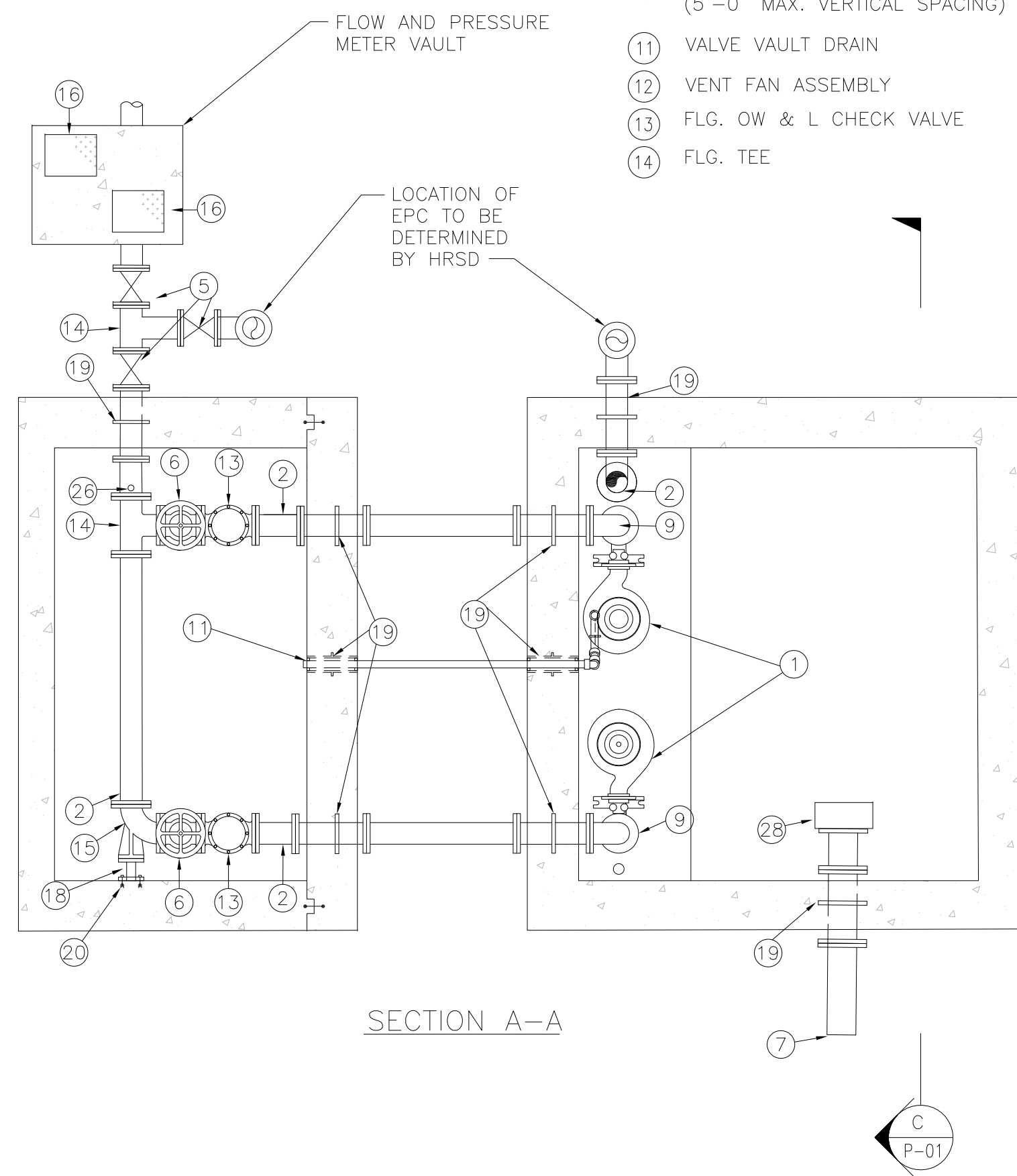
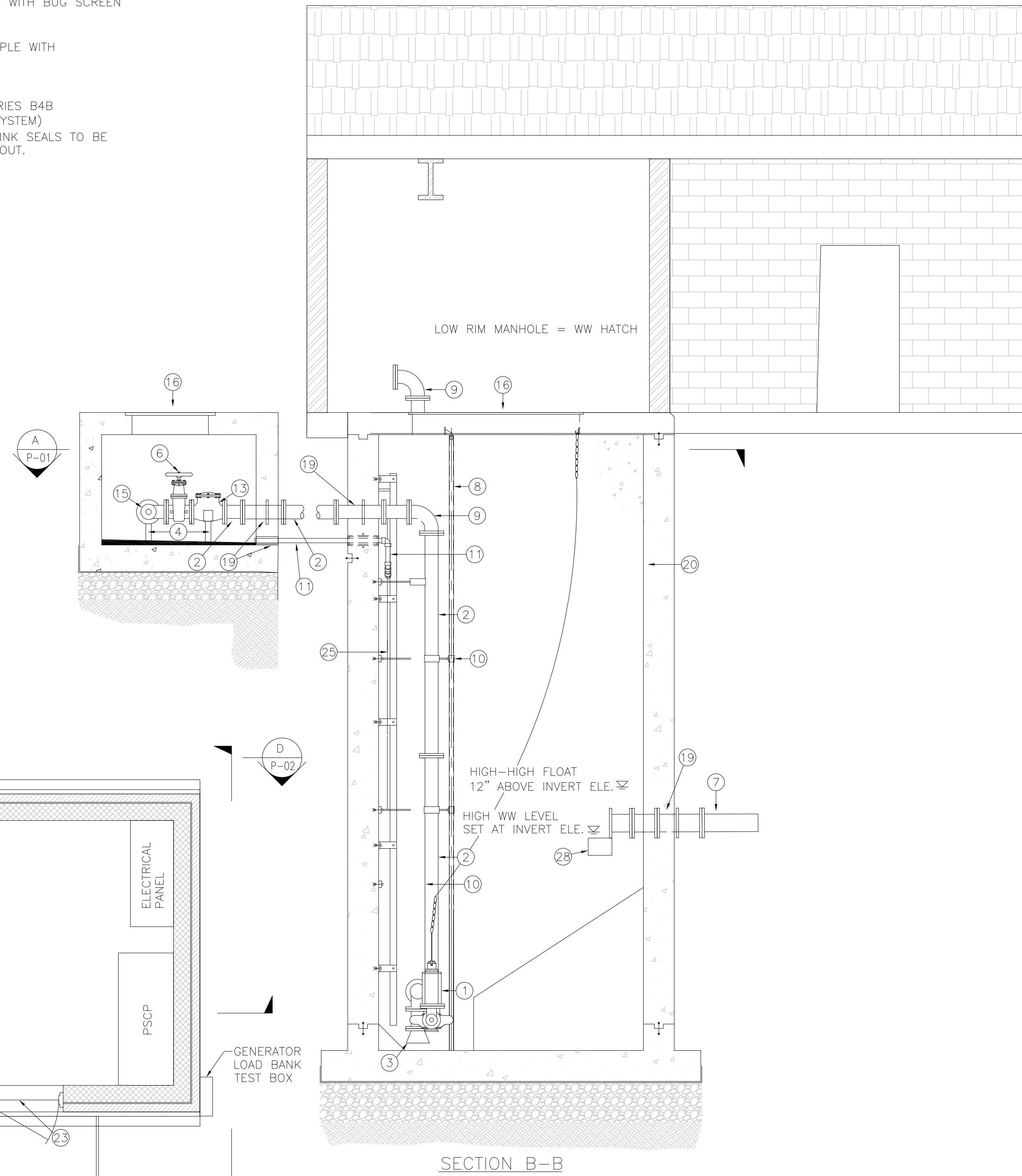


COMPONENTS

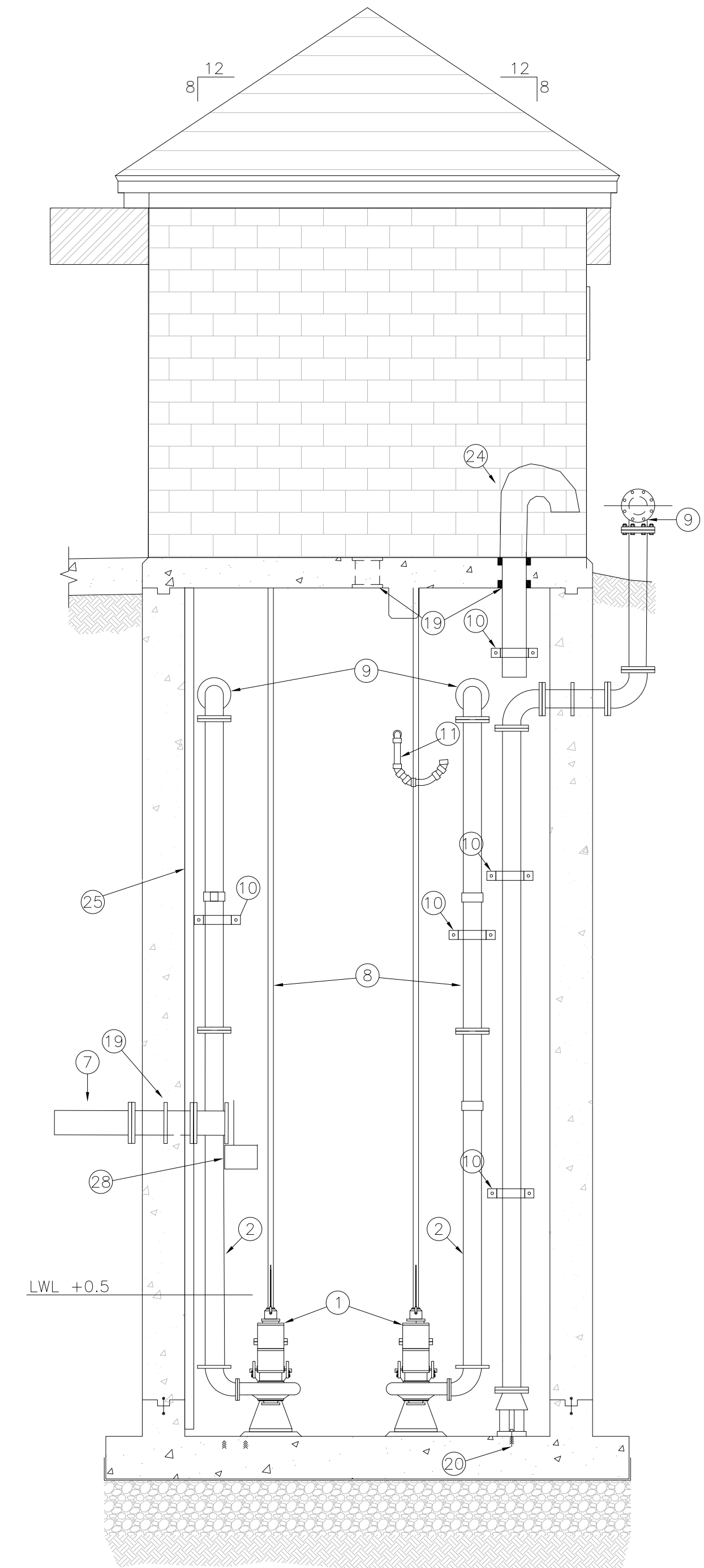
- | | |
|---|--|
| ① SUBMERSIBLE PUMP ASSEMBLY | ⑮ FLG. BASE 90° BEND |
| ② FLG. PIPE | ⑯ HALLIDAY HATCH (TO BE SIZED BY HRSD) |
| ③ FLG. SLUDGE SHOE | ⑰ BLIND FLANGE |
| ④ ADJUSTABLE PIPE SUPPORT | ⑱ FLG. PIPE SUPPORT |
| ⑤ BURIED GATE VALVE | ⑲ *WALL SLEEVE & DUAL LINK SEALS. |
| ⑥ FLG. GATE VALVE | ⑳ ADHESIVE ANCHORS (TYP) |
| ⑦ FLG. x PLAIN END PIPE | ㉑ 1" WATER SERVICE W/ VALVE |
| ⑧ GUIDE BAR (# AS REQ'D.) | ㉒ 3/4" RPZ BACKFLOW PREVENTER AND HOSE BIBB W/ VACUUM BREAKER |
| ⑨ FLG. 90° BEND | ㉓ THRESHOLD |
| ⑩ PIPE GUIDE AND RAIL BRACE (5'-0" MAX. VERTICAL SPACING) | ㉔ 316 SS WET WELL AIR INTAKE WITH BUG SCREEN |
| ⑪ VALVE VAULT DRAIN | ㉕ TRANSDUCER STILLING WELL |
| ⑫ VENT FAN ASSEMBLY | ㉖ 1" Ø TAP WITH 3" BRASS NIPPLE WITH BALL VALVE AND PLUG |
| ⑬ FLG. OW & L CHECK VALVE | ㉗ DRAIN TO TERMINAL MANHOLE |
| ⑭ FLG. TEE | ㉘ HALLIDAY DEBRIS BASKET (SERIES B4B WITH STAINLESS STEEL RAIL SYSTEM) |
| | *ANNULAR SPACE BETWEEN LINK SEALS TO BE FILLED WITH HYDROPHILIC GROUT. |



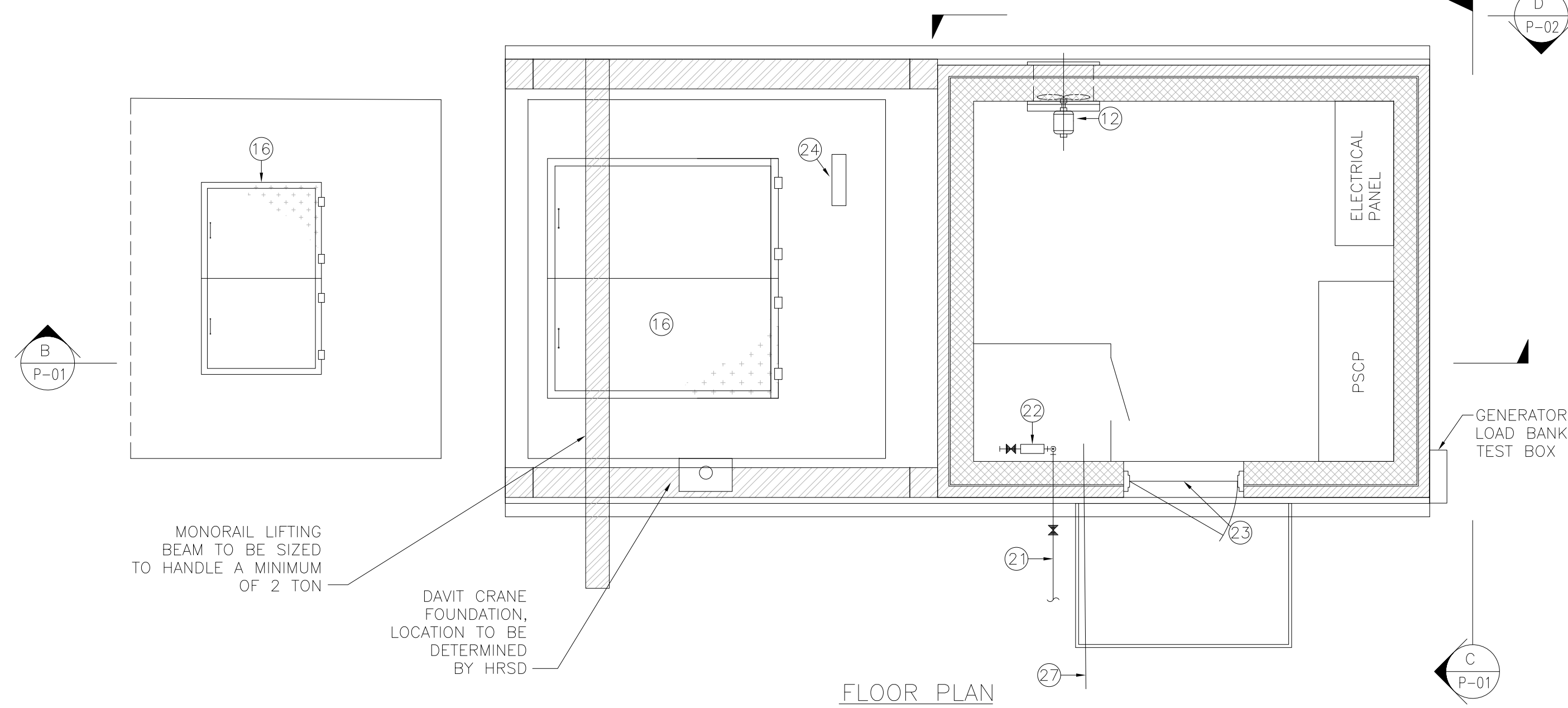
SECTION A-A



SECTION B-B



SECTION C-C



FLOOR PLAN

NOT TO SCALE

HRSD	SMALL COMMUNITIES SAMPLE DESIGN DETAIL	DRAWING NO. 400A
	SUBMERSIBLE PUMP STATION	SHEET 1 OF 2
		DATE 1/2020

NOTES

1. THE INFORMATION PROVIDED PRESENTS A GENERIC TEMPLATE OF THE SEWAGE PUMPING STATION TYPE THAT IS PREFERRED BY THE SMALL COMMUNITIES DIVISION OF HRSD. THE DEVELOPMENT OF A COMPLETE DESIGN AND DOCUMENTS FOR CONSTRUCTION OF A FACILITY, BASED UPON THIS TEMPLATE, SHALL BE TOTALLY THE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER. THIS TEMPLATE IS NOT SUITABLE FOR ANY SPECIFIC CONSTRUCTION PURPOSE, SITE OR APPLICATION.

2. STRUCTURE AND COMPONENT SIZES WILL VARY IN ACCORDANCE WITH THE DESIGN PARAMETERS THAT ARE SPECIFIC TO EACH FACILITY

3. REFER TO THE HRSD STANDARDS FOR DETAILED COMPONENT DESCRIPTIONS.

4. REFER TO THE HRSD STANDARDS APPROVED PRODUCTS LIST FOR ACCEPTABLE MANUFACTURES AND PRODUCTS.

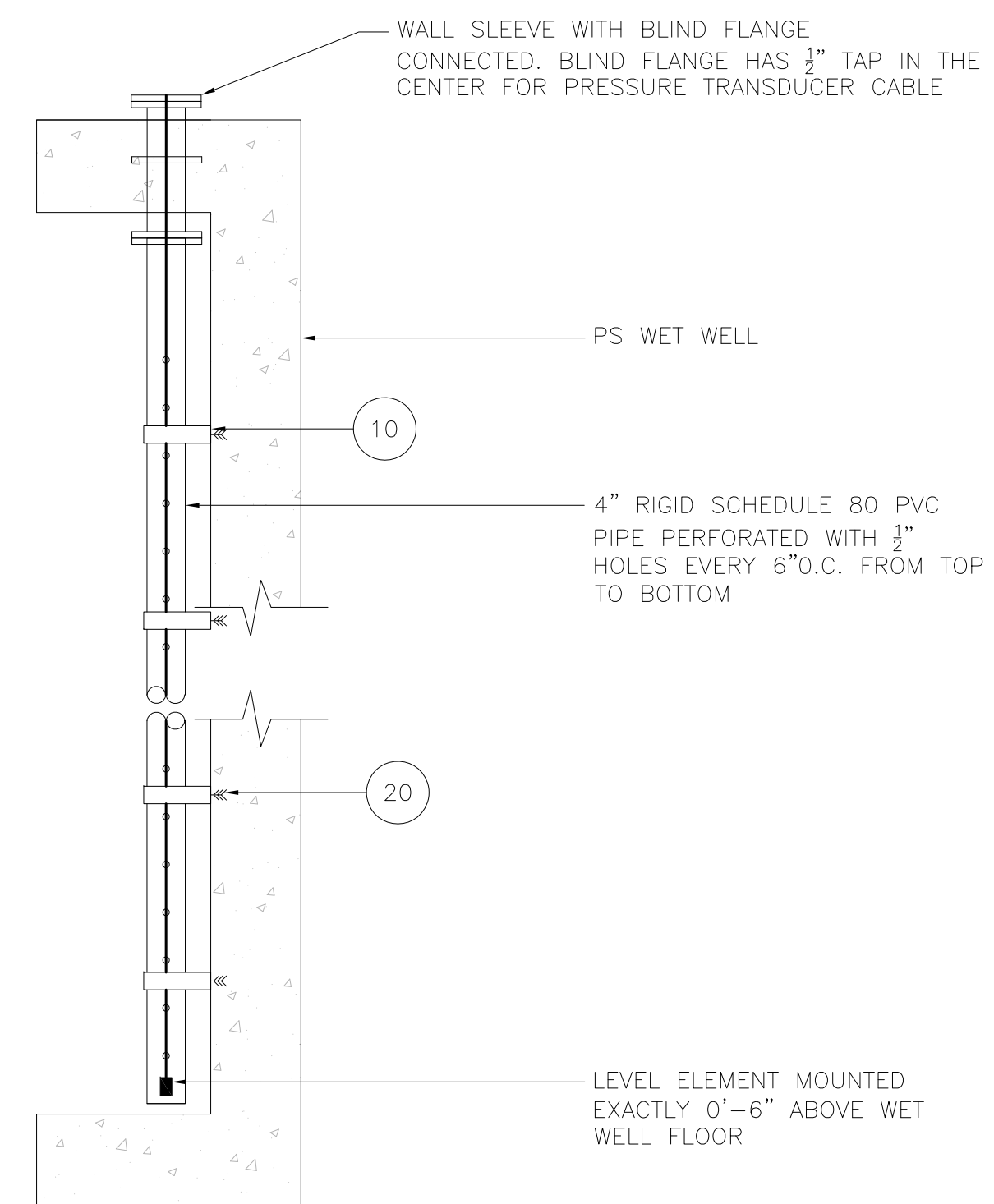
5. PUMP STATION WILL BE REQUIRED TO GENERALLY CONSIST OF CONCRETE WETWELL, CONCRETE VALVE VAULT, CONCRETE METER VAULT, AND CMU AND BRICK STRUCTURE TO HOUSE MOTOR CONTROLS, POWER AND WATER CLOSET.

6. ALL PIPE MATERIAL SHALL BE C900 PIPE UNLESS OTHERWISE STATED. ALL HARDWARE SHALL BE 316 SS UNLESS OTHERWISE STATED.

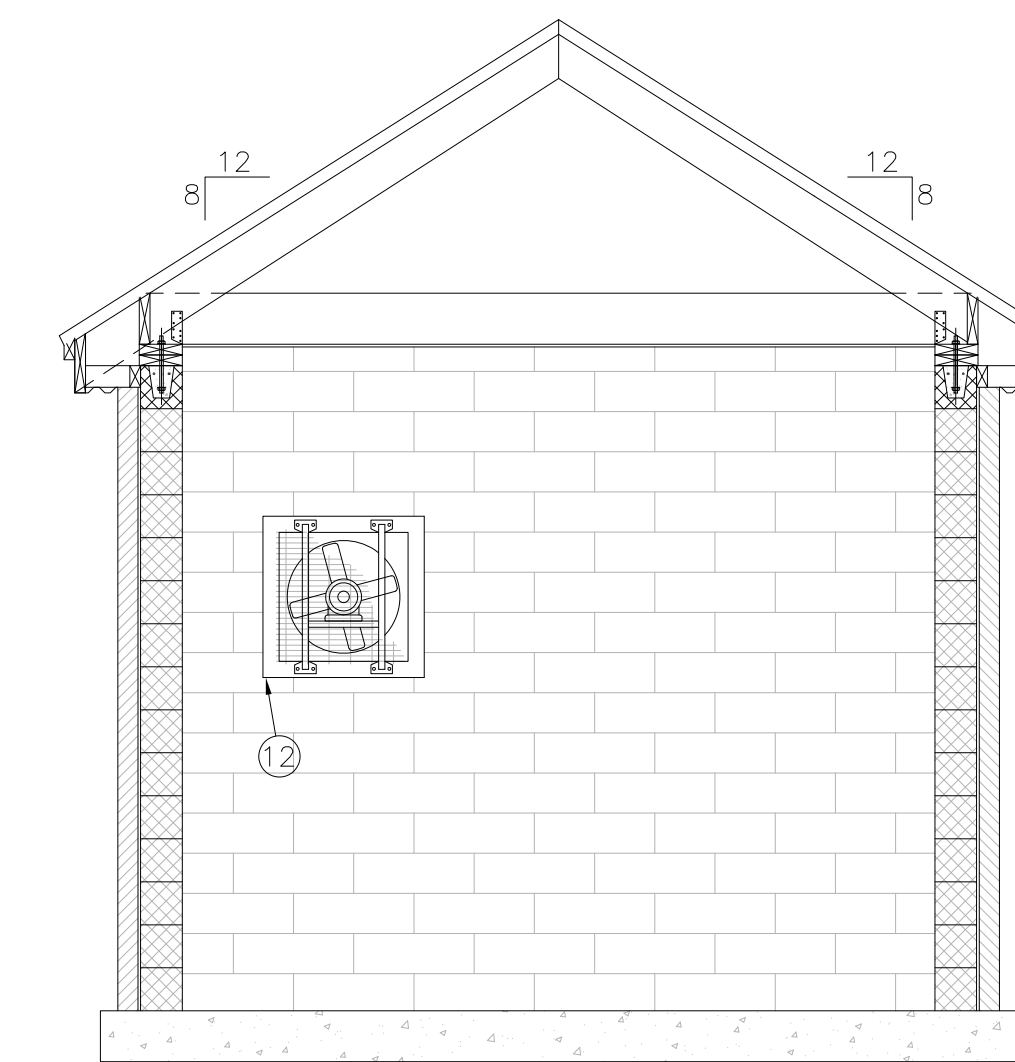
7. REVIEW AND APPROVAL OF ARCHITECTURAL DESIGN ELEMENTS MUST GO THROUGH HRSD REVIEW BOARD

8. PUMP STATION SHALL HAVE STAND BY GENERATOR AND HRSD SHALL BE SUPPLIED A SPARE PUMP

IN ACCORDANCE WITH CHAPTER 10, SECTION 1008.1.4 OF THE 2003 EDITION OF THE IBC, THERE SHALL BE A FLOOR OR LANDING ON EACH SIDE OF THE DOOR. SUCH FLOOR OR LANDING SHALL BE AT THE SAME ELEVATION ON EACH SIDE OF THE DOOR. LANDINGS SHALL BE LEVEL EXCEPT FOR EXTERIOR LANDINGS, WHICH ARE PERMITTED TO HAVE A SLOPE NOT TO EXCEED 0.25 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2 PERCENT SLOPE).



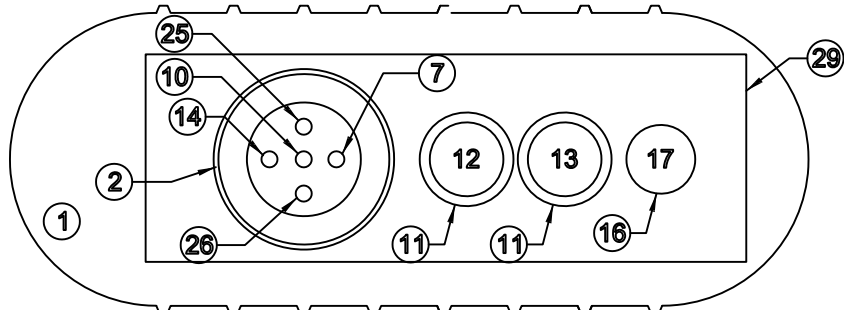
STILLING WELL DETAIL



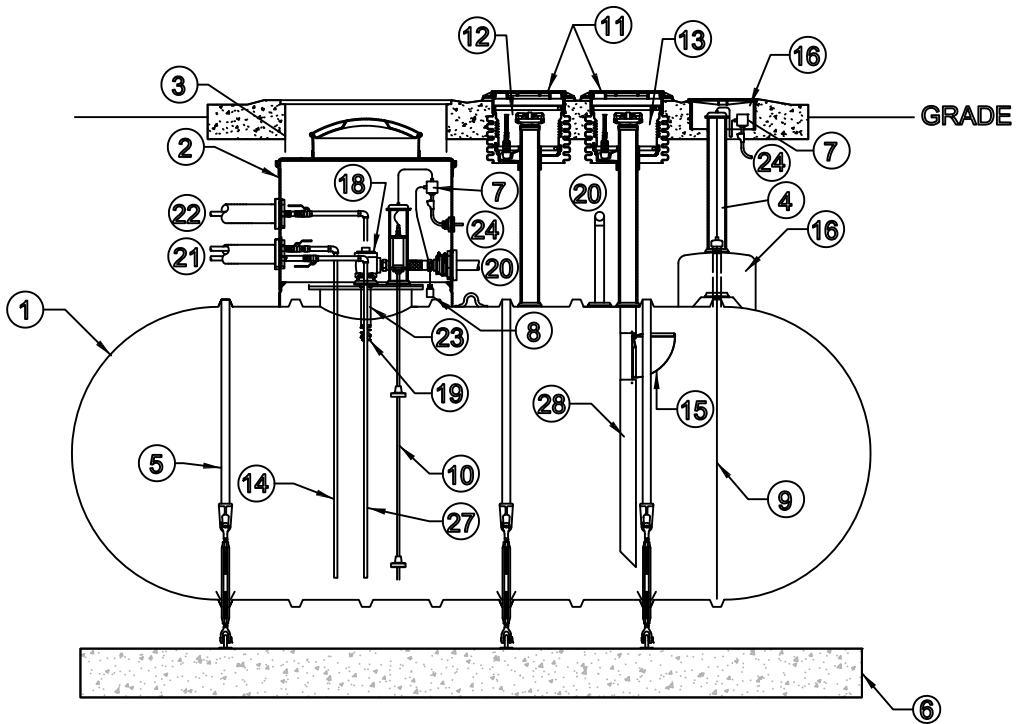
SECTION D-D

NOT TO SCALE

HRSD	SMALL COMMUNITIES SAMPLE DESIGN DETAIL	DRAWING NO. 400B
	SUBMERSIBLE PUMP STATION	SHEET 2 OF 2
		DATE 1/2020



TOP VIEW WITH NO EQUIPMENT REMOVED



STANDARD DESIGN DETAIL

UNDERGROUND STORAGE TANK

DRAWING NO.
401A

SHEET
1 OF 2

DATE
1/2020

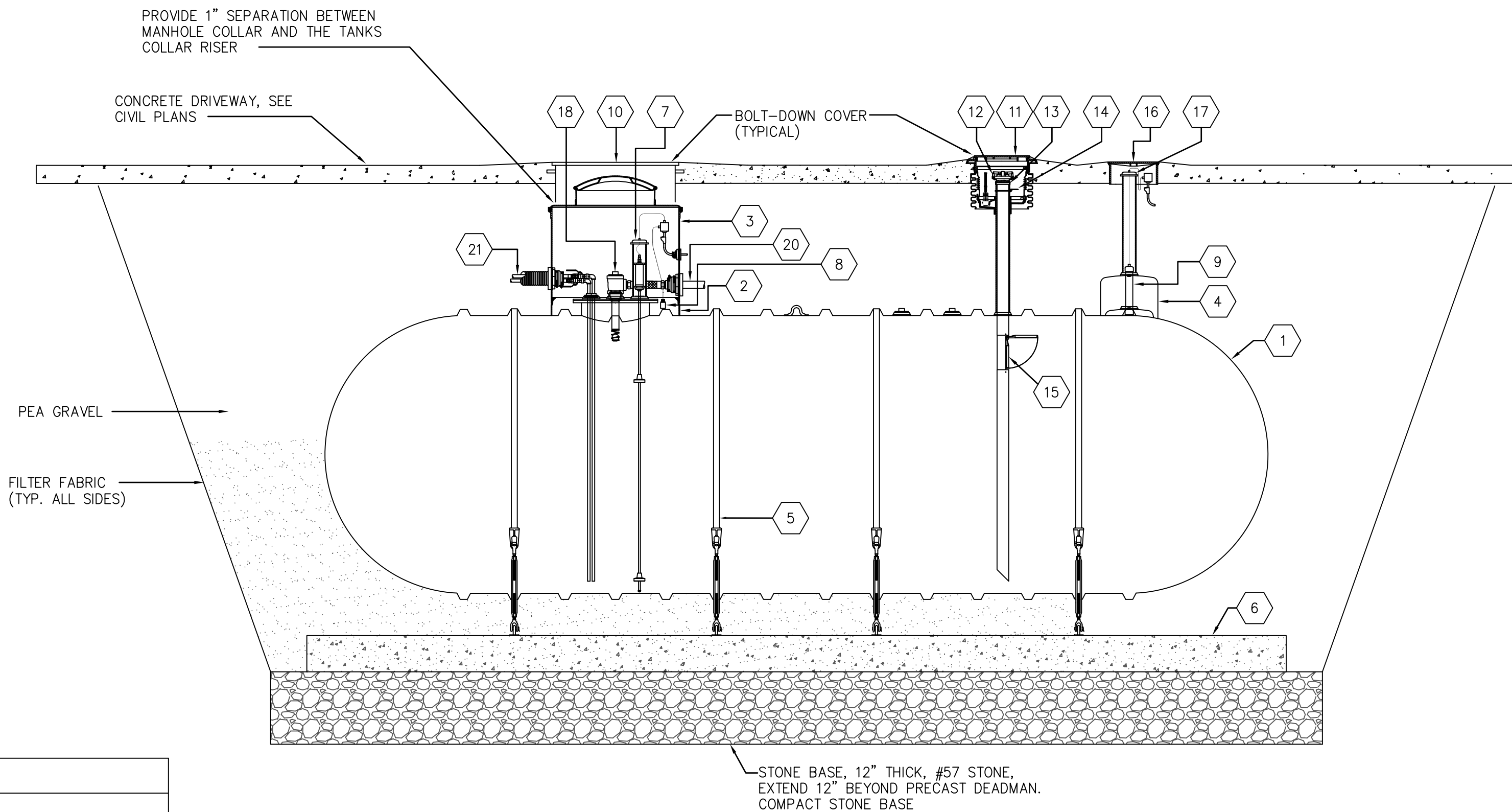
DIESEL FUEL DOUBLE WALL STORAGE TANK	
NO.	DESCRIPTION
1	DOUBLE WALL FIBERGLASS STORAGE TANK
2	42" FIBERGLASS ATTACHED MANWAY
3	42" WATERTIGHT FIBERGLASS ATTACHED MANWAY EXTENSION
4	MONITORING WELL
5	FIBERGLASS HOLD DOWN STRAP W/ TURNBUCKLE ASSEMBLY (TYPICAL)
6	CAST IN PLACE CONCRETE SLAB
7	TANK MONITORING SYSTEM PROBE
8	DISTINGUISHING LEAK SENSOR
9	NONDISTINGUISHING LEAK SENSOR
10	LEVEL PROBE
11	FIVE GALLON SPILL FILL MANHOLE
12	VAPOR RECOVERY CONNECTION
13	TANK FILL CONNECTION
14	FUEL OIL SUPPLY DROP TUBE
15	OVERFILL PREVENTION VALVE
16	MONITORING MANHOLE
17	SECONDARY TANK OPENING FOR LEAK SENSOR
18	EXTRACTOR ASSEMBLY WITH FOOT VALVE
19	BALL FLOAT
20	2" DOUBLE WALL VENT PIPING
21	DOUBLE WALL PRODUCT SUPPLY PIPING
22	DOUBLE WALL PRODUCT RETURN PIPING
23	FUEL OIL RETURN DROP TUBE
24	WIRING CONNECTION IN CONDUIT
25	FUEL OIL RETURN CONNECTION
26	SECONDARY FUEL SUPPLY CONNECTION
27	FUEL OIL SUPPLY DROP TUBE
28	TANK FILL DROP TUBE
29	CONCRETE APRON



STANDARD DESIGN DETAIL

UNDERGROUND STORAGE TANK

DRAWING NO. 401B
SHEET 2 OF 2
DATE 1/2020



UNDERGROUND FUEL TANK INSTALLATION DETAIL

PARTS LIST

NO.	DESCRIPTION
1	DOUBLE WALL FIBERGLASS STORAGE TANK (1,000 GALLONS)
2	42" FIBERGLASS ATTACHED COLLAR
3	42" WATERTIGHT FIBERGLASS ATTACHED COLLAR RISER
4	INTERSTITIAL FUEL LEAK MONITORING SYSTEM
5	FIBERGLASS HOLD DOWN STRAP W/ TURNBUCKLE ASSEMBLY
6	PRECAST CONCRETE ANCHOR BY TANK MANUFACTURER
7	LEVEL PROBE
8	NON-DESCRIMINATING TYPE LEAK SENSOR
9	DRY INTERSTITIAL DISCRIMINATING TYPE LEAK SENSOR
10	LARGE ROUND MANHOLE W/H2O RATED BOLT-DOWN COVER
11	5-GAL SPILL/FILL MANHOLE W/H2O RATED BOLT-DOWN COVER
12	FILL CAP
13	FILL ADAPTER
14	PRODUCT LABEL MARKER
15	OVERFILL PREVENTION VALVE
16	MONITORING MANHOLE W/H2O RATED BOLT-DOWN COVER
17	4" SENSOR CAP
18	EXTRACTOR ASSEMBLY
19	NOT USED
20	SINGLE WALL FIBERGLASS VENT PIPING
21	DOUBLE WALL FLEXIBLE FUEL SUPPLY/RETURN PIPING

	STANDARD DESIGN DETAIL	DRAWING NO. 402A
	UNDERGROUND FUEL TANK	SHEET 1 OF 2 DATE 1/2020

UNDERGROUND FUEL TANK STANDARD

THE CONTRACTOR INSTALLING THE TANK AND ACCESSORIES, FUEL MONITORING SYSTEM AND PIPING SHALL BE CERTIFIED BY EACH MANUFACTURER TO INSTALL THE EQUIPMENT. THE INSTALLED SYSTEM AND PARTS SHALL BE WARRANTED FOR A PERIOD OF FIVE YEARS FROM DATE OF FINAL ACCEPTANCE AGAINST DEFECTIVE MATERIALS, DESIGNS AND WORKMANSHIP. THE WARRANTY SHALL BE PROVIDED TO HRSD. THE TANK AND ALL ASSOCIATED EQUIPMENT SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE AND LOCAL CODES AND MANUFACTURERS REQUIREMENTS.

FUEL TANK

1. 1,000 GALLON FIBERGLASS DOUBLE WALL (DRY TYPE) UNDERGROUND STORAGE FUEL TANK WITH A 30-YEAR WARRANTY AS MANUFACTURED BY XERXES CORPORATION.
2. NPT FITTINGS SHALL BE FURNISHED FOR THE INTERSTITIAL LEAK SENSOR, LEVEL PROBE AND MANWAY LEAK SENSOR TO ALLOW CONDUIT AND WIRING RUN TO THE TANK'S ATTACHED COLLAR RISER AND MONITORING MANWAY.
3. TANK SHALL BE BURIED A MINIMUM OF 48" FROM TOP OF DRIVEWAY TO TOP OF TANK.
4. BACKFILL SHALL BE PEA GRAVEL, SIZE AS REQUIRED BY THE TANK MANUFACTURER. PEA GRAVEL SHALL BE WRAPPED WITH FILTER FABRIC AS SHOWN ON THE TANK INSTALLATION DETAIL.
5. A FIBERGLASS 42" ATTACHED COLLAR AND COLLAR RISER SHALL BE PROVIDED AROUND THE MANWAY TO BRING IT UP TO FINISH GRADE. A 1" SEPARATION SHALL BE PROVIDED BETWEEN THE BOTTOM OF THE MANWAY AND TOP OF COLLAR RISER.
6. THE COLLAR RISER SHALL BE PROVIDED WITH A FLAT TOP AND A 30" OVAL WATERTIGHT COVER.
7. THE FIBERGLASS 42" ATTACHED COLLAR, COLLAR RISER AND COVER SHALL BE WATERTIGHT. THE FIBERGLASS COLLAR SYSTEM AND COVER SHALL BE INSPECTED AND TESTED.
8. NPT FITTINGS SHALL BE FURNISHED ON TOP OF THE TANK AND ATTACHED COLLAR RISER FOR SPILL/FILL BOX, EXTRACTOR ASSEMBLY, LEVEL PROBE, LEAK SENSOR, SUPPLY/RETURN FUEL LINES VENT PIPING AND SPARE.
9. A PRECAST CONCRETE ANCHOR PAD SHALL BE PROVIDED WITH THE TANK, SIZED AND FURNISHED BY THE TANK MANUFACTURER.
10. FIBERGLASS HOLD DOWN STRAPS WITH GALVANIZED TURN BUCKLES SHALL BE FURNISHED WITH THE CONCRETE ANCHOR PAD BY THE TANK MANUFACTURER.

PARTS AS MANUFACTURED BY OHIO PATTERN WORKS (OPW)


1. COMPOSITE BOLT-DOWN MANHOLE COVERS, 19" AND 44", H20 RATING, OPW CONQUISTADOR SERIES.
2. ADAPTORS AND CAPS.
3. OVERFILL PREVENTION VALVE.
4. 5-GALLON THREAD-ON SPILL CONTAINMENT MANHOLE WITH SPILL DRAIN.
5. TRANSITION ADAPTORS FROM UNDERGROUND PIPING TO ABOVE GROUND.
6. SUMP OR MANHOLE PENETRATION FITTINGS FOR CONDUIT, PIPING, ETC.
7. FLEXIBLE FUEL PIPING AND FITTINGS.
8. TRANSITION SUMP ASSEMBLY.

VEEDER-ROOT FUEL MONITORING SYSTEM

1. FUEL ALARM/MONITORING SYSTEM SHALL BE AS VEEDER-ROOT #TLS 300C CONFIGURABLE CONSOLE WITH INTEGRAL PRINTER, OVERFILL ALARM AND ACKNOWLEDGEMENT SWITCH.
2. SECONDARY CONTAINMENT PIPE LEAK SENSOR IN TRANSITION SUMP PIT AND FIBERGLASS ATTACHED COLLAR SYSTEM.
3. MAG PLUS INTAKE PROBE AND MAG PROBE INSTALLATION KITS FOR INVENTORY AND STATIC TESTING.
4. INTERSTITIAL SENSOR FOR FIBERGLASS TANKS.

FUEL PIPING

1. UNDERGROUND FUEL PIPING SHALL BE 1/2" OR 3/4" DOUBLE WALL FLEXIBLE FUEL PIPING FLEXWORKS AS MANUFACTURED BY OPW. UNDERGROUND PIPING SHALL BE INSTALLED IN AXP SERIES ACCESS PIPE.
2. ABOVE GROUND FUEL PIPING SHALL BE 1/2" OR 3/4" BLACK IRON PIPING.
3. UNDERGROUND FUEL TANK VENT PIPING SHALL BE 2" SINGLE WALL FIBERGLASS PIPING AS MANUFACTURED BY OPW.
4. ABOVE GROUND FUEL TANK VENT PIPING SHALL BE 2" BLACK IRON PIPING. TERMINATE 12" ABOVE FINISH GRADE MINIMUM OR AS REQUIRED BY CODE.
5. PROVIDE EMERGENCY SHUT-OFF VALVE FOR ALL FUEL PIPING IN MANHOLES AND TRANSITION SUMP PIT.
6. UNDERGROUND FUEL PIPING SHALL BE INSTALLED AT DEPTHS AND SPACING AS RECOMMENDED BY THE MANUFACTURER. BACKFILL SHALL BE CLEAN MATERIAL AS REQUIRED BY THE MANUFACTURER.
7. ALL UNDERGROUND PIPING SHALL BE INSTALLED SUCH THAT THE PIPING SLOPES DOWN TO THE FUEL TANK.

	STANDARD DESIGN DETAIL	DRAWING NO. 402B
	UNDERGROUND FUEL TANK	SHEET 2 OF 2
		DATE 1/2020