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11300911
EIL 1646-890 REV. 1 A3-297X420

NOZZLES AND CONNECTIONS

MARK	QTY REQD.	NOM DIA.	@ SCH/ THK.	FLANGES RATING #	FLANGES TYPE	FLANGES FACING	PROJ (SEE NOTE-4)	PAD W X T	SERVICE
F	1	300	10THK	150	WN	RF	1165	160 X14	FEED
T	1	400	10THK	150	WN	RF	800	200 X18	TOP OUTLET
B	1	100	40s	150	WN	RF	1165	60 X18	BOTTOM OUTLET
M	1	500	10THK	150	WN	RF	1215	250 X14	MANHOLE + COVER FLG WITH HINGE
LS 1/2	2	50	40s	150	WN	RF	1115	-	LEVEL SWITCH
SP 1-2	2	50	40s	150	WN	RF	1115	-	STAND PIPE
AO	1	500	10THK	-	-	-	-	250 X8	ACCESS OPENING
VS 1-3	3	100	80	-	-	-	-	-	SKIRT VENTS

GENERAL NOTES

UNLESS STATED OTHERWISE

1. ALL DIMENSIONS ARE IN MM.
2. ALL ANCHOR BOLT HOLES TO STRADDLE N/S CENTER LINE.
3. NORTH DIRECTION WHEREVER SHOWN IS WITH RESPECT TO PLAN VIEW.
4. a) FOR NOZZLES ON SHELL PROJECTIONS ARE REFERRED TO FROM VESSEL CENTER LINE TO FLANGE CONTACT FACE.
   b) FOR NOZZLES ON HEAD PROJECTIONS ARE REFERRED TO FROM HEAD T.L. TO FLANGE CONTACT FACE.
5. THE INDICATED THICKNESS IS THE MINIMUM ACCEPTABLE AFTER CONSTRUCTION.
6. FLANGE GASKET FACE SHALL HAVE 125 RMS FINISH.
7. NOZZLES 50 NB & BELOW SHALL BE STIFFENED WITH 2-30X3 THK. FLATS AT 90° APART.
8. ALL S.S. INSIDE AND OUTSIDE SURFACES SHALL BE PICKLED AND PASSIVATED IN ACCORDANCE WITH ASTM A 380.
9. HOT FORMED DISHED ENDS SHALL BE SOLUTION ANNEALED.
10. NOZZLE NECK MADE OUT OF PLATES SHALL BE 100% RADIOGRAPHED.
11. ALL LONG AND CIRCUM. WELD JOINTS SHALL BE 100% RADIOGRAPHED FOR THEIR ENTIRE LENGTH.
12. ALL NOZZLE ATTACHMENTS SHALL FULL PENETRATION WELDS.
13. ROOT AND FINAL RUN OF ALL WELDS SHALL BE D.P. CHACKED.
14. I.D. OF WN FLANGES SHALL MATCH WITH I.D. OF CORRESPONDING NOZZLE PIPES.
15. DEMISTER SEGMENTS SHALL PASS THROUGH THE MANHOLE.
16. D.P. TEST SHALL BE CARRIED OUT ON INSIDE & OUTSIDE SURFACE OF DISHED END AT KNUCKLE ZONE.

1 HOLD UPS

- NOZZLE ORIENTATIONS, ELEVATION
- SIZE OF NOZZLES
- DETAIL OF INTERNALS
- PIPE DAVIT CAPACITY AND DIMENSIONS
- PIPE SUPPORT CLEATS
- LADDER / PLATFORM CLEATS

SPECIFICATIONS

X	DENOTES APPLICABILITY	
X	GENERAL SPECIFICATION FOR PRESSURE VESSELS	6-12-01
X	SUPPL. SPEC. FOR S.S. PLATES	6-12-06
X	STANDARD SPECIFICATION FOR B Q C S PLATES	6-12-11
X	STD. SPEC. FOR STRL. QUALITY PLATES.	6-12-14
X	STD. SPEC. FOR S.S. PLATES	6-12-020

STANDARDS

X	VESSEL TOLERANCES	7-12-001
	SUPPORT FOR HORIZONTAL VESSELS	7-12-002
	WOODEN PILLOWS FOR SADDLE SUPPORT	7-12-003
X	SKIRT BASE DETAILS	7-12-004
X	SKIRT OPENING DETAILS	7-12-005
	ANGLE LEG SUPPORT	7-12-006
	PIPE LEG SUPPORT	7-12-007
	BRACKET SUPPORT FOR VERTICAL VESSELS	7-12-008
X	MANHOLE WITH HINGED COVER	7-12-009
	MANHOLE WITH DAVIT	7-12-010
X	LADDER RUNGS FOR MANHOLE/DEMISTER	7-12-011
	RETAINING PLATES	7-12-012
X	NOZZLE REINFORCEMENT AND PROJECTION	7-12-013
	PAD NOZZLES FOR VESSELS	7-12-014
X	STANDARD BOLT HOLE ORIENTATIONS	7-12-015
	ALLOY LINER DETAILS	7-12-016
	SIGHT GLASSES FOR PRESSURE VESSELS	7-12-017
	INTERNAL FLANGES	7-12-018
X	VORTEX BREAKERS	7-12-019
X	INLET DEFLECTOR BAFFLE	7-12-020
	SUPPORT RING & BOLTING BAR	7-12-021
	SUPPORT RING SIZES FOR PACKED TOWERS	7-12-022
	PIPE DAVIT	7-12-023
X	LIFTING LUG TOP HEAD TYPE	7-12-024
X	FIRE PROOFING AND INSULATION SUPPORTS	7-12-025
X	EARTHING LUG	7-12-026
X	NAME PLATE	7-12-027
X	MANUFACTURING NAME PLATE	7-12-028
X	BRACKET FOR NAME PLATE	7-12-029
X	DETAILS OF WIREMESH DEMISTER SUPPORTS	7-12-036

1 REFERENCE DRAWINGS

X	NOZZLE ORIENTATIONS	3030-11-16-43-4-207 R-2
X	LADDERS / PLATFORMS SUPPORT CLEATS	3030-11-16-48-1-181 R-0
X	PIPE SUPPORT CLEATS	44-B5-1002 REV.-0
	TRAY SUPPORT AND BOLTING BARS	
	DATA SHEET FOR DEMISTER	

VENDOR: BHEL

STATUTORY REGULATIONS

- INDIAN BOILER REGULATIONS
- CHIEF INSPECTION OF EXPLOSIVES

DESIGN DATA

CODE	ASME SEC.-VIII DIV.-1 (1989)
WORKING PRESSURE (Kg/Cm²g)	14.0
DESIGN PRESSURE (Kg/Cm²g)	18.0
WORKING TEMPERATURE (°C)	(-)67
DESIGN TEMPERATURE (°C)	(-)120
CORROSION ALLOWANCE	(mm) NIL
TYPE OF HEADS	TORISPHERICAL
JOINT EFFICIENCY	SHELL 1.0 HEAD 1.0
RADIOGRAPHY	SHELL (SEE NOTE 11) HEAD (SEE NOTE 11)
POST WELD HEAT TREATMENT	NIL
HEAT TREATMENT	HEAD (SEE NOTE-9)
WIND SPECIFICATION	IS : 875/
EARTH-QUAKE SPECIFICATION	AS PER ACCELERATION SPECTRA
OPERATING MEDIUM	SP. GRAVITY 0.7
CAPACITY	(M³) 13.6
PAINTING / CLEANING	SEE NOTE - 8
INSULATION THICKNESS (mm)	165 ☐ HOT ☒ COLD
FIRE PROOFING	☒ YES ☐ NO
HYDROSTATIC TEST (Kg/Cm²g) PRESSURE (NEW & COLD)	HORIZONTAL VERTICAL 27.0 (AT VESSEL TOP)
INSPECTION BY	☒ EIL ☐ CIB ☐ LLOYDS

MATERIAL OF CONSTRUCTION
(AS PER ASME/IS OR EQUIVALENT)

SHELL AND REINFORCEMENT PAD	SA 240 GR. 304
HEADS	SA 240 GR. 304
SHELL FLANGES	-
NOZZLE FLANGES	SA 182 F 304
NOZZLE NECK UPTO 100 NB	SA 312 TP 304 (SEAMLESS)
COUPLINGS	-
PIPE FITTINGS	SA 403-304 WPS
GASKETS EXTERNAL	* SS 304 SPIRAL WOUND WITH GRAFOIL FILLER
GASKETS INTERNAL	-
EXTERNAL STUDS ~~/BOLTS/~~ NUTS	SA 320 GR. B8 CL. II/SA 194 GR.8
INTERNAL BOLTS/NUTS	SS 304
SKIRT ~~/SUPPORT~~	SA 240 GR. 304/SA 516 GR.70/IS:226
SKIRT ~~/SUPPORT~~ BASE	IS : 226
INTERNAL PARTS	SA 240 GR. 304
TRAYS	-
CLIPS & ATTACHMENTS (EXTERNAL)	SA 240 GR. 304
WRAPPER PLATE	-
DEMISTER / GRID	SS-304
NOZZLE NECK 150 NB & ABOVE	SA 240 GR. 304

* WITH S.S. CENTERING RING. DIMENSIONS AS PER API-601 / ASME B 16.20. 1

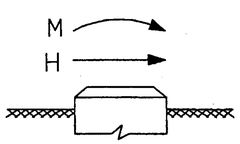
APPROXIMATE WEIGHT (KGS)

ERECTION WEIGHT	6300	OPERATING WEIGHT	18000
SHUT DOWN WEIGHT	15500	HYDROSTATIC TEST WEIGHT	19900

THIS DRAWING IS NOT TO SCALE

NUMBER OF ITEMS ONE

FOUNDATION LOADING DATA
(OPERATING CONDITION)



TYPE	MAX. MOMENT AT BASE (M) (Kgm)	MAX. SHEAR FORCE AT BASE (H) (Kg)
SEISMIC	47000	10000
WIND	20040	3463

NO	DATE	REVISION	BY	CH	APPVD.
1	25.4.96	REVISED AS MARKED 1	N.S		
0	27.2.95	ISSUED FOR PURCHASE	R.K	S.S	K.P.S	V.C
F	13-8-93	REISSUED FOR BIDS	KCM	D.D	A.K.M

ENGINEERS INDIA LIMITED
NEW DELHI

PLANT: LPG LAKWA
CLIENT: G.A.I.L.

VESSEL DESIGN DATA
L. P. SEPARATOR

ITEM NO	JOB NO	DRAWING NO	REV.
11-VV-007	3030	3030-00-16-46-3-009	1

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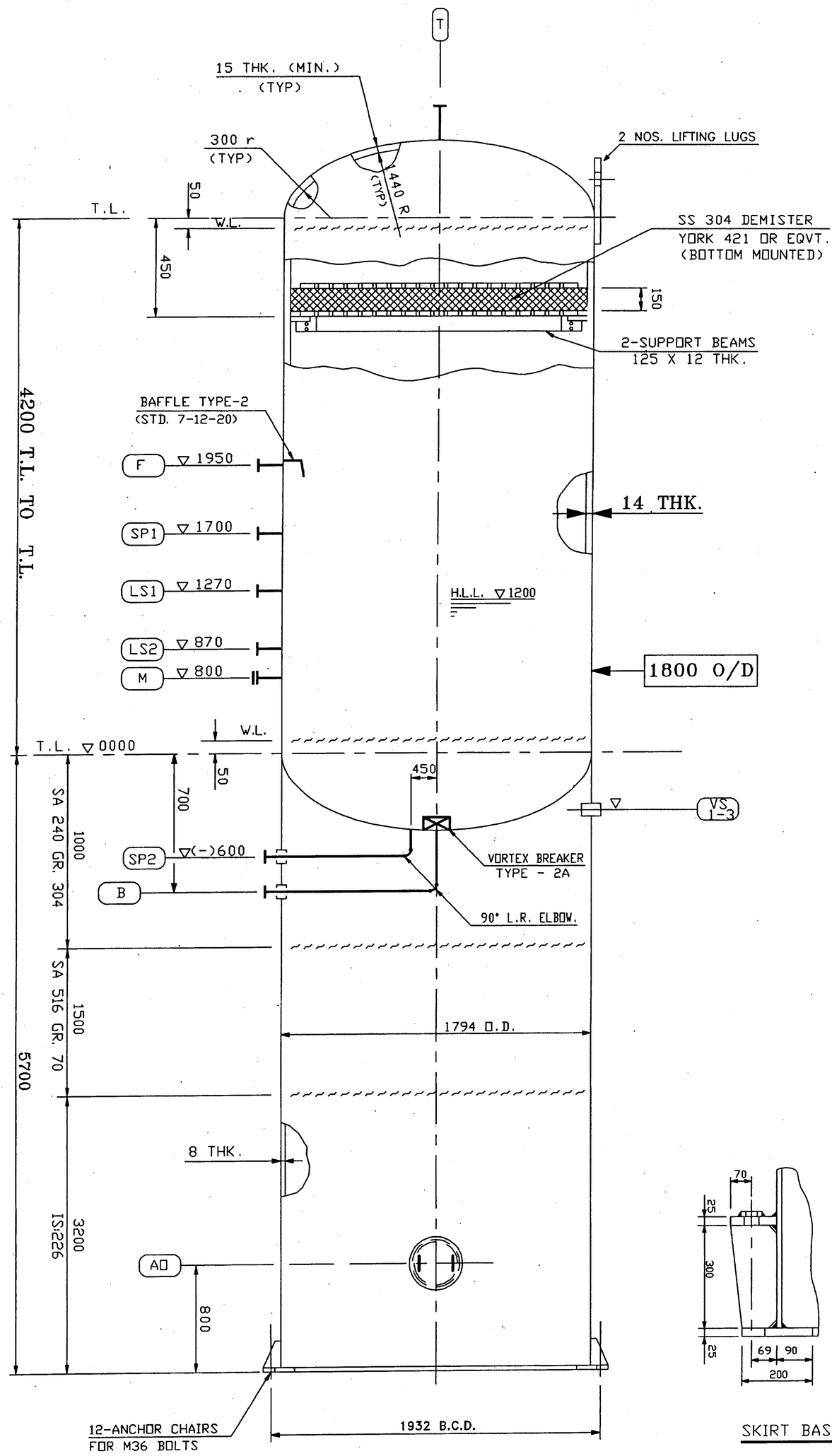

SKIRT BASE DETAIL

ENGINEERS INDIA LIMITED
NEW DELHI

DWG. NO.	
REFERENCE DRAWING	
CLIENT G.A.I.L.	PLANT LPG, LAKWA
JOB NO. 3030	

NO	DATE	REVISION	BY	CH	APPVD.
1		REVISED AS MARKED	N.S.		
0	27-2-95	ISSUED FOR PURCHASE	R.K.	S.S.	K.P.S.
F	13-8-93	REISSUED FOR BIDS	KCM	D.D.	AKM

L.P. SEPARATOR
(11-VV-007)

DRAWING NO. 3030-00-16-46-3-009

REV. 1

SHT. 2 OF 2