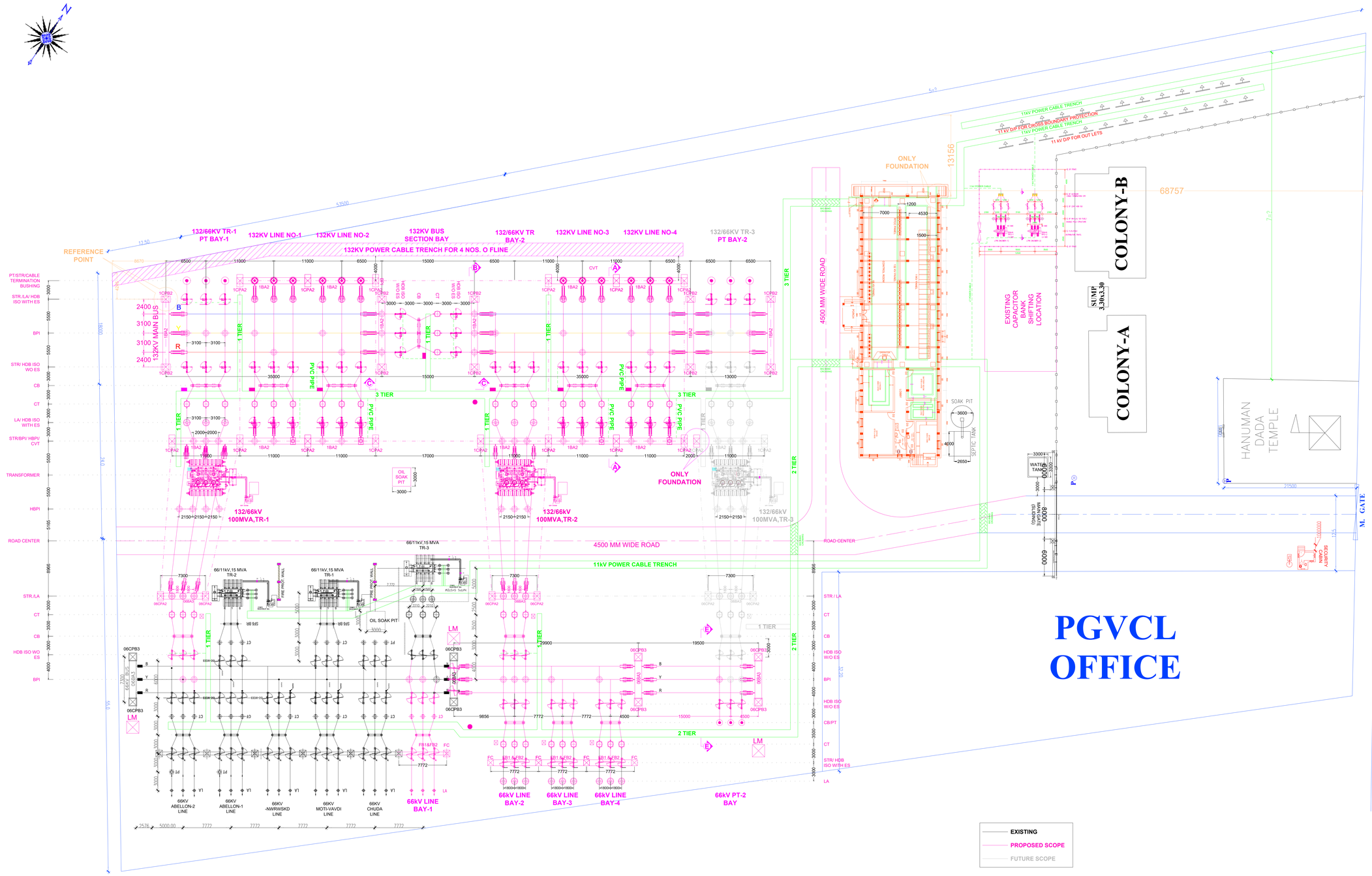

SAFETY NOTES

- ARRANGE KICK OFF MEETING WITH ALL STAKE HOLDERS INCLUDING WORKERS AND FIX UP SAFE WORKING AREA AND SAFETY INSTRUCTIONS/BOARDS.
- WASTE MATERIAL LIKE PACKING PAPER, WOOD, STEEL CUTS ARE TO BE CLEARED FROM SITE ON DAILY BASIS.
- CHILDREN, UNAUTHORISED PERSON AND ANIMAL SHALL NOT BE ALLOWED TO ENTER SUBSTATION PREMISES.
- ENSURE PROPER DISCIPLINE AREA MUST BE DONE BY PROVIDING ROPE TAPE WITH MANDATORY SIGN BOARDS.
- ENSURE AVAILABILITY OF PPE EQUIPMENTS LIKE HELMET, SAFETY BELT, SAFETY SHOES ETC. AND MUST BE USED DURING EXECUTION OF WORK.
- ONE ENGINEER FROM GETCO AND EXECUTING AGENCY TO BE NOMINATED AS SAFETY OFFICER WHO SHALL ENSURE OVERALL SAFETY AT SITE.
- FIRST AID KIT AND AVAILABILITY OF MEDICINE SHALL BE ENSURED BY SAFETY OFFICERS OF GETCO AND EXECUTING AGENCY.
- WINCH MACHINE, PULLEY AND ROPE MUST BE CHECKED VISUALLY AND TESTED PRIOR TO UTILIZE THEM.
- ENSURE ELEVATOR AFTER ISOLATION IN CASE WORKING AREA IS CLOSE TO CHARGED SWITCHYARD.
- STANDARD EARTHING RODS SHALL BE AVAILABLE IN SUFFICIENT QUANTITY AND ITS HEALTHINESS MUST BE ENSURED BY SITE ENGINEER IN-CHARGE.
- NO SMOKING, COOKING AND FIRE ARE ALLOWED IN THE WORKING AREA.
- CEMENT, STEEL, OIL DRUMS ETC. SHALL BE STACKED OUTSIDE THE SWITCHYARD WORKING AREA.
- WATER PIPE LINE AND WATER TAPS INSIDE BAY AREA MUST BE AVOIDED. NO WATER LEAKAGE SHALL BE LEFT UNATTENDED DURING EXECUTION AND LATER AFTER CHARGING. WATER PIPELINE MUST BE BURIED.
- ENSURE PROPER DOUBLE EARTHING OF WELDING MACHINE, FILTER MACHINE AND ANY OTHER ELECTRICAL EQUIPMENT.SUPPLY WIRE OF THESE MACHINES SHOULD BE JOINTLESS AND OF ADEQUATE CAPACITY.
- ENSURE ADEQUATE LIGHTING AT WORK PLACE WHEN WORK IS TO BE CARRIED OUT AFTER WORK IN YARD.
- IT SHALL BE ENSURED EVERYDAY THAT NO WORKER IS MISSING AFTER THE DAY'S WORK IN THE EVENING.
- IMPORTANT TELEPHONE AND CELL NO. MUST BE READILY AVAILABLE AT SITE.
- WORKING METHODOLOGY AND PROCEDURE MUST BE CLEAR BEFORE USING AND LOADING EXISTING STRUCTURES OF SWITCHYARD.
- ANY STANDING DERRICK POLE, CRANE ETC. MUST BE REMOVED AND KEPT AWAY ONCE WORK IS OVER.
- PROCEDURE AND ISOLATION MUST BE CLEAR BEFORE AC AND DC PANEL WORK AND CONNECTING RELAY, PROTECTION AND SCADA WORK.
- DON'T LEAVE ANY WORK OF BOLTING AND TIGHTENING HALF DONE IN STRUCTURE AND EQUIPMENT ERECTION. TAKE CLEARANCE BEFORE STRINGING.
- WORKING AREA MUST BE FREE FROM EXCAVATED PITS, BOTH CIVIL WORKS AND EARTHING PIT. IN UNAVOIDABLE CASE, INSTALL FENCING.
- ENSURE ELECTRICAL LICENSE OF CONTRACTORS.
- DURING PASSING THROUGH LIVE AREA/YARD, NO EQUIPMENT SHALL BE CARRIED OVERHEAD.
- DURING REMOVAL OF JUMPERS , BOTH SIDE EARTHING MUST BE PROVIDED.
- ARRANGE SAFETY AUDIT AT SITE ON MONTHLY BASIS. FOLLOW UP ON ACTION POINT AFTER SUCH AUDIT IS MUST AND SAFETY OFFICER OF GETCO AND EXECUTING AGENCY TO ENSURE.
- ANY EXCAVATED FOUNDATION SHOULD NOT BE LEFT OPEN FOR LONG TIME PERTICULARLY BEFORE MONSOON.
- ENSURE ALL PRECAUTIONS AND SAFETY MEASURES RELATED TO YARD EQUIPMENTS AFTER NECESSARY ISOLATION IN YARD WHICH MANDATORILY REQUIRES EFFECTIVE EARTHING.
- LONG DURATION LCP MUST BE DISPLAYED IN CONTROL ROOM AND PANEL BOARD. FOR WORK BY DIFFERENT TEAMS SEPARATE LCP SHALL BE TAKEN AND ON RETURN OF PERMIT BY ALL TEAMS FURTHER ACTION SHALL BE TAKEN.
- TP (TEST PERMIT) SHALL BE ISSUED WHEN MAINTENANCE/ TESTING WORK IS INVOLVED WHICH DO NOT REQUIRE EARTHING OF YARD EQUIPMENTS.

NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. THIS DRAWING SHALL BE REFERRED FOR PROPOSED SCOPE OF WORK ONLY.
3. INTER EQUIPMENTS SPACING IS TO BE PLANNED TO ENSURE STATUTORY CLEARANCES.
4. WORK WITH PEAK SHALL BE EARTH WITH UNTREATED ELECTRODE.
5. PHASE SEQUENCES SHALL BE MATCHED WITH THE EXISTING SYSTEM.
6. FOR CABLE TRENCH DETAILS, SEPARATE DRAWING MAY PLEASE BE REFERRED.
7. WHEREVER POWER CABLE TRENCH AND CONTROL CABLE TRENCH CROSSES THE ROAD SEPARATE CABLE TRENCH SECTION MAY PLEASE BE REFERRED.
8. SEPARATE DRAWING SHALL BE REFERRED FOR DIMENSIONS OF COMPOUND WALL.
9. ANY OBSTACLE SHALL BE REMOVED/SHIFTED WHICH ARE FALLING IN THE SWITCHYARD.
10. STANDARD EARTHING PHILOSOPHY OF GETCO SHALL BE REFERRED FOR EARTHING OF PROPOSED EQUIPMENTS AND STRUCTURES.
11. PERIPHERAL DRAIN & RAINWATER HARVESTING WELL TO BE CONSTRUCTED IF REQUIRED.
12. OIL SOAK PIT SHALL BE PROVIDED FOR TRANSFORMERS AS PER CIVIL DRG NO.GETCO/CZS-STD/OS-1.R0,DT.21.11.14. LOCATION OF OIL SOAK PIT IS INDICATIVE ONLY, IT SHALL BE ADJUSTED AS PER ACTUAL SITE CONDITION.
13. PVC PIPE SHALL BE PROVIDED FOR EARTHING ROD BELOW 6M WIDE ROAD AT 5M DISTANCE DURING CONSTRUCTION OF ROAD.
14. INVERTED LEVEL OF BOTTOM OF CABLE TRENCH SHALL BE DECIDED BY EE(CIVIL) FOR DRAIN WATER CONSIDERING SURROUNDING TERRAIN, SO THAT WATER DOES NOT GET ACCUMULATED AT ONE PLACE.
15. REFER SEPARATE CONTROL ROOM PANEL LAYOUT FOR ARRANGEMENT OF PANEL AND OTHER AMENITIES.
16. ANY MINOR CORRECTION SHALL BE DONE AT SITE AS PER ACTUAL SITE REQUIREMENT, SAME SHOULD BE INFORMED TO ENGINEERING DEPT.
17. LOCATION OF 132kV CVTs AND OTHER PLCC EQUIPMENTS OF PROPOSED 132kV LINE BAYS SHALL BE FINALIZED IN CONSULTATION WITH LOCAL PLCC SITE OFFICERS.
18. LOCATIONS OF NIFPS ARE TENTATIVELY SHOWN, IT MAY CHANGE DEPENDING ON ACTUAL SITE CONDITION.
19. POSITION OF VLDS AND ACDB SHALL BE FINALIZED DURING DETAIL ENGINEERING.
20. LOCATION OF OUTDOOR CUBICALS ARE INDICATIVE ONLY
21. ENTRIES YARD FGL IS CONSIDERED AT ONE LEVEL.
22. BREAK IN EMBOSSED CABLE TRENCH SHALL BE DONE (IF REQUIRED) DEPENDING ON SIZE OF PLATE.
23. FOR LIGHTNING PROTECTION OF 132kV CONTROL ROOM BUILDING, PLEASE REFER SEPARATE DRAWING.

SYSTEM PARAMETER

SR.NO.	DESCRIPTION OF PARAMETER	132kV SYSTEM	66kV SYSTEM
1	SYSTEM OPERATING VOLTAGE	132kV	66kV
2	MAX. OPERATING VOLTAGE OF THE SYSTEM (rms)	145kV	72.5kV
3	RATED FREQUENCY	50Hz	50Hz
4	NOS. OF PHASES	3	3
5	RATED INSULATION LEVEL		
	i). FULL WAVE IMPULSE WITHSTAND VOLTAGE (1.2 /50 microsec.)	650kvp	350kvp
	ii). SWITCHING IMPULSE WITHSTAND VOLTAGE (250 /2500 microsec.) DRY & WET	NA	NA
6	iii). ONE MINUTE POWER FREQUENCY DRY & WET WITHSTAND VOLTAGE (rms)	275kV	160kV
6	CORONA EXTINCTION VOLTAGE	--	--
7	MIN. CREEPAGE DISTANCE	25mm/kV(3625 mm)	25mm/kV(1810 mm)
8	MIN. CLEARANCE		
	i). PHASE TO PHASE	1300mm	630mm
	ii). PHASE TO EARTH	1300mm	630mm
	iii). SAFETY CLEARANCE	3600mm	3100mm
	iv). GROUND CLEARANCE	4600mm	4000mm
9	RATED SHORT CIRCUIT CURRENT FOR 3 SEC. DURATION	31.5kA	25kA
10	SYSTEM NEUTRAL EARTHING	EFFECTIVELY EARTHED	EFFECTIVELY EARTHED

SYMBOLS:-

	CIRCUIT BREAKER
	CT
	LA
	PT
	BPI
	WT
	DB ISOLATOR W/O ES.
	DB ISOLATOR WITH ES.
	CVT
	132/66KV TRANSFORMER
	66/11KV TRANSFORMER
	CT JB
	8MK
	LT ACDB

SWITCH-YARD CONDUCTOR DETAILS

DESCRIPTION	132KV SWITCH-YARD	66KV SWITCH-YARD
MAIN BUS I & II	TWIN AL-59 CONDUCTOR	TWIN AL-59 CONDUCTOR
FLYOVER BUS	SINGLE AL-59 CONDUCTOR FOR 132/66kV TR (HV) & LINE BAY	SINGLE AL-59 CONDUCTOR FOR 132/66kV TR (LV)
JUMPERS	SINGLE AL-59 CONDUCTOR FOR 132/66kV TR (HV) & LINE BAY	SINGLE AL-59 CONDUCTOR FOR 132/66kV TR (LV)
DROPPERS	SINGLE AL-59 CONDUCTOR FOR 132/66kV TR (HV) & LINE BAY	SINGLE AL-59 CONDUCTOR FOR 132/66kV TR (LV)
INSULATOR STRING (TENSION)	TWIN 120kN SRI	TWIN 120kN SRI
INSULATOR STRING (SUSPENSION)	SINGLE 120kN SRI	SINGLE 120kN SRI
SPACERS	350MM AT 04 MTR. INTERVAL	350MM AT 04 MTR. INTERVAL

SR NO.	REFERENCE

DATE:	REV:	DESCRIPTION
02.02.26	R2	1) CONSTRUCTION OF NEW 132kV & 66kV SWITCHYARD
05.03.24	R1	1) CONSTRUCTION OF NEW CONTROL ROOM, 11kV DP STRUCTURES, CABLE TRENCH, ROAD, ETC. 2) SHIFTING OF EXISTING CONTROL ROOM TO NEW CONTROL ROOM, 11kV DP STRUCTURES, POWER AND CONTROL CABLES, ETC. 3) DEMOLITION AND DISMANTLING OF EXISTING CONTROL ROOM AND 11kV DP STRUCTURES TO CREATE CLEAR SPACE FOR PROPOSED 132/66kV SWITCHYARD.
	R0	FIRST SUBMISSION BY FIELD OFFICE.

TENDER PURPOSE

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

LAYOUT PLAN OF 132kV RANPUR SUB-STATION (PHASE-II)

DRAWN:	CHECKED:	APPD:	SIZE:
JE (ENGG.)	DE (ENGG.)EE (CIVIL) EE (ENGG.)	I/C ACE (ENGG.)	A0

SCALE:	DATE:	DRG. NO:	SHEET:	REV:
1:400	02.02.26	GETCO / E / 1S-657 / P-004	1 OF 1	R2