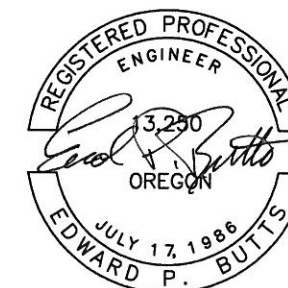


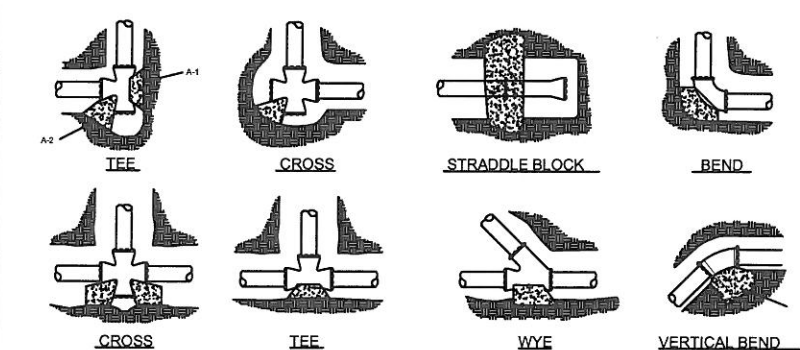
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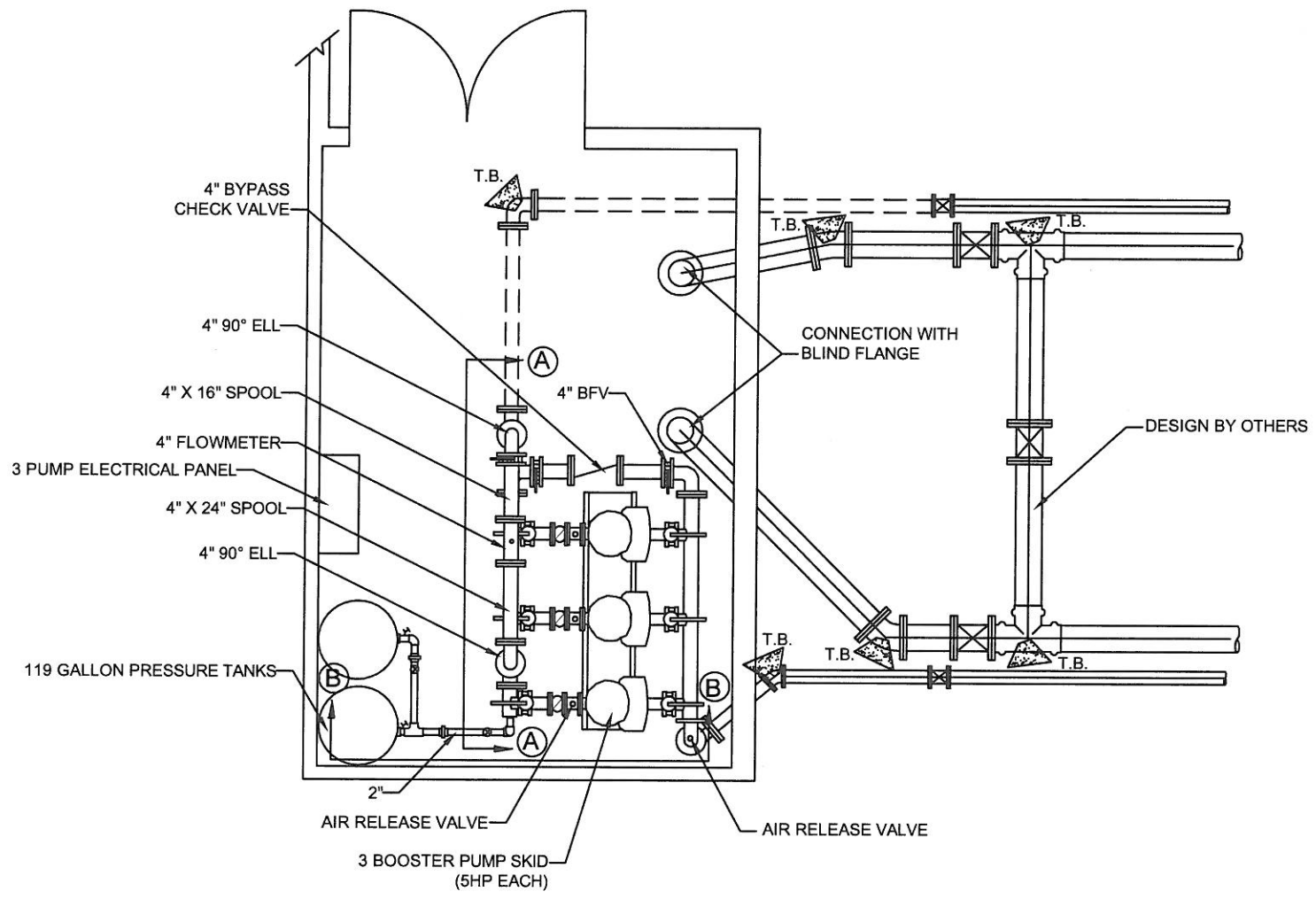
FITTING SIZE	(HORIZONTAL) BEARING AREA OF THRUST BLOCKS IN SQUARE FEET							(VERTICAL) VOLUME OF THRUST BLOCK IN CUBIC YARDS				
	TEE, WYE, DEAD END, AND HYDRANT	STRADDLE BLOCK	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22-1/2° BEND	11-1/4° BEND	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
				A-1	A-2							
4	1.0	1.8	1.4	1.9	1.4	1.0	—	—	—	—	—	—
6	2.1	3.7	3.0	4.3	3.0	1.6	1.0	—	1.3	—	—	—
8	3.8	6.5	5.3	7.6	5.4	2.9	1.5	1.0	2.3	1.1	—	—
10	5.9	10.2	8.4	11.8	8.4	4.6	2.4	1.2	3.7	1.8	—	—
12	8.5	14.7	12.0	17.0	12.0	6.6	3.4	1.7	5.5	2.8	1.2	—
14	11.5	—	16.3	23.0	16.3	8.9	4.6	2.3	7.6	3.9	1.7	—
16	15.0	26.1	21.3	30.0	21.3	11.6	6.0	3.0	9.8	5.1	2.3	0.9
18	19.0	—	27.0	38.0	27.0	14.6	7.6	3.8	—	—	—	—
20	23.5	46.8	33.3	47.0	33.3	18.1	9.4	4.7	—	—	—	—
24	34.0	58.8	48.0	68.0	48.0	26.2	13.6	6.8	—	—	—	—

NOTES:  
 ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:  
 BEARING AREA = (TEST PRESSURE / 150) x (2000 / SOIL BEARING STRESS) x (TABLE VALUE)  
 ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:  
 2. VOLUME = (TEST PRESSURE / 150) x (TABLE VALUE)

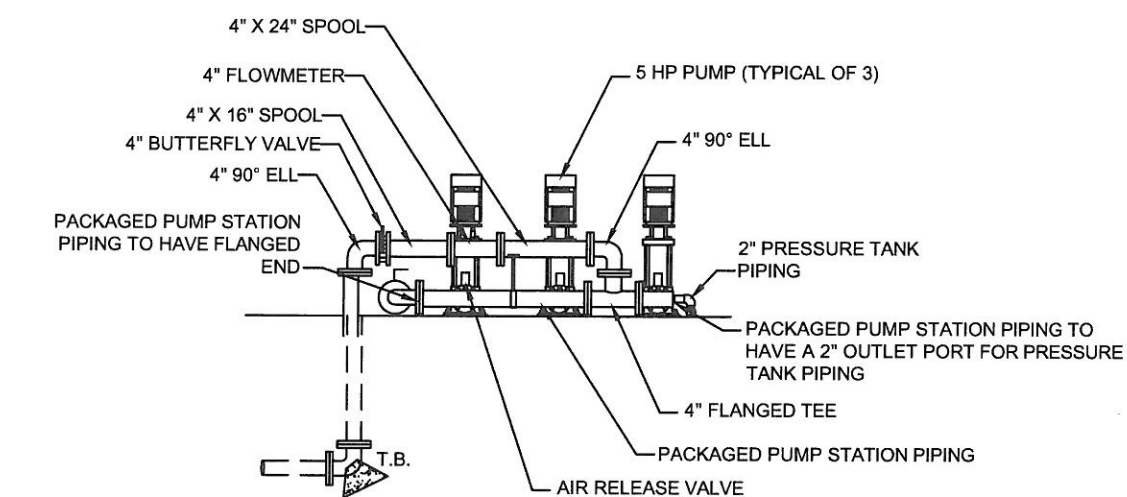


RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14" - 16"	#8	36"

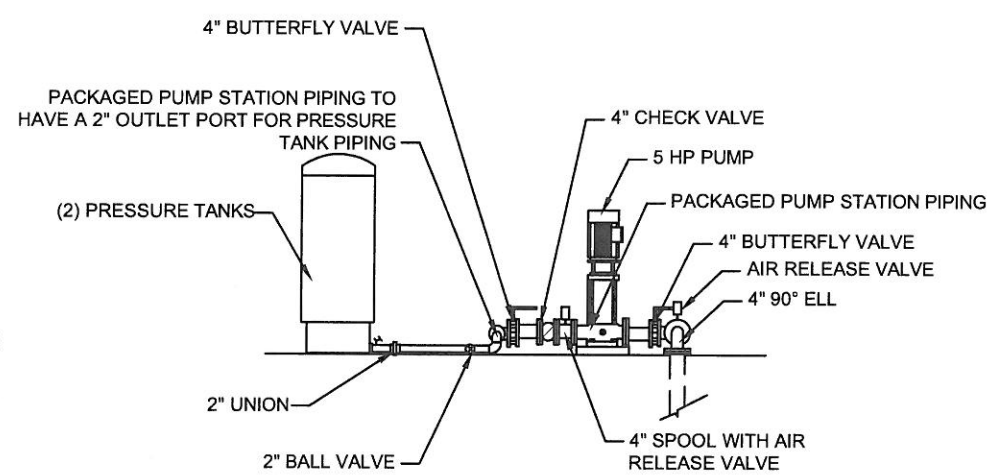
- NOTES:  
 1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.  
 2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.  
 3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.  
 4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.  
 5. TIE RODS SHALL BE DEFORMED GALVANIZED COLD ROLLED STEEL, 40,000 PSI TENSILE STRENGTH.



MECHANICAL PLAN  
 SCALE: 1/4" = 1'-0"



ELEVATION (A) - (A)  
 SCALE: 1/4" = 1'-0"



ELEVATION (B) - (B)  
 SCALE: 1/4" = 1'-0"

THRUST BLOCK DETAIL  
 SCALE: NTS

NOTE: EXTERIOR PIPING DESIGNED BY OTHERS

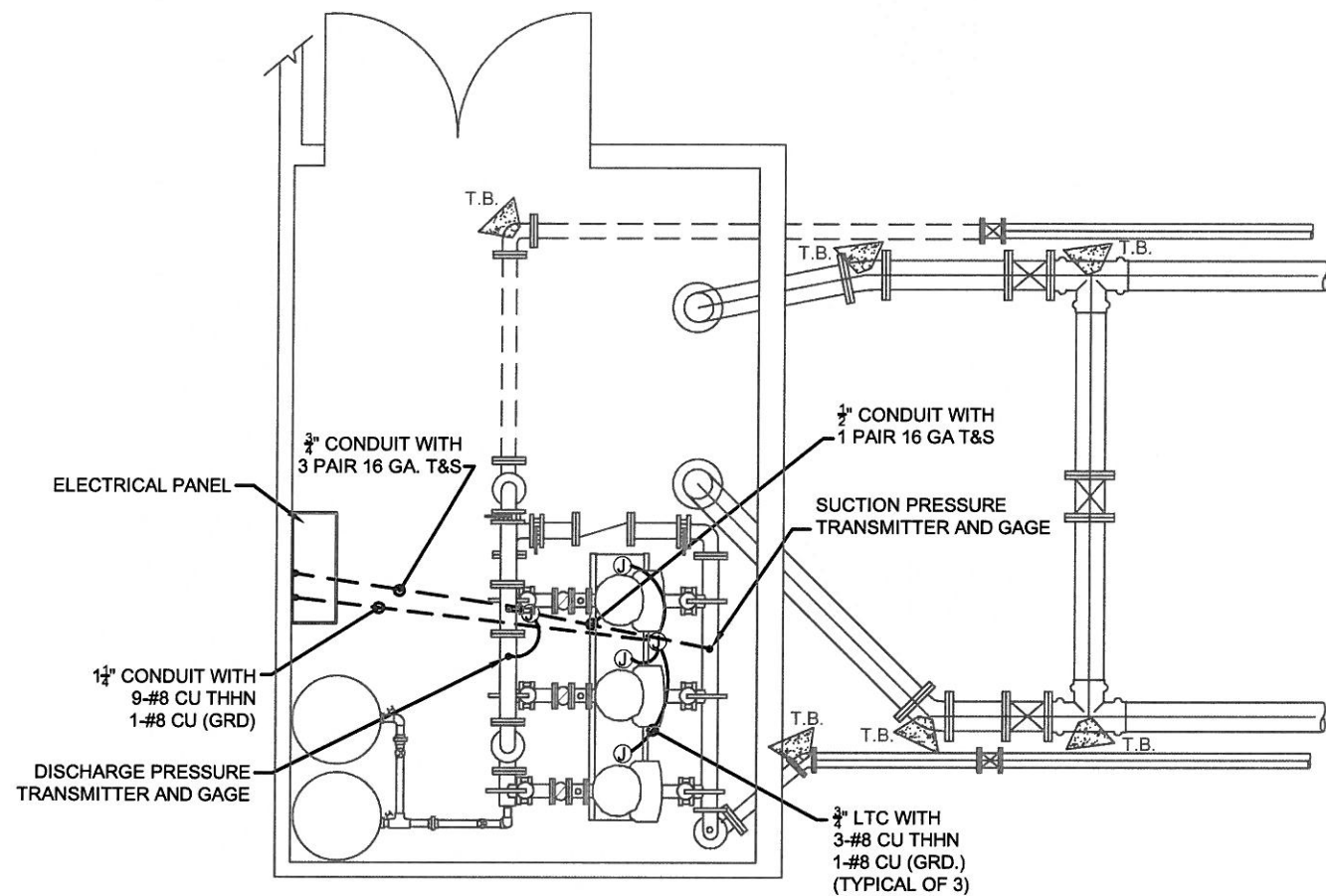


REVISIONS:		
No.	Date	By

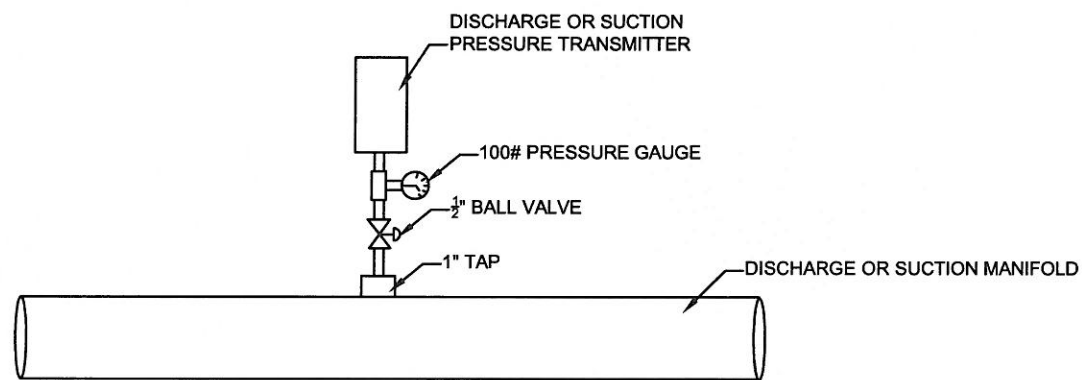
SHEET: 2



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**ELECTRICAL PLAN**  
 SCALE: 1/4" = 1'-0"



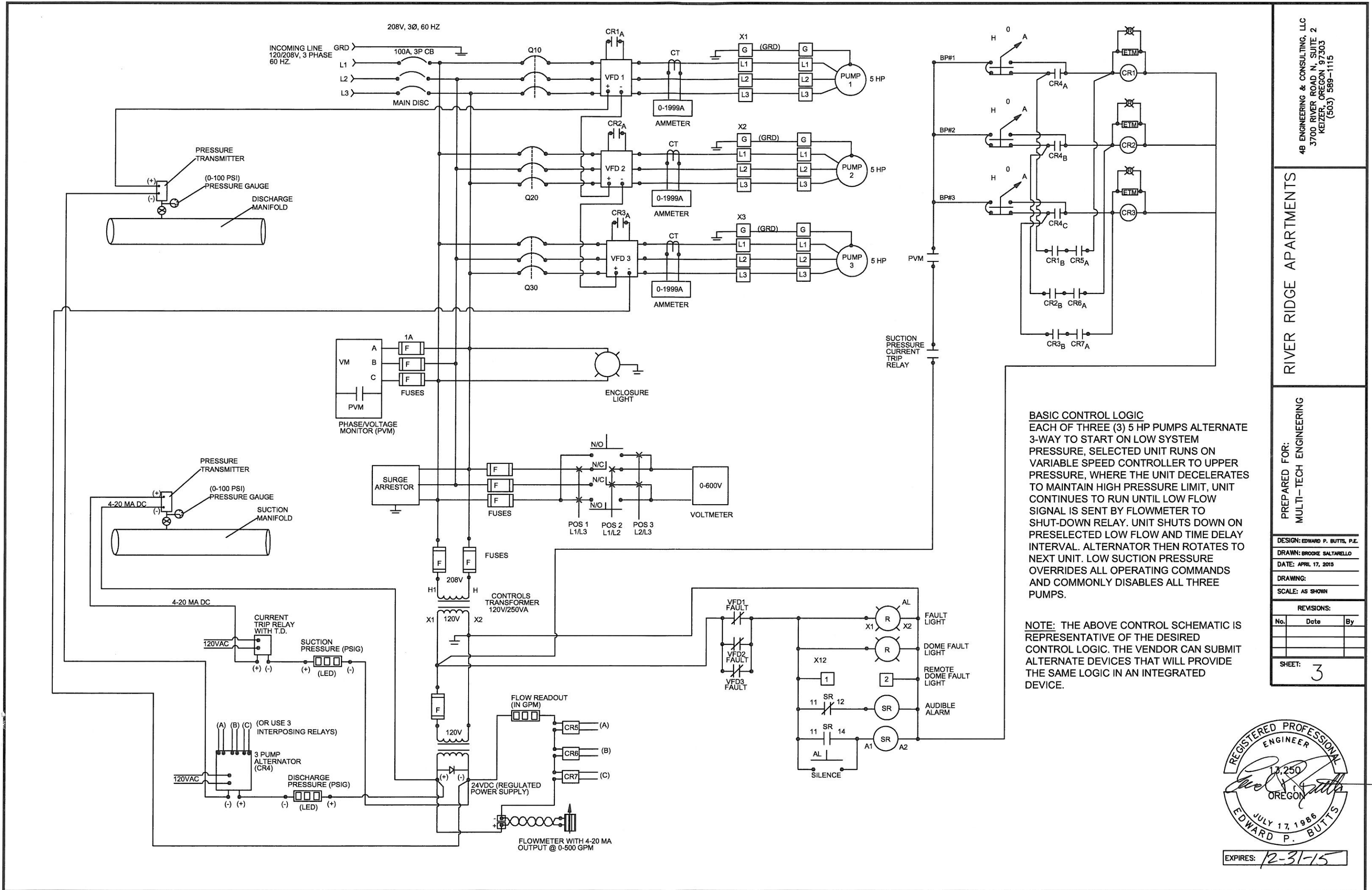
**TYPICAL PRESSURE TRANSMITTER AND GAUGE ASSY.**  
 SCALE: NTS

NOTE: EXTERIOR PIPING DESIGNED BY OTHERS



**ELECTRICAL LEGEND:**

- \$ SINGLE POLE SWITCH
- \$3 3-WAY SWITCH
- \$K KEY OPER. SWITCH
- DUPLEX RECEPTACLE
- INSTALLATION HEIGHT=42" OFF FLOOR (UNLESS OTHERWISE INDICATED)
- △ SPECIAL RECEPTACLE
- M MOTOR
- wp WEATHERPROOF RECEPTACLE
- LF-1 LIGHTING FIXTURE-TYPE AS INDICATED
- LIGHT FIXTURE-TYPE AS INDICATED
- ⊗ DESIGNATES SEAL-OFF
- ⊕ THERMOSTAT
- ⊙ PHOTOCELL
- ⊙ JUNCTION BOX
- UNDER SLAB CONDUIT
- EXPOSED OR OVERHEAD CONDUIT
- CONDUIT UP INTO EQUIP.
- CAPPED CONDUIT END
- LTC LIQUITITE FLEXIBLE COND.
- T&S TWISTED AND SHIELDED CONDUCTORS
- I.C. INSTRUMENTATION CABLE



**BASIC CONTROL LOGIC**  
 EACH OF THREE (3) 5 HP PUMPS ALTERNATE 3-WAY TO START ON LOW SYSTEM PRESSURE, SELECTED UNIT RUNS ON VARIABLE SPEED CONTROLLER TO UPPER PRESSURE, WHERE THE UNIT DECELERATES TO MAINTAIN HIGH PRESSURE LIMIT, UNIT CONTINUES TO RUN UNTIL LOW FLOW SIGNAL IS SENT BY FLOWMETER TO SHUT-DOWN RELAY. UNIT SHUTS DOWN ON PRESELECTED LOW FLOW AND TIME DELAY INTERVAL. ALTERNATOR THEN ROTATES TO NEXT UNIT. LOW SUCTION PRESSURE OVERRIDES ALL OPERATING COMMANDS AND COMMONLY DISABLES ALL THREE PUMPS.

**NOTE:** THE ABOVE CONTROL SCHEMATIC IS REPRESENTATIVE OF THE DESIRED CONTROL LOGIC. THE VENDOR CAN SUBMIT ALTERNATE DEVICES THAT WILL PROVIDE THE SAME LOGIC IN AN INTEGRATED DEVICE.

4B ENGINEERING & CONSULTING, LLC  
 3700 RIVER ROAD N, SUITE 2  
 KEIZER, OREGON 97303  
 (503) 589-1115

RIVER RIDGE APARTMENTS

PREPARED FOR:  
 MULTI-TECH ENGINEERING

DESIGN: EDWARD P. BUTTS, P.E.  
 DRAWN: BROOKE SALTARELLO  
 DATE: APRIL 17, 2015  
 DRAWING:  
 SCALE: AS SHOWN

REVISIONS:

No.	Date	By

SHEET: 3



EXPIRES: 12-31-15