

LEGENDS

DESCRIPTION	SYMBOL	QUANTITY	
		400kV	220kV
CIRCUIT BREAKER WITHOUT CONTROL SWITCHING DEVICE AND WITHOUT PRE INSERTION RESISTOR	□	2 SETS.	20 SETS.
CIRCUIT BREAKER WITHOUT CONTROL SWITCHING DEVICE AND WITH PRE INSERTION RESISTOR	□	---	---
CIRCUIT BREAKER WITH CONTROL SWITCHING DEVICE AND WITHOUT PRE INSERTION RESISTOR	◐	12 SETS.	---
CIRCUIT BREAKER WITH CONTROL SWITCHING DEVICE AND WITH PRE INSERTION RESISTOR	◐	---	---
INTERCONNECTING TRANSFORMER	⊙	5 NOS.	---
400KV ISOLATOR	⊥	38 NOS.	---
220KV ISOLATOR	⊥	---	66 NOS.
400KV CURRENT TRANSFORMER	⊥	42 SETS.	---
220KV CURRENT TRANSFORMER	⊥	---	60 SETS.
BUSHING CURRENT TRANSFORMER	⊥	9 SETS.	5 SETS.
EARTH SWITCH	⊥	38 SETS.	58 SETS.
SURGE ARRESTER	⊥	27 NOS.	36 NOS.
REACTOR	⊥	2 NOS.	---
WAVE TRAP	⊥	4 NOS.	14 NOS.
CAPACITIVE VOLTAGE TRANSFORMER	⊥	12 NOS.	33 NOS.

SYSTEM PARAMETER

S. NO.	VOLTAGE LEVEL	400V AIS	220KV AIS
1.	SYSTEM RATED VOLTAGE	400kV	220kV
2.	MAX. RATED VOLTAGE (Vrms.)	420kV	245kV
3.	RATED FREQUENCY	50Hz	50Hz
4.	NO. OF PHASE	3	3
5.	DESIGN AMB TEMP	50°C	50°C
6.	CORONA EXTINCTION VOLTAGE	300 kV	320 kV
7.	MAX. RADIO INTERFERENCE	1000 microvolts at 266 kV rms	156 kV rms
8.	MINIMUM CREEPAGE DISTANCE FOR INSULATOR STRINGS/ LONGROD INSULATORS /OUTDOOR BUSHINGS	31mm/kV	31mm/kV
9.	MINIMUM CREEPAGE DISTANCE FOR SWITCHGEAR EQUIPMENT	25mm/kV	25mm/kV
10.	RATED INSULATION LEVEL		
	a) FULL WAVE IMPULSE WITHSTAND VOLTAGE FOR EQUIPMENT OTHER THAN TRANSFORMERS AND REACTORS - FOR INSULATOR STRING (1.2/50 MICROSEC.)	1425kVp	1050kVp
	b) FULL WAVE IMPULSE WITHSTAND VOLTAGE FOR INSULATOR STRING (1.2/50 MICROSEC.)	1550kVp	1050kVp
	c) ONE MINUTE POWER FREQUENCY DRY WITHSTAND VOLTAGE (Vrms.)	630 kV	- kV
	d) ONE MINUTE POWER FREQUENCY DRY AND WET WITHSTAND VOLTAGE (Vrms.)	- kV	460 kV
	e) SWITCHING IMPULSE WITHSTAND VOLTAGE (250/2500 MICRO SEC.) DRY AND WET	1050 kV	- kV
11.	RATED SHORT CIRCUIT CURRENT	63 KA FOR 1 SEC.	50 KA FOR 1 SEC.
12.	SYSTEM NEUTRAL EARTHING	EFFECTIVELY EARTHED	
13.	SWITCHING SCHEME	ONE AND TWO MAN HALF BREAKER & TRANSFER	

NOTES
 1. ALL EQUIPMENT RATING/PARAMETERS SHOWN ARE INDICATIVE ONLY. IT IS THE SOLE RESPONSIBILITY OF THE BIDDER TO PROVIDE ALL EQUIPMENTS / ACCESSORIES TO MAKE THE SYSTEM COMPLETE (AS DECIDED BY OWNER) IN ALL RESPECTS AND NO EXTRAS ON ANY ACCOUNT WILL BE ENTERTAINED.

LEGENDS:
 - - - - - PRESENT SCOPE
 - - - - - FUTURE SCOPE

DO NOT SCALE TENDER PURPOSE

APRAVA Aprava Energy Private Limited

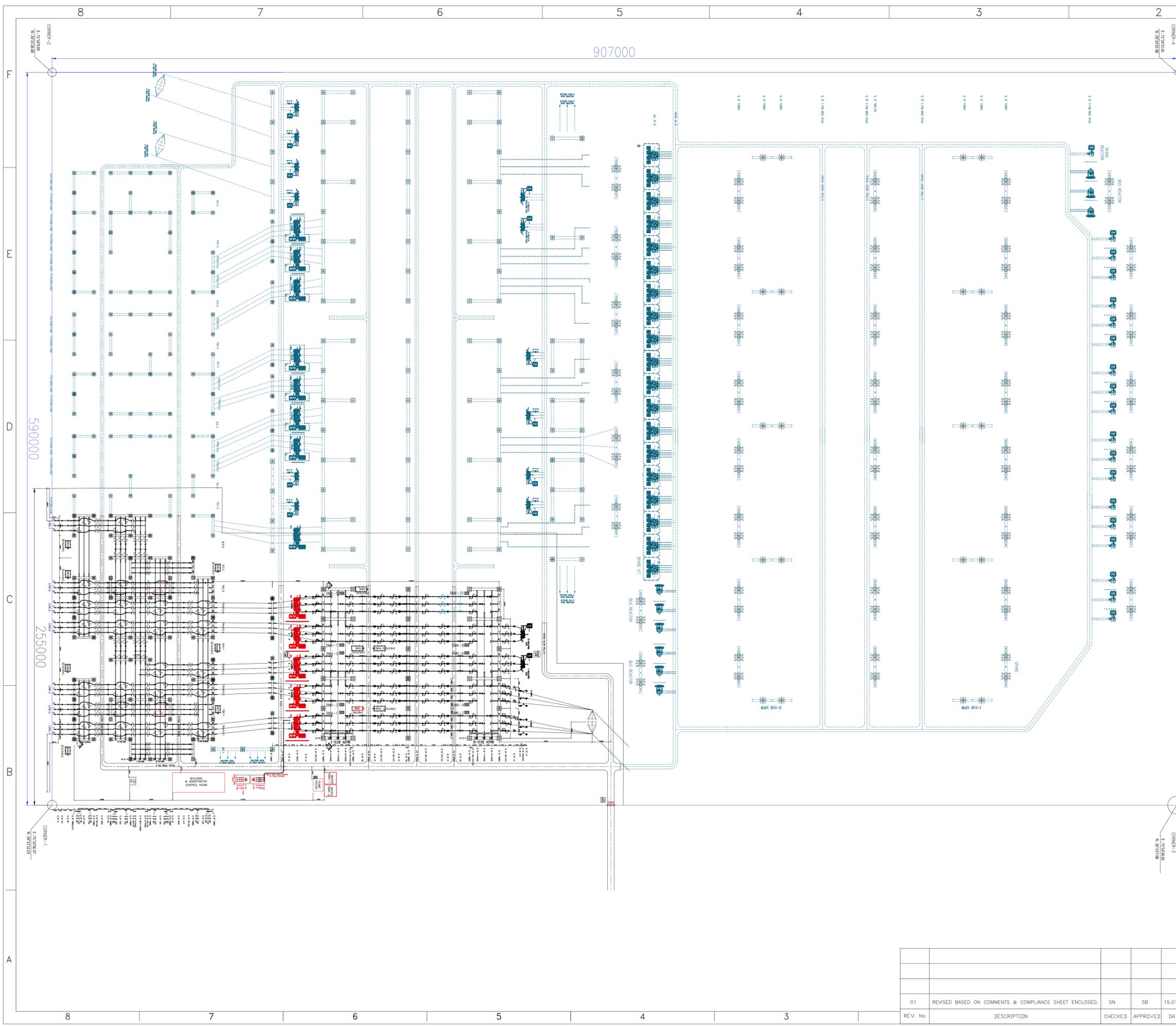
KEY SINGLE LINE DIAGRAM FOR 400/220KV SUBSTATION FOR FATEHGARH- 4 P.S.

TATA CONSULTING ENGINEERS LIMITED MUMBAI

SCALE: NTS	APPROVED	DATE (PO ISSUE)
DEL/CENTRE-DESIG EL	AS	10-08-23
DRN: KSR		DATE (CURRENT DRAW)
CHD: SB		10-08-23
		SHEET 01 OF 01
		ISSUE PO

FOR RD ISSUE ONLY				ISSUE	REVISIONS	DRN	CLEARED	APPD	DATE	ISSUE	REVISIONS	DRN	CLEARED	APPD	DATE	ISSUE	REVISIONS	DRN	CLEARED	APPD	DATE	ISSUE	REVISIONS	DRN	CLEARED	APPD	DATE	ISSUE
DISC	SIGNATURE	DATE	CIVIL																									

FILE NAME: F-040-Ry-05.dwg
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BILL OF QUANTITIES OF FREE ISSUED EQUIPMENT		
S. NO.	DESCRIPTION	QTY UNIT
1	500MVA, 400/220/33KV, 3-PHASE, AUTO TRANSFORMER	5 EA
2	125 MVAR, 420KV, 3-PHASE BUS REACTOR	2 EA

LEGENDS:
 ——— PRESENT SCOPE
 - - - - - FUTURE

PURPOSE OF SUBMISSION : FOR APPROVAL

PD. REF. NO. FFTL/LOA-CG/AUG23/201 on dated:08.08.2023

PROJECT FOR 400/220kV FATEHGARH- 4 AIS (NEW) AND 400kV BAY EXTENSION AT FGATEHGARH-3

SUBSTATION 400/220kV FATEHGARH-4 AIS (NEW) SUBSTATION

TITLE LAYOUT PLAN FOR 400/220kV SUBSTATION FOR FATEHGARH- 4 P.S

OWNER FATEHGARH IV TRANSMISSION LTD. (APRAAVA ENERGY PRIVATE LIMITED) **APRAAVA ENERGY**

OWNER'S CONSULTANT TATA CONSULTING ENGINEERS LIMITED MUMBAI **TATA**

EPC CONTRACTOR CG POWER AND INDUSTRIAL SOLUTIONS LIMITED ENGINEERING PROJECTS DIVISION : POWER SYSTEMS - GURUGRAM **CG**

REV. No	DESCRIPTION	CHECKED	APPROVED	DATE	DRG. No.	SCALE	DATE
01	REVISED BASED ON COMMENTS & COMPLIANCE SHEET ENCLOSED.	SN	SB	15.01.24	APPROVED	SB	SHEET No. 1 OF 1
					CG-APRAAVA-330-EL-102		23.11.23