



400kV SWITCHYARD EQUIPMENT		
MARK	DESCRIPTION	QTY
CB	400kV 1ph CIRCUIT BREAKER (57 WITH POW)	96
CT	400kV 1ph CURRENT TRANSFORMER	96
CTN	TRANSF. NEUTRAL STAR CONNECTION CURRENT TRANSFORMER	7
CTM	400kV 1ph CURRENT TRANSFORMER METERING	12
CVT	400kV 1ph CAPACITIVE VOLTAGE TRANSFORMER	24
VTM	400kV 1ph INDUCTIVE VOLTAGE TRANSFORMER METERING	12
IVT	400kV 1ph INDUCTIVE VOLTAGE TRANSFORMER	6
SA	400kV 1ph SURGE ARRESTER	42
DS1	400kV 3ph DISCONNECTOR SWITCH WITH 1 EARTH BLADE	38
DS2	400kV 3ph DISCONNECTOR SWITCH WITH 2 EARTH BLADE	16
DS3	400kV 1ph EARTHING DISCONNECTOR SWITCH	27
DSP	400kV 1ph DISCONNECTOR SWITCH PANTHOGRAPH	48
PI	400kV POST INSULATOR	204
20T01	SINGLE PHASE AUTOTRANSFORMER: 400/220/33 kV 117 MVA	3
20T02	SINGLE PHASE AUTOTRANSFORMER: 400/220/33 kV 117 MVA	3
20T03	SINGLE PHASE AUTOTRANSFORMER: 400/220/33 kV 117 MVA	3

220kV SWITCHYARD EQUIPMENT		
MARK	DESCRIPTION	QTY
CVT2	220kV 1ph CAPACITIVE VOLTAGE TRANSFORMER	3
SA2	220kV 1ph SURGE ARRESTER	9

33kV SWITCHYARD EQUIPMENT		
MARK	DESCRIPTION	QTY
CT2	33kV 3ph CURRENT TRANSFORMER	3
SA3	33kV 3ph SURGE ARRESTER	3
DS4	33kV 3ph DISCONNECTOR SWITCH	3
PI3	33kV POST INSULATOR	27
20T04	EARTHING TRANSFORMER	1
20T05	EARTHING TRANSFORMER	1
20T06	EARTHING TRANSFORMER	1
SAT	STATION AUXILIARY TRANSFORMER	7

ELECTRICAL CLEARANCES IN MILLIMETERS		
MARK	DESCRIPTION	DIST.
N	PHASE TO EARTH ROD-STRUCTURE	4100
	PHASE TO EARTH CONDUCTOR-STRUCTURE	3100
	PHASE TO PHASE ROD-CONDUCTOR	5000
	PHASE TO PHASE CONDUCTOR-CONDUCTOR	4200
DV	MAINTENANCE (N+2000)	6100
H	ACCESS AREAS	6350
T	TRANSPORT (N+100)	4200
G1	FIRE HAZARD CLEARANCE ACCORDING IEC 61936.1	15000
G2	FIRE HAZARD CLEARANCE ACCORDING IEC 61936.1	30000

- LEGEND:
- DOUBLE CIRCUIT OVERHEAD LINE TO CIRCUIT 1.
 - DOUBLE CIRCUIT OVERHEAD LINE TO CIRCUIT 2.
 - CONTROL BUILDING
 - 400/220 kV AUTOTRANSFORMER 350 MVA (3 x 117 MVA SINGLE PHASE)
 - WAREHOUSE.
 - PARKING AREA
 - RMU 1.
 - RMU 2.
 - RELAY HOUSE.
 - DOUBLE CIRCUIT OVERHEAD LINE TO ISINYA CIRCUIT 1.
 - DOUBLE CIRCUIT OVERHEAD LINE TO ISINYA CIRCUIT 2.
 - CONVERTER HALL POLE 1
 - CONVERTER HALL POLE 2.
 - AC FILTER BANK 1.
 - AC FILTER BANK 2.
 - AC FILTER BANK 3.
 - SEPTIC TANK
 - OIL RECOVERY TANK.
 - SPARE CONVERTER TRANSFORMERS.
 - ACCESS ROAD.
 - GATE HOUSE.
 - CONVERTER TRANSFORMERS.
 - DIESEL GENERATOR BUILDING.
 - STATION AUXILIARY TRANSFORMERS.
 - 33 kV SWITCHGEAR BUILDING
 - FIRE FIGHTING PUMP HOUSE.
 - PROVISIONAL ZONE INSTALLATION FIRE FIGHTING AND WATER TANK (TO BE CONCEPT).
 - CONVERTER HALL VENTILATION PACKET UNITS.

CONCRETE SLAB

PARTICULAR NOTES

- THE EQUIPMENT DIMENSIONS ARE PRELIMINARY TO BE CHECKED WITH SUPPLIER'S FINAL DIMENSIONS.

REFERENCE DRAWINGS

- N-000063_E_C1_9802_S CONVERTER STATION GENERAL LAYOUT - SUSWA HVDC STATION
- N-000063_E_C1_9808_S_001 GENERAL LAYOUT - SECTIONS
- N-000063_E_C1_9801_S SINGLE LINE DIAGRAM - SUSWA CONVERTER STATION

±0.00 = 1593.90 MASL		IFA		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)		
01	-	-	-				-	
00	2016-11-14	ACCORDING TO COMMENTS					AGF	LCQ
	2016-11-07	FIRST ISSUE					AGF	LCQ
Rev.	Rev. Date	Modification					Created By	Approved By
File Name (Prefix)							HVDC 500kV BIPOLE	
N-000063_E_C1_9808_S_01							2000 MW	
Customer							KETRACO Kenya	
Project							400kV AC, ±500kV DC	
ETHIOPIA-KENYA POWER SYSTEMS INTERCONNECTION PROJECT							-	
Location(s)							Location Designation(s)	
SUSWA CONVERTER STATION							-	
Scale	Paper Size	Customer Document Number				Technical Classification		
1:750	A1	EKPSIP_K1_C.D_00044_01				ECCN: N AL: N		
Responsible Dept.	Techn. Reference	Document Type				Document Designation		
ING	MOA	LAYOUT DRAWING				C1_9808_S		
Created By		Title, Supplementary Title				Drawing Number		
ISOLUX INGENIERIA S.A.		AGF				-		
Approved By		AC SWITCHYARD				Rev.		
Siemens AG		GENERAL LAYOUT				01		
Date of Issue		Language		Sheet		-		
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SCALE 1:750

