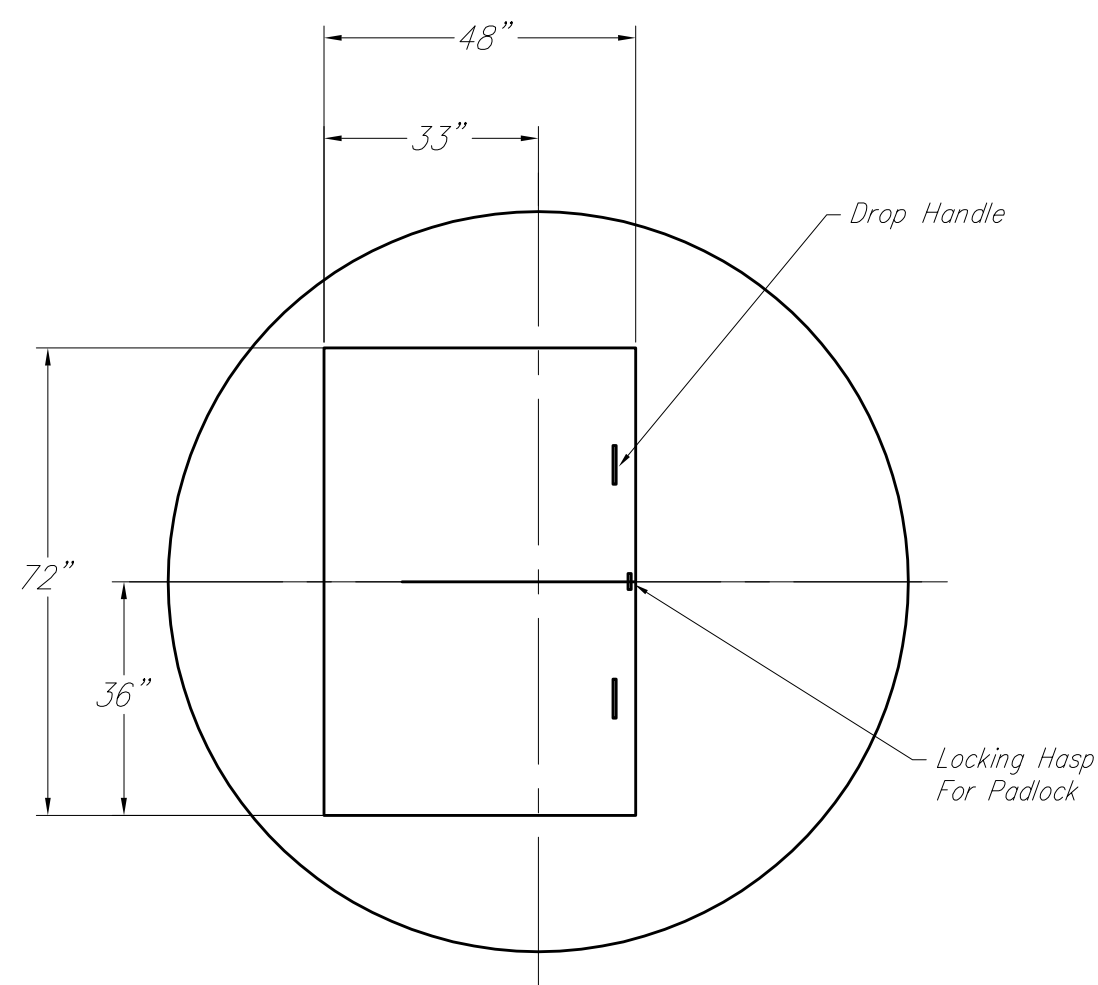


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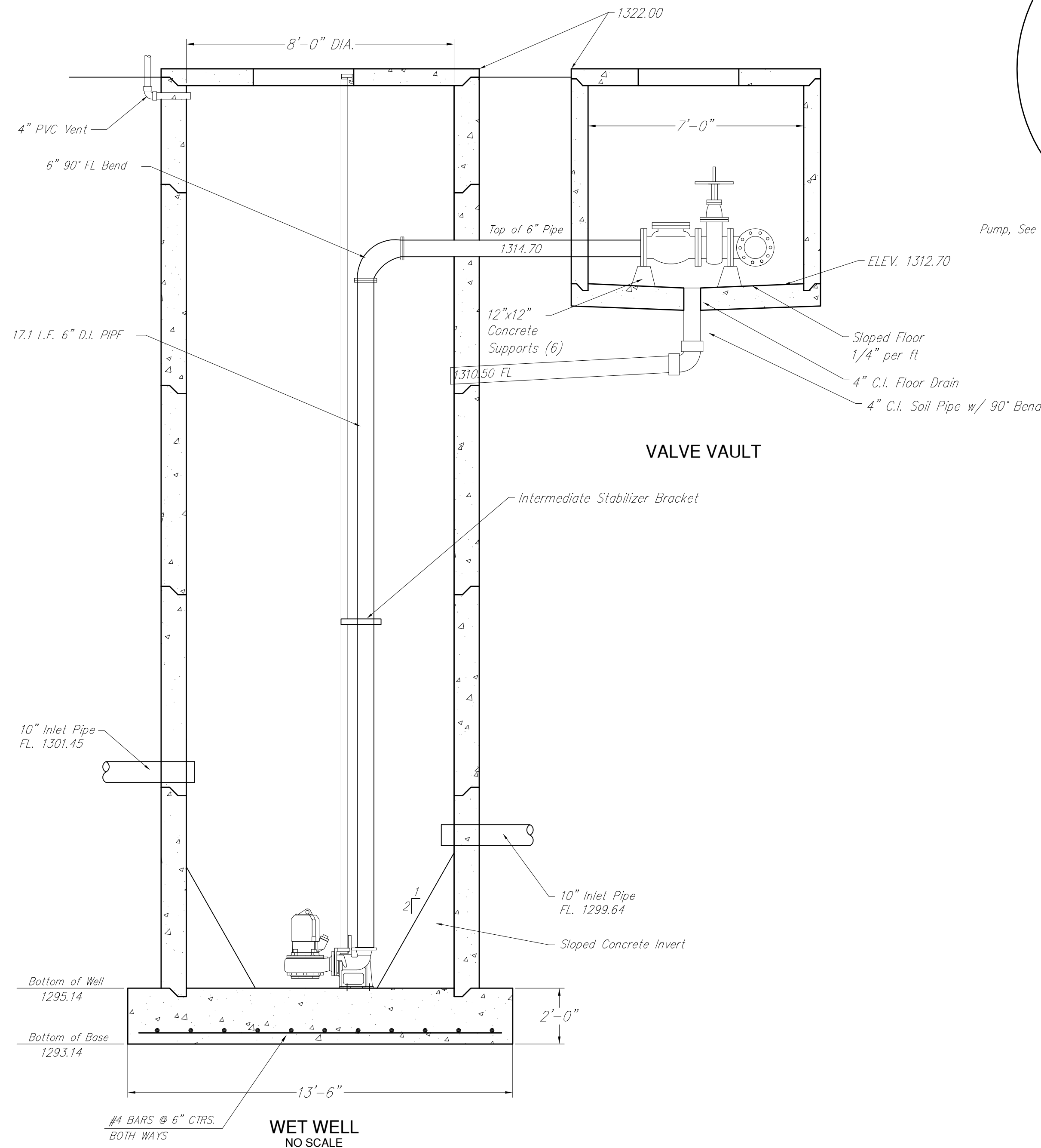
- All items indicated on sheets 13 through 16 shall be incidental to the lump sum bid item for "Lift Station". This includes labor and materials for the installation of all items. Refer to supplemental specifications for additional requirements.
- Pumps**
Pumps shall be ABS Model AFP1049.2M105/4EX-4", 14 HP, or approved equal. The pump shall be capable of operating at 435 gpm at 65 feet of total dynamic head with a static head of 19.3 feet. 6" Guide Rail and Pumps to be installed in accordance with manufacturer's specifications. Pumps shall be wired to operate in a duplex configuration such that pumps 1 & 2 will operate in a lead/lag configuration. An alternating device shall be provided with three positions: Pump 1, Pump 2, Alternate Pumps 1 & 2. The standard operation will be in the alternate position, with the other two positions reserved for one pump to be taken offline for maintenance.
- Valves**
Valves shall meet City of Wichita standard and supplemental specifications for valves. A handwheel shall be provided for operating valves.
- Control Panel**
The control panel shall be ABS Model QCL or approved equal. The control panel shall be mounted in a NEMA 12 enclosure and mounted inside the provided fiberglass shelter. Control Panel shall have the following options included: elapsed time meter, push test pump fail indicator, high temperature indicator, push test high temp indicator, push test seal alarm indicator, seal failure dry contacts, common alarm dry contacts, 460V 3 phase power monitor, 3 phase lightning arrester, and a time delay starting lag. The control panel shall be equipped with two (2) 110 volt service outlets. The contractor shall submit shop drawings and material specifications prior to installation.
- Generator**
The Generator shall be a 125KW, 3 phase Natural Gas fueled Generator provided by Caterpillar, ONAN, Genorak or approved equal. It shall have a sound attenuated, all-weather enclosure. The generator shall be equipped with an automatic transfer switch.
- Level Control System**
A PAK-II level control system compatible with City of Wichita specifications shall be installed for level control.
- Wet Well**
The wet well is a Class 1, Division 1 & 2 environment. This should be taken into account for all electrical requirements per applicable codes. Due to the corrosive atmosphere, all anchors, hardware, assembly bolt sets and brackets must be 304 stainless steel at a minimum. The wet well shall be lined with an approved liner. See Supplemental Specifications for manhole coating. Wet Well Access Doors shall be as shown on the detail. The doors shall be equipped with a flush aluminum drop handle that does not protrude above the cover. The door shall be removable for maintenance after installation.
- Confined Space Warning Sign**
The "Confined Space Warning" sign shall be fastened to the top of all vaults. If necessary for landscaping or site considerations, the sign may be fastened to the vault lid if it does not impede access to the handle. Acceptable materials: Aluminum 73415HH, Plastic 73439HH, or S.A. Vinyl 73463HH.
- Vault Construction**
The vault shall be an approved precast structure. The intent of these details shall not be limited by drawings or standards of precast structures. All joints of concrete-to-concrete or metal-to-concrete in the construction of the vault shall have an approved water tight mastic joint seal. Access doors shall be as shown on detail.

All pipe and fittings within valve vault shall be flanged. Inlet and outlet wall sleeves shall be provided and installed by the contractor. The inlet and outlet pipes shall be continuous through vault wall to no less than two(2) feet from the exterior wall of vault. Flanges of inlet and outlet pipes shall be in proper alignment and bolt pattern shall be rotated in such a way that valves and other fittings shall be in their proper vertical alignment when installed.

The contractor shall install a mega lug or other approved restrained joint on the exterior walls of the vault, which shall be manufactured of ductile iron conforming to ASTM A 536-80, heat treated to a minimum hardness of 370 BHN and have a working pressure of at least 250 P.S.I.
- Concrete**
All water retaining concrete structures shall conform to ACI 350 "Environmental Engineering Concrete Structures" and be detailed per the "ACI Detailing Manual" Special Publication SP-66. All concrete shall have 4000 PSI minimum compressive strengths at 28 days with a maximum water/cement ratio of 0.45. Minimum cementitious material content shall be 564 lb. per cubic yard. A slump of 1" to 3" shall be provided in the concrete unless an acceptable high-range water reducer is used. Portland cement shall conform to ASTM C-150, Type II. All aggregate for normal weight concrete shall meet ASTM C33. Aggregates shall be proportioned such that mix design shall contain a minimum of 50% coarse aggregates by gradation requirements set forth in ASTM C33. Coarse aggregate shall meet No. 67 grading requirements. Concrete shall have from 4 to 7% entrained air, conforming to ASTM C 260. concrete shall be in strict conformance with the current "ACI Manual of Concrete Practice". Chamfer all exposed edges of concrete 3/4", unless noted otherwise. Special care should be provided for the formwork of watertight structures with form ties having waterstops. Formwork shall comply to the ACI 347 "Guide to Formwork for Concrete". Concrete joints shall occur at locations shown on the drawings. Waterstops shall be Polyvinyl Chloride with a 3/8" minimum thickness and have a minimum width of 6". Adhesive waterstops, where noted on the drawings shall be Greenstreak "HydroTite" or approved equal. Placement of concrete shall be in conformance with ACI 304R.
- Flowmeter**
Flowmeter shall be magnetic type as approved by City of Wichita Specifications. A NEMA 4X Junction Box shall be provided inside flowmeter manhole. Liquid tight, flexible conduit shall be used in manhole.
- Reinforcing Steel**
All mesh shall meet ASTM A 185 and be furnished in flat sheets. Lap a minimum of 6" or one full mesh, whichever is greater. All mesh shall be placed on SBP's at 48" O.C., Max. All reinforcing shall meet ASTM A615-60,000. Reinforcing shall be detailed according to the ACI detailing manual under the supervision of a Structural Engineer licensed in the state where the project is located. Reinforcing shall be fabricated and placed per ACI and CRSI accepted methods, including concrete cover and bar supports. Provide 3" slab bolster with continuous bottom plate at 4'-0" maximum centers for positioning all footing bars cast against soil. All reinforcing steel for concrete exposed to view shall supports with plastic coated feet. Mark each bundle of reinforcing with weatherproof tags.

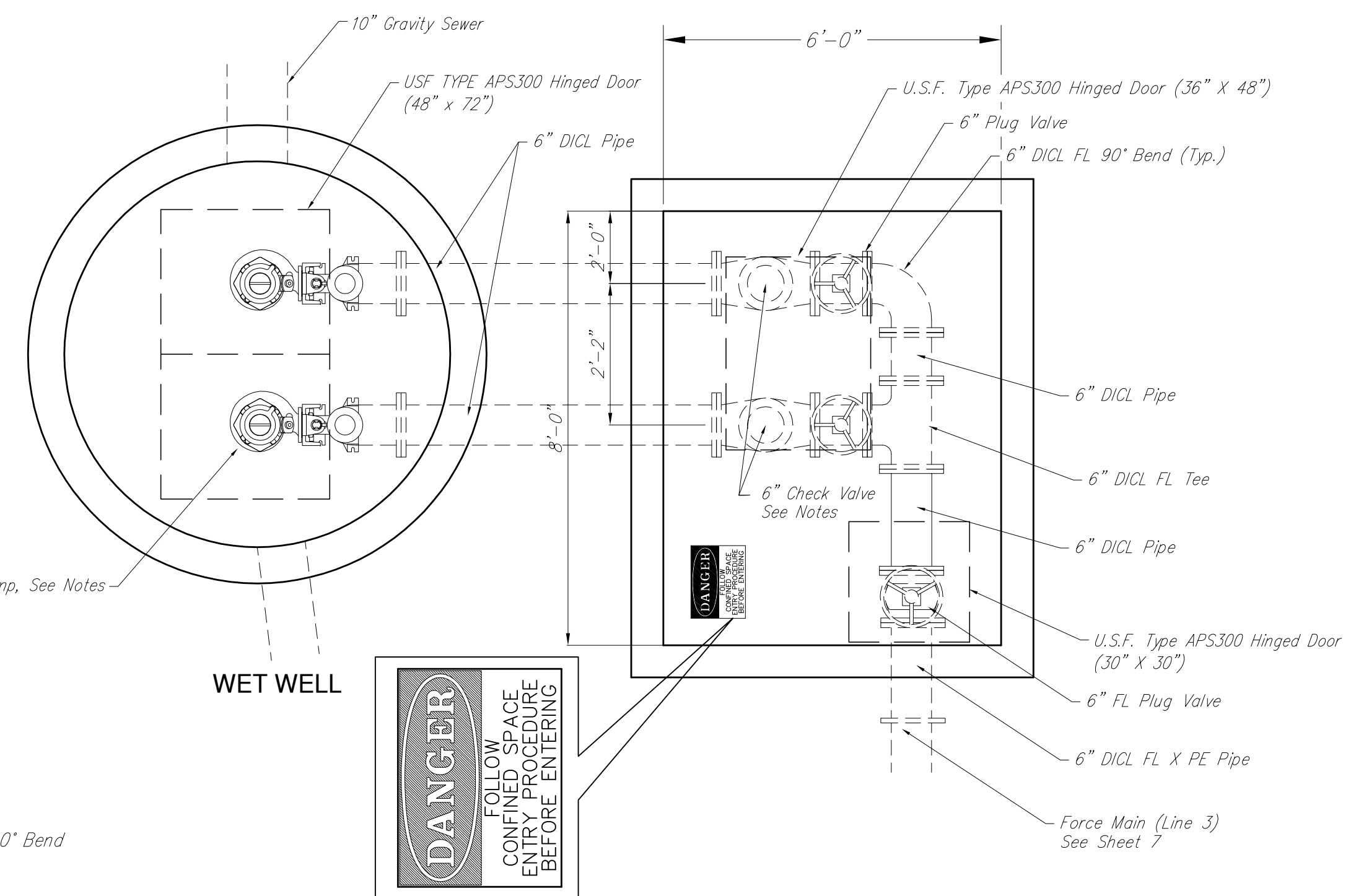


OPENING SIZE FOR ACCESS DOORS



VALVE VAULT

WET WELL NO SCALE



WET WELL

VALVE VAULT NO SCALE

REV. 7-10-07

<p>MAIN 16, SS #23 LIFT STATION DETAILS CITY OF WICHITA, KANSAS</p>			
<p>Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning</p>		<p>DESIGN PDC DRAWN PDC REVIEW UTILITY</p>	<p>REB JOB 268X SHEET 13 OF 24</p>
<p>924 North Main Wichita, Kansas 67203 www.rbkansas.com</p>		<p>(316) 264-8008 (316) 264-4621 fax E-mail: info@rbkansas.com</p>	<p>DATE Mar. 29, 2007</p>
<p>DRAWING FILE lift station</p>		<p>PROJECT NUMBER 468-83958</p>	