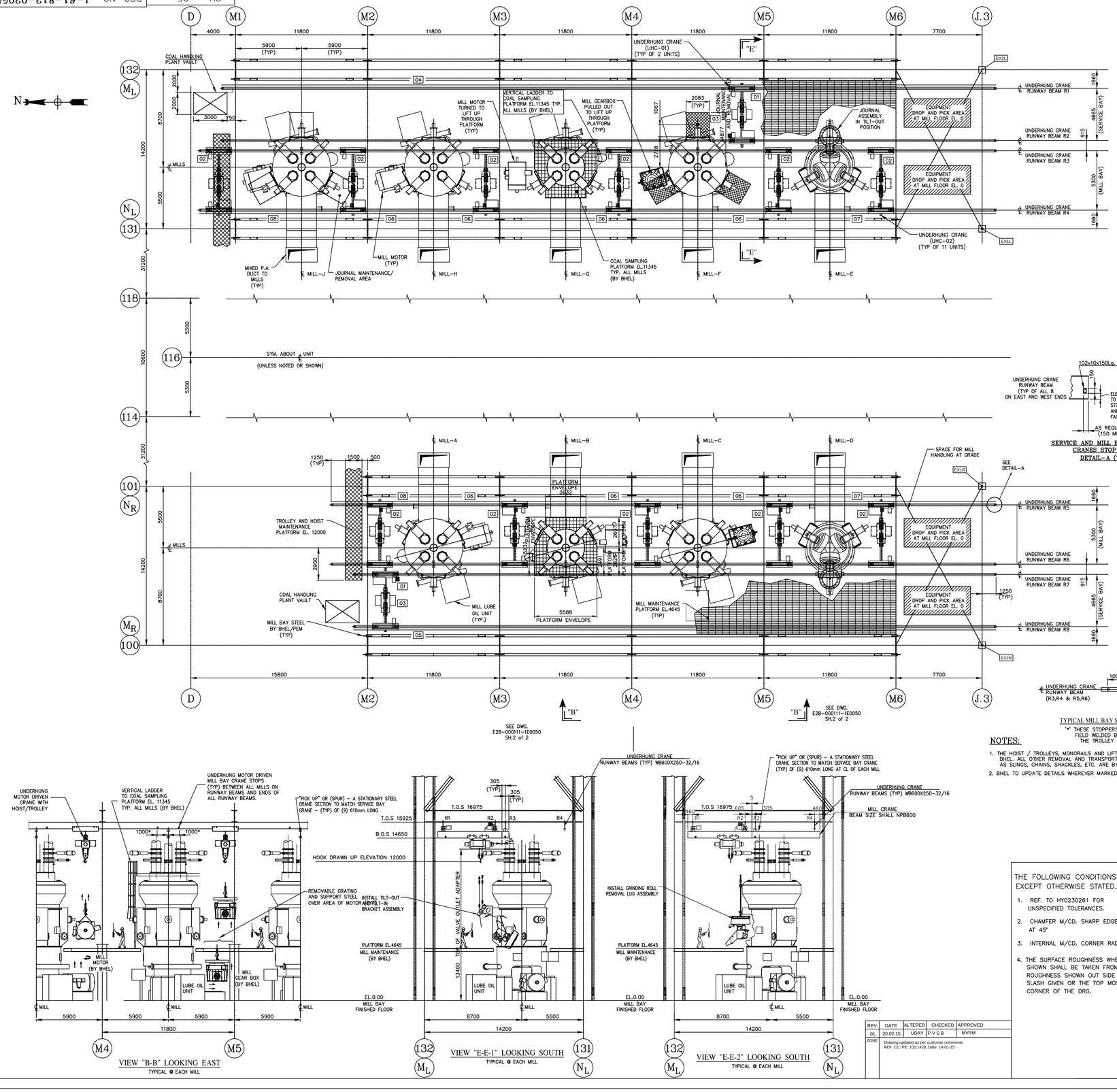
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 1-61-812-02055 SH. OF



VENDOR'S SCOPE OF SUPPLY / BHEL HYDERABAD

ITEM	DESCRIPTION	QTY.	REMARKS
01	UNDERHUNG CRANE-ELEC. CAPA. 25 ton SPAN 4665 mm – (UHC-01)	02	OVER HANG 460 mm AND 605 mm
02	UNDERHUNG CRANE-ELEC. CAPA. 25 ton SPAN 5300 mm – (UHC-02)	11	OVER HANG 305 mm AND 460 mm
03	TROLLEY WITH HOIST-ELEC. CAPA. 25 ton LIFT 12000 mm	02	"TWH" HAS TO TRAVEL ON SERVICE CRANE AND MILL CRANES
04	DSL-01 FOR SERVICE CRANE – TRAVEL LENGTH 69.20 M	02	TRAVELING CABLE WITH CABLE TROLLEY TYPE
05	DSL-02 FOR SERVICE CRANE – TRAVEL LENGTH 57.40 M	02	TRAVELING CABLE WITH CABLE TROLLEY TYPE
06	DSL-03 FOR MILL BAY CRANE – TRAVEL LENGTH 11.80 M	07	TRAVELING CABLE WITH TAUT WIRE LOOP TYPE
07	DSL-04 FOR MILL BAY CRANE – TRAVEL LENGTH 14.85 M	02	TRAVELING CABLE WITH TAUT WIRE LOOP TYPE
08	DSL-05 FOR MILL BAY CRANE – TRAVEL LENGTH 9.15 M	02	TRAVELING CABLE WITH TAUT WIRE LOOP TYPE
09	RATCHET LEVER TYPE AUX. HOIST CAPA. 10 ton LIFT 9.0 M	03	NOT SHOWN AND NOT IN VENDOR'S SCOPE
10	INTERLOCK MECHANISM – MALE TYPE	02	TO BE FITTED ON THE SERVICE CRANES
11	INTERLOCK MECHANISM – FEMALE TYPE	11	TO BE FITTED ON THE MILL BAY CRANES
12	MAINTENANCE PLATFORM FOR TROLLEY WITH HOIST	02	TO BE FITTED AT THE END OF THE MILL BAYS

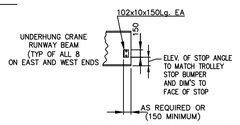
NOTES TO CUSTOMER:

01. EITHER MILL JOURNAL ASSEMBLY OR JOURNAL OPENING COVER WITH SPRING ASSEMBLY SHALL BE HANDLED AT A TIME.
02. POWER SUPPLY SHALL BE PROVIDED BY BHEL AT ELEVATION: "LATER". FOR POWER SUPPLY RATING REFER RESPECTIVE MILL BAY COLUMNS. THE SCOPE OF SUPPLY IS UP TO AND INCLUDING THE JUNCTION BOXES SHOWN ON EACH MILL BAY COLUMN.
03. POWER SUPPLY BRACKETS SHALL BE FED FROM 415V ACPDB UP TO 5.700 M ON MILL BAY COLUMNS. FOR POWER SUPPLY RATING REFER RESPECTIVE MILL BAY COLUMNS. ALSO REFER TO DOCUMENT "REQUIREMENT FOR ELECTRICAL POWER" ISSUED BY BHEL (T).
04. THE BOTTOM OF STEEL OF INTERCONNECTING MEMBERS BETWEEN COLUMNS "100" & "101" AND COLUMNS "131" & "132" ROW SHALL BE RESTRICTED TO EL.15925 mm.
05. EITHER JOURNAL SHAFT ASSEMBLY WITH GRINDING ROLL OR GRINDING ROLL SHALL BE HANDLED AT A TIME.

NOTES TO SUPPORTING STRUCTURES, PE-FB, TRICHY.
i). TO BE RELEASED BY SUPPORTING STRUCTURES / BOILER TRICHY.

ITEM	DESCRIPTION	QTY.	REMARKS
a	RUNWAY BEAMS (R1,R2)	02	LENGTH : 69.20 M
b	RUNWAY BEAMS (R3,R4)	02	LENGTH : 71.20 M
c	RUNWAY BEAMS (R5,R6)	02	LENGTH : 59.40 M
d	RUNWAY BEAMS (R7,R8)	02	LENGTH : 57.40 M

ii). RUNWAY BEAM SHALL BE RESTRICTED TO MAXIMUM DEPTH OF 600 mm (WB600X250-32/16).
iii). RUNWAY BEAM BOTTOM OF STEEL ELEVATION SHALL BE RESTRICTED TO 15325 mm.
iv). MAXIMUM LOAD TO BE HANDLED "20T" (UHC-01) & "20T" (UHC-02)
v). THE BOTTOM OF STEEL OF INTERCONNECTING MEMBERS BETWEEN COLUMNS "100" & "101" AND COLUMNS "131" & "132" ROW SHALL BE RESTRICTED TO EL.15925 mm.



SERVICE AND MILL BAYS STOPPER CRANES STOP ANGLE DETAIL-A (TYP.)

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. ACCEPTABLE TOLERANCE FOR SPAN UP TO 30M IS ± 6MM.
3. RUNWAY BEAMS SHALL BE INSTALLED AND SHALL MAINTAIN LEVEL WITH EACH OTHER AND WITHOUT SLOPE THROUGHOUT THE LENGTH
4. VERTICALITY OF RUNWAY BEAMS SHALL BE WITHIN ± 2MM.
5. PACKER PLATES (SHIMS) SHALL BE USED TO MAINTAIN LEVELS OF RUNWAY BEAM WHEN LEVEL DIFFERENCE COMES WITHIN ±2mm. FOR LARGE VARIATIONS INTERCONNECTING BEAM HAS TO BE CORRECTED TO MAINTAIN THE REUNWAY BEAM LEVEL.
6. MILL DETAILS SHOWN ARE ONLY SCHEMATIC. FOR EXACT DETAILS REFER TO DRAWINGS
   HP1203 BOWL MILL ARRGT – NTPC DRG NO;9549-102-PVM-B-003 /BHEL DRG NO:0-00-620-87035
   HP1203 BOWL MILL FOUNDATION ARRGT:NTPC DRG NO;9549-102-PVC-V-003/BHEL DRG NO:0-00-610-87036
7. REFERENCE DRAWINGS:
   A.–BOILER GENERAL ARRG'T. – SECTIONAL SIDE ELEVATION: SEE NTPC DWG. No. 9549-102-PVM-B-004/BHEL DRG NO;0-00-022-76631
   B.–BOILER GENERAL ARRG'T. – KEY PLAN, LEGEND AND NOTES: SEE NTPC DWG. No. 9549-102-PVM-B-008/BHEL DRG NO:0-00-022-7664
   C.–FOR REMOVAL OF GEARBOX, REFER TO GEARBOX REMOVAL APPLICATION: DWG. NO. "1-61-820-01987"
   D.–FOR REMOVAL OF JOURNAL/GRINDING ROLL REFER TO: JOURNAL/GRINDING ROLL REMOVAL APPLICATION: DWG. NO. "1-61-820-01989"
8. 0.00M EL. CORRESPONDS TO RL (+)222.0M (FFL OF MILL FLOOR AREA).

LOAD DETAILS:

SL NO	DESCRIPTION	LOAD IN Kgs.	QTY.
1A	MILL JOURNALS OPENING COVER (J1, J2, J3) & SPRING ASSEMBLY	5830	27
2A	MILL JOURNAL SHAFT ASSEMBLY WITH GRINDING ROLL (J1, J2, J3)	9770	27
3A	PLANETARY GEARBOX	17800	09
4A	RUNWAY BEAMS (R1, R2, R3, R4, R4 R6, R7 & R8)	325 Kg/M	08
5A	MILL MOTOR	9950	09
6A	UNDER HUNG CRANE (UHC-01) – SERVICE BAY CRANES	3000	02
7A	UNDER HUNG CRANE (UHC-02) – MILL BAY CRANES	2600	11
8A	25 TON TROLLY WITH HOIST	2600	02

SAFE WORKING LOAD: 25,000 Kgs. (UHC–01 & UHC–02)
RUNWAY BEAMS R1 THRU R8 TO BE DESIGN FOR 25 TON LIFT.

LEGEND:
TWH --------- TROLLEY WTH HOIST
UHC --------- UNDER HUNG CRANE
DSL --------- DOWN SHOP LEADS
JB --------- JUNCTION BOX

TYPICAL MILL BAY STOPPER DETAIL

'*' THESE STOPPERS ARE TO BE FIELD WELDED BASED ON THE TROLLEY LENGTH

NOTES:

1. THE HOIST / TROLLEYS, MONORAILS AND LIFTING ASSEMBLY SHOWN ARE BY BHEL. ALL OTHER REMOVAL AND TRANSPORT EQUIPMENT REQUIRED SUCH AS SLINGS, CHAINS, SHACKLES, ETC. ARE BY OTHERS.
2. BHEL TO UPDATE DETAILS WHEREVER MARKED "LATER"

VIEW "B-B" LOOKING EAST
TYPICAL ❹ EACH MILL

VIEW "E-E-1" LOOKING SOUTH
TYPICAL ❹ EACH MILL

VIEW "E-E-2" LOOKING SOUTH
TYPICAL ❹ EACH MILL

REV.	DATE	ALTERED	CHECKED	APPROVED
01	20.02.15	UDAY	P V S B	MVRM

ZONE
Drawing updated as per customer comments
REF: CC: PE: 1021428, Date: 14-01-15

THE FOLLOWING CONDITIONS APPLY EXCEPT OTHERWISE STATED.

1. REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.
2. CHAMFER M/CD. SHARP EDGES 1.2 TO 1.0 AT 45°
3. INTERNAL M/CD. CORNER RADII 1 TO 0.7
4. THE SURFACE ROUGHNESS WHERE–EVER NOT SHOWN SHALL BE TAKEN FROM THE SURFACE ROUGHNESS SHOWN OUT SIDE THE BACK SLASH GIVEN OR THE TOP MOST RIGHT CORNER OF THE DRG.

NTPC LIMITED (A Government of India Enterprise)

PROJECT
DARLIPALI SUPER THERMAL POWER PROJECT
STAGE–1, 2x800 MW
STEAM GENERATOR PACKAGE

BHARAT HEAVY ELECTRICALS LIMITED
HYDERABAD

	NAME	SIGN.	DATE	NO.OF
DRN.	UDAY		01.12.14	
CHD.	P V S B		01.12.14	
APPD.	MVRM		01.12.14	

DEPT.	UNTOL. DIMS. GR.		SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	NO.OF ITEMS
PULV ENGG. CODE 446	C/M/F		NTS			

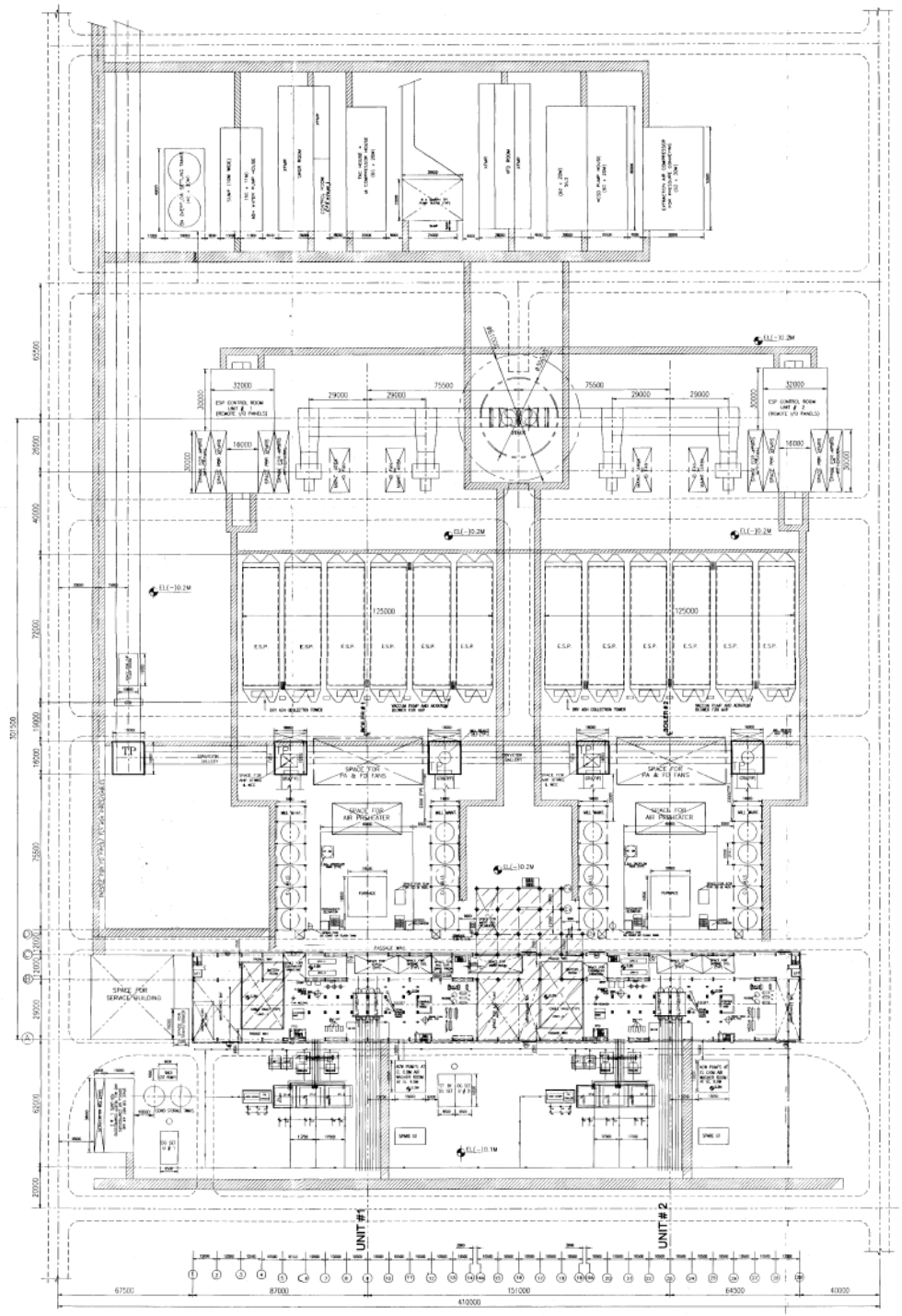
TITLE
MILL HANDLING ARRANGEMENT

CARD CODE 10 | 2 11

DRAWING NO. 9549-102-PVM-B-064 REV. 01

SHEET NO. 01 NO OF SHEETS

1-61-812-02055



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LEGEND

- PIPE HATCH
- VERTICAL BRACING
- FPD — FIRE PROOF DOOR
- GRATING
- CHEQUERED PLATE
- R — REMOVABLE
- HAND RAILING
- PIPE & CABLE TRESTLE
- FIRE BARRIER WALL
- RAIL TRACK

NOTES :

1. THE LOCATION OF EQUIPMENT ARE INDICATIVE ONLY. BIDDER CAN OPTIMIZE THE LAYOUT AS PER THEIR REQUIREMENT EXCEPT OWNER FACILITIES WHICH IS INDICATED AS HATCHED AREA.
2. IN CASE BIDDER OPTIMIZE THE LAYOUT, OWNER FACILITIES TO BE TAKEN CARE WHILE DEVELOPING THE TG EQUIPMENT LAYOUT, HOWEVER BUILDING SIZE CAN NOT BE INCREASED. ELEVATION OF DEARATOR FLOOR SHALL BE RESTRICTED TO 41.0M WITH NO ROOF OVER THE DEARATOR.
3. LOCATION OF VERTICAL BRACINGS SHOWN HERE ARE INDICATIVE ONLY AND THE SAME SHALL BE FINALIZED DURING DETAIL ENGINEERING.
4. LOCATION OF DOORS/REMOVABLE COVERS SHOWN IN THE DRAWINGS ARE INDICATIVE AND SHALL BE FINALIZED DURING DETAILED ENGINEERING.
5. ALL DIMENSIONS ARE IN MM'S AND LEVELS ARE IN METRES.
6. FIRE BARRIER WALL IS PROVIDED ON A-ROW BETWEEN AXIS NO. 3-8, 17-22.
7. ALL ELEVATIONS INDICATED IN THE DRG ARE w.r.t. T.G. BUILDING GROUND FLOOR ELEVATION AS(±)0.00M.

   i) FINISHED FLOOR OF PAVING SLAB IN BOILER/ESP/ID FAN AREA SHALL BE (-)0.2M.

   ii) FINISHED FLOOR ELEVATION IN MILL BAY AT GROUND LEVEL SHALL BE 0.00M.

   iii) FINISHED FLOOR LEVEL IN X-FMR YARD SHALL BE (-) 0.10M.

   iv) FINISHED FLOOR LEVEL INSIDE CHIMNEY SHALL BE 0.00M.

   v) FINISHED FLOOR LEVEL IN THE VARIOUS BUILDINGS IN MAIN PLANT AREA SHALL BE 0.00M.
7. ALL CABLE SPREADER ROOMS TO BE PROVIDED WITH DRAINAGE ARRANGEMENT.
8. BOTTOM OF STEEL OF PIPE / CABLE RACK IN MILL BAY AREA SHALL BE MINIMUM EL 17.0M.
9. FOR FLY ASH HANDLING EITHER VACUUM PUMPS OR EXTRACTION AIR COMPRESSORS SHALL BE PROVIDED.
10. IN CASE OF VACUUM PUMPS FOR DRY ASH SYSTEM, THESE SHALL BE LOCATED BELOW ESP NEAR IT'S 1ST FIELD AND THE SWGR. ROOM FOR THE SAME SHALL BE CONSTRUCTED IN ONE OF THE MAIN PLANT TPS. IN CASE OF EXTRACTION AIR COMPRESSORS, THESE ALONG WITH SWGR. ROOM SHALL BE LOCATED ALONG WITH ASH HANDLING FACILITIES ACROSS THE ROAD BEHIND CHIMNEY.
11. BRICK WALL REQUIREMENTS :

    i) ALL STAIRCASES AT 'A' ROW & 'C' ROW SHALL BE PROVIDED WITH 230 mm THICK BRICK ENCLOSURE.

    ii) ALL CABLE SPREADER ROOM WALLS.

    iii) WALLS OF SWAS ROOM & CPU RIO ROOM.

    iv) HT/LT SWITCH GEAR ROOMS, BOILER MCC ROOM.

    v) AIR HANDLING UNITS(AHU).

    vi) OIL EQUIPMENT ROOM .
12. RCC WALL : 250 mm THK RCC WALL FROM EL 0.0M TO 0.6M FOR LUBE OIL ROOM.
13. D-ROW IS THE FIRST ROW OF BOILER AND MILL BAY COLUMNS.
14. LOCATION AND SIZES OF TRANSFORMERS SHOWN IN TRANSFORMER YARD IS INDICATIVE ONLY.
15. SWAS ROOM DIMENSIONS ARE INDICATIVE ONLY,FURTHER DIMENSION SHALL BE FINALISED DURING DETAILED ENGINEERING.
16. RAIN WATER DOWN COMERS SHALL BE ROUTED WITH IN COLUMN FLANGE ALONG A-ROW IN ELECTRICAL BAY AND GEN. BUS DUCT BAY.
17. NO VERTICAL BRACING IN ELECTRICAL BAY & I.P. BUS DUCT BAY SHALL BE PROVIDED.
18. MINIMUM 756 SQ. M PER UNIT SHALL BE PROVIDED FOR BOILER MCC ROOM/ CABLE VAULT.

FOR TENDER PURPOSE

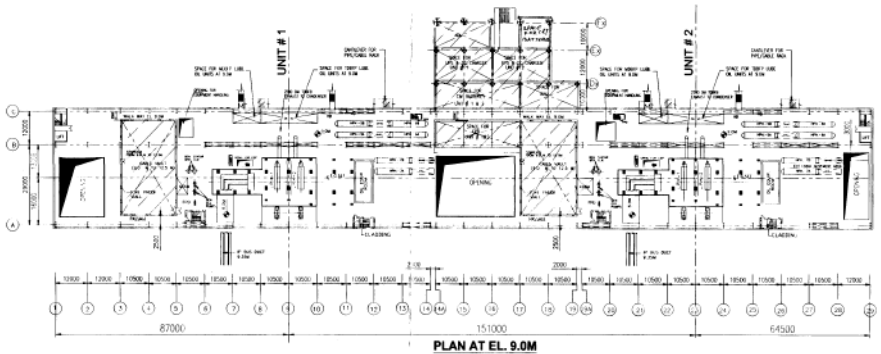
REV.	DESCRIPTION	DRAWN	DES'N	CHKD.	CHECKED BY	APPD.	DATE
0	RELEASED FOR TENDER PURPOSE	PRD	PTE	AG	GB SC WKM	SKC CM	JD ARCH		

NTPC Limited
(A GOVT. OF INDIA ENTERPRISE)
ENGINEERING DIVISION

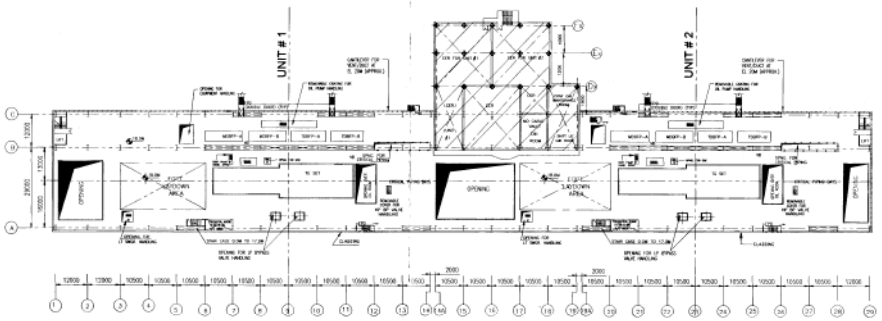
PROJECT: DARLIPALI SUPER THERMAL POWER PROJECT
STAGE-I (2x800MW)

TITLE: MAIN PLANT LAYOUT PLAN AT EL 0.00M

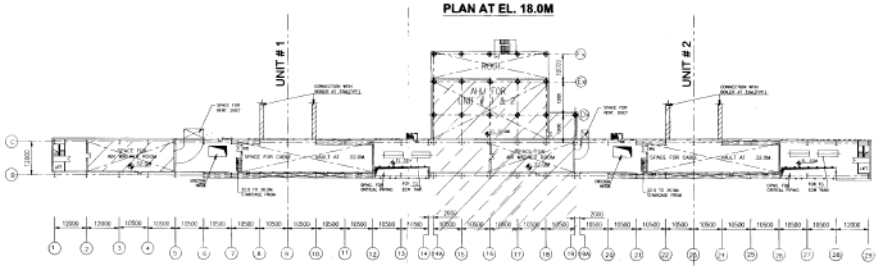
SIZE: A0 | SCALE: 1:1000 | DRG.NO: 9549-999-PDM-A-001 | REV: 0



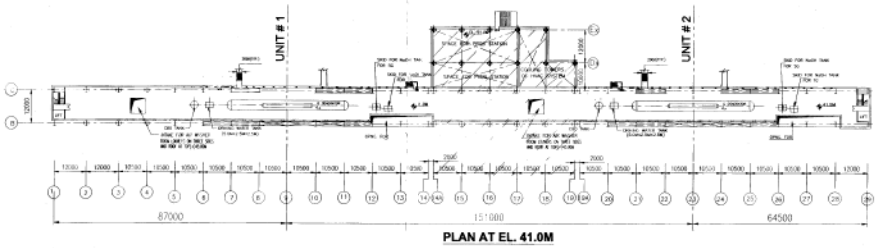
PLAN AT EL. 9.0M



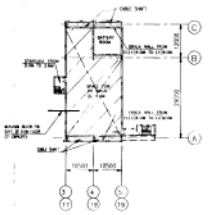
PLAN AT EL. 18.0M



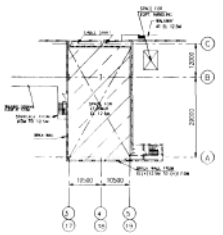
PLAN AT EL. 32.0M



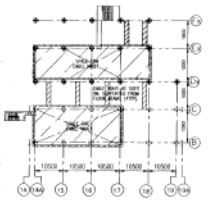
PLAN AT EL. 41.0M



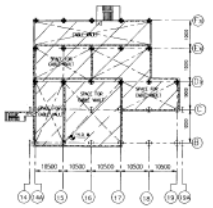
PLAN AT EL. 4.0M



PLAN AT 12.5 M.



PLAN AT EL. 5.1M



PLAN AT EL. 14.0 M.

LEGEND

- PIPE/CABLE/DUCT HATCH
- VERTICAL BRACING
- FPD — FIRE PROOF DOOR
- GRATING
- CHEQUERED PLATE
- R — REMOVABLE
- HAND RAILING

NOTES :

1. FOR OTHER NOTES REFER DRG. NO. 9548-999-POM-A-001.
2A. FALSE CEILING LEVEL IN UPS AND BATTERY CHARGER AREA SHALL BE EL 12.0 M i.e. 3.0 M ABOVE THE 9.0 M FLOOR LEVEL.
2B. FALSE CEILING HEIGHT IN CENTRAL CONTROL ROOM AREA SHALL BE 3.65 M. AND FALSE CELLING HEIGHT IN CER AREA SHALL BE 3.0M.
3. BRICKWALL ABOVE FALSE CEILING AT 'B' ROW IN CCR AREA TO BE PROVIDED.
4. NO WATER/STEAM PIPES INCLUDING RAIN WATER DOWNCOMER SHALL BE ROUTED IN CCR/CER/BATTERY/BATTERY CHARGER ROOMS. RAIN WATER DOWN COMER SHALL BE ROUTED WITHIN COLUMN FLANGE ON A-ROW COLUMNS OF ELECTRICAL BAYS.
5. TO AVOID DUST INGRESS IN THE CCR/CER/UPS ROOM, FOLLOWING SHALL BE ENSURED:
   * DOUBLE DOOR ENTRANCE FOR AHU ROOM/ UPS ROOM/ CCR.
   * FRESH AIR FAN FOR AHU ROOM SHALL HAVE SUCTION FROM TG HALL SIDE.
   * VENTING DAMPER FOR INERT GAS SYSTEM SHALL BE LOCATED TOWARDS TURBINE HALL SIDE/HEATER SIDE AND NOT ON BOILER SIDE.
6. NO VERTICAL BRACING SHALL BE PLACED INSIDE CER/CCR.
7. EXTENSION/PROJECTION OF CR IN AB BAY SHOULD BE AVOIDED TO THE EXTENT POSSIBLE SO AS TO AVOID OBSTRUCTION IN MOVEMENT OF MATERIAL THROUGH EOT CRANE.
8. DIRECT SUNLIGHT FALLING ON LVS & OWS SHOULD BE AVOIDED BY PROVIDING TINTED GLASS TOWARDS TG HALL(B ROW).
9. FACILITIES LIKE TOILET (LADIES/GENTS), AND CONFERENCE ROOM SHALL BE PROVIDED NEAR THE CONTROL ROOM AS PER NORMS (OUTSIDE CR).
10. WASH BASIN (EMERGENCY SHOWER) SHALL BE PROVIDED IN C&I BATTERY ROOMS IN EACH UNIT.
11. FOR DETAILS OF PIPE / CABLE / DUCT STRUCTURE AT A/C-ROW, SEPARATE DRGS. MAY BE REFERED.
12. LT SWITCHGEARS SHALL BE HANDLED FROM EQUIPMENT HANDLING HATCH PROVIDED IN BC- BAY.
13. ALL THE DOORS ON C- ROW PROVIDED AT 9.0M. & 17.0M. INTERCONNECTING WITH BOILER ARE OF DOUBLE DOOR TYPE TO AVOID INGRESS OF DUST TO MAIN PLANT BUILDING.
14. LOCATION OF VERTICAL BRACINGS SHOWN HERE IS TENTATIVE ONLY, AND THE SAME SHALL BE FINALIZED DURING DETAIL ENGINEERING STAGE.
15. AREA FOR CER/CCR IS TENTATIVE ONLY.

FOR TENDER PURPOSE

REV	DESCRIPTION	DRAWN	DESIGN	CHKD	CLEARED BY	APPD	DATE
0.	RELEASED FOR TENDER PURPOSE	PRS	TR	MC	GN SC MM	DBC	4/11/11

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NTPC Limited
(A GOVT. OF INDIA ENTERPRISE)
ENGINEERING DIVISION

PROJECT: **DARLIPALI THERMAL POWER PROJECT**
STAGE-I (2x800MW)

TITLE: **MAIN PLANT LAYOUT PLAN AT EL. 4.0M/5.1M/9.0M/12.5M/ 14.0M/18.0M/32.0M/36.0M/41.0M.**

SIZE	SCALE	DRG NO.	REV
A0	1:800	9549-99-POM-A-002	0