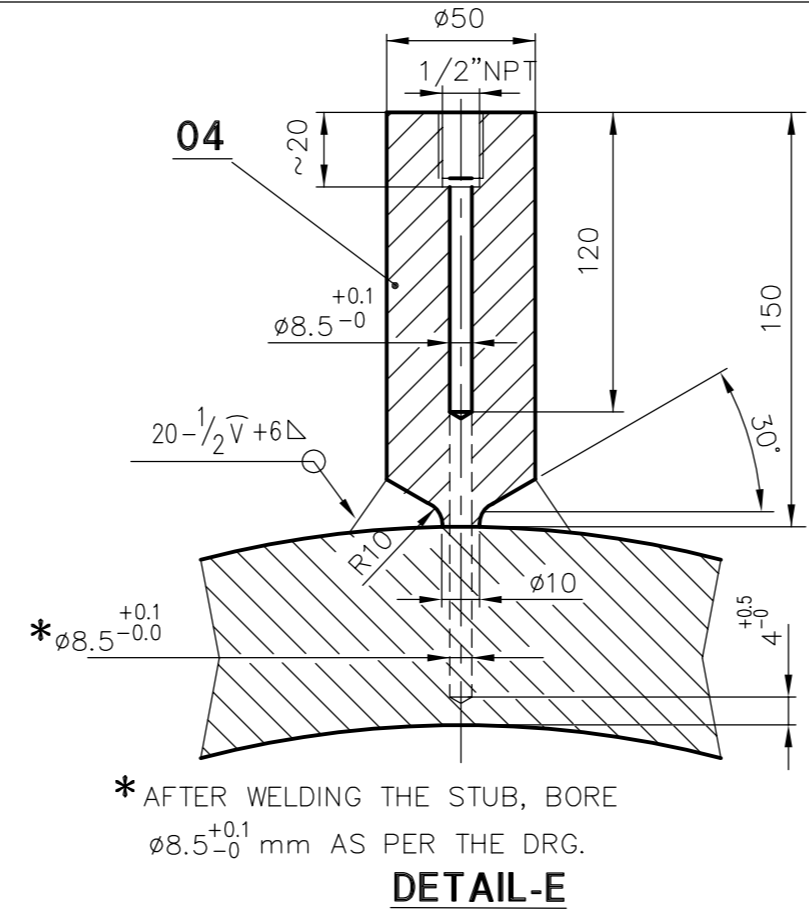
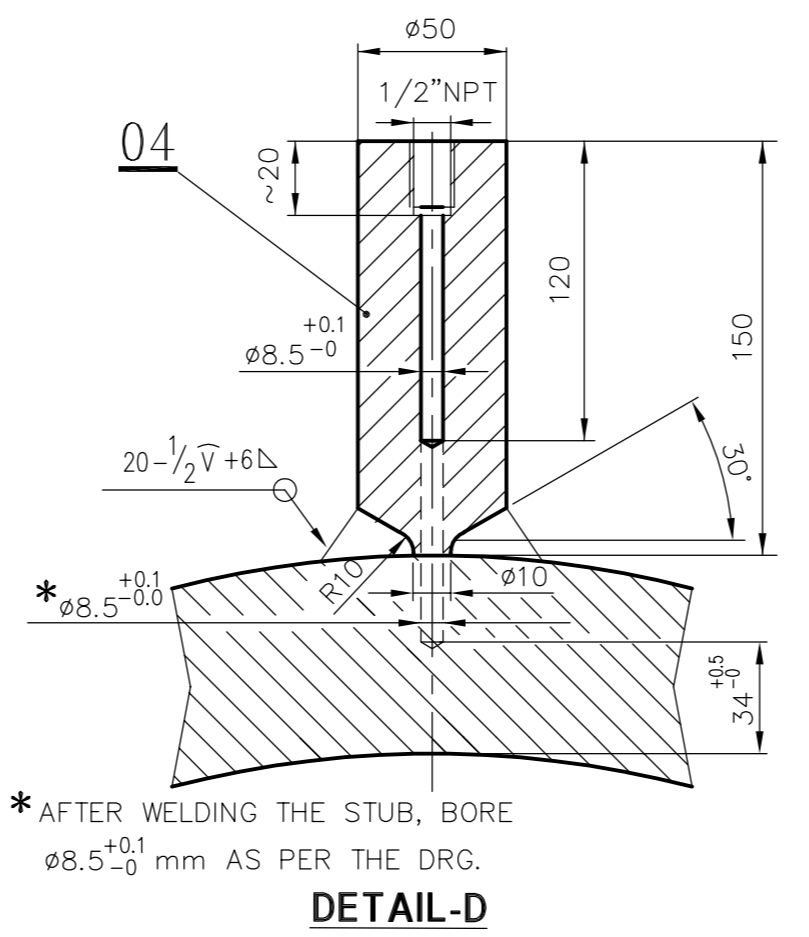
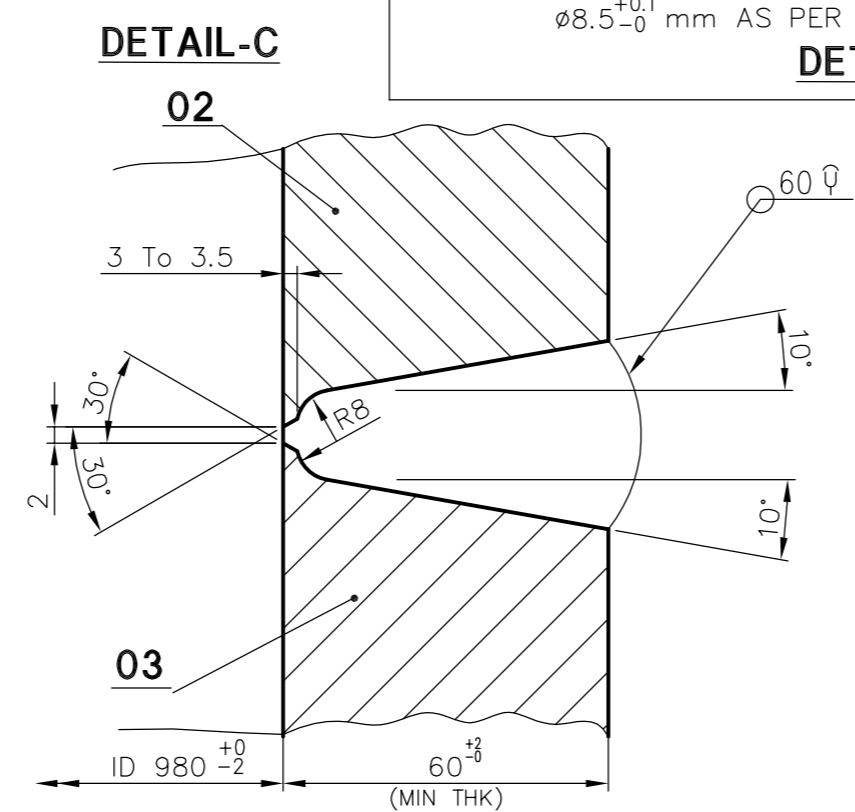
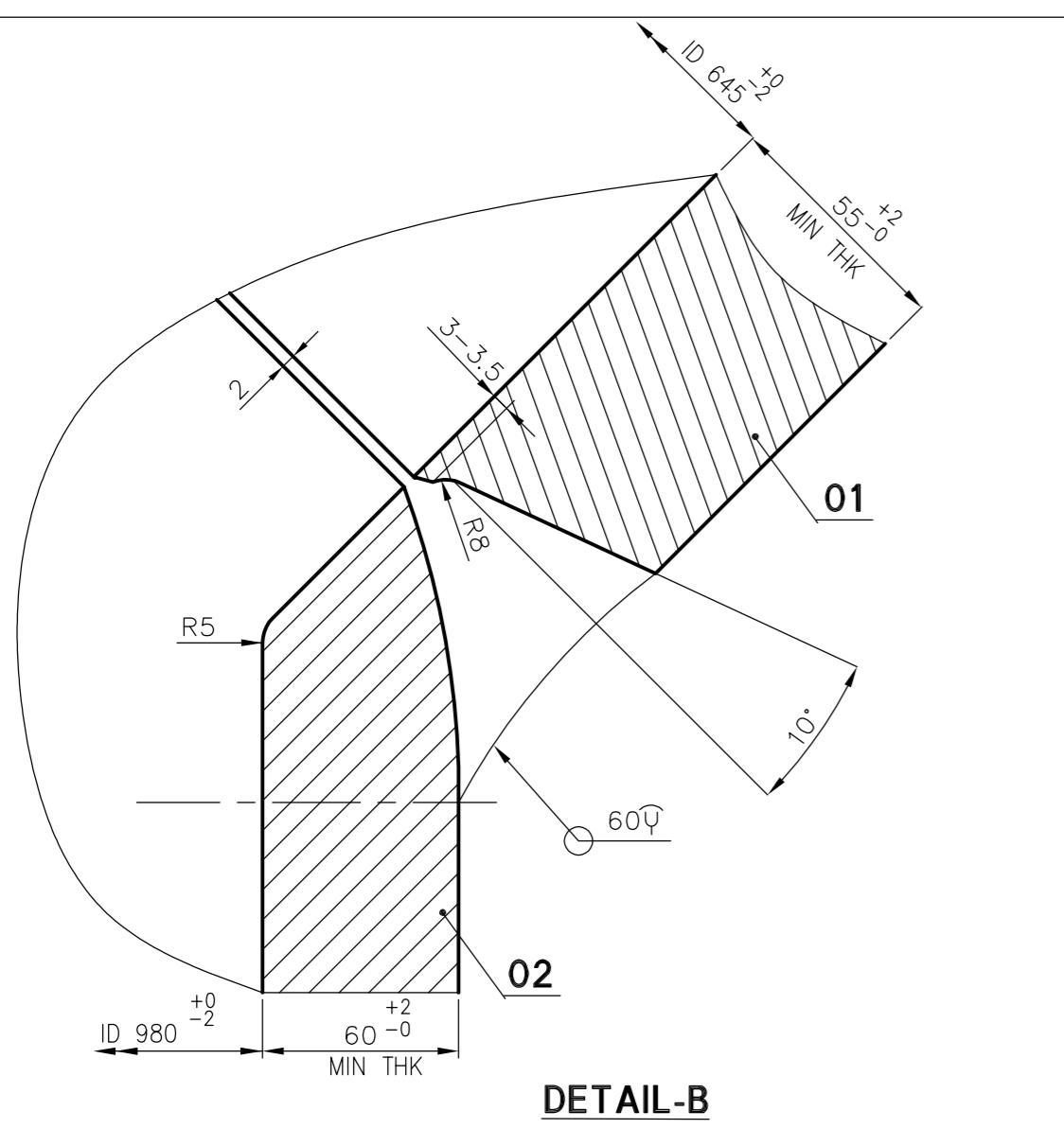
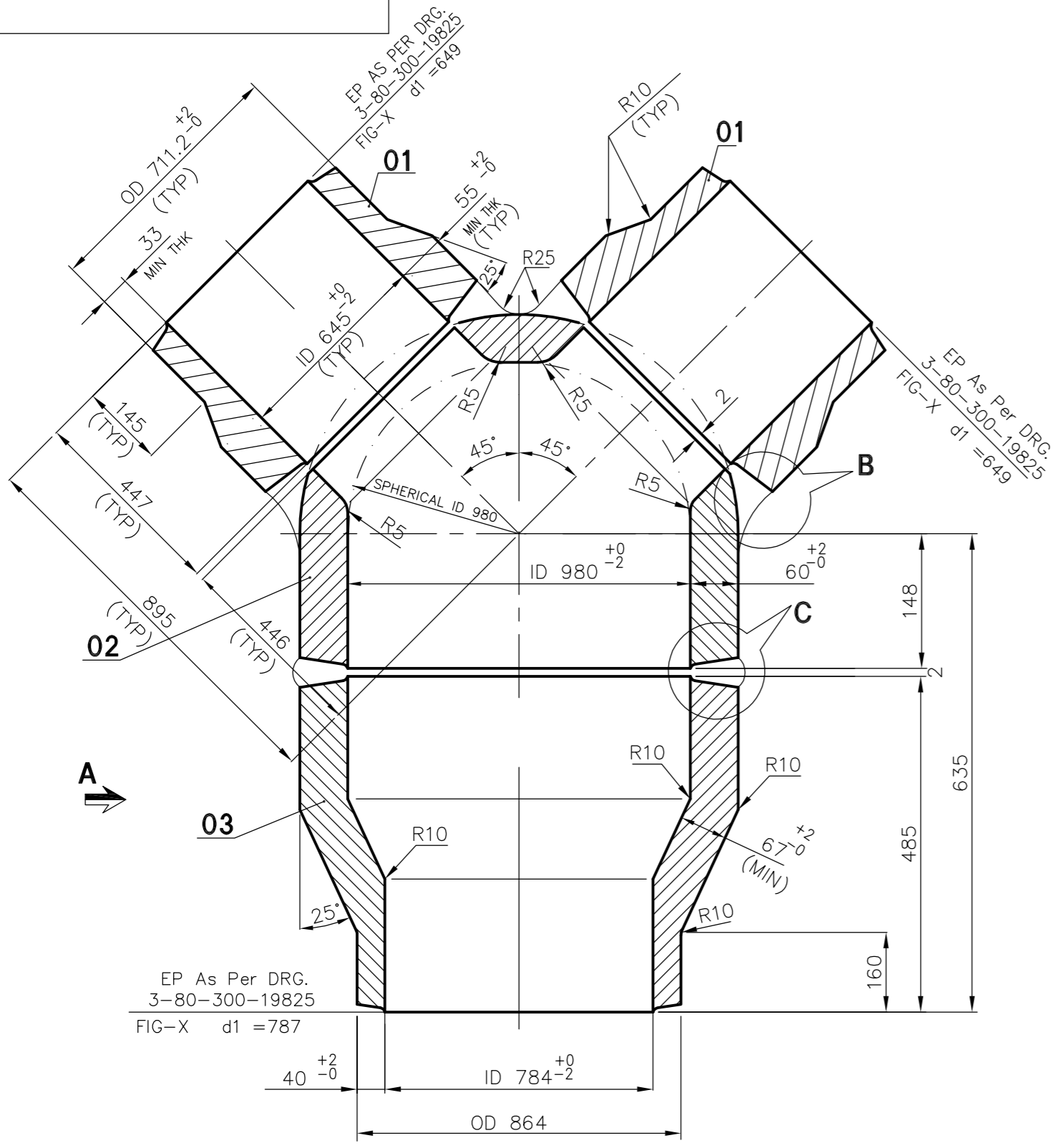


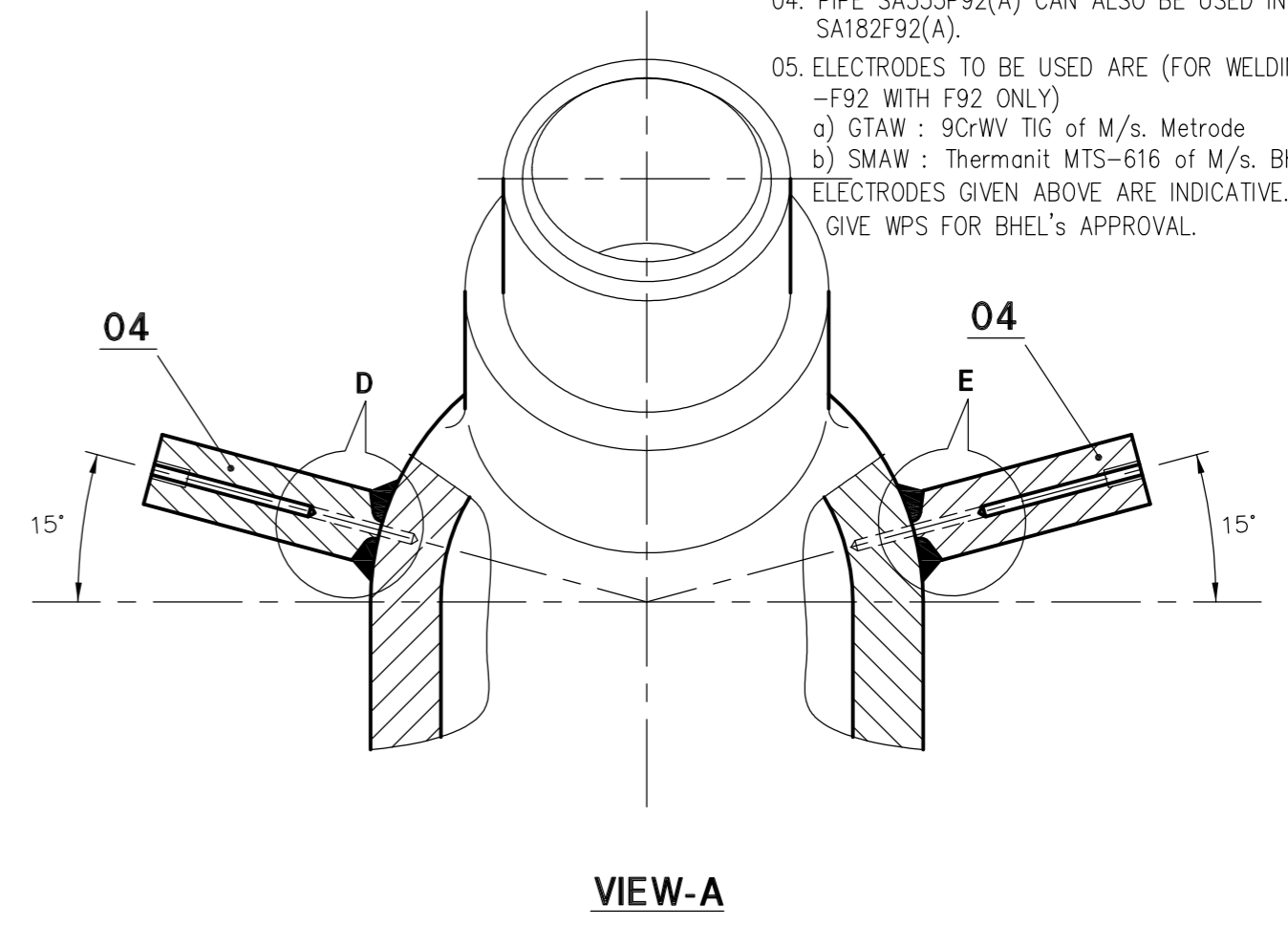
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2-80-310-11242



06. THE FINISHED MATERIAL SPECIFICATION IS SA182F92(A) UNDER MATERIAL CODE: 925057280000

- NOTES :-**
- DESIGN PRESSURE : 68 Kg/Cm²(g)
 - DESIGN TEMPERATURE : 596° C
 - FOLLOW TDG:108. REVISION 06.
 - PIPE SA335P92(A) CAN ALSO BE USED IN PLACE OF SA182F92(A).
 - ELECTRODES TO BE USED ARE (FOR WELDING OF -F92 WITH F92 ONLY)
 - a) GTAW : 9CrWV TIG of M/s. Metrode
 - b) SMAW : Thermit MTS-616 of M/s. Bholer
 ELECTRODES GIVEN ABOVE ARE INDICATIVE. VENDOR TO GIVE WPS FOR BHEL'S APPROVAL.



VAR NO	ITEM NO	DESCRIPTION	DRAWING NO	MATERIAL CODE	MATERIAL SPECN	UNIT WEIGHT	QUANTITY
	04	TEMP. STUB. $\phi 50$ L=150	2-80-310-11242	SA 182 F92	A	4	000
	03	OUTLET FORGING ID980 x THK60 MIN / ID784 x 40THK	2-80-310-11242	SA 182 F92	A	540	000
	02	BODY FORGING ID980 x THK60 MIN	2-80-310-11242	SA 182 F92	A	1080	000
	01	INLET FORGING ID 645 x THK 55 MIN	2-80-310-11242	SA 182 F92	A	410	000

JOB NO.		REL NO.		DATE	
---------	--	---------	--	------	--

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

BHARAT HEAVY ELECTRICALS LTD., PIPING CENTRE, CHENNAI 600 017	DRN	NAME	SIGN	DATE	NO OF
	CHD	S.PANDA	-Sd-	05.12.11	ITEMS
	APPD	S.PANDA	-Sd-	05.12.11	

DEPT.	GRADE OF UN TOL. DIM	SCALE	WEIGHT (Kg).	BHEL PO REF. NO.	ITEM No.
	C/M/F	N.T.S.			
TITLE			CARD CODE	MSE DRAWING NO.	REV
Y-PIECE (OD864x40/OD711x33) SA182F92			U 01	2-80-310-11242	01

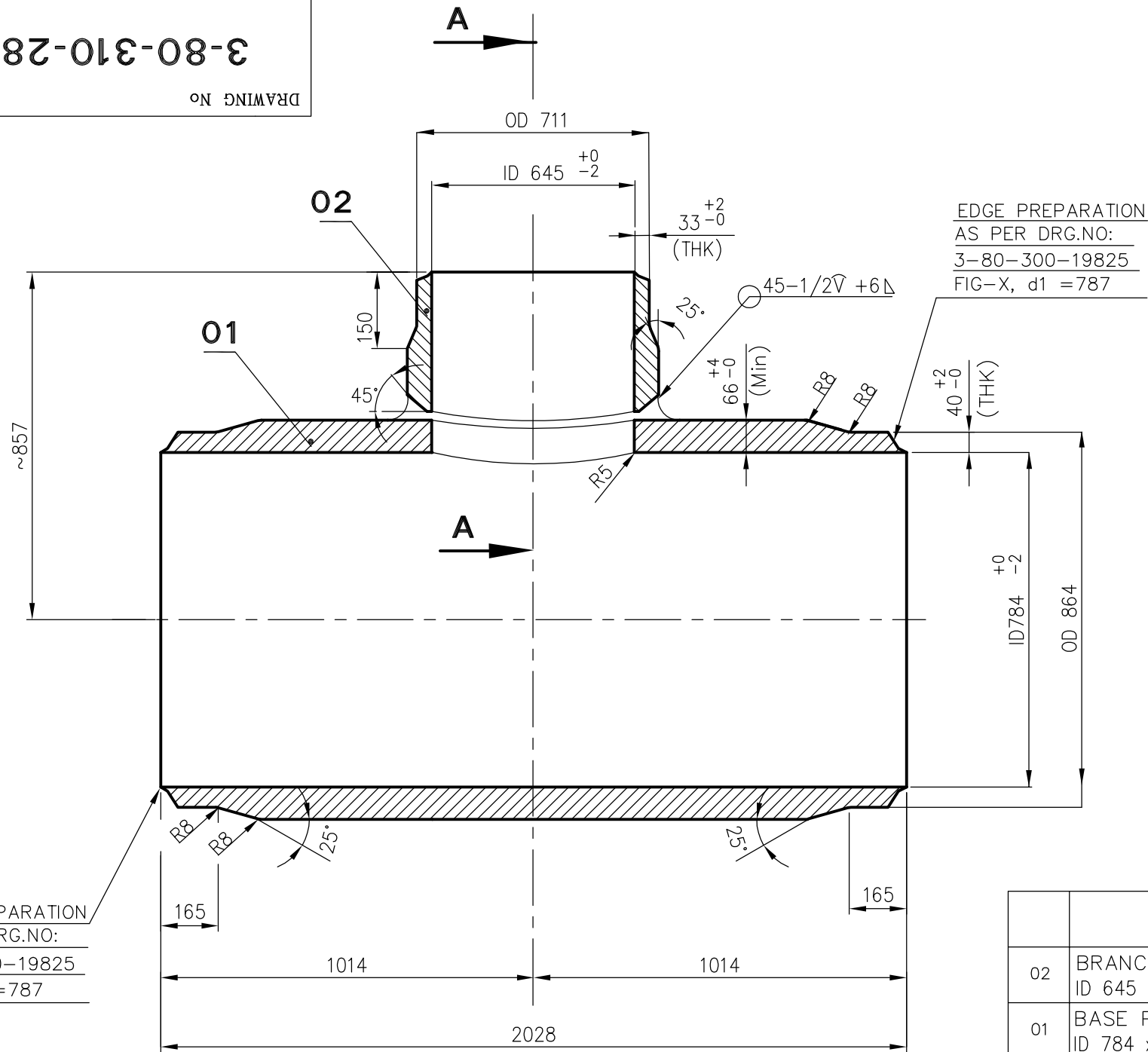
REV 02	DATE	ALTD :	BOOPALAN	REV 01	DATE	ALTD :	S.PANDA
		APPD :			30.01.12	APPD :	

ELECTRODE DETAILS INCORPORATED.

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3-80-310-28999

DRAWING No

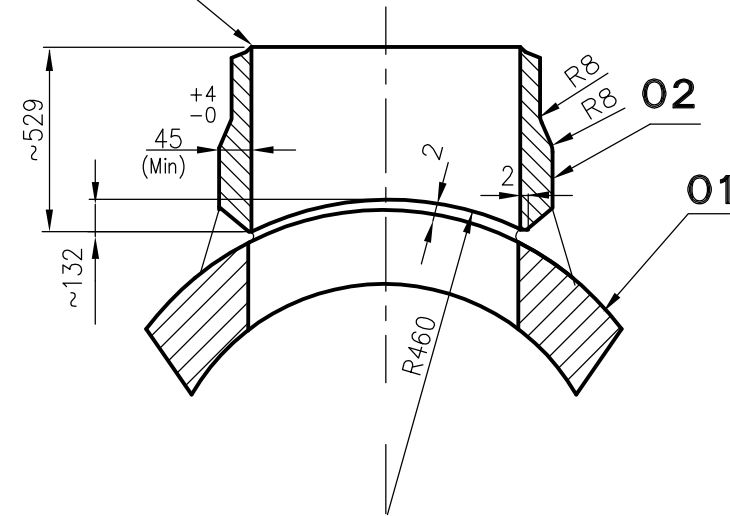


NOTES :-

- DESIGN PRESSURE : 60.8 Kg/Sq.Cm (g)
- DESIGN TEMPERATURE : 596° C
- FOLLOW TDG : 108 REV06
- ELECTRODES TO BE USED ARE,
 - GTAW : 9CrWV TIG of M/s. Metrode
 - SMAW : Thermanit MTS-616 of M/s. Bholer
 ELECTRODES GIVEN ABOVE ARE INDICATIVE. VENDOR TO GIVE WPS FOR BHEL'S APPROVAL.
- PIPE SA335P92(A) CAN ALSO BE USED IN PLACE OF SA182F92(A).
- THE STOCK CODE FOR THE FINISHED UEQ. TEE: 925057290000

12.5

EDGE PREPARATION AS PER DRG.NO: 3-80-300-19825 FIG-X, d1=787



SECTION-AA

EDGE PREPARATION AS PER DRG.NO: 3-80-300-19825 FIG-X, d1=787

ITEM NO.	DESCRIPTION	DRAWING NO.	ITEM NO. / VAR NO.	MATERIAL CODE / MATERIAL SPEC.	A / C	UNIT WT. / QTY.
02	BRANCH NOZZLE L=529 ID 645 x Thk 45 Min	3-80-310-28999		SA 182 F92	A	405,000 1
01	BASE PIPE L = 2028 ID 784 x Thk 66 Min	3-80-310-28999		SA 182 F92	A	2636,000 1

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT



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

DRN	NAME	SIGN	DATE	NO OF ITEMS
MANOJ	MANOJ	-SD.-	05.12.11	
CHD	S.PANDA	-SD.-	05.12.11	
APPD	S.PANDA	-SD.-	05.12.11	

REV	DATE	ALTD :	REV	DATE	ALTD :
02		BOOPALAN	01	30.01.12	S.PANDA
ZONE			ZONE		ELECTRODE DETAILS INCORPORATED.

DEPT.	GRADE OF UN TOL DIM	SCALE	WEIGHT (Kg).	BHEL PO REF.NO:	ITEM No.
	C/M/F	N.T.S.			
TITLE			CARD CODE	DRAWING No.	REV
FABRICATED UNEQUAL TEE (OD864x40/OD711x33) SA182F92			U 01	3-80-310-28999	01

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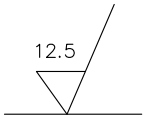
REV	DATE	ALTERED: BOOPALAN	REV	DATE	ALTERED: BOOPALAN	REV	DATE	ALTERED: BOOPALAN
01	30.06.12	APPROVED: S.PANDA	02	05.02.12	APPROVED: S.PANDA	03	09.08.12	APPROVED: S.PANDA
TDG NO. CORRECTED			MATERIAL CODE INDICATED			REDUCER TYPE CHANGED		

ALL DIMENSIONS ARE IN MILLIMETRES

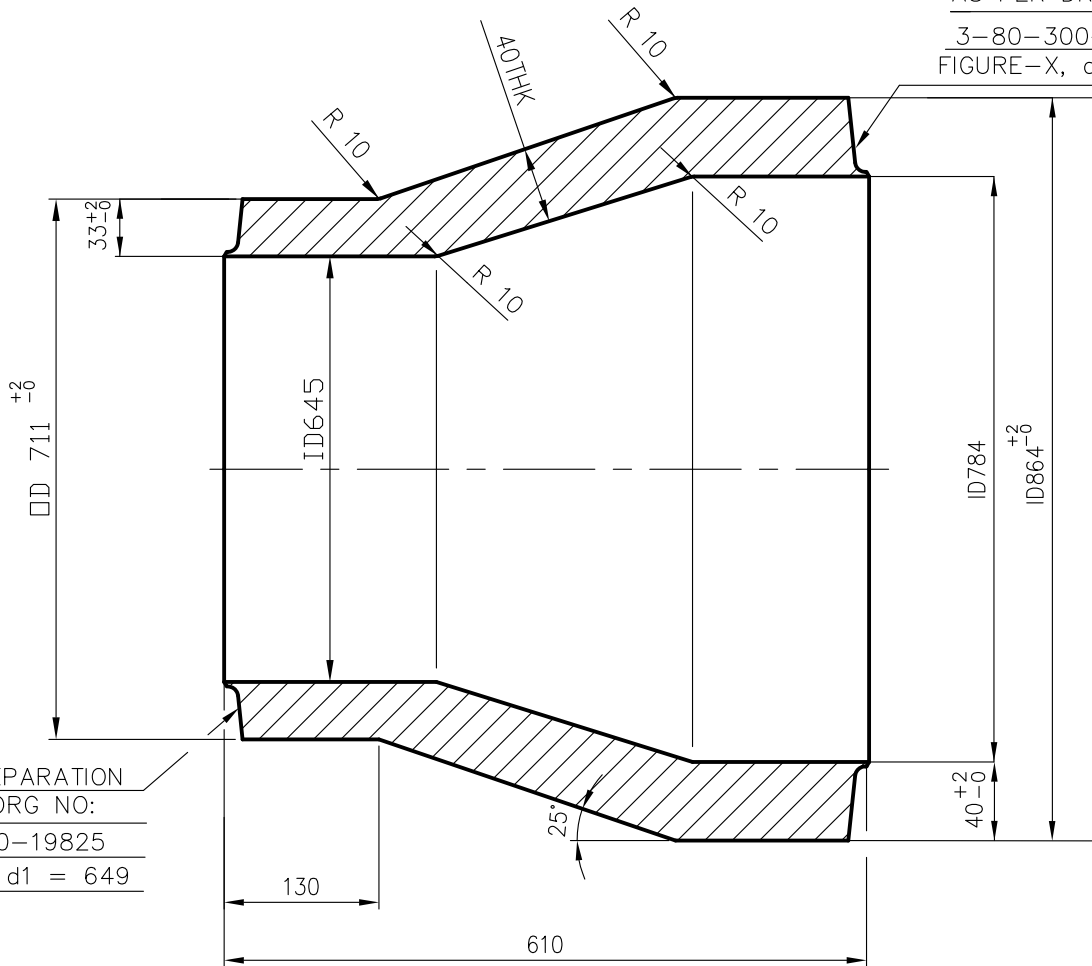
NOTES :-

- 01. DESIGN PRESSURE : 60.8 Kg/Cm² (g)
- 02. DESIGN TEMPERATURE : 596° C
- 03. FOLLOW TDG. 104 REV04

12.5



EDGE PREPARATION
AS PER DRG NO:
3-80-300-19825
FIGURE-X, d1=787



EDGE PREPARATION
AS PER DRG NO:
3-80-300-19825
FIGURE-X, d1 = 649

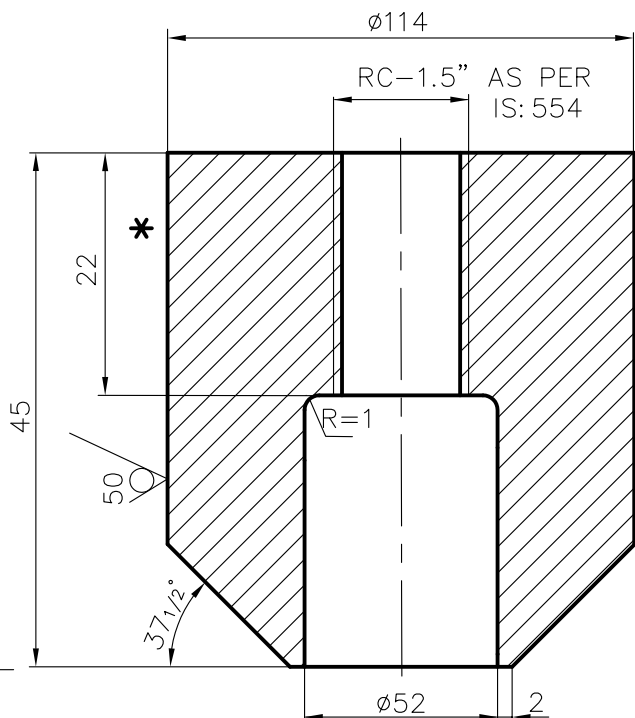
	MATCHING PIECE L=610 OD864X40/OD711X33	92 117 689 0000	A	400	000
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT.WT.(Kg)	
		MATL. SPECN.	C	QTY.	

		BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DRN	NAME	SIGN	DATE	NO.OF VAR
DEPT		GRADE OF UNTOL.DIM	SCALE	CHD	S.PANDA		05.12.11	
CODE		C / M / F	N.T.S	APPD	S.PANDA		05.12.11	
TITLE				CARD CODE	DRAWING NO.			REV
MATCHING PIECE (OD864X40/OD711X33 SA182F92)				U 01	4-80-310-74372			03

ALL DIMENSIONS ARE IN MILLIMETRES

REV 01	DATE	ALTD
		APPD


12.5/



NOTES:

- 01 DESIGN PRESSURE : 62 kg/sq.cm(g)
- 02 DESIGN TEMPERATURE : 601 °C
- 03 HARD PUNCH "F92" AT PLACE MARKED WITH *
- 04 ALTERNATE/SUITABLE SIZE OF SA182 F92 FORGING CAN ALSO BE USED.
- 05 FOLLOW TDC: TDG:104, REV.04
- 06 THIS STUB IS REQUIRED FOR HRH&LPBP SYSTEMS OF 660 MW UNIT.

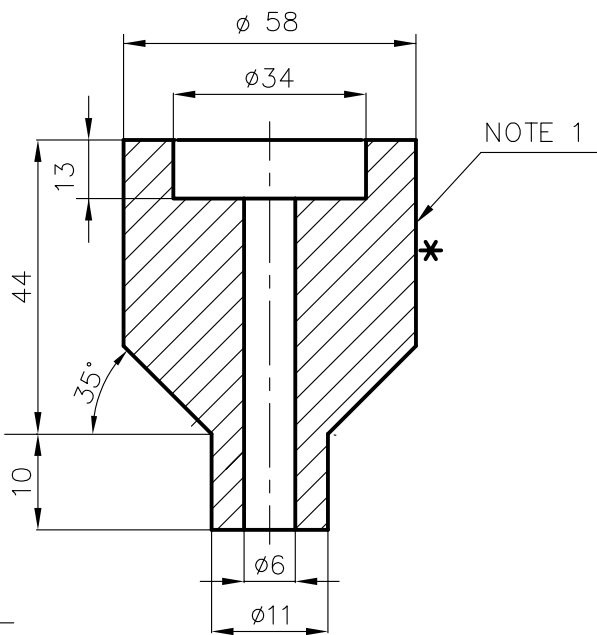
	TEMP STUB RC1.5" OD114	92 516 751 0000	A	3	200
		SA 182 F92			
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT	UNIT.WT.(Kg)
		MATL. SPECN.	C	DI	QTY.

 BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DRN	NAME	SIGN	DATE	NO. OF VAR
		B B SINGH			11.05.12	
		S PANDA			11.05.12	
		C V NATHAN			11.05.12	
DEPT	GRADE OF UNTOL. DIM	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.	ITEM NO.	NO. OF ITEMS
CODE	C / M / F	N.T.S				
TITLE			CARD CODE	DRAWING NO.	REV	
TEMPERATURE STUB RC1.5" OD 114 L=45 SA182F92			U 01	4-80-310-75204	00	

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REV 01	DATE	ALTD:
		APPD:

DESIGN PRESSURE: 62 kg/sq.cm(g) DESIGN TEMPERATURE: 601°C



NOTES:

- 01 HARD PUNCH "SA182F92(A) CL9000-25", AT PLACE MARKED WITH *
- 02 ALTERNATE/SUITABLE SIZE OF SA182 F92 FORGING CAN ALSO BE USED.
- 03 FOLLOW TDC: TDG:104, REV.04
- 04 THIS STUB IS REQUIRED FOR HRH & LPBP SYSTEM OF 660MW UNIT.
- 05 THE CRITICAL DIMENSIONS ARE IN LINE WITH ASME B16.11 (HALF COUPLING)/CL 9000.

	ROD ϕ 80 ; L=54	92 516 750 0000	A	0 810
		SA 182 F92		
NO.	DESCRIPTION	MATL. CODE	A	UNIT.WT.(Kg)
		MATL. SPECN.	C	QTY.

	BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		NAME	SIGN	DATE	NO. OF VAR
	DEPT	GRADE OF UNTOL. DIM	DRN	B B SINGH	11.05.12	
	CODE	C / M / F	CHD	S PANDA	11.05.12	
			APPD	C V NATHAN	11.05.12	
		SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.	ITEM NO.	NO. OF ITEMS
		N.T.S	0.810			
TITLE			CARD CODE	DRAWING NO.	REV	
SOCKET WELDED STUB NB 25-CL 9000 SA182F92			U 01	4-80-310-75205	00	

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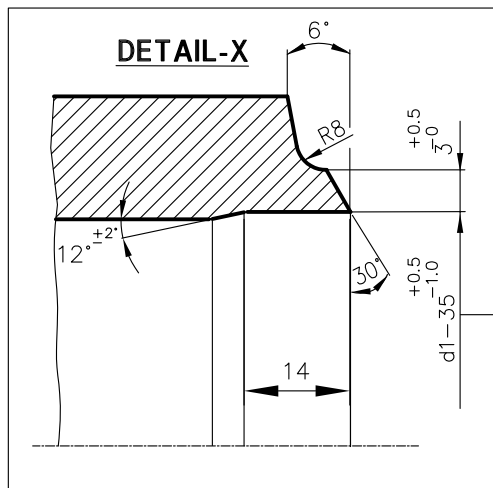
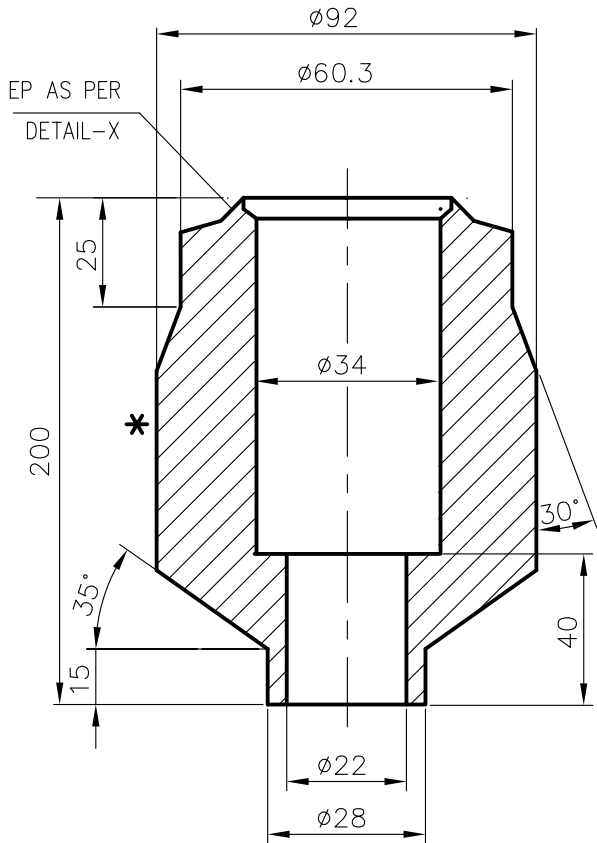
ALL DIMENSIONS ARE IN MILLIMETRES

12.5


REV 01	DATE 13.06.12	ALTERED APPROVED	BAHADUR S.PANDA
DRG. TITLE ALTD.			

NOTES:

- 01 DESIGN PRESSURE : 62 kg/sq.cm(g)
- 02 DESIGN TEMPERATURE : 601 °C
- 03 HARD PUNCH "F92" AT PLACE MARKED WITH *
- 04 ALTERNATE/SUITABLE SIZE OF SA182 F92 FORGING CAN ALSO BE USED.
- 05 FOLLOW TDC: TDG:104, REV.04
- 06 THIS STUB IS REQUIRED FOR HRH&LPBP SYSTEMS VENT OF 660 MW UNIT.



	ROD ϕ 100, L=200	92 516 749 0000	A	6	160
		SA 182 F92			
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT	UNIT.WT.(Kg)
		MATL. SPECN.	C	DI	QTY.

 BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DRN	B B SINGH	SIGN		DATE	11.05.12	NO. OF VAR
		CHD	S PANDA			DATE	11.05.12	
		APPD	C V NATHAN			DATE	11.05.12	
DEPT	GRADE OF UNTOL. DIM	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS	
CODE	C / M / F	N.T.S	6 160					
TITLE			CARD CODE	DRAWING NO.			REV	
STUB OD92 SA182F92 (CONN. PIPE OD60.3)			U 01	4-80-310-75206			01	

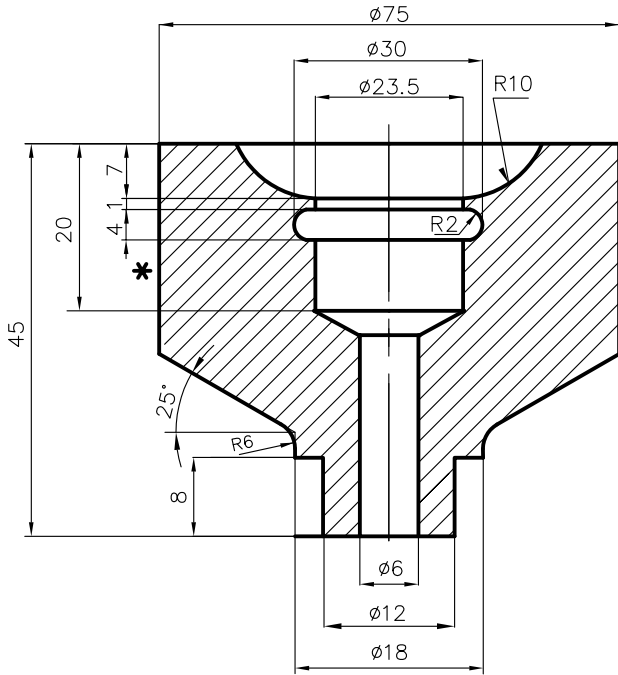
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DATE

12.5/

NOTES:

- 01 DESIGN PRESSURE : 62 kg/sq.cm(g)
- 02 DESIGN TEMPERATURE : 601°C
- 03 HARD PUNCH "F92" AT PLACE MARKED WITH *
- 04 ALTERNATE/SUITABLE SIZE OF SA182 F92 FORGING CAN ALSO BE USED.
- 05 FOLLOW TDC: TDG:104, REV.04
- 06 THIS STUB IS REQUIRED FOR HRH&LPBP SYSTEMS OF 660 MW UNIT.



ROUND ϕ 80 L=45

92 516 748 0000 A
SA 182 F92

0 820
UNIT.WT.(Kg)
QTY.

VAR

MATL. SPECN. A C



BHARAT HEAVY ELECTRICALS LIMITED
PIPING CENTRE
CHENNAI 600 017

B B SINGH	11.05.12
S PANDA	11.05.12
C V NATHAN	11.05.12

DEPT	GRADE OF TOL. DIM C / M / F	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.	ITEM NO.	NO. OF ITEMS
		N.T.S	0.820			

TEMPERATURE STUB OD75
L=45 HWR SA182F92

U 01

4-80-310-75207

REV
00

CAUTION: This ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

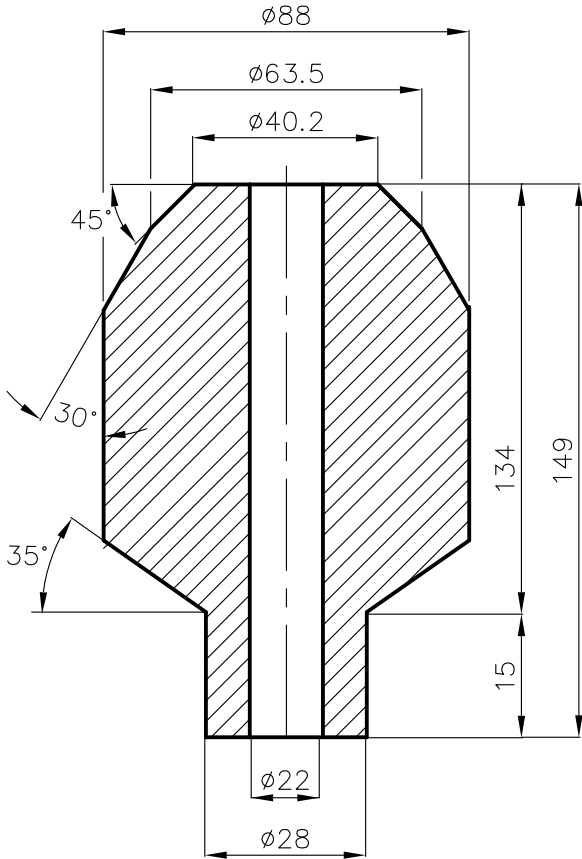
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REV 01	DATE 13.06.12	ALTERED BAHADUR	APPROVED S.PANDA
DRG. TITLE ALTD.			
REV 02	DATE 12.07.12	ALTERED :K.BOOPALAN-Sd-	APPROVED : S.PANDA -Sd-
DRG. TITLE ALTD.			

NOTES:

- 01 DESIGN PRESSURE : 62 kg/sq.cm(g)
- 02 DESIGN TEMPERATURE : 601°C
- 03 HARD PUNCH "F92" AT PLACE MARKED WITH *
- 04 ALTERNATE/SUITABLE SIZE OF SA182 F92 FORGING CAN ALSO BE USED.
- 05 FOLLOW TDC: TDG:104, REV.04
- 06 THIS STUB IS REQUIRED FOR HRH&LPBP SYSTEMS FOR 660 MW UNIT.

12.5



	RODØ100; L=149	92 516 747 0000	A	7 000
		SA 182 F92		
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT.WT.(Kg)
		MATL. SPECN.	C	QTY.

		BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DRN	B B SINGH	SIGN	DATE	NO.OF VAR
				CHD	S PANDA		11.05.12	
				APPD	C V NATHAN		11.05.12	
DEPT	GRADE OF UNTOL. DIM	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS	
CODE	C / M / F	N.T.S	7.000					
TITLE				CARD CODE	DRAWING NO.			REV
THERMOWELL STUB OD 88 H-149 SA182F92 (MAIN PIPE THICK 37)				U 01	4-80-310-75208			02