



Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)

Transmission Business Group

Materials Management, 5th Floor, Plot No.25,

Sector-16A, Noida, Uttar Pradesh, PIN No: 201301

Phone: 0120-6748543, Email: gaurav.agarwal@bhel.in

CORRIGENDUM - 01 TO NIT NO-99909

Dated 27-05-2026

Subject: Corrigendum-01 to Tender enquiry for Pre-Bid Tie up with the GIS OEM for Supply & Services of 400KV & 220KVGIS for NPCIL's Kundankulam Unit 5&6 Sub-Station Tender / Project.

Project : NPCIL's Kundankulam Unit 5&6
Equipment / Item : Supply & Services of 400kV & 220kV GIS and Its associated equipment
Enquiry No/Date : 61G2700039 Dated 20-05-2026
BHEL NIT NO : 99909
Original Tender due date : 01-06-2026

This Corrigendum is issued by BHEL TBG against above mentioned NIT/ enquiry for-
-Change in commercial term (enclosed).
-issuance of technical corrigendum-01 (enclosed).

Tender due date shall remain same i.e. 01-06-2026.

All other terms and conditions for this tender enquiry shall remain unchanged.

Bidder to ensure submission of offer on or before due date.

Note: Tender ID on CPP Portal is **2026_BHEL_61417_1**.

Thanking you

-----Sd/-----

Gaurav Agarwal
BHEL TBG, NOIDA

Project	NPCIL's Kundankulam Unit 5&6
Equipment / Item	Supply & Services of 400kV & 220kV GIS and Its associated equipment
Enquiry No/Date	NIT No. 99909_ Enquiry No. 61G2700039 Dated 20-05-2026

Change in Commercial terms and conditions of NIT

Please refer following changes in NIT terms –

NIT Clause no.	Terms as per NIT	Revised NIT term/Clarification
22.A.1 & 22.A.2 of STC	TERMS OF PAYMENT	Bank Guarantee to be submitted against 'Advance' shall be initially valid for 12 months from the date of submission of Invoice. In case of recovery of 'Advance' is not completed before expiry of Bank Guarantee, BG shall be kept suitably extended till complete recovery of 'Advance'. The Bank Guarantee shall, however, be released within one month after complete recovery of 'Advance'.
12 of STC	TECHNICAL PQR (Annexure-G)	GIS of 400kV & 230kV class are to be supplied by the same manufacturer. Since the manufacturer for both 400kV GIS and 230kV GIS shall be the same, the Pre-Qualification Requirement (Technical: Annexure-G) specified for 230kV GIS shall not be applicable and accordingly, only the Pre-Qualification Requirement (Technical: Annexure-G) applicable for 400kV GIS shall be considered for qualification of both 400kV GIS and 230kV GIS.
12 of STC	FINANCIAL PQR- Bidder should have a minimum average audited annual turnover / Sales Value of INR 42 Crs (for 400kV GIS) and INR 7.5 Cr (for 220kV) for the three financial years 2022-23, 2023-24 & 2024-25 and.....	Financial PQR- Bidder should have a minimum average audited annual turnover / Sales Value of INR 50 Crs for the three financial years 2022-23, 2023-24 & 2024-25 and.....
12.1.e of STC	PLACEMENT OF ORDER: Evaluation shall be done RATING WISE based on overall quantity for each rating as per NIT and accordingly, PO/LOI shall be placed (rating wise) on L1 bidder for.....	PLACEMENT OF ORDER: Evaluation shall be done on OVERALL PACKAGE WISE (combining both 400kV & 230kV class GIS) based on overall quantity of both the ratings as per NIT and accordingly, PO/LOI shall be placed (rating wise) on L1 bidder for.....
5 of STC	ACTIVITY SCHEDULE:	Rating-wise activity schedules were given in NIT, however, as the evaluation and ordering will be done on overall package wise (combining both 400kV & 230kV class GIS), hence activity schedule (as enclosed) for both "400kV & 230kV GIS" shall be considered and accordingly, activity schedule given in NIT for individual ratings shall not be considered while submitting the offer.

Terms and conditions have been mentioned in brief in above table, however, Detailed terms and conditions as per NIT and subsequent corrigendum shall be applicable along with changes as mentioned above.

All other terms and conditions of NIT shall remain same.

For 400kV and 230kV GIS

Activity Schedule for PO-1 (Main Supply Items & Service Items and/ or any other item not covered in PO- 2 & PO-3)

SI. NO.	Activity	ACTIVITY TIME IN WEEKS	REMARKS IF ANY
A. Supply			
1	Order acknowledgement by vendor	1 Week	Supplier scope. PO date shall be considered as Zero Date.
2	Inputs to vendor from BHEL after issue of PO	2 Weeks	BHEL scope.
3	Submission of Documents necessary for getting manufacturing clearance like Drawings, Data sheet etc.		Supplier scope. To be quoted considering proposed delivery plan mentioned in STC.
4	Review and Approval of documents from BHEL/Customer and issue of manufacturing clearance.	6 Weeks	BHEL scope.
5	Manufacturing time (after Manufacturing Clearance from BHEL) along with Inspection Call (ie. Time from Manufacturing Clearance date and inspection date mentioned in inspection call)		Supplier scope. To be quoted inline with proposed delivery plan mentioned in STC.
6	BHEL/ customer Inspection & dispatch clearance	2 Weeks	BHEL scope
7	Dispatch	2 Weeks	Supplier scope
	Total time for supply		
B. Services at site			
8	Joint checking including surveying, levelling and marking of GIS Hall/ building floor and other associated GIB/ equipment foundations		BHEL/Supplier scope. The date on which site is declared ready jointly by vendor & BHEL site for ETC activities of GIS, shall be considered as Zero date.
9	Supervision of installation of GIS Bays and its associated work including LCC, cable trays, cabling and earthing work		BHEL/Supplier scope.
11	Testing and pre-commissioning of GIS Bays and its associated work including LCC, cable trays, cabling and earthing work		Supplier scope.
12	HV testing and commissioning of GIS		Supplier scope.
	Total time for service		
	TOTAL COMPLETION TIME (SUPPLY+SERVICES)		

- Note:
1. Supplier must ensure the completeness and correctness of the requisite drawings/documents before submission for approval.
 2. Inspection call should be raised Two (02) weeks in advance before inspection date. Inspection call should be given in the prescribed format only (enclosed). Inspection calls not in the prescribed format shall not be entertained.
 3. Delay in activity pertaining to BHEL, not attributable to vendor, as listed above shall be added, if required in case of time extension and Delivery date will be re-fixed accordingly based on bidder's request & delay analysis.

For 400kV and 230kV GIS

Activity Schedule for PO-2 (Mandatory Spares)

SI. NO.	Activity	ACTIVITY TIME IN WEEKS	REMARKS IF ANY
1	Order acknowledgement by vendor	1 Week	Supplier scope. PO date shall be considered as Zero Date.
2	Inputs to vendor from BHEL after issue of PO	2 Weeks	BHEL scope.
3	Submission of Documents necessary for getting manufacturing clearance like Drawings, Data sheet etc.		Supplier scope. To be quoted considering proposed delivery plan mentioned in STC.
4	Review and Approval of documents from BHEL/Customer and issue of manufacturing clearance.	6 Weeks	BHEL scope.
5	Manufacturing time (after Manufacturing Clearance from BHEL) along with Inspection Call (ie. Time from Manufacturing Clearance date and inspection date mentioned in inspection call)		Supplier scope. To be quoted inline with proposed delivery plan mentioned in STC.
6	BHEL/ customer Inspection & dispatch clearance	2 Weeks	BHEL scope
7	Dispatch	2 Weeks	Supplier scope
	Total time for supply		
Note:	<p>1. Supplier must ensure the completeness and correctness of the requisite drawings/documents before submission for approval.</p> <p>2. Inspection call should be raised Two (02) weeks in advance before inspection date. Inspection call should be given in the prescribed format only (enclosed). Inspection calls not in the prescribed format shall not be entertained.</p> <p>3. Delay in activity pertaining to BHEL, not attributable to vendor, as listed above shall be added, if required in case of time extension and Delivery date will be re-fixed accordingly based on bidder's request & delay analysis.</p>		

For 400kV and 230kV GIS

Activity Schedule for PO-3 (TOOLS AND TESTING & MAINTENANCE EQUIPMENT)

SI. NO.	Activity	ACTIVITY TIME IN WEEKS	REMARKS IF ANY
1	Order acknowledgement by vendor	1 Week	Supplier scope. PO date shall be considered as Zero Date.
2	Inputs to vendor from BHEL after issue of PO	2 Weeks	BHEL scope.
3	Submission of Documents necessary for getting manufacturing clearance like Drawings, Data sheet etc.		Supplier scope. To be quoted considering proposed delivery plan mentioned in STC.
4	Review and Approval of documents from BHEL/Customer and issue of manufacturing clearance.	6 Weeks	BHEL scope.
5	Manufacturing time (after Manufacturing Clearance from BHEL) along with Inspection Call (ie. Time from Manufacturing Clearance date and inspection date mentioned in inspection call)		Supplier scope. To be quoted inline with proposed delivery plan mentioned in STC.
6	BHEL/ customer Inspection & dispatch clearance	2 Weeks	BHEL scope
7	Dispatch	2 Weeks	Supplier scope
	Total time for supply		
Note:	<p>1. Supplier must ensure the completeness and correctness of the requisite drawings/documents before submission for approval.</p> <p>2. Inspection call should be raised Two (02) weeks in advance before inspection date. Inspection call should be given in the prescribed format only (enclosed). Inspection calls not in the prescribed format shall not be entertained.</p> <p>3. Delay in activity pertaining to BHEL, not attributable to vendor, as listed above shall be added, if required in case of time extension and Delivery date will be re-fixed accordingly based on bidder's request & delay analysis.</p>		

Ref. No. Technical Corrigendum No. 01

Project: Pre-Bid Tie up for Pre-Bid Tie up for, 400kV & 230kV GIS & GIBD systems of Nuclear Power Corporation of India Limited for Main Plant Electrical System Package for KKNPP Units-5&6

Package/ Item: GAS INSULATED SWITCHGEAR WITH ITS ACCESSORIES

Technical Specification No. TB-PBTU-KKNPP-400kV GIS, REV-00 & TB-PBTU-KKNPP-230kV GIS, REV-00

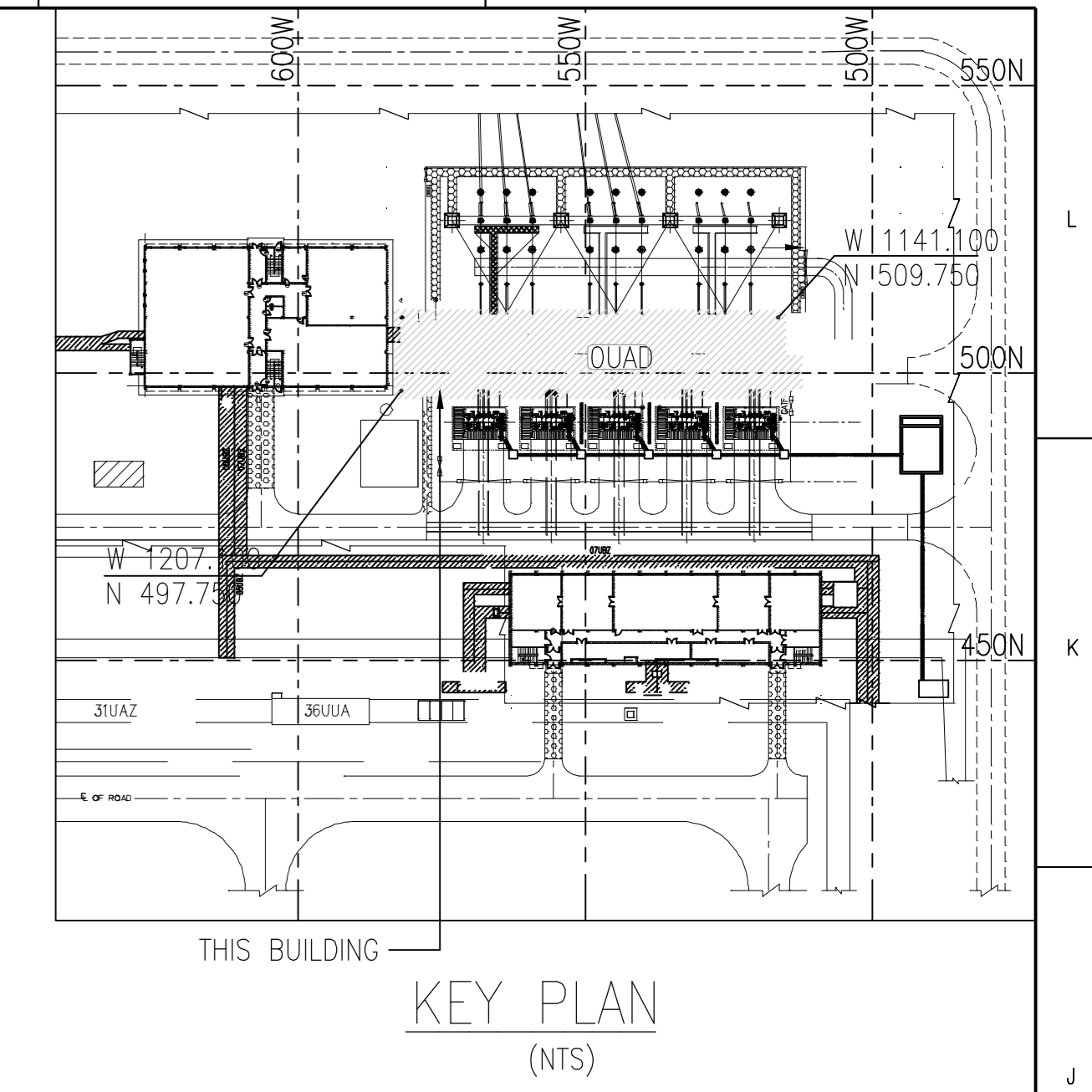
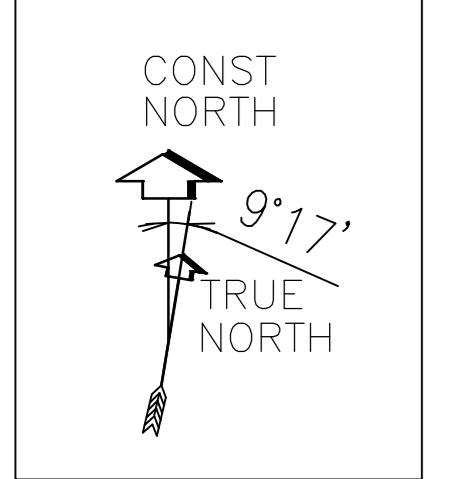
Date: 26.05.2026

Sl. No.	Volume/ Section/ Clause	Volume/ Section/ Clause as Existing	Volume/ Section/ Clause as Amended/ Added in Technical Corrigendum
1	Technical Specification	Section-1	Drawings & docuemnts as per Part 1, Part 2a&2b, Part 3 are attached.
2	-	-	Pre-Bid Clarification- Response-2 to Tender No. CMM/MEQ/91-21-2-1219 is attached.

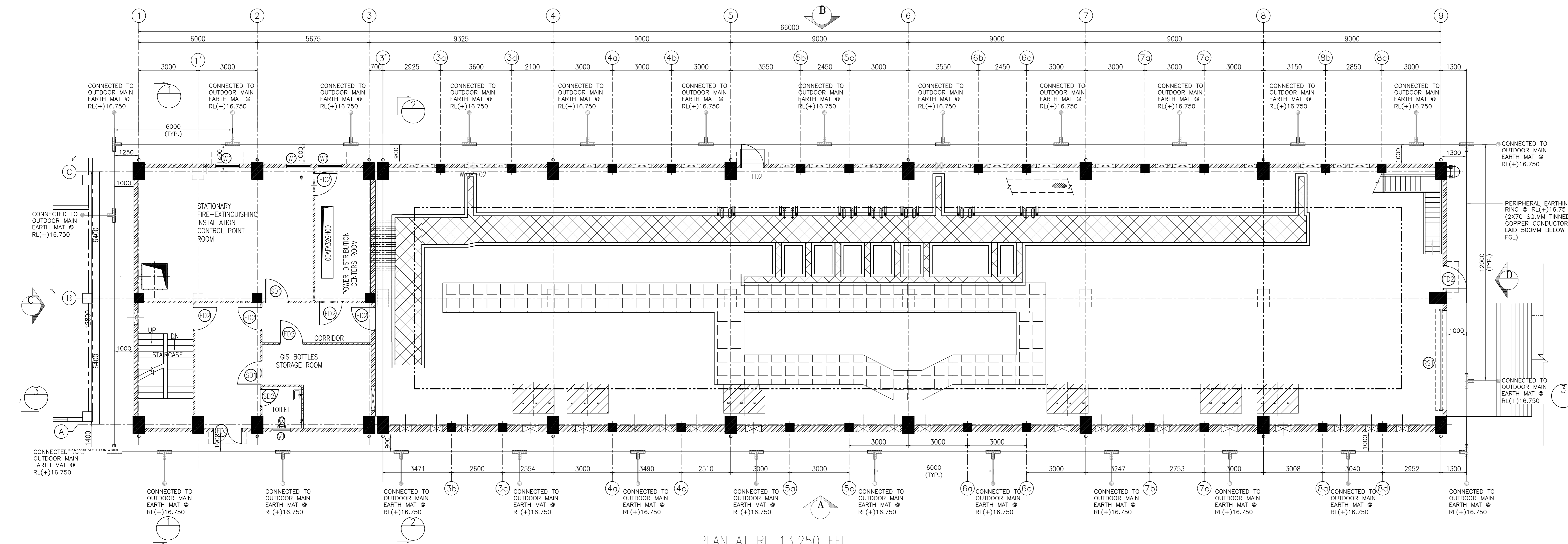
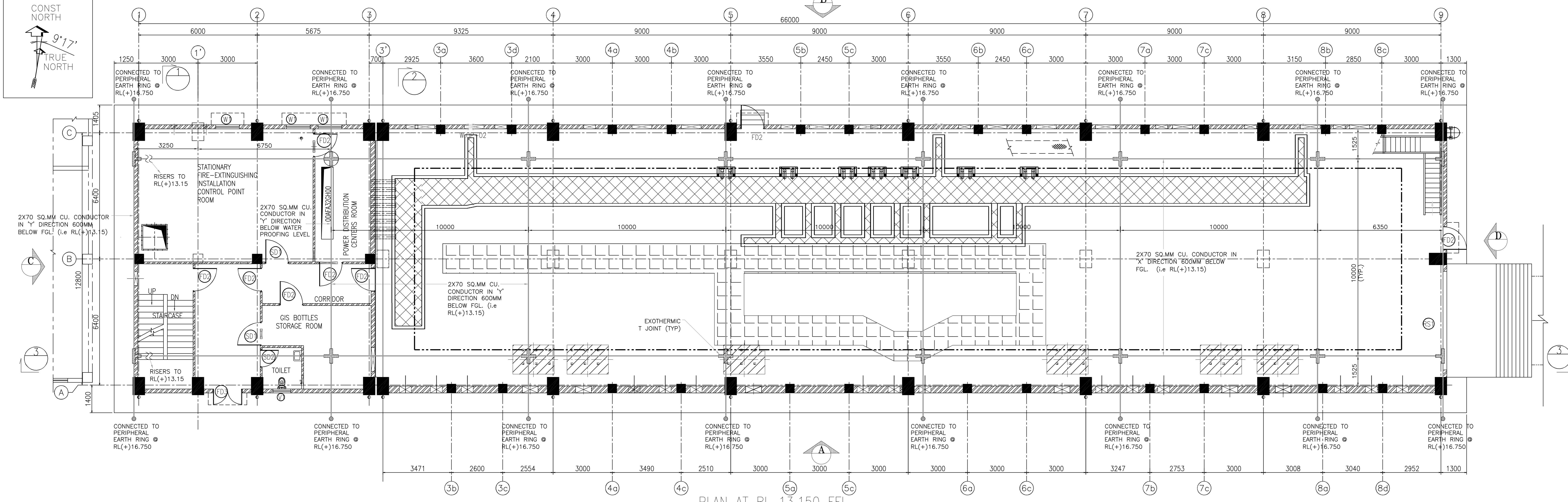
Note:

1. The changes/ revision are marked/ highlighted in yellow, if applicable.
2. Amendment/ addendum/ clarification/ corrigendum issued herein shall form part of Technical Specification.

Bidders to please note that amendment/ addendum/ clarification/ corrigendum issued shall supersede the respective Volume/ Section/ Clause of Technical Specification Document to the extent for the Volume/ Section/ Clause or part thereof the amendment is issued.



- NOTES:
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
 - THE PORTION OF GS CONDUCTOR/FLATS WHICH UNDERGO FILET WELDING AT SITE SHALL BE COATED TO A MINIMUM THICKNESS OF 150 MICRONS OF COLD GALVANIZING ANTI CORROSION PAINT OF APPROVED BRAND AFTER WELDING UNLESS OTHERWISE SPECIFIED IN THE WORKING DRAWING.
 - WALL MOUNTED DB's, JB's, ETC. SHALL BE CONNECTED WITH 50X10MM GS FLAT PROVIDED INSIDE THE BUILDING WALL.
 - EARTHING BUS BAR 50X10MM GS FLAT SHALL BE FIXED AT 500MM ABOVE FFL ALONG THE WALL. EARTH FLAT SHALL BE RUN/LAD INSIDE 40MM THICK SCREED CONCRETE AT DOOR CROSSING AREA.
 - CABLE TRAY EARTHING SHALL BE DONE USING 40X4MM GS FLAT. CABLE TRAY RAILS SHALL BE USED AS A GROUNDING CONDUCTOR. THE RAILS OF CABLE TRAYS SHALL BE SUITABLY CLEANED AND ELECTRICALLY BONDED TO ALL OTHER CABLE TRAYS (I.E. VERTICAL LAYERS) ON THE SAME CABLE ROUTE. AT REGULAR INTERVALS OF 25 TO 30 METERS USING 40X4MM GS FLAT. 16 SQ.MM TINNED COPPER CONDUCTOR SHALL BE USED FOR EARTHING OF COI CRANE, HAND RAIL AND MONO RAIL. EARTHING TERMINAL OF EQUIPMENT SHALL BE CONNECTED WITH NEAREST COMMON EARTH BUS OR OTHER COMMON EARTH POINT THROUGH THE SHORTEST POSSIBLE WAY.
 - EQUIPMENT AND STRUCTURE EARTHING DETAIL DRAWING SHALL BE REFERRED FOR THE DETAILS OF FOLLOWING EQUIPMENT:
 - BUS DUCT AND SUPPORT EARTHING
 - TEST LINK BOX
 - WELDING DETAILS OF EQUIPMENTAL GRID
 - RECEPTACLES AND SOCKETS SHALL BE EARTHED THROUGH THE 5TH CORE FOR THREE PHASE / 3RD CORE FOR SINGLE PHASE OF COPPER FLEXIBLE CABLE.
 - ALL THE METAL PIPING, BRASS, ETC., ON THE ROOF SHALL BE BONDED TO THE PROTECTIVE NETWORK TO AVOID SIDE FLASHING.
 - EARTH PIT / ELECTRODE SHALL BE LOCATED MINIMUM 1M AWAY FROM FOUNDATION.
 - DISPER-A RADIUS OF 20M CONSIDERING CLASS 1 LIGHTNING PROTECTION LEVEL FOR GIS BUILDING AND A RADIUS OF 30M CONSIDERING CLASS 2 LIGHTNING PROTECTION LEVEL FOR TRANSFORMER YARD (DURG) HAS BEEN CONSIDERED AS PER IEC-62305.
 - ALL THE CONDUCTING COMPONENTS OF EQUIPMENT SUCH AS LIFT RAILS, CRANES, METAL FLOORS, METAL DOOR FRAMES, PIPES, CABLE TRAYS, ETC. SHALL BE CONNECTED TO THE NEAREST COMMON BUS OR OTHER COMMON POINT THROUGH THE SHORTEST POSSIBLE WAY.
 - ALL THE CONDUCTING COMPONENTS OF THE DATA SYSTEMS ENCLOSURES (CNR, SQAIA, ETC) SHALL BE CONNECTED TO THE COMMON GROUNDING NETWORK.
 - TO REDUCE THE IMPACT OF ELECTROMAGNETIC FIELDS, ALL THE METAL COMPONENTS LIKE METAL ROOFS AND LINERS, REINFORCED CONCRETE BARS, DOOR AND WINDOW METAL FRAMES SHALL BE GALVANICALLY PROTECTED AND CONNECTED TO THE LIGHTNING PROTECTION SYSTEM.
 - WHENEVER CONNECTION BETWEEN DISSIMILAR MATERIAL IS ENVISAGED GALVANIC CORROSION SHALL BE PREVENTED THROUGH THE USE OF SUITABLE WASHER/ TECHNIQUES.
 - THE FOLLOWING ELECTRICAL EQUIPMENTS SHALL ALSO BE GROUNDED:
 - EMBEDDED PARTS (EPS) PROVIDED FOR THE INSTALLATION OF ELECTRICAL EQUIPMENTS
 - CURRENT AND POTENTIAL TRANSFORMER SECONDARY NEUTRAL
 - CABLE PENETRATIONS
 - METAL SHEATHS, SHELLS AND ANVOURS OF CONTROL AND POWER CABLES
 - RACKS, FRAMEWORKS AND OTHER METAL STRUCTURES SUPPORTING ELECTRIC EQUIPMENT OR ANY OTHER METALLIC EQUIPMENTS/PARTS
 - LIGHTING FIXTURES, RECEPTACLES, LIGHTING MAST AND POLES
 - PLANT INSTRUMENT SYSTEM CLEAN GROUNDING, UPS SYSTEM CLEAN/ SAFETY GROUND, DATA CONCENTRATOR (SQAIA RTU), PANEL, HIM ETC. SHALL BE SEPARATED FROM THE ELECTRICAL GROUNDING SYSTEM AND SHALL BE PERMITTED TO BE JOINED WITH THE MAIN EARTH ONLY AT THE LAST POINT OF THE MESH.
 - AN INDEPENDENT NETWORK SHALL BE PROVIDED FOR LIGHTNING PROTECTION AND THIS SHALL BE BONDED WITH THE MAIN GROUNDING NETWORK BELOW GROUND, AT REGULAR INTERVALS, MINIMUM AT TWO POINTS.
 - ALL STEEL STRUCTURES ACCESSIBLE TO PERSONNEL AS ENCLOSURES, STEEL STAIRWAYS, PIPING, METALLIC DOORS, METALLIC FENCES, ETC. WILL BE CONNECTED TO STATION EARTHING SYSTEM AT A MINIMUM OF 2 LOCATIONS. GROUNDING CONDUCTORS SHALL BE OF GALVANIZED STEEL STRIPS OF THE APPROPRIATE SIZES, MINIMUM 25X6MM.
 - LIGHTING FIXTURES AND RECEPTACLES SHALL BE GROUNDED THROUGH THE GROUNDING WIRE/CONDUCTOR PROVIDED IN THE LIGHTING CIRCUIT/CABLE FOR THIS PURPOSE.
 - ALL THE INSTRUMENT CHASSIS AND HOUSINGS WILL BE CONNECTED TO THE STATION EARTHING NETWORK WITH SUFFICIENT SIZE OF EARTHING CONDUCTORS.
 - THE SIGNAL GROUND (ZERO SIGNAL REFERENCE POINT) WILL BE INSULATED FROM THE CHASSIS GROUND ON ALL THE CONTROL EQUIPMENT. WITHIN ANY ONE MEASURING SYSTEM, THE SIGNAL GROUND IS TO BE CONNECTED TO INSTRUMENTATION EARTHING TERMINAL. THIS WILL BE MAINTAINED INSULATED THROUGHOUT THE SYSTEM AND FINALLY CONNECTED TO THE INSTRUMENTATION EARTH MAT AT ONLY ONE LOCATION USING INSULATED CONDUCTOR.
 - THE OVERALL SHIELD WILL BE CONNECTED TO GROUND AT ONLY ONE END AND NOT AT BOTH ENDS OF THE CABLE RUN UNLESS SPECIFIC TECHNICAL REASONING EXISTS. THIS GROUND SHALL ALSO BE CONNECTED TO THE INSTRUMENTATION EARTH MAT.
 - GROUND CONNECTIONS AT EQUIPMENT END SHALL BE MADE THROUGH COMPRESSION TYPE/BRAZED/WELDED TYPE LUGS.
 - ALL HARDWARE USED FOR GROUNDING INSTALLATION SHALL BE HOT DIP GALVANIZED OR ZINC PASSIVATED. SPRING WASHERS SHALL BE USED FOR ALL GROUNDING CONNECTIONS AND ALL CONNECTIONS ADEQUATELY LOCKED AGAINST LOOSENING.
 - A SUITABLE BOLTED TEST LINK ALONG WITH TEST LINK BOX SHALL BE PROVIDED AT ABOVE GROUND LEVEL FOR TESTING THE CONTINUITY OF THE CONDUCTING PATH OF ALL DOWN CONDUCTORS. THE BOLTED JOINT SHALL BE COVERED WITH THICK COATINGS OF BITUMINOUS PAINT AFTER SUCCESSFUL TESTING.
 - EQUIPMENTAL EARTH MAT SHALL BE PROVIDED FOR ALL FLOORS AS SHOWN IN RESPECTIVE FLOOR DRAWING. EQUIPMENTAL MAT SHALL BE 10MM DIA MS ROD. ALL EXPOSED CONDUCTORS ABOVE GROUND SHALL BE GI.
 - THIS DWG. SHALL BE READ IN CONJUNCTION WITH EARTHING NOTES & DETAILS DWG. NO:102/KK56/0.UAD.0.ET.OK.WD001
 - EARTHING CONDUCTOR SHALL BE RE-ROUTED TO SUIT SITE CONDITIONS, IN CASE IT COLLIDES WITH EQUIPMENT/STRUCTURE FOUNDATIONS AS PER SITE CONDITIONS.



Notes:
 Regarding scope of work
 1. Equipment earthing (EEM, at equipment end part like DCDB, PDB, etc.) shown in sheet 5 are only exclusion from civil Contractor and the same is included in the Scope of Main plant Electrical Contractor.

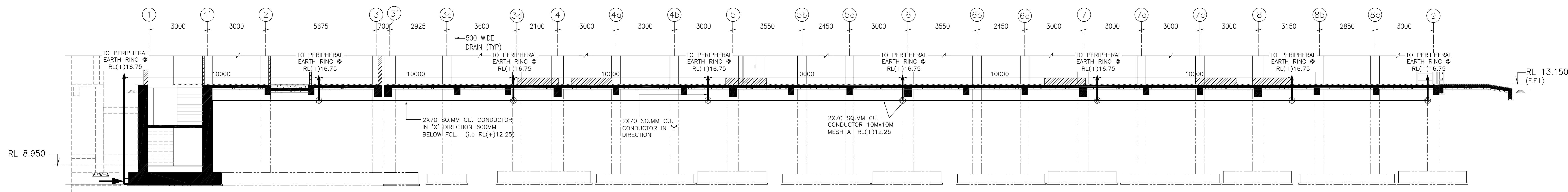
KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI			
0	1	CONSTRUCTION	KK56/HC/011111 Dt. 24-09-2025
Rev No	Issue No	Issued for	Issue Sheet Number with Date

NUCLEAR POWER CORPORATION OF INDIA LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)			
PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
NAME	SANJEEV DHAKAR	P.SURESH KUMAR	AJAY VISHWAS
SIGNATURE			
DATE	30.06.2025	30.06.2025	
TITLE :- KUDANKULAM NUCLEAR POWER PLANT 5 & 6 230 KV GIS BUILDING - EARTHING AND LIGHTNING PROTECTION LAYOUT			
PROJECT:-	KKNPP 5&6	SCALE - NTS	PROJECTION
DRG. No.	102.KK56.0.UAD.0.ET.OK.WD001	SHEET	01/10/07
REV. NO.	1	REV. NO.	1

DRG. No. 102.KK56.0.UAD.0.ET.OK.WD001 (Sheet 1 of 7)

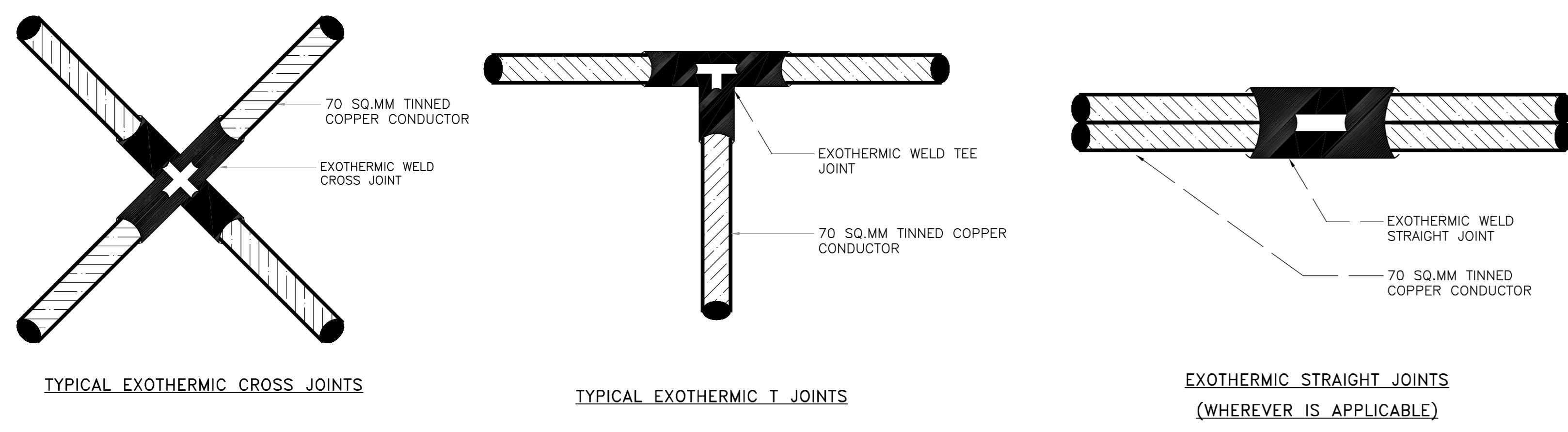
REV. NO.	DATE	DESCRIPTION	REVISION CONTROL SHEET

DRG. TO BE READ IN CONJUNCTION WITH DDW/PV/CON. # IF ANY.

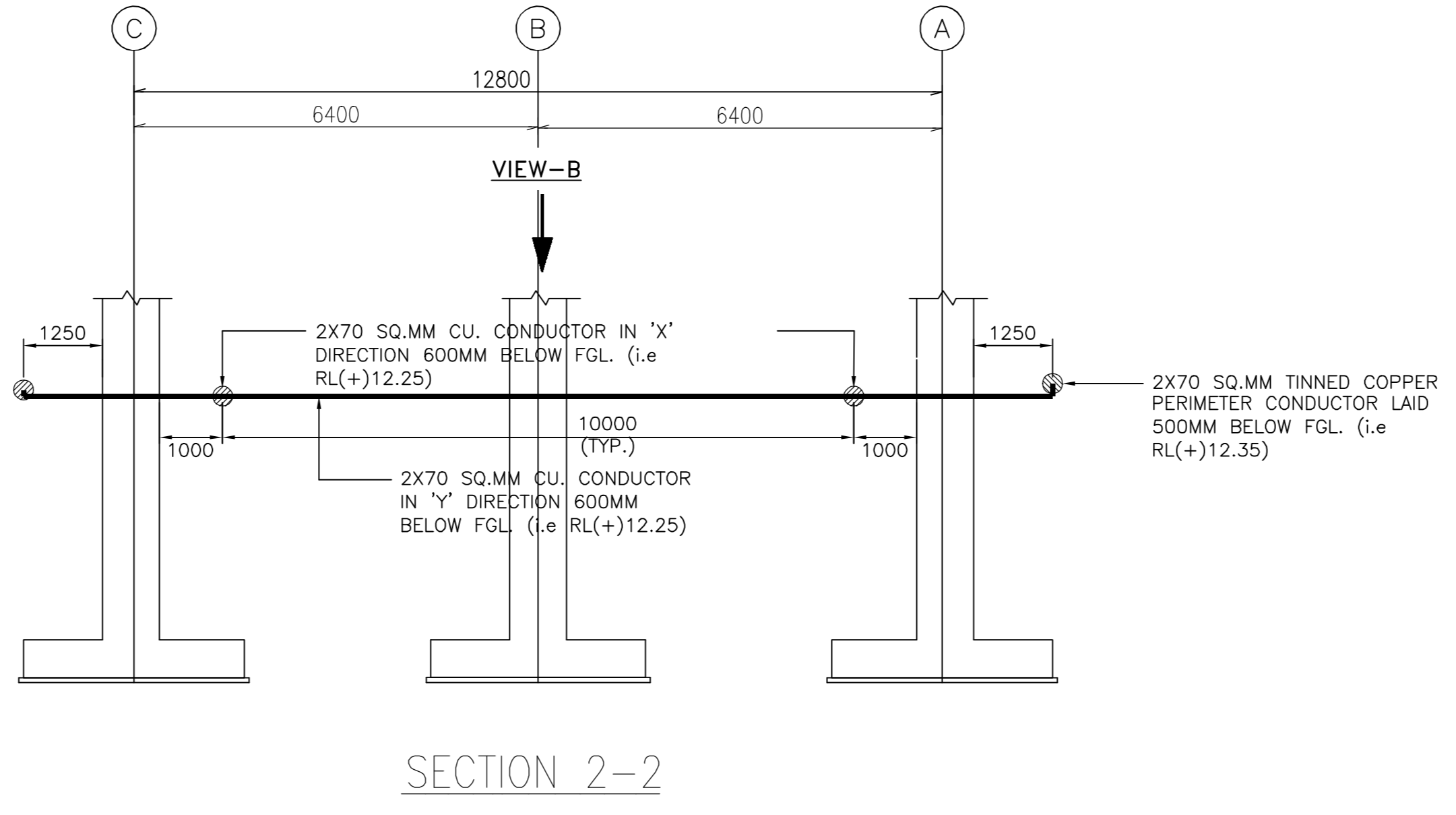
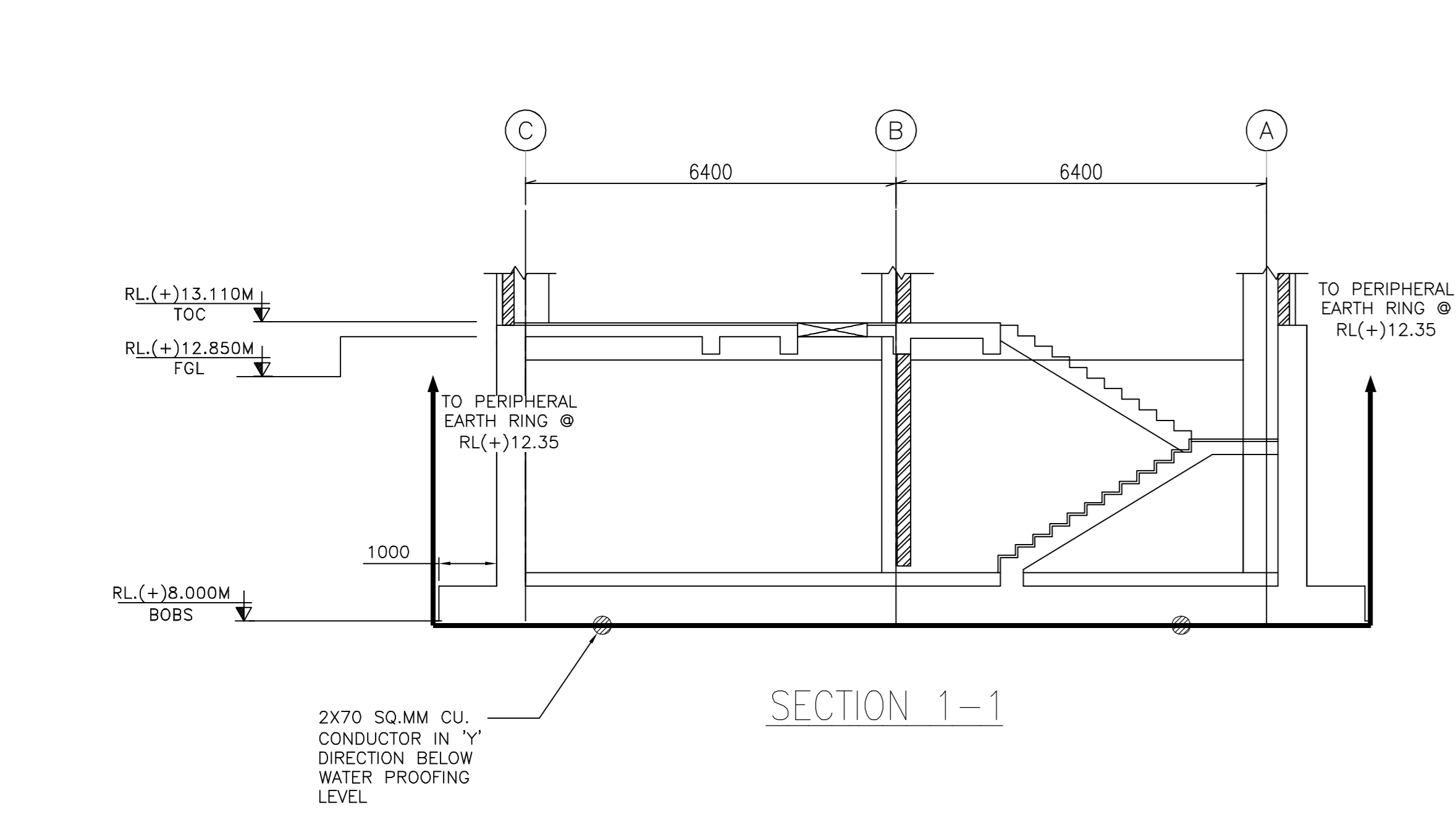
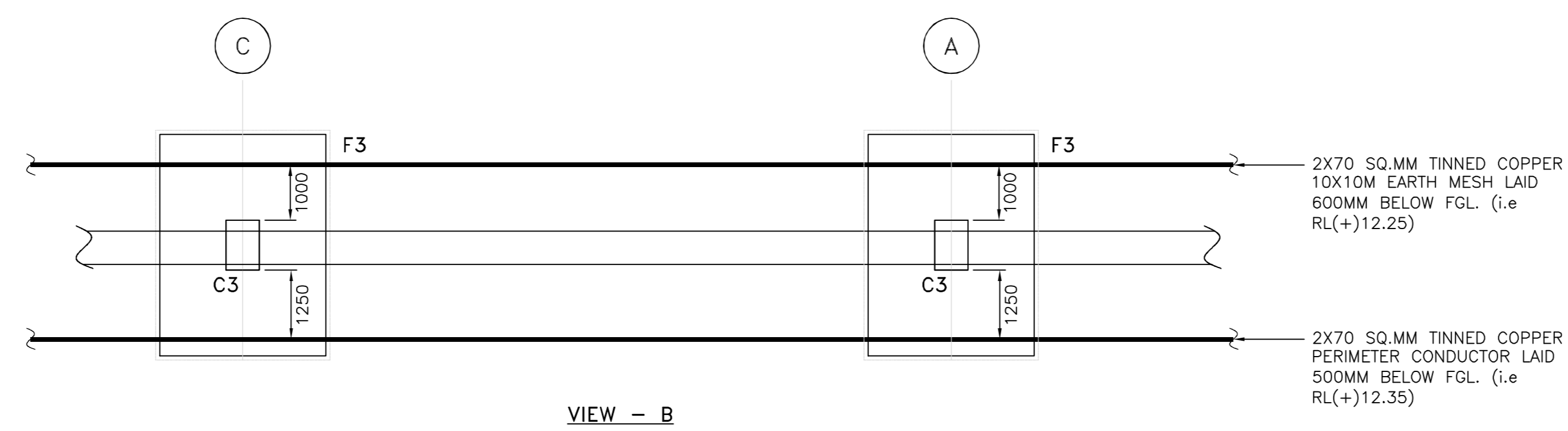
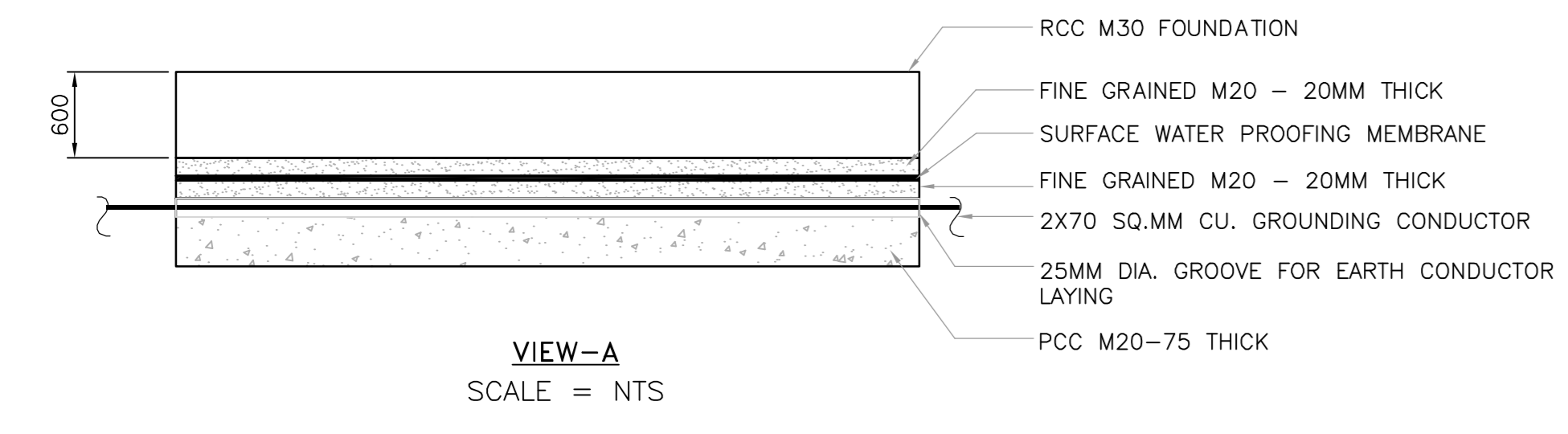


SECTION 3-3

EXOTHERMIC WELDING CONNECTIONS DETAILS OF 2X70 SQ.MM CU. CONDUCTOR:



TYPICAL CROSSING OF 2X70 SQ.MM TINNED COPPER CONDUCTOR LAYING ABOVE PCC
SCALE = NTS



TYPE OF EARTHING CONDUCTOR & LEADS:

Sl.No	EQUIPMENT	MATERIAL	SIZE	NO.OF. LEADS/SPACING
1.	MAIN EARTHING CONDUCTOR (BURIED IN EARTH BELOW WATER PROOFING OF EACH BUILDING)	TINNED COPPER	2X70 SQ.MM	-
2.	PERIPHERAL EARTHING RING (BURIED IN EARTH 500MM BELOW FGL)	TINNED COPPER	2X70 SQ.MM	-
3.	EQUIPOTENTIAL GRID (BURIED IN 50MM THICK SCREED FLOOR)	GI ROD	10 MM DIA.	-
4.	EARTHING BUS ON THE WALL INSIDE THE BUILDING (GIS ROOM,PDB ROOM)	GS FLAT	50 X 10 MM	-
5.	EARTHING BUS ON THE WALL INSIDE THE BUILDING (OTHER THAN GIS ROOM,PDB ROOM)	GS FLAT	40 X 4 MM	-
6.	LIGHTNING PROTECTION GRID (LAID IN PARAPET WALL & ROOF OF THE BUILDING)	GI ROD	12 MM DIA.	-
7.	400/230KV CIRCUIT BREAKER (PART OF GIS)	TINNED COPPER	2X70 SQ.MM	2
8.	400/230KV ISOLATOR (PART OF GIS)	TINNED COPPER	2X70 SQ.MM	2
10.	400/230KV CT & PT (Part of GIS)	TINNED COPPER	2X70 SQ.MM	2
11.	LOCAL CONTROL PANEL	GS FLAT	40 X 4 MM	2
12.	GIBD	GS FLAT	50 X 10 MM	2
13.	415V MCCS / ACDBS /DCDBS / RECTIFIERS / INVERTERS/ BATTERY BANK STAND	GS FLAT	50 X 10 MM	2
14.	415V PDBS	GS FLAT	50 X 10 MM	2
15.	415V LIGHTING PANELS	GS FLAT	25 X 4 MM	2
16.	415V LIGHTING LOAD CENTERS	GS FLAT	50 X 10 MM	2
17.	LIGHTING DBS	GS FLAT	50 X 10 MM	2
18.	CONTROL BOARDS	GS FLAT	25 X 4 MM	2
19.	SPACE HEATER BOARD	GS FLAT	25 X 4 MM	2
20.	WALL MOUNTED DBS	GS FLAT	25 X 4 MM	2
21.	PUSH BUTTON STATIONS	GS FLAT	25 X 4 MM	2
22.	MARSHALLING BOXES, JUNCTION BOXES	GS FLAT	25 X 4 MM	2
23.	415V MOTORS	TINNED COPPER	2X70 SQ.MM	2
i.	75 KW AND ABOVE	TINNED COPPER	2X70 SQ.MM	2
ii.	20 TO 74 KW	TINNED COPPER	70 SQ.MM	2
iii.	7.5 TO 19 KW	TINNED COPPER	35 SQ.MM	2
iv.	UP TO 7.4 KW	TINNED COPPER	10 SQ.MM	2
24.	THREE PHASE RECEPTACLES	TINNED COPPER	10 SQ.MM	2
25.	WELDING OUTLETS	TINNED COPPER	10 SQ.MM	2
26.	SINGLE PHASE RECEPTACLES	PART OF CABLE LAID FOR THE PURPOSE OF POWER SUPPLY		
27.	CABLE TRAYS (CONNECTION TO MAIN GRID)	GS FLAT	40 X 4 MM	2
28.	HAND RAILS	TINNED COPPER	16 SQ.MM	2
29.	EOT CRANES	TINNED COPPER	16 SQ.MM	2
30.	MONORAILS	TINNED COPPER	16 SQ.MM	2
31.	METALLIC NON-CURRENT CARRYING STRUCTURES, TANKS & VENTILATION DUCTS	TINNED COPPER	16 SQ.MM	2
32.	VENTILATION EQUIPMENT	GS FLAT	40 X 4 MM	2
33.	LIGHTNING DOWN CONDUCTOR UP TO TEST LINK BOX	GI ROD	12 MM DIA.	-
34.	LIGHTNING DOWN CONDUCTOR AFTER TEST LINK BOX	TINNED COPPER	70 SQ.MM	-
35.	EARTH ELECTRODE	CU ROD	3M LONG, 25MM DIA.	-

LEGEND CUM BILL OF QUANTITY FOR EARTHING & LIGHTNING PROTECTION:

SYMBOL	DESCRIPTION	QTY (APPRX)
—	MAIN EARTH MAT - 2X70 SQ.MM STRANDED TINNED COPPER CONDUCTOR.	1022 M
—	20SQ.MM TINNED COPPER CONDUCTOR FOR LIGHTNING PROTECTION	125 M
—	70 SQ.MM TINNED COPPER CONDUCTOR FOR 20 TO 74 KW - ROOF EXHAUSTER/AIR COOLED PACKAGED AC UNITS	15 M
—	35 SQ.MM TINNED COPPER CONDUCTOR FOR 7.5 TO 19 KW - DRY TYPE AHU	5 M
—	METALLIC NON-CURRENT CARRYING STRUCTURES - 16 SQ.MM TINNED COPPER	155 M
—	10 SQ.MM TINNED COPPER CONDUCTOR FOR UP TO 7.4 KW - DRY TYPE AHU, EXHAUST FAN	210 M
—	EQUIPOTENTIAL EARTH MAT AT GIS ROOM - 25X10MM GI FLAT	390 M
—	RISERS & EARTH BUS ON THE WALL INSIDE BUILDING - 50X10MM GS FLAT	445 M
—	EARTH BUS BAR ON WALL INSIDE BUILDING OTHER THAN GIS ROOM, GIBD ROOM, LCC, CABLE TRAY EARTHING - 40X4MM GS FLAT	325 M
—	EARTH RISERS FOR LIGHTING PANEL - 25X4MM GS FLAT	20 M
—	LIGHTNING PROTECTION GRID & DOWN CONDUCTOR - 12MM DIA. GI ROD	1185 M
—	EARTH MAT ARRANGEMENT INSIDE THE GRADE SLAB LEVEL AT GIS ROOM - 10MM DIA. MS ROD	420 M
—	EQUIPOTENTIAL GRID - 10MM DIA. GI ROD	1300 M
EARTHING MATERIAL FOR VENTILATION EQUIPMENTS:		
○	EP : EARTH PIT (25MM DIA 3M LONG COPPER ROD FOR BUILDING LIGHTNING PROTECTION)	18 Nos.
⊕	SS HOLDER SUITABLE FOR 12MM DIA. GI ROD	657 Nos.
⊕	SS HOLDER SUITABLE FOR 70SQ.MM TINNED COPPER	18 Nos.
⊕	GI CLAMP SUITABLE FOR 50X10 MM GS FLAT	380 Nos.
⊕	GI CLAMP SUITABLE FOR 40X4 MM GS FLAT	560 Nos.
⊕	TEST LINK BOX	18 Nos.
⊕	CROSS CONNECTOR WITH CONCRETE BLOCK SUITABLE FOR 12MM DIA. GI ROD	25 Nos.
⊕	T CONNECTOR WITH CONCRETE BLOCK SUITABLE FOR 12MM DIA. GI ROD	56 Nos.
●	ARC WELDING	
⊕	EXOTHERMIC WELDING JOINTS	
⊕	X JOINTS 70SQ.MM CU TO 70 SQ.MM CU	28 Nos.
⊕	T JOINTS 70SQ.MM CU TO 70 SQ.MM CU	180 Nos.
—	STRAIGHT JOINTS 70SQ.MM CU TO 70 SQ.MM CU	100 Nos.

KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI
0 1 CONSTRUCTION KK56/II/H/C/011111 Dt. 24-09-2025

Rev Issue No Issued for Issue Sheet Number with Date

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

PREPARED BY: SANJEEV DHAKAR
CHECKED BY: P.SURESH KUMAR
REVIEWED BY: AJAY VISHWAS
APPROVED BY: A.KHANDELWAL

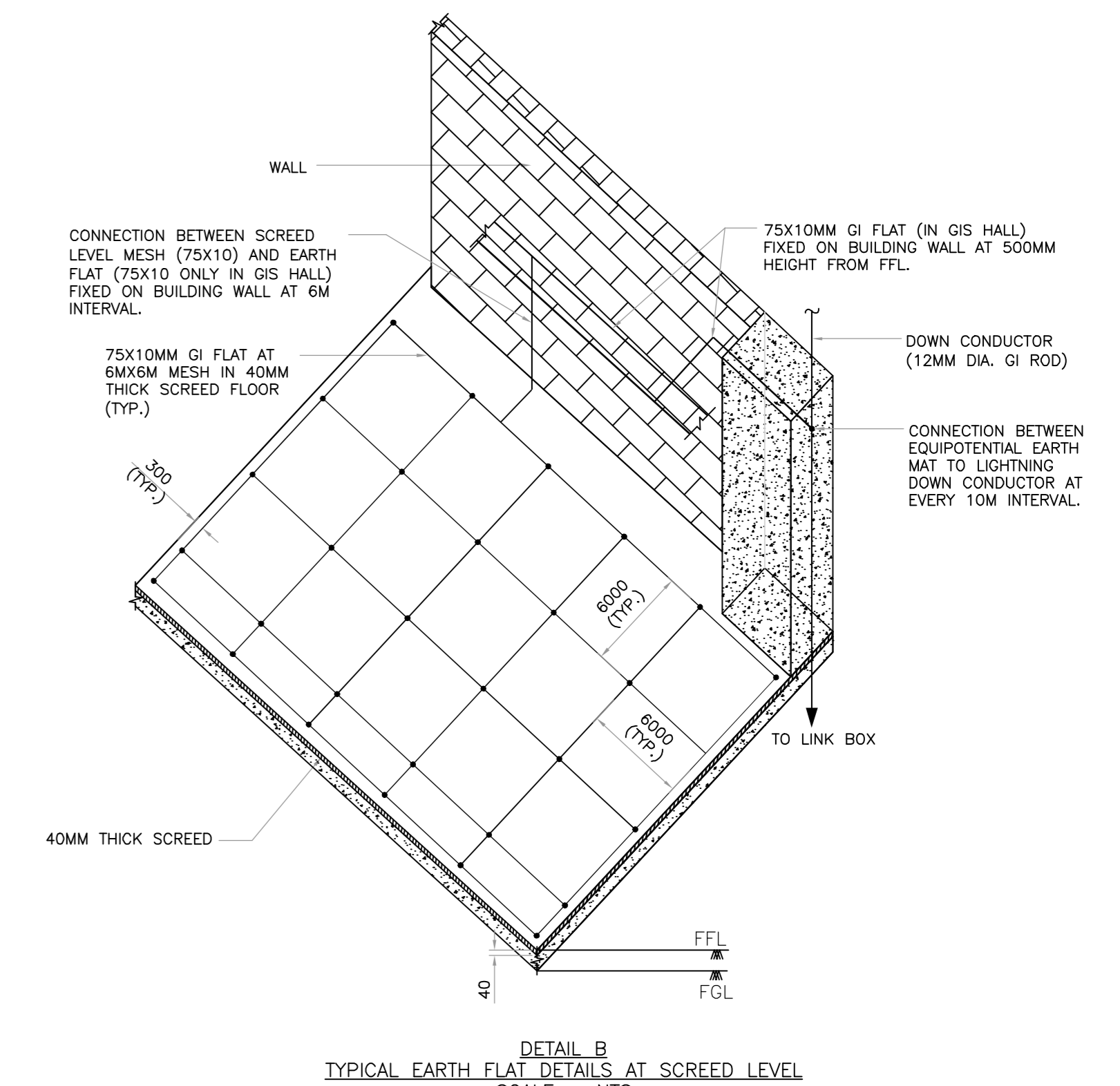
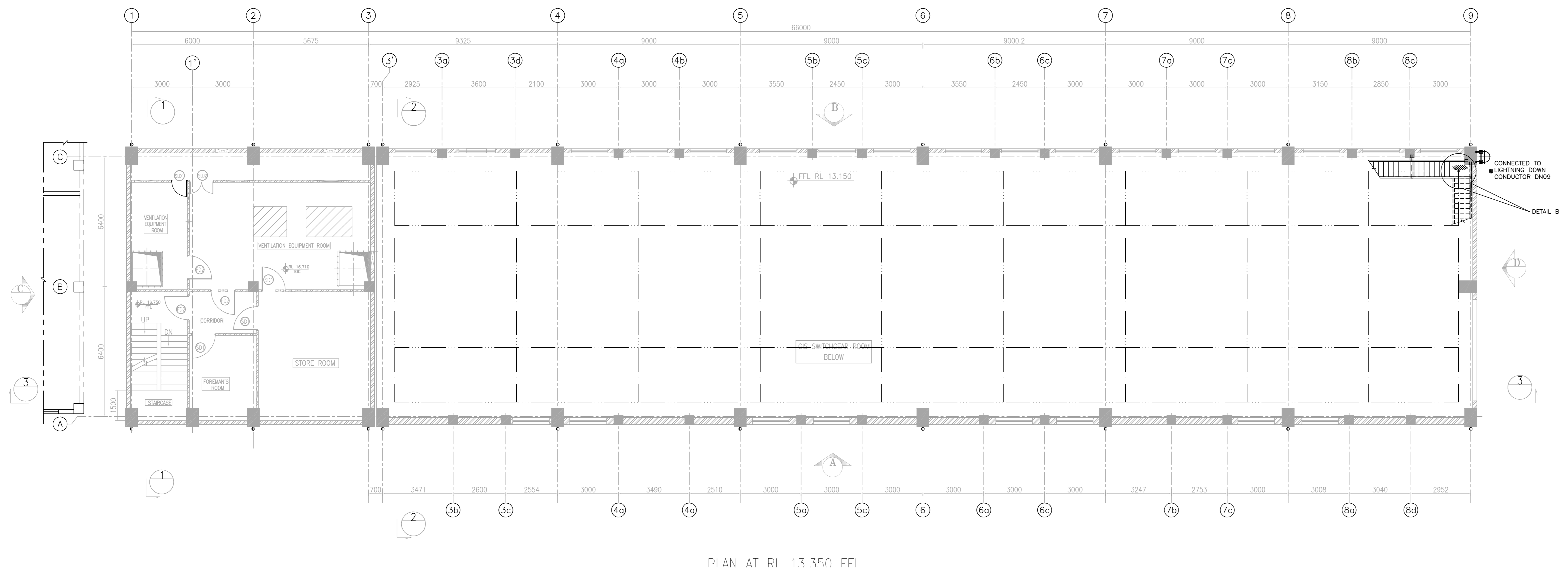
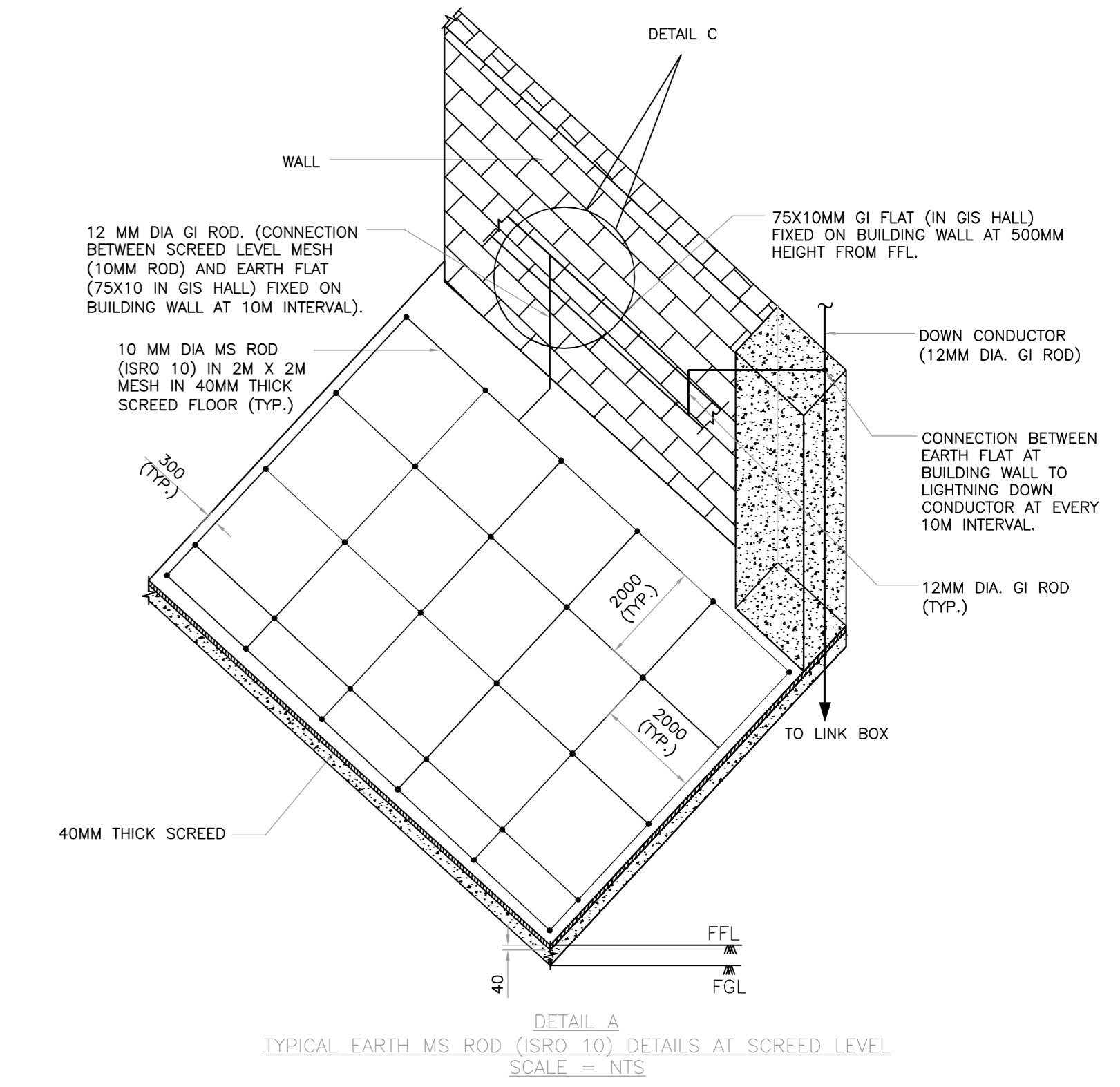
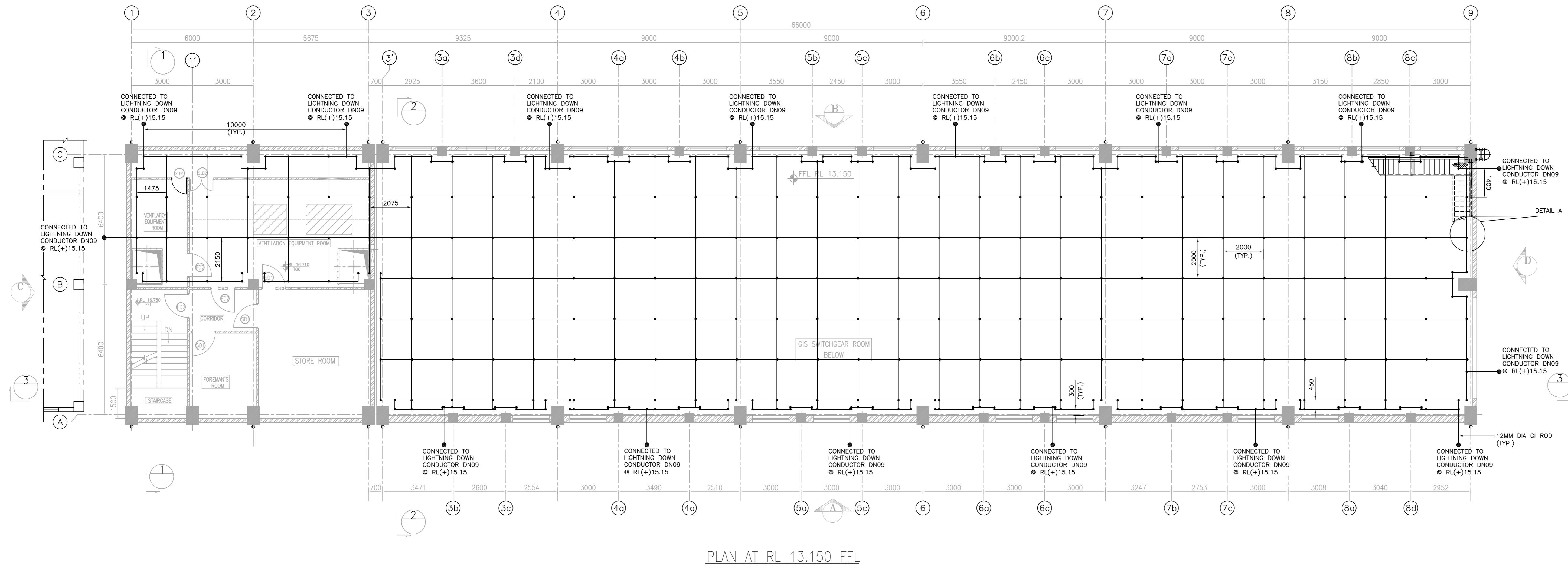
DATE: 26.08.2025
TITLE: KUDANKULAM NUCLEAR POWER PLANT 5 & 6
230 KV GIS BUILDING - EARTHING AND LIGHTNING PROTECTION LAYOUT

PROJECT: KKNPP 5&6
SCALE: NTS
PROJECTION: 1st Angle

DRG. No. 102.KK56.0UAD.0.ET.OK.WD001
SHEET: 02 of 07
REV. NO. 01

DRG. No.	REFERENCE DRAWINGS	DRAWING No.
102.KK56.0UAD.0.ET.OK.WD001 (Sheet 2 of 7)		

REV.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
01		FIRST ISSUE				



KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI

0 1 CONSTRUCTION KK56/H/C/011111 DL 24-09-2025

Rev No Issued for Issue Sheet Number with Date

NUCLEAR POWER CORPORATION OF INDIA LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE)

PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
NAME: SANJEEV	P.SURESH KUMAR	AJAY VISHWAS	A.KHANDELWAL
SIGNATURE	<i>[Signature]</i>		
DATE: 19.09.2025	29.08.2025		

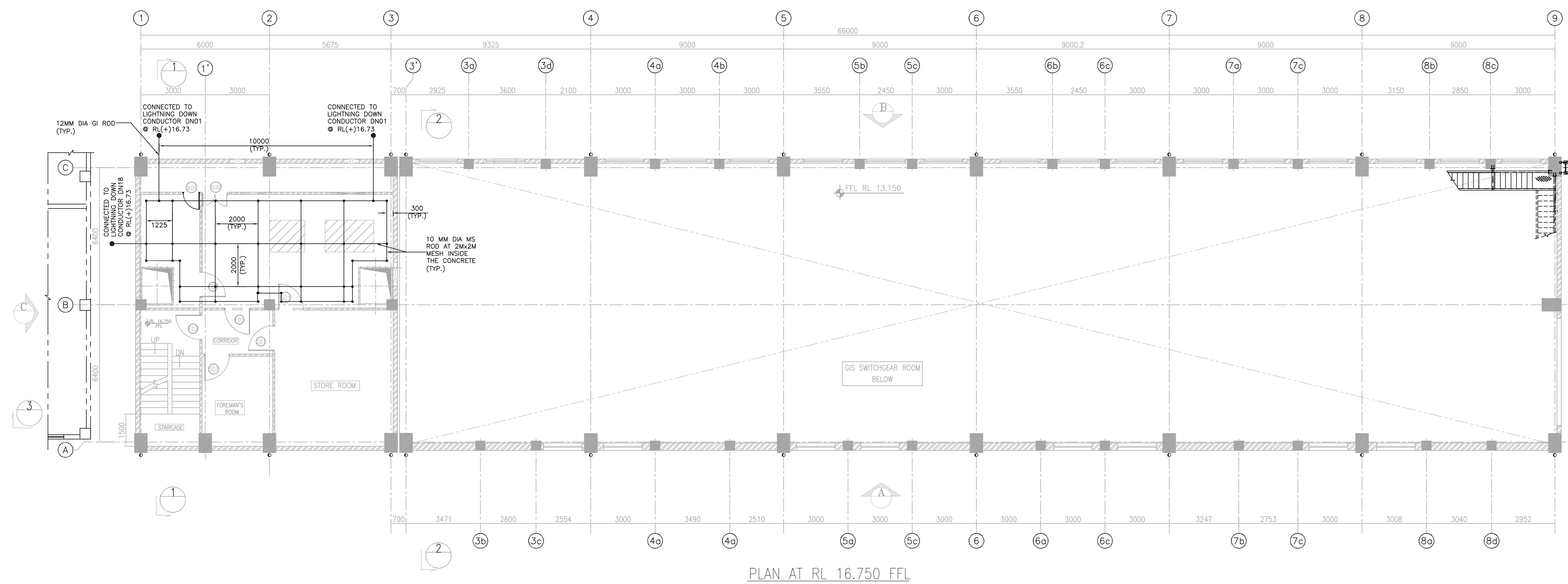
TITLE :- KUDANKULAM NUCLEAR POWER PLANT 5 & 6
230 KV GIS BUILDING - EARTHING AND LIGHTNING PROTECTION LAYOUT

PROJECT:- KKNPP 5&6 SCALE - NTS

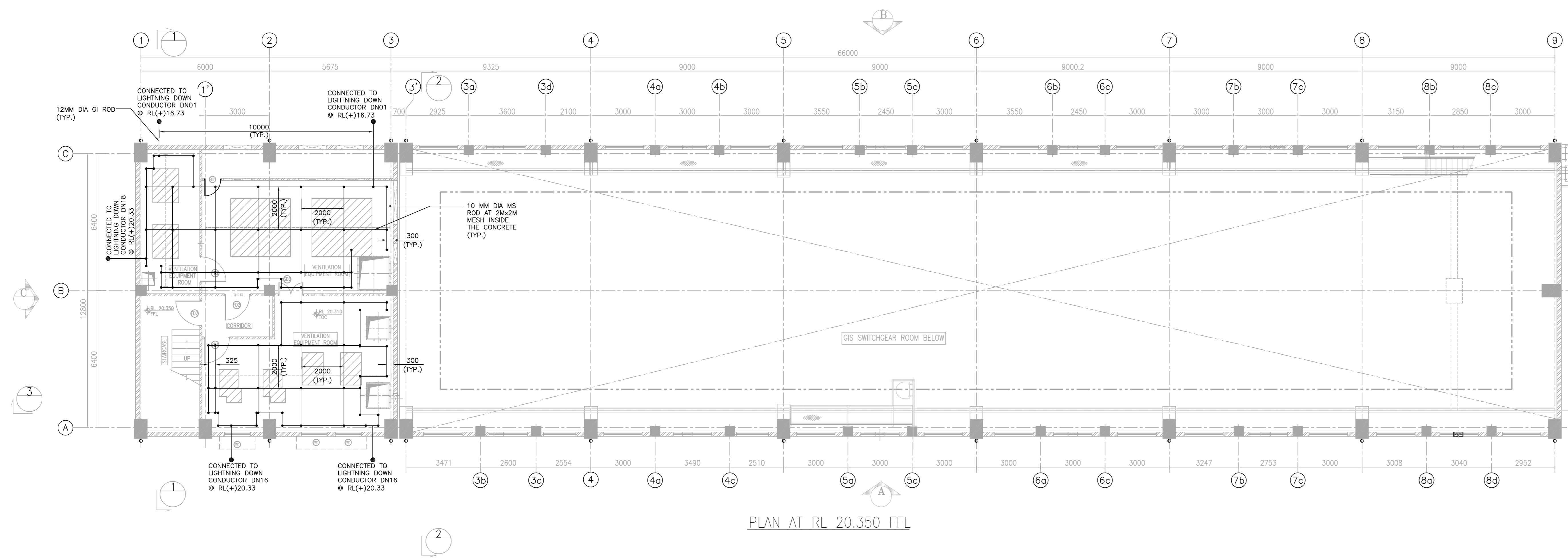
DRG. No. 102.KK56.0UAD.0.ET.OK.WD001 SHEET 03 of 07

REV. No.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
01		FIRST ISSUE				

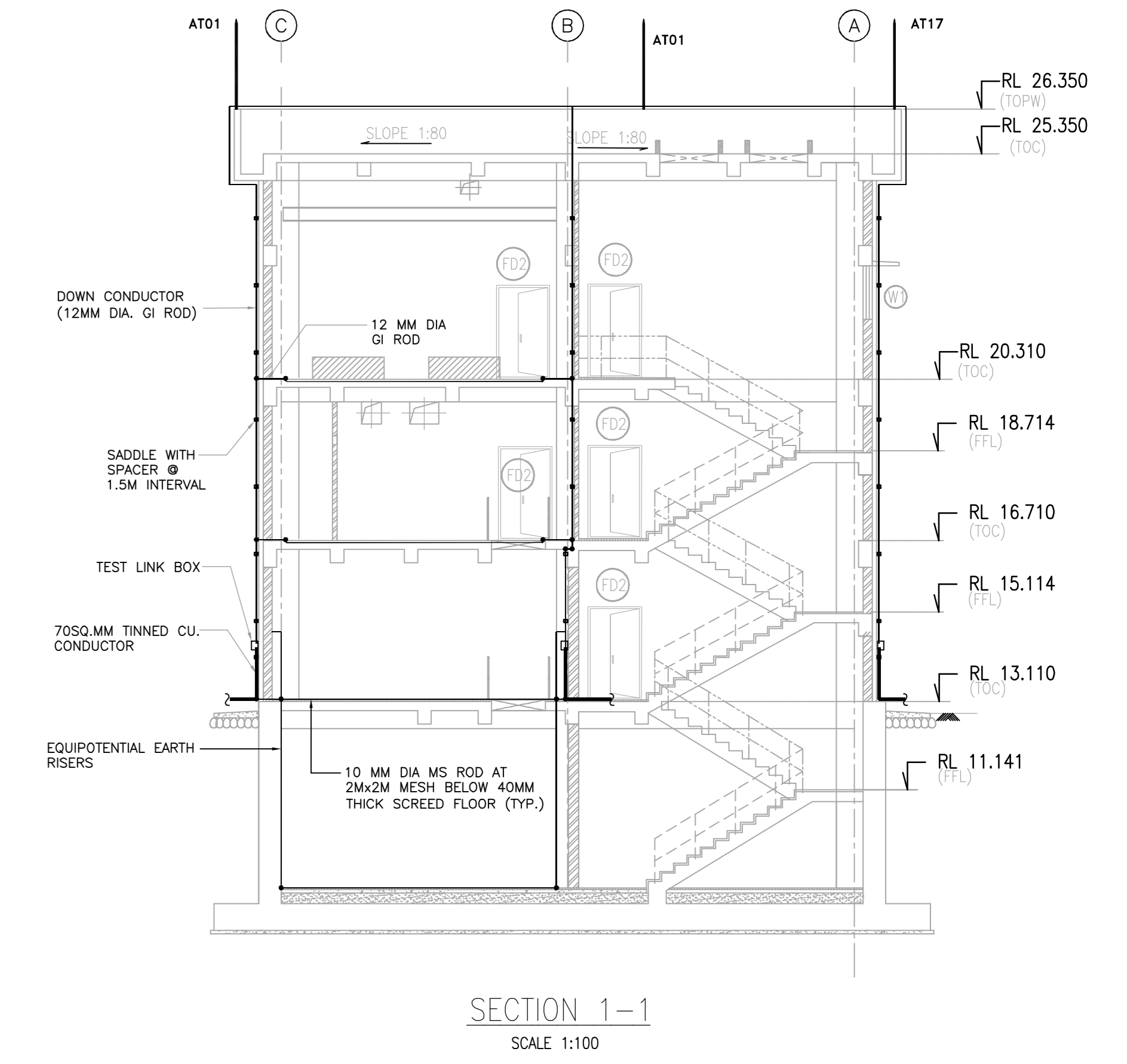
DRG. TO BE READ IN CONJUNCTION WITH DOW/FOR/CON. IF ANY.



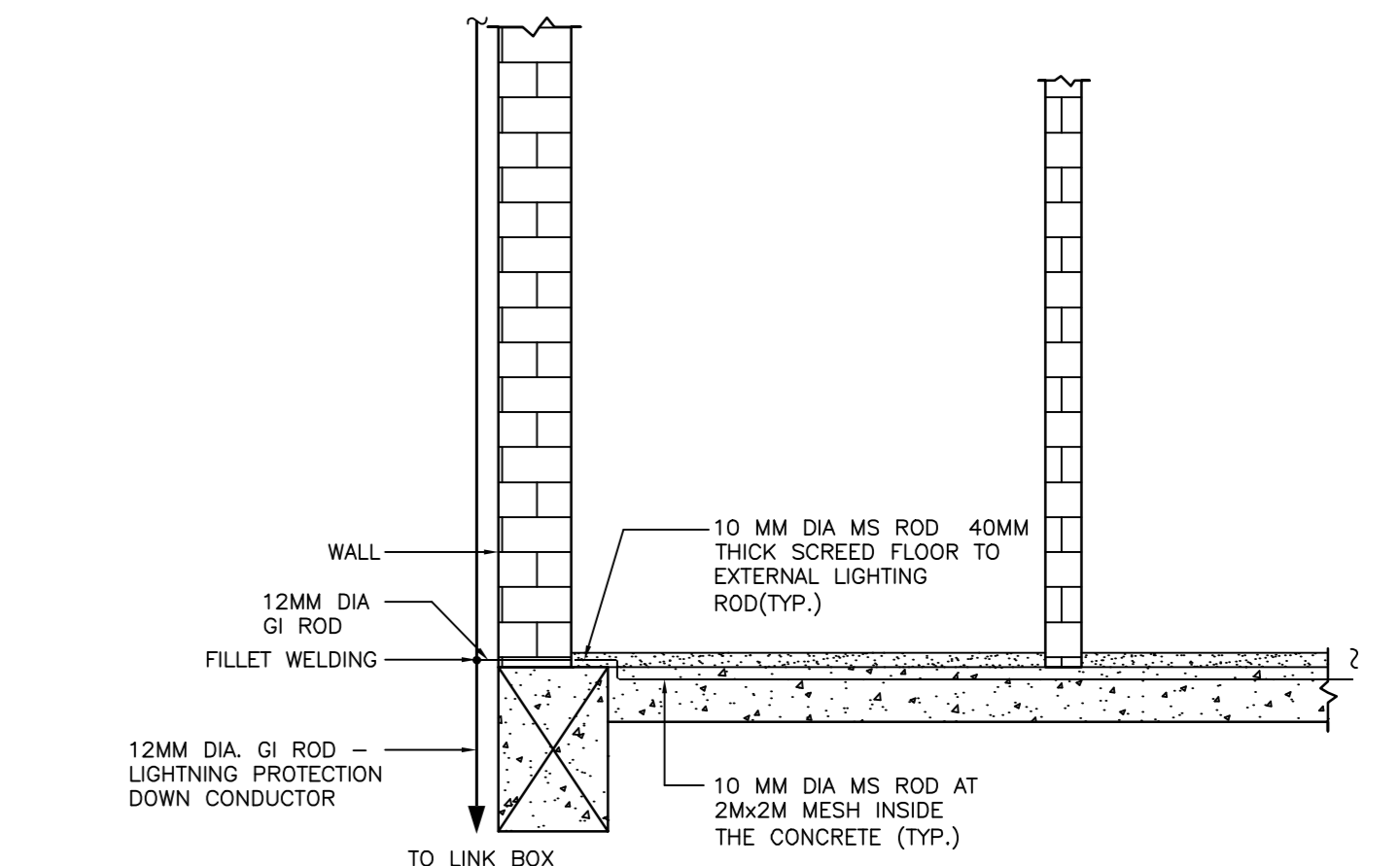
PLAN AT RL 16.750 FFL



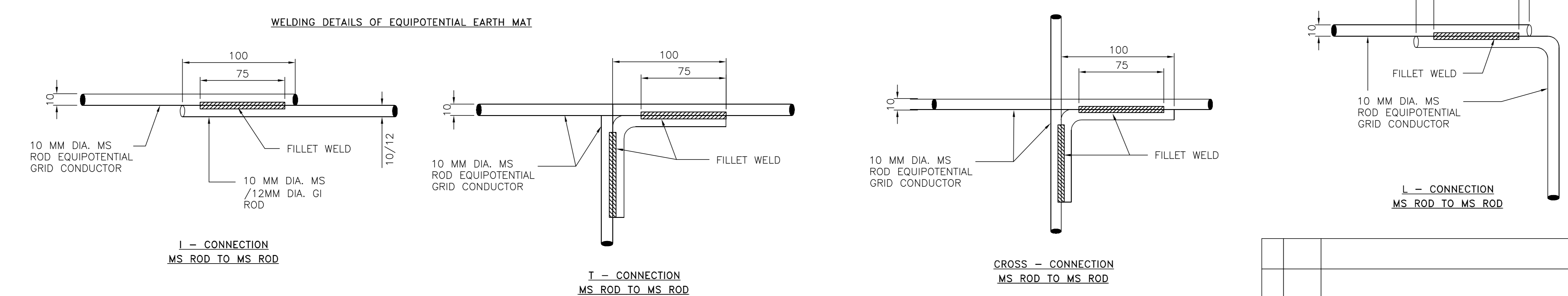
PLAN AT RL 20.350 FFL



SECTION 1-1
SCALE 1:100



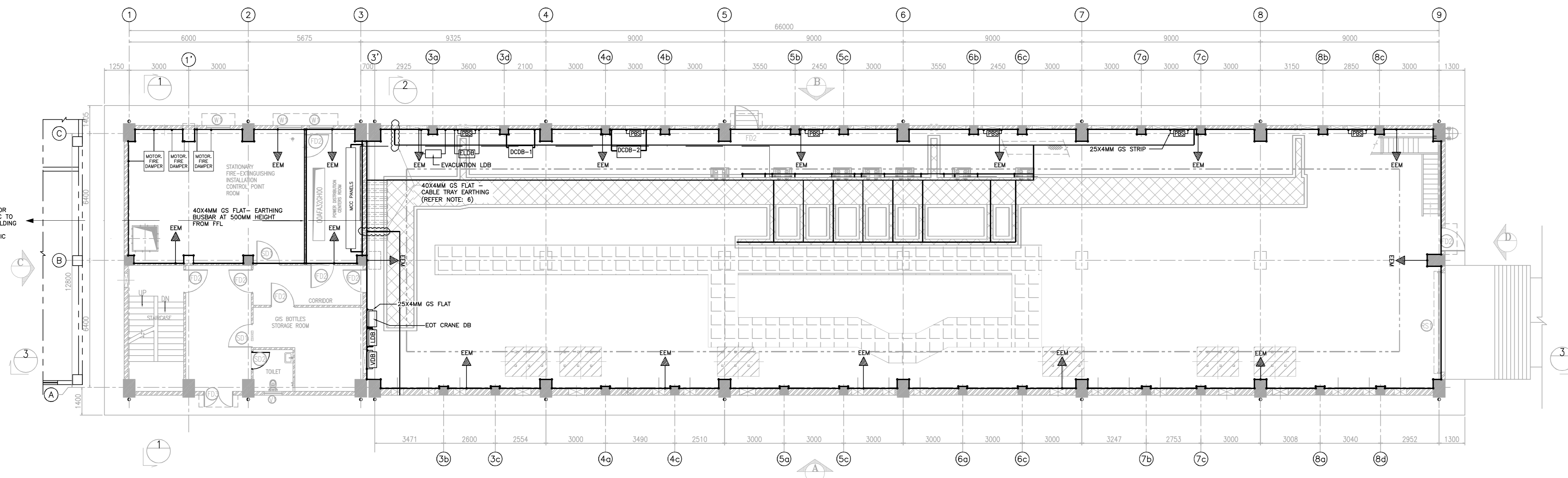
TYPICAL WALL CROSSING OF EQUIPOTENTIAL EARTH MAT CONDUCTORS (10MM DIA. MS ROD)
SCALE = NTS



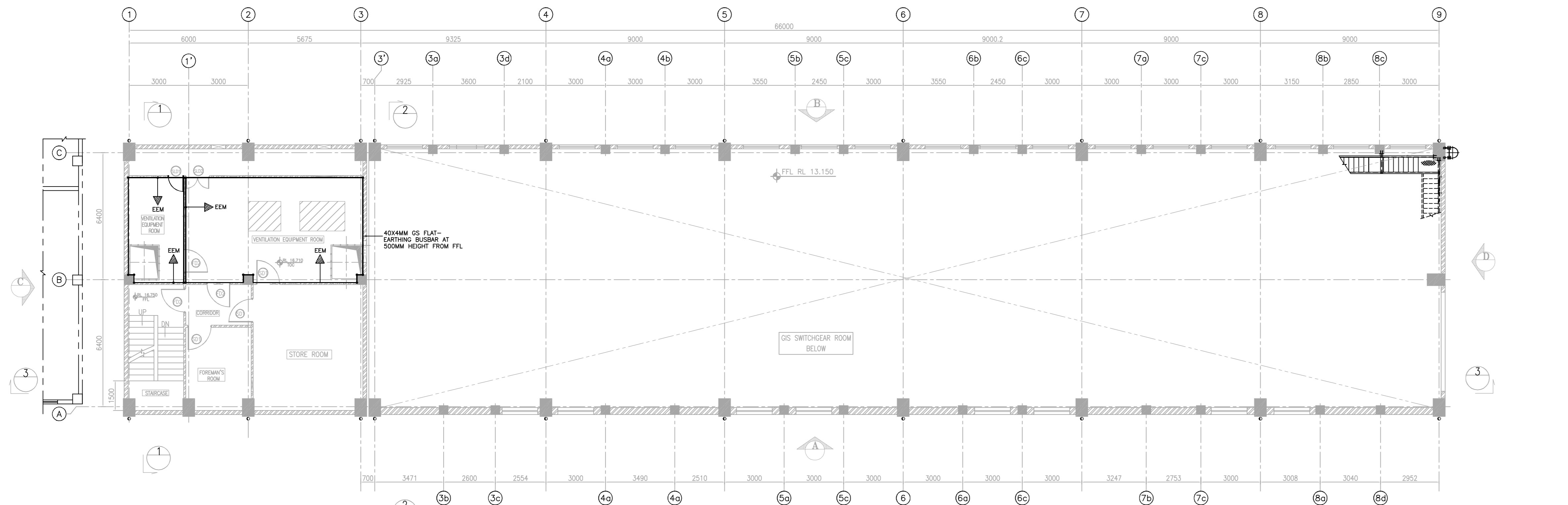
KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI				
Rev No	Issue No	Issued for	Issue Sheet Number with Date	
0	1	CONSTRUCTION	KK56/H/C/011111 Dt. 24-09-2025	
<p>NUCLEAR POWER CORPORATION OF INDIA LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)</p>				
NAME	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
	SANJEEV DHAKAR	P.SURESH KUMAR	AJAY VISHWAS	A.KHANDELWAL
SIGNATURE	<i>Sd/-</i>			
DATE	26.08.2025			
<p>TITLE :- KUDANKULAM NUCLEAR POWER PLANT 5 & 6 230 KV GIS BUILDING - EARTHING AND LIGHTNING PROTECTION LAYOUT</p>				
PROJECT:- KKNPP 5&6				SCALE - NTS
DRG. No. 102.KK56.0UAD.0.ET.OK.WD001				PROJECTION SHEET 04 of 07
<p>DRG. TO BE READ IN CONJUNCTION WITH DDV/PCN/ECN, IF ANY.</p>				

DRG. No.	REFERENCE DRAWINGS	DRAWING No.
102.KK56.0UAD.0.ET.OK.WD001 (Sheet 4 of 7)		

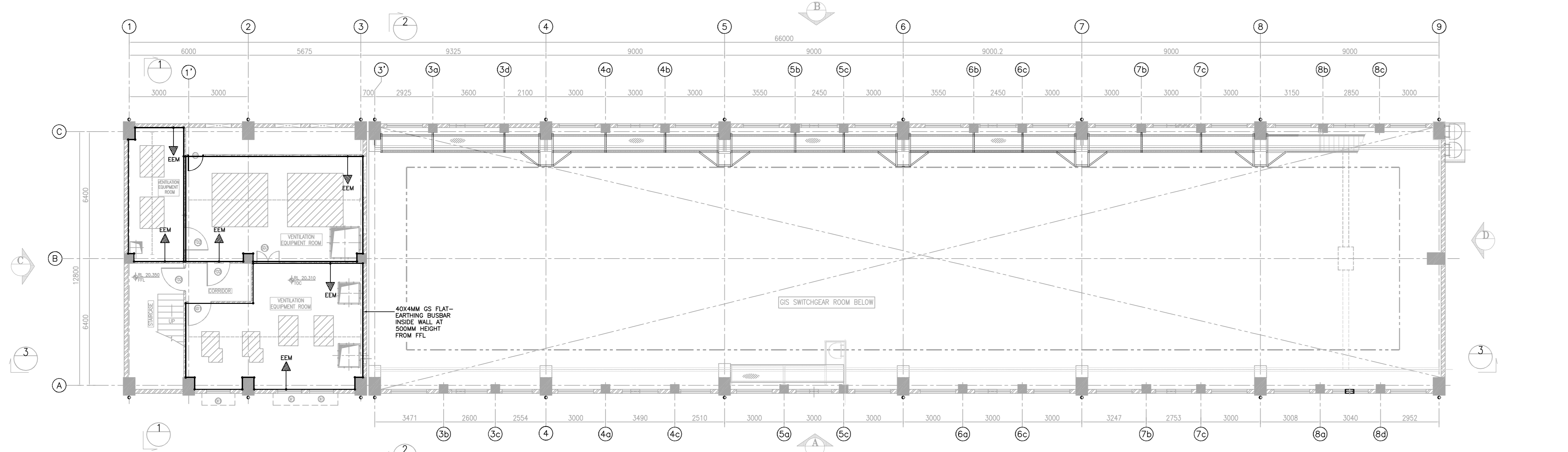
REV.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
01		FIRST ISSUE				



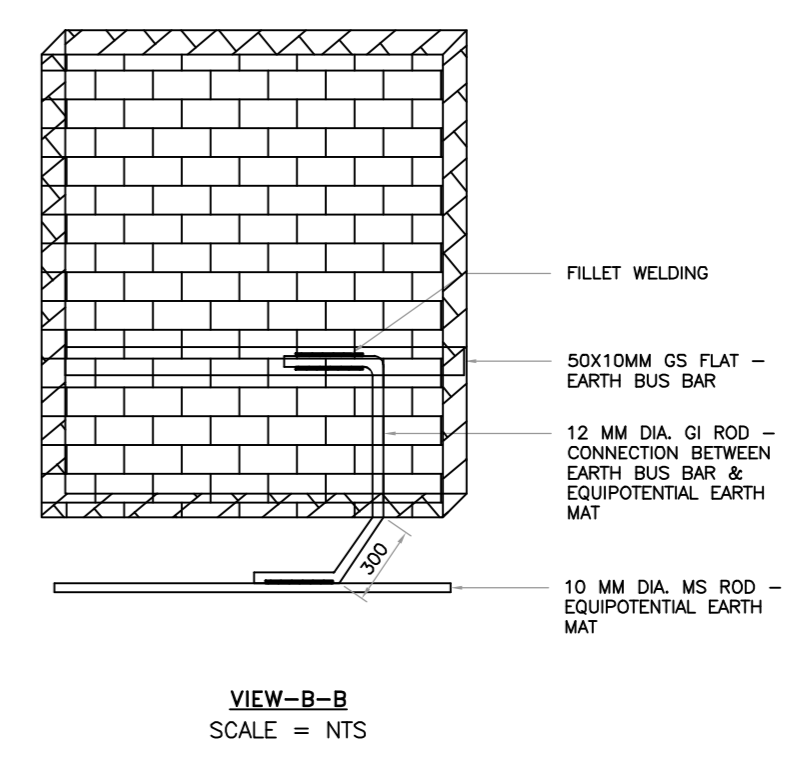
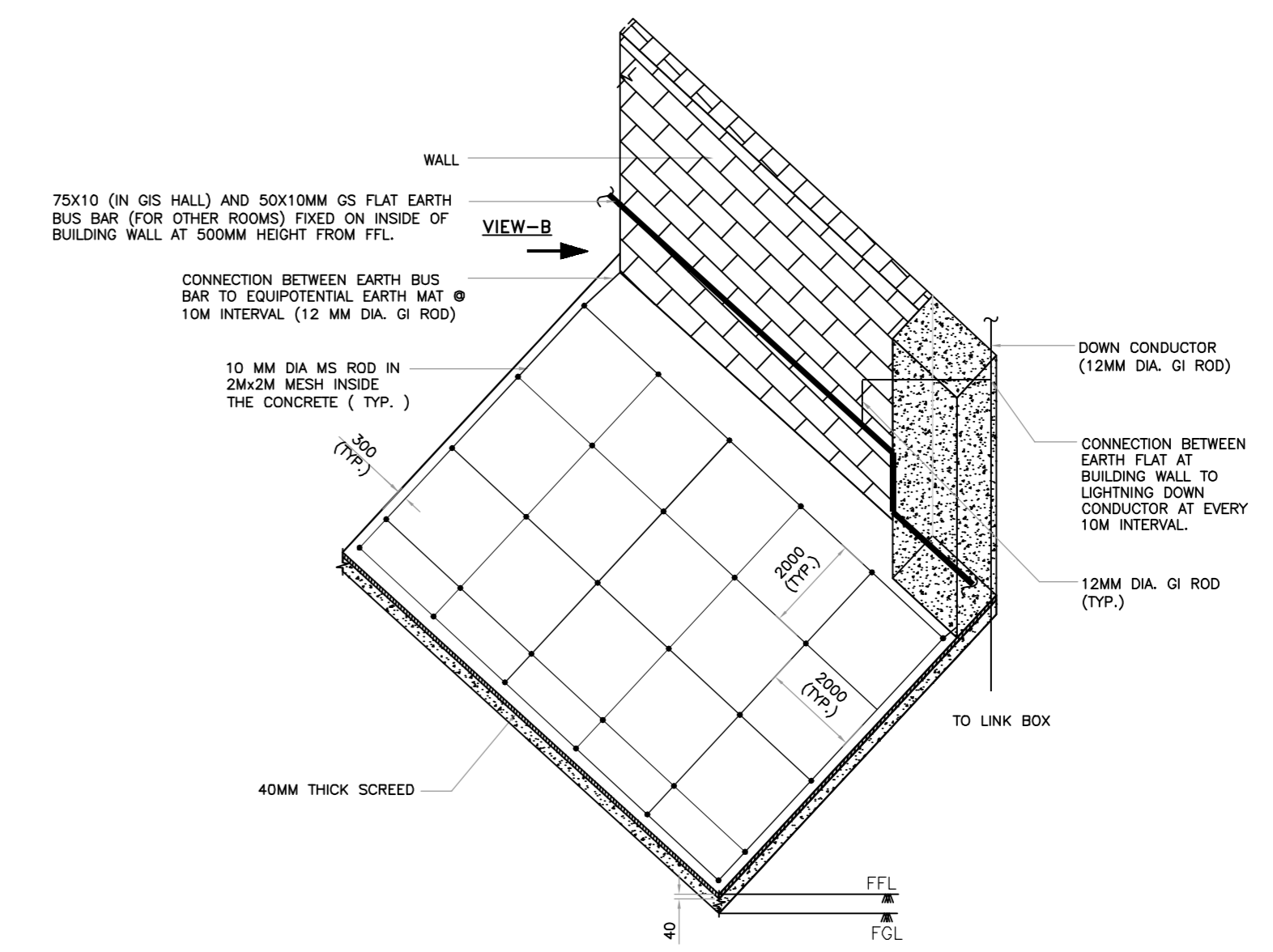
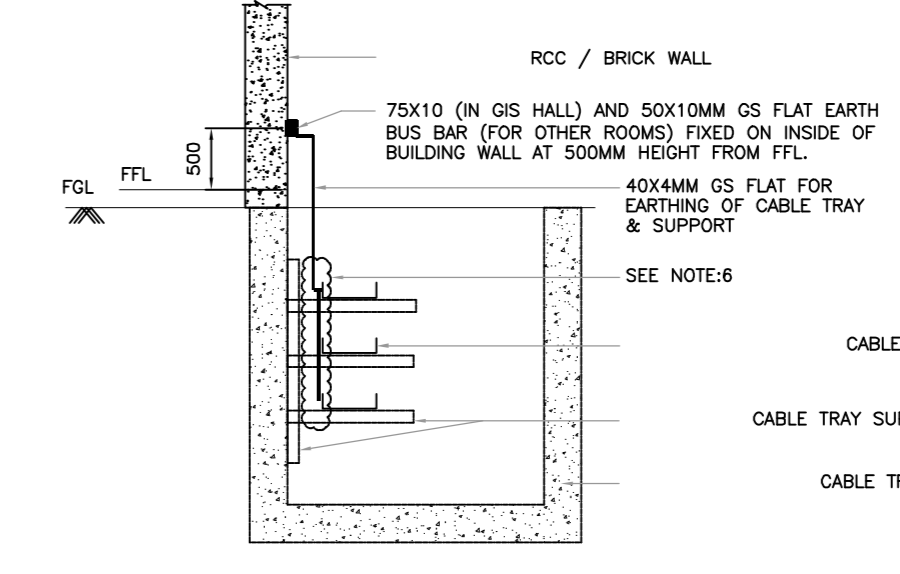
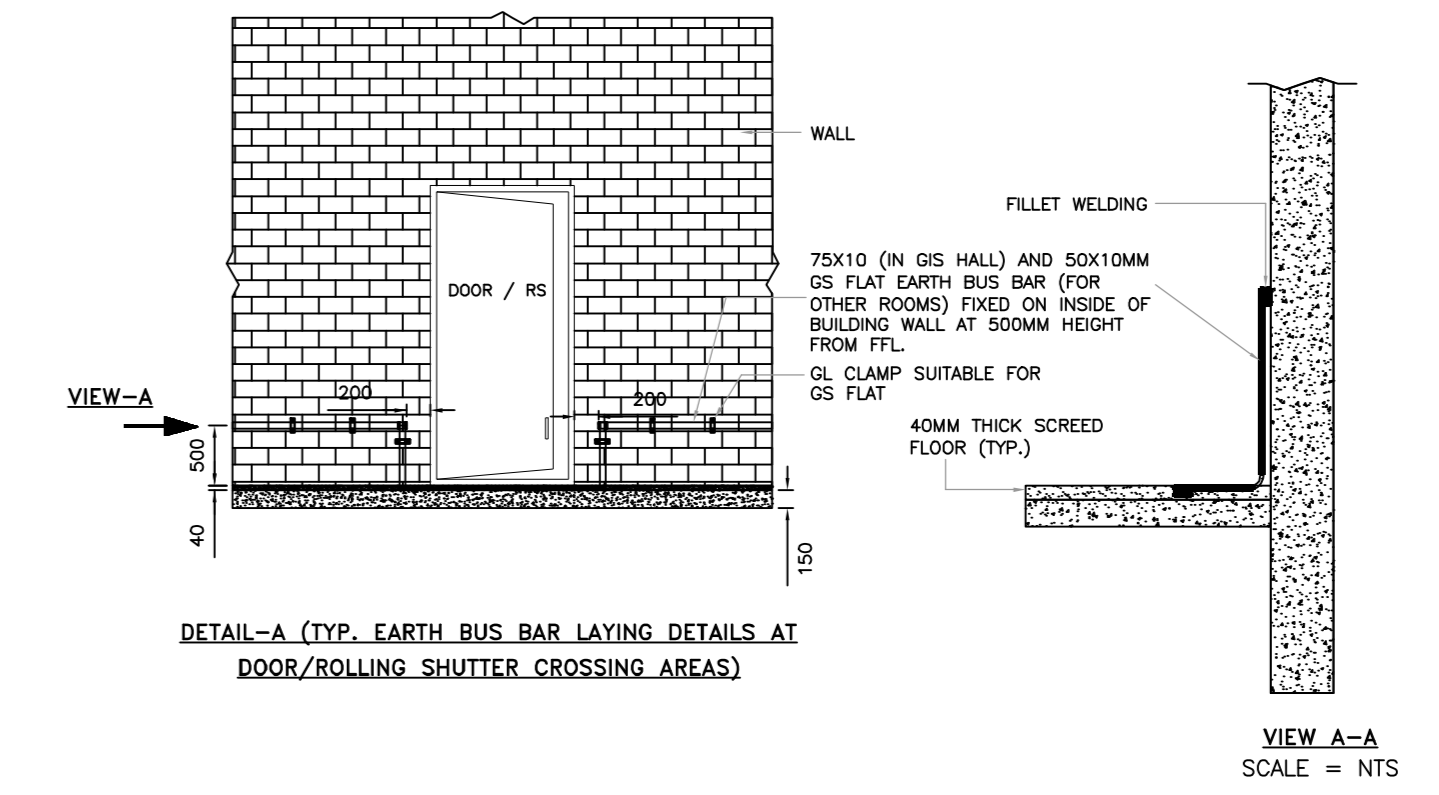
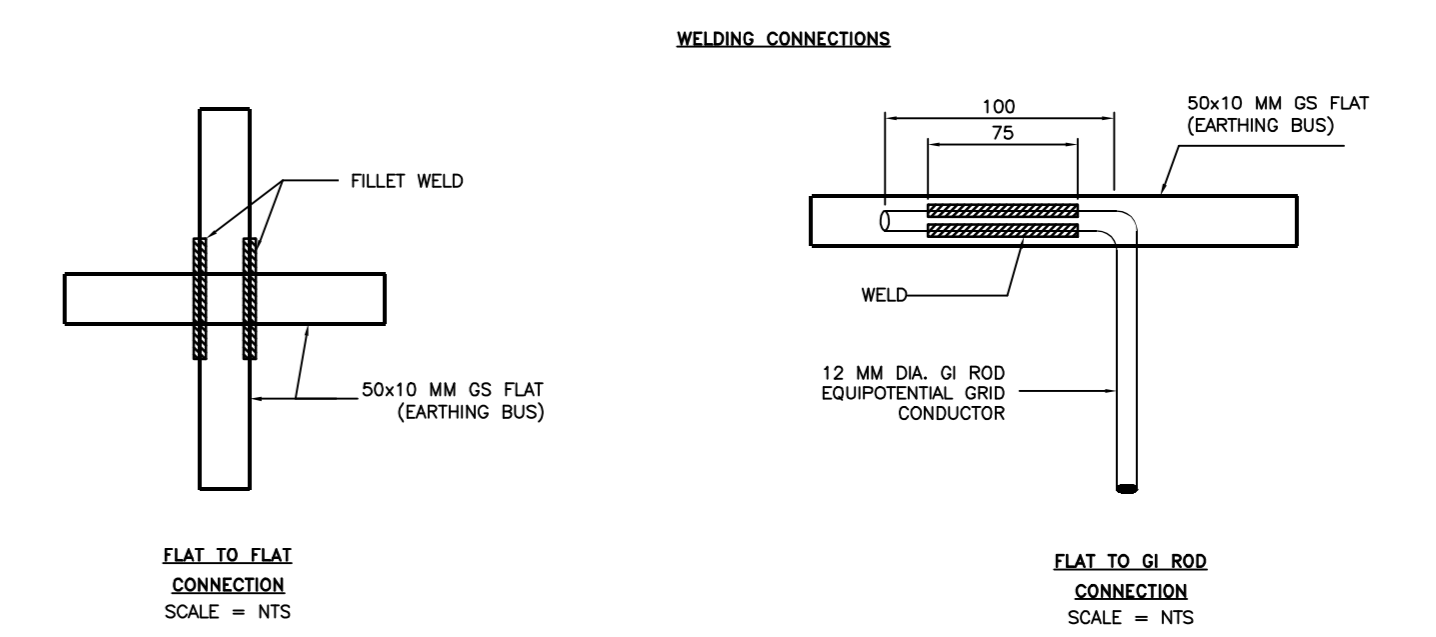
PLAN AT RL 13.150 FFL



PLAN AT RL 16.750 FFL



PLAN AT RL 20.350 FFL



KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI			
0	1	CONSTRUCTION	KK56/II/H/C/011111 Dt. 24-09-2025
Rev No	Issue No	Issued for	Issue Sheet Number with Date

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

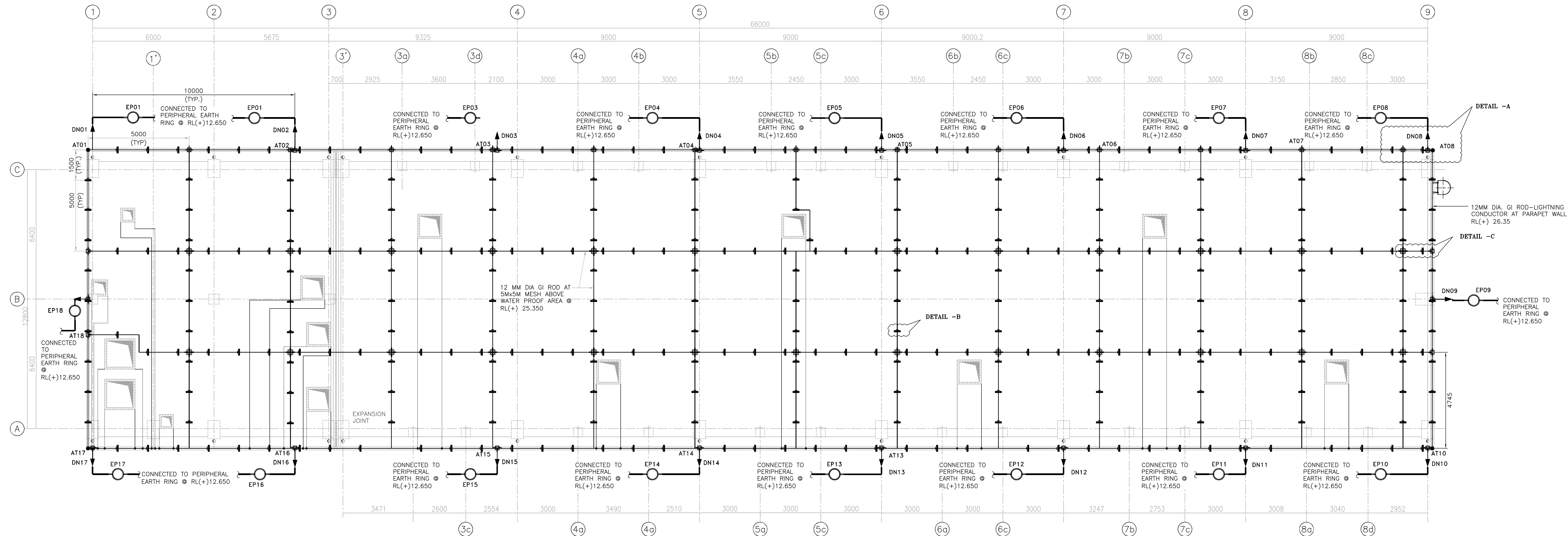
NAME	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
	SANJEEV DHAKAR	P.SURESH KUMAR	AJAY VISHWAS	A.KHANDELWAL
SIGNATURE	<i>[Signature]</i>			
DATE	26.06.2025			

TITLE :- KUDANKULAM NUCLEAR POWER PLANT 5 & 6
230 KV GIS BUILDING - EARTHING AND LIGHTNING PROTECTION LAYOUT

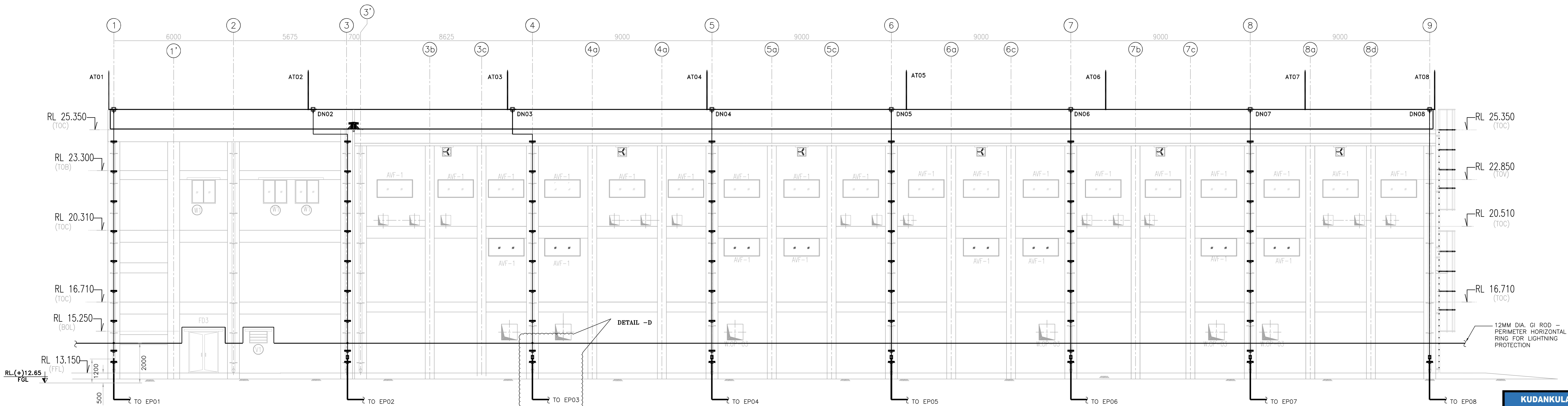
PROJECT:-	KKNPP 5&6	SCALE - NTS
DRG. No.	102.KK56.0UAD.0.ET.OK.WD001	SHEET 015 of 017

REV.	DATE	DESCRIPTION	PREPARED BY (NAME)	CHECKED BY (NAME)	REVIEWED BY (NAME)	APPROVED BY (NAME)
RO	-	FIRST ISSUE				

DRG. No.	REFERENCE DRAWINGS	DRAWING No.
102.KK56.0UAD.0.ET.OK.WD001 (Sheet 5 of 7)		



PLAN AT RL 25.350 (TOC)
ROOF PLAN



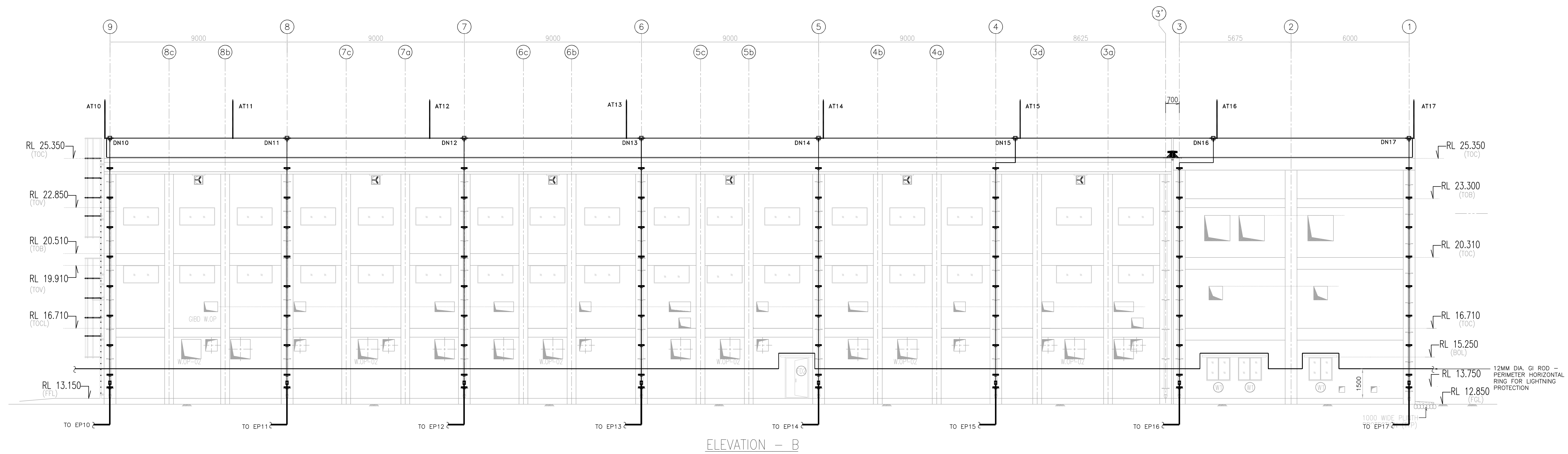
ELEVATION - A

KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI			
Rev No	Issue No	Issued for	Issue Sheet Number with Date
0	1	CONSTRUCTION	KK56/H/C/011111 Dt. 24-09-2025
<p>NUCLEAR POWER CORPORATION OF INDIA LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)</p>			
NAME	PREPARED BY	CHECKED BY	REVIEWED BY
	SANJEEV DHAKAR	P.SURESH KUMAR	AJAY VISHWAS
SIGNATURE			
DATE	26.06.2025		
<p>TITLE :- KUDANKULAM NUCLEAR POWER PLANT 5 & 6 230 KV GIS BUILDING - EARTHING AND LIGHTNING PROTECTION LAYOUT</p>			
PROJECT:-	KKNPP 5&6	SCALE - NTS	PROJECTION
DRG. No.	102.KK56.0UAD.0.ET.OK.WD001	SHEET	06 of 07
REV. NO.		REV. NO.	

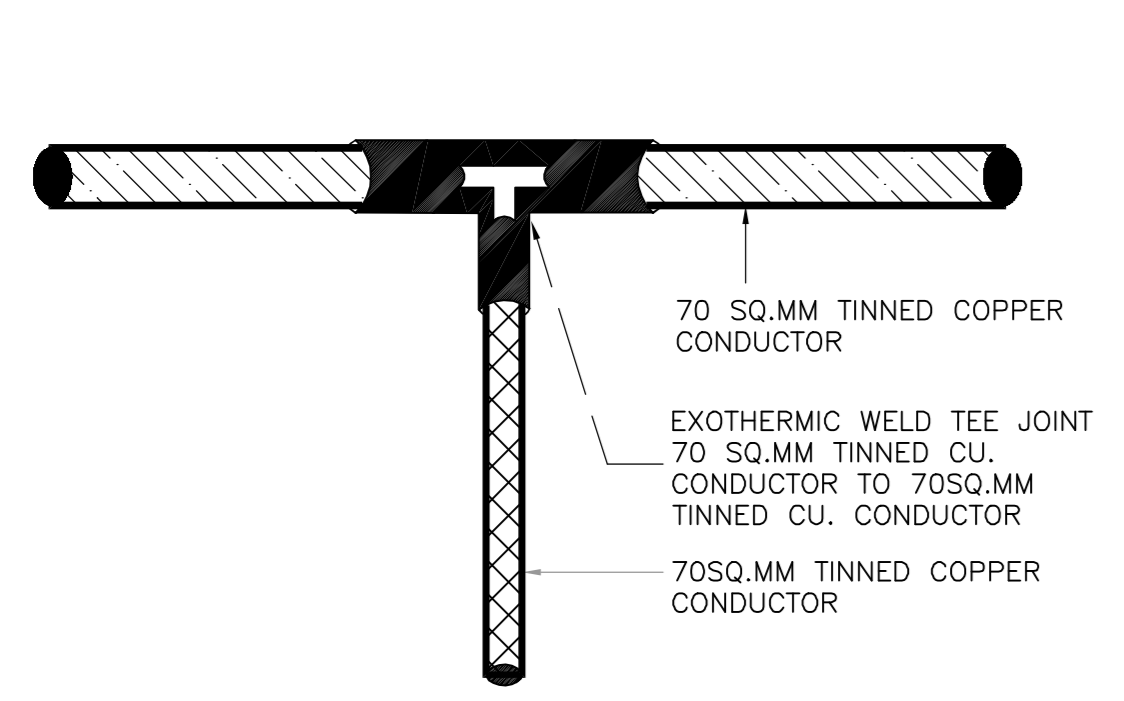
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REFERENCE DRAWINGS	DRAWING No.

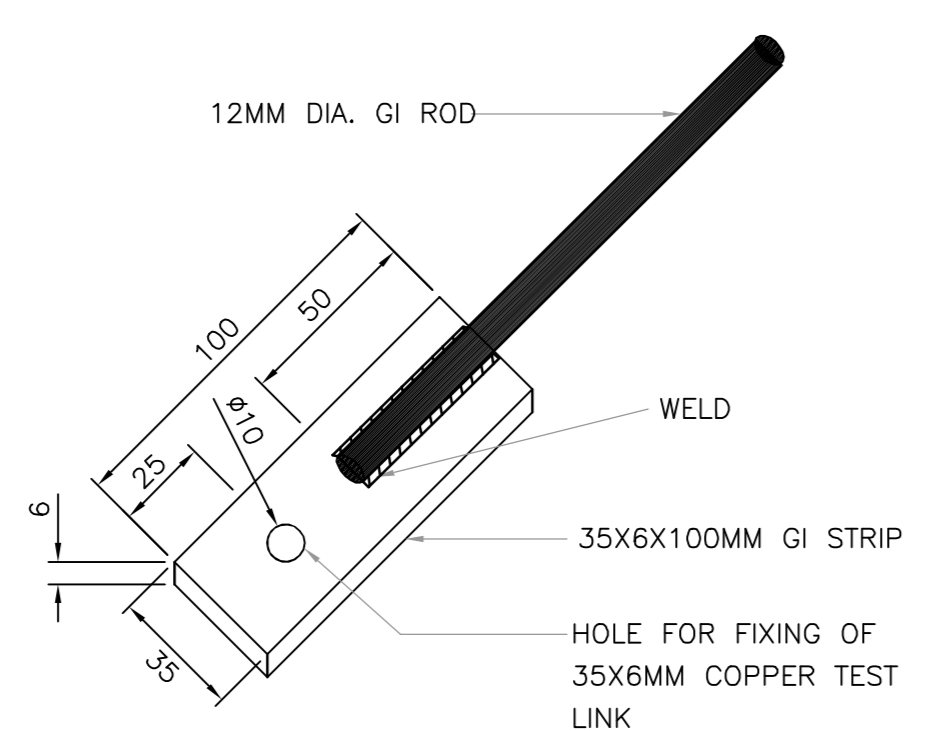
REV.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY



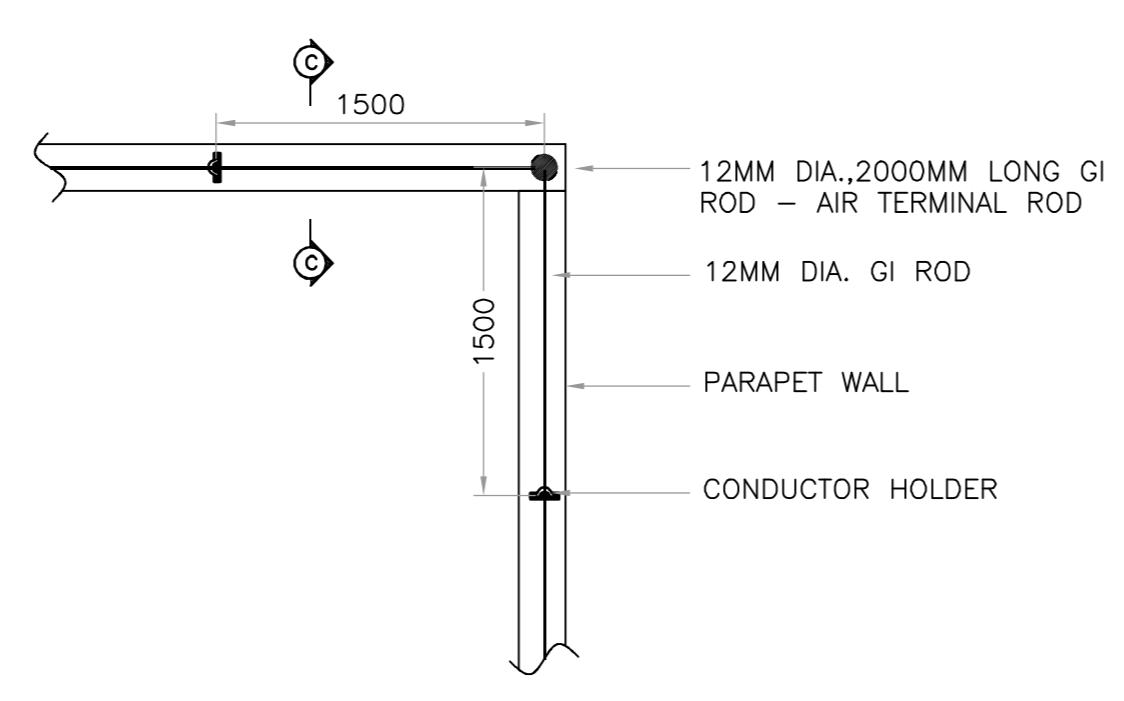
ELEVATION - B



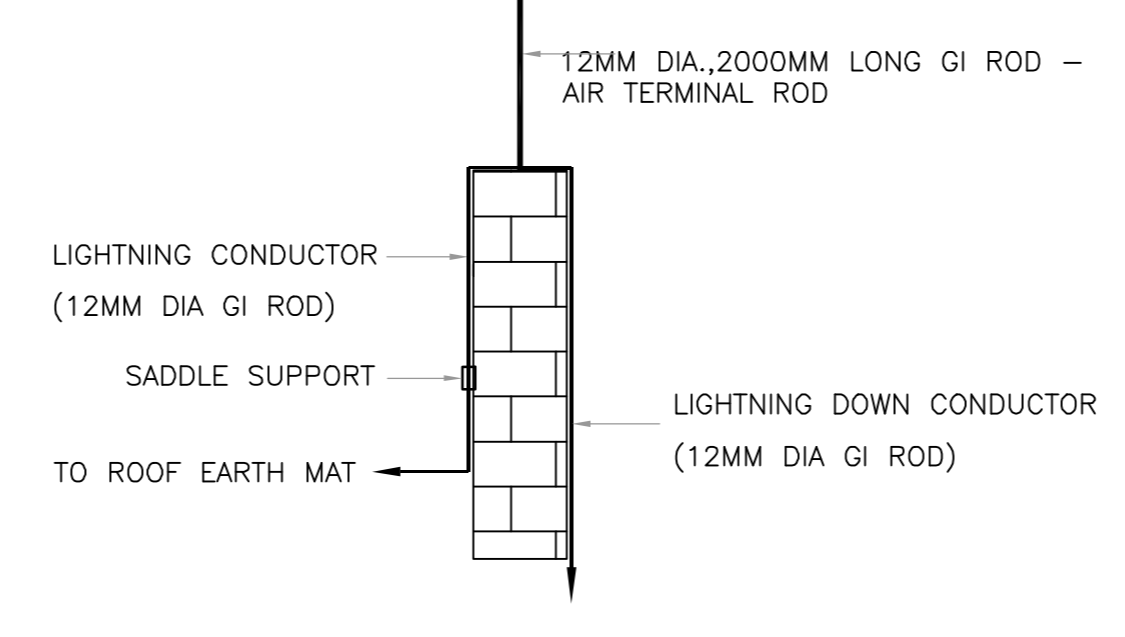
EXOTHERMIC T JOINTS 2X70 SQ.MM CU. - 70 SQ.MM CU. CONDUCTOR



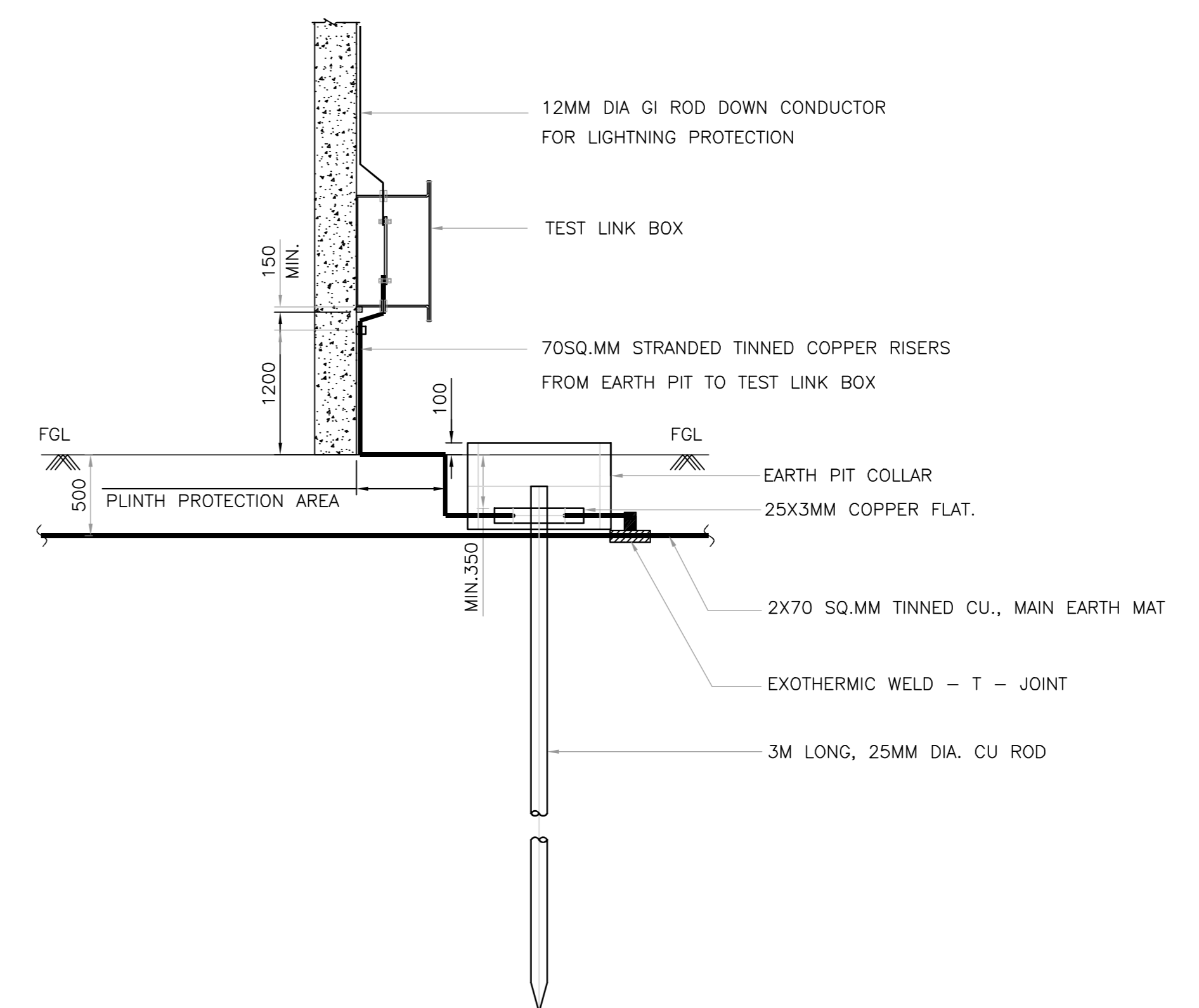
DETAILS OF 35X6X100MM GI STRIP



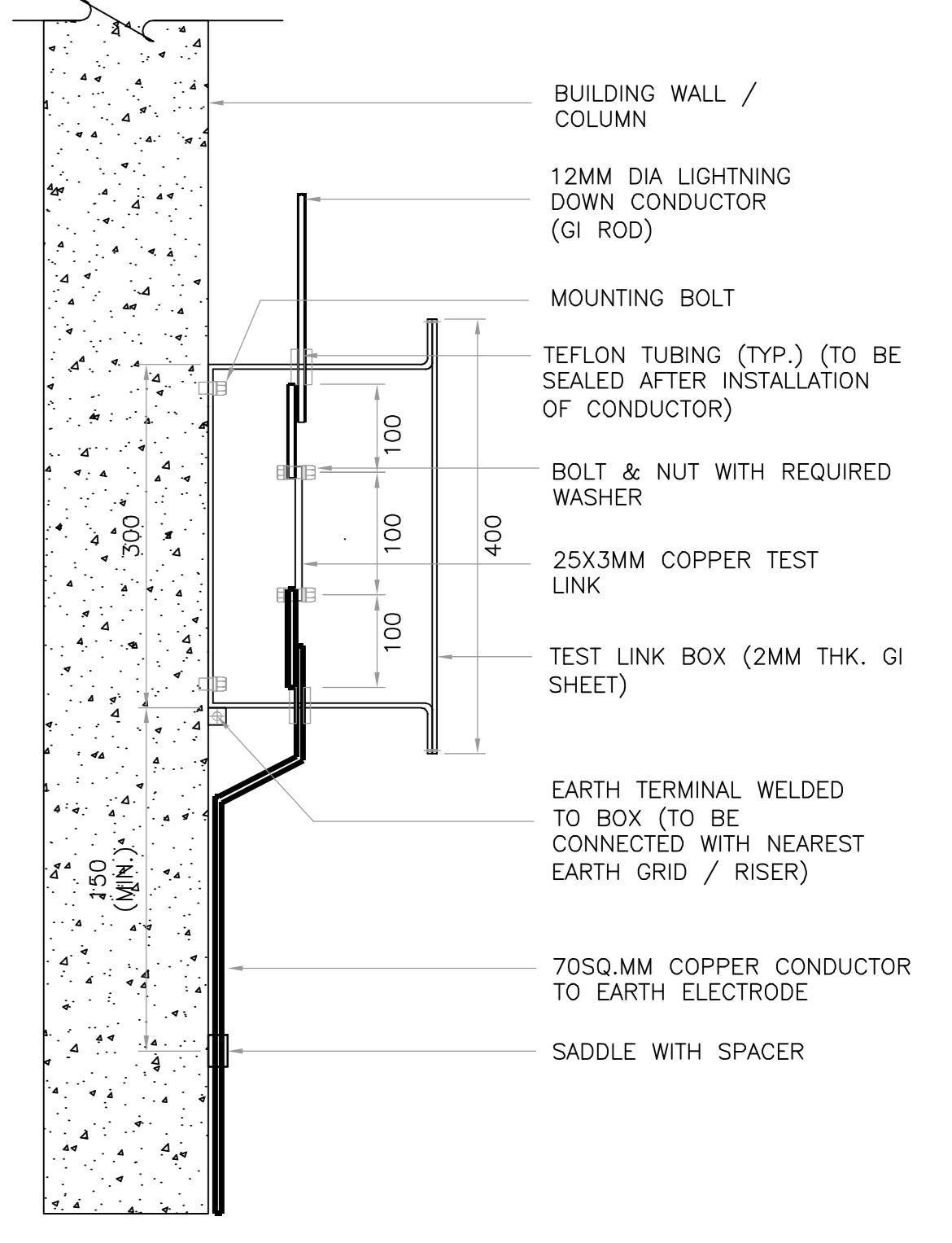
DETAIL-A (TYPICAL ARRANGEMENT OF AIR TERMINATION ROD ON PARAPET WALL)
SCALE = NTS



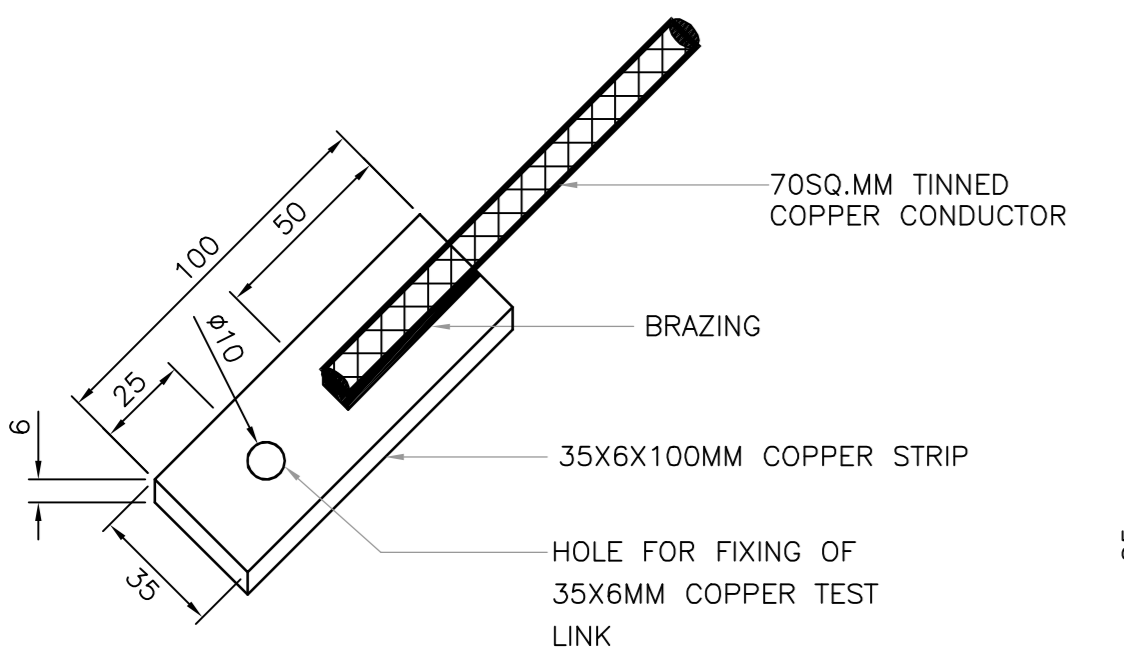
VIEW-C-C
SCALE = NTS



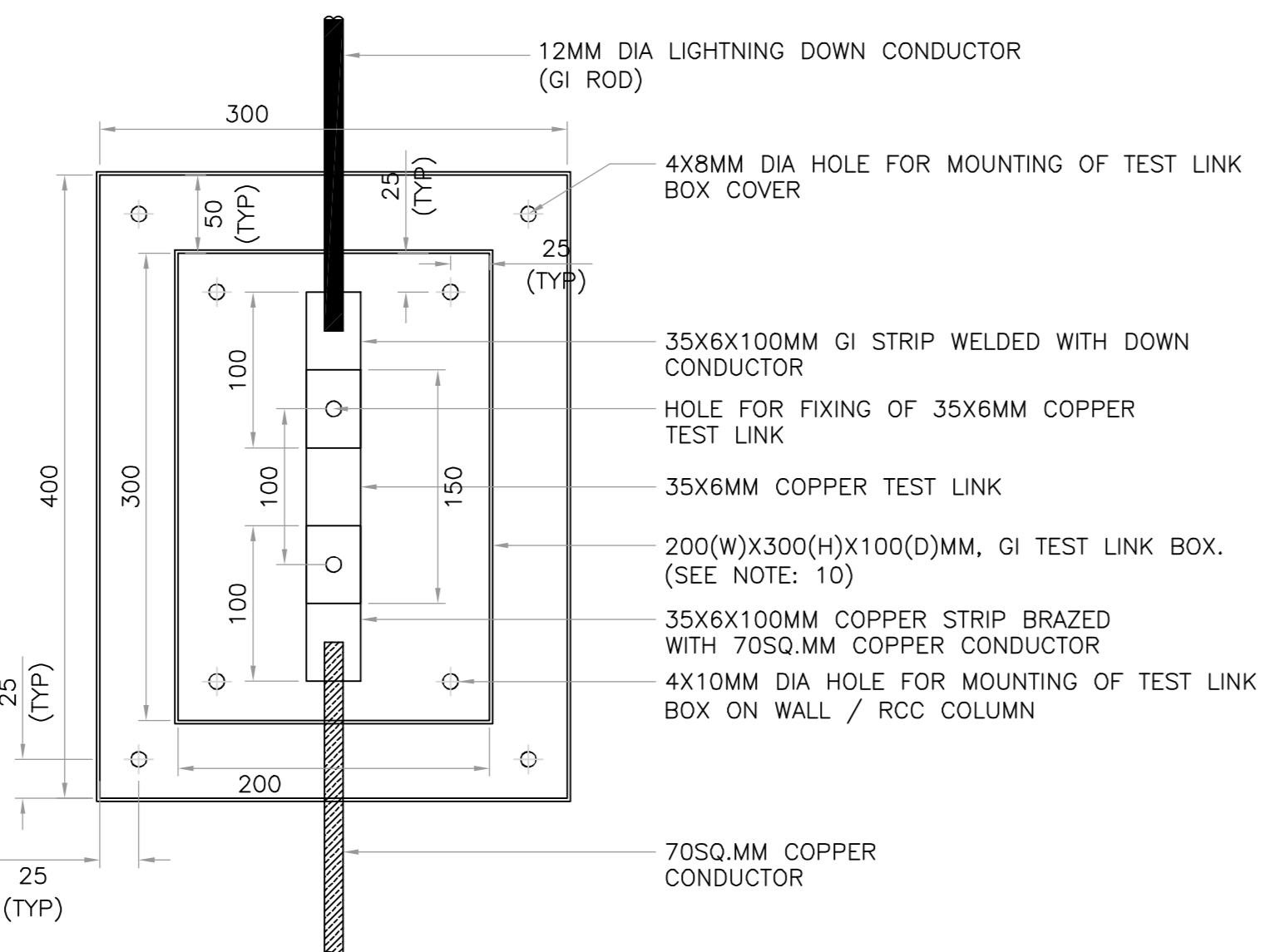
DETAIL-D (TYPICAL DETAILS OF EARTH PIT FOR BUILDING LIGHTNING PROTECTION)
SCALE : NTS



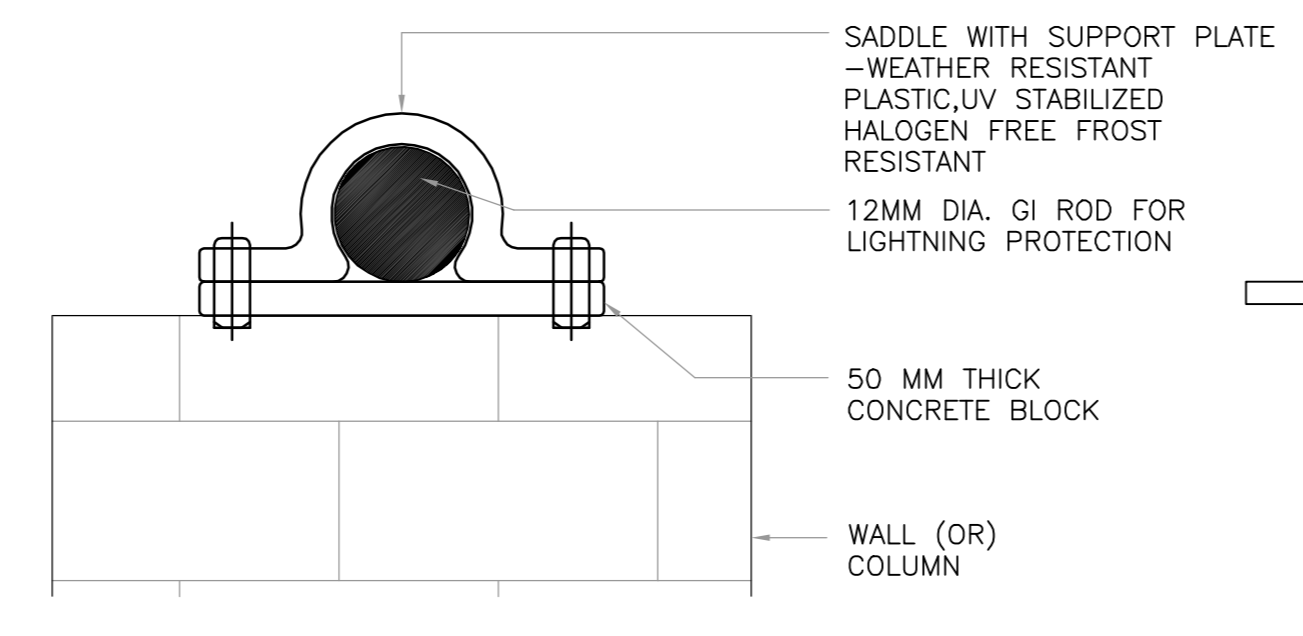
DETAIL-E (SIDE VIEW/FIXING DETAILS OF TEST LINK BOX (SEE NOTE: 10))
SCALE : NTS



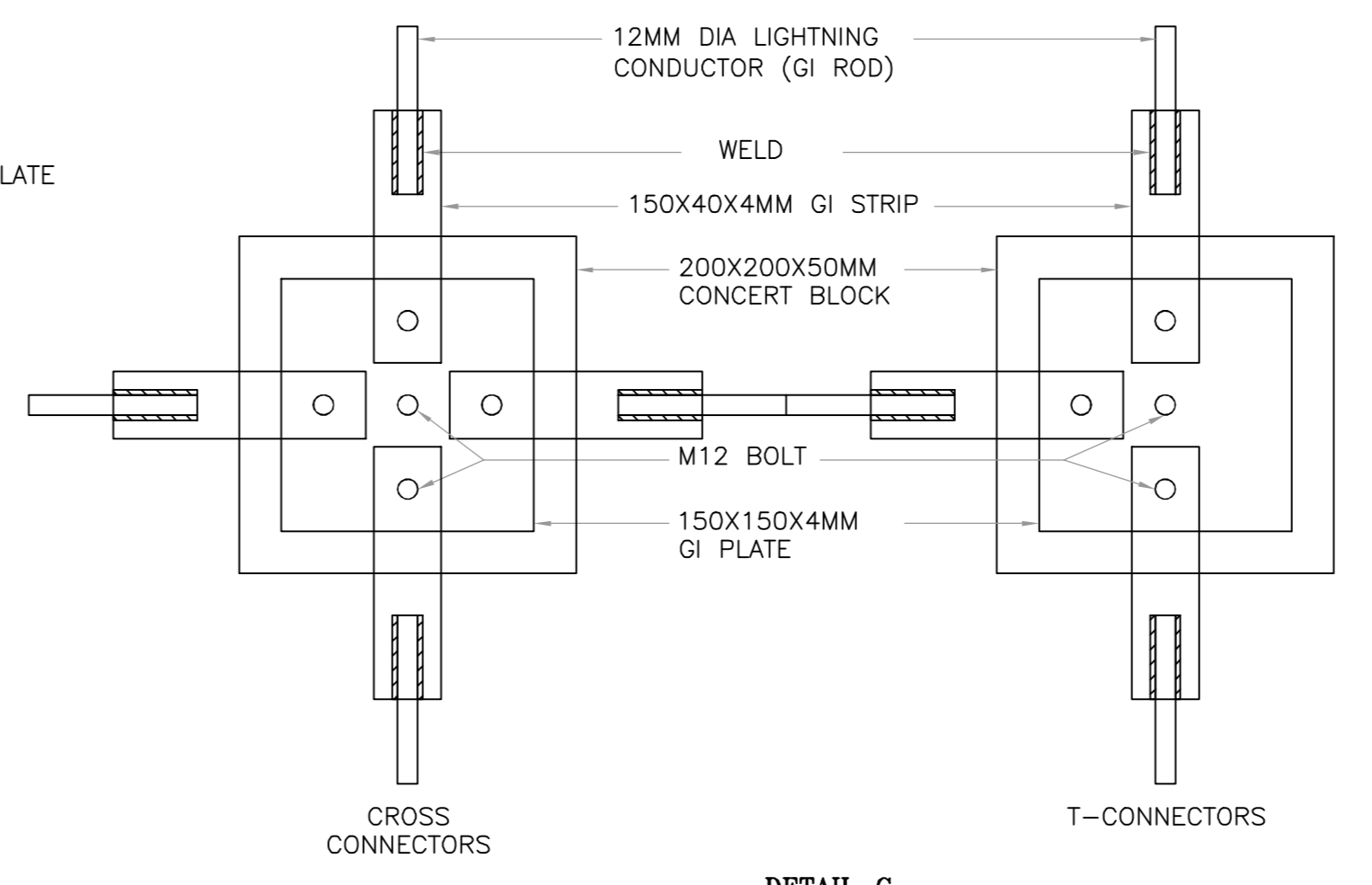
DETAILS OF 35X6X100MM COPPER STRIP



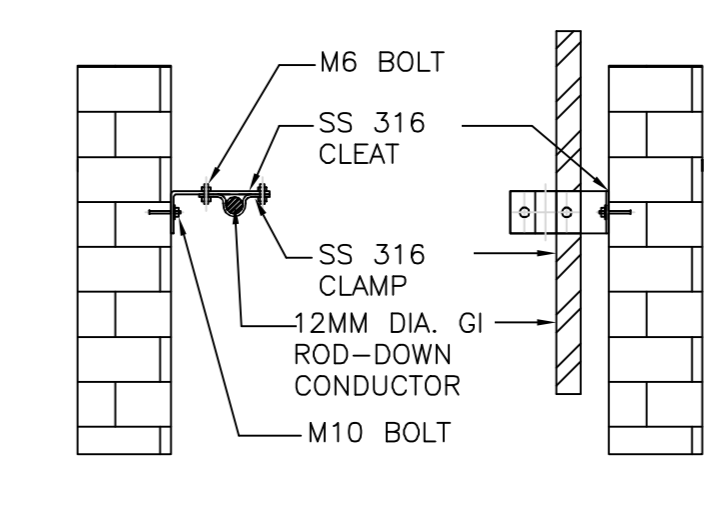
DETAILS OF TEST LINK BOX (COVER PLATE REMOVED)
SCALE = NTS



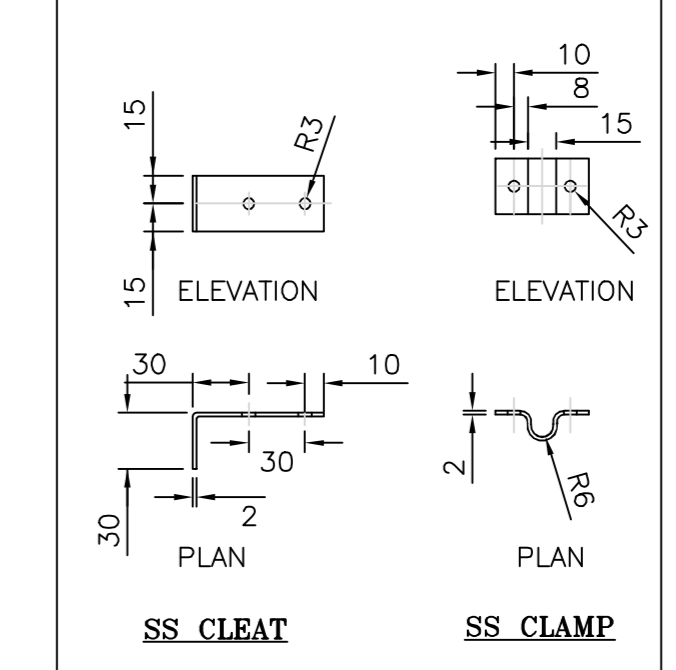
DETAIL-B (12MM DIA. GI ROD - LIGHTNING CONDUCTOR FIXING DETAILS ON TOP OF WALL / COLUMN)
SCALE = NTS



CROSS CONNECTORS
SCALE = NTS



TYPICAL ARRANGEMENT OF SADDLE SUPPORT FOR DOWN CONDUCTOR



KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI			
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NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
SANJEEV DHAKAR	P.SURESH KUMAR	AJAY VISHWAS	A.KHANDELWAL
DATE: 26.08.2025			

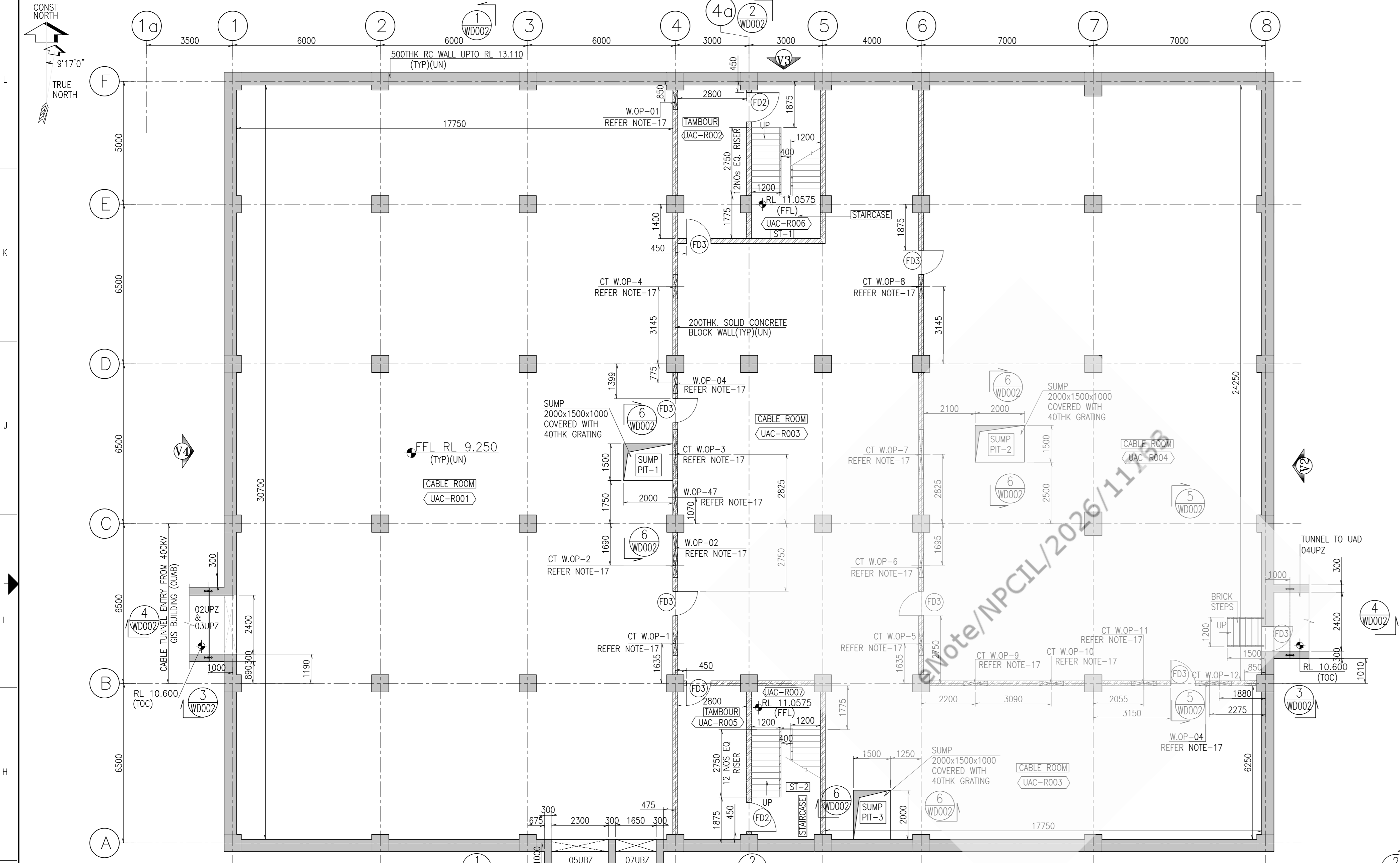
TITLE :- KUDANKULAM NUCLEAR POWER PLANT 5 & 6
230 KV GIS BUILDING - EARTHING AND LIGHTNING PROTECTION LAYOUT

PROJECT:- KKNPP 5&6
SCALE - NTS
PROJECTION
SHEET 017 of 017
REV. NO.

DRG. No. 102.KK56.0UAD.0.ET.OK.WD001
FILE NAME: KK56.H/CONSTRUCTION/011111 (Sheet 7 of 7)_R0

DRG. No.	REFERENCE DRAWINGS	DRAWING No.
102.KK56.0UAD.0.ET.OK.WD001 (Sheet 7 of 7)		

REV. NO.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
1		FIRST ISSUE				



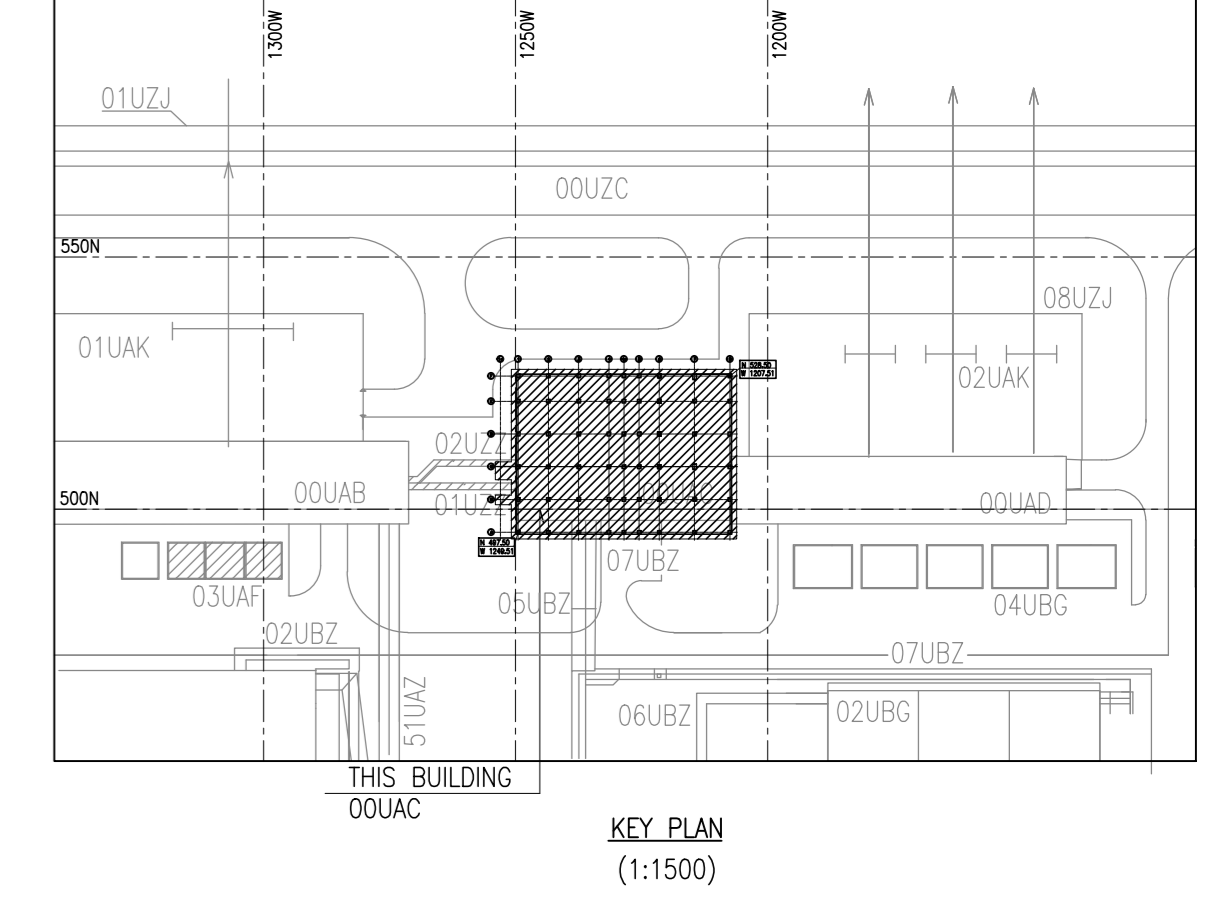
BASEMENT FLOOR PLAN AT RL 8.965 (FFL)
FLOOR FINISH 40THK (TYP)(UN), SCALE 1:100

S.NO	ROOM NO	ROOM	FLOOR FINISH	SKIRTING/WALL BASE	WALL FINISH	CEILING FINISH
1	UAC-R001, UAC-R003, UAC-R004	CABLE ROOM	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING 125MM HIGH POLISHED KOTA STONE SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
2	UAC-R002, UAC-R005	TAMBOUR	KOTA STONE FLOORING	125MM HIGH POLISHED KOTA STONE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
3	UAC-R006, UAC-R007, UAC-R110, UAC-R111	STAIRCASE	KOTA STONE FLOORING	125MM HIGH POLISHED KOTA STONE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
4	UAC-R102	VESTIBLE	KOTA STONE FLOORING	125MM HIGH POLISHED KOTA STONE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
5	UAC-R101	RELAY PANEL ROOM	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
6	UAC-R103	MEETING ROOM	VITRIFIED TILE FLOORING	125MM HIGH MATCHING GLAZED VITRIFIED TILE	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
7	UAC-R104	SWITCHYARD CONTROL ROOM	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
8	UAC-R105	AUXILIARY SWITCHYARD ROOM	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
9	UAC-R106	LAVATORY ROOM (M)	NON-SLIP VITRIFIED TILE FLOORING	-	2100 HIGH VITRIFIED TILE DADO WITH PLASTIC EMULSION PAINT ABOVE	PLASTIC EMULSION PAINT
10	UAC-R107	LAVATORY ROOM (F)	NON-SLIP VITRIFIED TILE FLOORING	-	2100 HIGH VITRIFIED TILE DADO WITH PLASTIC EMULSION PAINT ABOVE	PLASTIC EMULSION PAINT
11	UAC-R108	CORRIDOR	KOTA STONE FLOORING	125MM HIGH POLISHED KOTA STONE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT

FLOOR, WALL, CEILING COLOUR SHADE AS PER NPCL

MKD.	WIDTH	HEIGHT	QUANTITY	SPECIFICATION	REMARKS
FD1	1800	2100	10	2-HR FIRE RATED, GLAZED DOOR AS PER MANUFACTURER'S SPECIFICATION	
FD2	1200	2100	08	2-HR FIRE RATED, GLAZED DOOR AS PER MANUFACTURER'S SPECIFICATION	
FD3	1000	2100	09	2-HR FIRE RATED, GLAZED DOUBLE DOOR AS PER MANUFACTURER'S SPECIFICATION	
SD2	1200	2100	01	PRESSED STEEL DOOR WITH PRESSED STEEL FRAME, SINGLE SHUTTER	
SD3	900	2100	03	PRESSED STEEL DOOR WITH PRESSED STEEL FRAME, SINGLE SHUTTER	
W1	1800	1200	23	ALUMIN GLAZED WINDOW POWDER COATED WITH 5.5MM THK TOUGHENED GLASS, OPENABLE TYPE	

LEGEND	OPENING SIZE	ELEVATION OF TOP OF OPENING	REMARKS
	LENGTH	BREADTH	
SLOP-01	3915	600	
SLOP-02	5550	600	
SLOP-03	4185	600	
SLOP-04	4185	500	
SLOP-05	3915	400	
SLOP-06	5550	500	
SLOP-07	5550	400	
SLOP-08	4185	400	
SLOP-09	4185	300	
SLOP-10	5408	600	
SLOP-11	5585	600	
SLOP-12	5585	600	
SLOP-13	300	875	SLAB OPENING AT RL 13.150
SLOP-14	300	1075	ELECTRICAL OPENING
SLOP-15	400	600	
SLOP-16	300	4800	
SLOP-17	500	1280	
SLOP-18	500	1140	
SLOP-19	500	3000	
SLOP-20	400	3365	
SLOP-21	400	3685	
SLOP-22	400	350	
SLOP-23	500	1425	
SLOP-24	500	6050	
SLOP-25	500	5725	
SLOP-26	600	1425	
SLOP-27	600	6050	
SLOP-28	600	5725	
SLOP-29	400	150	
SLOP-30	800	4975	
SLOP-31	800	5725	
SLOP-32	800	1882	
SLOP-33	600	2090	
SLOP-34	300	400	SLAB OPENING AT RL 13.150
SLOP-35	300	400	HVAC OPENING
SLOP-36	1000	1000	SLAB OPENING AT RL 13.150
SLOP-37	300	600	PLUMBING OPENING
SLOP-38	75 DIA		
SLOP-39	110 DIA		
SLOP-40	75 DIA		



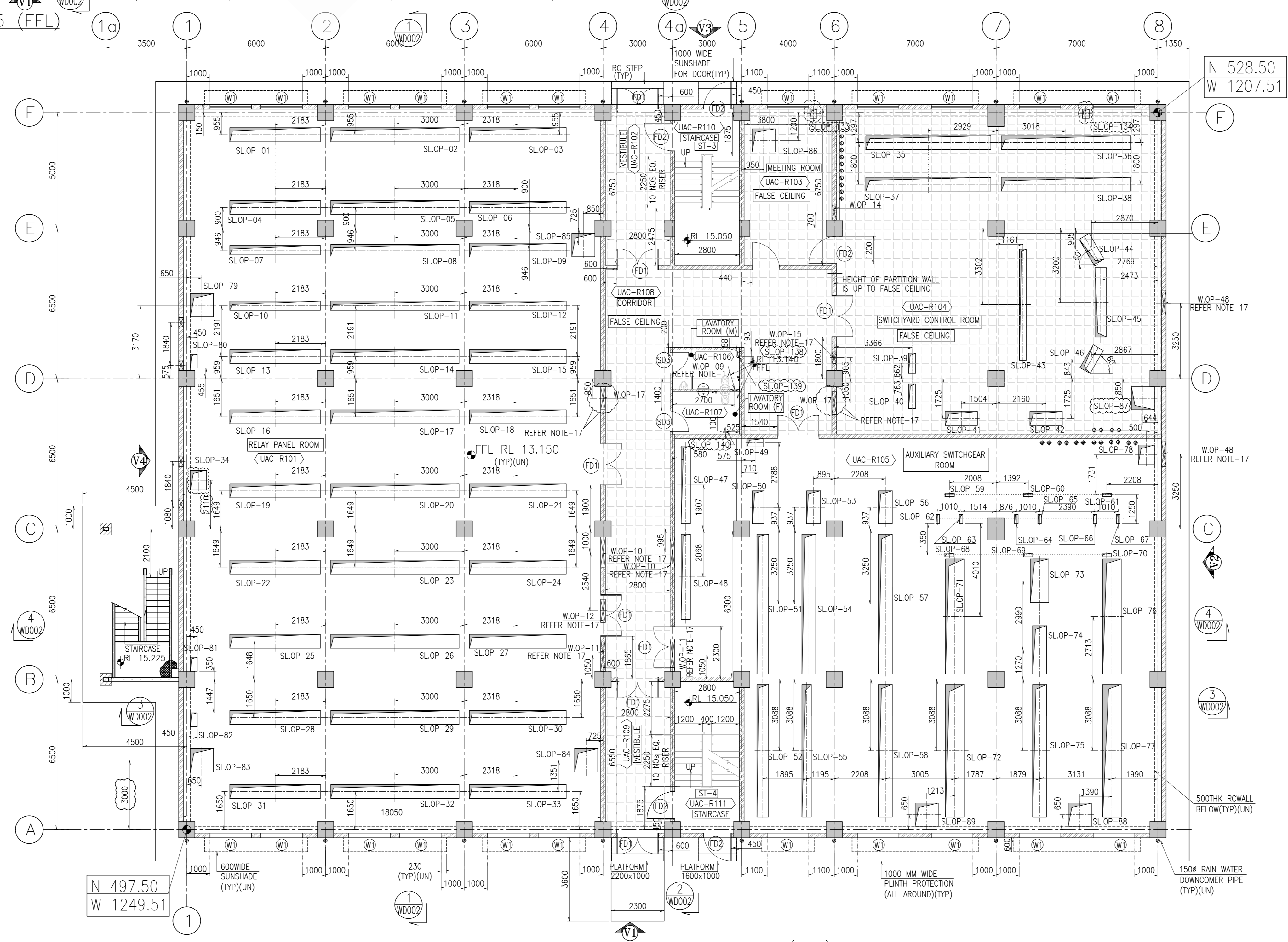
- LEGEND:**
- RL - REDUCED LEVEL
 - TYP - TYPICAL
 - UN - UNLESS NOTED OTHERWISE
 - THK - THICKNESS
 - TOC - TOP OF CONCRETE
 - RC - REINFORCED CONCRETE
 - CONST - CONSTRUCTION
 - FFL - FINISHED FLOOR LEVEL
 - FGL - FINISHED GRADE LEVEL
 - RWDC - RAINWATER DOWN COMER
 - W.OP - WALL OPENING
 - NORMAL CONCRETE
 - SECOND STAGE CONCRETE
 - 200THK SOLID CONCRETE
 - 100THK SOLID CONCRETE
 - BLOCK WALL
 - GRATING
 - FALSE CEILING
 - HAND RAIL
 - RAINWATER DOWN COMER PIPE

- NOTES**
- ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN M UNLESS NOTED OTHERWISE.
 - FOR ALL STRUCTURAL INFORMATION REFER STRUCTURAL DRAWINGS.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT CONCRETE FORMING DRAWINGS.
 - ALL ELEVATIONS INDICATED ARE FINISHED FLOOR LEVELS UNLESS NOTED OTHERWISE.
 - THIS DRAWING SHALL BE USED FOR ARCHITECTURAL DETAILS LIKE FLOOR FINISHES, WALL FINISHES, PAINTINGS, DOORS ETC. FOR EXACT LOCATIONS OF OPENING REFER CORRESPONDING DETAILED DRAWING.
 - ALL WORK SHALL BE DONE AS PER NPCL SPECIFICATIONS.
 - SUITABLE GROOVES/ROUGHNESS SHALL BE PROVIDED TO THE NOSING OF STAIRCASE AS DIRECTED BY ENGINEER-IN-CHARGE.
 - ALL BLOCK MASONRY SHALL CONSIST OF SOLID CONCRETE BLOCKS HAVING MINIMUM AVERAGE COMPRESSIVE STRENGTH OF 7.5MPa AND MINIMUM DENSITY OF 1800 KG/CUM. THE MASONRY SHALL BE CONSTRUCTED AT ALL THE LEVELS IN VARIOUS SIZES IN CEMENT MORTAR 1:4 BY VOLUME WITH BLOCKS MANUFACTURED AS PER IS 2185 (PART-1) UNLESS SPECIFIED OTHERWISE.
 - ALL BLOCK WALLS SHALL BE 200 THK UNLESS NOTED.
 - ALL VERTICAL JOINTS IN CONCRETE BLOCK MASONRY SHALL BE STAGGERED BOTH VERTICALLY & HORIZONTALLY.
 - SPACING OF TRANSOMS & MULLIONS SHALL BE SUITABLY ADJUSTED TO ACCOMMODATE / AVOID CROSSING AT LARGE SIZE OPENINGS. THE SPACING OF MULLIONS SHALL BE WITHIN 200MM TO 250MM & FOR TRANSOMS SHALL BE RESTRICTED IN BETWEEN 200MM AND 250MM.
 - SLAB CUT-OUTS SHOWN IN THIS DRG. SHALL BE KEPT COVERED WITH 6MM THK CHEQUERED PLATE TILL THE INSTALLATION OF EQUIPMENTS.
 - ALL FIRE DOORS SHALL HAVE A FIRE RATING OF NOT LESS THAN 2 HRS.
 - WHEREVER INTEGRAL FLOOR FINISH IS INDICATED, CARE SHALL BE TAKEN THAT FINAL SURFACE SHALL BE FREE FROM WAINESS.
 - TEMPORARY HANDRAIL SHALL BE PROVIDED ALL AROUND OPENINGS DURING CONSTRUCTION.
 - THE OPENING SIZE IN CONCRETE BLOCK WALL ARE SHOWN IN THIS DRAWING.
 - ELECTRICAL AND GRID WALL OPENINGS DETAILS ARE TENTATIVE AND ACTUAL SIZES BASED ON VENDOR INPUT WILL BE CONFIRMED BEFORE CONSTRUCTING THE WALL.
 - 3 NOS OF 80MM PIPE SLEEVES SHALL BE PROVIDED ABOVE THE LINTEL BEAMS OF DOOR IN THE MASONRY OF THE STRUCTURES.
 - GI PIPE SLEEVES SHALL BE PROVIDED ON BEAMS (SOFFIT OF ROOF SLABS) FOR CABLE CROSSING AT REGULAR INTERVALS. (60 MM DIA PIPE AT 3 METER INTERVALS).

THIS DRAWING READ IN CONJUNCTION WITH
DWG NO-177.KK56.0.UAC.0.AR.OK.WD001 (SH 2 OF 2)
DWG NO-177.KK56.0.UAC.0.AR.OK.WD002
DWG NO-177.KK56.0.UAC.0.AR.OK.WD003
DWG NO-177.KK56.0.O.KZ.OK.WD003

SR.NO	OPENING NUMBER	OPENING SIZE	OPENING BOTTOM ELEVATION	REMARKS
		WIDTH	HEIGHT	
1	W.OP-01	800	850	TOP OF OPENING FLUSH WITH BOTTOM OF BEAM HVAC OPENING
2	W.OP-02	1300	550	
3	W.OP-04	850	500	
4	W.OP-09	400	500	
5	W.OP-10	1300	750	
6	W.OP-11	1400	800	
7	W.OP-12	1000	600	
8	W.OP-13	900	600	
9	W.OP-14	700	600	
10	W.OP-15	500	600	
11	W.OP-17	1000	600	
12	W.OP-47	1300	600	
13	W.OP-48	1100	1100	
14	CT W.OP-01 CT W.OP-02 CT W.OP-04 CT W.OP-05 CT W.OP-06 CT W.OP-08 CT W.OP-09 CT W.OP-10 CT W.OP-11 CT W.OP-12	1000	1800	BOTTOM OF OPENING RL 10.250 CABLE TRAY OPENING
15	CT W.OP-03 CT W.OP-07	2000	1800	BOTTOM OF OPENING RL 10.250 CABLE TRAY OPENING

MKD.	WIDTH	HEIGHT	QUANTITY	SPECIFICATION	REMARKS
FD1	1800	2100	07	2-HR FIRE RATED, GLAZED DOOR AS PER MANUFACTURER'S SPECIFICATION	
FD2	1200	2100	06	2-HR FIRE RATED, GLAZED DOOR AS PER MANUFACTURER'S SPECIFICATION	
FD3	1000	2100	04	2-HR FIRE RATED, GLAZED DOUBLE DOOR AS PER MANUFACTURER'S SPECIFICATION	
SD1	800	1300	05	PRESSED STEEL DOOR WITH PRESSED STEEL FRAME, SINGLE SHUTTER AIR TIGHT	
SD2	1800	3000	02	PRESSED STEEL DOOR WITH PRESSED STEEL FRAME, DOUBLE SHUTTER	
SD3	1200	2100	04	PRESSED STEEL DOOR WITH PRESSED STEEL FRAME, SINGLE SHUTTER	
SD4	900	2100	05	PRESSED STEEL DOOR WITH PRESSED STEEL FRAME, SINGLE SHUTTER	
W1	1800	1200	24	ALUMIN GLAZED WINDOW POWDER COATED WITH 5.5MM THK TOUGHENED GLASS, OPENABLE TYPE	



GROUND FLOOR PLAN AT RL 13.150 (FFL)
FLOOR FINISH 40THK (TYP)(UN), SCALE 1:100

GROUP	ENGR	SIGN	GROUP	ENGR	SIGN	GROUP	ENGR	SIGN	GROUP	ENGR	SIGN
R3			R2			R1			RO		

DIS-NOT SCALE THE DRAWING.

UNLESS OTHERWISE STATED :-
ALL DIMENSIONS ARE IN mm.
MACHINE ALL OVER.
SURFACE FINISH TO BE TO BETTER.
REMOVE ALL BURRS.
REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMFERING TO 0 15 AND 0 40 X 45.
ROUND ALL INTERNAL CORNERS AND EDGES TO R 0 15.
TOLERANCES ON RADI AND CHAMFERS (IS : 2102)
TOLERANCES ON RADII AND CHAMFERS (IS : 2102)

TOLERANCES ON LINEAR DIMENSIONS (IS : 2102)

DIMENSIONS	TOL.	DIMENSIONS	TOL.
UP TO 6	± 0.1	6 - 30	± 0.15
30 - 100	± 0.2	100 - 2000	± 0.3
200 - 318	± 0.3	2000 - 4000	± 0.4
		4000 - 8000	± 0.5

TOLERANCES ON ANGULAR DIMENSIONS (IS : 2102)

RADI AND CHAMFERS	0.5-3	3-6	6-30
TOLERANCES	± 0.2	± 0.5	± 1.0

KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI			
0	1	CONSTRUCTION	KK56/UH/C/010976 Dt. 10-09-2025
Rev No	Issue No	Issued for	Issue Sheet Number with Date

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

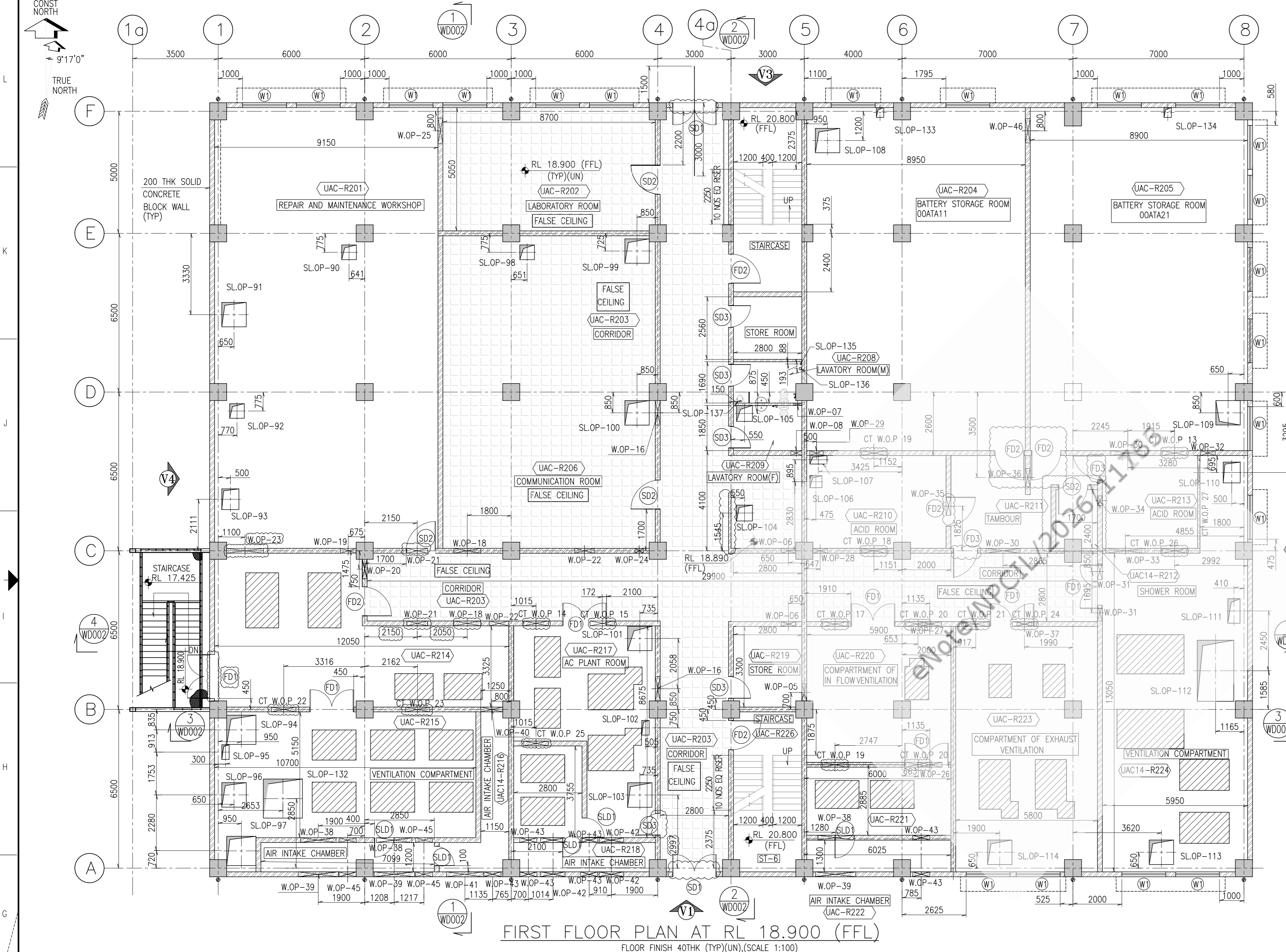
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SOURAV BASAK	R K NISHCHAL	K T RAO	
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DATE	29.07.2025	02.09.2025	
ENGINEERING CONSULTANT	TATA CONSULTING ENGINEERS LIMITED		
	MUMBAI JOB_REF_No.12860A		
DRAWN	CHECKED	REVIEWED	APPROVED
MD KASHIF RAZA NSARI	ROHIT KUMAR	YOGESH GATFANE	RAVIKUMAR GUDPALI
SIGNATURE			
DATE	26/05/2025	26/05/2025	26/05/2025
TITLE :-	KUDANKULAM NUCLEAR POWER PLANT 5 & 6 SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL PLANS		
PROJECT:-	KKNPP 5&6		
DRG. No.	177.KK56.0.UAC.0.AR.OK.WD001	SHEET	01 OF 02
REV. NO.		SCALE	1:1

REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.
STANDARD DRAWING FOR TRANSOMS, MULLIONS AND MASONRY WORK	177.KK56.0.O.KZ.OK.WD003	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL ELEVATIONS	177.KK56.0.UAC.0.AR.OK.WD003
SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL SECTIONS	177.KK56.0.UAC.0.AR.OK.WD002	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL PLANS	177.KK56.0.UAC.0.AR.OK.WD001 (SH 2 OF 2)

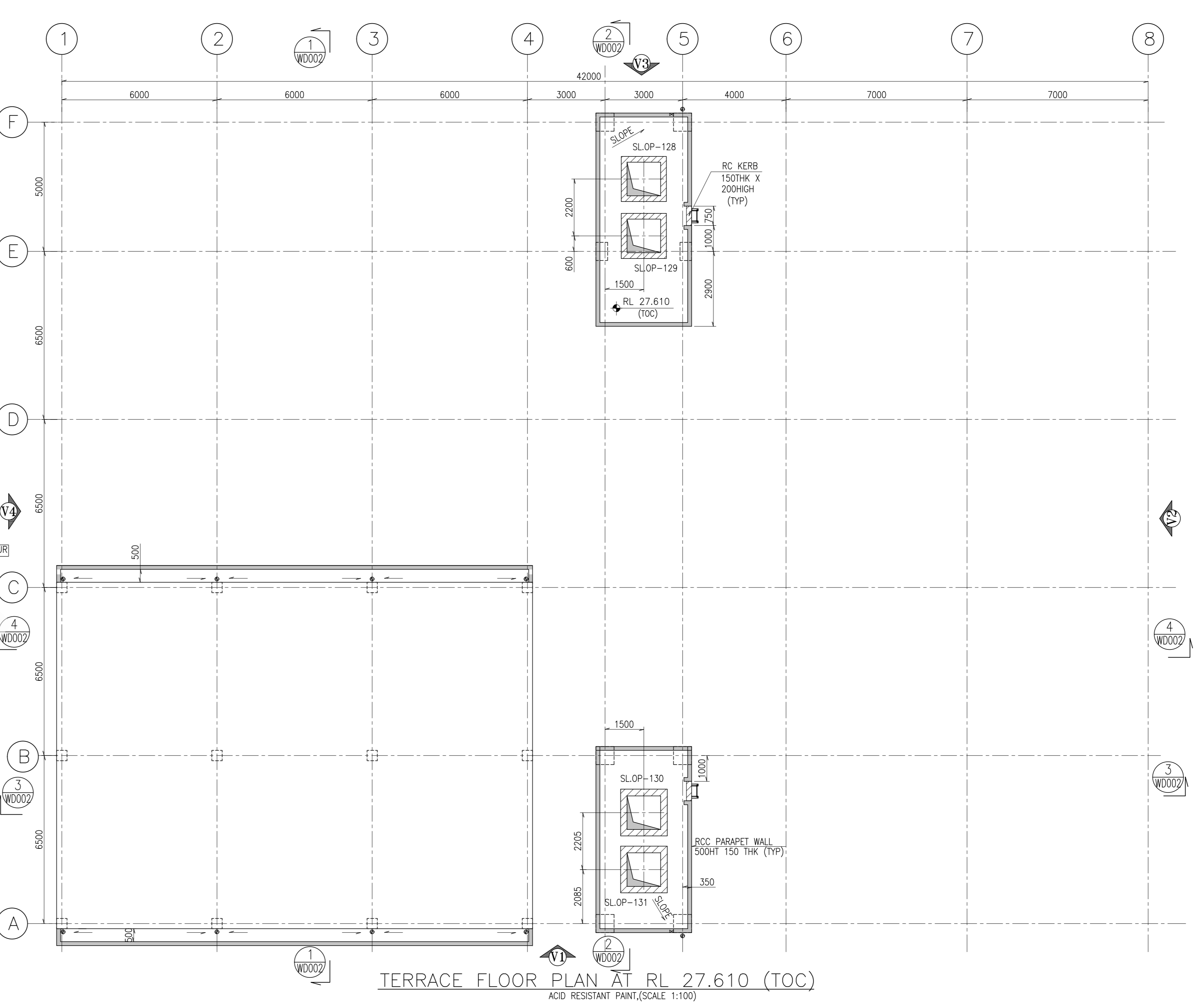
REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS	DRAWING No.

REV.	DATE	DESCRIPTION	REV'D.	APP'D.
RO	26/05/2025	FOR APPROVAL		
RO	15/04/2025	FOR APPROVAL		
RO	31/01/2025	FOR APPROVAL		
RO	21/10/2024	FOR APPROVAL		
P3	26/09/2024	FOR REVIEW AND COMMENTS		
P2	30/08/2024	FOR REVIEW AND COMMENTS		
P1	15/06/2023	FOR REVIEW AND COMMENTS		

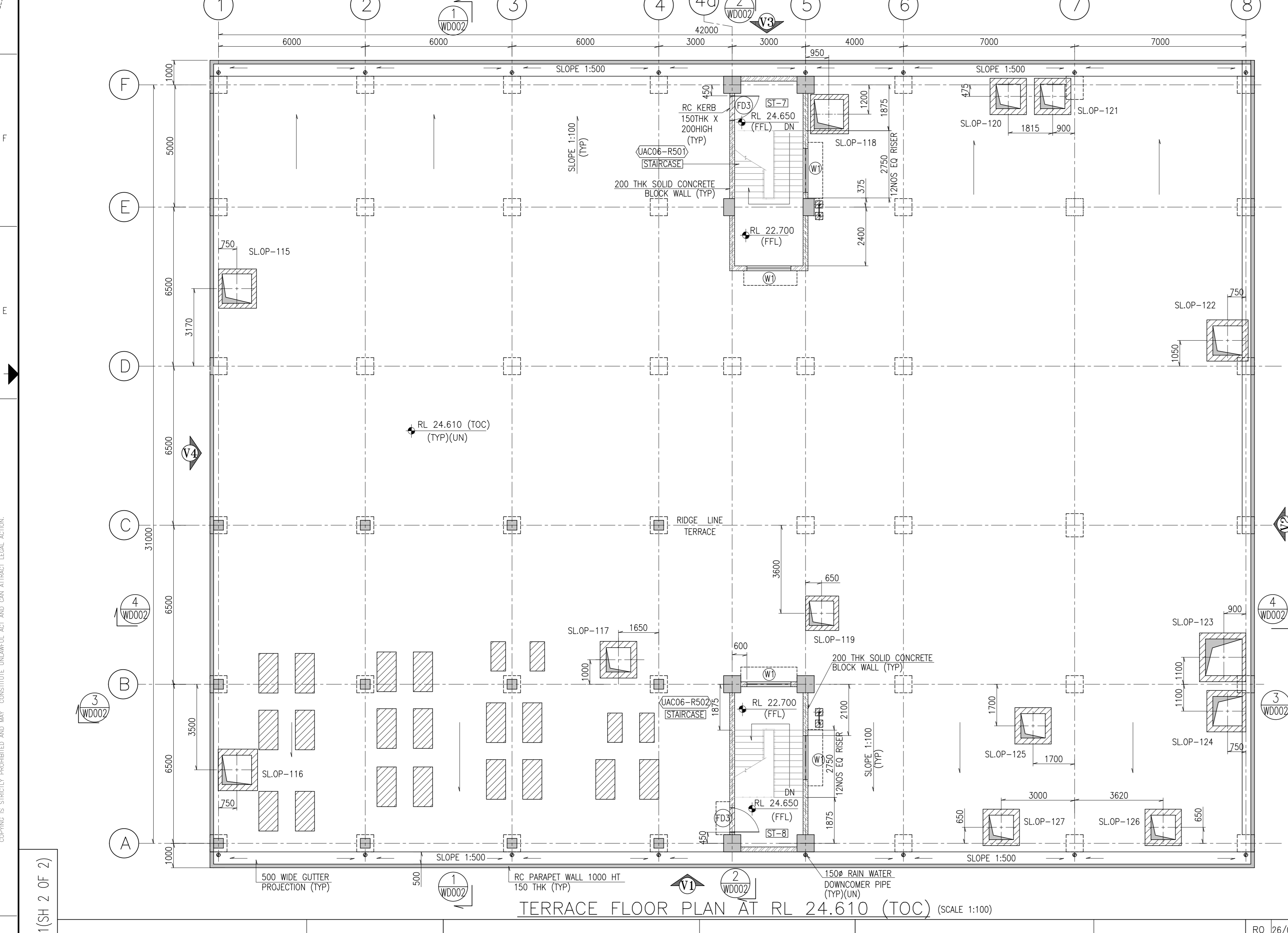
DRN.	DES.D.	DES.CHKD.	REV'D.	APP'D.



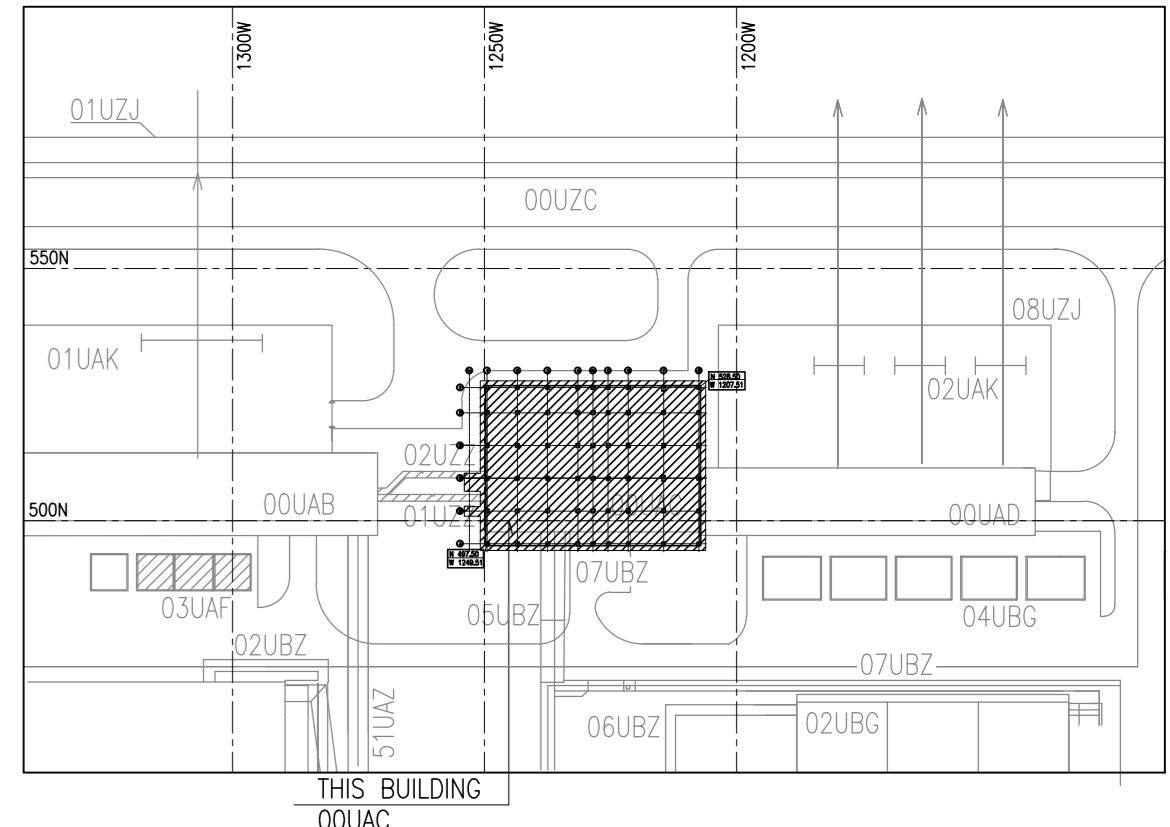
FIRST FLOOR PLAN AT RL 18.900 (FFL)
FLOOR FINISH 40THK (TYP)(UN), SCALE 1:100



TERRACE FLOOR PLAN AT RL 27.610 (TOC)
ACID RESISTANT PAINT, SCALE 1:100



TERRACE FLOOR PLAN AT RL 24.610 (TOC) (SCALE 1:100)



LEGEND:

RL	- REDUCED LEVEL	■	- NORMAL CONCRETE
TYP	- TYPICAL	▨	- SECOND STAGE CONCRETE
UN	- UNLESS NOTED	▤	- 200THK SOLID CONCRETE
THK	- THICKNESS	▥	- BLOCK WALL
TOC	- TOP OF CONCRETE	▧	- FALSE CEILING
CONST	- CONSTRUCTION	▩	- FALSE CEILING
DWG	- DRAWING	○	- HAND RAIL
FFL	- FINISHED FLOOR LEVEL	⊕	- RAINWATER DOWN COMER PIPE
RWDC	- RAINWATER DOWN COMER	⊖	- RAINWATER DOWN COMER PIPE

- NOTES**
- ALL DIMENSIONS ARE IN MM, ELEVATIONS ARE IN M UNLESS NOTED OTHERWISE.
 - FOR ALL OTHER NOTES, LEGENDS & REFERENCE DRAWINGS REFER DRG NO -177.KK56.0UAC.0.A.R.OK.WD001(SH 1 OF 2)
 - FALSE CEILING WITH BOTTOM ELEVATION AS RL 21.900
 - THIS DRAWING READ IN CONJUNCTION WITH DWG NO-177.KK56.0UAC.0.A.R.OK.WD001(SH 1 OF 2)
 - DWG NO-177.KK56.0UAC.0.A.R.OK.WD002
 - DWG NO-177.KK56.0UAC.0.A.R.OK.WD003
 - DWG NO-177.KK56.0.0.KZ.0K.WD003
 - ELECTRICAL AND GRID WALL OPENINGS DETAILS ARE TENTATIVE AND ACTUAL SIZES BASED ON VENDOR INPUT WILL BE CONFIRMED BEFORE CONSTRUCTING THE WALL.
 - 3 NOS OF 80MM PIPE SLEEVES SHALL BE PROVIDED ABOVE THE LINTEL BEAMS OF DOOR IN THE MASONRY OF THE STRUCTURES.
 - 60 PIPE SLEEVES SHALL BE PROVIDED ON BEAMS (SOFFIT OF ROOF SLABS) FOR CABLE CROSSING AT REGULAR INTERVALS. (80 MM DIA PIPE AT 3 METER INTERVALS).

SCHEDULE OF SLAB OPENINGS

LEGEND	OPENING SIZE	ELEVATION OF TOP OF OPENING	REMARKS
	LENGTH BREADTH		
SLOP-90	600 600		
SLOP-91	600 600		
SLOP-92	600 600		
SLOP-93	600 600		
SLOP-94	600 600		
SLOP-95	600 600		
SLOP-96	600 600		
SLOP-97	600 600		
SLOP-98	600 600		
SLOP-99	600 600		
SLOP-100	600 600		
SLOP-101	600 600		
SLOP-102	600 600		
SLOP-103	600 600		
SLOP-104	600 600		
SLOP-105	600 600		
SLOP-106	600 600		
SLOP-107	600 600		
SLOP-108	600 600		
SLOP-109	600 600		
SLOP-110	600 600		
SLOP-111	600 600		
SLOP-112	600 600		
SLOP-113	600 600		
SLOP-114	600 600		
SLOP-115	600 600		
SLOP-116	600 600		
SLOP-117	600 600		
SLOP-118	600 600		
SLOP-119	600 600		
SLOP-120	600 600		
SLOP-121	600 600		
SLOP-122	600 600		
SLOP-123	600 600		
SLOP-124	600 600		
SLOP-125	600 600		
SLOP-126	600 600		
SLOP-127	600 600		
SLOP-128	600 600		
SLOP-129	600 600		
SLOP-130	600 600		
SLOP-131	600 600		
SLOP-132	600 600		
SLOP-133	600 600		
SLOP-134	600 600		
SLOP-135	600 600		
SLOP-136	600 600		
SLOP-137	600 600		

ARCHITECTURAL FINISHES SCHEDULE

S.NO	ROOM NO	ROOM	FLOOR FINISH	SKIRTING/WALL BASE	WALL FINISH	CEILING FINISH
1	UAC-R201	REPAIR AND MAINTENANCE WORKSHOP	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
2	UAC-R202	LABORATORY ROOM	ACID RESISTANT TILE FLOORING	-	2100 HIGH ACID RESISTANT TILE DAQ WITH ACID RESISTANT PAINT ABOVE	ACID RESISTANT PAINT
3	UAC-R203	CORRIDOR	KOTA STONE FLOORING	KOTA STONE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
4	UAC-R204	BATTERY STORAGE ROOM 00ATA11	ACID RESISTANT TILE FLOORING	-	2100 HIGH ACID RESISTANT TILE DAQ WITH ACID RESISTANT PAINT ABOVE	ACID RESISTANT PAINT
5	UAC-R205	BATTERY STORAGE ROOM 00ATA21	ACID RESISTANT TILE FLOORING	-	2100 HIGH ACID RESISTANT TILE DAQ WITH ACID RESISTANT PAINT ABOVE	ACID RESISTANT PAINT
6	UAC-R206	COMMUNICATION ROOM	VITRIFIED TILE FLOORING	VITRIFIED TILE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
7	UAC-R207	STORE ROOM	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
8	UAC-R208	LABORATORY ROOM (N)	NON-SLIP VITRIFIED TILE FLOORING	-	2100 HIGH VITRIFIED TILE DAQO WITH PLASTIC EMULSION PAINT ABOVE	PLASTIC EMULSION PAINT
9	UAC-R209	LABORATORY ROOM (F)	NON-SLIP VITRIFIED TILE FLOORING	-	2100 HIGH VITRIFIED TILE DAQO WITH PLASTIC EMULSION PAINT ABOVE	PLASTIC EMULSION PAINT
10	UAC-R210	ACID ROOM	ACID RESISTANT TILE FLOORING	-	2100 HIGH ACID RESISTANT TILE DAQO WITH ACID RESISTANT PAINT ABOVE	ACID RESISTANT PAINT
11	UAC-R211	TAMBOUR	KOTA STONE FLOORING	KOTA STONE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
12	UAC-R212	SHOWER ROOM	PREMIUM QUALITY NON-SLIP VITRIFIED WALL TILE DAQO OVER A COAT OF PRIMER OVER CEMENT MORTAR (1:4)	VITRIFIED WALL TILE DAQO OVER CEMENT MORTAR (1:4)	2 COATS OF PLASTIC EMULSION PAINT OVER A COAT OF PRIMER OVER CEMENT PUTTY	2 COATS OF PLASTIC EMULSION PAINT OVER A COAT OF PRIMER OVER CEMENT PUTTY
13	UAC-R214	(PLS CONFIRM ROOM NAME)	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
14	UAC-R215	VENTILATION COMPARTMENT	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
15	UAC-R216	AIR INTAKE CHAMBER	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
16	UAC-R217	AC PLANT ROOM	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
17	UAC-R220	COMPARTMENT OF IN FLOW	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
18	UAC-R223	(PLS CONFIRM ROOM NAME)	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
19	UAC-R225	COMPARTMENT OF EXHAUST VENTILATION	HEAVY DUTY FLOORING	CEMENT PLASTER SKIRTING	ACRYLIC WATER EMULSION PAINT	ACRYLIC WATER EMULSION PAINT
20	UAC-R226	STARCASE	KOTA STONE FLOORING	KOTA STONE SKIRTING	PLASTIC EMULSION PAINT	PLASTIC EMULSION PAINT
21	EXTERNAL WALLS				ORGANIC SILICATE PAINT	
22	EXTERNAL METAL SURFACES				EPOXY/POLYURETHANE PAINT	
23						

FLOOR, WALL, CEILING COLOUR SHADE AS PER NPCIL

SCHEDULE OF WALL OPENING

SR.NO	OPENING NUMBER	OPENING SIZE	OPENING HEIGHT	OPENING ELEVATION	REMARKS
		WIDTH	HEIGHT		
1	W.O.P-05	700	450		
2	W.O.P-06	600	450		
3	W.O.P-07	450	450		
4	W.O.P-08	350	450		
5	W.O.P-16	1000	600		
6	W.O.P-18	1100	450		
7	W.O.P-19	650	350		
8	W.O.P-21	850	1660		
9	W.O.P-22	800	500		
10	W.O.P-23	1500	1660		
11	W.O.P-24	350	500		
12	W.O.P-25	1050	1000		
13	W.O.P-26	1000	600		
14	W.O.P-27	950	600		
15	W.O.P-29	550	600		TOP OF OPENING FLUSH WITH BOTTOM OF BEAM
17	W.O.P-30	1400	600		
18	W.O.P-31	550	450		
19	W.O.P-32	600	550		
20	W.O.P-33	1600	600		
21	W.O.P-34	400	550		
22	W.O.P-35	750	350		
23	W.O.P-36	750	600		
24	W.O.P-37	600	500		
25	W.O.P-38	1450	1450		
26	W.O.P-39	1650	1650		BOTTOM OF OPENING FLUSH WITH TOP OF LINTEL BEAM
27	W.O.P-40	900	2100		
28	W.O.P-41	1500	1900		
29	W.O.P-42	1000	1000		TOP OF OPENING FLUSH WITH BOTTOM OF BEAM
30	W.O.P-43	700	300		
31	W.O.P-45	700	300		
32	W.O.P-46	1000	1000		
33	W.O.P-47	1300	600		

SCHEDULE OF WALL OPENING

SR.NO	OPENING NUMBER	OPENING SIZE	OPENING BOTTOM ELEVATION	REMARKS
		WIDTH HEIGHT		
1	CT W.O.P-13	1000 500	BOTTOM OF OPENING RL 22.000	CABLE TRAY OPENING
	CT W.O.P-14			
	CT W.O.P-15			
	CT W.O.P-16			
	CT W.O.P-17			
	CT W.O.P-18			
	CT W.O.P-19			
	CT W.O.P-20			
	CT W.O.P-21			
	CT W.O.P-22			
	CT W.O.P-23			
	CT W.O.P-24			
	CT W.O.P-25			
	CT W.O.P-26			
	CT W.O.P-27			
	CT W.O.P-28			

REFERENCE DRAWINGS

DRAWING No.	REFERENCE DRAWINGS	DRAWING No.	REFERENCE DRAWINGS
177.KK56.0.UAC.0.A.R.OK.WD003	STANDARD DRAWING FOR TRANSOMS, MILLIONS AND MASONRY WORK	177.KK56.0.UAC.0.A.R.OK.WD003	STANDARD DRAWING FOR TRANSOMS, MILLIONS AND MASONRY WORK
177.KK56.0.UAC.0.A.R.OK.WD003	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL ELEVATIONS	177.KK56.0.UAC.0.A.R.OK.WD003	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL ELEVATIONS
177.KK56.0.UAC.0.A.R.OK.WD002	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL SECTIONS	177.KK56.0.UAC.0.A.R.OK.WD002	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL SECTIONS
177.KK56.0.UAC.0.A.R.OK.WD001 (SH 1 OF 2)	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL PLANS	177.KK56.0.UAC.0.A.R.OK.WD001 (SH 1 OF 2)	SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL PLANS

REVISIONS

REV.	DATE	DESCRIPTION	REV'D.	APP'D.
RO	26/05/2025	FOR APPROVAL	YMG	GRK
RO	15/04/2025	FOR APPROVAL	YMG	GRK
RO	31/01/2025	FOR APPROVAL	YMG	GRK
RO	21/10/2024	FOR APPROVAL	YMG	GRK
P3	26/09/2024	FOR REVIEW AND COMMENTS	YMG	GRK
P2	30/08/2024	FOR REVIEW AND COMMENTS	YMG	GRK
P1	15/06/2023	FOR REVIEW AND COMMENTS	YMG	GRK

KUDANKULAM PROJECT DOCUMENTATION CENTRE MUMBAI

01 CONSTRUCTION KK56/UH/C/010976 Dt. 10-09-2025

Rev No Issue Issued for Issue Sheet Number with Date

NUCLEAR POWER CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CHECKED	REVIEWED	APPROVED
SOURAV BASAK	R K NISHIAL	K T RAO

DATE: 29.07.2025 02.09.2025 02.09.2025

ENGINEERING CONSULTANT: TATA CONSULTING ENGINEERS LIMITED

DRAWN	CHECKED	REVIEWED	APPROVED
MD KASHIF RAZA NSARI	ROHIT KUMAR	YOGESH GATFANE	RAVIKUMAR GUDPALLI

NAME: MD KASHIF RAZA NSARI PROJECT: KKNPP 5&6

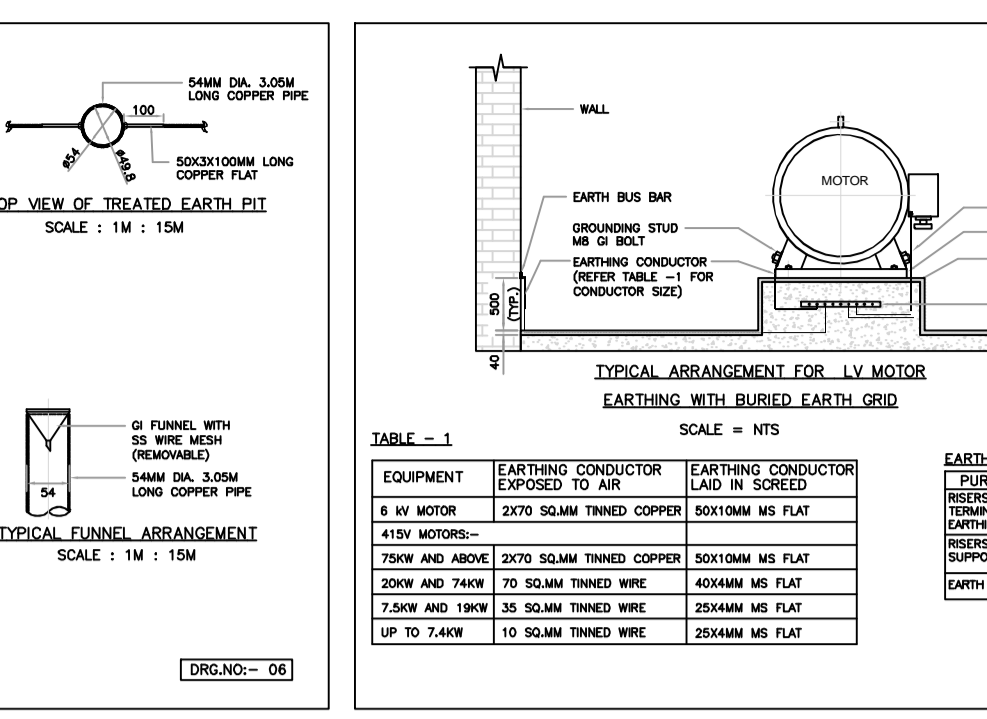
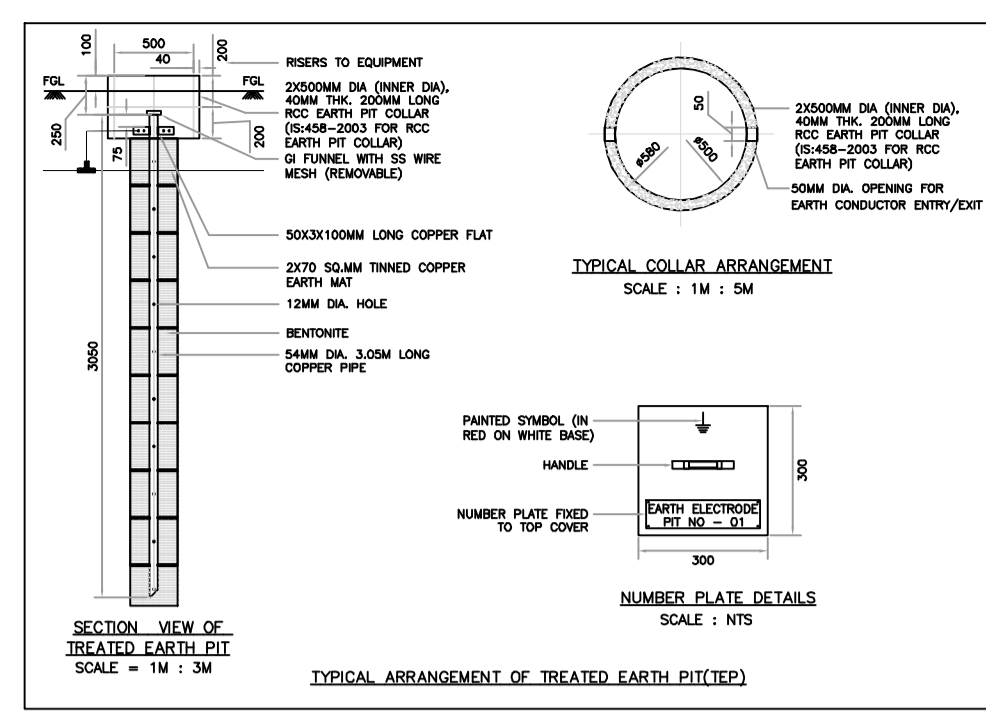
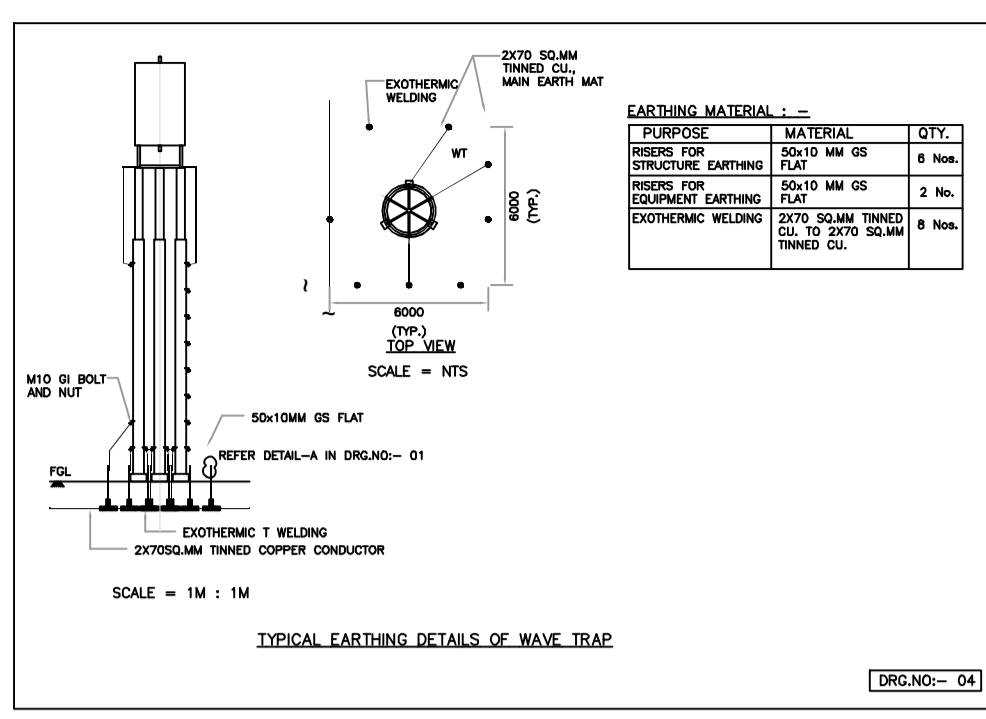
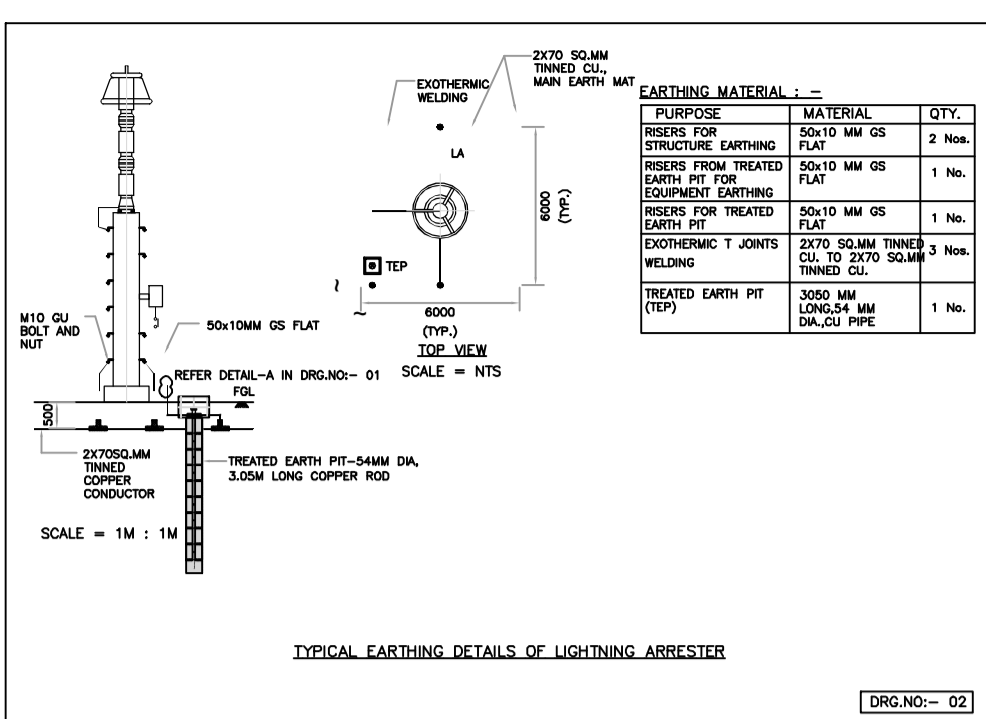
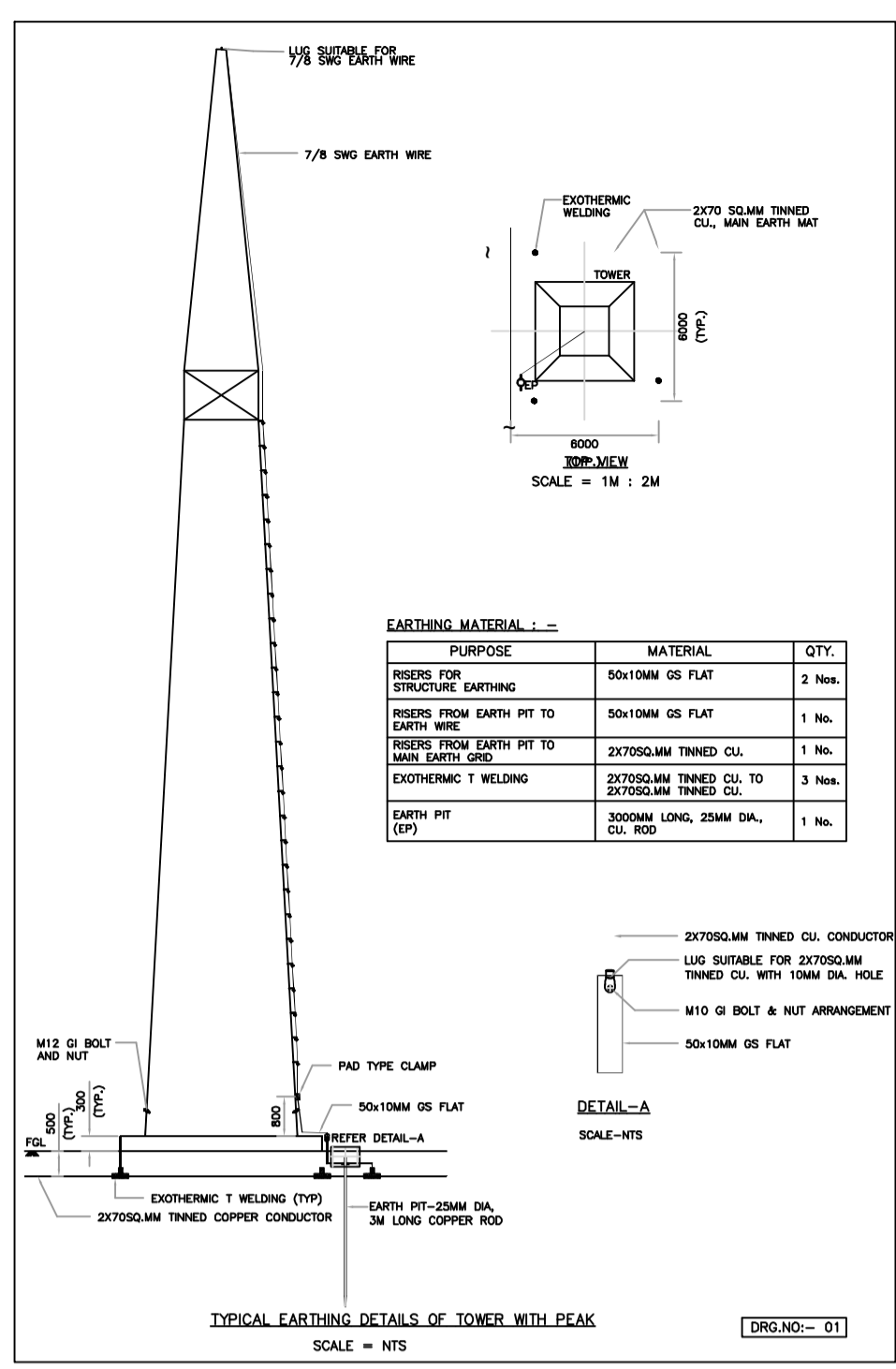
DATE: 26/05/2025 26/05/2025 26/05/2025 26/05/2025

TITLE: SWITCHYARD CENTRAL CONTROL BUILDING ARCHITECTURAL PLANS

PROJECT: KKNPP 5&6 SCALE: 1:11

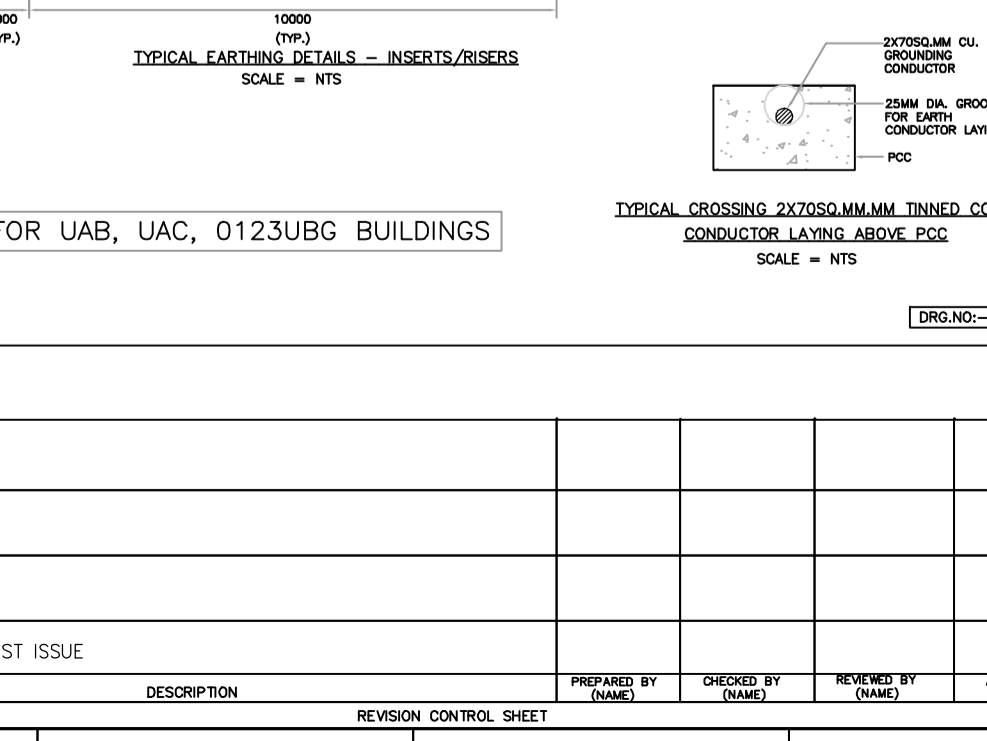
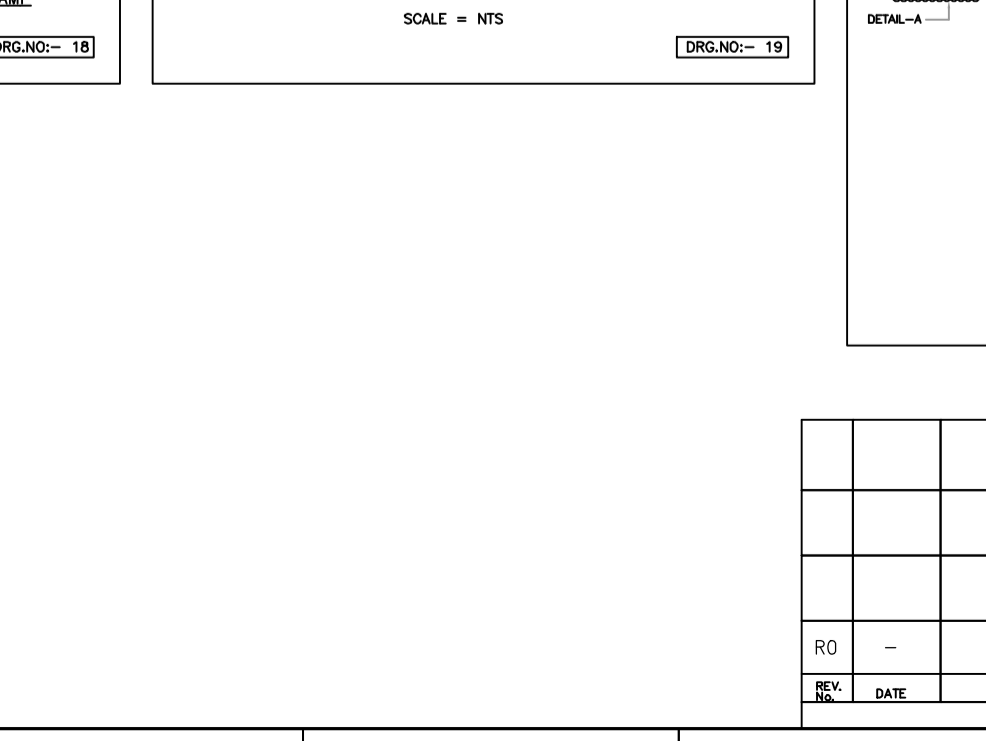
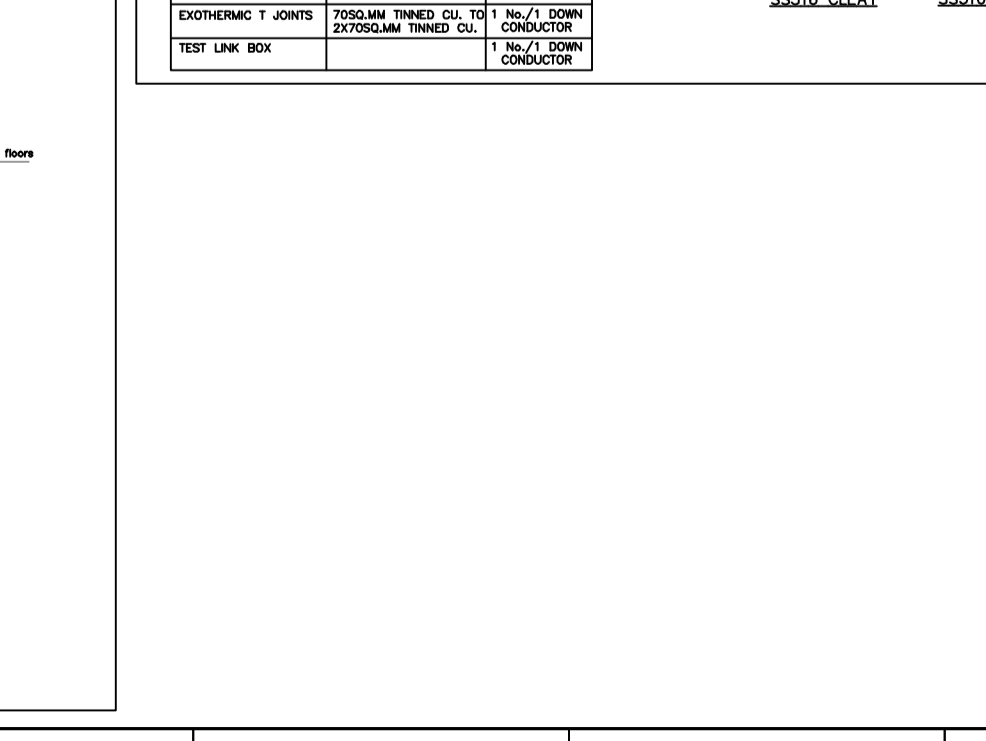
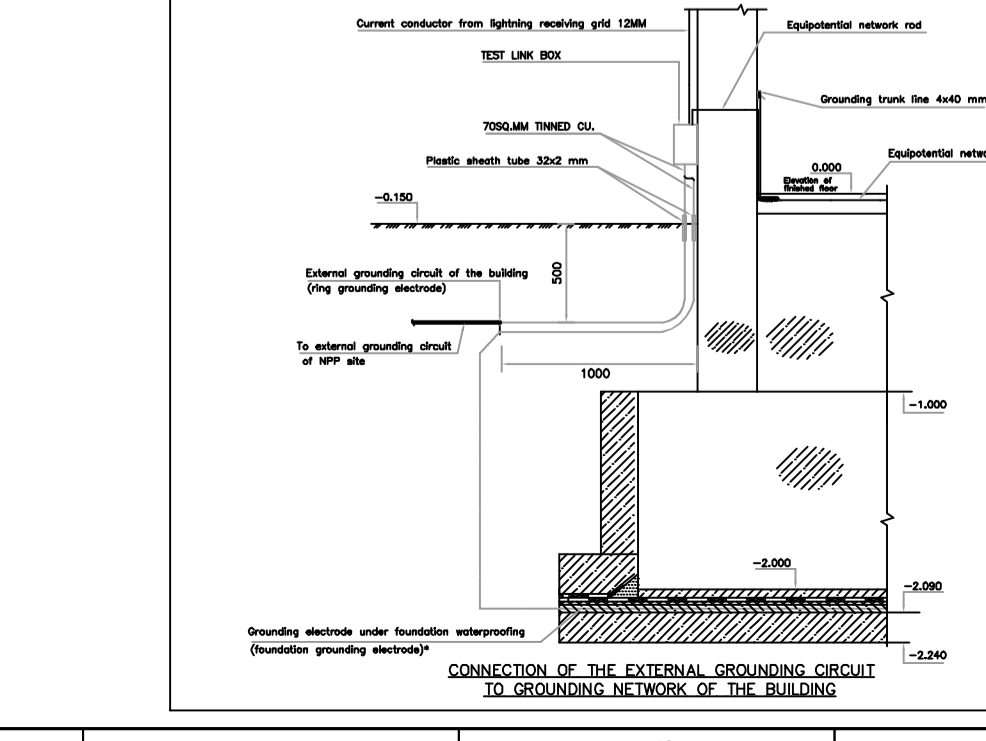
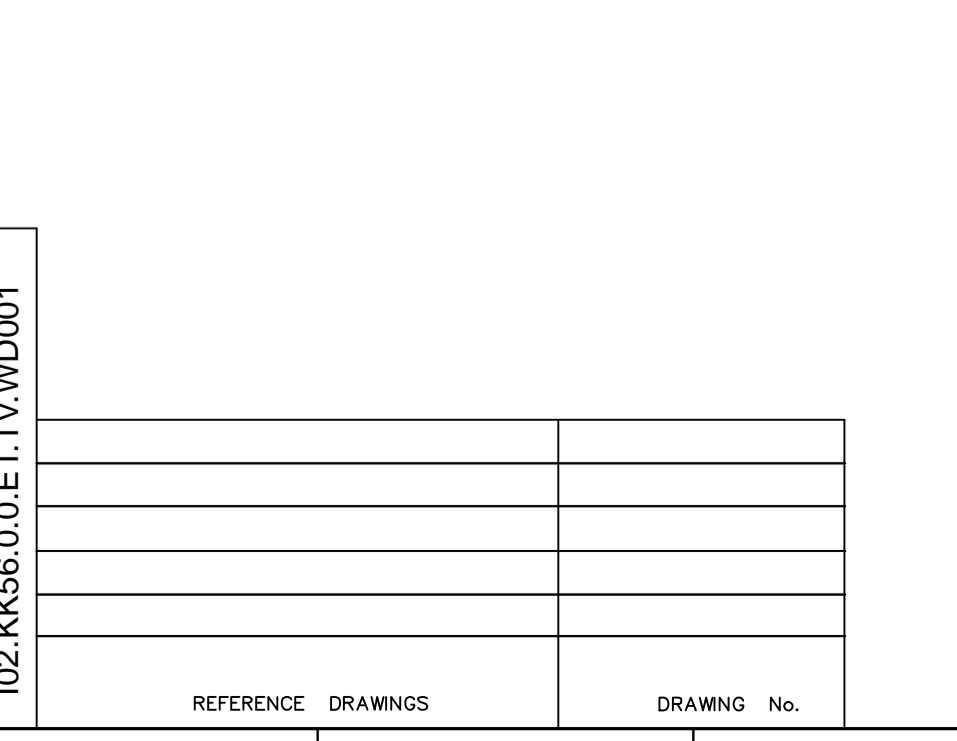
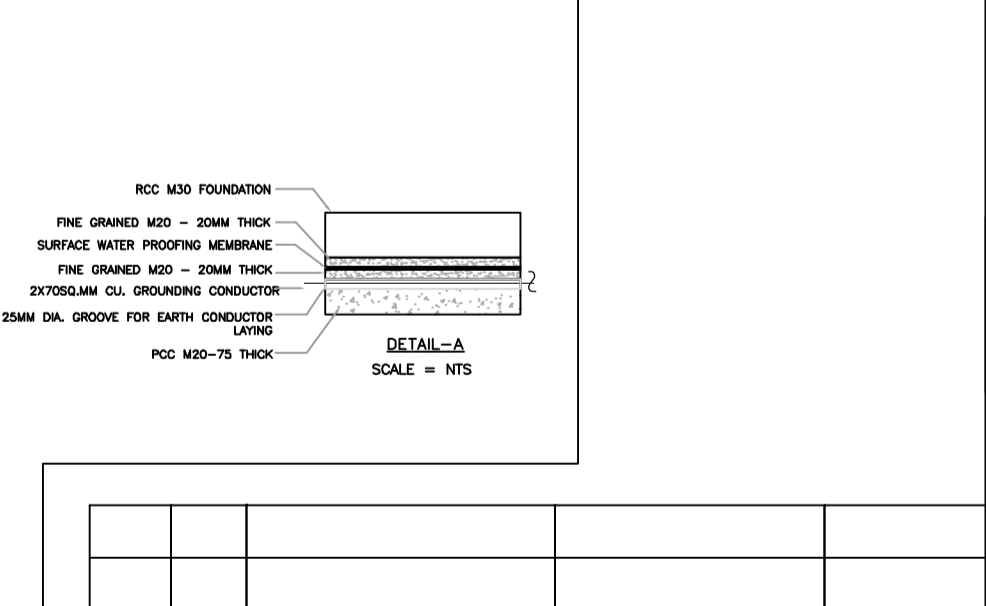
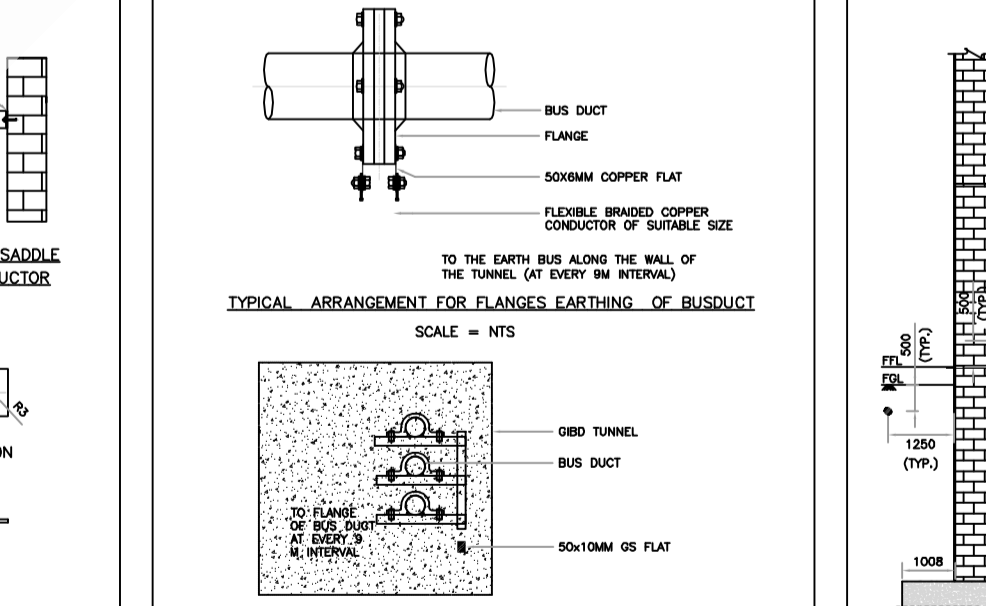
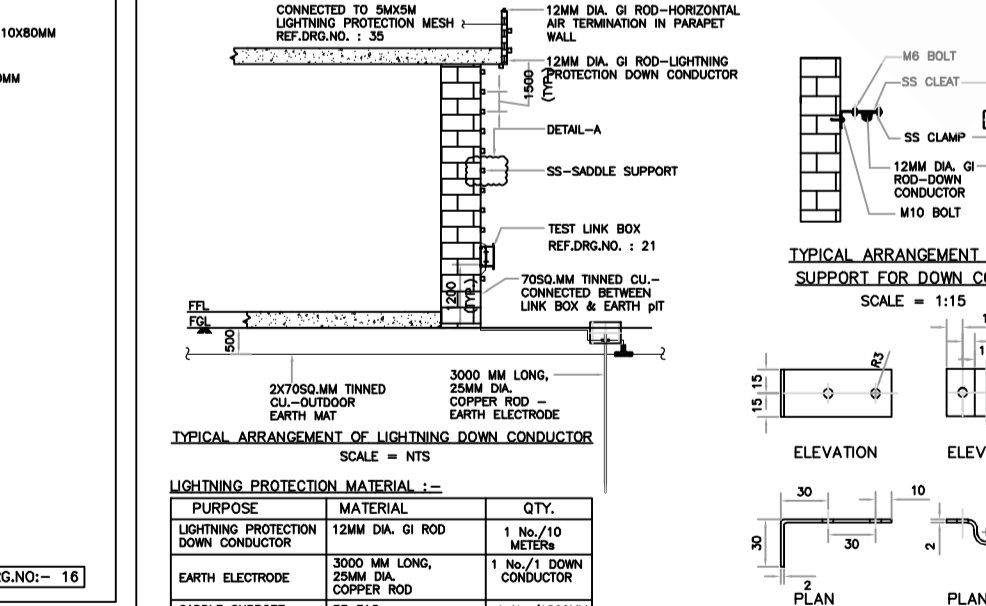
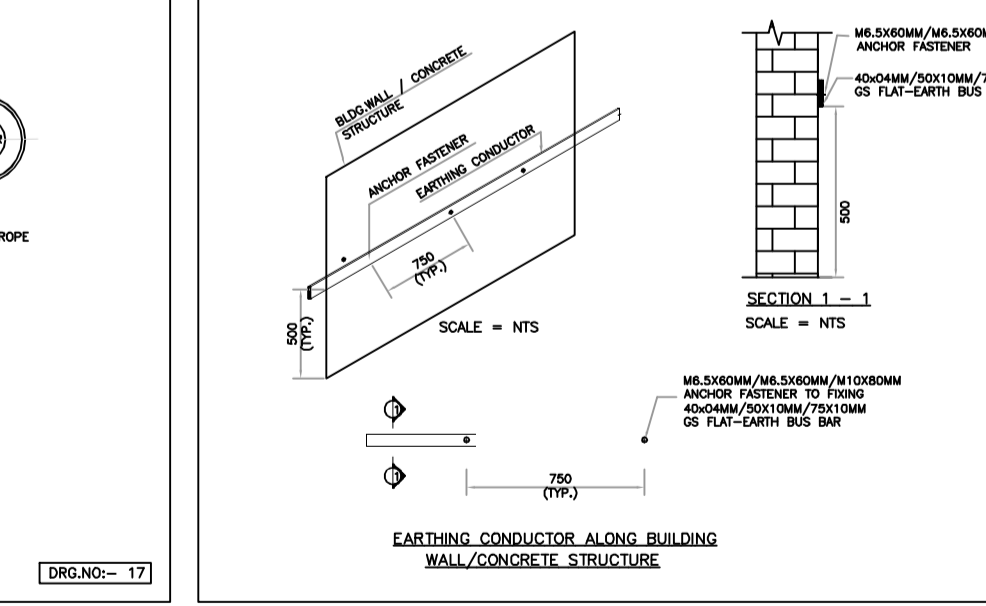
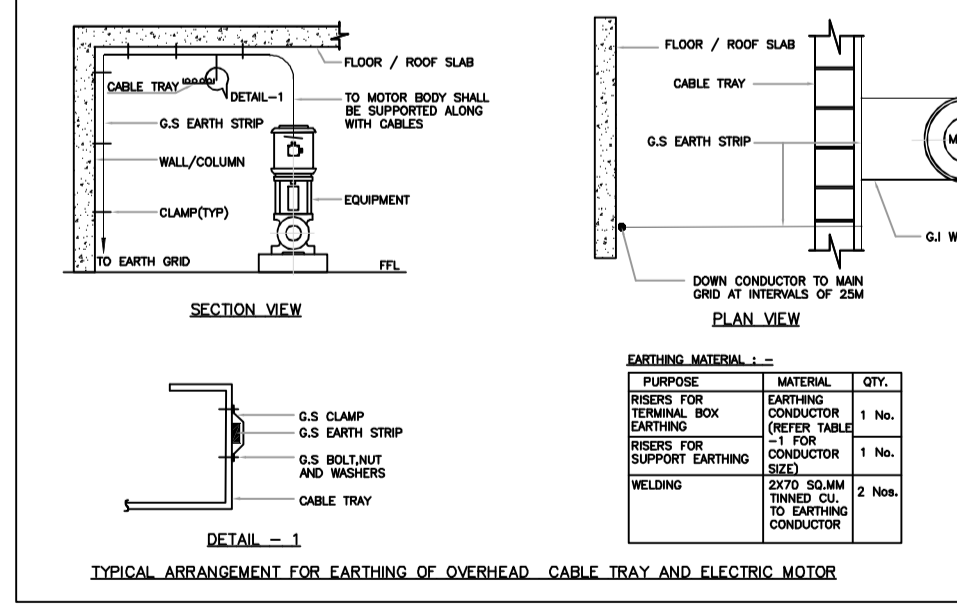
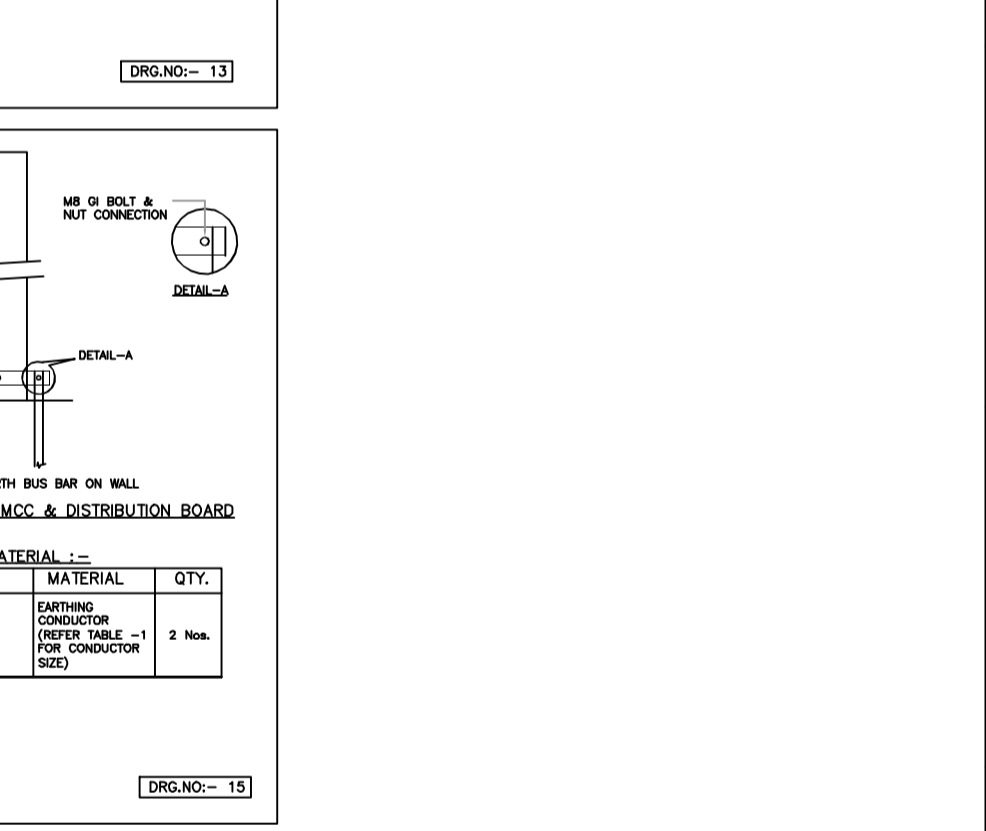
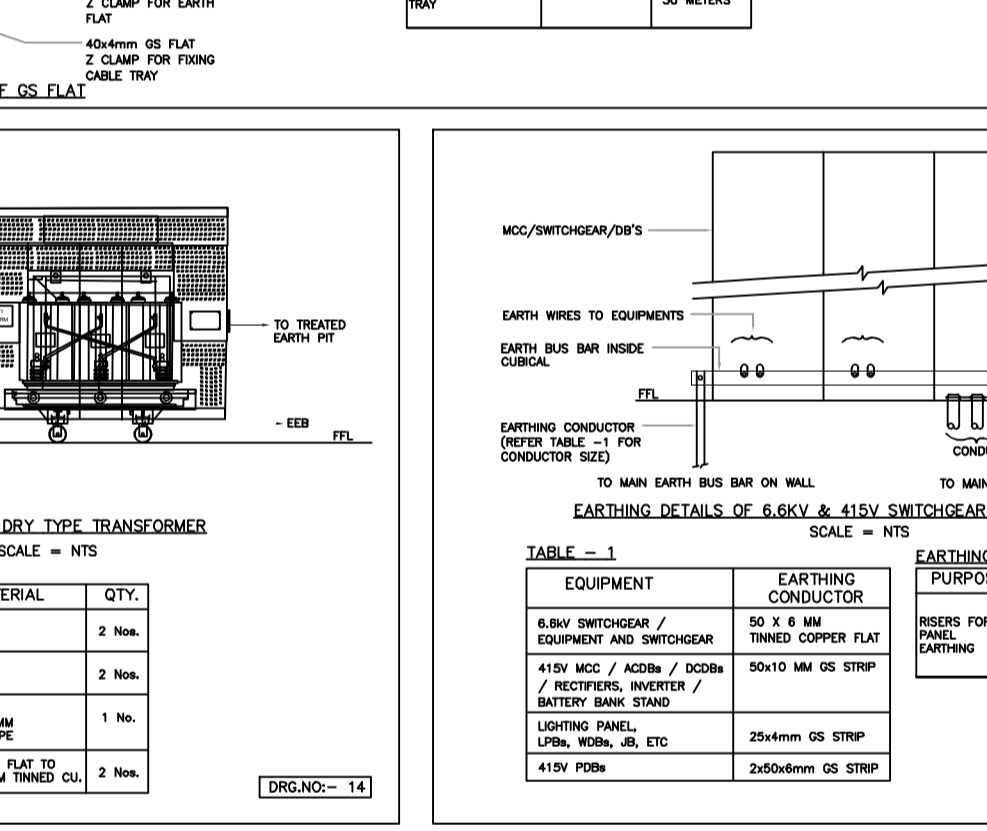
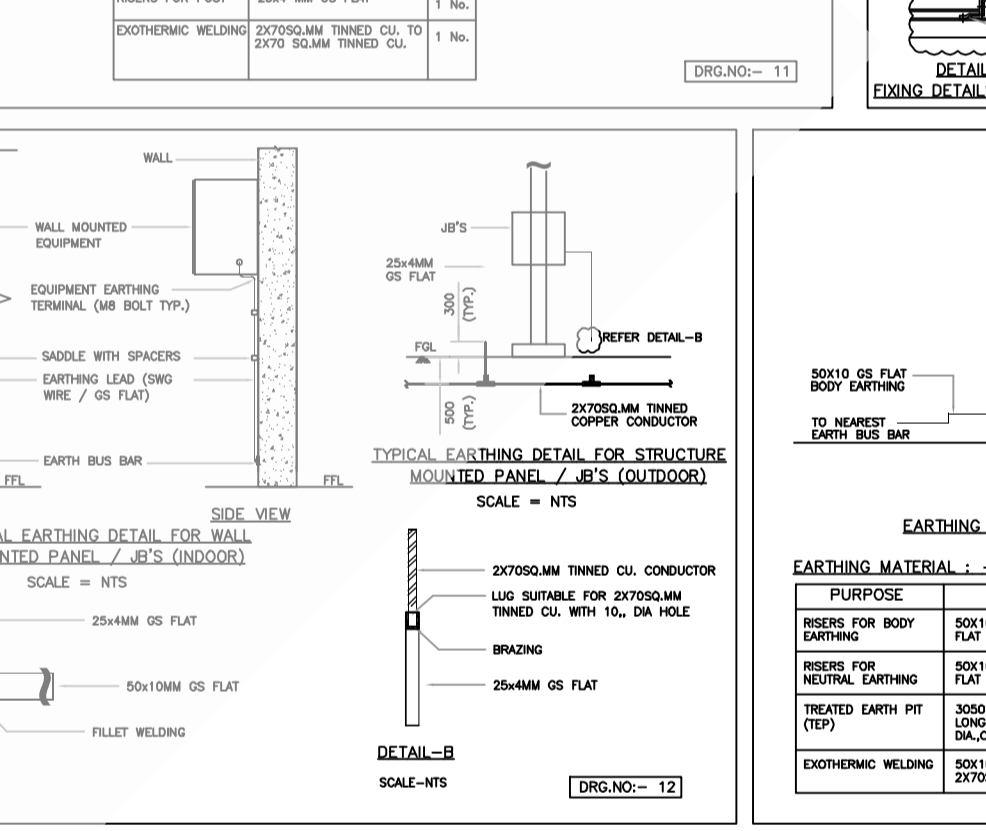
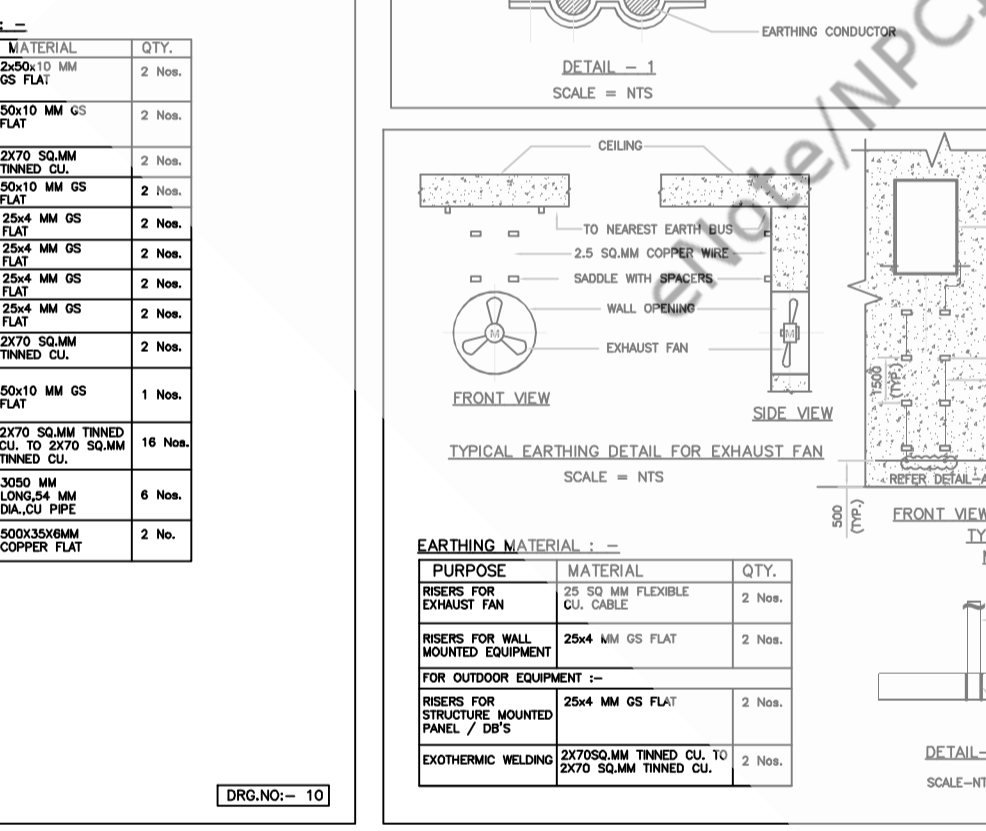
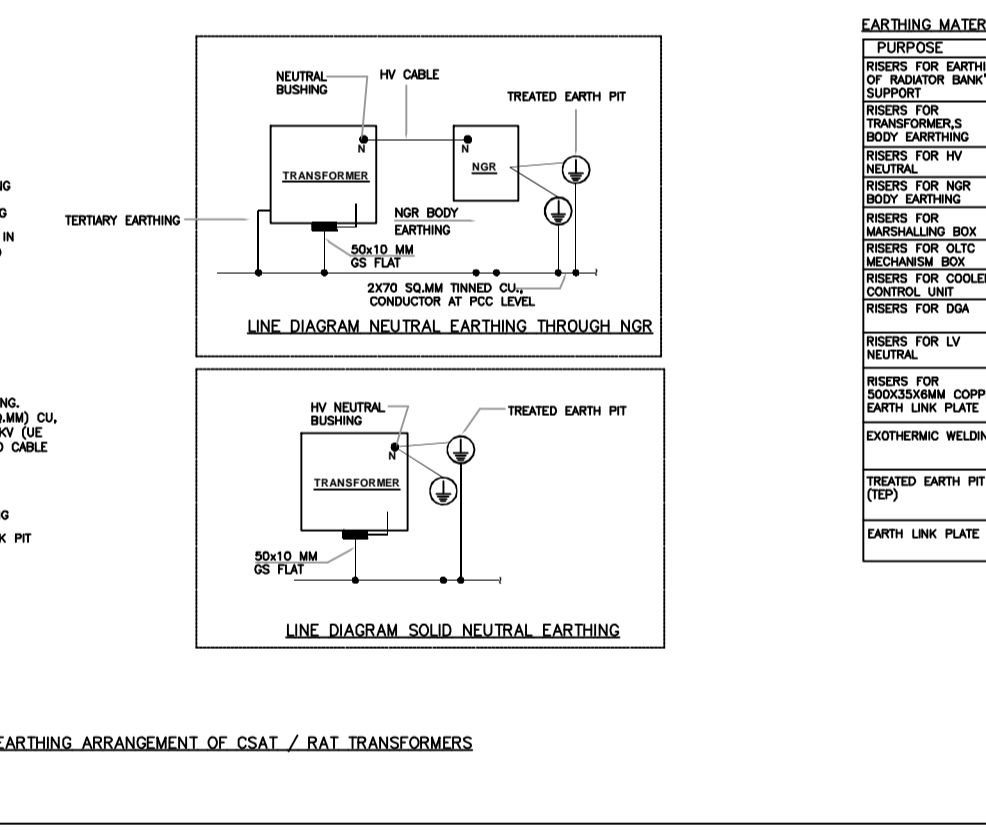
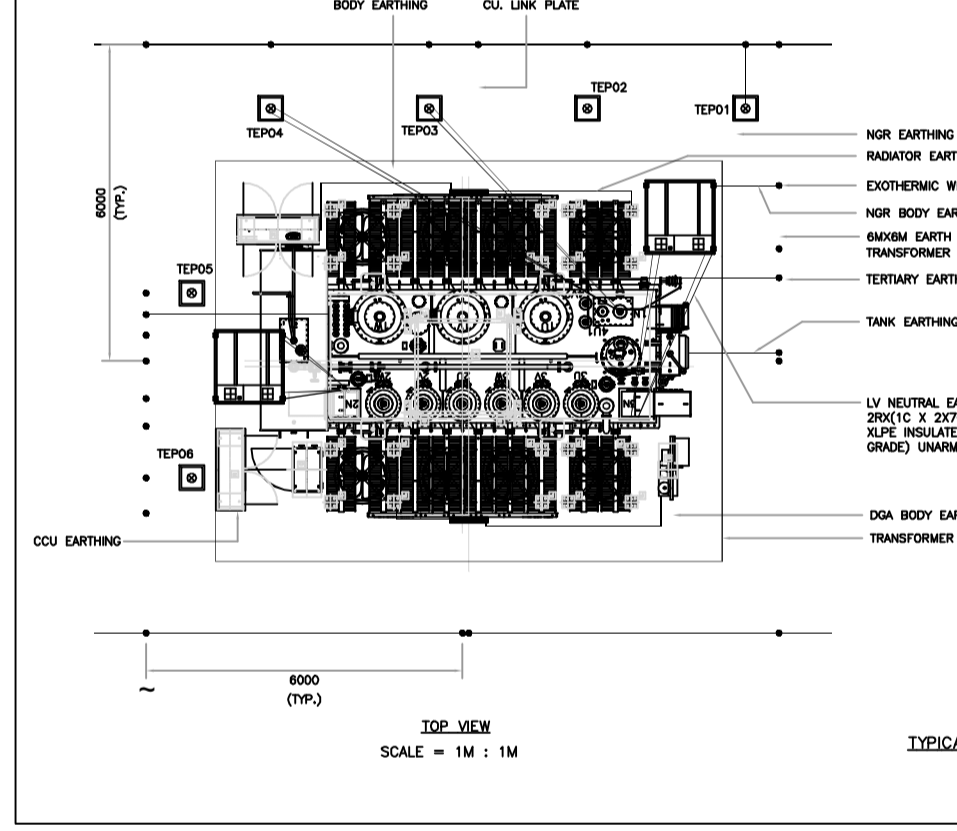
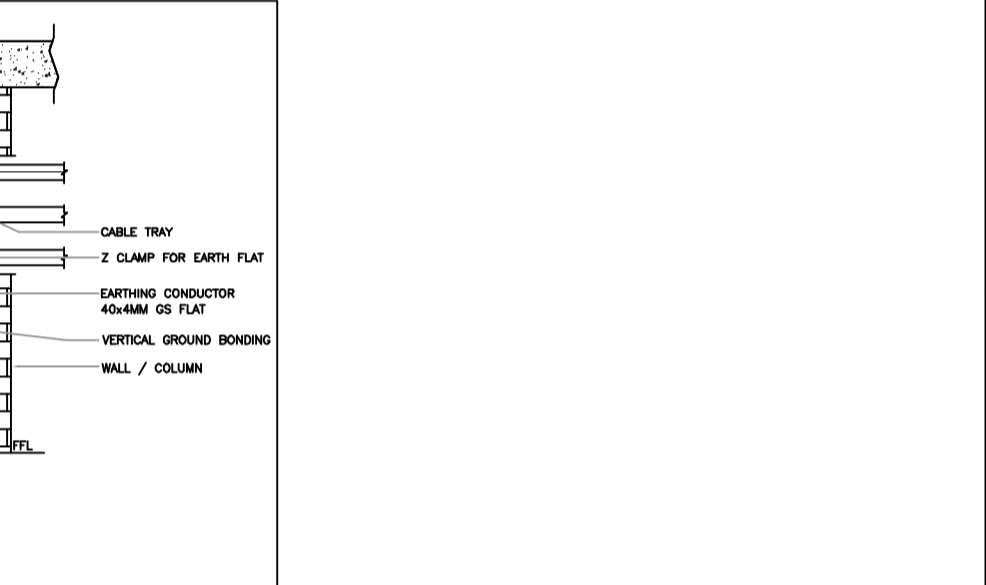
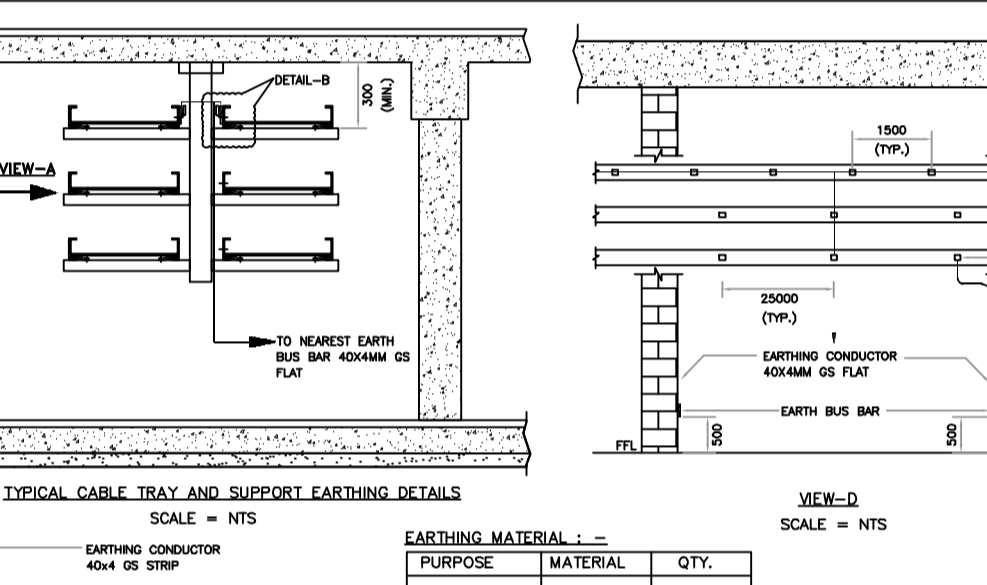
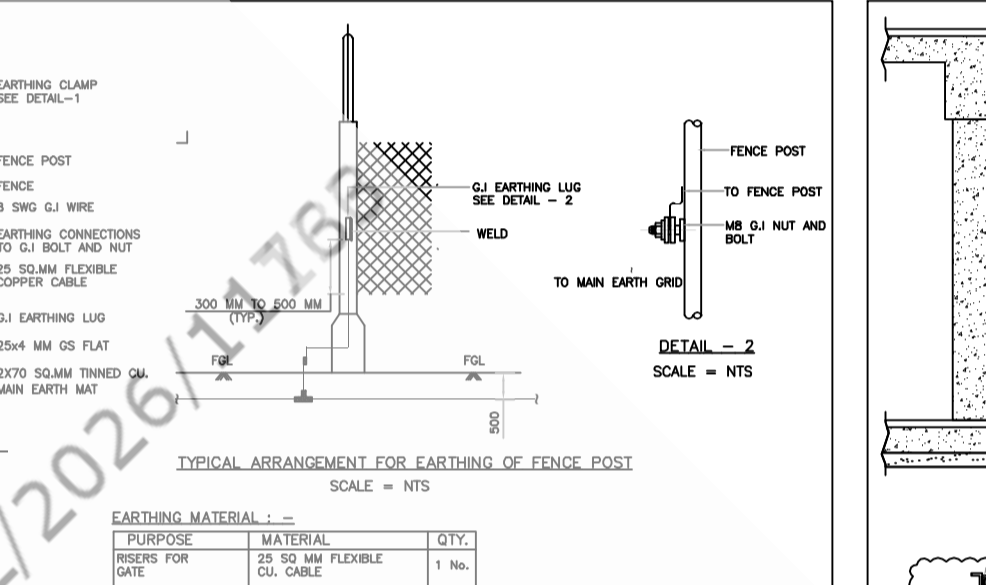
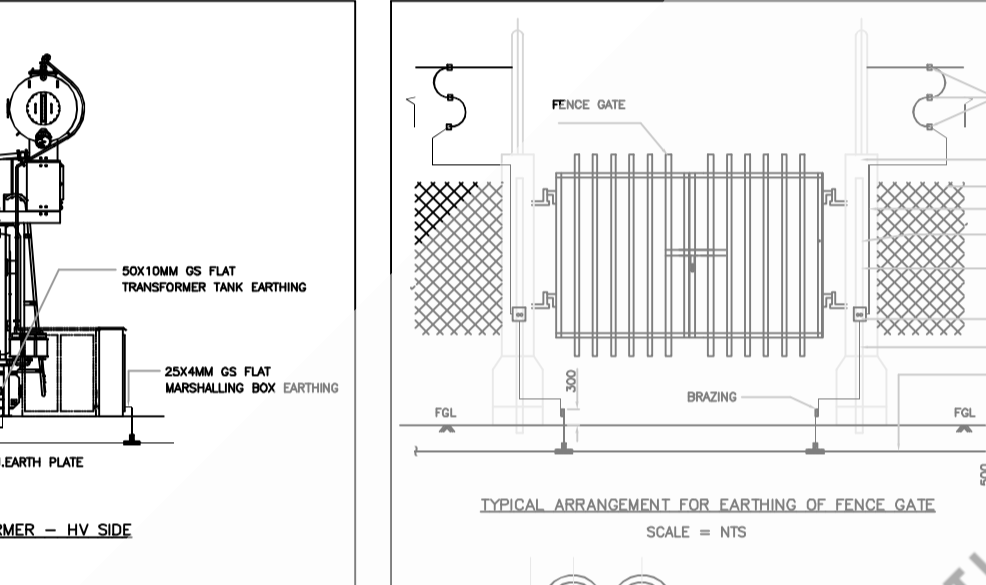
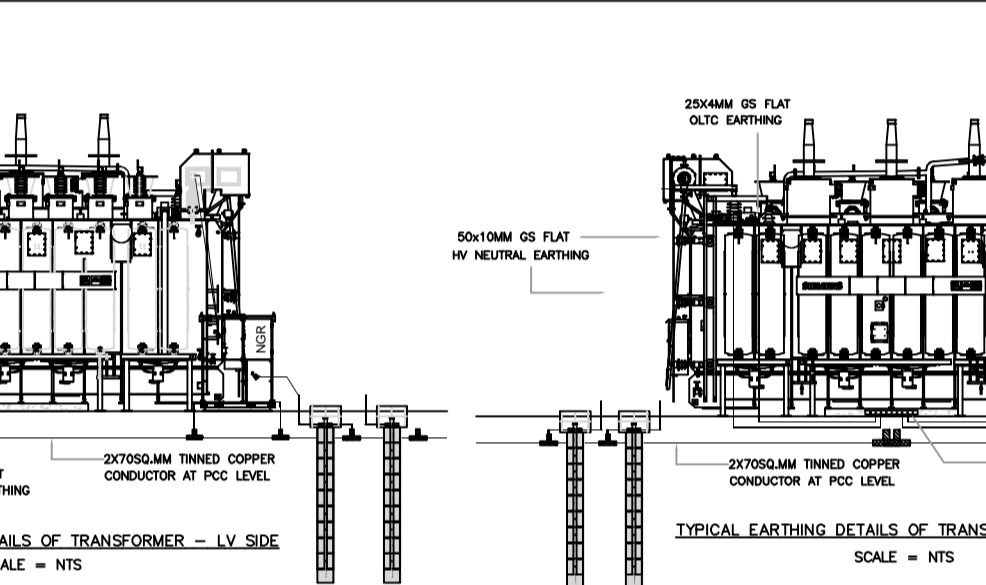
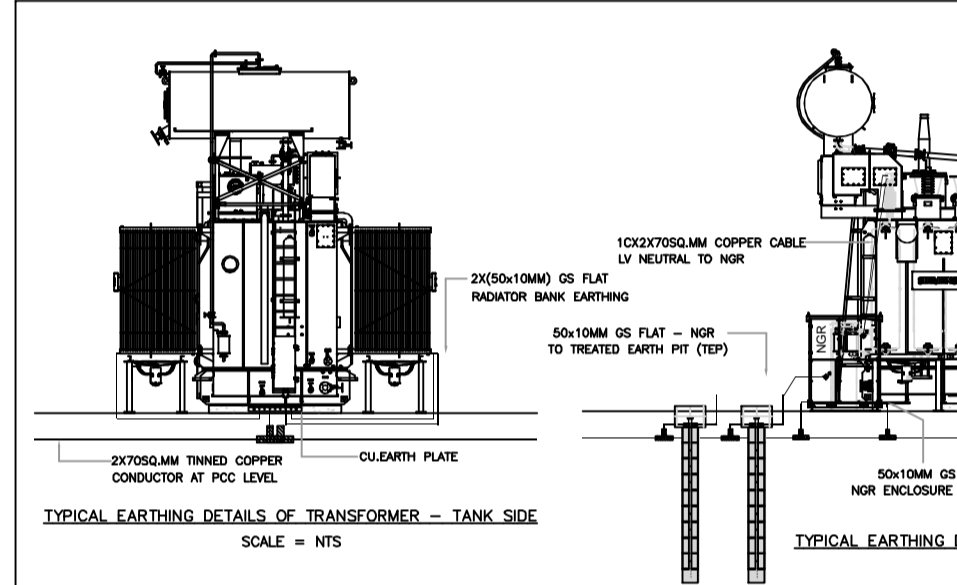
DRG. No. 177.KK56.0.UAC.0.A.R.OK.WD001 SHEET: 02 OF 02

DRG. TO BE READ IN CONJUNCTION WITH DCM/FE/CA, IF ANY.



LEGENDS :-

- 20x70x2MM THINNED COPPER CONDUCTOR
- 100x20x2MM COPPER CABLE
- 20x70x2MM THINNED COPPER CONDUCTOR
- 75x10MM GS FLAT
- 50x10MM GS FLAT
- 50x10MM MS FLAT
- 40x4MM GS FLAT
- 40x4MM CU FLAT
- 25 SQMM INSULATED FLEXIBLE COPPER CONDUCTOR
- 2.5 SQMM INSULATED FLEXIBLE COPPER CONDUCTOR
- 160SQMM THINNED COPPER CONDUCTOR
- 12MM DIA. GI ROD
- 10MM DIA. MS ROD
- 25MM DIA. GI ROD
- 7/8 SWG GS WIRE
- 5MM DIA. STEEL ROD



NO.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	REVIEWED BY	APPROVED BY
RO 01		FIRST ISSUE				

FOR UAB, UAC, 0123UBG BUILDINGS

DRG. No. 102.KK56.0.0.ET.TV.WD001

SCALE - NTS

PROJ. - KKNPP 5&6

SHEET 01 OF 03

REV. NO. 01

ISSUE NO.

CONSTRUCTION

ISSUE SHEET NUMBER (SN)

DATE

PREPARED BY: SANJEEV

CHECKED BY: P.SURESH KUMAR

REVIEWED BY: AJAY VISHWAS

APPROVED BY: A.KHANDELWAL

DATE: 20.03.2026

TITLE :- KUDANKULAM NUCLEAR POWER PLANT 5 & 6 EQUIPMENT & STRUCTURE EARTHING DETAILS

DRG. No. 102.KK56.0.0.ET.TV.WD001

102.KK56.0.0.ET.TV.WD001



न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

NUCLEAR POWER CORPORATION OF INDIA LIMITED

(A Govt. of India Enterprise)

(CIN : U40104MH1987GOI149458)



संविदा एवं सामग्री प्रबंधन निदेशालय
नाभिकीय ऊर्जा भवन,
ए-'O' ब्लॉक, तलमाला,
अणुशक्तिनगर, मुंबई - 400 094.
दूरभाष: 2599 3000 / 2599 1000
फैक्स: 91-22-2558 0741



DIRECTORATE OF CONTRACTS & MATERIALS MANAGEMENT

Nabhikiya Urja Bhavan,
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Anushaktinagar, Mumbai - 400 094.
Tel.: 2599 3000 / 2599 1000
Fax : 91-22-25580741

Pre-Bid Clarifications – Response-2 to Tender No. CMM/MEQ/91-21-2-1219

Ref.: CMM/MEQ/1219

Date: **22 MAY 2026**

To,

All the Concerned Bidders

Dear Sirs,

Sub: Tender No. CMM/MEQ/91-21-2-1219 for **Main Plant Electrical System Package for KKNPP-5&6**
(CPPP Tender ID: 2026_NPCIL_269561_1) – reg.

Ref: 1) Pre-Bid Meeting held on 26.03.2026
2) Pre-Bid Clarifications Response-1 issued on 24.04.2026.

This has reference to the subject Tender.

Please find attached herewith “Pre-Bid Clarifications – Response-2” to the queries received before/during or after the Pre-bid meeting.

Above shall form a part of the Tender, which may please be taken note of. All the other terms and conditions of the subject Tender remain unchanged.

This is, however, issued without prejudice to our rights under the terms and conditions of the subject Tender.

Thanking You,



Yours faithfully,

Sd/-

Addl. General Manager(C&MM)

For and on behalf of Nuclear Power Corporation of India Limited.
(The Purchaser)

Encl: 1. Pre-Bid Clarifications – Response-2

2. Annexures-1, 2, 3a, 3b, 3c, 3d, 3e, 3f, 3g, 4, 5 & 6

पंजीकृत कार्यालय: 16 वी मंजिल, सेंटर-1, वर्ल्ड ट्रेड सेंटर, कफ परेड, कुलाबा, मुंबई - 400 005
Regd. Office : 16th Floor, Center-1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005

Visit us at : www.npcil.nic.in

Pre-Bid Clarifications Response-2

NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
152	BHEL	1	SECTION - C	SUGGESTED VENDOR LIST FOR ELECTRICAL EQUIPMENT, KKNPP-5&6	SPECIFICATION NO: I02.KK56.0.0.AP.REP.PR003	Bidder understand that Vendor list given in the specification is suggestive and the same shall be finalised during detail engineering. Also Kindly provide package specific vendor evaluation criteria.	I02.KK56.0.0.AP.REP.PR003 already specify the requirement to be fulfilled for all vendor selections including suggested vendor selection.
153	BHEL	2	SECTION - C	SUGGESTED VENDOR LIST FOR ELECTRICAL EQUIPMENT, KKNPP-5&6	SPECIFICATION NO: I02.KK56.0.0.AP.REP.PR003	Bidder understand that Qualification of only main vendor shall be required, Separate qualification and approval for sub vendor to the approved main vendor shall not be required. Please confirm.	As per document I02.KK56.0.0.AP.REP.PR003, the bidder shall take the approval of NPCIL for Sub-vendor, based on credentials submitted and incase of sub of sub-vendor, the bidder shall evaluates and submit report to NPCIL. NPCIL reserve the right to accept or reject based on the credential of selected sub of sub vendors.
154	BHEL	3	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply		Bidder understand that Bill of quantities mentioned in the specification are firm and only requirement to be supplied under this contract. Please confirm.	The items specified in Section-E shall be supplied as per specification of respective items. Incuse of supply & erection items, there are a few consumables, non billable items which are not part of section-E. These items are included in the quoted rates. These items are to be identified & supplied as per detailed design drawings as per Tender specification.
155	BHEL	4	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 8 of BOQ : Copper flexibles/ Bus Bar	Kindly provide the specification of the mentioned items and Sizes to be supplied under this tender.	Minimum requirements shall be as per follows. Purity of Copper - 99.90% min ETP grade as per IS-191 and mechanical properties shall be as per IS 1897/ IS 9567
156	BHEL	5	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 2.4.1.1 of BOQ : LV S/G: LV switchgear - 50BJB LV switchgear - 60BJB	Bidder understand that 1 No. of 50BJB and 1 No. of 60BJB boards to be supplied.	Yes, 1 no.of BJB board (it may contain several vertical panels as per SLD requirements) , the bidder shall refer respective specifications.
157	BHEL	6	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 2.5.35, 2.5.57, 2.5.58 ,2.5.59, 2.5.61 to 2.5.65 of BOQ : 380/415 V MOTOR CONTROL CENTERS :	No. of boards is mentioned as 2 , however in all other places it is mentioned 1. kindly clarify.	For item no.2.5.35 of supply BoQ, KKNPP-5 qty. is 01 nos. and KKNPP-6 qty. is Zero., therefore total qty. will 01 nos. Total qty. 01 no.(one) may please be considered while quoting the rates. MCC - 60BFG76GH001 (SLD is similar to 50BFG76GH001) is for KKNPP-6, which is not required. For item no. 2.5.57, 2.5.58 ,2.5.59, 2.5.61 to 2.5.65 of supply BoQ, details of qty. given supply BoQ may please be referred..
158	BHEL	7	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 2.5.60 of BOQ : 380/415 V MOTOR CONTROL CENTERS :	3 No. of boards is mentioned as MCC -50BGE66GH001 MCC -50BGE66GH002 MCC -60BGE66GH001 However no. of boards mentioned is 2. please clarify.	NO.OF BOARDS FOR UNIT 5 is 2 and unit 6 is 1, total 3 nos. Please check BoQ. It is clearly mentioned
159	BHEL	8	SECTION - C	Page 12 of 83	SPECIFICATION NO: I02.KK56.0.0.PR.TT.PR008	Bidder Understand supply of oil filled transformers is excluded from Bidder's scope accordingly associated cables and Cabling system is also excluded from Bidders scope. However as per this clause all interface of oil filled transformers with other system is part of this tender. We understand that all interface related material (Cables, Cabling or any other material) is included in Supply BOQ mentioned in SECTION - E: and no other material to be supplied by the bidder . Please confirm.	Some materials may be part of the erection scope of works itself (to be supplied by contractor) as non billable items and same may be executed through BOQ in section-E. Bidder to refer complete tender document for understanding the scope, specifications, inclusions, exclusions of this contract.
160	BHEL	9	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.12	For item No. 3.12 GRP Cable Tray / Ducts purchaser's drawing for cable tray/ cable duct and tray supports/ bracket is not available. Kindly Quantify the requiremnet for each size to be provided.	Drawings for GRP Cable trays & suppoorts along with accessories, will be provided during detailed engineering/to be worked out during detailed engineering



Pre-Bid Clarifications Response-2

1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
161	BHEL	10	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.13	For item No. 3.13 SUPPLY OF BENTS,TEES AND ACCESSORIES,NUT BOLTS AND HARDWARE OF GLASS REINFORCED PLASTIC (GRP) CABLE TRAYS/DUCTS & SUPPORTS purchaser's drawing is not available. Kindly Quantify the requirement for each size to be provided.	Drawings for GRP Cable trays & supports along with accessories, will be provided during detailed engineering/to be worked out during detailed engineering
162	BHEL	11	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.9	For item No. 3.9 SUPPLY OF CABLE DUCT / TRAY PAINTED C2 TYPE RACK SUPPORTS,BRACKETS (Horizontal Supports) ,Z profile etc. Kindly Provide drawing for Z profile and its application.	Z profile is mainly used for local cable tray routing and supporting of cable routes till the equipment entry .Typical profiles are attached for understanding. 
163	BHEL	12	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.6	For item No. 3.6 SUPPLY OF CABLE DUCT / TRAY G.I. CC3 and CC4 TYPE SUPPORTS. Bidder understand that supply of CC3 and CC4 type rack is envisaged against item no. 3.6. Supply of Cable duct/ Cable tray/ Tray support is excluded against item no. 3.6. Kindly confirm.	We presume that query is related Supply BoQ Item Sr. No. 3.6, based on the same, our response are as follows: Application of CC3 and CC4 type elements is to support trays and ducts. Item description given in supply BoQ is quite clear. Different supports, ducts and trays are mentioned at appropriate places of BOQ with clear detailing. No further explanation is required.
164	BHEL	13	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.7	For item No. 3.7 SUPPLY OF CABLE DUCT / TRAY G.I. C2 TYPE RACK SUPPORTS,BRACKETS (Horizontal Supports) ,Z profile etc. Whether supply of Brackets (horizontal support) is also included along with the supply of C2 type rack support. Kindly clarify. Also please clarify what is Z profile.	Yes, bracket, Z profile etc. as clearly mentioned in the description of item 3.7 are included along with the supply of C2 type rack. For Z profile please refer reply to query at NPCIL responses. No. 162.
165	BHEL	14	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.12 & 3.13	For item No. 3.12 & 3.13 Supply of GRP cable tray, Support & accessories, whether the material requirement will be estimated in tonnage? Kindly clarify.	Yes, Material requirement is estimated in Tonnage.
166	BHEL	15	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.15	For item No. 3.15 DESIGN, ENGINEERING & SUPPLY OF CABLE TRAYS / DUCTS : (SUPPLY), Purchaser's requirement is not clear as supply of GI trays is already envisaged separately in this tender. Kindly clarify.	Supply BoQ Item Sr. No. 3.15 is kept for two purposes -a) Before bulk manufacturing prototypes are to be made to ensure proper connection assemblies, duplicating actual site installation conditions to avoid wastage and issues during installation. b)Based on site condition if specific element is to be designed then this item may be used for development of prototype.
167	BHEL	16	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 3.18-3.20	For item No. 3.18, 3.19 & 3.20 Supply of FIELD ROUTING CABLE TRAY / CHANNLES / ANGLES Purchaser's drawing is not available as mentioned. Kindly provide.	Dimensions of field routing elements are clearly marked in the supply BOQ item Sr. No. 3.18 & 3.19 and Details of supply BoQ item Sr. 3.20 are also given. Typical drawings will be provided to the successful bidder. However, preparation of fabrication drawing is manufacturer/Successful bidders responsibility during execution stage.
168	BHEL	17	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 6.0	For item No. 6.0 SUPPLY & DELIVERY OF FIRE BARRIER MATERIALS AS PER SPECIFICATION NO : I02.KK56.0.0.ET.TS.PR132, 2 Hrs rating fire stop system also envisaged however the same is not included in Bill of quantities. Bidder understand that 2 Hrs system is not required as per Section-E.	The specification and BOQ includes fire stop / barrier material of rating 0.75hr, 1.0 hr, 1.5hr and 3 Hrs

Pre-Bid Clarifications Response-2

NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
169	BHEL	18	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 6..1-6.7	For item No. 6.1 to 6.7 SUPPLY & DELIVERY OF FIRE BARRIER MATERIALS bidder understand only Fire stop mterial of differet rating are to be provided against the requirement. Fire resistance coating is excluded from scope of supply against this item as the same is envisaged against item no. 6.10, 6.11,6.12.	The fire barrier / stop supply also includes supply of consumables like sealant & fire resistent coating, Mineral wool which are included in the supply items of 6.1 to 6.7. Item 6.10, 6.11 and 6.12 is for supply of fire coating which is to be applied on cable other than the above requirement
170	BHEL	19	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 6..1-6.7	For item No. 6.1 to 6.7, SUPPLY & DELIVERY OF FIRE BARRIER MATERIALS, whether the requirement is for RTV silicon foam type fire stop system. Please clarify.	No, it does not mention RTV silicon foam alone. In I02.KK56.0.0.ET.TS.PR132, figure 1 to 9 configurations are clearly mentioned. Individual components used for fire sealant are fire barrier, two component silicon sealant, flexible silicon foam and fire resistance coating. Combinations as mentioned in the figures shall be used for providing the required fire sealing.
171	BHEL	20	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 6.13-6.16	For item No. 6.13 to 6.16, FIRE PROOFING OF CABLE DUCTS ,what is the application of fire resistance silicon sealant as the same is not envisaged as per Figure 8 & 9 of SPECIFICATION NO : I02.KK56.0.0.ET.TS.PR132. Please clarify.	For fire proofing ducts as mentioned in figure 8 and 9, silicon sealant is not mandatory.
172	BHEL	21	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No. 6.13-6.16	For item No. 6.13 to 6.16, FIRE PROOFING OF CABLE DUCTS ,Fire resistance coating as mentioned and Fire stop ablative coating as are same as to be supplied against item 6.10, 6.11, 6.12.	NO, coating on fire proofing ducts used for qualification of the ducts for fire tests shall be included under the supply of duct 6.13 to 6.16 with UOM as Sq.meter only. 6.10 to 6.12 is cable coating to be applied specifically on cable as explained in query response of NPCIL S.No. 169 as well
173	BHEL	22	SECTION - C		SPECIFICATION NO: I02.KK56.0.0.ET.TB.PR002, MANDATORY SPARES FOR ELECTRICAL EQUIPMENT	Some items are not directly related to BOQ line item and mentioned in percentage of total quantity envisaged. It is requested to quantify each item for offer preparation.	Quantities of such items are mentioned in percentage terms instead of absolute values. The BOQ item is for Mandatory spare, which shall be prepared by contractor after detailed engineering of respective systems taking guidance of the document I02.KK56.0.0.ET.TB.PR002 and get it approved by NPCIL for supply.
174	BHEL	23				We under stand all the BOQ required for erection & commission of the system is either included in the supply BOQ or shall be free issue material by purchaser. Kindly confirm.	All items are covered in Section-E. Please refer NPCIL response Sr. No. 154. also. Bidder to refer complete tender document for understanding the scope, specifications, inclusions, exclusions of this contract.
175	BHEL	24	01_I02.KK56.0.0.PR.TT.PR009_RS_Job specification; Annexure-I	Page 104 of 198	C.10 (Issue of Cables for erection and Scope of Cabling works)	Laying of the cables shall be carried out as per the cable schedules. We understand that All cable schedules and cable routes with respective drawings shall be provided by the Purchaser	Please refer relevent clauses of I02.KK56.0.0.PR.TT.PR008 for details regarding cable schedules/cable logs/ cable routes for different categories.
176	BHEL	25	01_I02.KK56.0.0.PR.TT.PR009_RS_Job specification; Annexure-I	Page 105 of 198	C.17. (Issue of Cables for erection and Scope of Cabling works)	All Cable ties, tags, Trefoil clamps, GI/Al clamps, GI binding wire. Scrap copper wire or any other material required for cabling shall be Free issued by purchaser. Kindly confirm.	No. Purchaser shall not issue as free issue materials. All Cable ties, tags, Trefoil clamps, GI/Al clamps, GI binding wire. Scrap copper wire or any other material required for cabling are in the Contractor scope of supply and erection. It is covered under erection schedule of the scope of Erection / Cable laying works.
177	BHEL	26	01_I02.KK56.0.0.PR.TT.PR009_RS_Job specification; Annexure-I	Page 112 of 198	40.3. (Following specific points are to be ensured for actual cable laying works:)	All Hume pipes, pipe sleeves or any other material required for cabling shall be Free issued by purchaser	No. Purchaser shall not issue as free issue materials. All Hume pipes, pipe sleeves or any other material required for cabling are in the Contractor scope of supply and erection. It is covered under erection schedule of MISCELLANEOUS WORKS BoQ item Sr. No. 11.
178	BHEL	27	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 2.10.1.1 of DC Distribution board :(SUPPLY)	DCDBs with Un=220V DC, In=800A, Icw = 36kA for 1s is mentioned, however in technical specification Ics at 36kA at 500V is mentioned. Kindly clarify	The nominal voltage rating of the DCDB is 220V (+10% to -15%). However, during boost charging of batteries, the voltage in the DCDB is around 300V. Hence, all MCCBs in the input module needs to be rated for 36kA at 500V DC.



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1	2	3	4	5	6	7	8
179	BHEL	28	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 2.11 BATTERY	It is mentioned that "The AH size of the battery shall be decided by the OEM after sizing calculation from the duty cycle of each battery. The minimum indicative sizes of the battery are given below." However the size is also mentioned. The bid shall be submitted as per battery rating mentioned. Any increase in Battery rating due to load cycle shall have cost implication.	Minimum indicative AH rating of the batteries are mentioned. Additionally, the duty cycles of each battery is given in the specification ET.TS.PR085_R2. The minimum indicative AH rating mentioned in the BoQ, is derived based on sample battery sizing calculation taking various factors based on the previous projects experience. However, as the battery sizing is subjective to OEM's proprietary factors, the C10 size may vary manufacturer to manufacturer for the same load duty cycle. In that case, the increase battery size will be supplied by the bidder without any price implication. However, in case the load duty cycle i.e. NPCIL inputs change, with respect to duty cycle given in the TS, the Bidder shall have to supply the battery size mentioned in the BoQ +10% without additional cost to NPCIL. In case the sizes are arrived above 110% of BoQ sizes due to change in NPCIL input, the same will be regulated through clause 19 of GCC of tender. But if the calculated size of the battery (as per sizing calculation by OEM) is lower than the minimum indicative AH size mentioned in the BoQ/TS, then battery size as mentioned in the BoQ/TS shall be supplied by the Bidder.
180	BHEL	29	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 3.1 to 3.5, CABLE METAL STRUCTURES (CMS) / CABLE TRAY & SUPPORTS:	For different types of cable ducts mentioned, purchaser's drawing or technical specification is not available. Kindly provide	Please refer Annexure IV and Annexure 5, of I02.KK56.0.0.ET.TS.PR101 Rev. No. _R2, typical drawings of KKPS and KKBS ducts are clearly marked.
181	BHEL	30	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	5.5 B_Supply	Sr. No., 2.4 to 2.10.	Bidder offers to supply Swbds/ MCCs with horizontal bus bar and earth bus bar of Aluminum and Vertical bus bar of Copper. Kindly accept.	Aluminum bus bar is not acceptable. Supply shall be in line with technical specification/datasheets of individual equipment.
182	BHEL	31	SECTION - C	SUGGESTED VENDOR LIST FOR ELECTRICAL EQUIPMENT, KKNPP-5&6	SPECIFICATION NO: I02.KK56.0.0.AP.REP.PR003	Bidder requests to allow other vendors i.e. M/s BCH, M/s C&S, M/s Pyrotech, M/s Tricolite etc for supply of Swbd/MCCS.	Tender conditions shall prevail. Please refer the document No. I02.KK56.0.0.AP.REP.PR003.
183	BHEL	32	Section E		SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	Bidder Understands that for any increase in the BOQ/Quantities during the execution mentioned in Detailed Schedule of Quantities, payment shall be made to the contractor as per the rate quoted in the respective schedule.	Quantities variations, if any, will be dealt as per the clause no. 19 of GCC of Section-B of Tender.
184	BHEL	33	Section E	5.0 EXCAVATION AND SOIL INVESTIGATION	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&6	Bidder requests Purchaser to provide the area demarcation and layout drawing for soil investigation.	Kindly Refer the following: 1) Annexure -1 Layout of 400kV Outdoor Switchyard and Annexure 2 -Tentative line routing details attached with the tender document I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard 2) Annexure -1 Layout of 230kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR054- Technical Specification for 230kV Outdoor Switchyard 3) I17.KK56.0.0.GE.RS.PR001 - Geo technical Investigation report attached alongwith. The soil investigation is envisaged for the 400kV and 230kV outdoor switchyard areas and for the tie line tower locations as required. The boundaries of switchyard and tentative tower locations are available as per the above documents/drawings for 400kV Lines. Also it may be noted that detailed route survey for the tie line is also included under the scope of this contract under item no 3.0, 6.0 of Miscellaneous Design Detailing and Allied Works schedule
185	BHEL	34	Section E	6.3 RE-LAYING OF ROADS	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&7	Bidder understands that any requirement of restoration in the road work (if any), it shall be only limited to outdoor switchyard area only. There is no road restoration work pertaining to main plant and BOP area. Please confirm. Further, Bidder understands that no civil engineering/drawing shall be prepared and submitted to Purchaser for this requirement.	The roads inside Outdoor Switchyard area boundary is included under the scope (Civil works)of this contract. Refer the description of items 1.1 and 2.1 of Civil works BoQ. The item 6.3 is intended for re-laying of roads outside Switchyard area (in the vicinity of Switchyard area) if required. Road width ranging from 4.5 meter upto 5 meter may to be considered for this item. Additionally, In case of damage caused to any road within KKNPP site by the contractor (e.g. due to equipment movement), it shall be restored by the contractor at his own cost. A scheme of restoration shall be submitted for approval of NPCIL for the above (both cases), before taking up execution (included under the scope of the subject item). The drawings required for bidder scope of civil work shall be prepared by the bidder



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186	BHEL	35	Section E	6.2 Removal / Reinstallation of Pre Cast Slab	SECTION - E: DETAILED SCHEDULE OF QUANTITIES AND RATES FOR MAIN PLANT ELECTRICAL SYSTEM PACKAGE FOR KKNPP-5&7	Bidder understands that no civil engineering/drawing shall be prepared and submitted to Purchaser for this requirement.	Kindly refer description of the subject item. The items is for removal/re-installation of pre cast slab/Cable trench covers etc. to facilitate cable laying , if required. Preparation of Procedures applicable for successful execution of these activities shall be included under this item itself.
187	BHEL	36	Section-A, APPENDIX-X, PRE-QUALIFICATION CRITERIA OF BIDDERS FOR PARTICIPATION IN EPC- MAIN PLANT ELECTRICAL SYSTEMS PACKAGE FOR KKNPP-5&6	B. TECHNICAL QUALIFICATION REQUIREMENTS, Clause 2.2.1 Gas Insulated Switchgear (GIS) of 220kV(at least) or above voltage level:	Completion of at least one project / works of GIS of 220kV and above voltage level as an EPC Contractor having completed the works of design/detailed engineering, project management, supply, installation, testing and commissioning. The job shall include completion of GIS works 220kV and above voltage level, with at least one-line bay integrated with GIS.	As per the referred clause for the GIS Qualification, the qualification requirements with respect to the Bidder's EPC experience have been specified . However, the tender document does not specify the technical qualification criteria for the GIS OEMs for the 400 kV and 220 kV class GIS equipment. Considering that these are critical and high-value equipment, and that we are required to undertake a pre-bid tie-up with GIS OEMs through an open tendering process, we request you to kindly provide the technical qualification requirements applicable for the 400kV & 220kV GIS OEMs. This will enable us to carry out the OEM selection process in line with the project requirements.	Qualification requirements for the Bidder has been stipulated in the tender. For details, Please refer the SPECIFICATION NO: I02.KK56.0.0.AP.REP.PR003, SUGGESTED VENDOR LIST FOR ELECTRICAL EQUIPMENTS, KKNPP-5&6
188	BHEL	37	Section-B(SCC), SI. No-10, GCC Cl. No 5.9	5.9 Terms of Payment.	NOTE 1: a) According to the Payment Terms, Advance payments will be interest bearing at the applicable rate as notified by NPCIL on the first of April each year. The rate of interest for the current financial year FY 2025 - 26 is 10.14% p.a.	As per the existing tender T&Cs, an interest-bearing advance is payable to the contractor. Considering the long project duration and the requirement for significant upfront commitments towards procurement of long lead equipment, raw material purchases and resource mobilization, we request your kind consideration to provide an interest-free advance of 10% bothe for supply & Services. Provision of an interest-free advance will facilitate timely mobilization and support smooth project execution in line with the project schedule.	Tender conditions shall prevail.
189	BHEL	38	Section-C	02_I02.KK56.0.0.AP.REP.PR003_R5 _Suggested Vendor list for electrical equipment	SI. No-1 400KV & 230 KV GAS INSULATED SWITCHGEAR a. GE VERNOVA T&D (GENERAL ELECTRIC TRANSMISSION & DISTRIBUTION) INDIA LIMITED CHENNAI b. SIEMENS ENERGY INDIA LTD., AURANGABAD c. HYOSUNG T&D INDIA PVT. LIMITED, PUNE	As per the suggestive list of vendors provided in the tender document, only three GIS OEMs are currently appearing in the list. However, there are several other GIS OEMs available in the Indian market who not only technically comply with the tender specifications but also meet the prescribed local content requirements. These OEMs are well established and widely accepted across the industry. BHEL also has experience working with these OEMs and has found them to be reliable sources for GIS equipment, bus ducts, and related services. Limiting the acceptable makes to only three OEMs may restrict competition and could potentially impact the competitiveness of the price offer for this tender. In view of the above, we request you to kindly consider the inclusion of the following OEMs in the approved vendor list: • M/s Toshiba Transmission & Distribution Systems (India) Private Limited(400kV & 220kV) • M/s Hitachi Energy India Ltd.(400kV) • M/s CG Power & Industrial Solutions Limited(220kV)	Any new Vendor shall be qualified /accepted as per document I02.KK56.0.0.AP.REP.PR003.



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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
190	BHEL	39	Section-C	02_I02.KK56.0.0.AP.REP.PR003_RS _Suggested Vendor list for electrical equipment	SI. No-1 400KV & 230 KV GAS INSULATED SWITCHGEAR a. GE VERNOVA T&D (GENERAL ELECTRIC TRANSMISSION & DISTRIBUTION) INDIA LIMITED CHENNAI b. SIEMENS ENERGY INDIA LTD., AURANGABAD c. HYOSUNG T&D INDIA PVT. LIMITED, PUNE	As per the project scope, GIS equipment of 400 kV and 220 kV class are required to be supplied under the tender. In this regard, we request your clarification on whether the makes of GIS for the 400 kV class and 220 kV class equipment can be different, or if the same OEM is required to be considered for both voltage levels. Your clarification will help us plan the OEM tie-up and bid preparation accordingly.	400kV GIS & 230kV GIS shall be supplied by same Manufacturers / OEM.
191	BHEL	40	Section-C	02_I02.KK56.0.0.AP.REP.PR003_RS _Suggested Vendor list for electrical equipment	In some equipment/items to maintain similarity with others, NPCIL reserves the right to choose the make of the equipment within the approved list, without or no implication to the NPCIL on account of time and cost i.e. even among the acceptable makes the Purchaser reserves the right to select the vendor based on the confidence/experience gained in other projects or makes being finalized for the other major works of the Project.	As per our standard procurement procedure, major equipment and items are procured through an open tendering process. In this context, reserving the right for the Purchaser to select the make may lead to proprietary procurement and could pose risks to the bidder in terms of cost, delivery timelines, and contractual commitments. Accordingly, we request NPCIL not to insist on such a requirement and to keep the selection of make open within the list of vendors proposed by the contractor, including the vendors listed in NPCIL's suggestive vendor list. This will help ensure transparency in procurement and avoid potential time and cost implications to Contractor.	It is not the intent to just replicate the make/manufacturer of each and every items of KKNPP 5&6 from the existing projects of NPCIL. The matter to be reviewed on case to case basis during execution/detailed engineering taking into account of the project timeline and time schedule of engineering, qualifications and tests of the offered equipment, their delivery schedules, services & support guarantees of the OEM, etc. by successful contractor for the subject package and NPCIL reserves its rights to insist on the same make of equipment, which the Contractor shall comply with no additional cost and time implication to NPCIL. The Sub-Vendors who are qualified/type tests (Except Seismic test)satisfactorily completed in earlier LWR Projects, will save time as the type test are not required to be repeated.
192	BHEL	41	Section-E	5.8 E_Civil Works	Civil BOQ item 5.1.1	We note that dewatering during excavation of foundations is not explicitly available as a separate item in the BOQ. In this regard, kindly clarify under which BOQ item the dewatering activity, if required during excavation, shall be considered.	Note no 1 of items under 5.1 shall be modified and considered as: "The cost of dewatering required for the excavation shall be included in this item."



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1	2	3	4	5	6	7	8
NPCL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
193	BHEL	42	Section-E	5.8 E_Civil Works	Guide no .AERB/SG/CSE-2 Phase 1	As per Item No. 5.2.13 of the tender document, the Soil Investigation Report is required for reference. We request you to kindly make the same available to enable us to assess the geotechnical conditions and prepare our bid accordingly.	<p>I17.KK56.0.0.GE.R5.PR001 - Geo technical Investigation report is attached alongwith. Also, -refer item 5.2 of Civil works BoQ (Soil Investigation). The items applicable and their final quantity shall be finalised with NPCIL concurrence prior to execution.</p> <p>Additional Clarifications: 1) Description of item 5.2.1 of Civil works BoQ shall be considered as follows "Setting up of drilling equipment at each of the drill locations includes following activities but not limited to them. (1) General clearance of site and removal of shrubs, bushes etc. and disposing at places as directed by Engineer-in Charge upto 3km lead, required to commence the boring/ drilling operation & in-situ tests in bore holes, for transferring of bench marks, making temporary benchmarks etc and clearance of site after completion of work. (2) Making temporary access roads to the boring/ drilling and test locations from existing approach roads to site. (3) Mobilization and Demobilization of adequate numbers of suitable boring and drilling rigs of hydraulic type, including necessary drilling rods, pumps, miscellaneous equipment, tools, spares, consumables etc. adequate for each set of drilling plant, survey equipment, etc. Additional rigs and equipment shall be mobilized if needed for timely completion of the work at his own cost. (4) Marking the drill hole locations on ground by actual survey as per the drawing, shifting and setting up of rig at each bore hole location including staging, platform, earthwork, anchoring etc. all complete. (5) Deployment of technical, skilled, semi-skilled & unskilled man power required for carrying out the complete work as per specifications & drawings. (6) Measurement of ground water level as per specifications & drawings. (7) Maintenance of drilling records and submission of final geological logs in hardcopy as well as soft copy. (Item will be operated only one time per one bore hole location)".</p> <p>2) Description of item 5.2.13 of Civil works BoQ shall be considered as follows "Preparation and submission of geotechnical investigation reports of all the tests, field investigations, laboratory tests etc. in the scope of this tender as detailed in various schedules, specifications, drawings inclusive of bore logs, Compilation, interpretation, analysis of the data, recommendations of the foundation design parameters found out from the tests, as per AERB Guide no. AERB /NPP/SG/CSE-2. Report shall be submitted in soft copies as well as hard copies. All the drawings shall be submitted in AutoCAD format."</p>
194	BHEL	1	SUGGESTED VENDOR LIST FOR ELECTRICAL EQUIPMENT, KKNPP-5&6	Clause 3.5 -Transformer	VPI Method	Please confirm if dry type varnished transformer can be used or not. Transformers will have class H insulation. Same transformers are supplied for KKNPP3&4 and for all NPCIL projects.	Tender conditions shall prevail.
195	BHEL	2		Clause 3.6.2 - Capacitor	Film Based Capacitor	Please confirm if Electrolytic capacitors of reputed make can be used or not. The number of capacitors used are selected ensuring only 50% rated current flows through each capacitor. The Film based capacitors are of different size and shape. Hence the sandwich assembly used for Inverter IGBT's and its supporting structure will have to be redesigned mechanically compared to equipments supplied to KKNPP 3&4.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
196	BHEL	3		Clause 3.10.1	Bare PCB Class3 performance Compliance Certificate from external audited agency.	Is it applicable to PCB's which are proven and used in NPCIL supplied inverters/rectifiers for more than 5 years.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
197	BHEL	4		Clause 3.10.7	Simulation Result of each PCB's circuit to be submitted	Stress analysis report for PCB components with voltage and current derating data can be provided.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
198	BHEL	5		Annexure 7.Clause1.4	Screening of 100% components to be done at ERTL/NABL accredited lab or NPCIL approved LAB.	Whether the same facility can be used for screening.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
199	BHEL	6		Annexure 7.Clause(1.1-1.3)&(2.1.1-2.1.3)		Whether these conditions are applicable if the components used in PCB's are same as the components used in KKNPP 3&4 supplied Equipments.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
200	BHEL	7		Clause 4.8 & Annexure 1 SLD	Inverter shall have input Filter	Inverter will be provided with EMI filter and DC capacitor filters at input. As per SLD(Page40/76).DC inductor filter is shown .Pls confirm if this is required This cannot be accommodated for the given panel dimensions	Inverter is not in the scope of supply of the subject tender.
201	BHEL	8		Clause 5.1.13	EMI filter at output of Rectifier	EMI filters are provided at input of rectifier only. Rectifiers supplied to KKNPP3&4 have qualified EMI EMC tests without filter at output	Rectifier is not in the scope of supply of the subject tender.



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202	BHEL	9		Clause 5.1.11	Analog Based controller	All KKNPP3&4 rectifiers were type test qualified with digital DSP controller to meet the transient & regulation requirements of specification. Analog based controller cannot meet these output transient requirements(CI.5.1.6).	Rectifier is not in the scope of supply of the subject tender.
203	BHEL	10		Clause 5.1.6	Transient Recovery:200ms Undershoot/OvrShoot:+/-10% of nominal value on application or removal of 100% Load	All KKNPP3&4 rectifiers were type test qualified with digital DSP controller to meet the transient & regulation requirements of specification. Analog based controller cannot meet these requirements.	Rectifier is not in the scope of supply of the subject tender.
204	BHEL	11		Clause 5.2.17	EMI filter at bypass input port EMI filter at output port of inverter	EMI filters are provided at input of inverter only. Inverters supplied to KKNPP3&4 have qualified EMI EMC tests without EMI filter at output and at bypass input port.	Inverter is not in the scope of supply of the subject tender.
205	BHEL	12		Clause 8.7 Type Test & Clause 3.3.7	IP41 Tests	Need to confirm whether the Type test can be conducted at In-house or at an External facility	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
206	BHEL	13		Clause 6.5	Proto undergoing seismic cannot be billed.	Proto will be supplied to site after replacement of relays, meters and contactors(if used) and will be billed. If additional unit is required cost will be extra.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
207	BHEL	14		Clause 3.3.2	frames made up of folded mild sheet steel of at least 3mm	Frames will be made of sheet steel of 2.5mm. All our seismic & ASW qualified panels are made of 2.5mm thickness sheet.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
208	BHEL	15		Clause 3.3.14	Modular Construction	Power components and Control components are arranged considering ease of maintenance, trouble shooting & replacement of faulty components.	The technical specification against which, the query is provided is not identified by the bidder. Hence, response couldn't be provided.
209	BHEL	16	Template-F	SL. NO.-8&14	Template-F	Kindly provide detail of spares along with quantity to be included in Mandatory spare list of 6KV IPBD & 415V NSPBD.	Please refer document I02.KK56.0.0.ET.TB.PR002 R2
210	BHEL	17	I02.KK56.0.0.ET.TS.PR079	3.4.3	--	Kindly confirm acceptance of Epoxy cast resin insulator.	The provisions as mentioned in the TS or the arrangement proposed here by the bidder-BHEL both are acceptable subject to the condition that the offered insulators qualifies the design requirements including the forces mentioned in the technical specifications.
211	BHEL	1	I02.KK56.0.0.ET.TS.PR078, Annexure -8 (pg 1651 to 1657 of 1972)		Width - 800mm/1000mm Depth - 1800mm Height - Not specified in spec	We understand that the panel dimensions given in the layout drawings are tentative & OEMs can offer panels with diemnsions as per their type tested design. We shall be offering panels with dimensions as mentioned below: Width : 820mm (upto 2500A) & 1220mm (for 3150A); Depth : 2100mm Height : 2800mm (excluding base frame) NPCIL to confirm acceptance.	Building and layout dimensions are fixed and there is no scope of change in the dimensions of switchgear panel, from the specified values in the tender specification and hence Tender requirement shall prevail.
212	BHEL	2	I02.KK56.0.0.ET.TS.PR078	6.35.1	Earthing switch to be provided in all the feeders.	We request customer to accept Separate Bus bar/Feeder Earthing Truck also as it offers more reliable and positive Earthing. In this case, the Earthing truck is placed in the panel itself after removing VCB truck & thus eliminates chances of any inadvertent operation by operator.	Tender Conditions shall prevail.



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213	BHEL	3	I02.KK56.0.0.ET.TS.PR078	1.4	*** Existing switchgear boards 00BCM & 00BCNaugmented by extension of existing boards by providing additional required feeders/cabinets.	Please inform the existing make & model of Switchgear. NPCIL is requested to provide existing GA drawing & layout.	Please refer Annexure-1- SLD of 6kV switchgear (sheet 178/1972). The make of switchgear is SEIPL (earlier name L&T EBG) model : VCB – VK Series Panel – VHIH
214	BHEL	4	PR.TT.PR008, Page 29 of 70	6.2.4	6 kV Switchgear- If VCBs are used, then the vacuum bottles shall also be of the same make as that of the switchgear.	Vacuum Interrupters are bought out component for BHEL make Switchgear. We request customer to allow Non-OEM make vacuum interrupter also. Required Type test reports & subvondor credentials shall be furnished for records during detailed Engg.	Tender Conditions shall prevail.
215	L&T	1	Section-B SCC	7	Price Adjustment	<p>As per clause 5.4.3 "....The price adjustment will be allowed up-to a ceiling of +/- thirty percent (+/- 30%) of the total DAP price (including packing & forwarding charges, however, excluding transportation, transit insurance, spares, value of free issue material if any and GST) component in INR...."</p> <p>We would like to bring to NPCIL's attention that the price adjustment formula for the supply portion is entirely driven by RBI indices (based on Whole Sale Price Index) and labour wages (based on Consumer Price Index), which are neither controlled by the Bidders nor predictable in terms of future movement. If the price adjustment exceeds 30%, the contractor will have to bear the additional financial burden despite having no influence over these cost drivers.</p> <p>We would also like to inform NPCIL that during the execution of the KKNPP 3&4 Package, the price variation has already exceeded 30%, even though the supply portion is still not completed and the execution period has extended beyond the original contractual timeline. Based on current market trends, we anticipate that the overall price variation may exceed 50%, driven by the surge in demand from the Renewable Energy sector and ongoing Global Geo-Political disruptions affecting key material costs and supply-chain stability.</p> <p>Therefore, we request NPCIL to remove the price adjustment ceiling limit in order to avoid unnecessary loading of financial charges in the Bid.</p>	Tender conditions shall prevail.
216	L&T	1	14_I02.KK56.0.0.ET.TS.PR052-R4-TS 400kV outdoor SY	1.6	Page No : 7 of 47: While designing the above, all the statutory stipulations and requirements such as Indian Electricity Rules, CEA guidelines, PGCIL, TNEB/TANTRANSCO guidelines, CBIP codes and standards etc. shall also be complied.	<p>Technical Part - Transmision Line</p> <p>We understand that the design of 400kV transmission line shall be as per IS 802 (latest codes), CEA Guide lines. Foundation design shall be as per CBIP Manual with overload factor of 1.1. Please confirm.</p>	The analysis and design of the towers and its foundations shall be carried out as per stipulations in IS 802 (latest), IS456 and CBIP manual. For structures categorized under seismic category II-b, AERB/SS/CSE-1 and CSE-2 shall be followed.



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1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
217	L&T	2	14_I02.KK56.0.0.ET.TS.PR052-R4-TS 400kV outdoor SY	6.9 b & l	Design of all towers types shall be of dead end/DD60 type as per IS 802	<p>Since the 400 kV D/C Tuticorin-II GIS - KKNPP 3 & 4 (AL-59 QUAD MOOSE conductor) line is an existing line associated with NPCIL, we understand that the existing towers were originally designed for a basic wind speed of 39 m/s (Wind Zone-2), Reliability Level-2, Importance Factor K4 = 1.3, and in accordance with the applicable technical specifications. Based on this, we understand that the same tower types will be supplied to NPCIL, using the tower GA & shop drawings and foundation drawings provided by NPCIL to bidder, for:</p> <ol style="list-style-type: none"> The tie overhead line connecting the 400 kV GIS of KKNPP Units 5 & 6 to the 400 kV GIS of KKNPP Units 3 & 4, and The shifting of the 400 kV Tuticorin-II GIS (Quad) D/C line from the 400 kV switchyard of KKNPP Units 3 & 4 to the 400 kV switchyard of KKNPP Units 5 & 6. <p>Kindly confirm our understanding.</p> <p>If our understanding differs, please specify whether the bidder is required to propose a new tower design of Deadend/DD60 with ACSR QUAD MOOSE conductor, either with tower testing or without tower testing along with new foundation design. Please confirm.</p>	<p>The tower GA and shop drawing shall be designed by the successful bidder and Supply shall be executed accordingly, by the successful bidder. Wind load calculation shall be carried out as per IS-875 Part-3. It is confirmed that the tower shall be designed based on analytical approach without any testing.</p>
218	L&T	3	15_I02.KK56.0.0.ET.TS.PR054-R4-TS 230kV outdoor SY	5.7	<p>Page No : 11 of 43: Works pertaining to 230 kV Tie line between KK 3&4 and KK5&6 Both 230kV D/C lines from TANTRANSCO will be initially terminated at KKNPP 3&4. Further, one 230kV line from KKNPP 3&4 will be shifted to KKNPP 5&6</p>	<p>It is understood that for 230kV Line Existing TANTRANSCO Towers shall be used. Based on this, we understand that tower GA & shop drawings and foundation drawings provided by NPCIL. Kindly Confirm.</p>	<p>The tower GA and shop drawing shall be designed by the successful bidder and Supply shall be executed accordingly, by the successful bidder. Wind load calculation shall be carried out as per IS-875 Part-3. Please note that, the tower shall be designed based on analytical approach without any testing.</p>
219	L&T	4	15_I02.KK56.0.0.ET.TS.PR054-R4-TS 230kV outdoor SY	5.7	<p>Page No : 11 of 43: Works pertaining to 230 kV Tie line between KKNPP 3&4 and KKNPP 5&6</p> <p>Generally, 48 no. fiber type OPGW shall used in the Tie/Transmission line. The number of fiber in the OPGW used in the Transmission line shall be decided during detailed engineering stage based on the requirement from transmission agency.</p>	<p>As per Indian conditions, OPGW of 24Fibers and 48Fibers are used in Transmission lines. Hence we request to confirm the no of fiber requirement and properties for OPGW.</p>	<p>48 no. of fibre OPGW shall be supplied as mentioned in item no. 1.3.9.5 of supply schedule. Refer Clause 1.8 of Annexure B- I02.KK56.0.0.ET.TS.PR051- Technical Specification for 400kV Gas Insulated Switch gear & Gas Insulated Bus duct for other requirements.</p>
220	L&T	5	16_I02.KK56.0.0.ET.TS.PR051-Rev 4 400kV GIS & GIBD	1.6.8	<p>Page No : 9 of 91: Scope also includes detailed site survey to fix routing, locations of tower/foundations, clearances, interference with other structures, crossing of 230kV lines, etc. for 400kV interconnection as described in Annexure B and I02.KK56.0.0.ET.TS.PR052.</p>	<p>Please provide a clear layout showing the co-ordinates of the existing/proposed 400 kV and 230 kV transmission towers, including those along the stretch from KKNPP Units 3 & 4 to Units 5 & 6, for our understanding and further study.</p>	<p>Tentative line routing details are provided in Annexure 2 I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switch yard (Grid size is 50 m x 50 m). The tower coordinates are not available as of now. The Coordinates of existing line will be finalized and shared during execution. It may also be noted that detailed route survey is included under the scope of this package under item no. 6.0 of Miscellaneous Design Detailing and Allied Works schedule.</p>



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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
221	L&T	6	16_I02.KK56.0.0.ET.TS.PRO51-Rev 4 400kV GIS & GIBD	Annexure B, Cl.1.3	Page No : 90 of 91: Earthing of Equipment and Structures shall be as per the per relevant applicable codes, standards, tender specification, drawings	Earthing arrangement details and drawings for Transmission towers are not provide. Request to furnish the details related to earthing arrangement	Refer the drawing I02.KK56.0.0.ET.TV.WD001 attached for typical tower earthing details. Additionally Refer Item no. 1.5.6 and 1.6.6 of the Erection BoQ. These items deal with the tower earthing for 400kV and 230kV towers respectively. The type of earthing shall be based on the tower design to meet the required parameters like tower footing impedance etc. The design and detailed calculations are included under the scope of this tender. The final arrangement shall be executed under the item no 1.5.6 and 1.6.6 of the Erection BoQ. Preparation of Earthing drawings as per the description of the above are included under the scope of this tender.
222	L&T	7	16_I02.KK56.0.0.ET.TS.PRO51-Rev 4 400kV GIS & GIBD	Annexure B, Cl.4.5	Page No : 91 of 91: Road Crossings – At locations of road crossings, lowest point of the overhead line shall be at a height of minimum 11 M + required ground clearance (from bottom of structure to ground) on structural steel supports. Additional clearance of 150mm shall be provided for error in sagging the conductor.	The maximum sag, and therefore the lowest point of the conductor, will occur at the mid-span between the two towers. We understand that at locations of road crossings, lowest point of the overhead line shall be at a height of minimum 11 M + required ground clearance of 8.84 M, total of 19.84 M from bottom of conductor to road. Kindly confirm our understanding.	As per the subject clause, the lowest point at road crossings shall be calculated by the Contractor as a part of Sag-Tension Calculations (The mid span point may not necessarily be the road crossing point). The clearance at road crossing shall be minimum 11 M + required ground clearance at road crossing as per the applicable regulations (with additional 150 mm for error).
223	L&T	8	16_I02.KK56.0.0.ET.TS.PRO51-Rev 4 400kV GIS & GIBD	Annexure B, Cl.5	Page No : 91 of 91: Hot dip galvanisation of steel members Structural steel members shall be of minimum grade E250 of IS 2052	We understand that both Mild steel (E250) and High tensile steel (E350) grade steel as per IS 2062 shall be used in tower design. Please confirm.	Material shall confirm IS 2062/ IS 802 which are readily available in market.
224	L&T	9	General			Kindly confirm the testing tower combination as Normal tower+9m Body extension	The tower extensions shall be finalized based on the route survey, sag calculations which are under the scope of this tender. It is confirmed that the tower shall be designed based on analytical approach without any testing.
225	L&T	10	General			Request to provide the Soil investigation report for the plant area to understand the type of foundation required for transmission line	Refer I17.KK56.0.0.GE.RS.PRO01 - Geo technical Investigation report attached. However, refer items 5.2 of Civil Works BoQ. If felt necessary during execution, bore hole testing shall be done for the tower as required.
226	L&T	11	General			Request to provide the existing 230kV Line detailed route alignment and layout details along with the co-ordinates	Tentative line routing details are provided in Annexure 2 I02.KK56.0.0.ET.TS.PRO51- Technical Specification for 400kV Outdoor Switch yard (Grid size is 50 m x 50 m). The tower coordinates are not available as of now. The Coordinates of existing line will be finalized and shared during execution. It may also be noted that detailed route survey is included under the scope of this package under item no. 3.0 of Miscellaneous Design Detailing and Allied Works schedule.
227	L&T	1	Section-E Price Schedule	5.5 B_Supply 5.6 C_Erection		As per Supply Price Schedule Clause 1.1.6 for 400 kV GIS and GIBD, Bus VT is mentioned as 2 Nos.; however, the same is not reflected in the erection schedule. Kindly clarify.	Refer item 1.1.3 of Erection schedule. Bus VT Erection is included as a part of Bus bar extension module erection.
228	L&T	2	Section-E Price Schedule	5.5 B_Supply Clause no 1.1.7 & 1.1.8		As per Supply Price Schedule Clause 1.1.8, 400 kV, 63 kA, 2000 A GIBD is specified, inclusive of PDs and densimeters, with all required bends, bellows, etc., to be included for routing. In this regard, kindly provide the tentative layout drawings or reference drawings of KKNPP Units 3 & 4 to enable proper quantification of bends and bellows.	Refer Annexure -1 Layout of 400kV Outdoor Switch yard attached with the tender document I02.KK56.0.0.ET.TS.PRO52- Technical Specification for 400kV Outdoor Switch yard and Annexure C Layout & EP location for 400kV GIS building attached along with I02.KK56.0.0.ET.TS.PRO51- Technical Specification for 400kV Gas Insulated Switch gear & Gas Insulated Bus duct. The 400kV GIS Bay equipment shall be placed inside GIS building (GIS Bay area). The tentative location of termination points SF6-Air Bushings, Line Reactors and Shunt Reactors are also marked in the above drawings. Generator Transformers are located in the main plant area and GIBDs shall be routed through underground tunnels upto Generator Transformers. The tunnel layout drawings are attached as annexure D to I02.KK56.0.0.ET.TS.PRO51- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct. Additional Clarification - The 400kV and 230kV GIS/GIBD, supports, LCC panels shall be qualified as per IEC 62271-207 high level. This shall override the seismic requirement of 400kV and 230kV GIS/GIBD mentioned in the tender documents.

Technical Part - Electrical

including GIS & GIBD



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229	L&T	3	Section-E Price Schedule	5.5 B_Supply Clause no 1.3.1 & Scope of work	Annexure 3_I02.KK56.0.0.ET.OKP.WD004_SLD for 400kV system	As per Supply Price Schedule Clause 1.3.1, lightning arrestors of 390 kV are specified with a quantity of 21 Nos. However, as per Annexure 3_I02.KK56.0.0.ET.OKP.WD004 SLD for the 400 kV system, 11 sets (33 Nos.) of 360 kV surge arresters are also indicated. These 360 kV surge arresters are not reflected in the price schedule. Kindly clarify whether these are included within the mentioned line item or need to be considered separately.	Kindly refer the items 1.1.2(04 sets=4x3=12 SAs)), 1.1.3(03 sets=3x3=09 nos. SAs),1.1.5(04 sets=4x3=12 nos. SAs) of supply BoQ, indicates that item to be supplied in all respect, as per Technical Specifications & Tender SLDs. The gas insulated surge arrestors Of 360kV for GT/Line Reactor/Shunt Reactor feeders are included as a part of GIS bays itself as mentioned above in supply BoQ item. The Outdoor Lightning arrestors are covered under a separate item 1.3.1 of the Supply BoQ.
230	L&T	4	Section-E Price Schedule	5.5 B_Supply 5.6 C_Erection		As per Supply Price Schedule Clause 1.2.5 for 230 kV GIS and GIBD, Bus VT is mentioned as 2 Nos.; however, the same is not reflected in the erection schedule. Kindly clarify.	Refer item 1.2.3 of Erection schedule. Bus VT Erection is included as a part of Bus bar extension.
231	L&T	5	Section-E Price Schedule	5.5 B_Supply Clause no 1.2.7		As per Supply Price Schedule Clause 1.1.8, 230 kV, 50 kA, 1000 A GIBD is specified, inclusive of PDs and densimeters, with all required bends, bellows, etc., to be included for routing. In this regard, kindly provide the tentative layout drawings or reference drawings of KKNPP Units 3 & 4 to enable proper quantification of bends and bellows.	Kindly Refer Annexure -1 Layout of 400kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PRO52- Technical Specification for 400kV Outdoor Switchyard and Annexure C Layout & EP location for 400kV GIS building attached along with I02.KK56.0.0.ET.TS.PRO51- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct. The 400kV GIS Bay equipment shall be placed inside GIS building (GIS Bay area). The tentative location of termination points SF6-Air Bushings, Line Reactors and Shunt Reactors are also marked in the above drawings. Generator Transformers are located in the main plant area and GIBDs shall be routed through underground tunnels upto Generator Transformers. The tunnel layout drawings are attached as annexure D to I02.KK56.0.0.ET.TS.PRO51- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct.
232	L&T	6	Section-E Price Schedule	5.5 B_Supply Clause no 1.1.11 & 1.2.12		5.5 B_Supply, Sl. No. 1.1.11 & 1.2.12, a portable PD monitoring system is specified. Kindly provide the detailed technical specifications for the portable PD monitoring system.	Kindly refer clause 5.16.3 of tender document I02.KK56.0.0.ET.TS.PRO53- Technical Specification for 230kV Gas Insulated Switch gear & Gas Insulated Bus duct
233	L&T	7	Section-E Price Schedule	5.5 B_Supply Clause no 1.3.1.8	5.5 B_Supply,	As per the referred line item, clamps and connectors are specified only for the 400 kV line bay. Kindly confirm under which line item the clamps and connectors for the GT bay, line reactor bays, and shunt reactor bays are to be considered.	Clamps and connectors are envisaged for outdoor switchyard (air insulated) busbar-equipment connections. GT bay, Line reactor bay and Shunt Reactor bays will be terminated via SF6-Oil bushings. Termination modules on GT/Line reactor/Shunt Reactor are included as a part of Gas Insulated Bus duct supply. Therefore clamps and connectors are not applicable for GT, Line Reactor, Shunt Reactor Bays.
234	L&T	8	Section-E Price Schedule	5.5 B_Supply Clause no 1.1.9 & 1.2.8	Annexure 3_I02.KK56.0.0.ET.OKP.WD004_SLD for 400kV system	The quantity of air bushings mentioned in the price schedule does not match the SLD provided in the scope of work. We understand that the bushings of the generator transformer, line reactors, and shunt reactors are directly connected to the 400 kV GIBD. Kindly confirm whether our understanding is correct.	Generator Transformer, Line Reactor and Shunt Reactor shall be connected via SF6-Oil bushings to the GIBD. The SF6-Oil bushings are a part of GT/Line Reactor/Shunt Reactor and are excluded from the scope of this tender.
235	L&T	9	Section-E Price Schedule	5.5 B_Supply Clause no 1.4.1	Annexure 4_I02.KK56.0.0.ET.OKP.WD005_SLD for 230kV system	As per Supply Price Schedule Clause 1.4.1, lightning arrestors of 216 kV are specified with a quantity of 9 Nos. However, as per Annexure 4_I02.KK56.0.0.ET.OKP.WD005 SLD for the 230 kV system, 3 sets (9 Nos.) of 198 kV surge arresters are also indicated. These 198 kV surge arresters are not reflected in the price schedule. Kindly clarify whether these are included within the mentioned line item or need to be considered separately.	216kV Lihnging Arrestor are applicable for 230kV Outddor switchyard portion and 198kV Surge Arrestor for for 230kV GIS Portion. Refer the items 1.2.2 and 1.2.3 of supply BoQ. The gas insulated surge arrestors are included as a part of RAT/CSAT bays itself. The Outdoor Lightning arrestors are covered under a separate item 1.4.1 of the Supply BoQ.
236	L&T	10	Section-E Price Schedule	5.5 B_Supply Clause no 1.4.7.1	5.5 B_Supply,	As per the referred line item, clamps and connectors are specified only for the 230 kV line bay. Kindly confirm under which line item the clamps and connectors for RAT and CSAT bays are to be considered.	For CSAT and RAT, 230kV side are connected to GIBD and 6.3kV side are connected to IPBD. For connection details for 230kV side, please refer cl 4.18 of TS (I02.KK56.0.0. ET.TS.PRO53) and for LV side (6.3kV), please refer cl 3.4 of TS(I02.KK56.0.0.ET.TS.PRO79). However, all essentials clamp and connectors for RAT and CSAT bays are to be considered under items 1.2.2 and 1.2.3 in subclause hardware. Clamps and connectors are envisaged for outdoor switchyard (air insulated) busbar-equipment connections. RAT/CSAT bays will be terminated via SF6-Oil bushings. Termination modules on RAT/CSAT are included as a part of Gas Insulated Bus duct supply. Therefore clamps and connectors are not applicable for RAT/CSAT Bays. Supply of CSAT, RATs, Shunt Reactors and Line Reactors are not under scope of this contract.



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1	2	3	4	5	6	7	8
237	L&T	11	Section-C Scope of Work			To finalize the layout drawing of GIBD and terminal connection points, kindly arrange to provide the KKNPP Units 3 & 4 layout drawings along with GA drawings of the generator transformer (GT), shunt reactor, and line reactor supplied for KKNPP Units 3 & 4.	Kindly Refer Annexure -1 Layout of 400kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard and Annexure C Layout & EP location for 400kV GIS building attached along with I02.KK56.0.0.ET.TS.PR051- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct. The 400kV GIS Bay equipments shall be placed inside GIS building (GIS Bay area). The tentative location of termination points SF6-Air Bushings, Line Reactors and Shunt Reactors are also marked in the above drawings. Generator Transformers are located in the main plant area and GIBDs shall be routed through underground tunnels upto Generator Transformers. The tunnel layout drawings are attached as annexure D to I02.KK56.0.0.ET.TS.PR051- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct.
238	L&T	12	Section-C Scope of Work		Annexure 4_I02.KK56.0.0.ET.OKP.WD005_SLD for 230kV system	As per Annexure 4_I02.KK56.0.0.ET.OKP.WD005 SLD for the 230 kV system, the bus duct is not indicated for the 6 kV line. Kindly confirm whether an isolated phase bus duct is to be considered, or if 6 kV cables are to be used for interconnection between the RAT, CSAT, and 6 kV switchgear.	Isolated phase Bus duct as per tender specification I02.KK56.0.0.ET.TS.PR079 - Technical specification for Medium Voltage Isolated Phase Bus Duct shall be used for interconnection between the RAT, CSAT, and 6 kV switchgear.
239	L&T	13	Section-E Price Schedule	5.5 B_Supply Clause no 1.1.9 & 1.2.8	Annexure 4_I02.KK56.0.0.ET.OKP.WD005_SLD for 230kV system	The quantity of air bushings mentioned in the price schedule does not match the SLD provided in the scope of work. We understand that the RAT and CSAT bushings are directly connected to the 230 kV GIBD. Kindly confirm whether our understanding is correct.	Yes, bidder understanding is correct, RAT and CSAT bushings (oil to SF6 bushing) in 230kV side are directly connected to 230kV GIBD. Oil-SF6 bushings will be a part of transformer supply and are excluded from the scope of this tender. However, termination of GIBDs on the Bushing flange is included under the scope of this tender.
240	L&T	14	Section-E Price Schedule	5.5 B_Supply Clause no 1.5.1.3		Kindly clarify the application of 500-terminal marshalling panels. (For Ex: 500 terminals marshalling panels common for 400kV Lines (ACL11, ACL12, ACL31, ACL32) and line reactors (ACR11, ACR12, ACR31, ACR32)).	Signals from field shall be routed to CMRP panels via marshalling panels. Please provide marshalling panels as per tender requirements.
241	L&T	15	Section-E Price Schedule	5.5 B_Supply Clause no 1.5.1.11		As per Price Schedule Item 1.5.11, the synchronizing panel is specified for both 400 kV and 230 kV systems qty as 1 no. however we understand that this panel separately for 400kV & 230kV Kindly confirm whether our understanding is correct. or else please specify the exact requirement.	Synchronising panel is common for 230kV and 400kV systems.
242	L&T	16	Section-E Price Schedule	5.5 B_Supply Clause no 1.6 & 1.7		As per the price schedule, erection hardware for transmission line (TL) works has not been envisaged in our scope. Kindly clarify whether the supply of erection hardware for TL lines needs to be considered in the supply schedule. Additionally, please confirm the minimum number of transmission line towers to be considered for both 400 kV and 230 kV lines, respectively.	As we understand, the query is regarding the clamps, connectors and joints for fixing the Conductor and insulator units to the transmission tower. Kindly refer the description of items 1.3.7 and 1.4.6 for 400kV and 230kV Insulator units. The hardwares such as turn buckles, corona ring, arcing horn and tension clamp, nuts, bolts, washers(accessories as applicable) are included as a part of the insulator unit itself. Items under 1.3.9, 1.3.10, 1.4.8, 1.4.9 covers clamps, joints, dampers for earthwire OPGW etc. As we understand items mentioned above covers all the required items for TL erection. Hope, It clarified the query. Tentative line routing details are provided in Annexure 2 I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard (Grid size is 50 m x 50 m). The tower coordinates are not available as of now. The Coordinates of existing line will be finalised and shared during execution. It may also be noted that detailed route survey is included under the scope of this package under item nos. 3.0 & 6.0 of Miscellaneous Design Detailing and Allied Works schedule. The no. of transmission towers shall be decided based on the detailed route survey.
243	L&T	17	Section-E Price Schedule	5.5 B_Supply Clause no 4.3	Flexible cables-KGN (FRHF)	As per tender documents we havenot envisaged specification for Flexible Cables-KGN(FRHF), Kindly provide the detailed specification for the same.	The technical requirements mentioned in the Supply BoQ Item Sr. No. 4.3 is sufficient for supply. So no additional technical specification required for the same.
244	L&T	18	Section-E Price Schedule	5.5 B_Supply Clause no 4.7.3 & 4.7.4	Cable reducing & Coupler	As per tender documents we havenot envisaged specification for Cable reducers & Couplers, Kindly provide the detailed specification for the same.	In addition to the cable coupler and cable reducing coupling mentioned BoQ Sl. No. 4.7.3 and 4.7.4 of the BoQ following requirements shall be as per the indicative drawings attached. In addition, the following shall be complied: 1. The single core wire shall be manufactured with multi-stranded copper conductors. Conductors shall comply with Class 6 as per IEC 60228 to cater to flexibility requirements. 2. Insulation shall be of silicone rubber as per IS 6380/relevant IEC to cater to flexibility requirements. For coupler/reducer with FRHF and FRLS types, Fire-resistant wire (FRHF/FRLS) shall meet the requirements of IEC 60331-21 for 180 min. 3. All wires shall be fire retardant when tested in bundles according to the requirements of IEC 60332-3-22, category A. Smoke generation during wire burning or smouldering shall not cause a decrease of transparency in the test chamber by more than 40 % during test as per IEC 61034-1(FRLS and LS) and IEC 61034-2 (for FRHF and HF). 4. Crimped Connector for connection of main cable with flexible cable shall be tinned copper 5. Breakout material/sleeve material for inside reactor building/containment application shall of qualified for radiation dose of 40Mrad. Indicative application drawing attached as annexure-1 for this items only.



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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
245	L&T	19	Section-E Price Schedule	5.5 B_Supply Clause no 4.7.1 & 4.7.2	Cabel termination (HT & LT)	As per tender documents we havenot envisaged specification for Cable Termination (HT<). Kindly provide the detailed specification for the both the cables termination kit (inside & outside reactor building).	The technical requirements mentioned in the BoQ.SI. Nos. 4.7.1 (HT Termination Kit) & 4.7.2 (LT termination) is sufficient for supply. So no additional technical specification required for the same.
246	L&T	20	Section-C Technical Specification	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	Please provide the following DCDB SLD since same is not attached in the technical specification: 1) 220V Type-2 DCDB SLD 2) 220V Type 7b Sub DCDB SLD. Also, In Annexure-7 (Details of type 7 DCDB) & Annexure -12 (Indicative SLD of Type 7 DCDB). Please confirm whether the same should be followed for Type-7a and 7b?	1) For Type 2 DCDB, the key SLD given in Annexure-13 of TS No. I02.KK45.0.0.ET.TS.PR082, to be referred. Moreover, the details of modules/blocks and its switchgears are already provided in annexure-2 of TS No. I02.KK45.0.0.ET.TS.PR082. For indicative SLD details, the details of similar blocks/modules of type 1 DCDB can be considered. 2) For both DCDB of type 7a and 7b, the Indicative SLD of Type 7 can be referred. However, please note that the SLDs are indicative in nature, the parameters and rating of devices mentioned in the indicative SLDs are not to be considered at actual. Instead, parameter, rating and switcgear details given in Annexure-7 of TS No. I02.KK45.0.0.ET.TS.PR082 to be considered.
247	L&T	21	Section-C Technical Specification	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	In addition to the above, as per Price Schedule Clause 2.10.1.7, the DCDB rating is found to be contradicting with Annexure-7 (Details of Type-7 DCDB) of the DCDB technical specification. Please confirm which incomer rating should be followed.	The description of type 7b DCDBs in price schedule and table 1 of ET.TS.PR082_R4 regarding 'In' is regarding the current rating of the panel/Assembly. For incomer rating details given in Annexure-7 of TS No. I02.KK45.0.0.ET.TS.PR082, to be followed.
248	L&T	22	Section-C Technical Specification	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	In addition to the above, there is a discrepancy between Annexures 1 to 7 (Details of DCDB types) and Annexure 12 (Indicative SLD of Type-7 DCDB) regarding feeder ratings. Please confirm which annexure should be followed.	The SLDs are indicative in nature, the parameters and rating of devices mentioned in the indicative SLDs are not to be considered at actual. Instead, parameter, rating and switcgear details given in Annexure-1 to Annexure-7 of TS No. I02.KK45.0.0.ET.TS.PR082 to be considered.
249	L&T	23	Section-C Technical Specification	5.5 B_Supply Clause no 2.10.1.9	Portable insulation monitoring device	Please provide the specification for Portable Insulation monitoring device.	The specification/requirement of portable Insulation fault locator is mentioned in the item description of sl. No. 2.10.1.9 of Price schedule.
250	L&T	24	Section-C Technical Specification	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	I02.KK45.0.0.ET.TS.PR082 - R4 DCDB	For IMD, RS-485 repeater, Condition Monitoring with intergrated gate way & portable insulation falut location system not specified in DCDB specification , we presume these are not required for this tender, please clarify whether our understanding is correct.	For IMDs, the Repeaters and Gateways are not envisaged. However, Portable Insulation fault locator is envisaged in sl. No. 2.10.1.9 of Price schedule.
251	L&T	25	Section-C Technical Specification	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	The number of verticals as per the 6 kV switchgear SLD, in accordance with the 6 kV switchgear specification, is not matching with the numerical relay specification for quantifying the relays. Please confirm which should be followed.	Please follow 6kVswitchgear SLDs for quantifying numerical relays.
252	L&T	26	Section-C Technical Specification	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	In addition to the above, the current-monitored arc protection (50AP) function is indicated in the 6 kV switchgear SLD as per the switchgear specification; however, it is not provided in some verticals as per the numerical relay specification. Please confirm which specification should be followed.	50AP shall be provided for all 6kV verticals. Refer arc protection scheme attached along with the tender.
253	L&T	27	Section-C Technical Specification	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	In addition to the above, the parameters indicated in the 6 kV switchyard board SLD, as per the 6 kV switchgear specification, differ from those in the numerical relay specification (Master Trip (86) and 50AP). Please confirm which specification should be followed.	50AP and 86 shall be provided for all 6kV verticals.
254	L&T	28	Section-C Technical Specification	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	I02.KK56.0.0.ET.TS.PR090_R4 Numerical relay I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	The current-monitored arc protection function (50AP) is indicated in each vertical of the 6 kV switchgear board SLD in KKNPP 5&6 TS. We request NPCIL to consider arc protection (50AP) for each boad line with KKNPP 3&4 supplied panels. Kindly confirm.	50AP shall be provided for all 6kV verticals.
255	L&T	29	Section-C Technical Specification	I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	I02.KK56.0.0.ET.TS.PR078_R3 6kV Switchgear	As per the specification, SLDs for 00BCM and 00BCN boards are available; however, these are not reflected in the price schedule. Please confirm whether these boards are applicable for this tender.	As per TS "Existing switchgear boards 00BCM & 00BCN in OUBS building already provisions feeders for KKNPP 5&6 expected loads. However, in case any additional feeder required during detailed design of KKNPP-5&6, the switchgear boards shall be augmented by extension of existing boards by providing additional required feeders/cabinets. ". The item will be executed by supply item 2.1.1.25 of section E.
256	L&T	30	Section-E Price Schedule	Supply 2.2.1 & 2.2.2	2.2.1 & 2.2.2	Please provide the autocad layout drawing of KKNPP 3&4 to enable quantification of the MV bus duct.	Please refer clause 7.15 of TS I02.KK56.0.0.ET.TS.PR079. The tentavive layout (of KKNPP-3&4) is attached in the annexures of this TS. Also please note that the bus duct supporting arrangement and layout are different in KKNPP 5&6 with respect to KKNPP 3&4. FRS is also expected to be different in KKNPP 5&6 with respect to KKNPP 3&4. Hence the seismic qualification will have to performed as per actual arrangement applicable to KKNPP 5&6.



Pre-Bid Clarifications Response-2

1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
257	L&T	31	Section-E Price Schedule	Supply 2.2.1 & 2.2.2	2.2.1 & 2.2.2	The MV bus duct requirement is limited to the switchyard area from RAT & CSAT to 6KV switchgears of Switchyard area & UAT to UBA(BBA, BBB, BBC & BBD) Normal power supply building boards in main plant, rest anywhere else required same shall be in NPCIL scope. Please confirm if our understanding is correct.	Scope is clearly mentioned in the section E and TS I02.KK56.0.0.ET.TS.PR079.
258	L&T	32	General			We request you to kindly accept the validity of the Type test as per latest CEA Guidelines from the date of Bid submission.	Pre-Bid response S.No. 139 already issued by us with respect to Clause 19 of scope document I02.KK56.0.0.PR.TT.PR008.
259	L&T	33	Section-C Scope of Work	Clause 19 of I02.KK56.0.0.PR.TT.PR008_R5	I02.KK56.0.0.PR.TT.PR008_R5	<p>As per the clause "In the technical specification for the respective equipment it has been mentioned that "The Purchaser reserves the right to demand repetition of some or all the type tests in the presence of his representative. Contractor shall quote unit rates for carrying out each type test and special test." However, to facilitate quoting by the bidders, the type and special tests for which unit rates are to be quoted have been brought out in Section E of the tender."</p> <p>We request NPCIL to provide a separate price schedule for quoting the type test and special test charges in order to have transparent & uniform bidding conditions. This will enable us to participate in the bid.</p>	<p>Carrying of Type tests/submission of valid type test reports is part of the scope of the subject tender as per the respective TS/tender. Hence bidder need not provide the unit rates for type tests separately. In case NPCIL wish to repeat any of the type test over and above the availability of the valid type test report, the same will be dealt separately through additional works as per clause no. 19 of GCC of Section-B of Tender.</p> <p>Please refer the clause no. 19 of document no. I02.KK56.0.0.PR.TT.PR008 -The validity of type test report in general will be as per latest CEA guidelines on the validity and extension of type tests except for cases specifically brought in respective TS/DS e.g. cables etc. TS/DS shall govern in such exceptions where specifically specified. However, the contractor and their sub-vendor/manufacturer shall provide necessary evidence in all the cases as per industry standard/practice that the product has not undergone any change after the type test.</p> <p>Pre-Bid clarification issued and Corrigendum issued shall be part of Tender and the same please also referred.</p>
260	L&T	34	Section-E Price Schedule	5.6 C_Erection clause no 1.14.1	Shunt reactor Annexure 3_I02.KK56.0.0.ET.OKP.WD004_S LD for 400kV system	<p>As per the Scope SLD of the 400kV Switchyard, it is understood that four line reactors and three shunt reactors are to be supplied by the Purchaser, with erection falling under the Contractor's scope. However, line reactor erection has not been considered in the erection price schedule.</p> <p>Kindly clarify whether the installation of line reactors is included within the scope of this tender.</p>	Supply/Installation/Erection of line reactor is not in the scope of Contractor. Please refer cl 6.1.9 of scope document I02.KK56.0.0.PR.TT.PR008 for civil work and interfacing related jobs.
261	L&T	35	Section-E Price Schedule	5.5 B_Supply Clause no 1.8	5kVA DG set	As per referred line item, "it is mentioned as Supply of 3 phase 415 V, 50 Hz, 5kVA silent portable generator of reputed make with the approval of make from Purchaser shall be provided". we have not envisaged the specification in tender document. Kindly provide the detailed specification for the same.	<p>Brief TS are as follows:</p> <p>Silent portable generator of capacity 5 kVA, three phase, 415 volts, 50 Hz, 0.8 Power Factor, complete with Diesel Engine, Alternator, Electric Control Panel and Acoustic Enclosure conforming to the specifications given below.</p> <ol style="list-style-type: none"> 1) The supplied Silent portable generator set shall comply with the latest CPCB norms/regulations for exhaust emissions and noise levels. 2) Governing standards to be followed for manufacturing and testing are ISO 8528, Indian and international standards applicable for the Silent portable generator of capacity 5 kVA 3) Power for Prime Duty: 5 kVA (Output available with varying load for an unlimited time). The engine shall be capable of delivering the rated output without undue heating of the engine or any other mechanical trouble, as per site conditions. 5) Integral fuel tank capacity- 50L 6) Cooling shall be air cooled 7) Engine shall be able to develop power required for driving a generating set of 5 kVA rated for Prime Duty (Output available with varying load for an unlimited time) with an overload capacity of 10% for a period not exceeding One Hour in any 12 hours running. 8) Bidder to submit all necessary documents while shipment of the Silent portable generator. 9) Performance class for Silent portable generator set shall be G2.
262	L&T	36	Section-E Price Schedule	5.5 B_Supply Clause no 1.3.4 & 1.4.4	Wavetrap	Kindly provide the detailed specification for 400kV & 230kV Wave Trap.	Detailed standalone specifications for wavetraps are not available. Kindly refer clause H of tender datasheet I02.KK56.0.0.ET.DS.PR046- Data Sheet for 400kV Outdoor Switchyard and I02.KK56.0.0.ET.DS.PR048- Data Sheet for 230kV Outdoor Switchyard. Basic parameters for the Wavetraps are provided in the above. The wavetrap shall satisfy Standard PGCIL/TANTRANSCO requirements for compatibility.
263	L&T	37	Section-E Price Schedule	5.5 B_Supply Clause no 4.7.6	Cable lug	Kindly provide the detailed specification for cable lug.	The technical requirements mentioned in the BoQ item no 4.7.6 may please be referred.



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
264	L&T	38	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.3.1 I02.KK56.0.0.ET.TS.PR099_R3	Dry type transformer	As per Price Schedule Item 2.3.1, if Category III transformers have already undergone type testing for KKNPP Units 3 & 4. In this context, please clarify whether seismic testing is required to be repeated for KKNPP Units 5 & 6. Further, as per Specification Clause 1.5, Category III (Table, S. No. 90) includes a requirement for seismic testing. Therefore, kindly confirm if any additional or repeat seismic testing is applicable for KKNPP Units 5 & 6.	Please refer clause 7.11.1 of TS ET.TS.PR099_R3 point a,b and c where details regarding acceptance of pre seismic tested transformers have been clearly provided and a portion of the the same is reproduced here "For Seismic test in case manufacturer has already tested the transformer on shake table in CPRI/IGCAR or other International lab with due accreditation and relevant IEC/IEEE standard and : 1) tested TRS completely envelopes final FRS given to the successful bidder as per IEEE 344 2) Can establish that condition given in clause 14.4.7.1 of IEC 60076-11_2018 (i.e. similar conceptual design, identical mechanical structure, weight, dimensions and structural strength) for extending the seismic test results are fulfilling for tested transformer and offered transformer, based on Purchaser review and acceptance Seismic test may not be repeated for those transformer category". CPRI/IGCAR or Indian Lab with due accreditation or other International lab with due accreditation are also acceptable.
265	L&T	39	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.3.2 & 2.3.3 I02.KK56.0.0.ET.TS.PR099_R3	Dry type transformer	In addition to above kindly confirm the same for Category I & II also.	Response same as above, please refer TS clause 7.11.1 of I02.KK56.0.0.ET.TS.PR099_R3
266	L&T	40	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.5.61, 2.5.62, 2.5.63 & 2.5.64 TS I02.KK56.0.0.ET.TS.PR091_R5	LVSwitchgear & MCC	As per the Supply Schedule (Items 2.5.61-2.5.64), the boards are indicated as Unit-5 boards. However, as per the specification, the corresponding SLDs are mentioned under common and Unit-3 building boards. We understand that these SLDs are applicable to the referenced boards. Kindly confirm if our understanding is correct.	Yes, these SLDs are applicable to referred boards/Boards given in query.
267	L&T	41	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.4.1.9 - 2.4.1.18 TS I02.KK56.0.0.ET.TS.PR091_R5	LVSwitchgear & MCC	Kindly provide the SLDs for the LV switchgear boards listed in the price schedule under Items 2.4.1.9 to 2.4.1.18.	Kindly refer feeder lists of the boards attached along with TS I02.KK56.0.0.ET.TS.PR091_R5.
268	L&T	42	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.4, 2.5 & 2.6 TS I02.KK56.0.0.ET.TS.PR091_R5	LVSwitchgear & MCC	In addition to the above, SLDs for many of the MCC boards have not been provided; instead, only feeder lists are available. Kindly provide the SLDs for Switchyard area also, since suppliers are asking for same for submitting their techno-commercial offer.	All details of SLDs are covered in feeder lists of the boards as well in the TS No.TS I02.KK56.0.0.ET.TS.PR091_R5. Please refer protection and control schemes along with feeder lists for bidding.
269	L&T	43	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.5.98 TS I02.KK56.0.0.ET.TS.PR091_R5	LVSwitchgear & MCC	As per Price Schedule Item 2.5.98, the SLD for 00BKJ14GH002 is not available in the specification. However, 00BKJ14GH001 has been mentioned twice. Kindly provide the SLD for 00BKJ14GH002.	"SYXP030-415V ENGG UTILITY BUILDING MCC-00BKG14GH001" shall be read as "SYXP030-415V ENGG UTILITY BUILDING MCC-00BKG14GH002".
270	L&T	44	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.5.87 & 2.5.88 TS I02.KK56.0.0.ET.TS.PR091_R5	PDB's	As per Price Schedule Items 2.5.87 and 2.5.88, KKS codes are to be provided for Workshop PDB-1 and PDB-2. For the purpose of quotation, kindly provide the reference SLDs.	Please consider KKS code of 00BKL81GH001 for Work shop PDB-1 and 00BKM81GH001 for Work shop PDB-2. Please refer feeder list of workshop PDB-1 and workshop PDB-2 attached along with TS I02.KK56.0.0.ET.TS.PR091_R5.
271	L&T	45	Section-C Technical Specification	TS I02.KK56.0.0.ET.TS.PR091_R5	PDB's	For the PDBs, two SLDs are available; however, their names are not mentioned in the Price Schedule. Kindly clarify whether we can refer to the following SLDs for the abovePDB's: 1. 00BKM81GH001 2. 00BKL81GH001	Please consider KKS code of 00BKL81GH001 for Work shop PDB-1 and 00BKM81GH001 for Work shop PDB-2. Please refer feeder list of workshop PDB-1 and workshop PDB-2 attached along with TS I02.KK56.0.0.ET.TS.PR091_R5.
272	L&T	46	Section-C Technical Specification	TS I02.KK56.0.0.ET.TS.PR091_R5	LVSwitchgear & MCC	In the tender specification SLDs for LV switchgear and MCC, three SLDs are indicated as "Spare Panel" (Pages 485-487 of 727). Kindly clarify the intended use of these boards.	These are spare panels, if any additional panels are required at the time of detailed engineering or execution. It will be taken consideration
273	L&T	47	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.5.87 & 2.5.88 TS I02.KK56.0.0.ET.TS.PR091_R5	LVSwitchgear & MCC	As per Price Schedule Items 2.5.65 and 2.5.66, kindly provide the SLDs for 00AFA34GH001, 00AFA44GH001, and 00AFA34GH000A.	Kindly refer feeder lists of the boards attached along with TS I02.KK56.0.0.ET.TS.PR091. All details required for techno-commercial offer are present in feeder lists of the boards. Please refer protection and control schemes along with feeder lists. Hope it clarifies the query.



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
274	L&T	48	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.8.1 & 2.8.3 TS I02.KK56.0.0.ET.TS.PR096_R2	LV Bus Duct	As per Price Schedule Items 2.8.1 and 2.8.3, we are considering that the scope includes only the accessories for LV bus duct connections between the LV switchgear and dry-type transformer, and not the straight-run bus ducts under these quantities. Kindly confirm if our understanding is correct.	Supply of straight run of busduct is in the scope of Contractor as per supply item 2.8.2 and 2.8.4 where as only auxiliaries are to be supplied as per item 2.8.1 and 2.8.3.
275	L&T	49	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.8.2 & 2.8.4 TS I02.KK56.0.0.ET.TS.PR096_R2	LV Bus Duct	As per Price Schedule Items 2.8.2 and 2.8.4, we understand that the bus duct length includes all 10 sets of connections (40 mtrs for 7 sets of 1600A and 15 Mtrs for 3 sets of 2500A). Kindly confirm if our understanding is correct.	Yes, Bidder understanding is correct. However, there will be requirement of about 25m length for 415V, 2500A busduct as per clause no. 1.13 of TS (I02.KK56.0.0.ET.TS.PR096) for 3 sets instead of 15 meters for 3 sets mentioned in present BoQ, supply item 2.8.4 . Bidder should be ready to to execute the actual length as required during detailed engineering.
276	L&T	50	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.8.4 TS I02.KK56.0.0.ET.TS.PR096_R2	LV Bus Duct	In addition to the above, the straight-run LV bus duct requirement for 415V, 2500A shows a discrepancy between the BOQ (15 m) and the specification (approximately 25 m). Kindly clarify whether the BOQ quantity is correct.	Please refer L&T- Set-2 query no. 49 and response from NPCIL.
277	L&T	51	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.15.1.2 TS I02.KK56.0.0.ET.TS.PR081_R3	Type-1 LDP's 4 Module	As per the specification, Type-1 LDP with 4 modules is not mentioned; however, it is included in the Supply Price Schedule. Kindly confirm.	The LDP Type-1, 4 module LDP is under the scope of supply. For the same, the specification of Type -1 LDPs given in I02.KK56.0.0.ET.TS.PR081_R3 is applicable.
278	L&T	52	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 2.15.1.9 TS I02.KK56.0.0.ET.TS.PR081_R3	Double pole MCB with add-on RCD Module for Type-1 LDP.	As per the Price Schedule, a double-pole MCB with add-on RCD module is specified for Type-1 LDP. However, the number of modules to be considered is not indicated. The specification, on the other hand, refers to three different module ranges. Kindly provide the percentage distribution of the number of modules to be considered for each of the three types.	Instead of percentage distribution of number of RCD module, refer clause 5.6.4 and 5.6.5 of I02.KK56.0.0.ET.TS.PR081_R3 for information of distribution of RCD modules in LDPs.
279	L&T	53	Section-E Price Schedule	5.5 B_Supply Clause no 4.7.5	Cable Glands	Kindly provide the detailed specification for cable glands.	The technical requirements mentioned in the BoQ clause no 4.7.5 is sufficient for supply. So no additional technical specification required for the same.
280	L&T	54	Section-E Price Schedule	5.5 B_Supply Clause no 5	Grounding system	Kindly provide the detailed specification for 5.3 Copper bars, & 5.4 GI Pipe & 5.5-5.21.2.2 flexible earthing conductor and boxes.	These are standard items and shall be as per relevant Indian standards are applicable.
281	L&T	55	Section E Price Schedule & Section C Technical specification	5.5 B_Supply Clause no 10.35.3.1.4 TS I02.KK56.0.0.ET.TS.PR086_R2	Table1 GI Branch Boxes	As per the specification, a GI branch box is defined with eight cage clamp feed-through terminal blocks suitable for 35 sqmm cables, along with five 2-way shorting links and two earth terminal blocks for 35 sqmm cables. However, details for 70 sqmm are not available. Kindly confirm whether the same configuration is to be followed for 70 sqmm cables.	Yes, similar arrangement shall be followed for 70 sqmm cables also
282	L&T	56	GIS Buildings			As per the tender documents, 400 kV and 230 kV GIS buildings, as well as control room buildings, are not within the scope of this tender. Therefore, kindly provide the building details followed in KKNPP Units 3&4 or dimension of KKNPP 5&6 buildings for GIS and CMRP, for onward input to the vendors.	Kindly Refer Annexure C Layout & EP location for 400kV GIS building attached along with I02.KK56.0.0.ET.TS.PR051- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct and Annexure A Layout & EP location for 230kV GIS building attached along with I02.KK56.0.0.ET.TS.PR053- Technical Specification for 230kV Gas Insulated Switchgear & Gas Insulated Bus duct. The Architectural/Layout drawings of 0UAC- I77.KK56.0UAC.0.AR.OK.WD001(SH 1 & 2) are attached alongwith. Editable copies shall be provided to the successful bidder during execution.
283	L&T	57	400/230kV Switchyard			Interconnection cables for control and power between switchyard equipment, indoor equipment, GIS, and CMRP panels are not specified in the switchyard supply schedule. Kindly clarify which schedule should be referred to for these cables.	Kindly refer cl. 1.0 (C) of TS of I02.KK56.0.0.PR.TT.PR008 regarding cable schedules (cable logs) of KKNPP 3,4 of BoP building/ areas. In addition, the type, size and quantity of the cable shall be finalized during detail engineering and the same shall be within the relevant cable supply items mentioned in the supply schedule.
284	L&T	58	Section_C		TS_I02.KK56.0.0.ET.TS.PR092	As per TS clause 1.14 "Design, engineering,manufacturing/ procurement, supply, installation, testing, pre commissioning/ commissioning and final handing over of Power Line Carrier Communication (PLCC) Panel along with their dedicated battery and battery charger is also included in Contractor's scope." We request NPCIL to provide the seprate line item for batter & battery charger.	Tender conditions shall prevail.



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
285	L&T	59	General			We request NPCIL to share the Technical Specification of PLCC & FOTE, RTU, SPS Panel.	In addition to CL. 1.16 of I02.KK56.0.0.ET.TS.PR092, Bidder to note that PLCC/FOTE/DTPC along with associated DCDB, battery, battery charger, communication equipment, etc. shall be provided as per the standard specifications of the transmission utility at NPCIL end. Remote end substation details for 400kV and 230kV lines will be provided to the successful bidder. Bidder is requested to approach the remote end substation and obtain the technical requirements for the respective PLCC/FOTE. Based on the same and other relevant grid requirements/standards/regulations, the design of PLCC/FOTE at KKNPP 5&6 end shall be finalized by the Contractor. Specification and architecture for PLC based and relay based Special Protection Scheme (SPS) panel as per requirement of grid/transmission authority will be provided to the Contractor at the time of execution of the work. Bidder may refer specification and architecture of SPS panels of existing 400kV transmission lines for an understanding of the requirement. Specification of RTU panel will be provided to the contractor at the time of execution.
						Technical Part - Switchyard Civil	
286	L&T	1	Section_C	LAYOUT OF 400KV OUTDOOR SWITCHYARD	A_I02.KK56.0.0.PR.TT.PR008_RS_Scope of work Annexure 5 I02.KK56.01UAK.0.ET.OK.WD001-Layout of KKNPP 5&6 _400kV outdoor Switchyard	As per the referred layout, in the notes (Point No. 4), it is mentioned that "construction of structures inside the fencing (towards north of UAB) is under the scope of this contract." Based on this, the bidder understands that only the works located within the fenced area (towards the north of UAB) are included in the scope of this contract. Accordingly, the structures and buildings such as 00 UAB, shunt reactors, and fencing for shunt reactors, located towards the south of UAB and outside the fenced area, are not part of the bidder's scope. Kindly confirm our understanding is correct.	Confirmed. However, all transmission towers (400kV and 230kV) works mentioned in respective tender documents is also included under the scope of the Contractor.
287	L&T	2	Section_C	LAYOUT OF 230KV OUTDOOR SWITCHYARD	A_I02.KK56.0.0.PR.TT.PR008_RS_Scope of work Annexure 6 I02.KK56.02UAK.0.ET.OK.WD001-Layout of 230kV Switchyard_KKNPP 5&6	As per the referred layout, in the notes (Point No. 3), it is mentioned that "construction of structures inside the fencing (towards north of UAD) is under the scope of this contract." Based on this, the bidder understands that only the works located within the fenced area (towards the north of UAD) are included in the scope of this contract. Accordingly, the structures and buildings such as 00 UAD, CSAT/RAT, and fencing for CSAT/RAT, located towards the south of UAD and outside the fenced area, are not part of the bidder's scope. Kindly confirm our understanding is correct.	Confirmed. However, all transmission towers (400kV and 230kV) works mentioned in respective tender documents is also included under the scope of the Contractor.
288	L&T	3	Section_E	Section-E_Price Schedules	5.6 C_Erection	In the price schedule, an item for Lightning High Mast Pole for the 400 kV switchyard is included (Sl. No. 1.3.10, Item 5.6 – C_Erection). However, a similar item is not available for the 230 kV switchyard in the referred price schedule. The bidder understands that the provision of a Lightning High Mast Pole for the 230 kV switchyard is not included in the scope of this contract, as the same is not included in price schedule. Kindly confirm our understanding is correct.	Confirmed.
289	L&T	4	Section_C	1) Section 4.3.4 – Material Properties & 2) Sl. No. 1.1 and 2.1	1)63_I02.KK56.0.0.CC.TS.PR001_T S FOR CIVIL WORKS OF E-BoP OUTDOOR STRUCTURES & 2) 5.8 E_Civil Works	As per the referred Clause 1, Section 4.3.4 – Material Properties, it is mentioned that "for RCC works, the grade of concrete shall not be lower than M35." However, as per Clause 2, Sl. No. 1.1 and 2.1, the grade of RCC mentioned is M30. Kindly confirm the grade of concrete (i.e.,M30 or M35) shall be considered by the bidder.	M35 grade shall be considered. (M35 grade shall be considered for all items where M30 grade is mentioned in the Civil Works BoQ.)
290	L&T	5	Section_E	1.5 400kV Switchyard & 2.5 230kV Switchyard	5.8 E_Civil Works	In price shedule quantity for "PCC of all grades using 12.5mm and down, graded hard stone aggregates with cement content of 340 kg/m3 for the secondary concrete of various floors of buildings and structures and other works/areas of all structures as per the construction drawings and specifications" given in cu.m. Unit price for PCC will vary from grade to grade. Request to split the PCC quantity for the required grades separatley in the price shedule.	As per the Scope of Works, PCC of M20 grade shall be considered. Cement content shall be considered as specified.



Pre-Bid Clarifications Response-2

1 NPCIL S.No	2 NAME OF THE BIDDER	3 QUERY NO	4 TENDER SECTION NO	5 REFERENCE CLAUSE NO	6 REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	7 DESCRIPTION OF THE QUERY	8 RESPONSE FROM NPCIL
291	L&T	6	Section_E	Section-E_Price Schedules	5.8 E_Civil Works & 5.6 C_Erection	We trust that, site levelling for 400kV & 220kV Switchyard is not in the bidder scope, as the same is not mentioned under scope of work & in the price schedule and we understand that, levelled land with earth protection upto the required FGL shall be furnished by NPCIL to the bidder. Please confirm.	The excavation and site leveling is in the scope of the successful bidder. Kindly refer CI 22.4.3 of TS No. I02.KK56.0.0.CC.TS.PR001_TS FOR CIVIL WORKS OF E-BoP OUTDOOR STRUCTURES, related to Site preparation.
292	L&T	7	Section_C	2.1. E1: Buildings housing electrical equipment	63_I02.KK56.0.0.CC.TS.PR001_TS FOR CIVIL WORKS OF E-BoP OUTDOOR STRUCTURES & 5.8 E_Civil Works	As per the referred clause, it is stated that "Structures under this category are primarily RCC buildings with solid concrete block infills for housing electrical equipment, and no structures under this category are included in the Contractor's scope." However, buildings such as 00 UAB, 00 UAD, and 00 UAC are not specifically mentioned under the Civil Scope of Work or in the price schedule. The bidder understands that the design and construction of GIS and control room buildings for the 400 kV and 230 kV switchyard are not included in the bidder's scope of work. Kindly confirm our understanding is correct.	Confirmed.
293	L&T	8	Section_E	Sl.no 1.1 & 2.1	5.8 E_Civil Works	Please furnish the Contour map (Indicating existing ground level with FGL) & Soil Report for 400kV & 220kV Switchyard area.	Bore logs of the KKNPP 5&6 area are included in Annexure-1 to I17.KK56.0.0.GE.RS.PR001 - Geo technical Investigation report . Existing ground levels at different locations of KKNPP 5&6 area can be referred from the bore logs.
294	L&T	9	Section_E	1.1.2 & 1.2.2	5.6 C_Erection	As per the referred clause, the bidder understands that the foundation works for 400 kV and 220 kV Gas Insulated Bus Duct (GIBD) are payable under the respective items 1.1 and 2.1, Item 5.8 - E_Civil Works. Kindly confirm our understanding is correct.	Confirmed.
295	L&T	1	Section C	1	I02.KK56.0.0.ET.TB.PR002 MANDATORY SPARES FOR ELECTRICAL EQUIPMENT, KKNPP-5&6	Technical Part - Electrical Contractor shall provide the following mandatory spares for Electrical equipment: it must be clearly noted that, the qty. of spares shown here against each item are corresponding to the qty. of spares which needs to be handed over to the Purchaser after the successful commissioning/ handing over of the subject equipment. Any spares getting consumed/ used during the supply, delivery, transportation, erection, installation, testing, pre-commissioning/commissioning etc. till handing over, shall be replenished by Contractor/ supplier/manufacturer at no extra cost. NPCIL shall communicate to L&T the replacement of Spares after charging/during charging to have a record of spares consumed which should not be a surprise to us during handing over.	Mandatory spares shall be credited to NPCIL stores for use by NPCIL during O&M after taking over of commissioned systems from the contractor. Any deficiency created in mandatory spares while in custody of the contractor before crediting to NPCIL stores shall be made up by contractor till handing over, at their own cost and contractor only shall maintain such records.
296	L&T	2	Section C	6.1.1	I02.KK56.0.0.ET.TS.PR080 TECHNICAL SPECIFICATION FOR FIBRE OPTIC CABLES AND ACCESSORIES OF UNITS-5 & 6	Type Test: Mould-growth test - Degree of biological fouling with fungi, number Anti-rodent and antitermite test Tests may be excluded, as both the tests are special in nature and some of our registered vendors not having facilities, also the time taken for these tests are between 7 to 30 days and test results not specific in nature.	Tender condition along with Corrigendum issued, pre-bid response from NPCIL shall be part of Tender.
297	L&T	3	Section C	8.12	I02.KK56.0.0.ET.TS.PR080 TECHNICAL SPECIFICATION FOR FIBRE OPTIC CABLES AND ACCESSORIES OF UNITS-5 & 6	Packing and Shipment: Cables shall be despatched in non-returnable wooden or steel drums of suitable barrel diameter, securely battened, with the take-off end fully protected against mechanical damage. The wood used for construction of the drum shall be properly seasoned, sound and free from defects. Wood preservatives shall be applied to the entire drum. The wooden drum shall be as per IS: 10418. Ferrous parts used shall be treated with a suitable rust preventive finish or coating to avoid rusting during transit or storage. Cable drums shall be completely of steel with only top battened by wood to avoid future long time storage damages (Applicable to all the Power and control cable drums).	Tender conditions shall prevail.



Pre-Bid Clarifications Response-2

1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
298	L&T	4	Section C	9.3	I02.KK56.0.0.ET.TS.PR101 TECHNICAL SPECIFICATION FOR CABLE CARRIER SYSTEM KKNPP 5&6	Methodology for Execution: In addition to the elements brought/described in the document, in case there is a requirement for fabrication and supply of any new element as directed by the Purchaser, the Contractor shall fabricate and supply the same at no extra cost and time to the Purchaser In case additional fabrication and erection directed by Purchaser at site, same should be certified by NPCIL and erection/material cost shall be claimed with additional quantity ammendment.	Please refer clause 9.3 of TS ET.TS.PR101_R2 quoted here "In addition to the elements brought/described in the document, in case there is a requirement for fabrication and supply of any new element as directed by the Purchaser, the Contractor shall fabricate and supply the same at no extra cost and time to the Purchaser. Also, as already envisaged, the unit for measurement of the CMS elements is terms of Tonnage." Hence, Quantities as mentioend in the BOQ are in terms of MT and hence in case there is a requirement for fabrication and supply of any new element as directed by the Purchaser, the Contractor shall fabricate and supply the same at no extra cost and time to the Purchaser.Tender clause shall prevail.
299	L&T	5	Section C	7.1.3	I02.KK56.0.0.ET.TS.PR109, R2 TECHNICAL SPECIFICATION FOR GLASS REINFORCED PLASTIC (GRP) CABLE TRAYS, KKNPP 5&6	SPECIAL REQUIREMENTS FOR CABLE STRUCTURE AND NOMENCLATURE: In cases where the requirement at site is in between two standard lengths, it is permitted to cut and join standard elements to suit actual site conditions. The same shall be as per practices recommended by the manufacturer Jointing process for Tray to Tray is not mentioned and to be obtained from NPCIL.	Jointing process of tray to tray is through bolting two trays with a plate element .Details will be provided to successful bidder.
300	L&T	6	Section C	4.16	I02.KK56.0.0.ET.TS.PR086 TECHNICAL SPECIFICATION FOR LIGHTING SYSTEMS AND RECEPTACLES OF KKNPP 5&6	In rooms/areas where the number of runs of lighting cables is less than equal to four, the cables can be directly cleated to the wall/ceiling. Cleat, spacers, saddles, clip, hook, chains etc. for lighting accessories details not provided. To be obtained from NPCIL.	Cleat, spacers, saddles, clip, hook, chains etc. are standard items as accessories for works & the same shall be supplied as accessories items for erection works and shall be as per relevant Indian standards are applicable.
301	L&T	7	Section C	1	I02.KK56.0.0.CC.TS.PR001 TECHNICAL SPECIFICATION FOR CIVIL WORKS OF ELECTRICAL BALANCE OF PLANT OUTDOOR STRUCTURES OF KKNPP-5&6	Earthwork- Excavation: The scope of the excavation work includes excavation in all types of soils and rocks, including hard rocks. Type of soil is rocky. Request approval from NPCIL for controlled blasting if required.	Outdoor Grounding conductors are laid below 500 mm from ground level, so control blasting is not allowed at site due to safety buildings are located near by. However, manual or mechanical excavation works are allowed to lay the grounding conductor at site.
302	L&T	8	Section C	Annexure-1 10.14.13 & 10.14.14	I02.KK56.0.0.PR.TT.PR009_R5_Jo b specification Annexure_1_Project docuent- Execution of site works	Supply of anchor fasteners (including seismic type) shall be provided where embedment plates are not provided at site. This depends on site conditions and request NPCIL for issuing the ammendment for supply and installation of Anchor fasteners.	Bidder need to refere complete tender document for calrity on the scope of works, BoQ, inclusions, exclusions etc.
303	L&T	9	Section B	52	1) SPECIAL CONDITIONS OF CONTRACT (SCC)	Any damage to the facility by other agencies, NPCIL to clarify the cost recovery mechanism to the responsible agency and reimbursement to the affected agency.	The Contractor shall be responsible for ensuring the safety and protection of the facility against any damages by other agencies until the handover to NPCIL. Any such damages during this period shall be rectified by the contractor at no additional cost to NPCIL.
304	L&T	10	Section C	9.2	18_I02.KK56.0.0.ET.TS.PR019_R1 _TS for MV Power Cables type- PvVng(A)-LS	NPCIL to confirm that Type Tests and Special Tests may be conducted only on the initial lot of cables and not for every lot of cables which will ensure timely delivery. Request approval from NPCIL.	Tender condition along with Corrigedenum issued, pre-bid response from NPCIL shall be part of Tender.
305	L&T	11	Bus Duct Rating	Cl 5.6	I02.KK56.0.0.ET.TS.PR096 Rev.No. R2	For duct mentioned as C5-H & GIS panels mentioned C5M- Clarify the complete painting scheme or approved painting procedure or method statement available.	LV busduct shall be painted as per ISO 12944 category C5-H. For GIS/GIBD, ISO 12944 category C5-M shall be met as a minimum tender requirement. LCC/Cubicle panel for GIS- Painting shall be as per OEM recommendations.
306	L&T	12	GENERIC SEISMIC TEST PROCEDURE FOR ELECTRICAL EQUIPMENT	Clause 3	I02.KK56.0.0.ET.PM.PR001	Considering the limited availability of lab faciltiy and high cost of testing , it is proposed that Previous seismic test reports of similar designs may be reviewed for approval.	Bidder may please refer clause 13 of this document I02.KK56.0.0.ET.PM.PR001 regarding acceptance of previous test reports.



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1 NPCIL S.No	2 NAME OF THE BIDDER	3 QUERY NO	4 TENDER SECTION NO	5 REFERENCE CLAUSE NO	6 REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	7 DESCRIPTION OF THE QUERY	8 RESPONSE FROM NPCIL
307	L&T	13	JOBS SPECIFICATION – ELECTRICAL SYSTEMS	Clause 4	I02.KK56.0.0.PR.TT.PR009_R5	Please confirm weather previous approved QAP & drawings can be used as refrence with minor modifications for the project.	Indicative QAPs in the respective specifications of the subject tender already addresses the previous execution experiences. However, contractor shall develop the QAPs for the subject package taking reference of the indicative QAPs. NPCIL will review , fine tune during the detailed design and approve before start of manufacturing/work, which shall be final and binding.
308	L&T	14	Section B	Table SI No 37	Tender No. CMM/MEQ/91-21-2-12	Weather TPI is acceptable for all categories of equipments and for all stages of inspections.	Will be reviewed on case to case basis.
309	L&T	15	RECTIFIERS, INVERTERS AND SPARE CELL CHARGERS	Clause 7	I02.KK56.0.0.ET.TS.PR084	Clarify weather enhanced packing alone is sufficient or periodic inspection is required.	Enhanced weatherproof packing commensurate for long duration outdoor storage is required. If periodic inspection is recommended by the OEM, such shall be done without cost implication to NPCIL.
310	L&T	16	TECHNICAL SPECIFICATION FOR RECTIFIERS, INVERTERS AND SPARE CELL CHARGERS	Clause 5	I02.KK56.0.0.ET.TS.PR084	For few type test minimum years of validity not clearly specified- to be clarified.	For validity of type test reports/certificates, I02.KK56.0.0.PR.TT.PR008(Scope of work) shall be referred and Corrigedenum, Pre-Bid response shall be also be referred. Corrigedenums issued, pre-bid responses issued shall be part of Tender.
311	L&T	17	SUGGESTED VENDOR LIST FOR ELECTRICAL EQUIPMENTS,	Clause 3.1	I02.KK56.0.0.AP.REP.PR003_R5	For additional vendor approval- what will be the Timeline for approval of vendors.	All works shall be executed in strict compliance to the level-2 schedule to be prepared by the contractor and approved by NPCIL. It will be the responsibility of contractor for timely vendor approvals and further works to meet the timeline of the level-2 schedule of the project.
312	L&T	18	TECHNICAL SPECIFICATION FOR SCADA SYSTEMS	Clause 8	I02.KK56.0.0.ET.TS.PR104	For Scada- Complete SCADA QAP will be submitted including all the components as a whole, sub vendor documents may not required.	Indicative QAP as per Annexure-19 of the Technical specification shall be complied.
313	L&T	19	TECHNICAL SPECIFICATION FOR LV power cable, MV Power Cable & Control Cable	Type Test	I02.KK56.0.0.ET.TS.PR004 I02.KK56.0.0.ET.TS.PR019 I02.KK56.0.0.ET.TS.PR003	Type test can be done for any 1 sample from 1 type of Control cable, MV Cable & Power cable as 100% testing will be very high.	Tender conditions along with corrigedenum issued, Pre-Bid responses issued by NPCIL shall be part of Tender.
314	L&T	1	Section-B SCC	7	Price Adjustment	As per 5.5.6 "....In case of dispatches which are delayed beyond the Contractual Milestone Date of dispatch (as given in Contract) for reasons attributable to the Contractor or Force Majeure events, the provision of Price Adjustment shall be as per terms of PO, regulated on the basis of the indices as applicable as per PO terms on the original Contractual Milestone Date of dispatch or the indices as applicable as per PO terms on the actual delivery date, whichever is lower." However, since Force Majeure events are beyond the control of the Contractor, we propose that "the Price Adjustment provisions be applied in accordance with the original PO terms for the extended period as well, based on the indices prevailing at the time of actual supply during such extended period".	Tender conditions shall prevail.
315	L&T	2	Section-B SCC	7	Price Adjustment	As per 5.6.3 " ... In case of activities that are delayed beyond the Contractual Milestone Date for Intermediate Completion (as given in Contract) for reasons attributable to the Contractor or Force Majeure events, the provision of Price Adjustment shall be as per terms of PO, regulated on the basis of the indices as applicable as per PO terms on the original Contractual Milestone Date of completion or the indices as applicable as per PO terms on the actual date of completion, whichever is lower." However, since Force Majeure events are beyond the control of the Contractor, we propose that "the Price Adjustment provisions be applied in accordance with the original PO terms for the extended period as well, based on the indices prevailing at the time of actual execution during such extended period".	Tender conditions shall prevail.
316	L&T	3	Section-B GCC	3.4.7	Latent DLP Bank Gurrantee	As per the clause "The Contractor shall submit a Bank Guarantee for 1% (one percent) of the total value of goods sold, in the respective contract currencies, as security against latent defect. This Bank Guarantee shall be valid for a period of 5 (five) years from the date of successful completion of the defect liability period as per the contract." We request NPCIL to accept Insurance Security Bond and confirm.	Tender conditions shall prevail.



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1 NPCIL S.No	2 NAME OF THE BIDDER	3 QUERY NO	4 TENDER SECTION NO	5 REFERENCE CLAUSE NO	6 REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	7 DESCRIPTION OF THE QUERY	8 RESPONSE FROM NPCIL
317	L&T	4	Section-B SCC	26	Additional expenditure for extended stay	<p>As per SCC Clause "20.2.1 In the event of delay in completion and handing over of the Facilities beyond CDD by the Contractor due to specific site related issues for which Purchaser is responsible like release of work front as per work programme schedule and readiness of other facilities to be provided to the Contractor by the Purchaser in accordance with the Contract, the Contractor shall be entitled to compensation for additional expenditure for extended stay at site to the extent required for such reasons in addition to extension of time as per GCC clause no. 20.1. The amount of compensation will be arrived at through mutual consultation between the Purchaser and the Contractor following the other procedures as per GCC Sub-Clause no. 19.2.2 and 19.2.3."</p> <p>There is no timeline mentioned for the claim approval process. Hence, we request you to consider the timeline of 90 days for settlement of Contractor's claim towards additional expenditure for extended stay from the date of submission by the contractor.</p>	Tender conditions shall prevail.
318	L&T	5	Section-B SCC	7	Price Adjustment	<p>As per SCC Clause "5.4.7 No Price Adjustment will be payable if the total amount of Price Adjustment against the Contract sums up to less than 2% (Two percent) of the total Contract Price. However, if the total amount of Price Adjustment against the Contract sums to more than 2% (Two percent) of the total Contract Price, the total Price Adjustment shall be payable to the Contractor."</p> <p>We request NPCIL to clarify the below: Example: In case the total cumulative Price Adjustment works out to 2.5% of the total Contract Price, whether (a) only the excess portion beyond 2% (i.e., 0.5%) shall be payable, or (b) the entire 2.5% shall be payable to the Contractor.</p> <p>Kindly confirm.</p>	Tender conditions shall prevail.
319	L&T	6	Section-B SCC	12	Right of Recourse under Civil Liability for Nuclear Damage Act, 2010 and Rules, 2011 Thereof.	<p>As per SCC Clause "This clause shall be read in conjunction with GCC clause 6.8.7: Regarding contracts with manufacturers of or vendors for the supply of systems, equipment, components, or building of structures, or provision of services to Kudankulam Nuclear Power Project Units 3 to 6, such manufacturers or vendors or service providers, being not responsible for the plant design or integration, will not be assigned the role of Supplier. Therefore, the right of recourse under Section 17(a) & 17(b) of CLND Act 2010 will not be applicable for this contract."</p> <p>We would like to inform NPCIL that EPC Contractor comes under "Contractor" as per definition, but as per SCC clause, indemnification not mentioned for "Contractor".</p> <p>In view of the above, please confirm that the right of recourse under Section 17(a) & 17(b) of the CLND Act, 2010 shall not be applicable to the EPC Contractor under this contract.</p>	Tender conditions shall prevail.



Pre-Bid Clarifications Response-2

1 NPCIL S.No	2 NAME OF THE BIDDER	3 QUERY NO	4 TENDER SECTION NO	5 REFERENCE CLAUSE NO	6 REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	7 DESCRIPTION OF THE QUERY	8 RESPONSE FROM NPCIL
320	L&T	7	General		General Query related to Contractor's claim	As per SCC Clause "20.2.1 In the event of delay in completion and handing over of the Facilities beyond CDD by the Contractor due to specific site related issues for which Purchaser is responsible like release of work front as per work programme schedule and readiness of other facilities to be provided to the Contractor by the Purchaser in accordance with the Contract, the Contractor shall be entitled to compensation for additional expenditure for extended stay at site to the extent required for such reasons in addition to extension of time as per GCC clause no. 20.1. The amount of compensation will be arrived at through mutual consultation between the Purchaser and the Contractor following the other procedures as per GCC Sub-Clause no. 19.2.2 and 19.2.3. The clause does not clearly define the scope of 'additional expenditure' for overstay. In this regard, it is interpreted that the same includes compensation towards balance quantities executed beyond the CDD at revised rates based on prevailing market conditions. Kindly confirm.	Tender conditions shall prevail.
321	L&T	8	Section-C		Mandatory Spares	We request you provide the itemwise detailed BOQ of Mandatory Spares of Equipments rather than in % as mentioned in the Specification IO2.KK56.0.0.ET.TB.PR002_R2.	Tender conditions shall prevail.
322	L&T	9	Section-B GCC	6.12.1	Force Majeure	It is observed that the current Force Majeure clause does not explicitly cover certain geopolitical risks and 'acts of man', including governmental actions that may disrupt (and not necessarily prohibit) performance of contractual obligations. In order to ensure adequate risk allocation and clarity, We request purchaser to consider the following events under Force Majeure - terrorism, sanctions, blockades, port closures, cyber-attacks, government-mandated closures, disruption of shipping routes or essential utility infrastructure or widespread disruption of transportation networks etc".	Tender conditions shall prevail.
Technical Part - Mechanical							
323	L&T	10	A_IO2.KK56.0.0.PR.TT.PR008_R5_Scope of work	LAYOUT OF 400KV OUTDOOR SWITCHYARD	Annexure 5 IO2.KK56.01UAK.0.ET.OK.WD001- Layout of KKNPP 5&6_400KV outdoor Switchyard	As a bidder, we understand that no mechanical works—particularly HVAC and Fire Fighting Systems—are included for the Main Control Building and GIS Hall under this tender. Kindly confirm the same. If any mechanical works, firefighting systems, and HVAC systems are required for the successful commissioning and operation of the electrical system, kindly provide detailed specifications and include the same in the price schedule.	Confirmed. No mechanical works i.e HVAC, Firefighting for Main Control Building and GIS hall are not included under this tender.
324	L&T	11	A_IO2.KK56.0.0.PR.TT.PR008_R5_Scope of work	LAYOUT OF 230KV OUTDOOR SWITCHYARD	Annexure 6 IO2.KK56.02UAK.0.ET.OK.WD001- Layout of 230KV Switchyard_KKNPP 5&6	We request confirmation on whether the supply of electrical equipment materials associated with mechanical protection systems falls within our scope or under a third-party scope. If it falls within our scope, kindly include the same in the price schedule.	Supply of electrical equipment materials associated with mechanical protection systems are not included under the scope of this tender. All the items included under the scope of this package is covered in the supply schedule.
Technical Part - Electrical							
325	L&T	12	mpe_Section C Part01	5.4	IO2.KK56.0.0.ET.TS.PR052_R4_TS For 400KV Outdoor Switchyard	As per the referenced clause, the system parameters specify the lightning impulse withstand values based on IS standards, while the power frequency withstand value is indicated for wet conditions. Kindly clarify whether these values should be strictly followed as per the specification, or aligned with IEC. Additionally, please confirm whether the dry power frequency withstand value is also to be considered.	As we understand, the standards (IEC/IS) donot specify different values of Power frequency/Lightning Impulse withstand for dry and wet conditions. The withstand values are specified for a specific Voltage level. The Value specified in the subject clause is aligned with respective IEC standards. The applicability of Wet Power frequency/Lightning Impulse withstand tests shall be as per relevant IEC standards. As per the same, Wet Power frequency/Lightning Impulse withstand tests are applicable to those which are envisaged for Outdoor use. As per KKNPP 5&6, Only the GIS and GIBD will be located Indoor while all other equipment like SF6-Air Bushing, Wavetrap, Bus Post Insulator CVT, Lightning Arrestors are placed outside and therefore Wet Power frequency/Lightning Impulse withstand tests will be applicable for these equipment.



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
326	L&T	13	mpe_Section C Part01	6.2	I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard	As per the scope input layout of the 400 kV Switchyard (Annexure-5: I02.KK56.01UAK.0.ET.OK.WD001), construction of structures within the fenced area towards the north of the UAB is included in the scope of this contract. However, as per the referenced specification clause, the cable trench/cable tray layouts for the 400 kV Outdoor Switchyard, 230 kV Outdoor Switchyard, Shunt Reactor Yard, and Transformer Yard of KKNPP 5&6 indicate that the shunt reactors and transformers are not located towards the north of the UAB building. Kindly clarify only drawings towards shunt reactors transformer to be prepared, physical trench is not in scope of this tender.	Physical construction of trenches towards the south of UAB/UAD are not in scope of this tender. Engineering items are covered under the MISCELLANEOUS DESIGN, DETAILING AND ALLIED WORKS schedule .
327	L&T	14	mpe_Section C Part01	7.8.4	I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard	Batteries/Battery charger required for PLCC shall be dedicated for PLCC system but we have not envisaged same items in price schedule, kindly clarify.	The PLCC/FOTE equipments are inclusive of the dedicated power supply arrangements for the same. Kindly refer the description of the respective items.
328	L&T	15	mpe_Section C Part01	7.8.6	I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard	Two wave traps shall be provided (on R and Y phase) for each transmission line bay including tie line bays subject to acceptability of the transmission agency. In case the transmission agency asks for three wave traps (R, Y, B) for each transmission line, the same shall be provided by the Contractor. Specifications of the wave trap shall be subject to review and acceptability by the transmission agency during detail engineering. In this regard, kindly confirm the actual requirement of wave traps—whether two numbers per line (as per SLD) or wave traps on all three phases are to be considered. Also, please clarify the requirement in line with KKNPP Units 3 & 4 construction practices and provide the detailed specifications for the wave traps.	Two wave traps shall be provided (on R and Y phase) for each transmission line bay as per Tender conditions. Detailed standalone specifications for wavetraps are not available. Kindly refer clause H of tender datasheet I02.KK56.0.0.ET.DS.PR046- Data Sheet for 400kV Outdoor Switchyard. Basic parameters for the Wavetraps are provided in the above. The wavetraps shall satisfy Standard PGCIL/TANTRANSCO requirements for compatibility.
329	L&T	16	mpe_Section C Part01	6.8.5	I02.KK56.0.0.ET.TS.PR054_R4_TS For 230kV Outdoor Switchyard	Two wave traps shall be provided (on R and Y phase) for each transmission line bay including tie line bays subject to acceptability of the transmission agency. In case the transmission agency asks for three wave traps (R, Y, B) for each transmission line, the same shall be provided by the Contractor. Specifications of the wave trap shall be subject to review and acceptability by the transmission agency during detail engineering. In this regard, kindly confirm the actual requirement of wave traps—whether two numbers per line (as per SLD) or wave traps on all three phases are to be considered. Also, please clarify the requirement in line with KKNPP Units 3 & 4 construction practices and provide the detailed specifications for the wave traps.	Two wave traps shall be provided (on R and Y phase) for each transmission line bay as per Tender conditions. Detailed standalone specifications for wavetraps are not available. Kindly refer clause H of tender datasheet I02.KK56.0.0.ET.DS.PR048- Data Sheet for 230kV Outdoor Switchyard. Basic parameters for the Wavetraps are provided in the above. The wavetraps shall satisfy Standard PGCIL/TANTRANSCO requirements for compatibility.
330	L&T	17	mpe_Section C Part01	6.1	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	Clause 6.10 states that civil construction and floor openings for switchgear under this technical specification are to be carried out by the contractor through the respective tender. The contractor is required to coordinate with the concerned civil agency for switchgear installation requirements. In cases where civil construction is not within the contractor's scope, cable openings in the floor will be provided by the Purchaser based on inputs from the contractor. However, if the provided openings are inadequate or not at the required locations, the contractor shall make suitable modifications at no additional cost to the Purchaser. Any unused openings shall be properly closed with floor casting, including reinforcement, as directed by NPCIL, without additional cost. In line with the above clause, since the main plant civil works are not within the scope of this tender, we request that the activities related to creation and closing of civil openings be excluded from our scope of work.	Tender conditions shall prevail.
331	L&T	18	Section-E Price Schedule 5.5 B_Supply	Supply-1.1	400kV GIS	As per BOQ, Circuit Breakers with Controlled Switching Device (CSD) are to be considered for all 400kV bays and no Pre-Insertion Resistor (PIR) is required. Kindly confirm that our understanding is correct.	Confirmed.



Main Plant Electrical System Package for KKNPP Units - 5 & 6: Detailed Engineering, Manufacture, Procurement, Inspection & Testing, Supply, Erection / Construction, Pre-Commissioning, Commissioning & Testing, Trial Operation, Performance Guarantee (PG), Handing over of Systems and Equipment.

Pre-Bid Clarifications Response-2

1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
332	L&T	19	Section-E Price Schedule 5.5 B_Supply	Supply-1.2	230kV GIS	As per the BOQ, provision of Controlled Switching Device (CSD) and Pre-Insertion Resistor (PIR) is not specified. Hence, we understand that both CSD and PIR are not required for the 230kV Circuit Breakers. Kindly confirm our understanding.	Confirmed. However, the supplied equipment shall be inclusive of any device which is an integral part of the equipment as per type tested design. 50KA rms value is acceptable. Based on site conditions type of connection will be finalized and will be done at detailed Engg. Stage. However, for majority cases bus duct flange will be used.
333	L&T	20	mpe_Section C Part01	5.8.3	I02.KK56.0.0.ET.TS.PR051 Rev 4	As the BCU is integrated within the LCC panel for 400kV GIS, we understand that separate Circuit Breaker panel is not required and only the CMRP panel shall be considered. Kindly confirm whether our understanding is correct.	Confirmed.
334	L&T	21	mpe_Section C Part01	5.8.3	I02.KK56.0.0.ET.TS.PR053 R3	As the BCU is integrated within the LCC panel for 230kV GIS, we understand that separate Circuit Breaker panel is not required and only the CMRP panel shall be considered. Kindly confirm whether our understanding is correct.	Confirmed.
335	L&T	22	mpe_Section C Part01	5.2.5 (m)	I02.KK56.0.0.ET.TS.PR051 Rev 4	As per Specification Clause 5.2.5 m, If the power supply to Isolators/ earthing switch initially off and open/ close command is given, isolators/ earth switch which cannot be carried out to non-availability of power at that moment, operation of Isolator/ Earth switch shall not take place when AC supply is restored subsequently. However All the drives for Disconnectors, WIP Earth switches and Fast Acting earth switches shall be DC operated type. With this we understand that if the power supply to Isolators/ earthing switch initially off (AC Supply) Still DC Supply is available. So we can operate the Isolators/ earthing switch by DC source. In absence of both power Supply (AC & DC) this clause can be complied. Please confirm our understanding is correct.	The Power supply to Isolators/earth switches shall be either DC or AC as per OEM design. The intent of subject clause is the following. Suppose a close/open command is given to an isolator earth switch while the operating power supply is absent (operation not possible). The command shall not latch on so that the Isolator/Earth switch operates inadvertently when operating power supply gets restored. The control schematics/interlocks shall ensure the above feature.
336	L&T	23	Section-E Price Schedule 5.5 B_Supply	Supply-1.1 & 1.2	400kV GIS & 230kV GIS	Since the EOT crane not in our scope. Kindly provide the technical details of the EOT crane for 400kV & 230kV GIS (capacity, span, hook height and coverage) to ensure compatibility with GIS installation requirements	For 400kV: capacity 8T, span 14000mm, lift 9500mm runway length 11600mm, For 230kV: capacity 8T, span 12000mm, lift 7000mm, runway length 5500mm.
337	L&T	24	mpe_Section C Part01	Clause 7.2	I02.KK56.0.0.ET.TT.PR005_R2 TS for Grounding and Lightning Protection System	as per this clause Minimum four number of earth electrodes shall be installed at the peripheral of the switchyard earth mat to achieve earth resistance of 0.5ohm. - Earth electrodes shall be of copper rod minimum with 25 mm dia and 3 meter length we have not envisaged these electrodes in price schedule please confirm.	SUPPLY OF COPPER ROD EARTHING ELECTRODE FOR GROUNDING GRID RESISTANCE MEASUREMENT : (SUPPLY) Supply & Delivery of Copper rod earth electrode conforming to IS 3043 along with accessories to facilitate the measurement of outdoor grounding earth resistance using alternate method. The location electrodes will be finalized in consultation with earth resistance measuring agency. Electrodes are part of subject item.
338	L&T	25	mpe_Section C Part01	Clause 7.3	I02.KK56.0.0.ET.TT.PR005_R2 TS for Grounding and Lightning Protection System	As per this clause i) Appropriate size of copper conductor taking into account the manufacturer's recommendation and the codal requirements shall be used for 400 kV & 230 kV GIS & GIBD, switchyard and transformer yard equipment connections to earthing grid. Same shall be considered from which price schedule please confirm.	Vendor recommended sizes can be considered.
339	L&T	26	mpe_Section C Part01	Clause 7.6 Instrumentation Earthing	I02.KK56.0.0.ET.TT.PR005_R2 TS for Grounding and Lightning Protection System	As per this clause Signal grounding shall be separate from equipment/system grounding. Finally connected at one point of the outdoor earth mat. - Separate earthing layout drawings shall be prepared for signal grounding and subject to approval from the Purchaser. As per Price schedule Signal Grounding are not envisaged, kindly provide what is the exact requirement.	Signal grounding JB's are not part of this tender.
340	L&T	27	mpe_Section C Part01	Annexure-1 2.4.2	I02.KK56.0.0.ET.TT.PR005_R2 TS for Grounding and Lightning Protection System	6kV Motors & 75KW above Motors shall be grounded with Minimum 140Sgmm tinned copper wires, however we have not envisaged such sizes in price schedule kindly clarify which price schedule need to be used.	Tender conditions shall prevail.
341	L&T	28	mpe_Section C Part01	Clause 3.7.5	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per specification clause 3.7.5 The core clamping structure shall be designed to minimise eddy current loss and bolts shall not pass through the lamination for any purpose whatsoever, however providing the bolted core construction in which the properly insulated bolts pass through the core to have a rigid fixing structured to minimize the core vibrations. Kindly confirm is this ok?	Core bolts insulated with fibre glass tubes OR the construction as mentioned in the TS both are acceptable.



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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
342	L&T	29	mpe_Section C Part01	Clause 3.8.6	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per specification clause 3.8.6 The transformer shall be able to withstand short circuits as well as switching and atmospheric impulse voltages as specified in data sheet. However as per IEC 60076-3, the switching impulse test is not applicable, Since the system voltage is less than the 72.5kV, kindly confirm if performing full wave lightning impulse test on the transformer with voltage levels of HV:- 60kVpeak is sufficient.	Switching Impulse test is not applicable.
343	L&T	30	mpe_Section C Part01	Clause 5.3	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per specification clause 5.3 Primary off-circuit tap changer/link shall be provided and shall have a range as specified in the data sheet. Under conditions of external short circuit, the tap changing device shall be capable of carrying the same current as the windings. however, transformer with off circuit tap links and tapping on HV winding. In this construction, the tappings can be adjusted manually with the help of bolted tap links. Tap changing device is not applicable. Kindly confirm.	Agreed with a condition that the offered tap links shall comply to the Short circuit requirement as per the TS.
344	L&T	31	mpe_Section C Part01	Clause 5.4.4	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the specification clause stating: "The bus bars shall have a short-time current rating equal to the higher of the two values specified for the transformer or the LV switchgear. These bus bars shall be connected to the switchgear bus bar through copper flexible connections." In this regard, we request clarification on the following points: Short-Circuit Rating Connection details for the respective LV switchgear and transformer have not been provided. So, we have considered the transformer short-circuit rating of 50 kA for bus bar selection as per DS. Please confirm whether this assumption is acceptable. LV Side Termination Arrangement The LV side termination is required to be suitable for: Bus duct flange connection as per Clause 5.4, and Extended bus bars for connection to the LV switchgear bus bars through copper flexible links as per Clause 5.4.4. Kindly confirm which termination arrangement is to be considered. If both arrangements are required, please share detailed information of the respective LV switchgear/bus duct boards for proper coordination.	50 kA is acceptable. Termination through duct or copper flexible will be decided during detailed Engg. Stage. However, for most of the cases bus duct shall be used.
345	L&T	32	mpe_Section C Part01	Clause 6.1	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the specification clause, the transformers are required to withstand a symmetrical short-circuit current of 50 kA for 4 seconds on the HV side. However, in accordance with IS 2026-5, the standard short-circuit withstand duration is 2 seconds. Accordingly, the transformer will be designed and supplied as per IS 2026-5 (2-second short-circuit duration). Please confirm acceptance of the same.	SC duration as mentioned in TS shall be followed and transformer shall be designed for the same. No deviation is accepted.
346	L&T	33	mpe_Section C Part01	Clause 6.17.1	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the specification clause stating: "The louvres shall be covered with stainless steel wire mesh. The enclosure shall have a structural steel framework with lockable hinged doors on the front and rear of the transformer." If a 2 mm CRCA sheet enclosure with IP41 degree of protection and sand-trap louver construction is provided, the provision of stainless steel wire mesh behind the louvres is not applicable. Kindly confirm.	IP shall be complied. Sand trap construction or wire mesh construction as mentioned in the TS both are acceptable.
347	L&T	34	mpe_Section C Part01	Clause 6.17.5	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the specification clause stating: "The complete structure shall be rigid, self-supporting, free from vibration, twists and bends, and shall be suitable for connecting a ventilation hood on the top. A flanged throat connection, suitably drilled with gasket, shall be provided at the top of the enclosure for connection to the ventilation duct." Kindly confirm whether the transformer construction adopted in line with KKNPP Units 3 & 4 is acceptable.	Transformer construction adopted in line with KKNPP Units 3 & 4 and one mentioned in TS both are acceptable.



Pre-Bid Clarifications Response-2

1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
348	L&T	35	mpe_Section C Part01	Clause 6.19.2	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the specification clause stating: "The efficiency of the transformers offered shall be greater than or equal to (a) 98.5% for transformers rated from 1 MVA up to and including 1.25 MVA, and (b) 99.0% for transformers rated above 1.25 MVA, at full load, 120°C, and 0.8 power factor. The losses offered shall meet this requirement for Category I and II transformers. For Category III transformers, the efficiency shall be as per the losses specified in Clause 6.19.9." We propose to offer transformers with losses as considered for NPCIL – KKNPP Units 3 & 4. Kindly confirm whether this is acceptable.	Details as mentioned in the TS shall be followed. No deviation envisaged.
349	L&T	36	mpe_Section C Part01	Clause 6.19.9	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the specified clause, the heat emissions of Category III transformers (i.e., the total losses determined from no-load and short-circuit tests) shall not exceed the following limits: For 400 kVA rating: 5.2 kW For 1000 kVA rating: 11.5 kW Accordingly, for Category III transformers, the total losses are interpreted as the sum of no-load losses and load losses: For 400 kVA: Total losses (no-load + load losses) = 5.2 kW For 1000 kVA: Total losses (no-load + load losses) = 11.5 kW Kindly confirm whether our understanding is correct.	The total losses determined from no-load and short-circuit tests readings shall not exceed values as mentioned in TS.
350	L&T	37	mpe_Section C Part01	Annexure -I	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	Overall dimensions of CAT-I & II transformer mentioned as We will offer transformer with overall dimensions inline with the supply of KKNPP 3&4 supplied transformer, Kindly accept the same.	Dimensions as mentioned in TS shall be followed.
351	L&T	38	mpe_Section C Part01	Clause 7.9	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	Routine tests shall be carried out in line with IS 2026 (Part 11). Kindly confirm.	IS 2026-11 is acceptable for routine tests as mentioned in clause 7.9.
352	L&T	39	mpe_Section C Part01	Annexure-I, 5.4 & 6.19.10	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	The dimensions of the 0.415/0.415 kV isolation transformer shall be restricted in accordance with the actual site layout conditions. Kindly provide the detailed site layout for reference.	Layout will be provided to Successful bidder at the time of GTP finalization.
353	L&T	40	mpe_Section C Part01	Clause 5.4.10	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	Protection of the Isolation transformer shall be in accordance with the approved protection scheme. Kindly provide the protection scheme adopted for KKNPP Units 3 & 4 for reference.	Will be provided to Successful bidder during detailed Engg. Stage.
354	L&T	41	mpe_Section C Part01	Clause 5.4.6	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the clause, "The terminal chamber for bus duct termination on the LV side of the auxiliary transformer shall have a gasketed cover plate, bolted to it. Separate inspection covers shall be provided to facilitate connection and inspection." However, due to the 90° orientation of the HV and LV windings, provision of a separate inspection window is not feasible. Instead, the LV termination will be designed to suit bus duct connection through a flange arrangement. Further, the LV side bus duct will project only up to 200 mm outside.	LV side bus duct length shall be sufficient to ensure proper connection with LV bus bar to be used for connection LV Switchgear. Reason for not provided viewing window is not understood. TS clause shall follow.
355	L&T	42	mpe_Section C Part01	Clause 1.5	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	The rating margin consideration for dry-type transformers is applicable only to Category I and Category II transformers. Kindly confirm whether our understanding is correct.	Your understanding is correct.



Pre-Bid Clarifications Response-2

NPCL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
356	L&T	43	mpe_Section C Part01	Clause 3.7.1	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	The lamination grade is to be indicated in the technical data sheet; however, the same has not been envisaged in the current datasheet. Kindly provide the required details.	Grade used shall be complying to all technical requirement of TS and shall be mentioned in data sheet by manufacturer for NPCIL information.
357	L&T	44	mpe_Section C Part01	Clause 6.5	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	As per the specification, transformers intended for indoor installation shall have a minimum degree of protection of IP41. The marshalling box shall have a degree of protection of IP55 as per IS 60947, and the cable termination box, bus-duct termination chamber, etc., shall have a degree of protection not less than IP55. In this regard, kindly provide details confirming whether the transformer is of indoor or outdoor type, along with the applicable degree of protection for each case.	All Dry type transformers are indoor only. IP ratings as mentioned in the TS shall be followed.
358	L&T	45	mpe_Section C Part01	Clause 6.14.3	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	All support insulators shall be provided with terminal connector clamps suitable for supporting the terminals and conductors as specified in the data sheets. However, the required details are not available in the datasheet. Kindly provide the same.	Support insulator of suitable rating and complying to IEC/IS standard shall be provided and details of the same shall be submitted to NPCIL in the manufacturer data sheet submission
359	L&T	46	mpe_Section C Part01	Clause 6.19.6	I02.KK56.0.0.ET.TS.PR099 Rev 3 TS for Dry type transformer	All auxiliary transformers shall be designed to withstand repeated direct-on-line starting of the largest motor fed by them, considering the balance load (i.e., transformer kVA minus the largest motor kVA connected). However, the details of the largest connected motor kVA for each auxiliary transformer are not provided in the specification. Therefore, we propose to proceed based on the transformer ratings specified. Kindly confirm if this approach is acceptable.	Rating of largest motor will be provided during detailed Engg. Based on process requirement to the successful bidder and the transformer shall be designed to take care of the requirement as mentioned in the TS.
360	L&T	47	Price Schedule & mpe_Section C Part01	5.5 B_Supply Clause no 2.1.1.25	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	Additional &/deletion 630A/1250A switchgears cabinets / feeders along with associated items (like CT, PT, BUS BAR, LA, relay and other items as required) is required as per price schedule, however exact requirement(components) is not clear, kindly provide the SLD for the same.	The addition &/ deletion item shall be executed, if additional switchgear is required over and above the SLD attached with the TS I02.KK56.0.0.ET.TS.PR078 or some deletion is required in the SLD. The requirement, if any, will be known only during detailed engineering. The item will be executed based on the requirement.
361	L&T	48	mpe_Section C Part01	3.9	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	As per specification clause 3.9, Necessary structural supports and plates and Insulating mats of Elastomer, as required for proper movement of circuit breaker trolley, shall be included in the scope of Contractor. Insulating mat made of Elastomer shall be as per Class B of IS 15652-2006 or latest. however we have not envisaged Insulation Mat in price schedule, kindly provide the provision in price schedule for insulation MAT.	Please refer erection BoQ item Sl. No. 11.5, for insulation mat.
362	L&T	49	mpe_Section C Part01	Annexure -1 Sl No 3	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	As per this clause The bus bar rating of 00BCJ and 00BCK boards shall be 1600A, other rating mentioned in the SLD and CMRP diagrams should be ignored. However we haven't envisaged these boards(SLD, Schemes etc) neither in TS nor in Price schedule, we presume that these boards are not covered under this tender scope, kindly confirm our understanding is correct.	The boards 00BCJ and 00BCK are not in the supply scope of this tender.
363	L&T	50	mpe_Section C Part01	Clause no 5.5	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	As per this clause The tie between 00BCJ & 00BCK shall be closed manually by 2 out of 3 logic, between CBs. However we haven't envisaged these boards(SLD, Schemes etc) neither in TS nor in Price schedule, we presume that these boards are not covered under this tender scope, kindly confirm our understanding is correct.	The boards 00BCJ and 00BCK are not in the supply scope of this tender.



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
364	L&T	51	mpe_Section C Part01	Clause no 1.17	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	As per this clause, "In addition to design, engineering and supply of all interfaces and coordination for equipment covered under this specification, the scope also includes equipment such as DC distribution boards etc. covered under other modules but forming part of this composite electrical systems package and also interface with other protection panels, SCADA of power unit 5&6, SCADA of switchyard, ESFAS, TPTS-RC etc.(Purchaser supplied items) (which are not covered under this Technical specification), so as to ensure safe and satisfactory operation of the entire electrical system without any constraints imposed due to lack of such integration." however Main plant SCADA is in NPCIL/RF scope of supply, So detailed SCADA architecture of main plant shall be provided by NPCIL, and SCADA Architecture details of ESFAS, TPTS-RC etc. also in NPCIL scope.	TS contains scheme documents which covers the required interface with the connected systems. Contractor shall develop the scheme document of 6kV switchgear taking guidance and requirements specified in the TS. Relevant WDs related to the interface for remote end equipment in NPCIL scope of supply will be provided during detailed engineering.
365	L&T	52	mpe_Section C Part01	Clause no 1.17	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	In addition to above, ESFAS/TPTSRC system (Purchaser scope of supply items) are hardwired system, interface hardwired contacts shall have to be provided to these system, without any cost implications to Purchaser. We understand that these panels are supplied by Purchaser, we do not know what is the exact contacts requirement, so kindly exclude supply of these contacts from contractor scope.	TS contains scheme documents which covers the required interface with the connected systems. Contractor shall develop the scheme document of 6kV switchgear taking guidance and requirements specified in the TS. Relevant WDs related to the interface for remote end equipment in NPCIL scope of supply will be provided during detailed engineering.
366	L&T	53	mpe_Section C Part01	Clause no 3.10	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	Fire load and heat emission from the cabinet shall be such that the switchgear room firefighting system and ventilation system shall be capable to handle the same effectively. The input details for the same shall be provided by CONTRACTOR to PURCHASER. heat emission and fireload values of 6kv switchgear will be provided, kindly provide toleable values of ventilation system and fire fighting system as input.	Contractor shall provide heat load calculation and fire load calculation for 6kV switchgear as specified in the TS and get it approved by purchaser during detailed engineering.
367	L&T	54	mpe_Section C Part01	Clause no 5.11.g	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear	This digital signal processor scheme for ALT is additional over and above scheme already provided in typical CMRP drawings enclosed along with this specification(Both in NPSS and RPSS) Kindly confirm whether DSP is free issue item or need to consider by contractor.	Please refer supply BoQ item Sl. No. 2.1.1.26 to 2.1.1.28 for automatic load transfer system module/panel.
368	L&T	55	mpe_Section C Part01	Clause no 7.11	I02.KK56.0.0.ET.TS.PR078_R3_TS For 6kV Switchgear I02.KK56.0.0.ET.PZ.PR001_R1_Ad ditional Clarification document	As switchgears shall be installed in varies building, the overlapping of the applicable spectra for performing a consolidated test, shall be in contractor scope. As per annexure -3 floor response spectra buidling wise given in graphical representation, kindly provide the digital values of floor sepectra, additionally ASW enveloped spetra has been provided so kindly provide floor wise spectra as we are not installing all the equipments in all the floors.	Digital values of any specific spectra will be provided during detailed engineering.
369	L&T	56	Section-E Price Schedule 5.5 B_Supply	1.5.3.1& 1.5.14.1		As per the BOQ, For 400kV & 230kV distributed or centralized scheme is indicated. However, in Annexure-7 (List of Protection Relays), Busbar Protection BU Set-1 and BU Set-2 are specified for each Line Bay, Reactor Bay and GT Bay. Please confirm which busbar protection scheme is to be considered or whether we are free to propose appropriate scheme.	Refer SPECIFICATION NO. I02.KK56.0.0.ET.TS.PR090 wherein it is mentioned "Though distributed bus bar protection with bay units are indicated in this specification for 230kV system, centralized bus bar protection would also be acceptable. The same can be worked out during detailed design stage and decision of NPCIL on the selected bus bar scheme will be final. In any case, the bus bar protection scheme shall have provision for future expansion."
370	L&T	57	mpe_Section C Part01			As per Annexure-7 (List of Protection Relays), for 50BAT01 & 60BAT01 – Generation Transformer, protection functions such as 87BD1, 50BF, Open Pole Detection, Measurement Supervision, and Metering are indicated. Kindly confirm whether only these protection functions are to be considered within our scope, or if any additional protection functions are also required.	Refer SPECIFICATION NO. I02.KK56.0.0.ET.TS.PR090, clause 1.2, table 1 for protection requirements of bus ducts of generator transformers 50BAT01 and 60BAT01.



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
371	L&T	58	mpe_Section C Part01 Section-E Price Schedule 5.5 B_Supply	1.1.2, 1.1.3, 1.1.5, 1.2.2 & 1.2.3	Annexure 4_I02.KK56.0.0.ET.OKP.WD005_S LD for 230kV system Annexure 3_I02.KK56.0.0.ET.OKP.WD004_S LD for 400kV system	As per the price schedule, surge arrestors are specified as Gas Insulated Surge Arrestors (R, Y, B). However, the SLD indicates their placement after the GIBD, which appears to be contradictory. Kindly clarify whether the surge arrestors are to be provided as per the price schedule or as per the SLD (i.e., outdoor surge arrestors). Note: In the SLD, surge arrestors for shunt reactors are shown within the GIBD, whereas for the remaining feeders, they are indicated as outdoor surge arrestors.	As per KKNPP 5&6 design, the Transformer/Shunt Reactor feeders have gas insulated surge arrestors. These surge arrestors are included as a part of respective bays. Refer Items 1.1.2, 1.1.3, 1.1.5, 1.2.2, 1.2.3 of the Supply BoQ. The surge arrestors of EHV line feeders are outdoor lightning arrestors. These are covered under items 1.3.1 and 1.4.1 of the supply BoQ
372	L&T	59	mpe_Section C Part01	General	I02.KK56.0.0.ET.TS.PR019 I02.KK56.0.0.ET.TS.PR100 TS for MV Cables	In the mentioned voltage grade in the specification is 6 kV (unearthed). Since this voltage grade is not covered in IEC standards, shall we proceed with the voltage grade 6/10 (12) kV. Please confirm.	Voltage grade 6/10 (12) kV as per IEC is acceptable.
373	L&T	60	mpe_Section C Part01	Clause 6.1.7	I02.KK56.0.0.ET.TS.PR019 I02.KK56.0.0.ET.TS.PR100 TS for MV Cables	As per the specification, core identification is mentioned to be with coloured strips. However, we understand that this requirement is applicable to multicore HT cables. Since, as per the BOQ, the cables are single-core, natural colour identification of the core will be followed. Kindly confirm if this is acceptable.	Understanding is correct. Natural colour core identification for single core cable as per standards is acceptable.
374	L&T	61	mpe_Section C Part01	Clause No 2.1 Figure No - 6.1.3.1.	I02.KK56.0.0.ET.TS.PR019 I02.KK56.0.0.ET.TS.PR100 TS for MV Cables	As per the specification and the cross-sectional diagram on Page No. 8 of 25 (Sl. No. 7), it is mentioned that a copper wire screen with copper tape shall be provided. However, we understand that an open helix copper tape shall be applied over the copper wire screen. Kindly confirm if our understanding is correct.	Copper Wire and copper tape both are to be applied to achieve required cross section of screen as mentioned in Table 6.1.3.1.
375	L&T	62	mpe_Section C Part01	Clause 6.1.6 of I02.KK56.0.0. ET.TS.PR003 Clause 6.1.8 of I02.KK56.0.0. ET.TS.PR004	I02.KK56.0.0.ET.TS.PR003 & I02.KK56.0.0.ET.TS.PR004 TS of VVGng & VVGEng_LS & FRLS cables	As per clause of specification, it is mentioned Nominal cable insulation thickness shall comply with the requirements of IS 1554. & As per Clause Number 6.1.3 It is mentioned that the design of screened and non-screened cables shall meet the requirements of IEC 60502-1,2004. Kindly Confirm the Standard Whether it is as per IS 1554 or IEC 60502-1	For cables covered under I02.KK56.0.0.ET.TS.PR003 & I02.KK56.0.0.ET.TS.PR004, cable thickness as IEC 60502-1 is acceptable. Overall OD shall comply with TS requirements
376	L&T	63	mpe_Section C Part01	Clause 6.1.7	I02.KK56.0.0.ET.TS.PR003 & I02.KK56.0.0.ET.TS.PR004 & I02.KK56.0.0.ET.TS.PR114 & I02.KK56.0.0.ET.TS.PR113, Specification of Power and control cables	As per this clause, for multicore unscreened cables inner sheath is not required, kindly confirm our understanding is correct.	For LV power cables, confirmed for multi core unscreened cable. For control cables the understanding is confirmed
377	L&T	64	mpe_Section C Part01	Clause 6.1.15	I02.KK56.0.0.ET.TS.PR003 Technical specification of VVGng- LS & VVGEng-LS	Kindly clarify the requirement of Value-1 and Value-2, specifically indicating the compound to which each is applicable. We understand that the referenced clause may not apply to the insulation compound, and that it is applicable only to the sheathing (Table - Value 2). Accordingly, Value-1 may not be considered. Kindly confirm whether our understanding is correct.	Tender conditions shall prevail.
378	L&T	65	mpe_Section C Part01	Clause 6.1.17	I02.KK56.0.0.ET.TS.PR004 Technical specification of VVGng- FRLS & VVGEng-FRLS	Kindly clarify the requirement of Value-1 and Value-2, specifically indicating the compound to which each is applicable. We understand that the referenced clause may not apply to the insulation compound, and that it is applicable only to the sheathing (Table - Value 2). Accordingly, Value-1 may not be considered. Kindly confirm whether our understanding is correct.	Tender conditions shall prevail.
379	L&T	66	Price Schedule & mpe_Section C Part01	5.5 B_Supply Clause no 4.2.183, 4.2.184 & 4.2.185	I02.KK56.0.0.ET.TS.PR003 Technical specification of VVGng- LS & VVGEng-LS	As per price schedule 4.2.183, 184 & 185 given cable Type is not covered in specification, please share the specification for the same to proceed.	Relevant clauses of TS of VVGng-LS cable is I02.KK56.0.0.ET.TS.PR003 shall be applicable



Main Plant Electrical System Package for KKNPP Units - 5 & 6: Detailed Engineering, Manufacture, Procurement, Inspection & Testing, Supply, Erection / Construction, Pre-Commissioning, Commissioning & Testing, Trial Operation, Performance Guarantee (PG), Handing over of Systems and Equipment.

Pre-Bid Clarifications Response-2

1 NPCIL S.No	2 NAME OF THE BIDDER	3 QUERY NO	4 TENDER SECTION NO	5 REFERENCE CLAUSE NO	6 REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	7 DESCRIPTION OF THE QUERY	8 RESPONSE FROM NPCIL
380	L&T	67	mpe_Section C Part01	Clause 6.1.7	I02.KK56.0.0.ET.TS.PR097 Technical specification of PPGEng-A-FRHF, PVPGEEng-A-FRHF & PVPEng-A-HF	As per this clause, kindly confirm whether a drain wire is required. If so, please provide the detailed specifications for the drain wire for screening, as the same is not specified in the technical specification. Alternatively, confirm whether it shall be followed in line with the KKNPP 3 & 4 supply.	Bare/annealed plain solid copper wire of 0.4 mm diameter shall be provided longitudinally under the screen as drain wire
381	L&T	68	mpe_Section C Part01	Clause 6.1.6	I02.KK56.0.0.ET.TS.PR114 TS of KVVGng-LS & KVVGEEng-LS I02.KK56.0.0.ET.TS.PR113 TS of KVVGng-FRLS & KVVGEEng-FRLS	As per the specification, an insulation thickness table has been provided. However, the same specification also states that the cable shall conform to IEC 60502-1, and the values in the provided table do not align with the IEC requirements. Further, as per Clause No. 6.1.3, the design of both screened and unscreened cables shall be in accordance with IEC 60502-1. In view of the above, kindly confirm the applicable insulation thickness requirements for all cables.	Tender specification requirements superecede codes and standards requirements as per clause 3.5 . Specification requirements to be followed
382	L&T	69	mpe_Section C Part01	Clause 6.1.11	I02.KK56.0.0.ET.TS.PR114 TS of KVVGng-LS & KVVGEEng-LS I02.KK56.0.0.ET.TS.PR113 TS of KVVGng-FRLS & KVVGEEng-FRLS	As per the specification, an outer sheath thickness table has been provided. However, the same specification also states that the cables shall comply with IEC 60502-1, and the values in the provided table do not align with the IEC requirements. Further, as per Clause No. 6.1.3, the design of both screened and unscreened cables shall be in accordance with IEC 60502-1. In view of the above, kindly confirm the applicable outer sheath thickness requirements for all cables.	Tender specification requirements superecede codes and standards requirements as per clause 3.5 . Specification requirements to be followed
383	L&T	70	Price Schedule & mpe_Section C Part01	5.5 B_Supply Clause no 4.4.84 & 4.4.85	I02.KK56.0.0.ET.TS.PR114 TS of KVVGng-LS & KVVGEEng-LS	As per the price schedule, pair-type cables are included in the scope. However, the corresponding specifications for the same have not been provided in the technical documents. Kindly share the detailed specifications for pair-type cables to enable us to proceed further.	There is no separate dedicated specification for the subject item. The specification of KVVGEEng-LS cable is the guiding document for this cable also i.e. overall design, material and construction of the subject pair cable shall be as per KVVGEEng-LS design with consideration of additional requirements such as pairing of the cores and individual pair screening.
384	L&T	71	Price Schedule	5.5 B_Supply Clause no 5.5, 5.6, 5.7, 5.8	Earthing Cable	As per the BOQ, insulated earthing cables are included in the scope. However, the corresponding technical specifications for the same have not been provided. Kindly share the detailed specifications for insulated earthing cables to enable us to proceed further.	Conductor shall class 6 of IEC 60228 and Basic Insulation shall type A PVC as per IS 1554-1 & sheath shall be ST1 PVC compound as per IS-1554-1.
385	L&T	72	mpe_Section C Part01	Clause 9.6.7 Note point 3.	I02.KK56.0.0.ET.TS.PR100_R1_TS for MV cables inside containment	As per this clause, one set of random samples for each type of cable material (i.e., sheath and insulation compound) from every cable manufacturer shall be subjected to all LOCA tests (refer Annexure 1 for details). As per our understanding, these tests are time-consuming. Therefore, if the vendor has already conducted LOCA, radiation ageing, and thermal ageing tests for KKNPP Units 3 & 4, the same need not be repeated for KKNPP Units 5 & 6. Kindly confirm whether our understanding is correct.	Tender conditions along with corrigedenum issued, Pre-Bid responses issued by NPCIL shall be part of Tender.
386	L&T	73	mpe_Section C Part01		I02.KK56.0.0.ET.TS.PR098_R1_TS for LV power cables (PvPng-A-HF & PVPng-A-FRHF) I02.KK56.0.0.ET.TS.PR097_R1_TS for LV power cables (PPGEEng-A-FRHF, PVPGEEng-A-FRHF & PVPEng-A-HF)	In addition to above, kindly confirm same is applicable for LV Power cables inside reactor building also.	Tender conditions along with corrigedenum issued, Pre-Bid responses issued by NPCIL shall be part of Tender.



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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
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387	L&T	74	SECTION-B-2	Clause 15 of SPECIAL CONDITIONS OF CONTRACT	SPECIAL CONDITIONS OF CONTRACT (SCC)	All applicable documents and specifications required for execution of the contractor's scope are included in the scope document. Preparation of all drawings related to systems and components falls under the contractor's scope, and no drawings will be provided by NPCIL to the contractor. However, the main plant design remains under NPCIL's scope. Design documents such as cable schedules/logs, cable termination details, layout drawings, cable routing, equipment erection layouts, and SCADA architecture are not included in the contractor's scope. Kindly confirm whether our understanding is correct.	Bidder understanding is not correct. Please refer the section-E of Tender. Please refer complete tender documents, scope of works and jobs specification for clarity on the specifications, scope, inclusions, exclusions.
388	L&T	75	SECTION-B-2	Clause 15 of SPECIAL CONDITIONS OF CONTRACT	SPECIAL CONDITIONS OF CONTRACT (SCC)	In addition to above, Based on these inputs/details, detailed erection drawings shall be prepared by Contractor and submitted to NPCIL for approval. Contractor shall carry out the erection & installation of systems / components as per inputs / details / etc. The cost towards this activity is deemed to be included in the respective supply items and no separate payment is applicable. However, the major equipment like GT, RAT's , CSAT & shuntreactors etc supply and foundations not in present scope of this tender, so erection drawings for Purchaser supplied material shall not be scope of this tender. Kindly confirm whether our understanding is correct.	Bidder understanding is not correct. Please refer the section-E of Tender. Preparation of Erection darwaing for CSAT, RATs,& Shunt Reactors are under scope of EPC Contractor. However details of foundation drawing and details of RATs, CSAT & Shunt Reactor will be provided to successful bidder. Please refer complete tender documents, scope of works and jobs specification for clarity on the specifications, scope, inclusions, exclusions.
389	L&T	1	Section-B SCC	5.9	Terms of Payment	As per clause 5.9 "NOTE 1: a) According to the Payment Terms, Advance payments will be interest bearing at the applicable rate as notified by NPCIL on the first of April each year. The rate of interest for the current financial year FY 2025 – 26 is 10.14% p.a. As per the payment terms, advance payment is recoverable only through adjustment in running bills. In case the progress, supply, or billing is delayed due to reasons attributable to the Purchaser, such as non-availability of work fronts, delayed approvals, or site constraints, the adjustment of advance also gets delayed for reasons beyond the Contractor's control. This leads to continued levy of interest on the unadjusted advance. Kindly clarify whether, for delays clearly attributable to the Purchaser, interest on the unadjusted portion of advance shall be waived or suspended for the corresponding period, so as to avoid undue financial burden on the Contractor. Kindly confirm.	Tender Conditions shall prevail.
Technical Part - Electrical							
390	L&T	1	mpe_Section C Part01	Annexure-3	I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC	As per specification mentioned SLD's , we have not envisaged numerical relay's in LV switchgear and MCC panels, Kindly confirm our understanding is correct.	Numerical relays are provided at incomers and bus couplers of the following LV switchgear and MCCs: 00BKS, 00BKU, 00BKG, 00BKH, 00BKG10GH001; BKL, BKM, BHA, etc. Please refer the scheme drawings attached in the tender
391	L&T	2	Price Schedule & mpe_Section C Part01	1.3	I02.KK56.0.0.ET.TS.PR092_R4_TS for CMRP panels of 400kV and 230kV switchyard	As per the referenced clause, marshalling panels are indicated as "as required." However, the BOQ considers one panel each for Set-1 and Set-2. Kindly confirm which requirement should be followed.	Number of marshalling panels mentioned in the BoQ is based on the engineering inputs available as on date. Based on the detailed engineering, if additional marshalling panels are required, same shall be provided by the Contractor. Such additional panels shall be dealt separately as per the contract conditions.
392	L&T	3	Price Schedule & mpe_Section C Part01	1.3	I02.KK56.0.0.ET.TS.PR092_R4_TS for CMRP panels of 400kV and 230kV switchyard	In the technical specification, the quantity for billing and metering panels is mentioned as one set. However, the BOQ specifies a total of 8 numbers, implying one panel for each line panel and one for the busbar. Kindly confirm if this understanding is correct.	One panel can house upto 4 nos. of Special energy meters. Total no. of panels shall be based on the requirement during detailed design; however, minimum 4 panels shall be provided. All the special energy meters (SEMs) shall be procured and provided by contractor through CTUIL only as per CEA regulation on metering.
393	L&T	4	Price Schedule	1.5.8 & 1.5.9	5.5 B_Supply_1	Please clarify the exact application and scope of the special protection and PLC-based protection scheme.	Refer clause no. 1.15 of I02.KK56.0.0.ET.TS.PR092_R4_TS for CMRP panels of 400kV and 230kV switchyard.



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394	L&T	5	Price Schedule & mpe_Section C Part01	1.5.3	5.5 B_Supply_1	As per the BOQ, the busbar protection is specified as either a distributed or centralized scheme. However, the drawings provided in the technical specifications indicate a distributed busbar protection scheme. Kindly confirm which scheme is to be considered. Additionally, please clarify the basis on which the distributed busbar protection scheme has been adopted.	Though distributed bus bar protection with bay units are indicated in this specification for 400kV system, centralized bus bar protection will also be acceptable. The same can be worked out by contractor during detailed design stage and decision of NPCIL on the selected bus bar scheme will be final. In any case, the bus bar protection scheme shall have provision for future expansion. However, it is preferable to retain existing distributed protection scheme to avoid changes in multiple fronts like cable logs and other interfaces.
395	L&T	6	mpe_Section C Part01	1.5.2	I02.KK56.0.0.ET.TS.PR092_R4_TS for CMRP panels of 400kV and 230kV switchyard	As per the referenced clause, the CMRP drawing schemes include items of specific makes. Kindly confirm whether the same makes are to be strictly followed, or if equivalent equipment meeting the specified requirements may be used.	The CMRP drawings are indicative and based on specific makes of items and the same are provided for reference and guidance only. Vendor needs to develop detailed CMRP drawings taking into account requirements of indicative CMRPs and features of adopted makes of items and additional features as specified in relevant technical specifications and submit for review and approval of NPCIL. All other Interfaces and cabling related information are available with respect to the CMRP schemes provided in tender. In case of change in make/model, contractor shall make relevant changes in all interface documents as well.
396	L&T	7	mpe_Section C Part01	Annexure-3 Common Notes clause 8 (page no 49)	I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC I02.KK56.0.0.ET.TS.PR090_R4_TS for Numerical Relays other than DG sets	As per the referenced clause, Independent Verification and Validation (IV&V) All microprocessor based releases and numerical relays used in safety class (Class 1E panels) LV switchgear panels shall be subjected to IV & V. The scope covers preparation and submission of all associated documents (As per NPCIL IV&V working procedure), IV&V tests at factory after successful completion of acceptance tests but before issue of shipping release and IV&V tests at site after commissioning. However, as per the Annexure-3 list of boards, Class 1E panels are not envisaged; therefore, Independent Verification and Validation (IV&V) is not applicable to these boards. Kindly confirm whether our understanding is correct.	Your understanding is correct. This is a general clause and is applicable only for safety class 1E panels. Independent Verification and Validation (IV&V) requirements (for LV switchgear and MCC) withdrawn from the tender.
397	L&T	8	mpe_Section C Part01	Clause 5.6.2	I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC	The minimum number of strands per conductor for 2.5 mm ² shall be seven (7) and for 1.5 mm ² shall be three (3). Extra flexible wires (preferably Class 6 type as per IEC 60228) shall be used for devices mounted on moving parts such as swinging panels or doors. Please confirm whether control and power cables supplied in line with KKNPP 3&4 shall be acceptable.	Control and power cables shall be supplied as per the subject tender specifications.
398	L&T	9	mpe_Section C Part01	Clause 3.3.6	I02.KK56.0.0.ET.TS.PR082_R4_TS for DC distribution boards	As per the referenced clause, Type - 7 DCDBs shall be free standing panels having feeder compartment, busbar compartment, draw-out incomer compartment and fixed type outgoing compartment in the same panel. The separation factor of these DCDBs shall be at least 3B type 2. Please confirm whether Sub-DCDB's supplied in line with KKNPP 3&4 shall be acceptable.	Fixed type incomer compartment is also acceptable for type-7 sub-DCDBs.
399	L&T	10	mpe_Section C Part01	Clause 3.2.14	I02.KK56.0.0.ET.TS.PR082_R4_TS for DC distribution boards	As per the referenced clause, All the auxiliary/control components (applicable for all type of DCDBs) and the MCBs for outgoing circuits (applicable only for Type -7 DCDB) shall be mounted on standard SS DIN rails. However Galvanized /Zinc Coated/ Passivated Din Rail will be used for auxiliary/control components/MCB mounting can be acceptable pl confirm.	Zinc passivated DIN rails are also acceptable in addition to SS DIN rails for mounting of Auxiliary/Control components/MCBs etc.
400	L&T	11	mpe_Section C Part01	Clause 3.3.14	I02.KK56.0.0.ET.TS.PR081_R3_TS for wall mounted power distribution boards	As per the referenced clause, All the auxiliary/control components and the MCBs for outgoing circuits shall be mounted on standard SS DIN rails. However Galvanized /Zinc Coated/ Passivated Din Rail will be used for auxiliary/control components/MCB mounting can be acceptable pl confirm.	Zinc passivated DIN rails are also acceptable in addition to SS DIN rails for mounting of Auxiliary/Control components/MCBs etc.
401	L&T	12	mpe_Section C Part01	Clause 6.5.2	I02.KK56.0.0.ET.TS.PR083_R3_TS for switching devices and Junction boxes (other than used for lighting)	Clause 6.5.2 specifies that the equipment shall be tested for IP65 as per IEC 60529. Kindly confirm whether materials supplied in line with KKNPP 3&4(IP-55) are acceptable.	IP 55 is acceptable for all the items in the subject TS except for SD-3 and JB-6. For SD-3 and JB-6, IP65 is required.
402	Polycab	1	I02.KK56.0.0.ET.TS.PR019	General	CABLE TYPE-PVVNG -A LS	In the mentioned voltage grade in the specification is 6 kV (unearthed). Since this voltage grade is not covered in IEC standards, shall we proceed with the voltage grade 6/10 (12) kV. Please confirm	Voltage grade 6/10 (12) kV as per IEC is acceptable.



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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
403	Polycab	2	I02.KK56.0.0.OET.TS.PR019	Clause No - 6.1.7	CABLE TYPE-PvVNG -A LS	In the specification, it is mentioned that core identification shall be with Coloured strips, however we understood that the same shall be applicable for 3 Core HT Cable, So, we proceed as per our practice with Natural colour core identification for single core cable as the same is listed in BOQ, please confirm	Understanding is correct. Natural colour core identification for single core cable as per standards is acceptable.
404	Polycab	3	I02.KK56.0.0.OET.TS.PR019	Clause No 2.1 Figure No - 6.1.3.1.	CABLE TYPE-PvVNG -A LS	As per specification & in the Cross-sectional diagram of Page No - 8 of 25 & Sl.No - 7, it is mentioned that Copper wire screen with Copper tape shall be applicable, however we understood that Open helix copper tape shall be applicable over Copper wire screen, please confirm the same.	Copper Wire and copper tape both are to be applied to achieve required cross section of screen as mentioned in Table 6.1.3.1. of TS No. I02.KK56.0.0.OET.TS.PR019
405	Polycab	4	I02.KK56.0.0.OET.TS.PR019	Clause No 6.1.7	CABLE TYPE-PvVNG -A LS	We understood that we will have to consider CCV process for curing.	Requirement is clear in TS. CCV is acceptable along with the TS requirement reproduced here "The conductor screen, XLPE insulation and insulation screen shall all be extruded in one operation by 'Triple Extrusion' process to ensure perfect bonding between the layers. Curing shall be through continuous vulcanization (CV). The core identification (as applicable) shall be by coloured strips or by printed numerals".
406	Polycab	5	I02.KK56.0.0.OET.TS.PR019	Clause No 6.11.7	CABLE TYPE-PvVNG -A LS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable.
407	Polycab	6	I02.KK56.0.0.ET.TS.PR100	General	CABLE TYPE-PvPng(A) HF	In the mentioned voltage grade in the specification is 6 kV (unearthed). Since this voltage grade is not covered in IEC standards, shall we proceed with the voltage grade 6/10 (12) kV. Please confirm	Voltage grade 6/10 (12) kV as per IEC is acceptable.
408	Polycab	7	I02.KK56.0.0.ET.TS.PR100	Clause No - 6.1.7,	CABLE TYPE-PvPng(A) HF	In the specification, it is mentioned that core identification shall be with Coloured strips, however we understood that the same shall be applicable for 3 Core HT Cable, So, we proceed as per our practice with Natural colour core identification for single core cable as the same is listed in BOQ, please confirm	Understanding is correct. Natural colour core identification for single core cable as per standards is acceptable.
409	Polycab	8	I02.KK56.0.0.ET.TS.PR100	Clause No 2.1 Figure No - 6.1.3.1.	CABLE TYPE-PvPng(A) HF	As per specification & in the Cross-sectional diagram of Page No - 8 of 25, Sl.No - 7, it is mentioned that Copper wire screen with Copper tape shall be applicable, however we understood that Open helix copper tape shall be applicable over Copper wire screen, please confirm .	Copper Wire and copper tape both are to be applied to achieve required cross section of screen as mentioned in Table 6.1.3.1.
410	Polycab	9	I02.KK56.0.0.ET.TS.PR100	Clause No - 6.1.7,	CABLE TYPE-PvPng(A) HF	We understood that we will have to consider CCV process for curing.	Requirement is clear in TS. CCV is acceptable along with the TS requirement reproduced here "The conductor screen, XLPE insulation and insulation screen shall all be extruded in one operation by 'Triple Extrusion' process to ensure perfect bonding between the layers. Curing shall be through continuous vulcanization (CV). The core identification (as applicable) shall be by coloured strips or by printed numerals. "
411	Polycab	10	I02.KK56.0.0.ET.TS.PR100	Clause No 6.11.7	CABLE TYPE-PvPng(A) HF	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
412	Polycab	11	I02.KK56.0.0.ET.TS.PR003	6.1.6	CABLE TYPE-VVGng-LS & VVGEng-LS	As per Clause Number 6.1.6, It is mentioned Nominal cable insulation thickness shall comply with the requirements of IS 1554. & As per Clause Number 6.1.3 It is mentioned that the design of screened and non-screened cables shall meet the requirements of IEC 60502-1,2004. Kindly Confirm the Standard Whether It is as per IS 1554 or IEC 60502-1	For CABLE TYPE-VVGng-LS & VVGEng-LS, cable insulation thickness as IEC 60502-1 is acceptable. Overall OD shall comply with TS requirements
413	Polycab	12	I02.KK56.0.0.ET.TS.PR003	General	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we have to considered VVGng-LS for Unscreened cable & VVGEng-LS for screened cable. As the same is not specified in the given specification	Confirmed.
414	Polycab	13	I02.KK56.0.0.ET.TS.PR003	6.1.4	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we have to offer Upto and including 6 Sq.mm with Solid Copper Conductor, As the same is not specified in the given specification	Solid Copper Conductor (Class 1 as per IEC 60228) for sizes upto and including 6 Sq.mm is acceptable. However, for lighting cables, BoQ cl. 11, conductor shall be stranded (Class 6 as per IEC 60228)
415	Polycab	14	I02.KK56.0.0.ET.TS.PR003	6.1.10	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we considered PVC ST2 Compound as outer sheath material instead of PVC ST1 material	CABLE TYPE-VVGng-LS & VVGEng-LS, ST2 is acceptable. However, all technical requirements and cable OD shall be as per relevant technical specifications



Main Plant Electrical System Package for KKNPP Units - 5 & 6: Detailed Engineering, Manufacture, Procurement, Inspection & Testing, Supply, Erection / Construction, Pre-Commissioning, Commissioning & Testing, Trial Operation, Performance Guarantee (PG), Handing over of Systems and Equipment.

Pre-Bid Clarifications Response-2

1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
416	Polycab	15	I02.KK56. 0.0. ET.TS.PR003	6.1.7	CABLE TYPE-VVGng-LS & VVGEng-LS	For Multi core unscreened cable, Inner sheath is not required as per specification, please confirm	Confirmed for multi core unscreened cable
417	Polycab	16	I02.KK56. 0.0. ET.TS.PR003	Clause No 6.11.7	CABLE TYPE-VVGng-LS & VVGEng-LS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
418	Polycab	17	I02.KK56. 0.0. ET.TS.PR003	Clause No 6.1.15	CABLE TYPE-VVGng-LS & VVGEng-LS	The mentioned clause no shall not be applicable for insulation compound, whether the same is applicable for sheathing only (Table - VALUE 2), VALUE 1 will not be consider	Tender conditions shall prevail.
419	Polycab	18		BOQ Sr no.-4.2.183, 4.2.184 & 4.2.185	VVGEng-LS	As per BOQ 4.2.183, 184 & 185 given cable Type is not covered in specification, please share the specification for the same to proceed	Relevant clauses of TS of VVGEng-LS cable is I02.KK56. 0.0. ET.TS.PR003 shall be applicable
420	Polycab	19	I02.KK56. 0.0. ET.TS.PR004	6.1.8	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	As per Clause Number 6.1.8, It is mentioned Nominal cable insulation thickness shall comply with the requirements of IS 1554. & As per Clause Number 6.1.3 It is mentioned that the design of screened and non-screened cables shall meet the requirements of IEC 60502-1,2004. Kindly Confirm the Standard Whether It is as per IS 1554 or IEC 60502-1	For CABLE TYPE-VVGng-FRLS & VVGEng-FRLS, cable insulation thickness as per IEC 60502-1 is acceptable. Overall OD shall comply with TS requirements
421	Polycab	20	I02.KK56. 0.0. ET.TS.PR004	General	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we considered VVGng-FRLS for Unscreened cable & VVGEng-FRLS for screened cable. As the same is not specified in the specification	Confirmed
422	Polycab	21	I02.KK56. 0.0. ET.TS.PR004	6.1.4	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we have have to offer Upto and including 6 Sq.mm with Solid Copper Conductor	Solid Copper Conductor (Class 1 as per IEC 60228) for sizes upto and including 6 Sq.mm is acceptable. However, for lighting cables, BoQ cl. 11, conductor shall be stranded (Class 6 as per IEC 60228)
423	Polycab	22	I02.KK56. 0.0. ET.TS.PR004	6.1.12	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we considered PVC ST2 Compound as outer sheath material instead of PVC ST1 Material	CABLE TYPE-VVGng-LS & VVGEng-LS, ST2 is acceptable. However, all technical requirements and cable OD shall be as per relevant technical specifications
424	Polycab	23	I02.KK56. 0.0. ET.TS.PR004	General	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	For Multi core unscreened cable, Inner sheath is not required as per given specification, please confirm	Confirmed for Multi core unscreened cable
425	Polycab	24	I02.KK56. 0.0. ET.TS.PR004	Clause No 6.11.7	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
426	Polycab	25	I02.KK56. 0.0. ET.TS.PR004	Clause No 6.1.5	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we have to consider Sector shape conductor from 25 Sq.mm and above size for multi core cables.	Sector shape conductor from 25 Sq.mm and above size is acceptable. Overall OD shall comply with TS requirements
427	Polycab	26	I02.KK56. 0.0. ET.TS.PR004	Clause No 6.1.17	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	The mentioned clause no shall not be applicable for insulation compound, whether the same is applicable for sheathing only (Table - VALUE 2), VALUE 1 will not be consider	Tender conditions shall prevail
428	Polycab	27	I02.KK56. 0.0. ET.TS.PR098	6.1.5	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	Kindly confirm that shall we have to consider Sector shape conductor from 25 Sq.mm and above size for multi core cables for cable type PvPng-A-FRHF	Sector shape conductor from 25 Sq.mm and above size is acceptable. Overall OD shall comply with TS requirements
429	Polycab	28	I02.KK56. 0.0. ET.TS.PR098	6.1.7	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	Kindly confirm that shall we have have to offer Upto and including 6 Sq.mm with Solid Copper Conductor	Solid Copper Conductor (Class 1 as per IEC 60228) for sizes upto and including 6 Sq.mm is acceptable. However, for lighting cables, BoQ cl. 11, conductor shall be stranded (Class 6 as per IEC 60228)
430	Polycab	29	I02.KK56. 0.0. ET.TS.PR098	Clause No 6.11.7	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
431	Polycab	30	I02.KK56. 0.0. ET.TS.PR097	6.1.5	PPGEng-A-FRHF, PVPgEng-A-FRHF & PVPgEng-A-FRHF	Kindly confirm that shall we have to consider Sector shape conductor from 25 Sq.mm and above size for multi core cables for cable type PPGEng-A-FRHF & PVPgEng-A-FRHF	Sector shape conductor from 25 Sq.mm and above size is acceptable. Overall OD shall comply with TS requirements



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
432	Polycab	31	I02.KK56.0.0.ET.TS.PR097	6.1.8	PPGEng-A-FRHF, PVPGEEng-A-FRHF & PVPEng-A-HF	Kindly confirm that shall we have have to offer Upto and including 6 Sq.mm with Solid Copper Conductor	Solid Copper Conductor (Class 1 as per IEC 60228) for sizes upto and including 6 Sq.mm is acceptable. However, for lighting cables, BoQ cl. 11, conductor shall be stranded (Class 6 as per IEC 60228)
433	Polycab	32	I02.KK56.0.0.ET.TS.PR097	6.1.7	PPGEng-A-FRHF, PVPGEEng-A-FRHF & PVPEng-A-HF	Kindly confirm whether drain wire required or not, if required then please specify the Drain wire details for Screening, as the same is not specified in technical specification.	Bare/annealed plain solid copper wire of 0.4 mm diameter shall be provided longitudinally under the screen as drain wire
434	Polycab	33	I02.KK56.0.0.ET.TS.PR097	Clause No 6.11.7	PPGEng-A-FRHF, PVPGEEng-A-FRHF & PVPEng-A-HF	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
435	Polycab	34	I02.KK56.0.0.ET.TS.PR114	6.1.6	CABLE TYPE-KVVGng-LS & KVVGEEng-LS	As per Specification for insulation thickness table given, However in same specification it is mentioned that cable required as per IEC 60502-1, However Provided Table Thickness & IEC not match with each other. Also as per given specification clause no 6.1.3, it is mentioned design of screened and unscreened cable design shall be as per IEC 60502-1. Hence, Kindly confirm insulation thickness requirement for all cables.	As per clause 3.5 specification requirements supercede the requirements of codes and standards. Hence, tender requirement regarding insulation thickness shall be complied.
436	Polycab	35	I02.KK56.0.0.ET.TS.PR114	6.1.7	CABLE TYPE-KVVGng-LS & KVVGEEng-LS	For Multi core unscreened cable, Inner sheath is not required as per given specification, please confirm	Confirmed.
437	Polycab	36	I02.KK56.0.0.ET.TS.PR114	6.1.11	CABLE TYPE-KVVGng-LS & KVVGEEng-LS	As per Specification for outer sheath thickness table given, However in same specification it is mentioned that cable required as per IEC 60502-1, However Provided Table Thickness & IEC not match with each other. Also as per given specification clause no 6.1.3, it is mentioned design of screened and unscreened cable design shall be as per IEC 60502-1. Hence, Kindly confirm outer sheath thickness requirement for all cables.	As per clause 3.5 specification requirements supercede the requirements of codes and standards. Hence, tender requirement regarding sheath thickness shall be complied.
438	Polycab	37	I02.KK56.0.0.ET.TS.PR114	General	CABLE TYPE-KVVGng-LS & KVVGEEng-LS	Kindly confirm that shall we considered KVVGng-LS for Unscreened cable & KVVGEEng-LS for screened cable. As the same is not specified in the specification.	Understanding is correct :KVVGng-FRLS is Unscreened cable and KVVGEEng-FRLS is screened cable. The tender clause 6.10.2 highlights this.
439	Polycab	38	I02.KK56.0.0.ET.TS.PR114	Clause No 6.11.7	CABLE TYPE-KVVGng-LS & KVVGEEng-LS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	The clause mentions "as applicable". Since the cables are designed as per IEC standards, IEC standards need to be specified/mentioned.
440	Polycab	39	-	BOQ Sr number 4.4.84 & 4.4.85	CABLE TYPE-KVVGng-LS & KVVGEEng-LS	Pair type cable covered in BOQ, but we have not receive specification for the same. Please share the same to proceed.	There is no separate dedicated specification for the subject item. The specification of KVVGEEng-LS cable, TS No.I02.KK56.0.0.ET.TS.PR114 is the guiding document for this cable also i.e. overall design, material and construction of the subject pair cable shall be as per KVVGEEng-LS design with consideration of additional requirements such as pairing of the cores and individual pair screening
441	Polycab	40	I02.KK56.0.0.ET.TS.PR113	6.1.6	CABLE TYPE-KVVGng-FRLS & KVVGEEng-FRLS	As per Specification for insulation thickness table given, However in same specification it is mentioned that cable required as per IEC 60502-1, However Provided Table Thickness & IEC not match with each other. Also as per given specification clause no 6.1.3, it is mentioned design of screened and unscreened cable design shall be as per IEC 60502-1. Hence, Kindly confirm insulation thickness requirement for all cables.	As per clause 3.5 specification requirements supercede the requirements of codes and standards. Hence, tender requirement regarding insulation thickness shall be complied.
442	Polycab	41	I02.KK56.0.0.ET.TS.PR113	6.1.7	CABLE TYPE-KVVGng-FRLS & KVVGEEng-FRLS	For Multi core unscreened cable, Inner sheath is not required as per given specification, please confirm	Confirmed.
443	Polycab	42	I02.KK56.0.0.ET.TS.PR113	6.1.11	CABLE TYPE-KVVGng-FRLS & KVVGEEng-FRLS	As per Specification for outer sheath thickness table given, However in same specification it is mentioned that cable required as per IEC 60502-1, However Provided Table Thickness & IEC not match with each other. Also as per given specification clause no 6.1.3, it is mentioned design of screened and unscreened cable design shall be as per IEC 60502-1. Hence, Kindly confirm outer sheath thickness requirement for all cables.	As per clause 3.5 specification requirements supercede the requirements of codes and standards. Hence, tender requirement regarding sheath thickness shall be complied.



Pre-Bid Clarifications Response-2

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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
451	MEIL	3		BOQ Sr no.-1.8	DG	DG specifications are currently not available. As per the defined scope of work, the supply, erection, and commissioning of DG sets, along with their auxiliaries, are included under a separate contract.	The supply, erection and commissioning of the portable DG is in the scope of this tender. The item description given in Supply BoQ sr. no. 1.8 shall be considered as specification for this item. The manufacturer shall provide datasheets and relevant test reports for the generator set as a part of the bid.
452	MEIL	4	30_I02.KK56.0.0.ET.TS.PR085_R2_TS for battery and load bank		Regenerative Load Bank	Regenerative Load bank Specifications currently Not Available	The specification parameters of regenerative load banks are provided in table 2 of I02.KK56.0.0.ET.TS.PR085_r2. The rated input voltage and current rating are mentioned in the table. The output voltage shall be 400V,±10% (Settable), 50Hz. The clauses in the specification I02.KK56.0.0.ET.TS.PR085_r2 regarding load banks are also applicable for regenerative load banks.
453	MEIL	5		BOQ Sr no.-4.3	Flexible cables	Specifications Not Available	Pls refer description of the relevant item of the BOQ item.
454	MEIL	6		BOQ Sr no.-2.2	Switching Devices (Isolator Boxes, Changeover boxes and Interlock boxes, Junction Boxes)	Specifications Not Available	Refer document I02.KK56.0.0.ET.TS.PR083 (TECHNICAL SPECIFICATION FOR SWITCHING DEVICES AND JUNCTION BOXES (EXCEPT FOR LIGHTING PURPOSES) FOR KKNPP 5&6)
455	MEIL	7			Cable termination kits HT, LT, Cable Glands, cable couplers	Specifications Not Available	Pls refer description of the relevant item of the BOQ item. For Cable reducing coupling Cable coupler, please refer the Pri-bid query response sent earlier.
456	MEIL	8	I02.KK56.0.0.ET.TS.PR051 Rev 4 Annexure A to C and IQAP,17_I02.KK56.0.0.ET.TS.PR053_R3_TS for 230kV Gas Insulated Switchgear and Gas Insulated Bus Duct,14_I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard,15_I02.KK56.0.0.ET.TS.PR054_R4_TS For 230kV Outdoor Switchyard		GA Drawings for GIS and out door switch yard	Drawings Required	Kindly Refer Annexure -1 Layout of 400kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard and Annexure C Layout & EP location for 400kV GIS building attached along with I02.KK56.0.0.ET.TS.PR051- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct. The 400kV GIS Bay equipments shall be placed inside GIS building (GIS Bay area). The tentative location of termination points SF6-Air Bushings, Line Reactors and Shunt Reactors are also marked in the above drawings. For 230kV Annexure A Layout & EP location for 230kV GIS building attached along with I02.KK56.0.0.ET.TS.PR053- Technical Specification for 230kV Gas Insulated Switchgear & Gas Insulated Bus duct and Annexure -1 Layout of 230kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR054- Technical Specification for 230kV Outdoor Switchyard. The final layout/GA drawings of GIS equipment shall be developed by the OEM based on above drawings and relevant tender requirements.
457	MEIL	9		BOQ Sr no.-8.1& 8.2	Copper Flexibles /rods	Specifications Not Available	Minimum requirements shall be as per follows. Purity of Copper - 99.90% min ETP grade as per IS-191 and mechanical properties shall be as per IS 1897/ IS 9567
458	MEIL	10			CMRP Panels	Datasheets not available	For CMRP panels refer the technical specification attached with the tender.
459	MEIL	11	25_I02.KK56.0.0.ET.TS.PR101_R2_TS for cable carrier systems,26_I02.KK56.0.0.ET.TS.PR109_R2_TS for GRP cable trays		Cable trays & Cable carrier systems	Datasheets & Drawings not available	Will be shared with successful bidder during detail Engg.
460	MEIL	12	I02.KK56.0.0.ET.TS.PR104_R5_TECHNICAL SPECIFICATION FOR SCADA		Scada & GPS	Datasheets not available	All the required data and technical parameters are included in the Technical specification itself. And data to be furnished by contractor or manufacturer shall be as per appendix-1 of I02.KK56.0.0.ET.TS.PR104_R5
461	MEIL	13			Generator Transformer location and the busduct tunnel routing for GT	Drawings Required	Generator Transformers are located in the main plant area and GIBDs shall be routed through underground tunnels from OUB upto Generator Transformers. The tunnel layout drawings are attached as annexure D to I02.KK56.0.0.ET.TS.PR051- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct.



Pre-Bid Clarifications Response-2

NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
462	MEIL	14	SPECIFICATION NO: I02.KK56.0.0.ET.TS.PR051 Rev5	4.8	Preferably, busbar disconnecting switches, sectionalizers and earthing switches shall be housed in separate gas compartments.	The ES between CB & line side DS shall be provided in separate gas compartment, however other ES shall be part of DS module, same has been supplied in the past NPCIL project, request your acceptance on the same.	Type tested OEM design shall be acceptable.
463	MEIL	15	SPECIFICATION NO: I02.KK56.0.0.ET.TS.PR051 Rev5	5.4.1	High speed earthing switch shall be class E2.	Offered High speed Earthing switch shall confirm to class E1, same has been supplied to NPCIL, kindly confirm the same.	Tender conditions shall prevail.
464	MEIL	16	SPECIFICATION NO: 230kV GIS and GIBD_I02.KK56.0.0.ET.TS.PR053	5.1.5	d) Positive mechanism interconnection shall be provided between interrupting contacts, resistor switches (when used), if any, to ensure maximum operating reliability or retention timing.	Kindly share the Evacuation line lengths to consider the PIR, also please inform the feeders for which PIR & CSD are required.	PIR arrangement is not acceptable. The usage of CSDs is not a mandatory requirement for 230kV Circuit breakers as per tender requirement. However, CSDs shall be provided if the same are an integral part of the type tested arrangement or if OEM recommendations demand the same. The 230kV line lengths for KKNPP 5&6 range tentatively between 20kM -30kMs.
465	MEIL	17	SPECIFICATION NO: 230kV GIS and GIBD_I02.KK56.0.0.ET.TS.PR053	5.24.8	Mechanical interlocks, in addition to electrical is a preferred method such that it will not be possible to close the earthing switch when the isolator is closed or vice-versa.. In specific cases of non-provision of the same it shall demonstrated that safety, in case on lack of electrical interlock, is not compromised.	Padlocking facility shall be provided along with electrical interlocking. We Request your kind acceptance on the same.	As specified in the subject clause, electrical interlocking is a mandatory requirement. Additional mechanical interlocks/padlocks etc are preferred but not mandatory. Additional Mechanical interlocks/ padlock facility shall be provided as per OEM practices and the same shall be acceptable.
466	MEIL	18	SPECIFICATION NO: I02.KK56.0.0.ET.TS.PR051 Rev5	4.33.8	The bellows shall be metallic (of stainless steel 316 L grade as a minimum taking into account the highly corrosive atmosphere prevailing at KKNPP site) of following types or other suitable equivalent arrangement shall be provided wherever necessary. Additionally, appropriate protective coating shall also be provided on the bellows	Wall sealings shall be excluded from GIS OEM scope. Also please note that the material of the bellows shall be SS 321 (1.4541) as per past supplies to NPCIL, request your kind acceptance.	Bellow material of SS321 satisfies tender requirements and therefore is acceptable. Wall sealings - If GIBD crossings across walls require a specific wall frame assembly/bellow type wall sealing etc as per OEM practises, the same shall be included in the GIS OEM scope. If no such specific assembly is required as per OEM, the wall sealing (GIBD crossings) shall be under the scope of the Contractor (with arrangement and materials acceptable to OEM). The Wall sealings shall have a fire rating of min. 4 hrs. The sealant material shall be capable of withstanding outside environment, thermal expansions of bus duct etc. For 230kV - 8 no of feeders need to cross the wall. The type of wall opening (1 opening for 1 bus duct or 1 opening for 3 bus ducts) shall be decided after finalisation of layout. The required opening dimensions/location shall be decided based on final layout arrangement. For 400kV - 14 no of feeders need to cross the wall. The type of wall opening (1 opening for 1 bus duct or 1 opening for 3 bus ducts) shall be decided after finalisation of layout. The required opening dimensions/location shall be decided based on final layout arrangement. Wall thickness of 350-400 mm may be considered. The wall sealing shall be included as a part of 400kV and 230kV Gas Insulated Bus duct erection (Items 1.1.2, 1.2.2 of Erection BoQ)
467	MEIL	19	SPECIFICATION NO: I02.KK56.0.0.ET.TS.PR051 Rev5	5.27.18	Earthing Tester	Excluded from GIS OEM Scope of supply	The earthing tester arrangement shall be provided/applicable based on OEM practices/recommendation.



Pre-Bid Clarifications Response-2

NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
468	MEIL	20	20_I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC	5.2.2	The compartments in the panels shall have an ingress protection of IP20 rating. The construction of the panels shall provide for total closing of doors of the drawout module compartment in SERVICE and TEST positions of drawout module.	The drawout module compartment will have covers.	Tender conditions shall prevail.
469	MEIL	21	20_I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC	5.6.9	Panel wiring shall be securely supported, neatly arranged, readily accessible and connected to equipment terminals and terminal blocks. Wiring gutters, troughs shall be used for this purpose. Wiring between terminals shall be point to point (without any splicing or 'T' connections). All such cable troughs shall be of SS wire mesh and PVC/plastic troughs are not preferred.	Panel internal wiring will be bunched with PVC spiral and PVC channels/troughs/ducts will be used as required.	Tender conditions shall prevail.
470	MEIL	22	20_I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC	5.9.3	All the ACBs and MCCBs working as incomers shall have communication capable microprocessor based releases to facilitate remote monitoring, measurement, parameterization and control.	Noted considering IV and V qualification of such components are not envisaged	IV&V is not applicable for the LV switchgear and MCCs.
471	MEIL	23	20_I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC & 29_I02.KK56.0.0.ET.TS.PR082_R4_TS for DC distribution boards			Control scheme Drawings Required	For LV Switchgear & MCCs, Refer Annexure-1 of TS No.102.KK56.0.0.ET.TS.PR091_R5 For DCDBs, Refer Annexure-8 of 102.KK56.0.0.ET.TS.PR082_r4 for control and relay protection schemes of DCDBs.
472	MEIL	24	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	3.6.6	Core coil assembly and transformer enclosures shall be suitably supported and braced to withstand forces which will be encountered during seismic testing.	We will offer transformer suitable for seismic spectrum which was considered for the NPCIL-KK-3&4 units.	Please refer clause 7.11 of the TS, seismic requirement are clearly mentioned in the TS. Also, Project specific spectra is provided in the TS. Reference of KK3&4 shall not be taken. Please refer the pre-bid response sent earlier.

DRY TYPE TRANSFORMER



Pre-Bid Clarifications Response-2

1	2	3	4	5	6	7	8
NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
478	MEIL	30	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	6.19.2	Efficiency of the transformers offered should be greater than or equal to a) 98.5% for transformers rated 1MVA and above up to and including 1.25MVA b) 99.0% for transformers rated > 1.25MVA at full load 120 degree for 0.8 Power factor. The losses offered should consider this requirement for cat I and II transformers .For cat III transformers efficiency shall be as per losses provided in clause 6.19.9.	We will offer transformer with losses which was considered for the NPCIL-KK-3&4 units	Tender conditions shall prevail.
479	MEIL	31	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	6.19.9	Heat emissions of transformers for cat III transformers (Value of total losses by no load and S/c test): - at rated power 400 kV-A shall not exceed 5,2 kW; - at rated power 1000 kV-A shall not exceed 11,5 kW.	For Category III transformer, the total losses are considered as per this clause For 400kVA, total losses (no load losses +load losses):- 5.2kW For 1000kVA, total losses (no load losses +load losses):- 11.5kW	The total losses determined from no-load and short-circuit tests readings shall not exceed values as mentioned in TS.
480	MEIL	32	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer			We will offer transformer with overall diemnsions which was considered for the NPCIL-KK-3&4 units	Dimensions as mentioned in TS shall be followed.
481	MEIL	33	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	9	The equipment may be stored outdoors for long periods before installation. The packing shall be completely suitable for outdoor storage, in areas with heavy rains/ high ambient temperature.	Packing will be as per our standard pratice.	Tender conditions shall prevail.
482	MEIL	34	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	7.9	Routine tests	As per IS 2026-11, all routine tests will be performaed on transformer	All routine test are to be performed as per IS 2026-11 and the Tender Technical specification.
483	MEIL	35	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	7.10	Type tests	Separate charges for type tests will be furnished during our final offer	Please refer clause 7 of the TS ,details regarding routine,type and special tests are clearly mentioned in the respective sections. No seprate charges will be paid for performance of the tests as per the technical specification. Quoted price for the item shall include all the tesing as asked in the technical specification.
484	MEIL	36	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	7.11	Special tests	Separate charges for special tests will be furnished during our final offer	Please refer clause 7 of the TS ,details regarding routine,type and special tests are clearly mentioned in the respective sections. No seprate charges will be paid for performance of the tests as per the technical specification.Quoted price for the item shall include all the tesing as asked in the technical specification.
485	MEIL	37	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	7.14	Tests at site	Testing at site is not in our scope.	Please refer clause 7.14, testing at site is in the scope of the CONTRACTOR i.e. Successful bidder.
486	MEIL	38	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	Annexure-I	Isolation transformer 0.415/0.415 kV dimensions shall be limited as per actual site layout conditions	Please share the site layout darwing.	Will be shared with successful bidder during detail Engg.



Pre-Bid Clarifications Response-2

NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
						MV Power Cables	
487	MEIL	39	102.KK56.0.0.0ET.TS.PR019	General	CABLE TYPE-PVVNG -A LS	In the mentioned voltage grade in the specification is 6 kV (unearthed). Since this voltage grade is not covered in IEC standards, shall we proceed with the voltage grade 6/10 (12) kV. Please confirm	Voltage grade 6/10 (12) kV as per IEC is acceptable.
488	MEIL	40	102.KK56.0.0.0.ET.TS.PR019	Clause No - 6.1.7	CABLE TYPE-PVVNG -A LS	In the specification, it is mentioned that core identification shall be with Coloured strips, however we understood that the same shall be applicable for 3 Core HT Cable, So, we proceed as per our practice with Natural colour core identification for single core cable as the same is listed in BOQ, please confirm	Understanding is correct. Natural colour core identification for single core cable as per standards is acceptable.
489	MEIL	41	102.KK56.0.0.0.ET.TS.PR019	Clause No 2.1 Figure No - 6.1.3.1.	CABLE TYPE-PVVNG -A LS	As per specification & in the Cross-sectional diagram of Page No - 8 of 25 & Sl.No - 7, it is mentioned that Copper wire screen with Copper tape shall be applicable, however we understood that Open helix copper tape shall be applicable over Copper wire screen, please confirm the same.	Copper Wire and copper tape both are to be applied to achieve required cross section of screen as mentioned in Table 6.1.3.1.
490	MEIL	42	102.KK56.0.0.0.ET.TS.PR019	Clause No 6.1.7	CABLE TYPE-PVVNG -A LS	We understood that we will have to consider CCV process for curing.	Requirement is clear in TS. CCV is acceptable along with the TS requirement reproduced here "The conductor screen, XLPE insulation and insulation screen shall all be extruded in one operation by 'Triple Extrusion' process to ensure perfect bonding between the layers. Curing shall be through continuous vulcanization (CV). The core identification (as applicable) shall be by coloured strips or by printed numerals.
491	MEIL	43	102.KK56.0.0.0.ET.TS.PR019	Clause No 6.11.7	CABLE TYPE-PVVNG -A LS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable
492	MEIL	44	102.KK56.0.0.0.ET.TS.PR019			BOQ mentions 6 KV , in Cl No. 2.1 of technical spec, however mentions UE grade	
493	MEIL	45	102.KK56.0.0.0.ET.TS.PR019			In Cl No. 3.0 , gives a comprehensive list of various standards. This includes both IS 7098 (Pt 2) as well as IEC 60502-2	
494	MEIL	46	102.KK56.0.0.0.ET.TS.PR019			Further in Cl No. 6.1.3 , it is mentioned as Cable design shall be in compliance with requirements of IEC 60502-2 and at various stages IEC standards are mentioned. UE grade is not covered in IEC standard	
495	MEIL	47	102.KK56.0.0.0.ET.TS.PR019			In view of above and since BOQ mentions 6 KV and not 6/6 KV, we shall consider 3.6/ 6 KV as per IEC 502-2. Please confirm	
496	MEIL	48	102.KK56.0.0.0.ET.TS.PR019			Also please note that Voltage grade as per IS 7098 (Pt 2) is 6.6/ 6.6 KV (UE). Hence IS standard could not be considered .	
497	MEIL	49	102.KK56.0.0.0.ET.TS.PR019			2.As per Cl No.9.6.1 & QAP , Routine tests are to be witness by the Customer. However Routine tests shall be witness as per Sampling Plan of Acceptance tests as given in IEC 502-2	
498	MEIL	50	102.KK56.0.0.0.ET.TS.PR019			3.As per Cl No.9.6.2 & QAP , type tests to be witness by the Customer. However Type tests shall be conducted in external laboratory after manufacturing against the order. Type tests reports shall be submitted for review only	
IPBD							
499	MEIL	51	MV Busduct Technical data sheet Doc.No: 102.KK56.0.0.0.ET.DS.PR074, Rev-R1, - 3.24, Page 7 of 14,		Material of Bus support insulator - Porcelain	We propose to offer Epoxy support insulator instead of Porcelain. We have supplied our busduct for Power plants 3 &4 with Epoxy insulator same will be followed	Please refer NPCIL response against MEIL query no. 66 pre-bid for set 1
500	MEIL	52	MV Busduct Technical data sheet Doc.No: 102.KK56.0.0.0.ET.DS.PR074, Rev-R1, - 3.19, Page 6 of 14,		Canopy for outdoor horizontal portion of the Busduct	Canopies are not required for outdoor horizontal portion of the bus duct because, the MV bus duct is in circular shape hence there are no chances for accumulation of rain water.	Please refer NPCIL response against MEIL query no. 60 for prebid set 1
501	MEIL	53	MV Busduct Technical data sheet Doc.No: 102.KK56.0.0.0.ET.DS.PR074, Rev-R1, - 1.46, Page 11 of 14,		Removable FRP shrouds for all busbar joints	We have not considered the FRP shrouds for IPBD. We have supplied our busduct for Power plants 3 &4 without shrouds, same will be followed	Shrouds are not applicable for IPBD



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NPICIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
502	MEIL	54	LV Busduct Technical data sheet Doc.No: 102.KK56.0.0.ET.DS.PR086, Rev-R1, - 3.15, Page 2 of 6		Busbar Material	We have considered the Al.alloy for Busbar and Enclosure. We have supplied our busduct for Power plants 3 & 4 with Al.alloy same will be followed MV Cables inside containment	Tender specification shall prevail. The detailing shall be done during detail engineering based on mutual agreement between purchaser and contractor.
503	MEIL	55	102.KK56.0.0.ET.TS.PR100	General	CABLE TYPE-PvPng(A) HF	In the mentioned voltage grade in the specification is 6 kV (unearthed). Since this voltage grade is not covered in IEC standards, shall we proceed with the voltage grade 6/10 (12) kV. Please confirm	Voltage grade 6/10 (12) kV as per IEC is acceptable.
504	MEIL	56	102.KK56.0.0.ET.TS.PR100	Clause No - 6.1.7,	CABLE TYPE-PvPng(A) HF	In the specification, it is mentioned that core identification shall be with Coloured strips, however we understood that the same shall be applicable for 3 Core HT Cable, So, we proceed as per our practice with Natural colour core identification for single core cable as the same is listed in BOQ, please confirm	Understanding is correct. Natural colour core identification for single core cable as per standards is acceptable.
505	MEIL	57	102.KK56.0.0.ET.TS.PR100	Clause No 2.1 Figure No - 6.1.3.1.	CABLE TYPE-PvPng(A) HF	As per specification & in the Cross-sectional diagram of Page No - 8 of 25, Sl.No - 7, it is mentioned that Copper wire screen with Copper tape shall be applicable, however we understood that Open helix copper tape shall be applicable over Copper wire screen, please confirm .	Copper Wire and copper tape both are to be applied to achieve required cross section of screen as mentioned in Table 6.1.3.1.
506	MEIL	58	102.KK56.0.0.ET.TS.PR100	Clause No - 6.1.7,	CABLE TYPE-PvPng(A) HF	We understood that we will have to consider CCV process for curing.	Requirement is clear in TS. CCV is acceptable along with the TS requirement reproduced here "The conductor screen, XLPE insulation and insulation screen shall all be extruded in one operation by 'Triple Extrusion' process to ensure perfect bonding between the layers. Curing shall be through continuous vulcanization (CV). The core identification (as applicable) shall be by coloured strips or by printed numerals.
507	MEIL	59	102.KK56.0.0.ET.TS.PR100	Clause No 6.1.7	CABLE TYPE-PvPng(A) HF	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same. Cables For Lighting	IEC marking is acceptable
508	MEIL	60	102.KK56.0.0.ET.TS.PR003	6.1.6	CABLE TYPE-VVGng-LS & VVGEng-LS	As per Clause Number 6.1.6, It is mentioned Nominal cable insulation thickness shall comply with the requirements of IS 1554. & As per Clause Number 6.1.3 It is mentioned that the design of screened and non-screened cables shall meet the requirements of IEC 60502-1,2004. Kindly Confirm the Standard Whether It is as per IS 1554 or IEC 60502-1	For CABLE TYPE-VVGng-LS & VVGEng-LS, cable insulation thickness as IEC 60502-1 is acceptable. Overall OD shall comply with TS requirements
509	MEIL	61	102.KK56.0.0.ET.TS.PR003	General	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we have to considered VVGng-LS for Unscreened cable & VVGEng-LS for screened cable. As the same is not specified in the given specification	Confirmed
510	MEIL	62	102.KK56.0.0.ET.TS.PR003	6.1.4	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we have to offer Upto and including 6 Sq.mm with Solid Copper Conductor, As the same is not specified in the given specification	Solid Copper Conductor (Class 1 as per IEC 60228) for sizes upto and including 6 Sq.mm is acceptable. However, for lighting cables, BoQ cl. 11, conductor shall be stranded (Class 6 as per IEC 60228)
511	MEIL	63	102.KK56.0.0.ET.TS.PR003	6.1.10	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we considered PVC ST2 Compound as outer sheath material instead of PVC ST1 material	CABLE TYPE-VVGng-LS & VVGEng-LS, ST2 is acceptable. However, all technical requirements and cable OD shall be as per relevant technical specifications
512	MEIL	64	102.KK56.0.0.ET.TS.PR003	6.1.7	CABLE TYPE-VVGng-LS & VVGEng-LS	For Multi core unscreened cable, Inner sheath is not required as per specification, please confirm	Confirmed for multi core unscreened cable
513	MEIL	65	102.KK56.0.0.ET.TS.PR003	Clause No 6.1.7	CABLE TYPE-VVGng-LS & VVGEng-LS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
514	MEIL	66	102.KK56.0.0.ET.TS.PR003	Clause No 6.1.15	CABLE TYPE-VVGng-LS & VVGEng-LS	The mentioned clause no shall not be applicable for insulation compound, whether the same is applicable for sheathing only (Table - VALUE 2), VALUE 1 will not be consider	Tender conditions shall prevail
515	MEIL	67		BOQ Sr no.-4.2.183, 4.2.184 & 4.2.185	VVGEng-LS	As per BOQ 4.2.183, 184 & 185 given cable Type is not covered in specification, please share the specification for the same to proceed	Relevant clauses of TS of VVGEng-LS cable is 102.KK56.0.0.ET.TS.PR003 shall be applicable



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NPCIL S.No	NAME OF THE BIDDER	QUERY NO	TENDER SECTION NO	REFERENCE CLAUSE NO	REFERENCE DRAWING No. / TECHNICAL SPECIFICATION No. / VALVE SPECIFICATION No. / INSTRUMENTATION SHEET No. / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
516	MEIL	68	I02.KK56.0.0.ET.TS.PR004	6.1.8	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	As per Clause Number 6.1.8, It is mentioned Nominal cable insulation thickness shall comply with the requirements of IS 1554. & As per Clause Number 6.1.3 it is mentioned that the design of screened and non-screened cables shall meet the requirements of IEC 60502-1,2004. Kindly Confirm the Standard Whether It is as per IS 1554 or IEC 60502-1	For CABLE TYPE-VVGng-FRLS & VVGEng-FRLS, cable insulation thickness as IEC 60502-1 is acceptable. Overall OD shall comply with TS requirements
517	MEIL	69	I02.KK56.0.0.ET.TS.PR004	General	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we considered VVGng-FRLS for Unscreened cable & VVGEng-FRLS for screened cable. As the same is not specified in the specification	Confirmed
518	MEIL	70	I02.KK56.0.0.ET.TS.PR004	6.1.4	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we have to offer Upto and including 6 Sq.mm with Solid Copper Conductor	Solid Copper Conductor (Class 1 as per IEC 60228) for sizes upto and including 6 Sq.mm is acceptable. However, for lighting cables, BoQ cl. 11, conductor shall be stranded (Class 6 as per IEC 60228)
519	MEIL	71	I02.KK56.0.0.ET.TS.PR004	6.1.12	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we considered PVC ST2 Compound as outer sheath material instead of PVC ST1 Material	CABLE TYPE-VVGng-LS & VVGEng-LS, ST2 is acceptable. However, all technical requirements and cable OD shall be as per relevant technical specifications
520	MEIL	72	I02.KK56.0.0.ET.TS.PR004	General	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	For Multi core unscreened cable, Inner sheath is not required as per given specification, please confirm	Confirmed for Multi core unscreened cable
521	MEIL	73	I02.KK56.0.0.ET.TS.PR004	Clause No 6.11.7	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
522	MEIL	74	I02.KK56.0.0.ET.TS.PR004	Clause No 6.1.5	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we have to consider Sector shape conductor from 25 Sq.mm and above size for multi core cables.	Sector shape conductor from 25 Sq.mm and above size is acceptable. Overall OD shall comply with TS requirements
523	MEIL	75	I02.KK56.0.0.ET.TS.PR004	Clause No 6.1.17	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	The mentioned clause no shall not be applicable for insulation compound, whether the same is applicable for sheathing only (Table - VALUE 2), VALUE 1 will not be consider	Tender conditions shall prevail
524	MEIL	76	I02.KK56.0.0.ET.TS.PR098	6.1.5	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	Kindly confirm that shall we have to consider Sector shape conductor from 25 Sq.mm and above size for multi core cables for cable type PvPng-A-FRHF	Sector shape conductor from 25 Sq.mm and above size is acceptable. Overall OD shall comply with TS requirements
525	MEIL	77	I02.KK56.0.0.ET.TS.PR098	6.1.7	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	Kindly confirm that shall we have to offer Upto and including 6 Sq.mm with Solid Copper Conductor	Solid Copper Conductor (Class 1 as per IEC 60228) for sizes upto and including 6 Sq.mm is acceptable. However, for lighting cables, BoQ cl. 11, conductor shall be stranded (Class 6 as per IEC 60228)
526	MEIL	78	I02.KK56.0.0.ET.TS.PR098	Clause No 6.11.7	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	IEC marking is acceptable. Other information as per the relevant clause of the technical specification shall stenciled on the drum or contained in a metallic label attached to it.
527	MEIL	79	06_I02.KK56.0.0.ET.TS.PR080_R4_TECHNICAL SPECIFICATION FOR FIBER OPTIC CABLES		FO cable	Fibre optic cable & Lan cables FIBER TYPE: As per BOQ Supply of 6 Core multi-mode fiber optics cable OKSng(A)-FRHF-01-M6-6MG2 which is OM1 fiber type as per clause 5.2, while BOQ & subsequent description mentions about 50±2.5µm micron fiber, which may be OM2 for Clause 5.1 or OM4 for Clause 5.2. So please confirm the fiber type & clause 5.1 or 5.2 to consider?	Description for OKSng(A)-FRHF-01-M6-6MG2-1500 in BOQ shall be read as "As per IEC 60793 & 60794, Core diameter: 62.5±2.5µm, Numerical Aperture: 0.20±0.015µm, Cladding diameter: 125±2µm, Diameter of loose tube - nominal 1.8 mm, Tube requirement- Jelly filled with non-dripping and silicon free multi loose tubes. Loose tube material shall be PBT (polybutylene taraphalate)" Cable shall comply to the TS clause 5.1 and/or clause 5.2 and other appropriate clause based on the proposed optical fiber cable.
528	MEIL	80	06_I02.KK56.0.0.ET.TS.PR080_R4_TECHNICAL SPECIFICATION FOR FIBER OPTIC CABLES		FO cable	INNER SHEATH (Clause 5.2.2-Table 3 & Clause 5.2.5.4.iii): is mentioned of silicon rubber, while these are flame retardant cables as per Cat A as per IEC 60332-3-22, so inner sheath should be LSZH. Please confirm.	Inner sheath material of ST8 type as per IEC 60502-1 with properties of flame retardant, low smoke and zero Halogen (as per cat A of IEC 60332-3-22) is also acceptable.
529	MEIL	81	06_I02.KK56.0.0.ET.TS.PR080_R4_TECHNICAL SPECIFICATION FOR FIBER OPTIC CABLES		FO cable	Fiber optics cable OKSng(A)-FRHF-01-M4-4MG2-1500: ---4F shall be with OM1 fiber type, please reconfirm.	Refer to the NPCIL response of MEIL Set-2 query Sr.NO-79
530	Polycab				Rubber specification	We did not receive rubber specification	The technical requirements mentioned in the Supply BoQ Item Sr. No. 4.3 is sufficient for supply. So no additional technical specification required for the same.

