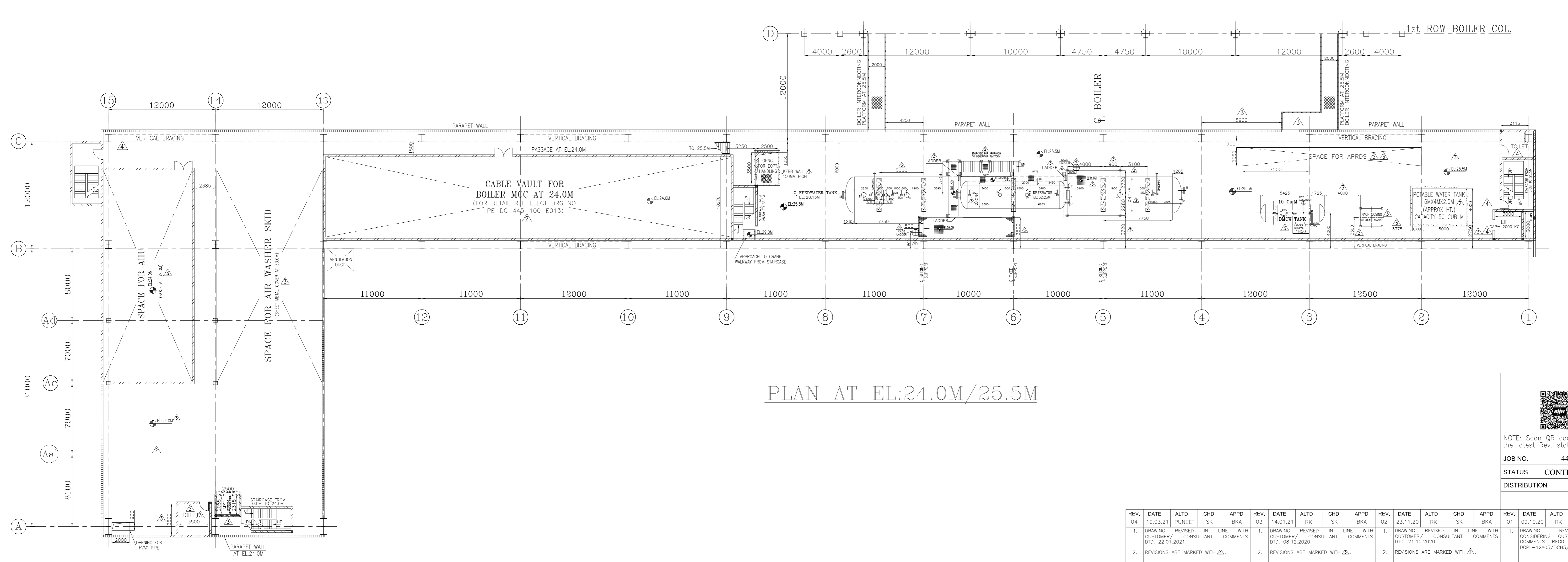
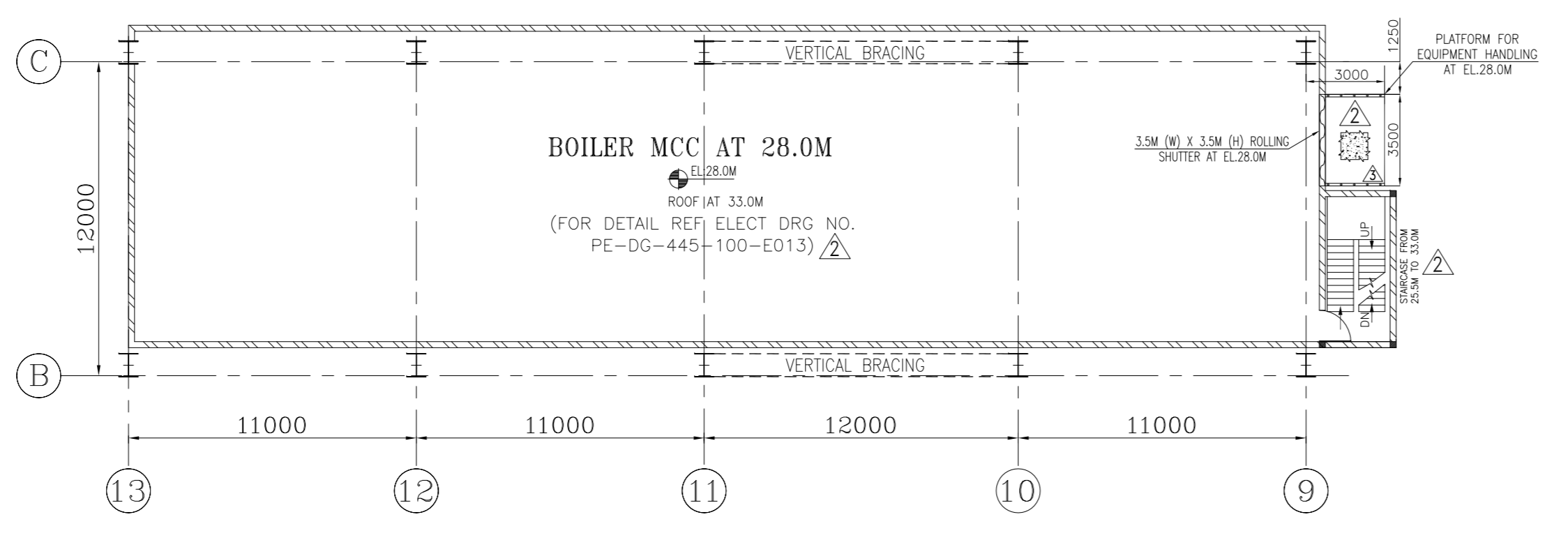


- REFERENCE DRAWINGS:**
- |   |                           |
|---|---------------------------|
| 1. T.G. EQUIPMENT LAYOUT PLAN AT EL.0.0M  | PE-DG-445-100-M003        |
| 2. T.G. EQUIPMENT LAYOUT PLAN AT EL.8.5M  | PE-DG-445-100-M004        |
| 3. T.G. EQUIPMENT LAYOUT PLAN AT EL.17.0M | PE-DG-445-100-M005        |
| 4. CROSS SECTION OF MAIN PLANT (TG BLDG.) | PE-DG-445-100-M007        |
| 5. GA OF DEAERATOR                        | HY-DG-1-16310-98701 (HYD) |
| 6. DEAERATOR PLATFORM ASSEMBLY            | - (HYD)                   |
| 7. GA OF ECW TANK                         | BP-DG-426-167-.... (BPL)  |
| 8. GA OF NAOH DOSING TANK                 | - (PEM)                   |
| 9. LAYOUT OF BOILER SWITCHGEAR ROOM       | PE-DG-445-100-E013 (PEM)  |



- LEGEND:**
- CHEQUERED PLATE FLOORING
  - REMOVABLE CHEQUERED PLATE
  - GRATED FLOORING
  - REMOVABLE GRATING
  - CONCRETE BLOCK
  - HAND RAILING
  - PARAPET WALL
  - GLASS PARTITION
  - CUT OUTS
  - BRICK WALL

- NOTES:**
1. ALL DIMENSIONS ARE IN MM'S AND LEVELS ARE IN METRES.
  2. ALL ELEVATIONS INDICATED IN THE DRG. ARE W.R.T. POWER HOUSE GROUND FLOOR ELEVATION AS 0.00M WHICH CORRESPONDS TO RL.5M
  3. MIN. HEADROOM CLEARANCE OF 2.2M MAY BE CONSIDERED FOR ANY SITE ROUTED ACTIVITY.
  4. MIN. CLEARANCE OF 1.2M AROUND EQUIPMENT MAY BE CONSIDERED FOR ANY SITE ROUTED ACTIVITY.

**CUSTOMER:** THE WEST BENGAL POWER DEVELOPMENT CORPN. LTD.(WBPDCL)  
1X660MW, SAGARDIGHI THERMAL POWER EXTENSION PROJECT (UNIT #5)

**CONSULTANT:** DEVELOPMENT CONSULTANTS PRIVATE LTD.  
KOLKATA

**PROJECT:** BHARAT HEAVY ELECTRICALS LTD  
POWER SECTOR  
PROJECT ENGINEERING MANAGEMENT  
NOIDA

**JOB NO. 445**  
**STATUS CONTRACT**  
**DISTRIBUTION**

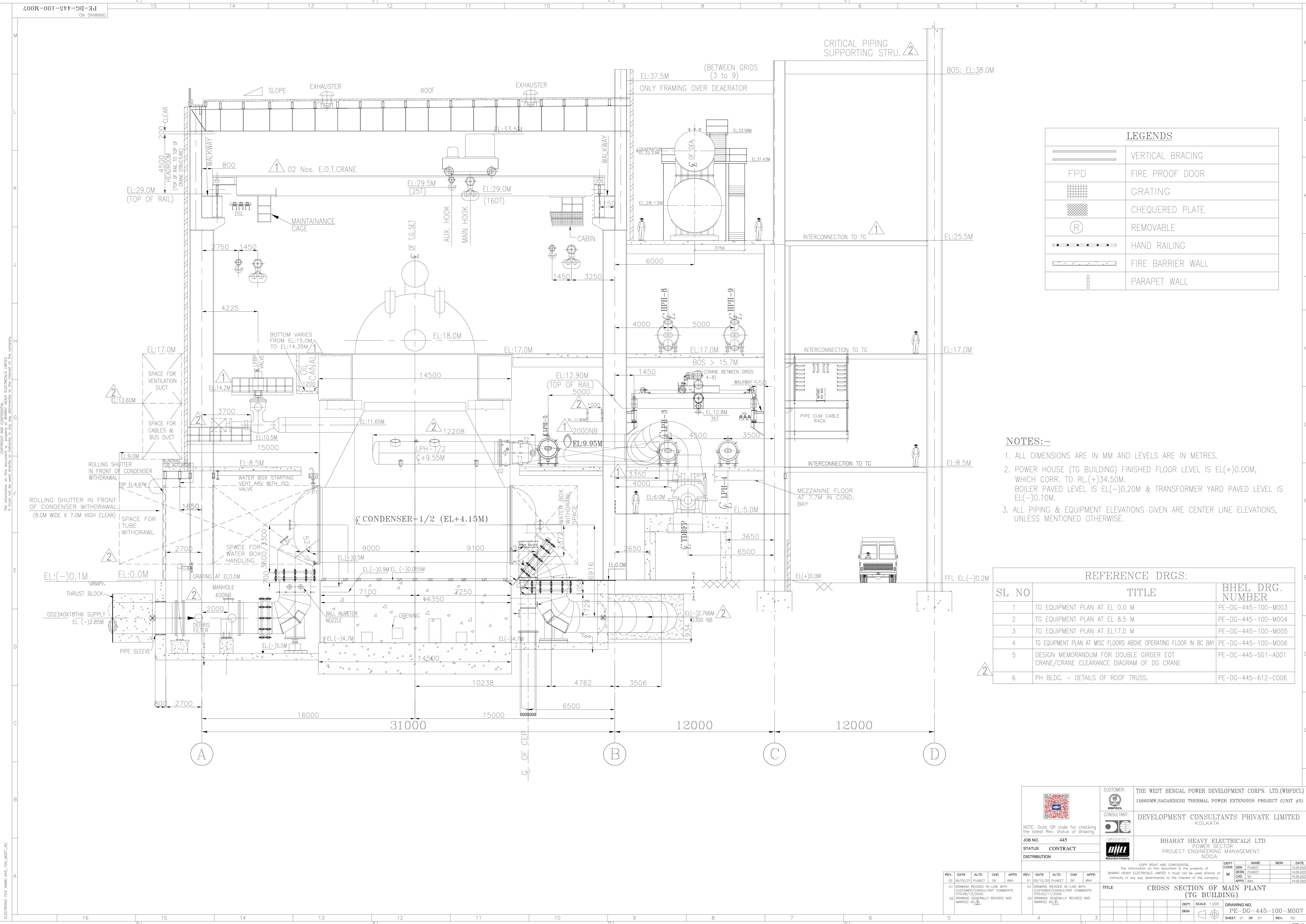
**REVISIONS:**

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD
1.	19.03.21				1.	14.01.21				1.	23.11.20				1.	09.10.20			
2.					2.					2.					2.				

**TITLE T.G. EQUIPMENT LAYOUT PLAN AT EL. 24.0M/25.5M, 28.0M & 33.0M**

**DEPT. SCALE 1:200 DRAWING NO. PE-DG-445-100-M006 SHEET 01 OF 01 REV. 04**

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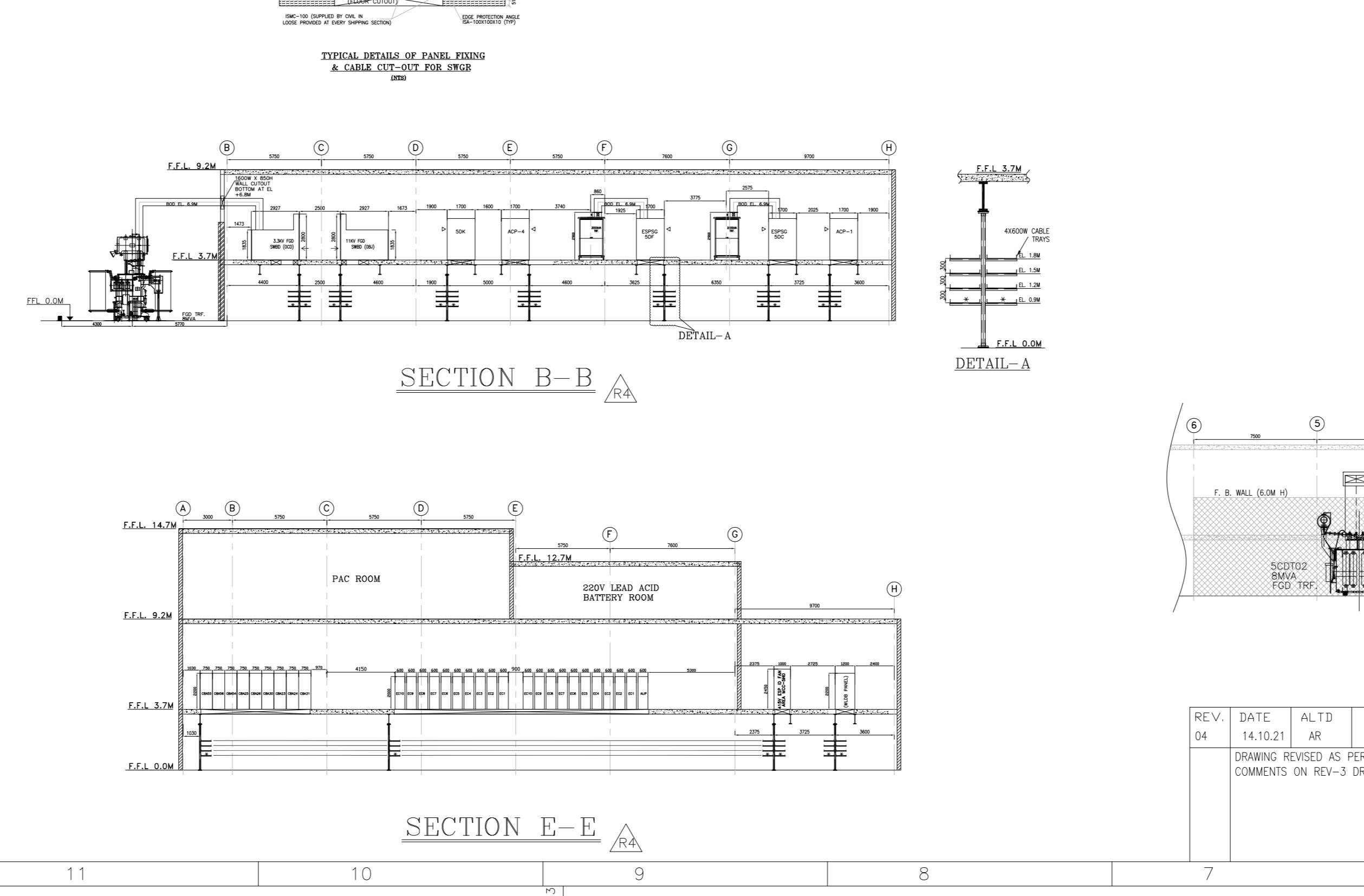
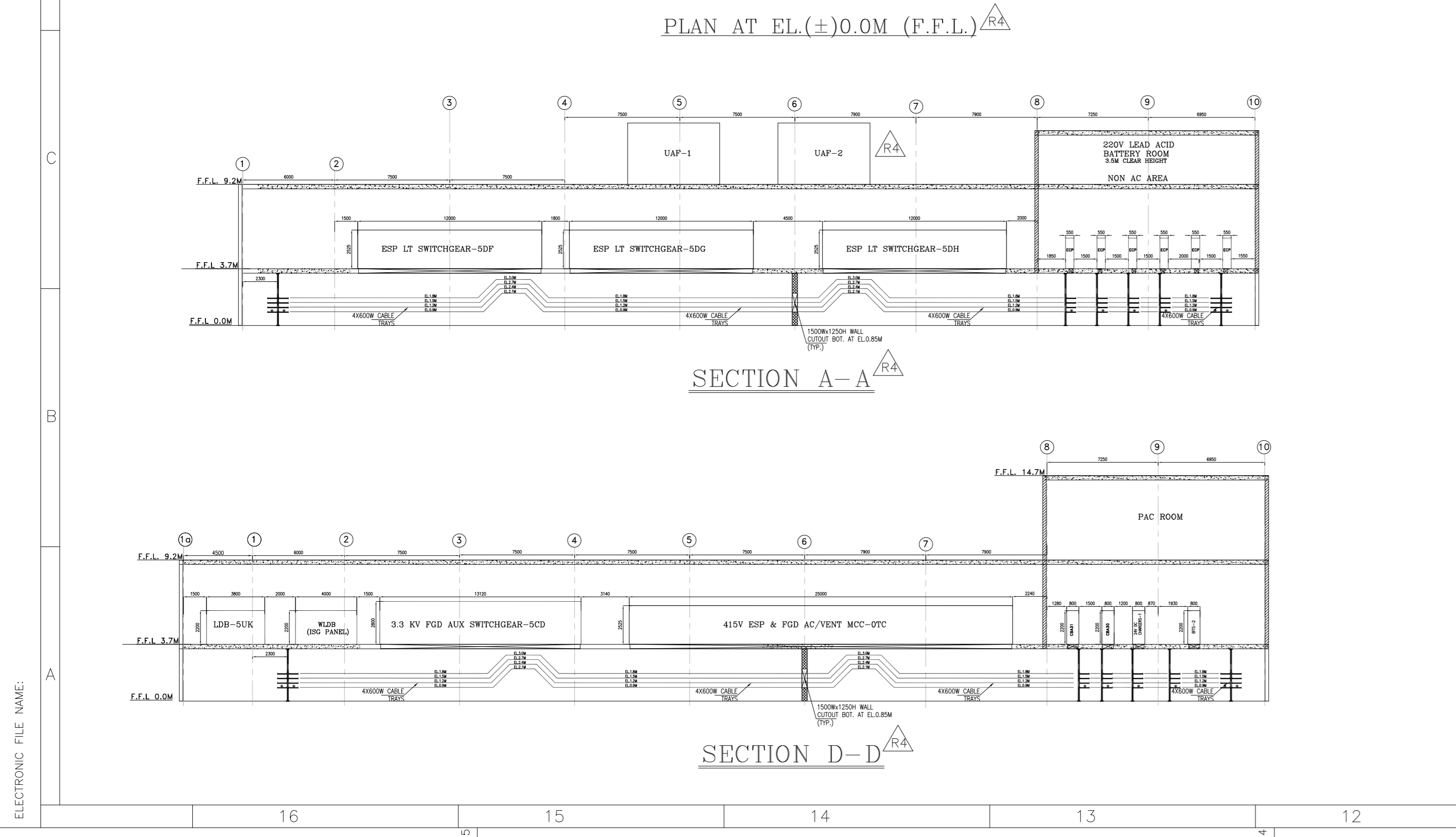
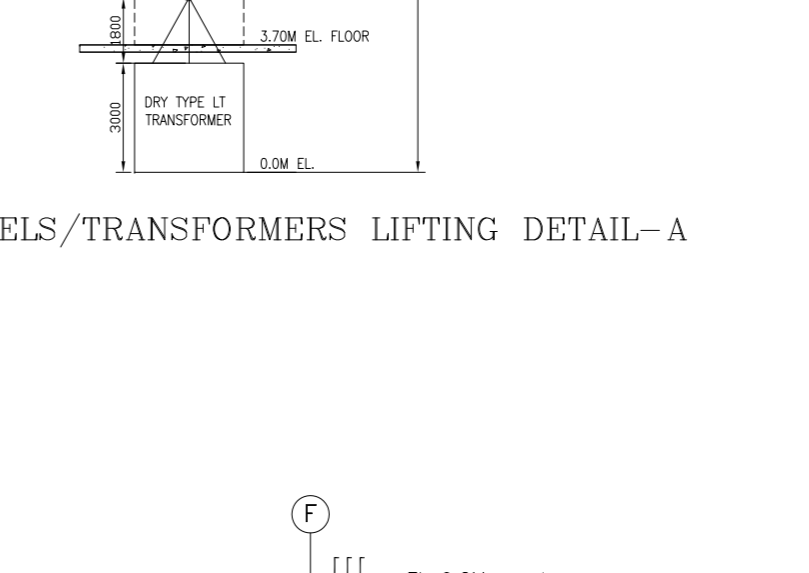
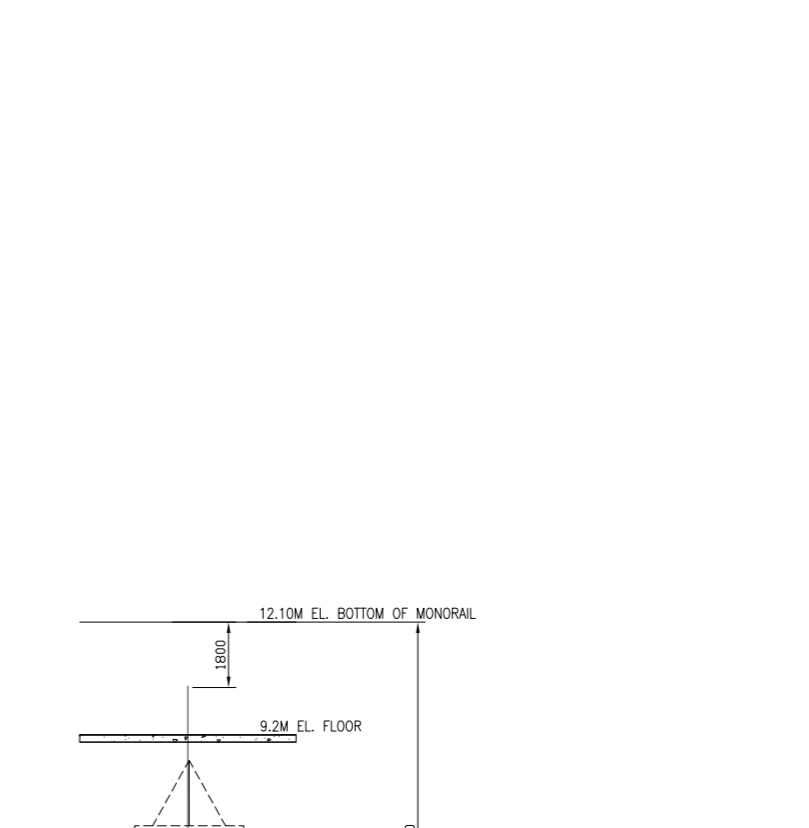
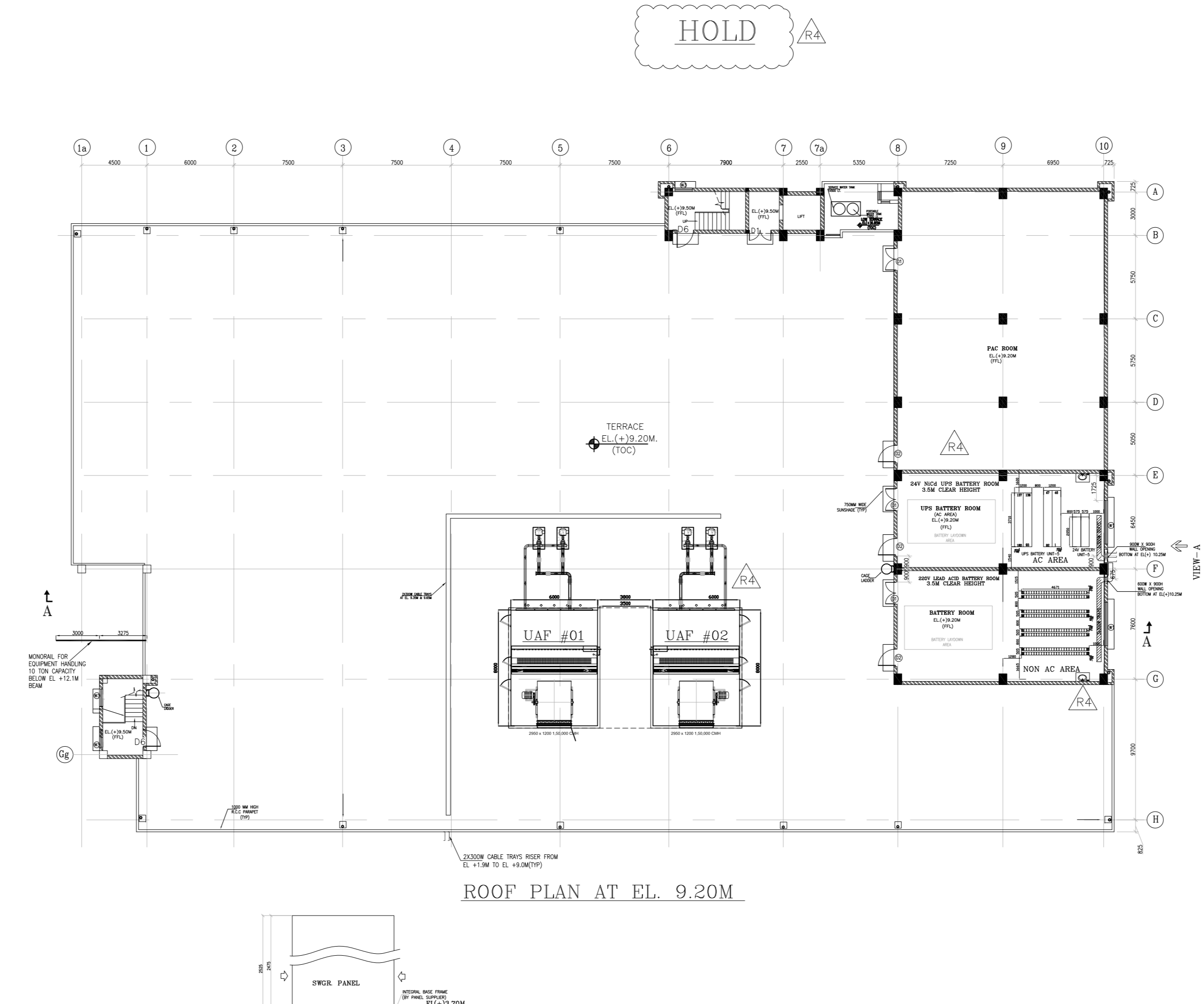
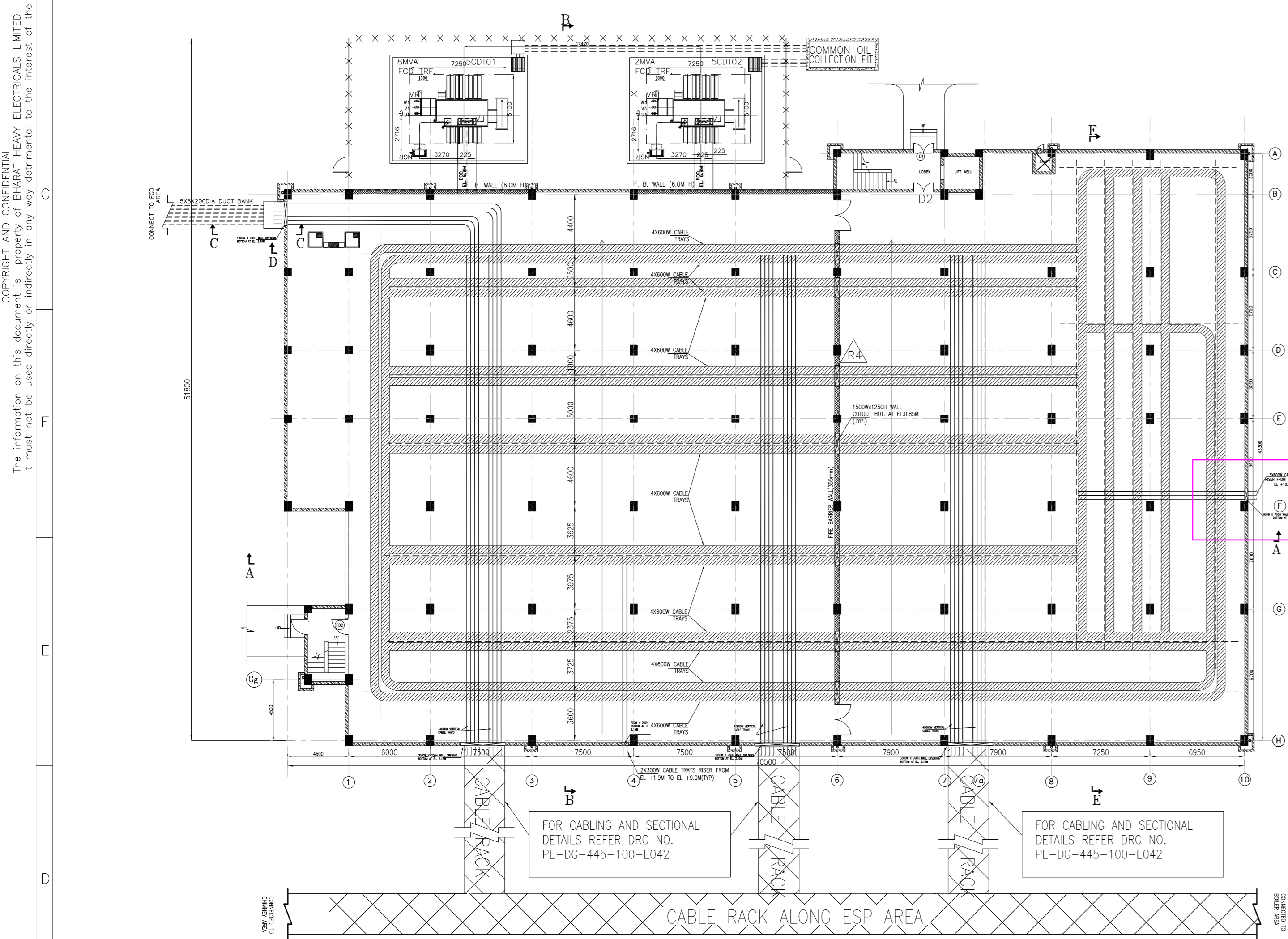
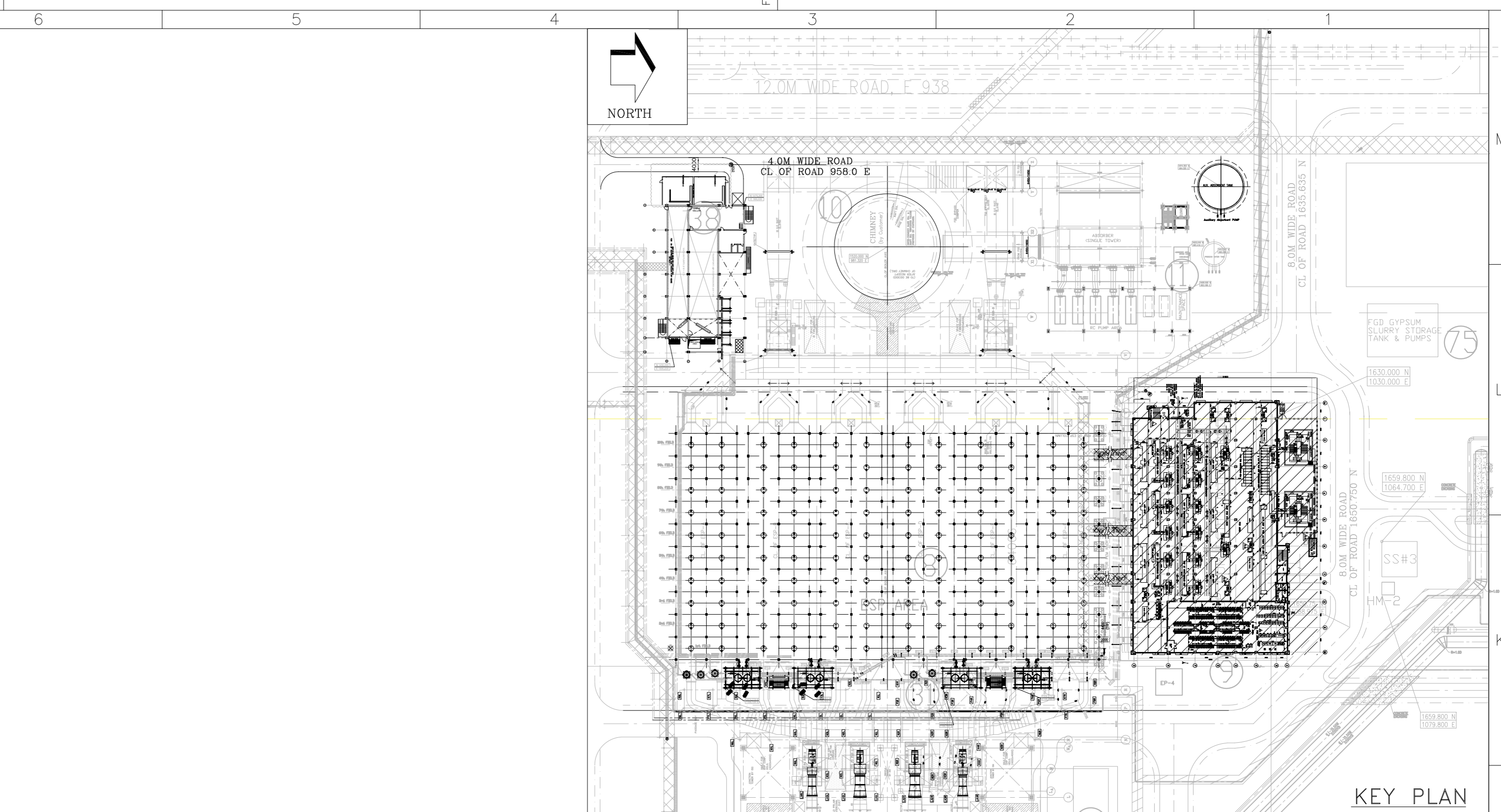
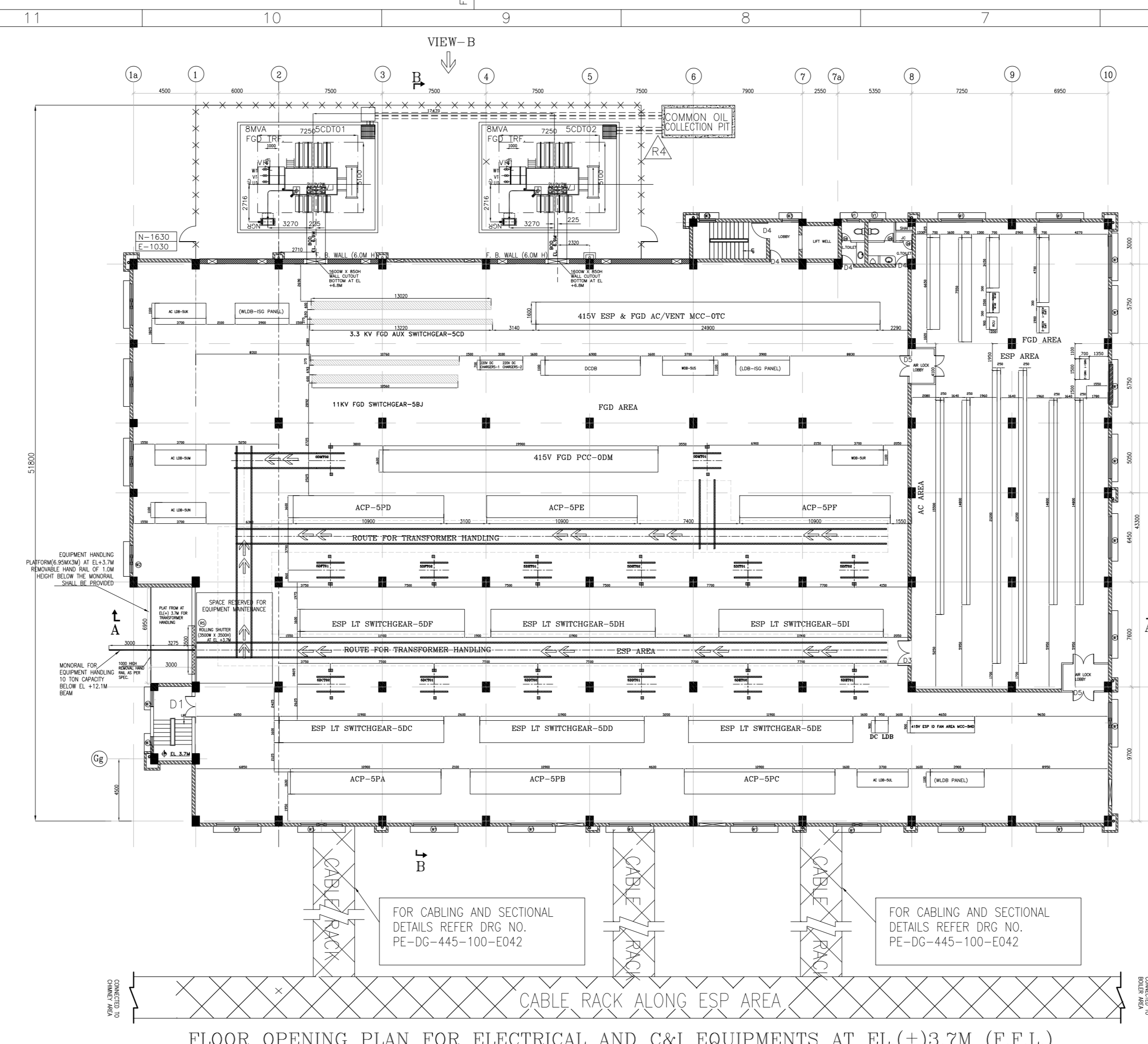
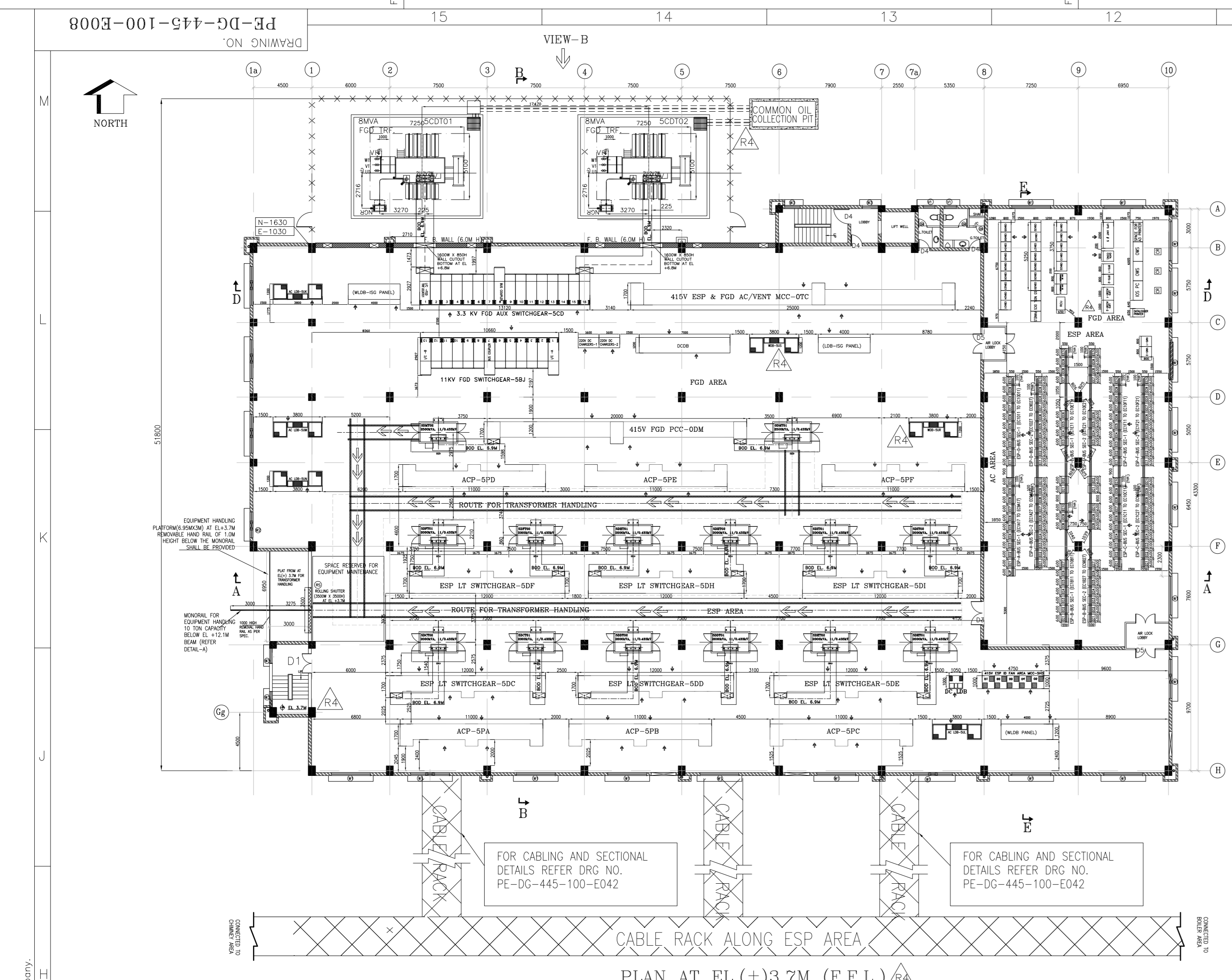
LEGENDS	
	VERTICAL BRACING
	FIRE PROOF DOOR
	GRATING
	CHEQUERED PLATE
	REMOVABLE
	HAND RAILING
	FIRE BARRIER WALL
	PARAPET WALL

- NOTES:-**
- ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METRES.
  - POWER HOUSE (TG BUILDING) FINISHED FLOOR LEVEL IS EL(+).00M, WHICH CORR. TO RL.(+).34.50M. BOILER PAVED LEVEL IS EL(-).0.20M & TRANSFORMER YARD PAVED LEVEL IS EL(-).0.10M.
  - ALL PIPING & EQUIPMENT ELEVATIONS GIVEN ARE CENTER LINE ELEVATIONS, UNLESS MENTIONED OTHERWISE.

REFERENCE DRGS:		
SL NO	TITLE	BHEL DRG. NUMBER
1	TG EQUIPMENT PLAN AT EL 0.0 M	PE-DG-445-100-M003
2	TG EQUIPMENT PLAN AT EL 8.5 M	PE-DG-445-100-M004
3	TG EQUIPMENT PLAN AT EL17.0 M	PE-DG-445-100-M005
4	TG EQUIPMENT PLAN AT MISC FLOORS ABOVE OPERATING FLOOR IN BC BAY	PE-DG-445-100-M006
5	DESIGN MEMORANDUM FOR DOUBLE GIRDER EOT CRANE/CRANE CLEARANCE DIAGRAM OF DG CRANE	PE-DC-445-501-A001
6	PH BLDG. - DETAILS OF ROOF TRUSS.	PE-DG-445-612-C006

<p>NOTE: Scan QR code for checking the latest Rev. status of drawing.</p>	<p><b>CUSTOMER:</b> THE WEST BENGAL POWER DEVELOPMENT CORPN. LTD.(WBPDCL) 1X600W.SAGARDIGHI THERMAL POWER EXTENSION PROJECT (UNIT #5)</p>
	<p><b>CONSULTANT:</b> DEVELOPMENT CONSULTANTS PRIVATE LIMITED KOLKATA</p>
<p><b>JOB NO.:</b> 445 <b>STATUS:</b> CONTRACT <b>DISTRIBUTION:</b></p>	<p><b>BHARAT HEAVY ELECTRICALS LTD</b> POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA</p>
<p>REV. DATE ALTD CHD APPD</p> <p>01 01/01/2020 PUNJEE SK BSA 02 28/02/21 PUNJEE SK BSA 03 01/02/22 PUNJEE SK BSA</p>	<p>DEPT. CODE NAME SIGN DATE</p> <p>M CHD SK 14.09.2020 M CHD SK 14.09.2020 M APPD SK 14.09.2020</p>
<p>01 DRAWING REVISED IN-LINE WITH CUSTOMER/CONSULTANT COMMENTS (DTRG/1/2020).</p> <p>02 DRAWING GENERALLY REVISED AND MARKED AS 2.</p>	<p>01 DRAWING REVISED IN-LINE WITH CUSTOMER/CONSULTANT COMMENTS (DTRG/1/2020).</p> <p>02 DRAWING GENERALLY REVISED AND MARKED AS 2.</p>
<p><b>TITLE</b> CROSS SECTION OF MAIN PLANT (TG BUILDING)</p> <p>DEPT. SCALE 1:200 DRAWING NO. PE-DG-445-100-M007 SHEET 01 OF 01 REV. R2</p>	

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- LEGEND**
- OPERATING FRONT OF THE PANEL
  - DOUBLE LEAF DOOR (1800Wx2100H)
  - DOUBLE LEAF FIRE PROOF DOOR (1800Wx2100H)
  - DOUBLE LEAF DOOR (1800Wx2100H) PLUS 900 HIGH REMOVABLE TRANSOM
  - SINGLE LEAF DOOR (1200Wx2100H)
  - DOUBLE LEAF DOOR-2SET (1800Wx2100H)
  - SINGLE LEAF FIRE PROOF DOOR (1200Wx2100H)
  - BRICK WALL
  - FIRE BARRIER WALL
  - PANEL CUTOUT
  - WALL CUTOUT
  - EYE WASH BASIN
  - TRANSFORMER HANDLING ROUTE

- NOTES**
- ALL ELEVATION ARE INDICATED IN THE DRAWING ARE W.R.T POWER HOUSE FINISHED FLOOR EL. (+)0.00M & BOILER PAVED LEVEL (-) 0.200M I.E. RL 34.30M.
  - ALL AREAS SHOWN IN THIS DRG. ARE NON A/C UNLESS STATED OTHERWISE.
  - ALL DIMENSIONS ARE IN MM AND ELEVATIONS IN METRES UNLESS STATED OTHERWISE.
  - FOR MOUNTING & FOUNDATION DETAILS RESPECTIVE EQUIPMENT DRAWINGS SHALL BE REFERRED.
  - WALL BEAM ARRANGEMENT SHALL BE DETAILED WITH SPECIFIC CONSIDERATION OF LT BUSDUCT PASSAGE.
  - CABLE TRAYS & TRAY SUPPORTS INSTALLATION SHALL BE DONE AS PER REFERENCE DRG. NO. AT SL. NO. 3
  - ESP TRF. SHOWN HERE IS TENTATIVE ONLY. SAME SHALL BE FINALIZED AFTER RECEIPT OF TRF. GA DRAWING.
  - ESP CONTROL PANEL, ACP, LMSB, LDB, DCS PANEL, CHARGER, SWGR & ITS ASSOCIATED BUSDUCT DIMENSIONS SHOWN ITS PRELIMINARY AND SUBJECT TO REVISION AFTER RECEIPT OF FINAL GA DRAWING FROM EQUIPMENT SUPPLIER. FLOOR OPENING FOR PANELS ARE UNDER HOLD.
  - EQUIPMENT/CABLING LAYOUT & FLOOR/WALL CUTOUT DETAIL SHOWN IN ESP CONTROL ROOM IS TENTATIVE AND SUBJECT TO REVISION BASED ON FINAL EQUIPMENT GA DRAWING.
  - BOTTOM MOST TRAY OF HORIZONTAL RUNS MARKED 'A' SHALL BE PERFORMED TYPE.
  - DETAILED CABLE TRAY LAYOUT SHALL BE SHOWN IN NEXT REVISION WITH COORDINATION OF CIVIL FOR SECONDARY BEAMS.
  - INSERT PLATE INDICATED IN TRANSFORMER WITHDRAWAL PATH.

**REFERENCE DRAWINGS :**

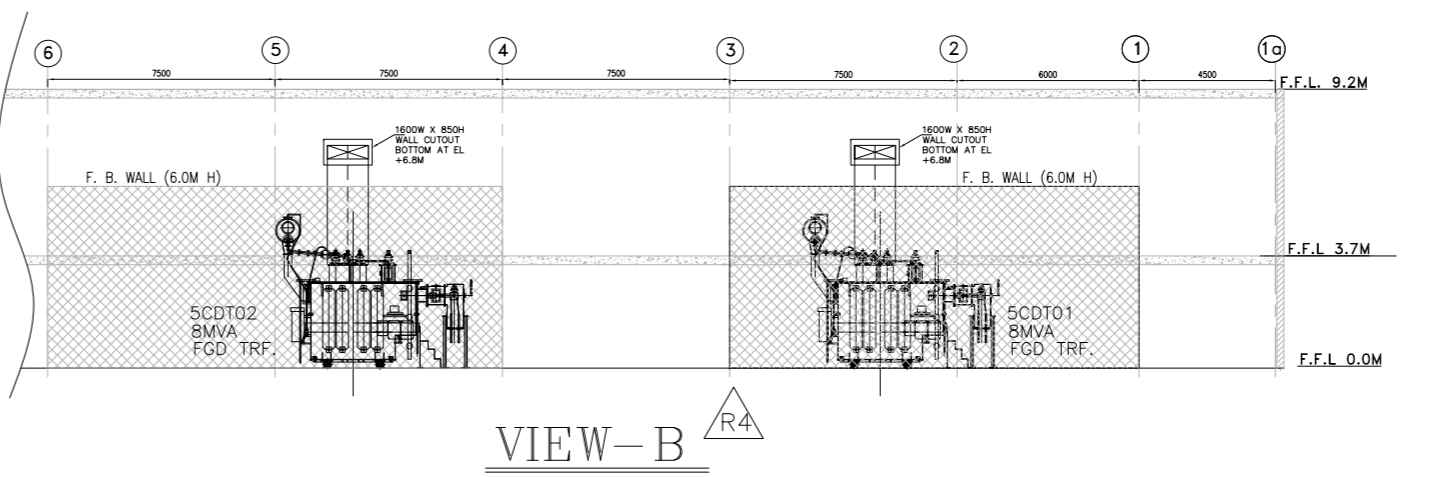
S. NO.	TITLE	BHEL DRAWING NO.	SOURCE AGENCY
01.	PLOT PLAN	PE-DG-445-100-M001	PEM/ MPL
02.	CABLE ERECTION PHILOSOPHY	PE-DG-445-507-E004	PEM/ ELECT
03.	TYPICAL DETAILS OF CABLE TRAYS AND ACCESSORIES	PE-DG-445-507-E005	PEM/ ELECT
04.	INSTALLATION DETAILS OF CABLE TRAYS SUPPORT SYSTEM	PE-DG-445-507-E006	PEM/ ELECT
05.	ELECTRICAL SLD FOR AUXILIARY POWER DISTRIBUTION	PE-DG-445-565-E001	PEM/ ELECT
06.	CABLING LAYOUT IN ESP & CHIMNEY AREA	PE-DG-445-100-E042	PEM/ ELECT

**TABLE-I TRANSFORMER DETAILS:**

S.NO.	EQUIPMENT	DESIGNATION	LXWXH (MM)
1	FGD AUX. TRANSFORMER (8MVA)	0CDT01, 0CDT02	7250X5100X5300
2	FGD SERVICE TRANSFORMER (2500KVA)	0DMT01, 0DMT02	4150X2100X2750
3	ESP SERVICE TRANSFORMER (2000KVA)	5SDT01, 5SDT02, 5SDT01, 5SDT02, 5SDT01, 5SDT02, 5SDT01, 5SDT02	4150X2100X2750

**TABLE-I SWBD DETAILS:**

S.NO.	EQUIPMENT	DESIGNATION	LXWXH (MM)
1	ESP LT SWGR	5SC-500,50E,50F,50H,50I	12000X1700X2525
2	ACP	5SR,5PB,5PC,5PD,5PE,5PF	11000X1700X2525
3	FGD FCC	0DM	20000X1700X2525
4	ESP & FGD AC/VENT MCC	0TC	25000X1700X2525
5	ESP ID FAN AREA MCC	5HD	4750X1000X2450
6	LDB (ESP AREA)	5UK,5UL,5UM,5UN	3800X1200X2200
7	11 KV FGD SWITCHGEAR	5B1	10660X1927X2800
8	3.3 KV FGD AUX. SWITCHGEAR	5CD	11300X1927X2800
9	DCDB (FGD AREA)	-	7000X1000X2200
10	WLDG (FGD AREA)	-	4000X1200X2200
11	LDB (ISC SCOPE)	-	4000X1200X2200
12	RCU PANEL	-	1000X650X2200
13	EC PANEL'S	EC	6900X550X2000
14	CRE PANEL	CBA	800X750X2200
15	DCS PANEL (ISC SCOPE)	1-3	800X800X2200
16	DC-LDB (FGD AREA)	-	1050X1000X2200
17	LDB (FGD AREA)	5UR,5US	3800X1200X2200
18	ALUP	600X550X2000	
19	BTS PANEL	BTS-1,BTS-2	800X800X2200
20	UPS ACDB	UPS ACDB-1,UPS ACDB-2	1000X800X2200
21	VMS PANEL	VMS-1,VMS-2	800X800X2200



**REVISIONS**

REV.	DATE	ALT.	CHD.	APPD.	REV.	DATE	ALT.	CHD.	APPD.	REV.	DATE	ALT.	CHD.	APPD.
01	14.10.21	AR	AWG	DMK	02	22.06.21	AR	AWG	DMK	03	08.09.21	AR	AWG	DMK
01	14.10.21	AR	AWG	DMK	02	22.06.21	AR	AWG	DMK	03	08.09.21	AR	AWG	DMK
DRAWING REVISED AS PER CUSTOMER COMMENTS ON REV-3 DRAWING														
DRAWING REVISED AS PER CUSTOMER COMMENTS ON REV-2 DRAWING														
DRAWING REVISED AS PER CUSTOMER COMMENTS ON REV-1 DRAWING														
DRAWING REVISED AS PER CUSTOMER COMMENTS DATED 29.01.21														

**CUSTOMER:** THE WEST BENGAL POWER DEVELOPMENT CORPN. LTD.(WBPDCL)  
1X660MW,SAGARDIGHI THERMAL POWER EXTENSION PROJECT (UNIT #5)

**CONSULTANT:** DEVELOPMENT CONSULTANTS PRIVATE LIMITED  
KOLKATA

**CLIENT:** BHARAT HEAVY ELECTRICALS LTD  
POWER SECTOR  
PROJECT ENGINEERING MANAGEMENT  
NOIDA

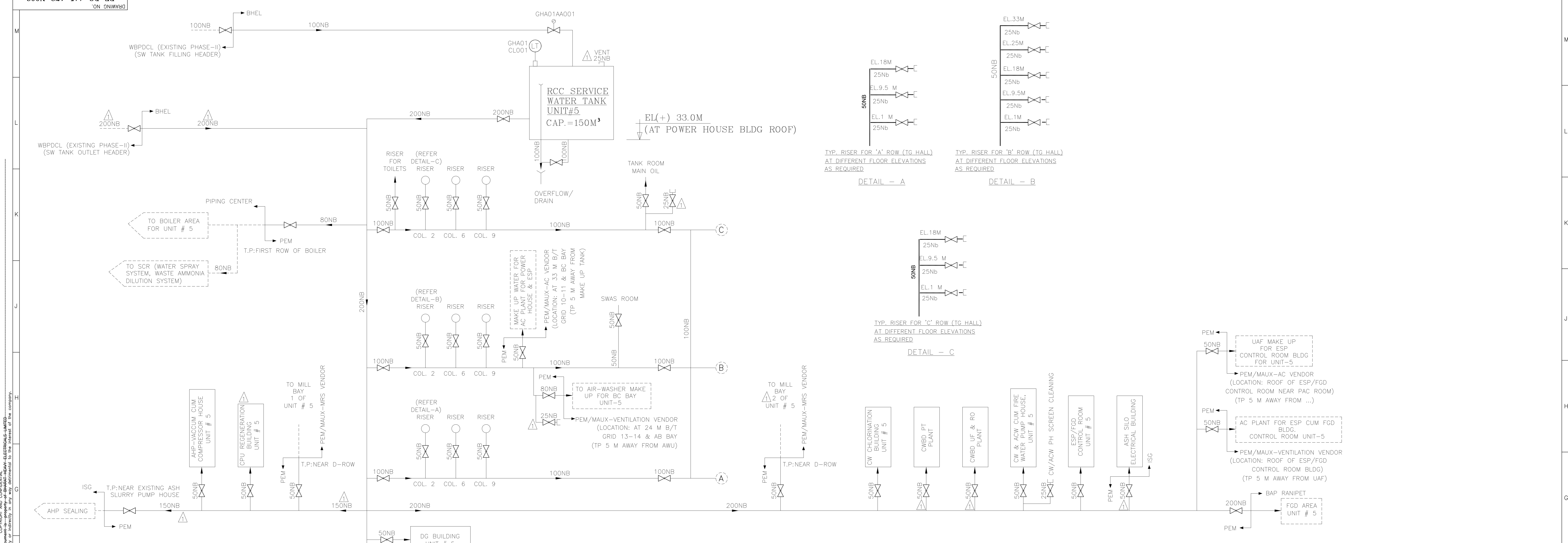
**JOB NO.:** 445  
**STATUS:** CONTRACT  
**DISTRIBUTION:**

**REVISIONS:**

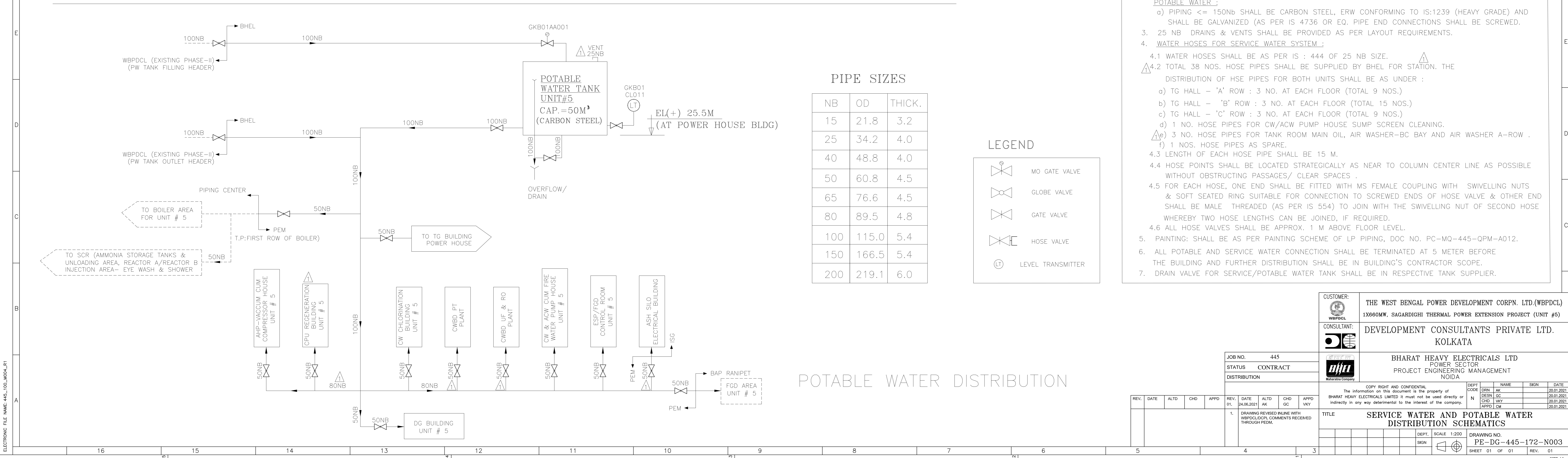
TO	FROM	DATE	BY	CHKD.	APPD.
01	00	14.10.21	AR	AWG	DMK
02	01	22.06.21	AR	AWG	DMK
03	02	08.09.21	AR	AWG	DMK
04	03	29.01.21	AR	AWG	DMK

**TITLE:** ELECTRICAL EQUIPMENT & CABLING LAYOUT IN ESP CUM FGD CONTROL ROOM.

**SCALE:** 1:200  
**DRAWING NO.:** PE-DG-445-100-E008  
**SHEET:** 01 OF 01  
**REV.:** 4



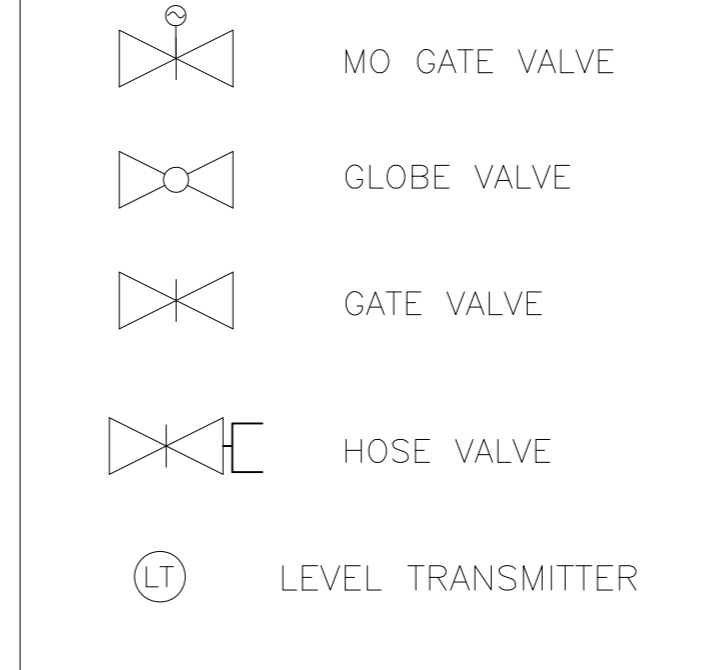
### SERVICE WATER DISTRIBUTION



### PIPE SIZES

NB	OD	THICK.
15	21.8	3.2
25	34.2	4.0
40	48.8	4.0
50	60.8	4.5
65	76.6	4.5
80	89.5	4.8
100	115.0	5.4
150	166.5	5.4
200	219.1	6.0

### LEGEND



- NOTES :-**
- DESIGN PRESSURE FOR SERVICE & POTABLE WATER SYSTEM = 10 KG/SQ.CM(g) MECH. DESIGN TEMPERATURE : 60 °C
  - MATERIALS OF CONSTRUCTION (PIPEWORK) :  
**SERVICE WATER :**  
 a) PIPING <= 150NB SHALL BE CARBON STEEL, ERW CONFORMING TO IS:1239 (HEAVY GRADE).  
 b) PIPING > 150NB SHALL BE CARBON STEEL (IS 2062), ROLLED & WELDED CONFIRMING TO IS 3589 FROM CS PLATES AS PER IS 2062.  
**POTABLE WATER :**  
 a) PIPING <= 150NB SHALL BE CARBON STEEL, ERW CONFORMING TO IS:1239 (HEAVY GRADE) AND SHALL BE GALVANIZED (AS PER IS 4736 OR EQ. PIPE END CONNECTIONS SHALL BE SCREWED).  
 b) PIPING > 150NB SHALL BE CARBON STEEL (IS 2062), ROLLED & WELDED CONFIRMING TO IS 3589 FROM CS PLATES AS PER IS 2062.
  - 25 NB DRAINS & VENTS SHALL BE PROVIDED AS PER LAYOUT REQUIREMENTS.
  - WATER HOSES FOR SERVICE WATER SYSTEM :**  
 4.1 WATER HOSES SHALL BE AS PER IS : 444 OF 25 NB SIZE.  
 4.2 TOTAL 38 NOS. HOSE PIPES SHALL BE SUPPLIED BY BHEL FOR STATION. THE DISTRIBUTION OF HSE PIPES FOR BOTH UNITS SHALL BE AS UNDER :  
 a) TG HALL - 'A' ROW : 3 NO. AT EACH FLOOR (TOTAL 9 NOS.)  
 b) TG HALL - 'B' ROW : 3 NO. AT EACH FLOOR (TOTAL 15 NOS.)  
 c) TG HALL - 'C' ROW : 3 NO. AT EACH FLOOR (TOTAL 9 NOS.)  
 d) 1 NO. HOSE PIPES FOR CW/ACW PUMP HOUSE SUMP SCREEN CLEANING.  
 e) 3 NO. HOSE PIPES FOR TANK ROOM MAIN OIL, AIR WASHER-BC BAY AND AIR WASHER A-ROW .  
 f) 1 NOS. HOSE PIPES AS SPARE.  
 4.3 LENGTH OF EACH HOSE PIPE SHALL BE 15 M.  
 4.4 HOSE POINTS SHALL BE LOCATED STRATEGICALLY AS NEAR TO COLUMN CENTER LINE AS POSSIBLE WITHOUT OBSTRUCTING PASSAGES/ CLEAR SPACES .  
 4.5 FOR EACH HOSE, ONE END SHALL BE FITTED WITH MS FEMALE COUPLING WITH SWIVELLING NUTS & SOFT SEATED RING SUITABLE FOR CONNECTION TO SCREWED ENDS OF HOSE VALVE & OTHER END SHALL BE MALE THREADED (AS PER IS 554) TO JOIN WITH THE SWIVELLING NUT OF SECOND HOSE WHEREBY TWO HOSE LENGTHS CAN BE JOINED, IF REQUIRED.  
 4.6 ALL HOSE VALVES SHALL BE APPROX. 1 M ABOVE FLOOR LEVEL.  
 5. PAINTING: SHALL BE AS PER PAINTING SCHEME OF LP PIPING, DOC NO. PC-MQ-445-OPM-A012.  
 6. ALL POTABLE AND SERVICE WATER CONNECTION SHALL BE TERMINATED AT 5 METER BEFORE THE BUILDING AND FURTHER DISTRIBUTION SHALL BE IN BUILDING'S CONTRACTOR SCOPE.  
 7. DRAIN VALVE FOR SERVICE/POTABLE WATER TANK SHALL BE IN RESPECTIVE TANK SUPPLIER.

### POTABLE WATER DISTRIBUTION