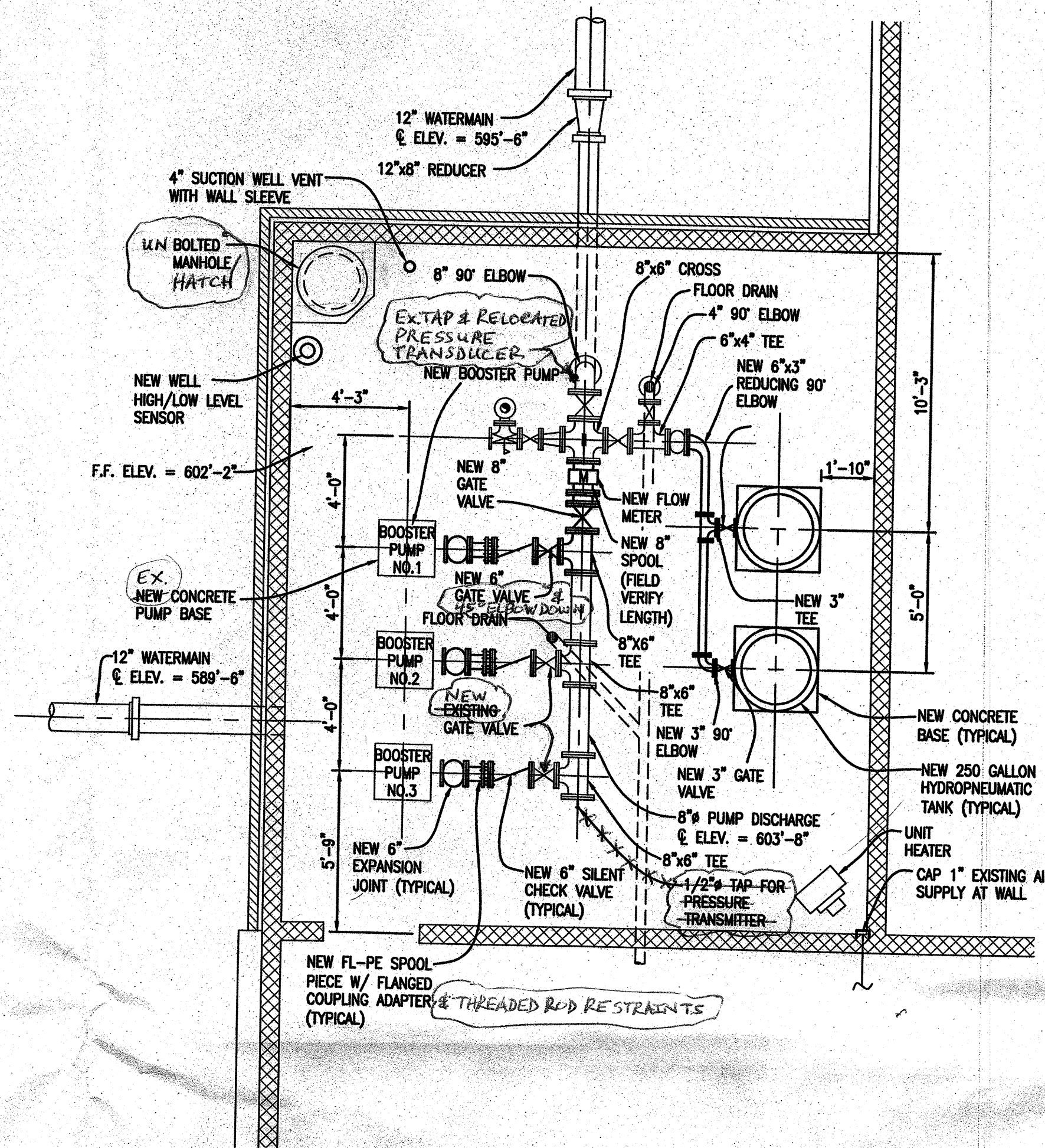
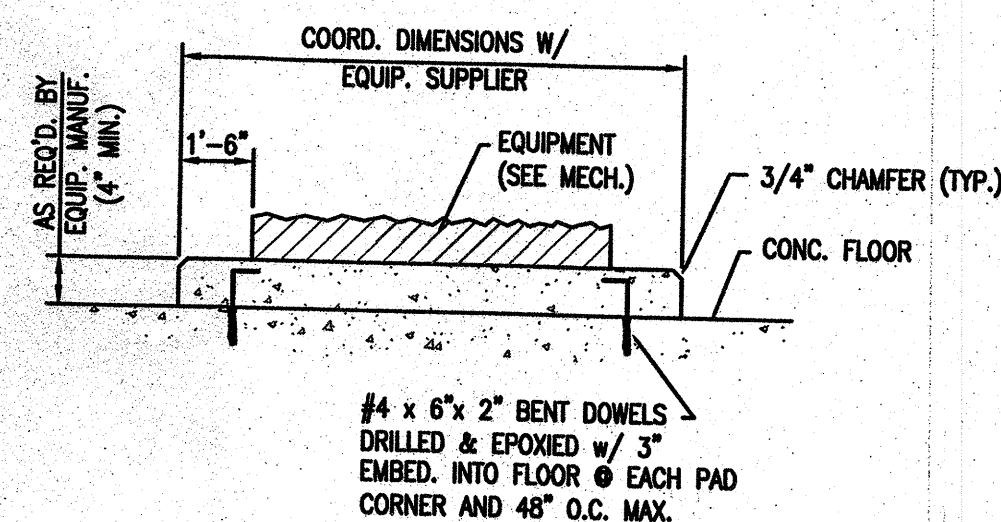


GRADE LEVEL DEMOLITION PLAN
1/4" = 1'-0"



GRADE LEVEL PLAN
1/4" = 1'-0"



EQUIPMENT PAD DETAIL
NO SCALE

GENERAL NOTES:

1. Dimensions indicated are approximate. Contractor shall verify all field dimensions.
2. Provide a ductile iron flanged spool piece of the same length and diameter as the flow meter.

SPECIFICATIONS:

1. SILENT CHECK VALVES shall be iron or semi-steel with stainless steel spring, bronze trim, Buna-N rubber seats, and O-Ring seals. Valves shall be Golden-Anderson wafer style Model 290, or approved equal.
2. EXPANSION JOINTS shall be Metraflex Metrosphere or approved equal.
3. GATE VALVES shall be Resilient Seated Gate Valves. Valves shall comply with the requirements of the AWWA C509-09 and shall have O-Ring stem seals. Valves shall be American Darling, ITT Kennedy Valve Ken-Seal, or approved equal.
4. HYDROPNEUMATIC TANKS shall be Amtrol WX-453-C Wel-X-Trol steel with an Ultra TUF-KOTE finish coating. The diaphragm shall be heavy duty butyl and the connection shall be malleable iron. The bladder shall have a pre-charge of 115 psig. The maximum operating temperature shall be 240°F and the maximum working pressure shall be 250psig.
5. BOOSTER PUMP shall be Layne Christensen 9RCHC, 7 stage pumps operating at variable speed with a maximum discharge flow rate of 500 gpm and total dynamic head of 285 ft. Both pumps and motor shall be vertically mounted. Pumps shall possess the characteristic of non-overloading over the entire pump curve.
6. FLOW METER shall be ABB with flanged connections, teflon lining, 316 stainless steel electrodes, and 4-20 mA output.
7. FLANGED MJ ADAPTERS shall be Smith Blair 912 or approved equal.
8. COATING SYSTEMS FOR INTERIOR CAST OR DUCTILE IRON PIPE, VALVES, PUMPS AND FITTINGS shall be two-component polyamide-epoxy coatings; provide one finish coat over in accordance with manufacturer's instructions:
 - Series 37H Chem Prime HS. DFT 2.0 to 3.0 mils.
 - Intermediate Coat: Series HI-Build Epoxoline. DFT 4.0 to 6.0.
 - Finish Coat: Series 86 HI-Build Epoxoline. DFT 4.0 to 6.0.
 - Total DFT: 10.0 to 15.0 mils.

SUGGESTED CONSTRUCTION SEQUENCE:

The following construction sequence is suggested and assumes all equipment and materials are on site. The Contractor shall review the following sequence and, may at his option submit an alternate sequence for review and approval by the Owner.

1. Install variable frequency drives for Pump No. 2 and 3. Modify the control program to allow selection of the lead pump. Place Pump No. 2 or 3 in service.
2. Isolate the pump discharge header from the transmission main. Modify the pump discharge header to accommodate a 6 inch discharge for Pump No. 1, flow meter and isolation valves. Paint items that will be subject to water flow before installation. Disinfect the discharge header at 200 mg/l chlorine solution for 4 hours, flush to waste (use bisulfate to dechlorinate the chlorinated water), and perform a membrane filter test. (Subject to approval by the Michigan Department of Environmental Quality).
3. Install Pump No. 1 and its discharge piping and valves. Install the variable frequency drive for Pump No. 1. Point pump and discharge piping after installation but before being subject to water flow. Return the control program for Pump No. 1 to be the lead.
4. Install the silent check valves for Pump No. 2 and 3. Point the check valves and piping changes before placing the units in service. One pump should be removed from service at a time.
5. Install a 1/2" tap in the tee blind flange fitting for the existing pressure transducer and complete the installation.
6. Install the radio transmitters and receivers and confirm their proper operation. Save a copy of the existing control logic. Install the programmable logic control software upgrade. Verify proper operation while being prepared to reload the existing control logic. Switch over the single source to the proposed radio system.
7. Remove the existing hydropneumatic tank.
8. Install the proposed captive air tanks and piping and valves.