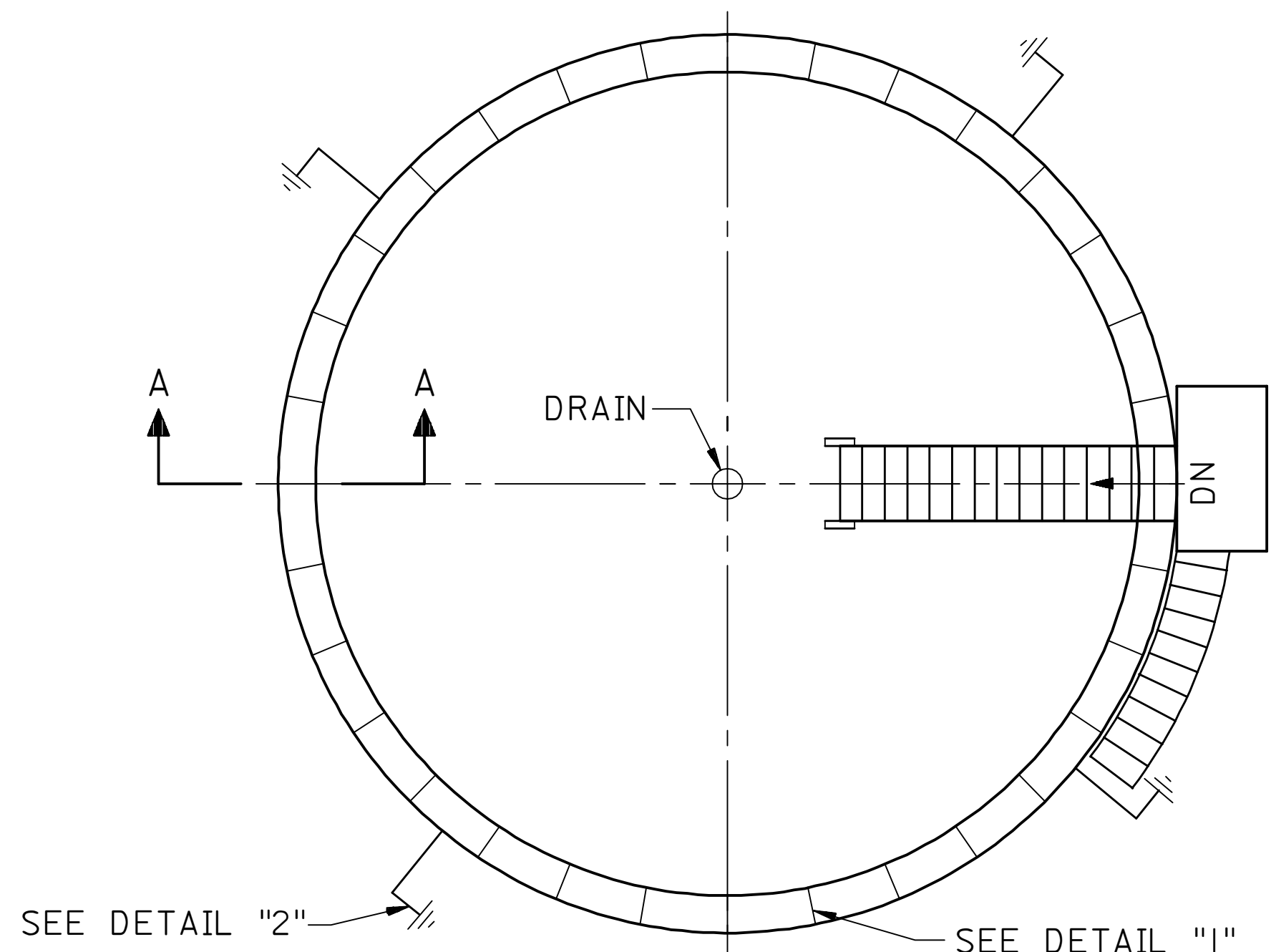
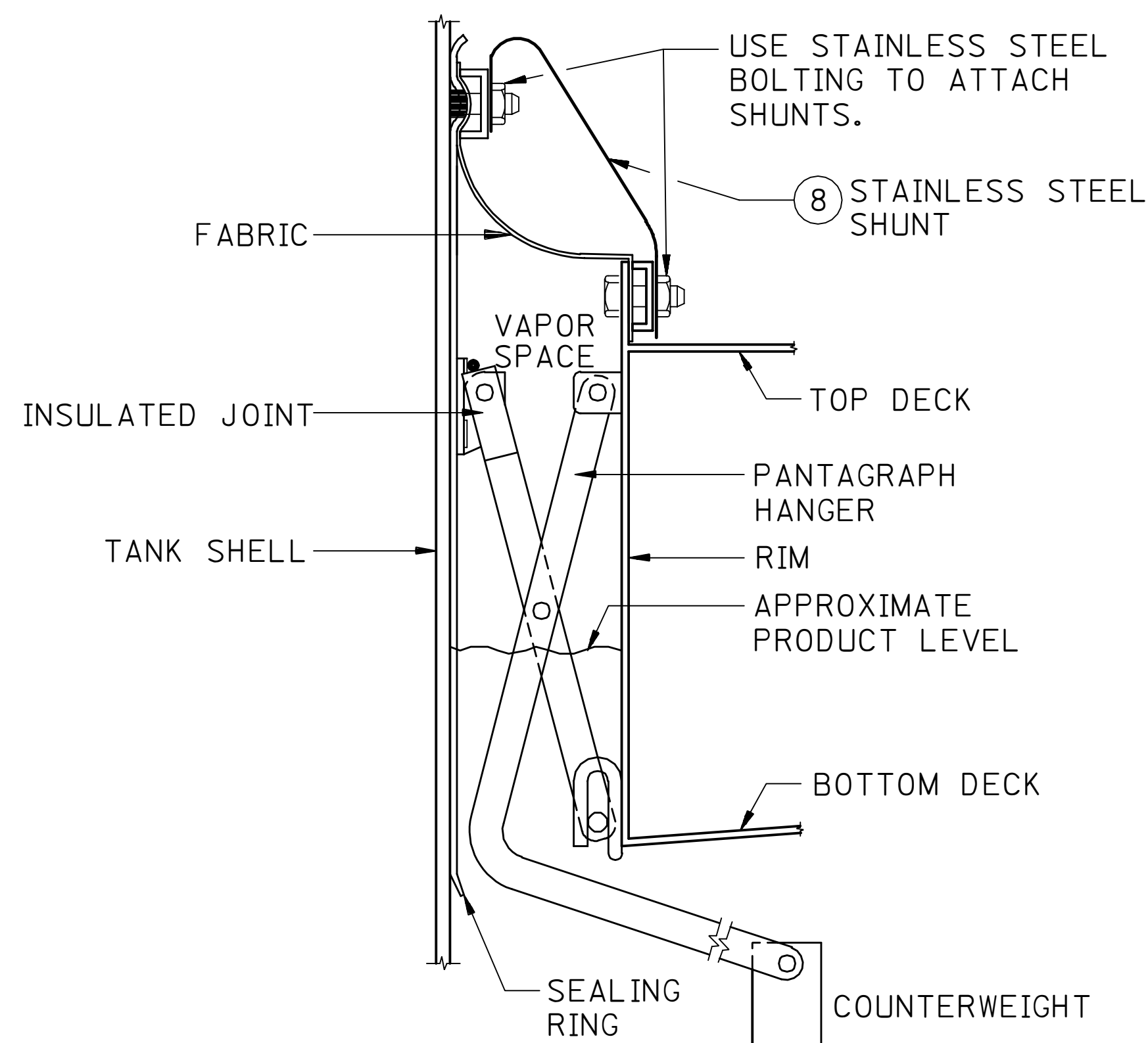


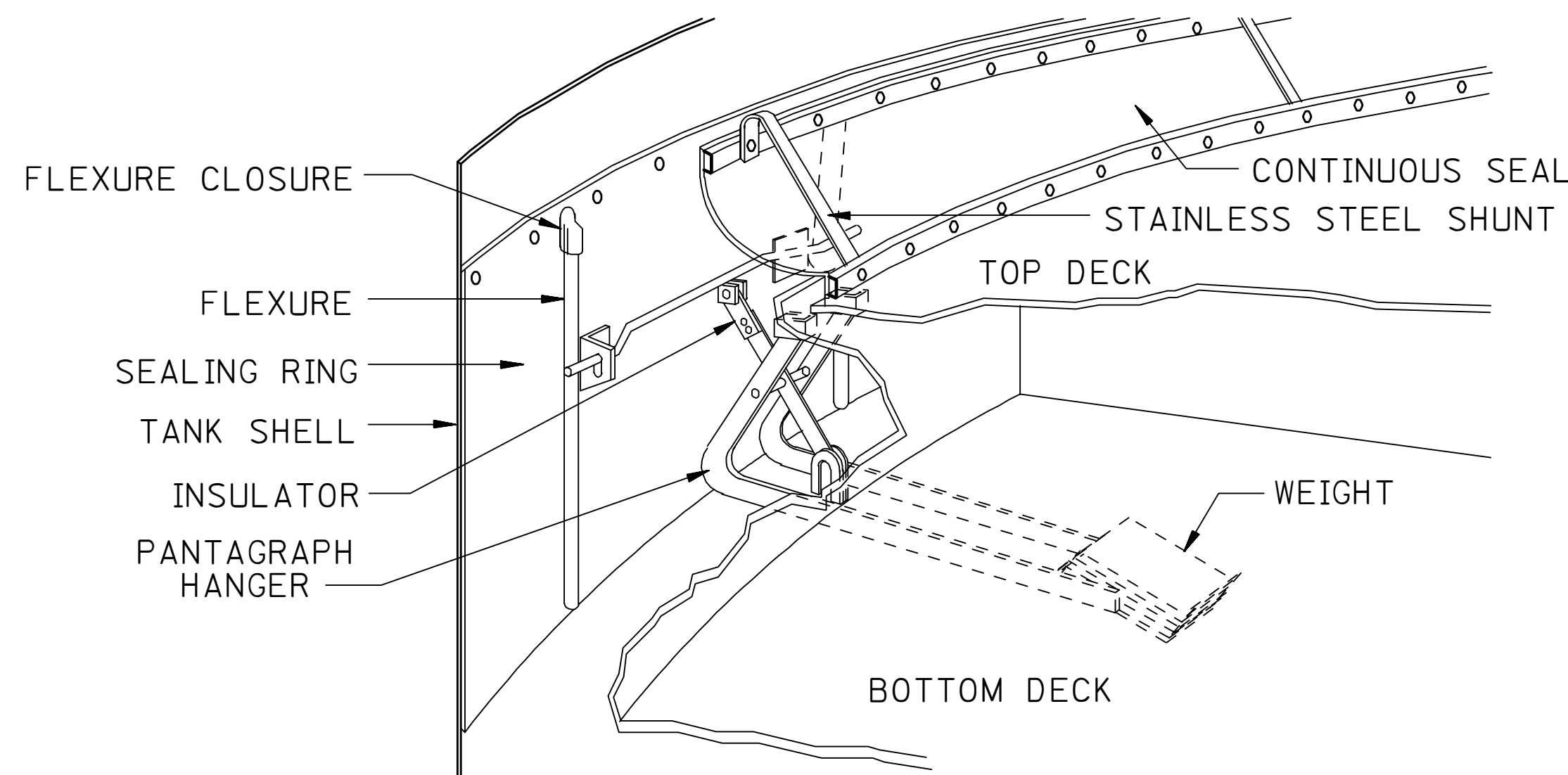


PLAN

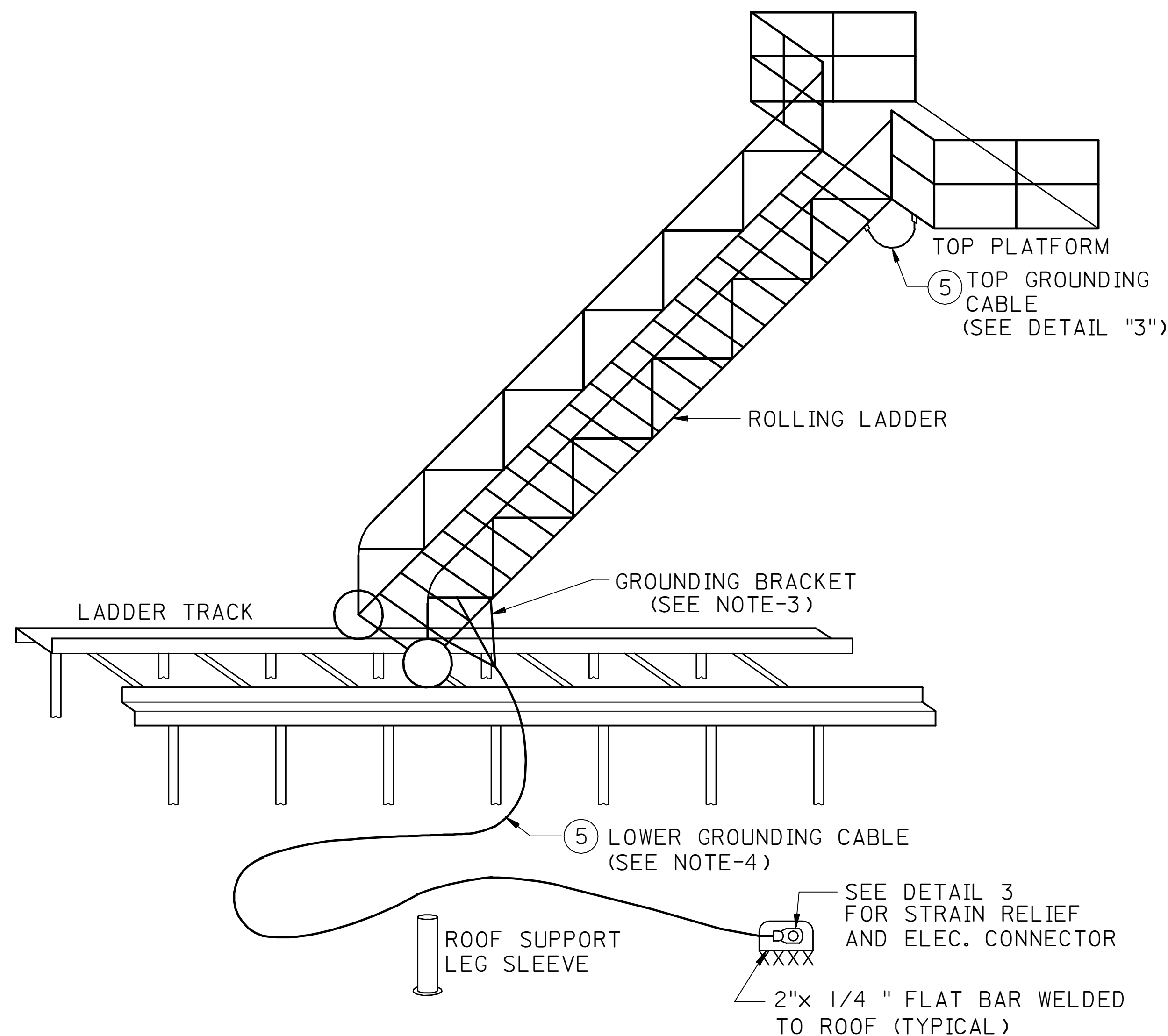


SECTION "A-A"

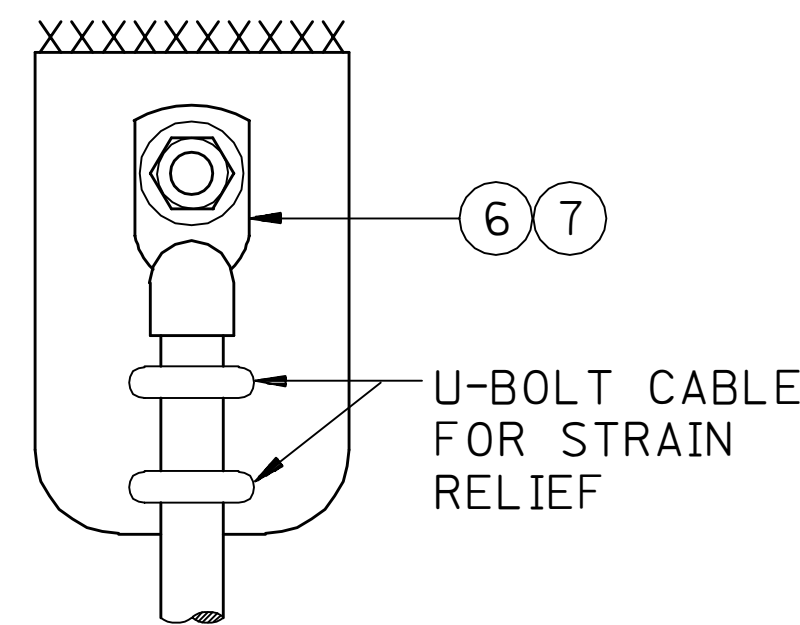
(TYPICAL MECHANICAL (METALLIC) SHOE SEAL)



PANTAGRAPH AND SEAL DETAIL I

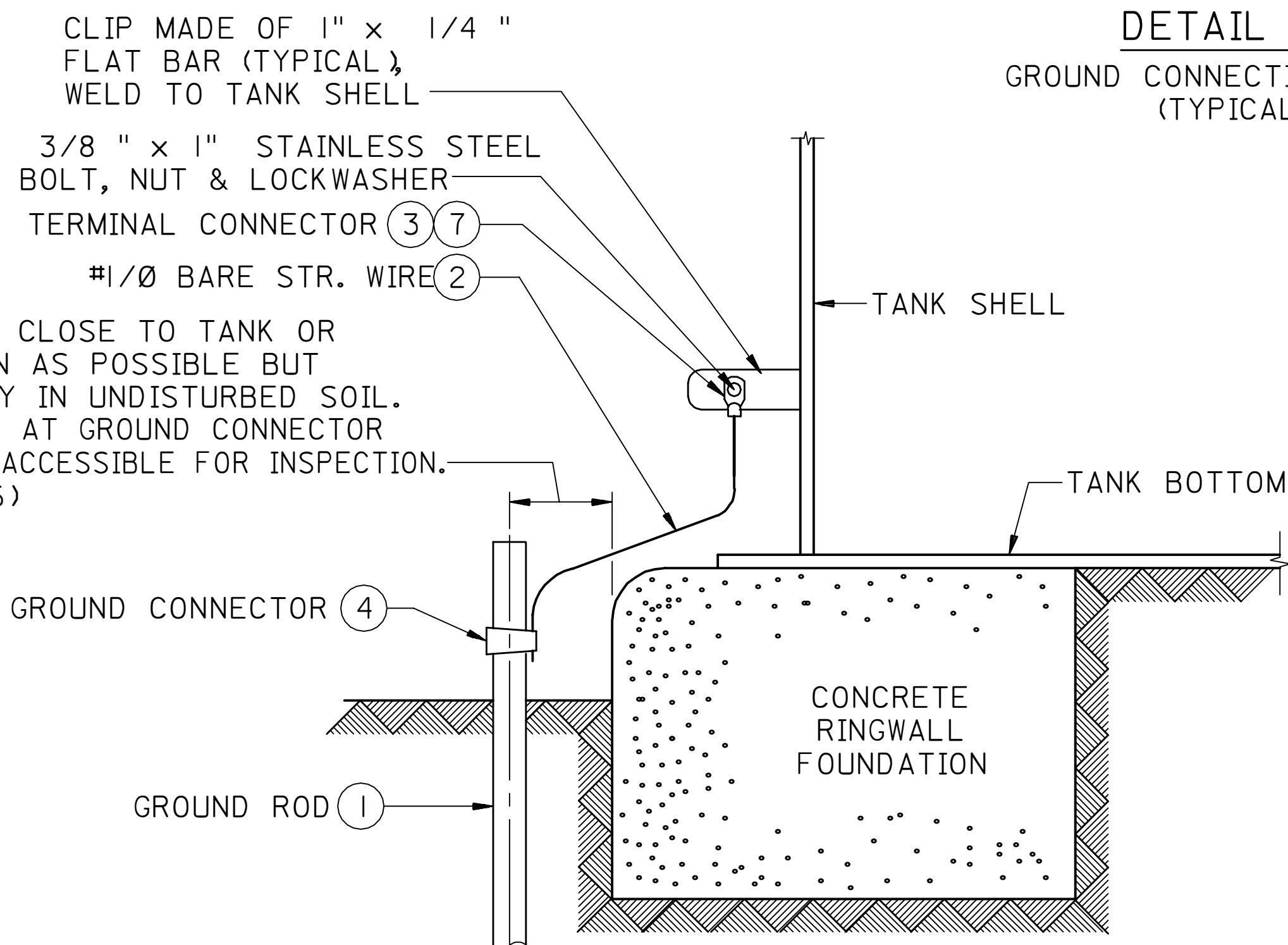


TYPICAL SUPPLEMENTAL FLOATING ROOF
TANK GROUNDING



DETAIL "3"

GROUND CONNECTION DETAIL (TYPICAL)



DETAIL "2"

(TYPICAL FOR ALL TANKS)

NOTES:

1. FIELD TO CLEAN ALL CONTACT SURFACES TO WHICH GROUNDING AND BONDING CONNECTIONS ARE MADE. ALL BOLTS FOR CABLE CLAMPS, CONNECTORS AND STAINLESS STEEL SHUNTS TO BE PULLED UP TIGHT, AND THEN COATED WITH EPOXY MASTIC. USE STAINLESS STEEL BOLTING AND WASHERS FOR ALL COPPER WIRE GROUND AND BOND ATTACHMENTS, EXCEPT USE EXISTING STAINLESS STEEL BOLTING AND WASHERS FOR SHUNTS AND ROOF TO SHOE JUMPER. MAXIMUM DISTANCE BETWEEN SHUNTS SHALL BE 3M (SEE DETAIL "1" AND SECTION "A-A").
2. TANKS SHALL HAVE A MINIMUM OF 2 EQUALLY SPACED CLIPS FOR GROUND ROD ATTACHMENT. SEE DETAIL "2".
3. GROUNDING BRACKET TO BE FABRICATED AND INSTALLED SO THAT THE CABLE IS HELD A MINIMUM OF TWO FEET BEYOND THE OUTSIDE OF THE LADDER TRACK.
4. CABLE TO BE BONDED TO A PAD WELDED TO ROOF. LOCATION OF PAD AND LENGTH OF CABLE MUST BE CHOSEN SO PATH OF CABLE IS CLEAR OF LEG SUPPORT SLEEVES, ETC. FOR ANY LADDER (ROOF) POSITION, THE CABLE MUST NOT INTERFERE WITH ROLLING OF LADDER.
5. INSULATORS (C B & I OR EQUAL) SHALL BE INSTALLED SO THAT THE PANTAGRAPH HANGER DOES NOT FORM A CONDUCTIVE PATH BETWEEN THE ROOF AND SHELL.
6. FOR TANKS WITH A CONCRETE SKIRT AROUND THEM, THE GROUND RODS SHOULD BE INSTALLED IN GROUND WELLS. SEE LIB. DWG. DD-950022 SH. 1.
7. DETAIL 2 APPLIES TO ALL TANKS. OTHER DETAILS ETC. APPLY ONLY TO FLOATING ROOF TANKS.
8. FOR TANKS WITH PRIMARY & SECONDARY SEALS, PLACE SHUNT ABOVE SECONDARY SEAL. DO NOT PLACE SHUNT BETWEEN PRIMARY & SECONDARY SEAL.

LIST OF MATERIALS

ITEM NO.	AMS NO.	DESCRIPTION
1	14-246-542	16mm DIA. x 2.4M (5/8 " x 8'-0") COPPERWELD GROUND ROD
2	15-195-453	50mm ² COPPER CABLE WITH GREEN INSULATION
3	14-198-135	COMPRESSION TYPE CONNECTOR BURNDY YA25-L6 OR EQUAL
4	14-113-240	COMPRESSION TYPE GROUND CLAMP, BURNDY YGHP29C26 OR EQUAL OR
	14-118-237	MECHANICAL GROUND CLAMP, BURNDY GAR6426 OR EQUAL
5	15-119-196	67.4mm ² (2/0 AWG) COPPER WELDING CABLE
6	14-198-480	COMPRESSION TYPE TERMINAL CONNECTOR, BURNDY YA26-L6 OR EQUAL
7	09-612-335	EPOXY MASTIC APCS-26
8		SHUNT- TYPE 302, 0.4mm (28 GA) x 50mm(2") WIDE x LENGTH TO SUIT OR EQUIVALENT CORROSION RESISTANCE AND CURRENT CARRYING CAPACITY

MANDATORY DRAWING

REV. NO.	DATE	BY	JO/EWO	DESCRIPTION	CHKD.	CERT.	APPD.
03	AUG02	MNL		RE-INSTATED REVISION 01. REVISED NOTES AND LOM.			
02	MAR96	ESSD RLO		REVISED LIST OF MATERIAL AND ADDED NOTE-6.	ORIG. SIGNED	ORIG. SIGNED	ORIG. SIGNED
01	JAN91	ASC		NEW DRAWING DIGITIZED INTO CADD DATABASE.	ORIG. SIGNED	ORIG. SIGNED	ORIG. SIGNED

SAUDI ARABIAN OIL COMPANY

DRAWN BY _____	CHECKED BY _____	SCALE _____	NONE
DATE STARTED _____	DATE COMPLETED _____	OPR'G. DEPT. _____	ENG. DEPT. _____
APP'D FOR CONSTR. _____			
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED		CERTIFIED _____	BY _____ DATE _____

TANK GROUNDING

STD. DWG.

PLANT NO.	INDEX	DRAWING NUMBER	SHT. NO.	REV. NO.
990	P	AB-036387	001	03