



# भारत हेवी इलेक्ट्रिकल्स लिमिटेड

( भारत सरकार का उपक्रम )

## BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

**TCN - 03**

Ref: PSER:SCT:RKL-M1797:TCN-03

Date: 20-02-2017

Sub	Tender Change Notice (TCN) - 03	
Job	Design, Engineering, Manufacturing, Supply, Erection, Testing, Commissioning, Etc Of Air Conditioning System For 1x250 MW Units At PP-II Expansion, NSPCL, Rourkela, Odisha.	
Ref	1.0	Tender no PSER:SCT: RKL-M1797:16
	2.0	BHEL's NIT, vide reference no PSER:SCT: RKL-M1797:17:5427, Dated 19/01/17
	3.0	BHEL's TCN-01 ref PSER:SCT:RKL-M1797:TCN-01 Date: 08-02-2017
	4.0	BHEL's TCN-02 ref PSER:SCT:RKL-M1797:TCN-02 Date: 14-02-2017
	5.0	All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting the offer.

- 1) Clarification to bidder's queries is attached as per Annexure-A to TCN -03.
- 2) Amendment to existing clauses of Technical Specification is attached vide Addendum No 1 to Technical Specification No PE-TS-427-553-A001.
- 3) Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
- 4) All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

Dy Mgr (SCT)

Encl: As above.

पावर सेक्टर पूर्वी क्षेत्र ( मुख्यालय )

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : (033) 23398000/ 23398231

**FORMAT FOR NO DEVIATION CERTIFICATE**  
**(To be submitted in the bidder's letter head)**

BHARAT HEAVY ELECTRICALS LIMITED,  
Power Sector - Eastern Region,  
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,  
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	Design, Engineering, Manufacturing, Supply, Erection, Testing, Commissioning, Etc Of Air Conditioning System For 1x250 MW Units At PP-II Expansion, NSPCL, Rourkela, Odisha.	
Ref	1.0	Tender no PSER:SCT: RKL-M1797:16
	2.0	BHEL's NIT, vide reference no PSER:SCT: RKL-M1797:17:5427, Dated 19/01/17
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:RKL-M1797:TCN-01, Dated 08/02/17
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:RKL-M1797:TCN-02 Dated 14/02/17
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:RKL-M1797:TCN-023Dated 20/02/17
	6.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized  
representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALLAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : (033) 2339-8000/ 2339-8231

**Air Conditioning System for 1x250 MW Units at PP-II Expansion , NSPCL , Rourkela , Odisha , Tender No- PSER:SCT:M1797:16**

**ANNEXURE-A TO TCN-03**

**Tender No : PSER:SCT:M1797:16**

Sl No.	Reference Clause of Tender document			Bidder Query	BHEL's reply
1	SCH-3 - MAIN SUPPLY PRICE BREAK-UP , RKL-M1797-AC-VOL-IIIA- EXCLUDING SWITCHYARD AREA-PRICE SCH-R0	SL NO 1/B /2	AC-Plant-2: AIR COOLED CONDENSING TYPE AC for ESP CONTROL BLD.	Please note that layout drawing are not available for ESP control building - therefore we request you provide the same so that we can calculate the piping quantity & ducting quantity. Further Capacity & static pressure of each AHUs are not available in the price Schedule - Kindly clarify	PL REFER ADDENDUM -01 TO TCN-03- TS-PE-TS-427-553-A001
2	SCH-3 - MAIN SUPPLY PRICE BREAK-UP , RKL-M1797-AC-VOL-IIIA- EXCLUDING SWITCHYARD AREA-PRICE SCH-R0	SL NO C /2	AC-Plant-3: CENTRAL CHILLED WATER SYSTEM FOR ADMINISTRATIVE BLD.	Please note that layout drawing are not available for Admin building - therefore we request you provide the same so that we can calculate the piping quantity & ducting quantity. Further Capacity & static pressure of each AHUs are not available in the price Schedule - Kindly clarify	PL REFER ADDENDUM -01 TO TCN-03- TS-PE-TS-427-553-A001
3	SECTION : I : SUB-SECTION : C 1 B : SPECIFIC TECHNICAL REQUIREMENT (FOR SWITCH YARD AREA.) SCT-RKL-M1797-VOL-II-TS-01-R0	Equipment Heat Load	Equipment load	Please furnish us equipment load to be considered for calculation of heat load in each Air conditioning Room at Power house building , ESP Building and service building. As only Switchyard area Equipment load has been given	PL REFER ADDENDUM -01 TO TCN-03- TS-PE-TS-427-553-A001
4	Scope : Technical Specification,SCT-RKL-M1797-VOL-II-TS-01-R0	Water Softening Plant	Two nos. water softening plant shall be provided as per price schedule.	Please provide us detail technical specification for Water Softening Plant .	Water softening plant shall be suitable to provide water of quality suitable for proper functioning of AC plant.
5	Scope : Technical Specification,SCT-RKL-M1797-VOL-II-TS-01-R0	PLC	Micro processor based/PLC control panel incorporating controls safety & interlocks, required charge of lithium bromide solution and refrigerant for all the units.	Please let us know the requirement of PLC for this tender- as no separate BOQ of PLC systems has been appeared in the price schedule.	VAM shall be microprocessor/PLC based control system .However complete AC system shall be DDCMIS based .



**AIR CONDITIONING SYSTEM  
1X250MW NSPCL ROURKELA TPS**

**SPECIFICATION NO.PE-TS-427-553-A001**

**ADDENDUM No. 1**

**DATE: 18.02.2017**

**SHEET 1 OF 4**

# **1x250MW NSPCL ROURKELA**

## **ADDENDUM No. 1**

(TECH SPEC No. PE-TS-427-553-A001)

# **AIR CONDITIONING SYSTEM**



**AIR CONDITIONING SYSTEM  
1X250MW NSPCL ROURKELA TPS**

**SPECIFICATION NO.PE-TS-427-553-A001**

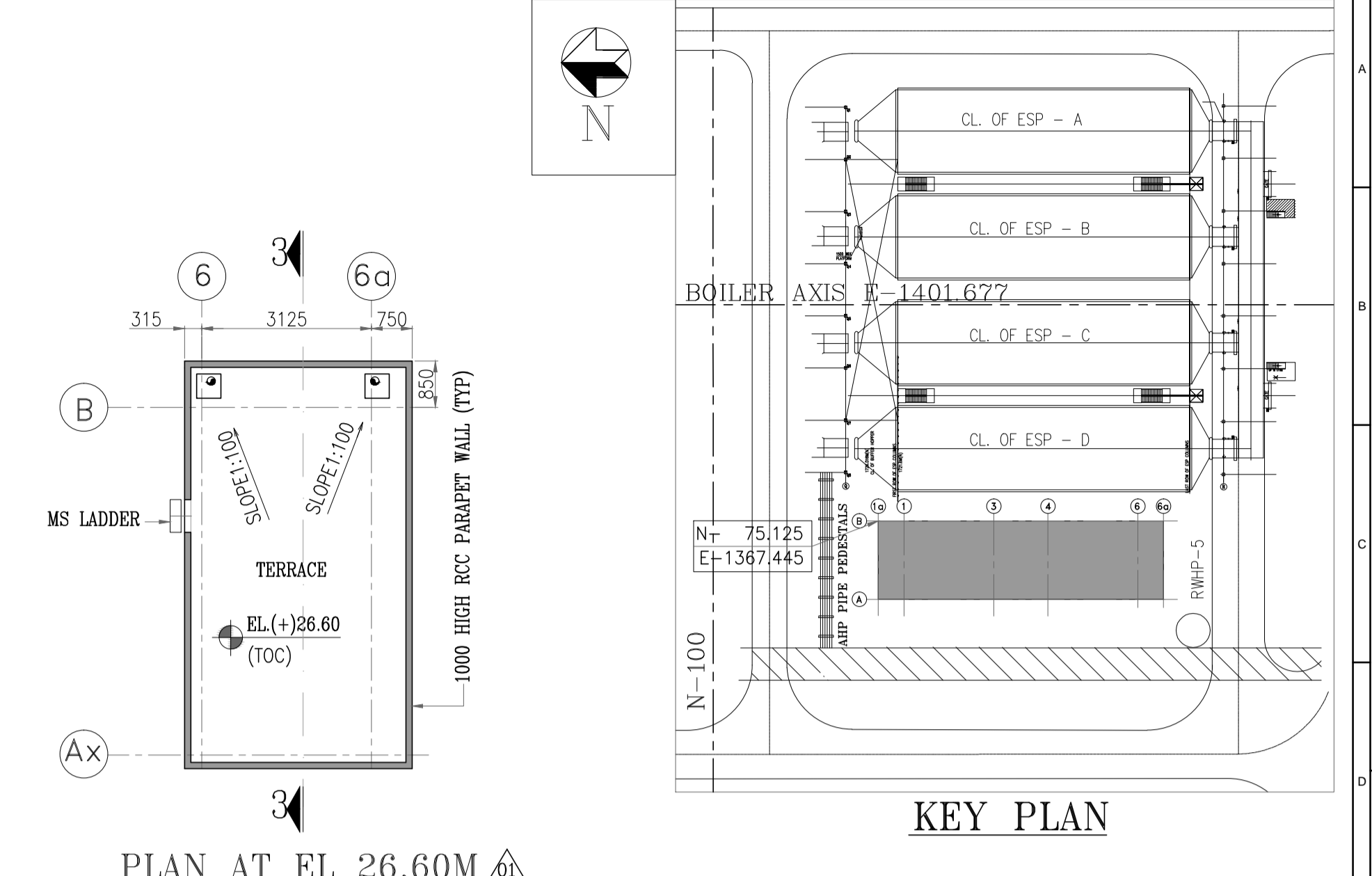
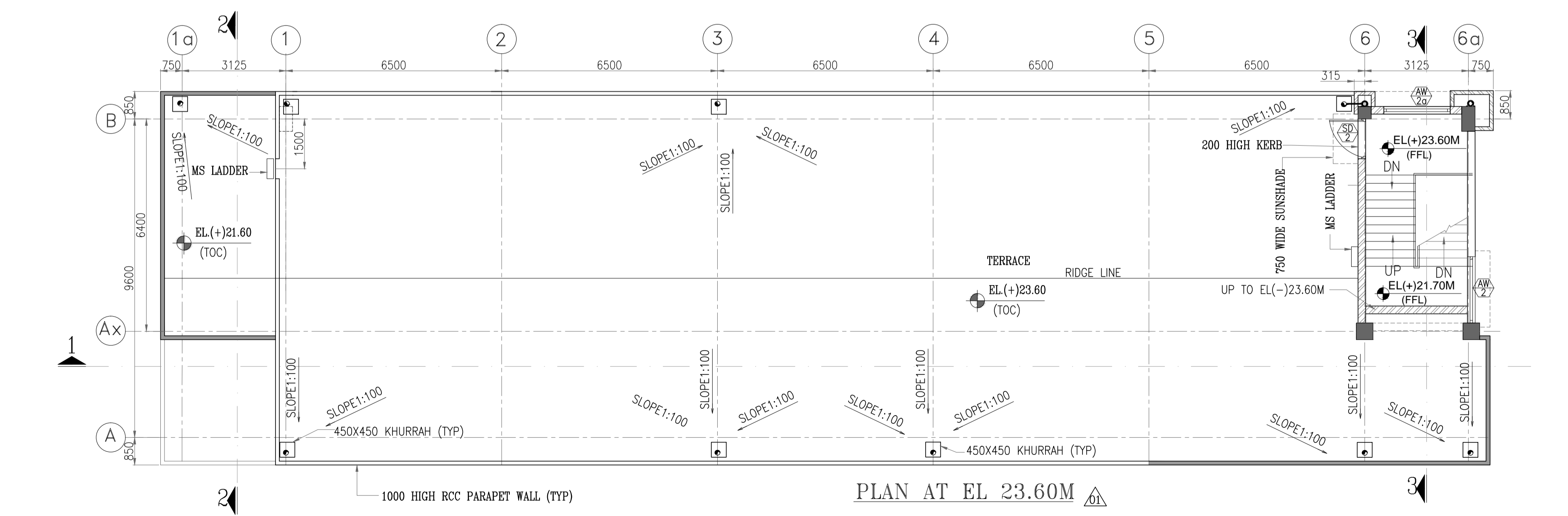
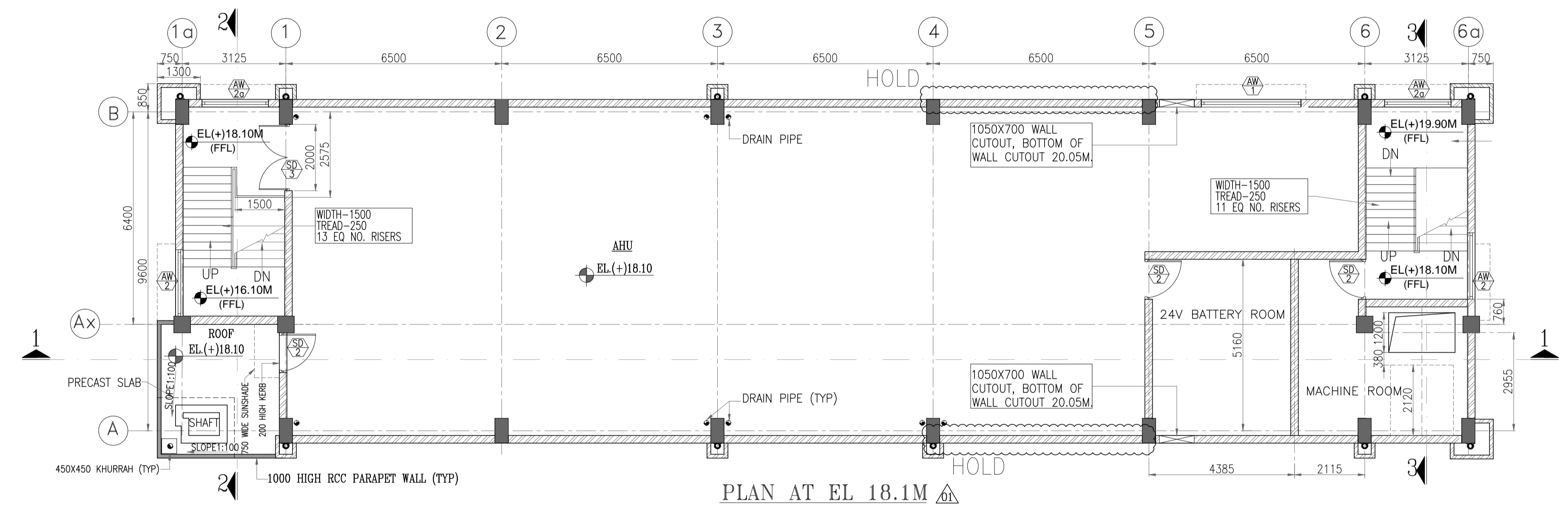
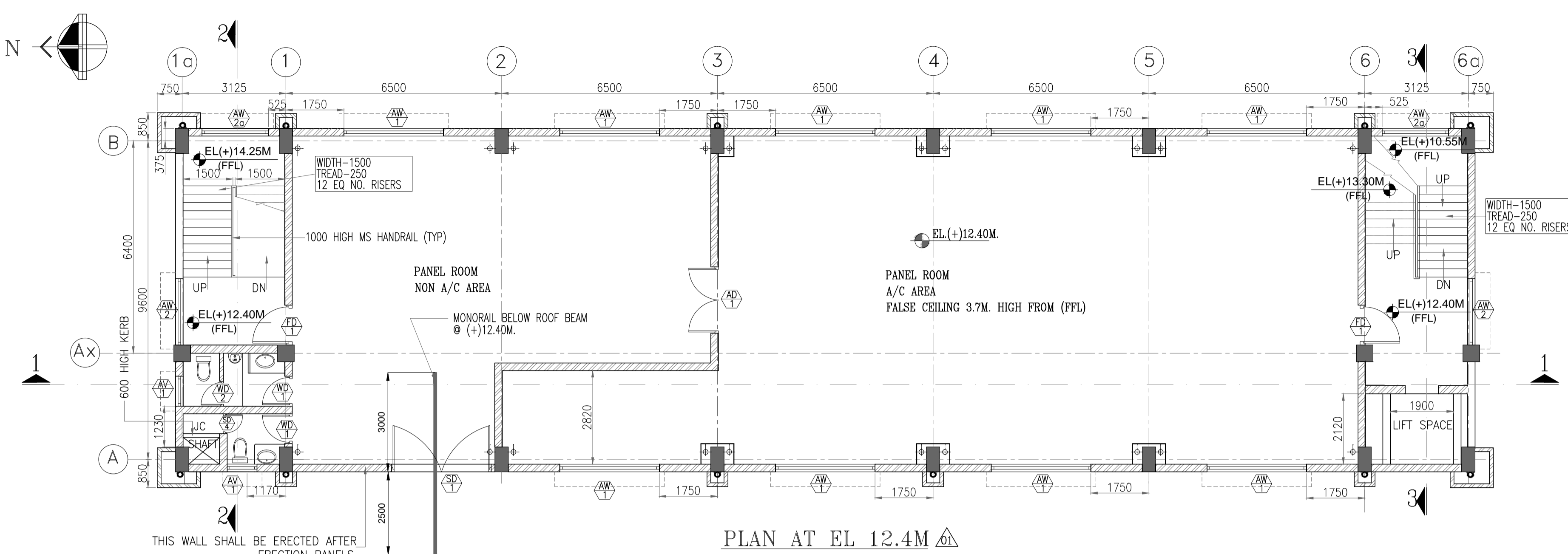
**ADDENDUM No. 1**

**DATE: 18.02.2017**

**SHEET 2 OF 4**

**AMENDMENT TO EXISTING CLAUSES OF TECHNICAL SPECIFICATION**

Sl. No.	Clause	Existing description	To be read as (Amendment)
1	--	--	Layout drawing of Administrative building.
2	--	--	Layout drawing of ESP control room building.
3	--	--	Tentative Heat dissipation data shall be as under:- <ol style="list-style-type: none"><li>1. CER, CR, COMPUTER ROOM, SHIFT INCHARGE ROOM, C&amp;I ROOM, UPS ROOM AT 15.5 M Level is approximately 135 KW.</li><li>2. SWAS room at 9.0 M level approximately 3 KW.</li><li>3. ESP control room building approximately 333 KW.</li><li>4. Administrative building approximately 15 KW for each floor.</li></ol>



- NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETERS & ELEVATION IN METER .
  2. FOR REFERENCE PE-DG-427-611-C003 STANDARD NOTES & DETAILS FOR ARCHITECTURAL WORKS
  3. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. +219.00 M ABOVE MEAN SEA LEVEL .
  4. ALL WINDOWS & VENTILATORS ON GROUND FLOOR SHALL BE PROVIDED WITH GRILL AS PER SPECIFICATIONS.

- REFERENCE DRGS.**
1. PE-DG-427-100-E007-----EQUIPMENT AND CABLE TRAY LAYOUT IN ESP CONTROL ROOM
  2. PE-DG-427-611-C003-----STANDARD NOTES & DETAILS FOR ARCHITECTURAL WORKS
  3. PE-DG-427-619-C001-----ESP CONTROL BLDG.-ARCHITECTURAL PLANS SHEET-1
  4. PE-DG-427-619-C003-----ESP CONTROL BLDG.-ARCHITECTURAL ELEVATIONS.
  5. PE-DG-427-619-C004-----ESP CONTROL BLDG.-ARCHITECTURAL SECTIONS

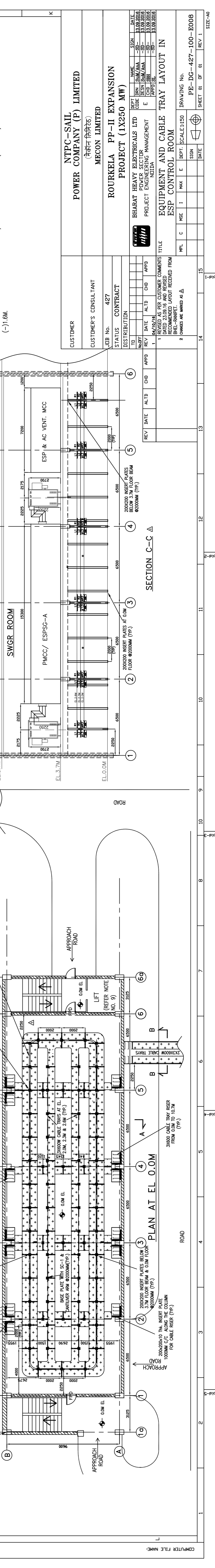
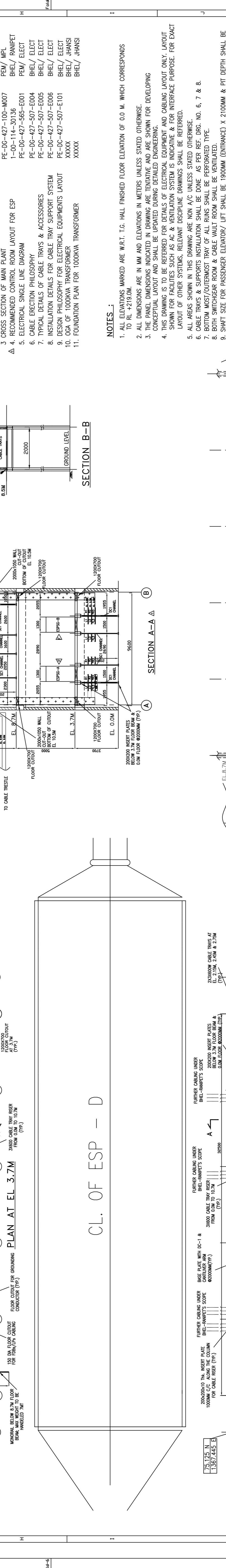
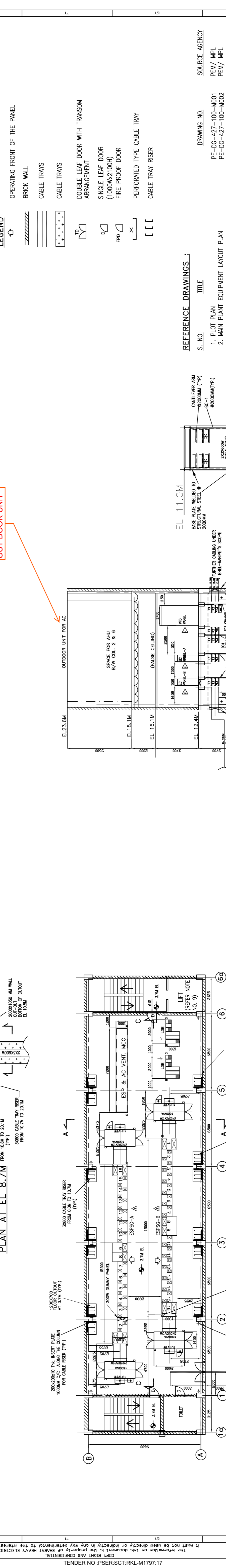
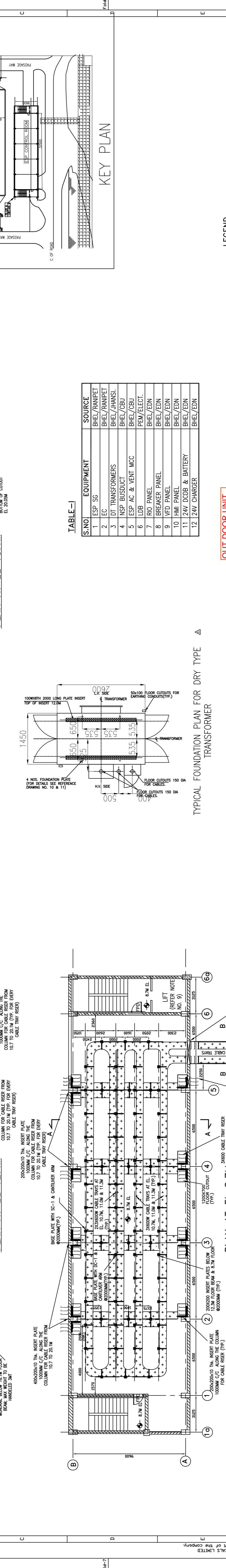
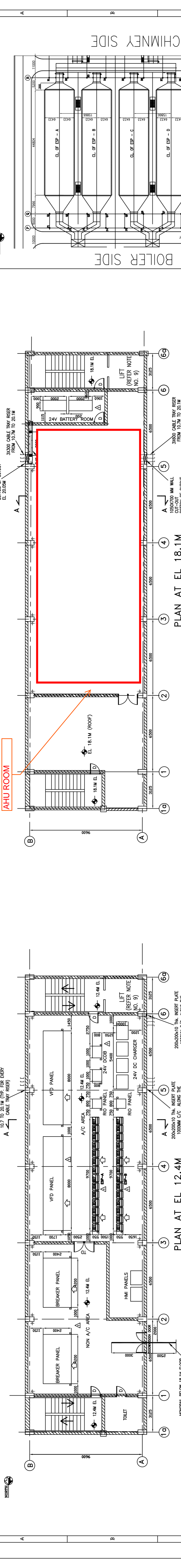
- LEGEND: -**
- |  |                                    |  |                                   |
|--|------------------------------------|--|-----------------------------------|
|  | - BRICK WALL                       |  | - SOIL PIPE                       |
|  | - WATER SUPPLY PIPE                |  | - WASTE WATER PIPE                |
|  | - 75Ø WASTE WATER PIPE             |  | - WATER SUPPLY PIPE               |
|  | - 100Ø SOIL PIPE                   |  | - TAP                             |
|  | - THICKNESS                        |  | - C.I. FLOOR TRAP WITH C.P. JALLI |
|  | - TYPICAL                          |  | - TOWEL RAIL                      |
|  | - UNLESS NOTED OTHERWISE           |  | - MIRROR                          |
|  | - ELEVATION                        |  | - LIQUID SOAP HOLDER              |
|  | - LEVEL                            |  | - EXHAUST FAN                     |
|  | - EUROPEAN WATER CLOSET-780mm LONG |  | - VENT PIPE                       |
|  | - WASH BASIN                       |  | - AIR CONDITIONING                |
|  | - URINAL                           |  | - RAIN WATER PIPE                 |
|  | - VENT PIPE                        |  | - BRICK WALL                      |

BH&L-PROJECT ENGINEERING MANAGEMENT (CIVIL)	
THIS DRAWING MARKED (✓) IS RELEASED FOR	
<input checked="" type="checkbox"/>	COMMENTS/APPROVAL
<input type="checkbox"/>	PLANNING/INFORMATION
<input type="checkbox"/>	CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY	ANIMESH DAS
SIGNATURE	
DATE	25 November 2016

CUSTOMER		<b>NTPC-SAIL POWER COMPANY (P) LIMITED</b>	
CUSTOMER'S CONSULTANT		<b>MECON LIMITED</b>	
JOB No. 427		<b>ROURKELA PP-II EXPANSION PROJECT (1X250 MW)</b>	
STATUS CONTRACT			
DISTRIBUTION			
TO		DEPT	
NO. OF		DRN	
REV	DATE	ALTO	CHD
01	21.11.16	SHEELA	PS/SB
BHARAT HEAVY ELECTRICALS LTD		POWER SECTOR	PROJECT ENGINEERING MANAGEMENT
NTPC		ROURKELA	PP-II
MECON COMMENTS INCORPORATED & REVISION MARKED AS			
TITLE		ESP CONTROL BUILDING ARCHITECTURAL PLANS SH-2	
MPL	C	MSE	I
MAX	E	DEPT	SCALE 1:150
SIK		DRAWING No.	PE-DG-427-619-C002
DATE		SHEET	01 OF 01
		REV	01

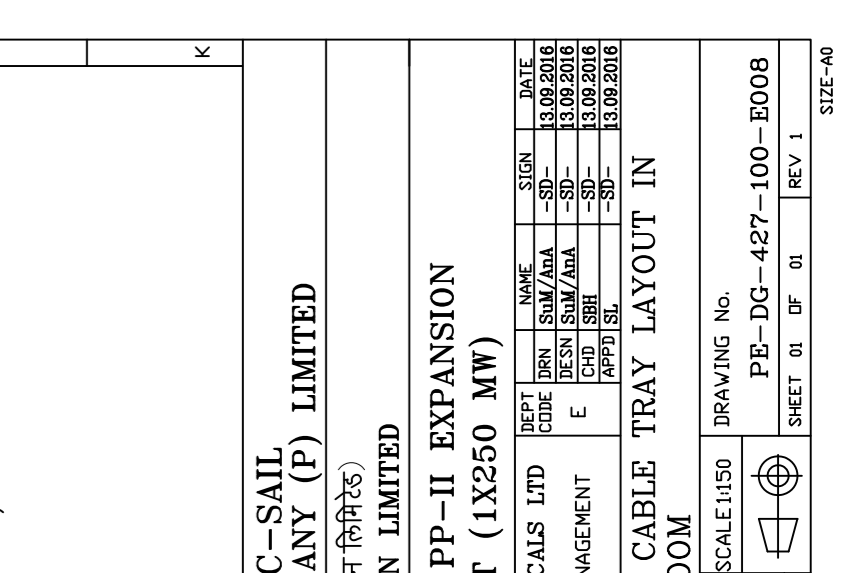
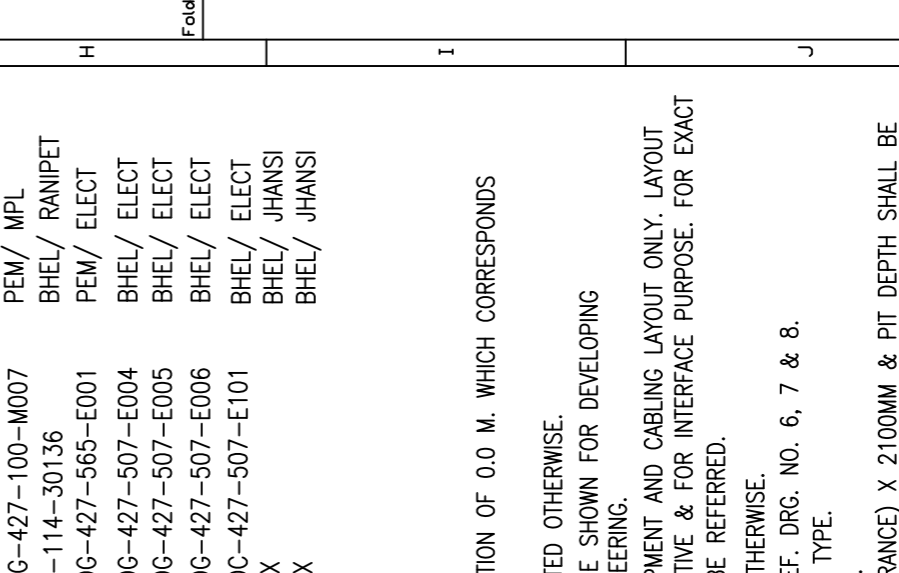
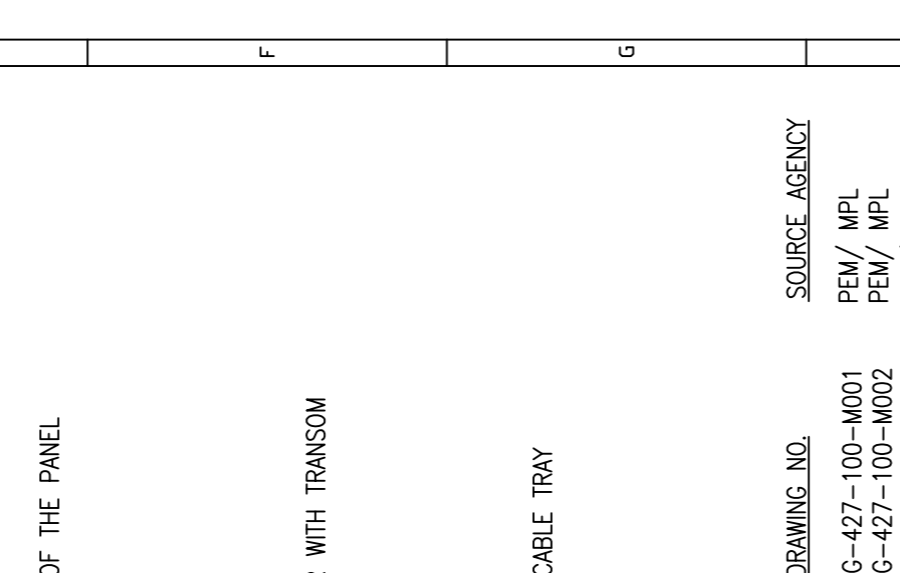
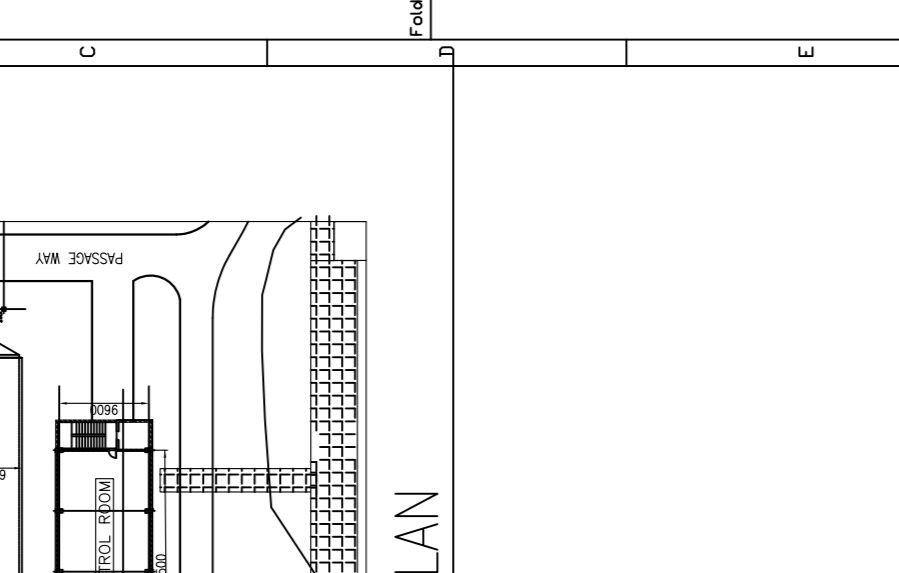
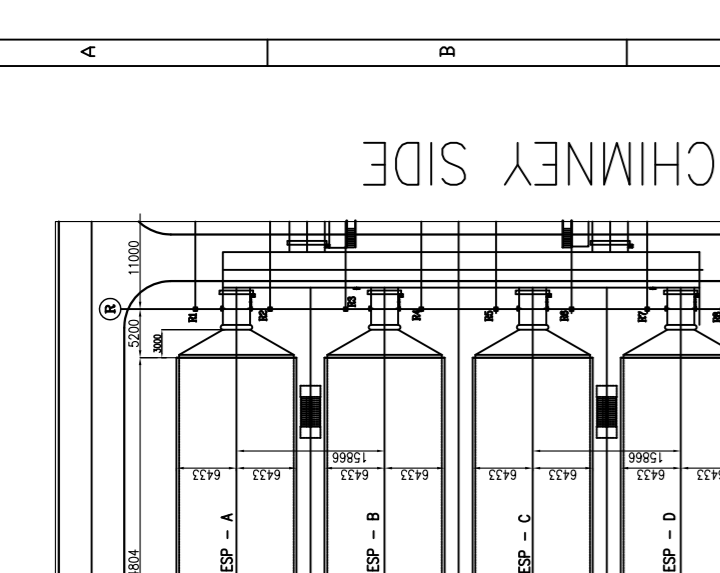
ALL DIMENSIONS ARE IN MM

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



CHAPTER FILE NAME: TENDER NO: PSER-SCT-RK1M1797-17

KEY PLAN



LEGEND

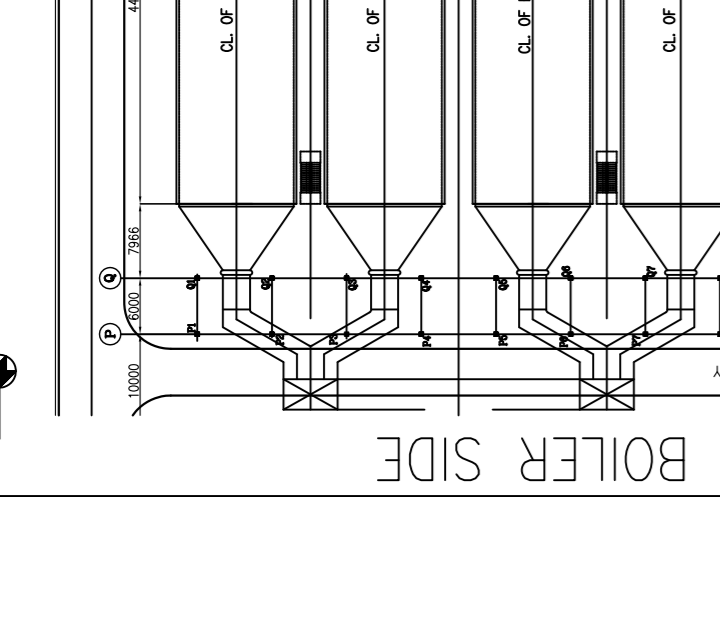


TABLE-I: Equipment list with columns for S.NO, EQUIPMENT, and SOURCE. Lists items like ESP SC, EC, DT TRANSFORMERS, NSP BUSDUCT, ESP AC & VENT MCC, LDB, RID PANEL, BREAKER PANEL, VFD PANEL, HM PANEL, 24V DCB & BATTERY, and 12 24V CHARGER.

REFERENCE DRAWINGS: List of drawing numbers and titles used as references, including plot plan, main plant equipment layout, cross section of main plant, recommended control room layout for ESP, electrical single line diagram, cable erection philosophy, typical details of cable trays & accessories, installation details for cable tray support system, design philosophy for electrical equipments layout, O&A of 1000KVA transformer, and foundation plan for 1000KVA transformer.

NOTES: 1. ALL ELEVATIONS MARKED ARE W.R.T. T.G. HALL FINISHED FLOOR ELEVATION OF 0.0 M. WHICH CORRESPONDS TO RL +219.0M. 2. ALL DIMENSIONS ARE IN MM AND ELEVATIONS IN METERS UNLESS STATED OTHERWISE. 3. THE PANEL DIMENSIONS INDICATED IN DRAWING ARE TENTATIVE AND ARE SHOWN FOR DEVELOPING CONCEPTUAL LAYOUT AND SHALL BE UPDATED DURING DETAILED ENGINEERING. 4. THIS DRAWING IS TO BE REFERRED FOR DETAILS OF ELECTRICAL EQUIPMENT AND CABLE LAYOUT ONLY. LAYOUT SHOWN FOR FACILITIES SUCH AS AC & VENTILATION SYSTEM IS INDICATIVE & FOR INTERFACE PURPOSE. FOR EXACT LAYOUT OF OTHER SYSTEMS, RELEVANT DISCIPLINE DRAWINGS SHALL BE REFERRED. 5. ALL AREAS SHOWN IN THIS DRAWING ARE NON A/C UNLESS STATED OTHERWISE. 6. CABLE TRAYS & SUPPORTS INSTALLATION SHALL BE DONE AS PER REF. DRG. NO. 6, 7 & 8. 7. BOTH SWITCHGEAR ROOM & CABLE VAULT ROOM SHALL BE PERFORMED TYPE. 8. SHAFT SIZE FOR PASSENGER ELEVATOR/ LIFT SHALL BE 1900MM (ENTRANCE) X 2100MM & PIT DEPTH SHALL BE (-)1.0M.

REVISIONS: Table with columns for REV, DATE, ALT, CHD, APP, and COMMENTS. Shows revision history for the drawing.

CUSTOMER: NTPC-SAIL POWER COMPANY (P) LIMITED (एन टी पी सी सायल पावर कंपनी (प) लिमिटेड)

CUSTOMER'S CONSULTANT: MECON LIMITED (मेकॉन लिमिटेड)

STATUS: CONTRACT

JOB NO: 427

DISTRIBUTION: BHARAT HEAVY ELECTRICALS LTD (भारत हेवी इलेक्ट्रिकल्स लि.)

TITLE: EQUIPMENT AND CABLE TRAY LAYOUT IN ESP CONTROL ROOM

PROJECT: ROURKELA PP-II EXPANSION PROJECT (IX250 MW) (रूरकेला पीपी-2 विस्तार प्रोजेक्ट (IX250 MW))

DATE: 13.09.2016

SCALE: AS SHOWN