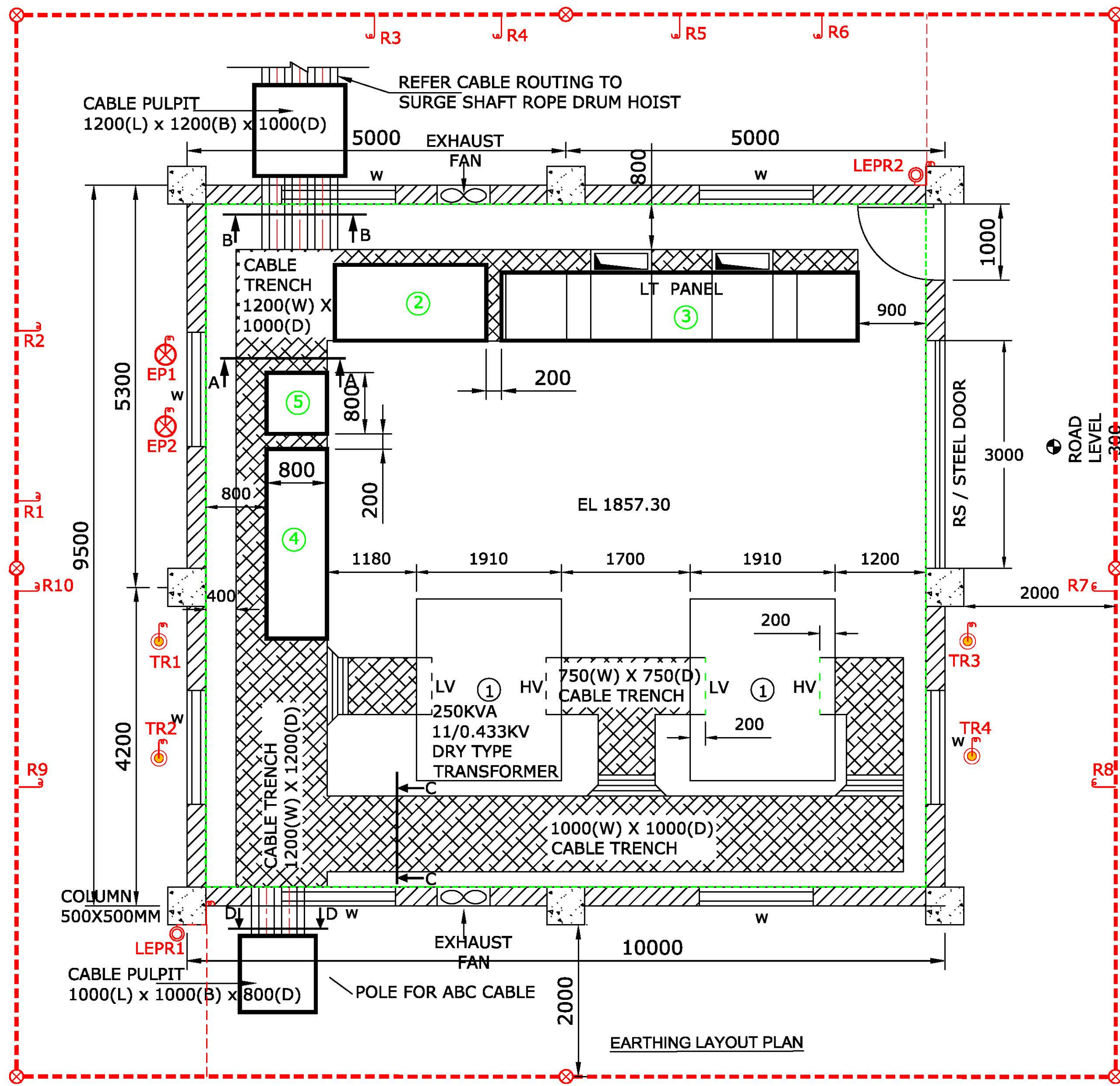




S NO.	EQUIPMENT	QTY	DIMENSION
1	250KVA TRANSFORMER	2	2400W x 1910 x 2340H
2	MLDB-1	1	2000(W) x 1000(D) x 1800(H)
3	LT SWITCHGEAR	1	4700(W) x 1210(D) x 2530(H)
4	SURGE SHAFT SUPPLY PANEL (HM PACKAGE)	1	2500(W) x 800(D) x 2000(H)
5	RTU SURGE SHAFT	1	800(W) x 800(D) x 2415(H)

RISER DETAILS

RISER NO.	CONNECTION
R1, R2, R3, R4, R5, R6	TO EARTH CONDUCTOR RING AT FLOOR EL1300.0M
LEPR1, LEPR2	FOR BUILDING LIGHTNING PROTECTION
R7, R8, R9, R10	FOR TRANSFORMER TANK & COOLERS
TR1, TR2, TR3, TR4	FOR NEUTRAL EARTHING OF TRANSFORMER
EP1, EP2	FOR SURGE SHAFT RTU PANEL

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 600MM 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 300MM 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 6MM 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 LOCATION SHALL BE AS BELOW:
I) 33KV/11KV/SWITCHGEAR - 65X8 MM GS FLAT
II) 415V MCC/DISTRIBUTION BOARDS - 50X6 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
- RTU FOR SURGE SHAFT SHALL BE CONNECTED TO EP1 AND EP2 EARTH ELECTRODE

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 / PIGTAIL 40 MM DIA MS ROD
- EARTH CONDUCTOR ABOVE GROUND 65 x 8mm GS FLAT

REV.	DATE	ALTERED	CHECKED	APPD.	REV.	DATE	ALTERED	CHECKED	APPD.	REV.	DATE	ALTERED	CHECKED	APPD.
ZONE					ZONE					ZONE				

ADDITIONAL INFORMATION	CUSTOMER	STATUS	DISTRIBUTION OF PRINTS	TITLE	SUB-VENDOR NAME	WEIGHT (kg)	SCALE 1:50	SHEET NC
	एन टी सी लिमिटेड NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE) TAPOVAN VISHNUGAD H.P. PROJECT (4X130 MW) (UTTARANCHAL)			भारत हेवी इलेक्ट्रिकल्स लि. BHARAT HEAVY ELECTRICALS LTD BHOPAL, INDIA				

DEPT. CODE	PRPD	NAME	SIGN	DATE	NO. OF VAR
HSE CKD	VKG	NARESH		31/07/19	
415 APPD	RMP			31/07/19	

SUB-VENDOR NAME	WEIGHT (kg)	SCALE 1:50	SHEET NC

NTPC DRG. NO.	5505	Validity Unknown	10/03/2019	Reason: ATIL	Location: NTPC
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[illegible]

1. THE LIGHTENING PROTECTION SYSTEM WILL BE GENERALLY IN ACCORDANCE WITH IS:2309.
2. DOWN CONDUCTORS SHALL BE CLEATED ON OUTER SIDE OF THE BUILDING WALLS, AT 750MM INTERVAL OR WELDED TO OUTSIDE BUILDING COLUMNS AT 1000MM 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 CLEATED 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 LIGHTENING PROTECTION SYSTEM.
7. LIGHTENING 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 P/Q AT EVERY 1M DISTANCE FOR LIGHTENING CONDUCTORS.

REV.	DATE	ALTERED CHECKED		REV.	DATE	ALTERED CHECKED		REV.	DATE	ALTERED CHECKED		SUB-VENDOR DRG. NO.		PO REF	NO. OF ITEMS
ZONE		APPD.		ZONE		APPD.		ZONE		APPD.		TITLE			
												EARTHING & LIGHTENING PROTECTION FOR SURGE SHRAFT BUILDING		NTPC DRG. NO. 5505-906-H199-PVE-U-014	
												SUB-VENDOR NAME		WEIGHT (kg)	SCALE 1:50
														BHEL DRG. NO.	REV. 00
														SHEET NO. 02	NO. OF SHT. 02

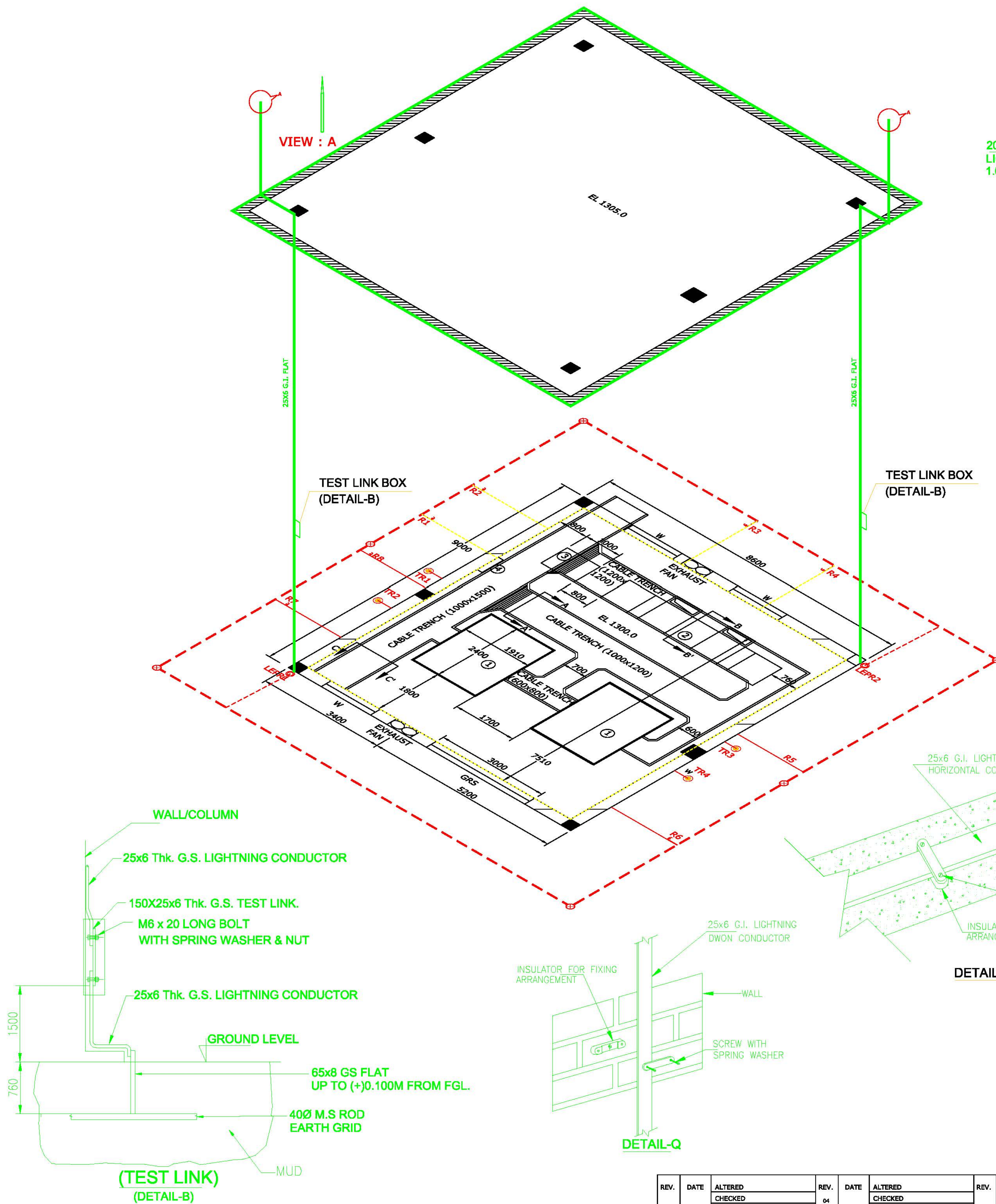
FOR NEATURAL EARTHING OF TRANSFORMER

1. THE EARTHING SYSTEM WILL BE GENERALLY IN ACCORDANCE WITH IS:3043. MEASURED VALUE OF EARTHING RESISTANCE HAVE TO BE LESS THAN ONE OHM.
2. 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.
3. EARTHING CONDUCTORS BURIED IN GROUND WILL BE LAID MINIMUM 600MM 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 300MM BELOW THEM. EARTHING CONDUCTOR CROSSING THE ROAD WILL BE INSTALLED IN PIPES.
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5. STAIR CASE, HAND RAILS AND OTHER NON CURRENT CARRYING METAL PARTS SHALL BE EARTHED THROUGH 25 x 6MM GS FLAT CONDUCTOR.
6. 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
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 - 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

--- EARTH CONDUCTOR ABOVE GROUND 65 x 8mm GS FLAT

11/11/2016

	एन टी पी सी लिमिटेड N.T.P.C. LIMITED (A GOVERNMENT OF INDIA ENTERPRISE) (FORMERLY NATIONAL THERMAL POWER CORPORATION LTD.) ENGINEERING DIVISION			
	CONSULTANT :- Central Electricity Authority जल विद्युत अभियान्त्रिकी और नवीनीकरण एवं आधुनिकीकरण प्रभाग			
PROJECT				
TAPOVAN VISHNUGAD HYDROELECTRIC POWER PROJECT (4x130MW)				
	BHARAT HEAVY ELECTRICALS LTD. BHOPAL, INDIA			
TITLE				
EARTHING & LIGHTNING PROTECTION FOR TRT BUILDING				
SUB-VENDOR NAME	WEIGHT (kg)	SCALE 1:50	RHEL DRG. NO.	
			SHEET NO. 1 NO. OF SHEET.	



NOTES (LIGHTENING PROTECTION SYSTEM):

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2. DOWN CONDUCTORS SHALL BE CLEATED ON OUTER SIDE OF THE BUILDING WALLS, AT 750MM INTERVAL OR WELDED TO OUTSIDE BUILDING COLUMNS AT 1000MM INTERVAL.
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5. LIGHTENING CONDUCTOR ON THE ROOF SHALL NOT BE DIRECTLY CLEATED ON THE SURFACE OF ROOF. SUPPORTING BLOCKS OF PCC/INSULATING COMPOUND SHALL BE USED FOR CONDUCTOR FIXING AT INTERVAL OF 1500MM.
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7. LIGHTENING 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 P/Q AT EVERY 1M DISTANCE FOR LIGHTENING CONDUCTORS.

ADDITIONAL INFORMATION

STATUS

DISTRIBUTION OF PRINTS

NTPC-4, CEA-2

एन टी पी सी लिमिटेड
N.T.P.C. LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

(FORMERLY NATIONAL THERMAL POWER CORPORATION LTD.) ENGINEERING DIVISION

CONSULTANT :-
Central Electricity Authority
जल विद्युत अभियांत्रिकी और नवीनीकरण एवं आधुनिकीकरण प्रभागPROJECT
TAPOVAN VISHNUGAD HYDROELECTRIC POWER PROJECT (4x130MW)BHARAT HEAVY ELECTRICALS LTD.
BHOPAL, INDIADEPT. NAME SIGN DATE NO. OF SHEETS
DRM NTPC-4 31/07/19 1
HPE CKD VSD 31/07/19 1
419 APPD RMP 31/07/19 1TITLE
EARTHING & LIGHTENING PROTECTION FOR TRT BUILDING

SUB-VENDOR DRG. NO. NTPC DRG. NO. 5505-908-H199-PVE-U-015

BHEL DRG. NO.

SHEET NO. 2 NO. OF SHEETS 2

SCALE 1:50

WEIGHT (kg)

REV. 00

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED			CHECKED			CHECKED
		APPROVED			APPROVED			APPROVED			APPROVED
ZONE			ZONE			ZONE			ZONE		

