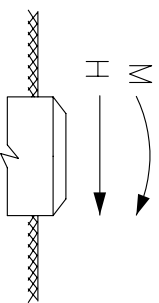


NOZZLES AND CONNECTIONS

MARK	QTY	NOM DIA.	SCH/ THK.	FLANGES		PROJECTION (NOTE-4)	P AD W X T	SEER VICE
				CLASS TYPE	FACING			
F	1	200	12	300	WN	RF	960	95X16
T	1	200	12	300	WN	RF	960	95X16
B	1	100	40S	300	WN	RF	960	50X16
D	1	50	80S	300	WN	RF	910	-
V	1	50	80S	300	WN	RF	910	-
UC	1	50	80S	300	WN	RF	SEE DRG.	-
LT3	1	50	80S	300	WN	RF	910	-
MH	1	500	12	300	WN	RF	1060	215X16
SP 1-2	2	50	80S	300	WN	RF	910	-
MCF	1	50	80S	300	WN	RF	SEE DRG.	-
P1	1	38.1 I.D	15.875	300	LWN	RF	910	-
LT4	1	50	80S	300	WN	RF	740	-

VESSEL SHALL BE DELIVERED TO BCPL-LAKWA

FOUNDATION LOADING DATA (OPERATING CONDITION)			
	TYPE	MAX. MOMENT AT BASE (M) (Kgm)	MAX. SHEAR FORCE AT BASE (H) (Kg)
	SEISMIC	DBE MCE	DBE MCE
	WIND	-	-

GENERAL NOTES

- UNLESS STATED OTHERWISE.
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
 - ALL ANCHOR BOLT HOLES TO STRADDLE N/S CENTER LINE.
 - NORTH DIRECTION WHEREVER SHOWN IS WITH RESPECT TO PLAN VIEW.
 - a) FOR NOZZLES ON SHELL PROJECTIONS ARE REFERRED TO FROM VESSEL CENTER LINE TO FLANGE CONTACT FACE.
b) FOR NOZZLES ON HEAD PROJECTIONS ARE REFERRED TO FROM HEAD T.L. TO FLANGE CONTACT FACE.
 - THE INDICATED THICKNESS IS THE MINIMUM ACCEPTABLE AFTER CONSTRUCTION.
 - FLANGE GASKET FACE SHALL HAVE 125 AARH FINISH.
 - DIMENSIONS OF FLANGES SHALL BE AS PER ANSI B16.5 UNLESS OTHERWISE STATED.
 - ID OF WELD NECK FLANGES SHALL MATCH WITH CORRESPONDING ID OF NOZZLE PIPE/SHELL.
 - NOZZLES 50NB AND BELOW SHALL BE STIFFENED WITH 2NOS.40X6THK. FLATS 90° APART.
 - SURFACE CLEANING / PRIMER PAINTING SHALL BE AS PER SPEC. 6907-0642-PT-L07
 - ALL FABRICATED NOZZLES/MANWAYS SHALL BE FULLY RADIOGRAPHED.
 - ALL INTERNALS SHALL BE SIZED SO AS TO PASS THROUGH MANHOLE.
 - ALL SS SURFACE SHALL BE PICKLED & PASSIVATED AS PER ASTM A380
 - PIPE TO PIPE, PIPE TO FLANGE, PIPE TO FITTING & FITTING TO FLANGE JOINT SHALL BE WELDED WITH THE SAME TECHNIQUE USED FOR MAIN EQUIPMENT WELDING.

SPECIFICATIONS

×	DENOTES APPLICABILITY
×	GENERAL SPEC. FOR PRESSURE VESSELS
×	SUPP. SPEC. FOR SS VESSELS
×	STD. SPEC. FOR BOCS PLATES
×	STD. SPEC. FOR STRUCTURAL QUALITY PLATES
×	STANDARD SPEC. FOR SS PLATE
×	JOB SPEC. FOR SHOP & FIELD PAINTING

STANDARDS

×	VESSEL TOLERANCES	7-12--0001
×	SUPPORT FOR HORIZONTAL VESSEL	7-12--0002
×	WOODEN PILLOWS FOR SADDLE SUPPORT	7-12--0003
×	SKIRT BASE DETAILS	7-12--0004
×	SKIRT OPENING DETAILS	7-12--0005
×	ANGLE LEG SUPPORT	7-12--0006
×	PIPE LEG SUPPORT	7-12--0007
×	BRACKET SUPPORT FOR VERTICAL VESSEL	7-12--0008
×	MANHOLE WITH HINGED COVER	7-12--0009
×	MANHOLE WITH DAVIT	7-12--0010
×	LADDER RUNGS FOR MANHOLE/DEMISTER	7-12--0011
×	RETAINING PLATE	7-12--0012
×	NOZZLE REINFORCEMENT AND PROJECTION	7-12--0013
×	PAD NOZZLES FOR VESSELS	7-12--0014
×	STANDARD BOLT HOLE ORIENTATION	7-12--0015
×	ALLOY LINER DETAILS	7-12--0016
×	SIGHT GLASSES FOR PRESSURE VESSELS	7-12--0017
×	INTERNAL FLANGES	7-12--0018
×	VORTEX BREAKERS	7-12--0019
×	INLET DEFLECTOR BAFLE	7-12--0020
×	SUPPORT RING & BOLTING BAR	7-12--0021
×	SUPPORT RING SIZES FOR PACKED TOWERS	7-12--0022
×	PIPE DAVIT	7-12--0023
×	LIFTING LUG TOP HEAD TYPE	7-12--0024
×	FIRE PROOFING AND INSULATION SUPPORTS	7-12--0025
×	EARTHING LUG	7-12--0026
×	NAME PLATE	7-12--0027
×	MANUFACTURER NAME PLATE	7-12--0028
×	BRACKET FOR NAME PLATE	7-12--0029
×	NAME PLATE FOR SMALL EQUIPMENT	7-12--0030
×	DETAILS OF FORGED NOZZLES	7-12--0031
×	SUPPORTS FOR INTERNAL FEED PIPE	7-12--0032
×	HOT INSULATION SUPPORTS FOR HORIZONTAL VESSEL	7-12--0033
×	PIPE DAVIT SUPPORT FOR COLD INS. VESSELS	7-12--0034
×	TYP.DETAILS OF WIRE MESH DEMISTER SUPPORTS	7-12--0036
×	S.R. NOZZLE NECK	7-12--0037

DESIGN DATA

CODE	ASME SEC. VIII DIV 1(LATEST) + ADDENDA
WORKING PRESSURE	(Kg/Cm ² g) INT 20.7 EXT. -
DESIGN PRESSURE	(Kg/Cm ² g) INT 26 EXT. -
WORKING TEMPERATURE	(°C) -103.2
DESIGN TEMPERATURE	(°C) -135/65
MDMT	(°C) -135
CORROSION ALLOWANCE	(mm) NIL
TYPE OF HEADS	TORISPHERICAL
JOINT EFFICIENCY	SHELL 0.85 HEAD 1.0
RADIOGRAPHY	SHELL SPOT HEAD SINGLE PIECE
POST WELD HEAT TREATMENT	-
HEAT TREATMENT	HEAD AS PER SPEC.
WIND SPECIFICATION	IS : 875
EARTH-QUAKE SPECIFICATION	SITE SPECTRA
OPERATING MEDIUM	HYDROCARBON SP. GRAVITY- 0.3412
CAPACITY	(M ³) 4.97
PAINTING / CLEANING	AS PER JOB SPEC. (REFER NOTE-10)
INSULATION THICKNESS (mm)	215 (PUF) ☐ HOT ☐ COLD
FIRE PROOFING	☐ YES ☒ NO
HYDROSTATIC TEST (Kg/Cm ² g)	HORIZONTAL VERTICAL
PRESSURE (NEW & COLD)	33.8 (AT TOP)
INSPECTION BY	☒ EIL ☐ CIB ☐ LLOYDS

MATERIAL OF CONSTRUCTION

(AS PER ASME/IS OR EQUIVALENT)	
SHELL	SA 240 TP 304L
REINFORCEMENT PAD	SA 240 TP 304L
HEADS	SA 240 TP 304L
SHELL FLANGES	-
NOZZLE FLANGES	SA 182 F304L
NOZZLE NECK UPTO 100NB	SA 312 TP 304L (SEAMLESS)
NOZZLE NECK ABOVE 100NB	SA 240 TP 304L
PIPE FITTINGS	SA 403 TP 304L
GASKETS EXTERNAL	SPIRAL WOUND GASKET WITH SS 316 METAL WINDING AND GRAFOIL FILLER MATERIAL AND SS316 I/O RING. AS PER ASME B16.20
GASKETS INTERNAL	CAF
EXTERNAL STUDS/BOLTS/NUTS	SA 320 GR.B8 CL2/SA 194 GR.8
INTERNAL STUDS/BOLTS/NUTS	SA 320 GR.B8 CL2/SA 194 GR.8
SKIRT / SUPPORT	SA 240 TP.304L
SKIRT / SUPPORT BASE	SA 240 TP.304L
INTERNAL PARTS (WELDED)	SA 240 TP 304L/SA 312 TP 304L
INTERNAL PARTS (BOLTED)	SA 240 TP 304L/SA 312 TP 304L
EXTERNAL CLIPS & ATTACHMENTS WELDED OVER PAD	SA 240 TP 304L
EXTERNAL CLIP & ATTACHMENTS DIRECTLY WELDED TO SHELL	SA 240 TP 304L
PAD FOR EXTERNAL ATTACHMENT	SA 240 TP 304L
DEMISTER / GRID	-

STATUTORY REGULATIONS

INDIAN BOILER REGULATIONS (IBR)
DEPARTMENT OF EXPLOSIVES, NAGPUR (CCOE)

APPROXIMATE WEIGHT (KGS)

ERECTION WEIGHT	3200	OPERATING WEIGHT	4000
HYDROTEST WEIGHT	8150	HYDROTEST WEIGHT	8500
(SHOP)		(FIELD)	
NUMBER OF ITEMS :	ONE		

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
2. ALL ANCHOR BOLT HOLES TO STRADDLE N/S CENTER LINE.
3. NORTH DIRECTION WHEREVER SHOWN IS WITH RESPECT TO PLAN VIEW.
4.a) FOR NOZZLES ON SHELL PROJECTIONS ARE REFERRED TO FROM VESSEL CENTER LINE TO FLANGE CONTACT FACE. b) FOR NOZZLES ON HEAD PROJECTIONS ARE REFERRED TO FROM HEAD T.L. TO FLANGE CONTACT FACE.
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9. NOZZLES 50NB AND BELOW SHALL BE STIFFENED WITH 2NOS.40X6THK. FLATS 90° APART.
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12. ALL INTERNALS SHALL BE SIZED SO AS TO PASS THROUGH MANHOLE.
13. ALL SS SURFACE SHALL BE PICKLED & PASSIVATED AS PER ASTM A380
14. PIPE TO PIPE, PIPE TO FLANGE, PIPE TO FITTING & FITTING TO FLANGE JOINT SHALL BE WELDED WITH THE SAME TECHNIQUE USED FOR MAIN EQUIPMENT WELDING.

REFERENCE DRAWINGS

×	NOZZLE ORIENTATIONS	6907-11-16-43-4107, REV.0
×	LADDERS / PLATFORM CLEATS	-
×	PIPE SUPPORT CLEATS	-
×	TRAY SUPPORT AND BOLTING BARS	N.A.
×	DEMISTER DATA SHEET	N.A.
HOLD UPS		
×	NOZZLE ORIENTATIONS	SIZE OF NOZZLES 'LT' & 'SP'
×	NOZZLE ELEVATIONS	PIPE SUPPORT CLEATS
×	SUPPORT HEIGHT	LADDER / PLATFORM CLEATS
×	DETAIL OF INTERNALS	TRAY SUPPORTS/ BOLTING BARS
×	REROLLER CLIPS	PIPE DAVIT

STATUTORY REGULATIONS

INDIAN BOILER REGULATIONS (IBR)
DEPARTMENT OF EXPLOSIVES, NAGPUR (CCOE)

APPROXIMATE WEIGHT (KGS)

ERECTION WEIGHT	3200	OPERATING WEIGHT	4000
HYDROTEST WEIGHT	8150	HYDROTEST WEIGHT	8500
(SHOP)		(FIELD)	
NUMBER OF ITEMS :	ONE		

FILE NAME : 6907-11-16-46-3022 -A-1

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ENGINEERS INDIA LIMITED	
KOLKATA	
JOB NO.:	6907
CLIENT:	BCPL
PLANT:	C2 + RECOVERY UNIT

ISSUED FOR PURCHASE	0	17.03.2010
ISSUED FOR BIDS	A	01.07.2009
REVISION	BY	

CHK	APPROVED	APPROVED
AKG	AKG	AKG
AS/PB	AKG	AKG

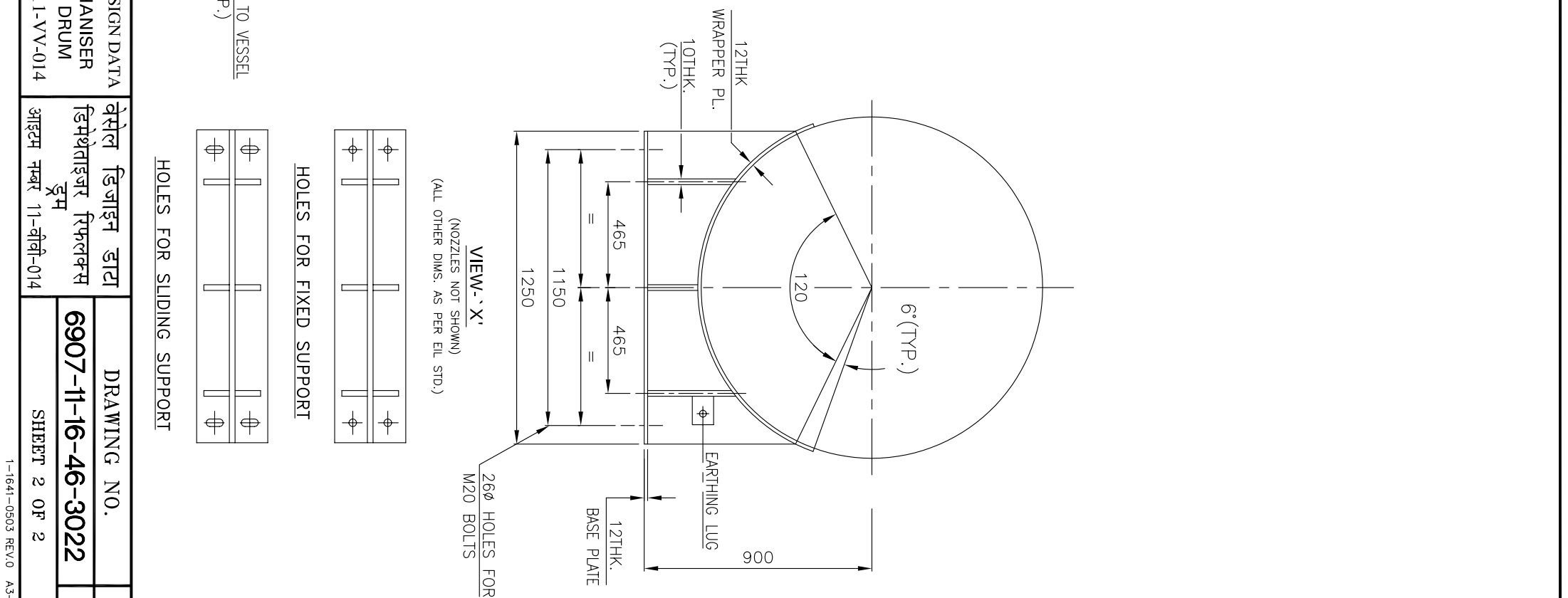
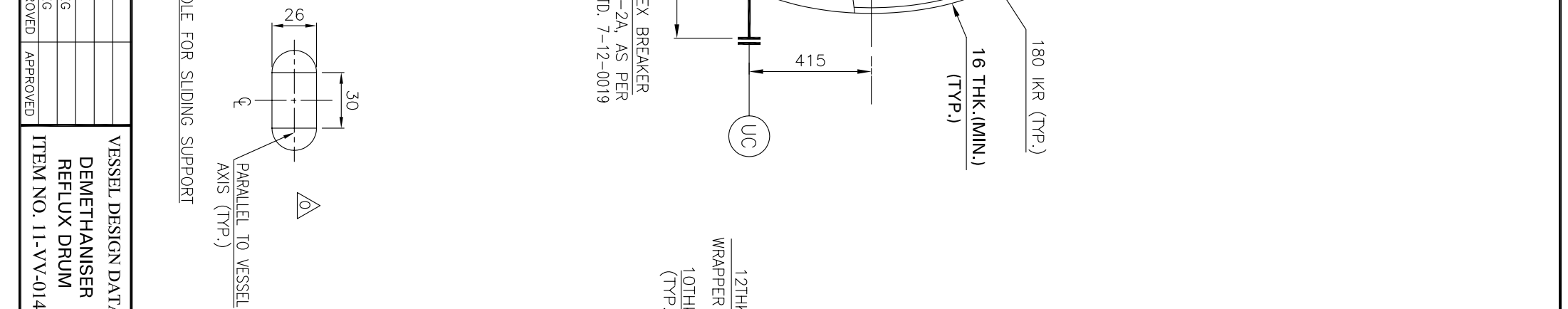
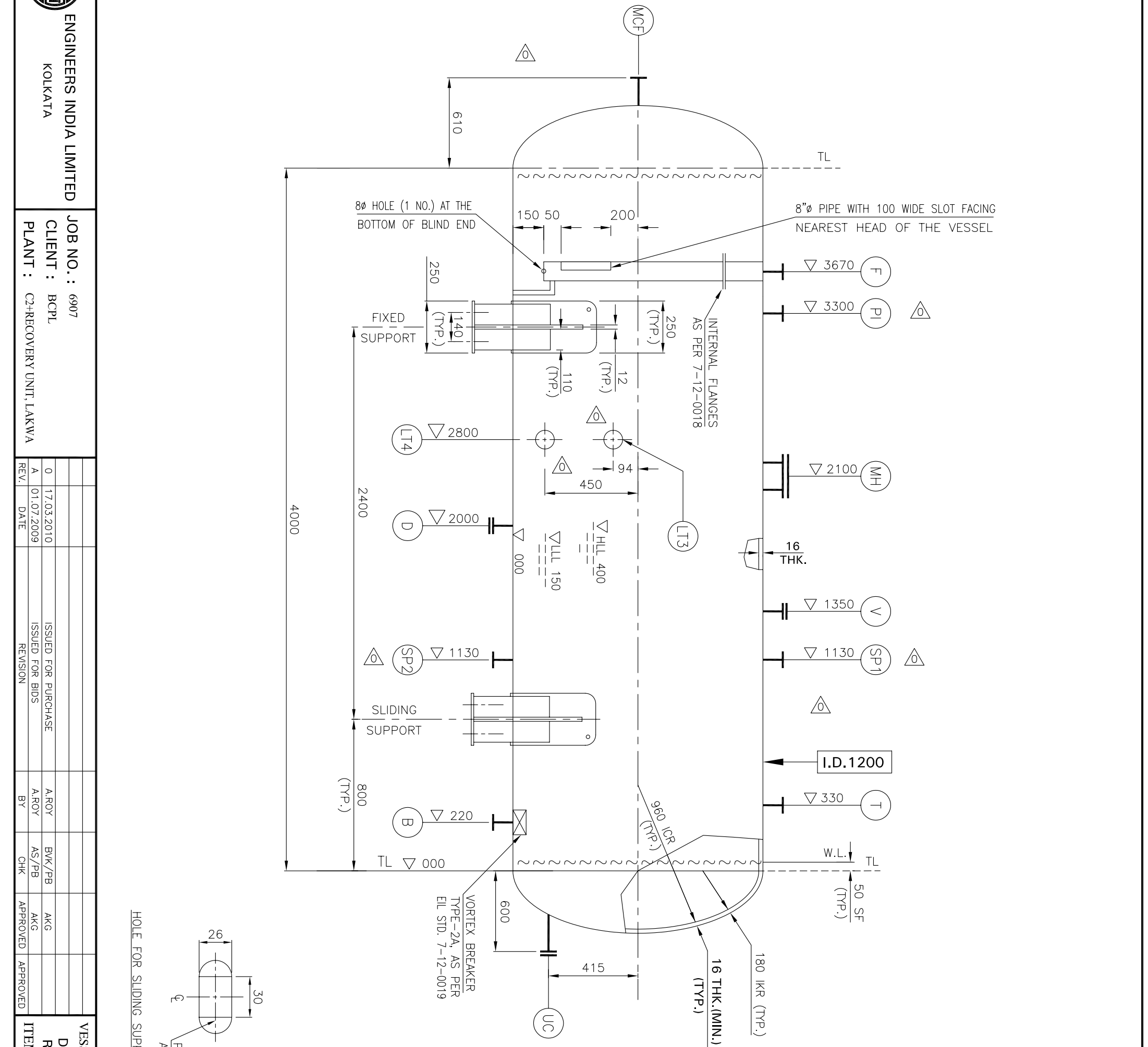
VESSEL DESIGN DATA
DEMETHANISER
REFLUX DRUM
ITEM NO. 11-VV-014

वेसेल डिजाइन ड्राटा
डिमथेनाइजर रिफ्लक्स
ड्रम
आइटम नम्बर 11-वीवी-014

DRAWING NO.	REV.
6907-11-16-46-3022	0
SHEET 1 OF 2	

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FILE NAME : 6907-11-16-46-3022-0-2



6° (TYP.)

120

465

1150

1250

VIEW - X'

(NOZZLES NOT SHOWN)

(ALL OTHER DIMS. AS PER EIL STD.)

HOLES FOR SLIDING SUPPORT

HOLES FOR FIXED SUPPORT

6° (TYP.)

120

465

1150

1250

VIEW - X

HOLES FOR SLIDING SUPPORT

VIEW-'X'

(ALL OTHER DIMS. AS PER EL. STD.)

HOLES FOR SLIDING SUPPORT

HOLES FOR FIXED SUPPORT

Technical drawing of a foundation and wall section. The drawing shows a cross-section of a wall and its foundation. The wall has a thickness of 260 mm and a height of 2000 mm. The foundation is 200 mm wide. The drawing includes dimensions for the wall, foundation, and reinforcement. The reinforcement consists of 4 bars of 16 mm diameter (4-16) and 2 bars of 10 mm diameter (2-10). The drawing is labeled "DRAWING NO. 7-11-16-46-3" and "SHEET 2 OF 3".

REV.	0
------	---

BOTTOM OF BLIND END
 150 50 200
 250
 FIXED
 NEAREST HEAD OF THE VESSEL
 ∇ 3670 (F)
 ∇ 3300 (P) $\triangle$ 0

JOB NO.: 6907
 CLIENT: BCPL
 PLANT: C2+RE

INTERNAL FLANGES
AS PER 7-12-0018

NEAREST HEAD OF THE VESSEL

250 (TYP.)

12 (TYP.)

110 (TYP.)

140 (TYP.)

250

FIXED SUPPORT

BOTTOM OF BLIND END

2800

LT

3670

F

3300

PI

200

150

50

JOB NO.: 6907

CLIENT: BCPL

PLANT: C3+RECOVERY UNIT, LAKWA

Technical drawing of a sewerage system plan view. The drawing shows a main sewer line with various manholes (MH, SP1, SP2, T, B, D), valves (V), and a sliding support. The drawing includes dimensions, elevations, and labels for components like 'VORTEX BREAKER' and 'SLIDING SUPPORT'. A detail view of the sliding support is shown at the bottom left.

Key features and dimensions:

- Manholes: MH (Elev. 2100), SP1 (Elev. 1130), SP2 (Elev. 1130), T (Elev. 330), B (Elev. 220), D (Elev. 2000).
- Valves: V (Elev. 1350).
- Sliding Support: Located at a distance of 800 (TYP.) from the T manhole.
- Vortex Breaker: Located at a distance of 600 from the T manhole.
- Dimensions: 450, 94, 415, 180 ICR, 960 ICR (TYP.), 16 THK. (TYP.), 50 SF (TYP.), 30, 26.
- Elevations: 2100, 1350, 1130, 330, 220, 2000, 000, 150, 400.
- Labels: I.D. 1200, W.L., TL, VORTEX BREAKER TYPE-2A, AS PER EIL STD. 7-12-0019, SLIDING SUPPORT.

ITEM NO. 11-VV-014 REFLUX DRUM DEMETHANISER VESSEL DESIGN DATA	MIN.) (TYP.) 12THK WRAPPER 10THK (TYP.) UC	PARALLEL TO VESSEL AXIS (TYP.) SUPPORT
--	---	--

VIEW
(NOZZLES N
(ALL OTHER DIMS.

[illegible]

Technical drawing of a 12THV base plate. The drawing shows a top view of a rectangular base plate with a circular cutout in the center. The base plate is labeled "12THV" and "BASE PL". It features an "EARTHING LUG" and "26Ø HOLES M20 BOLTS". Dimensions include a total width of 465, a central cutout diameter of 6" (TYP.), and a distance of 120 from the center to the edge. The drawing also shows "DRAWING SUPPORT" and "DRAWING NO. 6907-11-16-46-30222".

[illegible]

GROUNDING LUG

26Ø HOLE
M20 BOLT

12
BASE

G NO.

46-302

T 2 OF 2

-1641-0503

46-3022	REV.
0	

26Ø HOLES FOR
M20 BOLTS

12THK.
BASE PLATE

GROUNDING LUG

00

1641-0503 REV.0 A3-420x297

T 2 OF 2