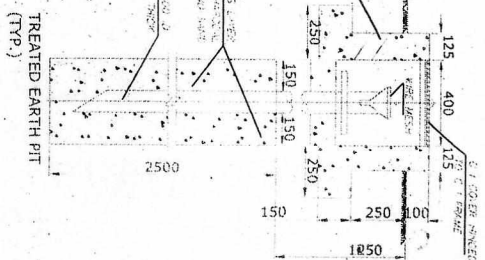


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1. THE LIGHTNING PROTECTION SYSTEM WILL BE GENERALLY IN ACCORDANCE WITH IS 2209.
2. DOWN CONDUCTORS SHALL BE CLEANED ON OUTER SIDE OF THE BUILDING WALLS AT 750MM INTERVAL OR WELDED TO OUTSIDE BUILDING COLUMNS AT 100MM INTERVAL.
3. LOCATION OF LIGHTENING CONDUCTOR & AIR TERMINATION MAY BE MODIFIED TO SUIT SITE.
4. ALL JOINTS IN THE DOWN CONDUCTORS SHALL BE WELDED TYPE.
5. LIGHTENING CONDUCTOR ON THE ROOF SHALL NOT BE DIRECTLY CLEANED ON THE SURFACE OF ROOF. SUPPORTING BLCKS OF PCCONSUMING COMPOUND SHALL BE USED FOR CONDUCTOR FIXING AT INTERVAL OF 100MM.
6. ALL METALLIC CONDUCTORS WITHIN A VICINITY OF TWO METER OF THE CONDUCTOR SHALL BE BOUNDED TO CONDUCTOR OF LIGHTENING PROTECTION SYSTEM
7. LIGHTENING CONDUCTOR SHALL NOT PASS THROUGH OR RUN INSIDE G+1 CONDUITS
8. TEST LINK SHALL BE MADE OF GALVANIZED STEEL OF SIZE 50XMM.
9. INSULATORS SHALL BE PROVIDED AS PER DETAIL P10 AT EVERY 1M DISTANCE FOR LIGHTENING CONDUCTORS

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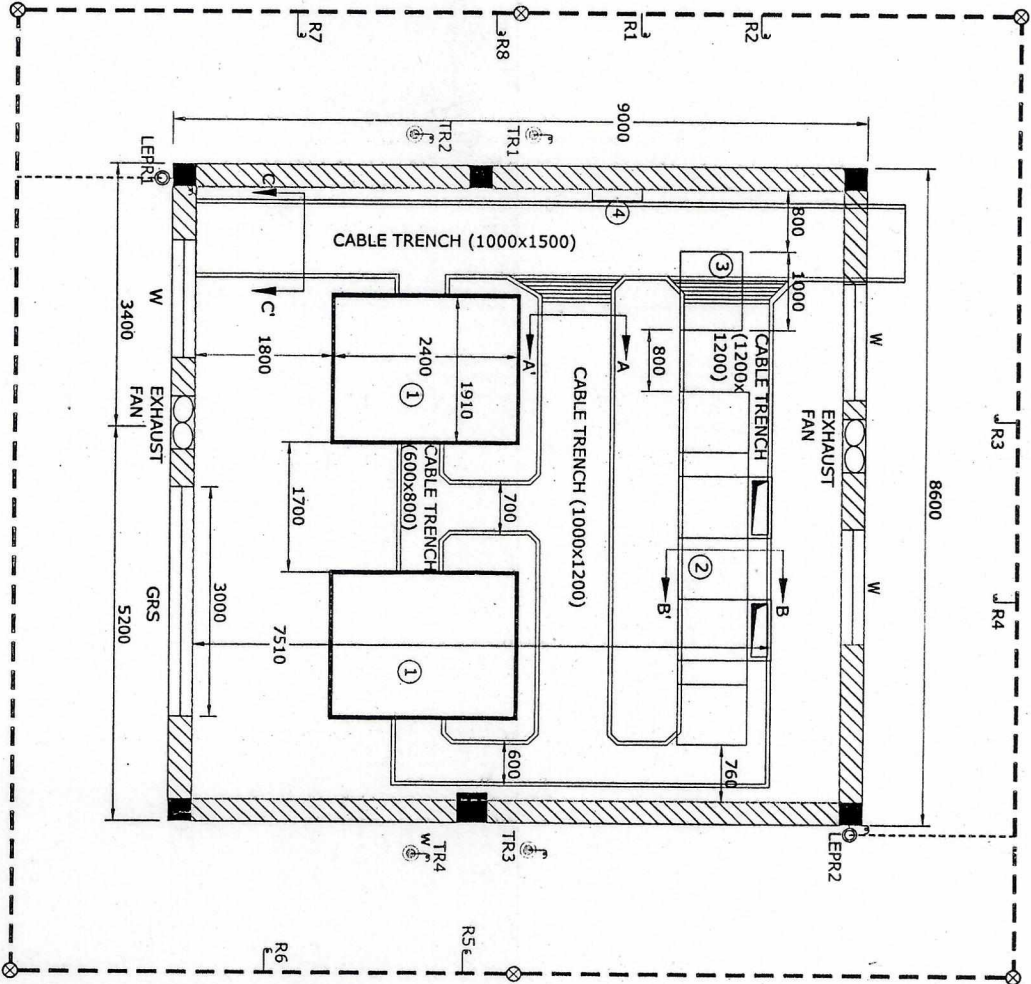
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NTPC LIMITED.

- LEGEND**
- 40 mm DIA. MS ROD FOR MAIN EARTH MAT
 - 40 mm DIA. MS ROD 300MM LONG EARTH ELECTRODE (EP)
 - 40 mm DIA. MS ROD 300MM LONG EARTH ELECTRODE FOR ELECTRONIC EARTH MAT (EEP)
 - 40 mm DIA. MS ROD 300MM LONG EARTH ELECTRODE FOR LIGHTNING PROTECTION (LEP)
 - TREATED EARTH PIT FOR TRANSFORMER NEUTRAL
 - RISER / PIT/AL 40 MM DIA. MS ROD
 - EARTH CONDUCTOR ABOVE GROUND 65 x 8mm GS FLAT



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- NOTES:**
- THE EARTHING SYSTEM WILL BE GENERALLY IN ACCORDANCE WITH IS:3043. MEASURED VALUE OF EARTHING RESISTANCE HAVE TO BE LESS THAN ONE OHM.
 - ROUTING OF EARTHING CONDUCTOR IS DIAGRAMMATIC ONLY. MARGINAL SHIFTING OF CONDUCTOR IF REQUIRED TO AVOID INTERFERENCE WITH OTHER SYSTEMS OR SERVICES WILL BE DONE AT SITE.
 - EARTHING CONDUCTORS BURIED IN GROUND WILL BE Laid MINIMUM 30MM BELOW GRADE LEVEL UNLESS OTHERWISE INDICATED IN THE DRAWING. WHEREVER IT WILL BE CROSSING PIPES, DUCTS, TRENCHES, RAIL TRACKS, FOUNDATION ETC. IT WILL BE AT LEAST 30MM BELOW THEM. EARTHING CONDUCTOR CROSSING THE ROAD WILL BE INSTALLED IN PIPES.
 - EARTHING CONDUCTORS EMBEDDED IN THE CONCRETE FLOOR OF THE BUILDING WILL HAVE APPROXIMATELY 50MM CONCRETE COVER.
 - STAIR CASE HAND RAILS AND OTHER NON CURRENT CARRYING METAL PARTS SHALL BE EARTHED THROUGH 25 x 8MM GS FLAT CONDUCTOR.
 - EARTHING CONDUCTOR LAID ALONG CONTINUOUS LENGTH OF THE CABLE TRAYS WILL BE EARTHED AT MINIMUM TWO PLACES BY 50X6 GS FLAT TO EARTHING SYSTEM. DISTANCE BETWEEN THE EARTHING POINTS SHALL NOT EXCEED 30M.
 - PIPE SLEEVES WILL BE PROVIDED FOR RISERS WHENEVER IT IS CROSSING THE FLOOR LEVEL.
 - FOR ANY FURTHER DETAILS PLEASE REFER TO DOCUMENT 'TYPICAL EQUIPMENT EARTHING DETAIL AND LIGHTING PROTECTION DETAILS'.
 - THE SIZES OF EARTHING CONDUCTORS TO BE CONNECTED BETWEEN FLOOR EARTH CONDUCTOR RING AND VARIOUS ELECTRICAL EQUIPMENT AT TWO LOCATIONS SHALL BE AS BELOW:
 - i) 330V/11KV SWITCHGEAR - 63X2 MM GS FLAT
 - ii) 415V MCC DISTRIBUTION BOARDS - 35X3 MM GS FLAT
 - iii) CONTROL PANELS & DESK - 25X3 MM GS FLAT
 - iv) CABLE TRAYS/STRUCTURES - 50X6 MM GS FLAT
 - v) RAILS/ OTHER NON CURRENT CARRYING METAL PARTS - 25X6MM GS FLAT

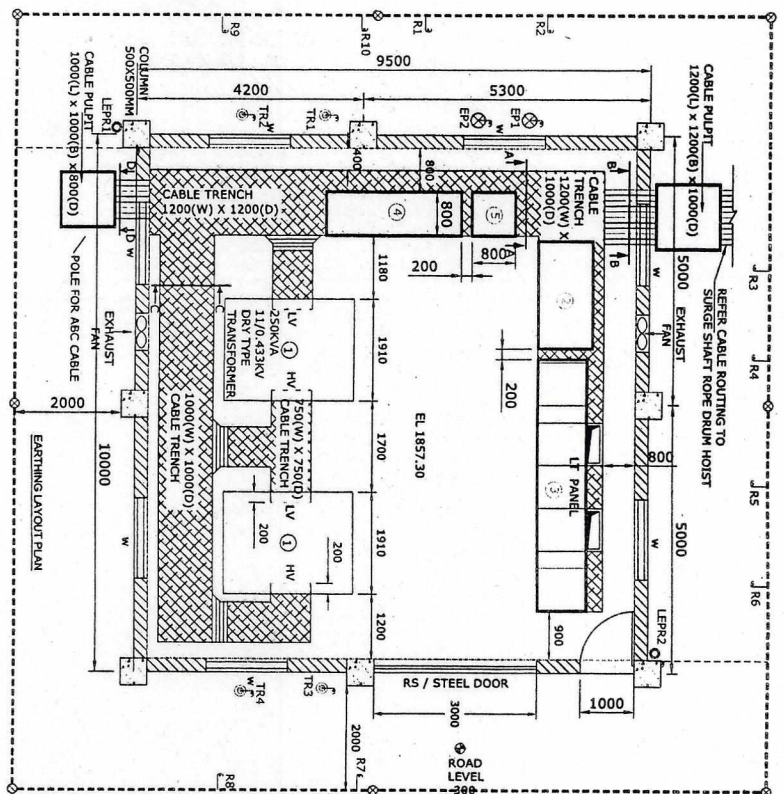
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RISER DETAILS	
RISER NO.	CONNECTION
R1, R2, R3, R4	TO EARTH CONDUCTOR RING AT FLOOR EL:1500.0MM
LEPR1, LEPR2	FOR BUILDING LIGHTNING PROTECTION
R5, R6, R7, R8	FOR TRANSFORMER TANK & COOLERS
TR1, TR2, TR3, TR4	FOR NEUTRAL EARTHING OF TRANSFORMER

S NO.	EQUIPMENT	QTY	DIMENSION
1	250MM TRANSFORMER	2	2400(W) x 1910(D) x 2340(H)
2	LT SWITCHGEAR	1	4700(W) x 1210(D) x 2300(H)
3	MDS	1	1000(W) x 800(D) x 1500(H)
4	NORMAL LIGHTING BOARD	1	650(W) x 1500(D) x 850(H)

(ALL DIMENSIONS ARE IN MM)



LEGEND

- 40 mm DIA. MS ROD FOR MAIN EARTH MAT
- 40 mm DIA. MS ROD 300MM LONG EARTH ELECTRODE (EP)
- 40 mm DIA. MS ROD 300MM LONG EARTH ELECTRODE FOR ELECTRONIC EARTH MAT (EEP)
- 40 mm DIA. MS ROD 300MM LONG EARTH ELECTRODE FOR LIGHTNING PROTECTION (LEP)
- TREATED EARTH PIT FOR TRANSFORMER NEUTRAL
- RISER / PIT/VAL. 40 MM DIA. MS ROD
- EARTH CONDUCTOR ABOVE GROUND 65 x 8mm GS FLAT

NOTES:

- THE EARTHING SYSTEM WILL BE GENERALLY IN ACCORDANCE WITH IS:3043. MEASURED VALUE OF EARTHING RESISTANCE HAVE TO BE LESS THAN ONE OHM
- ROUTING OF EARTHING CONDUCTOR IS DIAGRAMMATIC ONLY. MARGINAL SHIFTING OF CONDUCTOR IF REQUIRED TO AVOID INTERFERENCE WITH OTHER SYSTEMS OR SERVICES WILL BE DONE AT SITE.
- EARTHING CONDUCTORS BURIED IN GROUND WILL BE LAID MINIMUM 100MM BELOW GRADE LEVEL UNLESS OTHERWISE INDICATED IN THE DRAWING. WHEREVER IT WILL BE CROSSING PIPES, DUCTS, TRENCHES, RAIL TRACKS, FOUNDATION, ETC., IT WILL BE AT LEAST 200MM BELOW THEM. EARTHING CONDUCTOR CROSSING THE ROAD WILL BE INSTALLED IN PIPES.
- EARTHING CONDUCTORS EMBEDDED IN THE CONCRETE FLOOR OF THE BUILDING WILL HAVE APPROXIMATELY 50 MM CONCRETE COVER.
- STAIR CASE HAND RAILS AND OTHER NON CURRENT CARRYING METAL PARTS SHALL BE EARTHED THROUGH 25 x 8MM GS FLAT CONDUCTOR.
- EARTHING CONDUCTOR LAID ALONG CONTINUOUS LENGTH OF THE CABLE TRAYS WILL BE EARTHED AT MINIMUM TWO PLACES BY 35x6 GS FLAT TO EARTHING SYSTEM. DISTANCE BETWEEN THE EARTHING POINTS SHALL NOT EXCEED 30M.
- PIPE SLEEVES WILL BE PROVIDED FOR RISERS WHENEVER IT IS CROSSING THE FLOOR LEVEL.
- FOR ANY FURTHER DETAILS PLEASE REFER TO DOCUMENT 'TYPICAL EQUIPMENT EARTHING DETAIL AND LIGHTING PROTECTION DETAILS'.
- THE SIZES OF EARTHING CONDUCTORS TO BE CONNECTED BETWEEN FLOOR EARTH CONDUCTOR RING AND VARIOUS ELECTRICAL EQUIPMENT AT TWO LOCATION SHALL BE AS BELOW:
 - i) 38KV/11KV SWITCHGEAR - 65X8 MM GS FLAT
 - ii) 415V MCC/DISTRIBUTION BOARDS - 50X8 MM GS FLAT
 - iii) CONTROL PANELS & DESK - 25X3 MM GS FLAT
 - iv) CABLE TRAYS/STRUCTURES - 50X8 MM GS FLAT
 - v) RAILS/OTHER NON CURRENT CARRYING METAL PARTS - 25X6MM GS FLAT
- RTU FOR SURGE SHAFT SHALL BE CONNECTED TO EP1 AND EP2 EARTH ELECTRODE

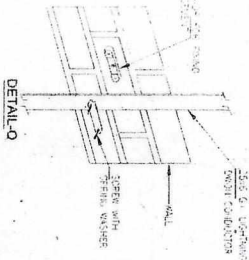
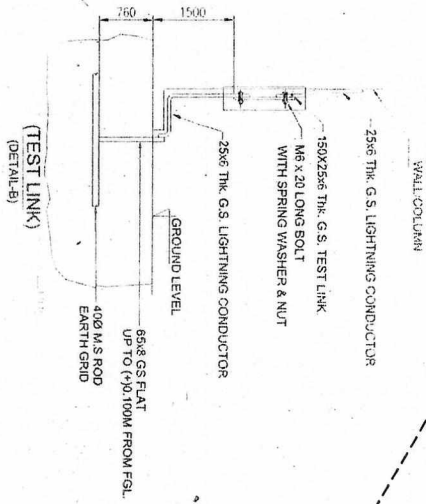
S NO.	EQUIPMENT	QTY	DIMENSION
1	250KVA TRANSFORMER	2	2400W x 1910 x 2340H
2	ALDB-1	1	2000(W) x 1000(D) x 1800(H)
3	LT SWITCHGEAR	1	4700(W) x 1210(D) x 2350(H)
4	SURGE SHAFT SUPPLY PANEL (PH PACKS)	1	2500(W) x 800(D) x 2000(H)
5	RTU SURGE SHAFT	1	800(W) x 800(D) x 2415(H)

RISER NO.	CONNECTION
RTU NO. 64, 65, 66	TO EARTH CONDUCTOR RING AT FLOOR EL. 1070MM
LEP1, LEP2	FOR BUILDING LIGHTNING PROTECTION
NO. RTU NO. 612	FOR TRANSFORMER TOWER & COILS
RTU NO. 1124	FOR NEUTRAL EARTHING OF TRANSFORMER
EP1, EP2	FOR SURGE SHAFT RTU PANEL

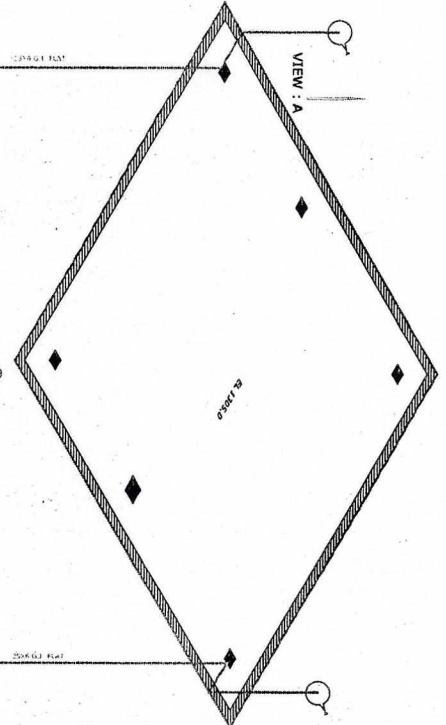
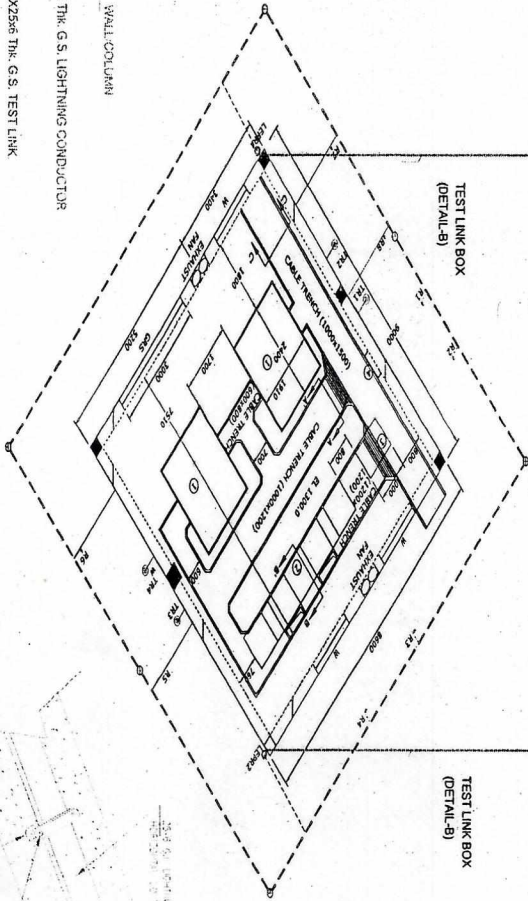
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CUSTOMER		PROJECT	
BHARAT HEAVY ELECTRICALS LTD.		TAPPAVAI VILLAGE PROJECT (OX130 MM)	
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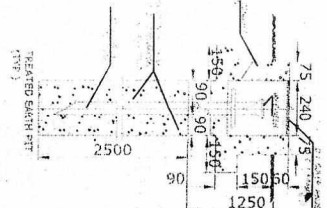
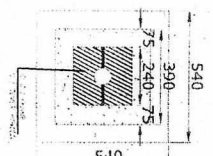
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DETAIL-P



FINING ARRANGEMENT OF AIR TERMINAL ROD



NOTES (LIGHTNING PROTECTION SYSTEM):

1. THE LIGHTNING PROTECTION SYSTEM WILL BE GENERALLY IN ACCORDANCE WITH IS:2335.
2. DOWN CONDUCTORS SHALL BE CLEARED ON OUTER SIDE OF THE BUILDING WALLS AT 750MM INTERVAL OR WELDED TO OUTSIDE BUILDING COLUMNS AT 1000MM INTERVAL.
3. LOCATION OF LIGHTNING CONDUCTOR & AIR TERMINATION MAY BE MODIFIED TO SUIT SITE.
4. ALL JOINTS IN THE DOWN CONDUCTORS SHALL BE WELDED TYPE.
5. LIGHTNING CONDUCTOR ON THE ROOF SHALL NOT BE DIRECTLY CLEARED ON THE SURFACE OF ROOF SUPPORTING BLOCKS OF PCC/INSULATING COMPOUND SHALL BE USED FOR CONDUCTOR FIXING AT INTERVAL OF 1500MM.
6. ALL METALLIC CONDUCTORS WITHIN A VICINITY OF TWO METER OF THE CONDUCTOR SHALL BE BOUNDED TO CONDUCTOR OF LIGHTNING PROTECTION SYSTEM.
7. LIGHTNING CONDUCTOR SHALL NOT PASS THROUGH OR RUN INSIDE G.I. CONDUITS.
8. TEST LINK SHALL BE MADE OF GALVANIZED STEEL OF SIZE 25X6MM.
9. INSULATORS SHALL BE PROVIDED AS PER DETAIL P10 AT EVERY 1M DISTANCE FOR LIGHTNING CONDUCTORS.

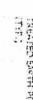
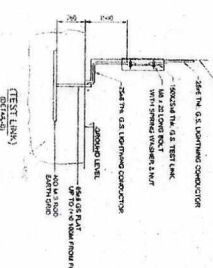
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CONSULTANT BHARAT HEAVY ELECTRICALS LTD. BHOPAL, M.P.		CONSULTANT BHARAT HEAVY ELECTRICALS LTD. BHOPAL, M.P.	

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10. RISERS RA & RB SHALL BE CONNECTED TO ELECTRONIC PANELS AT EL. 1607 ON

1. THE LIGHTNING PROTECTION SYSTEM WILL BE GENER-

- CALL - 1-800-368-7777

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