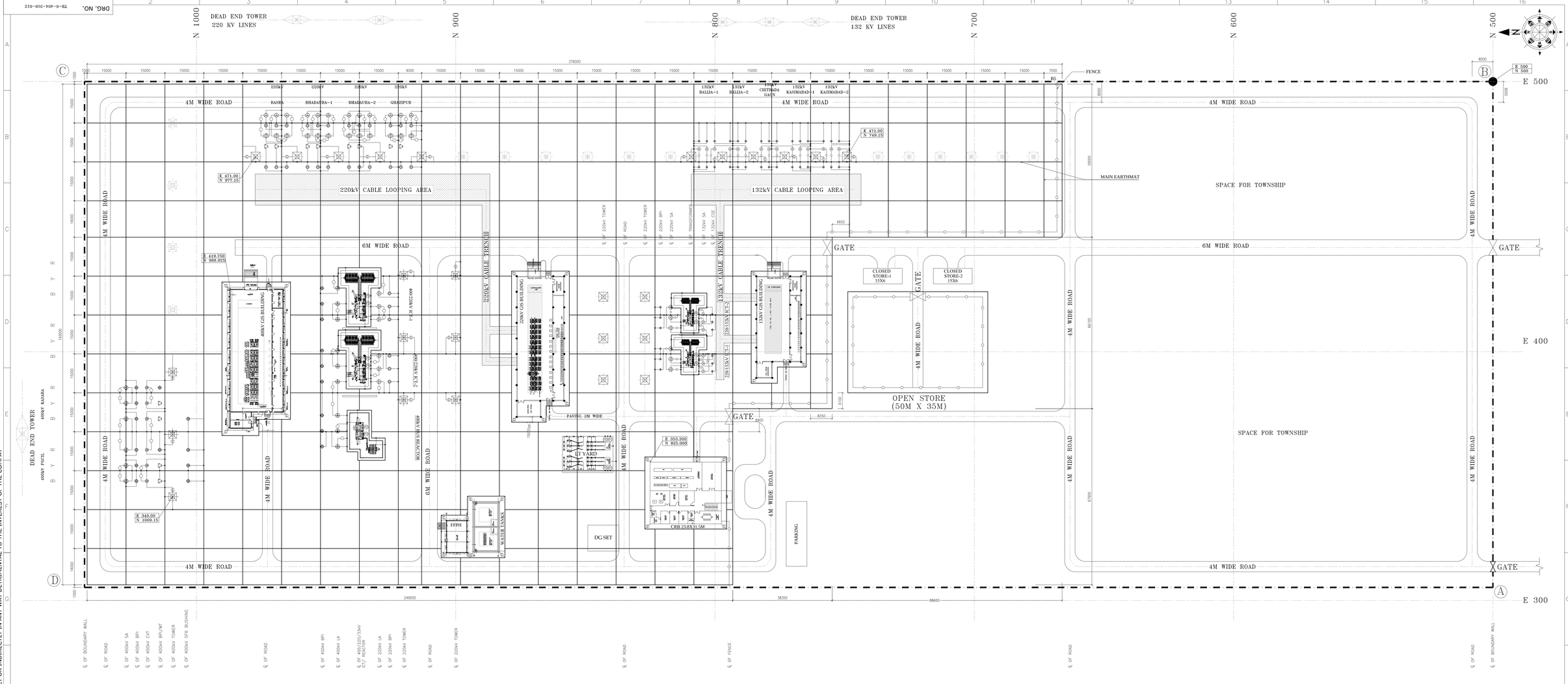
DRG. NO. TB-0-404-316-012



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INVENTORY NO | SIGN. AND DATE | REF. DRG. NO. | COMPUTER FILE NAME

EARTHING NOTES :–

1. ROUTING OF CONDUCTOR IS DIAGRAMMATIC ONLY, & MARGINAL SHIFTING OF CONDUCTOR TO AVOID INTERFERENCES OF STRUCTURE/FOUNDATION. CABLE TRENCHES ETC. SHALL BE DONE AT SITE.
2. ALL EQUIPMENTS AND STRUCTURES SHALL, IN GENERAL, BE GROUNDED AT TWO POINTS AT OPPOSITE CORNERS WHETHER SHOWN IN DRG. OR NOT AND THESE SHALL BE CONNECTED TO DIFFERENT PARTS OF THE GROUNDMAT WHEREVER POSSIBLE.
3. GROUNDING CONDUCTORS IN OUTDOOR AREAS SHALL BE BURIED 600MM BELOW FINISHED GROUND LEVEL.
4. WHENEVER A GROUNDING CONDUCTOR CROSSES ROADS, CABLE TRENCHES, UNDERGROUND SERVICE DUCTS, PIPES, TUNNELS, RAILWAY TRACKS, OIL RECOVERY TANKS, TRANSFORMER SOAK PIT ETC. IT SHALL BE LAID AT LEAST 300MM BELOW THEM, SHALL BE REROUTED ROUND THE EQUIPMENT/STRUCTURE FOUNDATIONS.
5. GROUNDING CONDUCTOR AROUND THE BUILDING SHALL BE BURIED IN GROUND AT A MINIMUM DISTANCE OF 1500MM FROM THE OUTER BOUNDARY OF THE BUILDING.
6. GROUNDING CONDUCTORS EMBEDDED IN CONCRETE SHALL HAVE APPROXIMATELY 50MM CONCRETE COVER. IF GROUNDING CONDUCTOR IS REQUIRED TO BE EMBEDDED IN MAJOR FOUNDATIONS, THEN IT SHALL BE LAID IN A SLEEVE.
7. CONNECTION BETWEEN EQUIPMENT GROUNDING LEADS AND MAIN GROUND CONDUCTORS SHALL BE WELDED TYPE FOR RUST PROTECTION, THE WELDS SHALL BE CLEANED WITH WIRE BRUSH, TREATED WITH RED LEAD PRIMER AND AFTERWARDS THICKLY COATED WITH TWO COATS BITUMEN COMPOUND TO PREVENT CORROSION.
8. 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 THEM. ARTIFICIAL COOLING SHALL NOT BE ALLOWED.
9. BENDING OF LARGE EARTHING ROD SHALL BE DONE PREFERABLE BY GAS HEATING.
10. ALL ARC WELDING OF LARGE DIAMETER CONDUCTORS SHALL BE DONE BY LOW HYDROGEN CONTENT ELECTRODES.
11. LOCATION OF ROD ELECTRODE E & PIPE ELECTRODE PE ARE SHOWN TENTATIVELY, ELECTRODES FOR LA'S & TRANSFORMER NEUTRALS SHALL BE LOCATED NEAREST TO RESPECTIVE EQUIPMENT (AS PRACTICABLE).
12. ALL ELECTRODES SHALL BE 40ø x 3000MM LONG M.S. ROD EXCEPT FOR TRANSFORMER NEUTRAL WHERE IT IS 40ø×3000MM PIPE ELECTRODE.
13. GROUNDING CONDUCTORS ALONG THEIR RUN ON CABLE TRENCH, LADDER, COLUMN, BEAMS, WALLS, ETC. SHALL BE SUPPORTED BY SUITABLE WELDING/ CLEATING AT INTERVALS OF 750 MM. GROUNDING CONDUCTORS ALONG CABLE TRENCHES SHALL BE ON THE WALL NEAR TO THE EQUIPMENT WHERE EVER GALVANIZED IRON ENDS OF THE SLEEVES SHALL BE PROVIDED FOR THE PASSAGE OF THE CONDUCTOR. BOTH ENDS OF THE SLEEVES SHALL BE SEALED TO PREVENT THE PASSAGE OF WATER THROUGH THE SLEEVES
14. ALL STEEL COLUMNS, METALLIC STAIRS ETC. SHALL BE CONNECTED TO THE NEAREST GROUNDING CONDUCTOR BY GROUNDING LEADS. ELECTRICAL CONTINUITY SHALL BE ENSURED BY BONDING THE DIFFERENT SECTION OF HAND RAILS AND METALLIC STAIRS.
15. METALLIC PIPES, CONDUITS AND CABLE TRAY SECTION FOR CABLE INSTALLATION SHALL BE BONDED TO ENSURE ELECTRICAL CONTINUITY AND CONNECTED TO THE GROUNDING CONDUCTOR AT NOT MORE THAN 10 MTRS INTERVALS. APART FROM INTERMEDIATE CONNECTION, BOTH ENDS SHALL ALSO BE CONNECTED TO THE GROUNDING SYSTEM.
16. A SEPARATE GROUNDING CONDUCTOR SHALL BE PROVIDED FOR GROUNDING LIGHTING FIXTURES, RECEPTACLES, SWITCHES, JUNCTION BOXES, LIGHTING CONDUITS ETC.
17. WHEREVER GROUNDING CONDUCTORS CROSSES OR RUNS ALONG METALLIC STRUCTURES SUCH AS GAS/WATER/STEAM CONDUIT/PIPES ETC. AND STEEL OF CONCRETE IT SHALL BE BONDED TO THE SAME.
18. LIGHTING POLES, JUNCTION BOXES ON THE POLES CABLE BOXES/ GLANDS, LOCKOUT SWITCHES ETC. SHALL BE CONNECTED TO THE GROUNDING CONDUCTOR RUNNING ALONGWITH THE SUPPLY CABLE WHICH, INTURN, SHALL BE CONNECTED TO THE GROUNDING GRID CONDUCTOR AT LEAST TWO POINTS.
19. 50x6MM GALVANISED STEEL FLAT SHALL BE USED FOR EARTHING OF CABLE TRENCHES & CONTROL PANELS. ALL TRENCHES SHALL BE EARTHED AT INTERVALS OF 20 MTRS. ALONG THE LENGTH OF THE TRENCH & AT ALL ENDS OF THE TRENCHES. RISER SHALL BE PROVIDED FOR TRENCH EARTHING AT EVERY 30 MTRS & AT ALL ENDS.
20. FOR EQUIPMENT, FENCE, GATE, ETC. EARTHING DETAILS, REFER EQUIPMENT EARTHING DRAWING.
21. THE RISER CONNECTION TO EARTHMAT WILL BE 40mm DIA ROD. THE RISER TO EQUIPMENT CONNECTION WILL BE BY 75x12mm G.I. FLAT
22. EARTHMAT SHOULD BE BURIED 2m BEYOND FENCE ON ALL SIDES. ALL GATES AND EVERY ALTERNATE POST OF FENCE SHALL BE CONNECTED TO EARTHING GRID.
23. EARTHING OF LIGHTING POLE IS TO BE DONE BY 3000MM LONG 20MM DIA ROD ELECTRODE.
24. GROUNDING CONDUCTOR ALONG THE LENGTH OF ROAD SHALL HAVE MINIMUM CLEARANCE OF 4 METER FROM C/L OF THE ROAD TO AVOID FOULING WITH DRAIN.
25. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

LEGEND:–

SYMBOL	DESCRIPTION
———	40mmø M.S. ROD. – MAIN EARTHMAT
•——	RISERS FOR EQUIPMENT/ STRUCTURE EARTHING
(E)	ROD ELECTRODE WITH TEST PIT
(PE)	PIPE ELECTRODE WITH TREATED EARTH PIT
◯	ROD ELECTRODE WITHOUT TEST PIT

TB-0-404-316-002	PLAN & SECTION LAYOUT DRG. FOR 400/200/132kV GIS S/S, BALLIA
TB-3-404-510-001	SINGLE LINE DIAGRAM 400/220/132kV GIS S/S
REF. DRG. NO.	TITLE

LOI NO. : 336/ESD-765kV/10 RASARA/Vol-3 DATED 03.08.2018

ADDITIONAL INFORMATION W.O.No. 87002

STATUS OF DRAWING CONTRACT

DISTRIBUTION OF PRINTS

ग्राहक/परियोजना का नाम NAME OF CUSTOMER / PROJECT: UTTAR PRADESH POWER TRANSMIISSION CORPORATIION LIMITED

400/220/132kV GIS SUBSTATION AT RASARA, BALLIA (U.P.)

भारत हैवी इलैक्ट्रिकल्स लिमिटेड BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION PROJECTS DIVISION

	तैयार /NAME	हस्ता./SIGN.	दि./DATE
बनाया DRAWN	PK		21.03.19
जाँचा CHECKED	MM		
स्वीकृत APPROVED	VK		

विभाग DEPT. TBEM | सीट 422 CODE | मापक्रम / SCALE | कार्ड कोड CARD CODE

शीर्षक/TITLE: EARTHMAT LAYOUT DRAWING FOR 400/220/132kV GIS SUB STATION, BALLIA

ड्रा.सं./DRAWING NO. TB-0-404-316-012 | पुनरी./REV. 00

पृष्ठ सं./SHEET No. 01 | अगला पृष्ठ/NEXT SHEET → –

REV.	DATE	ALTERED / CHECKED / APPROVED	ZONE