



SL No		COMPONENT & OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY		REMARKS
1		2	3	4	5	6	7	8	9	M	B	11
1.0		STRAIGHT										
1.0		PIPE: IS3589 (Longitudinal /spiral welded pipes)	Chemical Mechanical Soundness	Major Major Major	Verification Tensile test Hydraulic test or Radiography Measurement	One/ heat One/ heat 100%	IS 3589 IS 3589 IS 3589		TC TC TC	P P P	V W W	10% witness by BHEL
2.0		Surface Preparation of pipes	Dimension Degree of cleanliness	Major Major	Visual	10% Random 100%	IS 3589 Blast clean to near white metal.		TC HC	P P	W V	TC - Test certificate HC - History card / Register
2.1		Coating (internal)										
(a)		PRIMER **	Coal tar epoxy primer.	Major	Visual & Elcometer measurement	Each pipe	Minimum DFT:50 microns		HC	P	V	* Brand Name as approved by. BHEL & DVC. Ref page 2
(b)		OVER COAT **	Coal tar epoxy finish Paint	Major	Visual & Elcometer measurement	Each pipe	2 coats. DFT:100 microns min		HC	P	W	
(c)		Inspection of Coating	Dry film thickness (DFT) Holiday detection	Major Major	Visual & Elcometer Visual	Each pipe at 5 spots* min 100%	Per coat .Total DFT: Primer + Over coat =250 microns min. Dry film thickness 250 microns min. No Holiday		HC HC	P P	W W	*spots identification by BHEL. 10% witness by BHEL
PREPARED &  G.PANNEER SELVAM.		REVIEWED & APPROVED BY  P.Elangovan.	Legends M : MANUFACTURER / SUBCONTRACTOR. B : BHEL/BHEL Authorized Inspection Agency P : Perform. W : Witness. V : Verification.									
NAME & SIGNATURE												



BHARAT HEAVY ELECTRICALS LIMITED.
PIPING CENTRE CHENNAI – 17
QUALITY DEPARTMENT.

QA 03

QUALITY PLAN FOR CW PIPING (STRAIGHT PIPES SIZE NB $\geq$ 1000 MM)

PROJECT: MEJIA PHASE – II (2 X 500 MW) UNIT 1 & 2
BHEL CUSTOMER Nos : 6922 , 6923

QP NO : 6922 : QPC : 01
REV. NO : 00
DATE : 22.08.2007
PAGE : 2 of 2

PAGE : 2 of 2											
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1	2	3	4	5	6	7	8	9	M	B	
10											
11											
3.0	Coating(External) - Over ground piping.										
3.1	Surface preparation of out side surface	Power tool cleaning / Rotary wire brush	Major	Visual	100%	Free from all dirt, oil, grease, rust, scale, weldslag, fluxdeposit,foreign matters etc	Minimum DFT: 50 microns	HC	P	V	* Total DFT= Primer + Finish 125 microns min
	Primer	Red oxide Zinc Phosphate primer to IS:12744	Major	Visual & Elcometer	100%			HC	P	V	
	Finish paint	Synthetic enamel IS2932 smoke grey shade No.692 As per IS: 5	Major	Visual & Elcometer Measurement	100%			HC	P	W	
3.2	Coating (External) – Burried Piping No painting required for Pipes burried (under ground) – as Coal Tar Tape wrapping shall be carried out at site. Surface shall be cleaned with wire brush / power tool										
4.0	Marking & Identification	Work order NO, Du No, Length ,Makers Identification	Major	Visual	100%	Each pipe punched & stenciled As per P.O		HC	P	W	

APPROVED PAINT SUPPLIERS

(1) BERGER PAINTS

(2) SHALIMAR PAINTS

(3) ASIAN PAINTS

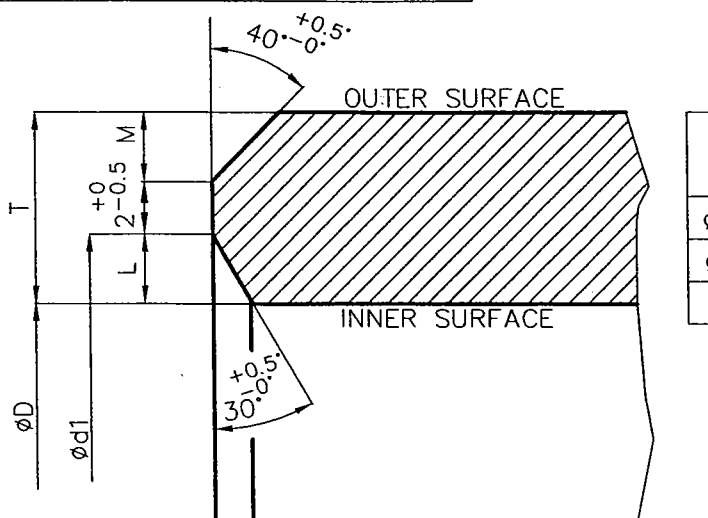
(4) JENSION & NICHOLSON

(5) CDC CARBOLINE.

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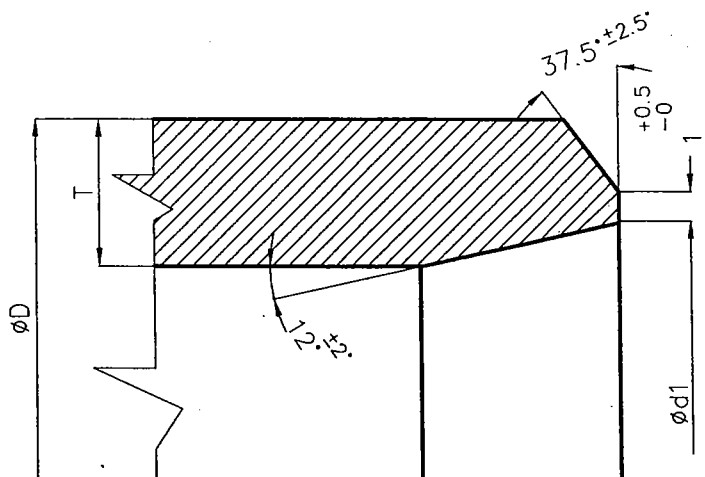
REV	DATE	ALTERED
		APPROVED

ALL DIMENSIONS ARE IN MILLIMETRES



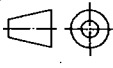
PIPE SIZE OD X T	ød1	øD	T	L	M
ø 3240 X 20	3226.0	3200	20	13	5
ø 2235 X 18	2221.0	2199	18	11	5

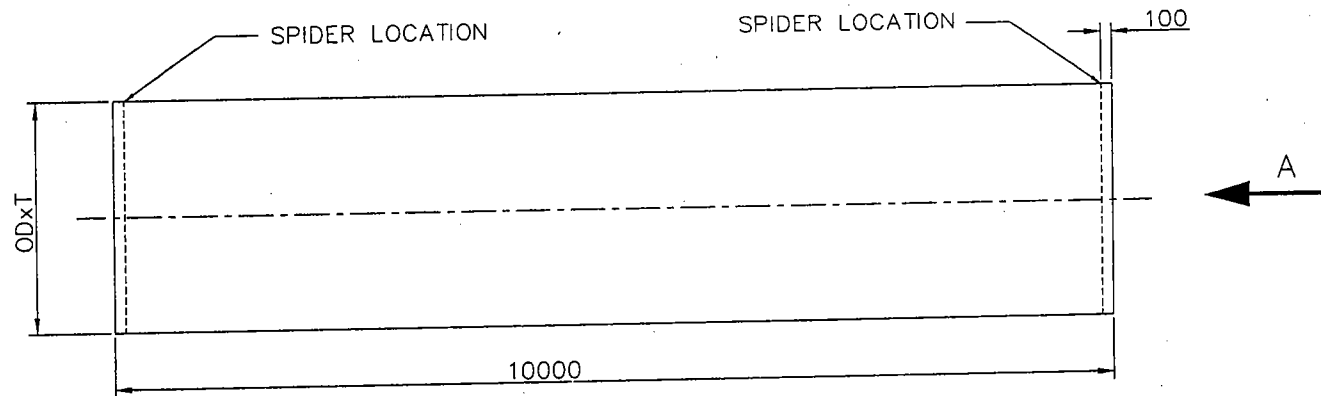
FIG-A



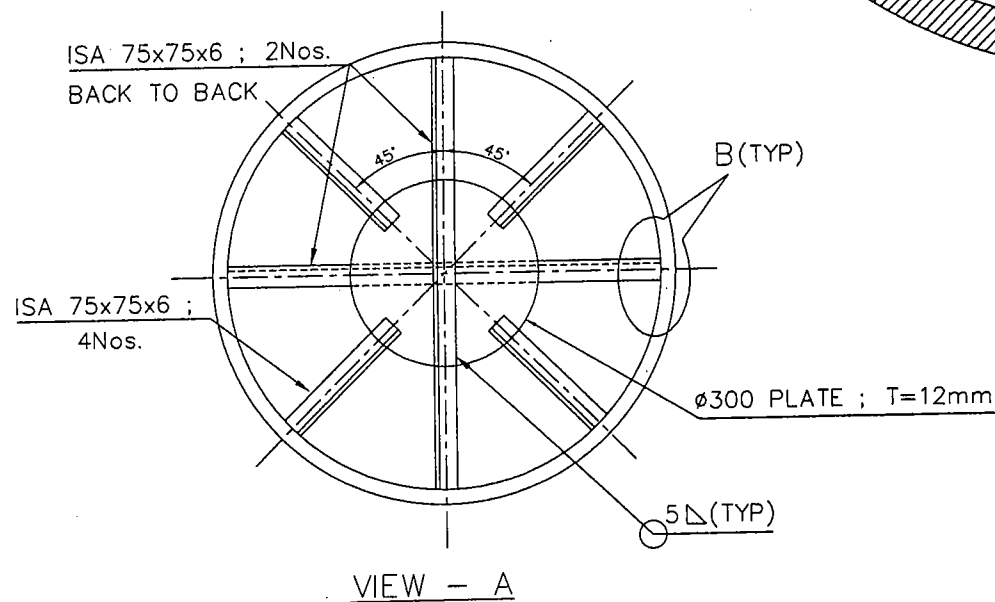
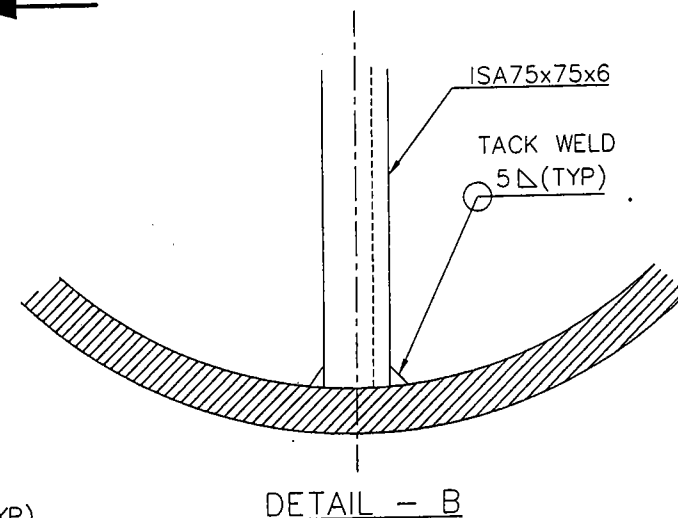
PIPE SIZE øD X T	ød1
ø 1829 X 14	1801.0
ø 1024 X 12	1000.0

FIG-B

 BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DRN	NAME VENKAT	SIGN	DATE 27-08-07	NO. OF VAR	
		CHD	VENKAT		27-08-07		
		APPD	S.MADHAVAN		27-08-07		
DEPT CODE	GRADE OF UNTOL DIM C / M / F	 SCALE N.T.S	WEIGHT (KG).		REF. TO ASSY./OLD DRG.	ITEM NO.	NO. OF ITEMS
TITLE EDGE PREPARATION DETAIL			CARD CODE U 01	DRAWING NO. 4-80-468-65593		REV 00	



SPIRAL/LONGITUDINAL WELDED PIPE
(2 LOCATIONS IN 10 MTR. PIPE)



BHARAT HEAVY ELECTRICALS LIMITED
PIPING CENTRE
CHENNAI 600 017

SPIDER ARRANGEMENT FOR
LARGER DIA PIPES

DRAWN	APPROVED	DATE
C KUMAR	C KARUNAKARAN	05.04.06