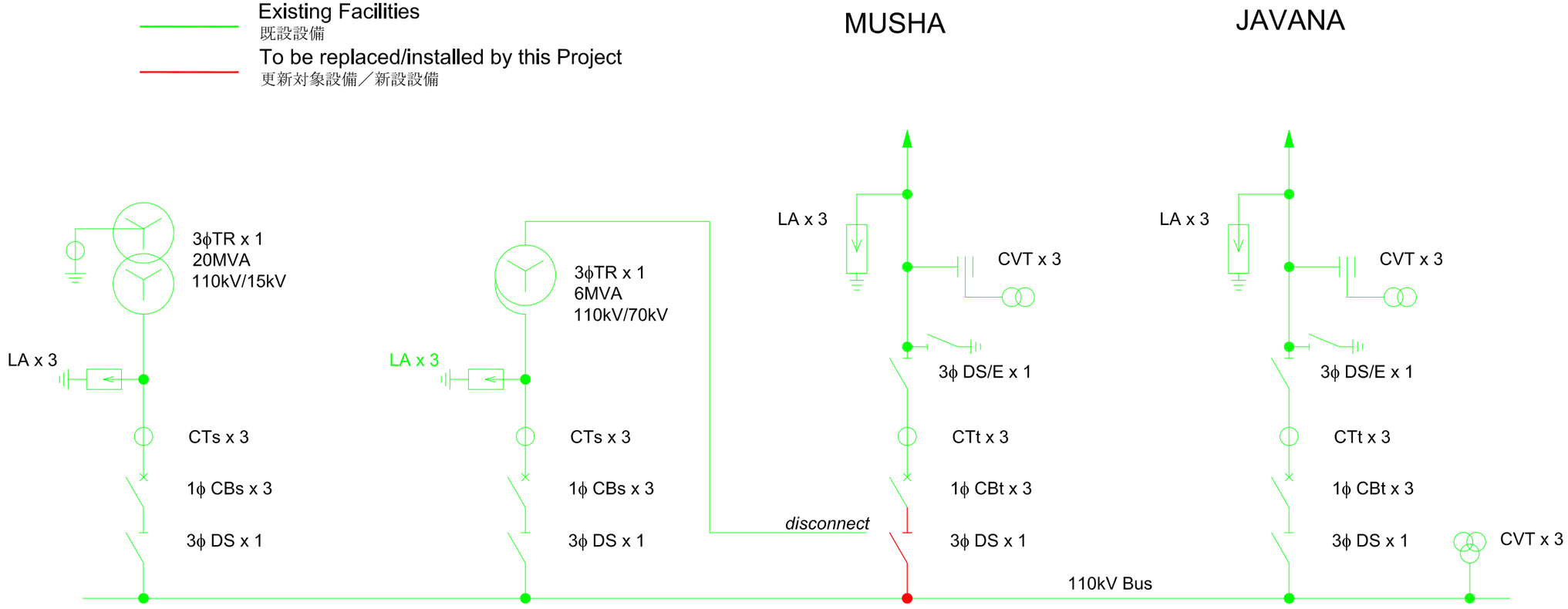
LEGEND

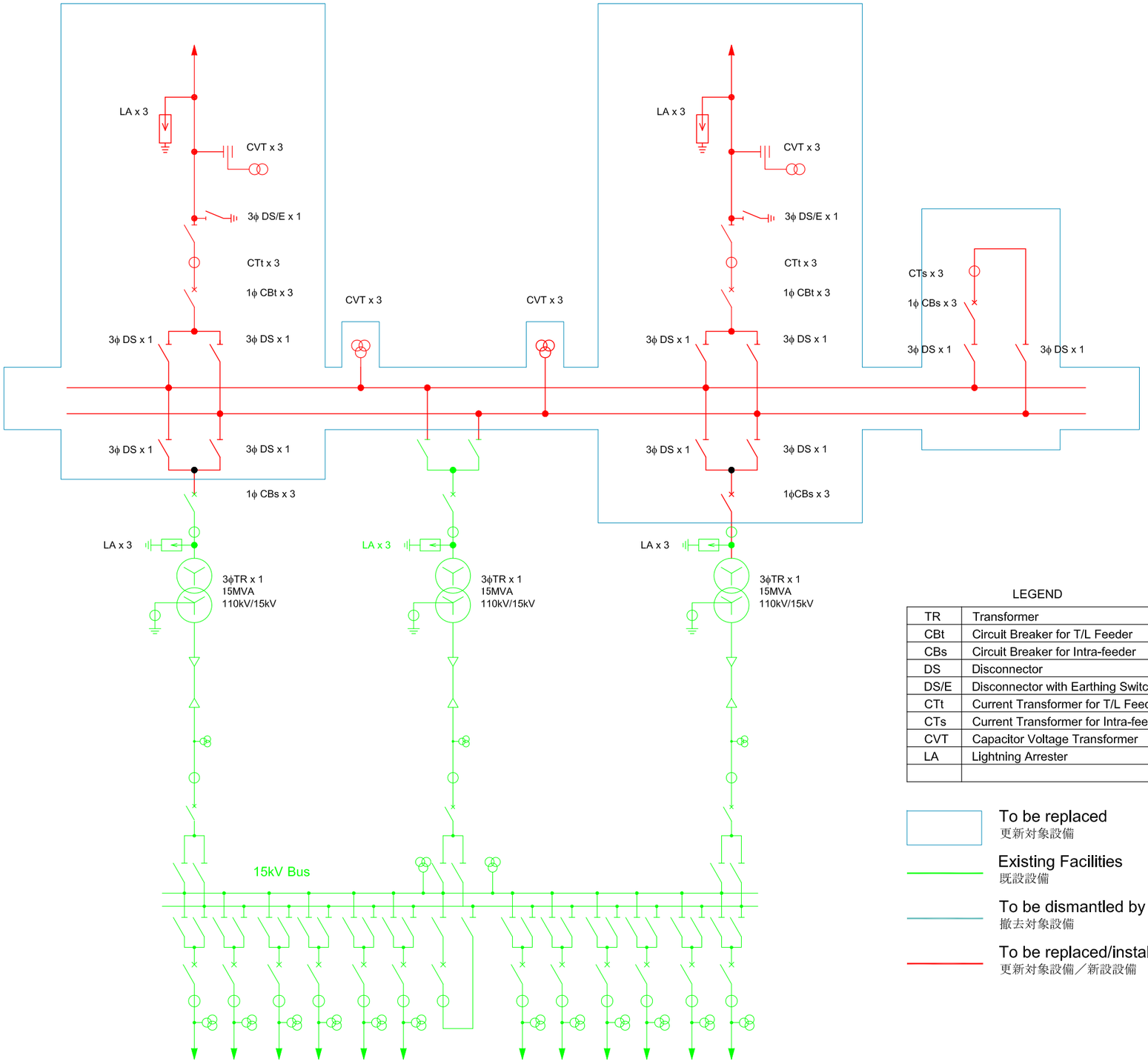
TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用しゃ断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器

Existing Facilities
既設設備

To be replaced/installed by this Project
更新対象設備／新設設備



	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU	NIPPON KOEI CO., LTD
		BIREMBO SUBSTATION SINGLE LINE DIAGRAM BIREMBO 変電所 単線結線図	SS-04	CHECKED BY	SHIMIZU	
				APPROVED BY	MANITA	
				DATE	Nov.05, 2010	



LEGEND

TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用遮断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器

To be replaced
更新対象設備

Existing Facilities
既設設備

To be dismantled by this Project
撤去対象設備

To be replaced/installed by this Project
更新対象設備／新設設備

THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU	NIPPON KOEI CO., LTD
	GIKONDO SUBSTATION SINGLE LINE DIAGRAM GIKONDO変電所 単線結線図	SS-05	CHECKED BY	SHIMIZU	
			APPROVED BY	MANITA	
			DATE	Nov.5, 2010	

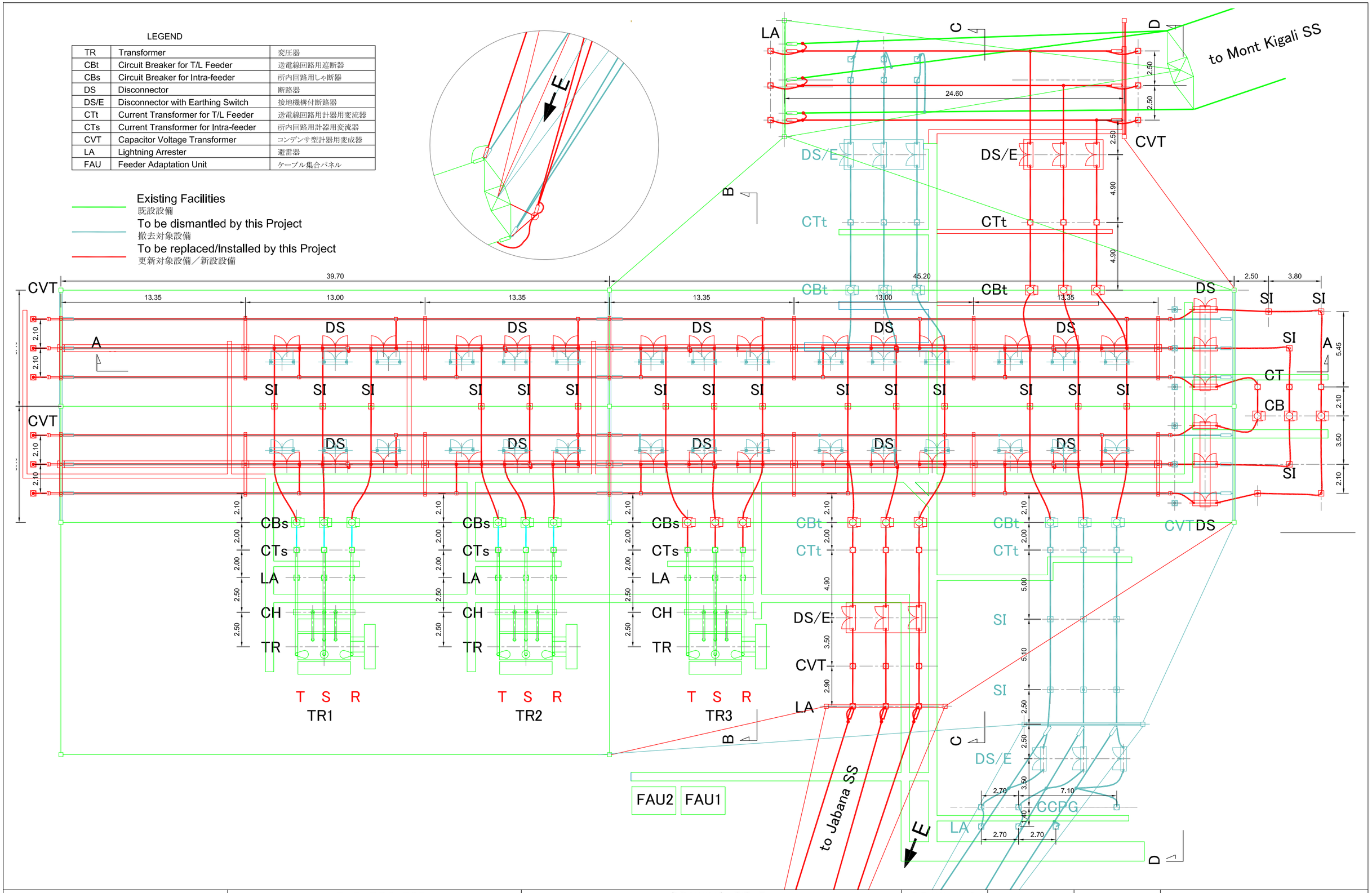
LEGEND

TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用しゃ断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器
FAU	Feeder Adaptation Unit	ケーブル集合パネル

Existing Facilities
既設設備

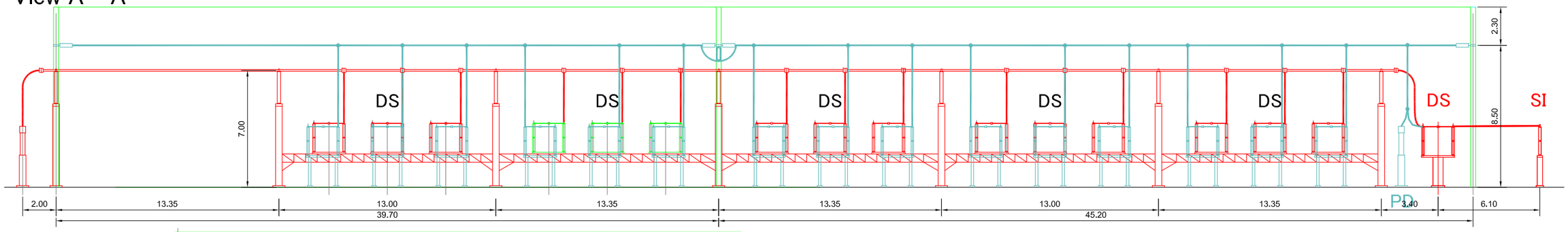
To be dismantled by this Project
撤去対象設備

To be replaced/installed by this Project
更新対象設備／新設設備

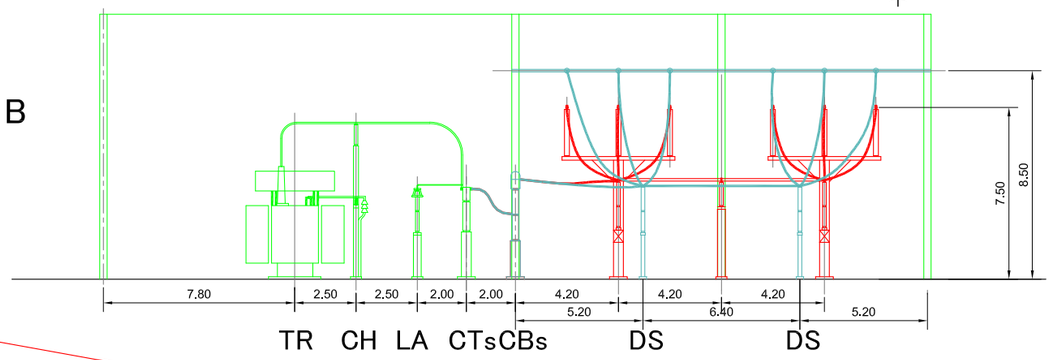


	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU
		GIKONDO SUBSTATION PLAN OF OUTDOOR SWITCHGEAR (1/250) GIKONDO変電所 屋外機器平面配置図	SS-06	CHECKED BY	SHIMIZU
				APPROVED BY	MANITA
				DATE	Nov.05, 2010
					NIPPON KOEI CO., LTD

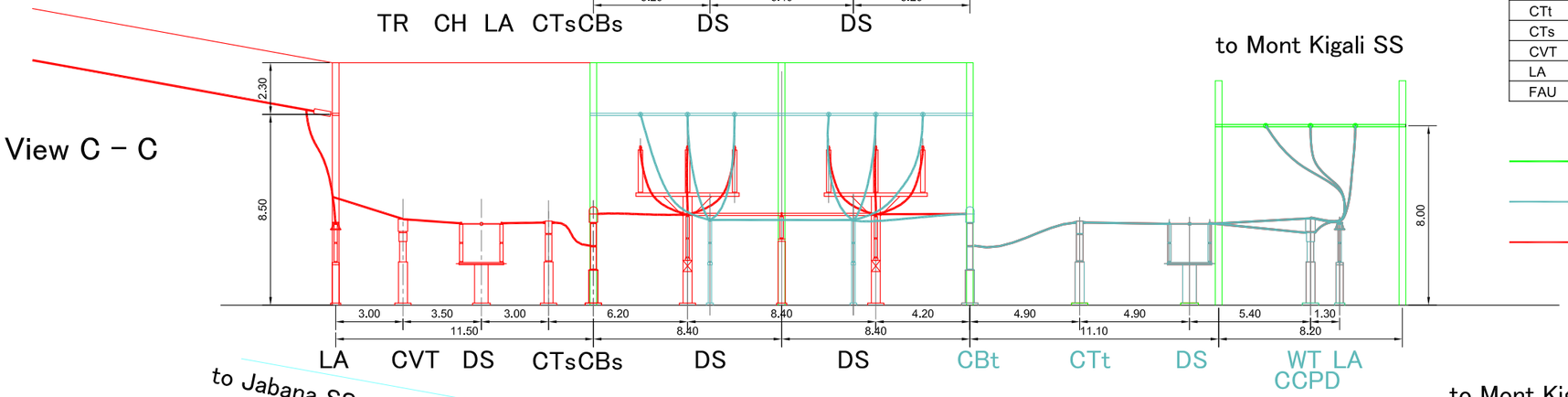
View A – A



View B – B



View C – C

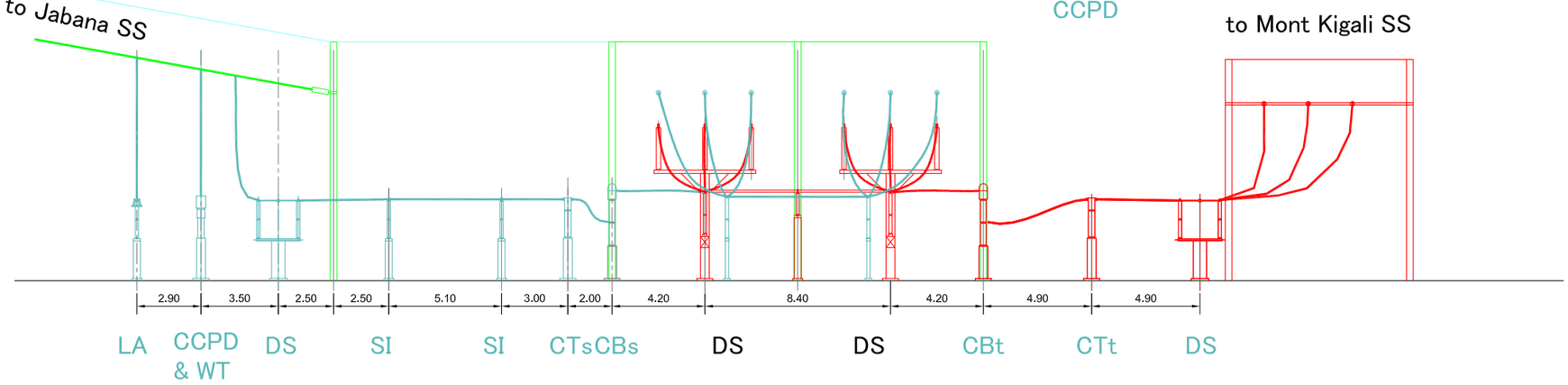


LEGEND

TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用しゃ断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器
FAU	Feeder Adaptation Unit	ケーブル集合パネル

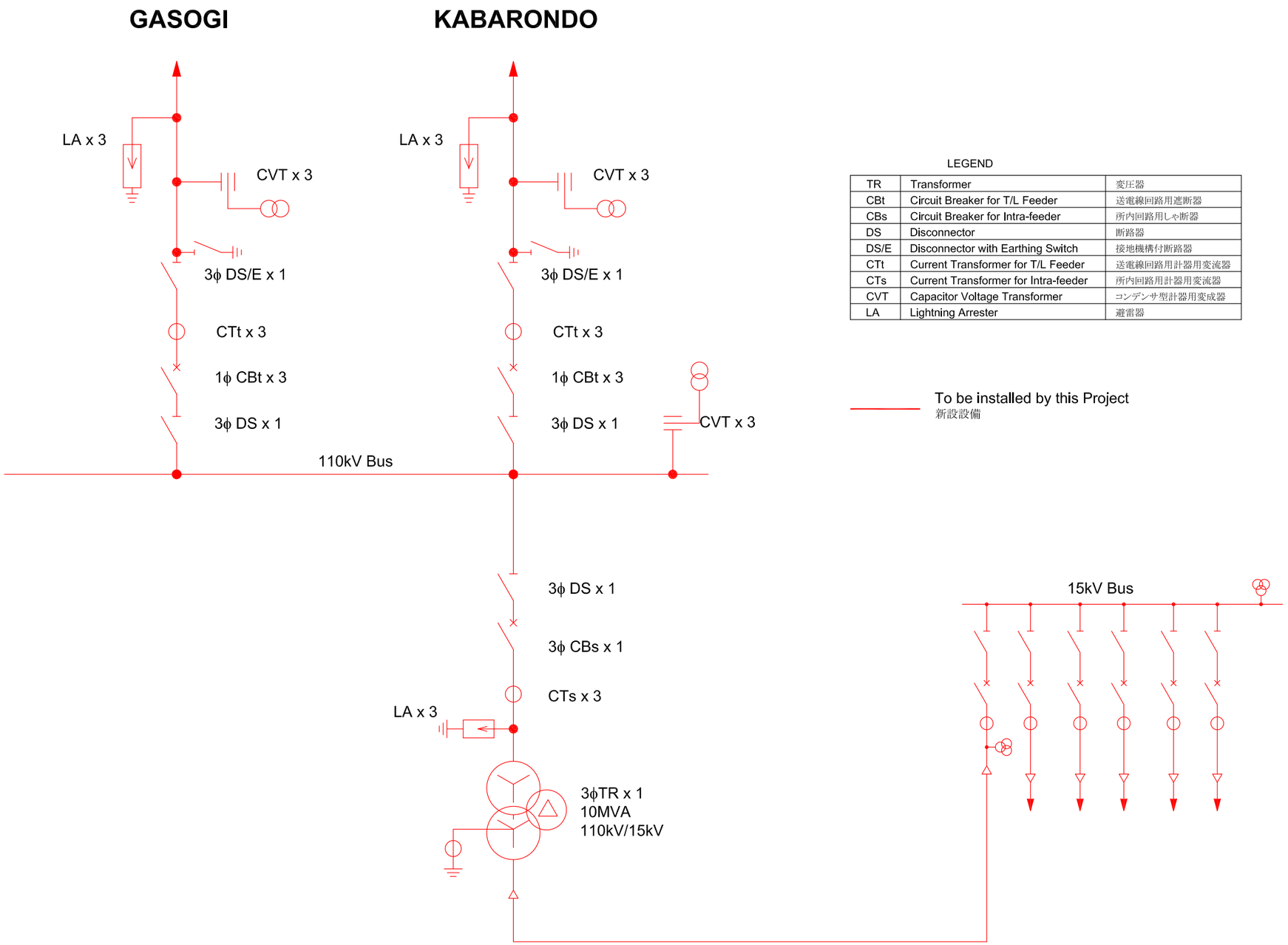
Existing Facilities
既設設備
To be dismantled by this Project
撤去対象設備
To be replaced/installed by this Project
更新対象設備／新設設備

View D – D



	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU
		GIKONDO SUBSTATION SECTION OF OUTDOOR SWITCHGEAR (1/250) GIKONDO変電所　屋外機器配置縦断図(1/250)	SS-07	CHECKED BY	SHIMIZU
				APPROVED BY	MANITA
				DATE	Nov.05, 2010

NIPPON KOEI CO., LTD

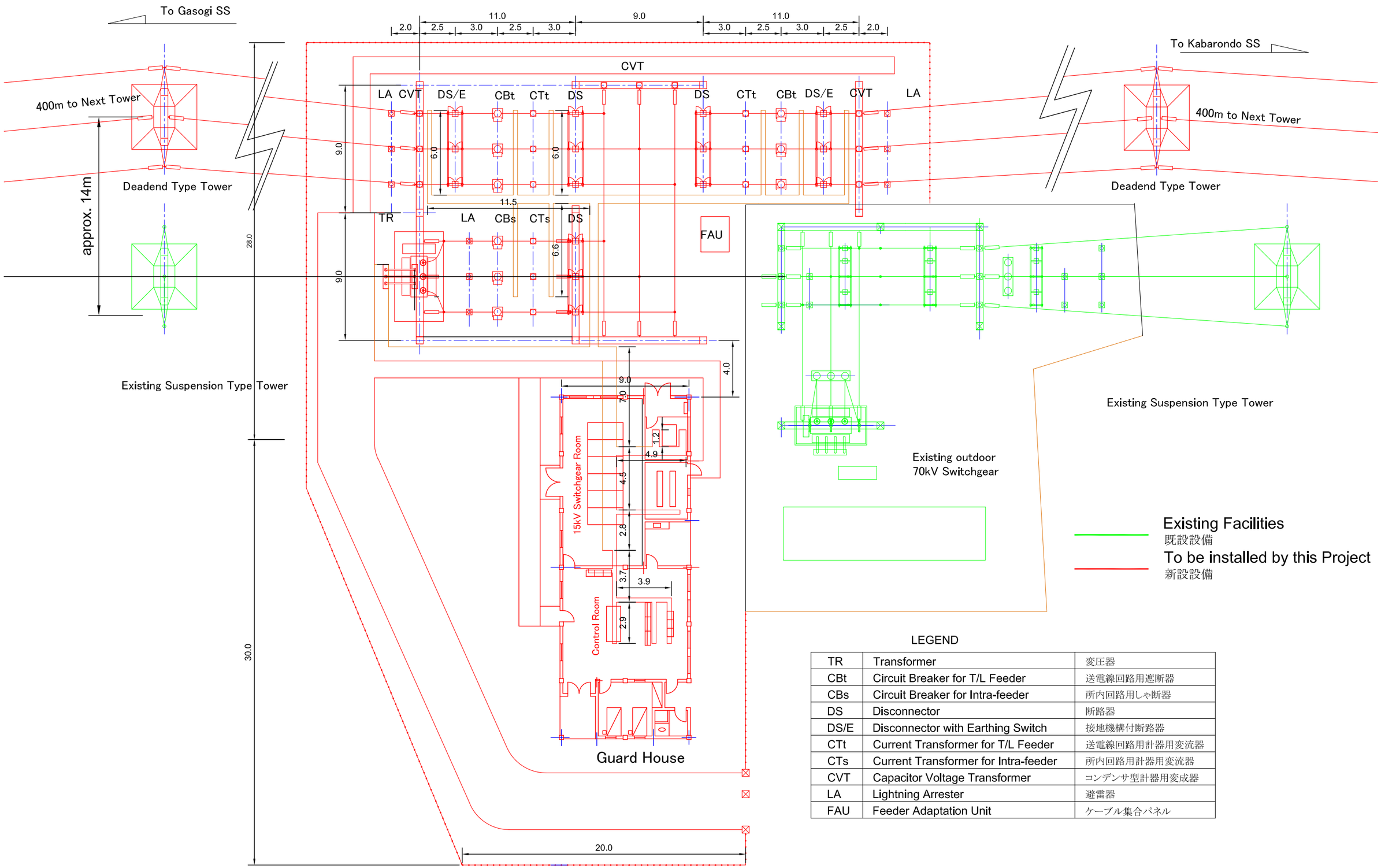


LEGEND

TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用しゃ断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器

To be installed by this Project
新設設備

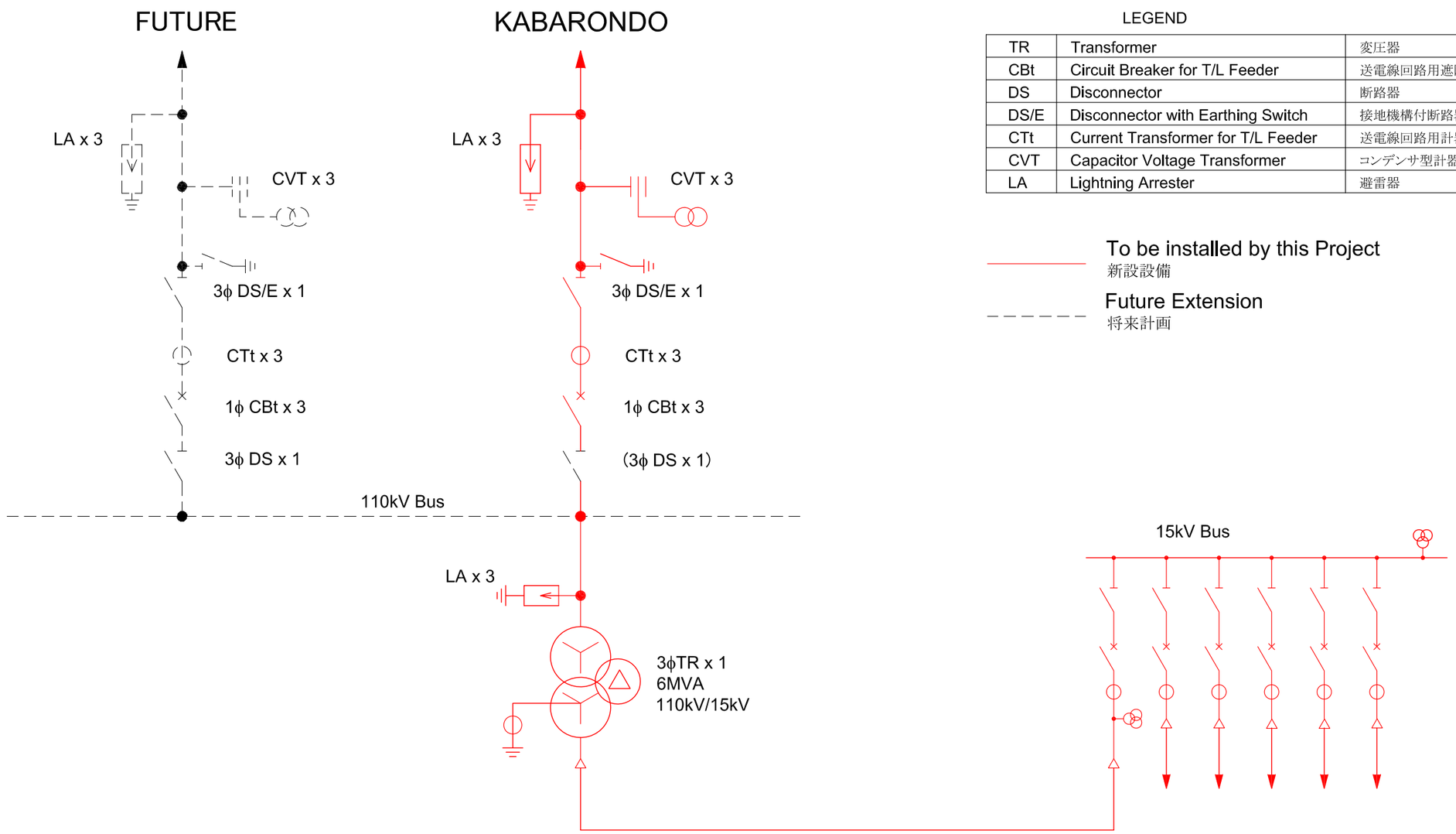
	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU
		MUSHA SUBSTATION SINGLE LINE DIAGRAM MUSHA変電所 単線結線図	SS−08	CHECKED BY	SHIMIZU
				APPROVED BY	MANITA
				DATE	Nov.05, 2010
					NIPPON KOEI CO., LTD



LEGEND

TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用しゃ断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器
FAU	Feeder Adaptation Unit	ケーブル集合パネル

THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU	NIPPON KOEI CO., LTD
	MUSHA SUBSTATION OUTDOOR SWITCHGEAR LAYOUT (1/250) MUSHA変電所 屋外機器配置図 (1/250)	SS-09	CHECKED BY	SHIMIZU	
			APPROVED BY	MANITA	
			DATE	Nov.05, 2010	



LEGEND

TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器

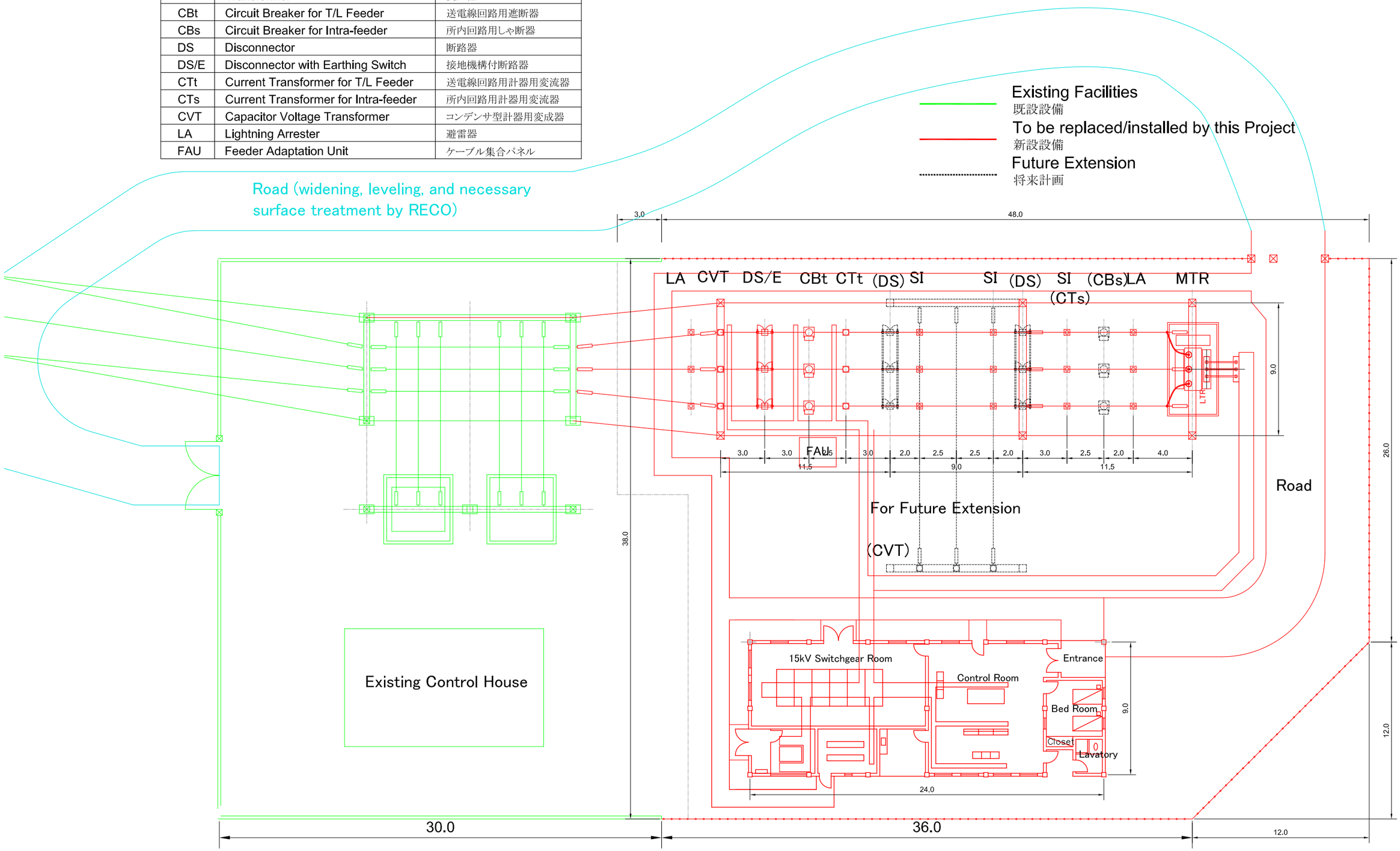
To be installed by this Project
新設設備

Future Extension
将来計画

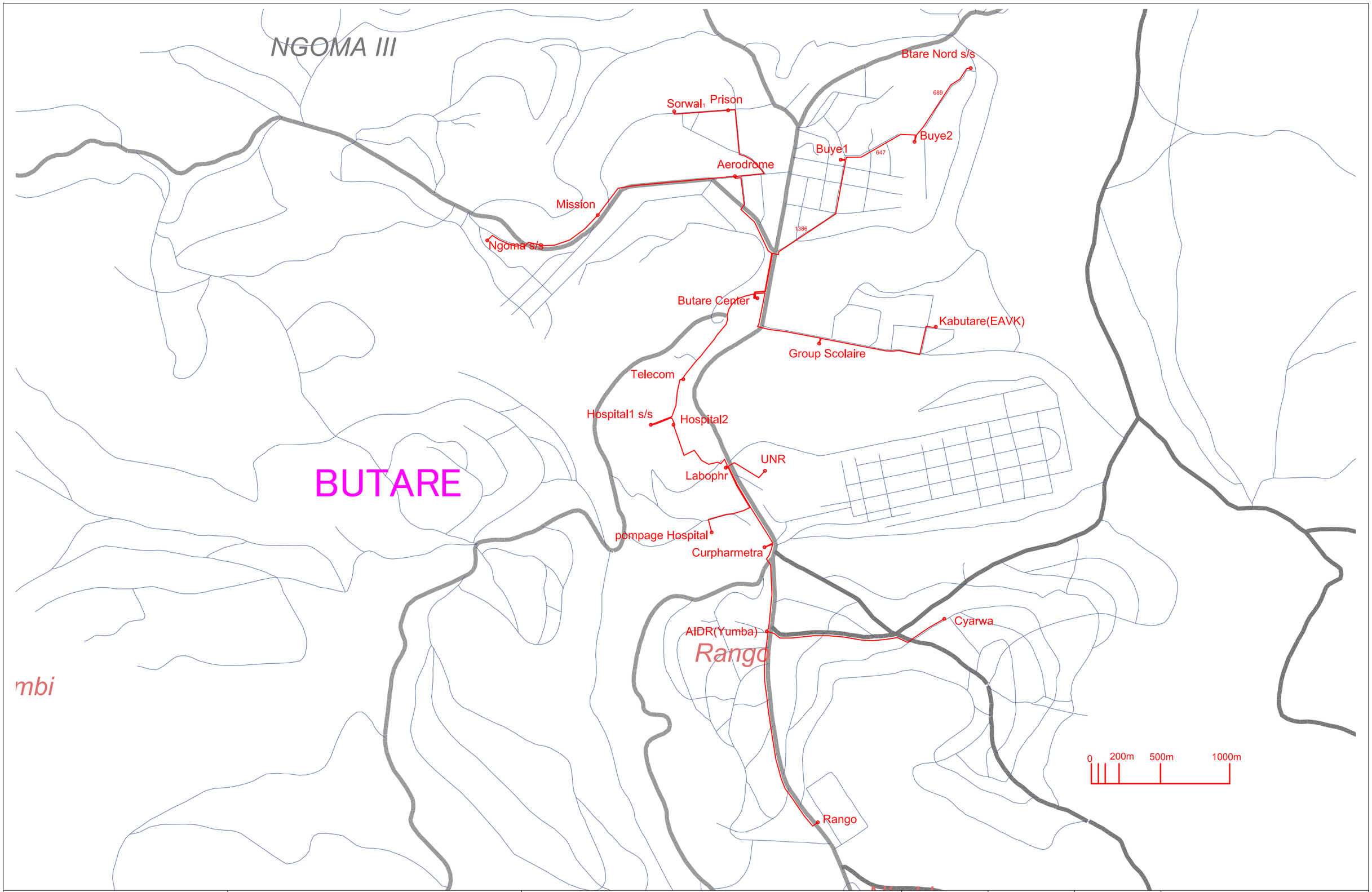
	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU
		RWINKWAVU SUBSTATION SINGLE LINE DIAGRAM RWINKWAVU変電所 単線結線図	SS−10	CHECKED BY	SHIMIZU
				APPROVED BY	MANITA
				DATE	Nov.05, 2010
					NIPPON KOEI CO., LTD

LEGEND

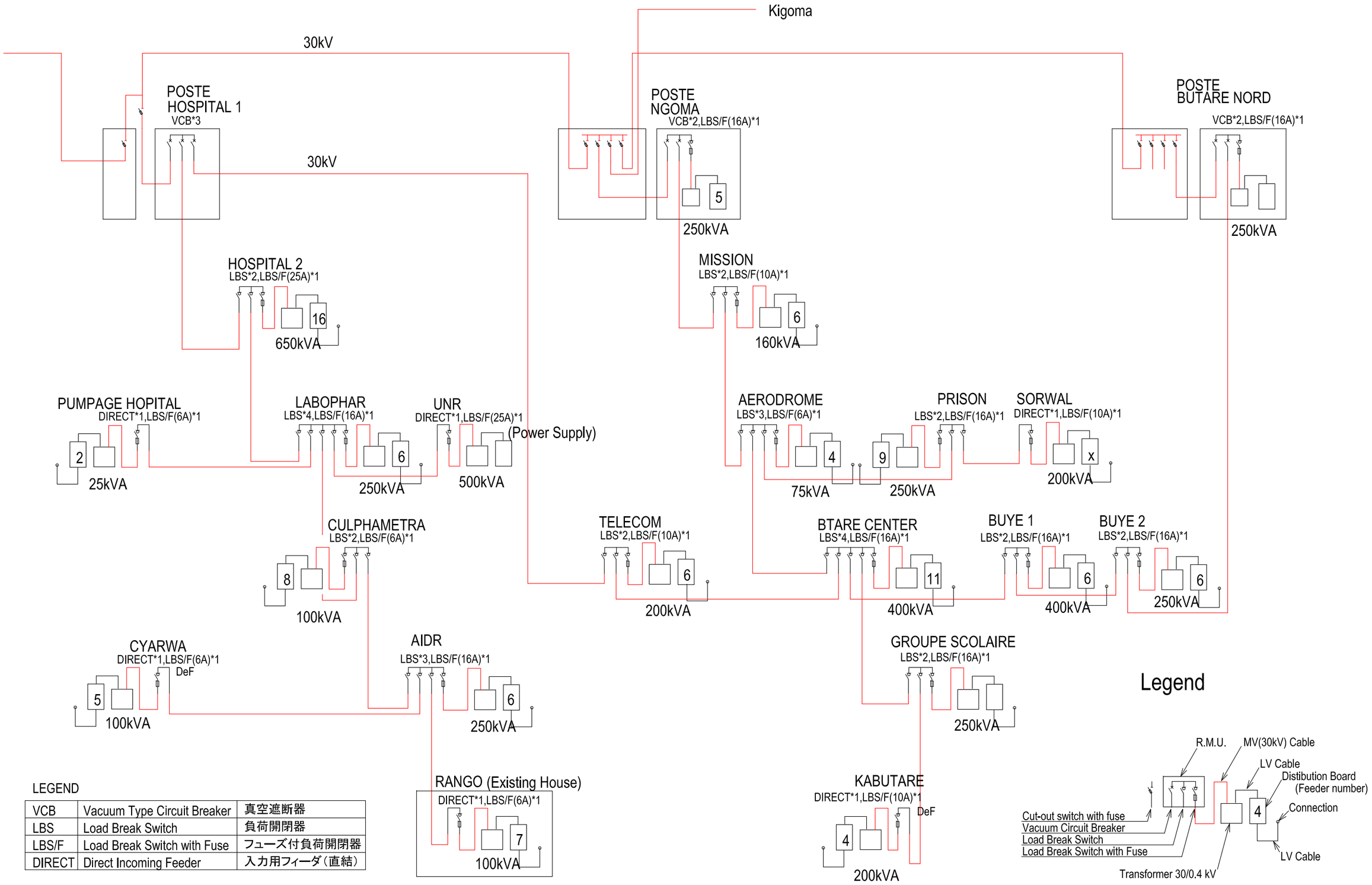
TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用しゃ断器
DS	Disconnector	断路器
DS/E	Disconnector with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor Voltage Transformer	コンデンサ型計器用変成器
LA	Lightning Arrester	避雷器
FAU	Feeder Adaptation Unit	ケーブル集合パネル



THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU	NIPPON KOEI CO., LTD
	RWINKWAVU SUBSTATION OUTDOOR SWITCHGEAR LAYOUT (1/250) RWINKWAVU変電所 屋外機器配置図 (1/250)	SS-11	CHECKED BY	SHIMIZU	
			APPROVED BY	MANITA	
			DATE	Nov.05, 2010	



	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE Distribution Network in Huye : Route Map フイエ市配電網：ルート図	DRAW. NO. HDS-01	PREPARED BY	FUKUI	NIPPON KOEI CO., LTD
				CHECKED BY	FUKUI	
				APPROVED BY	MANITA	
				DATE	Nov,05, 2010	



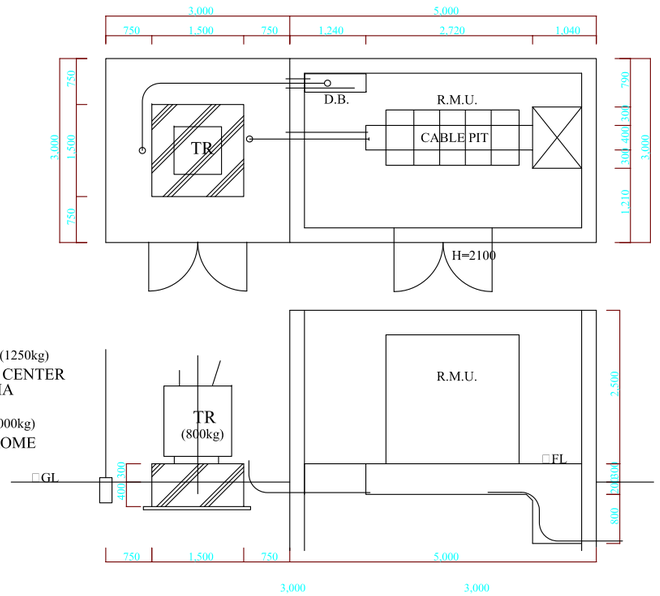
LEGEND

VCB	Vacuum Type Circuit Breaker	真空遮断器
LBS	Load Break Switch	負荷開閉器
LBS/F	Load Break Switch with Fuse	フューズ付負荷開閉器
DIRECT	Direct Incoming Feeder	入力用フィーダ（直結）

THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	FUKUI	NIPPON KOEI CO., LTD
	Distribution Network in Huye : Single Line Diagram フイエ市配電網：単線結線図	HDS-02	CHECKED BY	FUKUI	
			APPROVED BY	MANITA	
			DATE	Nov,05, 2010	

5 Panels (1250kg)
(1) BUTARE CENTER
(15) LABOPHA

4 Panels (1000kg)
(4) AERODROME
(19) AIDR



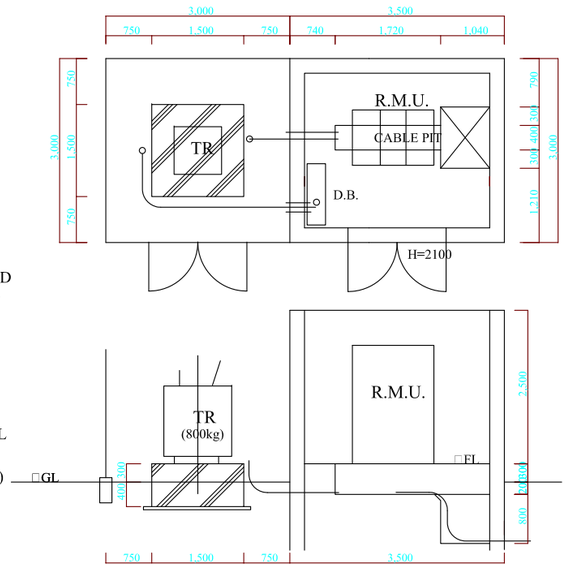
TYPE A

3 Panels (750kg)

(2) POSTE NGOMA
(5) PRISON
(7) POSTE BUTARE NORD
(10) GROUPE SCOLAIRE
(12) TELECOM
(14) HOSPITAL 2
(17) CULPHAMETRA

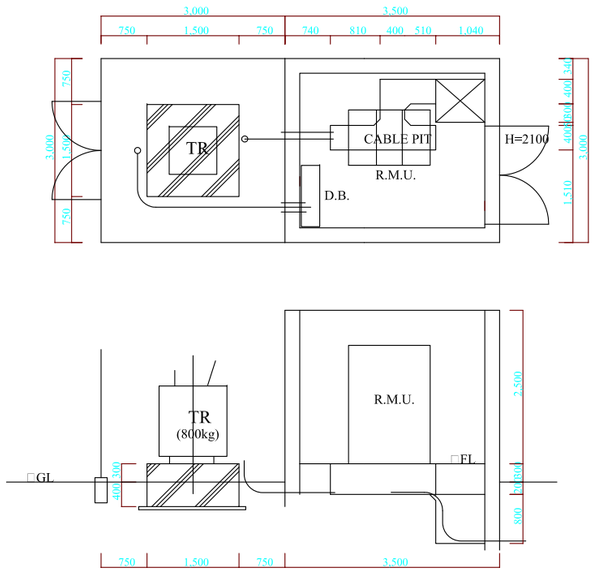
2 Panels (500kg)
(6) SORWAL
(11) KABUTARE(EAVX)
(18) POMPAGR HOSPITAL
(21) CYARWA

(16) UNR (WITHOUT D.B.)



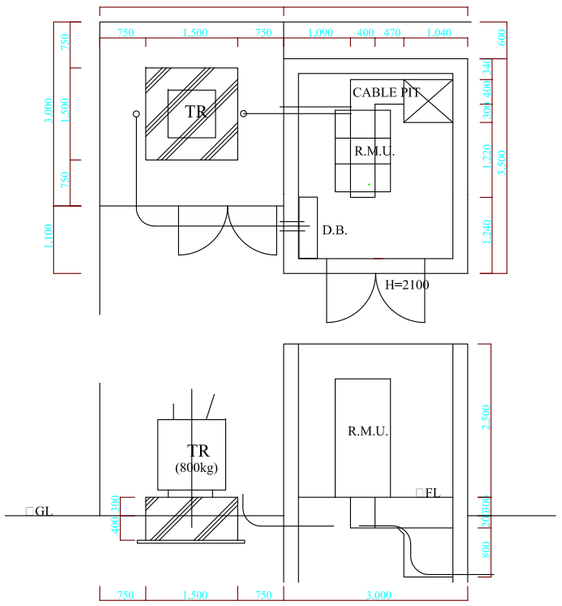
TYPE B-1

3 Panels (750kg)
(3) MISSION
(8) BUYE 2



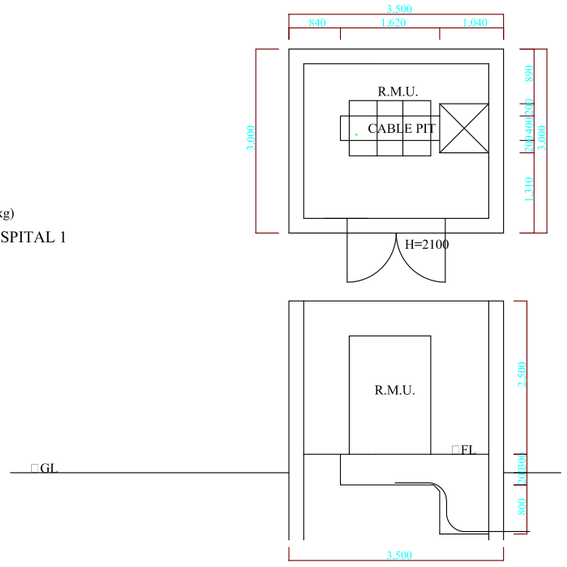
TYPE B-2

3 Panels (750kg)
(9) BUYE 1



TYPE B-3

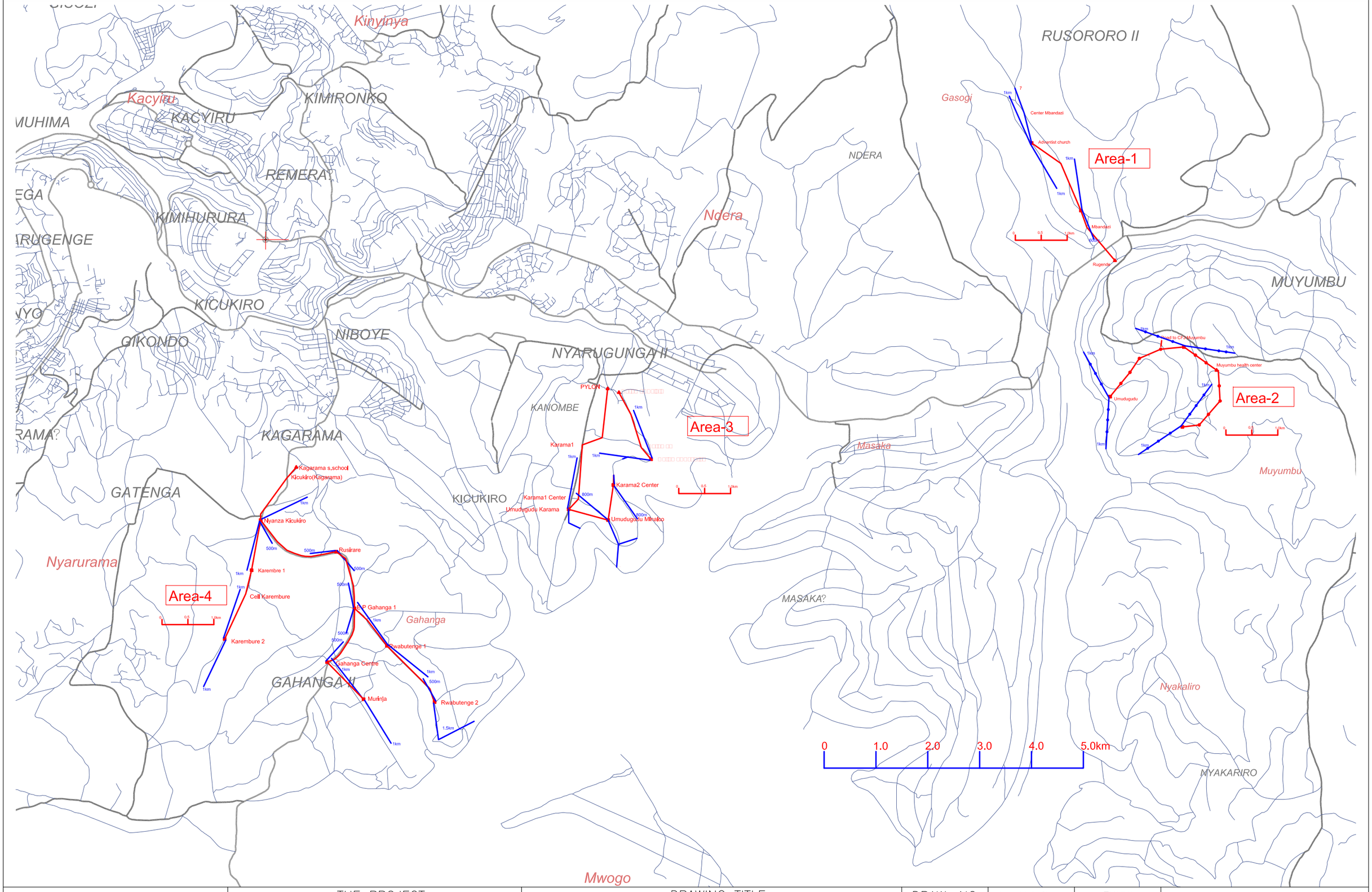
3 Panels (750kg)
(13) POSTE HOSPITAL 1



TYPE B-4

TR	Transformer	変圧器
D.B.	Distribution Board	配電盤
R.M.U.	Ring Main Unit	屋内開閉器盤

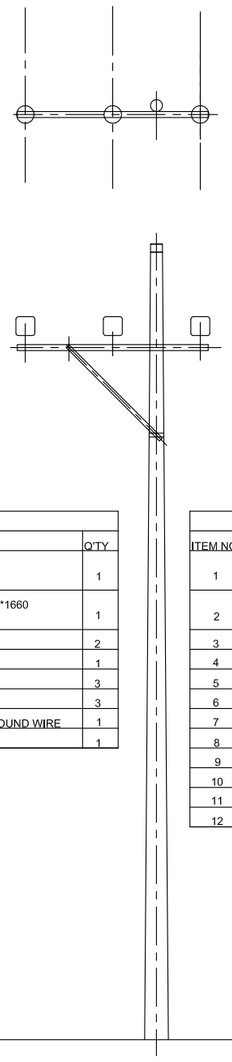
THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	FUKUI	NIPPON KOEI CO., LTD
	Huye Distribution Network : Building Planning for Ring Main Unit (RMU) (Type A, B-1, B-2, B-3 and B-4) フイエ市配電網：RMU建屋計画図 (Type A, B-1, B-2, B-3 and B-4)	HDS-03	CHECKED BY	FUKUI	
			APPROVED BY	MANITA	
			DATE	Nov,05, 2010	



	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	FUKUI	NIPPON KOEI CO., LTD
		Distribution Network in Kigali : Route Map Kigali 配電網：ルート図	KDS-01	CHECKED BY	FUKUI	
				APPROVED BY	MANITA	
				DATE	Nov,05, 2010	

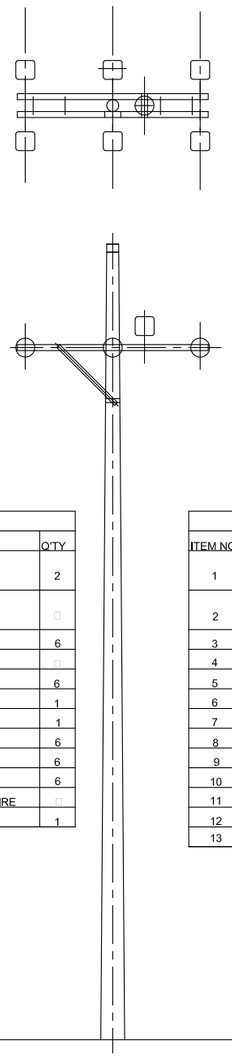
MV POLE TYPE (1/2)

Pole Type M1
Strait



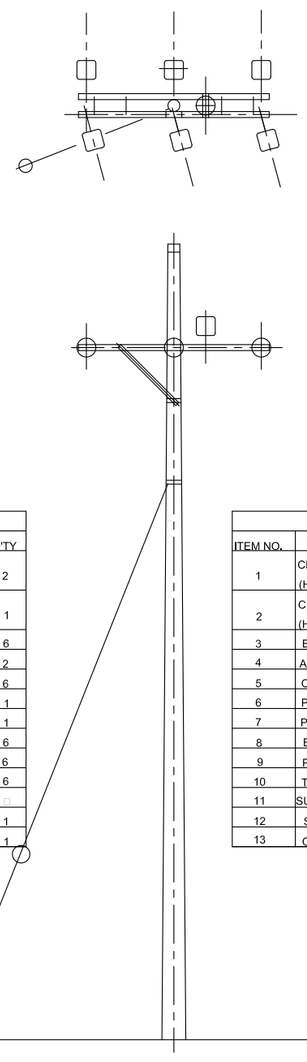
QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	CROSS ARM,L-75*75*6*2400 (HOT DIP GALVANIZED)	1
2	CROSS ARM BRACE,L-50*50*5*1660 (HOT DIP GALVANIZED)	1
3	BOLT,NUT,WASHER M16	2
4	ARM TIEBAND	1
5	PIN INSULATOR	3
6	PREFORMED INSULATOR TIE	3
7	SUPORT FOR OVERHEAD GROUND WIRE	1
8	CONCRETE POLE 12m	1

Pole Type M2
Strait (400m)



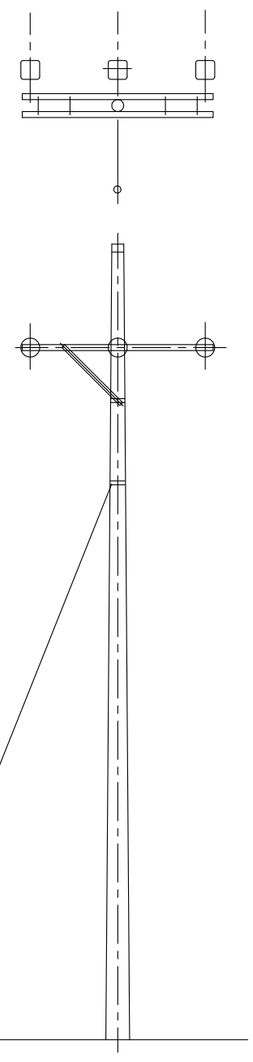
QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	CROSS ARM,L-75*75*6*2400 (HOT DIP GALVANIZED)	2
2	CROSS ARM BRACE,L-50*50*5*1050 (HOT DIP GALVANIZED)	
3	BOLT,NUT,WASHER M16	6
4	ARM TIEBAND	
5	COMPOSITE STRAIN INSULATOR	6
6	POST INSULATOR	1
7	PREFORMED INSULATOR TIE	1
8	EYE BOLT/NUT,M16	6
9	PREFORMEDDEAD END GRIP 70mm2	6
10	THIMBLE	6
11	SUPORT FOR OVERHEAD GROUND WIRE	
12	CONCRETE POLE 12m	1

Pole Type M3
Turning



QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	CROSS ARM,L-75*75*6*2400 (HOT DIP GALVANIZED)	2
2	CROSS ARM BRACE,L-50*50*5*1050 (HOT DIP GALVANIZED)	1
3	BOLT,NUT,WASHER M16	6
4	ARM TIEBAND	2
5	COMPOSITE STRAIN INSULATOR	6
6	POST INSULATOR	1
7	PREFORMED INSULATOR TIE	1
8	EYE BOLT/NUT,M16	6
9	PREFORMEDDEAD END GRIP 70mm2	6
10	THIMBLE	6
11	SUPORT FOR OVERHEAD GROUND WIRE	
12	STAY	1
13	CONCRETE POLE 12m	1

Pole Type M4
Start Point



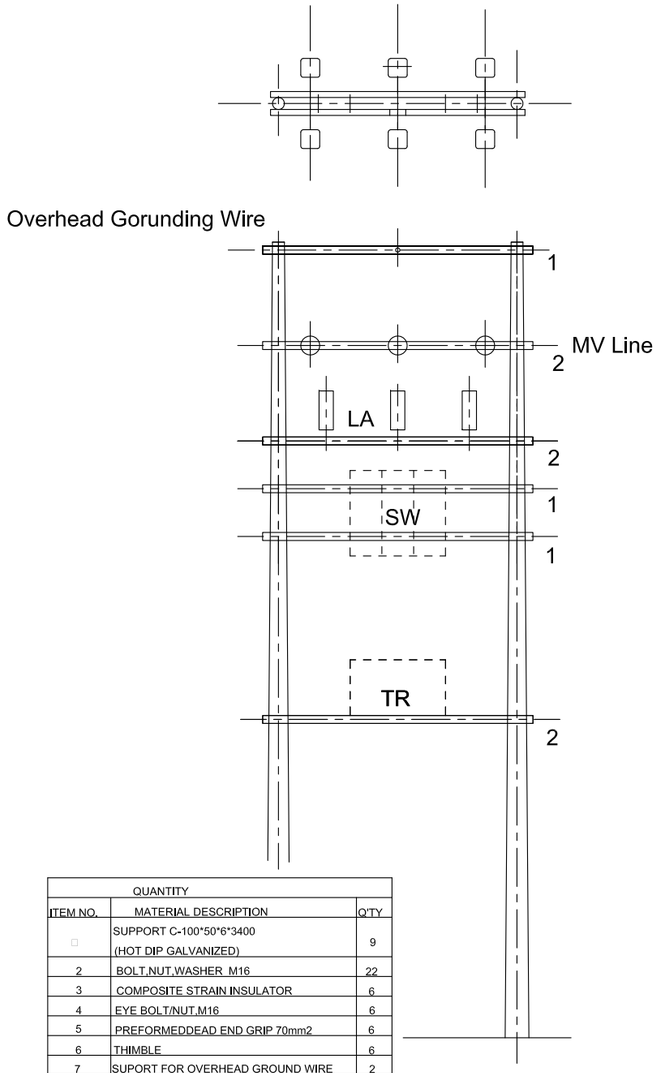
QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	CROSS ARM,L-75*75*6*2400 (HOT DIP GALVANIZED)	2
2	CROSS ARM BRACE,L-50*50*5*1050 (HOT DIP GALVANIZED)	1
3	BOLT,NUT,WASHER M16	6
4	ARM TIEBAND	2
5	COMPOSITE STRAIN INSULATOR	3
6	POST INSULATOR	1
7	PREFORMED INSULATOR TIE	1
8	EYE BOLT/NUT,M16	3
9	PREFORMEDDEAD END GRIP 70mm2	3
10	THIMBLE	3
11	SUPORT FOR OVERHEAD GROUND WIRE	
12	STAY	1
13	CONCRETE POLE 12m	1

	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	FUKUI
		Kigali Distribution Network : MV Distribution pole with Support Structure (1/2) キガリ市配電網：中圧配電柱　装柱図(1/2)	KDS-02(1/2)	CHECKED BY	FUKUI
				APPROVED BY	MANITA
				DATE	Nov,05, 2010
					NIPPON KOEI CO., LTD

MV POLE TYPE (2/2)

Pole Type M5

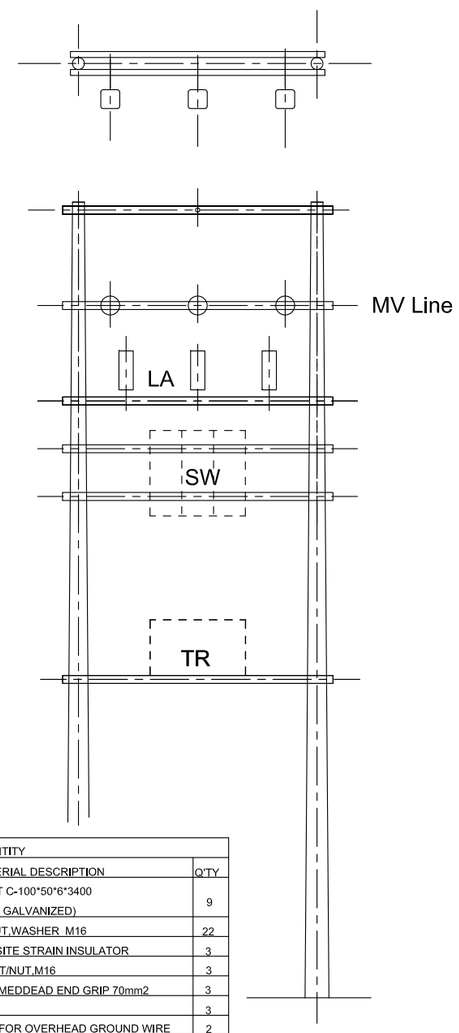
Transformer



QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
□	SUPPORT C-100*50*6*3400 (HOT DIP GALVANIZED)	9
2	BOLT,NUT,WASHER M16	22
3	COMPOSITE STRAIN INSULATOR	6
4	EYE BOLT/NUT,M16	6
5	PREFORMEDDEAD END GRIP 70mm2	6
6	THIMBLE	6
7	SUPORT FOR OVERHEAD GROUND WIRE	2
8	LIGHTNING ARRESTER	3
9	SWITCH WITH FUSE	1
10	TRANSFORMER	1
11	CONCRETE POLE 12m	2

Pole Type M6

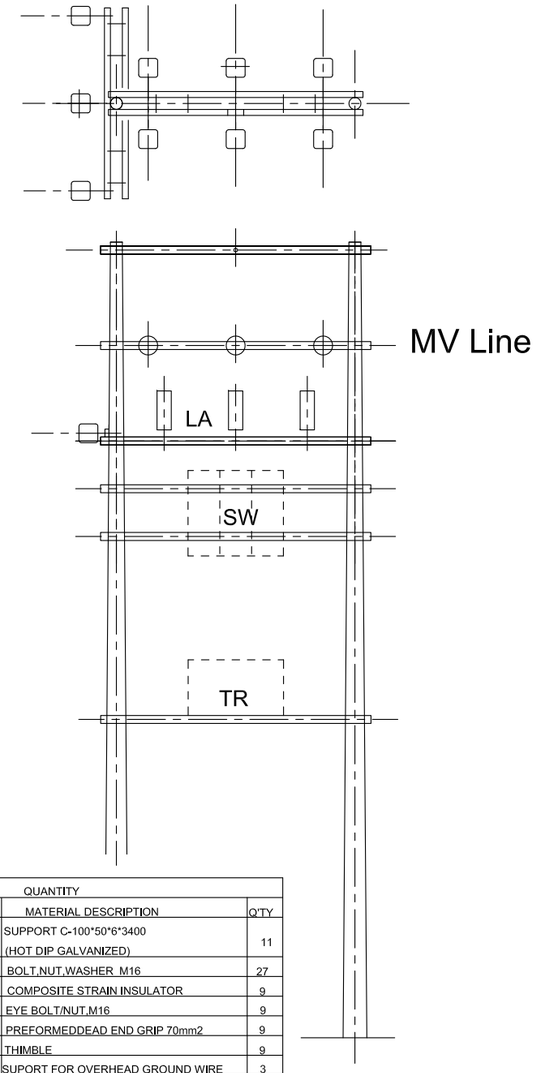
Transformer (Terminal)



QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
□	SUPPORT C-100*50*6*3400 (HOT DIP GALVANIZED)	9
2	BOLT,NUT,WASHER M16	22
3	COMPOSITE STRAIN INSULATOR	3
4	EYE BOLT/NUT,M16	3
5	PREFORMEDDEAD END GRIP 70mm2	3
6	THIMBLE	3
7	SUPORT FOR OVERHEAD GROUND WIRE	2
8	LIGHTNING ARRESTER	3
9	SWITCH WITH FUSE	1
10	TRANSFORMER	1
11	CONCRETE POLE 12m	2

Pole Type M7

Transformer+Divergent



QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
□	SUPPORT C-100*50*6*3400 (HOT DIP GALVANIZED)	11
2	BOLT,NUT,WASHER M16	27
3	COMPOSITE STRAIN INSULATOR	9
4	EYE BOLT/NUT,M16	9
5	PREFORMEDDEAD END GRIP 70mm2	9
6	THIMBLE	9
7	SUPORT FOR OVERHEAD GROUND WIRE	3
8	LIGHTNING ARRESTER	3
9	SWITCH WITH FUSE	1
10	TRANSFORMER	1
11	CONCRETE POLE 12m	2

THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	FUKUI	NIPPON KOEI CO., LTD
	Kigali Distribution Network : MV Distribution pole with Support Structure (2/2) キガリ市配電網：中圧配電柱　装柱図(2/2)	KDS-02(2/2)	CHECKED BY	FUKUI	
			APPROVED BY	MANITA	
			DATE	Nov,05, 2010	

LV POLE TYPE

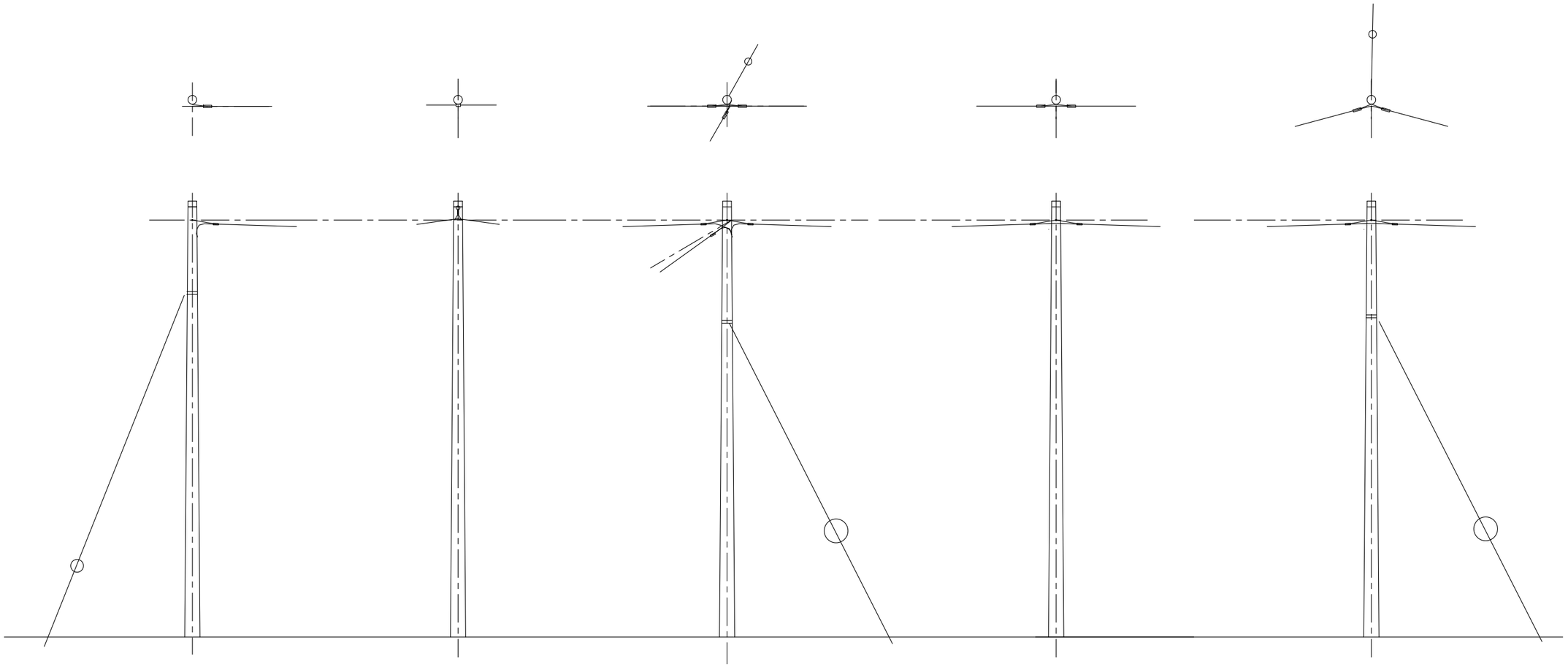
Pole Type L1
Start Point
Terminal

Pole Type L2
Strait

Pole Type L3
Divergent

Pole Type L4
Strait (Strain)

Pole Type L5
Turning



QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	SUPPORT FOR ABC CABLE	1
2	BOLT,NUT,WASHER M16	2
3	ARM TIE BAND	
4	STAY	1
5	CONCRETE POLE 9m	1

QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	SUPPORT FOR ABC CABLE	1
2	BOLT,NUT,WASHER M16	1
3	ARM TIE BAND	
4	CONCRETE POLE 9m	1

QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	SUPPORT FOR ABC CABLE	1
2	BOLT,NUT,WASHER M16	2
3	ARM TIE BAND	
4	STAY	1
5	CONCRETE POLE 9m	1

QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	SUPPORT FOR ABC CABLE	1
2	BOLT,NUT,WASHER M16	1
3		
4	CONCRETE POLE 9m	1

QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	SUPPORT FOR ABC CABLE	1
2	BOLT,NUT,WASHER M16	2
3	ARM TIE BAND	
4	STAY	1
5	CONCRETE POLE 9m	1

THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	FUKUI	NIPPON KOEI CO., LTD
	Kigali Distribution Network : LV Distribution pole with Support Structure キガリ市配電網：低圧配電柱　装柱図	KDS-03	CHECKED BY	FUKUI	
			APPROVED BY	MANITA	
			DATE	Nov,05, 2010	

資料-6

参考資料

様　式

主　管　部　長	文書管理課長	主　管　課　長

情報管理課長	図書資料室受付印

収　集　資　料　リ　ス　ト

平成 23 年 1 月 12 日　作成

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国　　名	ルワンダ共和国			現地調査期間	2010 年 5 月 8 日 ～ 2010 年 6 月 28 日 2010 年 12 月 11 日～ 2010 年 12 月 22 日	担当者氏名	

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1	Energy Sector Project and Program on June 2010	Word	A4	10	-	-	Ministry of Infrastructure	寄贈					
2	Meteorological Data (Temperature, Humidity, Wind Velocity etc.)	Word & Excel	A4	28	-	-	Meteorology Department in MININFRA	寄贈					
3	National Dispatching Operations Report for November 2009 and May 2010/06/24	模写	A4	1	コピー	1	RECO	寄贈					
4	List of schools in Huye	Excel	A4	1	コピー	1	RECO	寄贈					
5	Environmental Impact Assessment clearance	PDF	A4	7	コピー	1	RDB	寄贈					
6	SCADA TOPOROGY	PDF	A1	2	-	1	RECO	寄贈					
7	ELGZ SDH SYSTEM STM TRAFFIC OVERVIEW	PDF	A4	1	-	1	RECO	寄贈					
8	RECO & RWASCO Annual Report 2009	冊子	A4	1	オリジナル	1	RECO	寄贈					

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