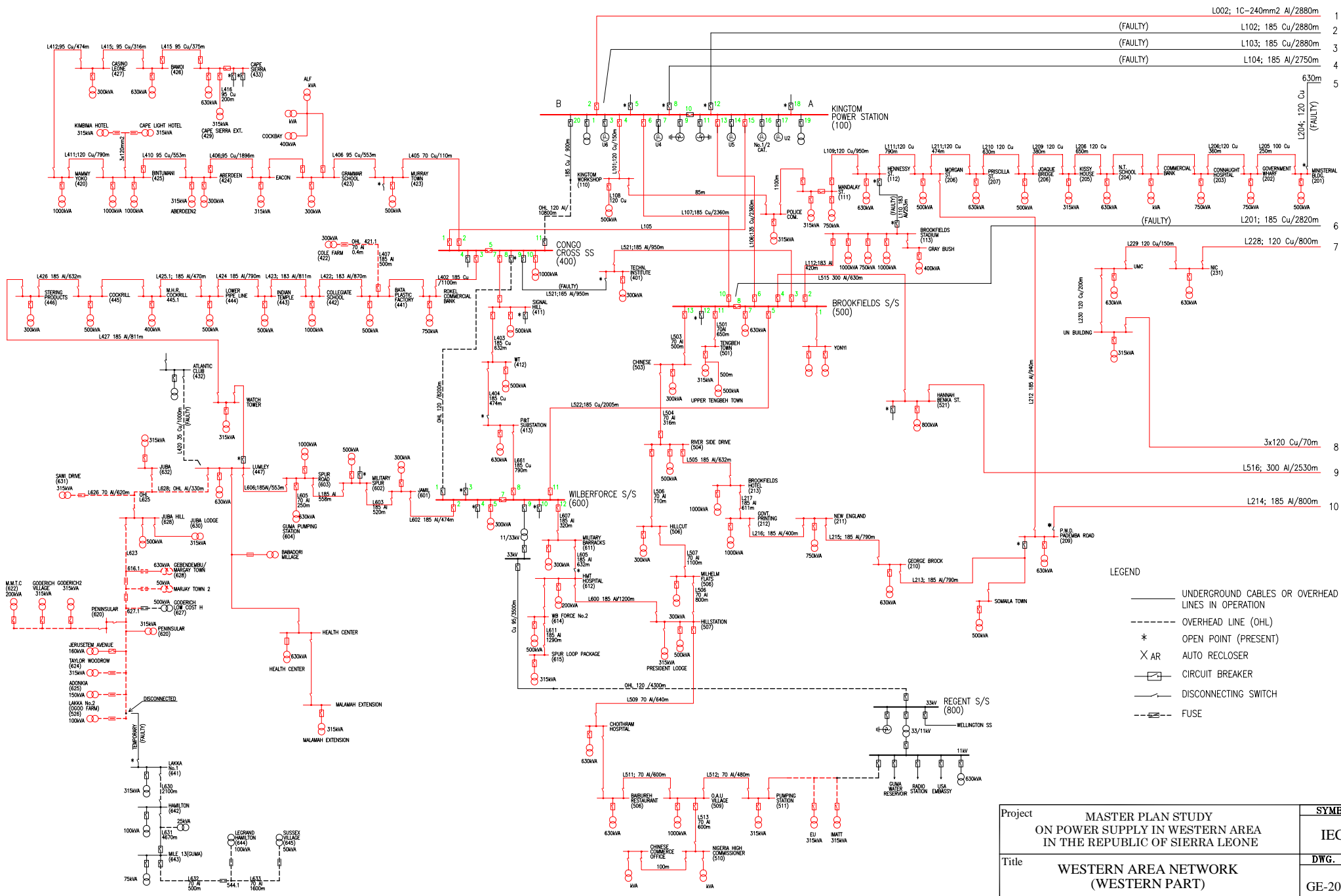


## **3. Drawing List**

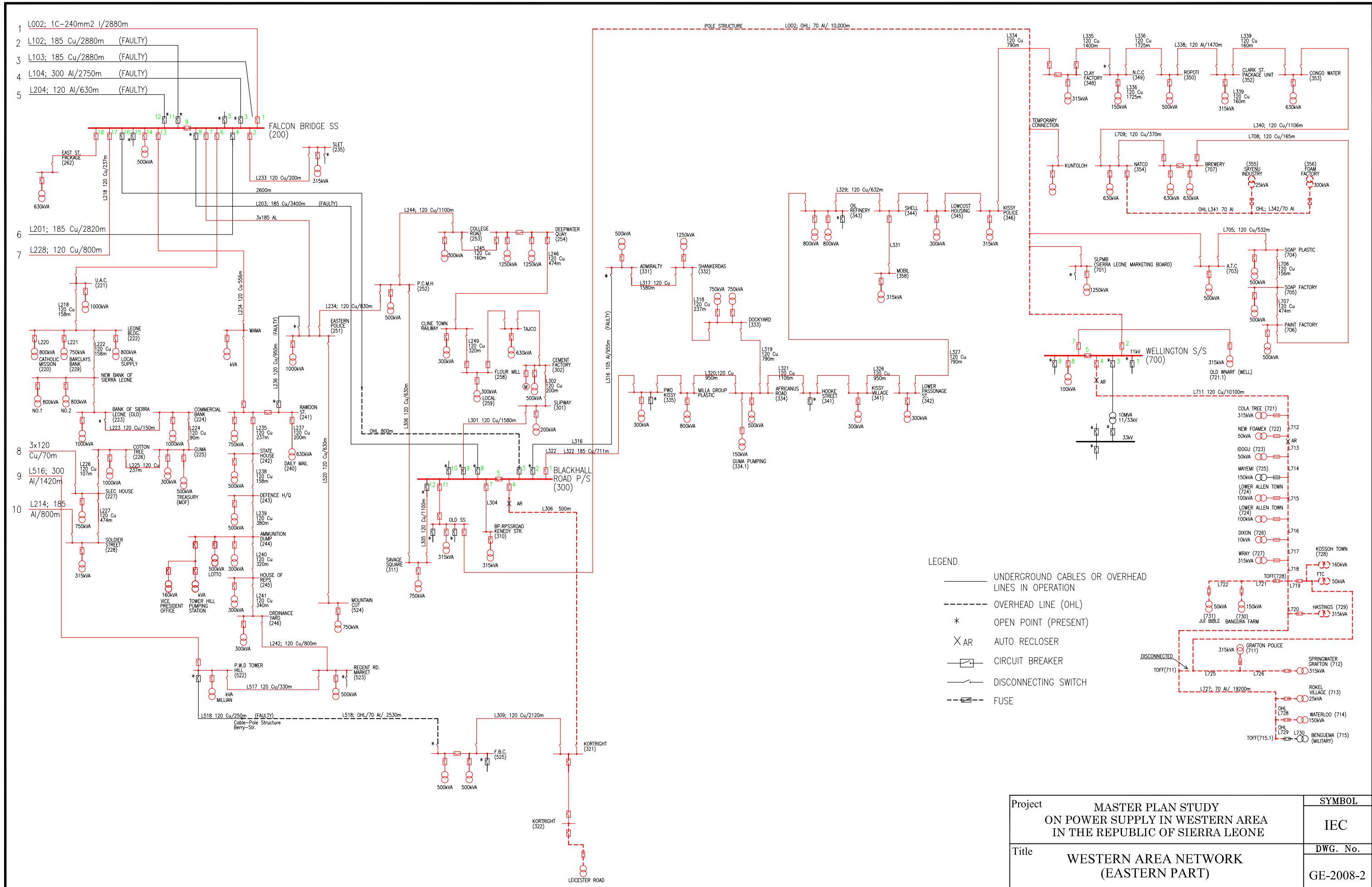
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<u>DWG No.</u>	<u>Title</u>
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1) GE-2008-1	Western Area Network (Western Part)
2) GE-2008-2	Western Area Network (Eastern Part)
3) CA-LV0	Coverage Area of LV System
4) GE-2009-1	Western Area Network (Western Part 2009)
5) GE-2009-2	Western Area Network (Eastern Part 2009)
6) RM-G01	General Route Map of Freetown Area
7) RM-D01	Route Map of Area-1 of Freetown
8) RM-D02	Route Map of Area-2 of Freetown
9) RM-D03	Route Map of Area-3 of Freetown
10) RM-D04	Route Map of Area-4 of Freetown
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1) KT-E1	11 / 33 kV SWGR Feeders: Kingtom P/S (100)
2) FB-E1	11 / 33 kV SWGR Feeders: Falcon Bridge S/S (200)
3) BR-E1	11 / 33 kV SWGR Feeders: Blackhall Road P/S (300)
4) CC-E1	11 kV SWGR Feeders: Congo Cross J/S (400)
5) BF-E1	11 kV SWGR Feeders: Brookfields J/S (500)
6) WF-E1	11 / 33 kV SWGR Feeders: Wilberforce S/S (600)
7) WN-E1	11 / 33 kV SWGR Feeders: Wellington S/S (700)
8) RT-E1	11 / 33 kV SWGR Feeders: Regent S/S (800)
9) FT-E1	11 / 33 kV SWGR Feeders: Freetown S/S (900)
10) GR-E1	11 / 33 kV SWGR Feeders: Goderich S/S (1000)
11) JU-E1	11 / 33 kV SWGR Feeders: Jui S/S (1100)
12) LP-E1	11 / 33 kV SWGR Feeders: Lumpa S/S (1200)
13) TB-E1	11 / 33 kV SWGR Feeders: Tombo S/S (1300)
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1) GE-2025	Western Area Power System 2025
2) GR-2025-1	Route Map for 33 kV Distribution Line (Western Area)
3) GR-2025-2	Route Map for 33 kV Distribution Line (Western Urban)
4) GE-2025-3	Coverage Area by 33 kV Substation
5) RM-D05	Route Map for 33 kV Distribution Line (Wilberforce S/S - Goderich S/S)



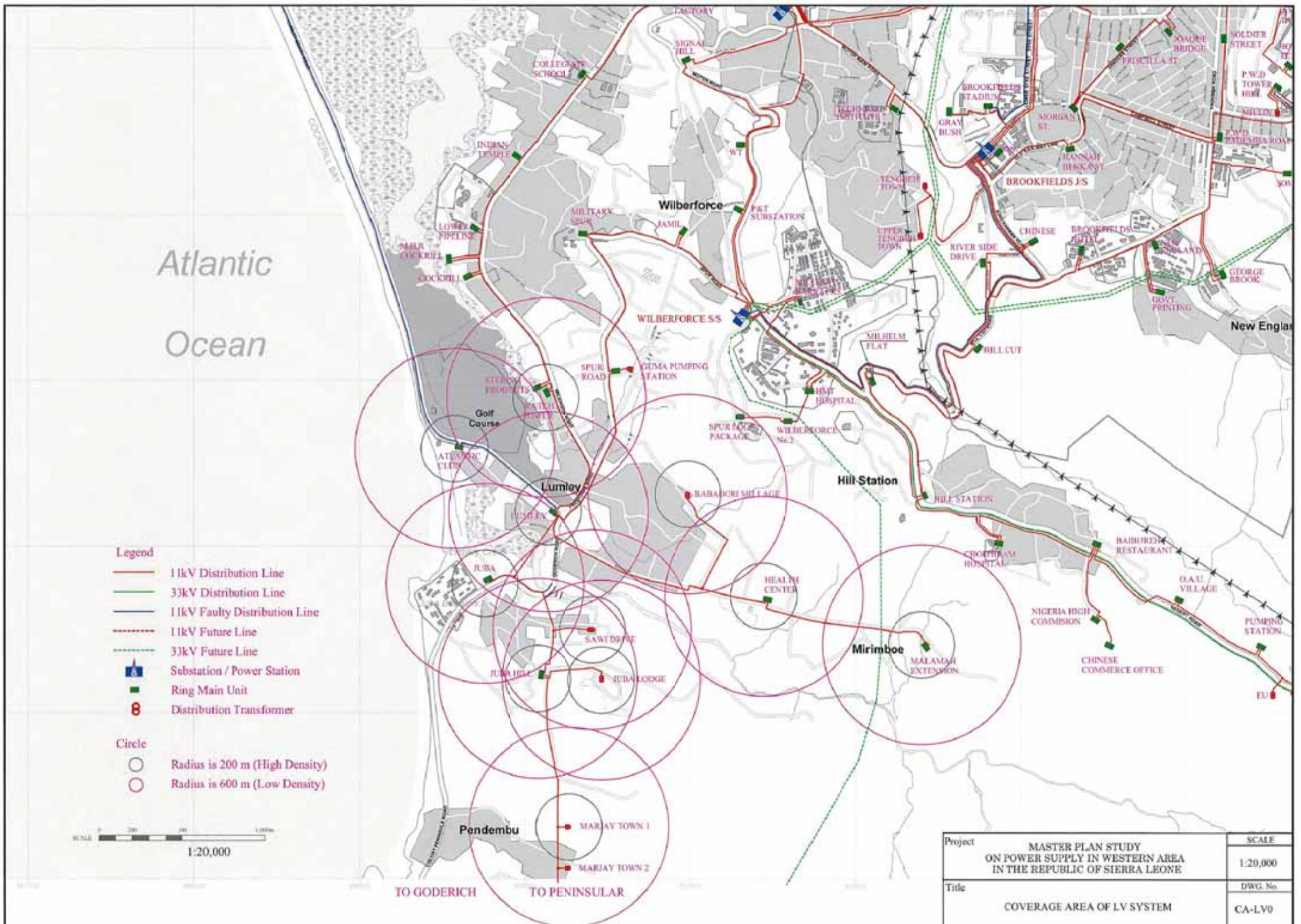
- LEGEND**
- UNDERGROUND CABLES OR OVERHEAD LINES IN OPERATION
  - OVERHEAD LINE (OHL)
  - \* OPEN POINT (PRESENT)
  - X AR AUTO RECLOSER
  - CIRCUIT BREAKER
  - /— DISCONNECTING SWITCH
  - FUSE

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	WESTERN AREA NETWORK (WESTERN PART)	DWG. No.
		GE-2008-1



- LEGEND**
- UNDERGROUND CABLES OR OVERHEAD LINES IN OPERATION
  - - - OVERHEAD LINE (OHL)
  - \* OPEN POINT (PRESENT)
  - X AR AUTO RECLOSER
  - /— CIRCUIT BREAKER
  - /— DISCONNECTING SWITCH
  - /— FUSE

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL	IEC
Title	WESTERN AREA NETWORK (EASTERN PART)	DWG. No.	GE-2008-2



Atlantic  
Ocean

**Legend**

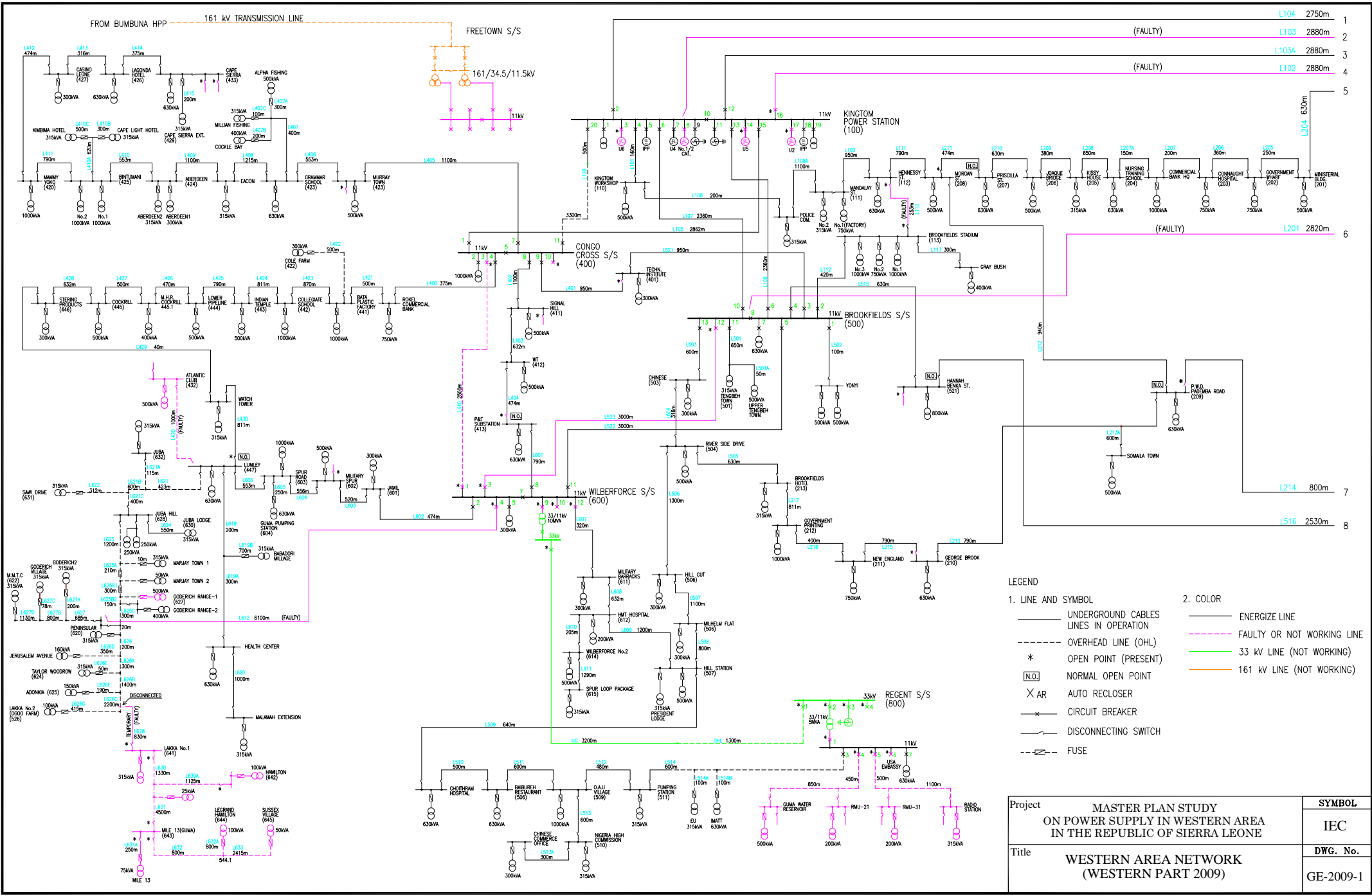
- 11kV Distribution Line
- 33kV Distribution Line
- 11kV Faulty Distribution Line
- 11kV Future Line
- 33kV Future Line
- Substation / Power Station
- Ring Main Unit
- Distribution Transformer

**Circle**

- Radius is 200 m (High Density)
- Radius is 600 m (Low Density)

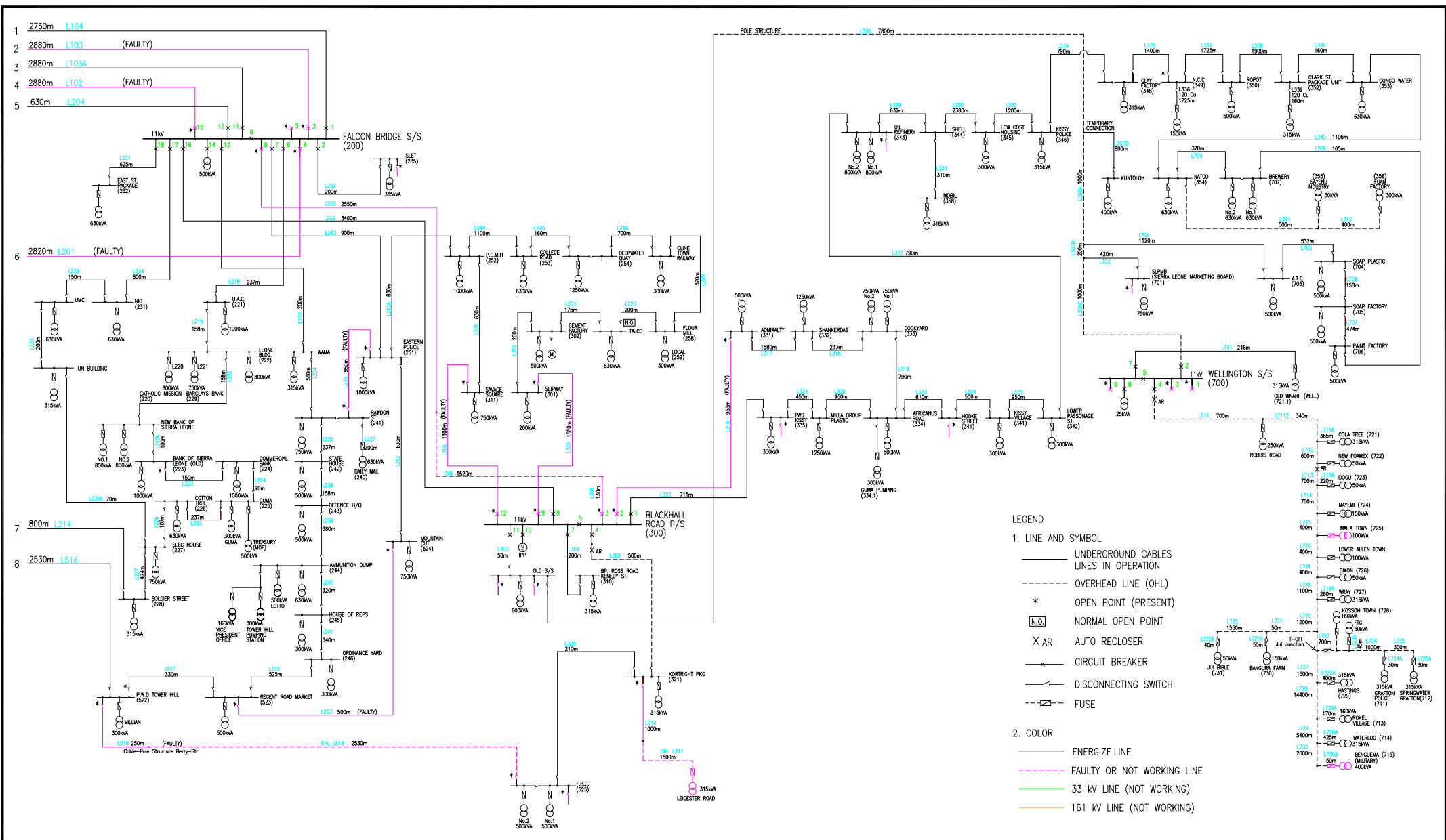


Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SCALE	1:20,000
Title	COVERAGE AREA OF LV SYSTEM	DWG. No.	CA-LV0



- LEGEND**
- |   |                                  |
|---|----------------------------------|
| 1. LINE AND SYMBOL                      | 2. COLOR                         |
| — UNDERGROUND CABLES LINES IN OPERATION | — ENERGIZE LINE                  |
| - - - OVERHEAD LINE (OHL)               | - - - FAULTY OR NOT WORKING LINE |
| * OPEN POINT (PRESENT)                  | — 33 kV LINE (NOT WORKING)       |
| [N.O.] NORMAL OPEN POINT                | — 161 kV LINE (NOT WORKING)      |
| X AR AUTO RECLOSER                      |                                  |
| — CIRCUIT BREAKER                       |                                  |
| — DISCONNECTING SWITCH                  |                                  |
| — FUSE                                  |                                  |

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL	IEC
Title	WESTERN AREA NETWORK (WESTERN PART 2009)	DWG. No.	GE-2009-1



**LEGEND**

**1. LINE AND SYMBOL**

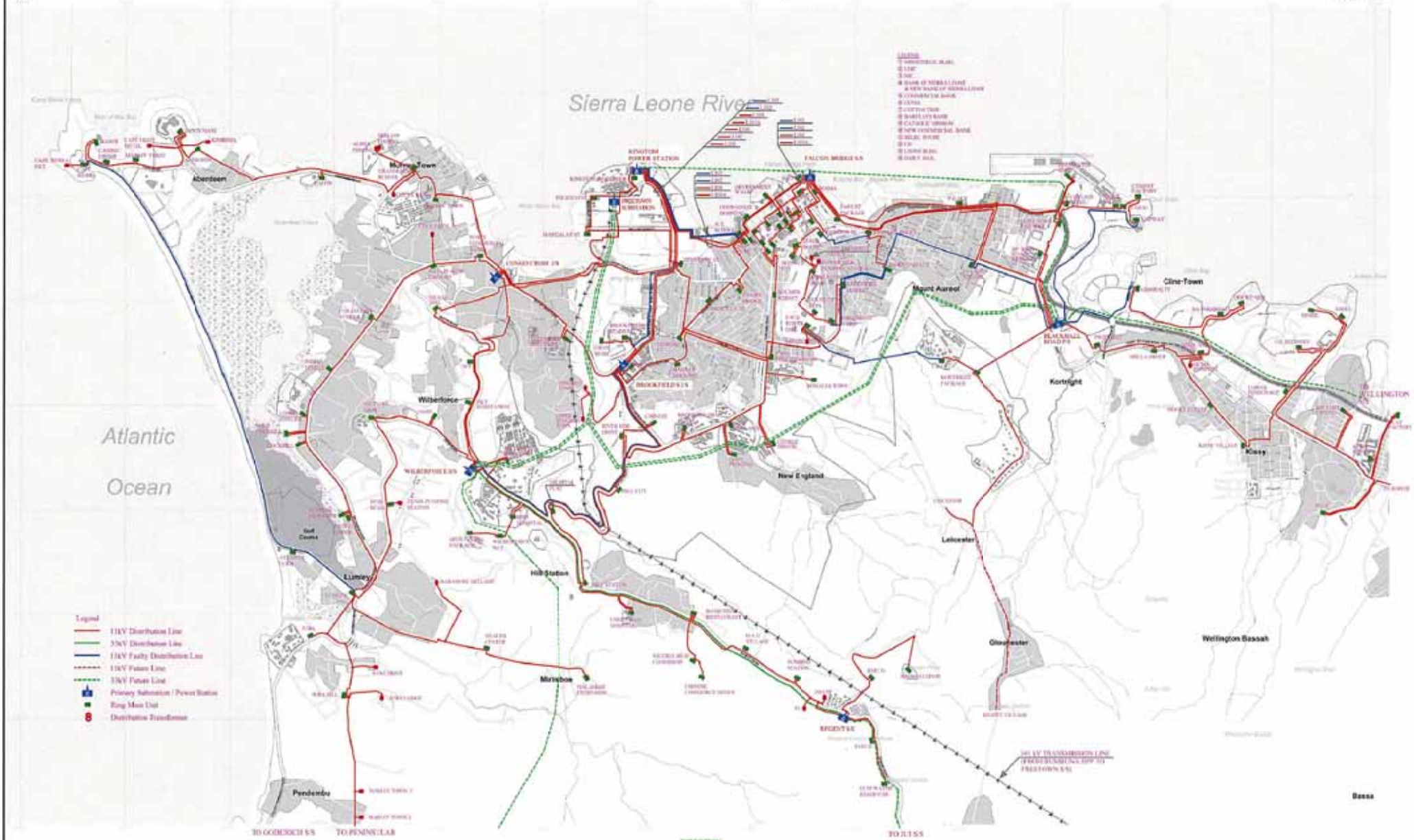
- UNDERGROUND CABLES LINES IN OPERATION
- - - OVERHEAD LINE (OHL)
- \* OPEN POINT (PRESENT)
- [N.O.] NORMAL OPEN POINT
- X AR AUTO RECLOSER
- /— CIRCUIT BREAKER
- /— DISCONNECTING SWITCH
- /— FUSE

**2. COLOR**

- ENERGIZE LINE
- - - FAULTY OR NOT WORKING LINE
- 33 kV LINE (NOT WORKING)
- 161 kV LINE (NOT WORKING)

Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL	IEC
Title	WESTERN AREA NETWORK (EASTERN PART 2009)	DWG. No.	GE-2009-2

# Freetown Area Map



- Legend
- 11kV Distribution Line
- 33kV Distribution Line
- 11kV Feeder Distribution Line
- 33kV Feeder Line
- Primary Substation / Power Station
- Ring Main Unit
- Distribution Transformer

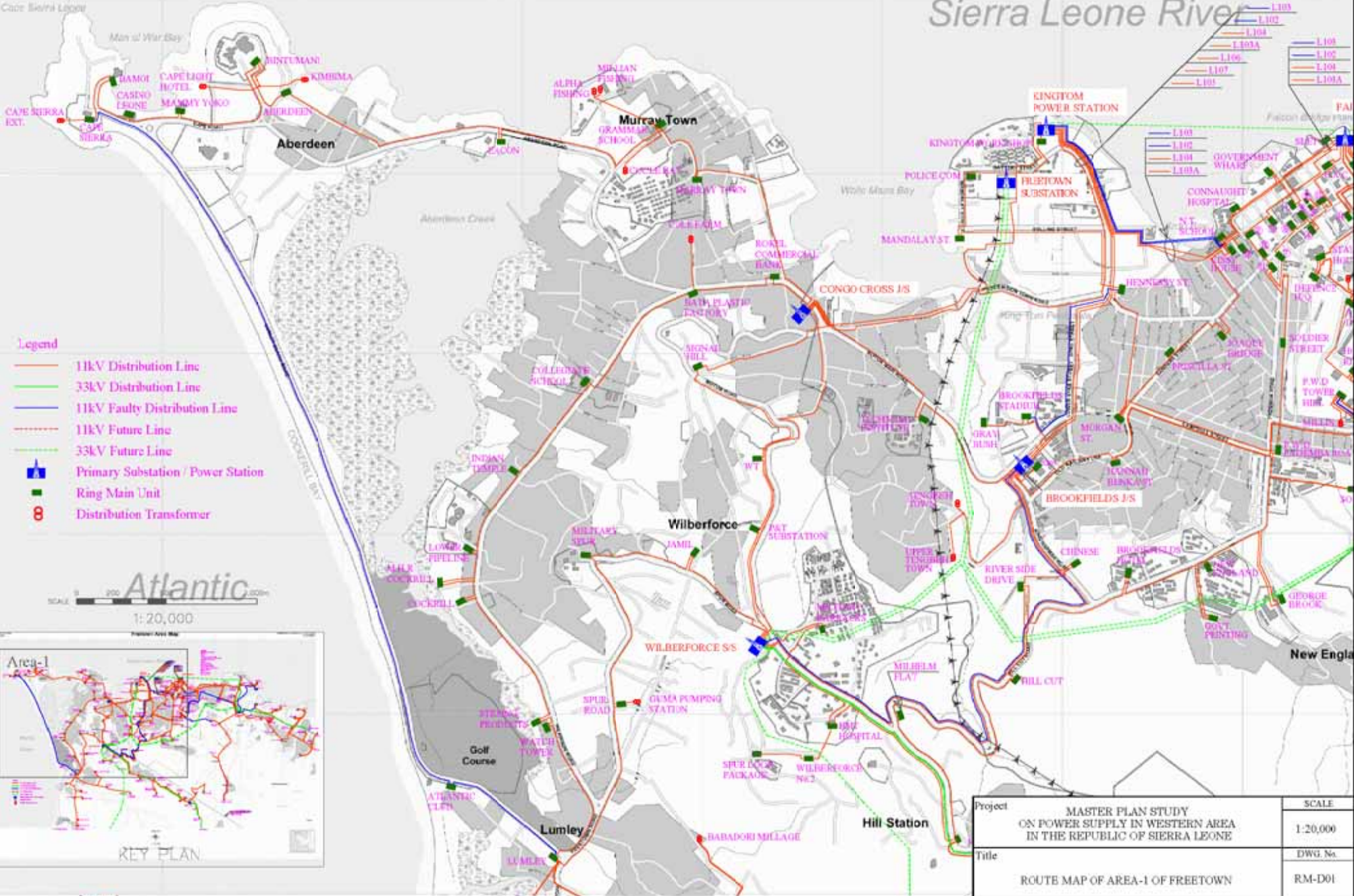
- Legend
- 11kV Distribution Line
- 33kV Distribution Line
- 11kV Feeder Distribution Line
- 33kV Feeder Line
- Primary Substation / Power Station
- Ring Main Unit
- Distribution Transformer



Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SCALE	1:10,000
Title	GENERAL ROUTE MAP OF FREETOWN AREA	DWG. No.	RM-G01



# Sierra Leone River

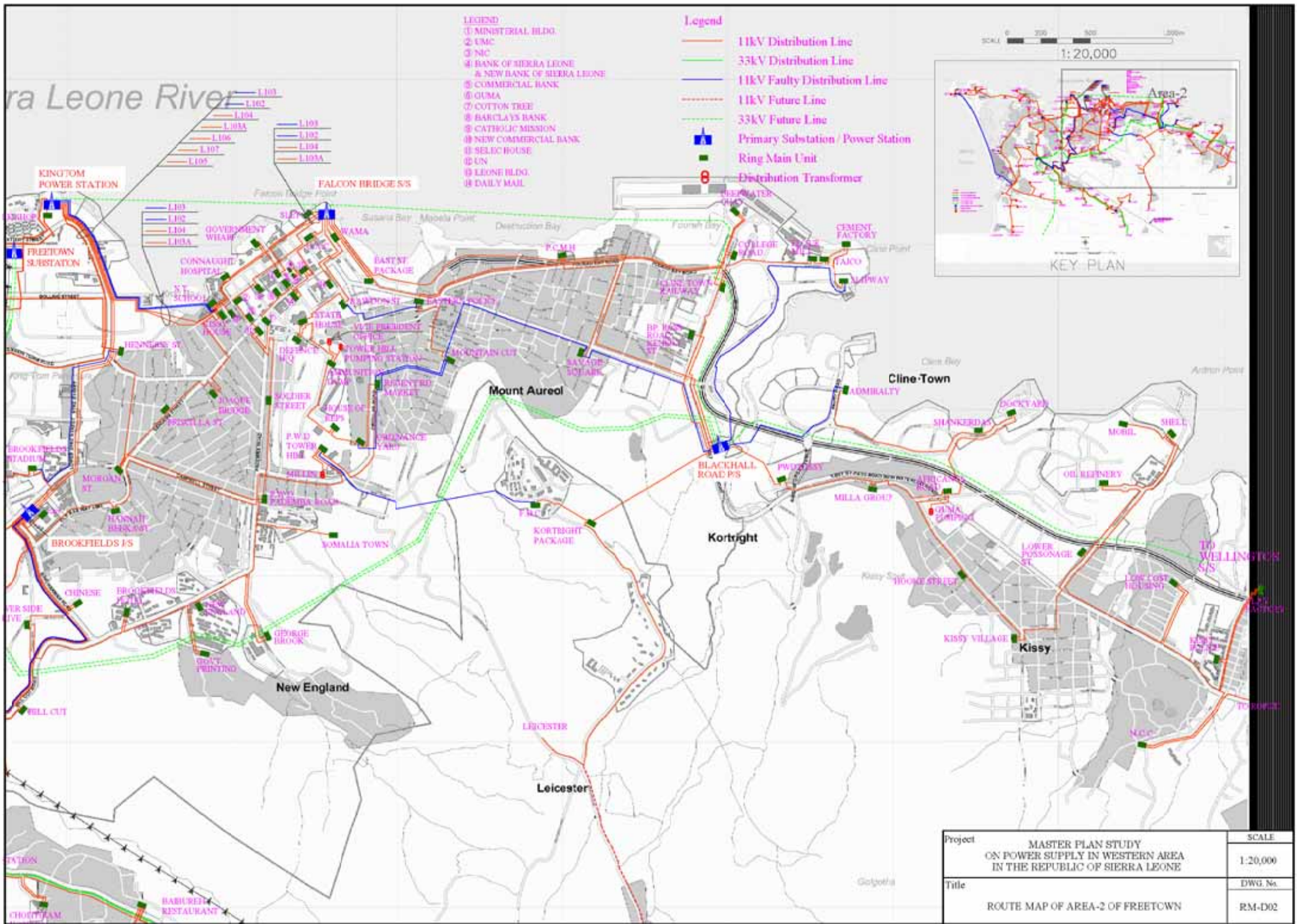


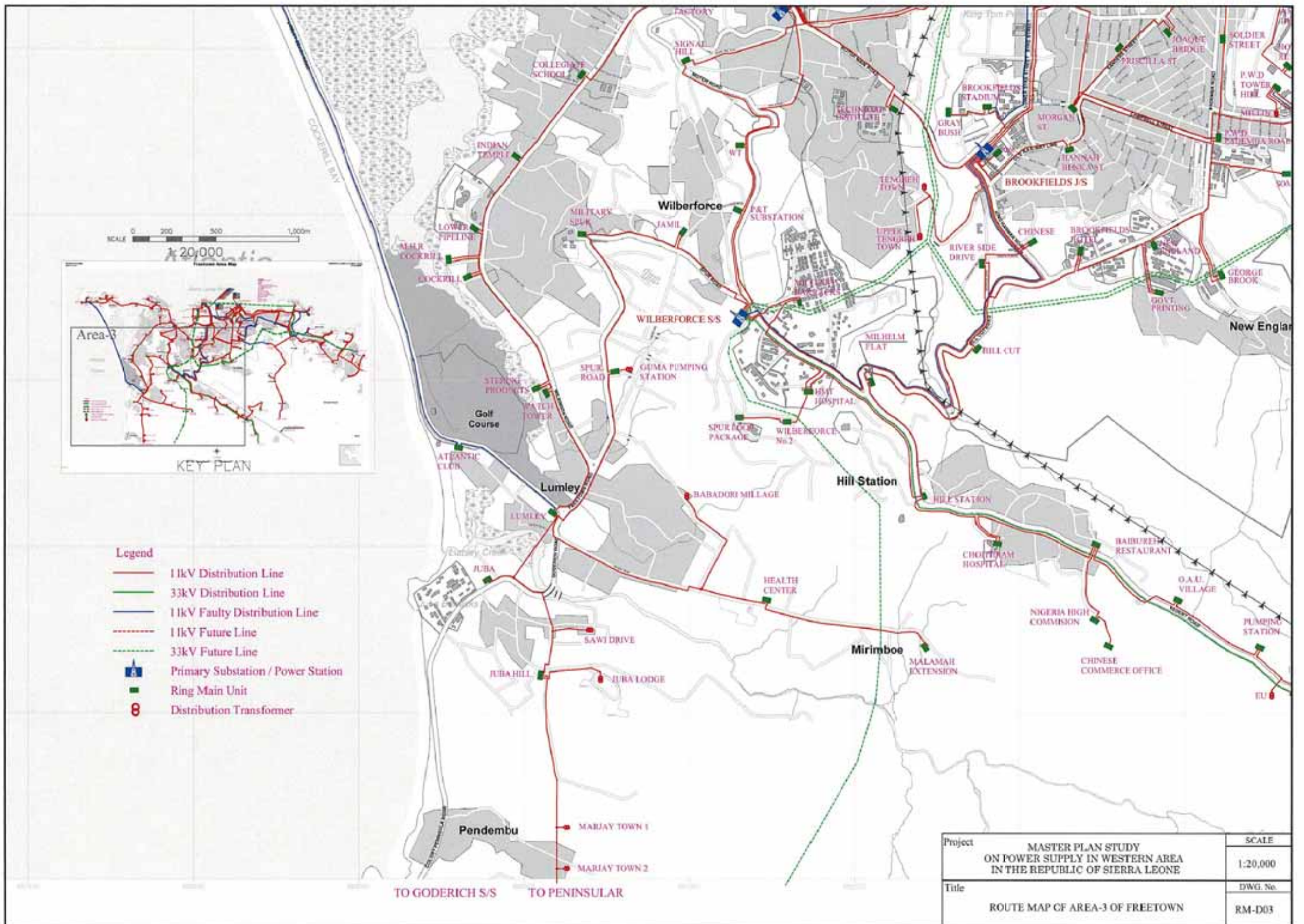
- Legend**
- 11kV Distribution Line
  - 33kV Distribution Line
  - 11kV Faulty Distribution Line
  - - - 11kV Future Line
  - - - 33kV Future Line
  - Primary Substation / Power Station
  - Ring Main Unit
  - ⊗ Distribution Transformer

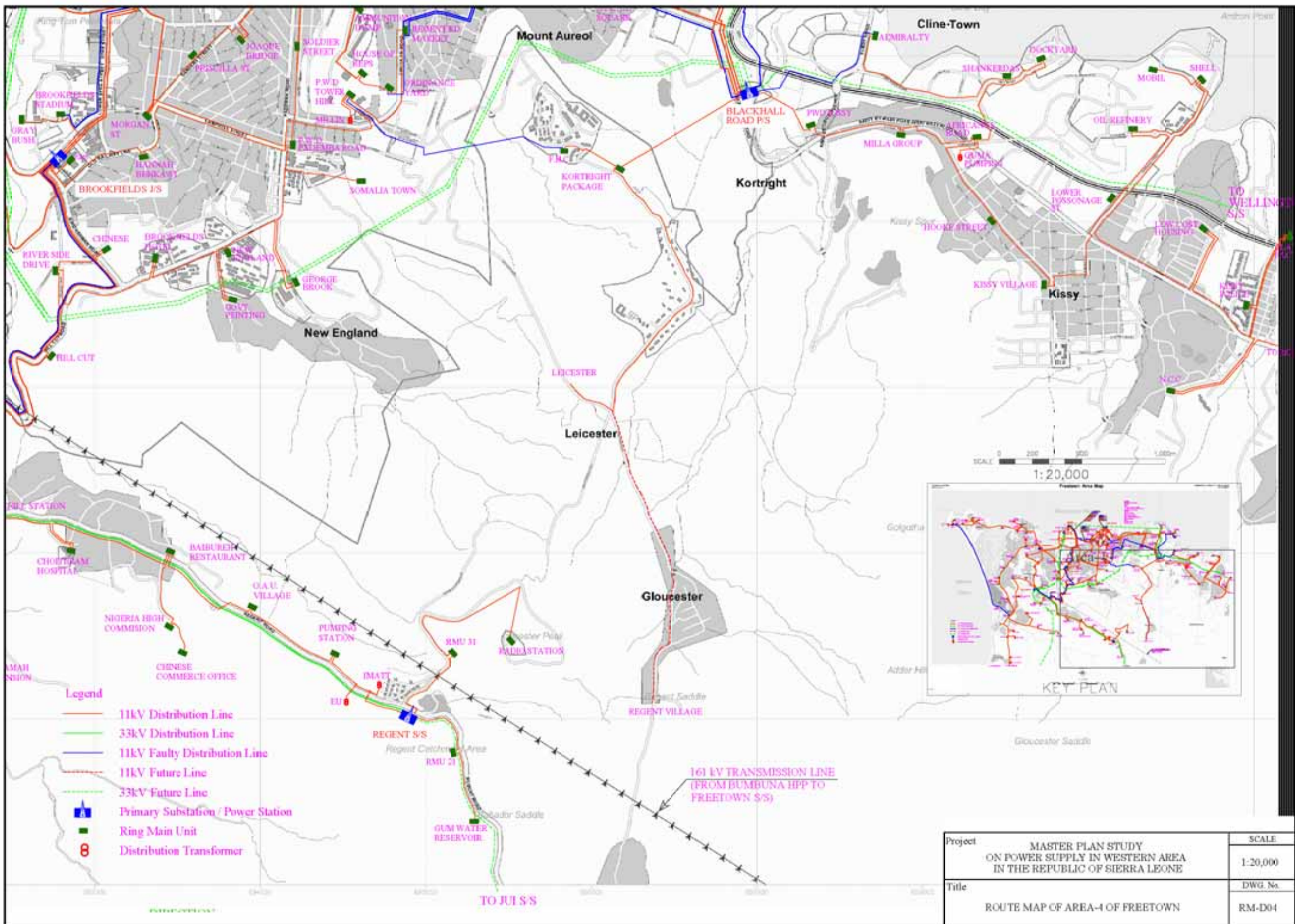
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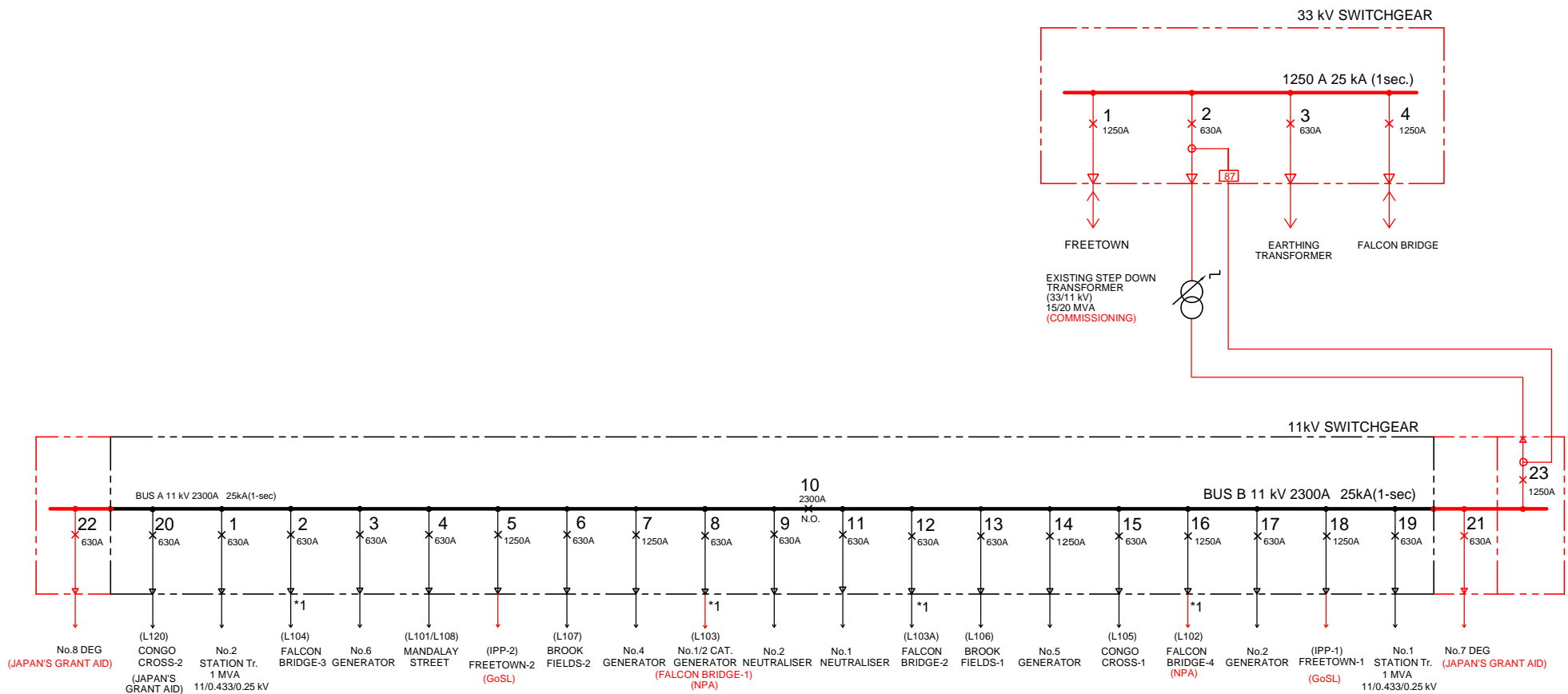


Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SCALE	1:20,000
Title	ROUTE MAP OF AREA-1 OF FREETOWN	DWG. No.	RM-D01





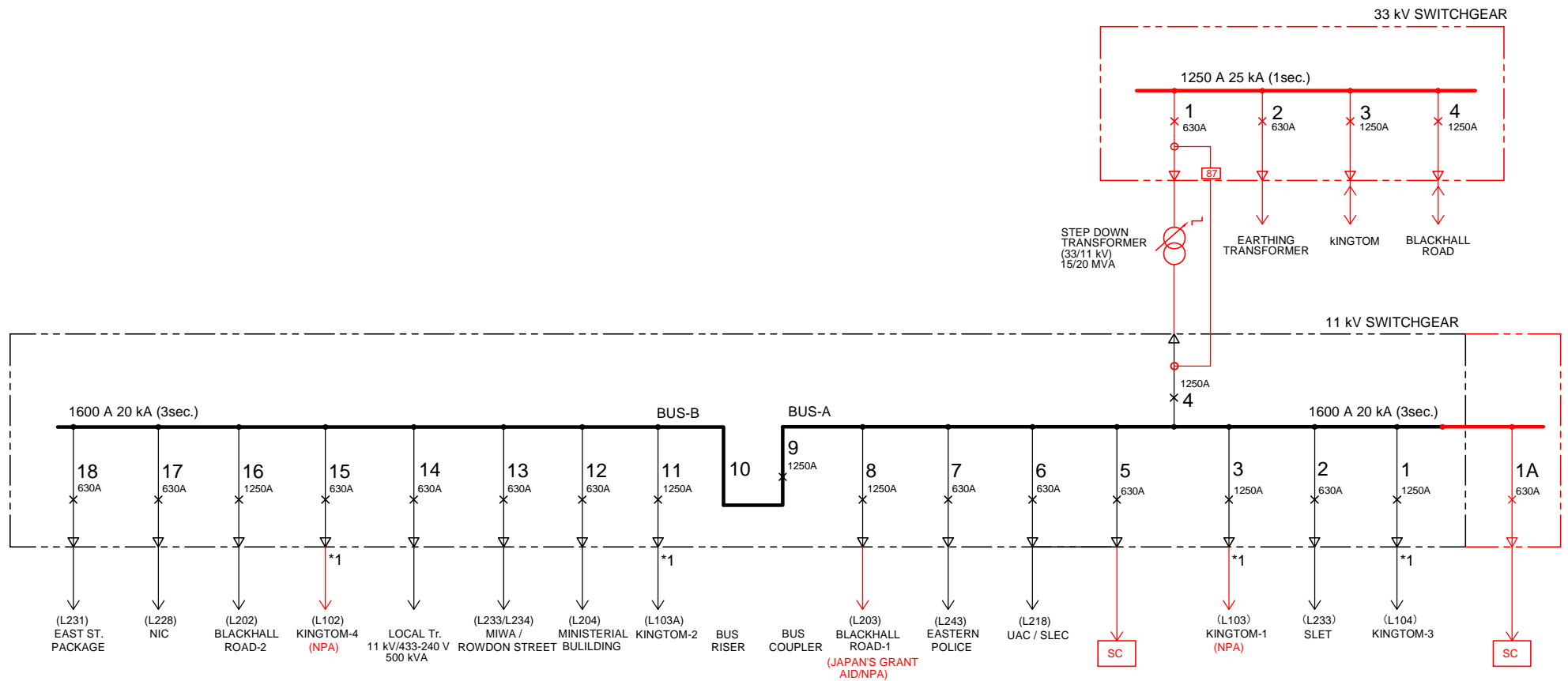




**REMARKS:**

- \* 1 : FALCONBRIDGE-4 FEEDER 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.

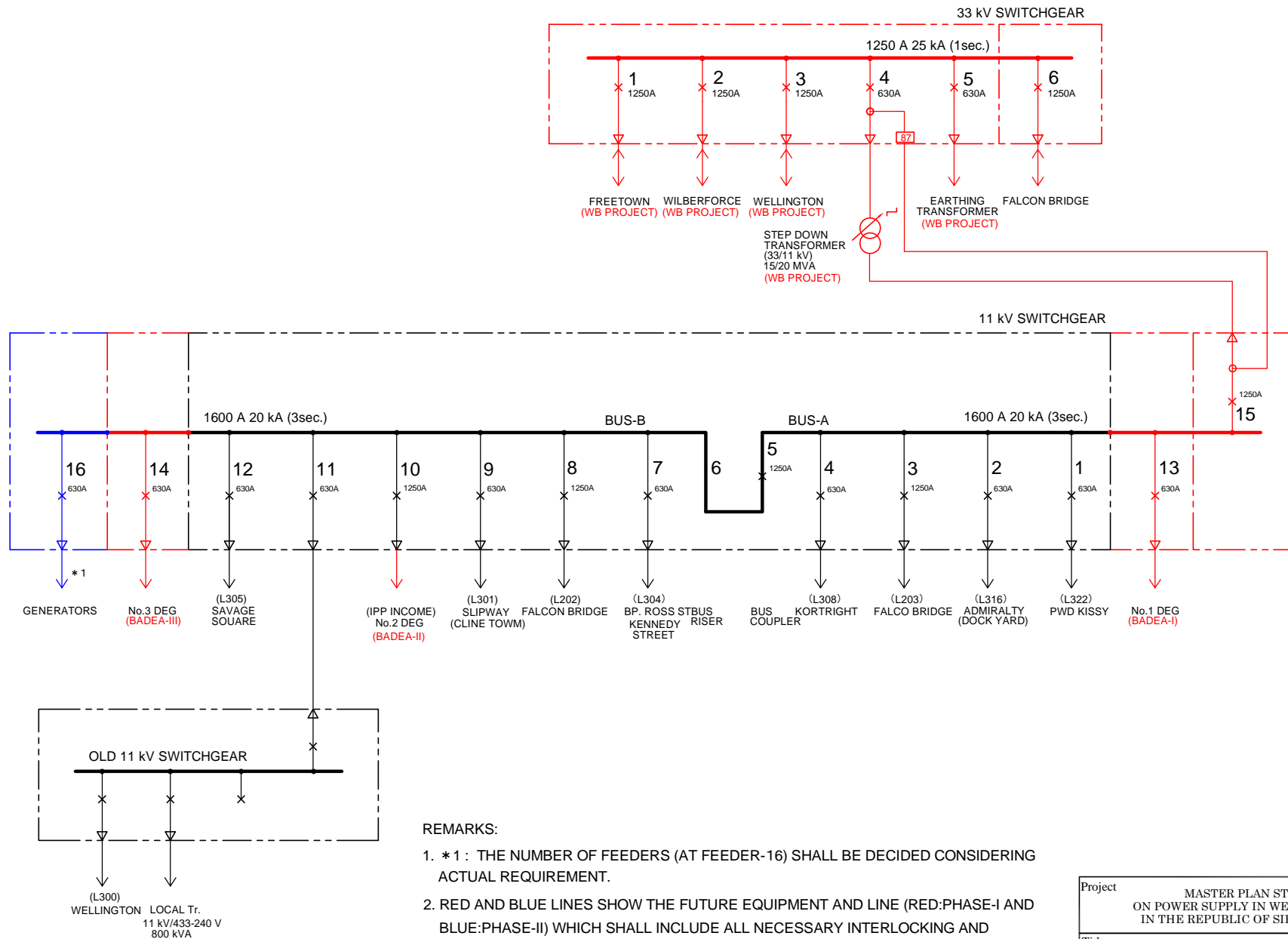
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: KINGTOM P/S (100)	DWG. No.
		KT-E1



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.

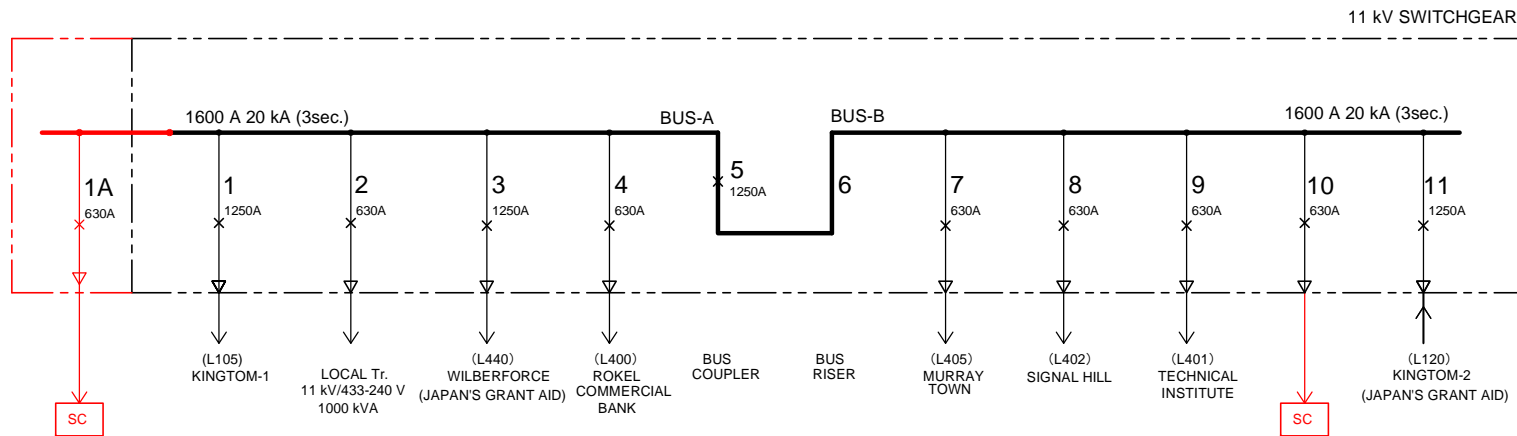
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: FALCON BRIDGE S/S (200)	DWG. No.
		FB-E1



**REMARKS:**

1. \* 1 : THE NUMBER OF FEEDERS (AT FEEDER-16) SHALL BE DECIDED CONSIDERING ACTUAL REQUIREMENT.
2. 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

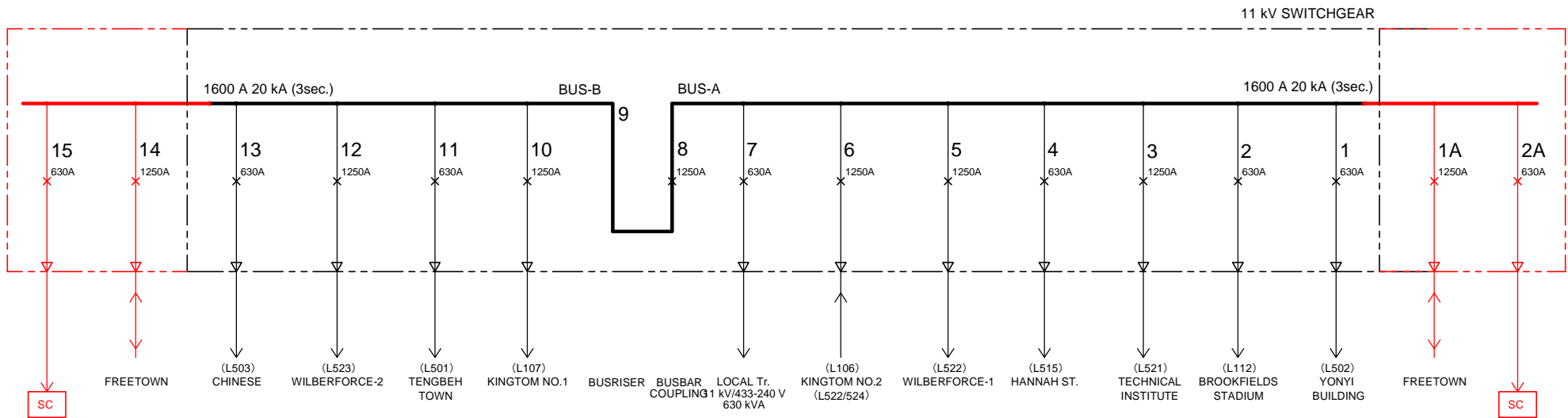


REMARKS:

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

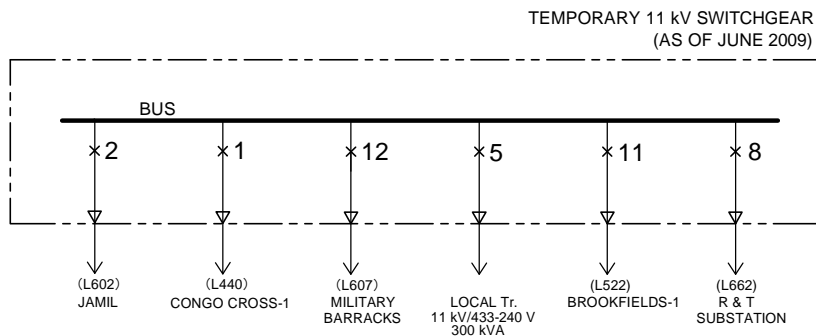
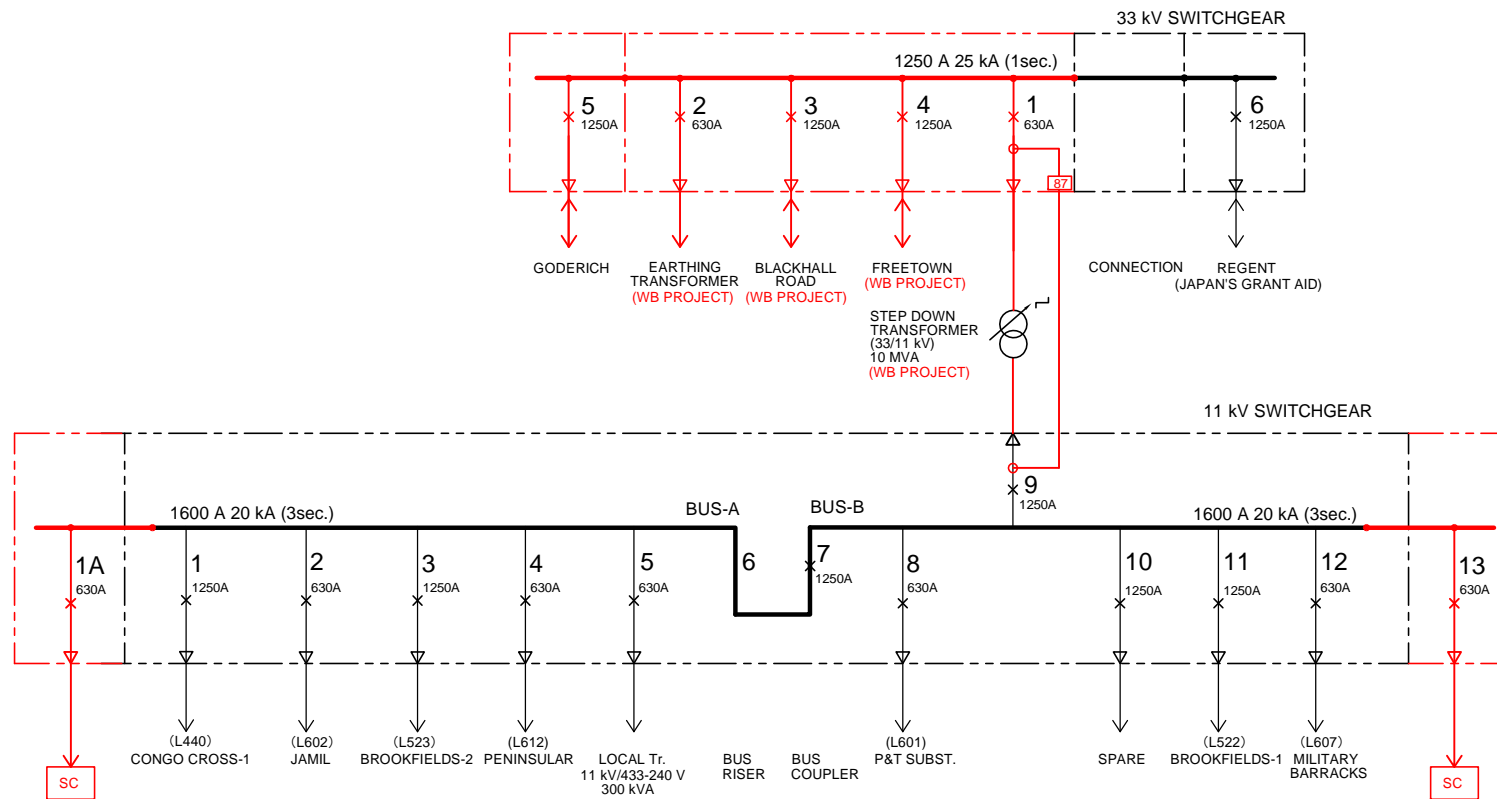




REMARKS:

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

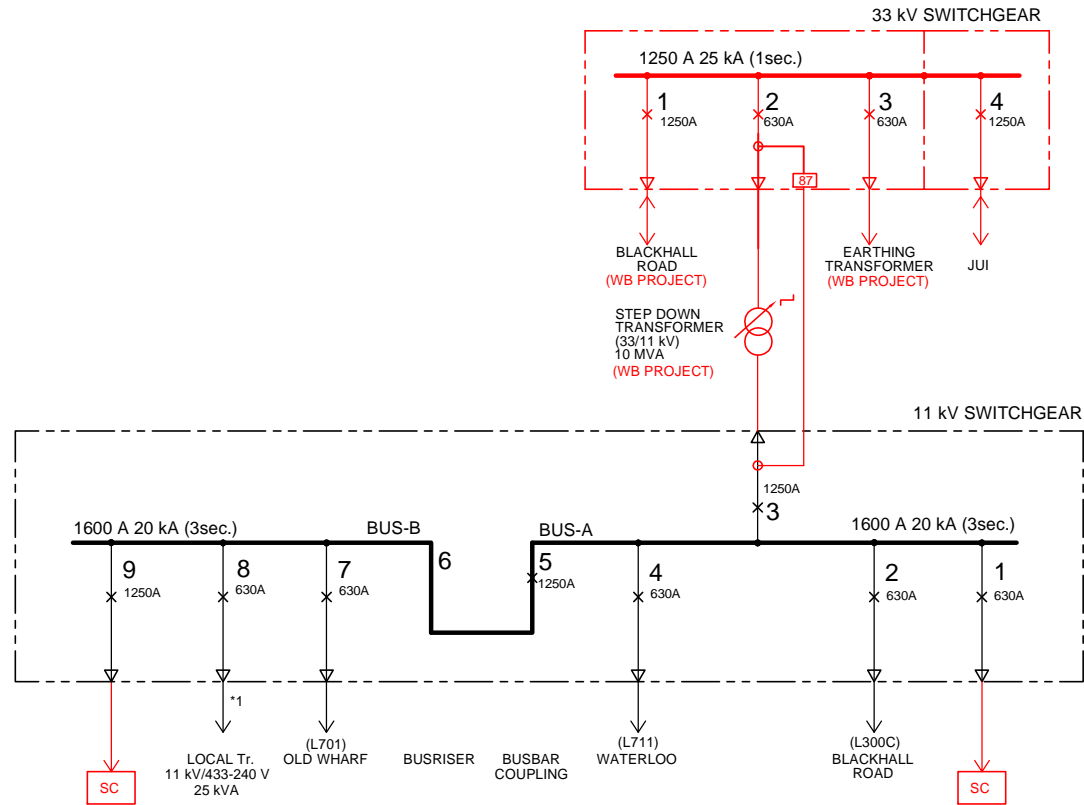
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11kV SWITCHGEAR FEEDERS: BROOKFIELDS J/S (500)	DWG. No.
		BF-E1



REMARKS:

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

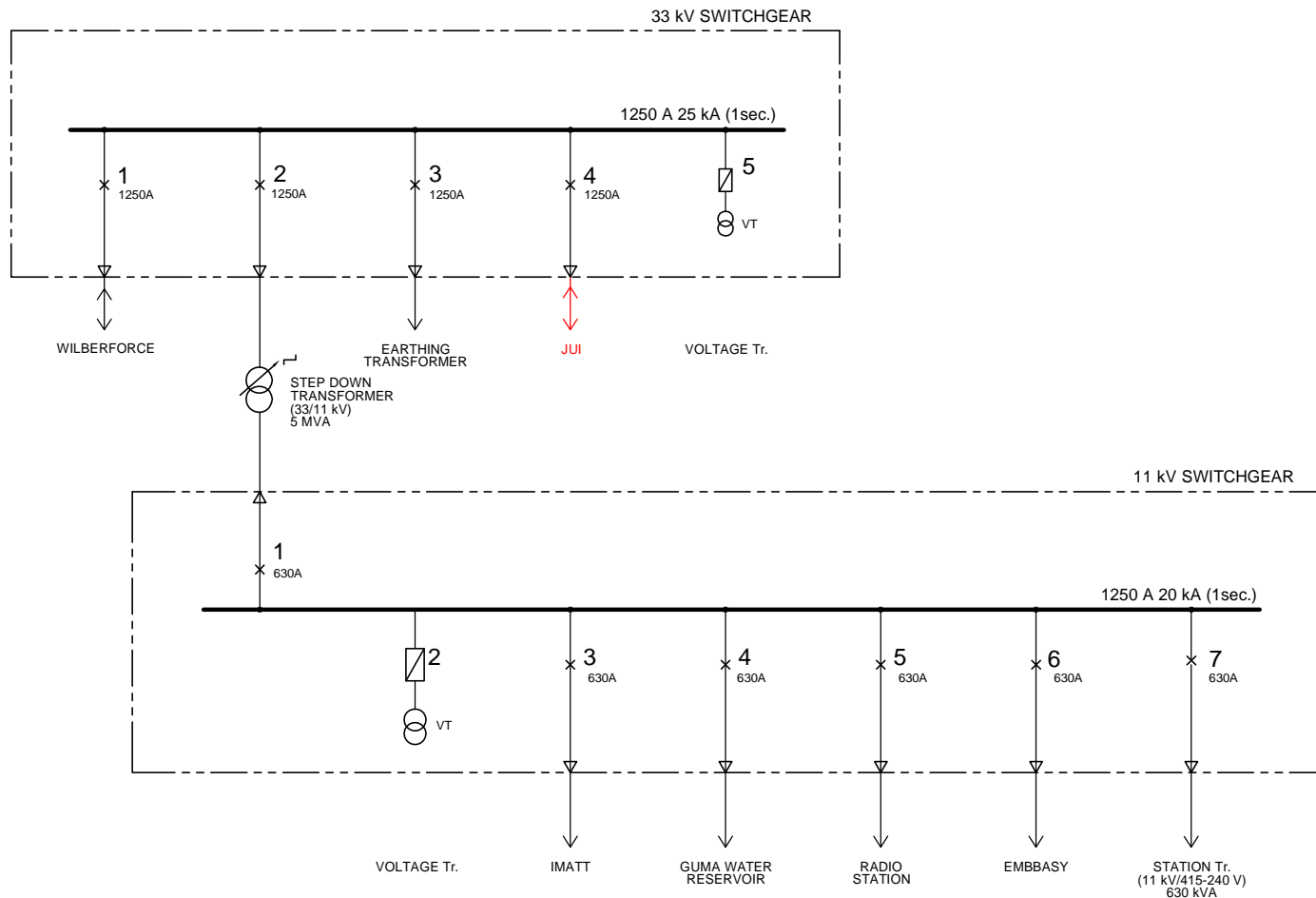
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: WILBERFORCE S/S (600)	DWG. No.
		WF-E1



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.

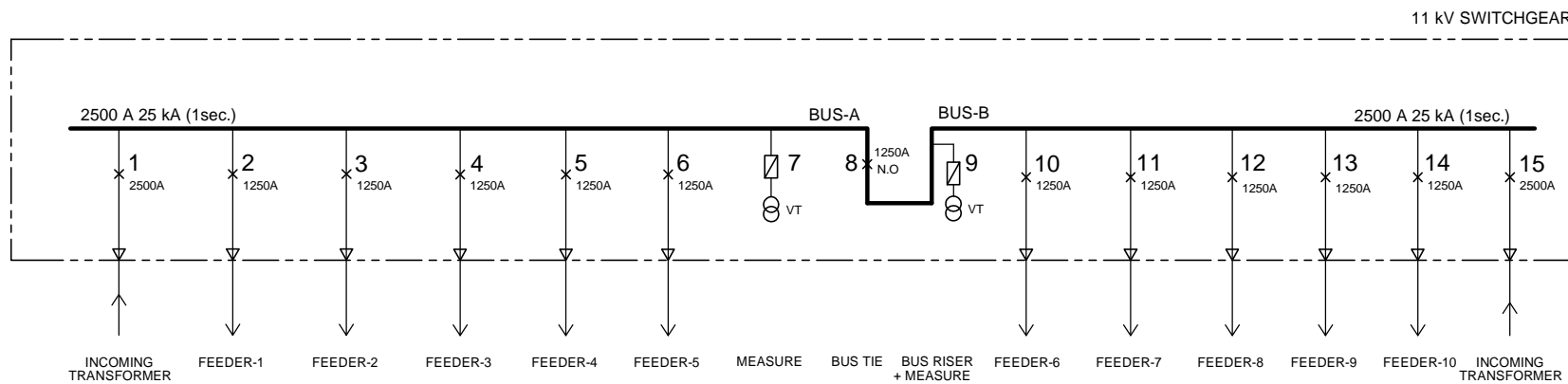
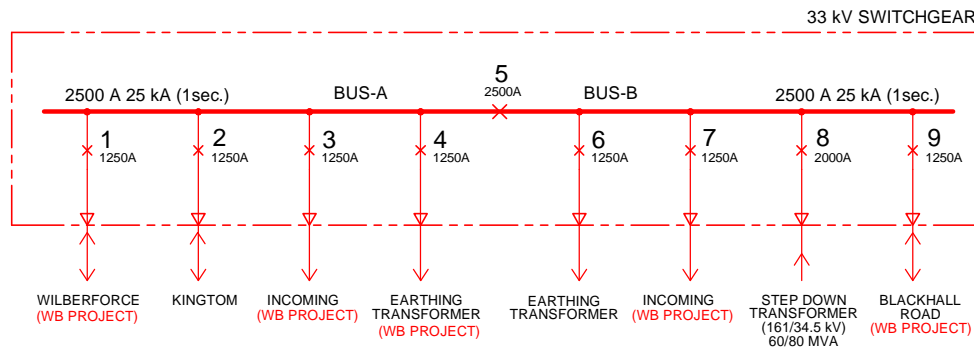
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: WELLINGTON S/S (700)	DWG. No.
		WN-E1



REMARKS:

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

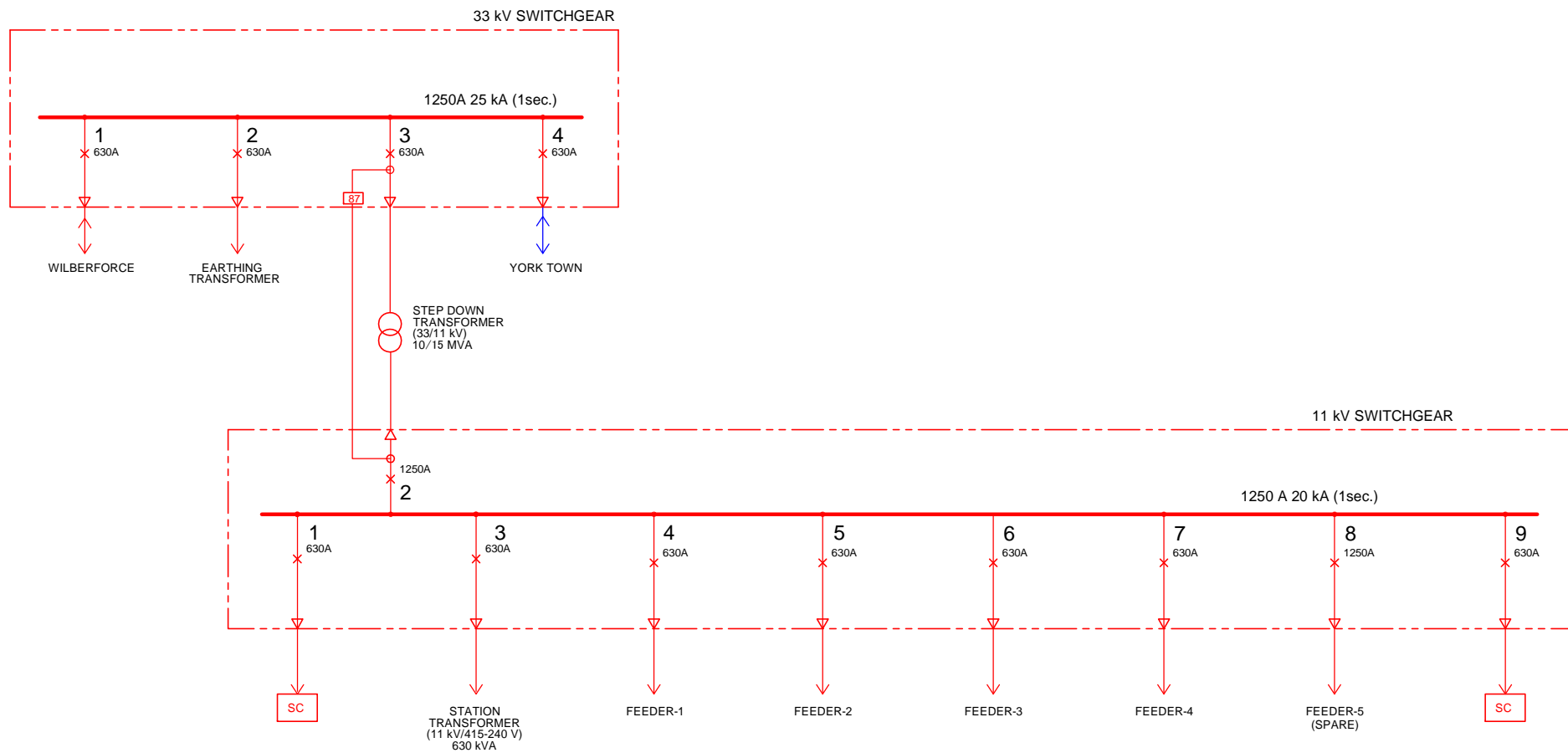
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: REGENT S/S (800)	DWG. No.
		RT-E1



REMARKS:

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

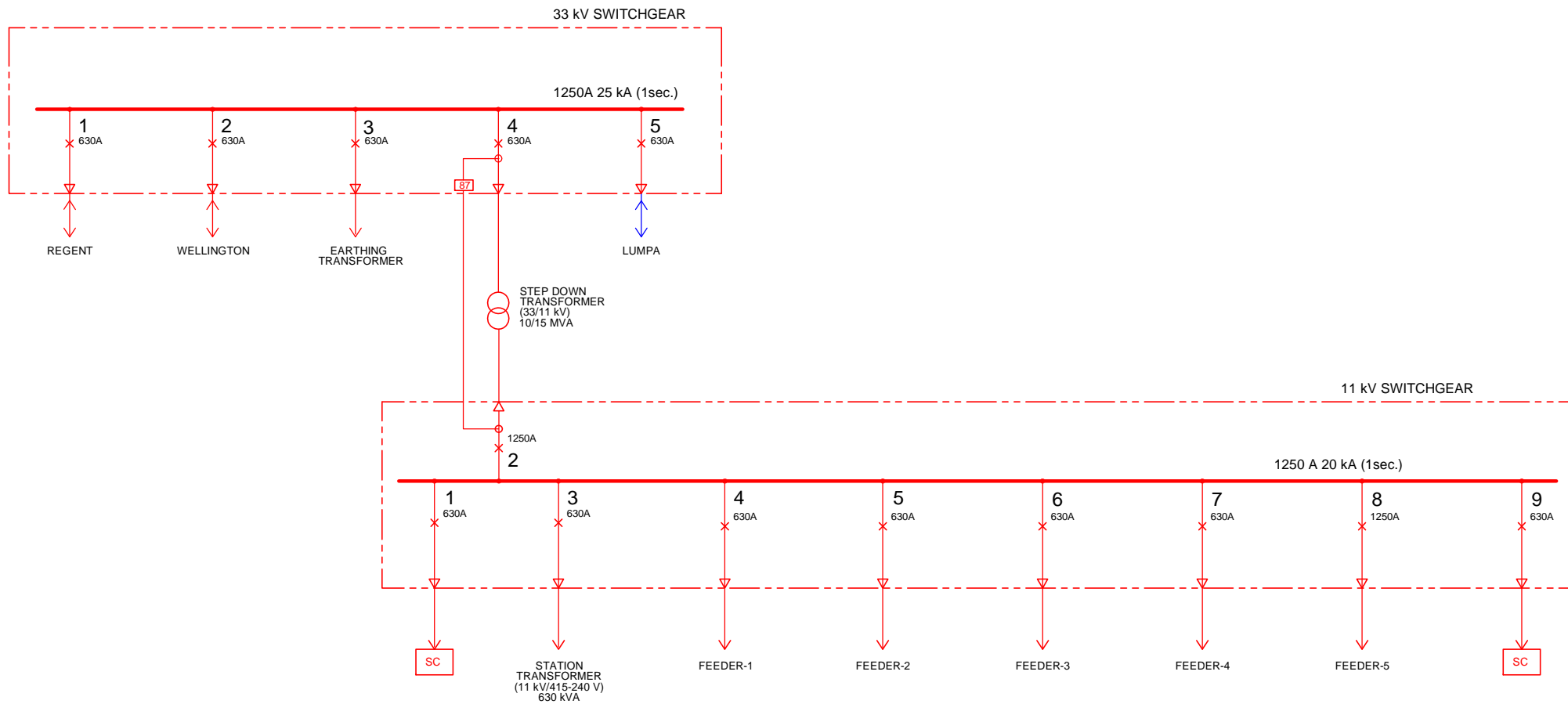
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: FREETOWN S/S (900)	DWG. No.
		FT-E1



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.

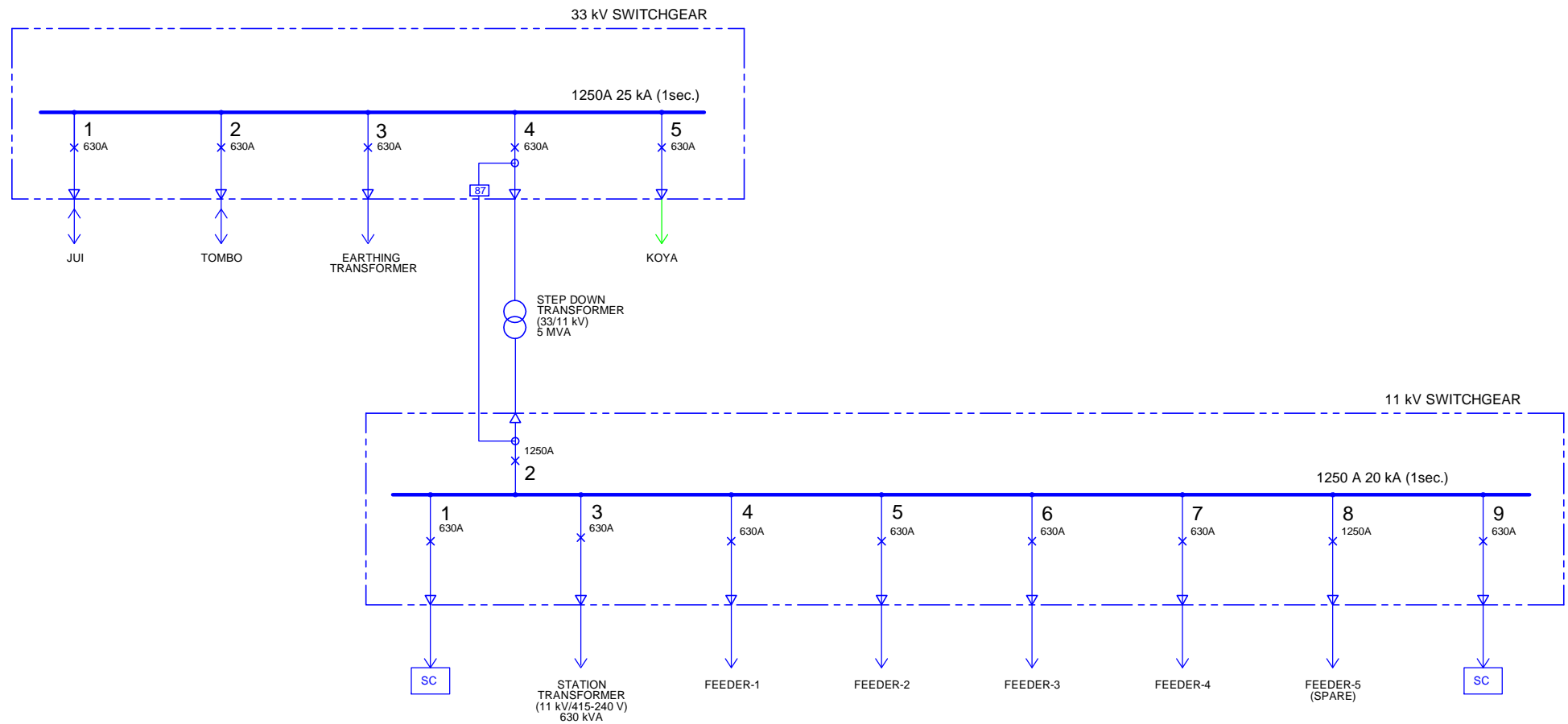
Project	MASTER PLAN STUDY ON POWER SUPPLY IN WESTERN AREA IN THE REPUBLIC OF SIERRA LEONE	SYMBOL
		IEC
Title	11/33 kV SWITCHGEAR FEEDERS: GODERICH S/S (1000)	DWG. No.
		GR-E1



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

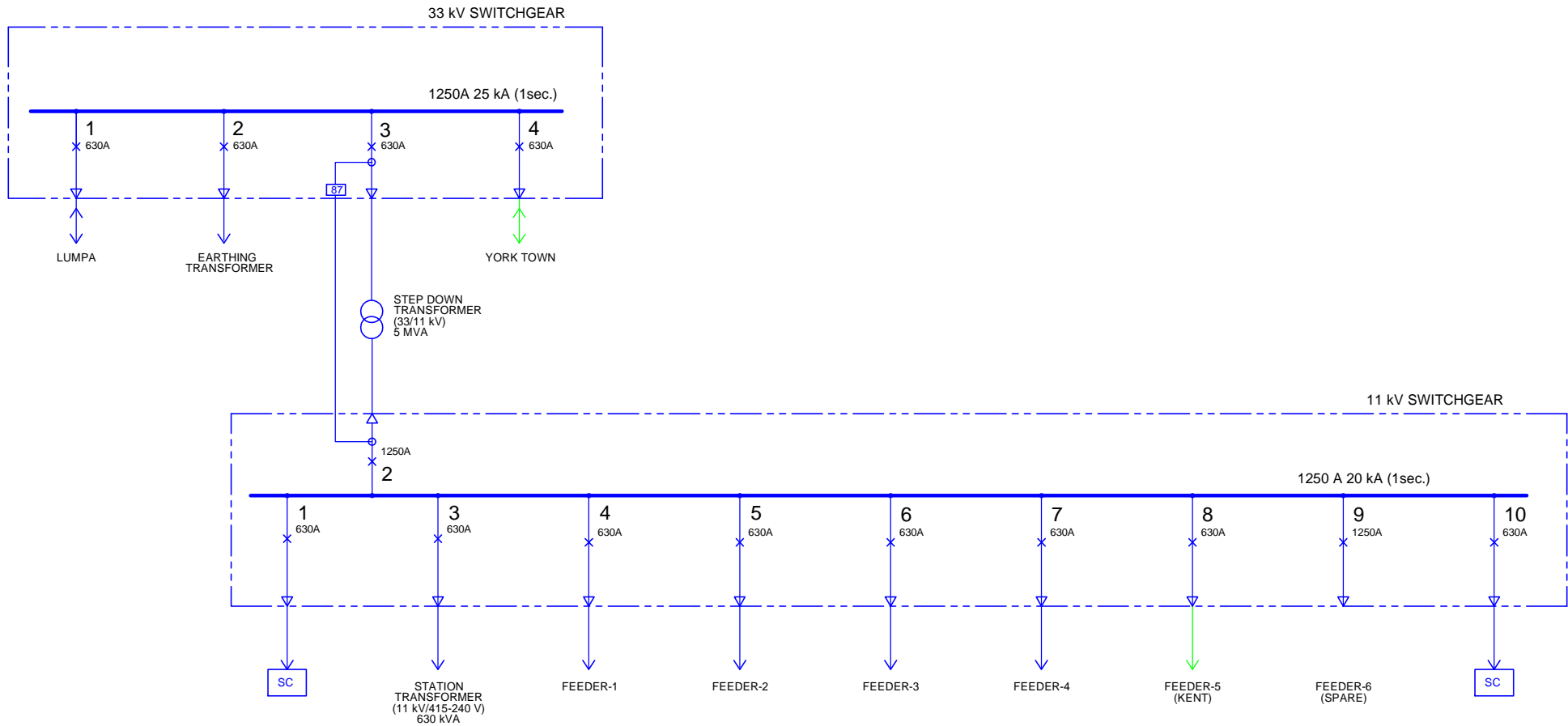


REMARKS:

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

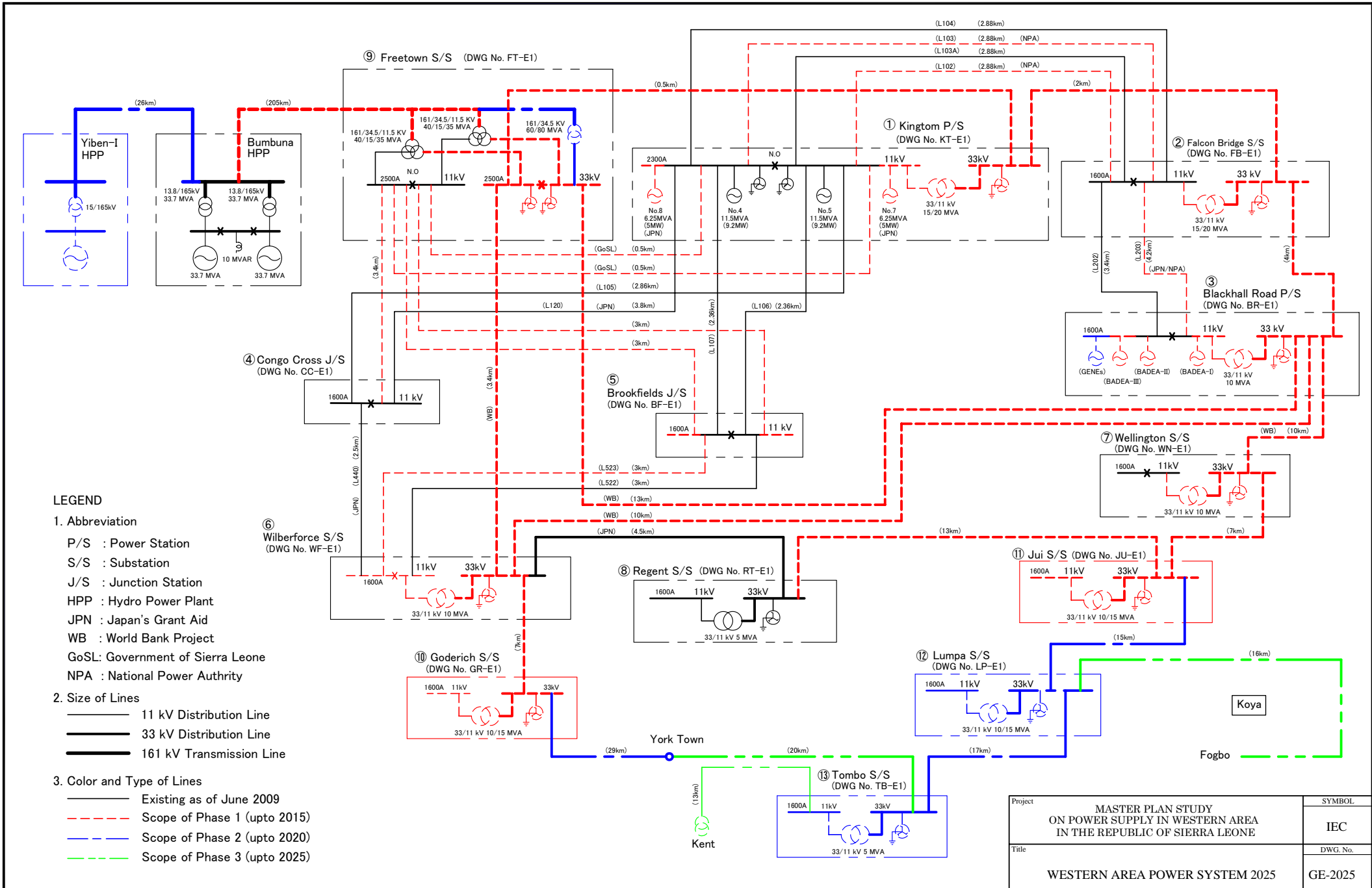




REMARKS:

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

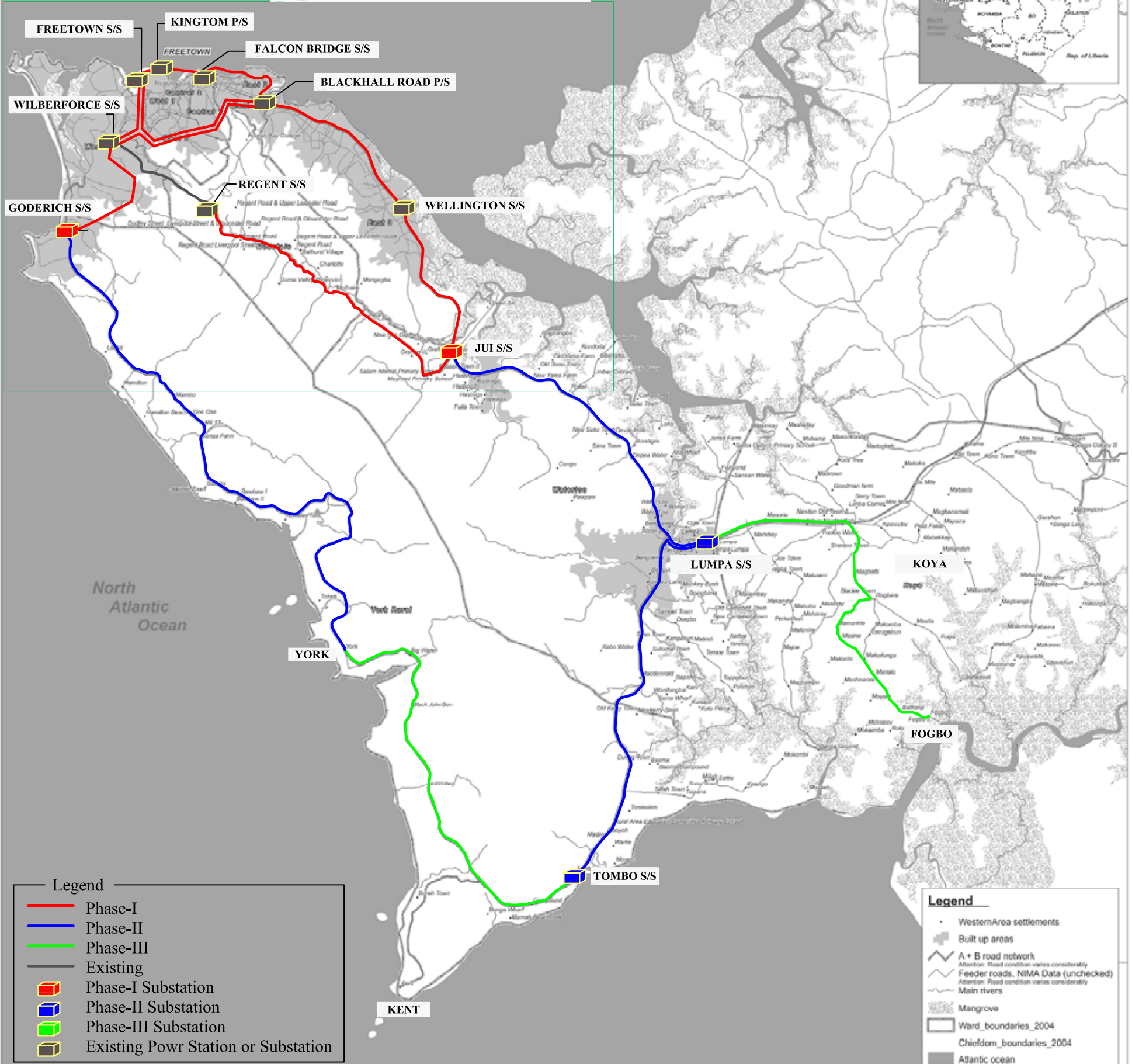
**3. Color and Type of Lines**

- 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

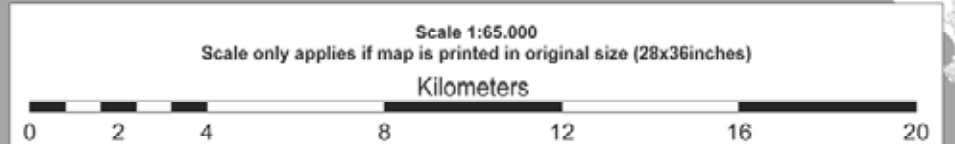
**Legend**

- 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

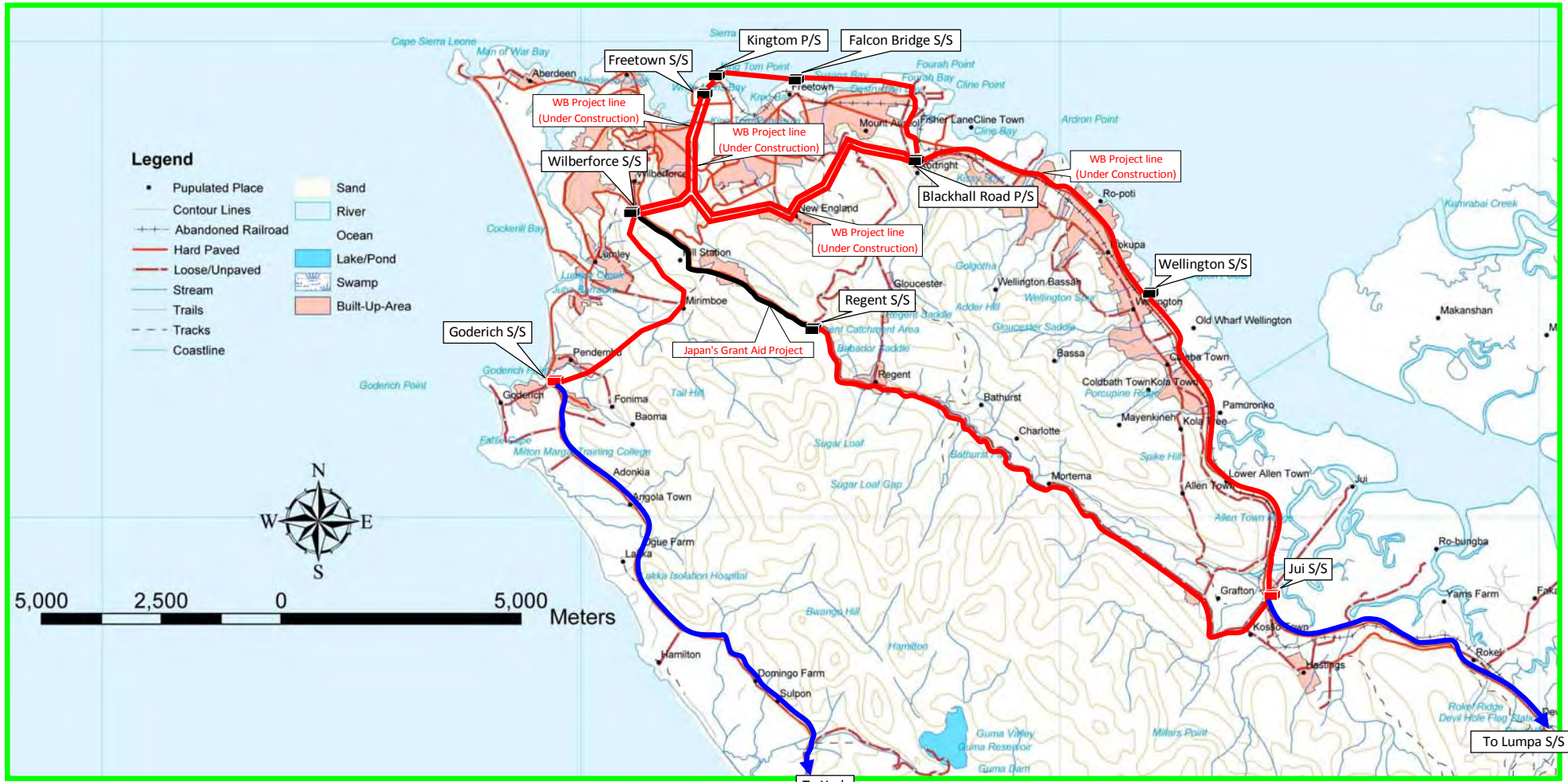


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 SLIS Map Code 0129  
 19 July 2007

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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

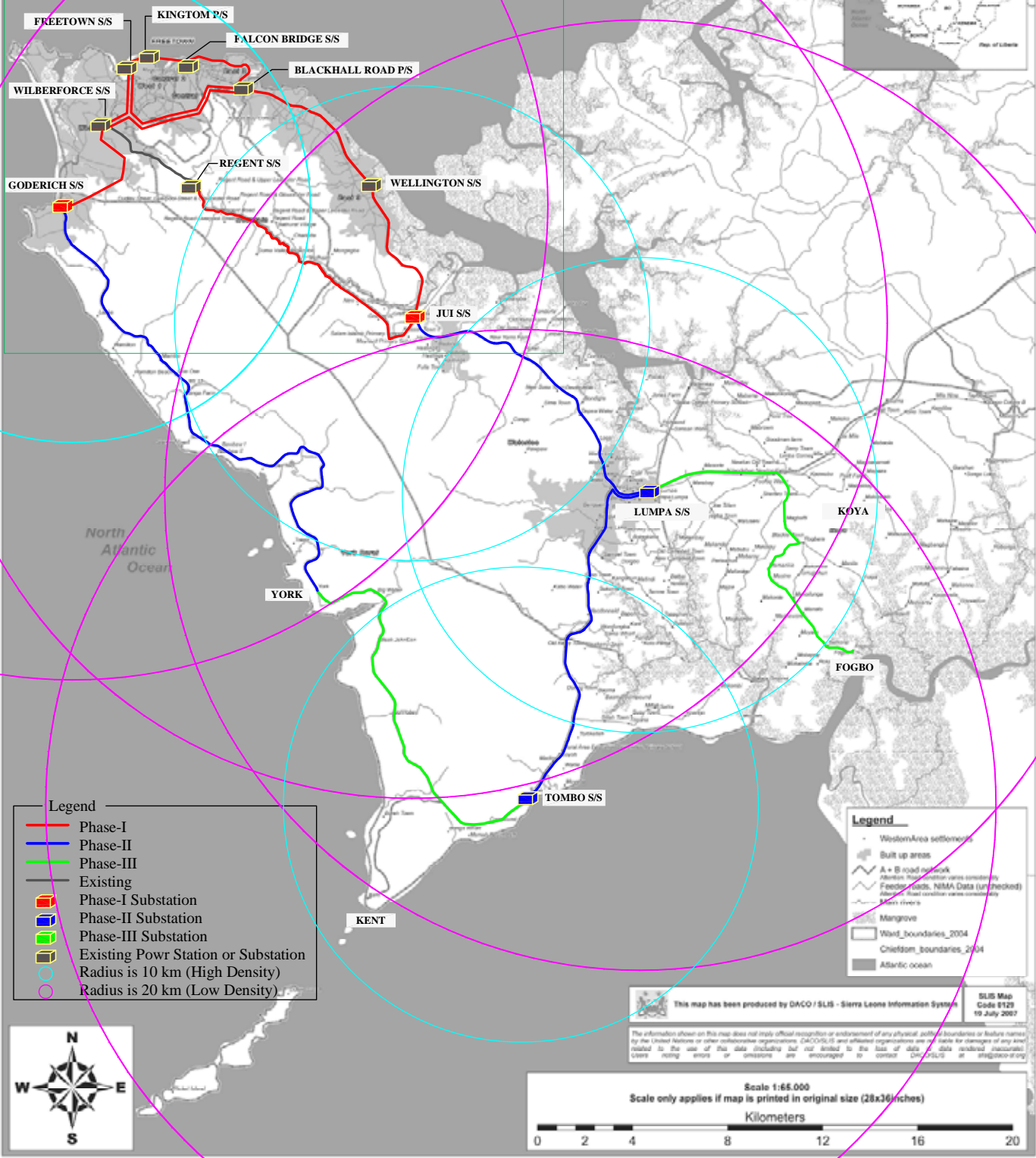
Symbol

- : 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)
- All roads (road 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