

# WATER WORK NOTES

## ITEM 638 - WATER WORK, MISC.: 16" WATER MAIN GALVANIZED STEEL PIPE ASTM A-53, GRADE B

- (A) 16" GALVANIZED STEEL PIPE SHALL BE 16" O.D. X 0.50" WALL ASTM A-53, GRADE B HAVING A MINIMUM WORKING PRESSURE OF 350 PSI.
- (B) THE INTERIOR OF ALL STEEL PIPE SHALL BE TOTALLY PRIMED AND COATED WITH WATER RESISTANT WHITEWASH FOR A DISTANCE OF THREE (3) FEET FROM EACH END.

## DRAWINGS - GALVANIZED STEEL PIPE ASTM A-53, GRADE B AND APPURTENANCES

- (A) THE CONTRACTOR SHALL SUBMIT TO THE CITY THROUGH THE ENGINEER FOR APPROVAL A MINIMUM OF SIX (6) SETS OF PRINTS OF ALL SHOP DRAWINGS GENERATED BY THE PIPE OR STRUCTURAL FABRICATOR OF ALL PIPE, FITTINGS AND MISCELLANEOUS OR SPECIAL DETAILS OF PIPE AND FITTING JOINTS INCLUDING LINE AND ASSEMBLY LAYOUT, FLANGE DETAILS, VICTAULIC GROOVING, VICTAULIC COUPLINGS, EXPANSION JOINTS, WELDING DETAILS, FACTORY APPLIED INSULATION, FIELD APPLIED INSULATION, JACKET, SLEEVE PACKING DETAILS, PIPE SUPPORT DETAILS INCLUDING CLAMP, SHIMS AND "LUBRITE" PLATE, AND ANY OTHER PIPE APPURTENANCES. THE LINE AND ASSEMBLY LAYOUT SHALL INCLUDE ALL PIPE AND FITTING DIMENSIONS, LOCATION OF ALL PIPE JOINTS AND LOCATION OF ANY OTHER PIPE APPURTENANCES. NO WORK SHALL BE DONE IN THE SHOP UNTIL AFTER THE DRAWINGS HAVE BEEN APPROVED.
- (B) THE APPROVAL OF THE DRAWINGS BY THE CITY SHALL NOT RELIEVE THE CONTRACTOR OF ANY OF HIS OBLIGATIONS IN CONNECTION WITH THIS CONTRACT.

## JOINTS

### (A) FLANGED JOINTS:

FLANGED JOINTS SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. FLANGES SHALL STRADDLE VERTICAL AND HORIZONTAL CENTERLINES. FLANGES FOR 8", 12" AND 16" STEEL PIPE SHALL BE CLASS "D" OR WELDED NECK CLASS "D" FLANGES. FLANGES FOR 24" STEEL PIPE SHALL BE CLASS "E" OR WELDED NECK CLASS "E" FLANGES. FLANGES SHALL BE OF EITHER CAST STEEL, FORGED OR ROLLED STEEL, OR PROPERLY WELDED AND MACHINED FABRICATED STEEL PLATES, WELDED TO PIPE WITH TWO (2) CONTINUOUS WELDS. THEY SHALL HAVE PLAIN FACES AND SHALL BE FACED TRUE AND SMOOTH AT RIGHT ANGLES TO THE AXIS OF THE PIPE AND SHALL BE SPOT FACED ON THE BACK. DRILLING SHALL CONFORM TO "AMERICAN 1928 STANDARD" DRILLING 150 POUND TEMPLATE. BLIND FLANGES, WHERE REQUIRED, SHALL BE RIBBED STEEL OR SHALL BE DISHED CAST IRON HAVING BOSSES TAPPED AT TOP AND BOTTOM FOR TWO (2) INCH STANDARD PIPE AND FURNISHED WITH MALLEABLE IRON PLUGS. ALL BOLTS AND NUTS FOR FLANGES AND OTHER TYPES OF BOLTING SHALL BE MADE OF STAINLESS STEEL: ASTM A 276-89a, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES," TYPE 304, AND ASTM A 193/A 193m-89, "SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE", HEAVY HEX.

### (B) EXPANSION JOINT ASSEMBLY:

THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE CITY THROUGH THE ENGINEER FOR APPROVAL OF THE EXPANSION JOINT ASSEMBLY.

THE EXPANSION JOINT ASSEMBLY SHALL BE, "DRESSER STYLE 63, TYPE 1" SLIP TYPE, OR APPROVED EQUAL, WITH MINIMUM 1/2" THICK BODY AND SLIP, WITH AN 8-IN TRAVERSE. THE EXPANSION JOINT ASSEMBLY SHALL INCLUDE ALL MATERIALS, BOLTS, NUTS AND WASHERS, WELDED NECK FLANGES A.S.A. 150# AND GASKETS. ALL BOLTS AND NUTS SHALL BE MADE OF STAINLESS STEEL: ASTM A 276-89A, TYPE 304, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING SHEET BARS AND SHAPES." NO FIELD WELDING OF GALVANIZED STEEL PIPE WILL BE PERMITTED. THE EXPANSION JOINT SHALL BE GALVANIZED EXCEPT SLIP PIPE. THE EXPANSION JOINT SHALL HAVE FIELD APPLIED INSULATION AS PER DETAILS ON THE CONTRACT DRAWINGS.

### (C) VICTAULIC TYPE COUPLINGS:

THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE CITY THROUGH THE ENGINEER FOR APPROVAL OF THE VICTAULIC COUPLING.

- (1) WHERE SHOWN ON THE DRAWINGS, OR WHERE REQUIRED, THE CONTRACTOR SHALL FURNISH AND INSTALL VICTAULIC TYPE JOINTS, INCLUDING COUPLINGS, FOR CONNECTION OF PIPE ENDS. STEEL PIPE ENDS SHALL BE FABRICATED AND GROOVED, AS SHOWN ON THE DRAWINGS, ADAPTED FOR INSTALLATION OF A STYPE 77 JOINT AND COUPLING.

VICTAULIC COUPLINGS SHALL BE STYLE 77 AND SHALL BE COMPOSED OF MALLEABLE IRON HOUSINGS HELD TOGETHER WITH STEEL BOLTS HEAT TREATED AND "HOT-DIP" GALVANIZED ACCORDING TO ASTM A 123-89A, "SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS," AND WITH A CONTINUOUS, HOLLOW, MOLDED RUBBER SEALING RING OF SUCH TYPE THAT THE SEAL BECOMES TIGHT AS THE PRESSURE WITHIN THE PIPE INCREASES. THE JOINTS SHALL BE CONSTRUCTED AND INSTALLED AND BE EQUAL IN ALL RESPECTS TO THOSE MANUFACTURED BY THE "VICTAULIC COMPANY OF AMERICA". MALLEABLE HOUSINGS SHALL CONFORM TO ASTM A 47-89, "SPECIFICATION FOR FERRITIC MALLEABLE IRON CASTINGS," OR TO THE REQUIREMENTS OF ASTM A 536-84, "SPECIFICATION FOR DUCTILE-IRON CASTINGS."

BOLTS AND NUTS SHALL BE MANUFACTURED BY THE COUPLING MANUFACTURER AND SHALL COMPLY IN MATERIAL WITH THE REQUIREMENTS ASTM A 183-83, "SPECIFICATION FOR CARBON STEEL TRACK BOLTS AND NUTS".

- (2) ALL METAL PARTS OF THE COUPLINGS SHALL BE COATED AT THE SHOP WITH ONE COAT OF BITUMINOUS PRIMER FURNISHED BY THE SAME MANUFACTURER WHO FURNISHES THE COATINGS AS SPECIFIED UNDER "COATINGS".

### PIPE SUPPORT ASSEMBLIES

PIPE SUPPORT ASSEMBLIES SHALL BE FABRICATED AS DETAILED ON THE PLANS AND SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL MATERIALS, CADMIUM PLATED SHOULDER AND CLAMP BOLTS, FASTENERS AND NUTS. THE SUPPORT ASSEMBLY CLAMP, SEAT PLATE ("LUBRITE" PLATE) AND SHIMS SHALL ALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A-123, LATEST REVISION THEREOF. NO FIELD WELDING OF GALVANIZED STEEL PIPE WILL BE PERMITTED. THERE SHALL BE A MINIMUM OF TWO (2) PIPE SUPPORTS FOR EACH PIPE LENGTH.

### INSULATION AND OUTER PROTECTIVE JACKET

INSULATION SHALL BE MINIMUM FOUR (4) INCHES FOR 9" O.D. STEEL PIPE, MINIMUM THREE AND ONE-HALF (3 1/2) INCHES FOR 12.75" O.D. STEEL PIPE AND MINIMUM THREE (3) INCHES FOR 16" O.D. STEEL PIPE OF A MINIMUM DENSITY OF 2 POUNDS PER CUBIC FOOT OF POLYURETHANE FOAM FACTORY APPLIED TO COMPLETELY FILL THE SPACE BETWEEN THE PIPE AND THE OUTER WEATHERPROOF JACKET. THE OUTER JACKET SHALL BE GALVANIZED STEEL OF THE DIMENSIONS SHOWN ON THE PLANS. THE OUTER JACKET SHALL BE A MINIMUM 22 GAUGE GALVANIZED STEEL, SPIRAL LOCK SEAM CONSTRUCTION. TO ASSURE NO VOIDS IN THE FOAM INSULATION ARE PRESENT, AN INFRARED OR X-RAY INSPECTION OF EACH PRE-INSULATED UNIT AT THE FACTORY IS REQUIRED.

EXTERIOR PIPE COATING ON 24" O.D., OR LARGER, STEEL WATER MAINS SHALL BE APPLIED IN ACCORDANCE WITH ANSI/AWWA C203-91, "COAL-TAR PROTECTIVE COATINGS AND LININGS FOR STEEL WATER PIPELINES - ENAMEL AND TAPE - HOT APPLIED" CONSISTING OF THE FOLLOWING:

- 1) COAT TAR PRIMER - TYPE A
- 2) COAL TAR ENAMEL - TYPE A, 1/32" THICK
- 3) FIBROUS GLASS MAT
- 4) 2ND COAT OF COAL TAR ENAMEL - TYPE A, 1/32" THICK
- 5) 2ND LAYER OF FIBROUS GLASS MAT
- 6) A COAT OF HEAVY BODIED COAL TAR EMULSION
- 7) TWO (2) FINISH COATS OF ALUMINUM PAINT

IN LIEU OF THE ABOVE, CONTRACTOR MAY FURNISH A FACTORY PRE-INSULATED SPRAY APPLIED POLYURETHANE FOAM INSULATION, THICKNESS AS INDICATED ABOVE, WITH A FIBERGLASS REINFORCED POLYESTER RESIN (FRP) JACKET APPLIED DIRECTLY OVER THE FOAM INSULATION. EXTERIOR PIPE COATING IS NOT REQUIRED. THE SYSTEM HEREIN SPECIFIED SHALL BE ONE WHICH IS DESIGNED TO BE SUPPORTED DIRECTLY ON THE FIBERGLASS JACKET AND PIPE SUPPORTS.

PIPE JOINTS, INCLUDING EXPANSION JOINTS AND SUPPORT AREAS, AND PIPE BETWEEN THE BACKWALLS OF THE BRIDGE ABUTMENTS SHALL BE FIELD INSULATED WITH FIBERGLASS OR PREFORMED POLYURETHANE FOAM (OR FRP IF APPLICABLE) AND JACKETED WITH GALVANIZED STEEL BANDED OVER ADJACENT JACKET. ALL FIELD APPLIED INSULATION SHALL BE INSTALLED TO FULLY FILL ANY VOIDS. FIELD PLACED INSULATION AND JACKET SHALL BE REMOVABLE IN ORDER TO PERFORM MAINTENANCE OR MAKE ADJUSTMENTS TO THE PACKING GLAND OF THE EXPANSION JOINT(S).

BURIED PIPE BEYOND THE BACKWALLS OF THE BRIDGE ABUTMENTS HAVING LESS THAN FOUR AND ONE-HALF FEET (4'-6") OF COVER SHALL BE INSULATED WITH A MINIMUM OF A ONE (1) FOOT INSULATION ENVELOPE EQUAL TO "WITCOLITE" OR "GILSULATE 500XR".

THE VOID BETWEEN THE SLEEVE AND THE STEEL WATER MAIN THROUGH EACH BRIDGE ABUTMENT WALL SHALL BE FILLED WITH JUTE PACKING AND SEALED AT BOTH ENDS WITH THREE (3) INCHES OF NON-SHRINKING GROUT AS SHOWN IN THE "SLEEVE PACKING DETAIL" ON THE PLANS.

### MEASUREMENT

THE NUMBER OF LINEAR FEET OF STEEL PIPE TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF LINEAR FEET FURNISHED AND PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AS MEASURED ALONG THE AXIS OF THE PIPING.

### PAYMENT

- (A) THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR AT THE CONTRACT PRICE BID PER LINEAR FOOT FOR "ITEM 638 - WATER WORK, MISC.: WATER MAIN GALVANIZED STEEL PIPE ASTM A-53, GRADE B" CLASSIFIED AS TO SIZE AND TYPE, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, HAULING, PLACING, CUTTING INTO AND CONNECTING THE PIPE, INCLUDING ALL EXPANSION JOINTS, COUPLINGS, PIPE INSULATION, INSTALLING SUPPORT ASSEMBLIES AND OTHER PIPE APPURTENANCE, FURNISHING AND COMPLETING THE SLEEVE PACKING DETAIL, INCLUDING THE SEAL, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM EXCEPT FOR ITEMS SPECIFICALLY LISTED AS SEPARATE PAY ITEMS.

- (B) THE CONTRACTOR WILL BE ASSESSED A CWD LABOR CHARGE FOR THE CHLORINATION OR THE FLUSHING, TESTING AND SAMPLING OF THE NEWLY LAID WATER MAIN BY THE CITY OF CLEVELAND, DIVISION OF WATER. PAYMENT OF THE CWD LABOR CHARGE FOR CHLORINATION OR THE FLUSHING, TESTING AND SAMPLING SHALL BE MADE BY THE CONTRACTOR TO THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER BEFORE ANY WATER WORK IS PERFORMED.

## ITEM 638 - WATER WORK, MISC.: TEMPORARY BY-PASS CONNECTION, COMPLETE WITH PIPE AND FITTINGS

THE CONTRACTOR SHALL, UNDER ITEM 638 - WATER WORK, MISC.: TEMPORARY BY-PASS CONNECTION, COMPLETE WITH PIPE AND FITTINGS, FURNISH ALL THE MATERIALS FOR AND SHALL PROPERLY CONSTRUCT AND CONNECT IN PLACE AT THE LOCATIONS SHOWN ON THE DRAWINGS OR AS DIRECTED, ALL DUCTILE IRON PIPE AND FITTINGS, INCLUDING ALL EXCAVATION WORK, BACKFILLING, SAND BEDDING AND PREMIUM BACKFILL, STEEL PLATES AND REPAVING (BOTH TEMPORARY AND PERMANENT), ALL AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT. IN GENERAL THIS WORK SHALL INCLUDE THE FURNISHING, LAYING, CONNECTING, TESTING OF PIPE AND FITTINGS, THE EXCAVATION, REMOVAL AND RESTORATION OF MISCELLANEOUS ITEMS, SHEETING AND SHORING, BACKFILLING, SAND BEDDING AND PREMIUM BACKFILL, IF SO NOTED ON THE CONTRACT DRAWINGS, THE CUTTING INTO, REMOVAL AND STORAGE OF EXISTING MAINS, AND THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT TO COMPLETE THE WORK AS SPECIFIED, SHOWN OR ORDERED.

THE CONTRACTOR SHALL ALSO FURNISH AND INSTALL SUPPORTS AND ANCHORING TO MINIMIZE LONGITUDINAL MOVEMENT AND RESIST THRUST FORCES WHEN THE TEMPORARY BY-PASS LINE IS INSTALLED ABOVE GROUND.

THE TEMPORARY BY-PASS LINE SHALL NOT OBSTRUCT ANY STREETS, SIDEWALKS OR DRIVEWAYS. FURNISH AND INSTALLATION OF STEEL PLATES, TRENCHING OR RAMPING SHALL BE PERFORMED AS REQUIRED TO PROVIDE PROTECTION FOR THE TEMPORARY WATER MAINS AND TO PROVIDE FOR THE SAFE MOVEMENT OF VEHICULAR TRAFFIC.

### PAYMENT

(A) THE WORK INCLUDED IN THIS ITEM SHALL BE PAID AT THE CONTRACT LUMP SUM BID FOR "ITEM 638, WATER WORK, MISC.: TEMPORARY BY-PASS CONNECTION COMPLETE, WITH PIPE AND FITTINGS", WHICH PRICE SHALL CONSTITUTE THE FURNISHING OF ALL LABOR, TOOLS, MATERIALS AND ALL EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN PLACE AS SHOWN AND LISTED ABOVE. SIDEWALK REPLACEMENT AND OTHER SITE RESTORATION SHALL BE INCLUDED IF NOT PAID FOR SEPARATELY UNDER OTHER ITEMS INDICATED IN THE PLANS.

(B) THE DIVISION OF WATER WILL REQUIRE THAT THE CONTRACTOR PAY ALL DIVISION OF LABOR CHARGES FOR "FLUSHING, TESTING AND SAMPLING" OF THE TEMPORARY BY-PASS LINE IN ACCORDANCE WITH THE FEE SCHEDULE INDICATED IN THE GENERAL NOTES "DIVISION OF WATER CHARGES." PAYMENT FOR DIVISION OF WATER LABOR SHALL BE MADE TO THE PERMITS AND SALES SECTION.

(C) UPON COMPLETION OF WATER WORK AND THE TEMPORARY BY-PASS LINE IS NO LONGER NEEDED, THE CONTRACTOR SHALL REMOVE THE TEMPORARY BY-PASS LINE AND REPLACE THE DAMAGED SEEDED, SODDED OR PAVED AREAS IF NOT PAID FOR SEPARATELY UNDER OTHER ITEMS OF WORK IN THIS CONTRACT.

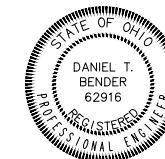
## ITEM 638 - WATER WORK, MISC.: 2" AIR RELIEF VALVE ASSEMBLY WITH VALVE BOX, COMPLETE

### WORK INCLUDED

THE CONTRACTOR SHALL UNDER "ITEM 638 - WATER WORK, MISC.: 2" AIR RELIEF VALVE ASSEMBLY WITH VALVE BOX, COMPLETE" FURNISH ALL MATERIALS INCLUDING PIPE, VALVE, VALVE BOX COMPLETE REQUIRED TO INSTALL 2" AIR RELIEF VALVE ASSEMBLY WITH VALVE BOX COMPLETE AT THE LOCATION(S) SHOWN ON THE PLANS. THE 2" AIR RELIEF VALVE ASSEMBLY SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.

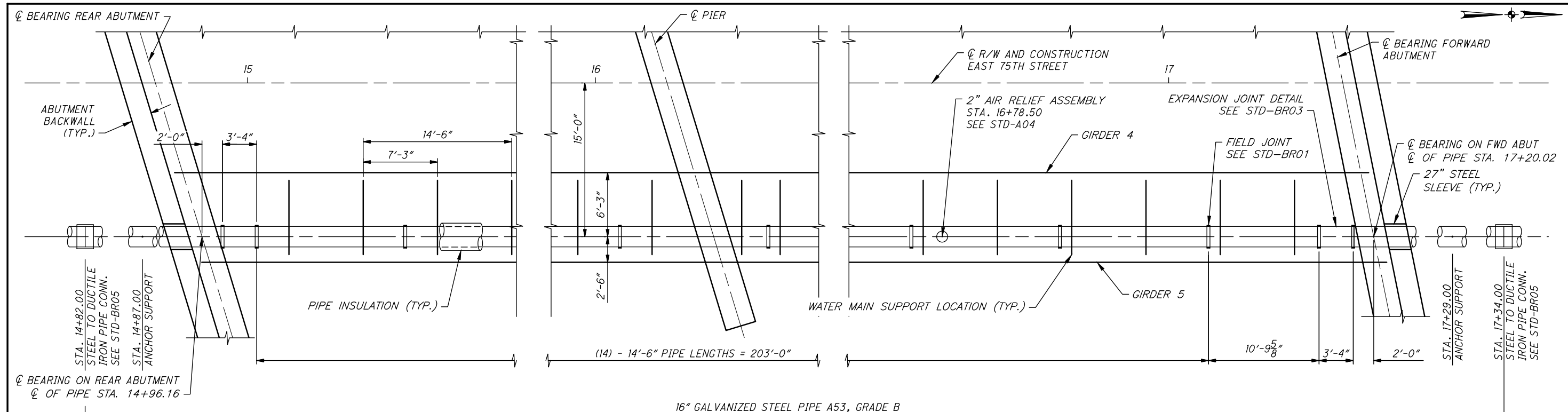
### PAYMENT

PAYMENT FOR WORK UNDER THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH "ITEM 638 - WATER WORK, MISC.: 2" AIR RELIEF VALVE ASSEMBLY WITH VALVE BOX, COMPLETE".



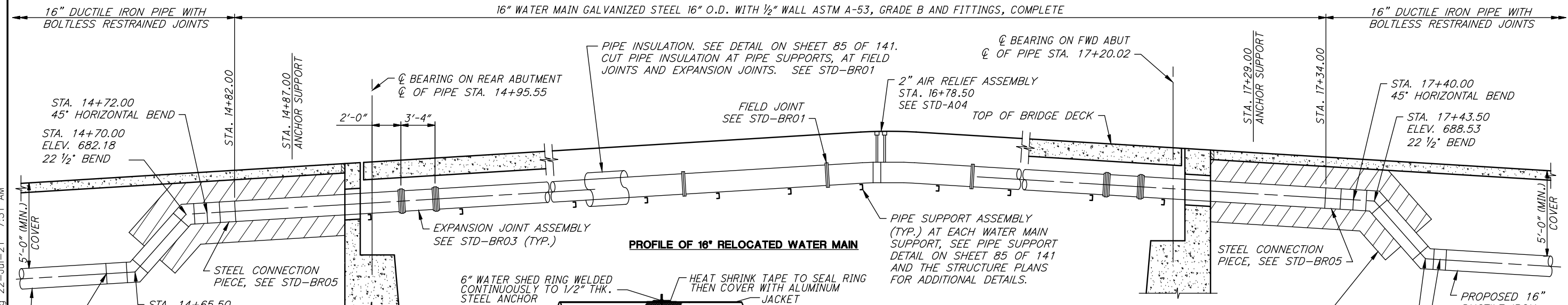
*[Signature]*

12/22/20

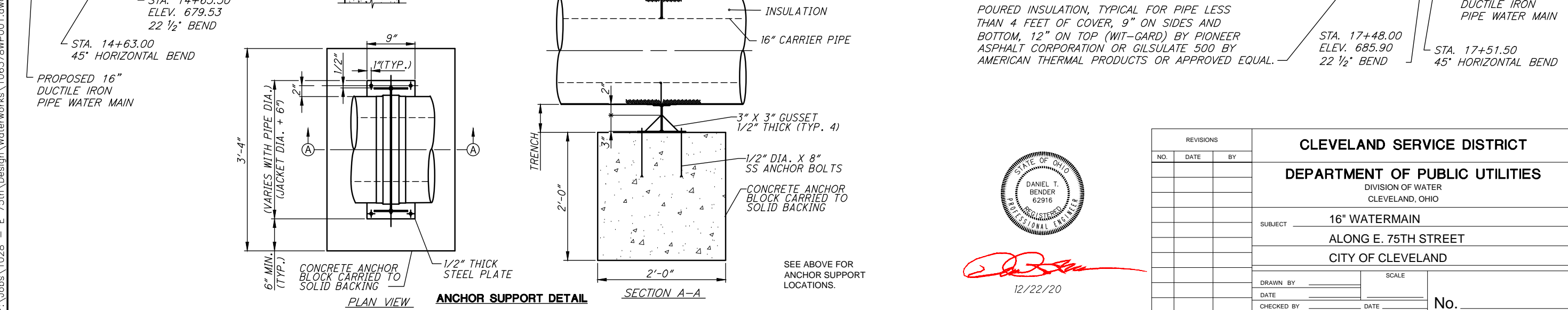


**PLAN**

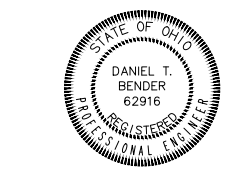
16" GALVANIZED STEEL PIPE A53, GRADE B  
 16" DUCTILE IRON PIPE WITH BOLTLESS RESTRAINED JOINTS  
 16" WATER MAIN GALVANIZED STEEL 16" O.D. WITH 1/2" WALL ASTM A-53, GRADE B AND FITTINGS, COMPLETE  
 16" DUCTILE IRON PIPE WITH BOLTLESS RESTRAINED JOINTS



**PROFILE OF 16" RELOCATED WATER MAIN**



**ANCHOR SUPPORT DETAIL**



12/22/20

REVISIONS		
NO.	DATE	BY

<b>CLEVELAND SERVICE DISTRICT</b>	
<b>DEPARTMENT OF PUBLIC UTILITIES</b>	
DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT <b>16" WATERMAIN</b>	
<b>ALONG E. 75TH STREET</b>	
<b>CITY OF CLEVELAND</b>	
DRAWN BY _____	SCALE _____
DATE _____	
CHECKED BY _____	DATE _____
No. _____	

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ESTIMATED QUANTITIES

CALC BY: BPS

CHK'D BY: LAB

ITEM	ITEM EXT.	PARTICIPATION						TOTAL	UNIT	DESCRIPTION	REAR ABUTMENT	FWD. ABUTMENT	PIERS	RETAINING WALLS	SUPER-STRUCTURE	GENERAL	CONTINGENCY*	REFERENCE SHEET NUMBERS
		01/BRF/BR	02/BRF/BR	03/BRF/BR	04/BRF/BR	05/BRF/BR	06/BRF/BR											
202	11203	LS					LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN								4	
202	23500	1027					1027	SY	WEARING COURSE REMOVED					1027	LS			
503	11100	LS					LS		COFFERDAMS AND EXCAVATION BRACING						LS			
503	21100	452					452	CY	UNCLASSIFIED EXCAVATION	109	76	58	209					
505	11100	LS					LS		PILE DRIVING EQUIPMENT MOBILIZATION			LS						
507	00200	1725					1725	FT	STEEL PILES HP12X53, FURNISHED			1725						
507	00250	1650					1650	FT	STEEL PILES HP12X53, DRIVEN			1650						
507	92200	225					225	FT	PREBORED HOLES			225						
509	10001	159,124					159,124	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	13,351	11,804	17,131	19,435	97,403			4	
510	10001	1702					1702	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	212	216		1274				4	
511	21523	411					411	CY	CLASS QC2 CONCRETE WITH QC/OA, SUPERSTRUCTURE, AS PER PLAN					411			4-5	
511	42013	96					96	CY	CLASS QC1 CONCRETE WITH QC/OA, PIER ABOVE FOOTINGS, AS PER PLAN			96					4-5	
511	44113	278					278	CY	CLASS QC1 CONCRETE WITH QC/OA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	165	113						4-5	
511	46013	162					162	CY	CLASS QC1 CONCRETE WITH QC/OA, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN				162				4-5	
511	46513	35					35	CY	CLASS QC1 CONCRETE WITH QC/OA, FOOTING, AS PER PLAN			35					4-5	
512	10001	1253					1253	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	198	244	64	747				5	
512	10050	338					338	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)					338				
512	10101	2301					2301	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	257	300	190	1023	531			5	
512	10300	102					102	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN					102				
512	10600	200					200	FT	CONCRETE REPAIR BY EPOXY INJECTION							400		
512	44400	273					273	SY	TYPE B WATERPROOFING	30	31		212					
513	10280	382,000					382,000	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4					382,000				
513	20000	4428					4428	EACH	WELDED STUD SHEAR CONNECTORS					4428				
514	80020	1450					1450	SF	SHOP PAINTING AND FIELD TOUCH-UP OF STRUCTURAL STEEL					1450			5	
516	11210	85					85	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	43	42							
516	13200	231					231	SF	1/2" PREFORMED EXPANSION JOINT FILLER	9	10		212					
516	13600	72					72	SF	1" PREFORMED EXPANSION JOINT FILLER	36	36							
516	44100	10					10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES & LOAD PLATE (NEOPRENE) (12" X 18" X 2.36")					10				
516	44300	5					5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES & LOAD PLATE (NEOPRENE) (18" X 30" X 4.26")					5				
517	76300	105					105	FT	RAILING, MISC.: GALVANIZED STEEL HANDRAIL				105				5	
517	76300	585					585	FT	RAILING, MISC.: SINGLE STEEL TUBE	28	31		526				5	
518	21200	215					215	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	73	51		91					
518	40000	794					794	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	79	81		634					
518	40010	100					100	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	30	21		49					
518	62100	40					40	FT	STRUCTURE DRAINAGE, MISC.: CLEAN AND REPAIR EXISTING SLOPE DRAINS	20	20						7A	
519	11101	46					46	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	21	25						5	
526	10001	46					46	SY	REINFORCED CONCRETE APPROACH SLABS (T = 12"), AS PER PLAN						46		38	
526	25001	75					75	SY	REINFORCED CONCRETE APPROACH SLABS (T = 15"), AS PER PLAN						75		38	
526	90010	57					57	FT	TYPE A INSTALLATION						57			
SPECIAL	53000200	LS					LS		STRUCTURES - TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES						LS		5-7	
SPECIAL	53014000	LS					LS		STRUCTURES - STRUCTURAL SURVEY AND MONITORING OF VIBRATION						LS		7	
601	20010	33					33	CY	CRUSHED AGGREGATE SLOPE PROTECTION	17	16							
607	39901	497					497	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN	21	20			456			7A	
613	41251	390					390	CY	LOW STRENGTH MORTAR BACKFILL (TYPE II), AS PER PLAN	260	130						7	
625	33001	1					1	EACH	STRUCTURE GROUNDING SYSTEM, AS PER PLAN						1		7A	
SPECIAL	69098400	LS					LS		AT&T OHIO UTILITY WORK						LS		3	
SPECIAL	69098400	LS		LS			LS		FIRST ENERGY (CEI) UTILITY WORK						LS		3	
SPECIAL	69098400	LS			LS		LS		DOMINION EAST OHIO (DEO) UTILITY WORK						LS		3	
SPECIAL	69098400	LS				LS	LS		VERIZON UTILITY WORK						LS		3	
SPECIAL	69098400	LS				LS	LS		CROWN CASTLE UTILITY WORK						LS		3-4	

\* CONTINGENCY QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

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DESIGN AGENCY  
**EUTHEMICS INC.**  
CONSULTING ENGINEERS

DATE  
8-3-20

REVIEWED  
RAB

DRAWN  
OOS

DESIGNED  
BPS

CHECKED  
LAB

STRUCTURE FILE NUMBER  
1867181

ESTIMATED QUANTITIES

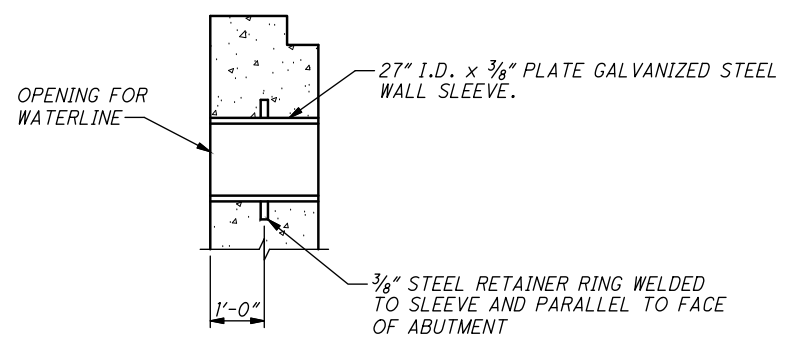
BRIDGE NO. 4-013M - EAST 75TH STREET  
OVER GCRTA & NORFOLK SOUTHERN RAILROAD

CUY-EAST 75TH STREET  
PID No. 106378

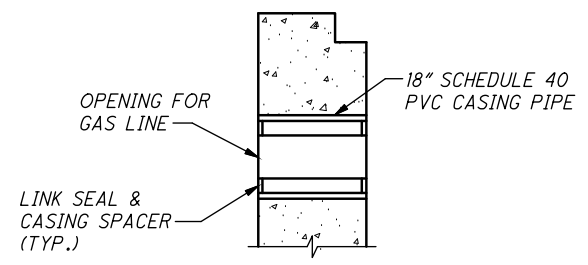
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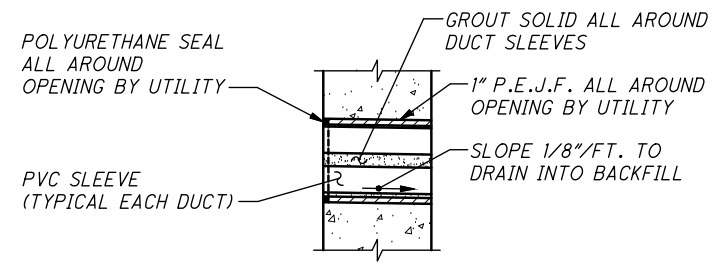




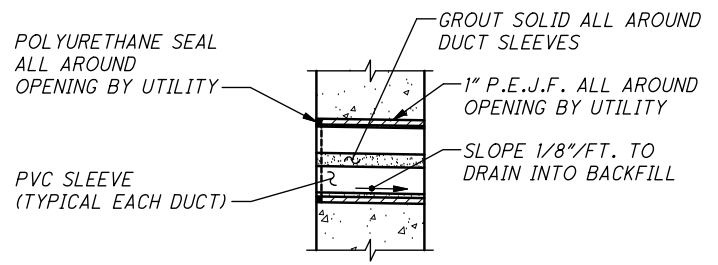
**OPENING IN BACKWALL FOR WATERLINE**  
 ADDITIONAL DETAILS PROVIDED ON SHEET 85/141  
 PAYMENT INCLUDED WITH ITEM 511, CLASS QC1 CONCRETE WITH QC/OA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN



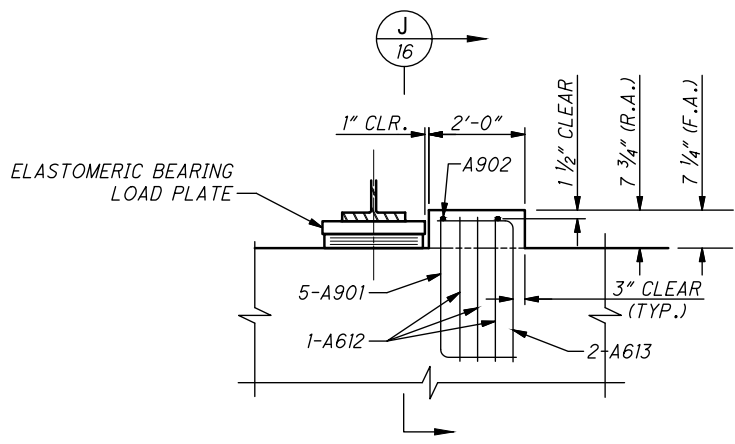
**OPENING IN BACKWALL FOR GAS LINE**  
 SEE NOTE 2 FOR PAYMENT DETAILS



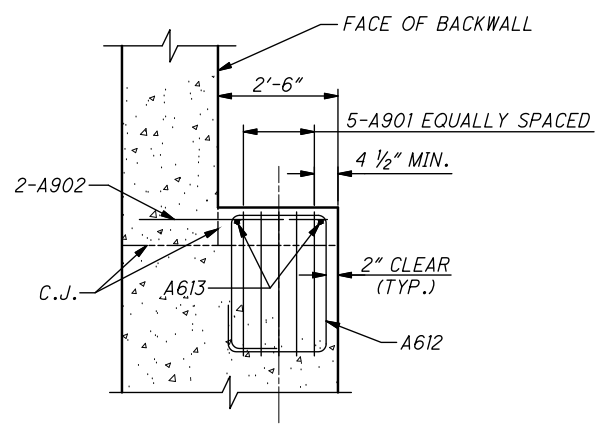
**OPENING IN BACKWALL FOR C.E.I., AT&T, VERIZON & CROWN CASTLE**  
 SEE NOTE 3 FOR PAYMENT DETAILS



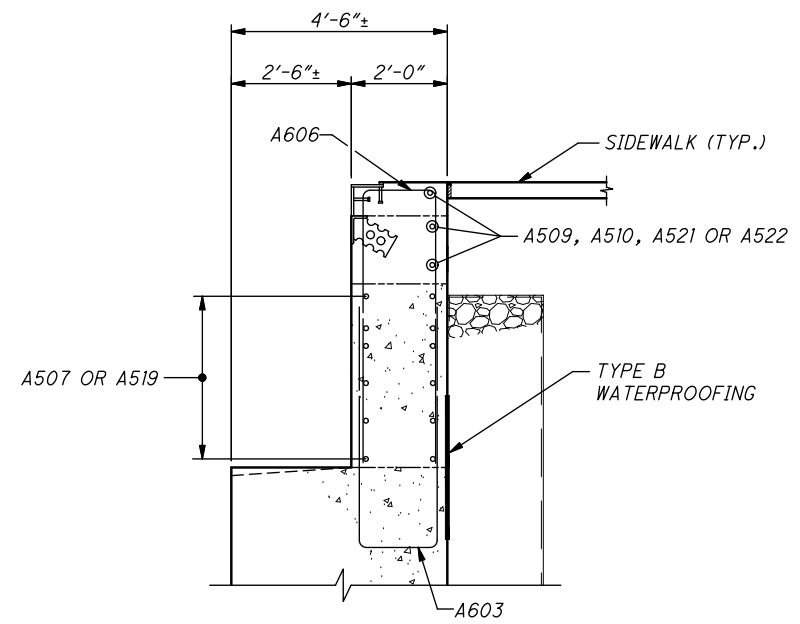
**OPENING IN BACKWALL FOR CPP**  
 PAYMENT INCLUDED WITH ITEM 511, CLASS QC1 CONCRETE WITH QC/OA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN



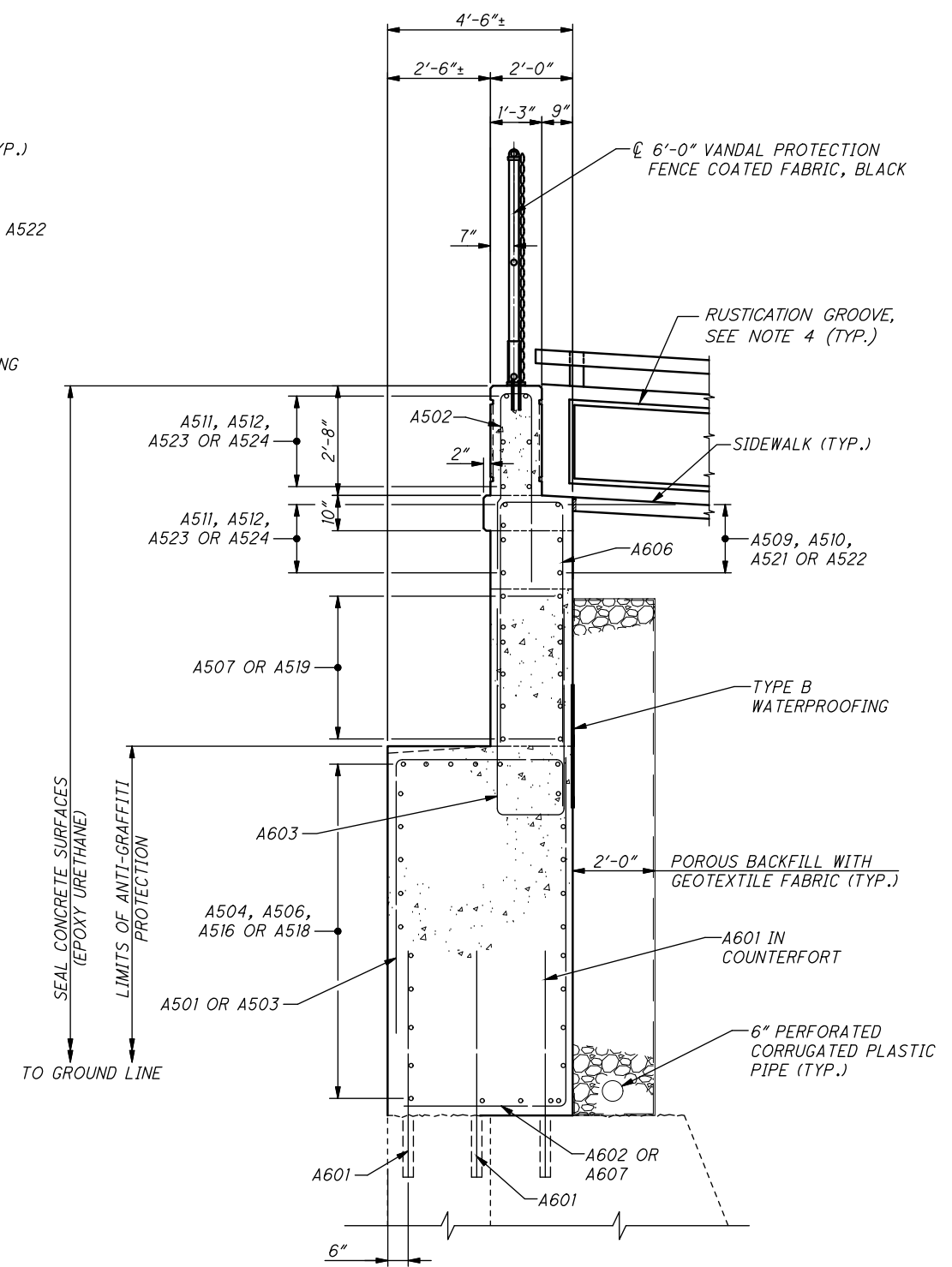
**SEISMIC PEDESTAL DETAIL**  
 (FRONT VIEW)



**SECTION**  
 J 16



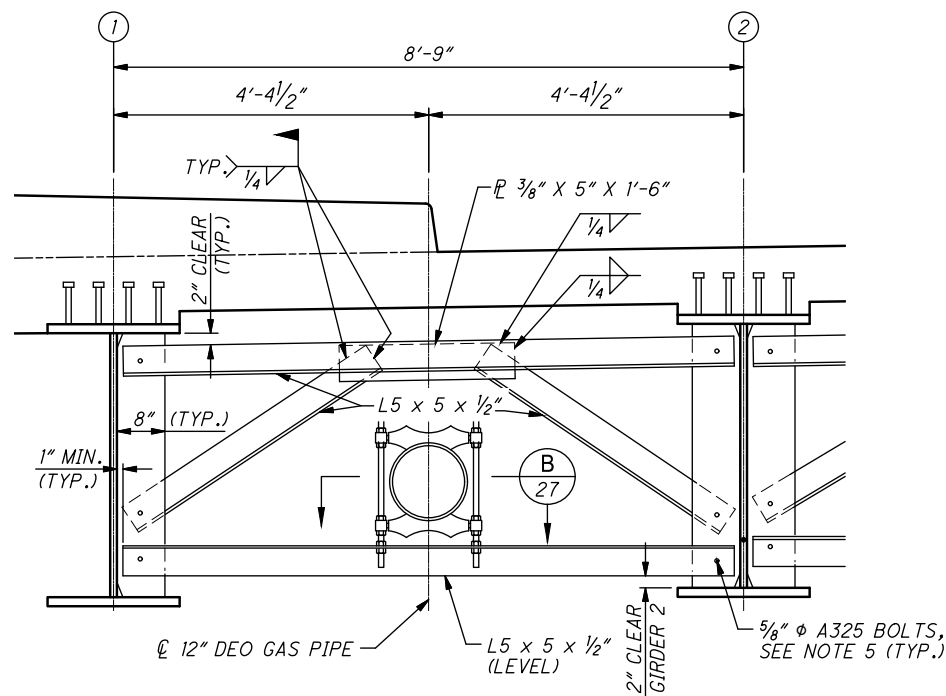
**SECTION**  
 B 14 B 15



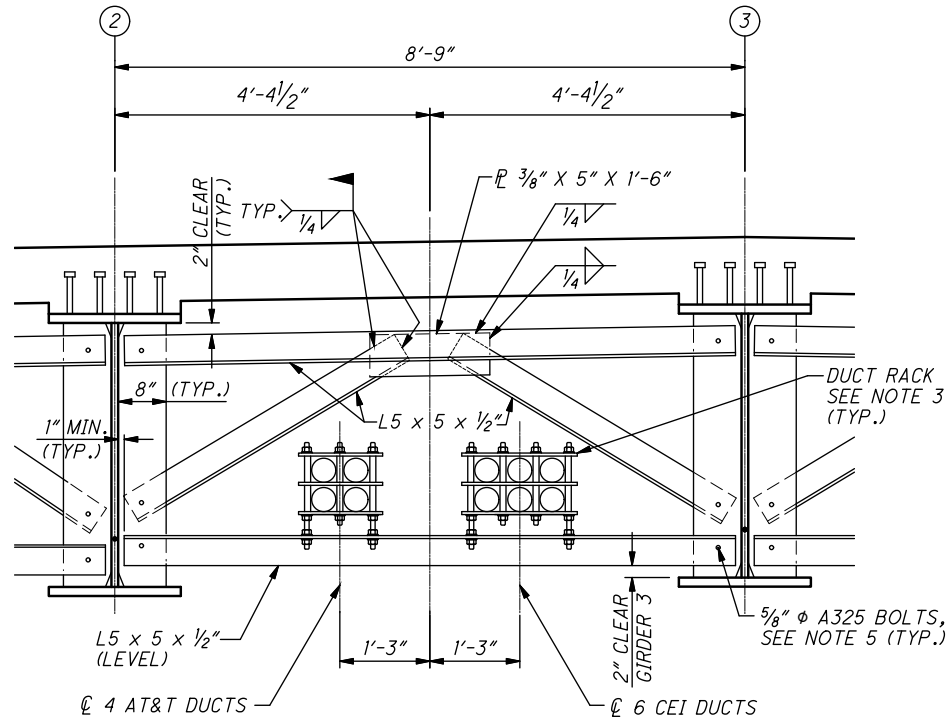
**SECTION**  
 C 14 C 15

- NOTES:**
- FOR THE LOCATIONS OF THE SEISMIC PEDESTALS, SEE SHEETS 14/40 & 15/40.
  - DOMINION ENERGY OHIO (DEO): CASING PIPE, LINK SEAL, AND CASING SPACER SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR AND PAID FOR 100% BY DOMINION ENERGY OHIO. COORDINATE WITH DEO DURING INSTALLATION. FOR MORE INFORMATION, SEE SHEET 3/40.
  - FIRST ENERGY (CED), AT&T, VERIZON & CROWN CASTLE: PVC SLEEVE, 1" P.E.J.F., POLYURETHANE SEAL, AND GROUT SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR AND PAID FOR 100% BY UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY DURING INSTALLATION. FOR MORE INFORMATION, SEE SHEET 3/40.
  - FOR RUSTICATION GROOVE DETAIL, SEE SHEET 35/40.

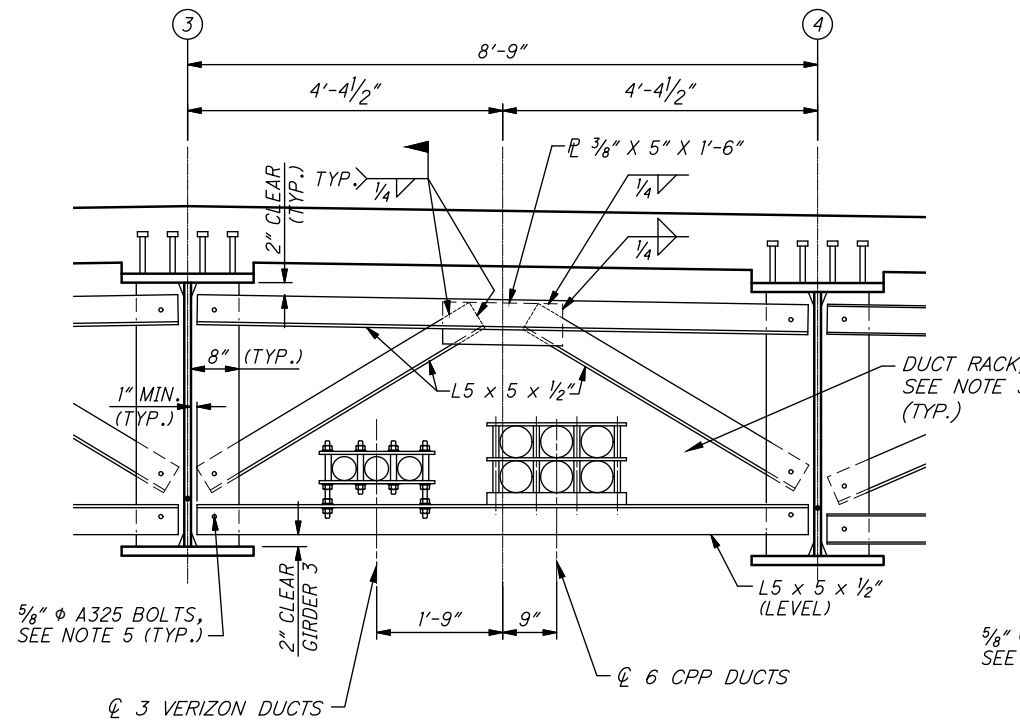
F:\Jobs\1028 - E 75th\Design\Structures\sheets\E75\_4013M\_SS003.dwg 20-Jul-21 1:59 PM



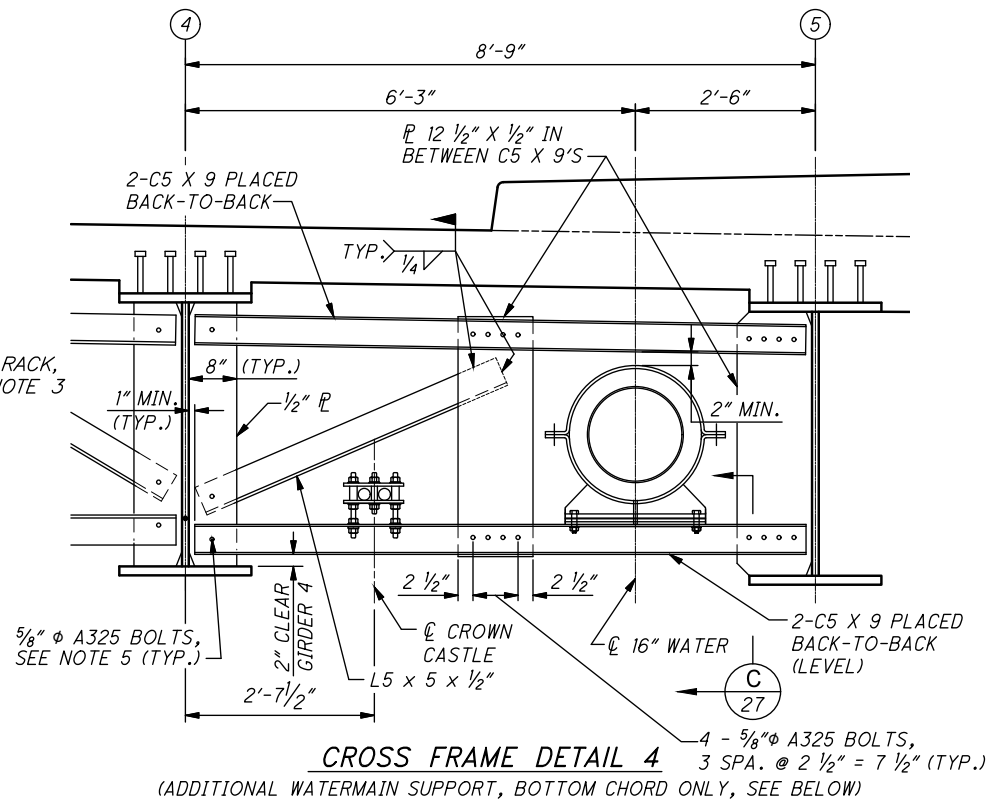
CROSS FRAME DETAIL 1



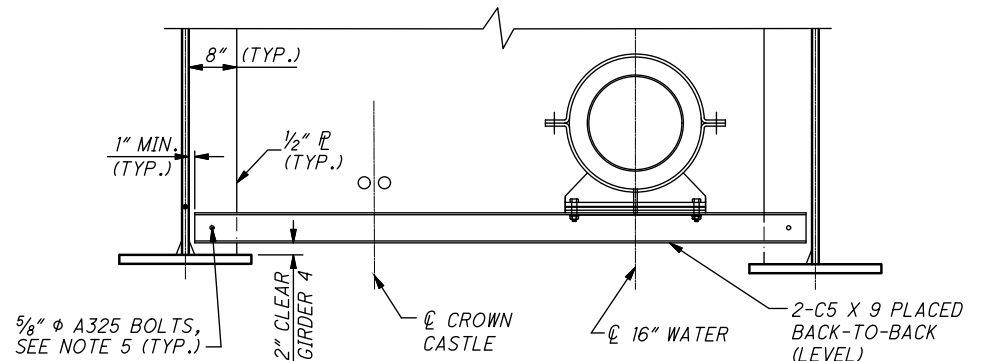
CROSS FRAME DETAIL 2



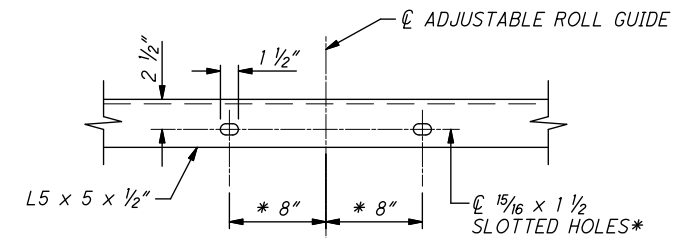
CROSS FRAME DETAIL 3



CROSS FRAME DETAIL 4  
(ADDITIONAL WATERMAIN SUPPORT, BOTTOM CHORD ONLY, SEE BELOW)

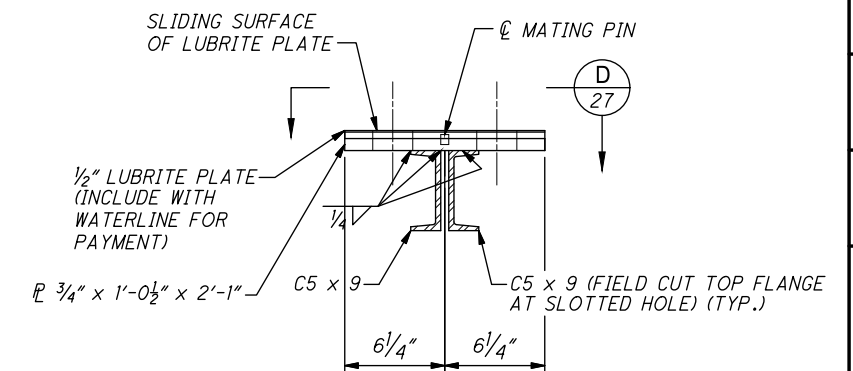


ADDITIONAL WATERMAIN SUPPORT DETAIL

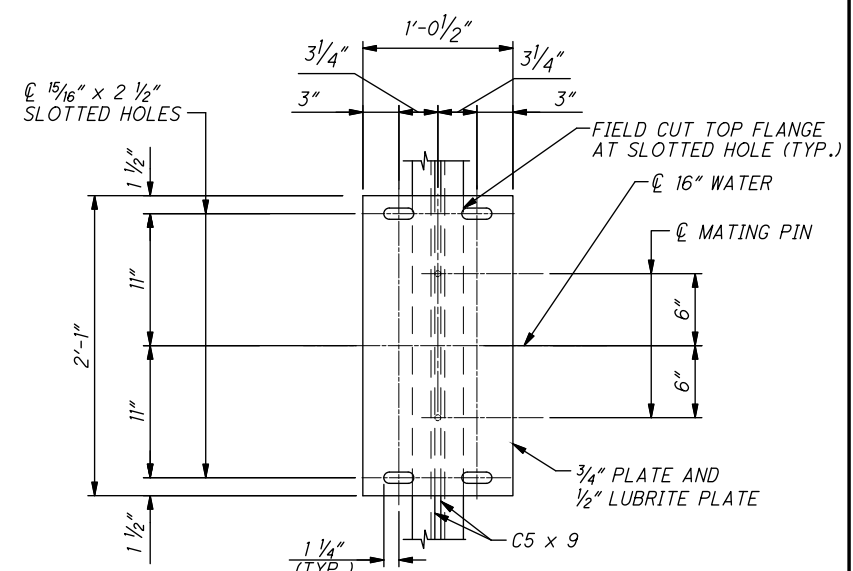


\* VERIFY SIZE AND SPACING OF SLOTTED HOLES WITH ROLL GUIDE SUPPLIER BEFORE PRE-DRILLING.

B SECTION



C SECTION



D SECTION

NOTES:

- FOR LOCATIONS OF INTERMEDIATE CROSSFRAMES AND ADDITIONAL WATER MAIN SUPPORTS SEE SHEET [25/40].
- FOR ADDITIONAL DETAILS AND NOTES SEE WATERWORK PLANS.
- VERIFY WITH THE DUCT RACK SUPPLIER THE NUMBER, SIZE AND SPACING OF HOLES IN THE SUPPORTING ANGLE BEFORE PRE-DRILLING.
- THE ADJUSTABLE ROLL GUIDE FOR THE 12" GAS LINE SHALL BE SUPPLIED BY AND PAID FOR 100% BY DOMINION ENERGY OHIO (DEO). THE CONTRACTOR SHALL INSTALL THE ROLLERS AND COORDINATE WITH D.E.O. DURING PIPE INSTALLATION.
- PROVIDE 1/16" φ HOLES IN CONNECTION PLATE AND 13/16" φ HOLES IN CROSS FRAME ANGLES.
- FOR ADDITIONAL NOTES AND DETAILS SEE ODOT STANDARD DRAWING GSD-1-19.