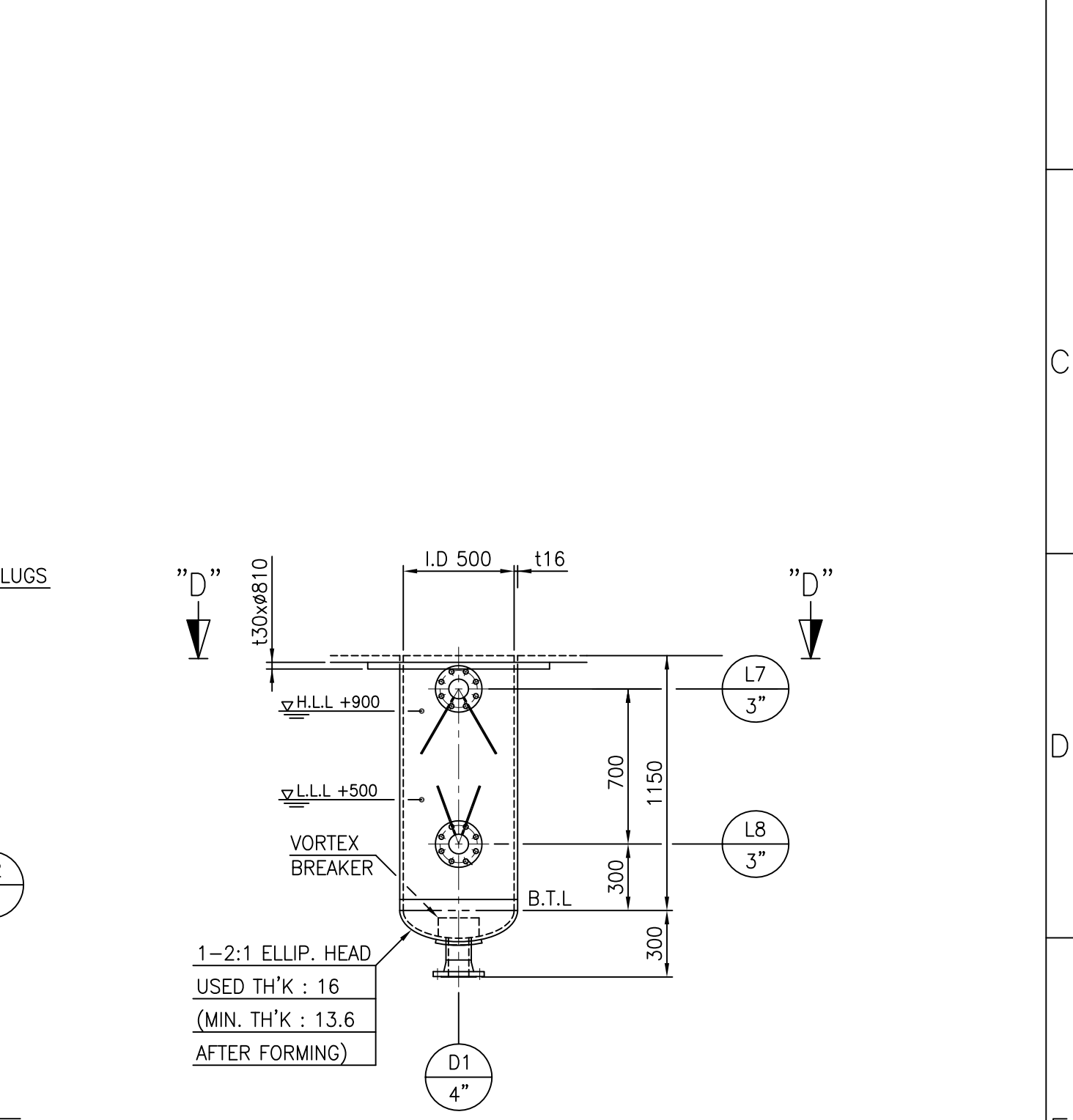
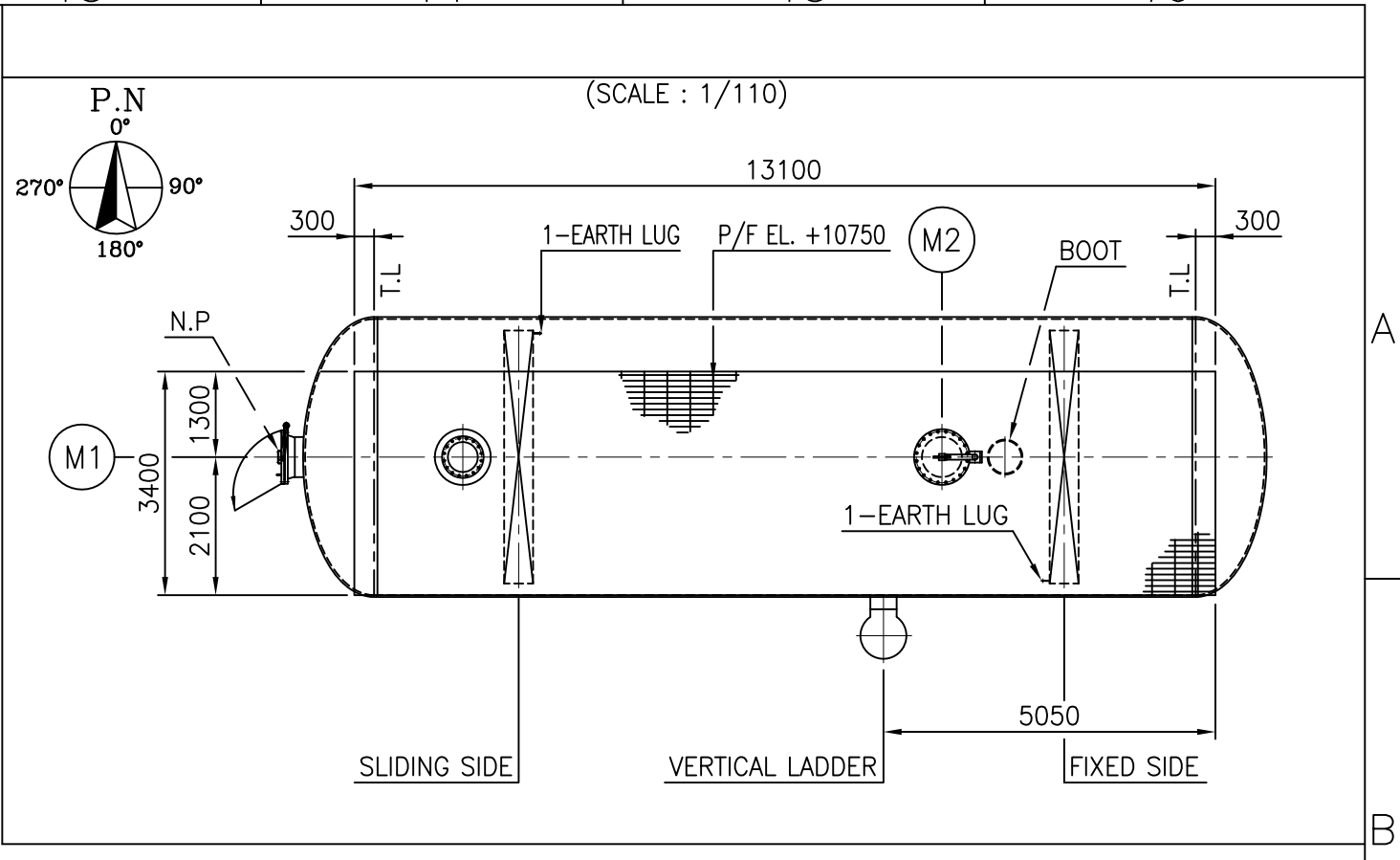
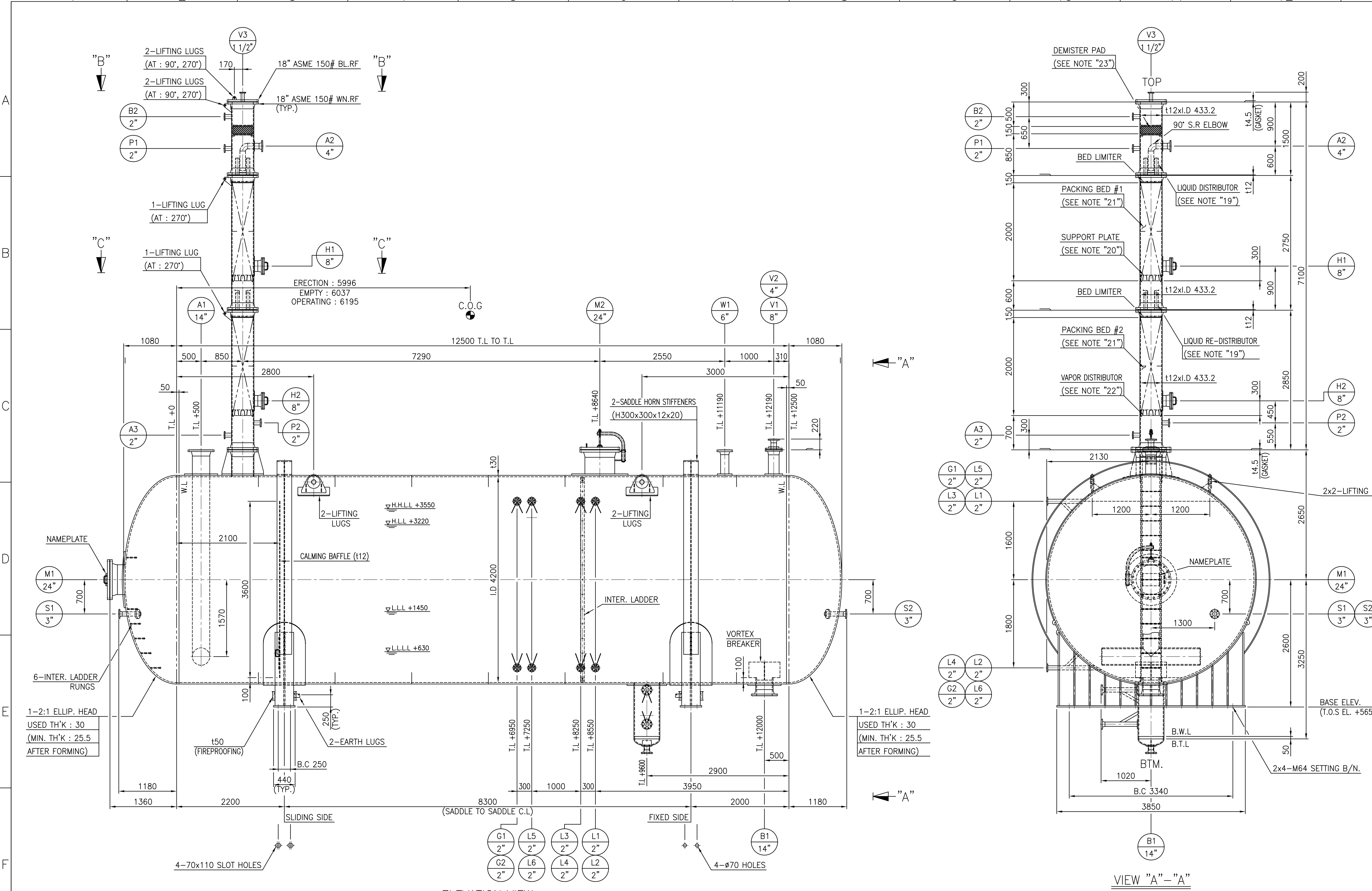
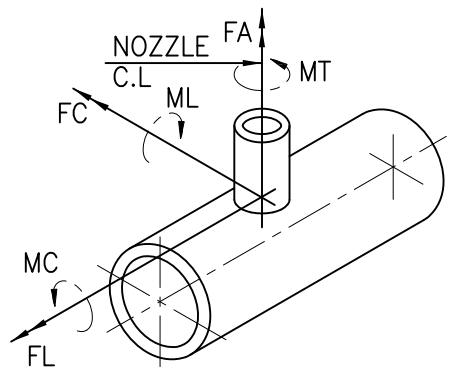




FOUNDATION LOADING DATA AT BASE				
WIND	CONDITION	EMPTY	OPERATING	TEST
	SHEAR FORCE [kN]	82.69	82.69	27.29
SEISMIC (NOTE "24")	MOMENT [kN-m]	215.0	215.0	70.95
	SHEAR FORCE [kN]	317.16	1011.59	-
	MOMENT [kN-m]	824.62	2630.1	-

MAXIMUM ALLOWABLE NOZZLE LOADS										NOZZLE SPECIFICATION							MATERIAL LIST			DESIGN DATA						
										MARK	REQ'D NO.	PIPE (PLATE)		FLANGE		PAD TH'K & SIZE	PROJECTION FROM VESSEL C.L.	DESCRIPTION	SHELL/HEAD	SA516-70N	CONSTRUCTION CODE		ASME SECTION VIII DIV.1 2017 EDITION			
										SIZE	SCH. & TH'K	RATING	TYPE	FACE					REINFORCING PAD	SA516-70N	FLUID	NAPHTHA+FUEL GAS			-	CODE STAMP
G	M1	1	24"	t16	ASME 150#	WN	RF	t30xø1150	SEE DWG.	MANHOLE (W/B.F & DAVIT) [SEE NOTE "25"]	NOZZLE NECK PIPE	SA106-B	SPECIAL SERVICE		NO	-	NATIONAL BOARD REGISTRATION	NO								
	M2	1	24"	t16	ASME 150#	WN	RF	t30xø1150	2650	MANHOLE (W/B.F & DAVIT) [SEE NOTE "25"]	NOZZLE NECK PLATE (SEE NOTE "13")	SA516-70N	DENSITY (LIQ./VAP.)		990.3/3.5	kg/m ³	TYPE	H-SADDLE								
	A1	1	14"	SCH.80	ASME 150#	WN	RF	t30xø680	2650	NAPHTHA FEED INLET (W/INTERNAL PIPE)	NOZZLE FLANGE COVER & BLIND	SA105N	DESIGN PRESS. (INT./EXT.)		14/F.V (HV@130 °C) [SEE NOTE "14"]	barg	CAPACITY	192.6 m ³								
	A2	1	4"	SCH.120	ASME 150#	WN	RF	t12xø210	410	DSO RICH NAPHTHA FEED INLET (W/INTERNAL PIPE)	FORGING	-	DESIGN TEMP. (INT./EXT.)		150/150	°C	NO. REQ'D	1 (ONE)								
	A3	1	2"	t16.1	ASME 150#	LWN	RF	-	380	FUEL GAS INLET	FITTING	SA234-WPB	OPERATING PRESSURE		1.5	barg	IMPACT TEST	NO								
	B1	1	14"	SCH.80	ASME 150#	WN	RF	t30xø680	2370	LIQUID OUTLET (W/VORTEX BREAKER)	STIFFENER RING	SA516-70N	OPERATING TEMPERATURE		45	°C	PAINTING	SEE NOTE "11"								
	B2	1	2"	t16.1	ASME 150#	LWN	RF	-	380	OFF-GAS OUTLET	INSULATION SUPPORT CLIP & RING	-	HYDRO. TEST PRESS. [TYPE : UG-99 (b)]	SHOP (HORI.)	18.76	barg	TOP DAVIT	NO								
	D1	1	4"	SCH.120	ASME 150#	WN	RF	t16xø210	SEE DWG.	DRAIN (W/VORTEX BREAKER)	EXTERNAL ATTACHMENTS	SA516-70N		FIELD (VERT.)	18.76	barg	LADDER & PLATFORM	YES								
	H1,2	2	8"	SCH.80	ASME 150#	WN	RF	t12xø400	410	HANDHOLE (W/B.F & HINGE)	WELDED INTERNAL	SA516-70N or 316 S.S	M.A.W.P (HOT & CORRODED)		14.43	barg										
	G1,2	2	2"	t16.6	ASME 300#	LWN	RF	-	SEE DWG.	LEVEL GAUGES	SUPPORT (SADDLE)	SA283-C	M.A.W.P GOVERNING PART		MAIN HEAD	-										
	L1~6	6	2"	t16.6	ASME 300#	LWN	RF	-	SEE DWG.	LT FOR SAFETY	EXTERNAL BOLTS/NUTS	SA193-B7/SA194-2H	CORROSION ALLOWANCE	SHELL/HEAD	3.0	mm										
	P7,8	2	3"	SCH.160	ASME 300#	WN	RF	t16xø180	1020	LEVEL INSTRUMENTS	INTERNAL BOLTS/NUTS	SA193-B8/SA194-8		SADDLE	0	mm										
	P1,2	2	2"	t16.6	ASME 300#	LWN	RF	-	380	PRESSURE TRANSMITTERS	GASKET	SEE NOTE "6"	M.D.M.T	FIXED INTERNAL	6.0	mm										
	S1,2	2	3"	SCH.160	ASME 150#	WN	RF	t30xø190	SEE DWG.	UTILITY CONNECTION	REMOVABLE INTERNALS	304 S.S	P.W.H.T		NO	-	REMOVABLE INTERNALS	91 kg								
	W1	1	6"	SCH.80	ASME 300#	WN	RF	t30xø300	2650	SAFETY VALVE	WIRE MESH (DEMISTER)	316 S.S	S.R OF HEAD AFTER COLD FORMING	YES (BOOT HEAD INLY)	-		LADDER & PLATFORM	10300 kg								
	V1	1	8"	SCH.80	ASME 150#	WN	RF	t30xø360	2650	VENTILATION (W/B.F)	TRAY / PACKING	304 S.S	RADIOGRAPHY (SHELL/HEAD)	FULL/FULL	-		FABRICATED	65150 kg								
	V2	1	4"	SCH.120	ASME 150#	WN	RF	t30xø210	2870	VENT	NAMEPLATE	304 S.S	JOINT EFFICIENCY (SHELL/HEAD)	100/100	%		ERECTION	65150 kg								
	V3	1	1 1/2"	t14.45	ASME 150#	LWN	RF	-	SEE DWG.	VENT	EARTH LUG	304 S.S	INSULATION THICKNESS	TYPE DENSITY	NO	mm	EMPTY	78900 kg								
										SETTING BOLT/NUT	SA193-B7/SA194-2H (H.D.G) [SEE NOTE "26"]	FIREPROOFING THICKNESS	TH'K DENSITY	50 (SADDLE ONLY)	mm	OPERATING	251650 kg									
															2400	kg/m ³	HYDRO. TEST (SHOP)	258950 kg								
												WIND CODE	ASCE 7-10 (V=56m/s, TERRAIN SURFACE ROUGHNESS : D)													
												SEISMIC CODE	ASCE 7-10 (FA=1, FV=1.3, SS=1.51g, S1=0.6g, SITE CLASS=C, I=1.5,R=3)				HYDRO. TEST (FIELD)	272750 kg								

04

19/APR/'23

FINAL ISSUE

H.K.BANG

J.Y.KIM

H.C.JUNG

02

27/FEB/'23

APPROVED FOR DESIGN

H.K.BANG

J.Y.KIM

H.C.JUNG

01

18/JAN/'23

APPROVED FOR DESIGN

H.K.BANG

J.Y.KIM

H.C.JUNG

00

31/OCT/'22

ISSUED FOR APPROVAL

H.K.BANG

C.H.KIM

C.H.KIM

REV.

DATE

DESCRIPTION

PREP. BY

CHKD. BY

APPD. BY

AUTH. BY

Adish Project

Adish

CONTRACT NO.: ADISH-P-PO-GE-096

SCALE: 1/45

DRAWING TITLE:

GENERAL ARRANGEMENT DRAWING SHEET

V-502-11

FEED SURGE DRUM

DWG NO.:

PROJ

PHASE

AREA

DISC

TYPE

SEQ.

SHT No.

CLASS

SIZE

SACR

403

NHT

ME

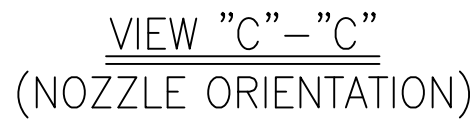
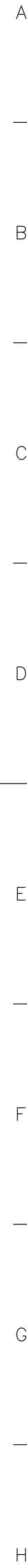
DWG

1102

1 OF 3

1

A1



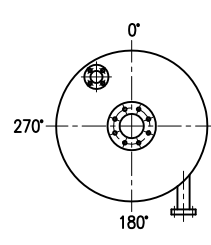
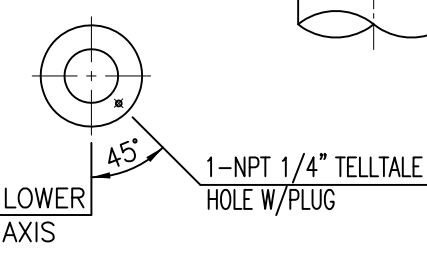
09	SACR-403-NHT-ME-DWG-1110	DETAIL OF INTERNALS DRAWING SHEETS
08	SACR-403-NHT-ME-DWG-1109	DETAIL OF DEVELOPMENT
07	SACR-403-NHT-ME-DWG-1108	DETAIL OF NAMEPLATE
06	SACR-403-NHT-ME-DWG-1107	DETAIL OF PLATFORM & LADDER DRAWING SHEETS
05	-DELETED-	
04	SACR-403-NHT-ME-DWG-1105	DETAIL OF FIREPROOFING CLIP DRAWING SHEETS
03	SACR-403-NHT-ME-DWG-1104	DETAIL OF NOZZLE AND MANHOLE DRAWING SHEETS
02	SACR-403-NHT-ME-DWG-1103	DETAIL OF BODY DRAWING SHEETS
01	SACR-403-NHT-ME-DWG-1102	GENERAL ARRANGEMENT DRAWING SHEETS
NO.	DRAWING NO.	DRAWING TITLE

GENERAL NOTES

- ALL DIMENSION ARE IN MM UNLESS OTHERWISE NOTED.
- ALL WELDS SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED.
- BOLT HOLES IN NOZZLE FLANGES SHALL STRADDLE THE PRINCIPAL OR VERTICAL CENTER LINE OF THE REACTOR.
- ALL WELDS INSIDE OF INSTRUMENT NOZZLES INCLUDING MANWAY, VENT, DRAIN SHALL BE FULLY FLUSHED.
- SMOOTH FINISH FOR CONTACT FACE OF FLANGES SHALL BE RAISED FACE 125-250 MICRO INCH (3.2~6.4 MICRO METER) AARH.
- GASKET MATERIAL : SPIRAL WOUND (14.5) – ASME B16.20
 – FILLER : GRAPHITE – INNER RING : 316L S.S
 – HOOP : 316L S.S – OUTER RING : C.S
- REINFORCING PAD SHALL BE ATTACHED TO ABOVE 2" NOZZLE AND PROVIDED WITH 1-NPT 1/4" TELL-TALE HOLE WITH PLUG.
 THE REINFORCEMENTS SHALL BE TESTED BY MEANS OF FOAMING AGENT AND AIR AT A PRESSURE OF APPROX. 0.5 barg.
- ALL REMOVABLE INTERNALS SHALL BE PASSED THROUGH MANHOLE.
- SPARE PART.

	ERECTION, PRE-COMMISSIONING, COMMISSIONING AND START-UP (SP1)	TWO (2) YEARS OPERATION (AS AN OPTION PRICE)
GASKET	200%	200%
BOLTS & NUTS	10% (MIN. 4 SETS)	10% (MIN. 4 SETS)

- NOZZLE STANDOUTS ARE FROM THE VESSEL CENTERLINE OR FROM THE TANGENT LINES TO GASKET SEATING FACE UNLESS STATED OTHERWISE.
 ELEVATION OF NOZZLE LOCATIONS SHALL BE FROM REFERENCE TANGENT.
- PAINTING SHALL BE AS PER PAINTING SPECIFICATION DOC. NO. : SACR-DE-GEN-PI-SPC-0004.
- ALL EXTERNAL ATTACHMENTS SHALL BE OF THE SAME MATERIAL WITH SAME WELDING CHARACTERISTIC AS THE PRESSURE CONTAINING MATERIALS TO WHICH THEY ARE DIRECTLY ATTACHED, PARTICULARLY WITH REGARDS TO IMPACT TEST REQUIREMENTS.
- FULL RADIOGRAPHIC EXAMINATION SHALL BE PERFORMED FOR NOZZLE NECK MADE BY PLATE.
- STEAM OUT DESIGN CONDITION : H.V @ 130 °C.
- IN CASE OF PWHT, ALL NDE SUCH AS RADIOGRAPHIC EXAMINATION, ULTRASONIC EXAMINATION, SHALL BE PERFORMED BEFORE AND AFTER PWHT.
- UNLESS OTHERWISE SPECIFIED ON OTHER PROJECT SPECIFICATIONS, ALL C.S BOLTS AND NUTS SHALL BE COATED PROPERLY TO PROVIDE PROPER PROTECTION SUCH AS GALVANIZATION, ETC.
- ADDITIONAL UT REQUIREMENT.
 – UT (100%) FOR WELD CATEGORY "D"
 – ALL NOZZLE TO SHELL ATTACHMENT SHALL BE 100% EXAMINATED BY ULTRASONIC EXAMINATION.
- ESTIMATED STRIPPING GAS (FUEL GAS) FLOW USED FOR SIZING OF THE DEAERATOR IS 180 kg/hr.
- LIQUID DISTRIBUTOR : KOCH GLTSH TYPE 106/107 OR EQUIVALENT.
 MATERIAL 304 S.S, INSTALLED 200 MM ABOVE PACKING
- SUPPORT PLATE : KOCH GLTSH TYPE 814 OR EQUIVALENT. MATERIAL 304 S.S.
- PACKING BED : 1" PALL RING, 304 S.S; 2 BEDS, EACH BED HEIGHT = 2000 MM.
- VAPOR DISTRIBUTOR : 15 MM ID HOLES, DISTRIBUTE EQUALLY IN TWO ROWS, POINTING DOWNSWARDS. TOTAL HOLE AREA SHALL BE 75% OF THE INLET NOZZLE AREA.
- DEMISTER PAD : YORK MESH TYPE 709 OR EQUIVALENT.
 MATERIAL : 316 S.S. DEMISTER HEIGHT 150 MM.
- 1/1.4 FACTOR FOR LOAD COMBINATION HAS BEEN APPLIED.
- MANHOLE WITH BLIND FLANGE, DAVIT, GASKET, BOLTS AND NUTS.
- SETTING BOLTS SHALL HAVE 725 MPa YIELD STRENGTH, 310 MPa ALLOWABLE TENSILE STRESS AND 185 MPa ALLOWABLE SHEAR STRESS AS MINIMUM.
- DESIGN CASE: SOR/EOR WITH 1% WEIGHT OF WATER IN THE NAPHTHA FEED.
 (SEE DWG. NO. : SACR-403-NHT-ME-DWG-1104-6 OF 7)
- HORIZONTAL SLOTTED PIPE INLET DISTRIBUTOR POSITIONED AT MAXIMUM DISTANCE FROM BOOT. SLOTS POINTING AWAY FROM BOOT. MINIMUM SLOTTED AREA TO BE TWO TIMES AREA OF FEED INLET NOZZLE (A1). DISTRIBUTOR TO BE KEPT AT MIN. LEVEL ELEVATION. REFER TO DETAIL.
 (SEE DWG. NO. : SACR-403-NHT-ME-DWG-1104-7 OF 7)
- LIQUID DISTRIBUTOR: KOCH GLUSH TYPE 106/107 OR EQUIVALENT. MATERIAL SS 304, INSTALLED 200 MM ABOVE PACKING.
 (SEE DWG. NO. : SACR-403-NHT-ME-DWG-1110-3 OF 5)
- CALMING BAFFLE EXTENDING FROM WALL TO WALL, PERFORATED WITH 10 MM ID HOLES. HOLE AREA SHALL COVER 30% OF BAFFLE AREA. TOP EDGE 150 MM ABOVE HLLL, BOTTOM EDGE 100 MM ABOVE BOTTOM. BAFFLE SHALL BE FITTED WITH MANWAY. REFER TO DETAIL.
 (SEE DWG. NO. : SACR-403-NHT-ME-DWG-1103-3 OF 3)
- DEMISTER PAD: YORK MESH TYPE 709 OR EQUIVALENT. MATERIAL: SS 316. DEMISTER HEIGHT 150 MM. DESIGN OF DEMISTER SUPPORT TO ENSURE THAT THE FLOW RESTRICTION IS NEGLIGIBLE.
 (SEE DWG. NO. : SACR-403-NHT-ME-DWG-1110-2 OF 5)
- DESIGN PRESSURE IS FIXED ON FEED NAPHTHA DESIGN PRESSURE COMING FROM CDU.
- LIQUID DENSITY ASSUMED FOR WATER AT FEED SURGE DRUM OPERATING PRESSURE AND TEMPERATURE.
- UNLESS OTHERWISE SPECIFIED ON OTHER PROJECT SPECIFICATIONS, ALL C.S BOLTS AND NUTS SHALL BE COATED PROPERLY TO PROVIDE PROTECTION SUCH AS GALVANIZATION, ETC.
- WATER SPRAY RING IS APPLICABLE TO THIS VESSEL. SUPPORT CLIPS FOR THE RINGS SHALL BE PROVIDED BY VESSEL VENDOR.

04					
03	19/APR/'23	FINAL ISSUE	H.K.BANG	J.Y.KIM	H.C.JUNG
02	27/FEB/'23	APPROVED FOR DESIGN	H.K.BANG	J.Y.KIM	H.C.JUNG
01	18/JAN/'23	APPROVED FOR DESIGN	H.K.BANG	J.Y.KIM	H.C.JUNG
00	31/OCT/'22	ISSUED FOR APPROVAL	H.K.BANG	C.H.KIM	C.H.KIM
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY
Adish Project					
ENSOI. INC.			 Asiatic Drilling & Engineering Company Limited		
CONTRACT NO.: ADSH-P-PO-GE-096				SCALE: 1/25	

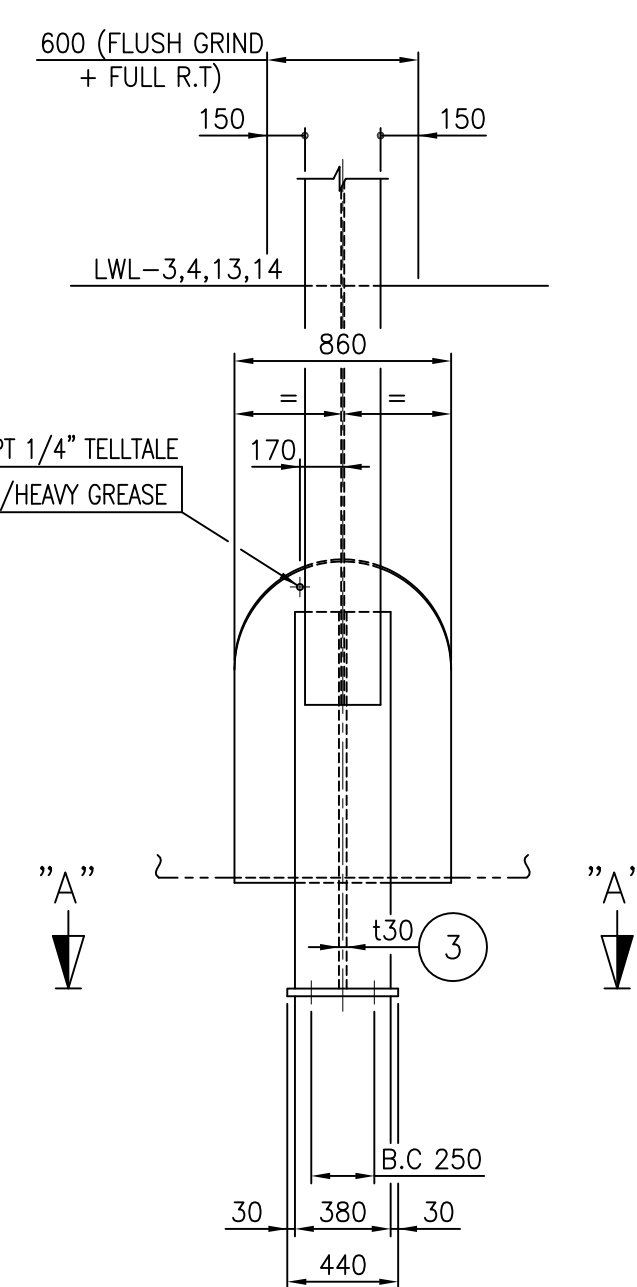
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GENERAL ARRANGEMENT DRAWING SHEET

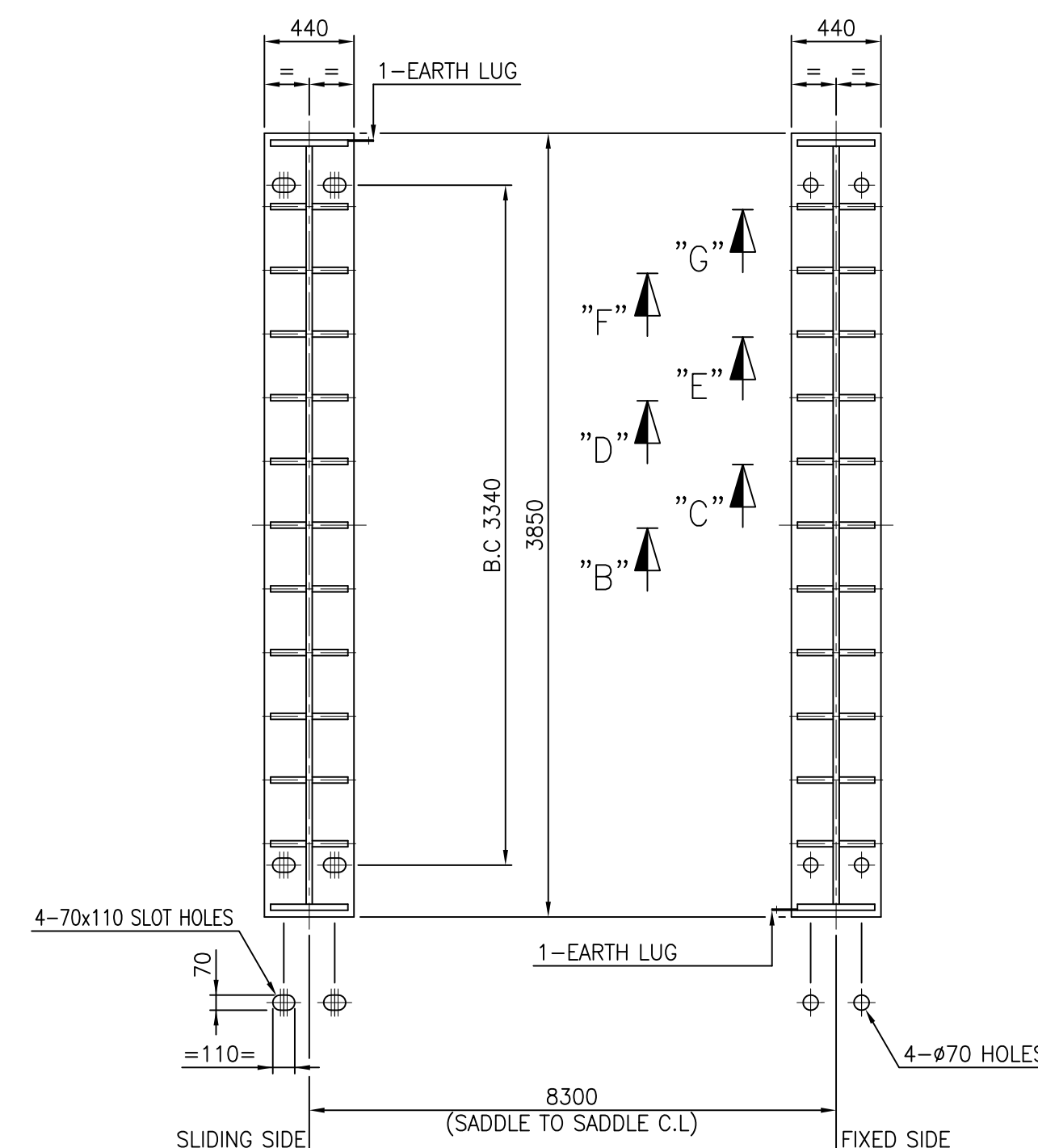
V-502-11

FEED SURGE DRUM

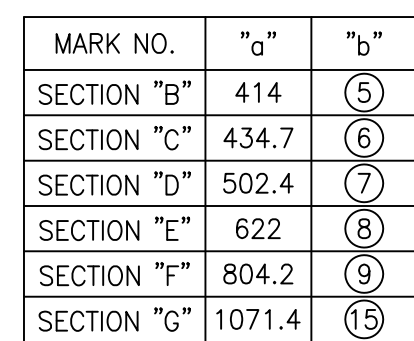
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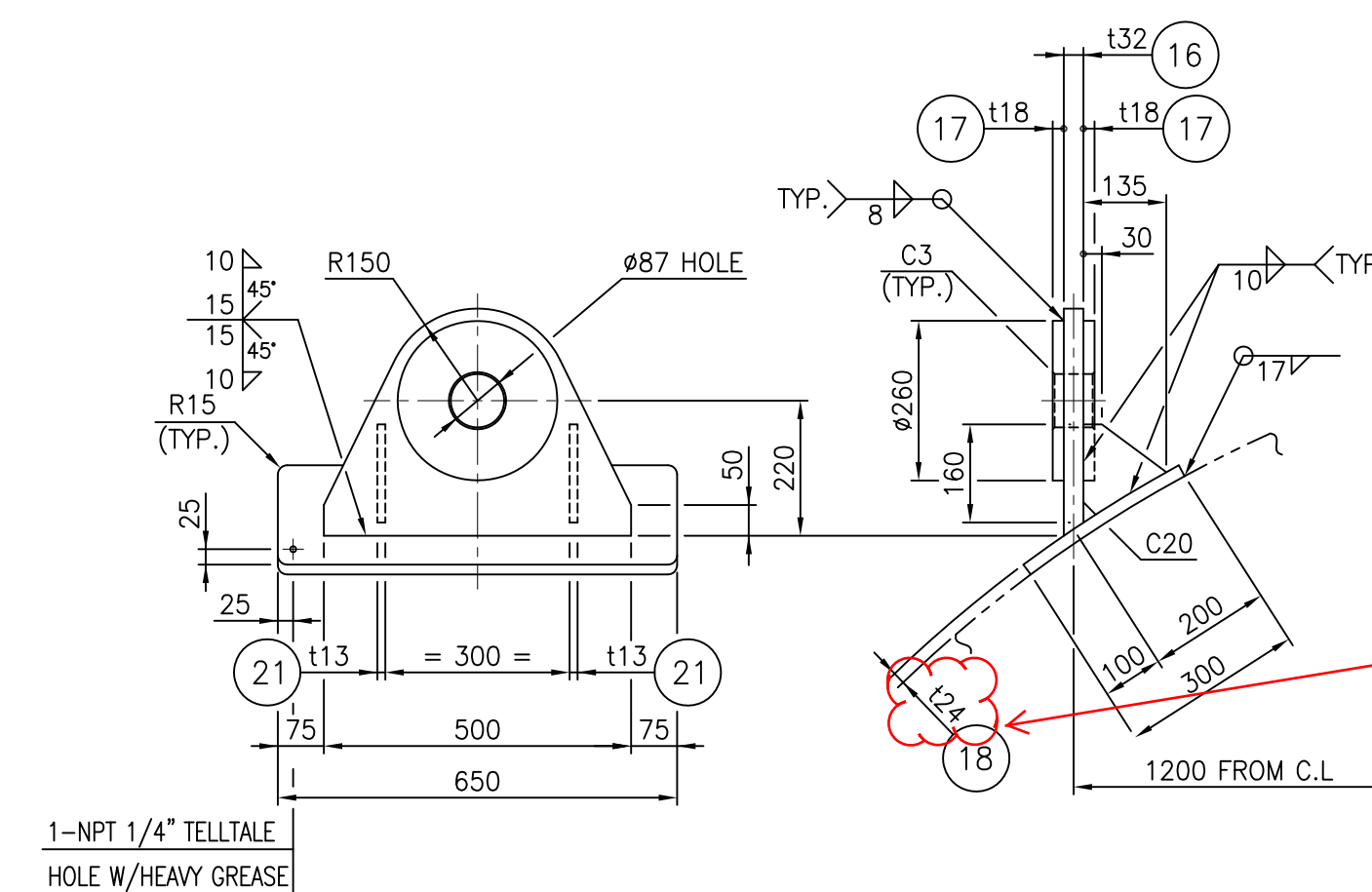
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SUB TOTAL : 9295 KG



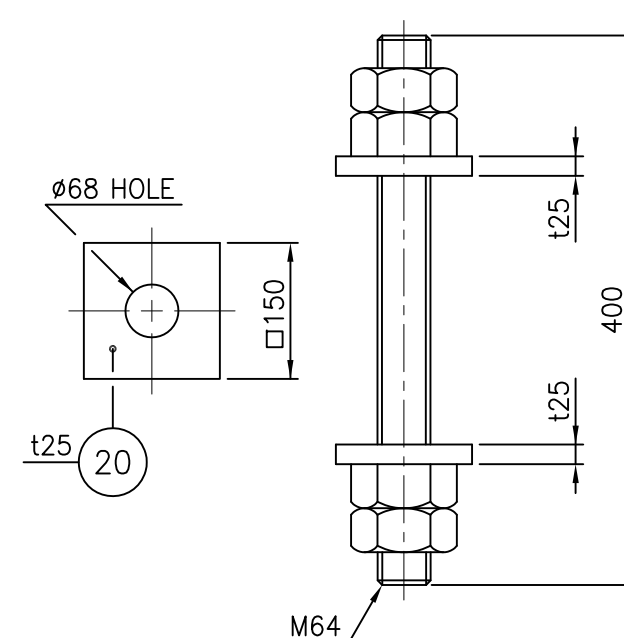
13 EARTH LUG



LIFTING LUG

PLEASE SPECIFY
PAD THK.

VENDOR DATA STATUS	
☐ STATUS A :	APPROVED
☐ STATUS B :	APPROVED AS NOTED
☐ STATUS C :	REVISE AS NOTED
☐ STATUS D :	NOT APPROVED
SIGNED BY :	DATE :



19 SETTING B/4NS/2W

04									
03	19/APR/'23		FINAL ISSUE	H.K.BANG	J.Y.KIM	H.C.JUNG			
02	27/FEB/'23		APPROVED FOR DESIGN	H.K.BANG	J.Y.KIM	H.C.JUNG			
01	18/JAN/'23		APPROVED FOR DESIGN	H.K.BANG	J.Y.KIM	H.C.JUNG			
00	31/OCT/'22		ISSUED FOR APPROVAL	H.K.BANG	C.H.KIM	C.H.KIM			
REV.	DATE		DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY		
ENSOL INC.			Adish Project				 South Korea - Thai Cross-border Railway projects		
CONTRACT NO.: ADSH-P-GO-GE-096						SCALE:		N/S	
DRAWING TITLE:									
GENERAL ARRANGEMENT DRAWING SHEET V-502-11 FEED SURGE DRUM									
DWG NO.:	PROJ	PHASE	AREA	DISC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	403	NHT	ME	DWG	1102	3 OF 3	1	A1