

4" Ø FILL RISER
REINF. CONG. SL

3/4" EXP. JOINT ALL AROUND CONG. SLAB

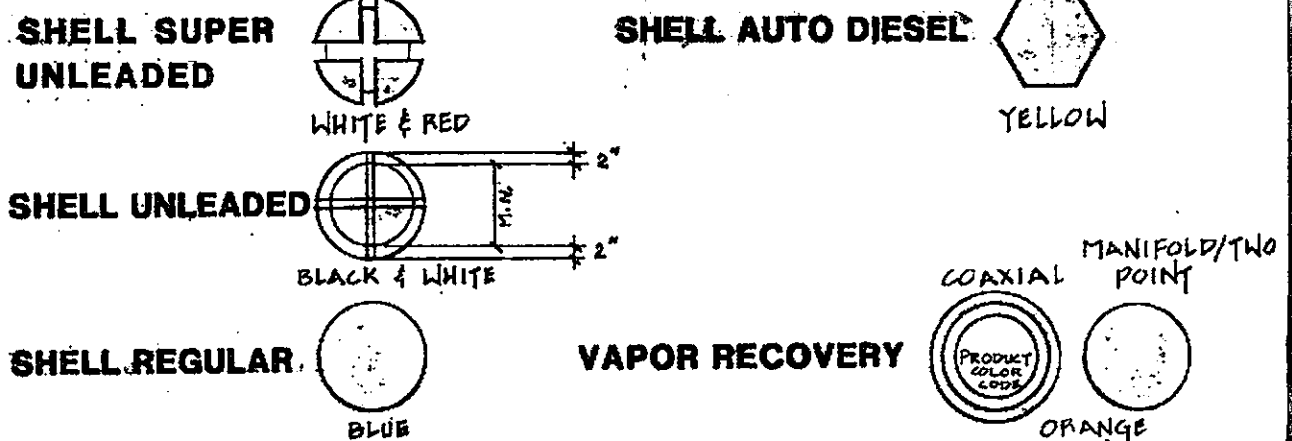
FILTER FABRIC

PEA GRAVEL BASE AND BACKFILL

9 TANK FITTINGS AR-88176

SHELL GASOLINE UNDERGROUND STORAGE IDENTIFICATION

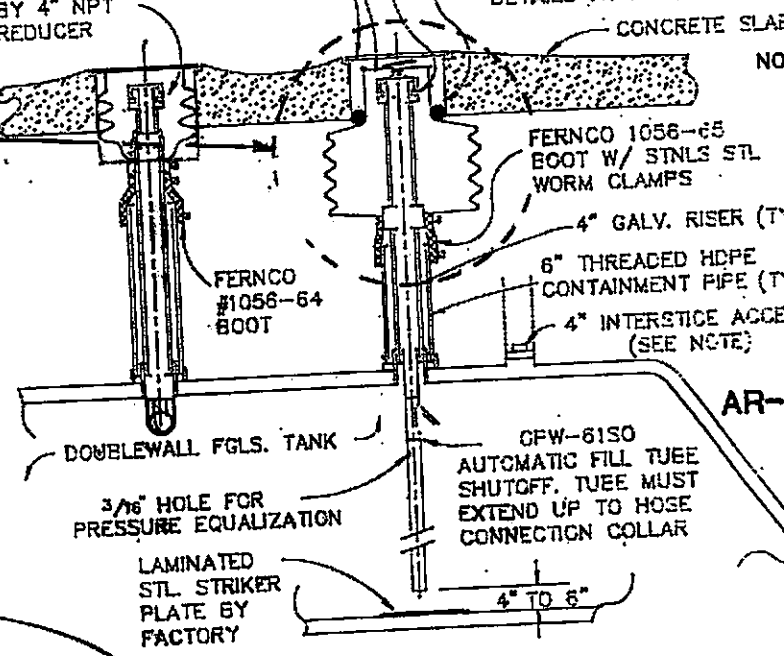
ALL MANHOLES TO BE PAINTED AS INDICATED BELOW.
ALL PAINT RINGS TO OVERLAP 2" ONTO SURROUNDING CONCRETE. (SEE BELOW)



EBW #705-428-03 SPILL CONTAINMENT FILLBOX SET. SEE ADDITIONAL DETAILS ATTACHED.

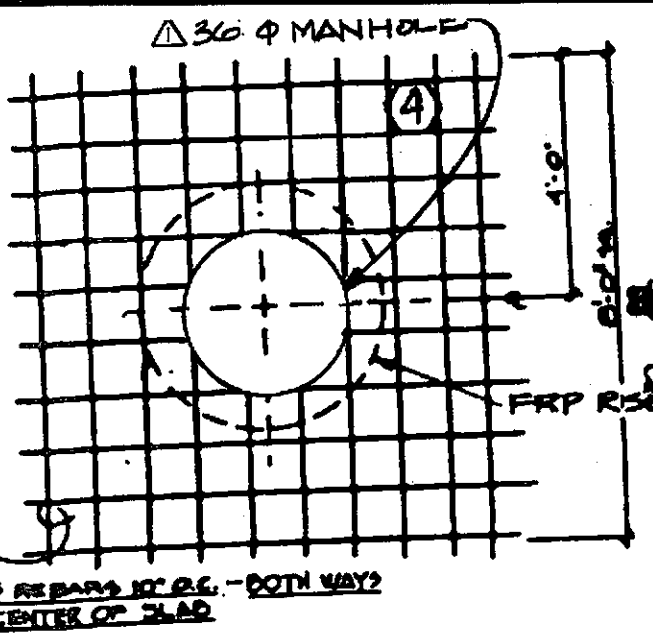
3" DRYBREAK BY 4" NPT REDUCER

4" TOP-SEAL CAP & COLLAR FOR TRUCK HOSE CONNECTION
HYDROCARBON ABSORBENT SAUSAGE. NOT FURNISHED BY EBW. SEE ADDITIONAL DETAILS ATTACHED.

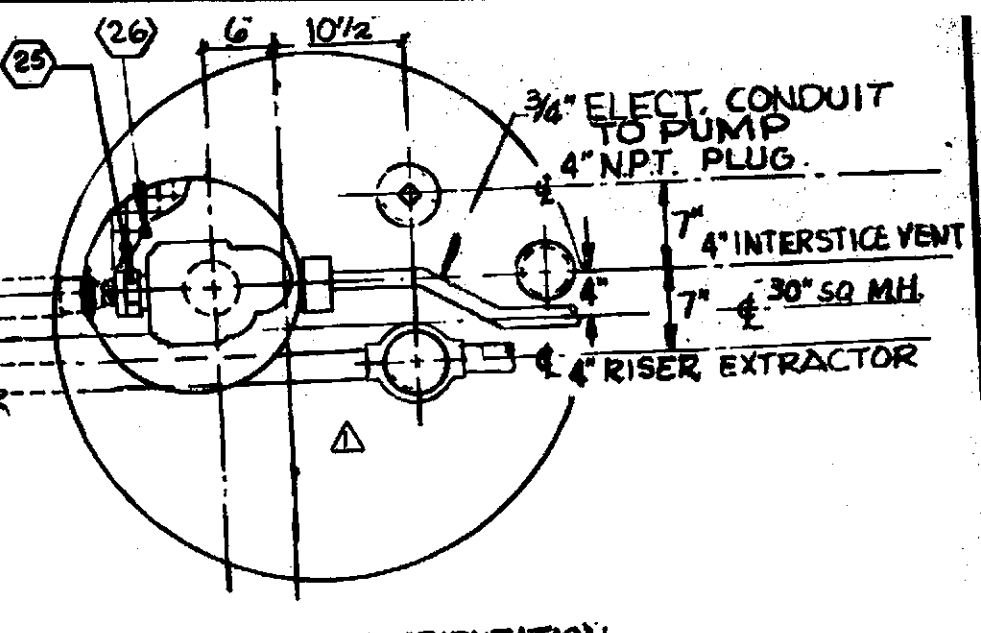


NOTE:

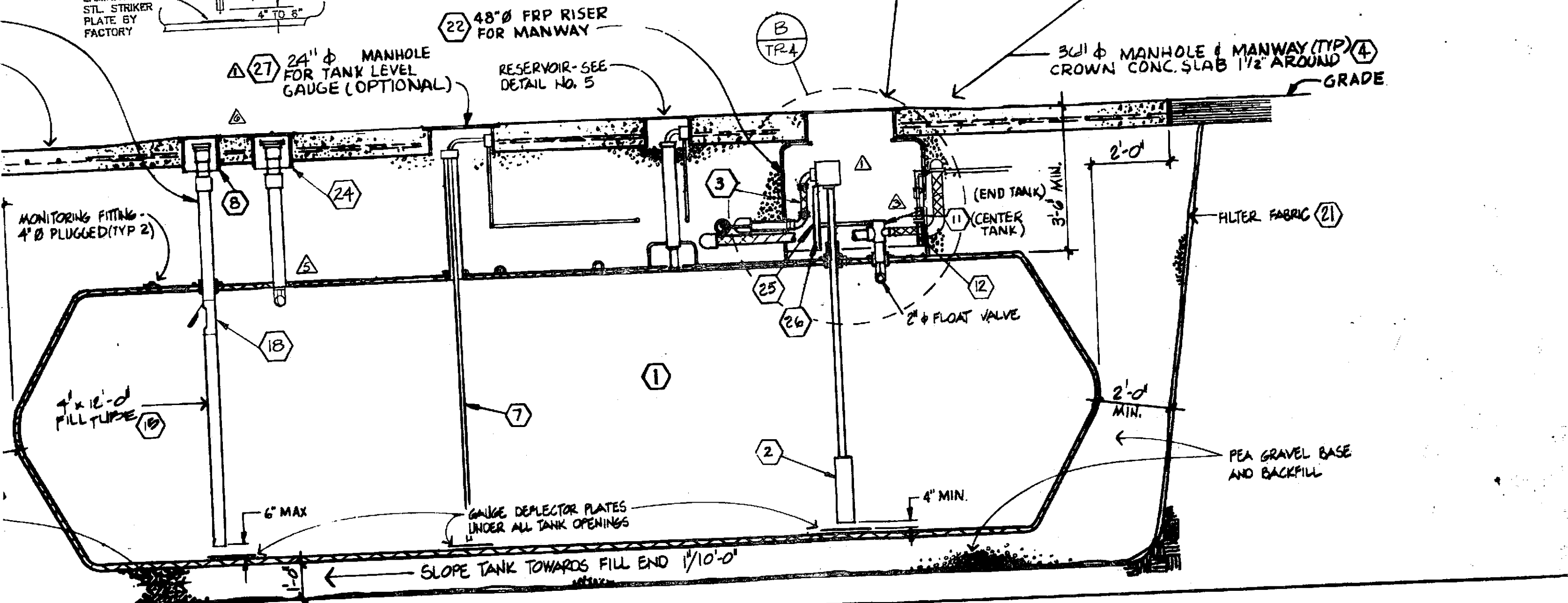
INTERSTICE ACCESS FTG. SHOWN W/ 4" NPT PLUG. RECOMMEND 4" THREADED PVC OR ABS PIPE EXTENDED TO SMALL SLAB ACCESS BOX (IN LIEU OF PLUG) TO PROVIDE FUTURE ACCESS TO TANK INTERSTICE. MAY REQUIRE SWAPPING FILL AND VAPOR RISERS TO OBTAIN CLEARANCE FOR INTERSTICE ACCESS RISER.



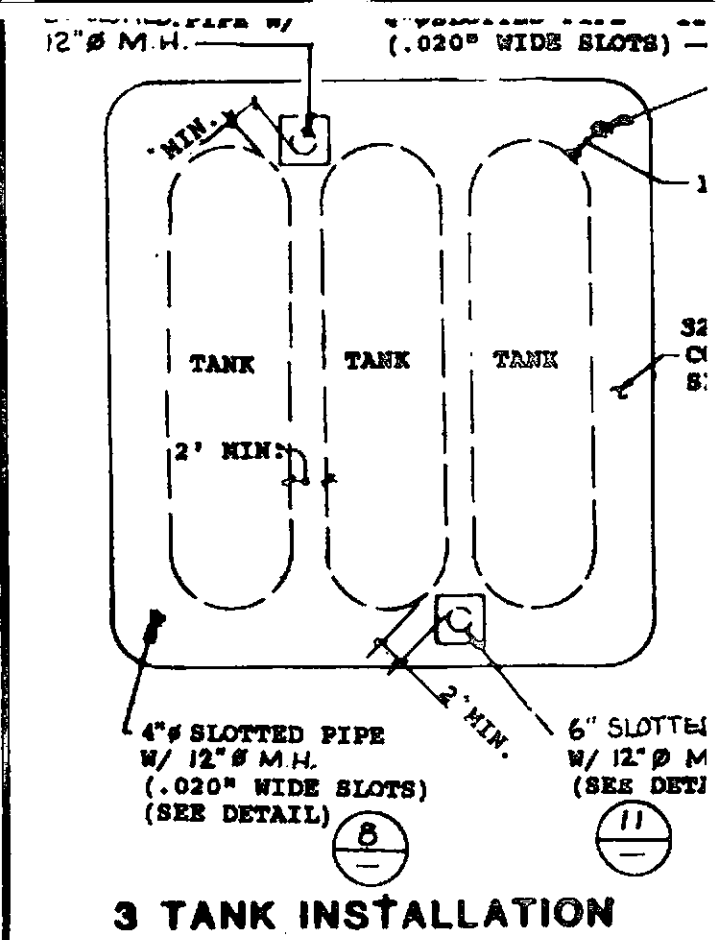
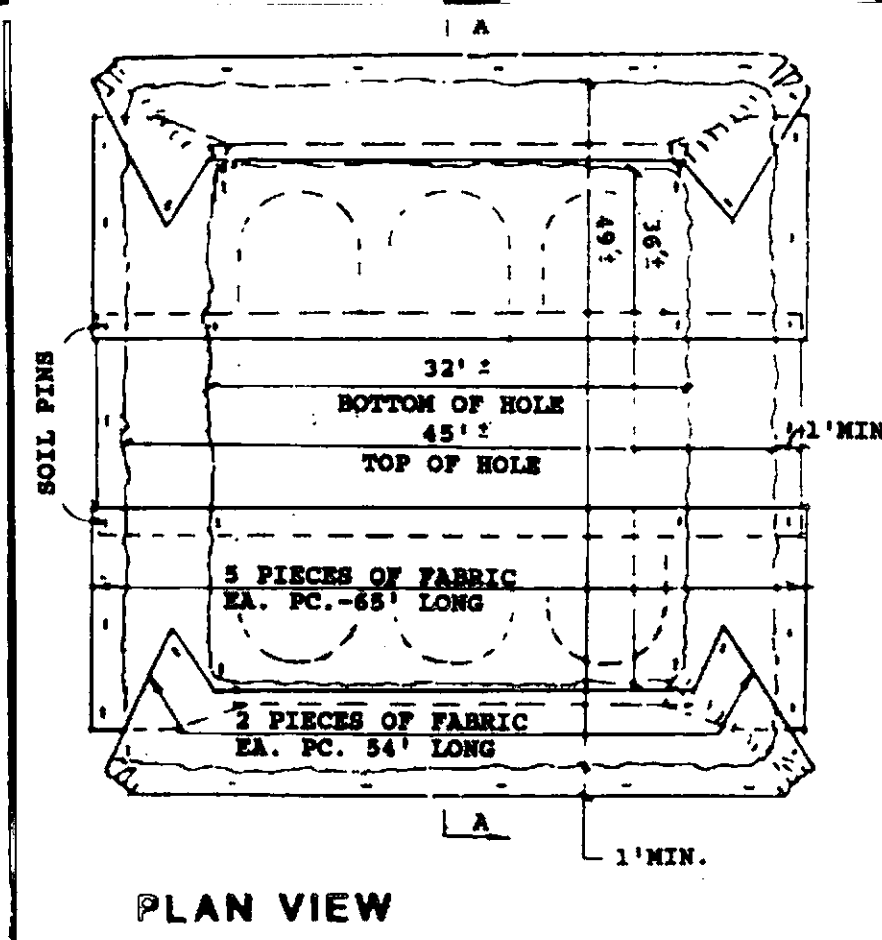
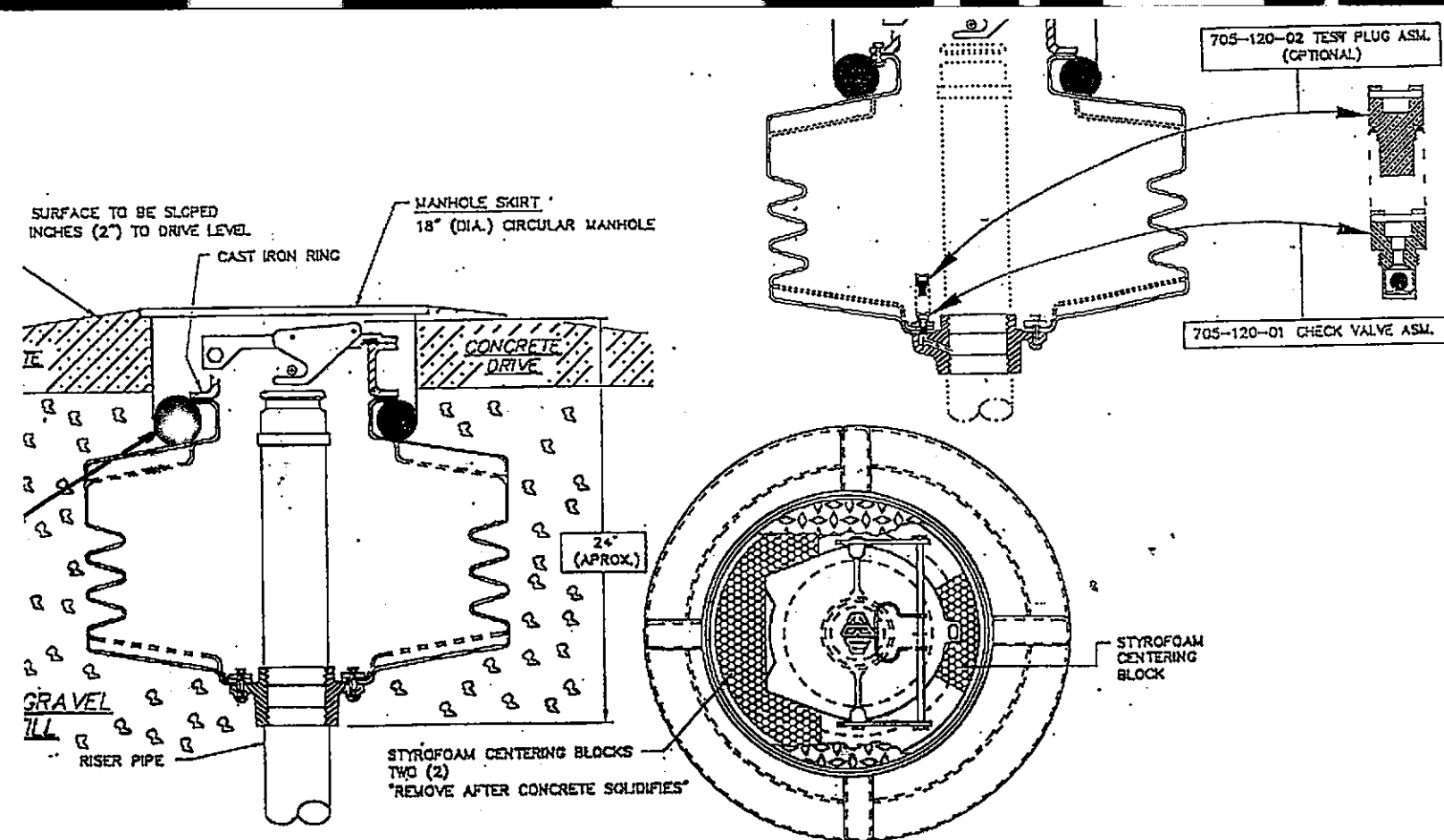
PLAN VIEW
TYPICAL REINFORCEMENT AT MANWAY



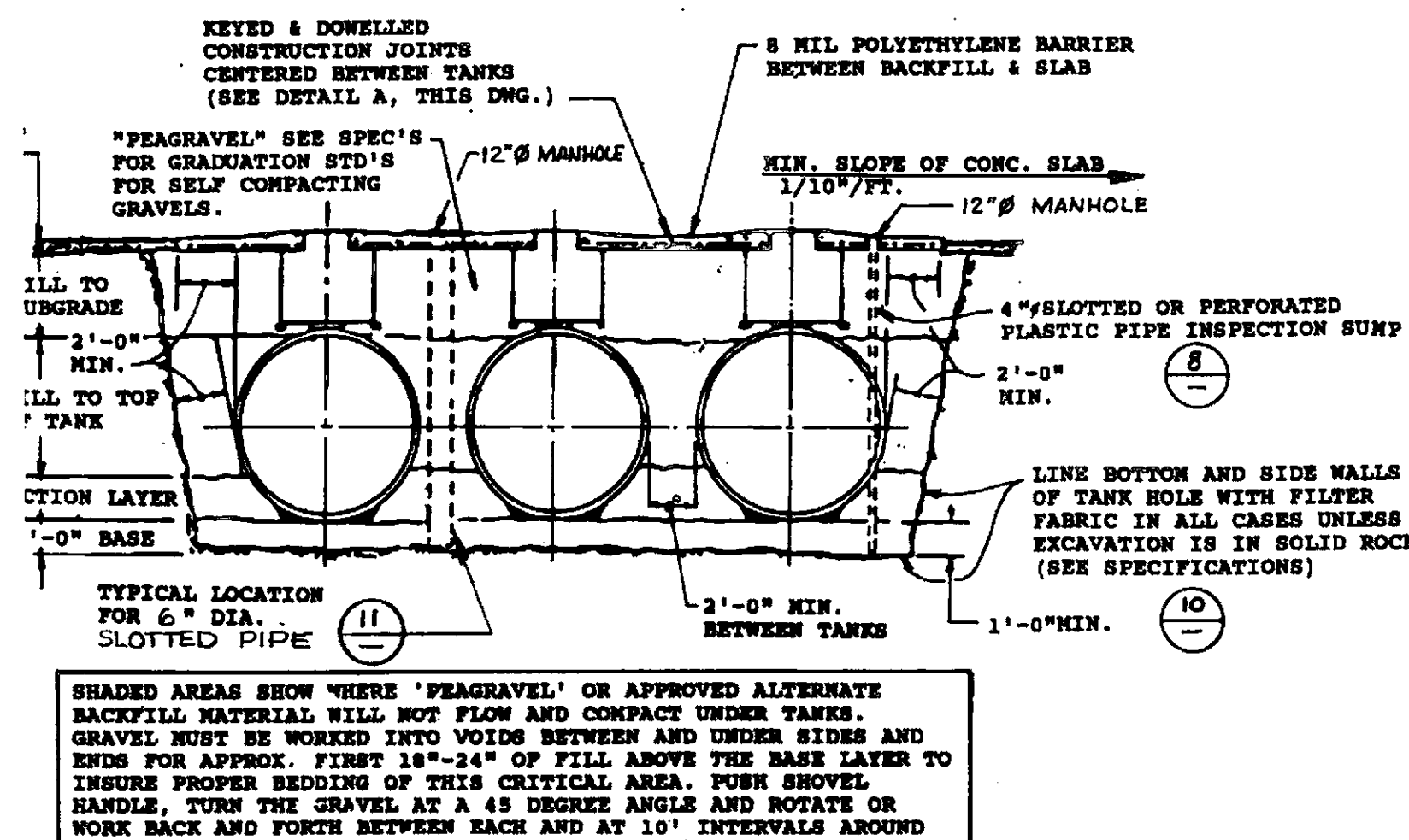
TYPICAL PUMP M.H. ORIENTATION



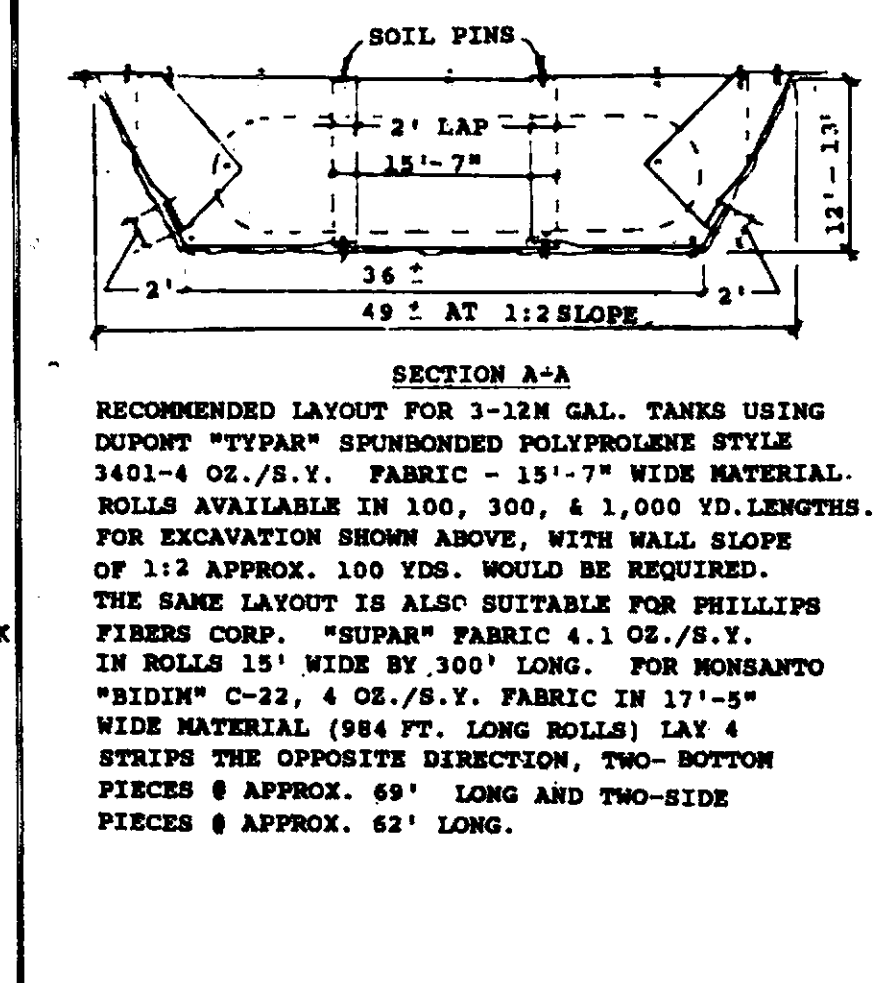
SPILL ABSORBER GASOLINE STORAGE TANK



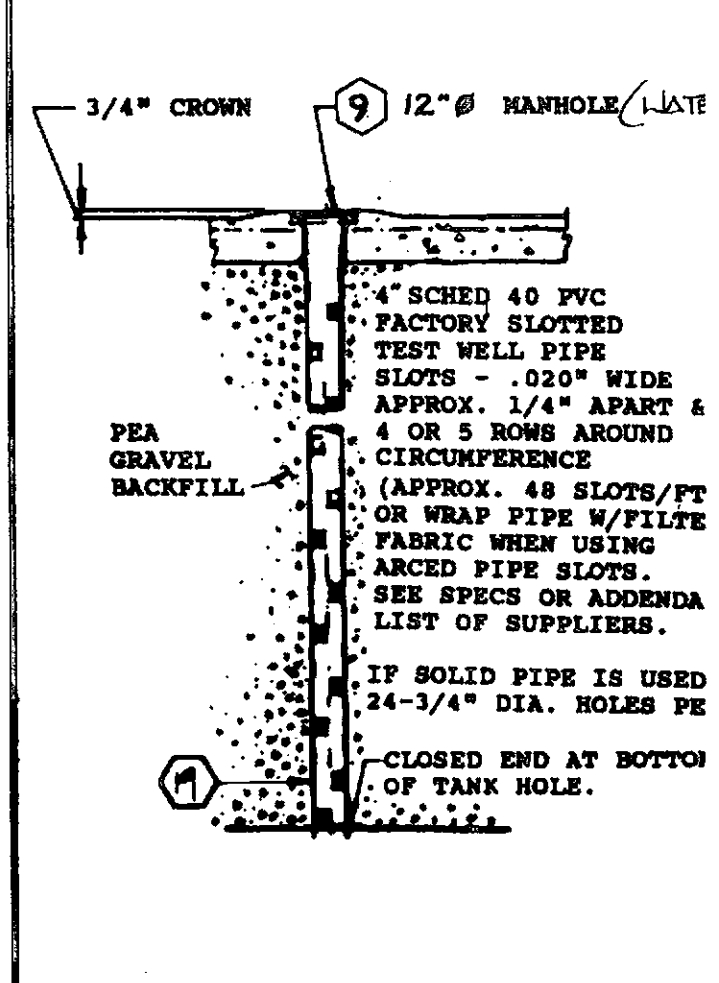
PILL CONTAINMENT FILLBOX

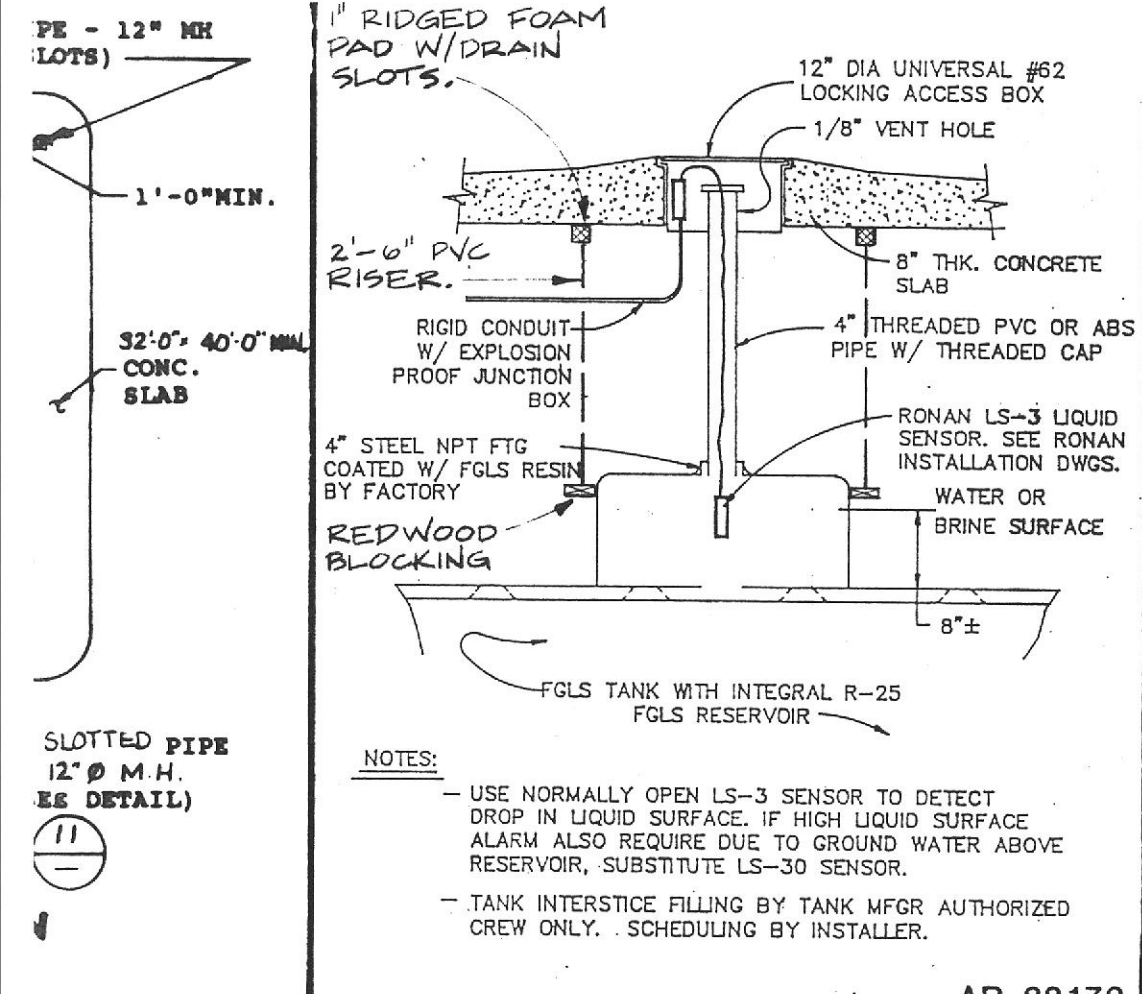


10 LINING



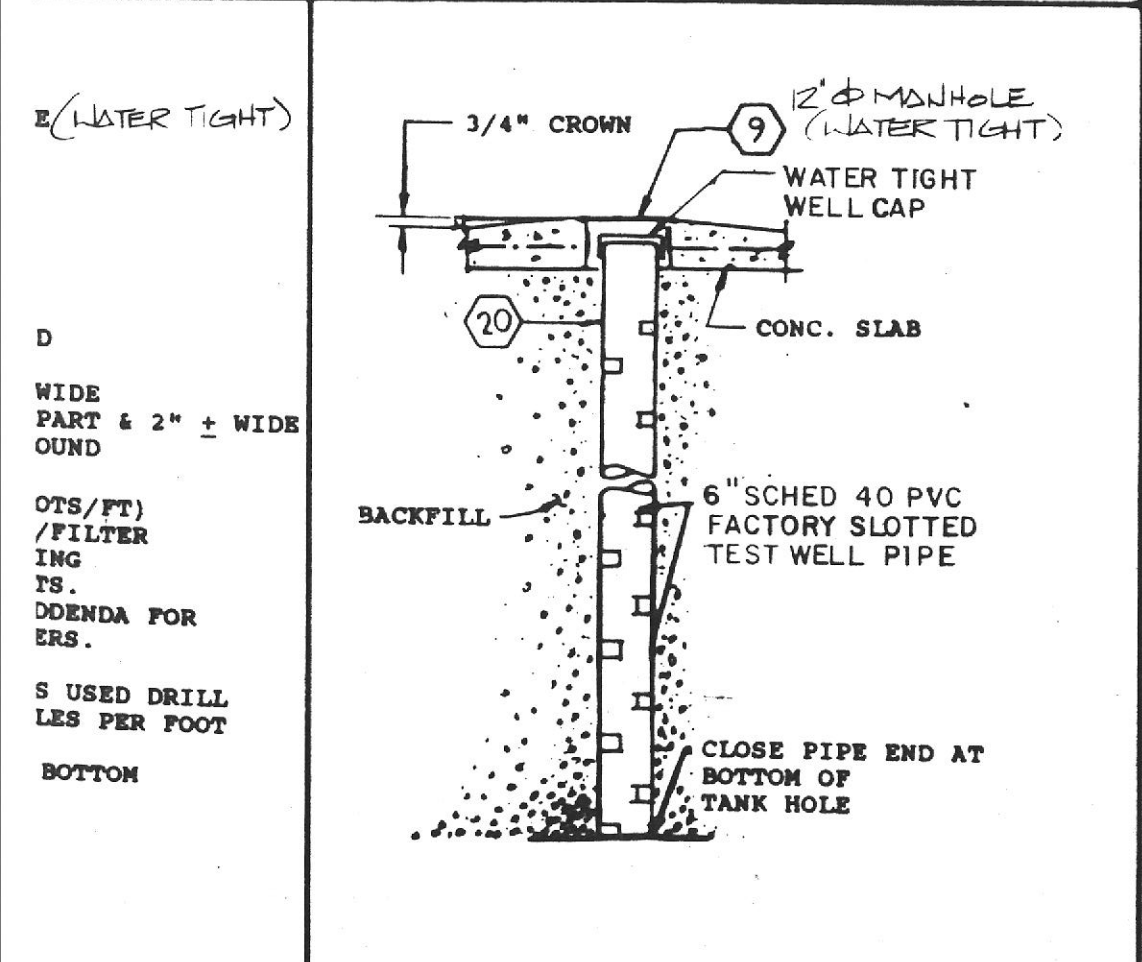
6 WELL PLAN



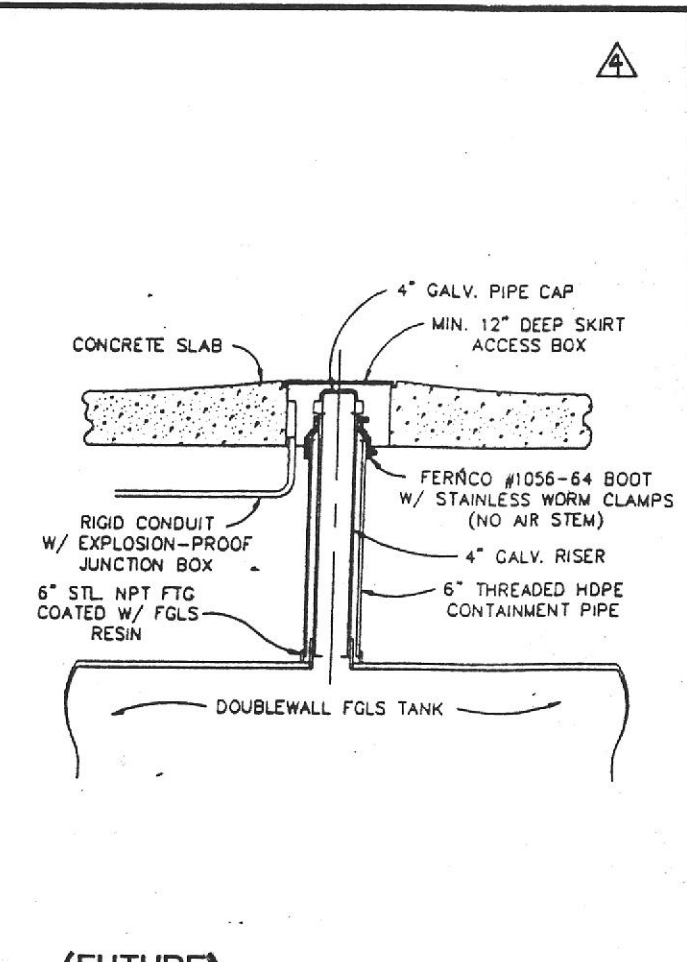


ITEM	DESCRIPTION / MANUFACTURE / MODEL NO.	QTY	INSTALL
(1)	12,000 GAL OWENS-CORNING FIBERGLASS DOUBLE WALL TANKS MODEL #DWT-2P		
(2)	3/4 HP RED JACKET SUB PUMPS WITH LEAK DETECTORS AND CONTROLLER		
(3)	2"Ø X 24" LONG TELEFLEX-FLEXIBLE HOSE		
(4)	36"Ø X 12" CNI # 236 RGS MANHOLE W/PULL HANDLE & GASKET		
(5)	16"Ø CNI #216R-8SG ROUND FILL BOX X 8" SKIRT W/2 SCREWS & GASKET		
(6)	HYDROSTATIC MONITORING FIBERGLASS RESERVOIR-ROANAN SENSOR LS-3		
(7)	4" LEVEL RISER VEEDERROOT TSL-250 (FUTURE)		
(8)	EBW #705-428-03		
(9)	12"Ø CNI #214R-8SG ROUND FILL BOX X 8" SKIRT W/2 SCREWS & GASKET		
(10)	PIG LOG ADSORBENT SOCK 1/2" Ø, OR EQUAL		
(11)	UNIVERSAL #V420-FLOAT VALVE 4" X 3" X 3" W/NO BLEED HOLE-ADJUST LENGTH		
(12)	RONAN LS-3 LEAK DETECTOR W/FLOAT VALVE		
(13)	EMCO-WHEATON A30-00 4" TOP SEAL FILL ADAPTER		
(14)	EMCO-WHEATON A39-002 4" LOCKING CAP		
(15)	EMCO-WHEATON A20-004 4" X 12' FILL TUBE OR EQUAL		
(16)	EMCO-WHEATON A76-005 3" X 4" VAPOR DRY BREAK		
(17)	EMCO-WHEATON A99-001 4" TOGGLE TYPE VAPOR CAP		
(18)	OPW 6150, POSITIVE SHUT OFF VALVE		
(19)	4" PVC THREADED CAP/THREADED ADAPTER/ SLIP/CAP/SLOTTED PIPE		
(20)	SC 6" PVC SLIP CAP/FLAT CAP/PIPE		
(21)	TYPAR FILTER FABRIC		
(22)	OWENS-CORNING FIBERGLASS 48"Ø MANWAY RISER		
(23)	2"Ø X 24" LONG TTYFLEX CONNECTOR W/SWIVEL-1 END		
(24)	EBW 705-5		
(25)	2"Ø CHECK VALVE-UNIVERSAL #212 BPR OR EQUIVALENT		
(26)	PRODUCT LINE LEAK SENSOR RONAN MODEL JT-1		
(27)	24"Ø CNI #224 R.S.G.		

RESERVOIR



EQUIPMENT LIST



MARK	DATE	REVISIONS	BY
△	4/18/89	REV. OF AR DETAILS	CWM
△	11/16/88	GENERAL	CWM
△	11/8/88	GENERAL	CWM
△	10/18/88	GENERAL	CWM
△	9/29/88	GENERAL	CWM
△	9/27/88	GENERAL	CWM
△	9/21/88	GENERAL	CWM

**TYPICAL TANK INSTALLATION
TYPICAL DETAILS**
318 S. LIVERMORE AVE.
LIVERMORE, CA

DATE APPR	PRELIM.	PERMIT	BID	CONST.
			6-6-89	PY

SCALE NONE
OWN. BY LS

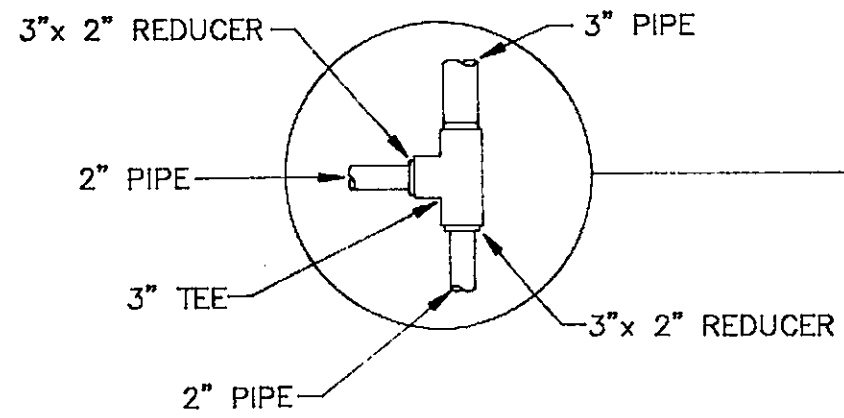
EAST THIRD STREET

EXIST. SIDEWALK

EXIST. APPROACH

100.00'

150.00'



G
TP-4
13.1H

F
TP-4
13.1G

A
TP-1

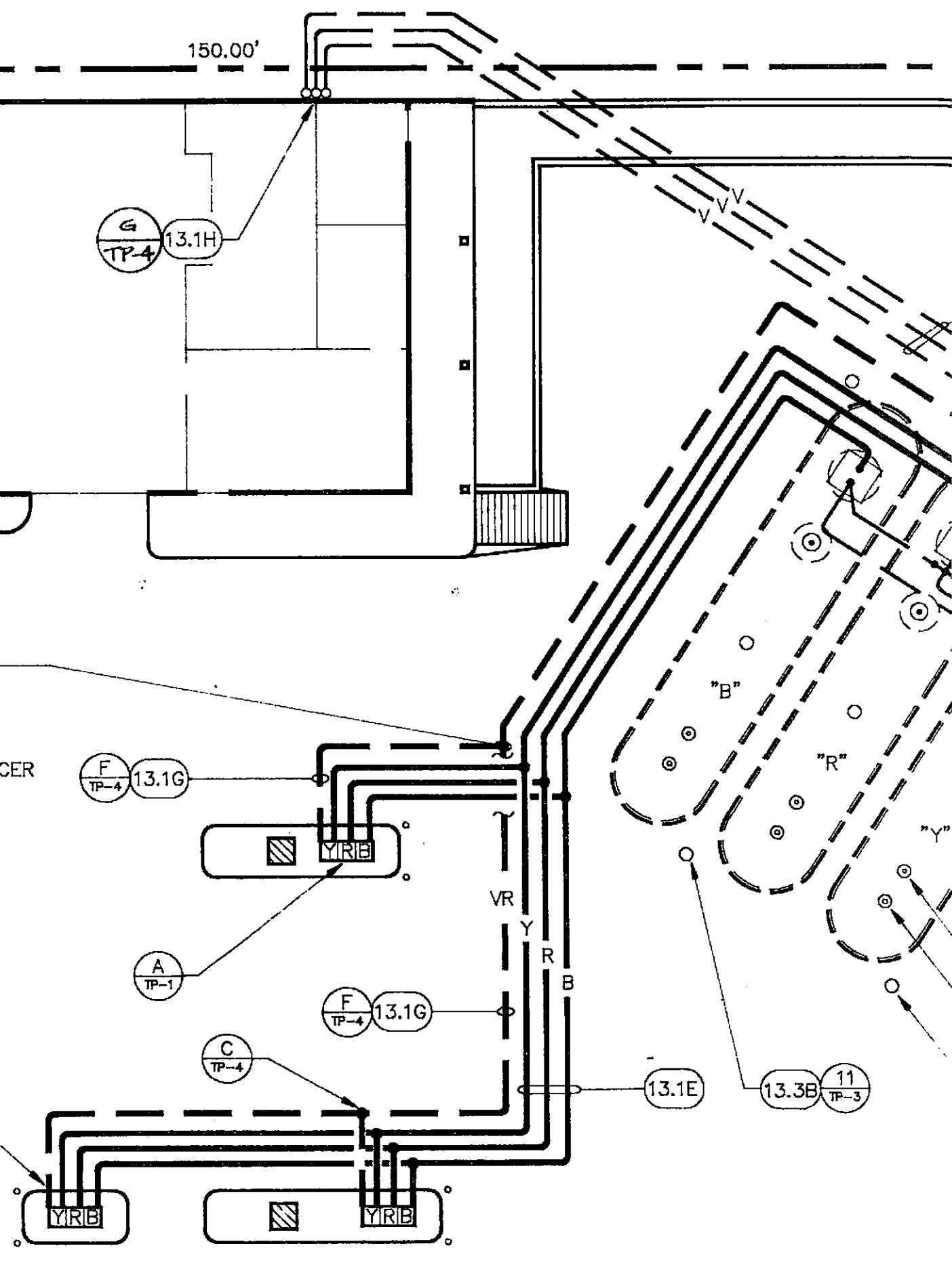
F
TP-4
13.1G

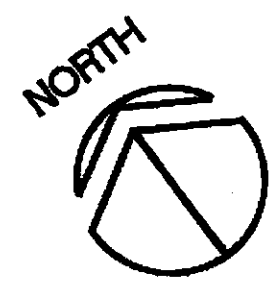
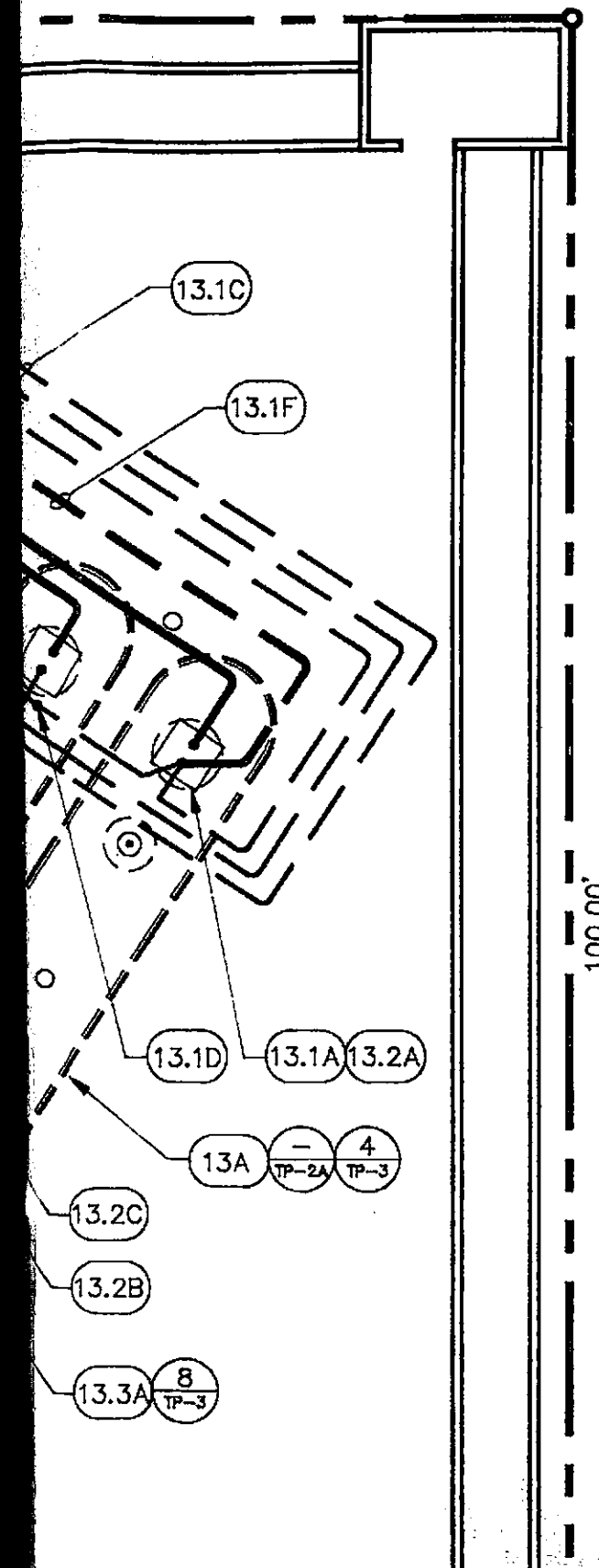
C
TP-4

2A
13.1B

13.1E

13.3B
11
TP-3





DIVISION 2 SITE PLAN

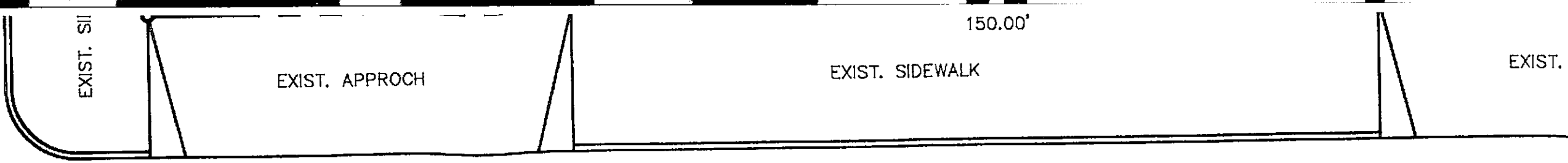
02070 DEMO

2A

DISCONNECT EXISTING PRODUCT AND VAPOR PIPING AT EXISTING DISPENSERS AND REMOVE AS REQUIRED TO COMPLY WITH LOCAL REGULATIONS. (TYPICAL)

DIVISION 13 SPECIAL CONSTRUCTION

- 13200 TANKS (13A) DOUBLE-WALL OWENS-CORNING FIBERGLASS TANK (TYP OF 3).
- 13210 PETROLEUM PIPING (13.1A) 3/4 H.P. SUB PUMP WITH IN-LINE LEAK DETECTOR (ONE PER TANK).
- (13.1B) INSTALL PRODUCT AND VAPOR PIPING TO DISPENSER. (TYPICAL)
- (13.1C) 2"Ø VENT LINES. MINIMUM SLOPE 1/4" PER FOOT TO TANKS.
- (13.1D) VAPOR MANIFOLD FOR STAGE II VAPOR PIPING. SEE SHELL OIL COMPANY TYPICAL PIPING DETAILS. DO NOT MANIFOLD DIESEL TANK TO GASOLINE TANKS.
- (13.1E) 2"Ø FIBERGLASS PRODUCT PIPING WITH 3" SECONDARY CONTAINMENT. SLOPE 1/4" PER FOOT TOWARD TANKS.
- (13.1F) 3"Ø FIBERGLASS "MAIN" VAPOR RETURN LINE, MINIMUM SLOPE OF 1/4" PER FOOT TO TANK.
- (13.1G) 2"Ø VAPOR RETURN LINE FROM DISPENSER TO MAIN (3"Ø) VAPOR RETURN LINE. SLOPE 1/4" PER FOOT TOWARD TANK.
- (13.1H) VENT RISERS.
- 13220 RISERS (13.2A) 4'-0"Ø FRP RISER (ONE PER TANK).
- (13.2B) 4"Ø FILL RISER (ONE PER TANK).
- (13.2C) 3"Ø VAPOR RISER (ONE PER TANK).
- 13230 LEAK DETECTION (13.3A) 4"Ø BACKFILL TEST WELL (TYP. OF 2)
- (13.3B) 6"Ø BACKFILL RECOVERY WELL (TYP. OF 2)



SOUTH LIVERMORE AVENUE

DRAWING NO. 6837F1 6-5-89

NOTE :

1. ALL PIPE RUNS ARE SHOWN SCHEMATICALLY. THE BEST ROUTE SHOULD BE DETERMINED IN THE FIELD AND INSTALLED ACCORDING TO NATIONAL, STATE, AND LOCAL CODE REQUIREMENTS.
2. ANY EXISTING MONITORING WELLS ON SITE ARE TO REMAIN UNDISTURBED. CONFLICTS BETWEEN PROPOSED WORK AND EXISTING WELLS MUST BE BROUGHT TO THE ATTENTION OF THE SHELL ENGINEER IMMEDIATELY. IF THIS PROCEDURE IS NOT FOLLOWED THE CONTRACTOR SHALL BE SOLEY RESPONSIBLE FOR RESTORING AND REPLACING WELLS PER GOVERMENT AGENCY REQUIREMENTS.

LEGEND

- Y — 2" φ PRO
- B — 2" φ PRO
- R — 2" φ LIN
- G — 2" φ

ROCH

EXIST. SIDEWALK



				DATE	
				PRELIM.	
				PERMIT	
				BID	6-6-84
				CONST.	
MARK	DATE	REVISIONS	BY		

PRODUCT PIPING PLAN

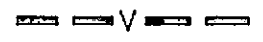
318 S. LIVERMORE AVE.
LIVERMORE, CA

GLASS "SHELL REGULAR LEADED GASOLINE"
LINE. (YELLOW)



2"Ø OR 3"Ø FIBERGLASS VAPOR RETURN LINE--
SLOPE 1/4" PER FT. TO TANKS (MIN.)

GLASS "SHELL SUPER UNLEADED GASOLINE"
LINE. (BLACK)



2"Ø FIBERGLASS VENT LINE SLOPE 1/4" PER FT.
TO TANKS (MIN.).

GLASS "SHELL UNLEADED GASOLINE" PRODUCT
LINE.

GLASS "SHELL DIESEL" PRODUCT LINES.



SHELL OIL COMPANY



ROBERT H. LEE & ASSOCIATES, INC.
 ARCHITECTURE ENGINEERING PLANNING
 800 LARKSPUR LANDING CIRCLE, #125, LARKSPUR, CA 94939 • (415) 461-8890

SCALE	1"=10'-0"
DWN. BY	LS
P.H.#	6837
W.I.C.#	

PF

3-3" FIBERGLASS SECONDARY LINES

3" FIBERGLASS VAPOR RECOVERY LINE
TO RETURN TO THE "LEADED" TANK ONLY

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)

LIFTING LUGS

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

EBW 5 GAL. SPILL CONTAINMENT

LEAK-PROOF SPILL CONTAINMENT
EBW #705-BG

6"Ø FILL RISER CONTAINMENT

4"Ø FILL RISER

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

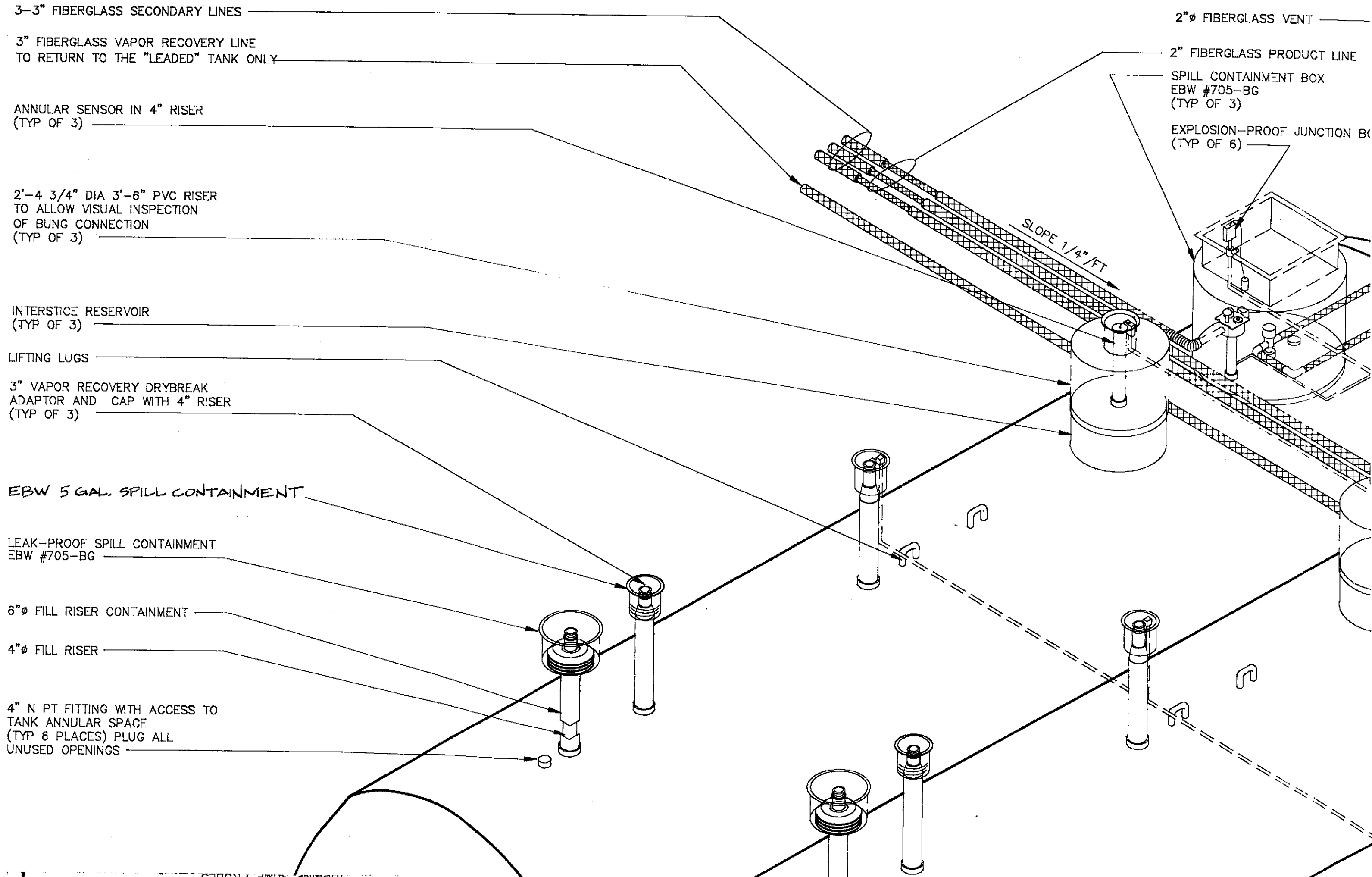
2"Ø FIBERGLASS VENT

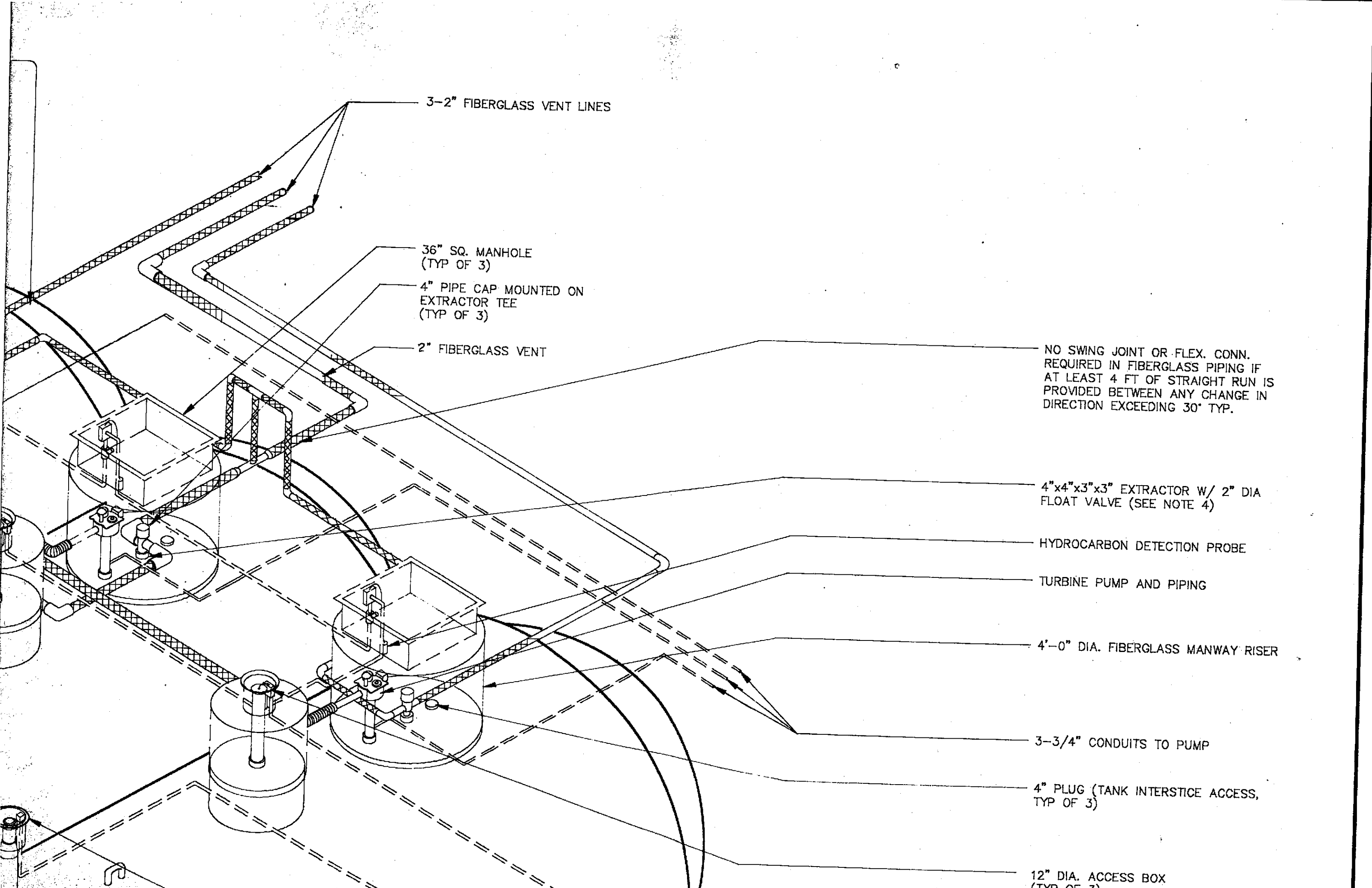
2" FIBERGLASS PRODUCT LINE

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

EXPLOSION-PROOF JUNCTION BOX
(TYP OF 6)

SLOPE 1/4"/FT





3-2" FIBERGLASS VENT LINES

36" SQ. MANHOLE
(TYP OF 3)

4" PIPE CAP MOUNTED ON
EXTRACTOR TEE
(TYP OF 3)

2" FIBERGLASS VENT

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.

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

HYDROCARBON DETECTION PROBE

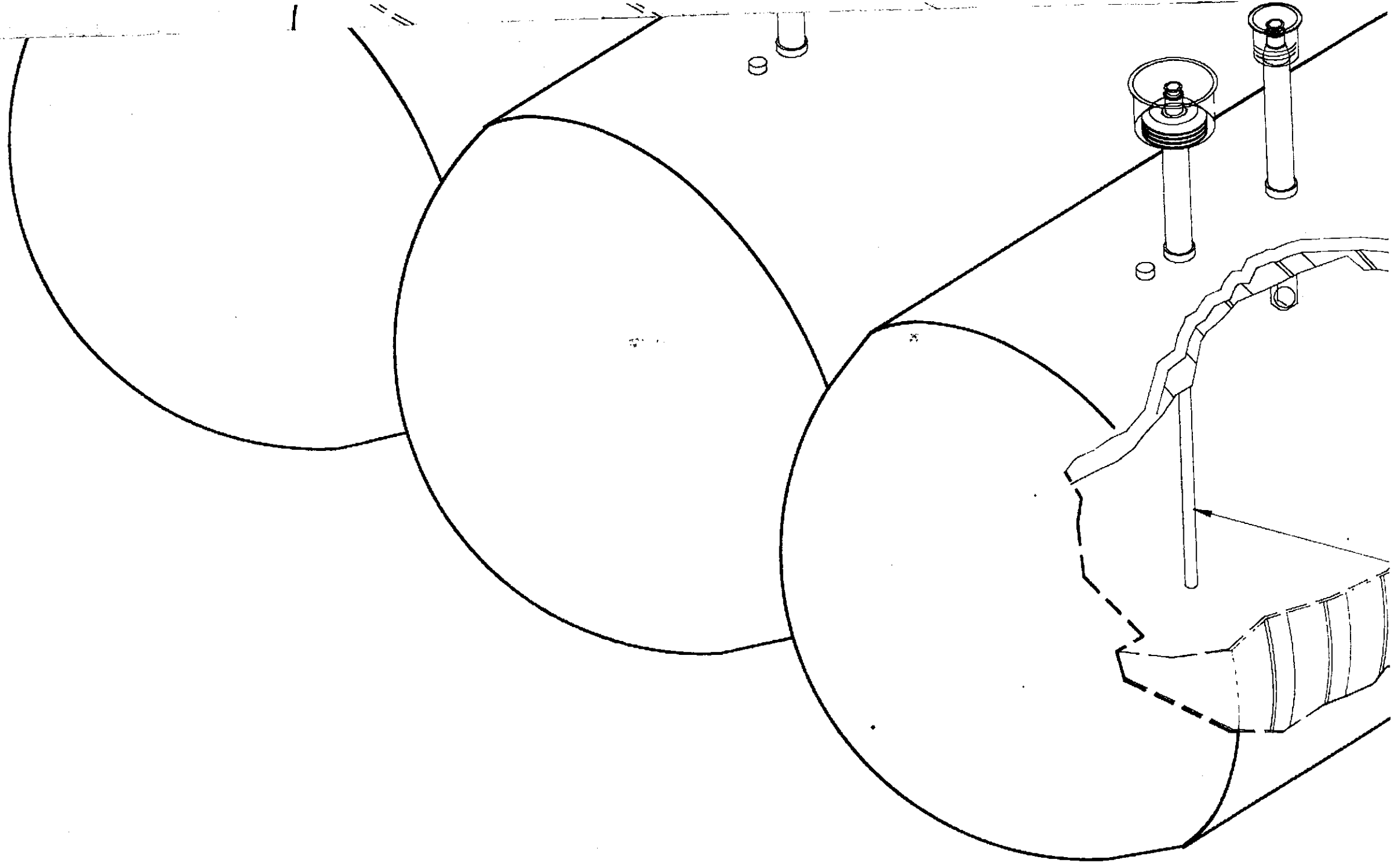
TURBINE PUMP AND PIPING

4'-0" DIA. FIBERGLASS MANWAY RISER

3-3/4" CONDUITS TO PUMP

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

12" DIA. ACCESS BOX
(TYP OF 3)



1" CONDUIT FOR ELECTRONIC RESERVOIR MONITOR PROBES AND TURBINE SUMP PROBES

1" CONDUIT FOR FUTURE TANK LEVEL GAUGE

12" DIA. ACCESS BOX (TYP OF 3)

4" RISER FOR FUTURE TANK LEVEL GAUGES (TYP OF 3)

4"x6" AXIAL FITTING (TYP OF 9)

4" FILL TUBE

STRIKER PLATE

NOTES:

1. THIS DRAWING IS A SHELL OIL TYPICAL AND DOES NOT REFLECT SITE SPECIFIC PIPING CONFIGURATIONS. SEE PETROLEUM PLAN FOR SITE SPECIFIC PIPING CONFIGURATIONS.
2. TURBINE SIZE 3/4 H.P. P75S1 SIZE 0909-5 (CUT AS REQUIRED).
3. CONTACT ENGINEER FOR TANK BURIAL DEPTH REQUIREMENT.
4. PLUG UNUSED TANK OPENINGS.
5. ALL GALVANIZED PIPING AND FITTINGS SHALL BE PRIMED AND WRAPPED.

MARK	DATE	REVISIONS	BY	DATE	APRVD
				4-21-89	
				6-6-89	PY

TANK ISOMETRIC
318 S. LIVERMORE AVE.
LIVERMORE, CA



SHELL OIL COMPANY



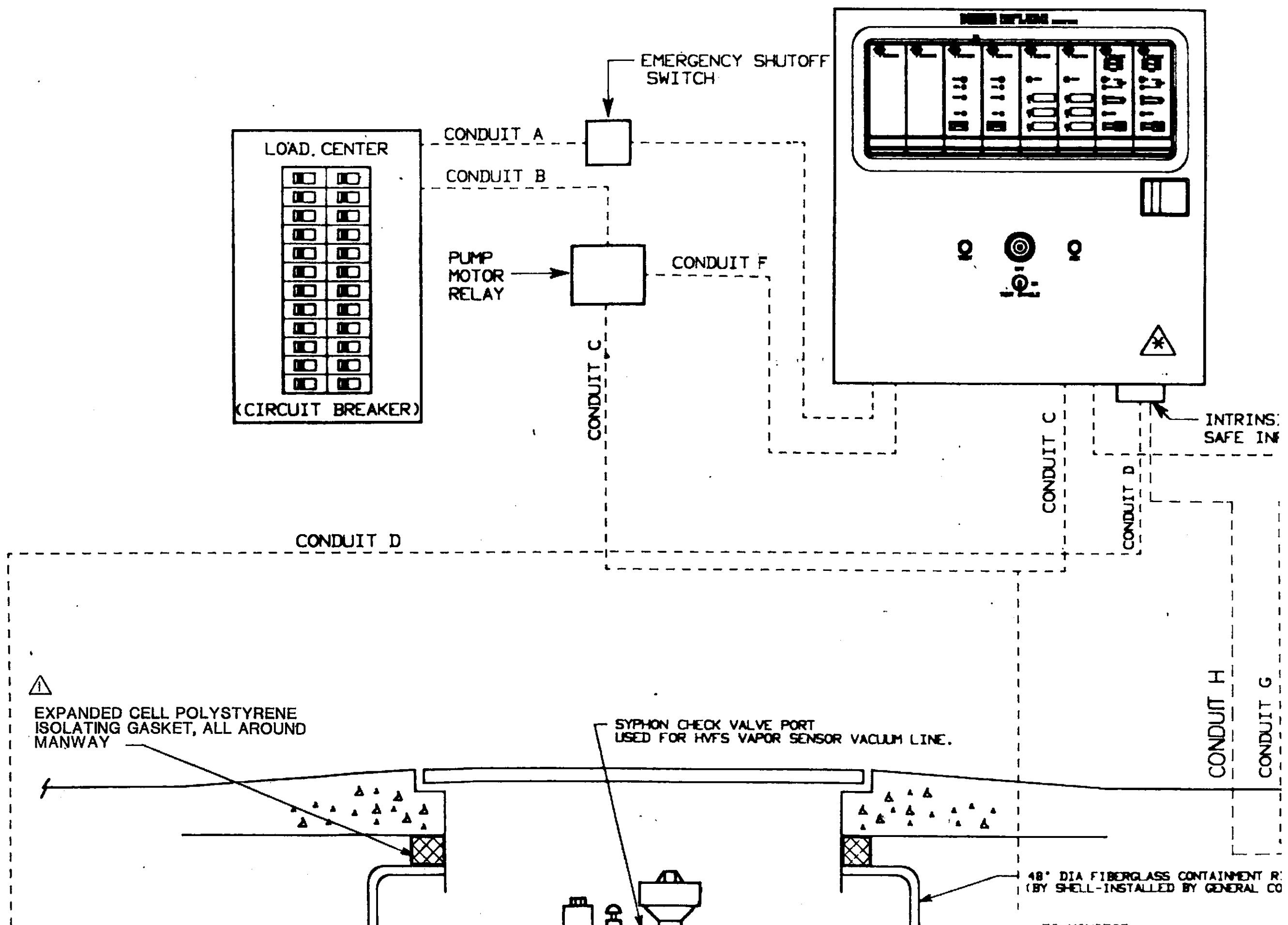
ROBERT H. LEE & ASSOCIATES, INC.
ARCHITECTURE ENGINEERING

SCALE NONE

DWN. BY CWM/BP

RHL# 6837

W.I.C.#



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REV	DESCRIPTION	DATE	BY	ENGR	APPR	DAI
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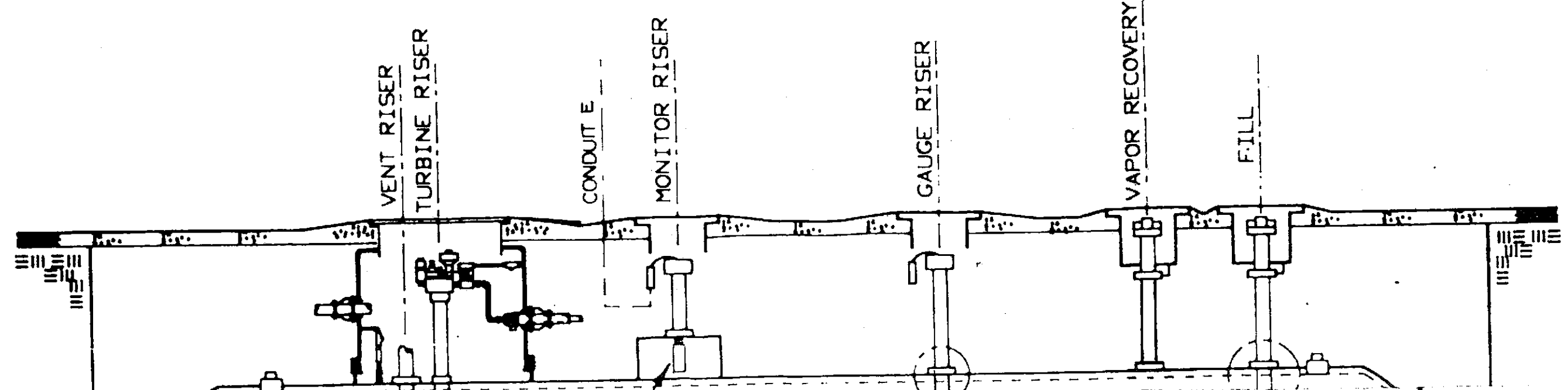
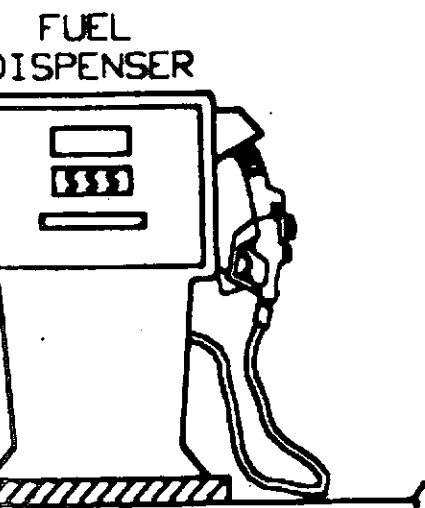
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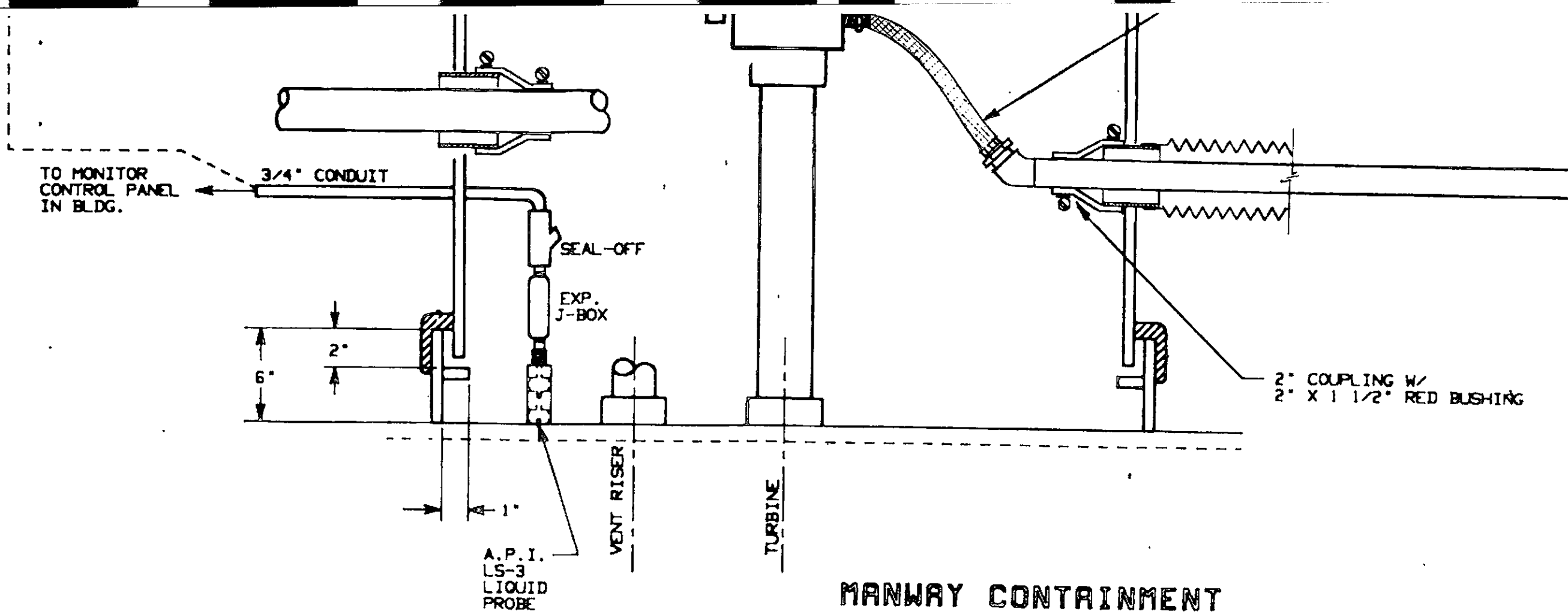
CONDUIT G

CONDUIT G

REFER TO TP-1
WIRING
FOR ACTUAL TERMINATION

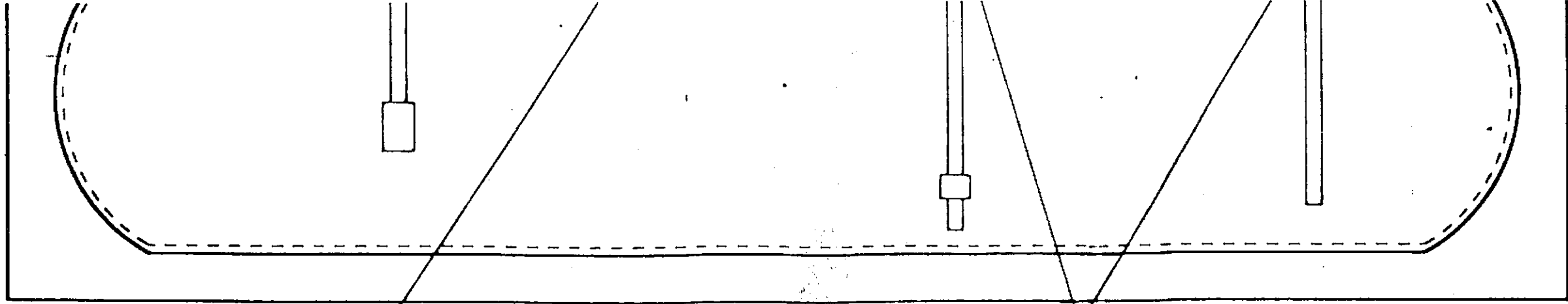
CTION





CONDUIT	NUMBER OF WIRES	PURPOSE
A	3	X76LVC -(8) -(3 JT-H2)-(12LS-3) POWER (HOT, NEUTRAL, GROUND, 120V)
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	2	2 WIRES FROM LS-3 NC (SUMP AREA)
E	2	2 WIRES FROM LS-3 NO (RESERVOIR)
F	1	120 VAC hot to relay starter coil (1 wire)
G	1	120 VAC return hot from dispenser switch or computer
H	2	2 WIRES FROM LS-3 NC DISPENSER CONTAINMENT BOX

CAUTION: All pump control power must be same phase as power for X76LVC
Non-conforming phases will cause severe equipment damage.



LS3-NO


DOUBLE WALL OCF "P" STYLE


SEE DETAILS
ON SHELL
DWGS.

center

MARK	DATE	REVISIONS	BY	DATE	APPV
▲	11-7-88	GENERAL	CWM		
▲	9-21-88	GENERAL	CHM		
				PRELIM.	
				PERMIT	
				BID	6-6-89 PY
				CONST.	

RONAN LEAK DETECTOR SYSTEM
BLOCK DIAGRAM
 318 S. LIVERMORE AVE.
 LIVERMORE, CA

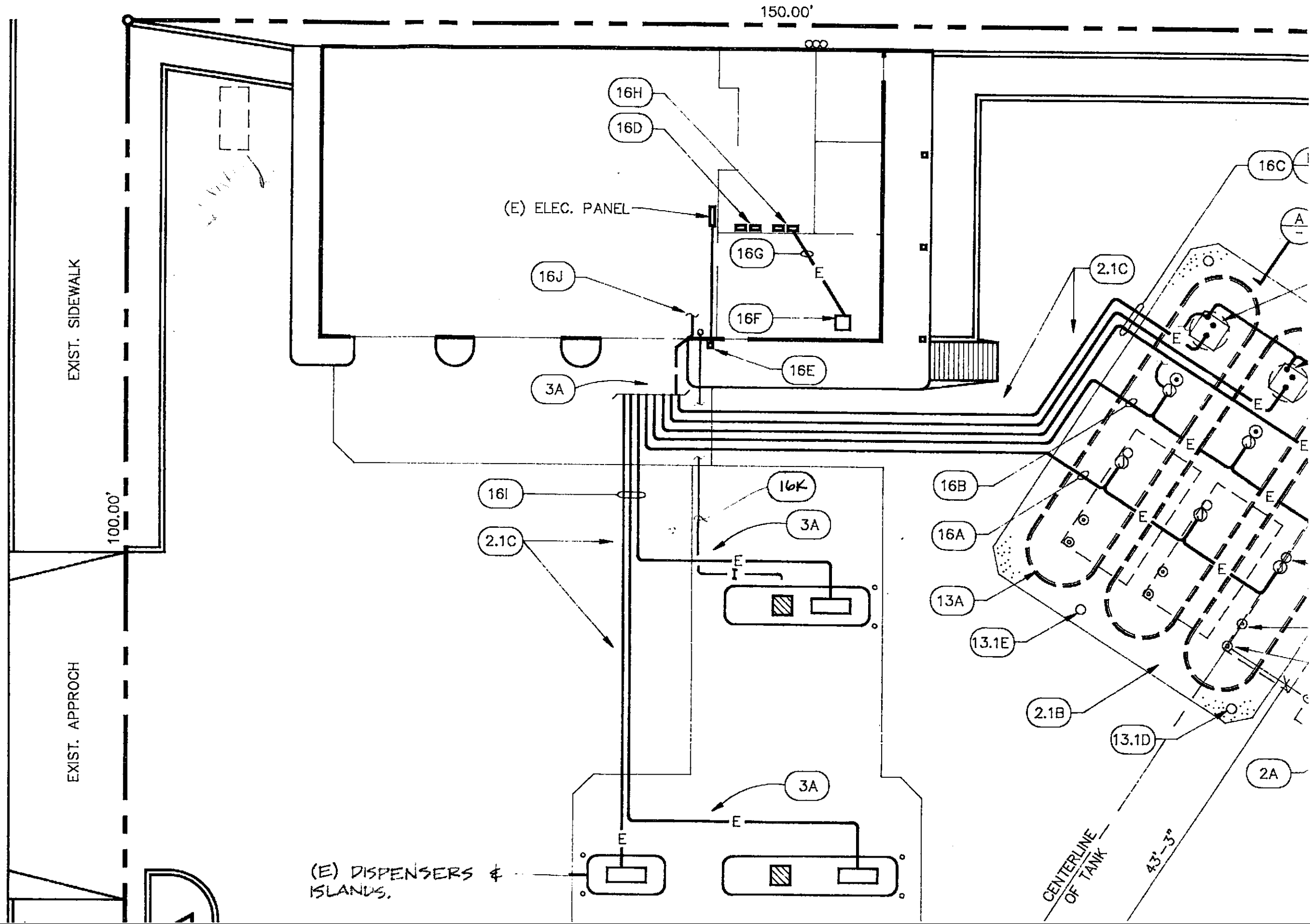

SHELL OIL COMPANY
 PACIFIC NORTHWEST DISTRICT

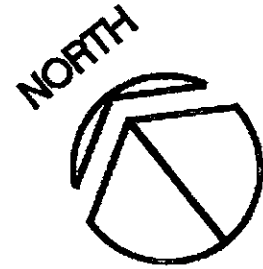
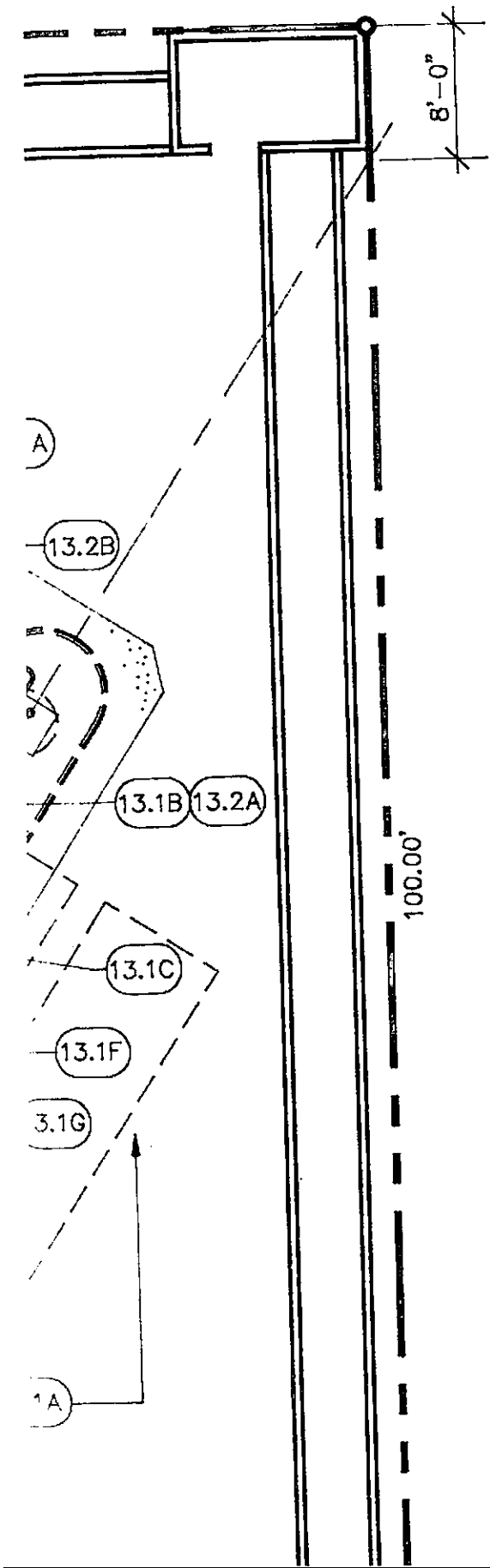

ROBERT H. LEE & ASSOCIATES, INC.
 ARCHITECTURE PLANNING ENGINEERING
 1227 HOWE AVENUE, #211, SACRAMENTO, CA 95825 • (916) 846-4003

SCALE N.T.S.
 DWN. BY LS
 RHL# 6837
 W.I.D.# _____

TP-6

EAST THIRD STREET





02070 DEMO

(2A)

EXISTING FUEL STORAGE TANKS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS (TYP OF 4).

02220 NEW WORK

(2.1A)

BACKFILL AND COMPACT HOLE 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.

(2.1B)

12" THICK REINFORCED CONCRETE SLAB PER SHELL OIL COMPANY STANDARDS AND SPECIFICATIONS. REINFORCED WITH 3/8" DIA. RODS O.C. EACH WAY PLACED 1-1/2" ABOVE THE BOTTOM OF CONCRETE. ADDITIONAL REINFORCEMENT SHALL BE USED AROUND 36" SQUARE MANHOLE PER DETAIL, SHEET TP-3.

(2.1C)

PATCH AND REPAIR EXISTING A/C PAVING WHERE DISTURBED BY NEW WORK. SEE DETAIL FOR CONCRETE TRENCH CAP.

DIVISION 3 CONCRETE

(3A)

SAWCUT AND REMOVE PORTION OF EXISTING CONCRETE DRIVE SLAB. PATCH AND REPLACE CONCRETE SLAB AFTER PIPING INSTALLATION HAS BEEN COMPLETED.

DIVISION 13 SPECIAL CONSTRUCTION

13200 TANKS

(13A)

OWENS-CORNING 12,000 GALLON DOUBLE-WALL FIBERGLASS UNDERGROUND FUEL STORAGE TANK WITH BURY DEPTH OF 5'.

13210 LIDS

(13.1A)

36" SQUARE MANHOLE FOR TURBINE PUMP (WITH ELECTRONIC SENSOR).

(13.1B)

16" ϕ WATERTIGHT MANHOLE FOR ANNULAR SPACE MONITORING.

(13.1C)

12" ϕ MANHOLE FOR TANK GAUGING.

(13.1D)

12" ϕ MANHOLE FOR 4" BACKFILL TEST WELL (TYP OF 2).

(13.1E)

12" ϕ MANHOLE FOR 6" BACKFILL WELL RECOVERY (TYP OF 2).

(13.1F)

12" ϕ SPILL CONTAINMENT MANHOLE FOR VAPOR RETURN. (ONE PER TANK)

(13.1G)

LEAK-PROOF SPILL CONTAINMENT MANHOLE FOR FILL RISERS (ONE PER TANK).

13230 LEAK DETECTION

(13.2A)

OWENS-CORNING LEAK DETECTION RESERVOIR AND SENSOR (ONE PER TANK).

(13.2B)

RONAN LEAK SENSING PROBE FOR TURBINE SUMP. (ONE PER TANK)

DIVISION 16 ELECTRICAL

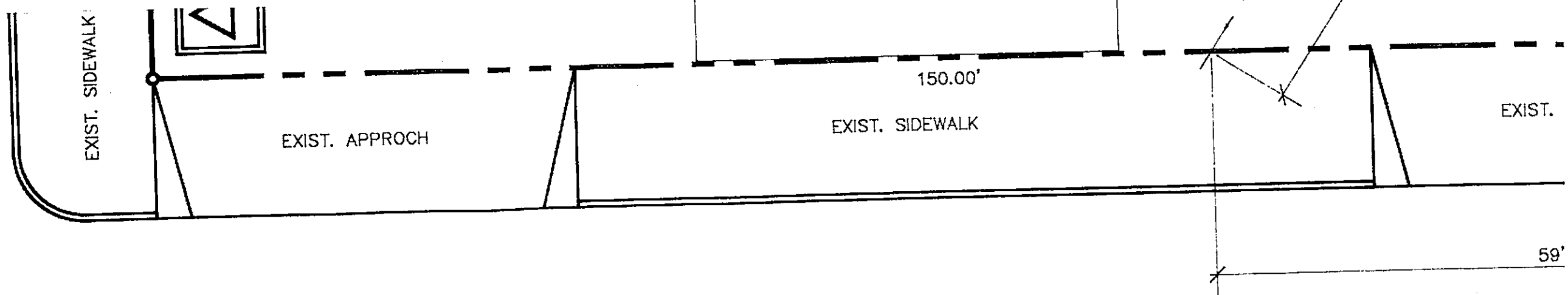
16410 TANK

(16A)

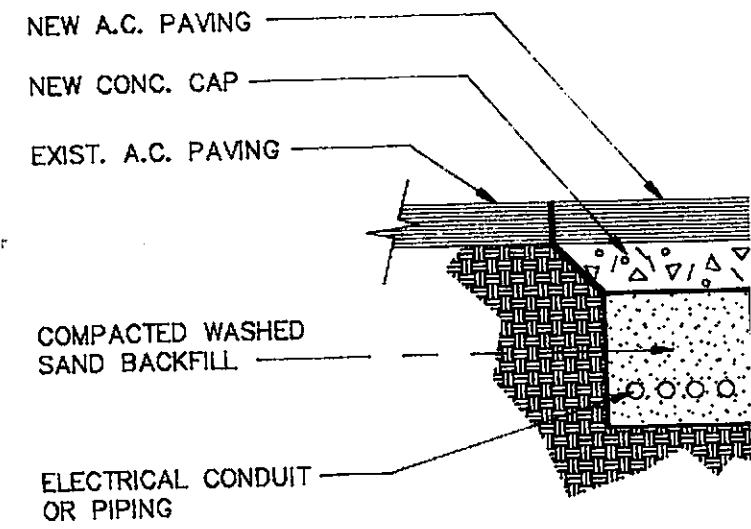
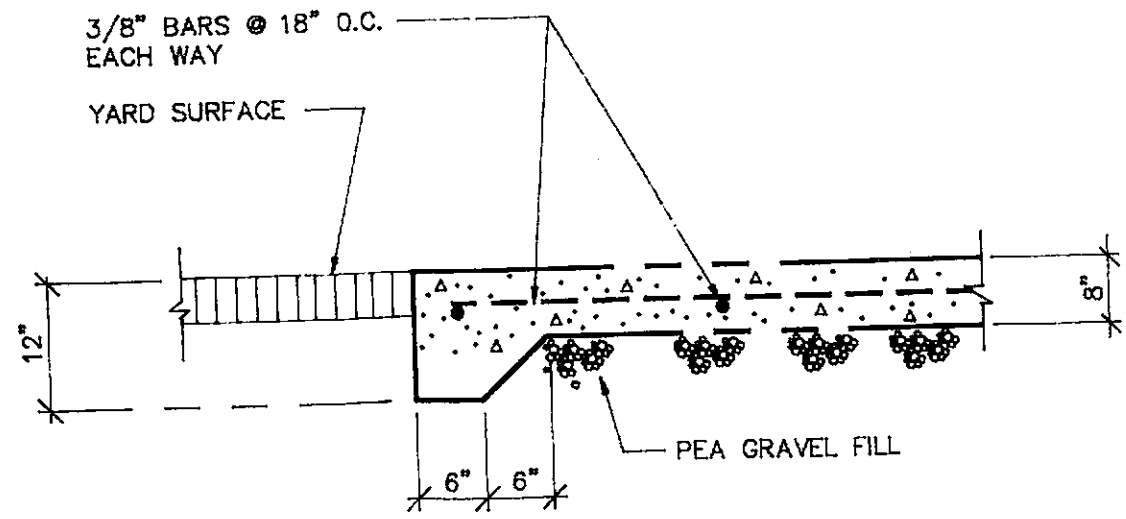
1" CONDUIT FOR TANK GAUGING TO TANK GAUGE CONSOLE. J-BOXES TO BE EXPLOSION PROOF AND CONTAINED WITHIN MANWAYS. LOOP 3/4" CONDUIT BETWEEN TANKS.

(16B)

1" CONDUIT TO RONAN LEAK DETECTION CONTROL PANEL FOR TURBINE SUMP PROBE AND ANNULAR SPACE PROBE. LOOP 3/4" CONDUIT BETWEEN TANKS.



SOUTH LIVERMORE AVENUE



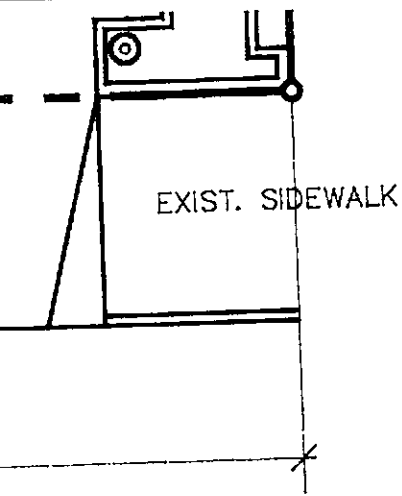
6-5-89

.6837A1

A TANK SLAB EDGE

3/4"=1'-0" GENERAL 02615.B 1/23/89

B CONCRETE TRENCH CAP



- 16C 3/4" CONDUITS FROM SUB PUMP TO PUMP RELAYS (ONE EACH PUMP).
- 16D LEAK DETECTION CONTROL PANEL AND TANK GAUGING CONSOLE. CONSULT SHELL ENGINEER FOR EXACT LOCATIONS.
- 16E 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.
- 16F CASHIER CONSOLE.
- 16G 2" CONDUIT FROM CONSOLE TO INTERCONNECT BOXES.
- 16H REMOVE EXISTING INTERCONNECT BOX AND INSTALL DISPENSER CONTROL INTERCONNECT EQUIPMENT.
- 16I 1" CONDUIT FROM DISPENSERS TO INTERCONNECT BOXES.
- 16J RUN ELECTRIC LINE OVERHEAD AT INTERIOR OF BLDG.
- 16K 3/4" CONDUIT FROM COLUMN BASE. STUB-UP INSIDE LUBE BAY DOOR FOR FUTURE INTERCOM.

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.


DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
 874.2278
 874.2237
 have been reviewed and found to be acceptable. Changes to your plans indicated by this Department are to ensure compliance with State and local health laws. The project proposed herein is in accordance with any required building codes and specifications. Notify this Department at least 24 hours prior to the following requirements:
 - Pre-Covering of Tool and Pans
 - Presence of a permit to operate a destructor on a site with accepted plan and at least 24 hours prior to the start of work.
 - THERE IS A FINANCIAL PENALTY FOR NON-COMPLIANCE WITH THESE REGULATIONS.

EM 7/20/89 will do ground water
 11/10/89

MARK	DATE	REVISIONS	BY

PRELIM PERMIT BID CONST.	DATE	APPRVD
	6-6-89	PY

SITE PLAN
318 S. LIVERMORE AVE.
LIVERMORE, CA

 SHELL OIL COMPANY	SCALE 1"=10'-0"
	DWN BY LS
ROBERT H. LEE & ASSOCIATES INC	F.H.L.# 6837
	W.I.C.#

NTS 02513.A
 GENERAL
 11/2/89