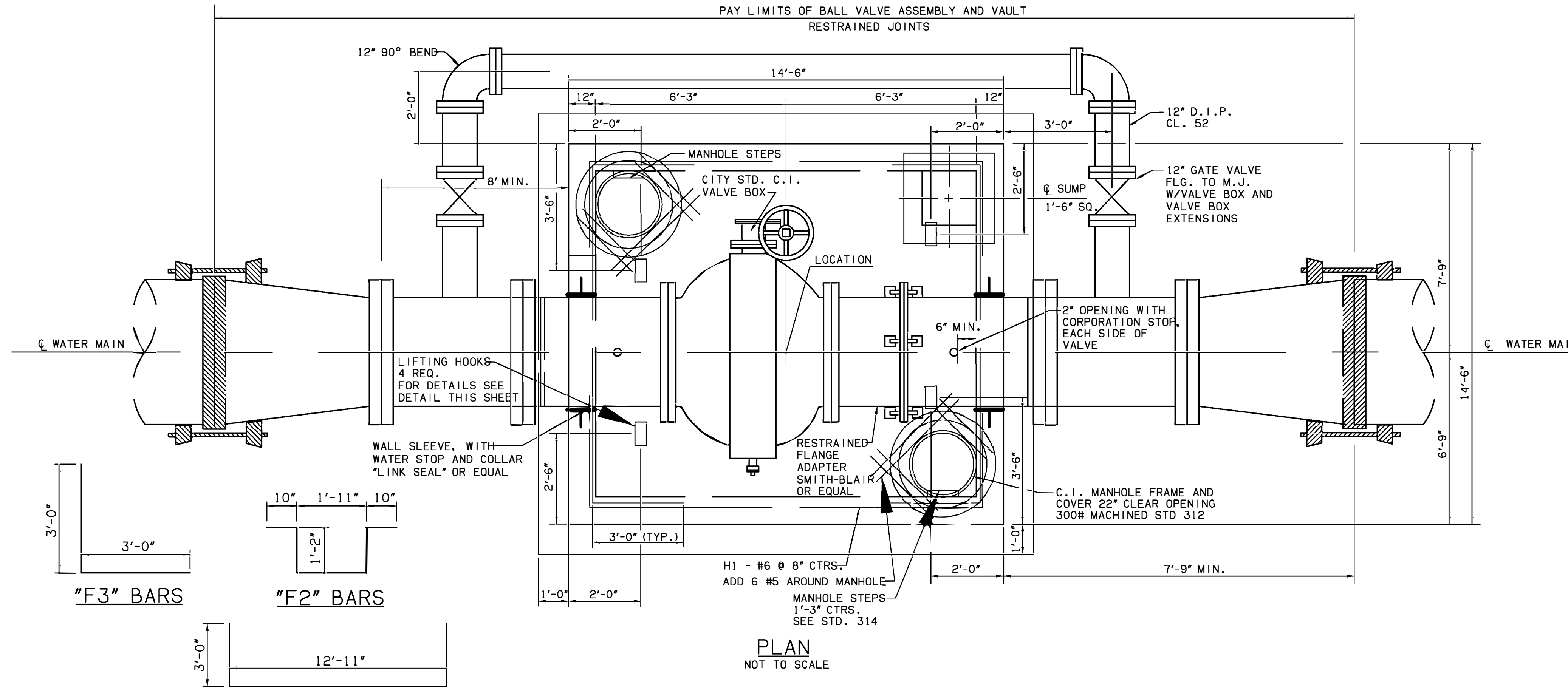
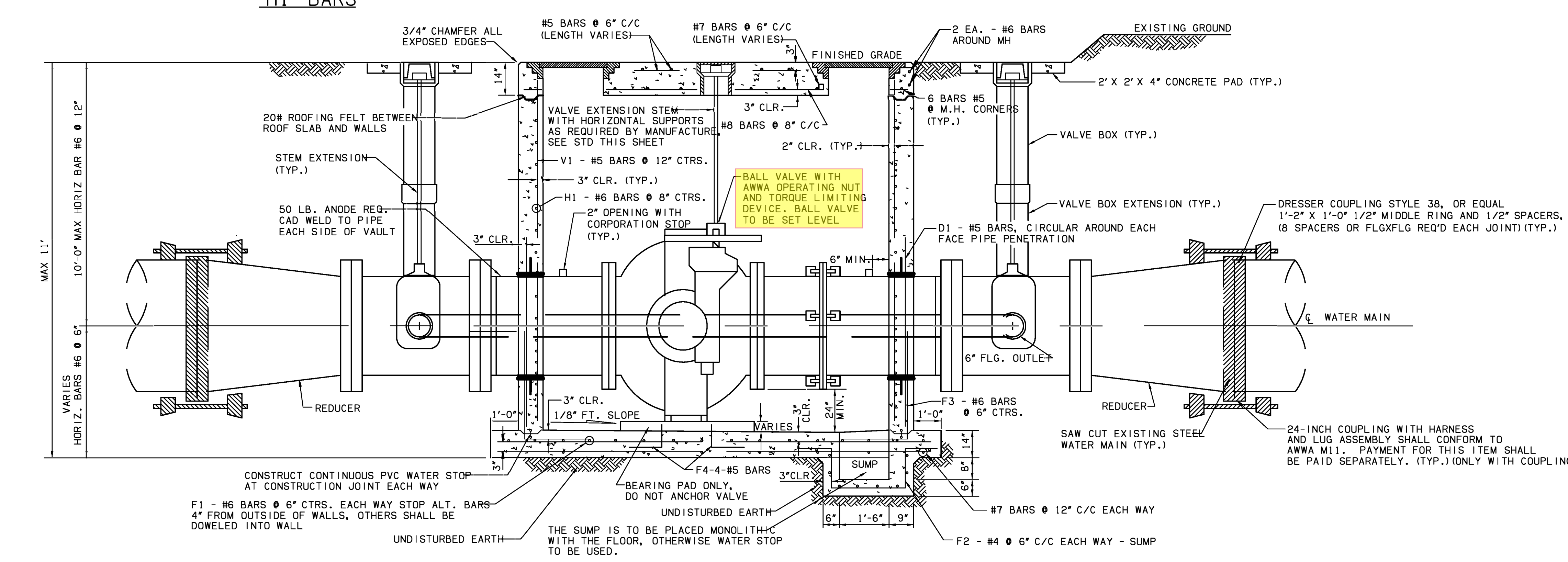


CONTRACT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	06374(47)	2012	374	565



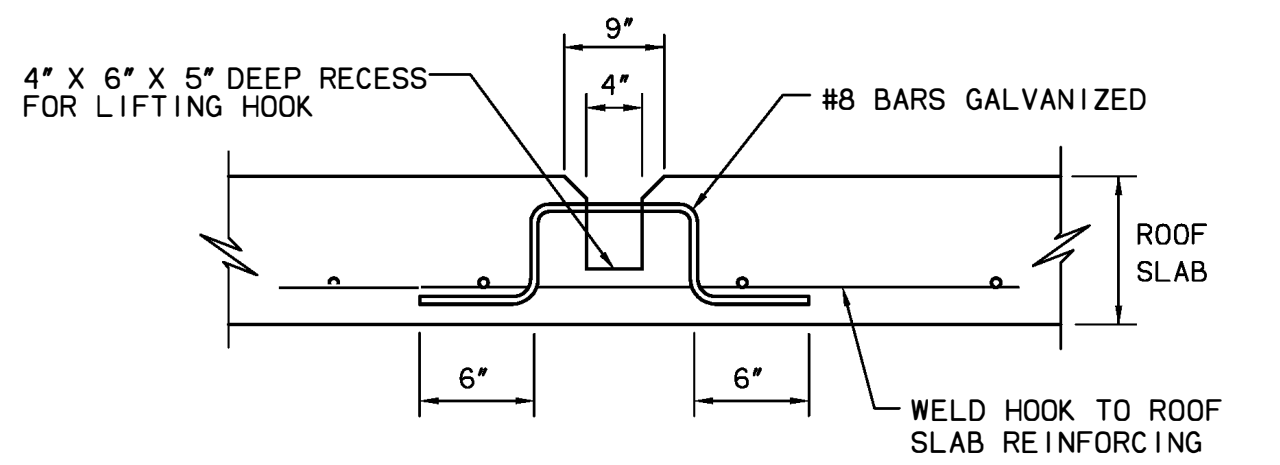
PLAN NOT TO SCALE



ELEVATION NOT TO SCALE

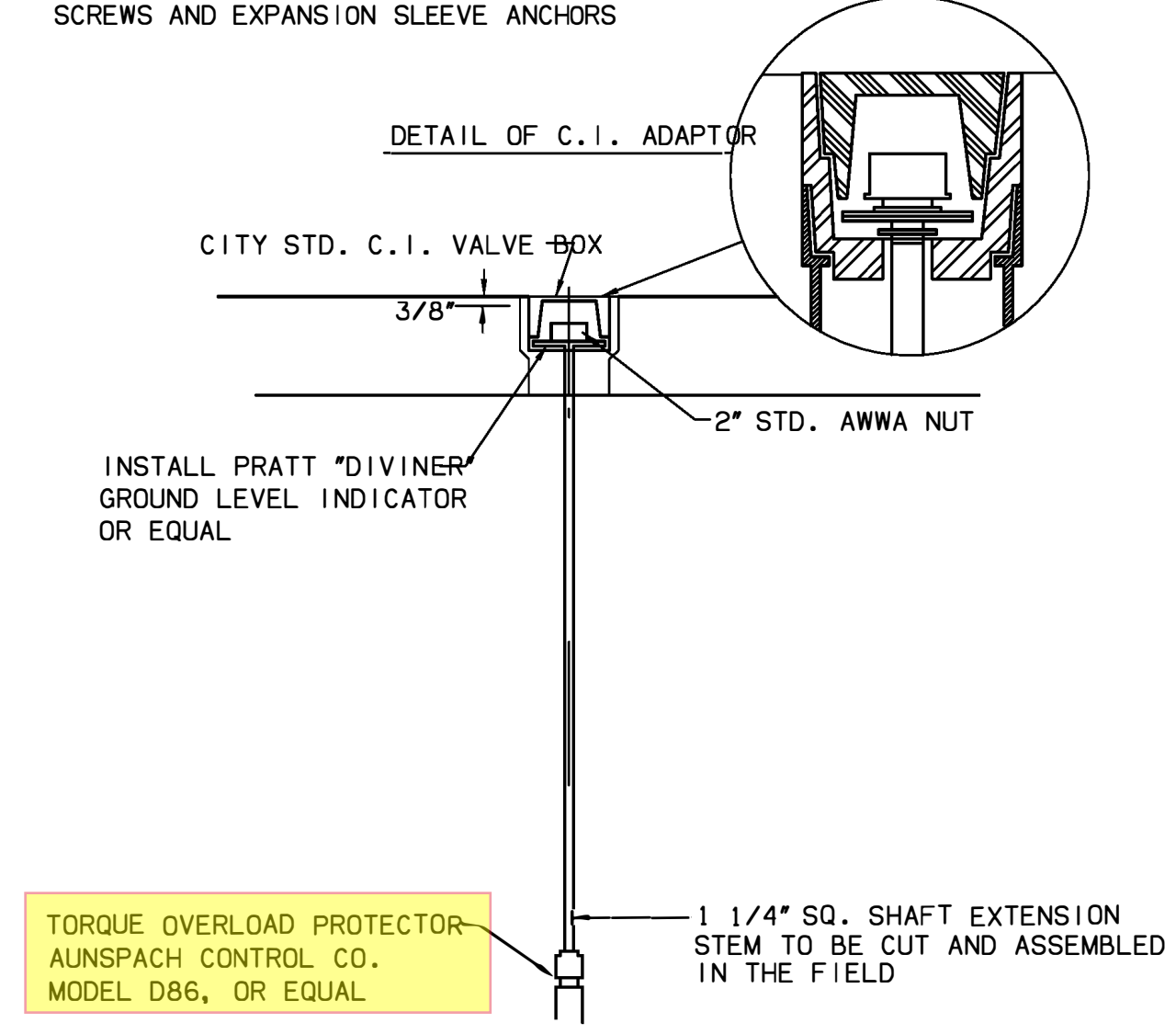
NOTE:

1. THE BALL VALVE ASSEMBLY AND VAULT SHALL NOT INCLUDE, BUT NOT LIMITED TO, CLEARING, EXCAVATION, REINFORCED CONCRETE, LIFTING HOOKS, CASTINGS, BALL VALVE WITH WHEEL AND OPERATOR NUT VALVE EXTENSION STEM WITH HORIZONTAL SUPPORTS, INDICATOR, RESTRAINED ADAPTERS, REDUCER, WALL SLEEVE, LINK SEAL, ALL PIPING, FITTINGS, BYPASS PIPING, GATE VALVES, GATE VALVE WITH VALVE BOX AND VALVE BOX EXTENSION, CATHODIC PROTECTION, 2" CORPORATION COCK, TRANSITION COUPLING WITH AWWA M11 HARNESS AND LUG ASSEMBLY, IF USED, BACKFILL, RESTORATION, AND APPURTENANCES REQUIRED FOR A COMPLETE INSTALLATION.
2. ALL BYPASS PIPING TO BE RESTRAINED MECHANICAL JOINTS, EBBA MEGALUGS SERIES #1100, OR EQUAL.
3. STEEL PIPE, CONCRETE PIPE (AWWA 301), OR DUCTILE IRON PIPE (CLASS 52) SHALL BE USED THROUGH VALVE VAULTS. DRESSER COUPLINGS, STYLE 38, TO BE INSTALLED AT A MINIMUM DISTANCE OF 8' FROM VALVE VAULT. "DRESSERLOY" BOLTS SHALL BE USED ON ALL DRESSER COUPLINGS. HARNESS AND LUG ASSEMBLY REQUIRED WITH EITHER IRON OR STEEL. ROTATE LUG ASSEMBLY SO AS NOT TO INTERFERE WITH GATE VALVE.
4. BOLTS AND NUTS SHALL CONFORM TO ASTM A307 GRADE B AND ASTM A563, GRADE A, RESPECTIVELY.
5. REINFORCING STEEL SHOP DRAWINGS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO MATERIAL DELIVERED TO THE JOB SITE.
6. SEE STD 330 FOR CATHODIC PROTECTION.



LIFTING HOOK DETAIL NOT TO SCALE

NOTE:  
IN SIDEWALKS, COVER HOOK OPENING WITH A STEEL PLATE. SECURE WITH SCREWS AND EXPANSION SLEEVE ANCHORS



STEM EXTENSION FOR BALL VALVE NOT TO SCALE

FOR REFERENCE ONLY

Design		CITY OF TULSA STD.326	
Drawn		I-44 & LEWIS INTERCHANGE TULSA COUNTY	
Checked		<b>30" THRU 48" BALL VALVE VAULT</b>	
Approved		<b>UNDER H-20 LOADING</b>	
Squad		Job Piece No. 06374(47)	Sheet No. 374



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Water & Sewer  
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**All MATERIALS CONTAINING BRASS:** Federal Reduction of Lead in Drinking Water Act, Federal Regulations effective January 4, 2014.

Disclaimer: All products received must meet Federal guidelines even if not stated in specifications.

**Section 4:**

**WValveBALL 03172005**

(Use spec with: Section 4, Item 37-41)

**Ball Valve with Manual Operator Specifications:**

Ball valves shall conform to AWWA Standard for Ball Valves, ANSI/AWWA C507. They shall be Double-seated with natural or synthetic rubber located in the valve body. Ball seating surfaces shall be stainless steel; Designed for 150 psi working pressure; "O" ring rotor bearing seals; Constructed of high-tensile strength cast iron; Counter-clockwise opening; Equipped with totally enclosed manual operators, and torque limiting control device. Ball shall have flanges which will be ANSI B16.1, Class 125, cast iron flanges.

Only the following makes will be permitted: Pratt

**Manual Operators** shall be permanently lubricated, counter-clockwise opening, and designed for buried or submerged service. Manual operators shall be equipped with a 2" square AWWA operating nut with removable hand wheel complete with spinner and an open-closed indicator, suitable for one-man operation at 150 psi unbalanced across the valve. The manual operator shall be either worm gear or traveling nut type and shall conform to AWWA C507 for Ball Valves.

**Section 4:**

**WValveBfly 120101**

(Use spec with: Section 4, Item 42-45)

**Butterfly Valve Specifications:**

Butterfly valves shall be of the tight-closing, rubber-seat type, shall have a rated pressure of 150 psi and shall be bubble-tight at this pressure with flow in either direction. Valve opening shall be counter-clockwise. The valve shall conform to and be tested in accordance with the AWWA Standard for Rubber-Seated Butterfly Valves, ANSI/AWWA C504, Class 150B. The valve body shall be of the short-body flange type, constructed of cast iron conforming to either ATSM A126, Class B, or ANSI/ASTM A436, Type 1, or cast-iron conforming to ANSI/ASTM A48 Class 40, or ductile iron, ANSI/ASTM A536 Grade CF8, or monel. Valve seats shall be body mounted and shall be of natural or synthetic rubber compound with mating seat surfaces of 18-8, Type 304 or 316 stainless steel, or alloy cast iron conforming to ANSI/ASTM A436, Type 1 bronze Grade A, D or E. Valve bearings shall be corrosion resistant and self-lubricating.

Interior surfaces of the valve, except seating surfaces, shall be epoxy coated in accordance with AWWA Standard for Protective Interior Coatings for Valves and Hydrants, AWWA C550. Exterior surface of the valve shall be painted with (2) coats of asphalt varnish conforming to Federal Specifications TT-V-51C.

Manual valve operators shall be totally enclosed, permanently lubricated, counter-clockwise opening, and designed for buried or submerged service, equipped with a 2" square operating nut with a removable hand wheel complete with spinner and an open-closed indicator, suitable for one-man operation at 150 psi unbalanced across the valve.

Only the following makes will be permitted: Pratt & Mueller

**Section 4:**

**WValveTLD 120101**

(Use spec with: Section 4, Item 46)

**Torque Limiting Device Specifications:**

Torque limiting device shall be manufactured of hardened steel and cast iron, capable of being mounted directly on a 2" square AWWA operating nut by means of 2 set screws 90 degrees apart. Total weight of the device shall not exceed





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25lbs. and maximum outside diameter shall be 4-1/2", to fit inside a standard City of Tulsa valve box. The device shall automatically declutch at 200 ft. lbs. of input torque in either direction of rotation. The device shall automatically reset in either direction when the torque level drops below the set point. The device shall be designed for permanent buried or submerged service, with tamper-proof construction to prevent the declutching mechanism from being bypassed. Reliability shall be 5 percent of the original torque rating for a minimum of 1000 cycles. Certified proof-of-design test reports shall be furnished.

Three sources include:

H-E Engineering Equipment Co.  
P.O. Box 4524  
Tulsa, Ok. 74159  
Phone 918-587-2411

Hardison Fluid Equipment  
2500 W. Skelly Dr.  
Tulsa, OK. 74107  
Phone 918-445-7440

Aunspach Controls Co.  
1897 McKelvey Hill Dr.  
St. Louis, Mo. 63043  
Phone 314-576-7587

*Sales @ Aunspach Controls . COM  
Josh*

**Section 5:  
WPIPE**

(Use spec with Section 5, Item 1-49)

**COPPER TUBING**

Where copper tubing is specified, it shall be Type "K" soft annealed copper tubing and shall meet applicable requirements of the current edition of A.S.T.M. B88-61

**DUCTILE IRON PIPE, DUCTILE AND CAST IRON FITTINGS, AND VALVES**

(2013 Engineering Specs)

**PIPE AND FITTINGS**

203.1.1 Where ductile iron pipe (DIP) three (3) inches in diameter and larger is specified or required, it shall conform to, and be tested in accordance with, the current American National Standard for Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids, ANSI/AWWA C151/A21.51.

203.1.2 Length of joints shall be either eighteen or twenty feet. The minimum standard thickness class of each size pipe shall be as follows:

Pipe Size	Thickness Class
4" thru 8"	51
10" and larger	50

203.1.3 For 16-inch and larger Water Ductile Iron Pipe, all bell and spigot joints shall be electrically bonded.