

GENERAL NOTES

- PROJECT ELEVATION ± 0.000 CORRESPONDS TO ELEVATION 1593.90 m.a.s.l.
- PROJECT COORDINATE SYSTEM ORIGIN (HORIZONTAL GRID=1000000 ; VERTICAL GRID=1000000) IS AT UTM COORDINATES (Y=9882744361 ; X=206252959), UTM ZONE 37N DATUM ARC1960.



VERTICAL
GRID

HORIZONTAL
GRID

- CONVERTER HALLS & CONTROL BUILDING FINISHED FLOOR IS AT ELEVATION ± 0.000 .
- ALL DIMENSIONS AND COORDINATES ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS AND TOPOGRAPHIC LEVELS ARE IN METERS, UNLESS NOTED OTHERWISE.

CONCRETE PIPE	280 m
PVC DRAIN PIPE	4621 m
PVC SLOTTED DRAIN PIPE	3705 m
MANHOLE TYPE 1	95 Units
MANHOLE TYPE 2	23 Units
MANHOLE TYPE 3	132 Units
MANHOLE TYPE 4	2 Units
GUTTER	159 Units

PARTICULAR NOTES

- SLOPE FOR PVC SLOTTED DRAIN PIPES IS 0.0%.
- SLOPE FOR PIPES BETWEEN GUTTERS AND BETWEEN GUTTER AND MANHOLE IS 1.0%.
- SLOPE FOR MAIN COLLECTORS ACCORDING TO DOCUMENT N-000063_E_D2_9843_S_DR_0.3%.
- NOT INDICATED DIAMETERS FOR SMALL CONNECTIONS EQUAL TO 250mm, PVC DRAIN PIPES.
- FOR DEWATERING OF CABLE TRENCHES SEE DRAWING N-000063_E_C5_9861_S_AC_002.

REFERENCE DRAWINGS

- N-000063_E_C1_9808_S AC SWITCHYARD - GENERAL LAYOUT
- N-000063_E_C1_9808_S_001 AC SWITCHYARD - GENERAL SECTIONS
- N-000063_E_C5_9121_S_001 CONVERTER WATER COOLING SYSTEM (CWC) - FOUNDATION
- N-000063_E_C5_9741_S FIRE DETECTION SYSTEM - CIVIL INPUT & CONSTRUCTION DRAWING
- N-000063_E_C5_9803_S_BD_AC AC FILTER BANKS - FOUNDATION
- N-000063_E_C5_9804_S_BD_102 CONVERTER HALL - POLE 1. FOUNDATIONS & FIRE WALLS
- N-000063_E_C5_9804_S_BD_202 CONVERTER HALL - POLE 2. FOUNDATIONS & FIRE WALLS
- N-000063_E_C5_9805_S_BD DC SWITCHYARD - FOUNDATION - PLAN
- N-000063_E_C5_9807_S_001 CONVERTER TRANSFORMER AREA TRANSFER WAY FOR 400kV TRANSFORMERS
- N-000063_E_C5_9807_S_DTR_BD_001 CONVERTER TRANSFORMER AREA - SPARE DELTA TRANS.
- N-000063_E_C5_9807_S_STR_DB_001 CONVERTER TRANSFORMER AREA - SPARE STAR TRANSF.
- N-000063_E_C5_9808_S_BD AC SWITCHYARD - FOUNDATION - PLAN
- N-000063_E_C5_9808_S_TR_002 AC SWITCHYARD - TRANSFER WAY FOR 220-400kV TRANSFORM.
- N-000063_E_C5_9808_S_TR_BD_001 AC SWITCHYARD - FOUNDATION FOR 220-400kV TRANSFORMER
- N-000063_E_C5_9813_S_BD_001 CONTROL BUILDING - FOUNDATION
- N-000063_E_C5_9814_S_33kV AC SWITCHYARD - 33kV SWITCHYARD BUILDING
- N-000063_E_C5_9814_S_GH AUXILIARY BUILDING - GATE HOUSE
- N-000063_E_C5_9814_S_PH AUXILIARY BUILDING - PUMP HOUSE
- N-000063_E_C5_9814_S_RH AUXILIARY BUILDING - RELAY HOUSES
- N-000063_E_C5_9814_S_RMU AUXILIARY BUILDING - RMU
- N-000063_E_C5_9819_S_BD_002 STORAGE AREA - WAREHOUSE FOUNDATION
- N-000063_E_C5_9828_S_004 LANDSCAPING - INTERN ROAD - PLAN VIEW
- N-000063_E_C5_9828_S_005 LANDSCAPING - INTERN ROAD - SECTIONS AND DETAILS
- N-000063_E_C5_9843_S_DR_007 CIVIL DOCUMENTS - OIL DRAINAGE FOR CONVERTER TRANSFORMERS
- N-000063_E_C5_9843_S_DR_002 CIVIL DOCUMENTS - INSPECTION BOXES AND STORM DRAIN
- N-000063_E_C5_9853_S_COB_002 HYDRAULIC SERVICES - CONTROL BUILDING
- N-000063_E_C5_9853_S_GH_002 HYDRAULIC SERVICES - GATE HOUSE
- N-000063_E_C5_9861_S_AC_001 CABLE ROUTING - AC SWITCHYARD - PLAN
- N-000063_E_C5_9861_S_AC_002 CABLE ROUTING - AC SWITCHYARD - DETAILS
- N-000063_E_C5_9861_S_DC_001 CABLE ROUTING - DC SWITCHYARD - PLAN
- N-000063_E_C5_9861_S_DC_002 CABLE ROUTING - DC SWITCHYARD - DETAILS

SCALE 1:1000

± 0.00 = 1593.90 MASL		AB		IFA = Issued for approval IFI = Issued for information IFC = Issued for construction		IFM = Issued for implementation (Design Input) IFM = Issued for manufacture AB = As built (Documentation)	
R1	2021-02-24	ACCORDING TO COMMENTS				ZHOU	ROO
R0	2020-07-20	AS BUILT				ZHOU	ROO
07	2018-08-30	ACCORDING TO COMMENTS				LMT	ACC
Rev.	Rev. Date	Modification				Created By	Approved By
Name (Prefix)						HVDC 500kV BIPOLE	
000063_E_C5_9843_S_DR_001_R1						2x1000 MW	
Customer						400kV AC, ±500kV DC	
KETRACO Kenya						-	
Project						-	
Ethiopia - Kenya Power Systems Interconnection Project							
Location(s)						Location Designation(s)	
Suswa Converter Station						-	
Scale	Paper Size	Customer Document Number				Technical Classification:	
-/-	A1	EKPSIP_K1_C_D_00046_91				ECCN: N	AL: N
Responsible Dept.	Techn. Reference	Document Type				Document Designation	
ING	ZHOU	CIVIL CONSTRUCTION DRAWING				C5_9843_S_DR_001	-
Created By		Title, Supplementary Title				Drawing Number	
ZHOU		CIVIL DOCUMENTS				-	
Approved By		STORM WATER DRAINAGE				Rev.	
Siemens AG		GENERAL LAYOUT				R1	Date of Issue
						2021-02-24	Language
						en	Sheet
							1 / 3

These items are controlled by the U.S. Government (when labeled with "ECCN" unequal to "N") and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be re-exported, transferred, or otherwise disposed of to any other country or to any person other than the ultimate consignee or end-user(s) herein identified, without the prior written authorization of the U.S. Government. Items labeled with "ECCN" unequal to "N" are subject to U.S. law and regulations. Items labeled with "AL" are subject to U.S. law and regulations. Items labeled with "ECCN" unequal to "N" may require authorization from responsible authorities depending on the final end-use, or the destination, without label or with label "AL/N" / "ECCN".

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MANHOLE	H	P	E	E1	E2
MS-RW-001	2,500	1593,750	1591,250	1592,696	
MS-RW-002	1,550	1593,750	1592,200		
MS-RW-003	1,620	(*) 1592,200	1592,280		
MS-RW-004	1,170	1593,750	1592,580		
MS-RW-005	2,750	(*) 1593,900	1591,150	1592,178	
MS-RW-006	2,620	(*) 1593,900	1591,138		1592,166
MS-RW-007	1,704	1593,750	1592,046		
MS-RW-008	1,840	1593,750	1591,910		
MS-RW-009	1,961	1593,750	1591,789		
MS-RW-010	2,052	1593,750	1591,698		
MS-RW-021	1,044	1593,750	1592,706		
MS-RW-023	2,600	1593,750	1591,150	1592,630	
MS-RW-024	2,612	1593,750	1591,138		1592,618
MS-RW-026	1,225	1593,750	1592,525		
MS-RW-028	2,600	1593,750	1591,150	1592,463	
MS-RW-029	2,612	1593,750	1591,138		1592,471
MS-RW-030	1,381	1593,750	1592,369		
MS-RW-031	1,496	1593,750	1592,254		
MS-RW-032	2,730	1593,750	1591,020	1592,200	
MS-RW-033	2,742	1593,750	1591,008		1592,188
MS-RW-040	2,362	1593,750	1591,388		1592,901
MS-RW-041	0,898	1593,750	1592,852		
MS-RW-042	1,023	1593,750	1592,727		
MS-RW-043	2,415	1593,750	1591,335	1592,696	
MS-RW-044	2,427	1593,750	1591,323		1592,684
MS-RW-045	1,980	1593,750	1591,770	1592,080	
MS-RW-046	1,992	1593,750	1591,758		1592,068
MS-RW-047	2,500	1593,750	1591,250	1592,549	
MS-RW-048	2,512	1593,750	1591,238		1592,537
MS-RW-049	1,316	1593,750	1592,434		
MS-RW-050	1,456	1593,750	1592,294		
MS-RW-051	2,600	1593,750	1591,150	1592,265	
MS-RW-052	2,612	1593,750	1591,138		1592,253
MS-RW-060	0,959	1593,750	1592,791		
MS-RW-061	2,362	1593,750	1591,388		1592,901
MS-RW-062	2,350	1593,750	1591,400	1592,913	
MS-RW-070	2,512	1593,750	1591,238		1592,684
MS-RW-073	2,600	1593,750	1591,150	1592,549	
MS-RW-074	2,612	1593,750	1591,138		1592,537
MS-RW-075	1,316	1593,750	1592,434		
MS-RW-076	1,400	1593,750	1592,350		
MS-RW-077	2,730	1593,750	1591,020	1592,265	
MS-RW-078	2,742	1593,750	1591,008		1592,253
MS-RW-080	1,719	1593,750	1592,031		
MS-RW-081	0,815	1593,750	1592,935		
MS-RW-083	0,926	1593,750	1592,824		
MS-RW-084	1,031	1593,750	1592,719		
MS-RW-086	1,842	1593,750	1591,908	1592,590	FROM RW-84
MS-RW-087	2,610	1593,750	1591,140	1591,863	
MS-RW-088	2,622	1593,750	1591,128		1591,851
MS-RW-090	2,750	(*) 1593,900	1591,150	1592,394	
MS-RW-091	1,250	1593,750	1592,500		
MS-RW-093	2,415	1593,750	1591,335	1592,847	
MS-RW-095	0,815	1593,750	1592,935		
MS-RW-096	2,350	1593,750	1591,400	1592,913	
MS-RW-098	0,750	1593,750	1593,000		
MS-RW-099	0,750	1593,750	1593,000		
MS-RW-100	0,750	1593,750	1593,000		
MS-RW-101	1,343	1593,750	1592,407	1592,774	FROM RW-223
MS-RW-102	2,815	(*) 1593,900	1591,085	1592,180	
MS-RW-103	1,107	1593,750	1592,643		
MS-RW-104	1,013	1593,750	1592,737		
MS-RW-105	0,939	1593,750	1592,812		
MS-RW-106	0,815	1593,750	1592,935		
MS-RW-107	0,750	1593,750	1593,000		

MANHOLE	H	P	E	E1	E2
MS-RW-108	0.834	1593,750	1592,916		
MS-RW-109	0.967	1593,750	1592,783		
MS-RW-110	1.897	1593,750	1591,853	1592,713	FROM RW-109
MS-RW-111	1.968	1593,750	1591,782		
MS-RW-112	2.039	1593,750	1591,712		
MS-RW-113	2.137	1593,750	1591,613		
MS-RW-114	2.253	1593,750	1591,497		
MS-RW-115	2.334	1593,750	1591,416		
MS-RW-117	2.469	1593,750	1591,281	1592,457	FROM RW-169
MS-RW-118	2.559	1593,750	1591,191		
MS-RW-120	2.649	1593,750	1591,101	1592,292	FROM RW-128
MS-RW-122	2.781	1593,750	1590,969		
MS-RW-128	2.127	1593,750	1591,623		1592,400
MS-RW-131	2.530	1593,750	1591,220	1592,132	
MS-RW-132	1.533	1593,750	1592,218		
MS-RW-133	1.470	1593,750	1592,281		
MS-RW-140	2.851	(*) 1593,900	1591,049	1592,121	FROM RW-002
MS-RW-143	1.671	(*) 1593,900	1592,229		
MS-RW-144	1.575	(*) 1593,900	1592,325		
MS-RW-145	1.635	1593,750	1592,115		
MS-RW-146	1.746	1593,750	1592,004		
MS-RW-147	2.262	1593,750	1591,488		1592,905
MS-RW-148	1.848	1593,750	1591,902		
MS-RW-149	1.615	1593,750	1592,135		
MS-RW-150	1.732	1593,750	1592,018		
MS-RW-152	1.832	1593,750	1591,918		
MS-RW-153	1.885	1593,750	1591,865		
MS-RW-156	0.750	1593,750	1593,000		
MS-RW-157	0.750	1593,750	1593,000		
MS-RW-158	0.864	1593,750	1592,886	1592,946	FROM RW-157
MS-RW-159	2.050	1593,750	1591,700	1592,850	
MS-RW-160	2.062	1593,750	1591,688		1592,838
MS-RW-161	2.115	1593,750	1591,635	1592,721	
MS-RW-162	0.750	1593,750	1593,000		
MS-RW-163	0.913	1593,750	1592,837		
MS-RW-164	0.750	1593,750	1593,000		
MS-RW-165	2.050	1593,750	1591,700	1592,773	
MS-RW-166	2.066	1593,750	1591,684		1592,757
MS-RW-167	2.250	1593,750	1591,500	1592,917	
MS-RW-168	2.115	1593,750	1591,635	1592,617	
MS-RW-169	2.131	1593,750	1591,619		1592,601
MS-RW-170	2.882	(*) 1593,900	1591,018		1592,114
MS-RW-171	1.841	(*) 1593,900	1592,059		
MS-RW-172	1.923	(*) 1593,900	1591,977		
MS-RW-200	2.169	1593,750	1591,581	1591,611	FROM RW-010
MS-RW-201	1.938	1593,750	1591,812	1592,064	FROM RW-033
MS-RW-202	1.726	1593,750	1592,024	1592,129	FROM RW-052
MS-RW-204	1.621	1593,750	1592,129		
MS-RW-205	1.967	1593,750	1591,783		
MS-RW-206	2.065	1593,750	1591,685	1592,649	FROM RW-208
MS-RW-208	0.976	1593,750	1592,774		
MS-RW-209	0.865	1593,750	1592,885		
MS-RW-210	0.750	1593,750	1593,000		
MS-RW-211	1.912	(*) 1593,900	1591,838		
MS-RW-212	2.029	1593,750	1591,721	1591,826	FROM RW-153
MS-RW-213	2.185	1593,750	1591,565	1592,895	FROM RW-156
MS-RW-214	2.376	1593,750	1591,374		
MS-RW-215	2.860	1593,750	1590,890	1591,282	FROM RW-214
MS-RW-216	2.288	1593,750	1591,462		
MS-RW-217	2.101	1593,750	1591,649		
MS-RW-218	2.762	(*) 1593,900	1591,138		1592,382
MS-RW-219	2.427	1593,750	1591,323		1592,835

MANHOLE	X COORDINATE	Y COORDINATE
MS-RW-001	206034459	9882624639
MS-RW-002	206247150	9882744361
MS-RW-003	205909759	9882590424
MS-RW-004	206281155	9882750136
MS-RW-005	205909759	9882624639
MS-RW-006	205909759	9882628639
MS-RW-007	205910759	9882668361
MS-RW-008	205910759	9882713789
MS-RW-009	205910759	9882754082
MS-RW-010	205910759	9882784567
MS-RW-021	205956959	9882599484
MS-RW-023	205956959	9882624639
MS-RW-024	205956959	9882628639
MS-RW-026	205956959	9882659611
MS-RW-028	205956959	9882673557
MS-RW-029	205956959	9882677848
MS-RW-030	205956959	9882711897
MS-RW-031	205956959	9882750218
MS-RW-032	205956959	9882768211
MS-RW-033	205956959	9882772211
MS-RW-040	205999459	9882556310
MS-RW-041	205999459	9882572559
MS-RW-042	205999459	9882614330
MS-RW-043	205999459	9882624614
MS-RW-044	205999459	9882628614
MS-RW-045	206017879	9882813558
MS-RW-046	206013879	9882813558
MS-RW-047	205999459	9882673560
MS-RW-048	205999459	9882677560
MS-RW-049	205999459	9882711897
MS-RW-050	205999459	9882758536
MS-RW-051	205999459	9882768211
MS-RW-052	205999459	9882772211
MS-RW-060	206034459	9882593087
MS-RW-061	206034459	9882556310
MS-RW-062	206034459	9882552310
MS-RW-070	206034459	9882628639
MS-RW-073	206034459	9882673560
MS-RW-074	206034406	9882677560
MS-RW-075	206034459	9882711897
MS-RW-076	206034459	9882739920
MS-RW-077	206034459	9882768211
MS-RW-078	206034435	9882772211
MS-RW-080	206085459	9882708046
MS-RW-081	206198797	9882749491
MS-RW-083	206164559	9882749491
MS-RW-084	206129059	9882749491
MS-RW-086	206085459	9882749491
MS-RW-087	206085459	9882768211
MS-RW-088	206085459	9882772211
MS-RW-090	205909724	9882552310
MS-RW-091	205910957	9882525937
MS-RW-093	205956959	9882552310
MS-RW-095	205956958	9882523138
MS-RW-096	205999428	9882552310
MS-RW-098	205999459	9882523271
MS-RW-099	206034459	9882523271
MS-RW-100	206085459	9882523624
MS-RW-101	206085459	9882579511
MS-RW-102	206220959	9882732360
MS-RW-103	206132543	9882579511
MS-RW-104	206164059	9882579511
MS-RW-105	206192238	9882579511
MS-RW-106	206213494	9882579511
MS-RW-107	206219855	9882615357

MANHOLE	X COORDINATE	Y COORDINATE
MS-RW-108	206221959	9882643361
MS-RW-109	206266059	9882643361
MS-RW-110	206289450	9882643361
MS-RW-111	206312959	9882643361
MS-RW-112	206336599	9882643361
MS-RW-113	206369459	9882643361
MS-RW-114	206407959	9882643361
MS-RW-115	206407959	9882670445
MS-RW-117	206407959	9882715361
MS-RW-118	206407959	9882745558
MS-RW-120	206407959	9882775361
MS-RW-122	206407959	9882819606
MS-RW-128	206371909	9882775361
MS-RW-131	206085459	9882673560
MS-RW-132	206085459	9882643449
MS-RW-133	206085459	9882622535
MS-RW-140	206220959	9882743502
MS-RW-143	206220959	9882716106
MS-RW-144	206220959	9882684073
MS-RW-145	206281065	9882730984
MS-RW-146	206283551	9882693151
MS-RW-147	206312959	9882769224
MS-RW-148	206285459	9882659150
MS-RW-149	206281155	9882757599
MS-RW-150	206283539	9882797585
MS-RW-152	206283544	9882830804
MS-RW-153	206266132	9882834591
MS-RW-156	206312959	9882823123
MS-RW-157	206312959	9882793897
MS-RW-158	206312959	9882775361
MS-RW-159	206328977	9882775361
MS-RW-160	206332977	9882775361
MS-RW-161	206367909	9882775361
MS-RW-162	206312959	9882674594
MS-RW-163	206312959	9882715361
MS-RW-164	206312959	9882744274
MS-RW-165	206328977	9882715361
MS-RW-166	206332977	9882715361
MS-RW-167	206312959	9882765224
MS-RW-168	206368024	9882715361
MS-RW-169	206372024	9882715361
MS-RW-170	206220959	9882754621
MS-RW-171	206220959	9882772928
MS-RW-172	206220959	9882800109
MS-RW-200	205910759	9882813558
MS-RW-201	205956959	9882813558
MS-RW-202	205999459	9882813558
MS-RW-204	206034459	9882813558
MS-RW-205	206085459	9882813558
MS-RW-206	206085459	9882846367
MS-RW-208	206127047	9882846367
MS-RW-209	206164059	9882846367
MS-RW-210	206201833	9882846367
MS-RW-211	206220959	9882846367
MS-RW-212	206260959	9882846367
MS-RW-213	206312959	9882846367
MS-RW-214	206376769	9882846367
MS-RW-215	206407959	9882846367
MS-RW-216	206347541	9882846367
MS-RW-217	206284860	9882846367
MS-RW-218	205909759	9882556310
MS-RW-219	205956959	9882556310
MS-RW-220	206085459	9882677551
MS-RW-223	206085459	9882551024
MS-RW-224	205900893	9882829100

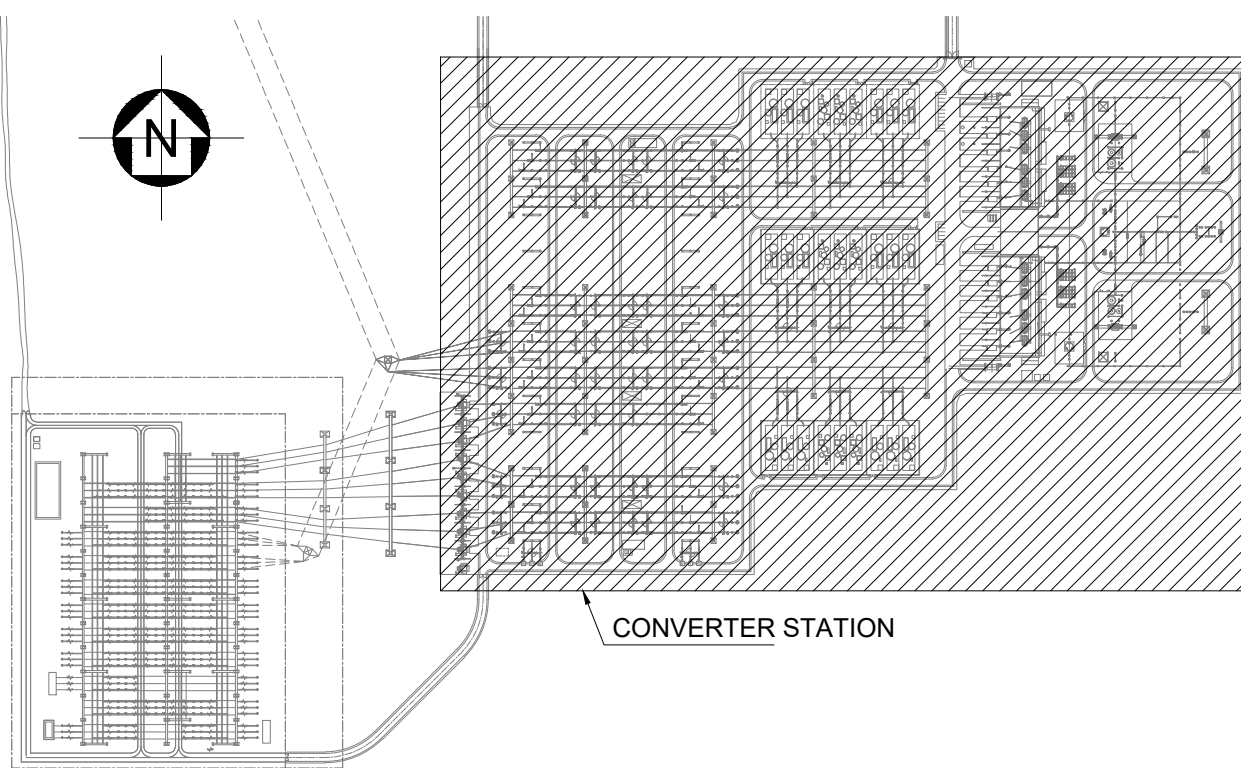
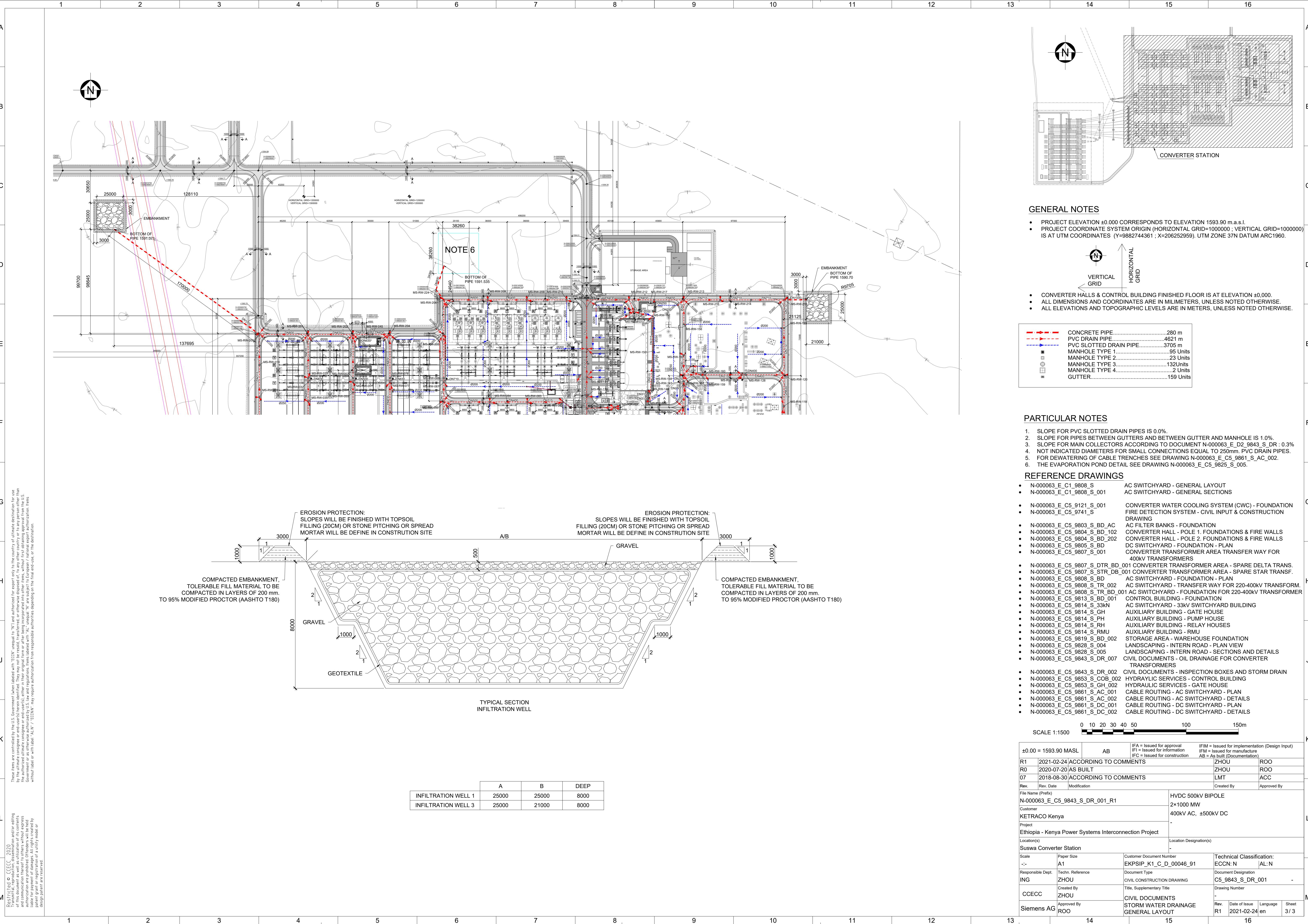
PARTICULAR NOTES

- P (*) MANHOLES IN TRANSFORMERS TRANSFER WAY WILL INCLUDE A SUMP IN THE CAST IRON COVER.

REFERENCE DRAWINGS

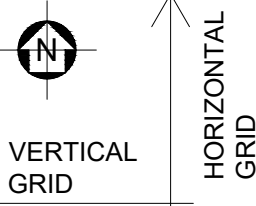
- | | |
|------------------------------------|--|
| • N-000063_E_C1_9808_S | AC SWITCHYARD - GENERAL LAYOUT |
| • N-000063_E_C1_9808_S_001 | AC SWITCHYARD - GENERAL SECTIONS |
| • N-000063_E_C5_9121_S_001 | CONVERTER WATER COOLING SYSTEM (CWC) - FOUNDATION |
| • N-000063_E_C5_9741_S | FIRE DETECTION SYSTEM - CIVIL INPUT & CONSTRUCTION DRAWING |
| • N-000063_E_C5_9803_S_BD_AC | AC FILTER BANKS - FOUNDATION |
| • N-000063_E_C5_9804_S_BD_102 | CONVERTER HALL - POLE 1. FOUNDATIONS & FIRE WALLS |
| • N-000063_E_C5_9804_S_BD_202 | CONVERTER HALL - POLE 2. FOUNDATIONS & FIRE WALLS |
| • N-000063_E_C5_9805_S_BD | DC SWITCHYARD - FOUNDATION - PLAN |
| • N-000063_E_C5_9807_S_001 | CONVERTER TRANSFORMER AREA TRANSFER WAY FOR 400KV TRANSFORMERS |
| • N-000063_E_C5_9807_S_DTR_BD_001 | CONVERTER TRANSFORMER AREA - SPARE DELTA TRANS. |
| • N-000063_E_C5_9807_S_STR_DTB_001 | CONVERTER TRANSFORMER AREA - SPARE STAR TRANSF. |
| • N-000063_E_C5_9808_S_BD | AC SWITCHYARD - FOUNDATION - PLAN |
| • N-000063_E_C5_9808_S_STR_TR_002 | AC SWITCHYARD - TRANSFER WAY FOR 220-400kV TRANSFORM. |
| • N-000063_E_C5_9808_S_TR_BD_001 | AC SWITCHYARD - FOUNDATION FOR 220-400kV TRANSFORMER |
| • N-000063_E_C5_9813_S_BD_001 | CONTROL BUILDING - FOUNDATION |
| • N-000063_E_C5_9814_S_33KN | AC SWITCHYARD - 33KV SWITCHYARD BUILDING |
| • N-000063_E_C5_9814_S_GH | AUXILIARY BUILDING - GATE HOUSE |
| • N-000063_E_C5_9814_S_PH | AUXILIARY BUILDING - PUMP HOUSE |
| • N-000063_E_C5_9814_S_RH | AUXILIARY BUILDING - RELAY HOUSES |
| • N-000063_E_C5_9814_S_RMU | AUXILIARY BUILDING - RMU |
| • N-000063_E_C5_9819_S_BD_002 | STORAGE AREA - WAREHOUSE FOUNDATION |
| • N-000063_E_C5_9828_S_004 | LANDSCAPING - INTERN ROAD - PLAN VIEW |
| • N-000063_E_C5_9828_S_005 | LANDSCAPING - INTERN ROAD - SECTIONS AND DETAILS |
| • N-000063_E_C5_9843_S_DR_007 | CIVIL DOCUMENTS - I/O DRAINAGE FOR CONVERTER TRANSFORMERS |
| • N-000063_E_C5_9843_S_DR_002 | CIVIL DOCUMENTS - INSPECTION BOXES AND STORM DRAIN |
| • N-000063_E_C5_9853_S_COB_002 | HYDRAULIC SERVICES - CONTROL BUILDING |
| • N-000063_E_C5_9853_S_GH_002 | HYDRAULIC SERVICES - GATE HOUSE |
| • N-000063_E_C5_9861_S_AC_001 | CABLE ROUTING - AC SWITCHYARD - PLAN |
| • N-000063_E_C5_9861_S_AC_002 | CABLE ROUTING - AC SWITCHYARD - DETAILS |
| • N-000063_E_C5_9861_S_DC_001 | CABLE ROUTING - DC SWITCHYARD - PLAN |
| • N-000063_E_C5_9861_S_DC_002 | CABLE ROUTING - DC SWITCHYARD - DETAILS |

+0.00 = 1593.90 MASL		AB		IFA = Issued for approval IFI = Issued for information IFC = Issued for construction		IFM = Issued for implementation (Design Input) IFM = Issued for manufacture AB = As built (Documentation)	
R1	2021-02-24	ACCORDING TO COMMENTS				ZHOU	ROO
R0	2021-07-20	AS BUILT				ZHOU	ROO
07	2018-08-30	ACCORDING TO COMMENTS				LMT	ACC
Rev.	Rev. Date	Modification				Created By	Approved By
File Name (Prefix) N-00063_E_C5_9843_S_DR_001_R1						HVDC 500kV BIPOLE 2x1000 MW	
Customer						400kV AC, ±500kV DC	
KETRACO Kenya						-	
Project						-	
Ethiopia - Kenya Power Systems Interconnection Project						-	
Location(s)						Location Designation(s)	
Suswa Converter Station						-	
Scale	Paper Size	Customer Document Number				Technical Classification:	
-/-	A1	EKSPIS_K1_C_D_00046_91				ECCN: N AL: N	
Responsible Dept.	Techn. Reference	Document Title				Document Designation	
ING	ZHOU	CIVIL CONSTRUCTION DRAWING				C5_9843_S_DR_001 -	
CCECC	Created By ZHOU	Title, Supplementary Title				Drawing Number	
		CIVIL DOCUMENTS				-	
Siemens AG	Approved By ROO	STORM WATER DRAINAGE GENERAL LAYOUT				Rev. R1	Date of Issue 2021-02-24
						Language en	Sheet 2 / 3



GENERAL NOTES

- PROJECT ELEVATION ±0.000 CORRESPONDS TO ELEVATION 1593.90 m.a.s.l.
- PROJECT COORDINATE SYSTEM ORIGIN (HORIZONTAL GRID=1000000 ; VERTICAL GRID=1000000) IS AT UTM COORDINATES (Y=9882744361 ; X=206252959), UTM ZONE 37N DATUM ARC1960.



- CONVERTER HALLS & CONTROL BUILDING FINISHED FLOOR IS AT ELEVATION ±0.000.
- ALL DIMENSIONS AND COORDINATES ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS AND TOPOGRAPHIC LEVELS ARE IN METERS, UNLESS NOTED OTHERWISE.

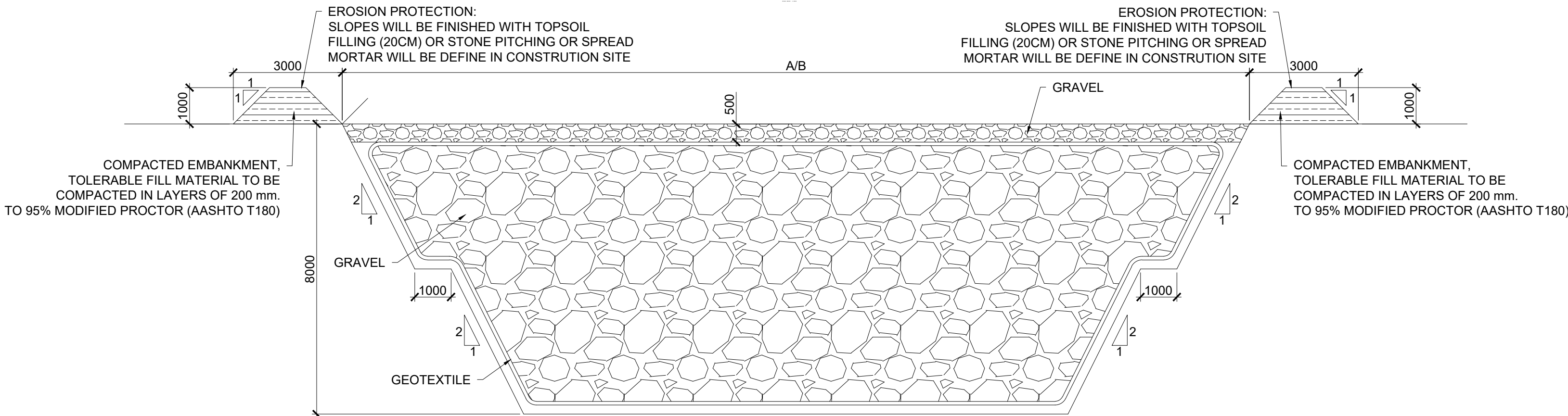
—+—+—+—	CONCRETE PIPE.....	280 m
—+—+—+—	PVC DRAIN PIPE.....	4621 m
—+—+—+—	PVC SLOTTED DRAIN PIPE.....	3705 m
■	MANHOLE TYPE 1.....	95 Units
■	MANHOLE TYPE 2.....	23 Units
■	MANHOLE TYPE 3.....	132 Units
■	MANHOLE TYPE 4.....	2 Units
■	GUTTER.....	159 Units

PARTICULAR NOTES

- SLOPE FOR PVC SLOTTED DRAIN PIPES IS 0.0%.
- SLOPE FOR PIPES BETWEEN GUTTERS AND BETWEEN GUTTER AND MANHOLE IS 1.0%.
- SLOPE FOR MAIN COLLECTORS ACCORDING TO DOCUMENT N-000063_E_D2_9843_S_DR : 0.3%
- NOT INDICATED DIAMETERS FOR SMALL CONNECTIONS EQUAL TO 250mm. PVC DRAIN PIPES.
- FOR DEWATERING OF CABLE TRENCHES SEE DRAWING N-000063_E_C5_9861_S_AC_002.
- THE EVAPORATION POND DETAIL SEE DRAWING N-000063_E_C5_9825_S_005.

REFERENCE DRAWINGS

- N-000063_E_C1_9808_S AC SWITCHYARD - GENERAL LAYOUT
- N-000063_E_C1_9808_S_001 AC SWITCHYARD - GENERAL SECTIONS
- N-000063_E_C5_9121_S_001 CONVERTER WATER COOLING SYSTEM (CWC) - FOUNDATION
- N-000063_E_C5_9741_S FIRE DETECTION SYSTEM - CIVIL INPUT & CONSTRUCTION DRAWING
- N-000063_E_C5_9803_S_BD_AC AC FILTER BANKS - FOUNDATION
- N-000063_E_C5_9804_S_BD_102 CONVERTER HALL - POLE 1. FOUNDATIONS & FIRE WALLS
- N-000063_E_C5_9804_S_BD_202 CONVERTER HALL - POLE 2. FOUNDATIONS & FIRE WALLS
- N-000063_E_C5_9805_S_BD DC SWITCHYARD - FOUNDATION - PLAN
- N-000063_E_C5_9807_S_001 CONVERTER TRANSFORMER AREA TRANSFER WAY FOR 400kV TRANSFORMERS
- N-000063_E_C5_9807_S_DTR_BD_001 CONVERTER TRANSFORMER AREA - SPARE DELTA TRANS.
- N-000063_E_C5_9807_S_STR_DB_001 CONVERTER TRANSFORMER AREA - SPARE STAR TRANSF.
- N-000063_E_C5_9808_S_BD AC SWITCHYARD - FOUNDATION - PLAN
- N-000063_E_C5_9808_S_TR_002 AC SWITCHYARD - TRANSFER WAY FOR 220-400kV TRANSFORM.
- N-000063_E_C5_9808_S_TR_BD_001 AC SWITCHYARD - FOUNDATION FOR 220-400kV TRANSFORMER
- N-000063_E_C5_9813_S_BD_001 CONTROL BUILDING - FOUNDATION
- N-000063_E_C5_9814_S_33kN AC SWITCHYARD - 33kV SWITCHYARD BUILDING
- N-000063_E_C5_9814_S_GH AUXILIARY BUILDING - GATE HOUSE
- N-000063_E_C5_9814_S_PH AUXILIARY BUILDING - PUMP HOUSE
- N-000063_E_C5_9814_S_RH AUXILIARY BUILDING - RELAY HOUSES
- N-000063_E_C5_9814_S_RMU AUXILIARY BUILDING - RMU
- N-000063_E_C5_9819_S_BD_002 STORAGE AREA - WAREHOUSE FOUNDATION
- N-000063_E_C5_9828_S_004 LANDSCAPING - INTERN ROAD - PLAN VIEW
- N-000063_E_C5_9828_S_005 LANDSCAPING - INTERN ROAD - SECTIONS AND DETAILS
- N-000063_E_C5_9843_S_DR_007 CIVIL DOCUMENTS - OIL DRAINAGE FOR CONVERTER TRANSFORMERS
- N-000063_E_C5_9843_S_DR_002 CIVIL DOCUMENTS - INSPECTION BOXES AND STORM DRAIN
- N-000063_E_C5_9853_S_COB_002 HYDRAYLIC SERVICES - CONTROL BUILDING
- N-000063_E_C5_9853_S_GH_002 HYDRAULIC SERVICES - GATE HOUSE
- N-000063_E_C5_9861_S_AC_001 CABLE ROUTING - AC SWITCHYARD - PLAN
- N-000063_E_C5_9861_S_AC_002 CABLE ROUTING - AC SWITCHYARD - DETAILS
- N-000063_E_C5_9861_S_DC_001 CABLE ROUTING - DC SWITCHYARD - PLAN
- N-000063_E_C5_9861_S_DC_002 CABLE ROUTING - DC SWITCHYARD - DETAILS



	A	B	DEEP
INFILTRATION WELL 1	25000	25000	8000
INFILTRATION WELL 3	25000	21000	8000

These items are controlled by the U.S. Government (when labeled with "ECCN" unequal to "N") and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be re-exported, transferred, or otherwise disposed of to any other country or to any person other than the person or entity identified herein, without the express written authorization of the U.S. Government. Items labeled with "AL" are subject to U.S. export administration. Items labeled with "N" are subject to U.S. export administration. Items labeled with "ECCN" may require authorization from responsible authorities depending on the final end-use, or the destination.

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Rev.	Rev. Date	Modification			Created By			
File Name (Prefix)					Approved By			
N-000063_E_C5_9843_S_DR_001_R1					HVDC 500kV BIPOLE			
Customer					2x1000 MW			
KETRACO Kenya					400kV AC, ±500kV DC			
Project					-			
Ethiopia - Kenya Power Systems Interconnection Project					-			
Location(s)					Location Designation(s)			
Suswa Converter Station					-			
Scale	Paper Size	Customer Document Number		Technical Classification:				
-/-	A1	EKPSIP_K1_C_D_00046_91		ECCN: N AL: N				
Responsible Dept.	Techn. Reference	Document Type		Document Designation				
ING	ZHOU	CIVIL CONSTRUCTION DRAWING		C5_9843_S_DR_001 -				
Created By		Title, Supplementary Title		Drawing Number				
ZHOU		CIVIL DOCUMENTS		-				
Approved By		STORM WATER DRAINAGE		Rev.				
ROO		GENERAL LAYOUT		Date of Issue				
				Language				
				Sheet				
				3 / 3				