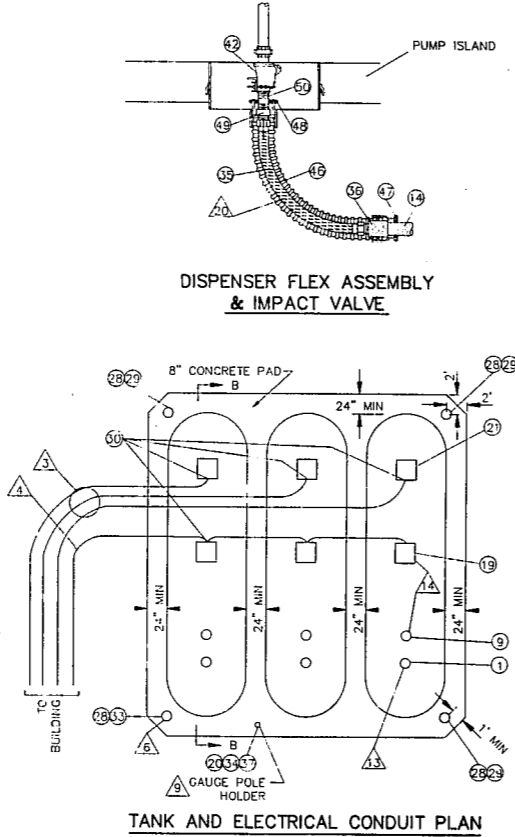
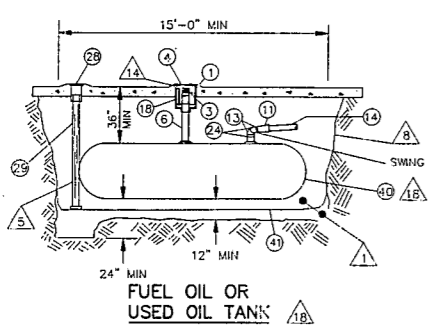


SUBMERGED PUMP FLEX ASSEMBLY



- NOTES**
1. PEA GRAVEL BACKFILL - ALL OTHER MATERIALS MUST BE APPROVED BY TANK MANUFACTURER AND OWNER'S FIELD REPRESENTATIVE.
 2. CROWN EXCAVATION FOR DRAINAGE TO OBSERVATION WELLS. INSTALL SHALLOW PAN IMPERMEABLE LINER IN DRY HOLES ONLY. PROVIDE 6" PEA GRAVEL BED BELOW LINER.
 3. 3/4" CONDUIT FROM EACH SUBMERSIBLE PUMP TO BUILDING. TERMINATE WITH SEAL-OFF PER NFPA SPECIFICATIONS.
 4. 3/4" CONDUIT FOR FUTURE ELECTRONIC TANK GAUGE. LOOP CONDUITS BETWEEN TANKS, THROUGH JUNCTION BOX. SEAL OFF HOME RUN AT BOTH TANK AND BUILDING. DO NOT PIPE INTO VENTING TROUGH.
 5. FOR USED OIL TANK GAUGES - ONE 4" MONITORING WELL, SUPPLIED BY OWNER, WILL BE INSTALLED.
 6. THREE 4" OBSERVATION WELLS AND ONE 12" OBSERVATION WELL DEPTH AS SHOWN OR AS REQUIRED BY LOCAL REGULATIONS. DO NOT USE PVC CEMENT.
 7. FILTER FABRIC - CUT TO FIT TIGHTLY AROUND PIPING, PENETRATION.
 8. SLOPE SIDES OF TANK HOLE AS REQUIRED BY SOIL CONDITIONS. 24" MINIMUM DISTANCE BETWEEN TANK WALL AND WALLS OF EXCAVATION.
 9. GAUGE POLE HOLDER: O.C. TO FURNISH 4" X 12" SOLID SCHD 40 PVC PIPE WITH SEALED BOTTOM CAP. TOP: OWNER SUPPLIED MANHOLE.
 10. 4" STEEL PIPE RISER FOR FUTURE GAUGE. CUT TO PROVIDE 8" CLEARANCE BENEATH MANHOLE LID. USE 12" PIPE NIPPLE ABOVE COUPLING.
 11. PIPE TO BE REAMED ON BOTH ENDS TO ACHIEVE A TRUE OPENING OF 4". PROVIDE 4-1/2" TO 5-1/2" CLEARANCE FROM TOP OF FITTING TO GRADE. USE 12" PIPE NIPPLE ABOVE COUPLING.
 12. CUT AND POSITION FILL TUBE WITH ANGLE AWAY FROM SUB-PUMP, AS SHOWN.
 13. CURB BOX COVERS ARE TO BE PRIME AND PAINTED ACCORDING TO THE FOLLOWING SPECIFICATIONS:
 - *FILL: REGULAR UNLEADED - WHITE W/BLACK CROSS
 - REGULAR LEADED - BLUE
 - PLUS UNLEADED - BLUE W/WHITE CROSS
 - SUPER UNLEADED - RED W/WHITE CROSS
 - *VAPOR RECOVERY: ORANGE
 - *TANK GAUGE: GRAY
 - *TANK OBSERVATION WELLS - BLACK TRIANGLE ON WHITE BACKGROUND
 - SUBMERSIBLE PUMPS - GRAY
 - *PAINT SURROUNDING 3" OF CONCRETE PAD TO MATCH.
 14. SLOPE CONCRETE AROUND ALL CONCRETE CURB BOXES - 1" RISE OVER 12" RUN.
 15. TANK BOTTOMS ARE TO BE INSTALLED LEVEL.
 16. DRILL 1/8" RELIEF ORIFICE THROUGH FILL TUBE AT LOCATION SHOWN.
 17. FIBERGLASS PIPING SHALL BE LAID AND CONTINUOUSLY SUPPORTED ON A 6" COMPACTED BEDDING OF CLEAN SAND. NO PIPING SHALL BE SUPPORTED BY BLOCKS, PLANKS, OR OTHER DEBRIS.
 18. FUEL OIL OR USED OIL TANKS ARE TO BE INSTALLED ONLY WHEN SPECIFIED ON PLOT PLAN. FUEL OIL FITTINGS ARE TO BE SUPPLIED BY GENERAL CONTRACTOR. SEAL AND PLUG UNUSED OPENINGS.
 19. MINIMUM BEND RADIUS 8".
 20. INTERIOR OF FIBERGLASS RISER TO 6" CLEAR OF PEA GRAVEL BACKFILL TO THREADED JOINTS ARE EXPOSED.
 21. PROVIDE 6" CLEARANCE BETWEEN TOP OF PVC PIPE AND GRADE.

UNDERGROUND STORAGE TANKS GENERAL SPECIFICATIONS

GENERAL: EXCAVATE, SET AND FILL AROUND ALL UNDERGROUND TANKS AS SHOWN. TANKS ARE TO BE BALLASTED WITH PRODUCT OR WATER, ACCORDING TO LOCAL REGULATIONS. AFTER INSTALLATION AND BACKFILL, SEE OWNER'S REPRESENTATIVE. ALTERNATE METHODS OF BACKFILLING TANKS SHALL BE AS RECOMMENDED BY TANK MANUFACTURER AND APPROVED BY OWNER'S FIELD REPRESENTATIVE.

GENERAL: WHERE THIS DRAWING IS IN CONFLICT WITH THE LOCAL REGULATIONS, LOCAL REGULATIONS WILL SUPERCEDE THIS DRAWING, IF MORE RESTRICTIVE.

FIBERGLASS TANKS: ALL TANKS ARE TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND APPROVAL OF OWNER'S FIELD REPRESENTATIVE.

PIPE: GLASS FIBER PIPE TO BE A.O. SMITH OR OBA GEGY. (BRANDS MAY NOT BE MIXED). STEEL PIPE TO BE SCHEDULE 40 GALVANIZED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

PIPE JOINT SEAL: RECTORSEAL #5 OR #7 SHALL BE USED ON ALL STEEL PIPE FITTINGS.

TRENCHING: ALL TRENCHING FOR PIPE SHALL BE AS NOTED ON DRAWINGS. SPACE PIPING IN TRENCHES 8" ON CENTER. BACKFILL OVER PRODUCT PIPING AND VENT LINES OUTSIDE THE TANK CAVITY SHALL BE OF CLEAN COMPACTED SAND. COMPACT SAND FILL BEFORE AND AFTER PIPE INSTALLATION USING FLAT PLATE MECHANICAL TAMPER. ALL CONDUIT SHALL BE AS NOTED ON DRAWINGS, AND IN ONE TRENCH, SEPARATE FROM PIPING, TO BUILDING.

TANK VENTS: ALL TANK VENTS SHALL BE 2". SLOPE ALL VENTS AND PIPES DOWN UNIFORMLY TO TANKS.

TANK AND PRODUCT LINE TEST: UPON DELIVERY, ALL UNDERGROUND STORAGE TANKS SHALL BE TESTED ABOVE GROUND WITH AIR PRESSURE AT 5 PSI. USE SOAP AND WATER OR OTHER APPROVED METHOD FOR DETECTING LEAKS. LOOSEN THE PLUG FOR VENTILATION AFTER AIR TEST.

AFTER INSTALLATION BELOW GROUND AND FOLLOWING BACKFILL TO TOP OF TANK AND INSTALLATION OF PIPING CONNECTIONS, ALL UNDERGROUND STORAGE TANKS SHALL BE TESTED WITH AIR PRESSURE AT 5 PSI.

GASOLINE PRODUCT LINES INCLUDING VENT LINES SHALL BE TESTED WITH AIR PRESSURE AT 50 PSI BEFORE BACKFILL USING SOAP AND WATER OR OTHER OWNER APPROVED METHOD OF DETECTING LEAKS.

AFTER COMPLETION OF ALL YARD CONCRETE WORK, INCLUDING TANK PADS AND PUMP ISLANDS, A SECOND 50 PSI AIR PRESSURE TEST SHALL BE PERFORMED ON THE GASOLINE PRODUCT LINES PRIOR TO ACTIVATING THE SUBMERSIBLE PUMPS. A PETRO-TITE TANK AND LINE TEST OR OTHER APPROVED TEST SHALL THEN BE CONDUCTED AT THE OWNER'S EXPENSE.

AIR TESTS SHALL BE MAINTAINED WITHOUT FALL-OFF IN PRESSURE FOR A MINIMUM OF 60 MINUTES. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE OWNER'S FIELD REPRESENTATIVE.

TANK ANCHORING: TO BE DONE ACCORDING TO SPECIFICATIONS OF THE TANK MANUFACTURER. THE ENGINEER WILL DETERMINE THE NECESSITY OF ANCHORING AT A GIVEN SITE.

O - MATERIAL SCHEDULE		
NO.	EQUIPMENT SCHEDULE	SUPPLIER
1	SPILL PROTECTION WITH DRAIN VALVE	OWNER
2	4" NPT FLANGE ON TANK	TANK MFG
3	FILL CAP OPW-634TT-4" OR EQUIVALENT	OWNER
4	ADAPTOR OPW-633TI-4" (BRONZE) OR EQUIVALENT	OWNER
5	4" STEEL COUPLING SCH. 40 GALVANIZED	G. C.
6	4" STAND PIPE LENGTH AS REQUIRED SCH. 40 GALVANIZED	G. C.
7	ALUMINUM FILL TUBE OPW 61T-4" OR EQUIVALENT	OWNER
8	UNIVERSAL V421 EXTRACTOR VENT VALVE OR EQUIVALENT (4" X 2" X 2") WITH UNIVERSAL #37 STAINLESS STEEL FLOAT AND 1/8" RELIEF ORIFICE	OWNER
9	12" CURB BOX OPW-104-A	OWNER
10	2" X 30" FLEXIBLE CONNECTOR RESISTOFLEX OR EQUIVALENT	OWNER
11	2" FIBERGLASS PIPE A.O. SMITH RED THREAD II OR AMERON DUALLOY 2000	G. C.
12	2" GROUND JOINT UNION	G. C.
13	2" PIPE 90° ELBOW (STEEL) SCH. 40 GALVANIZED	G. C.
14	2" FIBERGLASS PIPE A.O. SMITH RED THREAD II OR AMERON DUALLOY 2000	G. C.
15	2" PIPE SCH. 40 GALVANIZED	G. C.
16	CAP OPW-1711-1-3 OR EQUIVALENT	OWNER
17	ADAPTOR OPW-1611 AVB 3" X 4" OR EQUIV.	OWNER
18	TANK DELIVERY MARKER UNIVERSAL NO. 55	OWNER
19	CURB BOX 24" X 24" RED JACKET OR EQUIV.	OWNER
20	4" PIPE CAP SCH. 40 GALVANIZED	G. C.
21	36" DIA. 20" FIBERGLASS RISER, OWENS-CORNING OR XERXES	OWNER
22	RED JACKET SUBMERSIBLE PUMP	OWNER
23	RED JACKET LEAK DETECTOR	OWNER
24	2" PIPE NIPPLE, 4" LONG (STEEL) SCH. 40 GALVANIZED	G. C.
25	2" VENT CAP OPW 23 OR EQUIVALENT	OWNER
26	2" PIPE 45° ELBOW SCH. 40 GALVANIZED	G. C.
27	FIBERGLASS ADAPTOR 2" X 2" NPT	G. C.
28	OBSERVATION WELL MANHOLE 12" MORRISON 519A OR EQUIV.	OWNER
29	4" FACTORY SLOTTED PVC-1 PIPE .02" SLOTS CAPPED BOTTOM	OWNER
30	ATLANTIC SCREEN CO. OR EQ. 13 FT. LONG	G. C.
31	SEAL OFF-CROUSE HINDS MODEL EYD2	G. C.
32	JUNCTION BOX-CROUSE HINDS GUP215	G. C.
33	OBSERVATION WELL MANHOLE 12" MORRISON 519A OR EQUIV.	OWNER
34	12" FACTORY SLOTTED PVC-1 PIPE .02" SLOTS OR AS PER LOCAL REGULATIONS. ATLANTIC SCREEN NO. T21 OR EQUIV. 13 FT. LONG	OWNER
35	4" PVC-1 PIPE 12 FT. LONG SCH. 40 FOR GAUGE STOCK	G. C.
36	1-1/2" X 2" FLEXIBLE CONNECTOR - RESISTOFLEX OR EQUIVALENT	OWNER
37	FIBERGLASS REDUCER BUSHING 2" X 1-1/2" NPT FEMALE	G. C.
38	4" QUICK OPENING SEALED BOX OPW 126A	OWNER
39	FILTER FABRIC - TYPAR OR EQUIV.	G. C.
40	FIBERGLASS TANK - OWENS CORNING OR XERXES	OWNER
41	FIBERGLASS USED OIL TANK - OWENS CORNING OR XERXES	OWNER
42	SHALLOW PAN LINER, FUEL GUARD OR EQUIV. - SEE NOTE 2	OWNER
43	IMPACT VALVE - OPW 10RM OR EQUIV.	OWNER
44	2" STEEL COUPLING SCH 80 EXTRA-STRONG	G. C.
45	RESERVED	
46	2" STEEL COUPLING SCH. 40 GALVANIZED	G. C.
47	ISOLATION SLEEVE, TOTAL CONTAINMENT FJ-042	OWNER
48	COMPRESSION SEAL FOR 2" COUPLING TOTAL CONTAINMENT	OWNER
49	COMPRESSION SEAL FOR 1 1/2" PIPE TOTAL CONTAINMENT	OWNER
50	1 1/2" STEEL COUPLING SCH 80 EXTRA-STRONG	G. C.
51	1 1/2" STEEL PIPE NIPPLE 4" LONG SCH 40 GALVANIZED	G. C.

RETAIL MARKETING DESIGN AND ENGINEERING 200 PUBLIC SQUARE CLEVELAND, OHIO 44114			
TANK & LINE DETAILS SUBMERGED (REMOTE) PUMPING FIBERGLASS PIPING			
DWG. NO.: 15-R	REV.: 4		
SCALE: N.T.S.	MADE BY: DDK		
DATE:	CHECKED BY: RWN		
REVISIONS	DATE	DWN	OKD.
CHANGED GAUGE POLE HOLDER, TANK GAUGE INFO	4/20/87	COE	JSD
REV. NOTE 13	5/13/88	COE	EMJ
REV FLEX ASSEMBLY, MANHOLES, AND OVERFILL	1/22/89	COE	EMJ
REV FLEX ASSEMBLY	10/6/89	GPD	DBW