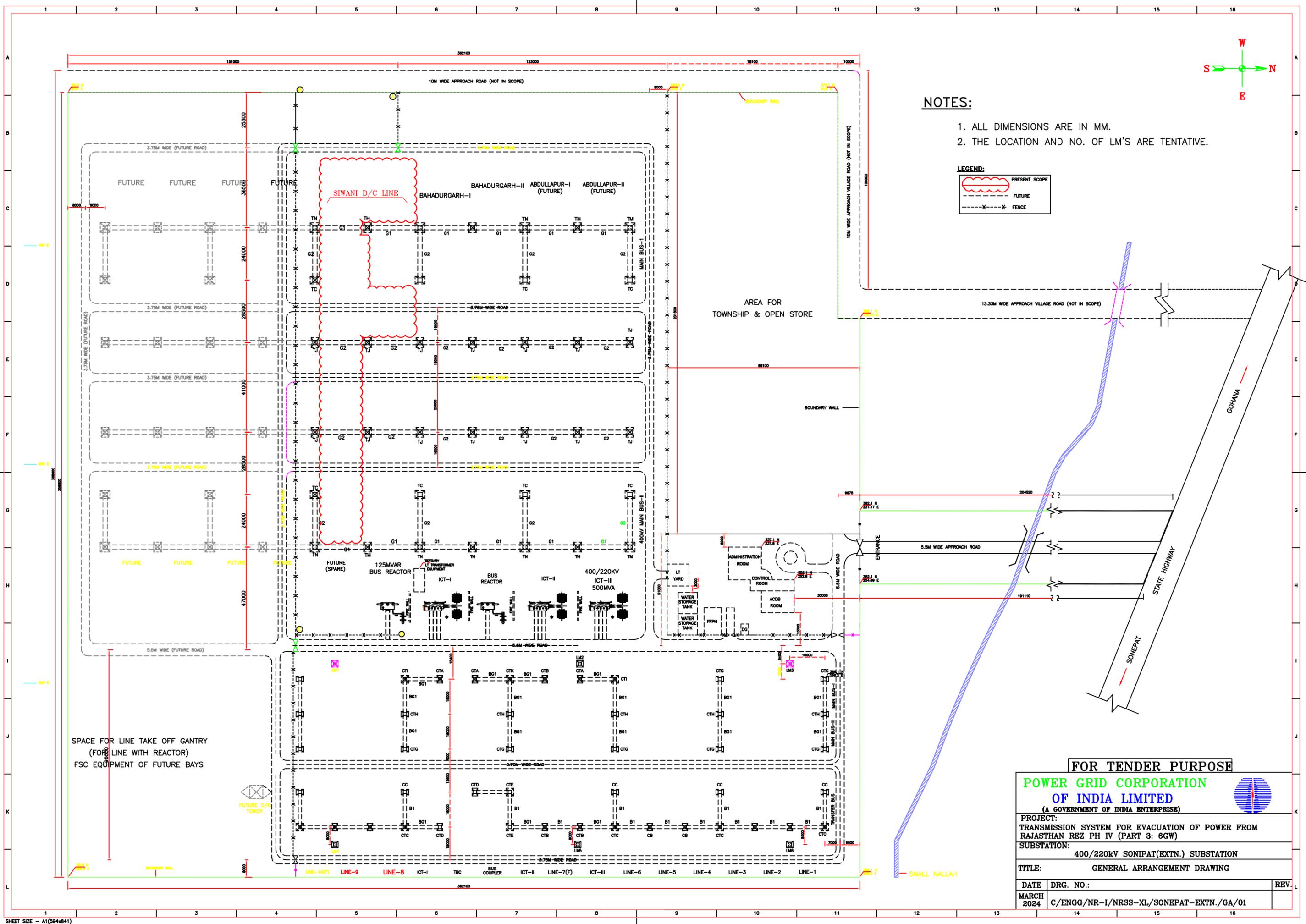


400kV LEGEND		
1		SF6 CIRCUIT BREAKER WITHOUT CR., WITH CONTROL
2		SF6 CIRCUIT BREAKER WITH CR., WITH CONTROL
3		HORIZONTAL DOUBLE BREAK ISOLATOR WITH ONE EARTH SWITCH
4		CURRENT TRANSFORMER (1 ϕ)
5		SURGE ARRESTOR (1 ϕ)
6		CAPACITOR VOLTAGE TRANSFORMER
7		WAVE TRAP

LEGEND	
	UNDER PRESENT SCOPE
	EXISTING/FUTURE

FOR TENDER PURPOSE		
POWER GRID CORPORATION OF INDIA LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)		
PROJECT: TRANSMISSION SYSTEM FOR EVACUATION OF POWER FROM RAJASTHAN REZ PH IV (PART 3: 6GW)		
SUBSTATION: 400/220 kV SONEPAT SUBSTATION EXTENSION		
TITLE: SINGLE LINE DIAGRAM		
DATE	DRG. NO.	REV.
March 2024	C/ENGG-SS/NR-I/SONEPAT/EXTN./SLD/01	00



NOTES:

1. ALL DIMENSIONS ARE IN MM.
2. THE LOCATION AND NO. OF LM'S ARE TENTATIVE.

LEGEND:

- PRESENT SCOPE
- FUTURE
- FENCE

SPACE FOR LINE TAKE OFF GANTRY
(FOR LINE WITH REACTOR)
FSC EQUIPMENT OF FUTURE BAYS

FOR TENDER PURPOSE

**POWER GRID CORPORATION
OF INDIA LIMITED**

(A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT:
TRANSMISSION SYSTEM FOR EVACUATION OF POWER FROM
RAJASTHAN REZ PH IV (PART 3: 6GW)

SUBSTATION:
400/220kV SONIPAT(EXTN.) SUBSTATION

TITLE:
GENERAL ARRANGEMENT DRAWING

DATE	DRG. NO.:	REV.
MARCH 2024	C/ENGG/NR-1/NRSS-XL/SONEPAT-EXTN./GA/01	

संदर्भ/Ref : CC-ENGG-TR202236-1001849-SS1917-EARTHMAT-LAY

Date : 01/09/2023

From : Somiran Das
General Manager

To : Shyam Indus Power Solutions Pvt. Lt
129 129, Transport Centre, Rohtak R New Delhi
110035
110035

Cc : BAHADURGARH, SONIPAT & JIND S/S

Subject : Substation Package (SS104) including Extension of: (a) 400/220kV Bahadurgarh S/S (b) 220kV Sonipat S/S (c) 400/220kV Jind S/S (d) 765/400kV Bikaner (PG) S/S (e) 400/220kV Bikaner-II S/S (f) 400/220kV Kotputli S/S

LOA Ref : CC/NT/AIS/DOM/A04/2/00610/NOA-1/23-100645/01 & NOA-2/23-100645/02 Dated 21/04/2023

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : SIPS-PGCIL-SNP-400-SYD-LAY-003 R1 Earthing
Orgn. Drg. No. : TR202236-1001849-SS1917-EARTHMAT-LAY
Revision No. : 01
Drg. Title : SONIPAT-EARTHMAT LAYOUT DRG
App. Category : CAT-I
Release Date : 01/09/2023



Scan to verify

Comments : Approved with minor corrections to be incorporated in as-built drawings

अनुमोदित श्रेणी/App. Category:

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- REL-CON निर्माण हेतु जारी।
Released for construction.

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.



SHYAM INDUS POWER SOLUTIONS PRIVATE LIMITED

(An ISO 9001:2015 Certified Company)

Regd. Office: 129, Transport Centre, Rohtak Road, Punjabi Bagh, New Delhi – 110035

Corp. Office: 1501-1502, 15th Floor, Tower-A, Signature Tower, South City – 1, Gurugram, Haryana - 122001

Reference No:- SIPS/2023-24/ PGCIL/SS-104/ Design/DS-05

Date: 21st August-2023

To,

The Senior General Manager (Design & Engineering),

Power Grid Corporation India Limited.

Saudamini PGCIL Sec 29 , Gurugram (Haryana)

Subject: Substation Package SS-104 for (I) (a) Extension of 765/400kV Bikaner (PG) S/s (b) Extension of 400/220kV Kotputli S/s (c) Extension of 400/220kV Bikaner -II S/s associated with 'Transmission System for Evacuation of Power from Rajasthan REZ PH-IV (Part-I) (Bikaner Complex) Part-E' and (II) (a) Extn. Of 400/220kV Bahadurgarh S/s (b) Extn of 400/220kV Jind S/s (c) Extension of 220kV Sonipat S/s associated with 'Augmentation of ISTS for Interconnection of HVPNL Transmission Schemes': -

Reference:

1. Your NOA no CC/NT/AIS/DOM/A04/22/00610/NOA-1/23-100645/01 dated 21.04.2023 For supply of goods
2. Your NOA no CC/NT/AIS/DOM/A04/22/00610/NOA-2/23-100645/02 dated 21.04.2023 for supply of Service's

Sub.- Submission of Revised Earth Mat Plan as per comment for 400/220KV Grid Extension Sonapat,

Dear Sir,

Reference to above subject, we are enclosing here with the following drawing for Bay extension Project 400/220KV Sonapat Haryana Grid substation for your kind review and approval .

SL No.	Drawing No.	Drawing title	Remarks
1	SIPS-PGCIL-SNP-400-SYD-LAY-003	Earth Mat Layout Plan R1	Sheet 1

You are requested to kindly accord your kind approval so that same can be adopted for further construction and necessary engineering and design.

Assuring you our all-time best services

Thanking you

Regards

For Shyam Indus Power solution Pvt Ltd



Dinesh Kumar Sharma

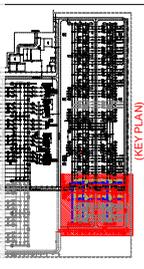
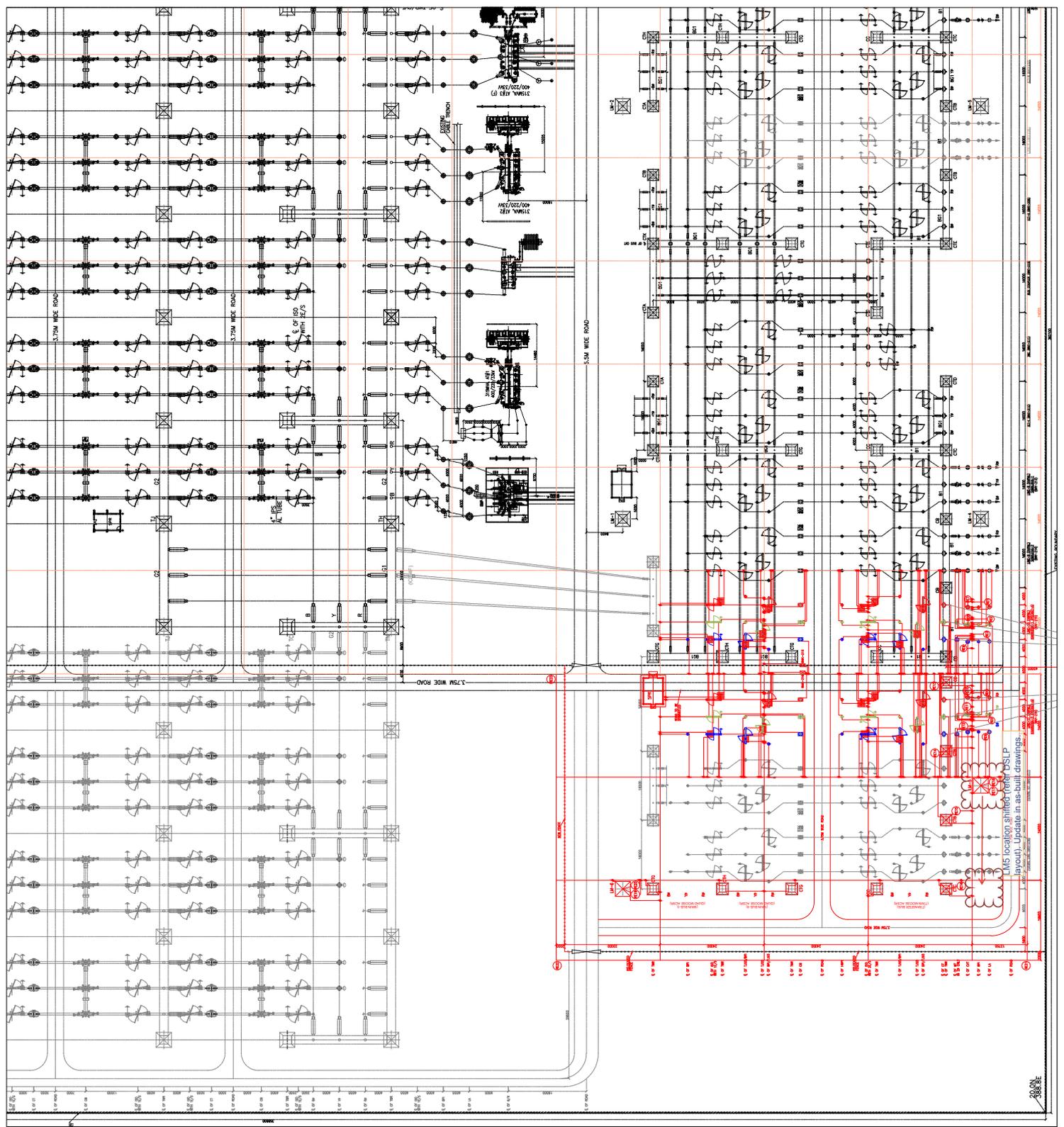
(AGM Design Engineering),

Mob. No. 9268564691

CIN No. : U74999DL2004PTC127124

Telephone : +91124-6913000

E-mail : info@shyamindus.com, Website : www.shyamindus.com

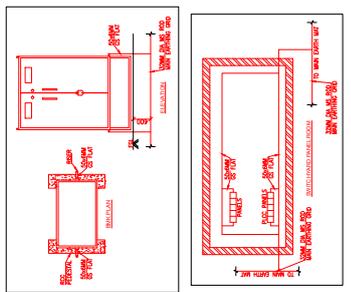


REV	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	15.06.2023
2	ISSUED FOR APPROVAL	08.07.2023
3	ISSUED FOR APPROVAL	08.07.2023
4	ISSUED FOR APPROVAL	08.07.2023
5	ISSUED FOR APPROVAL	08.07.2023
6	ISSUED FOR APPROVAL	08.07.2023
7	ISSUED FOR APPROVAL	08.07.2023
8	ISSUED FOR APPROVAL	08.07.2023
9	ISSUED FOR APPROVAL	08.07.2023
10	ISSUED FOR APPROVAL	08.07.2023
11	ISSUED FOR APPROVAL	08.07.2023
12	ISSUED FOR APPROVAL	08.07.2023
13	ISSUED FOR APPROVAL	08.07.2023

Approved with minor corrections to be incorporated in as-built drawings

GENERAL NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS MENTIONED IN THE DRAWINGS.
- ALL MATERIALS SHALL BE OF THE HIGHEST QUALITY AND SHALL BE APPROVED BY THE ENGINEER IN CHARGE.
- ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SAFETY REGULATIONS AND PROCEDURES.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION REGULATIONS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FIRE SAFETY REGULATIONS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE HEALTH AND SAFETY REGULATIONS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE QUALITY MANAGEMENT SYSTEMS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE DOCUMENTATION REQUIREMENTS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE RECORD KEEPING REQUIREMENTS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE COMMUNICATION REQUIREMENTS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REPORTING REQUIREMENTS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REVIEW REQUIREMENTS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CLOSURE REQUIREMENTS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE HANDOVER REQUIREMENTS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE AS-BUILT DRAWINGS REQUIREMENTS.



REV	DESCRIPTION	DRAWN BY	CHECKED BY	APPROVED BY	DATE
01	RELEASED FOR APPROVAL				15.06.2023
00	RELEASED FOR APPROVAL				08.07.2023

CLIENT: POWER GRID CORPORATION OF INDIA LTD. (A GOVERNMENT OF INDIA ENTERPRISE)

EPIC CONTRACTOR: M/S SHYAM INDUS POWER SOLUTION PVT LTD (5TH FLOOR, TOWER A, SIGNATURE TOWER, HARYANA-12201)

EPIC DESIGN CONSULTANT: M/S THORES ENGINEERING SOLUTION

PROJECT TITLE: SUB STATION PACKAGE SS-04 FOR (I) EXTENSION OF 76.4KV V BIKANER (C) S/S (B) EXTENSION OF 400/230KV KOTWADI S/S (C) EXTENSION OF 400/230KV BIKANER-I S/S RAJASTHAN REZ PHV (PART) BIKANER COMPLEX PAR E AND (II) EXTENSION OF 400/230KV BANHOURAH S/S (B) EXT OF 400/230KV AND S/S (C) EXTENSION OF 400/230KV BANHOURAH S/S (B) EXT OF 400/230KV AND S/S (C) EXTENSION OF INTERCONNECTION OF LOCAL TRANSMISSION SCHEMES OF ISTS FOR CCN(T)AS/DOM/AM/22008/UNDOA-223-100645/01 (DATE: 21.04.2023)

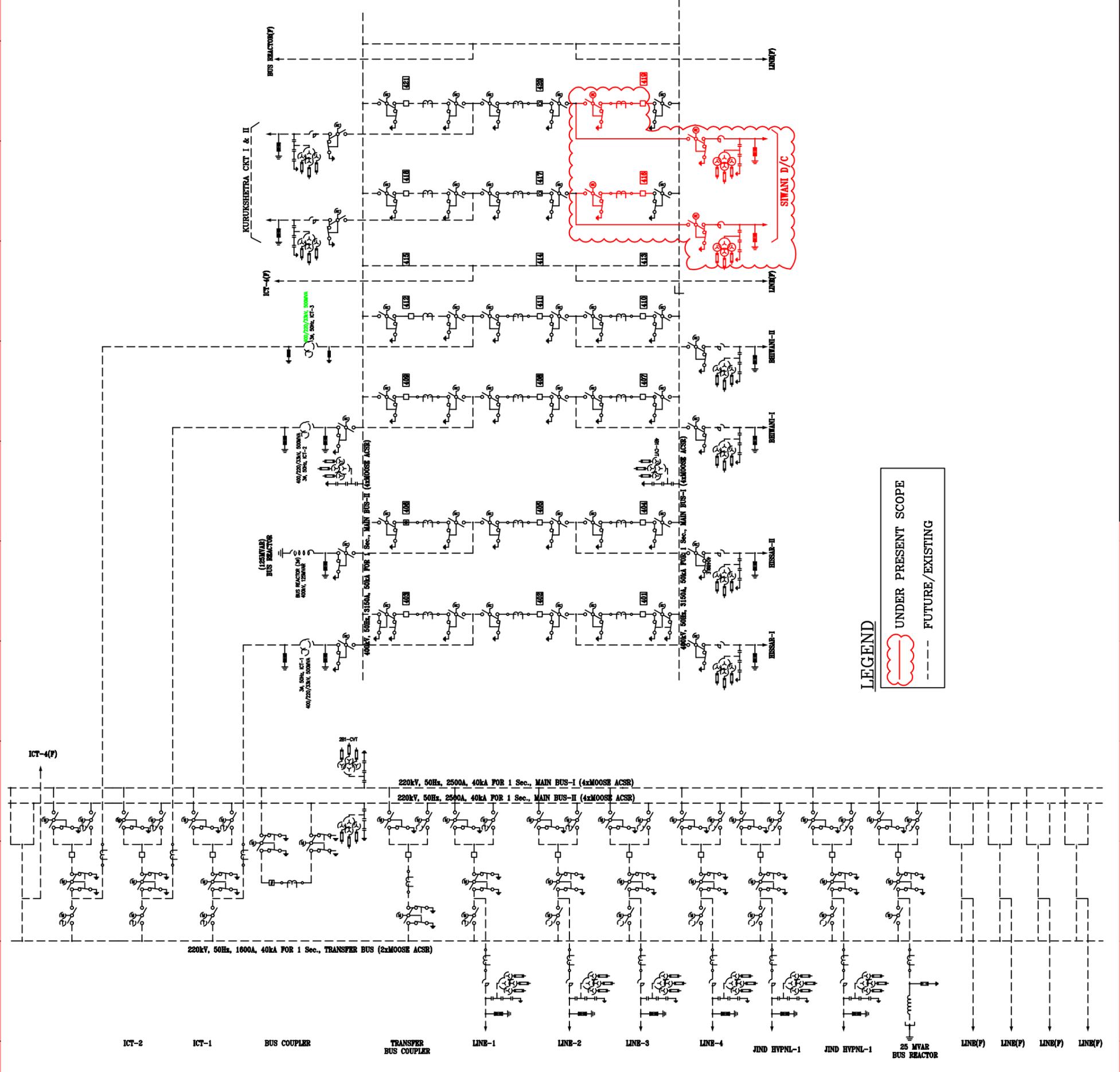
NOA NO: CCN(T)AS/DOM/AM/22008/UNDOA-223-100645/02 (DATE: 21.04.2023)

SUB STATION:	400/230KV SONIPAT S/S EXTENSION	REVISION:	01
DRAWING TITLE:	OUTDOOR EARTH MAT LAYOUT	SIZE:	A0
DRAWINGS NO:	SIPS-PG-QIL-SNP-400-5Y-LAY-003	SHEET NO:	01 OF 01
		SCALE:	1:300

NOTE: THE DRAWINGS SET IS THE PROPERTY OF SHYAM INDUS. COPYING OR REUSE OF THE DRAWING WITHOUT PERMISSION IS PROHIBITED.

400KV LEGEND:-

SL. ITEM	DESCRIPTION	SYMBOL
1	CIRCUIT BREAKER WITH PIR	
2	CIRCUIT BREAKER WITHOUT PIR	
3	ISOLATOR WITH ONE EARTH SWITCH	
4	CURRENT TRANSFORMER	
5	CAPACITOR VOLTAGE TRANSFORMER	
6	SURGE ARRESTER	
7	WAVE TRAP	



LEGEND

UNDER PRESENT SCOPE

FUTURE/EXISTING

FOR TENDER PURPOSE ONLY

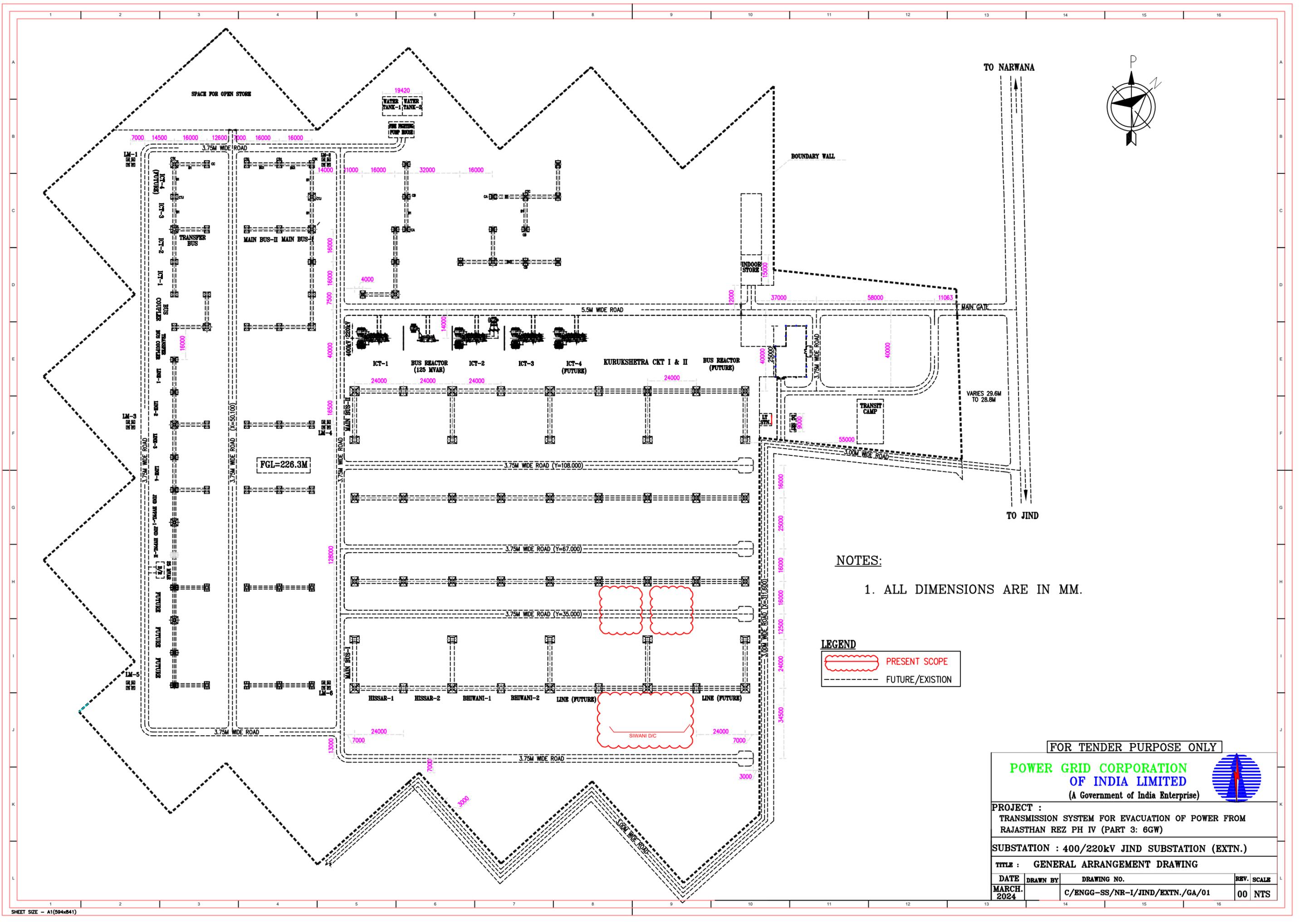


PROJECT :
 TRANSMISSION SYSTEM FOR EVACUATION OF POWER FROM RAJASTHAN REZ PH IV (PART 3: 6GW)

SUBSTATION : 400/220kV JIND SUBSTATION (EXTN.)

TITLE: SINGLE LINE DIAGRAM

DATE	DRAWN BY	REV.	SCALE
MARCH 2024	C/ENGG-SS/NR-1/JIND/EXTN./SLD/01	00	NTS



TO NARWANA

TO JIND

NOTES:

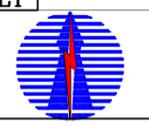
1. ALL DIMENSIONS ARE IN MM.

LEGEND

- PRESENT SCOPE
- - - FUTURE/EXISTION

FOR TENDER PURPOSE ONLY

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



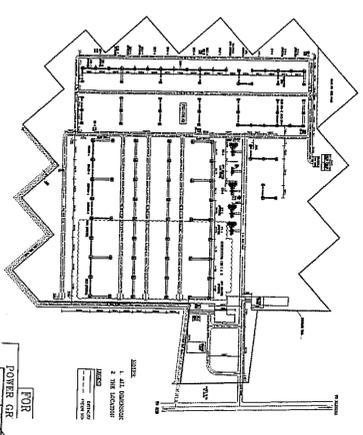
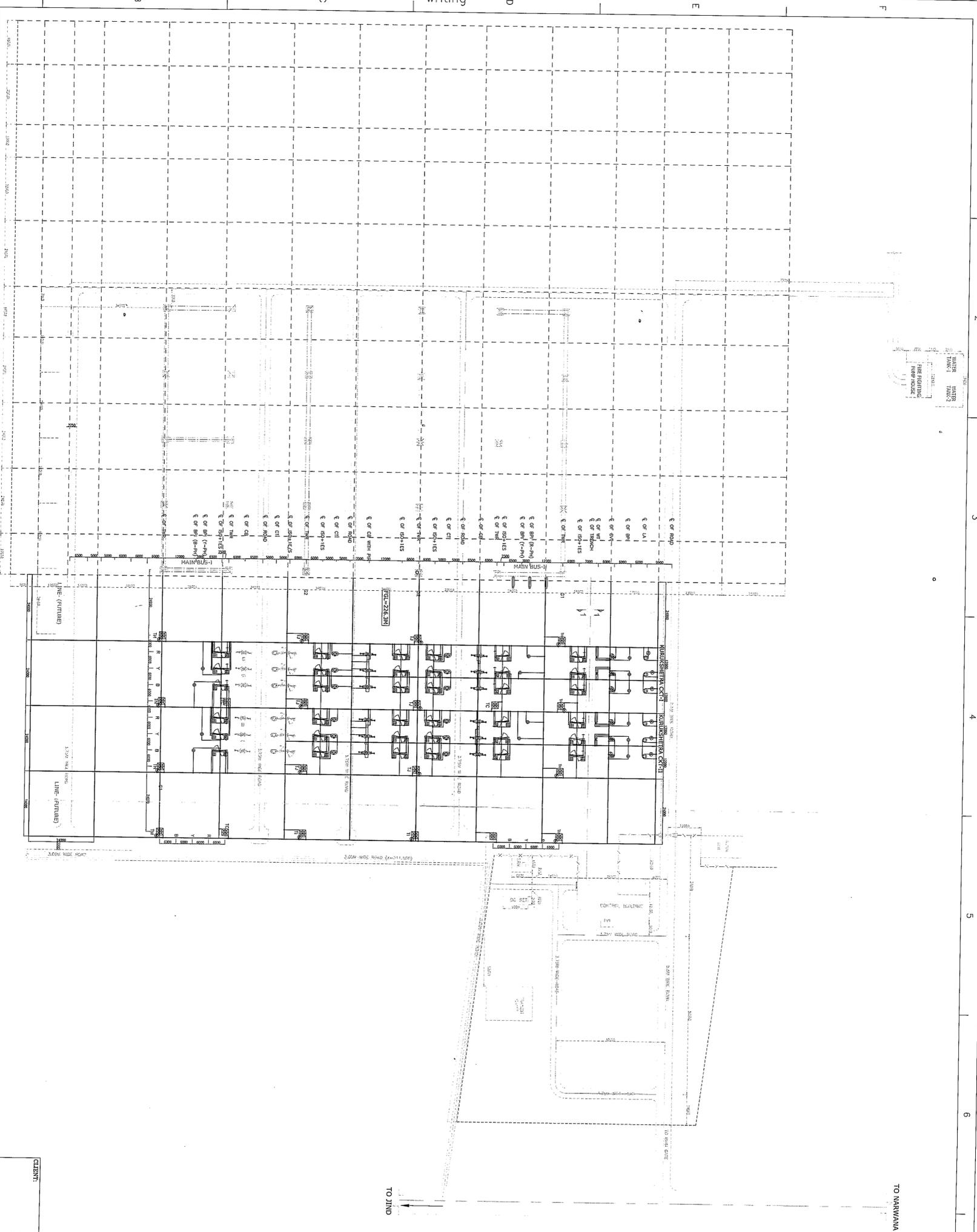
PROJECT : TRANSMISSION SYSTEM FOR EVACUATION OF POWER FROM RAJASTHAN REZ PH IV (PART 3: 6GW)

SUBSTATION : 400/220kV JIND SUBSTATION (EXTN.)

TITLE : GENERAL ARRANGEMENT DRAWING

DATE	DRAWN BY	DRAWING NO.	REV.	SCALE
MARCH. 2024		C/ENGG-SS/NR-1/JIND/EXTN./GA/01	00	NTS

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BILL OF MATERIALS

Sl. NO.	DESCRIPTION	UNIT	MARKED	QTY. AS ENGD.	QTY. AS NOA
1	40mm DIA MS ROD FOR MAIN EARTHMAT	MTR.		2300	2000

- NOTES:**
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
 - EARTHMAT, AUXILIARY MAT AND EARTHING LOCATION SHOWN ARE INDICATIVE ONLY. MINOR MODIFICATION IF ANY MAY BE.
 - EVERY EQUIPMENT/STRUCTURE SHALL BE CONNECTED TO GRID AS PER POOL STANDARD EQUIPMENT EARTHING DETAILS & EARTHING CONNECTIONS TO EQUIPMENT TERMINALS SHALL BE OF RISER OF A PARTICULAR EQUIPMENT SHALL BE CONNECTED TO DIFFERENT EARTHING MAT ROD FROM EQUIPMENT TO THE EQUIPMENT/STRUCTURE TERMINALS OF THE EQUIPMENT/STRUCTURE AS PER THE MANUFACTURER'S SPECIFICATIONS.
 - CONDUCTOR SHALL BE DIVERTED SMOOTHLY AROUND GRID.
 - ALL UNDERGROUND CONNECTIONS SHALL BE MADE BY ELECTRIC NATURAL OR FLEXIBLE JOINT SHALL BE ALLOWED TO COOL NATURALLY OR BY USING AIR COOLING EARTHING DETAILS.
 - ALL THE WELD JOINTS SHALL BE TREATED WITH RED ENAMEL PAINT AFTERWARDS COATED WITH TWO COATS OF BITUMEN COMPOUND.
 - CABLE SUPPORTS IN TRENCHES SHALL BE EARTHED.
 - CABLE TRAYS SHALL BE EARTHED AT REGULAR INTERVALS.
 - WIREMESH AND RAIL TRACKS SHALL BE EARTHED AT REGULAR INTERVALS.
 - THE EARTH FLAT ALONG THE CABLE TRENCH SHALL BE DARTED INTERMEDIATELY AT EVERY 30M (MAX).
 - INTERMEDIATE JOINTS SHALL BE TREATED WITH RED ENAMEL PAINTED WITH TWO COATS OF RED OXIDE PRIMER AND TWO COATS OF P80 OFFICE RED ENAMEL PAINT.
 - BETWEEN ANY TWO CONDUCTORS SHALL BE MAINTAINED 150MM CLEARANCE.
 - 1500MVA AUXILIARY EARTH MAT OF 1500X2000 SHALL BE PROVIDED UNDER ISOLATOR MAIN SWITCH & EARTH SWITCH.
 - THIS Dwg TO BE REFERRED ONLY FOR MAIN EARTHMAT LAYOUT.

CONTROLLED COPY

<input checked="" type="checkbox"/>	DESIGN	<input type="checkbox"/>	AS BUILT
<input type="checkbox"/>	PERIOD	<input type="checkbox"/>	CONSTRUCTION
<input type="checkbox"/>	PLANNING	<input type="checkbox"/>	REFERENCE
<input type="checkbox"/>	MANUFACTURING	<input type="checkbox"/>	INBENT
<input type="checkbox"/>	RECORD	<input type="checkbox"/>	EXECUTION

ALSTOM T&D INDIA
AUTH. SIG

1	REFERENCE DRAWING NO.	C/0803/MS-1/JND/ESM/04/01																		
2	DESCRIPTION	ELECTRICAL LAYOUT																		
3	NOTES	EXISTING MAIN EARTHMAT 40mm DIA MS ROD FOR RISER 40mm DIA 3000mm LONG MS ROD ELECTRODE WITH TEST LINK AUX. EARTHMAT (3000x1500mm)																		
4	REV.	<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> <th>CHECKED</th> <th>STATUS</th> </tr> <tr> <td>R0</td> <td>19.10.15</td> <td>FIRST ISSUE</td> <td>PK</td> <td>AD/RAG</td> <td>FOR APPROVAL</td> </tr> <tr> <td></td> <td>19.10.15</td> <td></td> <td>SR</td> <td></td> <td></td> </tr> </table>	REV.	DATE	DESCRIPTION	BY	CHECKED	STATUS	R0	19.10.15	FIRST ISSUE	PK	AD/RAG	FOR APPROVAL		19.10.15		SR		
REV.	DATE	DESCRIPTION	BY	CHECKED	STATUS															
R0	19.10.15	FIRST ISSUE	PK	AD/RAG	FOR APPROVAL															
	19.10.15		SR																	
5	DESCRIPTION	EARTHMAT LAYOUT FOR EXTENSION OF 400/220KV JIND SUBSTATION																		
6	CHECKED	<table border="1"> <tr> <th>DATE DRAWN</th> <th>DATE CHECKED</th> <th>BY</th> <th>CHECKED</th> </tr> <tr> <td>19.10.15</td> <td>19.10.15</td> <td>SR</td> <td></td> </tr> </table>	DATE DRAWN	DATE CHECKED	BY	CHECKED	19.10.15	19.10.15	SR											
DATE DRAWN	DATE CHECKED	BY	CHECKED																	
19.10.15	19.10.15	SR																		
7	CLIENT	<p>ALSTOM</p> <p>ALSTOM T&D INDIA LTD. 2nd FLOOR, PLOT No.-2 SECTOR-29 Gurgaon-122 001 (HARYANA)</p>																		
8	TITLE	<p>Substation package SI for Extension of a) Kathal SS, b) Jalandhar SS, c) Agra SS, d) Bhatnagar SS under NRS-XXXV, Extension of Wagdara under Extension of Jind SS, Extension of Amritsar SS under NRS-XXXI Part-B, Extension of Jind SS under Strengthening in NR-WR Transmission Corridor scheme for Jpps in Kathal SS, Extension of Jind SS under Strengthening in NR-WR Transmission Corridor scheme for Jpps in Kathal SS, s/s under Augmentation of Transformer in Northern Region Part-A.</p> <p>NOA No: CC-05/321-NR2/SS-2797/3/01/NOA-1/5828 DATED:23.9.2015</p>																		