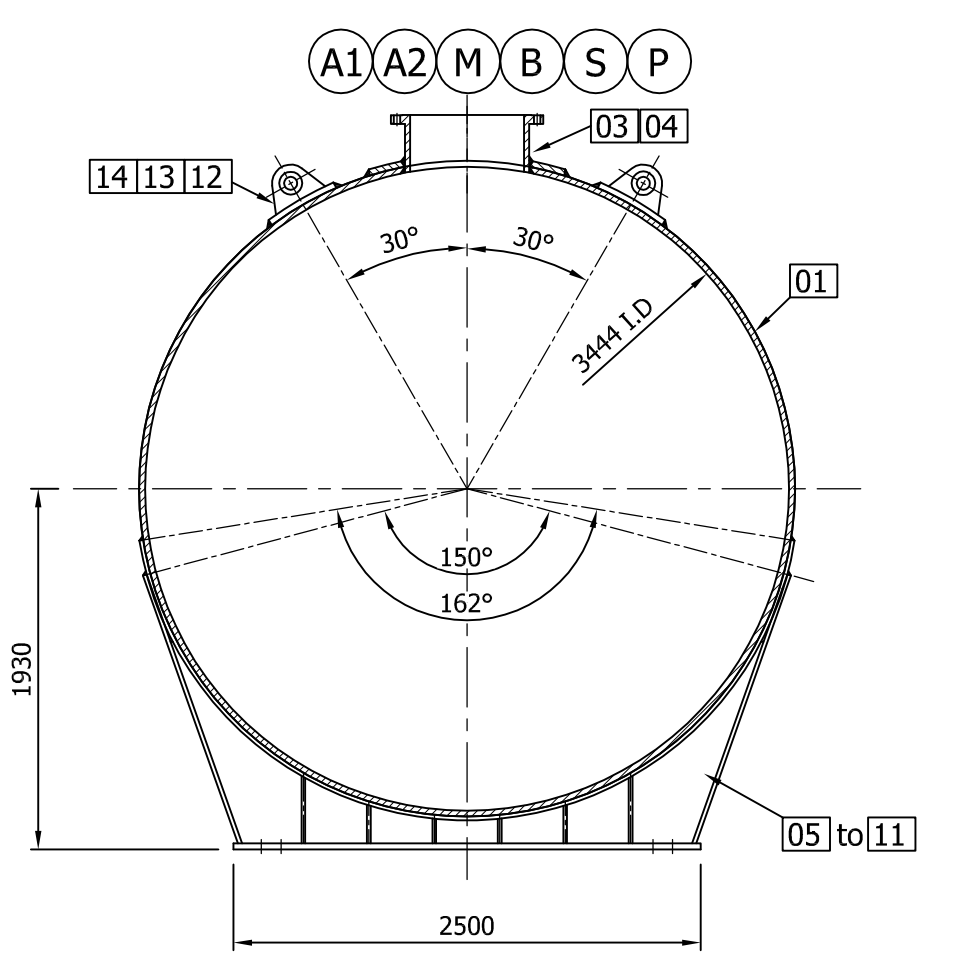
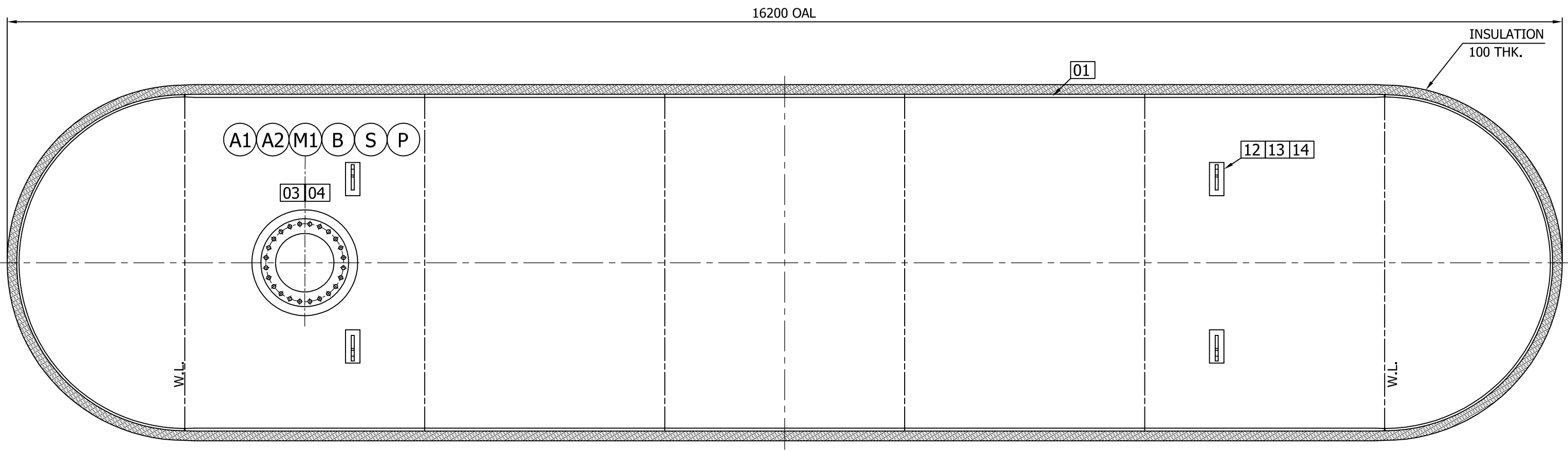


SECTIONAL ELEVATION



SECTION S-S



PLAN

DESIGN DATA		
DESCRIPTION		UNIT
No OFF	4	
CODE	ASME SEC. VIII DIV - 1 2019 + IRS RULES FOR STEEL SHIPS 2019	
TYPE	HORIZONTAL	
FLUID HANDLED	LIQUID ANHYDROUS AMMONIA	
OPERATING PRESSURE	1.0	kg/cm ² g
OPERATING TEMPERATURE	-33	°C
DESIGN PRESSURE	22.84	kg/cm ² g
DESIGN TEMP:	55	°C
HYD. TEST PRESSURE	34.3	kg/cm ² g
RADIOGRAPHY	FULL, 200% (BEFORE & AFTER PWHT)	
JOINT EFFICIENCY	0.95	
PWHT	YES , FULL VESSEL (SEE CHART) (SEE NOTE 12)	
CORROSION ALLOWANCE	1.5	
INSULATION	YES, PUF (100 THK.)	mm
CAPACITY	138.4	m ³
THIRD PARTY INSPECTION	IRS	
FABRICATED WEIGHT	46250 x 4 =185000	kgs
EMPTY WEIGHT (INCLUDING INSULATION)	47250 x 4 =189000	kgs
FULL OF WATER WEIGHT	184650	kgs
PAINING	ONE COAT OF TWO -PACK POLYURETHANE HOLDING PRIMER (30 MICRONS) TO BE APPLIED ON EXTERNAL SURFACE, AFTER GRIT/ SLAG BLASTING TO SA 2½.	

GENERAL NOTES:-

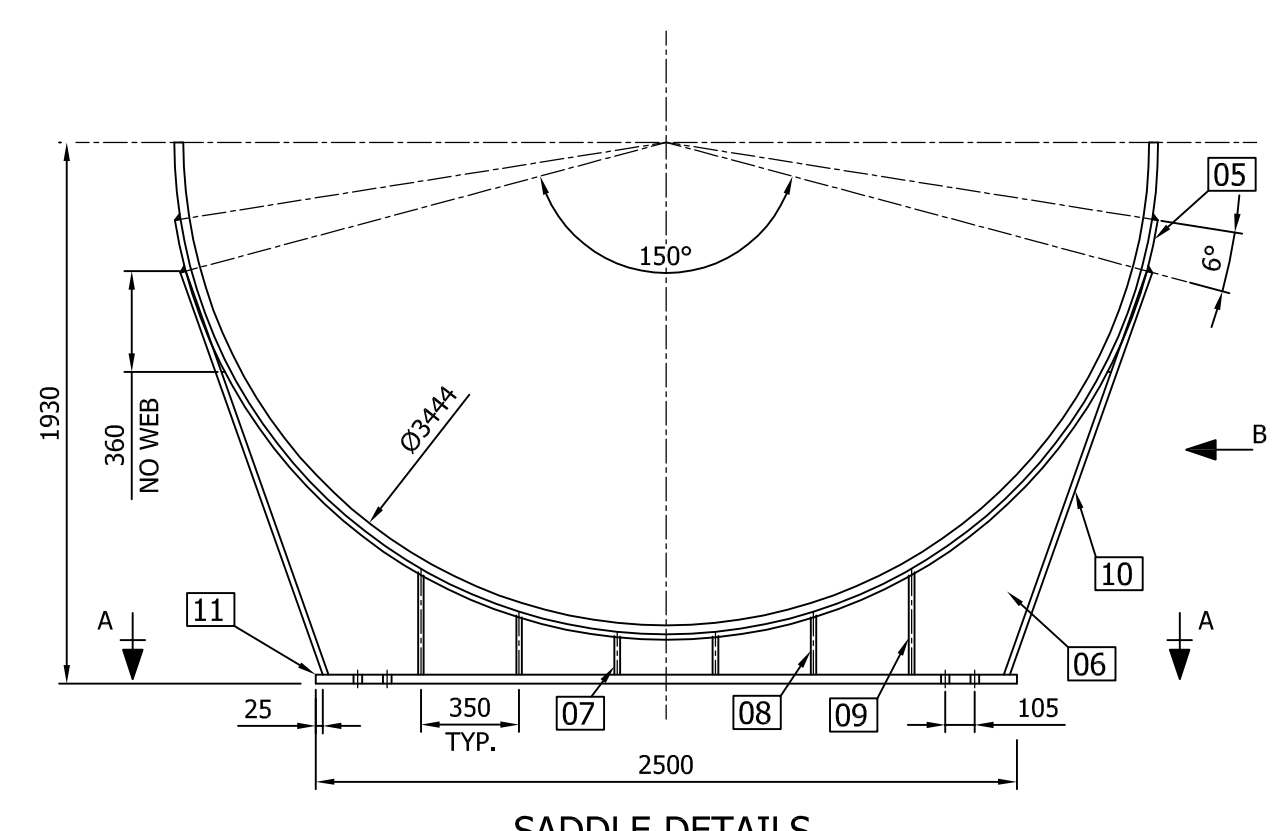
- BILL OF MATERIAL IS SHOWN FOR ONE NUMBER BULLET ONLY.
- ALL BOLT HOLES SHALL STRADDLE PRINCIPAL AXIS OF THE EQUIPMENT.
- CHARPY IMPACT TESTING OF THE PRESSURE PARTS SHALL BE DONE AS INDICATED BELOW.
- ALL FIT-UPS & WELD JOINTS SHALL BE DONE AS PER THE WELDING PROCEDURE AS APPROVED BY THE INSPECTION / CLASSIFICATION AGENCY.
- STRESS RELIEVING SHALL BE DONE AS PER THE FOLLOWING CHART GIVEN.
- COLD INSULATION SHALL BE AS PER FEDO SPEC. 02ES042/2010.
- SLING ANGLE FROM HORIZONTAL SHALL BE MINIMUM 45 DEGREES.
- 6 φ TAPPED HOLE TO BE PROVIDED ALL PAD PLATES.
- UT OF THE PLATES SHALL BE CARRIED OUT AS PER SA 578 LEVEL B & SUPPLEMENTARY REQUIREMENTS S1.
- THE HEMISPHERICAL DISHED ENDS SHALL MANUFACTURED AS PER DES/SPEC/119 REV:0.
- ALL THE WELDED JOINTS (INCLUDING DISHED ENDS) SHALL BE SUBJECTED TO RADIOGRAPHIC EXAMINATION BEFORE AND AFTER PWHT.
- THE PWHT OF THE BULLETS SHALL BE CARRIED OUT BY HEATING THE VESSEL AS A WHOLE IN AN ENCLOSED FURNACE. IF NOT FEASIBLE PROVISIONS OF ASME SEC. VIII, DIV I UW 40 (3) SHALL BE EMPLOYED.

CHARPY IMPACT TESTING

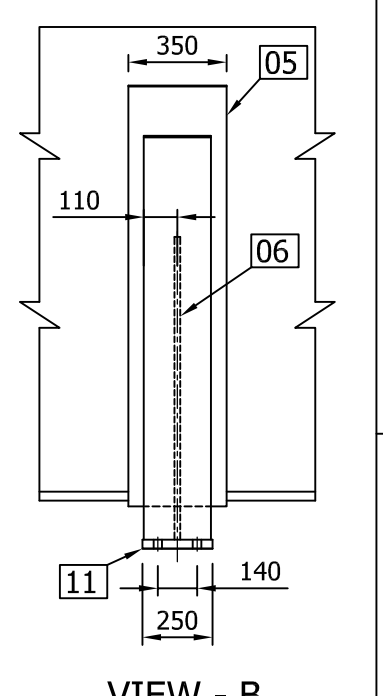
COMPONENT	MATERIAL	TESTING TEMP:	MIN: AVARGE ENERGY
SHELL, DISHED END	SA 537CL. 1	-40°C	27 J
RF/PAD, SADDLE SUPPORT	SA 320 Gr. L 7M	-45°C	27 J
BOLTS FOR FLANGES	SA 350LF2 CL.1	-55°C	41J

* DETAILS OF PIPING CLEATS/BRACKETS TO BE FURNISHED LATER.

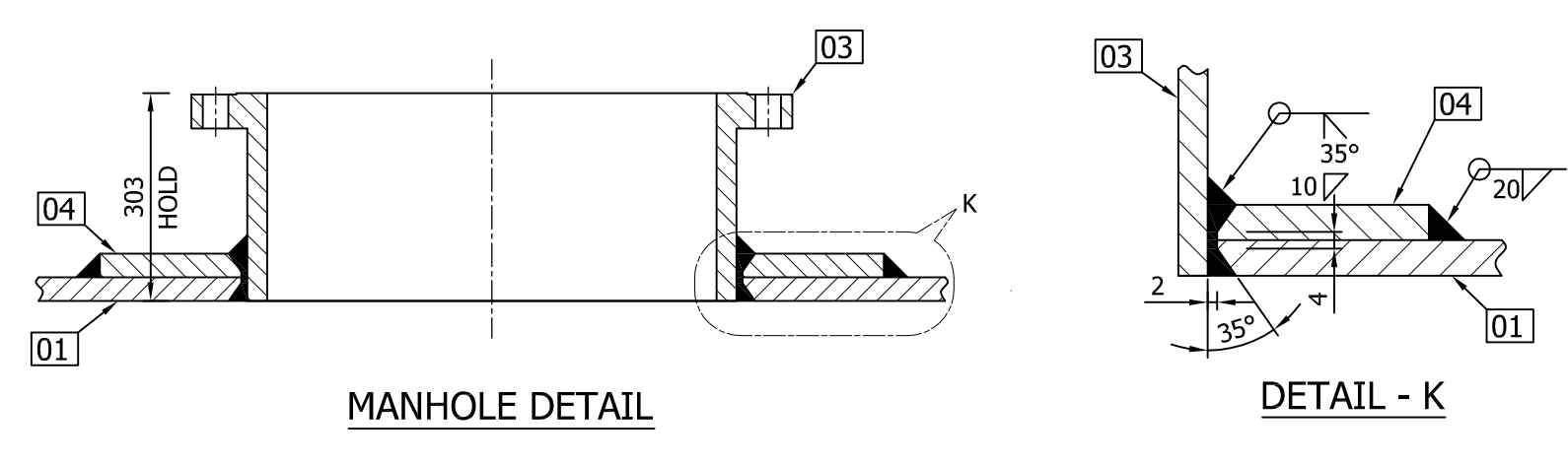
FOR TENDER PURPOSE ONLY



SADDLE DETAILS



VIEW - B



MANHOLE DETAIL

DETAIL - K

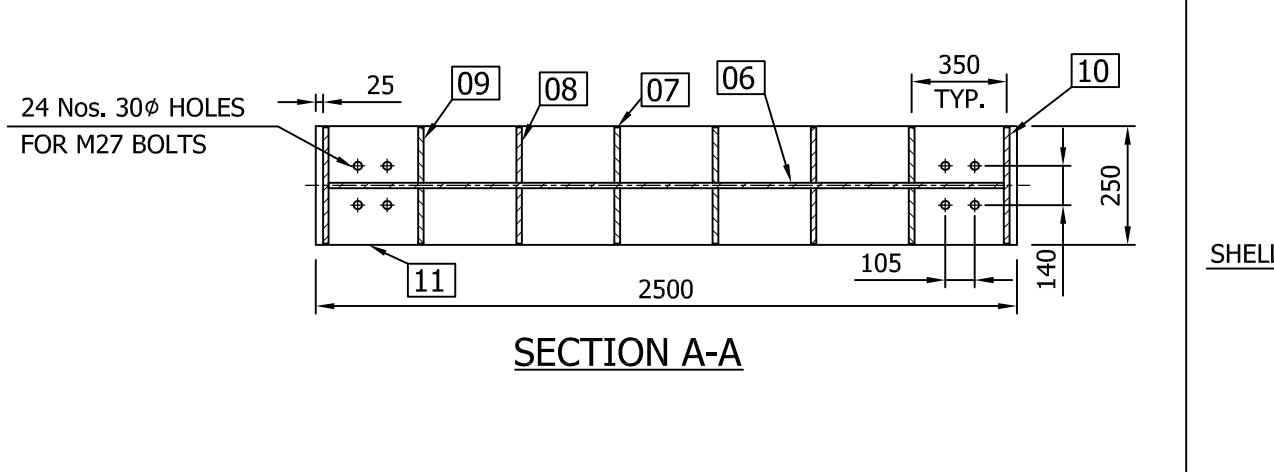
SL.No.	NAME PLATE	HOLD
1	NAME PLATE	HOLD
2	WARNING PLATE	HOLD
3	DOMES FITTINGS	HOLD
4	PIPING LAYOUT	HOLD

ELECTRODE SPECIFICATION

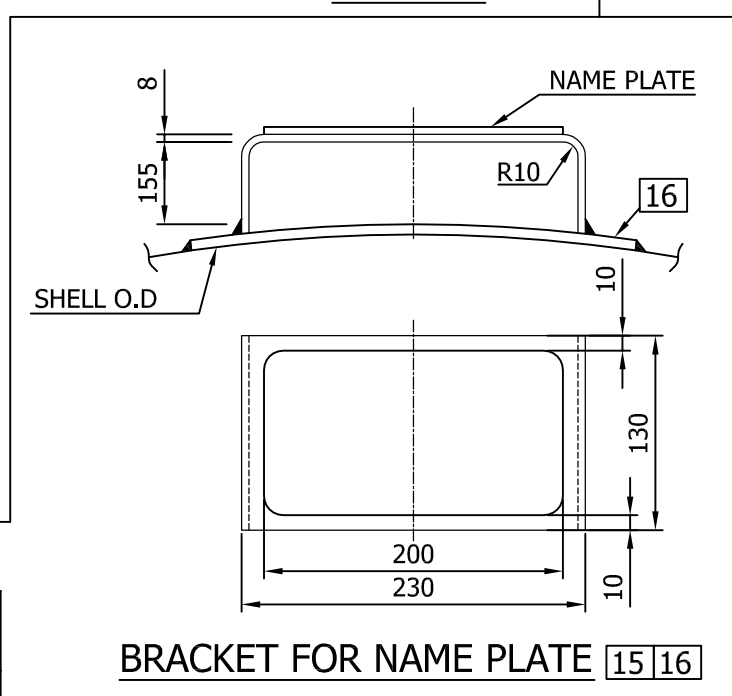
SMAW	SA 537 CL.1/SA 350 LF 2 CL.1	TO	SA 537 CL.1/SA 350 LF 2 CL.1	AWS E 7018-1
SAW	SA 537 CL.1	TO	SA 537 CL.1	SFA 5.17 F 7 A (P) 5 EH 12 K

PWHT CYCLE (FOR COMPLETE VESSEL)

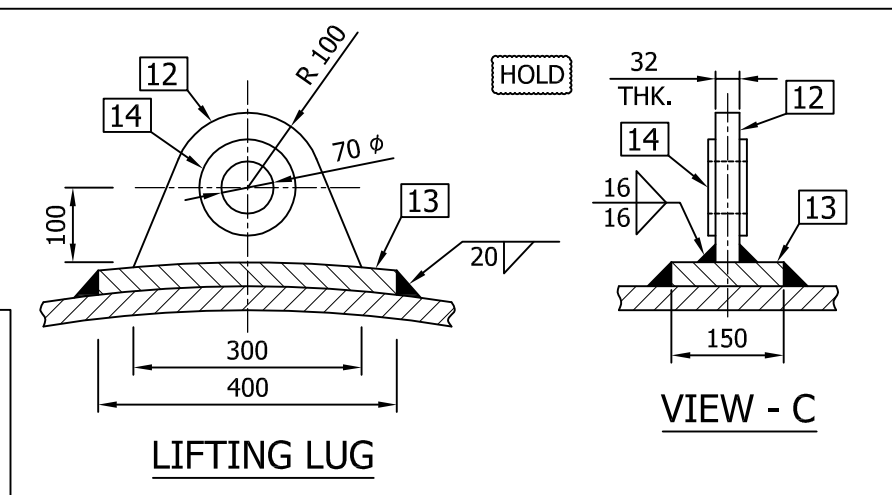
CHARGING TEMPERATURE	400° C
HEATING RATE	150° C (MAX.)/HOUR
HOLDING TEMPERATURE	610 +/-10°C
HOLDING TIME	90 MINUTES (MIN.)
COOLING RATE	175° C(MAX.)/HOUR UP TO 400° C AND THEN COOLING IN STILL AIR.



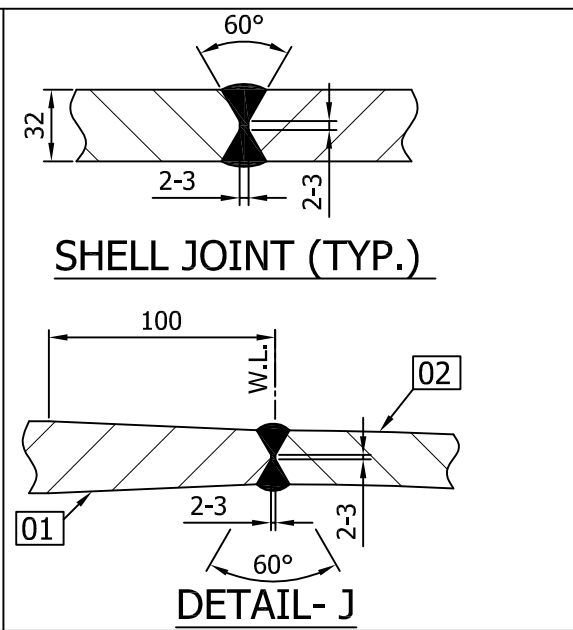
SECTION A-A



BRACKET FOR NAME PLATE [15] [16]



LIFTING LUG



SHELL JOINT (TYP.)

VIEW - C

DETAIL - J

MARK	NO OFF	SIZE NB	O/DxTHK.	SERVICE	PROJ: FROM	FLANGE	BLIND FLANGE QTY.	STANDARD	CLASS	TYPE	REMARKS
M1	1	600	610	MANHOLE	2025	1	1	B 16.5	#300	LWNRF	
L	1	80	88.9x5.49	MAGNETIC LEVEL							
P	1	20	26.7x2.87	PRESSURE GUAGE							
S	1	80	88.9x5.49	SAFETY VALVE	HOLD						
B	1	80	88.9x5.49	VAPOR EDUCTION PIPE							
A1	1	80	88.9x5.49	LIQUID EDUCTION PIPE							
A2	1	80	88.9x5.49	LIQUID EDUCTION PIPE							

NOZZLE SCHEDULE

SL. NO	DESCRIPTION	QTY.	MATERIAL	SIZE	AREA (M2)	WT. (kg)	REMARKS
16	NAME PLATE						REFER DWG.
16	PAD PLATE						REFER DWG.
15	BRACKET FOR NAME PLATE						REFER DWG.
14	PAD FOR LUG EYE	10 THK.	8 SA 537 CL.1	70 I.D x 130 O.D			
13	LIFTING LUG PAD	32 THK.	4 SA 537 CL.1	400 x 150 LG.			
12	LIFTING LUG	32 THK.	4 SA 537 CL.1	300 x 200 LG.			
11	BASE PLATE	32 THK.	6 SA 537 CL.1	250 x 2500 LG.			
10	END RIB	20 THK.	12 SA 537 CL.1	240 x 1527 LG.			
09	RIB-III	20 THK.	24 SA 537 CL.1	110 x 361 LG.			
08	RIB-II	20 THK.	24 SA 537 CL.1	110 x 207 LG.			
07	RIB-1	20 THK.	24 SA 537 CL.1	110 x 134 LG.			
06	WEB PLATE	20 THK.	6 SA 537 CL.1	3172 x 1079 LG.			
05	WEAR PLATE	20 THK.	6 SA 537 CL.1	350 X 4988 LG.			
04	PAD PLATE	32 THK.	1 SA 537 CL.1	706 1/D X 1106 O/D			
03	FLANGE (LWNRF)	68.3 THK.	1 SA350 LF2, CL.1	600 NB X 259 LG. #300			
02	DISHED END	24 THK. (TYP) 19 THK. (MIN)	2 SA 537 CL.1	3452 ID x 19 THK.(MIN)			HEMISPHERICAL
01	SHELL	32 THK.	5 SA 537 CL.1	3444 ID x 2500 LG.			

PO NUMBER :	4800013360 DATED 11.03.20
CLIENTS NAME :	FACT-CD
ITEM NUMBER :	AB 1/2/3/4
TITLE:	AMMONIA BULLETS AB 1/2/3/4
JOB No. 8673/19	REF No. XXXX-02-DG-10617
FACT ENGINEERING WORKS	
KOCHI - 682006	KERALA
DRG No. 1715522	SHEET NO. 1 OF 1

REV.	ZONE	DESCRIPTION	DRN.	CHD.	APD.	DATE

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