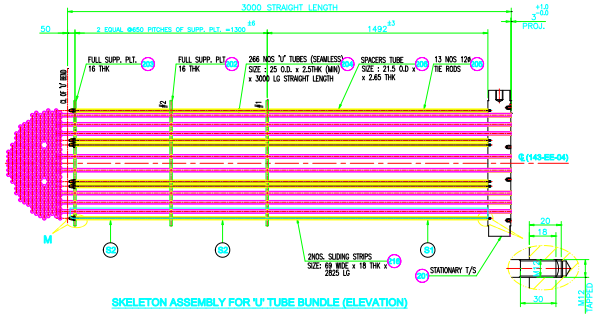
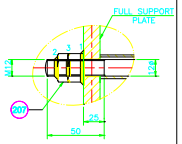
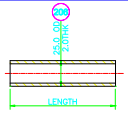



SKELETON ASSEMBLY FOR 'U' TUBE BUNDLE (ELEVATION)



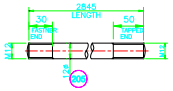

DETAIL OF 'M'

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

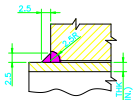


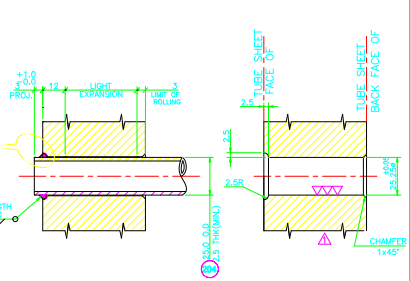

| SPACER TUBES | | |
|---|---|---|
| MRO | NO.OFT | LENGTH |
| S1 | 13 | 1484.00 |
| S2 | 26 | 634.00 |

DETAIL OF SPACER TUBES




DETAIL OF TIE RODS

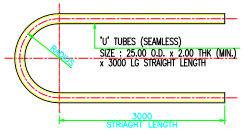



TUBE TO T/S WELD JOINT DETAIL
(AS PER EIL SPEC. : 6-15-0003 FIG. NO. 2)




TUBE HOLE DETAIL IN TUBE SHEET

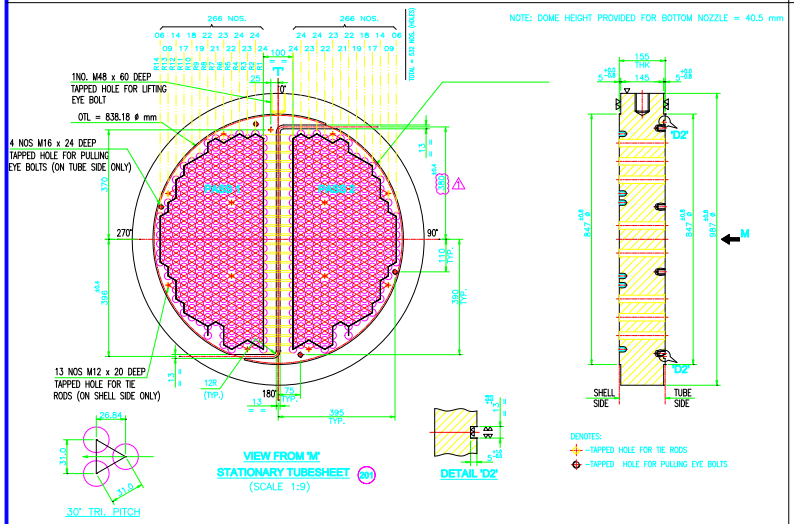



'U' TUBES DETAIL (PLAN) 204

| ROW NO. | RADIUS (IN mm) | LENGTH (IN mm) | QTY. | REMARKS |
|---|---|---|---|---|
| R1 | 50.00 | 6157.08 | 24 | – |
| R2 | 76.85 | 6241.42 | 24 | – |
| R3 | 103.69 | 6325.76 | 23 | – |
| R4 | 130.54 | 6410.10 | 24 | – |
| R5 | 157.39 | 6494.45 | 22 | – |
| R6 | 184.23 | 6578.79 | 23 | – |
| R7 | 211.08 | 6663.13 | 21 | – |
| R8 | 237.93 | 6747.47 | 22 | – |
| R9 | 264.77 | 6831.81 | 19 | – |
| R10 | 291.62 | 6916.15 | 18 | – |
| R11 | 318.47 | 7000.50 | 17 | – |
| R12 | 345.31 | 7084.84 | 14 | – |
| R13 | 372.16 | 7169.18 | 09 | – |
| R14 | 399.01 | 7253.52 | 06 | – |

⚠ TOTAL = 266 NOS. ('U' TUBES)

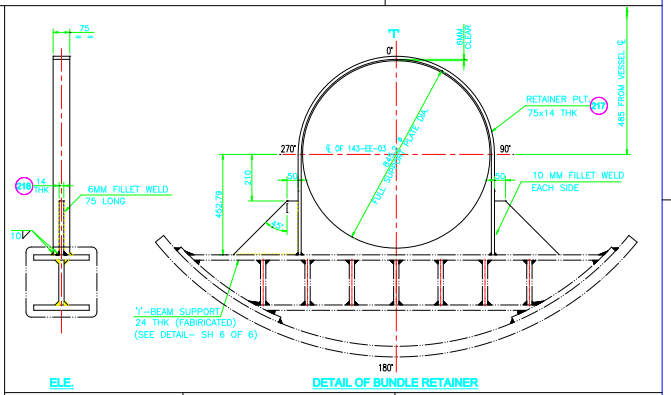
NOTE:
1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.




VIEW FROM 'M' STATIONARY TUBESHEET 201
(SCALE 1:9)

DETAIL 'D2'

DENOTES:
-TAPPED HOLE FOR TIE RODS
-TAPPED HOLE FOR PULLING EYE BOLTS

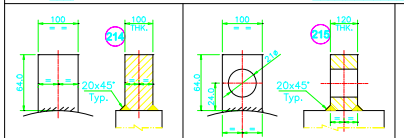



FULL SUPPORT PLATE 202 203
(QTY. 2+1 NOS.)




ELE.

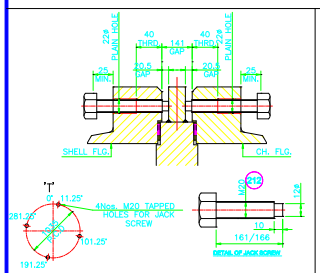
DETAIL OF BUNDLE RETAINER



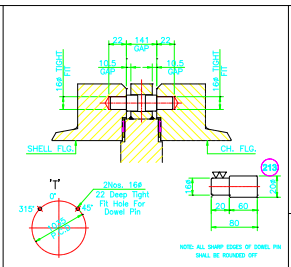

JACK SCREW STOPPER PLT.



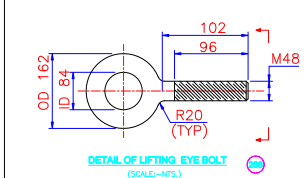

DOWEL PIN STOPPER PLT.




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

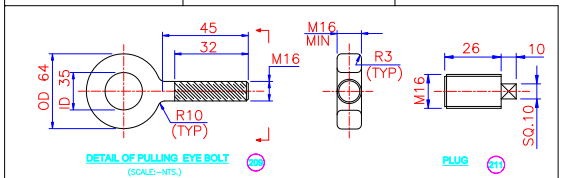



ORIENTATION & ARRANGEMENT OF DOWEL PIN FOR SHELL FLG. & CH. FLG.



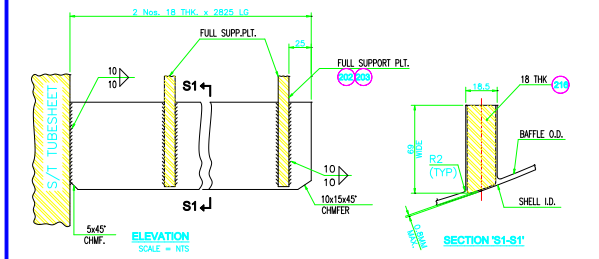

DETAIL OF LIFTING EYE BOLT 208
(SCALE:-NTS.)

PLUG 210




DETAIL OF PULLING EYE BOLT 209
(SCALE:-NTS.)

PLUG 211

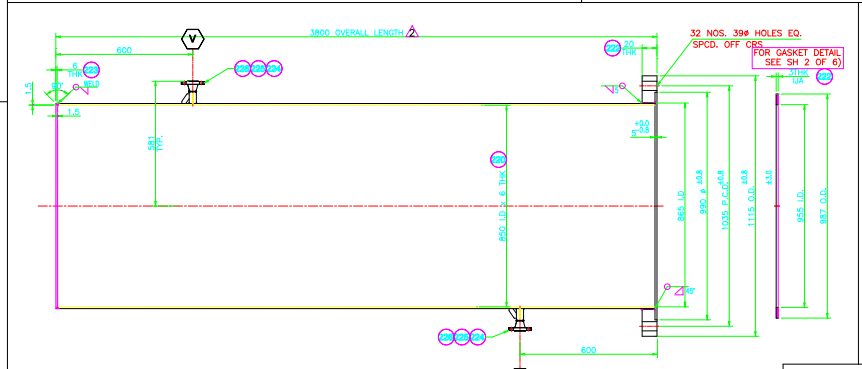



ELEVATION
SCALE = NTS

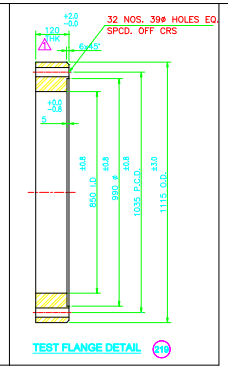
SECTION 'S1-S1'

SLIDING STRIP WELD DETAIL

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




⚠ DUMMY SHELL




TEST FLANGE DETAIL 218

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 |

AS BUILT DRG.

| P.No. | DESCRIPTION | MATERIAL | QTY. | SIZE |
|---|---|---|---|---|
| 226 | STIFFNERS | SA 516 GR 70 | 4 | 30 WIDE x 6 THK |
| 225 | FLANGE | SA 105 | 2 | 20 NB, AS PER ASME B 16.5, 300#, WNRF FLG TO SUIT SCH 160 |
| 224 | NOZZLE V.D | SA 106 GR B | 2 | 15NB x SCH 40 x 100 LG |
| 223 | CLOSURE PLATE | IS 2062 GR B | 1 | 862 O.D x 6 THK |
| 222 | GASKET | IJA | 1 | 987 O.D x 950 I.D x 3 THK |
| 221 | PLATE FLANGE | IS 2062 GR B | 1 | 1115 O.D x 865 I.D x 20 THK |
| 220 | DUMMY SHELL | IS 2062 GR B | 1 | 2689 CR x 6 THK x 3800 LG |
| 219 | TEST FLANGE | IS 2062 GR.B | 1 | 1115 O.D x 850 I.D x 120THK |
| 218 | STIFFNERS | SA 516 GR 70 | 2 | 243 x 293 x 14 THK |
| 217 | RETAINER PLATE | SA 516 GR 70 | 2 | 2274 CR x 75 x 14 THK |
| 216 | SLIDING STRIPS | SA 516 GR 70 | 2 | 69 WIDE x 2825 LG x 18 THK |
| 215 | DOWEL PIN LOCATING PLT. | SA 516 GR 70 | 2 | 64 x 100 x 120 THK. |
| 214 | JACK SCREW STOPPER PLT. | SA 516 GR 70 | 4 | 64 x 100 x 100 THK. |
| 213 | DOWEL PINS | SA 516 GR 70 | 4 | 209 SEE DETAIL |
| 212 | JACK SCREWS | SA 193 CR. B7 | 4/4 | M20 x 161 LG./ 166 LG. |
| 211 | PLUGS FOR PULLING EYE BOLT | SA 105 | 4 | M16 SEE DETAIL |
| 210 | PLUGS FOR LIFTING EYE BOLT | SA 105 | 1 | M48 SEE DETAIL |
| 209 | EYE BOLTS FOR T/S & PULLING | SA 105 | 4 | M16 SEE DETAIL |
| 208 | EYE BOLTS FOR T/S & LIFTING | SA 105 | 1 | M48 SEE DETAIL |
| 207 | SPACER TUBES | IS 1239 GR C | 26 | 21.5 O.D. x 2.65 THK |
| 206 | NUT + LOCK NUT | SS 304 L | 13 SET | M12 STD. |
| 205 | TIE RODS | IS 2062 GR C | 13 | 12ø x 2845 LG. SEE DETAIL |
| 204 | 'U' TUBES (SEAMLESS) | SA 179 | 266 | 25.0 O.D x 2.5 THK(MIN.) x 3000 STLG. |
| 203 | FULL SUPPORT PLATE | SA 516 GR 70 | 1 | 845.2 ø x 16 THK. SEE DETAIL |
| 202 | FULL SUPPORT PLATE (#1&#2) | SA 516 GR 70 | 2 | 845.2 ø x 16 THK. SEE DETAIL |
| 201 | STATIONARY TUBE SHEET | SA 266 GR. 4 | 1 | 987 ø x 155 THK. |

BILL OF MATERIAL (ITEM NO.143-EE-04)

| REV. | DESCRIPTION | DATE | DRN. | CHECKED | APPROVED |
|---|---|---|---|---|---|
| 3 | FINAL AS BUILT DRG. | 30/08/12 | RAJ. | NK | BCN |
| 2 | REVISED AS PER EIL COMMNETS | 20/11/11 | NGP | NK | SR |
| 1 | REVISED AS PER EIL COMMNETS | 19.07.11 | NGP | NK | SR |
| 0 | SUBMITTED FOR APPROVAL | 07.05.11 | NGP | NK | SR |

OWNER:
BRAHMAPUTRA PETROCHEMICAL COMPLEX
LEPETKATA, (ASSAM)

इंजीनियर्स इंडिया लिमिटेड (भारत सरकार का उपक्रम)
ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)

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

| | | | |
|---|---|---|---|
| DATE 07.05.11 | SCALE 1:18 | TITLE 'U' TUBE BUNDLE DETAIL FOR COLD BLOW DOWN CUM METHANOL VAPORISER ITEM No.: (143-EE-04) | |
| DEPT. | | | |
| DRN. BY | NGP | PROJECT: BPCL LEPETKATA, ASSAM PLANT : OFFSITE | REF. DWG. NO. 6907-143-EE-46-IC-3003 & 3004 REV. 0 (SH.3) |
| CHK. BY | NK | DRG. NO. MAPL-C-2132/33-04 | SHT. 4/6 |
| APP. BY | SR | FWD NO.: | REV. 3 |

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