City of St. Louis
Water Division

Requisition # 41517R 1070
9/30/2016

SPECIFICATION FOR FABRICATED STEEL PIPE

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, equipment, materials, and incidentals required to fabricate steel pipe segments as shown on the drawings and as specified herein. Items to be supplied are as follows:
   a. Quantity (1) - Pipe segment M-1; Ø30" I.D. x 22" lay length x 1/2" wall thickness (AWWA Ø30" class D flat-faced flange x plain end)
   b. Quantity (5) - Pipe segment M-2; Ø36" I.D. x 22" lay length x 1/2" wall thickness (AWWA Ø36" class D flat-faced flange x plain end)
   c. Exterior longitudinal or spiral welds pipe welds shall be ground smooth 10" from plain end of pipe prior to application of pipe exterior coating(s).

1.02 SUBMITTALS

A. Fully dimensioned shop drawings of pipe segments.
B. State delivery lead time for pipe segments.
C. Submit mill test reports for the steel used to fabricate pipe and appurtenances.
D. Submit documentation if the alternate Arc Welding Qualifications Procedures are employed.
E. Submit pipe coating product data sheets.
F. Submit Material Safety Data Sheets (MSDS) for all materials used to fabricate and coat pipe and appurtenances.

1.03 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)
   a. ANSI/ASTM A139, Grade B – Standard Specification for Electric-Fusion (ARC)-Welded Steel Pipe.
   b. ASTM A283, Grade C – Specification for Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and bars.
   c. ASTM A283, Grade D - Specification for Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and bars.
B. American National Standards Institute (ANSI)
C. American Welding Society (AWS)
D. American Water Works Association (AWWA)
   a. AWWA C200-12 – Steel Water Pipe
   b. AWWA C207-13 – Steel Pipe Flanges for Waterworks Service
   c. AWWA C210-15 – Liquid-Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines
E. National Sanitation Foundation (NSF)
   a. NSF 61
F. Steel Structures Painting Council (SSPC)

PART 2 – PRODUCTS

2.01 FABRICATED STEEL PIPE

A. All steel pipes shall be fabricated in accordance with referenced AWWA Standards C200 and C207. Steel pipe material shall conform to the requirements of ASTM A283, Grade D or ANSI/ASTM A139, Grade B.
B. Pipe flanges shall be AWWA C207 Standard steel-ring flanges, Class D (150 PSI). These flanges have the same diameter and drilling as class 125 cast-iron flanges (ANSI/ASME B16.1). ID of the flange bore shall not exceed the pipe OD by more than 0.19 inches.
C. Shop welds of the pipe and appurtenances shall conform to applicable ANSI/AWS Standards.
D. Pipe wall thickness shall be 1/2".
E. Design pressure = 150 PSI.

2.02 SURFACE PREPARATION AND SHOP PAINTING

A. General. Surface preparation and shop painting shall conform to AWWA C210 and the pipe coating shall be applied in accordance with the coating manufacturer's recommendations. Application by air-spray or airless-spray is preferred. The topcoat shall be applied within the time limits, surface conditions, and temperature recommended by the coating manufacturer.
B. Steel surface preparation shall be in accordance with the manufacturer's recommendations and minimum requirements as follows:
    a. All surfaces must be clean, dry and free of oil, grease, chalk and other contaminants.
    b. Immersion Service: SSPC-SP10 Near-White Blast Cleaning with a minimum angular anchor profile of 1.5 mils.
    c. Non-Immersion Service: SSPC-SP6 Commercial Blast Cleaning with a minimum angular anchor profile of 1.5 mils.
C. All interior (wetted) surfaces of pipe and appurtenances shall receive (1) coat of Tnemec HI-Build TNEME-TAR 46H-413 @ 16-20 mils DFT (Dry Film Thickness). Color of Hi-Build TNEME-TAR 46H-413 shall be black.
D. Exterior surfaces of pipe and appurtenances shall receive (2) coats of Tnemec Pota-Pox 20FC @ 4-6 mils DFT. Color of Pota-Pox 20FC shall be 39BL (Delft Blue).

PART 3 – MATERIALS AND WORKMANSHIP

3.01 General. All materials furnished and all work completed shall meet the requirements of this specification and by extension Standards cited.

PART 4 – VERIFICATION

4.01 INSPECTION

A. All work performed and material furnished under the requirements of this specification may be inspected by the City of St. Louis Water Division (CSLWD), but such inspection shall not relieve the manufacturer of responsibility to furnish material and perform work in accordance with this specification. If the CSLWD desires to inspect the pipe or witness the tests, reasonable notice shall be given by the manufacturer as to the time at which the inspection may be made.
B. Rejection of pipe. The CSLWD may reject any pipe sections or special sections that do not conform to the prescribed test results and tolerances set forth in this specification.
C. Finished pipe at delivery destination. Shipments received at the delivery destination will be inspected by the CSLWD for damage before and after unloading. Any pipe section or special section that shows dents or kinks on delivery may be rejected. A description of the damage and the reasons for rejection will be noted on the bill of lading. The manufacturer shall repair or replace the rejected sections subject to AWWA standards and CSLWD approval.

PART 5 – TEST PROCEDURES

5.01 Hydrostatic testing of pipe. Each length of pipe shall be tested by the manufacturer to a hydrostatic pressure not less than 150 PSI. By agreement between the CSLWD and the manufacturer, other nondestructive test methods may be used in lieu of the hydrostatic test.

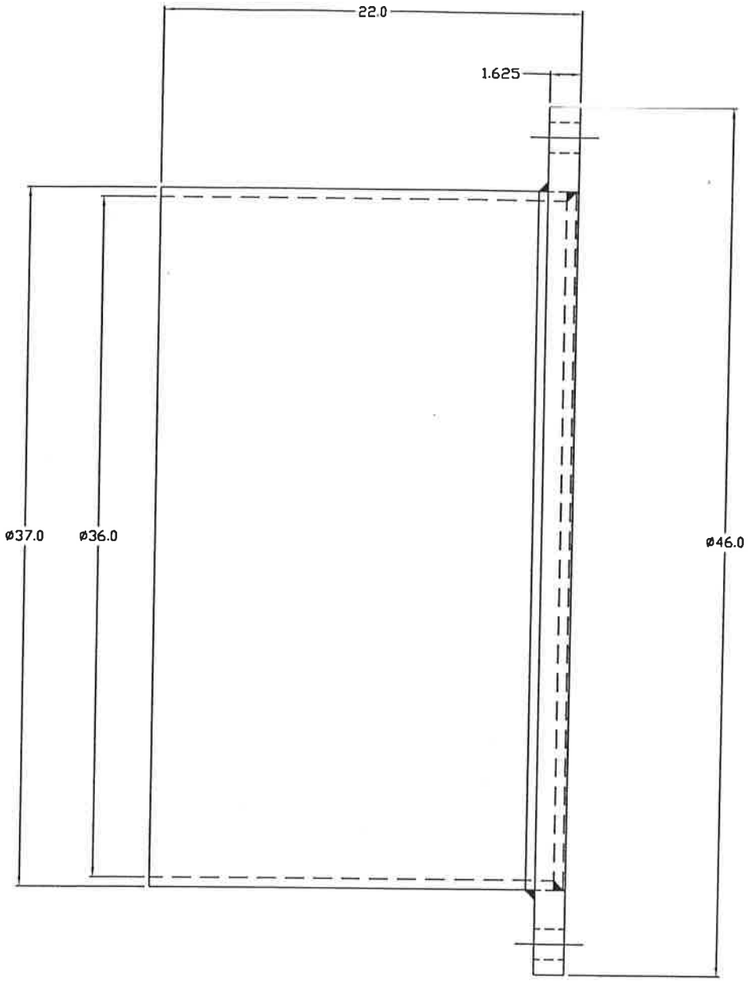
5.02 Nondestructive (NDE) testing of pipe sections approved in lieu of hydrostatic testing. Approved NDE method(s) shall be radiographic or magnetic particle testing of welds. A copy of the test reports shall be included with delivery of pipe segments.

PART 6 – DELIVERY

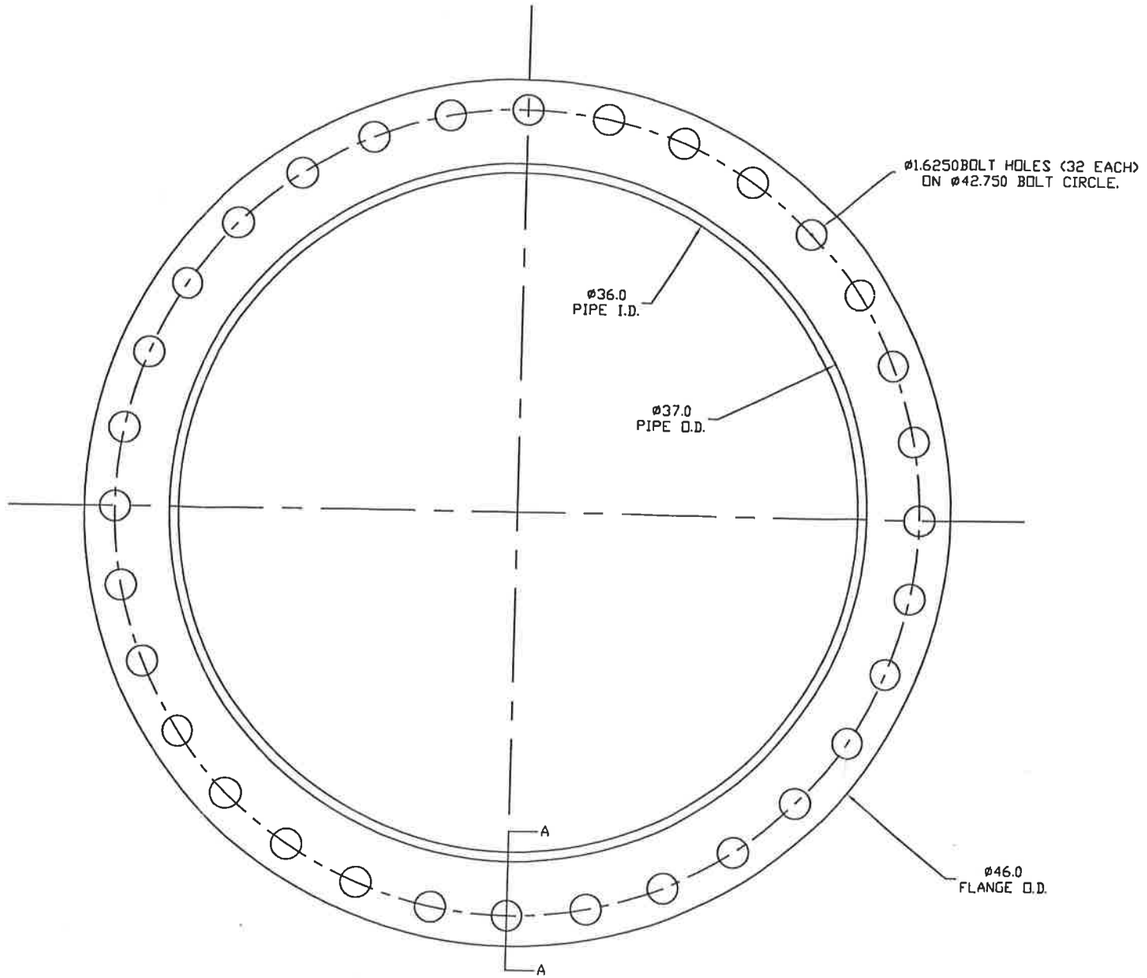
6.01 HANDLING AND LOADING

A. Pipe shall be handled with proper equipment and in a manner to prevent distortion or damage to the pipe and coatings. The use of hooks or clamps that could kink or bend the ends will not be permitted. Loading shall be done in such a manner as to prevent projections on any pipe length, such as flanges or plain ends from rubbing against one another or against another pipe length.
B. Out-of-roundness. Pipe shall be loaded so as to ensure that out-of-roundness shall not exceed the limits specified in AWWA C200.
C. Freight on bill, freight to be prepaid and included on bill. Delivery address is as follows: City of St. Louis Water Division, Chain of Rocks Water Treatment Plant, 10450 Riverview Drive, St. Louis, MO 63137. Deliver times Monday – Friday between the hours of 7:30 a.m. and 2:30 p.m., 24-hour notice of delivery required. Notify Project Engineer at (314) 592-8215 to coordinate delivery.

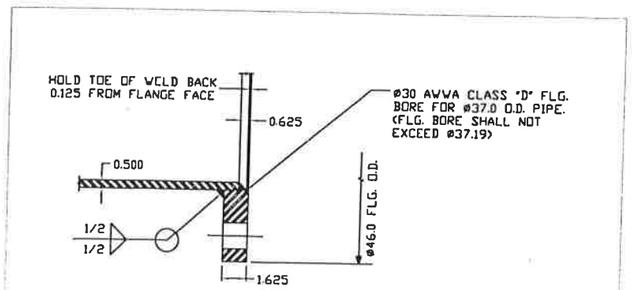
End of Specification



FRONT VIEW



SIDE VIEW



SECTION A-A

NOTES:

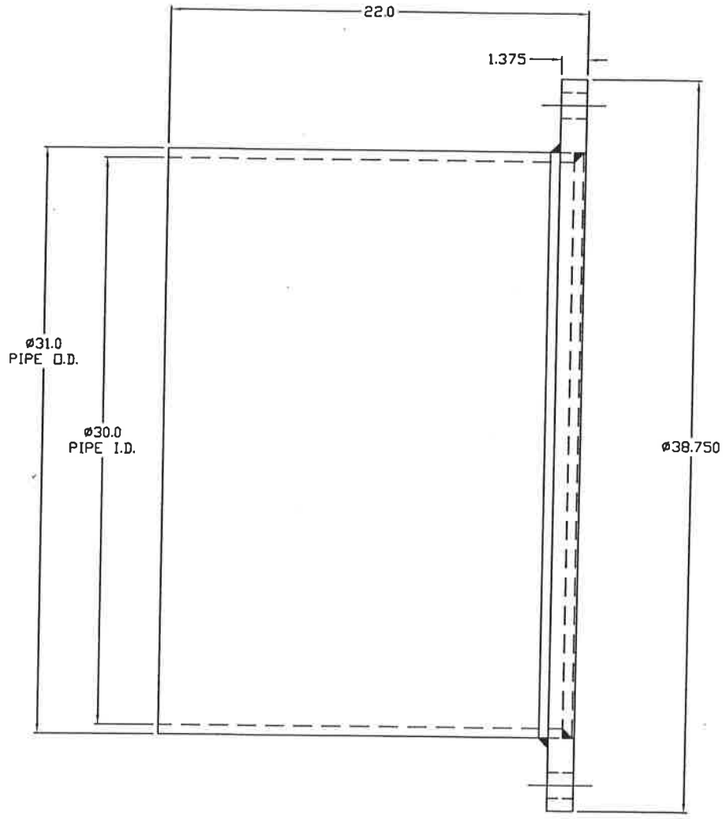
1) ALL DIMENSIONS IN INCHES
2) PIPE MATERIAL AND FABRICATION AS PER DRAWING AND SPECIFICATION.
3) PIPE COATINGS AS PER SPECIFICATION.

CITY OF ST. LOUIS
WATER DIVISION

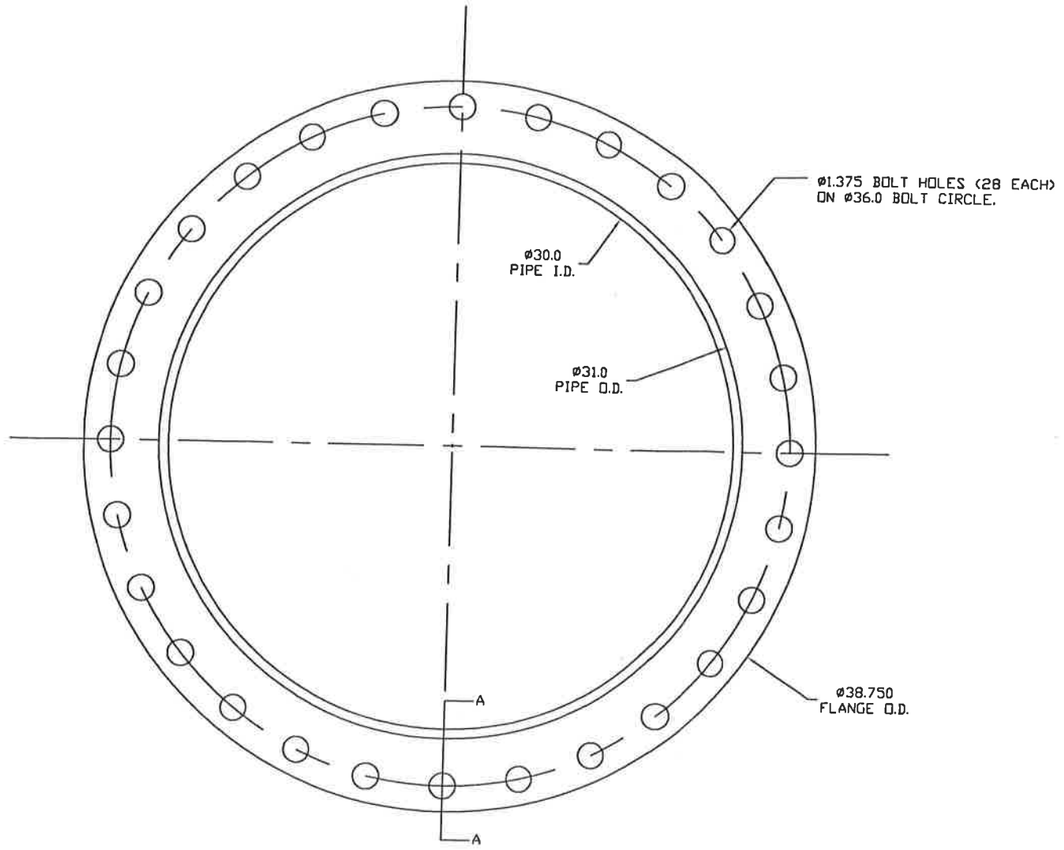
C/R PRIMARY PUMPING STATION
DETAILS OF PIPE FOR
DISCHARGE VALVES

SIZE	DATE:	DWG NO.	REV
D	4/1/16	CRWTP PRIMARY	
SCALE: NTS	DRAWN BY: S. CYMERMAN	SHEET: 1 OF 2	

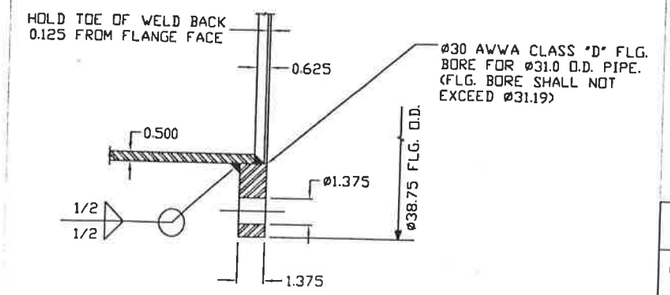
FNAME
REVDATE
USER



FRONT VIEW



RIGHT VIEW



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C/R PRIMARY PUMPING STATION
DETAILS OF PIPE FOR
DISCHARGE VALVES

SIZE	DATE:	DWG NO.	REV
D	4/1/16	CRWTP PRIMARY	
SCALE: NTS	DRAWN BY: S. CYMERMAN	SHEET: 2 OF 2	

USER FNAME REVDATE