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COMPUTER DRG. PATH NAME :

INVENTORY NO. SIGN & DATE REF. DRG. NO.

REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED

LEGEND

-  CONNECTION TO GROUND MAT THROUGH RISER
 E CONNECTION TO ROD ELECTRODE.
 PE CONNECTION TO PIPE ELECTRODE
 RISER

GENERAL NOTES:

- 1 ALL EARTH STRIPS SHALL BE TAKEN ALONG EDGE OF STRUCTURE. ALL DRAWING SHOWS TYPICAL ONLY.
- 2 ALL EQUIPMENT STRUCTURES SHALL BE PIPE TYPE.
- 3 REFER STANDARD PROCESS SPECIFICATION NO. TB 4 304 001 FOR WELDING (SHEET 19 & 20).
- 4 FOR NOTES REFER EARTHING LAYOUT OF 400/220KV S/S DRG. NO. TB 0 304 316 003
- 5 ALL EARTHING SHALL BE DONE IN ACCORDANCE WITH IS: 3043 UNLESS OTHERWISE STATED IN TECHNICAL SPECIFICATION.
- 6 7/9 SWG E/WIRE DOWN CONDUCTOR SHALL BE CLEATED AT AN INTERVAL OF 1.0 M ALONGWITH STRUCTURE NO HOLES IN STRUCTURE IS ALLOWED FOR THIS PURPOSE.

SHEET NO.

DESCRIPTION

02. 400/245KV CIRCUIT BREAKER
03. 400/245KV CVT
04. 420/245KV ISOLATER HORIZONTAL CENTRE
BREAK WITHOUT E/S
05. 420/245KV ISOLATER HORIZONTAL CENTRE
BREAK WITH TWO E/S
- 05A. 420/245KV ISOLATER HORIZONTAL CENTRE
BREAK WITH ONE E/S
06. 400/245KV CT
07. POST INSULATOR (400/245KV)
08. FIXING ARRANGEMENT OF EARTH STRIP
CLAMP FOR TUBULAR TYPE STRUCTURE
09. LIGHTNING ARRESTER (360KV & 198KV)
10. CLAMP FOR VERTICAL MOUNTING OF 7/9 SWG.
WIRE ON STEEL COLUMNS

SHEET NO.

DESCRIPTION

11. CABLE TRENCH EARTHING
12. SHIELD WIRE TOWER EARTHING
13. PIPE EARTH ELECTRODE DETAILS.
14. ROD EARTH ELECTRODE
15. MARSHALLING KIOSK EARTHING.
16. AUX. EARTH MAT FOR ISO MAIN MECH. E/S MECH.
BOX & CIRCUIT BREAKER (TYP.)
17. LIGHTNING MAST EARTHING.
18. PANELS EARTHING
19. WELDING DETAILS-1
20. WELDING DETAILS-2

JOB NO. 87009

STATUS CONTRACT

DRG./REF. NO.

PRINT SCALE



KARNATAKA POWER
CORPORATION LTD.

CUSTOMER KARNATAKA POWER CORPORATION LIMITED
PROJECT BELLARY THERMAL POWER STATION
STAGE-II (1x500MW)



BHARAT HEAVY ELECTRICALS LTD.
TRANSMISSION PROJECTS DIVISION

DEPT CODE	NAME	SIGN.	DATE
DRN	KAPL		
CHD	MS/MK	-sd-	
APPD	SN	-sd-	

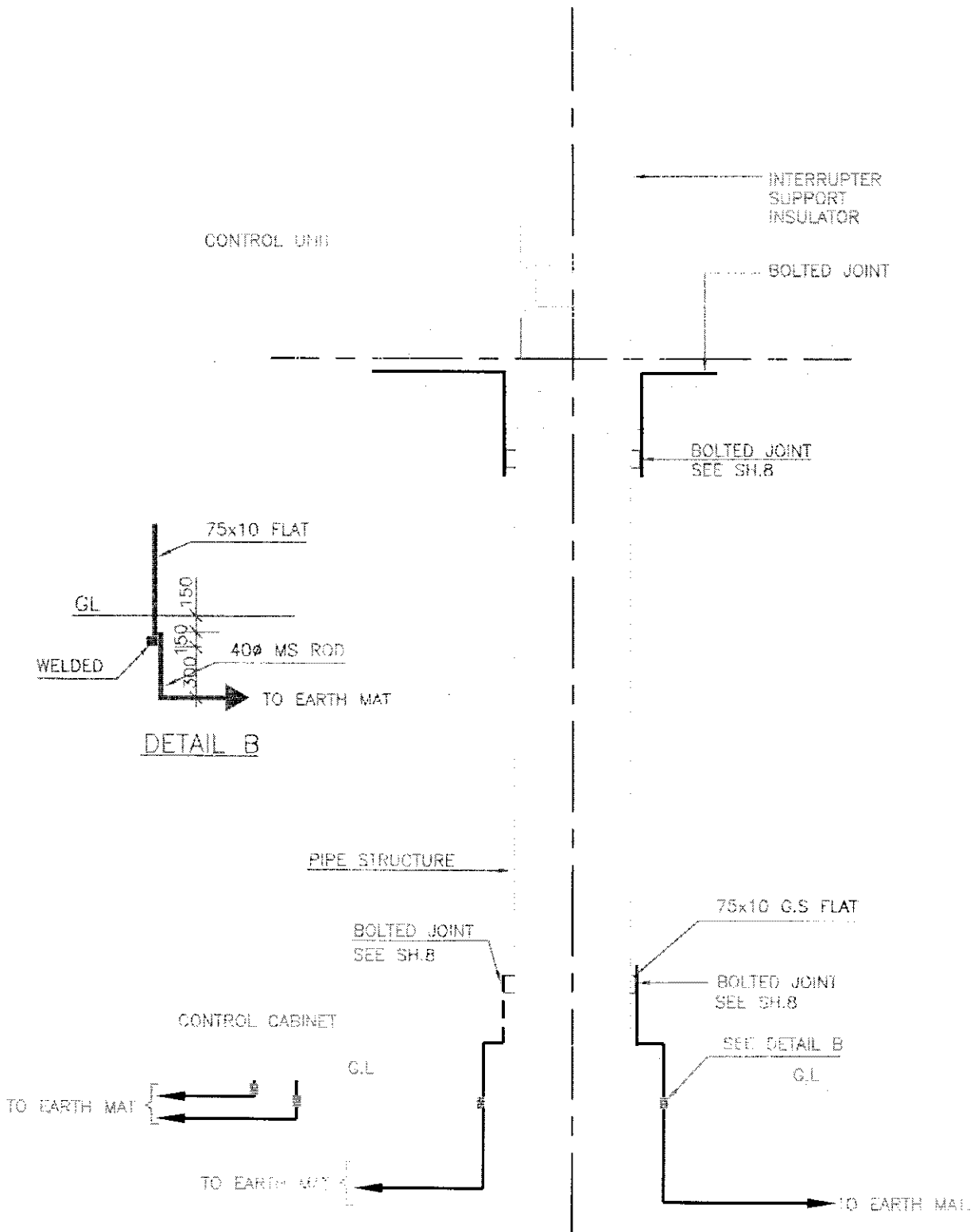
REV.	DATE	ALTD	CHD	APPD

SUB-CONTRACTOR :

TITLE

EQUIPMENT EARTHING DETAILS

DEPT.	SCALE	DRAWING NO.
SIGN		TB-4-304-509-004
DATE		SHEET 1
		REV. 00



NOTE:

- 1) LOCAL CONTROL CABINET & COMPRESSOR UNIT SHALL BE EARTHED SEPARATELY.



EQUIPMENT EARTHING DETAILS

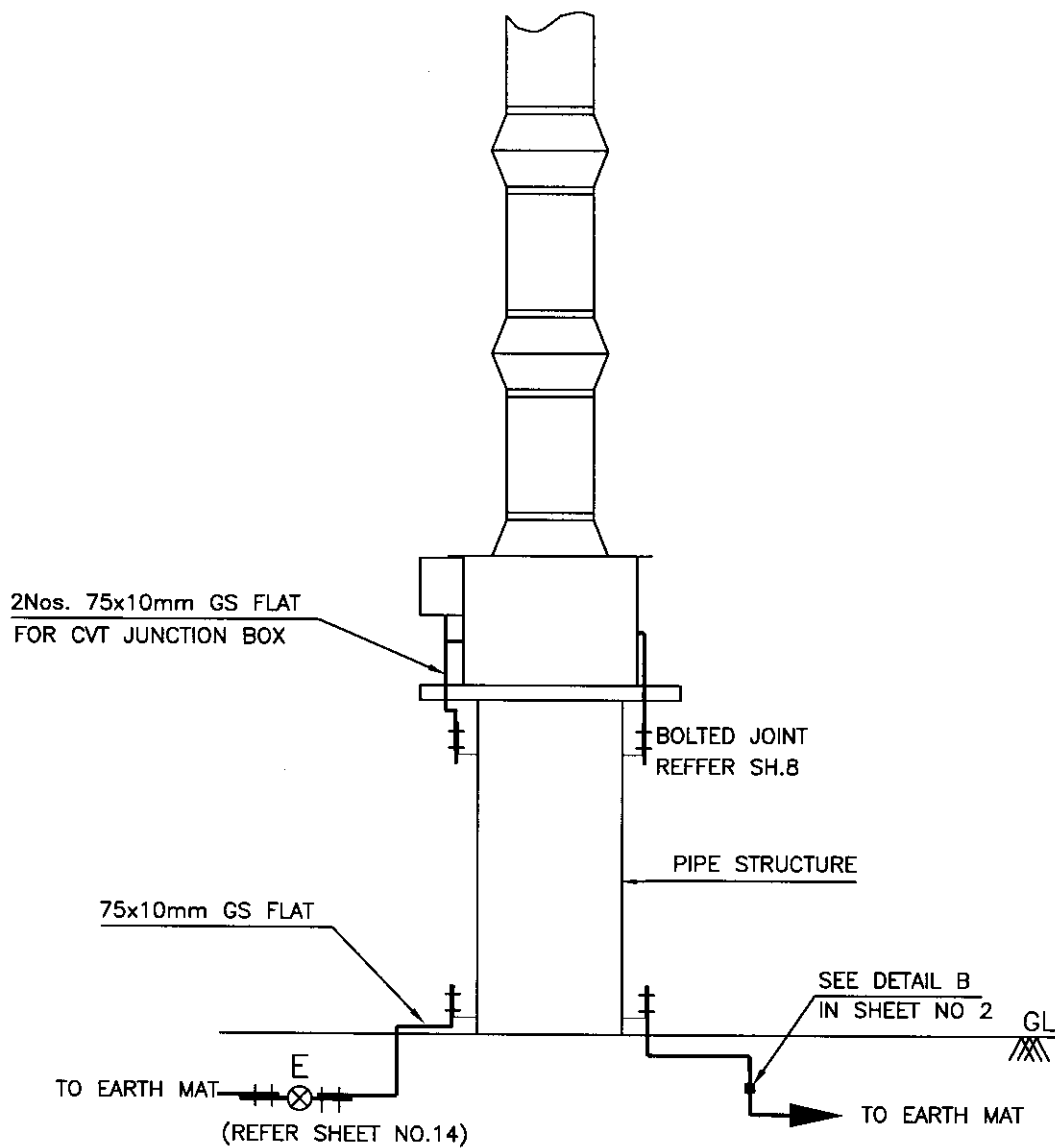
400/245kV CIRCUIT BREAKER EARTHING

COMPUTERREF.No.

DRG. No.

TB 4 304 509 004

SHEET No.
2



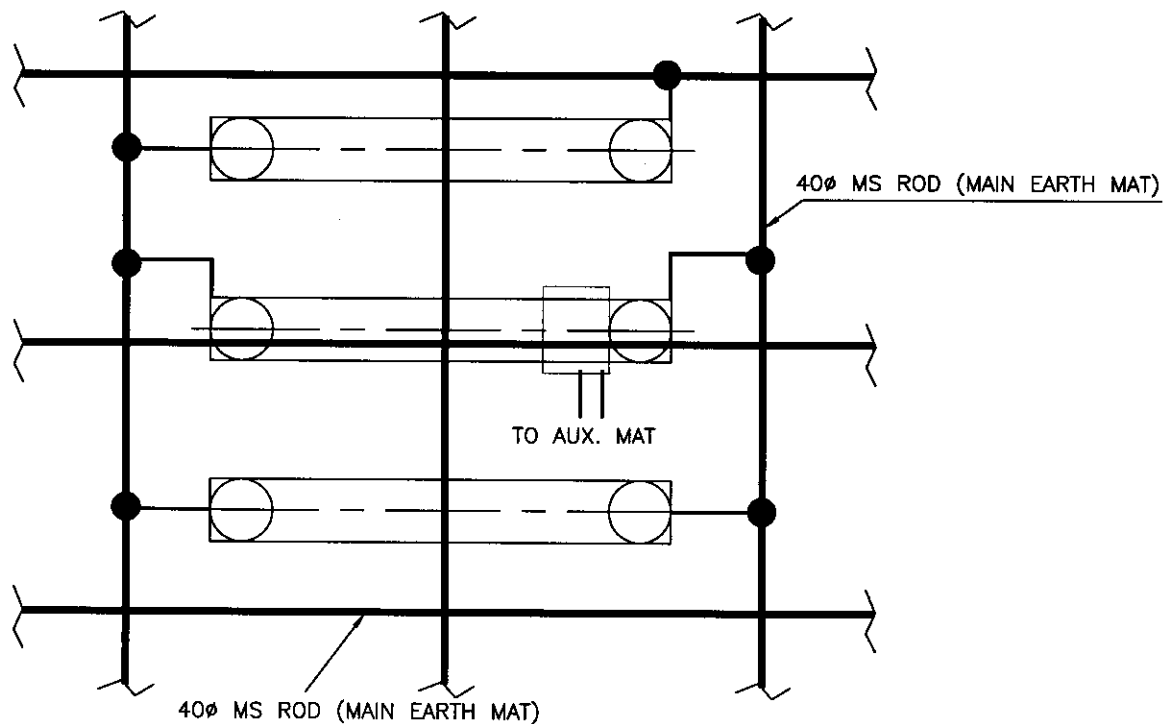
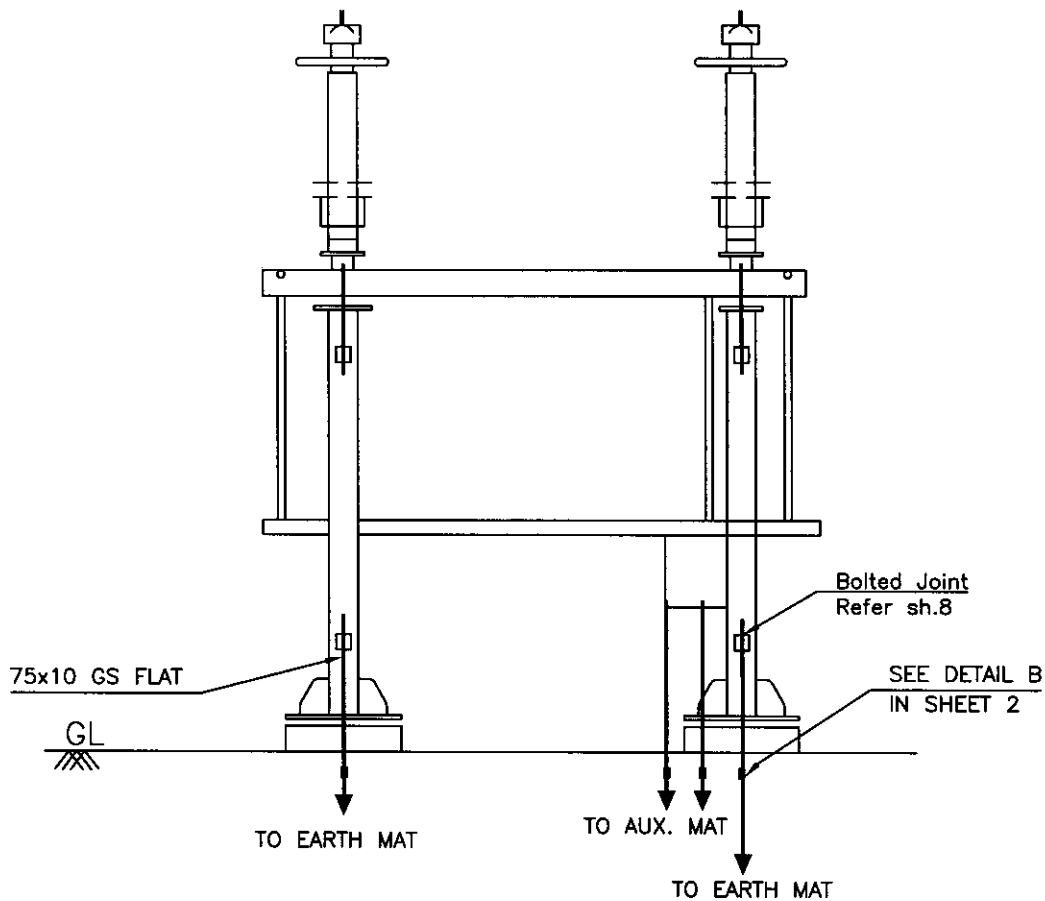
EQUIPMENT EARTHING DETAILS 420kV/245kV CVT/VT

COMPUTERREF.NO.

DRG. No.

TB 4 304 509 004

SHEET No.
3



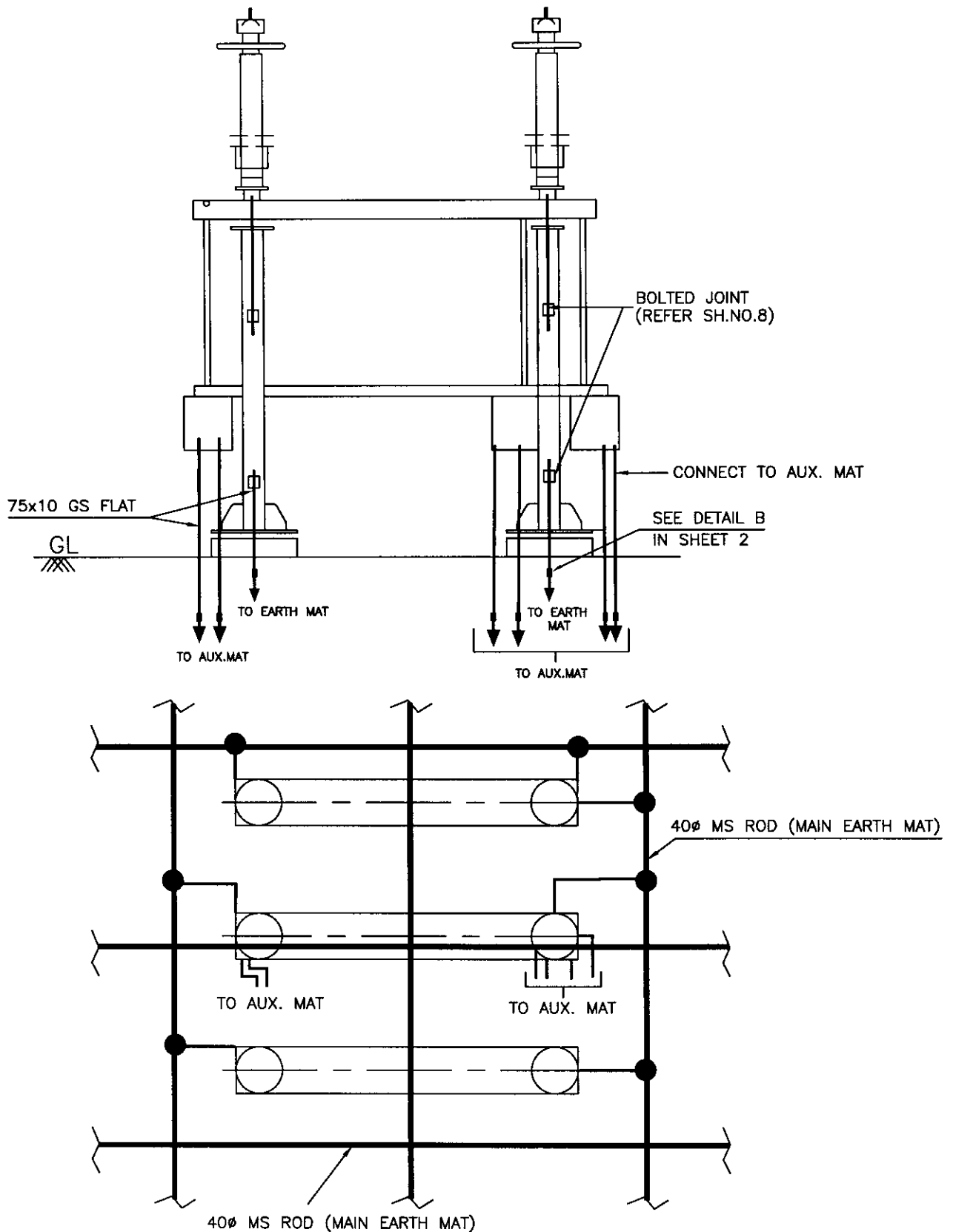
EQUIPMENT EARTHING DETAILS HORIZONTAL CENTER BREAK ISOLATOR (TYPICAL) WITHOUT EARTH SWITCH

COMPUTER REF. NO.

DRG. No.

TB 4 304 509 004

SHEET No.
4



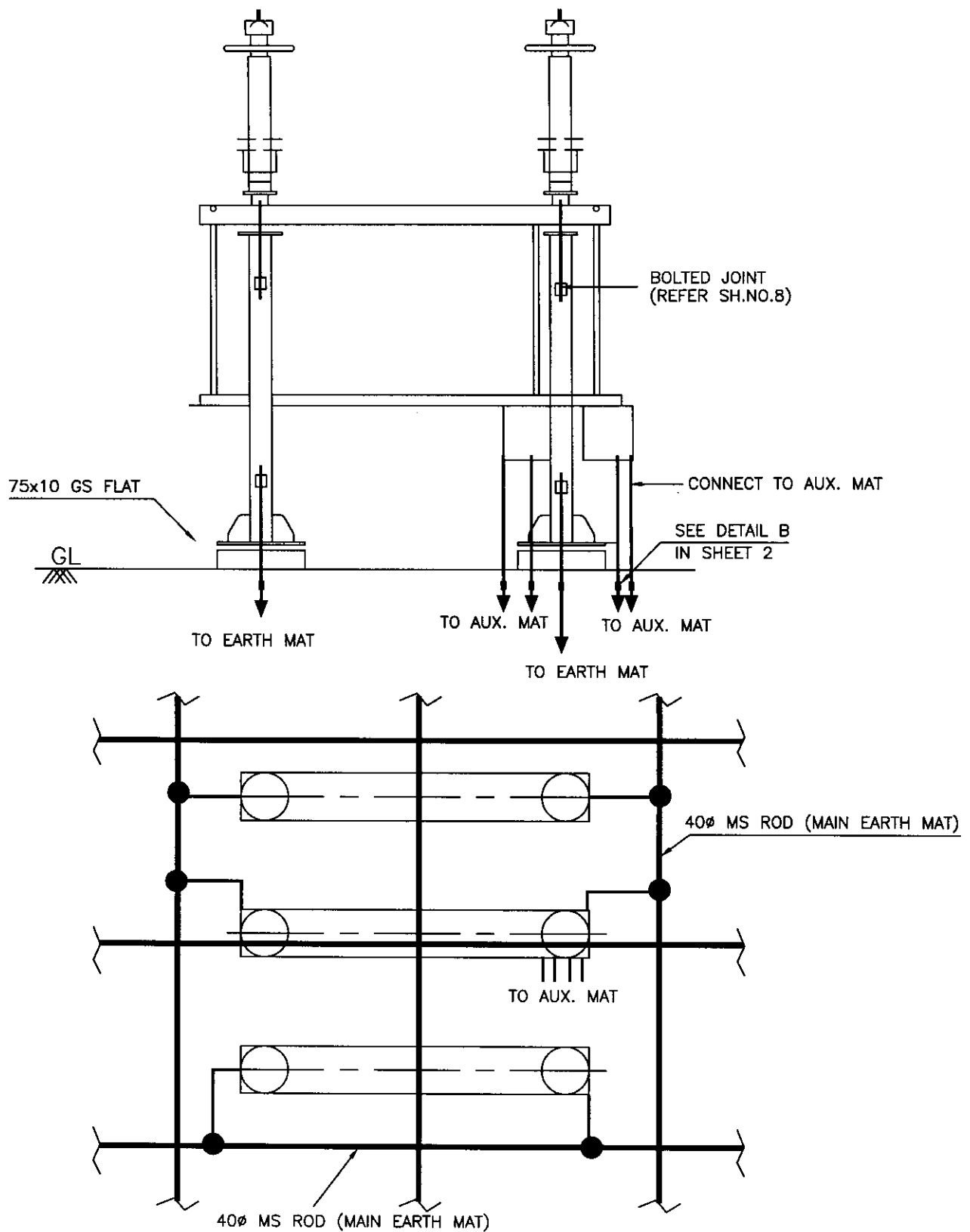
EQUIPMENT EARTHING DETAILS HORIZONTAL CENTER BREAK ISOLATOR (TYPICAL) WITH TWO EARTH SWITCHES

COMPUTERREF.NO.

DRG. No.

TB 4 304 509 004

SHEET No.
5



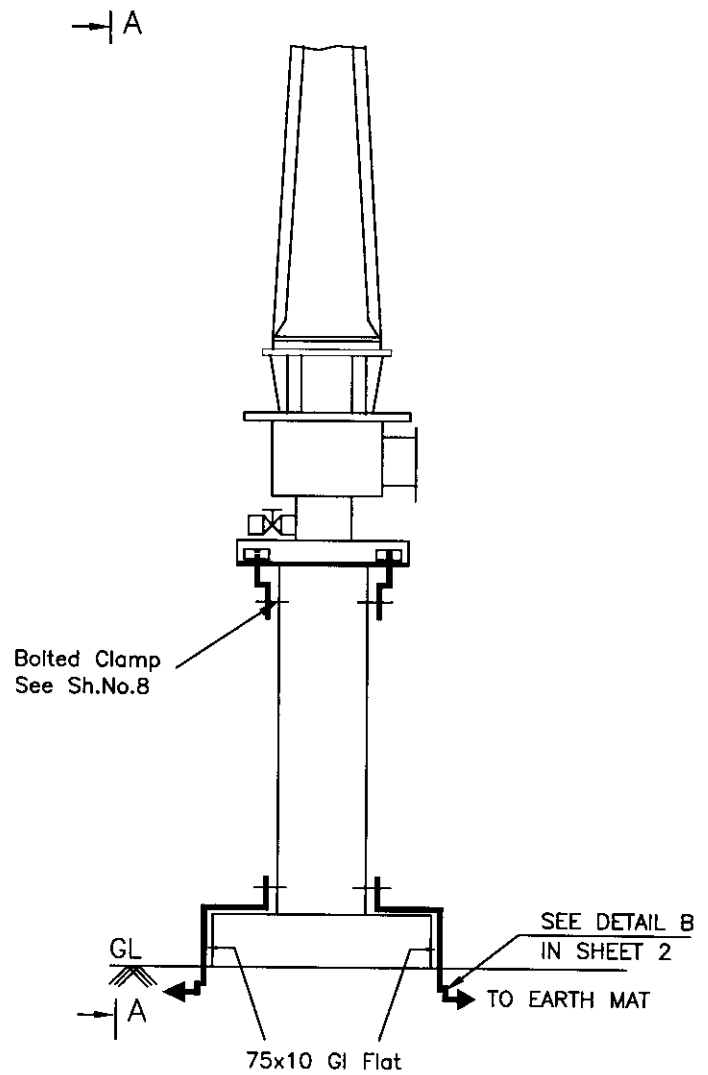
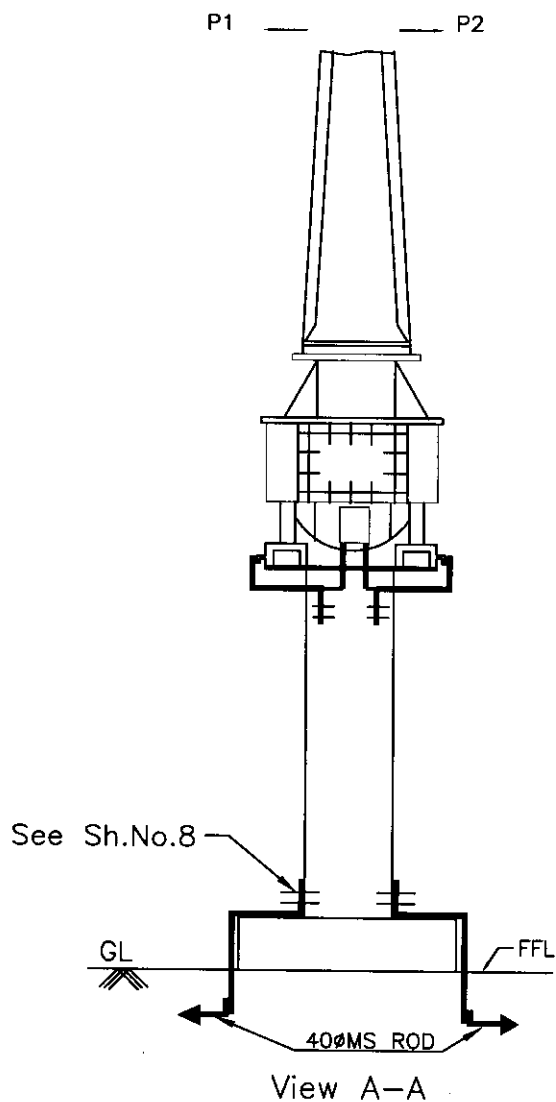
EQUIPMENT EARTHING DETAILS
HORIZONTAL CENTER BREAK
ISOLATOR (TYPICAL) WITH ONE EARTH SWITCH

COMPUTERREF.NO.

DRG. No.

TB 4 304 509 004

SHEET No.
5A



EQUIPMENT EARTHING DETAILS 400/245kV Current Transformer

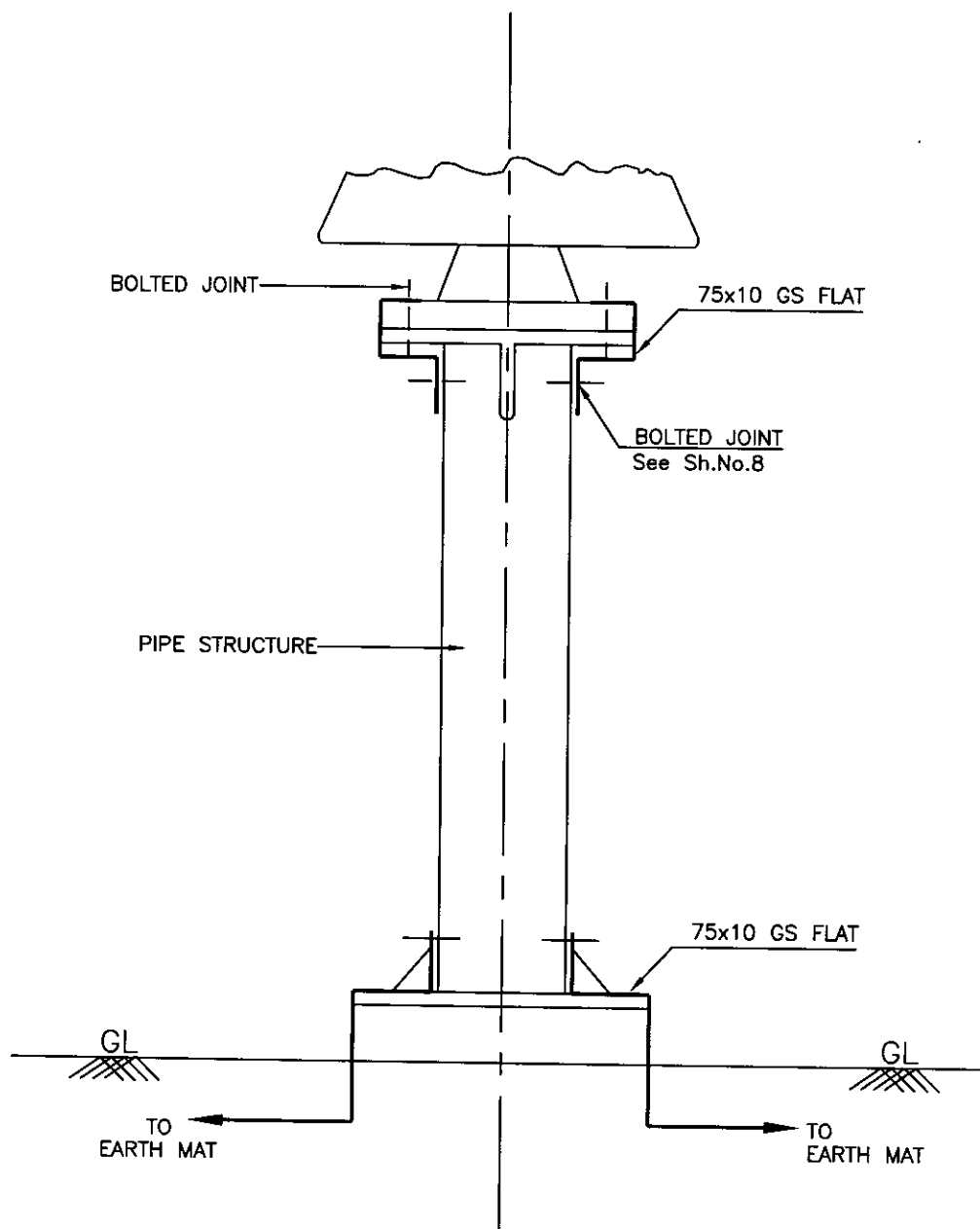
COMPU. DRG. REF.

DRG.NO.

TB 4 304 509 004

SHEET No.

6



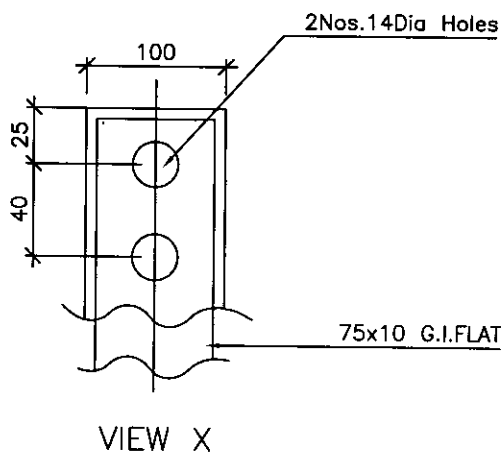
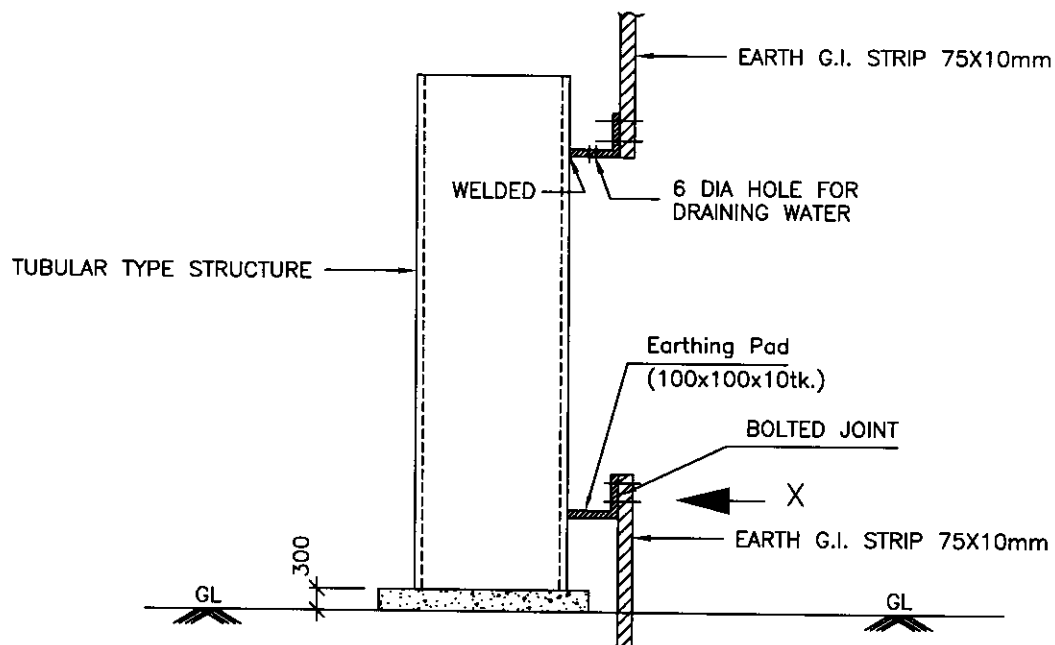
EQUIPMENT EARTHING DETAILS POST INSULATOR EARTHING (SOLID CORE TYPE)

COMPUTER REF. NO.

DRG. No.

TB 4 304 509 004

SHEET No.
7



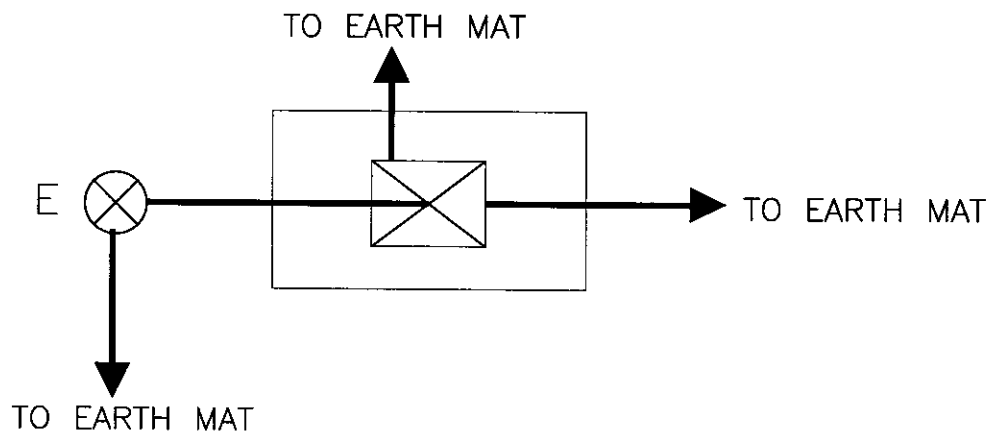
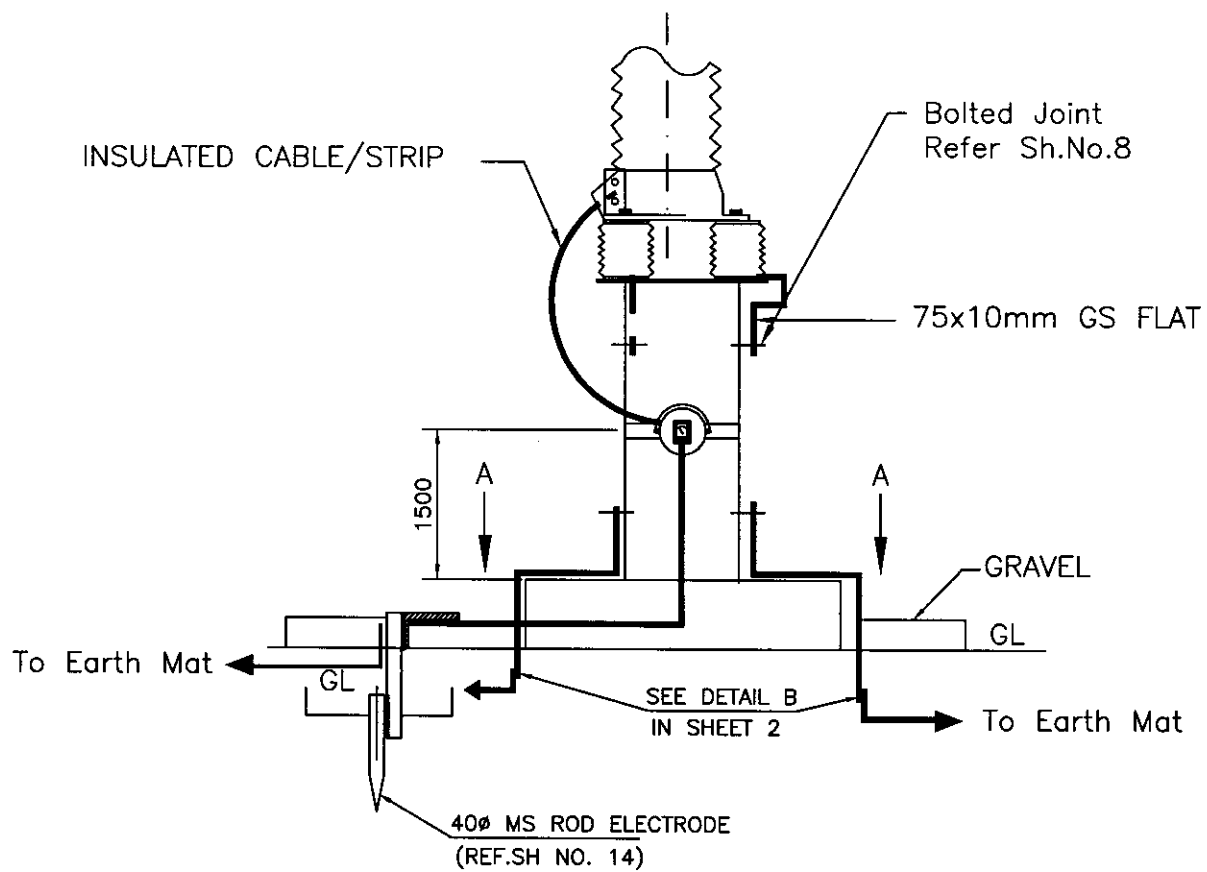
EQUIPMENT EARTHING DETAILS
FIXING ARRANGEMENT OF EARTH STRIP
CLAMP FOR TUBULAR TYPE STRUCTURE

COMPUTER REF. NO.

DRG. No.

TB 4 304 509 004

SHEET No.
8



VIEW A-A

NOTES;

LA SHALL BE EARTHED THROUGH EARTH TERMINAL OF SURGE COUNTER



EQUIPMENT EARTHING DETAILS
LIGHTNING ARRESTER(360kV & 198kV)

COMPU. DRG. REF.

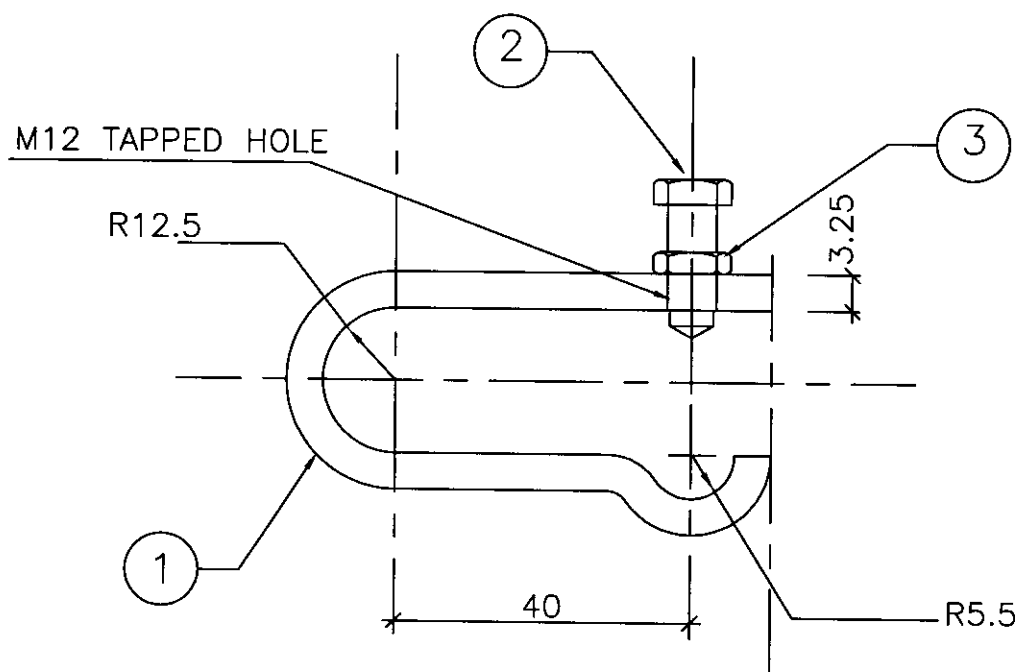
DRG.NO.

TB 4 304 509 004

SHEET No.

9

ITEM	BILL OF MATERIAL	QTY.	REMARK
1.	3x25x128mm lg MILD STEEL FLAT	1	HOT DIP GALV.
2.	BOLT HEX B M12x50	1	H.D. GALV.
3.	LOCK NUT HEX B M12	1	H.D. GALV.



CLAMP FOR VERTICAL MOUNTING OF
7/9 SWG WIRE ON STEEL COLUMNS



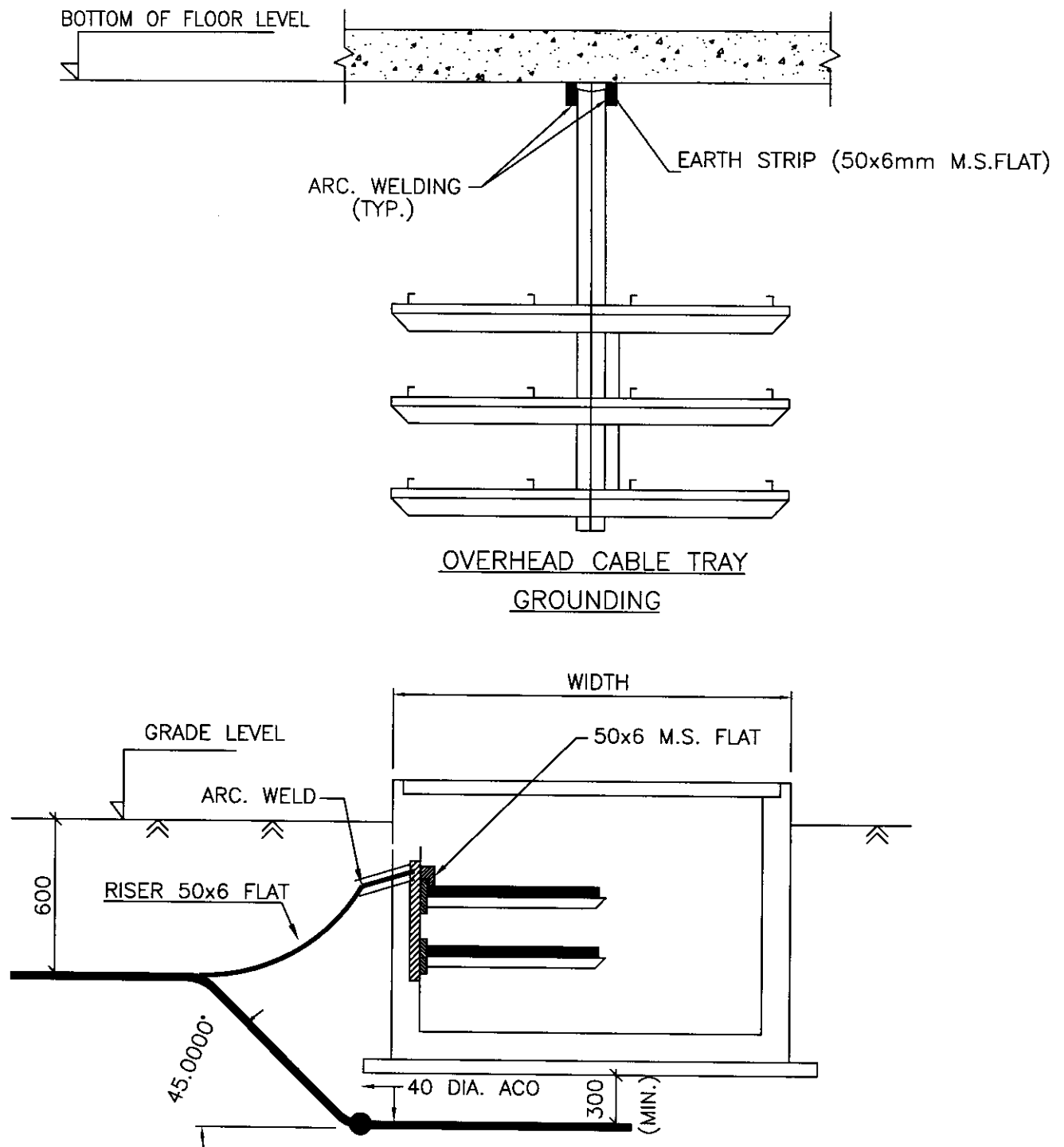
EQUIPMENT EARTHING DETAILS

COMPUTER REF. NO.

DRG. No.

TB 4 304 509 004

SHEET No.
10



NOTE:

1. ALL TRENCHES SHALL BE EARTHED AT AN INTERVAL OF 10M ALONG THE LENGTH OF TRENCH & FREE ENDS.
2. THE EARTH STRIP (50x6 M.S. FLAT) SHALL BE WELDED TO EMBEDDED PLATE AT EVERY 0.75M INTERVAL & CONTROL ROOM AT EVERY 2M INTERVAL
3. THE CABLE RACKS ARE PROVIDED ON BOTH SIDES OF THE TRENCH, BOTH SIDES SHALL BE EARTHED AS PER ABOVE.
4. CABLE EARTHING WILL BE DONE AS PER SPECIFICATION.



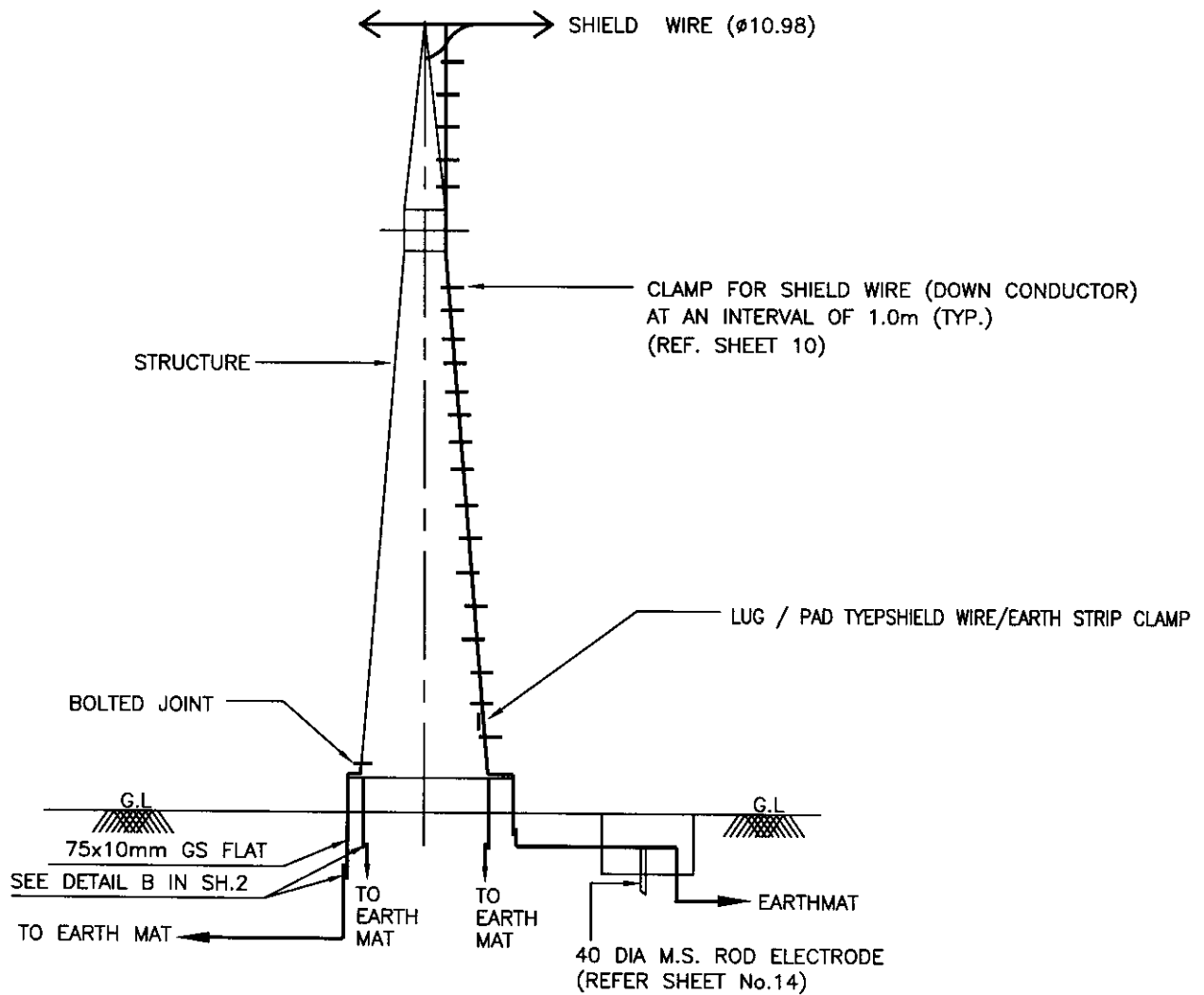
EQUIPMENT EARTHING DETAILS CABLE TRENCH EARTHING

COMPU. DRG. REF.

DRG. NO.

TB 4 304 509 004

SHEET
11



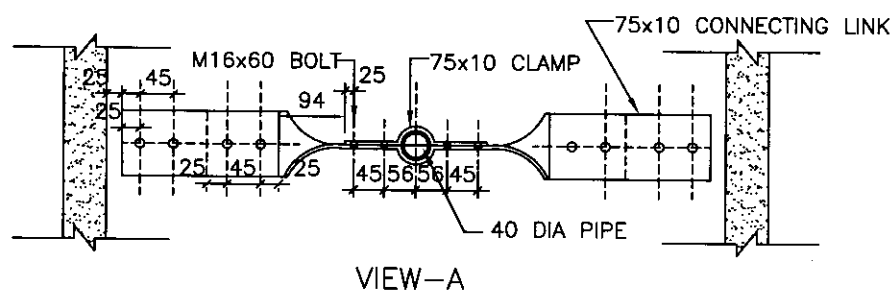
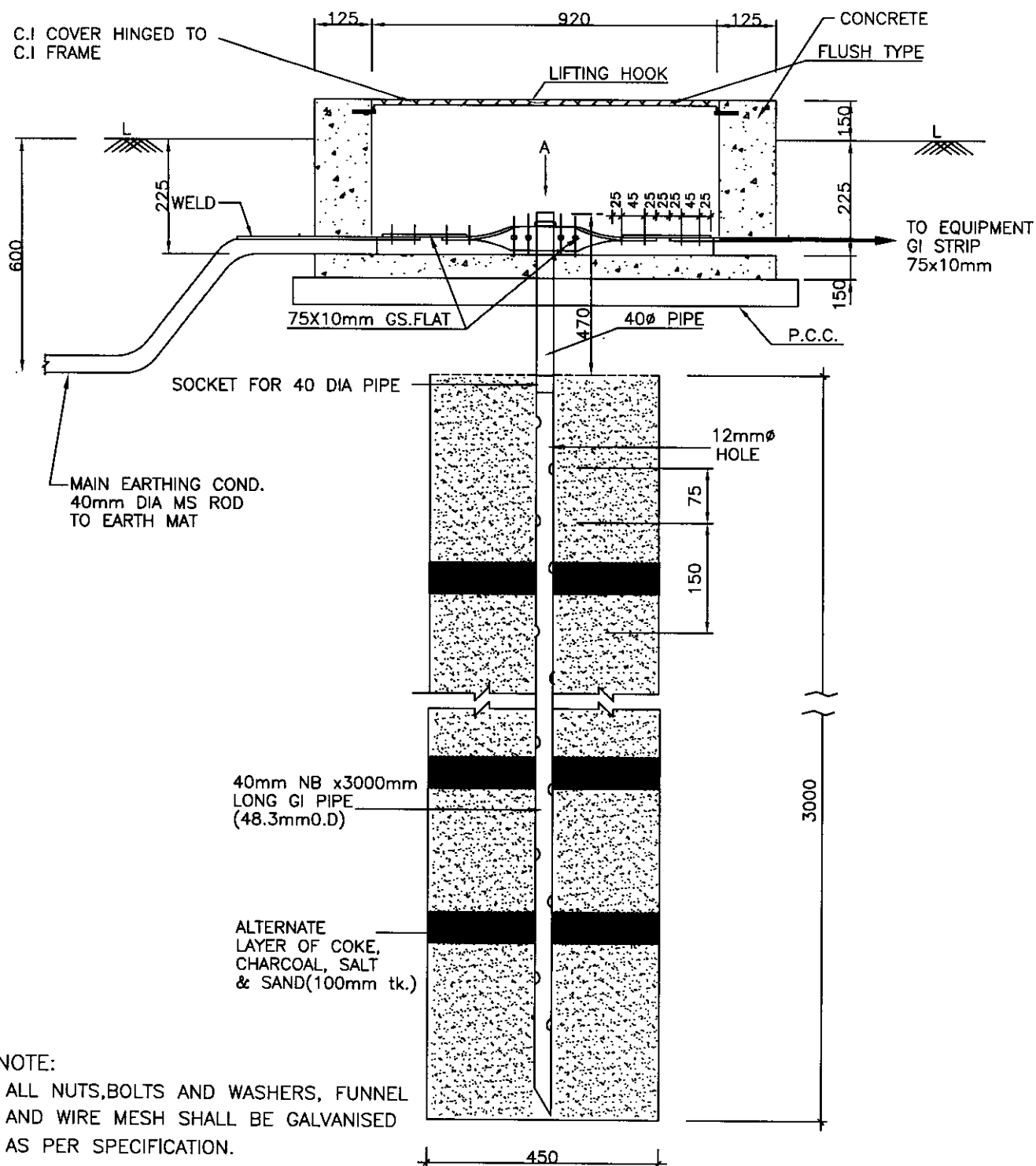
EQUIPMENT EARTHING DETAILS SHIELD WIRE TOWER EARTHING

COMPUTER REF. NO.

DRG. No.

TB 4 304 509 004

SHEET No.
12



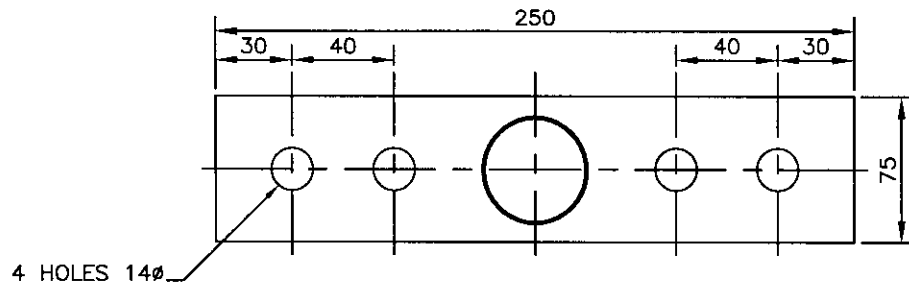
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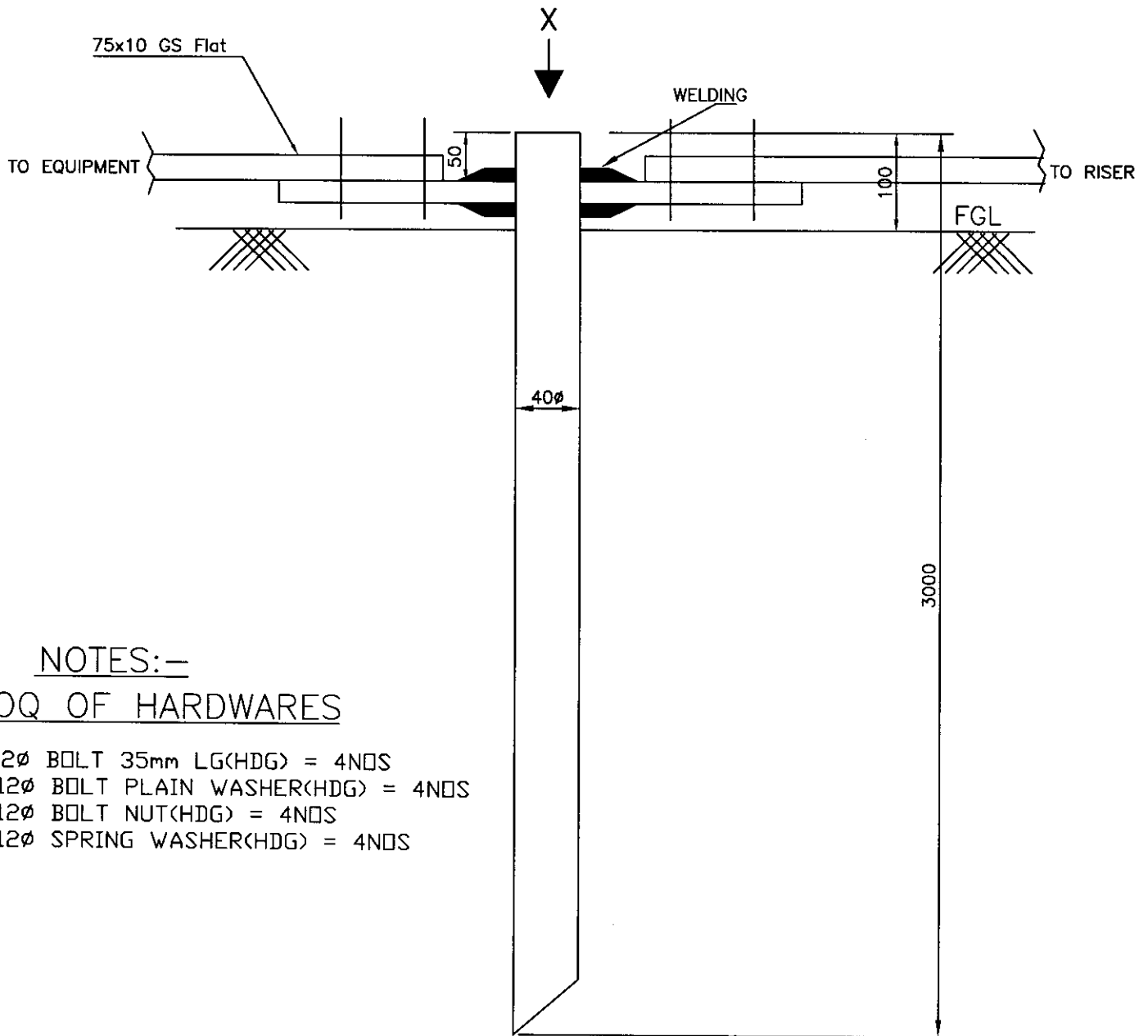
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SHEET No.
13

EQUIPMENT EARTHING DETAILS
DETAILS OF PIPE EARTH ELECTRODE
IN TREATED EARTH PIT (PE) FOR NEUTRAL EARTHING OF AUX. TRANSFORMER



DETAIL-X



NOTES:-

BOQ OF HARDWARES

1. M 12Ø BOLT 35mm LG(HDG) = 4 NOS
2. M 12Ø BOLT PLAIN WASHER(HDG) = 4 NOS
3. M 12Ø BOLT NUT(HDG) = 4 NOS
4. M 12Ø SPRING WASHER(HDG) = 4 NOS



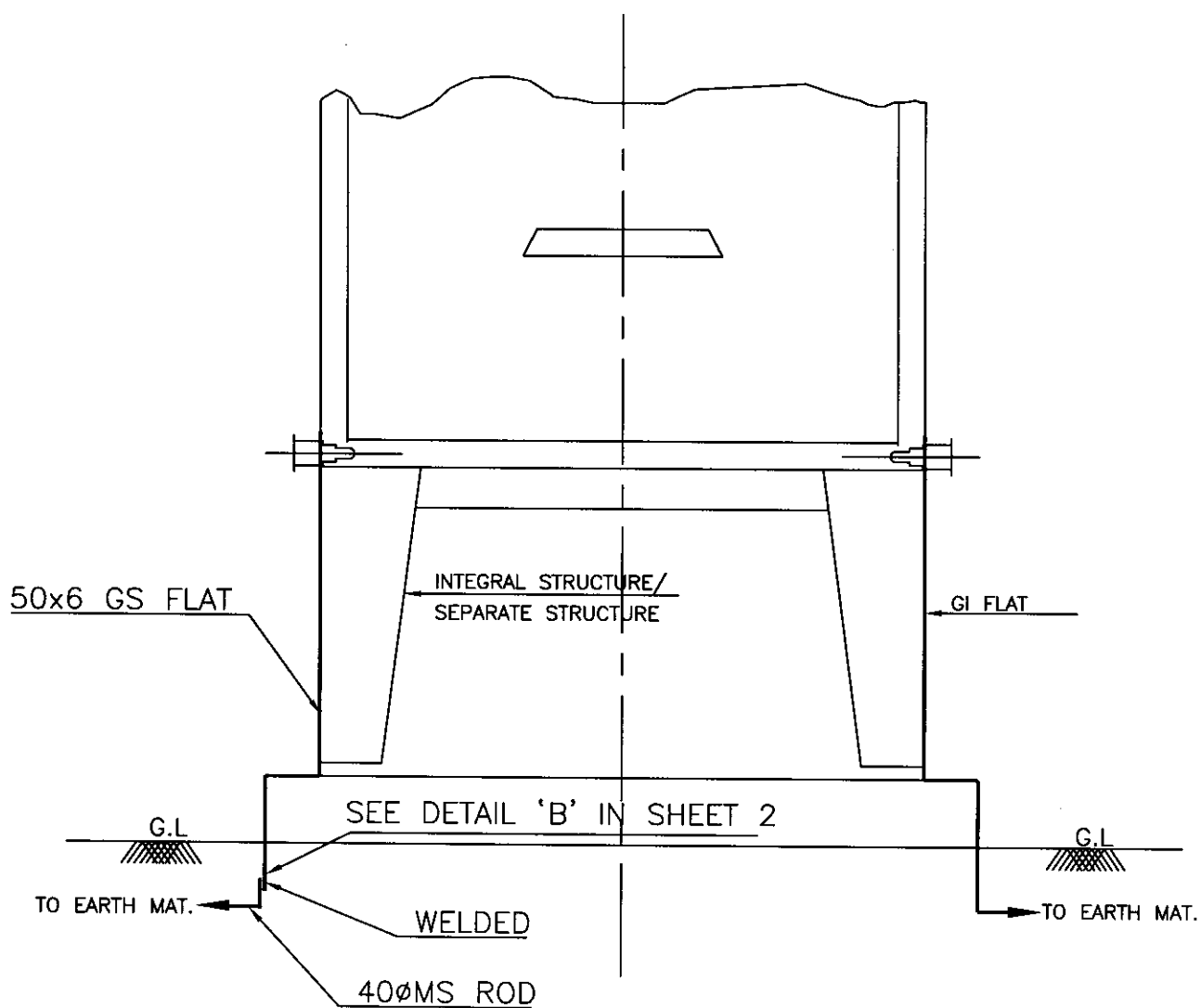
EQUIPMENT EARTHING DETAILS
DRIVEN IN ROD ELECTRODE

COMPU. DRG. REF.

DRG.NO.

TB 4 304 509 004

SHEET No. 14



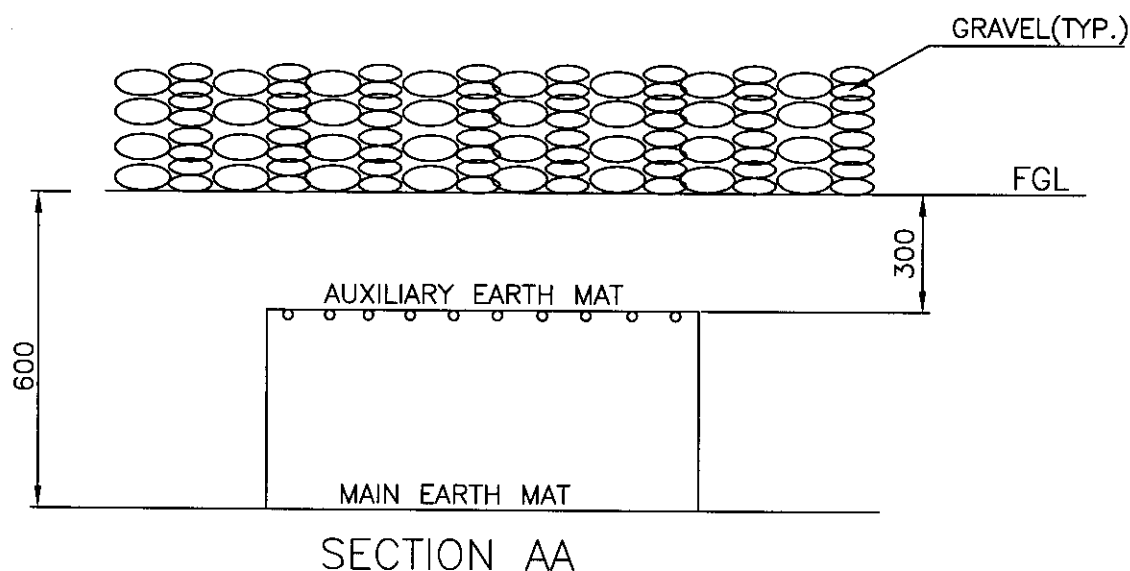
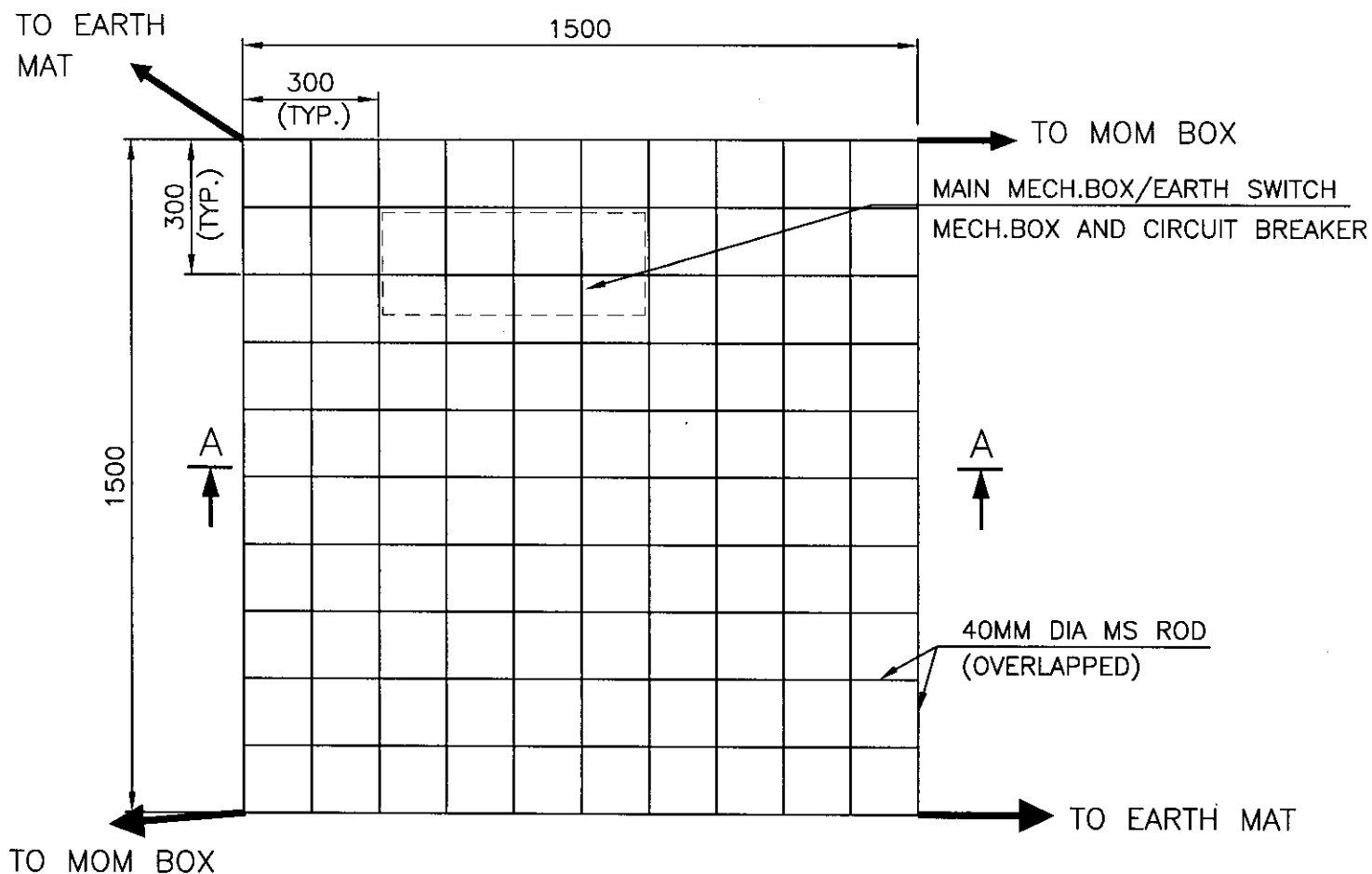
EQUIPMENT EARTHING DETAILS MARSHALLING KIOSK EARTHING

COMPUTER REF. NO.

DRG. No.

TB 4 304 509 004

SHEET No.
15



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.



EQUIPMENT EARTHING DETAILS
AUXILIARY EARTH MAT FOR ISOLATOR MAIN MECH., E/S MECH.
AND CIRCUIT BREAKER CONTROL CUBICLE

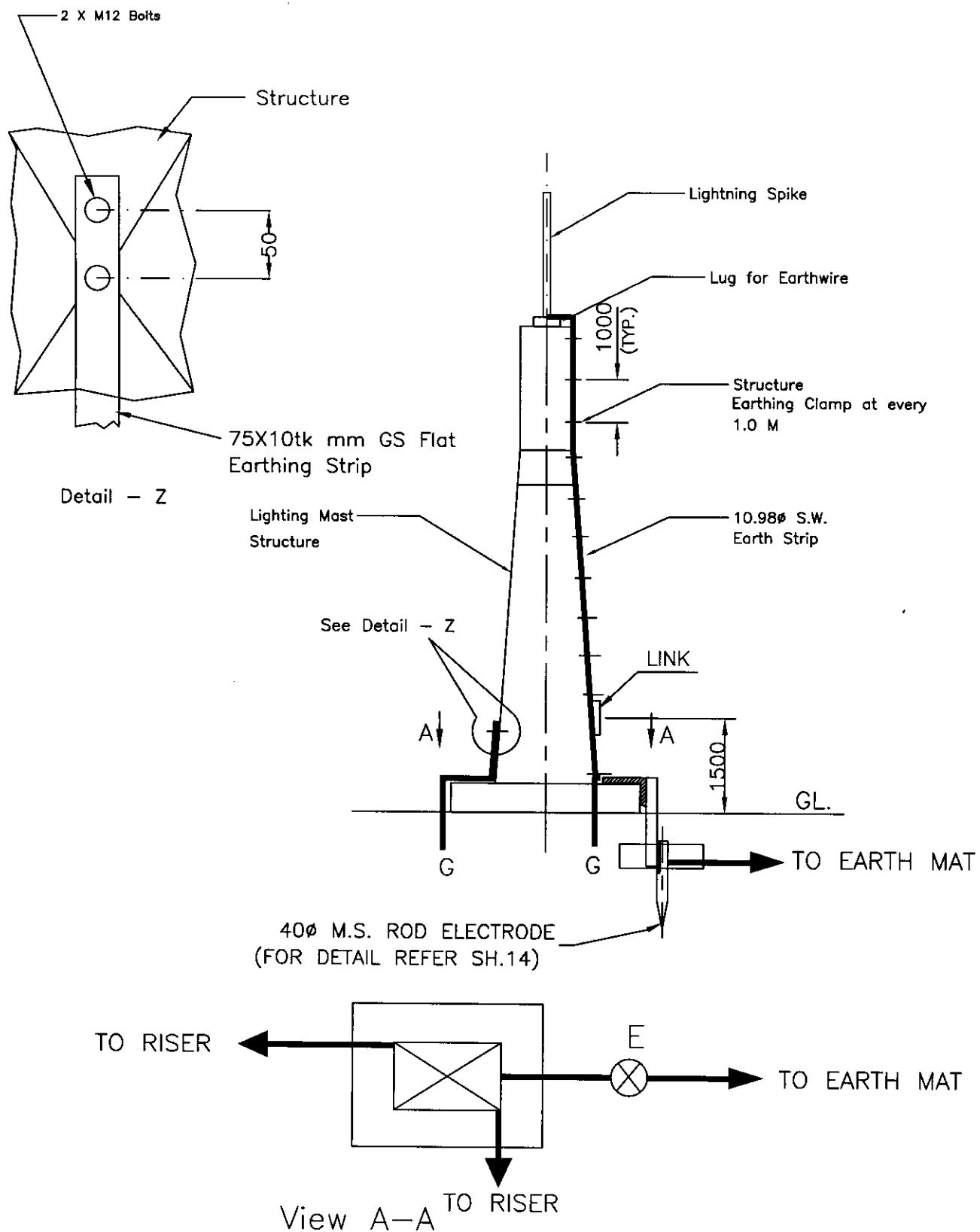
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Report No.

TB 4 304 509 004

SHEET No.

16



EQUIPMENT EARTHING DETAILS Lightning Mast

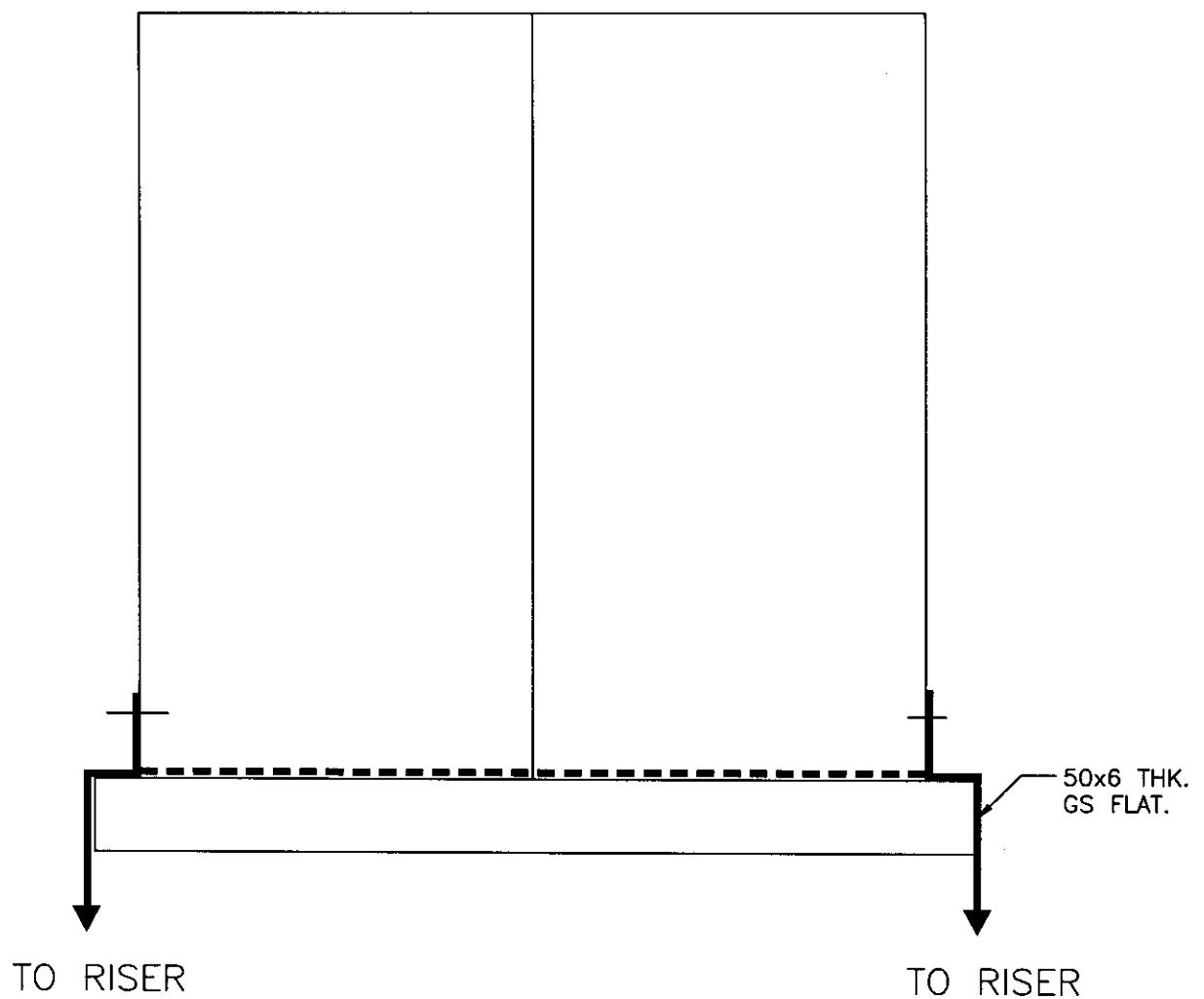
COMPU. DRG. REF.

DRG.NO.

TB 4 304 509 004

SHEET No.

17



NOTE:

FLEXIBLE EARTHING CONDUCTOR BETWEEN DOOR, PANEL &
GLAND PLATE ARE SHOWN IN OGA DRAWINGS.



EQUIPMENT EARTHING DETAILS PANELS EARTHING

COMPU. DRG. REF.

Report No.

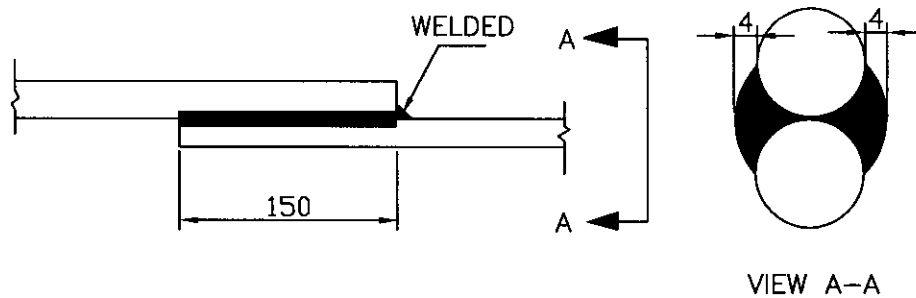
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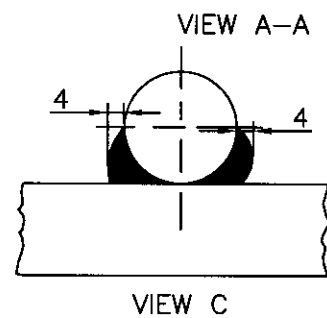
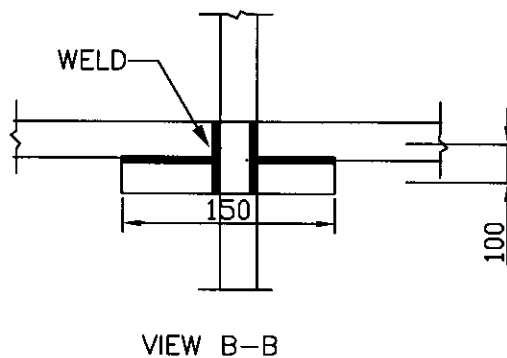
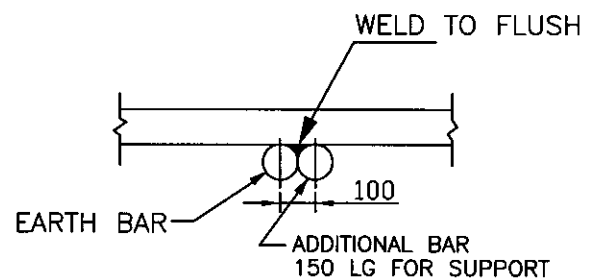
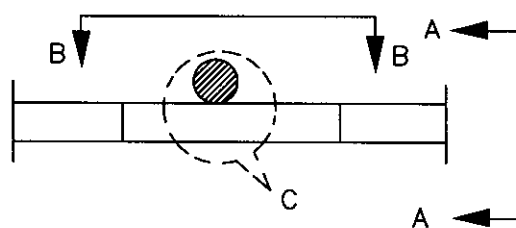
18

ROD TO ROD

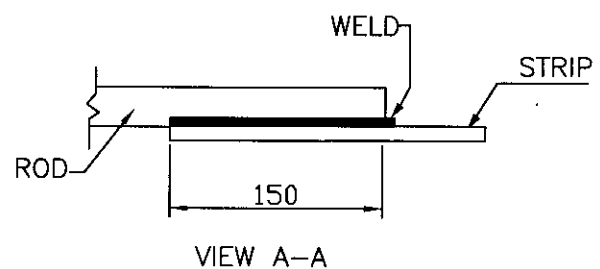
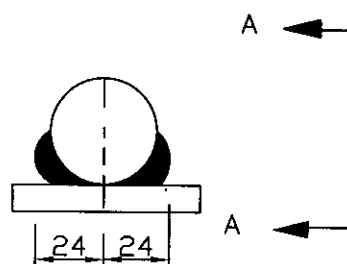
1. STRAIGHT LAP JOINT/RISER



2. RIGHT ANGLE JOINT



3. ROD TO STRIP



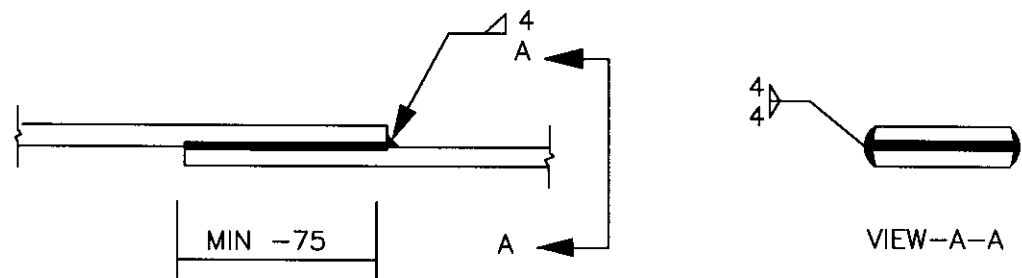
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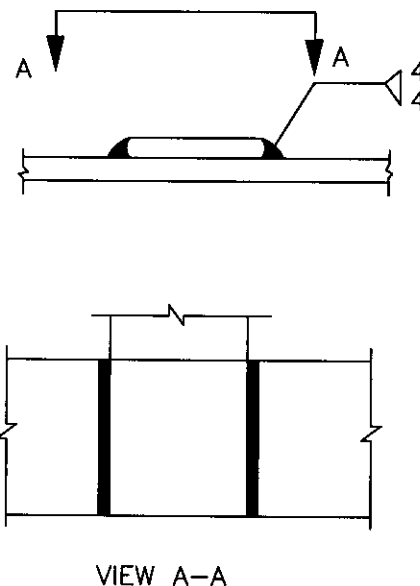
REVISION NO.				PREPARED	CHECKED				
DATE									
REVISION NO.								APPROVED	
DATE								HEAD TBEM	

C. STRIP TO STRIP (FOR 50x6 G.S. FLAT OR M.S. FLAT)

1. STRAIGHT LAP JOINT/RISER



2. CROSS LAP JOINT



NOTE :- NO JOINT SHALL BE PERMITTED IN 75x10mm GI FLAT.

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DATE									
REVISION NO.								APPROVED	
DATE								HEAD TBEM	