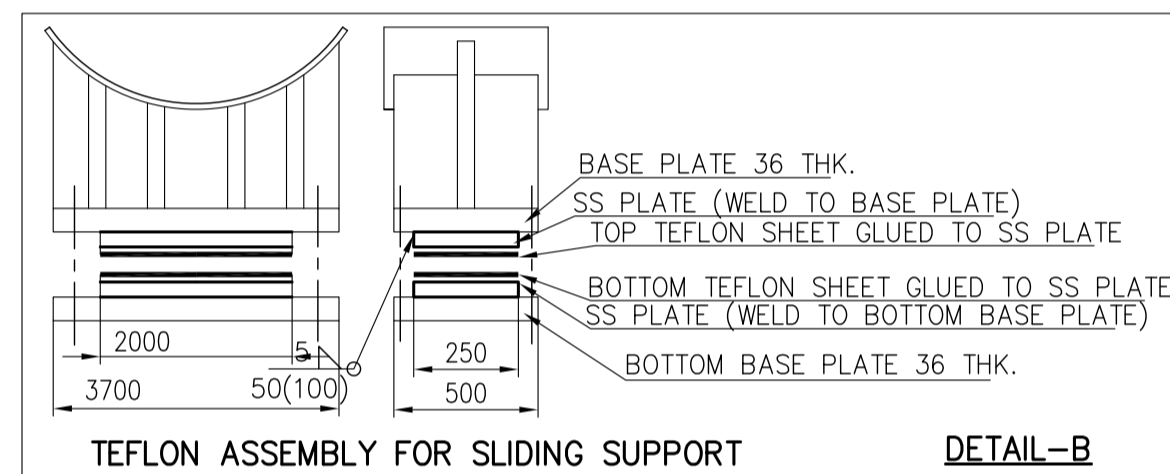
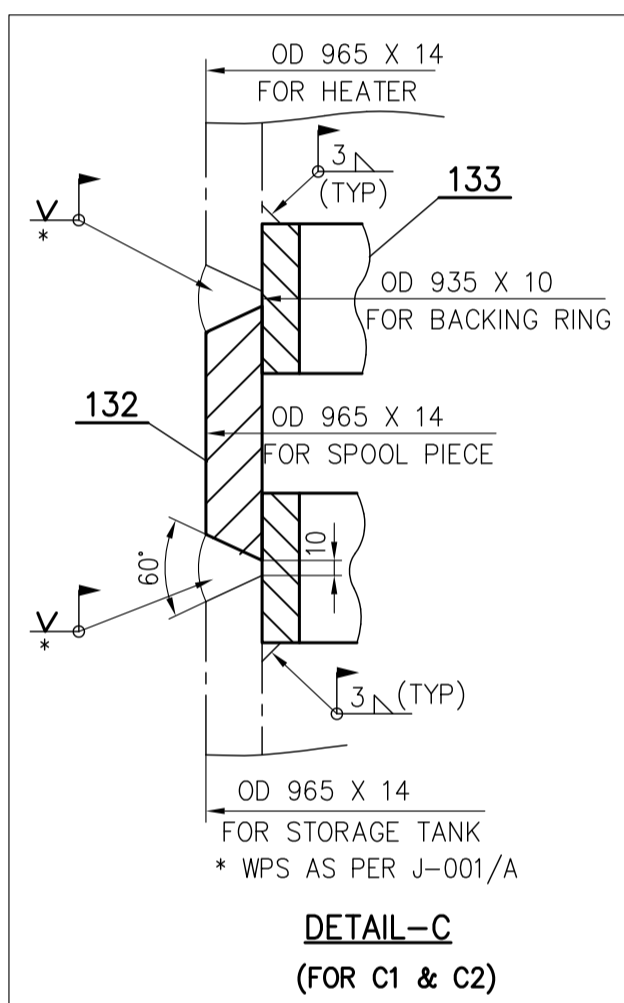


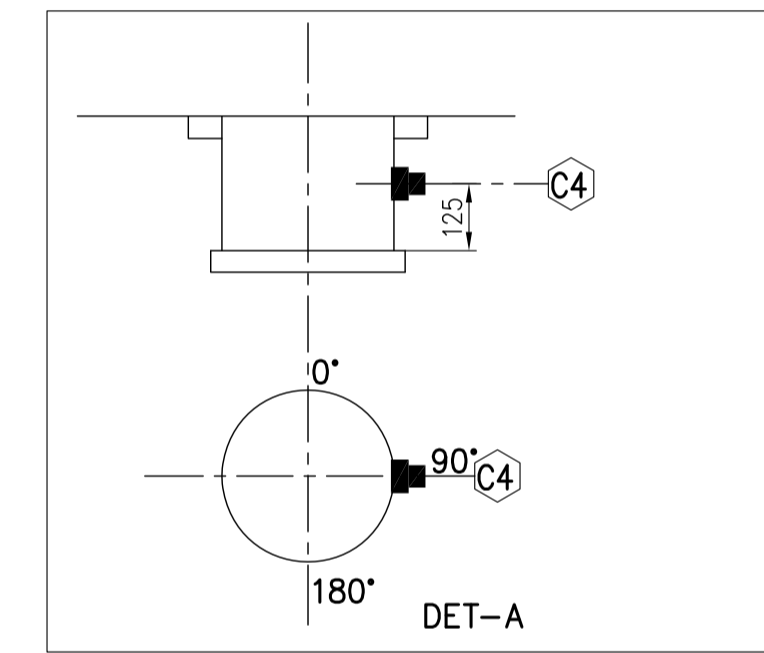
REFER DET-A FOR C4 NOZZLE.

REFER POS. NO. 4/13, 5/11, 6/16, 112-113, 140-141, 172-173 FOR C4 NOZZLE (REFER DET-A)
 REFER POS. NO. 4/13, 112 FOR C8, C9 & C10 NOZZLES
 REFER POS. NO. 4/15, 114-116 FOR C3 NOZZLE
 REFER POS. NO. 6/19, 174-175 FOR S9 NOZZLE

PREFIX 1/, 2/, 3/ FOR POS. NOS. FOR SEC-I, II, III, EXCEPT POS. NOS. 101-116, 132-141, 161-175



IMPORTANT:-
 SUBCONTRACTOR SHALL TAKE CONCURRENCE FROM HE ENGG. DEPARTMENT, BEFORE MAKING ANY OPENINGS FOR NOZZLES ON THE SHELL & DISHED ENDS.



- NOTES:-**
- ALL NOZZLE BOLT HOLES SHALL STRADDLE NORMAL CENTRE LINES OF VESSEL.
 - ALL FABRICATED NOZZLES TO BE FULLY RADIOGRAPHED.
 - BUTT WELD CONNECTIONS TO HAVE HYDROTEST BLANK - OFF PLATES LEFT IN PLACE (TO BE REMOVED AFTER HYDRAULIC TEST AT SITE)
 - WPS FOR FILLET WELDS ON SHELL ARE AS PER J-002/A & FILLET DIMENSION SHOWN IS THROAT DIMENSION
 - ALL LONGITUDINAL AND CIRCUMFERENTIAL WELDS ARE TO BE BACK-GOUGED TO SOUND METAL.
 - M.P. TEST REQUIRED ONLY AT NOZZLE TO HEAD WELDS AND NOZZLE TO SHELL WELDS
 - TANK WILL BE DESPATCHED IN THREE SECTIONS.
 - INSIDE EDGES OF ALL PROJECTED CONNECTIONS SHALL BE ROUNDED OFF.
 - FOUNDATION BOLTS: M56x400 STUD WITH TWO NUTS 28 No'S PER SET ALONG WITH WASHER SHALL BE SUPPLIED.
 - HYDRAULIC TEST: AS PER HY0852061 & IBR REGULATION 601.
 - SPOOL PIECE CONSTRUCTED OF SA 516/70 WILL BE SUPPLIED TO AID IN PROPER FIT UP OF THE DOWN COMMERS AND EQUALIZERS. TWO BACKING RINGS WILL BE SUPPLIED WITH EACH SPOOL PIECE (REFER DET-C).
 - STORAGE TANK TO HEADER CONNECTION SHALL BE AS PER DET-C AT SITE. (DOWN COMMERS & EQUALISERS)
 - VENTILATOR IS A FLANGED CONN. BLANKED WITH A BLIND FLANGE. THIS CAN BE USED FOR VENTILATION INSIDE THE STORAGE TANK DURING ANY MAINTAINANCE OPERATION. THIS IS POSSIBLE BY OPENING THE BLIND FLANGE OF THE VENTILATOR NOZZLE.
 - SPOOL PIECE ARE EDGE PREPARED ONLY ON ONE SIDE AT WORKS. CUTTING SPOOL PIECE TO EXACT LENGTH AS PER SITE REQUIREMENT AND EDGE PREPARATION ON THE OTHER SIDE IS IN SITE SCOPE OF WORK.
 - BOLTING TO SECURE HEATER TO STORAGE TANK IS OF M27x160 IN SIZE AND 8 No'S IN QTY.
 - SYMBOL INDICATES SITE WELDING
 - SADDLE SUPPORTS FOR SUPPORTING DEAERATOR HEATER SHALL BE DESPATCHED IN TACK WELDED CONDITION FROM WORKS. FINAL WELDING SHALL BE AT SITE.
 - FOR NAME PLATE (POS. NO. 6/12) DRG. NO. REFER ST.TANK ASSLY. DRG.
 - TEST COUPONS REQUIRED FOR ALL LONGITUDINAL SEAM OF ROLLED PIPES & SPOOL PIECES.

*** NOTES FOR LIST OF NOZZLE CONN.**

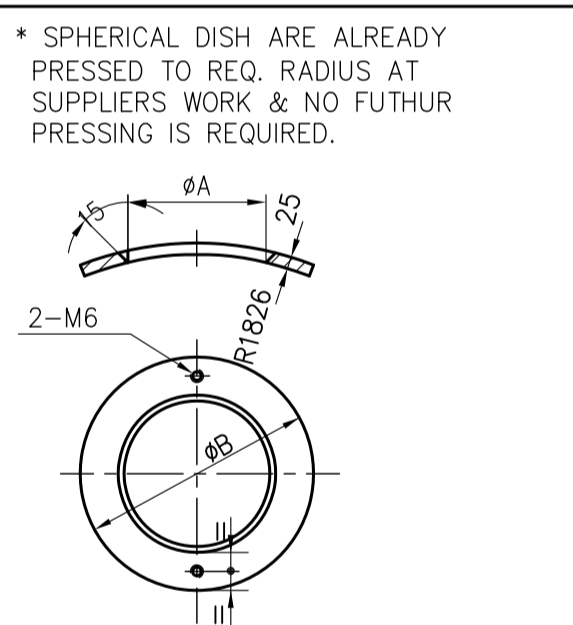
- FOR DETAILS J-001/A, J-002/A, J-007/A, J-015/A, J-017/A, J-021/A REFER DRG. NO. 2-163-10-00014.
- FOR DETAILS D1 TO D32 REFER DRG. NO. 1-163-10-11178
- FOR DETAIL-A, B, C & E REFER THIS DRG.

** SW PIPE TO COUPLING AFTER REMOVING PLUG

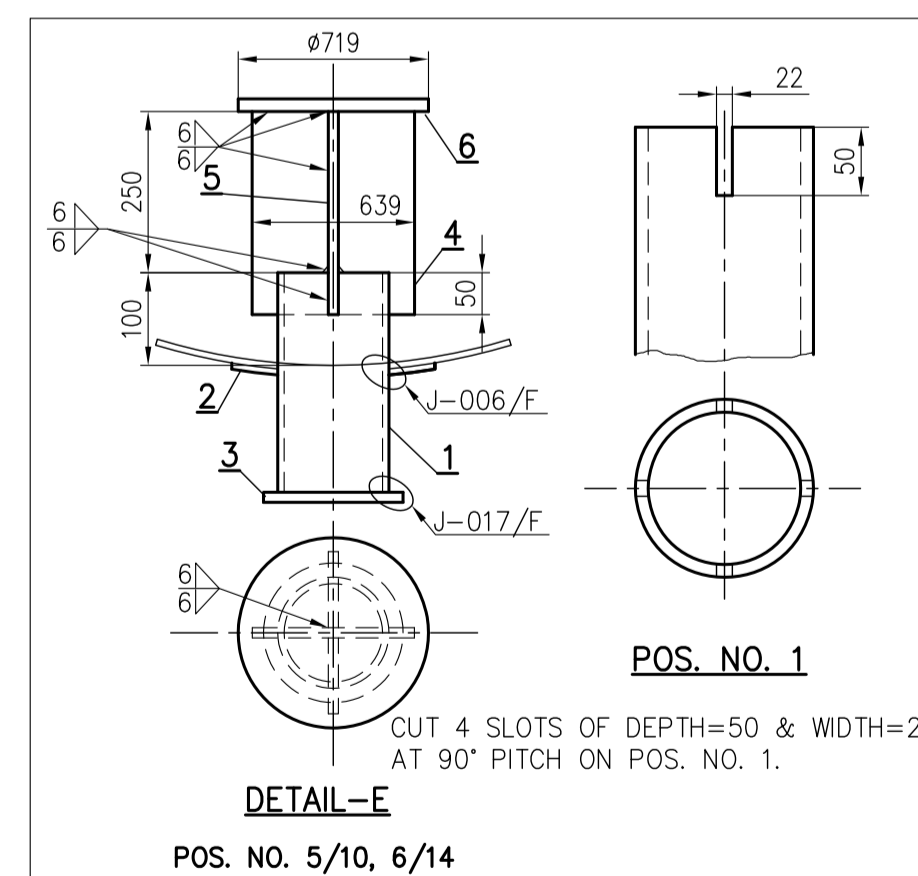
LIST OF NOZZLE CONNECTIONS

REF.	DESCRIPTION	SIZE	OD X THK	QTY	TYPE	WELDING DETAILS			REMARKS	ØA	ØB	REF.	VAR.
						SHELL TO	NOZZLE END CONNECTION	NOZZLE END CONNECTION					
S1	FEED WATER OUTLET	22"	559 x 14	3	BW	DET-D32	DET-D32	DET-D5	WITH VORTEX BREAKER	575	1050	S1	01
S2	OVER FLOW CONN.	8"	219.1 X 12.7	1	BW	DET-D1	DET-D1	DET-D5		235	400	S2	02
S3	INITIAL HEATING STEAM CONN.	14"	355.6 X 12.7	1	BW	DET-D1	DET-D1	DET-D5		372	600	S3	03
S4	DRAIN CONN.	6"	168.3 X 10.97	1	BW	DET-D2	DET-D2	DET-D5		184	300	S4	04
S5	VENTILATOR	6"	168.3 X 10.97	2	FLG CL.300 RF	DET-D4	DET-D4	DET-D5	REFER NOTE-15	184	300	S5	05
S6	MAN HOLES	24"	610 X 12.7	2	FLG CL.300 RF	J-007/A	J-015/A			626	950	S6	06
S7	STAND PIPE CONN.	2"	60.3 X 8.74	4	BW	DET-D17	DET-D17	DET-D21				S7	07
S8	INITIAL FILLING CONN.	6"	168.3 X 10.97	1	BW	DET-D1	DET-D1	DET-D5		184	300	S8	08
S9	SAMPLING CONN.	1"	COUPLING CL.6000	1	SW	DET-D6	DET-D6	DET-D31	**			S9	09
S10	BFP RECIRCULATION CONN.	10"	273.1 X 12.7	3	BW	DET-D10	DET-D10	DET-D5	WITH DISPERSER	289	500	S10	10
S12A-D	SAFETY RELIEF VALVE CONN.	8"	219.1 X 12.7	4	FLG CL.300 RF	DET-D8	DET-D8	DET-D8		235	400	S12A-D	12
C1	EQUALISER CONN.	38"	965 X 14	2	BW	DET-D1	DET-D1	DET-D5/ DET-C		981	1860	C1	21
C2	DOWNCOMMER CONN.	38"	965 X 14	2	BW	DET-D1	DET-D1	DET-D5/ DET-C		981	1860	C2	21
C3	PRESSURE GAUGE CONN.	1/2"	COUPLING CL.6000	1	SW	DET-D6	DET-D6	DET-D31	**			C3	23
C4	TEMPERATURE GAUGE CONN.	M33X2	COUPLING	4	SCREWED	J-008/A	****	SCREW THERMOWELL	SPECIAL COUPLING			C4	24
C8	PG TEST THERMOWELL CONN.	M33X2	COUPLING	1	SCREWED	J-008/A	****	SCREW THERMOWELL	SPECIAL COUPLING			C8	24
C9	TEMPERATURE STUB FOR REMOTE	M33X2	COUPLING	1	SCREWED	J-008/A	****	SCREW THERMOWELL	SPECIAL COUPLING			C9	24
C10	CONN. FOR RTD	M33X2	COUPLING	1	SCREWED	J-008/A	****	SCREW THERMOWELL	SPECIAL COUPLING			C10	24

**** SCREW PLUG WITH WASHER



* SPHERICAL DISH ARE ALREADY PRESSED TO REQ. RADIUS AT SUPPLIERS WORK & NO FUTURH PRESSING IS REQUIRED.



POS. NO. 5/10, 6/14

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GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

INVENTORY NO

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: **OPGCL-BANHARPALLI 2X660MW**

BHARAT HEAVY ELECTRICALS LTD. HYDERABAD

DRN. B UMA	NAME UMESH MENON	DATE 21.04.14	NO. OF VAR.
APPD. ACS	APPD. ACS	DATE 10.04.15	NO. OF VAR.

DEPT. HEE
 GRADE OF TOL. DIM. C/M/F
 SCALE NTS
 WEIGHT (KG) NA
 REF. TO ASSY DRG. NA
 ITEM NO. NA
 NO. OF ITEMS NA

TITLE: **NOZZLE ASSLY. DETAILS (DEAERATOR STORAGE TANK)**

DRG. NO. **1-163-11-11434**

SHEET No. **01** / NO. OF SHEETS