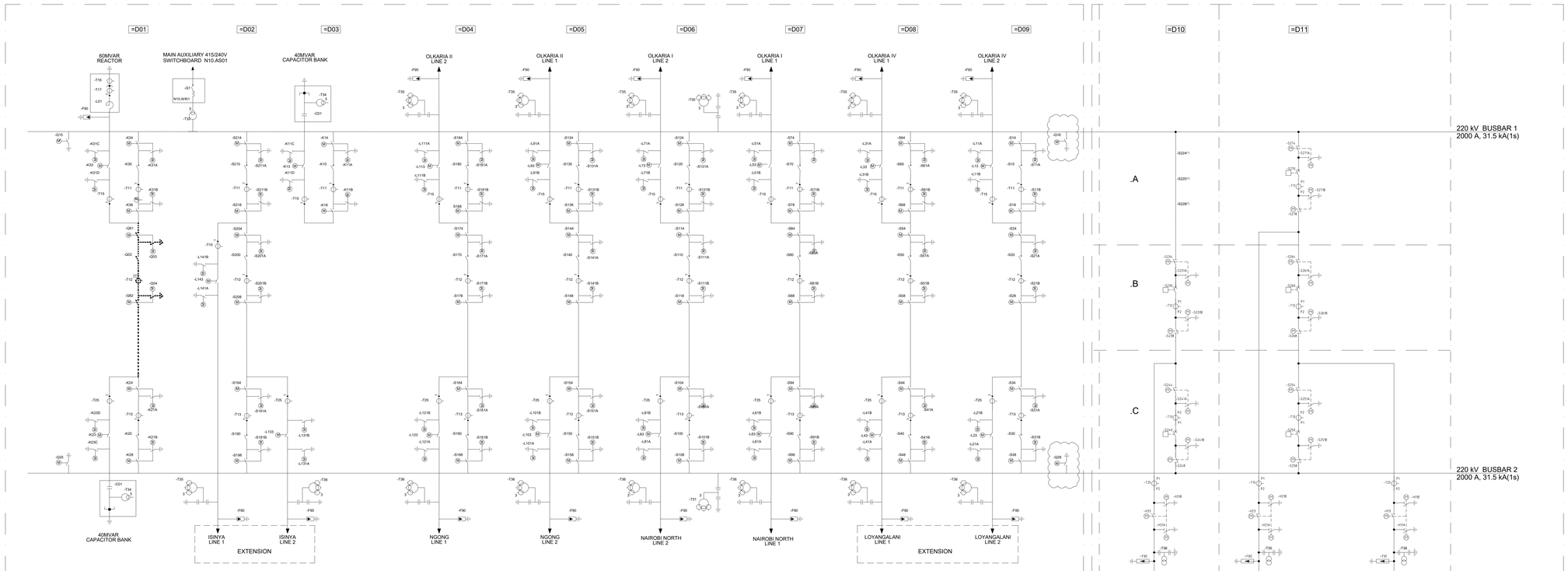

LEGEND	EQUIPMENT MARK	TECHNICAL CHARACTERISTICS
CIRCUIT BREAKER	Q01 - Q02 - Q03	In 1250A, Ik= 31.5kA/3s, BIL= 1050kV
DISCONNECTING SWITCH WITH MOTOR OPERATED	Q10 - Q20 - Q30 - Q40 - Q50 - Q60 - Q61	In= 1250A, BIL= 1050kV
EARTHING SWITCH WITH MOTOR OPERATED	Q00 - Q01 - Q02 - Q03 - Q04 - Q05 - Q06- Q07 - Q60 - Q61	In= 1250A, BIL= 1050kV
DIAMETER CURRENT TRANSFORMER 2 cores - 1 ratio	-T11 - T12- T13	1250/1-1A 20VA 5P20 - 20VA 520 BIL= 1050kV
LINE CURRENT TRANSFORMER 5 cores - 1 ratio	-T15 - T25	1250/1-1-1-0.1-0.1 20VA 5P20 - 20VA 5P20 - 20VA CL 0.2S - 10VA CL 0.2S BIL= 1050kV
CAPACITOR BANK CURRENT TRANSFORMER 3 cores - 1 ratio	-T15	20VA 5P20 - 20VA 5P20 - 20VA 5P20 BIL= 1050kV
REACTOR CURRENT TRANSFORMER 3 cores - 1 ratio	-T15	1250/1-1-1A 20VA 5P20 - 20VA 5P20 - 20VA 5P20 BIL= 1050kV
SURGE ARRESTER	-F90	Un= 245kV, 10kA, BIL= 1050kV, Class 3
CAPACITIVE VOLTAGE TRANSFORMER	-T30 - T31 -T35 - T36	220000/ 3V-1-1S/ 3V-1-1S/ 3V-1-0.5 50VA 3P - 50VA 3P - 50VA cl 0.5 BIL= 1050kV
CAPACITOR BANK	-C01	0.75 mVr - Current : 130A Un= 240kV, 40MVAR, 1.11uF BIL= 1050kV
REACTOR	-L01	Rated current : 157.46A Un=220kV, 60MVAR BIL= 1050kV
REACTOR BUSHING CURRENT TRANSFORMER 1 core - 1 ratio	-T16	400/1A 10VA 5P20 BIL= 1050kV
REACTOR BUSHING CURRENT TRANSFORMER 1 core - 1 ratio	- T17	1250/1A 10VA 5P20 BIL= 1050kV
VOLTAGE TRANSFORMER	- T32	220000/ 3V-1-1S/ 3V 300/1A BIL= 1050kV
CAPACITOR BANK VOLTAGE TRANSFORMER	- T34	1-1-1-1-1-1 75VA CL0.5 BIL= 95kV
FUTURE BAY		

NOTE

1. The value of BIL will be validated by insulation co-ordination and network design report.

2. Current and voltage transformers : transformation ratio, accuracy class and power will be validated by calculation note.

SUSWA EXISTING

LEGEND:

SYMBOLS ACCORDING TO: IEC 60617

CIRCUIT BREAKER	
CURRENT TRANSFORMER	
DISCONNECTOR MOTORIZED	
GROUNDING SWITCH MOTORIZED	
CAPACITIVE VOLTAGE TRANSFORMER	
SURGE ARRESTER	

CURRENT TRANSFORMER T11, T12, T13, T15, T25	1250 /1-1-1 A 3x50VA 5P20	N-000063_E_D3_9621_SE
CAPACITIVE VOLTAGE TRANSFORMER T35, T36	220:√3 / 3x 0.110:√3 kV 10 VA cl 0.5 2x 50 VA cl 0.5-3PT1	N-000063_E_D3_9611_SE
SURGE ARRESTER F90, F91	MCOV 158kV RMS Ur 198 kV LIPL (10kA) = 525 kV	N-000063_E_D3_9515_SE
CIRCUIT BREAKER S230, S240, S250, S260, S270	245 kV/2000 A/ 40 kA (3s)	N-000063_E_D3_9161_SE
SWITCH / EARTHING SWITCH S234, S238, S244, S248, S274, S278, S264, S268, S254, S258, H33, H23, H13 S231A, S231B, S241A, S241B, S271A, S271B, S261A, S261B, S251A, S251B, H31A, H31B, H21A, H21B, H11A, H11B	245 kV / 2000 A	N-000063_E_D3_9165_SE

SUSWA EXISTING EXTENSION

BUILDING

LIMIT OF BAY

LIMIT OF COMPONENT

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N-000063_1008ZXW150_09_2002EWCT

±0.00 = 1593.90 MASL	IFC	IFA = Issued for approval IFI = Issued for information IFC = Issued for construction	IFIM = Issued for implementation (Design Input) IFM = Issued for manufacture AB = As built (Documentation)	
09	2019-12-02	ACCORDING TO COMMENTS	APM	ACC
08	2019-02-14	ACCORDING TO COMMENTS	APM	ACC
07	2019-02-07	ACCORDING TO COMMENTS	APM	ACC
Rev.	Rev. Date	Modification	Created By	Approved By

File Name (Prefix)	HVDC 500kV BIPOLE
N-000063_E_C1_9801_SE_09	2000 MW
Customer	400kV AC, ±500kV DC
KETRACO Kenya	
Project	
Ethiopia - Kenya Power Systems Interconnection Project	
Location(s)	Location Designation(s)
Suswa Existing Substation	-

Scale: -	Paper Size: A0	Customer Document Number: EKPSIP_K4_G_W_00003_09	Technical Classification: ECCN: N / AL: N
Responsible Dept.: ING	Techn. Reference: JPL	Document Type: LAYOUT AND MAJOR EQUIPMENT DRAWINGS	Document Designation: C1_9801_SE - -
Siemens AG	Created By: APM	Title, Supplementary Title: SINGLE LINE DIAGRAMS	Drawing Number: -
	Approved By: ACC	AC SINGLE LINE DIAGRAM	Rev.: 09 / Date of Issue: 2019-12-02 / Language: en / Sheet: 1 / 1