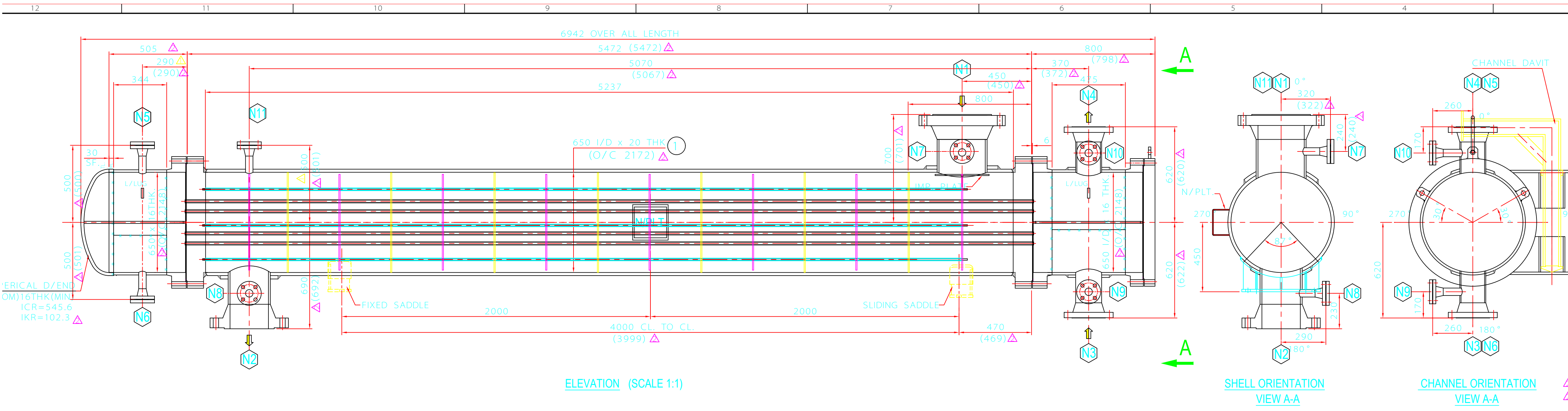




ELEVATION (SCALE 1:1)

SHELL ORIENTATION
VIEW A-A

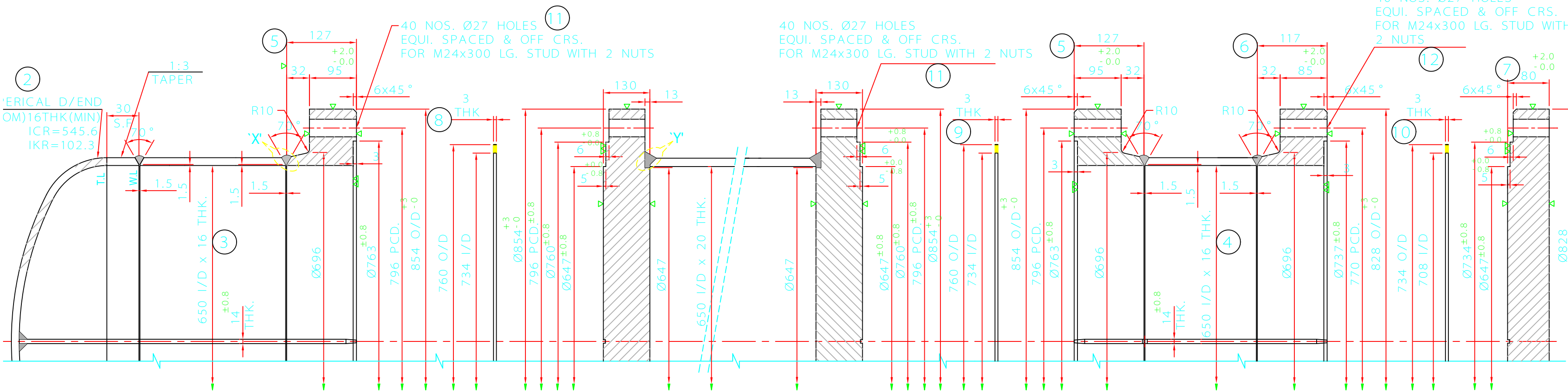
CHANNEL ORIENTATION
VIEW A-A

MECHANICAL DESIGN DATA

CODE OF CONSTRUCTION :- ASME SEC. VIII DIV 1-2007 EDITION		
TYPE :- AEM (HORIZONTAL) TEMA CLASS :- R 1999 ED.		
DESIGN PRESSURE (INT/EXT)	Kg/cm ² g	48.00
OPERATING PRESSURE (INT/EXT)	Kg/cm ² g	21.70
DESIGN TEMPERATURE	°C	150.0
OPERATING TEMPERATURE	°C	65.0 / 40.0
HYDROTEST PRESSURE (IN/OUT)	Kg/cm ² g	62.4
HYDROTEST POSITION	HORIZONTAL	
MIN DESIGN METAL TEMPERATURE	°C	-
NUMBER OF PASSES	1	4
RADIOGRAPHY (SHELL/HEAD)	SPOT	SPOT
JOINT EFFICIENCY (SHELL/HEAD)	0.85	0.85
CORROSION ALLOWANCE	MM	3.0
PROCESS MEDIUM/FLUID	REGENERATION GAS	COOLING WATER
HEAT TREATMENT OF HEAD	-	-
POST WELD HEAT TREATMENT	-	-
INSULATION THK	mm.	25
SURFACE AREA (GROSS/EFF.)	Sq.m	135.0
PAINTING/CLEANING	SEE NOTE NO. - 11	
EMPTY WEIGHT	Kgs	2522
OPERATING WEIGHT	Kgs	-
FULL OF WATER WEIGHT	Kgs	9675
BUNDLE WEIGHT	Kgs	-
INSPECTION	EIL	

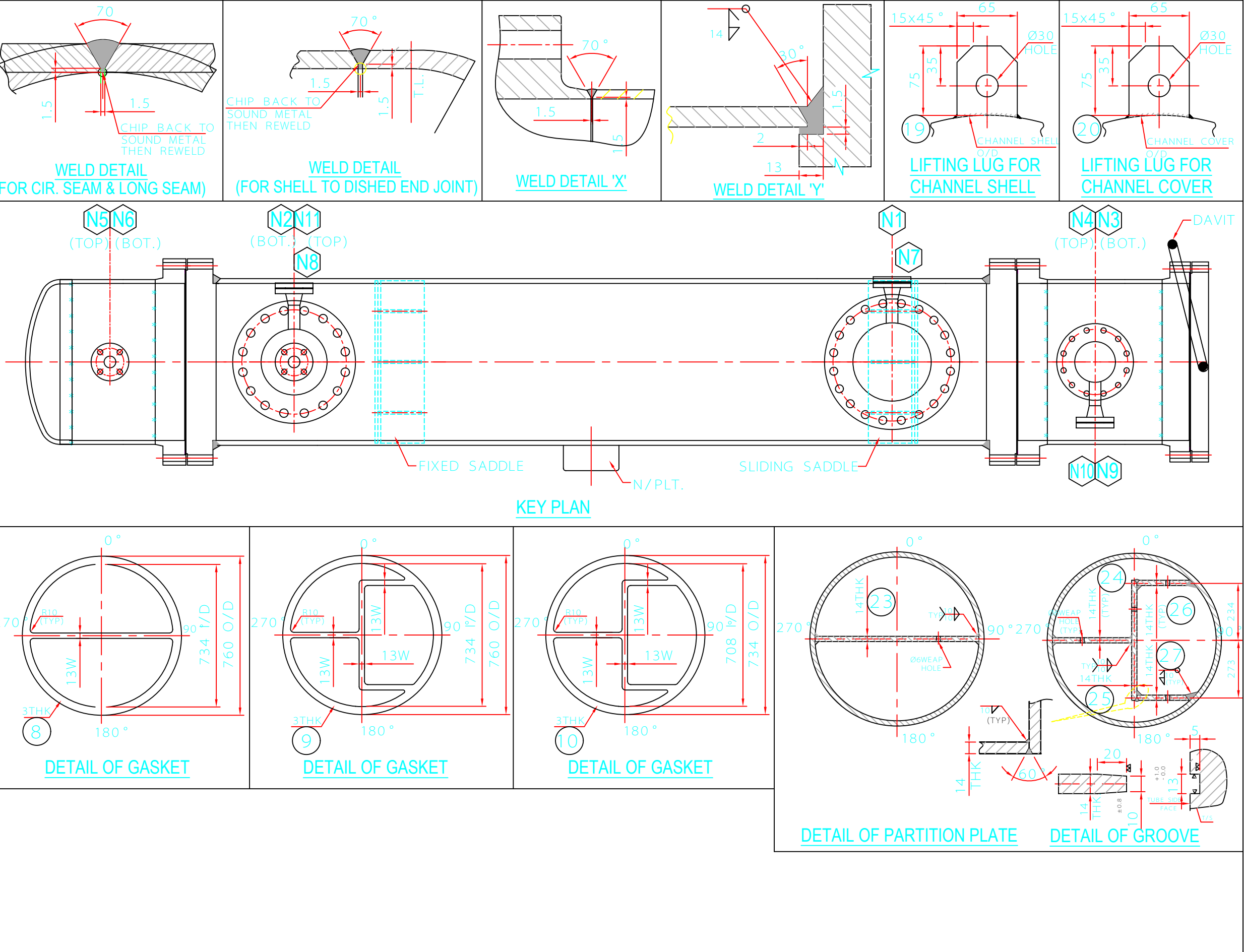
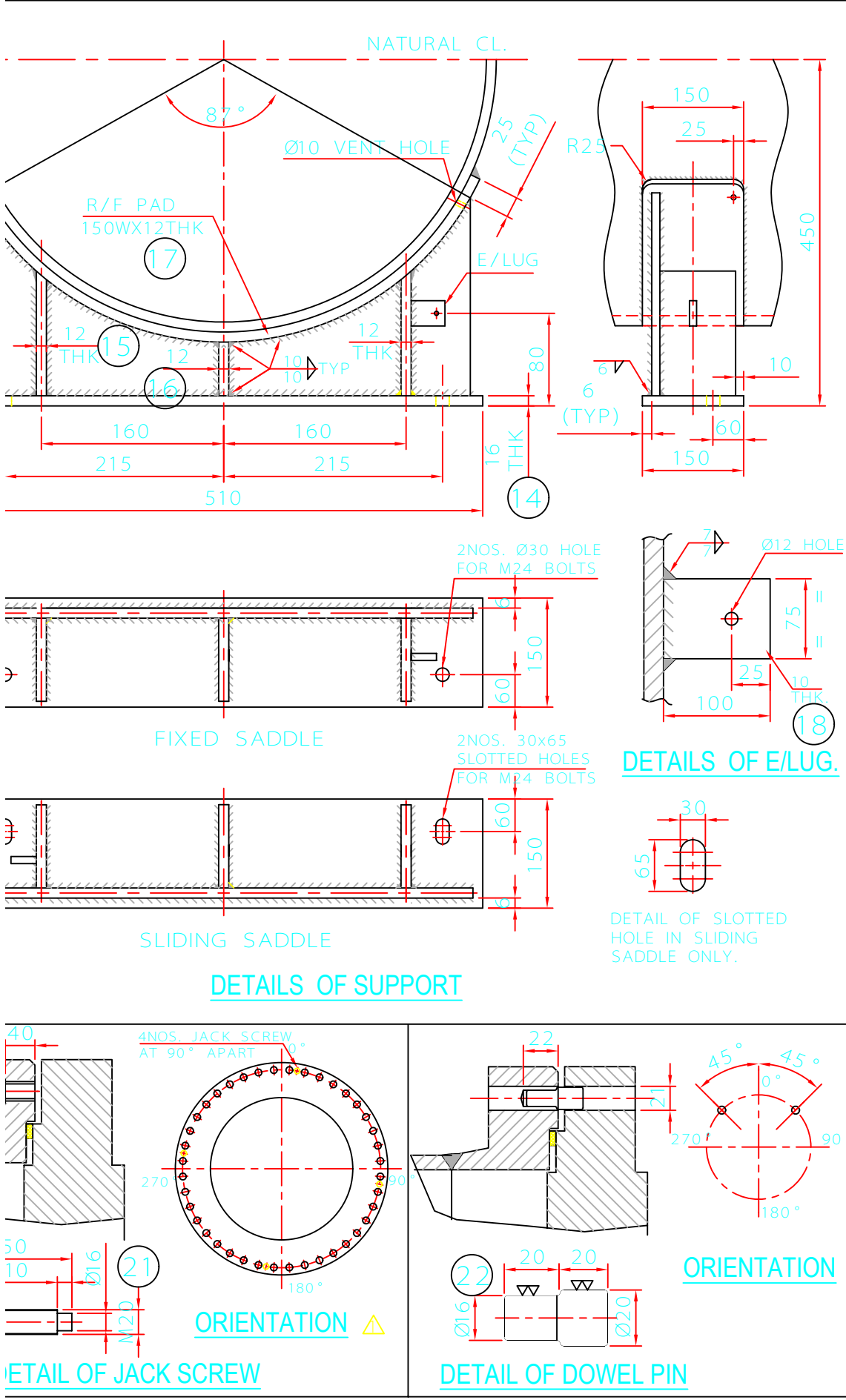
NOZZLE SCHEDULE

NOZ. MARK	SIZE	SCH./T	QTY	TYPE	RATN	PROJ. CL.	PAD WxTHK	SERVICE
N1	300 NB	SCH.80	1	WNRF	600#	700	70x22	SHELL INLET
N2	250 NB	SCH.80	1	WNRF	600#	690	50x22	SHELL OUTLET
N3	150 NB	SCH.80	1	WNRF	300#	620	50x16	CHANNEL INLET
N4	150 NB	SCH.80	1	WNRF	300#	620	50x16	CHANNEL OUTLET
N5	40 NB	SCH.160	1	WNRF	600#	500	-	CHANNEL VENT + BF.
N6	40 NB	SCH.160	1	WNRF	600#	500	-	CHANNEL DRAIN + BF.
N7/N8	40 NB	SCH.160	2	WNRF	600#	SEE DTI	-	MP. CONN. + BF.
N9/N10	40 NB	SCH.160	2	WNRF	300#	SEE DTI	-	MP. CONN. + BF.
N11	40 NB	SCH.160	1	WNRF	600#	500	-	SHELL VENT + BF.



WELDING DETAIL OF SHELL, D/END, CHANNEL SHELL TO FLANGE

- NOTES :-
- 1) ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE STATED.
 - 2) ALL NOZZLE FLANGES BOLT HOLES SHALL STRADDLE TO CENTER LINE OF EQUIP.
 - 3) PROVIDE DOUBLE BAFFLE AT CENTRE LINE OF SHELL SIDE INLET & OUTLET NOZZLE.
 - 4) FOR NOZZLE ON SHELL PROJECTIONS ARE REFERRED TO FROM VESSEL CENTER LINE TO FLANGE CONTACT FACE.
 - 5) ALL THE TUBES SHALL BE SEAMLESS AND COLD DRAWN.
 - 6) FOR NOZZLE ON HEAD PROJECTIONS ARE TO FROM HEAD T.L. TO FLANGE CONTACT FACE.
 - 7) FLANGE GASKET FACE SHALL HAVE 125-250 AARH FINISH.
 - 8) DIMENSIONS FLANGES SHALL BE AS PER ASME B 16.5 UNLESS OTHERWISE STATED.
 - 9) I.D. OF WELD NECK FLANGES SHALL MATCH WITH CORRESPONDING I.D. OF NOZZLE PIPE.
 - 10) NOZZLE GASKET SHALL BE AS PER ASME B16.20 UNLESS OTHERWISE STATED.
 - 11) PAINTING :-
SURFACE PREPARATION :-
ALL EXTERNAL C.S. SURFACES SHOT BLASTED TO NEAR WHITE FINISH OF SA 2 1/2.
PRIMER SPECIFICATION :-
ALL EXTERNAL C.S. SURFACES AFTER SHOT BLASTING SHALL BE COATED WITH ONE COAT OF INORGANIC ZINC SILICATE PRIMER UP TO 65-75 MICRON DFT.
12) SHELL SIDE IS SUBJECTED TO STEAM OUT CONDITIONS OF 20.5 kg/cm² (g) @190°C.
- APPLICABLE ONLY MANDATORY SPARE AS PER SP. NO. 6907-16-46-SS-6280/0033 REV. 0
- 1) GASKETS - 400% (FOR EACH GIRTH JOINT & NOZZLE PROVIDED WITH BLIND FLANGE)
 - 2) BOLTING - 20% (MINIMUM 4 STUDS & NUTS FOR EACH GIRTH FLANGE & NOZZLE FLANGE PROVIDED WITH BLIND FLANGE)



EIL REFERENCE STANDARDS

SR.NO.	DOCUMENT TITLE	DOC. NO.
1	SUPPORT FOR HEAT EXCHANGER	7-15-0004
2	EYE BOLT DETAIL	7-15-0008
3	JACK SCREW	7-15-0010
4	DOWEL PIN	7-15-0011
5	NOZZLE REINFORCEMENT & PROJECTION	7-12-0013
6	STANDARD BOLT HOLE ORIENTATION	7-12-0015
7	EARTHING LUGS	7-15-0016
8	NAME PLATE	7-15-0017
9	HEAT EXCHANGER TOLERANCES	7-15-0019
10	EXPANDED TUBE TO TUBESHEET JOINT	7-15-0006

BILL OF MATERIAL

S.NO.	DESCRIPTION	MATERIAL	QTY	SIZE
27	PARTITION PLATE	SA 516 GR 60	1	720 x 180 x 14 THK.
26	PARTITION PLATE	SA 516 GR 60	1	720 x 230 x 14 THK.
25	PARTITION PLATE	SA 516 GR 60	1	720 x 521 x 14 THK.
24	PARTITION PLATE	SA 516 GR 60	1	720 x 320 x 14 THK.
23	PARTITION PLATE	SA 516 GR 60	1	646 x 650 x 14 THK.
22	DOWEL PIN	IS 2062 GR B	6	Ø20 x 40 LG. SEE DETAIL
21	JACK SCREW	SA 193 GR B7	12	M20 x 150 LG.
20	LIFTING LUG (CH. COVER)	SA 516 GR 60	1	80 x 65 x 16 THK.
19	LIFTING LUG (CHANNEL)	SA 516 GR 60	4	80 x 65 x 16 THK.
18	EARTHING LUG	IS 2062 GR B	2	100 x 75 x 10 THK.
17	PAD FOR SADDLE	SA 516 GR 60	2	595 x 150 x 12 THK.
16	MIDDLE PLATE	IS 2062 GR B	2	122 x 80 x 12 THK.
15	SIDE PLATE	IS 2062 GR B	4	122 x 117 x 12 THK.
14	BASE PLATE	IS 2062 GR B	2	510 x 150 x 16 THK.
13	SADDLE PLATE	IS 2062 GR B	2	490 x 175 x 12 THK.
12	STUD WITH TWO NUT	SA 193 GRB7 / 194 GRB8	40+8	M24 x 250 LG.
11	STUD WITH TWO NUT	SA 193 GRB7 / 194 GRB8	50+16	M24 x 300 LG.
10	GASKET	IJA.	1+4	734 O/D x 708 I/D x 3 THK.
09	GASKET	IJA.	1+4	760 O/D x 734 I/D x 3 THK.
08	GASKET	IJA.	1+4	760 O/D x 734 I/D x 3 THK.
07	CHANNEL COVER	SA 266 GR 4	1	AS PER DRAWING
06	BODY FLANGE	SA 266 GR 4	1	AS PER DRAWING
05	BODY FLANGE	SA 266 GR 4	2	AS PER DRAWING
04	CHANNEL (RHS.)	SA 516 GR 60	1	2093 CIR. x 475 LG. x 16 THK
03	CHANNEL (LHS.)	SA 516 GR 60	1	2093 CIR. x 344 LG. x 16 THK
02	DISH END	SA 516 GR 60	1	880 BD. x 20 THK. (NOM.)
01	SHELL	SA 516 GR 60	1	2105 CIR. x 5237 LG. x 20 THK.

REV	DESCRIPTION	SBL	MM.	CHKD.	APPD.	DATE
2	AS BUILT DIMENSIONS ARE INCORPORATED.	SBL	MM.	CHKD.	APPD.	04.05.10
1	REVISED AS PER EIL COMMENTS DT. 30.11.2009	SBL	MM.	CHKD.	APPD.	12.12.09
0	SUBMITTED FOR APPROVAL	SBL	MM.	CHKD.	APPD.	5.10.09

CONSULTANT :- **EIL ENGINEERS INDIA LIMITED**

CLIENT :- BRAHMAPUTRA CRACKER & POLYMER LTD. LEPETKATA, ASSAM

UNIT :- C2 + RECOVERY LEPETKATA

PROJECT :- BRAHMAPUTRA PETROCHEMICAL COMPLEX

Gansons GANSONS LIMITED, NAGPUR. - 28.

TITLE :- **G.A. OF REGENERATION GAS TRIM COOLER**
(ITEM NO:- 112-EE-113)

DRN.	SBL.	05.10.09	WO. - 1938	REV.
CHD.	MM.	05.10.09	DRG. No. GLN - 1140	2
APPD.	DKPC.	05.10.09	"AS BUILT" SH. 1 OF 2	

PR. NO. :- 6907-112-EE-PR-6280/0033 REV.-0 DT. 25.11.09
PO. NO. :- 6907-112-EE-PO-6280/0011/0033 DT. 25.11.09
FOA. NO. :- 6907-6280/33 DT. 01.10.2009
REF.DRG. NO. :- 6907-112-16-46-DS-4113 REV.-0
QTY. :- ONE