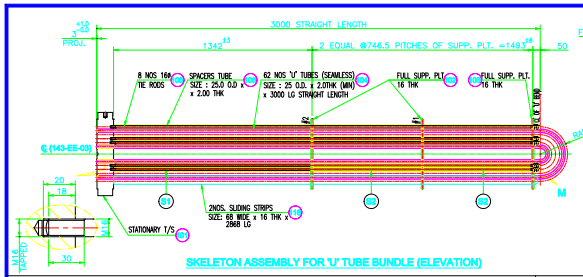
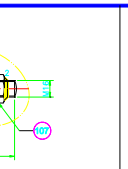
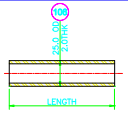


SKELETON ASSEMBLY FOR 'U' TUBE BUNDLE (ELEVATION)



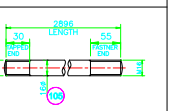
DETAIL OF 'M'

1. WELD FIRST NUT TO SUPPORT PLT.
2. WELD SECOND NUT TO TIE ROD
3. WELD BOTH NUT TOGETHER ALL WELDS TO EXTEND THE LENGTH OF ONE FLAT OF NUT

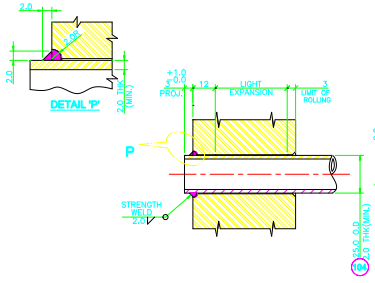


DETAIL OF SPACER TUBES

SPACER TUBES		
MKD	NOS.OFF	LENGTH
S1	08	1334.00
S2	16	730.50



DETAIL OF TIE RODS

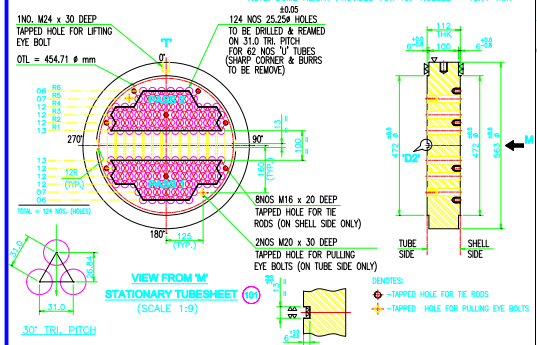


TUBE TO T/S WELD JOINT DETAIL
(AS PER EIL SPEC. : 6-15-0003 FIG. NO. 2)

TUBE HOLE DETAIL IN TUBE SHEET

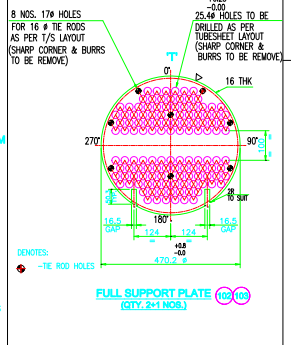
NOTE:
1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.

NOTE: DOME HEIGHT PROVIDED FOR TOP NOZZLE = 40.77 mm

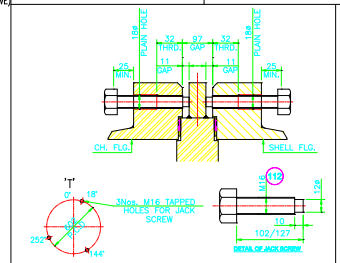


VIEW FROM 'M'
STATIONARY TUBESHEET (101)
(SCALE 1:9)

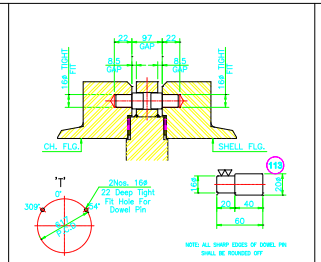
DETAIL 'D2'



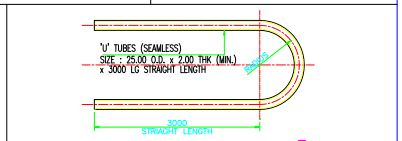
FULL SUPPORT PLATE (102)(103)
(QTY. 2+1 NOS.)



ORIENTATION & ARRANGEMENT OF JACK SCREW FOR SHELL FLG. & CH. FLG.



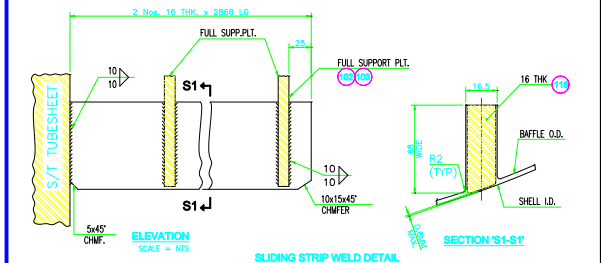
ORIENTATION & ARRANGEMENT OF DOWEL PIN FOR SHELL FLG. & CH. FLG.



'U' TUBES DETAIL (ELEVATION) (104)

ROW NO.	RADIUS (IN mm)	LENGTH (IN mm)	QTY.	REMARKS
R1	50.00	6157.08	13	–
R2	76.85	6241.42	12	–
R3	103.69	6325.76	12	–
R4	130.54	6410.10	12	–
R5	157.39	6494.45	07	–
R6	184.23	6578.79	06	–

TOTAL = 62 NOS. ('U' TUBES)

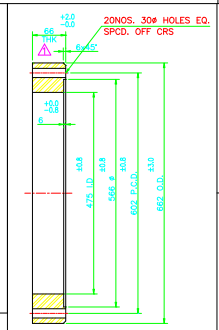


ELEVATION
SCALE = NTS

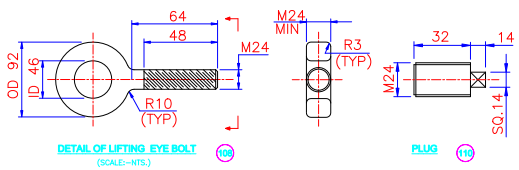
SLIDING STRIP WELD DETAIL

SECTION 'S1-S1'

NOTE : SLIDING STRIP WELDED TO EACH FULL SUPPORT PLATE & ST. TUBESHEET

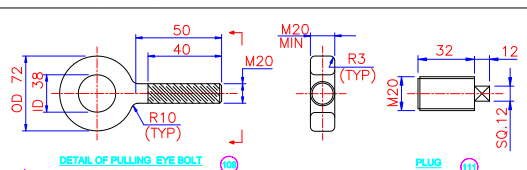


TEST FLANGE DETAIL (110)



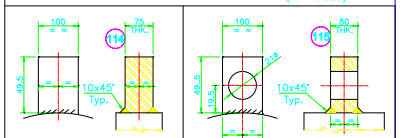
DETAIL OF LIFTING EYE BOLT (109)
(SCALE:-NTS.)

PLUG (110)



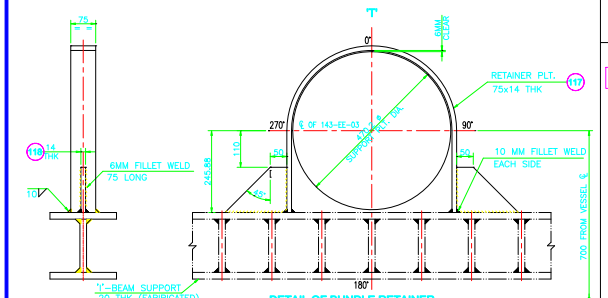
DETAIL OF PULLING EYE BOLT (108)
(SCALE:-NTS.)

PLUG (111)

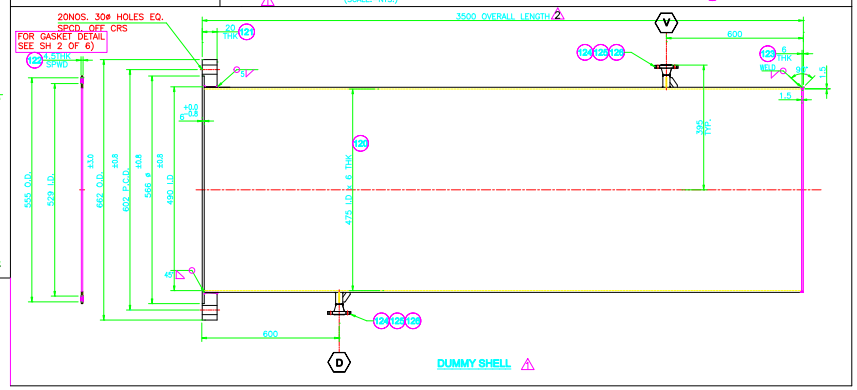


JACK SCREW STOPPER PLT.

DOWEL PIN STOPPER PLT.



DETAIL OF BUNDLE RETAINER



DUMMY SHELL

P.No.	DESCRIPTION	MATERIAL	QTY.	SIZE
126	STIFFNERS	SA 516 GR 70	4	30 WIDE x 6 THK
125	FLANGE	SA 105	2	20 NB, AS PER ASME B 16.5, 300#, WNRF FLG TO SUIT SCH 160
124	NOZZLE V.D	SA 106 GR B	2	15NB x SCH 40 x 95 LG
123	CLOSURE PLATE	IS 2062 GR B	1	487 O.D x 6 THK
122	GASKET	***	1	555 O.D x 529 I.D x 4.5 THK
121	PLATE FLANGE	IS 2062 GR B	1	662 O.D x 490 I.D x 20 THK
120	DUMMY SHELL	IS 2062 GR B	1	1511 OR x 6 THK x 3500 LG
119	TEST FLANGE	SA 2062 GR.B	1	662 O.D x 475 I.D x 66THK
118	STIFFNERS	SA 516 GR 70	2	196 x 136 x 14 THK
117	RETAINER PLATE	SA 516 GR 70	2	1320 OR x 75 x 14 THK
116	SLIDING STRIPS	SA 240 GR 304 L	2	68 WIDE x 2868 LG x 16 THK
115	DOWEL PIN LOCATING PLT.	SA 240 GR 304 L	2	50 x 100 x 80 THK.
114	JACK SCREW STOPPER PLT.	SA 240 GR 304 L	3	50 x 100 x 75 THK.
113	DOWEL PINS	SA 240 GR 304 L	4	22ø SEE DETAIL
112	JACK SCREWS	SA 193 GR B7	3/3	M16 x 102/127 LG.
111	PLUGS FOR PULLING EYE BOLT	SA 182 F 304 L	2	M20 SEE DETAIL
110	PLUGS FOR LIFTING EYE BOLT	SA 182 F 304 L	1	M24 SEE DETAIL
109	EYE BOLTS FOR T/S & PULLING	SA 182 F 304 L	2	M20 SEE DETAIL
108	EYE BOLTS FOR T/S & LIFTING	SA 182 F 304 L	1	M24 SEE DETAIL
107	SPACER TUBES	SA 213 TP 304 L	16	25.0 O.D. x 2.00 THK(MIN.)
106	NUT + LOCK NUT	SS 304 L	8/2	M16 STD.
105	TIE RODS	SA 479 TP 304 L	8	16ø x 2896 LG. SEE DETAIL
104	'U' TUBES (SEAMLESS)	SA 213 TP 304 L	62	25.0 O.D. x 2.00 THK(MIN.) x 3000 STLG.
103	FULL SUPPORT PLATE	SA 240 GR 304 L	1	470.2 ø x 16 THK. SEE DETAIL
102	FULL SUPPORT PLATE (#1&#2)	SA 240 GR 304 L	2	470.2 ø x 16 THK. SEE DETAIL
101	STATIONARY TUBE SHEET	SA 965 F 304 L	1	563 ø x 112 THK.

BILL OF MATERIAL (ITEM NO.143-EE-03)

REV.	DESCRIPTION	DATE	DRN.	CHECKED	APPROVED
2	FINAL AS BUILT DRG.	30/08/12	RA.J.	NK	BCN
1	REVISED AS PER EIL COMMNETS	19.07.11	NGP	NK	SR
0	SUBMITTED FOR APPROVAL	07.05.11	NGP	NK	SR

AS BUILT DRG.

OWNER:
BRAHMAPUTRA PETROCHEMICAL COMPLEX
LEPETKATA, (ASSAM)

ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)

Meenakshi Associates (P) Ltd.
C – 83, SECTOR – 30, NOIDA – 201301, U.P.

MEENAKSHI ASSO. REFERENCE DRAWINGS :

01. GA FOR COLD BLOW DOWN CUM METHANOL VAPOSIZER (143-EE-03 & 04)	MAPL-C-2132/33 SH-1
02. SHELL PART DETAIL FOR COLD BLOW DOWN CUM METHANOL VAPOSIZER (143-EE-03 & 04)	MAPL-C-2132/33 SH-2
03. 'U' TUBE BUNDLE DETAILS FOR BLOW DOWN CUM METHANOL VAPOSIZER (143-EE-03)	MAPL-C-2132/33 SH-3
04. 'U' TUBE BUNDLE DETAILS FOR BLOW DOWN CUM METHANOL VAPOSIZER (143-EE-04)	MAPL-C-2132/33 SH-4
05. NOZZLES & SADDLE DETAILS FOR COLD BLOW DOWN CUM METHANOL VAPOSIZER (143-EE-03 & 04)	MAPL-C-2132/33 SH-5
06. 'I' BEAM SUPPORT DETAILS FOR COLD BLOW DOWN CUM METHANOL VAPOSIZER (143-EE-03 & 04)	MAPL-C-2132/33 SH-6

DATE 07.05.11	SCALE 1:18	TITLE 'U' TUBE BUNDLE DETAIL FOR COLD BLOW DOWN CUM METHANOL VAPORISER ITEM No.: (143-EE-03)	
DEPT.			
DRN. BY NGP		PROJECT: BPCL LEPETKATA, ASSAM PLANT : OFFSITE	REF. DWG. NO. 6907-143-EE-PR-0603 & 2304 REV. 0 (SH.3)
CHK. BY NK		DRG. NO. MAPL-C-2132/33-03	SHT. 3/6
APP. BY SR		FWD NO.:	REV. 2

PR No.- 6907-143-EE-PR-6620/0431 REV.0 DT. 11/04/2011