


# KABARNET 132/33KV SUBSTATION LVDC SINGLE LINE DIAGRAM

COVER

1

REFERENCE DRAWINGS			
DRAWING NO.:	REV:		
<input type="checkbox"/> APPROVED	<input type="checkbox"/> APPROVED WITH COMMENTS	<input type="checkbox"/> NOT APPROVED	<input type="checkbox"/> FOR INFORMATION
DATE: .....		SIGNATURE/STAMP: "PROJECT CONSULTANT"	
		KENYA ELECTRICITY TRANSMISSION COMPANY LTD	
		COLENCO CONSULTING LIMITED	
PROJECT:			
KENYA TRANSMISSION NETWORK IMPROVEMENT PROJECT (KTRNIP).			
PROJECT DRAWING NO.	NAME	DATE	PROJECT NO.
PREPARED:	HL	29/05/2023	KABARNET132/33KV SUBSTATION
DRAWN:	J	29/05/2023	
CHECKED:	V.JOSHI	29/05/2023	
APPROVED:	S.DESHMUKH	29/05/2023	
REVISION			
SCALE:	1:600	DWG NO.	REV.:





## LEGEND

	CHARGER		VOLTMETER		ENERGY METER		CONTACT
	MOLDED CASE CIRCUIT BREAKER MOTORIZED		AMMETER		VOLTAGE SELECTOR SWITCH		SWITCH
	2-POLE MINATURE CIRCUIT BREAKER		CURRENT TRANSFORMER		UNDER(ZERO) VOLTAGE RELAY		FUSE
	BATTERY SET		SIGNAL LAMP		EARTH FAULT RELAY		REVISION MARK
			EARTH		OVER VOLTAGE RELAY		
			DROPPING DIODE		FUSE SWITCH, 2POLE.		

## NOTE:

- 1-THE QUANTITY, SIZE AND RATINGS ARE PRELIMINARY AND SHALL BE COMPLETED AND FINALIZED AT DETAIL DESIGN STAGE BY EPC CONTRACTOR SUBJECT TO CLIENT/CONSULTANT APPROVAL.
- 2-AT LEAST 20% SPARE OF EACH FEEDER TYPE SHALL BE CONSIDERED IN ADDITION TO FUTURE FEEDERS.
- 3-ALL CIRCUIT BREAKERS SHALL BE EQUIPPED WITH AUXILIARY CONTACT(S).
- 4-LVDC SINGLE LINE DIAGRAM SHALL BE SHOWN IN OPERATOR WORKSTATION WITH DYNAMIC COLORS
- 5-ALL MEASURING VALUES(VOLTAGE, CURRENT, REACTIVE POWER, ACTIVE POWER, FREQUENCY, POWER FACTOR, ENERGY, TEMPERATURE AND ETC) SHALL BE MONITORED THROUGH HMI AND ALL NECESSARY EQUIPMENT SUCH AS TRANSDUCERS(OF VOLTAGE, CURRENT AND ETC TYPE) SHALL BE CONSIDERED.
- 6-SHORT CIRCUIT CAPACITY OF BUSBAR ARE THE MIN-VALUES, AND ARE FINALIZED DUE TO ACTUAL CALCULATIONS.
- 7-THE CONTRACTOR SHALL PROVIDE SUB-DISTRIBUTION BOARDS AS REQUIRED SUBJECT TO CLIENT/CONSULTANT APPROVAL.
- 8-ALL MCBs FOR FUTURE EXTENSION AND CORRESPONDENT SPACE, ACCORDING TO GENERAL SINGLE LINE DIAGRAM, SHALL BE SUPPLIED IN MAIN LVDC PANELS IN CONTROL BUILDING.
- 9-ALL NECESSARY MCB'S FOR OUTPUT FEEDERS SHALL BE PROVIDED.(PER CB/DS/ES MOTOR, TRIP1, TRIP2, CLOSE, MAIN/BACKUP AND ETC.)
- 10-THE EXISTING PHILOSOPHY SHOULD BE FOLLOWED ON WIRING AND DISTRIBUTION.
- 11-ALL SIGNALS REQUIRED TO CONTROL THE AC/DC SYSTEM SHOULD BE CONSIDERED BY SAS.
- 12-110VDC BATTERY CHARGERS SHALL BE THYRISTOR CONTROLLED, SUITABLE FOR PARALLEL OPERATION WITH EACH OTHER SHARING THE LOAD, COMPLETE WITH ALL THE ACCESSORIES.
- 13-THE RECTIFIERS SHALL BE FED FROM THE LVAC MAIN SWITCHGEAR. DOUBLE WOUND TRANSFORMERS SHALL BE PROVIDED AT THE INPUT SIDE OF RECTIFIER TO PREVENT GALVANIC CONNECTION BETWEEN THE DC AND AC SYSTEM
- 14-THE INCOMINGS AND COUPLER CIRCUIT BREAKERS SHALL BE INTERCHANGEABLE WITH EACH OTHER.
- 15-THE CUBICLES SHALL BE COMPLETELY SELF-SUPPORTING, MADE OF A REQUIRED NUMBER OF STANDARDIZED, PREFABRICATED, VERTICAL SECTIONS BOLTED TOGETHER TO FORM INDOOR METAL CLAD, DUST-PROOF RIGID UNIT, DEGREE OF PROTECTION IP51. THE CUBICLES SHALL BE FREE STANDING, EQUIPPED WITH BOTTOM FRAMES SUITABLE FOR BOLTING TO THE FLOOR. SHEET STEEL THICKNESS SHALL NOT BE LESS THAN 2 mm.
- 16-THE INTERLOCK SYSTEM SHALL BE IMPLEMENTED TO MAKE THE ENTIRE SYSTEM WORK PROPERLY.

LEGEND & NOTE

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