

TDDP.2 – RCO (ADD)

NOTES

1. THE NEUTRAL GROUNDING RESISTORS (NGR) ARE INDICATED FOR FUTURE INSTALLATION.
2. SYNCHRONIZING SCHEMATIC
- 2.1 0-Y-P-01 SHOWN THUS, REFER TO INCOMING IVT DESIGNATIONS.
- 2.2 0BY-P-01 SHOWN THUS, REFERS TO RUNNING BUS IVT
- 2.3 #B ONLY ✓ SHOWN THUS, REFERS TO THE SECONDARY WINDING OF IVT FOR PHASE "B" AND USING FULL TAP WINDING 115V FOR SYNCHRONIZING SYSTEM WITH ONE END OF THE WINDING CONNECTED WITH COMMON GROUND BUS.
- 2.4 MANUAL SYNCHRONIZING BY SYNCHROSCOPE SHALL UTILIZE INCOMING AND RUNNING SECONDARY VOLTAGES OF METERING CORES FROM "PHASE B" FOR BOTH IVT'S.
- 2.5 AUTOMATIC SYNCHRONISM VERIFICATION BY SYNCHRO CHECK RELAY (25) SHALL UTILIZE INCOMING AND RUNNING SECONDARY VOLTAGES OF RELAYING CORES FROM "PHASE B" FOR BOTH VT'S.
3. EACH DIGITAL POWER METER (DPM) SHALL BE COMMUNICATED WITH AUTOMATIC METER READING (AMR) APPLICATION SERVER VIA SWITCH NETWORK.
4. FOR NEW INSTALLATION, 115KV RELAY PROTECTION SHALL BE A DOUBLE MAIN PROTECTION CONFIGURATION (MAIN1&2) WHEREAS MAIN1&MAIN2 SHALL BE DIFFERENT IN PRODUCTS/MANUFACTURERS.

6. 115 KV. IVT RATIO

115,000	:	115	/	115	//	115	/	115	V (05YP-01)	50VA/0.2/1.5VF, 50VA/3P/1.5VF (SIMULTANEOUS BURDEN = 100 VA.)
$\sqrt{3}$		$\sqrt{3}$		$\sqrt{3}$		$\sqrt{3}$		$\sqrt{3}$		

115 KV. CVT RATIO

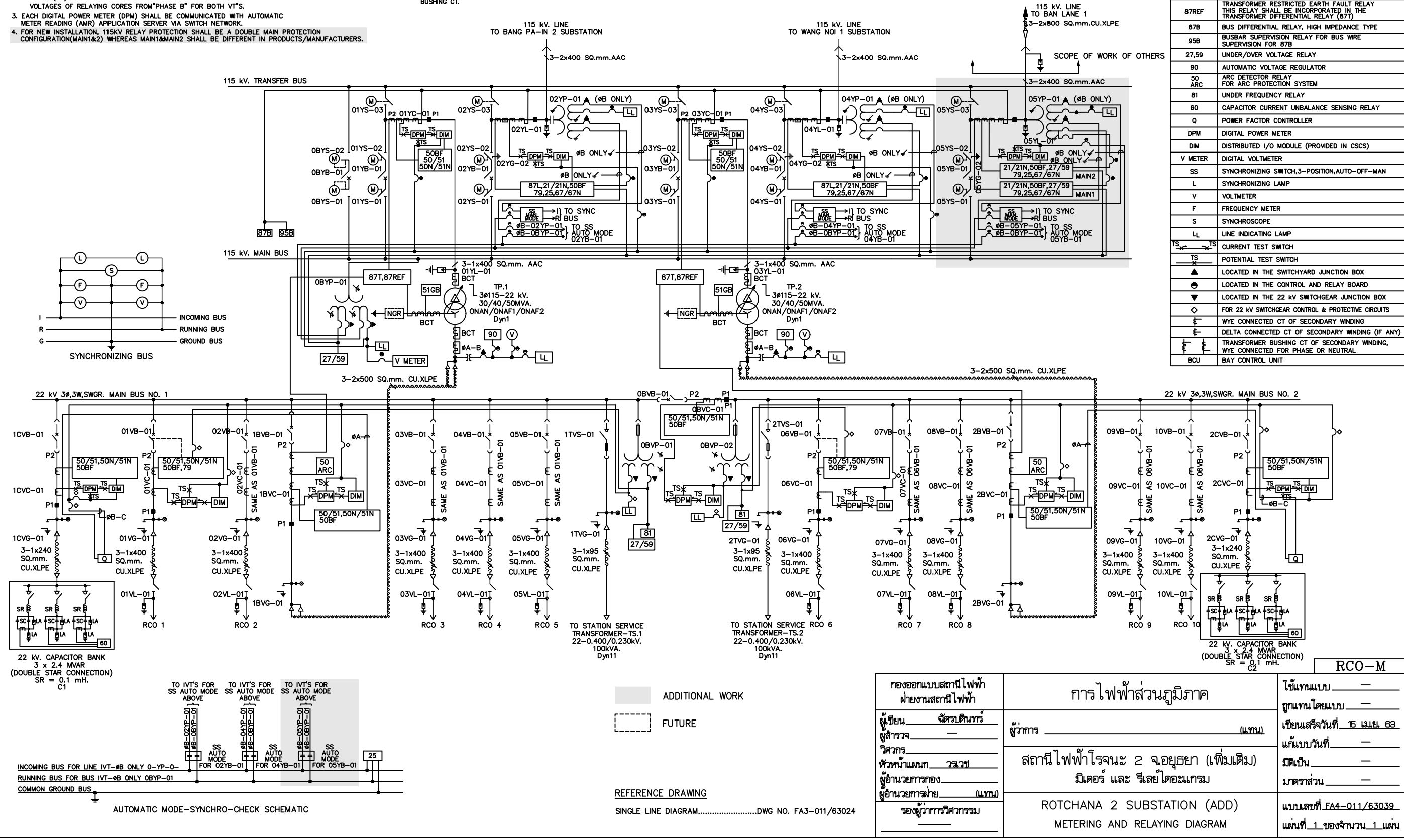
115,000	:	115	/	115	//	115	/	115	V	200VA/0.5/1.5VF, 200VA/3P/1.5VF
$\sqrt{3}$		$\sqrt{3}$		$\sqrt{3}$		$\sqrt{3}$		$\sqrt{3}$		

8. 22 KV. VT. RATIO

22000	:	110	//	110	V	50VA/0.5/1.9VF, 50VA/3P/1.9VF
$\sqrt{3}$		$\sqrt{3}$		$\sqrt{3}$		

9. 22 KV. CT. RATIO

1800/1500/900	:	1/1/1/1	A	- FOR INCOMING BREAKER	20VA/5P20, 20VA/0.5F55, 20VA/5P20, 20VA/5P20
1800/1500/900	:	1/1	A	- FOR TIE BREAKER	20VA/0.5F55, 20VA/5P20
600/300	:	1/1	A	- FOR OUTGOING 22 KV.	20VA/0.5F55, 20VA/5P20
1800/1500/900	:	1/1	A	- FOR LOW SIDE TRANSFORMER BUSHING CT.	20VA/5P20, 20VA/0.5F55
1800/1500/900	:	1/1	A	- FOR NEUTRAL BUSHING CT.	20VA/5P20, 20VA/5P20
600/300	:	1/1	A	- FOR CAPACITOR BANK	20VA/0.5F55, 20VA/5P20



DEVICES	EXPLANATION
87L	LINE CURRENT DIFFERENTIAL RELAY
21, 21N	DISTANCE TIME-STEP PHASE AND GROUND DISTANCE RELAY
67	DIRECTIONAL PHASE OVERCURRENT RELAY
67N	DIRECTIONAL GROUND OVERCURRENT RELAY
25	SYNCHROCHECK RELAY
79	AUTOMATIC RECLOSING RELAY
50 BF	BREAKER FAILURE RELAY
50	NON-DIRECTIONAL INSTANTANEOUS AND TIME
51	PHASE OVERCURRENT RELAY
50N	NON-DIRECTIONAL INSTANTANEOUS
51N	AND TIME GROUND OVERCURRENT RELAY
51GB	NON-DIRECTIONAL GROUND BACKUP OVERCURRENT RELAY
87T	TRANSFORMER DIFFERENTIAL RELAY
87REF	TRANSFORMER RESTRICTED EARTH FAULT RELAY THIS RELAY SHALL BE INCORPORATED IN THE TRANSFORMER DIFFERENTIAL RELAY (87T)
87B	BUS DIFFERENTIAL RELAY, HIGH IMPEDANCE TYPE
95B	BUSBAR SUPERVISION RELAY FOR BUS WIRE SUPERVISION FOR 87B
27,59	UNDER/OVER VOLTAGE RELAY
90	AUTOMATIC VOLTAGE REGULATOR
50 ARC	ARC DETECTOR RELAY FOR ARC PROTECTION SYSTEM
81	UNDER FREQUENCY RELAY
60	CAPACITOR CURRENT UNBALANCE SENSING RELAY
Q	POWER FACTOR CONTROLLER
DPM	DIGITAL POWER METER
DIM	DISTRIBUTED I/O MODULE (PROVIDED IN CSCS)
V METER	DIGITAL VOLTMETER
SS	SYNCHRONIZING SWITCH, 3-POSITION, AUTO-OFF-MAN
L	SYNCHRONIZING LAMP
V	VOLTMETER
F	FREQUENCY METER
S	SYNCHROSCOPE
LL	LINE INDICATING LAMP
TS	CURRENT TEST SWITCH
TS	POTENTIAL TEST SWITCH
▲	LOCATED IN THE SWITCHYARD JUNCTION BOX
●	LOCATED IN THE CONTROL AND RELAY BOARD
▼	LOCATED IN THE 22 KV SWITCHGEAR JUNCTION BOX
◇	FOR 22 KV SWITCHGEAR CONTROL & PROTECTIVE CIRCUITS
⋈	WYE CONNECTED CT OF SECONDARY WINDING
⋈	DELTA CONNECTED CT OF SECONDARY WINDING (IF ANY)
⋈	TRANSFORMER BUSHING CT OF SECONDARY WINDING, WYE CONNECTED FOR PHASE OR NEUTRAL
BCU	BAY CONTROL UNIT

22 KV. CAPACITOR BANK
3 x 2.4 MVAR
(DOUBLE STAR CONNECTION)
SR = 0.1 mH.
C1

TO IVT'S FOR SS AUTO MODE ABOVE

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INCOMING BUS FOR LINE IVT-#B ONLY 0-Y-P-01

RUNNING BUS FOR BUS IVT-#B ONLY 0BY-P-01

COMMON GROUND BUS

AUTOMATIC MODE-SYNCHRO-CHECK SCHEMATIC

ADDITIONAL WORK

FUTURE

REFERENCE DRAWING

SINGLE LINE DIAGRAM.....DWG NO. FA3-011/63024

กองออกแบบสถานีไฟฟ้า ฝ่ายงานสถานีไฟฟ้า	การไฟฟ้าส่วนภูมิภาค	ใช้แทนแบบ _____ ถูกแทนโดยแบบ _____ เขียนเสร็จวันที่ 15 เม.ย. 63 แก้แบบวันที่ _____ มติเป็น _____ มาตรฐาน _____
ผู้เขียน ธีรธรดินทร์ ผู้สำรวจ _____ วิศวกร _____ หัวหน้าแผนก วัชรพล ผู้อำนวยการกอง _____ ผู้อำนวยการฝ่าย (แทน)	ผู้ว่าการ _____ (แทน) สถานีไฟฟ้าโรจนะ 2 จ.อยุธยา (เพิ่มเติม) มิเตอร์ และ ซีลยไดอะแกรม	แบบเลขที่ FA4-011/63039 แผ่นที่ 1 ของจำนวน 1 แผ่น
รองผู้ว่าการวิศวกรรม	ROTCHANA 2 SUBSTATION (ADD) METERING AND RELAYING DIAGRAM	