

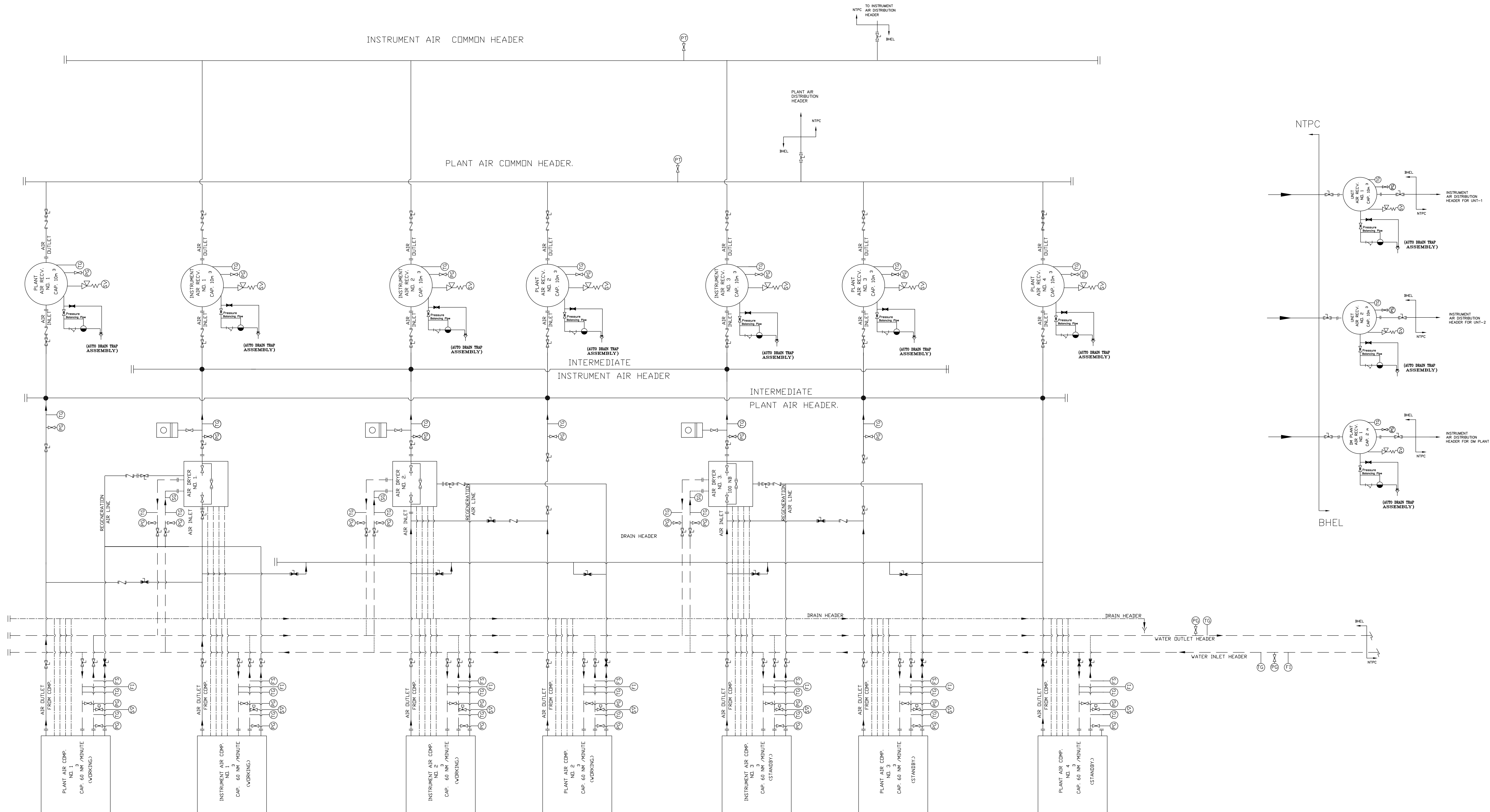
MDL FOR CAS PACKAGE FOR GADARWARA TPP (2X800MW)

ANNEXURE-VIII

"A" S NO	"B" VENDOR_DRG_NO.	"C" NTPC_DRG_NO.	"D" DRAWING TITLE	"E" PURPOSE	"F" BOI (Y/N)	"G" NAME OF BOI	"H" SCHEDULED SUBMISSION DATE FROM LOI DATE	"I" RESUBMISSION AFTER INCORPORATING COMMENTS	"J" COMMENTS / APPROVAL FROM BHEL & NTPC
1	PE-V0-395-555-A001		QUALITY PLAN OF AIR COMPRESSOR	A-CUST	N	CAS	21	10	21
2	PE-V0-395-555-A002		QUALITY PLAN OF AIR DRYING PLANT	A-CUST	N	CAS	21	10	21
3	PE-V0-395-555-A003		QUALITY PLAN OF AIR RECEIVER	A-CUST	Y	CAS	25	10	21
4	PE-V0-395-555-A004		QUALITY PLAN OF MOTOR	A-CUST	Y	CAS	21	10	21
5	PE-V0-395-555-A005		2	A-CUST	Y	CAS	21	10	21
6	PE-V0-395-555-A006		QUALITY PLAN OF BALL VALVE	A-CUST	Y	CAS	21	10	21
7	PE-V0-395-555-A007		SUB-VENDOR LIST & INSPECTION CATEGORISATION SCHEDULE	A-CUST	N	CAS	15	10	21
8	PE-V0-395-555-A101		TDS OF INSTRUMENT AIR & SERVICE AIR COMPRESSORS	A-CUST	Y	CAS	21	10	21
9	PE-V0-395-555-A102		TDS OF AIR DRYING PLANT	A-CUST	N	CAS	21	10	21
10	PE-V0-395-555-A103		TDS , GA & CHARACTERISTIC CURVES OF MOTOR FOR AIR COMPRESSOR	I-CUST	Y	CAS	21	10	21
11	PE-V0-395-555-A108		TYPE TEST CERTIFICATE OF COMPRESSOR MOTOR	A-CUST	Y	CAS	60	10	21
12	PE-V0-395-555-A104		TDS & GA OF VALVES	I-CUST	Y	CAS	42	10	21
13	PE-V0-395-555-A105		TDS OF INSTRUMENTS	I-CUST	Y	CAS	42	10	21
14	PE-V0-395-555-A301		GA DRAWING OF INSTRUMENT & SERVICE AIR COMPRESSOR	I-CUST	N	CAS	21	10	21
15	PE-V0-395-555-A302		GA DRAWING OF AIR DRYER	I-CUST	N	CAS	21	10	21
16	PE-V0-395-555-A302(2 nos. sheets)		GA DRAWING OF AIR RECEIVER.	I-CUST	Y	CAS	25	10	21
17	PE-V0-395-555-A401		COMPRESSOR HOUSE LAYOUT	A-CUST	N	CAS	30	10	21
18	PE-V0-395-555-A501		P & I DIAGRAM OF AIR COMPRESSOR	I-CUST	N	CAS	21	10	21
19	PE-V0-395-555-A502		P&I DIAGRAM OF AIR DRYER	I-CUST	N	CAS	21	10	21
20	PE-V0-395-555-A503		P&I DIAGRAM OF COMPRESSED AIR SYSTEM WITHIN COMPRESSOR HOUSE	A-CUST	N	CAS	21	10	21
21	PE-V0-395-555-A701		OPERATION & CONTROL PHILOSOPHY OF COMPRESSED AIR SYSTEM	A-CUST	N	CAS	42	10	21
22	PE-V0-395-555-A702		ELECTRICAL & INTERNAL WIRING DIAGRAM FOR COMPRESSOR AND AIR DRYER PANEL.	I-CUST	N	CAS	50	10	21
23	PE-V0-395-555-A751		ELECTRICAL FEEDER LIST	I-G-P	N	CAS	21	10	21
24	PE-V0-395-555-A752		CONTROL CABLE SCHEDULE	I-G-P	N	CAS	60	10	21
25	PE-V0-395-555-A753		I/O List for CAS system.	I-CUST	N	CAS	56	10	21
26	PE-V0-395-555-A901		CAS PG TEST PROCEDURE	A-CUST	N	CAS	75	10	21
27	PE-V0-395-555-A903		O&M MANUAL-COMP AIR SYSTEM	I-CUST	N	CAS	90	10	21

List of Drawings enclosed with the technical specification












SNO	DESCRIPTION	DRG NO
1	GENERAL LAYOUT PLAN	9572-999-POC-F-001
2	TG HALL EQUIPMENT LAYOUT PLAN AT 0.0 M	9572-110-PEM-PVM-F-049
3	TG HALL EQUIPMENT LAYOUT PLAN AT 8.5 M	9572-110-PEM-PVM-F-050
4	TG HALL EQUIPMENT LAYOUT PLAN AT 18 M	9572-110-PEM-PVM-F-051
5	TG HALL EQUIPMENT LAYOUT PLAN AT MISCELLANEOUS FLOORS IN BC BAY	9572-110-PEM-PVM-F-052
6	SERVICE AIR & INSTRUMENT AIR PIPING LAYOUT	9572-110-PEM-PVM-F-065
6	PID FOR COMPRESSED AIR SYSTEM(TENDER DWG)	
7	PID 's FOR IA & SA SYSTEM	PE-DG-395-555-A501





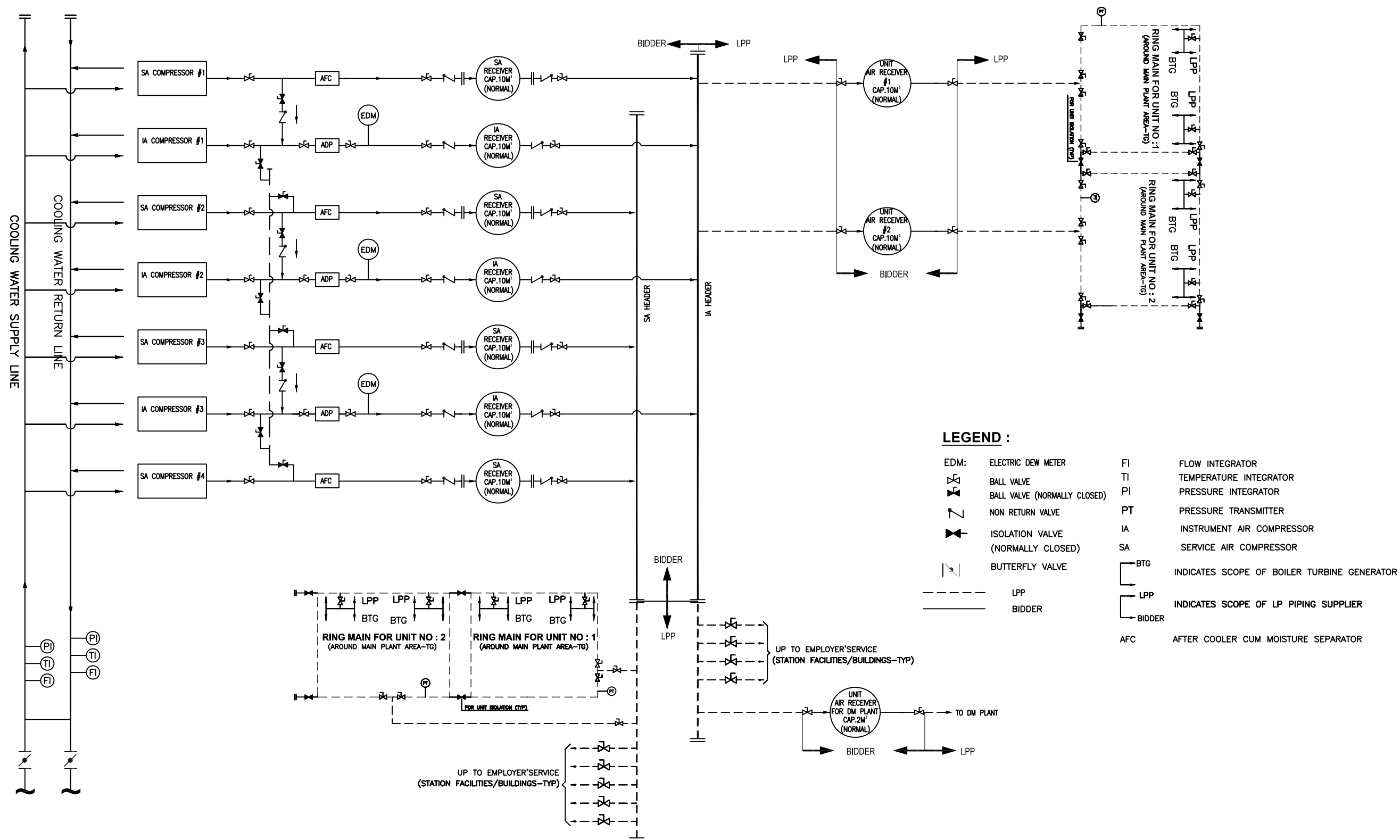
NOTES :-

1. THE GIVEN P&I IS CONFINED TO INSTRUMENTS AND PIPING FOR COMPRESSOR HOUSE AREA ONLY
2. ALL INTERCONNECTING COMPRESSED AIR PIPING SHALL CONFORM TO IS:1239 (HEAVY GRADE) OR IS:3589 GR-410 AND GALVANISED AS PER IS:4760.
3. ALL COOLING WATER PIPING WILL BE CONFORMING TO IS:1239 (PART-I, HEAVY GRADE).
4. FITTINGS FOR AIR PIPING SHALL BE CONFORMING TO RELEVANT BIS STANDARD AND GRADE EQUIVALENT THAT OF PARENT PIPE GRADE.
5. COMPRESSED AIR PIPING HANDLING HOT AIR WILL BE SUITABLY INSULATED SO AS TO RESTRICT SURFACE TEMPERATURE TO 60 deg C.
6. ALL PRESSURE & TEMPERATURE GAUGE SHALL 150 mm DIAL TYPE.
7. DRAIN PIPING UPTO THE NEAREST DRAIN POINT WITHIN THE AIR COMPRESSOR ROOM SHALL BE PROVIDED.
8. AFTER COOLER SHALL BE PROVIDED WITH EACH COMPRESSOR (i.e., FOR EACH IA & SA COMPRESSOR).
9. IN CASE OF TWIN TOWER HOC TYPE DRIER THE REGENERATION LINE SHALL NOT BE APPLICABLE.

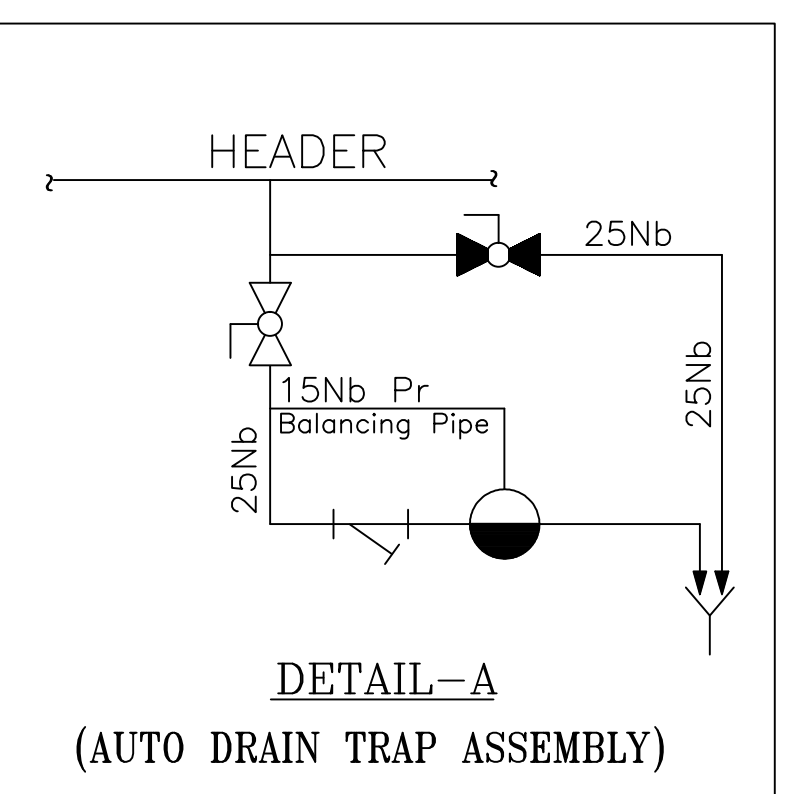
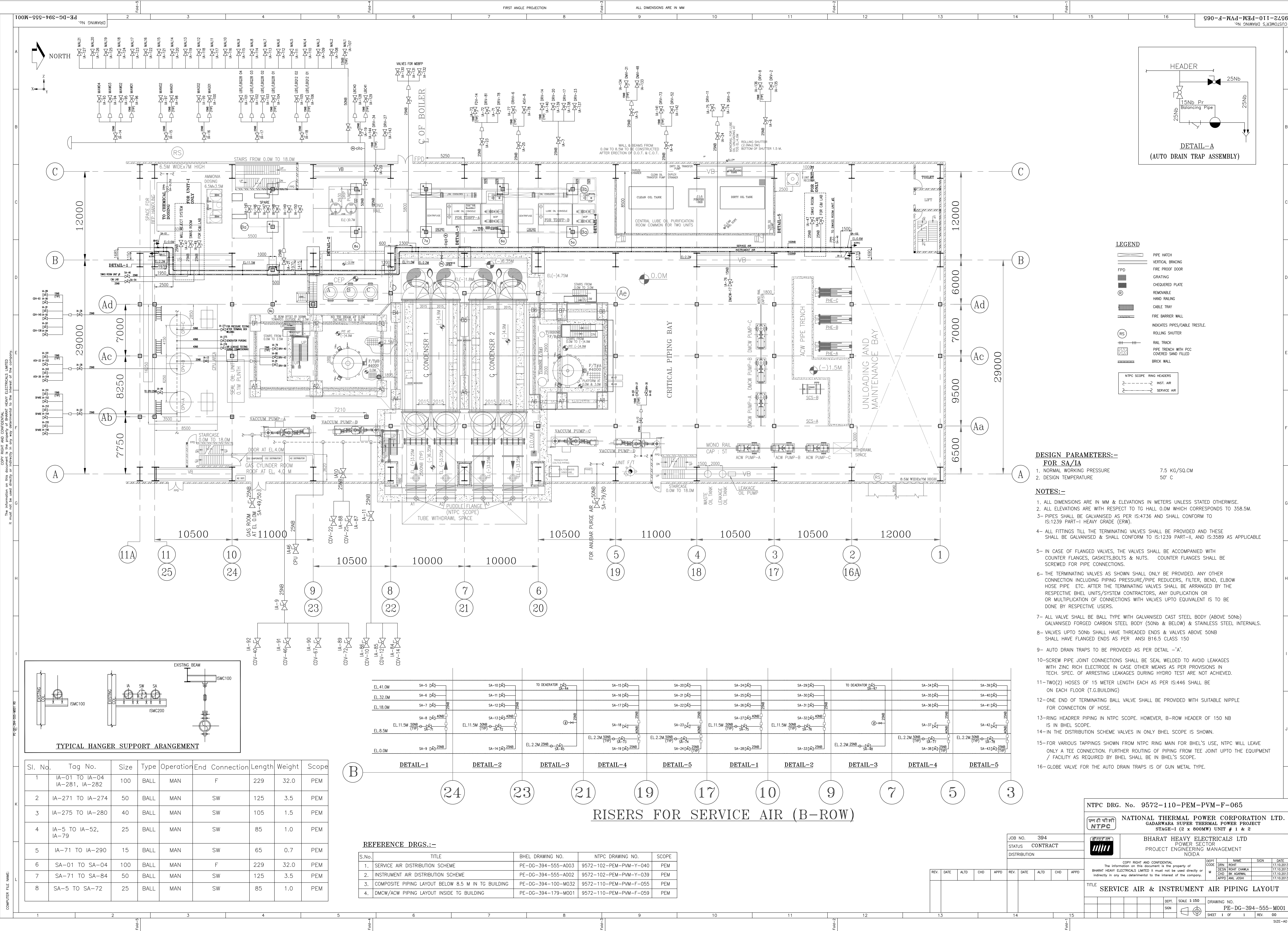
LEGEND

- | | | | |
|---|----------------------------|---|-----------------|
|  | NOR RETURN VALVE |  | Y" TYPE FUNNEL |
|  | BALL VALVE (OPEN) |  | DEV POINT METER |
|  | BALL VALVE (CLOSED) |  | WATER LINE |
|  | GLOBE VALVE (OPEN) |  | DRAIN LINE |
|  | RELIEF/SAFETY VALVE (OPEN) |  | AIR LINE |
|  | MIDDLE VALVE | | |
| FS | FLOW SWITCH | | |
| TG | TEMP. GAUGE | | |
| PG | PRESSURE GAUGE | | |
| FI | FLOW INDICATOR | | |
| SV | SOLENOID VALVE | | |

JOB NO.		395		NATIONAL THERMAL POWER CORPORATION LTD.									
STATUS		CONTRACT		GADARWARA TPP STAGE-II, (2x800MW)									
DISTRIBUTION								DEPT CODE	DRN DESN	NAME	SIGN	DATE	
REV.	DATE	ALTD	CHD							APPD	CHD	HARISH KUMAR	
								MA	CHD	SK BHAIKUMI		15.11.2013	
				TITLE									
				P & I DIAGRAM FOR IA & SA SYSTEM									
								DEPT.	SCALE	~	DRAWING NO.		
								SIGN			PE-DG-395-555-A501		
								DATE			SHEET 1 OF 1	REV. 0	
				4									
				3									

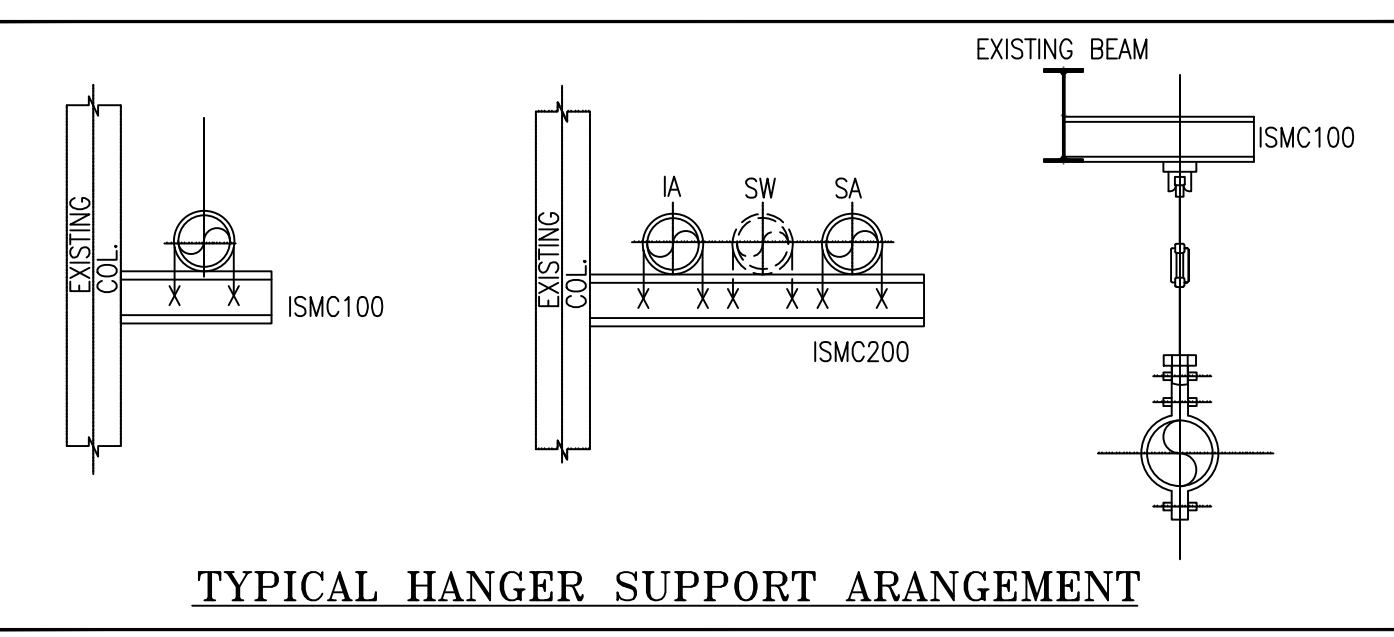


PROJECT			
GADARWARA SUPER THERMAL POWER PROJECT			
STAGE-I (2x800MW)			
TITLE			
SCHEMATIC DRAWING OF COMPRESSED AIR SYSTEM			
SIZE	SCALE	DRG.NO.	
A3	NTS		



- LEGEND**
- PIPE HATCH
 - VERTICAL BRACING
 - FIRE PROOF DOOR
 - GRATING
 - CHECKERED PLATE
 - REMOVABLE HAND RAILING
 - CABLE TRAY
 - FIRE BARRIER WALL
 - INDICATES PIPES/CABLE TRELS
 - ROLLING SHUTTER
 - RAIL TRACK
 - PIPE TRENCH WITH RCC COVERED SAND FILLED
 - BRICK WALL
- NTPC SCOPE RING HEADERS
- INST. AIR
 - SERVICE AIR

- DESIGN PARAMETERS:-**
- FOR SA/IA
- 1. NORMAL WORKING PRESSURE 7.5 KG/SQ.CM
 - 2. DESIGN TEMPERATURE 50° C
- NOTES:-**
- ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
 - ALL ELEVATIONS ARE WITH RESPECT TO TG HALL 0.0M WHICH CORRESPONDS TO 358.5M.
 - PIPES SHALL BE GALVANISED AS PER IS:4736 AND SHALL CONFORM TO IS:1239 PART-I HEAVY GRADE (ERW).
 - ALL FITTINGS TILL THE TERMINATING VALVES SHALL BE PROVIDED AND THESE SHALL BE GALVANISED & SHALL CONFORM TO IS:1239 PART-II, AND IS:3589 AS APPLICABLE
 - IN CASE OF FLANGED VALVES, THE VALVES SHALL BE ACCOMPANIED WITH COUNTER FLANGES, GASKETS, BOLTS & NUTS. COUNTER FLANGES SHALL BE SCREWED FOR PIPE CONNECTIONS.
 - THE TERMINATING VALVES AS SHOWN SHALL ONLY BE PROVIDED, ANY OTHER CONNECTION INCLUDING PIPING PRESSURE/PIPE REDUCERS, FILTER, BEND, ELBOW HOSE PIPE ETC. AFTER THE TERMINATING VALVES SHALL BE ARRANGED BY THE RESPECTIVE BHEL UNITS/SYSTEM CONTRACTORS, ANY DUPLICATION OR OR MULTIPLICATION OF CONNECTIONS WITH VALVES UPTO EQUIVALENT IS TO BE DONE BY RESPECTIVE USERS.
 - ALL VALVE SHALL BE BALL TYPE WITH GALVANISED CAST STEEL BODY (ABOVE 50NB) GALVANISED FORGED CARBON STEEL BODY (50NB & BELOW) & STAINLESS STEEL INTERNALS.
 - VALVES UPTO 50NB SHALL HAVE THREADED ENDS & VALVES ABOVE 50NB SHALL HAVE FLANGED ENDS AS PER ANSI B16.5 CLASS 150
 - AUTO DRAIN TRAPS TO BE PROVIDED AS PER DETAIL -A.
 - SCREW PIPE JOINT CONNECTIONS SHALL BE SEAL WELDED TO AVOID LEAKAGES WITH ZINC RICH ELECTRODE IN CASE OTHER MEANS AS PER PROVISIONS IN TECH. SPEC. OF ARRESTING LEAKAGES DURING HYDRO TEST ARE NOT ACHIEVED.
 - TWO(2) HOSES OF 15 METER LENGTH EACH AS PER IS:446 SHALL BE ON EACH FLOOR (T.G.BUILDING)
 - ONE END OF TERMINATING BALL VALVE SHALL BE PROVIDED WITH SUITABLE NIPPLE FOR CONNECTION OF HOSE.
 - RING HEADER PIPING IN NTPC SCOPE. HOWEVER, B-RING HEADER OF 150 NB IS IN BHEL SCOPE.
 - IN THE DISTRIBUTION SCHEME VALVES IN ONLY BHEL SCOPE IS SHOWN.
 - FOR VARIOUS TAPPINGS SHOWN FROM NTPC RING MAIN FOR BHEL'S USE, NTPC WILL LEAVE ONLY A TEE CONNECTION. FURTHER ROUTING OF PIPING FROM TEE JOINT UPTO THE EQUIPMENT / FACILITY AS REQUIRED BY BHEL SHALL BE IN BHEL'S SCOPE.
 - GLOBE VALVE FOR THE AUTO DRAIN TRAPS IS OF GUN METAL TYPE.



Sl. No.	Tag No.	Size	Type	Operation	End Connection	Length	Weight	Scope
1	IA-01 TO IA-04 IA-281, IA-282	100	BALL	MAN	F	229	32.0	PEM
2	IA-271 TO IA-274	50	BALL	MAN	SW	125	3.5	PEM
3	IA-275 TO IA-280	40	BALL	MAN	SW	105	1.5	PEM
4	IA-5 TO IA-52, IA-79	25	BALL	MAN	SW	85	1.0	PEM
5	IA-71 TO IA-290	15	BALL	MAN	SW	65	0.7	PEM
6	SA-01 TO SA-04	100	BALL	MAN	F	229	32.0	PEM
7	SA-71 TO SA-84	50	BALL	MAN	SW	125	3.5	PEM
8	SA-5 TO SA-72	25	BALL	MAN	SW	85	1.0	PEM

DETAIL-1	DETAIL-2	DETAIL-3	DETAIL-4	DETAIL-5	DETAIL-1	DETAIL-2	DETAIL-3	DETAIL-4	DETAIL-5
24	23	21	19	17	10	9	7	5	3

RISERS FOR SERVICE AIR (B-RING)

REFERENCE DRGS.:-

S.No.	TITLE	BHEL DRAWING NO.	NTPC DRAWING NO.	SCOPE
1.	SERVICE AIR DISTRIBUTION SCHEME	PE-DG-394-555-A003	9572-102-PEM-PVM-Y-040	PEM
2.	INSTRUMENT AIR DISTRIBUTION SCHEME	PE-DG-394-555-A002	9572-102-PEM-PVM-Y-039	PEM
3.	COMPOSITE PIPING LAYOUT BELOW 8.5 M IN TG BUILDING	PE-DG-394-100-M032	9572-110-PEM-PVM-F-055	PEM
4.	DMCW/ACW PIPING LAYOUT INSIDE TG BUILDING	PE-DG-394-179-M001	9572-110-PEM-PVM-F-059	PEM

NTPC DRG. No. 9572-110-PEM-PVM-F-065

NATIONAL THERMAL POWER CORPORATION LTD.
POWER SECTOR
GADWARA SUPER THERMAL POWER PROJECT
STAGE-I (2 x 800MW) UNIT # 1 & 2

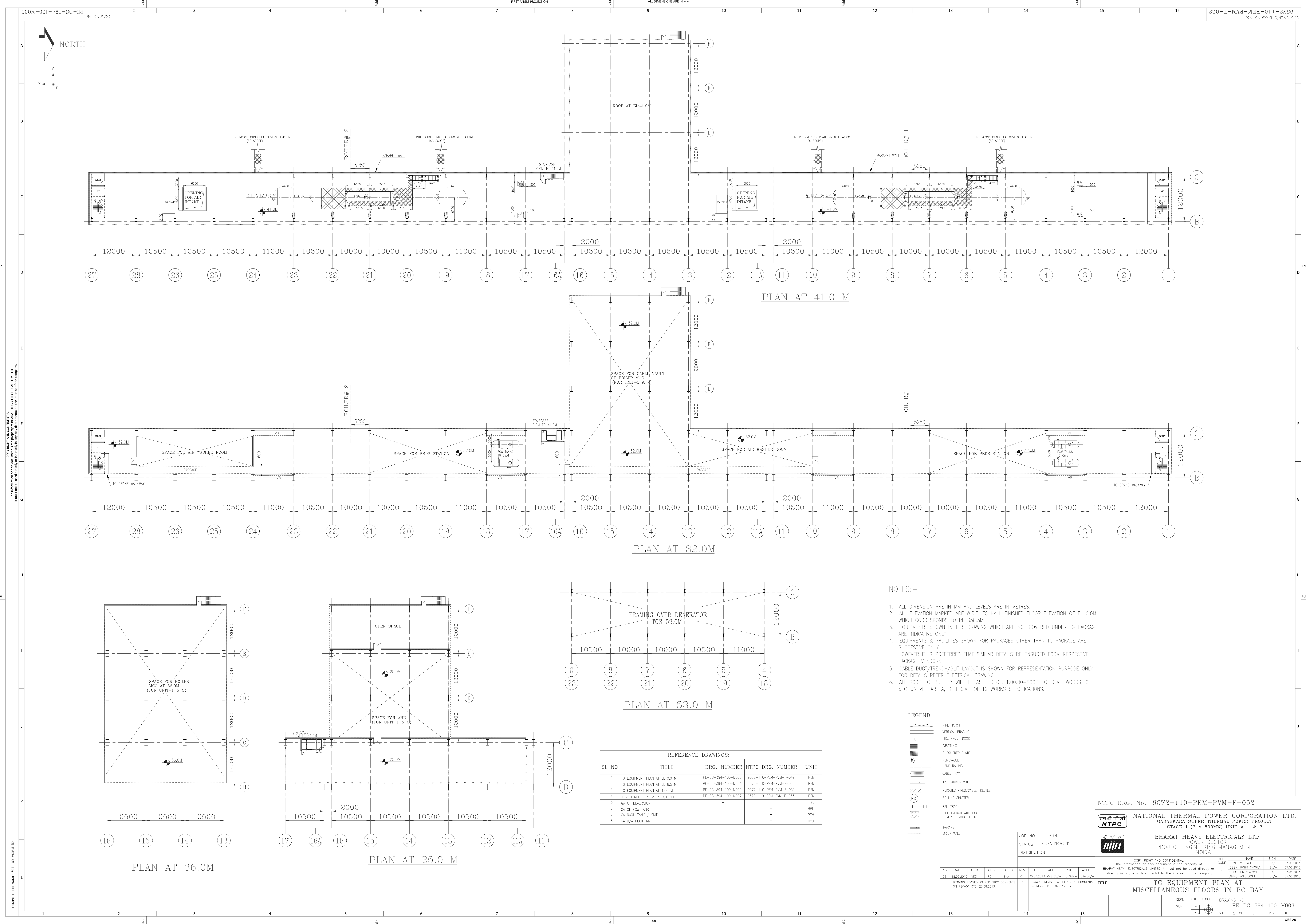
BARHAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NODA

JOB NO.	394
STATUS	CONTRACT
DISTRIBUTION	

REV.	DATE	ALTD	CHD	APPD

DEPT.	NAME	SIGN	DATE
DESIGN	ROHIT CHANDEL		17.10.2013
CHD.	DR. AGARWAL		17.10.2013
APPD.	ANIL JOSHI		17.10.2013

TITLE			
SERVICE AIR & INSTRUMENT AIR PIPING LAYOUT			
DEPT.	SCALE 1:150	DRAWING NO.	
SKN		PE-DG-394-555-M001	
SHEET	1 OF 1	REV	00



NOTES:-

1. ALL DIMENSION ARE IN MM AND LEVELS ARE IN METRES.
2. ALL ELEVATION MARKED ARE W.R.T. TG HALL FINISHED FLOOR ELEVATION OF EL 0.0M WHICH CORRESPONDS TO RL 358.5M.
3. EQUIPMENTS SHOWN IN THIS DRAWING WHICH ARE NOT COVERED UNDER TG PACKAGE ARE INDICATIVE ONLY.
4. EQUIPMENTS & FACILITIES SHOWN FOR PACKAGES OTHER THAN TG PACKAGE ARE SUGGESTIVE ONLY. HOWEVER IT IS PREFERRED THAT SIMILAR DETAILS BE ENSURED FORM RESPECTIVE PACKAGE VENDORS.
5. CABLE DUCT/TRENCH/SLOT LAYOUT IS SHOWN FOR REPRESENTATION PURPOSE ONLY. FOR DETAILS REFER ELECTRICAL DRAWING.
6. ALL SCOPE OF SUPPLY WILL BE AS PER CL. 1.00.00--SCOPE OF CIVIL WORKS, OF SECTION VI, PART A, D-1 CIVIL OF TG WORKS SPECIFICATIONS.

LEGEND

- PIPE HATCH
- VERTICAL BRACING
- FIRE PROOF DOOR
- GRATING
- CHECKERED PLATE
- REMOVABLE
- HAND RAILING
- CABLE TRAY
- FIRE BARRIER WALL
- INDICATES PIPES/CABLE TRESTLE.
- ROLLING SHUTTER
- RAIL TRACK
- PIPE TRENCH WITH RCC COVERED SAND FILLED
- PARAPET
- BRICK WALL

REFERENCE DRAWINGS:				
SL NO	TITLE	DRG. NUMBER	NTPC DRG. NUMBER	UNIT
1	TG EQUIPMENT PLAN AT EL 0.0 M	PE-DG-394-100-M003	9572-110-PEM-PWM-F-049	PEM
2	TG EQUIPMENT PLAN AT EL 8.5 M	PE-DG-394-100-M004	9572-110-PEM-PWM-F-050	PEM
3	TG EQUIPMENT PLAN AT 18.0 M	PE-DG-394-100-M005	9572-110-PEM-PWM-F-051	PEM
4	T.G. HALL CROSS SECTION	PE-DG-394-100-M007	9572-110-PEM-PWM-F-053	PEM
5	GA OF DEAERATOR	-	-	HYD
6	GA OF ECW TANK	-	-	BPL
7	GA NAOH TANK / SKID	-	-	PEM
8	GA D/A PLATFORM	-	-	HYD

NTPC DRG. No. 9572-110-PEM-PVM-F-052

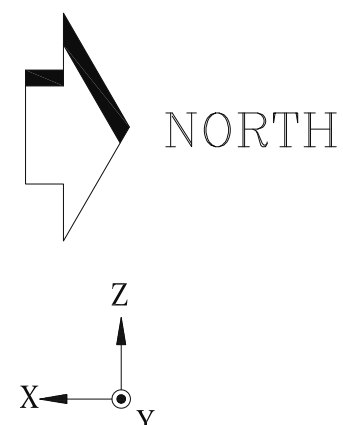
NATIONAL THERMAL POWER CORPORATION LTD.
GADARWARA SUPER THERMAL POWER PROJECT
STAGE-1 (2 x 800MW) UNIT # 1 & 2

POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
Noida

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indirectly in any way detrimental to the interest of the company.

**TG EQUIPMENT PLAN AT
MISCELLANEOUS FLOORS IN BC BAY**

DRAWING NO. PE-DG-394-100-M006
SHEET 1 OF 1
REV 02



NORTH

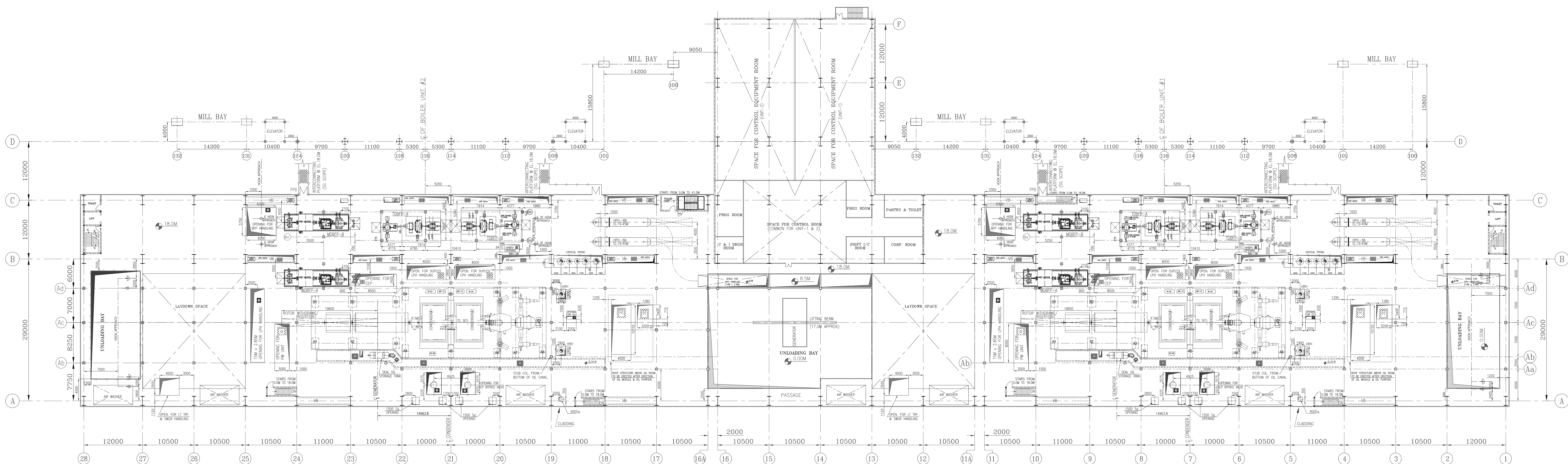
9572-110-PEM-PVM-F-050
9572-110-PEM-PVM-F-051
9572-110-PEM-PVM-F-052

REFERENCE DRGS:

REFERENCE DRGS:					
SL NO	TITLE	DRG. NUMBER	NTPC DRG. NUMBER	UNIT	
1	TG EQUIPMENT PLAN AT EL 0.0 M	PE-DG-394-100-M003	9572-110-PEM-PWM-F-049	PEM	
2	TG EQUIPMENT PLAN AT EL 8.5 M	PE-DG-394-100-M004	9572-110-PEM-PWM-F-050	PEM	
3	TG EQUIPMENT PLAN AT MISCELLANEOUS FLOORS IN BC BAY	PE-DG-394-100-M006	9572-110-PEM-PWM-F-052	PEM	
4	T.G. HALL CROSS SECTION	PE-DG-394-100-M007	9572-110-PEM-PWM-F-053	PEM	
5	GA MDBFP	–	–	HYD	
6	GA TDBFP	–	–	HYD	
7	GA HP HEATER 8A	–	–	HYD	
8	GA HP HEATER 8B	–	–	HYD	
9	TG DECK FOUNDATION PLAN	–	–	HWR	
10	LAYDOWN OF GENERATOR COMPONENTS	–	–	HWR	
11	LAYDOWN OF TURBINE COMPONENTS	–	–	SAG	
12	FOUNDATION ARRANGEMENT FOR BFP AND DRIVE TURBINE	–	–	HYD	
13	FOUNDATION OF MDBFP	–	–	HYD	
14	OIL CANAL FOUNDATION PLAN	–	–	HWR	
15	OUTLINE OF GENERATOR	–	–	HWR	

LEGEND

	PIPE HATCH
	VERTICAL BRACING
	FIRE PROOF DOOR
	GRATING
	CHECKERED PLATE
	REMOVABLE
	HAND RAILING
	CABLE TRAY
	FIRE BARRIER WALL
	INDICATES PIPES/CABLE TRESTLE
	ROLLING SHUTTER
	RAIL TRACK
	PIPE TRENCH WITH PCC COVERED SAND FILLED



NOTES:—

1. ALL DIMENSION ARE IN MM AND LEVELS ARE IN METRES.
2. ALL ELEVATION MARKED ARE W.R.T. TO GALL FINISHED FLOOR ELEVATION OF EL 0.0M WHICH CORRESPONDS TO 358.5 M .
3. EQUIPMENTS SHOWN IN THIS DRAWING WHICH ARE NOT COVERED UNDER TG PACKAGE ARE INDICATIVE ONLY.
4. EQUIPMENTS & FACILITIES SHOWN FOR PACKAGES OTHER THAN TG PACKAGE ARE SUGGESTIVE ONLY
HOWEVER IT IS PREFERRED THAT SIMILAR DETAILS BE ENSURED FORM RESPECTIVE PACKAGE VENDORS.
5. CABLE DUCT/TRENCH/SPLIT LAYOUT IS SHOWN FOR REPRESENTATION PURPOSE ONLY. FOR DETAILS REFER ELECTRICAL DRAWING.
6. ALL INSERTS, EMBEDMENTS & PLATFORMS SHALL BE AS PER AGREED CONTRACT.

CIVIL TO NOTE:

* COLUMN UPTO BFP DECK.
\$ COLUMN UPTO ~13.5(BOTTOM OF OIL CANAL)

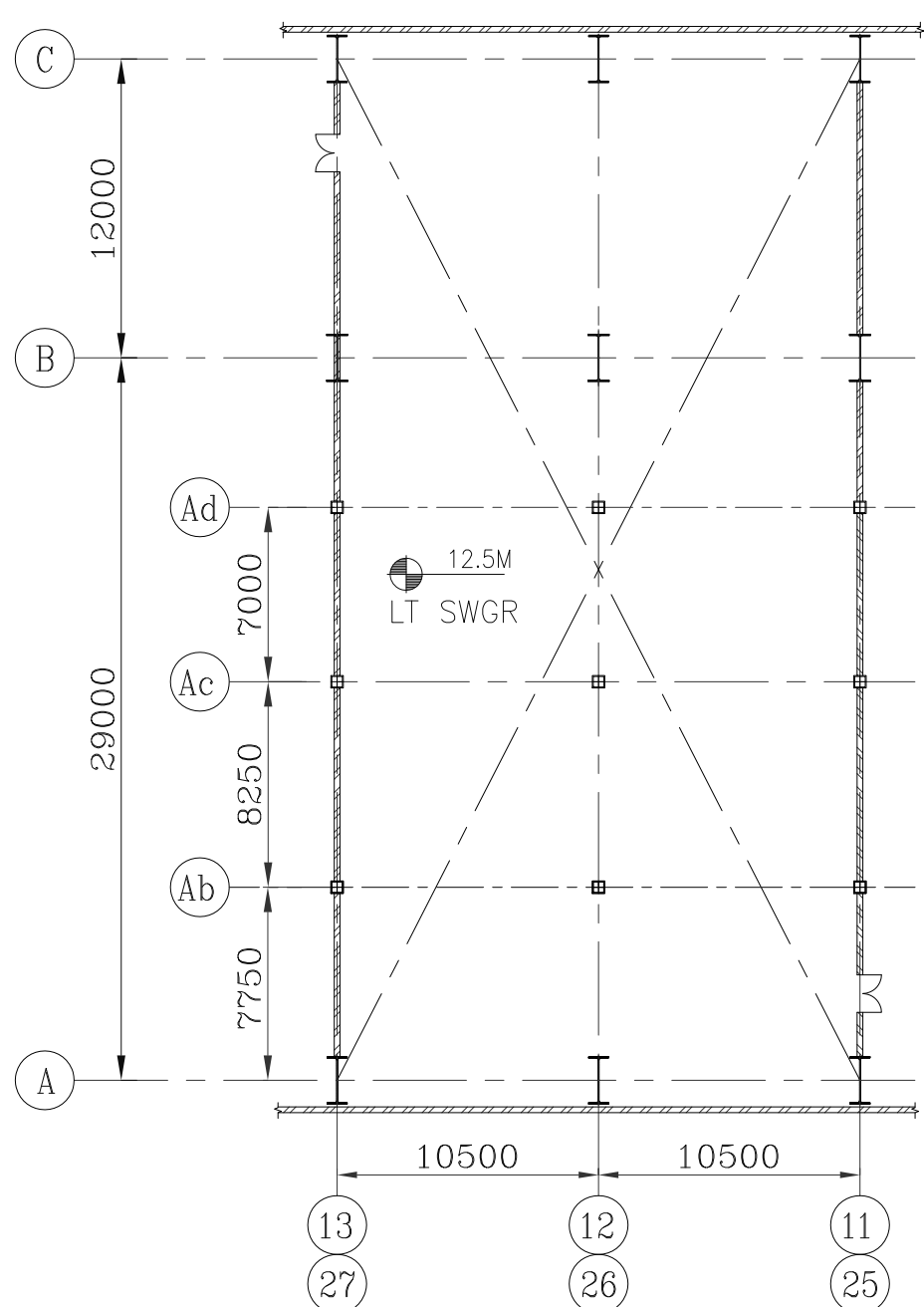
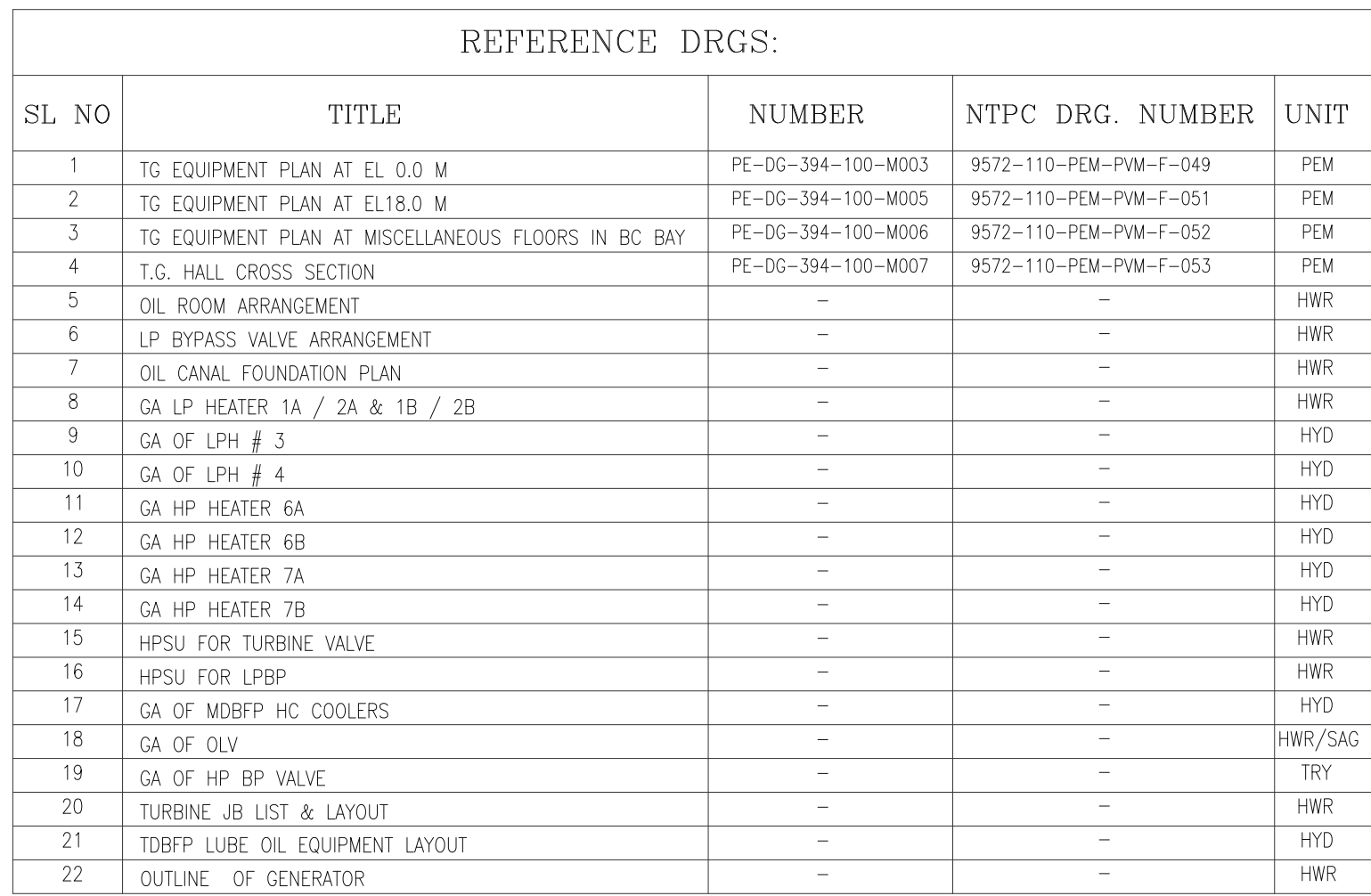
DETAIL OF LAY-DOWN SPACE FOR TG COMPONENTS

S No	DESCRIPTION	WT IN T	AREA M ² M
60	HP SHMT	25.0	5.5 X 1.3
61	EXHAUST CASING	20.0	5.4 X 3.3
62	INNER CASING UPPER PART	17.0	3.4 X 22.0
63	IP SHATT	40.0	6.232 X 1.7
64	IP TURBINE OUTER CASING UPPER PART	41.0	5.89 X 4.4
65	IP TURBINE INNER CASING UPPER PART	32.0	5.9 X 3.2
66	IP TURBINE INNER CASING LOWER PART	37.0	5.9 X 3.5
67	LP1 & LP2 SHATT	76.0	6.932 X 3.46
68	LP1 & LP2 OUTER CASING UPPER PART	28.0	5.56 X 5.935
69	LP1 & LP2-INNER CASING UPPER HALF	26.0	5.55 X 3.56
70	SHMT SEAL CAS -TE & GE	0.5	0.405 X 1.12
71	HP FRONT BEARING UPPER PART	0.6	0.85 X 1.35
72	HP REAR BEARING UPPER PART	0.9	0.8 X 1.45
73	IP REAR BEARING UPPER PART	2.3	1.215 X 2.1
74	LP REAR BEARING UPPER PART	2.3	1.275 X 2.1
75	LP2-REAR BEARING UPPER PART	2.3	1.235 X 2.1
76	STATIONARY BLADE RING ASSEMBLY 4 NOS	3.5	5.9 X 0.6

19	GENERATOR – ROTOR	93.0	14.57 X 1.91
20	END SHIELD UPPER & LOWER HALF (ES) 2 NOS	9.0	1.2 X 3.9
21	END SHIELD UPPER & LOWER HALF (TS) 2 NOS	8.0	1.2 X 3.6
22	HYDROGEN COOLERS (2 NOB TWIN TYPE)	4.5	5.0 X 1.5
23	HYDROGEN COOLERS HOUSING	26.0	4.6 X 5.2
24	EXCITER	3.0	5.6 X 2.01
25	EXCITER HOUSING	3.5	4.4 X 3.97
26	BEARING SHELLS – TS & ES 4 NOS	0.5	0.5 X 0.8
27	HP CONTROL VALVE	2.2	2.1 X 0.9
28	HP CONTROL VALVE ACTUATOR	1.5	1.4 X 0.8
29	HP STOP VALVE	2.5	2.0 X 1.0
30	HP STOP VALVE ACTUATOR	1.2	1.5 X 0.7
31	IP CONTROL VALVE	4.9	2.5 X 1.3
32	IP CONTROL VALVE ACTUATOR	1.5	1.7 X 0.7
33	IP STOP VALVE	6.2	2.1 X 1.7
34	IP STOP VALVE ACTUATOR	1.4	2.1 X 0.7
35	BYPASS VALVE WITH ACTUATOR 2 NOS	10.5	2.5 X 2.0

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD
02	18.09.2013	VKS	RC	BKA	01	30.07.2013	VKS Sd/-	RC Sd/-	BKA Sd/-
1	DRAWING REVISED AS PER NTPC COMMENTS ON REV-01 DTD. 23.08.2013.				1	DRAWING REVISED AS PER NTPC COMMENTS ON REV-0 DTD. 02.07.2013 .			

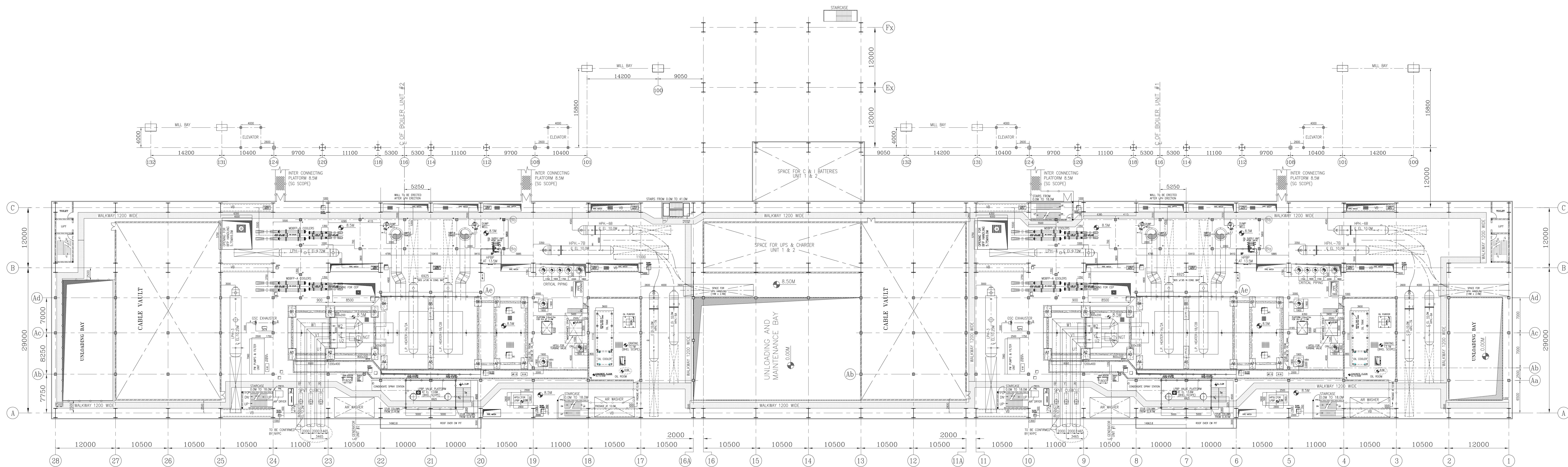
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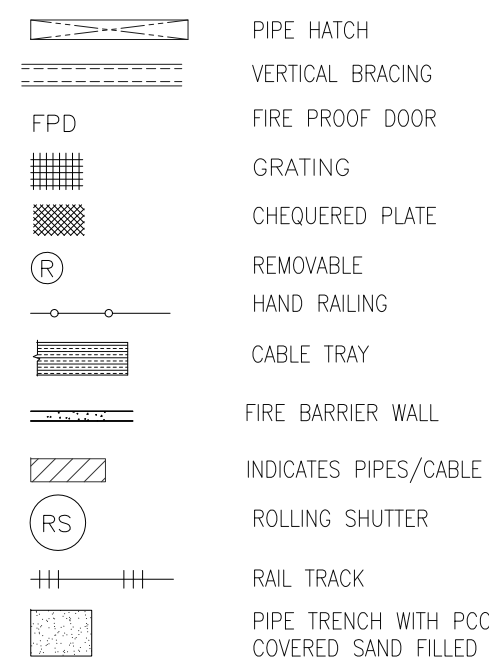
PLAN AT 12.5M

NOTES:—

1. ALL DIMENSION ARE IN MM AND LEVELS ARE IN METRES.
2. ALL ELEVATION MARKED ARE W.R.T. TO HALL FINISHED FLOOR ELEVATION OF EL 0.0M WHICH CORRESPONDS TO RL 358.5 M.
3. EQUIPMENTS SHOWN IN THIS DRAWING WHICH ARE NOT COVERED UNDER TG PACKAGE ARE INDICATIVE ONLY.
4. EQUIPMENTS & FACILITIES SHOWN FOR PACKAGES OTHER THAN TG PACKAGE ARE SUGGESTIVE ONLY
HOWEVER IT IS PREFERRED THAT SIMILAR DETAILS BE ENSURED FORM RESPECTIVE PACKAGE VENDORS.
5. CABLE DUCT/TRENCH/SPLIT LAYOUT IS SHOWN FOR REPRESENTATION PURPOSE ONLY. FOR DETAILS REFER ELECTRICAL DRAWING.
6. ALL INSERTS, EMBEDMENTS & PLATFORMS SHALL BE AS PER AGREED CONTRACT.



LEGEND




CIVIL TO NOTE:


* COLUMN UPTO BOTTOM OF BFP DECK

MAX BEAM DEPTH FOR PLATFORMS BELOW TG DECK TO BE RESTRICTED TO 600MM
PLATFORMS AT 2.5M BELOW TG DECK TO BE ERECTED AFTER F/T INSTALLATION.
ELEVATION OF THE BEAMS BELOW TG DECK SHALL BE DECIDED LATER BASED
ON CONDENSER DRG.

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD
02	18.09.2013	VKS	RC	BKA	01	30.07.2013	VKS Sd/-	RC Sd/-	BKA Sd/-
1	DRAWING REVISED AS PER NTPC COMMENTS				1	DRAWING REVISED AS PER NTPC COMMENT			


NTPC DRG. No. 9572-110-PEM-PVM-F-050

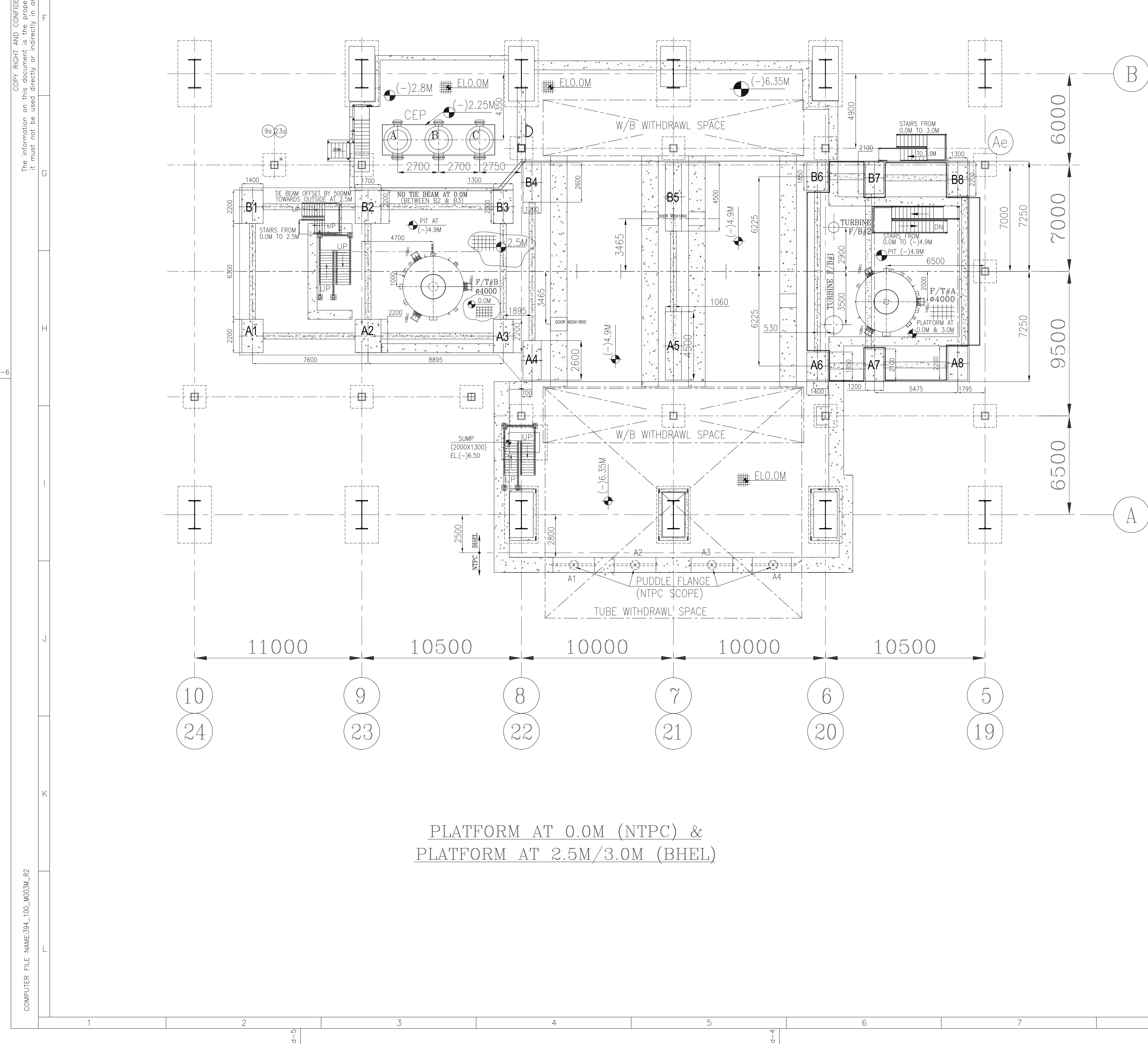
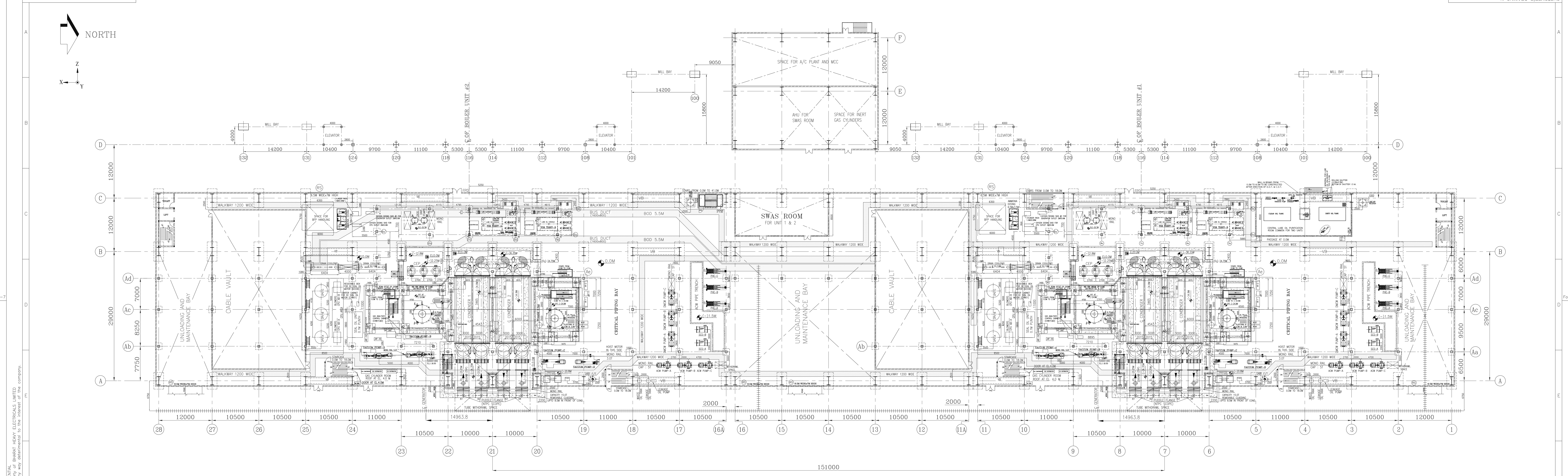
 NATIONAL THERMAL POWER CORPORATION LTD.
GADARWARA SUPER THERMAL POWER PROJECT
STAGE-I (2 x 800MW) UNIT # 1 & 2


 BHARAT HEAVY ELECTRICALS LTD
 POWER SECTOR
 PROJECT ENGINEERING MANAGEMENT
 NOIDA

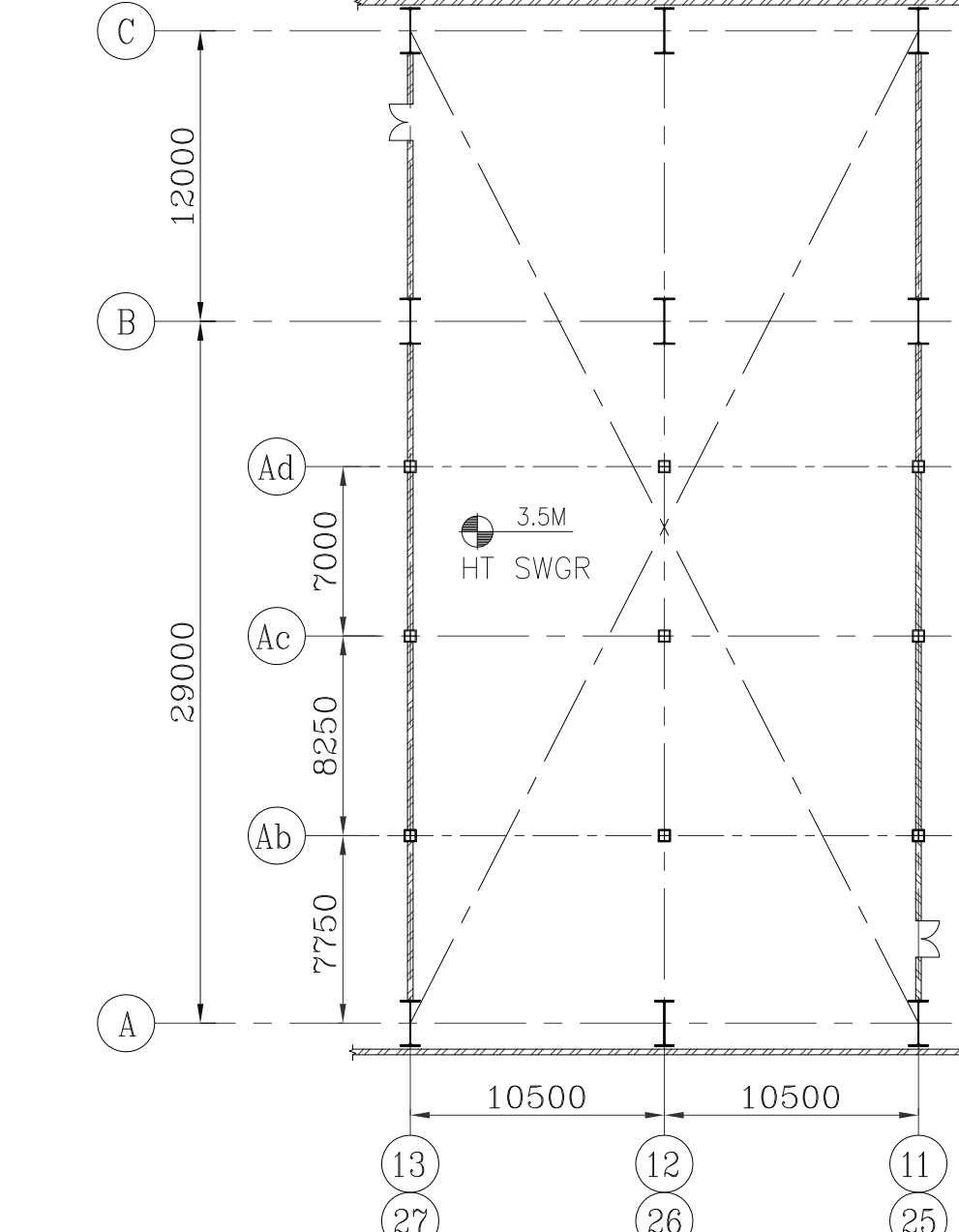
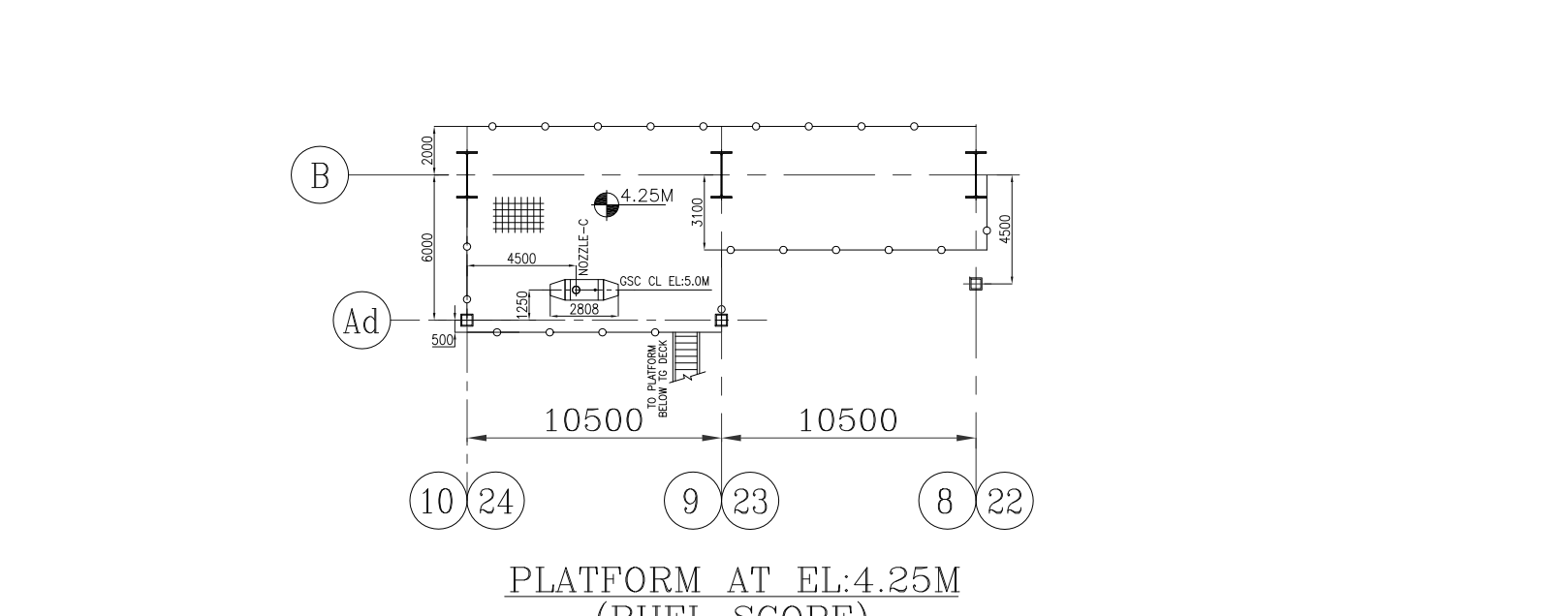
COPY RIGHT AND CONFIDENTIAL		DEPT	NAME	SIGN	DATE
BHARAT HEAVY ELECTRICALS LIMITED it must not be used directly or indirectly in any way detrimental to the interest of the company.		CODE	DRN	WK SAI	Sd/- 07.06.20
			DESN	ROHIT CHAMLA	Sd/- 07.06.20
			CHD	AK AGARWAL	Sd/- 07.06.20
			APPD	ANU JYOSHI	Sd/- 07.06.20

TITLE TG EQUIPMENT PLAN AT EL 8.5 M

DEPT.	SCALE 1:300	DRAWING NO.	
SIGN		PE-DG-394-100-M004	
		SHEET 1 OF 1	REV 02



REFERENCE DRGS:				
SL NO	TITLE	NUMBER	NTPC DRG. NUMBER	UNIT
1	TG EQUIPMENT PLAN AT EL 8.5 M	PE-DG-394-100-M004	9572-110-PEM-PVM-F-050	PEM
2	TG EQUIPMENT PLAN AT EL 18.0 M	PE-DG-394-100-M005	9572-110-PEM-PVM-F-051	PEM
3	TG EQUIPMENT PLAN AT MISCELLANEOUS FLOORS IN BC BAY	PE-DG-394-100-M006	9572-110-PEM-PVM-F-052	PEM
4	T/G HALL CROSS SECTION	PE-DG-394-100-M007	9572-110-PEM-PVM-F-053	PEM
5	KEY PLAN OF BOILER	0-00-020-76424	-	TRY
6	CONDENSER ASSEMBLY (GENERAL ARRANGEMENT)	-	-	HWR
7	GENERAL ARRANGEMENT OF DRAIN COOLER # 1	-	-	HYD
8	GENERAL ARRANGEMENT OF DRAIN COOLER # 2	-	-	HYD
9	GENERAL ARRANGEMENT GLAND STEAM CONDENSER	-	-	HWR
10	GENERAL ARRANGEMENT F / T-B	-	-	BPL
11	GENERAL ARRANGEMENT F / T-A	-	-	BPL
12	GENERAL ARRANGEMENT CEP	-	-	HYD
13	GENERAL ARRANGEMENT SEAL OIL UNIT	-	-	HWR
14	GENERAL ARRANGEMENT OF VACUUM PUMPS CONDENSER # 1	-	-	HWR
15	GENERAL ARRANGEMENT OF VACUUM PUMPS CONDENSER # 2	-	-	HWR
16	TDBFP LUBE OIL	-	-	HYD
17	DRIP PUMPS	-	-	HYD
18	GA WASTE OIL TANK	-	-	HWR
19	GA OF PRE	-	-	PEM
20	GA ECM PUMP	-	-	PEM
21	LEAKAGE OIL TANK AND PUMP	-	-	HWR
22	GA OF CPU (PPING LAYOUT FOR SERVICE VESSEL AREA)	-	-	PEM
23	GA AMMONIA SKID	-	-	PEM
24	GA OF OXYGEN DCS	-	-	PEM
25	GA OF COLDS	-	-	PEM
26	LIST OF JUNCTION BOX	-	-	HWR



LEGEND	
	PIPE HATCH
	VERTICAL BRACING
	FIRE PROOF DOOR
	GRATING
	CHEQUERED PLATE
	REMOVABLE HAND RAILING
	CABLE TRAY
	FIRE BARRIER WALL
	INDICATES PIPES/CABLE TRESTLE
	ROLLING SHUTTER
	RAIL TRACK
	PIPE TRENCH WITH RCC COVERED SAND FILLED
	BRICK WALL

NOTES:-

1. ALL DIMENSION ARE IN MM AND LEVELS ARE IN METRES.

2. ALL ELEVATION MARKED ARE W.R.T. TG HALL FINISHED FLOOR ELEVATION OF EL 0.0 M WHICH CORRESPONDS TO RL 358.5M.

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CIVIL TO NOTE:

COLUMN FOR FLASH TANK SUPPORT

* COLUMN UPTO BOTTOM OF BFP DECK

MAX BEAM DEPTH FOR PLATFORMS BELOW TG DECK TO BE RESTRICTED TO 600MM. PLATFORMS AT 2.5M/3.0M BELOW TG DECK TO BE ERECTED AFTER F/T INSTALLATION. ELEVATION OF THE BEAMS BELOW TG DECK SHALL BE DECIDED LATER BASED ON CONDENSER DRG.

NTPC DRG. No. 9572-110-PEM-PVM-F-049

NTPC

NATIONAL THERMAL POWER CORPORATION LTD.

GADARWARA SUPER THERMAL POWER PROJECT

STAGE-1 (2 x 800MW) UNIT # 1 & 2

BHARAT HEAVY ELECTRICALS LTD

POWER SECTOR

PROJECT ENGINEERING MANAGEMENT

NOIDA

JOB NO. 394

STATUS CONTRACT

DISTRIBUTION

REV. DATE ALTD CHD APPD

02 18.09.2013 WES RC BKA

01 30.07.2013 WES SA/- RC SA/- BKA SA/-

1 DRAWING REVISED AS PER NTPC COMMENTS ON REV-01 DTD. 23.08.2013.

1 DRAWING REVISED AS PER NTPC COMMENTS ON REV-01 DTD. 02.07.2013.

DEPT. NAME SIGN DATE

CODE DESN. INK. SIGN SA/- 07.06.2013

M CHD. BK. AGARWAL SA/- 07.06.2013

APPD. JAIL. JOSHI SA/- 07.06.2013

TITLE

TG EQUIPMENT PLAN AT EL 0.0 M

DEPT. SCALE 1:150

DRAWING NO. PE-DG-394-100-M003

SHEET 1 OF 1

REV. 02

COMPUTER FILE NAME: 94_100_M003.dwg

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SIZE-A0