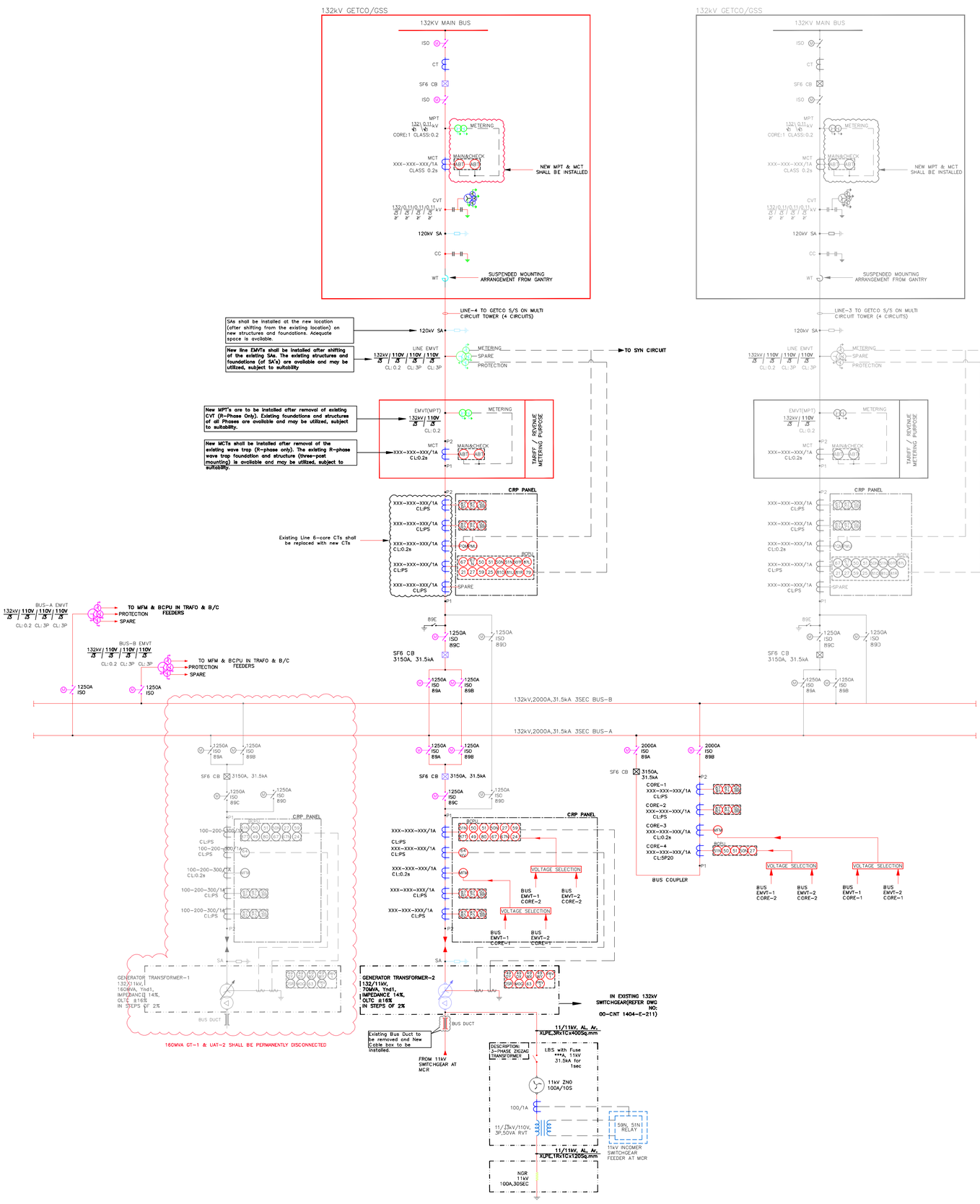
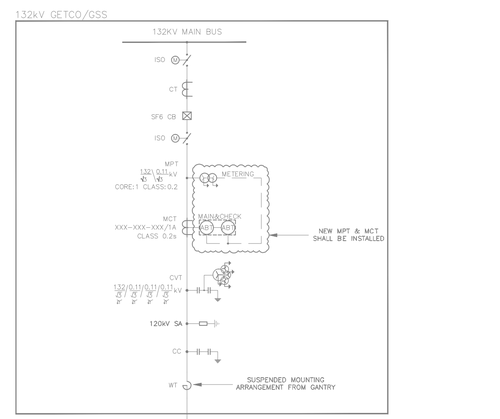




NOTES:-

1. The bidder shall mandatorily refer to the tender document for the complete scope and detailed specifications pertaining to modifications in the existing switchgear, switchyard, and associated systems.
2. All ratings specified herein (except for existing 132 kV transformer, CB, SA, and isolators) are indicative and tentative. The same shall be finalized during detailed engineering based on design calculations, system studies, and applicable standards. Any modification in ratings, parameters, or configurations required to meet system and/ or regulatory requirements shall be carried out by the bidder without any additional cost or time implication to the owner.
3. Equipment ratings shall be designed considering an ambient temperature as per the latest cea guidelines or 45°c, whichever is higher.
4. CT and PT parameters including but not limited to ratio, number of tapings, ALF (accuracy limit factor), ISF (instrument security factor), accuracy class, burden, knee-point voltage, excitation current, and RCT are indicative only. Finalization shall be carried out during detailed engineering and shall be subject to approval by STU (GETCO) / concerned competent statutory authorities. The EPC contractor shall submit detailed design calculations for approval.
5. The SLD is conceptual in nature and is intended solely for tendering purposes to provide a broad overview of the scheme. Accordingly, it does not depict all equipment, metering instruments, IDT's, devices, protection functions, interlocks, and system requirements. Notwithstanding the same, the bidder's scope shall be deemed to include all items, systems, and functionalities required for safe, reliable, and compliant operation of the plant, irrespective of whether such items are explicitly indicated in the SLD or not. No claim on account of omissions or interpretations shall be entertained.
6. Locations and quantity of tariff/revenue meters indicated in the SLD are tentative and subject to finalization during detailed engineering in line with STU/GETCO/SLD's requirements. The bidder shall comply with all statutory and regulatory requirements without any cost implication.
7. Protection-class CT's shall be provided for each LV winding of all IDT's in all phases within the cable box. In case differential protection is applicable, PS-class ct's shall be provided.
8. Trip circuit supervision (TCS) shall be provided for each trip coil with necessary alarms and annunciation integrated into the control system.
9. 4000 a, 11 kV VCB's shall be provided with dual (two) independent trip coils, each capable of tripping under all conditions.
10. Wherever only space provision is indicated, it shall be construed as fully functional, ready-to-use provision for future installation by the owner. This shall include all associated infrastructure such as cable trenches, trays/supports, cable trench covers, earthing, dc and ac system capacity, and interfacing provisions.
11. Differential protection (87t) shall be mandatorily provided for all transformers rated 10 MVA and above.
12. Nitrogen injection fire protection system (NIFPS) shall be mandatorily provided for all transformers rated 10 MVA and above.
13. The EPC contractor shall mandatorily supply and install new MCT's and MPT's as part of the scope at GETCO's end, ensuring full compliance with applicable technical standards and procedures. In addition, the contractor's optional scope shall include the replacement of existing three-phase current transformers (CT's), installation of new line EMVT's, and the removal of up to two (2) capacitive voltage transformers (CVT's) and up to two (2) wave traps.
14. The single line diagram (SLD) and related data provided for GETCO end are indicative and for reference only, and actual condition may vary. The EPC contractor shall be solely responsible for detailed site survey, verification of all technical parameters, and ensuring completeness and correctness of design and execution. No claims arising from discrepancies or inadequacies in the provided information shall be entertained after bid submission. Any additional work required to complete the project shall be deemed included in the contractor 's scope without extra cost or time.
15. The bidder is hereby informed that the details provided are common to both line -3 and line-4. All submissions shall take this into account accordingly.
16. Matching Line CTs shall be provided at GETCO end for both end. (for both line)
17. Matching Distance + Differential (21 + 87L) relays shall be provided at GETCO end and it shall be retrofitted in the existing C&R Panel.
18. Required hardware shall be provided in the existing FOTE (GE Make) Panel at GETCO end.
19. At GIPCL end, the FOTE shall have the required hardware for 87L (OPGW is already available).
20. Cable sizes mentioned are the minimum requirements; however, it shall be finalized during detailed engineering.

ABBREVIATIONS	
CT	CURRENT TRANSFORMER
PT	POTENTIAL TRANSFORMER
EMVT	ELECTROMAGNETIC VOLTAGE TRANSFORMER
LA	LIGHTNING ARRESTER
OLTC	ON LOAD TAP CHANGER
SF6	SULFUR HEXAFLUORIDE
MFM	MULTIFUNCTION METER
PMU	PHASOR MEASUREMENT UNIT
GT	GENERATOR TRANSFORMER
BCU	BAY CONTROL & PROTECTION UNIT
ABT	AVAILABILITY BASED TARIFF METER
SOTF	SWITCH ON TO FAULT
NGR	NEUTRAL GROUNDING RESISTOR
LBS	LOAD BREAK SWITCH
CC	COUPLING CAPACITOR

LEGENDS:-

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GENERATOR TRANSFORMER		EMVT
	BUSHING CT		BUS DUCT
	CT		3-PHASE ZIGZAG TRANSFORMER
	MOTORIZED ISOLATOR		NGR
	SURGE ARRESTER		LBS
	SF6 CB		RESIDUAL VOLTAGE TRANSFORMER
	CABLE TERMINATION		CAPACITIVE VOLTAGE TRANSFORMER
	COUPLING CAPACITOR		

- EXISTING SF6 CB SHALL BE UTILIZED
- EXISTING TRANSFORMER SHALL BE UTILIZED AND DOES NOT REQUIRE REPLACEMENT.
- EXISTING MOTORIZED ISOLATOR SHALL BE UTILIZED
- EXISTING SA SHALL BE UTILIZED
- NEW 132kV LINE EMVTs
- CT-EXISTING EQUIPMENT SHALL BE REPLACED WITH NEW EQUIPMENT UNITS, UTILIZING THE AVAILABLE STRUCTURES AND FOUNDATIONS WHEREVER FEASIBLE.
- EXISTING BUS EMVT's SHALL BE UTILIZED AND DOES NOT REQUIRE REPLACEMENT.

EXISTING STRUCTURE AND FOUNDATIONS MAY BE USED WITH REQUIRED MODIFICATIONS

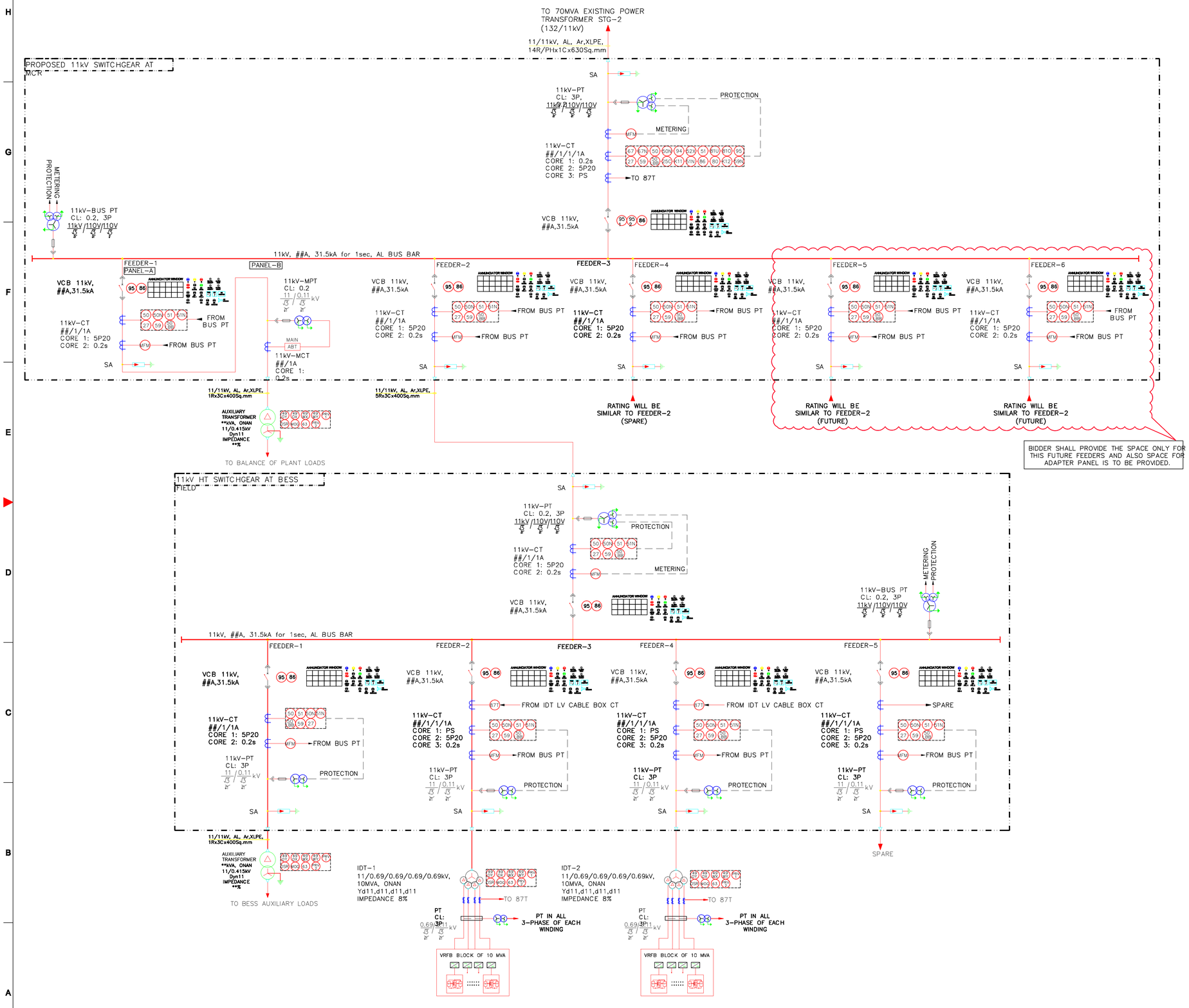
CLIENT:
GUJARAT INDUSTRIES POWER COMPANY LIMITED (M/s GIPCL)

PROJECT:
DEVELOPEMENT OF 20MW/20MWH VFRB PROJECT AT GIPCL VADODARA COMPLEX

TITLE: TENDER DRAWING - CONCEPTUAL 132 AND 11 KV SLD

DEPT.		SCALE: NTS	SHEET: 01 OF 02	REV.

DWG.NO.:- DWG - 02



LEGENDS:–

1. NOTES SHALL BE REFERRED IN SHEET 01 OF 02

LEGENDS:–

SYMBOL	DESCRIPTION
	PT(DRAW OUT TYPE)
	IDT
	CT
	BESS BIDIRECTIONAL INVERTER
	SURGE ARRESTER
	VCB(INDOOR DRAW OUT TYPE)
	CABLE TERMINATION
	AUXILIARY TRANSFORMER

ABBREVIATIONS	
IDT	INVERTER DUTY TRANSFORMER
CT	CURRENT TRANSFORMER
PT	POTENTIAL TRANSFORMER
CB	CIRCUIT BREAKER
BESS	BATTERY ENERGY STORAGE SYSTEM
MFM	MULTIFUNCTION METER
VCB	VACUUM CIRCUIT BREAKER
ABT	AVAILABILITY BASED TARIFF METER

ANSI CODES			
21	DISTANCE PROTECTION	24	OVER FLUXING RELAY
25C	SYNCHRONISM-CHECK RELAY	87T	TRANSFORMER DIFFERENTIAL PROTECTION
27	3-PH UNDER VOLTAGE PROTECTION	80	DC FAIL RELAY
50	INSTANTANEOUS OVER CURRENT RELAY	79	3-PH AUTO RECLOSING RELAY
50N	INST. EARTH FAULT RELAY	81U	UNDER FREQUENCY RELAY
51	IDMT OVER CURRENT RELAY	81O	OVER FREQUENCY RELAY
51N	IDMT EARTH FAULT RELAY	86	MASTER TRIP RELAY
50LBB	LOCAL BREAKER BACKUP RELAY	95	TRIP CIRCUIT SUPERVISION RELAY
87B1	MAIN ZONE-1 BUSBAR DIFFERENTIAL PROTECTION	87B2	MAIN ZONE-2 BUSBAR DIFFERENTIAL PROTECTION
87C	BUSBAR CHECK DIFFERENTIAL RELAY	81R	RATE OF CHANGE OF FREQUENCY PROTECTION (ROCOF)
59	OVER VOLTAGE PROTECTION	52X	CB CONTACT MULTIPLICATION RELAY
64R	RESTRICTED EARTH FAULT RELAY	49WX	WINDING TEMPERATURE TRIP RELAY
67	DIRECTIONAL OVER CURRENT RELAY	49WY	WINDING TEMPERATURE ALARM RELAY
49	THERMAL OVERLOAD RELAY	49OX	OIL TEMPERATURE TRIP RELAY
67N	DIRECTIONAL EARTH FAULT RELAY	49OY	OIL TEMPERATURE ALARM RELAY
PRV	PRESSURE RELIEF VALVE	MOG	MAGNETIC OIL GAUGE
94	ANTI PUMPING RELAY	K11	INTER POSTING RELAY (CLOSE)
49T	WINDING TEMPERATURE PROTECTION	51NGT	NEUTRAL GROUNDING BACK-UP E/F PROTECTION
K12	INTER POSTING RELAY (OPEN)	OSR	OIL SURGE RELAY
63	BUCHHOLZ RELAY	59N	NEUTRAL OVER VOLTAGE/NEUTRAL DISPLACEMENT

R1	26.03.2026	REVISED AS PER CLIENT'S COMMENTS	SRK AN

CLIENT:

GUJARAT INDUSTRIES POWER COMPANY LIMITED (M/s GIPCL)

PROJECT:

DEVELOPEMENT OF 20MW/20MWH VFRB PROJECT AT GIPCL VADODARA COMPLEX TENDER DRAWING - CONCEPTUAL 132 AND 11 KV SLD

TITLE: CONCEPTUAL SLD FOR 20MW/120MWH BESS AT EXISTING STATION-2 COMPLEX GIPCL VADODARA

DEPT.		SCALE:	SHEET: 02 OF 02	REV.

DWG.NO.:- DWG - 02