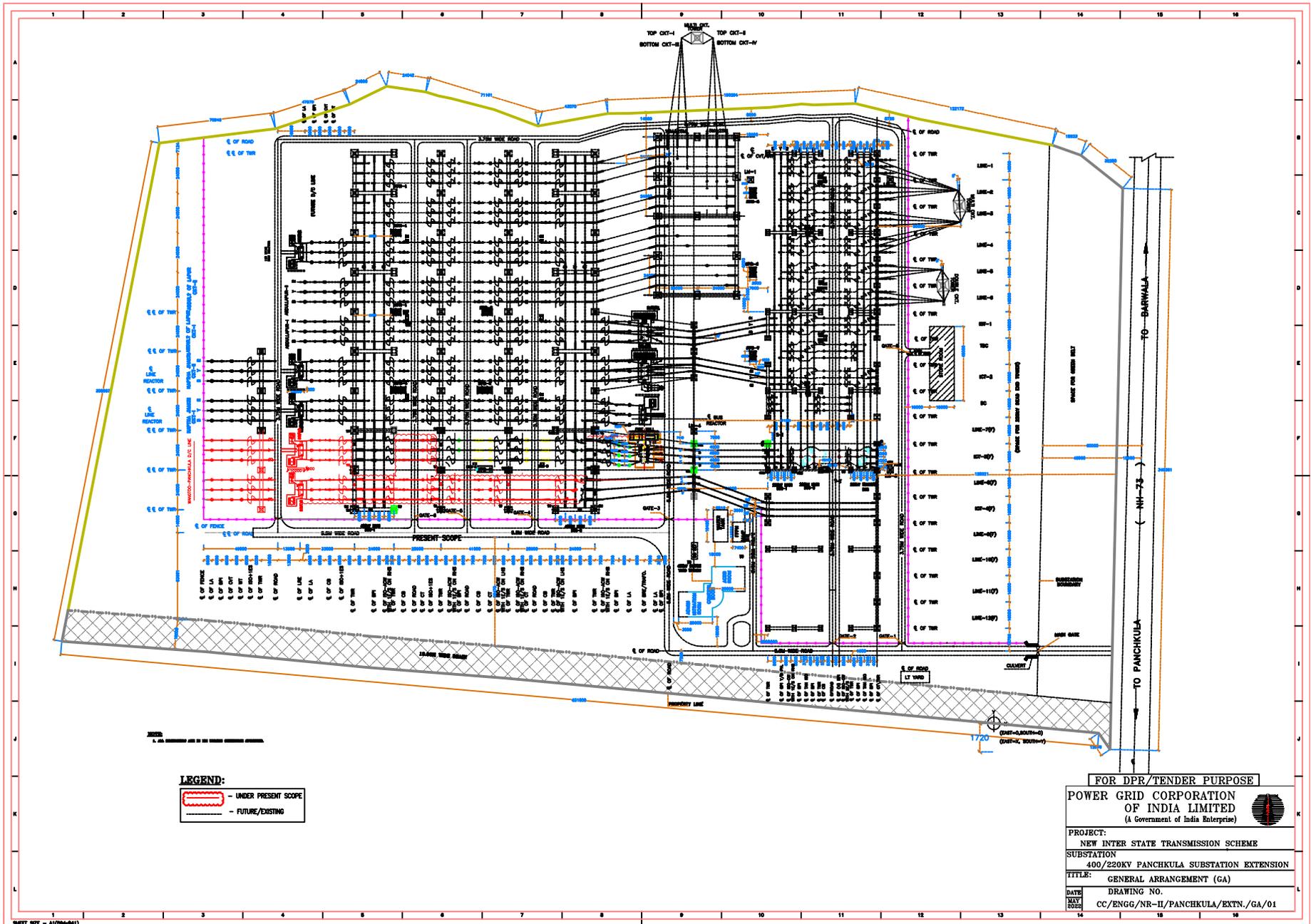


EQUIPMENT NUMBERING SYSTEM:

<p> </p> <p> </p> <p> </p>	<p> </p>
<p> LINE NO. (S/N) FROM BUS TO BUS - 400KV FROM BUS TO BUS - 220KV </p>	<p> CONNECTED EQUIPMENT A - CONNECTED TO MAIN BUS - 1 B - CONNECTED TO MAIN BUS - 2 C - CONNECTED TO LINE T - CONNECTED TO TRANSFORMER D - CONNECTED TO TRANSFER BUS </p>
<p> APPROPRIATE NO. (S/N) 40 - ISOLATOR 41 - CIRCUIT BREAKER </p>	<p> LEGEND:- --- PRIMARY SCOPE --- SECONDARY --- FUTURE </p>

	<p> CLIENT : Power Grid Corporation of India Limited (A Government of India Enterprises) </p>
<p> Drawing No: CCI/ENGG/NR-II/PANCHKULA/EXT./SLD/01 </p>	<p> Sheet 1 of 1 </p>
<p> SUBSTATION: 400/220KV PANCHKULA SUBSTATION </p>	<p> Rev No: R1 </p>
<p> TITLE: SINGLE LINE DIAGRAM FOR 400/220KV PANCHKULA SUBSTATION </p>	



LEGEND:
 - UNDER PRESENT SCOPE
 - FUTURE/EXISTING

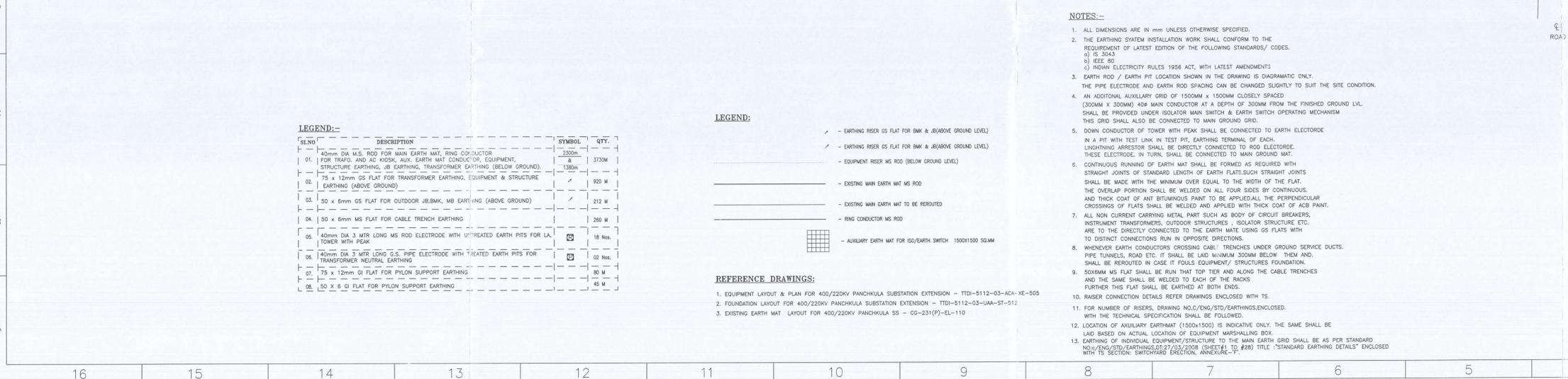
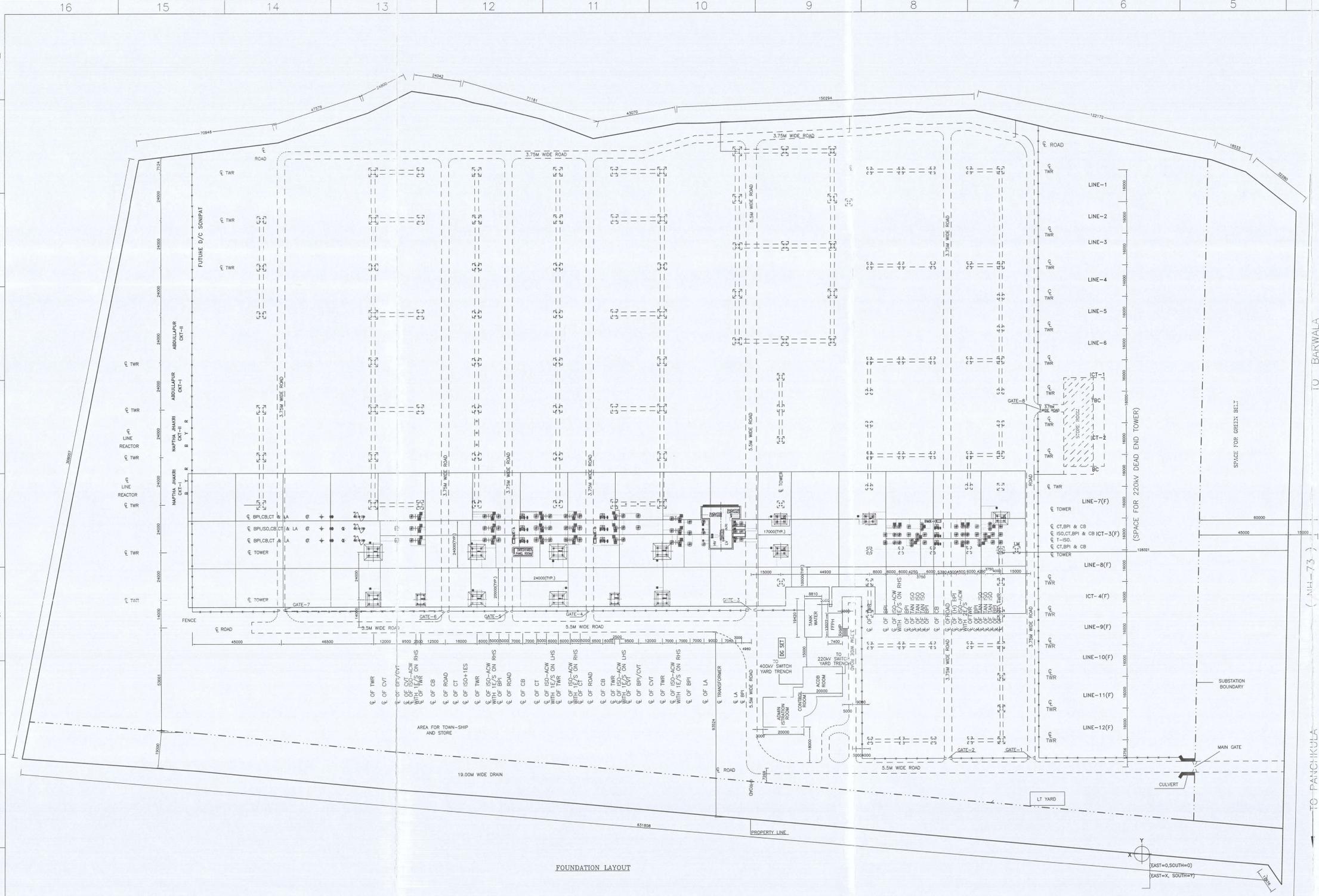
FOR DPR/TENDER PURPOSE

POWER GRID CORPORATION OF INDIA LIMITED
 (A Government of India Enterprise)



PROJECT: NEW INTER STATE TRANSMISSION SCHEME
 SUBSTATION: 400/220KV PANCHKULA SUBSTATION EXTENSION
 TITLE: GENERAL ARRANGEMENT (GA)

DATE: _____
 DRAWING NO. CC/ENGG/NR-II/PANCHKULA/EXTN./GA/01



LEGEND:-

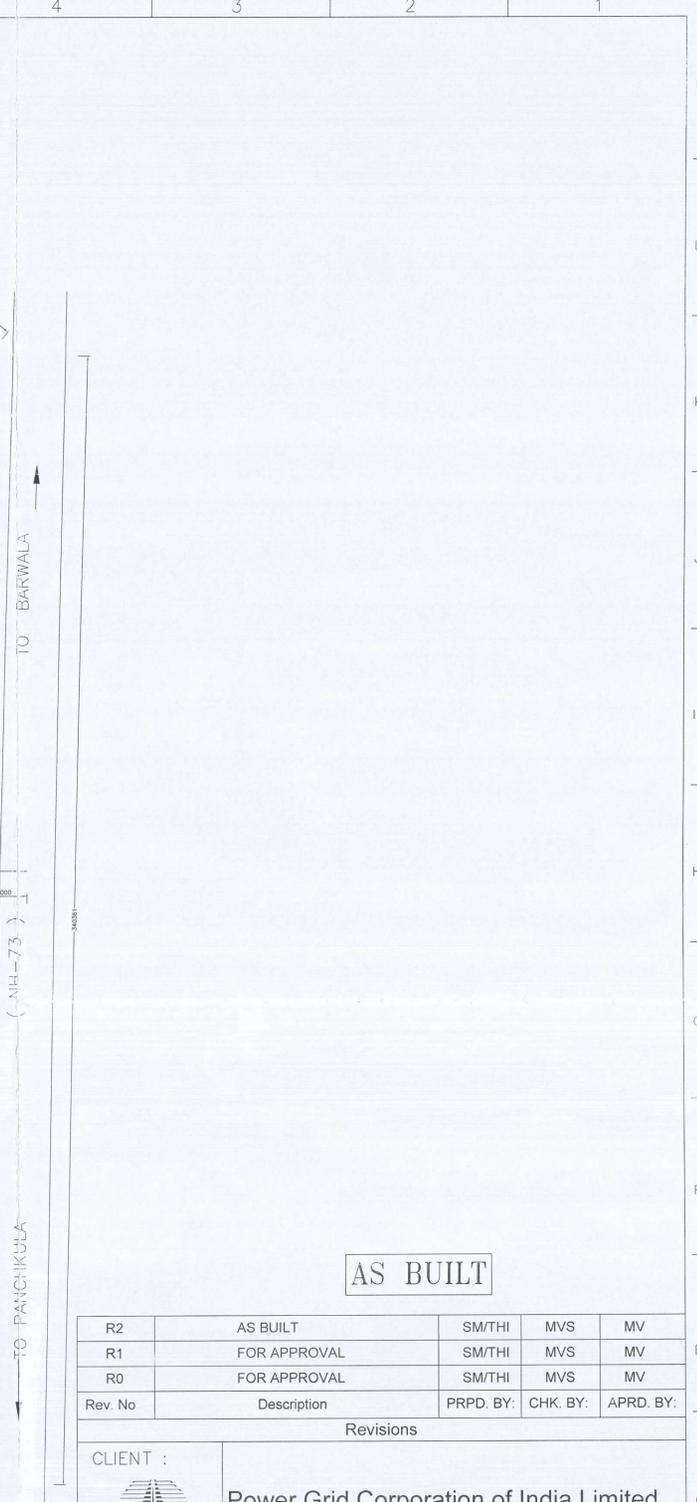
S/NO	DESCRIPTION	SYMBOL	QTY.
01.	40mm DIA M.S. ROD FOR MAIN EARTH MAT, RING CONDUCTOR FOR TRAFU, AND AC KIOSK, AUX. EARTH MAT CONDUCTOR, EQUIPMENT, STRUCTURE EARTHING, TRANSFORMER EARTHING (BELOW GROUND), 75 x 12mm GS FLAT FOR TRANSFORMER EARTHING, EQUIPMENT & STRUCTURE EARTHING (ABOVE GROUND)		3730M
02.	75 x 12mm GS FLAT FOR TRANSFORMER EARTHING, EQUIPMENT & STRUCTURE EARTHING (ABOVE GROUND)		920 M
03.	50 x 6mm MS FLAT FOR OUTDOOR J.B.BANK, MB EARTHING (ABOVE GROUND)		212 M
04.	50 x 6mm MS FLAT FOR CABLE TRENCH EARTHING		260 M
05.	40mm DIA 3 MTR LONG MS ROD ELECTRODE WITH TREATED EARTH PITS FOR LA TOWER WITH PEAK		18 Nos.
06.	140mm DIA 5 MTR LONG G.S. PIPE ELECTRODE WITH TREATED EARTH PITS FOR TRANSFORMER NEUTRAL EARTHING		02 Nos.
07.	75 x 12mm GI FLAT FOR PYLON SUPPORT EARTHING		80 M
08.	50 X 6 GI FLAT FOR PYLON SUPPORT EARTHING		45 M

LEGEND:

	- EARTHING RISER GS FLAT FOR B.M.K. & J (ABOVE GROUND LEVEL)
	- EARTHING RISER GS FLAT FOR B.M.K. & J (ABOVE GROUND LEVEL)
	- EQUIPMENT RISER MS ROD (BELOW GROUND LEVEL)
	- EXISTING MAIN EARTH MAT MS ROD
	- EXISTING MAIN EARTH MAT TO BE REROUTED
	- RING CONDUCTOR MS ROD
	- AUXILIARY EARTH MAT FOR ISO/EARTH SWITCH 1500X1500 50MM

- REFERENCE DRAWINGS:**
- EQUIPMENT LAYOUT & PLAN FOR 400/220KV PANCHKULA SUBSTATION EXTENSION - TTDI-5112-03-ACA-XE-505
 - FOUNDATION LAYOUT FOR 400/220KV PANCHKULA SUBSTATION EXTENSION - TTDI-5112-03-UAA-ST-512
 - EXISTING EARTH MAT LAYOUT FOR 400/220KV PANCHKULA SS - CG-231(P)-EL-110

- NOTES:-**
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
 - THE EARTHING SYSTEM INSTALLATION WORK SHALL CONFORM TO THE REQUIREMENT OF LATEST EDITION OF THE FOLLOWING STANDARDS/ CODES.
 - a) IS 3043
 - b) IEEE 80
 - c) INDIAN ELECTRICITY RULES 1956 ACT, WITH LATEST AMENDMENTS
 - EARTH ROD / EARTH PIT LOCATION SHOWN IN THE DRAWING IS DIAGNOSTIC ONLY. THE PIPE ELECTRODE AND EARTH ROD SPACING CAN BE CHANGED SLIGHTLY TO SUIT THE SITE CONDITION.
 - AN ADDITIONAL AUXILIARY GRID OF 1500MM x 1500MM CLOSELY SPACED (300MM X 300MM) 40# MAIN CONDUCTOR AT A DEPTH OF 300MM FROM FINISHED GROUND LVL. SHALL BE PROVIDED UNDER ISOLATOR MAIN SWITCH & EARTH SWITCH OPERATING MECHANISM THIS GRID SHALL ALSO BE CONNECTED TO MAIN GROUND GRID.
 - DOWN CONDUCTOR OF TOWER WITH PEAK SHALL BE CONNECTED TO EARTH ELECTRODE IN A PIT WITH TEST LINK IN TEST PIT, EARTHING TERMINAL OF EACH LIGHTNING ARRESTOR SHALL BE DIRECTLY CONNECTED TO ROD ELECTRODE. THESE ELECTRODE, IN TURN, SHALL BE CONNECTED TO MAIN GROUND MAT.
 - CONTINUOUS RUNNING OF EARTH MAT SHALL BE FORMED AS REQUIRED WITH STRAIGHT JOINTS OF STANDARD LENGTH OF EARTH FLATS. SUCH STRAIGHT JOINTS SHALL BE MADE WITH THE MINIMUM OVER EQUAL TO THE WIDTH OF THE FLAT. THE OVERLAP PORTION SHALL BE WELDED ON ALL FOUR SIDES BY CONTINUOUS AND THICK COAT OF ANT BITUMINOUS PAINT TO BE APPLIED ALL THE PERPENDICULAR CROSSINGS OF FLATS SHALL BE WELDED AND APPLIED WITH THICK COAT OF ACB PAINT.
 - ALL NON CURRENT CARRYING METAL PART SUCH AS BODY OF CIRCUIT BREAKERS, INSTRUMENT TRANSFORMERS, OUTDOOR STRUCTURES, ISOLATOR STRUCTURE ETC. ARE TO BE DIRECTLY CONNECTED TO THE EARTH MAT USING GS FLATS WITH TO DISTINCT CONNECTIONS RUN IN OPPOSITE DIRECTIONS.
 - WHENEVER EARTH CONDUCTORS CROSSING CABLE TRENCHES UNDER GROUND SERVICE DUCTS, PIPE TUNNELS, ROAD ETC. IT SHALL BE LAID MINIMUM 300MM BELOW THEM AND SHALL BE REROUTED IN CASE IT FOULS EQUIPMENT/ STRUCTURES FOUNDATION.
 - 50X6MM MS FLAT SHALL BE RUN THAT TOP TIER AND ALONG THE CABLE TRENCHES AND THE SAME SHALL BE WELDED TO EACH OF THE BACKS FURTHER THIS FLAT SHALL BE EARTHED AT BOTH ENDS.
 - RAISER CONNECTION DETAILS REFER DRAWINGS ENCLOSED WITH TS.
 - FOR NUMBER OF RISERS, DRAWING NO./ENG/STD/EARTHINGS/ENCL-505 WITH THE TECHNICAL SPECIFICATION SHALL BE FOLLOWED.
 - LOCATION OF AUXILIARY EARTH MAT (1500X1500) IS INDICATIVE ONLY. THE SAME SHALL BE LAID BASED ON ACTUAL LOCATION OF EQUIPMENT MARSHALLING BOX.
 - EARTHING OF INDIVIDUAL EQUIPMENT/STRUCTURE TO THE MAIN EARTH GRID SHALL BE AS PER STANDARD NO./ENG/STD/EARTHINGS/01/27/03/2008 (SHEET #1 TO #28) TITLE 'STANDARD EARTHING DETAILS' ENCLOSED WITH TS SECTION, SWITCHYARD SECTION, ANNEXURE.



AS BUILT

R2	AS BUILT	SM/THI	MVS	MV
R1	FOR APPROVAL	SM/THI	MVS	MV
R0	FOR APPROVAL	SM/THI	MVS	MV
Rev. No	Description	PRPD. BY:	CHK. BY:	APRD. BY:

CLIENT :

Power Grid Corporation of India Limited
(A Government of India Enterprises)

PROJECT: Transformer Package T1 for Augmentation of Transformation Capacity of (i) 400/ 220 kV Samba S/s (ii) 400/ 220 kV Jalandhar S/s and (iii) 400/ 220 kV Panchkula S/s under Augmentation of Transformers in Northern Region-Part B

CONTRACT NO.: CC-CS/381-NR2/TR-2117/3/G4/NOA-1/5112 dated 25.11.2014

SUBSTATION: 400/220KV PANCHKULA SUBSTATION EXTENSION

CONTRACTOR: Toshiba Transmission & Distribution Systems (India) Pvt.Ltd

Drawing No.: TTDI-5112-03-BAW-XE-507

DATE: 24.04.15

PRPD. BY: SM/THI

CHK. BY: MVS

APRD. BY: MV

SHEET 1 OF 1

TITLE: EARTHING LAYOUT FOR 400/220KV PANCHKULA SUBSTATION EXTENSION

Rev No: R2