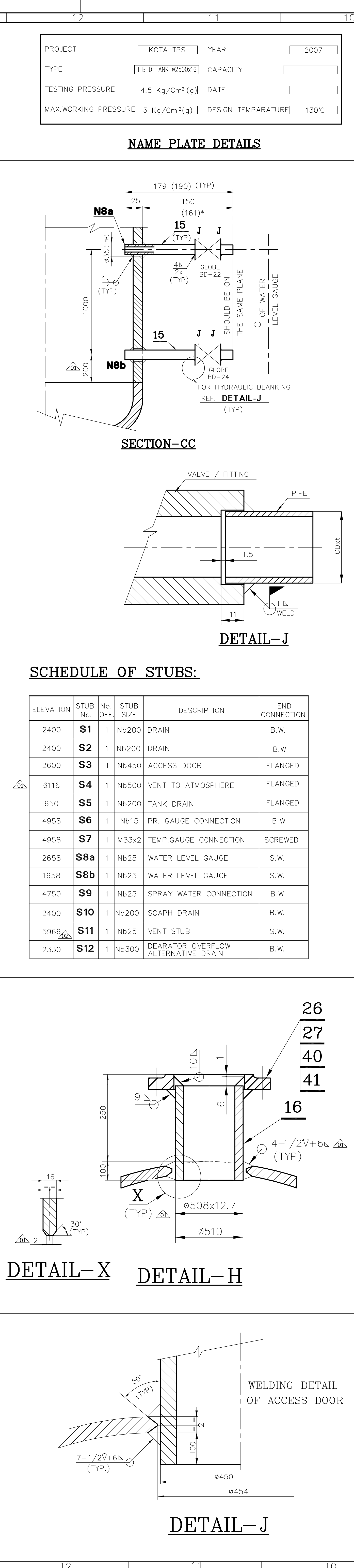
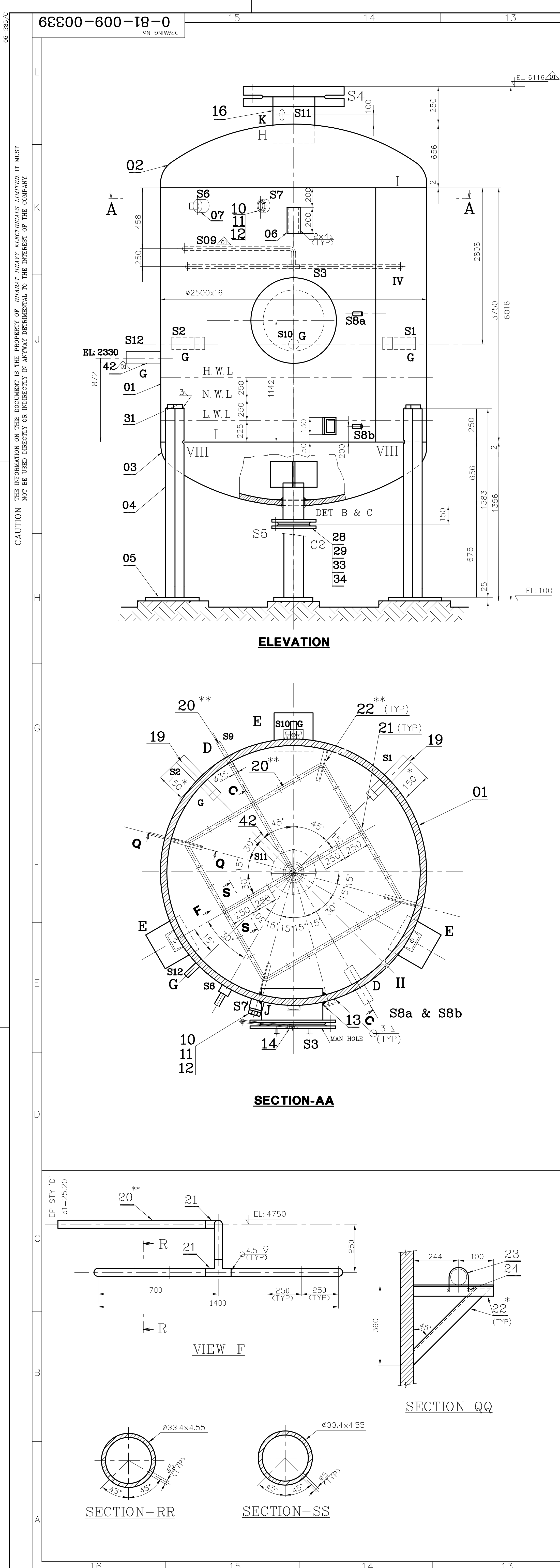


List of Major Items and Material Specifications for Piping, Piping Components including Fittings and Tanks & Vessels.		
DESCRIPTION		
MATERIAL SPECIFICATION	Size	Category
Specification to Carbon Steel- ASTM SA106GRB / SA106GRC, SA234 WPB /WPC, SA105, SA 515 /SA 516GR70, SA672GrB70	Pipes up to Dia 610 and plates up to 125 mm and Rounds up to D250mm	IBR/NonIBR
Specification to IS 1239 / IS3589 BLACK, IS2062 , OTHER I.S SPECNS, FASTENERS,GASKETS & CAF JOINTS etc	IS 1239 pipes up to Dia NB150 and IS 3589 pipes up to Dia 1014	Non IBR
Specification to – IS 1239 GALVANISED & THREADED	pipes up to Dia NB150	Non IBR
Specification to – API 5 L GRB	Pipes up to Dia 610	Non IBR
Specification to ASTM SA335 P11 / P12/ P22, SA234WP11/ WP12/WP22, SA 182 F11/F12/F22,SA 387 Gr12,Gr22,SA193GrB7,SA194Gr2H	Pipes up to Dia 610 and plates up to 125 mm and Rounds up to D250mm	IBR/NonIBR
Specification to - ASTM/ ASME SS304,304H	Pipies up to Dia 323.9	Non IBR
Specification to - ASTM/ ASME SS316	Pipies up to Dia 323.9	Non IBR
Specification to - ASTM/ ASME SS321	Pipies up to Dia 323.9	Non IBR
Specification to-DUPLEX SS AS PER ASTM-A-790 TYPE 2205 WELDED 65 NB AND ABOVE UP TO 300NB	Pipies up to Dia 323.9	Non IBR
Specification to -DUPLEX SS AS PER ASTM-A-790 TYPE 2205 SEAMLESS BELOW 65 NB	Pipies up to Dia NB65	Non IBR
Fittings to <b>all specifications and sizes</b> covered as mentioned	Elbows, Equal & Unequal Tess, Reducers, Flanges, End Caps	IBR/NonIBR
Tanks & Vessels - made from SA 515 Gr70 and IS 2062 Plates	Tank Dia From 1000 to 3200 mm	IBR/NonIBR
PAINTING SCHEME NO.1 - Synthetic Enamel-Total DFT -70 Microns	As per Contract requirement	
PAINTING SCHEME NO.2 - Synthetic Enamel-Total DFT -120 Microns	As per Contract requirement	
PAINTING SCHEME NO.3 - Epoxy - Total DFT - 160 Microns	As per Contract requirement	
PAINTING SCHEME NO.4 - Epoxy - Total DFT - 200 Microns	As per Contract requirement	
PAINTING SCHEME NO.5 - Coal Tar Epoxy - Total DFT - 200 Microns	As per Contract requirement	
PAINTING SCHEME NO.6 - Chlorinated Rubber Total DFT - 160 Microns	As per Contract requirement	
PAINTING SCHEME NO.7 - Heat Resistance Aluminium Gr2 -Total DFT-40 microns	As per Contract requirement	





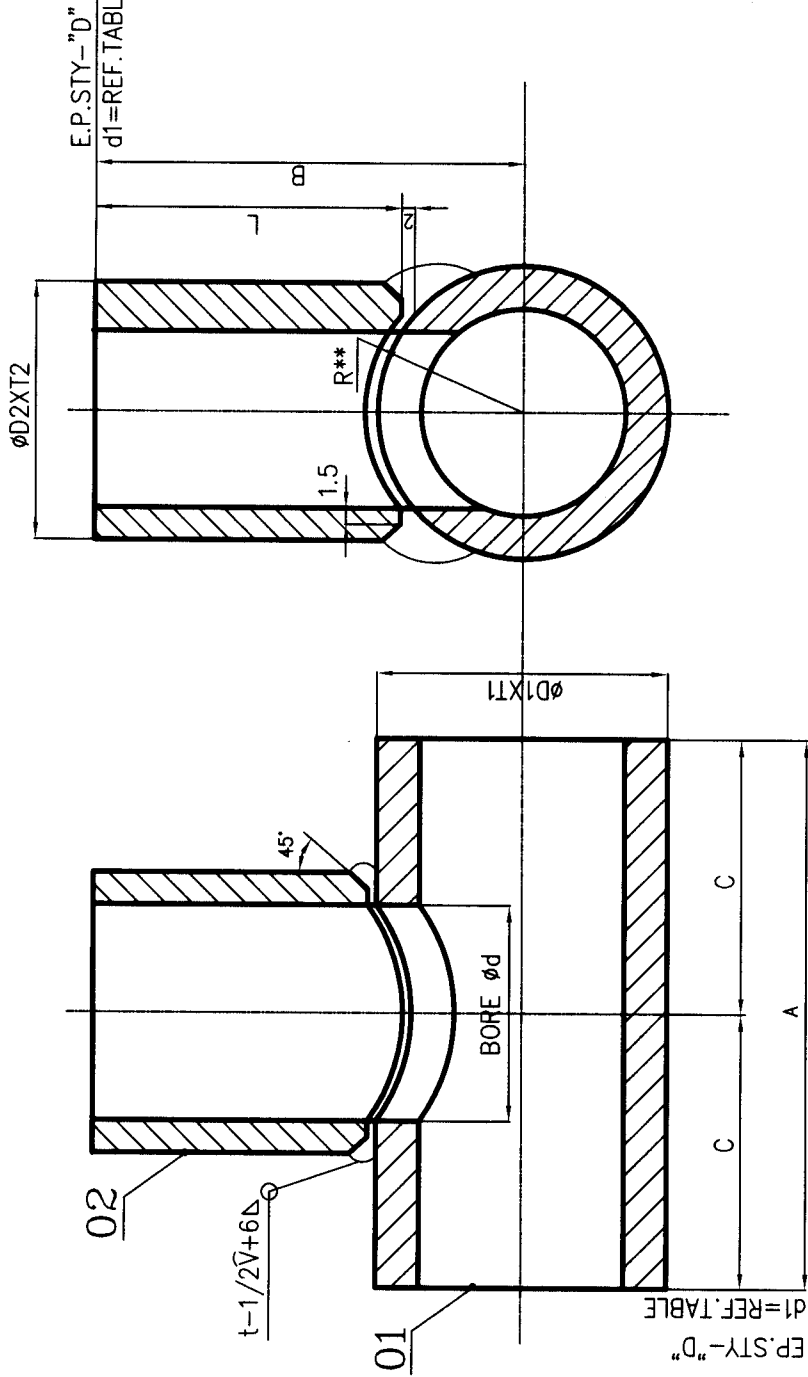


\*\* BRANCH PIPE SHALL BE CUT TO SUIT THE OUTER SURFACE OF THE MAIN PIPE SUCH THAT A UNIFORM GAP OF 2mm IS MAINTAINED THROUGHOUT

885472-894-08-E

DRAWING NO

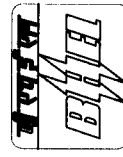
CAUTION THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY



VAR NO.	$\phi D1 \times T1$	$\phi D2 \times T2$	d1	ITEM NO : 01 (RUN PIPE)	ITEM NO : 02 (BRANCH PIPE)	ASSY.WT (Kgs)
05	$\phi 406.4 \times 6.4$	$\phi 219.1 \times 6.35$	207.1	206.4	205.2	173
04	$\phi 219.1 \times 6.35$	$\phi 168.3 \times 7.11$	156.8	154.08	111.55	169
03	$\phi 219.1 \times 6.35$	$\phi 114.3 \times 6.02$	105.3	102.26	111.55	101
02	$\phi 355.6 \times 9.53$	$\phi 219.1 \times 6.35$	207.1	206.4	179.8	203
01	$\phi 355.6 \times 9.53$	$\phi 168.3 \times 7.11$	156.8	154.08	179.8	138

VAR NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	NO. VAR NO.	MATERIAL SPEC.	QTY.
07						
06						
05	02	PIPE OD 219.1 X 6.35 L=173	3-80-463-24538		150822910000 SA106GRB	5   763
	01	PIPE OD 406.4 X 6.4 L=700	3-80-463-24538		159382510000 API5LGRB	44   191
04	02	PIPE OD 168.3 X 7.11 L=169	3-80-463-24538		150824110000 SA106GRB	4   776
	01	PIPE OD 219.1 X 6.35 L=500	3-80-463-24538		150822910000 SA106GRB	16   657
03	02	PIPE OD 114.3 X 6.02 L=101	3-80-463-24538		151820900001 SA106GRB	1   624
	01	PIPE OD 219.1 X 6.35 L=400	3-80-463-24538		150822910000 SA106GRB	13   326
02	02	PIPE OD 219.1 X 6.35 L=203	3-80-463-24538		150822910000 SA106GRB	6   763
	01	PIPE OD 355.6 X 9.53 L=700	3-80-463-24538		150825310000 SA106GRB	56   931
	02	PIPE OD 168.3 X 7.11 L=138	3-80-463-24538		150824110000 SA106GRB	3   900
01	01	PIPE OD 355.6 X 9.53 L=600	3-80-463-24538		150825310000 SA106GRB	48   798

TYPE OF PRODUCT  
OR NAME OF  
CUSTOMER/PROJECT

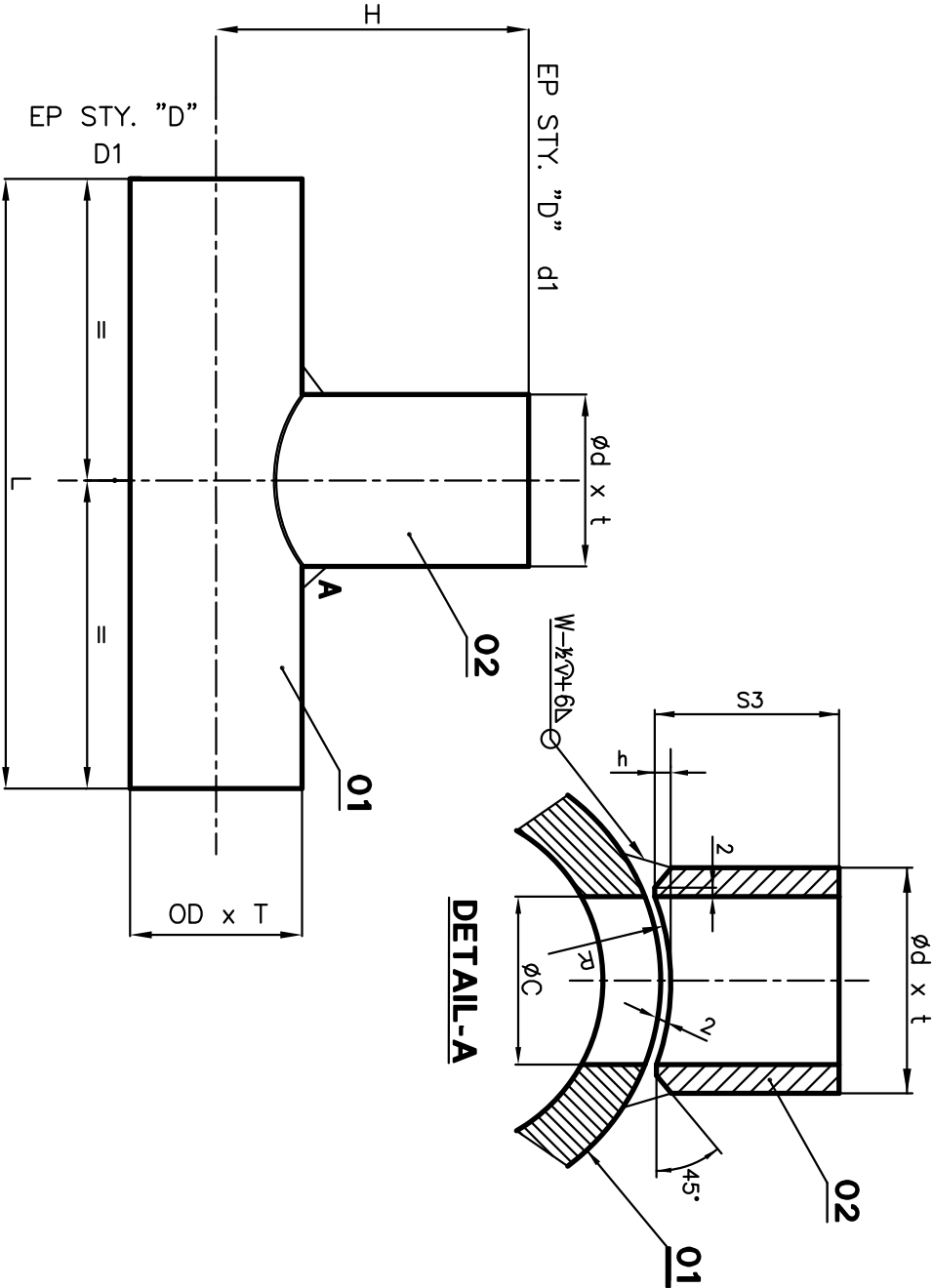


BHARAT HEAVY ELECTRICALS LTD.,  
PIPING CENTRE,  
CHENNAI 600 017

NAME	SIGN	DATE	NO OF ITEMS
MANIKANDAN	<i>[Signature]</i>	03.08.07	
SANTHOSH K. R.	<i>[Signature]</i>	03.08.07	
APPD K.V.RAMANI	<i>[Signature]</i>	03.08.07	

DEPT.	GRADE OF UN TOL DIM C/M/F	SCALE	WEIGHT (Kg). REF TO ASSY / OLD DRG	ITEM No.
TITLE	CARD CODE	DRAWING No.	REV	REV
WELDED UNEQUAL TEE	U 01	3-80-463-24538	00	00

54282-394-08-3  
ON GINWARD



VAR. NO.	OD x T	Od x t	L	H	C	S3	h	EP STY. "D"		W	R	WT
								EP D1	Ød1			
01	Ø610x8	Ø610x10	900	600	590	515	222	594.0	594.0	10	307.0	167.206
02	Ø610x8	Ø406x6	800	500	394	265	72	594.0	394.0	8	307.0	104.996
03	Ø508x6	Ø508x10	800	500	488	423	179	496.0	496.0	10	256.0	102.558
04	Ø508x6	Ø406x6	700	500	394	337	93	496.0	394.0	6	256.0	66.217
05	Ø457x6	Ø219x6	500	400	207	194	25	445.0	207.0	6	230.5	37.891
06	Ø406x6	Ø406x10	700	400	386	331	136	394.0	394.0	10	205.0	68.311
07	Ø406x6	Ø355x6	600	400	343	288	93	394.0	343.0	6	205.0	46.086
08	Ø406x6	Ø168.3x5.4	500	400	157.5	211	16	394.0	157.5	6	205.0	33.175
09	Ø457x6	Ø168.3x5.4	500	400	157.5	183	14	445.0	157.5	6	230.5	36.322
10	Ø219x6	Ø76.6x4.5	300	250	67.6	144	5	445.0	157.5	6	230.5	10.427

10	02	PIPE Ø76.6X4.5	L=144	3-80-463-28745		15 838 016 0000		1	138
10	01	PIPE Ø219X6	L=300	3-80-463-28745		15 938 549 0000		9	289
09	02	PIPE Ø168.3X5.4	L=183	3-80-463-28745		15 838 025 0000		3	880
09	01	PIPE Ø457x6	L=500	3-80-463-28745		15 938 527 0000		32	442
08	02	PIPE Ø168.3X5.4	L=211	3-80-463-28745		15 838 025 0000		4	473
08	01	PIPE Ø406X6	L=500	3-80-463-28745		15 938 526 0000		28	702
07	02	PIPE Ø355X6	L=288	3-80-463-28745		15 938 542 0000		14.	895
07	01	PIPE Ø406x6	L=600	3-80-463-28745		15 938 526 0000		31	191
06	02	PIPE Ø406x10	L=331	3-80-463-28745		15 938 575 0000		32	355
06	01	PIPE Ø406X6	L=700	3-80-463-28745		15 938 526 0000		35	956
05	02	PIPE Ø219X6	L=194	3-80-463-28745		15 938 549 0000		6	117
05	01	PIPE Ø457x6	L=500	3-80-463-28745		15 938 527 0000		31	774
04	02	PIPE Ø406X6	L=337	3-80-463-28745		15 938 526 0000		19	964
04	01	PIPE Ø508X6	L=700	3-80-463-28745		15 938 528 0000		46	253
03	02	PIPE Ø508X10	L=423	3-80-463-28745		15 938 577 0000		51	944
03	01	PIPE Ø508X6	L=800	3-80-463-28745		15 938 528 0000		50	614
02	02	PIPE Ø406X6	L=265	3-80-463-28745		15 938 526 0000		15	699
02	01	PIPE Ø610x8	L=800	3-80-463-28745		15 938 530 0000		89	297
01	02	PIPE Ø610x10	L=515	3-80-463-28745		15 938 578 0000		77	456
01	01	PIPE Ø610x8	L=900	3-80-463-28745		15 938 530 0000		89	750



BHARAT HEAVY ELECTRICALS LIMITED  
PIPING CENTRE  
MADRAS 600 017

DRN	I.D.B.RAU	29.08.11	REF. TO ASSY./OLD DRG.	ITEM NO.	NO.OF VAR.
CHD	I.D.B.RAU	29.08.11			
APPD	G.AARATHI	29.08.11			

REV		DATE		ALTERED	
01				APPROVED	
ZONE					
DEPT	PC	GRADE OF UNTOOL. DIM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG.
CODE		C/M/F	N.T.S		

TITLE		CARD CODE	DRAWING NO.	REV
WELEDDED UN EQUAL TEES		U 01	3-80-463-28745	00