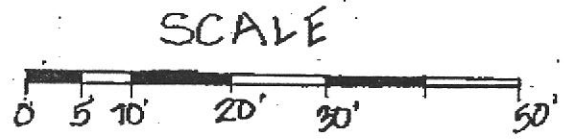
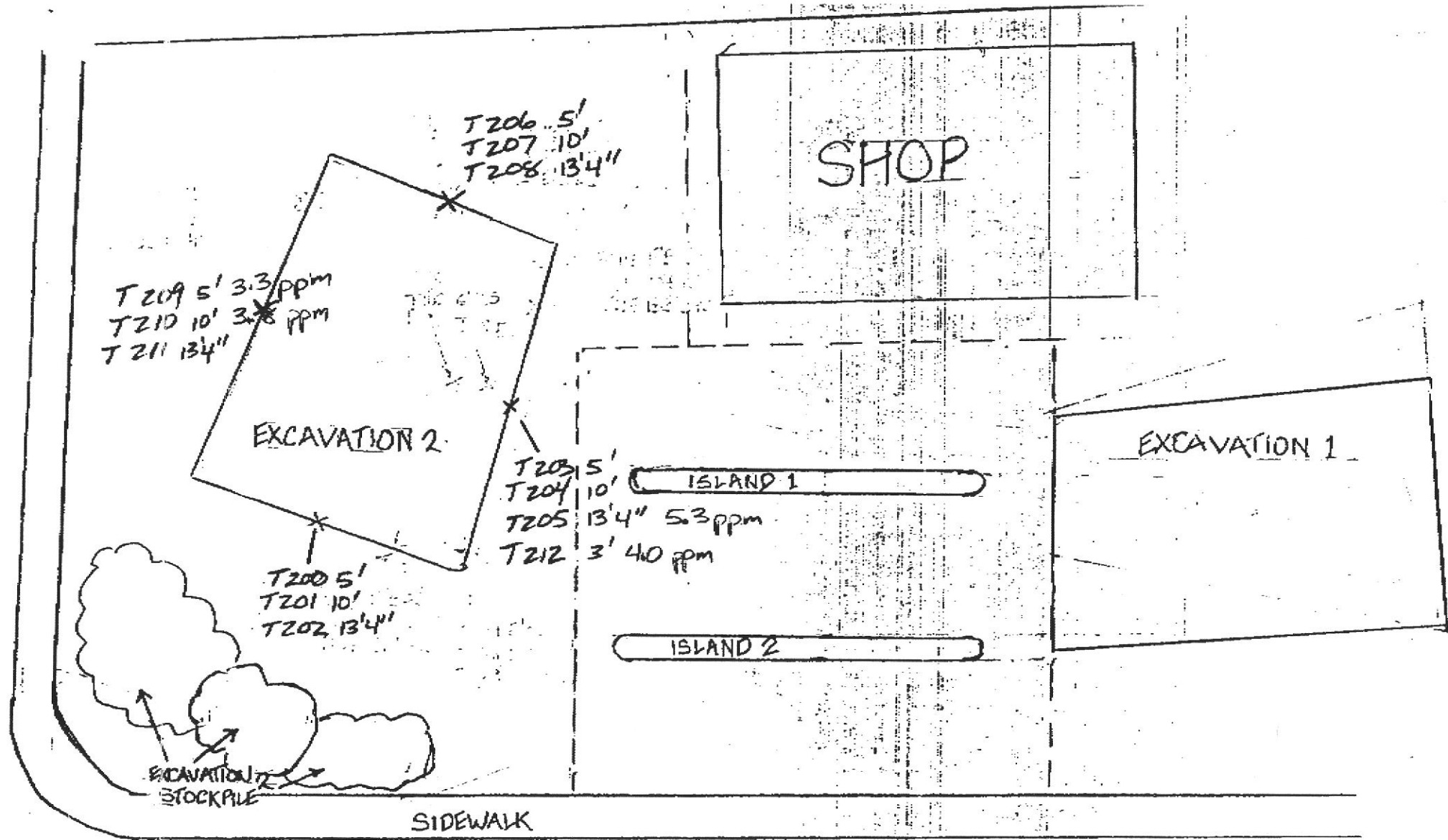
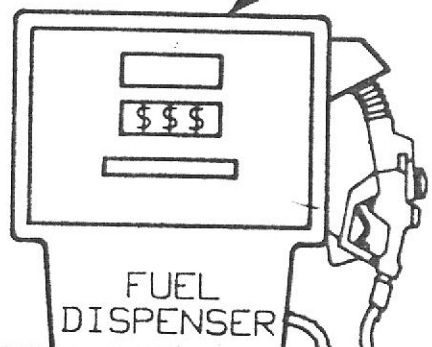
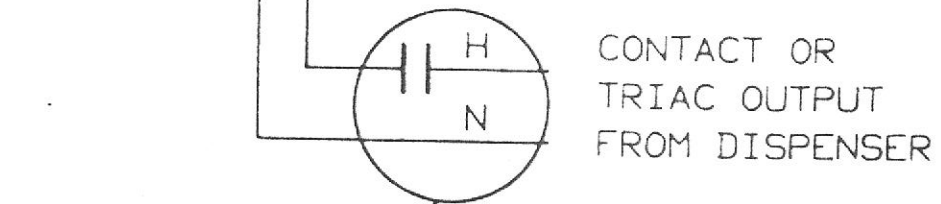
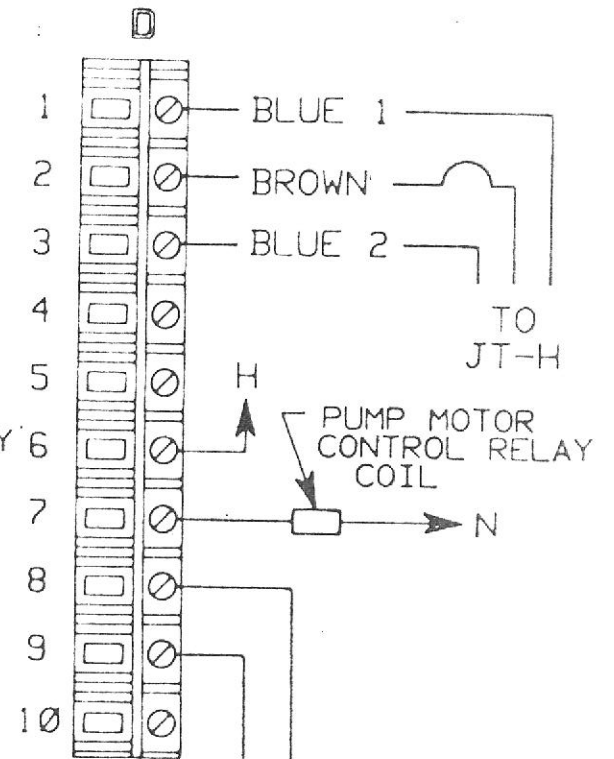
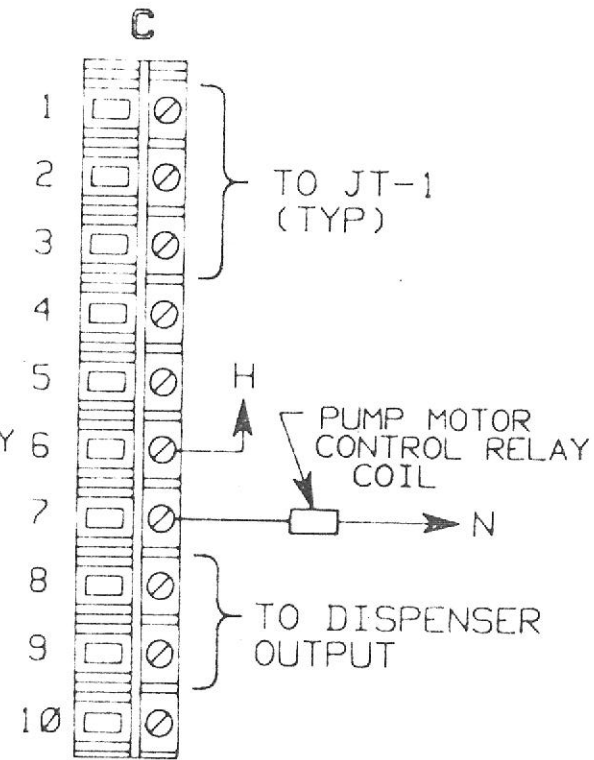
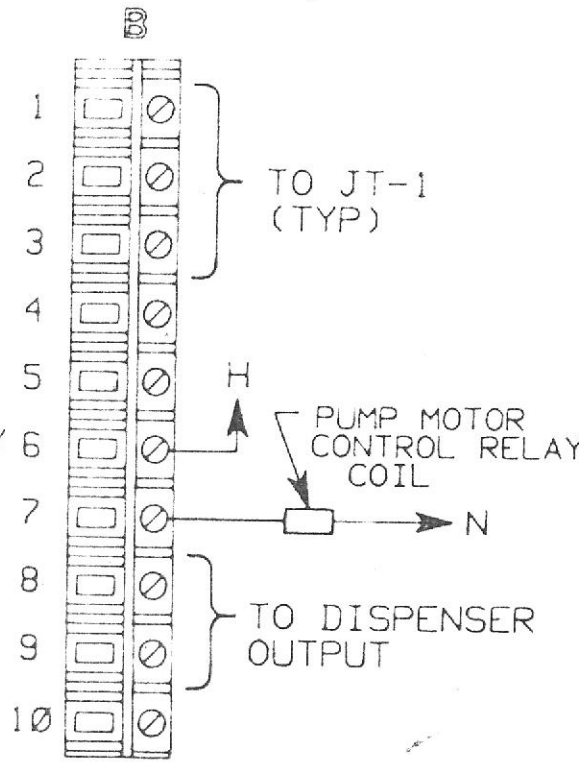
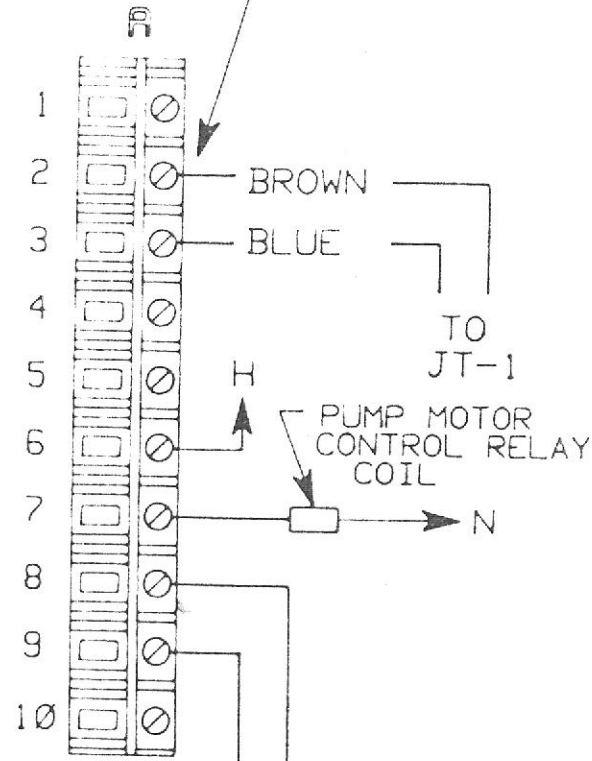
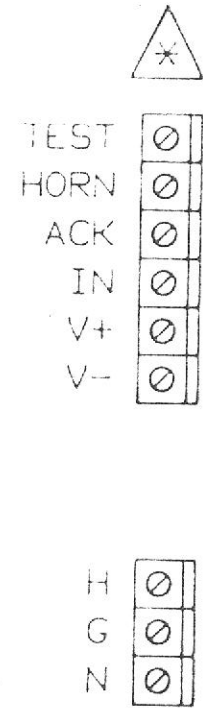


LAKE CHARBOT ROAD

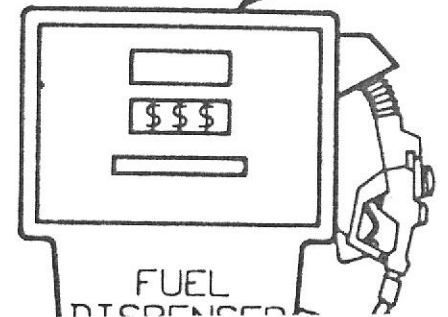
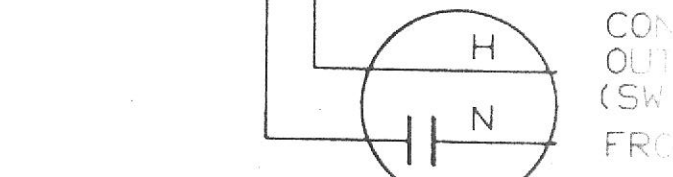


2724 CASTRO VALLEY BLVD.

NOTE: JUMPER 1 TO 3 FOR CONTINUOUS PRESSURE MONITORING
 (ALARM & SHUTDOWN IF PRESSURE FALLS BELOW 20 PSI)
 OR
 JUMPER 1 TO 2 IGNORE PRESSURE DROPPING BELOW
 20 PSI ON PUMPING CYCLE.
 (USED ON OLDER SYSTEMS USING LOWER H.P. SUBMERSIBLE
 PUMPS FEEDING SEVERAL DISPENSERS.)



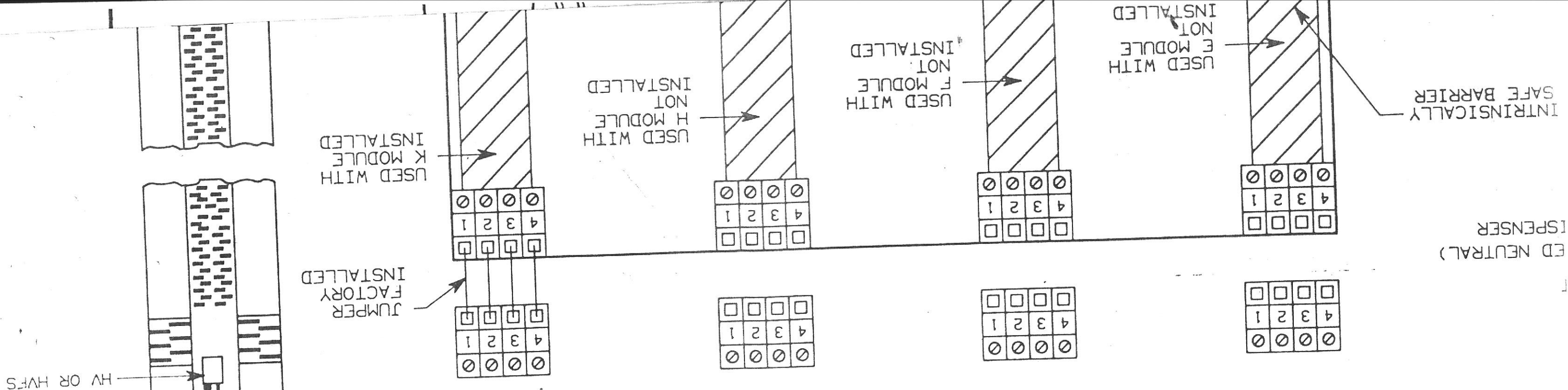
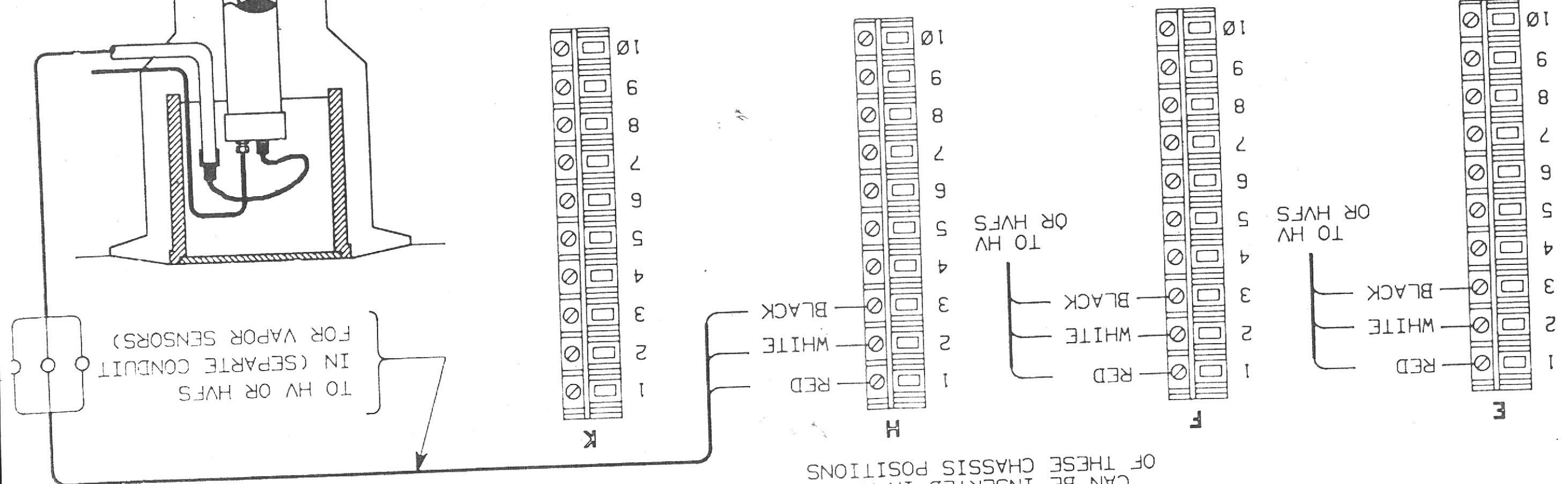
REFER TO DISPENSER
 MANUAL FOR WIRING DETAILS

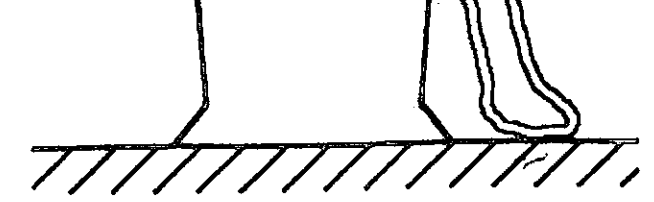
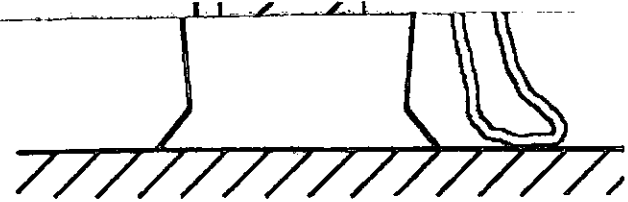


THE INFORMATION DISCLOSED HEREIN WAS ORIGINATED BY AND IS THE PROPERTY OF HONAN AND EXCEPT FOR FIG. 1 EXPRESSLY GRANTED TO THE UNITED STATES GOVERNMENT. HONAN RESERVES ALL PATENT PROPRIETARY DESIGN OR FIG. SALE, MANUFACTURING AND REPRODUCTIONS RIGHT THERE TO.

REV	DESCRIPTION	DATE	BY	ENGR	APPR
1	ADDED BARRIER WIRING AND JT-H	11.FEB.88 KSP			

NOTE X76AM-4 ALARM MODULES CAN BE INSERTED IN ANY OF THESE CHASSIS POSITIONS

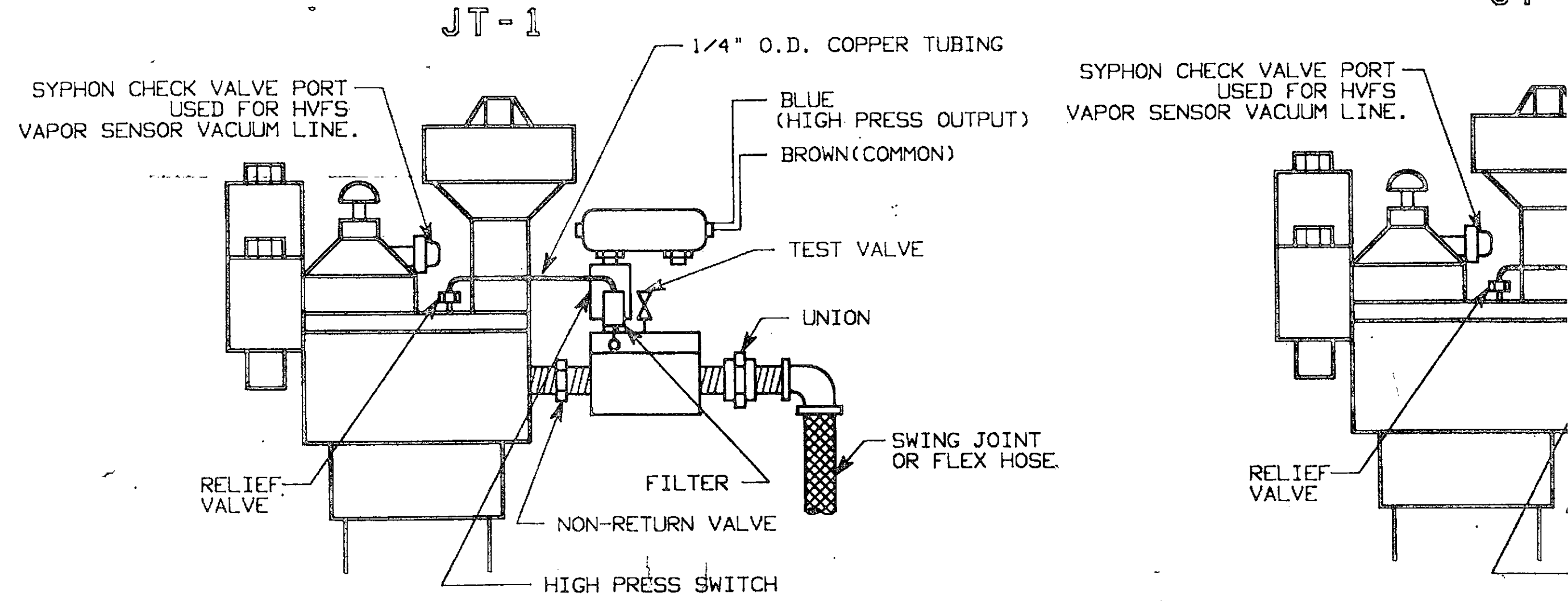




NOTES :
 SYSTEM ABOVE IS SHOWN WITH 4 LINE
 LEAK MONITORS AND THREE VAPOR SENSOR MONITOR
 AND ONE ALARM MODULE (3 ALARM INPUTS)
 ACTUAL INSTALLATIONS MAY HAVE DIFFERENT
 NUMBERS OF EACH. (CHASSIS ARE
 PLUG COMPATIBLE FOR ANY COMBINATION)
 REFER TO BLOCK LAYOUT DRAWING

* SEE WIRING DIAGRAM DWG. NO. X76C213
 FOR INTERNAL WIRING

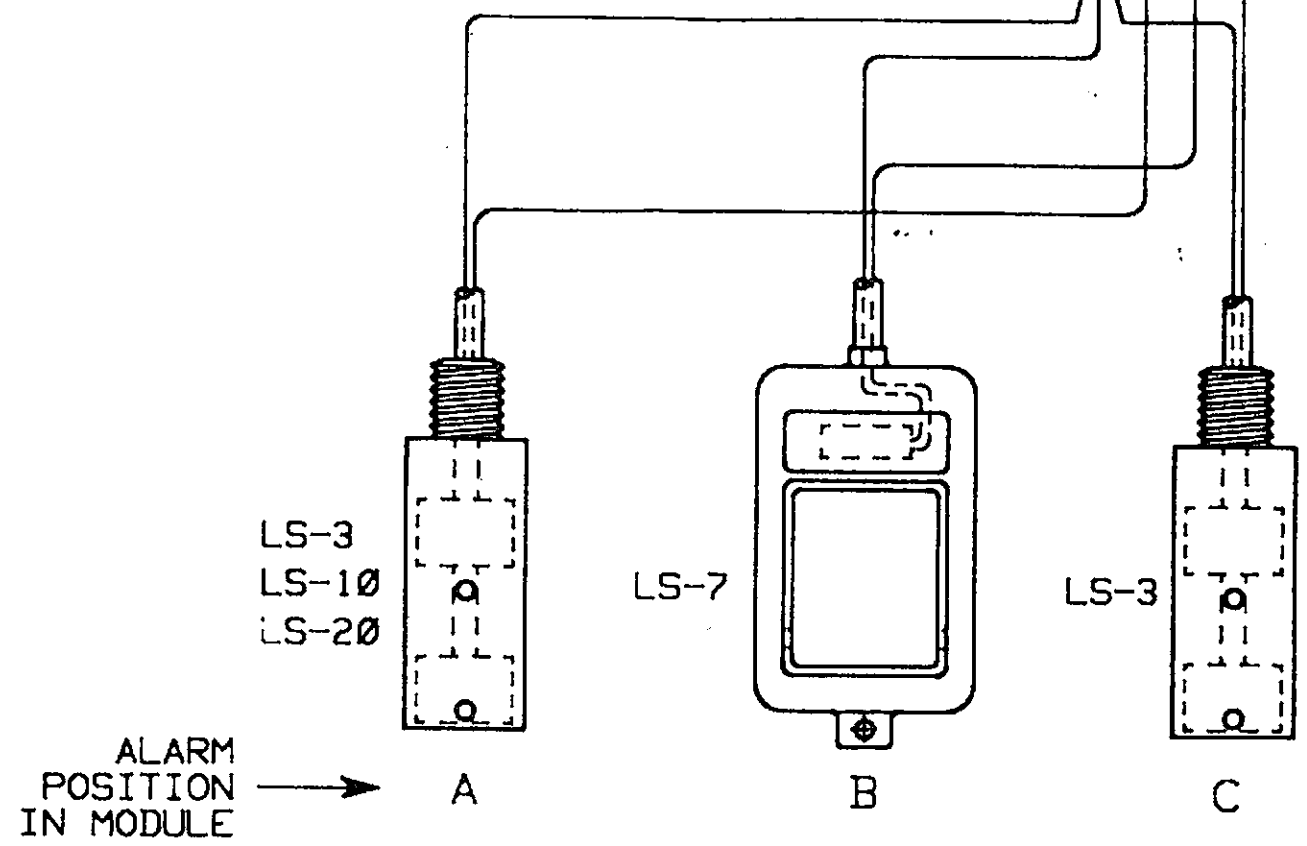
JT-



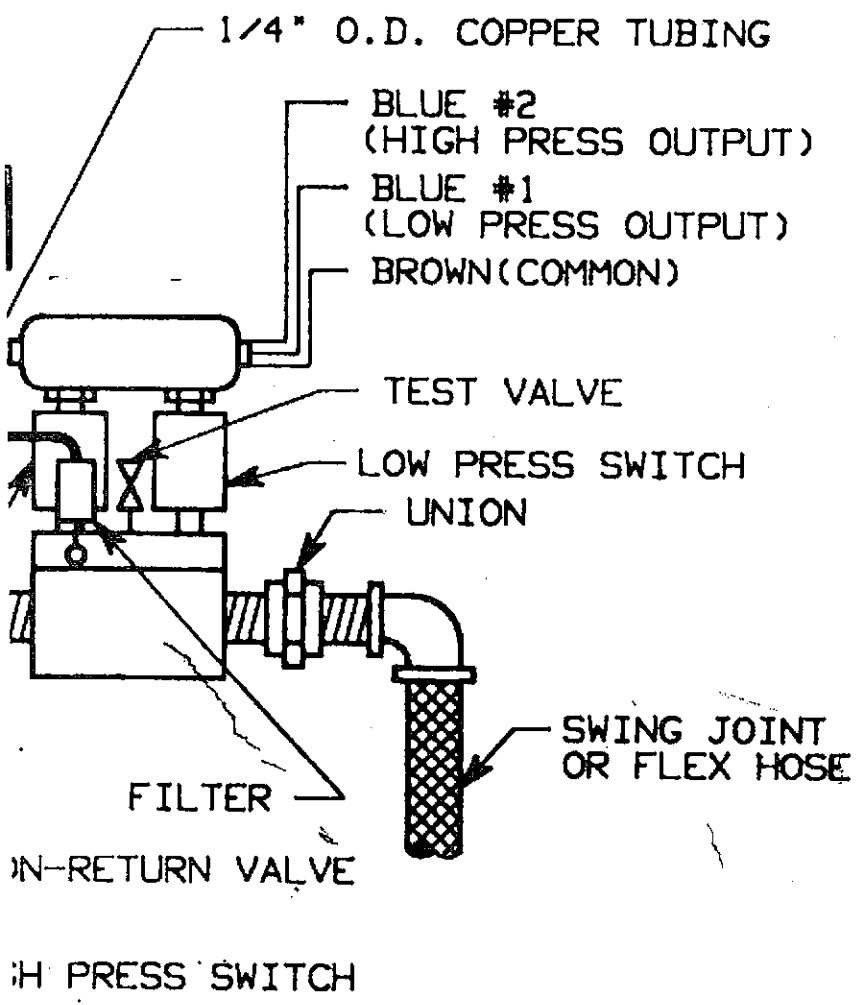
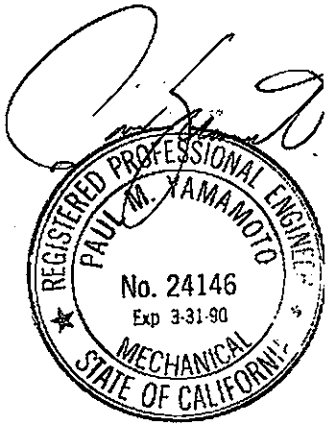
X76D128-1
 DISK: X76M: FOL:6
 IG. X76D0267 R1 23-FEB-88



VADOSE WELL



TYPICAL FOR THREE CONTACT INPUT PER ALARM MODULE X76AM-4



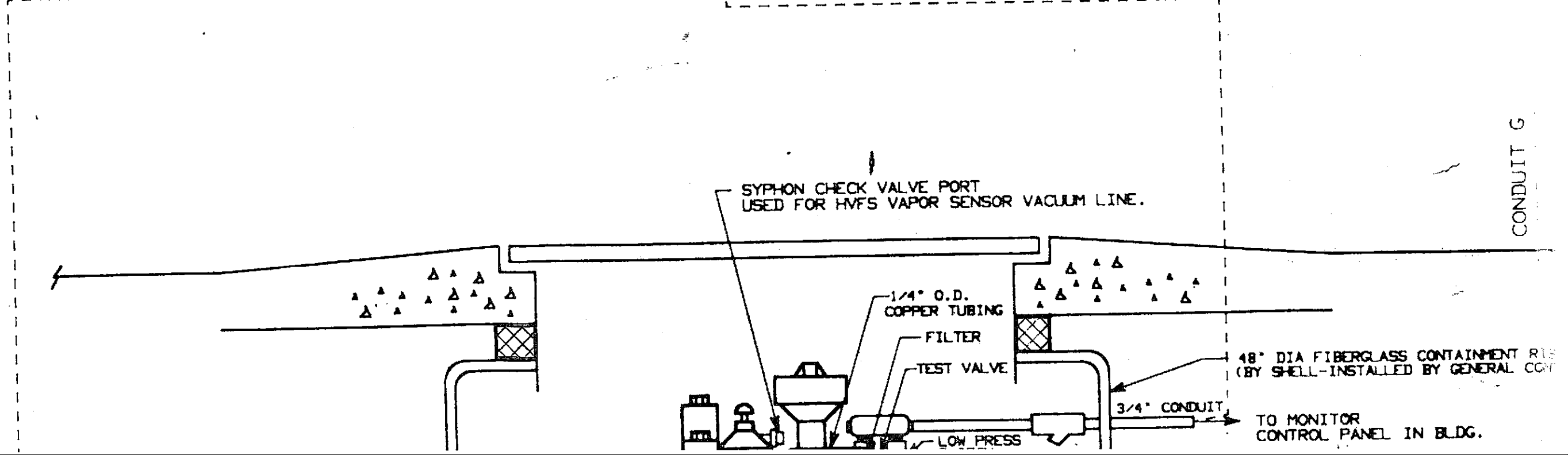
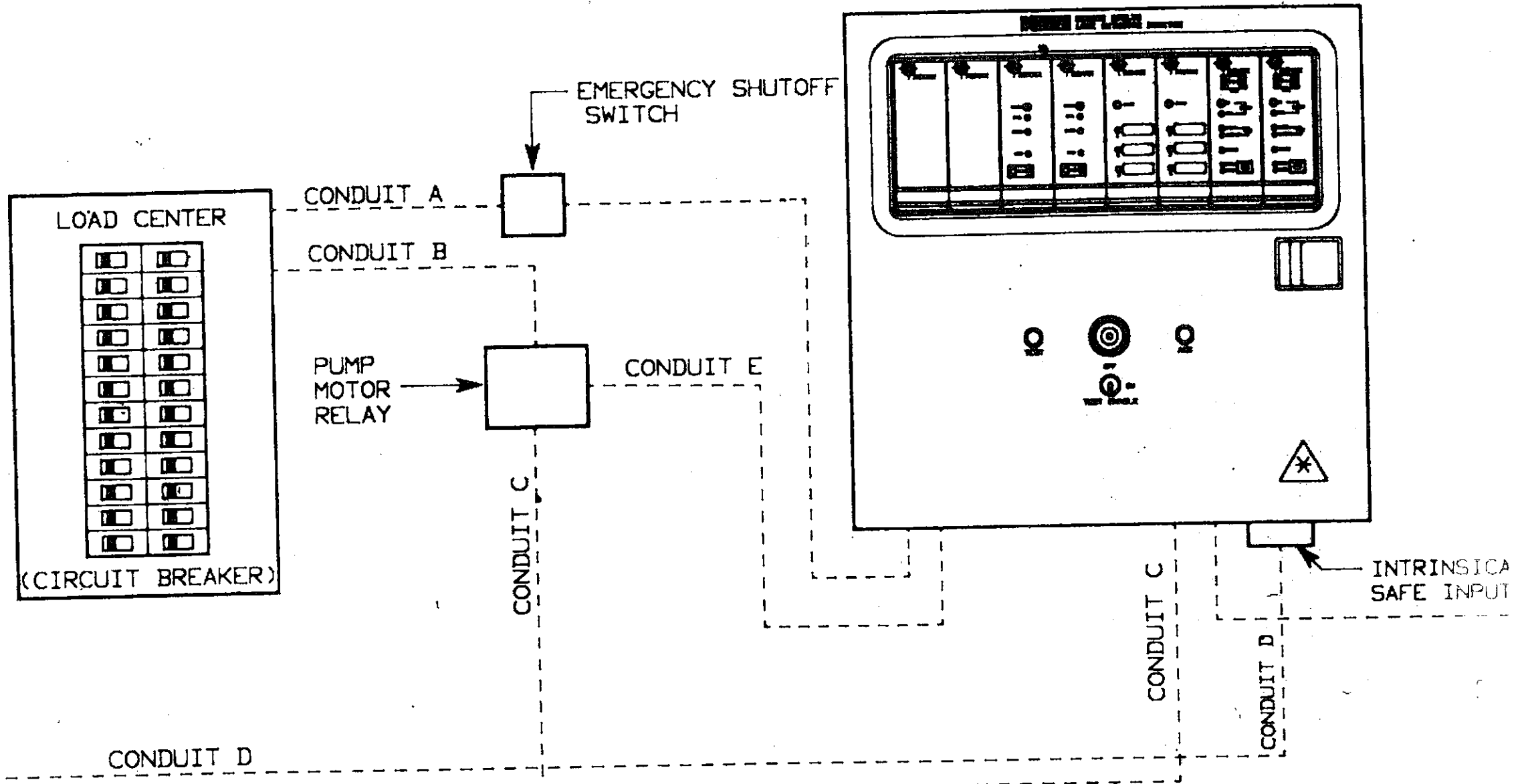
MARK	DATE	REVISIONS	BY

RONAN LEAK DETECTOR SYSTEM WIRING DETAILS

SHELL OIL COMPANY
EAST BAY DISTRICT

ROBERT H. LEE & ASSOCIATES, INC.
ARCHITECTURE PLANNING ENGINEERING
900 LARKSPUR LANDING CIRCLE, #125, LARKSPUR, CA 94529 • (415) 461-8890

DATE A	
PRELIM.	
PERMIT	
BID	
CONST.	8-25-88 P
SCALE	
OWN. BY	
RHL+	6662, 6667, 6727
PP	



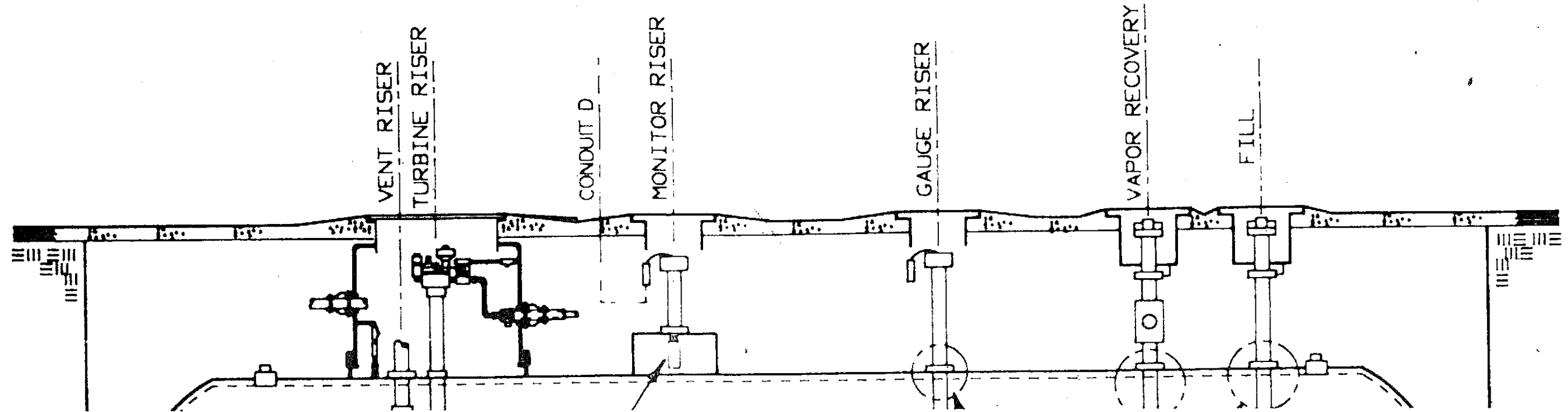
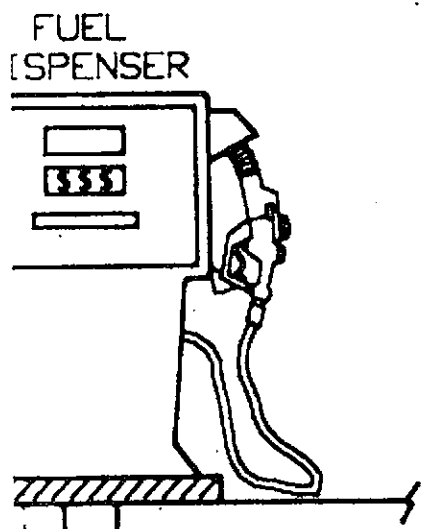
THE INFORMATION DISCLOSED HEREIN WAS ORIGINATED BY AND IS THE PROPERTY OF RONAN AND EXCEPT FOR RIGHTS EXPRESSLY GRANTED TO THE UNITED STATES GOVERNMENT, RONAN RESERVES ALL PATENT, PROPRIETARY, DESIGN, US SALE, MANUFACTURING AND REPRODUCTIONS RIGHT THERETO

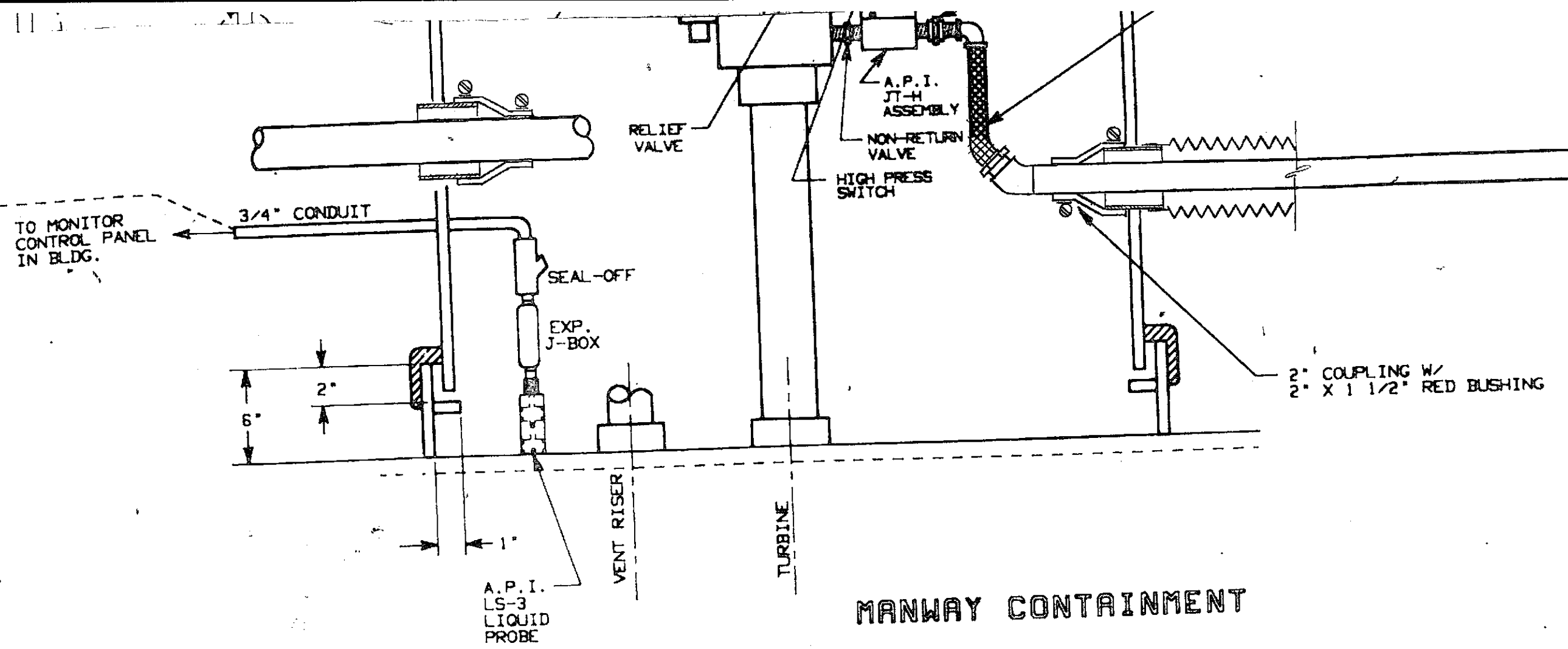
REV	DESCRIPTION	DATE	BY	ENGR	APPR	QA
-----	-------------	------	----	------	------	----

OPTIONAL
COMPUTER
CENTER

CONDUIT G
CONDUIT G
TION

* REFER TO
WIRING DIAGRAM #X76D267
FOR ACTUAL TERMINATION

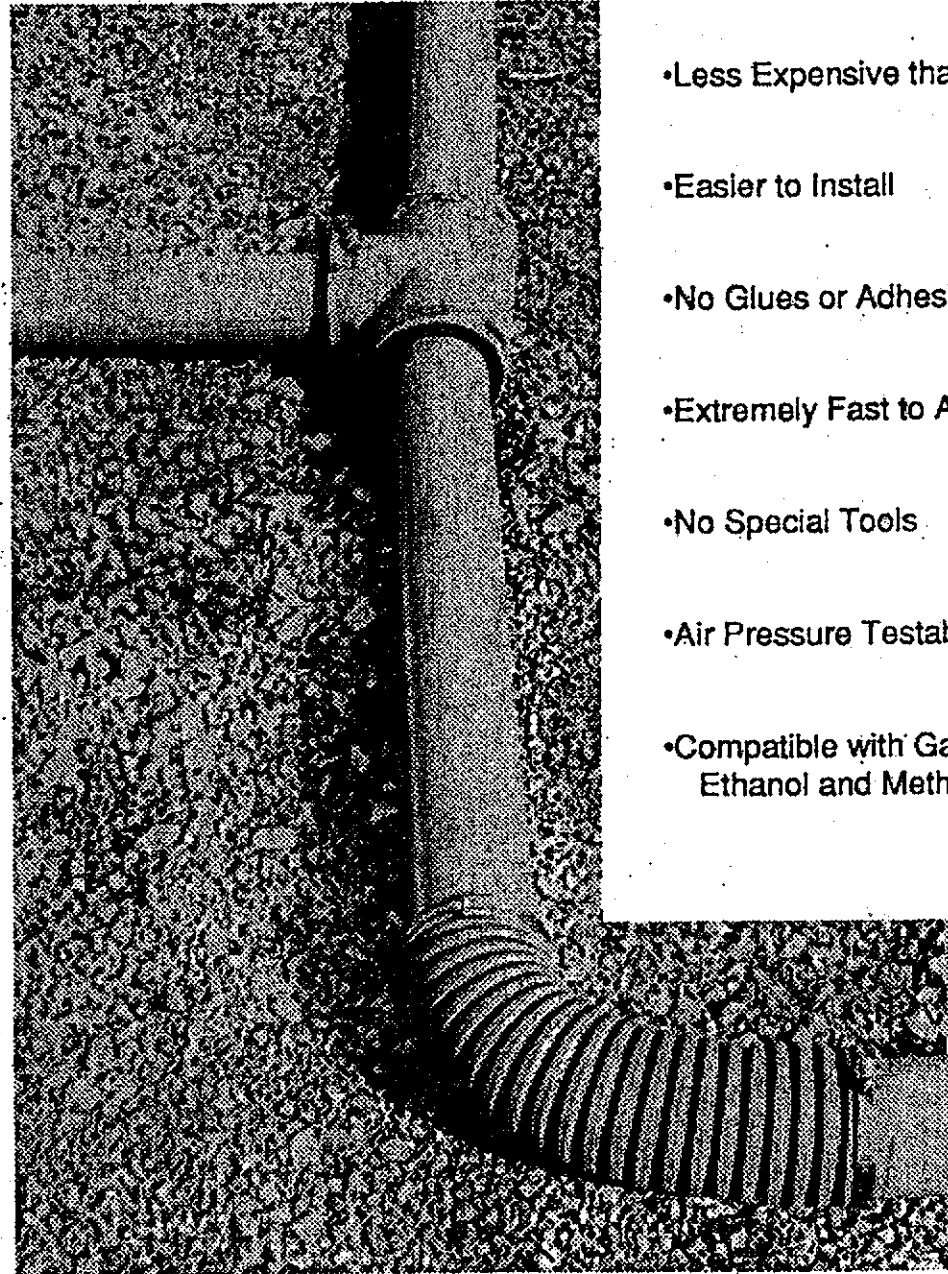




CONDUIT	NUMBER OF WIRES	PURPOSE
A	3	X76 power (hot, neutral, ground, 120 VAC)
B	2	240 VAC power to relay starter
C	4	240 VAC submersible pump power (2 wires) JT-H Line leak sensor: 3 WIRES (cap spare red wire)
D	4	2 WIRES FROM LS-3 NC (SUMP AREA) 2 WIRES FROM LS-3 NO (RESERVOIR)
E	1	120 VAC hot to relay starter coil (1 wire)
G	1	120 VAC return hot from dispenser switch or comput

CAUTION: All pump control power must be same phase as power for X76. Non-conforming phases will cause severe equipment damage.

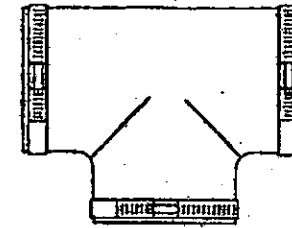
Mechanical Seal System



- Less Expensive than Fiberglass
- Easier to Install
- No Glues or Adhesives
- Extremely Fast to Assemble
- No Special Tools
- Air Pressure Testable
- Compatible with Gasoline, Ethanol and Methanol

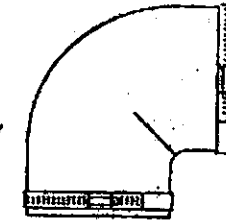
Patent Pending

COMPONENTS



MECHANICAL TEE FITTING

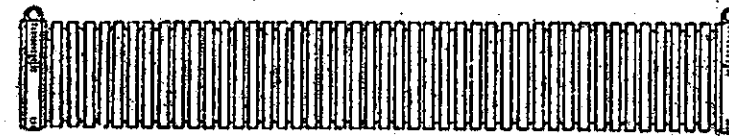
This fitting is used for containment of both 2" and 3" primary Tee's. The 2" Tee should be inserted into the Mechanical Tee prior to primary pipe assembly. The Mechanical Tee must be split and sealed when installed over 3" primary Tees.



MECHANICAL 90° FITTING

This fitting comes pre-split for installation over a 3" primary 90° fitting. The split is to be sealed and bonded on the outside using fusion welding ribbon and sealed on the inside silicone sealant.

All Mechanical Fittings are made of High Density Polyethylene and are fitted with all stainless steel clamps and Compression. The inside diameter of the Compression Seals are sized to accept the Pipe Jacket Straight-Run Pipe. This pipe is inserted stainless steel clamp is tighten using a nut driver or screw driver.



FLEX PIPE

This flexible pipe is designed to be installed over a swing-joint or flex connector under a dispenser. On one end it is fitted with a Compression Seal to clamp to Straight-Run Pipe and the other end with a Compression Seal to clamp to 1 1/2" pipe.



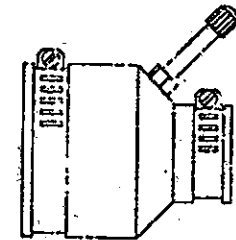
STRAIGHT-RUN PIPE

This pipe comes in 15' lengths, package. This pipe is sized to contain both 2" or into all Mechanical Fittings, Flex Pipes



33" FLEX FITTING

This flexible pipe is designed to be used for pipe cross-overs and special piping configurations. It comes fitted on both end with a Compression Seal to clamp to the Straight-Run Pipe.



4X2 REDUCER TI
Installed at the to collection sump, t system. It is fitt resting of the syst Straight-Run Pipe

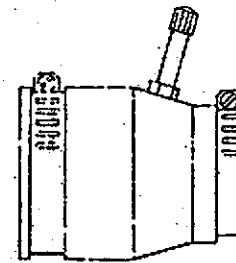


16" FLEX FITTING

Used to contain 2" primary 90's, 45's, & straight connectors.



5.0 O.D. X 4.0 I.D. COMPRESSION SEAL



4X3 REDUCER TI
To be installed th This Test Clamp i 3" primary pipe.

The following Pipe Jacket components are used for containment of either 2" or 3" steel or fiberglass primary piping. These components are sealed together by a combination of "Compression Seals" and "Fusion Ribbon Welding" requiring the use of the Applicator Tool Kit

MECHANICAL 45° FITTING

This fitting comes the same as the Mechanical 90° Fitting and should be installed in the same manner.

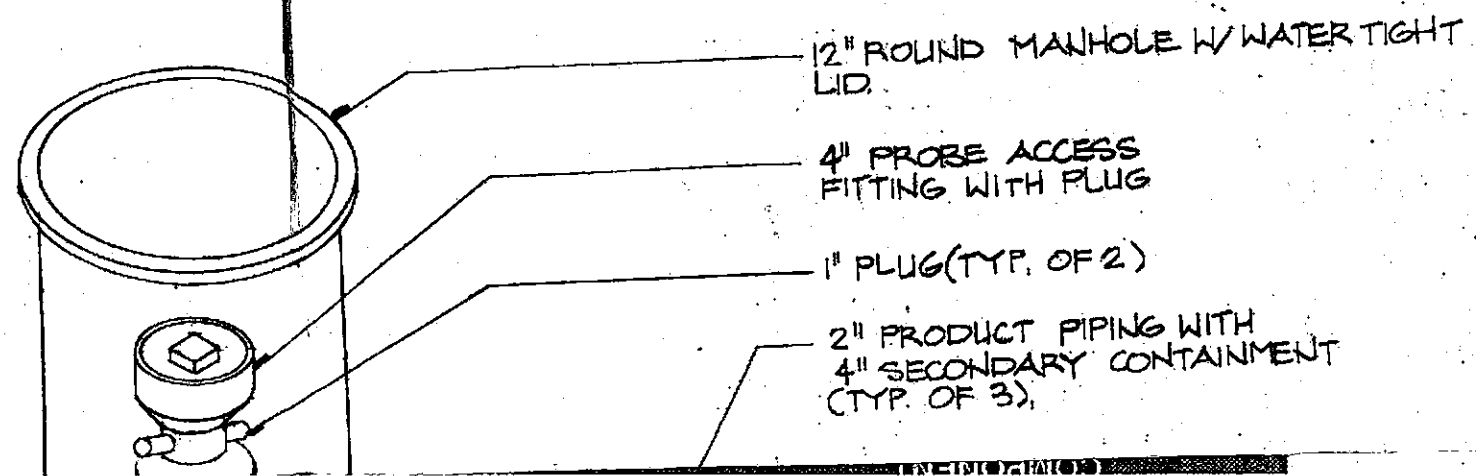
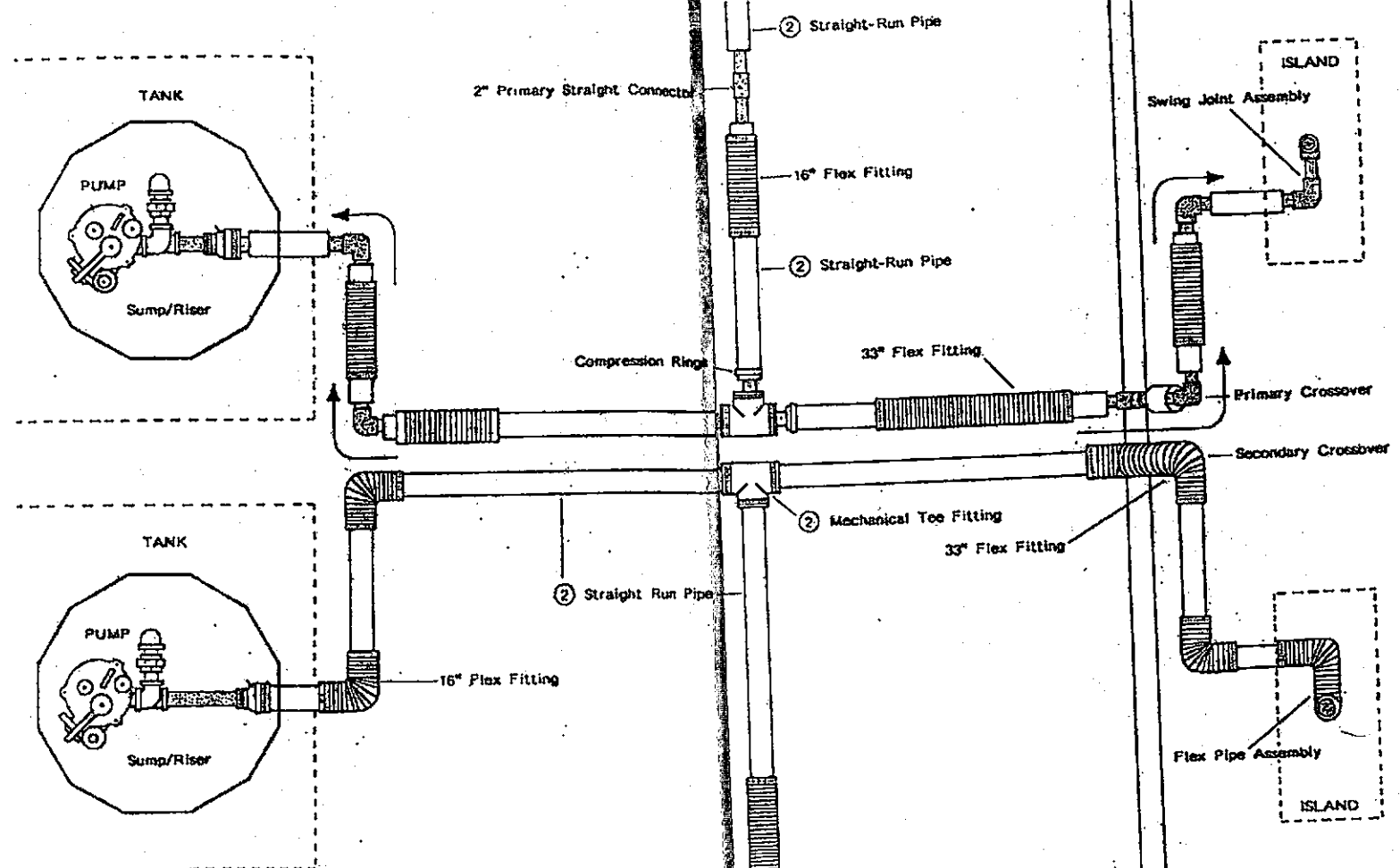
side of Buna-N (Nitrile) rubber. Mechanical Fitting and then the

s to a bundle. (135' total) ry pipe and to be inserted ngs and Test Clamps.

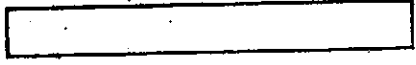
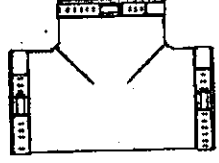



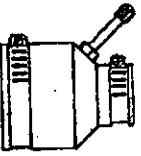
no piping system, inside a the Pipe Jacket container. air valve stem for air pressure Test Clamp is sized to fit the many pipe.

the Test Clamp above. This fit the Straight-Run Pipe and

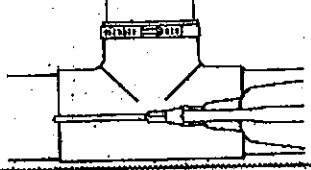

ASSEMBLY



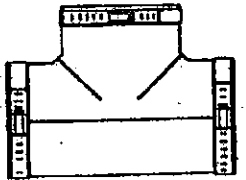
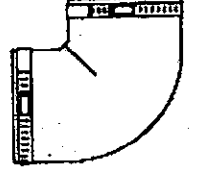
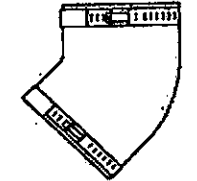
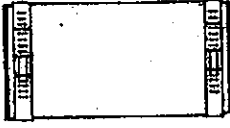
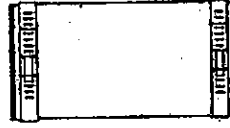
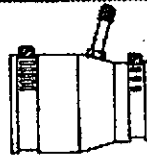

- 12" ROUND MANHOLE W/ WATER TIGHT LID.
- 4" PROBE ACCESS FITTING WITH PLUG
- 1" PLUG (TYP. OF 2)
- 2" PRODUCT PIPING WITH 4" SECONDARY CONTAINMENT (TYP. OF 3)

COMPONENT	DESCRIPTION
	② Straight-Run Pipe (SP-215) (SP-220) Use for 2" primary pipe containment between ② Mechanical and Flex Fittings. Comes in 15' or 20' lengths; packaged 7 lengths per bundle. (Totals 105' and 140')
	② Mechanical Tee Fitting (MF-200) This non-split containment fitting is designed to have a 2" primary tee fitting inserted, prior to primary pipe sealing. It's Compression Seals are sized to accept the the ② Straight-Run Pipe. It is fitted with three Compression Seals and three stainless steel clamps and is packaged in a case of 16 each.
	16" Flex Fitting (FF-016) Used to contain 2" primary 90°, 45° fittings, and as straight connectors. It is sized to slide back and forth over the ② Straight-Run Pipe. It is fitted with two Compression Seals and two stainless steel clamps and is packaged in a case of 18 each.
	33" Flex Fitting (FF-033) Used to contain 2" primary cross-overs and special primary pipe configurations. It is fitted with two Compression Seals and two stainless steel clamps and is packaged in a case of 9 each.
	② Flex Pipe Assembly (FP-042) Used to contain swing joints or flex connectors under the dispenser and to terminate the Pipe Jacket system. Comes in a 42" length and is packaged in a case of 9 each.
	② Reducer Test Clamp (TC-402) Used inside a Sump/Riser to seal-off and air test the ② Pipe Jacket system. Comes fitted with and air valve stem and is packaged in a case of 8 each.

Mechanical Sealing Accessories

	Fusion Welding Ribbon (WR-013) Used to seal the top split in both ② and ③ Fusion Tee Fittings. The 13" long ribbon is applied through the speed-tip of the hot air gun and is packaged in a tube of 50 ribbons.
	Observation Cap (OC-301) Used to provide access and seal the riser pipe on Zoned Observation Wells. Packaged in a case of 12 each.

② = 2" Primary Pipe Containment ③ = 3" Primary Pipe Containment

	③ Mechanical Tee Fitting (MF-200) This split containment fitting is designed to have a 3" primary tee fitting inserted, prior to primary pipe sealing. Its Compression Seals are sized to accept the ③ Straight-Run Pipe. It is fitted with three Compression Seals and three stainless steel clamps and is packaged in a case of 16 each.
	③ Mechanical 90° Fitting (MF-200) This non-split containment fittings primary 90° fitting inserted, prior to primary pipe sealing. Its Compression Seals are sized to accept the ③ Straight-Run Pipe. It is fitted with two Compression Seals and two stainless steel clamps and is packaged in a case of 18 each.
	③ Mechanical 45° Fitting (MF-200) This non-split containment fittings primary 45° fitting inserted, prior to primary pipe sealing. Its Compression Seals are sized to accept the ③ Straight-Run Pipe. It is fitted with two Compression Seals and two stainless steel clamps and is packaged in a case of 18 each.
	③ Mechanical Straight Coupling (SP-215) (SP-220) This non-split straight coupling is used to connect ③ Straight-Run Pipes together. It is fitted with two Compression Seals, two stainless steel clamps and is packaged in a case of 18 each.
	③ Mechanical Reducer Coupling (SP-215) (SP-220) This non-split reducer coupling transition from ③ Straight-Run Pipe to ② Straight-Run Pipe. It is fitted with two Compression Seals, two stainless steel clamps and is packaged in a case of 18 each.
	③ Reducer Test Clamp (TC-402) Used inside a Sump/Riser to seal-off and air test the ③ Pipe Jacket system. Comes fitted with and air valve stem and is packaged in a case of 8 each.
	③ Straight-Run Pipe (SP-215) (SP-220) Used for primary pipe containment between ③ Mechanical and Flex Fittings. Comes in 15' lengths; packaged 7 lengths per bundle. (Totals 105' and 140')

have a 3" primary
 pe sealing. It's
 ③ Straight-Run
 lon Seals, three
 a case of 6 each.

ned to have a 3"
 pipe sealing. It's
 ③ Straight-Run
 als, two stainless
 6 each.

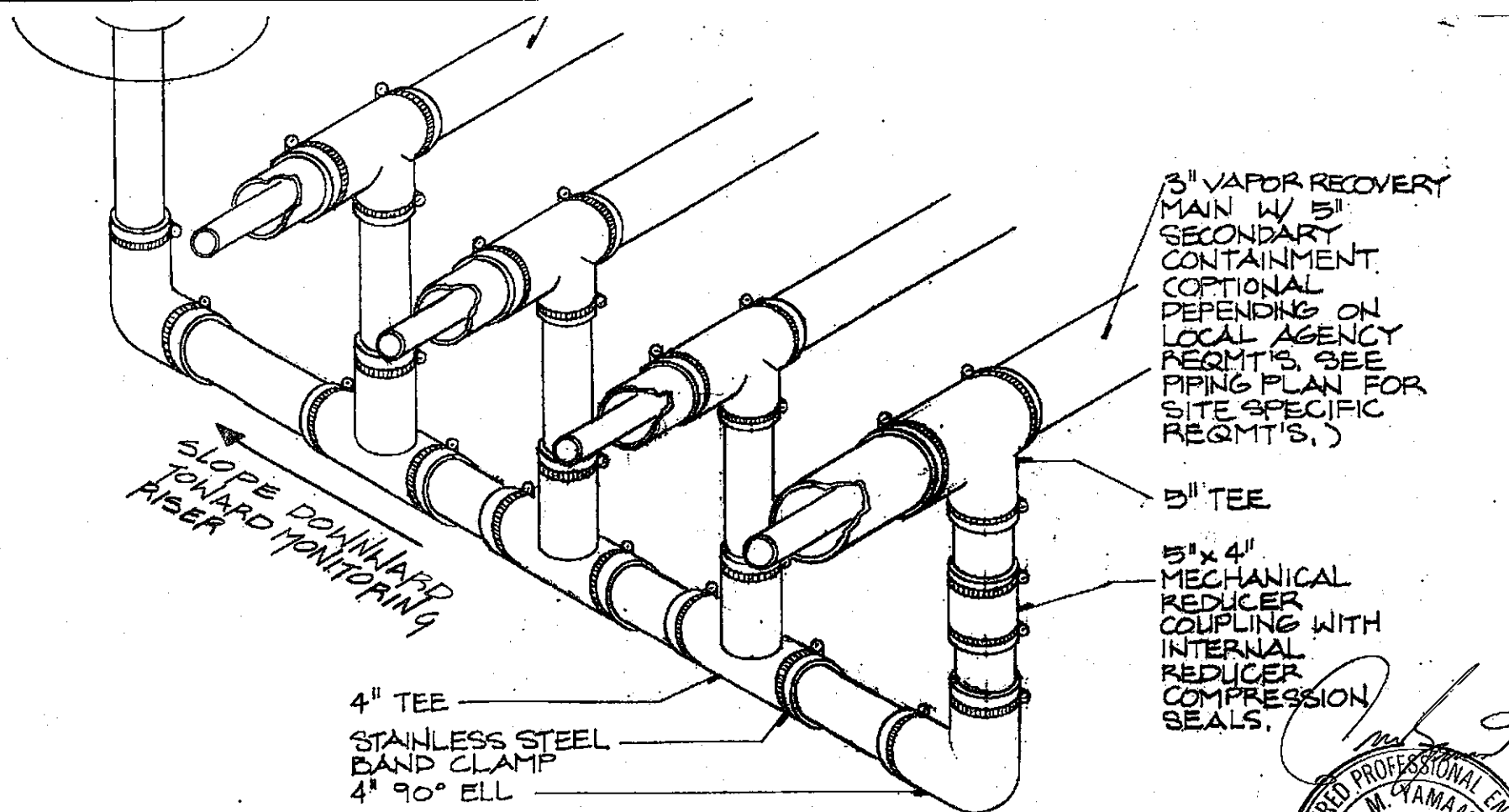
ned to have a 3"
 pipe sealing. It's
 ③ Straight-Run
 als, two stainless
 6 each.

(MF-303)
 d to seal two ③
 fitted with two
 clamps and is

(MF-302)
 gned to seal the
 down to ②
 o different sized
 clamps and is

d air test the ③
 an air valve stem

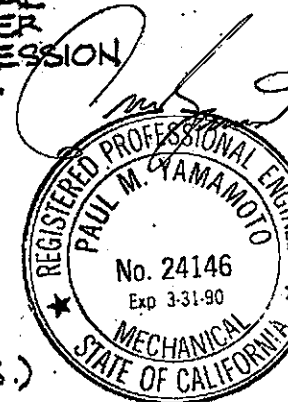
een ③ Mechanical
 lents per bundle.



A

PIPING SECONDARY CONTAINMENT MONITORING PORT

(OPTIONAL- SEE PIPING PLAN FOR SITE SPECIFIC REQMT'S.)



				DATE	APPV
				PRELIM.	
				PERMIT	
				BID	
MARK	DATE	REVISIONS	BY	CONST.	8-25-88 PMY

TYPICAL PIPING SECONDARY CONTAINMENT

TOTAL CONTAINMENT

John Carter
 Manufacturer's Representative



SHELL OIL COMPANY



ROBERT H. LEE & ASSOCIATES, INC.

SCALE **NONE**

DWN. BY

RHL # **6727**

W.I.C.# **6662 6663**

INSTALLATION SUGGESTIONS

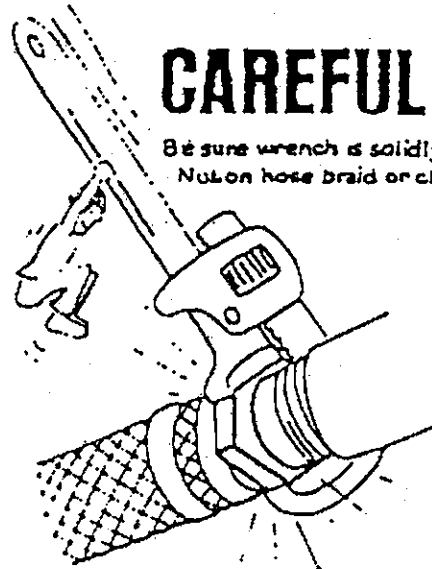
Resistoflex Flexible PTFE Connector ■ Part Number R29236

This connector has a tough, durable and flexible plastic convoluted liner with stainless wire overbraid. It will give excellent service by following these few simple suggestions.



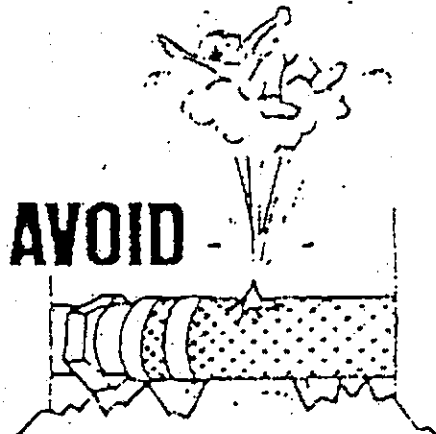
DON'T

Do not overbend - 90° maximum bend should be enough to install properly - Avoid bends that cause the hose to flatten and kink which reduces flow.



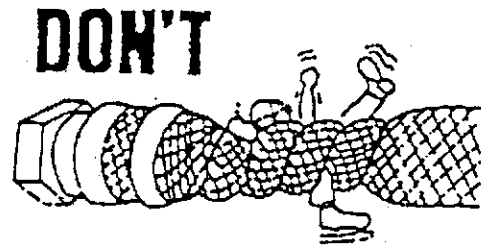
CAREFUL

Be sure wrench is solidly on hex of fitting. Not on hose braid or clamps.



AVOID

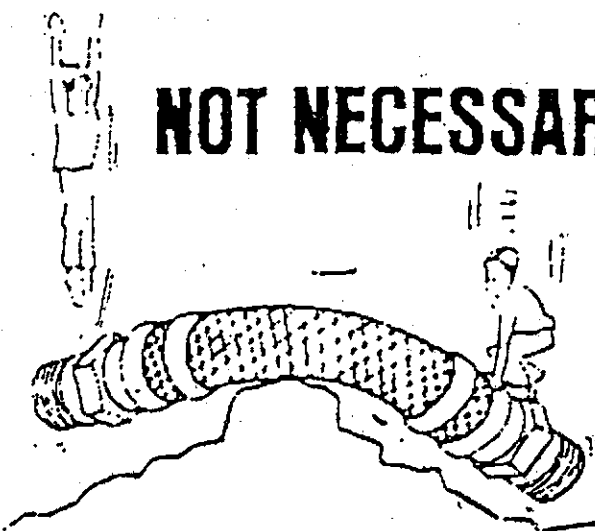
Do not lay hose on rocks or structure which might puncture the hose.



DON'T

Do not twist hose. Keep red lay lines on centerline of hose. If red line is spiraled, hose is twisted.

NOT NECESSARY



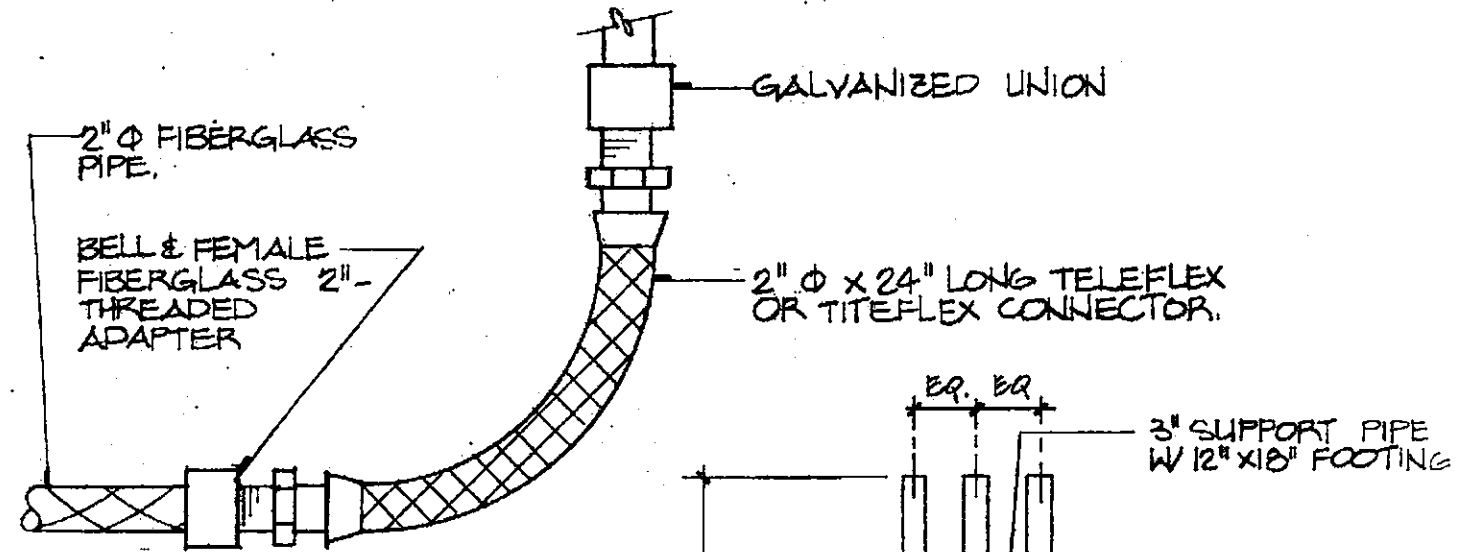
Hose is easily flexed. Does not have to be limbered up.

RESISTOFLEX CORPORATION

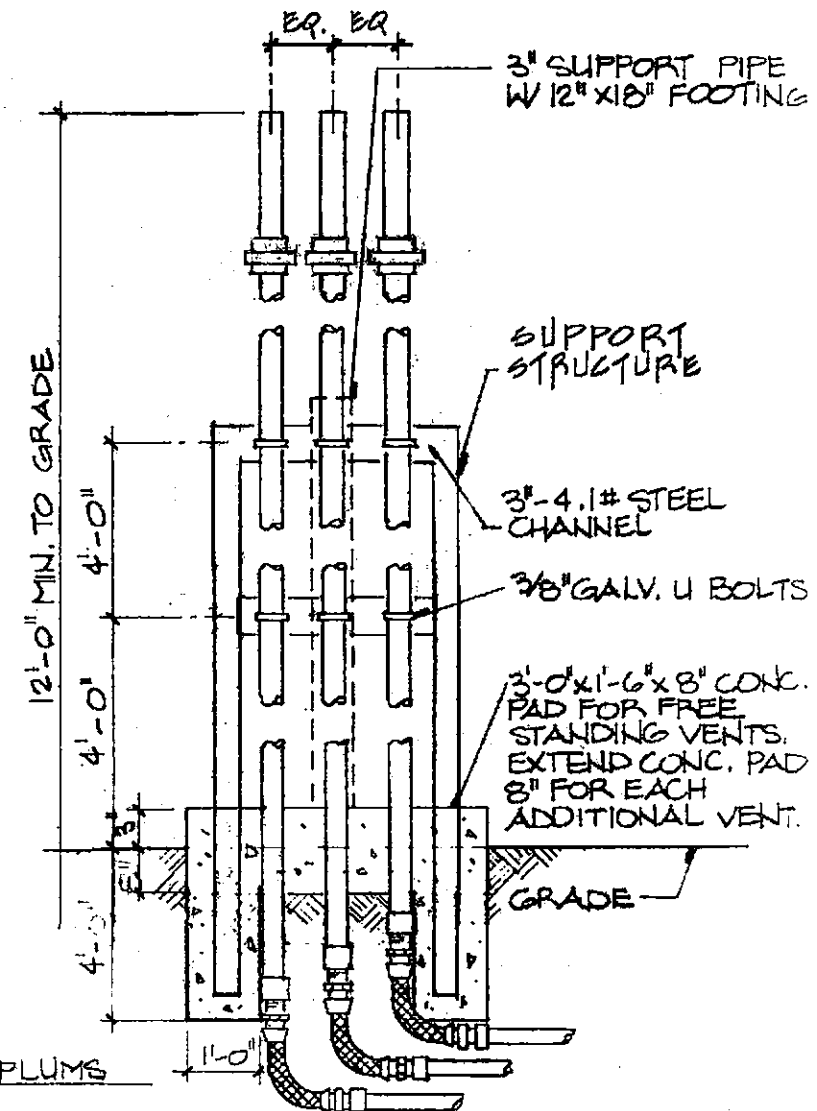
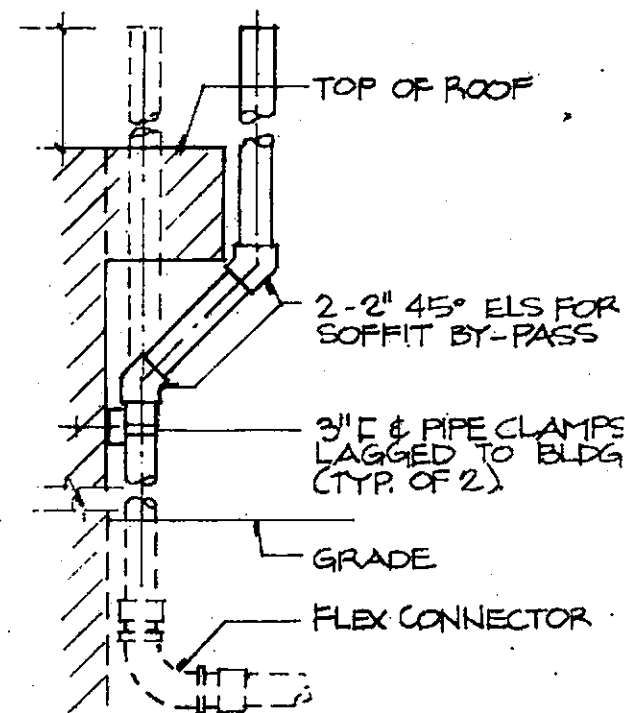
Available Through:

MAX. BEND IS 45°

VENT RISER & FLEX CONNECTOR DETAIL



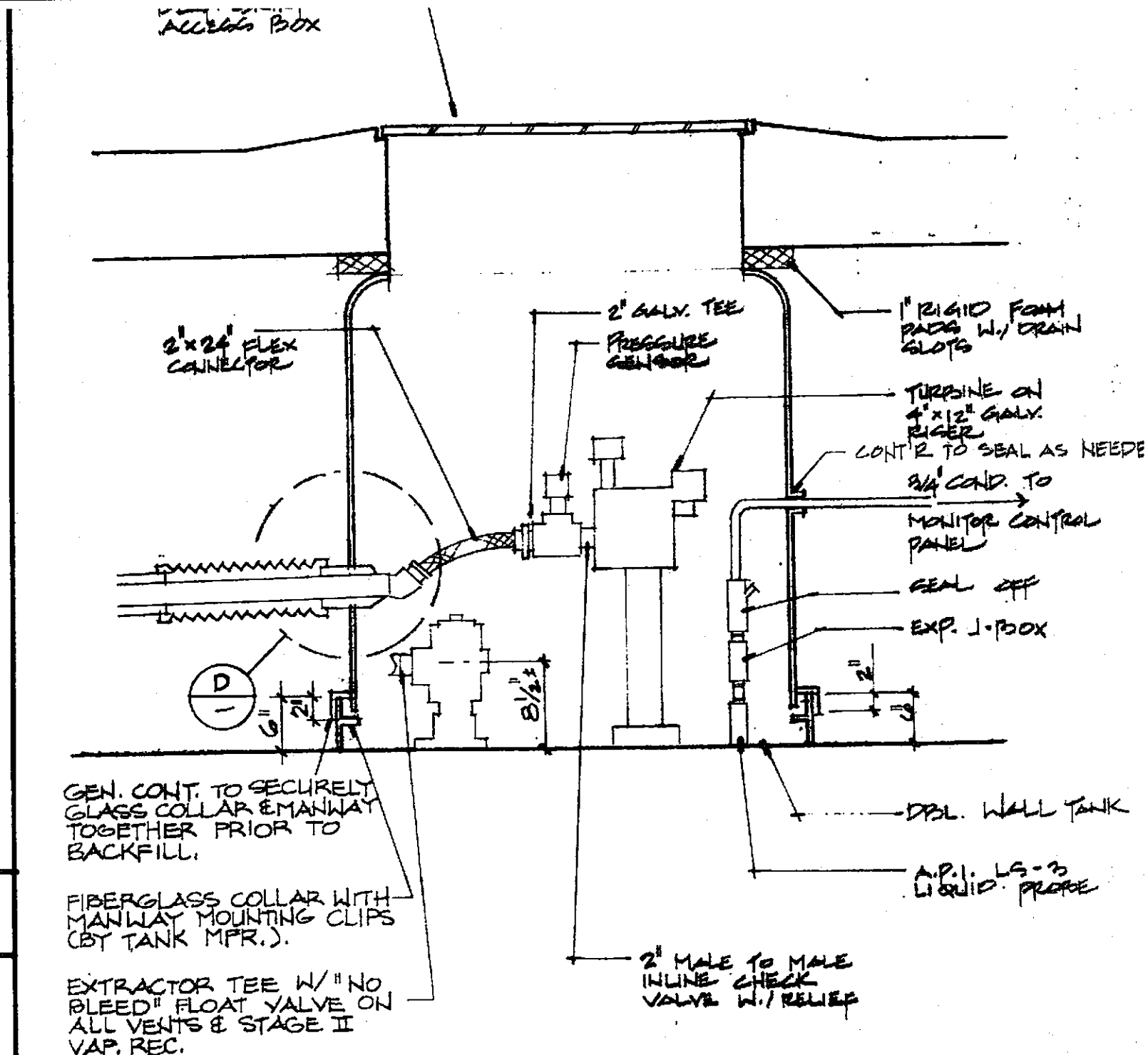
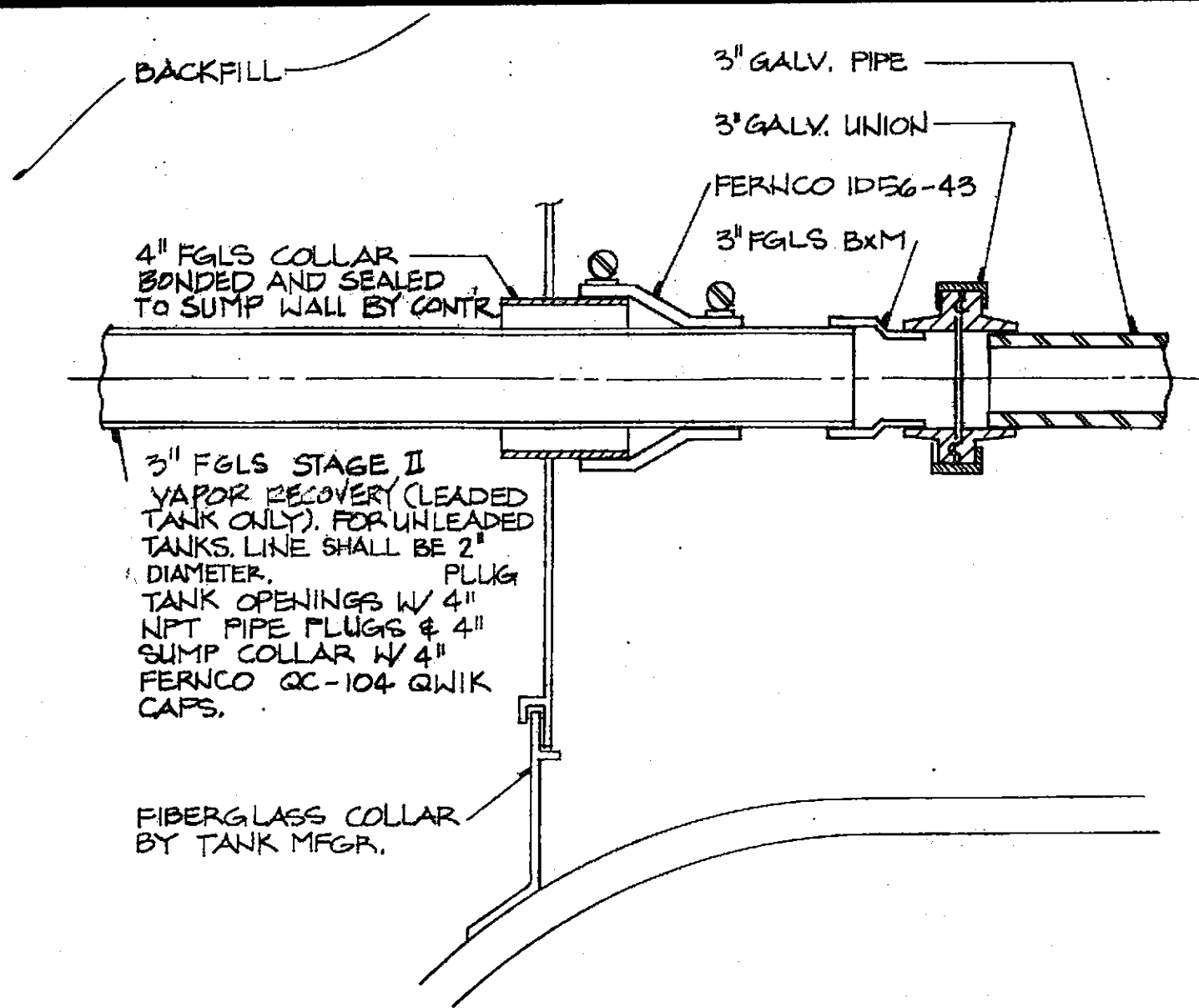
FLEX CONNECTOR



ELEVATION AT BUILDING

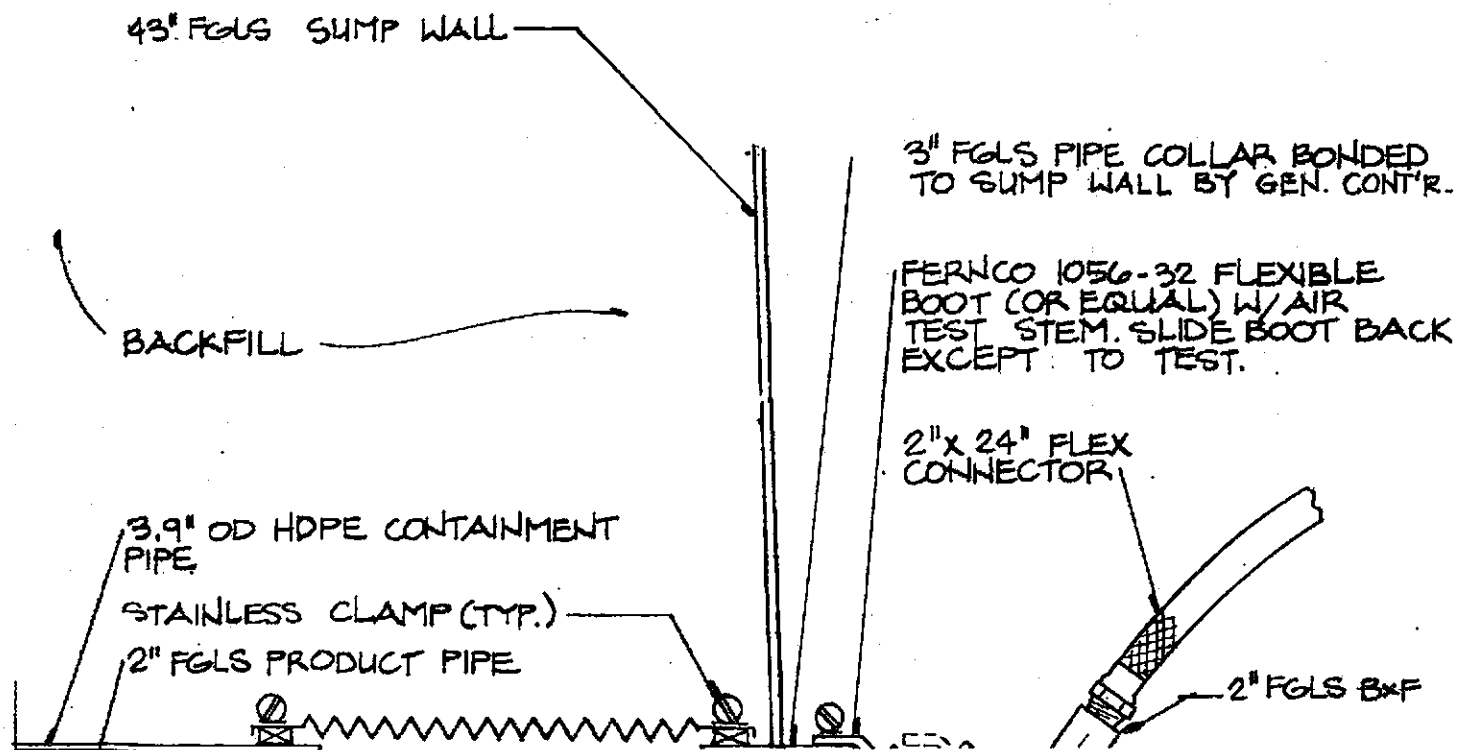
VENT RISERS ARE ALL STANDARD GALVANIZED STEEL PIPE OR MALLEABLE IRON FITTINGS, F/S. VENTS MAY REQUIRE PIPE BUMPERS.

FREE STANDING ELEVATION



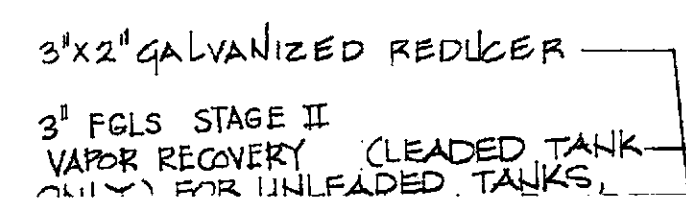
E

VAPOR LINE-PENETRATION AT CONTAINMENT SUMP

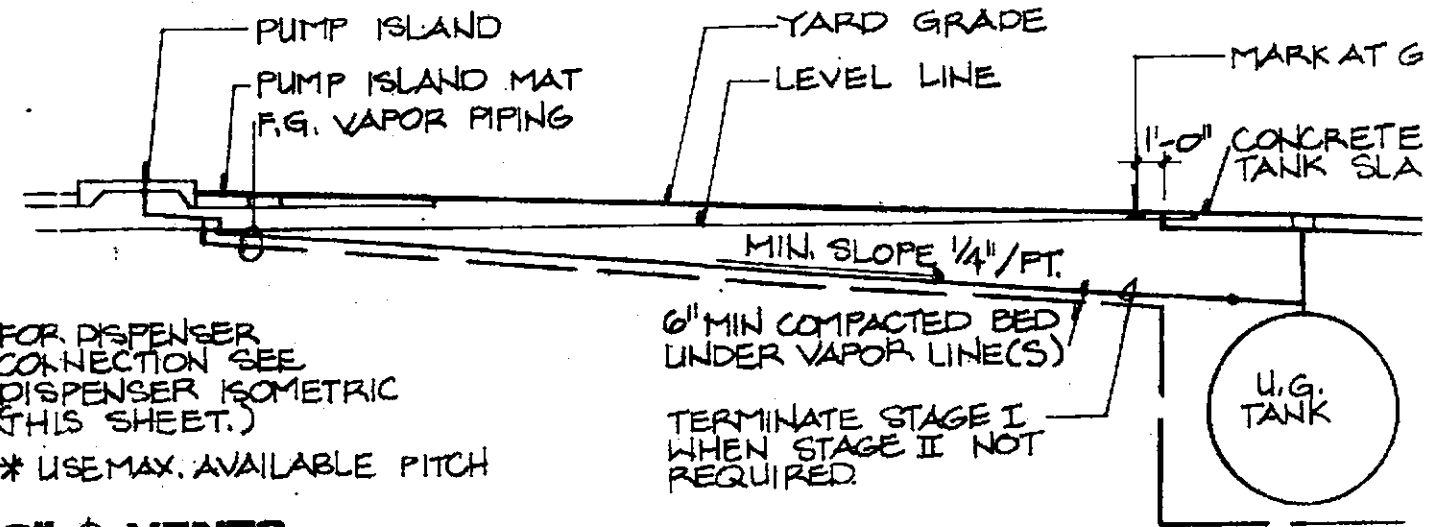


B

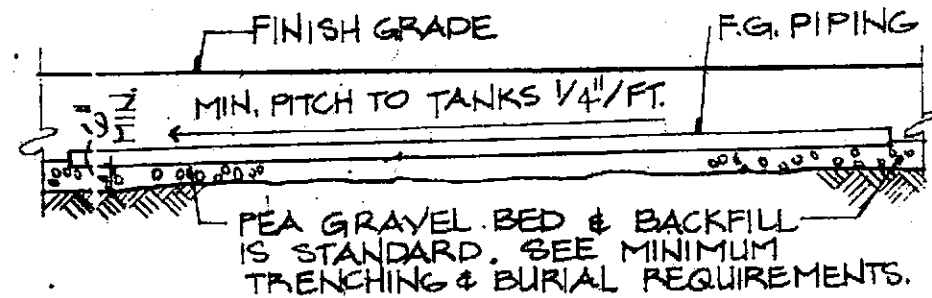
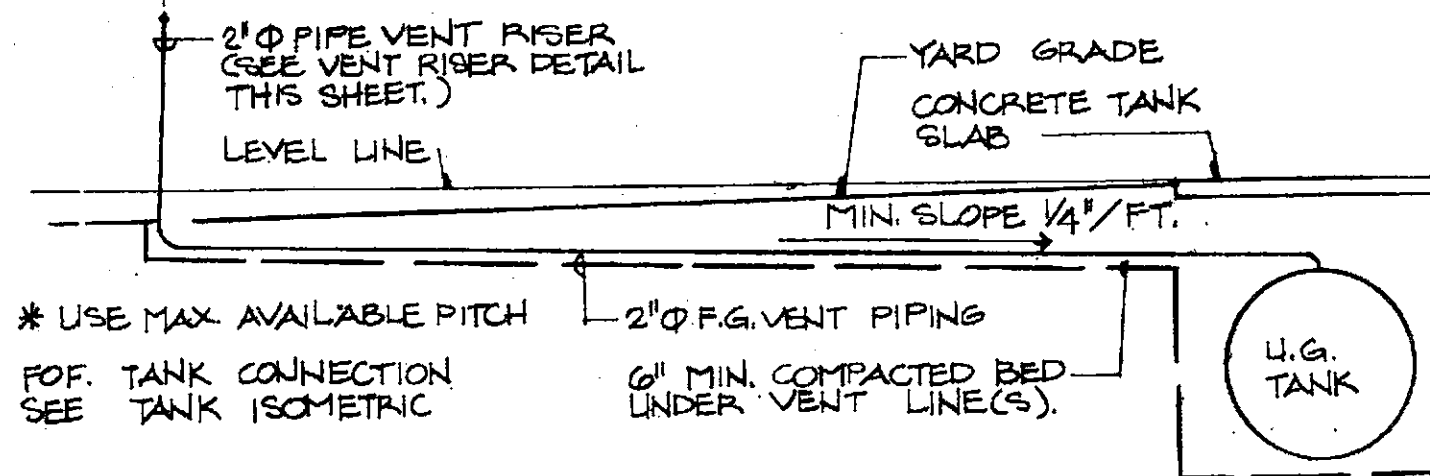
TURBINE CONTAINMENT



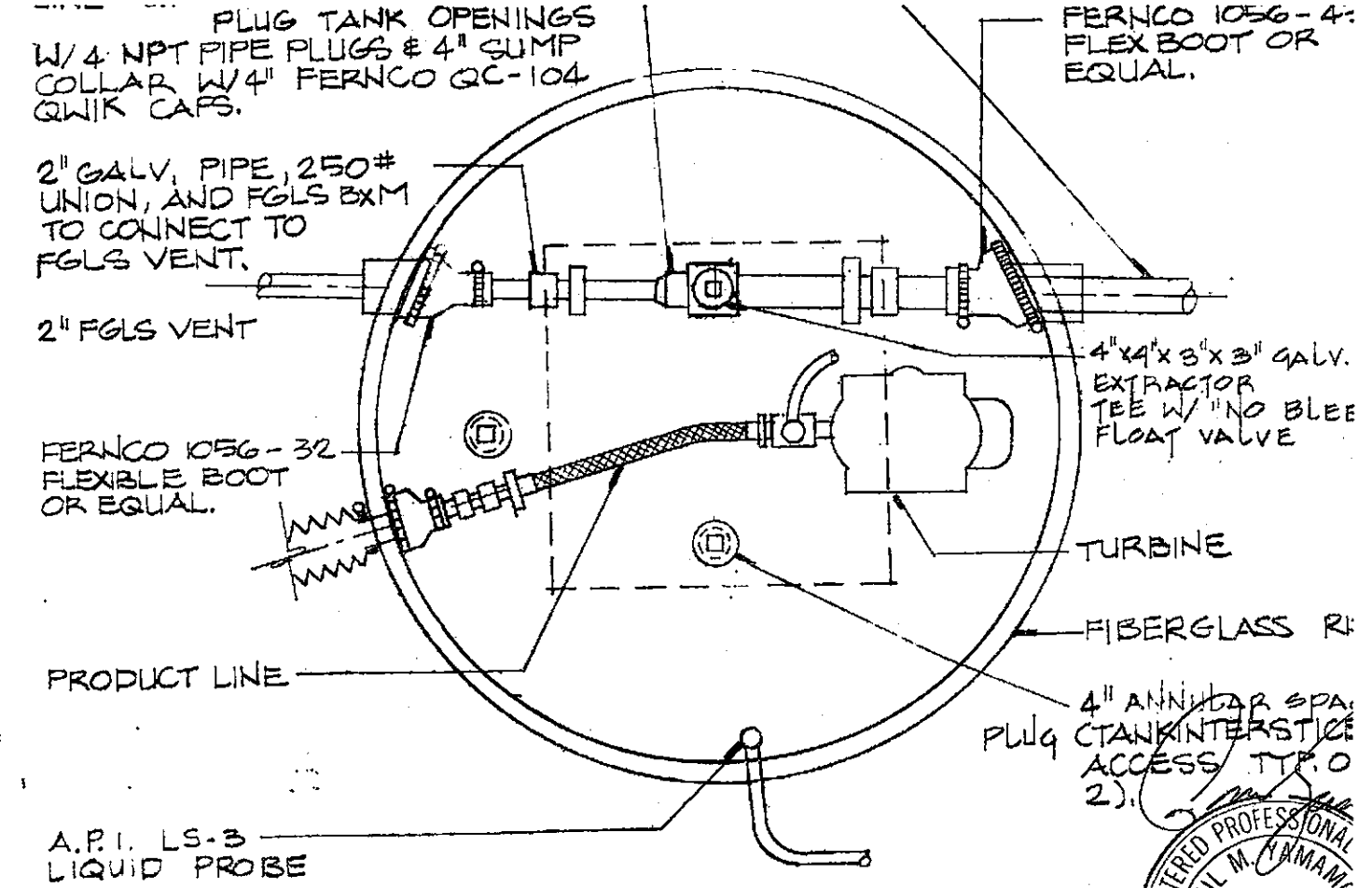
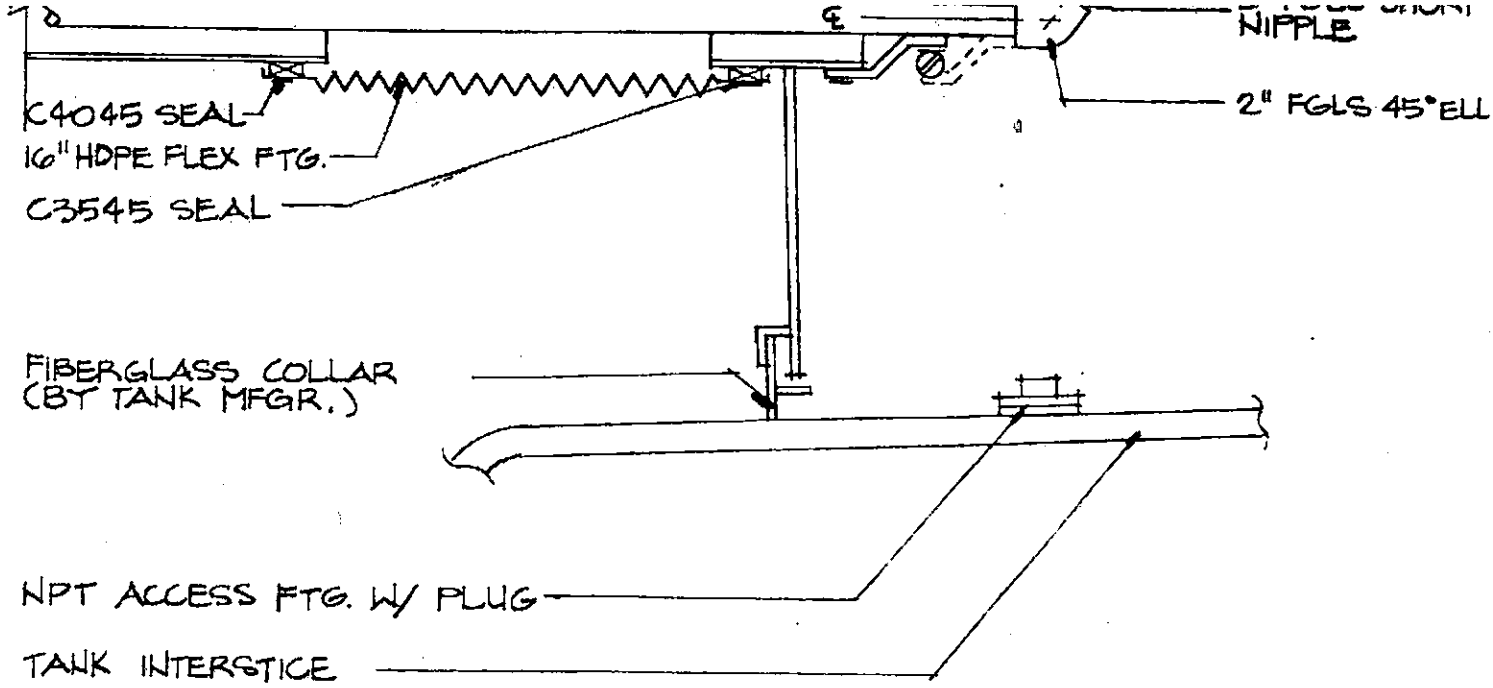
2" OR 3" ϕ VAPOR PIPING



2" ϕ VENTS

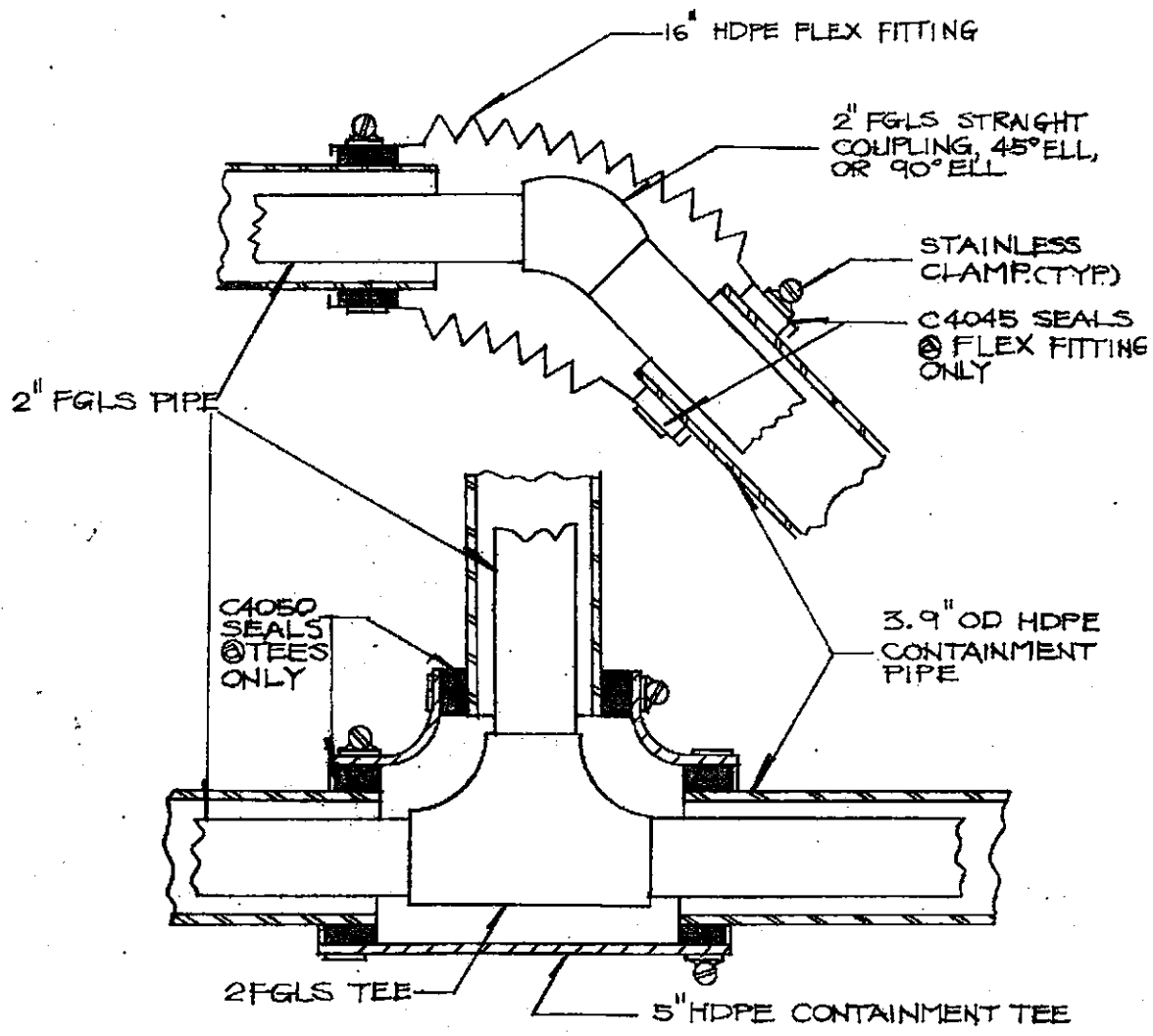


1. CONTRACTOR TO INSTALL & PREGRADE A MIN. 6" PEA GRAVEL BED FOR ALL FIBERGLASS PIPING.
2. FABRICATE PIPE RUNS AT GRADE & INSTALL IN TRENCH.
3. AFTER MAKING NECESSARY CONNECTIONS OF RUNS OR FITTINGS IN TRENCH REGRADE & COMPACT BED UNDER THESE CONNECTIONS.
4. REMOVE ANY GRADE STAKES, ETC. PRIOR TO BACK FILL.
5. NO SAGS OF HUMPS PERMITTED.

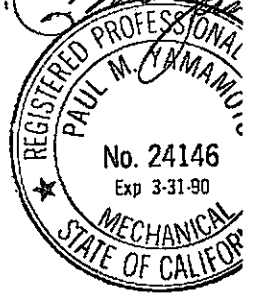


D

PRODUCT LINE-PENETRATION AT CONTAINMENT SUMP



REGULAR (LEADED) TANK



A

TURBINE CONTAINMENT

THIS DETAILS ARE SHELL OIL TYPICALS AND DO NOT REFLECT SITE SPECIFIC PIPING CONFIGURATIONS SEE PETROLEUM PIPING PLAN FOR SITE SPECIFIC PIPING CONFIGURATIONS

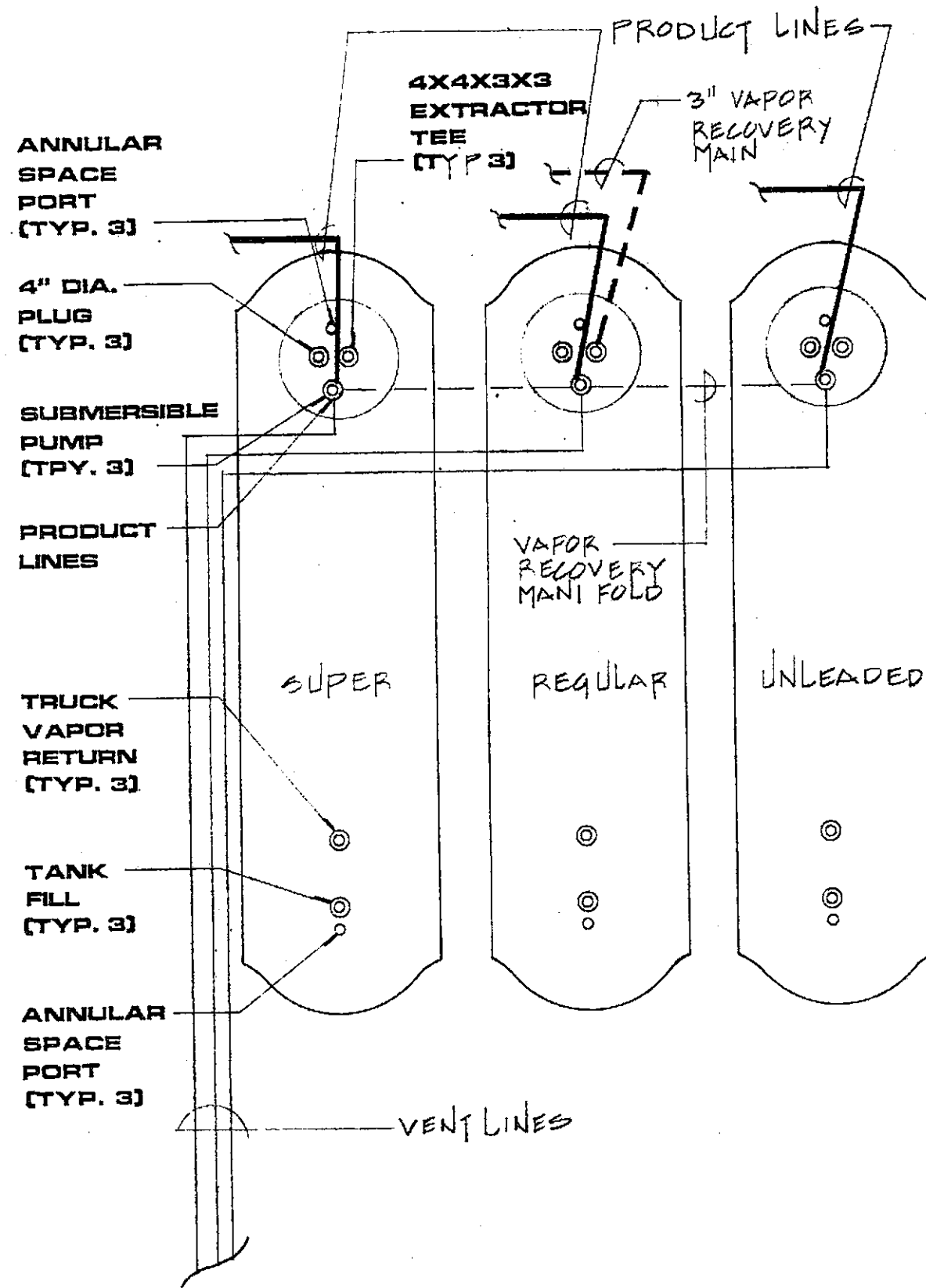
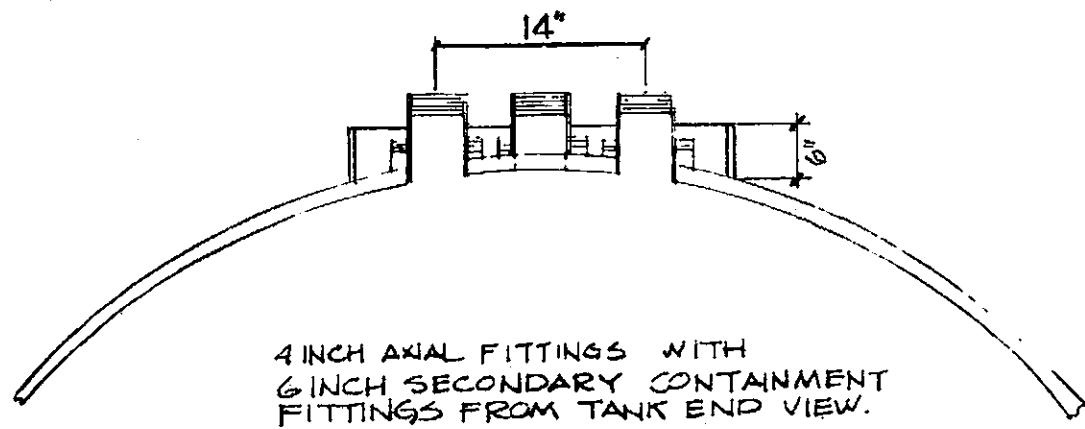
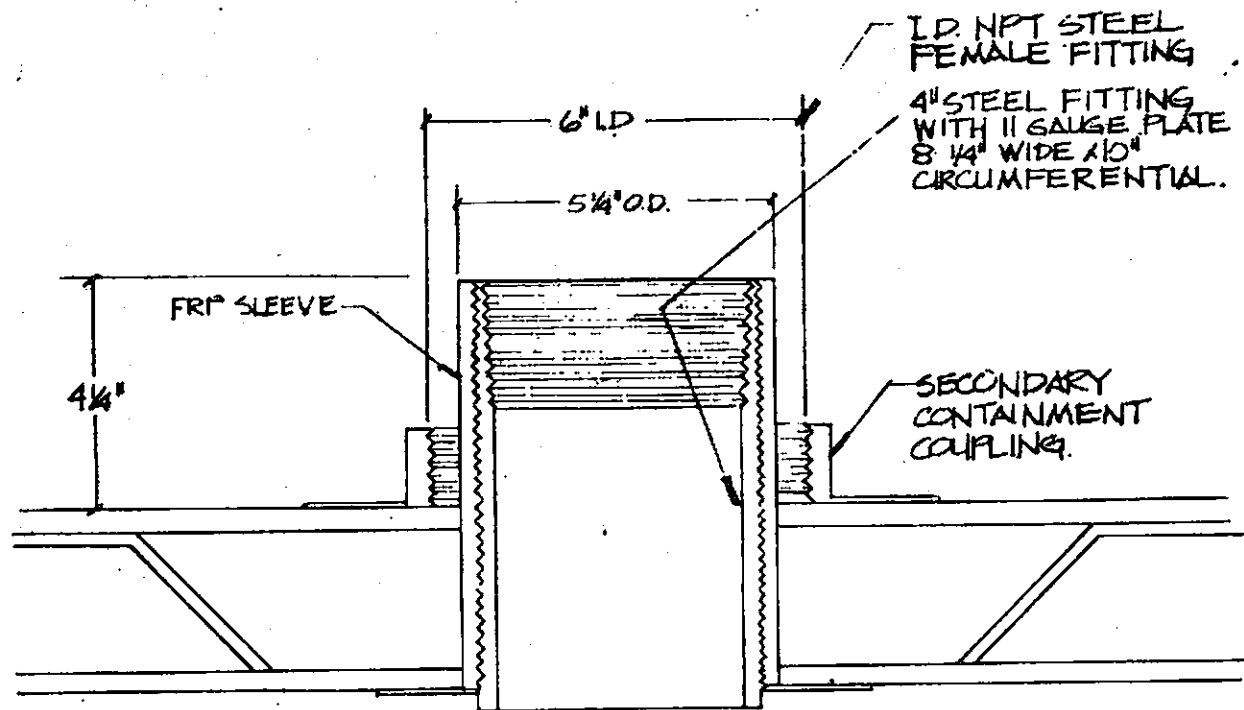
MARK	DATE	REVISIONS	BY	DATE	APPROVED

PIPING SECONDARY CONTAINMENT



SHELL OIL COMPANY

SCALE _____
 DWN. BY _____
 RHL # 6727
 W.I.C.# 6662 66



①
4" Ø FI
REIN
3/8" Ø RODS @ 8" O.C. 1-1/2" FROM BOTTOM OF CONCRETE

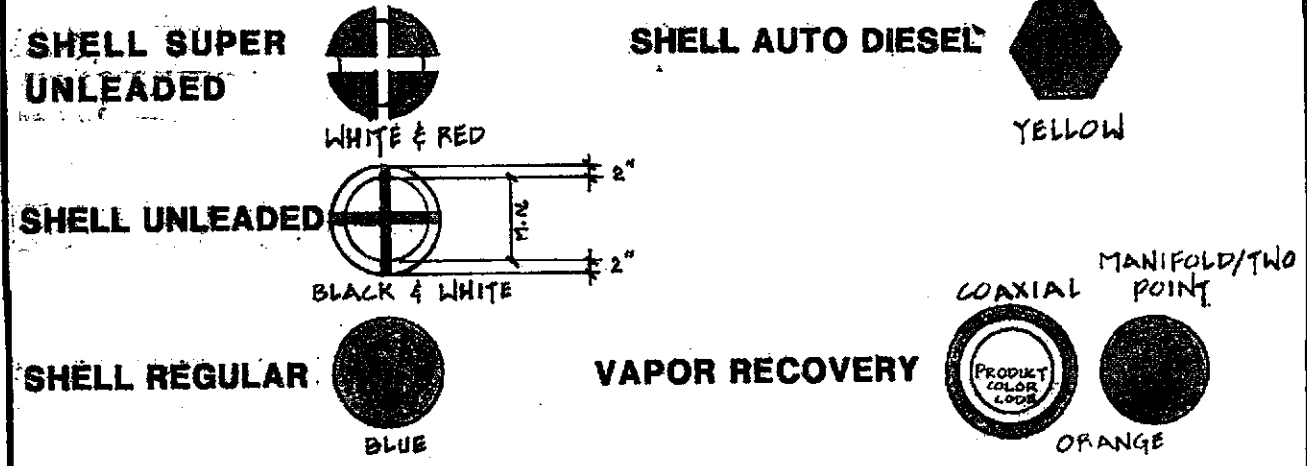
FILTER FABRIC

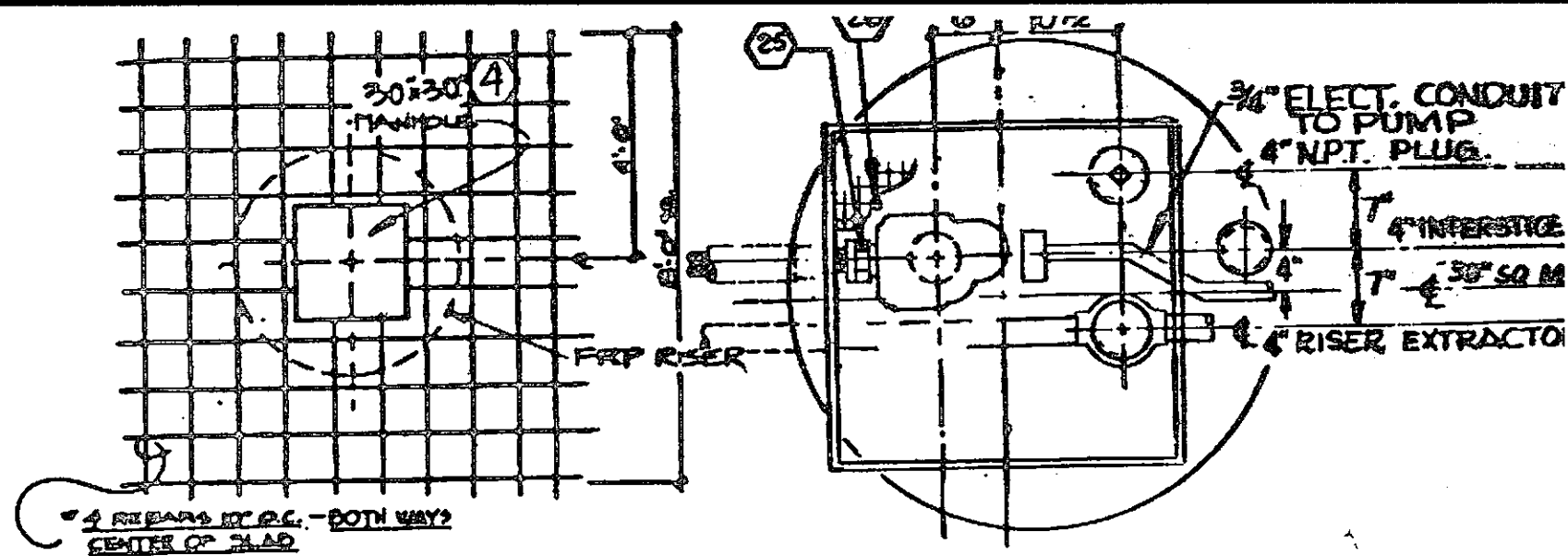
PEA GRAVEL BASE AND BACKFILL

9 TANK FITTINGS

SHELL GASOLINE UNDERGROUND STORAGE IDENTIFICATION

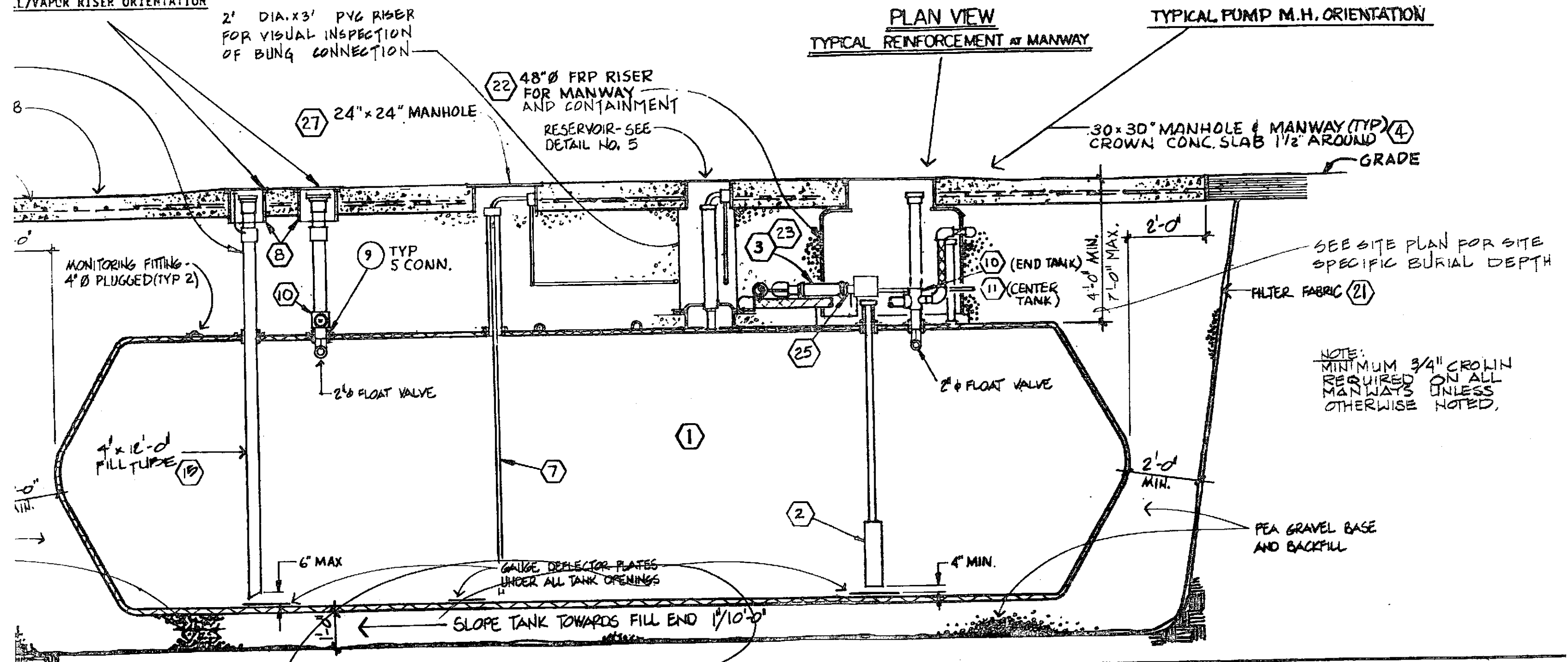
ALL MANHOLES TO BE PAINTED AS INDICATED BELOW. ALL PAINT RINGS TO OVERLAP 2" ONTO SURROUNDING CONCRETE. (SEE BELOW)



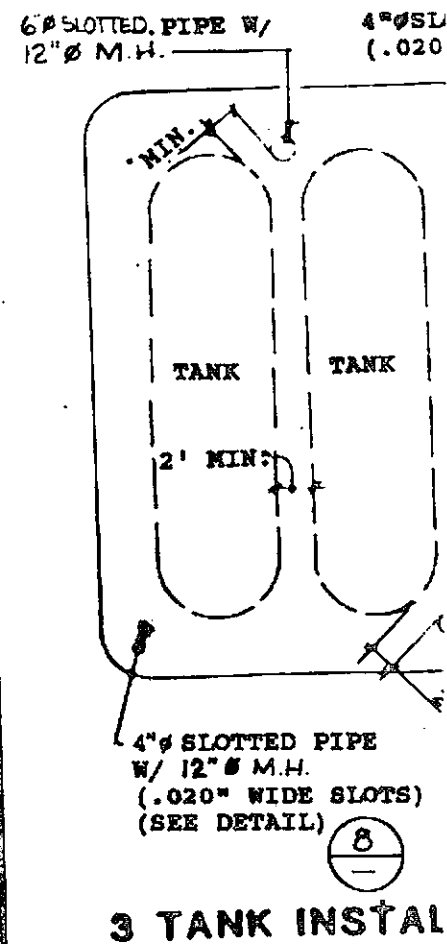
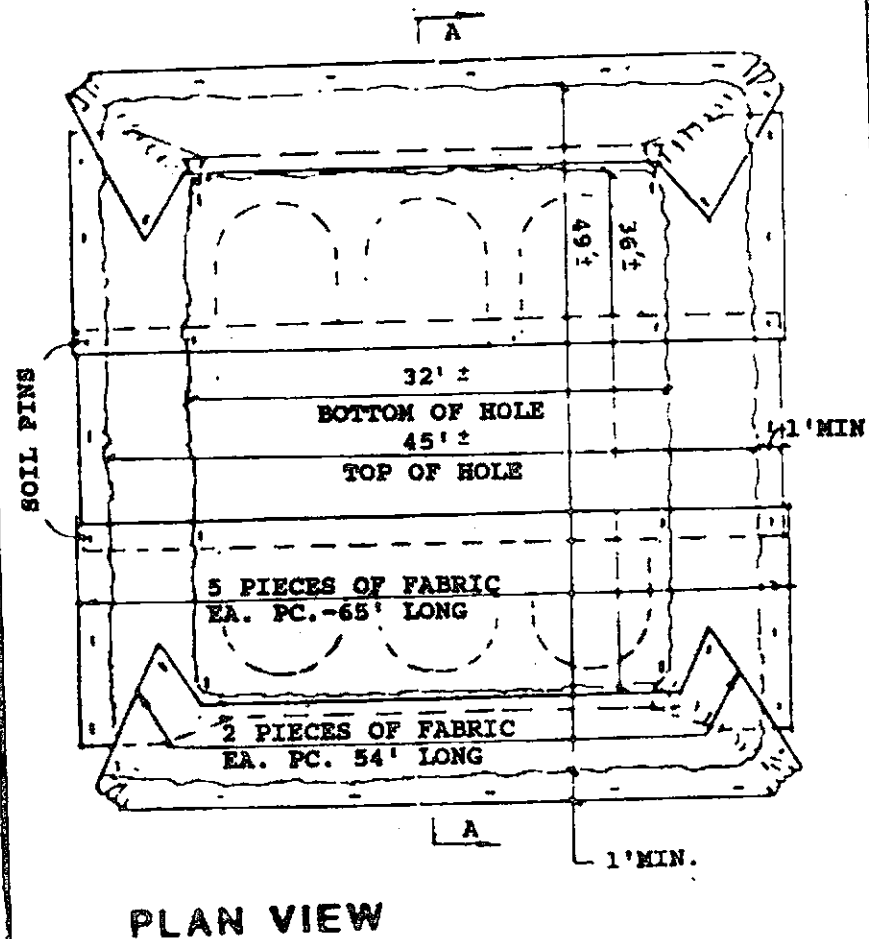
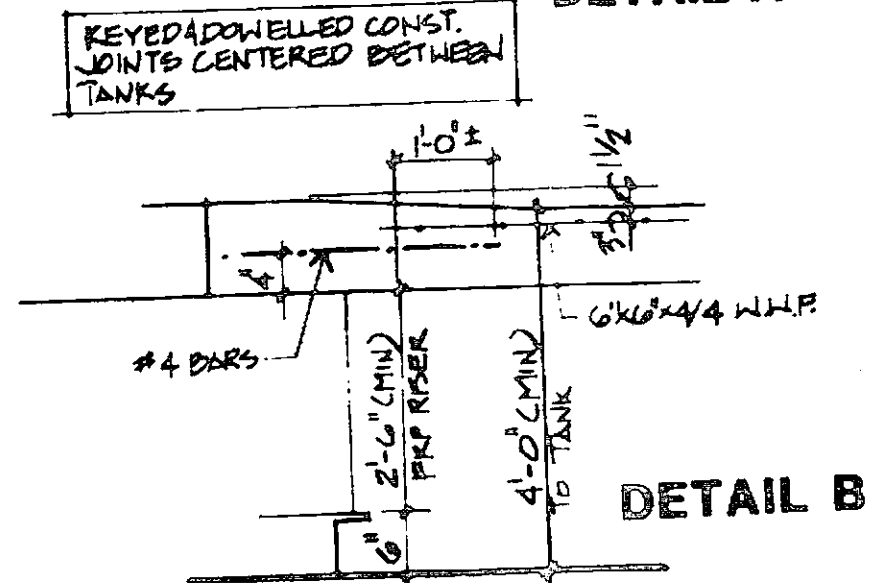
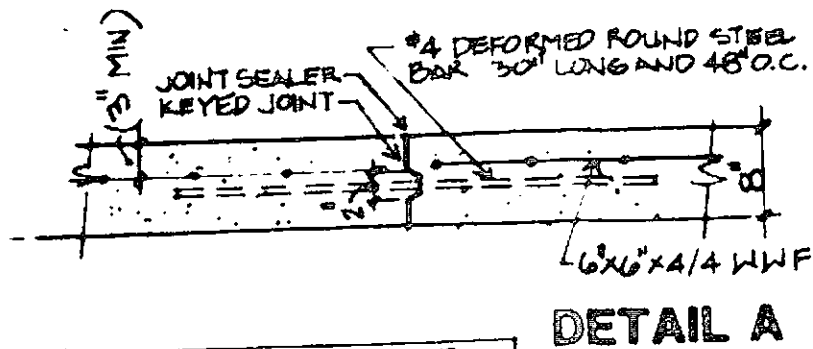
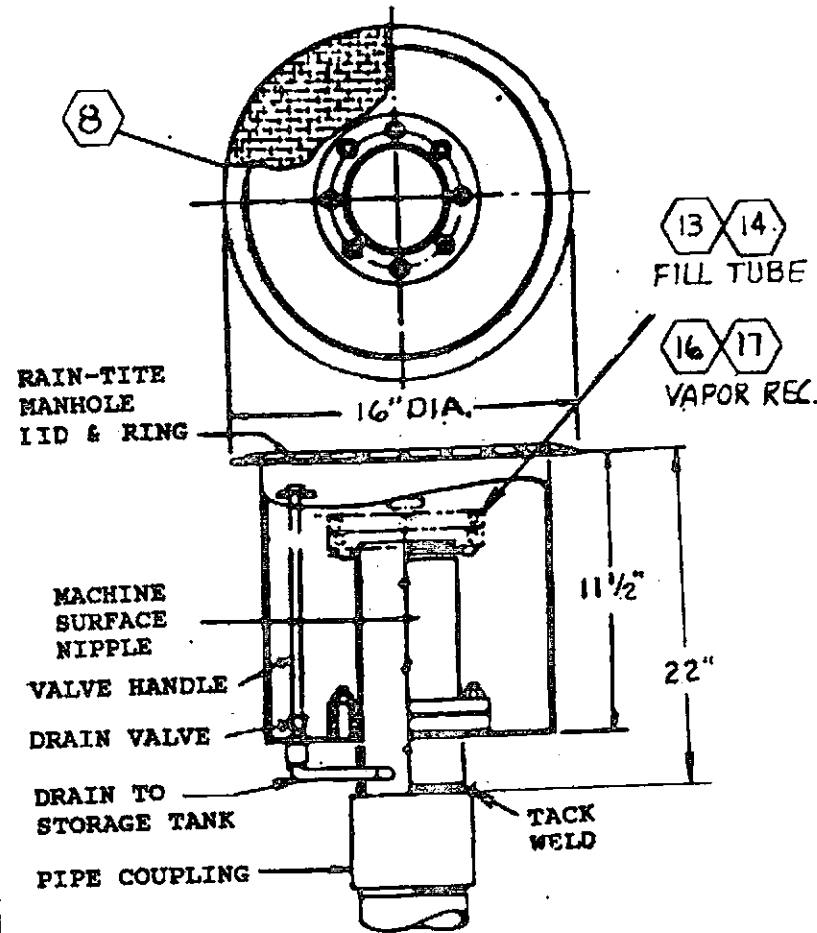


L/VAPOR RISER ORIENTATION

2' DIA. x 3' PVC RISER FOR VISUAL INSPECTION OF BUNG CONNECTION



WALL FIBERGLASS GASOLINE STORAGE TANK

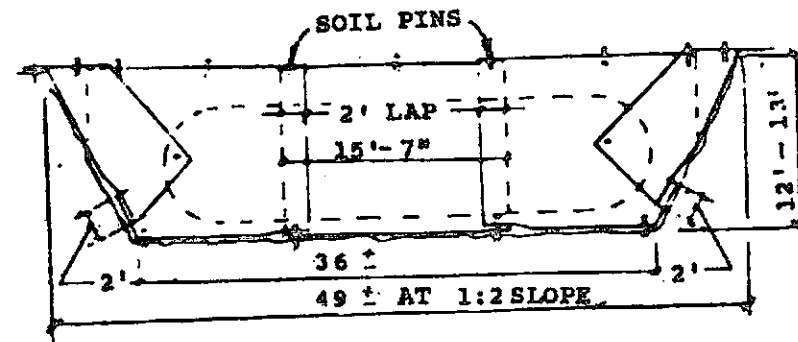
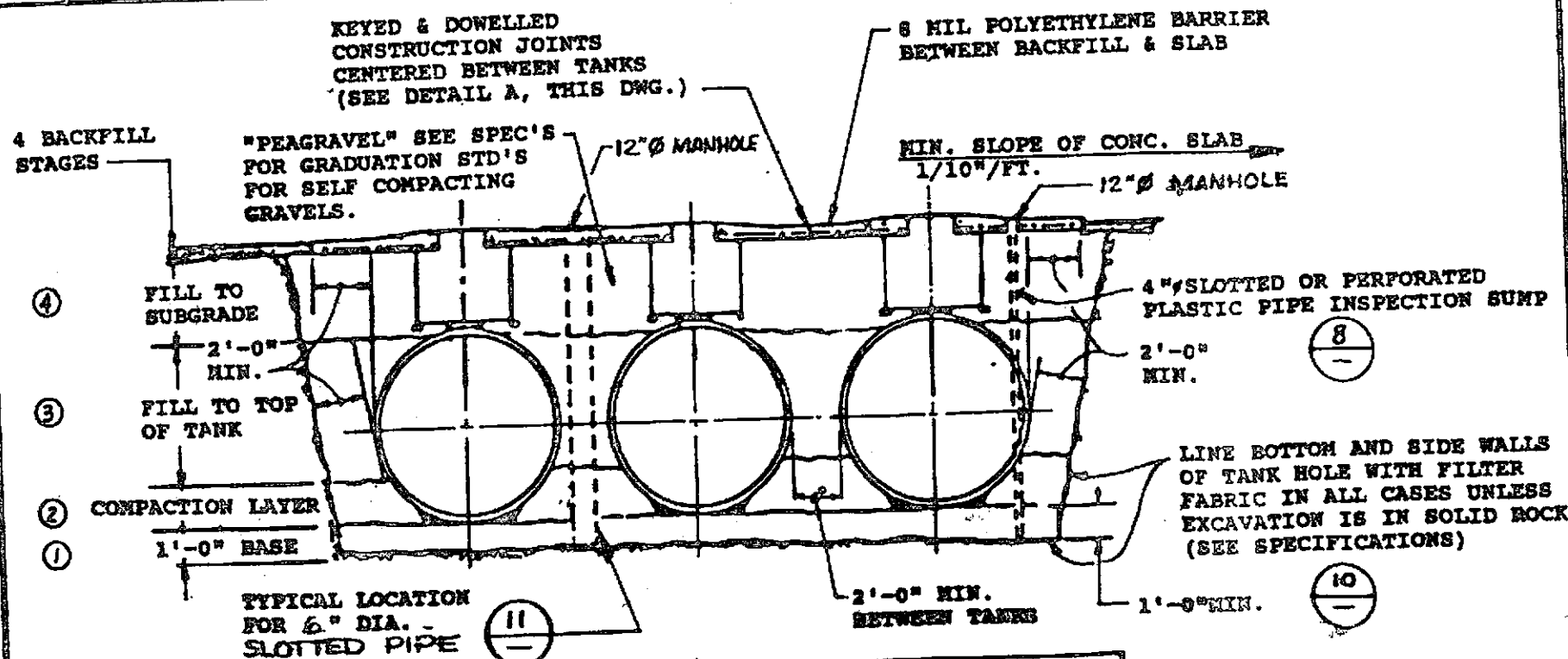


① MANHOLE

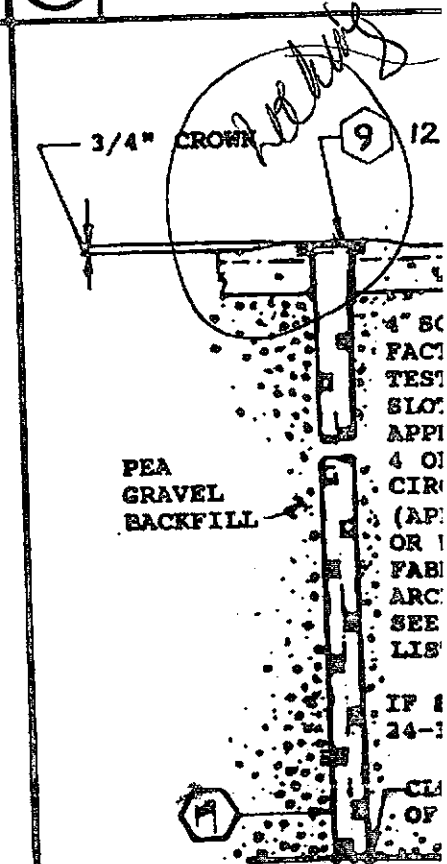
② CONST. JOINT

⑩ LINING

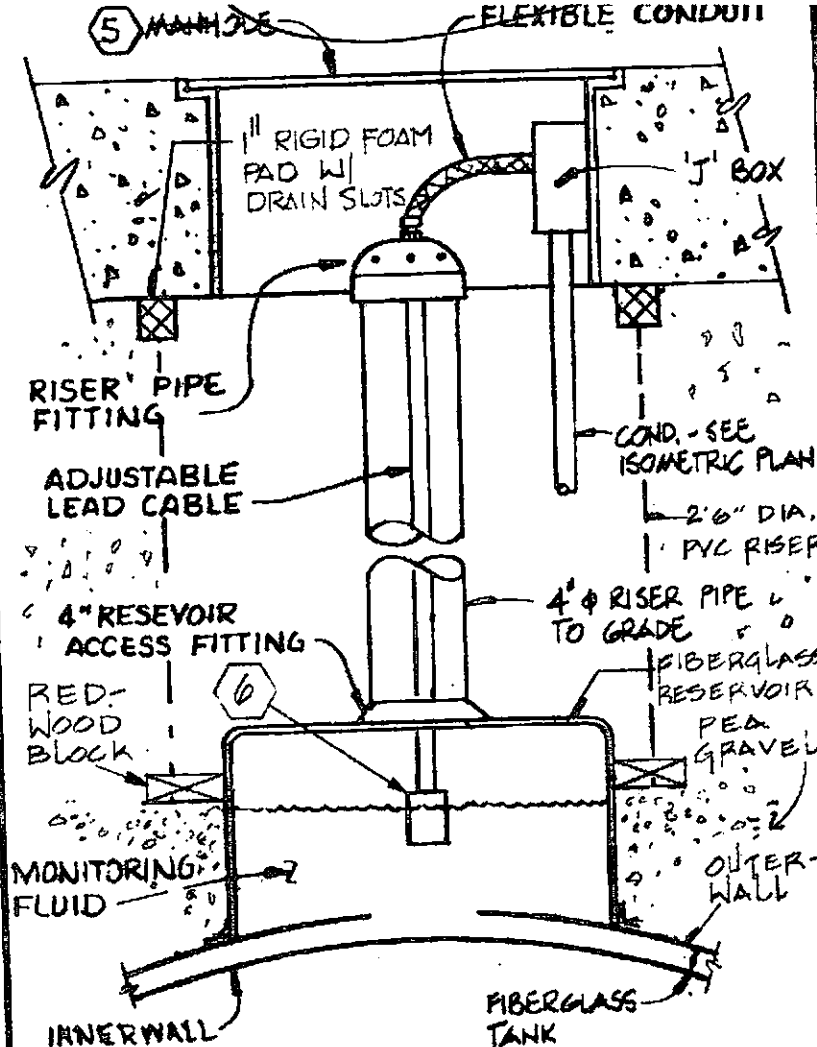
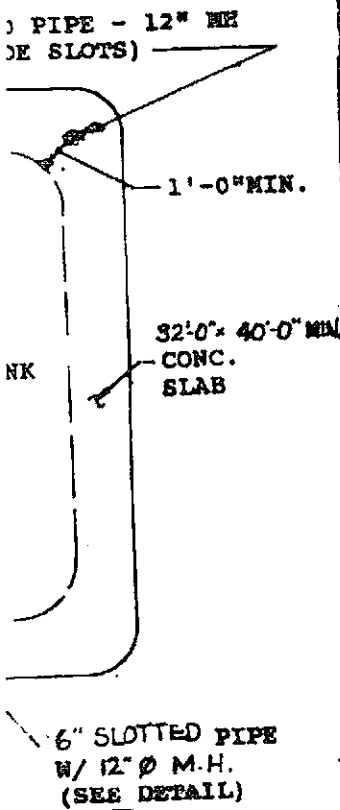
⑥ WELL



RECOMMENDED LAYOUT FOR 3-12M GAL. TANKS USING DUPONT "TYPAR" SPUNBONDED POLYPROPYLENE STYLE 3401-4 OZ./S.Y. FABRIC - 15'-7" WIDE MATERIAL. ROLLS AVAILABLE IN 100, 300, & 1,000 YD. LENGTHS. FOR EXCAVATION SHOWN ABOVE, WITH WALL SLOPE OF 1:2 APPROX. 100 YDS. WOULD BE REQUIRED. THE SAME LAYOUT IS ALSO SUITABLE FOR PHILLIPS FIBERS CORP. "SUPAR" FABRIC 4.1 OZ./S.Y. IN ROLLS 15' WIDE BY 300' LONG. FOR MONSANTO "BIDIM" C-22, 4 OZ./S.Y. FABRIC IN 17'-5" WIDE MATERIAL (984 FT. LONG ROLLS) LAY 4 STRIPS THE OPPOSITE DIRECTION, TWO-BOTTOM PIECES @ APPROX. 69' LONG AND TWO-SIDE PIECES @ APPROX. 62' LONG.



SHADED AREAS SHOW WHERE 'PEAGRAVEL' OR APPROVED ALTERNATE SHOULD BE USED AND COMPACT UNDER TANKS.



UNDERGROUND TANK EQUIPMENT

ITEM	QTY	DESCRIPTION / MANUFACTURE / MODEL NO.	FURNISH	INSTALLED
(1)	3	12,000 GAL. OWENS-CORNING FIBERGLASS DOUBLE WALL TANKS MODEL No. DWT-2P	SHELL	GC
(2)	3	3/4 HP. RED JACKET SUB PUMPS WITH LEAK DETECTORS AND CONTROLLER.	SHELL	GC
(3)	3	3"Ø X 24" LONG TELEFLEX-SECONDARY CONTAINMENT-FLEXIBLE HOSE BOOT	SHELL	GC
(4)	3	30" X 30" X 9" C.N.I. #229 MANHOLE REINFORCED COVER W/ PULL HANDLE	SHELL	GC
(5)	1	16"Ø CNI #216R-BSG ROUND FILL BOX X 8" SKIRT W/ 2 SCREWS & GASKET	SHELL	GC
(6)	3	HYDROSTATIC MONITORING FIBERGLASS RESERVOIR-ROMAN SENSOR LS-10	SHELL	GC
(7)	3	4" LEVEL RISER VEEDERROOT TSL-250 (FUTURE)	SHELL	GC
(8)	6	CNI #200 SPILL PROTECTION MANHOLE, WITH DRAIN VALVE	SHELL	GC
(9)	4	12"Ø CNI #214R-BSG ROUND FILL BOX X 8" SKIRT W/ 2 SCREWS & GASKET	SHELL	GC
(10)	5	EMCO-WHEATON A79-002 - 4" X 2" X 2" W/ NO BLEED HOLE - ADJUST LENGTH TO FIT	SHELL	GC
(11)	1	UNIVERSAL #V420-FLOAT VALVE 4" X 3" X 3" W/ NO BLEED HOSE-ADJUST LENGTH	SHELL	GC
(12)	3	2'Ø DIA. X 3' PVC RISER	SHELL	GC
(13)	3	EMCO-WHEATON A30-014" TOP SEAL FILL ADAPTER	SHELL	GC
(14)	3	EMCO-WHEATON A39-002 4" LOCKING CAP	SHELL	GC
(15)	3	EMCO-WHEATON A20-004 4" X 12" FILL TUBE OR EQUAL	SHELL	GC
(16)	3	EMCO-WHEATON A76-005 3" X 4" VAPOR DRY BREAK	SHELL	GC
(17)	3	EMCO-WHEATON A99-001 4" TOGGLE TYPE VAPOR CAP	SHELL	GC
(18)	2	4" PVC THREADED CAP/THREADED ADAPTER/SLIP/CAP/SLOTTED PIPE	SHELL	GC
(19)	2	SC 6" PVC SLIP CAP/FLAT CAP/PIPE	SHELL	GC
(20)	1	TYPAR FILTER FABRIC	SHELL	GC
(21)	3	OWENS-CORNING FIBERGLASS 48"Ø MANWAY RISER	SHELL	GC
(22)	3	2"Ø X 24" LONG TITEFLEX CONNECTOR W/ SWIVEL-1 END	SHELL	GC
(23)	3	2"Ø CHECK VALVE - UNIVERSAL #212 BPR OR EQUIVALENT	SHELL	GC
(24)	3	24" SQUARE CNI #225 MANHOLE 9" SKIRT REINFORCED COVER	SHELL	GC

MANHOLE

RESERVOIR

MANHOLE

40 PVC SLOTTED PIPE

1/4" APART & 2" ± WIDE ROWS AROUND PERIPHERY

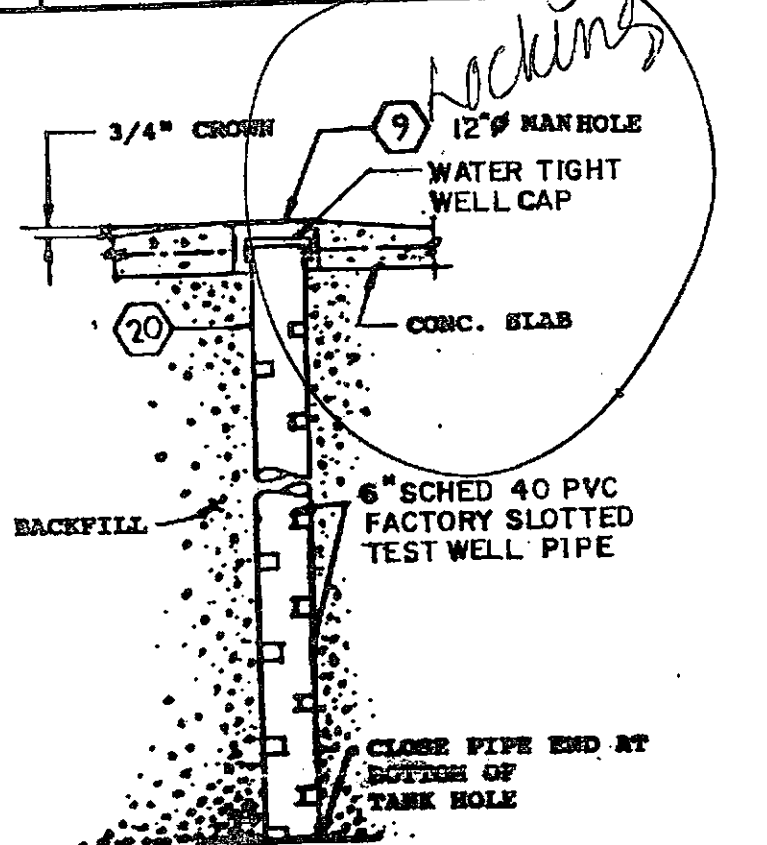
(.48 SLOTS/FT) PIPE W/FILTER WHEN USING PIPE SLOTS.

SEE OR ADDENDA FOR SUPPLIERS.

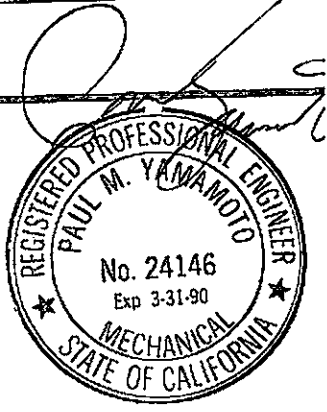
PIPE IS USED DRILL DIA. HOLES PER FOOT

END AT BOTTOM

MOLE.



EQUIPMENT LIST



MARK	DATE	REVISIONS	BY

DATE

PREPARED BY

PERMIT NO.

SIC

CONST. 8-25-88

TANK INSTALLATION DETAIL

2724 CASTRO VALLEY BLVD.

CASTRO VALLEY, CALIFORNIA



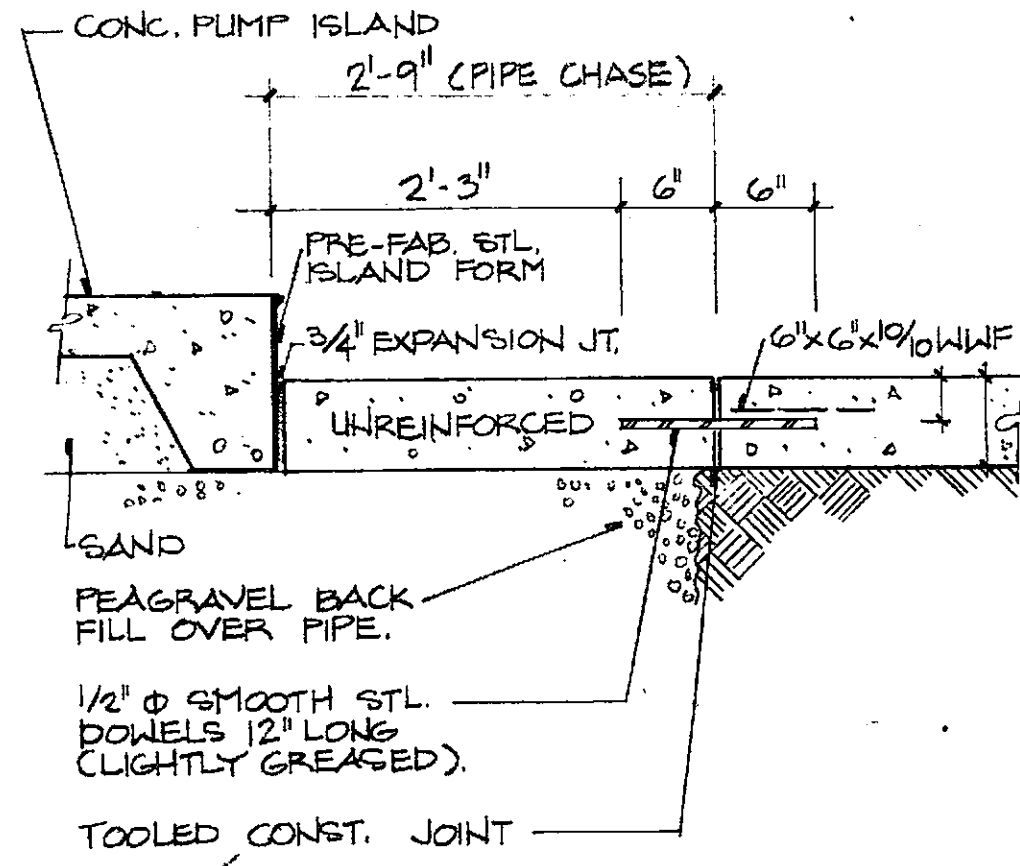
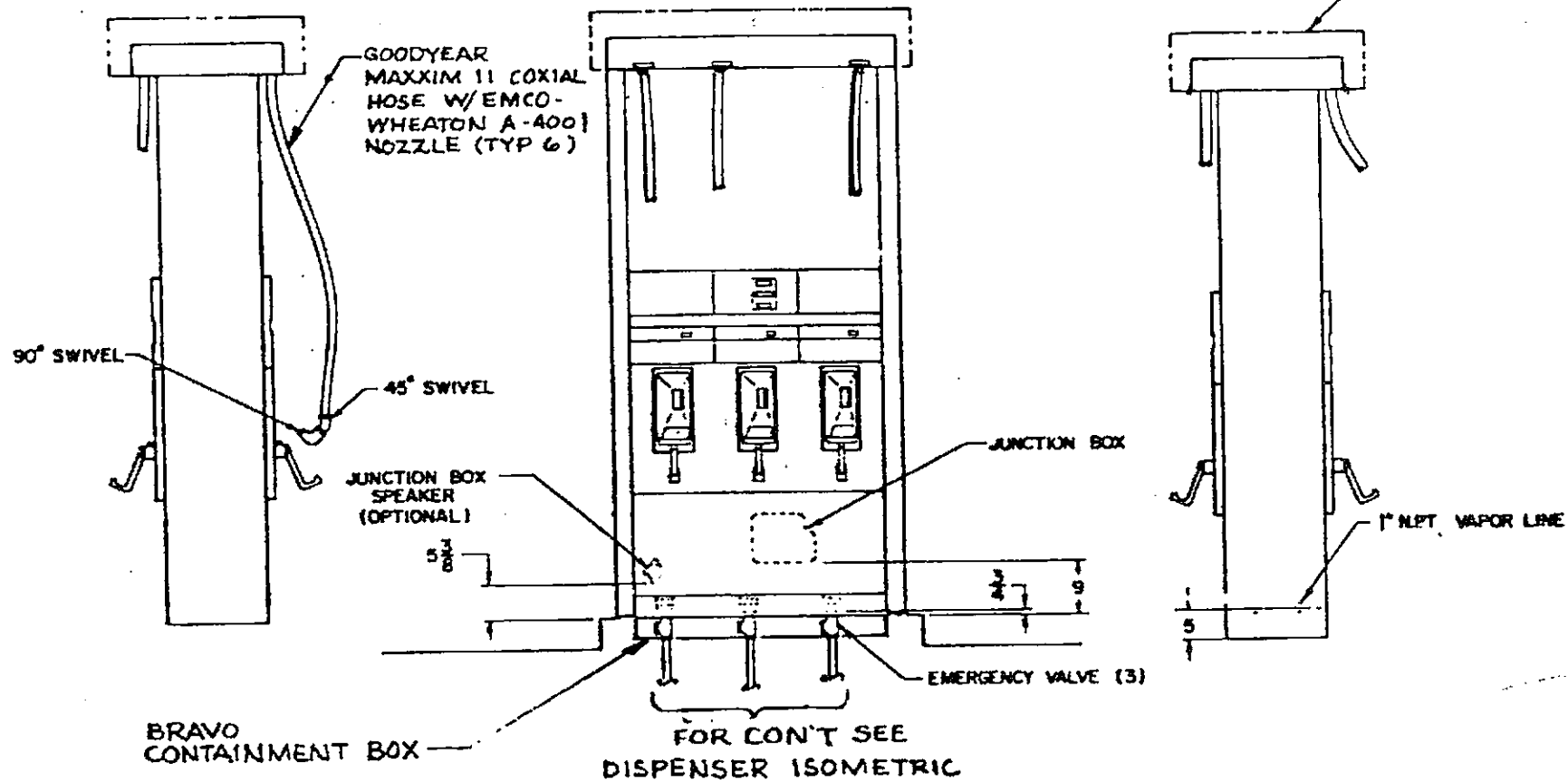
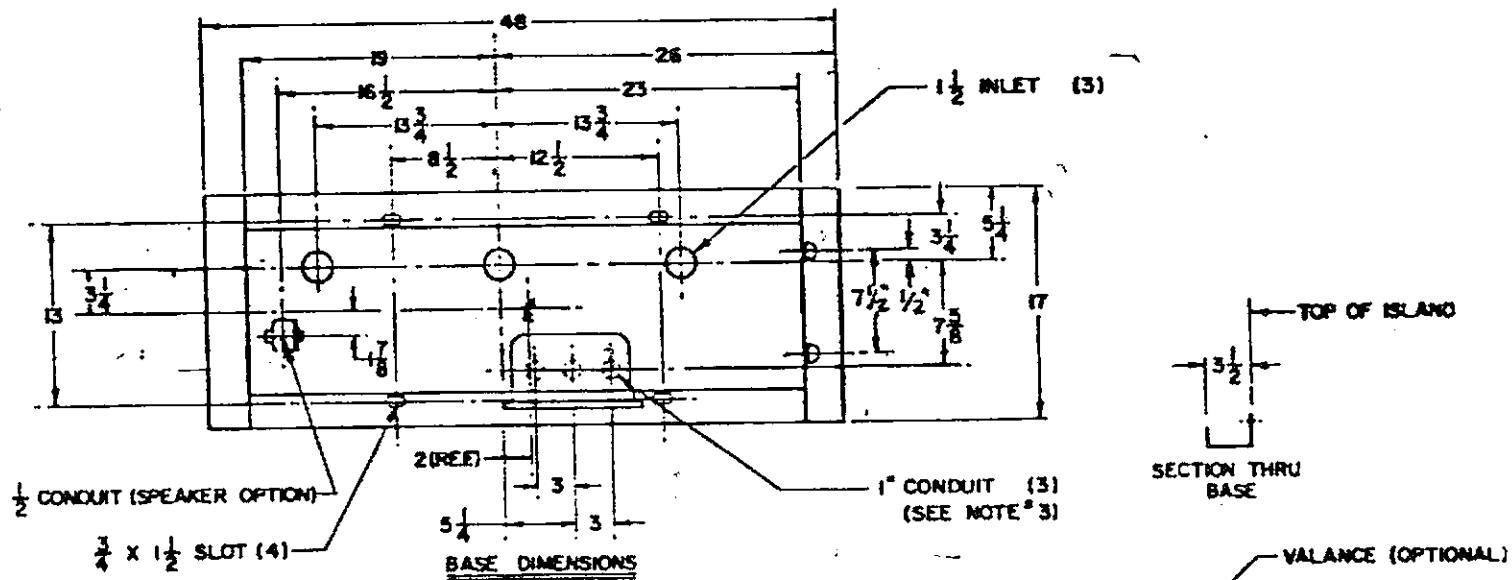
SHELL OIL COMPANY

SCALE: NOM

DRAWN BY: D.M.

FILE: 666

WOULD RUN LEVEL, AVOIDING
LIQUID TRAPS.
NG MUST CONFORM TO ALL
EGULATIONS.
TAPS SHOWN ARE SUPPLIED.
OR ALL MAY BE USED TO
ECTRICAL CONNECTION TO
R.



RECOMMENDED PIPE CHASE WIDTH 2'-9" MIN. FOR THREE PRODUCT LINES WITH 3.9" DIA. SECONDARY CONTAINMENT, 2'-0" MIN FOR 3" DIA. V.R. LINES. EXTEND CHASE BEYOND EDGE OF TRENCH.

PIPE CHASE SECTION AT DISPENSER ISLAND.

DISPENSER DETAILS

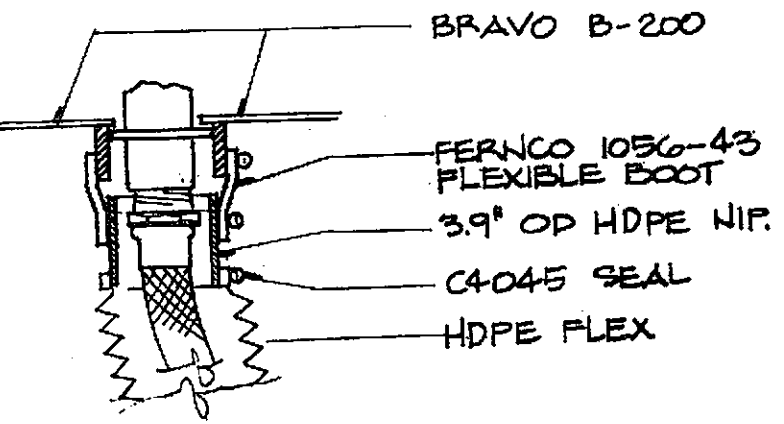
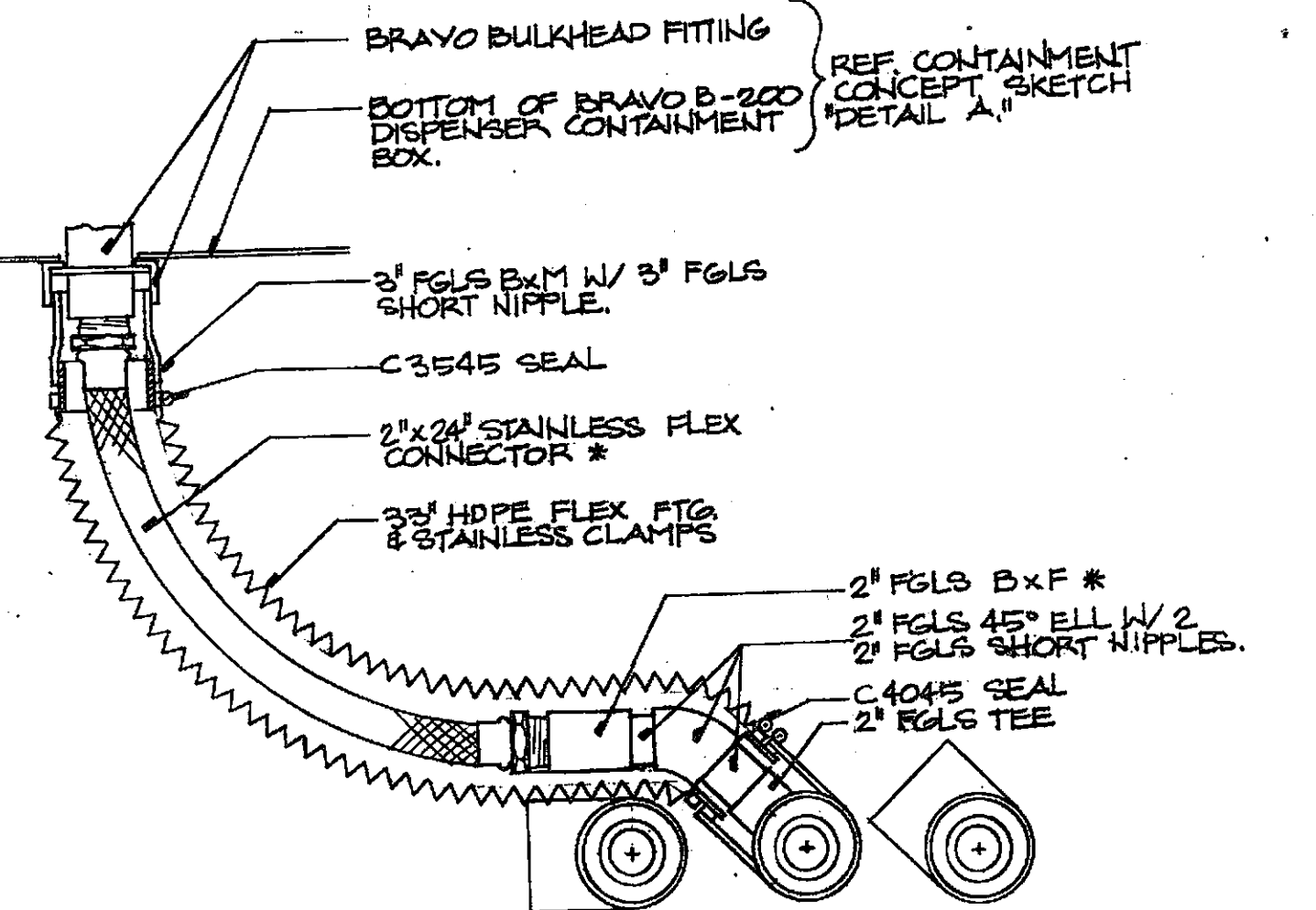
(B) PIPE CHASE (C)

MULTI GRADE
DISPENSER SEE
DETAIL A THIS SHEET

2" VAPOR RETURN
FROM DISPENSER
UNION (TYP.)
MANIFOLD



IMPACT ROLLER
(OR 2") INCLUDE ONLY IF
PIPING SHEET.



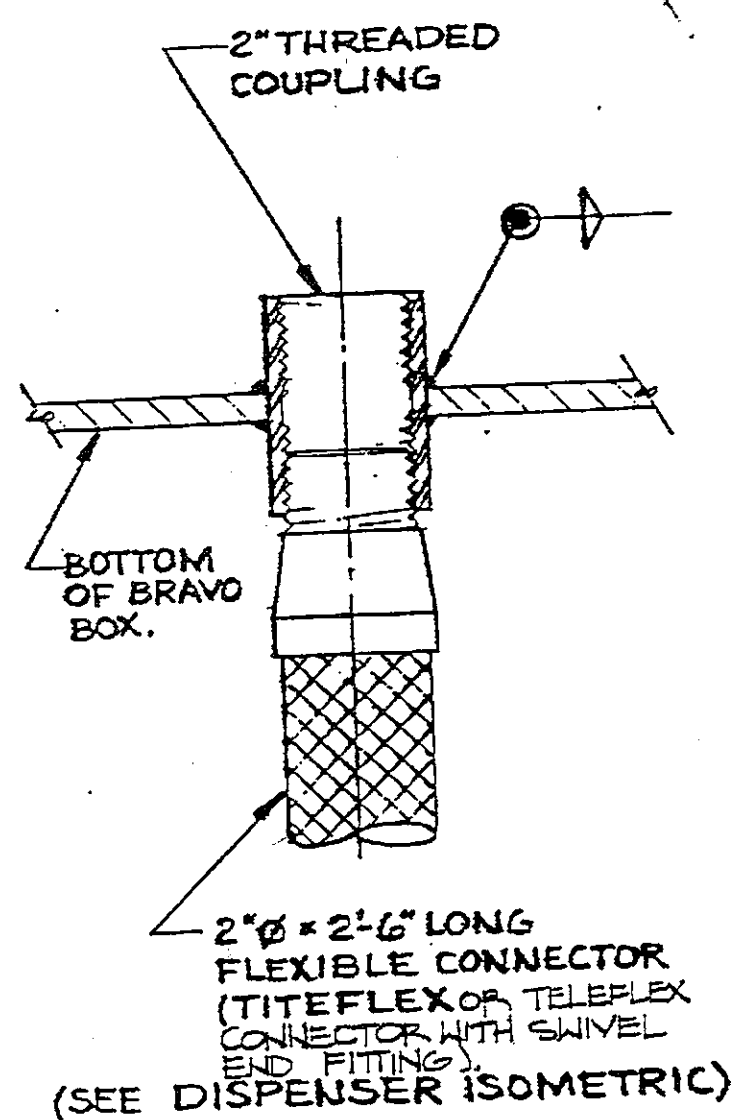
ALTERNATE CONNECTION

REF. CONTAINMENT CONCEPT SKETCH "DETAIL A."

5" HDPE CONTAINMENT TEE W/ C4050 SEALS, 3.9" OD HDPE SHORT NIPPLE, & STAINLESS CLAMPS.

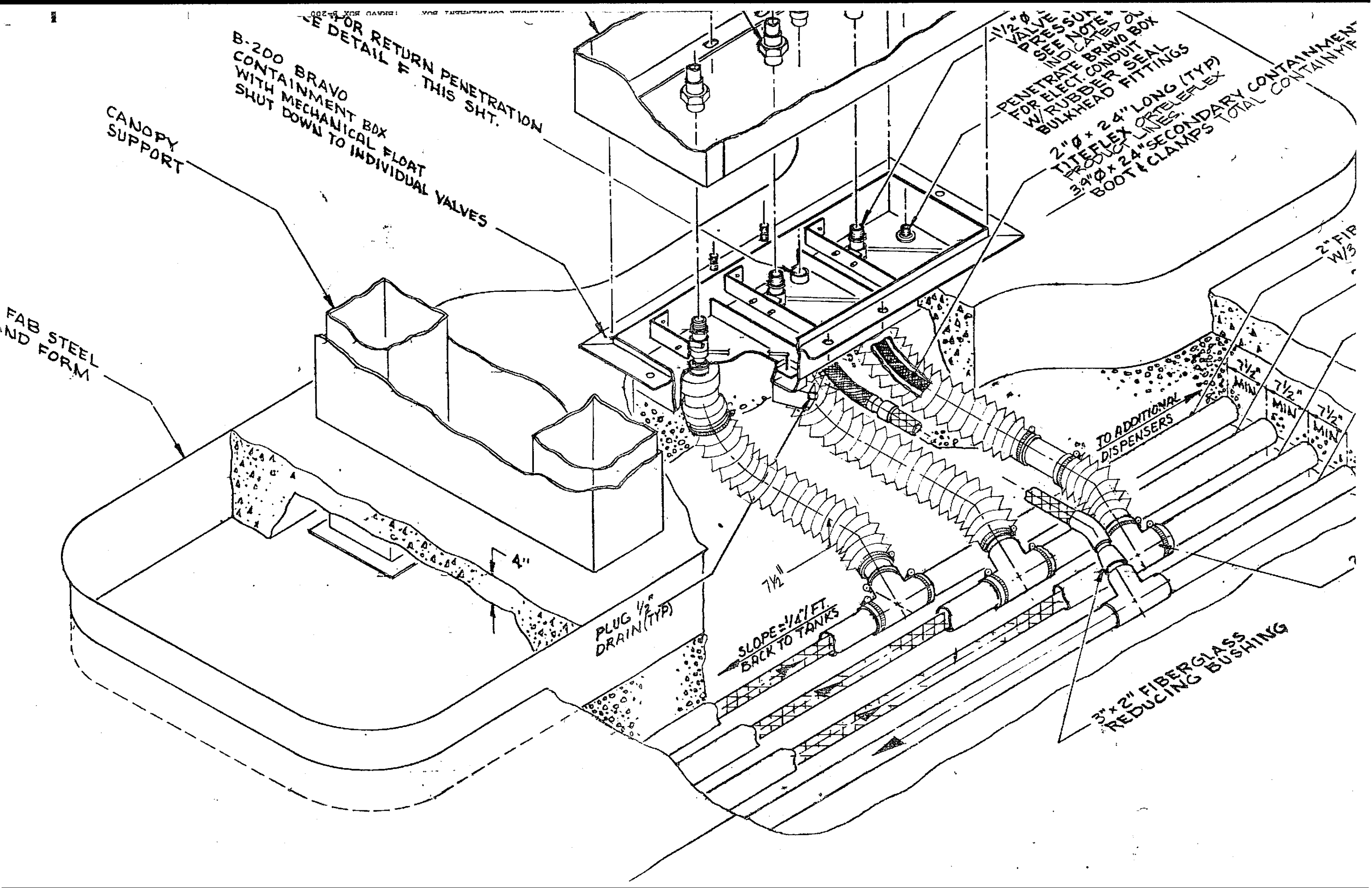
* OK TO SUBSTITUTE 2" FGLS COUPLING FOR 2" BxF, ADD 2" x 1/2" FGLS THRD REDUCER, & SUBSTITUTE 1/2" FLEX CONNECTOR.

SECONDARY CONTAINMENT AT DISPENSER CONNECTION



F VAPOR PIPING AT BRAVO BOX

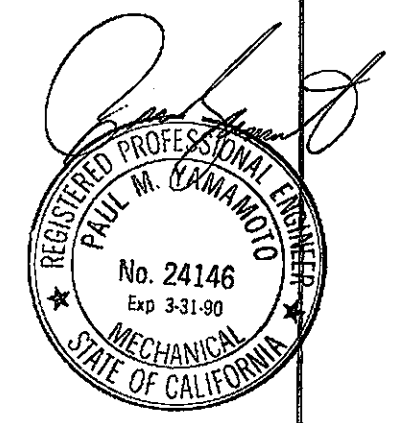
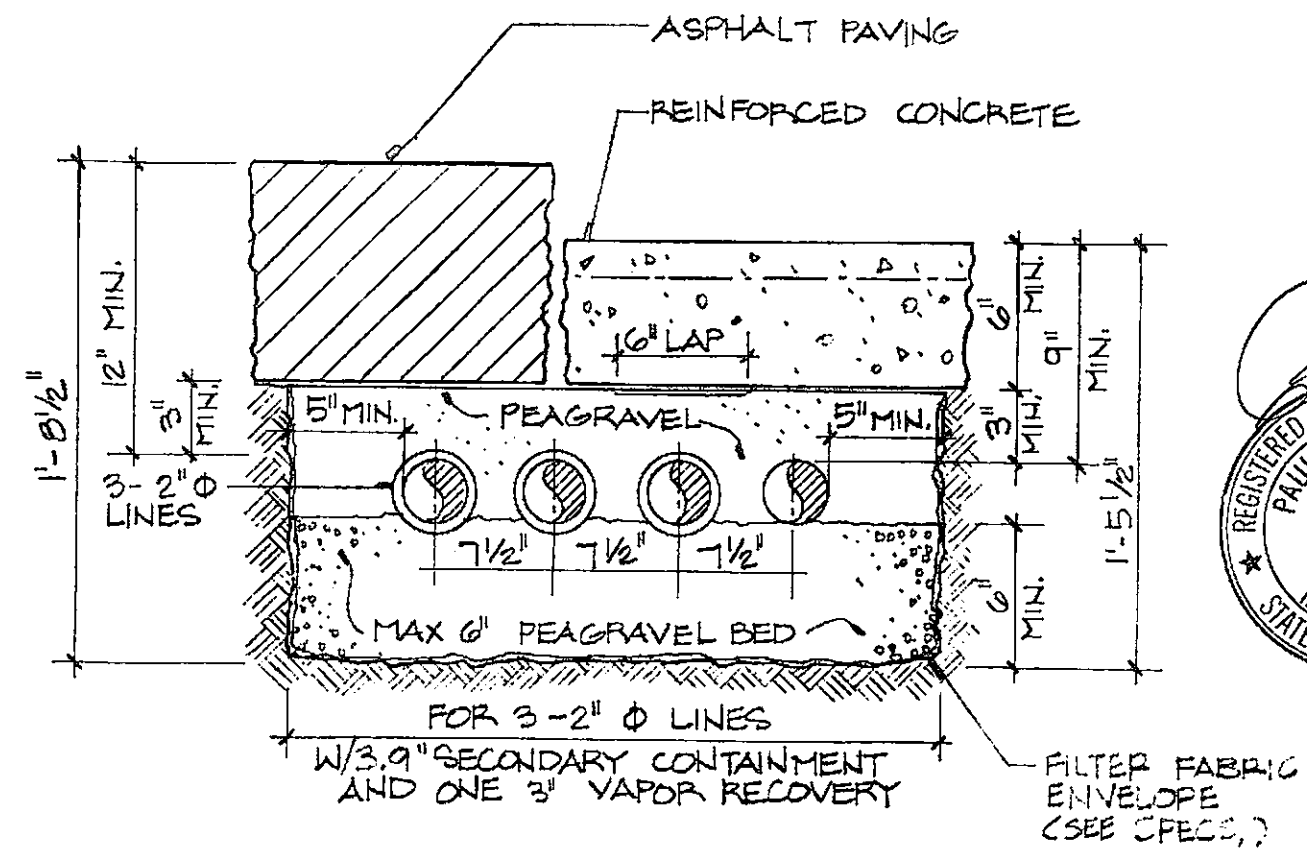
DESCRIPTION	MANUFACTURER/MODEL #
MULTI-GRADE DISPENSER	DRESSER-WAYNE DL/390-IL/190V
SECONDARY CONTAINMENT BOOT	3.9" TOTAL CONTAINMENT
SAFETY IMPACT VALVE	1 1/2" DIA.
FLEX CONNECTOR (VAPOR RECOVERY)	2" x 24" TELEFLEX OR TITFLEX WITH SWIVEL END
FLEX CONNECTORS (PRODUCT)	2" x 24" TELEFLEX OR TITFLEX WITH SWIVEL END
DISPENSER CONTAINMENT BOX	BRAVO BOX B-200



DISPENSER/ISLAND EQUIP. LIST

177.
 GLASS PIPE (REG LEADED)
 ONDARY CONTAINMENT
 ERGLASS PIPE (REGULAR UNL)
 ONDARY CONTAINMENT
 2" FIBERGLASS PIPE (SUPER UNL)
 W/3.9" SECONDARY CONTAINMENT
 3" FIBERGLASS PIPE
 VAPOR RECOVERY
 SINGLE WALL
 SEE PIPECHASE
 DETAIL THIS SHEET

ARY AND 3.9" SECONDARY
 AINMENT 90° ELL OR TEE
 HDPE FITTINGS



© TRENCH DETAIL

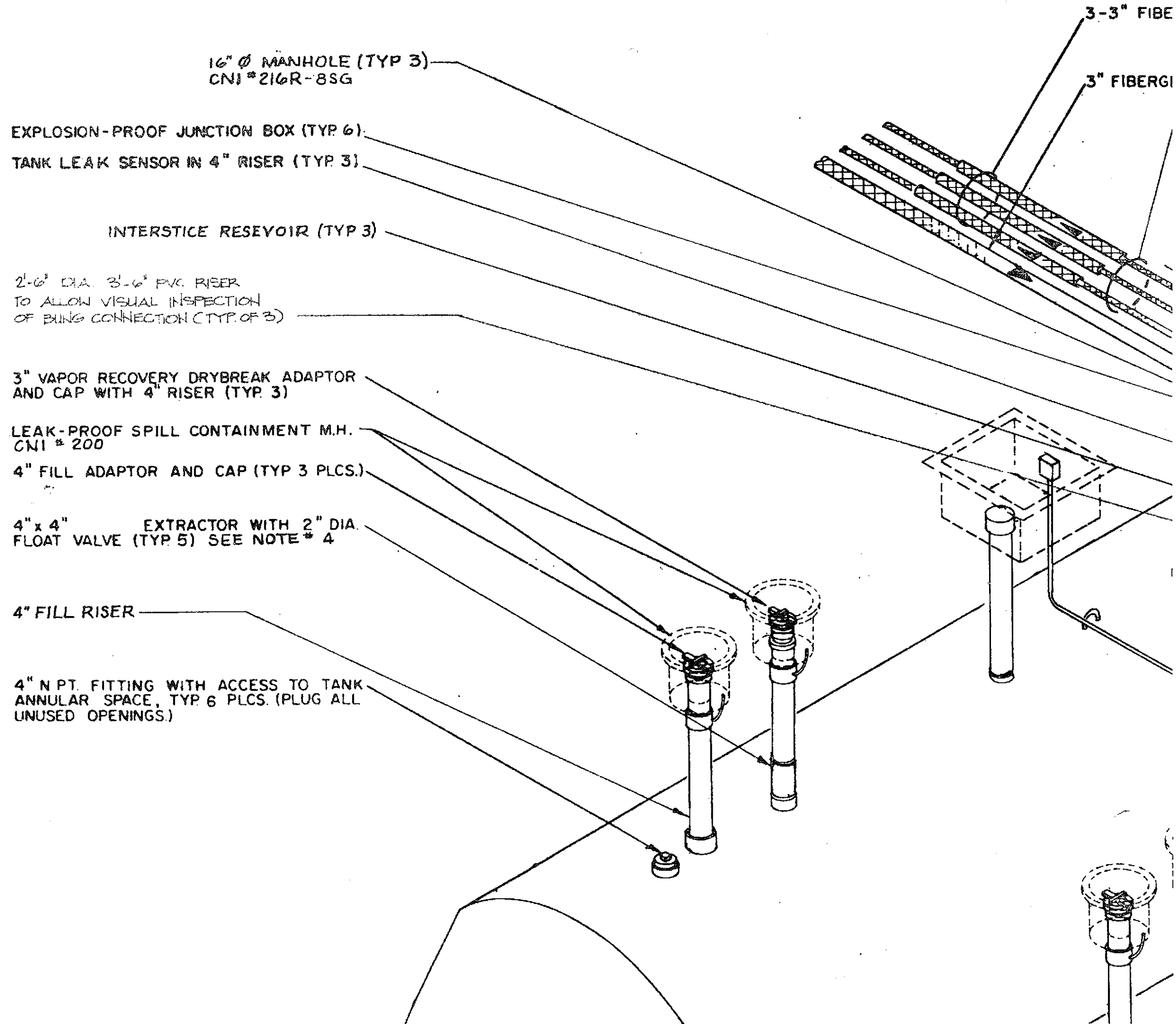
				DATE ARR'D
				PRELIM. _____
				PERMIT _____
				BID _____
MARK	DATE	REVISIONS	BY	CONST. 8-25-88 PMY

DISPENSER AND PIPING DETAILS



SHELL OIL COMPANY

SCALE 1/4" = 1'-0"
 DWN. BY D. MITCHELL
 PNL# 6662, 6663, 6727



16" Ø MANHOLE (TYP 3)
CNI # 216R-8SG

EXPLOSION-PROOF JUNCTION BOX (TYP 6)

TANK LEAK SENSOR IN 4" RISER (TYP 3)

INTERSTICE RESEVOIR (TYP 3)

2'-6" DIA. 3'-6" PVC RISER
TO ALLOW VISUAL INSPECTION
OF BUNG CONNECTION (TYP. OF 3)

3" VAPOR RECOVERY DRYBREAK ADAPTOR
AND CAP WITH 4" RISER (TYP. 3)

LEAK-PROOF SPILL CONTAINMENT M.H.
CNI # 200

4" FILL ADAPTOR AND CAP (TYP 3 PLCS.)

4" x 4" EXTRACTOR WITH 2" DIA.
FLOAT VALVE (TYP 5) SEE NOTE # 4

4" FILL RISER

4" N PT. FITTING WITH ACCESS TO TANK
ANNULAR SPACE, TYP 6 PLCS. (PLUG ALL
UNUSED OPENINGS)

3-3" FIBE

3" FIBERGI

SECONDARY LINES

POR RECOVERY LINE

FIBERGLASS PRODUCT LINE

(TYP. 3)

30° SQUARE WATER TIGHT MANHOLE (TYP. 3)

2" Ø VAPOR MANIFOLD FOR STAGE II PIPING (ALL GALV. PIPE AND FITTINGS)

SLOPE DOWNWARD TOWARD LEADED TANK

3-2" FIBERGLASS VENT LINES

NO SWING JOINT, OR FLEX. CONN. REQUIRED IN FIBERGLASS PIPING IF AT LEAST 4 FT. OF STRAIGHT RUN IS PROVIDED BETWEEN ANY CHANGE IN DIRECTION EXCEEDING 30° TYP.

2" x 2" x 3" GALV. TEE

3" GALV. PIPING

4" x 4" x 3" x 3" EXTRACTOR W/ 2" DIA. FLOAT VALVE (SEE NOTE 4)

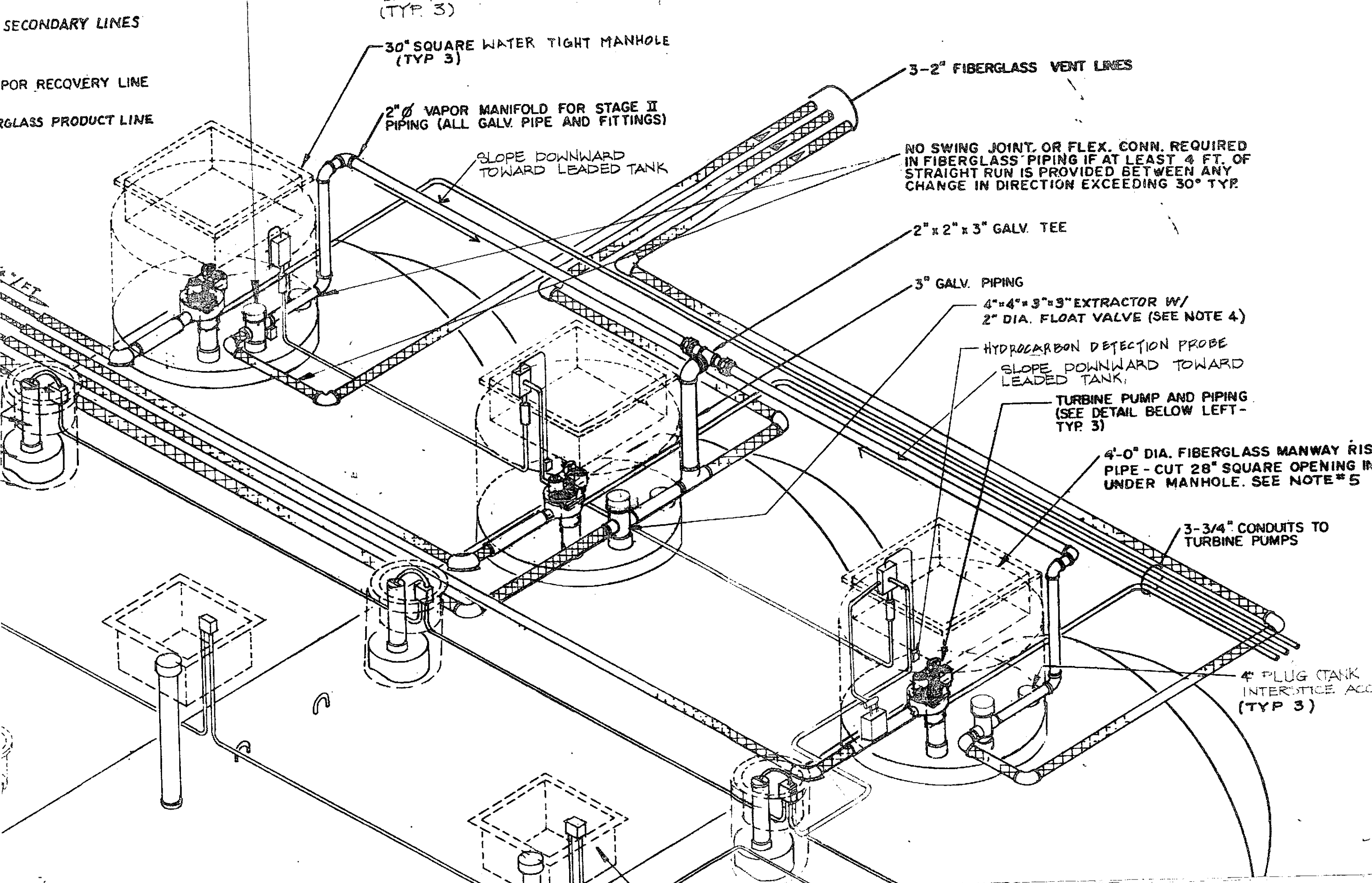
HYDROCARBON DETECTION PROBE SLOPE DOWNWARD TOWARD LEADED TANK

TURBINE PUMP AND PIPING (SEE DETAIL BELOW LEFT - TYP. 3)

4'-0" DIA. FIBERGLASS MANWAY RISER PIPE - CUT 28" SQUARE OPENING IN UNDER MANHOLE. SEE NOTE #5

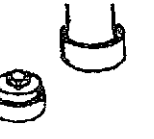
3-3/4" CONDUITS TO TURBINE PUMPS

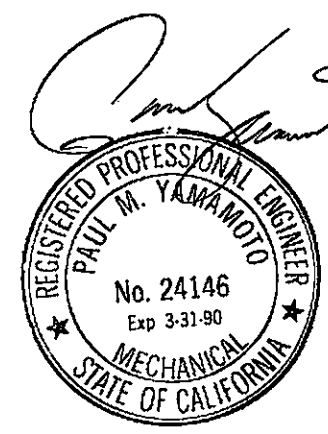
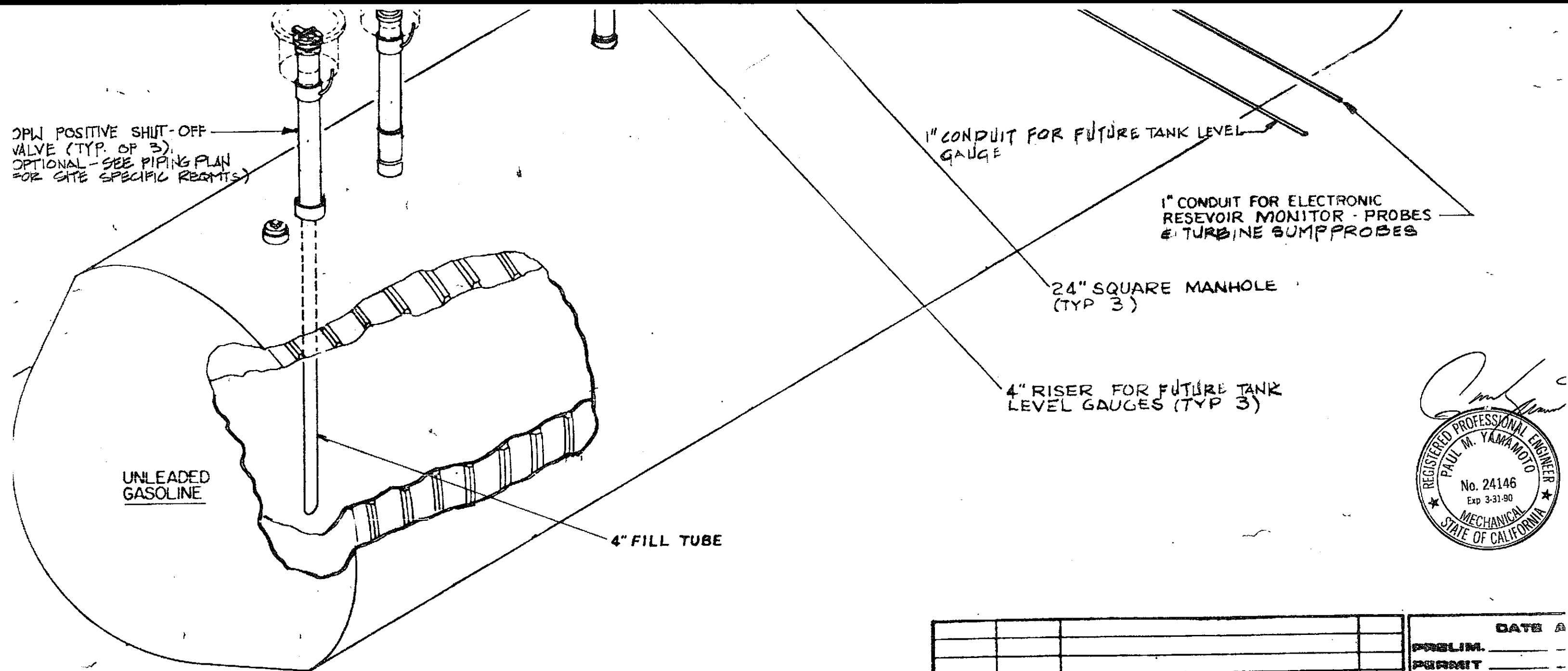
4" PLUG (TANK INTERSTICE ACC. (TYP. 3))



UNLEADED
GASOLINE

LEADED
GASOLINE






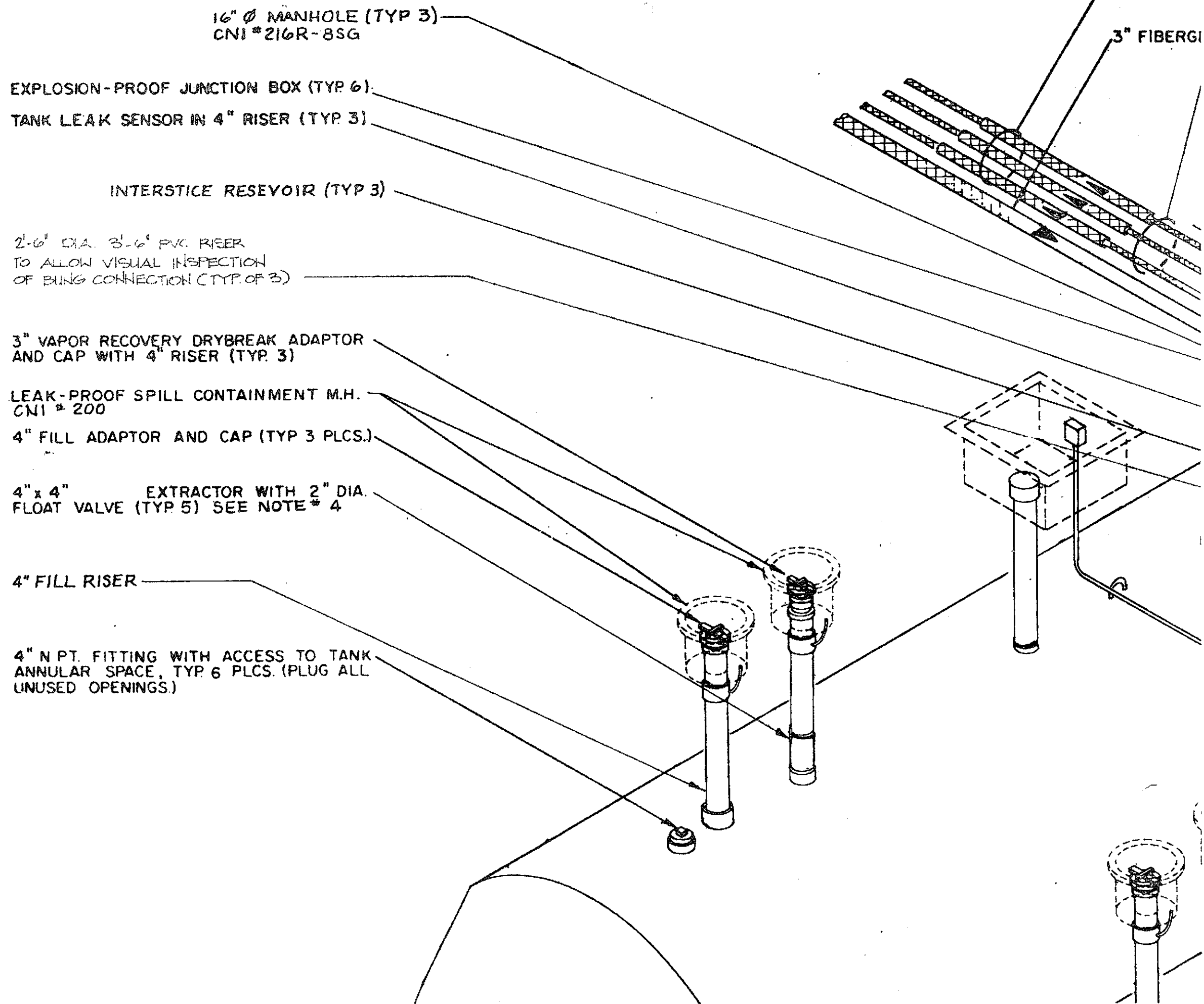
- NOTES:
- 1.) BRAVO BOX (PUMP ISLAND) INSTALL 2" COUPLING FOR VAPOR
 - 2.) TURBINE SIZE: 3/4 H.P. P 75S1 SIZE 0909-5 (CUT AS REQ'D)
 - 3.) RONAN SENSORS REQ'D. 3 PER EACH PRODUCT LINE.
 - 4.) FLOAT VALVES TO HAVE LENGTH ADJUSTED TO FIT WITH NO BLEED VENT HOLES.
 - 5.) SEE ENGINEER FOR TANK BURIAL REQUIREMENT
 - 6.) PLUG ALL UNUSED TANK OPENINGS.

MARK	DATE	REVISIONS	BY	DATE

TYPICAL TANK INSTALLATION ISOMETRIC VIEW

 <p>SHELL OIL COMPANY</p>	<p>SCALE <u>NONE</u> OWN BY <u>D.M.A.</u></p>
	<p>REL. <u>6662, E</u> <u>6727</u></p>
<p>ROBERT H. LEE & ASSOCIATES, INC.</p> <p>ARCHITECTURE PLANNING ENGINEERING</p> <p>500 LARKSPUR LEADING CIRCL., #125, LARKSPUR, CA 94039 · (415) 461-2333</p>	

PF



SECONDARY LINES

POR RECOVERY LINE

GLASS PRODUCT LINE

(TYP. 3)

30" SQUARE WATER TIGHT MANHOLE (TYP. 3)

2" Ø VAPOR MANIFOLD FOR STAGE II PIPING (ALL GALV. PIPE AND FITTINGS)

SLOPE DOWNWARD TOWARD LEADED TANK

3-2" FIBERGLASS VENT LINES

NO SWING JOINT, OR FLEX. CONN. REQUIRED IN FIBERGLASS PIPING IF AT LEAST 4 FT. OF STRAIGHT RUN IS PROVIDED BETWEEN ANY CHANGE IN DIRECTION EXCEEDING 30° TYP.

2" x 2" x 3" GALV. TEE

3" GALV. PIPING

4" x 4" x 3" x 3" EXTRACTOR W/ 2" DIA. FLOAT VALVE (SEE NOTE 4)

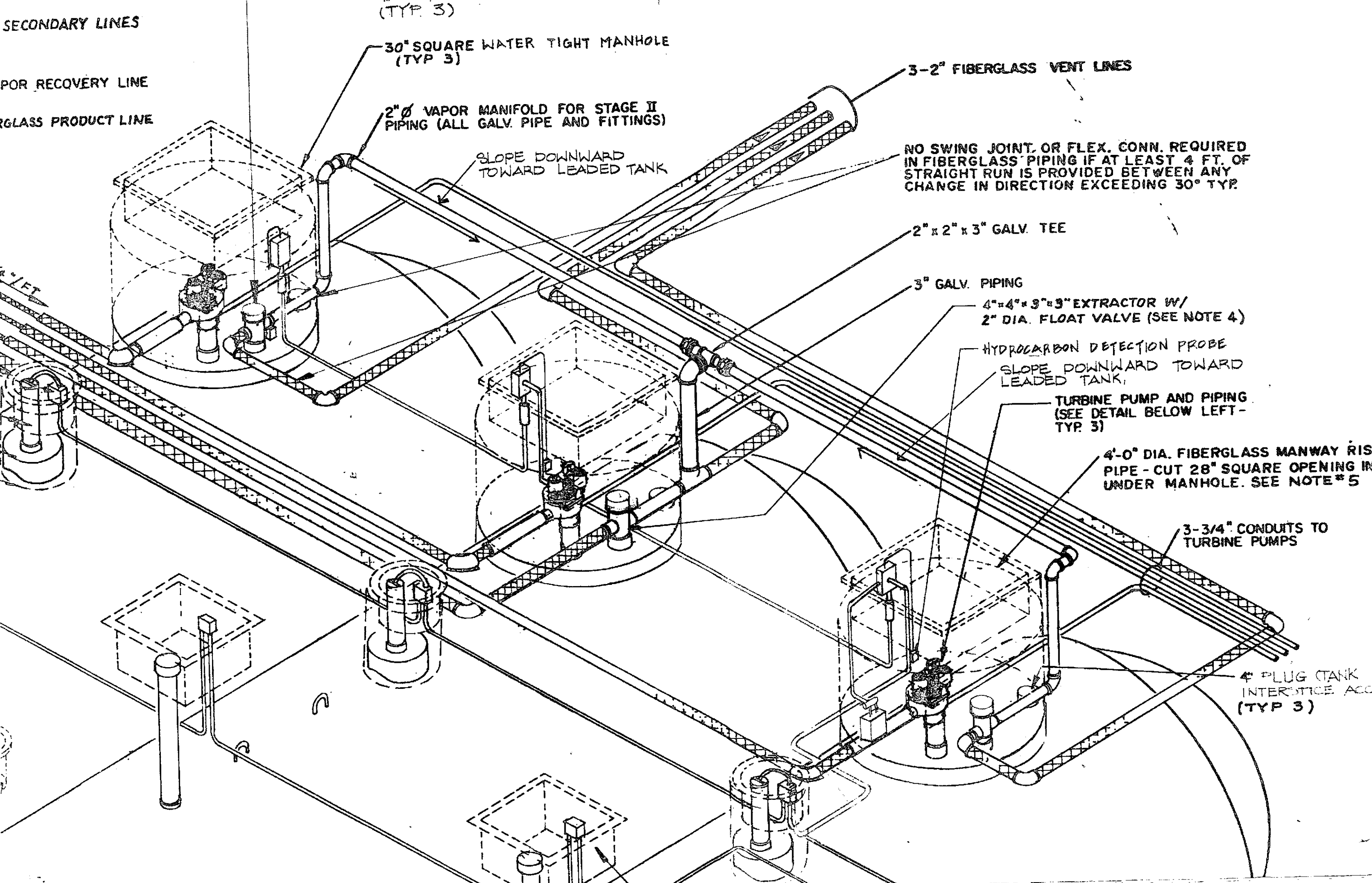
HYDROCARBON DETECTION PROBE
SLOPE DOWNWARD TOWARD LEADED TANK

TURBINE PUMP AND PIPING (SEE DETAIL BELOW LEFT - TYP. 3)

4'-0" DIA. FIBERGLASS MANWAY RISE PIPE - CUT 28" SQUARE OPENING IN UNDER MANHOLE. SEE NOTE # 5

3-3/4" CONDUITS TO TURBINE PUMPS

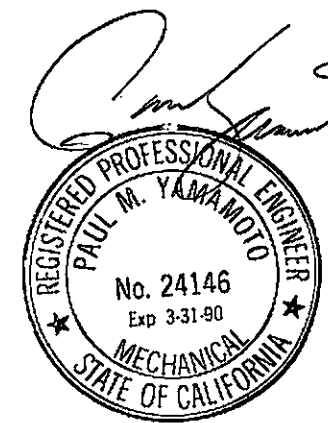
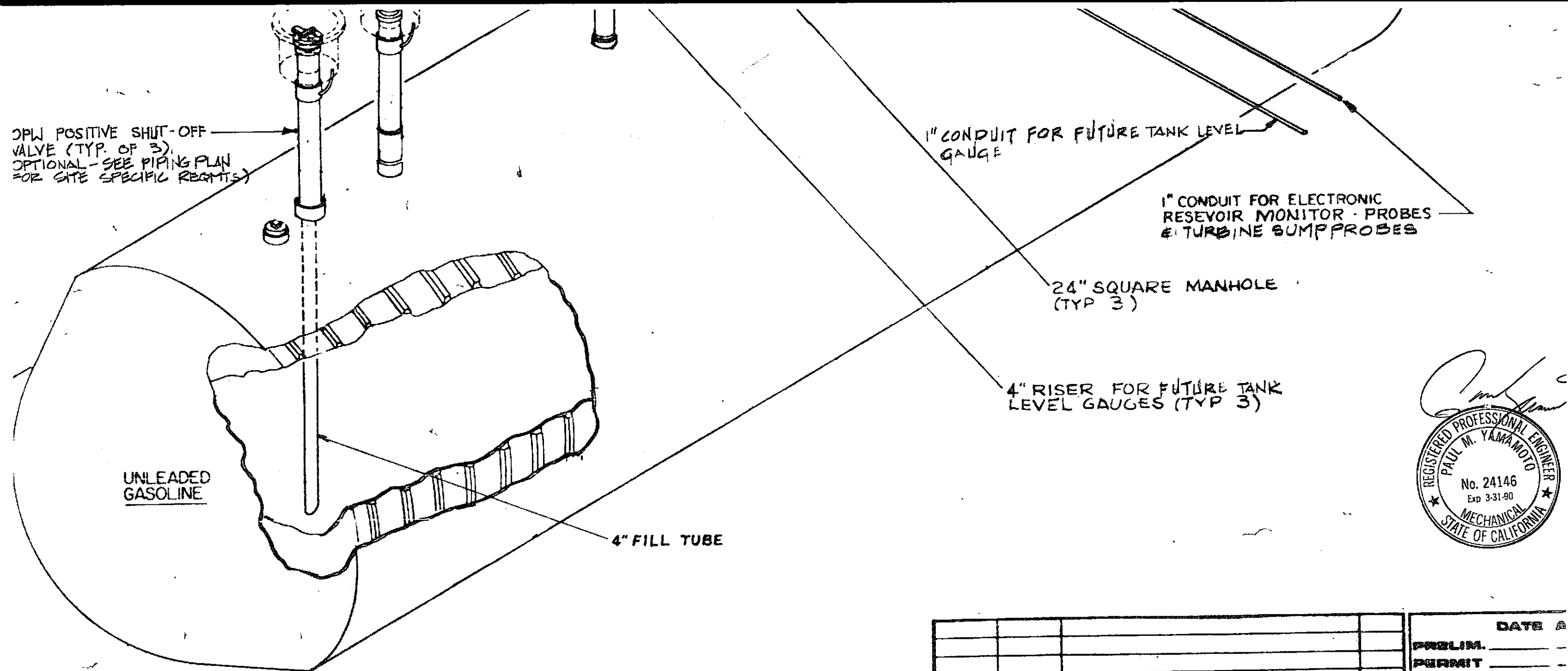
4" PLUG (TANK INTERFICE ACC. (TYP. 3)



UNLEADED
GASOLINE

LEADED
GASOLINE






NOTES:

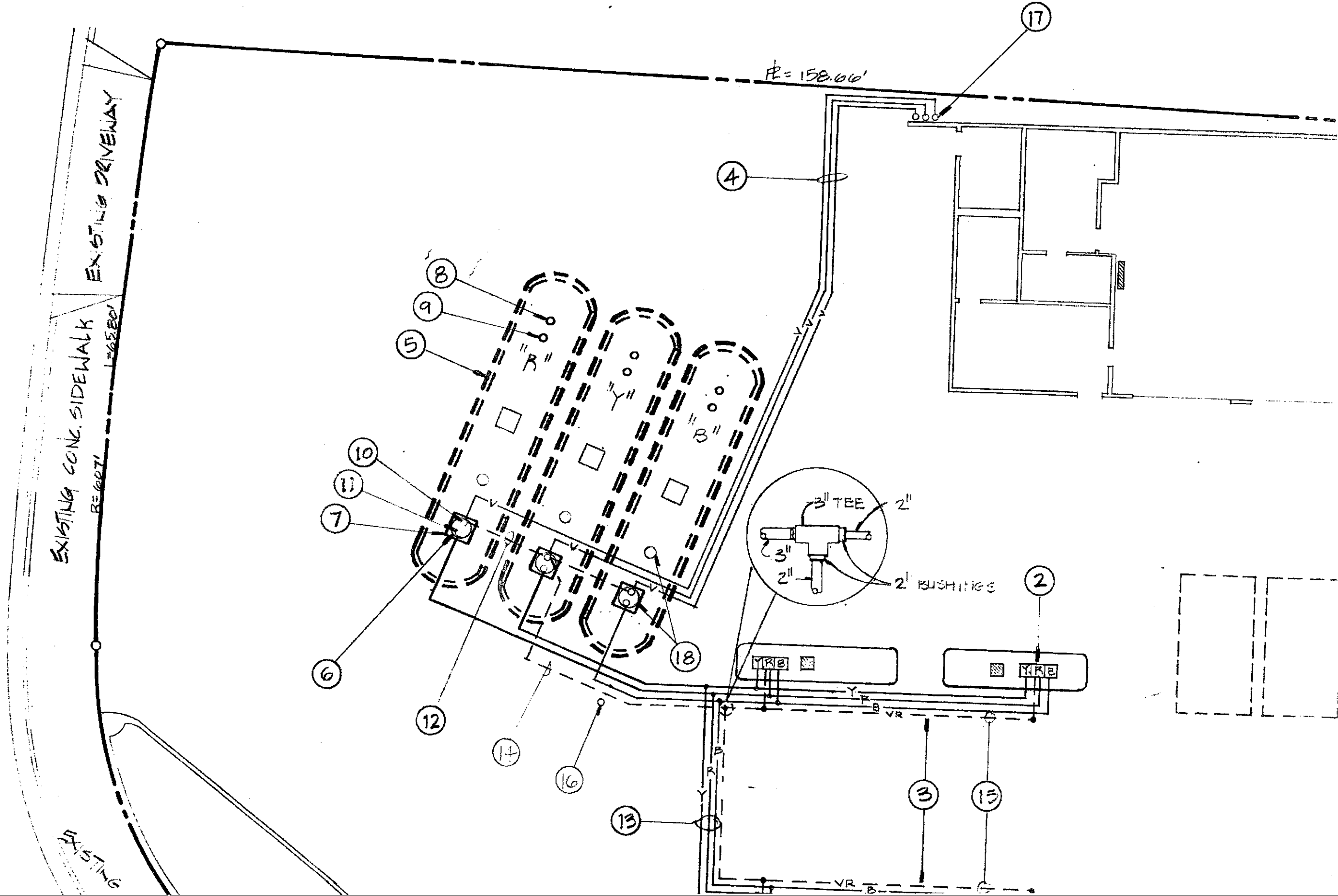
- 1.) BRAVO BOX (PUMP ISLAND) INSTALL 2" COUPLING FOR VAPOR
- 2.) TURBINE SIZE: 3/4 H.P. P 75S1 SIZE 0909-5 (CUT AS REQ'D)
- 3.) ROMAN SENSORS REQ'D. 3 PER EACH PRODUCT LINE.
- 4.) FLOAT VALVES TO HAVE LENGTH ADJUSTED TO FIT WITH NO BLEED VENT HOLES.
- 5.) SEE ENGINEER FOR TANK BURIAL REQUIREMENT
- 6.) PLUG ALL UNUSED TANK OPENINGS.

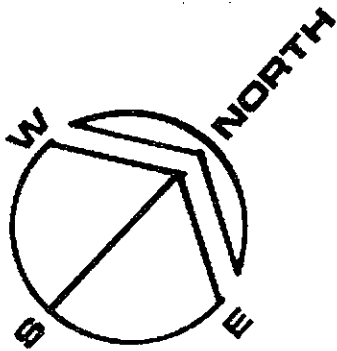
MARK	DATE	REVISIONS	BY	DATE

TYPICAL TANK INSTALLATION ISOMETRIC VIEW

 <p>SHELL OIL COMPANY</p>	<p>SCALE <u>NONE</u></p> <p>OWN. BY <u>D.M.A.</u></p>
	<p>NO. <u>6662, 6727</u></p>
<p>ROBERT H. LEE & ASSOCIATES, INC.</p> <p>ARCHITECTURE PLANNING ENGINEERING</p> <p>500 LAKEMORE LANDING DRIVE, # 100, LAKEMORE, CA 94033 (415) 223-0200</p>	

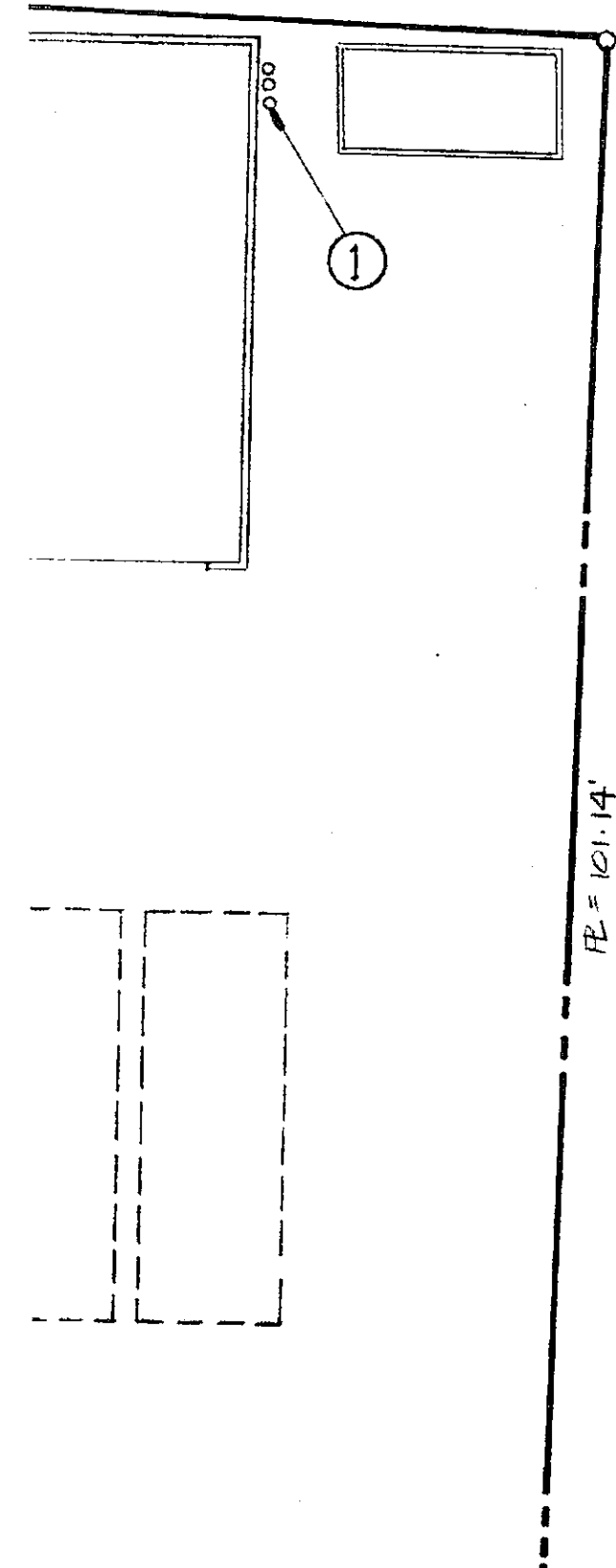
LAKE CHABOT RD.

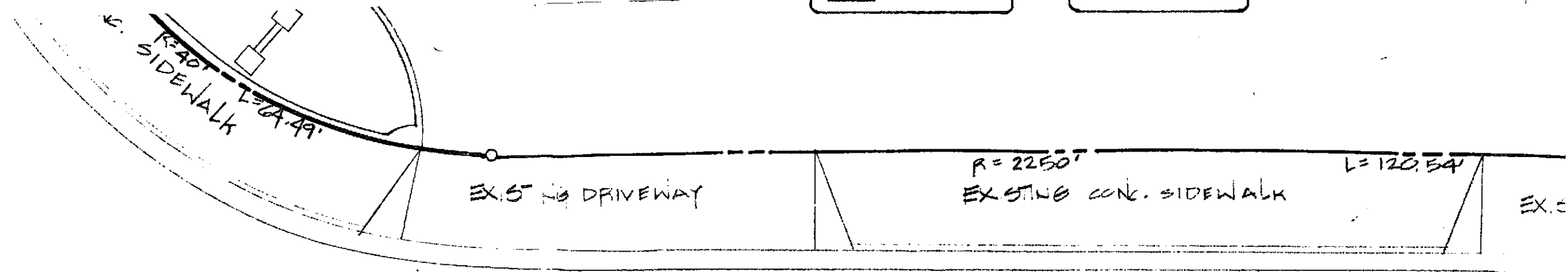




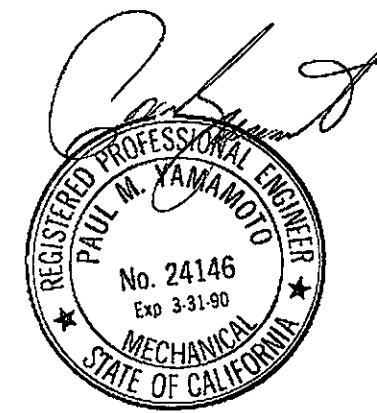
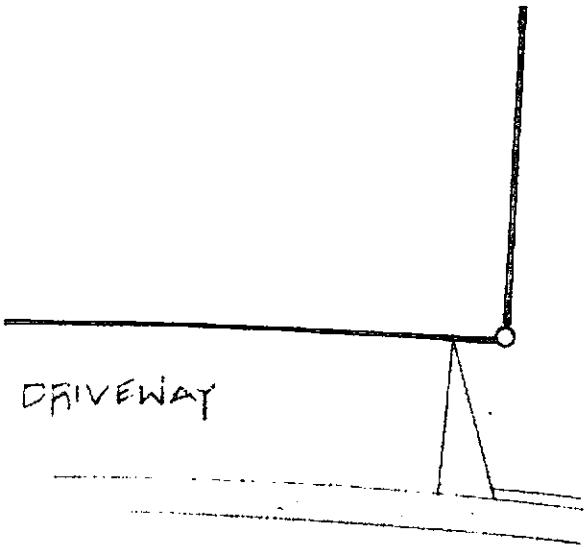
NOTES:

- ① EXISTING VENT RISERS, EXCEPT FOR EXISTING WASTOIL TANK VENT, TO BE REMOVED. SEAL AND PATCH ROOF TO MATCH EXISTING
- ② DISCONNECT EXISTING PRODUCT AND VAPOR PIPING AT EXISTING DISPENSERS TO REMAIN AND REMOVE AS REQUIRED TO COMPLY WITH LOCAL REGULATIONS. CONNECT NEW PRODUCT AND VAPOR PIPING TO EXISTING DISPENSERS.
- ③ SAWCUT AND REMOVE PORTION OF EXISTING CONCRETE DRIVE SLAB AND INSTALL NEW PRODUCT AND VAPOR LINES TO EXISTING DISPENSER (TYPICAL OF 4). PATCH AND REPLACE CONCRETE SLAB AFTER PIPING INSTALLATION HAS BEEN COMPLETED.
- ④ NEW 2" DIA. FIBERGLASS VENT LINES. MINIMUM SLOPE OF 1/4" PER FOOT TO TANKS.
- ⑤ NEW 12,000 GALLON DOUBLE-WALL OWENS-CORNING FIBERGLASS TANK (TYPICAL OF 3)
SEE TYPICAL TANK INSTALLATION DETAILS.
- ⑥ 4' DIA. FRP RISER (TYPICAL OF 3).
- ⑦ TANK MANWAY OPENING (TYPICAL OF 3).
- ⑧ 4" DIA. FILL RISER IN SPILL CONTAINMENT MANHOLE (TYPICAL OF 3).
- ⑨ 3" DIA. VAPOR RISER IN SPILL CONTAINMENT MANHOLE (TYPICAL OF 3).
- ⑩ 4" DIA. EXTRACTOR FITTING, RISER AND END CAP. (TYPICAL OF 3).
- ⑪ NEW 3/4 H.P. SUB PUMP WITH IN-LINE LEAK DETECTOR (TYPICAL OF 3).
- ⑫ 2"/3" DIA. VAPOR MANIFOLD FOR STAGE II VAPOR PIPING. SEE SHELL OIL COMPANY TYPICAL PIPING DETAILS.
- ⑬ 2" DIA. FIBERGLASS PRODUCT PIPING WITH 3" SECONDARY CONTAINMENT. SLOPE 1/4" PER FOOT TOWARD TANKS.
- ⑭ 3" DIA. FIBERGLASS "MAIN" VAPOR RETURN LINE, MINIMUM SLOPE OF 1/4" PER FOOT TO TANK.
- ⑮ 2" DIA. VAPOR RETURN LINE FROM DISPENSER TO MAIN (3" DIA.) VAPOR RETURN LINE.
- ⑯ PIPING MONITOR WELL SEE DETAIL "A" SHEET PP-25.
- ⑰ NEW 2" DIA. VENT RISERS. SEE PP-4, DTL.4
- ⑱ NEW RONAN LEAK SENSING PROBE FOR TURBINE PUMP AND ANNULAR SPACE RISER (TYP. OF 6).





CASTRO VALLEY



ALL PIPING RUNS ARE SHOWN SCHEMATICALLY. THE BEST ROUTE SHOULD BE DETERMINED IN THE FIELD AND INSTALLED ACCORDING TO NATIONAL, STATE, AND LOCAL CODE REQUIREMENTS.

LEGEND

—Y—	3"Ø DOUBLE WALL FIBERGLASS 'SHELL REGULAR GASOLINE' (LEADED) PRODUCT LINE (YELLOW)
—B—	3"Ø DOUBLE WALL FIBERGLASS 'SHELL SUPER UNLEADED GASOLINE' PRODUCT LINE (BLACK)
—R—	3"Ø DOUBLE WALL FIBERGLASS 'SHELL UNLEADED GASOLINE' PRODUCT LINE (RED)
----VR----	2"Ø FIBERGLASS VAPOR RETURN LINE MIN. SLOPE = 1/4" : 1'-0" TO TANKS
—V—	2"Ø FIBERGLASS GASOLINE STORAGE TANK VENT LINE MIN. SLOPE = 1/4" : 1'-0" TO TANKS

				DATE	APPV.
					PRELIM.
					PERMIT
					BID 2-10-88
					CONST. 2-25-88
MARK	DATE	REVISIONS	BY		

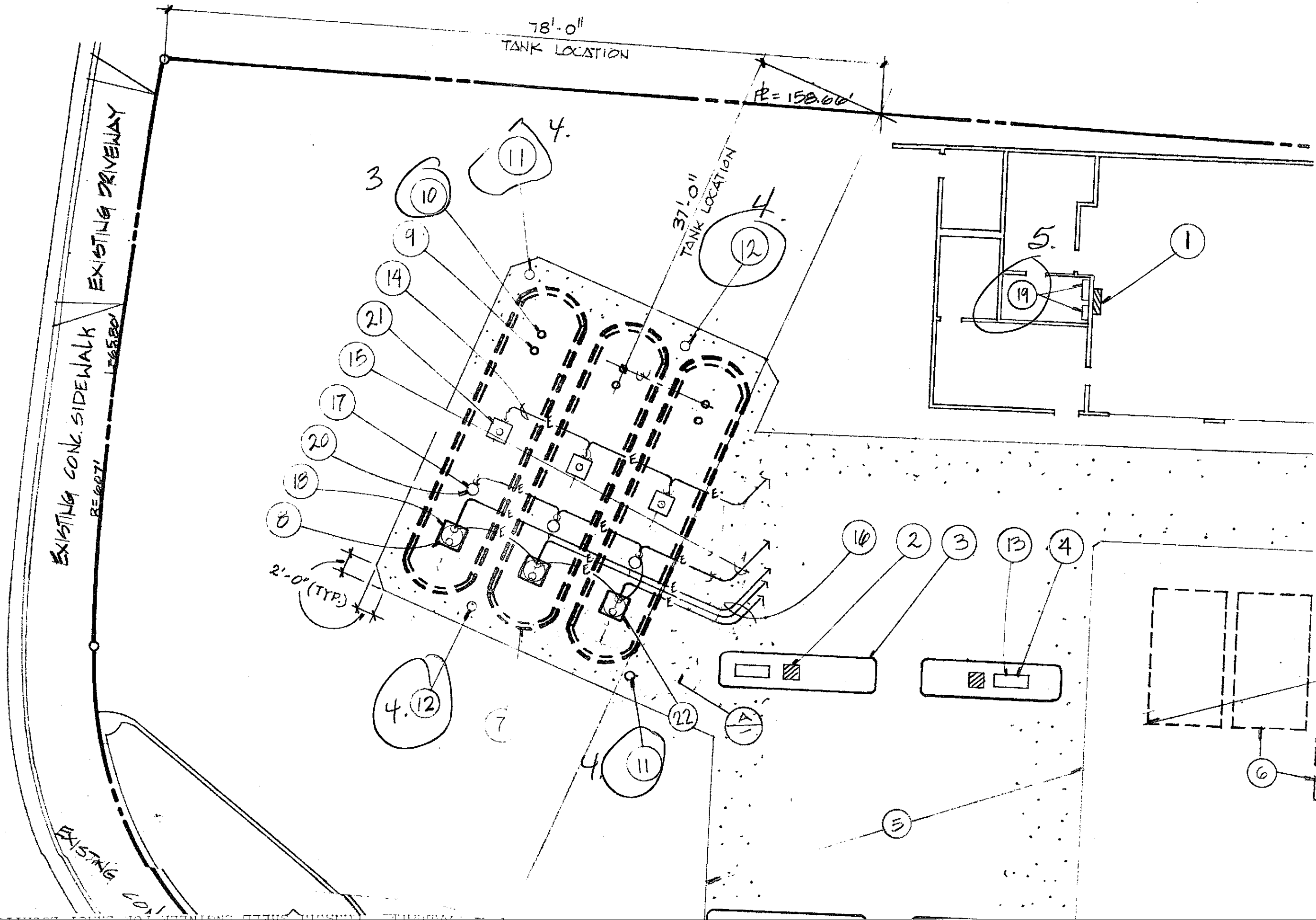
PETROLEUM PIPING PLAN

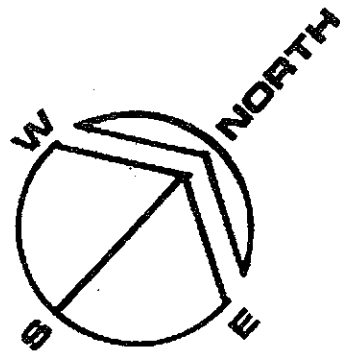
2724 CASTRO VALLEY BLVD.

CASTRO VALLEY, CA.

 <p>SHELL OIL COMPANY</p>	<p>SCALE 1" = 10' 0"</p> <p>OWN. BY LE</p> <p>RHL # 6662</p> <p>W.I.C.#</p>
	<p>ROBERT M. LEE & ASSOCIATES, INC.</p>

LAKE CHABOT RD.





NOTES:

- 1 EXISTING ELECTRICAL PANEL.
- 2 EXISTING CANOPY COLUMN (TYP OF 4).
- 3 EXISTING DISPENSER ISLAND. MODIFY EXISTING DISPENSER CORE HOLE TO ALLOW FOR ANCHORING PRODUCT PIPING W/BRVBOX (TYP OF 4).
- 4 EXISTING MULTI-PRODUCT DISPENSER TO REMAIN (TYP OF 4).
- 5 EXISTING CONCRETE DRIVE SLAB. SAWCUT AND PATCH AS REQUIRED FOR NEW WORK.
- 6 CONTRACTOR SHALL GAS FREE, REMOVE AND DISPOSE OF EXISTING FUEL STORAGE TANKS IN ACCORDANCE WITH LOCAL REGULATIONS (TYP OF 4).
- 7 NEW OWENS-CORNING 12,000 GALLON DOUBLE-WALL FIBERGLASS UNDERGROUND FUEL STORAGE TANK WITH NEW 8" THICK REINFORCED CONCRETE SLAB PER SHELL OIL COMPANY STANDARDS AND SPECIFICATIONS. MINIMUM 4'-0", MAXIMUM 7'-0" BURY DEPTH (TYP OF 3). CONTRACTOR SHALL USE 3/8" DIA. RODS AT O.C. EACH WAY PLACED 1-1/2" ABOVE THE BOTTOM OF CONCRETE. ADDITIONAL REINFORCEMENT SHALL BE USED AROUND 30" X 30" MANHOLE PER DETAIL 4, SHEET PP-3.
- 8 NEW 30" SQUARE WATER TIGHT MANHOLE FOR TURBINE PUMP (WITH ELECTRONIC SENSOR).
- 9 NEW 3" DIA. VAPOR RETURN RISER WITH 16" DIA. SPILL CONTAINMENT MANHOLE.
- 10 NEW 4" DIA. FILL WITH 16" DIA. SPILL CONTAINMENT MANHOLE, (TYP OF 3).
- 11 NEW 4" DIAMETER SLOTTED PIPE TEST WELL IN 12" DIAMETER MANHOLE AND COVER. SEE SHELL OIL COMPANY TYPICAL TANK INSTALLATION DETAILS (TYP OF 2). (NO ELECTRONIC SENSING).
- 12 NEW 6" DIAMETER SLOTTED PIPE TEST WELL IN 12" DIAMETER WATERTIGHT MANHOLE PER SHELL OIL SPECIFICATIONS (TYP OF 2). (NO ELECTRONIC SENSING).
- 13 CONTRACTOR SHALL CONNECT NEW DISPENSERS TO NEW PRODUCT AND VAPOR RETURN PIPING LINES PER SHELL STANDARD SPECIFICATIONS AND REPAIR PAVING WHERE DAMAGED OR DISTURBED BY NEW INSTALLATION WORK (TYP OF 3).
- 14 NEW 1" CONDUIT FOR FUTURE TANK GAUGING TO EXISTING ELECTRICAL PANEL. PULL 15 #18 THWN DIFFERENT COLORS BETWEEN PANEL AND J-BOXES FOR FUTURE USE. J-BOXES TO BE EXPLOSION PROOF AND CONTAINED WITHIN MANWAYS. LOOP 3/4" CONDUIT BETWEEN TANKS (TYP OF 3).
- 15 NEW 1" CONDUIT TO NEW RONAN LEAK DETECTION CONTROL PANEL IN STORAGE ROOM FOR TURBINE SUMP PROBE AND ANNULAR SPACE PROBE. LOOP 3/4" CONDUIT BETWEEN TANKS.
- 16 NEW 3/4" CONDUITS FROM SUB PUMPS TO NEW PUMP RELAYS IN STORAGE ROOM. (ONE EACH PUMP).
- 17 NEW 16" DIA. WATERTIGHT MANHOLE FOR ANNULAR SPACE MONITORING (BY ELECTRONIC SENSOR).
- 18 NEW TURBINE PUMP (TYP OF 3).

ACCEPTED *MJM*

DEPARTMENT OF ENVIRONMENTAL HEALTH
 470 - 27th Street, Third Floor
 Oakland, CA 94612
 Telephone: (415) 874-7237

"These plans have been reviewed and found to be acceptable and essentially meet the requirements of State and local health laws. Changes to your plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction.

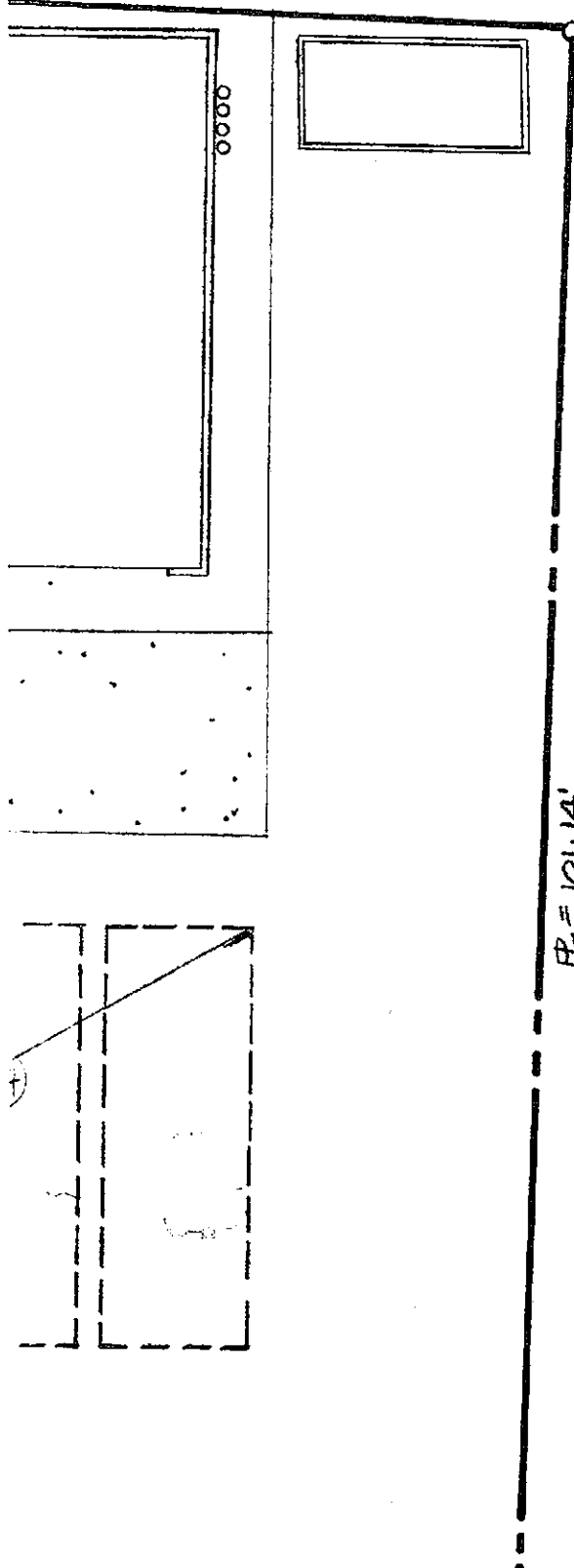
One copy of these accepted plans must be on the job and available to all contractors and craftsmen involved with the construction and installation.

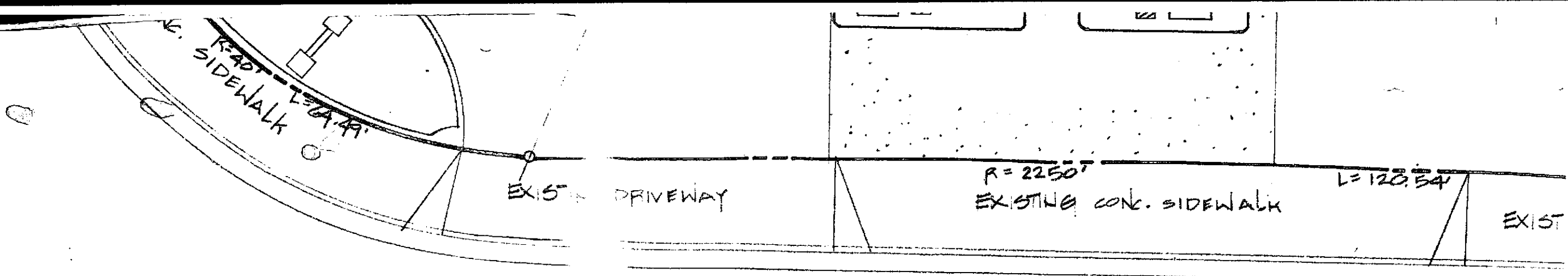
Any change or alterations of these plans and specifications must be submitted to this Department and to the Fire and Building Inspection Department to determine if such changes meet the requirements of State and local laws. Notify this Department at least 48 hours prior to the following required inspections:

- _____ Pressure Test
- _____ Pre-Covering of Tank and Piping
- _____ Final Inspection

Issuance of a permit to operate is dependent on compliance with accepted plans and all applicable laws and regulations.

THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS.

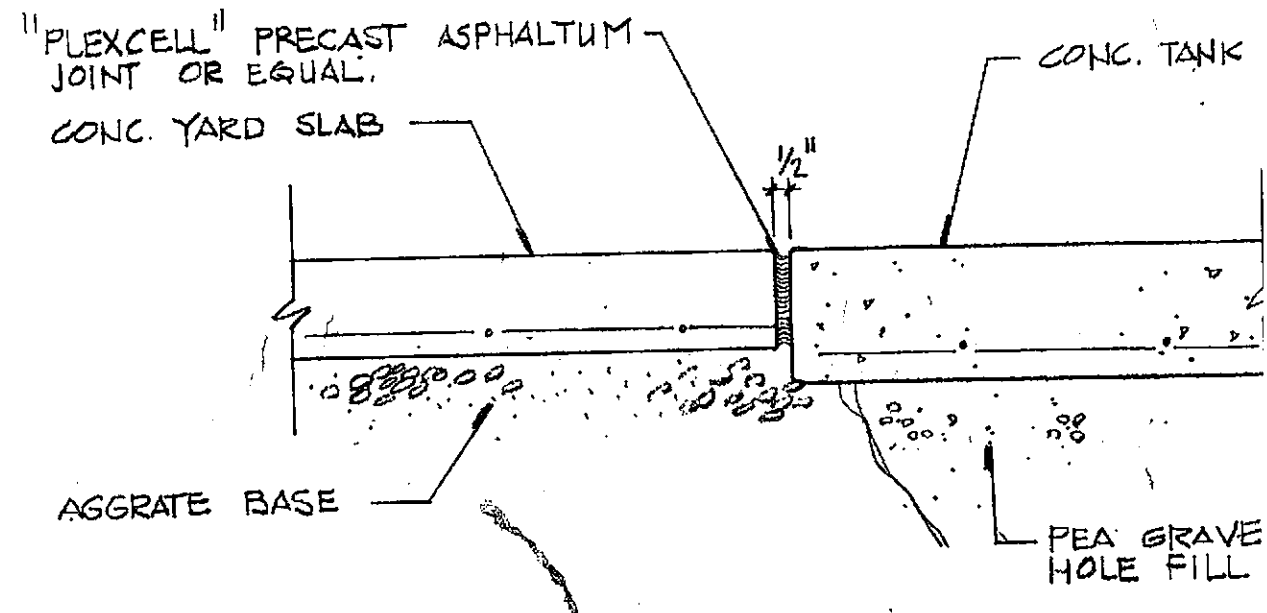


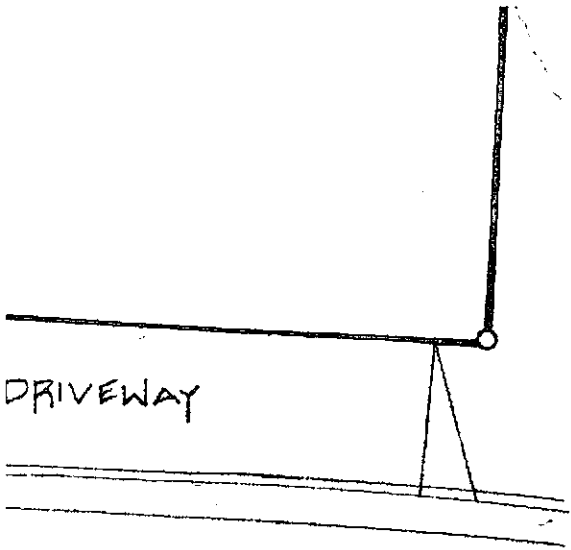


CASTRO VALLEY

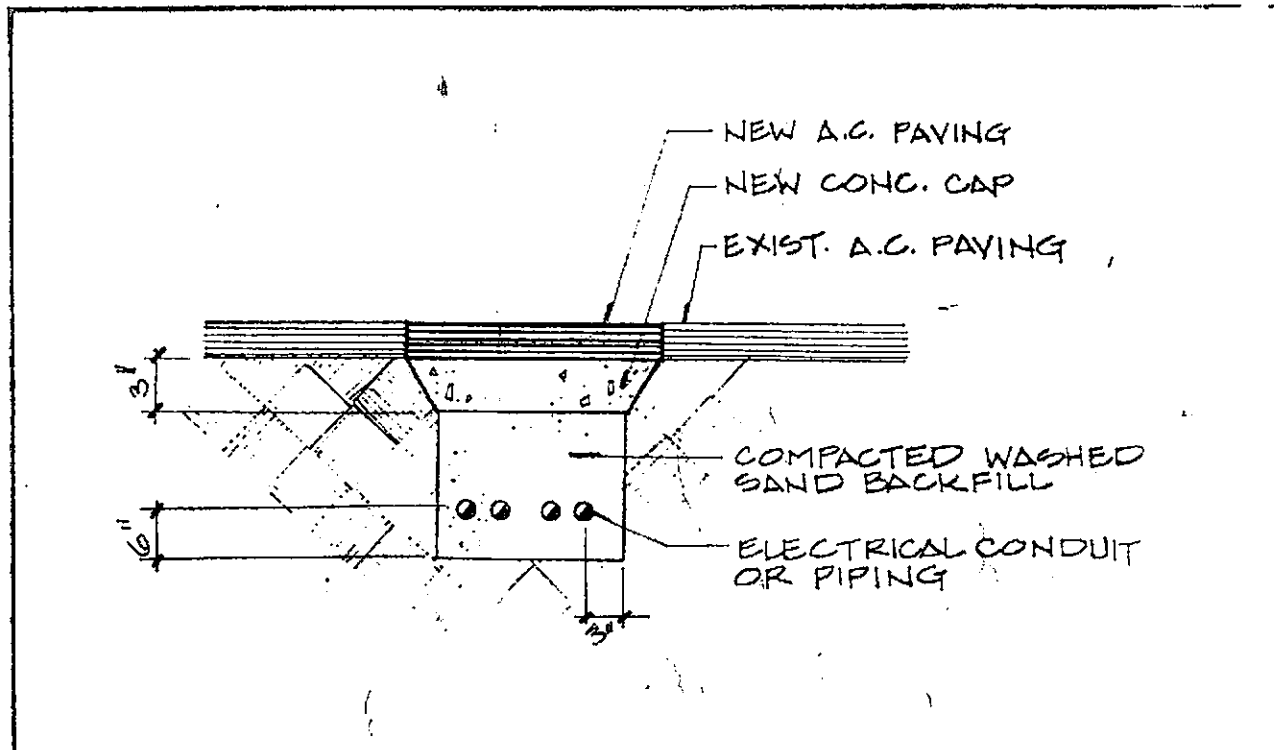
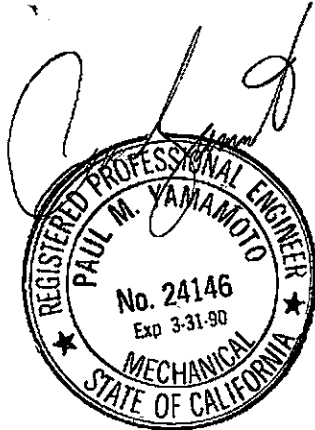
Notes

1. Permit applications must be submitted for each new tank prior to installation
 2. "As-builts" must be submitted within 30 days of completion of construction
 3. Spill catchment basin - 5 gallon minimum
 4. Test wells must have locking covers as anti-vandalism device
 5. Leak detection control panel - dedicated circuit
 6. Red jackets must have tamper-proof seal as an anti-vandalism device
- Season tank. Pressure test





24) BACK FILL AND COMPACT HOLE TO 90%, PATCH YARD AREA WITH 4" AGGREGATE BASE AND 4" A/C PAVING. SLOPE AREA AS REQUIRED TO MATCH EXISTING GRADES AND PROVIDE POSIT DRAINAGE.



NEW GAUGING-CORNER LEAK DETECTION RESERVOIR AND SENSOR (TYPICAL OF 3).

24" SQUARE MANHOLE FOR FUTURE TANK GAUGING)

NEW TANK LEAK SENSING PROBES FOR TURBINE PUMP

PROVIDE SHORING DURING EXCAVATION OF NEW TANKS HOLES TO PREVENT SUBVERSION OF ADJOINING DRIVE SLABS AND DISPENSE ISLANDS. (ALTERNATE BID)

NOTE:
GENERAL CONTRACTOR SHALL NOTIFY B.A.A.G.M.D. 10 DAYS PRIOR TO TANK REMOVAL FOR INSPECTION.

WHEN BACKFILLING TOTAL CONTAINMENT SYSTEM, GENERAL CONTRACTOR MUST ARRANGE TO HAVE SHELL OIL INSPECTOR ON SITE.

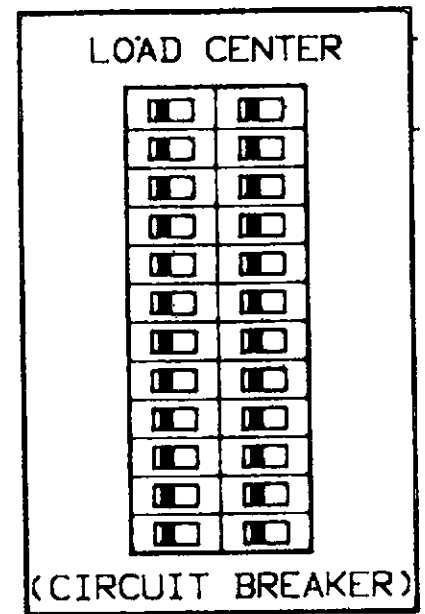
FIRE DEPT. CONTACT: BOB BOHMAN (415) 670-6880
ENVIR. HEALTH DEPT. CONTACT: LARRY SETO (415) 271-4320

ALL ELECTRICAL RUNS ARE SHOWN SCHEMATICALLY. THE BEST ROUTE SHOULD BE DETERMINED IN THE FIELD AND INSTALLED ACCORDING TO NATIONAL, STATE, AND LOCAL CODE REQUIREMENTS.

5-12-88 PMY
 8-10-88 PMY
 8-25-88 PMY

SITE / YARD ELECTRICAL PLAN

[Faint, illegible text and signatures]



EMERGENCY SHUTOFF SWITCH

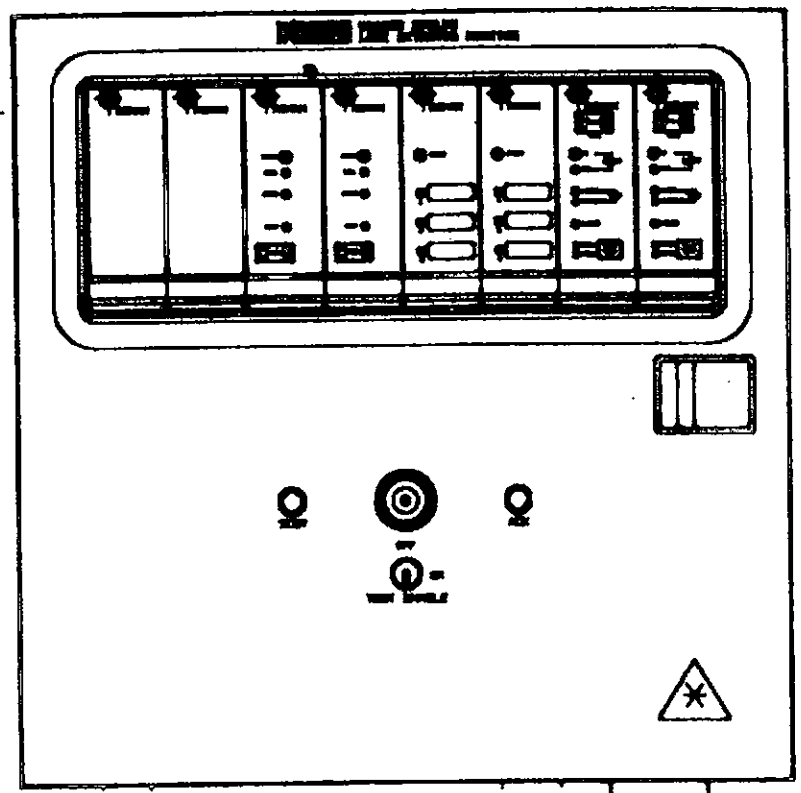
CONDUIT A

CONDUIT B

PUMP MOTOR RELAY

CONDUIT E

CONDUIT C



INTRINSIC SAFE

CONDUIT C

CONDUIT D

CONDUIT D

SYPHON CHECK VALVE PORT
USED FOR HVFS VAPOR SENSOR VACUUM LINE.

1/4" O.D.
COPPER TUBING

FILTER

TEST VALVE

OPTIONAL
(SEE SITE PLAN)

48" DIA FIBERGLASS CONTAINMENT
(BY SHELL-INSTALLED BY GENERAL)

THE INFORMATION DISCLOSED HEREIN WAS ORIGINATED BY AND IS THE PROPERTY OF RONAN AND EXCEPT FOR EXPRESSLY GRANTED TO THE UNITED STATES GOVERNMENT. RONAN RESERVES ALL PATENT PROPRIETARY, OSS, SALE, MANUFACTURING AND REPRODUCTIONS RIGHT THERETO

REV	DESCRIPTION	DATE	BY	ENGR	APP
-----	-------------	------	----	------	-----

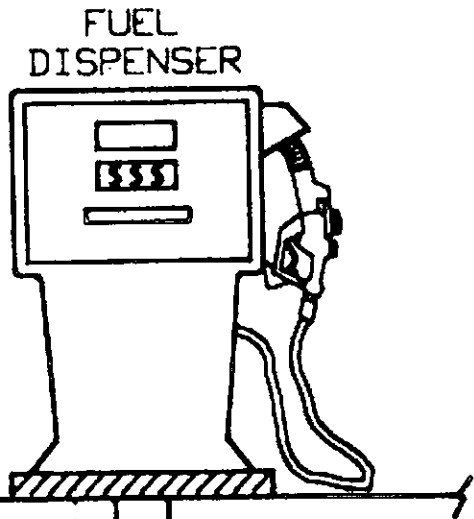
OPTIONAL
COMPUTER
CENTER

CONDUIT G

CONDUIT G

△ REFER TO
WIRING DIAGRAM #X76D267
FOR ACTUAL TERMINATION

LY
SECTION



VENT RISER
TURBINE RISER

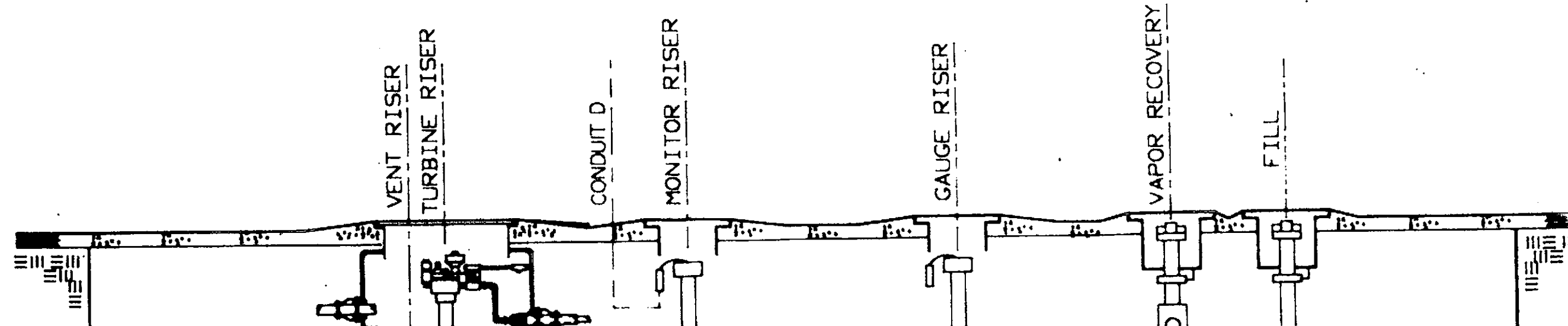
CONDUIT D

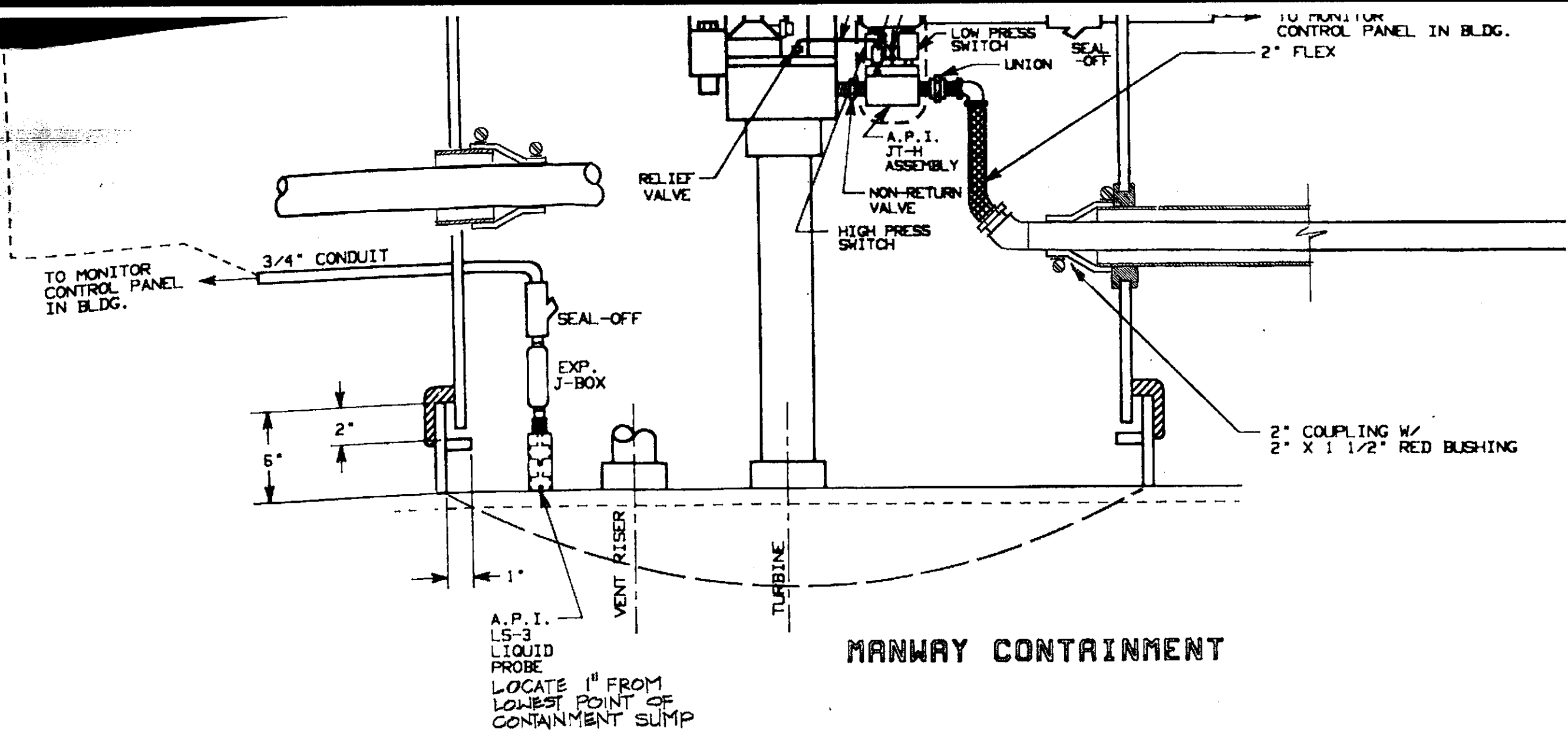
MONITOR RISER

GAUGE RISER

VAPOR RECOVERY

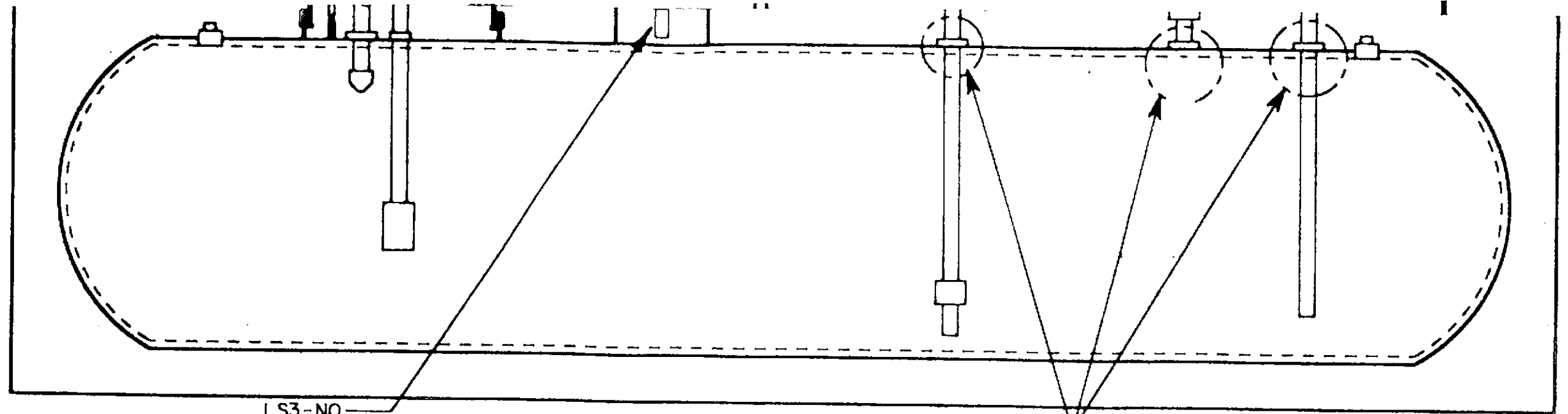
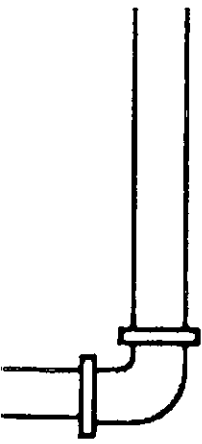
FILL





CONDUIT	NUMBER OF WIRES	PURPOSE
A	3	X76 power (hot, neutral, ground, 120 VAC)
B	2	240 VAC power to relay starter
C	4	240 VAC submersible pump power (2 wires) JT-H Line leak sensor: 3 WIRES (cap spare red wire)
D	4	2 WIRES FROM LS-3 NC (SUMP AREA) 2 WIRES FROM LS-3 NO (RESERVOIR)
E	1	120 VAC hot to relay starter coil (1 wire)
G	1	120 VAC return hot from dispenser switch or computer

CAUTION: All pump control power must be same phase as power for X76.
Non-conforming phases will cause severe equipment damage.



LS3-NO

DOUBLE WALL OCF "P" STYLE



SEE DETAIL 9
ON
DWG. NO. PP-3

d center

				DATE
				PRELIM.
				PERMIT
				BID
				CONST.
MARK	DATE	REVISIONS	BY	

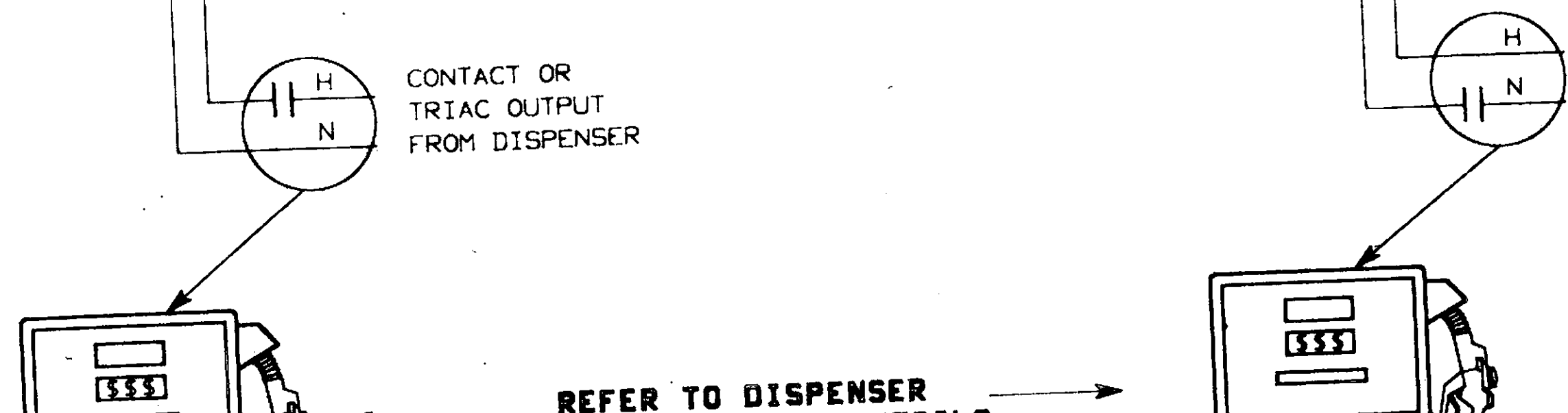
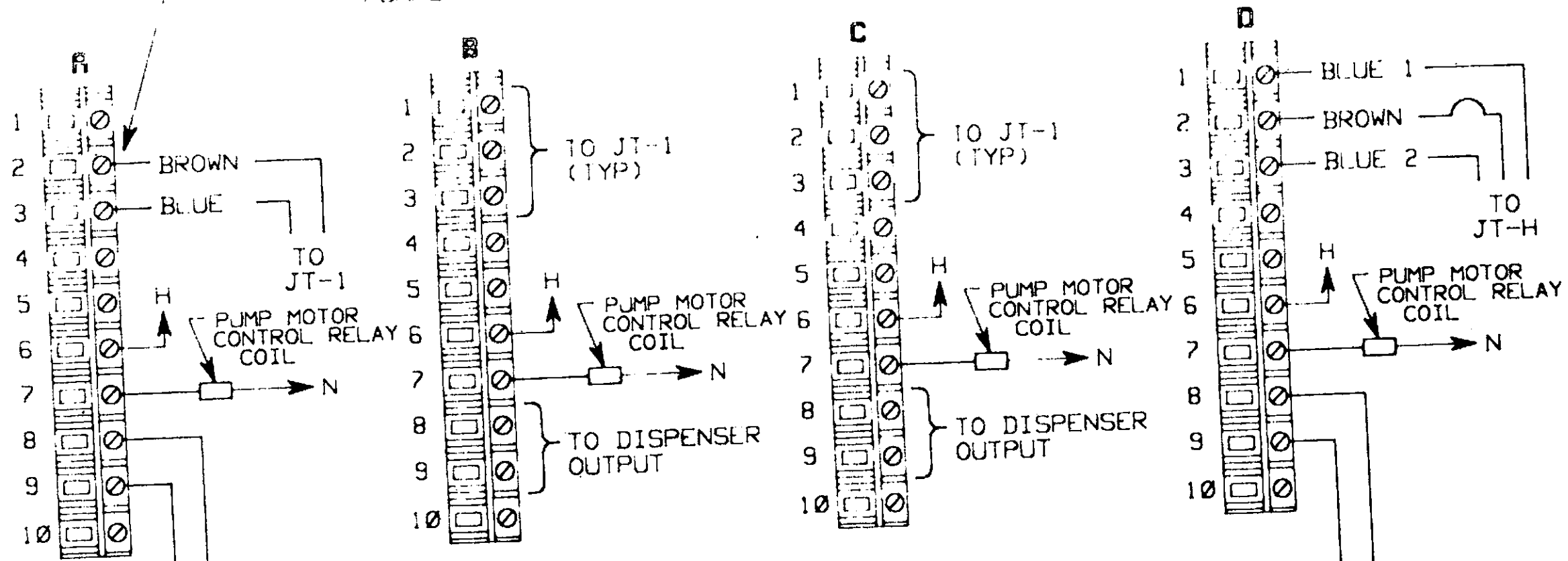
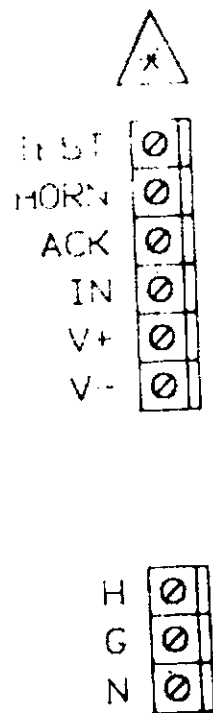
**RONAN LEAK DETECTOR SYSTEM
BLOCK DIAGRAM**

**2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.**

 <p>SHELL OIL COMPANY</p>	SCALE _____
	DWN. BY _____
 <p>ROBERT H. LEE & ASSOCIATES, INC.</p> <p>ARCHITECTURE PLANNING ENGINEERING</p>	RHL ← 6662
	W.I.C. ← _____

NOTE: JUMPER 1 TO 3 FOR CONTINUOUS PRESSURE MONITORING
 (A ARM & SHUT-DOWN IF PRESSURE FALLS BELOW 20 PSI)
 ON

JUMPER 1 TO 2 FOR PUMP MOTOR CONTROL ON PUMPING CYCLE
 (USED ON OLDER SYSTEMS USING LOWER H.P. SUBMERSIBLE
 PUMPS FEEDING SEVERAL DISPENSERS.)



REFER TO DISPENSER

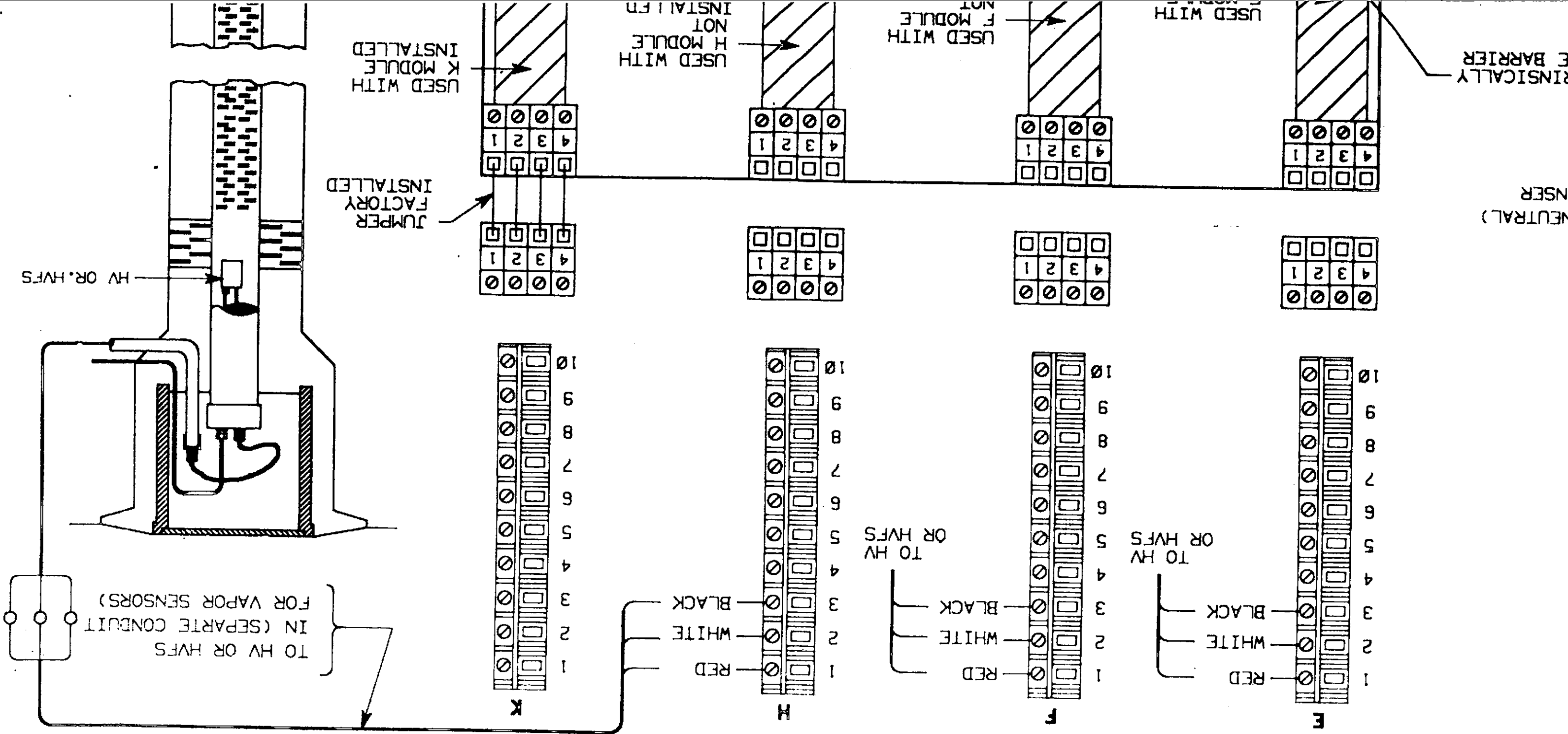
X57 INTRINSICAL SAFE BARRI

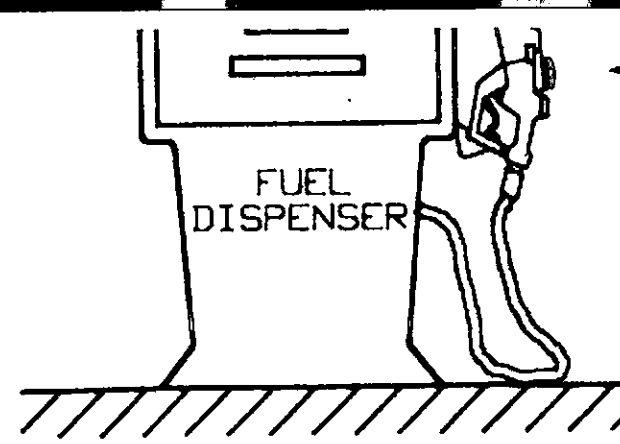
THE INFORMATION DISCLOSED HEREIN WAS ORIGINATED BY AND IS THE PROPERTY OF ROMAN AND EXCEPT FOR RIGHT EXPRESSLY GRANTED TO THE UNITED STATES GOVERNMENT ROMAN RESERVES ALL PATENT PROPRIETARY DESIGN OR SALE MANUFACTURING AND REPRODUCTIONS RIGHT THERE TO

REV	DESCRIPTION	DATE	BY	ENGR	APPR	QA

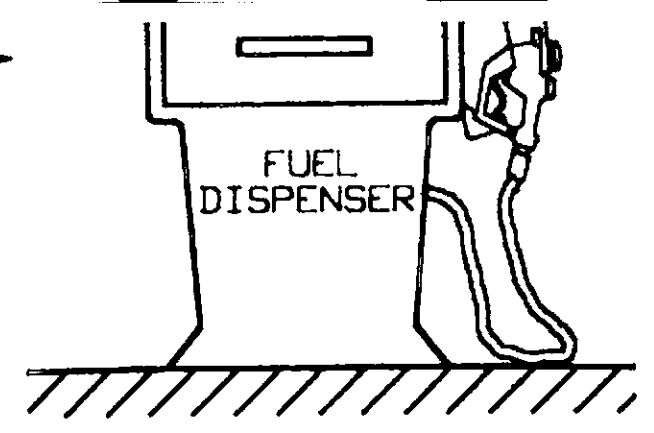
1 ADDED BARRIER WIRING AND JT-H 11.FEB.88 KSP

NOTE X26AM-4 ALARM MODULES CAN BE INSERTED IN ANY OF THESE CHASSIS POSITIONS



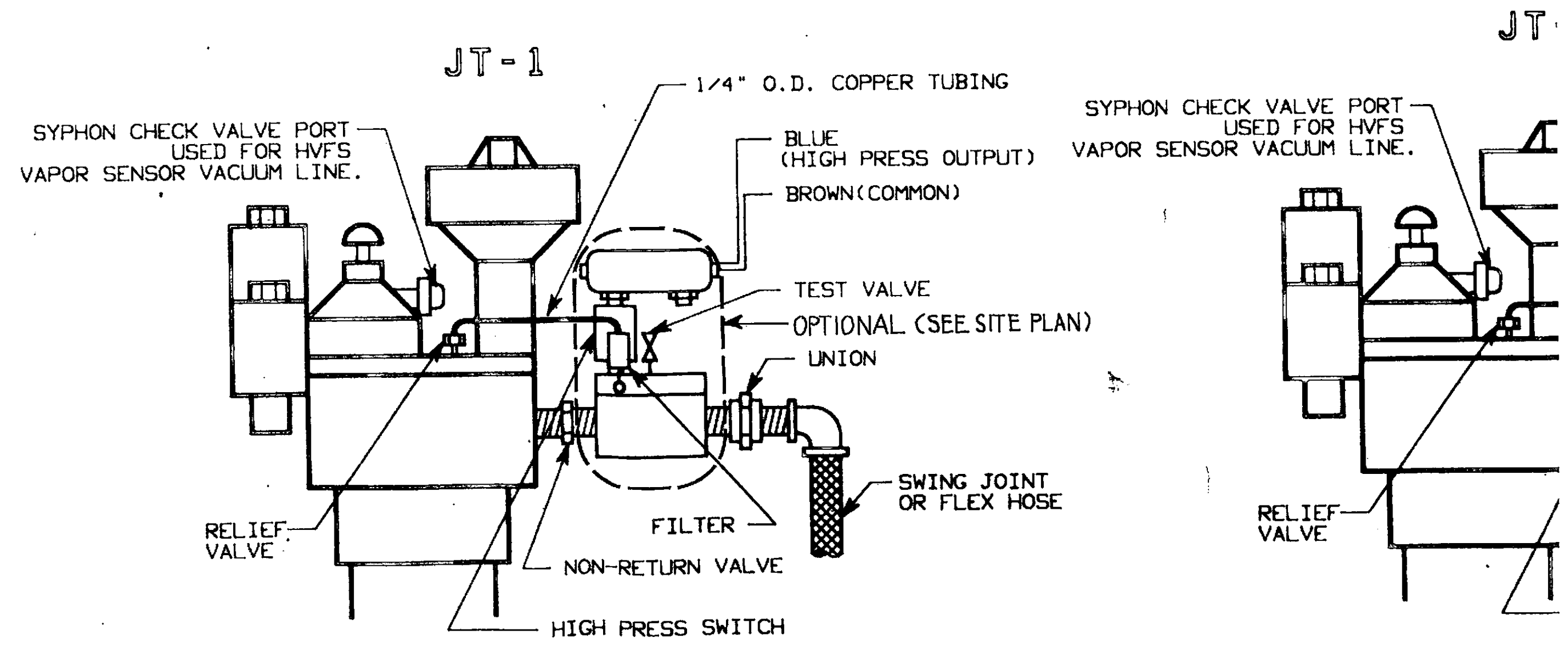


REFER TO DISPENSER
MANUAL FOR WIRING DETAILS

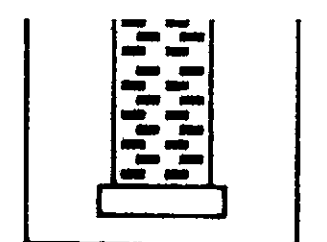
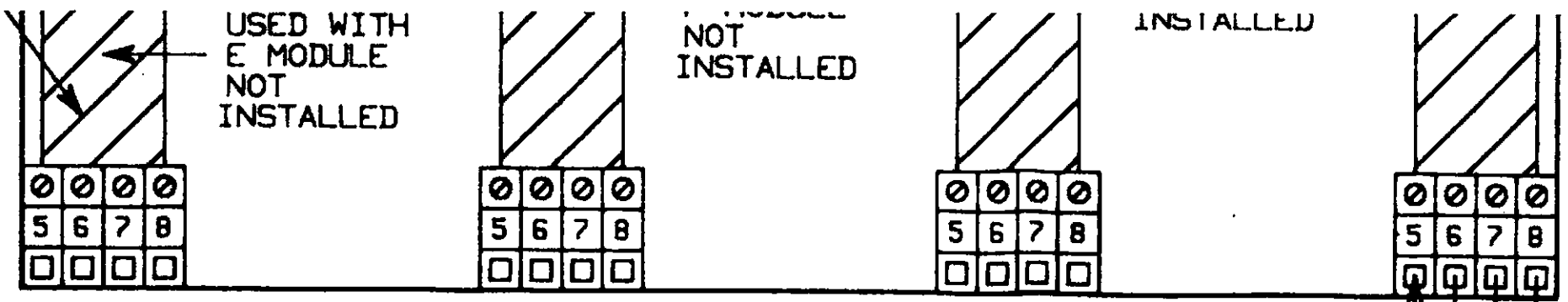


NOTES :
SYSTEM ABOVE IS SHOWN WITH 4 LINE
LEAK MONITORS AND THREE VAPOR SENSOR MONITOR
AND ONE ALARM MODULE (3 ALARM INPUTS)
ACTUAL INSTALLATIONS MAY HAVE DIFFERENT
NUMBERS OF EACH. (CHASSIS ARE
PLUG COMPATIBLE FOR ANY COMBINATION)
REFER TO BLOCK LAYOUT DRAWING

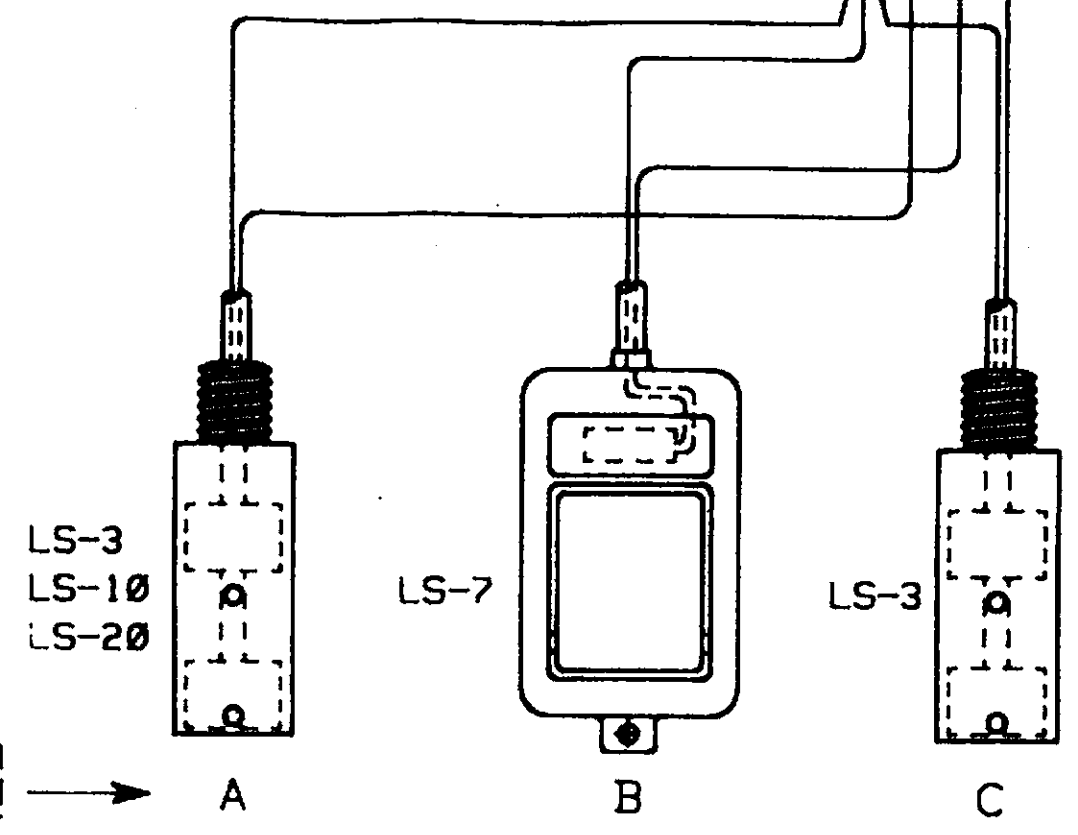
* SEE WIRING DIAGRAM DWG. NO. X76C213
FOR INTERNAL WIRING



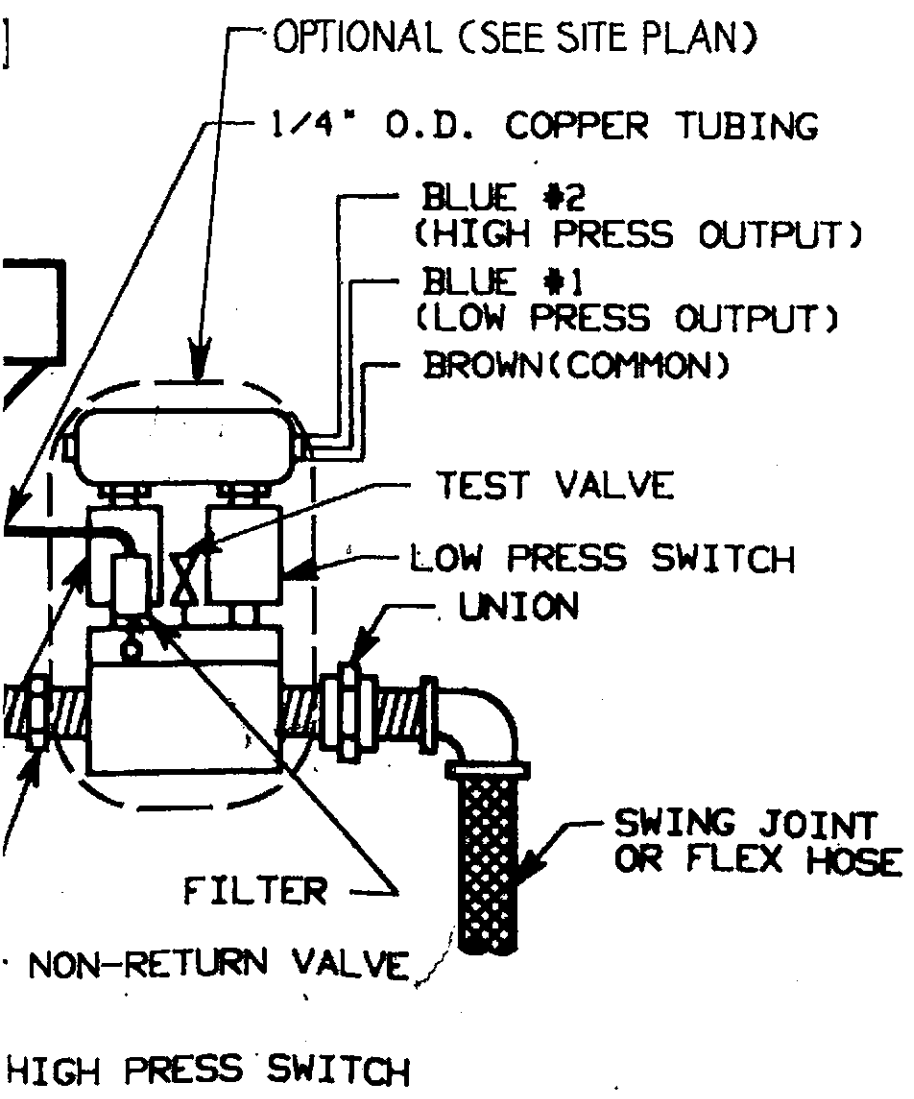
JT



VADDOSE WELL



TYPICAL FOR THREE CONTACT INPUT PER ALARM MODULE X76AM-4



				DATE
				PRELIM. _____
				PERMIT _____
				BID _____
				CONST. _____
MARK	DATE	REVISIONS	BY	

RONAN LEAK DETECTOR SYSTEM WIRING DETAILS

**2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.**



SHELL OIL COMPANY
EAST BAY DISTRICT

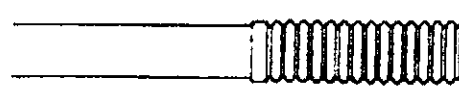
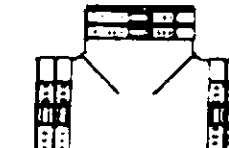

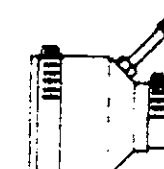
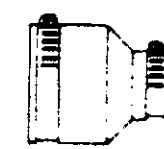


SCALE _____
OWN. BY _____
RHL+ 666






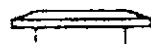
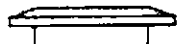
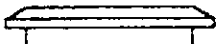
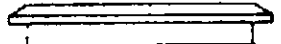
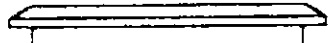
TOTAL CONTAINMENT

Pipe Jacket™
Secondary Containment System

Mechanical Seal System

Pipe Jacket™ Components

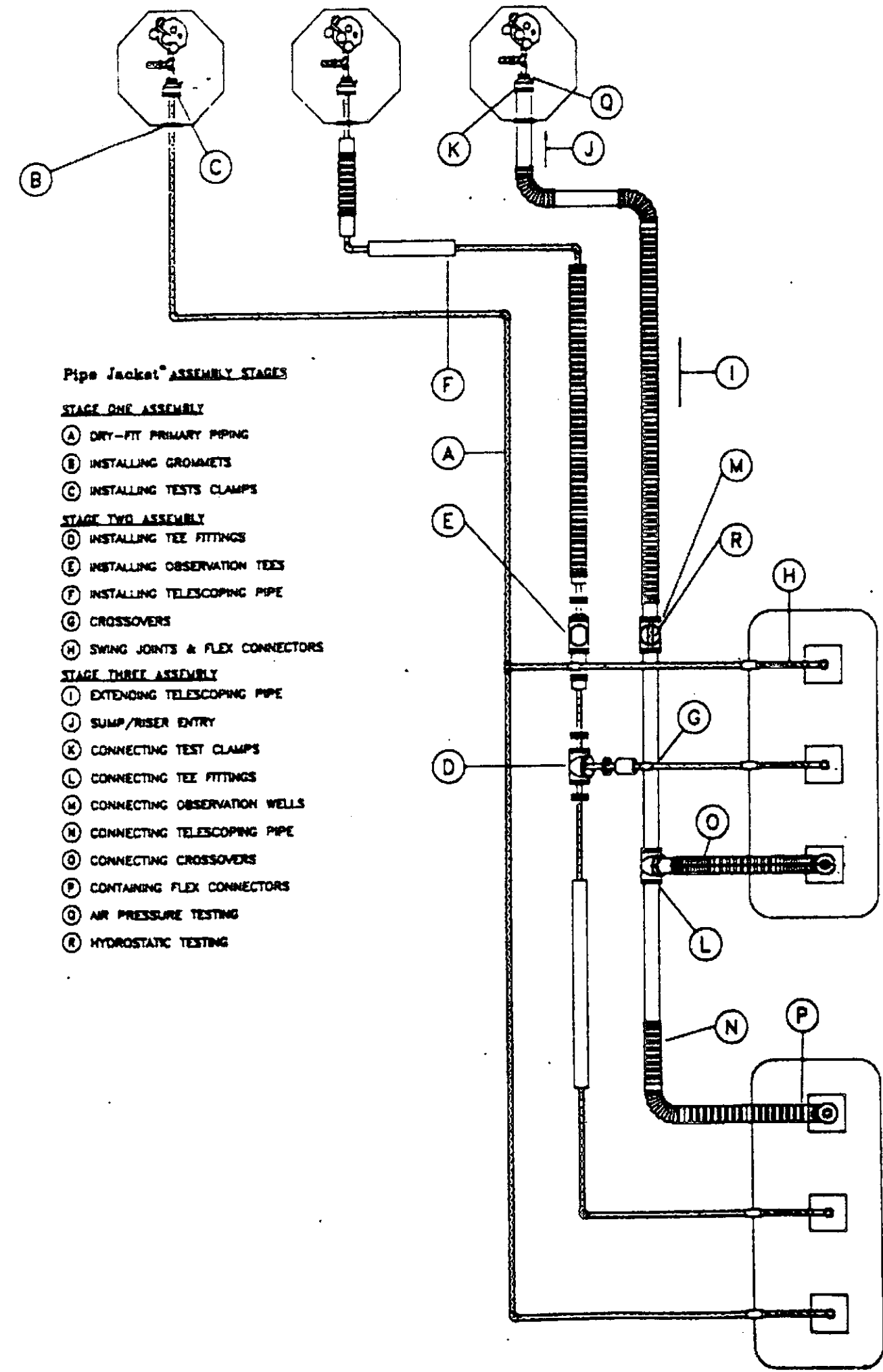
	<p>Telescoping Pipe Consists of a 15' long section of straight pipe contained within a 15' long section of flexible pipe. Telescoping Pipe is available in two size diameters, for containment of either 2" or 3" primary pipe. The Telescoping feature provides for easy installation and total primary pipe observation. Comes bagged in bundles of five sections of each type pipe totalling 150 lineal feet.</p>
	<p>Tee Fittings There are two sizes of containment tee fittings for containment of 2" and 3" primary tee fittings. Tee fittings are of a non-split design, sized large enough to have the primary tee fitting inserted prior to primary pipe sealing. They come with their own Compression Seals and six stainless steel clamps.</p>
	<p>Swing Joint Flex Used for containment of 2" diameter steel swing joints, at the end of a piping system under the dispenser. This flexible pipe is 33" in length and has one coupling on each end. It is more flexible than the Telescoping Flex Pipe and is designed to go over even the tightest swing joints. Comes fitted with two compression seals and two stainless steel clamps.</p>
	<p>Test Reducer These reducers are used inside the Sump/Riser to seal off the Pipe Jacket system during air and hydrostatic testing. They are fitted with an air valve stem, stainless steel clamps and are available in three sizes, one for 1-1/2" primary pipe, one for 2" primary pipe, and one for 3" primary pipe.</p>
	<p>Terminating Reducers These reducers are clamped to the primary pipe just below the shear valve located under the dispenser. The Terminating Reducer comes fitted with stainless steel clamps and can be clamped to either a 2" or 1-1/2" diameter pipe.</p>
	<p>Observation Caps These caps are installed at the top of an observation well to seal and to permit future access for observation and testing of the Pipe Jacket. Each Cap comes fitted with its own stainless steel clamp.</p>
	<p>Compression Seals These rubber seals are used in each end of a Telescoping Flex Pipe section and for sealing 3" to 2" Telescoping Straight Pipe step-downs. They come fitted with their own stainless steel clamp and are packaged in a bag of 24 each.</p>

COMPONENT











A = 2" Primary Pipe Containment

DESCRIPTION
4" Riser Mount Collar (RM-004) Installed in the base of any Sump/Riser for direct mounting to a 4" riser pipe of a submersible pump. Comes with two stainless steel clamps and packaged in a case of 6 each.
6" Riser Mount Collar (RM-006) Installed in the base of any Sump/Riser for direct mounting to a 6" riser pipe of a submersible pump. Comes with two stainless steel clamps and packaged in a case of 6 each.
1/2" Grommet (GS-050) Used to seal 1/2" conduit entries into Sump/Risers. Comes packaged in a bag of 24 each.
3/4" Grommet (GS-075) Used to seal 3/4" conduit entries into Sump/Risers. Comes packaged in a bag of 24 each.
1" Grommet (GS-100) Used to seal 1" conduit entries into Sump/Risers. Comes packaged in a bag of 24 each.
1-1/2" Grommet (GS-150) Used to seal 1-1/2" pipe entries into Sump/Risers. Comes packaged in a bag of 12 each.
2" Grommet (GS-200) Used to seal 2" pipe entries into Sump/Risers. Comes packaged in a bag of 12 each.
3" Grommet (GS-300) Used to seal 3" pipe entries into Sump/Risers. Comes packaged in a bag of 8 each.
A Grommet (GS-390) Used to seal Telescoping Pipe A entries into Sump/Riser. Comes packaged in a bag of 6 each.
B Grommet (GS-490) Used to seal Telescoping Pipe B entries into Sump/Riser. Comes packaged in a bag of 6 each.

B = 3" Primary Pipe Containment



Pipe Jacket[®] ASSEMBLY STAGES

STAGE ONE ASSEMBLY

- (A) DRY-FIT PRIMARY PIPING
- (B) INSTALLING GROMMETS
- (C) INSTALLING TESTS CLAMPS

STAGE TWO ASSEMBLY

- (D) INSTALLING TEE FITTINGS
- (E) INSTALLING OBSERVATION TEES
- (F) INSTALLING TELESCOPING PIPE
- (G) CROSSOVERS
- (H) SWING JOINTS & FLEX CONNECTORS

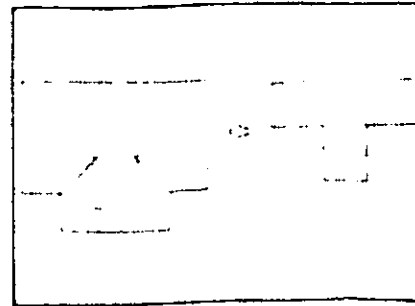
STAGE THREE ASSEMBLY

- (I) EXTENDING TELESCOPING PIPE
- (J) SUMP/RISER ENTRY
- (K) CONNECTING TEST CLAMPS
- (L) CONNECTING TEE FITTINGS
- (M) CONNECTING OBSERVATION WELLS
- (N) CONNECTING TELESCOPING PIPE
- (O) CONNECTING CROSSOVERS
- (P) CONTAINING FLEX CONNECTORS
- (Q) AIR PRESSURE TESTING
- (R) HYDROSTATIC TESTING

Stage Two Assembly

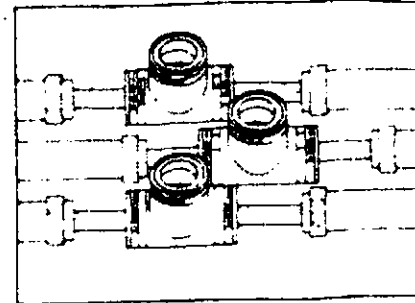
Installing Tee Fittings

These secondary tees should be installed over the primary tees prior to the primary tees being connected and sealed to the primary pipe. First remove the compression seals from the secondary tee and slide them onto the primary pipe. Next insert the primary tee inside the secondary tee. The containment tees are large enough to permit primary pipe connection and test observation.



Installing Observation Tees

If zone observation wells are required in the Pipe Jacket™ system, use a turned-up secondary containment tee. This fitting can be located anywhere in a piping run between two sections of Telescoping Straight Pipe. At a later stage of assembly this turned-up tee fitting will be fitted with a section of Telescoping Straight Pipe, used as a riser and sealed on top with a rubber observation cap.



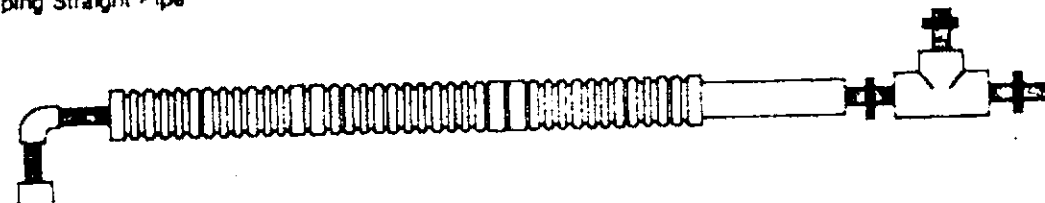
Installing Telescoping Pipe

Telescoping Pipe should be cut with a conventional hand saw and the rough edge cleaned with a knife. The Telescoping Flex Pipe should be cut between double couplings located every 16" O.C. Sizing of the Telescoping Pipe should always allow for a minimum 4" pipe overlap and a 3" fitting overlap. Note: Compression Seals should be inserted into the end coupling of Telescoping Flex Pipe before installing it over the primary piping. Refer to the illustrations below for example piping runs.

Runs Between Tees: Runs should begin and end with Telescoping Straight Pipe and have Telescoping Flex Pipe in between.



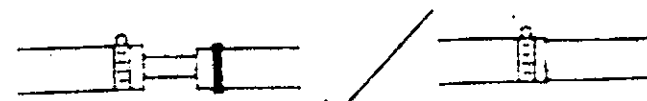
Runs Between Tees and Elbows: Runs should begin with Telescoping Flex Pipe and end with a Telescoping Straight Pipe.



Long Runs: Runs in excess of 30' should have full lengths of Telescoping Straight Pipe and Flex Pipe alternate.

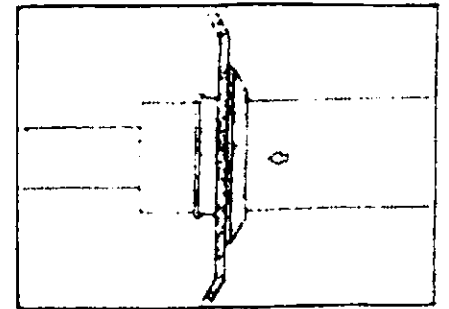


Step Downs: When stepping down from 3" to 2" Telescoping Straight Pipe do so by sealing overlap joints with Compression Seals.



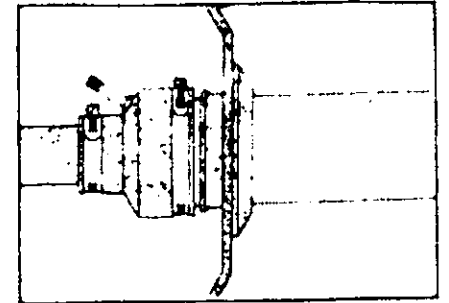
Sump/Riser Entry

Shift the Telescoping Straight Pipe located just outside the Sump/Riser into the Grommet opening and let it extend into the Sump/Riser approximately four inches.



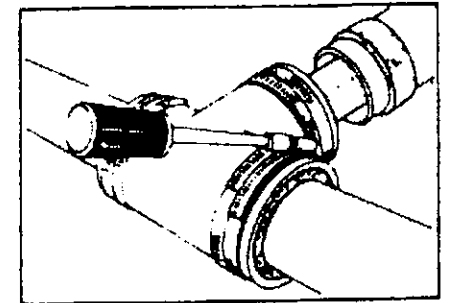
Connecting Test Reducers

Connect the Test Reducer by tightening the stainless steel clamp to the 4" end of the Telescoping Straight Pipe, then connect the other end of the Test Reducer to the primary pipe. Make sure the Test Reducer is turned so that the valve stem is facing upwards.



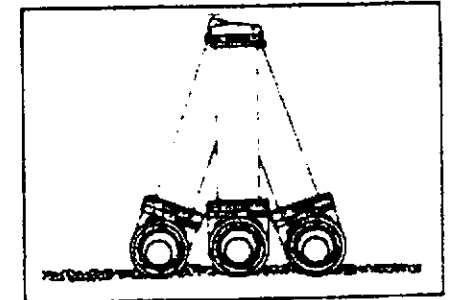
Connecting Tees

Insert the Telescoping Straight Pipe into the Compression Seal opening approximately three inches and then tighten down on the two stainless steel clamps using a manual or electric nut driver.



Connecting Observation Wells

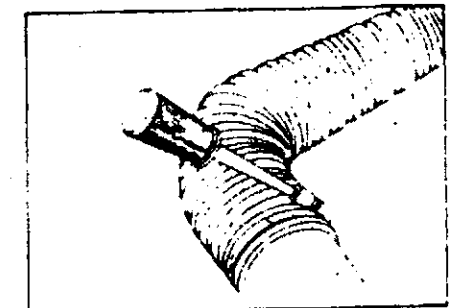
The turned-up Tee Fitting should be connected to the Telescoping Straight Pipe as discussed above. At the turned-up opening of the Tee Fitting, insert a short section of Telescoping Straight Pipe which extends to approximately 4" to 6" below grade. This riser pipe will be sealed at the top by using the Observation Cap to allow future access to the observation well. Connect the observation tee fitting to piping as described above.



Connecting Telescoping Pipe

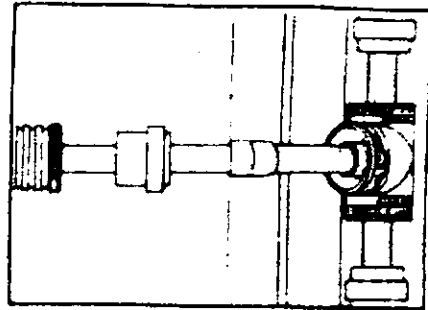
The Telescoping Flex Pipe should make connection to the Telescoping Straight Pipe by positioning them both so that there is a minimum 4" overlap joint. Next install the stainless steel clamp over the end of the Telescoping Flex Pipe.

Note: The inside Compression Seal should have been pre-installed into the end of the Telescoping Flex Pipe prior to primary pipe connection.



Crossovers

Where crossovers are required in the piping system, the height of the crossover should accommodate the additional size of the Pipe Jacket™ Components. For crossovers with Tees the Telescoping Flex Pipe should be positioned on the primary pipe so that it may be shifted over the 45° elbow and connected to a short section of Telescoping Straight Pipe at the Tee. For crossovers with 90° fittings, the Telescoping Pipe should be cut long enough, to extend around the 90° fitting to the adjoining piping run.



Swing Joints and Flex Connectors

The Pipe Jacket™ system terminates, at the dispenser, just under the shear valve by using the Terminating Flex for swing joint containment or a section of Telescoping Flex Pipe for flexible connector containment. It is not necessary to install either of these Pipe Jacket™ components until the primary piping has been tested and inspected. At a later stage of assembly after primary pipe testing, they may be installed by inserting them down through the island access opening. Refer to Containing Swing Joints and Flex Connectors sections on page 5 for additional information.

Primary Pipe Connection

After all of the Pipe Jacket™ components have been installed onto the primary piping and extended into their final position, double check Telescoping Pipe length and that all other components are in their proper position, then primary pipe connection may begin. Start by shifting the Telescoping Pipe and compression seals away from all primary pipe and fitting connections. Avoid adhesive and sealant spills from primary connections inside secondary tee fittings. During the testing and inspection stage of the primary piping, the Telescoping Pipe can be shifted from side to side on a piping run to permit complete primary pipe and fitting inspections.

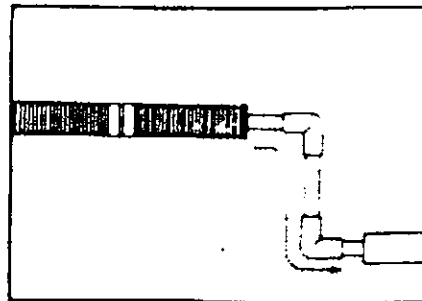
Stage Three Assembly

Pipe Jacket Connection

After the primary piping has been connected, tested and inspected, connection of the Pipe Jacket™ components may then proceed. All components should be shifted into their final position before tightening of clamps begins. At this stage of assembly, make sure all compression seals are inspected and cleaned of dirt and debris.

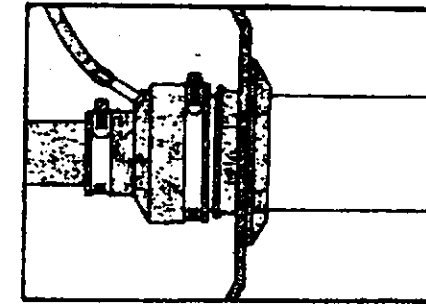
Extending Telescoping Pipe

After the primary piping has been tested the pre-installed Telescoping Pipe should be extended into its final position. For shifting of Telescoping Flex Pipe around primary 90° fittings it may be necessary to apply a lubricant, such as liquid soap or petroleum jelly to the primary 90° fittings to prevent jamming. It should be noted the Tee Fittings and their compression seals only accept the Telescoping Straight Pipe.



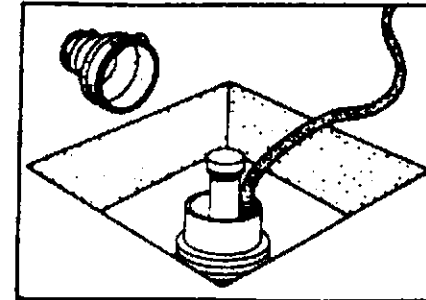
Air Pressure Testing

After all Pipe Jacket™ components have been connected, an air pressure/soap test may be performed to detect any pin hole leaks. Using the valve stem on the Test Reducer, pressurize the Pipe Jacket™ line not to exceed 5 p.s.i. Any leaks detected at over-lap joints can be eliminated by reassembling the overlap joint or simply tightening the clamp down more firmly. Because of temperature changes, an air-pressure hold test is not recommended, but rather a hydrostatic hold test as explained below.



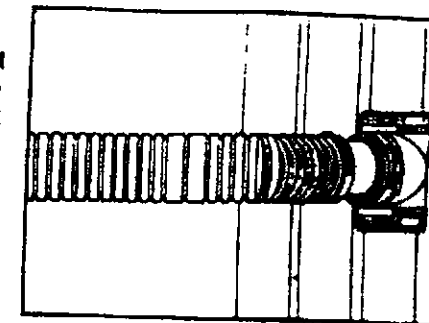
Hydrostatic Testing

A hydrostatic hold test may be performed if required. Water may be added into the Pipe Jacket at the end of the system under the dispenser or at the pipe observation wells. Remove the Terminating Reducers for both applications. If filled at the pipe observation well first remove the Observation Cap and install a section of Telescoping Flex Pipe, to extend the well height above the dispenser island. After the test is complete, disconnect the Test Clamp and let water drain into the Sump/Riser. Next, pump water out of the Sump/Riser and reconnect the Terminating Reducer and Observation Cap.



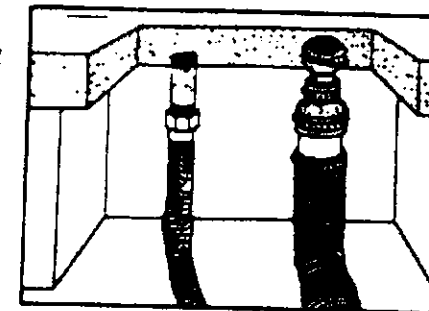
Connecting Crossovers

Insert the short section of Telescoping Straight Pipe into Tee and connect it as previously described. Next shift the Telescoping Flex Pipe over the short section of Telescoping Straight Pipe and connect as described previously. For Crossovers which have a primary 90° fitting, instead of a tee the Telescoping Flex Pipe would be shifted around the 90° fitting and connected to the Telescoping Straight pipe on the adjacent piping run.



Containing Flex Connectors

If flexible connectors are used, at the dispenser, they should be contained by using a section of Telescoping Flex Pipe. It is also installed in the same manner as the Swing Joint Flex but can be sized long enough to extend around a 90° fitting and connected to the Telescoping Straight Pipe located on the adjoining piping run, if that is the circumstance.



				DATE
				PRELIM. 10/18/8
				PERMIT
				BID
				CONST.
MARK	DATE	REVISIONS	BY	

TYPICAL PIPING SECONDARY CONTAINMENT

2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.

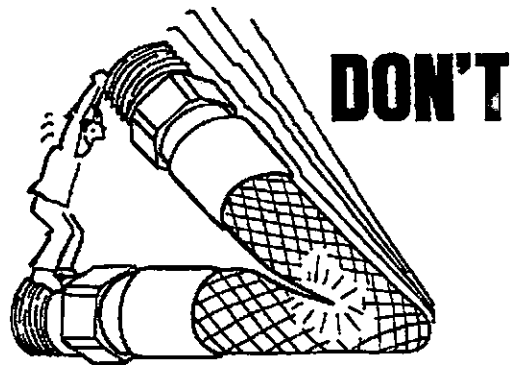


SHELL OIL COMPANY

SCALE NON
DWN. BY 66E
RHL #

Resistoflex® Flexible PTFE Connector ■ Part Number R29236B

This connector has a tough, durable and flexible plastic convoluted liner with stainless wire overbraid. It will give excellent service by following these few simple suggestions.



DON'T

Do not overbend - 90° maximum bend should be enough to install properly - Avoid bends that cause the hose to flatten and kink which reduces flow.



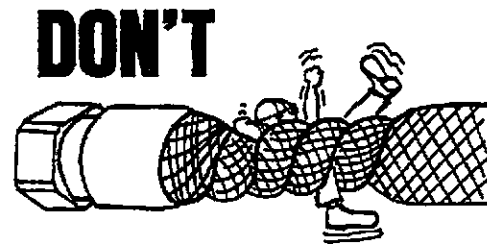
CAREFUL

Be sure wrench is solidly on hex of fitting -Not on hose braid or collars.



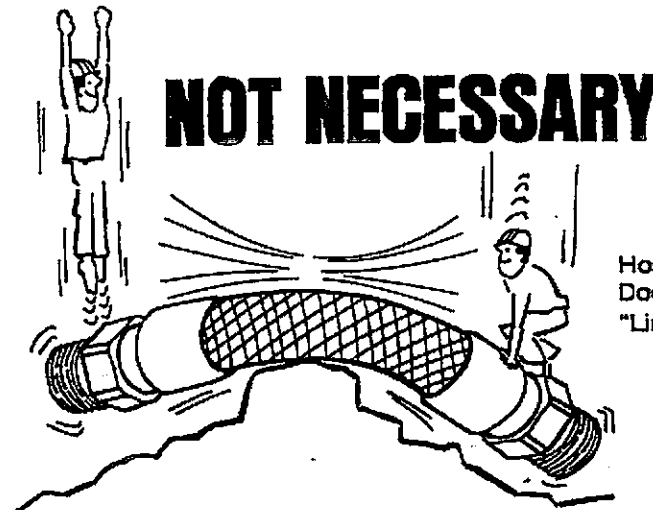
AVOID

Do not place hose on rocks or structure which might puncture the hose.



DON'T

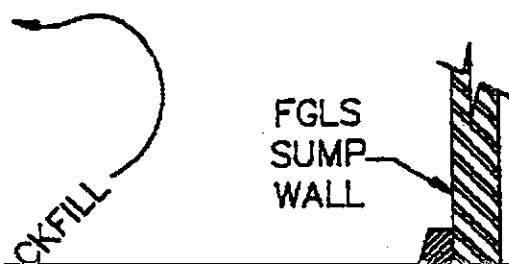
Do not twist hose. Keep red lay lines on centerline of hose. If red line is spiralled, hose is twisted.



NOT NECESSARY

Hose is easily flexed - Does not have to be "Limbered Up."

FLEX CONNECTOR PRECAUTION

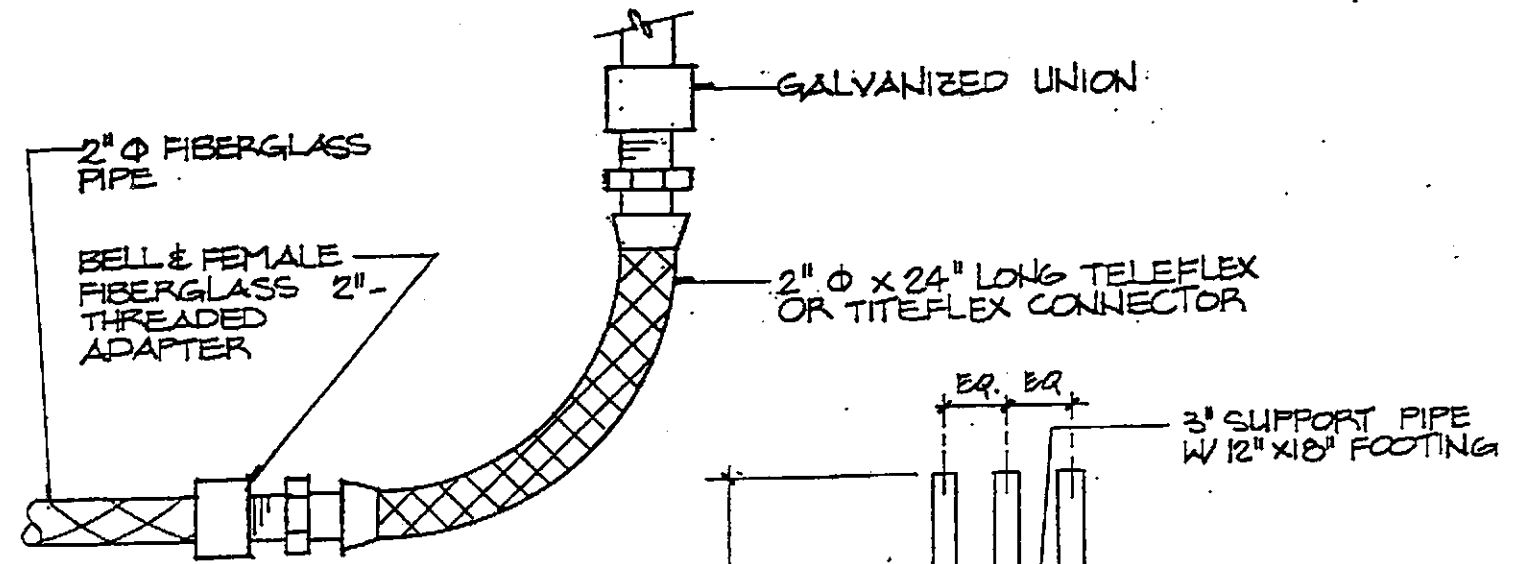


FGLS SUMP WALL

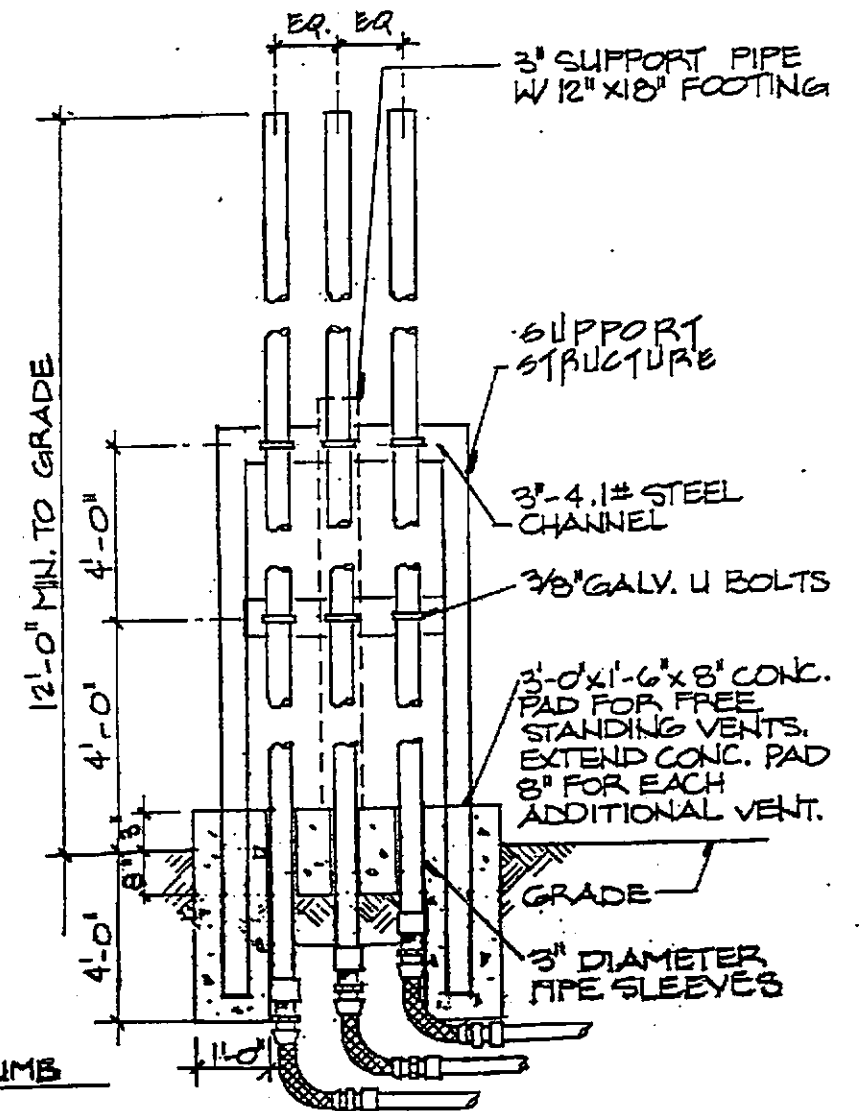
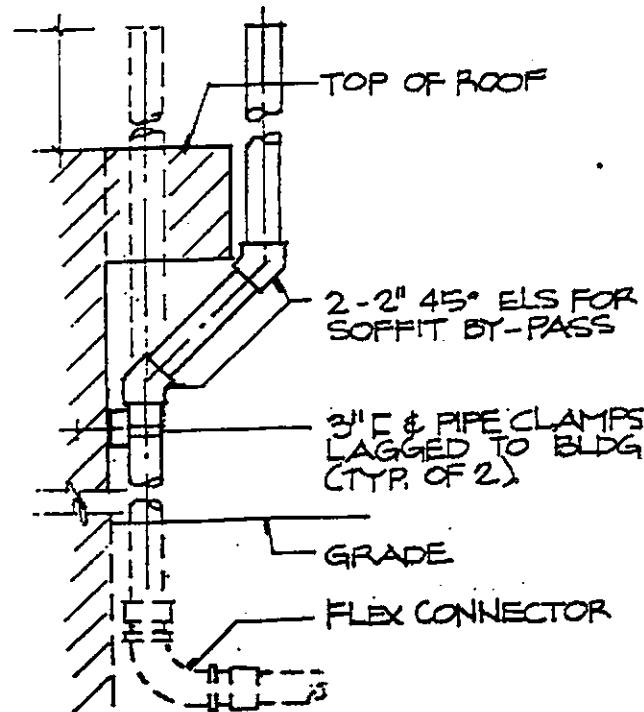
BOSTIK'S CHEM-CAULK
1000 URETHANE OR
RTV SILICONE CAULK
(IF REQUIRED)

PIPE SIZE	UNI-SEAL NUMBER	HOLE SIZE
1/2"	U-251	1.25"
3/4"	U-252	1.25"

VENT RISER & FLEX CONNECTOR DETAIL



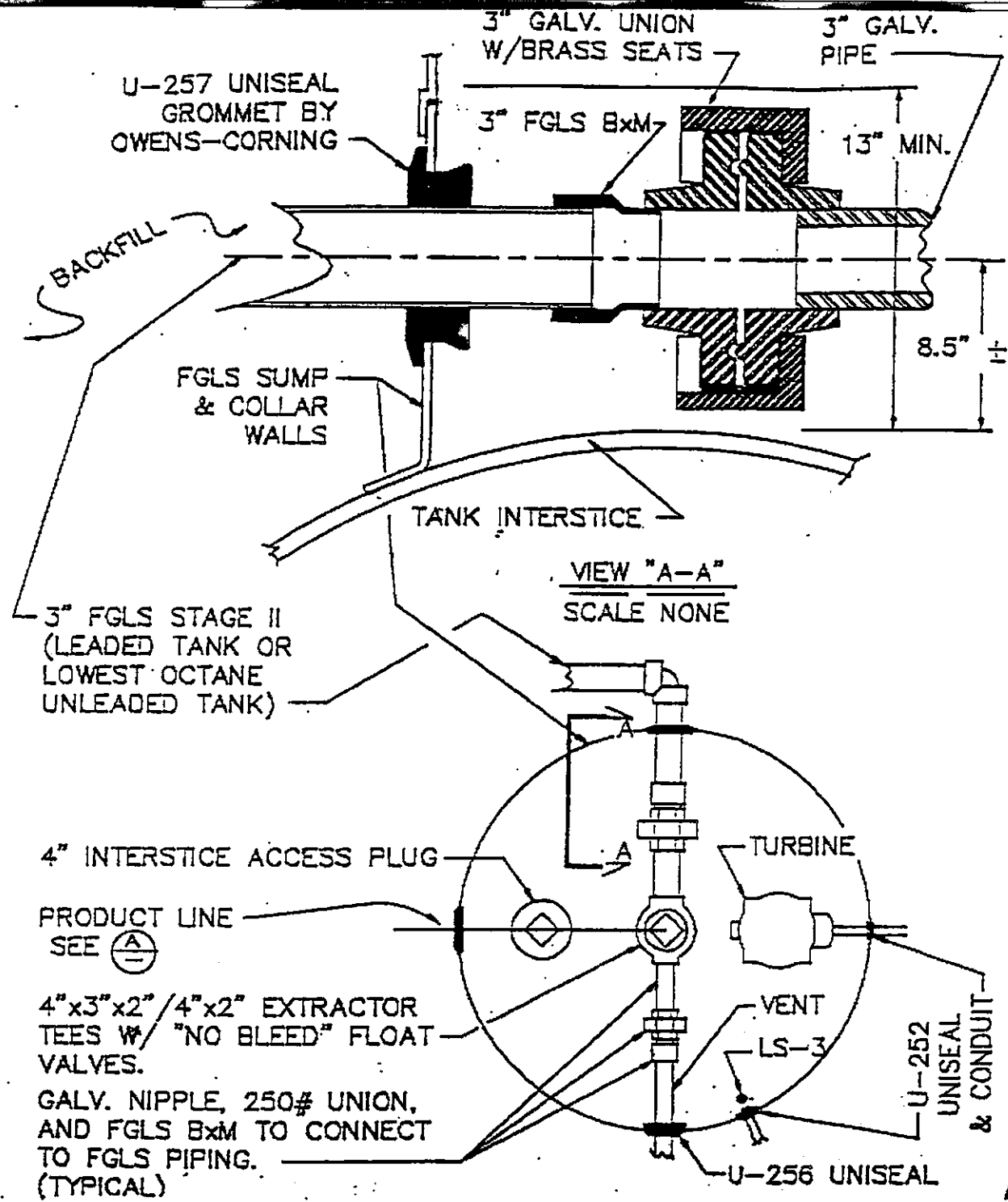
FLEX CONNECTOR



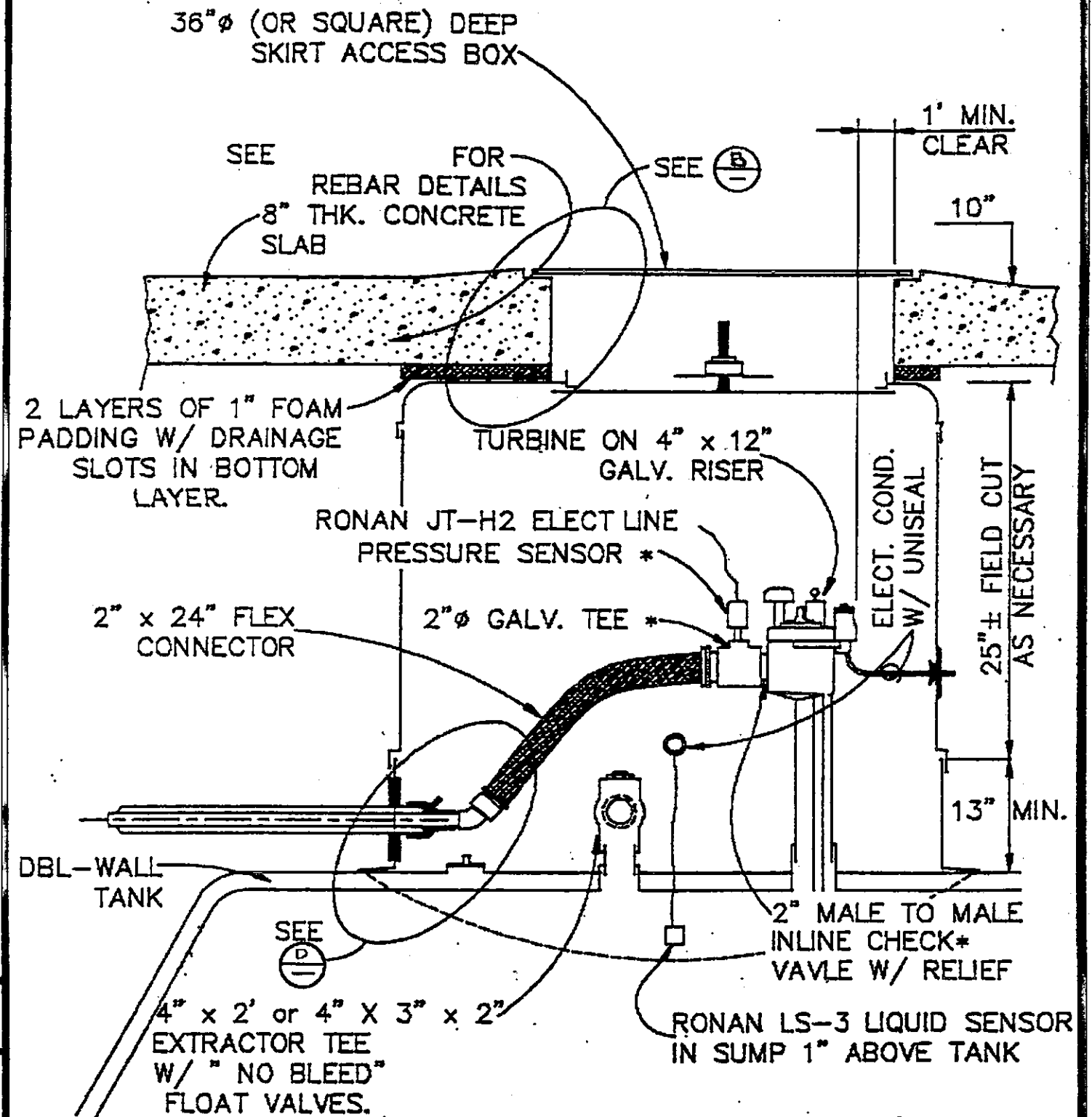
ELEVATION AT BUILDING

VENT RISERS ARE ALL STANDARD GALVANIZED STL PIPE OR MALLEABLE IRON FITTINGS, F/S. VENTS MAY REQUIRE PIPE BUMPERS.

FREE STANDING ELEVATION



* - OPTIONAL ON CONTAINED PRODUCT PIPING.



(D) VAPOR LINE-PENETRATION AT CONTAINMENT SUMP

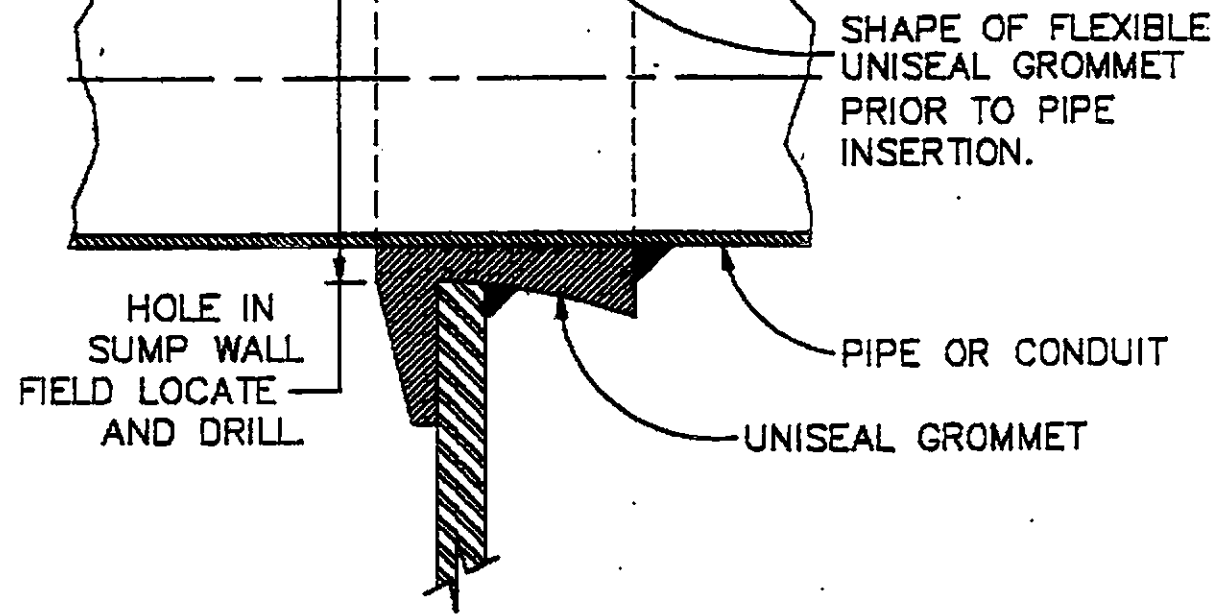
FGLS SUMP WALL

BACKFILL

BOSTIK'S CHEM-CAULK 1000 URETHANE OR RTV SILICONE CAULK (IF NECESSARY)

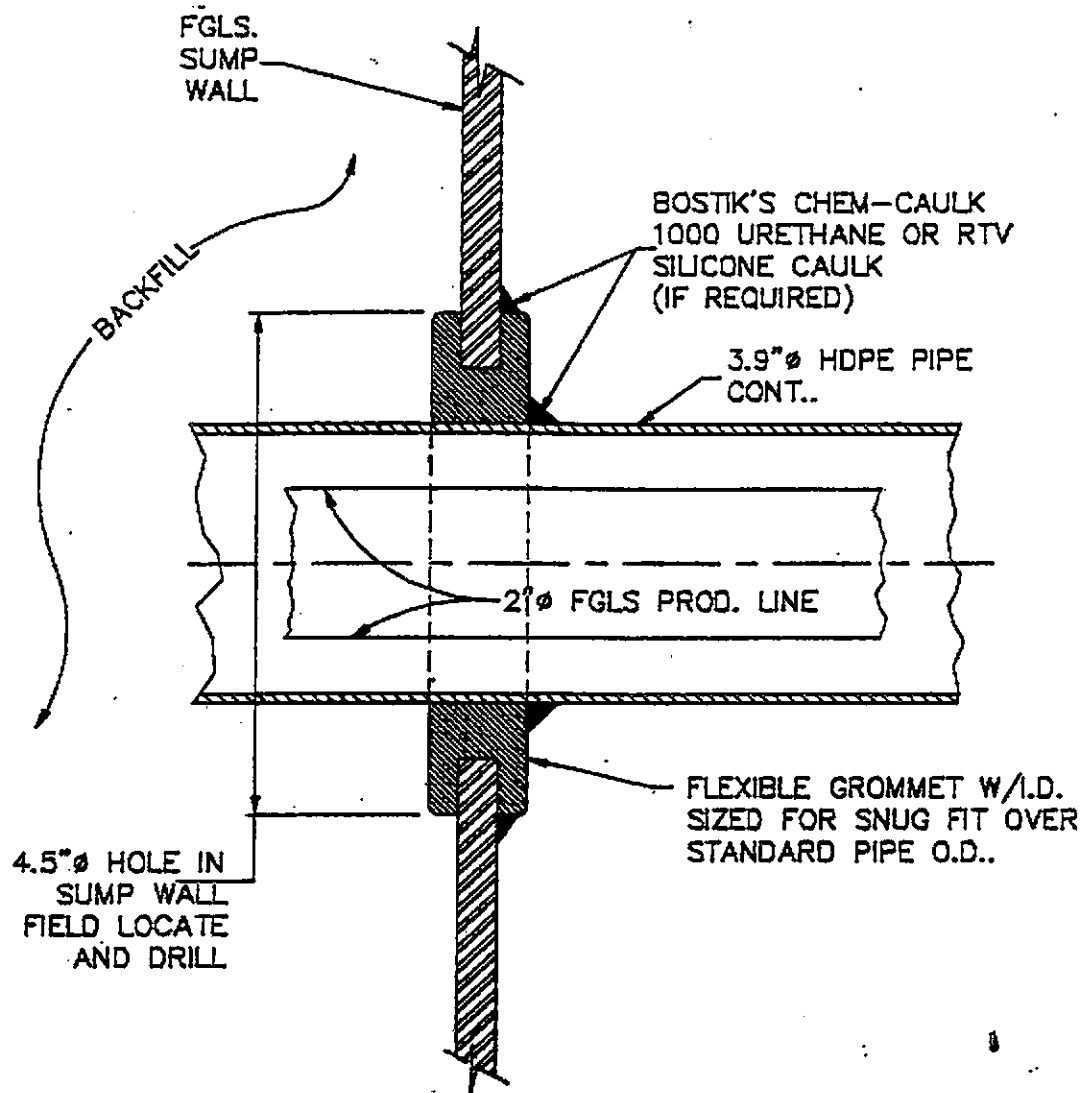
(A) TURBINE CONTAINMENT

STEEL CLAMP BAR



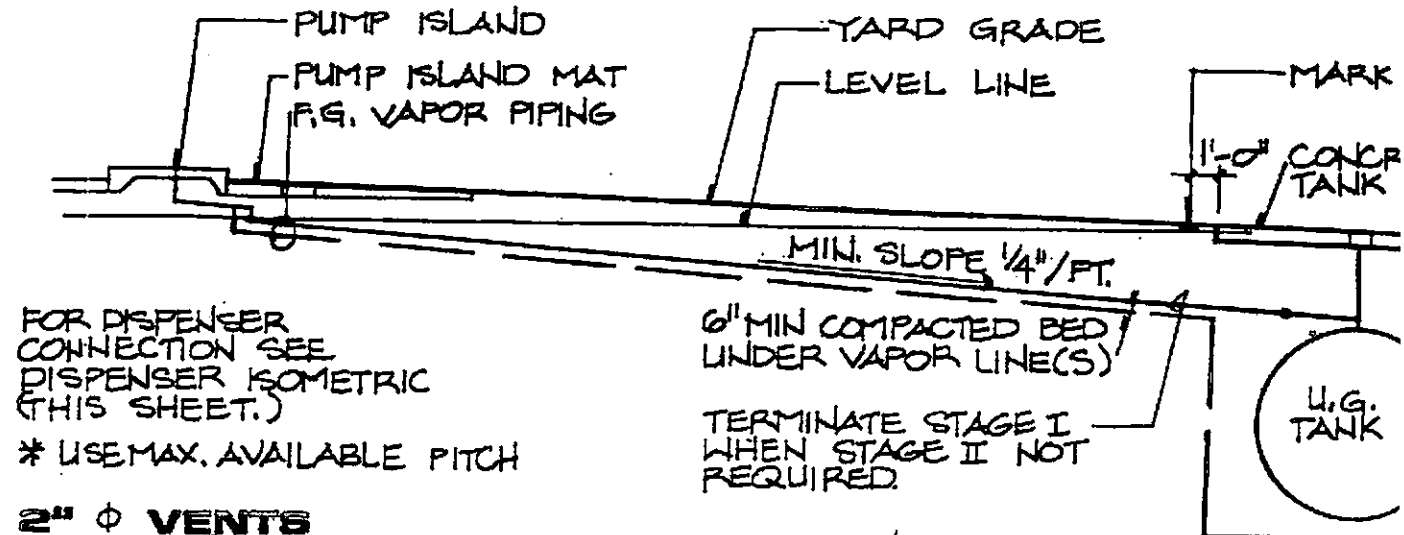
AR-88168-1

(H) SUMP PENETRATION CONDUIT OR PIPING



AR-88167-1

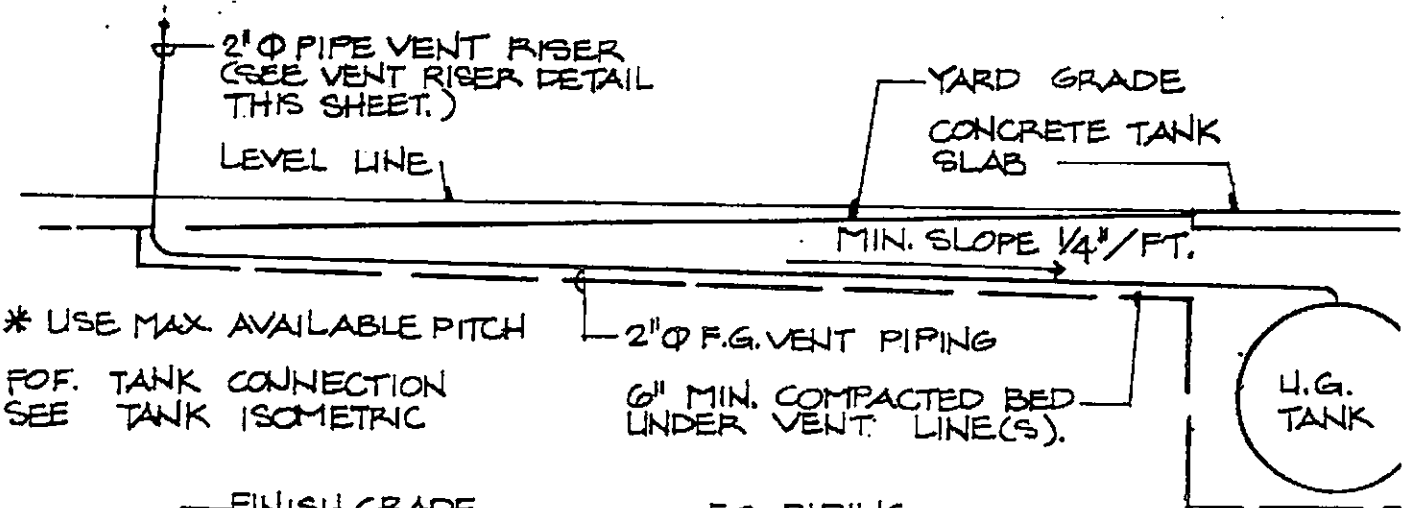
2" OR 3" ϕ VAPOR PIPING



FOR DISPENSER CONNECTION SEE DISPENSER ISOMETRIC (THIS SHEET.)
 * USE MAX. AVAILABLE PITCH

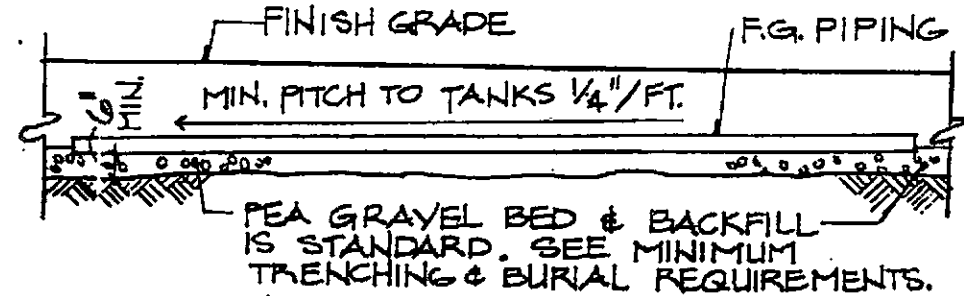
6" MIN COMPACTED BED UNDER VAPOR LINE(S)
 TERMINATE STAGE I WHEN STAGE II NOT REQUIRED.

2" ϕ VENTS



* USE MAX AVAILABLE PITCH
 FOR TANK CONNECTION SEE TANK ISOMETRIC

6" MIN. COMPACTED BED UNDER VENT LINE(S).

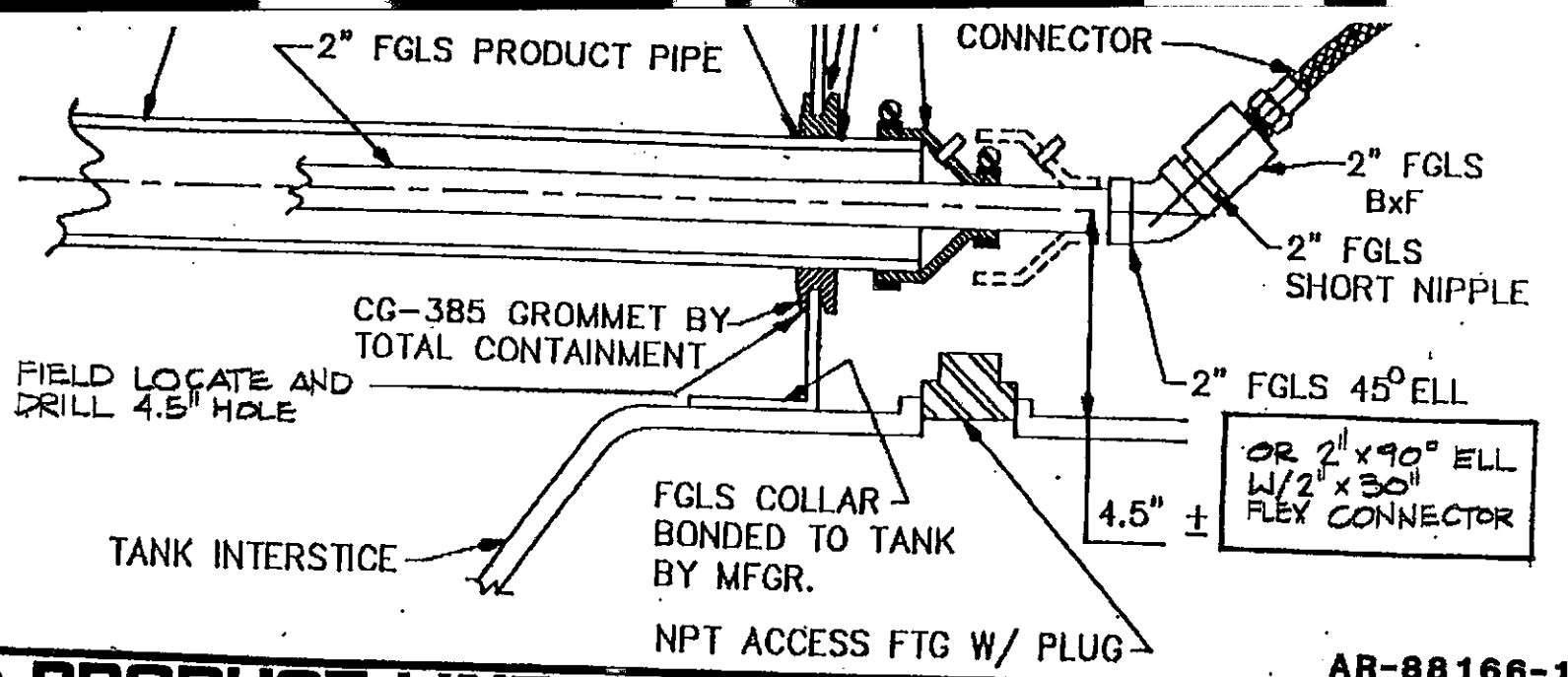


1. CONTRACTOR TO INSTALL & PREGRADE A MIN. 6" PEA GRAVEL BED FOR FIBERGLASS PIPING.
2. FABRICATE PIPE RUNS AT GRADE & INSTALL IN TRENCH.
3. AFTER MAKING NECESSARY CONNECTIONS OF RUNS OR FITTINGS IN TRENCH REGRADE & COMPACT BED UNDER THESE CONNECTIONS.
4. REMOVE ANY GRADE STAKES, ETC. PRIOR TO BACK FILL.
5. NO SAGS OF HUMPS PERMITTED.

(I) SUMP PENETRATION - PRODUCT PIPING

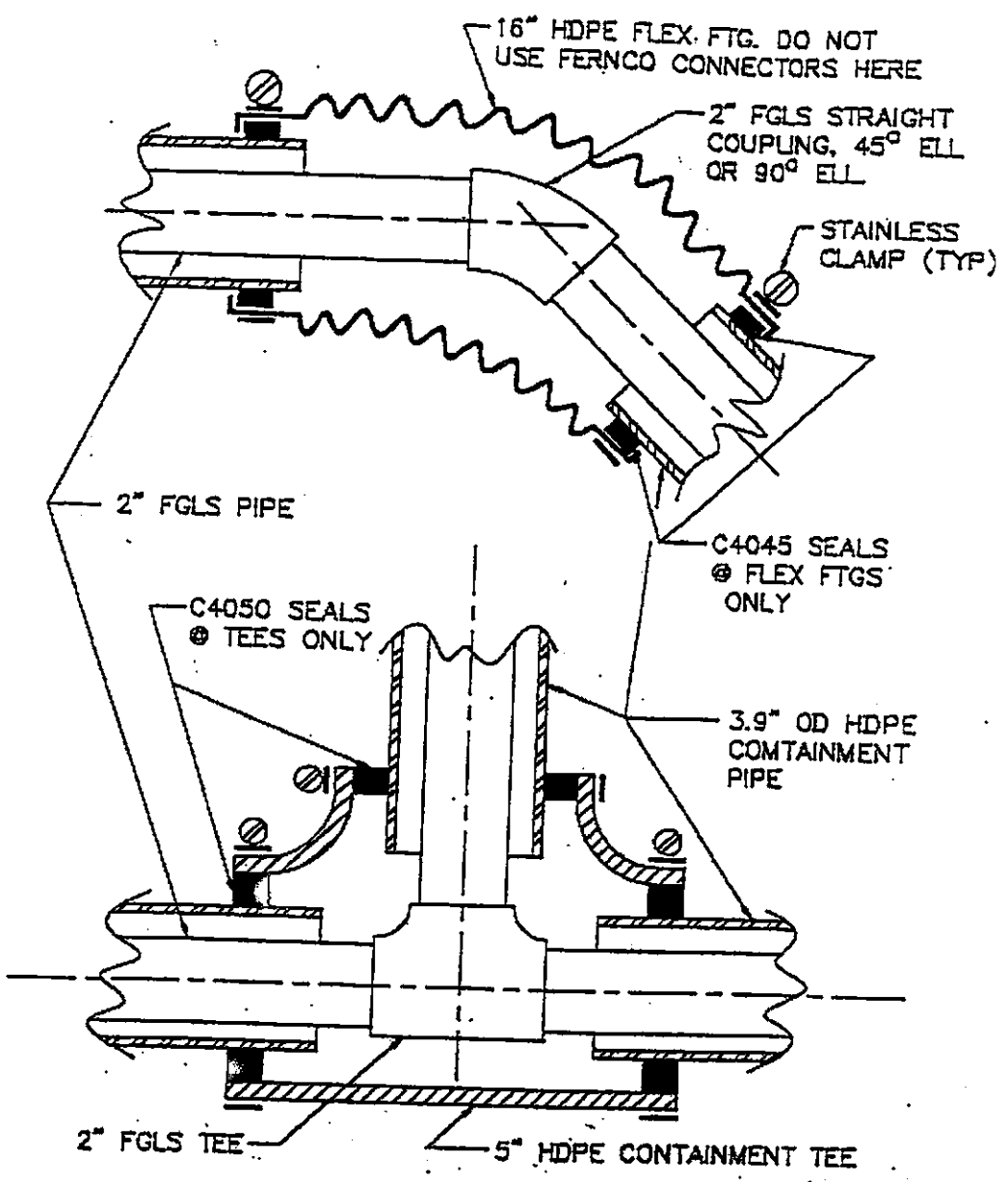
(G) VENT/VAPOR PIPING SLOPE

GRADE
B



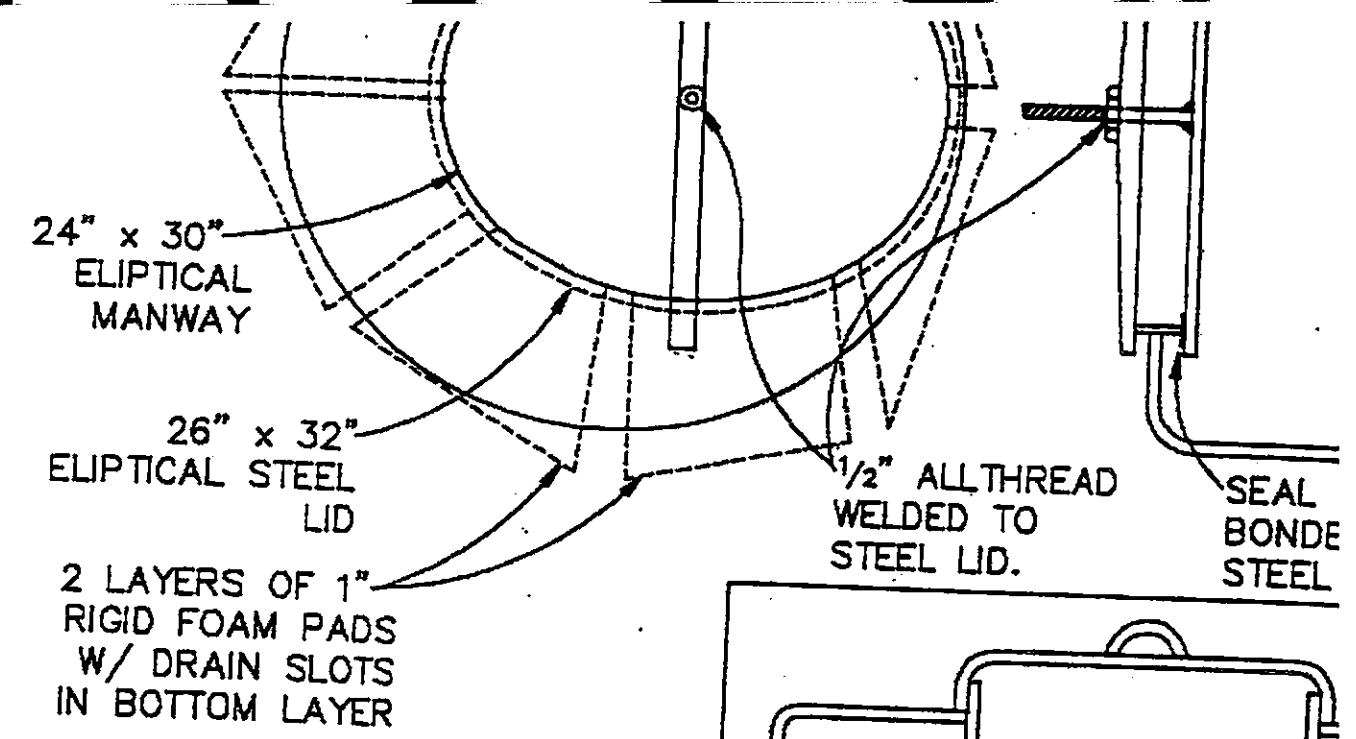
AR-88166-1

D PRODUCT LINE - PENETRATION AT CONTAINMENT SUMP



AR-88170-1

E SECONDARY CONTAINMENT



SEALED LID REMOVAL PROCEDURE

LOOSEN NUT AND WASHER ON ALLTHREAD STUD. ROTATE BAR 90° & LOWER ENTIRE ASSEMBLY INTO SUMP. TURN LID EDGEMISE & REMOVE THROUGH ELLIPTICAL OPENING.

OPENING MUST BE LARGE ENOUGH FOR MECHANIC TO ENTER SUMP WITHOUT REMOVING TURBINE.

NOTE:
STANDARD SUMP LID TO BE FRICTION COVER AS SHOWN. RETROFITABLE TO SEALED - PRESSURE TIGHT LID IF NECESSARY FOR TEST OR GROUNDWATER.

AR-88110

B MANWAY

MARK	DATE	REVISIONS	BY	DATE APPLIED

PIPING SECONDARY CONTAINMENT

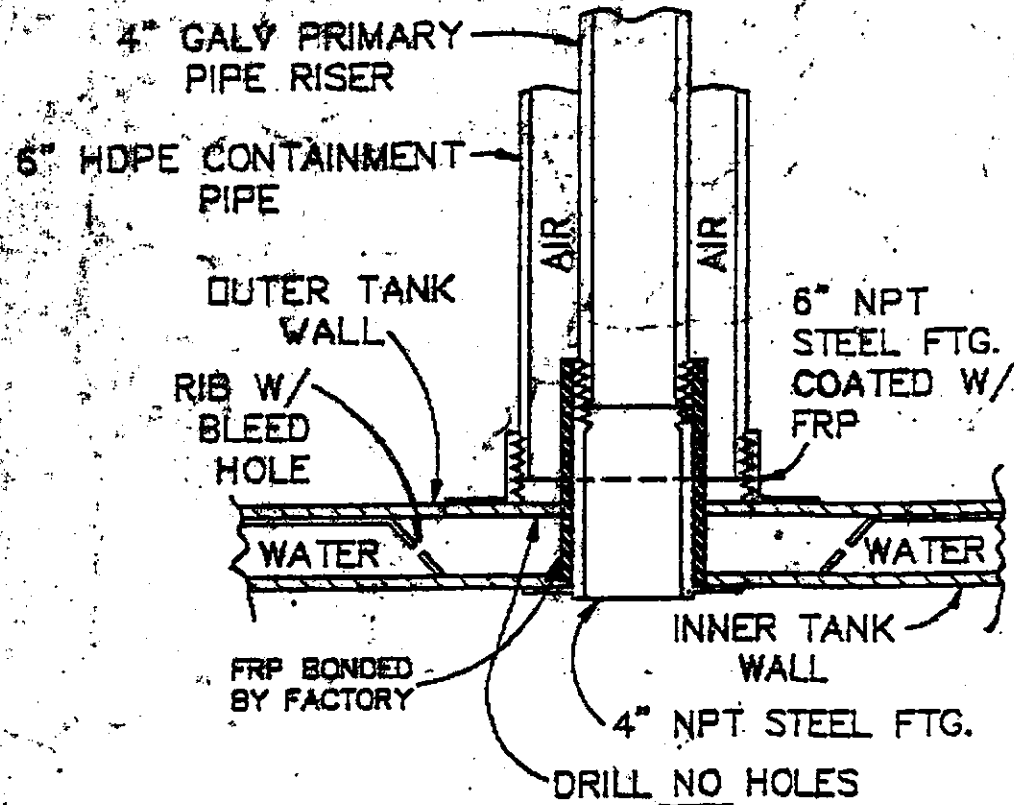
**2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.**



SHELL OIL COMPANY

ROBERT H. LEE & ASSOCIATES INC.

SCALE
DWN. BY
RHL # **6662**
W.I.C.#



AR-88176

9 AXIAL TANK FITTING

SHELL GASOLINE UNDERGROUND STORAGE IDENTIFICATION

ALL MANHOLES TO BE PAINTED AS INDICATED BELOW.
ALL PAINT RINGS TO OVERLAP 2" ONTO SURROUNDING CONCRETE. (SEE BELOW)

SHELL SUPER UNLEADED



WHITE & RED

SHELL AUTO DIESEL



YELLOW

SHELL UNLEADED



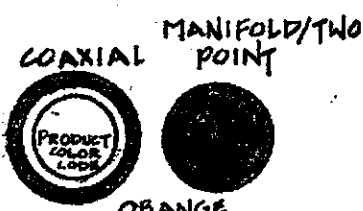
BLACK & WHITE

SHELL REGULAR



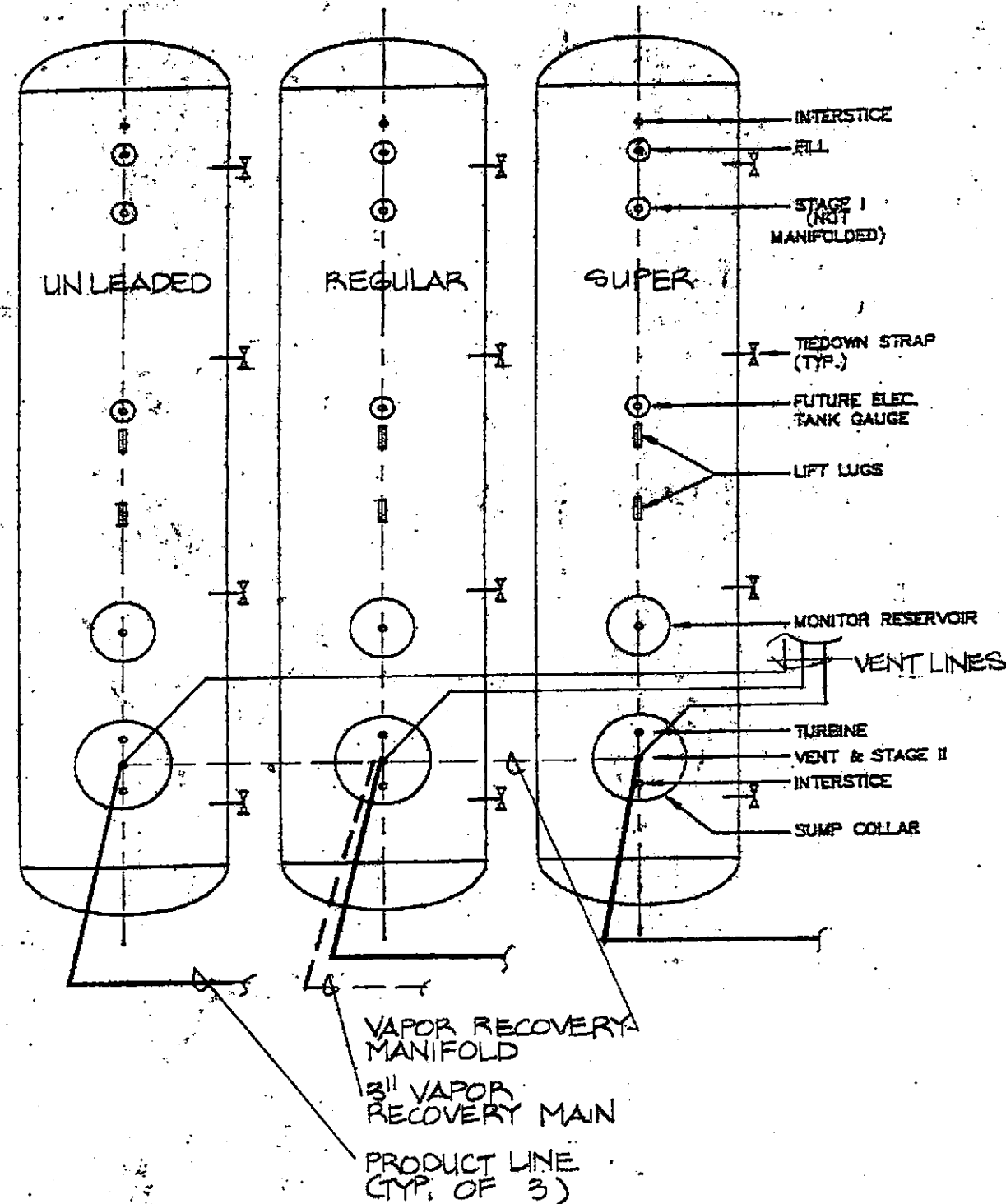
BLUE

VAPOR RECOVERY

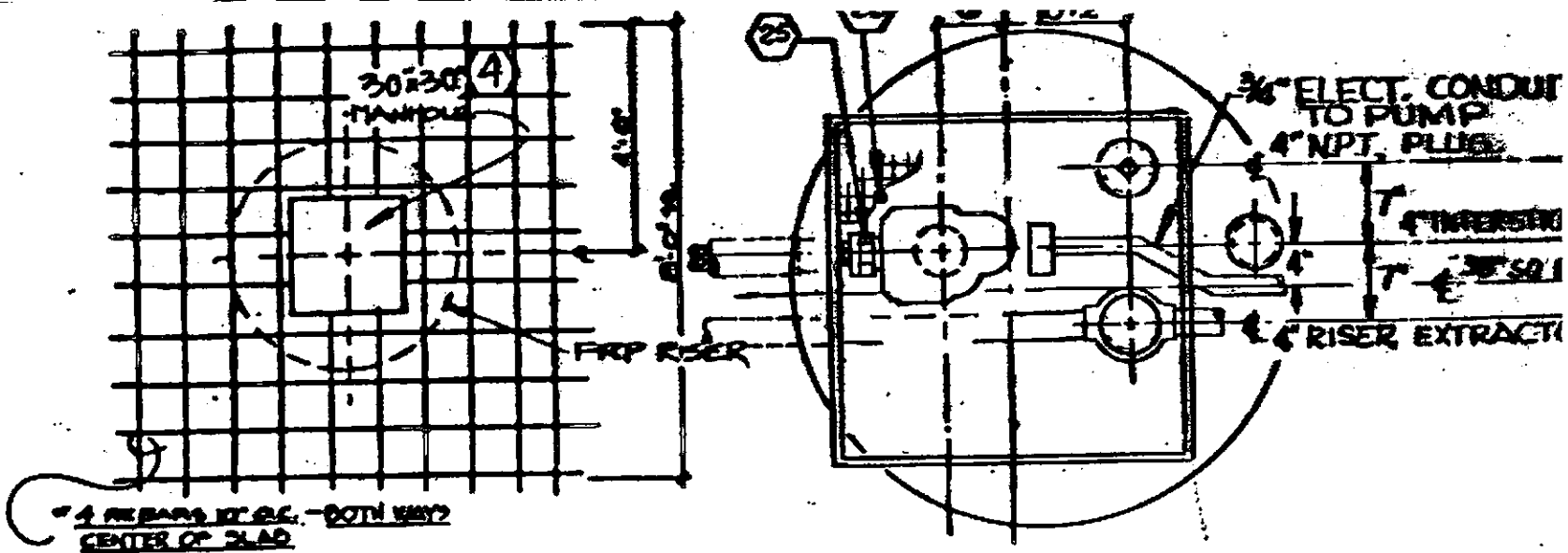


COAXIAL

ORANGE

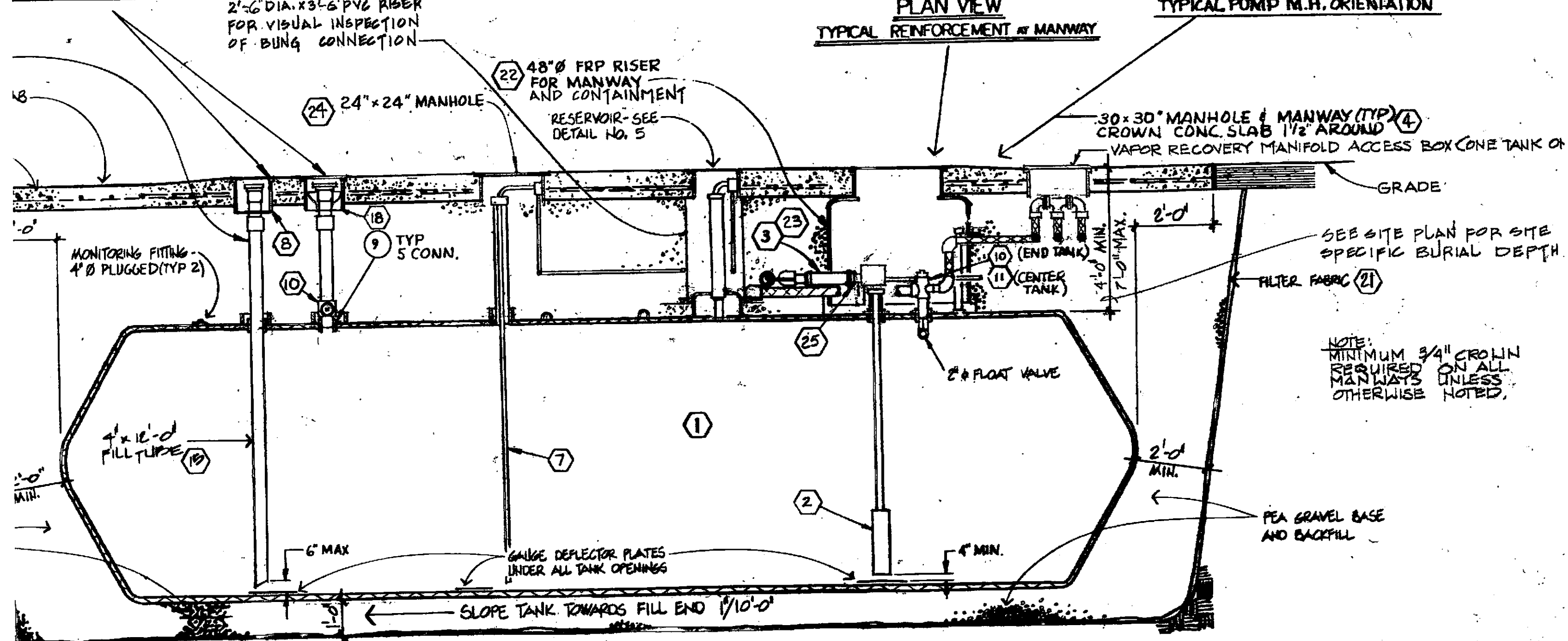


AR-88176-1



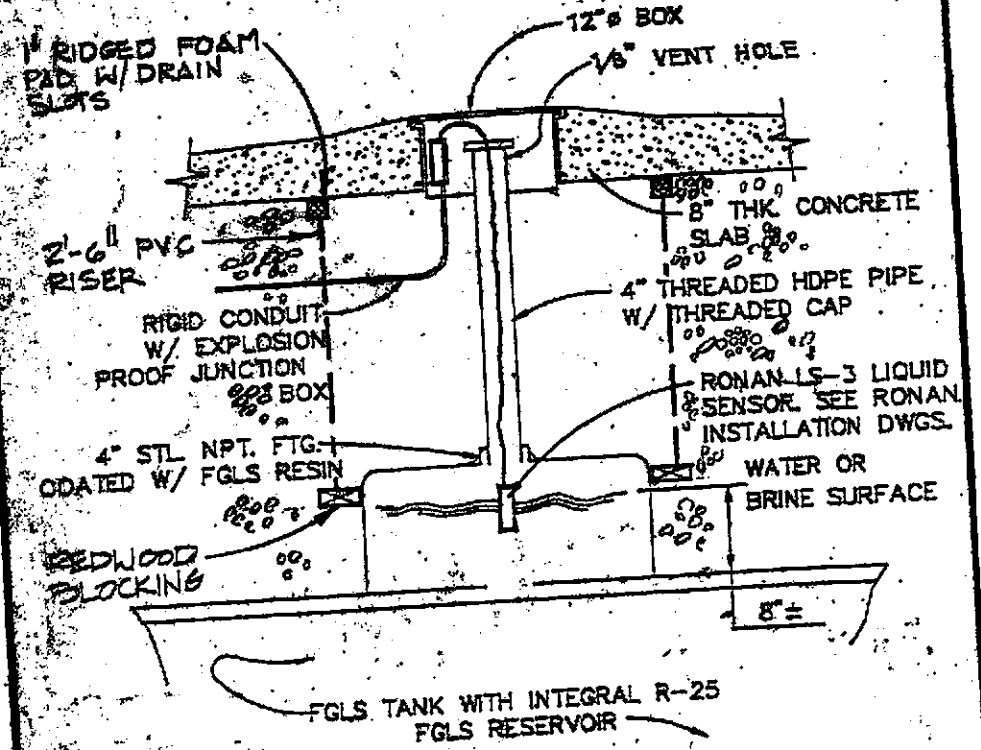
LL/VAPOR RISER ORIENTATION

2'-6" DIA. x 3'-6" PVC RISER FOR VISUAL INSPECTION OF BUNG CONNECTION



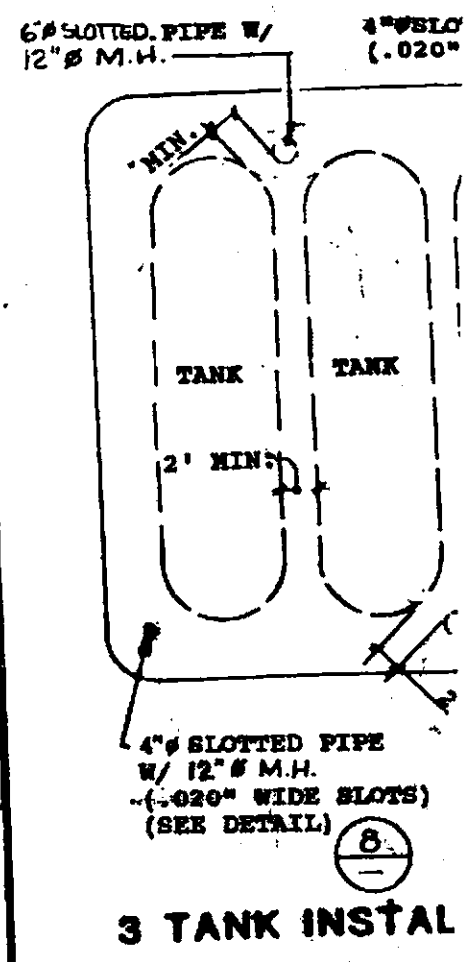
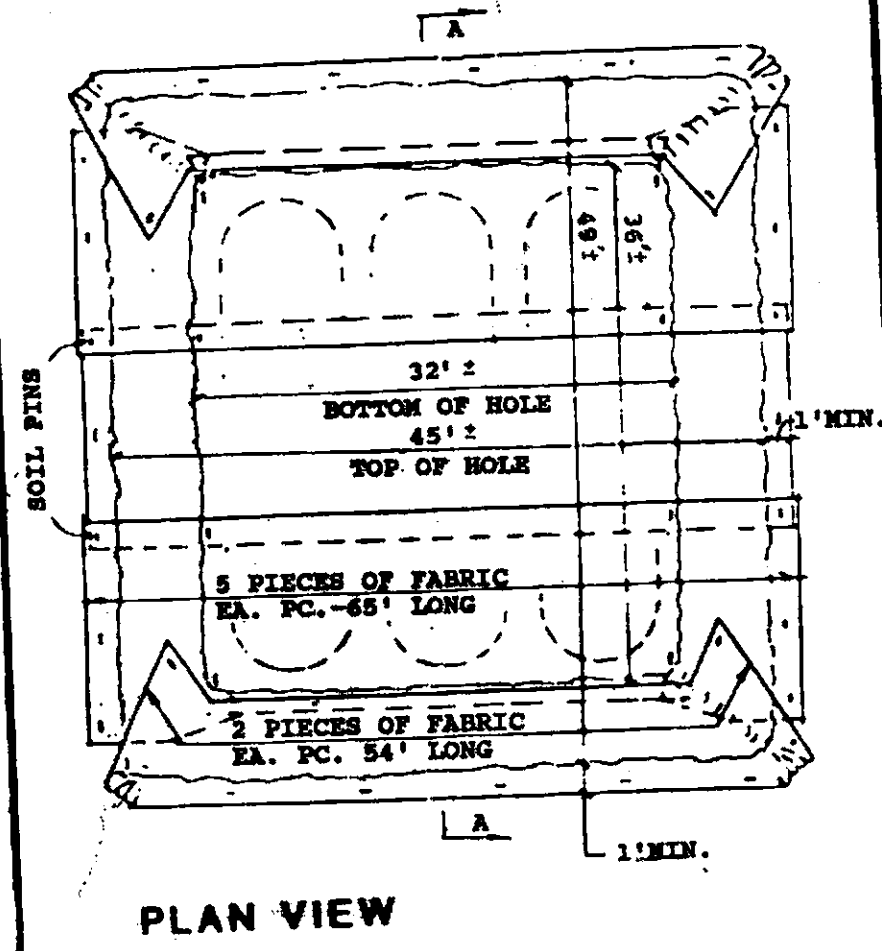
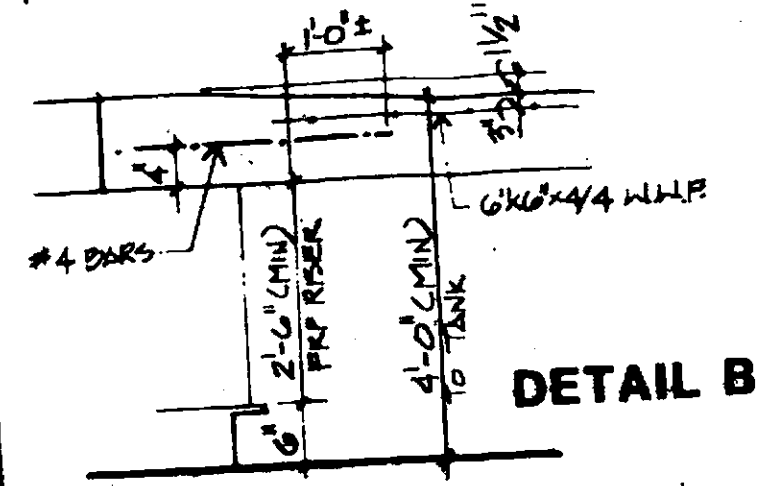
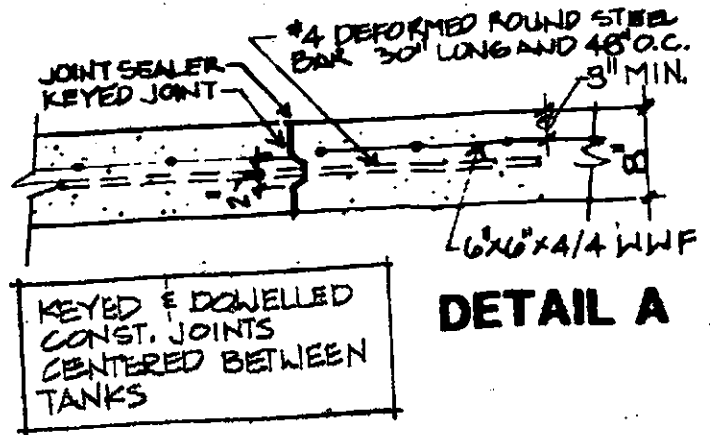
WALL FIBERGLASS GASOLINE STORAGE TANK

Access lid cannot be



NOTES:

- USE NORMALLY CLOSED LS-3 SENSOR TO DETECT DROP IN LIQUID SURFACE. IF HIGH LIQUID SURFACE ALARM ALSO REQUIRE DUE TO GROUND WATER ABOVE RESERVOIR, SUBSTITUTE LS-30 SENSOR.
- CONTACT OWENS-CORNING IF YOU WISH D-C MECHANIC TO BULK DELIVER &/OR INSTALL WATER OR BRINE.

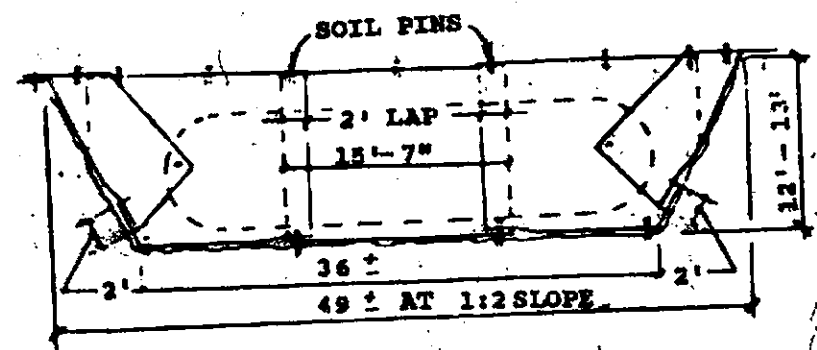
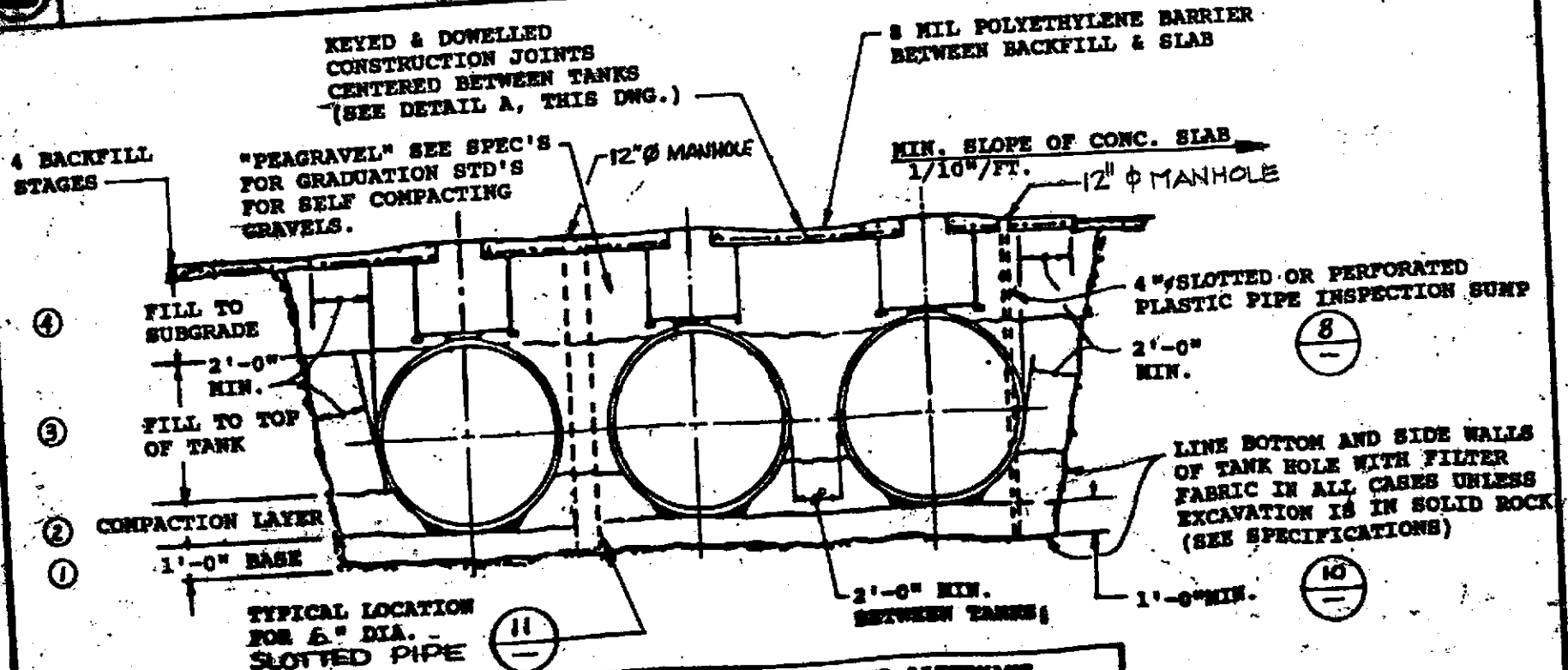


5 RESERVOIR AR-88172-1

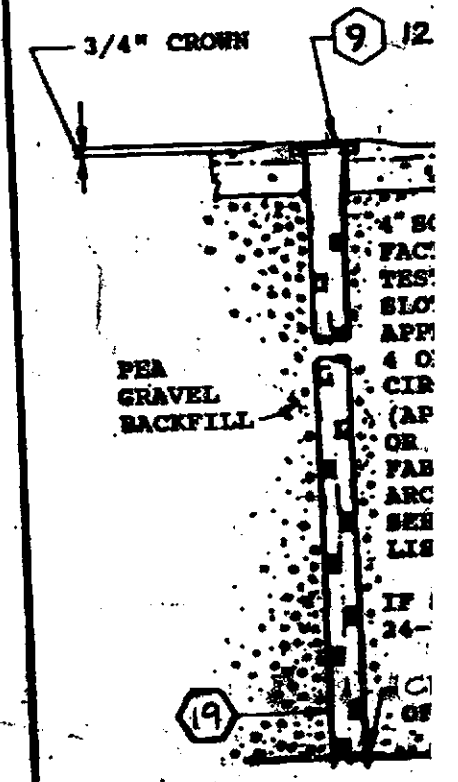
2 CONST. JOINT

10 LINING

6 WELL



RECOMMENDED LAYOUT FOR 3-12M GAL. TANKS USING DUPONT "TYPAR" SPUNBONDED POLYPROPYLENE STYLE 3401-4 OZ./S.Y. FABRIC - 15'-7" WIDE MATERIAL. ROLLS AVAILABLE IN 100, 300, & 1,000 YD. LENGTHS. FOR EXCAVATION SHOWN ABOVE, WITH WALL SLOPE OF 1:2 APPROX. 100 YDS. WOULD BE REQUIRED. THE SAME LAYOUT IS ALSO SUITABLE FOR PHILLIPS FIBERS CORP. "SUPAR" FABRIC 4.1 OZ./S.Y. IN ROLLS 15' WIDE BY 300' LONG. FOR MONSANTO "BIDIN" C-22, 4 OZ./S.Y. FABRIC IN 17'-5" WIDE MATERIAL (984 FT. LONG ROLLS) LAY 4 STRIPS THE OPPOSITE DIRECTION, TWO-B PIECES @ APPROX. 69' LONG AND TWO-SIDE PIECES @ APPROX. 62' LONG.



SHADED AREAS SHOW WHERE 'PEAGRAVEL' OR APPROVED ALTERNATE BACKFILL MATERIAL WILL NOT FLOW AND COMPACT UNDER TANKS. SEE NOTES BETWEEN AND UNDER SIDES AND

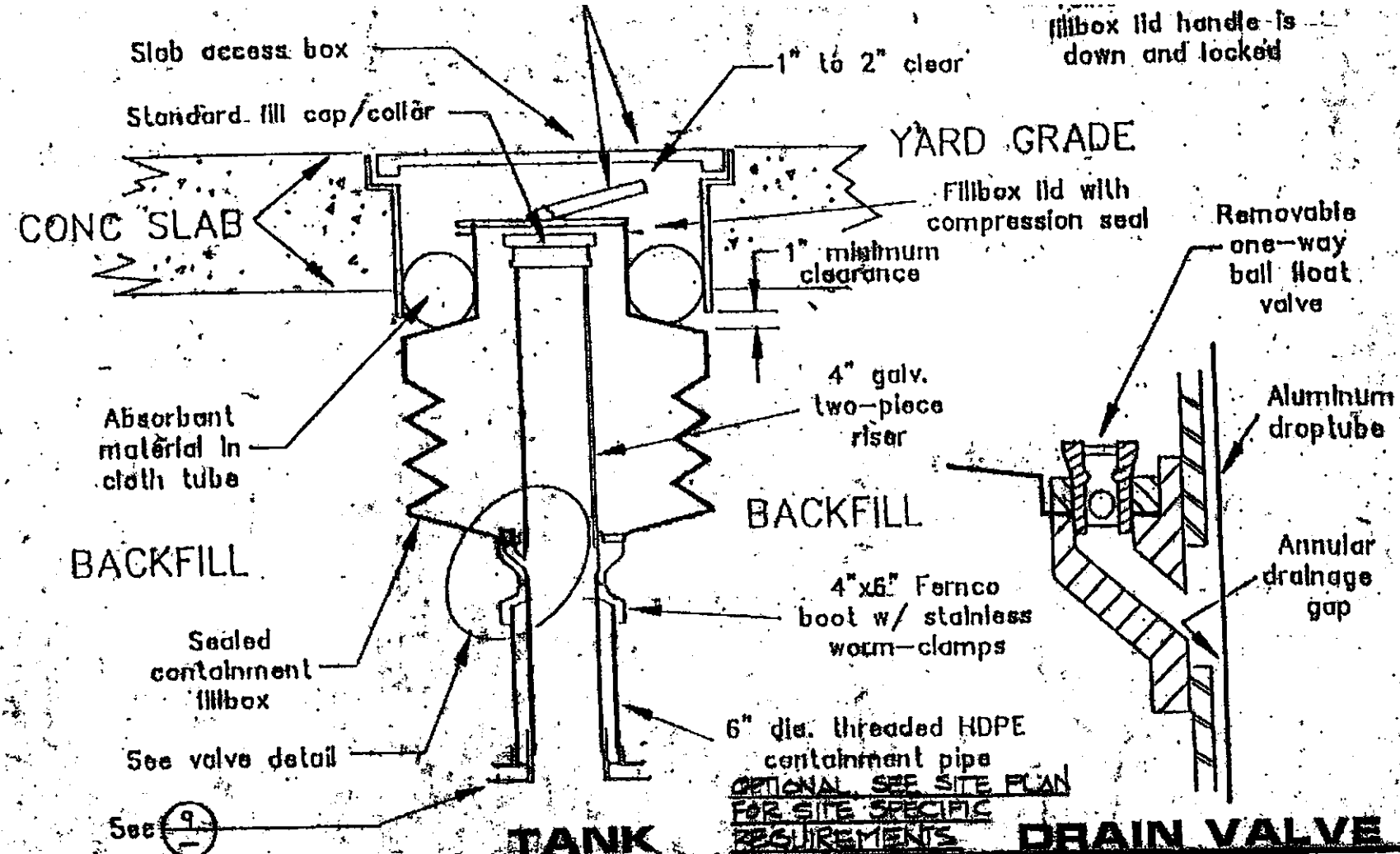
TYPE - 12" MH SLOTS)

1'-0" MIN.

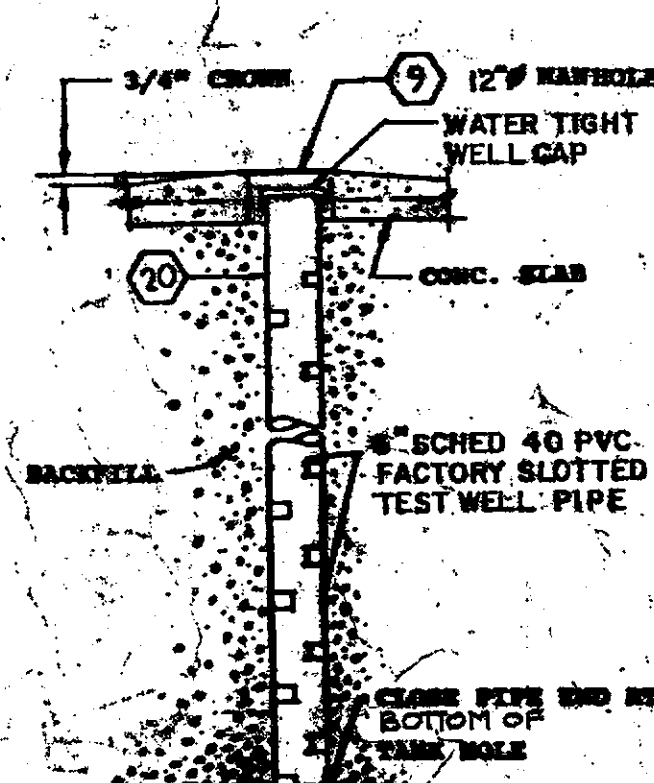
32'-0" x 40'-0" WAL. CONC. SLAB

6" SLOTTED PIPE W/ 12" Ø M.H. (SEE DETAIL)

ON

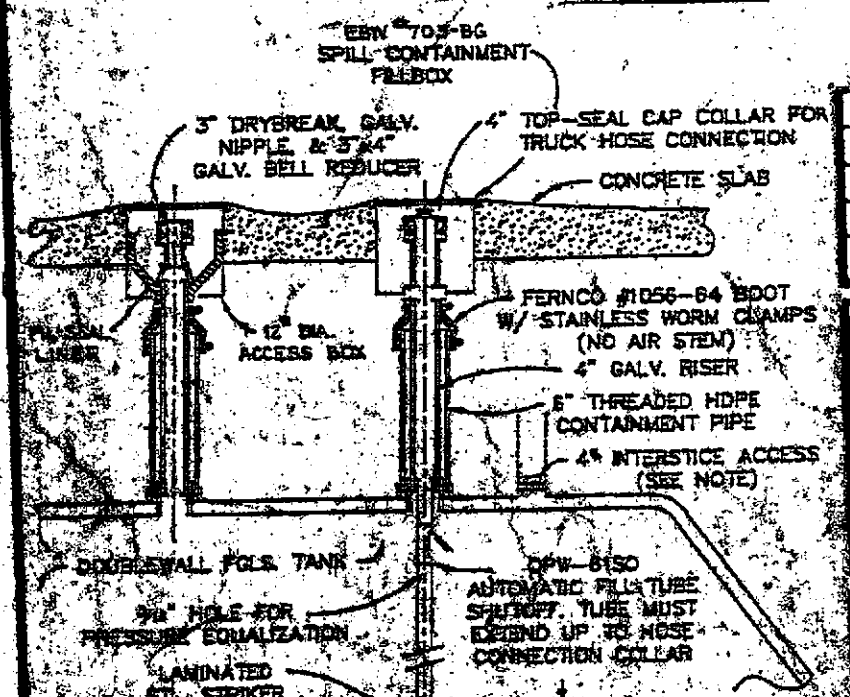


1 FILL MANHOLE



NOTE: INTERSPACE ACCESS FTG. SHOWN W/ 4" NPT PLUG. RECOMMEND 4" THREADED PVC OR ABS PIPE EXTENDED TO SMALL SLAB ACCESS BOX IN LIEU OF PLUG TO PROVIDE FUTURE ACCESS TO TANK INTERSPACE.

NOTE: SECONDARY CONT. ON RISER IS OPTIONAL. SEE PIPING PLAN FOR SITE SPECIFIC REQUIREMENTS. INCLUDE ONLY IF CALLED FOR ON SITE PLAN.



ITEM	QTY	DESCRIPTION / MANUFACTURER / MODEL NO.	UNITS	TYPE
1	3	12,000 GAL. OVER-CORNING FIBERGLASS DOUBLE WALL TANKS MODEL #DMT-21	SHELL	C.
2	3	3/4 H.P. RED JACKET SUB PUMPS WITH LEAK DETECTOR AND CONTROLLER	SHELL	C.
3	3	3" Ø X 24" LONG TELEFERIK - SECONDARY CONTAINMENT FLEXIBLE HOSE HOOP	SHELL	C.
4	3	30" X 30" X 9" CHU #229 MANHOLE, REINFORCED COVER X WITH FILL HANDLE	SHELL	C.
5	1	16" Ø CHU #216A-88G ROUND FILL BOX X 8" SKIRT WITH TWO SCREWS AND GASKET	SHELL	C.
6	3	HYDROSTATIC MONITORING FIBERGLASS RESERVOIR RONAN SENSOR IS-3	SHELL	C.
7	3	4" LEVEL RISER VERIBROOK TEL-250 (FUTURE)	SHELL	C.
8	3	EW #705-BG SPILL CONTAINMENT FILL BOX	SHELL	C.
9	4	12" Ø CHU #216A-88G ROUND FILL BOX X 8" SKIRT WITH TWO SCREWS AND GASKET	SHELL	C.
10	5	EMCO-WHEATON 179-002-4" X 2" X 2" WIRE NO BLEED HOLE ADJUST LENGTH TO FIT	SHELL	C.
11	2	UNIVERSAL #V420-FLOUT WHEELS 4" X 3" X 3" WITH NO RIBBED EDGE ADJUST LENGTH	SHELL	C.
12	3	2'-6" DIA. X 2' PVC RISER	S.C.	C.
13	3	EMCO-WHEATON A30-014 4" TOP SEAL FILL ADAPTER	SHELL	C.
14	3	EMCO-WHEATON A39-002 4" LOCKING CAP	SHELL	C.
15	3	EMCO-WHEATON A20-004 4" X 12' FILL TUBE OR EQUIV.	SHELL	C.
16	3	EMCO-WHEATON A76-005 3" X 4" VAPOR DRY BREAK	SHELL	C.
17	3	EMCO-WHEATON A99-001 4" TORSION TYPE VAPOR CAP	SHELL	C.
18	3	12" Ø MANHOLE WITH FILL-SEAL-DRK RISER	SHELL	C.
19	2	4" PVC THREADED CAP / THREADED ADAPTER / SEAL / CAP / SLOTTED PIPE	SHELL	C.
20	2	SC 6" PVC FILL CAP / SEAL CAP / PIPE	SHELL	C.
21		TYPIK FILLER FABRIC	SHELL	C.
22	3	OVER-CORNING FIBERGLASS 48" Ø MANWAY RISER	SHELL	C.
23	3	2" Ø X 24" LONG TELEFERIK CONNECTOR WITH SWIVEL - 1 END	SHELL	C.
24	3	24" SQUARE CHU #229 MANHOLE 9" SKIRT REINFORCED COVER	SHELL	C.
25	3	2" Ø CHECK VALVE - FIBERGLASS MANHOLE OR EQUIV.	SHELL	C.

EQUIPMENT LIST

MARK	DATE	REVISIONS	BY	DATE AP

TANK INSTALLATION DETAIL

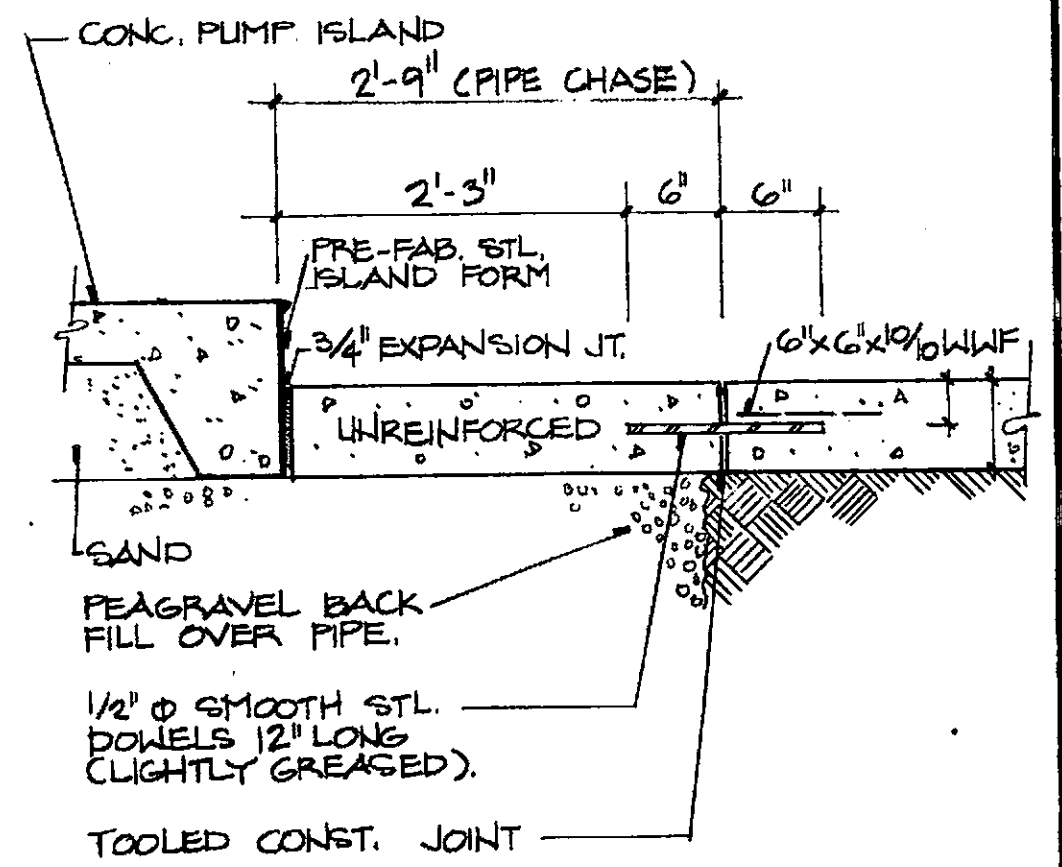
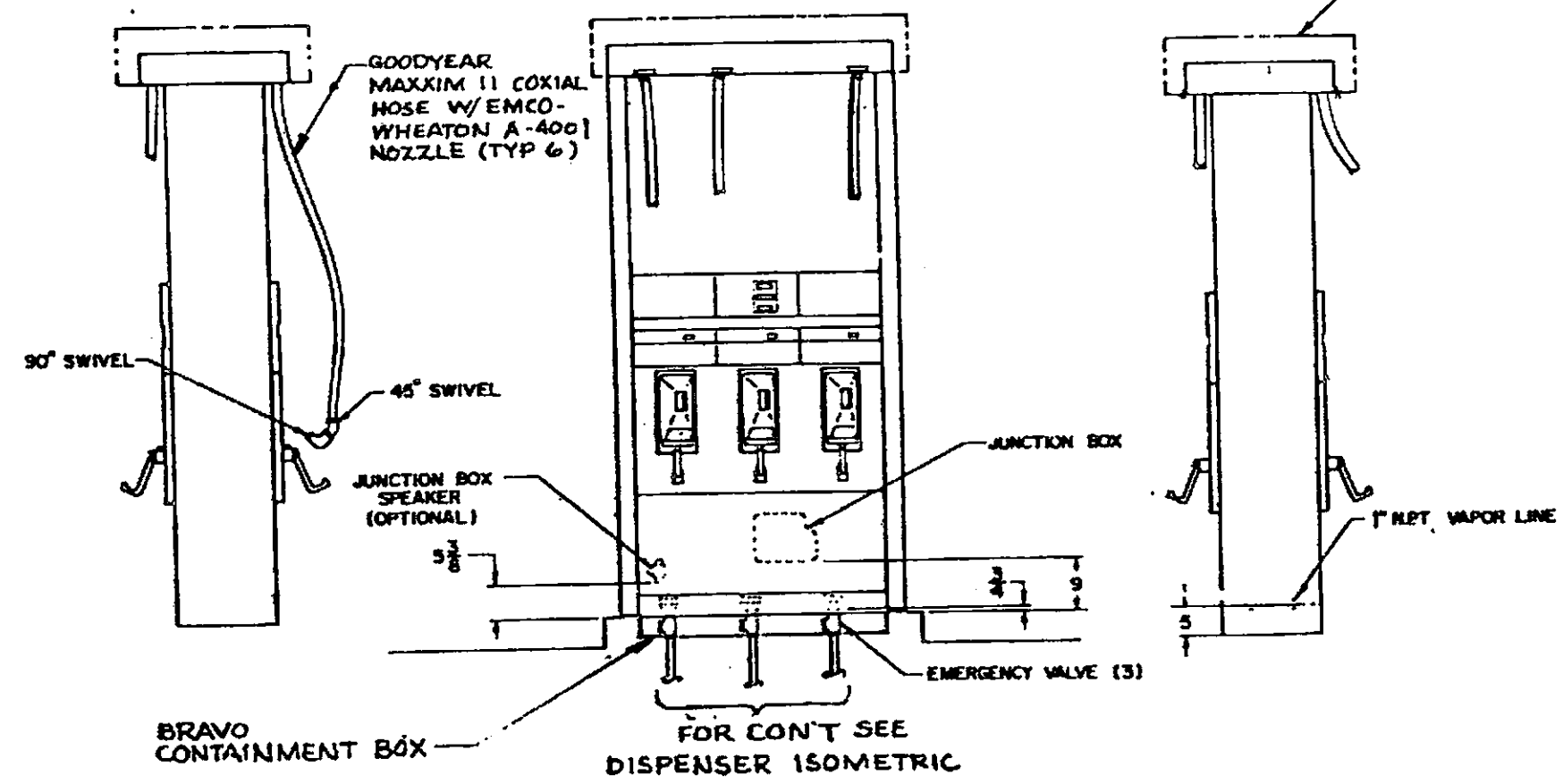
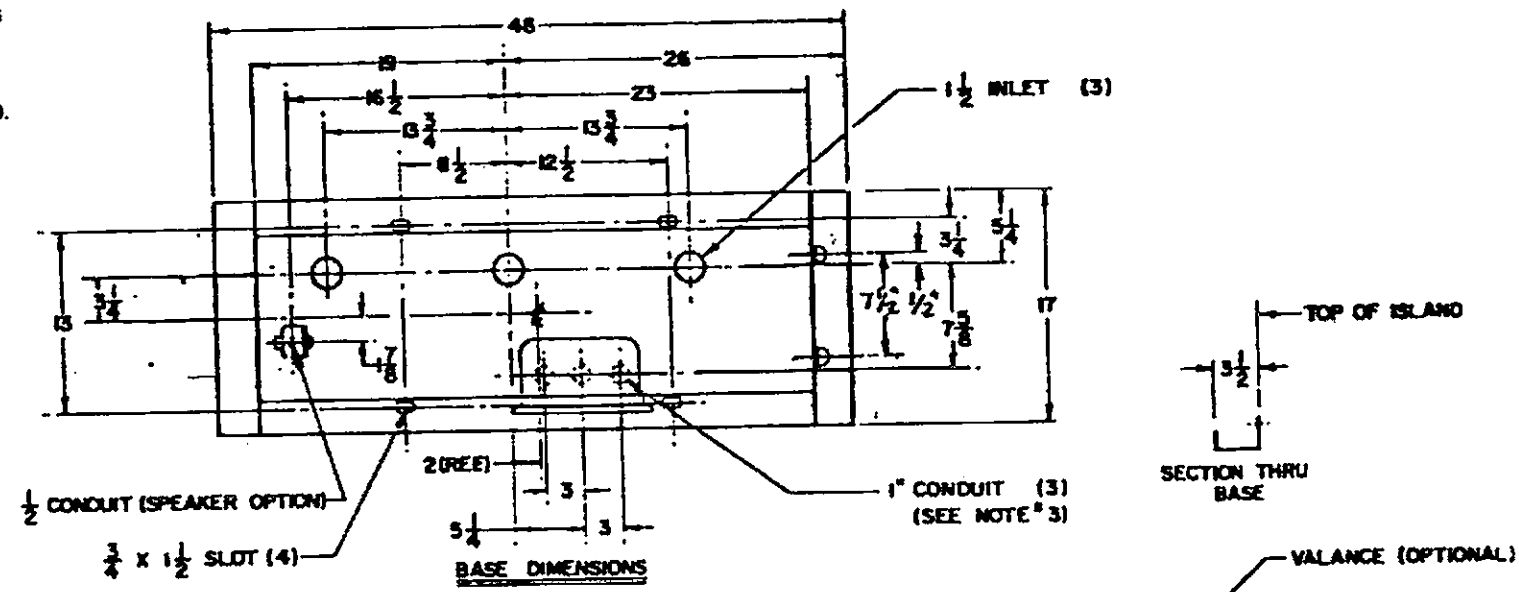
2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.



SHELL OIL COMPANY

SCALE: NONE
OWN. BY D.M./M
NO. 6662

PIPING SHOULD RUN LEVEL, AVOIDING
 AIR OR LIQUID TRAPS.
 ALL PIPING MUST CONFORM TO ALL
 LOCAL REGULATIONS.
 CONDUIT TAPS SHOWN ARE SUPPLIED.
 ANY ONE OR ALL MAY BE USED TO
 MAKE ELECTRICAL CONNECTION TO
 DISPENSER.



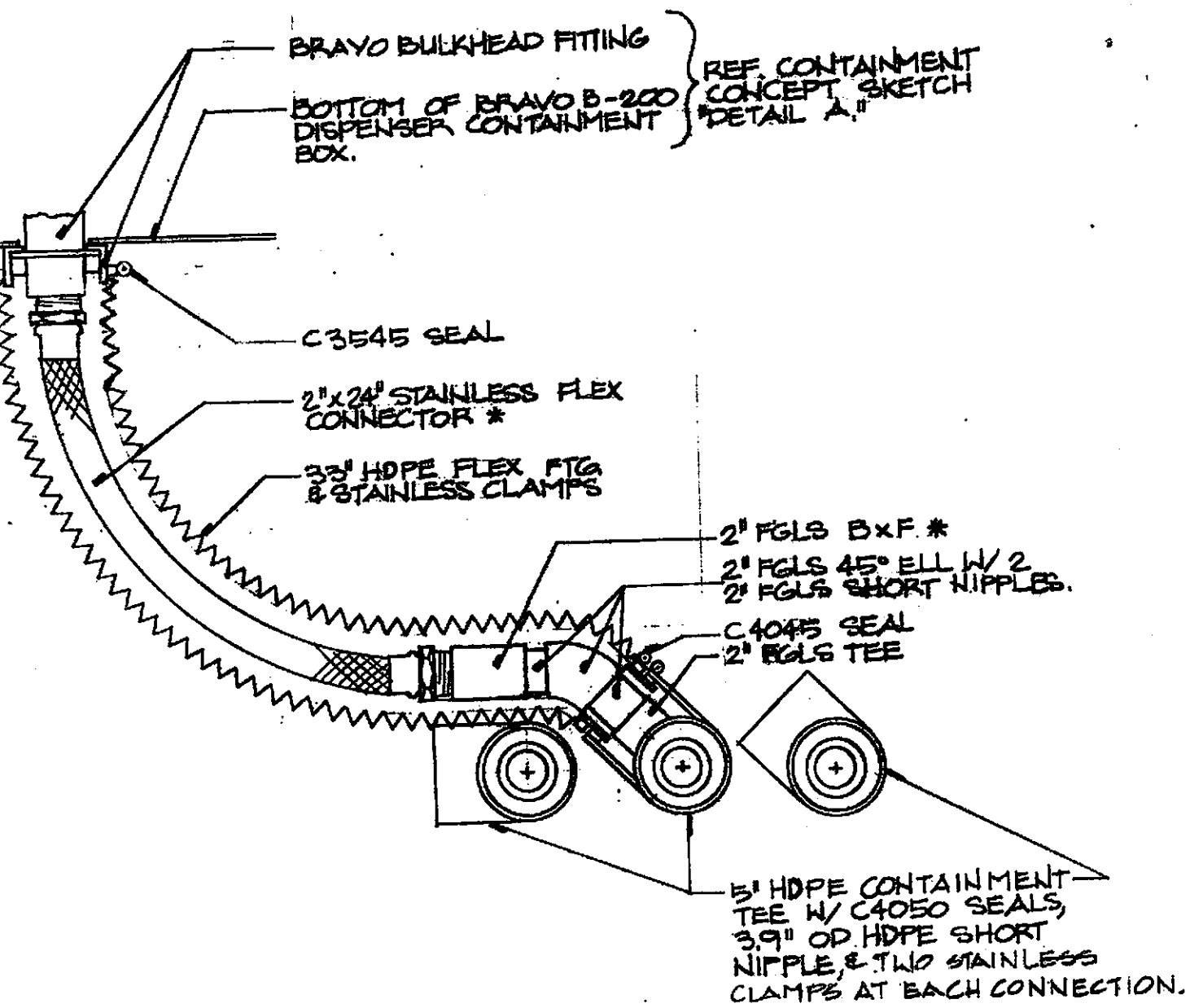
RECOMMENDED PIPE CHASE WIDTH 2'-9" MIN. FOR THREE PRODUCT LINES WITH 3.9" DIA. SECONDARY CONTAINMENT, 2'-0" MIN FOR 3" DIA. V.R. LINES. EXTEND CHASE BEYOND EDGE OF TRENCH.

PIPE CHASE SECTION AT DISPENSER ISLAND.

DISPENSER DETAILS

(B) PIPE CHASE

MULTI
 DISPE
 2" VAPOR RE
 FROM

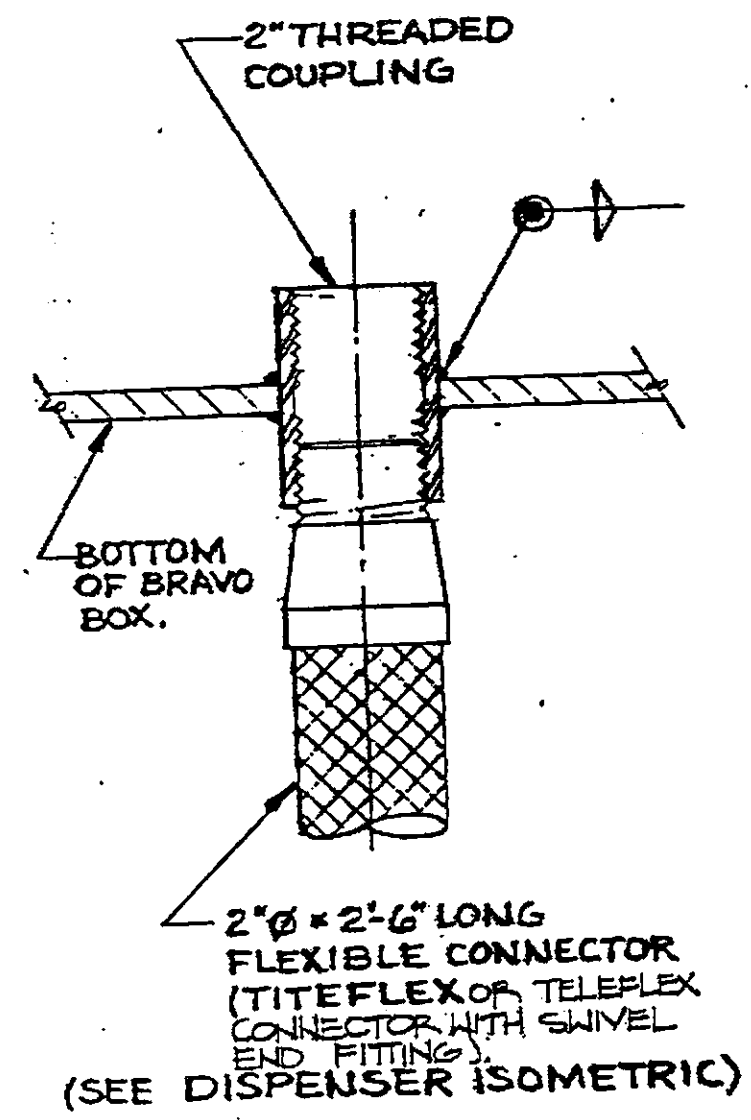


REF. CONTAINMENT
CONCEPT SKETCH
"DETAIL A."

2" FGLS Bx F *
2" FGLS 45° ELL W/ 2
2" FGLS SHORT NIPPLES.
C4045 SEAL
2" FGLS TEE

5" HDPE CONTAINMENT
TEE W/ C4050 SEALS,
3.9" OD HDPE SHORT
NIPPLE, & TWO STAINLESS
CLAMPS AT EACH CONNECTION.

* OK TO SUBSTITUTE 2"
FGLS COUPLING FOR 2" Bx F,
ADD 2" x 1 1/2" FGLS THRD
REDUCER, & SUBSTITUTE
1 1/2" FLEX CONNECTOR

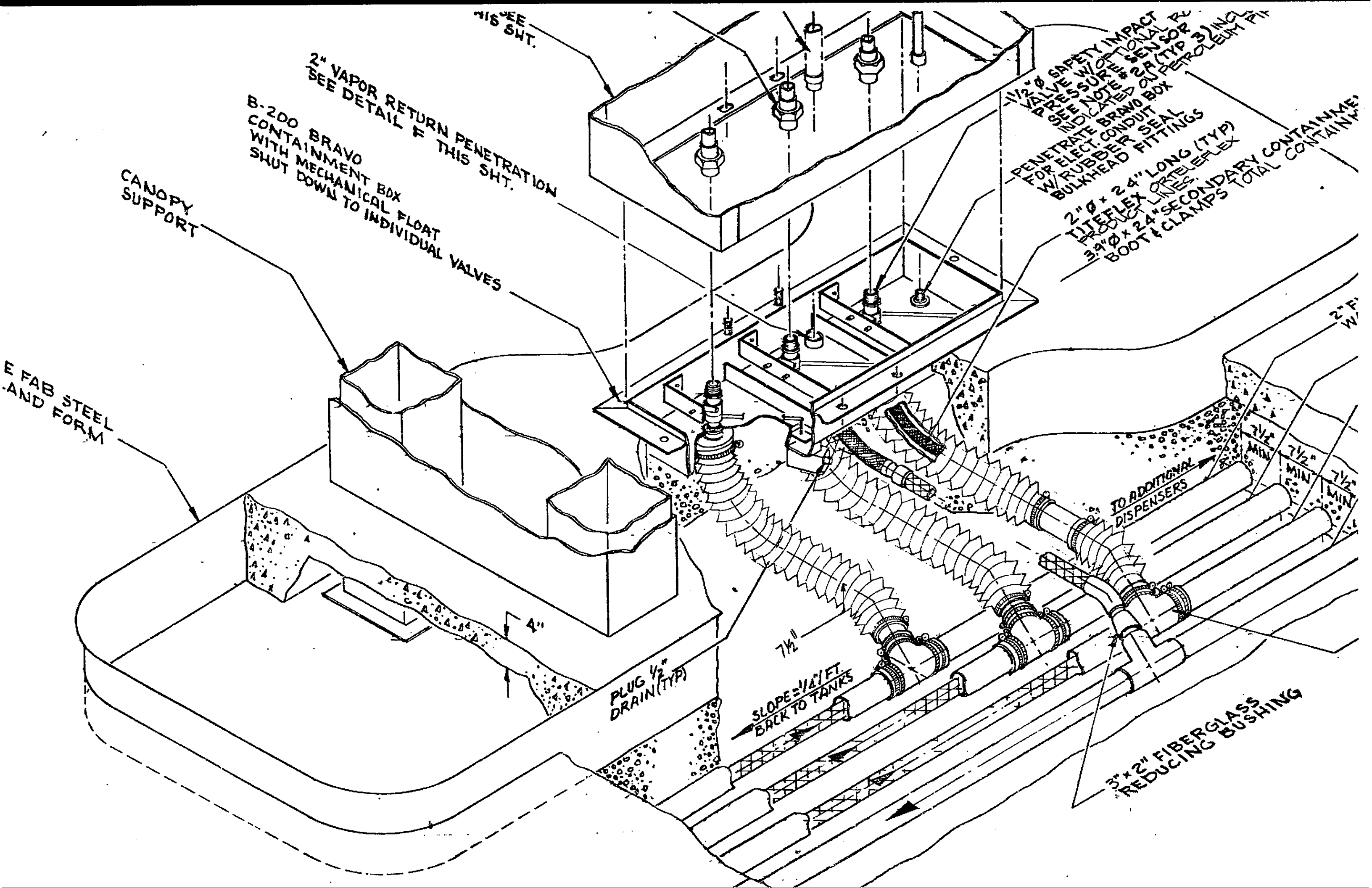


2" Ø x 2'-6" LONG
FLEXIBLE CONNECTOR
(TITIFLEX OR TELEFLEX
CONNECTOR WITH SWIVEL
END FITTING).
(SEE DISPENSER ISOMETRIC)

**SECONDARY CONTAINMENT
AT DISPENSER CONNECTION**

F VAPOR PIPING AT BRAVO BOX

DESCRIPTION	MANUFACTURER/MODEL #
MULTI-GRADE DISPENSER	DRESSER-WAYNE DL/190-IL/190V
SECONDARY CONTAINMENT BOOT	3.9" TOTAL CONTAINMENT
SAFETY IMPACT VALVE	1 1/2" DIA.

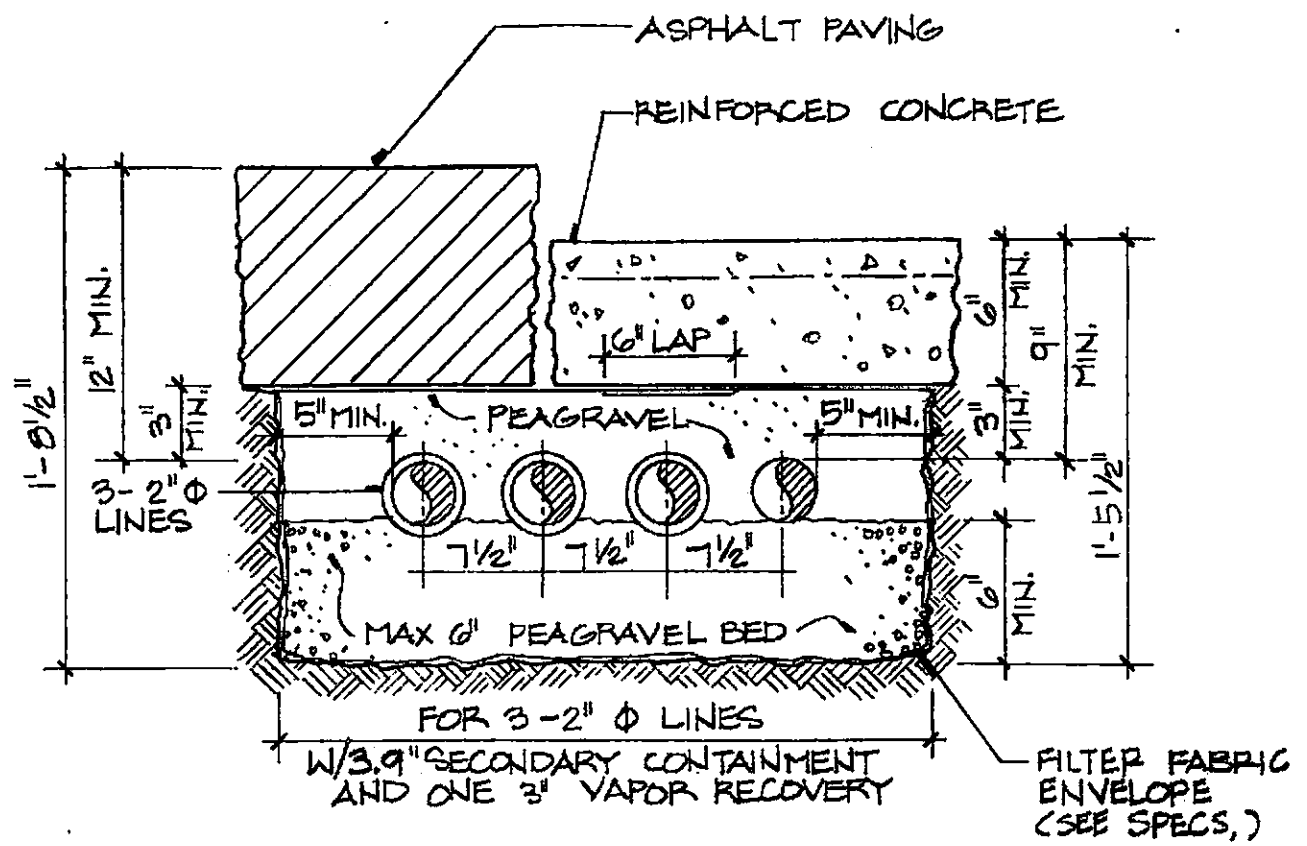


(TYP.)

1" GLASS PIPE (REG LEADED)
 W/3.9" SECONDARY CONTAINMENT
 1.5" GLASS PIPE (REGULAR UNL)
 W/3.9" SECONDARY CONTAINMENT
 2" FIBERGLASS PIPE (SUPER UNL)
 W/3.9" SECONDARY CONTAINMENT
 3" FIBERGLASS PIPE
 VAPOR RECOVERY
 SINGLE WALL
 SEE PIPECHASE
 DETAIL THIS SHEET
 PRIMARY AND 3.9" SECONDARY
 CONTAINMENT 90° ELL OR TEE
 HDPE FITTINGS

FLEX CONNECTORS (PRODUCT)	2" OX 24" TELEFLEX OR TITEFLEX WITH SWIVEL END
DISPENSER CONTAINMENT BOX	ERAVO BOX B-200
NOZZLE	EMCO-WHEATON A-4001
PRODUCT & VAPOR HOSE	GOODYEAR MAXXIM II COAXIAL 12 FT.
STEEL ISLAND FORM	

DISPENSER/ISLAND EQUIP LIST



G TRENCH DETAIL

				DATE APPRO'D
				PRELIM. _____
				PERMIT _____
				BID _____
				CONST. _____
MARK	DATE	REVISIONS	BY	

DISPENSER AND PIPING DETAILS
2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.

SCALE NONE

3-3" FIBERGLASS SECONDARY LINES

3" FIBERGLASS VAPOR RECOVERY LINE

ANNULAR SENSOR IN 4" RISER
(TYP OF 3)

2'-4 3/4" DIA 3'-6" PVC RISER
TO ALLOW VISUAL INSPECTION
OF BUNG CONNECTION
(TYP OF 3)

INTERSTICE RESERVOIR
(TYP OF 3)

3" VAPOR RECOVERY DRYBREAK
ADAPTOR AND CAP WITH 4" RISER
(TYP OF 3)

12" DIA ACCESS BOX WITH FIL-SEAL
LINER (TYP OF 3)

LEAK-PROOF SPILL CONTAINMENT
EBW #705-BG

4" FILL RISER

4" N PT FITTING WITH ACCESS TO
TANK ANNULAR SPACE
(TYP 6 PLACES) PLUG ALL
UNUSED OPENINGS

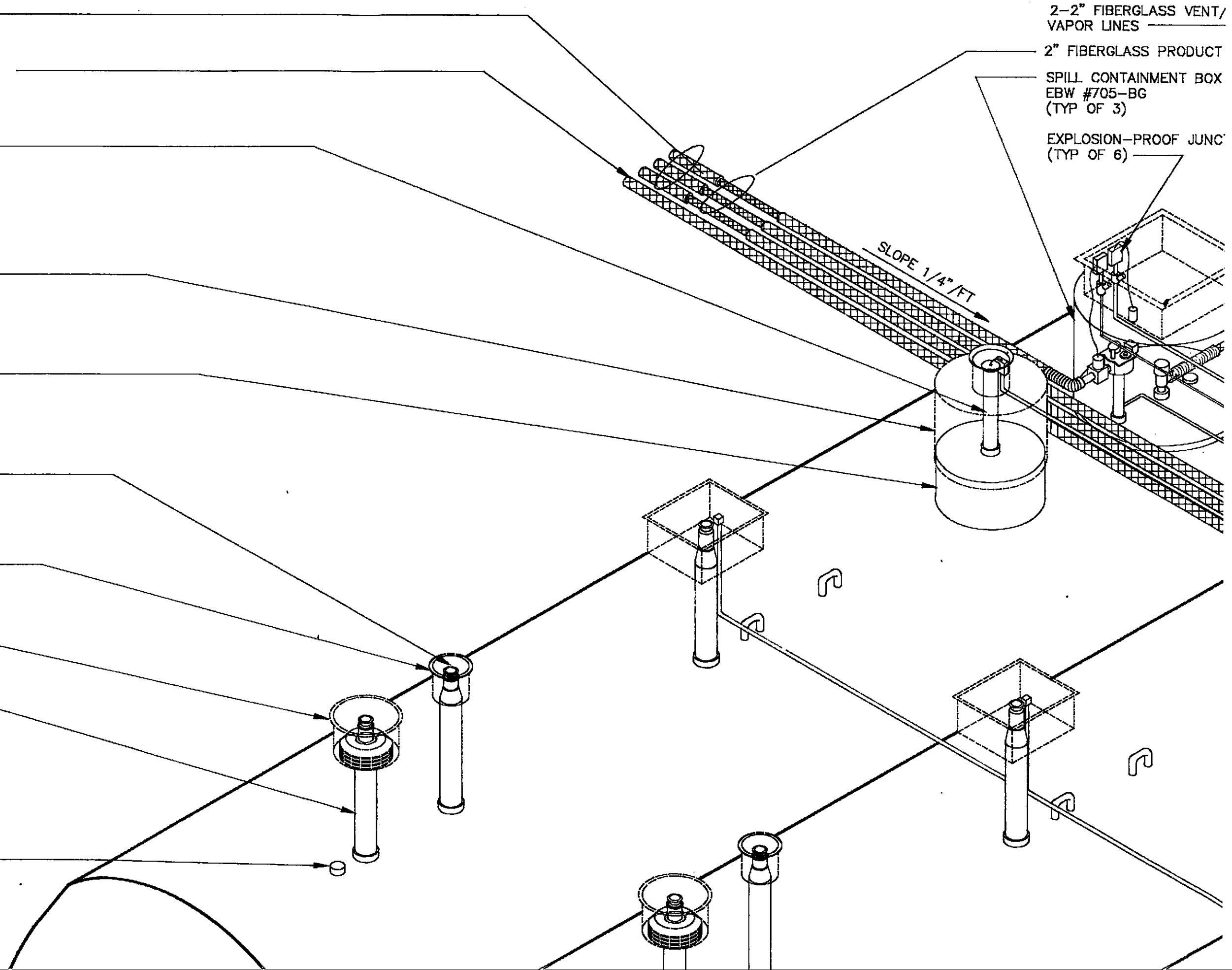
2-2" FIBERGLASS VENT/
VAPOR LINES

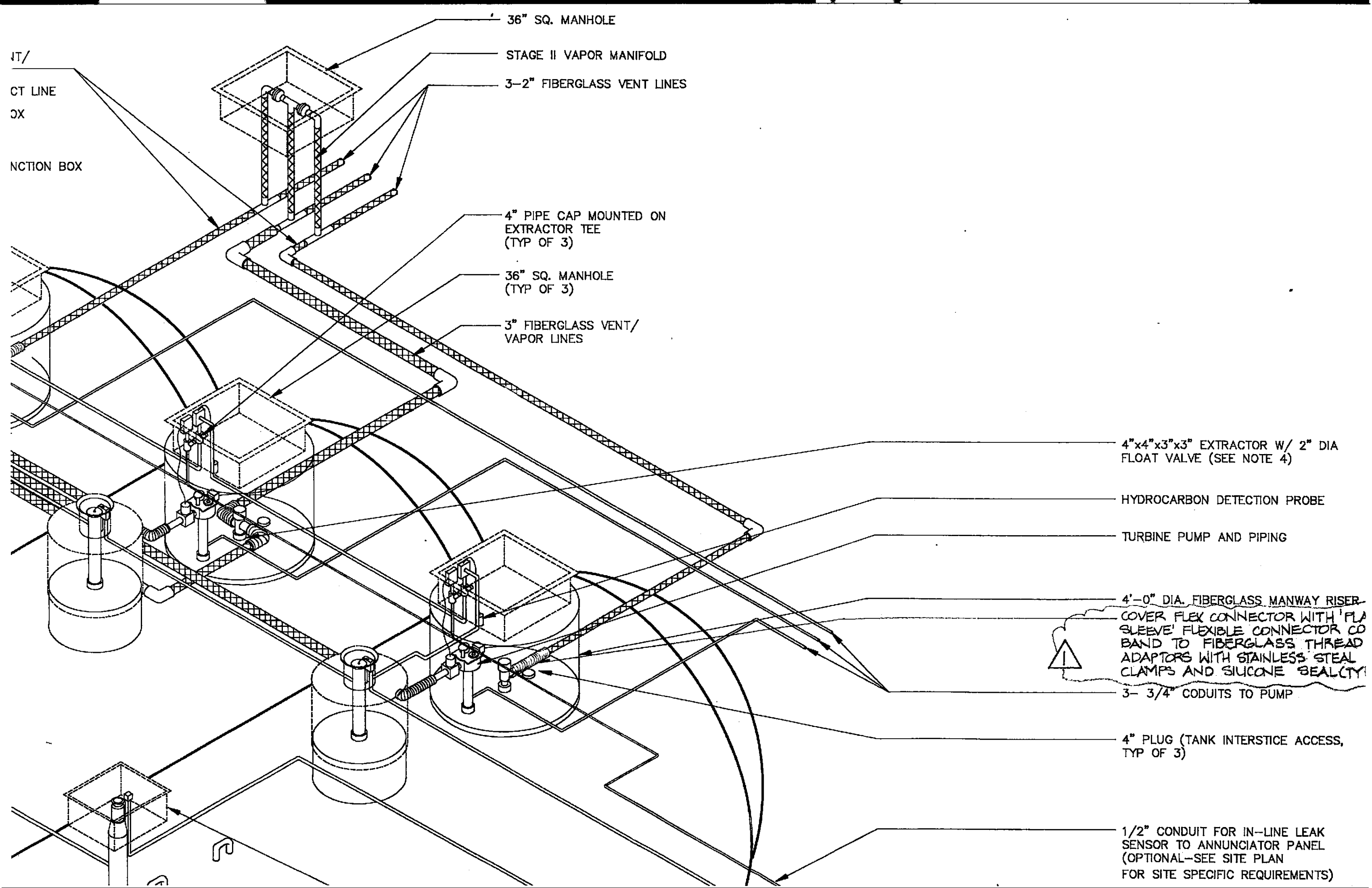
2" FIBERGLASS PRODUCT

SPILL CONTAINMENT BOX
EBW #705-BG
(TYP OF 3)

EXPLOSION-PROOF JUNC'
(TYP OF 6)

SLOPE 1/4" / FT





IT/
CT LINE
OX
UNCTION BOX

36" SQ. MANHOLE
STAGE II VAPOR MANIFOLD
3-2" FIBERGLASS VENT LINES

4" PIPE CAP MOUNTED ON EXTRACTOR TEE (TYP OF 3)
36" SQ. MANHOLE (TYP OF 3)
3" FIBERGLASS VENT/VAPOR LINES

4"x4"x3"x3" EXTRACTOR W/ 2" DIA FLOAT VALVE (SEE NOTE 4)

HYDROCARBON DETECTION PROBE

TURBINE PUMP AND PIPING

4'-0" DIA. FIBERGLASS MANWAY RISER COVER FLEX CONNECTOR WITH 'FLA SLEEVE' FLEXIBLE CONNECTOR CO BAND TO FIBERGLASS THREAD ADAPTORS WITH STAINLESS STEEL CLAMPS AND SILICONE SEALANT

3- 3/4" CODUITS TO PUMP

4" PLUG (TANK INTERSTICE ACCESS, TYP OF 3)

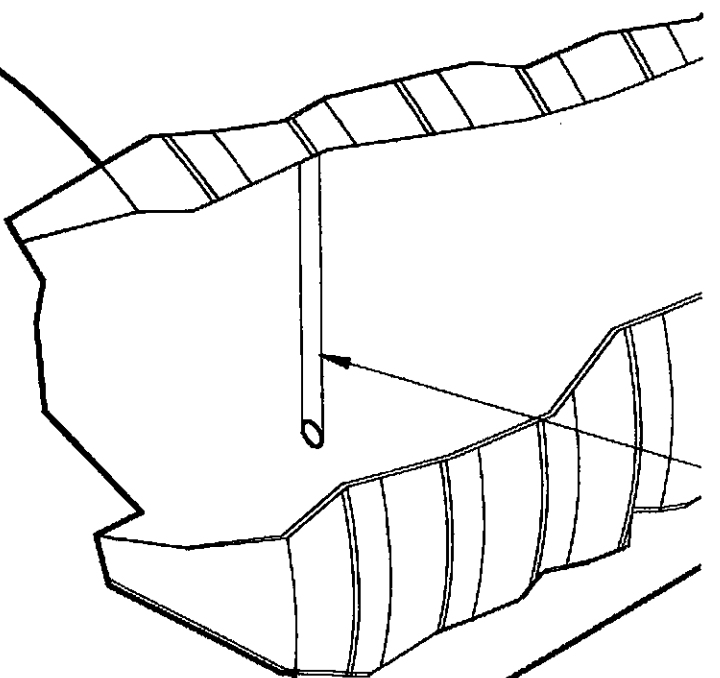
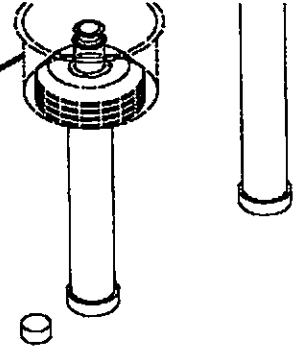
1/2" CONDUIT FOR IN-LINE LEAK SENSOR TO ANNUNCIATOR PANEL (OPTIONAL-SEE SITE PLAN FOR SITE SPECIFIC REQUIREMENTS)

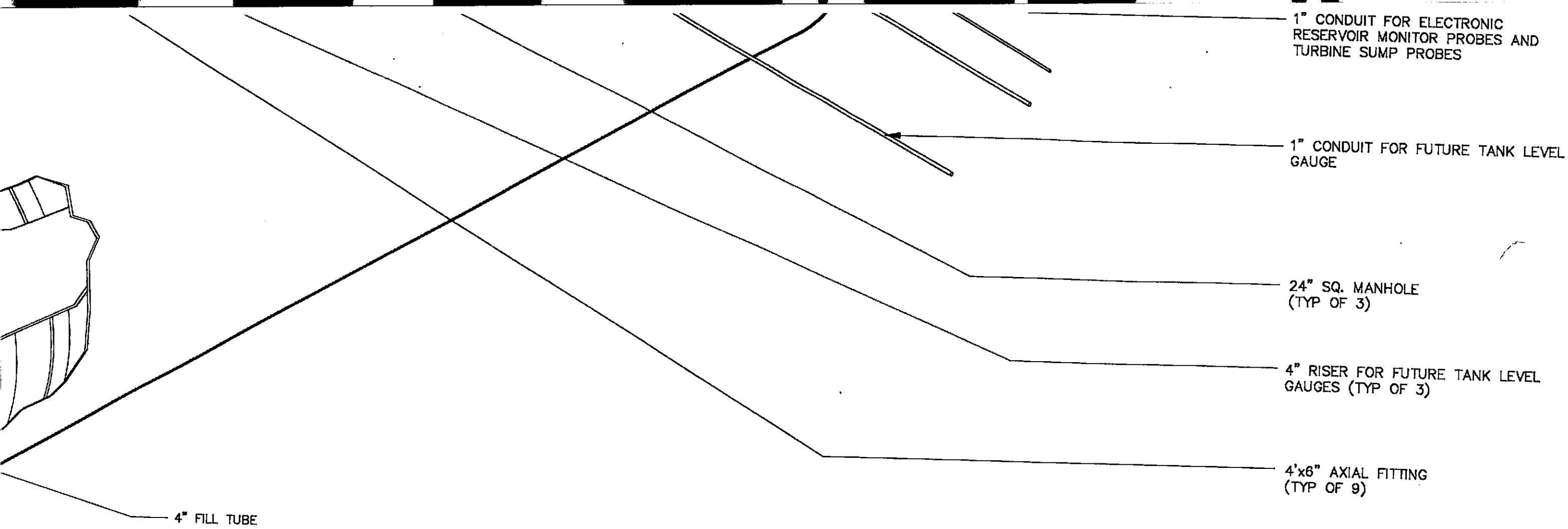


UNLEADED
GASOLINE

UNLEADED
GASOLINE
OR LOWEST
OCTANE UNLEADED

UNLEADED
GASOLINE





NOTES:

- THIS DRAWING IS A SHELL OIL TYPICAL AND DOES NOT REFLECT SITE SPECIFIC PIPING CONFIGURATIONS. SEE PETROLEUM PLAN FOR SITE SPECIFIC PIPING CONFIGURATIONS.
- TURBINE SIZE 1 1/2 H.P. P150S1 SIZE 0909-5 (CUT AS REQUIRED).
- CONTACT ENGINEER FOR TANK BURIAL DEPTH REQUIREMENT.
- PLUG ALL UNUSED TANK OPENINGS.
- ALL GALVANIZED PIPING AND FITTINGS SHALL BE PRIMED AND WRAPPED.

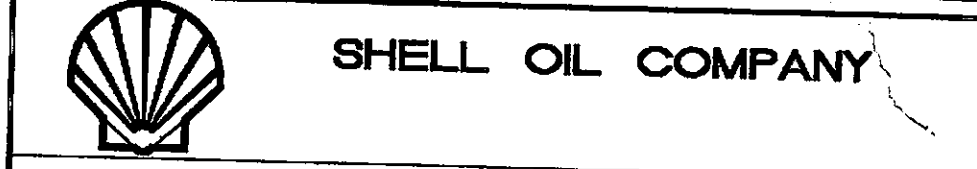
MARK	DATE	REVISIONS	BY	DATE	APRVD
▲	9-27-88	REVISIONS PER FIRE DEPT.	EGP		

TYPICAL TANK INSTALLATION

ISOMETRIC VIEW

2724 CASTRO VALLEY BLVD.

CASTRO VALLEY, CA.



ROBERT H. LEE & ASSOCIATES, INC.
 ARCHITECTURE ENGINEERING PLANNING

SCALE	3/8"=1'-0"
DWN. BY	GC
R.H.#	6662
W.I.C.#	

Conditional Use		
Building/Canopy		
Sign		
Air Pollution Control District		
State Encroachment		
Street Improvement		
Sidewalk/Driveway		
Demolition and/or Sewer Cap		
Industrial Waste		
Grading		
Sewer Connection		
Tree Removal		
Electrical		
Plumbing		
U.G. Tank Removal/Installation		
Fire Department		
Environmental Health (Hazardous Materials Storage)		
Health Dept. (Food Mart Approval)		

Water meter		
Water service		
Condensate piping for HVAC		
Product, vapor return and vent piping		
Irrigation system in planters		
Sewer system main hook up, vents, and clean outs		
Yard drains/catch basins		
Air piping		
Storm drain system piping, clean-outs & hook up		
Cold water piping		
Hot water piping		
Water shut-off valve		
Oil and sediment trap		
Water pressure regulator (if required)		
Backflow preventor (if required)		
Anti-Siphon valves for sprinkling system (if required)		
Fire protection sprinkler system		
Building drains to		
Canopy drains to island face		
Product piping monitoring well		

ON-SITE DEMOLITION (Removal and Disposal Of)

Portion of existing storefront and walls		
Concrete slabs for trenching		
Buildings to foundation		
Floors and foundations		
Asphalt concrete paving		
Pump islands		
Pumps and dispenser removal		
Air/Water reels		
Area lighters removal		
Underground tanks		
Air compressor		
Strip entire lot/site clear as shown on .		
Planters		
Backfill and compaction of tank hole		
Waste oil tank removal		
High-Rise sign and pole		
High-Rise sign base/foundation		
Monument sign		
Monument sign base/foundation		
Price sign		
Price sign base/foundation		
Contaminated soil (IF APPLICABLE)		
Shelving in customer room, restroom door and frame		

SITE ELECTRICAL

Temporary electrical service		
Underground electrical service		
Underground telephone service		
Intercom system conduit		
Alarm system, complete		
All electrical conduits and conductors in yard		
Submerged pump/console and dispenser electrical		
Ground rod at main panel		
Isolated ground rod in sales area		
Emergency shut-off switch-dispensers		
Stubbing in for future electronic tank gauging		
Stubbing in for future electronic credit card reader		
Intercom system equipment		
Dispenser control equipment		
Final connection for HVAC equipment		
Electrical conduit for car wash equipment		

NEW ON-SITE WORK

Fill/cut/grading/compaction		
Grading unpaved area		
Retaining walls		

PUMP ISLAND EQUIPMENT

Electronic Dispenser w/retractor		
der		
MGD		
card reader		
Nozzles		

470 - 27th Street, Third Floor
 Oakland, CA 94612
 Telephone: (415) 874-7237

10 M gal. fiberglass tank	/	/
12 M gal. fiberglass tank	/	/
550 gal. double wall fiberglass tank	/	/
10 M gal. double wall fiberglass tank	/	/
12 M gal. double wall fiberglass tank	/	/
Concrete tank hold down log	/	/
Hold down straps	/	/
Flexible liner (Hytrel or equiv.) - Piping trench	/	/
Flexible liner (Hytrel or equiv.) - Piping at tanks	/	/
Typar filter fabric	/	/
1 1/2 H.P. Red Jacket Submersible Turbines w/leak detectors & controllers	SH	G
Piping Leak Detection System (RAMM or equiv.)	SH	G
24" x 24" Manholes and covers	SH	G
30" x 30" Manholes and covers	SH	G
16" dia. W.P. MANHOLE FOR FIP. MONITOR RISERS & ANNULAR SP. MONITOR	SH	G
16" dia. FILL CAP CONTAINMENT BOX	SH	G
16" dia. VAPOR SPILL CONTAINMENT BOX (STAGE I)	SH	G
12" dia. test well manhole and cover	SH	G
8" dia. access manhole for extractor fitting	SH	G
4' - 0" dia. FRP risers	SH	G
2' - 0" dia. FRP riser for waste oil tank	SH	G
4" dia. slotted pipe test well assembly	SH	G
6" dia. slotted pipe test well assembly	SH	G
4" extractor fitting riser and 4" plug (sub pump end)	SH	G
4" galv. pipe riser for fill pipe	SH	G
4" galv. pipe riser for extractor fitting	SH	G
4" galv. pipe riser for tank gauging	SH	G
4" galv. pipe riser for subpumps	SH	G
4" screw cap assembly	SH	G
Product Fill Assembly	SH	G
4" top seal fill adaptor w/cap	SH	G
Aluminum fill tube	SH	G
Product tag holder	SH	G
Product tag	SH	G
Vapor Assembly	SH	G
3" Adaptor w/cap	SH	G
3" galv. pipe assembly	SH	G
Product tag holder	SH	G
Product tag	SH	G
4" x 3" x 2" Vent Valve Assembly	SH	G
4" x 2" x 2" Vent Valve Assembly	SH	G
2" Float Valve	SH	G
Diesel fill deflector	SH	G
2" Flex connector at submersible turbine	SH	G
Owens-Corning Leak Detection reservoir	SH	G
2'-6" DIA. x 3'-0" PVC RISER FOR ANNULAR SPACE RISER	SH	G
OPW 01-50 POSITIVE SHUT OFF VALVE	SH	G
ANCHOR BOX	SH	G
FLEX CONNECTIONS	SH	G
TESTS		

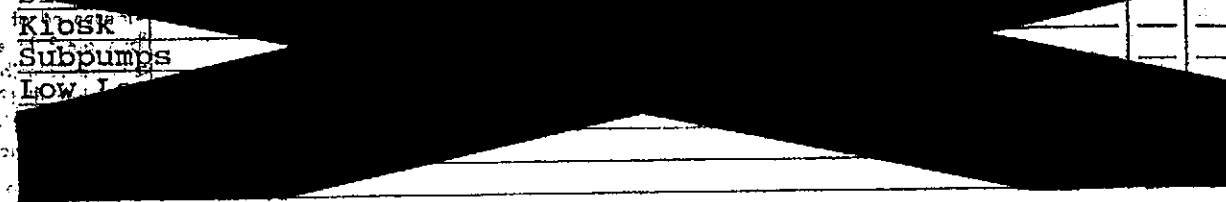
Gasoline storage tank pressure testing	G	G
Gasoline piping pressure testing	G	G
Gasoline dispenser calibration	G	G
Electric	G	G
Plumbing	G	G
Air and water piping pressure tests	G	G
Compaction test and certificate to SHELL	G	G
Complete meter calibrations and notification to sealer of weights and measures	/	/
Water test yard and gutter drainage	/	/
Liquid blockage and pressure decay test for vapor recovery lines	G	G

These plans have been reviewed and found able and essentially meet the requirements local health laws. Changes to your plans and Department are to assure compliance with laws. The project proposed is in compliance of any required hold down details for One copy of these detailed plans must be available to all contractors and craftsmen involved with the construction and installation.

Any change or alteration of these plans must be submitted to this Department Building Department to determine if such changes meet the requirements of State and Notify this Department at least 48 hours following required inspections:

- Pressure Test
- Pre-Covering of Tank and
- Final Inspection

Issuance of a permit to operate is dependent compliance with accepted plans and all applicable regulations.



CLEAN-UP	/	/
Sweep building clean before painting	/	/
Wash windows, remove paint	/	/
Remove all trash and excess materials from site including Owners sub-contractors debris	G	G
Final Operation check out of equipment and return keys to Owners Representative	G	G
and hose down entire yard area	G	G

THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS.

REFERENCE DRAWING LIST

SW-1	SCOPE OF WORK SUMMARY
DR-24021-26	GENERAL SPECIFICATIONS
JOB #6662	2724 CASTRO VALLEY BLVD., CASTRO VALLEY
A-1	SITE/YARD ELECTRICAL PLAN
P-1	PETROLEUM PIPING PLAN
JOB #6663	1591 TRANCAS ST., NAPA
A-1	SITE/YARD ELECTRICAL PLAN
P-1	PETROLEUM PIPING PLAN
JOB #6727	1801 SANTA RITA ROAD, PLEASANTON
A-1	SITE/YARD ELECTRICAL PLAN
P-1	PETROLEUM PIPING PLAN
PP-1	TYPICAL TANK INSTALLATION ISOMETRIC VIEW
PP-2	DETAILS DISPENSER AND PIPING DETAILS
PP-3	TANK INSTALLATION DETAILS
PP-4	PIPING SECONDARY CONTAINMENT
PP-5	TYPICAL PIPING SECONDARY CONTAINMENT
PP-6	RONAN LEAK DETECTOR SYSTEM BLOCK DIAGRAM
PP-7	RONAN LEAK DETECTOR SYSTEM WIRING DETAIL

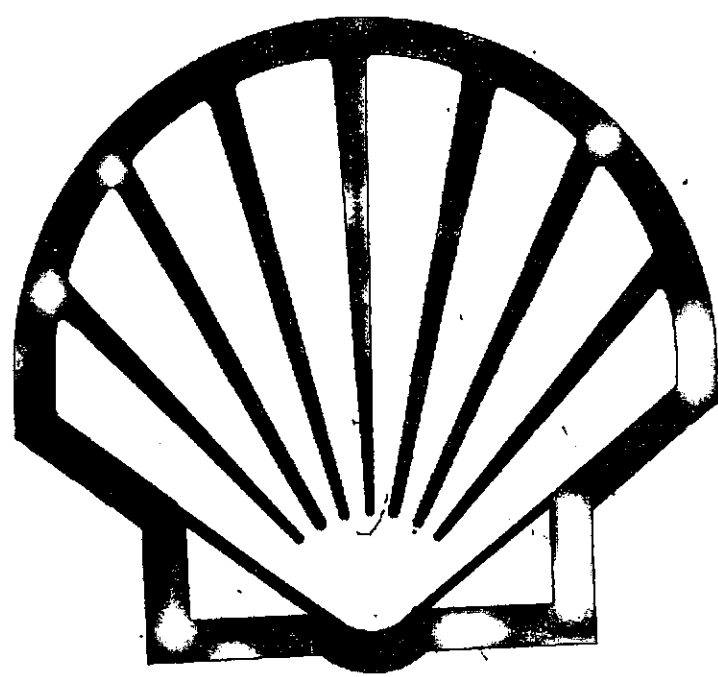
ALTERNATE BID #1 (ALL JOBS)
GENERAL CONTRACTOR TO PROVIDE SEPARATE ADD-ON PRICE FOR SHORING DURING EXCAVATION OF NEW TANK HOLE PER SHELL STANDARD SPECS. PROVIDE QUOTE PER LINEAL FOOT TO SHORE EXIST. & FUTURE EXCAVATIONS, ASSUME A MIN. RETAINING WALLS

Retaining walls	
Concrete slabs	
Concrete Pump Islands MODIFICATION	
Redwood paving headers	
Concrete curbs (PATCH/REPAIR)	
Concrete yard paving (PATCH/REPAIR)	
Asphalt yard paving (patch/repair)	
Concrete wheel stops	
Fence (chain link/masonry/wood)	
Concrete drain gutters/swale	
Catch basins	
Landscaping,	
Irrigation system	
Topsoil to within 6" of top of curbing	
Trenches for plumbing/electrical/	
New tank installation	
Pea gravel backfill	
Trenching and backfill	
Guard posts	
Steel/masonry trash enclosure with steel gates	
Trash enclosure slab and footings	
Equipment enclosure slab and footings	
Masonry equipment enclosure	
Chain link fence equipment enclosure with redwood slats	
Freestanding vent piping support	
Area lighter footings	
Vacuum station slab and footings	
Price sign/monument sign/high rise sign footings	
Concrete walk extension and concrete handicapped ramp	
Steel gates for refuse enclosure	
CONCRETE BARRIERS FOR SOIL AERATION	

Product/Vapor H	
Shear Nipple - Vap	
Flow Regulator	
Nozzle - Reg. Leaded -	
Nozzle - Reg. Unlead	
Nozzle - Super Up	
Nozzle - Diesel	
Diesel Filt	
MGD pump	
1 1/2"	
St	
flex connectors	

YARD EQUIPMENT

Windsht	
Towel P	



SHELL OIL COMPANY

SCOPE OF WORK SUMMARY FOR ALL CONTRACTORS

LEG
SH
G
S
P
SN
D
U
O

Leak Detection System Test	G	G
Soil Contamination Test	SH	SH
Inspection of foundation excavations	/	/
Special inspection of concrete	/	/
Special inspection of welding	/	/
'Petrotite' tank and line inspection (WRITTEN RESULTS TO SHELL)	G	G

MISCELLANEOUS

Furnish construction schedule	G	G
Furnish 'As Built' dwg. showing all piping	G	G
Furnish qualified job superintendent at all times	G	G
Job site cleanliness	G	G
Furnish chemical toilet with weekly servicing	/	/
Furnish trash dumpster with weekly servicing	/	/
Barricades and safety signs per OSHA requirements	G	G
Temporary fencing around site throughout construction	G	G

NOTE TO CONTRACTOR:

CONTRACTOR IS RESPONSIBLE TO SEE THAT THE WORK IN FIELD IS DONE ACCORDANCE WITH THE FOLLOWING APPLICABLE NATIONAL, STATE AND LOCAL CODES, ORDINANCES AND REQUIREMENTS BY GOVERNING AGENCIES, AS WELL AS ALL OTHER APPLICABLE CODES NOT LISTED HERE, WHETHER OR NOT SUCH CODES, ORDINANCES, REQUIREMENTS, ETC. ARE SPECIFICALLY SHOWN ON DRAWINGS AND/OR CALLED FOR IN SPECIFICATIONS. ALL CODES ARE LISTED AS CURRENT EDITIONS OR THOSE PRESENTLY IN USE BY GOVERNING AGENCIES.

- BUILDING - UNIFORM BUILDING CODE
- ELECTRICAL - NATIONAL ELECTRIC CODE
- MECHANICAL - UNIFORM MECHANICAL CODE
- PLUMBING - UNIFORM PLUMBING CODE
- FIRE - UNIFORM FIRE CODE
- HANDICAPPED ACCESS - CALIFORNIA ADMINISTRATIVE CODE, TITLE 24
- HEALTH - CALIFORNIA HEALTH AND SAFETY CODE
- HAZARDOUS MATERIALS - LOCAL ENVIRONMENTAL HEALTH DEPT. REQUIREMENTS
- AIR POLLUTION - CALIFORNIA WATER RESOURCES BOARD REQUIREMENTS
- CALIFORNIA AIR RESOURCES BOARD REQUIREMENTS
- BAY AREA AIR QUALITY MANAGEMENT DISTRICT REQUIREMENTS

NOTE:

THE EQUIPMENT LISTED ON THIS SHEET IS A SUMMARY OF ALL JOB SITES. CERTAIN ITEMS MAY NOT BE APPLICABLE TO ALL SITES.

**DO NOT
USE FOR CONSTRUCTION
UNLESS SIGNED AND DATED**

Robert H. Lee
ROBERT H. LEE & ASSOC. 10/28/88
DATE

GENERAL CONTRACTOR
ELECTRICAL CONTRACTOR
PLUMBING CONTRACTOR
MECHANICAL CONTRACTOR
PAINTERS
PROPERTY COMPANY
OTHERS

NOTES:



1. SHELL OIL WILL APPLY FOR UNDERGROUND TANK REMOVAL/INSTALLATION PERMITS, GENERAL CONTRACTOR SHALL PICK UP & PAY FOR PERMIT FEES. SHELL WILL REIMBURSE CONTRACTOR FOR PERMIT FEES.

NOTE!!

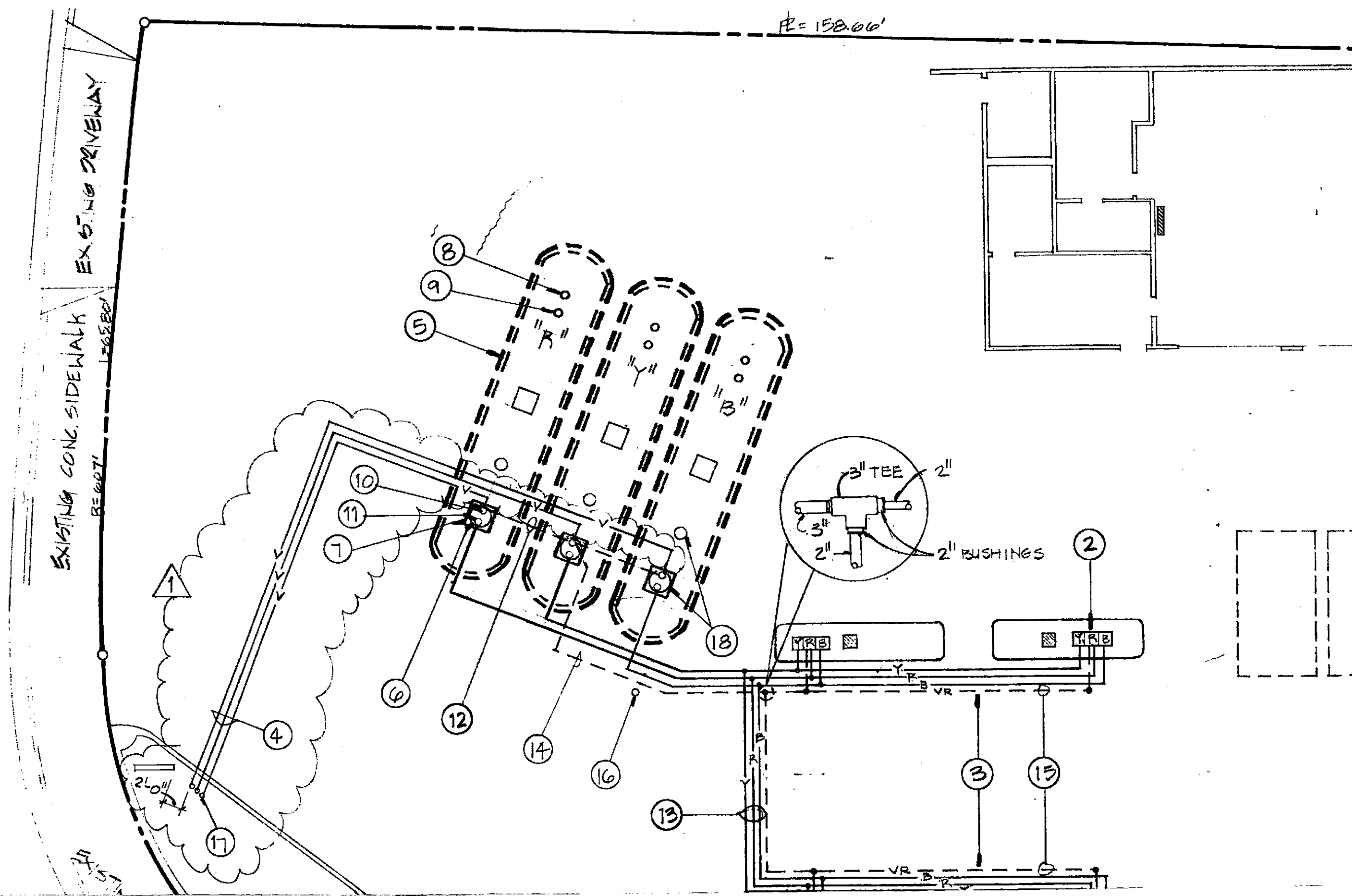
ALL OTHER EQUIPMENT & MATERIALS SHOWN ON THE DRAWINGS BUT NOT DESIGNATED IN THIS SUMMARY SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR.

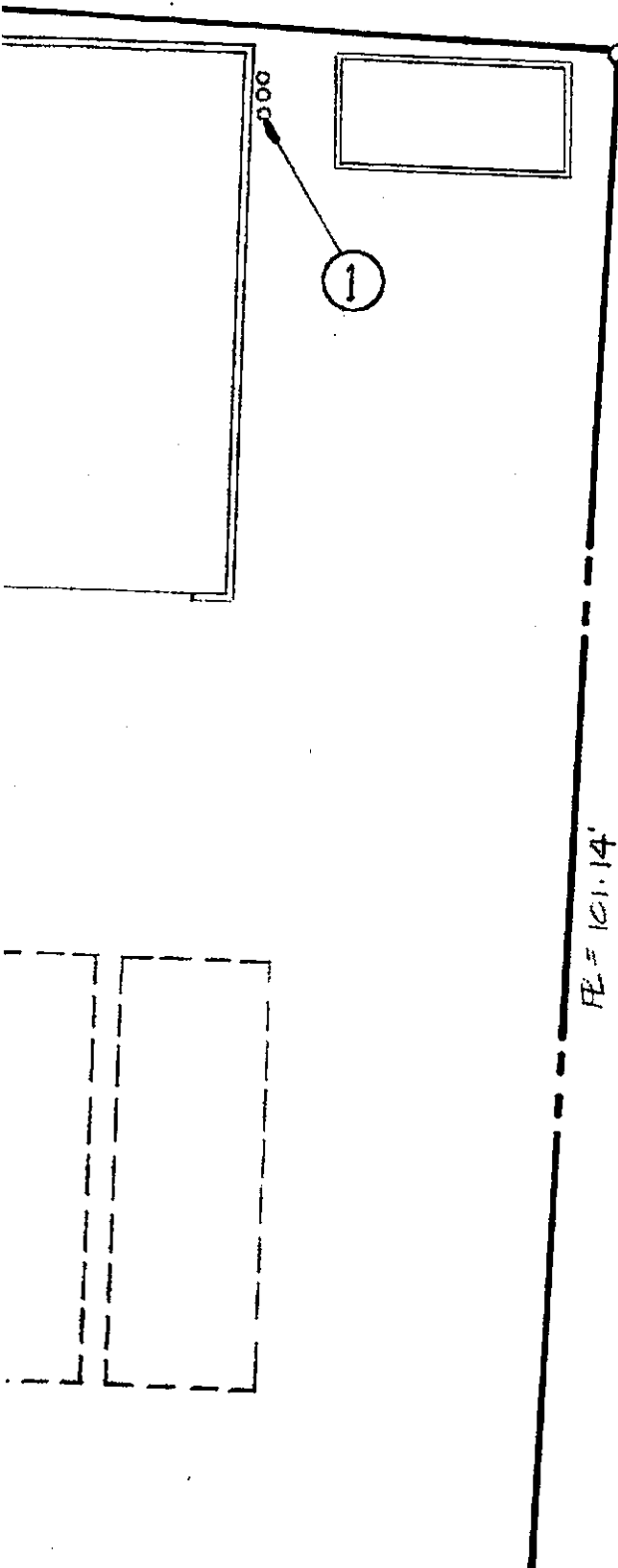
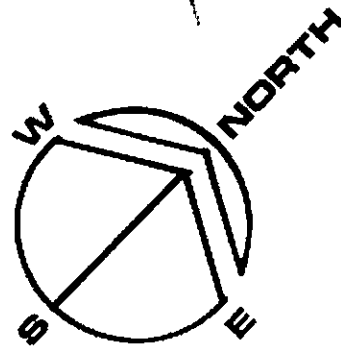
				DATE APPLIED
				PRELIM. PERMIT
				BID 8-10-88 PM
				CONST. 8-25-88 PM
MARK	DATE	REVISIONS	BY	

**SCOPE OF WORK SUMMARY
TANK INSTALLATION**

 SHELL OIL COMPANY	SCALE NONE
	OWN. BY E.W.
 ROBERT H. LEE & ASSOCIATES, INC. ARCHITECTURE PLANNING ENGINEERING 500 LAKESIDE LANDING CIRCLE, 1ST FLOOR, LAKESIDE, CA 94026 (415) 443-8888	RHL# 8882 SE
	5757
SW-1	

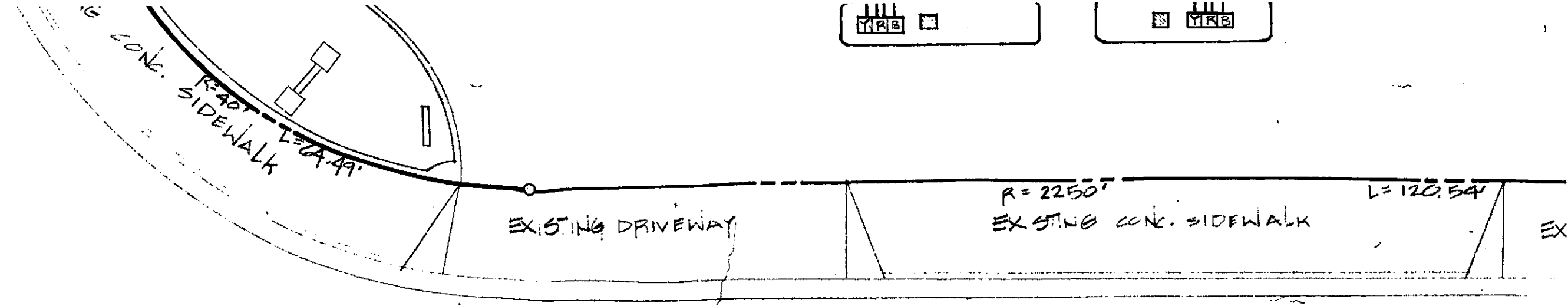
LAKE CHABOT RD.





NOTES:

- ① EXISTING VENT RISERS, EXCEPT FOR EXISTING WASTOIL TANK VENT, TO BE REMOVED SEAL AND PATCH ROOF TO MATCH EXISTING.
- ② DISCONNECT EXISTING PRODUCT AND VAPOR PIPING AT EXISTING DISPENSERS TO REMAIN AND REMOVE AS REQUIRED TO COMPLY WITH LOCAL REGULATIONS. CONNECT NEW PRODUCT AND VAPOR PIPING TO EXISTING DISPENSERS.
- ③ SAWCUT AND REMOVE PORTION OF EXISTING CONCRETE DRIVE SLAB AND INSTALL NEW PRODUCT AND VAPOR LINES TO EXISTING DISPENSER (TYPICAL OF 4). PATCH AND REPLACE CONCRETE SLAB AFTER PIPING INSTALLATION HAS BEEN COMPLETED.
- ④ NEW 2" DIA. FIBERGLASS VENT LINES. MINIMUM SLOPE OF 1/4" PER FOOT TO TANKS.
- ⑤ NEW 12,000 GALLON DOUBLE-WALL OWENS-CORNING FIBERGLASS TANK (TYPICAL OF 3)
SEE TYPICAL TANK INSTALLATION DETAILS.
- ⑥ 4' DIA. FRP RISER (TYPICAL OF 3).
- ⑦ TANK MANWAY OPENING (TYPICAL OF 3).
- ⑧ 4" DIA. FILL RISER IN SPILL CONTAINMENT MANHOLE (TYPICAL OF 3).
- ⑨ 3" DIA. VAPOR RISER IN SPILL CONTAINMENT MANHOLE (TYPICAL OF 3).
- ⑩ 4" DIA. EXTRACTOR FITTING, RISER AND END CAP. (TYPICAL OF 3).
- ⑪ NEW 3/4 H.P. SUB PUMP WITH IN-LINE LEAK DETECTOR (TYPICAL OF 3).
- ⑫ 2"/3" DIA. VAPOR MANIFOLD FOR STAGE II VAPOR PIPING. SEE SHELL OIL COMPANY TYPICAL PIPING DETAILS.
- ⑬ 2" DIA. FIBERGLASS PRODUCT PIPING WITH 3" SECONDARY CONTAINMENT. SLOPE 1/4" PER FOOT TOWARD TANKS.
- ⑭ 3" DIA. FIBERGLASS "MAIN" VAPOR RETURN LINE, MINIMUM SLOPE OF 1/4" PER FOOT TO TANK.
- ⑮ 2" DIA. VAPOR RETURN LINE FROM DISPENSER TO MAIN (3" DIA.) VAPOR RETURN LINE.
- ⑯ PIPING MONITOR WELL SEE DETAIL "A" SHEET PP-85.
- ⑰ NEW 2" DIA. VENT RISERS. SEE PP-4, DTL. 4
- ⑱ NEW RONAN LEAK SENSING PROBE FOR THERMINE PUMP



CASTRO VALLEY

ING DRIVEWAY

ALL PIPING RUNS ARE SHOWN SCHEMATICALLY. THE BEST ROUTE SHOULD BE DETERMINED IN THE FIELD AND INSTALLED ACCORDING TO NATIONAL STATE, AND LOCAL CODE REQUIREMENTS.

LEGEND

- Y— 3"Ø DOUBLE WALL FIBERGLASS 'SHELL REGULAR GASOLINE (LEADED) PRODUCT LINE (YELLOW)
- B— 3"Ø DOUBLE WALL FIBERGLASS 'SHELL SUPER UNLEADED GASOLINE' PRODUCT LINE (BLACK)
- R— 3"Ø DOUBLE WALL FIBERGLASS 'SHELL UNLEADED GASOLINE' PRODUCT LINE (RED)
- VR--- 2"Ø FIBERGLASS VAPOR RETURN LINE MIN. SLOPE = 1/4" : 1'-0" TO TANKS
- V— 2"Ø FIBERGLASS GASOLINE STORAGE TANK VENT. LINE MIN. SLOPE = 1/4" : 1'-0" TO TANKS

				DATE
				PRELIM.
				PERMIT
▲	9-27-88	REVISIONS PER FIRE DEPT.	SGP	BID 8-10-88
MARK	DATE	REVISIONS	BY	CONST. 8-25-80

PETROLEUM PIPING PLAN

**2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.**

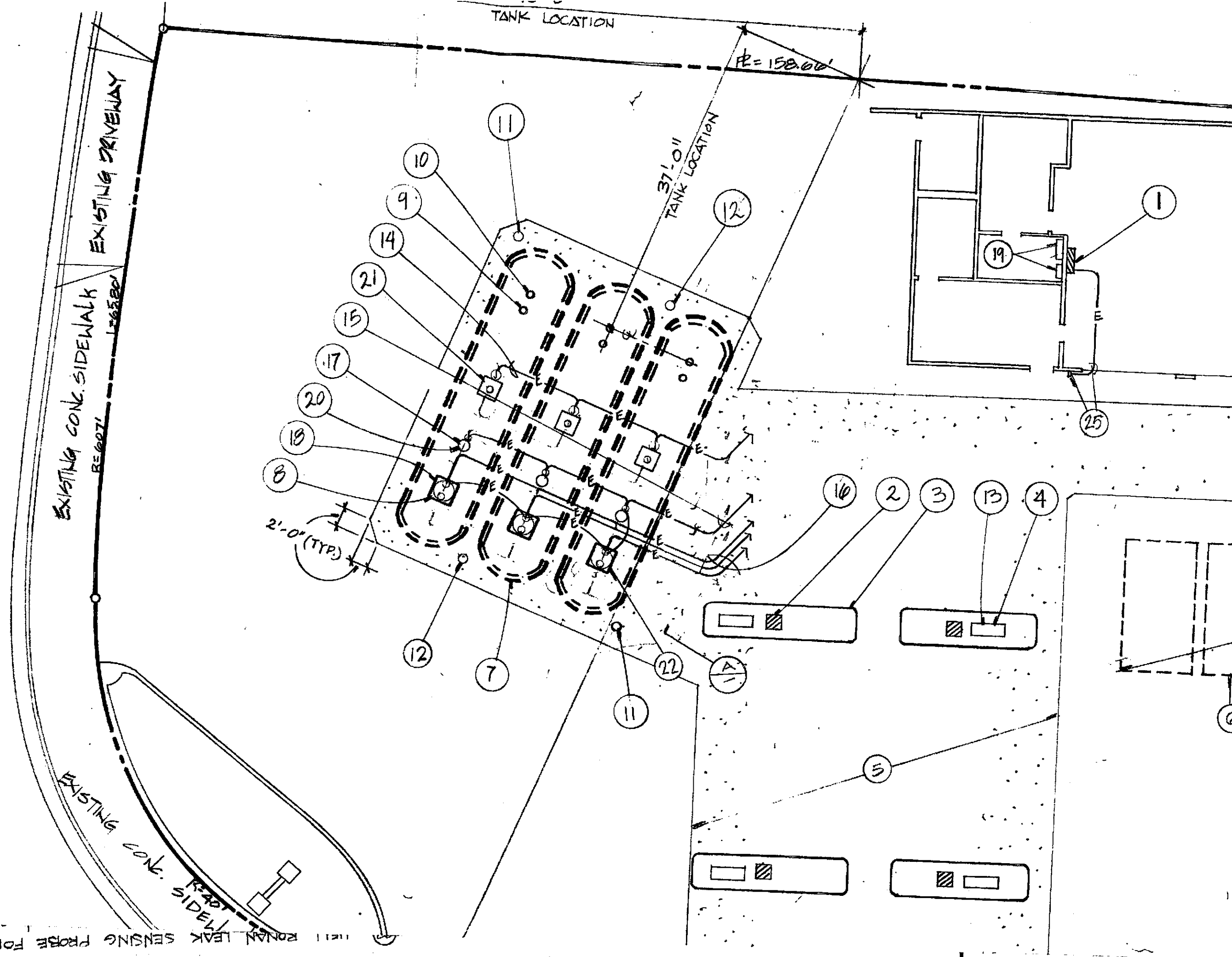


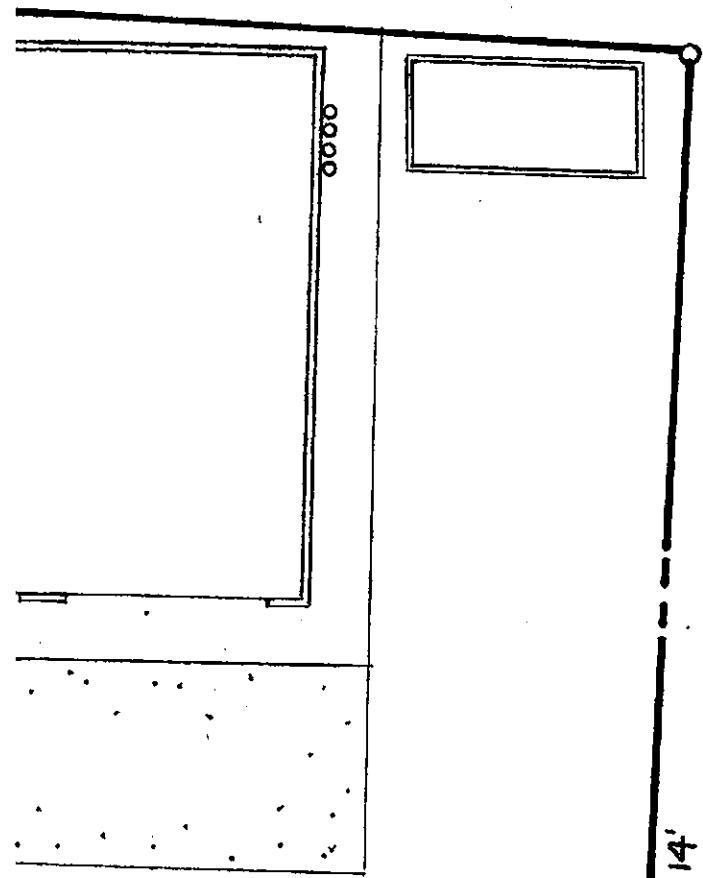
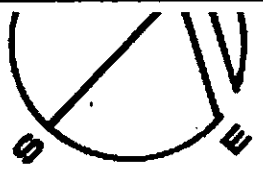
SHELL OIL COMPANY

SCALE 1" = 10'
 DWN. BY LE
 RHL # 6662
 W.I.C.#

LAKE CHABOT RD.

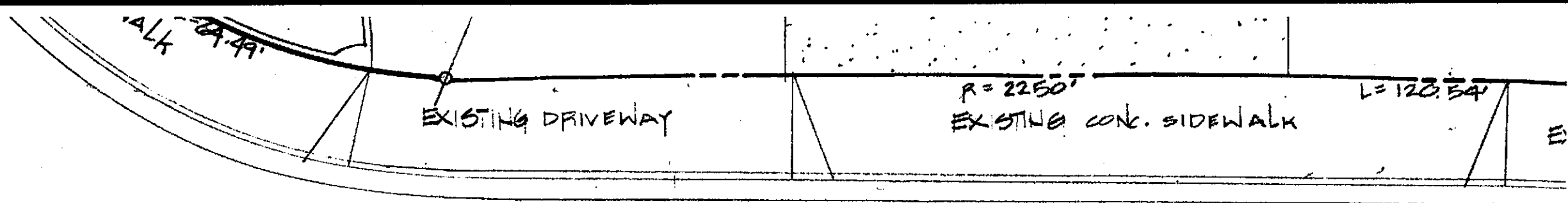
WELL POINT LEAK SENSING PROBE FOR TURBINE SUMP



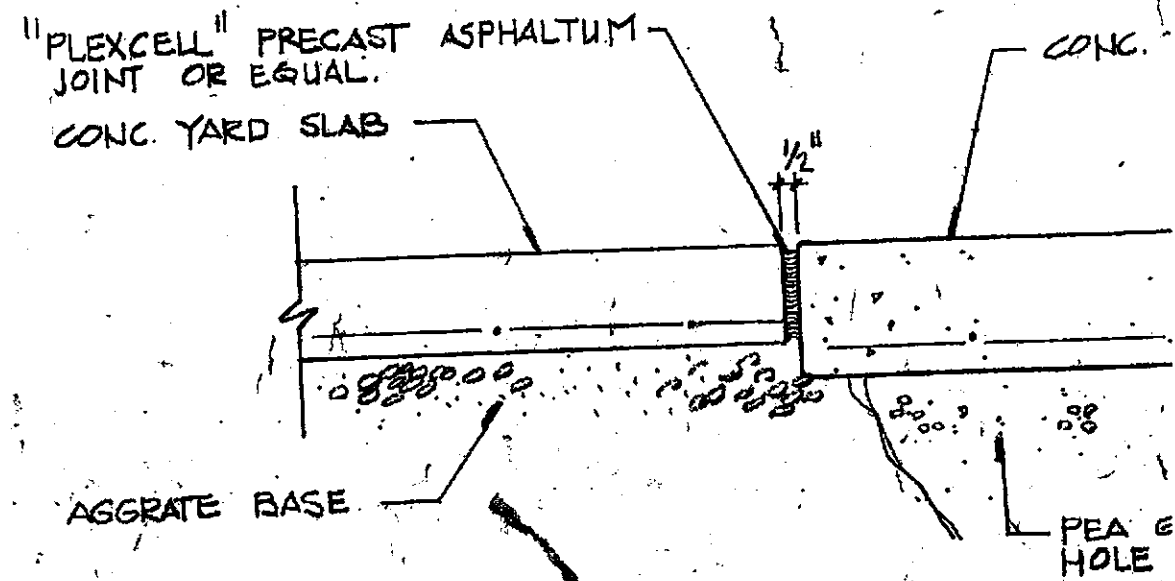


RZ = 101.14'

- 2 EXISTING CANOPY COLUMN (TYP OF 4).
- 3 EXISTING DISPENSER ISLAND. MODIFY EXISTING DISPENSER CORE HOLE TO ALLOW FOR ANCHORING PRODUCT PIPING W/BRVBOX (TYP OF 4).
- 4 EXISTING MULTI-PRODUCT DISPENSER TO REMAIN (TYP OF 4).
- 5 EXISTING CONCRETE DRIVE SLAB. SAWCUT AND PATCH AS REQUIRED FOR NEW WORK.
- 6 CONTRACTOR SHALL GAS FREE, REMOVE AND DISPOSE OF EXISTING FUEL STORAGE TANKS IN ACCORDANCE WITH LOCAL REGULATIONS (TYP OF 4).
- 7 NEW OWENS-CORNING 12,000 GALLON DOUBLE-WALL FIBERGLASS UNDERGROUND FUEL STORAGE TANK WITH NEW 8" THICK REINFORCED CONCRETE SLAB PER SHELL OIL COMPANY STANDARDS AND SPECIFICATIONS. MINIMUM 4'-0", MAXIMUM 7'-0" BURY DEPTH (TYP OF 3). CONTRACTOR SHALL USE 3/8" DIA. RODS AT O.C. EACH WAY PLACED 1-1/2" ABOVE THE BOTTOM OF CONCRETE. ADDITIONAL REINFORCEMENT SHALL BE USED AROUND 30" X 30" MANHOLE PER DETAIL 4, SHEET PP-3.
- 8 NEW 30" SQUARE WATER TIGHT MANHOLE FOR TURBINE PUMP (WITH ELECTRONIC SENSOR).
- 9 NEW 3" DIA. VAPOR RETURN RISER WITH 16" DIA. SPILL CONTAINMENT MANHOLE.
- 10 NEW 4" DIA. FELL WITH 16" DIA. SPILL CONTAINMENT MANHOLE, (TYP OF 3).
- 11 NEW 4" DIAMETER SLOTTED PIPE TEST WELL IN 12" DIAMETER MANHOLE AND COVER. SEE SHELL OIL COMPANY TYPICAL TANK INSTALLATION DETAILS (TYP OF 2). (NO ELECTRONIC SENSING).
- 12 NEW 6" DIAMETER SLOTTED PIPE TEST WELL IN 12" DIAMETER WATERTIGHT MANHOLE PER SHELL OIL SPECIFICATIONS (TYP OF 2). (NO ELECTRONIC SENSING).
- 13 CONTRACTOR SHALL CONNECT NEW DISPENSERS TO NEW PRODUCT AND VAPOR RETURN PIPING LINES PER SHELL STANDARD SPECIFICATIONS AND REPAIR PAVING WHERE DAMAGED OR DISTURBED BY NEW INSTALLATION WORK (TYP OF 3).
- 14 NEW 1" CONDUIT FOR FUTURE TANK GAUGING TO EXISTING ELECTRICAL PANEL. PULL 15 #18 THWN DIFFERENT COLORS BETWEEN PANEL AND J-BOXES FOR FUTURE USE. J-BOXES TO BE EXPLOSION PROOF AND CONTAINED WITHIN MANWAYS. LOOP 3/4" CONDUIT BETWEEN TANKS (TYP OF 3).
- 15 NEW 1" CONDUIT TO NEW RONAN LEAK DETECTION CONTROL PANEL IN STORAGE ROOM FOR TURBINE SUMP PROBE AND ANNULAR SPACE PROBE. LOOP 3/4" CONDUIT BETWEEN TANKS.
- 16 NEW 3/4" CONDUITS FROM SUB PUMPS TO NEW PUMP RELAYS IN STORAGE ROOM. (ONE EACH PUMP).
- 17 NEW 16" DIA. WATERTIGHT MANHOLE FOR ANNULAR SPACE MONITORING (BY ELECTRONIC SENSOR).
- 18 NEW TURBINE PUMP (TYP OF 3).
- 19 NEW LEAK DETECTION CONTROL PANEL AND FUTURE TANK GAUGING CONSOLE. CONSULT SHELL ENGINEER FOR EXACT LOCATIONS.
- 20 NEW OWENS-CORNING LEAK DETECTION RESERVOIR AND SENSOR (TYPICAL OF 3).

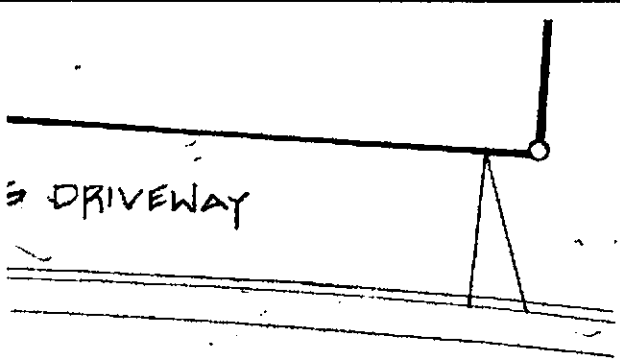


CASTRO VALLEY



A YARD/TANK CONC. SLAB

DRIVEWAY



24 BACK FILL AND COMPACT HOLE TO 90%, PATCH YARD AREA WITH 4" AGGREGATE, BASE AND 4" A/C PAVING. SLOPE AREA AS REQUIRED TO MATCH EXISTING GRADES AND PROVIDE POSITIVE DRAINAGE.

1 25 NEW DISPENSER EMERGENCY SHUT-OFF SWITCH MOUNTED ON EXTERIOR WALL AT +60". INSTALL CONTROL CONTACTOR, NEMA 1 ENCLOSURE, CIRCUITRY AND CONDUITS REQUIRED FOR REMOTE DEACTIVATION OF SUBMERSIBLE PUMPS.

21 24" SQUARE MANHOLE FOR FUTURE TANK GAUGING.

22 NEW RONAN LEAK SENSING PROBE FOR TURBINE SUMP

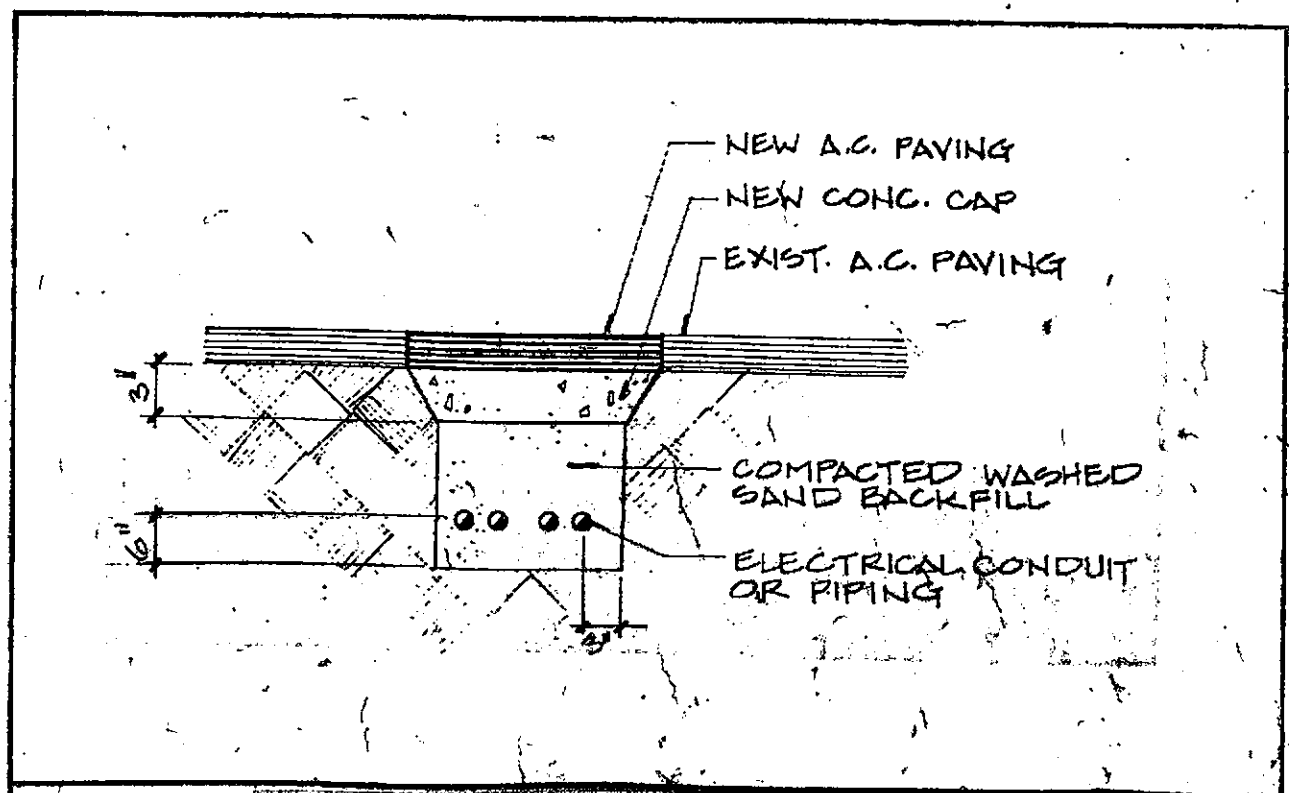
23 PROVIDE SHORING DURING EXCAVATION OF NEW TANKS HOLES TO PREVENT SUBVERSION OF ADJOINING DRIVE SLABS AND DISPENSE ISLANDS. (ALTERNATE BID)

NOTE:
GENERAL CONTRACTOR SHALL NOTIFY B.A.A.G.M.D. 10 DAYS PRIOR TO TANK REMOVAL FOR INSPECTION.

WHEN BACKFILLING TOTAL CONTAINMENT SYSTEM, GENERAL CONTRACTOR MUST ARRANGE TO HAVE SHELL OIL INSPECTOR ON SITE.

FIRE DEPT. CONTACT: BOB BOHMAN (415) 670-5880
ENVR. HEALTH DEPT. CONTACT: LARRY SETO (415) 271-4311


ALL ELECTRICAL RUNS ARE SHOWN SCHEMATICALLY. THE BEST ROUTE SHOULD BE DETERMINED IN THE FIELD AND INSTALLED ACCORDING TO NATIONAL, STATE, AND LOCAL CODE REQUIREMENTS.



CONCRETE TRENCH CAP

MARK	DATE	REVISIONS	BY	DATE	APP
△	9-27-88	REVISIONS PER FIRE DEPT.	SGP		
					PRELIM. 5-12-88 PM
					PERMIT 8-10-88 PM
					BIG 8-25-88 PM
					CONST 8-25-88 PM

SITE / YARD ELECTRICAL PLAN
2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA.

 SHELL OIL COMPANY

ROBERT H. LEE & ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEER
SHELL OIL COMPANY

SCALE 1" = 10'-0"
DRAWN BY E.W.
DATE 5-6-88
W.D. 5662

5662 A-1

NN.

LAKE CHABOT RD.

(E) SIDEWALK

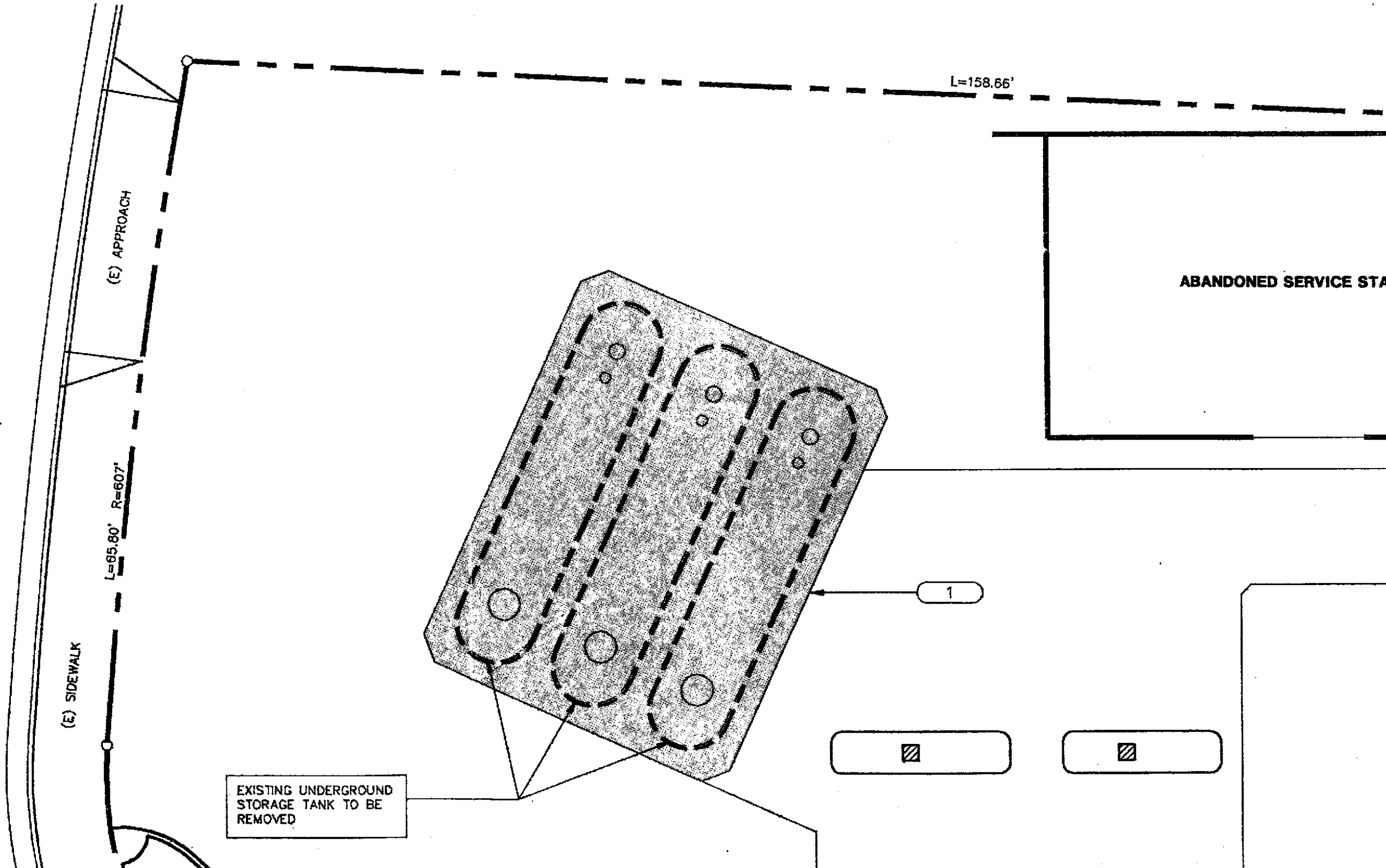
L=65.80' R=607'

(E) APPROACH

L=158.66'

ABANDONED SERVICE STA

EXISTING UNDERGROUND STORAGE TANK TO BE REMOVED



GASOLINE TANK REMOVAL

- 1) Existing underground tanks, installed in 1989, have NEVER contained any gasoline products or other flammable liquids. Existing underground tanks currently contain water.

Underground gasoline tanks shall be transported back to tank manufacturer for re-certification.

WASTE OIL TANK REMOVAL

- 1) For underground waste oil tanks, arrange for disposal of remaining liquid contents with authorized disposal service.
- 2) Drain and flush all piping into tank or appropriate container.
- 3) Remove all flammable liquid from the tank. Use a hand pump to remove the bottom few inches of liquid.
- 4) Uncover tank and disconnect attached piping.
- 5) Prior to complete excavation and tank removal the tanks must be re-purged by the following method.

Preferred method for conditioning tank:

Make vapors inert by adding 15 pounds of dry ice (carbon dioxide per 1,000 gallons of tank capacity.

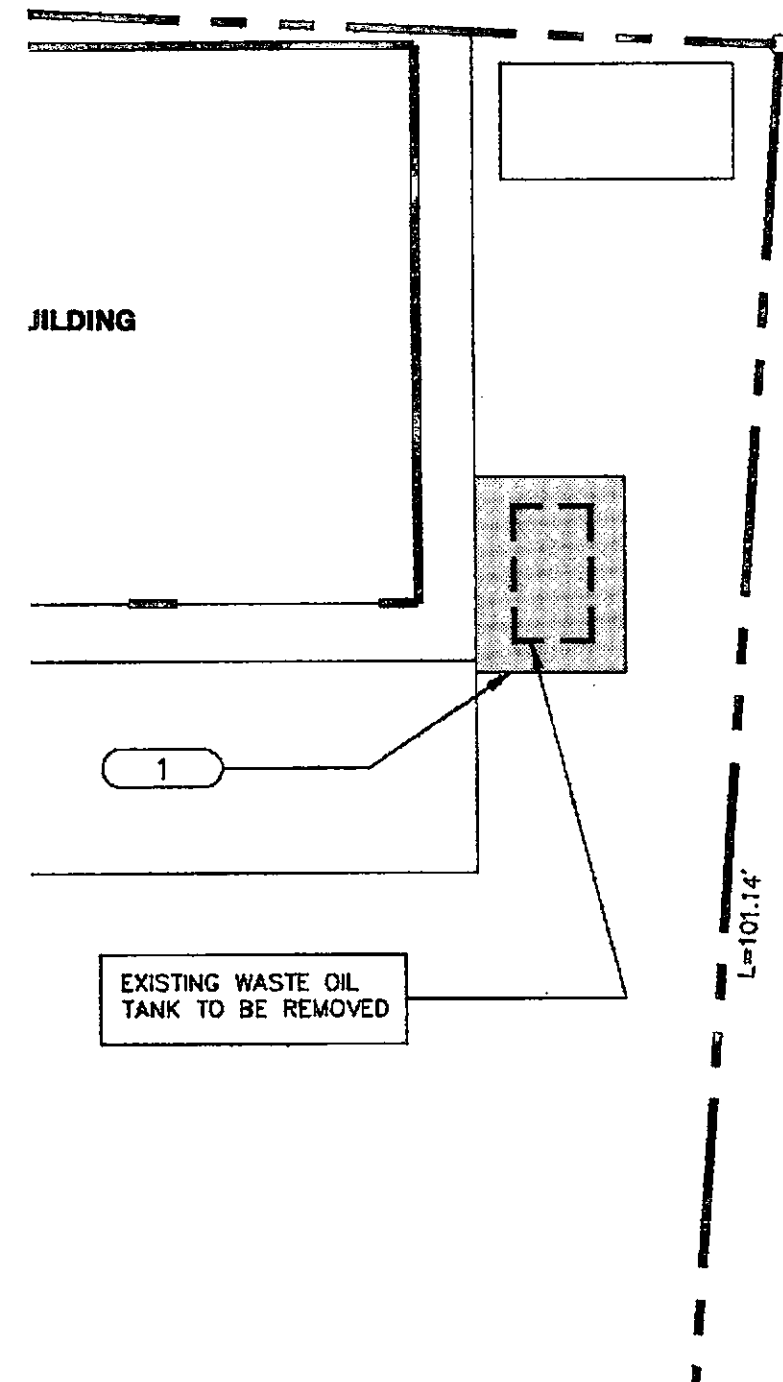
The vapors in the tank will be made inert by adding solid carbon dioxide (dry ice) in the amount of 15 pounds per 1000 gallons of tank capacity. The dry ice should be crushed and distributed evenly over the greatest possible area to secure rapid evaporation. As the dry ice vaporizes, flammable vapors will flow out of the tank and may surround the area. Hence, observe all normal safety precautions regarding flammable vapors. Make sure that all of the dry ice has vaporized.

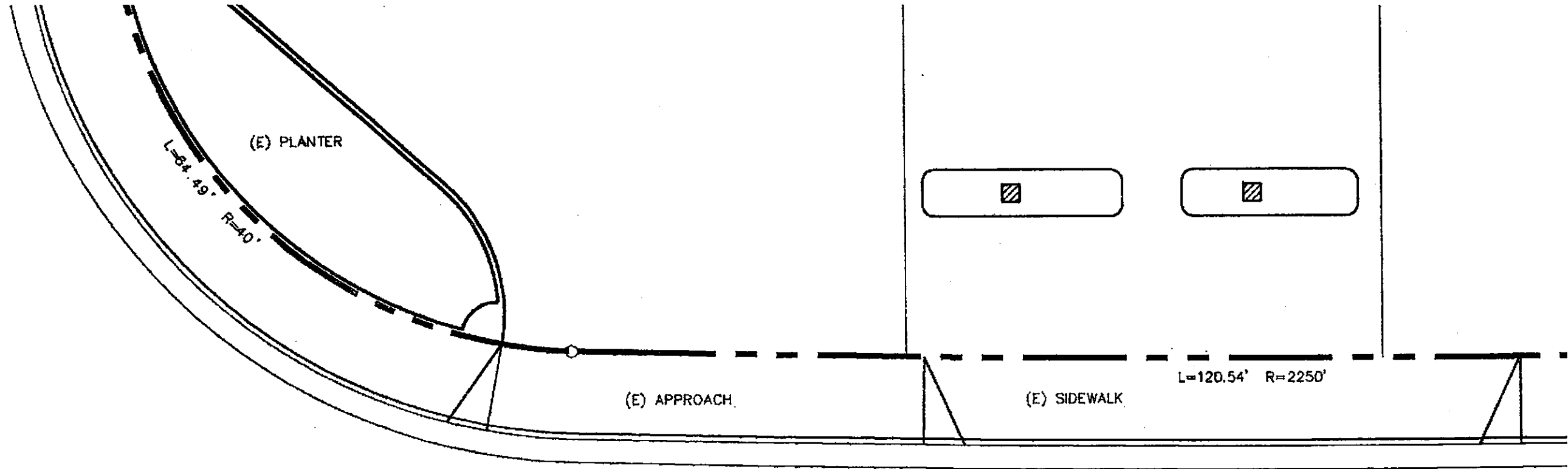
After the tank has been freed of vapors and prior to moving from the site, plug or cap all holes. Use threaded (boiler) plugs to plug any corrosion leak holes. One tank fitting plug should have a 1/8" vent hole to prevent the tank from being subjected to an excessive pressure differential caused by extreme temperature changes.

- 6) Temporarily plug all tank openings, complete excavation and remove the tank; placing it in a secure location. Block the tank to prevent movement. **USE EXTREME CAUTION DURING REMOVAL OPERATION.**
- 7) Remove tanks and secure at grade.
- 8) No fiberglass or steel tank shall be reused. Render all tanks useless after removing from site.
- 9) As an added precaution, regardless of condition, the tanks shall be labeled adjacent to the fill opening if leakable.

1

BACKFILL AND COMPACT HOLE TO 90%





CASTRO VALLEY BLVD.

"TANKS HAVE CONTAINED FLAMMABLE LIQUIDS
NOT GAS-FREE
NOT SUITABLE FOR FOOD OR DRINKING WATER"

- 10) Assure tank disposal is in accordance with governing regulations.
- 11) Company Rep. and Contractor shall inspect open excavation for evidence of product leakage.
- 12) The Contractor shall have the following items on site:
 1. Fire extinguishers
 2. An LEL meter
 3. A first aid kit
 4. Hard hat and protective clothing for all personnel
 5. Access to an Industrial Hygienist
- 13) When the site is left unattended, surround the excavation with a 6'-0" high removable chain link fence.

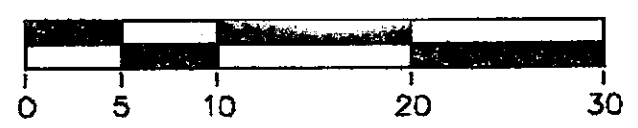
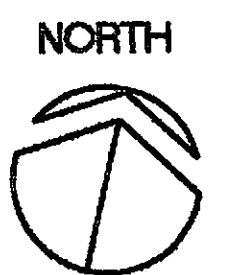
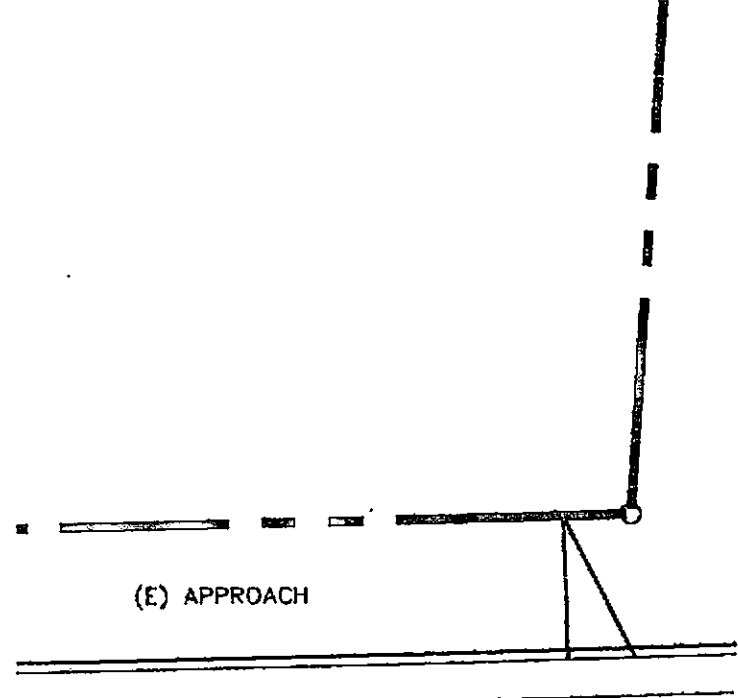
EMERGENCY PLAN

In the event of an accident, the Contractor shall proceed with the following steps:

- 1) Dial 9-1-1 and provide the following information:

"THERE IS A (FIRE OR DANGEROUS SPILL) AT 2724 CASTRO VALLEY BLVD. If anyone is trapped or needs medical attention, tell the answering dispatcher. Stay on the line and be prepared to answer any questions concerning the situation.
- 2) Attend any injured persons and direct incoming assistance to them.
- 3) Attempt to extinguish any fire if you can do so safely. Have the extinguisher ready to use in the event of any dangerous spill. Try to contain any spill, or use absorbent on smaller spills.
- 4) Report to arriving emergency response personnel to provide them any information or assistance they may need.
- 5) Notify the following:

Shell Representative, Dan Kirk, (415) 675-6134
County Environmental Health, (415) 874-7237
State Office of Emergency Services, (800) 852-7550



1	4/19/91	FOR CLIENT'S APPROVAL
MARK	DATE	MILESTONE/REVISIONS

SITE SAFETY PLAN

**2724 CASTRO VALLEY BLVD.
CASTRO VALLEY, CALIFORNIA**

SCALE: 1"=1'



Shell Oil Company



ROBERT H. LEE & ASSOCIATES, INC.
ARCHITECTURE ENGINEERING
900 LARKSPUR LANDING CIRCLE, STE. 125, LARKSPUR CA. 94939 • (415) 46
BRIAN F. ZITA, ARCHITECT JAMES H. RAY, CIVIL EN

RHL REVIEW	INITIAL	DATE	
PRELIMINARY	RJM	04/18/91	DATE 04,
PLANNING			DRAWN B
STEEL BID			
BLDG PERMIT			RHL NO.1
GENERAL BID			WIC#
PERMIT REV'S			
CONSTRUCTION			

A