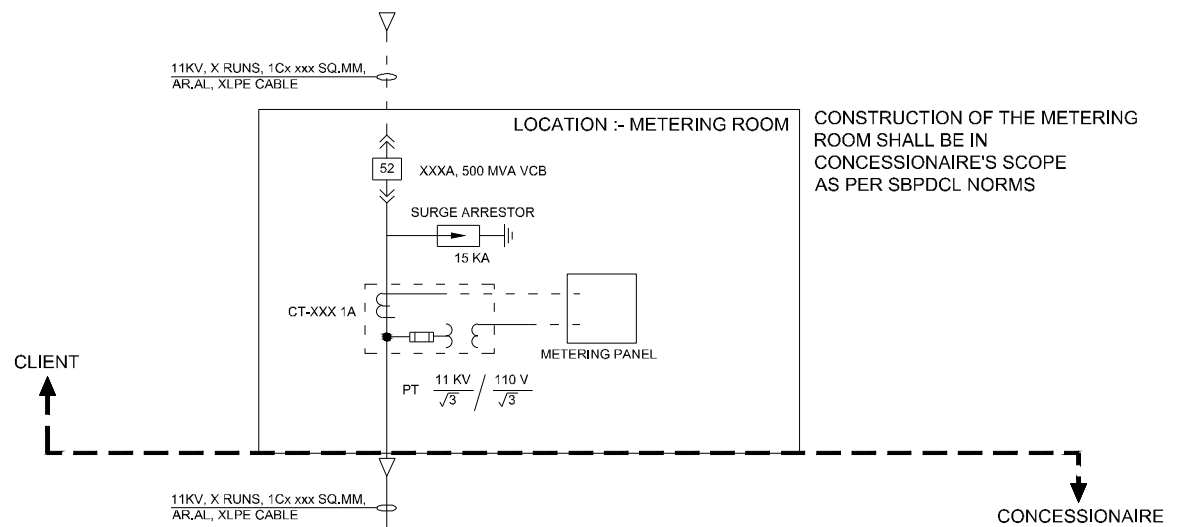
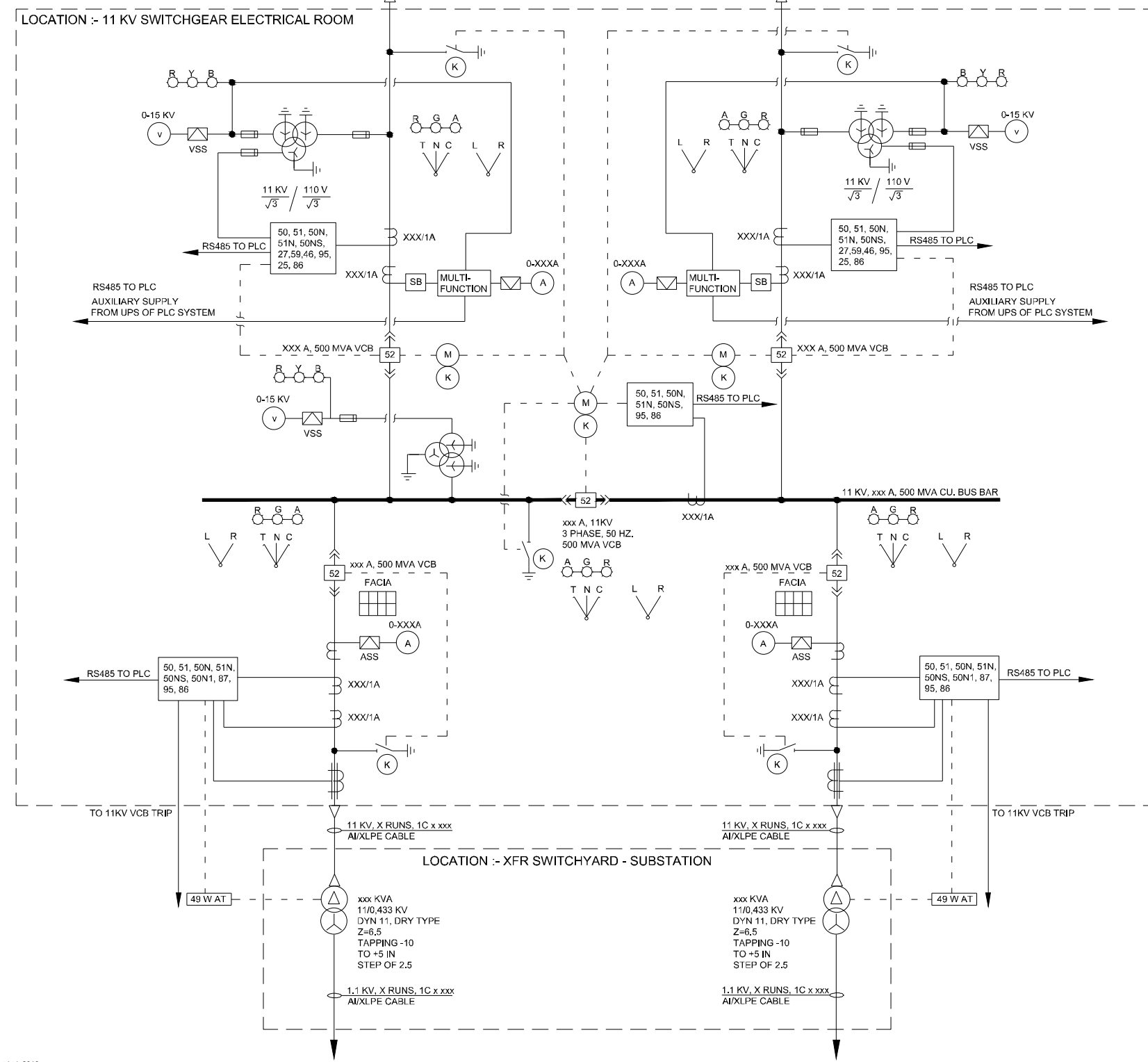


FROM SBPDCL SUBSTATION



CONSTRUCTION OF THE METERING ROOM SHALL BE IN CONCESSIONAIRE'S SCOPE AS PER SBPDCL NORMS



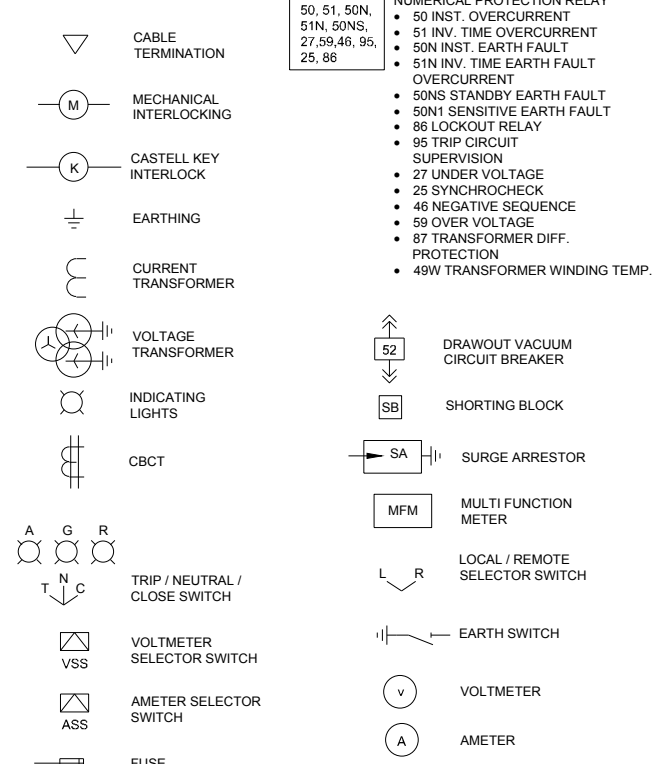
GENERAL DESCRIPTION:

- 11kV SHALL BE TAPPED FROM THE METERING PANEL ROOM BY THE CONCESSIONAIRE WITH 11 kV RATED 3 CORE ARMORED ALUMINUM XLPE CABLE.
- 11kV POWER SUBSTATION SHALL BE CONSTRUCTED AT THE PATANA STP PS AND SPS'S.
- 11 kV SWITCHBOARD OF 500 MVA RATING SHALL BE HOUSED IN A SEPARATE ROOM AND SHALL FEED 2 NUMBERS 11/0.433 kV TRANSFORMERS WITH ON LOAD TAP CHARGER. TRANSFORMERS SHALL BE ERRECTED IN A SWITCHYARD AREA ADJACENT TO SUBSTATION BUILDING. BUS BAR OF 11kV SWITCHBOARD SHALL BE ELECTRICAL GRADE COPPER.
- BOTH TRANSFORMERS SHALL FEED 0.433kV TO MAIN LV PANEL OR PMCC PANEL WITH TWO INCOMERS AND BUSCOUPLER ARRANGEMENT.
- TWO AUTOMATIC POWER FACTOR CORRECTION (APFC) PANELS COMPRISING MICROPROCESSOR APFC RELAY SHALL BE CONNECTED TO BOTH BUSES. BOTH APFC RELAYS SHALL BE CONFIGURED WITH BOTH BUSES CT'S OF HT SIDE WITH SUMMATION CT ARRANGEMENT TO TAKE CARE OF 100% AVAILABILITY OF POWER FACTOR CORRECTIONS IN CASE OF ONE INCOMER FAILURE.
- ALL MULTIFUNCTION METERS SHALL HAVE INBUILT KWH METERING IN ADDITION TO OTHER ELECTRICAL PARAMETERS. ACCURACY CLASS SHALL BE OF 0.5. ALL MFM SHALL BE CONFIGURED TO PLC THROUGH RS 485 SERIAL COMM.
- ALL MICROPROCESSOR RELAYS SHALL BE CONFIGURED TO PLC RS485 SERIAL COMMUNICATION.
- ALL CABLES SHALL BE LAID IN CONCRETE TRENCH AS MENTIONED UNDER NOTE.
- THE PROPOSED SWITCHGEAR IS SINGLE FRONT, SINGLE TIER, FULLY COMPARTMENT ALIZED, IP4X PANEL. INSTALLED IN HT ELECTRICAL ROOM.
- THE INCOMER AND BUS COUPLER'S CIRCUIT BREAKER ARE TO BE INTERLOCKED SUCH THAT ONLY TWO OF THE THREE CBs CAN BE CLOSED.
- ALL CTs AND VTs SHALL BE PROVIDED WITH SHORTING AND TEST BLOCK.

NOTES:

- ALL INCOMING AND CONTROL CABLES ORIGINATING FROM SUBSTATION BUILDING TO VARIOUS ELECTRICAL PANEL ROOM SHALL BE IN THE CONCRETE TRENCHES WITH PROPER SEGREGATION OF HT, LT, CONTROL AND FOC / INSTRUMENT CABLES IN TRAYS.
- ALL THE CONCRETE TRENCHES SHALL BE APPROXIMATELY 300mm ABOVE FGL, WITH CONCRETE EMBEDDED ELECTRICAL ROAD CROSSINGS GUIDED UNIFORMLY TOWARDS TRENCH ON BOTH SIDES OF ROADS AND PATH WAYS OR CULVERT CROSSING ON EVERY ROAD / PATH WAYS WHICHEVER SUITS THE REQUIREMENT AS PER THE SITE CONDITIONS.
- ALL THE TRENCH SHALL BE COVERED WITH PRE-CAST SLAB (PROPERLY SEALED AT THE TOP TO AVOID WATER INGRESS), HOWEVER AT AN INTERMITTENT DISTANT THROUGHOUT THE TRENCH THERE SHOULD BE STORM WATER COLLECTION PIT AND WATER DRAINAGE SYSTEM (MANUAL / AUTOMATIC) WITH AN ALARM FACILITY PROMPTING FOR THE DEWATERING.
- ALL ELECTRICAL CABLES ORIGINATING FROM VARIOUS MCC PANELS TO VARIOUS DRIVES / EQUIPMENTS MAY MERGE WITH ABOVE TRENCH OR SHALL HAVE SEPARATE TRENCH CONNECTIVITY UP TO THE CONCRETE STRUCTURE THEREAFTER CABLES SHALL BE ON PERFORATED / LADDER TYPE FRP / STEEL (POWDER COATED) TRAYS WITH SEGREGATION AMONG POWER / CONTROL / INSTRUMENTATION / COMMUNICATION CABLES.

LEGEND:



NOT FOR CONSTRUCTION

| Rev | Drawn | Checked | Reviewed | Date | Description |
|-----|-------|---------|----------|------|-------------|
| | | | | | |

Designed by: _____ Date: _____
 Drawn by: _____ Date: _____
 Checked by: _____ Date: _____
 Reviewed by: _____ Date: _____

Client: **NMCG**

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Project: **196969 PATNA**

Drawing title: **SEWAGE DISTRICT KEY SINGLE LINE DIAGRAM**

Approved by: _____ Date: _____
 Drawing scale: **NTS** Sheet size: **A1**
 Drawing No. **196969-E-001** Revision: _____