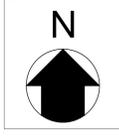


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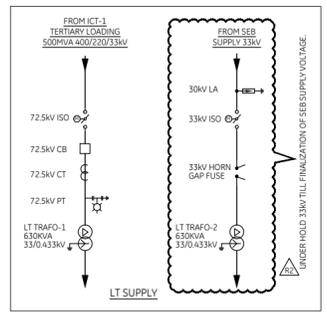
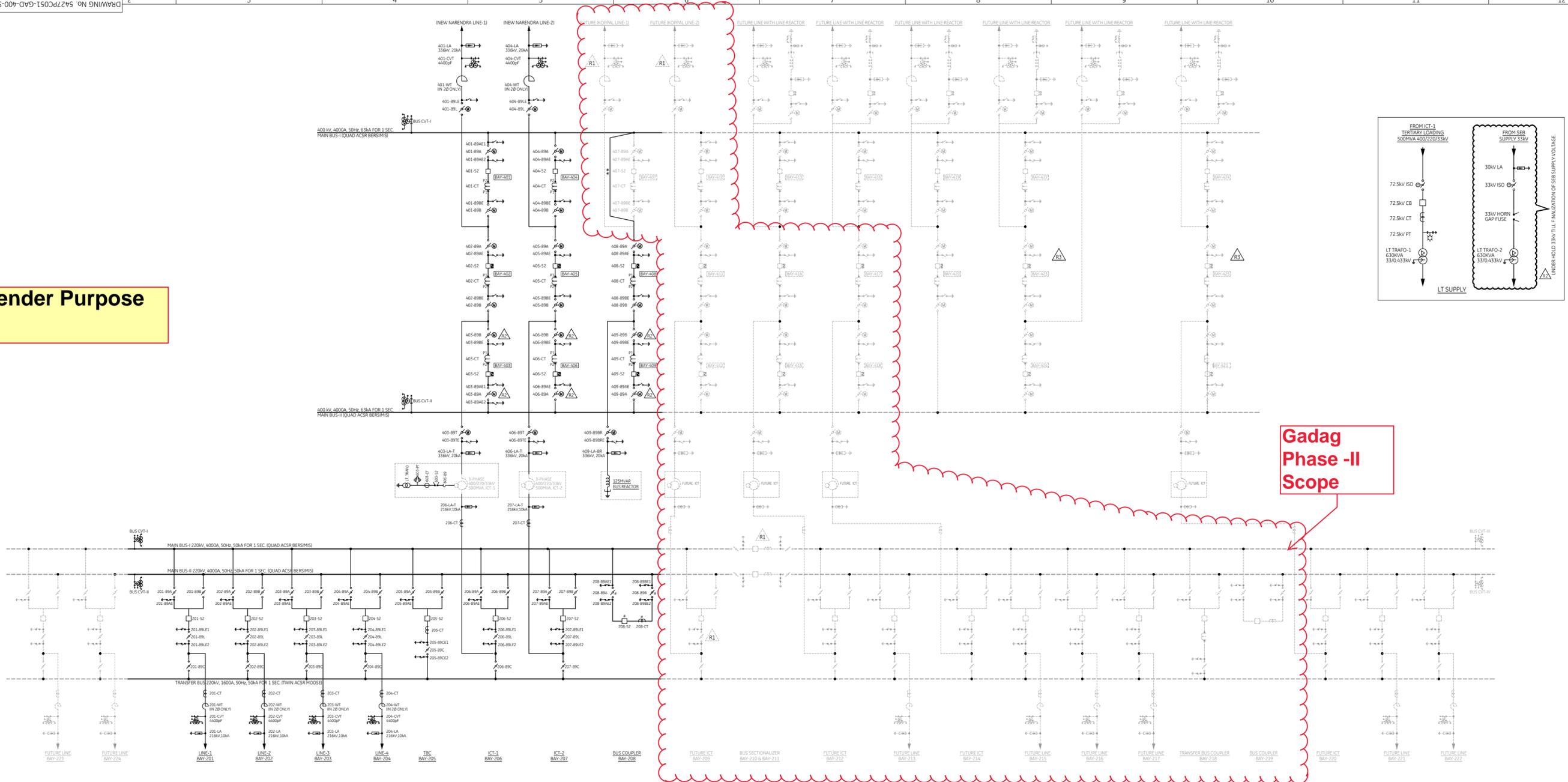
2021-E-GE-GDG-SWD-LAY-002	GENERAL ARRANGEMENT LAYOUT FOR 400/220kV AIS GADAG SUBSTATION
2021-E-GE-GDG-SWD-SLD-001 (TENDER)	SINGLE LINE DIAGRAM 400/220kV AIS GADAG SUBSTATION
REFERENCE NO.	DESCRIPTION

REV No.	DESCRIPTION	DATE	DRAWN	ELE	CIVIL	MECH	APPROVED	STATUS
R2	REVISED AS PER CUSTOMER COMMENTS	01.08.22						FOR APPROVAL
R1	REVISED AS PER CUSTOMER COMMENTS DATED: 04.05.2022	19.05.22						FOR APPROVAL
R0	FIRST ISSUE	26.04.22						FOR APPROVAL

PROJECT: TRANSMISSION SCHEME FOR SOLAR ENERGY ZONE IN GADAG (1000 MW), KARNATAKA PART-A, PHASE-1	
PROJECT CAPACITY: 1000 MW	PROJECT LOCATION: GADAG, KARNATAKA
CLIENT: REC POWER DEVELOPMENT AND CONSULTANCY LIMITED	
CONTRACTOR: ReNew RENEW SOLAR SERVICES PRIVATE LIMITED COMMERCIAL BLOCK-1 ZONE-6 GOLF COURSE ROAD, DLF CITY PHASE-V, GURUGRAM HARYANA-122009	
SUB CONTRACTOR: GE T&D INDIA LTD. AXIS HOUSE, PLOT NO 1-14, SECTOR-128, TOWERS 3&6 JAYTEE WISH TOWN, NOIDA, UTTAR PRADESH, (INDIA)	
LOA REF.: LOA/GADAG/SUBSTATION/001, DATED: 17.03.2022	LOA/GADAG/SUBSTATION/002, DATED: 17.03.2022
TITLE: GADAG S/S-400/220kV OVERALL ELECTRICAL LAYOUT PLAN & SECTIONAL DRAWING	
A-0 RENEW DWG NO.	TOTAL SH. NO. REV.
GE DWG NO. 5427PC051-GAD-400-SYD-ACS-S2020-GADAG-001	003

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For Tender Purpose Only



Gadag Phase-II Scope

SYSTEM PARAMETERS FOR AIS		
S.NO.	DESCRIPTION OF PARAMETER	400KV SYSTEM
01	SYSTEM OPERATING VOLTAGE	400kV
02	MAX. OPERATING VOLTAGE OF THE SYSTEM (rms)	420kV
03	RATED FREQUENCY	50Hz
04	NO OF PHASE	3 PHASE
RATED INSULATION LEVELS		
(i) FULL WAVE LIGHTNING IMPULSE WITHSTAND VOLTAGE (1.2 / 50micro sec)		
		±1300kVp
		±1425kVp
		±1550kVp
(ii) SWITCHING IMPULSE WITHSTAND VOLTAGE (250 / 250micro sec) (DRY & WET)		
		±1050kVp
(iii) ONE MINUTE POWER FREQUENCY WITHSTAND VOLTAGE (rms)		
		±630kVp
(iv) ONE MINUTE POWER FREQUENCY DRY & WET WITHSTAND VOLTAGE (rms)		
		460kV
06	CORONA EXTINCTION VOLTAGE	320kV
07	MAX. RADIO INTERFERENCE VOLTAGE LEVEL	1000 micro volts at 266kV rms
08	(i) MINIMUM CREEPAGE DISTANCE INSULATOR STRING/LONGROD INSULATORS/OUTDOOR BUSHINGS	13000 MM (31mm/kV)
08	(ii) MINIMUM CREEPAGE DISTANCE FOR OTHER SWITCHYARD EQUIPMENT	10500 MM (25mm/kV)
09	RATED SHORT CIRCUIT CURRENT FOR 1 SEC. DURATION	63KA
10	SYSTEM NEUTRAL EARTHING	EFFECTIVELY EARTHED

220KV EQUIPMENTS (50KA FOR 1SEC) BILL OF QUANTITY			
S.NO.	SYMBOL	DESCRIPTION	TOTAL QUANTITY
01		245KV, 1600A, DOUBLE BREAK ISOLATOR WITH ONE EARTH SWITCH (3-PHASE)	07
02		245KV, 1600A, DOUBLE BREAK ISOLATOR WITH TWO EARTH SWITCH (3-PHASE)	07
03		245KV, 3150A, DOUBLE BREAK ISOLATOR WITH TWO EARTH SWITCH (3-PHASE)	02
04		245KV, 1600A, DOUBLE BREAK TANDEM TYPE ISOLATOR WITHOUT EARTH SWITCH (3-PHASE)	13
05		245KV, 3150A, CIRCUIT BREAKERS (3-PHASE)	01
06		245KV, 1600A, CIRCUIT BREAKERS (3-PHASE)	07
07		245KV CURRENT TRANSFORMER (1-PHASE) 1600-800/1A, WITH 120% EXTENDED CURRENT RATING, 5 CORE	21
08		245KV CURRENT TRANSFORMER (1-PHASE) 4000-3000-1000/1A, WITH 120% EXTENDED CURRENT RATING, 5 CORE	03
09		245KV CAPACITIVE VOLTAGE TRANSFORMER (1-PHASE) 4400 PF, 3 CORE SUITABLE FOR CARRIER COUPLING	18
10		21kV SURGE ARRESTER (1-PHASE) 10KA, CL-3	18
11		WAVE TRAP 220KV, 1600AMP, 0.5MH, 50KA/1SEC	08

400KV EQUIPMENTS (63KA FOR 1SEC) BILL OF QUANTITY			
S.NO.	SYMBOL	DESCRIPTION	TOTAL QUANTITY
01		420KV ISOLATOR (3-PHASE) (DOUBLE BREAK) 400A, 25KA FOR 3 SEC. ISOLATOR WITH ONE E/S	19
02		420KV ISOLATOR (3-PHASE) (DOUBLE BREAK) 3150A, ISOLATOR WITH TWO E/S	02
03		420KV CIRCUIT BREAKERS (3-PHASE) 3150A, WITHOUT CLOSING RESISTOR WITH CONTROL SWITCHING DEVICE	06
04		420KV CIRCUIT BREAKERS (3-PHASE) 3150A, WITHOUT CLOSING RESISTOR, WITHOUT CONTROL SWITCHING DEVICE	02
05		420KV CURRENT TRANSFORMER (1-PHASE) 6CORE 3000-2000-500/1A, WITH 120% EXTENDED CURRENT RATING.	24
06		420KV CAPACITIVE VOLTAGE TRANSFORMER (1-PHASE) 4400 PF, 3 CORE SUITABLE FOR CARRIER COUPLING	12
07		33kV SURGE ARRESTER (1-PHASE) 20KA, CL-4	15
08		WAVE TRAP 400KV, 3150AMP, 0.5MH, 63KA/1SEC	04

72.5KV EQUIPMENT (25KA FOR 3 SEC)			
S.NO.	SYMBOL	DESCRIPTION	TOTAL QUANTITY
01		72.5KV ISOLATOR (3-PHASE) 400A, 25KA FOR 3 SEC. ISOLATOR WITHOUT E/S	01
02		72.5KV, 1250A, CIRCUIT BREAKER (3-PHASE)	01
03		72.5KV CURRENT TRANSFORMER (1-PHASE) 50/1A, WITH 120% EXTENDED RATING	03
04		72.5KV VOLTAGE TRANSFORMER (1-PHASE)	03
05		630KVA, 250KVP BIL, 33/0.433KV LT TRANSFORMER	01

EQUIPMENT DESIGNATION FOR SLD			
4	0	1	89
			A/B/C/L/BR/L/R/T
			E

36KV EQUIPMENT (25KA FOR 3 SEC)			
S.NO.	SYMBOL	DESCRIPTION	TOTAL QUANTITY
01		36KV ISOLATOR (3-PHASE) 400A, 25KA FOR 3 SEC. ISOLATOR WITHOUT E/S	01
02		30KV SURGE ARRESTER (1-PHASE)	03
03		36KV HORN GAP FUSE (1-PHASE)	03
04		630KVA, 170kVp BIL, 33/0.433KV LT TRANSFORMER	01

LEGEND
 — PRESENT SCOPE
 - - - FUTURE

NOTES
 1. THE QUANTITY INDICATED IN THE BOM IS EXCLUDING ANY TYPES OF SPARES.
 2. CT POLARITY SHOWN IN THE ELECTRICAL SLD IS TENTATIVE.
 3. SHALL BE FINALIZED AFTER APPROVAL OF PROTECTION SLD.
 4. FINAL CT & CVT PARAMETERS SHALL BE AS PER APPROVED PSD & CT Adequacy CHECK
 5. WAVE TRAP DEPICTION ON RESPECTIVE PHASES ARE TENTATIVE. SAME WILL BE FINALIZED DURING COMMISSIONING STAGE AND SHALL BE REFLECTED IN THE AS BUILT SLD.
 6. THIS DRAWING IS COMBINATION OF REQUIREMENTS INCLUDING ISD 14001 & ISD 45001.
 7. ** HALF DIA CONSIDERED WITH SHORTING ARRANGEMENT FOR BUS CONNECTION WITHOUT DISCONNECTOR.

REV No.	DESCRIPTION	DATE	DRAWN	ELE	CIVIL	MECH	APPROVED	STATUS
R3	REVISED INLINE TENDER SLD & RFP REQUIREMENT							FOR APPROVAL
R2	REVISED AS PER CUSTOMER COMMENTS DATED: 04.05.2022							FOR APPROVAL
R1	REVISED AS PER CUSTOMER MAIL DATED: 20.04.2022							FOR APPROVAL
R0	FIRST ISSUE							FOR APPROVAL

Name	Date	Sign.	FOR APPROVAL
KSV	ABH		KNG
01.06.22	01.06.22		01.06.22
KSV	ABH		KNG
13.05.22	13.05.22		13.05.22
KSV	ABH		KNG
28.04.22	28.04.22		28.04.22
KSV	ABH		KNG
18.04.22	18.04.22		18.04.22

PROJECT: TRANSMISSION SCHEME FOR SOLAR ENERGY ZONE IN GADAG (1000 MW), KARNATAKA PART-A, PHASE-1

PROJECT CAPACITY: 1000 MW **PROJECT LOCATION:** GADAG, KARNATAKA

CLIENT: REC POWER DEVELOPMENT AND CONSULTANCY LIMITED

CONTRACTOR: RENEW SOLAR SERVICES PRIVATE LIMITED
 COMMERCIAL BLOCK-1 ZONE-6 GOLF COURSE ROAD, DLF CITY PHASE-V, GURUGRAM HARYANA-122009

SUB CONTRACTOR: GE T&D INDIA LTD.
 AXIS HOUSE, PLOT NO I-14, SECTOR-128, TOWERS 566 JAYPEE WISH TOWN, NOIDA, UTTAR PRADESH, (INDIA)

LOA REF.: LOA/GADAG/SUBSTATION/001, DATED: 17.03.2022
 LOA/GADAG/SUBSTATION/002, DATED: 17.03.2022

TITLE: GADAG S/5-400/220KV FOR SWITCHYARD SINGLE LINE DIAGRAM

A-1	RENEW DWG NO.	-	TOTAL SH. 001	SH.No.	REV.
GE DWG NO.	5427PC051-GAD-400-SYD-ACS-S5020-SL-0001		SCALE	001	R3