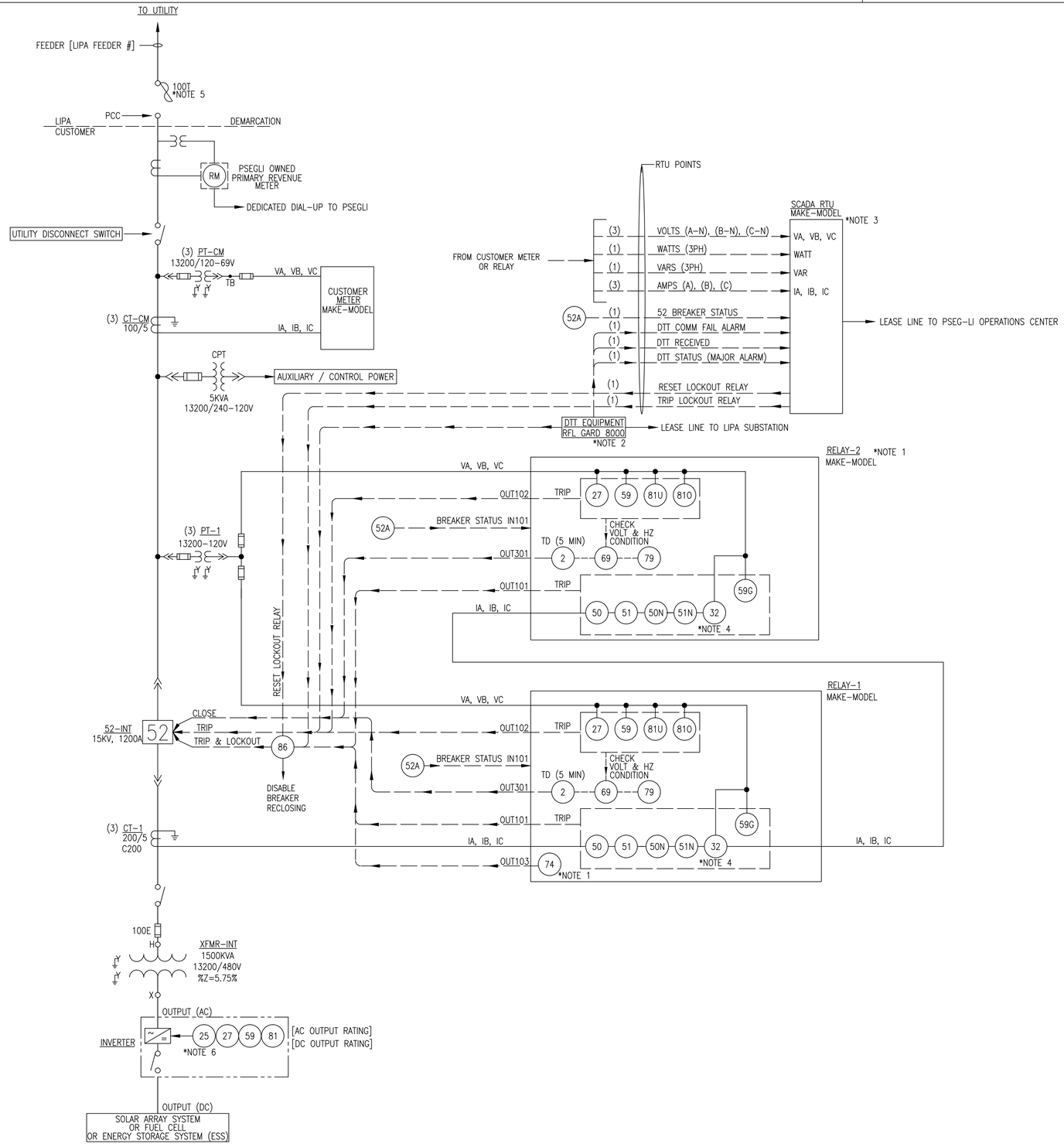

ANSI FUNCTIONS

- (2) TIME DELAY CLOSING RELAY
- (25) SYNCH CHECK RELAY
- (27) UNDERVOLTAGE RELAY
- (32) DIRECTIONAL POWER
- (50) PHASE INSTANTANEOUS OVERCURRENT RELAY
- (50N) GROUND INSTANTANEOUS OVERCURRENT RELAY
- (51) PHASE TIME OVERCURRENT RELAY
- (51N) GROUND TIME OVERCURRENT RELAY
- (52) CIRCUIT BREAKER
- (59) OVERVOLTAGE RELAY
- (59G) ZERO SEQUENCE OVER VOLTAGE (3V0)
- (69) PERMISSIVE CONTROL DEVICE
- (74) RELAY FAILURE ALARM
- (79) RECLOSING RELAY
- (81 U/O) UNDER/OVER FREQUENCY RELAY
- (86) LOCKOUT RELAY (MANUAL RESET)

INTEGRATED INVERTER SETTINGS			
VOLTAGE SETTINGS			
ANSI NO.	TRIP	PICKUP (%)	TIME DELAY (SEC)
27-1	UNDERVOLTAGE	50	0.16
27-2	UNDERVOLTAGE	88	5
59-1	OVERVOLTAGE	110	1
59-2	OVERVOLTAGE	120	0.16
FREQUENCY SETTINGS			
ANSI NO.	TRIP	PICKUP (HZ)	TIME DELAY (SEC)
81/U-1	UNDERFREQUENCY	56.5	0.16
81/U-2	UNDERFREQUENCY	58	180
81/O-1	OVERFREQUENCY	61	180
81/O-2	OVERFREQUENCY	62	0.16

NOTE 1: RELAY FAILURE TRIP IS NOT REQUIRED IF TWO REDUNDANT UTILITY GRADE RELAYS ARE USED

NOTE 2: IF DTT REQUIRED BY LIPA

NOTE 3: IF SCADA RTU REQUIRED BY LIPA

NOTE 4: DIRECTIONAL POWER RELAY (32) MAY BE REQUIRED TO LIMIT OR PREVENT EXPORT POWER FLOW TO CONTRACTUAL AGREEMENT

NOTE 5: ACTUAL FUSE SIZE TO BE DETERMINDED BY LIPA

NOTE 6: SYNCH CHECK RELAY (25) MUST BE SHOWN FOR GRID FORMING INVERTERS

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DER OWNER/DEVELOPER IS RESPONSIBLE FOR EQUIPMENT RATINGS AND SIZES.

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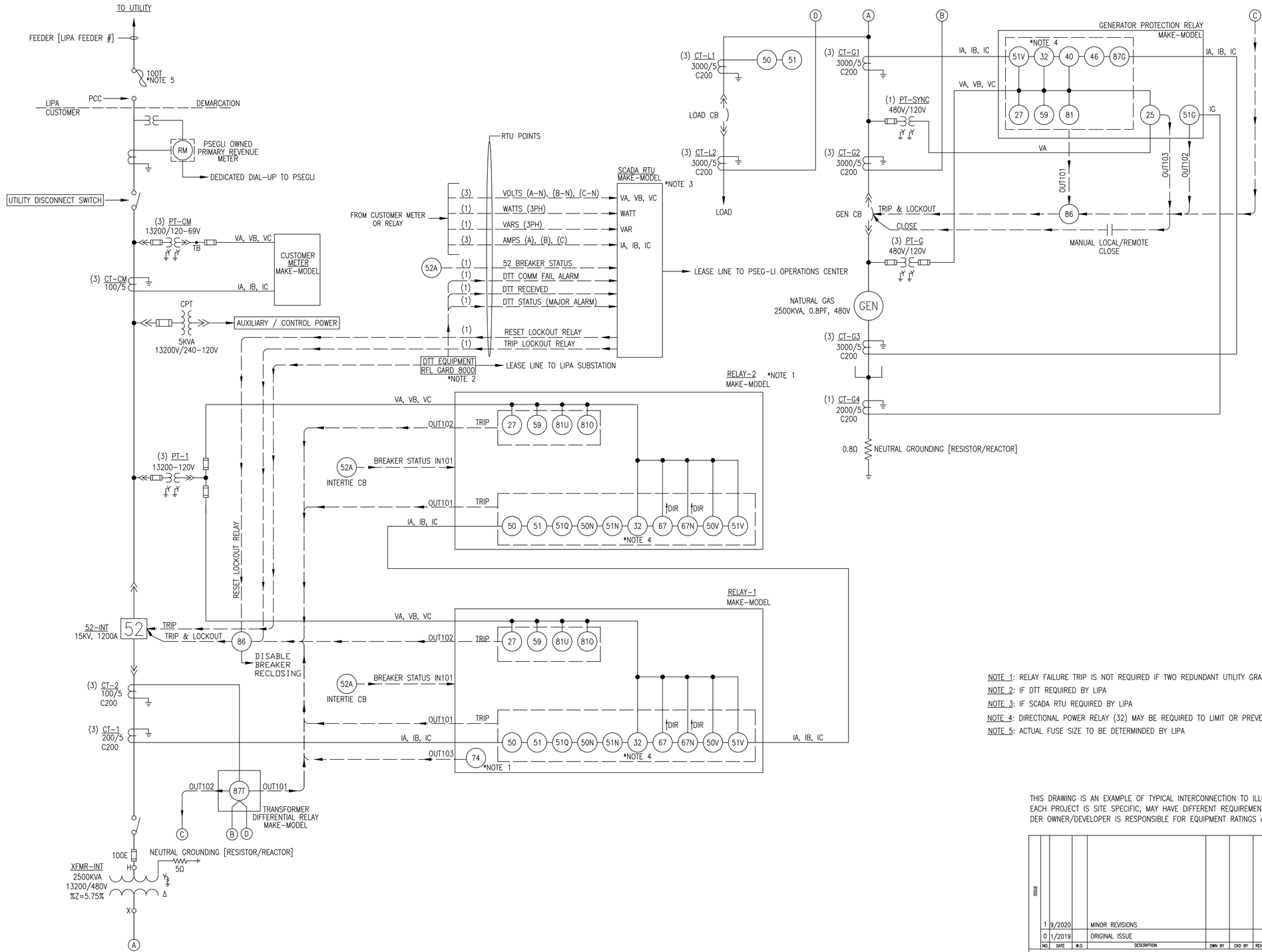
APPENDIX D
SAMPLE DRAWING D-1

FUNCTIONAL DIAGRAM
INVERTER BASED DER

PSEG LONG ISLAND

SCALE

VENDOR DWG. NO.



ANSI FUNCTIONS

- 25 SYNCH CHECK RELAY
- 27 UNDERVOLTAGE RELAY
- 32 DIRECTIONAL POWER
- 40 LOSS OF EXCITATION RELAY
- 50 PHASE INSTANTANEOUS OVERCURRENT RELAY
- 50N GROUND INSTANTANEOUS OVERCURRENT RELAY
- 50V VOLTAGE RESTRAINED PHASE INSTANTANEOUS RELAY
- 51 PHASE TIME OVERCURRENT RELAY
- 51G GENERATOR NEUTRAL TIME OVERCURRENT RELAY
- 51N GROUND TIME OVERCURRENT RELAY
- 46 / 51Q NEGATIVE SEQUENCE TIME OVERCURRENT RELAY
- 51V VOLTAGE RESTRAINED PHASE TIME OVERCURRENT RELAY
- 52 CIRCUIT BREAKER
- 59 OVERVOLTAGE RELAY
- 67 PHASE DIRECTIONAL OVERCURRENT
- 67N GROUND DIRECTIONAL OVERCURRENT RELAY
- 74 RELAY FAILURE ALARM
- 81 U/O UNDER/OVER FREQUENCY RELAY
- 86 LOCKOUT RELAY (MANUAL RESET)
- 87G GENERATOR DIFFERENTIAL RELAY
- 87T TRANSFORMER DIFFERENTIAL RELAY

NOTE 1: RELAY FAILURE TRIP IS NOT REQUIRED IF TWO REDUNDANT UTILITY GRADE RELAYS ARE USED

NOTE 2: IF DTT REQUIRED BY LIPA

NOTE 3: IF SCADA RTU REQUIRED BY LIPA

NOTE 4: DIRECTIONAL POWER RELAY (32) MAY BE REQUIRED TO LIMIT OR PREVENT EXPORT POWER FLOW TO CONTRACTUAL AGREEMENT

NOTE 5: ACTUAL FUSE SIZE TO BE DETERMINDED BY LIPA

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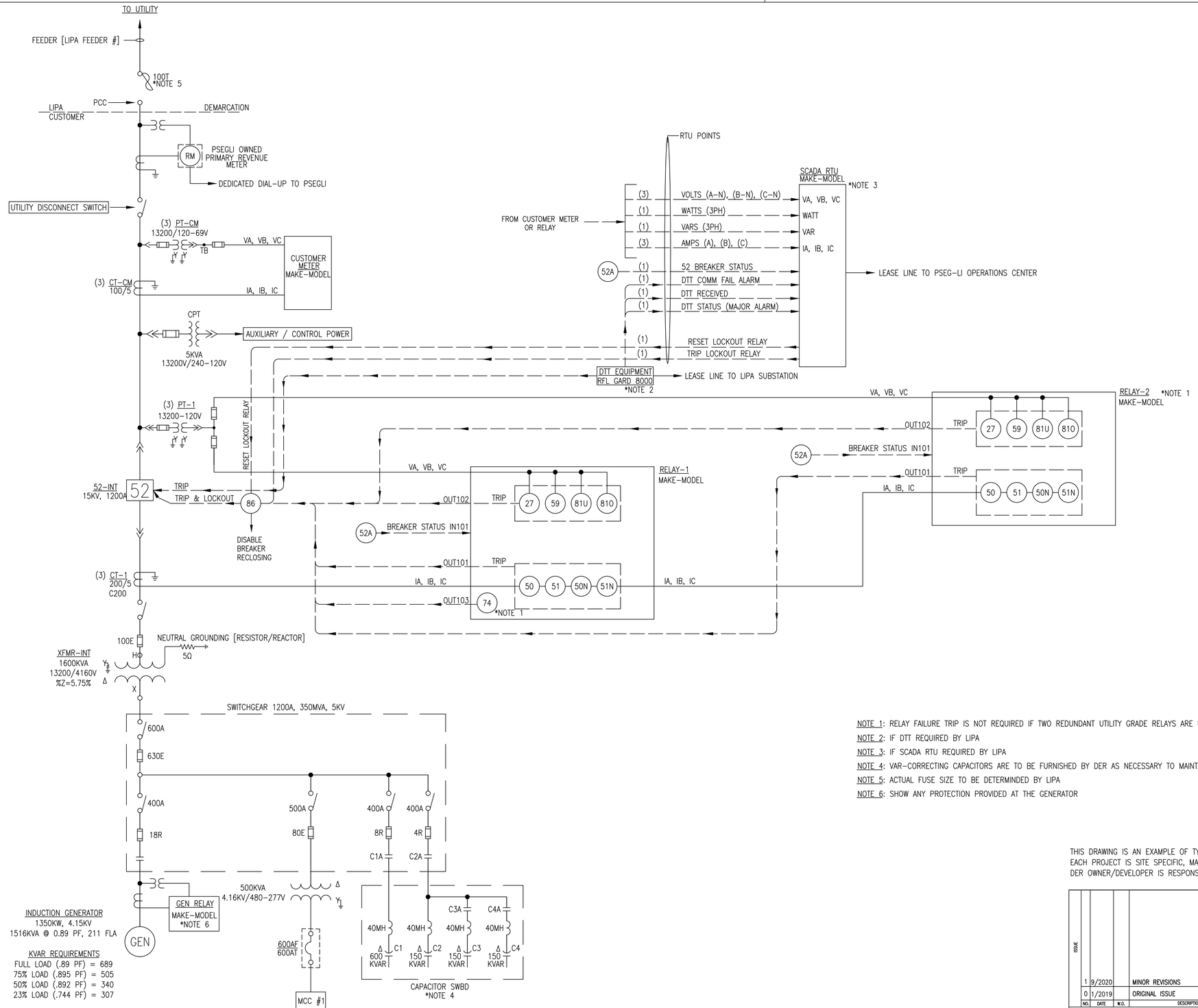
APPENDIX D
SAMPLE DRAWING D-2

FUNCTIONAL DIAGRAM
SYNCHRONOUS GENERATOR

PSEG LONG ISLAND

SCALE

VENDOR DWG. NO.



ANSI FUNCTIONS

- 27 UNDERVOLTAGE RELAY
- 50 PHASE INSTANTANENOUS OVERCURRENT RELAY
- 50N GROUND INSTANTANEOUS OVERCURRENT RELAY
- 51 PHASE TIME OVERCURRENT RELAY
- 51N GROUND TIME OVERCURRENT RELAY
- 52 CIRCUIT BREAKER
- 59 OVERVOLTAGE RELAY
- 74 RELAY FAILURE ALARM
- 81 U/O UNDER/OVER FREQUENCY RELAY
- 86 LOCKOUT RELAY (MANUAL RESET)

NOTE 1: RELAY FAILURE TRIP IS NOT REQUIRED IF TWO REDUNDANT UTILITY GRADE RELAYS ARE USED

NOTE 2: IF DTT REQUIRED BY LIPA

NOTE 3: IF SCADA RTU REQUIRED BY LIPA

NOTE 4: VAR-CORRECTING CAPACITORS ARE TO BE FURNISHED BY DER AS NECESSARY TO MAINTAIN NEAR-UNITY SYSTEM POWER FACTOR AND MUST BE REVIEWED AND APPROVED BY PSEGLI

NOTE 5: ACTUAL FUSE SIZE TO BE DETERMINDED BY LIPA

NOTE 6: SHOW ANY PROTECTION PROVIDED AT THE GENERATOR

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DER OWNER/DEVELOPER IS RESPONSIBLE FOR EQUIPMENT RATINGS AND SIZES.

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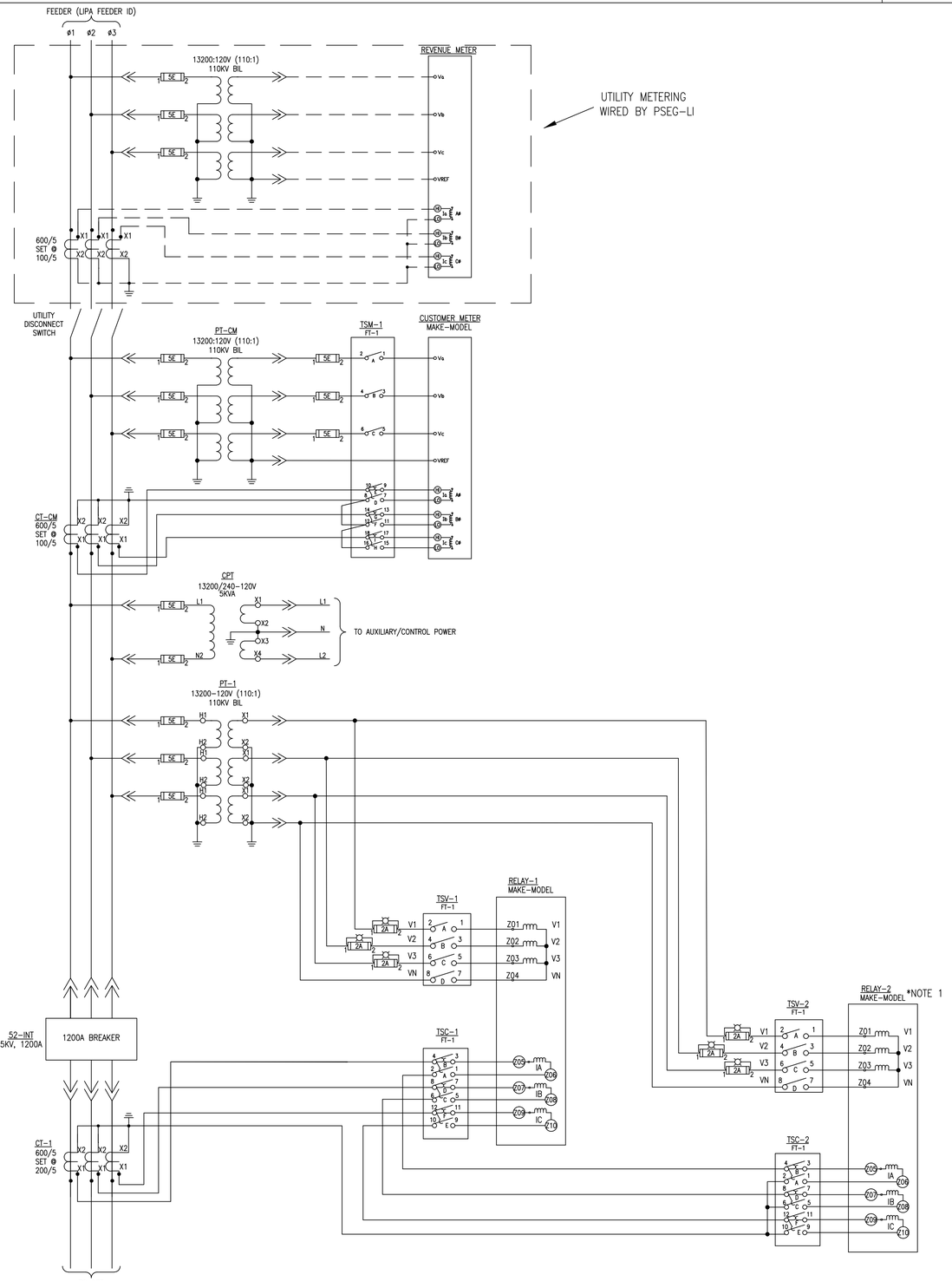
APPENDIX D
SAMPLE DRAWING D-3

FUNCTIONAL DIAGRAM
INDUCTION GENERATOR

PSEG LONG ISLAND

SCALE

VENDOR DWG. NO.



NOTE 1: IF USING REDUNDANT UTILITY GRADE RELAY

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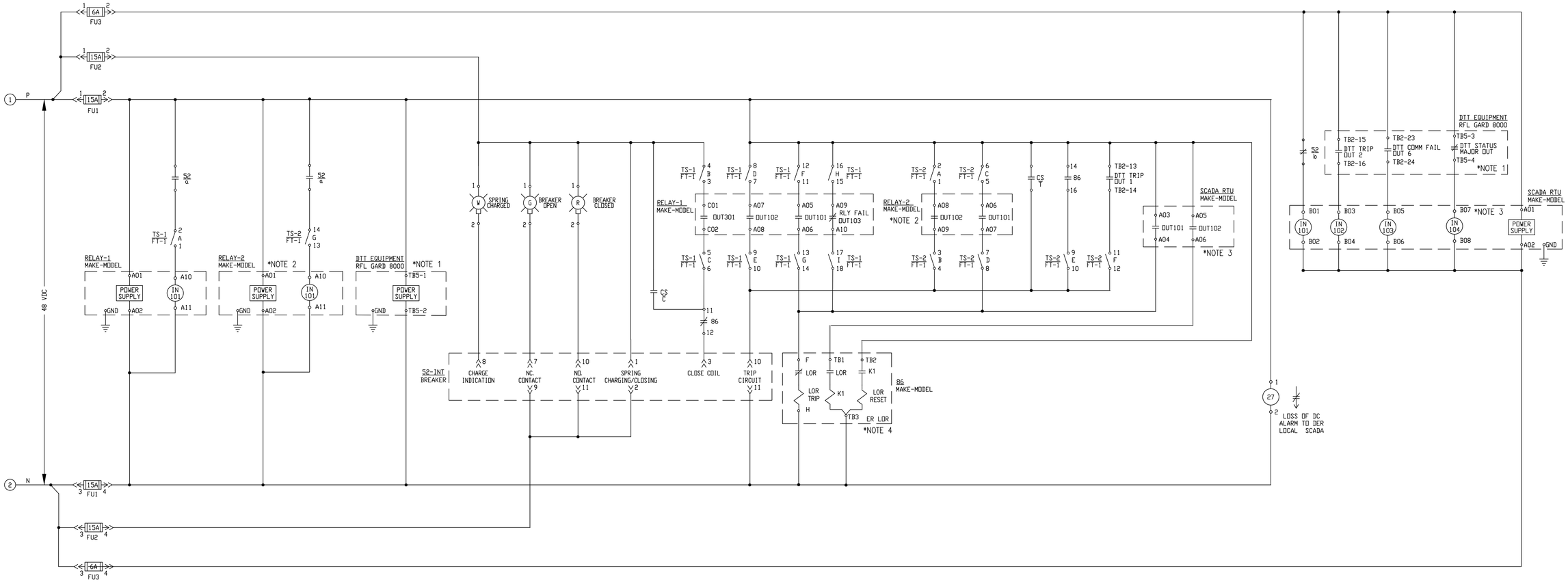
APPENDIX D
SAMPLE DRAWING D-4

THREE LINE DIAGRAM

PSEG LONG ISLAND

SCALE

VENDOR DWG. NO.



NOTE 1: IF DTT REQUIRED BY LIPA

NOTE 2: IF USING REDUNDANT UTILITY GRADE RELAY

NOTE 3: IF SCADA REQUIRED BY LIPA

NOTE 4: ELECTRIC RESET (ER) LOCKOUT RELAY (LOR) FUNCTIONALITY WILL BE NEEDED TO IMPLEMENT SCADA RESET OF LOR

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APPENDIX D
SAMPLE DRAWING D-5

DC SCHEMATIC

PSEG LONG ISLAND

SCALE

VENDOR DWG. NO.