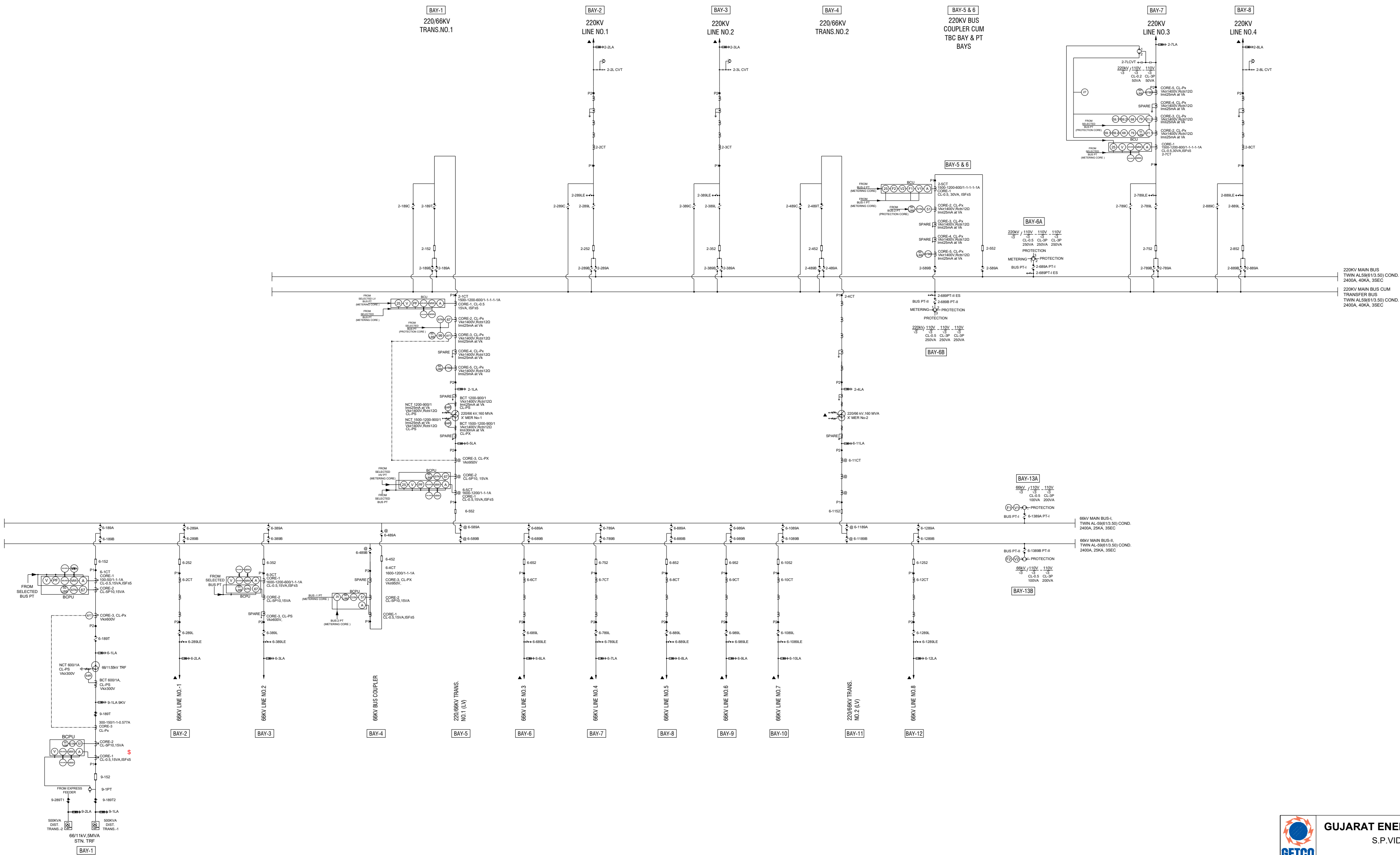




- LEGEND:-**
- 21 DISTANCE PROTECTION RELAY (MAIN-1 PROTECTION)
 - 21.2 DISTANCE PROTECTION RELAY (MAIN-2 PROTECTION)
 - 25 CHECK SYNCHRONISING RELAY (INTEGRATED IN 21.1, 21.2, BCU & BCU)
 - 27 NO VOLT RELAY (SEPARATE STATIC RELAY)
 - 28B LOCAL BREAKER BACKUP PROTECTION (INTEGRATED IN 21.1, 67, BCU, 87T & 87BB)
 - 41 NON DIRECTIONAL O/C PROTECTION
 - 51N NON DIRECTIONAL EARTH FAULT PROTECTION (INTEGRATED IN 51)
 - 66 OVER VOLTAGE PROTECTION STAGE-1 (INTEGRATED IN 21.1 & 21.2)
 - 66.2 OVER VOLTAGE PROTECTION STAGE-2 (INTEGRATED IN 21.1 & 21.2)
 - 66R RESTRICTED EARTH FAULT PROTECTION (INTEGRATED IN 87T FOR 66/11kV TRANSFORMER)
 - 67 DIRECTIONAL OVER CURRENT PROTECTION (INTEGRATED IN 87T)
 - 67N DIRECTIONAL EARTH FAULT PROTECTION (INTEGRATED IN 87T)
 - 68 POWER SWING PROTECTION (INTEGRATED IN 21.1 & 21.2)
 - 68.2 AUTO RECLOSING RELAY (INTEGRATED IN 21.1 & 21.2)
 - 70N BUS BAR PROTECTION
 - 87T TRANSFORMER DIFFERENTIAL PROTECTION (INTEGRATED IN 87T)
 - 95 OVER FLUXING PROTECTION (INTEGRATED IN 87T)
 - A AMMETER
 - V VOLTMETER
 - MMW REACTIVE POWER METER
 - MMW ACTIVE POWER METER
 - PF POWER FACTOR METER
 - F FREQUENCY METER
 - MMW ACTIVE ENERGY METER
 - MMW REACTIVE ENERGY METER
- NOTE:** ALL PROTECTIVE REALYS ARE NUMERICAL & IEC61850 EDITION-2 AS WELL AS CYBER SECURITY COMPATIBLE.

SYMBOL - (220KV YARD)		
SL NO.	ITEM DESCRIPTION	SYMBOL
1	CIRCUIT BREAKER (3ph)	
2	HDB ISOLATOR WITH 1 EARTH SWITCH	
3	HDB ISOLATOR WITHOUT EARTH SWITCH	
4	TANDEN ISOLATOR WITHOUT EARTH SWITCH	
5	220KV CURRENT TRANSFORMER (1-ph)	
6	CAPACITOR VOLTAGE TRANSFORMER (1-ph)	
7	220KV POTENTIAL TRANSFORMER	
8	SURGE ARRESTOR (1-ph)	
9	220/66KV POWER TRANSFORMER	

SYMBOL - (66KV YARD)		
SL NO.	ITEM DESCRIPTION	SYMBOL
1	CIRCUIT BREAKER	
2	HDB ISOLATOR WITH 1 EARTH SWITCH (3ph)	
3	HDB ISOLATOR WITHOUT EARTH SWITCH (3ph)	
4	HDB ISOLATOR WITHOUT EARTH SWITCH (3ph)	
5	66KV CURRENT TRANSFORMER (1-ph)	
6	66KV CURRENT TRANSFORMER (1-ph)	
7	66KV POTENTIAL TRANSFORMER	
8	LIGHTNING ARRESTOR (1-ph)	

SYMBOL - (11KV YARD)		
SL NO.	ITEM DESCRIPTION	SYMBOL
1	CIRCUIT BREAKER	
2	CURRENT TRANSFORMER (1-ph)	
3	DISTRIBUTION TRANSFORMER	
4	11KV POTENTIAL TRANSFORMER	
5	ISOLATOR WITHOUT EARTH SWITCH	
6	8KV LIGHTNING ARRESTOR	

- ▲ All the Protections & Configurations shown for 220kV Line -3, 220/66kV TRF - 1, 66kV Line -2 are applicable to all other respective bays.
- MFM shall be provided, if BCU is not having sufficient Analogue inputs for metering as well as protection core of CT.

- LEGEND:**
- PROPOSED
 - FUTURE

TENDER PURPOSE



GUJERAT ENERGY TRANSMISSION CORPN.LTD.
S.P.VIDYUT BHAVAN, RACE COURSE,
VADODARA - 390 007

**PROTECTION SINGLE LINE DIAGRAM OF
220KV MAKANSAR SUB-STATION**

DRAWN:	CHECKED:	APPD:	SIZE: A2
DE (ENGG.)	EE (ENGG.)	SE (ENGG.) I/C. ACE (ENGG.)	
SCALE:	DATE:	DRG. NO:	SHEET:
N.T.S.	07.05.2026	GETCO / E / 2S-156 / P-002	1 OF 1

1	SLD, DWG. NO. GETCO / E /2S-156 / P-002/R0 DT. 04.11.2026	15.10.25	R0	FIRST PREPARATION
SR NO.	REFERENCE	DATE:	REV:	DESCRIPTION