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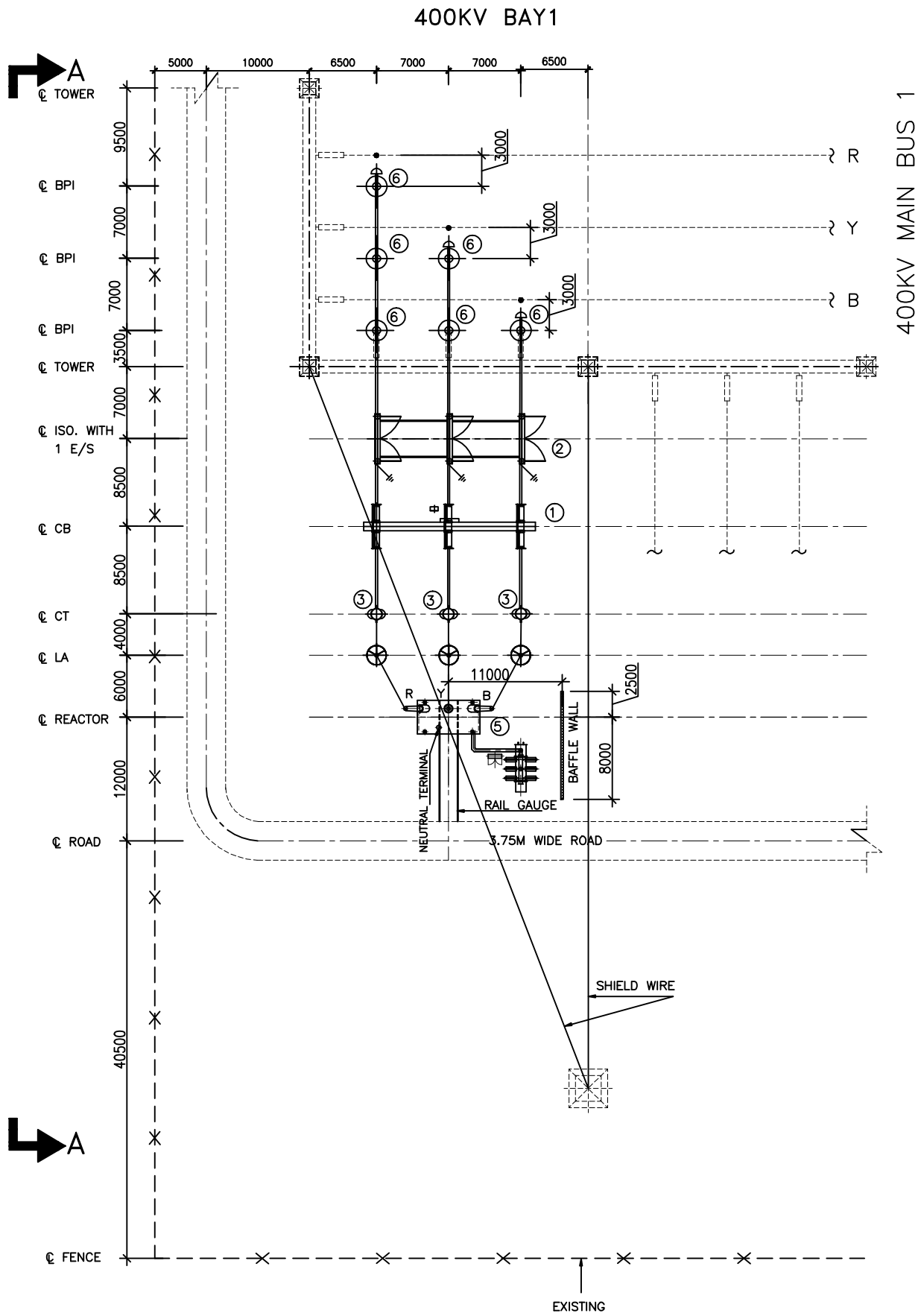
COMPUTER DRG. PATH NAME :

REF. DRG. No.

SIGN. & DATE

INVENTORY No.

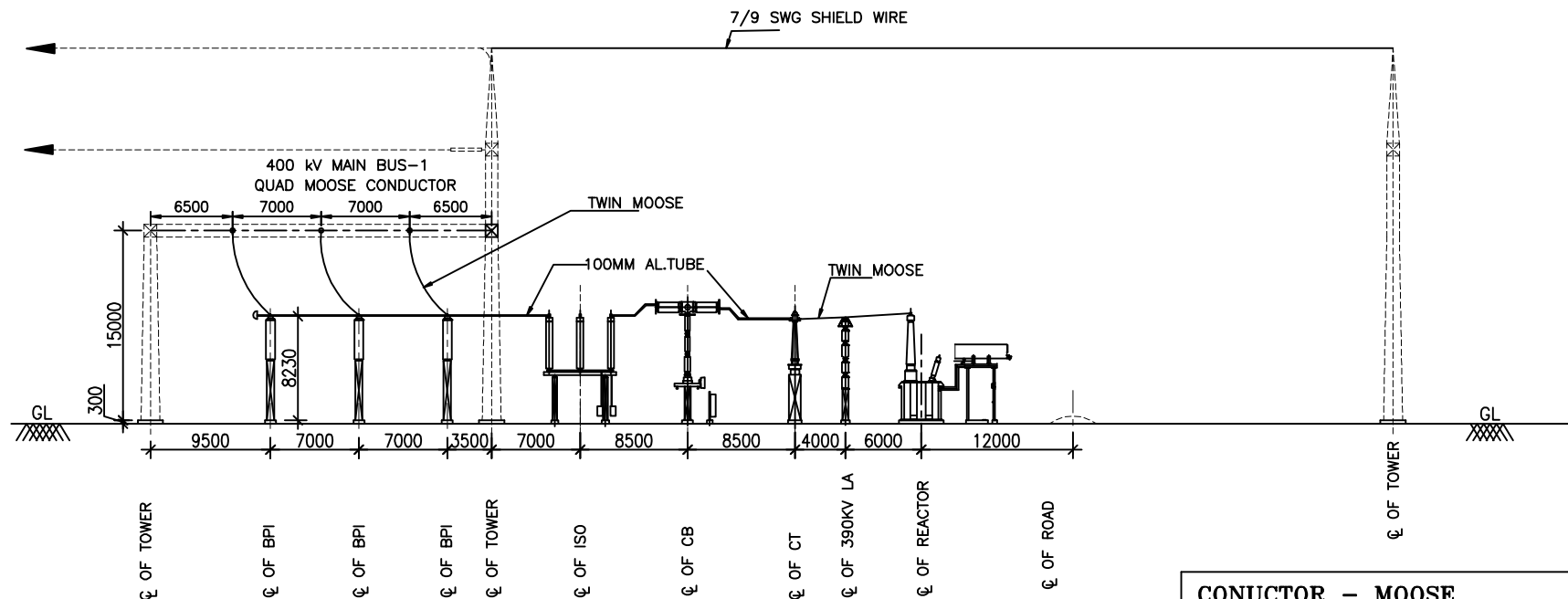
DRAWING No. TB-2-341-316-002



NOTES: -

1. ALL DIMENSIONS ARE MM.
2. ALL HEIGHT ARE ABOVE PLINTH LEVEL UNLESS OTHERWISE SPECIFIED.
3. _____ PRESENT SCOPE
4. _____ EXISTING
5. ALL NON-CUENT CARRYING METAL PARTS ARE TO BE EARTHED AND CONNECTED TO GROUND MAT.
6. WHILE INSTALLING THE EQUIPMENTS IT MAY BE ENSURED TO INSTALL THE BREAKER , CTs, ISOLATORS, LIGHTING ARRESTORS, STRUCTURES IN LINE WITH SIMILAR EQUIPMENTS OF ADJACENT BAYS WHEREVER FEASIBLE.
7. CABLE DUCTS SHALL BE SHOWN SEPERATELY IN CABLE TRENCH DRAWING.
8. GROUND MAT IS TO BE PROVIDED FOR THE NEW REACTOR BAY IN CONSULTATION WITH SEE (R&D).
9. LA PRESSURE RELIEF VALVE SHALL NOT BE TOWARDS REACTOR SIDE/ ANY EQUIPMENT KEPT NEAR SURGE ARRESTER.

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM.)



SECTION A-A

SCHEDULE OF EQUIPMENT

S.NO.	DESCRIPTION	SYMBOL	QTY.
1	400kV, 2000A, 40kA, SF6 CIRCUIT BREAKER WITHOUT CLOSING RESISTOR		01
2	400kV, 3150A, 40kA, CENTRE BREAK ISOLATOR WITH ONE EARTH SWITCH		01
3	400kV, 2000/1-1A & 500/1-1-1A, 40kA, CURRENT TRANSFORMER		03
4	390kV, 10kA Closs-3 SURGE ARRESTER		03
5	63MVAR, 400KV REACTOR		01
6	400KV POST INSULATOR		06

PARTICULARS	400KV
1. BASIC INSULATION LEVEL (KV)	1425 KV
2. MINIMUM CLEARANCE (a) B/W PHASES (FOR RIGID BUS) (b) B/W PHASES (FOR STRUNG BUS) (c) B/W PHASES TO EARTH	4000 MM 4000 MM 3500 MM
3. (a) BAY WIDTH (b) HEIGHT OF MAIN BUS (c) HEIGHT OF JACK BUS	27000 MM 15500 MM 20000 MM
4. HEIGHT OF LIVE POINT OF VARIOUS EQUIPMENTS ISOLATOR, CT, BREAKER ETC.	8230 MM
5. POWER FREQUENCY WITH STAND VOLTAGE	630 KV
6. CREPAGE DISTANCE	10500 MM
7. SECTIONAL CLEARANCE	6500 MM

REFERENCE DWG.

DWG.NO.: KPTCL/TECH/SS-400/NEL-1
DWG.TITLE: LAYOUT PLAN FOR MODIFICATION WORKS AT 400/220 KV S/S NELAMANGLA.

CONDUCTOR - MOOSE

1.	STANDING AND WIRE DIAMETER	54/3.53(AL) +7/3.53(STEEL)
2.	SECTIONAL AREA OF ALUMINIUM	528.5 SQ.MM.
3.	TOTAL SECTIONAL AREA	597.00 SQ.MM.
4.	OVERALL DIA	31.77 MM.
5.	WEIGHT (APPROX.)	2004 KG/M
6.	DC RESISTANCE AT 20 °C	0.05552 OHM/KM
7.	MINIMUM U.T.S.	161.2 KN



CONDUCTOR-ALUMINIUM TUBE-100MM

1.	NOMINAL SIZE	100 MM
2.	OUTER DIAMETER	114.2 MM
3.	INNER DIAMETER	97.18 MM
4.	WALL THICKNESS	8.51 MM
5.	CROSS SECTION	2825.61SQMM
6.	MAX. DC RESIST AT 20° C	-
7.	CURRENT RATING AT OUTDOOR	3150
8.	WEIGHT PER UNIT LENGTH	7.7 KG/M
9.	GRADE OF ALUMINIUM.	63401 WP (RANGE 2) AS PER IS 5082

EQUIPMENTS STRUCTURE QUANTITY

1.	400kV CT STRUCTURE (1Ph)	03
2.	LA STRUCTURE-390kV	03
3.	ISOLATOR STRUCTURE (3-PH)	01
4.	BPI STRUCTURE	06

BUS POST INSULATOR	TOP PCD	BOTTOM PCD	QTY.
400kV	127 MM	300 MM	06

ADDITIONAL INFORMATION W.O.No. 80008				ग्राहक/परियोजना का नाम KARNATAKA POWER TRANSMISSION CORPORATION LIMITED (INSTALLATION OF 1X63MVAR BUS REACTOR)					
STATUS OF DRAWING				NAME OF CUSTOMER/PROJECT					
DISTRIBUTION OF PRINTS				 <div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड इंजीनियरिंग परियोजना विभाग BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION PROJECTS DIVISION</div>		<div>खसका DRAWN</div> JUGENDRA	<div>हस्ता./SIGN.</div> JUGENDRA	<div>दि./DATE</div> 31.01.11	
				<div>कोड CHECKED</div> MM/DKM	<div>स्वीकृत APPROVED</div> DS				
REV.	DATE	ALTERED	RK	विभाग DEPT.		अनुपात / SCALE	कार्ड कोड CARD CODE		
01	23.06.11	CHECKED	MM	कोड APPROVED					
ZONE	DRAWING REVISED AS PER KPTCL COMMENTS DATED 21.05.11			शीर्षक/TITLE	LAYOUT PLAN & SECTION FOR MODIFICATION WORKS AT 400/220KV S/S NELAMANGALA			ड्राईंग क्र./DRAWING NO. TB-2-341-316-002	पुनः/REV. 02
							पृष्ठ क्र./SHEET No. 01	अगला पृष्ठ/NEXT SHEET --	

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COMPUTER DRG. PATH NAME :

REF. DRG. No.

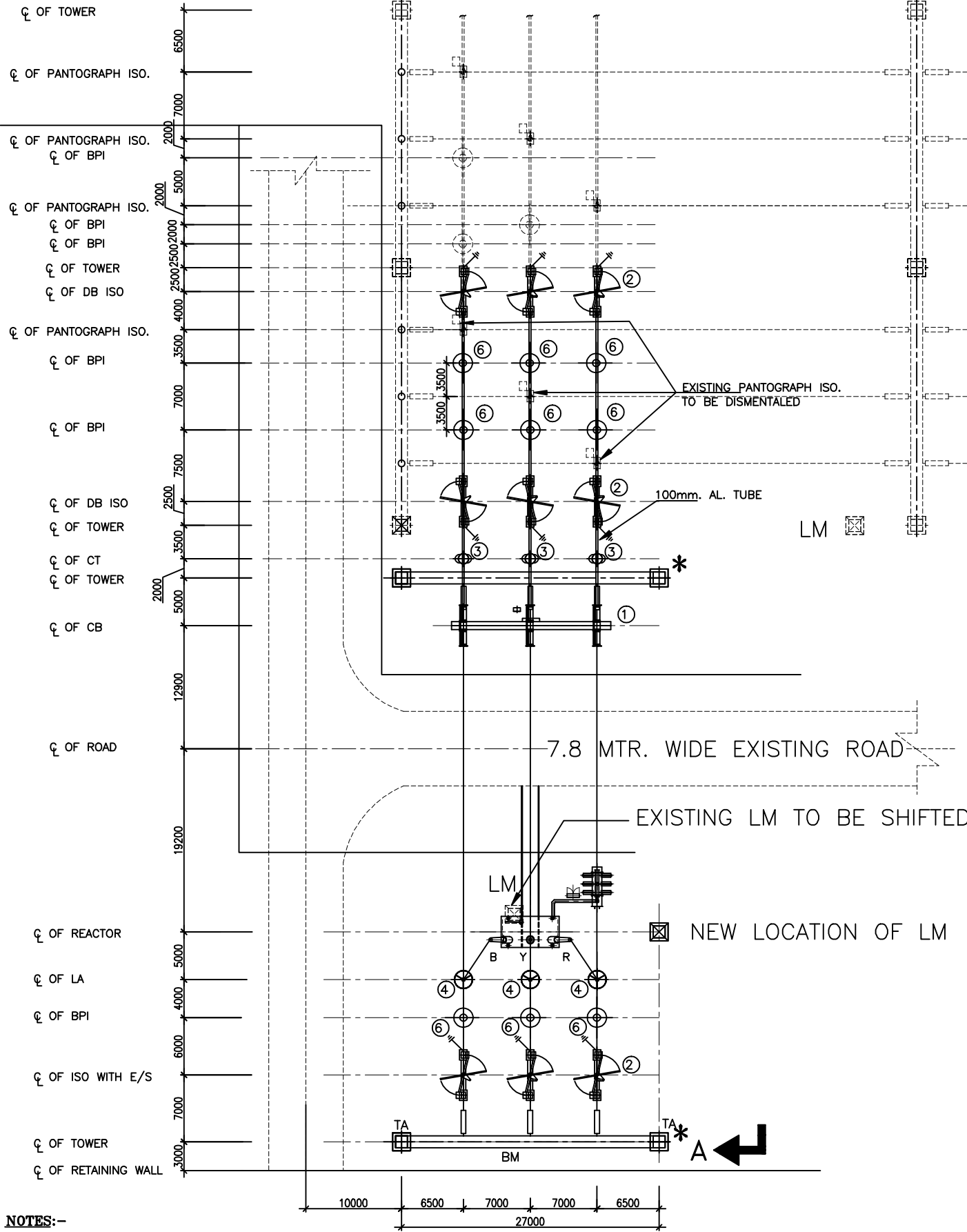
SIGN. & DATE

INVENTORY No.

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM.)

7
6
5
4
3
2
1

TO EXISTING
NELMANGLA LINE BAY



NOTES:-

1. ALL DIMENSIONS ARE MM UNLESS OTHERWISE SPECIFIED.
2. ALL HEIGHT ARE ABOVE PLINTH LEVEL UNLESS OTHERWISE SPECIFIED.
3. _____ PRESENT SCOPE
4. _____ EXISTING
5. EXISTING PANTOGRAPH ISOLATOR BENEATH BUS-1 IS TO BE DISMANTLED, CONNECTION OF MAIN BUS -1 TO THE REACTOR & NELAMANGALA LINE SHALL BE PROVIDED THROUGH NEW DOUBLE BRAKE ISOLATOR WHICH ARE TO BE PROVIDED AT NEW LOCATIONS.
6. EXISTING LM TO BE SHIFTED TO NEW LOCATION SHOWN.
7. ALL NON-CUENT CARRYING METAL PARTS ARE TO BE EARTHED AND CONNECTED TO GROUND MAT.
8. CABLE DUCTS SHALL BE SHOWN SEPERATELY IN CABLE TRENCH DRAWING.
9. GROUND MAT IS TO BE PROVIDED FOR THE NEW REACTOR BAY IN CONSULTATION WITH SEE (R&D).
10. WHILE INSTALLING THE EQUIPMENTS ARE MAY BE ENSURED TO INSTALL THE BREAKER , CTs, ISOLATORS, SURGE ARRESTORS, STRUCTURES IN LINE WITH SIMILAR EQUIPMENTS OF ADJACENT BAYS WHEREVER FEASIBLE.
11. LA PRESSURE RELIEF VALVE SHALL NOT BE TOWARDS REACTOR SIDE/ ANY EQUIPMENT KEPT NEAR SURGE ARRESTER.

* THE DESIGN OF BEAM AND COLUMN FOR REACTOR BAY WILL BE DONE BY BHEL AND SHALL BE SUBMITTED FOR APPROVAL.

SCHEDULE OF EQUIPMENT

S.NO.	DESCRIPTION	SYMBOL	QTY.
1	400KV, 2000A, 40KA FOR 1 SEC., 3-PH. SF6 CIRCUIT BREAKER WITHOUT CLOSING RESISTOR		01
2	400KV, 3150A, 40KA FOR 1 SEC., 3-PH. DOUBLE BREAK ISOLATOR WITH ONE EARTH SWITCH		03
3	400KV, 3000A, 40KA FOR 1 SEC., 1-PH. CURRENT TRANSFORMER		03
4	390KV, 10ka Class-3 SURGE ARRESTER		03
5	63MVAR, 400KV REACTOR		01
6	400KV POST INSULATOR		09

CONDUCTOR-ALUMINIUM TUBE-100MM

1. NOMINAL SIZE	100 MM
2. OUTER DIAMETER	114.2 MM
3. INNER DIAMETER	97.18 MM
4. WALL THICKNESS	8.51 MM
5. CROSS SECTION	2825.61SQMM
6. MAX. DC RESIST AT 20° C	-
7. CURRENT RATING AT OUTDOOR	3150
8. WEIGHT PER UNIT LENGTH	7.7 KG/M
9. GRADE OF ALUMINIUM.	63401 WP (RANGE 2) AS PER IS 5082

CONDUCTOR - MOOSE

1. STANDING AND WIRE DIAMETER	54/3.53(AL) +7/3.53(STEEL)
2. SECTIONAL AREA OF ALUMINIUM	528.5 SQ.MM.
3. TOTAL SECTIONAL AREA	597.00 SQ.MM.
4. OVERALL DIA	31.77 MM.
5. WEIGHT (APPROX.)	2004 KG/M
6. DC RESISTANCE AT 20° C	0.05552 OHM/KM
7. MINIMUM U.T.S.	161.2 KN

PARTICULARS	400KV
1. BASIC INSULATION LEVEL (KV)	1425 KV
2. MINIMUM CLEARANCE (a) B/W PHASES (FOR RIGID BUS) (b) B/W PHASES (FOR STRUNG BUS) (c) B/W PHASES TO EARTH	4000 MM 4000 MM 3500 MM
3. (a) BAY WIDTH (b) HEIGHT OF MAIN BUS(FROM GROUND)	27000 MM 15500 MM
4. HEIGHT OF LIVE POINT OF VARIOUS EQUIPMENTS ISOLATOR, CT, BREAKER ETC.	8000 MM
5. POWER FREQUENCY WITH STAND VOLTAGE	630 KV
6. CREPAGE DISTANCE	10500 MM
7. SECTIONAL CLEARANCE	6500 MM

EQUIPMENTS STRUCTURE QUANTITY

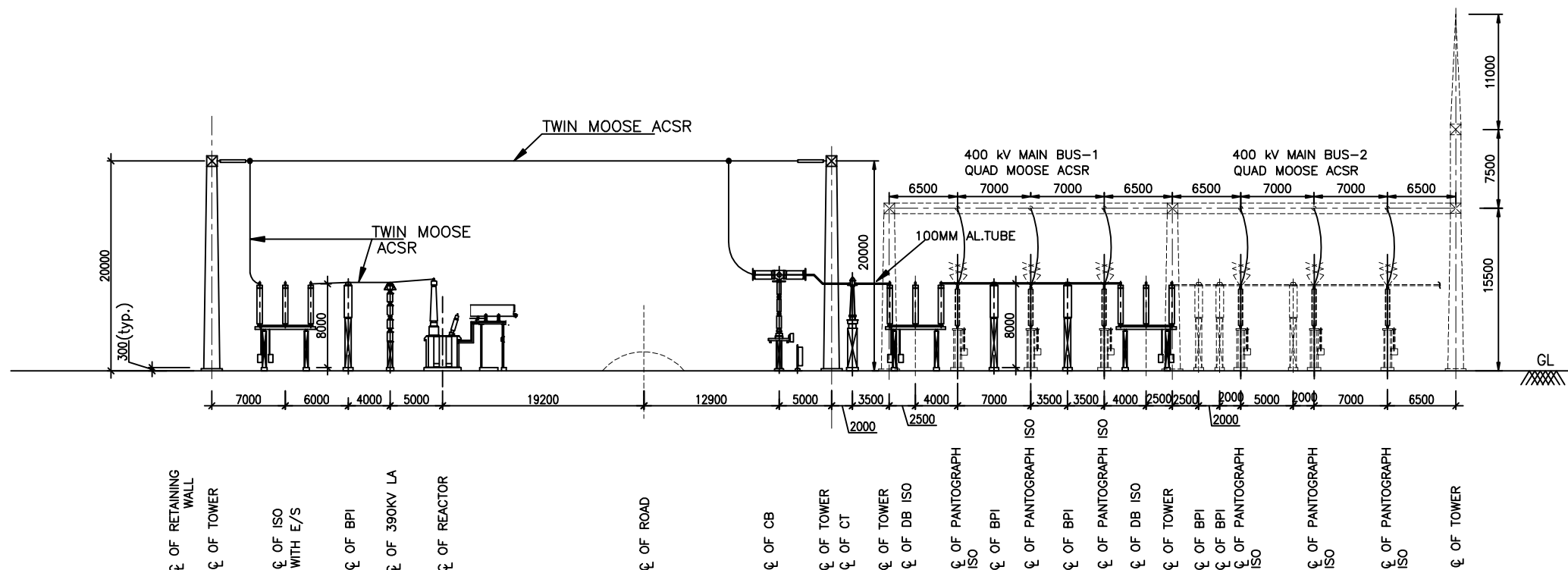
1. 400KV CT STRUCTURE	03
2. LA STRUCTURE-390KV (1Ph)	03
3. ISOLATOR STRUCTURE (3Ph)	3
4. BPI STRUCTURE	09

TOWERS

SL.NO.	TOWER DESIGNATION	STR. HEIGHT	QTY.
1	TA	20	04

BEAMS

SL.NO.	BEAM DESIGNATION	SPAN	QTY.
1	BM	27MTR.	02



SECTION A-A

TO BE DISMANTLED AND NEW DOUBLE BREAK ISOLATOR ARE TO BE PROVIDED AT NEW LOCATION (AS SHOWN IN LAYOUT PLAN) FOR CONNECTION OF MAIN BUS-1 TO REACTOR AND NELAMANGALA LINE

REFERENCE DWG.

DWG.NO.: KPTCL/TECH/SS-400/HDY-1
DWG.TITLE: LAYOUT PLAN FOR MODIFICATION WORKS AT 400/220 KV S/S (HOODY)

ADDITIONAL INFORMATION W.O.No. 80008	ग्राहक/परियोजना का नाम KARNATAKA POWER TRANSMISSION CORPORATION LIMITED (INSTALLATION OF 1X63MVAR BUS REACTOR)
STATUS OF DRAWING	NAME OF CUSTOMER/PROJECT
DISTRIBUTION OF PRINTS	भारत हेवी इलेक्ट्रिकल्स लिमिटेड द्वारा निर्माण परियोजना विभाग BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION PROJECTS DIVISION
REV. DATE ALTERED RK 01 23.06.11 CHECKED MM APPROVED DKM	विभाग DEPT. कोड CODE
REV. DATE ALTERED RK 02 29.09.11 CHECKED MM/DKM APPROVED RS	अनुपात / SCALE 1:500 कार्ड कोड CARD CODE
REV. DATE ALTERED RK 03 29.09.11 CHECKED MM/DKM APPROVED RS	ड्राईंग.क./DRAWING NO. TB-2-341-316-002A पृष्ठ क्र./SHEET No. 01
REV. DATE ALTERED RK 04 29.09.11 CHECKED MM/DKM APPROVED RS	पुनः/REV. 02 पृष्ठ क्र./SHEET No. 01

V100-015-142-3-BL

ON DRG

1

2

3

4

5

6

7

TO NALANGALA LINE BAY

EXISTING
PANTOGRAPH
ISOLATOR

MAIN BUS-II

400-89C
400-89CE

MAIN BUS-I

400R-89A
400R-89AE

400R-CT

400R-52

400R-89B
400R-89BE

400R-LA(390kV)

REACTOR BUSHING CT (BUS SIDE CT)

63MVAR REACTOR

REACTOR NEUTRAL CT

SCHEDULE OF EQUIPMENT

S.NO.	DESCRIPTION	SYMBOL	ABR.	QTY.
1	400kV, 2000A, 40KA FOR 1 SEC., 3-PH. SF6 CIRCUIT BREAKER WITHOUT CLOSING RESISTOR		52	01
2	400kV, 3150A, 40KA FOR 1 SEC., 3-PH. DOUBLE BREAK ISOLATOR WITH ONE EARTH SWITCH		89 89E	03
3	400kV, 3000A, 40KA FOR 1 SEC., 1-PH. CURRENT TRANSFORMER		CT	03
4	390kV, 10KA Class-3 SURGE ARRESTER		LA	03
5	63MVAR, 400KV REACTOR			01

400 KV, 3000 A CURRENT TRANSFORMER

Core No.	RATIO	Output Burden at Highest Tap	Min KPV	Mox Ie	Mox Rct	Acc Class	Purpose
1	3000-2000 -500/1	-	3000-2000 -500 V	20 mA at KPV AT HIGHEST TAP	15-10-2.5 OHM	PS	Spare
2	3000-2000 -500/1	-	3000-2000 -500 V	20 mA at KPV AT HIGHEST TAP	15-10-2.5 OHM	PS	Reactor Differential
3	3000-2000 -500/1	20 VA	-	-	-	0.2	Metering
4	3000-2000 -500/1	-	3000-2000 -500 V	20 mA at KPV AT HIGHEST TAP	15-10-2.5 OHM	PS	Busbor Differential
5	3000-2000 -500/1	-	3000-2000 -500 V	20 mA at KPV AT HIGHEST TAP	15-10-2.5 OHM	PS	Busbor Differential, LBB

BUS REACTOR

COMPUTER DRG. PATH NAME :

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INVENTORY NO.

SIGN & DATE

REV. DATE

ALT.D.

CHD.

APPD.

REV. DATE

ALT.D.

CHD.

APPD.

02 01.08.11

MM

DKM/VK

RS

01 18.05.11

RK

MM/DKM

DS

NGR AND 120 KV LA REMOVED

DRAWING REVISED AS PER KPTCL
COMMENTS DATED 11.04.11

NAME

SIGN.

DATE

NAME OF CUSTOMER
KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

NAME OF PROJECT
(INSTALLATION OF 1X63MVAR BUS REACTOR)

BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION PROJECTS DIVISION

CARD CODE

SINGLE LINE DIAGRAM FOR MODIFICATION WORKS
AT 400/220KV S/S HOODY

NEXT SHEET
SHEET No.

01

DEPT.

CODE

TBEM

422

SCALE:1:500

W.O. No.

80008

DRG. No.

TB-3-341-510-001A

REV.

02

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COMPUTER DRG. PATH NAME :

REF. DRG. NO.

SIGN & DATE

INVENTORY NO.

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED			CHECKED
		APPD			APPD			APPD
						JOB No.		

LEGEND

- CONNECTION TO GROUND MAT THROUGH RISER.
- ⊗

PE

CONNECTION TO PIPE ELECTRODE.
- RISER

GENERAL NOTES:

- EARTH STRIP SHALL BE CLEATED TO LATTICE /PIPE TYPE STRUCTURE AT AN INTERVAL OF 1.0M.
- FOR WELDING DETAILS REFER SHEET #19, 20 & 21.
- E/WIRE DOWN CONDUCTOR SHALL BE CLEATED AT AN INTERVAL OF 2.0 M ALONG THE STRUCTURE. NO HOLES IN STRUCTURE ARE ALLOWED FOR THIS PURPOSE.
- NOT MORE THAN 2 RISERS ARE PERMISSIBLE PER PIG TAIL (40mm DIA. ROD.).
- SUBSTRUCTURE/STOOL SHALL NOT BE USED FOR EARTHING PURPOSE
- EARTHING LEAD FROM ON EQUIPMENT /STRUCTURE SHALL BE CONNECTED TO DIFFERENT EARTHING GRID.
- EQUIPMENT SHOWN IN DRAWING IS ONLY SYMBOLIC REPRESENTATION.

SHEET NO. DESCRIPTION

02. 400kV SF6 CIRCUIT BREAKER
03. 400kV POST INSULATOR (SOLID CORE TYPE)
04. 390kV LIGHTNING ARRESTER
05. MARSHALLING KIOSK
06. 400/220kV HORIZONTAL DOUBLE BREAK ISOLATOR WITH ONE EARTH SWITCH
- 6A. 400kV HORIZONTAL CENTER BREAK ISOLATOR WITH ONE EARTH SWITCH
- 6B. 400kV HORIZONTAL CENTER BREAK ISOLATOR WITH TWO EARTH SWITCH
- 6C. 400kV PANTOGRAPH ISOLATOR WITHOUT EARTH SWITCH
- 6D. 400kV PANTOGRAPH ISOLATOR WITH ONE EARTH SWITCH
- 07 SHIELD WIRE TOWER
- 07A. LIGHTNING MAST
- 07B. ROD ELECTRODE WITH TEST LINK FOR LM, TOWER WITH PEAK AND LA
08. 400/220/66kV CURRENT TRANSFORMER
09. CABLE TRENCH
10. DETAIL OF PIPE EARTH ELECTRODE IN TREATED EARTH PIT (ET)

SHEET NO. DESCRIPTION

11. RAIL BONDING
12. AUXILIARY EARTH MAT FOR ISOLATOR MAIN MECH.,E/S MECH. BOX.
13. SWITCHGEAR / MCC / CONTROL AND RELAY BOARD/AC KIOSK
14. 400kV SHUNT REACTOR.
15. FENCE POST
16. TYPICAL ARRANGEMENT OF EQUIPMENT EARTHING WITH MAIN GRID
17. WELDING DETAILS
- 17A. WELDING DETAILS
- 17B. WELDING DETAILS

FOR TENDER PURPOSE ONLY

W.O.NO. 80008/80009

STATUS

CUSTOMER KARNATAKAPOWER TRANSMISSION CORPORATION LTD.

PROJECTS 400/220 KV NELAMANGLA & HOODY S/S
400/220 KV TALAGUPPA & GUTTUR S/S



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
ट्रान्समिशन परियोजना विभाग
BHARAT HEAVY ELECTRICALS LTD.
TRANSMISSION PROJECTS DIVISION

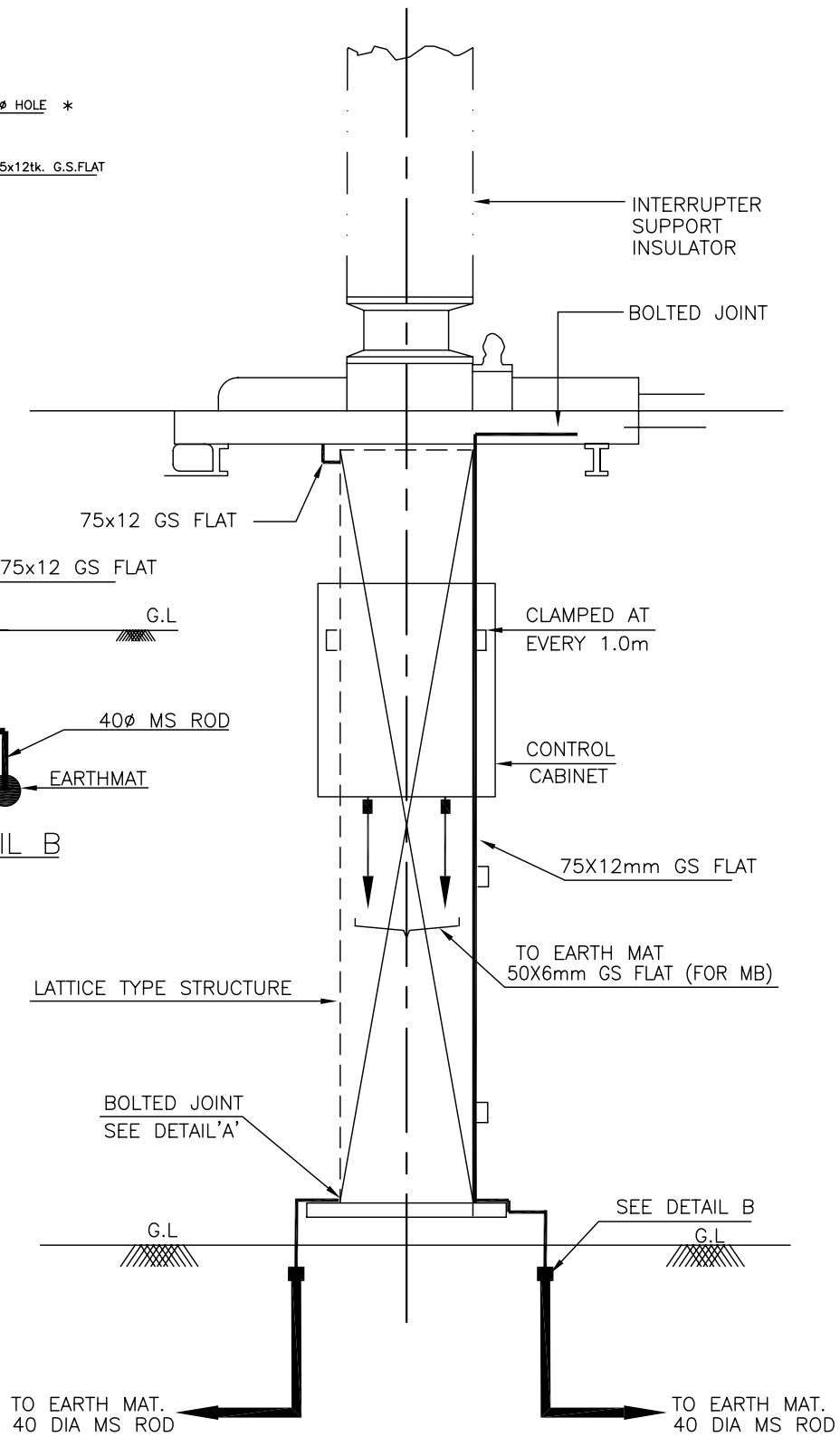
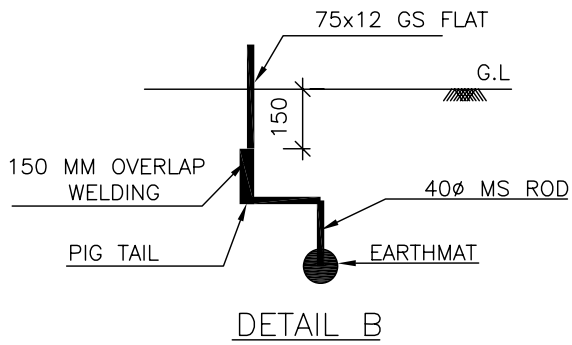
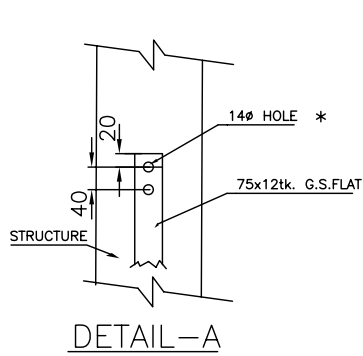
DEPT CODE		NAME	SIGN.	DATE
DRN				
DESN				
CHD				
APPD				

REV.	DATE	ALTD	CHD	APPD
01	25.1.2011	JUGENDRA	SK	DS

AS BUILT DRAWING

TITLE EQUIPMENT & STRUCTURE EARTHING DETAILS

						DEPT.	SCALE	DRAWING NO.
						SIGN		TB-4-342-316-005
						DATE		SHEET 1 OF REV. 00



NOTE:

1) * BOLT SIZE AND HOLE SIZE SHALL BE TO SUIT RESPECTIVE EQPT./STRUCTURE.



EQUIPMENT EARTHING DETAILS

400kV SF6 CIRCUIT BREAKER

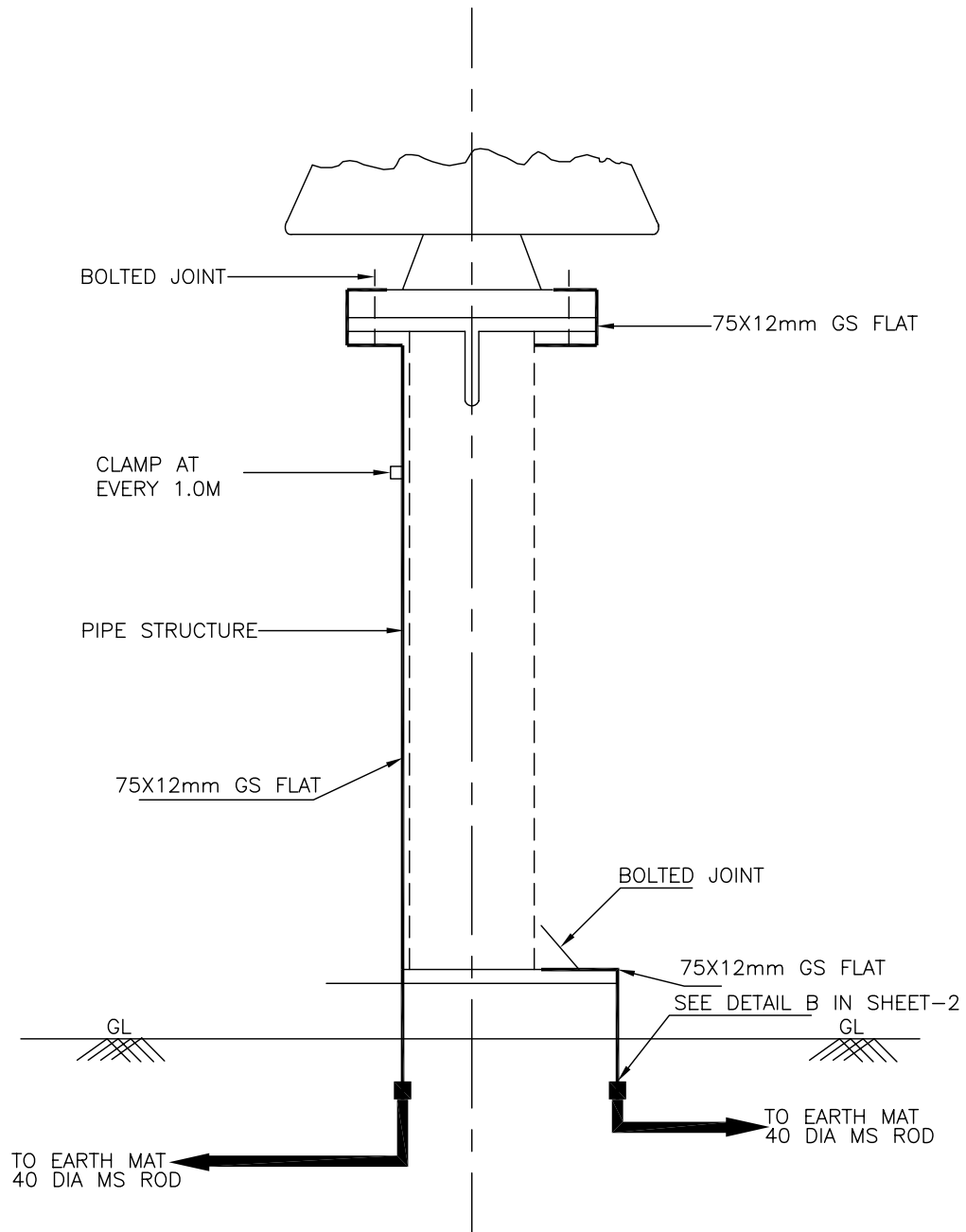
COMPUTERREF.NO.

DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
2

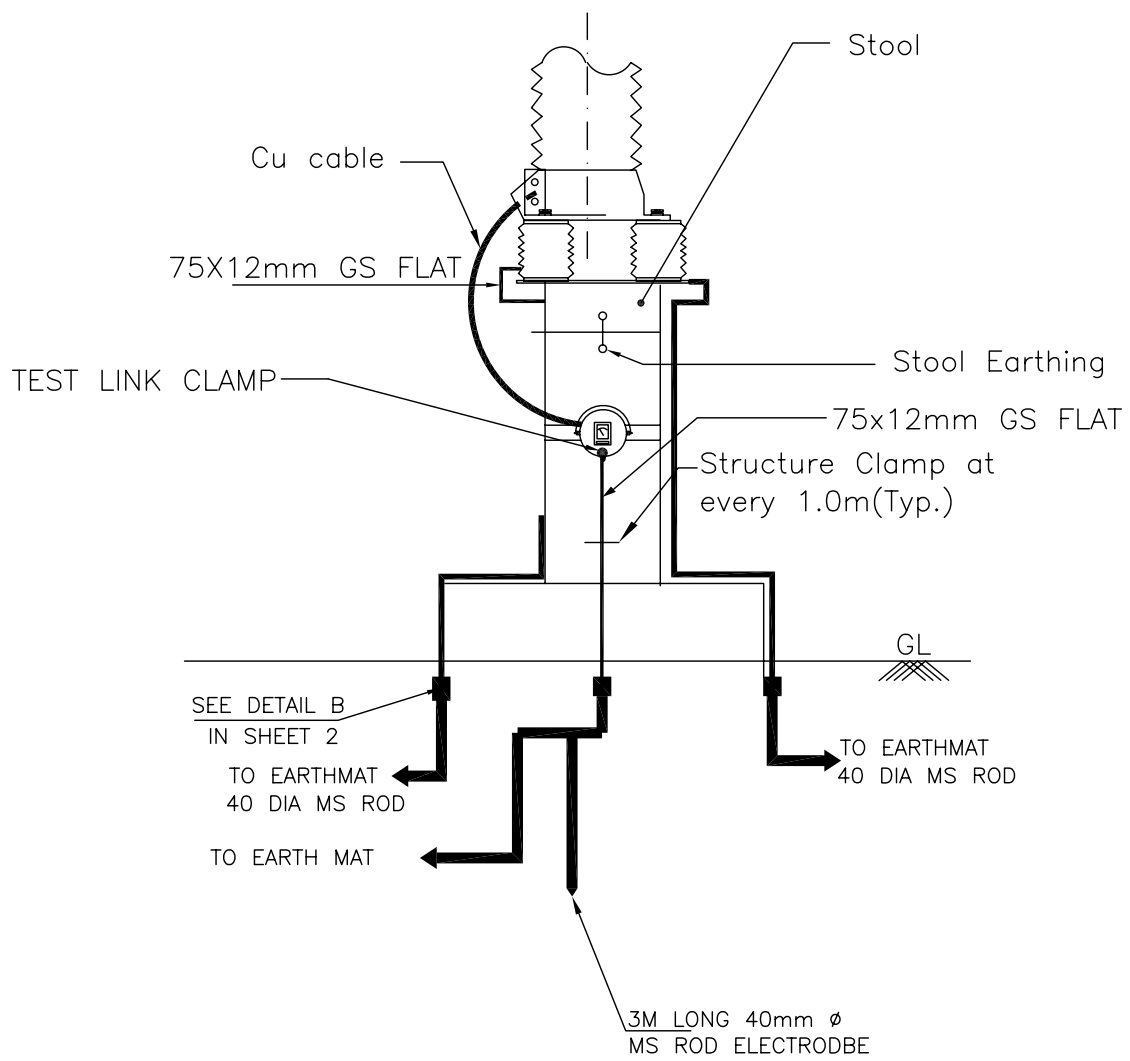


EQUIPMENT EARTHING DETAILS 400kV POST INSULATOR (SOLID CORE TYPE)

DRG. No. TB-4-342-316-005

REV. 00

SHEET No. 3



NOTES;

1. LA SHALL BE EARTHED THROUGH EARTH TERMINAL OF SURGE COUNTER
2. NO. OF ROD ELECTRODE 1 NO. PER PHASE,
3. TEST LINK SHALL HAVE PROVISION TO BOLT TEST LEAD BEFORE ISOLATING THE MAIN EARTHING CONNECTIONS (AS PER SKETCH ABOVE) = 1NO.



EQUIPMENT EARTHING DETAILS

LIGHTNING ARRESTER(390kV)

COMPU. DRG. REF.

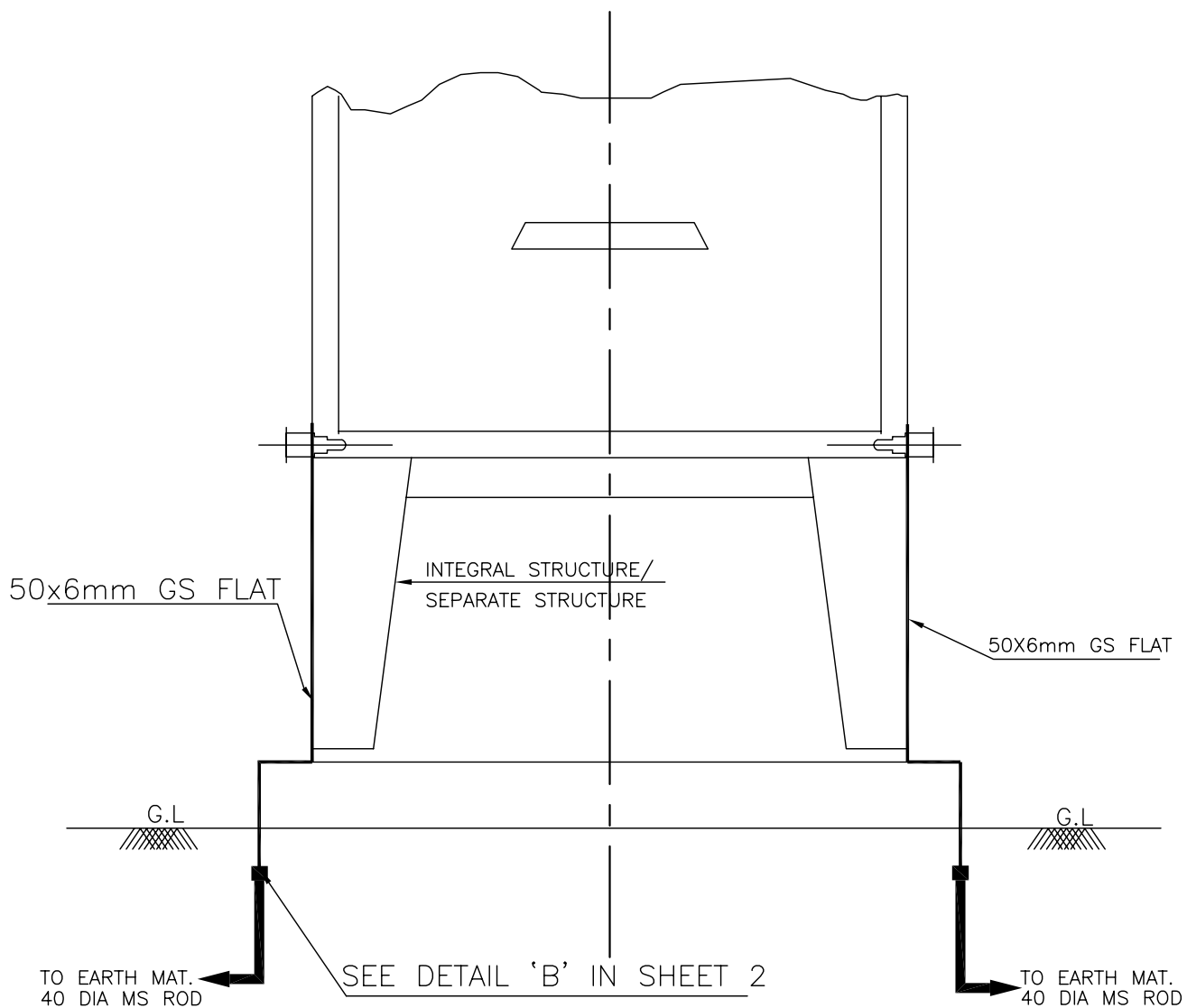
DRG.NO.

TB-4-342-316-005

REV. 00

SHEET No.

4



EQUIPMENT EARTHING DETAILS MARSHALLING KIOSK

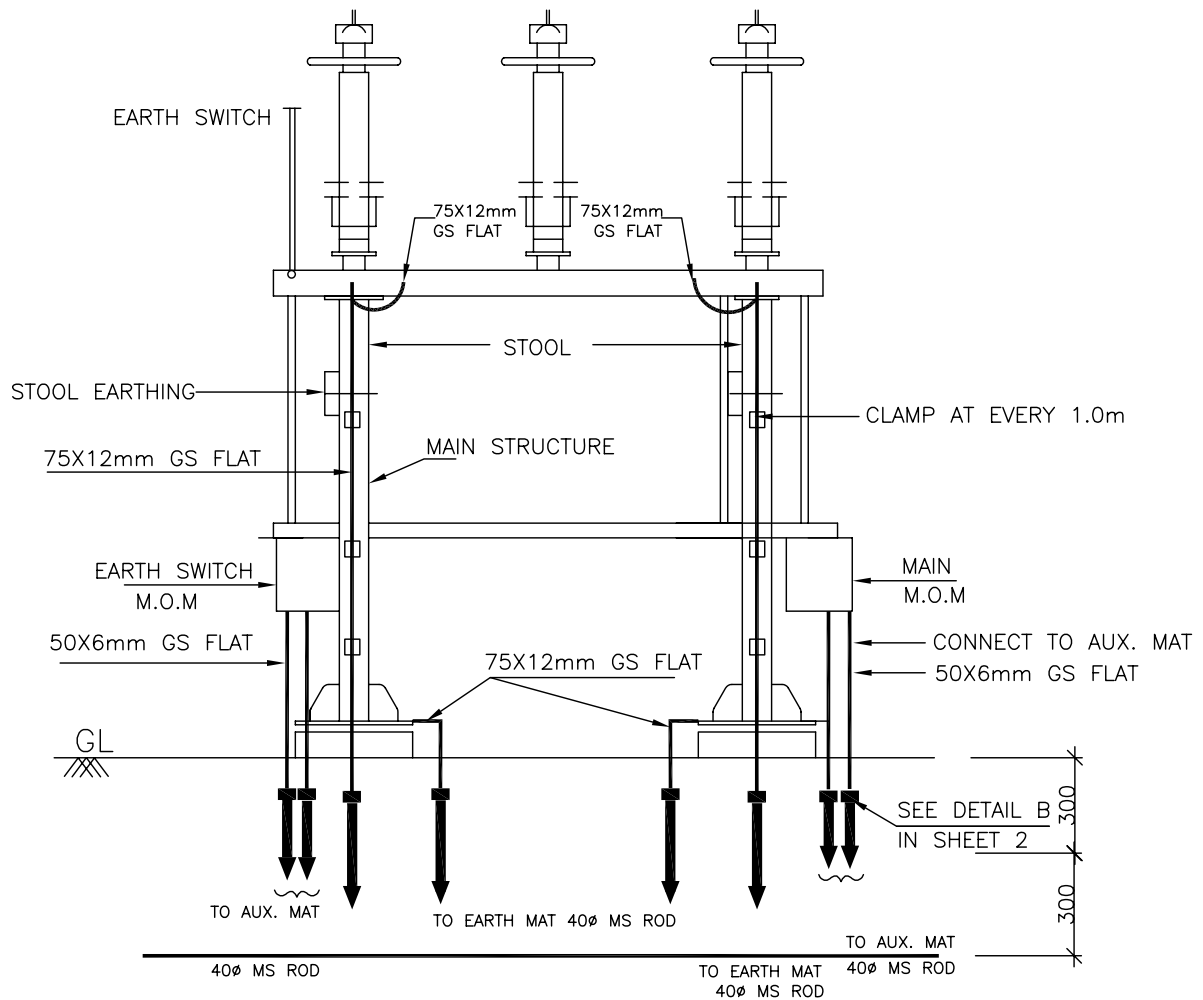
COMPUTERREF.NO.

DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
5



NOTES

1. AUXILIARY EARTH MAT SHALL BE PROVIDED BELOW EVERY MOM BOX (REFER SHEET 14)



EQUIPMENT EARTHING DETAILS

400/220kV DOUBLE BREAK ISOLATOR (TYPICAL) WITH ONE EARTH SWITCH

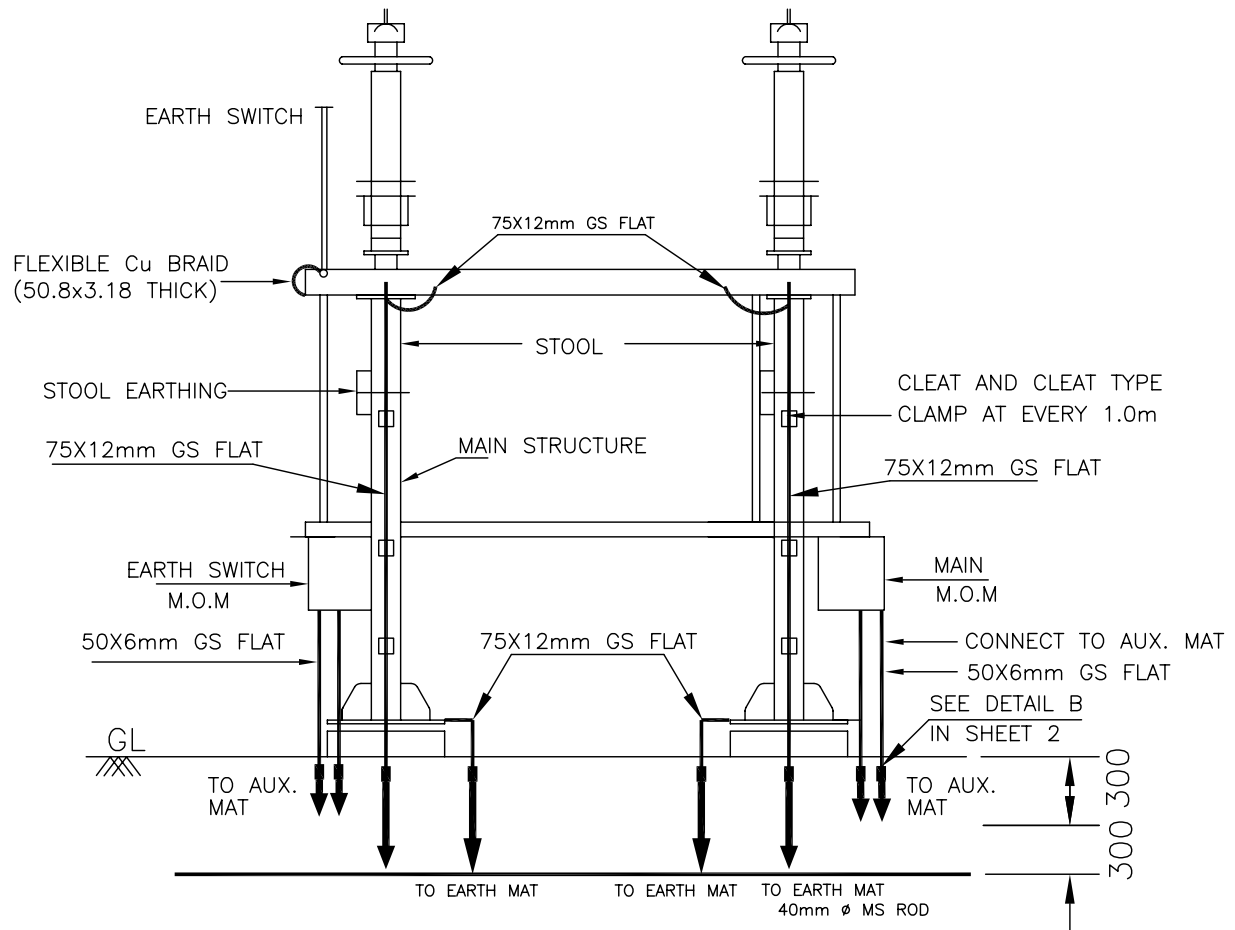
COMPUTERREF.NO.

DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
6



NOTES

1. AUXILIARY EARTH MAT SHALL BE PROVIDED BELOW EVERY MOM BOX (REFER SHEET 14).



EQUIPMENT EARTHING DETAILS

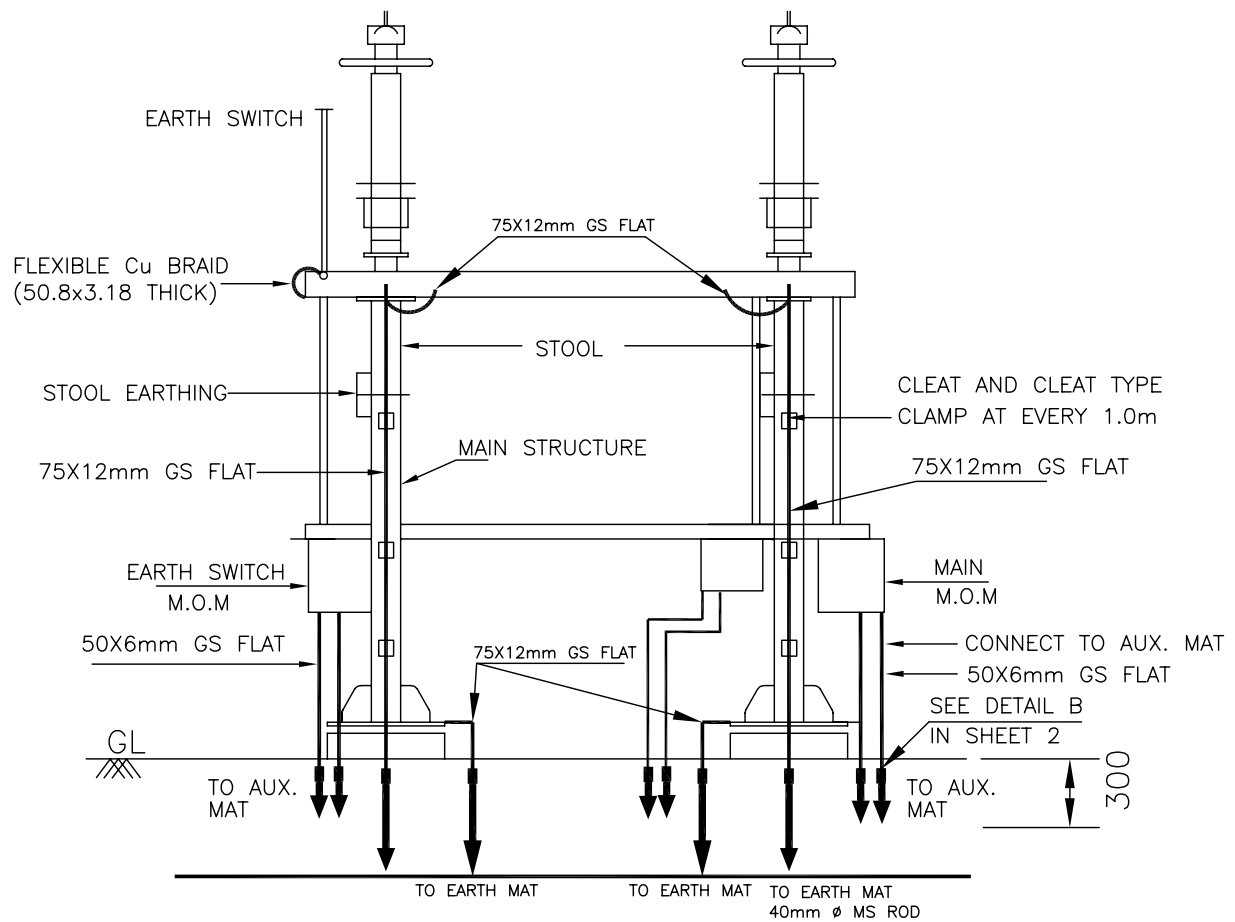
400kV HORIZONTAL CENTER BREAK ISOLATOR WITH 1 E/S

COMPUTERREF.NO.

DRG. No. TB-4-342-316-005

REV. 00

SHEET No.
6A



NOTES

1. AUXILIARY EARTH MAT SHALL BE PROVIDED BELOW EVERY MOM BOX (REFER SHEET 14).



EQUIPMENT EARTHING DETAILS

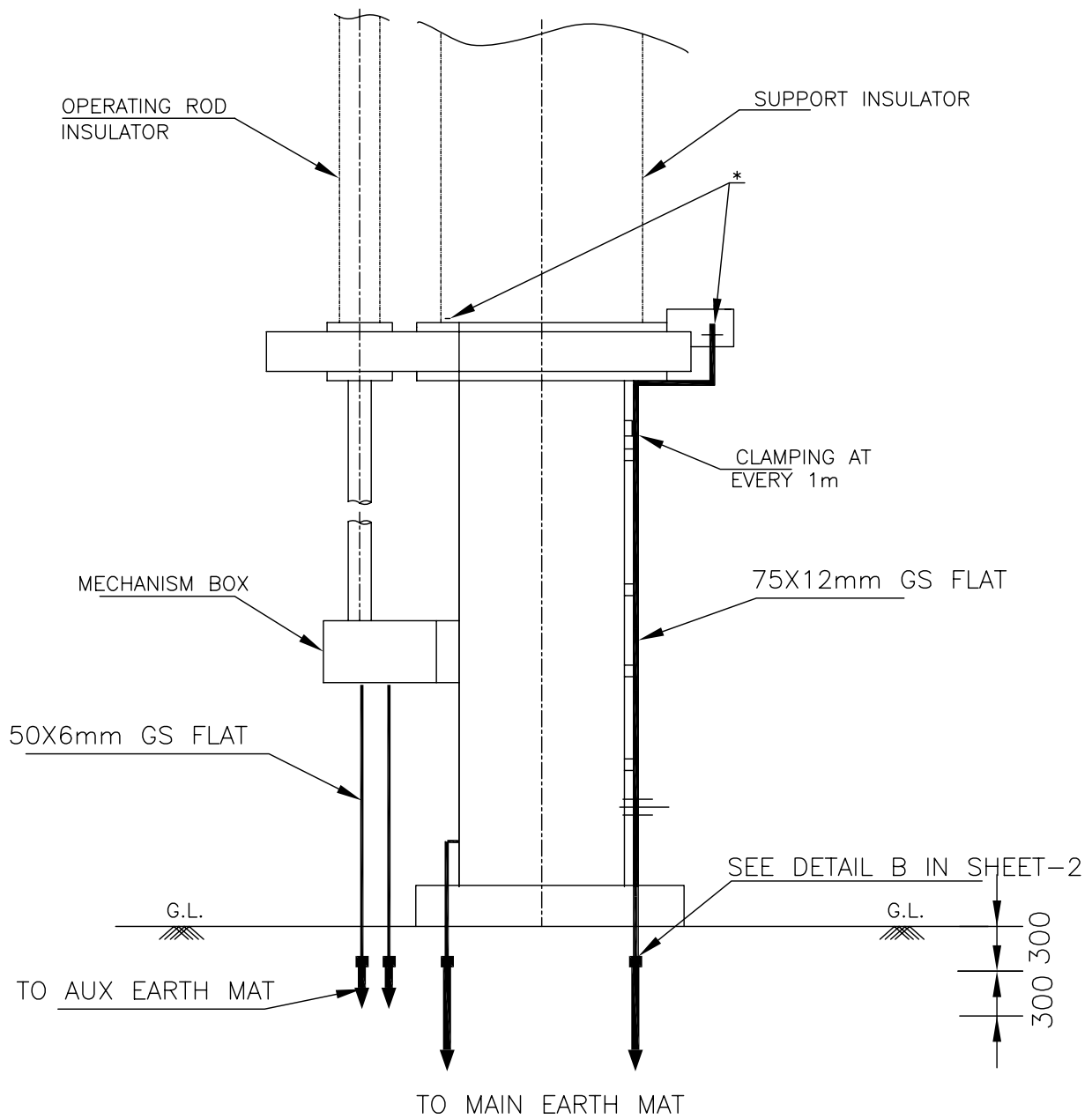
400kV HORIZONTAL CENTER BREAK ISOLATOR WITH 2 E/S

COMPUTERREF.NO.

DRG. No. TB-4-342-316-005

REV. 00

SHEET No.
6B



NOTES

1. AUXILIARY EARTH MAT SHALL BE PROVIDED BELOW EVERY MOM BOX (REFER SHEET 14).



EQUIPMENT EARTHING DETAILS

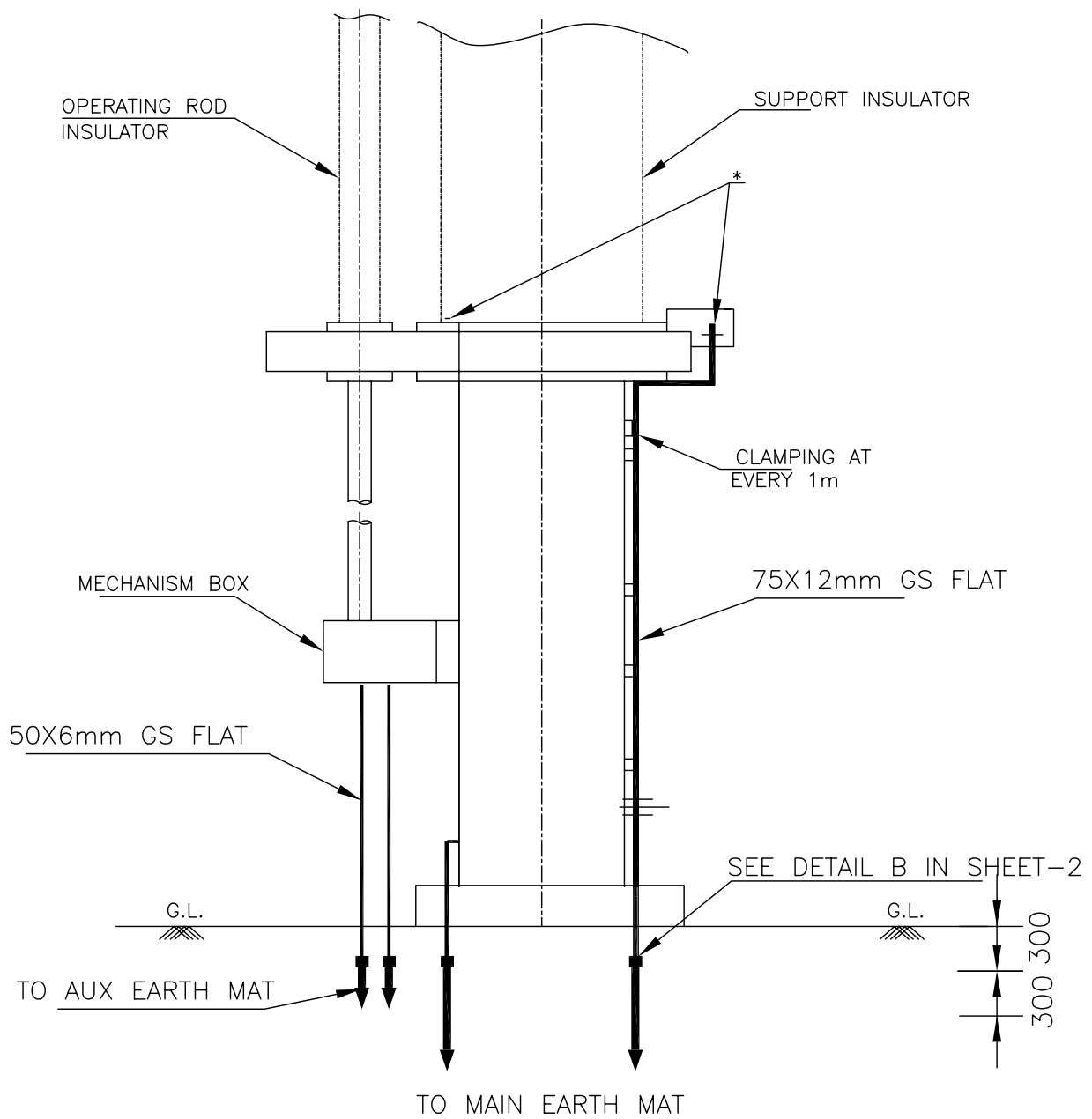
400kV PANTOGRAPH ISOLATOR WITHOUT E/S

COMPUTERREF.NO.

DRG. No. TB-4-342-316-005

REV. 00

SHEET No.
6C



NOTES

1. AUXILIARY EARTH MAT SHALL BE PROVIDED BELOW EVERY MOM BOX (REFER SHEET 14).



EQUIPMENT EARTHING DETAILS

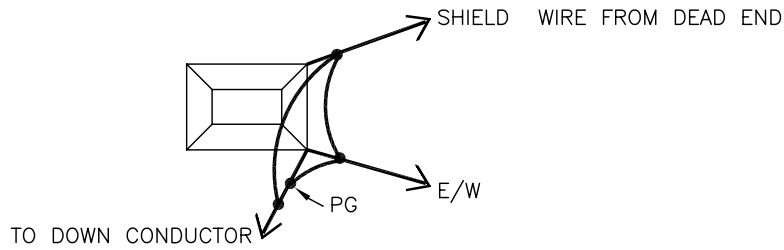
400kV PANTOGRAPH ISOLATOR WITH 1E/S

COMPUTERREF.NO.

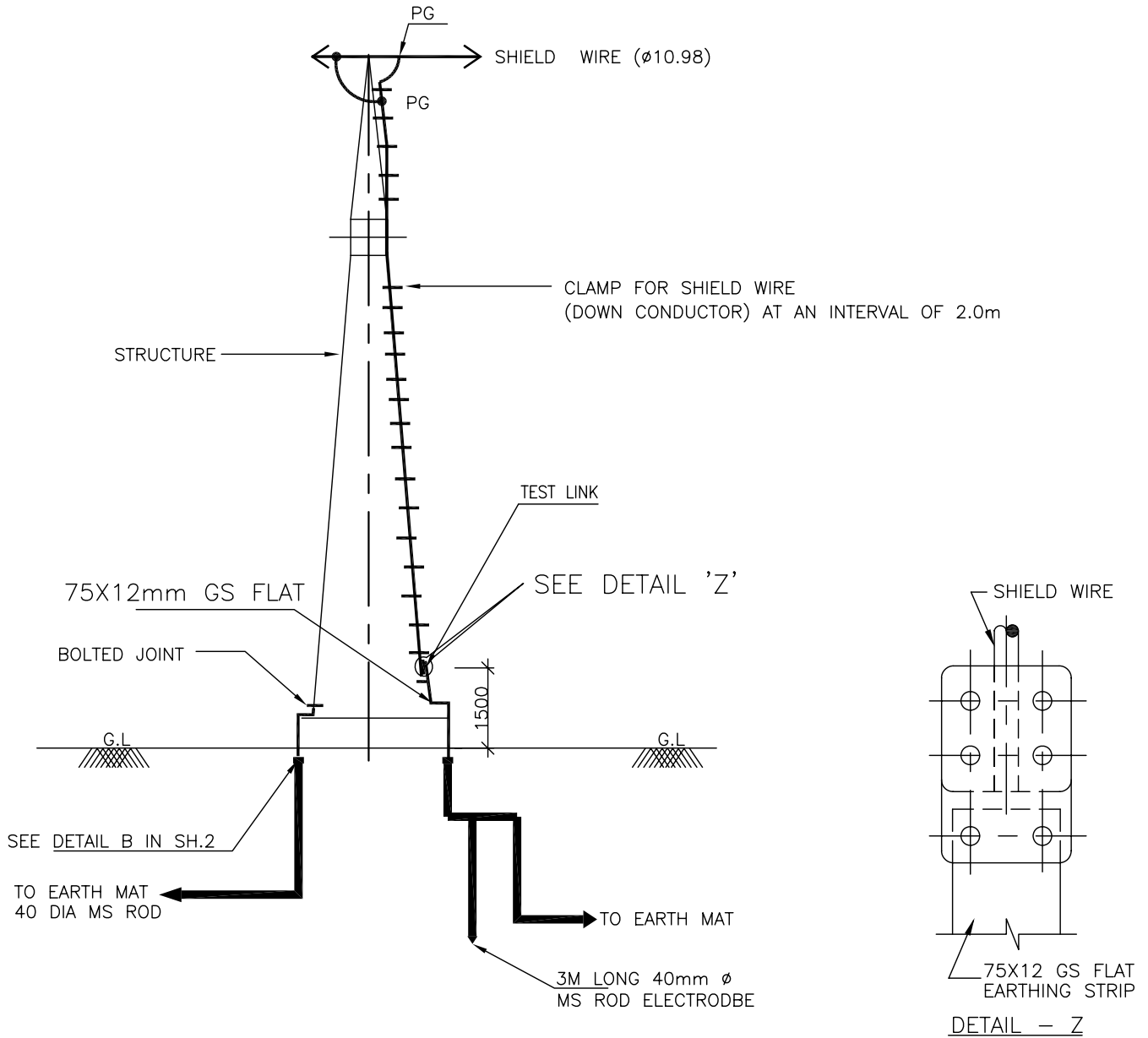
DRG. No. TB-4-342-316-005

REV. 00

SHEET No.
6D



DETAIL WHEN 2 & E/WIRE TERMINATES A TOWER



NOTE:

1. NO. OF ROD ELECTRODE : 1 NO. PER TOWER WITH DOWN CONDUCTOR.



EQUIPMENT EARTHING DETAILS

SHIELD WIRE TOWER

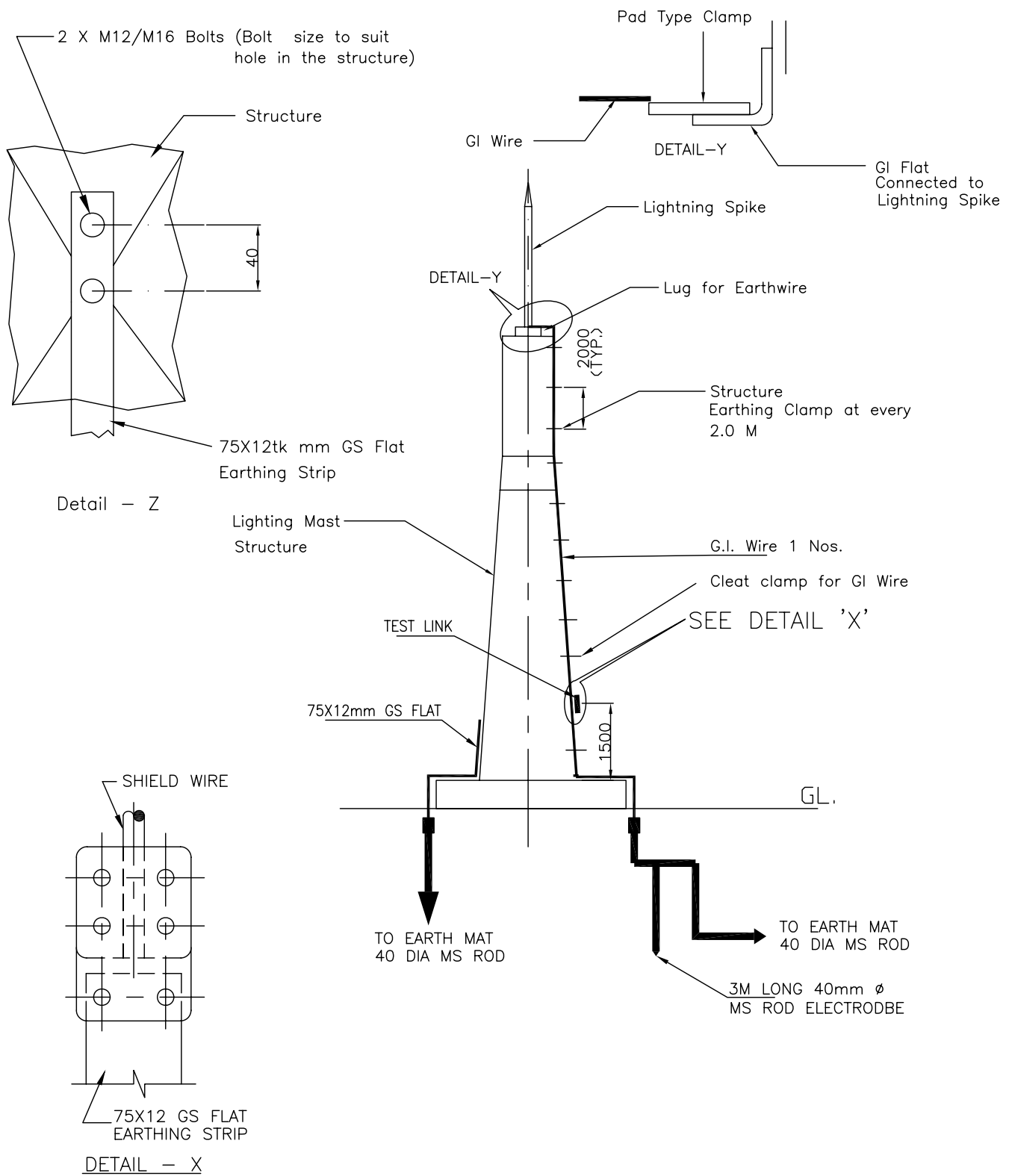
COMPUTERREF.NO.

DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
7



NOTES:

1. NO. OF ROD ELECTRODE : 1 NO.



EQUIPMENT EARTHING DETAILS
LIGHTNING MAST

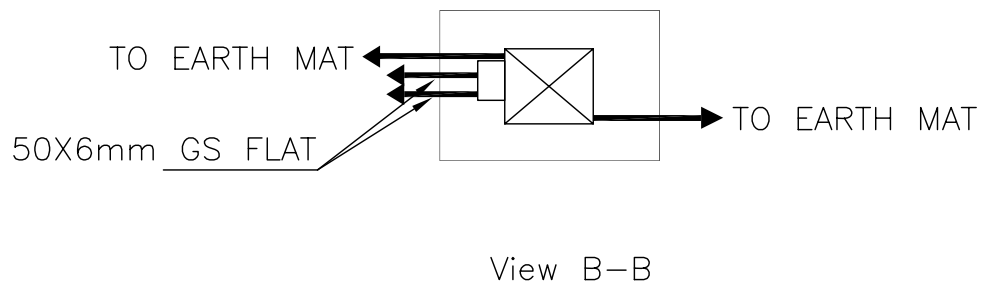
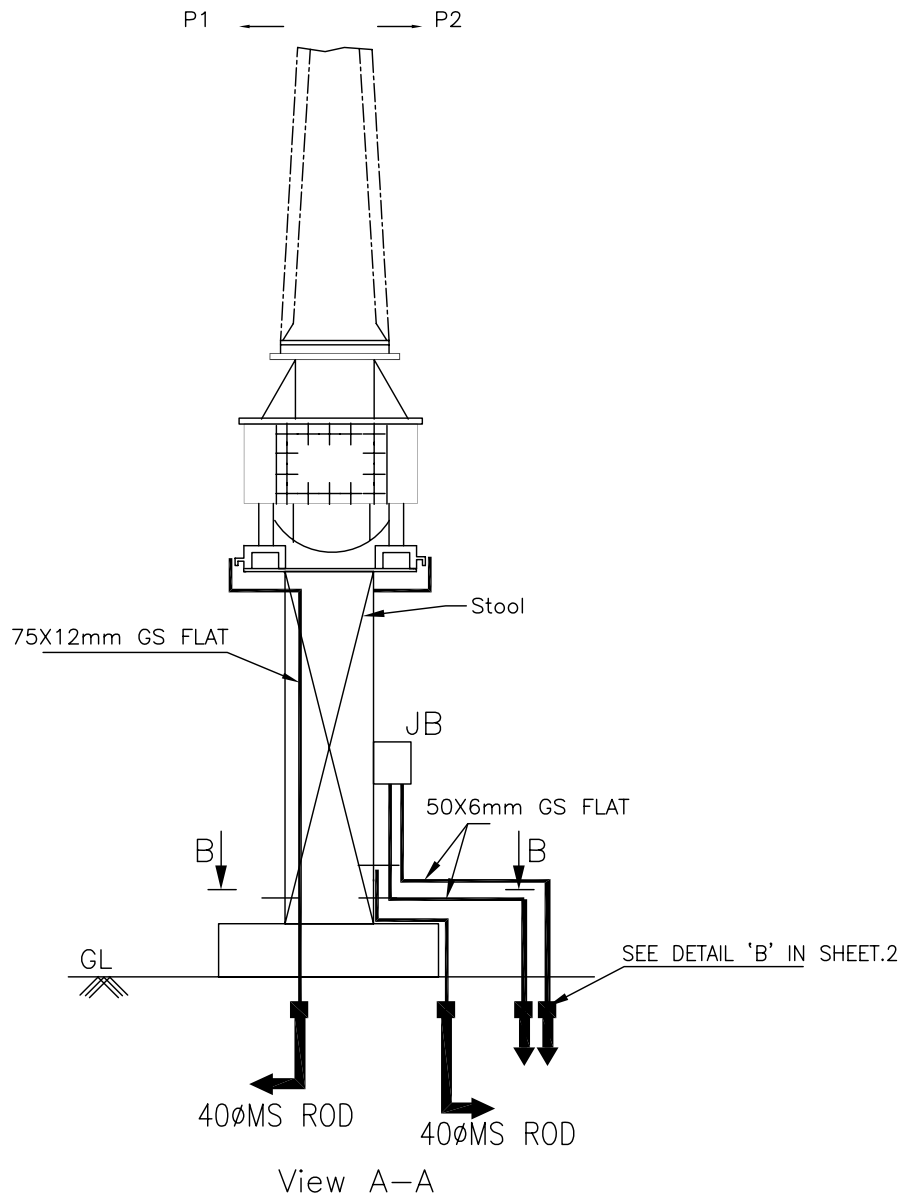
COMPUTERREF.NO.

DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
7A



EQUIPMENT EARTHING DETAILS 400 kV Current Transformer

COMPU. DRG. REF.

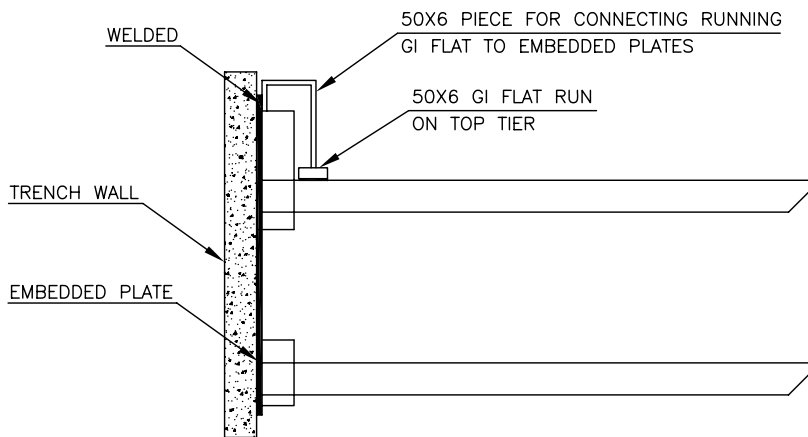
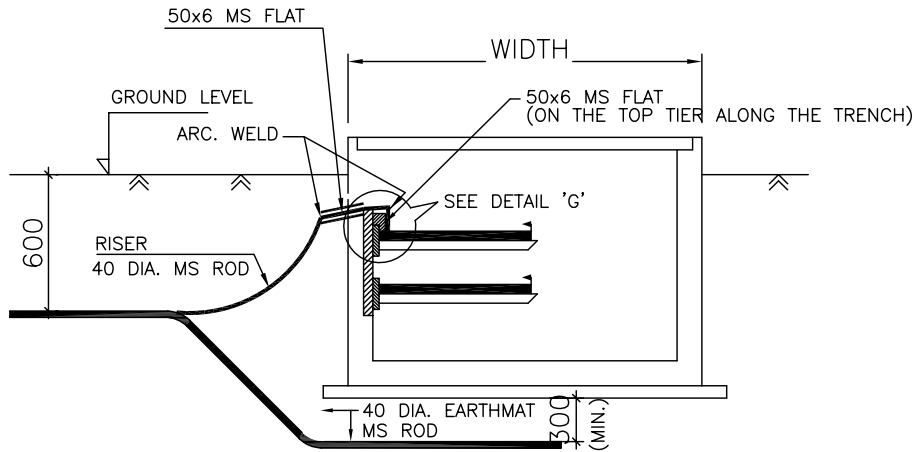
DRG.NO.

TB-4-342-316-005

REV. 00

SHEET No.

8



DETAIL 'G'

DETAIL FOR CONNECTING GI FLAT RUNNING HORIZONTAL ON TOP TIER TRENCH TO EMBEDDED PLATE.

NOTE:

1. ALL TRENCHES SHALL BE EARTHED AT AN INTERVAL OF 30M ALONG THE LENGTH OF TRENCH & FREE ENDS.
2. THE EARTH STRIP (50x6 MS FLAT) SHALL BE WELDED TO EMBEDDED PLATE AT EVERY 0.75M INTERVAL.
3. WHERE THE CABLE RACKS ARE PROVIDED ON BOTH SIDES OF THE TRENCH, BOTH SIDES SHALL BE EARTHED AS PER ABOVE.
4. THE MS FLAT SHALL BE FINALLY PAINTED WITH TWO COATS OF RED OXIDE PRIMER & TWO COATS OF POST OFFICE RED ENAMEL PAINT.



EQUIPMENT EARTHING DETAILS CABLE TRENCH

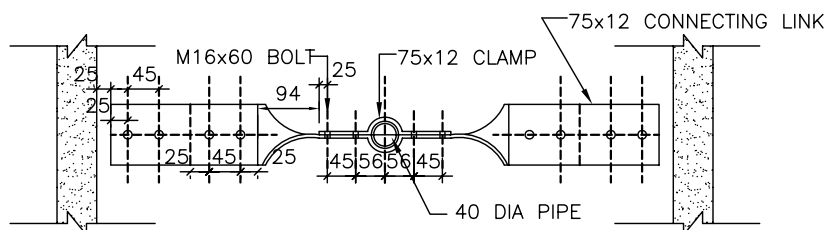
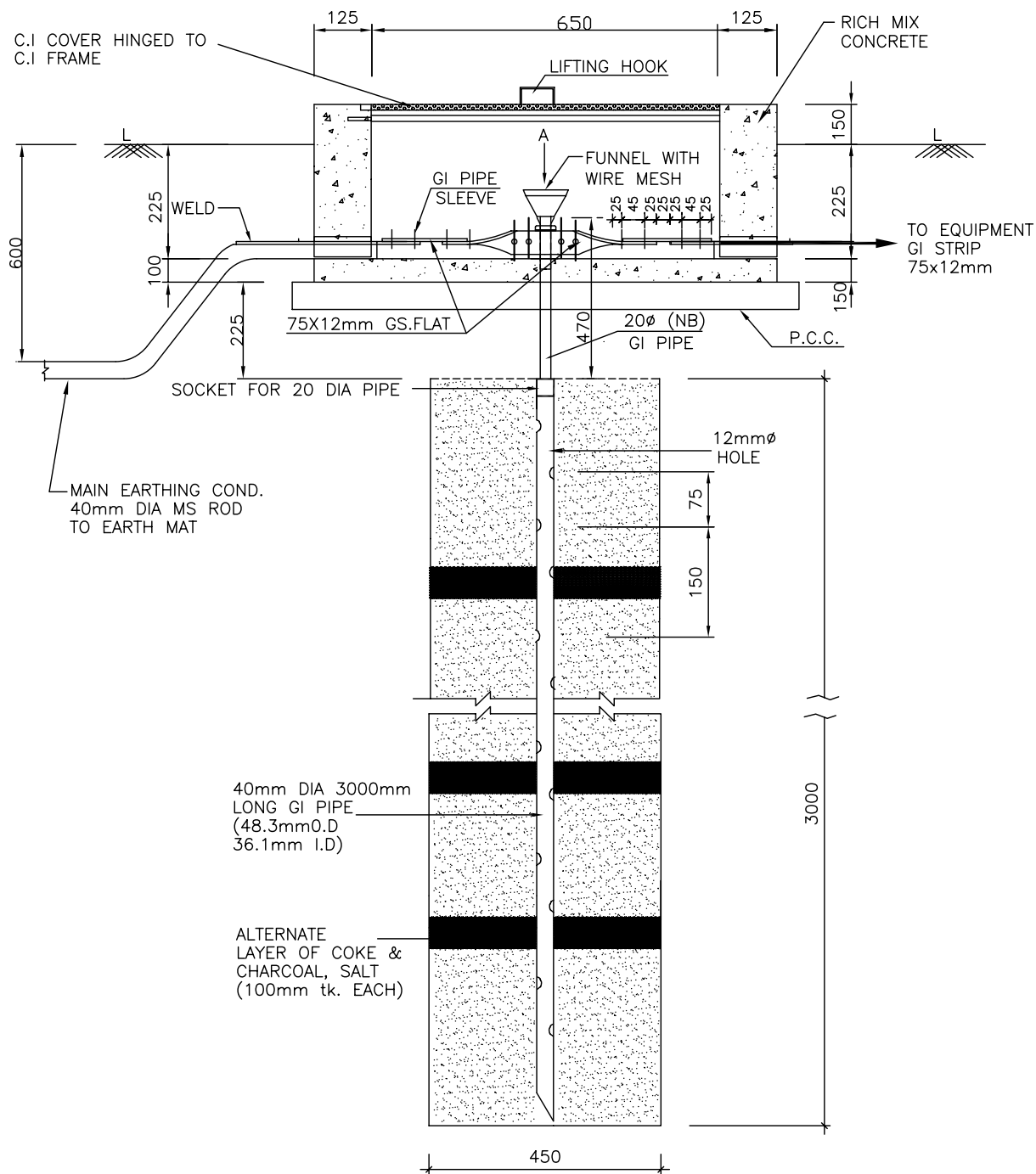
COMPU. DRG. REF.

DRG. NO.

TB-4-342-316-005

REV. 00

SHEET
9



VIEW-A

NOTE:

1. ALL NUTS,BOLTS AND WASHERS, FUNNEL GI PIPE AND WIRE MESH SHALL BE GALVANISED AS PER SPECIFICATION.
2. FUNNEL SHALL BE SECURELY HELD TO THE PIPE.
3. TO BE USED FOR CONNECTING TO NEUTRAL OF POWER TRANSFORMER/REACTOR/NGR



EQUIPMENT EARTHING DETAILS
DETAILS OF PIPE EARTH ELECTRODE
IN TREATED EARTH PIT (ET)

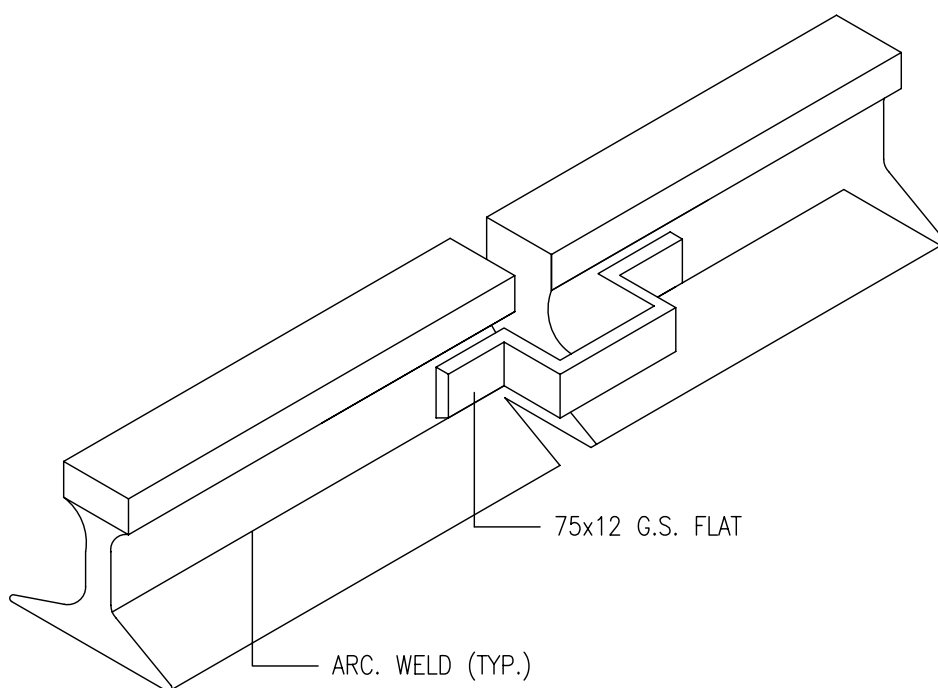
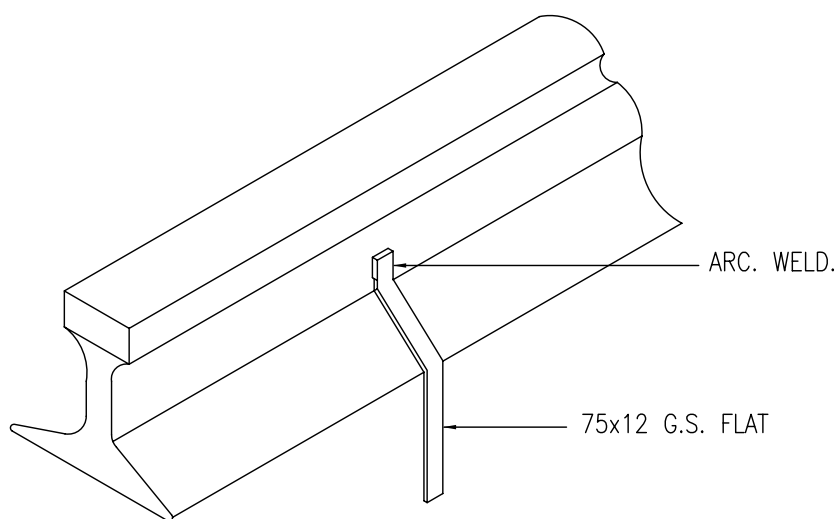
COMPUTERREF.NO.

DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
10



NOTE:—

1. RAILWAY TRACKS WITHIN SWITCHYARD AREA SHALL BE EARTHED AT BOTH ENDS & AT 30M. SPACING.



EQUIPMENT EARTHING DETAILS

RAIL BONDING

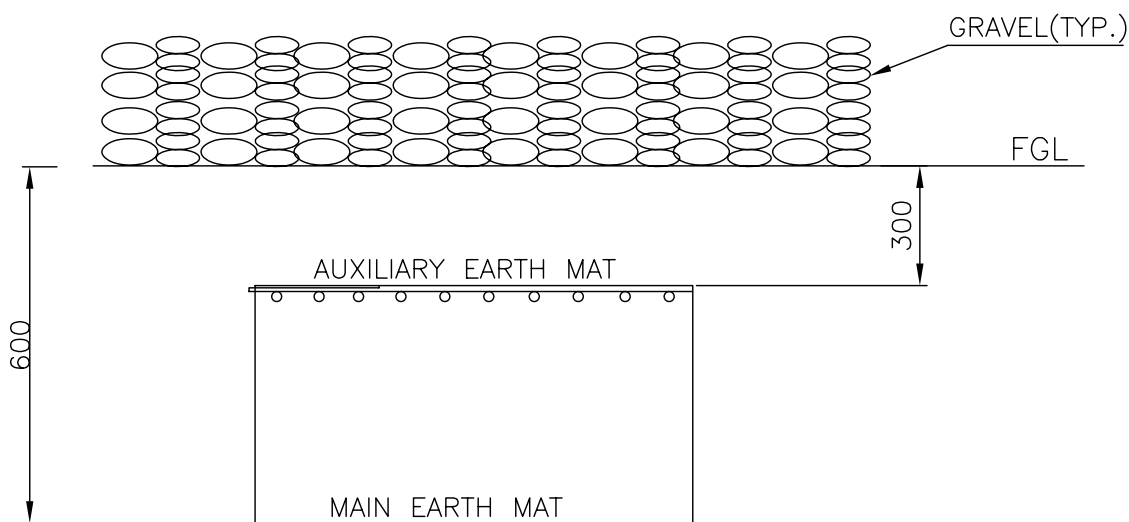
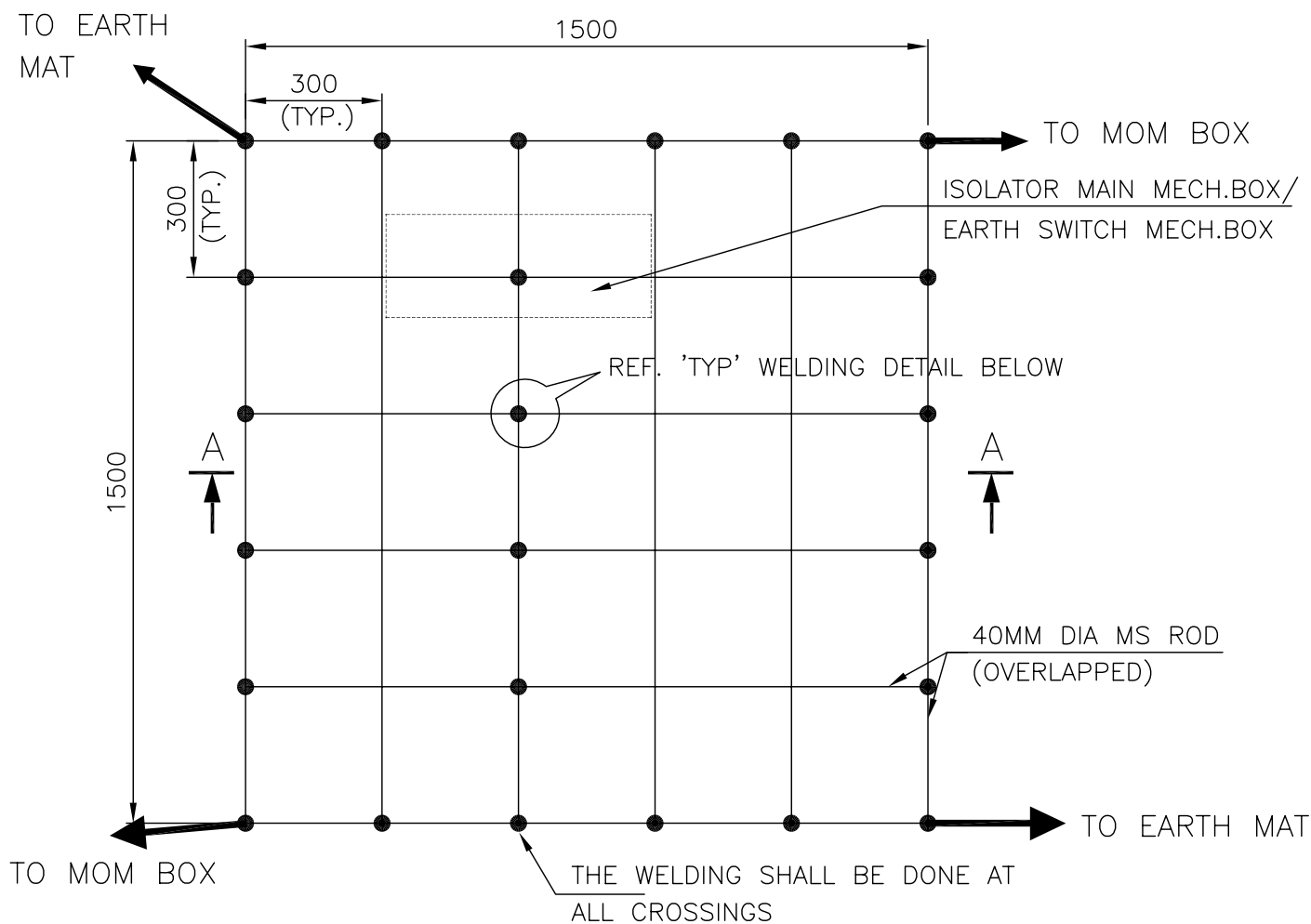
COMPU. DRG. REF.

DRG. NO.

TB-4-342-316-005

REV. 00

SHEET No.
11



SECTION AA

NOTE:

AUX. EARTH MAT SHALL BE SO POSITIONED THAT THE FOOT OF THE OPERATOR ALWAYS LIE OVER THE AUX. EARTH MAT AREA WHILE ATTENDING / OPERATING THE MECH. BOX THE CABLE TRENCH ROUTING SHALL BE PLANNED ACCORDINGLY.



EQUIPMENT EARTHING DETAILS

AUXILIARY EARTH MAT FOR ISOLATOR MAIN MECH., E/S MECH. BOX

COMPU. DRG. REF.

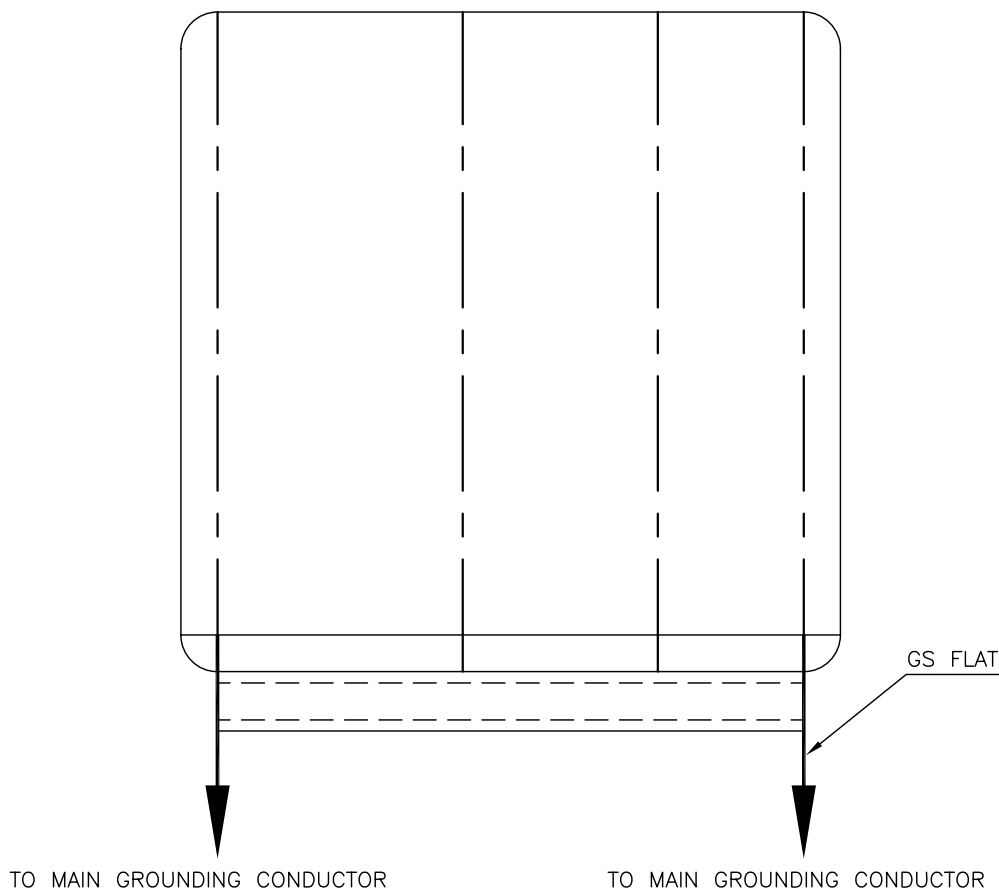
Report No.

TB-4-342-316-005

REV. 01

SHEET No.

12



EQUIPMENT

FLAT SIZE

SWITCHGEAR/ MCC	50X6 MM
AC / DC DISTRIBUTION BOARDS	50X6 MM
CONTROL & RELAY PANELS	50X6 MM
AC KIOSK	50X6 MM



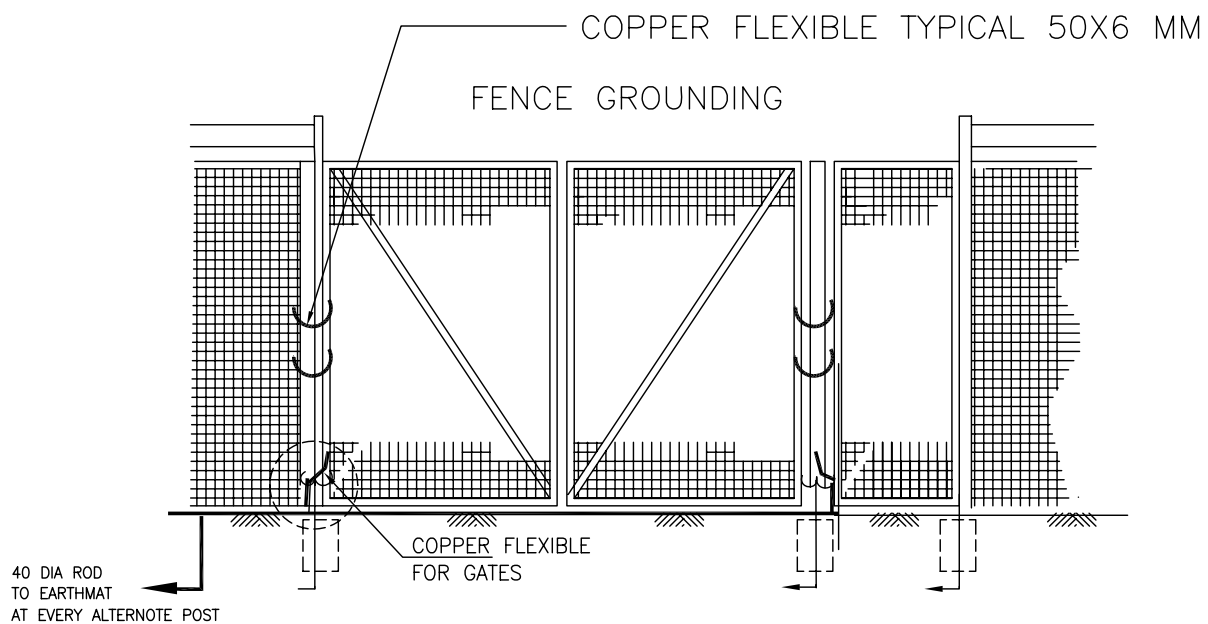
EQUIPMENT EARTHING DETAILS

SWITCHGEAR / MCC / CONTROL AND RELAY BOARD/AC KIOSK

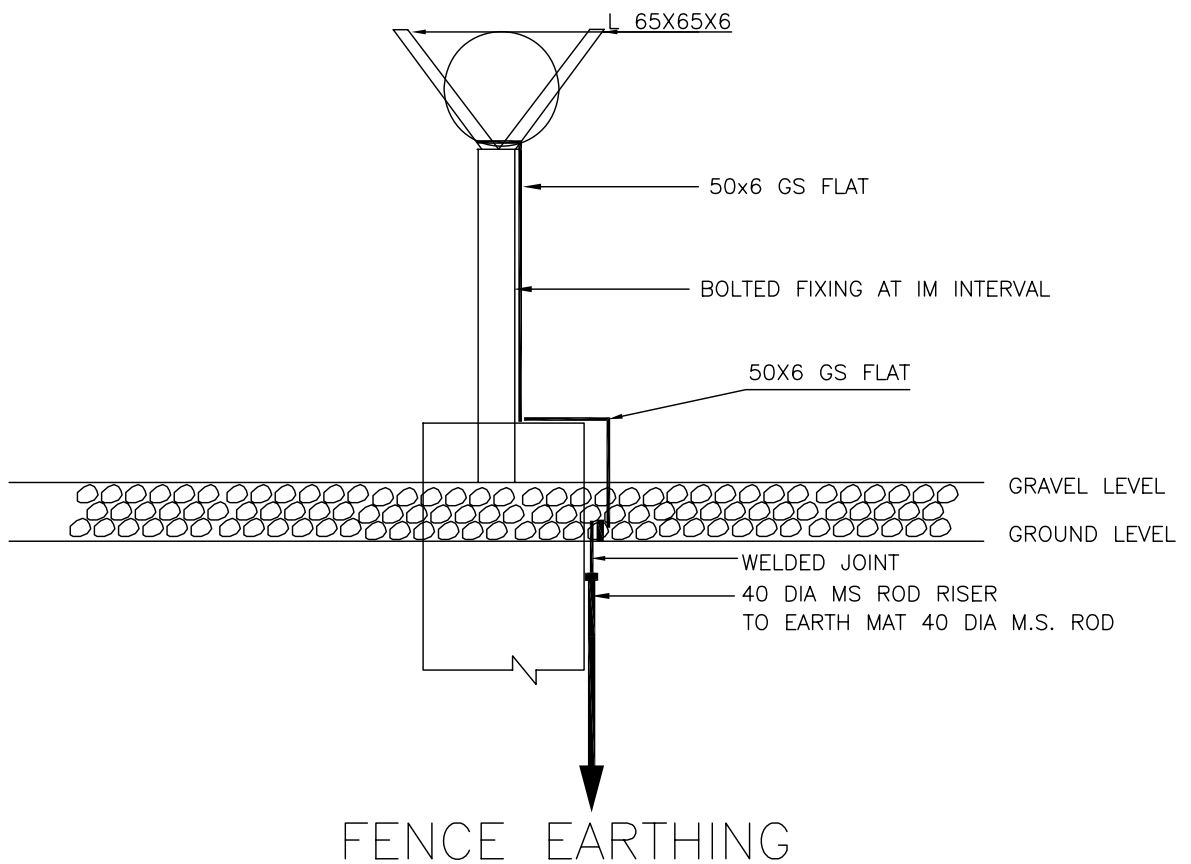
DRG. No. TB-4-342-316-005

REV. 00

SHEET No.
13



EVERY ALTERNOTE FENCE POSTS SHALL BE EARTHED BY 50X6 MM GS FLAT.
 50X6 FLAT SHALL BE WELDED TO 65X65X6 ANGLES FORMING V-SHAPE AT THE TOP OF FENCE



EQUIPMENT EARTHING DETAILS FENCE POST

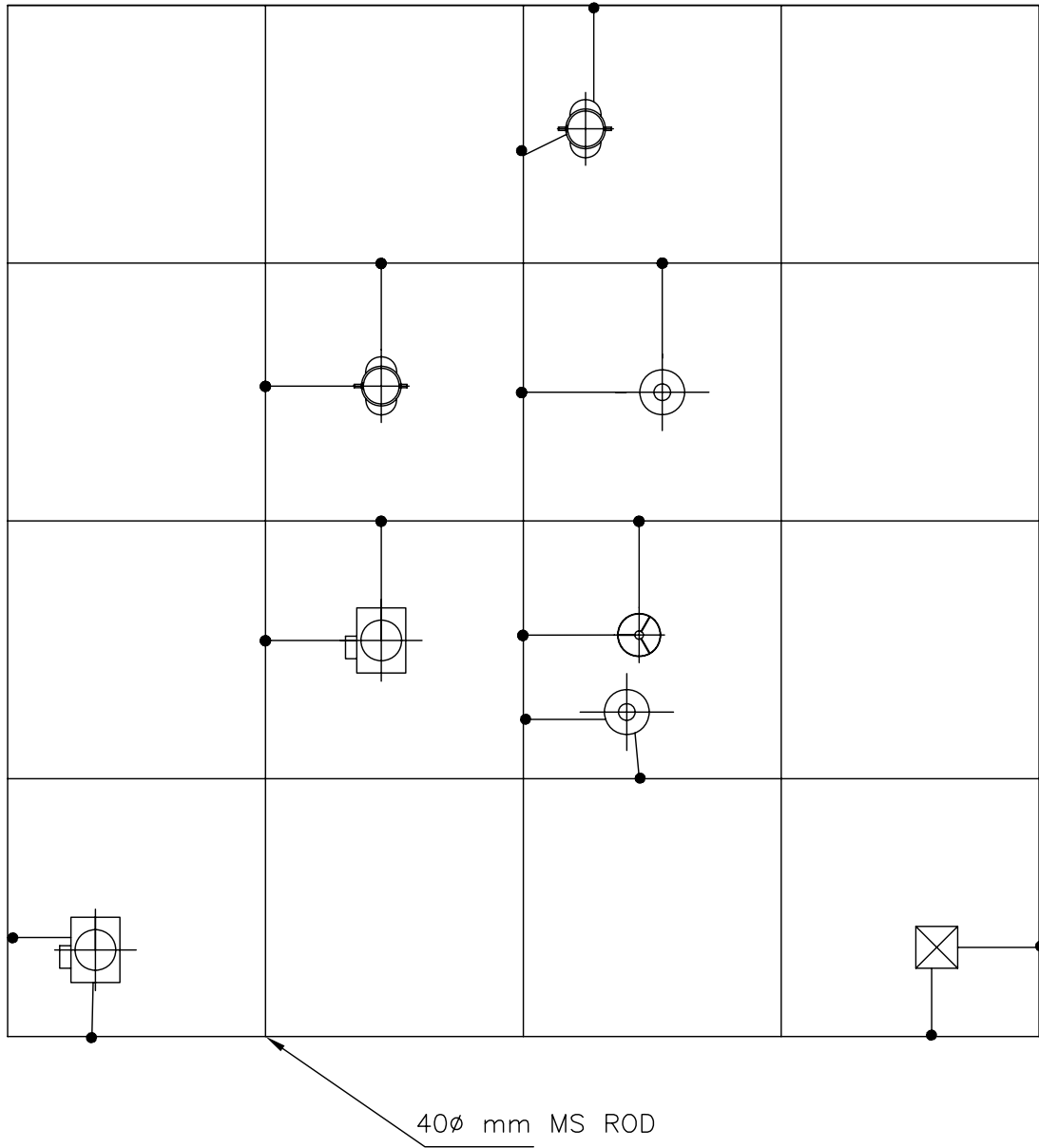
DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
15

MAIN EARTHMAT GRID



• —RISER



EQUIPMENT EARTHING DETAILS

TYPICAL ARRANGEMENT OF EQUIPMENT EARTHING WITH MAIN GRID

COMPU. DRG. REF.

DRG. NO.

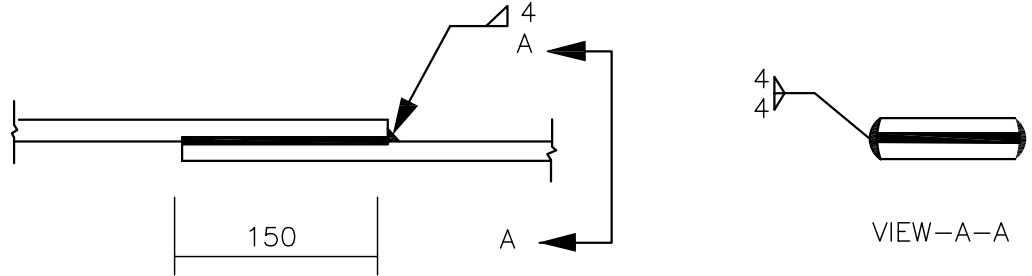
TB-4-342-316-005

REV. 00

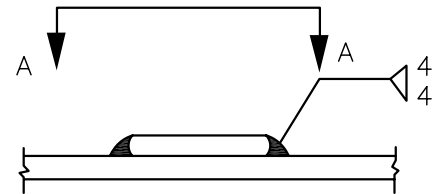
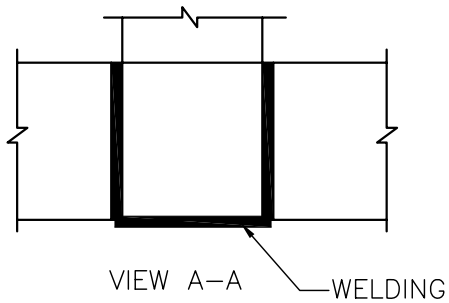
SHEET No.
16

STRIP TO STRIP

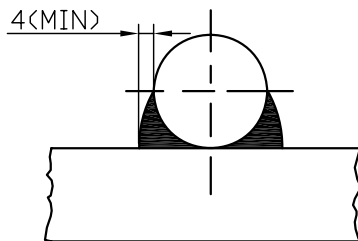
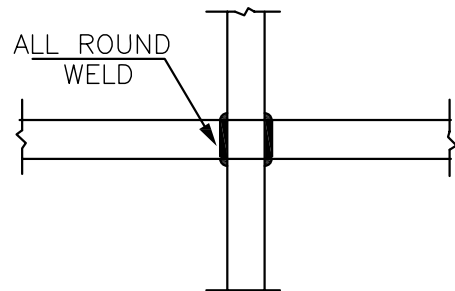
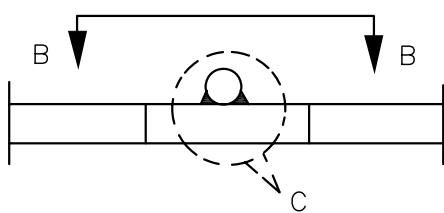
1. STRAIGHT LAP JOINT/RISER



2. CROSS LAP JOINT



RIGHT ANGLED JOINT (ROD TO ROD)



VIEW B-B



EQUIPMENT EARTHING DETAILS WELDING DETAIL

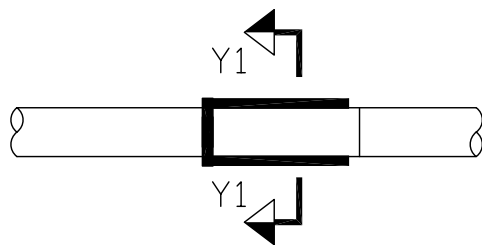
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DRG. No.

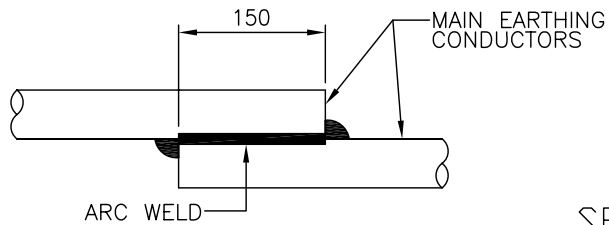
TB-4-342-316-005

REV. 00

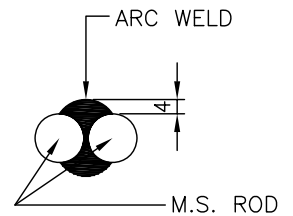
SHEET No.
17



ELEVATION

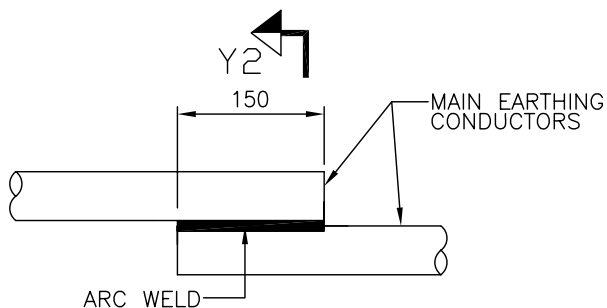


PLAN

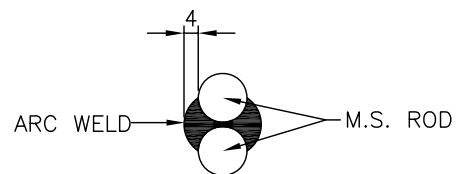


SECTION Y1-Y1

<CONDUCTOR IN HORIZONTAL PLANE>



PLAN



SECTION Y2-Y2

<CONDUCTOR IN VERTICAL PLANE>



EQUIPMENT EARTHING DETAILS WELDING DETAILS

COMPUTERREF.NO.

DRG. No.

TB-4-342-316-005

REV. 00

SHEET No.
17B

