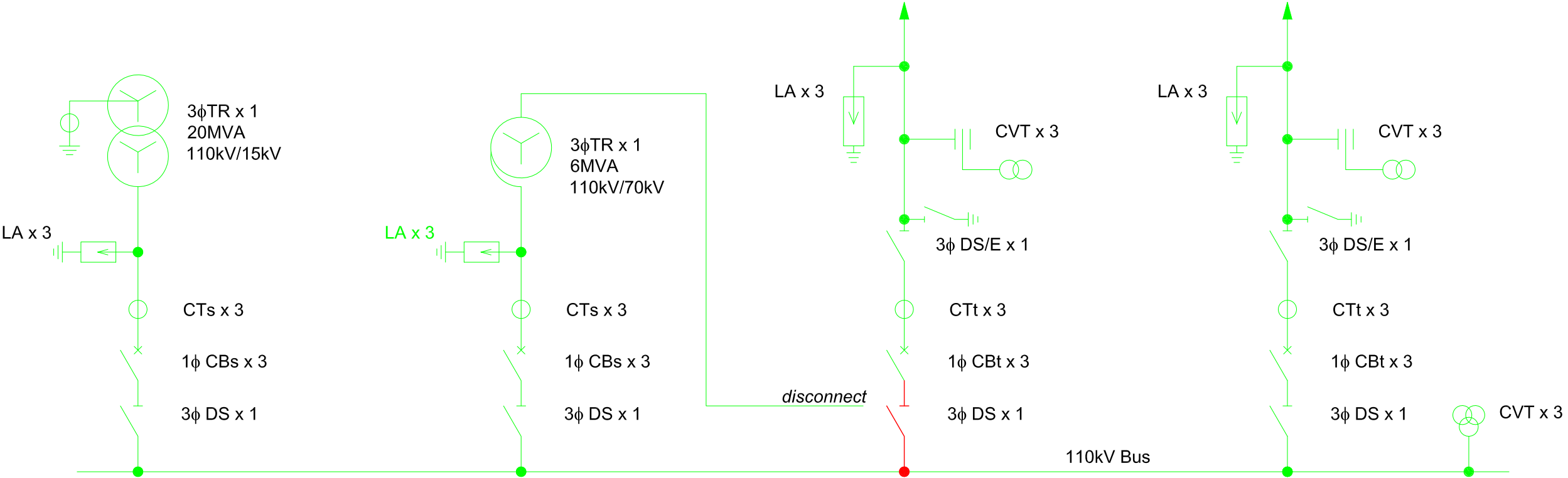


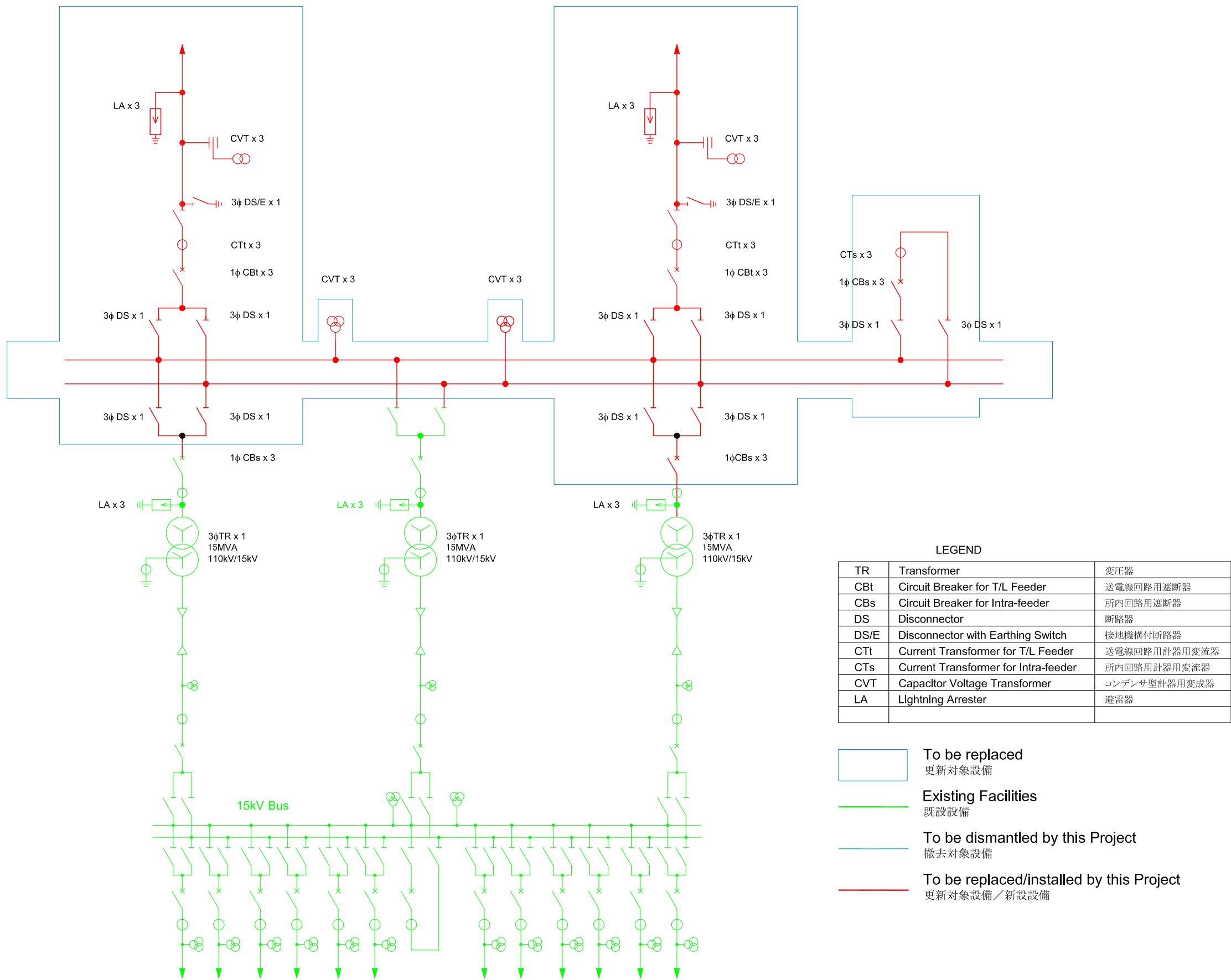
LEGEND		
TR	Transformer	変圧器
CBt	Circuit Breaker for T/L Feeder	送電線回路用遮断器
CBs	Circuit Breaker for Intra-feeder	所内回路用しゃ断器
DS	Disconnecter	断路器
DS/E	Disconnecter with Earthing Switch	接地機構付断路器
CTt	Current Transformer for T/L Feeder	送電線回路用計器用変流器
CTs	Current Transformer for Intra-feeder	所内回路用計器用変流器
CVT	Capacitor 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

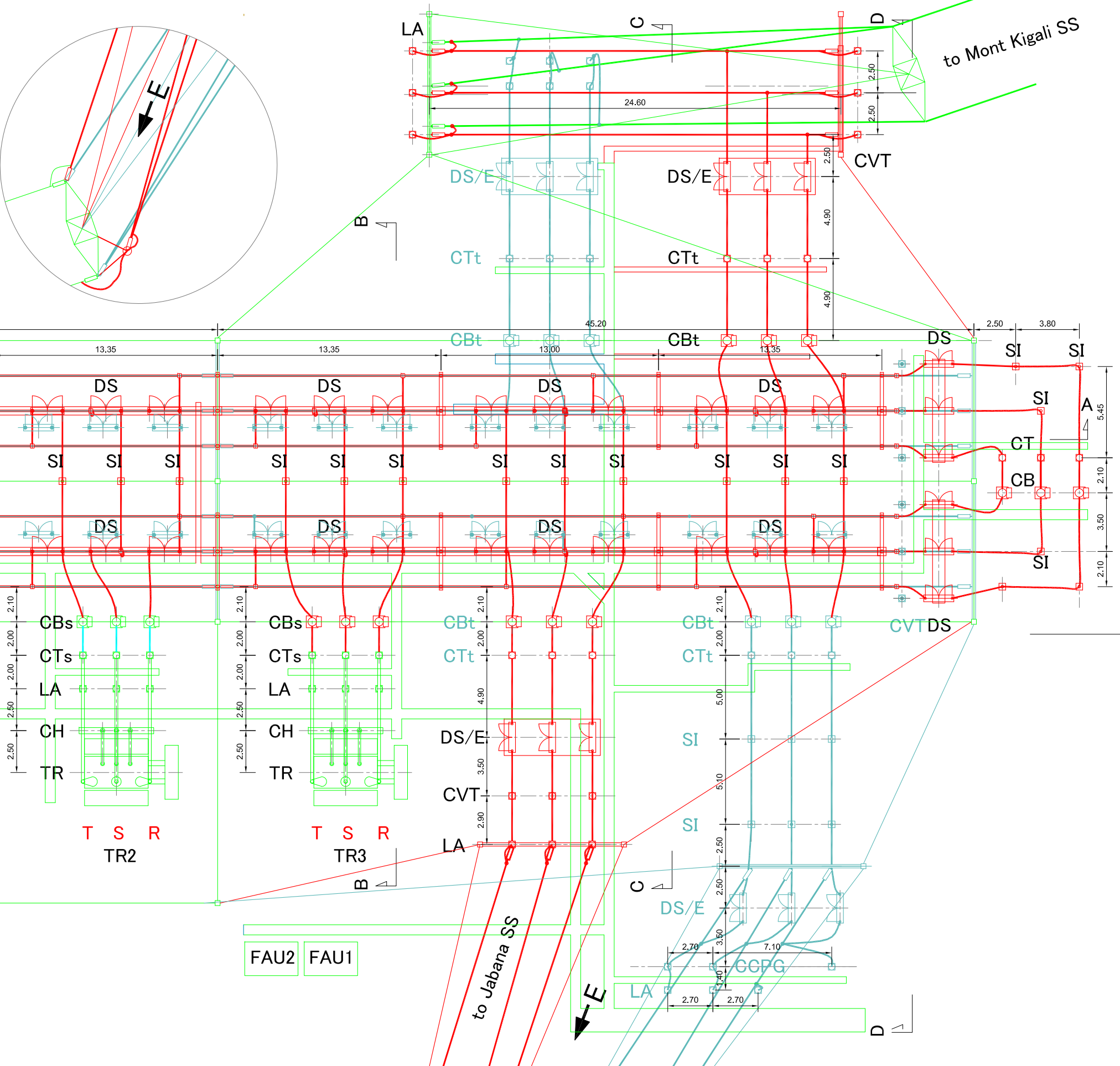


	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE	DRAW. NO.	PREPARED BY	SHIMIZU	 NIPPON KOEI CO., LTD
		BIREMBO SUBSTATION SINGLE LINE DIAGRAM BIREMBO 変電所 単線結線図	SS-04	CHECKED BY	SHIMIZU	
				APPROVED BY	MANITA	
				DATE	Nov.05, 2010	



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	所内回路用しゃ断器
DS	Disconnecter	断路器
DS/E	Disconnecter 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



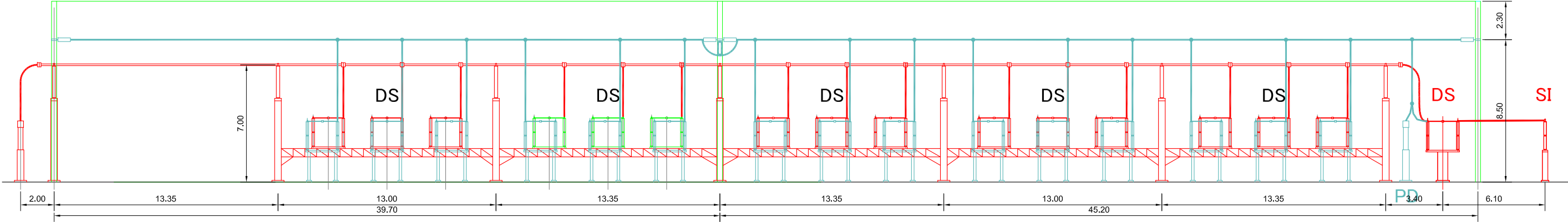
THE PROJECT  
FOR  
UPGRADING AND EXPANSION OF  
SUBSTATION AND DISTRIBUTION NETWORK  
IN THE REPUBLIC OF RWANDA

DRAWING TITLE  
**GIKONDO SUBSTATION PLAN OF OUTDOOR SWITCHGEAR (1/250)**  
GIKONDO変電所 屋外機器平面配置図

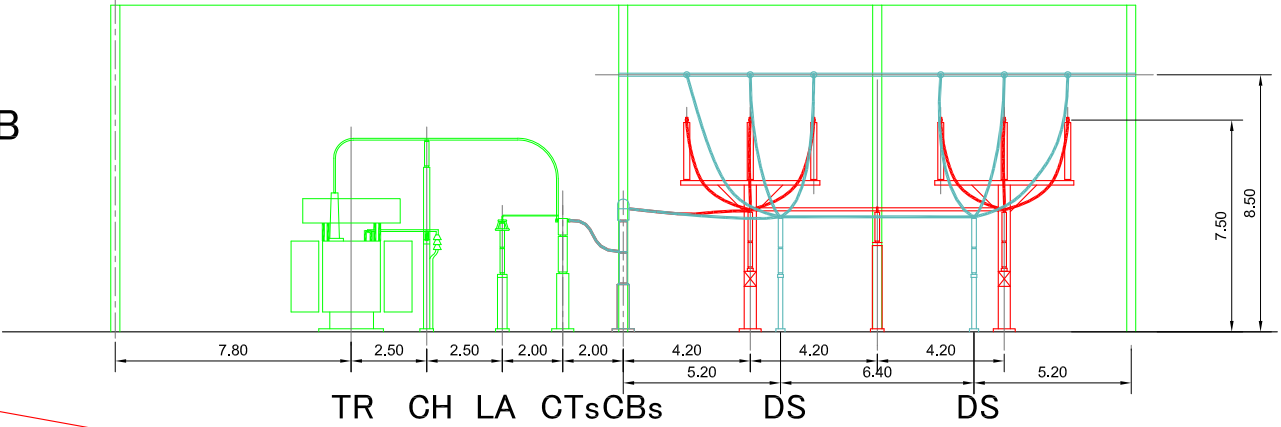
DRAW. NO. SS-06	PREPARED BY SHIMIZU
	CHECKED BY SHIMIZU
	APPROVED BY MANITA
	DATE Nov.05, 2010



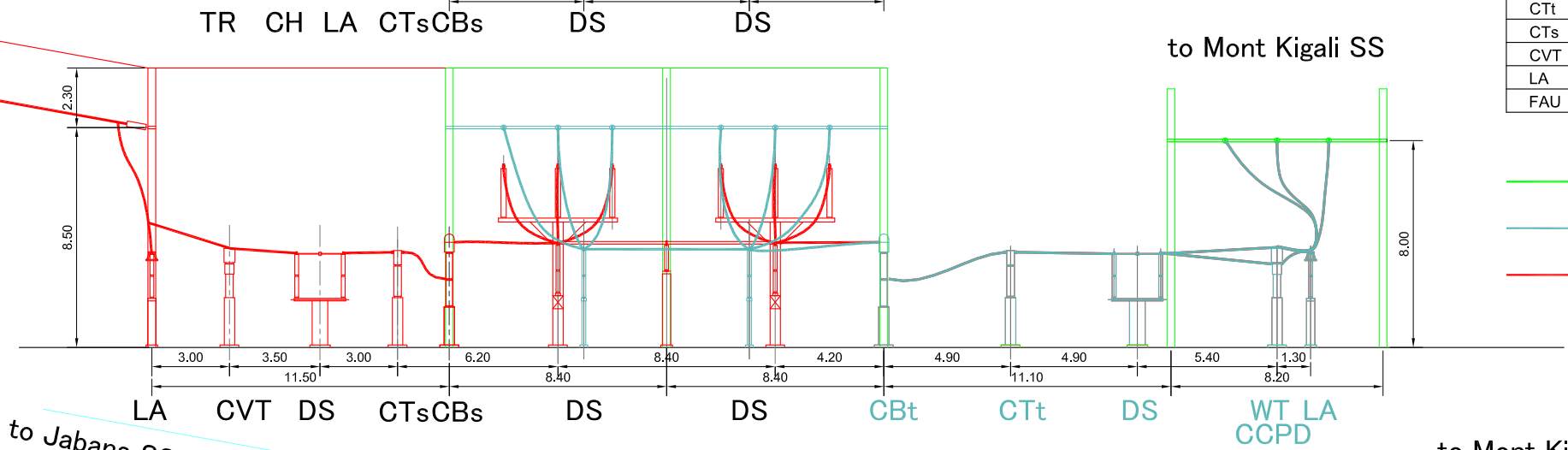
View A – A



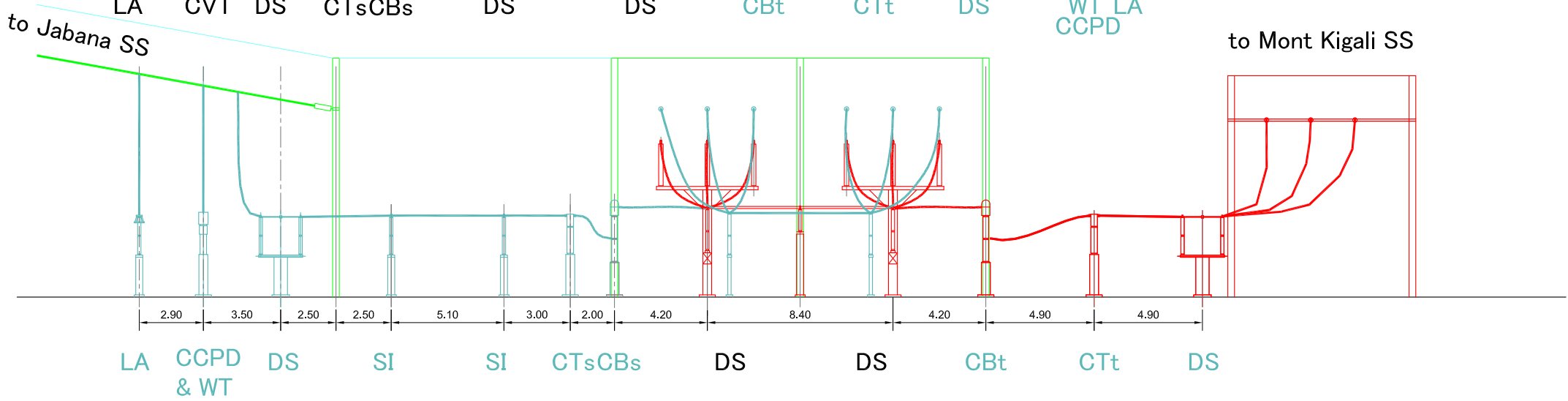
View B – B



View C – C



View D – D



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	Disconnecter	断路器
DS/E	Disconnecter 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

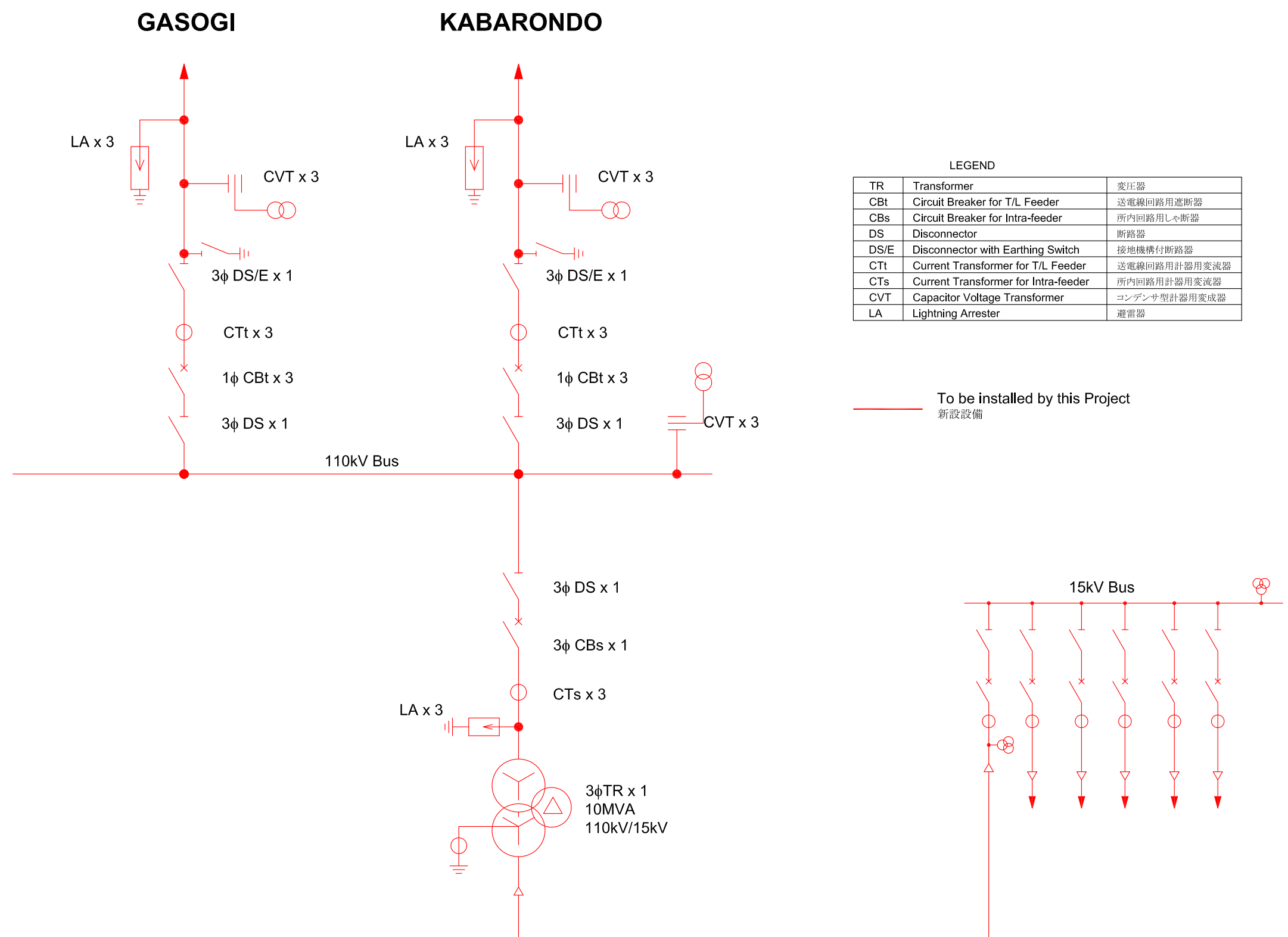
- Existing Facilities  
既設設備
- To be dismantled by this Project  
撤去対象設備
- To be replaced/installed by this Project  
更新対象設備／新設設備

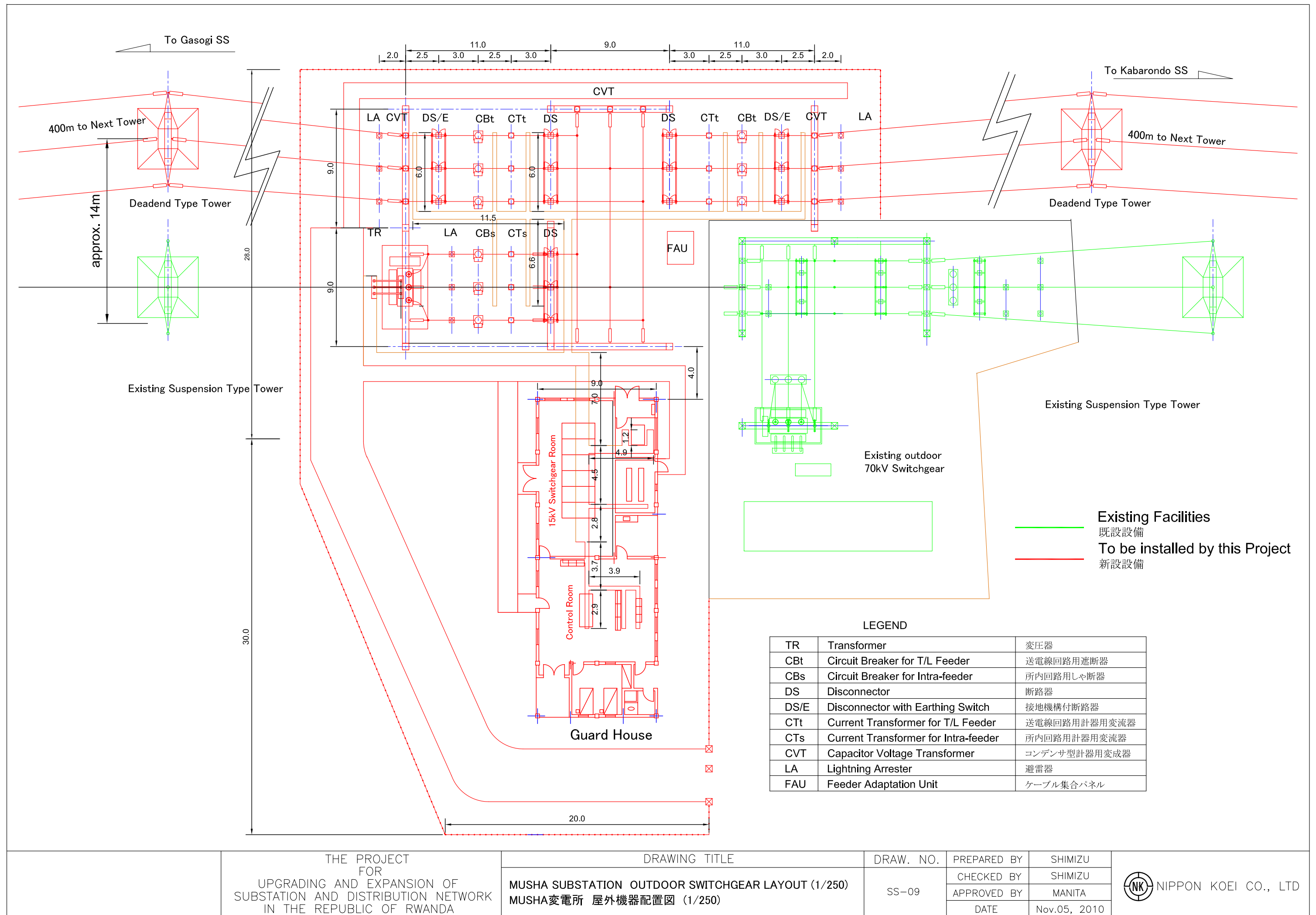
THE PROJECT  
FOR  
UPGRADING AND EXPANSION OF  
SUBSTATION AND DISTRIBUTION NETWORK  
IN THE REPUBLIC OF RWANDA

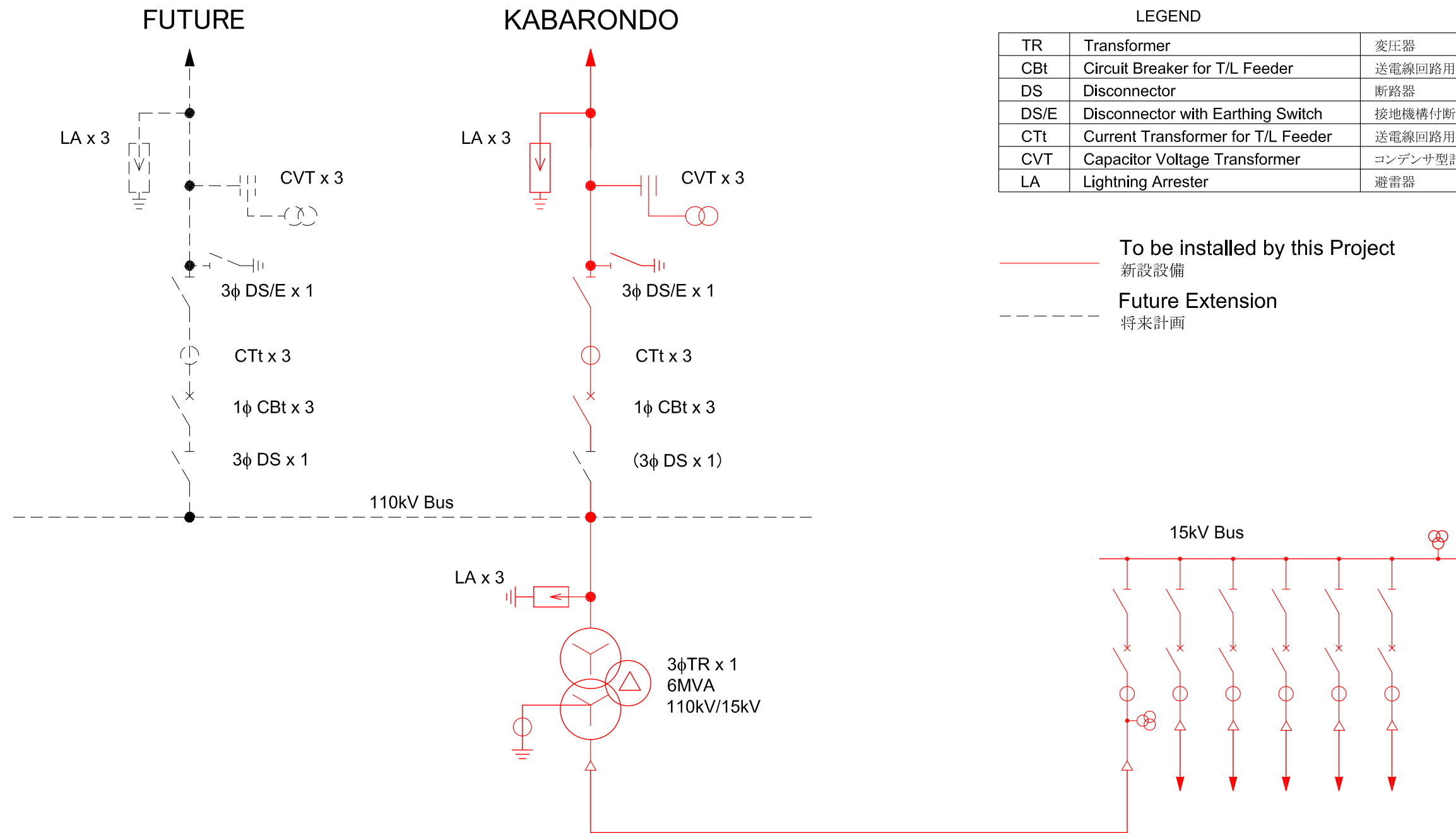
DRAWING TITLE  
GIKONDO SUBSTATION SECTION OF OUTDOOR SWITCHGEAR (1/250)  
GIKONDO変電所 屋外機器配置縦断面図(1/250)

DRAW. NO. SS-07  
PREPARED BY SHIMIZU  
CHECKED BY SHIMIZU  
APPROVED BY MANITA  
DATE Nov.05, 2010







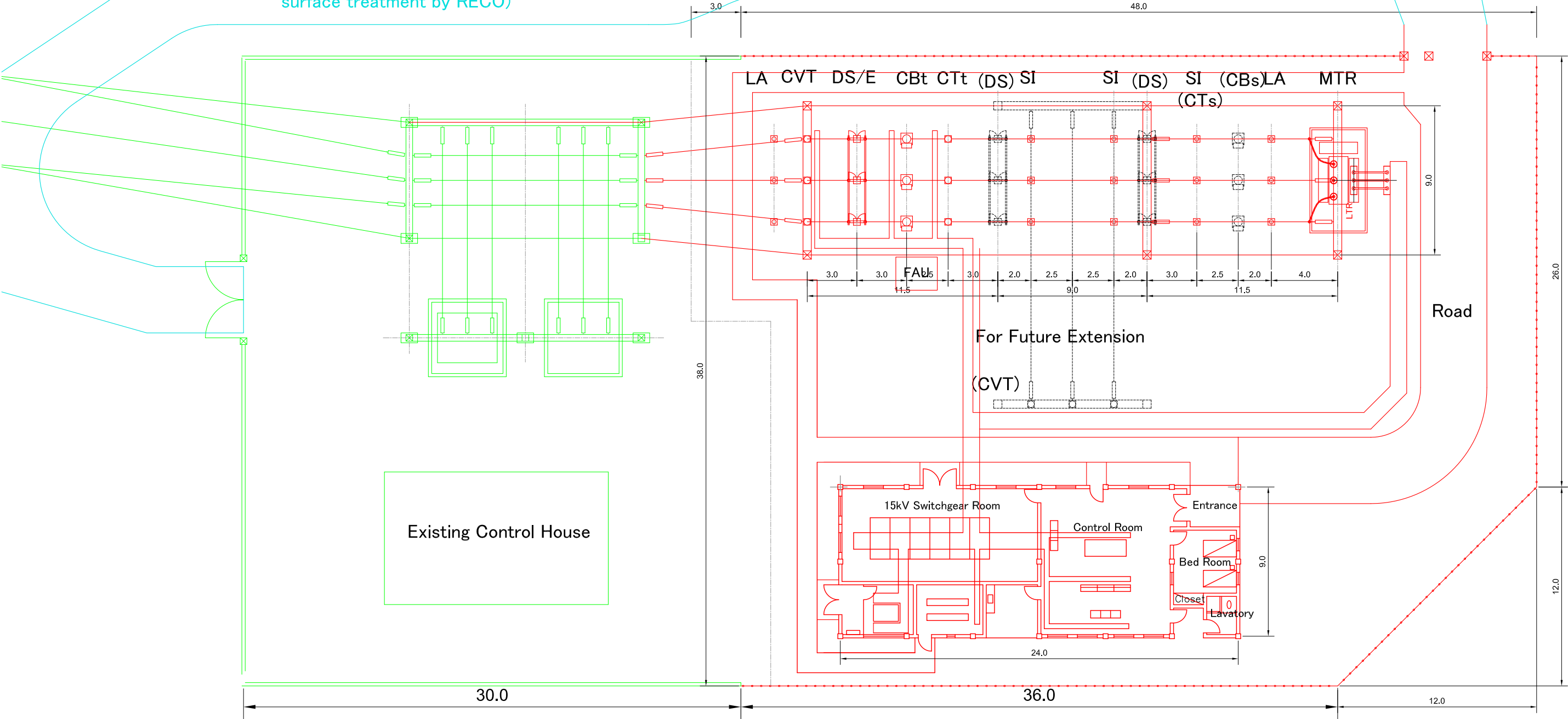


LEGEND

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	所内回路用しゃ断器
DS	Disconnecter	断路器
DS/E	Disconnecter 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 replaced/installed by this Project  
新設設備
- Future Extension  
将来計画

Road (widening, leveling, and necessary surface treatment by RECO)



THE PROJECT  
FOR  
UPGRADING AND EXPANSION OF  
SUBSTATION AND DISTRIBUTION NETWORK  
IN THE REPUBLIC OF RWANDA

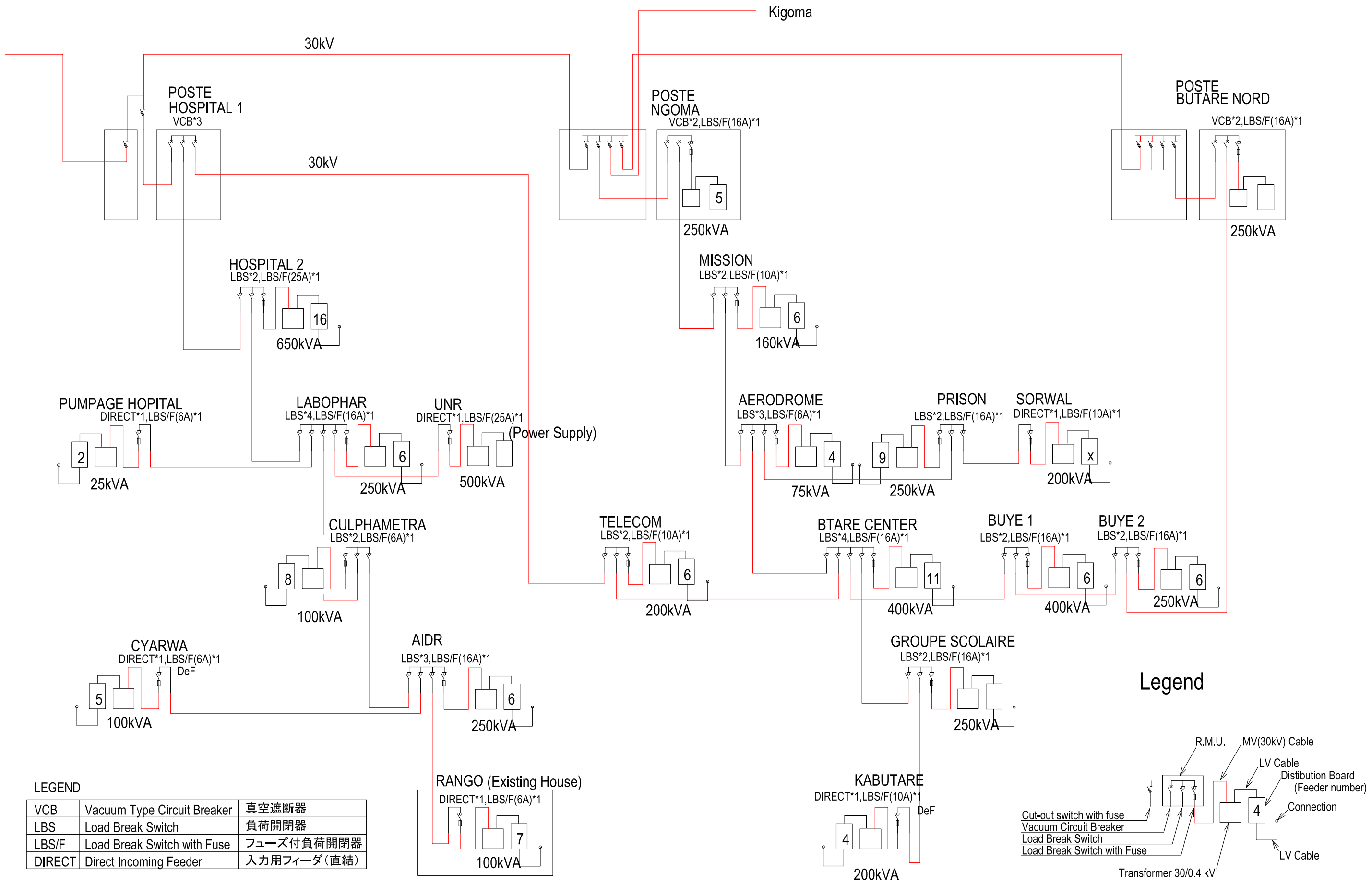
DRAWING TITLE  
RWINKWAVU SUBSTATION OUTDOOR SWITCHGEAR LAYOUT (1/250)  
RWINKWAVU変電所 屋外機器配置図 (1/250)

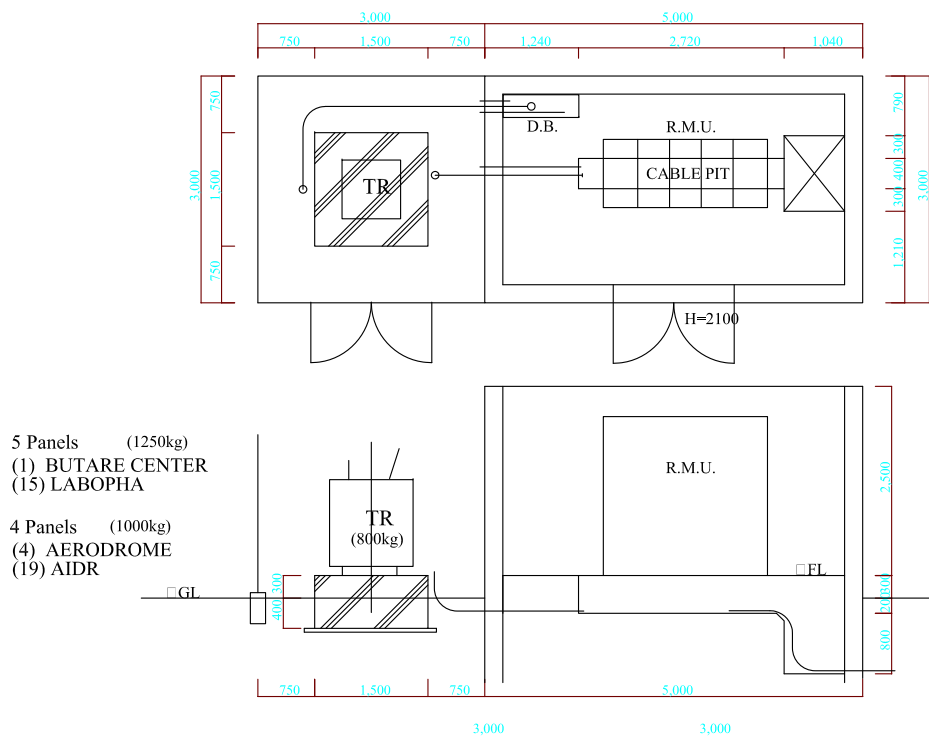
DRAW. NO. SS-11  
PREPARED BY SHIMIZU  
CHECKED BY SHIMIZU  
APPROVED BY MANITA  
DATE Nov.05, 2010









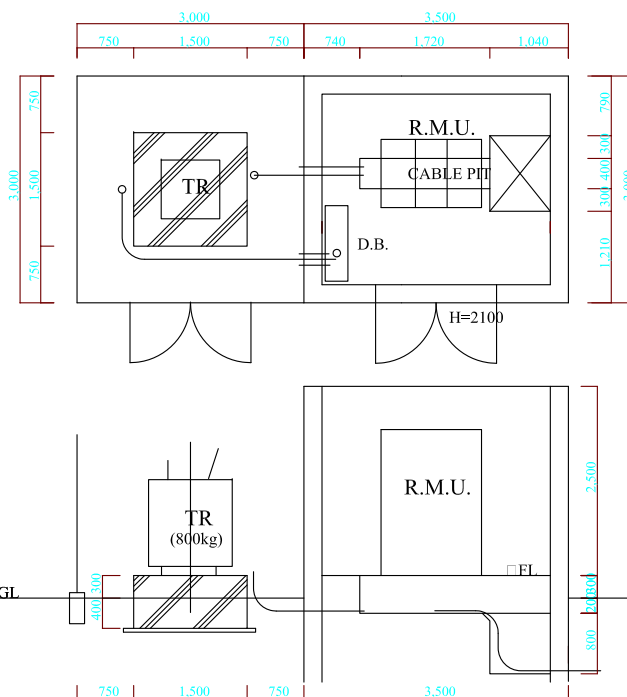


TYPE A

5 Panels (1250kg)  
(1) BUTARE CENTER  
(15) LABOPHA  
4 Panels (1000kg)  
(4) AERODROME  
(19) AIDR

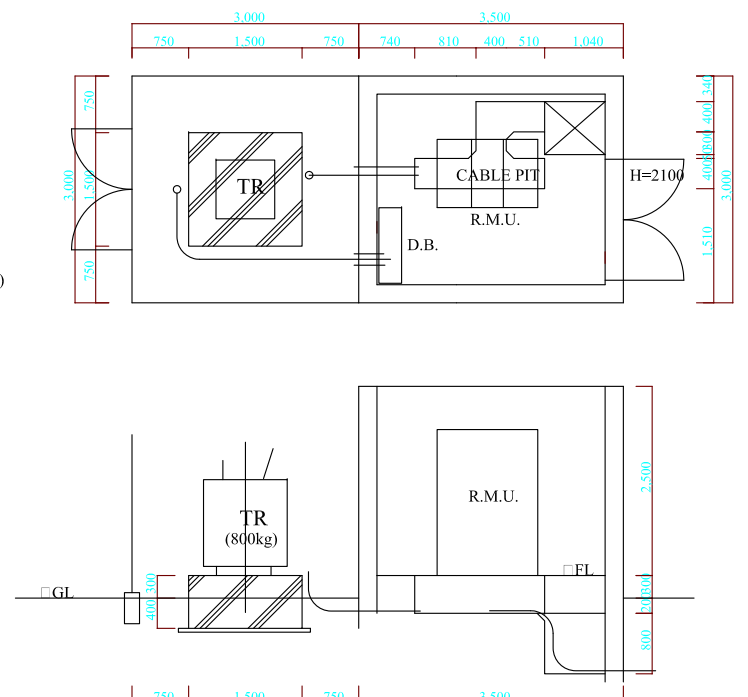
3 Panels (750kg)  
(2) POSTE NGOMA  
(5) PRISON  
(7) POSTE BUTARE NORD  
(10) GROUPE SCOLAIRE  
(12) TELECOM  
(14) HOSPITAL 2  
(17) CULPHAMETRA

2 Panels (500kg)  
(6) SORWAL  
(11) KABUTARE(EAVX)  
(18) POMPAGR HOSPITAL  
(21) CYARWA  
(16) UNR (WITHOUT D.B.)

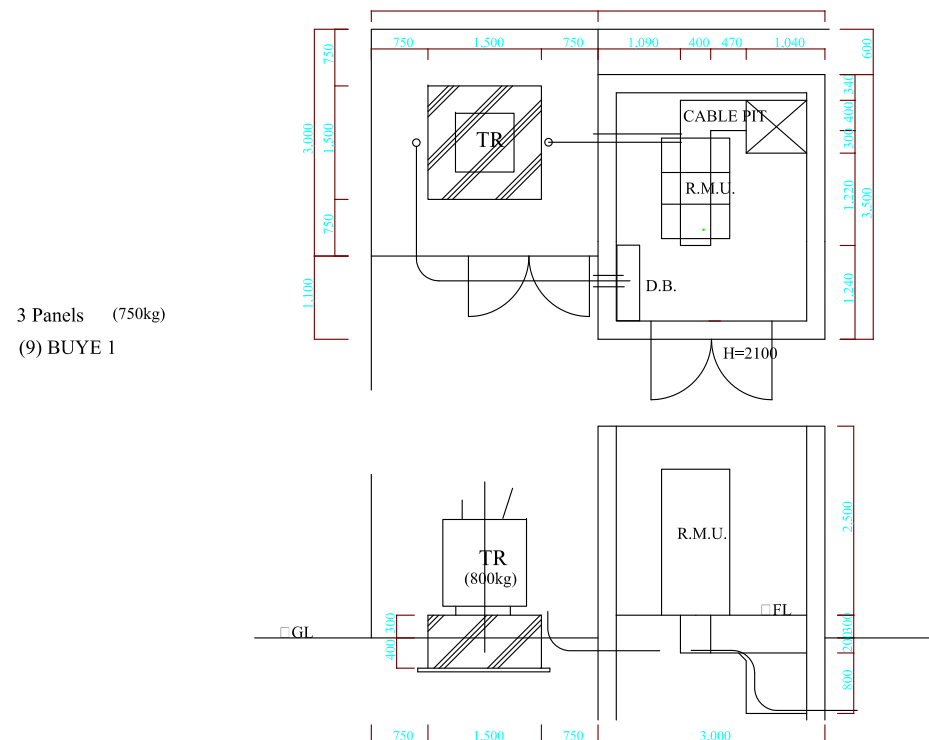


TYPE B-1

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



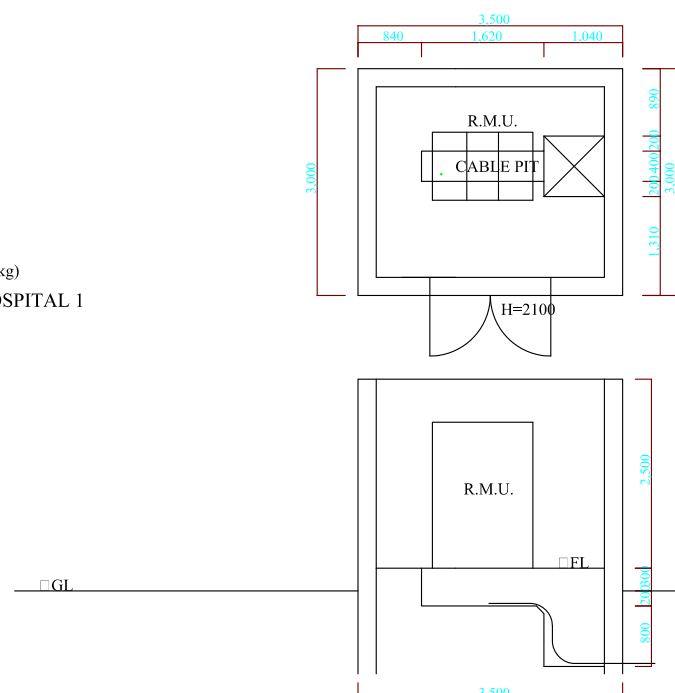
TYPE B-2



TYPE B-3

3 Panels (750kg)  
(9) BUYE 1

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



TYPE B-4

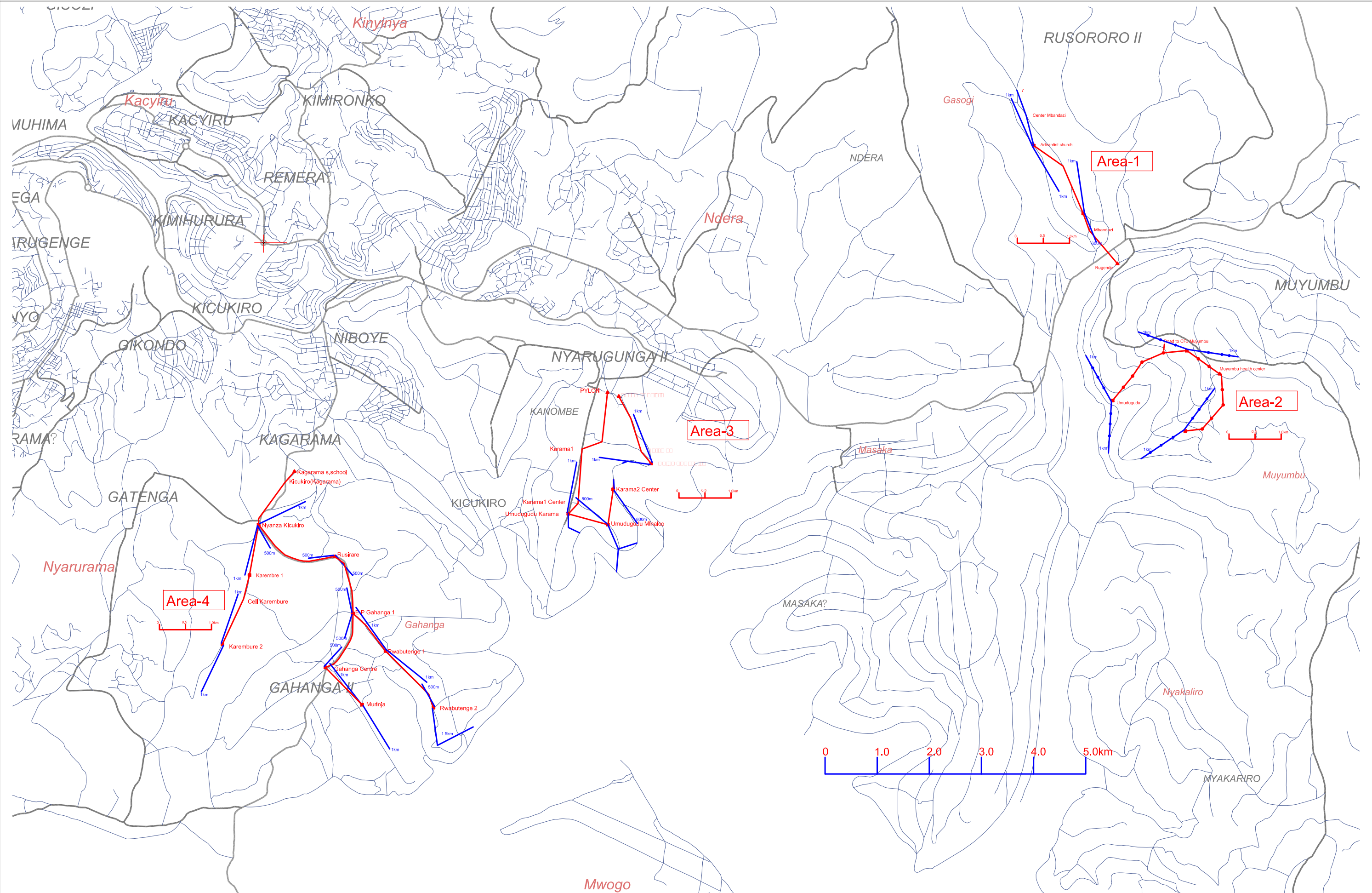
TR	Transformer	変圧器
D.B.	Distribution Board	配電盤
R.M.U.	Ring Main Unit	屋内開閉器盤


THE PROJECT  
FOR  
UPGRADING AND EXPANSION OF  
SUBSTATION AND DISTRIBUTION NETWORK  
IN THE REPUBLIC OF RWANDA

DRAWING TITLE  
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)

DRAW. NO. HDS-03  
PREPARED BY FUKUI  
CHECKED BY FUKUI  
APPROVED BY MANITA  
DATE Nov,05, 2010

 NIPPON KOEI CO., LTD

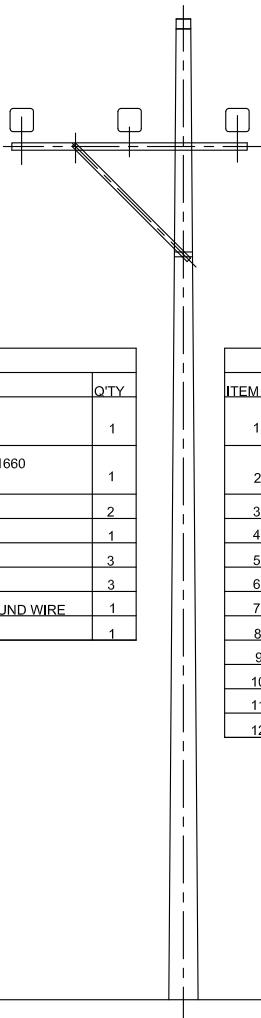
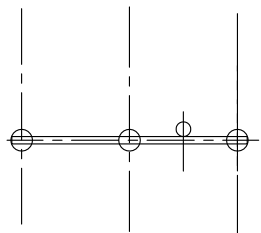


	THE PROJECT FOR UPGRADING AND EXPANSION OF SUBSTATION AND DISTRIBUTION NETWORK IN THE REPUBLIC OF RWANDA	DRAWING TITLE		DRAW. NO.	PREPARED BY	FUKUI	 NIPPON KOEI CO., LTD
		Distribution Network in Kigali : Route Map Kigali 配電網 : ルート図		KDS-01	CHECKED BY	FUKUI	
					APPROVED BY	MANITA	
					DATE	Nov,05,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



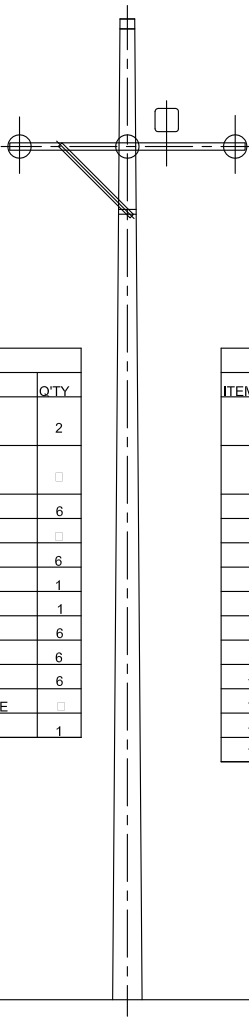
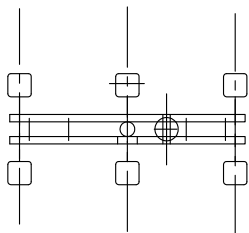
MV POLE TYPE (1/2)

Pole Type M1  
Strait



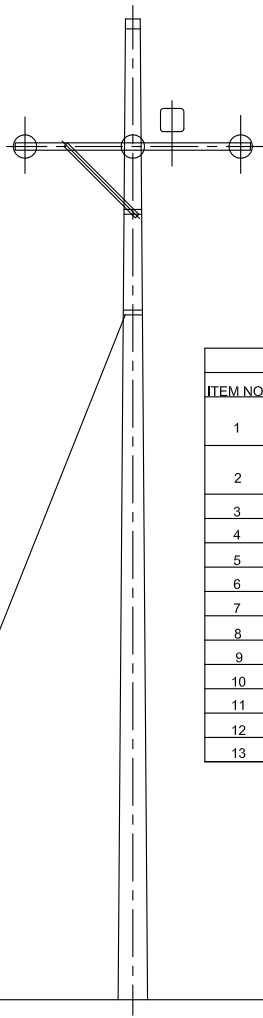
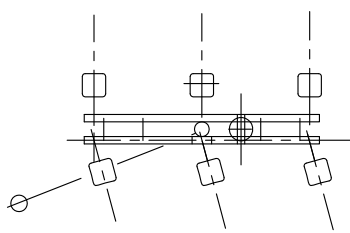
QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	CROSS ARM,L-75*75*6*2400 (HOT DIP GALVANIZED)	1
2	CROSS ARM BRACE,L-50*50*5*1660 (HOT DIP GALVANIZED)	1
3	BOLT,NUT,WASHER M16	2
4	ARM TIEBAND	1
5	PIN INSULATOR	3
6	PREFORMED INSULATOR TIE	3
7	SUPORT FOR OVERHEAD GROUND WIRE	1
8	CONCRETE POLE 12m	1

Pole Type M2  
Strait (400m)



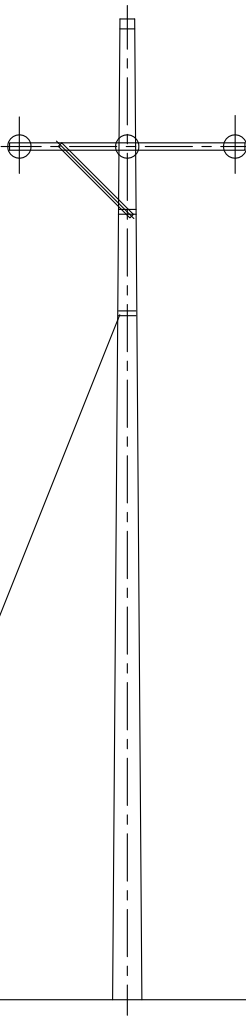
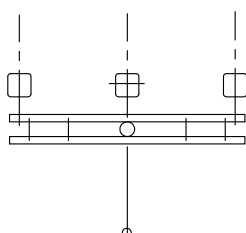
QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	CROSS ARM,L-75*75*6*2400 (HOT DIP GALVANIZED)	2
2	CROSS ARM BRACE,L-50*50*5*1050 (HOT DIP GALVANIZED)	1
3	BOLT,NUT,WASHER M16	6
4	ARM TIEBAND	1
5	COMPOSITE STRAIN INSULATOR	6
6	POST INSULATOR	1
7	PREFORMED INSULATOR TIE	1
8	EYE BOLT/NUT,M16	6
9	PREFORMEDDEAD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

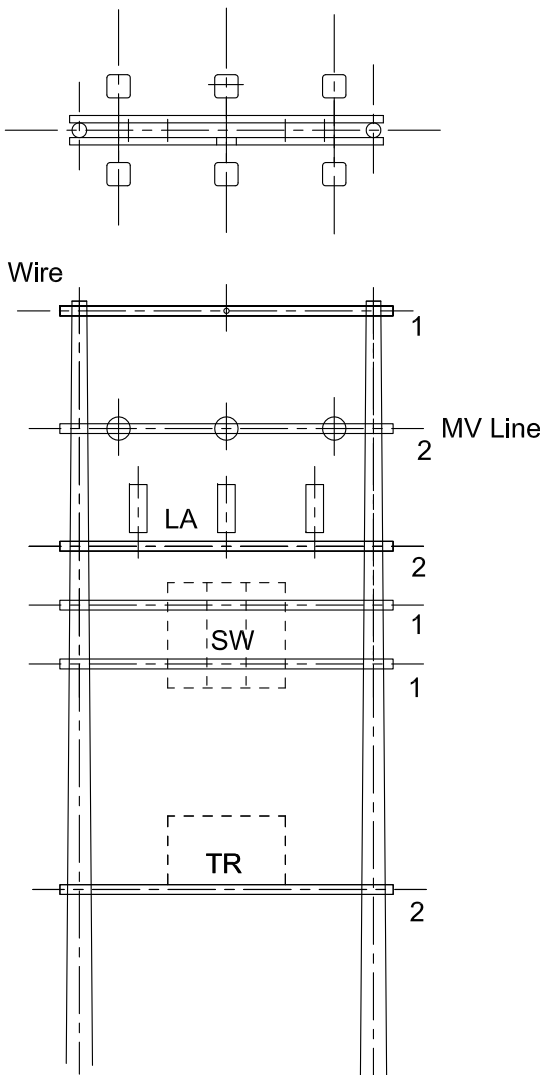
Pole Type M4  
Start Point



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	1
12	STAY	1
13	CONCRETE POLE 12m	1

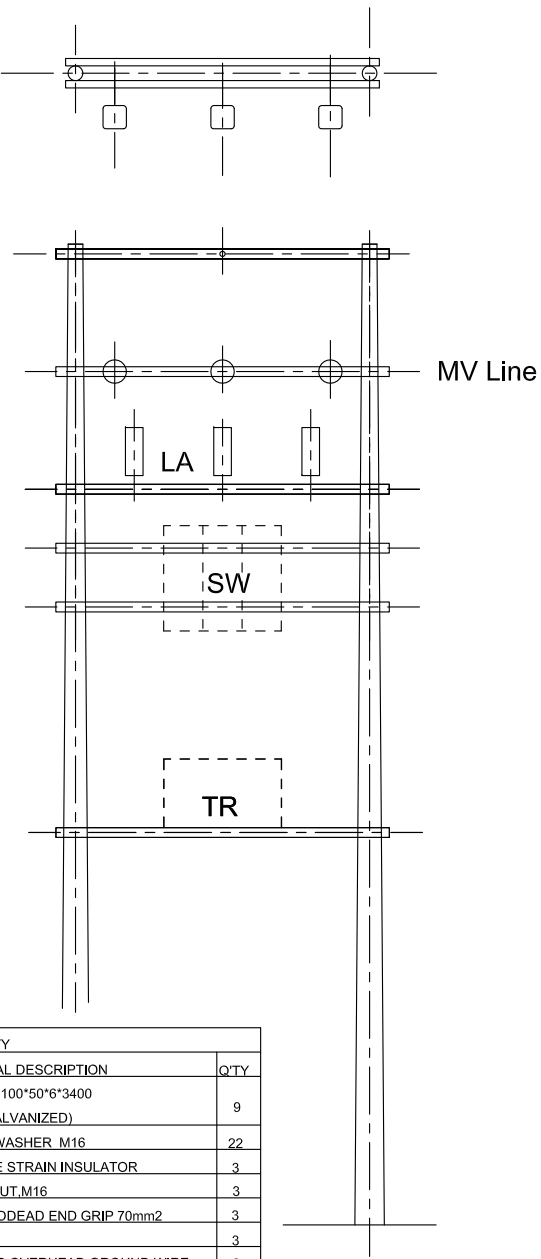
MV POLE TYPE (2/2)

Pole Type M5  
Transformer



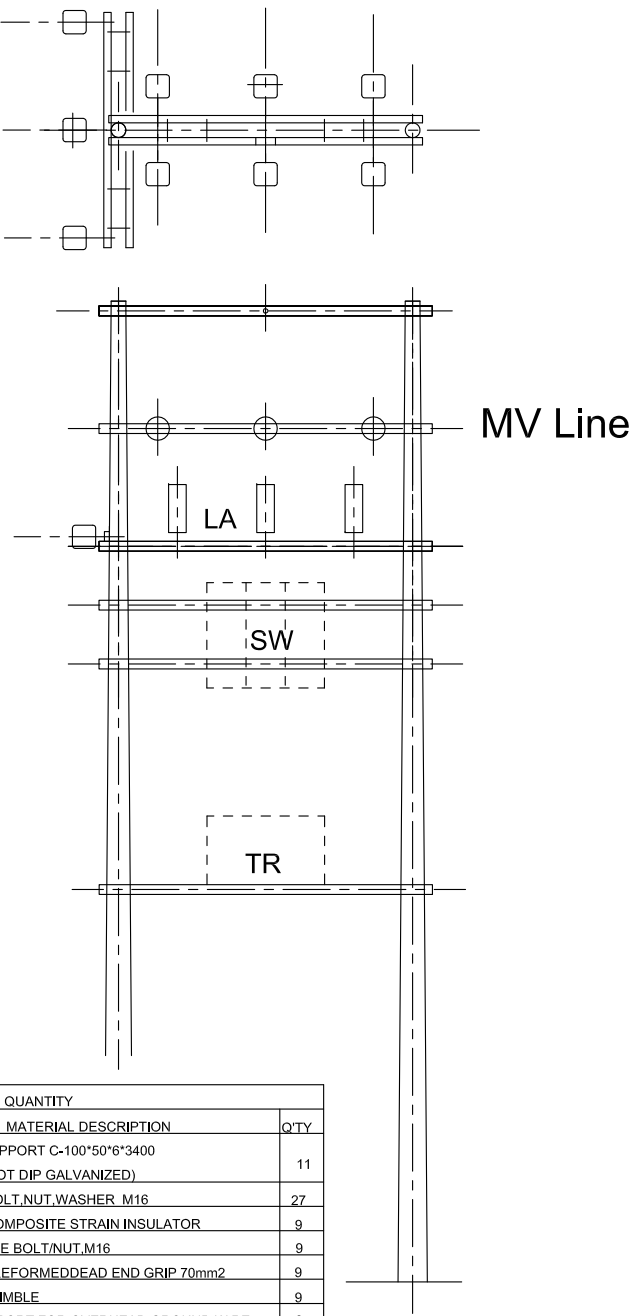
QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	SUPPORT C-100*50*6*3400 (HOT DIP GALVANIZED)	9
2	BOLT,NUT,WASHER M16	22
3	COMPOSITE STRAIN INSULATOR	6
4	EYE BOLT/NUT,M16	6
5	PREFORMEDDEAD END GRIP 70mm2	6
6	THIMBLE	6
7	SUPORT FOR OVERHEAD GROUND WIRE	2
8	LIGHTNING ARRESTER	3
9	SWITCH WITH FUSE	1
10	TRANSFORMER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

Pole Type M6  
Transformer  
(Terminal)



QUANTITY		
ITEM NO.	MATERIAL DESCRIPTION	Q'TY
1	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
1	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

LV POLE TYPE

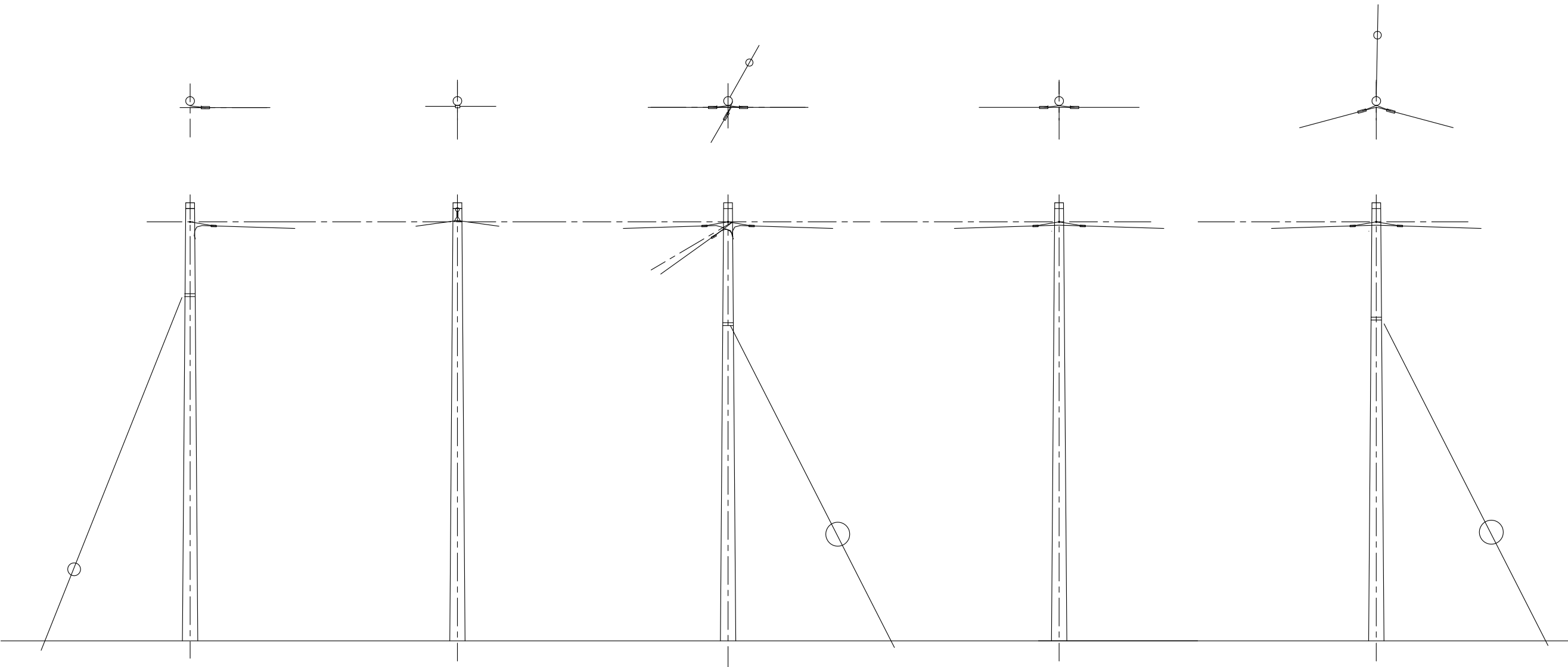
Pole Type L1  
Start Point  
Terminal

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	1
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	1
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	1
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	1
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	1
4	STAY	1
5	CONCRETE POLE 9m	1

6

THE PROJECT  
FOR  
UPGRADING AND EXPANSION OF  
SUBSTATION AND DISTRIBUTION NETWORK  
IN THE REPUBLIC OF RWANDA

DRAWING TITLE  
Kigali Distribution Network : LV Distribution pole with Support Structure  
キガリ市配電網：低圧配電柱 装柱図

DRAW. NO.	PREPARED BY	FUKUI
KDS-03	CHECKED BY	FUKUI
	APPROVED BY	MANITA
	DATE	Nov,05, 2010

 NIPPON KOEI CO., LTD