

संदर्भ/Ref : CC-ENGG-TB202310-1002052-SC1405-OD EARTH

Date : 20/06/2024

From : Sumit Mishra
DGM

To : HYOSUNG T and D INDIA PVT LTD
11 Khed City Village Nimgaon Pune 410505
410505

Cc :

Subject : Substation extension package SS112

LOA Ref : CC/NT/W-GIS/DOM/A06/23/03905/NOA-3/23-109068/03 & NOA-4/23-109068/04 Dated 24/11/2023

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : HI-23D-4074A-EPC-B-04
Orgn. Drg. No. : TB202310-1002052-SC1405-OD EARTH
Revision No. : 02
Drg. Title : JEYPORE-OUTDOOR EARTHING LAYOUT
App. Category : CAT-I
Release Date : 20/06/2024



Scan to verify

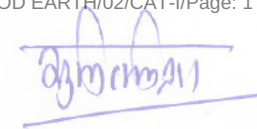
Comments : Document in order.

अनुमोदित श्रेणी/App. Category:

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
 - II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
 - III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
 - IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- CATREL/ निर्माण हेतु जारी।
REL-CON **Released for construction.**



नोट/Note:

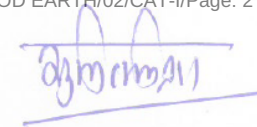
1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.



JEYPORE- 400kV-OUTDOOR EARTHING LAYOUT

400kV GIS Substation Extension Package SS-112, for Extension of 400kV Jeypore(POWERGRID) substation under transmission scheme for inter-regional ER-WR Interconnection scheme.

REV	DESCRIPTION	DATE	PREPARED BY	CHECKED BY	APPROVED BY
2	Revised as per comments	06-06-2024	N.RN	BP/GS	DM
1	Revised as per comments	13-05-2024	N.RN	BP/GS	DM
0	FIRST ISSUE	03-04-2024	N.RN	BP/GS	DM
OWNER:	 POWER GRID CORPORATION LTD				
CONTRACTOR:	 HYOSUNG T&D INDIA Pvt. Ltd.				
PROJECT:	400kV GIS Substation Extension Package SS-112, for Extension of 400kV jeypore(POWERGRID) substation under transmission scheme for inter-regional ER-WR interconnection scheme.				
TITLE:	JEYPORE- 400kV-OUTDOOR EARTHING LAYOUT				
DOCUMENT NO				REVISION	
HI-23D-4074A-EPC-B-04				2	



DOC. No. :HI-23D-4074A-EPC-B-04_Compliance Sheet_R1

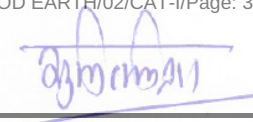
• **CUSTOMER : POWERGRID CORPORATION OF INDIA LIMITED**

• **PROJECT : 400kV GIS Substation Extension Package SS-112, for Extension of 400kV jeypore(POWERGRID) substation under transmission scheme for inter-regional ER-WR interconnection scheme.**

**COMPLIANCE SHEET
OF
JEYPORE
400kV-OUTDOOR EARTHING LAYOUT**

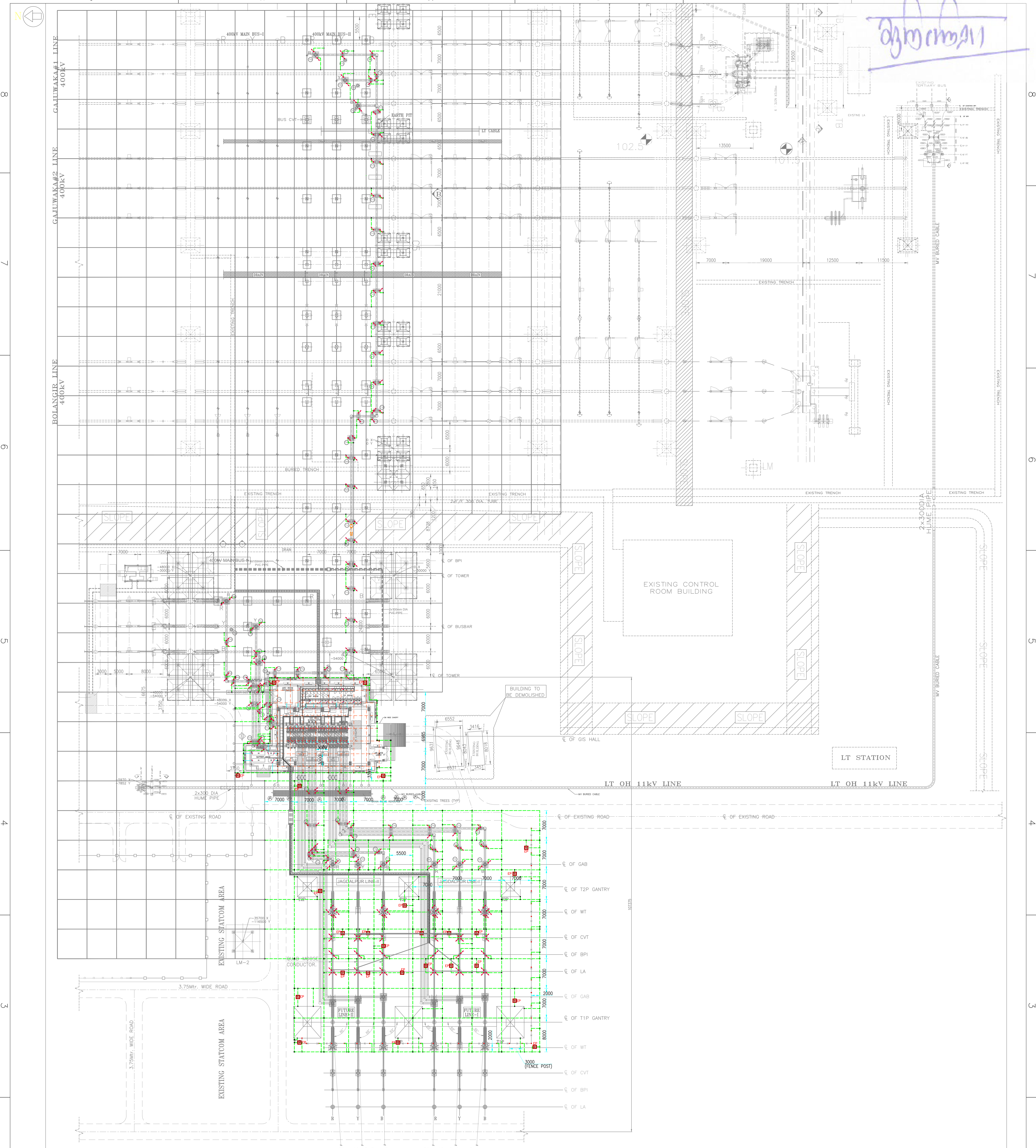
06 JUNE 2024

 **HYOSUNG T&D INDIA Pvt. Ltd.**

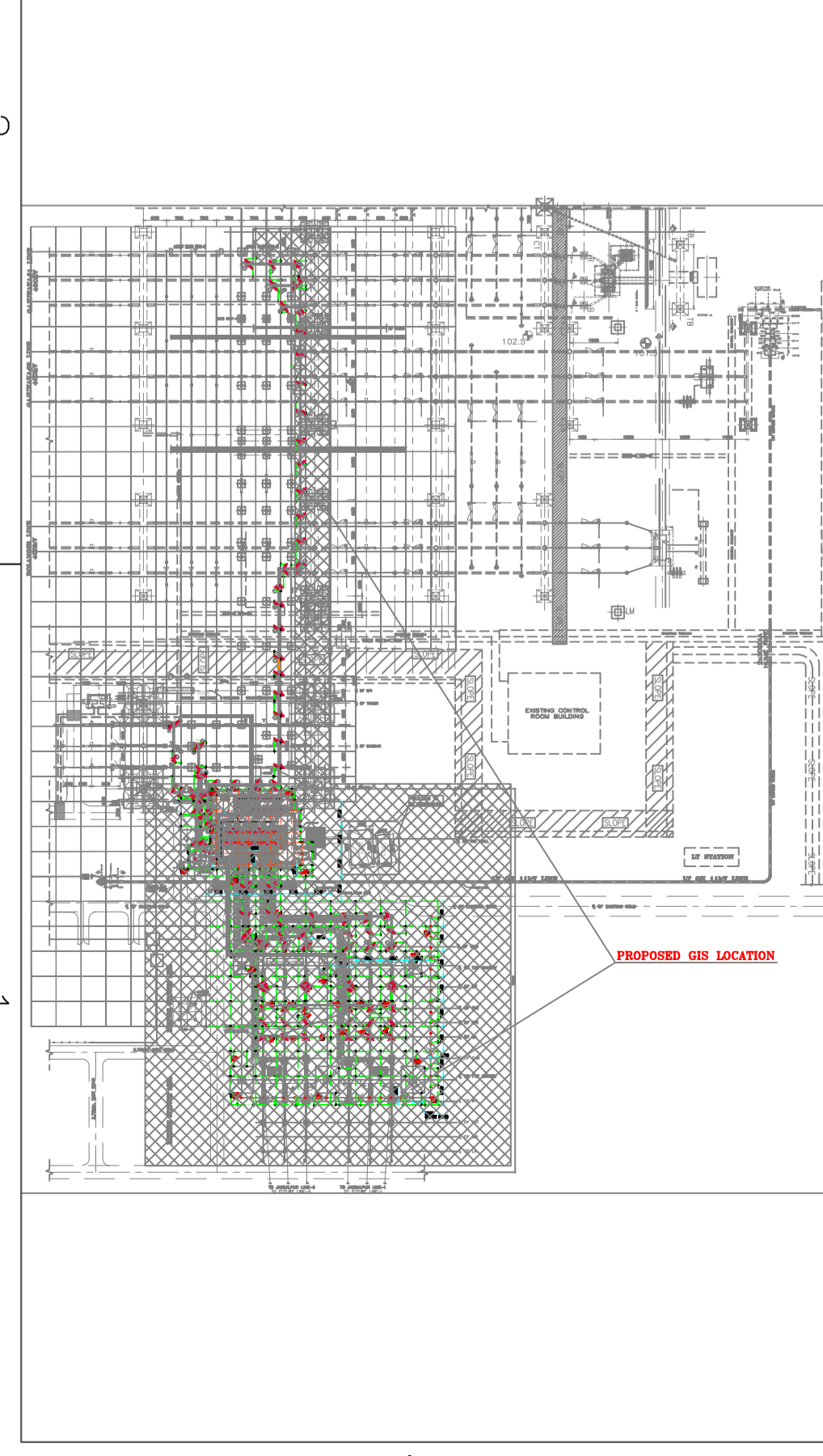


<i>S.No</i>	<i>Reference Drawing</i>	<i>POWERGRID Approval Document</i>	<i>POWERGRID Comments_29/05/24</i>	<i>HYOSUNG Response_06/06/2024</i>
1	JEYPORE-OUTDOOR EARTHING LAYOUT	CC-ENGG-TB202310-1002052-SC1405-OD EARTH	Remove this earthmat and move fence accordingly.	Noted & Revised.
2	JEYPORE-OUTDOOR EARTHING LAYOUT	CC-ENGG-TB202310-1002052-SC1405-OD EARTH	Please mention the qty of earthmat & risers seperately	Noted & Revised.

This drawing is the property of HYOSUNG T&D INDIA PVT. LTD. and must not be passed on to any person or body not authorized by us to receive it nor be copied or otherwise made use either in full or in part by such person or body without our prior permission in writing.



KEY PLAN:-



NOTES:-

1. ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE SPECIFIED.
2. MAIN EARTH MAT CONDUCTOR WILL BE LAID 600mm BELOW THE GROUND LEVEL.
3. EARTH MAT CONDUCTOR RUNNING BELOW CABLE TRENCHES, DRINK & RAIN, WILL BE LAID 300mm BELOW THEM.
4. THIS DRAWING IS ONLY SYMBOLIC REPRESENTATION OF EARTHING CONDUCTOR LAYOUT, AT ACTUAL SITE CONDITION CONDUCTOR WILL BE ROUTED IN SUCH MANNER, SO THAT IT DOES NOT FOUL WITH ANY FOUNDATION.
5. CABLE TRENCH EARTHING WILL BE DONE WITH 50x6 MS FLAT & RUN ALONG THE TOP TIER OF CABLE TRENCH. EARTH FLAT OF CABLE TRENCH WILL BE CONNECTED TO THE MAIN EARTHING AT 50MTRS INTERVAL & BOTH ENDS THE MS FLAT SHALL BE PAINTED WITH 2 COATS OF RED OXIDE PRIMER & TWO COATS OF POST OFFICE RED ENAMEL PAINT.
6. EQUIPMENT EARTHING CONNECTION ARE REPRESENTATIVE ONLY & WILL BE DONE AS PER SITE CONDITION & AS PER PGCL DRG-D1-C/ING/ST/0/EARHING/09 FOR EARTHING STANDARD DETAIL.
7. ALL EARTHING WILL BE DONE IN ACCORDANCE WITH IS:3045 & IEEE-80/2000 UNLESS OTHERWISE SPECIFIED IN THE TECHNICAL SPECIFICATION.
8. ONE NUMBER ROAD ELECTRODE WITH TEST LINK C1 FRAME & COVER SHALL BE PROVIDED TO CONNECT EACH DOWN CONDUCTOR OF SURGE ARRESTER, CVT, LM & TOWERS WITH PEAK.
9. ALL THE EQUIPMENT STRUCTURE, TOWER STRUCTURE, METALLIC STAIRS SHALL BE CONNECTED TO THE NEAREST EARTHING GRID BE AT LEAST TWO EARTHING LEADS.
10. ANTI RUST TREATMENT SHALL BE DONE AS PER TECHNICAL SPECIFICATION, SECTION CIVIL WORKS, CL-4.0.
11. MINIMUM DISTANCE OF 6000mm SHALL BE MAINTAINED BETWEEN TWO ADJACENT EARTH ELECTRODES.
12. CABLE SUPPORTS IN TRENCHES SHALL BE EARTHED BY 50x6mm MS FLAT RUNNING ALONG THE TOP TIER OF THE CABLE TRENCH.
13. GIS EQUIPMENT & ITS ASSOCIATED ACCESSORIES ARE GROUNDED IN LINE WITH MANUFACTURED RECOMMENDATION & PROVIDED AS PROVIDED ON GIS BAY.
14. CONNECTION WITH EXISTING EARTH MAT SHALL BE IDENTIFIED AT SITE AND ACCORDINGLY.
15. EARTHING CONDUCTORS CROSSING THE ROAD SHALL BE LAID 300mm BELOW ROAD OR AT GREATER DEPTH TO SUIT THE SITE CONDITIONS.
16. EARTHING CONDUCTOR AROUND THE GIS AREA SHALL BE BURIED IN EARTH AT A MINIMUM DISTANCE OF 1500mm FROM OUTER BOUNDARY OF THE BUILDING.

LEGENDS:-

Sl.No.	LEGENDS	DESCRIPTIONS	QTYs.	UNIT
1.		MAIN EARTH MAT 40mm WILD STEEL ROD (MAIN EARTH MAT QUANTITY AS PER BPS IS 700 Mtrs)	2100	Mtrs.
2.		40mm WILD STEEL ROD FOR RISER	200	Mtrs.
3.		75x10mm G.S FLAT FOR ABOVE GROUND & EARTHING LEADS (FOR COILS, EQUIPMENTS & AUXILIARY STRUCTURES)	1190	Mtrs.
4.		50x6mm G.S FLAT FOR INDOOR LT PANELS, CONTROL PANELS & OUTDOOR MARSHALLING BOXES, JUNCTION BOXES & LIGHTING PANELS ETC.	60	Mtrs.
5.		50x6mm MS FLAT FOR OUTDOOR AND INDOOR CABLE TRENCHES.	230	Mtrs.
6.		40MM DIA, 3M LONG ROD EARTH ELECTRODE FOR LA, CVT, GATRY TOWER, LM AND SWITCHYARD	26	Nos.
7.		WILD EARTH MAT FOR GIS HALL EARTHING (40mm WILD STEEL ROD)	420	Mtrs.
8.		FENCE POST	45	Nos.
9.		MAIN EARTH MAT EXISTING (40mm WILD STEEL ROD)	---	---

REFERENCE DRAWING & DOCUMENTS:-

- JEYPORE - SINGLE BAY BUSWAY - H-230-40104-PC-8-02
- JEYPORE - OVERALL ELECTRICAL LAYOUT PLAN AND SECTION - H-230-40744-PC-8-02
- EXISTING JEYPORE - 400KV SWITCHYARD CARTRIDGE LAYOUT - H11420040-115
- EXISTING JEYPORE STATION - OVERALL EARTHING LAYOUT AND STATION AREA - E50105-80558-V104-2

REV. No	REVISED DATE	DESCRIPTION	DRAWN	DESIGNED	CHECKED	APPROVED
2	06.06.24	REVISED AS PER PGCL COMMENTS	N.RN	B.P	G.S	D.M
1	13.05.24	REVISED AS PER PGCL COMMENTS AND LATEST OGA UPDATED	N.RN	B.P	G.S	D.M
0	03.04.24	FOR APPROVAL	N.RN	B.P	G.S	D.M

CLIENT:
POWER GRID CORPORATION OF INDIA LIMITED.

SUPPLIER / CONTRACTOR:
HYOSUNG T&D INDIA Pvt. Ltd.

PROJECT: 400KV GIS SUBSTATION EXTENSION PACKAGE SS-112 FOR EXTENSION OF 400KV JEYPORE(POWERGRID) SUBSTATION UNDER TRANSMISSION SCHEME FOR INTER-REGIONAL ER-WR INTERCONNECTION.

PACKAGE: 400KV GIS SUBSTATION EXTENSION PACKAGE SS-112.

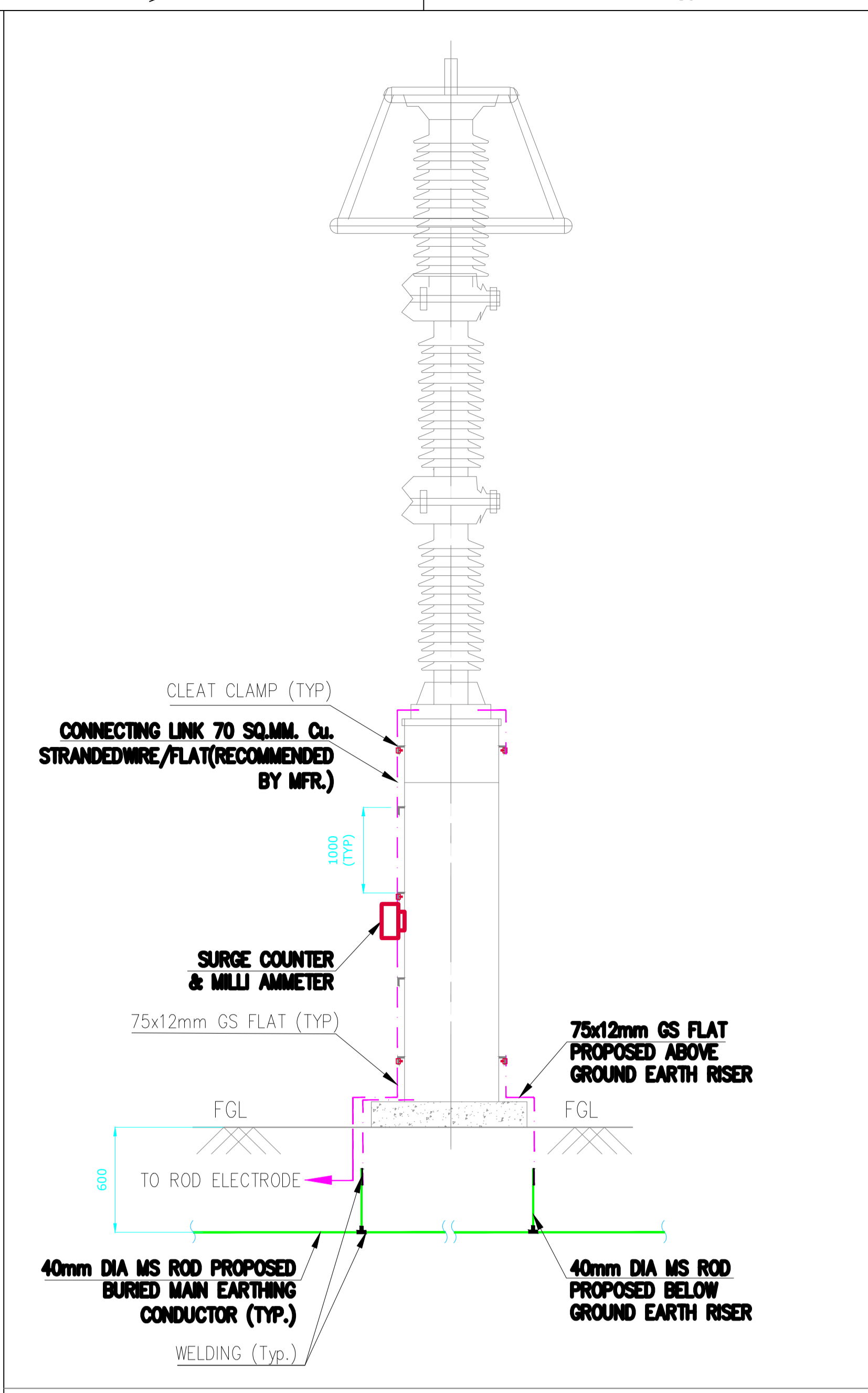
JOB No.:	NAME	SIGN	DATE	TITLE:
DRWN	N.RN	N.RN	03.04.24	JEYPORE - OUTDOOR EARTHING LAYOUT FOR 400KV SWITCHYARD.
DSGN	B.P	B.P	03.04.24	
CHKD	G.S	G.S	03.04.24	
APPD	D.M	D.M	03.04.24	

SCALE: 1:300
PROJECTION:

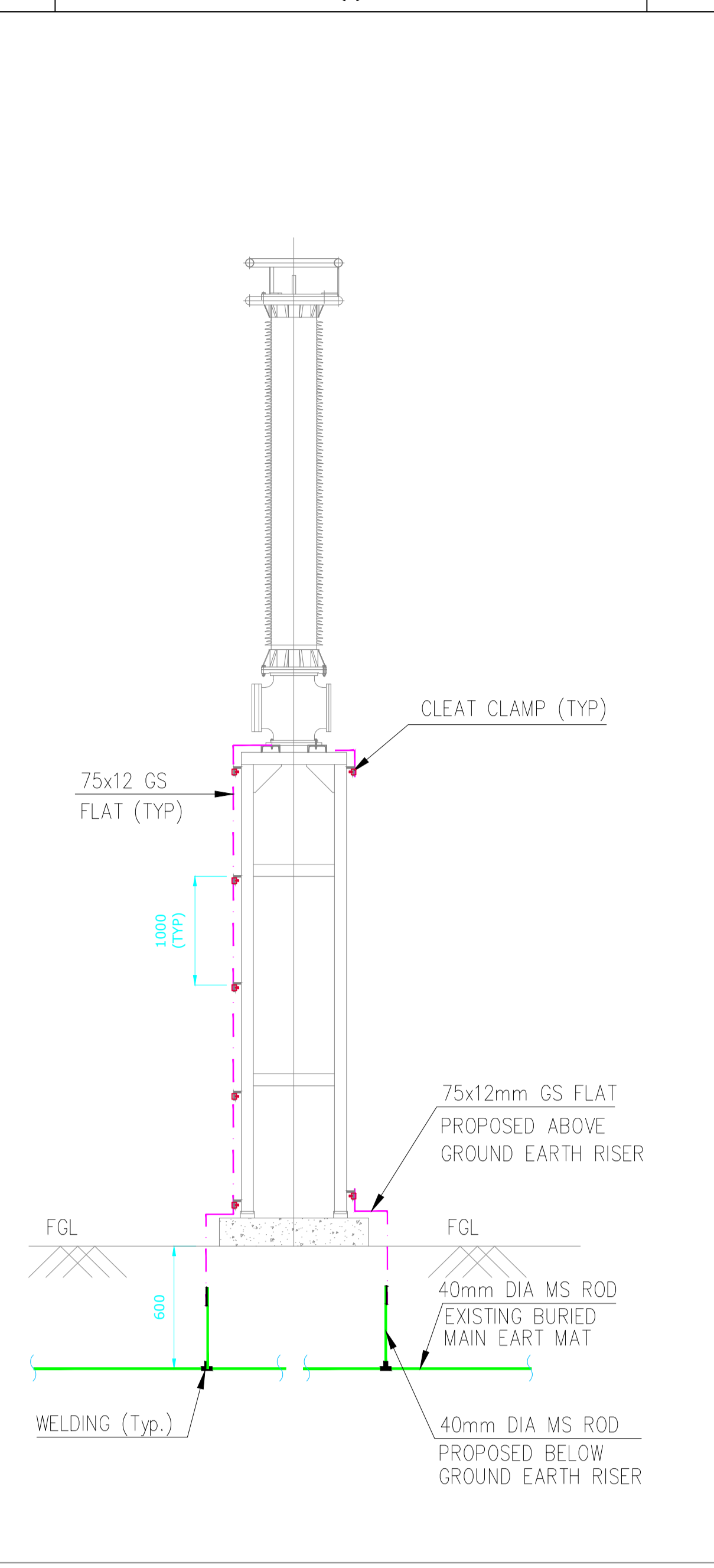
DRG. No.: H 1 - 2 3 D - 4 0 7 4 A - E P C - B - 0 4
SIZE: AO
REV.: 2
SHEET 1 OF 2

RELEASED FOR: PRELIMINARY TENDER INFORMATION APPROVAL CONSTRUCTION

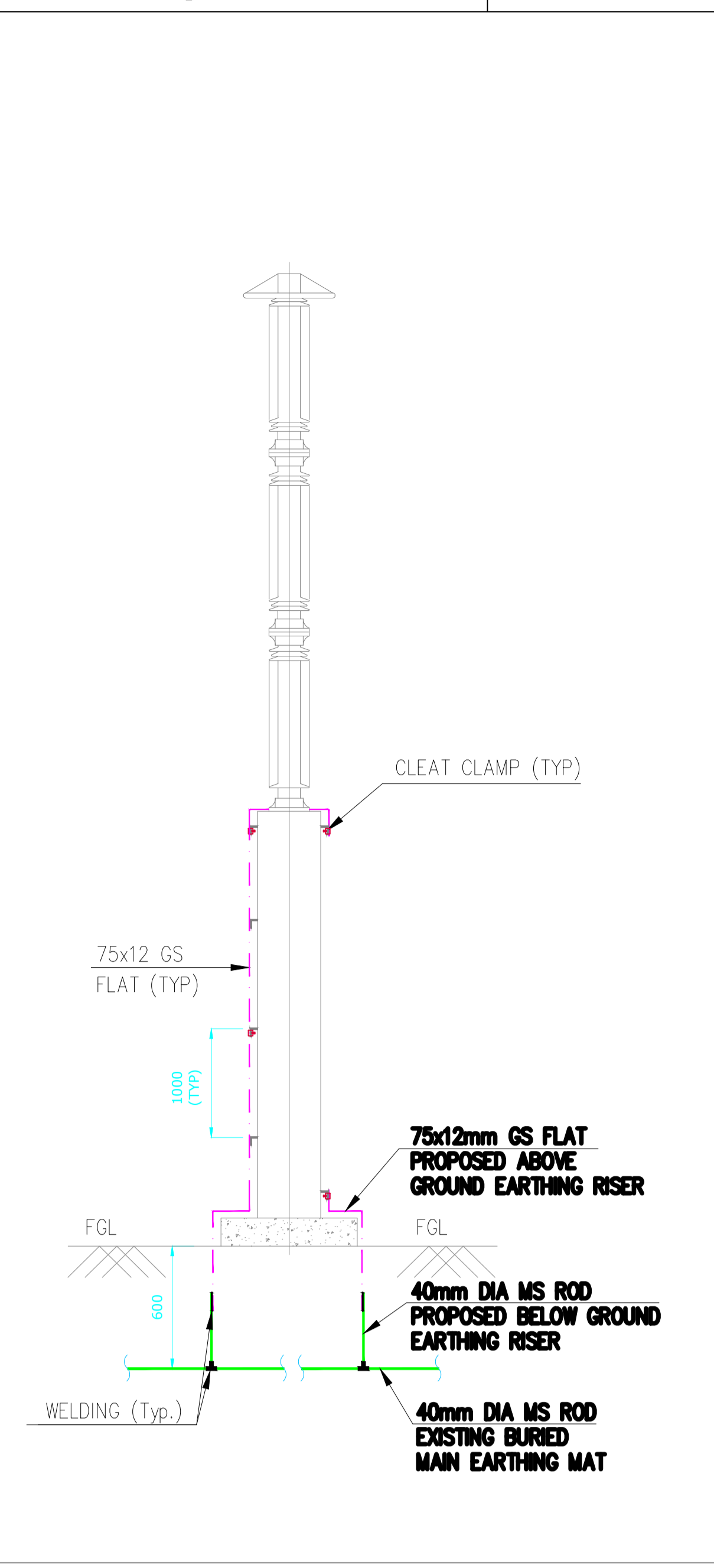
This drawing is the property of HYOSUNG T&D INDIA PVT. LTD. and must not be passed on to any person or body not authorized by us to receive it nor be copied or otherwise made use either in full or in part by such person or body without our prior permission in writing.



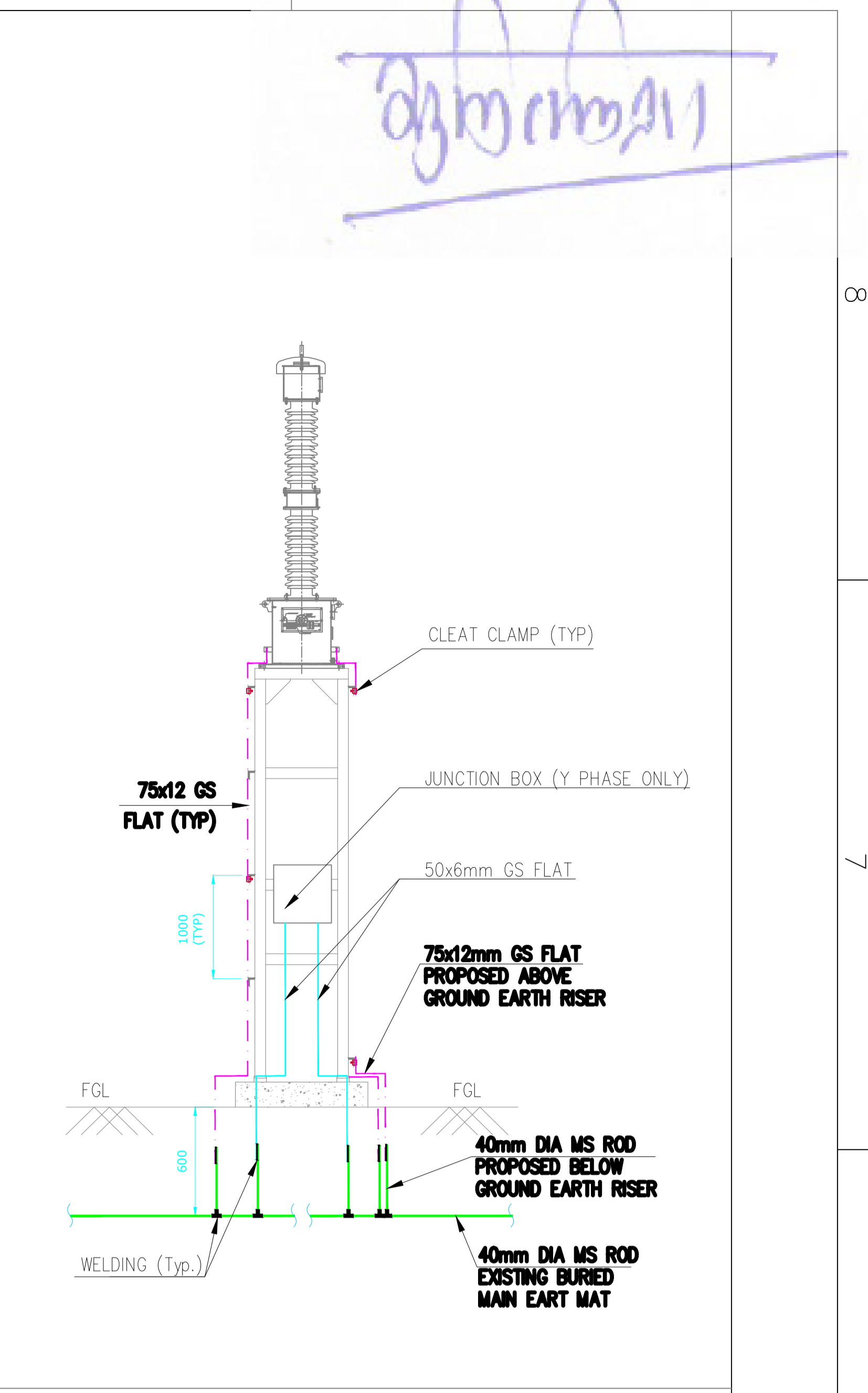
TYPICAL EARTHING DETAIL FOR LIGHTNING ARRESTOR (LA)



TYPICAL EARTHING DETAIL FOR GAS TO AIR BUSHING (GAB)



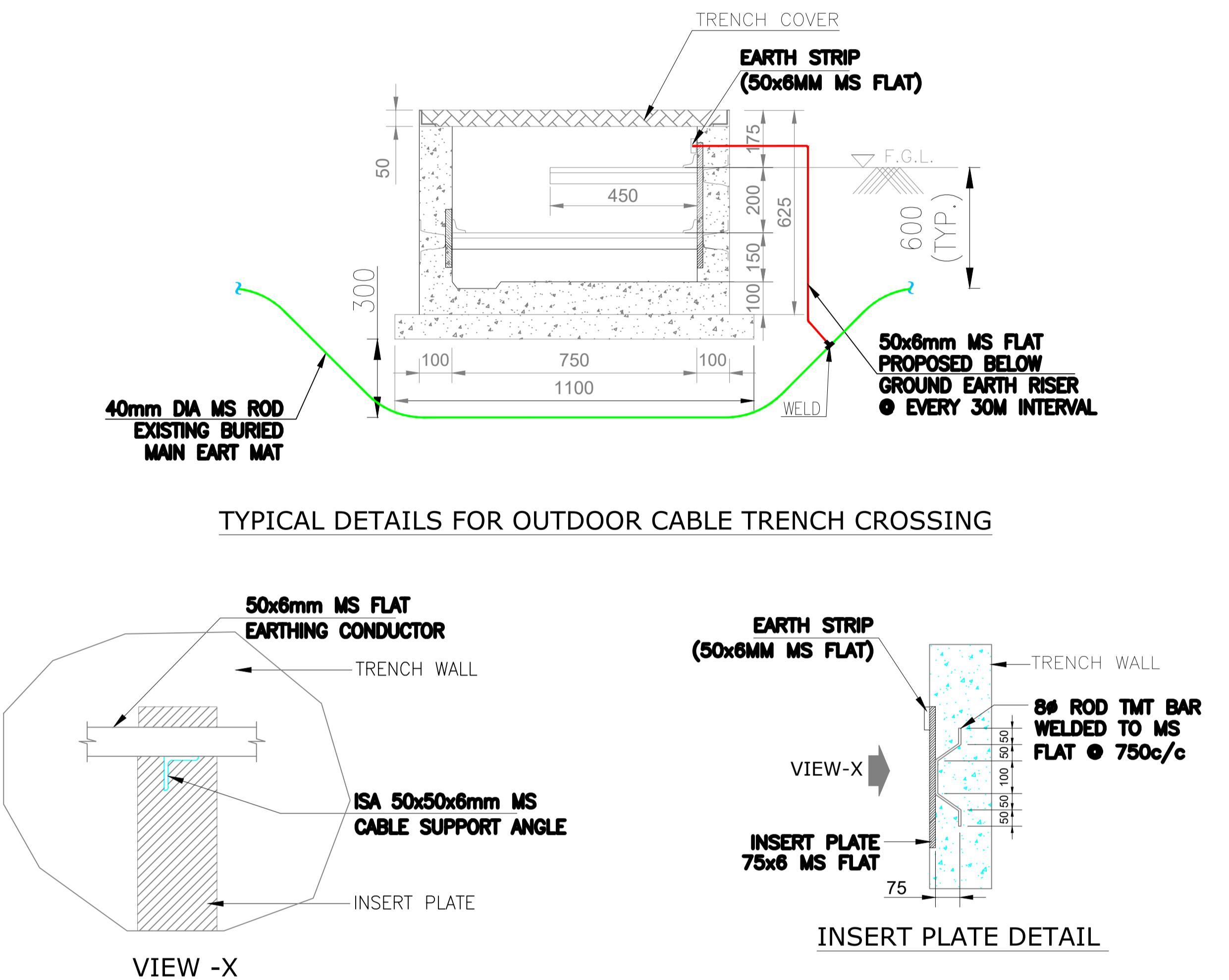
TYPICAL EARTHING DETAIL FOR BUS POST INSULATOR (BPI)



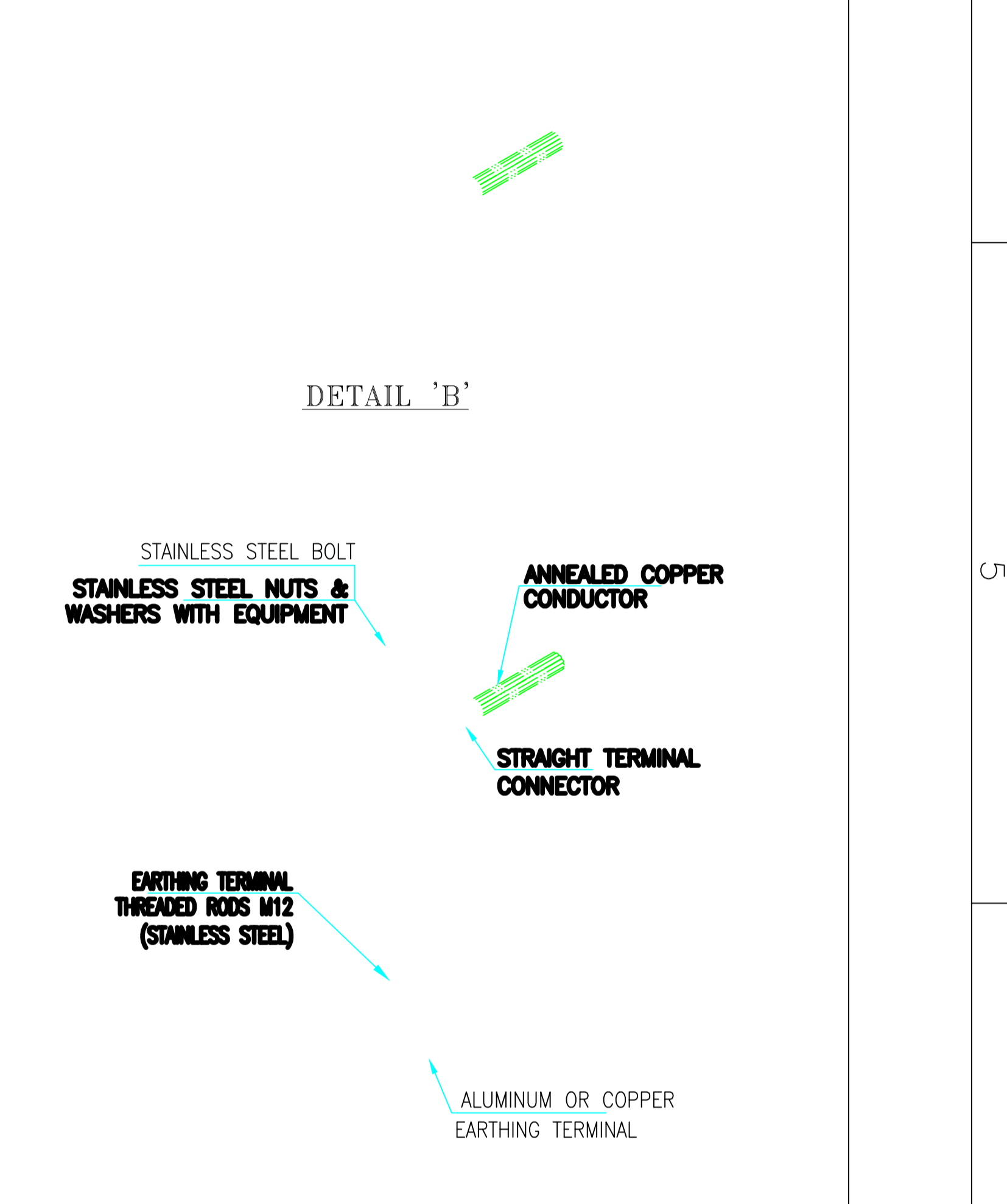
DETAIL OF EARTHING FOR CAPACITIVE VOLTAGE TRANSFORMER (CVT)



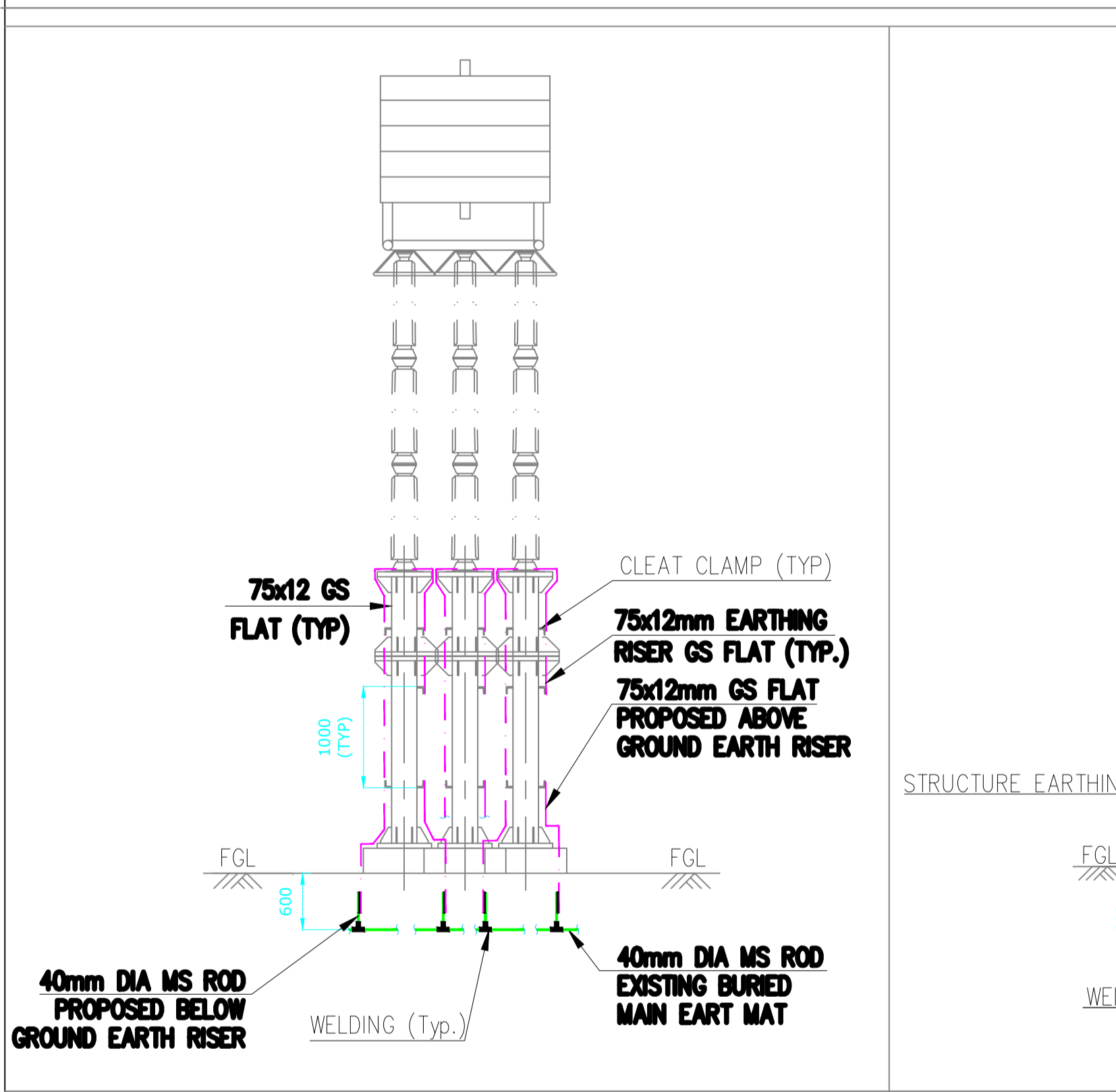
ROD ELECTRODE EARTHING



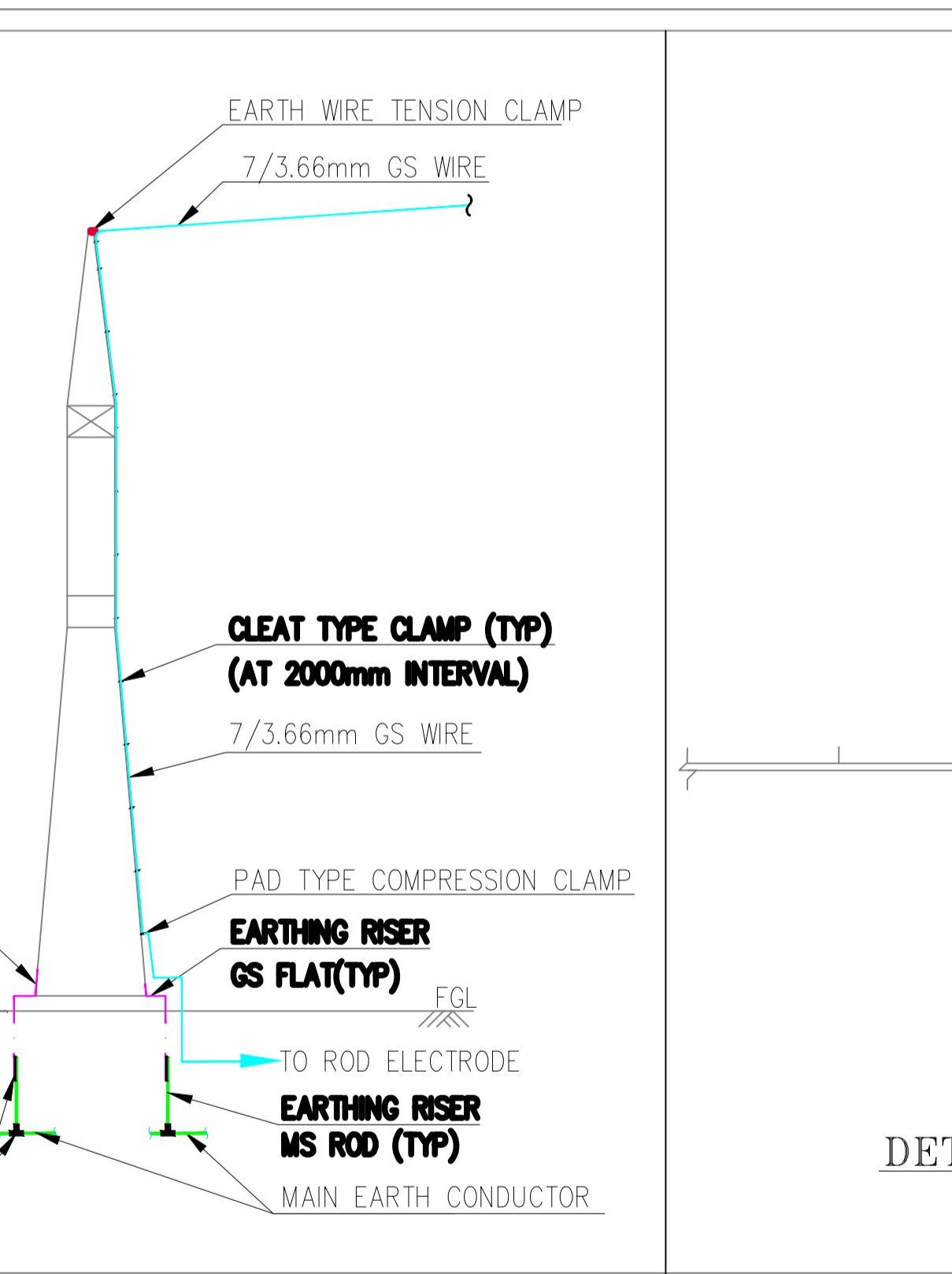
TYPICAL DETAILS FOR OUTDOOR CABLE TRENCH CROSSING



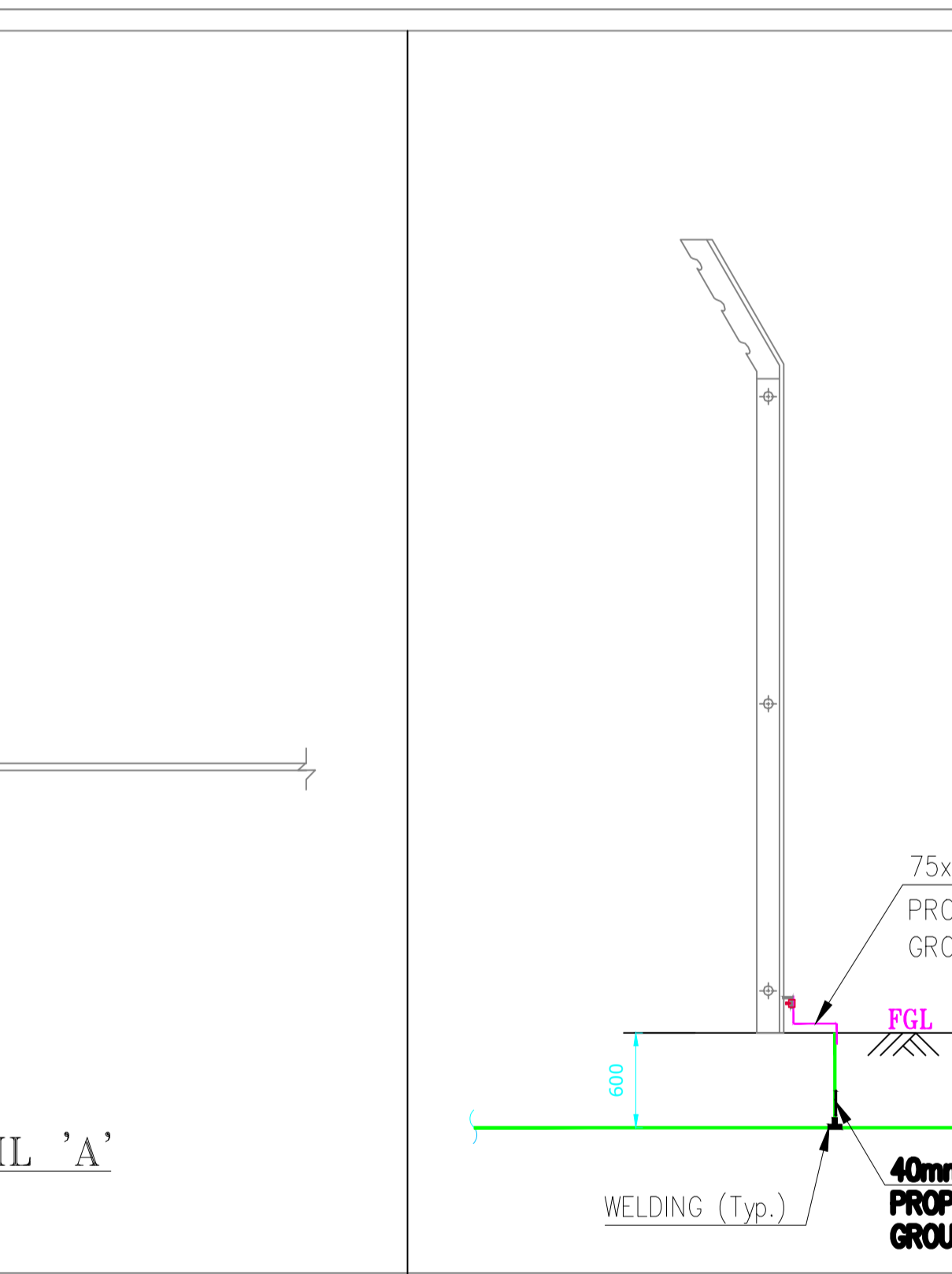
DETAIL 'B'



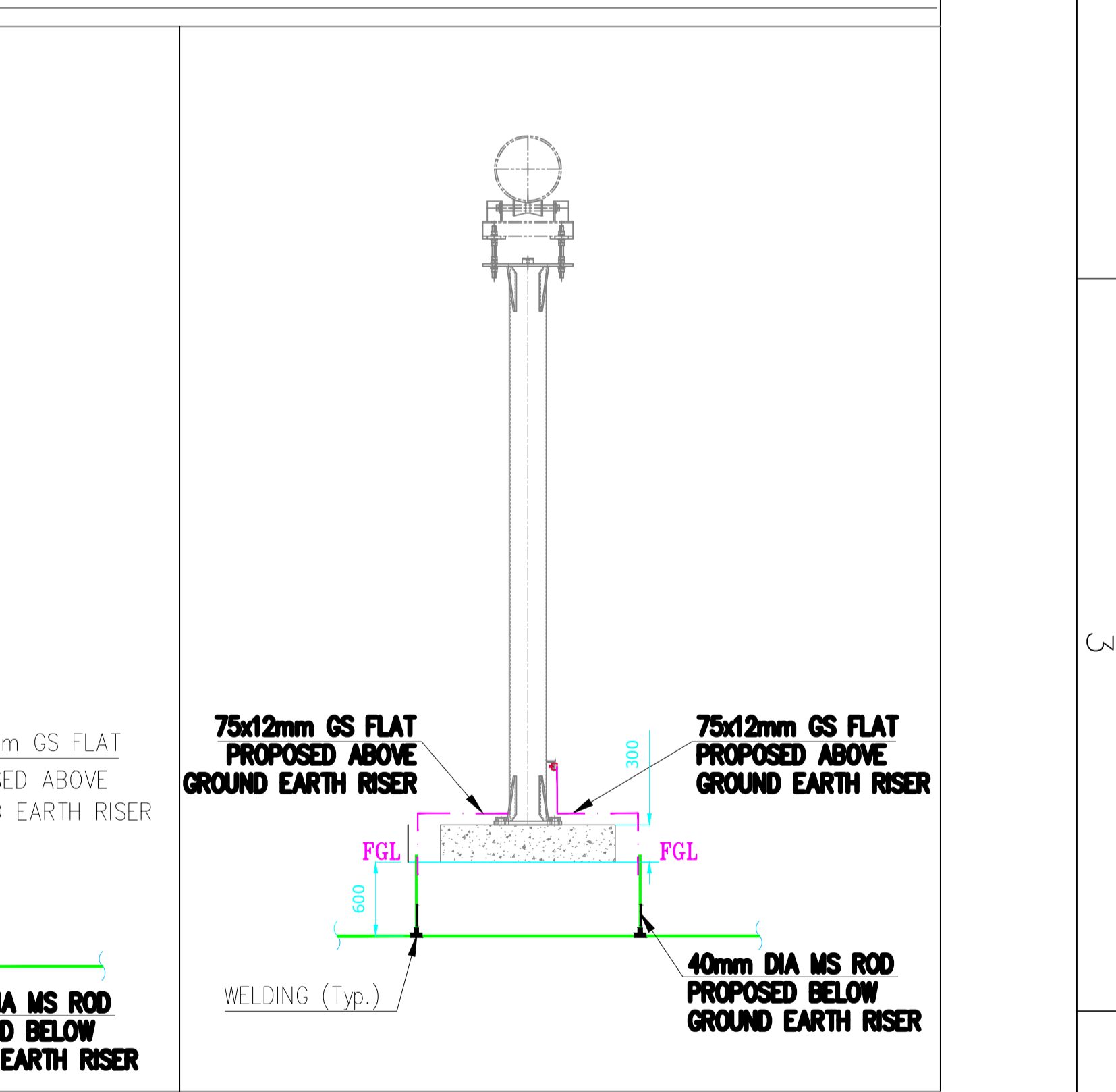
TYPICAL EARTHING DETAIL FOR WAVE TRAP (WT)



EARTHING OF TOWER WITH PEAK



DETAIL 'A'



TYPICAL EARTHING DETAIL FOR GIB SUPPORT STRUCTURE

REV. No	REVISED DATE	DESCRIPTION	DRAWN	DESIGNED	CHECKED	APPROVED
2	06.06.24	REVISED AS PER PGCL COMMENTS	N.RN	B.P	G.S	D.M
1	13.05.24	REVISED AS PER PGCL COMMENTS AND LATEST OGA UPDATED	N.RN	B.P	G.S	D.M
0	03.04.24	FOR APPROVAL	N.RN	B.P	G.S	D.M

REVISIONS

CLIENT : POWER GRID CORPORATION OF INDIA LIMITED.

SUPPLIER / CONTRACTOR : HYOSUNG T&D INDIA Pvt. Ltd.

PROJECT : 400KV GIS SUBSTATION EXTENSION PACKAGE SS-112 FOR EXTENSION OF 400KV JEYPORE(POWERGRID) SUBSTATION UNDER TRANSMISSION SCHEME FOR INTER-REGIONAL ER-WR INTERCONNECTION.

PACKAGE : 400KV GIS SUBSTATION EXTENSION PACKAGE SS-112.

JOB No. :	NAME	SIGN	DATE
DRWN	N.RN	N.RN	03.04.24
DSGN	B.P	B.P	03.04.24
CHKD	G.S	G.S	03.04.24
APPD	D.M	D.M	03.04.24

TITLE : JEYPORE - OUTDOOR EARTHING LAYOUT FOR 400KV SWITCHYARD.

SCALE : 1:300

PROJECTION : [Symbol]

DRG. No. H 1 - 2 3 D - 4 0 7 4 A - E P C - B - 0 4

SIZE : AO

REV. 2

RELEASED FOR PRELIMINARY TENDER INFORMATION APPROVAL CONSTRUCTION