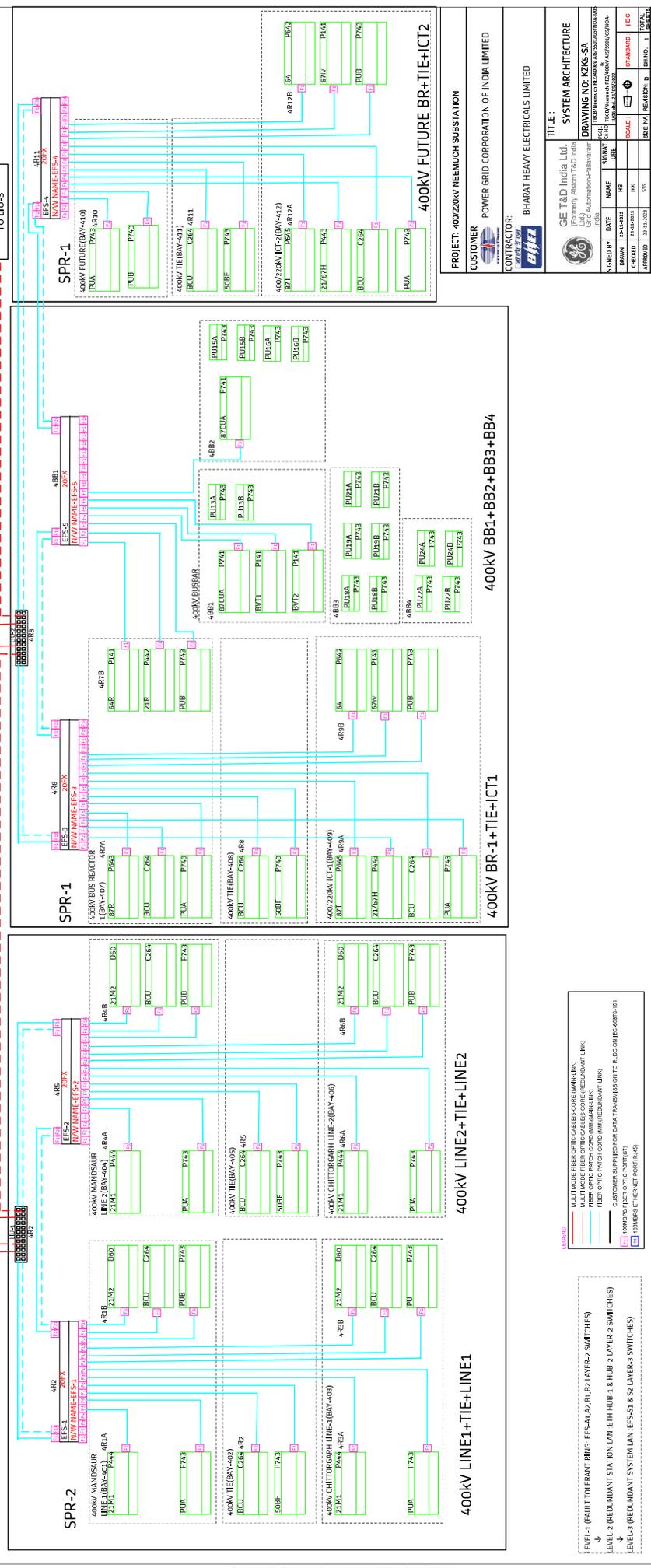
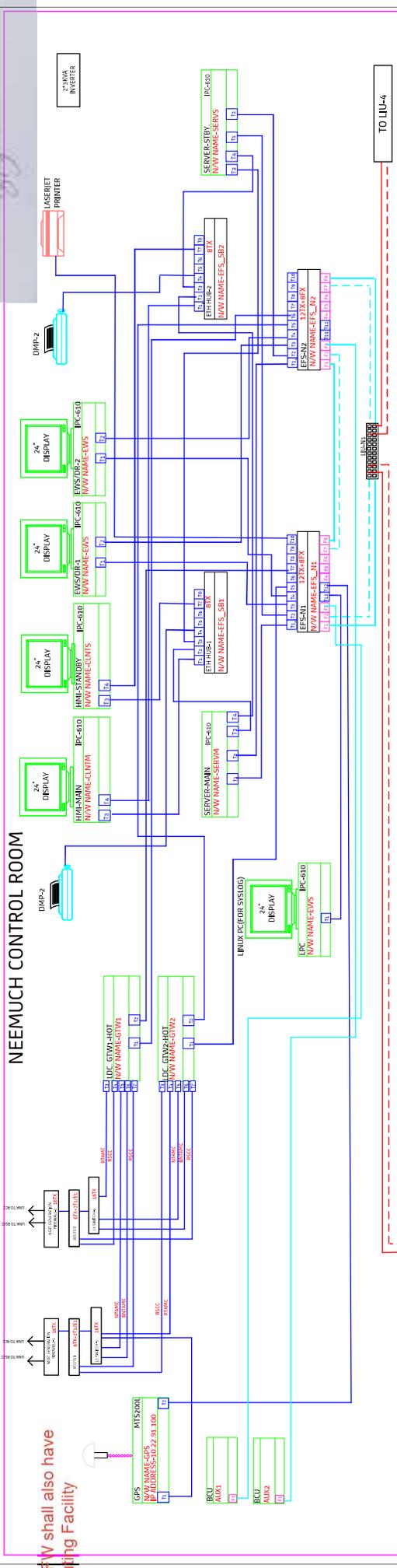


A. 400/220 KV NEEMUCH PS

NEEMUCH CONTROL ROOM

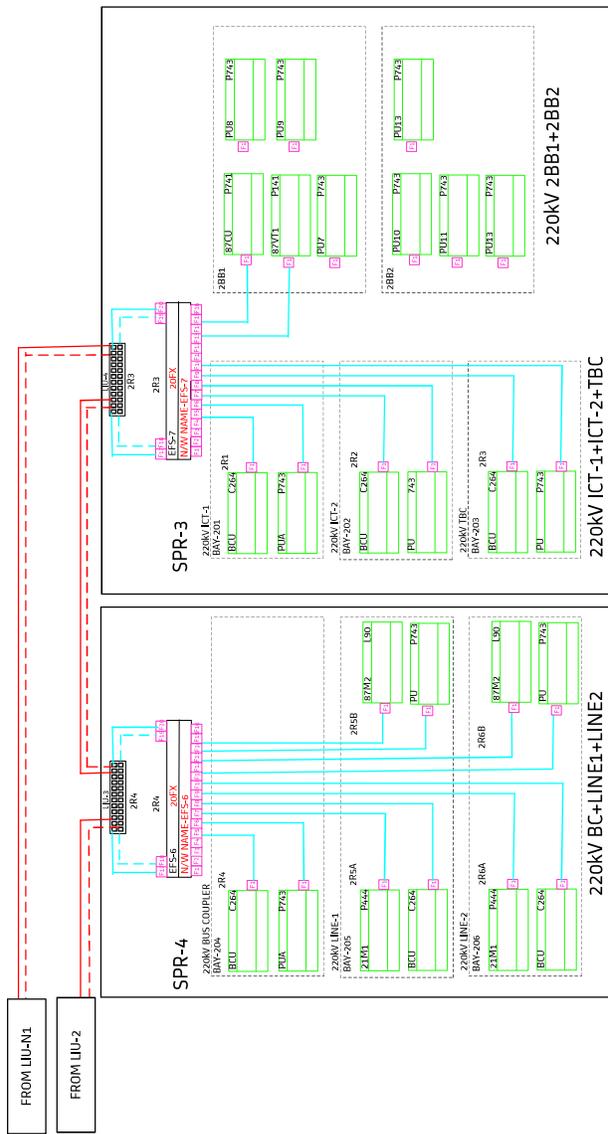
NGPW shall also have Routing Facility



PROJECT: 400/220KV NEEMUCH SUBSTATION
 CUSTOMER: POWER GRID CORPORATION OF INDIA LIMITED
 CONTRACTOR: BHARAT HEAVY ELECTRICALS LIMITED

NO.	REV.	DATE	BY	CHKD	SCALE	DESCRIPTION
1	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
2	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
3	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
4	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
5	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
6	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
7	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
8	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
9	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
10	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
11	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
12	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
13	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
14	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
15	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
16	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
17	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
18	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
19	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER
20	1	12/12/2022	SSS	SSS	1:1	ISSUED FOR TENDER

- LEVEL-1 (FAULT TOLERANT RING EFS-A1-A2, B1-B2, LAYER-2 SWITCHES)
- LEVEL-2 (REDUNDANT STATION LAN ETH HUB-1 & HUB-2, LAYER-2 SWITCHES)
- LEVEL-3 (REDUNDANT SYSTEM LAN EFS-S1 & S2, LAYER-3 SWITCHES)



EFS PORT DETAILS :

S NO.	ETHERNET SWITCH	USED PORTS	SPARE PORTS	TOTAL PORTS
1	EFS-N1	37X45FX	37X45FX	127X48FX
2	EFS-N2	17X48FX	57X42FX	127X48FX
3	EFS-SB1	51X	31X	81X
4	EFS-SB2	51X	31X	81X
5	EFS-1	16FX	4FX	20FX
6	EFS-2	16FX	4FX	20FX
7	EFS-3	16FX	4FX	20FX
8	EFS-4	15FX	5FX	20FX
9	EFS-5	11FX	9FX	20FX
10	EFS-6	14FX	6FX	20FX
11	EFS-7	12FX	8FX	20FX

LEGEND

- MULTIMODE FIBER OPTIC CABLE (OM3/OM4)
- MULTI MODE FIBER OPTIC CABLE (OM3/OM4) (REDUCED) (RM)
- FIBER OPTIC PATCH CORD (MMUR/RM/RM)
- FIBER OPTIC PATCH CORD (MMUR/RM/RM)
- CUSTOMER SUPPLIED FIBER DATA TRANSMISSION TO RUDC ON IEC-488-101
- (to be filled fiber optic port)
- (to be filled ethernet port)

LEVEL-1 (FAULT TOLERANT RING EFS-A1-A2,B1-B2 LAYER-2 SWITCHES)

LEVEL-2 (REDUNDANT STATION LAN ETH HUB-1 & HUB-2 LAYER-2 SWITCHES)

LEVEL-3 (REDUNDANT SYSTEM LAN EFS-S1 & S2 LAYER-2 SWITCHES)

PROJECT: 400/220KV NEEEMUCH SUBSTATION

CUSTOMER: POWER GRID CORPORATION OF INDIA LIMITED

CONTRACTOR: BHARAT HEAVY ELECTRICALS LIMITED

SYSTEM ARCHITECTURE

DRAWING NO: KMS-SA

REVISIONS

NO.	DATE	BY	CHKD	REASON
1	12/12/2023	MM	MM	ISSUED FOR APPROVAL

SCALE: 1:1

DATE: 12/12/2023

BY: MM

CHKD: MM

APPROVED: 12/12/2023

SSS

SIZE: 11A

REV: 00/00/00

DATE: 12/12/2023

BY: MM

CHKD: MM

APPROVED: 12/12/2023

SSS

DATE: 12/12/2023

BY: MM

CHKD: MM

APPROVED: 12/12/2023

SSS

DATE: 12/12/2023

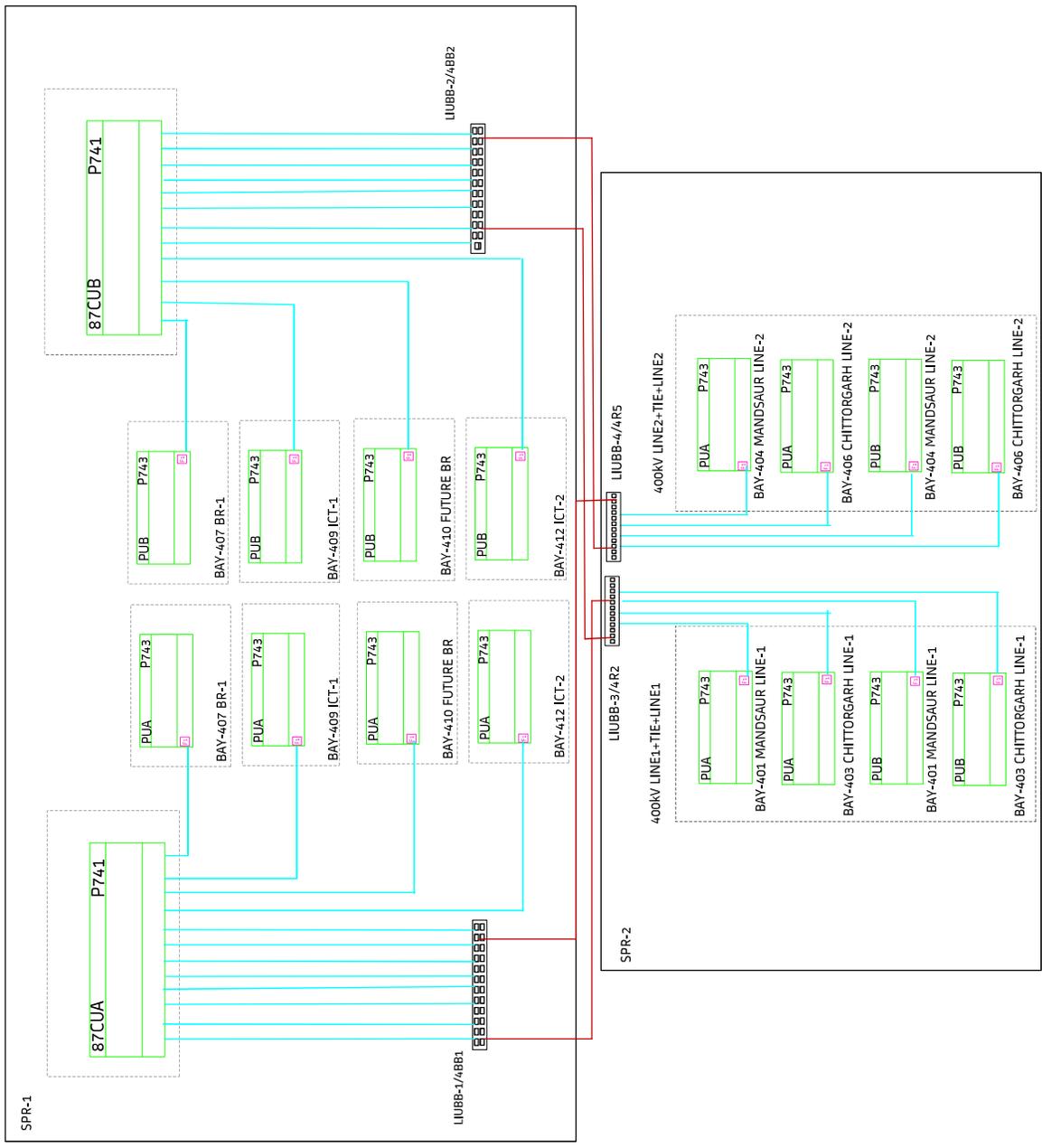
BY: MM

CHKD: MM

APPROVED: 12/12/2023

SSS

NEEMUCH 400KV BUSBAR ARCHITECTURE



- MULTIMODE FIBER OPTIC CABLE-CORE (MM-PMMA)
- FIBER OPTIC PATCH CORD (MM-PMMA)
- FIBER OPTIC PATCH CORD (MM-PMMA)
- CUSTOMER SUPPLIED FOR DATA TRANSMISSION TO BLDG ON (ECS-607X-01)
- (MM-PMMA) FIBER OPTIC PORT (BT)
- (MM-PMMA) ETHERNET PORT (MS)

PROJECT: 400/20KV NEEMUCH SUBSTATION

CUSTOMER: POWER GRID CORPORATION OF INDIA LIMITED

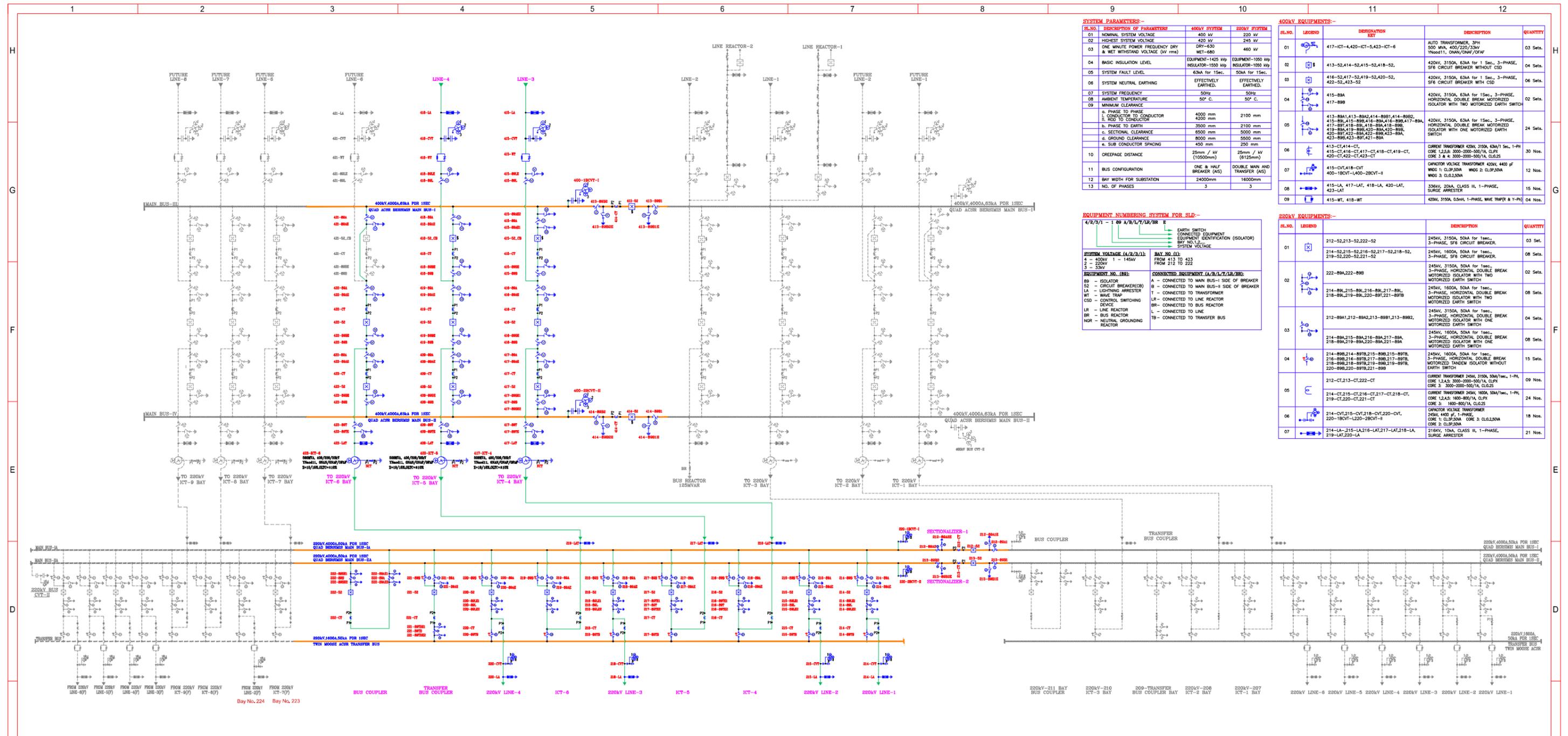
CONTRACTOR: BHARAT HEAVY ELECTRICALS LIMITED

TITLE: 400KV BUSBAR ARCHITECTURE

DRAWING NO: 12/MS-SA

NO.	DATE	BY	CHKD	SCALE	STANDARD	IEC	TOTAL
1	24.12.2022	MS					1
2	24.12.2022	MS					2
3	24.12.2022	MS					3
4	24.12.2022	MS					4
5	24.12.2022	MS					5
6	24.12.2022	MS					6
7	24.12.2022	MS					7
8	24.12.2022	MS					8
9	24.12.2022	MS					9
10	24.12.2022	MS					10

B.400 KV PACHORA PS



SYSTEM PARAMETERS-

SL. NO.	DESCRIPTION OF PARAMETERS	400KV SYSTEM	220KV SYSTEM
01	NOMINAL SYSTEM VOLTAGE	400 kV	220 kV
02	HIGHEST SYSTEM VOLTAGE	420 kV	240 kV
03	ONE MINUTE POWER FREQUENCY DRY & WET WITHSTAND VOLTAGE (kV rms)	DRY-630 WET-680	460 kV
04	BASIC INSULATION LEVEL	EQUIPMENT-1405 kVp INSULATOR-1500 kVp	EQUIPMENT-1000 kVp INSULATOR-1000 kVp
05	SYSTEM FAULT LEVEL	63KA for 1Sec.	50KA for 1Sec.
06	SYSTEM NEUTRAL EARTHING	EFFECTIVELY EARTHED.	EFFECTIVELY EARTHED.
07	SYSTEM FREQUENCY	50Hz	50Hz
08	AMBIENT TEMPERATURE	50° C.	50° C.
09	MINIMUM CLEARANCE		
	a. PHASE TO PHASE	4000 mm	2100 mm
	b. CONDUCTOR TO CONDUCTOR	4200 mm	4200 mm
	c. PHASE TO EARTH	3500 mm	2100 mm
	d. SECTIONAL CLEARANCE	6500 mm	5000 mm
	e. GROUND CLEARANCE	8000 mm	5500 mm
	f. SUB CONDUCTOR SPACING	450 mm	250 mm
10	CREEPAE DISTANCE	25mm / kV (1050mm)	25mm / kV (6125mm)
11	BUS CONFIGURATION	ONE & HALF BREAKER (AS)	DOUBLE MAIN AND TRANSFER (AS)
12	BAY WIDTH FOR SUBSTATION	24000mm	16000mm
13	NO. OF PHASES	3	3

EQUIPMENT NUMBERING SYSTEM FOR SLD-

4/2/3/1 - 1 89 A/B/L/T/AR/BR E

4 - 400KV
2 - 220KV
3 - 33KV

SYSTEM VOLTAGE (4/2/3/1) BAY NO. (1) FROM 413 TO 433 FROM 212 TO 222

EQUIPMENT NO. (89): CONNECTED EQUIPMENT (A/B/L/T/AR/BR):
 89 - ISOLATOR A - CONNECTED TO MAIN BUS-1 SIDE OF BREAKER
 52 - CIRCUIT BREAKER(B) B - CONNECTED TO MAIN BUS-8 SIDE OF BREAKER
 LA - LIGHTNING ARRESTER T - CONNECTED TO TRANSFORMER
 WT - WIRE TRAP W - CONNECTED TO LINE REACTOR
 CSD - CONTROL SWITCHING DEVICE LR - LINE REACTOR
 BR - BUS REACTOR BR - CONNECTED TO BUS REACTOR
 NR - NEUTRAL GROUNDING REACTOR TB - CONNECTED TO TRANSFER BUS

400KV EQUIPMENTS-

SL.NO.	LEGEND	DESCRIPTION	QUANTITY
01	417-ICT-4,420-ICT-5,423-ICT-6	AUTO TRANSFORMER, 3PH 500 MVA, 400/220/230V Y/No011, ONAN/ONAF/ONAF	03 Sets.
02	413-52,414-52,415-52,418-52,	420KV, 3150A, 63KA for 1 Sec., 3-PHASE, SF6 CIRCUIT BREAKER WITHOUT CSD	04 Sets.
03	416-52,417-52,419-52,420-52, 422-52,423-52	420KV, 3150A, 63KA for 1 Sec., 3-PHASE, SF6 CIRCUIT BREAKER WITH CSD	06 Sets.
04	415-89A, 417-89B	420KV, 3150A, 63KA for 1Sec., 3-PHASE, HORIZONTAL DOUBLE BREAK MOTORIZED ISOLATOR WITH TWO MOTORIZED EARTH SWITCH	02 Sets.
05	413-89A1,413-89A2,414-89B1,414-89B2, 415-89,415-89B,416-89A,416-89B,417-89A, 417-89B,418-89A,418-89B, 419-89A,419-89B,420-89A,420-89B, 422-89,422-89A,422-89B,423-89A, 423-89B,423-89A,421-89A	420KV, 3150A, 63KA for 1Sec., 3-PHASE, HORIZONTAL DOUBLE BREAK MOTORIZED ISOLATOR WITH ONE MOTORIZED EARTH SWITCH	24 Sets.
06	413-CT,414-CT, 415-CT,416-CT,417-CT,418-CT,419-CT, 420-CT,422-CT,423-CT	CURRENT TRANSFORMER 420V, 3150A, 63A/1 Sec., 1-PH CORE 1.2 L.S. 300-3000-500/1A, CLS.25	30 Nos.
07	415-CV,418-CV, 400-1BCVT,400-2BCVT-II	CAPACITOR VOLTAGE TRANSFORMER 420V, 4400 pF WDG 1: CL3P,500A WDG 2: CL3P,500A WDG 3: CL3P,500A	12 Nos.
08	415-LA, 417-LAT, 418-LA, 420-LAT, 423-LAT	336KV, 20KA CLASS II, 1-PHASE, SURGE ARRESTER	15 Nos.
09	415-WT, 418-WT	420V, 3150A, 0.5mH, 1-PHASE, WIRE TRAP (T-Ph)	04 Nos.

220KV EQUIPMENTS-

SL.NO.	LEGEND	DESCRIPTION	QUANTITY
01	212-52,213-52,222-52	245KV, 3150A, 50KA for 1Sec., 3-PHASE, SF6 CIRCUIT BREAKER	03 Sets.
	214-52,215-52,216-52,217-52,218-52, 219-52,220-52,221-52	245KV, 1600A, 50KA for 1Sec., 3-PHASE, SF6 CIRCUIT BREAKER	08 Sets.
02	222-89A,222-89B	245KV, 3150A, 50KA for 1Sec., 3-PHASE, HORIZONTAL DOUBLE BREAK MOTORIZED ISOLATOR WITH TWO MOTORIZED EARTH SWITCH	02 Sets.
	214-89,215-89,216-89,217-89, 218-89,219-89,220-89,221-89B	245KV, 1600A, 50KA for 1Sec., 3-PHASE, HORIZONTAL DOUBLE BREAK MOTORIZED ISOLATOR WITH TWO MOTORIZED EARTH SWITCH	08 Sets.
03	212-89A1,212-89A2,213-89B1,213-89B2, 214-89A,215-89A,216-89A,217-89A, 218-89A,219-89A,220-89A,221-89A	245KV, 1600A, 50KA for 1Sec., 3-PHASE, HORIZONTAL DOUBLE BREAK MOTORIZED ISOLATOR WITH ONE MOTORIZED EARTH SWITCH	08 Sets.
04	214-89B,214-89B,215-89B,215-89B, 216-89B,216-89B,217-89B,217-89B, 218-89B,218-89B,219-89B,219-89B, 220-89B,220-89B,221-89B	245KV, 1600A, 50KA for 1Sec., 3-PHASE, HORIZONTAL DOUBLE BREAK MOTORIZED ISOLATOR WITHOUT EARTH SWITCH	15 Sets.
	212-CT,213-CT,222-CT	CURRENT TRANSFORMER 245V, 3150A, 50A/1Sec., 1-PH CORE 1.2 L.S. 300-3000-500/1A, CLS.25	09 Nos.
05	214-CT,215-CT,216-CT,217-CT,218-CT, 219-CT,220-CT,221-CT	CURRENT TRANSFORMER 245V, 1600A, 50A/1Sec., 1-PH CORE 1.2 L.S. 1600-800/1A, CLS.25	24 Nos.
06	214-CV,215-CV,216-CV,217-CV,218-CV, 220-1BCVT,220-2BCVT-II	CAPACITOR VOLTAGE TRANSFORMER 245KV, 4400 pF, 1-PHASE, CORE 1: CL3P,500A CORE 2: CL3P,500A CORE 3: CL3P,500A	18 Nos.
07	214-LA,215-LA,216-LAT,217-LAT,218-LA, 219-LAT,220-LA	216KV, 10KA, CLASS II, 1-PHASE, SURGE ARRESTER	21 Nos.

* CAT-A approval will be provided after finalization of 220kV line details

G R INFRAPROJECTS LIMITED SECTOR-18, GURUGRAM (122015)	
PACHORA POWER TRANSMISSION LTD.(400/220KV PACHORA SEZ PP S/S)	
Approval status	
A: APPROVED	<input type="checkbox"/>
B: APPROVED SUBJECT TO INCORPORATION OF COMMENTS	<input checked="" type="checkbox"/>
C: RESUBMIT FOR APPROVAL AFTER INCORPORATING COMMENTS	<input type="checkbox"/>
D: FOR INFORMATION & RECORD	<input type="checkbox"/>
E: NOT APPROVED	<input type="checkbox"/>
THIS APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM ITS CONTRACTUAL OBLIGATIONS	
DATE	11/03/2024
SIGN	

1. REFERENCE PROTECTION SLD FOR 400K/220KV SWITCHYARD RAJGARH S/S REC/URJA/E-SYD-DRG/PSLD/002

LEGEND:-

- PRESENT SCOPE
- FUTURE
- BUS BAR PRESENT
- BUS BAR FUTURE

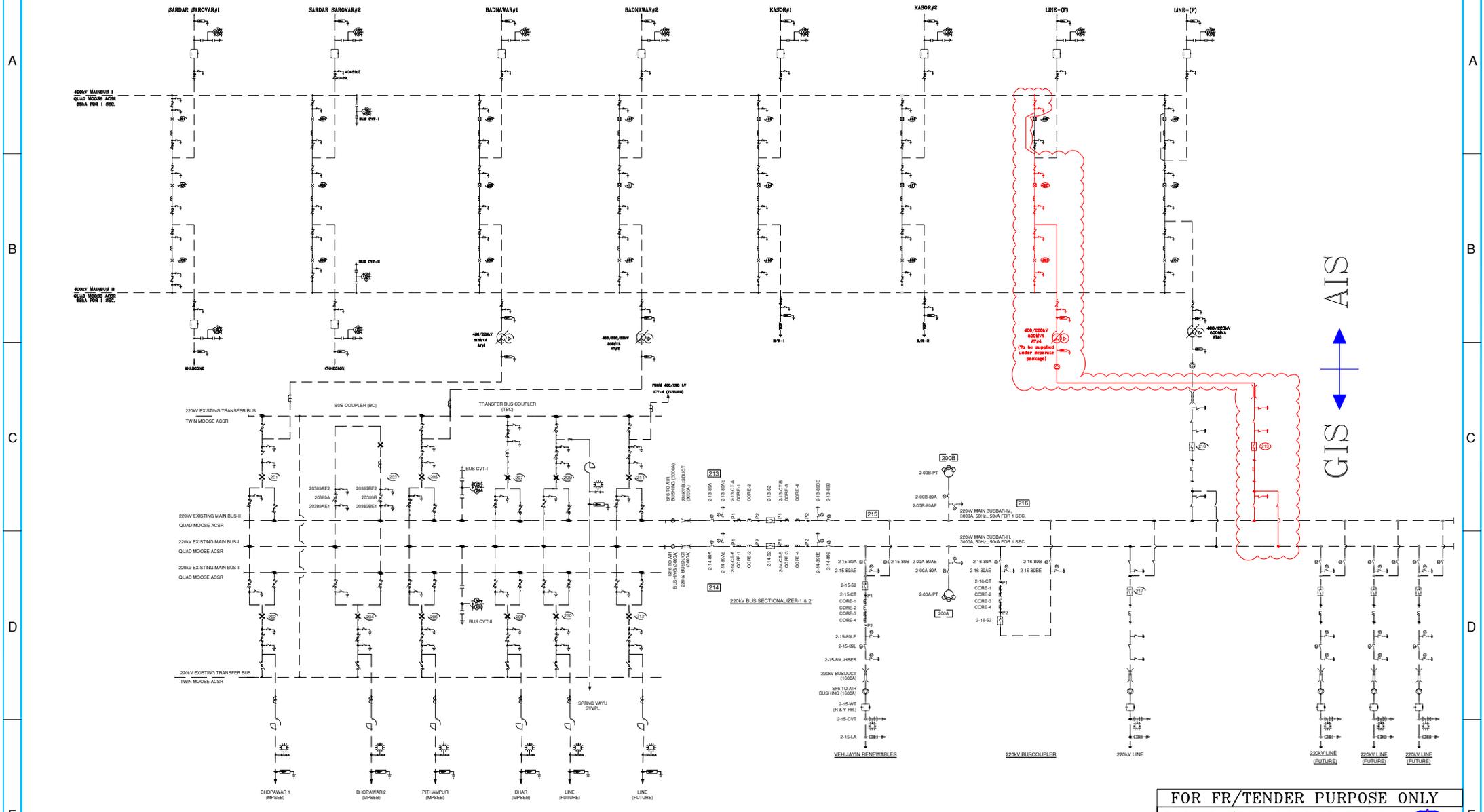
1. ALL STATUTORY & REGULATORY REQUIREMENT SHALL BE FOLLOWED FOR SUBSTATION AS REQUIRED SUBSTATION AS REQUIRED.

REV.	DESCRIPTION	DRAWN	CHECKED	APPROVED	STATUS
R1	REVISED AS PER COMMENTS	Name: A.B, G.R, A.K Date: 08.03.24, 08.03.24, 08.03.24	FOR APPROVAL		
R0	FIRST ISSUE	Name: A.B, G.R, A.K Date: 05.03.24, 05.03.24, 05.03.24	FOR APPROVAL		

CUSTOMER:	PACHORA POWER TRANSMISSION LIMITED
OWNER'S ENGINEER:	BONA FANG ZHENG PRIVATE LIMITED
PROJECT:	TRANSMISSION SYSTEM FOR EVACUATION OF POWER FROM RE PROJECTS IN RAJGARH 1000 MW SEZ IN MADHYA PRADESH-PHASE-II
REF NO:	RECPDCL/TBCH/RAJGARH PHASE-II/2023-2024/3461 DATED-31.12.2023
TITLE:	SINGLE LINE DIAGRAM FOR 400kV/220kV RAJGARH S/S
CONTRACTOR:	G R INFRAPROJECTS LTD. 2nd Floor, Nexus Tower, Plot No. 18, Phase-IV, Udyog Vihar, Sector-18, Gurugram, Haryana-122016, India.
DRAWING No.	REC/URJA/E-SYD-DRG/SLD-001
SHEET	01 OF 01
SCALE	NTS.
DATE:	08.03.24

Size: A0 (1189 x 841)

C.400 KV RAJGARH SS



Note: To be Referred for Present Scope only

FOR FR/TENDER PURPOSE ONLY
POWER GRID CORPORATION OF INDIA LIMITED
 (A Government of India Enterprise)

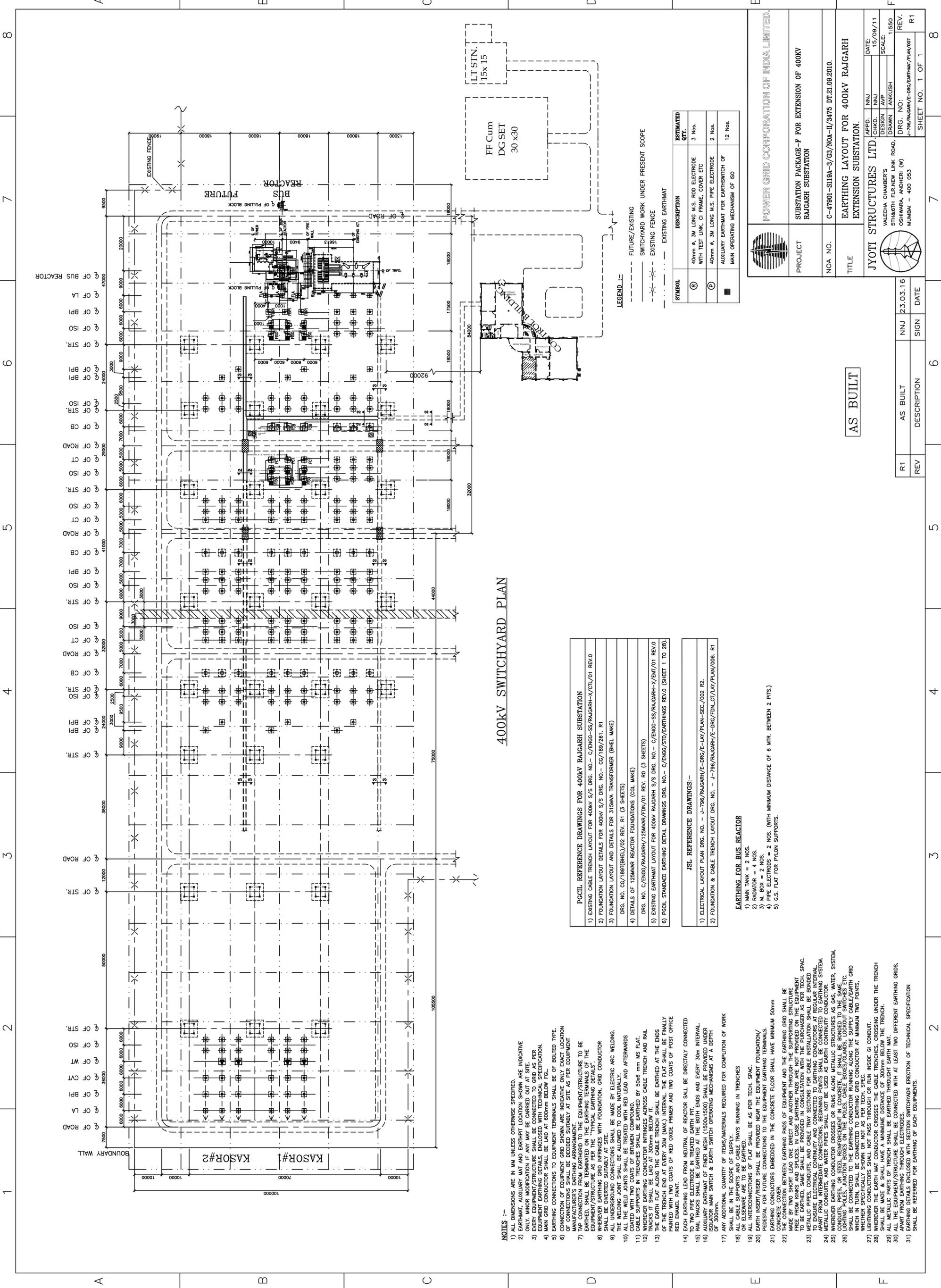
PROJECT:
 EXTN. OF 400/220KV RAJGARH SUBSTATION UNDER AUGMENTATION OF
 TRANSPORTATION CAPACITY AT 400/220KV RAJGARH S/S IN MP BY
 400/220KV, 1X500 MVA ICT (4th) (TERMINATED ON THE SECTIONALIZED
 220KV BUS)

SUBSTATION:
 400/220KV RAJGARH SUBSTATION EXTENSION

TITLE:
 400/220kV SINGLE LINE DIAGRAM

DRAWN	DATE	DRAWING NO.	REV.
	SEP 2024	C/ENGG/WR/RAJGARH-EXTN/ICT-4/SLD	00





400kV SWITCHYARD PLAN

NOTES :-

- 1) ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- 2) EARTH MAT, AUXILIARY MAT AND EARTH PIT LOCATION SHOWN ARE INDICATIVE ONLY. MINOR MODIFICATION IF ANY MAY BE CARRIED OUT AT SITE.
- 3) EVERY EQUIPMENT/STRUCTURE SHALL BE CONNECTED TO GRID AS PER EQUIPMENT EARTHING DETAILS, ENCLOSED WITH TECHNICAL SPECIFICATION.
- 4) MAIN GRID CONDUCTOR SHALL BE LAID AT 600mm BELOW POIL.
- 5) EARTHING CONNECTIONS TO EQUIPMENT TERMINALS SHALL BE OF BOLTED TYPE.
- 6) CONNECTION OF EQUIPMENT GRID SHOWN ARE INDICATIVE ONLY EXACT LOCATION SHALL BE DETERMINED BY THE MANUFACTURER'S EARTHING ARRANGEMENTS TO BE AVAILABLE AT SITE AS PER EQUIPMENT MANUFACTURER'S EARTHING ARRANGEMENTS.
- 7) TAP CONNECTION FROM EARTH TO THE EQUIPMENT/STRUCTURE TO BE EARTHED, SHALL BE TERMINATED ON THE EARTHING TERMINALS OF THE EQUIPMENT/STRUCTURE AS PER THE "TYPICAL EARTHING DETAILS".
- 8) WHEREVER EARTHING GRID INFRINGES WITH FOUNDATION, GRID CONDUCTOR SHALL BE EARTHED TO FOUNDATION.
- 9) ALL UNDERGROUND CONNECTIONS SHALL BE MADE BY ELECTRIC ARC WELDING. THE WELDING JOINT SHALL BE ALLOWED TO COOL NATURALLY.
- 10) ALL THE WELD JOINTS SHALL BE TREATED WITH RED LEAD AND AFTERWARDS COATED WITH TWO COATS OF BITUMEN COMPOUND.
- 11) CABLE SUPPORTS IN TRENCHES SHALL BE EARTHED BY 50x6 mm MS FLAT.
- 12) WHEREVER EARTHING CONDUCTOR INFRINGES ACROSS CABLE TRENCH AND RAIL TRACKS SHALL BE EARTHED TO TRENCH OR RAIL TRACKS.
- 13) THE EARTH FLAT ALONG THE CABLE TRENCH SHALL BE EARTHED AT THE ENDS OF THE TRENCH END AT EVERY 30M (MAX.) INTERVAL. THE FLAT SHALL BE FINALLY PAINTED WITH TWO COATS OF RED OXIDE PRIMER AND TWO COATS OF POST OFFICE RED ENAMEL PAINT.
- 14) EACH EARTHING LEAD FROM NEUTRAL OF REACTOR SHALL BE DIRECTLY CONNECTED TO TWO PIPE ELECTRODE IN TREATED EARTH PIT.
- 15) RAIL TRACKS SHALL BE EARTHED AT THE BOTH ENDS AND EVERY 30m INTERVAL.
- 16) AUXILIARY EARTH MAT OF FINER MESH (1500x1500) SHALL BE PROVIDED UNDER THE MAIN SWITCH & EARTH SWITCH OPERATING MECHANISMS AT A DEPTH OF 300mm.
- 17) ANY ADDITIONAL QUANTITY OF ITEMS/MATERIALS REQUIRED FOR COMPLETION OF WORK SHALL BE IN THE SCOPE OF SUPPLY.
- 18) ALL CABLE SUPPORTS AND CABLE TRAYS RUNNING IN TRENCHES OR ELSEWHERE ARE TO BE EARTHED.
- 19) ALL INTERCONNECTIONS OF FLAT SHALL BE AS PER TECH. SPEC.
- 20) EARTH RISER SHALL BE PROVIDED NEAR THE EQUIPMENT FOUNDATION/ PESTER FOR FUTURE CONNECTIONS TO THE EQUIPMENT EARTHING TERMINALS.
- 21) EARTHING CONDUCTORS EMBEDDED IN THE CONCRETE FLOOR SHALL HAVE MINIMUM 50mm CLEARANCE FROM THE CONCRETE.
- 22) THE CONNECTION BETWEEN EARTHING PADS OF EQUIPMENT AND THE EARTHING GRID SHALL BE MADE BY TWO SHORT LEAD ONE DIRECT AND ANOTHER THROUGH THE SUPPORTING STRUCTURE FREE FROM KINKS AND SPLICES. IN CASE EARTHING PADS ARE NOT PROVIDED ON THE EQUIPMENT TO BE EARTHED, SAME SHALL BE PROVIDED IN CONSULTATION WITH THE PURCHASER AS PER TECH. SPEC.
- 23) EARTHING CONDUCTORS SHALL BE PROVIDED AT REGULAR INTERVALS TO ENSURE ELECTRICAL CONTINUITY AND CONNECTED TO EARTHING SYSTEM APART FROM INTERMEDIATE CONNECTIONS. BEGINNING POINTS SHALL BE CONNECTED TO EARTHING SYSTEM.
- 24) METALLIC CONDUITS, AND WATER PIPES SHALL NOT BE USED AS EARTH CONTINUITY CONDUCTOR.
- 25) WHEREVER EARTHING CONDUCTOR CROSSES OR RUNS ALONG METALLIC STRUCTURES AS GAS, WATER, SYSTEM, TELEPHONE, TELEVISION, CABLE, CABLE BOXES/GLANDS, COCKPIT SWITCHES ETC. THE EARTHING CONDUCTOR SHALL BE CONNECTED TO THESE METALLIC STRUCTURES AT REGULAR INTERVALS.
- 26) ALL METALLIC PARTS OF TRENCH SHALL BE EARTHED THROUGH EARTH MAT.
- 27) LIGHTNING CONDUCTORS SHALL NOT PASS THROUGH OR RUN INSIDE OF CONDUIT.
- 28) ALL METALLIC PARTS OF TRENCH SHALL BE EARTHED THROUGH EARTH MAT.
- 29) ALL THE EQUIPMENT/STRUCTURE SHALL BE CONNECTED WITH AT LEAST TWO DIFFERENT EARTHING GRIDS.
- 30) EARTHING DETAILS ENCLOSED WITH SECTION SWITCHGEAR ERECTION OF TECHNICAL SPECIFICATION SHALL BE REFERRED FOR EARTHING OF EACH EQUIPMENTS.

PGCIL REFERENCE DRAWINGS FOR 400KV S/S DRG. NO. - C/ENG-SS/RAJGARH-X/DTL/01 REV.0

1) EXISTING CABLE TRENCH LAYOUT FOR 400KV S/S DRG. NO. - C/ENG-SS/RAJGARH-X/DTL/01 REV.0
2) FOUNDATION LAYOUT DETAILS FOR 400KV S/S DRG. NO. - CG/189/261. R1
3) FOUNDATION LAYOUT AND DETAILS FOR 315MVA TRANSFORMER (BHEL MAKE) DRG. NO. CG/189(BHEL)02 REV. R1 (3 SHEETS)
4) DETAILS OF 125MVA REACTOR FOUNDATIONS (GCL MAKE) DRG. NO. C/ENG/SS/RAJGARH/125MVA/FDN/01 REV. R0 (3 SHEETS)
5) EXISTING EARTH MAT LAYOUT FOR 400KV RAJGARH S/S DRG. NO. - C/ENG-SS/RAJGARH-X/EMT/01 REV.0
6) PGCIL STANDARD EARTHING DETAIL DRAWINGS DRG. NO. - C/ENG/STD/EARTHINGS REV.0 (SHEET 1 TO 2B)

JSL REFERENCE DRAWINGS:-

1) ELECTRICAL LAYOUT PLAN DRG. NO. - J-796/RAJGARH/E-DRG/E-LAY/PLAN-SEC./002 R2
2) FOUNDATION & CABLE TRENCH LAYOUT DRG. NO. - J-796/RAJGARH/E-DRG/FDN-LAY/PLAN/006. R1

EARTHING FOR BUS REACTOR

- 1) MAIN TANK = 2 NOS.
- 2) RADIATOR = 4 NOS.
- 3) M. BOX = 2 NOS.
- 4) PIPE ELECTRODES = 2 NOS. (WITH MINIMUM DISTANCE OF 6 MTR. BETWEEN 2 PITS.)
- 5) G.S. FLAT FOR PYLON SUPPORTS.

LEGEND :-

---	FUTURE/EXISTING
---	SWITCHYARD WORK UNDER PRESENT SCOPE
---	EXISTING FENCE
---	EXISTING EARTH MAT

SYMBOL	DESCRIPTION	ESTIMATED QTY.
⊙	40mm φ, 3M LONG M.S. ROD ELECTRODE WITH TEST LINK, CI FRAME, COVER ETC	3 Nos.
⊕	40mm φ, 3M LONG M.S. PIPE ELECTRODE	2 Nos.
■	AUXILIARY EARTH MAT FOR EARTH SWITCH OF MAIN OPERATING MECHANISM OF ISO	12 Nos.

POWER GRID CORPORATION OF INDIA LIMITED.

PROJECT: SUBSTATION PACKAGE-F FOR EXTENSION OF 400KV RAJGARH SUBSTATION

NOA NO. C-47901-S119A-3/G3/NOA-II/3475 DT.21.08.2010.

TITLE: EARTHING LAYOUT FOR 400KV RAJGARH EXTENSION SUBSTATION.

JYOTI STRUCTURES LTD.
 VALECHA CHAMBERS
 5TH & 6TH FLOOR, NEW LINK ROAD,
 OSHWARA, ANDHERI (W)
 MUMBAI - 400 053

DATE: 15/09/11
 APPD. NNU
 CHKD. NNU
 DESIGN AVP
 DRAWN ANKUSH
 SCALE: 1:550
 REV. NO. J-796/RAJGARH/E-DRG/EARTHING/PLAN/007
 SHEET NO. 1 OF 1

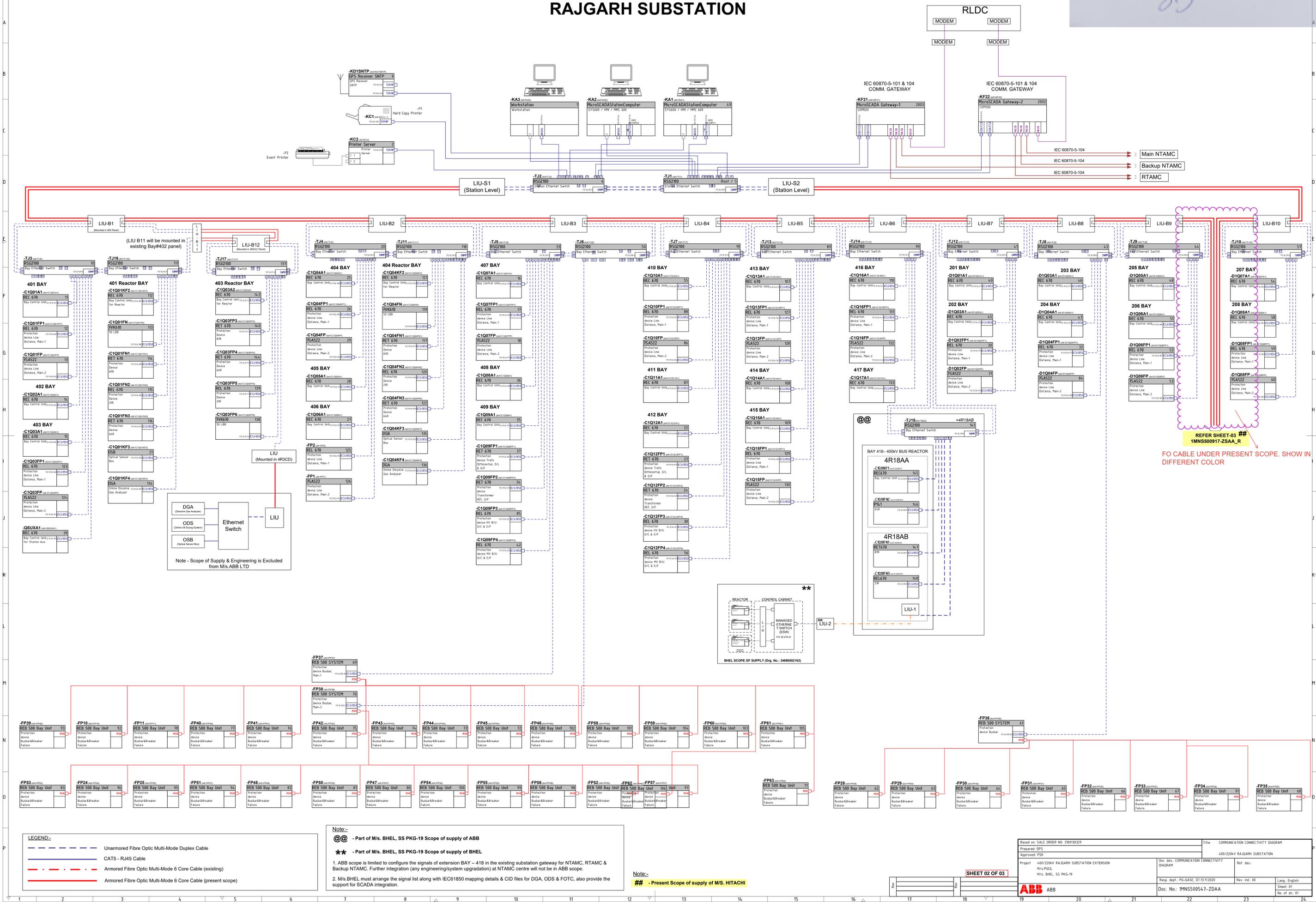
AS BUILT

REV	DESCRIPTION	SIGN	DATE
R1	AS BUILT	NNJ	23.03.16

REV	DESCRIPTION	SIGN	DATE
R1	AS BUILT	NNJ	23.03.16

Communication Connectivity Diagram of 400/220KV RAJGARH SUBSTATION

31304



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Based on SALE ORDER NO: 30019029 Title: COMMUNICATION CONNECTIVITY DIAGRAM

Prepared: DPS Approved: PSS Doc. No.: 400/220KV RAJGARH SUBSTATION EXTENSION

Project: 400/220KV RAJGARH SUBSTATION EXTENSION M/s. PGCL, M/s. BHEL, SS PKG-19

Doc. No.: 1MNS500547-ZDAA

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Sheet: 01 No. of sh. 01

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