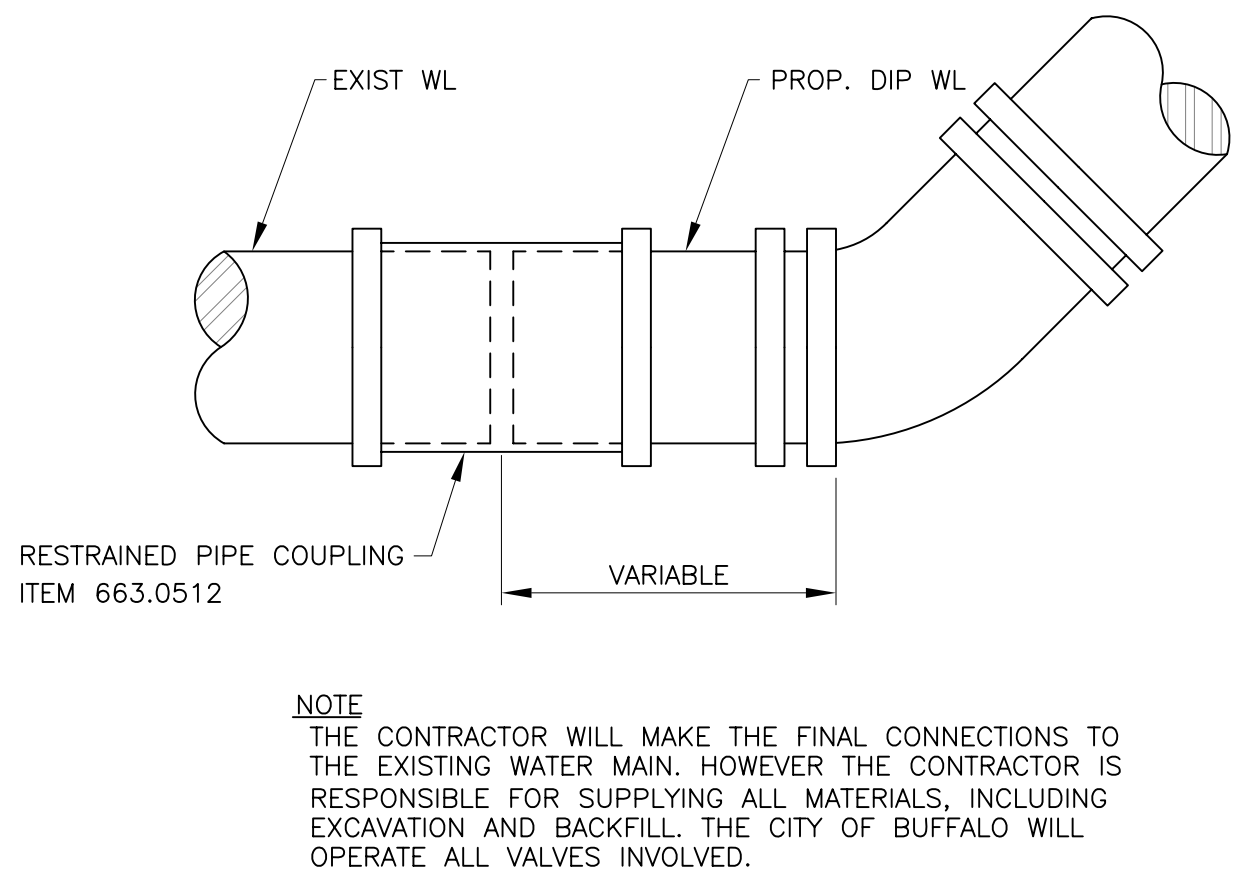
DRAWING TITLE  
**WATERLINE PROFILE  
AND PIPE ELEVATION  
AND DIRECTION  
CHART**

DRAWING NO.  
**WL-2**

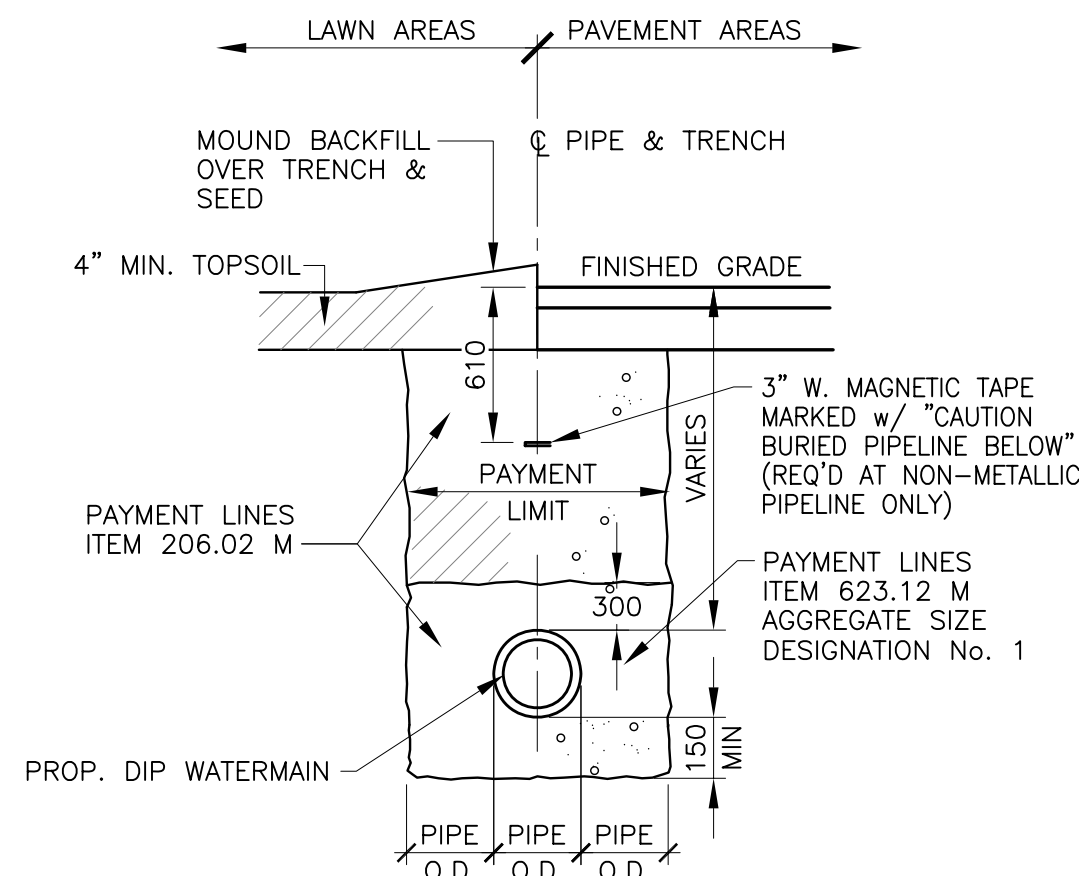




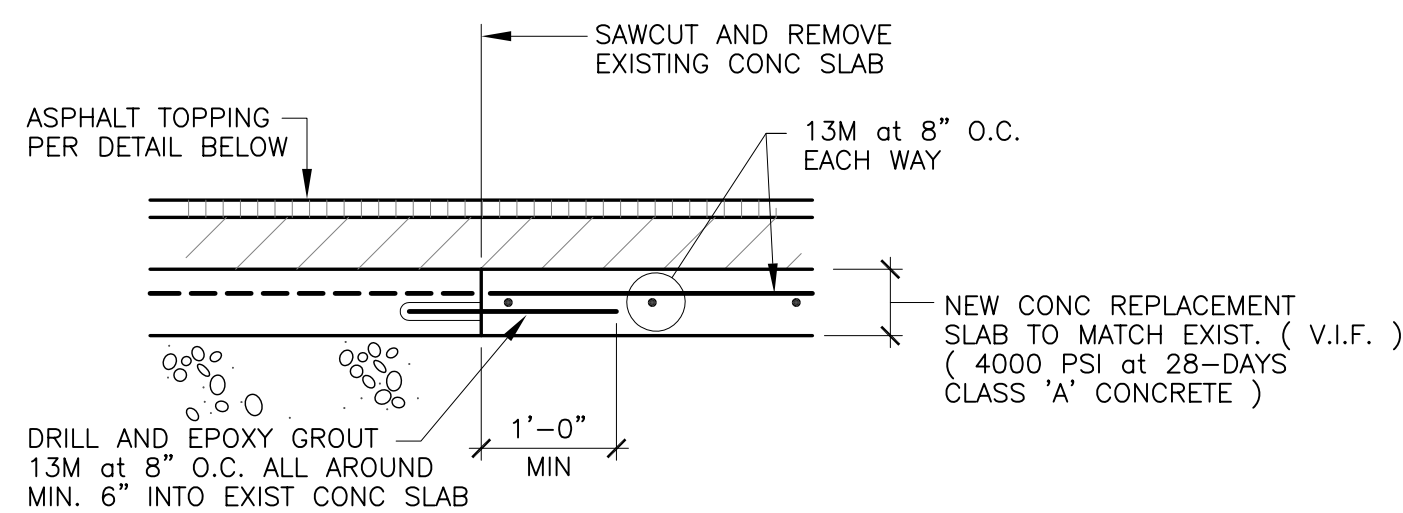
**TYPICAL CONNECTION DETAIL  
(DUCTILE TO STEEL)**



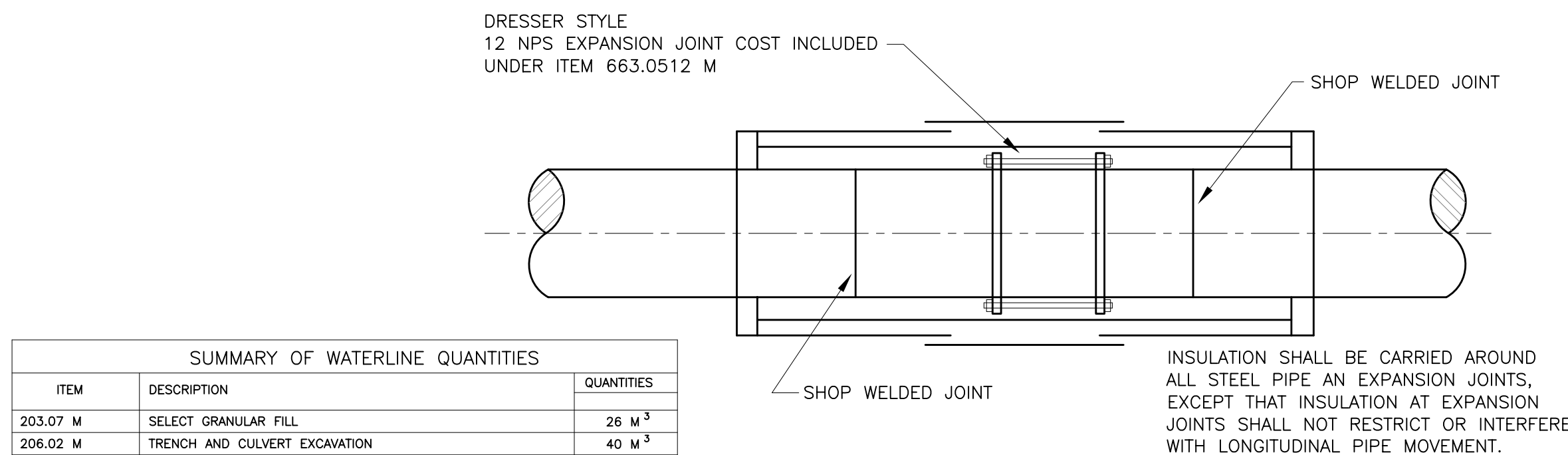
**TYPICAL CONNECTION DETAIL  
(DUCTILE TO EXISTING PIPE)**



**TYPICAL WATERLINE  
TRENCH**

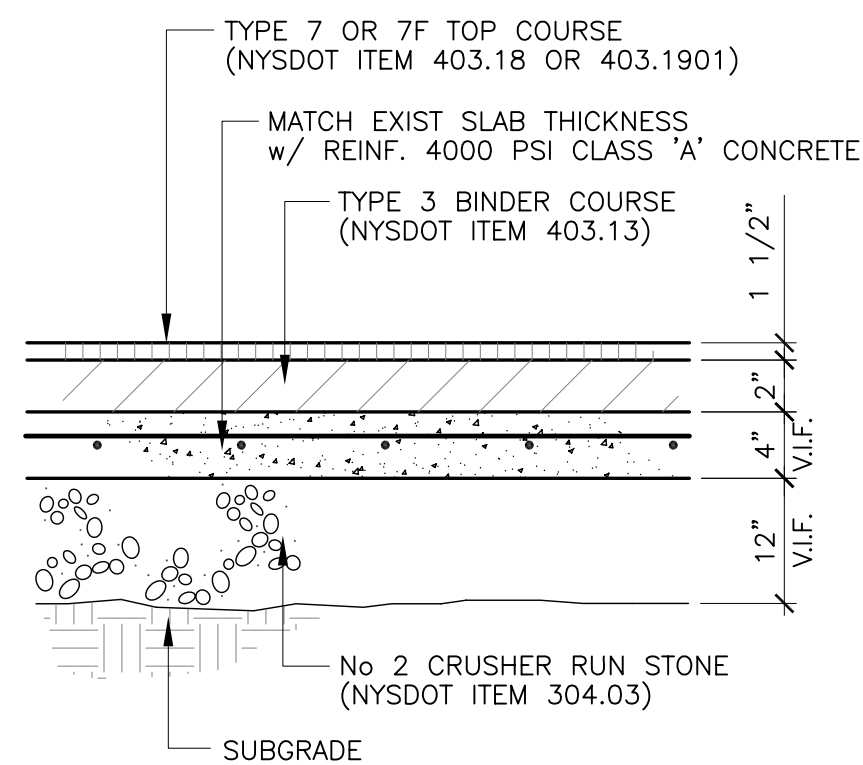


**CONCRETE APPROACH SLAB  
REPLACEMENT SECTION**

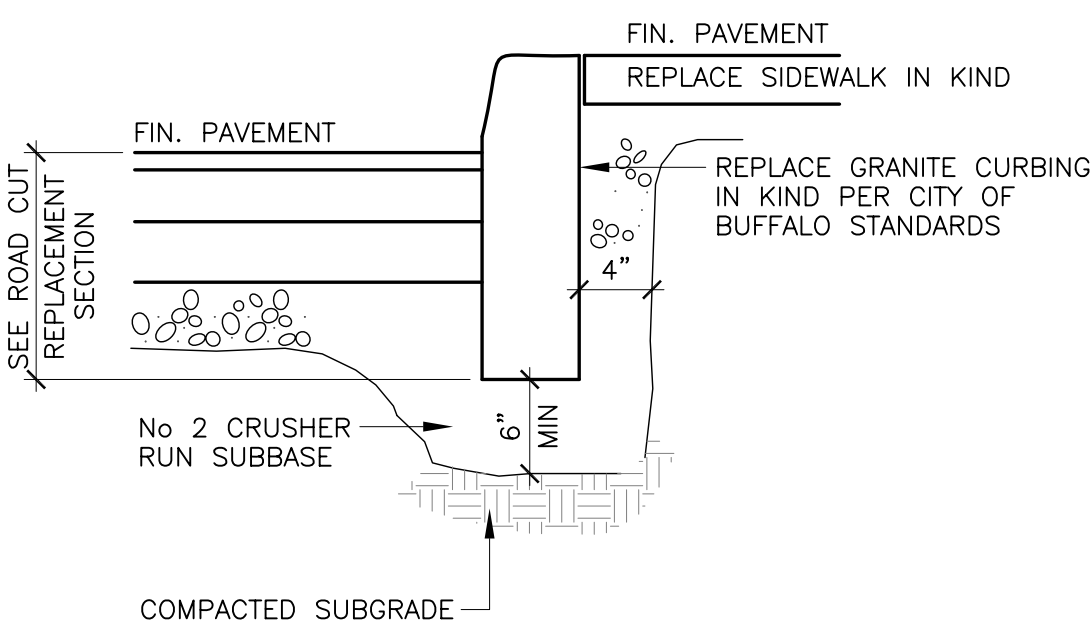
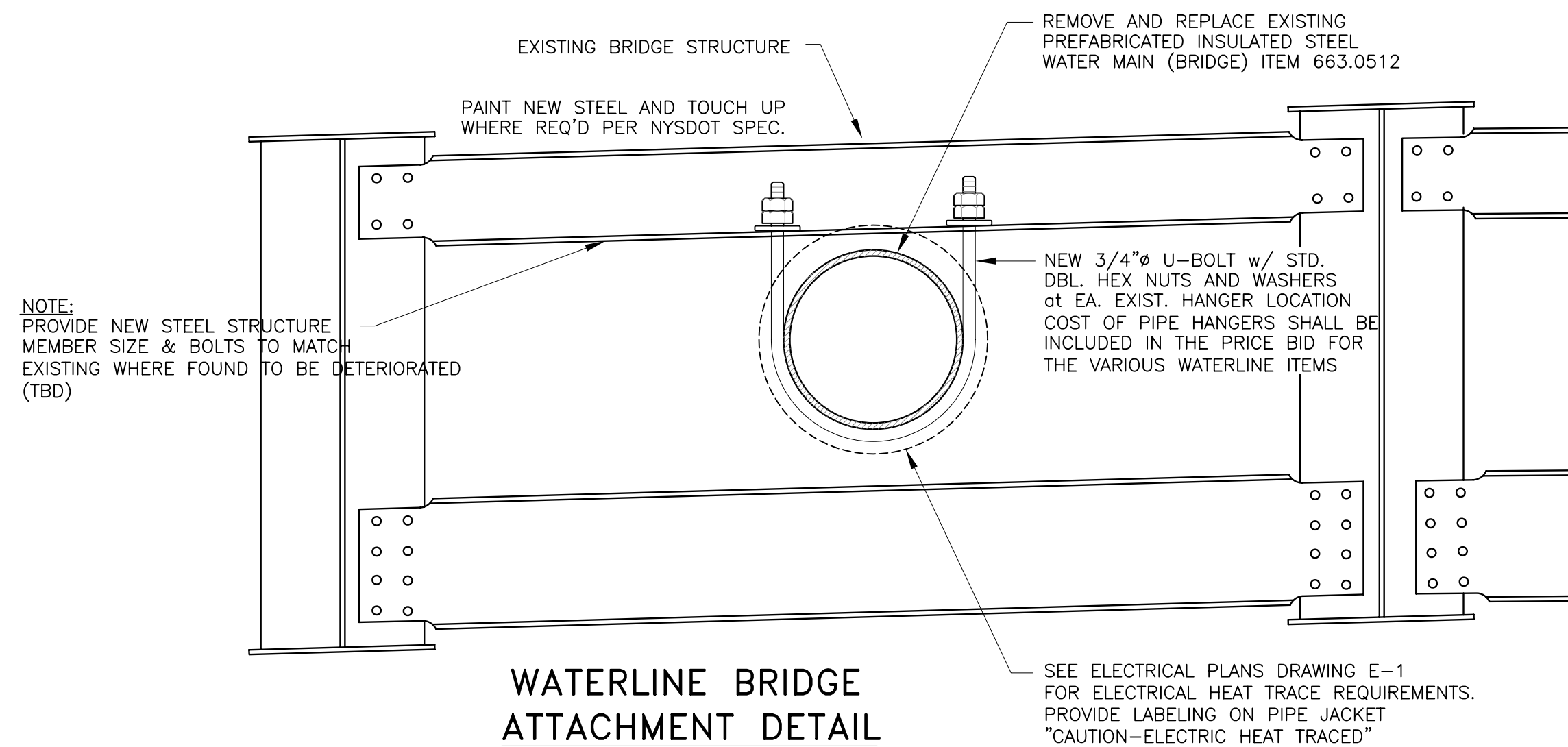
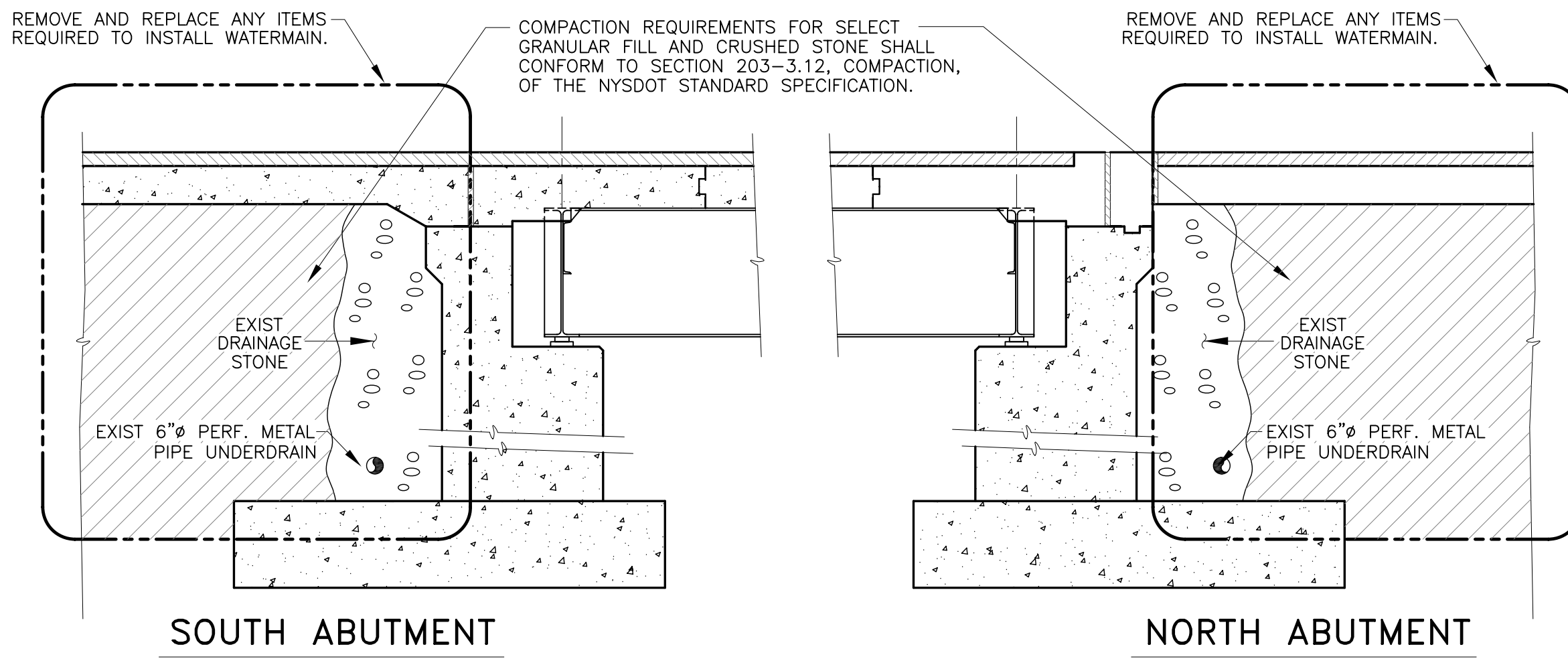


**EXPANSION JOINT DETAIL**

SUMMARY OF WATERLINE QUANTITIES		
ITEM	DESCRIPTION	QUANTITIES
203.07 M	SELECT GRANULAR FILL	26 M <sup>3</sup>
206.02 M	TRENCH AND CULVERT EXCAVATION	40 M <sup>3</sup>
552.05 M	SAFE OPERATION SHEET PILING	43 M <sup>3</sup>
623.12 M	CRUSHED STONE IN-PLACE MEASURE	16 M <sup>3</sup>
663.0112 M	DUCTILE IRON WATERLINE- 12 NPS	24 M
663.0512 M	PREFABRICATED INSULATED STEEL PIPE- 12 NPS	60 M
663.2312 M	POLYETHYLENE TUBE ENCASMENT FOR D.I.P. AND SPECIALS	24 M
663.2002 M	SPECIALS FOR DUCTILE IRON PIPE	600 kg



**ROAD CUT REPLACEMENT  
PAVEMENT SECTION**

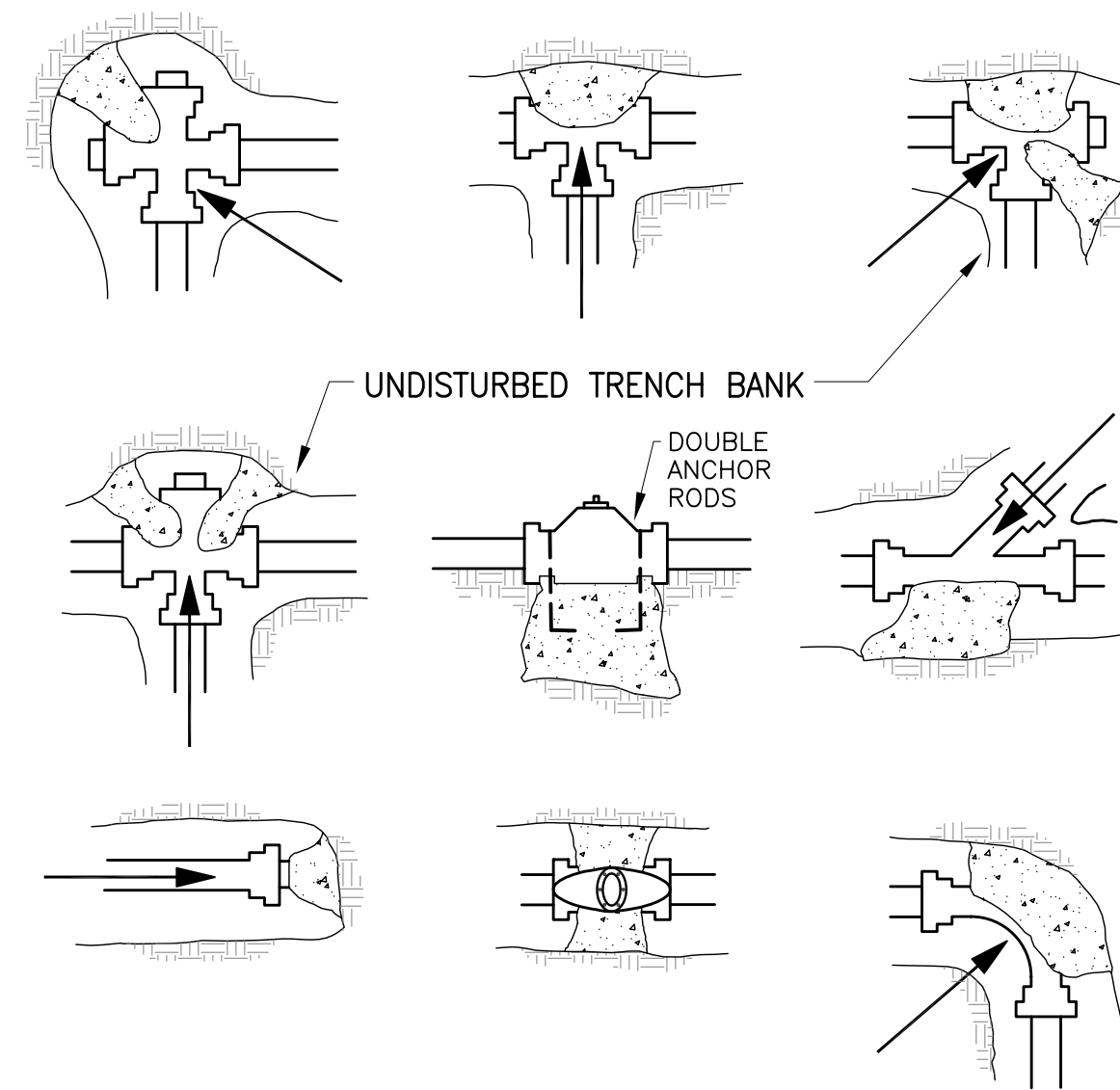


## GENERAL NOTES

- ALL INSTALLATIONS ARE TO BE IN ACCORDANCE WITH BUFFALO DIVISION OF WATER/ECWA AND ALL OTHER APPLICABLE REGULATORY AGENCY STANDARDS AND SPECIFICATIONS.
- RECORD PLAN INFORMATION PROVIDED BY UTILITY OWNERS HAS BEEN PLOTTED ON THE CONTRACT PLANS. PHYSICAL SURFACE FEATURES, SUCH AS VALVE BOXES AND HYDRANTS, HAVE BEEN FIELD LOCATED. DEPTHS WERE ESTIMATED FROM EITHER NEARBY VALVES OR EXCAVATIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY INFORMATION.
- THE CONTRACTOR SHALL PERFORM TEST PITS AT EXISTING PIPES, VALVES ETC. AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. THE PIPE LAYING SCHEDULE SHOULD REFLECT THE FIELD INFORMATION OBTAINED BY THE TEST PITS. THE STATIONING OF COUPLINGS AND BENDS SHOULD COORDINATE WITH THE TEST PIT INFORMATION IN ORDER TO FACILITATE CONSTRUCTION OF THE NEW PIPELINES AND CONSTRUCTION OF THE INTERCONNECTIONS. TEST PITS SHALL BE PAID FOR UNDER ITEM 206.02 M
- THE CONTRACTOR SHALL DEWATER TRENCHES, EXISTING MAINS, ETC. AS REQUIRED TO MAINTAIN A DRY TRENCH WHILE WORK IS BEING PERFORMED.
- TEMPORARY CAPS SHALL BE WATERTIGHT AND SHALL REMAIN IN PLACE UNTIL THE ACTUAL INTERCONNECTIONS ARE MADE.
- CAPS FOR PLUGS ON IRON PIPE SHALL BE MECHANICALLY RESTRAINED WATER-TIGHT CAPS OR PLUGS COMPATIBLE WITH THE PIPE BEING CAPPED AND SUITABLE TO RESIST THRUST DUE TO OPERATING PRESSURES OR AS DIRECTED BY THE ENGINEER.
- CONNECTIONS AT ALL FITTINGS, AND AS SHOWN ON THE PLANS, SHALL BE RESTRAINED JOINTS.
- THE CONTRACTOR SHALL MAKE THE FINAL INTERCONNECTIONS, HOWEVER THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL MATERIALS INCLUDING EXCAVATION AND BACKFILL. THE CITY OF BUFFALO WILL OPERATE ALL VALVES INVOLVED.
- NO INTERCONNECTIONS WILL BE MADE BY THE CONTRACTOR UNTIL THE PROPOSED PIPELINES AND END OF LINE VALVES HAVE BEEN INSTALLED, TESTED AND DISINFECTED AND THE ENGINEER AUTHORIZES THE INTERCONNECTION.
- SEE ELECTRICAL PLANS E-1 FOR HEAT TRACE REQUIREMENTS.

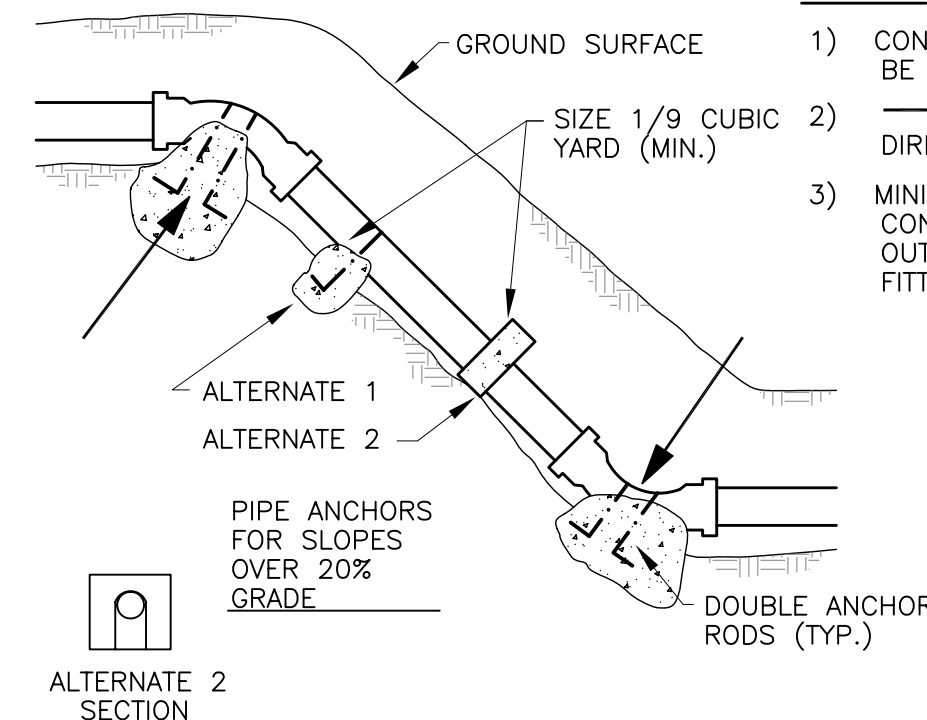
## RECOMMENDED SEQUENCE OF OPERATIONS FOR 12 NPS WATERLINE

- THE CONTRACTOR SHALL INSTALL THE 12 NPS WATERLINE BETWEEN STATIONS 0+21 AND 0+93 SHOWN ON DWG No. WL-1. LAY THE PIPE AS CLOSE AS POSSIBLE TO ITS PROPOSED TIE IN POINTS AND PLUG THE ENDS.
- CONTRACTOR SHALL PROVIDE A FILL/TEST FITTING ON THE NEW WATERLINE TO FACILITATE THE TESTING AND DISINFECTION OF THE NEW WATERLINE.
- PERFORM HYDROSTATIC TESTS. THIS WORK SHALL BE INCLUDED UNDER TESTING PROCEDURES. NO SEPARATE PAYMENT WILL BE MADE.
- AFTER COMPLETION OF HYDROSTATIC TESTS, FLUSH AND DISINFECT THE WATERLINES IN ACCORDANCE WITH STANDARD METHODS OF THE WATER AUTHORITY AND ERIE COUNTY DEPARTMENT OF HEALTH REQUIREMENTS AND RECEIVE ERIE COUNTY DEPARTMENT OF HEALTH APPROVAL. NO SEPARATE PAYMENT WILL BE MADE.
- UPON APPROVAL OF THE TEST RESULTS, THE CONTRACTOR SHALL MAKE THE INTERCONNECTION BETWEEN THE NEW AND EXISTING 12 NPS WATERLINE AT STATIONS 0+21 AND 0+93.



## NOTES:

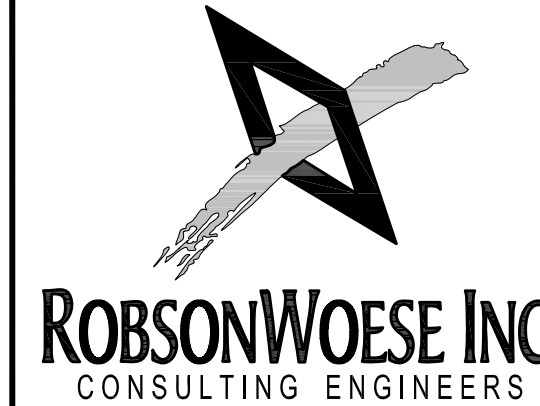
- CONCRETE USED SHALL BE NYSDOT CLASS B.
- INDICATES DIRECTION OF THRUST.
- MINIMUM DEPTH OF CONC. SHALL EXCEED OUTSIDE DIA. OF FITTING BY 2'.



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Albany Buffalo Rochester Syracuse  
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OFFICE OF ISSUE:  
ONE TOWNE CENTRE  
501 JOHN JAMES AUDUBON PARKWAY  
AMHERST, NY 14228  
EMAIL: RWB@RWROBSONWOOSE.COM  
T 716.636.1800  
F 716.636.1855

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**tredo**  
ENGINEERS

85 River Rock Drive,  
Suite 101  
Buffalo, New York 14207  
716.876.7147 ph  
716.876.0667 fax

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ACCESS ROAD OVERPASS  
WATER MAIN REPLACEMENT

NO.	REVISIONS	DATE
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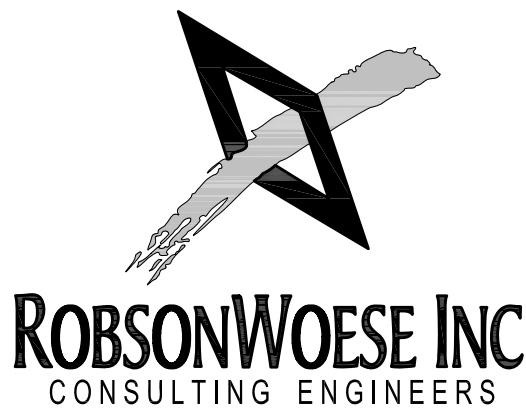
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DATE 02/25/2011

DRAWING TITLE

**TYPICAL DETAILS,  
GENERAL NOTES,  
QUANTITIES, AND  
OPERATION NOTES**

DRAWING NO.

**WL-3**



Albany Buffalo Rochester Syracuse  
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OFFICE OF ISSUE:  
ONE TOWNE CENTRE  
501 JOHN JAMES AUDUBON PARKWAY  
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EMAIL: RWBJ@ROBSONWOESE.COM  
T 716.636.1800  
F 716.636.1856

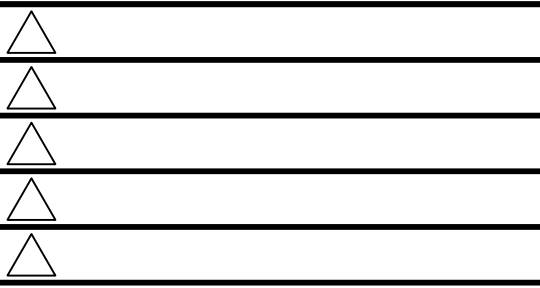
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JOB NO. 13100  
DESIGNED BY AVM  
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SCALE 1" = 20'  
DATE 02/25/2011

DRAWING TITLE

TRAFFIC PLAN

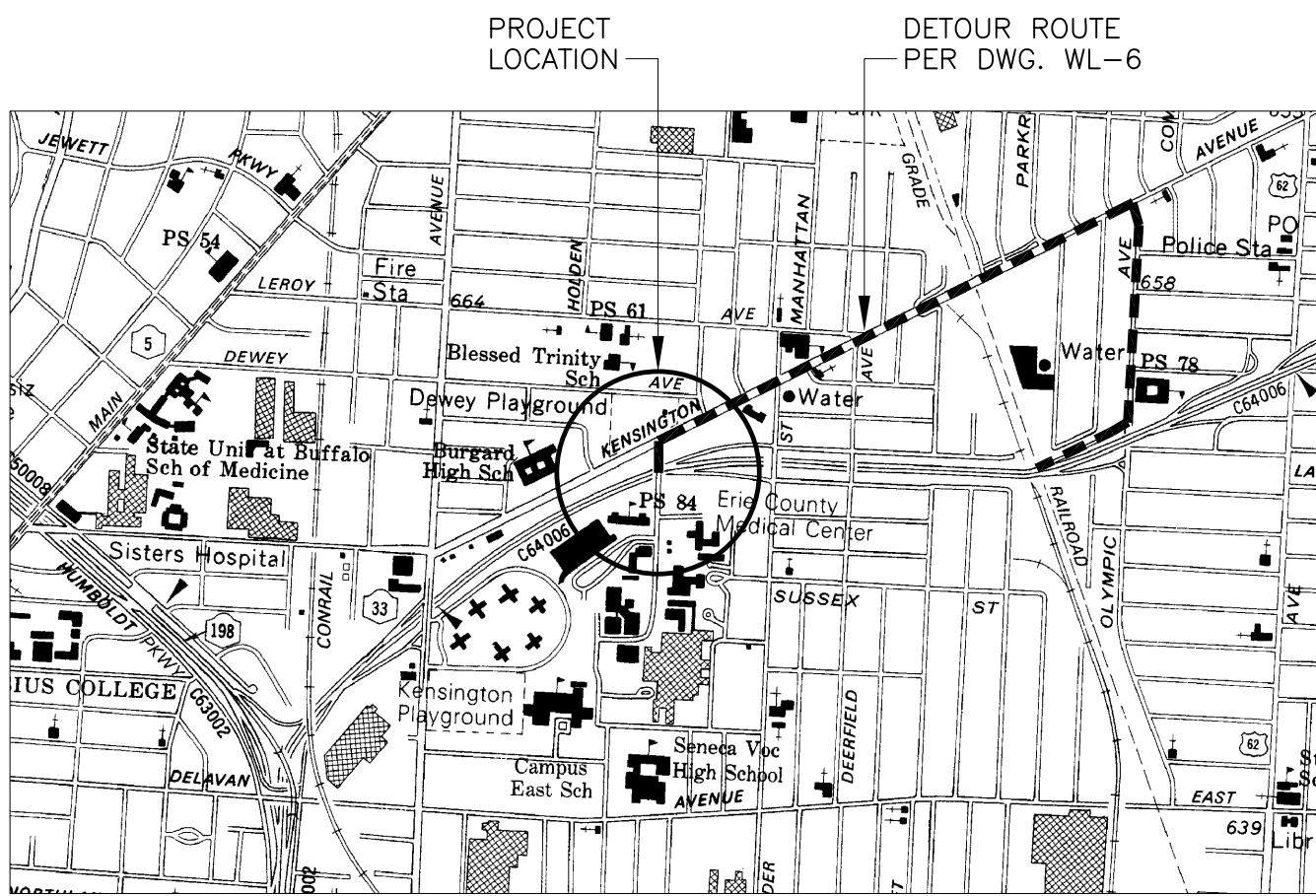
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WL-4

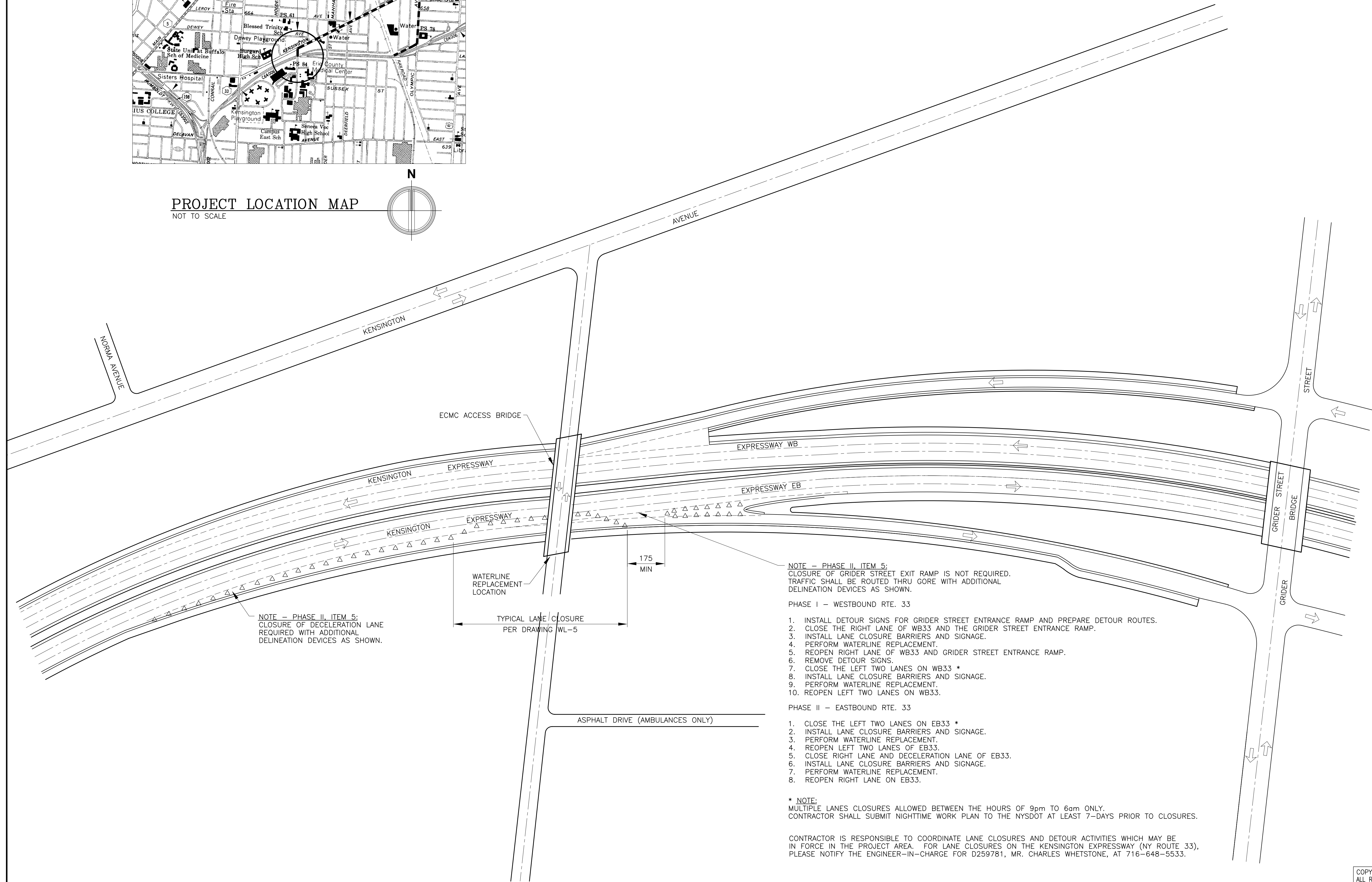
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PROJECT LOCATION MAP  
NOT TO SCALE



NOTE - PHASE II, ITEM 5:  
CLOSURE OF GRIDER STREET EXIT RAMP IS NOT REQUIRED.  
TRAFFIC SHALL BE ROUTED THRU GORE WITH ADDITIONAL  
DELINEATION DEVICES AS SHOWN.

PHASE I - WESTBOUND RTE. 33

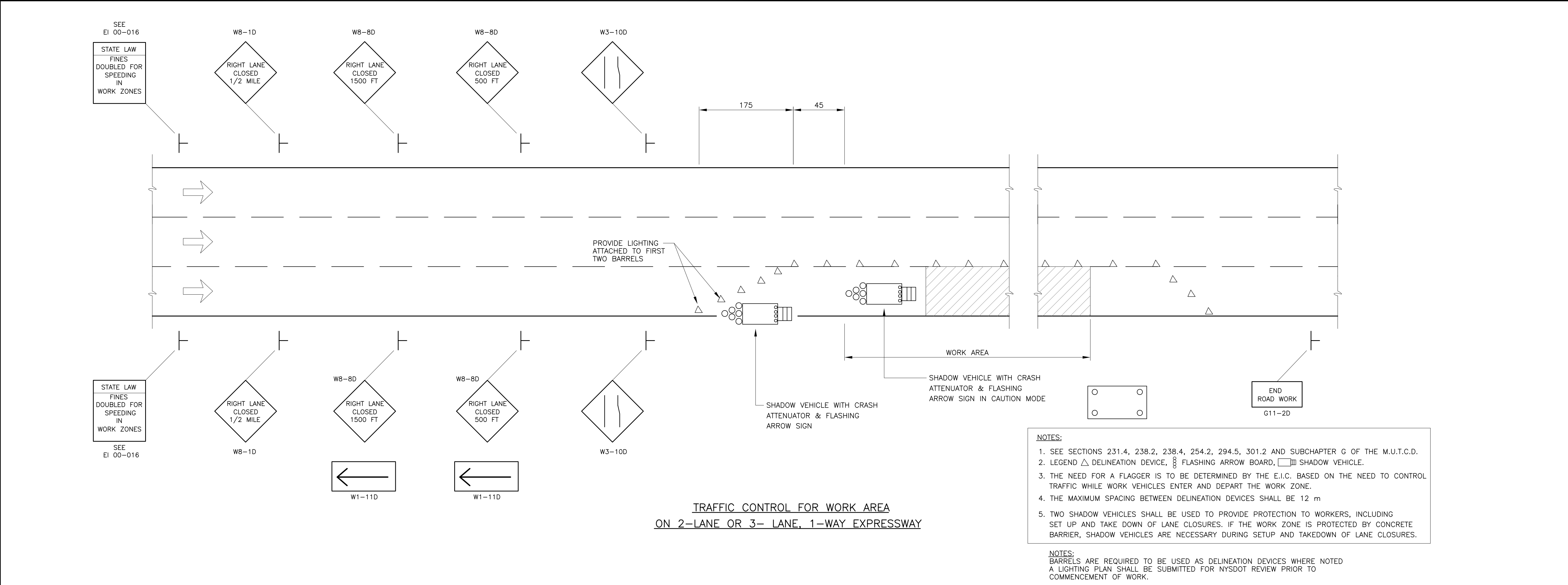
1. INSTALL DETOUR SIGNS FOR GRIDER STREET ENTRANCE RAMP AND PREPARE DETOUR ROUTES.
2. CLOSE THE RIGHT LANE OF WB33 AND THE GRIDER STREET ENTRANCE RAMP.
3. INSTALL LANE CLOSURE BARRIERS AND SIGNAGE.
4. PERFORM WATERLINE REPLACEMENT.
5. REOPEN RIGHT LANE OF WB33 AND GRIDER STREET ENTRANCE RAMP.
6. REMOVE DETOUR SIGNS.
7. CLOSE THE LEFT TWO LANES ON WB33 \*
8. INSTALL LANE CLOSURE BARRIERS AND SIGNAGE.
9. PERFORM WATERLINE REPLACEMENT.
10. REOPEN LEFT TWO LANES ON WB33.

PHASE II - EASTBOUND RTE. 33

1. CLOSE THE LEFT TWO LANES ON EB33 \*
2. INSTALL LANE CLOSURE BARRIERS AND SIGNAGE.
3. PERFORM WATERLINE REPLACEMENT.
4. REOPEN LEFT TWO LANES OF EB33.
5. CLOSE RIGHT LANE AND DECELERATION LANE OF EB33.
6. INSTALL LANE CLOSURE BARRIERS AND SIGNAGE.
7. PERFORM WATERLINE REPLACEMENT.
8. REOPEN RIGHT LANE ON EB33.

\* NOTE:  
MULTIPLE LANES CLOSURES ALLOWED BETWEEN THE HOURS OF 9pm TO 6am ONLY.  
CONTRACTOR SHALL SUBMIT NIGHTTIME WORK PLAN TO THE NYSOT AT LEAST 7-DAYS PRIOR TO CLOSURES.

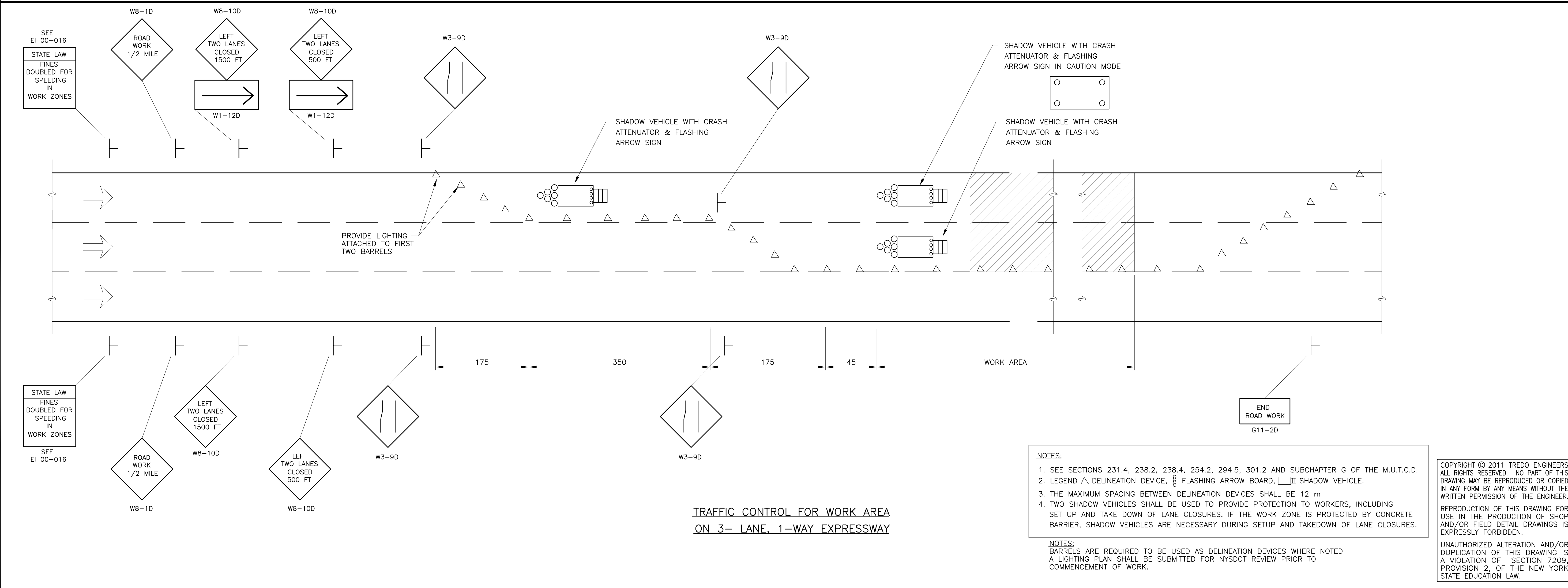
CONTRACTOR IS RESPONSIBLE TO COORDINATE LANE CLOSURES AND DETOUR ACTIVITIES WHICH MAY BE  
IN FORCE IN THE PROJECT AREA. FOR LANE CLOSURES ON THE KENSINGTON EXPRESSWAY (NY ROUTE 33),  
PLEASE NOTIFY THE ENGINEER-IN-CHARGE FOR D259781, MR. CHARLES WHETSTONE, AT 716-648-5533.



TRAFFIC CONTROL FOR WORK AREA  
ON 2-LANE OR 3-LANE, 1-WAY EXPRESSWAY

- NOTES:
1. SEE SECTIONS 231.4, 238.2, 238.4, 254.2, 294.5, 301.2 AND SUBCHAPTER G OF THE M.U.T.C.D.
  2. LEGEND  $\Delta$  DELINEATION DEVICE,  $\text{⏏}$  FLASHING ARROW BOARD,  $\text{⏏}$  SHADOW VEHICLE.
  3. THE NEED FOR A FLAGGER IS TO BE DETERMINED BY THE E.I.C. BASED ON THE NEED TO CONTROL TRAFFIC WHILE WORK VEHICLES ENTER AND DEPART THE WORK ZONE.
  4. THE MAXIMUM SPACING BETWEEN DELINEATION DEVICES SHALL BE 12 m
  5. TWO SHADOW VEHICLES SHALL BE USED TO PROVIDE PROTECTION TO WORKERS, INCLUDING SET UP AND TAKE DOWN OF LANE CLOSURES. IF THE WORK ZONE IS PROTECTED BY CONCRETE BARRIER, SHADOW VEHICLES ARE NECESSARY DURING SETUP AND TAKEDOWN OF LANE CLOSURES.

NOTES:  
BARRELS ARE REQUIRED TO BE USED AS DELINEATION DEVICES WHERE NOTED  
A LIGHTING PLAN SHALL BE SUBMITTED FOR NYSDOT REVIEW PRIOR TO COMMENCEMENT OF WORK.



TRAFFIC CONTROL FOR WORK AREA  
ON 3-LANE, 1-WAY EXPRESSWAY

- NOTES:
1. SEE SECTIONS 231.4, 238.2, 238.4, 254.2, 294.5, 301.2 AND SUBCHAPTER G OF THE M.U.T.C.D.
  2. LEGEND  $\Delta$  DELINEATION DEVICE,  $\text{⏏}$  FLASHING ARROW BOARD,  $\text{⏏}$  SHADOW VEHICLE.
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NOTES:  
BARRELS ARE REQUIRED TO BE USED AS DELINEATION DEVICES WHERE NOTED  
A LIGHTING PLAN SHALL BE SUBMITTED FOR NYSDOT REVIEW PRIOR TO COMMENCEMENT OF WORK.

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CONSULTING ENGINEERS  
Albany Buffalo Rochester Syracuse  
RWJOB#13100

OFFICE OF ISSUE:  
ONE TOWNE CENTRE  
501 JOHN JAMES AUDUBON PARKWAY  
AMHERST, NY 14228  
EMAIL: RWBJ@ROBSONWOESE.COM  
T 716.636.1800  
F 716.636.1856

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**tredo**  
ENGINEERS  
85 River Rock Drive,  
Suite 101  
Buffalo, New York 14207  
716.876.7147 ph  
716.876.0667 fax

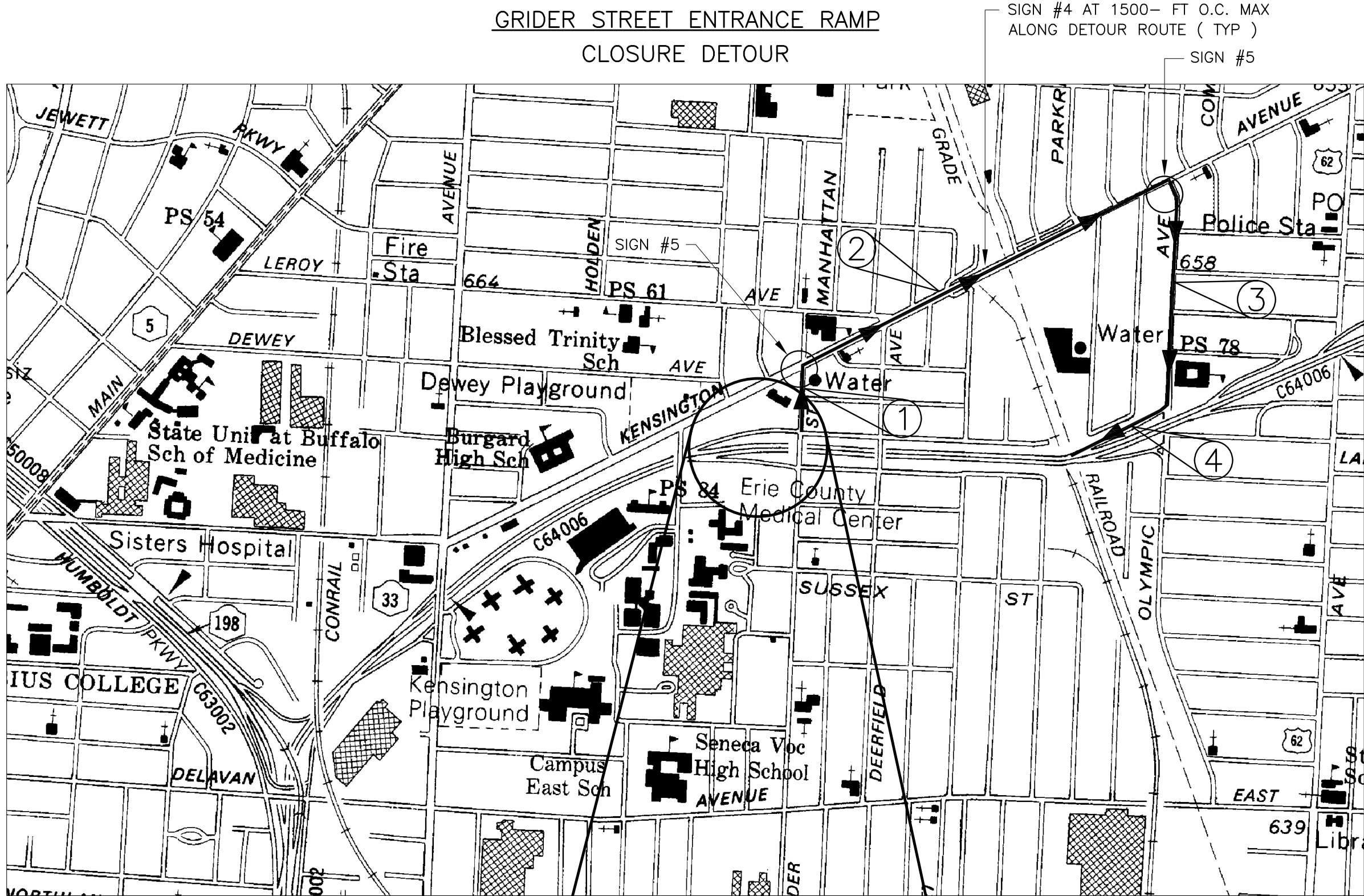
**E C M C**  
ERIE COUNTY MEDICAL CENTER  
ACCESS ROAD OVERPASS  
WATER MAIN REPLACEMENT

$\Delta$		
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$\Delta$	IN PROGRESS	04.15.11
NO.	REVISIONS	DATE
JOB NO.	13100	
DESIGNED BY	AVM	
CHECKED BY	MJE	
SCALE	NONE	
DATE	02/25/2011	

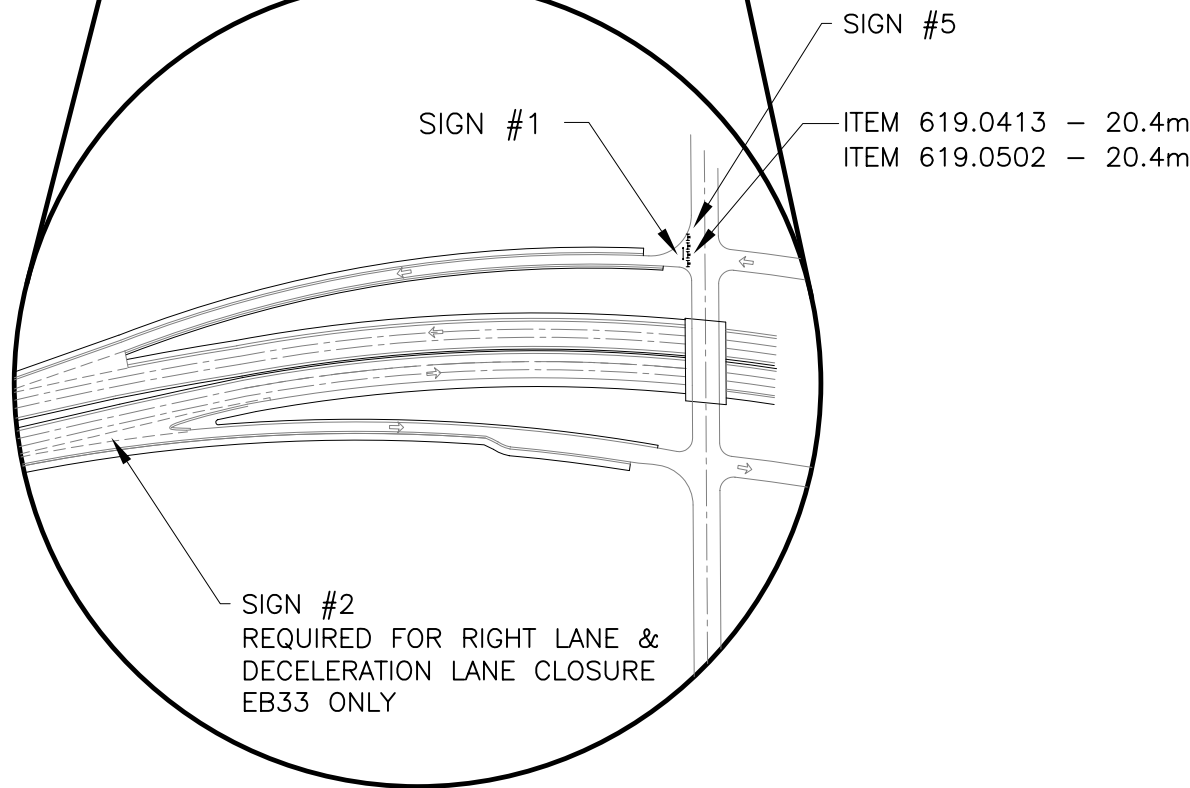
DRAWING TITLE  
**TRAFFIC CONTROL  
DIAGRAMS**

DRAWING NO.  
**WL-5**





- ROUTE: ○
- ① GRIDER STREET NORTH to
  - ② KENSINGTON AVE. EAST to
  - ③ OLYMPIC AVE. SOUTH to
  - ④ ENTRANCE RAMP WEST ON WB33



RAMP DETOUR SIGN TABLE

SIGN NUMBER	LEGEND	M.U.T.C.D. NUMBER	LOCATIONS	SIZE (mm)
1	ROAD CLOSED	R8-1C	*	1219 X 762
2	EXIT	G5-1Y	*	1524 X 1219
3	NOT USED		*	
4	DETOUR WEST 33 ↑	M14-25X M13-14X M3-1X M13-43X	*	750 X 375 750 X 375 900 X 900 750 X 525
5	DETOUR WEST 33 →	M14-25X M13-14X M3-1X M13-43X	*	750 X 375 750 X 375 900 X 900 750 X 525
6	NOT USED		*	
7	NOT USED		*	
8	NOT USED		*	

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OFFICE OF ISSUE:  
ONE TOWNE CENTRE  
501 JOHN JAMES AUDUBON PARKWAY  
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**tredo**  
ENGINEERS  
85 River Rock Drive,  
Suite 101  
Buffalo, New York 14207  
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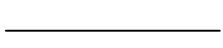






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△	IN PROGRESS	04.15.11
NO.	REVISIONS	DATE

JOB NO. 13100  
DESIGNED BY AVM  
CHECKED BY MJE  
SCALE NONE  
DATE 02/25/2011

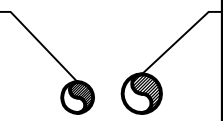
DRAWING TITLE  
**GRIDER STREET  
RAMP CLOSURE  
DETAILS**

DRAWING NO.  
**WL-6**

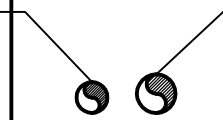
## ELECTRICAL SYMBOLS LIST

	EXISTING EQUIPMENT/WORK
	NEW EQUIPMENT/WORK
	REFERENCE TO DRAWING NOTE
	EXISTING SURFACE MOUNTED BRANCH CIRCUIT PANELBOARD
	JUNCTION BOX
	RESISTIVE TEMPERATURE SENSOR
	HEAT TRACE

ACTIVE RESISTIVE TEMPERATURE CONTROL CIRCUIT, SCHEDULE 80 PVC, 1" CONDUIT



ACTIVE PIPE MOUNTED HEAT TRACE POWER CIRCUIT, SCHEDULE 80 PVC, 1-1/4" CONDUIT

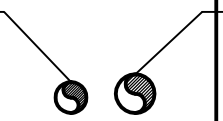


 **DUCTBANK SECTION**  
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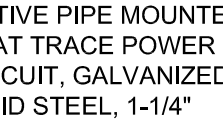
### NOTES:

- A. REFER TO ONE LINE DIAGRAM FOR CONDUCTORS AND CONTROL WIRING REQUIRED.

ACTIVE RESISTIVE TEMPERATURE CONTROL CIRCUIT, GALVANIZED RIGID STEEL, 1" CONDUIT



ACTIVE PIPE MOUNTED HEAT TRACE POWER CIRCUIT, GALVANIZED RIGID STEEL, 1-1/4" CONDUIT





 **DUCTBANK SECTION**  
NO SCALE

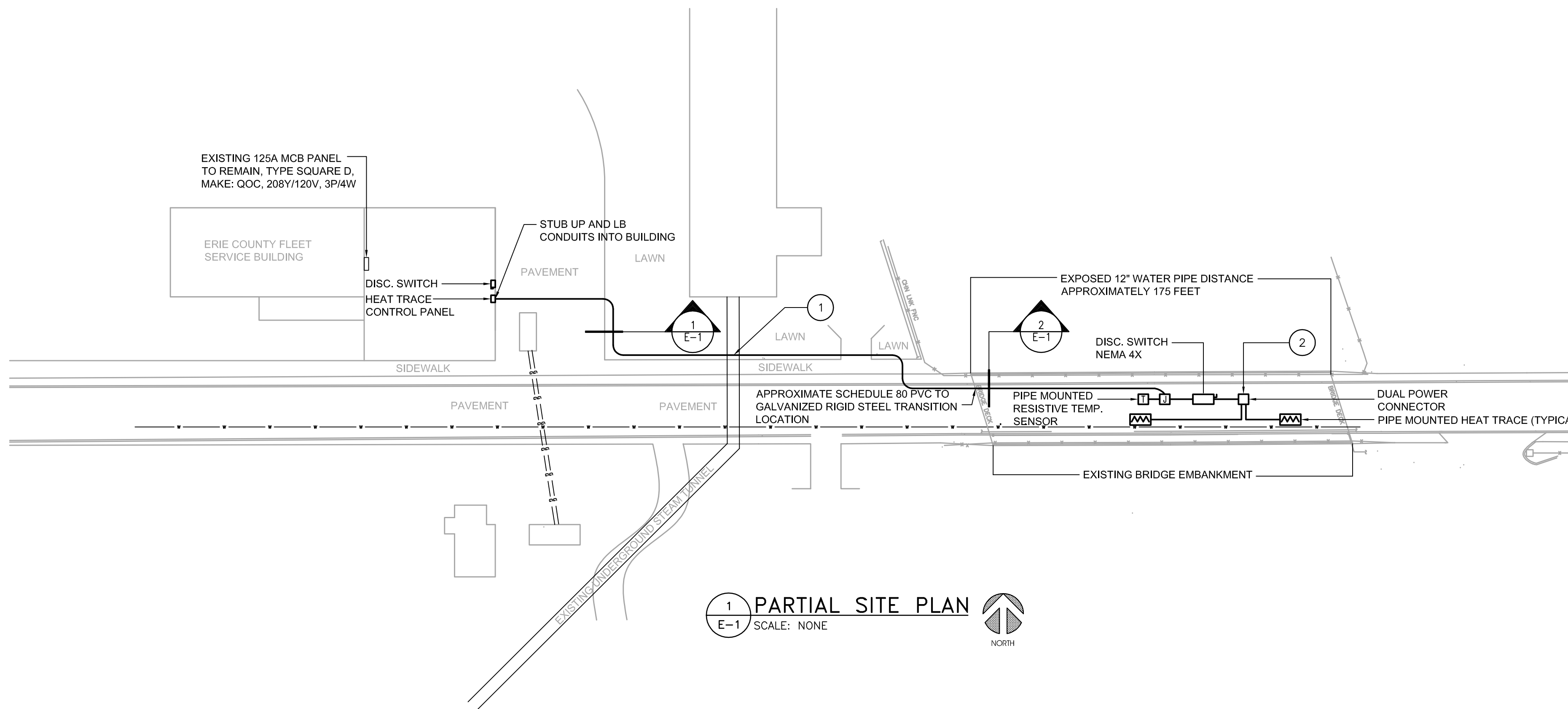
### NOTES:

- A. REFER TO ONE LINE DIAGRAM FOR CONDUCTORS AND CONTROL WIRING REQUIRED.

### EXISTING UTILITY LINE TYPES:

GAS 

WATER 





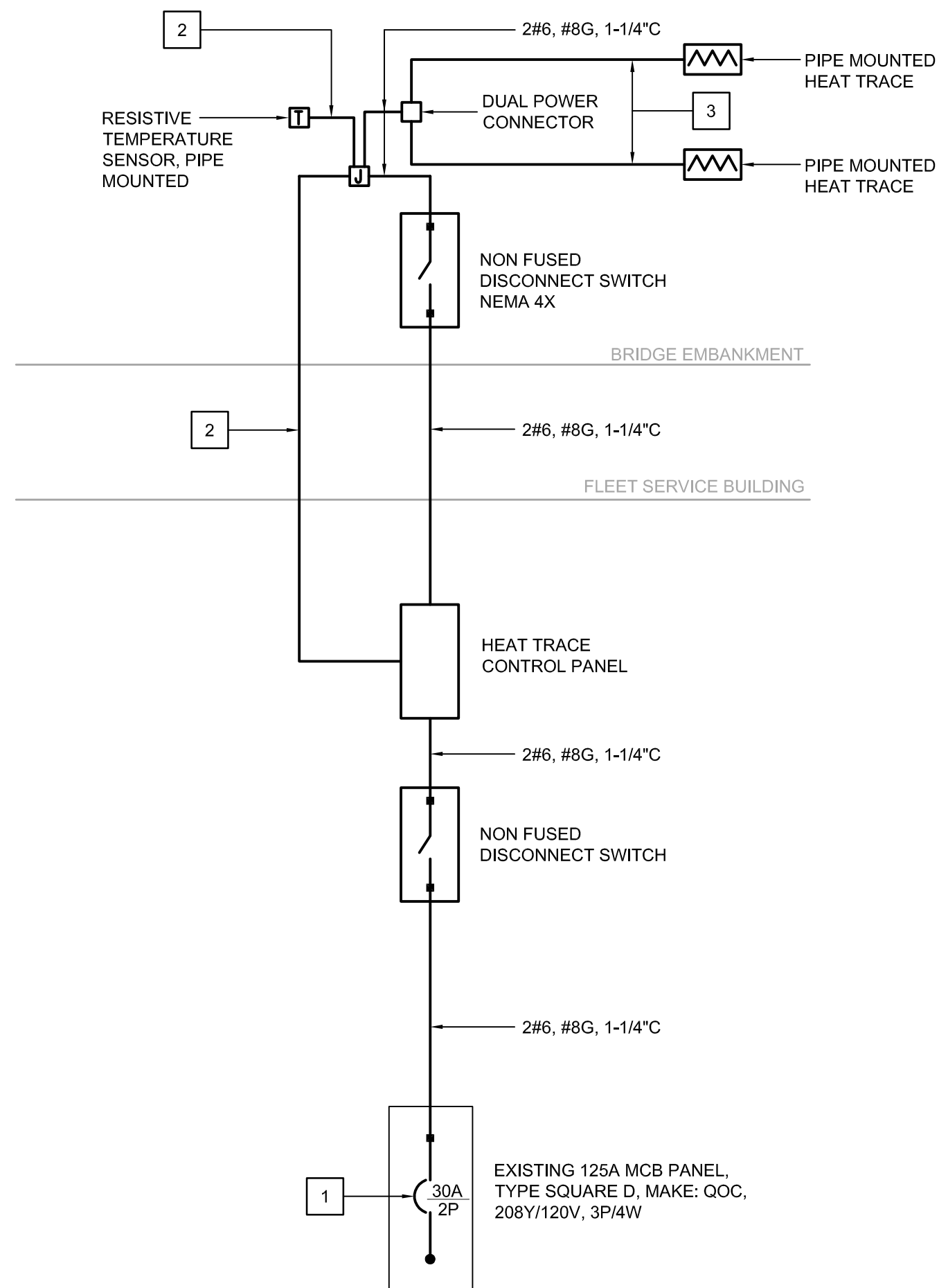
 **PARTIAL SITE PLAN**  
SCALE: NONE

### GENERAL NOTES:




- A. ALTHOUGH EVERY ATTEMPT HAS BEEN MADE TO INDICATE EXISTING UTILITIES AS ACCURATELY AS POSSIBLE FROM EXISTING SURVEYS, DRAWINGS, AND OTHER DATA, OTHER UTILITIES MAY BE PRESENT OR PLACED IN DIFFERENT LOCATIONS. VERIFY EXACT LOCATION OF EXISTING UTILITIES BY TEST HOLES OR SITE INVESTIGATION BEFORE EXCAVATING. NOTIFY THE UNDERGROUND FACILITIES PROTECTION ORGANIZATION (UFPO), TO LOCATE UTILITIES BEFORE WORK COMMENCES OR HIRE A PRIVATE LOCATING AGENCY.
- B. PROTECT AND MAINTAIN INTEGRITY OF EXISTING UTILITIES. CAREFULLY HAND EXCAVATE WHERE CROSSING EXISTING UTILITIES OR WHERE IN THE VICINITY OF EXISTING UTILITIES. FIELD VERIFY EXISTING LOCATIONS.
- C. DUCTBANK ROUTING IS DIAGRAMMATIC. ACTUAL ROUTING SHALL BE DETERMINED IN THE FIELD. COORDINATE WITH OTHER UTILITIES.
- D. PROVIDE SURFACE CUTS AND RESTORATION OF ALL SIDEWALKS, PAVEMENT, LAWN AREAS, AND PLANTINGS AS REQUIRED TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL FIELD VERIFY EXACT FIELD CONDITIONS AND PROVIDE THE APPROPRIATE SURFACE CUT AND RESTORATION WORK AS DETAILED ON DETAIL DRAWINGS.
- E. DUCTBANK SHALL BE CONCRETE ENCASED UNDER PAVEMENT AND SIDEWALK AREAS. LAWN AREAS SHALL BE IN SANDBED. REFER TO DETAILS.
- F. PROVIDE UPDATED PANELBOARD DIRECTORIES FOR ANY ALTERATIONS TO EXISTING POWER PANELS.
- G. ALL ELECTRICAL EXPOSED WORK UNDER BRIDGE EMBANKMENT SHALL BE TAMPERPROOF.
- H. BASIS OF DESIGN FOR HEAT TRACE: TYCO THERMO CONTROLS. COORDINATE WITH VENDOR FOR HEAT TRACE DESIGN. REFER TO PERFORMANCE BASED SPECIFICATION FOR HEAT TRACE SYSTEM REQUIREMENTS.
- I. PRIOR TO COMMENCEMENT OF ANY ELECTRICAL WORK, VERIFY ALL ELECTRICAL REQUIREMENTS FOR HEAT TRACE SYSTEM WITH VENDOR.
- J. ALL ABOVE GRADE CONDUIT EXPOSED TO THE EXTERIOR SHALL BE GALVANIZED RIGID STEEL CONDUIT. PROVIDE PVC TO GALVANIZED RIGID STEEL ADAPTER BEFORE STUBBING UP ABOVE GRADE.

### KEYED NOTES:

-  PROVIDE CONCRETE ENCASEMENT OVER EXISTING UNDERGROUND STEAM TUNNEL.
-  PROVIDE HEAT TRACE DUAL POWER CONNECTOR AND POWER HEAT TRACE FROM THE CENTER OF 12" WATERLINE. FROM THE POWER CONNECTOR, HEAT TRACE SHALL EXTEND EAST AND WEST ACROSS THE EXPOSED 12" WATERLINE AND EXTEND 25' UNDERGROUND ON BOTH ENDS PAST THE BRIDGE DECK. REFER TO MANUFACTURER REQUIREMENTS FOR ROUTING OF HEAT TRACE ON WATERLINE.

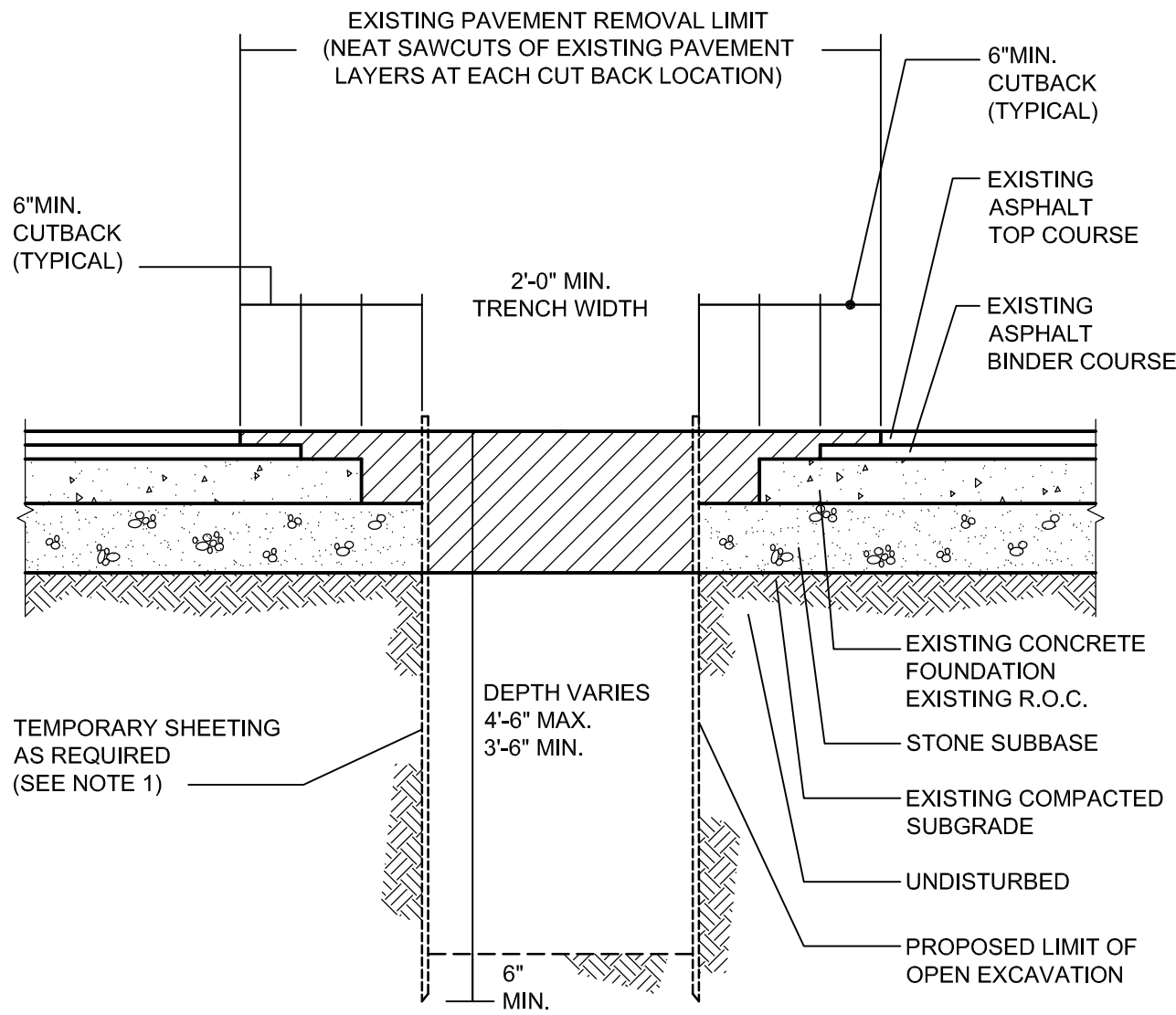


### DETAIL NOTES:

-  PROVIDE CIRCUIT BREAKER TYPE AND MOUNTING TO MATCH EXISTING. CIRCUIT BREAKER SIZED PER HEAT TRACE MANUFACTURER REQUIREMENTS.
-  PROVIDE CONTROL WIRING PER HEAT TRACE MANUFACTURER REQUIREMENTS.
-  PROVIDE WIRING PER HEAT TRACE MANUFACTURER REQUIREMENTS.

 **PARTIAL ONE LINE DIAGRAM**  
SCALE: NONE

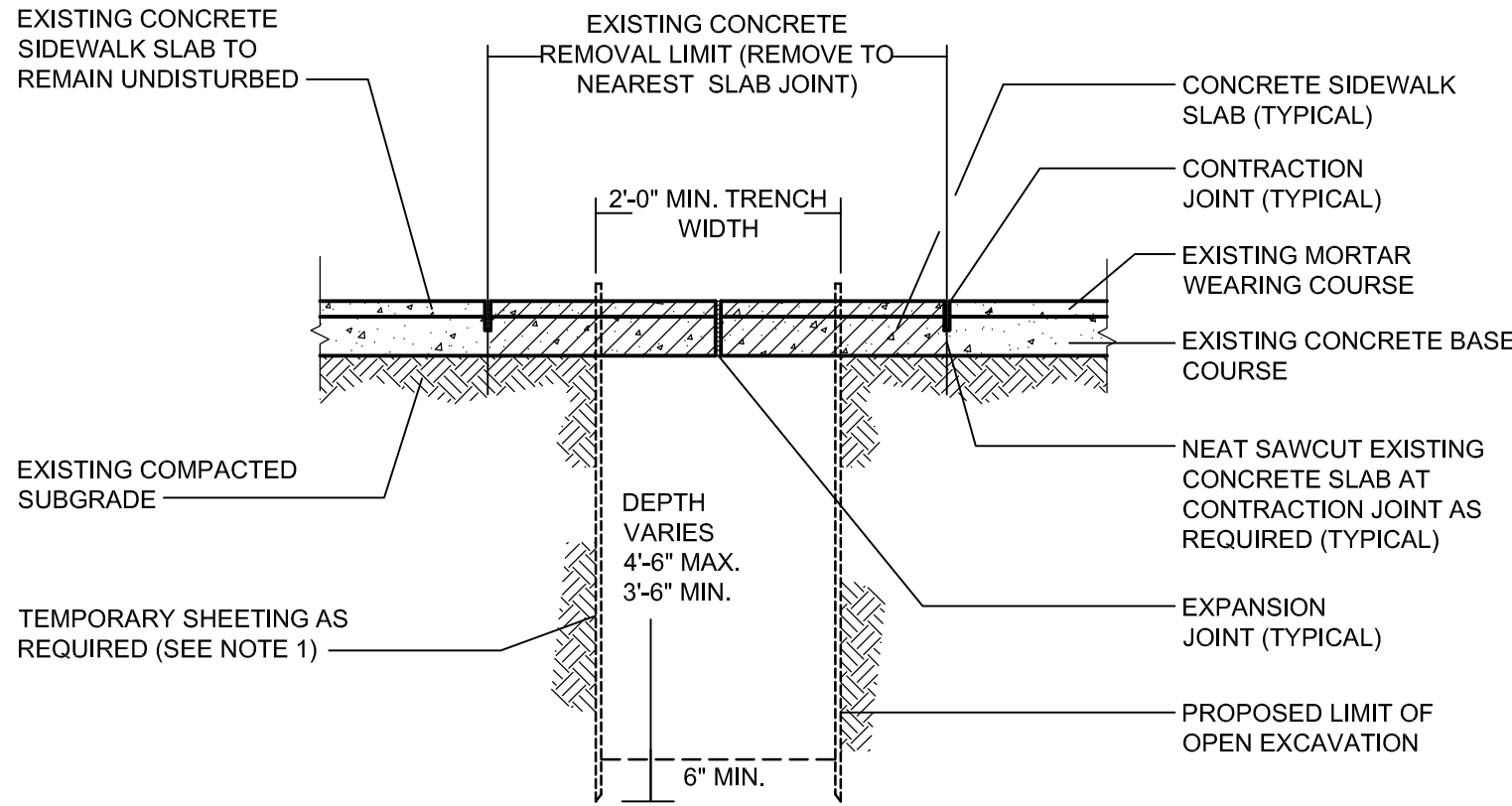




1 PAVEMENT CUT AND DUCTBANK TRENCH DETAIL  
E-2 NO SCALE

GENERAL NOTE:

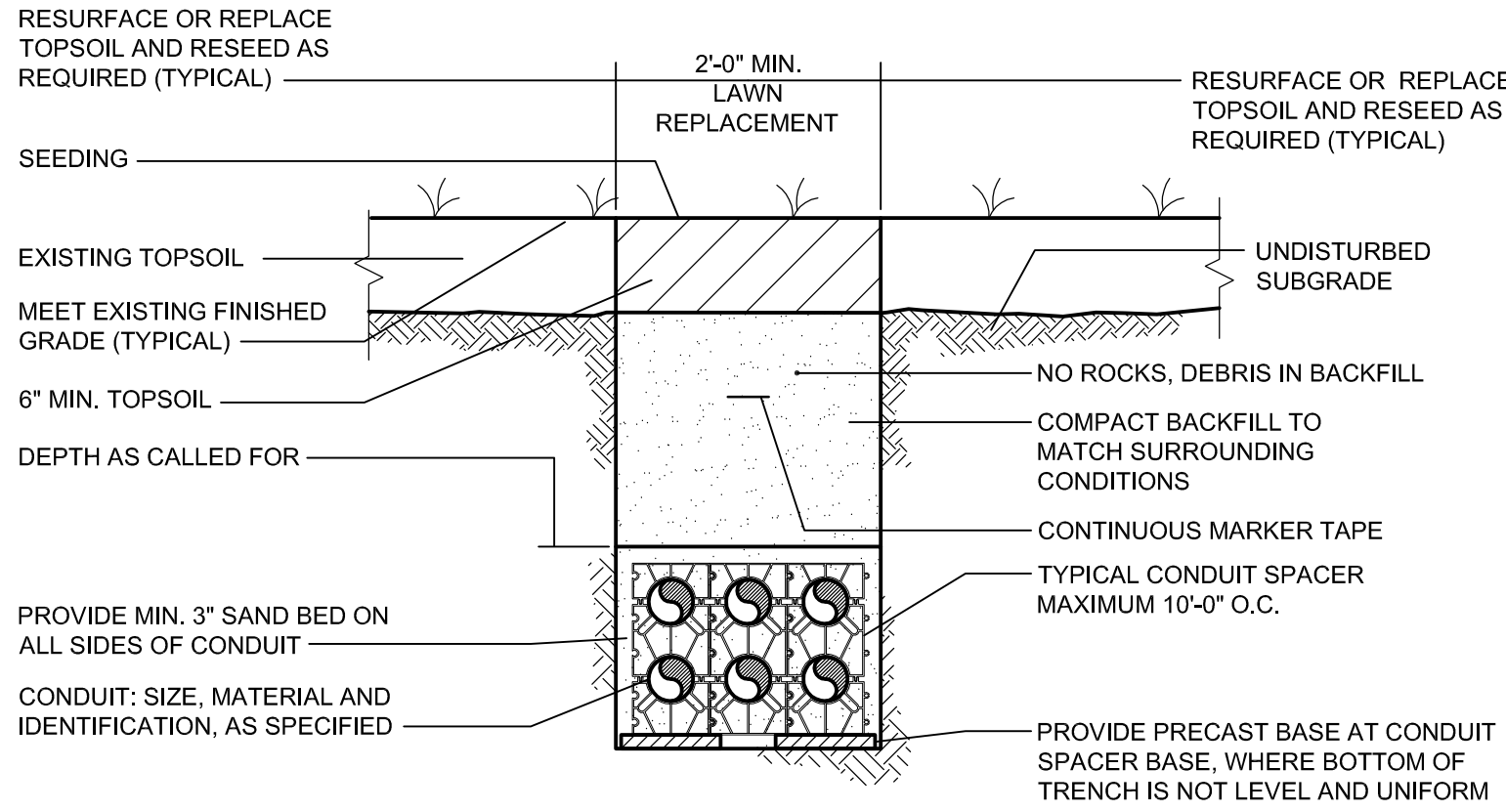
- A. CONTRACTOR SHALL PROVIDE TEMPORARY SHEETING AND BRACING AS REQUIRED DURING OPEN EXCAVATION. TEMPORARY SHEETING AND BRACING SHALL COMPLY WITH THE REQUIREMENTS OF TITLE 29 CODE OF FEDERAL REGULATIONS PART 1926, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA), IN PARTICULAR TO SECTION 1926.652 REGARDING SAFETY AND PROTECTION OF PERSONS EMPLOYED IN AN OPEN EXCAVATION; OR BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.
- B. SOME COURSES MAY NOT BE PRESENT.



2 CONCRETE SIDEWALK REMOVAL AND  
E-2 DUCTBANK TRENCH EXCAVATION DETAIL  
NO SCALE

GENERAL NOTES:

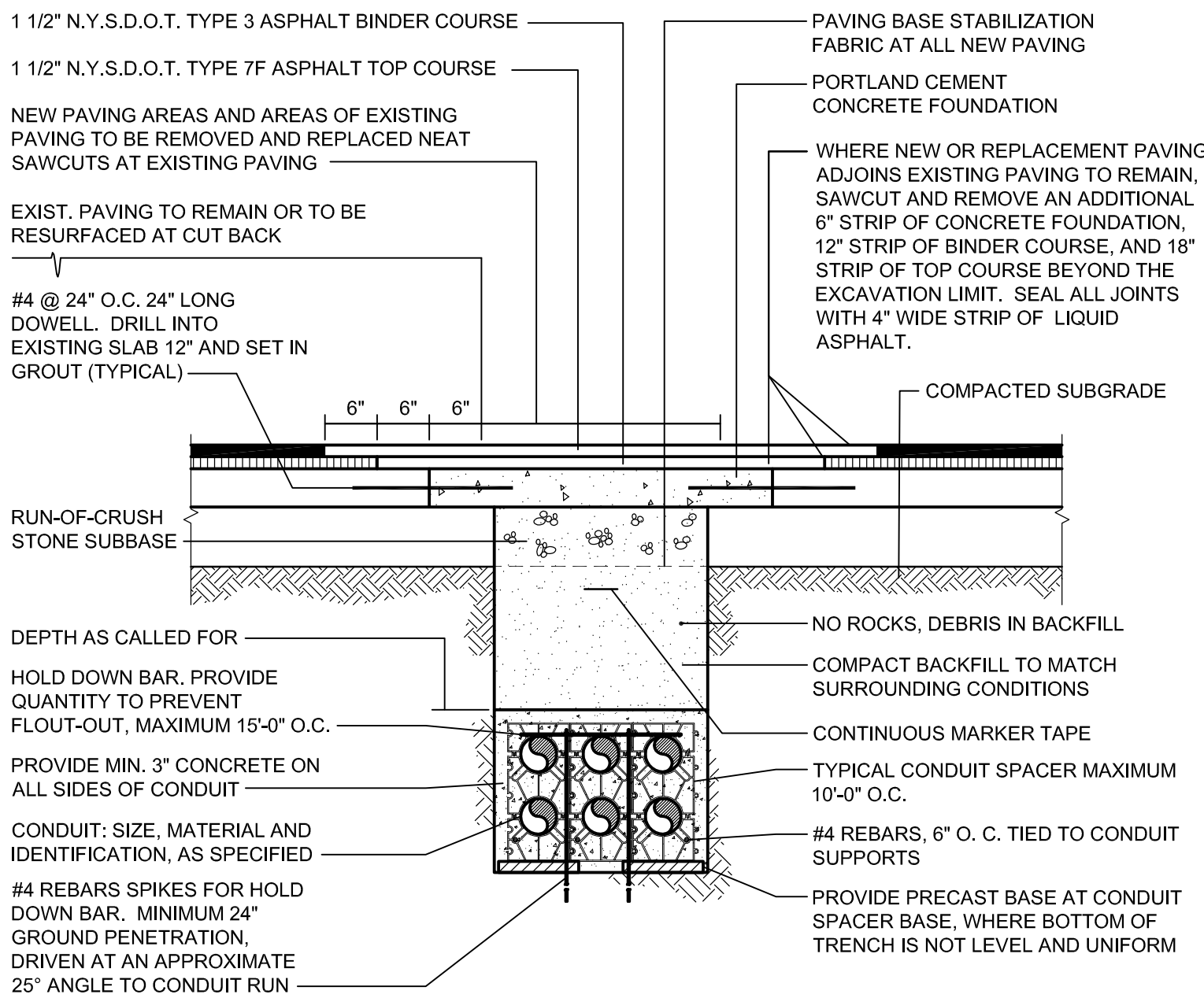
- A. CONTRACTOR SHALL PROVIDE TEMPORARY SHEETING AND BRACING AS REQUIRED DURING OPEN EXCAVATION. TEMPORARY SHEETING AND BRACING SHALL COMPLY WITH THE REQUIREMENTS OF TITLE 29 CODE OF FEDERAL REGULATIONS PART 1926, SAFETY AND PROTECTION OF PERSONS EMPLOYED IN AN OPEN EXCAVATION; OR BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.
- B. SOME COURSES MAY NOT BE PRESENT.



3 LAWN REPLACEMENT DETAIL  
E-2 NO SCALE

GENERAL NOTES:

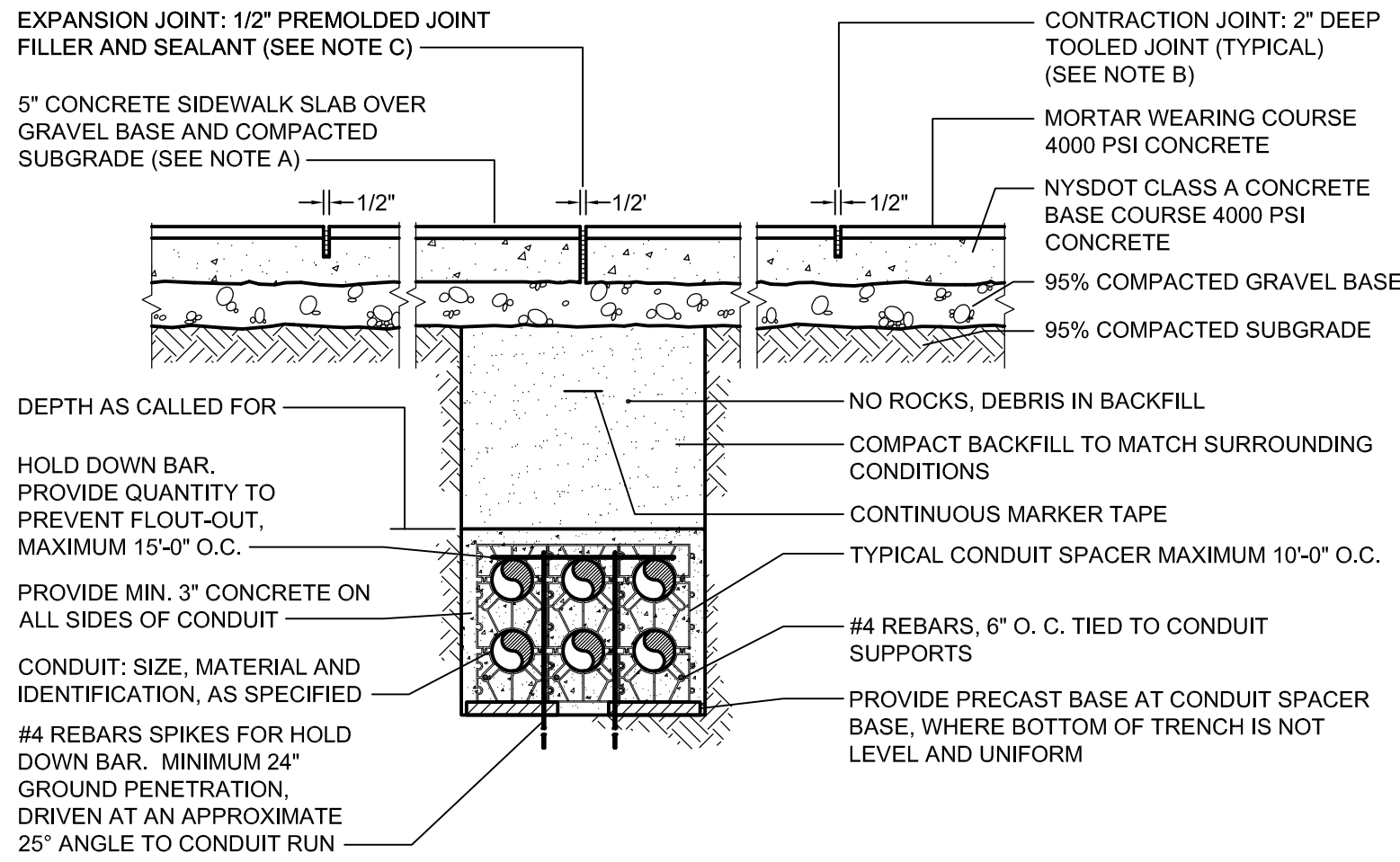
- A. GRASS SEED SHALL CONTAIN 50% KENTUCKY BLUE GRASS, 30% RED TOP, AND 20% PERENNIAL RYE GRASS.
- B. REPAIR ALL SETTLEMENT WITH TOPSOIL, RESEED. MAINTAIN AS CALLED FOR.
- C. REFER TO DUCTBANK SECTION AND/OR ONE-LINE DIAGRAM FOR ACTUAL QUANTITY AND SIZE OF CONDUITS REQUIRED.
- D. LEAVE PULL ROPE IN ALL SPARES.
- E. EXCAVATED MATERIAL MEETING SPECIFICATIONS MAY BE USED FOR BACKFILL IN TRENCHES. IN THE EVENT EXCAVATED MATERIAL DOES NOT MEET SPECIFICATIONS, PROVIDE GRANULAR BACKFILL AS SPECIFIED FOR BACKFILL. REMOVE UNSUITABLE MATERIAL FROM SITE.
- F. UNLESS OTHERWISE NOTED, TOP OF CONDUIT SHALL BE 30" BELOW FINISHED GRADE.
- G. SPACERS AND PRECAST BASE MAY BE DELETED FOR SINGLE TIER DUCTBANK SECTIONS.



4 PAVEMENT RESTORATION DETAIL  
E-2 NO SCALE

GENERAL NOTE:

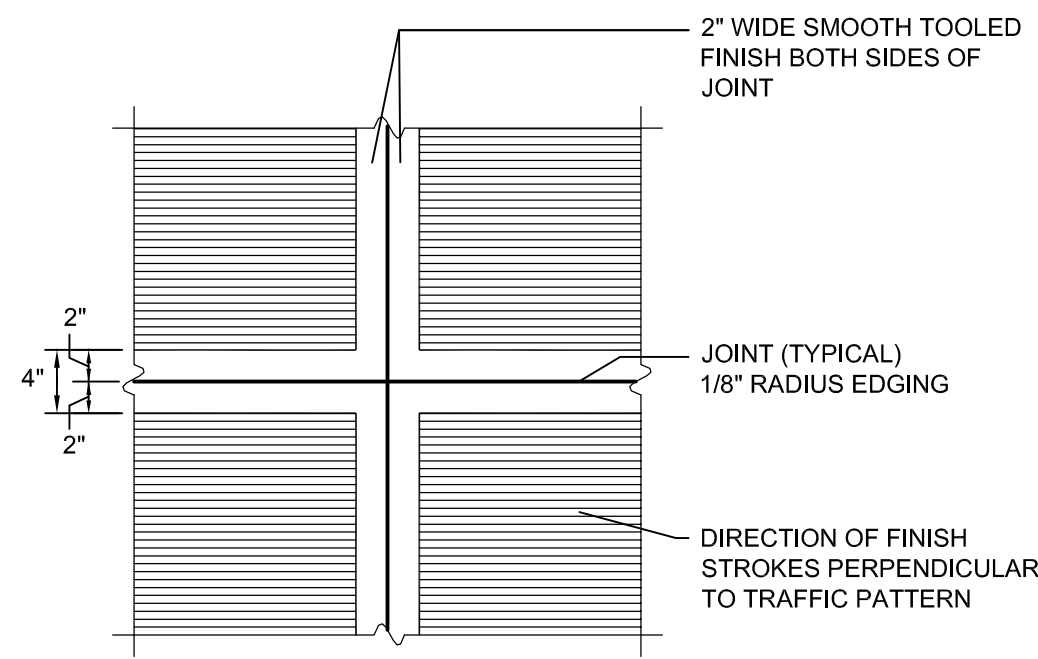
- A. SOME COURSES MAY NOT BE PRESENT.
- F. REFER TO DUCTBANK SECTION AND/OR ONE-LINE DIAGRAM FOR ACTUAL QUANTITY AND SIZE OF CONDUITS REQUIRED.
- G. LEAVE PULL ROPE IN ALL SPARES.
- H. EXCAVATED MATERIAL MEETING SPECIFICATIONS MAY BE USED FOR BACKFILL IN TRENCHES. IN THE EVENT EXCAVATED MATERIAL DOES NOT MEET SPECIFICATIONS, PROVIDE GRANULAR BACKFILL AS SPECIFIED FOR BACKFILL. REMOVE UNSUITABLE MATERIAL FROM SITE.
- I. UNLESS OTHERWISE NOTED, TOP OF CONDUIT SHALL BE 30" BELOW FINISHED GRADE.



5 CONCRETE SIDEWALK REPLACEMENT DETAIL  
E-2 NO SCALE

GENERAL NOTES:

- A. CONCRETE SIDEWALK SHALL BE CONSTRUCTED OF RECTANGULAR SLAB, WHICH SHALL NOT HAVE ANY DIMENSION GREATER THAN 6'-0". BETWEEN CONTRACTION OR EXPANSION JOINTS AND SHALL BE REINFORCED WITH 6"x6" (W1.4xW1.4) WELDED WIRE MESH. WELDED WIRE MESH, SHALL BE PLACED 2" FROM THE TOP OF THE CONCRETE BASE COURSE.
- B. CONTRACTION (TOOLED) JOINTS SHALL BE PLACED BETWEEN EXPANSION JOINTS AT EQUAL INTERVALS NOT TO EXCEED 6'-0". THESE JOINTS SHALL BE FORMED EITHER BY THE USE OF STEEL PLATES OR BY APPROVED METHOD OF CUTTING A GROOVE IN THE SURFACE OF THE FINISHED CONCRETE.
- C. EXPANSION JOINT MATERIAL SHALL BE PREMOLDED STRIPS OF ASPHALT FELT OF 0.239" THICKNESS, AS DEEP AS THE THICKNESS OF THE WALK, AND LAID IN ONE PIECE AS LONG AS THE FULL WIDTH OF SLAB.
- D. PROVIDE EXPANSION JOINTS WHERE CONCRETE SIDEWALK LINE INTERSECTS BUILDING WALLS, PERMANENT STRUCTURES, OR OTHER ADJACENT SIDEWALK SLABS.
- E. PROVIDE STIFF BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAFFIC PATTERN. MAINTAIN 2" SMOOTH BORDER AT ALL JOINTS.
- F. REFER TO DUCTBANK SECTION AND/OR ONE-LINE DIAGRAM FOR ACTUAL QUANTITY AND SIZE OF CONDUITS REQUIRED.
- G. LEAVE PULL ROPE IN ALL SPARES.
- H. EXCAVATED MATERIAL MEETING SPECIFICATIONS MAY BE USED FOR BACKFILL IN TRENCHES. IN THE EVENT EXCAVATED MATERIAL DOES NOT MEET SPECIFICATIONS, PROVIDE GRANULAR BACKFILL AS SPECIFIED FOR BACKFILL. REMOVE UNSUITABLE MATERIAL FROM SITE.
- I. UNLESS OTHERWISE NOTED, TOP OF CONDUIT SHALL BE 30" BELOW FINISHED GRADE.



6 CONCRETE WALK FINISH  
E-2 NO SCALE