

GENERAL INSTRUCTION FOR EARTHING:

1. Location of earthing conductors / risers shown in the earthing drawing may change to suit the site condition.
2. Two different risers of one structure/equipment shall be connected to different conductors of main earthmat.
3. Earthing conductor around the building shall be buried at a minimum distance of 1500 mm from the outer boundary of the building.
4. Minimum distance of 6000 mm shall be maintained between two treated (pipe) electrode.
5. For surge arrester, earthing lead from surge counter to main earthmat shall be shortest in length as practically as possible. Earthing lead from surge arrester shall not be passed through any pipe.
6. No welding is allowed in the over ground earthing leads/risers if the length is less than 6m .
7. All ground connections shall be made by electric arc welding. All welded joints shall be allowed to cool down gradually to atmospheric temperature before putting any load on it. Artificial cooling shall not be allowed.
8. All arc welding with MS ROD shall be done with low hydrogen content electrodes. the welds should be treated with red oxide primer and afterwards coated with two layers bitumen compound to prevent corrosion.
9. Wherever earthing conductor crosses cable trenches, underground service ducts, pipes, tunnels, railway tracks etc., it shall be laid minimum 300 mm below them and shall be circumvented in case it fouls with equipment/structure foundations.
10. Earthing conductor around the building shall be buried in earth at a minimum distance of 1500 mm from the outer boundary of the building.
11. Earthing conductors crossing the road shall be laid 300mm below road or at greater depth to suit the site conditions.
12. Earthing conductors embedded in the concrete shall have approximately 50mm concrete cover

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)



PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

JH/Jashwan

JH/Jashwan

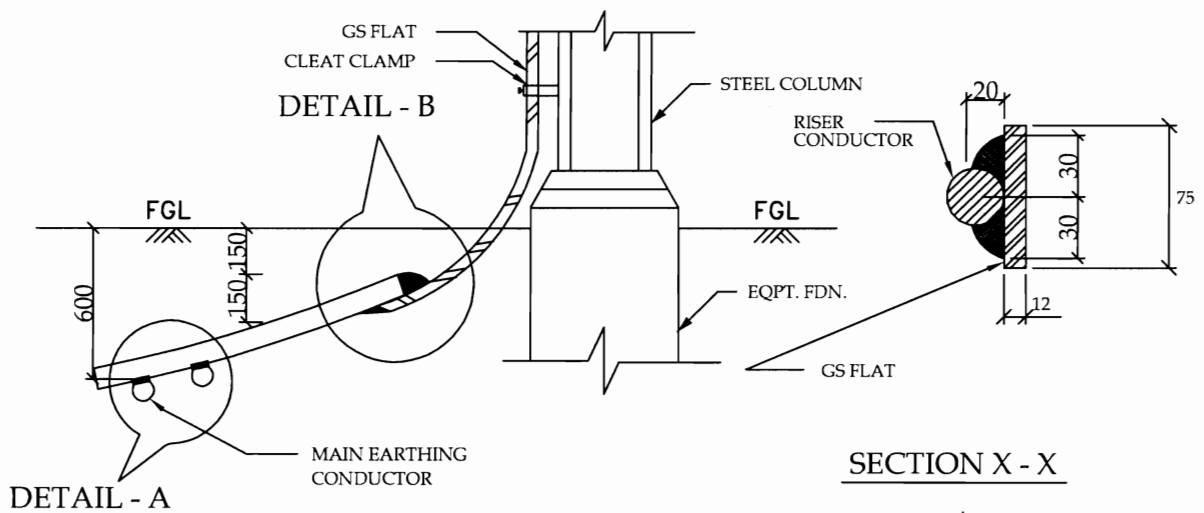
Dec-2013

Drawing No.:
C/ENG/STD/EARTHINGS/09
SHEET # 1

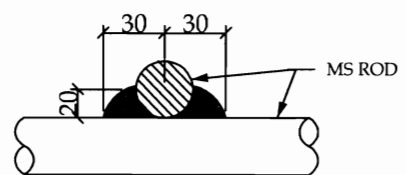
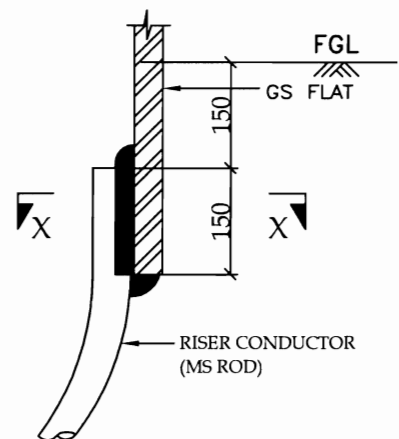
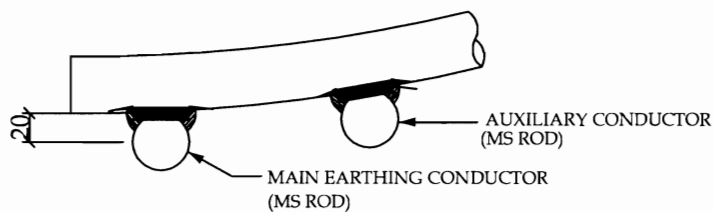
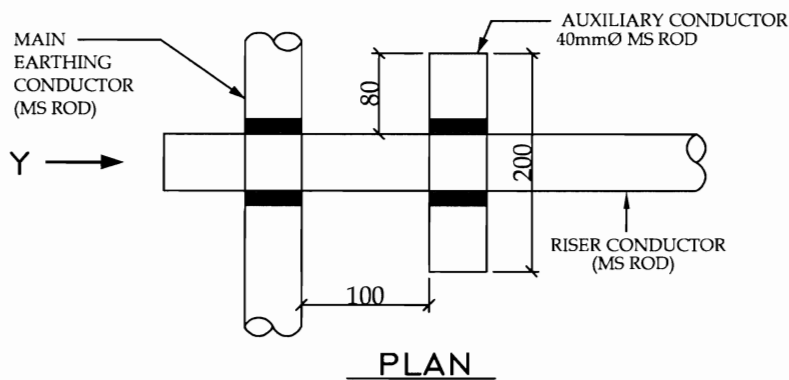
CKD BY

PRPD BY

Date



TYPICAL DETAILS OF RISER



RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)



PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

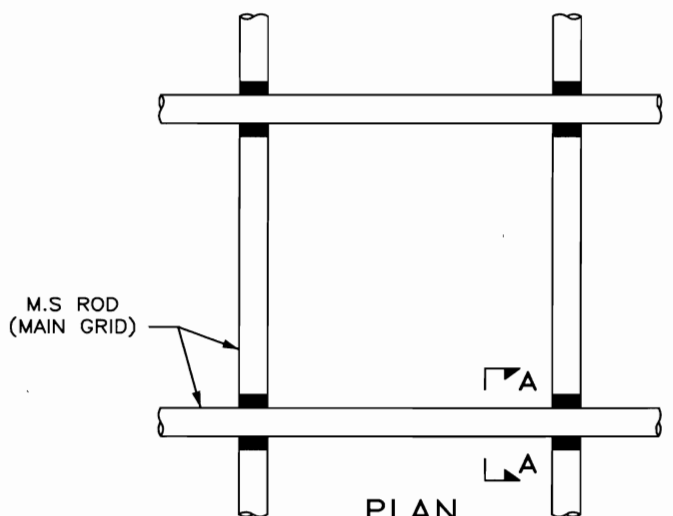
CKD BY

PRPD BY

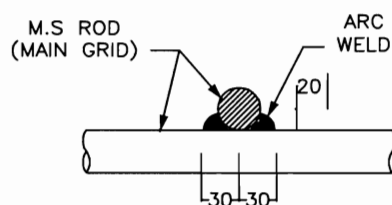
Dec-2013

Date

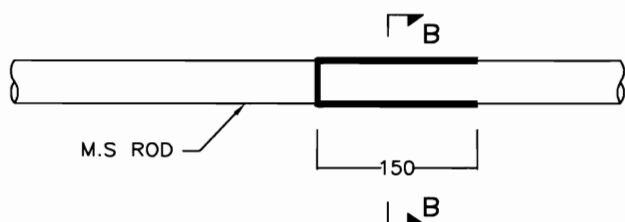
Drawing No.:
C/ENG/STD/EARTHINGS/09
SHEET # 2



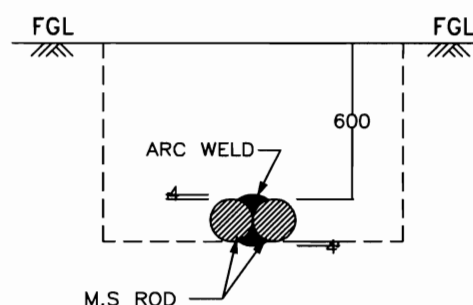
PLAN
DETAIL OF CROSS JOINT



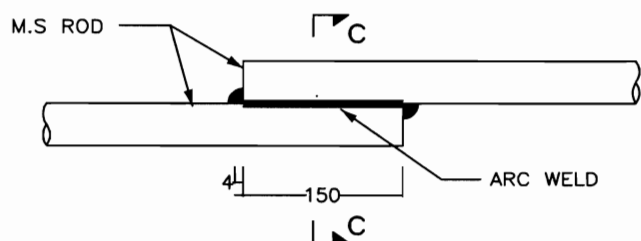
SECTION A - A



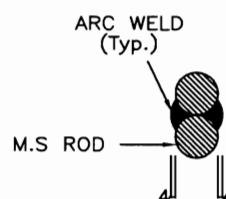
ELEVATION
(CONDUCTORS KEPT ON SIDES)



SECTION B - B



ELEVATION
(CONDUCTORS ONE ABOVE THE OTHER)



SECTION C - C

DETAIL OF LAP JOINT

RELEASED FOR CONTRUCTION

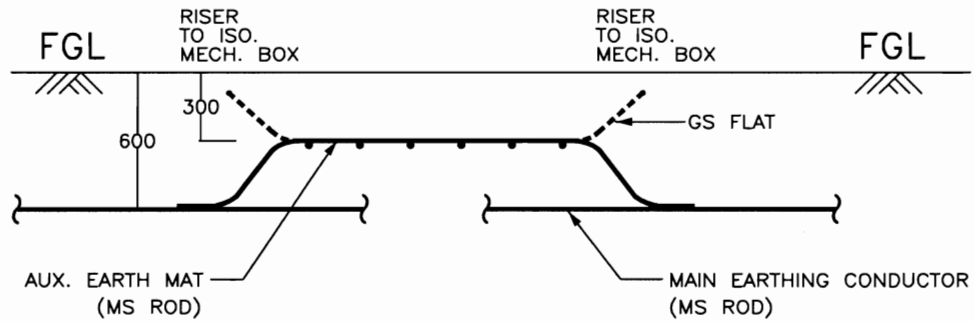
**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)



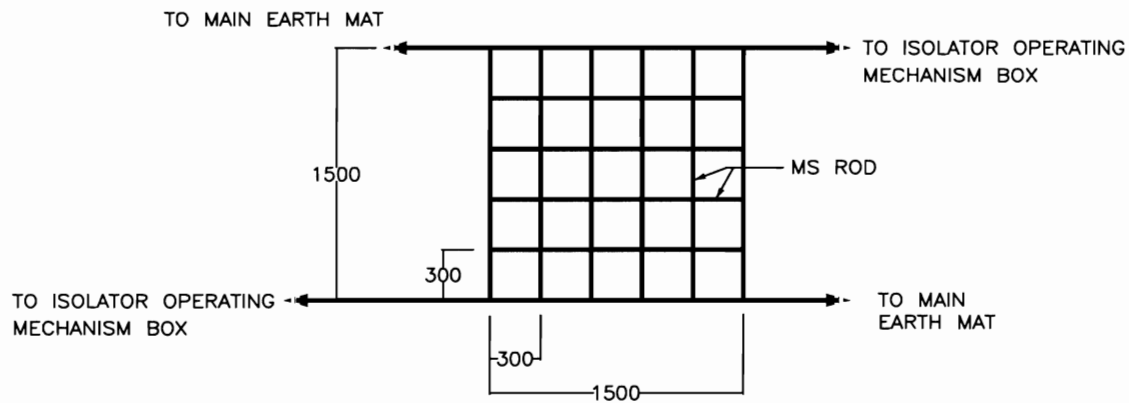
**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

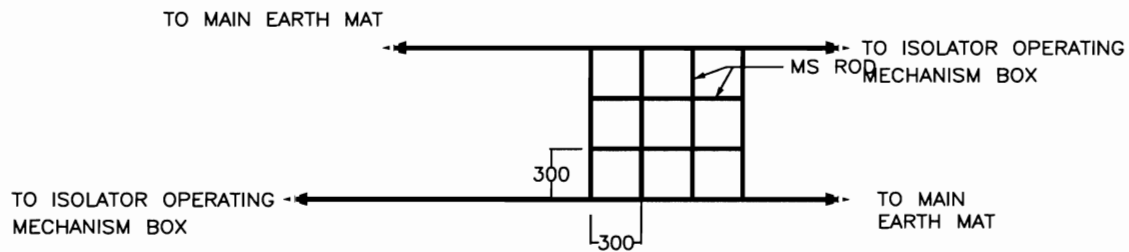
CKD BY	PRPD BY	Date	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 3
<i>JKP/Parsons</i>	<i>JKP/Parsons</i>	Dec-2013	



ELEVATION



PLAN (For 220kV & above class isolators)



PLAN (For 132kV & below class isolators)

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)



PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

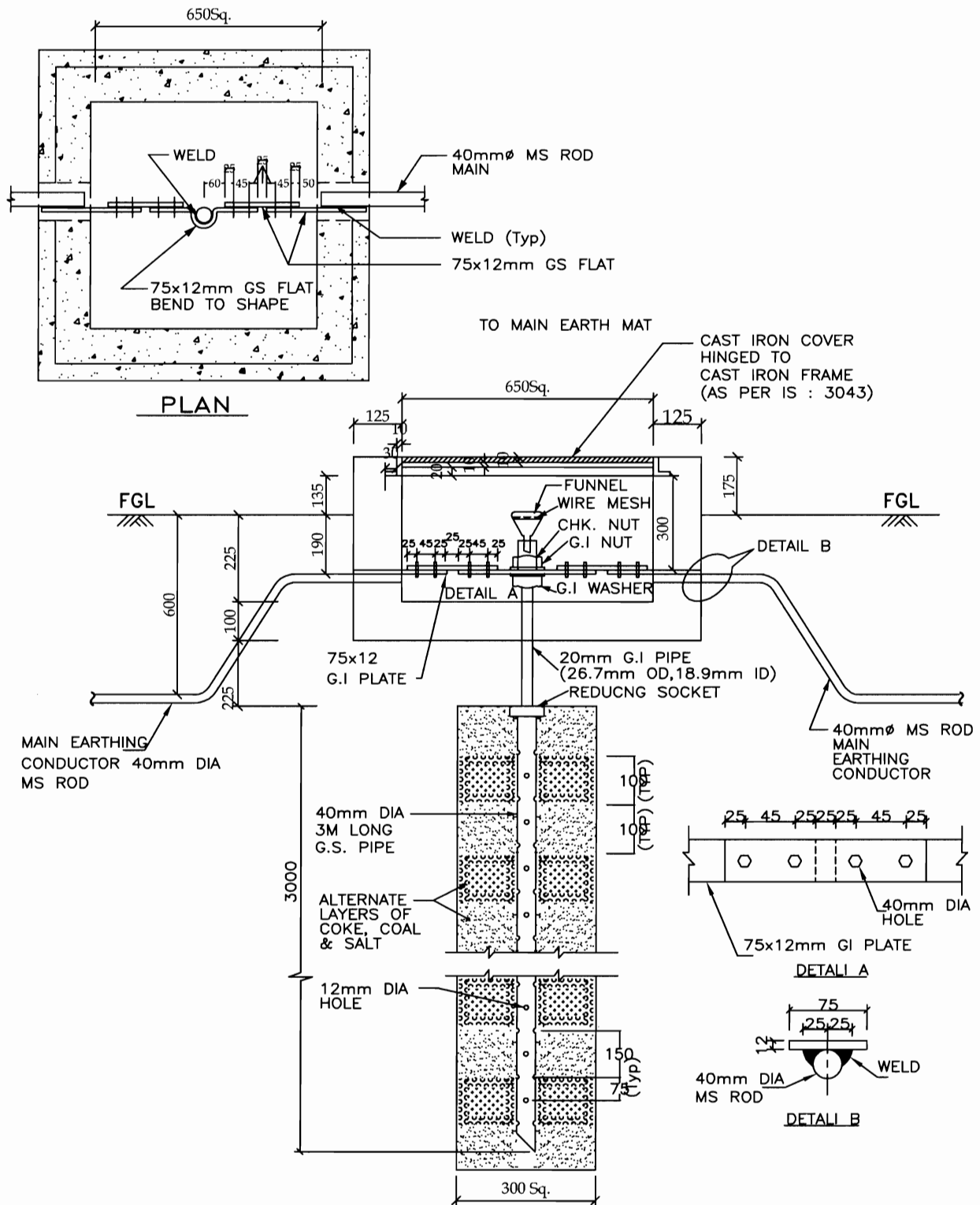
CKD BY

PRPD BY

Dec-2013

Drawing No.:
C/ENG/STD/EARTHINGS/09
SHEET # 4

Date



RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)



PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

CKD BY	PRPD BY	Date	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 5

60 45 45 50

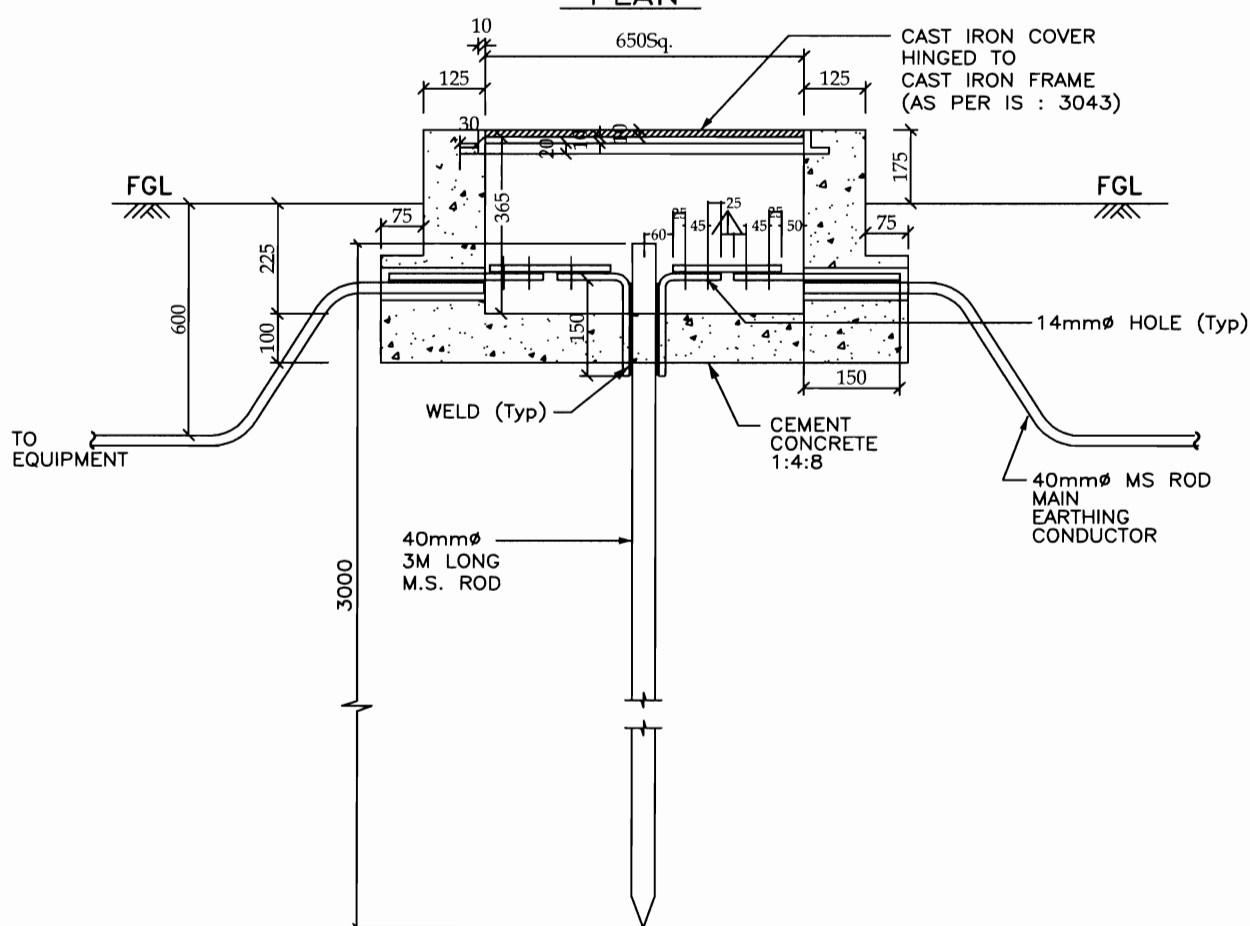
160

75x12mm GS FLAT

WELD

— 40mm ϕ MS ROD
MAIN

PLAN

ELEVATION

RELEASED FOR CONSTRUCTION

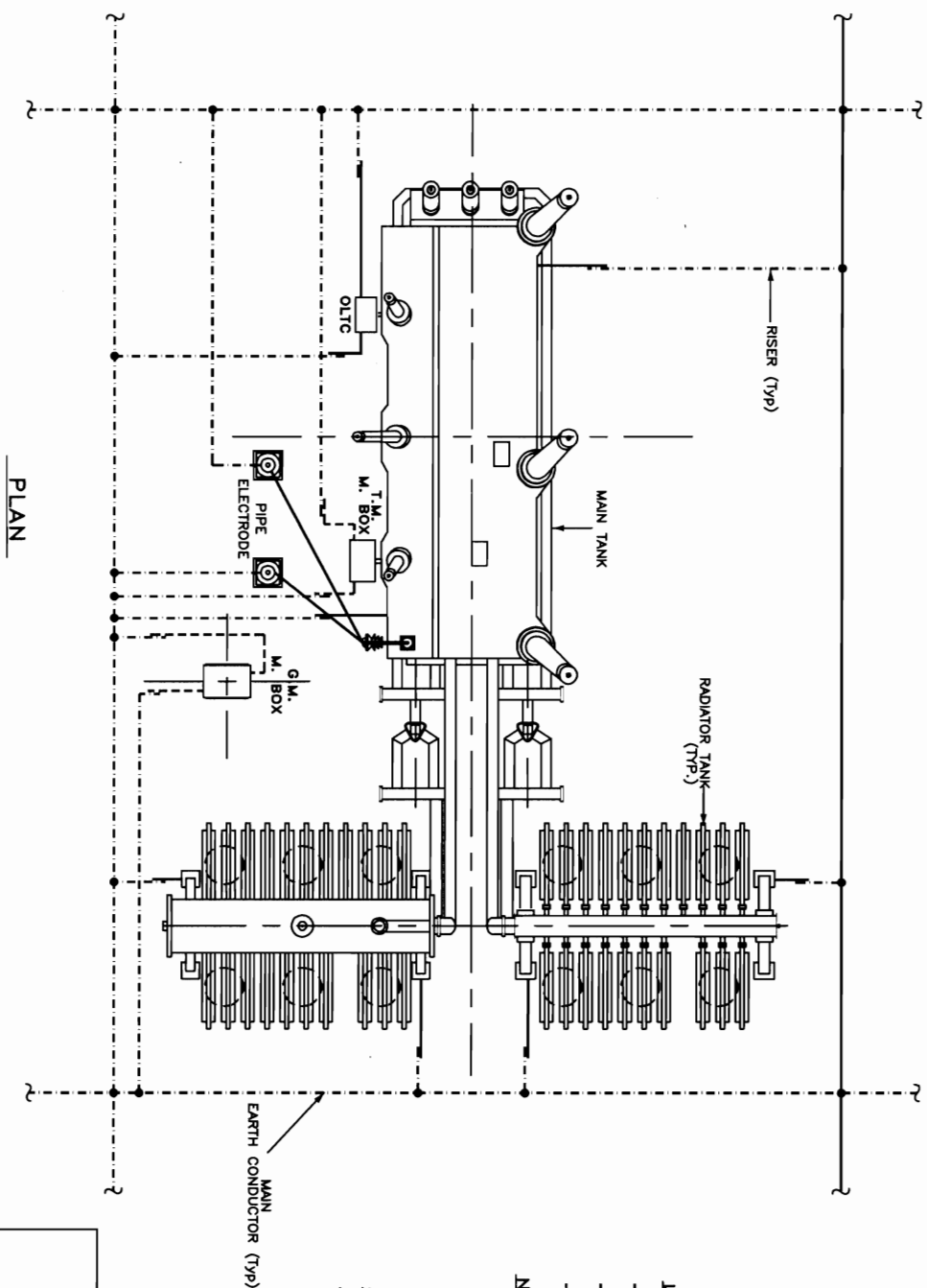


पावरग्रिह

TITLE:- STANDARD EARTHING DETAILS

<i>KKParloor</i>	<i>KKParloor</i>	Dec-2013	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 6
CKD BY	PRPD BY	Date	

EARTHING OF TRANSFORMER/ REACTOR



LEGEND

—	40mm ϕ MS ROD
—	75 x 12 mm GS FLAT
---	50 x 6 mm GS FLAT

NOTES :-

1. No. OF RISERS :-
 MAIN TANK — 2 Nos.
 RADIATOR TANK — 4 Nos.
 OLTC — 2 Nos. (ICT only)
 M. BOX — 2 Nos./M. BOX
 NEUTRAL EARTH ELECTRODE — 2 Nos.
2. No. OF PIPE ELECTRODE REQUIRED = 2 Nos.
3. Pylon supports shall be earthed to the main earthing conductor by GS FLAT.

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)

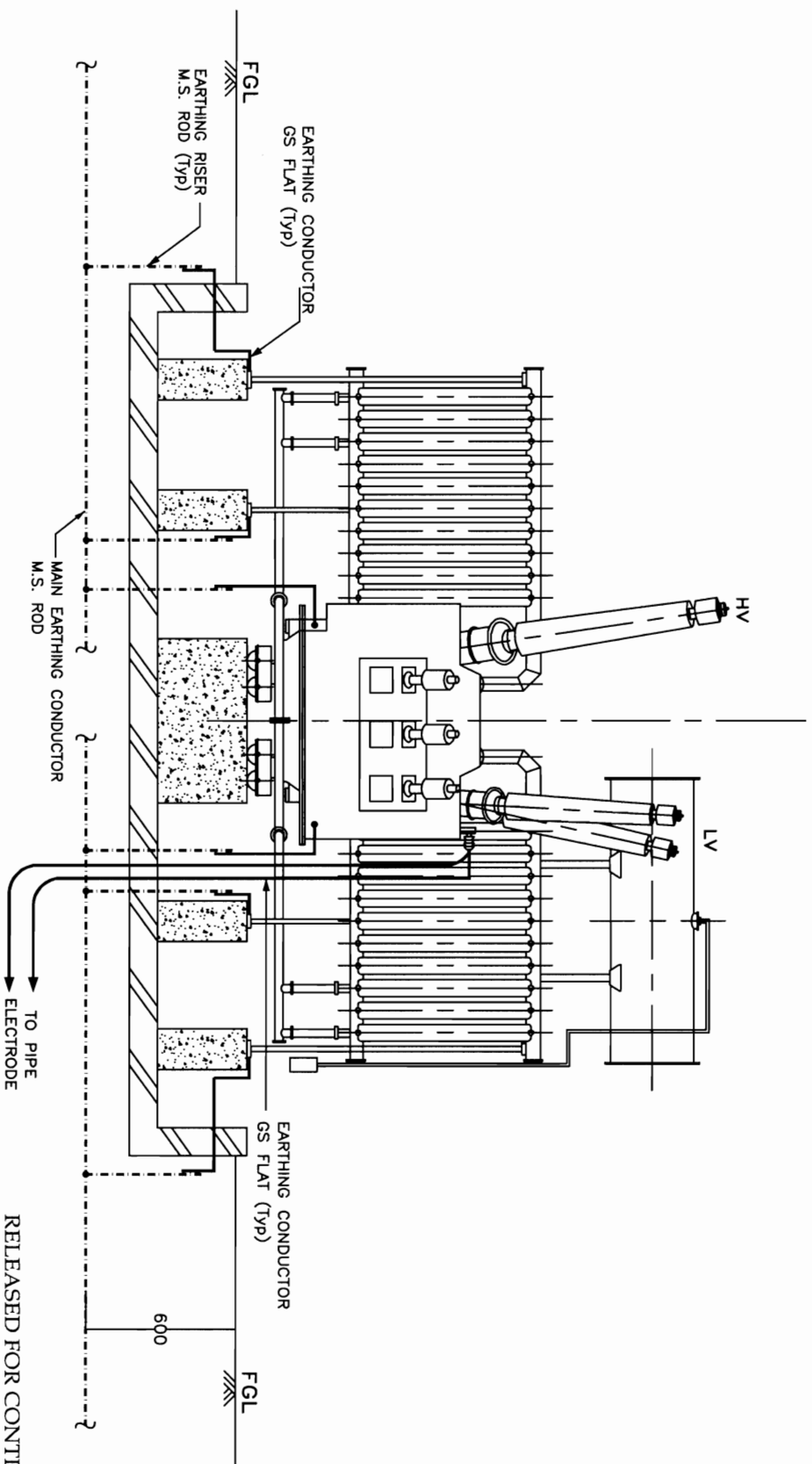


PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

CKD BY	PRPD BY	Date	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 7
--------	---------	------	---

EARTHING OF TRANSFORMER / REACTOR



LEGEND

—	40mm ϕ MS ROD
—	75 x 12 mm GS FLAT
- - -	50 x 6 mm GS FLAT

END VIEW

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)

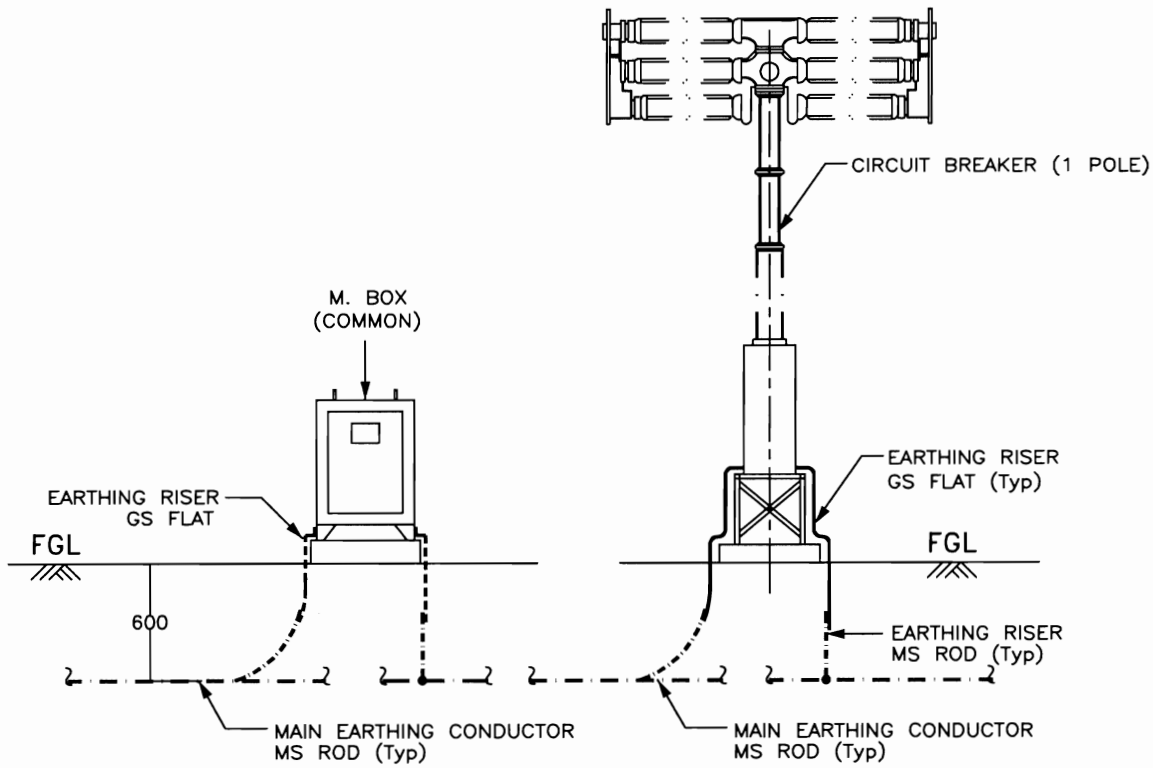


PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

CKD BY	PRPD BY	Date	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 8
--------	---------	------	---

EARTHING OF CIRCUIT BREAKER



ELEVATION

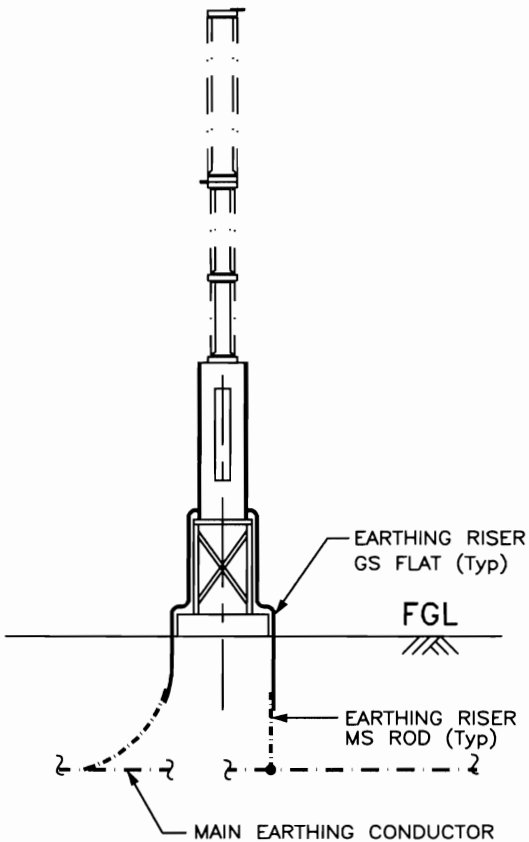
NOTES :-

1. No. OF RISERS FOR CIRCUIT BREAKER = 2 Nos. / PHASE
1. No. OF RISERS FOR LADDER (IF Applicable) = 2 Nos.
2. No. OF RISERS FOR MAR. BOX = 2 Nos.
3. CLEAT CLAMP SHALL BE PROVIDED AT 1000mm INTERVAL.

LEGEND

— · — · — · —	40mm ϕ MS ROD
—————	75 x 12 mm GS FLAT
-----	50 x 6 mm GS FLAT

RELEASED FOR CONTRUCTION



**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)



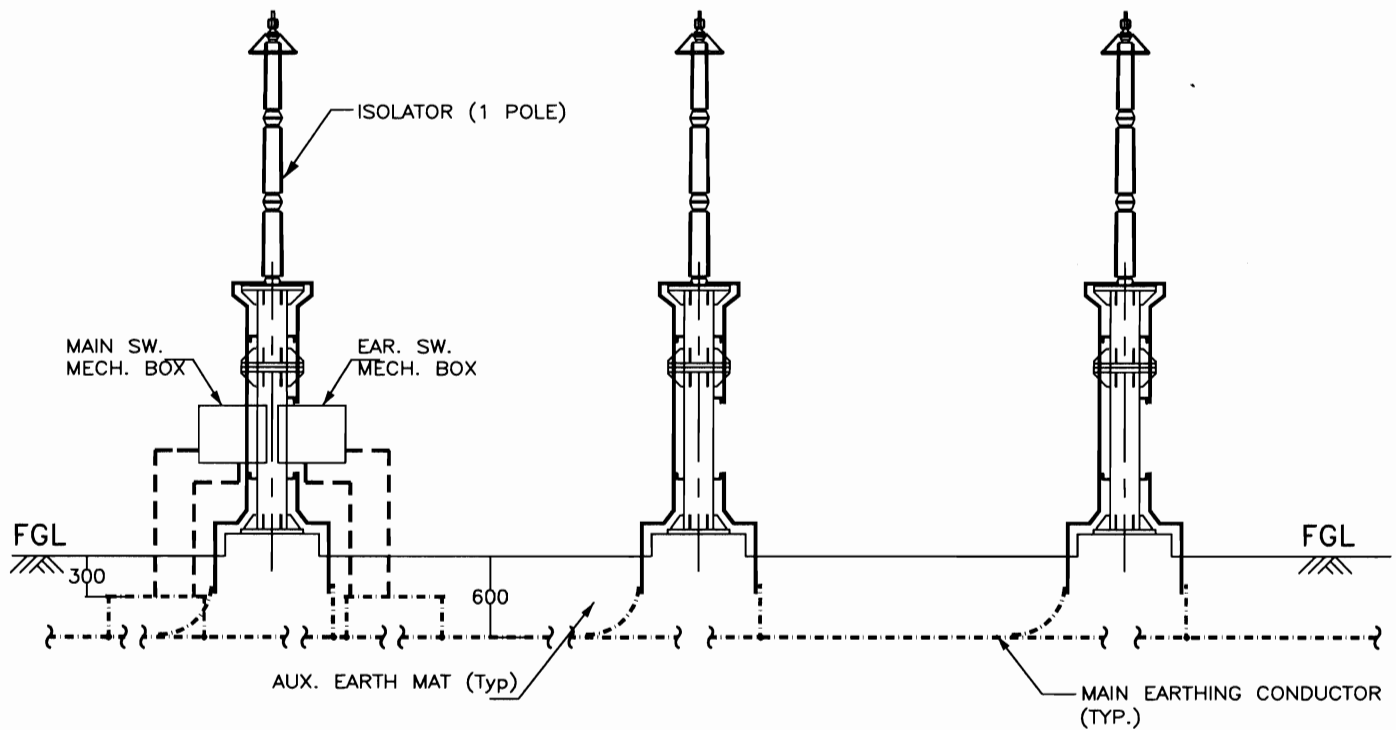
पावरग्रिड

**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

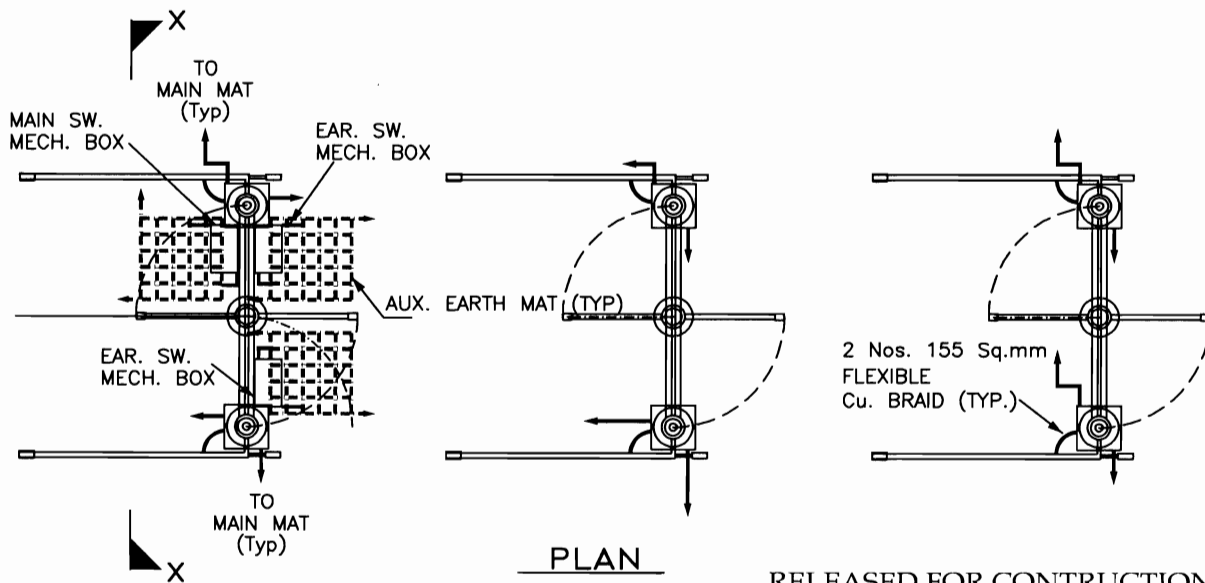
TITLE:- STANDARD EARTHING DETAILS

<i>CKD</i>	<i>PRPD</i>	Dec-2013	Drawing No.:
CKD BY	PRPD BY	Date	C/ENG/STD/EARTHINGS/09 SHEET # 9

EARTHING OF ISOLATOR



ELEVATION



RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)

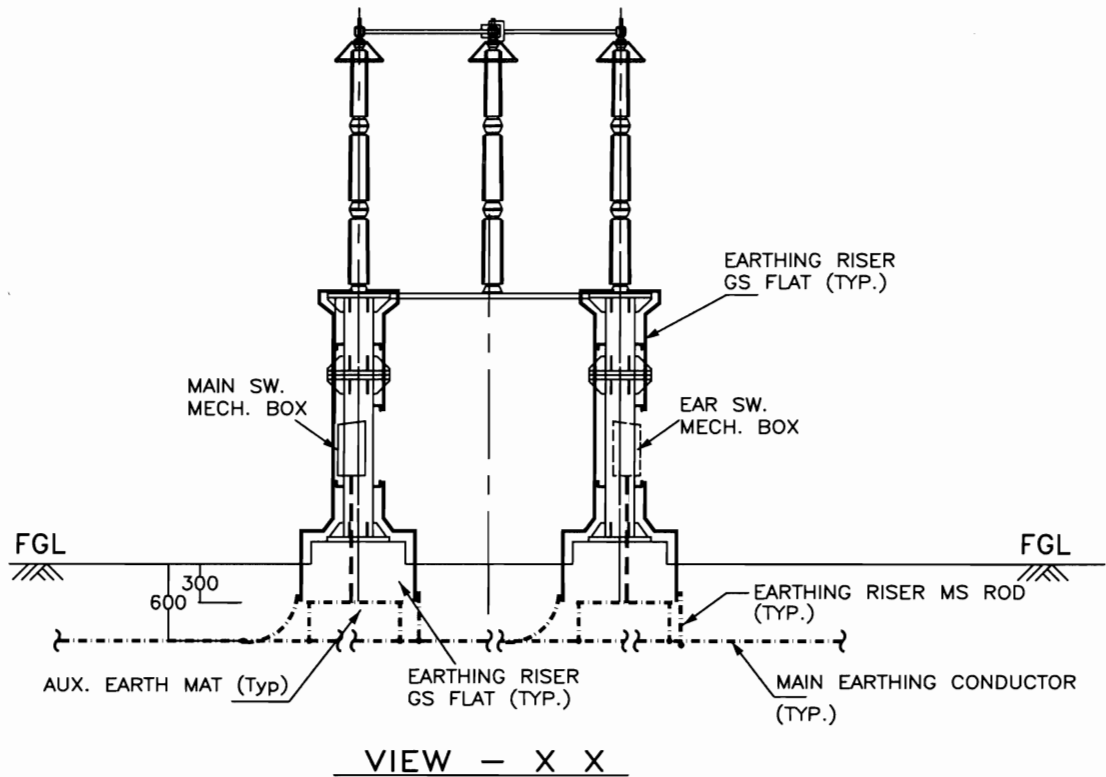


**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

<i>CKD</i>	<i>PRPD</i>	Dec-2013	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 10
CKD BY	PRPD BY	Date	

EARTHING OF ISOLATOR (1 PH)



LEGEND

— · — · — · —	40mm ϕ MS ROD
—————	75 x 12 mm GS FLAT
-----	50 x 6 mm GS FLAT

NOTES :-

1. No. OF RISERS FOR ISOLATOR = 4 Nos. / PHASE.
2. No. OF RISERS FOR MAIN MECH. BOX = 2 Nos.
3. No. OF RISERS FOR EARTH SW. MECH. BOX = 2 Nos. / BOX.
4. No. OF AUXILIARY EARTH MAT = 1 Nos. FOR EACH MB
5. CLEAT CLAMP SHALL BE PROVIDED AT 1000mm INTERVAL.
6. NO. OF AUX. EARTH MAT IS INDICATIVE ONLY. IT SHALL BE EXECUTED AS PER ACTUAL NUMBER/POSITION OF EARTH SWITCHES.

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)

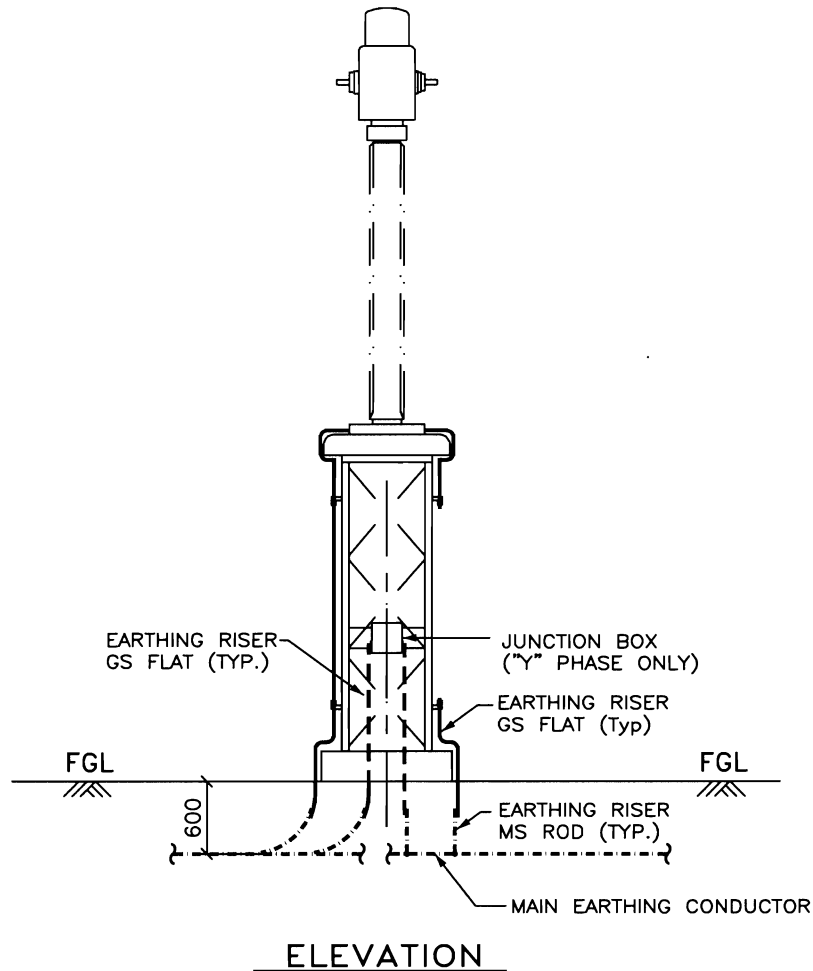


**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

<i>KKP/Parth</i>	<i>KKP/Parth</i>	Dec-2013	Drawing No.:
CKD BY	PRPD BY	Date	C/ENG/STD/EARTHINGS/09
			SHEET # 11

EARTHING OF CURRENT TRANSFORMER (1 PH)



LEGEND

	40mm ϕ MS ROD
	75 x 12 mm GS FLAT
	50 x 6 mm GS FLAT

NOTES :-

1. No. OF RISERS = 2 Nos. / PHASE.
2. No. OF RISERS FOR JUN. BOX = 2 Nos.
3. CLEAT CLAMP SHALL BE PROVIDED AT 1000mm INTERVAL.

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)

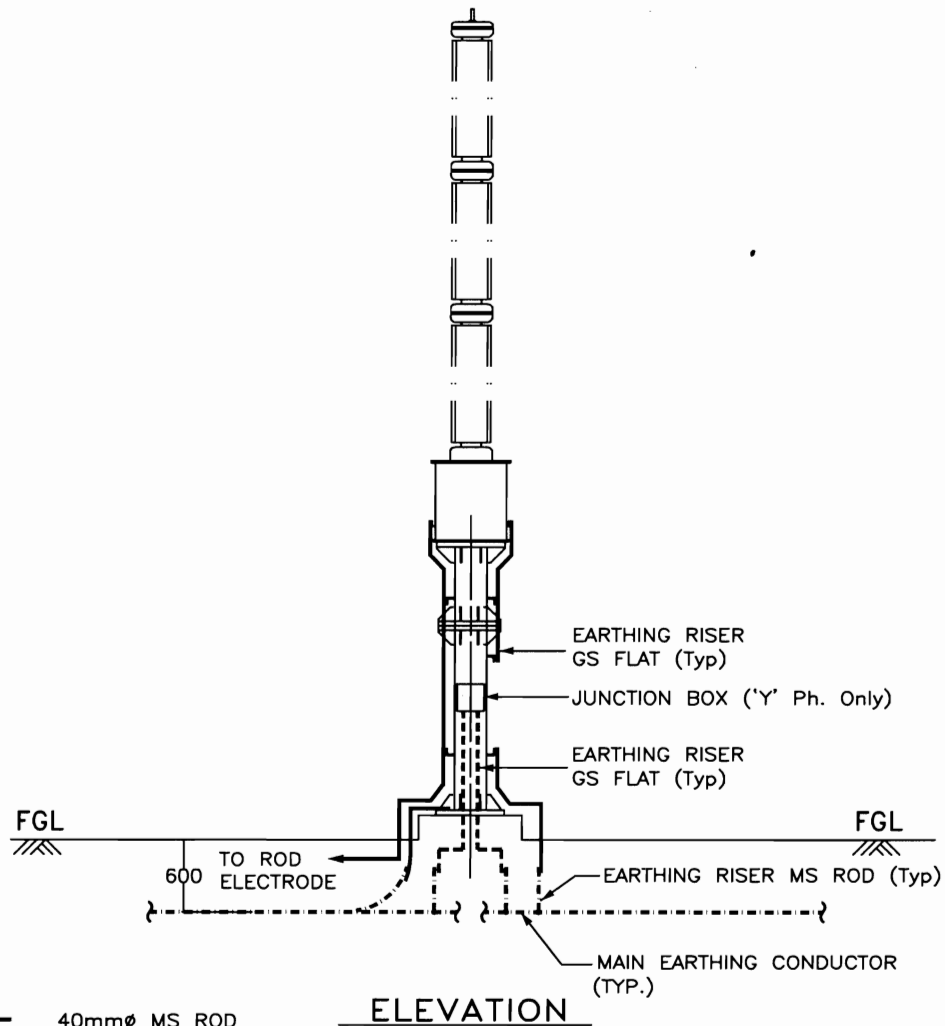


**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

<i>KK Pathak</i>	<i>KK Pathak</i>	Dec-2013	Drawing No.:
CKD BY	PRPD BY	Date	C/ENG/STD/EARTHINGS/09 SHEET # 12

EARTHING OF CAPACITIVE VOLTAGE TRANSFORMER (1 PH)



LEGEND

	40mm ϕ MS ROD
	75 x 12 mm GS FLAT
	50 x 6 mm GS FLAT

NOTES :-

1. No. OF RISERS = 3 Nos. / PHASE.
2. No. OF RISERS FOR J. BOX = 2 Nos.
3. No. OF ROD ELECTRODE REQUIRED = 1 No. / PHASE.
4. CLEAT CLAMP SHALL BE PROVIDED AT 1000mm INTERVAL.

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)



PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

K.K. Pathak

CKD BY

K.K. Pathak

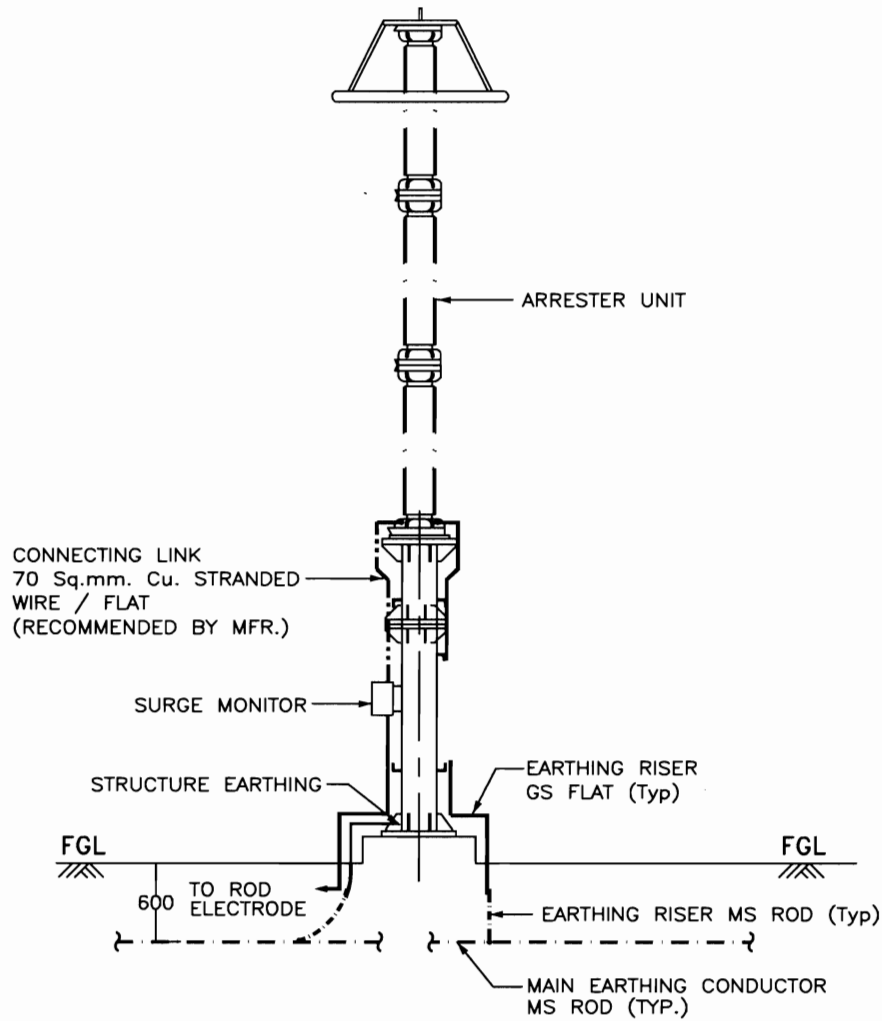
PRPD BY

Dec-2013

Date

Drawing No.:
C/ENG/STD/EARTHINGS/09
SHEET # 13

EARTHING OF SURGE ARRESTER (1PH)



ELEVATION

LEGEND

- 40mm ϕ MS ROD
- 75 x 12 mm GS FLAT

NOTES :-

- 1 . No. OF RISERS = 3 Nos. / PHASE.
- 2 . No. OF ROD ELECTRODE REQUIRED = 1 No. / PHASE.
- 3 . CLEAT CLAMP SHALL BE PROVIDED AT 1000mm INTERVAL.

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)



PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

CKD BY

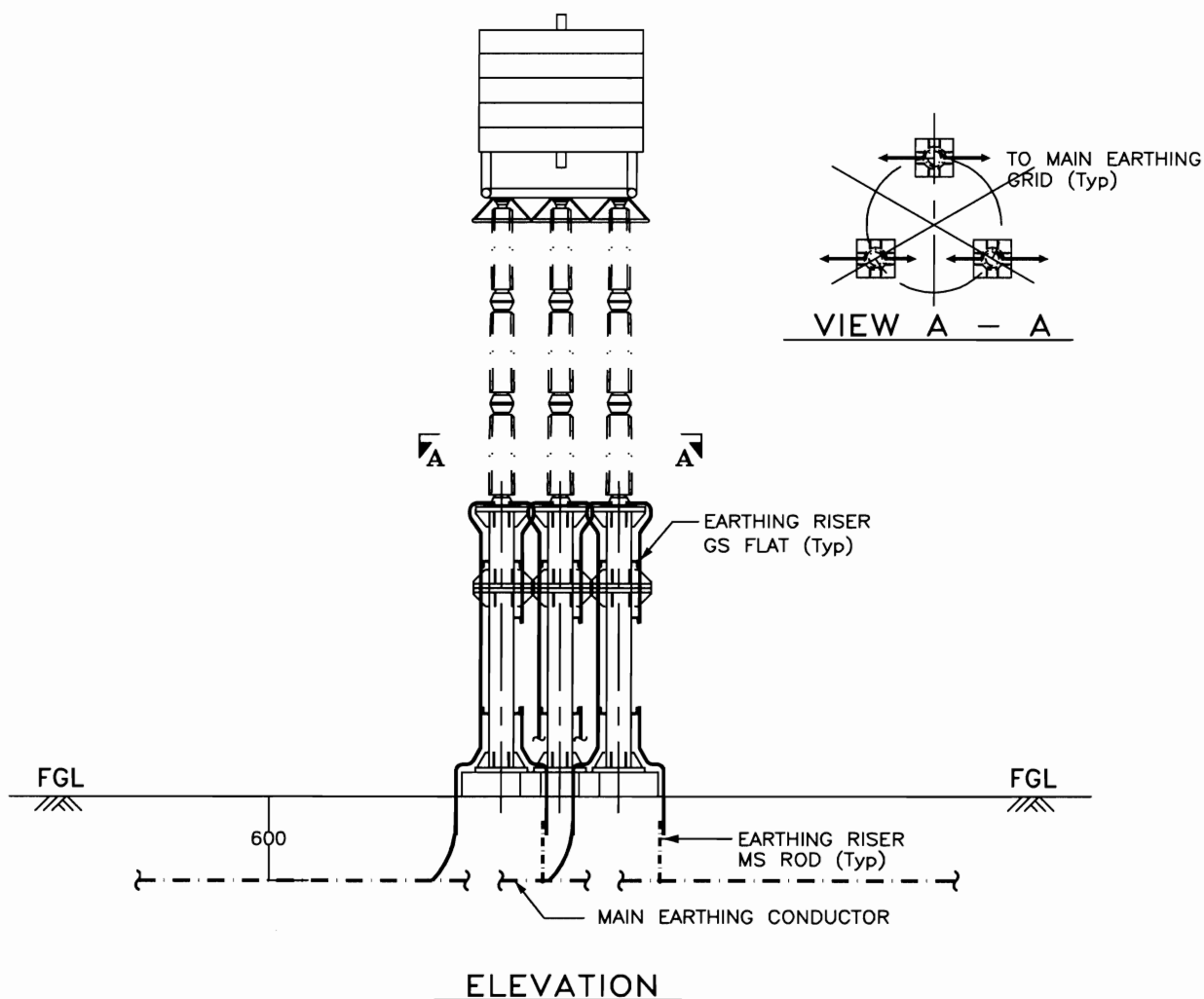
PRPD BY

Dec-2013

Drawing No.:
C/ENG/STD/EARTHINGS/09
SHEET # 14

Date

EARTHING OF WAVE TRAP (1PH)



LEGEND

- 40mm ϕ MS ROD
 75 x 12 mm GS FLAT

NOTE :-

1. No. OF RISERS = 6 Nos. / PHASE.
2. CLEAT CLAMP SHALL BE PROVIDED AT 1000mm INTERVAL.

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
 (A Government of India Enterprise)

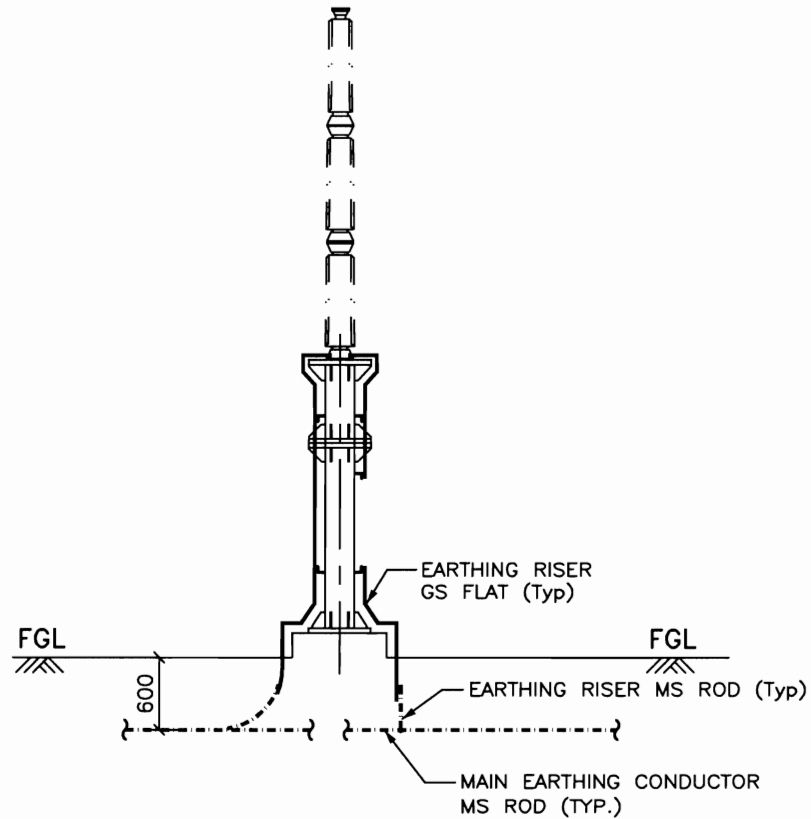


**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

<i>JKP/Parth</i>	<i>JKP/Parth</i>	Dec-2013	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 15
CKD BY	PRPD BY	Date	

EARTHING OF POST INSULATOR (1PH)



ELEVATION

LEGEND

- · — · — · — 40mm ϕ MS ROD
————— 75 x 12 mm GS FLAT

NOTES :-

1. No. OF RISERS = 2 Nos. / PHASE.
2. CLEAT CLAMP SHALL BE PROVIDED AT 1000mm INTERVAL.

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)

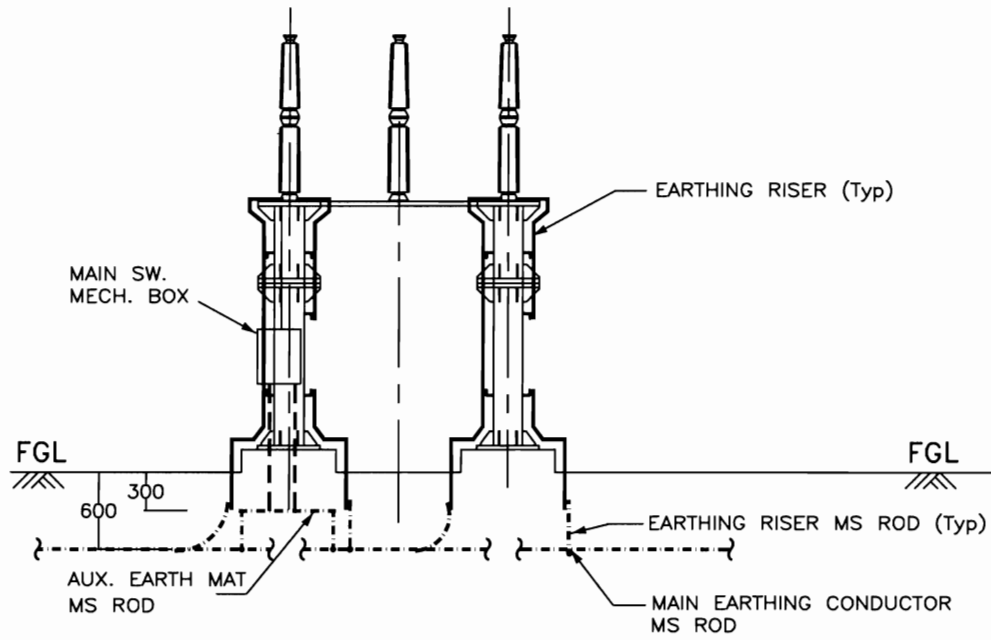


PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

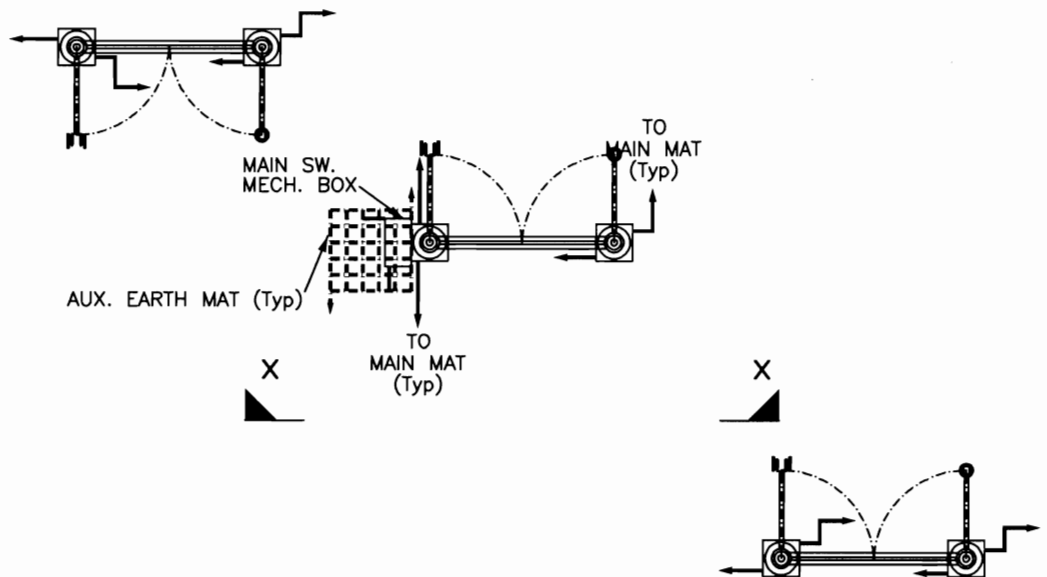
TITLE:- STANDARD EARTHING DETAILS

CKD BY	PRPD BY	Date	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 16

TANDEM ISOLATOR



VIEW - X X



PLAN

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)



PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

CKD BY

PRPD BY

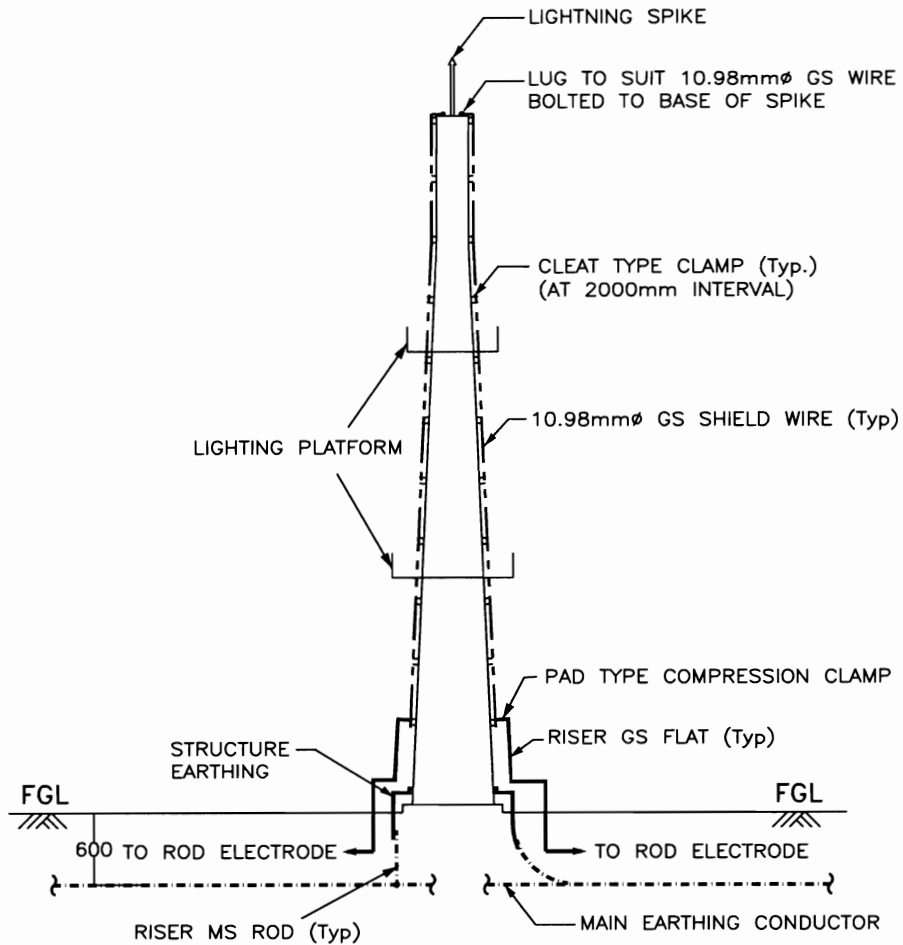
Dec-2013

Drawing No.:

C/ENG/STD/EARTHINGS/09

SHEET # 17

EARTHING OF LIGHTNING MAST



ELEVATION

NOTES :-

1. No. OF RISERS = 4 Nos.
2. No. OF ROD ELECTRODE REQUIRED = 2 Nos.
3. No. OF PAD TYPE CLAMP = 2 Nos.

LEGEND

- 40mmØ MS ROD
 75 x 12 mm GS FLAT

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)

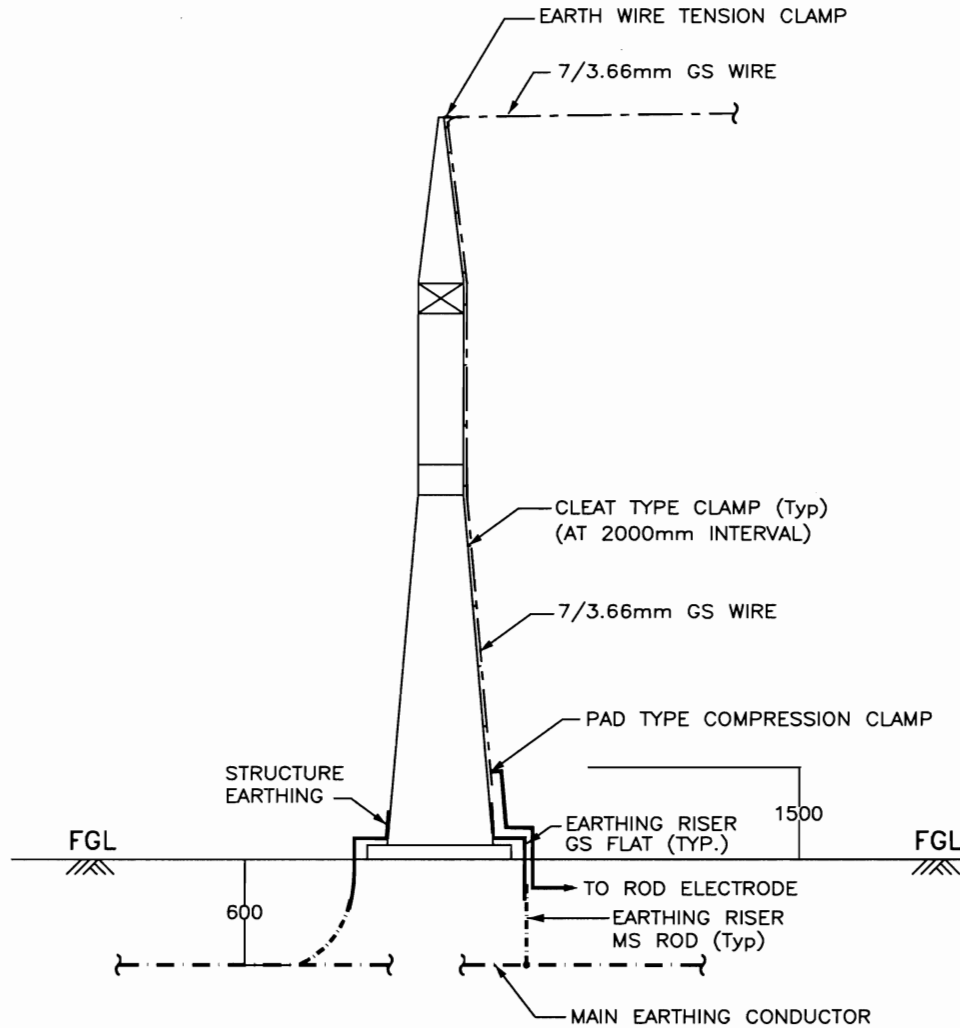


PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

<i>CKD</i>	<i>PRPD</i>	Dec-2013	Drawing No.:
CKD BY	PRPD BY	Date	C/ENG/STD/EARTHINGS/09 SHEET # 18

EARTHING OF TOWER WITH PEAK



ELEVATION

NOTES :-

1. No. OF RISERS = 3 Nos.
2. No. OF ROD ELECTRODE REQUIRED = 1 No.
3. No. OF PAD TYPE CLAMP = 1 No.

LEGEND

- · — · — 40mm ϕ MS ROD
 ————— 75 x 12 mm GS FLAT

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)

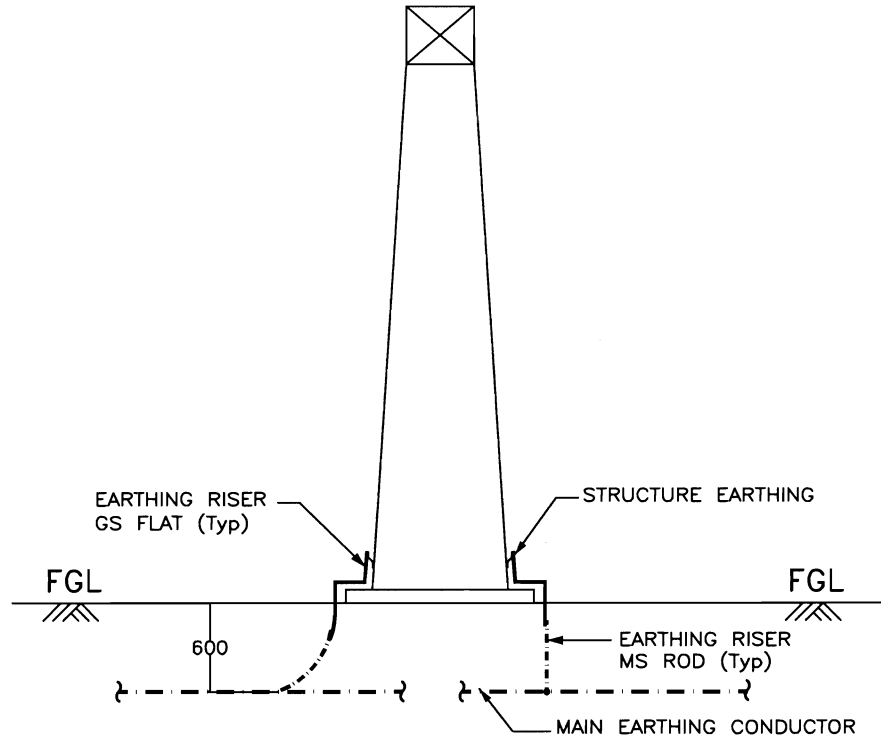


**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

CKD BY	PRPD BY	Date	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 19
KKP/Power	KKP/Power	Dec-2013	

EARTHING OF TOWER WITHOUT PEAK



ELEVATION

LEGEND

	40mm ϕ MS ROD
	75 x 12 mm GS FLAT

NOTES :-

1. No. OF RISERS = 2 Nos.

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)

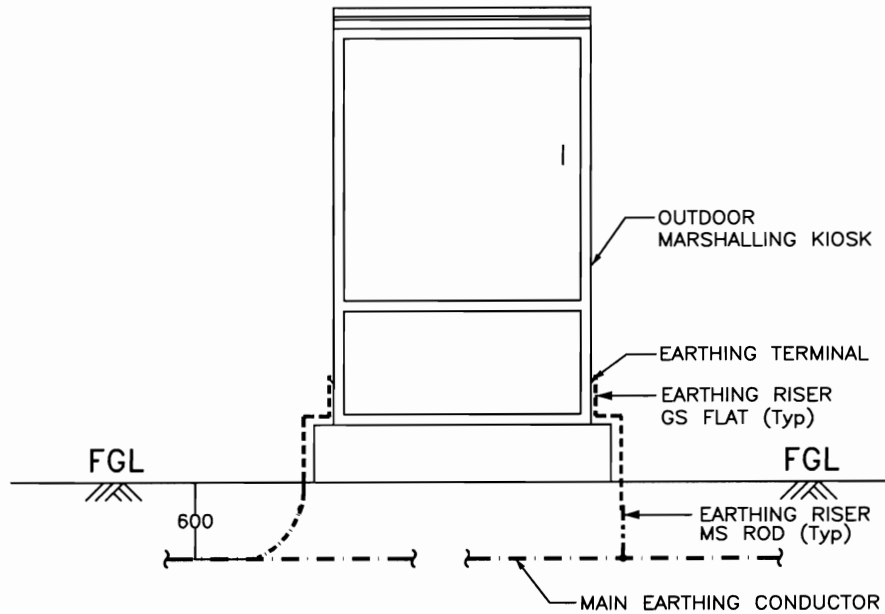


PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

<i>KH Parhar</i>	<i>KH Parhar</i>	Dec-2013	Drawing No.:
CKD BY	PRPD BY	Date	C/ENG/STD/EARTHINGS/09 SHEET # 20

EARTHING OF BAY MARSHALLING BOX



ELEVATION

LEGEND

— · — · — · —	40mm \varnothing MS ROD
—————	75 x 12 mm GS FLAT
-----	50 x 6 mm GS FLAT

NOTE :-

1. No. OF RISERS = 2 Nos.

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)

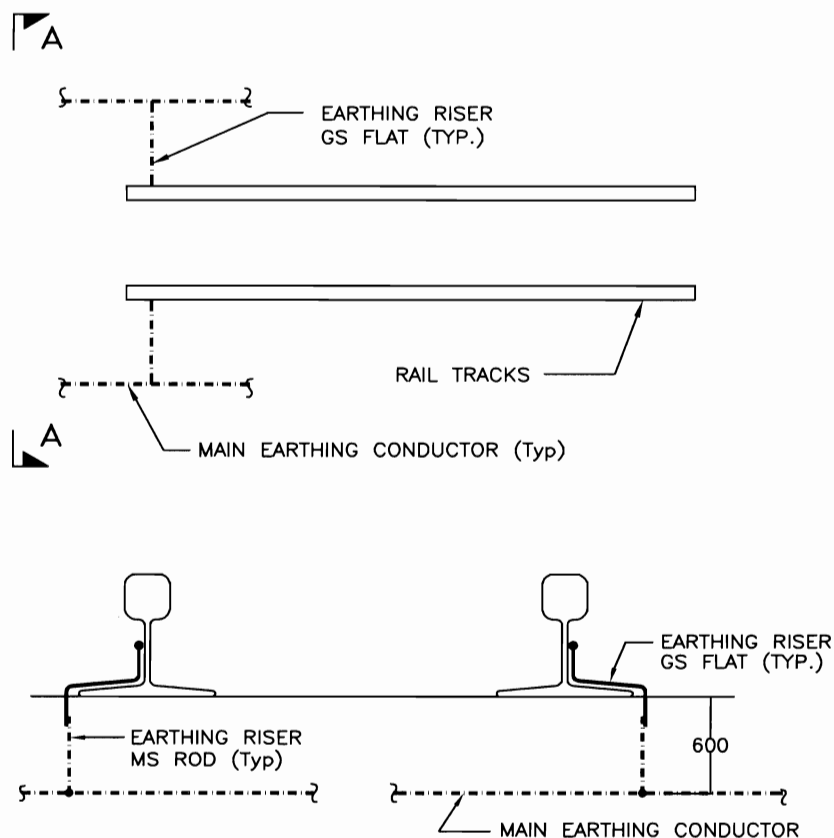


PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

TITLE:- STANDARD EARTHING DETAILS

CKD BY	PRPD BY	Date	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 21
--------	---------	------	--

EARTHING OF RAIL TRACK



SECTION A - A

LEGEND

	40mm ϕ MS ROD
	75 x 12 mm GS FLAT

NOTES :-

1. EACH RAIL SHALL BE EARTHED AT 30M INTERVAL AND ALSO AT BOTH ENDS.

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION
OF INDIA LIMITED
(A Government of India Enterprise)

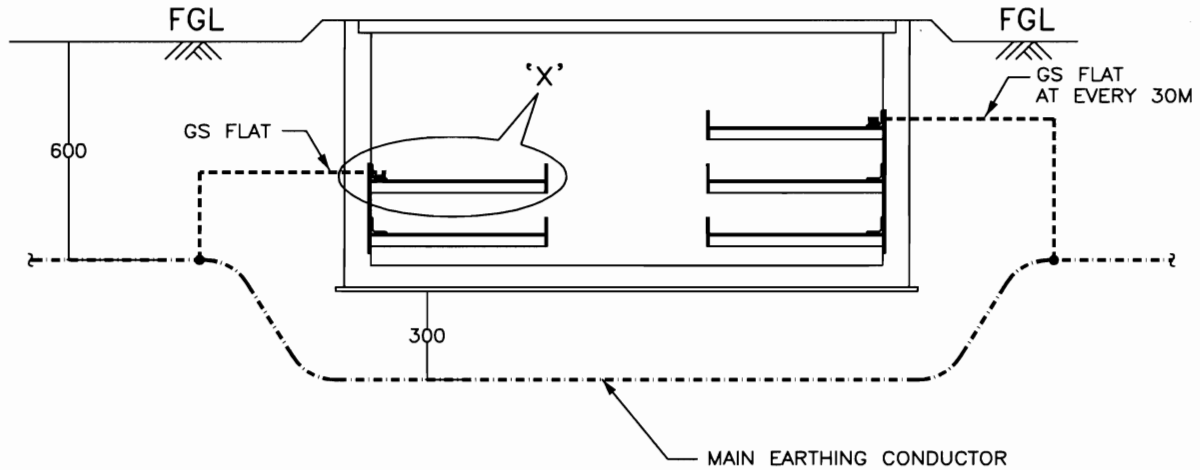


PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION

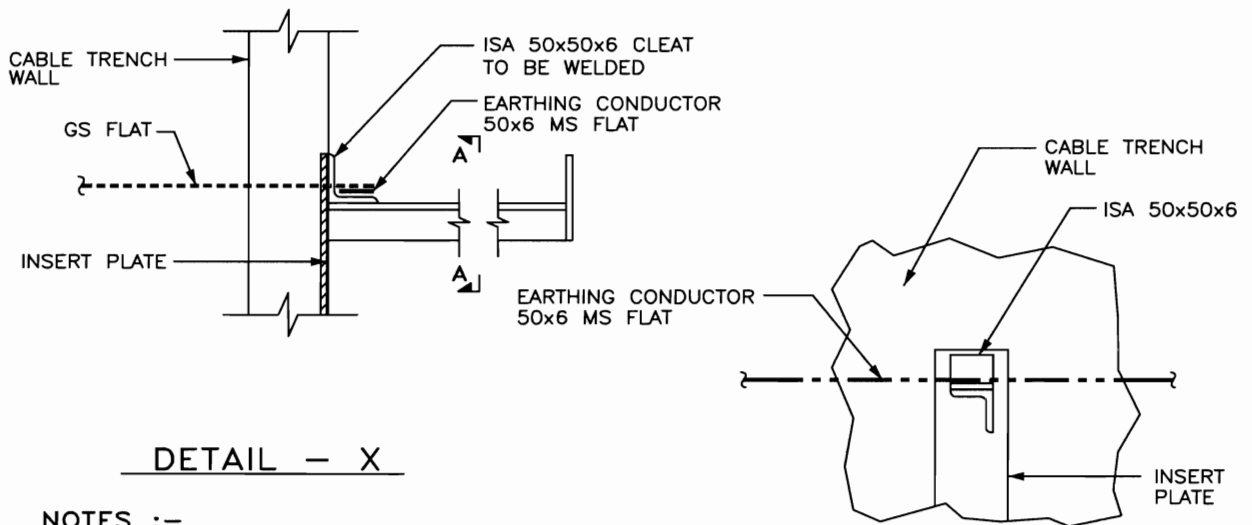
TITLE:- STANDARD EARTHING DETAILS

<i>KK/Parthasar</i>	<i>KK/Parthasar</i>	Dec-2013	Drawing No.:
CKD BY	PRPD BY	Date	C/ENG/STD/EARTHINGS/09
			SHEET # 22

EARTHING OF CABLE TRENCH



TYPICAL CROSS SECTION OF CABLE TRENCH



DETAIL - X

SECTION A - A

NOTES :-

1. MS FLAT SHALL RUN ON TOP TIER ALL ALONG THE CABLE TRENCHES & WELDED TO EACH OF THE RACKS.
2. MS FLAT SHALL BE EARTHED AT 30M INTERVAL AND ALSO AT BOTH ENDS.

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)



**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

CKD BY

PRPD BY

Dec-2013

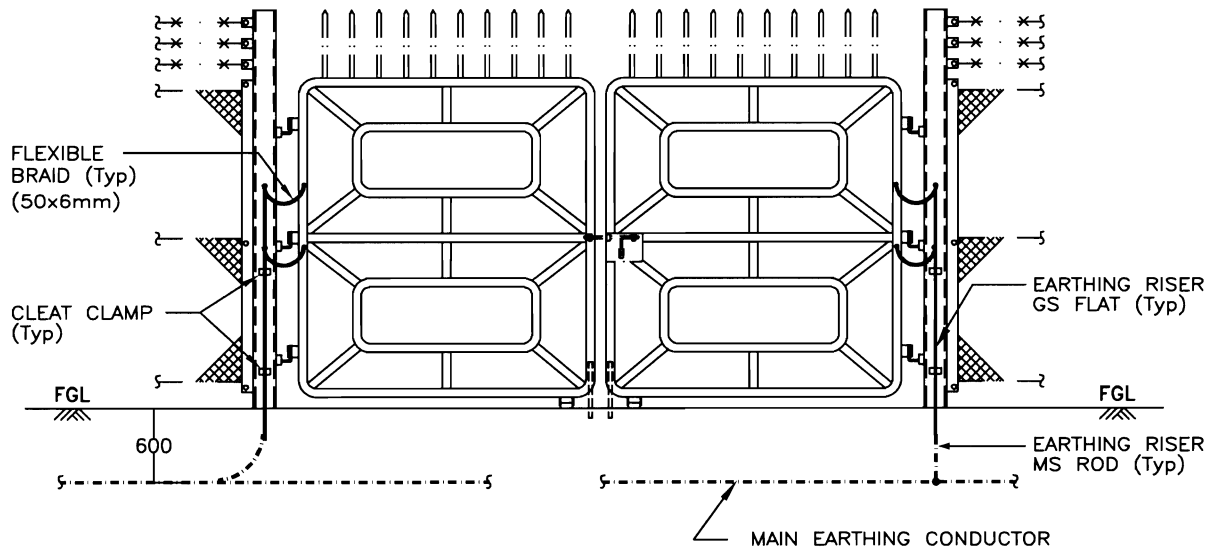
Drawing No.:

C/ENG/STD/EARTHINGS/09

Date

SHEET # 23

EARTHING OF GATES



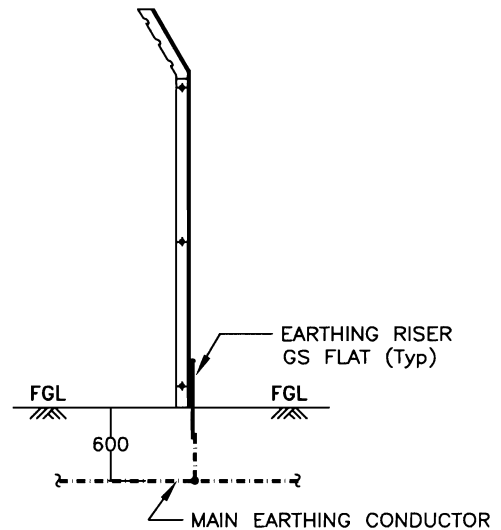
MAIN GATE

LEGEND

	40mm \varnothing MS ROD
	75 x 12 mm GS FLAT
	50 x 6 mm MS FLAT

NOTES :-

	FENCE POST	MAIN GATE
1 . No. OF RISERS REQUIRED	1	2
2 . No. OF FLEXIBLE BRAID	-	4
3. ALL GATES & EVERY ALTERNATE FENCE SHALL BE CONNECTED TO EARTHING GRID.		



FENCE POST (ALTERNATE FENCE POST)

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)

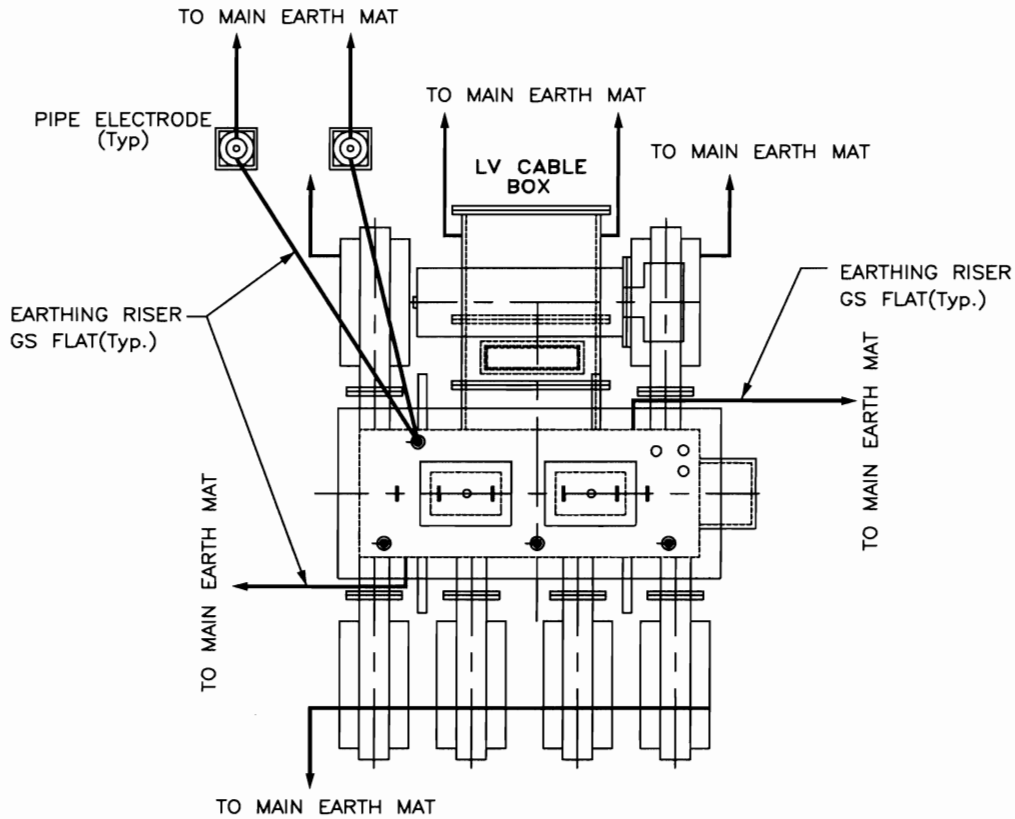


**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

<i>CKD BY</i>	<i>PRPD BY</i>	Dec-2013	Drawing No.:
CKD BY	PRPD BY	Date	C/ENG/STD/EARTHINGS/09 SHEET # 24

EARTHING OF LT TRANSFORMER



PLAN

LEGEND

	40mm ϕ MS ROD
	75 x 12 mm GS FLAT
	50 x 6 mm GS FLAT

NOTES :-

1. No. OF RISERS FOR MAIN TANK & T.M. MAR. BOX = 4 Nos.
2. No. OF RISERS FOR LV CABLE BOX & RADIATOR = 4 Nos.
3. No. OF RISERS FOR PIPE ELECTRODE = 2 Nos.
4. No. OF PIPE ELECTRODES REQUIRED = 2 Nos.

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)

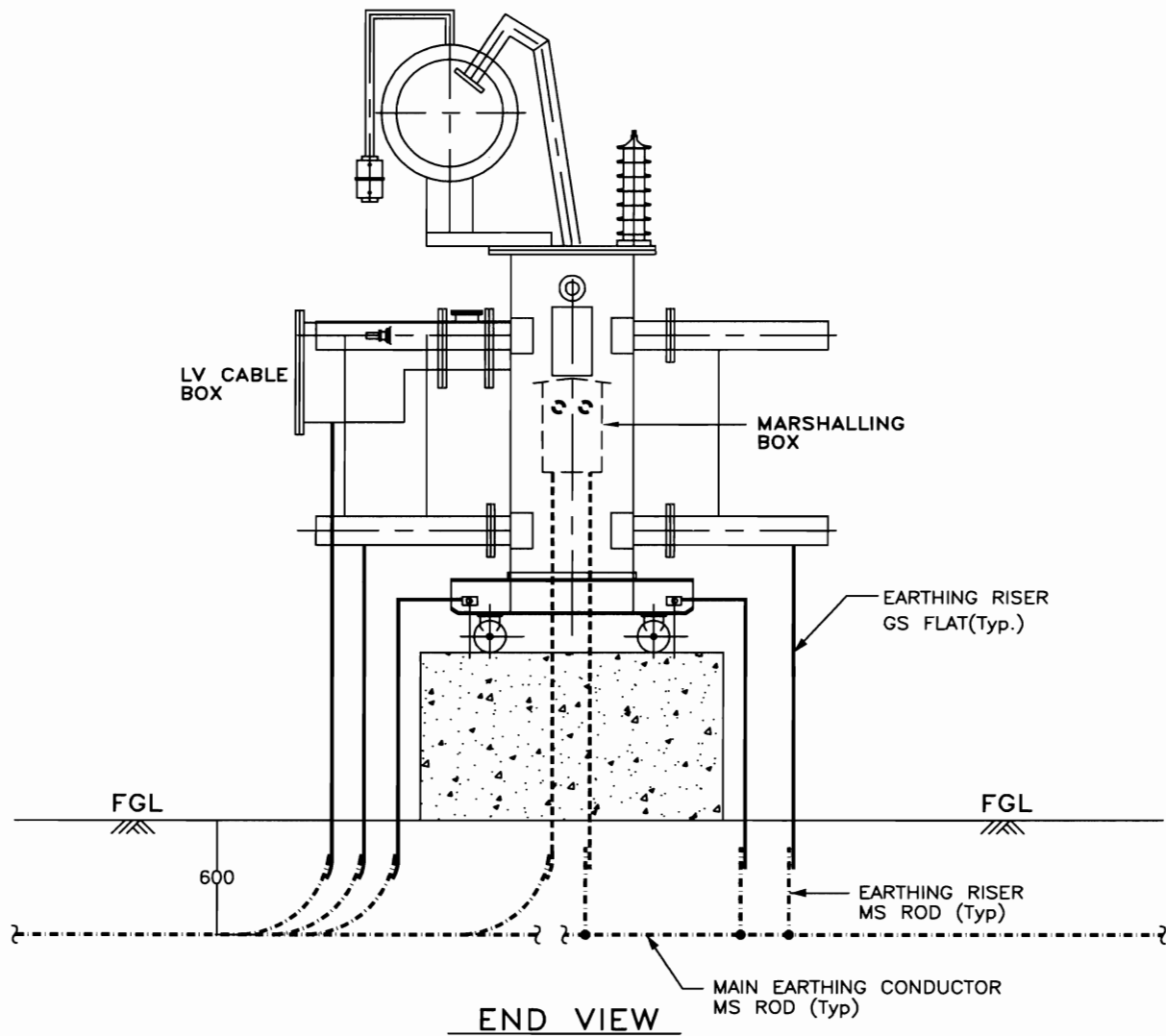


**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

<i>KK/Parthasar</i>	<i>KK/Parthasar</i>	Dec-2013	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 25
CKD BY	PRPD BY	Date	

EARTHING OF LT TRANSFORMER



RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)



**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

<i>KK/Parsons</i>	<i>KK/Parsons</i>	Dec-2013	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 26
CKD BY	PRPD BY	Date	

EARTHING OF PYLON SUPPORTS

Pylon supports shall be grounded through 50x6mm GI flat to the ring around the Pylon supports of 75x12mm GI flat which in turn is connected to the main grid (40 mm dia MS rod) at 2 to 3 points as available.

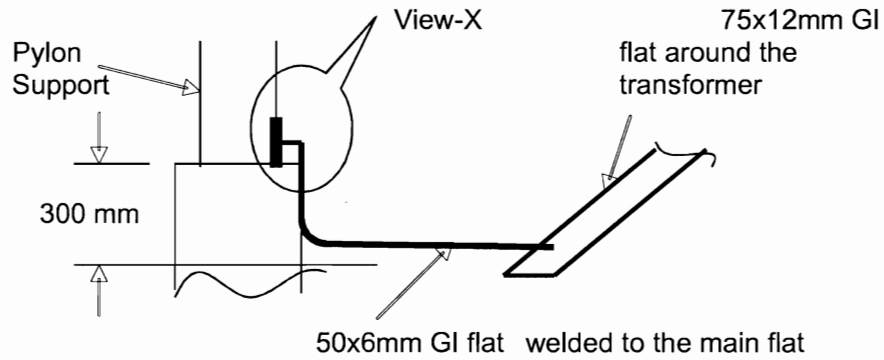


Fig.- Elevation (Earthing of Pylon Supports)

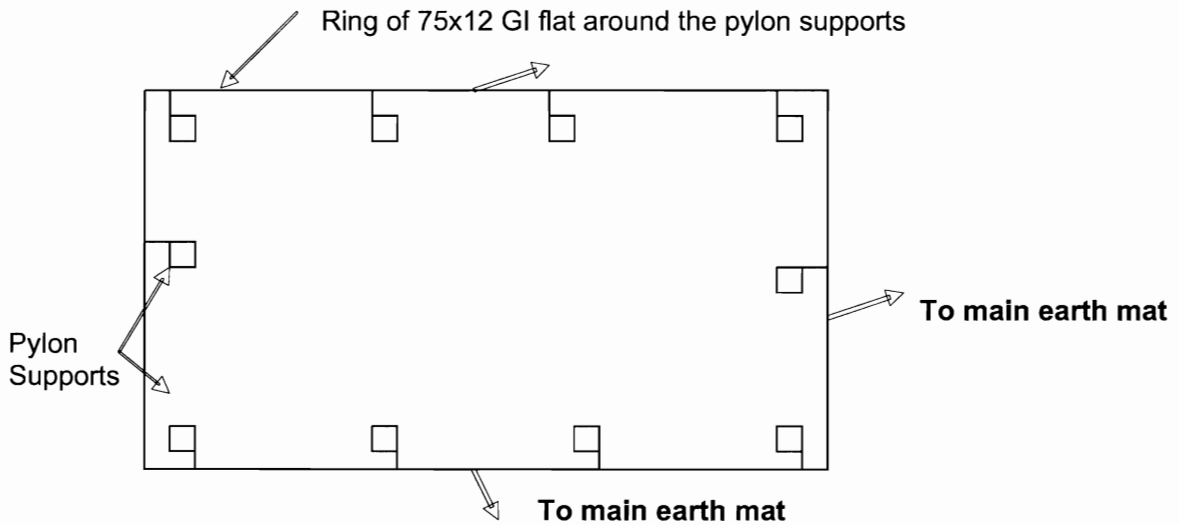



Fig.- Layout (Earthing of Pylon Supports)

RELEASED FOR CONTRUCTION

POWER GRID CORPORATION OF INDIA LIMITED (A Government of India Enterprise)			 पावरग्रिड
PROJECT :- TECHNICAL SPECIFICATION- SWITCHYARD ERECTION			
TITLE:- STANDARD EARTHING DETAILS			
<i>CKD BY</i>	<i>PRPD BY</i>	Dec-2013	Drawing No.: C/ENG/STD/EARTHINGS/09 SHEET # 27
		Date	

EARTHING OF HYDRANT/ HVW SPRAY PIPING

These pipes shall be grounded at pump house through 50x6mm GI flat connected to the main flat, 75x12mm running around the room.

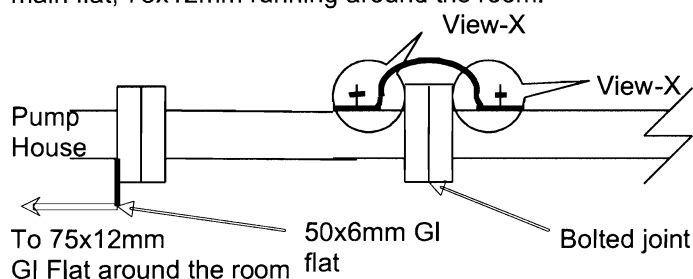


Fig.-Earthing of Hydrant / HVW Spray Piping

EARTHING OF HYDRANT POST/ HOSE BOX

A bolt shall be welded to these structures at the time of installation which can be used to connect them to the nearest riser or main 75x12mm GI flat through 50x6mm GI flat.

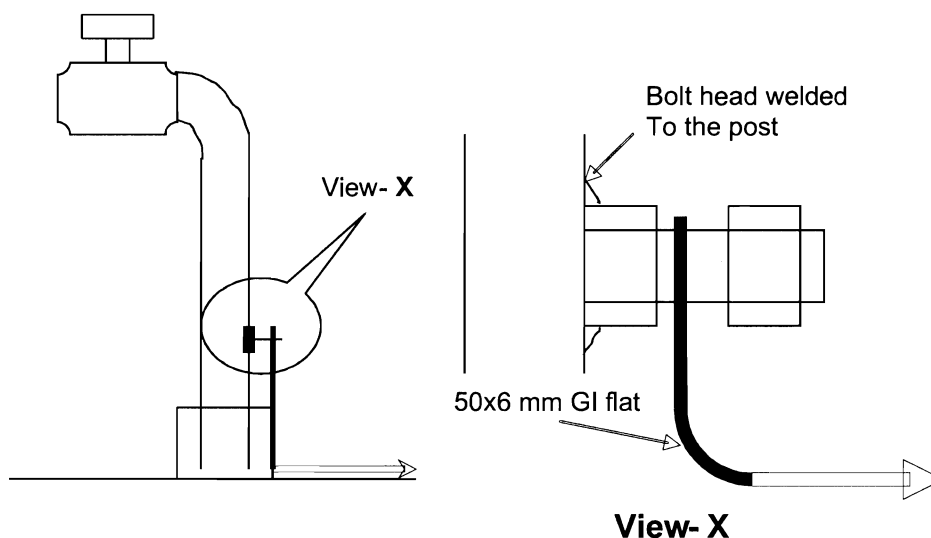


Fig.- Earthing of hydrant box / hose box

RELEASED FOR CONTRUCTION

**POWER GRID CORPORATION
OF INDIA LIMITED**
(A Government of India Enterprise)



**PROJECT :- TECHNICAL SPECIFICATION-
SWITCHYARD ERECTION**

TITLE:- STANDARD EARTHING DETAILS

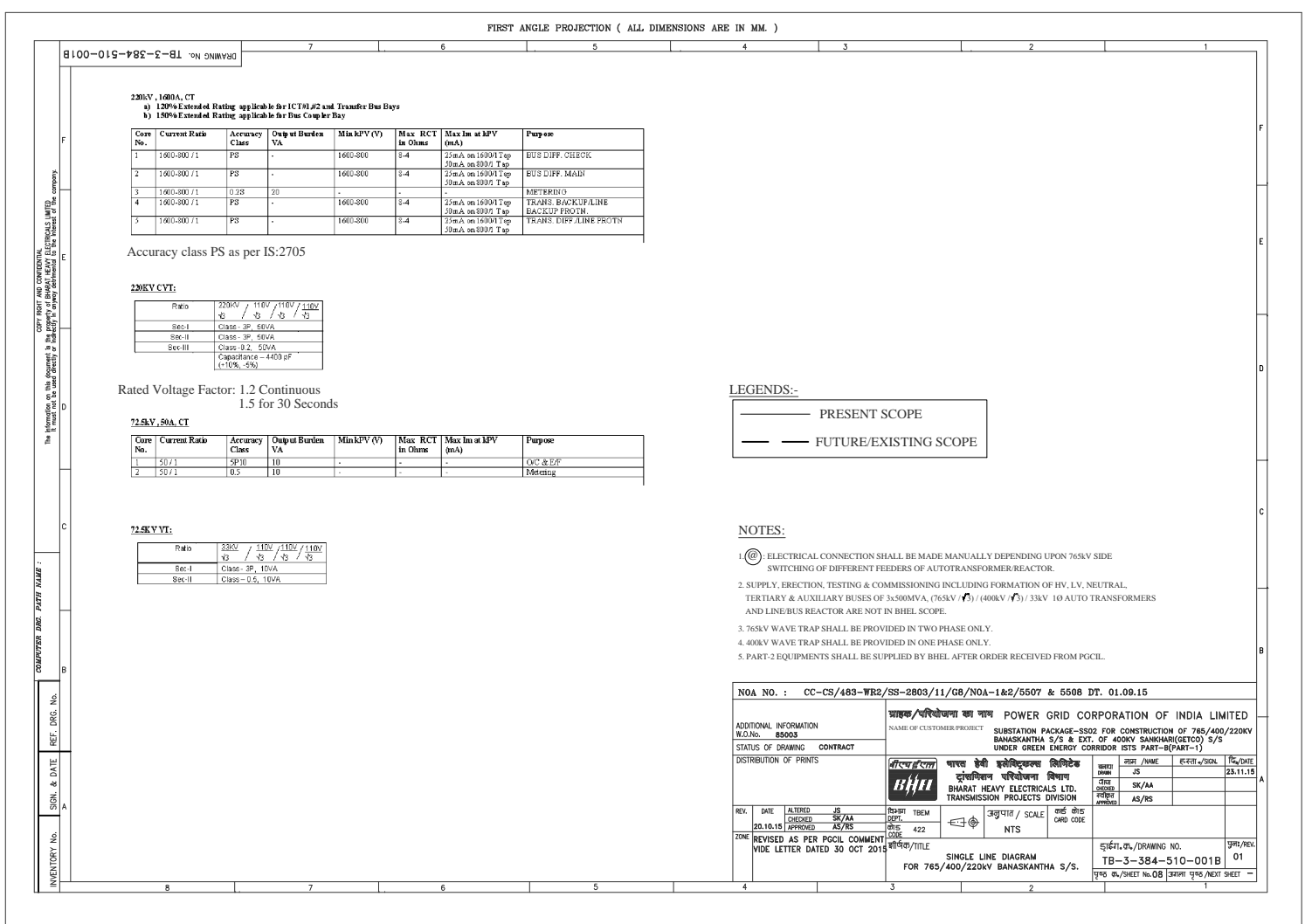
CKD BY

PRPD BY

Dec-2013




Drawing No.:
C/ENG/STD/EARTHINGS/09
SHEET # 28

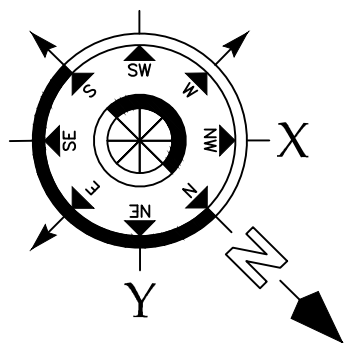
Date



PRINT SIZE A0 1

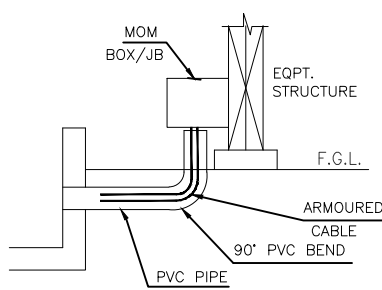


ADDITIONAL INFORMATION W.O.No.			POWER GRID CORPORATION OF INDIA, LTD. 765/400V/220KV BANASKANTHA S/S UNDER ISTS-6 HQA No. -- CC-5/483-WR2/SS-2803/(11/08)N/A--5507 & 5508 Dt 01 Sep/05							
STATUS OF DRAWING DISTRIBUTION OF PRINTS			 भारती हेवी इलेक्ट्रिकल लिमिटेड BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION PROJECTS DIVISION					ड्राफ्ट्समैन JK	चेक करी SK	दिनांक 06.02.11
REV.	DATE	ALTERED CHECKED APPROVED	डिजाइन प्रो.सं. जूरी		गुणन / SCALE NTS	फीड कोड CARD CODE AS/RS				
ZONE			नाम/प्र./TITLE SECTIONAL ELEVATION FOR 400KV BANASKANTHA SUBSTATION				नुमाँ./DRAWING NO. TB-384-510-004		पृष्ठ/पृष्ठ 01	
							ठेका सं. CONTRACT NO. 01/भारती प्रोजेक्ट एरिया			



1. ALL DIMENSIONS ARE IN mm.
2. THE LOCATION OF CABLE TRENCHES MARKED IN THIS DWG MAY BE SLIGHTLY MODIFIED TO SUIT SITE CONDITIONS.
3. OPENINGS FOR TAKING OUT PVC PIPES TO EQUIPMENTS SHALL BE PROVIDED IN CABLE TRENCHES.
4. OPENING OF SIZE SUITABLE TO DIA. 50/110 PIPE SHALL BE PROVIDED BELOW TOP CABLE SUPPORT.
4. BMB = INDICATES BAY MARSHALLING BOX.
5. BMBs SHALL BE PLACED IN THE LOCATION SHOWN. EXACT COORDINATES TO BE SUITABLY DECIDED AT SITE.
6. CABLES SHALL BE LAID IN MULTILAYER ON CABLE SUPPORT (ANGLES)
7. CABLE SUPPORT SHALL BE PROVIDED AT EVERY 0.75m INTERVAL.
8. INSERTS MUST BE EMBEDDED AT EVERY 0.75m INTERVAL FOR FIXING CABLE SUPPORT.
9. AUXILIARY POWER CABLES SHALL BE LAID IN TOP TIERS AND CONTROL CABLES IN BOTTOM TIERS, AS PER TECHNICAL SPECIFICATION
0. BURIED CABLING SHALL BE DONE AS PER SPECIFICATION (INSTALLATION OF CABLES).
1. LOCATION CABLES FOR LIGHTING PURPOSE SHALL BE AS PER LIGHTING LAYOUT.
2. LOCATION OF CABLE TRENCHES INSIDE CONTROL ROOM SHALL BE SHOWN SEPARATELY.
3. EARTH CONDUCTOR 50x6 MS FLAT TO BE WELDED ON THE CABLE SUPPORT BEFORE INSTALLATION OF CABLES.
4. CABLES CROSSING ROAD/RAIL TRACK SHALL BE LAID IN BOX CULVERT
5. FOR POWER & CONTROL SEPARATE PIPES SHALL BE USED CONSIDERING 60% VOID FOR EACH PIPE I.E., 40% FILLING CRITERIA.
6. PLACEMENT OF AC MK KIOSK AND ITS CABLE TRENCH IS TENTATIVE. EXACT COORDINATES TO BE SUITABLY DECIDED AT SITE.
7. ————— INDICATES CABLES LAID IN PVC PIPES OF 50/110mm OUTER DIA AT DEPTH OF 300mm (MAX.)
CABLE FROM EQUIPMENT TO CABLE TRENCH SHALL RUN IN PVC PIPES.
8. MARKED THUS (S) INDICATES CABLE ENTRY/EXIT FROM EQUIPMENT.
9. ALL OTHER DETAILS PERTAINING TO CIVIL WORKS SHALL BE REFLECTED IN THE RESPECTIVE CIVIL DRAWINGS.
20. PVC PIPES SHALL BE SECURELY FIXED AT BOTH ENDS, EITHER EMBEDDED IN CONCRETE OR PROPERLY CLAMPED.
21. AFTER LAYING THE CABLES THE ENDS OF PIPES SHALL BE FULLY SEALED TO PREVENT INGRESS OF WATER INSIDE THE PIPE.
22. CONTROL CABLES & POWER CABLES MUST BE LAID IN SEPARATE PVC PIPES.
23. CABLE TRENCH SHALL BE PROVIDED ON MARSHALLING BOX SIDE OF EQUIPMENT.
24. THE PURPOSE OF TRENCH LAYOUT DRAWING IS FOR USE AS FOLLOWS:
 - TO BE USED AS CIVIL INPUT FOR CABLE TRENCHES.
 - FOR ERECTION OF CABLE RACKS AT SITE.
 - FOR CABLE LAYING AND ROUTING AT SITE.
25. CABLE RACK AND SUPPORTS SHALL BE PAINTED AFTER INSTALLATION WITH 2 COATS OF METEL PRIMER (COMPRISING OF RED OXIDE & ZINC CHROMATE IN A SYNTHETIC MEDIUM) FOLLOWED BY TWO FINISHING COAT OF ALUMINIUM PAINT.
26. ■ INDICATES BRICK WALL SHALL BE PROVIDED IN TRENCH WHERE FUTURE TRENCH/EQUIPMENT PIPE TERMINATED IN PRESENT SCOPE OF TRENCH.
27. SUITABLE PULL OUT BOX SHALL BE PROVIDED IF REQUIRED WHERE CABLE SHALL BE LAID IN PVC PIPE.
28. LONGITUDINAL SLOPE IN CABLE TRENCH SHALL BE TYPICALLY 1:500.
29. ■■■■■ INDICATE PIPE CULVERT.
30. RACK ASSEMBLIES FOR CABLE TRENCHES SHALL BE PROVIDED ON THE FACE OF TRENCH WALL MARKED ◀ THUS.
31. FOR ALL CIVIL WORKS EXECUTION POWER GRID APPROVED/RELEASED DRGS SHALL BE FOLLOWED.
32. UNDERGROUND LAYING OF FIBER OPTIC CABLE SHALL BE DONE IN GI PIPE.

WG. NO.	TITLE
FB-3-384-510-001B R01	SINGLE LINE DIAGRAM 765/400KV BANASKANTHA S/S
FB-384-510-002	ELECTRICAL LAYOUT PLAN FOR 765/400KV BANASKANTHA S/S
FB-384-607-601	765KV FOUNDATION LAYOUT FOR BANASKANTHA
FB-384-607-602	400KV FOUNDATION LAYOUT FOR BANASKANTHA



DETAIL SHOWING ROUTING OF
CABLE INSIDE PVC PIPE CABLE
TRENCH TO EQUIPMENT

ADDITIONAL INFORMATION W.D.NO.AA 11035 : PROJECT CODE - 384			ग्राहक/परियोजना का नाम NAME OF CUSTOMER POWER GRID CORPORATION OF INDIA LTD		
STATUS OF DRAWING			NAME OF PROJECT SSO2 for Construction of 765/400/220KV Banaskantha S/S and Extension of 400KV Sankhari (CETCO) S/S with Green Energy Corridors : Inter-State Transmission Scheme (ISTS) - Part B NOA NO.- CC-CS/483-WR2/SS-2803/11/G8/NOA-II/5507 & 5508 Dtd 01 Sep 2015		
DISTRIBUTION OF PRINTS			नाम / NAME स्थान / SIGN. दि./DATE JK -SD- 05.03.16		
सिफ्ट ईस्ट BHEL भारत हेवी इलेक्ट्रिकल्स लिमिटेड भारतीयविान परियोजना विभाग BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION PROJECTS DIVISION			कक्षा / CLASS चेक / CHECKED स्वीकृत / APPROVED SK AS		
REV.	DATE	ALTERED CHECKED APPROVED	विभाग / DEPT. कोड / CODE उलुपात / SCALE कार्ड कोड CARD CODE		
ZONE			शीर्षक /TITLE CABLE TRENCH LAYOUT - 400KV YARD BANASKANTHA SUB STATION	ड्राईंग क्र./DRAWING NO. TB-384-510-008 पृष्ठ./REV. 0	
			पृष्ठ क्र./SHEET NO. 01 अगला पृष्ठ /NEXT SHEET -		
5	4		3	2	PRINT SIZE A1 1