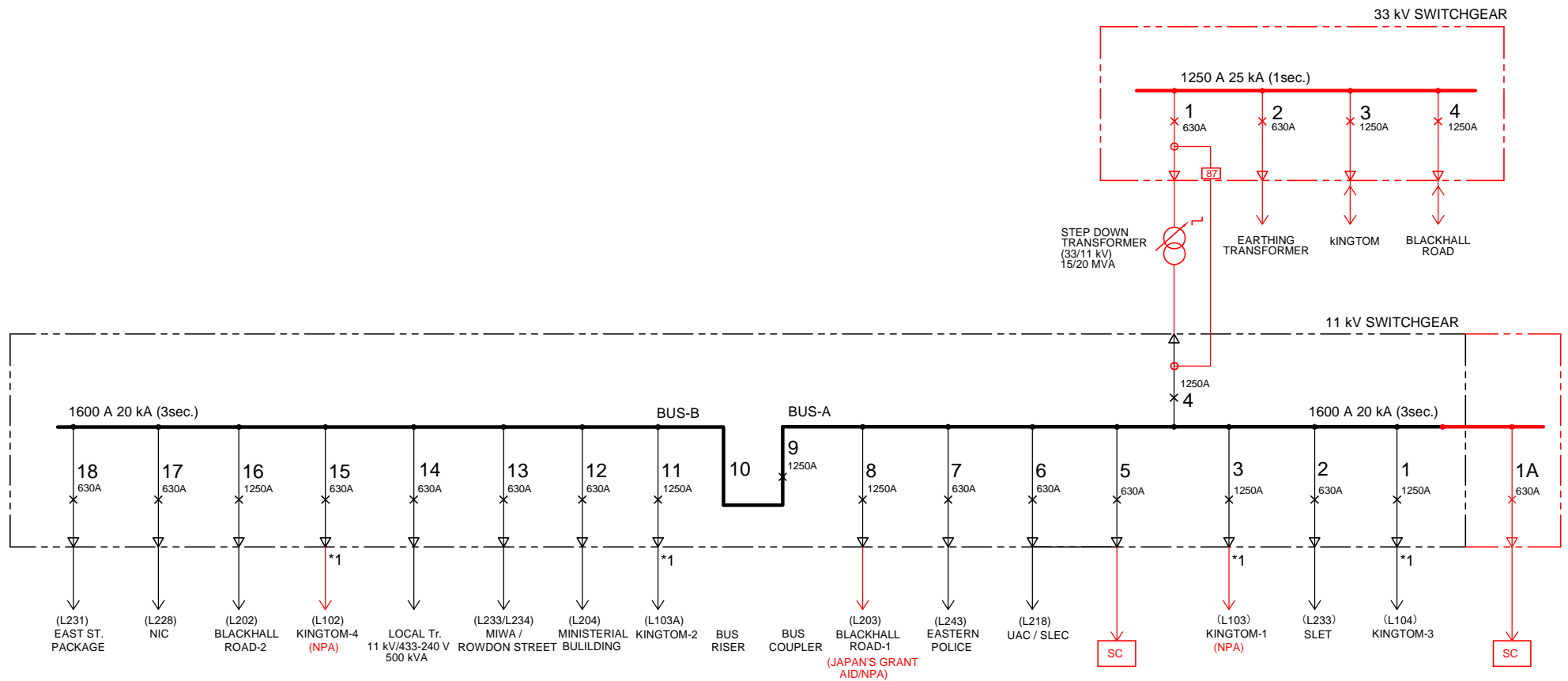


**REMARKS:**

1. \* 1 : FALCONBRIDGE-4 FEEDER IS NOW CONNECTED AS TEMPORARY CONNECTION, BECAUSE 11 kV SWITCHGEAR FOR No.4 FEEDER IS NOT AVAILABLE.
2. RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

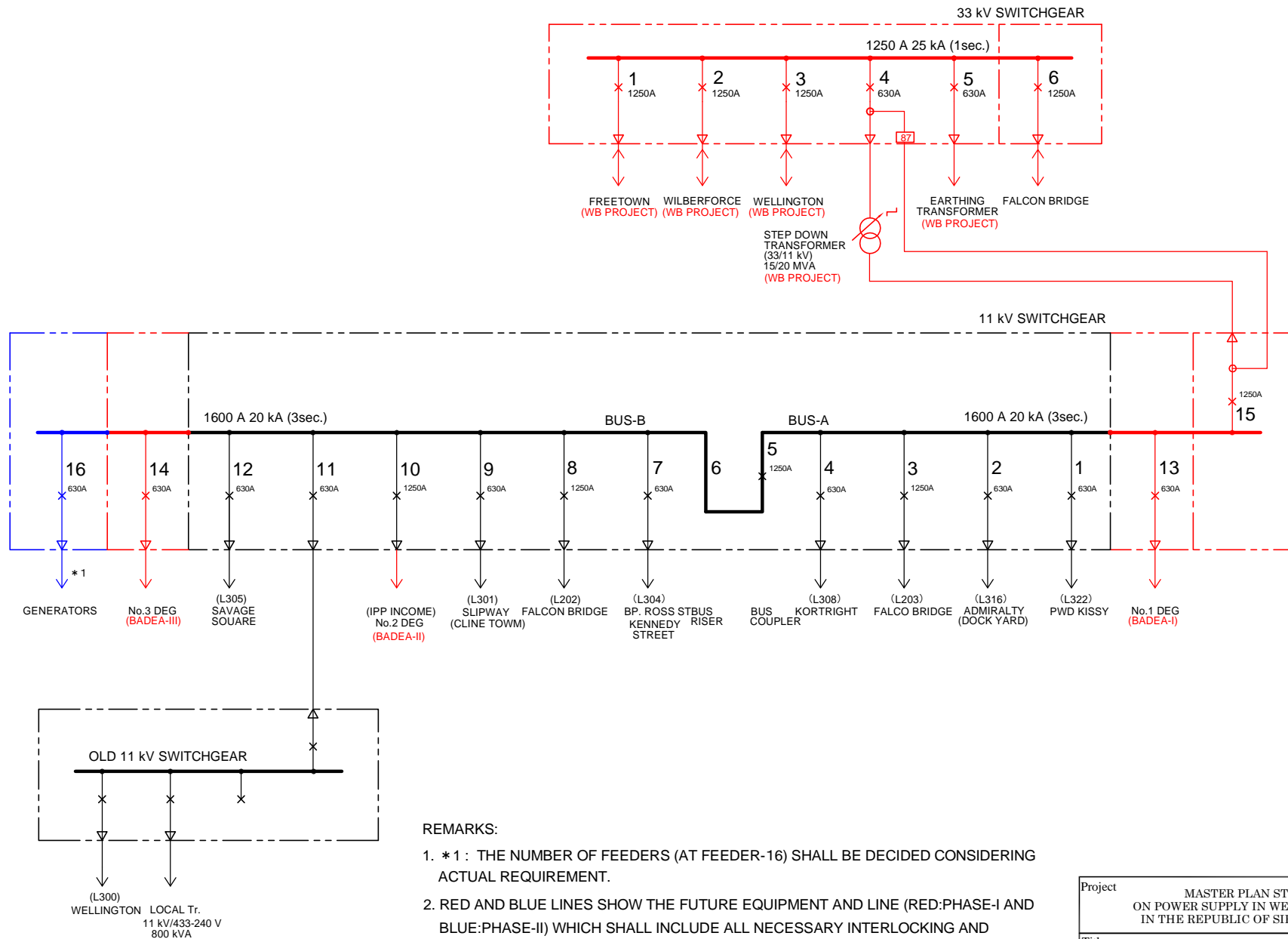
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: KINGTOM P/S (100)	DWG. No.
		KT-E1



REMARKS:

- \* 1 : KINGTOM -4 IS NOW CONNECTED AS TEMPORARY CONNECTION, BECAUSE 11 kV SWITCHGEAR FOR No.4 FEEDER IS NOT AVAILABLE.
- RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

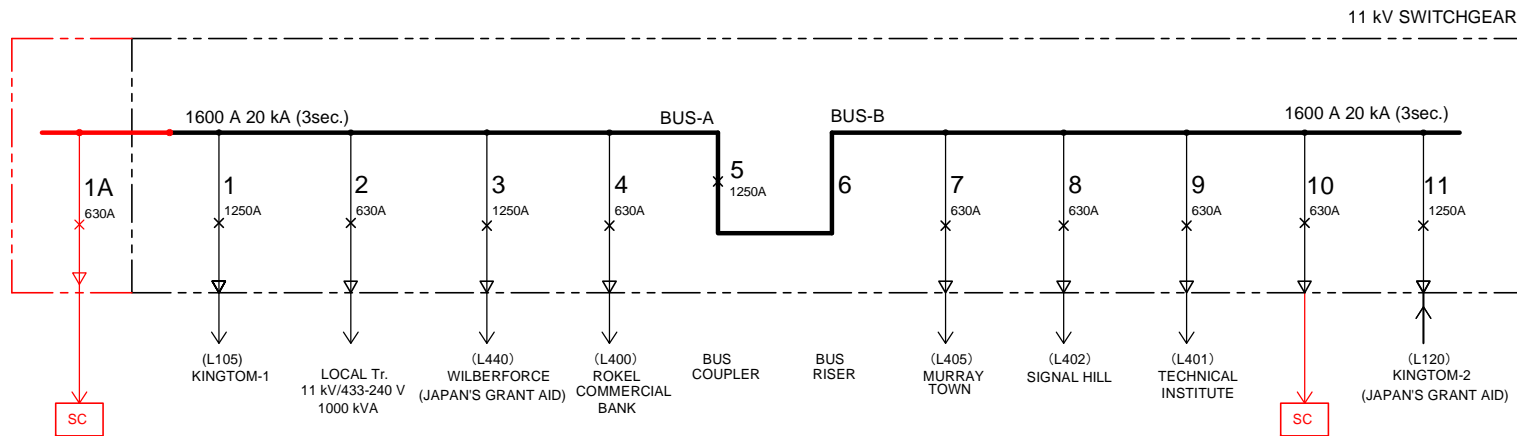
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: FALCON BRIDGE S/S (200)	DWG. No.
		FB-E1



**REMARKS:**

- \* 1 : THE NUMBER OF FEEDERS (AT FEEDER-16) SHALL BE DECIDED CONSIDERING ACTUAL REQUIREMENT.
- RED AND BLUE LINES SHOW THE FUTURE EQUIPMENT AND LINE (RED:PHASE-I AND BLUE:PHASE-II) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

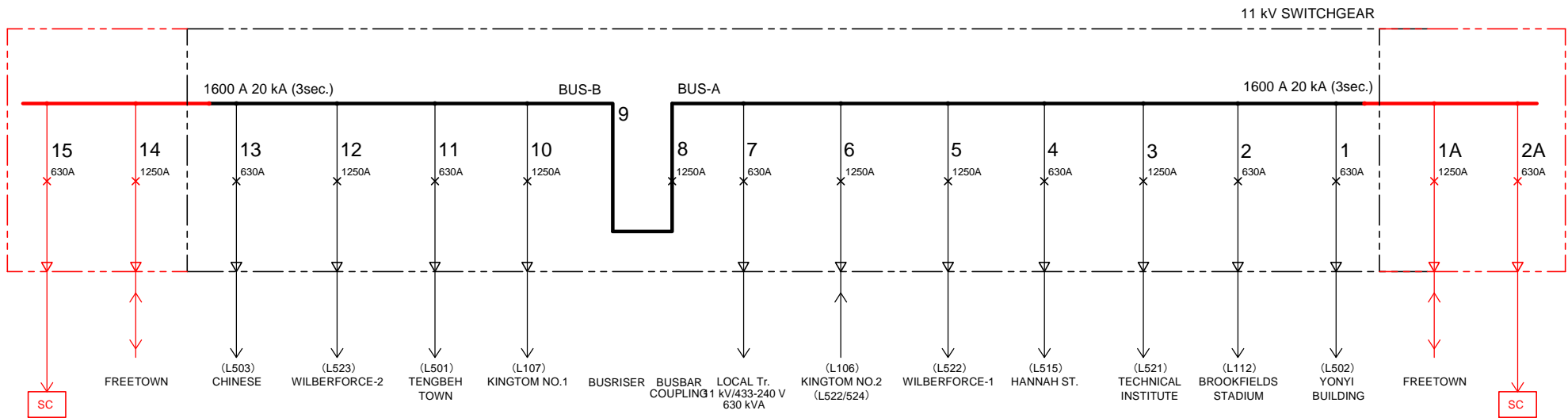
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: BLACKHALL ROAD P/S (300)	DWG. No.
		BR-E1



REMARKS:

1. RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

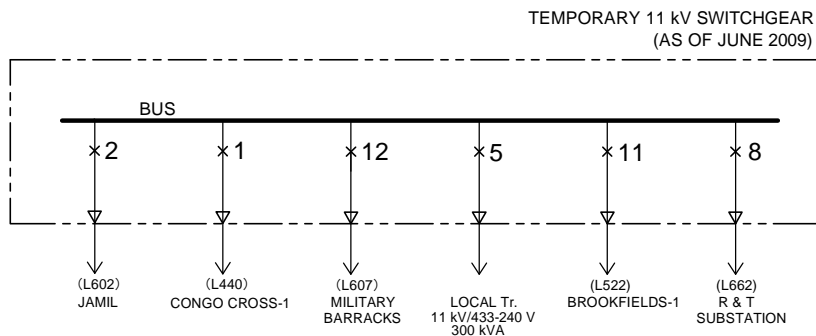
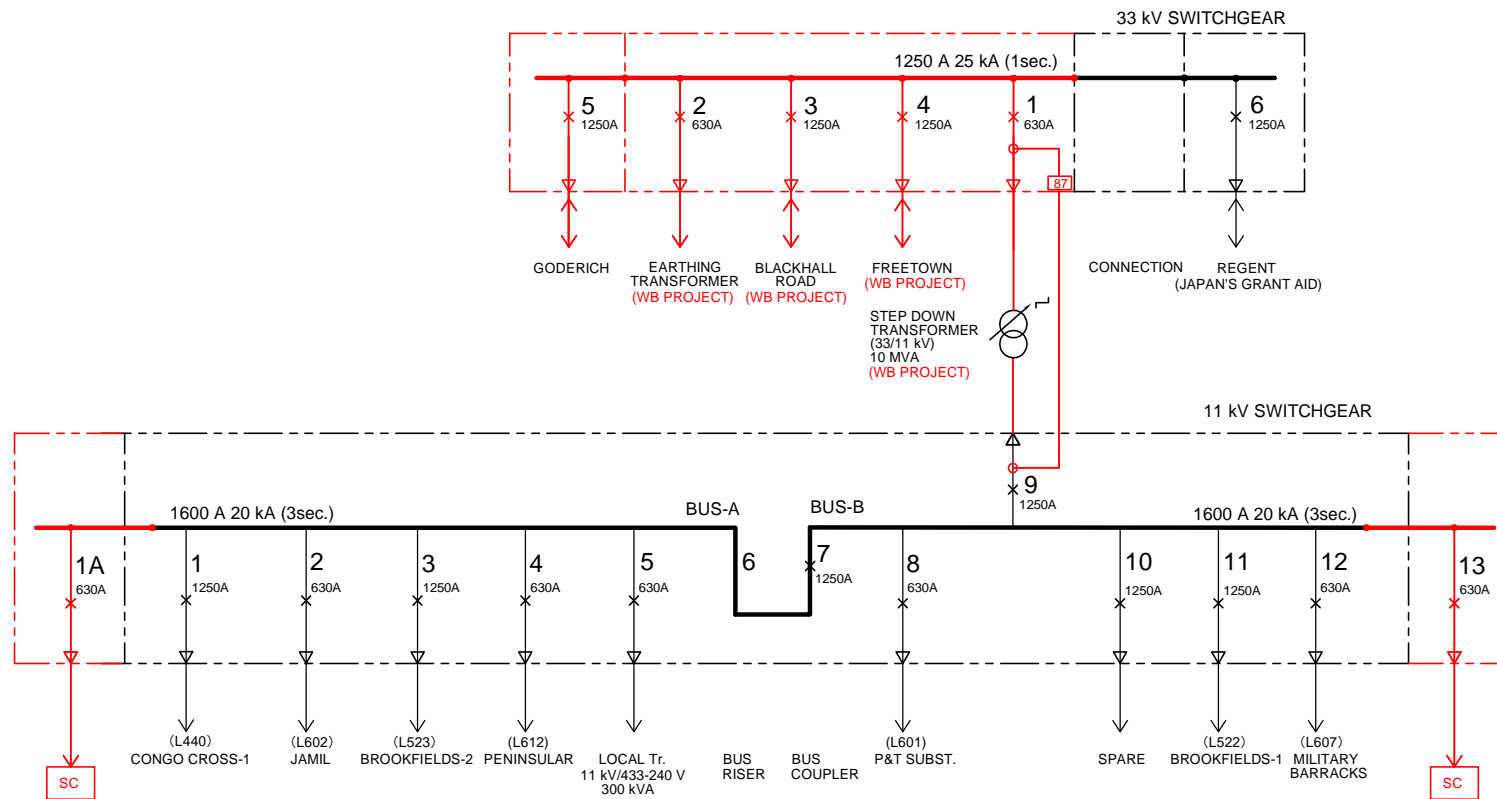
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL	IEC
Title	11kV SWITCHGEAR FEEDERS: CONGO CROSS J/S (400)	DWG. No.	CC-E1



REMARKS:

1. RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

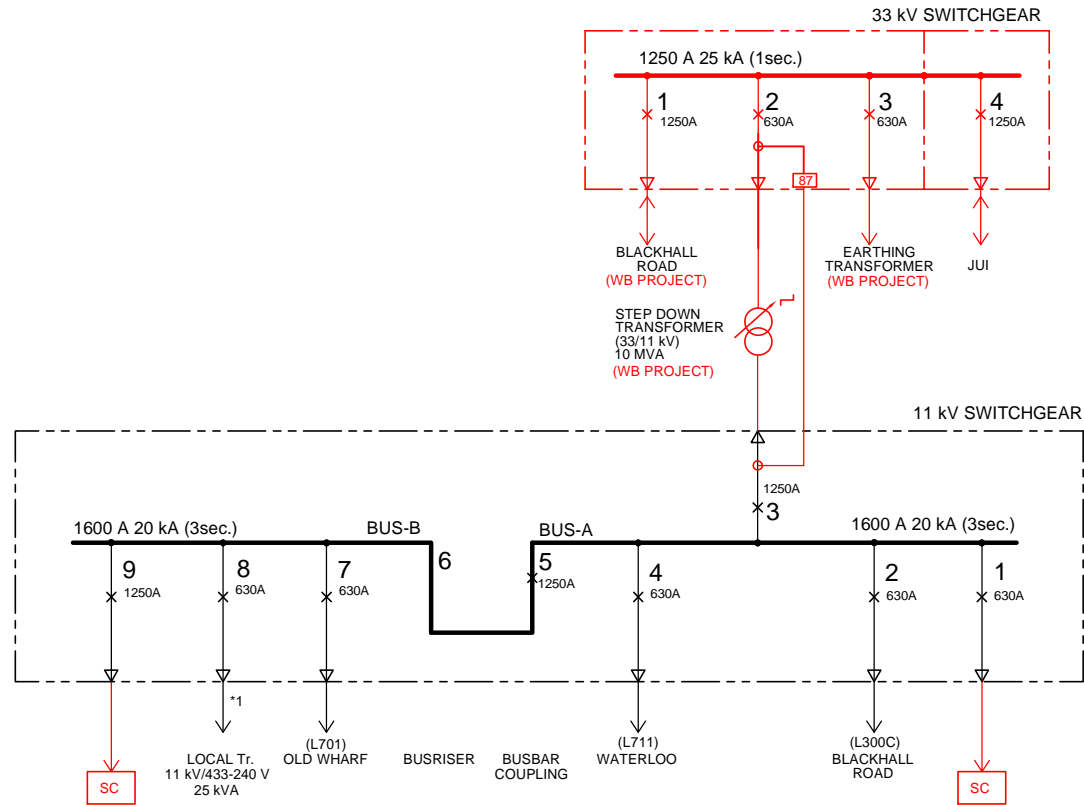
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11kV SWITCHGEAR FEEDERS: BROOKFIELDS J/S (500)	DWG. No.
		BF-E1



REMARKS:

1. RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

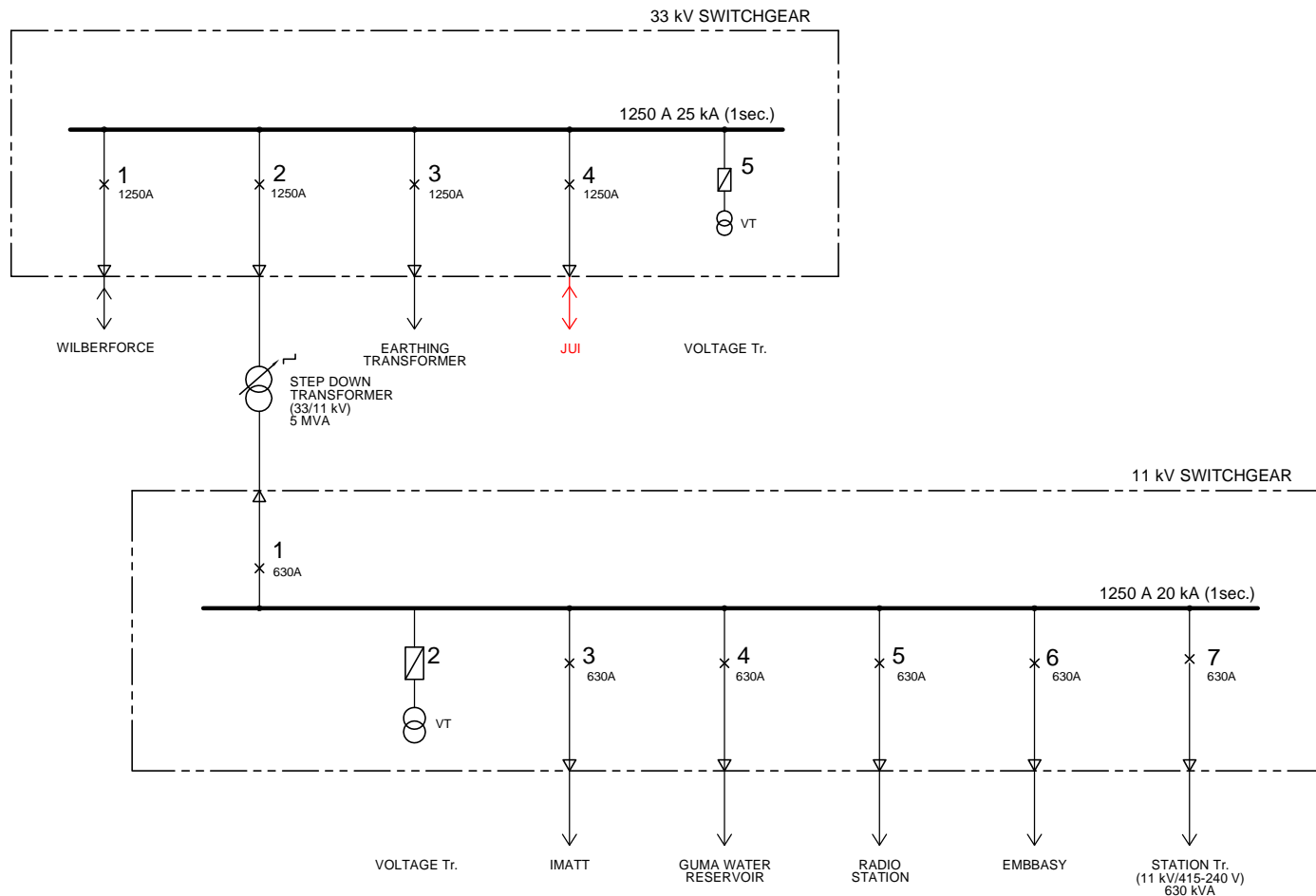
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: WILBERFORCE S/S (600)	DWG. No.
		WF-E1



REMARKS:

1. RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.
2. \*1 : 25 kVA LOCAL TRANSFORMER IS USED AS TEMPORARY.

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: WELLINGTON S/S (700)	DWG. No.
		WN-E1

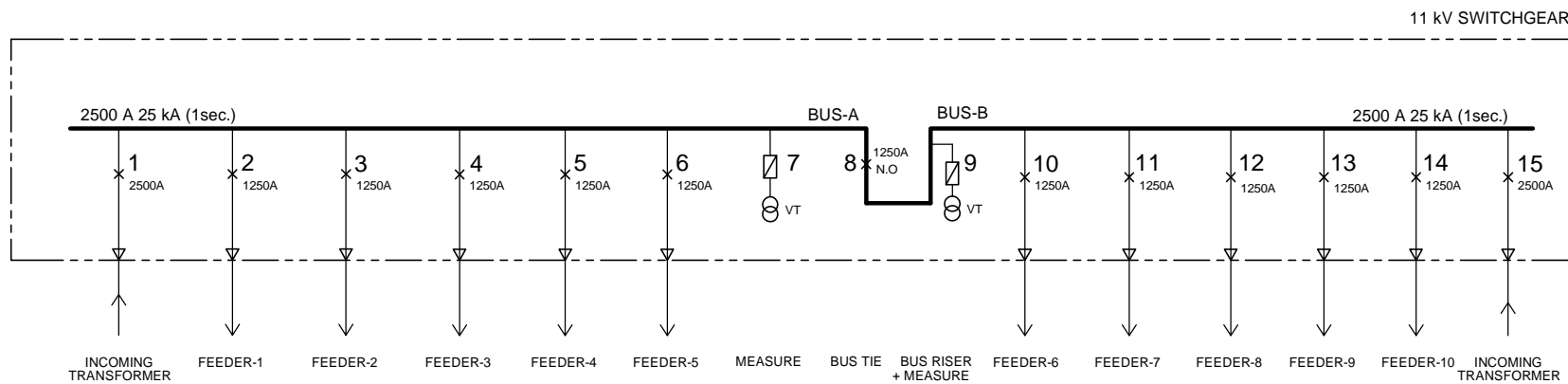
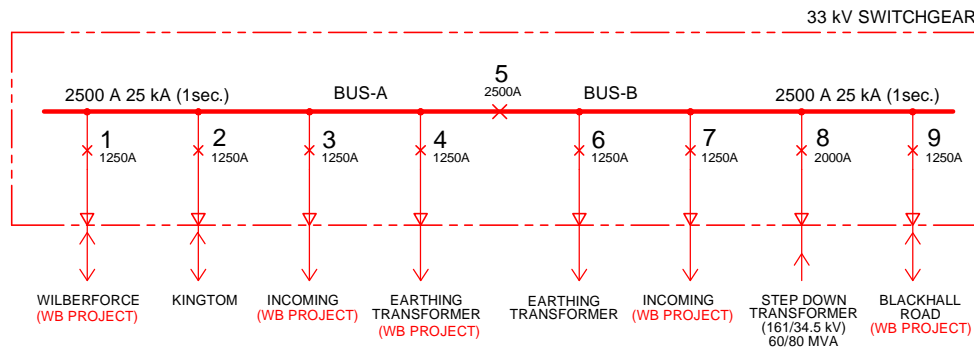


REMARKS:

1. RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: REGENT S/S (800)	DWG. No.
		RT-E1

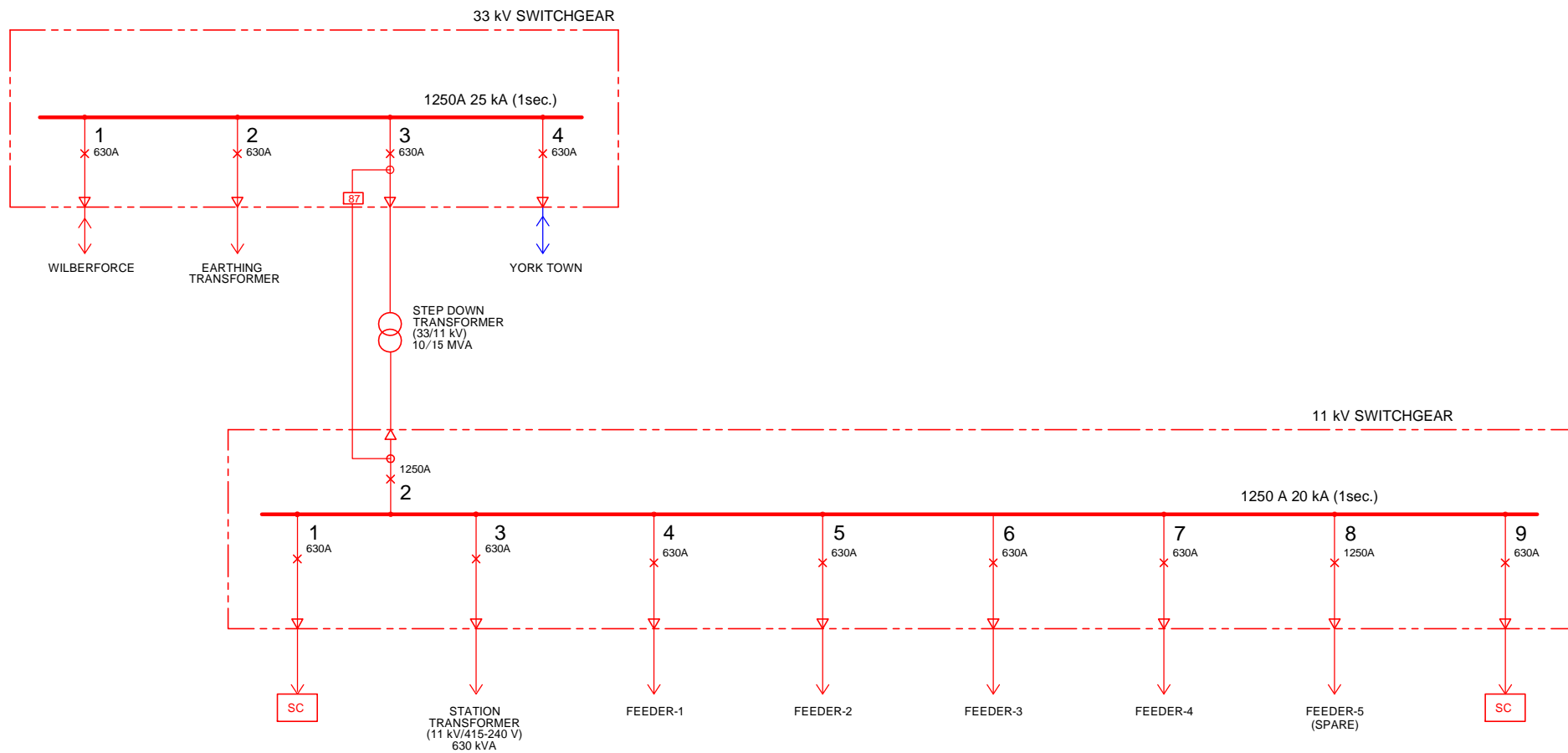




REMARKS:

1. RED LINE SHOWS THE FUTURE EQUIPMENT AND LINE (PHASE-I) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

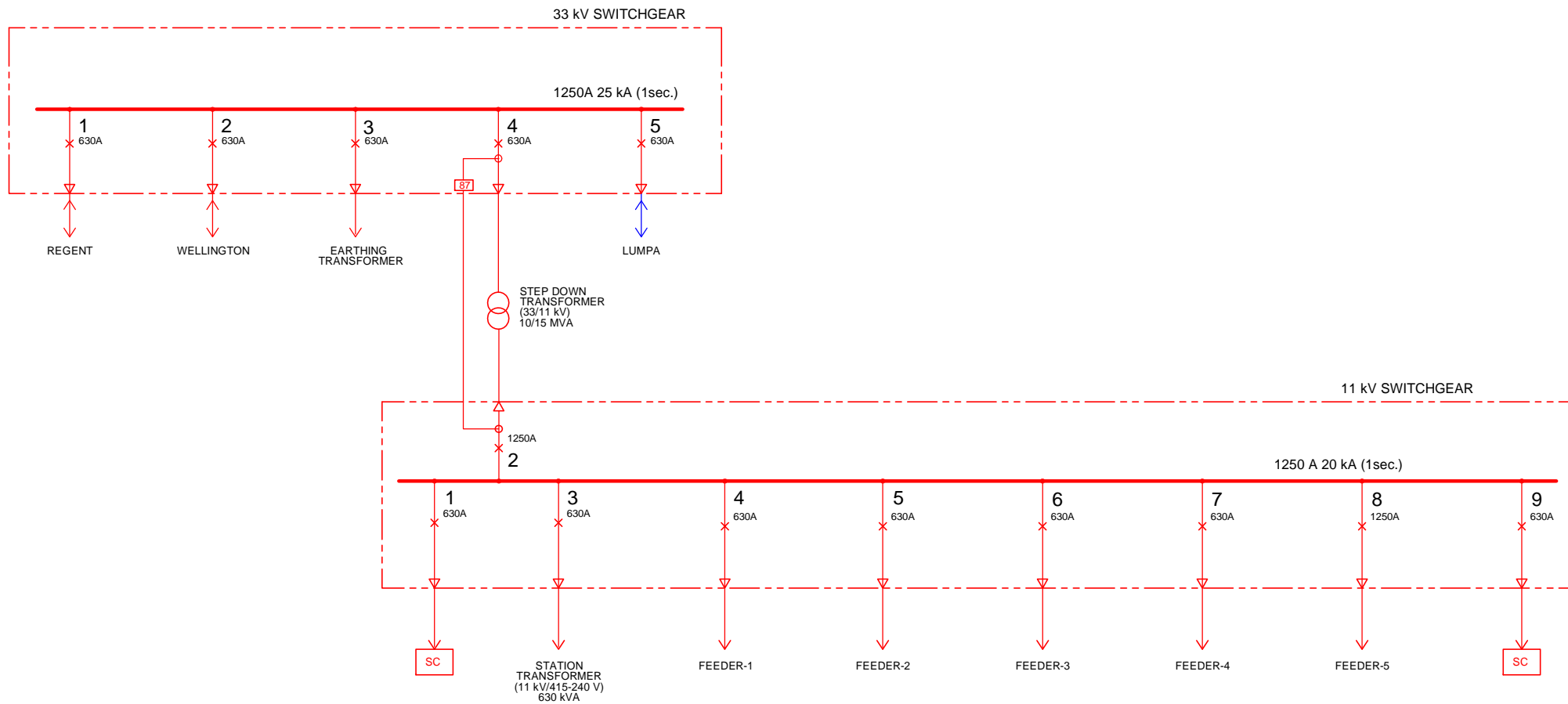
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: FREETOWN S/S (900)	DWG. No.
		FT-E1



REMARKS:

1. RED AND BLUE LINES SHOW THE FUTURE EQUIPMENT AND LINE (RED: PHASE-I AND BLUE: PHASE-II) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

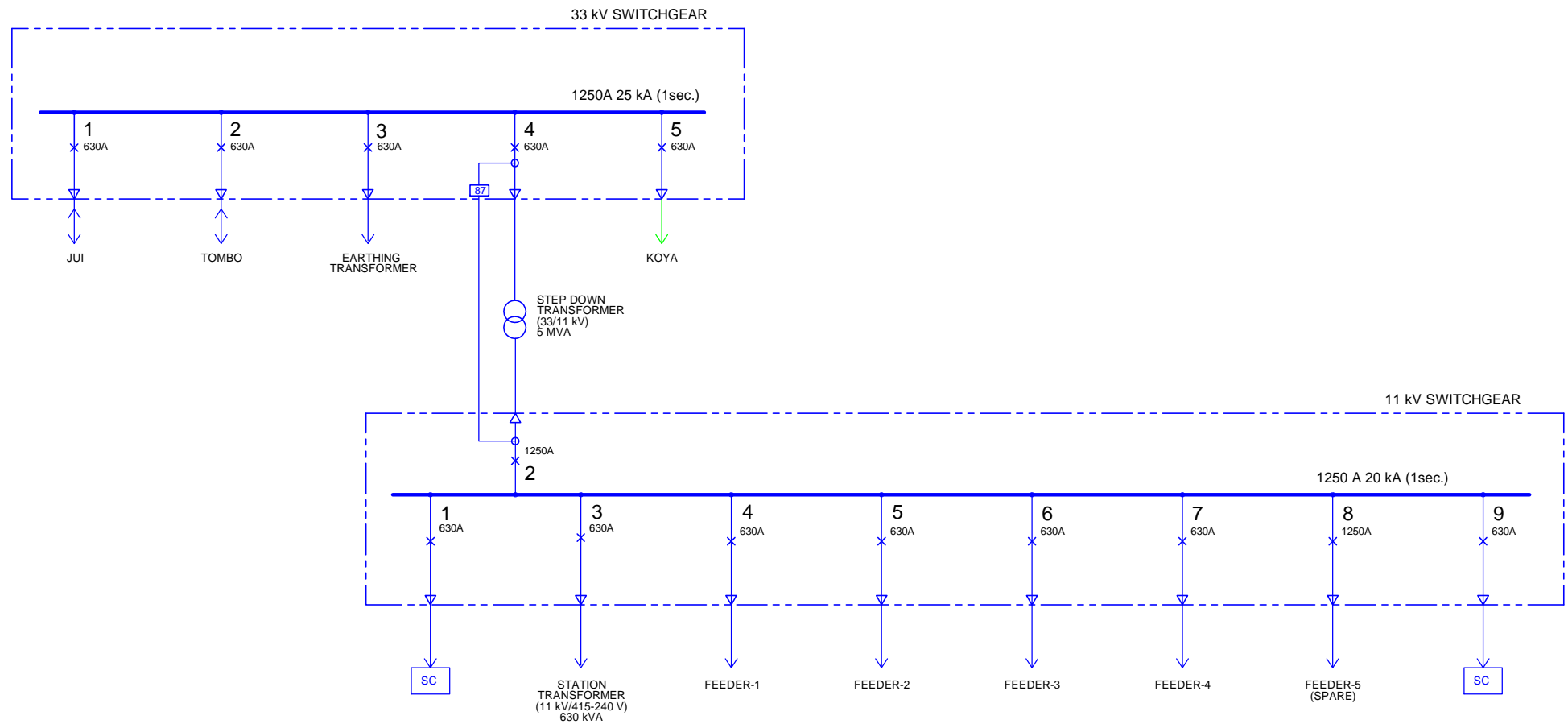
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: GODERICH S/S (1000)	DWG. No.
		GR-E1



REMARKS:

1. RED AND BLUE LINES SHOW THE FUTURE EQUIPMENT AND LINE (RED:PHASE-I AND BLUE:PHASE-II) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

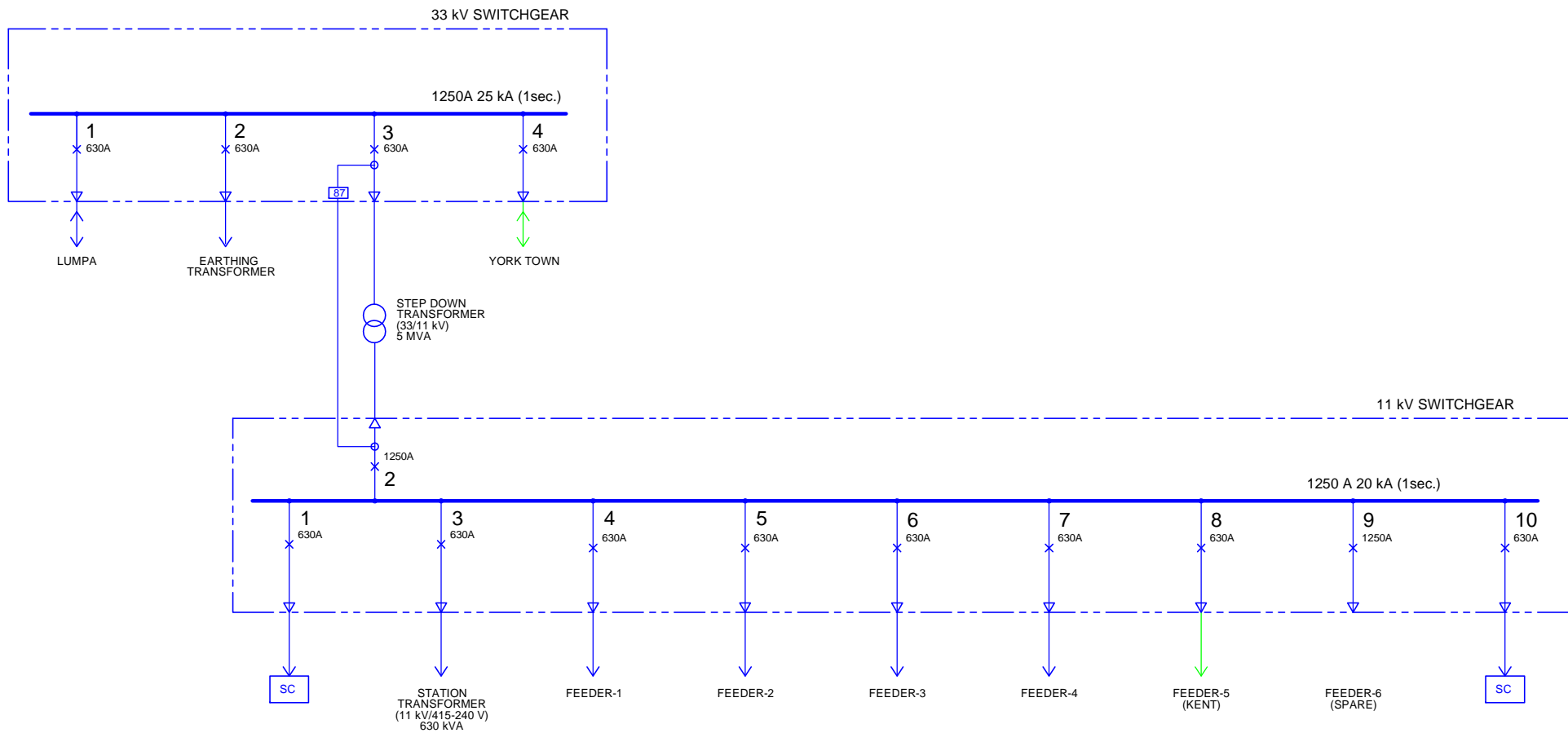
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: JUI S/S (1100)	DWG. No.
		JU-E1



REMARKS:

1. BLUE AND GREEN LINES SHOW THE FUTURE EQUIPMENT AND LINE (BLUE:PHASE-II AND GREEN:PHASE-III) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

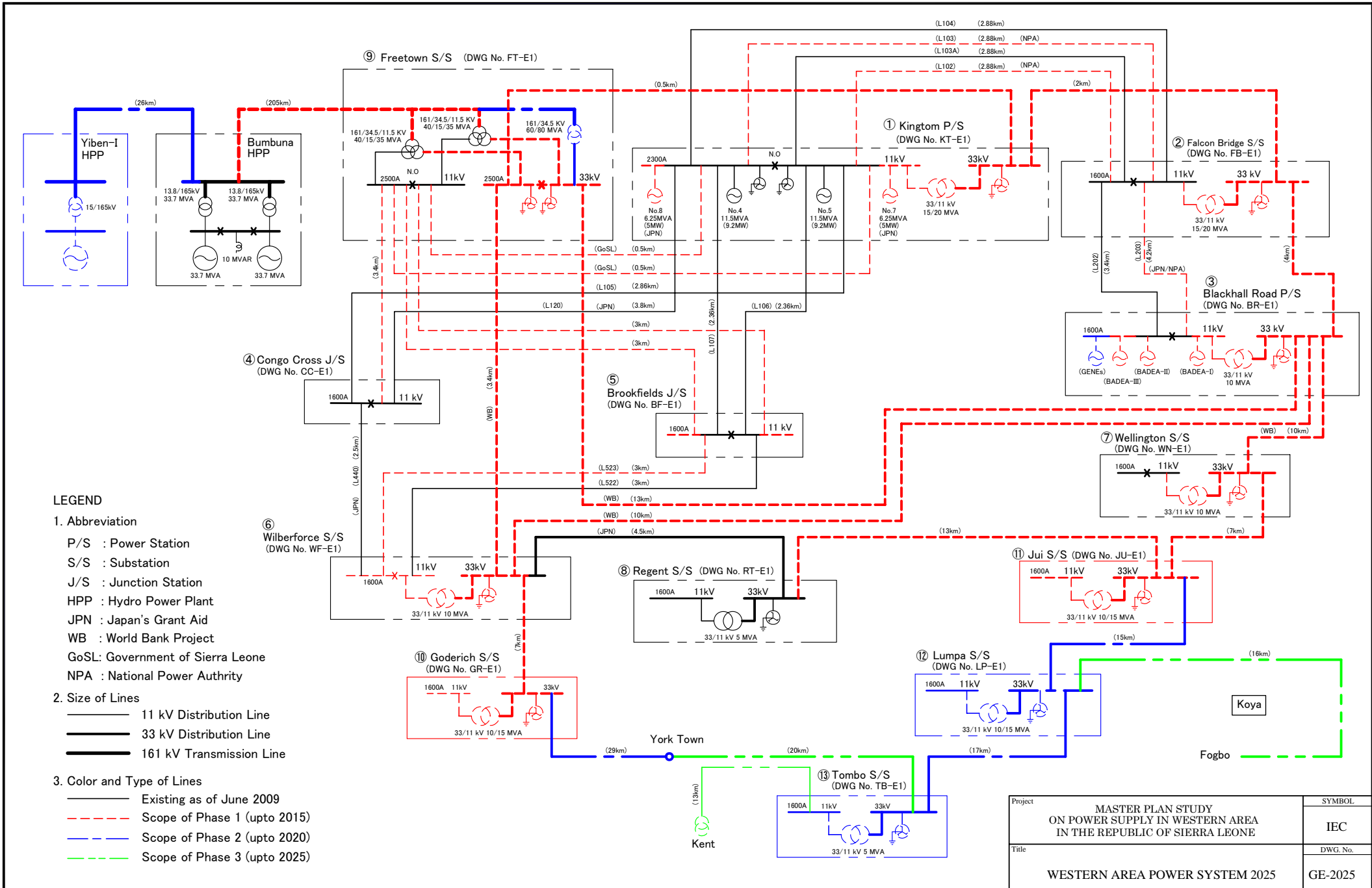
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL	IEC
Title	11/33 kV SWITCHGEAR FEEDERS: LUMPA S/S (1200)	DWG. No.	LP-E1



REMARKS:

1. BLUE AND GREEN LINES SHOW THE FUTURE EQUIPMENT AND LINE (BLUE:PHASE-II AND GREEN:PHASE-III) WHICH SHALL INCLUDE ALL NECESSARY INTERLOCKING AND PROTECTION SYSTEM.

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: TOMBO S/S (1300)	DWG. No.
		TB-E1



**LEGEND**

**1. Abbreviation**

- P/S : Power Station
- S/S : Substation
- J/S : Junction Station
- HPP : Hydro Power Plant
- JPN : Japan's Grant Aid
- WB : World Bank Project
- GoSL: Government of Sierra Leone
- NPA : National Power Authority

**2. Size of Lines**

- 11 kV Distribution Line
- 33 kV Distribution Line
- 161 kV Transmission Line

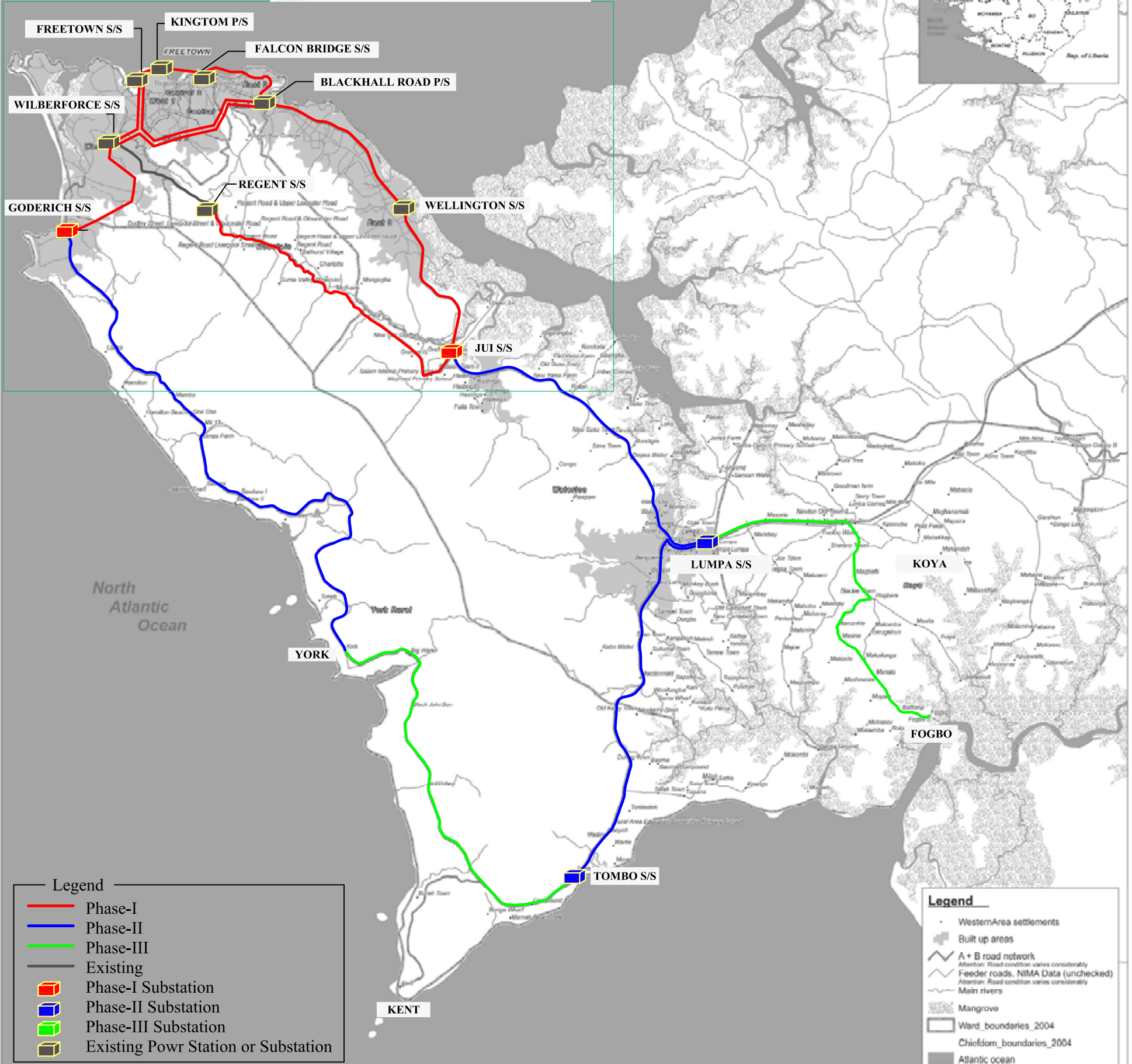
**3. Color and Type of Lines**

- Existing as of June 2009
- - - - Scope of Phase 1 (upto 2015)
- - - - Scope of Phase 2 (upto 2020)
- - - - Scope of Phase 3 (upto 2025)

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL	IEC
Title	WESTERN AREA POWER SYSTEM 2025	DWG. No.	GE-2025

# WESTERN AREA

REFER TO DWG No. GR-2025- 2 (WESTERN URBAN)



**Legend**

- Phase-I
- Phase-II
- Phase-III
- Existing
- Phase-I Substation
- Phase-II Substation
- Phase-III Substation
- Existing Powr Station or Substation

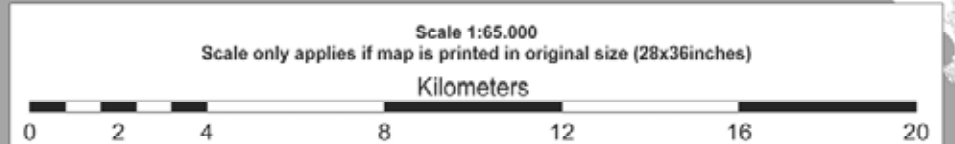
**Legend**

- WesternArea settlements
- Built up areas
- A + B road network  
*Attention: Road condition varies considerably*
- Feeder roads, NIMA Data (unchecked)  
*Attention: Road condition varies considerably*
- Main rivers
- Mangrove
- Ward\_boundaries\_2004
- Chiefdom\_boundaries\_2004
- Atlantic ocean

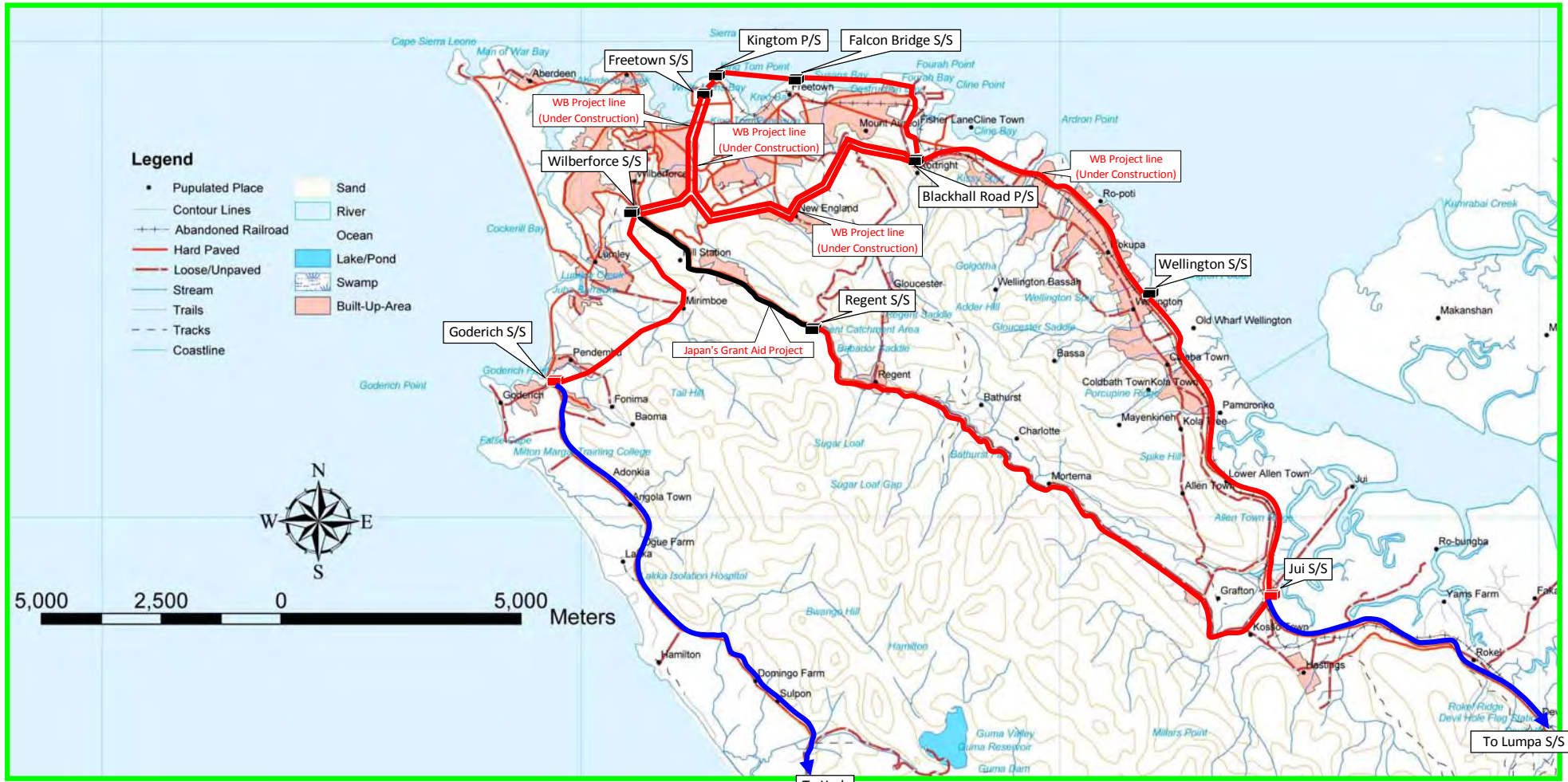


This map has been produced by DACO / SLIS - Sierra Leone Information System  
 SLIS Map Code 0129  
 19 July 2007

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Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SCALE	1:65,000
Title	ROUTE MAP FOR 33 kV DISTRIBUTION LINE (WESTERN AREA)	DWG. No.	GR-2025-1



Abbreviation

- P/S : Power Station
- S/S : Substation

Symbol

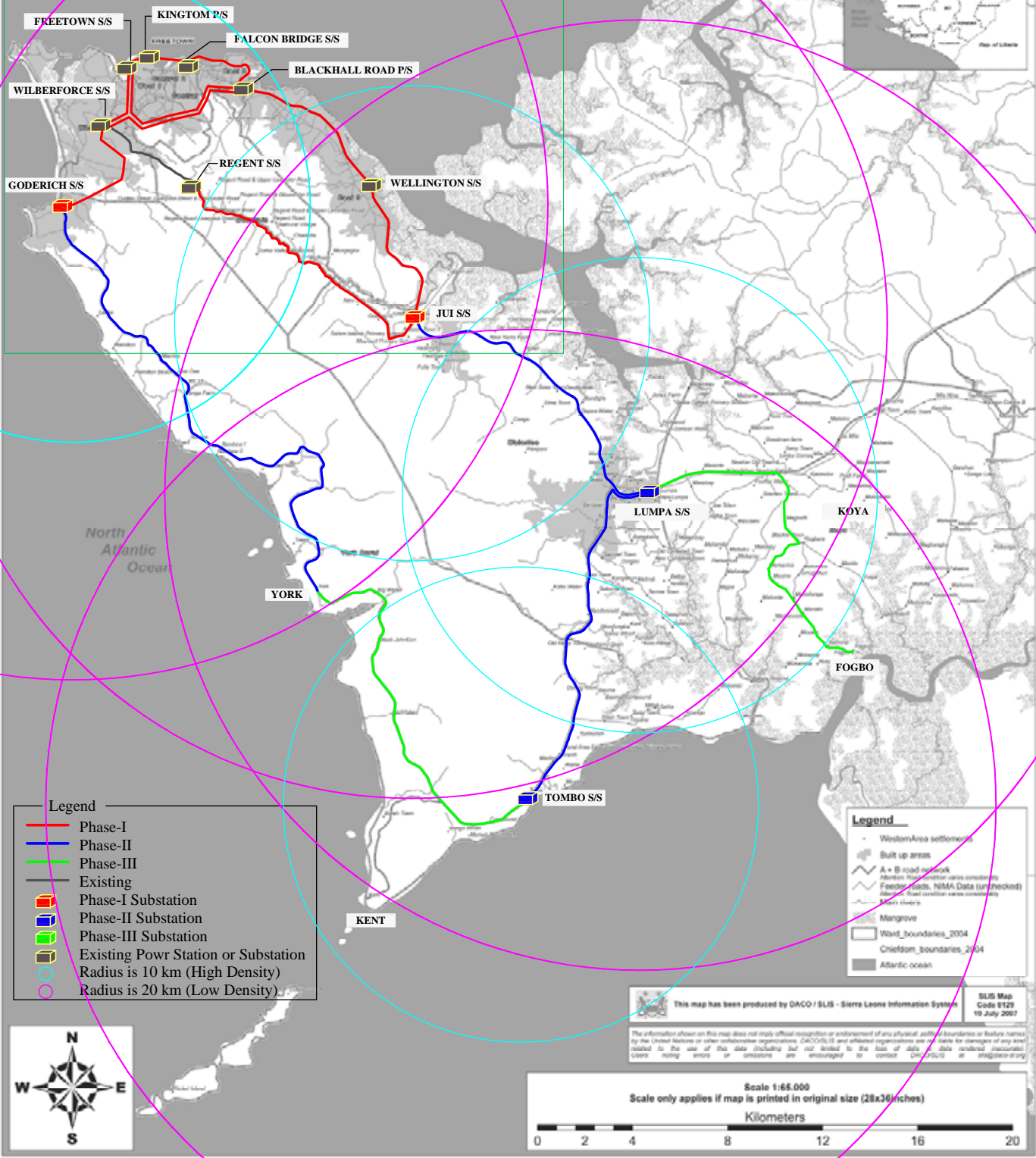
- : Existing Power Station or Substation
- : Substation for phase-1
- : Substation for phase-2
- : Existing 33 kV Line
- : 33kV Phase-1 Line
- : 33 kV Phase-2 Line

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SCALE	None
Title	ROUTE MAP FOR 33 kV DISTRIBUTION LINE (WESTERN URBAN)	DWG No.	GR-2025-2



# WESTERN AREA

REFER TO DWG No. GR-2025-2 (WESTERN URBAN)



**Legend**

- Phase-I
- Phase-II
- Phase-III
- Existing
- Phase-I Substation
- Phase-II Substation
- Phase-III Substation
- Existing Power Station or Substation
- Radius is 10 km (High Density)
- Radius is 20 km (Low Density)

**Legend**

- Western Area settlements
- Built up areas
- A + B road network
- District boundaries (open consistency)
- Feeder roads, NIMA Data (unchecked)
- Alluvial flood control areas (consistency)
- Main rivers
- Mangrove
- Ward boundaries\_2004
- Chiefdom boundaries\_2004
- Atlantic ocean



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SLIS Map Code 6129  
19 July 2007

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Scale 1:65,000  
Scale only applies if map is printed in original size (28x36 inches)





Kilometers

0 2 4 8 12 16 20

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SCALE 1:65,000
Title	COVERAGE AREA BY 33 kV SUBSATATION (WESTERN AREA)	DWG. No. GE-2025-3



To York Town

- Legend:
-  : Existing Substation
  -  : New Substation for Phase-I
  -  : New 33 kV Line for Phase-I
  -  : New 33 kV Line for Phase-II

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SCALE --
Title	ROUTE MAP FOR 33 kV DISTRIBUTION LINE (WILBERFORCE S/S - GODERICH S/S)	DWG No. RM-D05

## **CHAPTER-2**

# **Distribution System Database for Western Area Power System**

**PART-1 Facility Register for  
Distribution Transformers**

# Contents

	Page
1. HV-MV Transformers .....	1
2. Distribution Transformers .....	2
3. ID Number of Distribution Transformer .....	7

## Reference Drawings and Documents

- 1) GE-2025-3 : Western Area Power System 2025
- 2) GE-2009-1 : Western Area Network (Western Part 2009)
- 3) GE-2009-2 : Western Area Network (Eastern Part 2009)
- 4) RM-G01 : General Route Map of Freetown Area
- 5) GR-2025-1 : Route Map for 33 kV Distribution Line (Western Ar

# HV-MV Transformer Data

No.	Description	Unit	Kingtom	Blackhall Road	Wellington	Wilberforce	Regent	Freetown		Bumbuna			
								No.1 MTr	No. 2 MTr	No. 1 MTr	No. 2 MTr	Step-up Tr.	Reactor
1	Capacity	[MVA]											
	1) ONAN		15	10	10	10	5	32/28/12	32/28/12	33.7	33.7	5	10 [Mvar]
	2) ONAF		20	---	---	---	---	40/35/15	40/35/15	---	---	---	---
2	Voltage	[V]	33/11	33/11	33/11	33/11	33/11	161/11.5/34.5	161/11.5/34.5	13.8/165	13.8/165	13.8/34.5	13.8
3	Tap	---	+/- 4x2.5%	+/- 8x1.25%	+/- 8x1.25%	+/- 8x1.25%	+4x1.25% -12x1.25%	+/- 10x1.25%	+/- 10x1.25%	+/- 2x3.75%	+/- 2x3.75%	+/- 2x2.5%	---
4	%Z at rated capacity												
	1) HV/LV	[%]	No information	9.49	No information	9.32	8.04	---	---	11.45	11.44	(6>)	18.23 [Ω]
	2) H1/H2	[%]	---	---	---	---	---	13.5	13.4	---	---	---	---
	3) H1/H3	[%]	---	---	---	---	---	10.02	9.95	---	---	---	---
	4) H2/H3	[%]	---	---	---	---	---	5	5	---	---	---	---
5	Winding	---	Ynd11	Dyn11	Dyn11	Dyn11	Dyn11	YNynd11	YNynd11	YNd11	YNd11	Dyn5	Yn
6	LIWV	[kV]	170/75	170/70	170/75	170/70	170/70	650/95/170	650/95/170	125/650-N325	125/650-N325		125
7	AC	[kV]	75/35	95/38	75/35	95/38	95/38	275/38/70	275/38/70	70/150	70/150		50
8	Manufacturer												
	1) Name	---	Alstohm Savoisisienne	Construzione Trasformatori Electrici		Construzione Trasformatori Electrici	France Transfo	ABB	ABB	Coemsa Ansaldo			AEG ETI
	2) Year	---	1980	1997	1980	1997	2008	1994	1994				1997
9	Earthing Tr.												
	1) Current/time	[A/Sec.]	Not Installed		300/10	300/10	300/10						
	2) Impedance	[Ohm]			207.55	204.26	190.5						
	3) LIWV/AC	[kV]			170/70	170/70	170/70						
	4) Manufacturer												
	a) Name	---				Construzione	France Tr.						
	b) Year	---				1997	2008						
	c) Winding	---				ZN	Zn						
Operation Conditions			Future	Future	Future	Future	(2M/2009)	(5M/2009)	(5M/2009)	(5M/2009)	(5M/2009)	(5M/2009)	Future

## Data for Distribution Transformer (1/5)

No.	Description	ID No.	No.	Capacity [kVA]	LIWV/AC [kV]	LV [V]	Tap		%Z [%]	Conne- tion	Manufacture		Remarks
							[+/-, %]	set			Name	Year	
	<b>Kingtom P/S</b>	<b>100-00</b>	<b>2</b>	<b>1,000</b>		<b>433</b>	<b>2x2.5</b>	<b>4.8/4.9</b>	<b>Dy11</b>		<b>1977</b>	<b>*Station Tr.</b>	
1	Kingtom Workshop	104-01	1	500		433		4.57	Dyn11	Kirloskar (India)	1969		
2	Police Com. Mandallay ST	104-02	1	315									
3	1) No. 1: Factory	104-03A	1	750				4.41	Dyn11	Kirloskar	1969		
4	2) No. 2: Local	104-03B	1	315				4.55	Dyn11	BBC	1979		
5	Hennessy ST	104-04	1	630				5.51	Dyn11	Construzione	1969		
6	Morgan ST	104-05	1	500				5.01	Dyn11	Woden	1969		
7	Priscilla ST	104-05A	1	630				4.70	Dyn11	Woden	1984		
8	PWD-Pademba Road	104-06A	1	630									
9	Somaila Town	104-06B	1	500									
10	Joaque Bridge	104-07	1	500				4.71	Dyn11	Woden	1984		
	<b>Sub-total</b>		<b>10</b>	<b>5,270</b>								<b>0</b>	
	<b>Falcon Bridge S/S</b>	<b>200-00</b>	<b>1</b>	<b>500</b>				<b>5.13</b>	<b>Dyn11</b>	<b>Merelli</b>	<b>1967</b>	<b>Replace to 630</b>	
1	SLET	202-01	1	315				3.71	Dyn11	BBC	1979		
2	UAC	206-01	1	1,000									
3	Leone BLDG	206-02A	1	800									
4	Barclays Bank	206-02B	1	750									
	<b>Cahtolic Mission</b>	<b>206-02C</b>		<b>800</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>Private</b>	
	New Bank of Siera Leone	206-03											
5	1) No. 1	206-03A	1	800				4.45	Dyn11	GEC	1985		
6	2) No. 2	206-03B	1	800									
7	Bank of Sierra Leone - Old	206-04	1	1,000				6.00	Dyn11	Beltransfo	2002		
8	Eastern Police	207-01	1	1,000				4.54	Dyn11	Woden	1984		
9	Mountain Cut	207-02	1	750									
10	PCMH	207-03	1	1,000				6.16	Dyn11	Construzione	1996		
11	Ministerial BLDG	212-01	1	500				5.03	Dyn11	Merelli	1967		
12	Government Wharf	212-02	1	750				4.75	Dyn11	Brush	1964		
13	Connaught Hospital	212-03	1	750				4.38	Dyn11	BBC	1975		
14	Commercial Bank HQ	212-04	1	1,000				4.56	Dyn11	BBC	1975		
15	Nursing Training School	212-05	1	630				4.69	Dyn11	Woden	1969		
16	Kissy House	212-06	1	315				4.65	Dyn11	BBC	1979		
	<b>Wama</b>	<b>213-01</b>		<b>315</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>Private</b>	
17	Rawdon ST	213-02A	1	750				5.48	Dyn11	Merelli	1967		
18	Daily Mail	213-02B	1	630				4.70	Dyn11	Woden	1984		
19	State House	213-03	1	500									
20	Defence H/Q	213-04	1	500									
21	Ammunition Dump	213-05A	1	630				4.47	Dyn11	Construzione	1997		
22	Lotto	213-05B	1	500				4.45	Dyn11	Schnoider Electric	2004		
23	Tower Hill Pumping Station	213-05C	1	300									
24	Vice President Office	213-05D	1	160									
25	House of Reps	213-06	1	300									
26	Ordinance Yard	213-07	1	300				4.74	Dyn11	Merelli	1967		
27	Regent Road Market	213-08	1	500				5.54	Dyn11	Construzione	1996		
28	NIC	217-01	1	630				4.39	Dyn11	BBC	1975		
29	UMC	217-02	1	630				4.41	Dyn11	BBC	1975		
30	UN Building	217-03	1	315									
31	Slec House	217-04	1	750									
32	Soldier Street	217-05	1	315					Dyn11	Construzione	2003		
33	Cotton Tree	217-06	1	630				5.00	Dyn11	Construzione	1996		
34	Guma	217-07A	1	300				4.74	Dyn11	Beltransfo	1967		
35	Treasury (MOF)	217-07B	1	500									
36	Commercial Bank	217-08	1	1,000									
37	East ST Package	218-01	1	630				5.46	Dyn11	Construzione	1996		
	<b>Sub-total</b>		<b>37</b>	<b>24,045</b>								<b>Private</b>	<b>2</b>

## Data for Distribution Transformer (2/5)

No.	Description	ID No.	No.	Capacity [kVA]	LIWV/AC [kV]	LV [V]	Tap		%Z [%]	Conne- ction	Manufacture		Remarks
							[+/-, %]	set			Name	Year	
	<b>Blackhall Road P/S</b>	<b>300-00</b>	1	800		433	2x2.5		5.20	Dy11	Gritti (Italy)	2008	*Station Tr.
1	PWD Kissy	301-01	1	300									
	<b>Milla Group Plastic</b>	<b>301-02</b>		1,250	---	---	---		---	---	---	---	Private
2	Africanus Road	301-03A	1	500					4.51	Dyn11	Kirloskar	1990	*
3	Guma Pumping	301-03B	1	300									
4	Kissy Village	301-05	1	300					4.47	Dyn11	Marilli	1967	
5	Lower Pessonage ST	301-06	1	300					4.71	Dyn11	Long & Co.Ltd.	1971	
	Oil Refinary	301-07											
	<b>1) No. 1</b>	<b>301-07A</b>		800	---	---	---		---	---	---	---	Private
	<b>2) No. 2</b>	<b>301-07B</b>		800	---	---	---		---	---	---	---	Private
6	Mobil	301-09	1	315					4.77	Dyn11	Woden	1984	
7	Low Cost Housing	301-10	1	300									
8	Kissy Police	301-11	1	315						Dyn11			
9	Clay Factory	301-12	1	315									
10	Admiralty	302-01	1	500									
	<b>Shankerdas</b>	<b>302-02</b>		1,250	---	---	---		---	---	---	---	Private
	Dock Yard	302-03											
11	1) No. 1	302-03A	1	750					4.68	Dyn11	Kirloskar	1970	
12	2) No. 2	302-03B	1	750					4.71	Dyn11	Kirloskar	1970	
13	Kortright Pkg.	304-01	1	315					3.96	Dyn11	Costruzione	1996	
14	FBC 1	304-02A	1	500					4.81	Dyn11	Brush	1967	
15	FBC 2	304-02B	1	500					4.80	Dyn11	Brush	1967	
16	Leicester Road	304-03A	1	315									
17	Leicester	304-03B	1	75									
18	Benz Firm	304-03C	1	50									Replace to 160
19	Okoo Town	304-03D	1	50									Replace to 100
20	Regent Village	304-03E	1	160									Replace to 100
21	Bathurst Village	304-03F	1	50									
22	Charlotte Village	304-03G	1	50									
23	BP Ross Road Kenedy ST	307-01	1	315									
24	Slip Way	309-01	1	200									
	<b>Cement Factory</b>	<b>309-02</b>		500	---	---	---		---	---	---	---	Private
25	Tajco	309-03	1	630									
26	Flour Mill	309-04	1	300					4.47	Dyn11	Electric Co. Ltd.	1967	
27	Cline Town Railway	309-05	1	300									
28	Old S/S	311-01A	1	315									
29	Kuntoloh	311-01B	1	400									
	<b>SLPMB</b>	<b>311-01C</b>		750	75/35	400	---		---	---	---	---	*Private
30	ATC	311-02	1	500									
	<b>Soap Plastic</b>	<b>311-03</b>		500	---	---	---		---	---	---	---	Private
31	Soap Factory	311-04	1	500									
	<b>Paint Factory</b>	<b>311-05</b>		500	---	---	---		---	---	---	---	Private
	<b>Brewery</b>	<b>311-06</b>											
	<b>1) No. 1</b>	<b>311-06A</b>		630	---	---	---		---	---	---	---	Private
	<b>2) No. 2</b>	<b>311-06B</b>		630	---	---	---		---	---	---	---	Private
32	Natco	311-07A	1	630					4.39	Dyn11	BBC	1960	
33	Sayenu Industry	311-07B	1	50									
34	Foam Factory	311-07C	1	300					4.74	Dyn11	Mareli	1967	
35	Congo Water	311-08	1	630									
36	Clarke ST Package Unit	311-09	1	315					4.55	Dyn11	BBC	1979	
37	Ropoti	311-10	1	500		433			4.55	Dy11	Woden	1967	*
38	NCC	311-11	1	150									
39	Savage Square	312-01	1	750									
40	College Road	312-03	1	630					5.53	Dyn11	Costruzione	1996	
41	Deep Water	312-04A	1	1,250									
	<b>Sub-total</b>		<b>41</b>	<b>23,285</b>									Private 10



## Data for Distribution Transformer (3/5)

No.	Description	ID No.	No.	Capacity [kVA]	LIWV/AC [kV]	LV [V]	Tap		%Z [%]	Conne- ction	Manufacture		Remarks	
							[+/-, %]	set			Name	Year		
	<b>Congo Cross S/S</b>	<b>400-00</b>	<b>1</b>	<b>1,000</b>					<b>5.67</b>	<b>Dyn11</b>	<b>Pauwels Trafo</b>	<b>2003</b>	<b>*Station Tr.</b>	
1	Murray Town	402-01	1	500					5.15	Dyn11	Merelli	1967		
2	Grammar School	402-02	1	630					5.51	Dyn11	Construzione	1996		
	Cockle bay	402-02A												
3	1) No. 1	402-02B	1	400										
4	2) No. 2	402-02C	1	315										
5	Alpha Fishing	402-02D	1	500					4.53	Dyn11	BBC	1979		
6	EACON	402-03	1	315										
7	Aberdeen-1	402-04A	1	300										
8	Aberdeen-2	402-04B	1	315		433			4.45	Dy11	Woden	1972		
	Bintumani	402-05												
9	1) No. 1	402-05A	1	1,000										
10	2) No. 2	402-05B	1	1,000										
11	Cape Light Hotel	402-05C	1	315					4.74	Dyn11	Woden	1984		
12	Kimbima Hotel	402-05D	1	315					3.99	Dyn11	Construzione	1996		
13	Mammy Yoko	402-06	1	1,000										
14	Casino Leone	402-07	1	300					4.74	Dyn11	Merelli	1967		
15	Lagonda Hotel	402-08	1	315	95/38	400	2x2.5		4.01	Dyn11	Construzione	1996	*	
16	Cape Sierra	402-09A	1	630					5.52	Dyn11	Construzione	1996		
17	Cape Sierra EXT.	402-09B	1	315										
18	Rokel Commercial Bank	403-01	1	750					5.80	Dyn11	Brush	1968	Faulty	
19	Bata Plastic Factory	403-02A	1	1,000					5.04	Dyn11	Winder	1997		
20	Cole Farm	403-02B	1	300					4.74	Dyn11	Merelli	1967		
21	Collegiate School	403-03	1	1,000					4.56	Dyn11	Woden	1984		
22	Indian Temple	403-04	1	500					4.46	Dyn11	BBC	1975		
23	Lower Pipeline	403-05	1	500					4.58	Dyn11	Brush	1963		
24	MHR Cockrill	403-06	1	400										
25	Cockrill	403-07	1	500					4.55	Dyn11	Kirloskar	1969		
26	Stering Products	403-08	1	300									Replace to 1000	
27	Watch Tower	403-09	1	315										
27	Signal Hill	407-01	1	500					0.75	Dyn11	Ferranti Co. Ltd.	1964		
29	W. T	407-02	1	500					5.43	Dyn11	Merelli &C-SPA	1967		
30	Technical Institute	409-01	1	300										
<b>Sub-total</b>			<b>30</b>	<b>15,330</b>									Private	0
	<b>Brookfields S/S</b>	<b>500-00</b>	<b>1</b>	<b>630</b>				<b>5</b>	<b>4.00</b>	<b>Dyn11</b>	<b>Beltransfo</b>	<b>2002</b>	<b>*Station Tr.</b>	
	Yonyi	501-01												
1	1) No. 1	501-01A	1	500										
2	2) No. 2	501-01B	1	500										
	Brookfields Studium	502-01												
3	1) No.1	502-01A	1	1,000										
4	2) No. 2	502-01B	1	750										
5	3) No. 3	502-01C	1	1,000										
6	Gray Bush	502-02	1	400										
7	Hannah Benka ST	504-01	1	800										
8	Milian	504-02	1	300					4.74	Dyn11	Marilli	1967		
9	Tengbeh Town	511-01A	1	315					4.70	Dyn11	BBC	1979		
10	Upper Tengbeh Town	511-01B	1	500										
11	Chinese	513-01	1	300										
12	Riverside Drive	513-02	1	500					4.54	Dyn11	Kirloskar	1960		
13	Hill Cut	513-03	1	300					4.68	Dyn11	Kirloskar	1969		
14	Milhem Flat	513-04	1	300					4.74	Dyn11	Merelli	1967		
15	Brookfields Hotel	513-05	1	315					3.79	Dyn11	Pauwels Trafo	2003		
16	Government Printing	513-06	1	1,000					4.60	Dyn11	BBC	1975		
17	New England	513-07	1	750										
18	George Brook	513-08	1	630					4.00	Dyn11	Beltransfo	2002		
<b>Sub-total</b>			<b>18</b>	<b>10,160</b>									Private	0

## Data for Distribution Transformer (4/5)

No.	Description	ID No.	No.	Capacity [kVA]	LIWV/AC [kV]	LV [V]	Tap		%Z [%]	Conne- ction	Manufacture		Remarks	
							[+/-, %]	set			Name	Year		
	<b>Wilberforce S/S</b>	<b>600-00</b>	1	300					4.74	Dyn11	Merelli	1967	*Station Tr.	
1	Jamil	602-01	1	300					4.63	Dyn11	English Electric	1936		
2	Military Spur	602-02	1	500										
3	Spur Road	602-03A	1	1,000					5.03	Dyn11	R.F Winder Elect.	2005	*	
4	Guma Pumping Station	602-03B	1	630									Replace to 315	
5	Lumley	602-04	1	630		433	2x2.5		4.69	Dyn11	Woden England	1984	* Outdoor	
6	Babadori Millage	602-04A	1	315										
7	Health Center	602-02B	1	630		433	2x2.5		4.46	Dyn11	R.F Winder Elect.	2003	* Outdoor	
8	Malamah Extension	602-04C	1	315										
9	Juba	602-04D	1	315										
10	Sawi Drive	602-04E	1	315					4.04	Dyn11	A.E.G	1988/10		
11	Atrantic Club	602-04X	1	500									Replace to 315	
	Juba Hill	602-06A												
12	1) No. 1	602-06A1	1	250									Replace to 630	
13	2) No. 2	602-06A2	1	250										
14	Juba Logge	602-06B	1	315										
15	Marjay Town-1	602-06C	1	315						Dyn11	Construzione	2003		
16	Marjay Town-2	602-06D	1	50									Replace to 160	
17	Goderich Range-1	602-06E	1	500										
18	Goderich Range-2	602-06F	1	400										
19	Goderich-2	602-07B	1	315										
20	Goderich-Village	602-07C	1	315						Dyn11	Construzione	2003	Replace to 315	
21	MMTC	602-07D	1	315		433	2x2.5		4.98	Dyn11	Winder	1997	*Indoor	
22	Jerusalem Avenue	602-07E	1	160										
23	Taylor Woodrow	602-07F	1	315										
24	Adonkia	602-07G	1	150		433			4.45	Dy11	Woden	1972	* Outdoor	
25	Lakka-2 (Ogoo Farm)	602-07H	1	100										
26	Peninsular	602-07X	1	315		433	2x2.5		4.60	Dyn11	BBC	1979	* In house	
27	Lakka-1	602-08	1	315										
	Hamilton	602-09												
28	1) No. 1	602-09A	1	100					3.60	Dyn11	BBC	1965		
29	2) No. 2	602-09B	1	25										
30	Mile 13	602-10A	1	75					4.27	Dyn11	Crompton Parkinson	1966	* No use	
31	Legland Hamilton	602-10B	1	100										
32	Sussex	602-10C	1	50									Replace to 50	
33	P & T Substation	608-01	1	630										
34	Military Baracks	612-01	1	300										
35	HMT Hospital	612-02	1	200										
36	Hill Station	612-03A	1	500					4.51	Dyn11	Kirloskar	1969		
37	President Lodge	612-03B	1	315					3.96	Dyn11	Construzione	1996		
38	Choithram Hospital	612-04	1	630					4.40	Dyn11	BBC	1979		
39	Bai Bureh Restaurant	612-05	1	630					4.85	Dyn11	BBC	1979		
40	OU Village	612-06	1	1,000					4.34	Dyn11	BBC	1996		
41	Nigeria High Commission	612-07	1	315					4.65	Dyn11	BBC	1979		
42	Chinese Commerce Office	612-08	1	300					4.53	Dyn11	Bonar, Long & Co.	1974		
43	Pumping Station	612-09A	1	315										
44	E.U	612-09B	1	315					3.99	Dyn11	Construzione	1996		
45	IMATT	612-09C	1	630					5.53	Dyn11	Construzione	1996		
46	Wilberforce No. 2	612-20	1	500										
47	Spur Loop Package	612-21	1	315										
<b>Sub-total</b>			<b>47</b>	<b>17,075</b>									Private	1

## Data for Distribution Transformer (5/5)

No.	Description	ID No.	No.	Capacity [kVA]	LIWV/AC [kV]	LV [V]	Tap		%Z [%]	Connec- tion	Manufacture		Remarks
							[+/-, %]	set			Name	Year	
	<b>Wellington S/S</b>	<b>700-00</b>	<b>1</b>	<b>25</b>									*Station Tr.
1	Robbi Road	704-00	1	250	/17.5	400	2x2.5		4.00	Dyn11	Gritti	2007	
2	Cola Tree	704-01	1	315					4.04	Dyn11	AEG	1988	
	<b>New Foamex</b>	<b>704-02</b>		<b>50</b>				---	---	---	---	---	Private
3	Idogu	704-03	1	50									
4	Mayemi	704-04	1	150									Replace to 315
5	Maila Town	704-05	1	100									
6	Lower Allen Town	704-06	1	100					3.79	Dyn11	AEG	1988/9	
7	Dixon	704-07	1	50									
8	Wray	704-08	1	315									
9	Kossoh Town	704-09	1	160	95/38	400/230	2x2.5		4.33	Dyn11	Costruzione	1996	*Outdoor
10	FTC	704-09A	1	50									
11	Grafton Police	704-10	1	315									
12	Spring Water-Grafton	704-11	1	315						Dyn11	Brush	1979	
13	<b>Bangema Farm</b>	704-12	1	150					4.71	Dyn11	BBC	1984	
14	Jui Bible	704-13	1	50					4.25	Dyn11	Costruzione	1996	
15	Hasting	704-15	1	315									
16	Rokel Village	704-16	1	160					4.38	Dyn11	Costruzione	1996	
17	Waterloo Village	704-17	1	315					4.89	Dyn11	Winder	1996	
18	<b>Bangema (Miritary)</b>	704-18	1	400		400/230	2x2.5		4.09	Dyn11	Osaka Henatsuki	1966	Replace to 315
19	Old Wharf	707-01	1	315									
	<b>Sub-total</b>		<b>18</b>	<b>3,675</b>									Private 1
	<b>Regent S/S</b>	<b>800-00</b>	<b>1</b>	<b>630</b>	95/38	415	2x2.5		4.00	Dyn11	France Tr.	2008	*Station Tr.
1	No. 21 RMU	803-01	1	200									
2	Guma Water Reservoir	803-02	1	500									
3	No. 31 RMU	806-01	1	200									
4	Radio Station	806-02	1	315									
	<b>Sub-total</b>		<b>4</b>	<b>1,215</b>									Private 0
	<b>Summary</b>												
					<b>Distribution Tr.</b>					<b>Station Tr.</b>			<b>No. of Private Tr.</b>
1	Kingtom P/S		10	5,270						2	2,000		0
2	Falcon Bridge S/S		37	24,045						1	500		2
3	Blackhall Road P/S		41	23,285						1	800		10
4	Congo Cross S/S		30	15,330						1	1,000		0
5	Brookfields S/S		18	10,160						1	630		0
6	Wilberforce S/S		47	17,075						1	300		1
7	Wellington S/S		18	3,675						1	25		1
8	Regent S/S		4	1,215						1	630		0
	<b>Total</b>		<b>205</b>	<b>100,055</b>	[kVA]				9	5,885			14
	<b>NPA's</b>		<b>205</b>	<b>91,280</b>	[kVA]				9	5,885			
	<b>Private</b>			<b>8,775</b>	[kVA]								

Remarks:

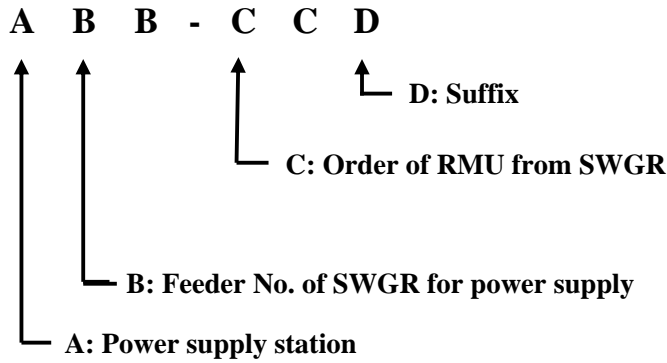
1: \* means the data checked by the Study Team

# 1. Identification (ID) Number of Distribution Transformer

## 1.1 Line ID No.

### (1) General

This ID numbering system shall be applied to 11/0.4 kV distribution transformer only. ID numbering system consists of eight (8) digits which shall be as follows.



### (2) Explanation of the Category

#### **A: Power supply station**

This shows the name of power supply station to the transformer. Abbreviations are as follows:

- 1 **Kingtom P/S**
- 2 **Falcon Bridge S/S**
- 3 **Blackhall Road P/S**
- 4 **Congo Cross S/S**
- 5 **Brookfields S/S**
- 6 **Wilber Force S/S**
- 7 **Wellington S/S**
- 8 **Regent S/S**
- 9 **Freetown S/S**

#### **B: Feeder No. of SWGR for power supply**

This shows the feeder No. of SWGR located in P/S and/or S/S  
(See **Single Line Diagram for 11 kV Switchgears**)

#### **C: Order of RMU from SWGR**

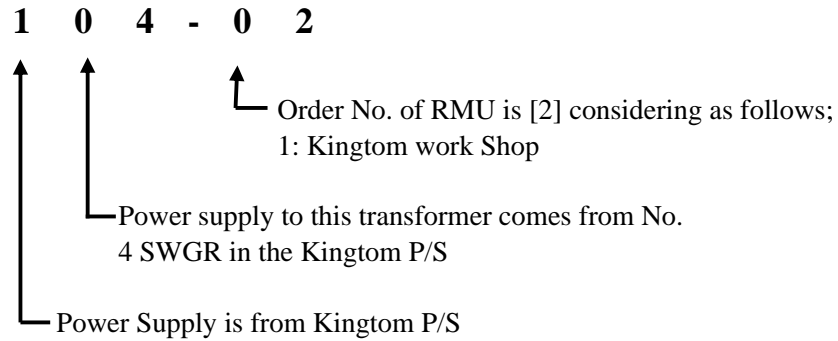
This No. shows order of RMU counting from 11 kV SWGR.

#### **D: Suffix**

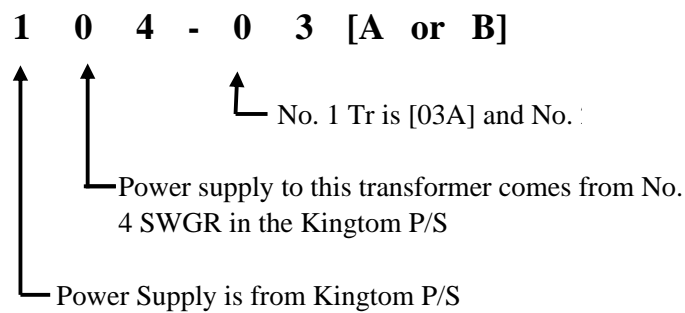
Alphabet shall be used for this purpose.

## 1.2 Example

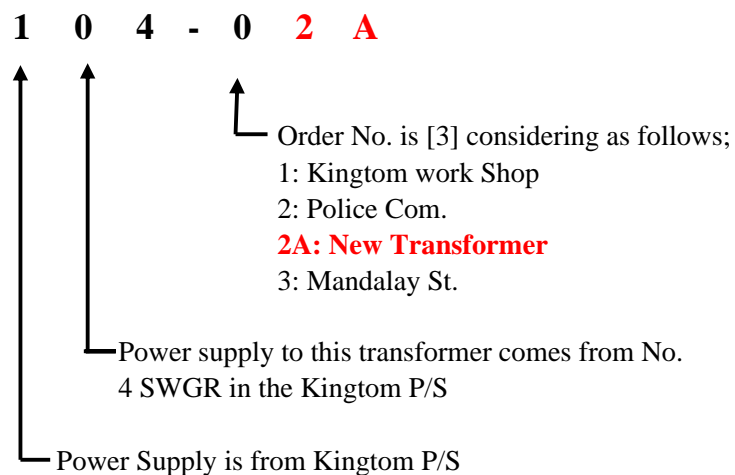
### (1) In case of [Police Com.]



### (2) In case of [Mnadalay ST.]



### (3) In case of New Tr. Between [Police Com.] And [Mandalay ST]



### (5) In case of Deletion or Privatizing of Transformer

This No. shall be unused number.

**PART-2 Facility Register for  
Ring Main Unit (RMU)**

# Contents

	Page
<b>1. Ring Main Unit (RMU)</b> .....	1

## Reference Drawings/ Documents

- 1) GE-2025 : Western Area Power System 2025
- 2) GE-2009 : Wester Area Network (Western Part 2009)
- 3) GE-2009 : Wester Area Network (Eastern Part 2009)
- 4) RM-G01 : General Route Map of Freetown Area
- 5) GR-2025 : Route Map for 33 kV Distribution Line (Western Area)

## Data for Ring Main Unit (RMU) (1/4)

No.	Description	No. of Feeder			SCC [kA]	LIWV/AC [kV]	Location	Manufacture		Remarks
		DS/LI (Amps)	CB	F. Sw. (For Tr.)				Name	Year	
1	Aberdeen Village							Yorkshire		
2	Adonkia	2				Outdoor			*	
3	Africanus Road							Long & Crawford		
4	Alpha Fishing							Long & Crawford		
5	Ammunition Dump							Lucy SF <sub>6</sub>		
6	AOK Commercial Bank							Mem Glasgow		
7	APT - Safecon Shell							Mem Glasgow		
8	ATC									
9	Bai Bureh (Old Sch.)							Long & Crawford		
10	Bami									
11	Bangura Farm									
12	Bank of S/L - New							Long & Crawford		
13	Bank of S/L - Old							Yorkshire		
14	Bata Plastic							Yorkshire		
15	Benguema									
16	Benz Town									
17	Bintumani							Long & Crawford		
18	Brewery							South Wales		
19	Brookfields Hotel							Long & Crawford		
20	Cape Light House									
21	Cape Sierra							ABB		
22	Casino Leone							Lucy SF <sub>6</sub>		
23	Catholic Mission							Yorkshire		
24	Chinese Compound							Long & Crawford		
25	Choithram Hospital							Long & Crawford		
26	Clarke Street							Long & Crawford		
27	Clay Factory							Long & Crawford		
28	Cockerill							Lucy SF <sub>6</sub>		
29	Cockerill H.Q							Unknown		
30	Cola Tree							Vacuum		
31	Cole Farm							Yorkshire		
32	College Road							Lucy		
33	Collegiate School							Long & Crawford		
34	Commercial Bank H.Q							Long & Crawford		
35	Congo Water							Vacuum		
36	Connaught Hospital							Long & Crawford		
37	Cotton Tree							Yorkshire		
38	Daily Mail							Lucy SF <sub>6</sub>		
39	Dock Yard							Yorkshire		
40	E.U									
41	East Street Pkg.							Vacuum		
42	Eastern Police							Yorkshire		
43	Electricity House							Lucy SF <sub>6</sub>		
44	FBC 1							Vacuum		
45	FBC 2							Brush		
46	Fisheries - Kissy							Brush		
47	Flour Mill							Lucy SF <sub>6</sub>		
48	Flour Mill Factory									
49	Foamaco							Yorkshire		
50	Foamex									
51	George Brook							Lucy SF <sub>6</sub>		
52	Goderich Village							Long & Crawford		
53	Government Printing							Long & Crawford		
54	Government Wharf							Lucy SF <sub>6</sub>		
55	Grammar School							Yorkshire		
56	Guma - Spur Road							Yorkshire		
57	Guma Building							Yorkshire		
58	Guma P/S Tower Hill							Lucy SF <sub>6</sub>		
59	Guma P/S-Hill Station							Long & Crawford		



## Data for Ring Main Unit (RMU) (2/4)

No.	Description	No. of Feeder			SCC [kA]	LIWV/AC [kV]	Location	Manufacture		Remarks
		DS/LI (Amps)	CB	F. Sw. (For Tr.)				Name	Year	
60	Hamilton							Long & Crawford		
61	Hasting Village									
62	HBC							Long & Crawford		
63	Henessy Street							Lucy SF <sub>6</sub>		
64	Hill Cot							Yorkshire		
65	Hill Station							Yorkshire		
66	Hotel 510									
67	IMATT - Hill Station									
68	Indian Temple							Long & Crawford		
69	Jamil Flat							Long & Crawford		
70	Joaque Bridge							Lucy SF <sub>6</sub>		
71	Juba Hill	2(200), 2(630)		---	13.1/3	Outdoor		Long & Crawford	*	
72	Juba Local							Lucy SF <sub>6</sub>		
73	Jui Bible College									
74	Kabassa Lodge							Long & Crawford		
75	Kenedy Street							Vacuum VD4		
76	Kign George 4 <sup>th</sup>							-		
77	Kimbima Hotel							Brush		
78	Kingtom Police Pkg.									
79	Kingtom Workshop	3(400)			13.1/3	Outdoor		Long & Crawford (England)	1978 *	
80	Kissy House							Long & Crawford		
81	Kissy Police Barracks							Yorkshire		
82	Kissy Village							Long & Crawford		
83	Kortright - 11/3.3 trx									
84	Kortright Pkg.									
85	Kossoh Town									
86	Lagonda									
87	Leicester									
88	Leocem Factory							ABB		
89	Leone Building							Yorkshire		
90	Lotto							Lucy SF <sub>6</sub>		
91	Low Cost Housing							ABB		
92	Lower Allen Town									
93	Lower Mamba Ridge							Long & Crawford		
94	Lower Personage							Long & Crawford		
95	Lower Pipeline							Long & Crawford		
96	Lumley H. Centre	2	---	1	20/3	Outdoor		Luck switchgear	2003 *	
97	Lumley	3(400)	2	---	33.4	Indoor		Yorkshir switchgear	* 850A at 10am	
98	Majay Town									
99	Mammy Yoko							Long & Crawford		
100	Mandallay Factory							Brush		
101	Mandallay-Local							Brush		
102	Mayami									
103	Michaels - Lakka							Long & Crawford		
104	Mile 13	2(400)	2	1		Indoor		Crompton Parkins	Old *	
105	Milhem Flat									
106	Milla Plastic - Kissy									
107	Ministerial							Lucy SF <sub>6</sub>		
108	MMCET							Long & Crawford		
109	Mobil - Kissy							Long & Crawford		
110	Morgan Street							Lucy SF <sub>6</sub>		
111	Mountatin Cut							Yorkshire		
112	Murray Town							Yorkshire		
113	Natco							Yorkshire		
114	National Workshop							Yorkshire		
115	New England							ABB		
116	New Jerusalem									
117	New Soap							Long & Crawford		
118	NIC							Long & Crawford		

## Data for Ring Main Unit (RMU) (3/4)

No.	Description	No. of Feeder			SCC [kA]	LIWV/AC [kV]	Location	Manufacture		Remarks
		DS/LI (Amps)	CB	F. Sw. (For Tr.)				Name	Year	
119	Nigeria High Comm.							Long & Crawford		
120	Nursing Training Sch.							Brush		
121	OAU							Long & Crawford		
122	Odugu									
123	Ogoo Farm									
124	Oil Refinery									
125	Oil Refinery									
126	Okey Fishing Co.							Long & Crawford		
127	Oku Town									
128	Old Soap							Long & Crawford		
129	Old Wharf							Vacuum		
130	Ordinance Yard							Lucy SF <sub>6</sub>		
131	P & T Sub							Long & Crawford		
132	Paint							Long & Crawford		
133	Paramount Hotel							Yorkshire		
134	Parliament							Xiamen Xiecheng		
135	PCMH							Yorkshire		
136	Peninsular Range	2	---	---	13.1/3	Outdoor		Manchester England	1979 *	
137	Police Barracks-Grafton									
138	President Lodge							Yorkshire		
139	Priscilla Street							Long & Crawford		
140	PWD - Kissy							Yorkshire		
141	PWD-Pademba Rd.							Long & Crawford		
142	Rawdon Street							Yorkshire		
143	Regent Road							Long & Crawford		
144	Regent Village									
145	Riverside Drive							Yorkshire		
146	Rokel Comm. Bank							Yorkshire		
147	Rokel Village									
148	Ropoti							Long & Crawford		
149	Savage Square							Lucy		
150	Sawi Drive									
151	Shankerdas							Long & Crawford		
152	Shell									
153	Signal Hill							ABB		
154	Sisters Mess							Yorkshire		
155	SLBS Goderich							Long & Crawford		
156	SLC Bank Liverpool							Long & Crawford		
157	SLET							Vacuum		
158	Slip Way							Long & Crawford		
159	SLPMB 1	1(200)		2(400)		Indoor		Long & Crawford	*	
160	SLPMB 2									
161	SLPMB 3									
162	Smithley									
163	Soldier Street							Lucy SF <sub>6</sub>		
164	Spring Water-Grafton							-		
165	Spur Loop							Long & Crawford		
166	Spur Military							Lucy SF <sub>6</sub>		
167	Spur Road							Yorkshire		
168	State House							Long & Crawford		
169	Station X							Yorkshire		
170	Sterling Product							Long & Crawford		
171	Tajco									
172	Technical							Lucy SF <sub>6</sub>		
173	Tengbeh Town							Vacuum		
174	Thunder Hill							Yorkshire		
175	UAC							Long & Crawford		
176	UMC							Long & Crawford		
177	W. T							ABB		

## Data for Ring Main Unit (RMU) (4/4)

No.	Description	No. of Feeder			SCC [kA]	LIWV/AC [kV]	Location	Manufacture		Remarks
		DS/LI (Amps)	CB	F. Sw. (For Tr.)				Name	Year	
178	Water Quay							Lucy		
179	Waterloo Village									
180	Wilberforce Barracks							Yorkshire		
181	Wilberforce No.1							ABB		
182	Wilberforce No.2							Yorkshire		
183	33 Substation							Vacuum		

**Abbreviation:** AC: AC Power Frequency  
 CB: Circuit Breaker  
 DS: Disconnecting Switch  
 LI: Load Isolator  
 LIWV: Lightning Impulse Withstand Voltage  
 SCC: Short Circuit Current (1-sec/ 3-sec)

**PART-3 Facility Register for  
11kV and 33kV Lines**

## Contents

<b>1.</b>	<b>33 kV Line</b>	.....	1
<b>2.</b>	<b>11 kV Line</b>	.....	2
<b>3.</b>	<b>Rated Current</b>	.....	6

### Reference Drawings/ Documents

- 1) GE-2025-3 : Western Area Power System 2025
- 2) GE-2009-1 : Western Area Network (Western Part 2009)
- 3) GE-2009-2 : Western Area Network (Eastern Part 2009)
- 4) RM-G01 : General Route Map of Freetown Area
- 5) GR-2025-1 : Route Map for 33 kV Distribution Line (Western Area)

# Future 33 and 11 kV Line (1/1)

No.	From	To	ID No.	Laying Method	Length [m]	Specification of Line				Remarks
						Conductor	Core	Size (mm2)	Type	
<b>33 kV Line</b>										
1	Freetown S/S	Wilberforce S/S (1)	L3901	U/G	1,000	Cu	3	185	XLPE	2010
	Freetown S/S	Wilberforce S/S(2)	L3901	O/H	2,400	Al	1x3	150	AAAC	2010
2	Freetown S/S	Blackhall Road P/S (1)	L3902	U/G	1,000	Cu	3	185	XLPE	2010
	Freetown S/S	Blackhall Road P/S (2)	L3902	O/H	12,000	Al	1x3	150	AAAC	2010
3	Freetown S/S	Kingtom P/S (1)	L3903	U/G	100	Cu	3x2	500	XLPE	2011
	Freetown S/S	Kingtom P/S (2)	L3903	O/H	400	Al	1x3	500	ACSR	2011
3		<b>Sub-Total</b>		<b>Total</b>	<b>16,900</b>	<b>O/H</b>	<b>14,800</b>			
1	Wilberforce S/S	Regent S/S (1)	L3601	U/G	3,200	Cu	3	185	XLPE	
	Wilberforce S/S	Regent S/S (2)	L3601	O/H	1,300	Al	1x3	120	ACSR	
2	Wilberforce S/S	Goderich S/S (1)	L3602	U/G	1,000	Cu	3x2	185	XLPE	2013
	Wilberforce S/S	Goderich S/S (2)	L3602	O/H	6,000	Al	1x3	240	ACSR	2013
1		<b>Sub-Total</b>		<b>Total</b>	<b>11,500</b>	<b>O/H</b>	<b>7,300</b>			
1	Kingtom P/S	Falcon Bridge S/S	L3101	U/G	2,000	Cu	3x2	500	M-XLPE	2012
1		<b>Sub-Total</b>		<b>Total</b>	<b>2,000</b>	<b>O/H</b>	<b>0</b>			
1	Falcon Bridge S/S	Blackhall Road P/S (1)	L3201	U/G	3,000	Cu	3x2	500	M-XLPE	2013
	Falcon Bridge S/S	Blackhall Road P/S (2)	L3201	O/H	1,000	Al	1x3	500	ACSR	2013
1		<b>Sub-Total</b>		<b>Total</b>	<b>4,000</b>	<b>O/H</b>	<b>1,000</b>			
1	Blackhall Road P/S	Wilberforce S/S (1)	L3301	U/G	1,000	Cu	3	185	XLPE	2010
	Blackhall Road P/S	Wilberforce S/S (1)	L3301	O/H	9,000	Al	1x3	150	AAAC	2010
1	Blackhall Road P/S	Wellington S/S (1)	L3302	U/G	1,000	Cu	3	185	XLPE	2010
	Blackhall Road P/S	Wellington S/S (2)	L3302	O/H	9,000	Al	1x3	150	AAAC	2010
1		<b>Sub-Total</b>		<b>Total</b>	<b>20,000</b>	<b>O/H</b>	<b>18,000</b>			
1	Regent S/S	Jui S/S (1)	L3804	U/G	1,000	Cu	3	185	XLPE	2013
	Regent S/S	Jui S/S (2)	L3604	O/H	12,000	Al	1x3	120	ACSR	2013
1		<b>Sub-Total</b>		<b>Total</b>	<b>13,000</b>	<b>O/H</b>	<b>12,000</b>			
1	Wellington S/S	Jui S/S (1)	L3701	U/G	7,000	Al	3x2	185	ACSR	2013
	Wellington S/S	Jui S/S (2)	L3701	O/H	7,000	Al	3x2	185	ACSR	2013
1		<b>Sub-Total</b>		<b>Total</b>	<b>7,000</b>	<b>O/H</b>	<b>7,000</b>			
1	Jui S/S	Lumpa S/S (1)	L31101	U/G	1,000	Cu	3x2	185	XLPE	2017
	Jui S/S	Lumpa S/S (2)	L31101	O/H	14,000	Al	1x3	240	ACSR	2017
1		<b>Sub-Total</b>		<b>Total</b>	<b>15,000</b>	<b>O/H</b>	<b>14,000</b>			
1	Goderich S/S	York	L31001	O/H	29,000	Al	1x3	120	ACSR	2016
	York	Tombo S/S	L31001	O/H	20,000	Al	1x3	120	ACSR	2022
1		<b>Sub-Total</b>		<b>Total</b>	<b>49,000</b>	<b>O/H</b>	<b>49,000</b>			
1	Lumpa S/S	Tombo S/S (1)	L31201	U/G	1,000	Cu	3	185	XLPE	2017
	Lumpa S/S	Tombo S/S (2)	L31201	O/H	16,000	Al	1x3	120	ACSR	2017
1		<b>Sub-Total</b>		<b>Total</b>	<b>17,000</b>	<b>O/H</b>	<b>16,000</b>			
		<b>Summary of 33 kV</b>								
				Under Ground Cable	<b>16,300</b>					
				Over Head Wire	<b>139,100</b>					
		<b>Total</b>		<b>Total</b>	<b>155,400</b>					
<b>11 kV Line</b>										
1	Kingtom P/S	Freetown S/S	L105A	U/G	500	Cu	3x2	500	XLPE	2010
2	Kingtom P/S	Freetown S/S	L118	U/G	500	Cu	3x2	500	XLPE	2010
3	Congo Cross J/S	Freetown S/S	L450	O/H	3,400	Al	1x3	240	ACSR	2020
4	Brookfields J/S (1)	Freetown S/S (1)	L550	U/G	500	Cu	3	185	XLPE	2020
	Brookfields J/S (1)	Freetown S/S (2)	L550	O/H	2,500	Al	1x3	240	ACSR	2020
5	Brookfields J/S (2)	Freetown S/S (1)	L551	U/G	500	Cu	3	185	XLPE	2020
	Brookfields J/S (2)	Freetown S/S (2)	L551	O/H	2,500	Al	1x3	240	ACSR	2020
5		<b>Sub-Total</b>		<b>Total</b>	<b>10,400</b>	<b>O/H</b>	<b>8,400</b>			

## 11 kV Line (1/4)

No.	From	To	ID No.	Laying Method	Length [m]	Specification of Line					Remarks
						Manuf. Year	Conductor	Core	Size (mm2)	Type	
1	Kingtom P/S	Kingtom Workshop	L101	U/G	160		Cu	3	120	PILC	
2	Kingtom P/S	Falcon Bridge S/S	L102	U/G	2,880		Cu	3	185	PILC	Faulty
3	Kingtom P/S	Falcon Bridge S/S	L103	U/G	2,880		Cu	3	185	PILC	
4	Kingtom P/S	Falcon Bridge S/S	L103A	U/G	2,880		Al	1x3	240	XLPE	
5	Kingtom P/S	Falcon Bridge S/S	L104	U/G	2,750		Al	3	185	XLPE	Faulty
6	Kingtom P/S	Congo Cross S/S	L105	U/G	2,862		Cu	3	185	PILC	
7	Kingtom P/S	Brookfields S/S	L106	U/G	2,360		Cu	3	185	PILC	
8	Kingtom P/S	Brookfields S/S	L107	U/G	2,360		Cu	3	185	PILC	
9	Kingtom Workshop	Police Com.	L108	U/G	200		Cu	3	185	PILC	
10	Police Com.	Mandalay Street	L108A	U/G	1,100		Cu	3	120	PILC	
11	Mandalay Street	Hennessy ST	L109	U/G	950		Cu	3	120	PILC	Faulty
12	Hennessy Street	Brookfields Stadium	L110	U/G	253		Al	3	185	PILC	
13	Hennessy Street	Morgan Street	L111	U/G	790		Cu	3	120	PILC	
14	Brookfields S/S	Brookfields Stadium	L112	U/G	420		Al	3	185	PILC	
15	Brookfields Stadium	Gray Bush	L113	U/G	300		Cu	3	120	PILC	
16	Kingtom P/S	Congo Cross S/S (1)	L120	U/G	500	2,007	Cu	3	185	XLPE	
	Kingtom P/S	Congo Cross S/S (2)	L120	O/H	3,300	2,007	Al	1x3	120	AAAC	
<b>16</b>		<b>Sub-Total</b>		<b>U/G</b>	<b>23,645</b>		<b>O/H</b>	<b>3300</b>			
1	Falcon Bridge S/S-1	Blackhall Road S/S-1	L202	U/G	3,400		Cu	3	185	PILC	Faulty
2	Falcon Bridge S/S-2	Blackhall Road S/S-2(1)	L203	U/G	2,700		Cu	3	185	XLPE	
	Falcon Bridge S/S-2	Blackhall Road S/S-2(2)	L203	O/H	1,500		Al	1x3	120	AAAC	
3	Falcon Bridge S/S	Ministerial Building	L204	U/G	630		Cu	3	185	PILC	
4	Ministerial Building	Government Wharf	L205	U/G	250		Cu	3	100	PILC	
5	Government Wharf	Connaught Hospital	L206	U/G	360		Cu	3	120	PILC	
6	Connaught Hospital	Commercial Bank HQ	L207	U/G	200		Cu	3	185	PILC	
7	Commercial Bank HQ	Nursing Training School	L207A	U/G	150		Cu	3	120	PILC	
8	Nursing Training School	Kissy House	L208	U/G	650		Cu	3	120	PILC	
9	Kissy House	Joaque Bridge	L209	U/G	380		Cu	3	120	PILC	
10	Joaque Bridge	Priscilla ST.	L210	U/G	630		Cu	3	120	PILC	
11	Priscilla ST.	Morgan ST.	L211	U/G	474		Cu	3	120	PILC	
12	Morgan ST.	PWD Pademba Road	L212	U/G	940		Al	3	185	PILC	
13	PWD Pademba Road	George Brook	L213	U/G	790		Al	3	185	PILC	
14	PWD Pademba Road	Somaila Town	L213A	U/G	600		Al	1x3	150	XLPE	
15	Soldier Street	PWD Pademba Road	L214	U/G	800		Al	3	185	PILC	
16	George Brook	New England	L215	U/G	790		Cu	3	120	PILC	
17	New England	Government Printing	L216	U/G	400		Al	3	185	PILC	
18	Government Printing	Brookfields Hotel	L217	U/G	811		Al	3	185	PILC	
19	Falcon Bridge S/S	UAC	L218	U/G	237		Cu	3	120	PILC	
20	UAC	Leone Building	L219	U/G	158		Cu	3	120	PILC	
21	Leone BLDG	Catholic Mission	L220	U/G							
22	Leone BLDG	Barclays Bank	L221	U/G							
23	Leone BLDG	New Bank of Sierra Leone	L222	U/G	158		Cu	3	120	PILC	
24	New Bank of Sierra Leone	Bank of Sierra Leone	L222A	U/G	100		Cu	3	120	PILC	
25	Bank of Sierra Leone	Commercial Bank	L223	U/G	150		Cu	3	120	PILC	
26	Commercial Bank	Guma	L224	U/G	90		Cu	3	120	PILC	
27	Guma	Cotton Tree	L225	U/G	237		Cu	3	120	PILC	
28	Cotton Tree	SLEC House	L226	U/G	107		Cu	3	120	PILC	
29	SLEC House	Soldier Street	L227	U/G	474		Cu	3	120	PILC	
30	Falcon Bridge S/S	NIC	L228	U/G	800		Cu	3	120	PILC	
31	NIC	UMC	L229	U/G	150		Cu	3	120	PILC	
32	UMC	UN Building	L230	U/G	200		Cu	3	120	PILC	
33	UN Building	SLEC House	L230A	U/G	70		Cu	3	120	PILC	
34	Falcon Bridge S/S	East ST. Package	L231	U/G	625		Cu	3	120	PILC	
35	Falcon Bridge S/S	SLET	L232	U/G	200		Cu	3	120	PILC	
36	Falcon Bridge S/S	Wama	L233	U/G	200		Cu	3	120	PILC	
37	Wama	Rawdon ST	L234	U/G	560		Cu	3	120	PILC	
38	Rawdon ST	State House	L235	U/G	237		Cu	3	120	PILC	
39	Eastern Police	Rawdon ST	L236	U/G	950		Cu	3	120	PILC	Faulty
40	Rawdon ST	Daily Mail	L237	U/G	200		Cu	3	120	PILC	
41	State House	Defence HQ	L238	U/G	158		Cu	3	120	PILC	
42	Defence HQ	Ammunition Dump	L239	U/G	380		Cu	3	120	PILC	
43	Ammunition Dump	House of Rep.	L240	U/G	320		Cu	3	120	PILC	
44	House of Rep.	Ordinance Yard	L241	U/G	340		Cu	3	120	PILC	
45	Ordinance Yard	Regent Road Market	L242	U/G	525		Cu	3	120	PILC	
46	Regent Road Market	Mountain Cut (1)	L242A	U/G	420		Cu	3	150	XLPE	
	Regent Road Market	Mountain Cut (2)	L242A	O/H	1,000		Al	1x3	70	ACSR	
47	Falcon Bridge S/S	Eastern Police	L243	U/G	900		Cu	3	120	PILC	
48	Eastern Police	PCMH	L243A	U/G	830		Cu	3	120	PILC	
49	PCMH	College Road (1)	L244	U/G	950		Cu	3	120	PILC	
	PCMH	College Road (2)	L244	O/H	150		Al	1x3	70	ACSR	
50	College Road	Deep Water Quay	L245	U/G	160		Cu	3	120	PILC	
51	Deep Water Quay	Cline Town Railway	L246	U/G	700		Cu	3	120	PILC	
52	Cline Town Railway	Flour Mill	L249	U/G	320		Cu	3	120	PILC	
53	Flour Mill	Tajco	L250	U/G	200		Cu	3	120	PILC	
54	Tajco	Cement Factory	L251	U/G	175		Cu	3	120	PILC	
55	Eastern Police	Mountain Cut	L252	U/G	630		Cu	3	120	PILC	
56	Mountain Cut	Regent Road Market	L253	U/G	500		Cu	3	120	PILC	Faulty
<b>56</b>		<b>Sub-Total</b>		<b>U/G</b>	<b>29,866</b>		<b>O/H</b>	<b>1150</b>			
1	Old S/S	BP of Temporarily Connection (1)	L300	O/H	4,920		Al	1x3	70	ACSR	
	Old S/S	BP of Temporarily Connection (2)	L300	U/G	2,880		Al	3	240	XLPE	
2	BP of Kuntoloh	BP of ATC	L300A	O/H	1,000		Al	1x3	70	ACSR	
3	BP of ATC	BP of Slpmb	L300B	O/H	200		Al	1x3	70	ACSR	
4	BP of Slpmb	Wellington S/S	L300C	O/H	1,000		Al	1x3	70	ACSR	
5	BP of Kuntoloh	Kuntoloh	L300D	U/G	800		Al	3	240	XLPE	

## 11 kV Line (2/4)

No.	From	To	ID No.	Laying Method	Length [m]	Specification of Line					Remarks
						Manuf. Year	Conductor	Core	Size (mm2)	Type	
6	Blackhall Road P/S	Cement Factory (1)	L301	U/G	1,430		Cu	3	120	PILC	Faulty
7	Blackhall Road P/S	Cement Factory (2)	L301	U/G	350		Al	3	240	XLPE	
8	Cement Factory	Slipway	L302	U/G	200		Cu	3	120	PILC	
9	Blackhall Road P/S	Old S/S	L303	U/G	50		Cu	3	120	PILC	
10	Blackhall Road P/S	BP. Ross Road Kenedy STR	L304	U/G	200		Cu	3	120	PILC	
11	Blackhall Road P/S	Savage Square	L305	U/G	1,100		Cu	3	185	PILC	
12	Savage Square	PCMH	L306	U/G	630		Cu	3	120	PILC	
13	Blackhall Road P/S	Kortright PKG	L308	O/H	500		Al	1x3	70	ACSR	
14	Kortright PKG	FBC	L309	U/G	210		Cu	3	120	PILC	
15	Kortright PKG	BP of Leicester Road(1)	L310	U/G	1,000		Cu	3	120	PILC	
16	Kortright PKG	BP of Leicester Road(2)	L311	O/H	1,500		Al	1x3	70	ACSR	
17	BP of Leicester Road	Leicester	L311A	O/H	1,000		Al	1x3	70	ACSR	
18	BP of Leicester Road	Benz Farm	L311B	O/H	500		Al	1x3	70	ACSR	
19	Benz Farm	Okoo Town	L312	O/H	500		Al	1x3	70	ACSR	
20	Okoo Town	Regent Village	L313	O/H	500		Al	1x3	70	ACSR	
21	Regent Village	Bathurst Village	L314	O/H	1,000		Al	1x3	70	ACSR	
22	Bathurst Village	Charlotte Village	L315	O/H	2,000		Al	1x3	70	ACSR	
23	Blackhall Road P/S	Admiralty (1)	L316	U/G	705		Cu	3	120	PILC	
24	Blackhall Road P/S	Admiralty (2)	L316	O/H	150		Al	1x3	70	ACSR	
25	Admiralty	Shankerdas	L317	U/G	1,580		Cu	3	120	PILC	
26	Shankerdas	Dockyard	L318	U/G	237		Cu	3	120	PILC	
27	Dockyard	Africanus Road	L319	U/G	790		Cu	3	120	PILC	
28	Africanus Road	Mill Group Plastic	L320	U/G	950		Cu	3	120	PILC	
29	Mill Group Plastic	PWD Kissey	L321	U/G	450		Cu	3	120	PILC	
30	Blackhall Road P/S	PWD Kissey (1)	L322	U/G	591		Cu	3	120	PILC	
31	Blackhall Road P/S	PWD Kissey (2)	L322	O/H	120		Al	1*3	70	ACSR	
32	Africanus Road	Hooke Street	L323	U/G	610		Cu	3	120	PILC	
33	Hooke Street	Kissey Village	L324	U/G	500		Cu	3	120	PILC	
34	Kissey Village	Lower Passonage ST	L325	U/G	950		Cu	3	120	PILC	
35	Lower Passonage ST	Oil Refinery	L327	U/G	790		Cu	3	120	PILC	
36	Oil Refinery	Shell	L329	U/G	632		Cu	3	120	PILC	
37	Shell	Low Cost Housing	L330	U/G	2,380		Cu	3	120	PILC	
38	Shell	Mobil	L331	U/G	310		Cu	3	120	PILC	
39	Low Cost Housing	Kissey Police	L332	U/G	1,200		Cu	3	120	PILC	
40	Kissey Police	New Shell	L334	U/G	790		Cu	3	120	PILC	
41	Clay Factory	NCC	L335	U/G	1,400		Cu	3	120	PILC	
42	NCC	Ropoti	L336	U/G	1,725		Cu	3	120	PILC	
43	Ropoti	Clark ST Package Unit	L338	U/G	1,900		Cu	3	120	PILC	
44	Clark ST Package Unit	Congo Water	L339	U/G	160		Cu	3	120	PILC	
45	Congo Water	Natco	L340	U/G	1,106		Cu	3	120	PILC	
46	Natco	Sayenu Industry (1)	L341	O/H	485		Al	1x3	70	ACSR	
47	Natco	Sayenu Industry (2)	L341	U/G	15		Cu	3	120	PILC	
48	Sayenu Industry	Foam Factory (1)	L342	O/H	385		Al	1x3	70	ACSR	
49	Sayenu Industry	Foam Factory (2)	L342	U/G	15		Cu	3	120	PILC	
<b>45</b>		<b>Sub-Total</b>		<b>U/G</b>	<b>28,636</b>		<b>O/H</b>	<b>15,760</b>			
1	Congo Cross J/S	Rockel Commercial Bank	L400	U/G	375		Cu	3	120	PILC	
2	Congo Cross J/S	Technical Institute	L401	U/G	950		Al	3	300	PILC	
3	Congo Cross J/S	Signal Hill	L402	U/G	1,100		Cu	3	120	PILC	
4	Signal Hill	WT	L403	U/G	632		Cu	3	120	PILC	
5	WT	P&T	L404	U/G	474		Cu	3	120	PILC	
6	Congo Cross J/S	Murray Town	L405	U/G	1,100		Cu	3	95	PILC	70, Mix
7	Murrya Town	Grammar School	L406	U/G	553		Cu	3	95	PILC	
8	Grammar School	BP of Alpha Fishing	L407	U/G	400		Cu	3	95	PILC	
9	BP of Alpha Fishing	Alpha Fishing	L407A	U/G	300		Cu	3	95	PILC	
10	BP of Alpha Fishing	Cockle Bay-1	L407B	U/G	200		Cu	3	95	PILC	
11	BP of Alpha Fishing	Cockle Bay-2	L407C	U/G	100		Cu	3	95	PILC	
12	Grammar School	Eacon	L408	U/G	1,215		Cu	3	95	PILC	
13	Eacon	Aberdeen	L409	U/G	1,100		Cu	3	95	PILC	
14	Aberdeen	Bintumani	L410	U/G	553		Cu	3	120	PILC	
15	Bintumani	BP of Cape Light Hotel	L410A	U/G	620		Cu	3	120	PILC	
16	BP of Cape Light Hotel	Cape Light Hotel (1)	L410B	O/H	150		Al	1x3	70	AAAC	
17	BP of Cape Light Hotel	Cape Light Hotel (2)	L410B	U/G	150		Cu	3	120	XLPE	
18	BP of Cape Light Hotel	Kimbina Hotel	L410C	O/H	500		Al	1x3	70	AAAC	
19	Bintumani	Mammy Yoko	L411	U/G	790		Cu	3	120	PILC	
20	Mammy Yoko	Casino Leone	L412	U/G	474		Cu	3	95	PILC	
21	Casino Leone	Lagonda Hotel	L413	U/G	316		Cu	3	95	PILC	
22	Lagonda Hotel	Cape Sierra	L414	U/G	375		Cu	3	95	PILC	
23	Cape Sierra	Cape Sierra EXT	L415	U/G	200		Cu	3	95	PILC	
24	Atlantic Club	Lumley	L420	U/G	1,000		Cu	3	120	PILC	
25	Rockel Commercial Bank	Bata Plastic Factory	L421	U/G	500		Cu	3	120	PILC	
26	Bata Plastic Factory	Cole Farm	L422	U/G	500		Cu	3	120	PILC	
27	Bata Plastic Factory	Collegiate School	L423	U/G	870		Cu	3	120	PILC	
28	Collegiate School	Indian Temple	L424	U/G	811		Cu	3	120	PILC	
29	Indian Temple	Lower Pipe Line	L425	U/G	790		Cu	3	120	PILC	
30	Lower Pipe Line	MHR Cockrill	L426	U/G	470		Cu	3	120	PILC	
31	MHR Cockrill	Cockrill	L427	U/G	500		Cu	3	120	PILC	
32	Cockrill	Stering Products	L428	U/G	632		Cu	3	120	PILC	
33	Stering Products	Watch Tower	L429	U/G	40		Cu	3	120	PILC	
34	Watch Tower	Lumley Village	L430	U/G	811		Cu	3	120	PILC	
35	Congo Cross J/S	Wilberforce S/S	L440	O/H	2,500		Al	1x3	120	AAAC	
<b>33</b>		<b>Sub-Total</b>		<b>U/G</b>	<b>2,151</b>		<b>O/H</b>	<b>19,900</b>			
1	Brookfields J/S	Tengbeh Town	L501	U/G	650		Al	1x3	70	XLPE	
2	Tengbeh Town	Upper Tengbeh Town	L501A	U/G	50		Al	1x3	70	XLPE	
3	Brookfields J/S	Yonyi	L502	U/G	100		Cu	3	120	PILC	



## 11 kV Line (3/4)

No.	From	To	ID No.	Laying Method	Length [m]	Specification of Line					Remarks
						Manuf. Year	Conductor	Core	Size (mm2)	Type	
4	Brookfields J/S	Chinese	L503	U/G	600		Cu	3	185	PILC	
5	Chinese	River Side Drive	L504	U/G	316		Cu	3	185	PILC	
6	River Side Drive	Brookfields Hotel	L505	U/G	630		Cu	3	120	PILC	
7	River Side Drive	Hill Cut	L506	U/G	1,300		Cu	3	185	PILC	
8	Hill Cut	Milhelm Flat	L507	U/G	1,100		Cu	3	185	PILC	
9	Milhelm Flat	Hill Station	L508	U/G	800		Cu	3	185	PILC	
10	Hill Station	Choithram Hospital	L509	U/G	640		Cu	3	185	PILC	
11	Choithram Hospital	Baibureh Resturant	L510	U/G	500		Cu	3	185	PILC	
12	Baibureh Resturant	OAU Village	L511	U/G	600		Cu	3	185	PILC	
13	OAU Village	Pumping Station	L512	U/G	460		Cu	3	185	PILC	
14	OAU Village	Nigeria High Commission	L513	U/G	600		Cu	3	185	PILC	
15	Nigeria High Commission	Chinese Commerce Office	L513A	U/G	300		Cu	3	185	PILC	
16	Pumping Station	BP of EU	L514	U/G	600		Al	3	300	PILC	
17	BP of EU	EU	L514 A	U/G	40		Al	3	300	PILC	
18	Brookfields J/S	Hannah Benka Coker Street	L515	U/G	630		Al	3	300	XLPE	
19	Hannah Benka Coker Street	PWD Tower Hill	L516	U/G	2,530		Al	3	300	XLPE	
20	PWD Tower Hill	Rgent Road Market	L517	U/G	330		Cu	3	120	PILC	
21	PWD Tower Hill	FBC (1)	L518	U/G	250		Cu	3	120	PILC	Faulty
22	PWD Tower Hill	FBC (2)	L518	O/H	2,280		Al	1x3	70	ACSR	
23	Brookfields J/S	Technical Institute	L521	U/G	950		Al	3	300	PILC	
24	Brookfields J/S	Wilberforce S/S-1	L522	U/G	3,000		Al	3	300	PILC	
24	Brookfields J/S	Wilberforce S/S-2	L523	U/G	3,000		Al	3	185	PILC	Faulty
24		<b>Sub-Total</b>		<b>U/G</b>	<b>22,256</b>		<b>O/H</b>	<b>2,280</b>			
1	Wilberforce S/S	P&T	L601	U/G	790		Cu	3	120	PILC	
2	Wilberforce S/S	Jamil	L602	U/G	474		Cu	3	120	PILC	
3	Jamil	Military Spur	L603	U/G	520		Cu	3	120	PILC	
4	Military Spur	Spur Road	L604	U/G	556		Cu	3	120	PILC	
5	Spur Road	Guma Pumping Station	L605	U/G	250		Cu	3	120	PILC	
6	Spur Road	Lumley	L606	U/G	553		Cu	3	120	PILC	
7	Wilberforce S/S	Military Barracks	L607	U/G	320		Cu	3	120	PILC	
8	Military Barracks	HMT Hospital	L608	U/G	623		Cu	3	120	PILC	
9	HMT Hospital	Hill Station	L609	U/G	1,200		Cu	3	185	PILC	
10	HMT Hospital	Wilberforce No. 2	L610	U/G	205		Al	3	185	PILC	
11	Wilberforce No. 2	Spur Loop Package	L611	U/G	1,290		Cu	3	120	PILC	
12	Wilberforce	Peninsular	L612	U/G	6,100		Al	3	185	PILC	Faulty
13	Lumley	BP of Babadori	L619	O/H	200		Al	1x3	70	AAAC	
14	BP of Babadori	Health Center	L619A	O/H	300		Al	1x3	70	AAAC	
15	BP of Babadori	Babadori	L619B	O/H	700		Al	1x3	70	AAAC	
16	Health Center	Malamah Extension	L620	U/G	1,000		Al	1x3	240	XLPE	
17	Lumley	BP of Juba	L621	O/H	423		Al	1x3	70	AAAC	
18	BP of Juba	Juba (1)	L621A	O/H	100		Al	1x3	70	AAAC	
19	BP of Juba	Juba (2)	L621A	U/G	15		Al	3	150	XLPE	
20	BP of Juba	BP of Sawi Drive	L621B	O/H	600		Al	1x3	70	AAAC	
21	BP of Sawi Drive	Juba Hill (1)	L621C	O/H	230		Al	1x3	70	AAAC	
22	BP of Sawi Drive	Juba Hill (2)	L621C	U/G	100		Cu	3	70	PILC	
21	BP of Sawi Drive	Sawa Drive (1)	L622	O/H	300		Al	1x3	70	AAAC	
22	BP of Sawi Drive	Sawa Drive (2)	L622	U/G	12		Cu	3	120	PILC	
23	Juba Hill	Juba Lodge	L624	U/G	550		Cu	3	120	PILC	
24	Juba Hill	BP of Marjay Town-1	L625	O/H	1,200		Al	1*3	70	AAAC	
25	BP of Marjay Town-1	BP of Marjay Town-2	L625A	O/H	210		Al	1*3	70	AAAC	
26	BP of Marjay Town-2	BP of Goderich Range	L625B	O/H	300		Al	1*3	70	AAAC	
26	BP of Goderich Low Cost	BP of Peninslar	L625C	O/H	320		Al	1*3	70	AAAC	
27	BP of Peninslar	BP of Jerusalem Avenue	L626	O/H	200		Al	1x3	70	AAAC	
28	BP of Jerusalem Avenue	BP of Taylor Woodrow	L626A	O/H	300		Al	1x3	70	AAAC	
29	BP of Taylor Woodrow	BP of Adonkia	L626B	O/H	1,400		Al	1x3	70	AAAC	
30	BP of Adonkia	BP of Lakka No. 2	L626C	O/H	2,200		Al	1x3	70	AAAC	
31	BP of Jersalem Avenue	Jersalem Avenue (1)	L626D	O/H	300		Al	1x3	70	AAAC	
32	BP of Jersalem Avenue	Jersalem Avenue (2)	L626D	U/G	50		Cu	3	50	PILC	
33	BP of Taylor Woodrow	Taylor Woodrow (1)	L626E	O/H	20		Al	1x3	70	AAAC	
34	BP of Taylor Woodrow	Taylor Woodrow (2)	L626E	U/G	30		Cu	3	120	PILC	
35	BP of Adonkia	Adonkia (1)	L626F	O/H	120		Al	1x3	70	AAAC	
36	BP of Adonkia	Adonkia (2)	L626F	U/G	70		Cu	3	120	PILC	
37	BP of Lakka No. 2	Lakka No. 2 (1)	L626G	O/H	400		Al	1x3	70	AAAC	
38	BP of Lakka No. 2	Lakka No. 2 (2)	L626G	U/G	15		Cu	3	50	PILC	
39	BP of Peninslar	BP of Goderich 2 (1)	L627	O/H	600		Al	1x3	70	AAAC	
40	BP of Peninslar	BP of Goderich 2 (2)	L627	U/G	85		Cu	3	120	PILC	
41	BP of Goderich 2	Goderich	L627A	U/G	200		Cu	3	150	XLPE	
42	BP of Goderich 2	BP of Goderich Village	L627B	O/H	800		Al	1x3	70	AAAC	
43	BP of Goderich Village	Goderich Village	L627C	O/H	78		Al	1x3	70	AAAC	
44	BP of Goderich Village	BP of MMTC (1)	L627D	O/H	1,100		Al	1x3	70	AAAC	
45	BP of Goderich Village	BP of MMTC (2)	L627D	U/G	30		Cu	3	50	XLPE	
46	BP of Lakka No. 2	Lakka No. 1	L628	U/G	830		Cu	3	120	XLPE	
47	Lakka No. 1	BP of Hamilton (1)	L630	O/H	1,300		Al	1x3	70	AAAC	
48	Lakka No. 1	BP of Hamilton (2)	L630	U/G	30		Cu	3	120	XLPE	
49	BP of Hamilton	Hamilton (1)	L630A	O/H	950		Al	1x3	70	AAAC	
50	BP of Hamilton	Hamilton (2)	L630A	U/G	175		Cu	3	70	XLPE	
51	BP of Hamilton	Mile 13 (Guma) (1)	L631	O/H	4,100		Al	1x3	70	AAAC	
52	BP of Hamilton	Mile 13 (Guma) (2)	L631	U/G	400		Cu	3	70	XLPE	
53	Mile 13 (Guma)	Mile 13	L631A	U/G	250		Cu	3	70	XLPE	
54	Mile 13 (Guma)	BP of Legrand Hamilton	L632	O/H	800		Al	1x3	70	AAAC	
55	BP of Legrand Hamilton	Legrand Hamilton	L632A	O/H	800		Al	1x3	70	AAAC	
56	BP of Legrand Hamilton	BP of Sussex (1)	L633	O/H	2,400		Al	1x3	70	AAAC	
57	BP of Legrand Hamilton	BP of Sussex (2)	L633	U/G	15		Cu	3	70	PILC	
47		<b>Sub-Total</b>		<b>U/G</b>	<b>39,489</b>		<b>O/H</b>	<b>22,751</b>			

## 11 kV Line (4/4)

No.	From	To	ID No.	Laying Method	Length [m]	Specification of Line					Remarks
						Manuf. Year	Conductor	Core	Size (mm2)	Type	
1	Wellington S/S	Old Wharf (1)	L701	U/G	200		Cu	3	120	PILC	
	Wellington S/S	Old Wharf (2)	L701	U/G	46		Cu	3	120	XLPE	
2	BP of SLPMB	SLPMB	L702	U/G	420		Cu	3	120	XLPE	
3	BP of ATC	ATC	L704	U/G	1,120		Cu	3	120	PILC	
4	ATC	Soap Plastic	L705	U/G	532		Cu	3	120	PILC	
5	Soap Plastic	Soap Factory	L706	U/G	158		Cu	3	120	PILC	
6	Soap Factory	Paint Factory	L707	U/G	474		Cu	3	120	PILC	
7	Paint Factory	Brewery	L708	U/G	165		Cu	3	120	PILC	
8	Brewery	Natco	L709	U/G	370		Cu	3	120	PILC	
9	Wellington S/S	Robbis Road (1)	L711Z	O/H	660		Al	1x3	70	ACSR	
	Wellington S/S	Robbis Road (2)	L711Z	U/G	40		Cu	3	120	PILC	
10	Robbis Road	BP of Cola Tree	L711	O/H	300		Al	1x3	70	ACSR	
11	BP of Cola Tree	Cola Tree (1)	L711A	O/H	265		Al	1x3	70	ACSR	
	BP of Cola Tree	Cola Tree (2)	L711A	U/G	100		Cu	3	120	PILC	
12	BP of Cola Tree	BP of New Foamex	L712	O/H	600		Al	1x3	70	ACSR	
13	BP of New Foamex	BP of Idogu	L713	O/H	700		Al	1x3	120	ACSR	
14	BP of Idogu	Idogu (1)	L713A	O/H	200		Al	1x3	120	ACSR	
	BP of Idogu	Idogu (2)	L713A	U/G	20		Cu	3	50	XLPE	
15	BP of Idogu	BP of Mayemi	L714	O/H	700		Al	1x3	120	ACSR	
16	BP of Mayemi	BP of Maila Town	L715	O/H	400		Al	1x3	120	ACSR	
17	BP of Maila Town	BP of Lower Allen Town	L716	O/H	400		Al	1x3	120	ACSR	
18	BP of Lower Allen Town	BP of Dixon	L717	O/H	400		Al	1x3	120	ACSR	
19	BP of Dixon	BP of Wray	L718	O/H	1,100		Al	1x3	120	ACSR	
20	BP of Wray	Wray	L718A	U/G	260		Cu	3	50	XLPE	
21	BP of Wray	BP of T-Off	L719	O/H	1,200		Al	1x3	120	ACSR	
22	BP of T-Off	BP of Bangura Farm (1)	L721	O/H	50		Al	1x3	120	ACSR	
	BP of T-Off	BP of Bangura Farm (2)	L721	U/G	50		Cu	3	120	PILC	
23	BP of Bangura Farm	Bangura Farm	L721A	O/H	50		Al	1x3	120	ACSR	
24	BP of Bangura Farm	BP of Jui Bible (1)	L722	O/H	1,510		Al	1x3	120	ACSR	
	BP of Bangura Farm	BP of Jui Bible (2)	L722	U/G	40		Al	3	50	XLPE	
25	BP of Jui Bible	Jui Bible	L722A	U/G	40		Al	3	50	XLPE	
26	BP of T-Off	BP of Kossoh Town/ FTC	L723	O/H	700		Al	1x3	120	ACSR	
27	BP of Kossoh Town/ FTC	FTC	L723	O/H	45		Al	1x3	120	ACSR	
28	BP of Kossoh Town/ FTC	BP of Grafton Police	L724	O/H	1,700		Al	1x3	120	ACSR	
29	BP of Grafton Police	Grafton Police	L724A	O/H	30		Al	1x3	120	ACSR	
30	BP of Grafton Police	BP of Spring Water Grafton	L725	O/H	300		Al	1x3	120	ACSR	
31	BP of Spring Water Grafton	Spring Water Grafton	L725A	O/H	30		Al	1x3	120	ACSR	
32	BP of T-Off	BP of Hastings	L727	O/H	1,500		Al	1x3	120	ACSR	
33	BP of Hastings	Hastings	L727A	O/H	400		Al	1x3	120	ACSR	
34	BP of Hastings	BP of Rokel Village	L728	O/H	14,400		Al	1x3	120	ACSR	
35	BP of Rokel Village	Rokel Village	L728A	O/H	170		Al	1x3	120	ACSR	
36	BP of Rokel Village	BP of Waterloo	L729	O/H	5,400		Al	1x3	120	ACSR	
37	BP of Waterloo	Waterloo (1)	L729A	O/H	400		Al	1x3	120	ACSR	
	BP of Waterloo	Waterloo (2)	L729A	U/G	25		Cu	3	120	PILC	
38	BP of Waterloo	BP of Benguema (Military)	L730	O/H	2,000		Al	1x3	120	ACSR	
39	BP of Benguema (Military)	Benguema (Military)	L730A	O/H	50		Al	1x3	120	ACSR	
39		<b>Sub-Total</b>		<b>U/G</b>	<b>39,720</b>		<b>O/H</b>	<b>35,660</b>			
16	Kingtom P/S	<b>Sub-Total</b>		<b>U/G</b>	<b>23,645</b>		<b>O/H</b>	<b>3,300</b>			
56	Falconbridge S/S			<b>U/G</b>	<b>29,866</b>		<b>O/H</b>	<b>1,150</b>			
45	Blackhall Road P/S			<b>U/G</b>	<b>28,636</b>		<b>O/H</b>	<b>15,760</b>			
33	Congo Cross S/S			<b>U/G</b>	<b>2,151</b>		<b>O/H</b>	<b>19,900</b>			
24	Brookfields S/S			<b>U/G</b>	<b>22,256</b>		<b>O/H</b>	<b>2,280</b>			
47	Wilberforce S/S			<b>U/G</b>	<b>39,489</b>		<b>O/H</b>	<b>22,751</b>			
39	Wellington S/S			<b>U/G</b>	<b>39,720</b>		<b>O/H</b>	<b>35,660</b>			
215		<b>Total</b>		<b>U/G</b>	<b>185,763</b>		<b>O/H</b>	<b>100,801</b>	<b>[m]</b>		<b>286,564</b>

# Rated Current (1/2)

## 1. 600/ 1,000 V Cables (Conductor: Cu)

Size [mm <sup>2</sup> ]	XLPE (BS6486)			
	1-core		3-cores	
	[A]	SCC	[A]	SCC
70				
95	333	13.6	289	13.6
120	383	17.1	335	17.2
150	437	21.4	386	21.4
185	496	26.4	441	26.5
240	579	34.3	520	34.3
300	662	42.9	599	42.9
400	717	57.2	673	57.2
500	791	71.5		

### Remarks:

SCC: Short Circuit Current [kA], 1-sec.  
Installation method is underground

## 2. 6,350/ 11,000 V Cables

### 2-1). Conductor: Cu

Size [mm <sup>2</sup> ]	PILC (BS6486)				XLPE (IEC502)			
	1-core		3-cores		1-core		3-cores	
	[A]	SCC	[A]	SCC	[A]	SCC	[A]	SCC
95	280	11.0	245	11.0	320	13.3	300	13.3
120	320	14.0	280	14.3	360	17.2	340	17.2
150	360	17.1	315	17.5	410	21.2	380	21.2
185	405	21.5	355	22.0	460	26.6	430	26.6
240	470	28.3	410	29.0	530	34.9	490	34.9
300	530	35.4	460	36.5	600	43.8	540	43.8
400	600	45.4	520	46.5	680	57.3	590	57.3
500	650	57.0			750	72.3		

Remarks: Above data is based on steel armour cables

### 2-2). Conductor: Al

Size [mm <sup>2</sup> ]	XLPE (IEC502)			
	1-core		3-cores	
	[A]	SCC	[A]	SCC
95	250	8.5	230	8.5
120	280	11.0	265	11.0
150	320	13.5	300	13.5
185	360	17.0	335	17.0
240	425	22.3	380	22.3
300	475	28.0	435	28.0
400	540	36.6	480	36.6
500	610	46.2		

# Rated Current (2/2)

3. 19/ 33 kV Cables (Conductor: Cu)					(Conductor: Al)			
Size [mm <sup>2</sup> ]	XLPE (IEC502)				XLPE (IEC502)			
	1-core		3-cores		1-core		3-cores	
	[A]	SCC	[A]	SCC	[A]	SCC	[A]	SCC
95	320	13.3	295	13.3	245	8.5	230	8.5
120	360	17.2	335	17.2	280	11.0	260	11.0
150	410	21.2	375	21.2	310	13.5	290	13.5
185	460	26.6	420	26.6	350	17.0	330	17.0
240	530	34.9	480	34.9	405	22.3	390	22.3
300	600	43.8	530	43.8	450	28.0	440	28.0
400	690	57.3	580	57.3	510	36.6	500	36.6
500	760	58.0			570	46.2		

## 4. Overhead Wire

Size [mm <sup>2</sup> ]	AAAC					ACSR			
	Current [A]	Capacity [MVA]			Current [A]	Capacity [MVA]			
		11	33	161		11	33	161	
95	305	5.8	17.4	85.1	330	6.3	18.9	92.0	
120	351	6.7	20.1	97.9	388	7.4	22.2	108.2	
150	407	7.8	23.3	113.5	425	8.1	24.3	118.5	
185	464	8.8	26.5	129.4	514	9.8	29.4	143.3	
240	557	10.6	31.8	155.3	593	11.3	33.9	165.4	
300	636	12.1	36.4	177.4	690	13.1	39.4	192.4	
400	894	17.0	51.1	249.3	810	15.4	46.3	225.9	
500	980	18.7	56.0	273.3	904	17.2	51.7	252.1	