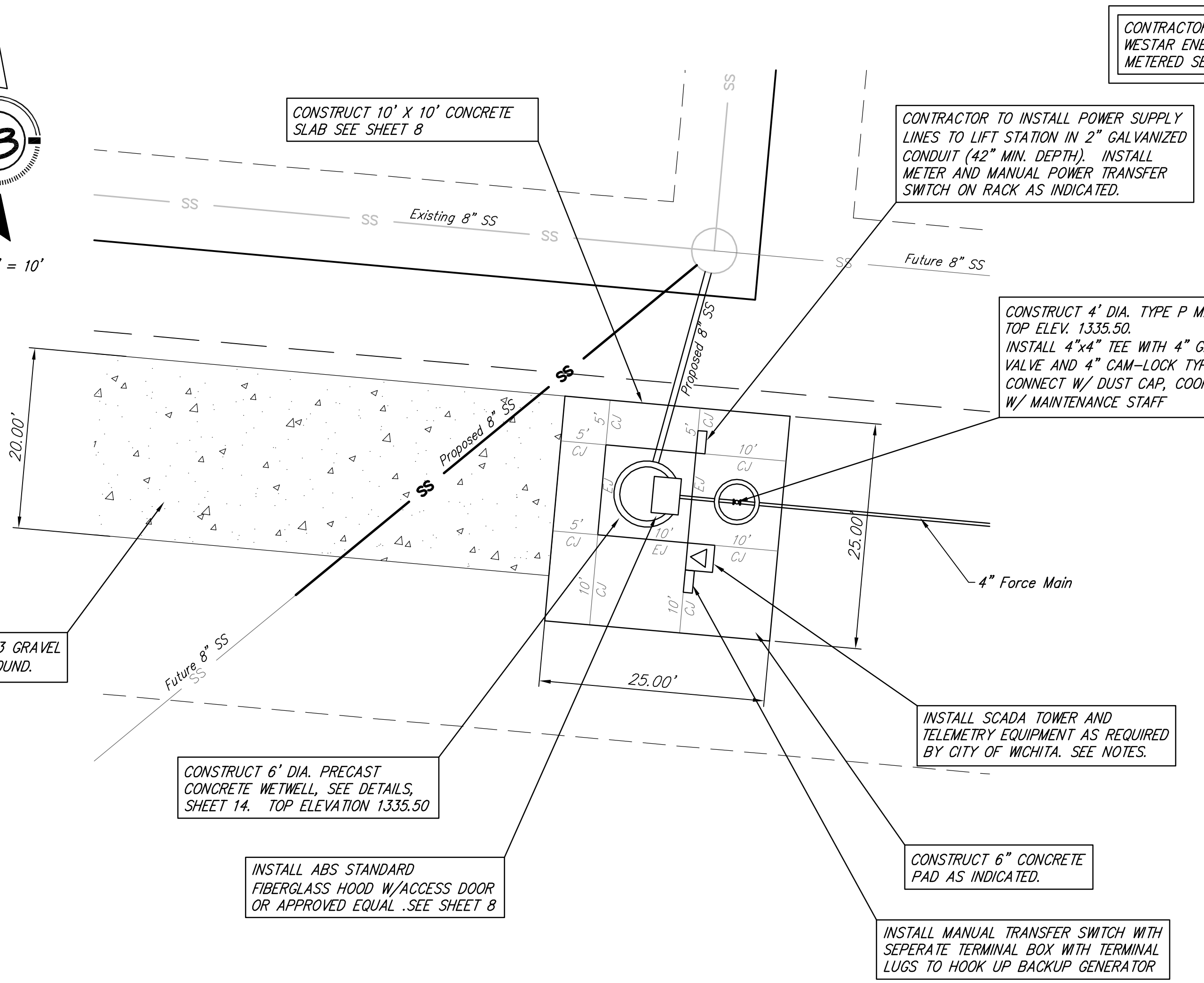




Scale 1" = 10'



CONTRACTOR TO COORDINATE WITH WESTAR ENERGY FOR INSTALLATION OF METERED SERVICE AND POWER HOOKUP.

CONTRACTOR TO INSTALL POWER SUPPLY LINES TO LIFT STATION IN 2" GALVANIZED CONDUIT (42" MIN. DEPTH). INSTALL METER AND MANUAL POWER TRANSFER SWITCH ON RACK AS INDICATED.

CONSTRUCT 4' DIA. TYPE P MANHOLE TOP ELEV. 1335.50. INSTALL 4"x4" TEE WITH 4" GATE VALVE AND 4" CAM-LOCK TYPE QUICK CONNECT W/ DUST CAP, COORDINATE W/ MAINTENANCE STAFF

INSTALL SCADA TOWER AND TELEMETRY EQUIPMENT AS REQUIRED BY CITY OF WICHITA. SEE NOTES.

CONSTRUCT 6" CONCRETE PAD AS INDICATED.

INSTALL MANUAL TRANSFER SWITCH WITH SEPERATE TERMINAL BOX WITH TERMINAL LUGS TO HOOK UP BACKUP GENERATOR

CONSTRUCT 6" AB-3 GRAVEL DRIVE W / TURNAROUND.

CONSTRUCT 6' DIA. PRECAST CONCRETE WETWELL, SEE DETAILS, SHEET 14. TOP ELEVATION 1335.50

INSTALL ABS STANDARD FIBERGLASS HOOD W/ACCESS DOOR OR APPROVED EQUAL .SEE SHEET 8

NOTES

All items indicated on sheets 8 to 11 shall be incidental to the lump sum bid item for "Lift Station". This includes labor and materials for the installation of all items.

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. The wet well shall be lined with a primer coating of Zebtron Low Temp Epoxy at a thickness of 2 to 3 mils minimum and than a final protective lining of Zebtron 386 or Warren S-301 Epoxy applied at a minimum thickness of 100 mils. QSR Patching material to be used to fill cracks, joints and any rough areas. Wet Well Access Doors shall be constructed of 1/4" thick aluminum floor plate reinforced to 300 p.s.f. live load. The door shall be equipped with a flush aluminum drop handle that does not protrude above the cover. The door shall be removable for maintenance after construction. A safety grate is required and must be rated for 300 lbs.

The contractor shall provide an outlet flange connection 12-inches from the inside wall. Inlet and outlet wall sleeves shall be provided and installed by the contractor and shall be in alignment with one another. The inlet and outlet pipe shall be ductile iron pipe, cement lined, Class 150 per Standard Specifications and shall be continuous through the wall and joint no less than two(2) feet from the exterior wall. 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, restrained joint, or approved equal on the exterior walls of the wetwell, 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.

Confined Space Warning Sign

The "Confined Space Warning" sign shall be fastened to the top of the wet well. Acceptable materials: Aluminum 73415HH, Plastic 73439HH, or S.A. Vinyl 73463HH.

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 3/8", 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. Special corner bar configuration is needed at watertight construction, see drawings for details.

Pumps

Pumps shall be ABS Model AFP104QM28/4EX-4", 4 HP, 220/1/60 or approved equal. The pump shall be a submersible 4 HP pump capable of operating at 100 gpm with 26 feet of total dynamic head with a single pump in operation. Guide Rail and Pumps to be installed in accordance with manufacturer's specifications. 4" Guide Rail and Pumps to be installed in accordance with manufacturer's specifications. Pumps are designed 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 specifications for valves.

Control Panel

The control panel shall be ABS Model QCI or approved equal. The control panel shall be mounted in a NEMA 12 enclosure and mounted inside the provided fiberglass building. The conduit from the vaults and control panel shall be installed to allow installation of a second panel in the future. 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. Stainless steel unistruts and hardware required for mounting control panel.

Backup Power

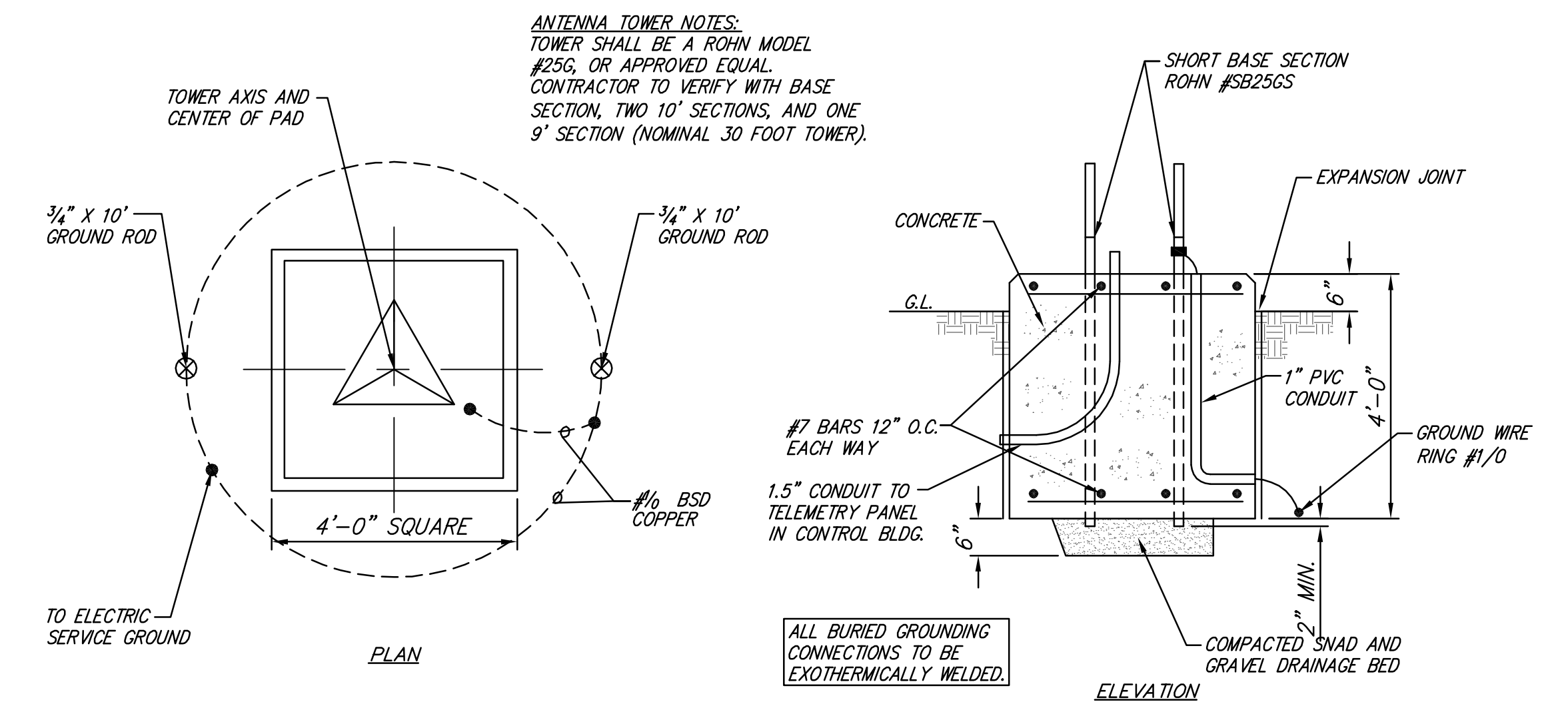
No backup generator is to be installed with this lift station. The contractor shall provide connections for a temporary generator to be connected to the lift station in the event of a power outage. A manual transfer switch shall be installed where indicated. Contractor shall coordinate with City of Wichita for Receptacle for Genset hookup.

Level Control System Notes

A PAC 2 level control system compatible with City of Wichita specifications shall be installed for level control. Floats shall be installed for alarm control as follows: Low, Hi and HiHi. The HiHi level float shall serve as an alarm and a back up to the PAC 2 for pump start.

Power Supply

The contractor will be responsible for the coordination of the installation of the metered service for the site, including submittal of plans to Westar. The contractor shall connect the lift station to the metered service with buried cable in 2" conduit buried at a minimum depth of 42".



TELEMETRY TOWER FOUNDATION

ANTENNA TOWER NOTES:
TOWER SHALL BE A ROHN MODEL #25G, OR APPROVED EQUAL.
CONTRACTOR TO VERIFY WITH BASE SECTION, TWO 10' SECTIONS, AND ONE 9' SECTION (NOMINAL 30 FOOT TOWER).

PUMP STATION DESIGN DATA

Design Flow: 80 lots @ 900 gpd = 72,000 gpd = 50 gpm
Force main: 156.3 L.F. 4" PVC

Static head: 1329 (elevation at outfall) - 1315 (pump off) = 14 feet

Dynamic head loss @ 100 gpm = 12' feet (156.3 L.F. of 4")

Total Dynamic Head (T.D.H.) = 14 + 12 = 26 feet

Drawdown Volume

V @ 80 Lots = t (2 X Q) / 4 = 20 min (2 X 50 gpm) / 4 = 500 gal.
If 6' Dia. Vault, volume is 634 gallons for 3.0 foot drawdown.

Design Cycle Time (Based on 80 Lots)

t = 634 / 50 + 634 / (100-50) = 25 min

Foundations/Soils

All soils work shall be performed under the supervision of the field engineer. All footings shall bear on undisturbed soils or engineered fill at elevations shown or noted on details and plans. All bearing materials shall be verified for the allowable bearing pressure stated above. All footings below grade may be earth formed with neat excavations, foundation walls shall be formed.

Electrical

Complete all work in accordance with the National Electrical Code (NEC), National Electrical Safety Code (NESC), and local regulations. All electrical equipment shall be U.L. listed. The construction drawings are schematic in nature and show relative locations of devices and equipment. Coordinate with the actual equipment installed. Coordinate electrical work with the work of other trades. All starters shall have 120 volt controls. Provide fused connection for units operating at 120 volts line to neutral. All charges from Westar to install and/or modify electric service to these facilities will be paid by the contractor.

Telemetry

All telemetry equipment shall meet City of Wichita specifications. Contractor to coordinate with Robert Bigley at 269-4769 for telemetry settings. Install owner provided coaxial cable between telemetry panel and antenna. The City of Wichita will provide hardware and software modifications to telemetry panel.

General Structural Notes

The general contractor shall review and stamp all shop drawings before submittal for approval. Verify all dimensions and elevations with plans prior to starting work. Contractor shall design, provide, and maintain temporary bracing, shoring, guying, etc., and other methods as required to prevent excessive loading and to stabilize structural elements during construction. These methods shall remain in place until all members and final connections have been completed. Structure top shall be designed for 150 psf live load.

Rev. 5-25-10

SOUTHWEST PASSAGE ADDITION LIFT STATION PLAN WICHITA SEDGWICK COUNTY, KANSAS		DESIGN KWL DRAWN KWL REVIEW KWL UTILITY DATE Feb. 23, 2010	PROJECT NUMBER 468-84227	SHEET 4 OF 8
		Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning 924 North Main Wichita, Kansas 67203 www.rbkansas.com (316) 264-8008 (316) 264-4621 fax E-mail: info@rbkansas.com		
DRAWING FILE lift station		PROJECT NUMBER 468-84227		