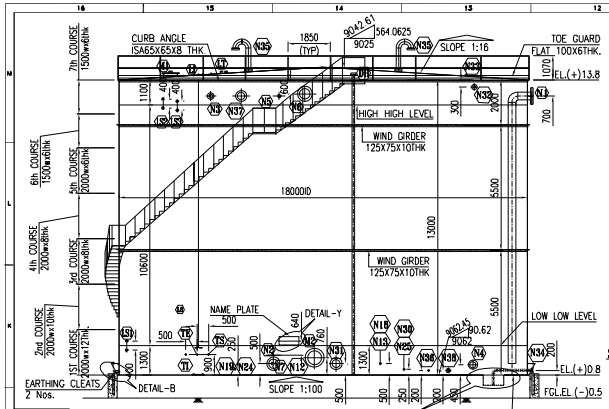
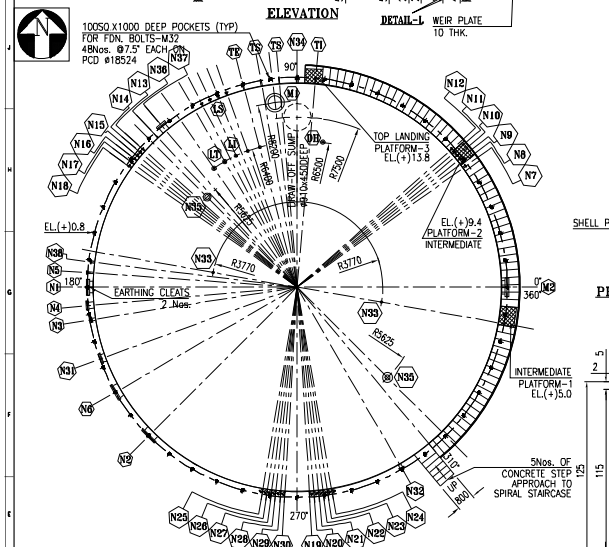


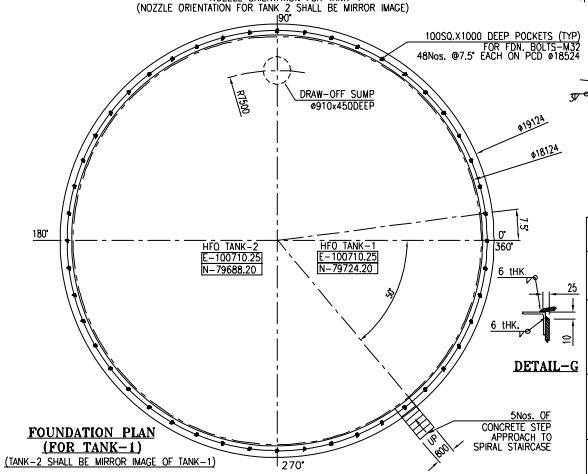
ELEVATION



PLAN AT BOTTOM PLATE LEVEL

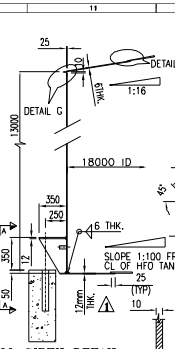
NOZZLE ORIENTATION FOR TANK-1

(NOZZLE ORIENTATION FOR TANK 2 SHALL BE MIRROR IMAGE)

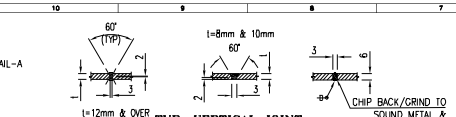


FOUNDATION PLAN (FOR TANK-1)

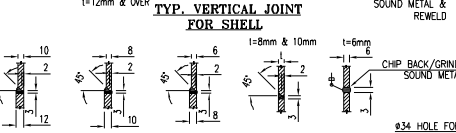
(TANK-2 SHALL BE MIRROR IMAGE OF TANK-1)



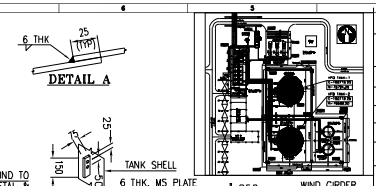
SHELL GIRTH DETAIL

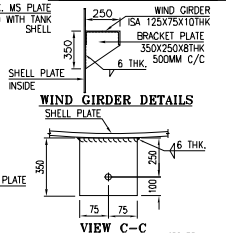


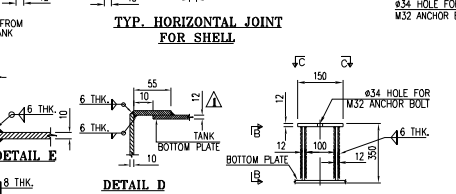
TYP. VERTICAL JOINT FOR SHELL

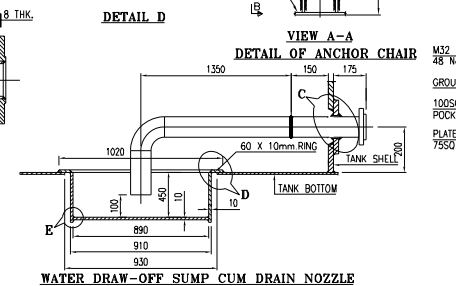


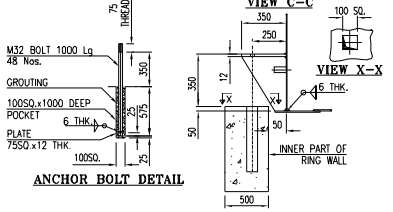
TYP. HORIZONTAL JOINT FOR SHELL





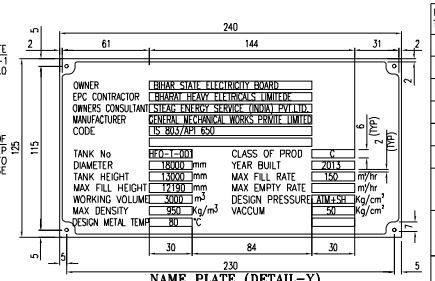




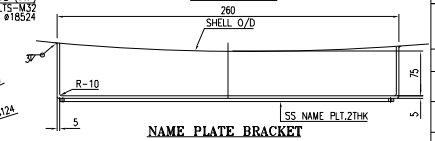


POCKET DETAIL

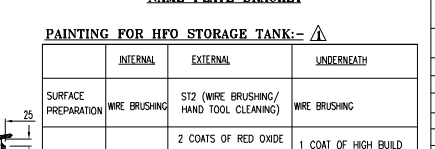
1. Do = OD OF PIPE = 88.9mm
2. Dp = OPENING IN THE REINFORCING PAD = 92mm
3. DS = OPENING IN THE SHELL = 154mm
4. DL = DIA OF PAD PLATE = 308mm
5. t = Thk OF SHELL = 12Thk.
6. T = Thk OF REINFORCING PLATE = 8Thk.



NAME PLATE (DETAIL-Y) FOR TANK-1



NAME PLATE BRACKET



PAINTING FOR HFO STORAGE TANK:- ⚠

	INTERNAL	EXTERNAL	UNDERNEATH
SURFACE PREPARATION	WIRE BRUSHING	ST2 (WIRE BRUSHING/ HAND TOOL CLEANING)	WIRE BRUSHING
PRIMER	N.A	2 COATS OF RED OXIDE ZINC CHROMATE PRIMER (IS 2074) OF 30-35 MICRONS DFT EACH	1 COAT OF HIGH BUILD COAL TAR EPOXY SUITABLY PIGMENTED, DFT : 80-100 MICRONS
FINISH	2 COATS OF DOUBLE BOILED LINSEED OIL	2 COATS OF SYNTHETIC ENAMEL (IS-2932) PAINT OF 20-25 MICRONS (DFT) EACH	N.A
TOTAL DFT		100-120 MICRONS	80-100 MICRONS

DESIGN DATA

TYPE	CENTRAL & CORNER COLUMN SUPPORTED VERTICAL CYLINDRICAL STORAGE TANK
CODE	IS 803/API 650
OPERATING PRESSURE	ATMOSPHERIC
DESIGN PRESSURE	FULL OF WATER
INTERNAL PRESSURE	50 Kgf/m² VACCUM
TOTAL PRESSURE	224.40 Kgf/m²
DESIGN TEMPERATURE	80° C
OPERATING TEMPERATURE	55° C
CAPACITY OF TANK (EFFECTIVE)	3000 m³
STORED PRODUCT	HFO
NO. REQD.	2 Nos.
SIZE OF TANK	18000DIA x 13000HT
TANK WEIGHT(EMPTY) INCLUDING STRUCTURE/ACCESSORIES/APPURTURANCES.	107.45 TONNES ⚠
FLOODED WEIGHT OF TANK	3285.0 TONNES ⚠
INSULATION	50THK LRB MATTRESS (ON SHELL ONLY)
SHELL JOINT EFFICIENCY	0.85
RADIOGRAPHY	ALL CROSS/TEE AND BUTT WELDS JOINTS 10% RADIOGRAPHY
LIVE LOAD ON ROOF	150 Kg/m²

MATERIAL SPECIFICATION

SHELL, BOTTOM & ROOF	IS2062 Fe410 Gr.B PLATES
NOZZLE NECK	A106Gr.B SEAMLESS
MANWAY NECK	ROLLED FROM IS2062 Gr.B PLATE
NOZZLE FLANGES	FORGED TO ANSI B16.5, A105 MATL
MANWAY FLANGES	FABRICATED FROM IS2062 Gr.B PLATE
GASKETS	RUBBER
BOLT & NUTS	ASTM A193 Gr.B7 / ASTM A194 Gr.2H
STRUCTURALS/PLATFORMS	IS2062 Fe410 Gr.A
HANDRAILS	C.S 32NB PIPE TO IS1239(M),GALV.

PLATE THICKNESS SCHEDULE

SL. No.	DESCRIPTION	CORROSION ALLOWANCE (mm)		THK. (mm)	TANK DIA. (m)	TANK HEIGHT (m)
1.	SHELL	2.0	1st COURSE	12.00	18.0	13.0
		1.5	2nd COURSE	10.00		
		1.5	3rd & 4th COURSE	8.00		
		1.5	REMAINING COURSE	6.00		
2.	BOTTOM PLATE	2.0		⚠ 12.00		
3.	ROOF PLATE	1.0		6.00		
4.	ROOF CURB ANGLE PROVIDED			- ISA 65X65x8THK		
5.	WIND GIRDER			- ISA 125X75X10THK		

NOZZLE SCHEDULE

NOZ. TYPE	NOZZLE	SIZE(NB)	TANK-1 ANGLE	TANK-2 ANGLE	ELEVATION (mm) (FROM TOP OF BOTTOM PLATE)	QTY	FLANGE TO ANSI B16.5 RATING	TYPE	FACE	SERVICE	PROJ.	REMARKS
S1	N1	500	180°	180°	12300	1	150#	S.O	R.F	INLET	280	U/L PUMP DISCHARGE
S2	N2	*300	225°	135°	500	1	150#	S.O	R.F	SUCTION HEATER	300	
S1	N3	100	189°	171°	12300	1	150#	S.O	R.F	INLET	175	RETURN FROM P&H UNIT
S8	N4	250	185°	175°	450	1	150#	S.O	R.F	INTERTANK TRANSFER	220	
S1	N5	50	176°	184°	12300	1	150#	S.O	R.F	INLET	150	FROM DOT
S9	N6	600	210°	150°	12400	1	150#	S.O	R.F	OVERFLOW	300	
S8	N7-N12	40	35.8°,37° 38.2°,39.4° 40.6°,41.8°	318.2°,319.4° 320.6°,321.8° 322.3°,324.2°	500	6	150#	S.O	R.F	STEAM INLET	150	FLOOR COIL HEATER
S8	N13-N18	40	138.2°,139.4° 140.6°,141.8° 143°,144.2°	215.8°,217° 218.2°,219.4° 220.6°,221.8°	500	6	150#	S.O	R.F	STEAM INLET	150	FLOOR COIL HEATER
S8	N19-N24	40	273.2°,274.4° 275.6°,276.8° 278°,279.2°	80.8°,82° 83.2°,84.4° 85.6°,86.8°	250	6	150#	S.O	R.F	COND. OUTLET	150	FLOOR COIL HEATER
S8	N25-N30	40	260.4°,261.6° 262.8°,264° 265.2°,266.4°	93.6°,94.8° 96°,97.2° 98.4°,99.6°	250	6	150#	S.O	R.F	COND. OUTLET	150	FLOOR COIL HEATER
S8	N31	350	200°	160°	500	1	150#	S.O	R.F	OUTLET	200	SPARE
S7	TI	M33X2	85°	275°	900	1	NPT(F) BOSS FOR THERMOWELL			TEMP.INDICATOR	-	
S7	TE	M33X2	105°	255°	900	1	NPT(F) BOSS FOR THERMOWELL			TEMP.ELEMENT CONNECTION	-	
S7	TS	M33X2	95° 100°	260° 265°	900	2	NPT(F) BOSS FOR THERMOWELL			TEMP.SWITCH	-	
R3	LI	40	105° 110° 115°	245° 250° 255°	TOP OF TANK	3	SCRD(BSP) COUPLING			LEVEL INDICATOR	-	FLOAT AND BOARD TYPE
R4	LT	80	120° 125°	235° 240°	TOP OF TANK	2	150#	S.O	R.F	LEVEL TRANSMITTER	150	
R6	DH	80	80°	280°	TOP OF TANK	1	150#	S.O	R.F	DIPHATCH	150	WITH BLIND FLANGE
R2	M1	600	97°	263°	TOP OF TANK	1	AS PER IS803 CODE			ROOF MAN HOLE	150	
S6	M2	600	0°	0°	760	1	AS PER IS803 CODE			SHELL MAN HOLE	150	
S4	N32	100	300°	60°	12700	1	150#	S.O	R.F	FOAM POURER	175	
R5	N33	25	170°,350°	10°,190°	TOP OF TANK	2	SCRD(BSP) COUPLING			HEAT DETECTOR	-	
S5	N34	80	90°	270°	200	1	150#	S.O	R.F	DRAIN	175	DRAW OFF SUMP
R1	N35	200	135°,315°	45°,225°	TOP OF TANK	2	150#	S.O	R.F	VENT	150	WITH FLAME ARRESTOR
S9	N36	25	133°	227°	200	1	-	HALF COUPLING	-	SAMPLING	-	-
S1	N37	300	130°	230°	12300	1	150#	S.O	R.F	INLET	220	SPARE
S2	N38	80	173°	187°	250	1	150#	S.O	R.F	DRAIN	175	
S2	LS1	25	110°,115°	245°,250°	1100,1500	2	150#	S.O	R.F	LEVEL SWITCH	150	-
S2	LS2	25	112.5°,117.5°	242.5°,247.5°	9200,9600	2	150#	S.O	R.F	LEVEL SWITCH	150	-
S2	LS3	25	110°,115°	245°,250°	9300,9700	2	150#	S.O	R.F	LEVEL SWITCH	150	-

NOTES:-

01. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED
02. ALL SHARP EDGES TO BE ROUNDED OFF.
03. ALL WELDS SHALL BE OF FULL PENETRATION WELDS.
04. REINFORCEMENT OF NOZZLE SHALL BE AS PER IS 803.
05. BOTTOM AND ROOF SHALL BE OF LAP WELDED CONSTRUCTION.
06. THE TANK WILL BE PROVIDED WITH SPIRAL STAIRCASE.
07. ALL NOZZLE ELEVATIONS ARE FROM TOP OF BOTTOM PLATE.
08. ROOF PLATE SHALL BE ATTACHED TO THE CURB ANGLE OF THE TANK WITH A CONTINOUS FILLET WELD ON THE TOP SIDE ONLY WITH WELD THICKNESS OF MINIMUM 5MM.
09. ALL ELEVATIONS ARE REFERED TO POWER HOUSE FGL.EL.0.0M WHICH CORRESPONDS TO RL (+)45.5M.
10. NOZZLE ORIENTATION AND FOUNDATION DETAILS OF TANK 2 SHALL BE MIRROR IMAGE OF TANK-1 ALONG EAST-WEST AXIS.
11. WEIR PLATE 8MM THICK SHALL BE PROVIDED AT TANK BOTTOM FOR ALL INLET LINES.
12. NOZZLE TYPE R1,R2...R6 INDICATES NOZZLE ON ROOF AND S1,S2.....S9 INDICATES NOZZLE ON SHELL.

*13. THE ID OF THE NOZZLE N2 SHOULD BE 2mm LARGER THAN THE OD OF THE SUCTION HEATER.

REV. NO.	DATE	DRAWN	CHKD	APPD	REVISION
2	01.03.14	KCK	RRN	RS	REVISED AS PER BHEL COMMENTS
1	07.01.14	RRN	RRN	RS	CHANGED AS PER BOTTOM PLATE THICKNESS
0	12.12.13	RRN	RRN	RS	REMOVED HOLD POINTS
B	14.08.13	SKK	RRN	RS	REVISED AS PER BHEL COMMENTS DTD. 29.07.13
A	25.06.13	SKK	RRN	RS	ORIGINAL ISSUE

OWNER	BIHAR STATE ELECTRICITY BOARD
CONSULTANT	STEAG ENERGY SERVICES (INDIA) PVT.LTD
PROJECT	2x250MW BSEB BARAUNI TPS
CUSTOMER	BHARAT HEAVY ELECTRICALS LTD, POWER GROUP,PROJECTS ENGINEERING MANAGEMENT NOIDA
CONTRACTOR	GENERAL MECHANICAL WORKS PRIVATE LIMITED, 885, G.I.D.C. INDUSTRIAL ESTATE, MAKARPURA, VADODARA-390 010 [GUJARAT] INDIA

DRAWN	SKK	DRG. TITLE	GA OF HFO TANK
CHECKED	RRN		
APPROVED	RS	DRG. No.	PE-V0-374-166-A501
DATE	25.06.13	REV. NO. 2	JOB NO.
SCALE	1:110	SIZE-A1	SH.NO. 1 OF 4