

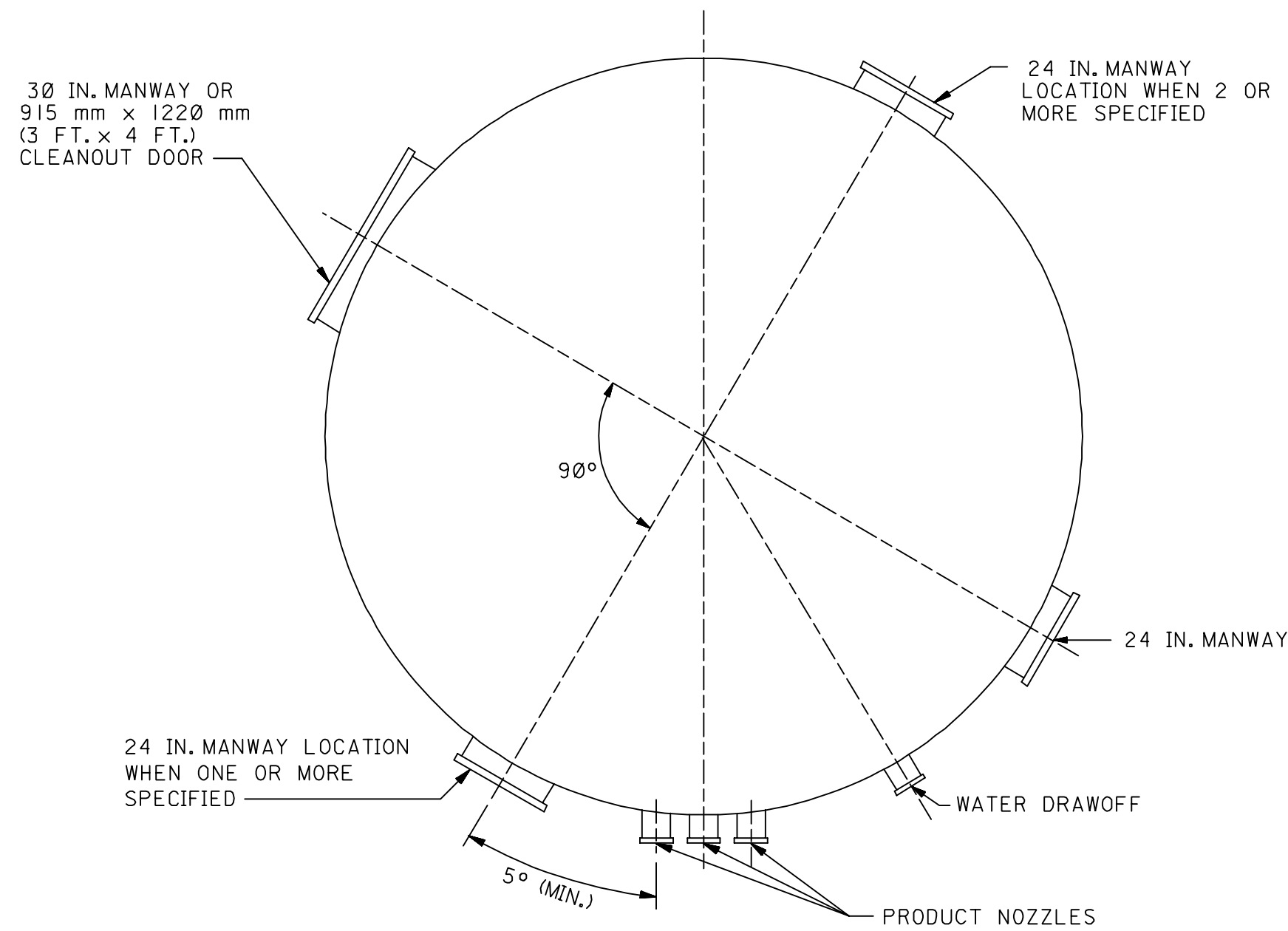


FIGURE-1

TYPICAL PLAN FOR SHELL APPURTENANCES

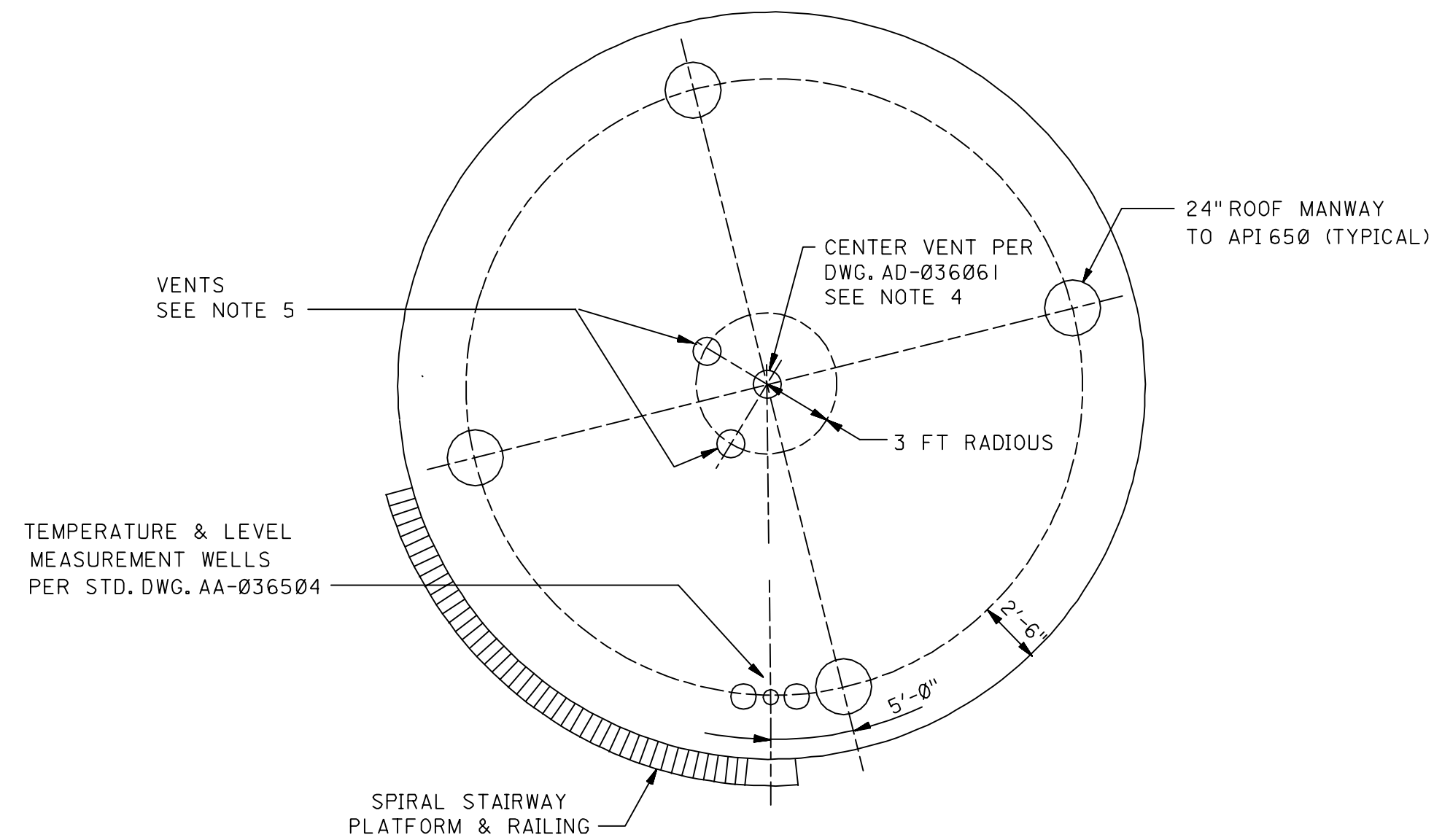


FIGURE-2

TYPICAL PLAN FOR CONE ROOFS

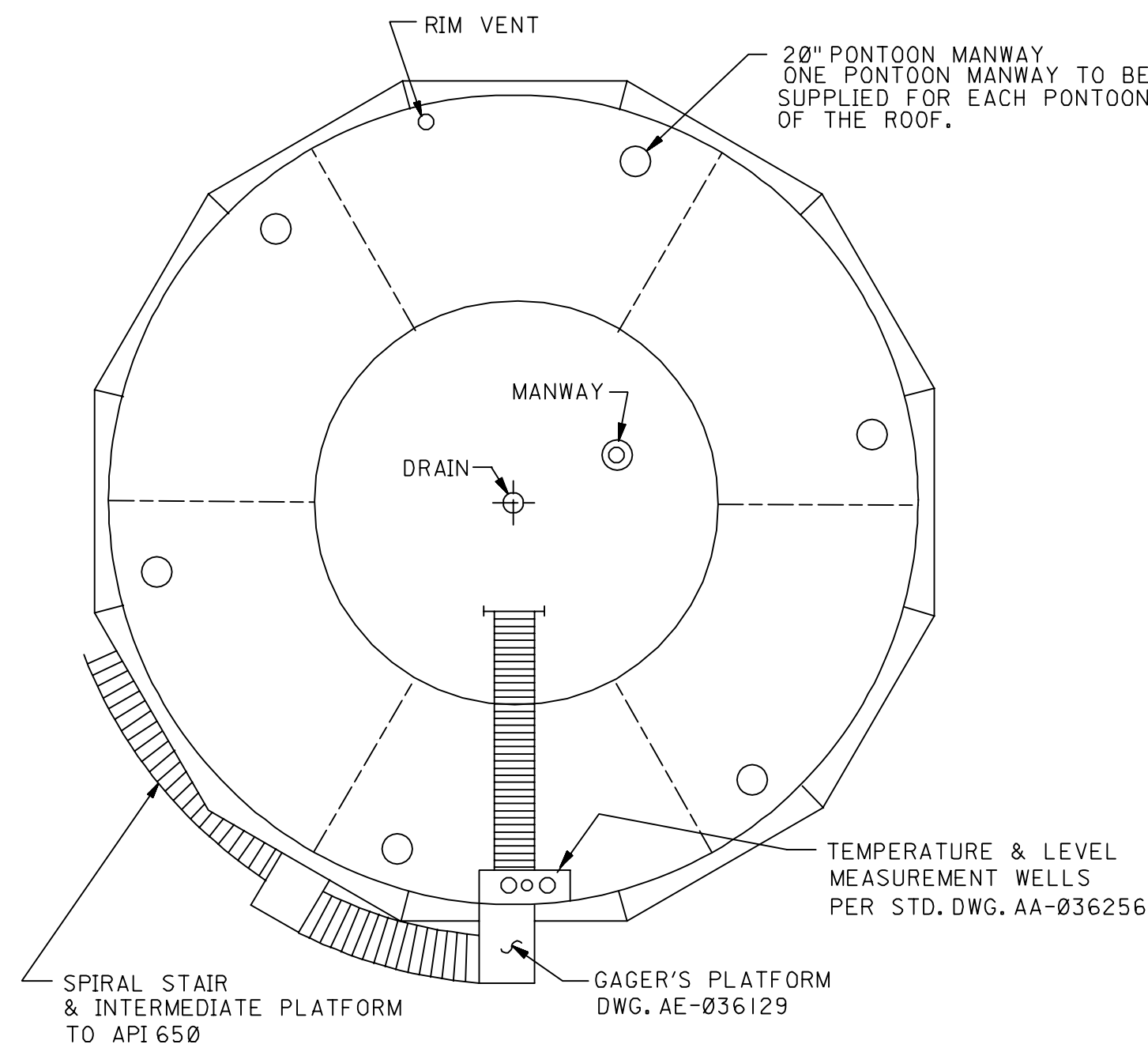


FIGURE-3

TYPICAL PLAN FOR EXTERNAL FLOATING ROOFS

NOTES:

SHELL APPURTENANCES :

- ONE (1) 24 IN. MANWAY FOR TANKS UP TO AND INCLUDING 6m (20 FT.) DIAMETER.
TWO (2) 24 IN. MANWAYS FOR TANKS OVER 6m (20 FT.) TO 30m (100 FT.) DIAMETER.
ONE (1) 30 IN. AND TWO (2) 24 IN. MANWAYS FOR TANKS OVER 30m (100 FT.) TO 60m (200 FT.) DIAMETER.
ONE (1) 30 IN. MANWAY AND A SUFFICIENT NUMBER OF 24 IN. MANWAYS SPACED AT NO MORE THAN 46m (150 FT.) APART AROUND THE TANK CIRCUMFERENCE FOR TANKS OVER 60m (200 FT.) DIAMETER.
- FLUSH TYPE CLEAN-OUT DOOR, WHEN SPECIFIED IN THE TANK DATA SHEET, SHALL BE 900mm x 1200mm (36 IN. x 48 IN.) MINIMUM, AND IT MAY BE SUBSTITUTED FOR ONE MANWAY.
- APPURTENANCE ORIENTATION TO BE SPECIFIED BY THE DESIGN ENGINEER. CLEANOUT DOOR SHALL BE LOCATED TRANSVERSE TO THE PREVAILING WIND AND EASILY ACCESSIBLE FROM THE ROADWAY.

CONE ROOF:

- ONE (1) 24 IN. MANWAY FOR TANKS UP TO AND INCLUDING 6m (20 FT.) DIAMETER.
TWO (2) 24 IN. MANWAYS FOR TANKS OVER 6m (20 FT.) TO 30m (100 FT.) DIAMETER.
THREE (3) 24 IN. MANWAYS FOR TANKS OVER 30m (100 FT.) TO 48m (160 FT.) DIAMETER.
MINIMUM OF FOUR (4) MANWAYS FOR TANKS OVER 48m (160 FT.) DIAMETER.
MANWAYS SHALL BE DISTRIBUTED EVENLY AROUND THE TANK ROOF AS SHOWN IN FIGURE 2.
- VENTS TO BE SIZED IN ACCORDANCE WITH API STANDARD 2000.
- MANWAYS MAY BE UTILIZED FOR THE INSTALLATION OF DIRECT-ACTING VENTS PER API-2000 (WEIGHT PALLET PRESSURE VENT OR WEIGHT-LOADED VENT)
- IF ONLY ONE VENT OPENING (SINGLE VENT) IS SPECIFIED, LOCATE IT AT THE CENTER OF THE ROOF AS SHOWN IN FIGURE 2.
- IF MORE THAN ONE VENT OPENING IS SPECIFIED, VENTS SHALL BE EQUALLY SPACED AROUND APPROXIMATELY 3 FT RADIUS CIRCLE AS SHOWN IN FIGURE 2.

EXTERNAL FLOATING ROOF:

- MANWAYS FOR ACCESS :
ONE (1) 40 IN. DECK MANWAY FOR TANKS.
- MANWAYS FOR VENTILLATION :
ONE (1) 24 IN. DECK MANWAY FOR TANKS UP TO AND INCLUDING 30m (100 FT.) DIAMETER.
TWO (2) 24 IN. DECK MANWAY FOR TANKS OVER 30m (100 FT.) TO 48m (160 FT.) DIAMETER.
THREE (3) 24 IN. DECK MANWAYS FOR TANKS OVER 48m (160 FT.) DIAMETER.
- PONTOON MANWAYS SHALL BE 20 IN. NOMINAL DIAMETER.
- NUMBER AND SIZE OF RIM VENTS SHALL BE PROVIDED IN ACCORDANCE WITH SAES-D-100 REQUIREMENTS.
- BLEEDER VENTS SHALL BE SIZED IN ACCORDANCE WITH SAES-D-100 REQUIREMENTS.

INTERNAL FLOATING ROOF:

- REQUIREMENT OF VENTS AND MANWAYS SHALL BE IN ACCORDANCE WITH 32-SAMSS-005, APPENDIX H.

DRAWING RESPONSIBILITY :

VESSEL STANDARDS COMMITTEE

SCALE: NONE

REVISION VALIDATION

THIS REVISION NO. IS COVERED, FOR ALL APPROVAL AND CERTIFICATION REQUIREMENTS, PER SAEP-334, UNDER DRAWING COMPLETION CERTIFICATE NO: 714120-0704-02

DESIGN CERTIFICATION (DESIGN AGENCY)		REVIEW FOR KEY DRAWINGS ☐ REQUIRED (SAUDI ARAMCO)		OTHER	
ENGG./DATE	CERTIFIED BY/DATE	CONST. AGENCY/DATE	OPERATIONS/DATE	BY/DATE	

REV. NO.	DATE	REVISION DESCRIPTION
01	MAY96	REVISED NOTES, FIGURE 2 & 3.

JOB ORDER/EWO NO. THIS REVISION IS NOT TO BE USED FOR CONSTRUCTION UNTIL CERTIFIED AND DATED

SAUDI ARABIAN OIL COMPANY

MANWAYS AND VENTS

DRAWING TYPE
STD

FOR TANKS

STD. DWG.

SAUDI ARABIA

PLANT NO.	INDEX	DRAWING NUMBER	SHT. NO.	REV. NO.
990	D	AB-036003	001	02