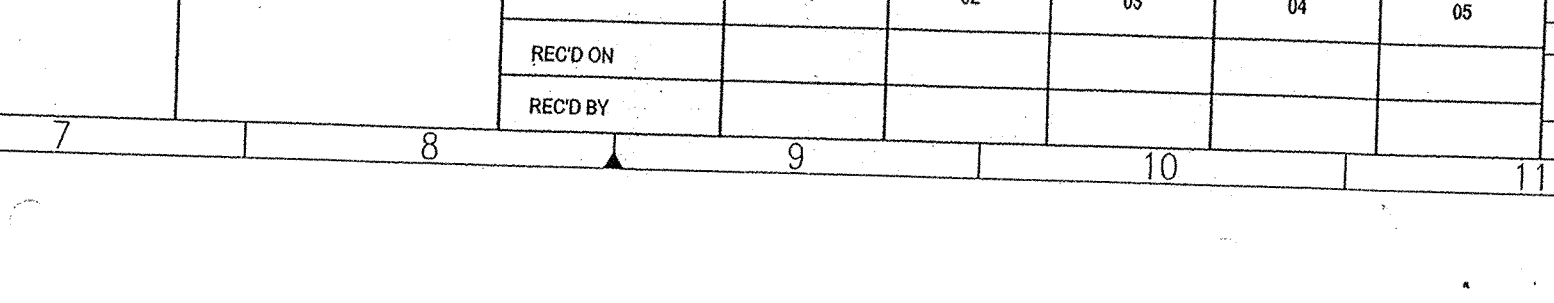
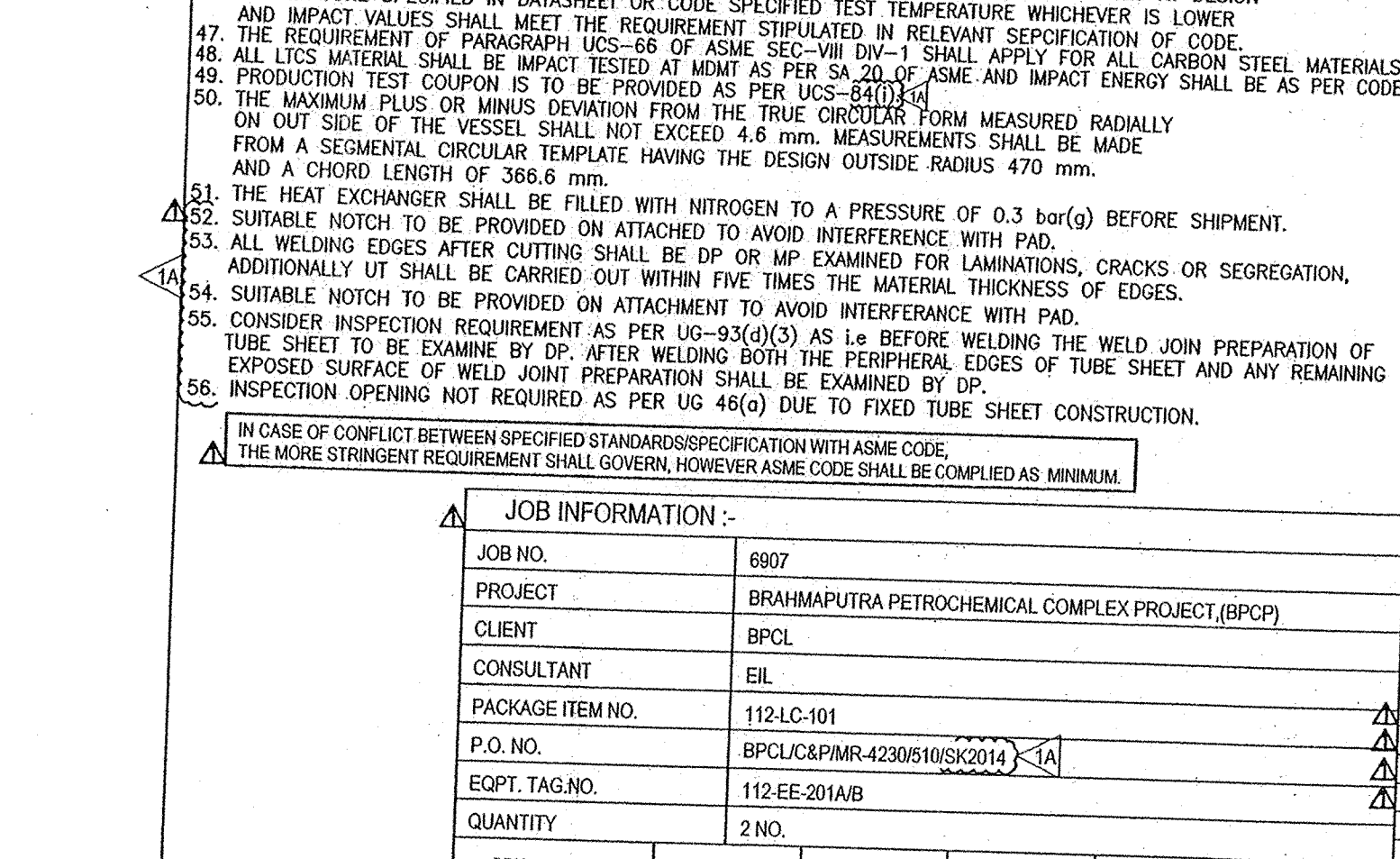
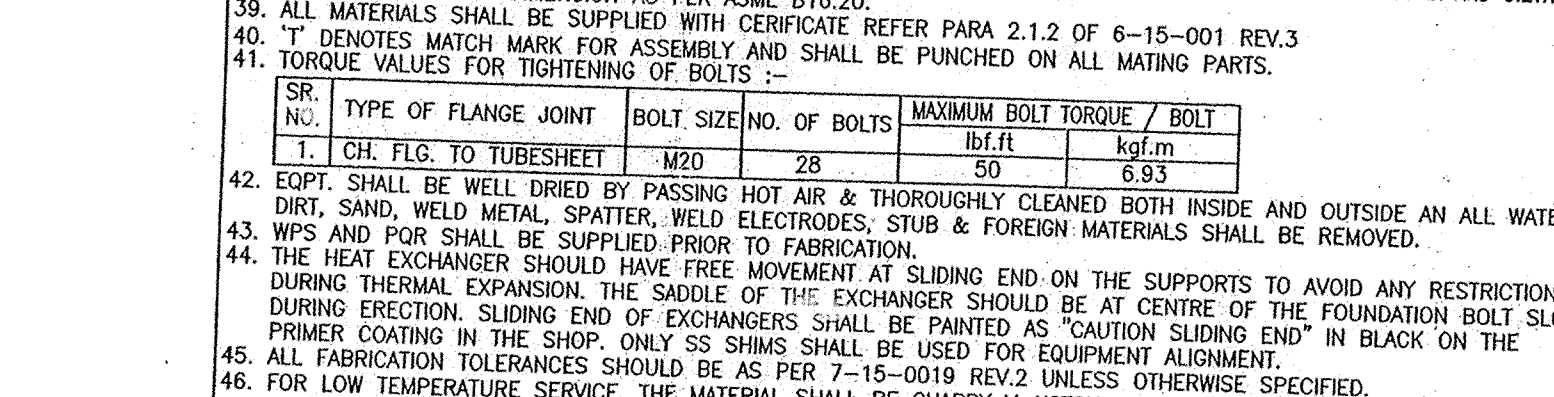
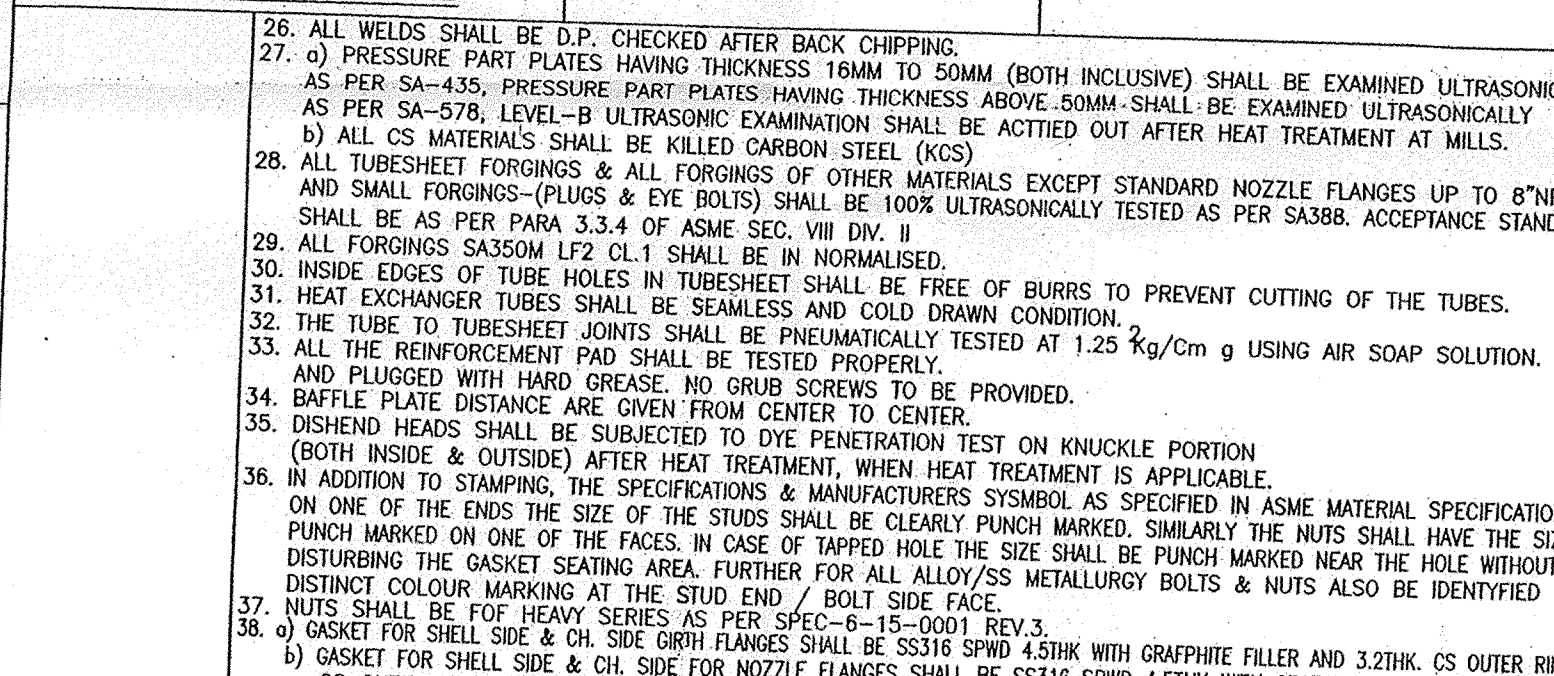
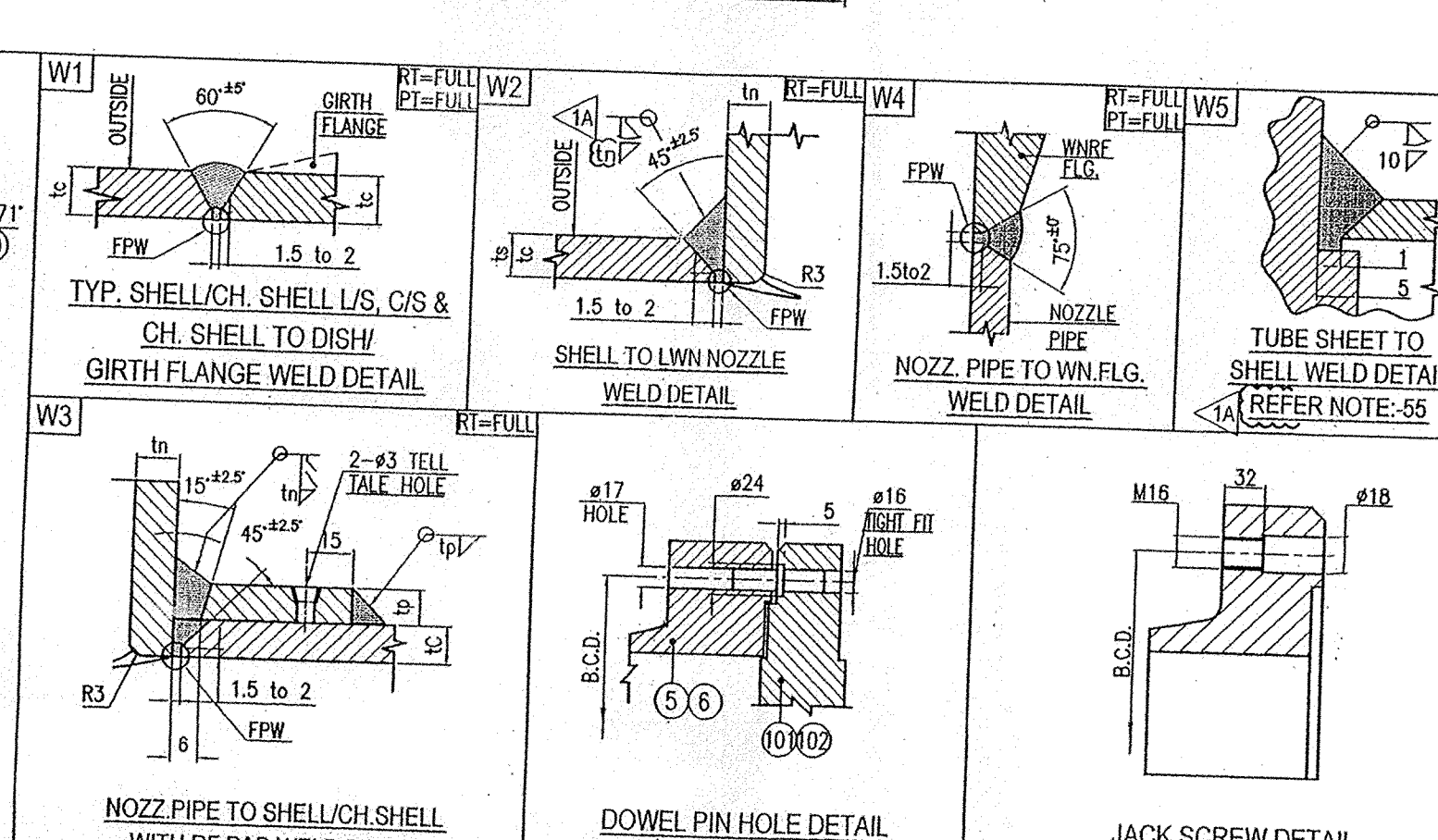
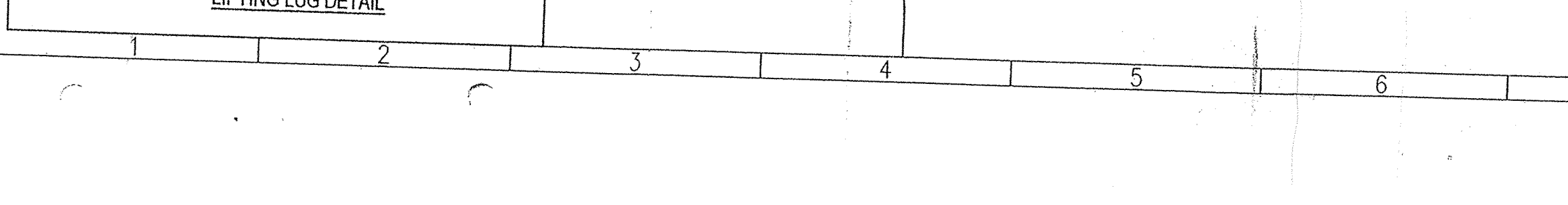
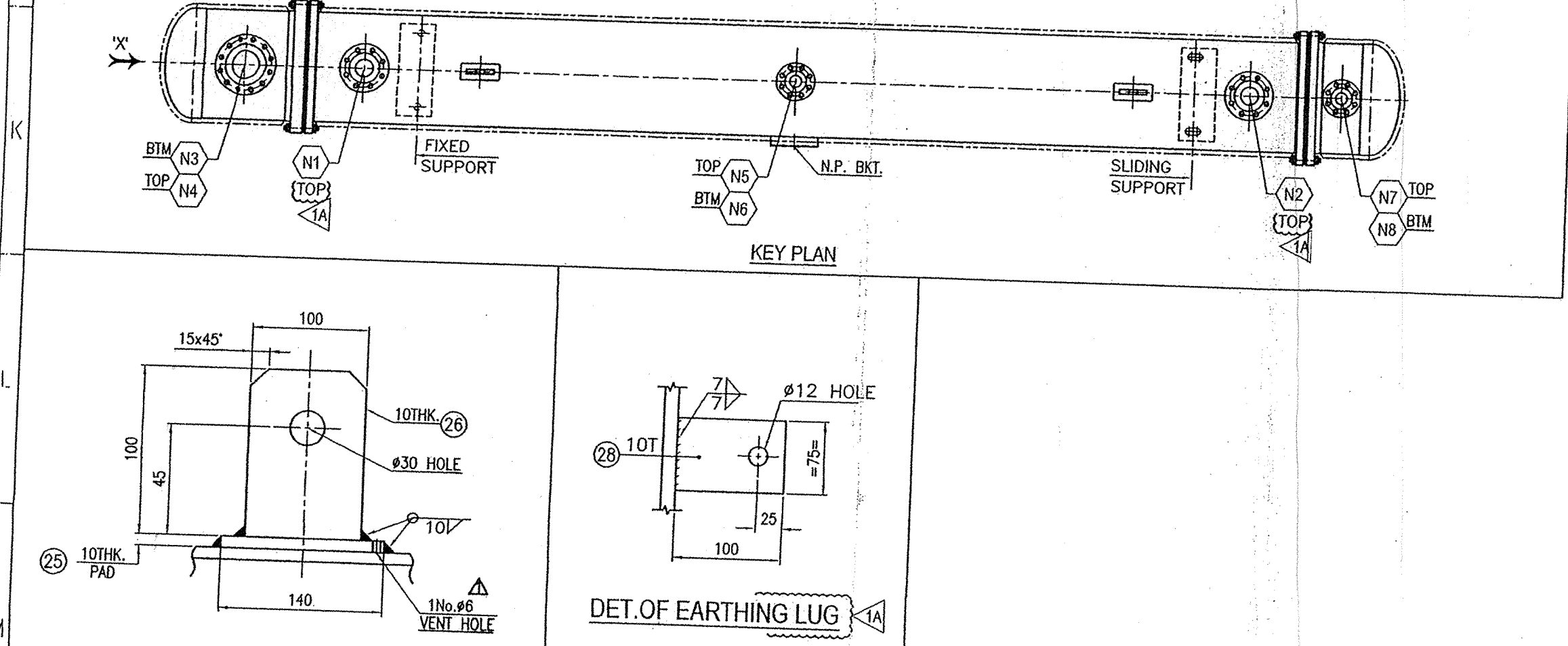
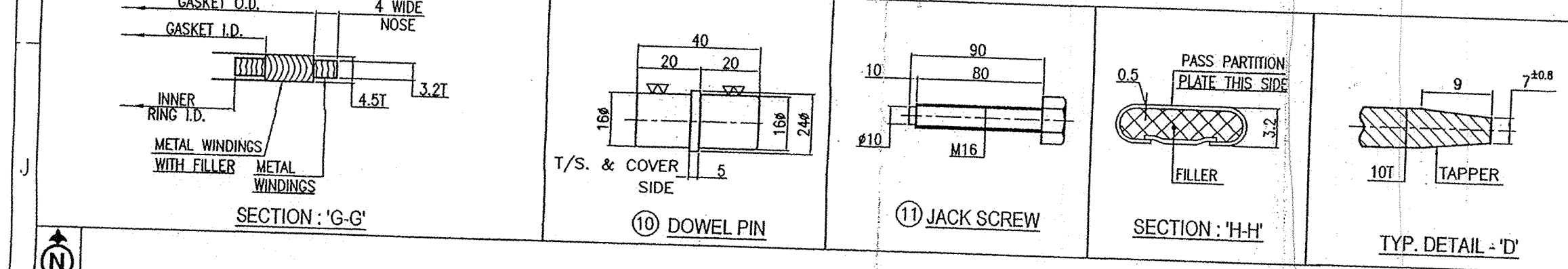
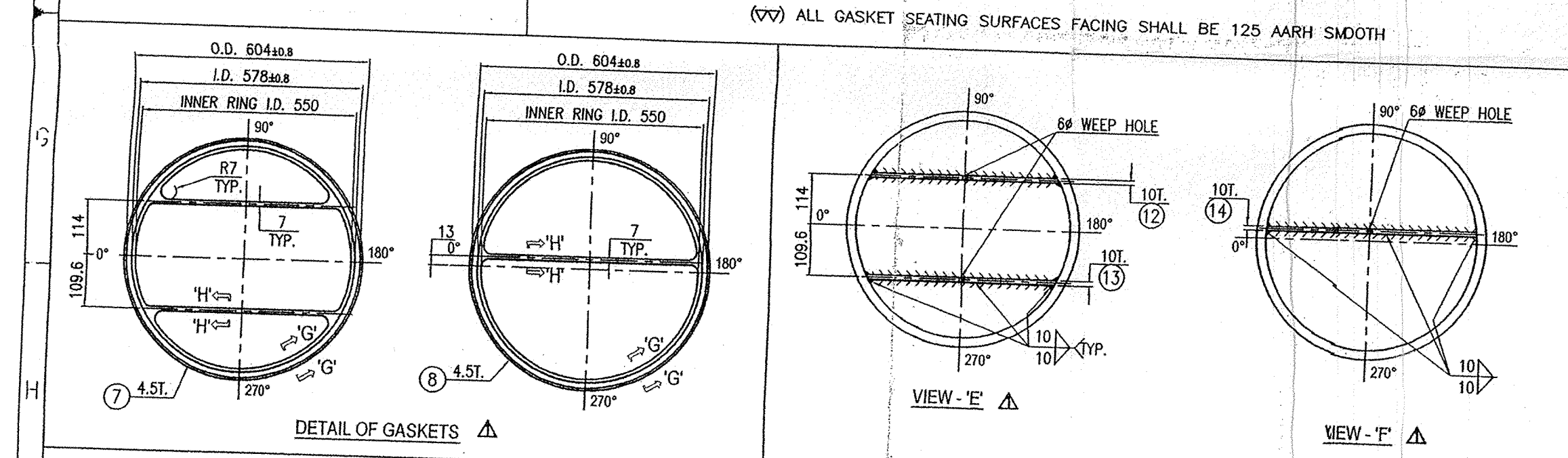
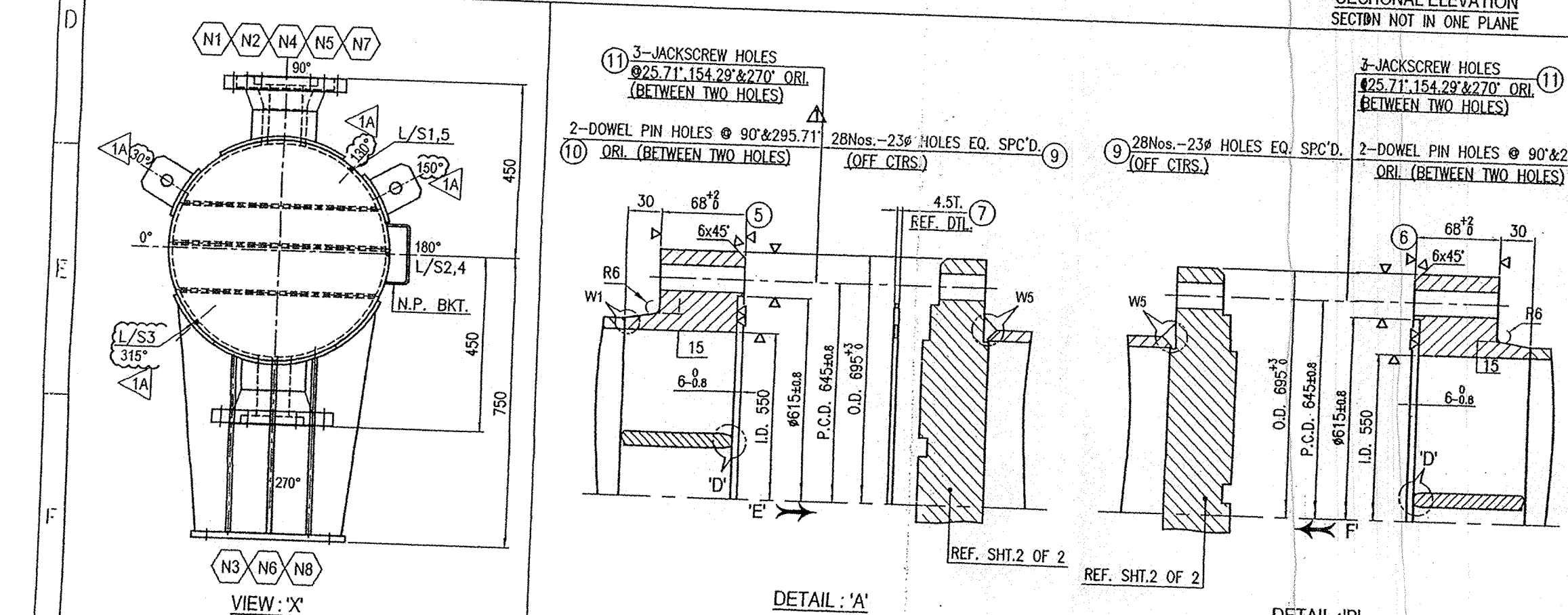
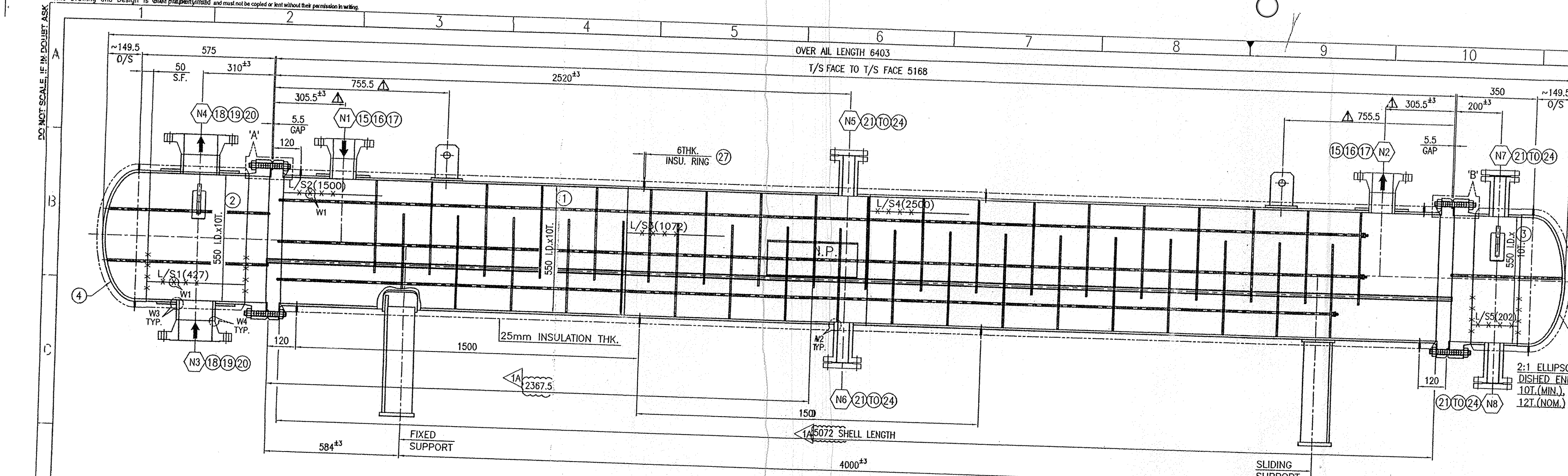
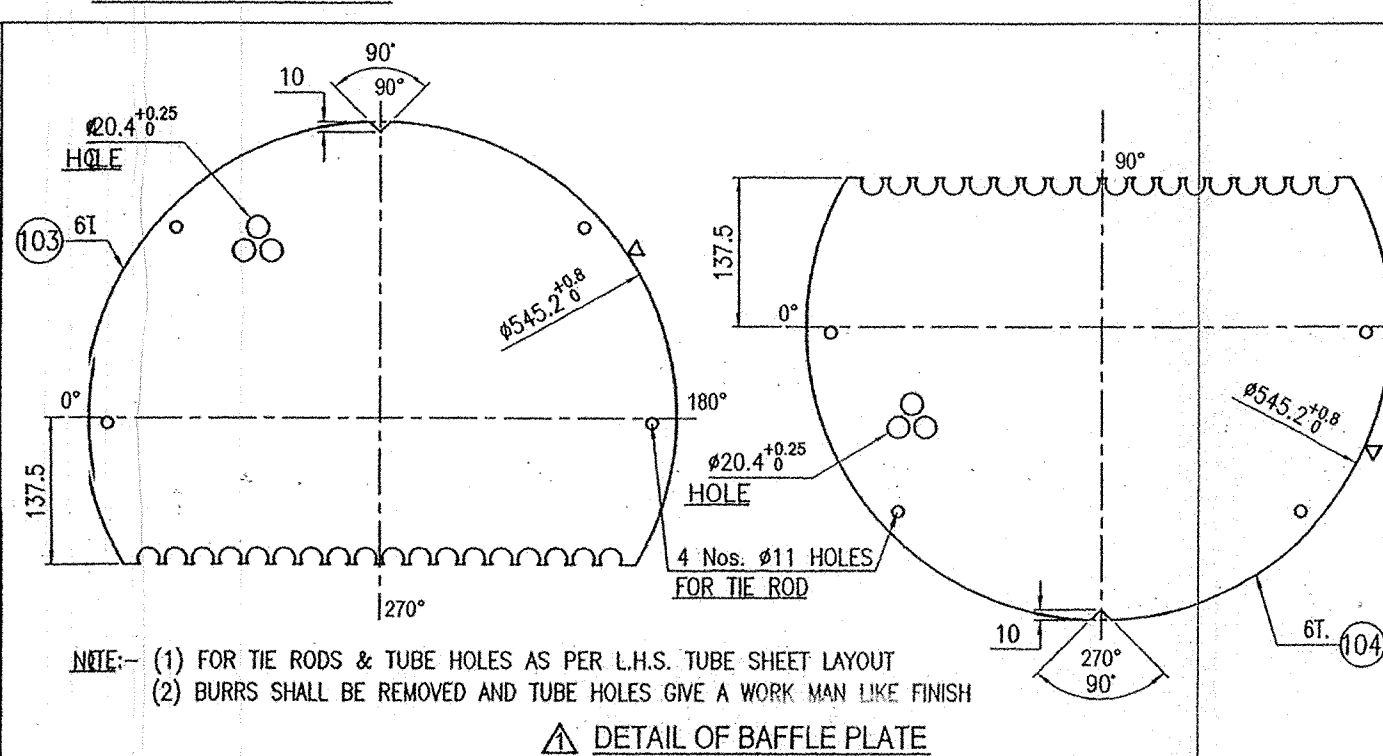
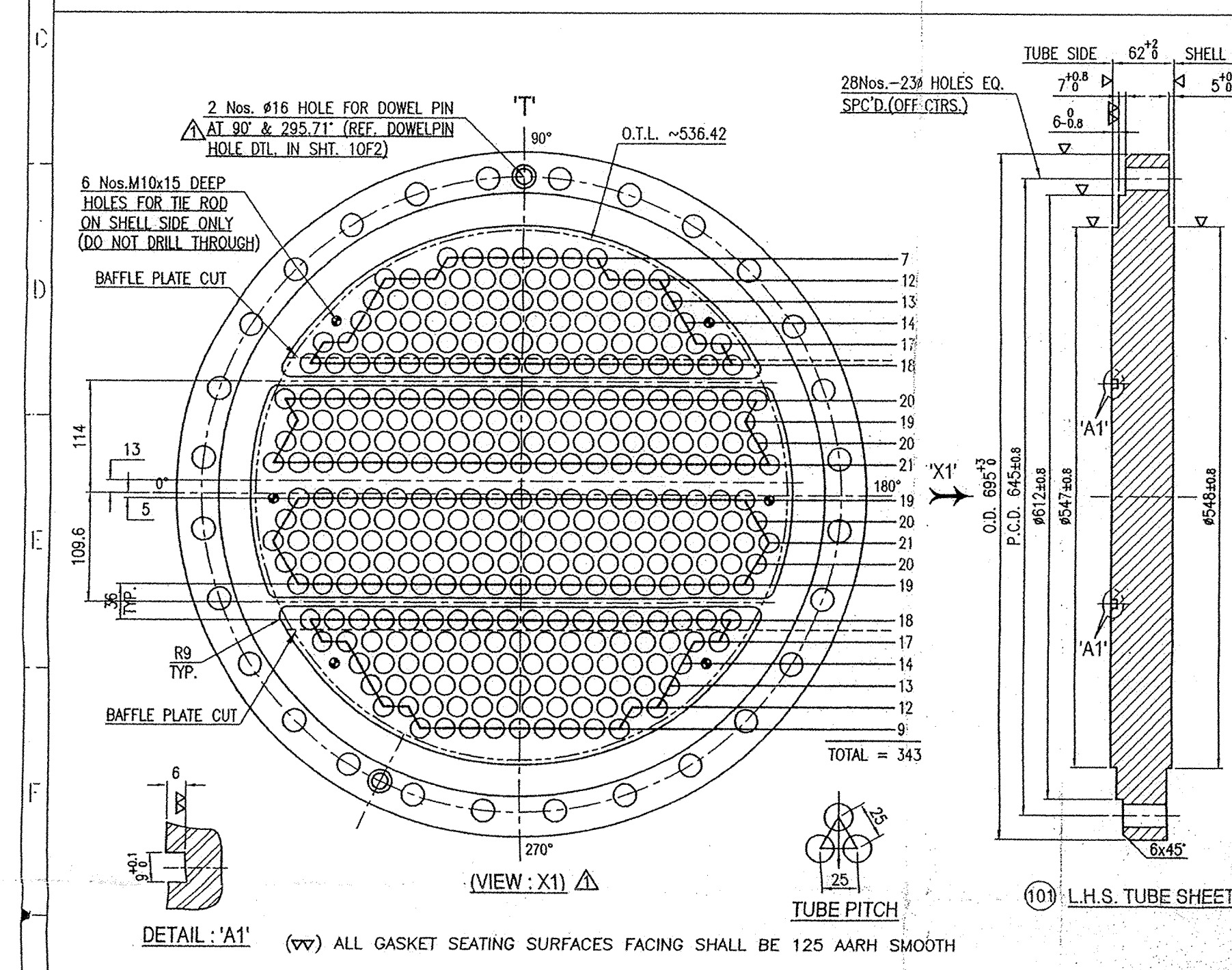
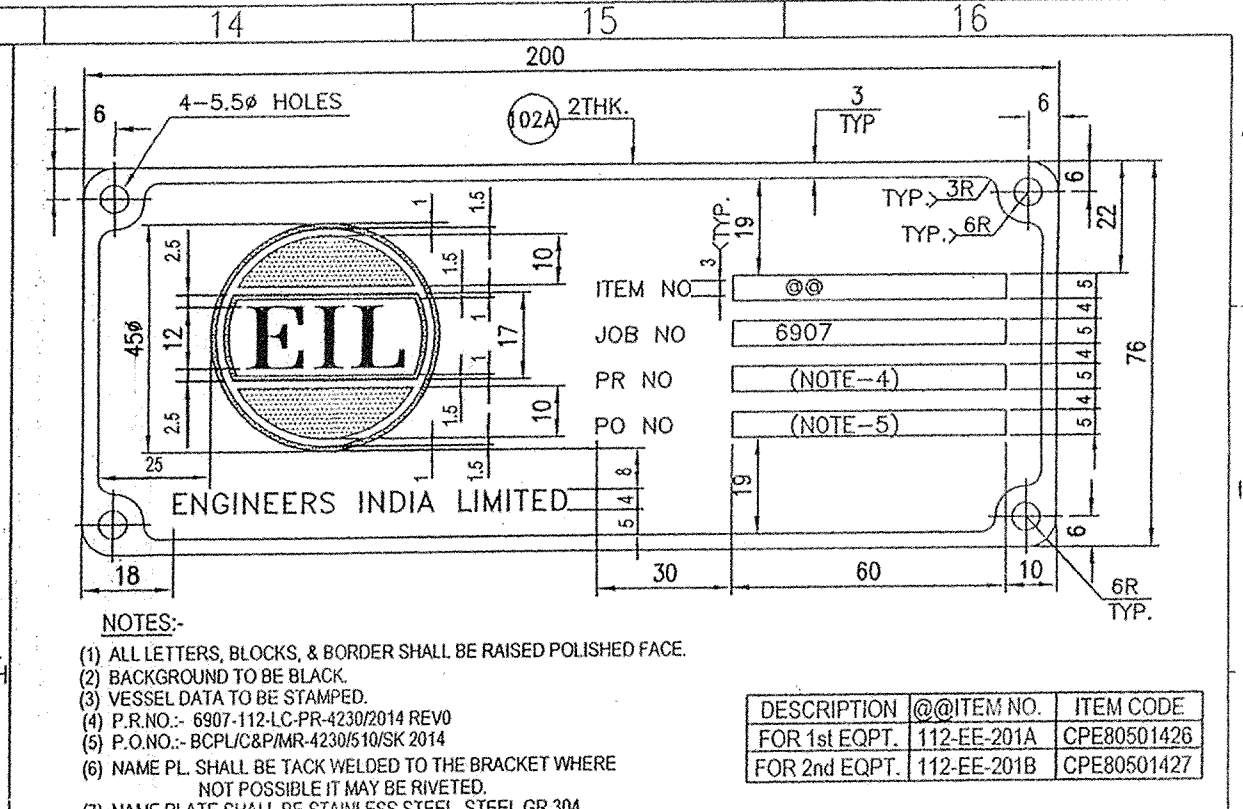
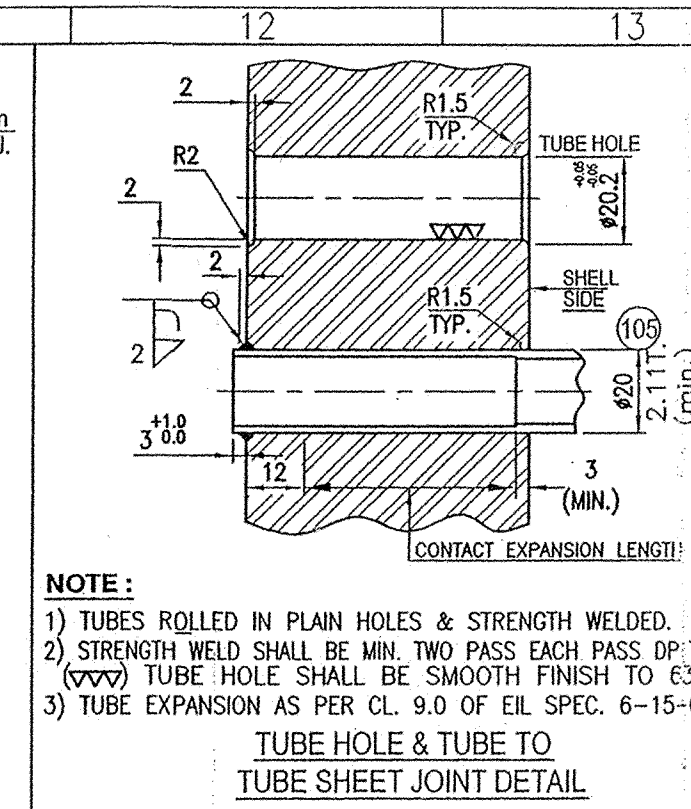
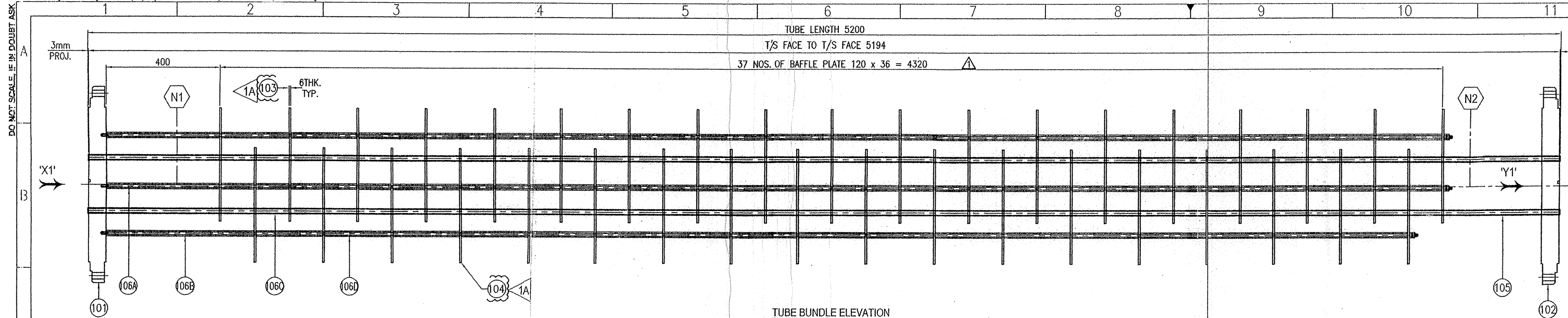


**GENERAL ASSEMBLY & DETAILS
FOR
OIL COOLER**



MATERIAL OF CONSTRUCTION		DESIGN DATA	
1	ALL MATERIAL SHALL CONFORM TO ASME SECTION II PART-A, ED-2007, ADD-2009 IN ADDITION TO THIS, MATERIAL SHALL CONFORM TO FOLLOWING REQUIREMENTS	1	CONSTRUCTION CODE :- ASME SEC. VIII DIV-1 EDITION 2007+ADD 2009
2	MAIN SHELL, CH. SHELL, DISH END, PAD FOR SADDLE, N.P. BKT., R-PAD, Baffles, PARTITION PLATE.	2	TEMP. TYPE :- TEMPERATURE CLASS R (2007)
3	CH. SHELL GIRTH FLANGE, TUBE SHEET, CH. SHELL COVER	3	CODE STAMP :- ASME U-STAMP
4	NOZZLE PIPE (SHELL & CH. SIDE)	4	PROCESS FLUID :- SHELL SIDE LUBE OIL
5	NOZZLE FLANGES (SHELL & CH. SIDE)	5	DESIGN PRESSURE :- 2452(25F.V)
6	GASKETS (GIRTH FLG.)	6	MAX ALLOWABLE WORKING PRESSURE :- 2452(25F.V)
7	STUD/NUTS (HEAVY)	7	M.A.E.W.P. :- 100(1.055)
8	TUBES	8	DESIGN TEMPERATURE (MAX.) :- 110
9	SPACERS	9	OPERATING PRESSURE (MAX.) :- 2215.5(22.59)
10	TIE RODS/NUTS	10	OPERATING TEMPERATURE (INOUT) :- 441.3(4.5)
11	JACK SCREW	11	PRESSURE DROP (ACTUAL/ALLOWED) :- 0.71/2
12	SADDLE SUPPORT	12	MEAN METAL TEMPERATURE :- 45
APPLICABLE CODES, STANDARDS :-		13	MOET :- 45
ASME Sec. - II PART-A 2007, AD-2009		14	RADIOGRAPHY :- 100%
ASME Sec. - II PART-B 2007, AD-2009		15	JOINT EFFICIENCY (SHELL/END) :- 100%
ASME B 16.5 - 2003		16	CORROSION ALLOWANCE :- 3.0
ASME Sec. - V, 2009		17	PNEUMATIC TEST PRESSURE :- 2746(28)
ASME B 16.9 - 2003		18	HYDRO TEST PRESSURE (HORI.) :- 2550(26)
ASME B 36.10M 2004		19	TEST TEMPERATURE (MIN/MAX) :- 1748
ASME B 1.5 - 2007		20	POST WELD HEAT TREATMENT :- NIL
ASME Sec. - V, 2009		21	POST FORMING HEAT TREATMENT :- YES (NOTE-22)
ASME B 1.5 - 2007		22	IMPACT TESTING REQUIRED :- YES (NOTE-48)
ASME Sec. - V, 2009		23	THERMAL INSULATION (MINERAL WOOL) :- 25
ASME B 1.5 - 2007		24	SURFACE AREA PER UNIT (GROSS/EFFECTIVE) :- 112.07/110.31
ASME Sec. - V, 2009		25	HEAT DUTY :- 790280
ASME B 1.5 - 2007		26	INSPECTION BY :- AI (L.R. INSURANCE INC)
ASME Sec. - V, 2009		27	CAPACITY WORKING (ACTUAL) :- 0.715
ASME B 1.5 - 2007		28	NO. OF PASSES :- ONE
ASME Sec. - V, 2009		29	FOULING RESISTANCE :- 0.000200
ASME B 1.5 - 2007		30	PAINTING & CLEANING :- REFER NOTE - 16
ASME Sec. - V, 2009		31	EMPTY WEIGHT :- 3455
ASME B 1.5 - 2007		32	TEST WEIGHT :- 4710
ASME Sec. - V, 2009		33	OPERATING WEIGHT :- 3913
ASME B 1.5 - 2007		34	WIND SPEED :- IS 875, PART III, BASIC WIND SPEED 50M/S
ASME Sec. - V, 2009		35	SEISMIC :- IS 1893, ZONE-V
ASME B 1.5 - 2007		36	SHIPTIC :- YES (NOTE-49)

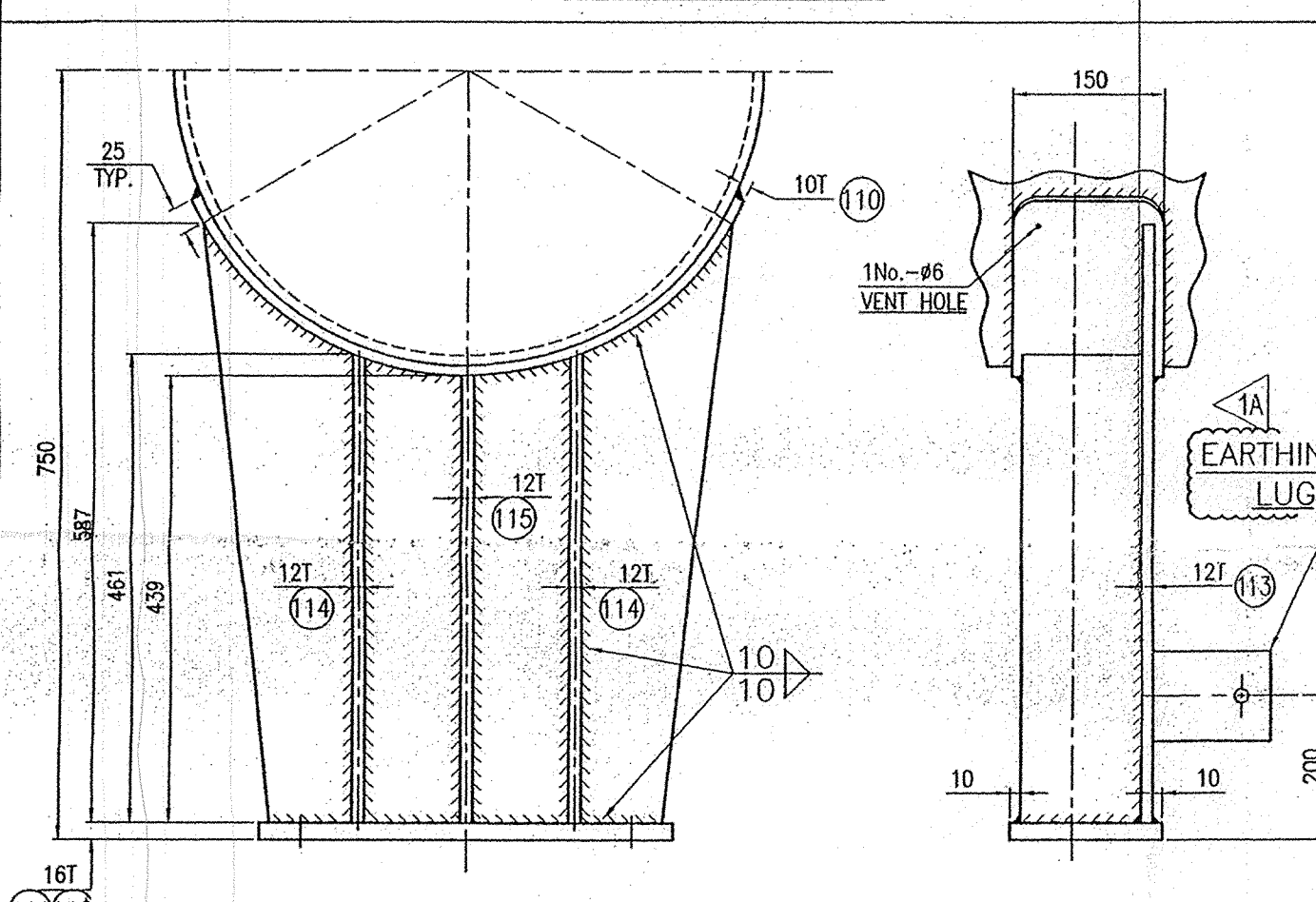
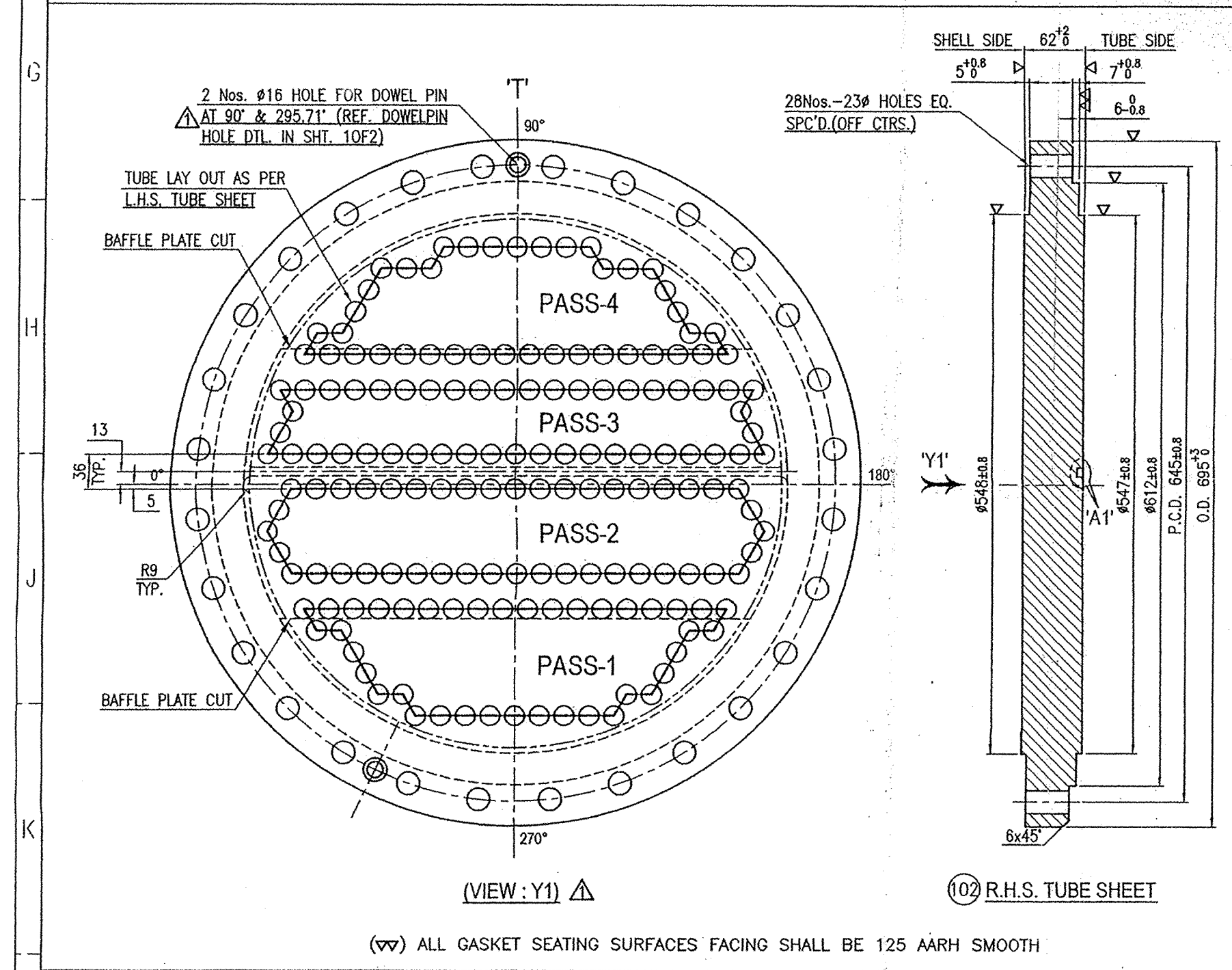
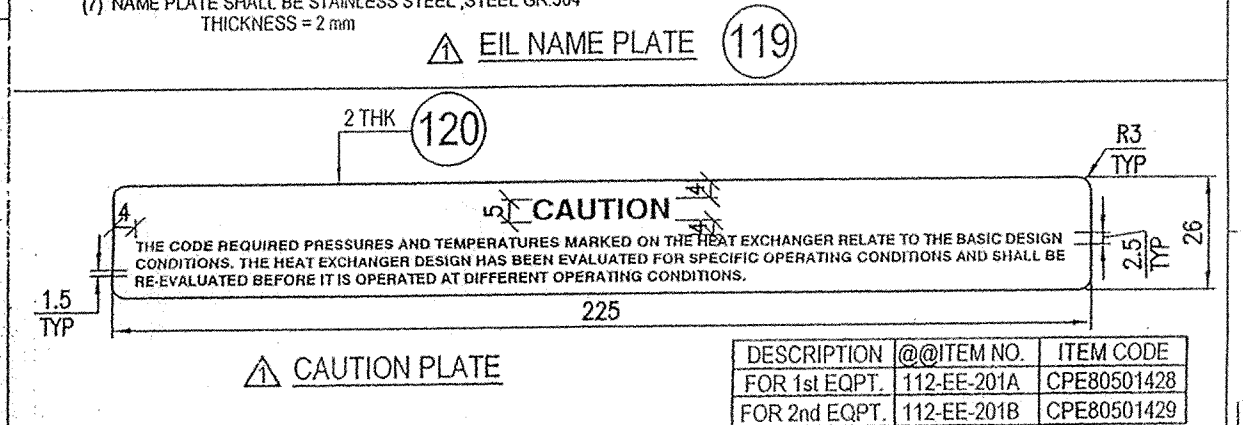
APPLICABLE DRAWINGS		FOUNDATION LOADING	
1	0300232-15-01 : TUBE BUNDLE, SADDLE & SADDLE SUPPORT DETAIL FOR OIL COOLER	1	WIND OPERATING
2	0300232-15-SP01 : SPARE LIST	2	OPERATING
3	FR-001-002-0300232(TDC)	3	SEISMIC
4	0300232-15-SP-01 : DISH END FORMING DETAIL	4	OPERATING
APPLICABLE FILE SPECIFICATION		5	WIND OPERATING
1	7-15-0001	6	SEISMIC
2	7-15-0002	7	OPERATING
3	7-15-0003	8	SEISMIC
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5	7-15-0005	10	SEISMIC
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221	7-15-0221	226	SEISMIC
222	7-15-0222	227	OPERATING
223	7-15-0223	228	SEISMIC
224	7-15-0224	229	OPERATING



KIRLOSKAR PNEUMATIC CO. LTD.

DESIGNED BY: MANUFACTURED FOR: KIRLOSKAR PNEUMATIC CO. LTD.
ITEM NO.: BRAHMAPUTRA CRACKER AND POLYMER LTD.
MANUFACTURER'S SERIAL NO.:
CODES: ASME SEC. VIII DIV.1 ED.2007, ADD-2009 & TEMA CLASS 'R' (2007)
INSPECTED BY: AI (L.R. INSURANCE INC.)

DESIGN PRESSURE	25/F.V.	19.25/F.V.	kg/cm2g
DESIGN TEMPERATURE	110	65	°C
TEST PRESSURE	28 (PNEU.)	26 (HYD.)	kg/cm2g
DATE OF TEST	*	*	
OPERATING FLUID	LUBE OIL	WATER	
CORROSION ALLOWANCE	3.0	3.0	mm
RADIOGRAPHY	100%	100%	
HEAT TREATMENT	NIL	DISH S.R.	
DUTY / SURFACE	790280	Kcal/hr	112.07/110.31 (Gross/Eff)
WEIGHT FULL OF WATER	~4710		kg
TOTAL WEIGHT EMPTY	~3435		kg
BUNDLE WEIGHT	~2031		kg



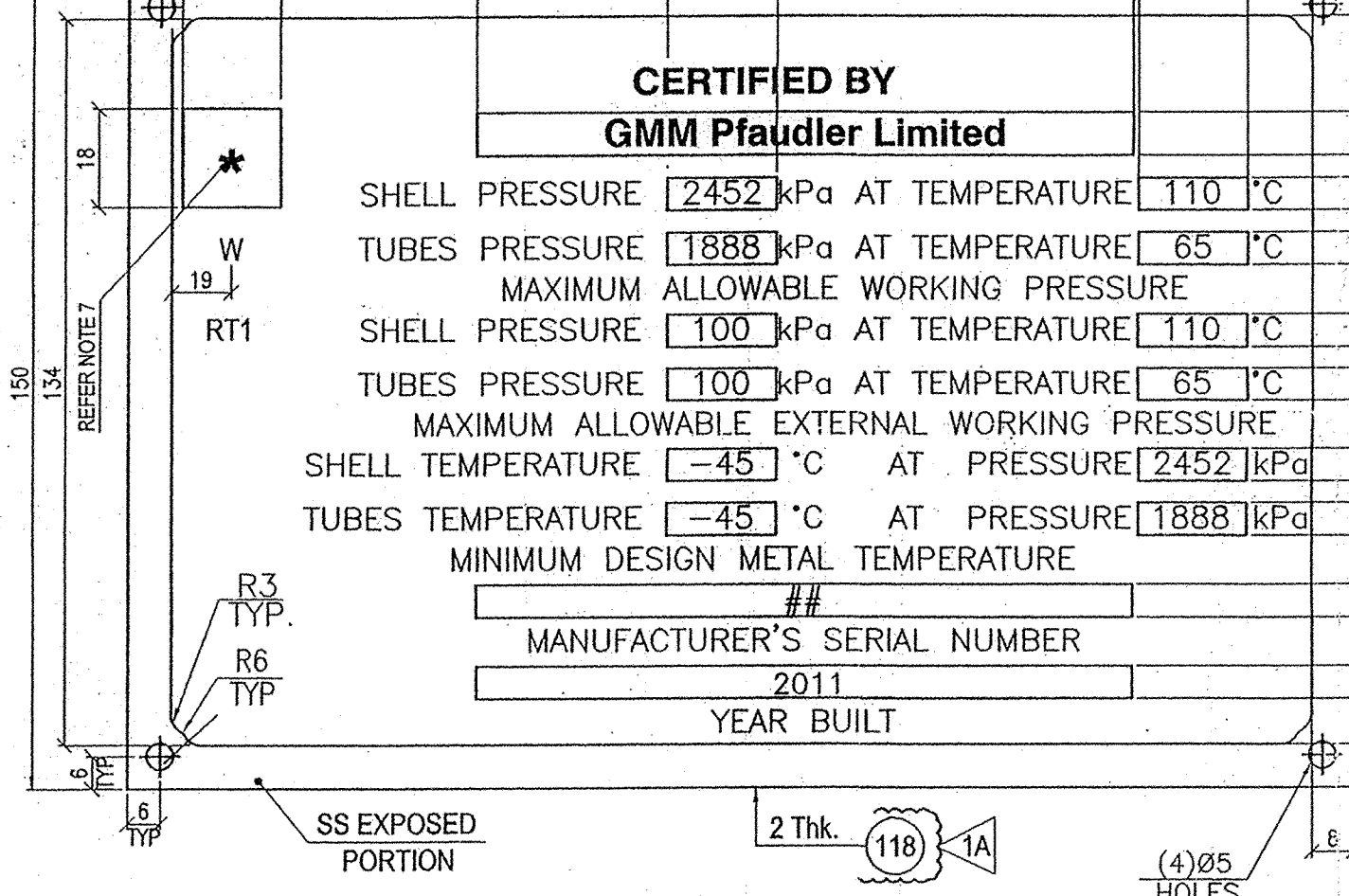
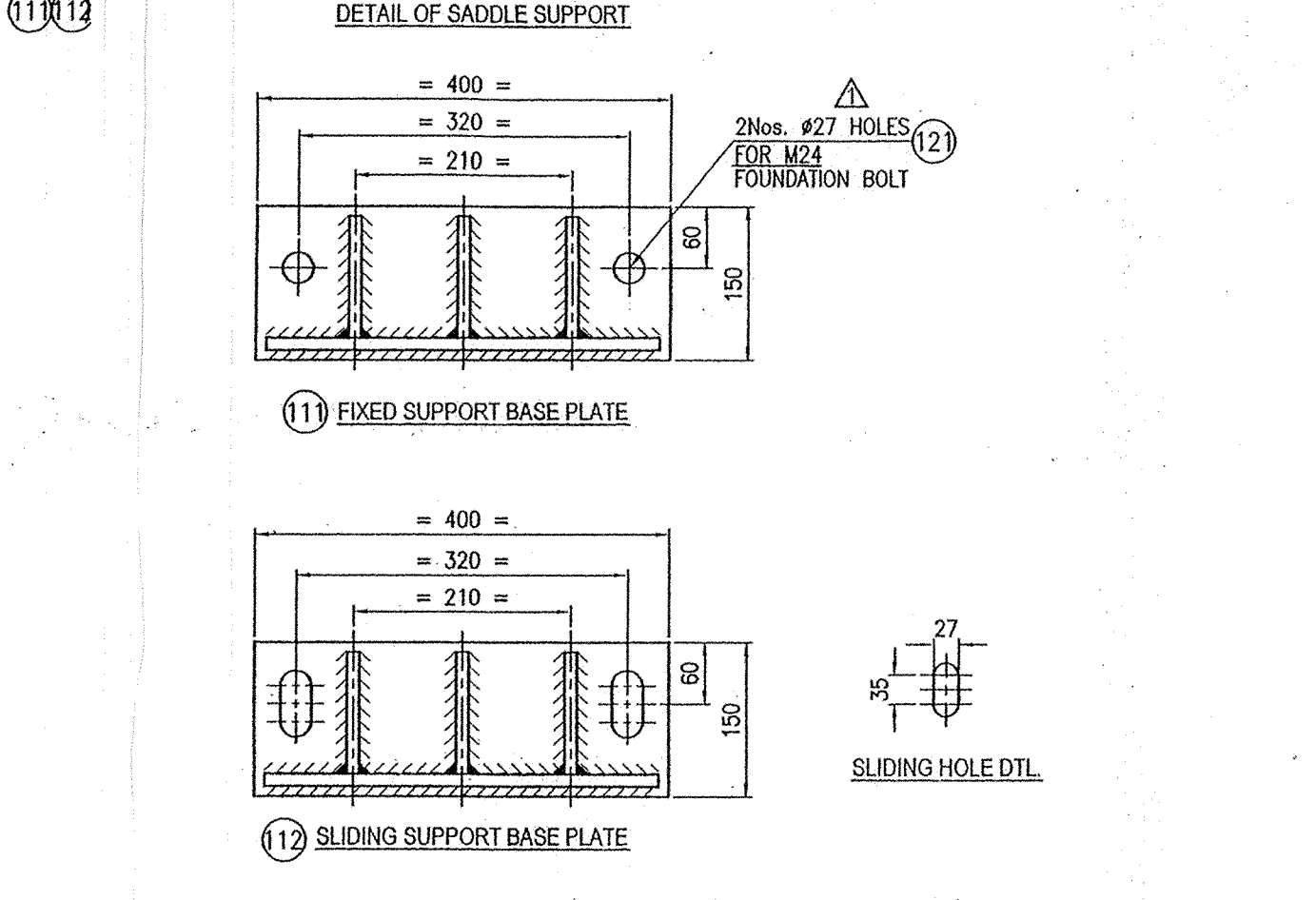
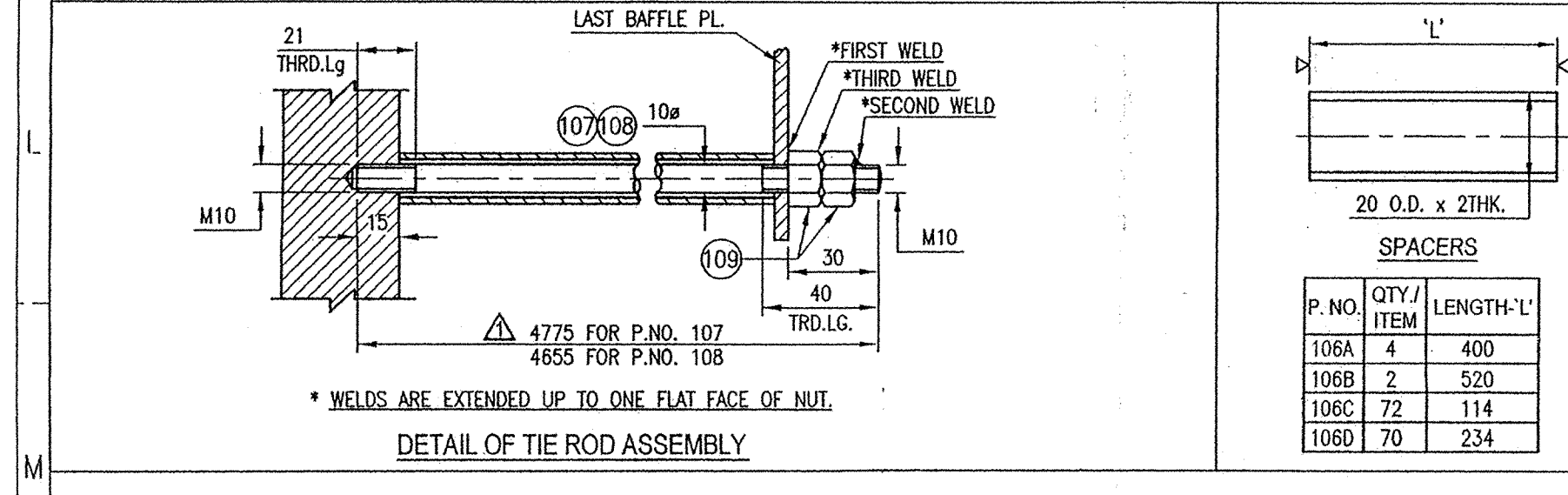
CERTIFIED BY GMM Pfäudler Limited

SHELL PRESSURE: 2452 kPa AT TEMPERATURE 110 °C
TUBES PRESSURE: 1888 kPa AT TEMPERATURE 65 °C
MAXIMUM ALLOWABLE WORKING PRESSURE
SHELL PRESSURE: 100 kPa AT TEMPERATURE 110 °C
TUBES PRESSURE: 100 kPa AT TEMPERATURE 65 °C
MAXIMUM ALLOWABLE EXTERNAL WORKING PRESSURE
SHELL TEMPERATURE: -45 °C AT PRESSURE 2452 kPa
TUBES TEMPERATURE: -45 °C AT PRESSURE 1888 kPa
MINIMUM DESIGN METAL TEMPERATURE

MANUFACTURER'S SERIAL NUMBER
2011
YEAR BUILT

AS-BUILT

ITEM NO.	DESCRIPTION	SIZE	MATERIAL	QTY.	KG.	REM.	CODE
121	BOLT & NUT	M4 x 20 LG.	SS 304	16	-	-	1355N0014
122	FOUNDATION BOLT	M24 x 100 LG.	FW-1A	4	-	-	13C54588
123	CAUTION NAME PLATE	2T x 225W x 26 LG.	SS 304	1	-	-	1355N0014
124	EIL NAME PLATE	2T x 200W x 76 LG.	SS 304	1	-	-	1355N0014
125	U-STAMP NAME PLATE	2T x 125W x 125 LG.	SS 304	1	-	-	1355N0014
126	GMM NAME PLATE	2T x 110W x 150 LG.	SS 304	1	-	-	1355N0014
127	N.P. BRACKET	6T. x 460W x ~400 D.LG.	SA 516M GR 415	1	9	-	CPER0501322
128	RIB PLATE	12T. x 118W x ~439LG.	SA 516M GR 415	2	10	-	CPER0501321
129	RIB PLATE	12T. x 118W x ~461LG.	SA 516M GR 415	4	21	-	CPER0501322
130	SUPPORT PLATE	12T. x 511W x ~587LG.	SA 516M GR 415	2	57	-	CPER0501321
131	SLIDING BASE PLATE	16T. x 150W x 400LG.	SA 516M GR 415	1	7.5	-	CPER0501322
132	FIXED BASE PLATE	16T. x 150W x 400LG.	SA 516M GR 415	1	7.5	-	CPER0501321
133	RIB-PAD FOR SADDLE SUPPORT	10T. x 150W x ~657LG.	SA 516M GR 415	2	11	-	CPER0501322
134	HEX. NUT	M10 STD.	SS 304	12	-	-	1355 N10006
135	TIE RODS	Ø10 x 4655 LG.	SS 304	2	5.7	-	06N000253
136	TIE RODS	Ø10 x 4775 LG.	SS 304	4	12	-	06N000253
137	SPACER	Ø20x2T (Min.) x SEE TABLE	SA 334M GR 1	24	-	-	0255/M0165
138	TUBE	Ø20x2T (Min.) x 5200 LG.	SA 334M GR 1	343	1584	-	0255/M0165
139	BAFFLE PLATE	6T. x AS PER DRG.	SA 516M GR 415	18	90	-	CPER0501322
140	BAFFLE PLATE	6T. x AS PER DRG.	SA 516M GR 415	19	95	-	CPER0501321
141	R.H.S. TUBE SHEET	62T. x AS PER DRG.	SA 350M GR L2 CL.1	1	110	-	CPER0501322
142	L.H.S. TUBE SHEET	62T. x AS PER DRG.	SA 350M GR L2 CL.1	1	110	-	CPER0501321



REVISION STATUS

REV.	DATE	DESCRIPTION	BY	CHD.	APPD.
1A	09.05.11	AS BUILT DIMENSIONS ARE SHOWN IN BRACKET. DRAWING REVISED FOR AS BUILT	VCP	SDP	BMP
1	07.12.10	REVISED AS MARKED	HAS	SDP	BMP

CONSULTANT:

O.A. NO. : 0300232-15A/B
QTY : TWO
SCALE: N.T.S.
DRN. : 25.07.2009
CHKD. SDP : 25.07.2009
APPD. BMP : 25.07.2009

CLIENT: BCPL, LEPETKATA
PROJECT: BRAHMAPUTRA PETROCHEMICAL COMPLEX PROJECT, LEPETKATA
CLIENT PO NO. :
DATE :
U-STAMP
G.A. DRG. FOR LUBE OIL COOLER
[112-EE-201A/B]

DRG. NO.: 0300232-15-01
ITEM CODE: 90TM0300232-15
REV. 1A

BRAHMAPUTRA CRACKER AND POLYMER LTD.

ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)
EL JOB NO: 6907

PROJECT: BRAHMAPUTRA PETROCHEMICAL COMPLEX PROJECT

MATERIAL	SCALE	DRG NO	FIRST USE MODEL
SA 516 Gr.60	N.T.S.	PRJ/9753/101/42	ACR PROJ

Quantity: TWO

APPRD: SDP
CHD: SDP
DRN: HAS

DATE OF RELEASE: 09.08.2010
DATE OF PRINT: 09.08.2010

FINISHED WEIGHT: 3435 kgs

TITLE: TUBE BUNDLE, BAFFLE & N.P. DRG. FOR OIL COOLER (EQUIPMENT TAG NO:-112-EE-201A/B)
CLIENT: BCPL, LEPETKATA

KIRLOSKAR PNEUMATIC CO. LTD.
HADAPSAR INDUSTRIAL ESTATE, PUNE 411013, INDIA.

AS BUILT