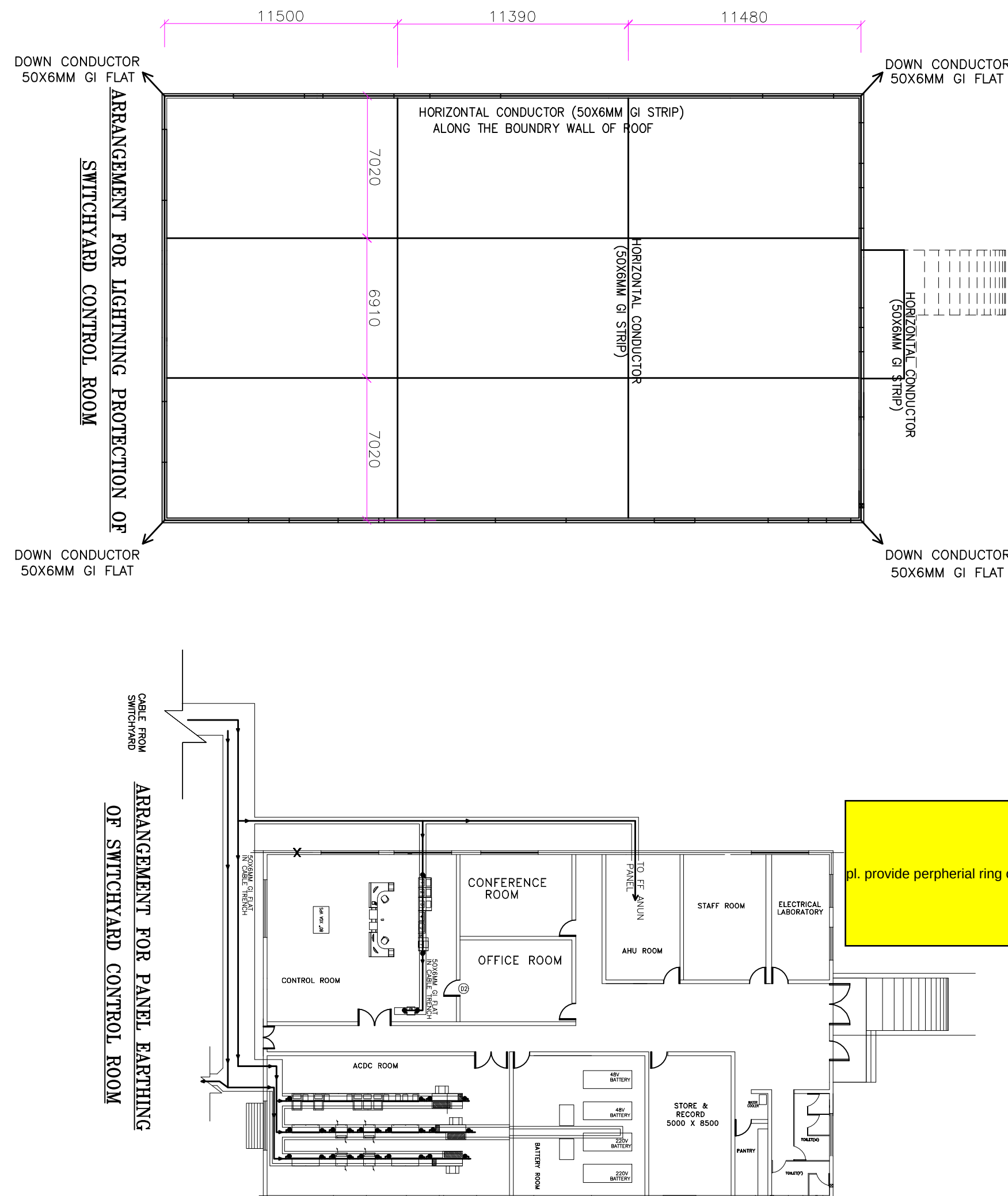


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INVENTORY NO. SIGN & DATE



LEGENDS:-

_____	EARTH MAT CONDUCTOR 40mm DIA MS ROD
●	ROD ELECTRODE WITHOUT TEST PIT
40MM DIA MS ROD RISER FOR EQUIPMENT CONNECTION	
ROD ELECTRODE WITH TEST PIT TO BE USED FOR CONNECTING TRANSFORMER/REACTOR NEUTRAL.	
	

NTPC DRAWING NO. 9661-230-01TB-PVE-E-003

OWNER :

THE SINGARENI COLLIERIES COMPANY LTD.

CONSULTANT : **एन टी पी सी लिमिटेड**

NIPC
(A GOVERNMENT OF INDIA ENTERPRISE)
CONSULTANCY WING

SCCL COAL BASED THERMAL POWER PLANT

PACKAGE

CONTRACTOR	CERT	NAME	SI
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 TRANSMISSION PROJECTS DIVISION NEW DELHI		DEPT CODE
DRN	SD/-	01.09.12
CHD	SD/-	01.09.12
ADPN	SD/-	01.09.12

EARTHING LAIDOUT FOR 400KV & 132KV SWITCHYARD

DEPT.	SCALE 1:600	DRAWING NO.	TB-06-0-353-509-015
SIGN			
DATE		SHEET 4	OF 4
		REV	01

- 1) ALL EARTHING AS PER TYPICAL EARTHING DETAIL IN DRC NO. 19-004-4-531-509-014 TO BE FOLLOWED.
- 2) WHEREVER A GROUNDING CONDUCTOR CROSSES ROADS, CABLE TRENCHES, UNDERGROUND SERVICE DUCTS, PIPE LINES, RAILWAY TRACKS, TELEPHONE LINES, POWER LINES, ETC. THE CONDUCTOR SHALL BE BENT AT AN ANGLE OF 45 DEGREES BUT NOT LESS THAN 60MM BELOW THE ROAD SURFACE AND SHALL BE REINFORCED AROUND THE EQUIPMENT/STRUCTURE FOUNDATIONS.
- 3) GROUNDING CONDUCTOR AROUND THE BUILDING SHALL BE BAIRED IN GROUND AT A MINIMUM DISTANCE OF 150MM FROM THE OUTER BOUNDARY OF THE BUILDING.
- 4) ALL GROUNDING CONDUCTORS SHALL HAVE APPROXIMATELY 5MM CONCRETE COVER.
- 5) ALL GROUNDING CONNECTIONS SHALL BE MADE BY ELECTRIC ARC WELDING. ALL WELDED JOINTS SHALL BE ALLOWED TO COOL DOWN GRADUALLY TO AMBIENT/TEMPERATURE BEFORE PUTTING ANY LOAD ON THEM. AIRTIGHT COUPLING SHALL BE USED FOR LARGE DIAMETER ROD/HOLE CONDUCTORS SHALL BE DONE BY NORMAL JOINT THROUGH JOINT.
- 6) ALL ARC WELDING OF LARGE DIAMETER CONDUCTORS SHALL BE DONE BY NORMAL JOINT THROUGH JOINT.
- 7) ELECTRODES ○ ROD ELECTRODES WITH TEST PIT TO BE USED FOR CONNECTING TRANSFORMER/REACTOR NEUTRAL AND NEUTRAL ELECTRODES FOR CVT, LV, LM & SHIELD WIRE TOWERS, SHOWN TENTATIVELY.
- 8) ○ ALL STEEL COLUMNS, METALLIC STAIRS ETC. SHALL BE CONNECTED TO THE NEAREST GROUNDING CONDUCTOR BY METALLIC STRIPS.
- 9) METALLIC CONDUITS AND CABLE TRAY SECTION FOR CABLE INSTALLATION SHALL BE BAIRED TO BUSHIRE THROUGH THE BUILDING FOUNDATION AND SHALL BE CONNECTED TO THE GROUNDING CONDUCTOR BY METALLIC STRIPS.
- 10) WHEREVER GROUNDING CONDUCTOR CROSSES OR RUNS ALONG METALLIC STRUCTURES SUCH AS EXHAUST/STEAM CONDUITS, BOTH ENDS SHALL ALSO BE CONNECTED TO THE GROUNDING SYSTEM.
- 11) A SEPARATE GROUNDING CONDUCTOR SHALL BE PROVIDED FOR GROUNDING LIGHTING FIXTURES, RECEPTACLES SWITCHES, JUNCTION BOXES, LIGHTING CONDUITS, ETC.
- 12) FOR EARTHING OF EQUIPMENT, JACKBOX, FENCE, GATE, AUXILIARY EARTH MAT ETC. EARTHING DETAILS TO BE AS PER TYPICAL EARTHING DETAIL IN DRC NO. 19-004-4-531-509-014.
- 13) IN CASE OF INTER-STATE, RAILWAY TRACKS NOT MOUNTED AT SAME LOCATION THE EARTHING CONDUCTOR SHALL BE LAID MINIMUM 1500MM AWAY FROM SUCH LOCATIONS.
- 14) RAILWAY TRACKS WITH SWITCHBOARD AREA SHALL BE BONDED ACROSS FISH PLATES AND CONDUCTOR TO EARTHING CONDUCTOR.
- 15) EARTHING SHOULD BE LAID 2M BEYOND FENCE IN ALL SITES.
- 16) CONNECTION WITH EQUIPMENT EARTHING PAD SHALL BE DOCTED TYPE CONNECTION BETWEEN EQUIPMENT AND EARTHING PAD.
- 17) CONDUCTOR SHALL BE CLEANED WITH WIRE BRUSH TREATED WITH RED POWDER AND AFTERWARDS THICKLY COATED WITH BITUMEN COMPOUND TO PREVENT CORROSION.
- 18) THE LOCATIONS OF RISERS SHALL BE IN SUCH A WAY THAT THEY SHOULD NOT INTERFERE WITH COLUMNS AND FOUNDATIONS.
- 19) EARTHING CONDUCTOR SHALL BE COVERED ON ALL SLOES BY A LAYER OF GOOD SOIL, FREE FROM STONES AND RUBBISH.
- 20) LIGHTNING CONDUCTOR ON ROOF SHALL NOT BE DIRECTLY CLAYED ON SURFACE OF ROOF.
- 21) SUPPORTING CABLES OF PEG/SUSPENDING COMPOUND SHALL BE USED FOR CONDUCTOR PLANE AT AN INTERVAL OF 1500MM.
- 22) CABLE CLAYED SURFACE OF ROOF SHALL BE DRAWN IN PLAIN ONLY. THE CONDUCTOR SHADING SHALL BE DONE BY THE FOLLOWING METHOD:
 - 22) 50MM W/ EARTH STRIP SHALL BE USED FOR DARTING AND LIGHTNING PROTECTION OF CONTROL ROOM BUILDING.
- 23) SUITABLE PIPE STEELERS SHALL BE PROVIDED WHERE EARTH CONDUCTOR PASSES THROUGH FLOOR AND ROOF AND THE SAME SHALL BE SEVED AFTER INSTALLATION.
- 24) IN ALL THE ROOMS OF SWITCHBOARD CONTROL ROOM A RING OF 50MM Ø PLAT SHALL BE LAID AND THE RINGS SHALL BE INTERCONNECTED THROUGH RISERS TO EARTHING AT LEAST AT TWO POINTS.
- 25) THE RISERS SHALL BE BAIRED IN GROUND AT AN ANGLE OF 45 DEGREES AND SHALL BE BAIRED IN THE FLOOR 25MM ABOVE THE FINISHED FLOOR SURFACE.
- 26) LAYING OF 50MM Ø PLAT INSIDE THE ROOM SHALL BE 300MM ABOVE THE GROUND ON WALL OR 25MM BELOW THE FINISHED FLOOR.
- 27) GROUNDING CONDUCTORS ALONG THEIR RUN ON CABLE TRAYCH LADDER, COLUMNS,STAIRS ETC. SHALL BE CLAYED TO THE SURFACE OF THE TRAYCH LADDER, COLUMNS,STAIRS ETC. BY USING 50MM Ø PLAT.
- 28) CABLE TRENCHES SHALL BE ON THE WALL NEAR TO THE EQUIPMENT. WHEREVER A GROUNDING CONDUCTOR PASSES THROUGH WALLS, FLOORS ETC GALVANIZED IRON STEEL SHALL BE PROVIDED FOR THE PASSAGE OF THE CONDUCTOR.

TRANSFORMER YARD TOWERS, BPI's & LA's SHALL BE CONNECTED TO TRANSFORMER YARD EARTHMAT GRID

