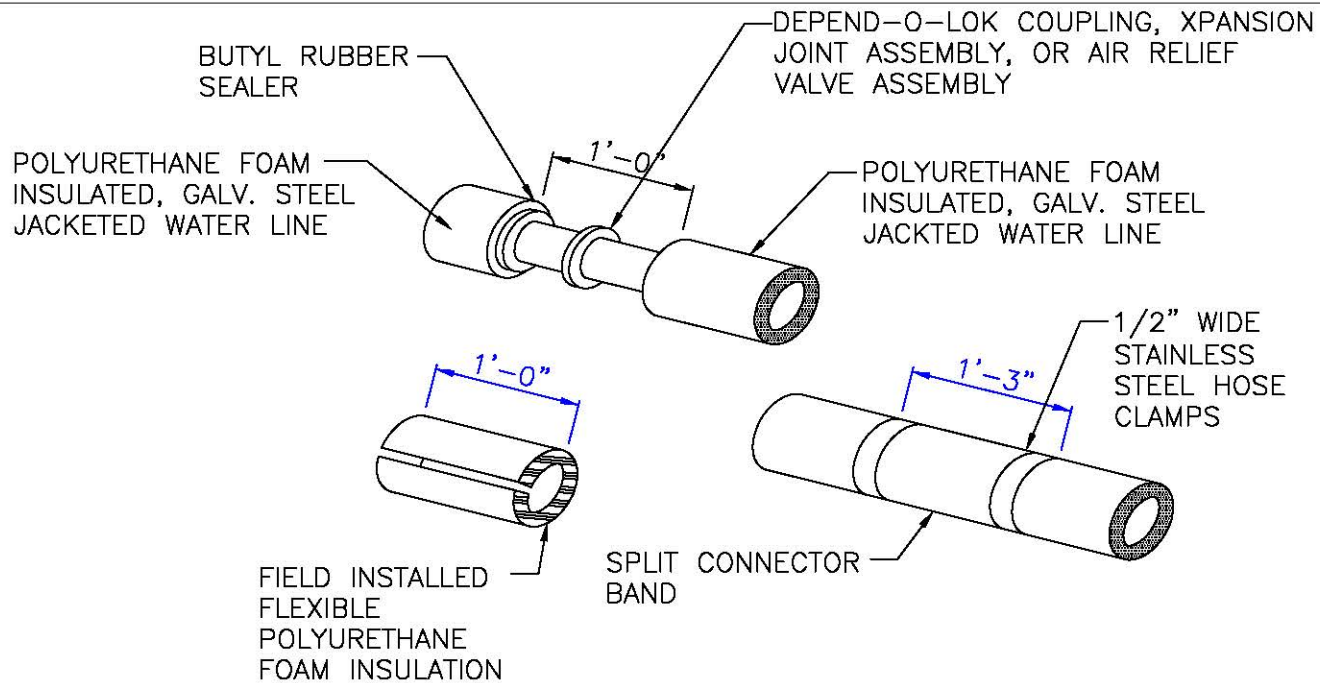


CLEVELAND DIVISION
OF WATER
CONSTRUCTION
STANDARDS

Bridge Details



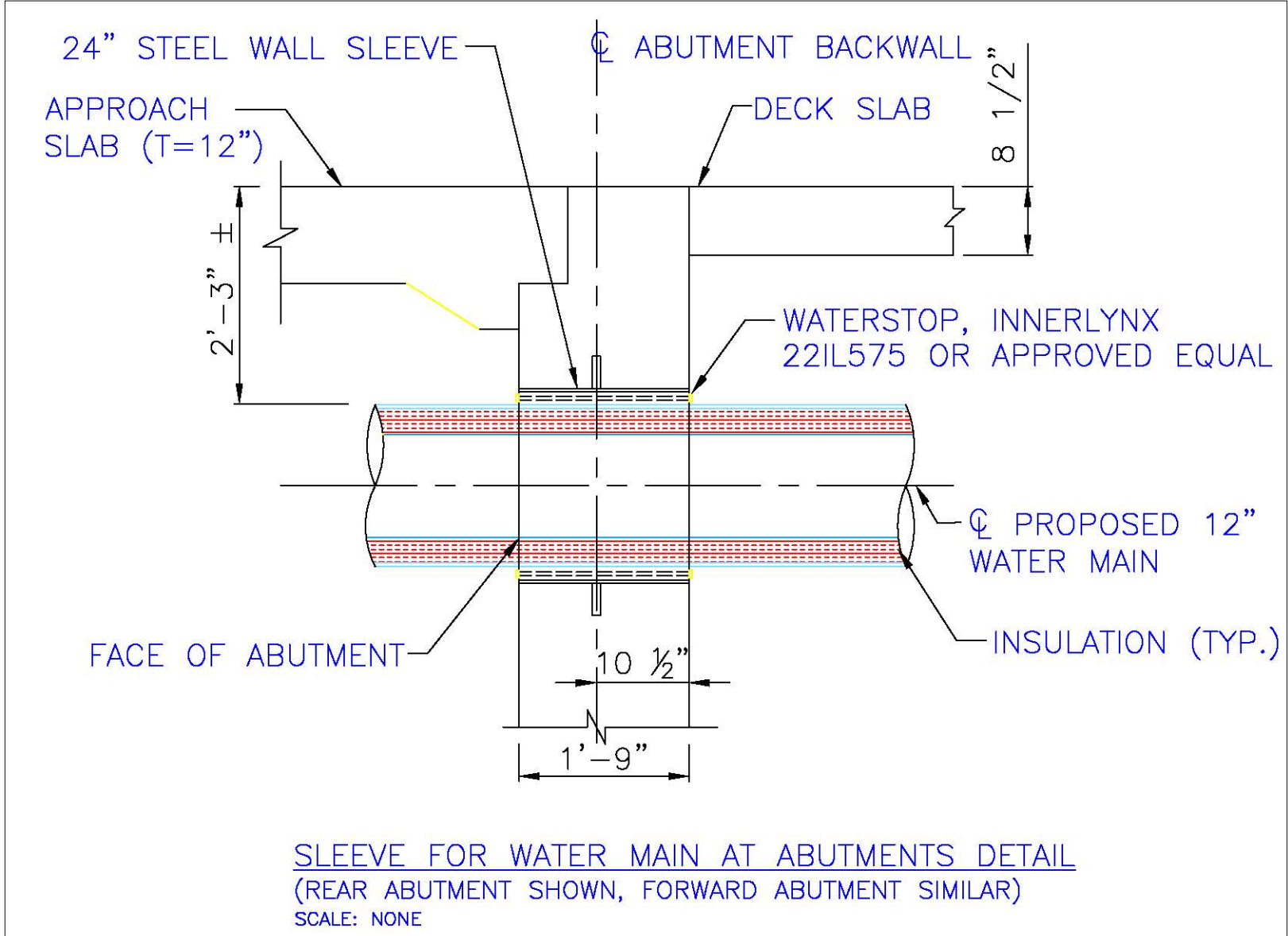
FIELD JOINT SEQUENCE

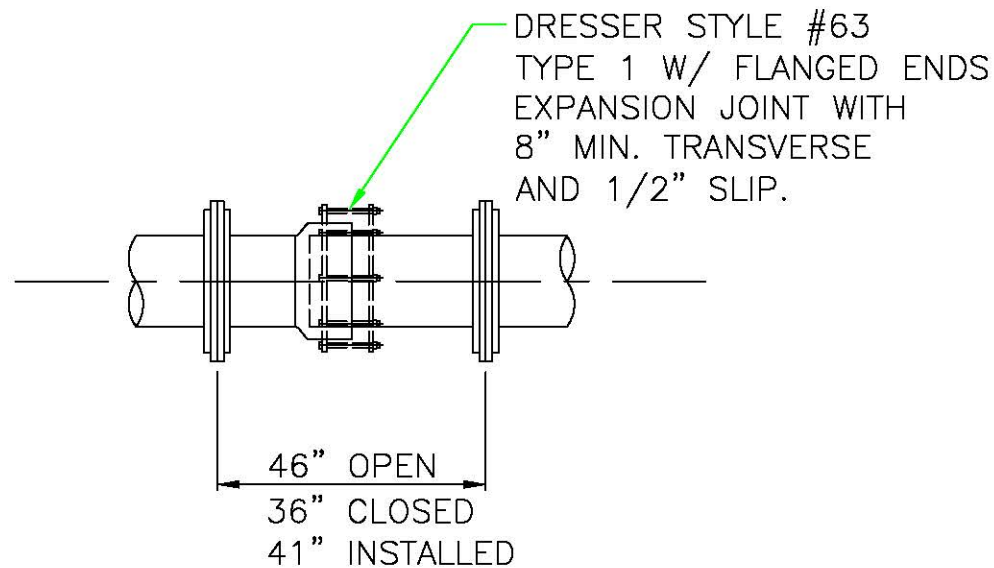
1. SLIDE SPLIT CONNECTOR BAND ON TO UNIT. MAKE JOINT AND TEST.
2. WRAP FLEXIBLE POLYURETHANE FOAM AROUND EXPOSED PIPE AND COUPLING AND TAPE INTO PLACE.
3. APPLY BUTYL RUBBER SEALER TO BOTH SIDES OF JOINT.
4. CENTER SPLIT CONNECTOR BAND OVER JOINT AND DRAW DOWN TIGHT WITH HOSE CLAMPS. SECURE SPLIT CONNECTOR BAND TO JACKET WITH SHEET METAL SCREWS (4 SCREWS PER END).

* ADJUST DIMENSIONS FOR EXPANSION JOINT ASSEMBLY

FIELD JOINT DETAILS

SCALE: NONE



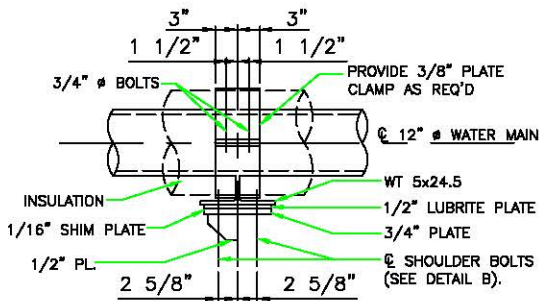


NOTE:
ALL ACTUAL DIMENSIONS TO BE VERIFIED WITH MANUFACTURE.

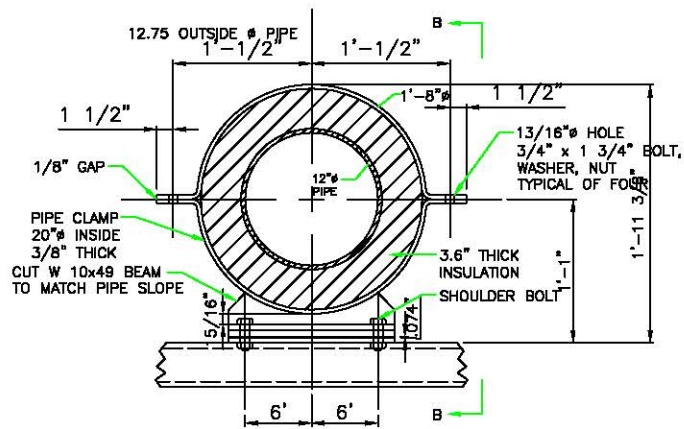
1. Expansion joints are to be installed at the first joint inside the bridge abutments on both sides.
2. Expansion joints should be installed every 300 feet thereafter.
3. Expansion joint assembly must be "Dresser Style 63, Type 1," Slip Type, or approved equal.
4. The expansion joint shall be galvanized steel, except for the slip pipe.
5. The expansion joint must have a minimum 1/2" thick body, and a slip with an 8" traverse.
6. The expansion joint assembly is to include all materials, bolts, nuts and washers, welded neck flanges A.S.A. #150 and gaskets.
7. All bolts and nuts must be stainless steel ASTM A 276-89A, Type 304.

EXPANSION JOINT DETAIL

SCALE: NONE

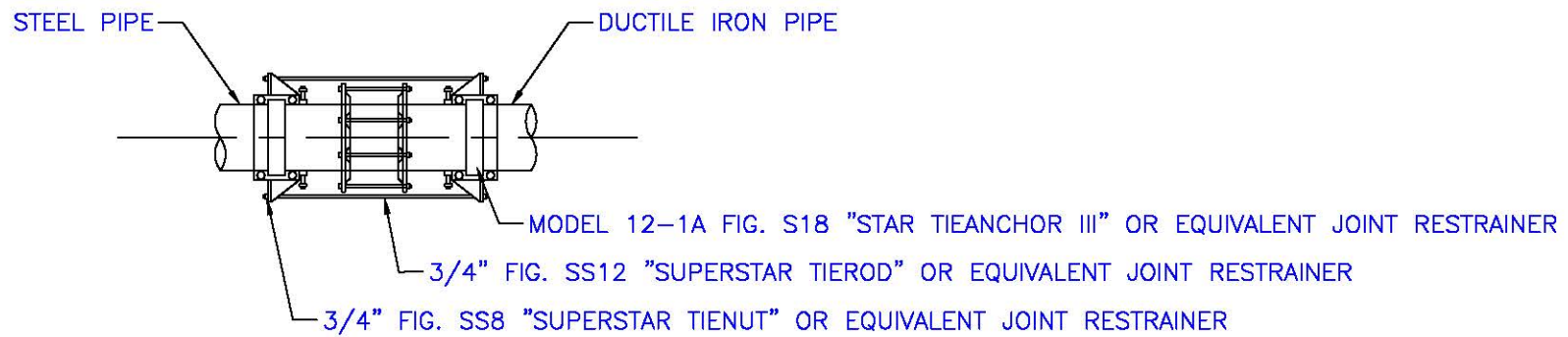


SECTION B-B
SCALE: NONE



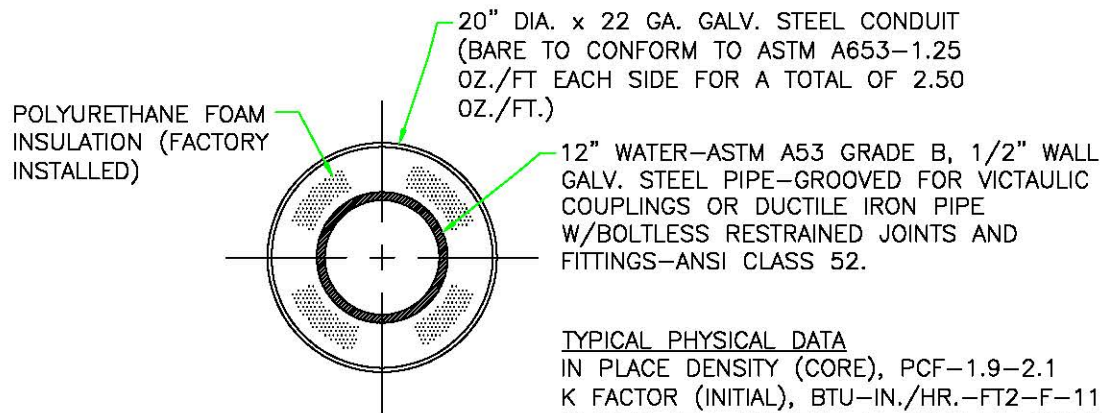
PIPE SUPPORT DETAIL
SCALE: NONE

1. PIPE SUPPORTS ARE TO BE FABRICATED AS DETAILED IN THE SHOP DRAWINGS.
2. THERE SHALL BE A MINIMUM OF TWO (2) PIPE SUPPORTS FOR EACH PIPE LENGTH. NO MORE THAN 20' OF PIPE SHALL BE UNSUPPORTED.
3. PIPE SUPPORTS ARE REQUIRED TO ALLOW MOVEMENT ONLY IN THE AXIAL DIRECTION. ALL OTHER MOVEMENT IS TO BE RESTRICTED.
4. PIPE SUPPORTS SHALL NOT CRUSH THE PIPE INSULATION.



"SS" DENOTES "SUPERSTAR" ITEMS MADE OF HIGH-STRENGTH CORROSION-RESISTANT STEEL.
 2 "SUPERSTAR TIEROD" JOINT RESTRAINERS ARE REQUIRED ON 12" PIPE AT 150 PSI.

STEEL TO DUCTILE IRON PIPE CONNECTION DETAIL
 SCALE: NONE



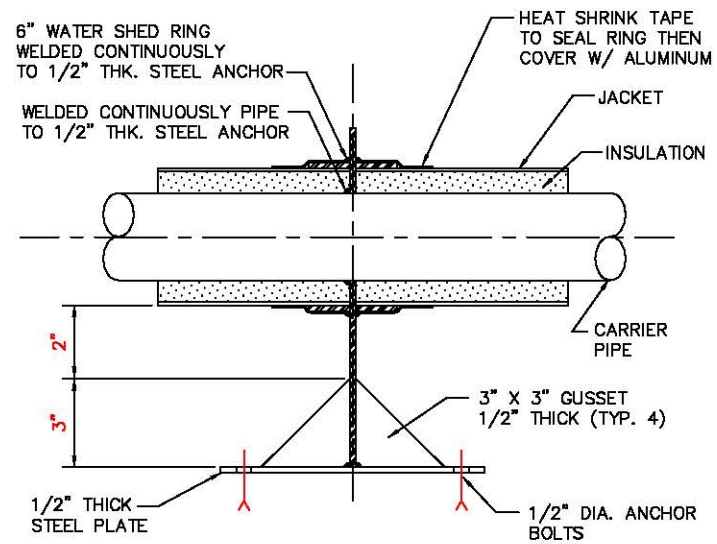
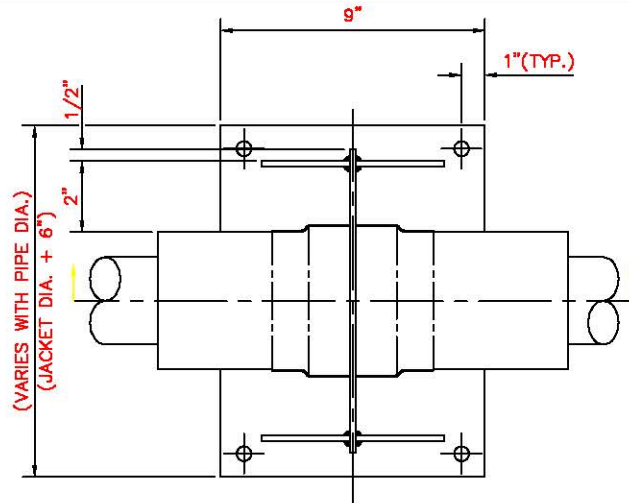
TYPICAL PHYSICAL DATA
 IN PLACE DENSITY (CORE), PCF-1.9-2.1
 K FACTOR (INITIAL), BTU-IN./HR.-FT²-F-11
 CLOSED CELL CONTENT, IT (BARE TO CONFORM TO
 ASTM A653/A653M-1.25 OZ./FT EACH SIDE FOR
 A TOTAL OF 2.50 OZ./FT.

Note:

Insulation shall be rigid, 90-95% closed cell polyurethane with a 2.0 to 3.0 pounds per cubic foot density and coefficient of thermal conductivity (K-factor) of 0.14 and shall conform to ASTM C-591. Insulation thickness shall be as follows:

- a.) A minimum of 3.5" for 12.75" O.D. Steel Pipe
- b.) A minimum of 3" for 16" O.D. Steel Pipe

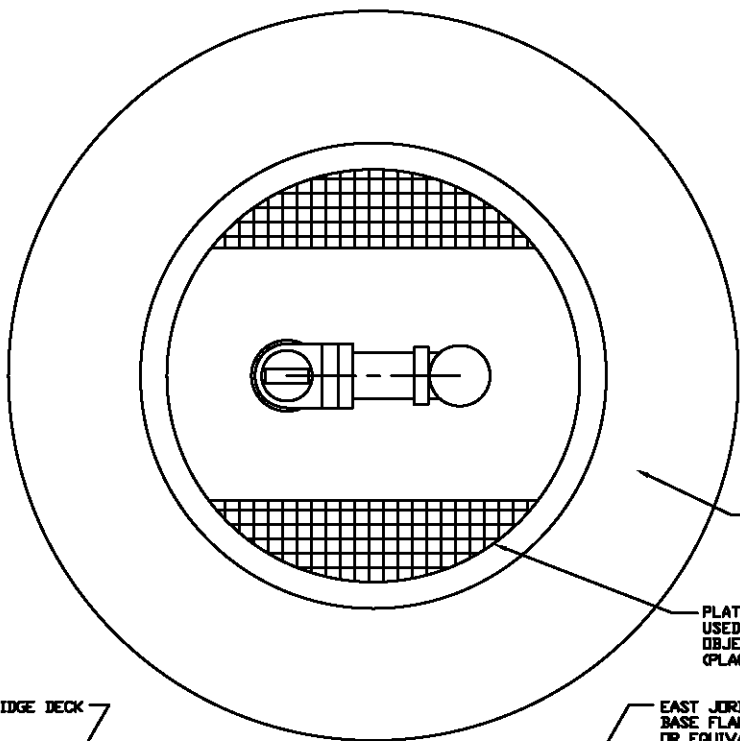
12"Ø PIPE INSULATION DETAIL
 SCALE: NONE



STD-BR07

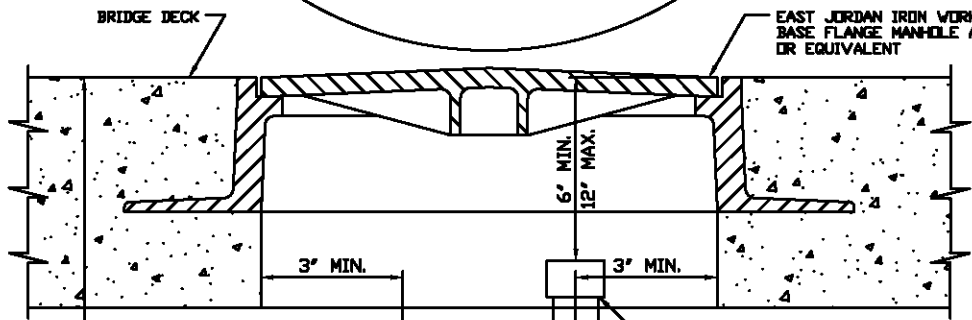
ABOVE GROUND ANCHOR DETAIL

DATE: 6-22-2009 BY: DCR



EAST JORDAN IRON WORKS #1267
BASE FLANGE MANHOLE AND COVER
OR EQUIVALENT (COVER REMOVED)

PLATFORM OR NETTING/MESH
USED TO STOP DROPPED
OBJECTS OR TOOLS.
(PLACED BELOW WATERMAIN).



EAST JORDAN IRON WORKS #1267
BASE FLANGE MANHOLE AND COVER
OR EQUIVALENT

6" MIN.
12" MAX.

3" MIN.

3" MIN.

VARIABLE

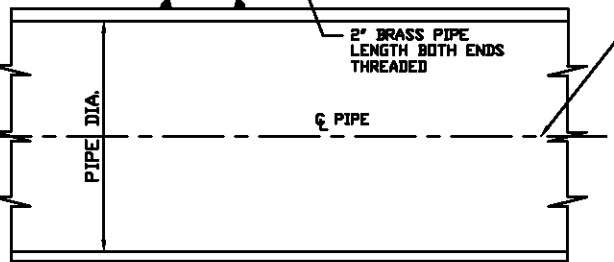
2" BRASS COUPLING
2" BRASS PIPE LENGTH
BOTH ENDS THREADED

2" AIR RELIEF
ASSEMBLY,
SEE ENLARGED
DETAIL

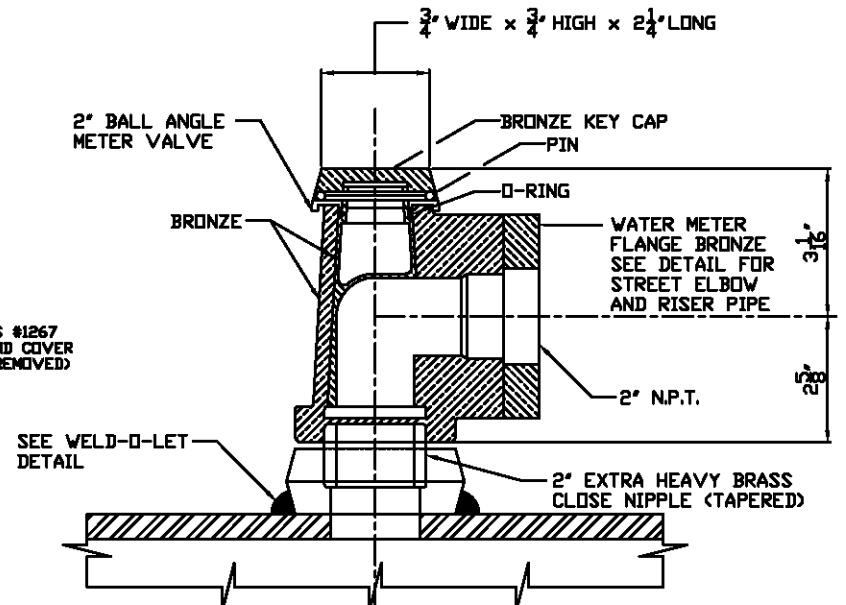
2" BRASS
90° ELBOW
1/8" HOLE FOR DRIP

2" BRASS PIPE
LENGTH BOTH ENDS
THREADED

INSULATED WATER MAIN



STD-A04



2" BALL ANGLE
METER VALVE

3/4" WIDE x 3/4" HIGH x 2 1/4" LONG

BRONZE KEY CAP
PIN

O-RING

BRONZE

WATER METER
FLANGE BRONZE
SEE DETAIL FOR
STREET ELBOW
AND RISER PIPE

3 1/8"

2" N.P.T.

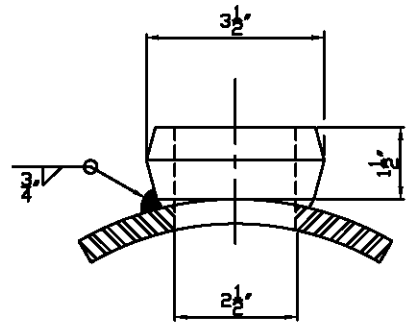
2 1/8"

SEE WELD-O-LET
DETAIL

2" EXTRA HEAVY BRASS
CLOSE NIPPLE (TAPERED)

AIR RELIEF VALVE ASSEMBLY

AIR RELIEF ASSEMBLY IS TO BE LOCATED AT
THE HIGH POINT OF WATER MAIN ON BRIDGE.



WELD-O-LET DETAIL

**2" AIR RELIEF/FLUSHING OUTLET VALVE
FOR STEEL WATER MAINS ON BRIDGES**

DATE: 8-11-2010 BY: RSK

CLEVELAND DIVISION OF WATER NOTES FOR WATER MAIN INSTALLATION ON BRIDGES:

DRAWINGS

1. THE CONTRACTOR, THROUGH THE ENGINEER, SHALL SUBMIT TO THE CITY FOR APPROVAL A MINIMUM OF SIX (6) SETS OF PIPE ASSEMBLY LAYOUT DRAWINGS GENERATED BY THE PIPE OR STRUCTURAL FABRICATOR. PIPE ASSEMBLY LAYOUT DRAWINGS SHALL INCLUDE ALL OF THE FOLLOWING:
 - a.) PIPE DIMENSIONS
 - b.) FITTING DIMENSIONS
 - c.) LOCATION AND ELEVATION OF ALL PIPES, FITTINGS, PIPE JOINTS, PIPE SUPPORTS, EXPANSION JOINTS AND ANY OTHER APPURTENANCES.
 - d.) TYPE OF PIPE, FITTINGS, PIPE JOINTS, PIPE SUPPORTS, EXPANSION JOINTS AND ANY OTHER APPURTENANCES
2. 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. DRAWINGS SHALL INCLUDE ALL OF THE FOLLOWING.
 - a) PIPE
 - b) COUPLINGS
 - c) INSULATION
 - d) WATER STOP
 - e) EXPANSION JOINT ASSEMBLY
 - f) PIPE SUPPORTS
3. NO WORK SHALL BE PERFORMED IN THE SHOP OR IN THE FIELD UNTIL AFTER THE DRAWINGS HAVE BEEN APPROVED.
4. THE APPROVAL OF THE DRAWINGS BY THE CITY SHALL NOT RELIEVE THE CONTRACTOR OF ANY OF HIS OBLIGATIONS WITH THIS CONTRACT.

MATERIALS

5. CARRIER PIPE SHALL BE GALVANIZED STEEL ASTM A-53 GRADE B, HAVING A MINIMUM WORKING PRESSURE OF 350 PSI. CARRIER PIPE SHALL BE OF THE FOLLOWING DIMENSIONS:
 - a.) 12.75" O.D. X 0.5" WALL THICKNESS.
 - b.) 16" O.D. X 0.5" WALL THICKNESS.
 - c.) 24" O.D. X 0.5" WALL THICKNESS.

INSULATION

6. JACKETING MATERIAL SHALL BE INTERNAL LOCK SEAL, 22 GAUGE, SPIRAL WOUND, GALVANIZED STEEL WITH A RUBBER "O" RING FORMED IN THE SEAM, FORMED INTO STEEL TUBES. (AT THE ENGINEERS OPTION, SPIRAL WOUND, LOCK SEAMED ALUMINUM JACKET .032" THICK OR STAINLESS STEEL 24 GAUGE MAY BE USED.)
7. ALL JOINTS ARE TO BE INSULATED USING POURED URETHANE OR SECTIONAL URETHANE FOAM TO THE THICKNESS SPECIFIED, COVERED WITH A METAL SLEEVE, SEALED WITH MASTIC OR SILICON, AND HELD IN PLACE WITH TWO ½" STAINLESS STEEL BANDS.
8. BURIED PIPE BEYOND THE BACK WALLS OF THE BRIDGE ABUTMENTS HAVING LESS THAN 4 ½' OF COVER SHALL BE INSULATED WITH A MINIMUM OF A 1 FOOT INSULATION

ENVELOPE EQUAL TO "WITCOLITE" OR "GILSULATE 500XR."

VICTAULIC COUPLINGS

9. VICTAULIC TYPE COUPLINGS SHALL BE INSTALLED BY THE CONTRACTOR FOR THE CONNECTION OF PIPE ENDS, WHERE REQUIRED OR SHOWN ON DRAWINGS. VICTAULIC TYPE COUPLINGS ARE TO BE STYLE 77 OR "DEPEND-O-LOK" TYPE.

MEASUREMENT

10. 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

11.
 - (A) THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR AT THE CONTRACT PRICE BID PER LINEAR FOOT FOR "ITEM SPECIAL - WATER MAIN EXTRA STRONG WELDED 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 THE 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 SPECIAL - EXTRA STRONG WELDED GALVANIZED STEEL PIPE
ASTM A-53, GRADE B**

- (A) GALVANIZED STEEL PIPE SHALL BE 12.75" O.D. X 0.50" WALL ASTM A-53 GRADE B, HAVING A MINIMUM WORKING PRESSURE OF 350 PSI.

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.

GALVANIZED STEEL PIPE SHALL BE 24" 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 - EXTRA STRONG WELDED 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 JOINT AND TYPE, ALL PIPE SUPPORTS, ELEVATIONS OF PIPE AT SUPPORTS, EXPANSION 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 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 STYLE 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 THREE AND ONE-HALF (3-1/2") FOR 12.75" O.D. STEEL PIPE AND MINIMUM THREE INCHES (3") 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 24 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 PREINSULATED 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) COAL 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; AND
- 7) TWO (2) FINISH COATS OF ALUMINUM PAINT.

IN LIEU OF THE ABOVE, CONTRACTOR MAY FURNISH A FACTORY PREINSULATED

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 (4-1/2') FEET 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 SPECIAL - WATER MAIN EXTRA STRONG WELDED 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 THE 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.

TABLE OF CONTENTS

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ASTM A-53, GRADE B

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