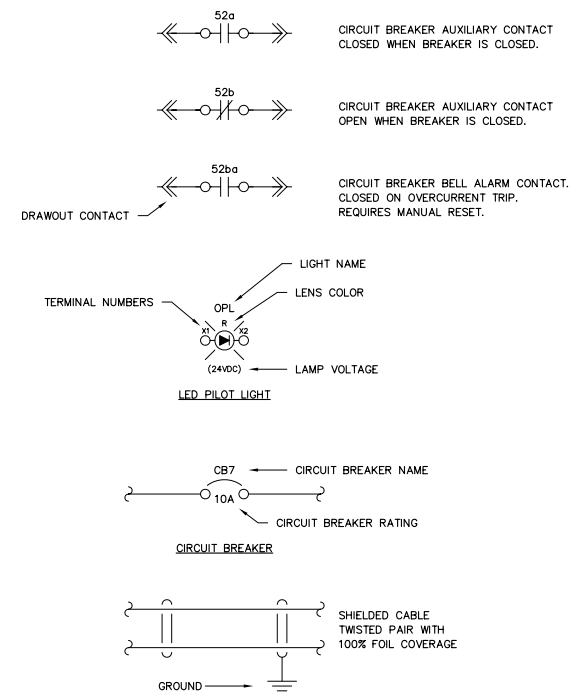
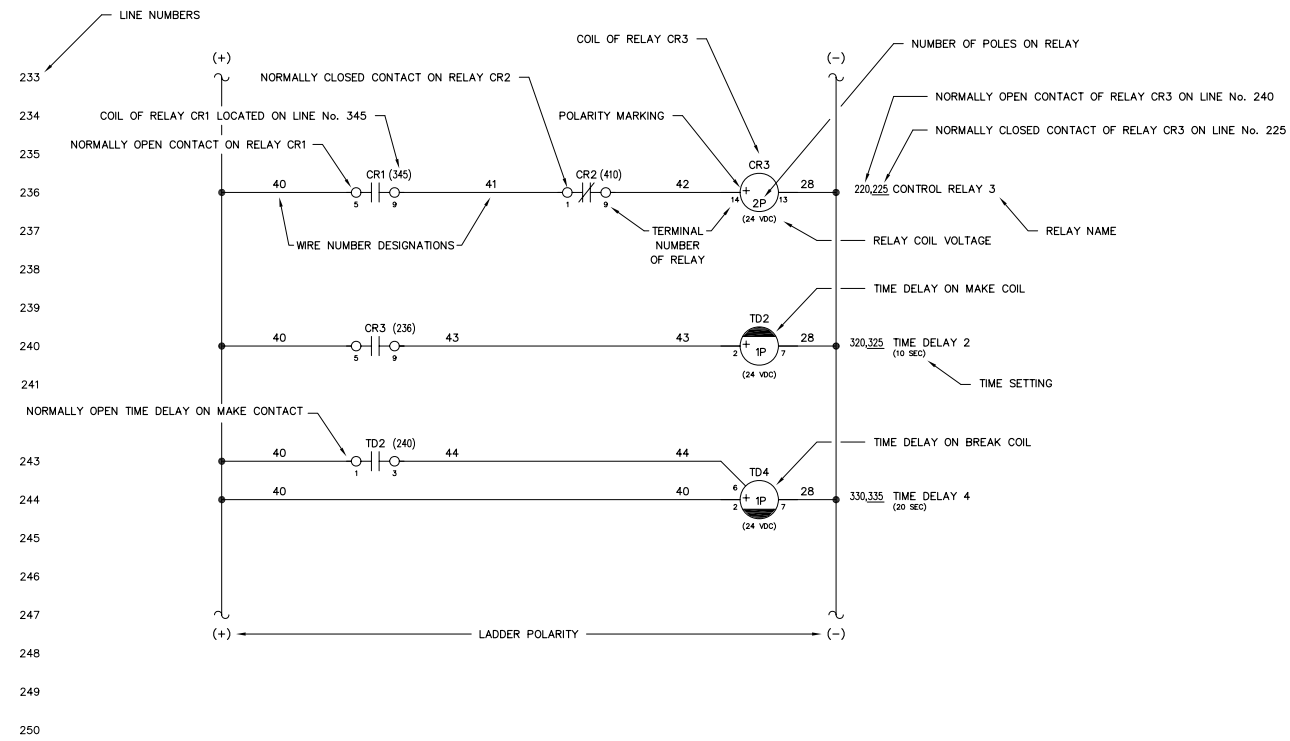




RURAL ENERGY GROUP  
813 W. NORTHERN LIGHTS BLVD.  
ANCHORAGE, ALASKA 99503  
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**AKIACHAK GENERATOR SWITCHGEAR  
ALASKA ENERGY AUTHORITY PURCHASE ORDER No. REG-07020  
CONTROLLED POWER, INC. JOB No. 6190**

<u>DRAWING No.</u>	<u>DRAWING TITLE</u>	<u>DRAWING No.</u>	<u>DRAWING TITLE</u>
6190-2101-D	COVER SHEET	6190-5313-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6190-3101-D	SCHEMATIC LEGEND AND NOTES	6190-5314-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6190-4101-D	GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM	6190-5315-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6190-4201-D	GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM	6190-5316-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6190-5101-D	GENERATOR SINGLE LINE, SCHEMATIC DIAGRAM	6190-5317-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6190-5201-D	GENERATOR 1 AC THREE LINE, SCHEMATIC DIAGRAM	6190-5318-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6190-5202-D	GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM	6190-5319-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6190-5203-D	GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM	6190-5401-D	BREAKER CONTROL, SCHEMATIC DIAGRAM
6190-5204-D	GENERATOR 4 AC THREE LINE, SCHEMATIC DIAGRAM	6190-5402-D	BREAKER CONTROL, SCHEMATIC DIAGRAM
6190-5205-D	MASTER AC THREE LINE, SCHEMATIC DIAGRAM	6190-5403-D	FEEDER 1 & 2 BREAKER CONTROL, SCHEMATIC DIAGRAM
6190-5206-D	MASTER AC THREE LINE, SCHEMATIC DIAGRAM	6190-5501-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
6190-5207-D	VFD AC THREE LINE, SCHEMATIC DIAGRAM	6190-5502-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
6190-5208-D	VFD AC THREE LINE, SCHEMATIC DIAGRAM	6190-5503-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
6190-5301-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM	6190-5601-D	COMMUNICATION NETWORK SINGLE LINE DIAGRAM
6190-5302-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM	6190-5602-D	COMMUNICATION NETWORK SCHEMATIC DIAGRAM
6190-5303-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM	6190-5701-D	HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM
6190-5304-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM	6190-6101-D	CONTROL SWITCH TARGET DIAGRAM
6190-5305-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM	6190-6201-D	NAMEPLATE ENGRAVING SCHEDULE
6190-5306-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM	6190-7101-D	INTERCONNECTION DIAGRAM
6190-5307-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM	6190-7102-D	INTERCONNECTION DIAGRAM
6190-5308-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM		
6190-5309-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM		
6190-5310-D	GENERATOR 4 DC CONTROL, SCHEMATIC DIAGRAM		
6190-5311-D	GENERATOR 4 DC CONTROL, SCHEMATIC DIAGRAM		
6190-5312-D	GENERATOR 4 DC CONTROL, SCHEMATIC DIAGRAM		



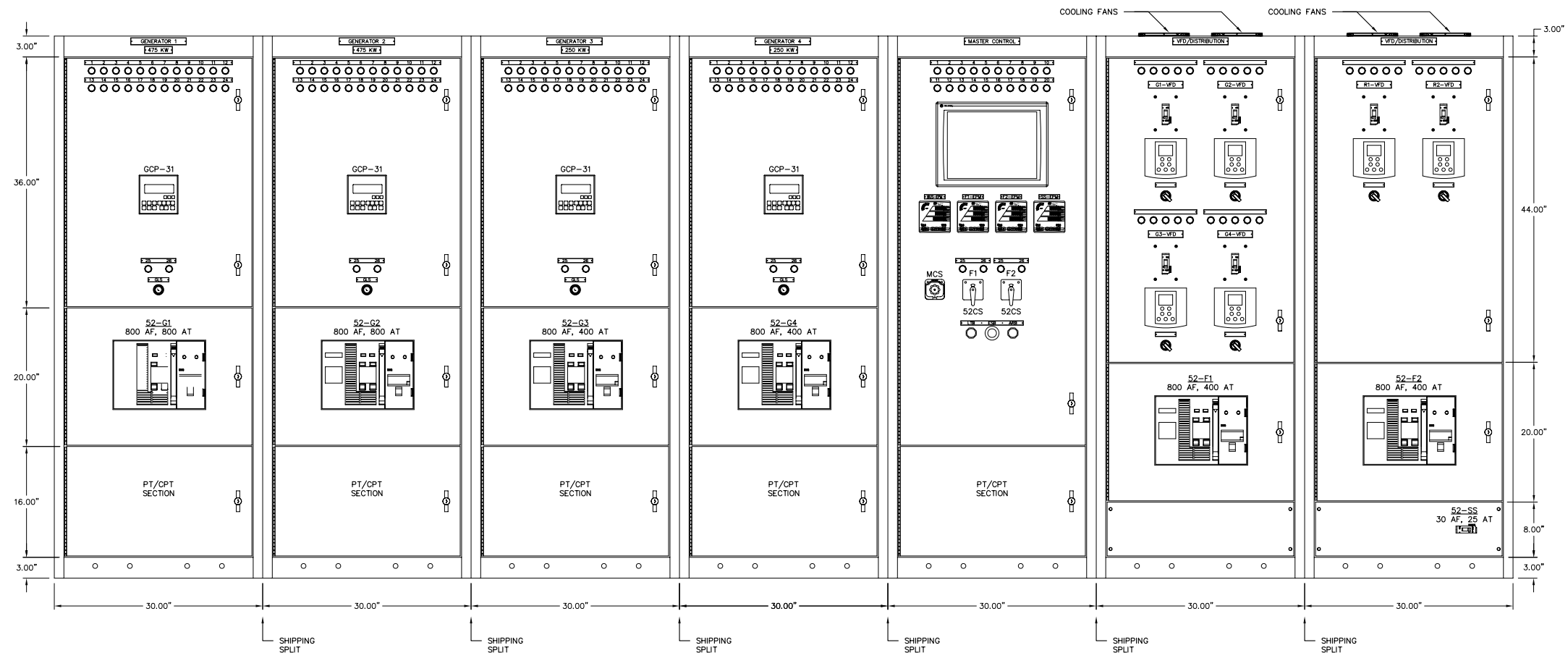
NOTES:

1. SCHEMATIC IS SHOWN AS FOLLOWS:
  - ALL AC AND DC POWER REMOVED
  - ALL RELAY CONTACTS DE-ENERGIZED
  - ALL CIRCUIT BREAKERS IN THE OPEN/RESET POSITION
  - ALL MODE SWITCHES IN THE "OFF" POSITION
  - ALL EMERGENCY STOP SWITCHES IN THE "NORMAL" POSITION
  - ALL PRESSURE SWITCHES SHOWN WITHOUT PRESSURE PRESENT
  - ALL LEVEL SWITCHES SHOWN WITHOUT FLUID PRESENT
  - ALL TEMPERATURE SWITCHES SHOWN AT AMBIENT
2. (⊙) INDICATES FIELD TERMINALS IN GENERATOR CONTROL SECTION.
3. (⊠) INDICATES TERMINALS AT ENGINE/GENERATOR.
4. (⊡) INDICATES INTERCONNECT TERMINALS IN MASTER SECTION.
5. (⊣) INDICATES FIELD TERMINALS IN MASTER SECTION.
6. (⊚) INDICATES INTERCONNECT TERMINALS IN GENERATOR CONTROL SECTION.
7. (⊙) INDICATES INTERCONNECT TERMINALS IN VFD/DIST SECTION.
8. (⊙) INDICATES FIELD TERMINALS IN VFD/DIST SECTION.
9. -- INDICATES FIELD WIRING BY OTHERS  
ALL CONTROL WIRING TO BE No. 14 AWG, 600 VOLT, TYPE SIS EXCEPT AS NOTED
10. SHIELDED WIRING TO BE No. 18 AWG, 300 VOLT, TWISTED LINE WITH 100% FOIL COVERAGE
11. ALL DIODES ARE 1N4007 EXCEPT AS NOTED

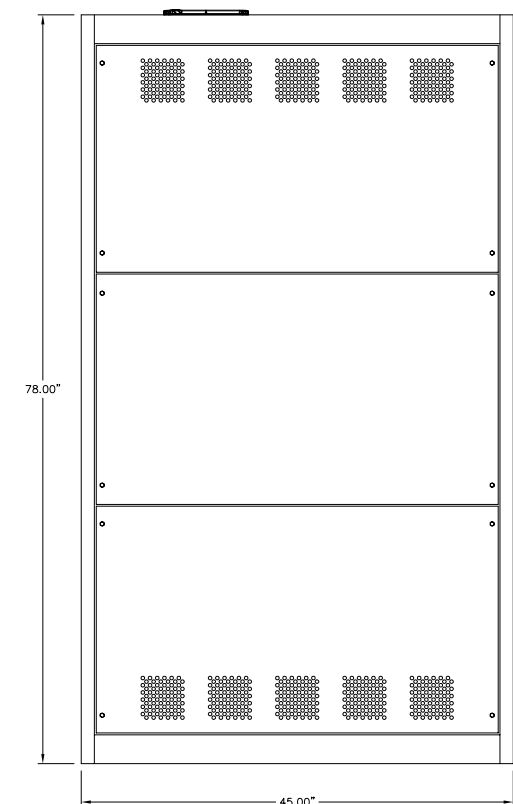
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. CONTROLLED POWER JOB No. 6190			
TITLE: SCHEMATIC LEGEND & NOTES			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-3101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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GENERATOR SWITCHGEAR – FRONT VIEW  
277/480V, 2400A, COPPER BUS, 3Ø, 4W 65 KAIC



SIDE VIEW

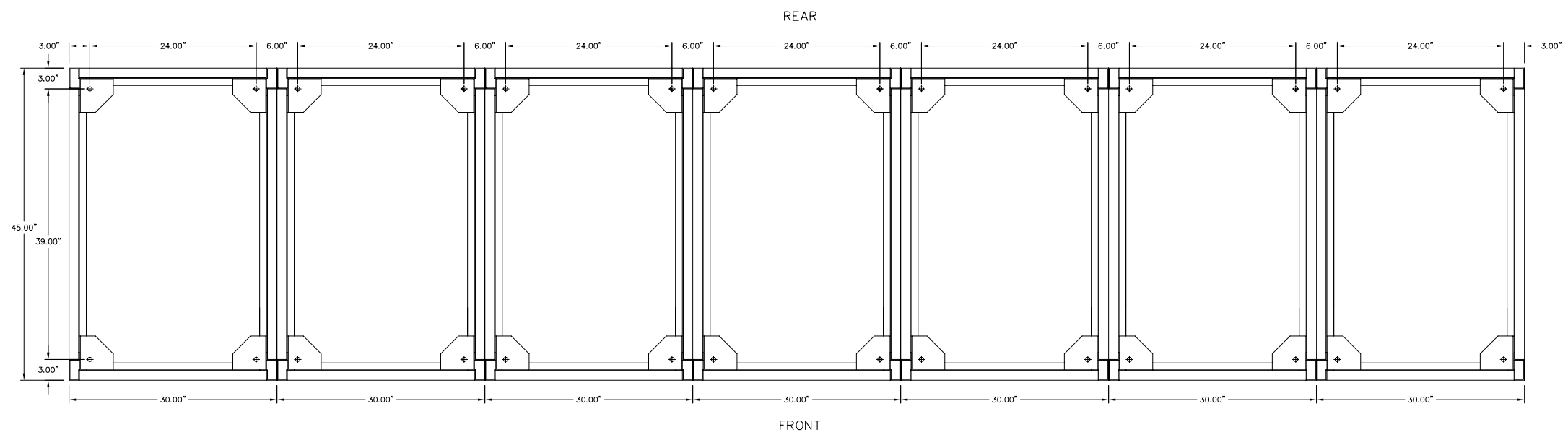
NOTES:

1. EACH SECTION SHIPPED INDIVIDUALLY.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No.		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR SWITCHGEAR ELEVATION VIEW			
SCALE: 1/10	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-4101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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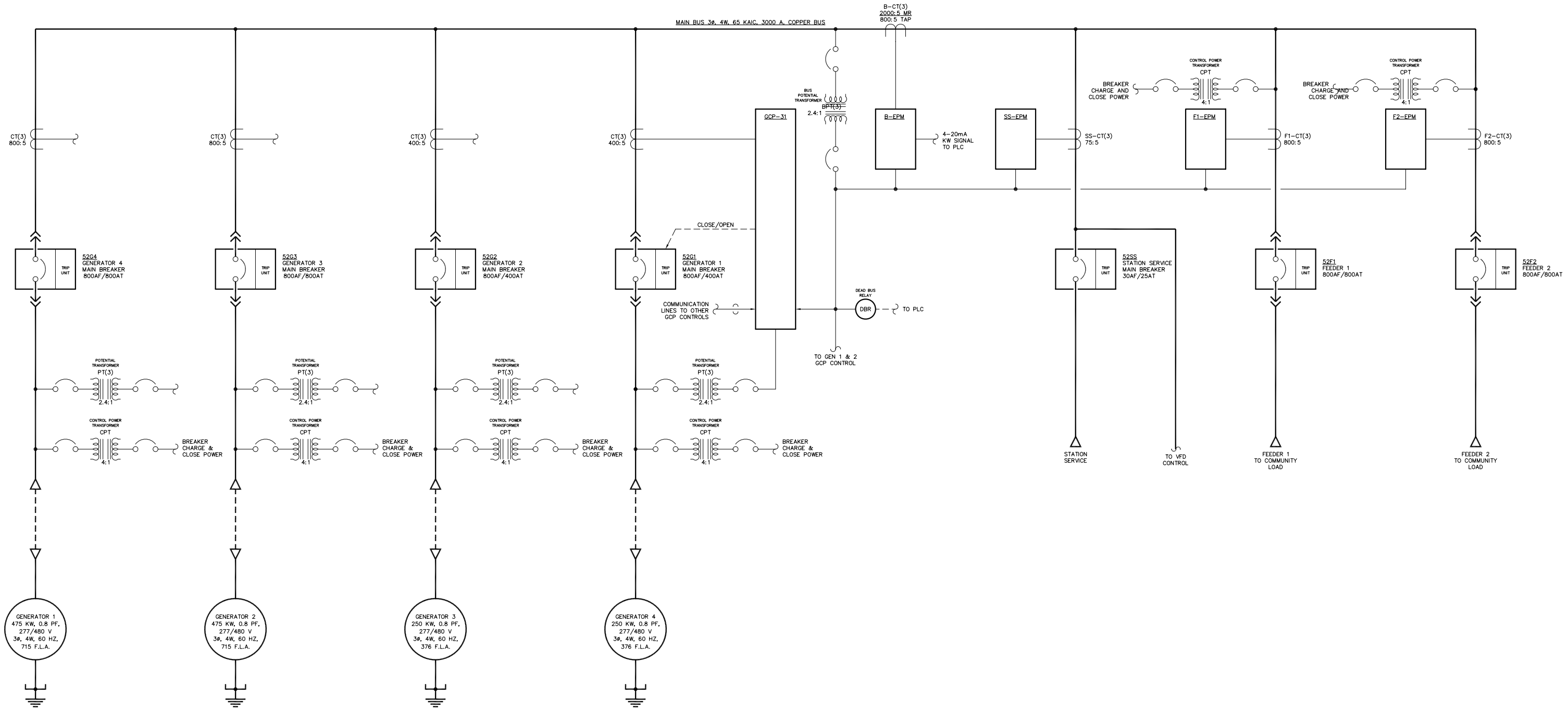
GENERATOR SWITCHGEAR – PLAN VIEW

- NOTES:
1. EACH SECTION SHIPPED INDIVIDUALLY.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM			
SCALE: 1/10		DATE: 07-18-07	DWN. BY: GPN
DWG. No: 6190-4201-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: AKIACHAK			

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MAIN BUS 36, 4W, 65 KAIC, 3000 A, COPPER BUS

B-CT(3)  
2000:5 MR  
800:5 TAP

CT(3)  
800:5

CT(3)  
800:5

CT(3)  
400:5

CT(3)  
400:5

BUS POTENTIAL TRANSFORMER  
BPT(3)  
2.4:1

4-20mA KW SIGNAL TO PLC

SS-CT(3)  
75:5

F1-CT(3)  
800:5

F2-CT(3)  
800:5

52G4 GENERATOR 4 MAIN BREAKER 800AF/800AT

52G3 GENERATOR 3 MAIN BREAKER 800AF/800AT

52G2 GENERATOR 2 MAIN BREAKER 800AF/400AT

52G1 GENERATOR 1 MAIN BREAKER 800AF/400AT

52SS STATION SERVICE MAIN BREAKER 30AF/25AT

52E1 FEEDER 1 800AF/800AT

52E2 FEEDER 2 800AF/800AT

GENERATOR 1  
475 KW, 0.8 PF,  
277/480 V  
36, 4W, 60 HZ,  
715 F.L.A.

GENERATOR 2  
475 KW, 0.8 PF,  
277/480 V  
36, 4W, 60 HZ,  
715 F.L.A.

GENERATOR 3  
250 KW, 0.8 PF,  
277/480 V  
36, 4W, 60 HZ,  
376 F.L.A.

GENERATOR 4  
250 KW, 0.8 PF,  
277/480 V  
36, 4W, 60 HZ,  
376 F.L.A.

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

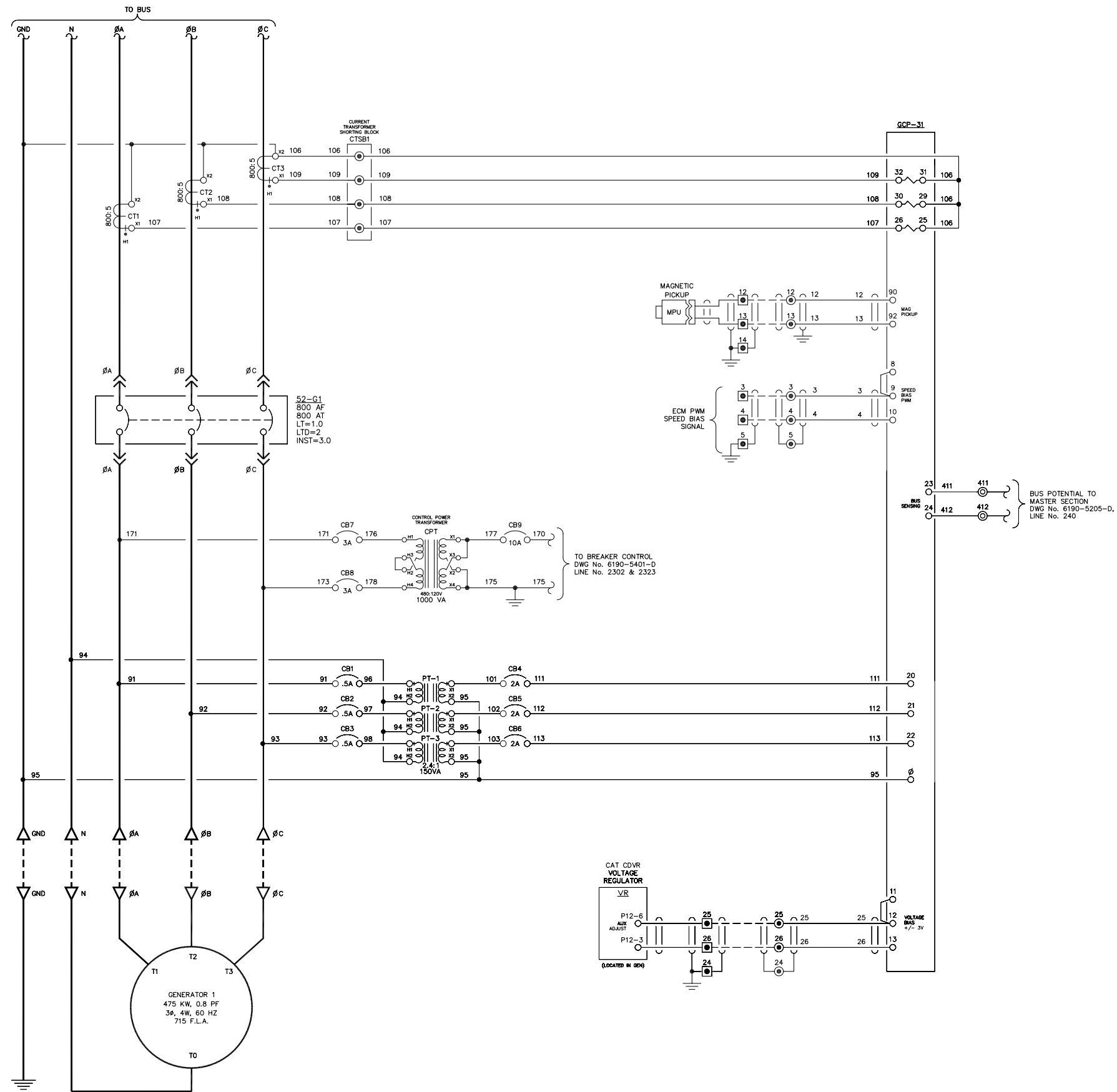
NOTES:  
1. GENERATORS 2, 3 & 4 SIMILAR TO GENERATOR 1.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: GENERATOR SWITCHGEAR SINGLE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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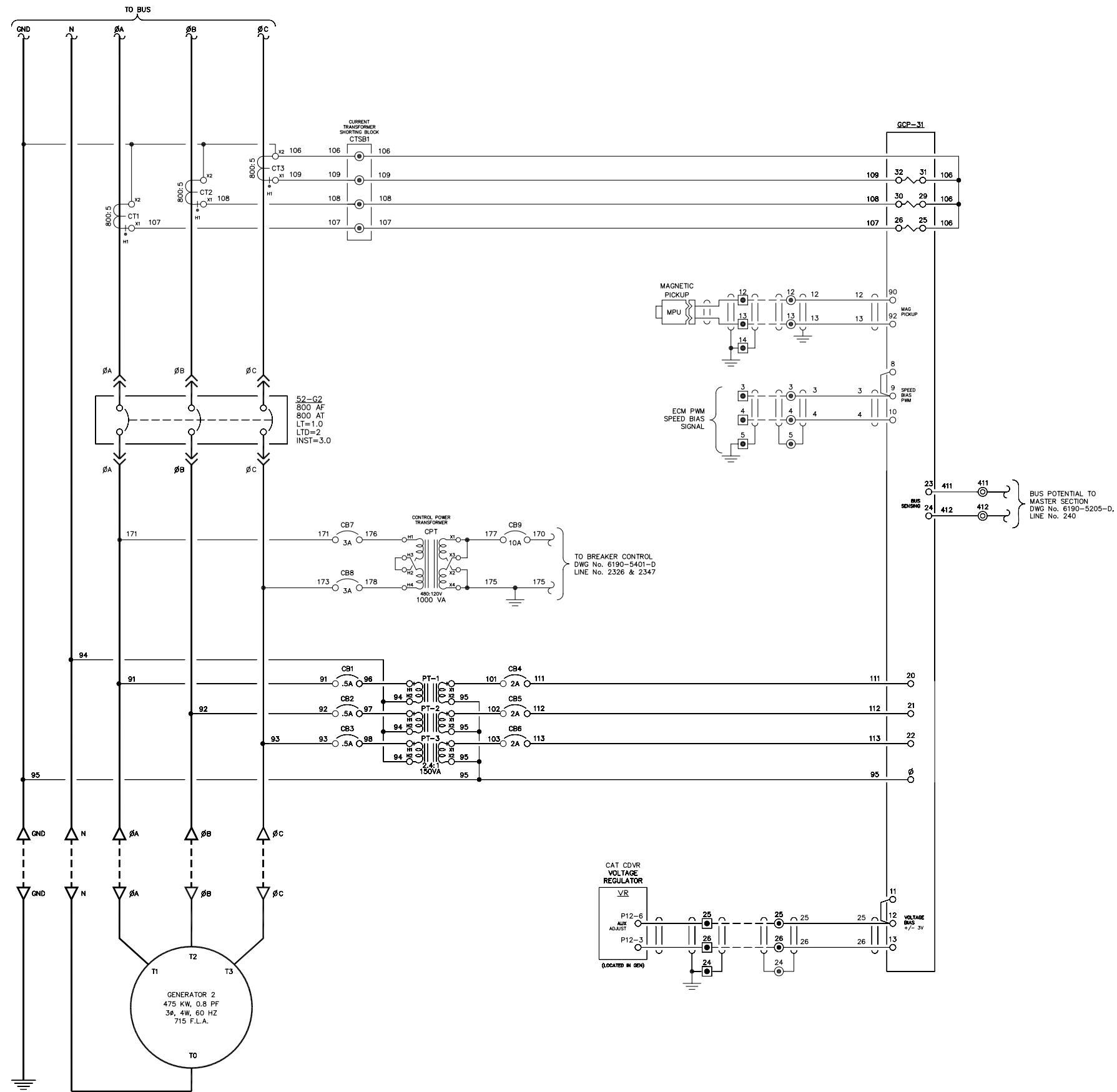
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 1 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5201-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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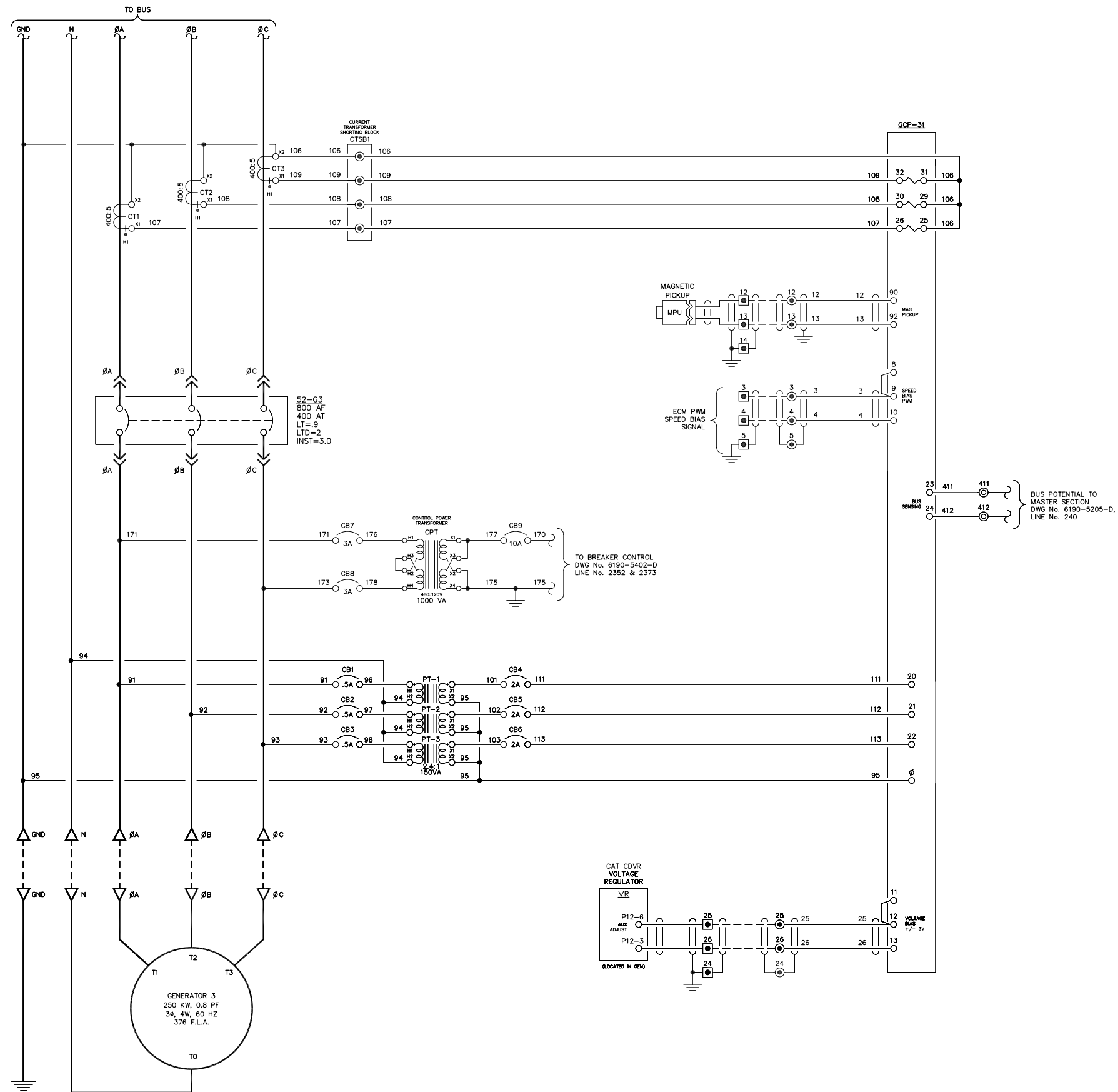
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5202-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

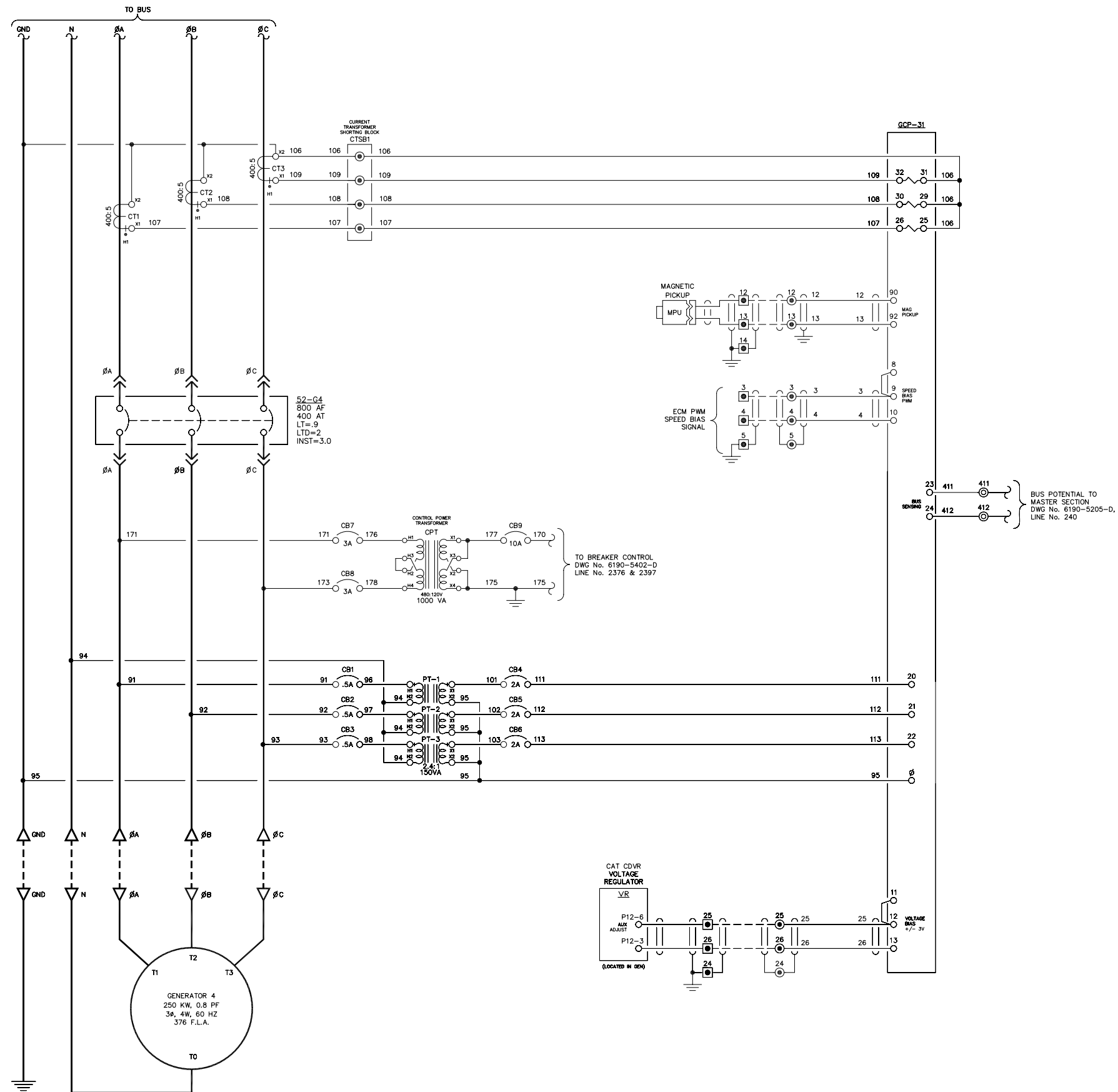
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AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5203-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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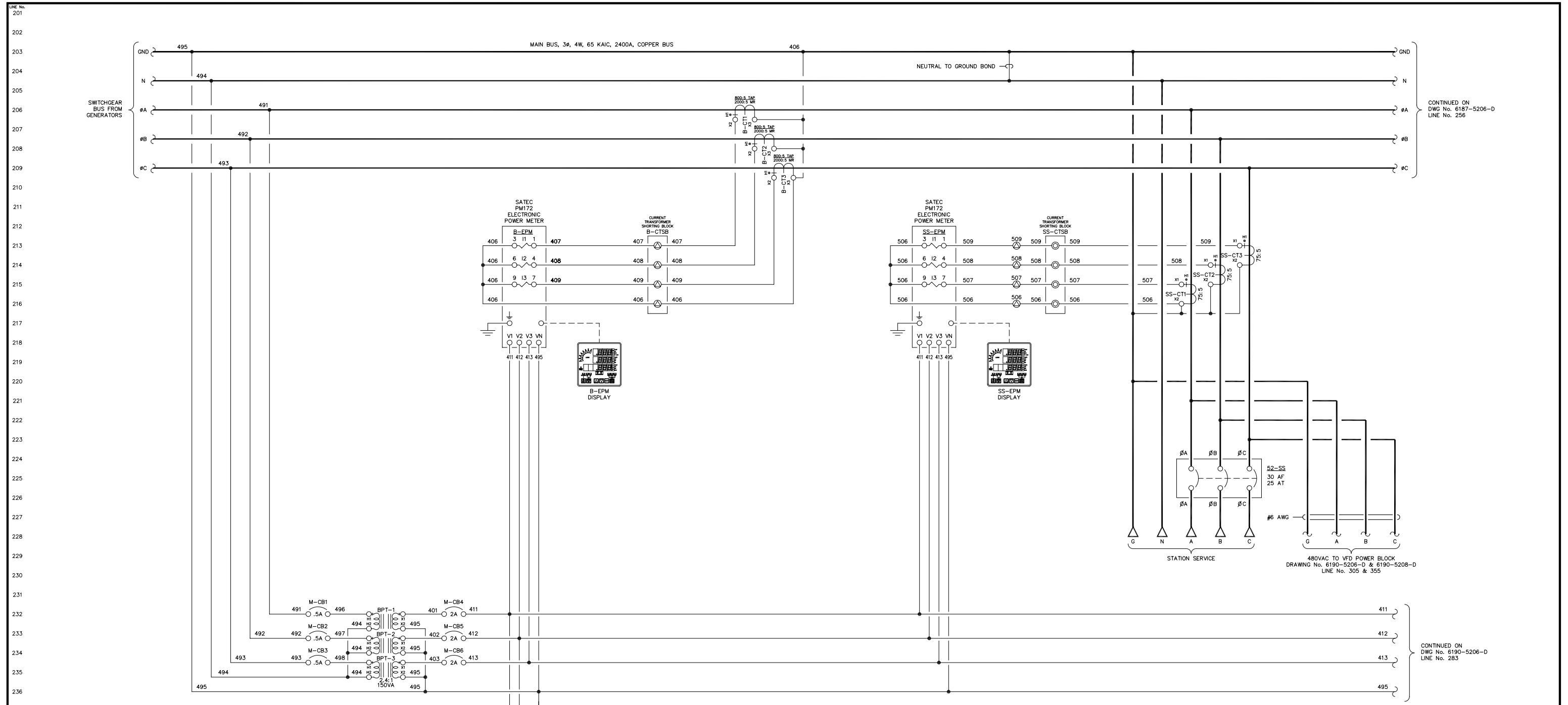


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 4 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5204-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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CONTINUED ON  
DWG No. 6197-5206-D  
LINE No. 256

CONTINUED ON  
DWG No. 6190-5206-D  
LINE No. 283

SYNC POTENTIAL  
TO GENERATOR SECTIONS  
DWG No. 6190-5201-D, LINE No. 25  
DWG No. 6190-5202-D, LINE No. 75  
DWG No. 6190-5203-D, LINE No. 125  
DWG No. 6190-5204-D, LINE No. 175

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

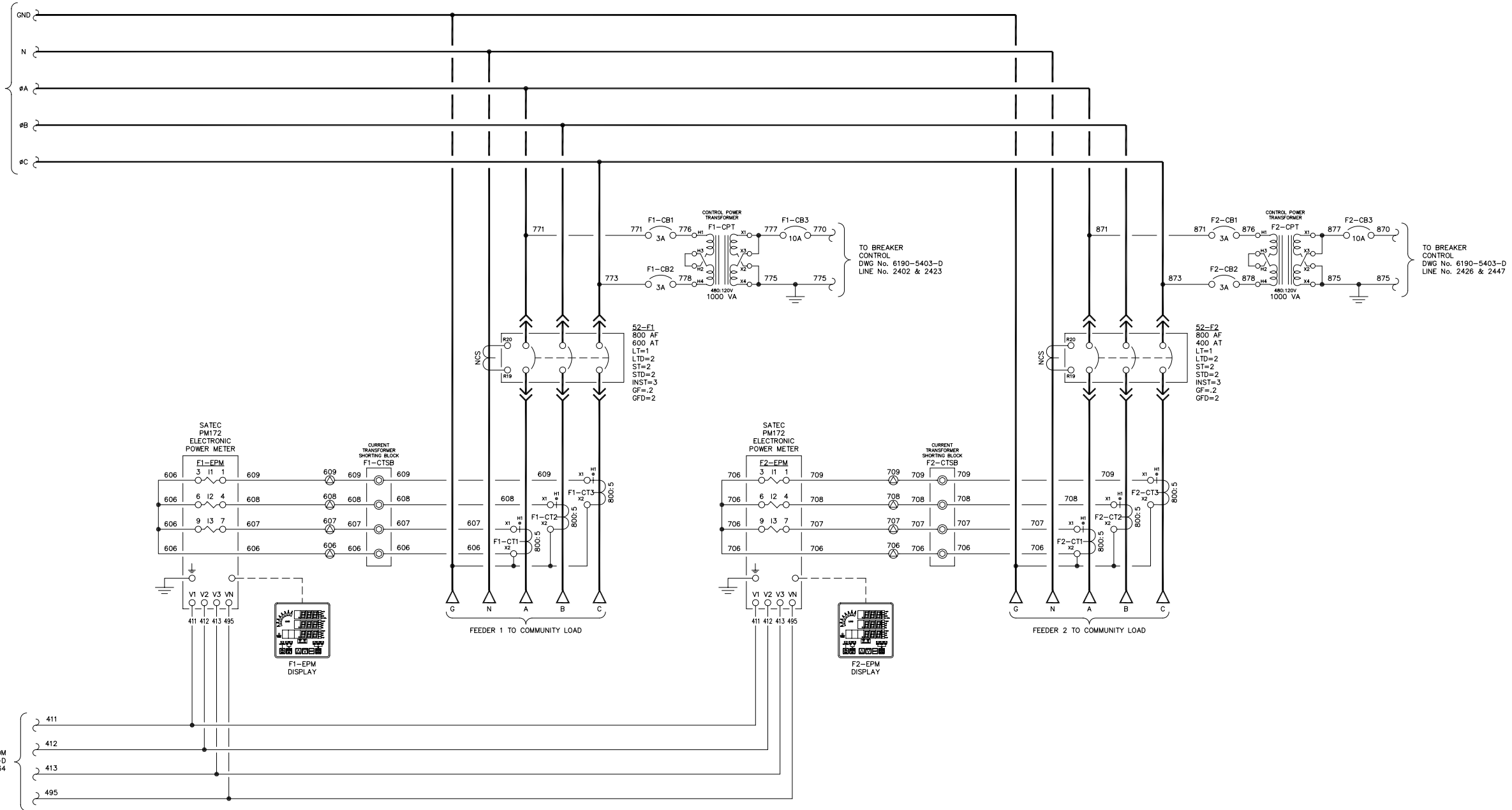
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: MASTER AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 07-18-07	DWN. BY: GPN
DWG. No: 6190-5205-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: AKIACHAK			

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CONTINUED FROM  
DWG No. 6197-5205-D  
LINE No. 206

CONTINUED FROM  
DWG No. 6197-5205-D  
LINE No. 234



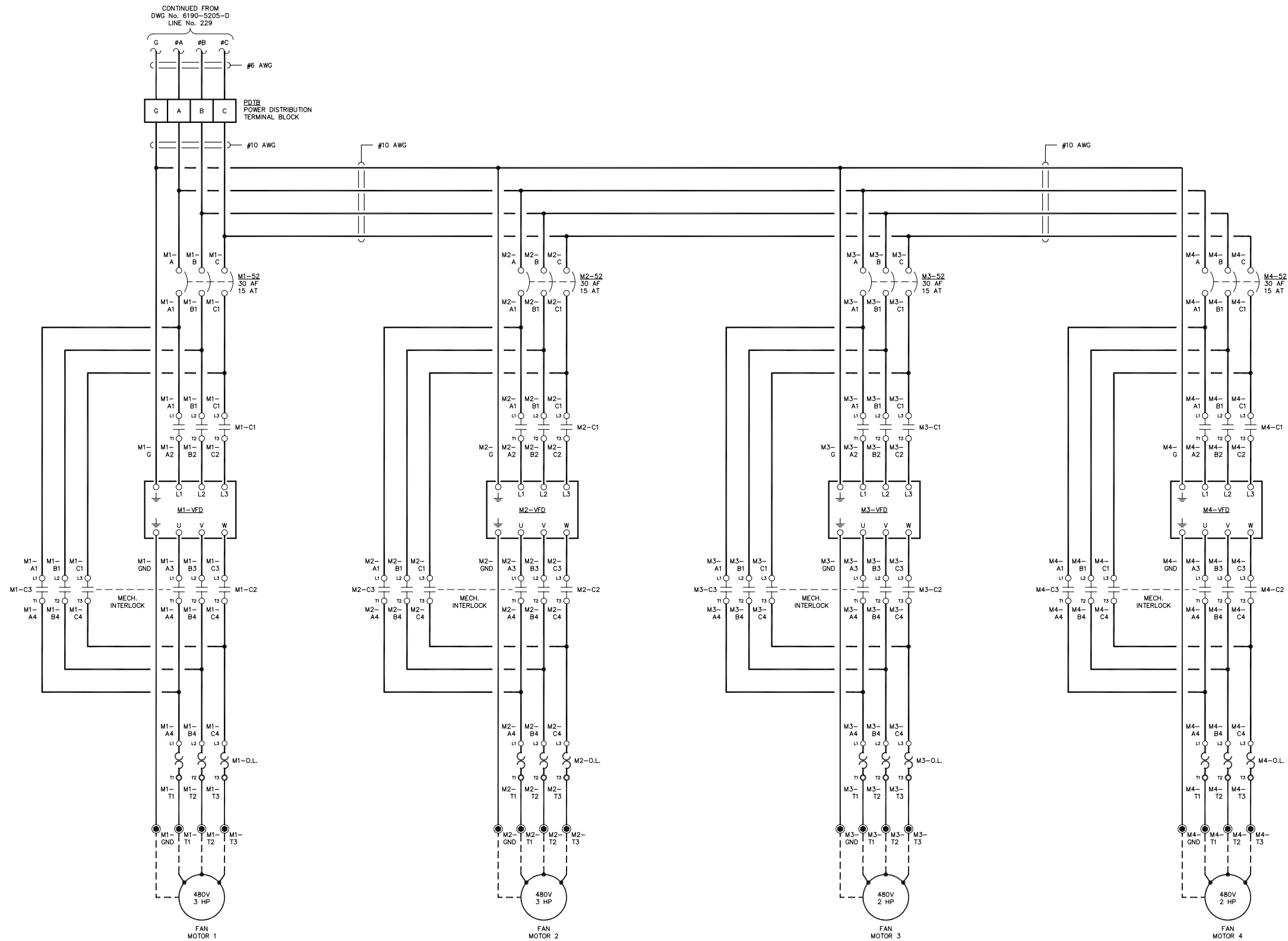
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: MASTER AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 07-18-07	DWN. BY: GPN
DWG. No: 6190-5206-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: AKIACHAK			

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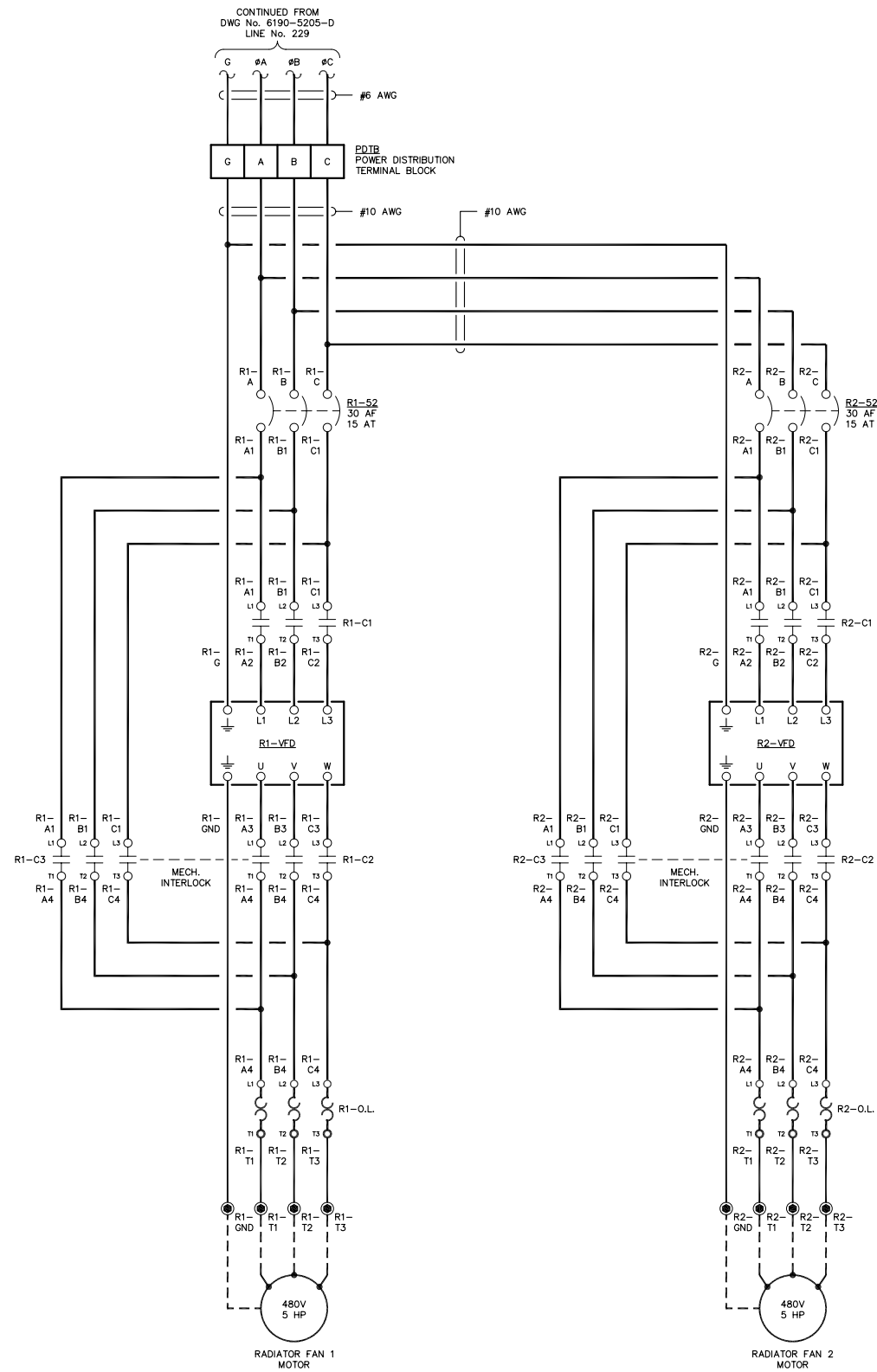
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: VFD THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5207-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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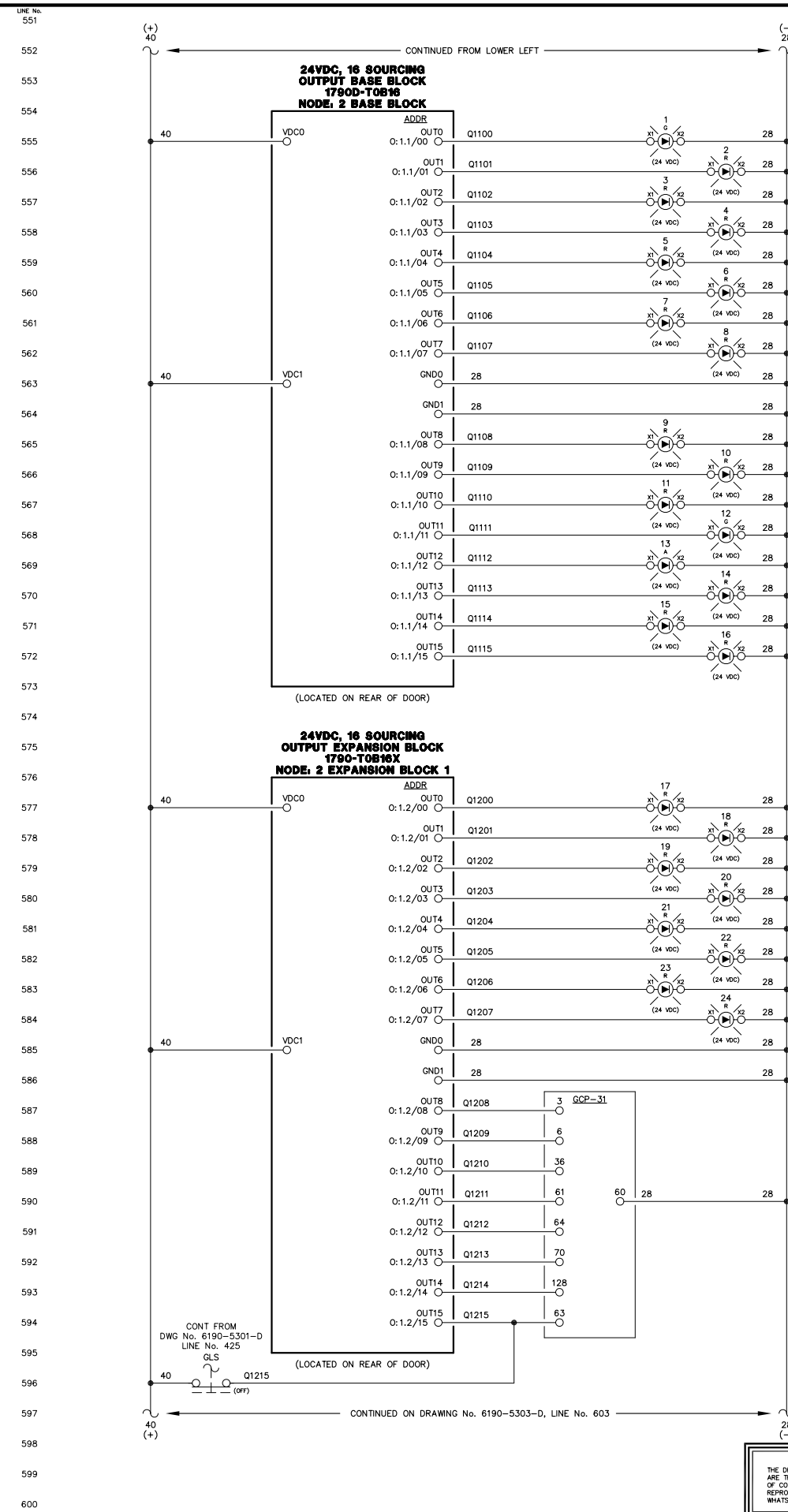
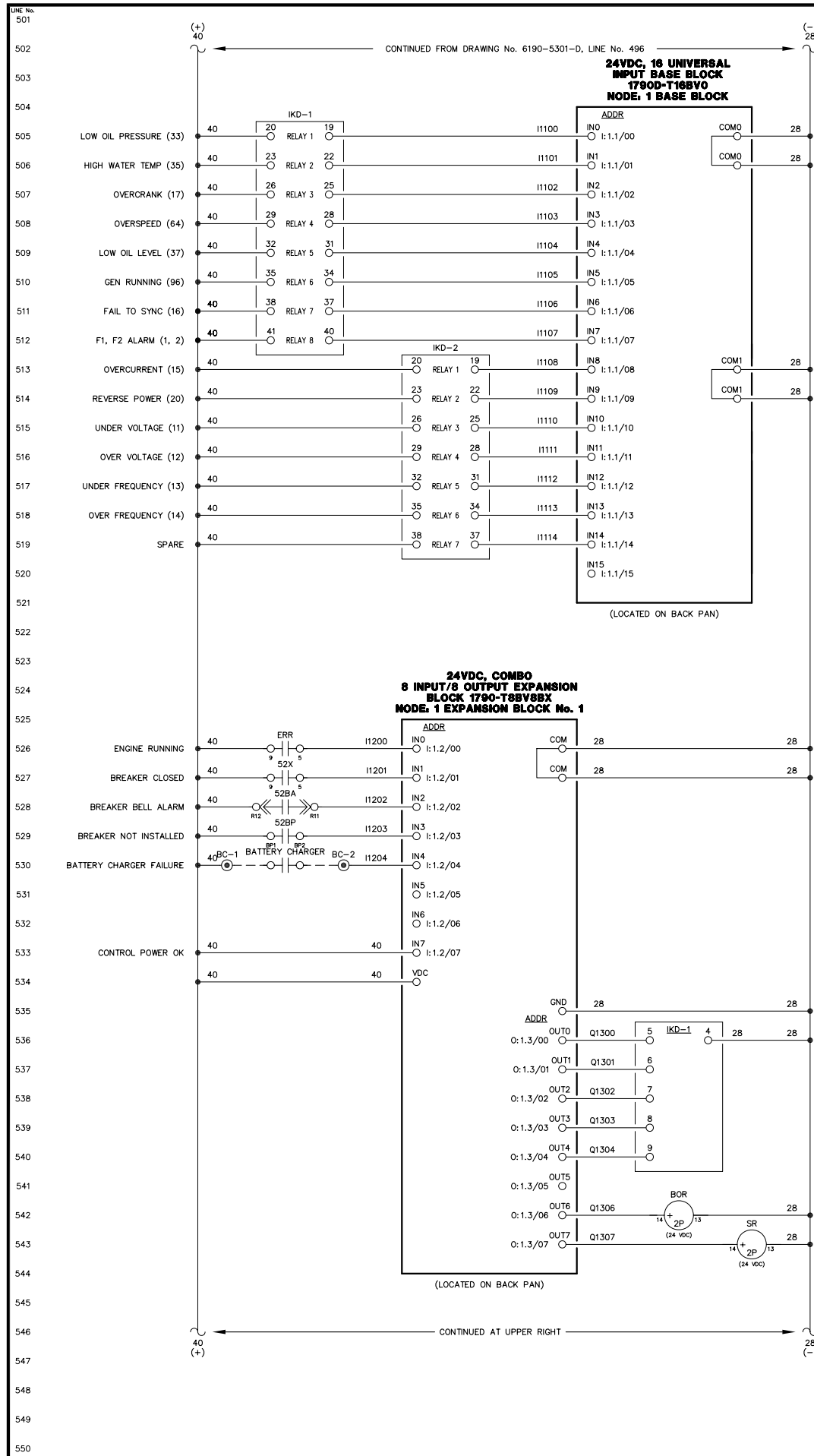
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: VFD THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5208-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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ANCHORAGE, ALASKA 99503  
HTTP://WWW.AIDEA.ORG





- ENGINE RUNNING LIGHT
- ALARM/LOCKOUT LIGHT
- LOW OIL PRESSURE LIGHT
- OIL LEVEL LIGHT
- HIGH WATER TEMPERATURE LIGHT
- OVERSPEED LIGHT
- OVERCRANK LIGHT
- RUNNING TIMEOUT LIGHT
- BATTERY CHARGER FAIL LIGHT
- AIR FILTER PLUGGED LIGHT
- HIGH INTAKE AIR TEMP LIGHT
- LEAD GEN LIGHT
- NORMAL STOP LIGHT
- NOT IN AUTO LIGHT
- SPARE LIGHT
- FAIL TO SYNC LIGHT
- OVERCURRENT LIGHT
- UNDER VOLTAGE LIGHT
- OVER VOLTAGE LIGHT
- UNDER FREQUENCY LIGHT
- OVER FREQUENCY LIGHT
- REVERSE POWER LIGHT
- INTAKE VFD BREAKER OPEN LIGHT
- INTAKE VFD FAILURE LIGHT
- AUTO 1
- MULTIFUNCTION (REMOTE ACK)
- INPUT 3 - COOLDOWN/LOCKOUT
- INPUT 4 - MASTER SHUTDOWN
- INPUT 7 - BREAKER LOGIC
- INPUT 13 - IDLE MODE
- AUTOMATIC MODE
- MODE SELECTION LOCK

NOTE:  
 1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190

TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN
DWG. No: 6190-5302-D	SHEET: 1 OF 1	CKD. BY: JMD

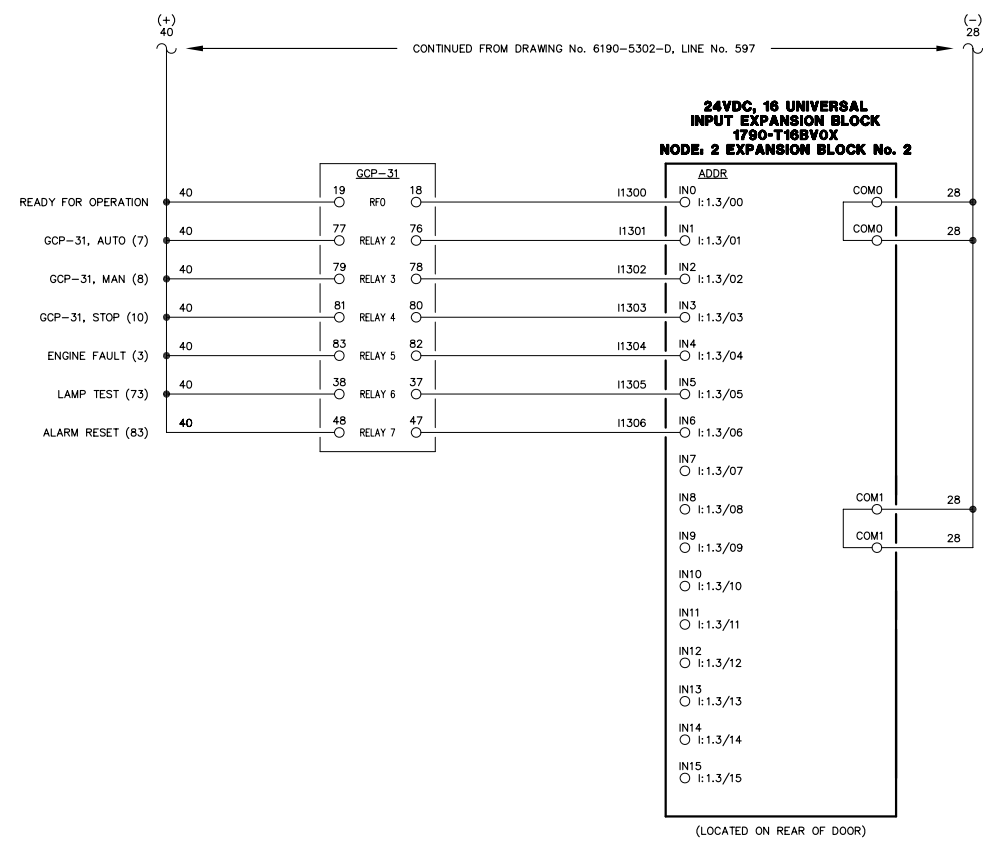
JOB: AKIACHAK

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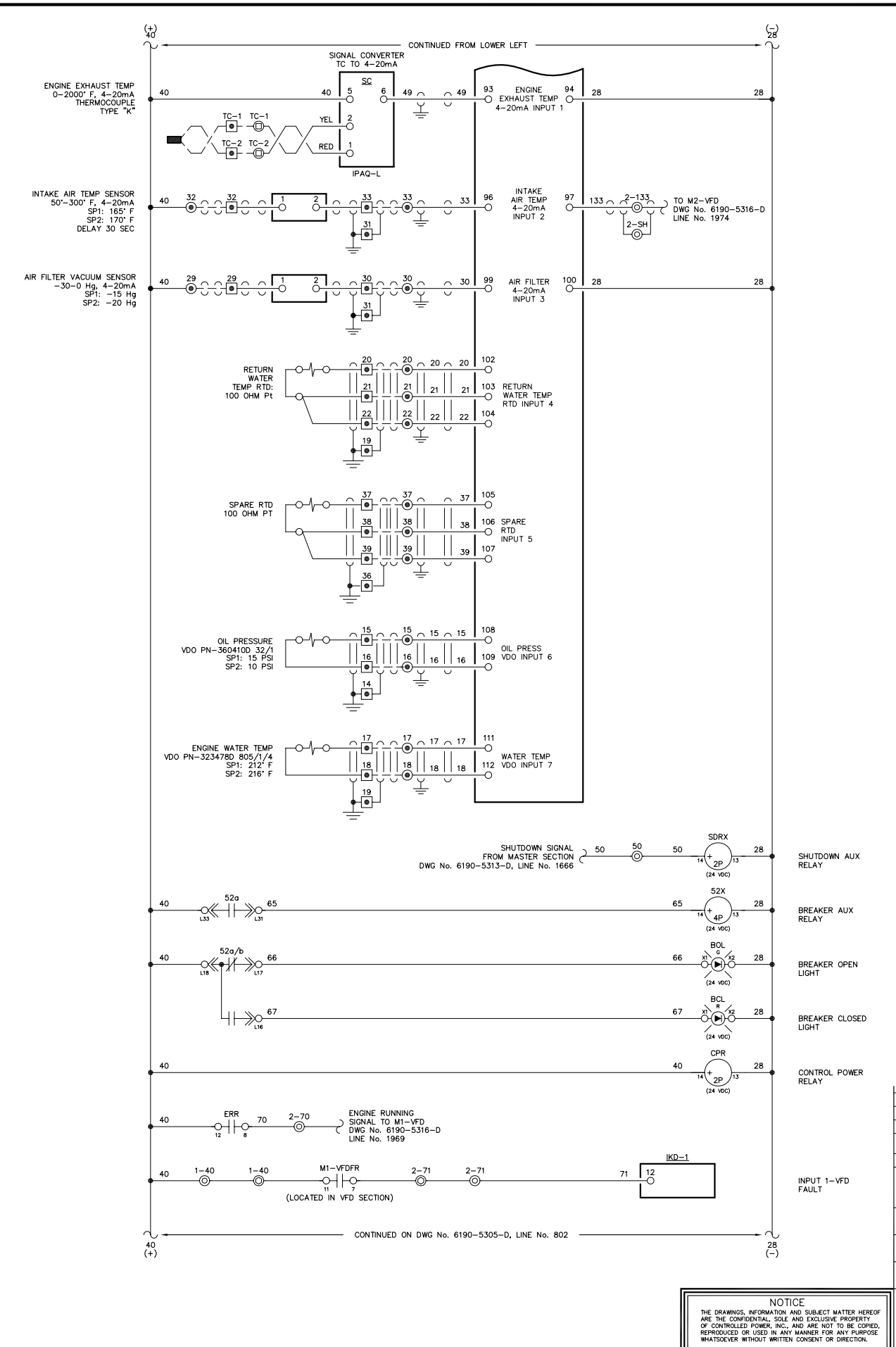
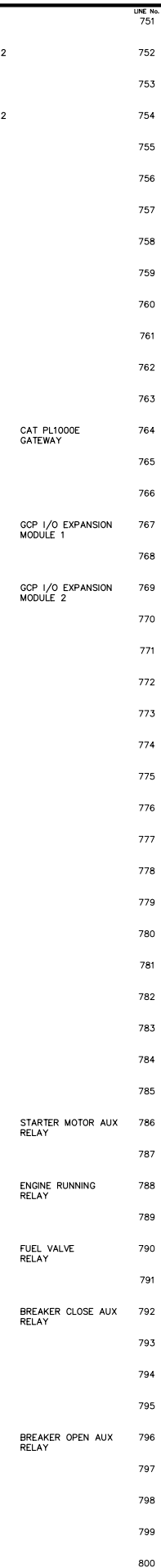
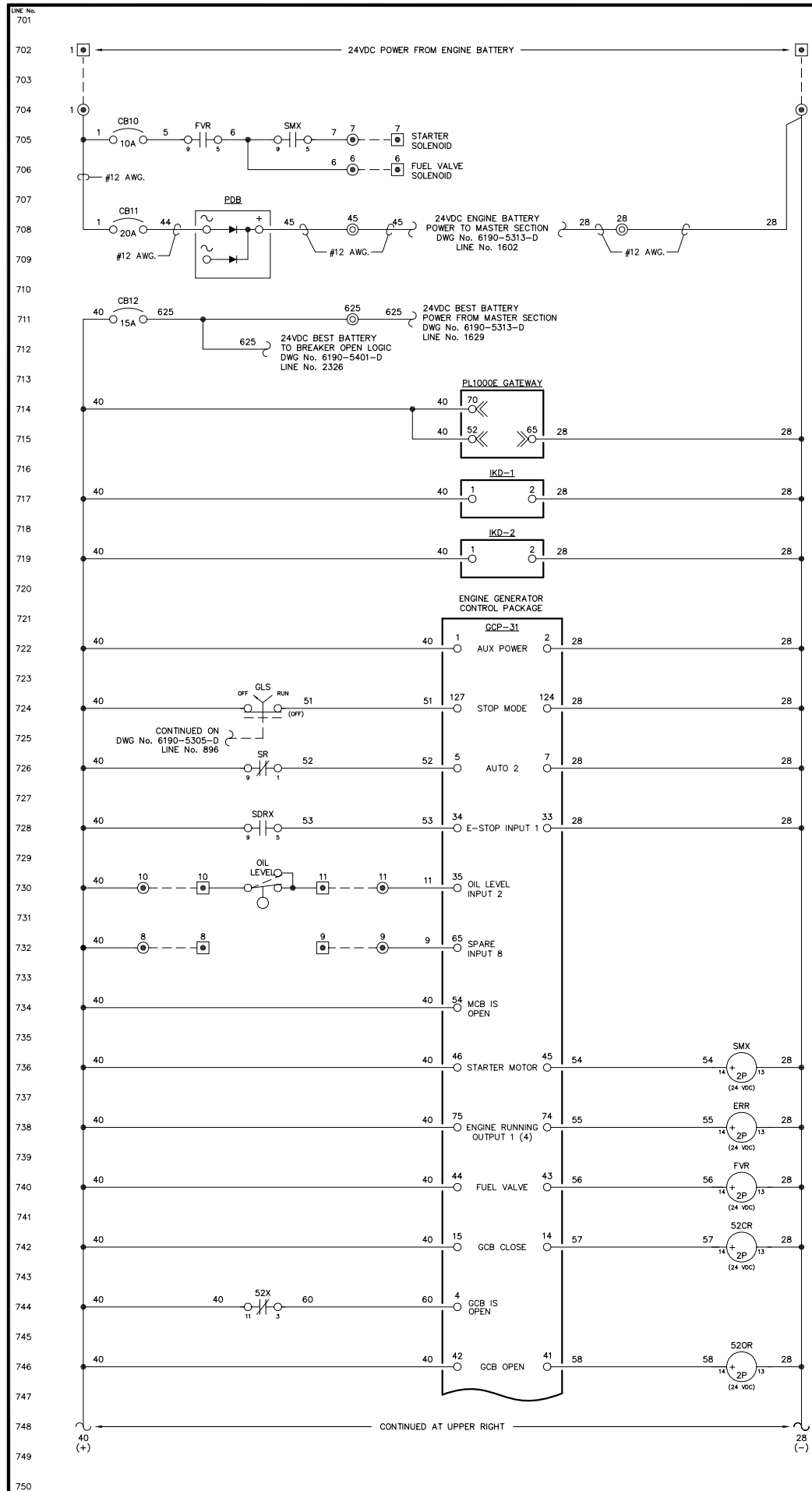
**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5303-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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[HTTP://WWW.AIDEA.ORG](http://www.aidea.org)





NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190

TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM

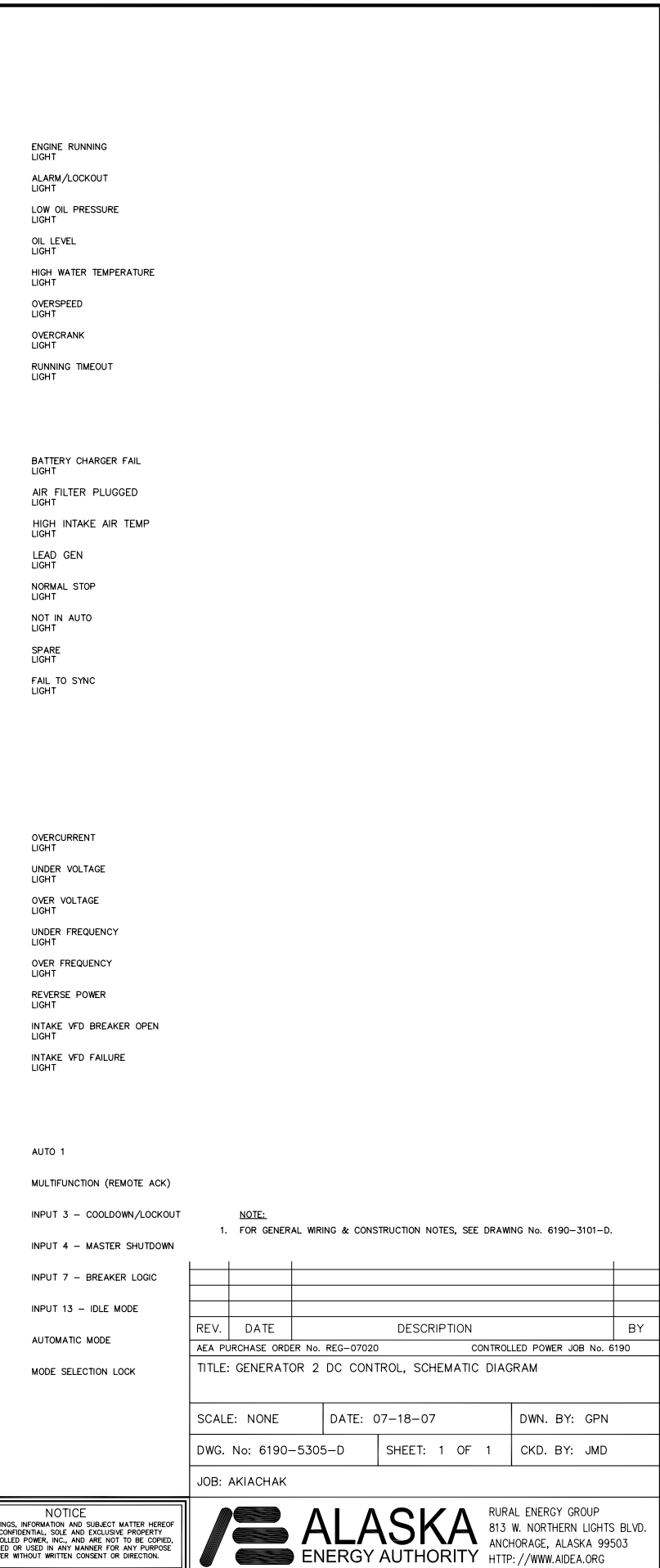
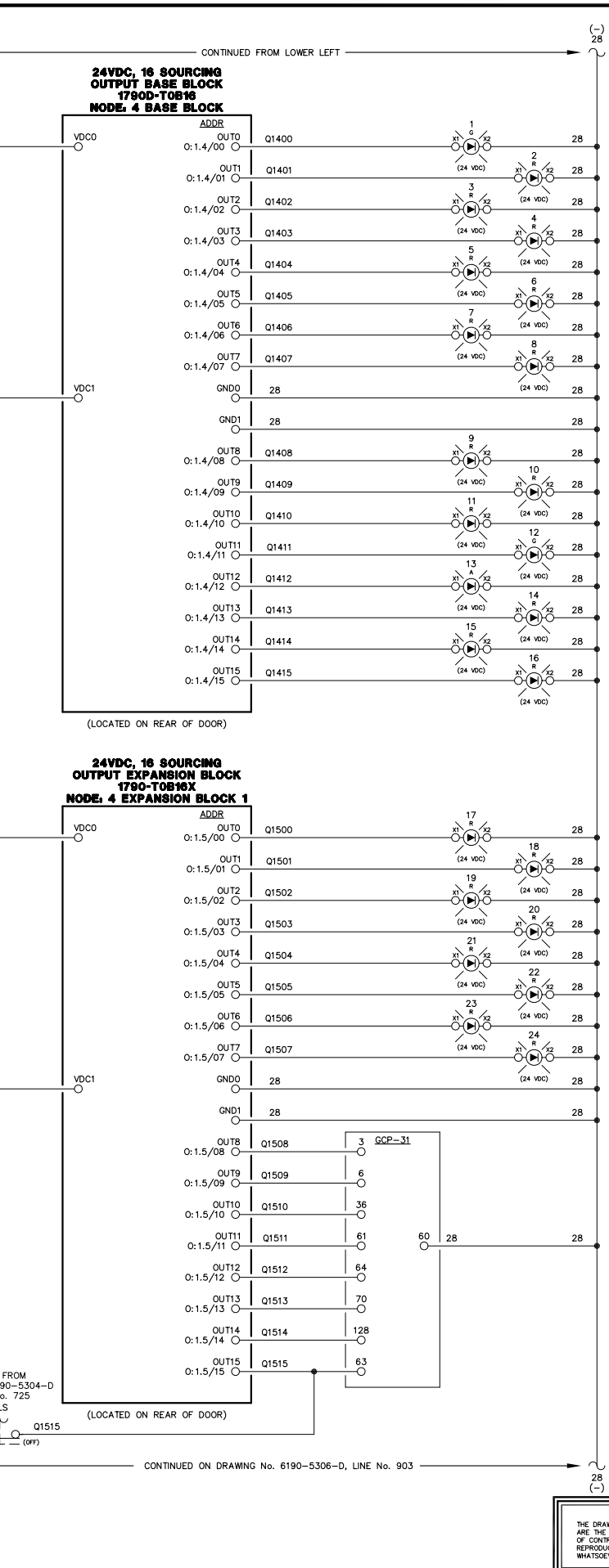
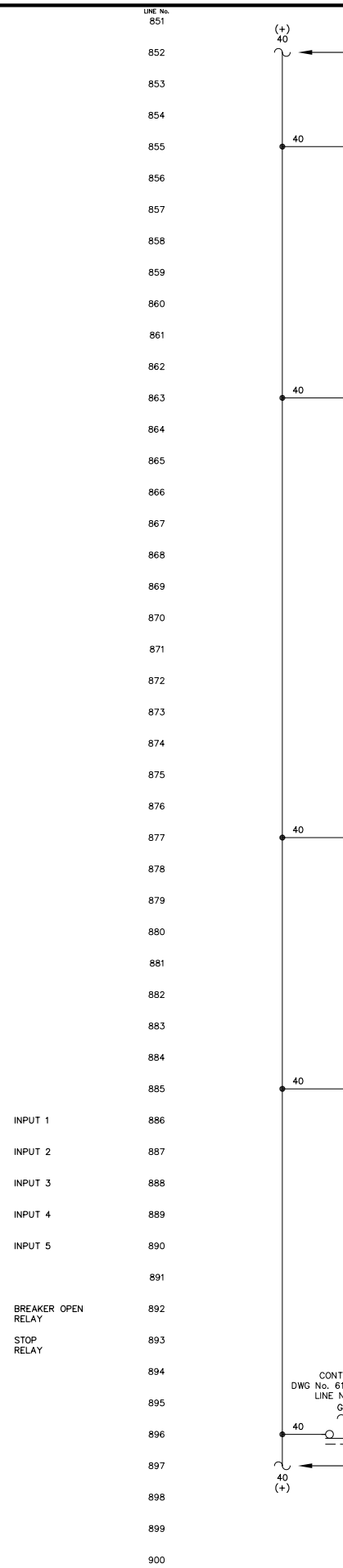
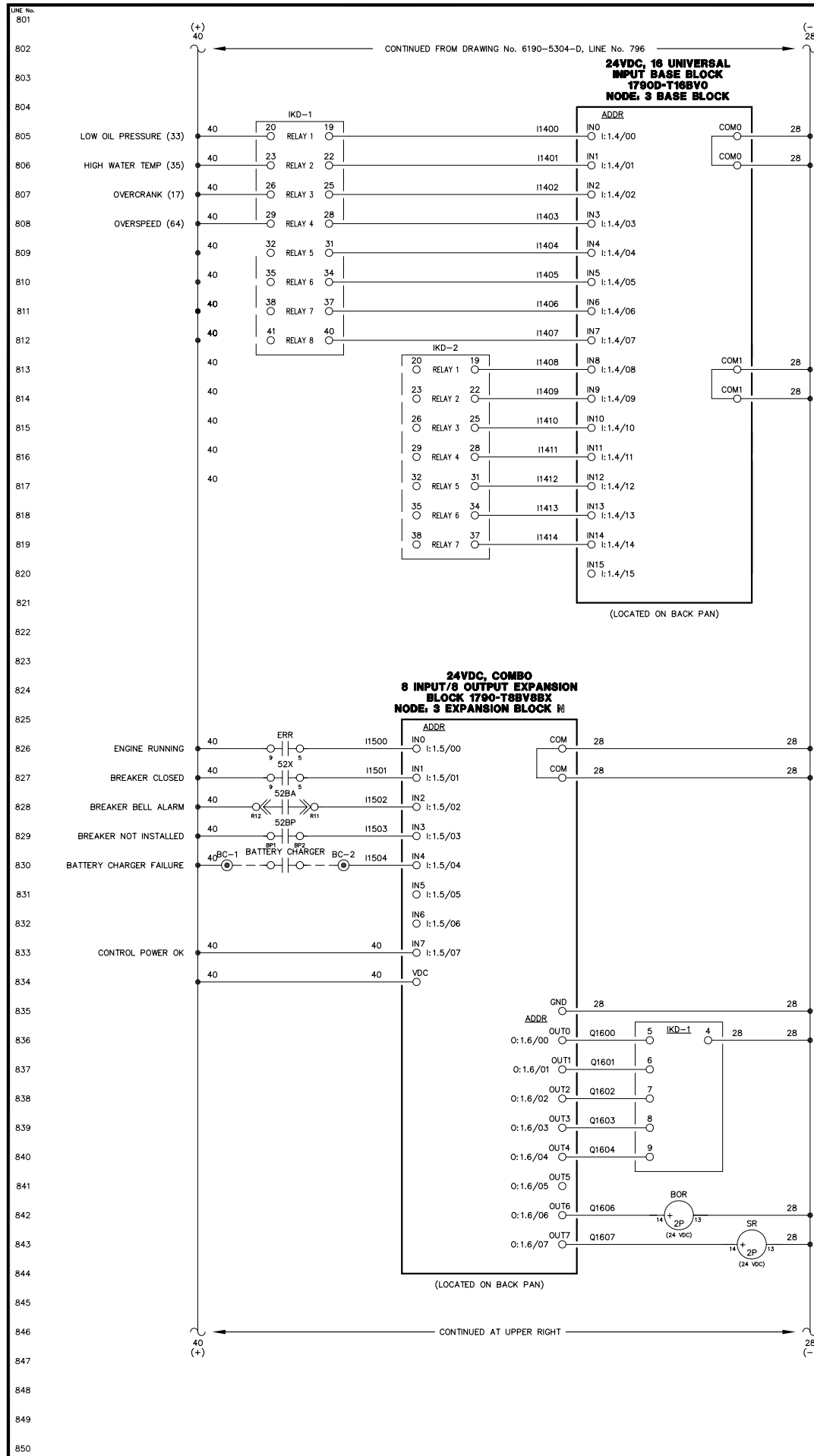
SCALE: NONE DATE: 07-18-07 DWN. BY: GPN

DWG. No: 6190-5304-D SHEET: 1 OF 1 CKD. BY: JMD

JOB: AKIACHAK

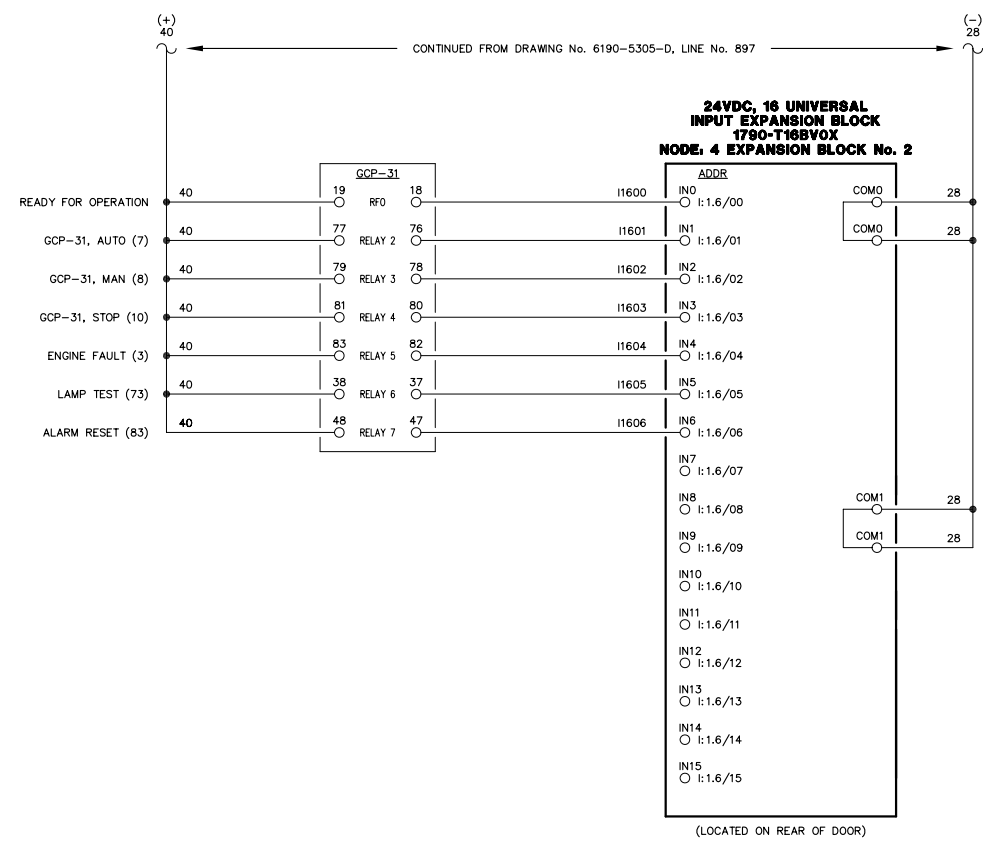
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**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

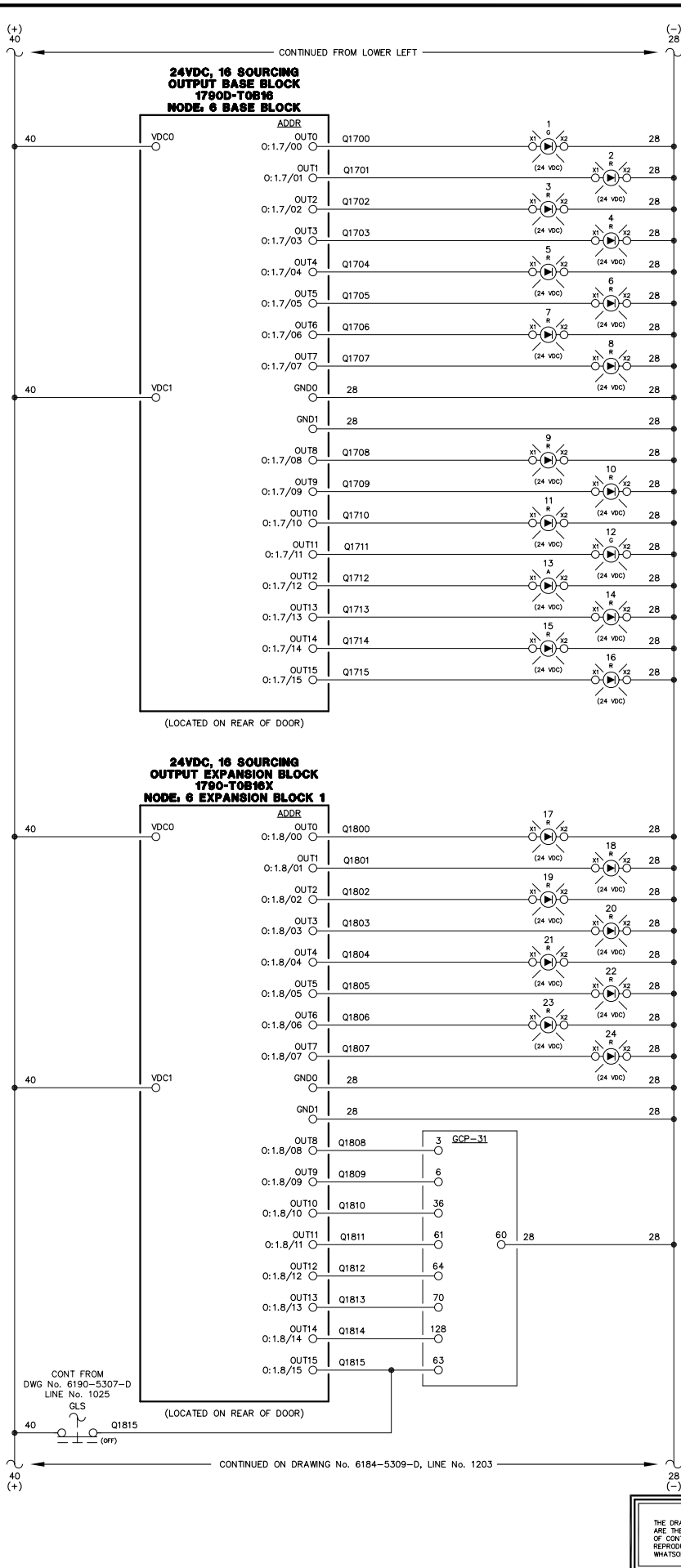
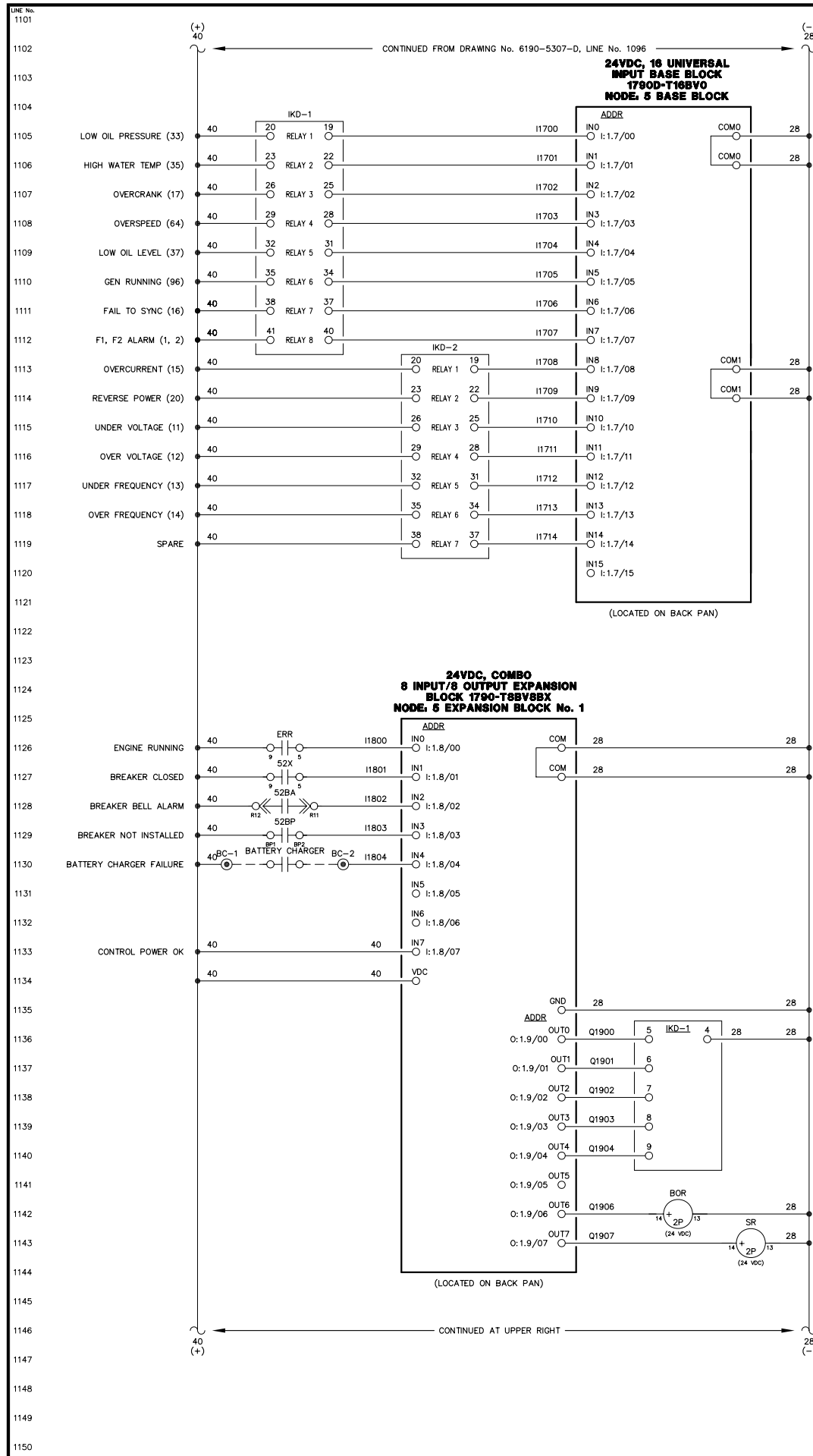
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5306-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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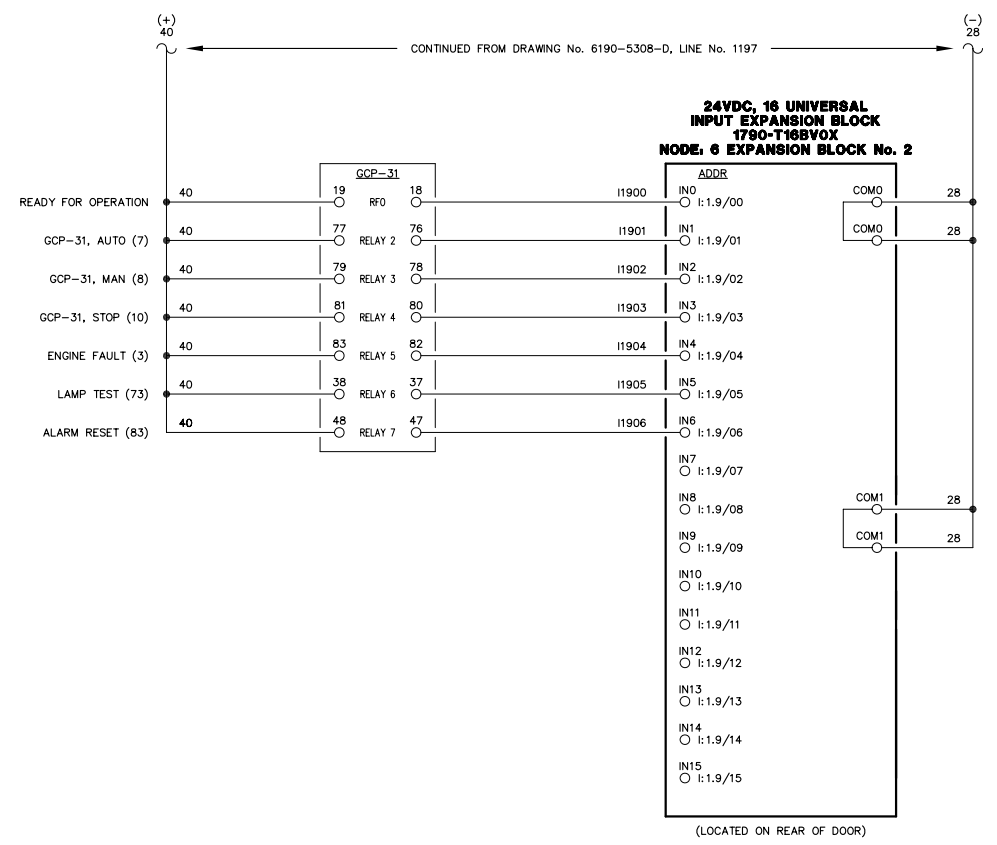
RURAL ENERGY GROUP  
813 W. NORTHERN LIGHTS BLVD.  
ANCHORAGE, ALASKA 99503  
HTTP://WWW.AIDEA.ORG





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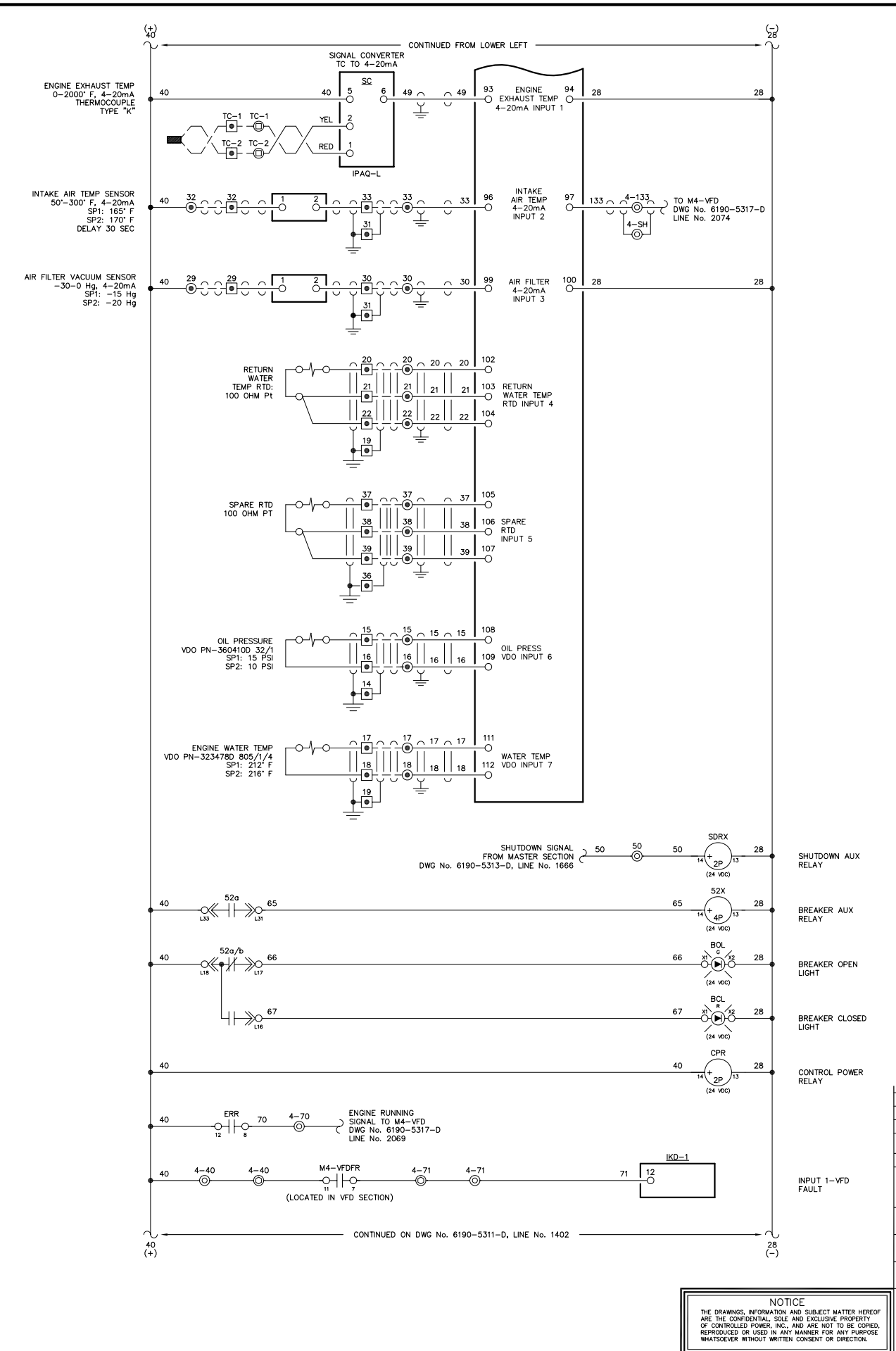
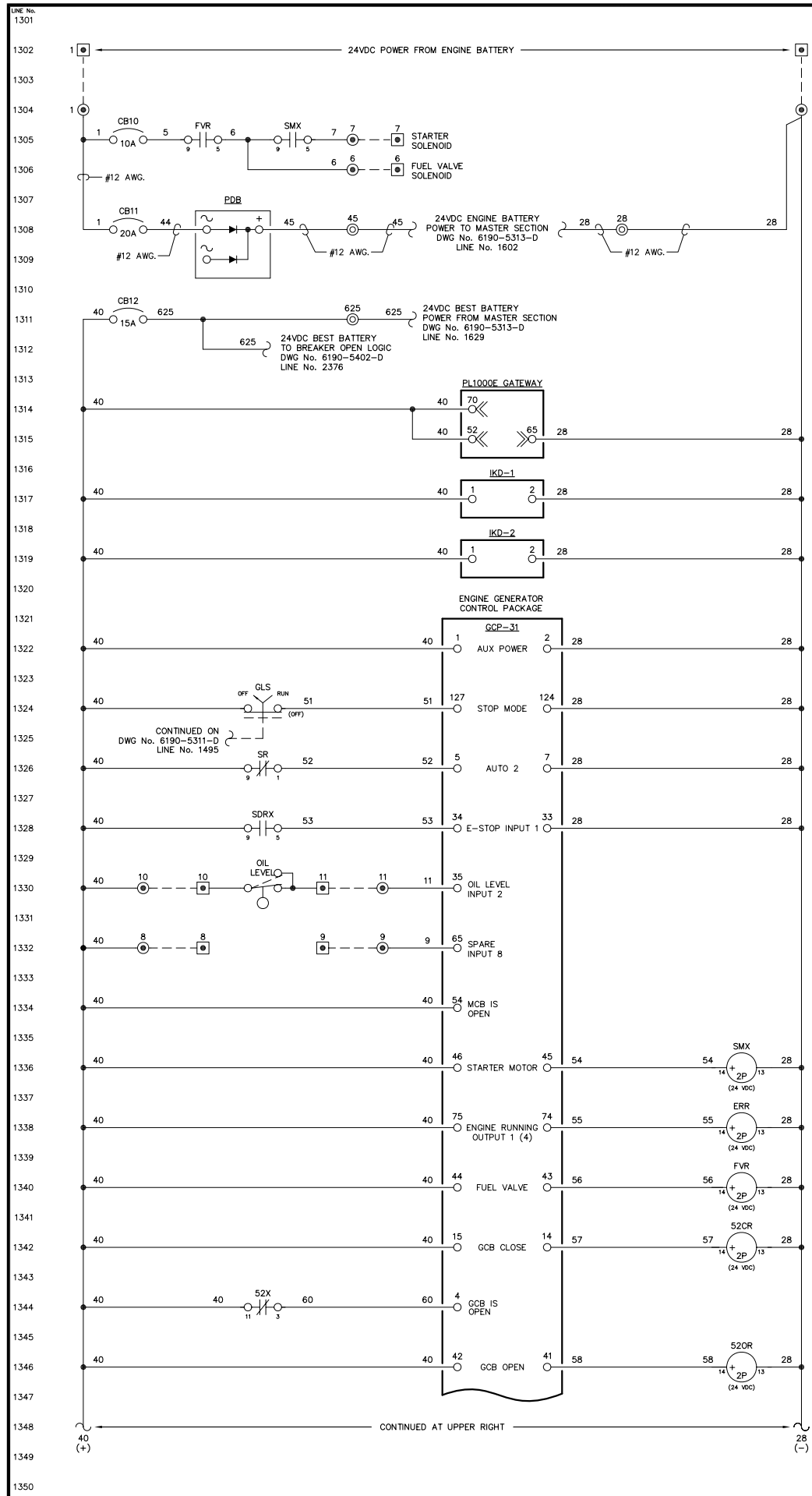
**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5309-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190

TITLE: GENERATOR 4 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE DATE: 07-18-07 DWN. BY: GPN

DWG. No: 6190-5310-D SHEET: 1 OF 1 CKD. BY: JMD

JOB: AKIACHAK



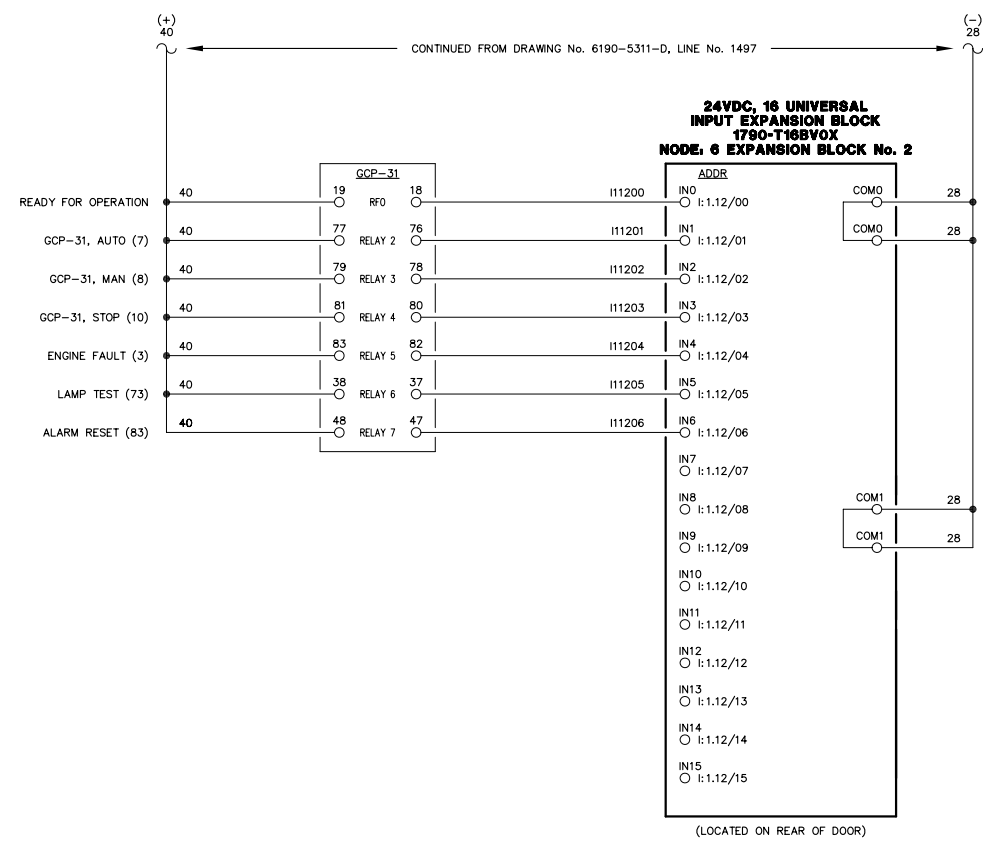
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**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

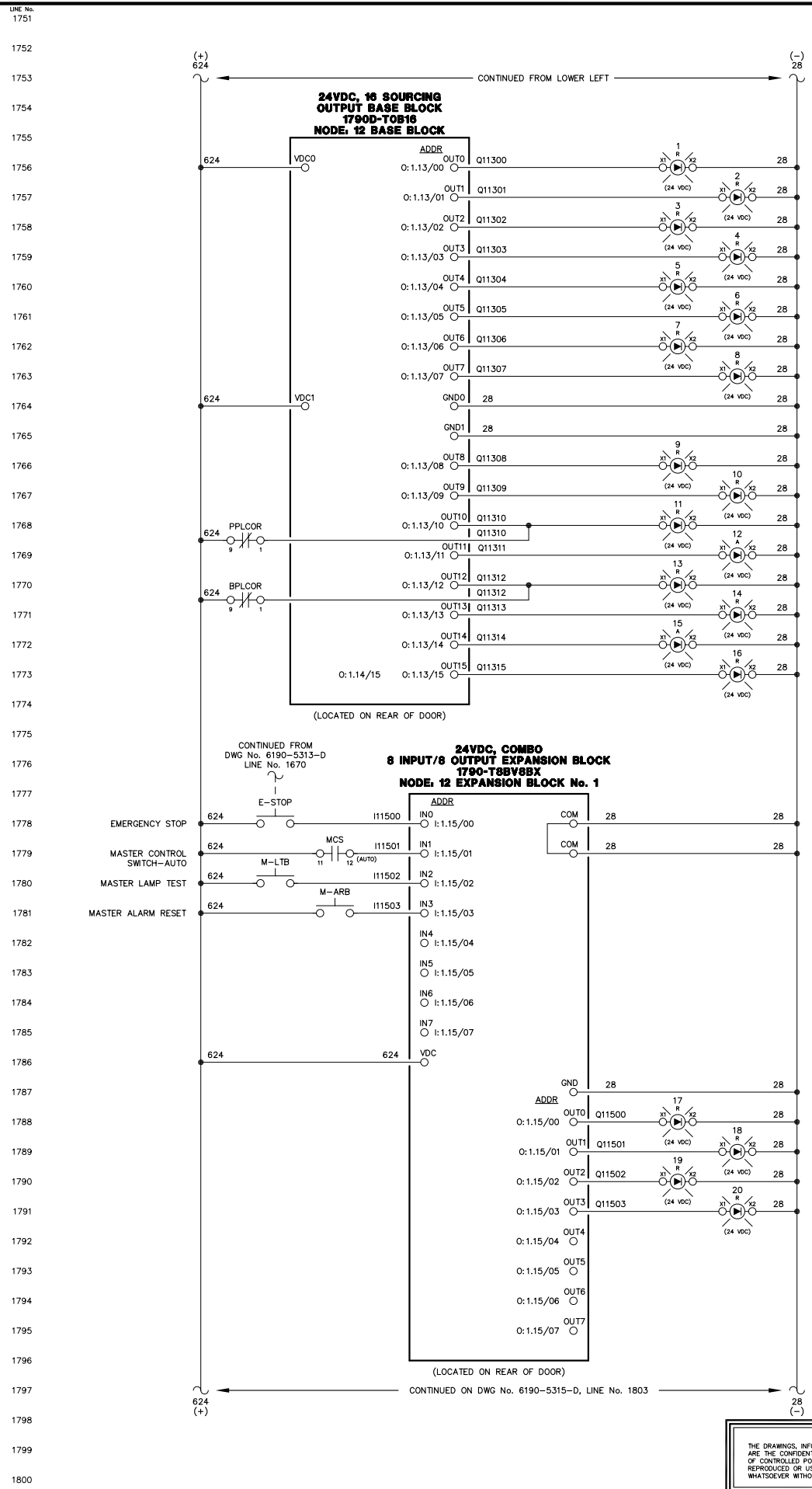
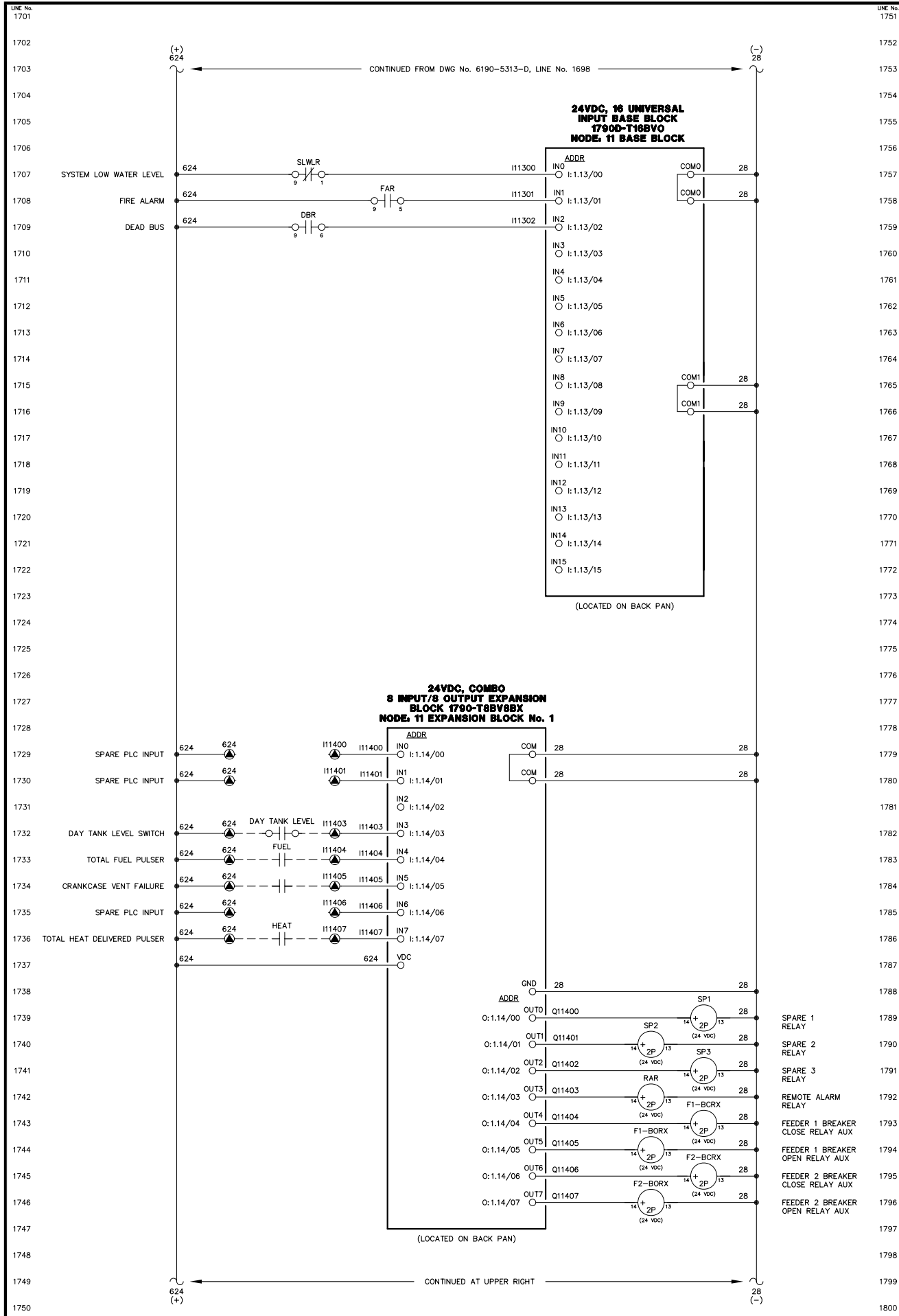
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 4 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5312-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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- FIRE ALARM LIGHT
- EMERGENCY STOP LIGHT
- SYSTEM LOW WATER LEVEL LIGHT
- LOW FUEL LEVEL LIGHT
- FEEDER BREAKER 1 TRIP LIGHT
- FEEDER BREAKER 1 FAIL TO CLOSE LIGHT
- FEEDER BREAKER 2 TRIP LIGHT
- FEEDER BREAKER 2 FAIL TO CLOSE LIGHT
- STATION SERVICE OVERCURRENT LIGHT
- CRANKCASE VENT FAILURE LIGHT
- PRIMARY PLC FAILURE LIGHT
- OPERATING ON BACKUP PLC LIGHT
- BACKUP PLC FAILURE LIGHT
- SYSTEM NOT IN AUTO LIGHT
- NO LOAD ON HEAT RECOVERY LIGHT
- HEAT RECOVERY LOSS OF PRESSURE LIGHT

- HEAT RECOVERY LOSS OF FLOW LIGHT
- SPARE LIGHT
- HYDRO ALARM LIGHT
- HYDRO COMM FAULT LIGHT

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

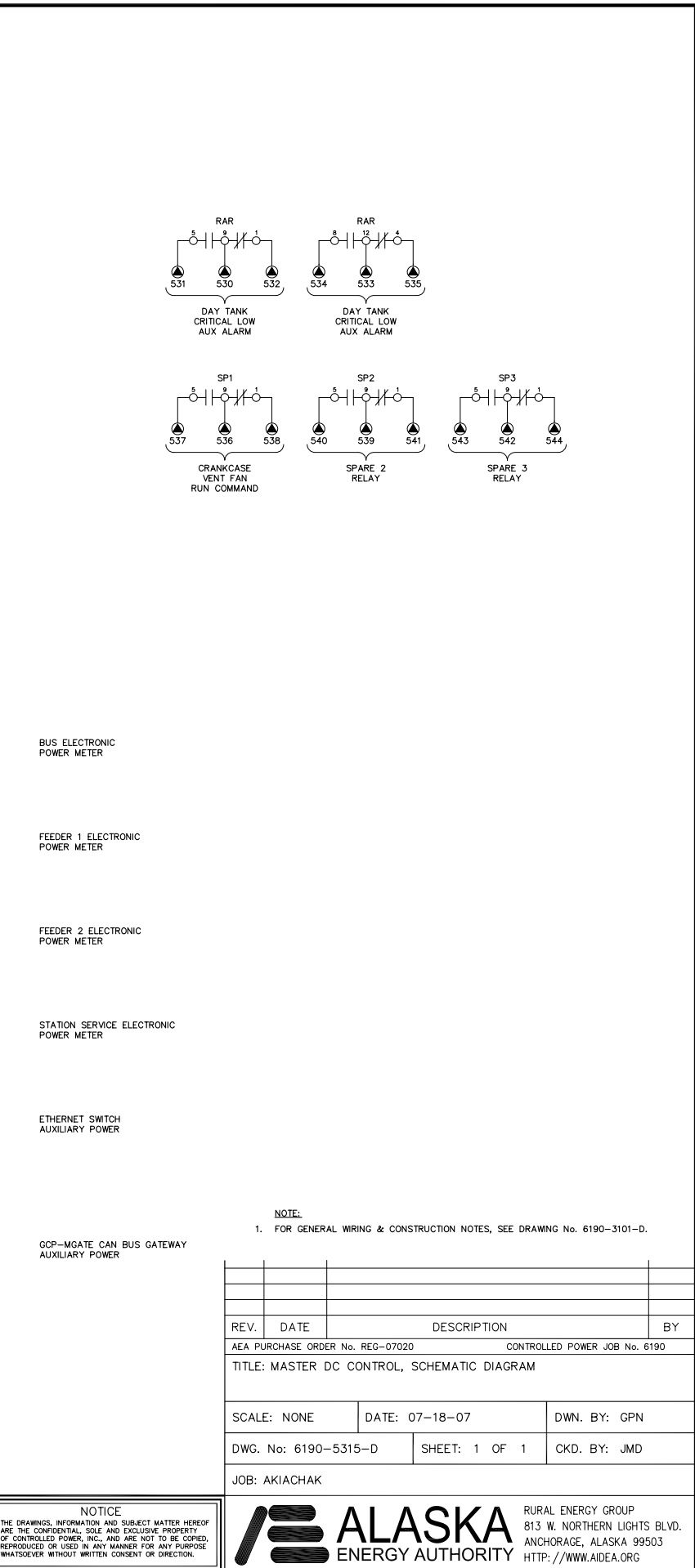
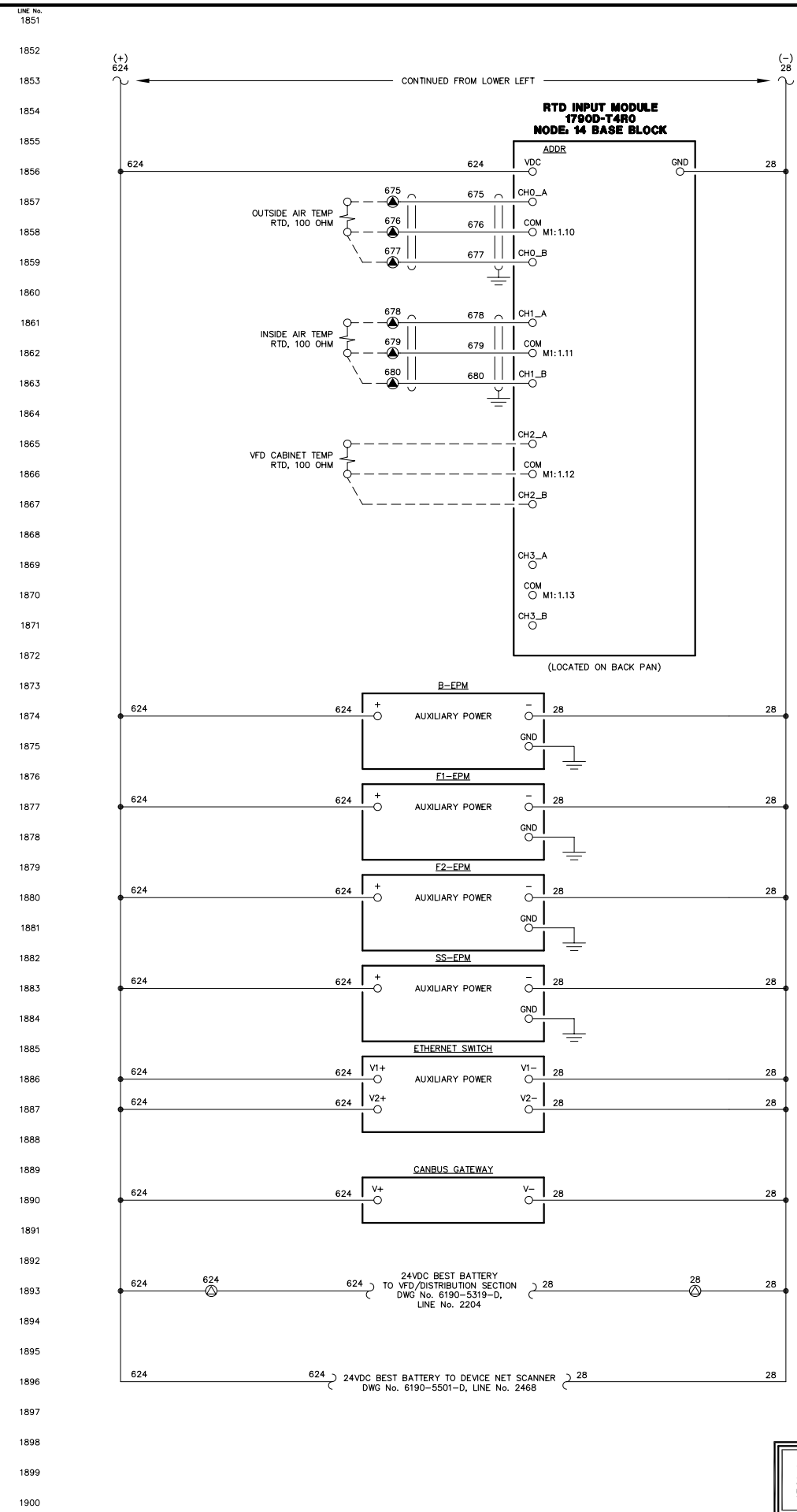
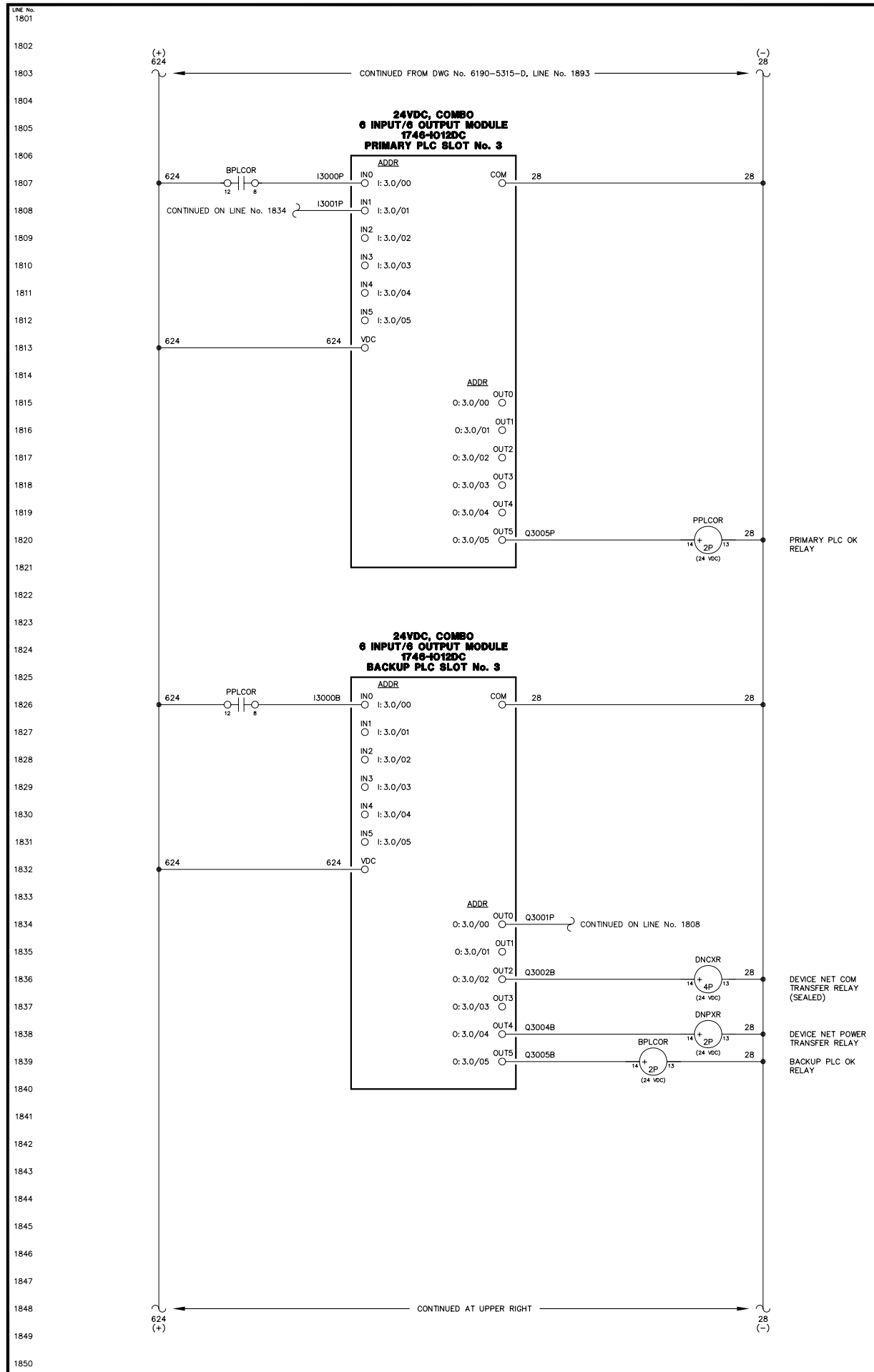
REV.	DATE	DESCRIPTION	BY

SCALE: NONE	DATE: 06-04-07	DWN. BY: GPN
DWG. No: 6190-5314-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: CHEFORNAK		

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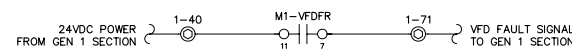
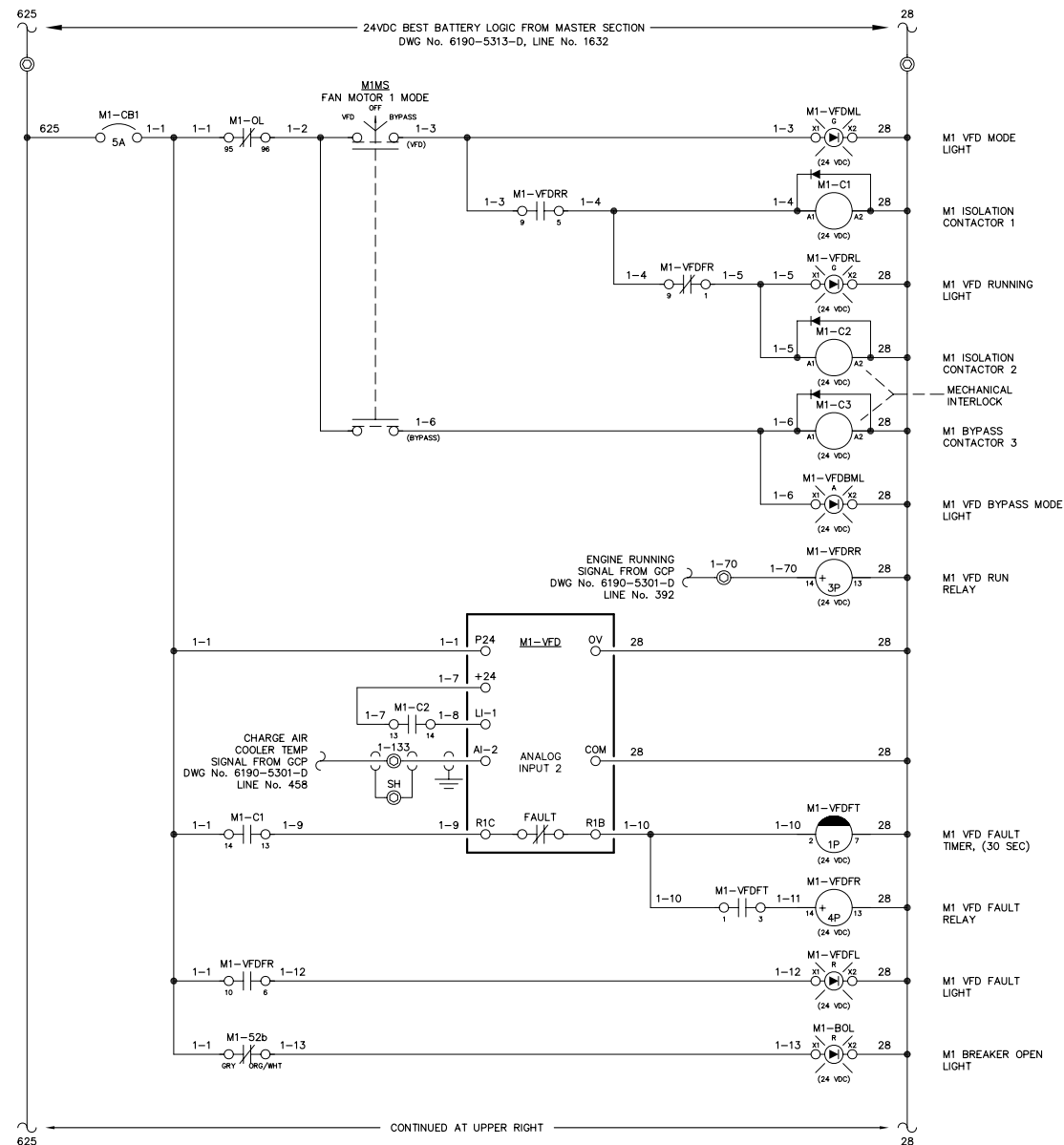
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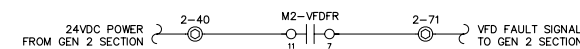
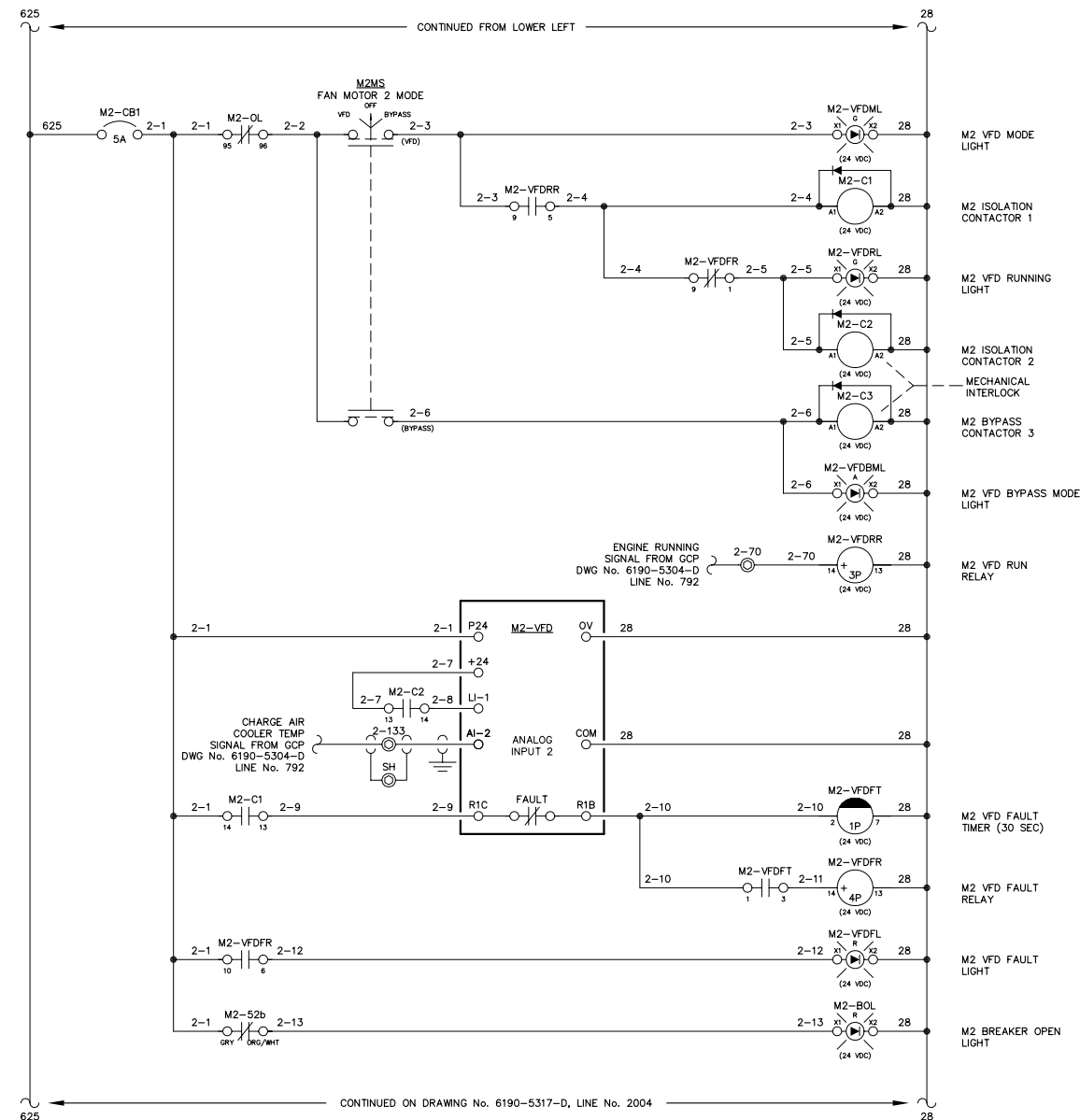
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ENGINE 2 CHARGE AIR COOLER VFD  
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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

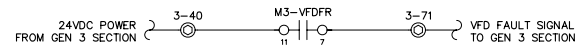
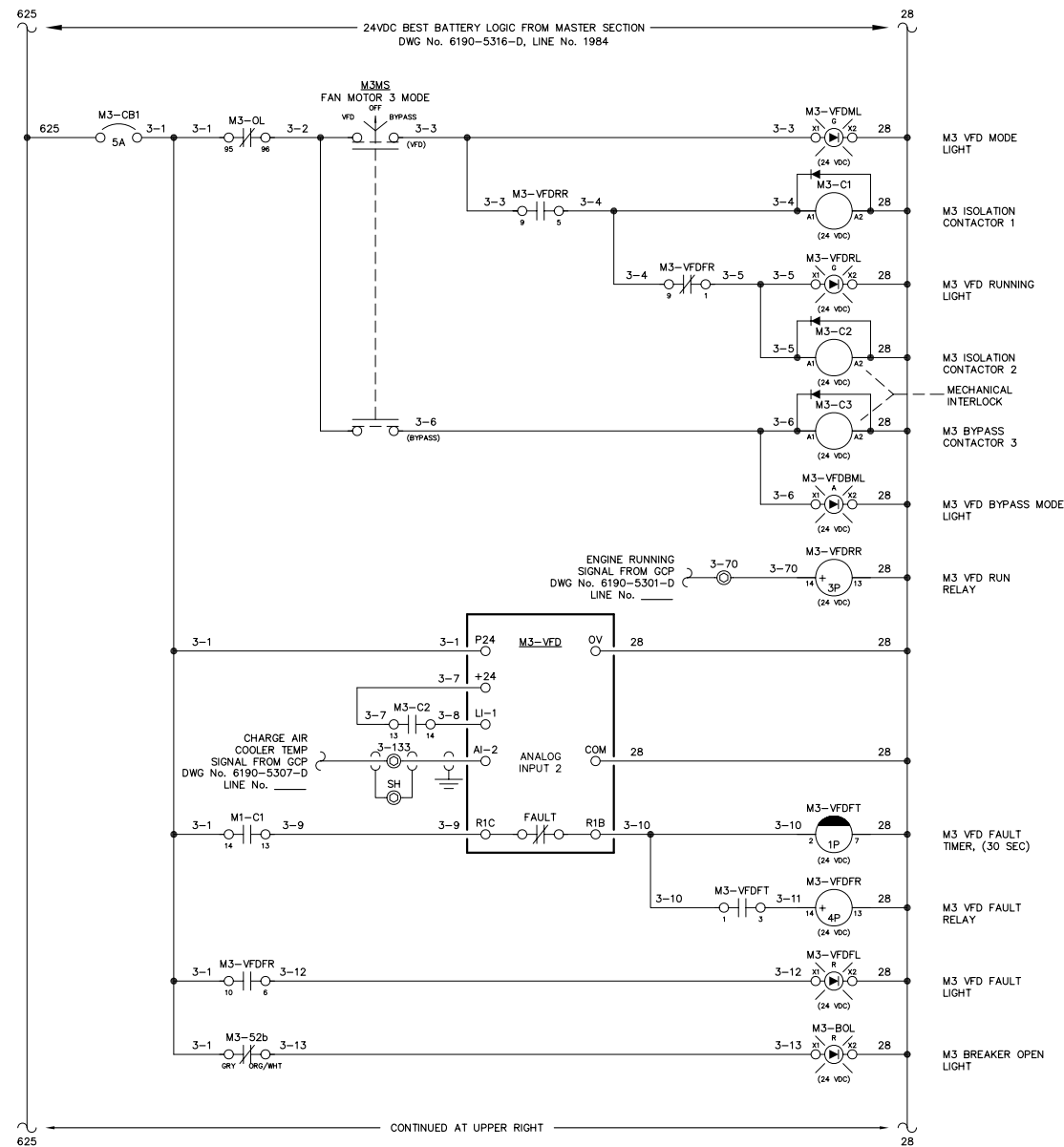
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 07-18-07	DWN. BY: GPN
DWG. No: 6190-5316-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: AKIACHAK			

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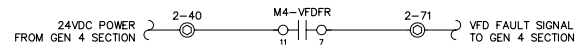
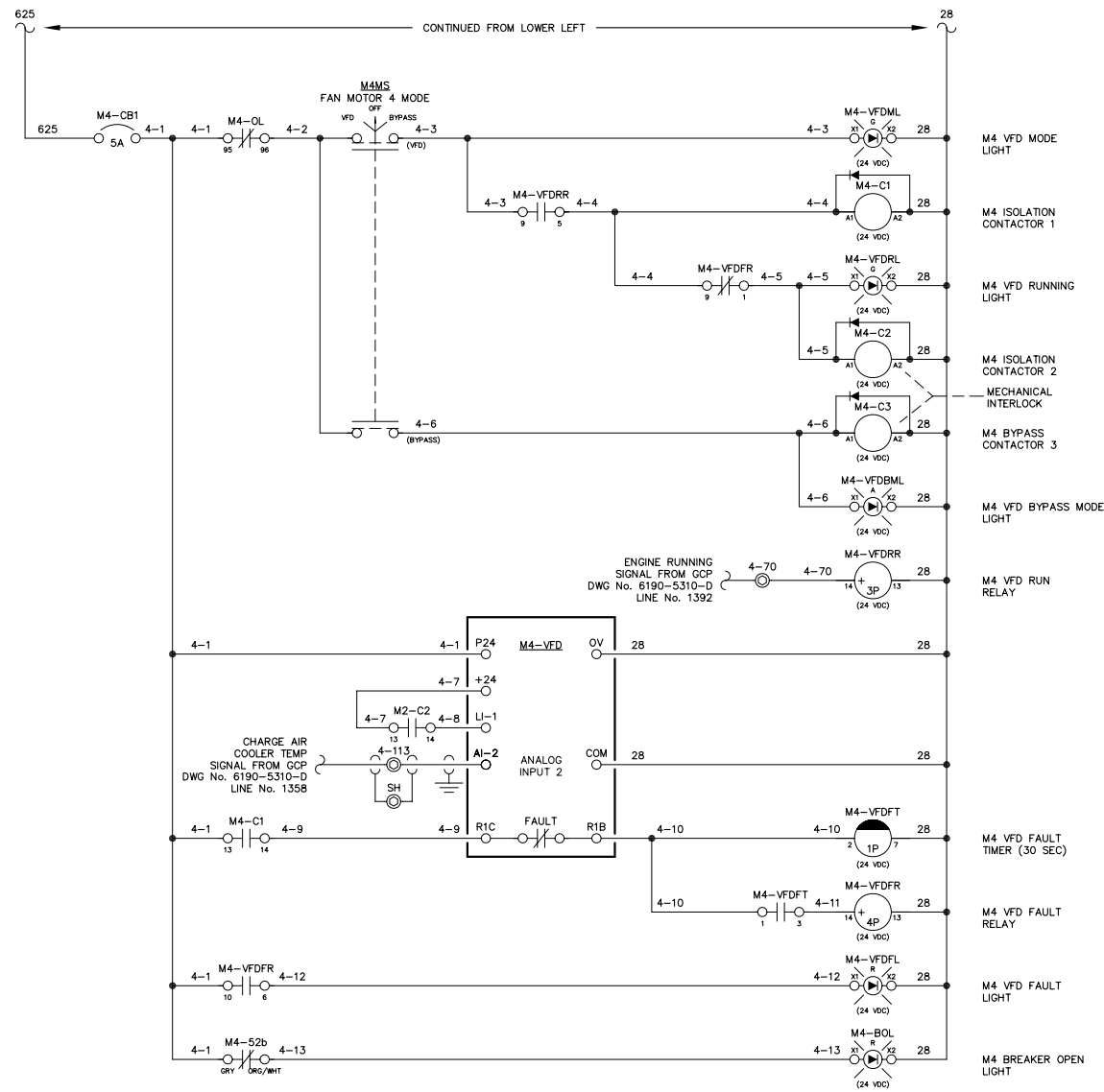
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ENGINE 3 CHARGE AIR COOLER VFD  
M3



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ENGINE 4 CHARGE AIR COOLER VFD  
M4

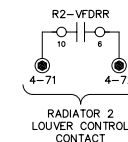
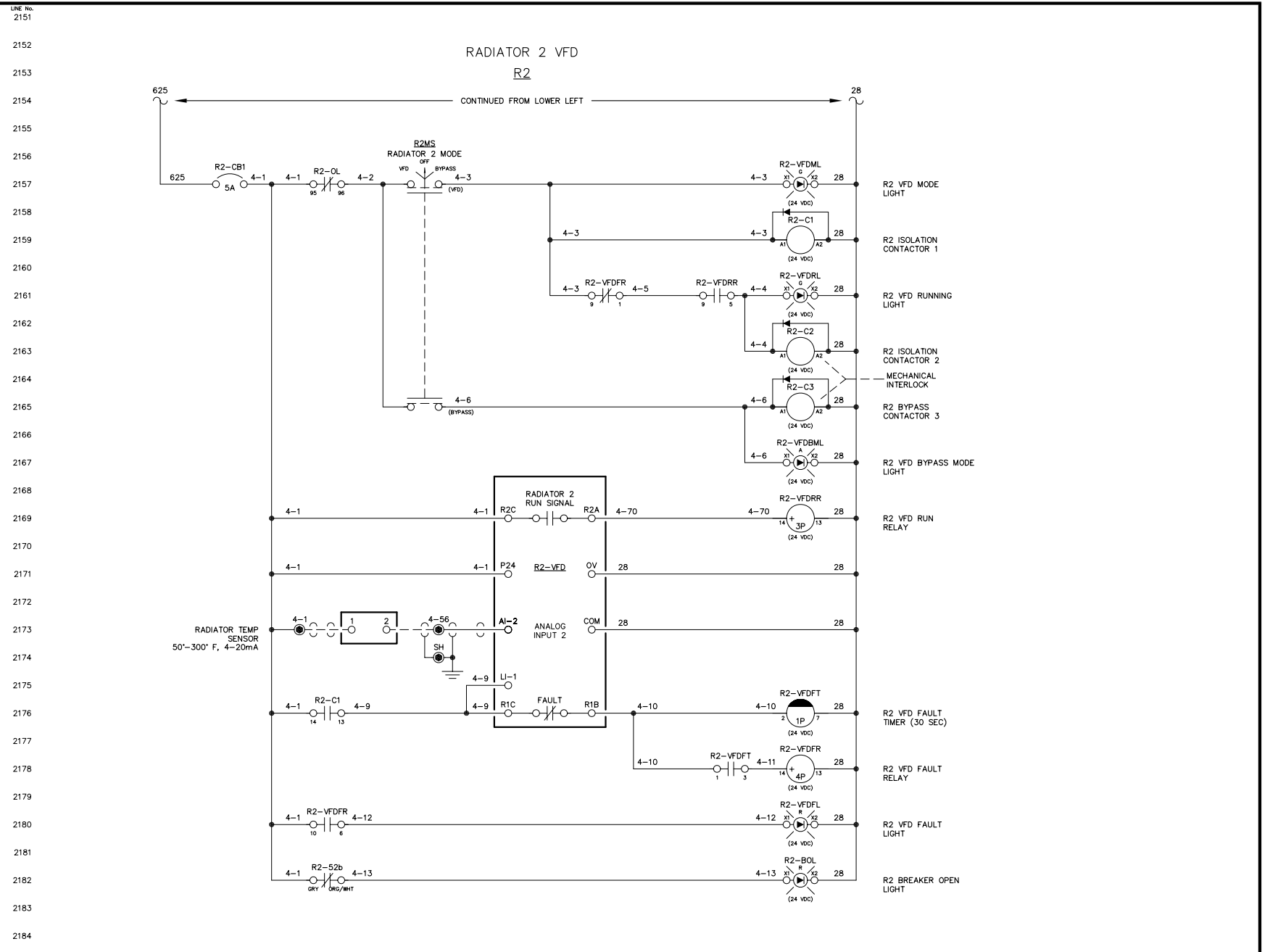
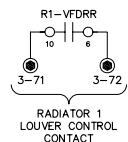
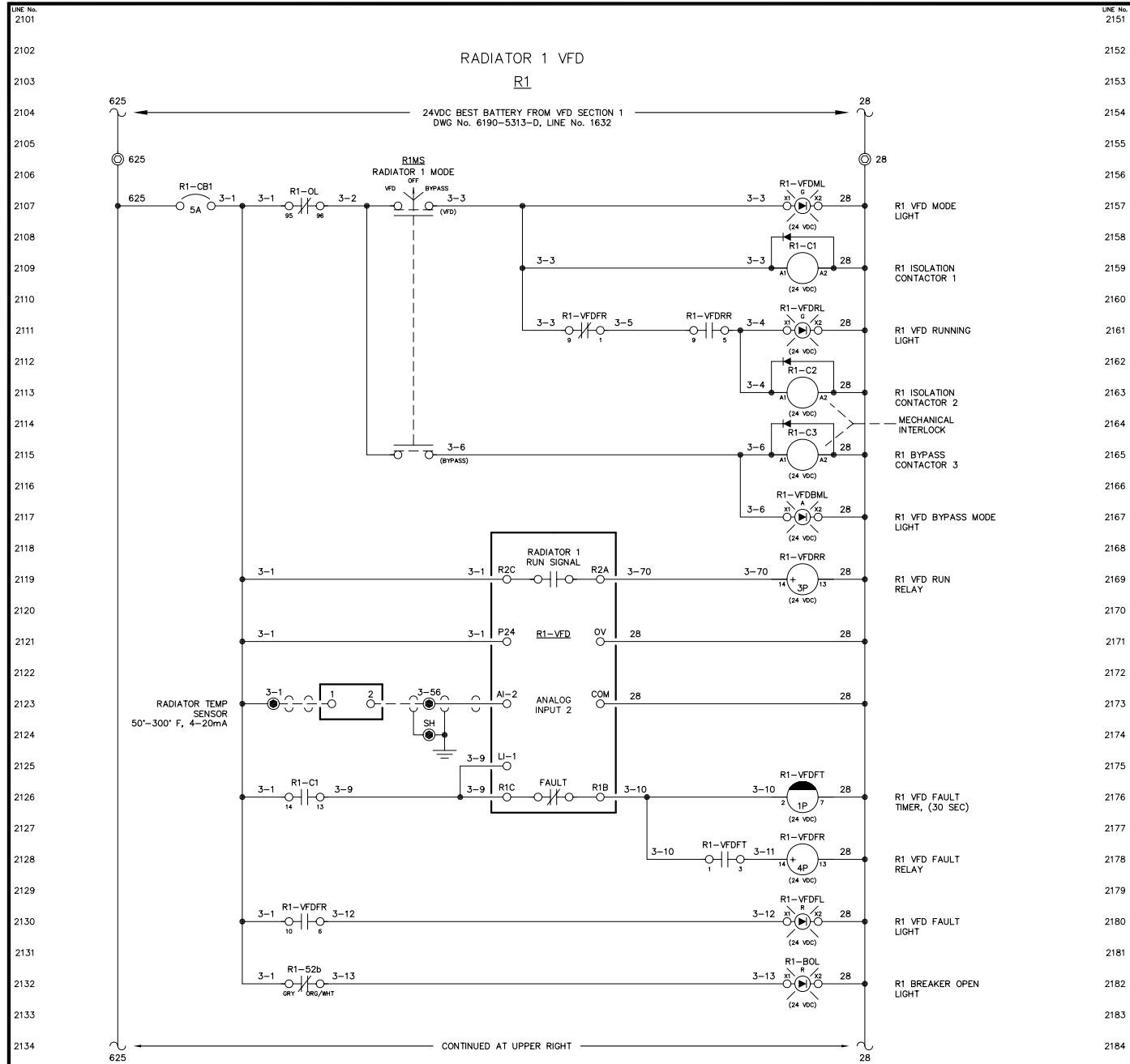


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 07-18-07	DWN. BY: GPN
DWG. No: 6190-5317-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: AKIACHAK			

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

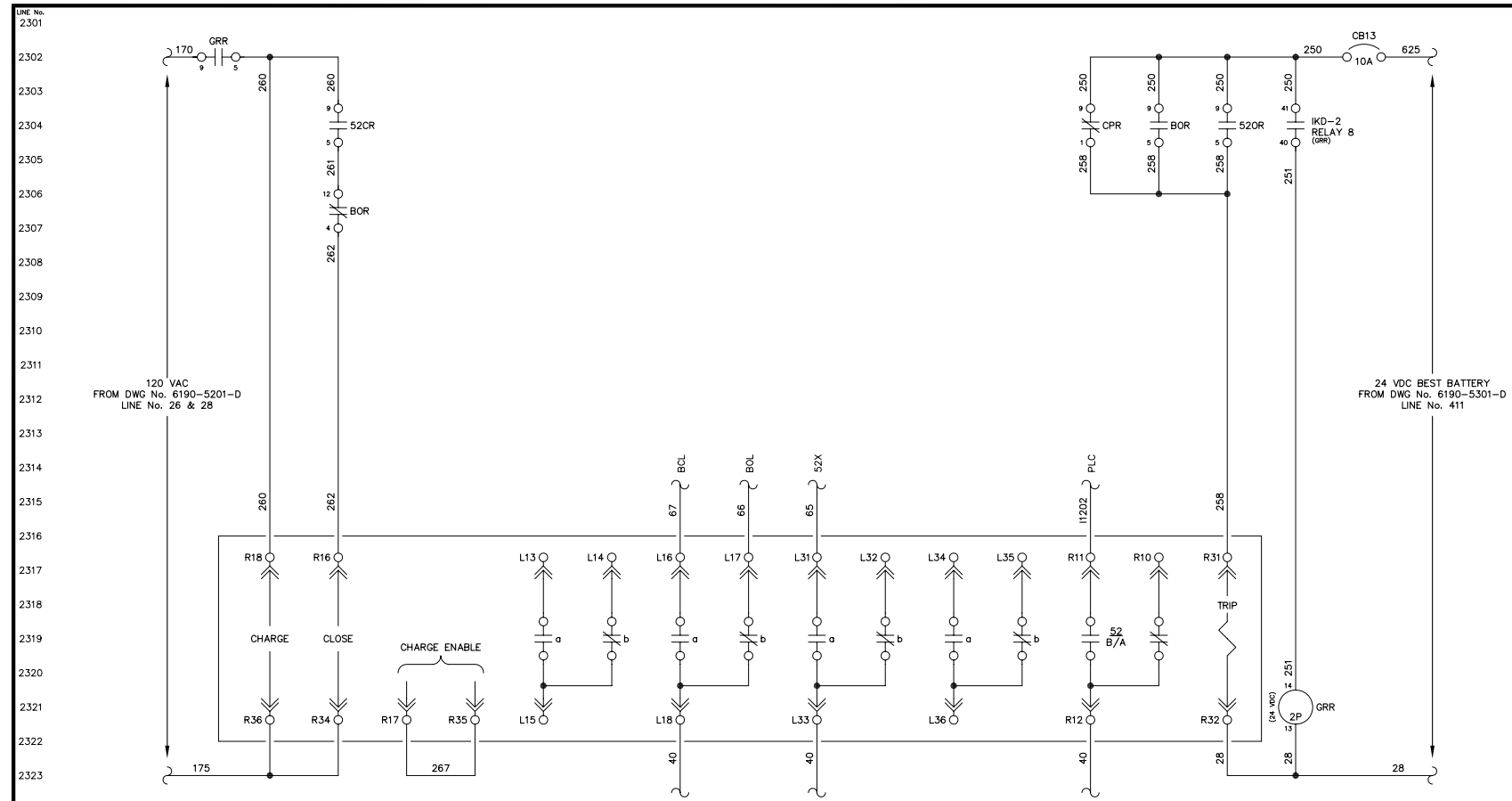
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5318-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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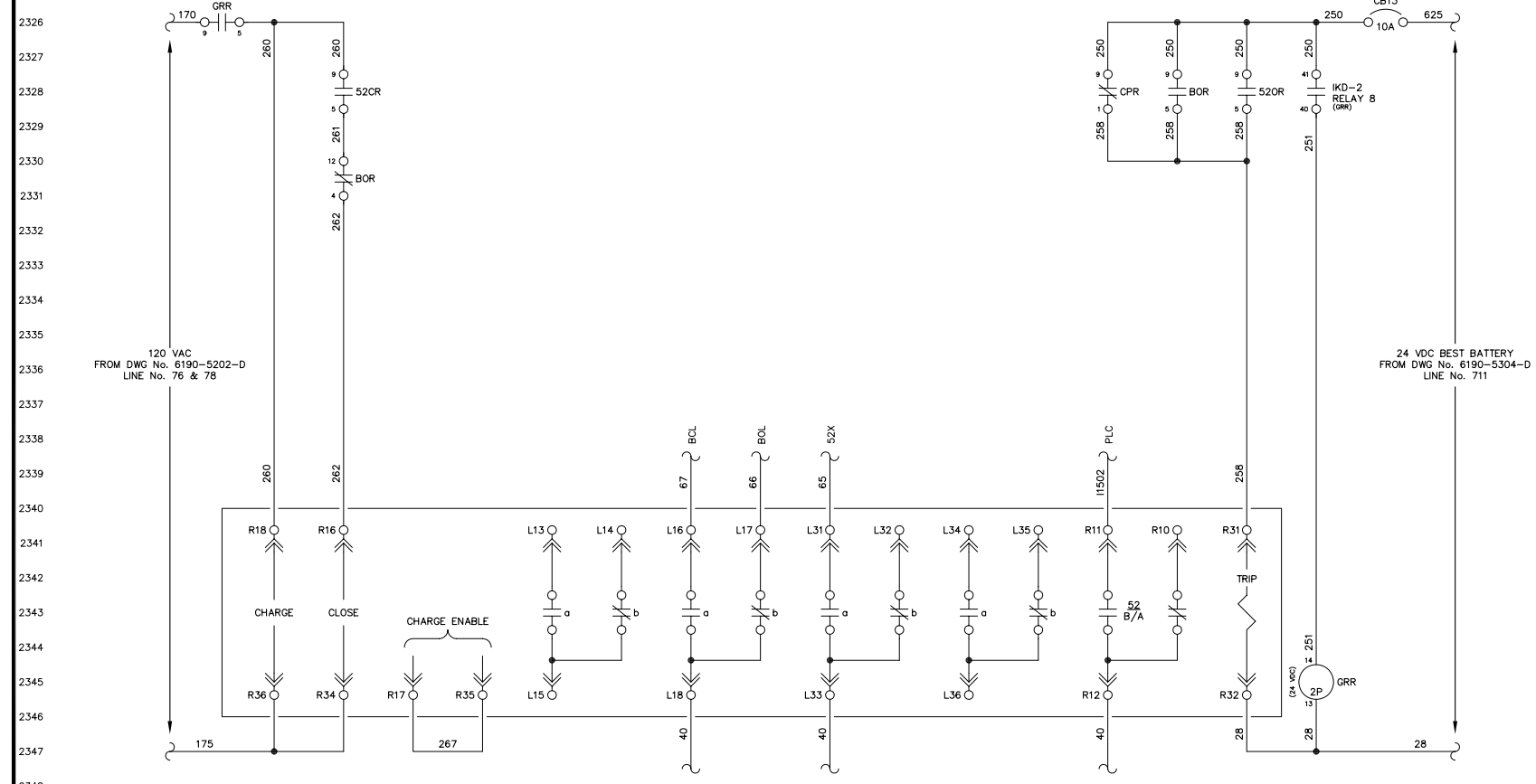
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RURAL ENERGY GROUP  
813 W. NORTHERN LIGHTS BLVD.  
ANCHORAGE, ALASKA 99503  
HTTP://WWW.AIDEA.ORG



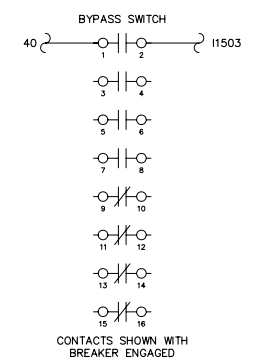
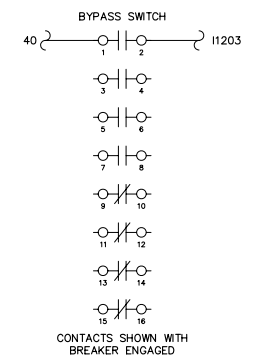




GENERATOR 1 BREAKER  
POWER BREAK II



GENERATOR 2 BREAKER  
POWER BREAK II

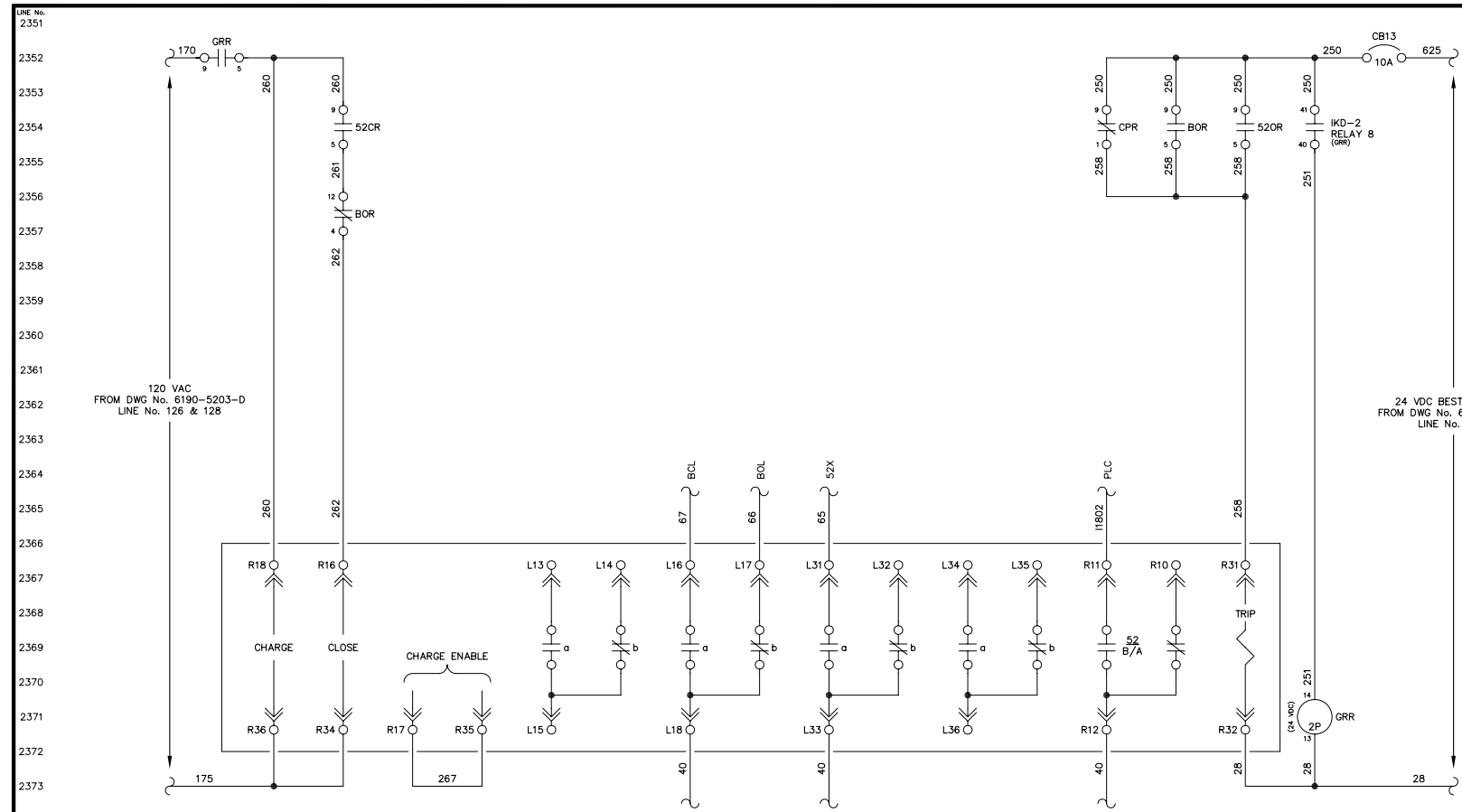


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

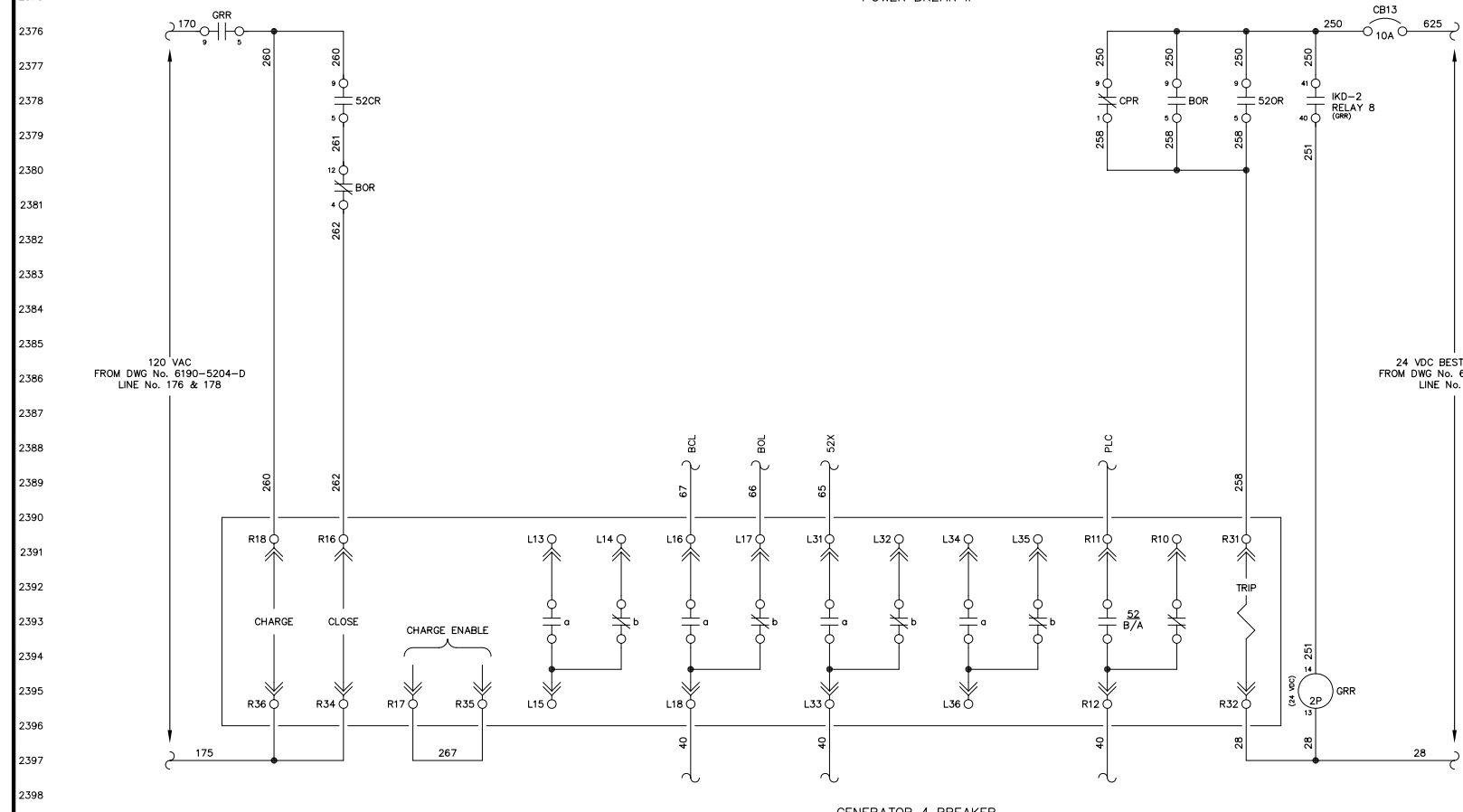
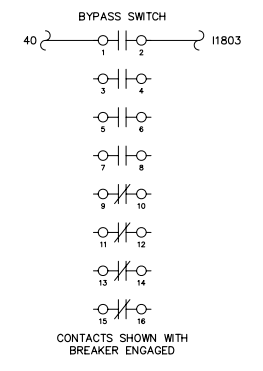
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 1 & 2 BREAKER CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5401-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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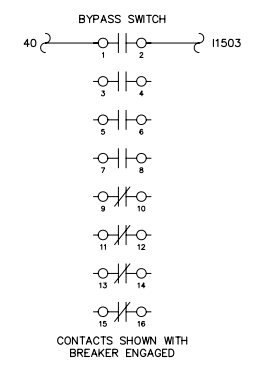
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GENERATOR 3 BREAKER  
POWER BREAK II



GENERATOR 4 BREAKER  
POWER BREAK II

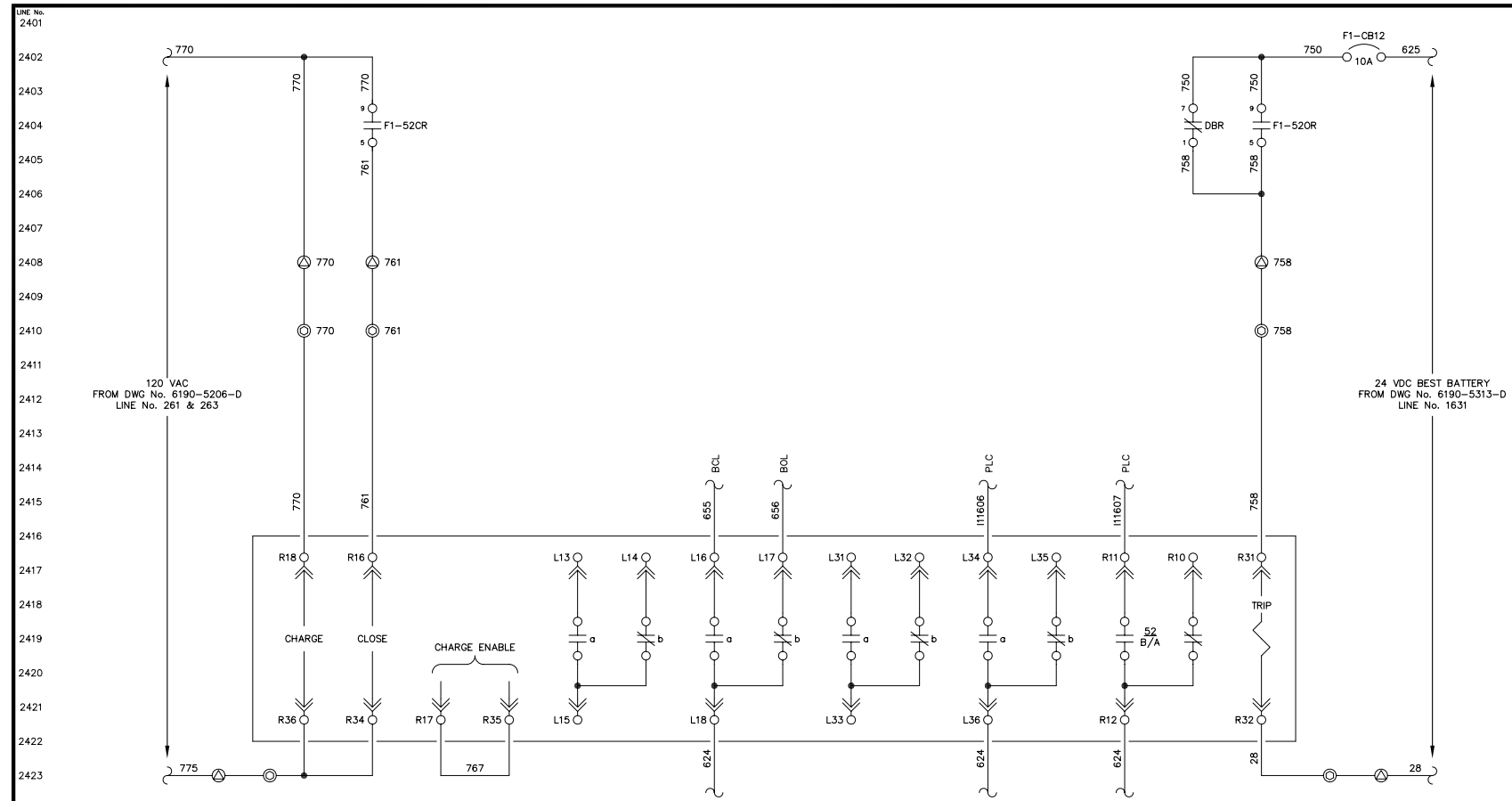


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

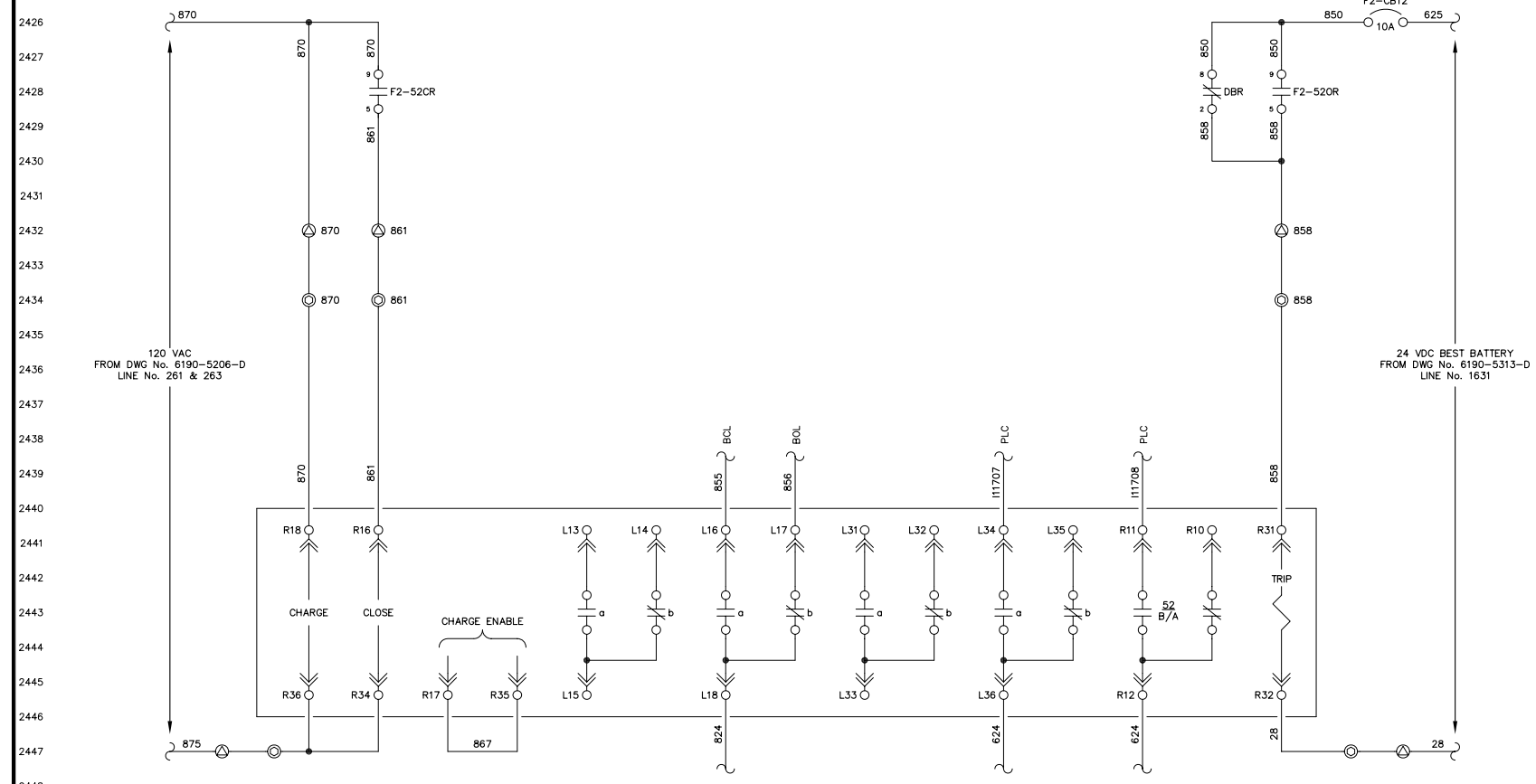
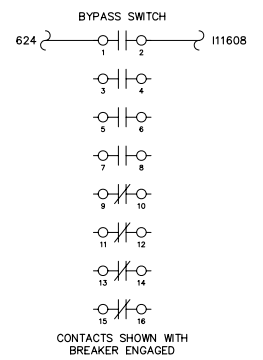
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: GENERATOR 3 BREAKER CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5402-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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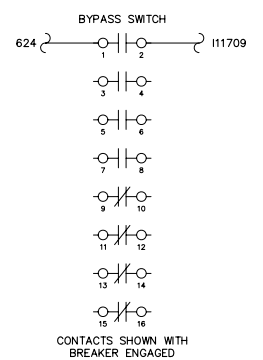
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FEEDER 1 BREAKER  
POWER BREAK II



FEEDER 2 BREAKER  
POWER BREAK II



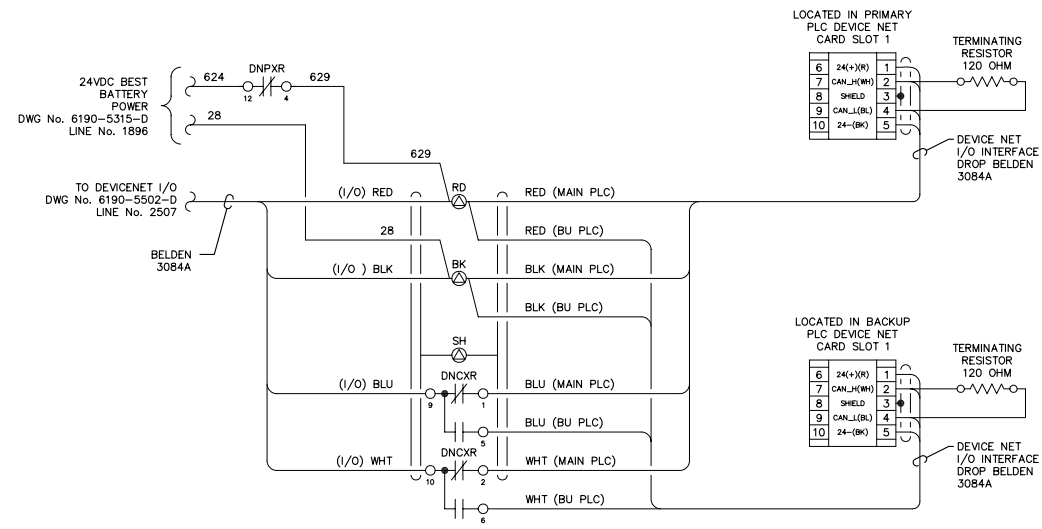
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: FEEDER 1 & 2 BREAKER CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5403-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

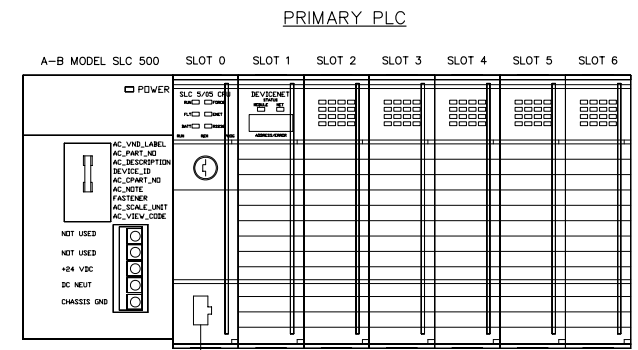
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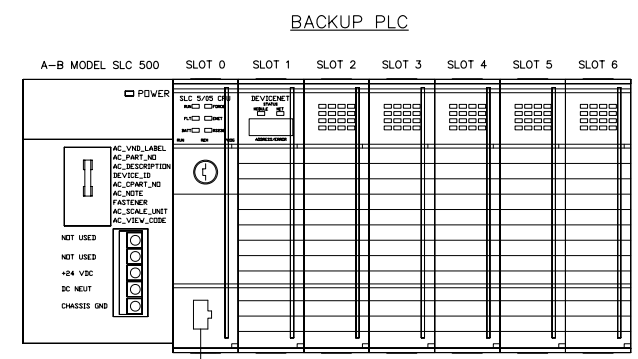


DEVICENET SWITCH



- LEGEND:
- POWER SPPLY, 1746-P3
  - SLOT 0 CPU, 1774-L552
  - SLOT 1 DEVICE NET SCANNER, 1747-SDN
  - SLOT 2 MVI46-MNET
  - SLOT 3 6 IN, 6 OUT, I/O MODULE, 1746-IO12DC
  - SLOT 4 (SPACE)
  - SLOT 5 (SPACE)
  - SLOT 6 (SPACE)

TO ETHERNET SWITCH, PORT No. 1  
DWG No. 6190-5601-D  
LINE No. 2604



- LEGEND:
- POWER SPPLY, 1746-P3
  - SLOT 0 CPU, 1774-L552
  - SLOT 1 DEVICE NET SCANNER, 1747-SDN
  - SLOT 2 MVI46-MNET
  - SLOT 3 6 IN, 6 OUT, I/O MODULE, 1746-IO12DC
  - SLOT 4 (SPACE)
  - SLOT 5 (SPACE)
  - SLOT 6 (SPACE)

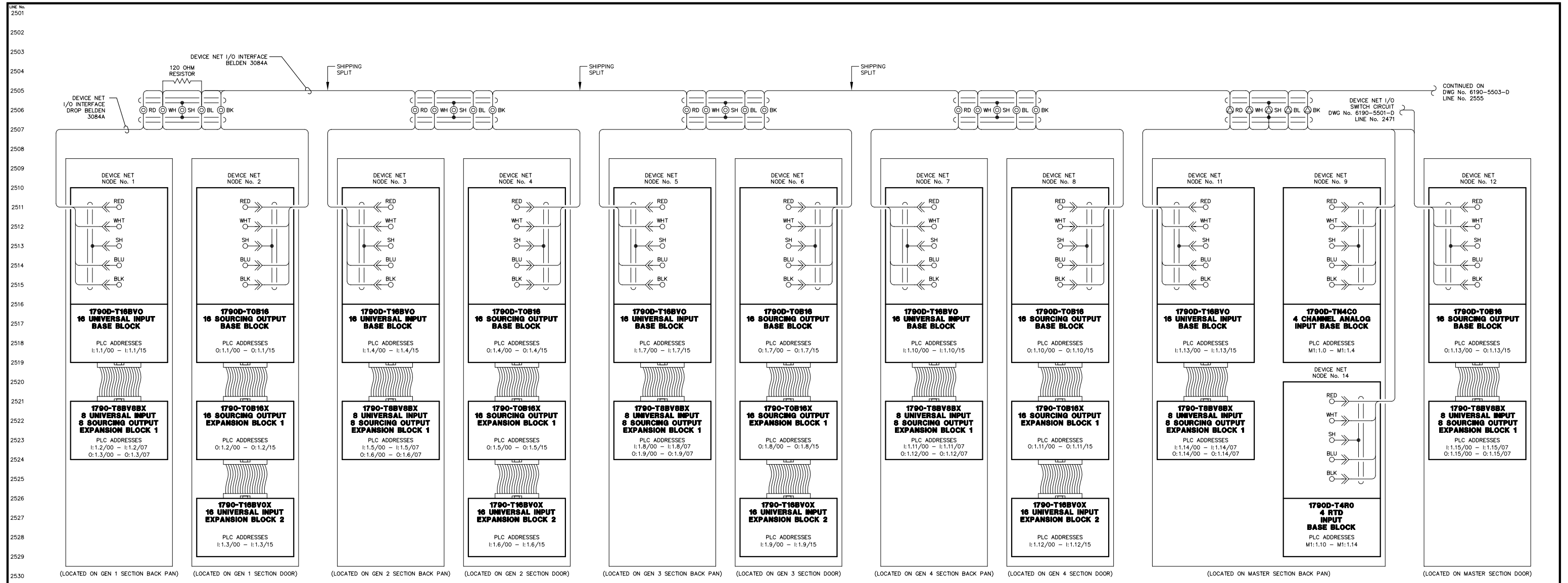
TO ETHERNET SWITCH, PORT No. 2  
DWG No. 6190-5601-D  
LINE No. 2604

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5501-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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NOTE:  
 1. FOR GENERAL WRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

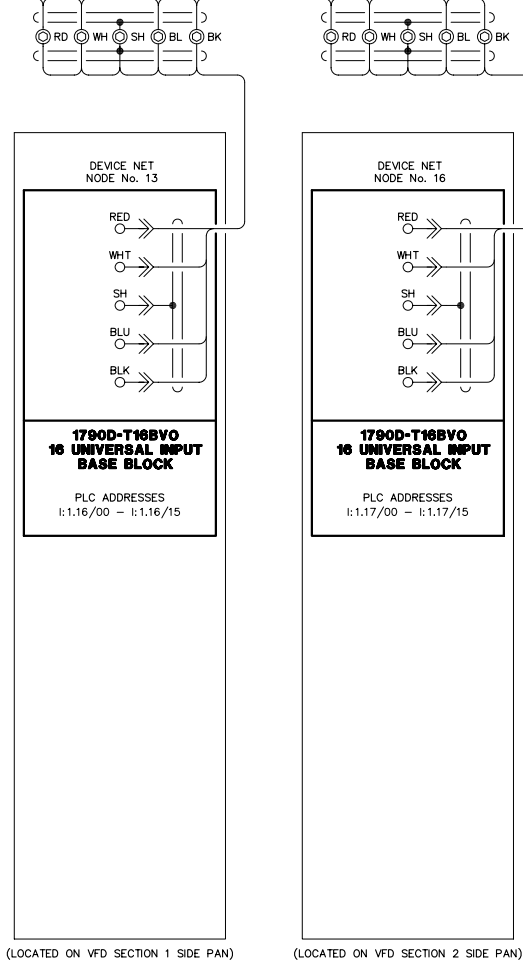
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5502-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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 ANCHORAGE, ALASKA 99503  
 HTTP://WWW.AIDEA.ORG

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CONTINUED FROM  
DWG No. 6190-5502-D  
LINE No. 2505



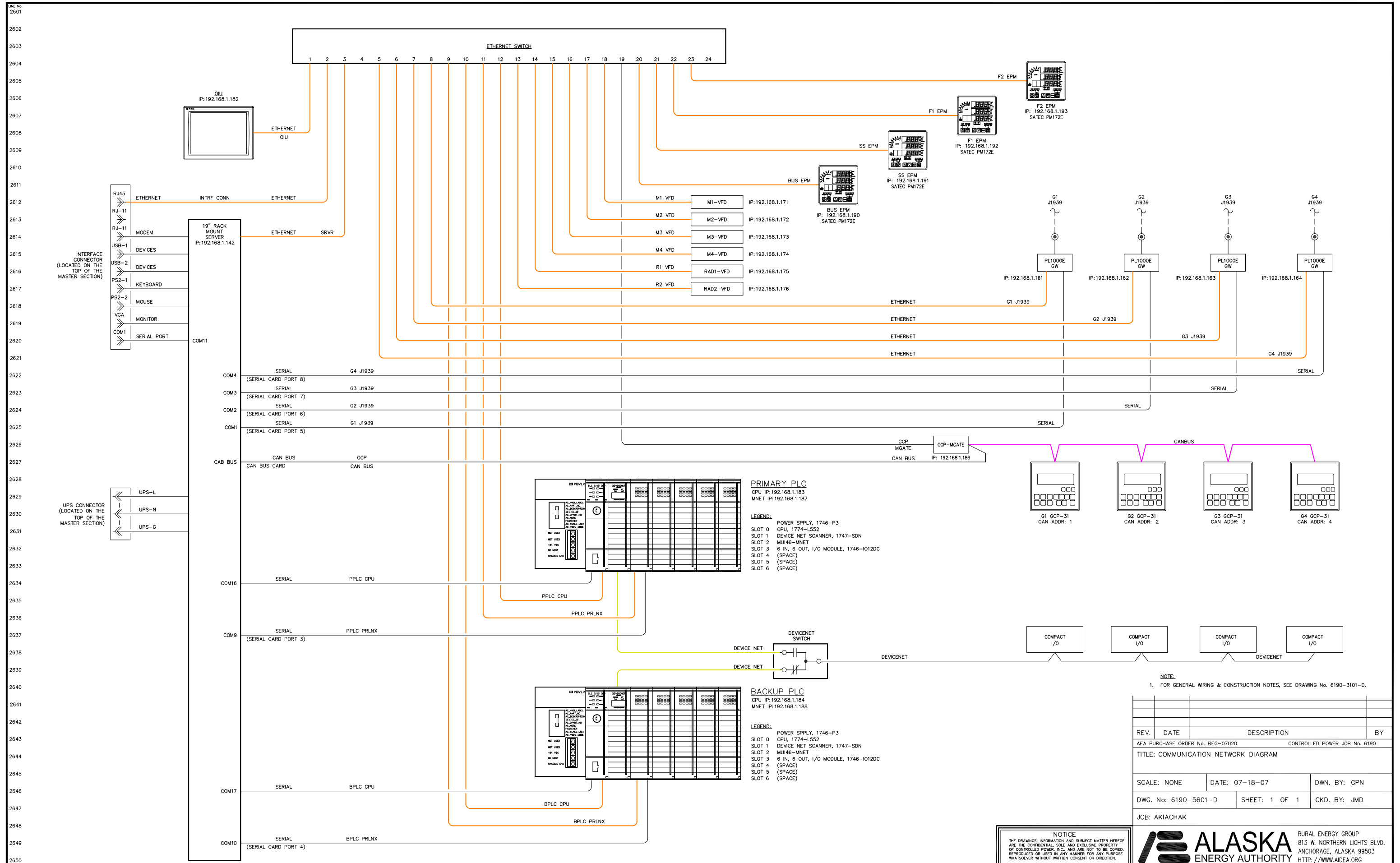
(LOCATED ON VFD SECTION 1 SIDE PAN) (LOCATED ON VFD SECTION 2 SIDE PAN)

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5503-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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ANCHORAGE, ALASKA 99503  
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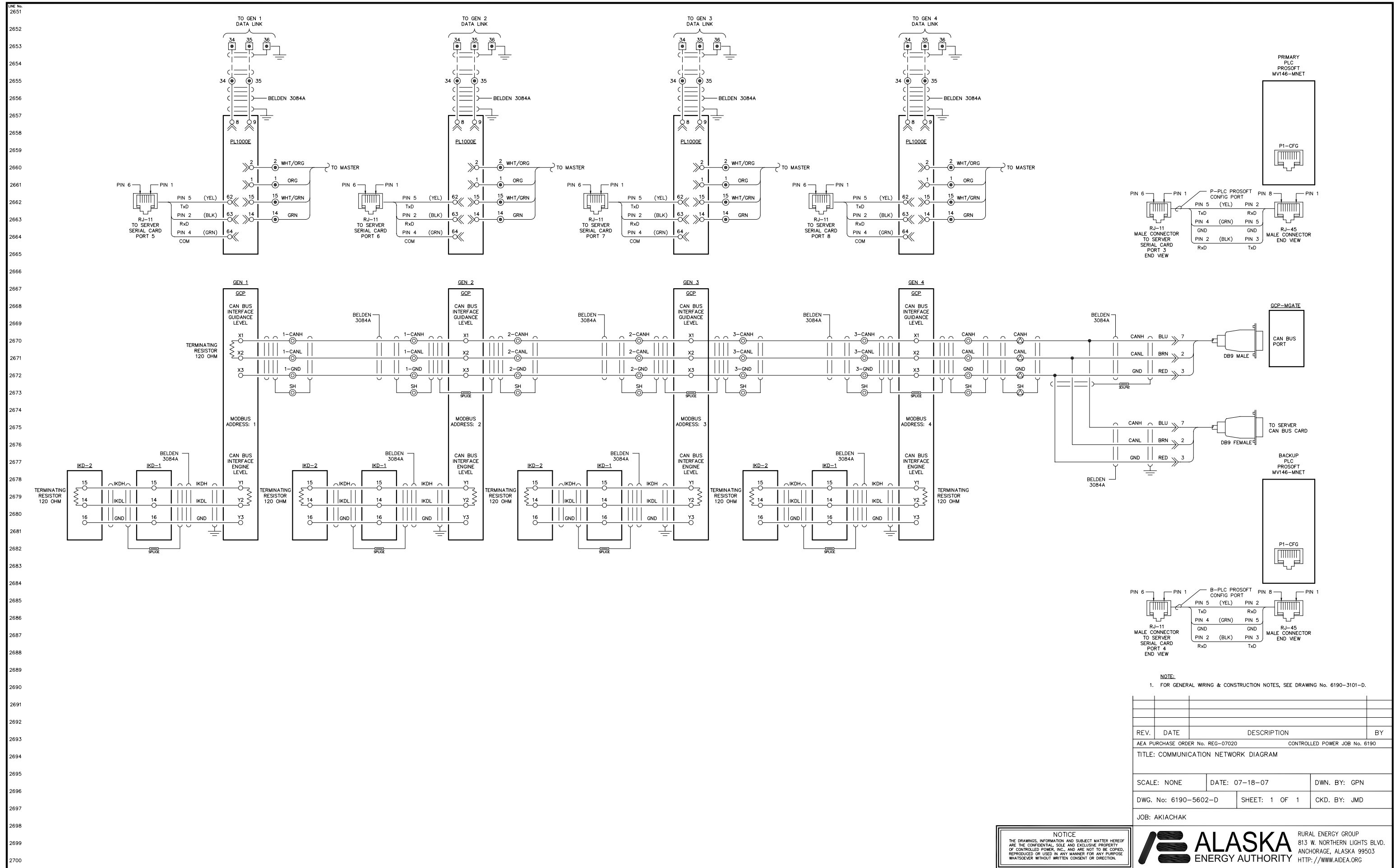


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: COMMUNICATION NETWORK DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5601-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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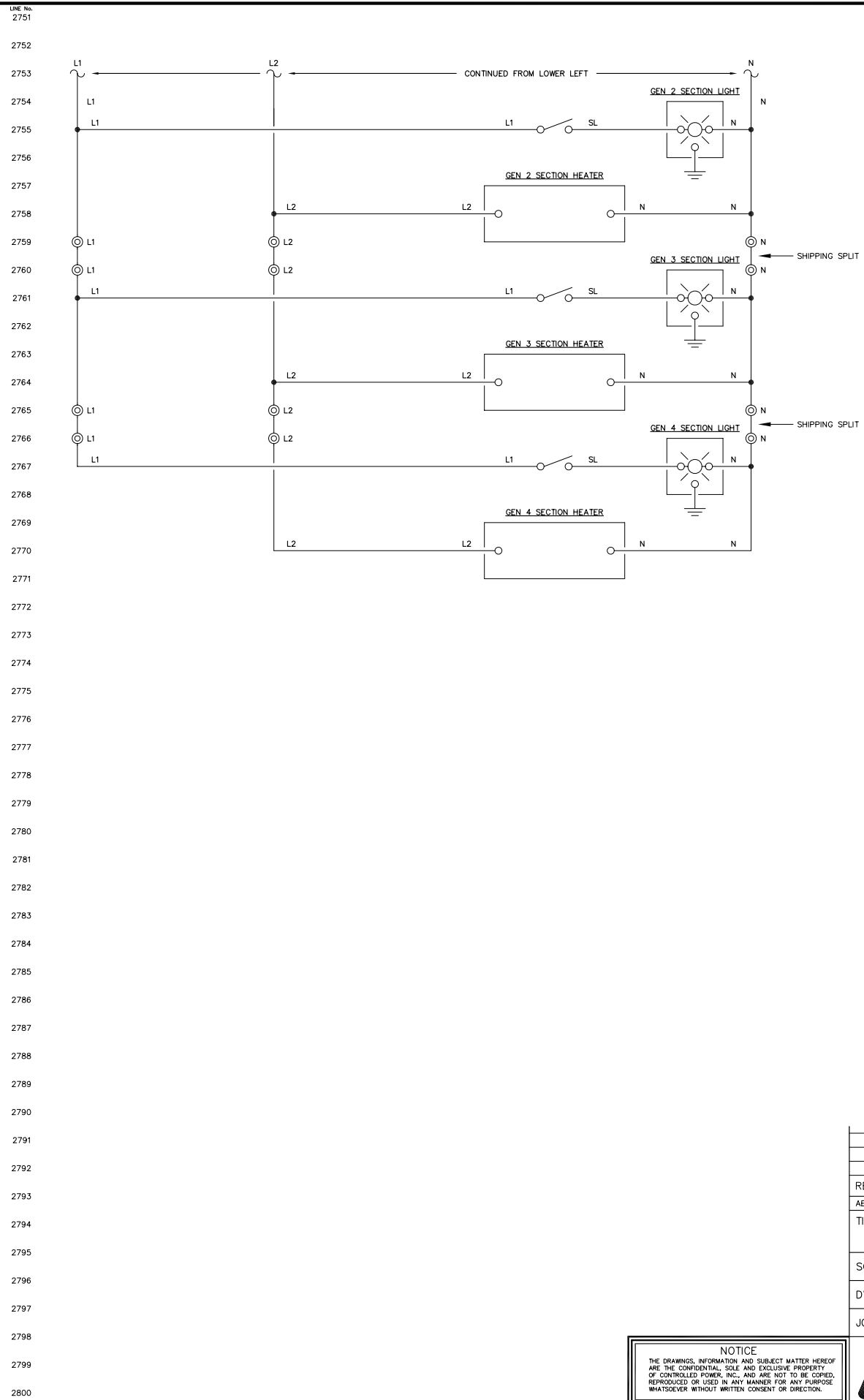
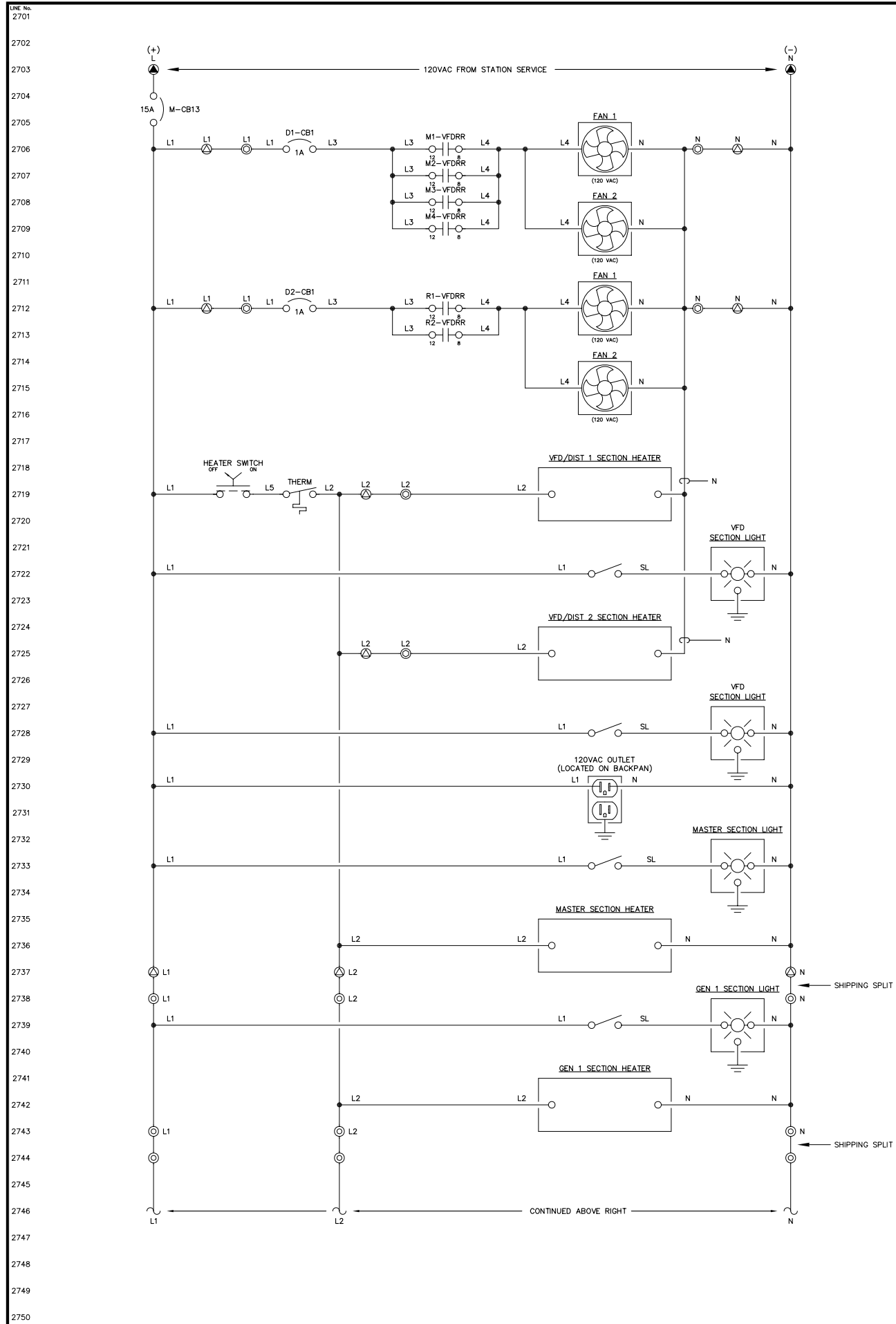
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: COMMUNICATION NETWORK DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5602-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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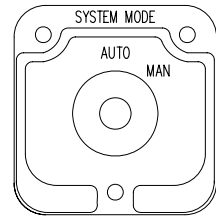
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-5701-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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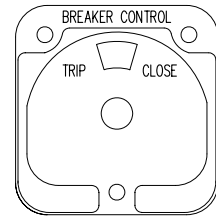
SYSTEM MODE SWITCH – SMS



(ELECTROSWITCH 24201C)  
KNURLED HANDLE  
QTY 1

DECK	CONTACTS	POS.
1	12	AUTO
	11	MAN
16	15	X
	17	X

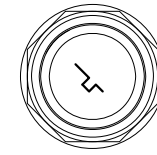
BREAKER CONTROL SWITCH – 52CS



(ELECTROSWITCH 2438D)  
PISTOL GRIP HANDLE  
SPRING RETURN TO CENTER  
QTY 2

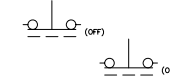
DECK	CONTACTS	TRIP	POS.
1	11	NORM	X
	18	CLOSE	X
16	17	X	X

ENGINE CONTROL SWITCH – ECS

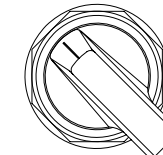


KEY OPERATED  
2 POS MAINTAINED  
QTY 4

POS
OFF
RUN
X
X

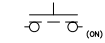


HEATER CONTROL SWITCH – HCS

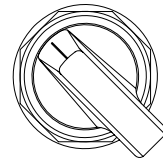


MAINTAINED  
LOCATED ON MASTER  
BACK PAN

POS
OFF
ON
X
X



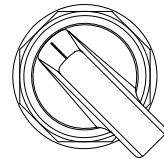
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

POS
VFD
OFF
BYPASS
X
X

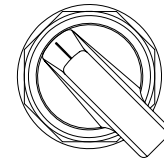
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

POS
VFD
OFF
BYPASS
X
X

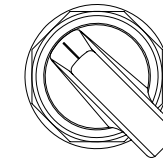
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

POS
VFD
OFF
BYPASS
X
X

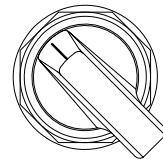
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

POS
VFD
OFF
BYPASS
X
X

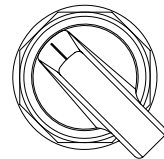
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

POS
VFD
OFF
BYPASS
X
X

VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

POS
VFD
OFF
BYPASS
X
X

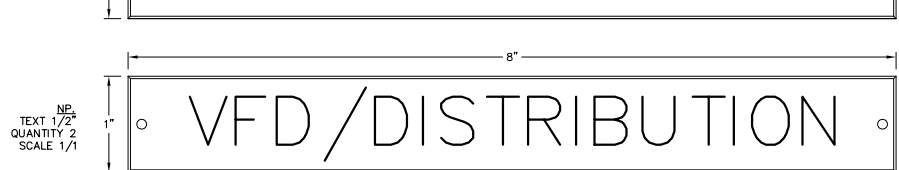
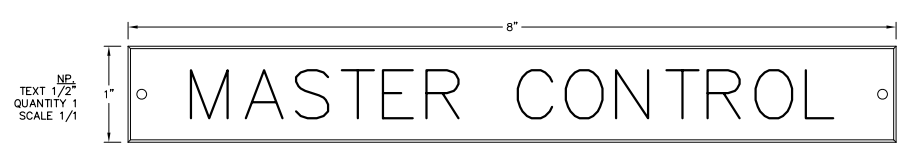
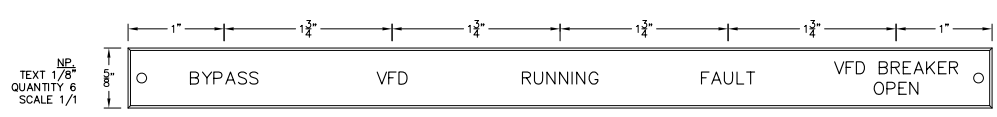
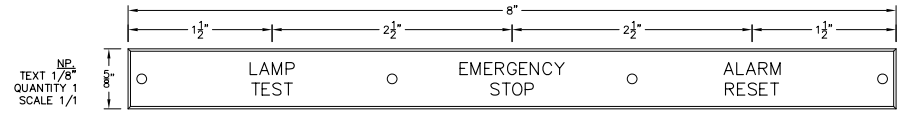
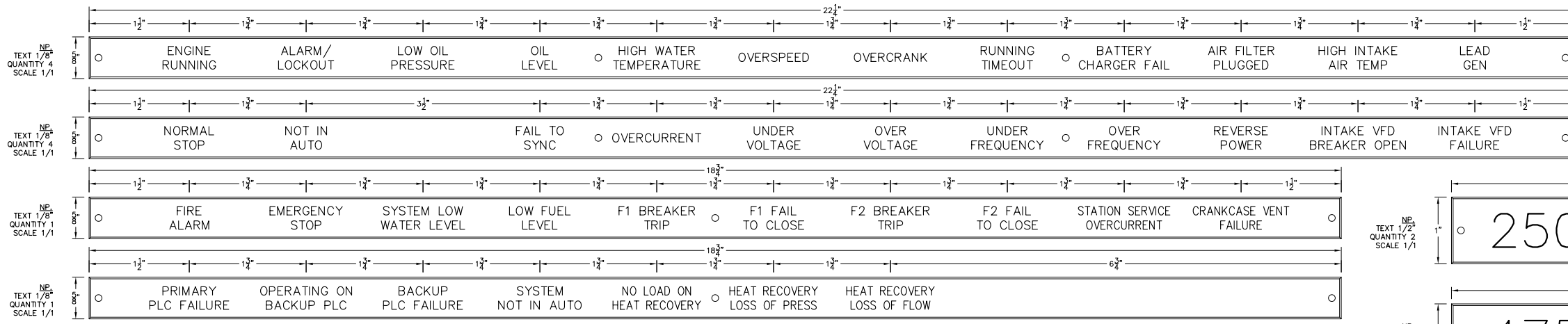
NOTE:

- FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

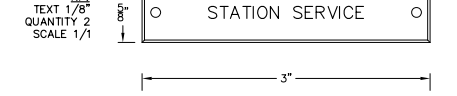
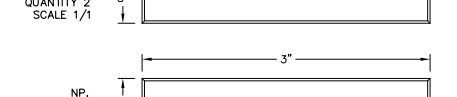
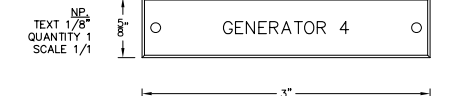
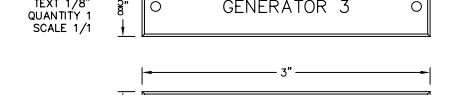
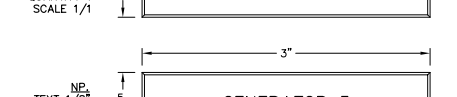
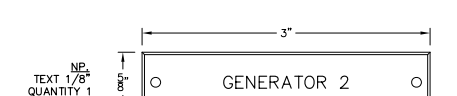
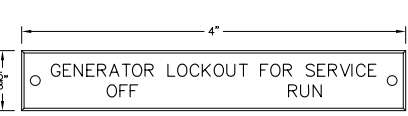
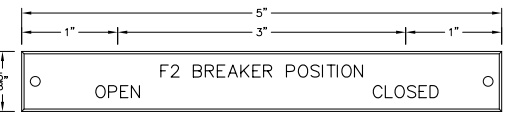
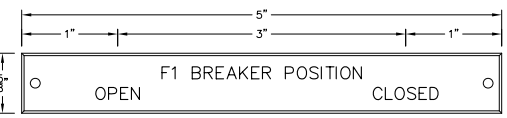
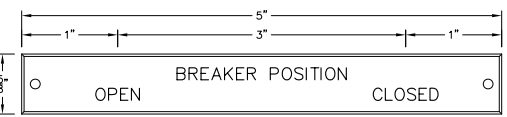
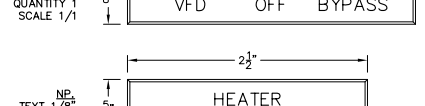
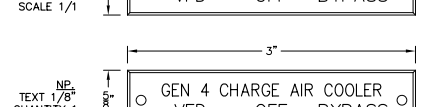
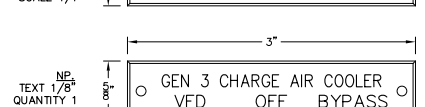
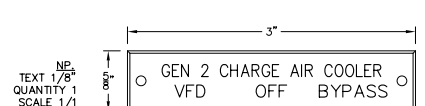
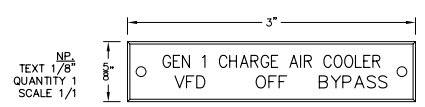
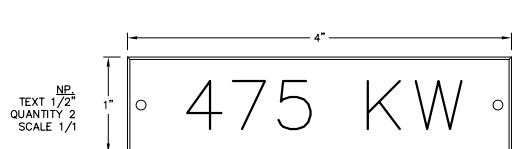
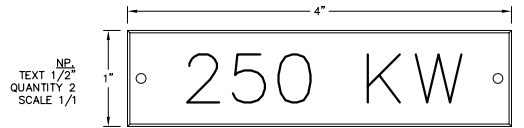
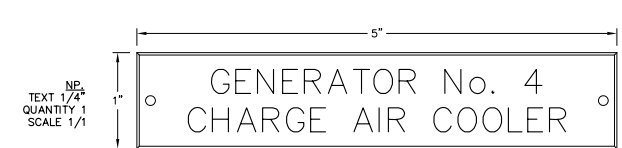
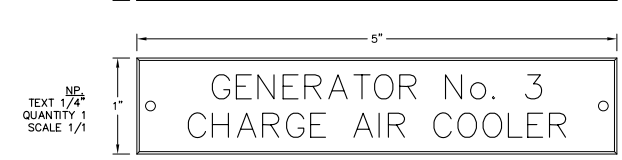
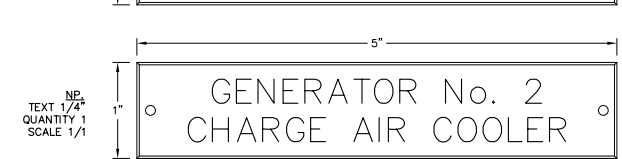
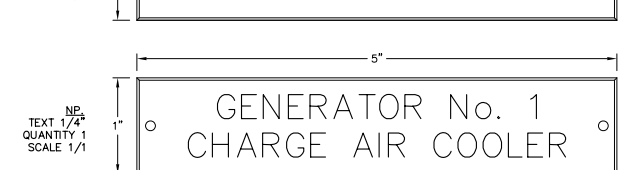
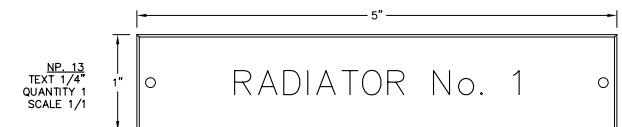
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: CONTROL SWITCH TARGET DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-6101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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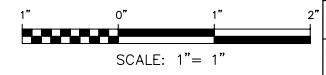


MANUFACTURED BY:  
 CONTROLLED POWER, INC.  
 17909 BOTHELL EVERETT HWY., S.E. #102  
 BOTHELL, WA. 98012  
 (425)-485-1778  
 SERIAL NUMBER: 6190



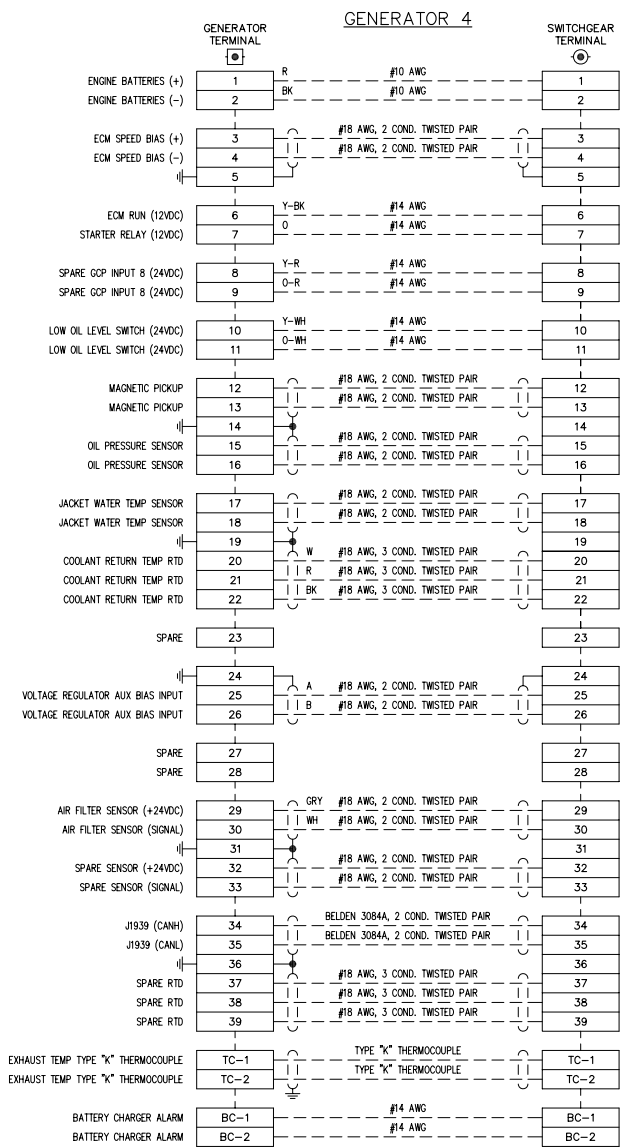
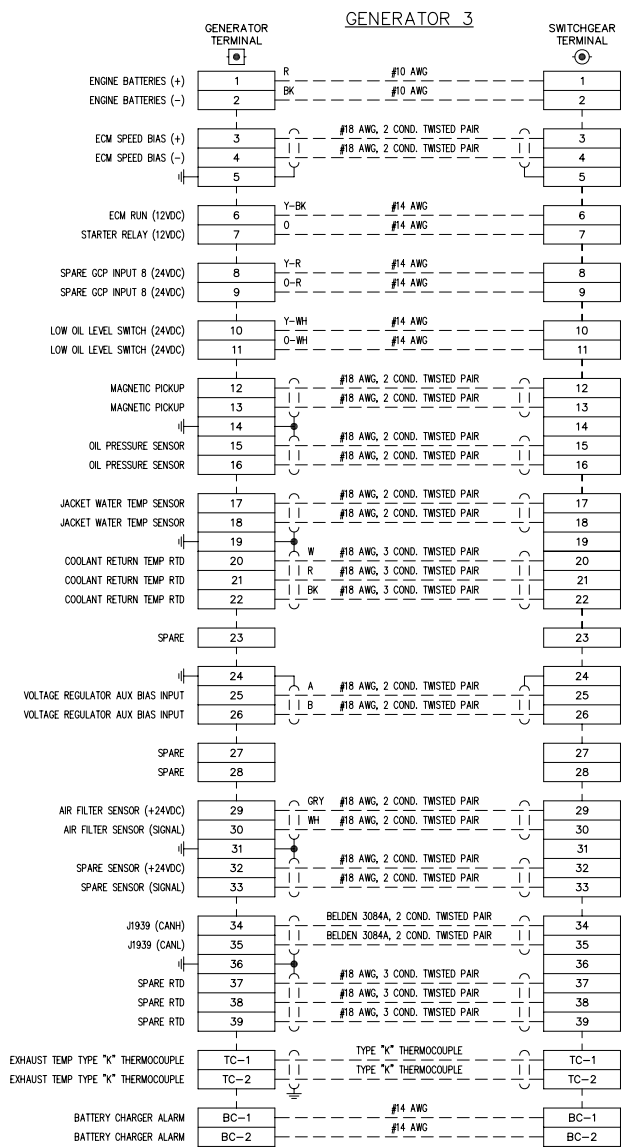
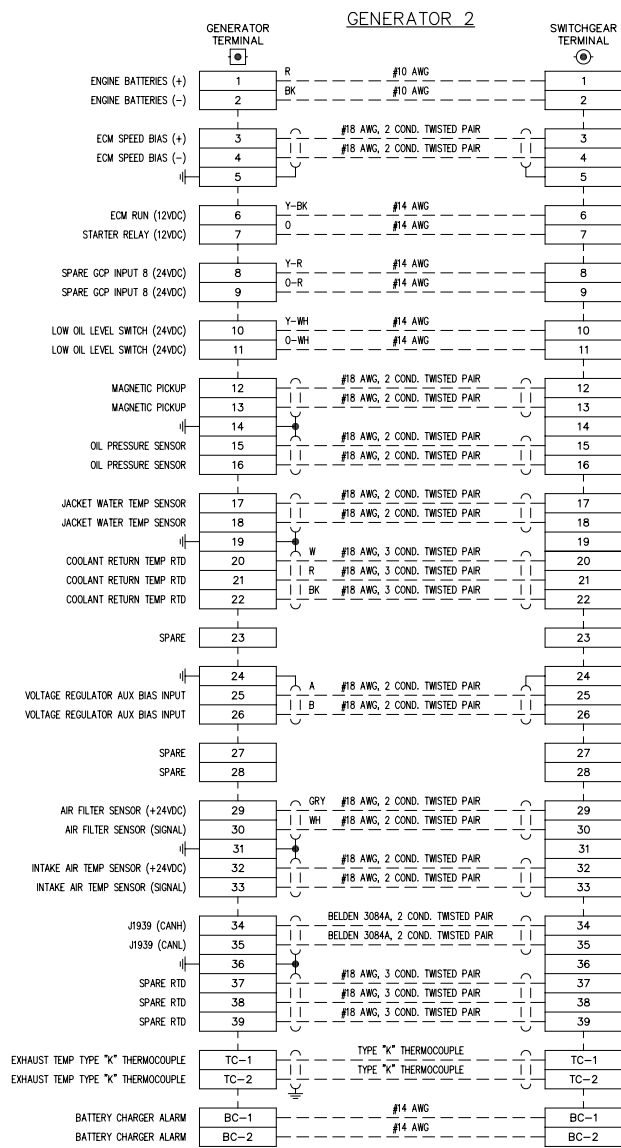
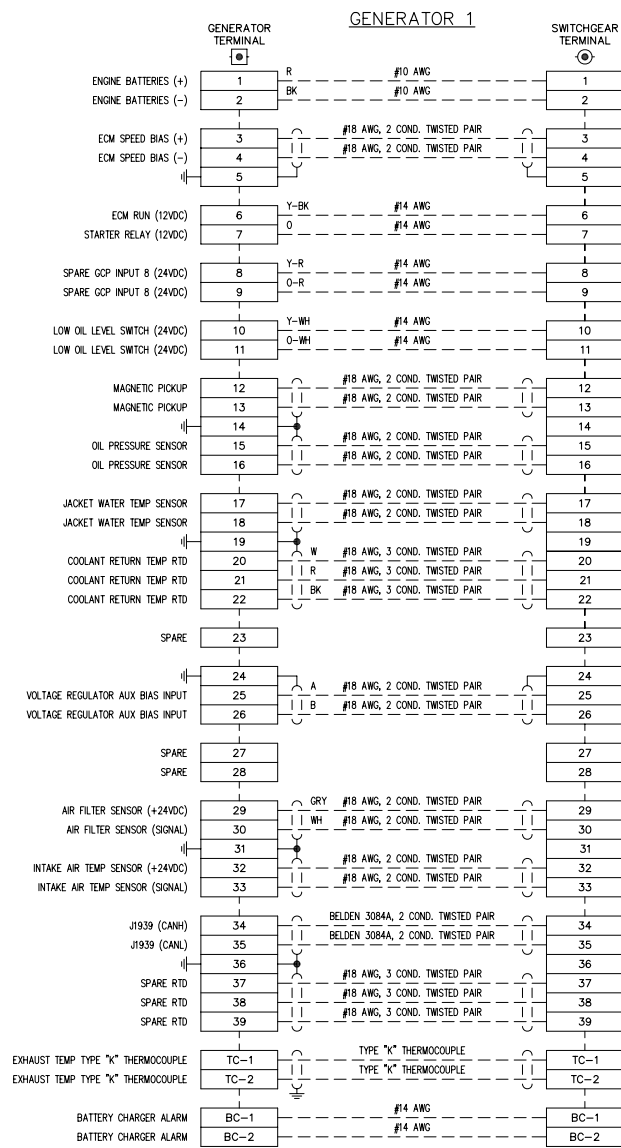
- NOTES:
- ALL NAMEPLATES SHALL BE BLACK FACE WITH WHITE LETTERS EXCEPT AS NOTED.
  - ALL NAMEPLATES SHALL HAVE PRESSURE SENSITIVE ADHESIVE ON BACK, 100 % COVERAGE.
  - ALL NAMEPLATES SHALL HAVE MOUNTING HOLES DRILLED AS INDICATED.
- ▲ INDICATES THAT NAMEPLATE SHALL BE BRUSHED ALUMINUM WITH BLACK ENGRAVED LETTERS.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: NAMEPLATE ENGRAVING SCHEDULE, FABRICATION DIAGRAM			
SCALE: NONE	DATE: 06-04-07	DWN. BY: GPN	
DWG. No: 6190-6201-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			



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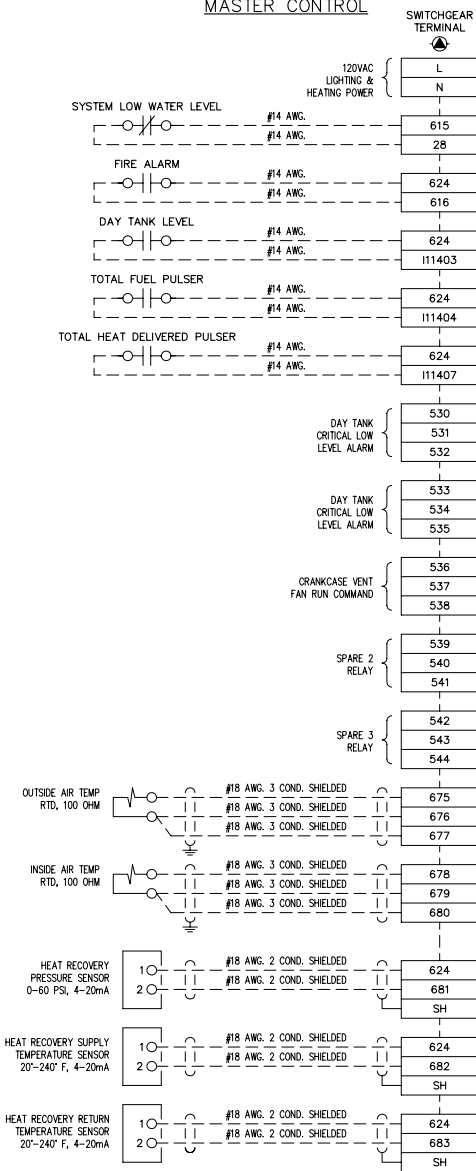
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020		CONTROLLED POWER JOB No. 6190	
TITLE: INTERCONNECTION DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-7101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

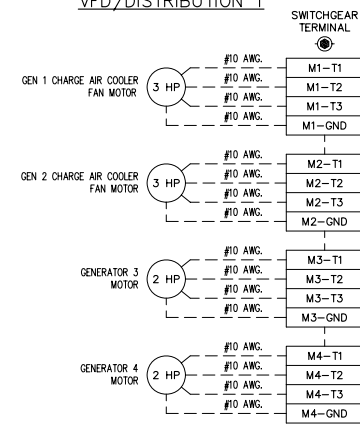
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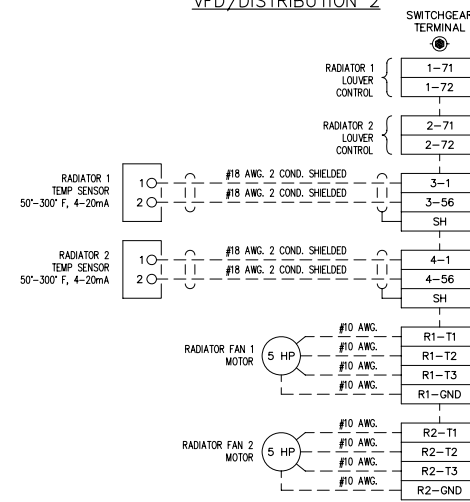
MASTER CONTROL



VFD/DISTRIBUTION 1



VFD/DISTRIBUTION 2



- NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6190-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-07020 CONTROLLED POWER JOB No. 6190			
TITLE: INTERCONNECTION DIAGRAM			
SCALE: NONE	DATE: 07-18-07	DWN. BY: GPN	
DWG. No: 6190-7102-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: AKIACHAK			

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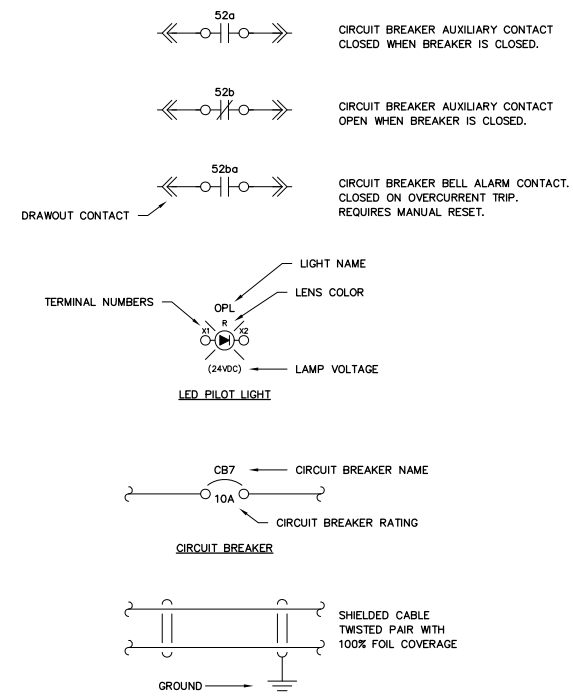
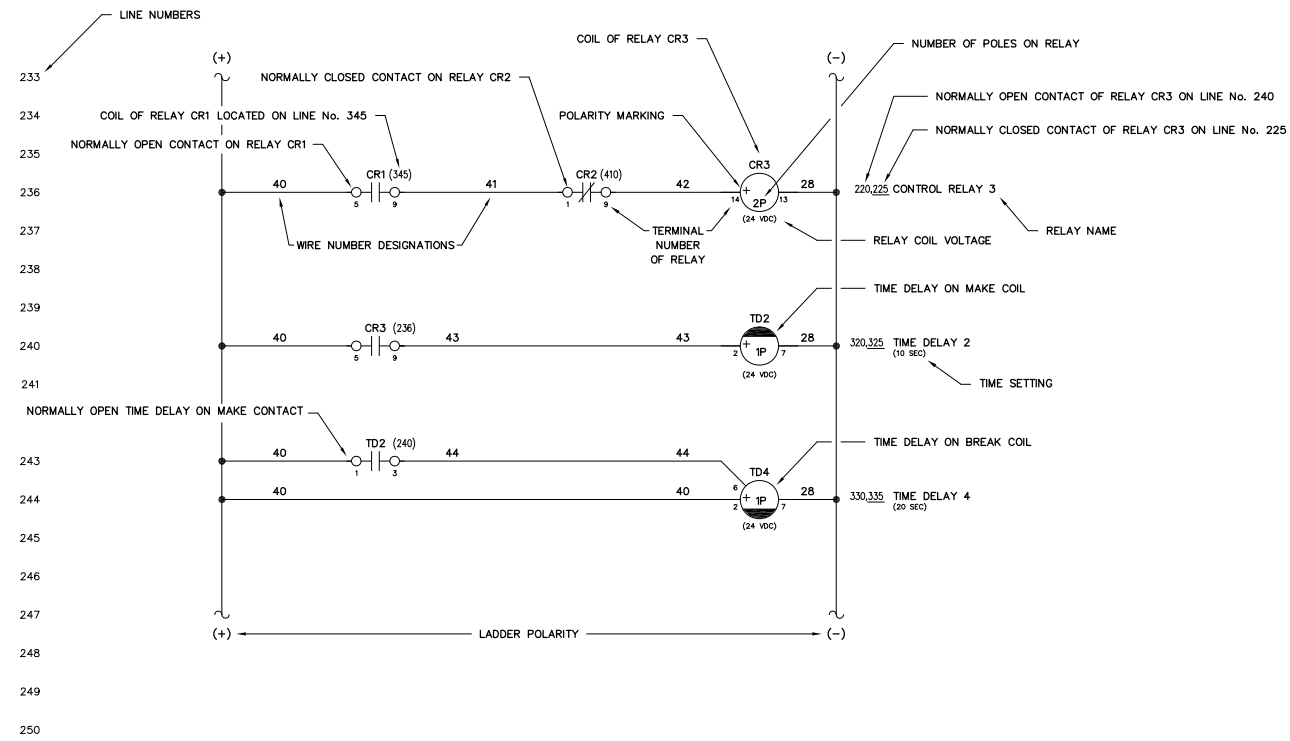


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**ANGOON GENERATOR SWITCHGEAR  
ALASKA ENERGY AUTHORITY PURCHASE ORDER No. REG-09-021  
CONTROLLED POWER, INC. JOB No. 6796**

<u>DRAWING No.</u>	<u>DRAWING TITLE</u>
6475-2101-D	COVER SHEET
6475-3101-D	SCHEMATIC LEGEND AND NOTES
6475-4102-D	NEUTRAL GROUNDING RESISTOR ENCLOSURE, OUTLIE DIAGRAM
6475-4101-D	GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM
6475-4201-D	GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM
6475-5101-D	GENERATOR SINGLE LINE, SCHEMATIC DIAGRAM
6475-5201-D	GENERATOR 1 AC THREE LINE, SCHEMATIC DIAGRAM
6475-5202-D	GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM
6475-5203-D	GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM
6475-5204-D	MASTER AC THREE LINE, SCHEMATIC DIAGRAM
6475-5205-D	VFD AC THREE LINE, SCHEMATIC DIAGRAM
6475-5301-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
6475-5302-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
6475-5303-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
6475-5304-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
6475-5305-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
6475-5306-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
6475-5307-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
6475-5308-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
6475-5309-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM

<u>DRAWING No.</u>	<u>DRAWING TITLE</u>
6475-5310-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6475-5311-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6475-5312-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6475-5313-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6475-5314-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6475-5315-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6475-5401-D	GENERATOR 1 & 2 CIRCUIT BREAKER CONTROL, SCHEMATIC DIAGRAM
6475-5401-D	GENERATOR 3 & FEEDER CIRCUIT BREAKER CONTROL, SCHEMATIC DIAGRAM
6475-5501-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
6475-5502-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
6475-5601-D	COMMUNICATION NETWORK DIAGRAM
6475-5602-D	COMMUNICATION NETWORK DIAGRAM
6475-5701-D	HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM
6475-6101-D	CONTROL SWITCH TARGET DIAGRAM
6475-6201-D	NAMEPLATE ENGRAVING SCHEDULE, FABRICATION DIAGRAM
6475-6202-D	ANNUNCIATOR WINDOWS, FABRICATION DIAGRAM
6475-7101-D	INTERCONNECTION DIAGRAM
6475-7102-D	INTERCONNECTION DIAGRAM



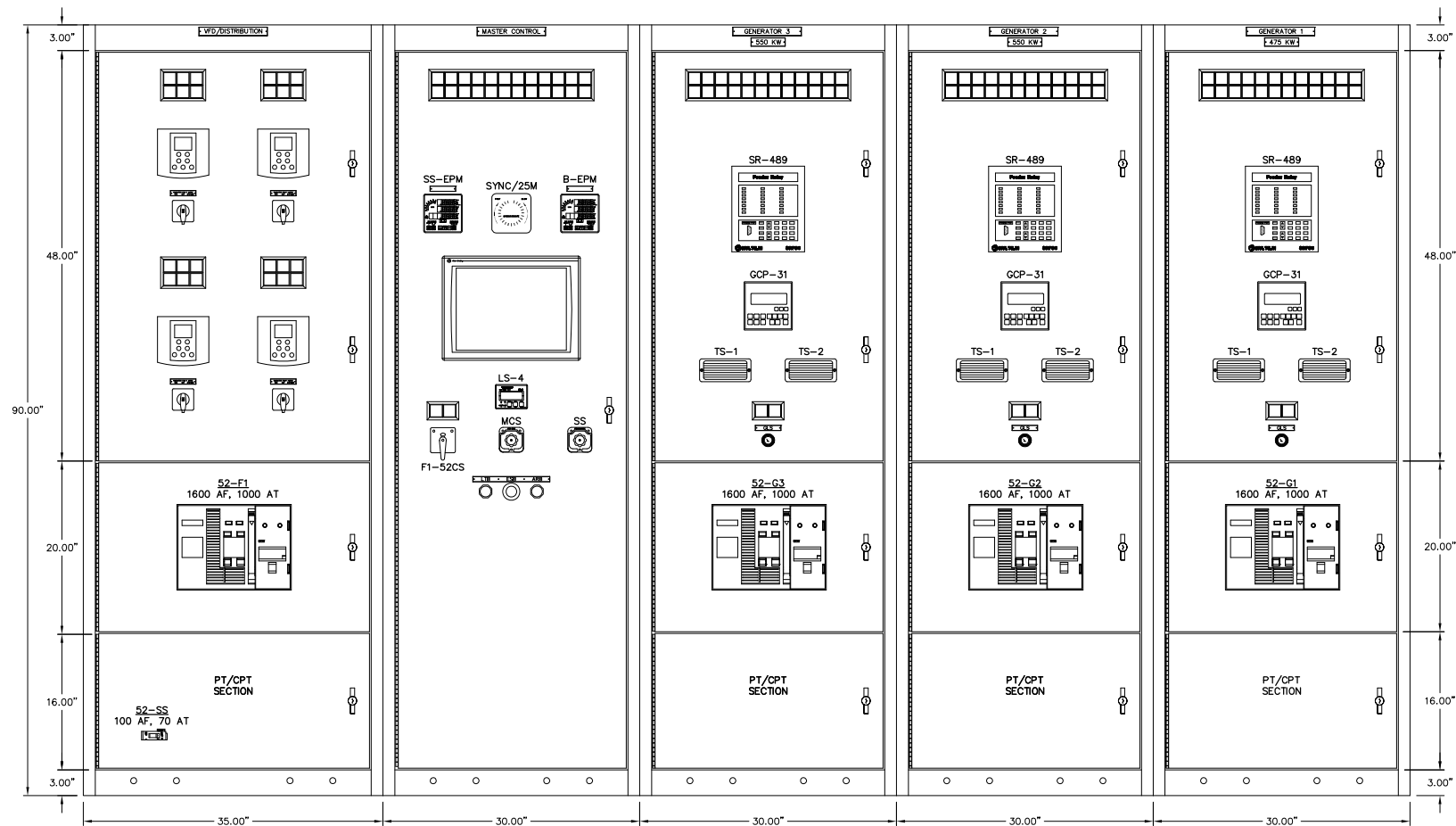
**NOTES:**

1. SCHEMATIC IS SHOWN AS FOLLOWS:
  - ALL AC AND DC POWER REMOVED
  - ALL RELAY CONTACTS DE-ENERGIZED
  - ALL CIRCUIT BREAKERS IN THE OPEN/RESET POSITION
  - ALL MODE SWITCHES IN THE "OFF" POSITION
  - ALL EMERGENCY STOP SWITCHES IN THE "NORMAL" POSITION
  - ALL PRESSURE SWITCHES SHOWN WITHOUT PRESSURE PRESENT
  - ALL LEVEL SWITCHES SHOWN WITHOUT FLUID PRESENT
  - ALL TEMPERATURE SWITCHES SHOWN AT AMBIENT
2. (⊙) INDICATES FIELD TERMINALS IN GENERATOR CONTROL SECTION.
3. (⊠) INDICATES TERMINALS AT ENGINE/GENERATOR.
4. (⊡) INDICATES INTERCONNECT TERMINALS IN MASTER SECTION.
5. (⊣) INDICATES FIELD TERMINALS IN MASTER SECTION.
6. (⊚) INDICATES INTERCONNECT TERMINALS IN GENERATOR CONTROL SECTION.
7. (⊛) INDICATES INTERCONNECT TERMINALS IN VFD/DIST SECTION.
8. (⊙) INDICATES FIELD TERMINALS IN VFD/DIST SECTION.
9. - - INDICATES FIELD WIRING BY OTHERS  
ALL CONTROL WIRING TO BE No. 14 AWG, 600 VOLT, TYPE SIS EXCEPT AS NOTED
10. SHIELDED WIRING TO BE No. 18 AWG, 300 VOLT, TWISTED LINE WITH 100% FOIL COVERAGE
11. ALL DIODES ARE 1N4007 EXCEPT AS NOTED

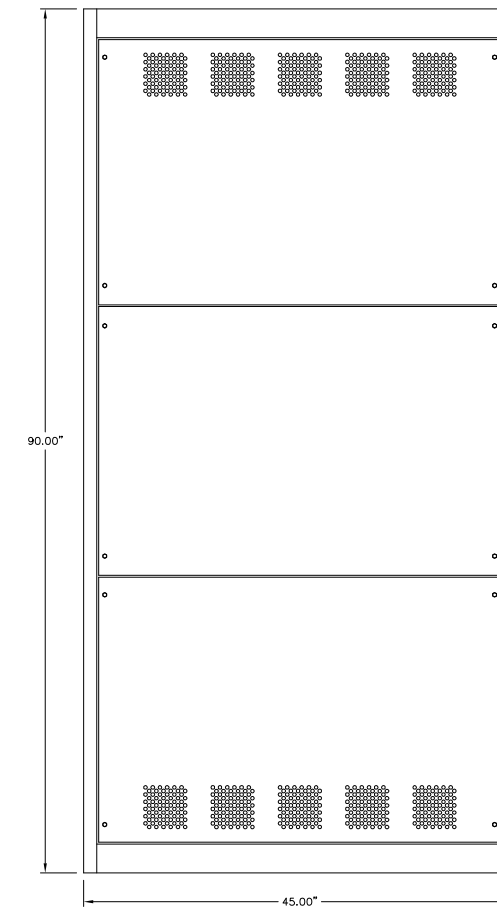
REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No.	
TITLE: SCHEMATIC LEGEND & NOTES			
SCALE: 1/10	DATE: 02-25-09	DWN. BY: GPN	
DWG. No: 6796-4101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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GENERATOR SWITCHGEAR – FRONT VIEW  
 277/480V, 3000A, COPPER BUS, 3 $\phi$ , 4W 65 KAIC



SIDE VIEW

NOTES:

1. EACH SECTION SHIPPED INDIVIDUALLY.

REV.	DATE	DESCRIPTION	BY
B	04-06-09	SHOP AS BUILT	GPN
A	01-15-09	REVISED PER GE REVIEW	GPN

AEA PURCHASE ORDER No. \_\_\_\_\_ CONTROLLED POWER JOB No. \_\_\_\_\_

TITLE: GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM

SCALE: 1/10      DATE: 10-31-08      DWN. BY: GPN

DWG. No: 6796-4101-D      SHEET: 1 OF 1      CKD. BY: JMD

JOB: ANGOON

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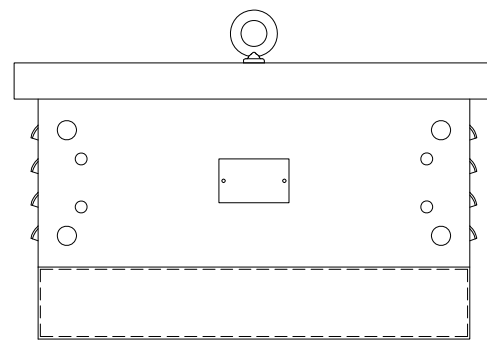
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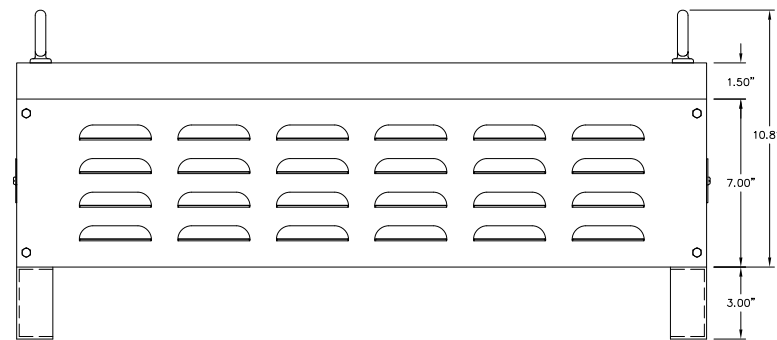
BILL OF MATERIAL			NAMEPLATE INFORMATION
STANDARD PORTS			VOLTS LINE TO NEUTRAL = 277
ITEM	DESCRIPTION	QTY	AMPS = 7
1	ENCLOSURE, DO, NEMA 3R, <10KW	1	OHMS $\pm$ 10% @ 25°C = 39.6
2	RESISTOR, WIREWOUND, 6.60 OHMS	6	TIME = CONTINUOUS
			TEMPERATURE RISE = 385°C
NOTES:			
WIRE TYPE = #10 AWG. 600V, 200°C			
JUMPER TYPE = 1 x 16 GA. 304 STAINLESS STEEL			
WIRE AND JUMPER TYPES ARE MINIMUM VALUES			
APPROXIMATE WEIGHT=75 lbs.			



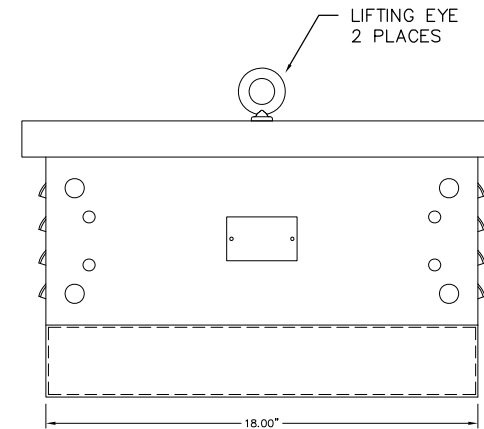
TOP VIEW



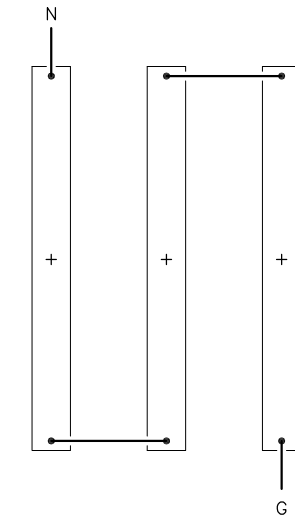
LEFT SIDE VIEW



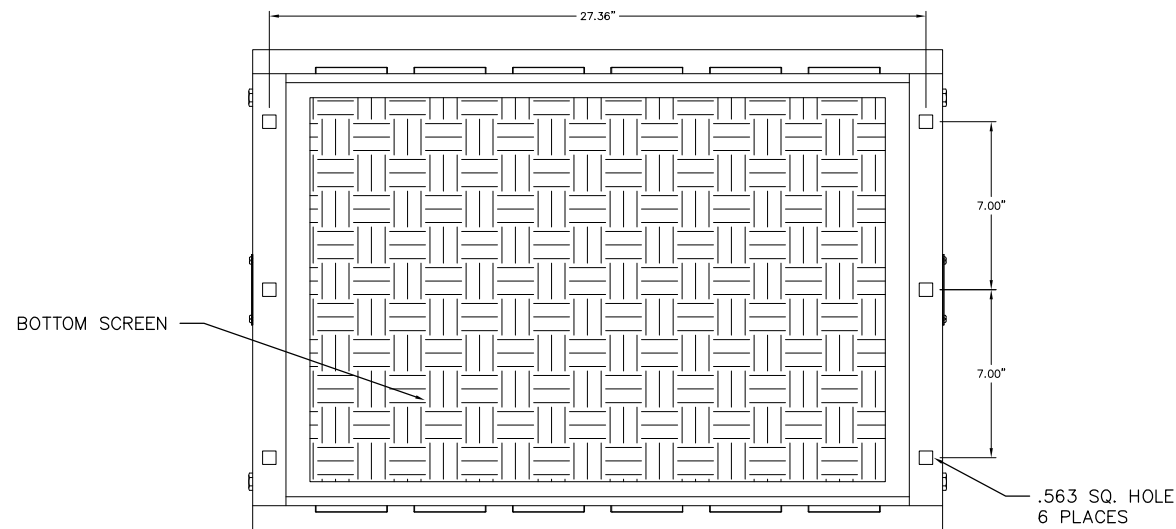
NEUTRAL GROUNDING RESISTOR FRONT VIEW



RIGHT SIDE VIEW



CONNECTION DIAGRAM

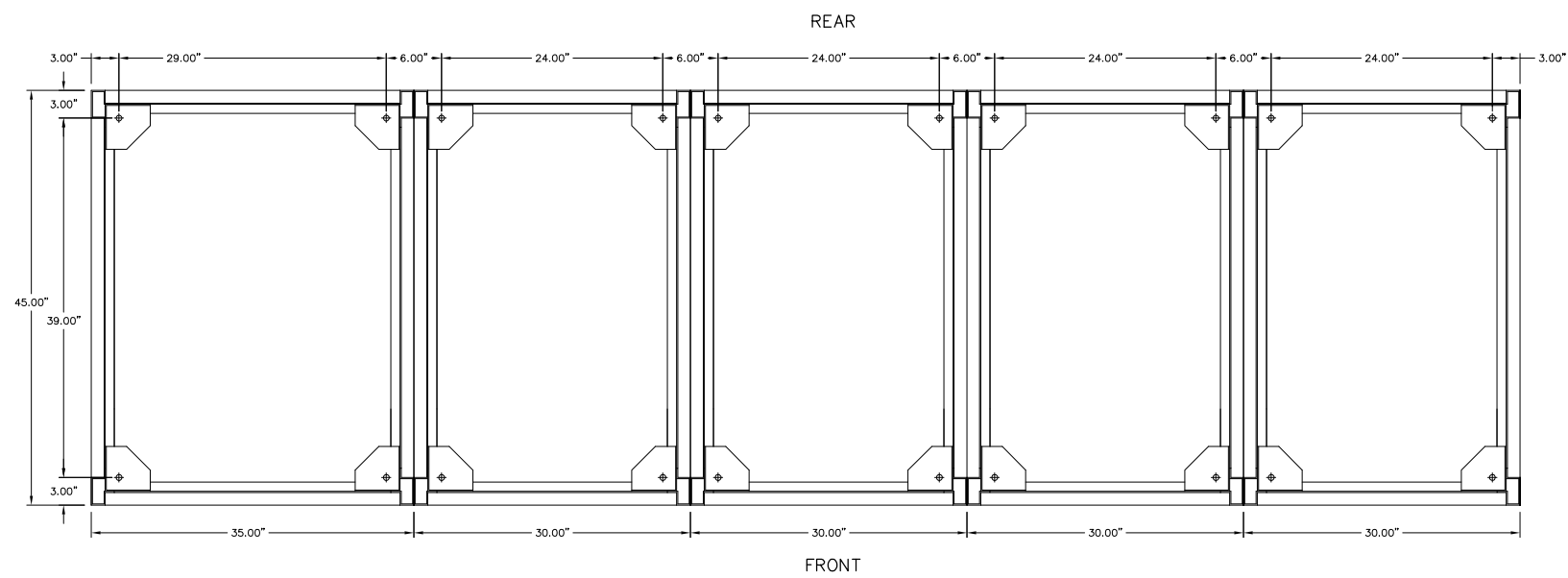


BOTTOM VIEW

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No.		CONTROLLED POWER JOB No.	
TITLE: NEUTRAL GROUNDING RESISTOR ENCLOSURE, OUTLINE DIAGRAM			
SCALE: 1/4	DATE: 03-27-09	DWN. BY: GPN	
DWG. No: 6796-4102-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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GENERATOR SWITCHGEAR - PLAN VIEW

- NOTES:**  
 1. EACH SECTION SHIPPED INDIVIDUALLY.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REC-09-021      CONTROLLED POWER JOB No. 6796

TITLE: GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM

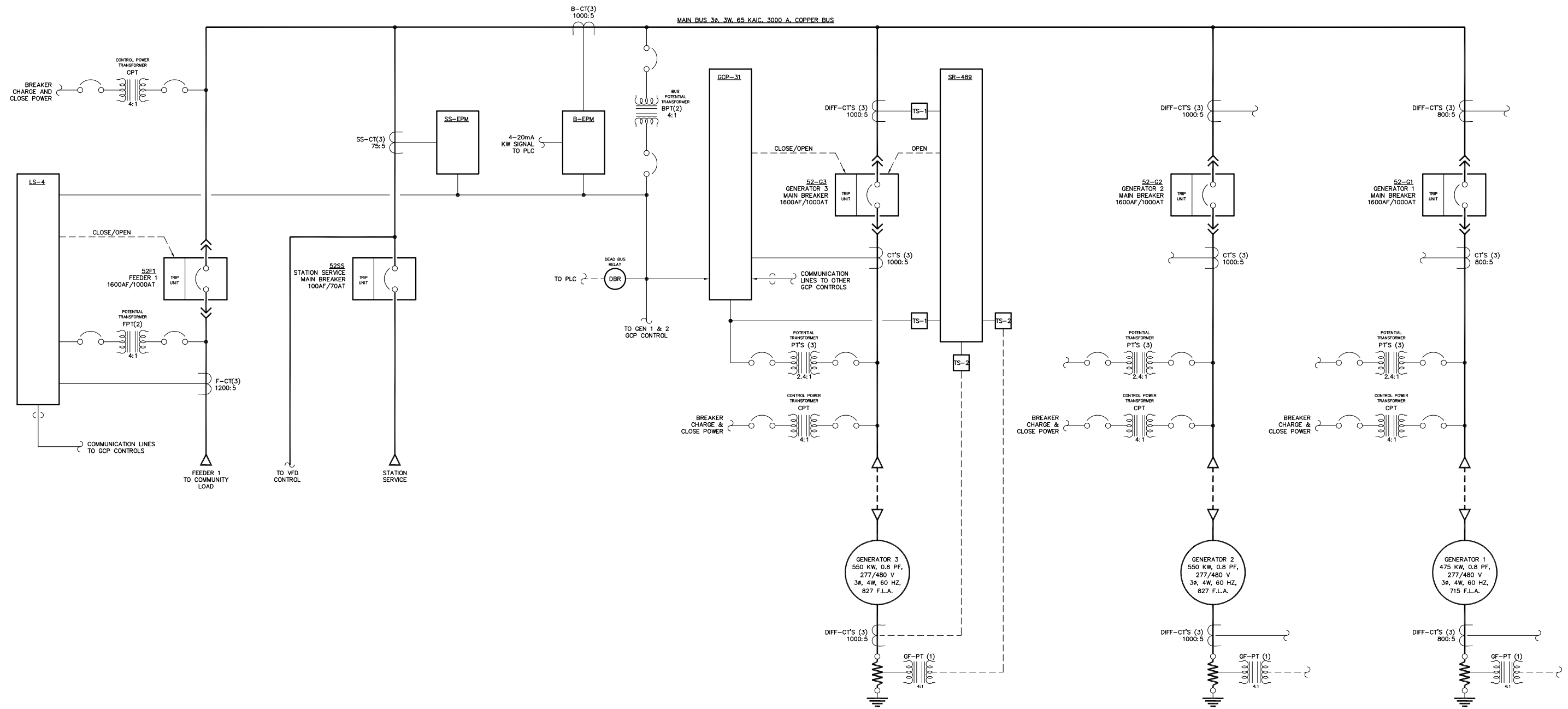
SCALE: 1/10      DATE: 02-19-09      DWN. BY: GPN

DWG. No: 6796-4201-D      SHEET: 1 OF 1      CKD. BY: JMD

JOB: ANGOON

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 813 W. NORTHERN LIGHTS BLVD.  
 ANCHORAGE, ALASKA 99503  
[HTTP://WWW.AIDEA.ORG](http://www.aidea.org)



**NOTES:**  
 1. GENERATORS 1 & 2 SIMILAR TO GENERATOR 3.

**NOTE:**  
 1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

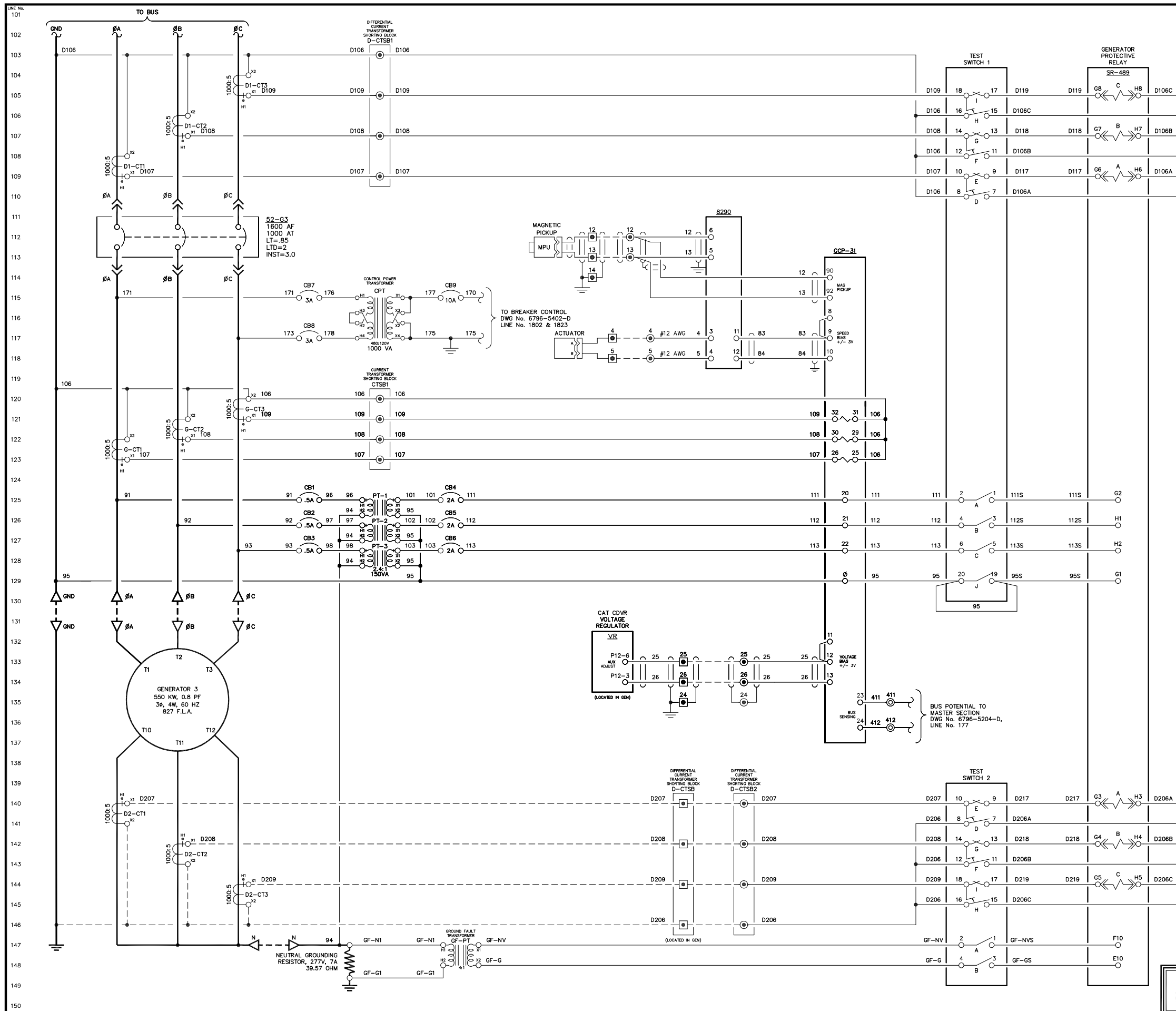
REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEV PURCHASE ORDER No. REC-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: GENERATOR SWITCHGEAR SINGLE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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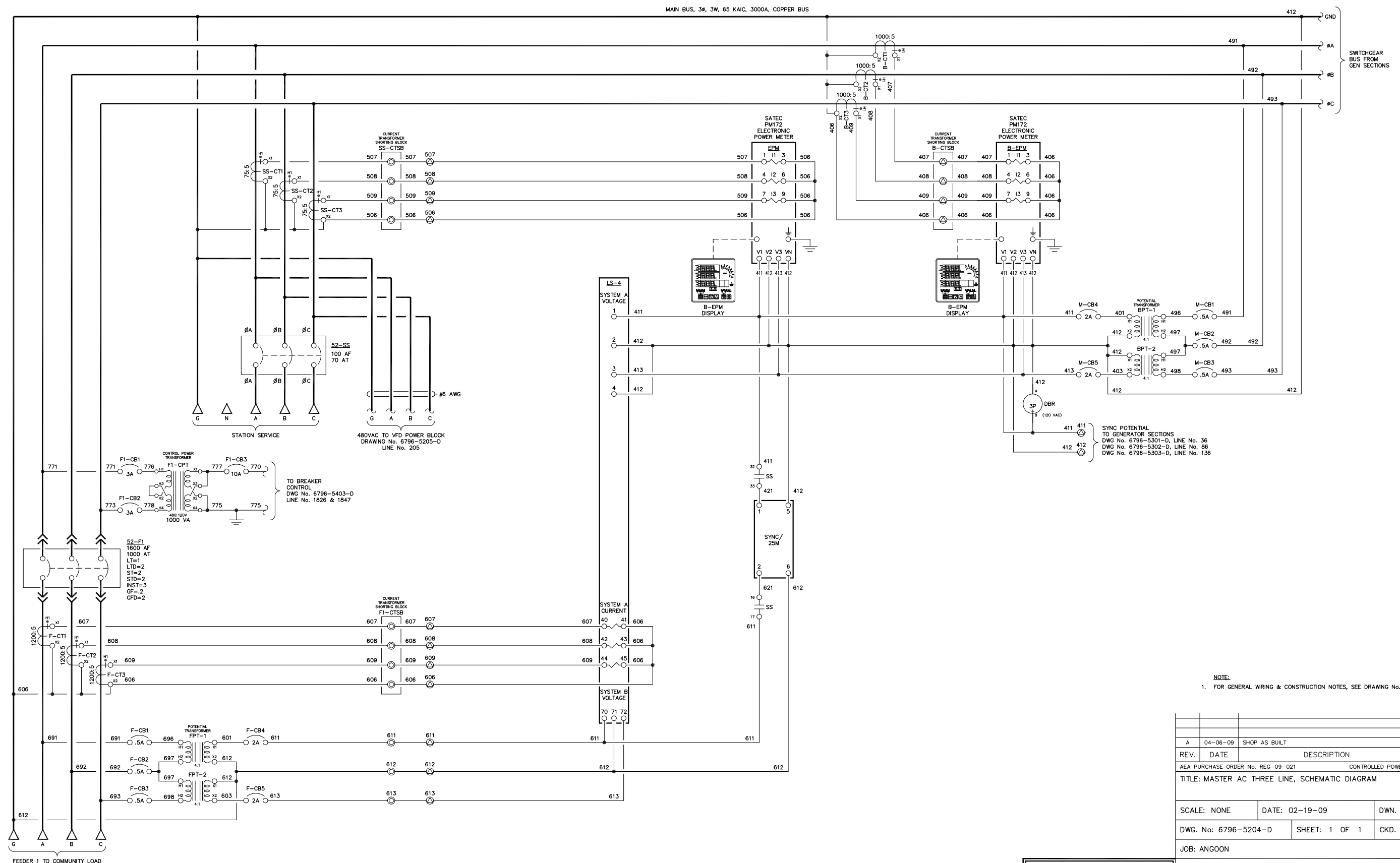
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
		AEA PURCHASE ORDER No. REG-09-021	CONTROLLED POWER JOB No. 6796
TITLE: GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-5203-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: ANGOON			

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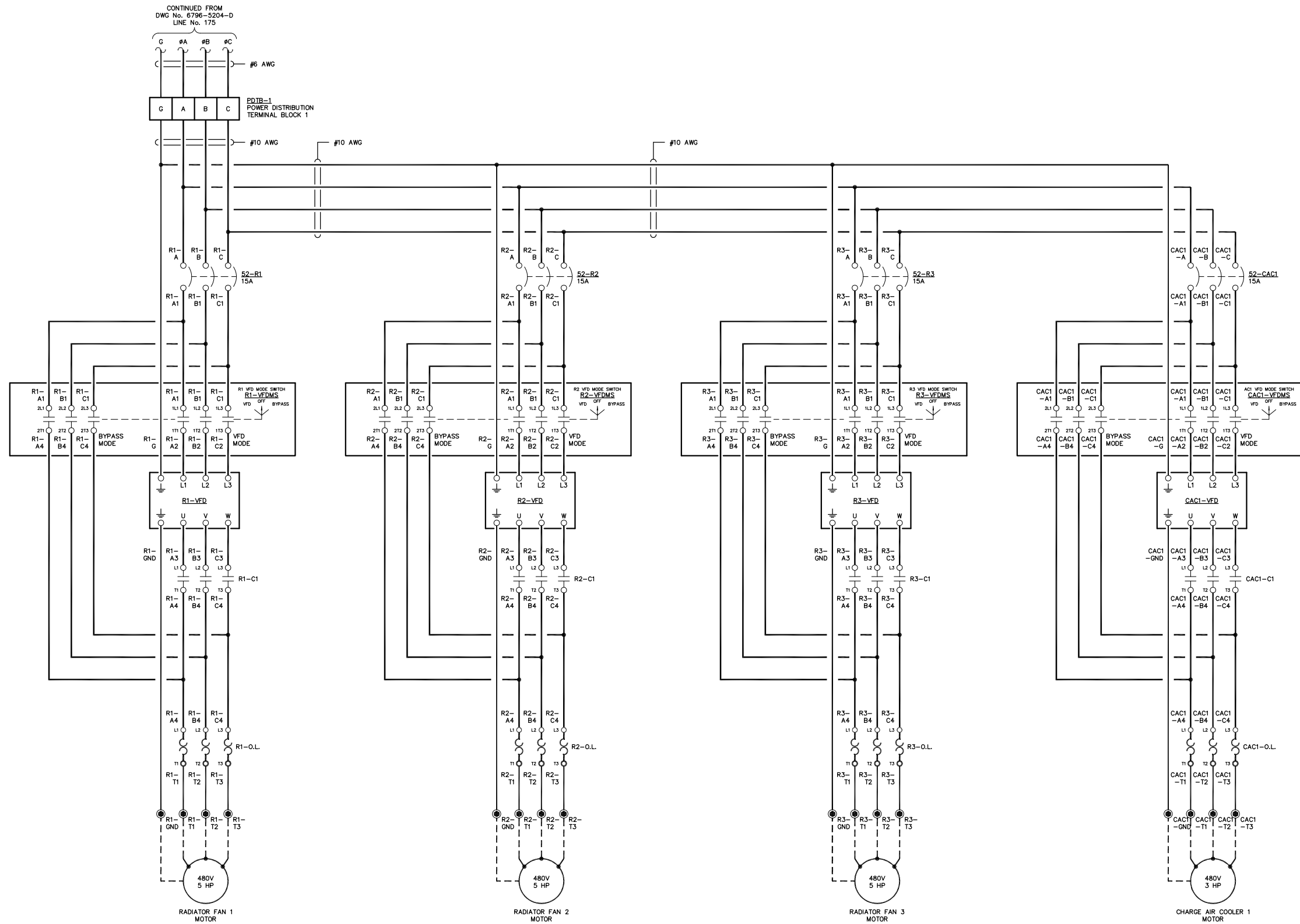
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REC-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: MASTER AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5204-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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LINE No.  
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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796

TITLE: VFD THREE LINE, SCHEMATIC DIAGRAM

SCALE: NONE DATE: 02-19-09 DWN. BY: GPN

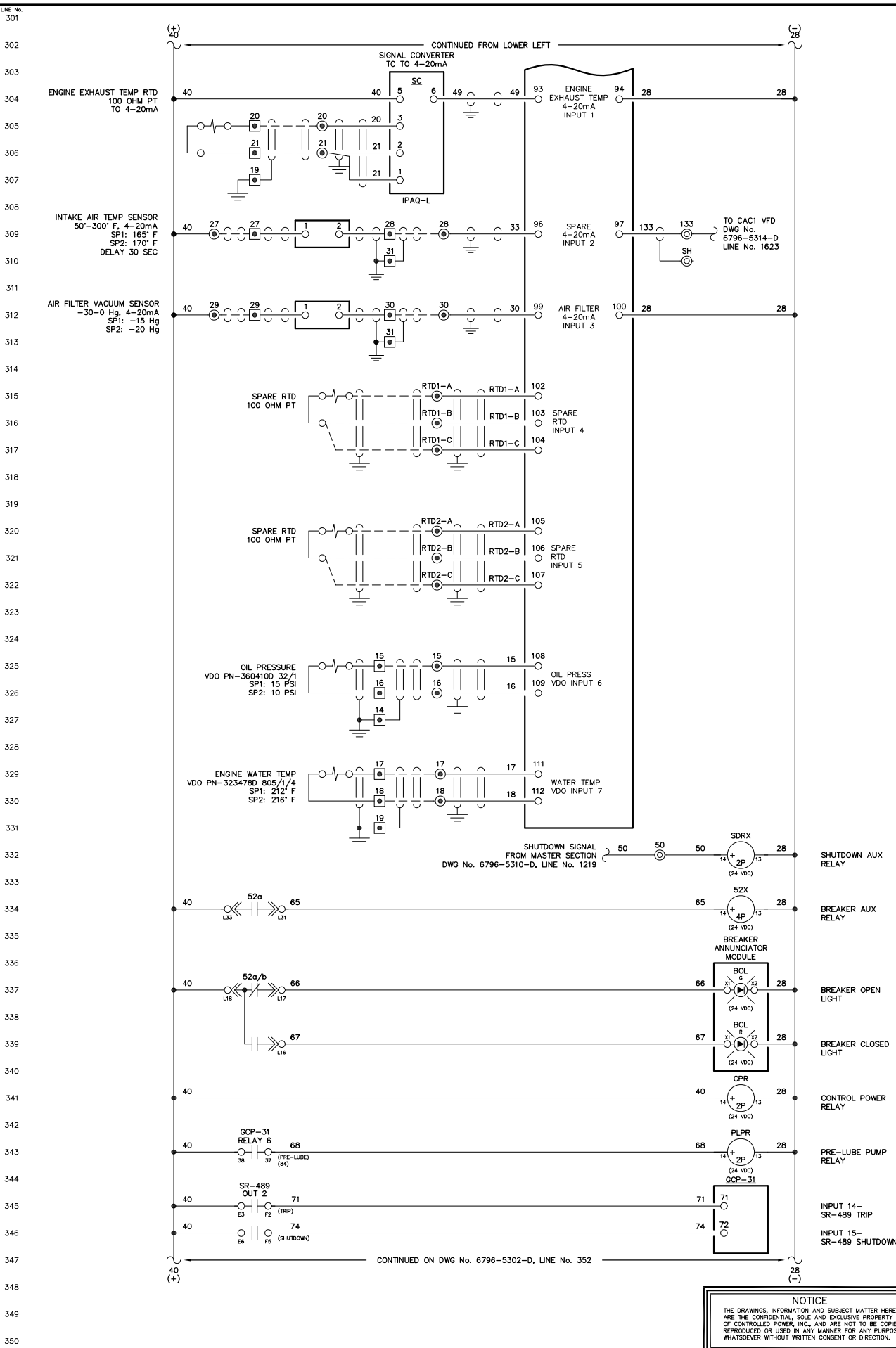
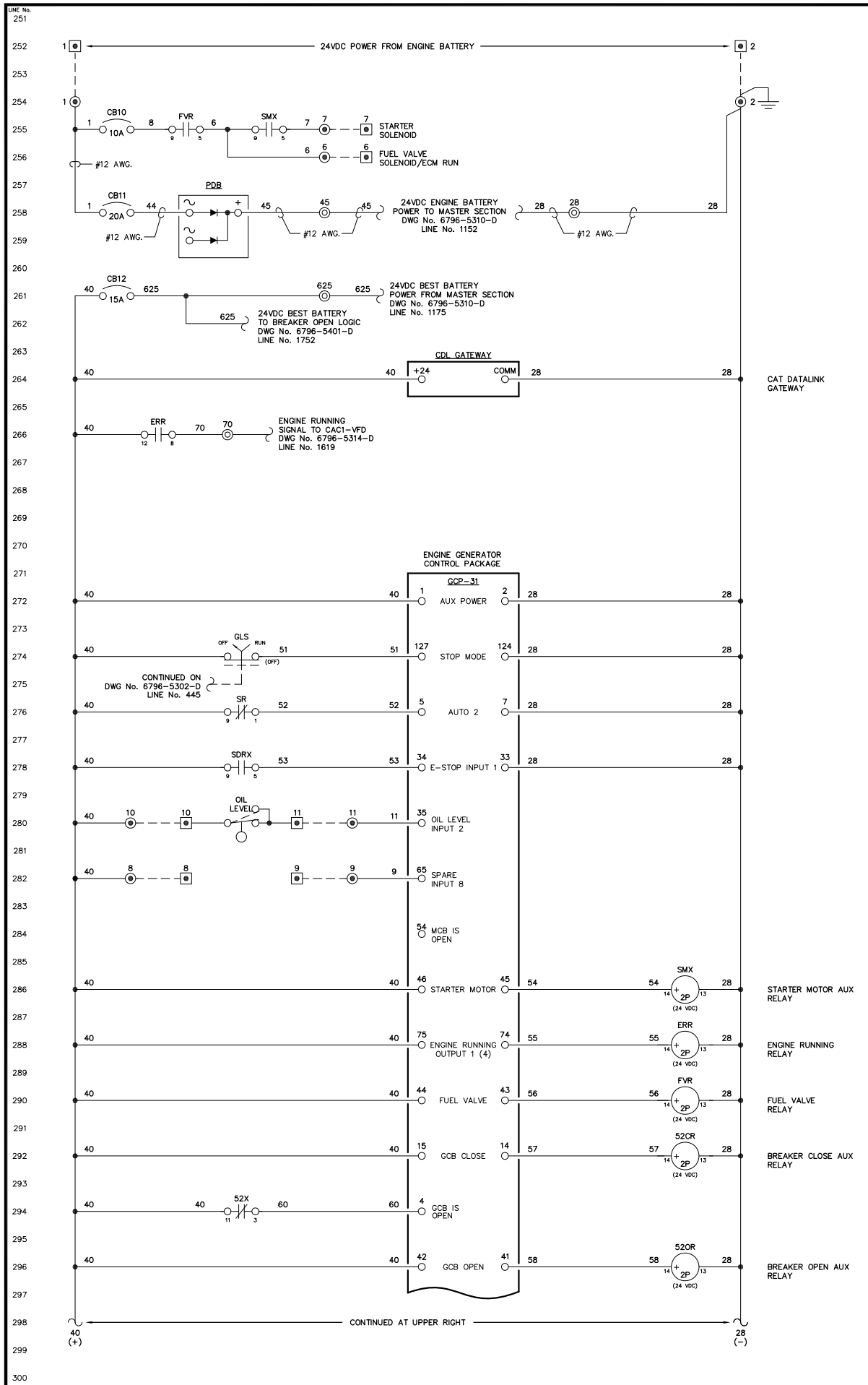
DWG. No: 6796-5205-D SHEET: 1 OF 1 CKD. BY: JMD

JOB: ANGOON

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PLPR PRE-LUBE PUMP RUN COMMAND

TO CAC1 VFD

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

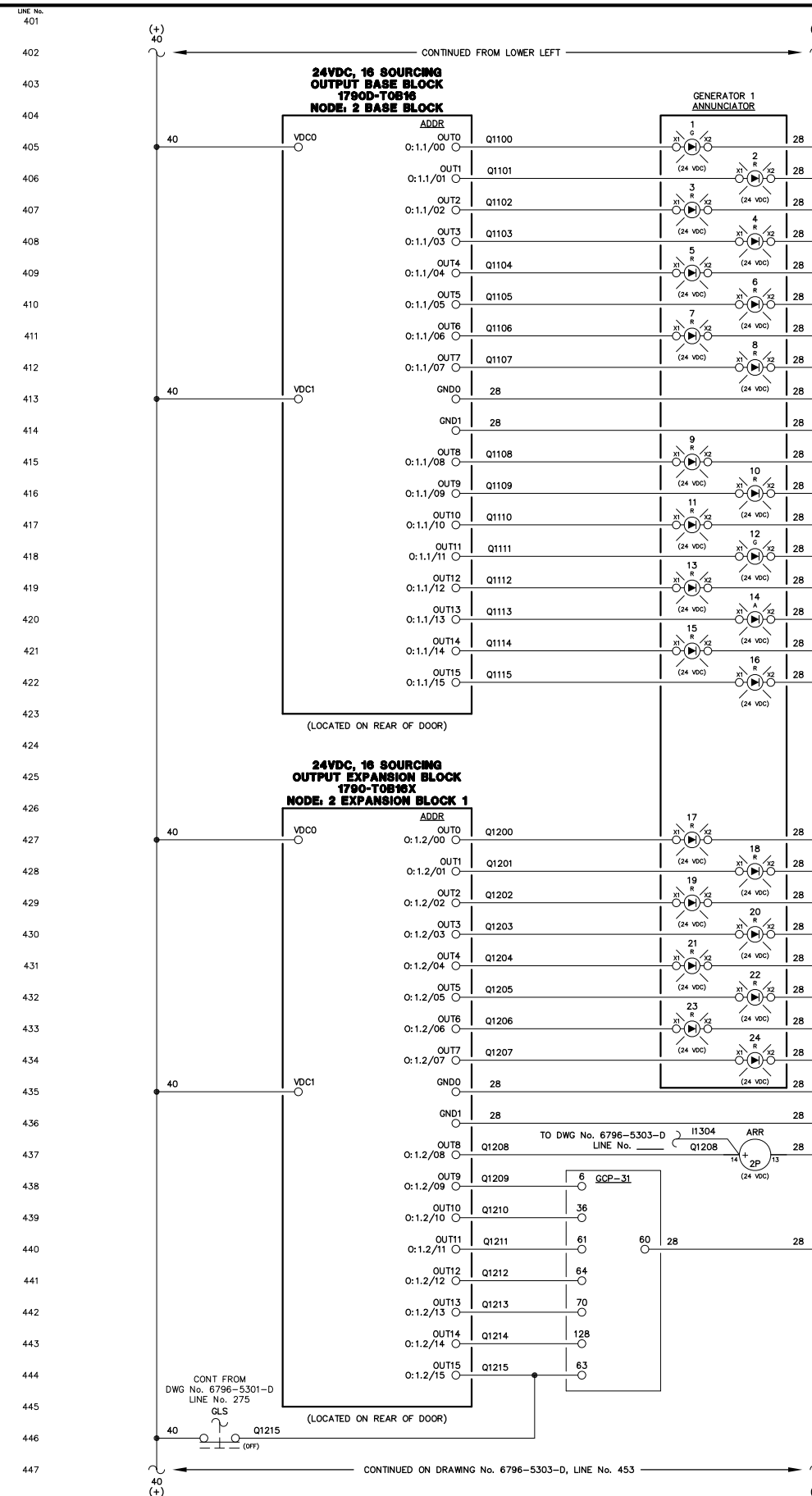
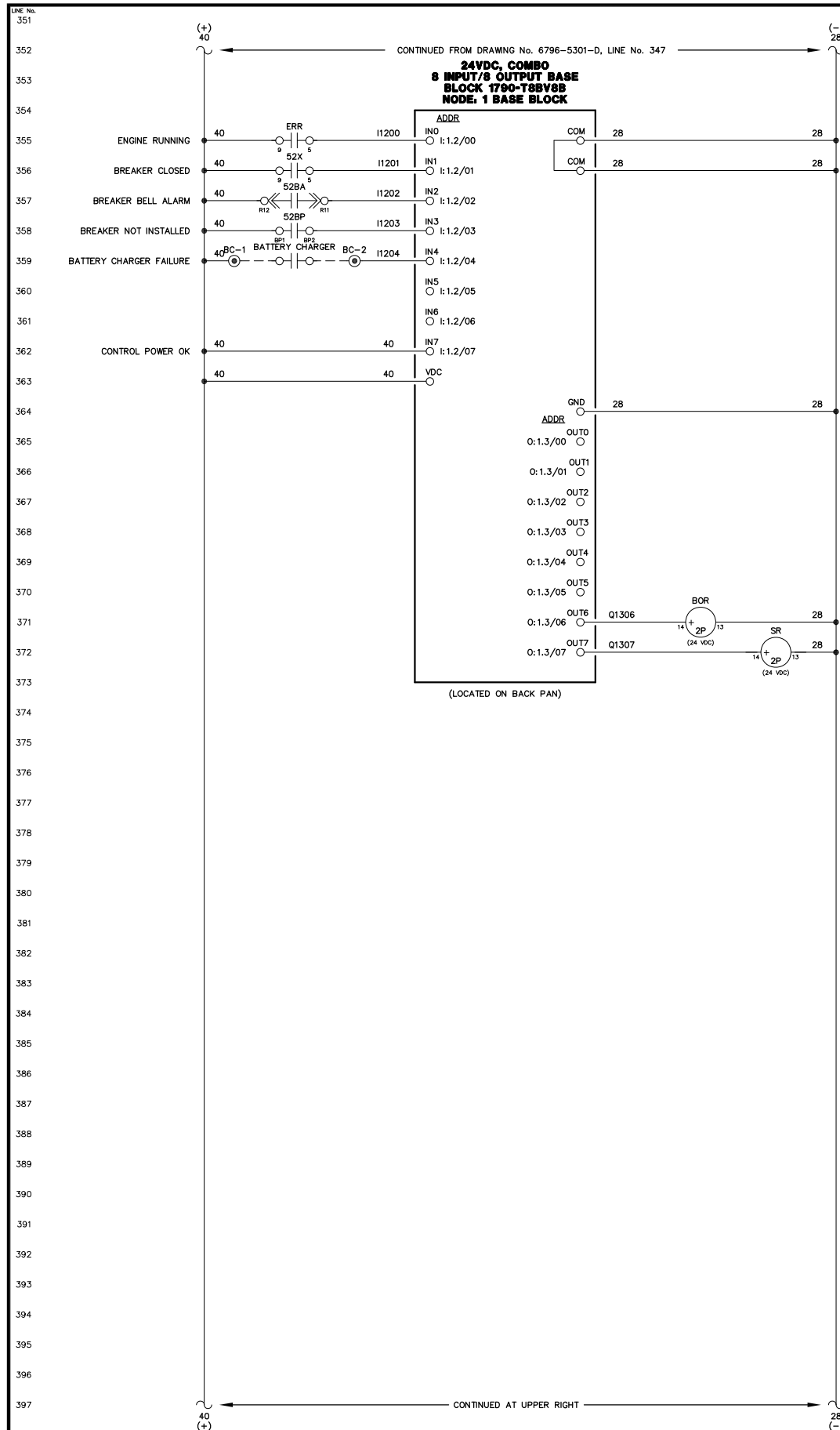
REV.	04-06-09	SHOP AS BUILT	GPN
DATE	DESCRIPTION		BY
AEA PURCHASE ORDER No. REC-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5301-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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Plot date: 2009/12/15 - 11:38



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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796

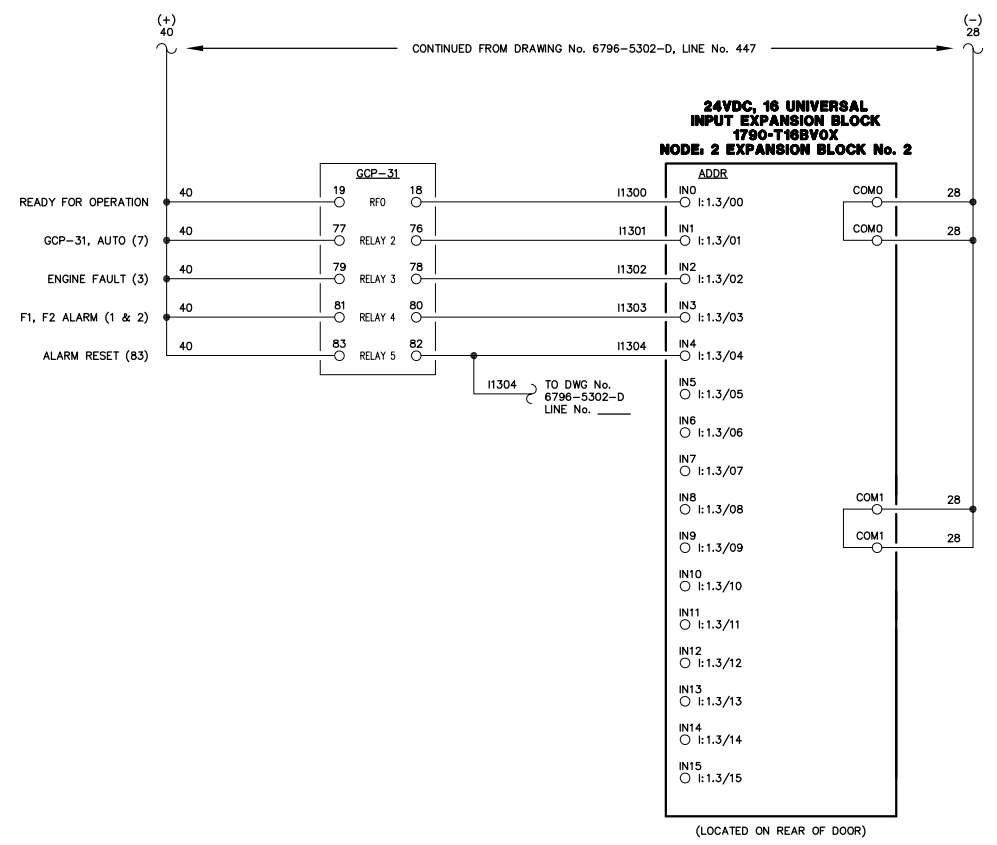
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-5302-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: ANGOON		



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**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REG-09-021 CONTROLLED POWER JOB No. 6796

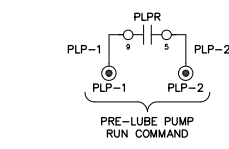
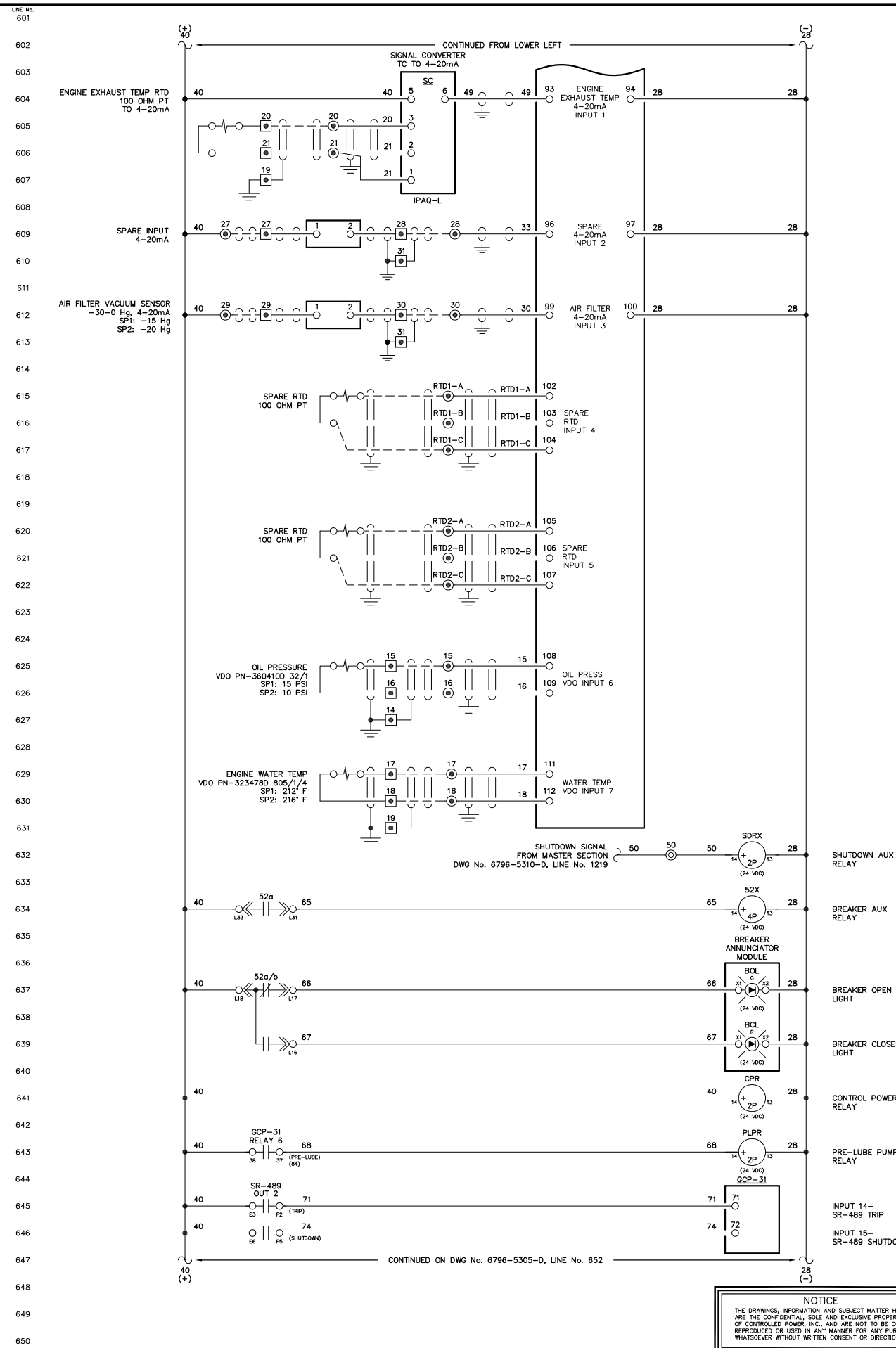
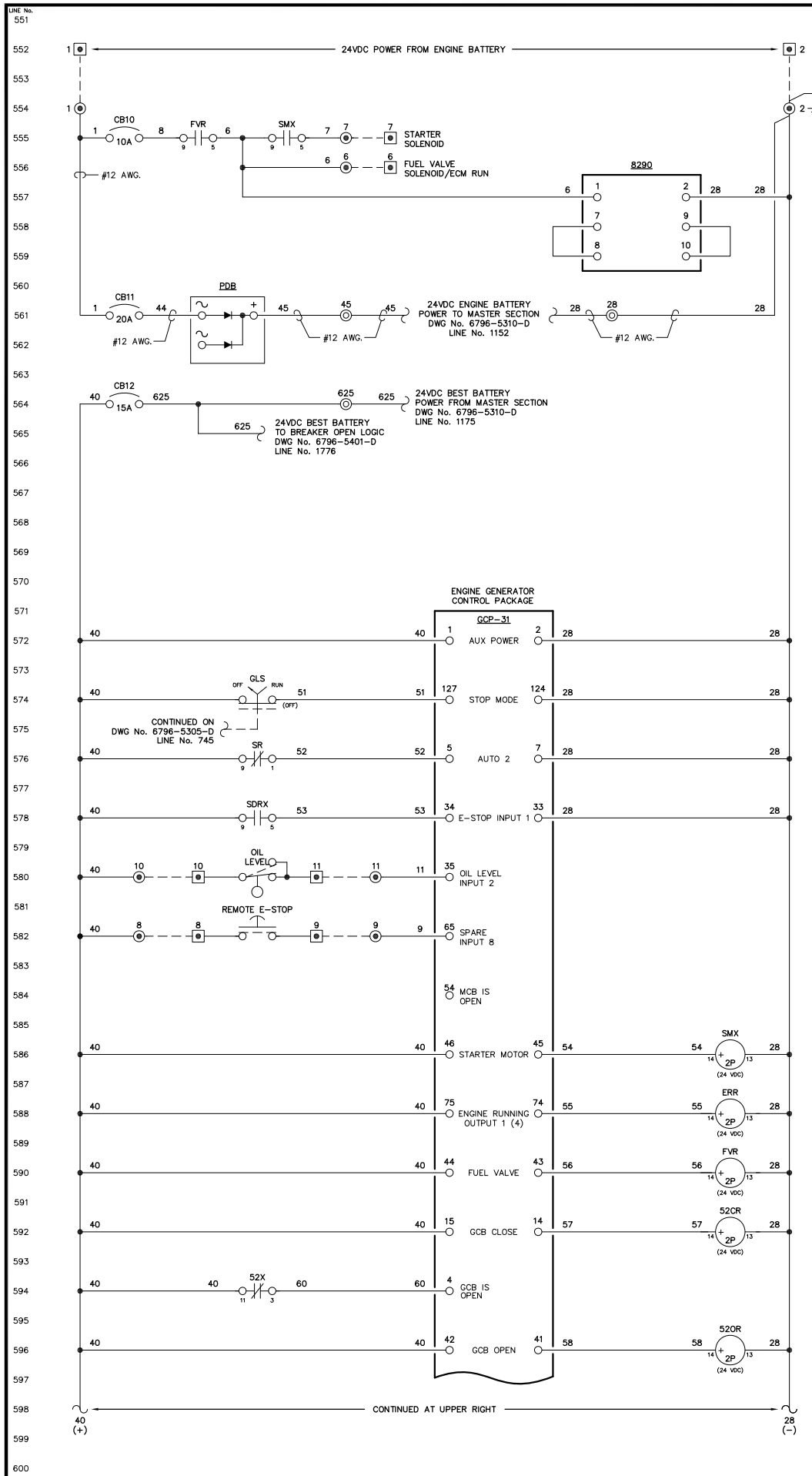
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-5303-D	SHEET: 1 OF 1	CKD. BY: JMD

JOB: ANGOON

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

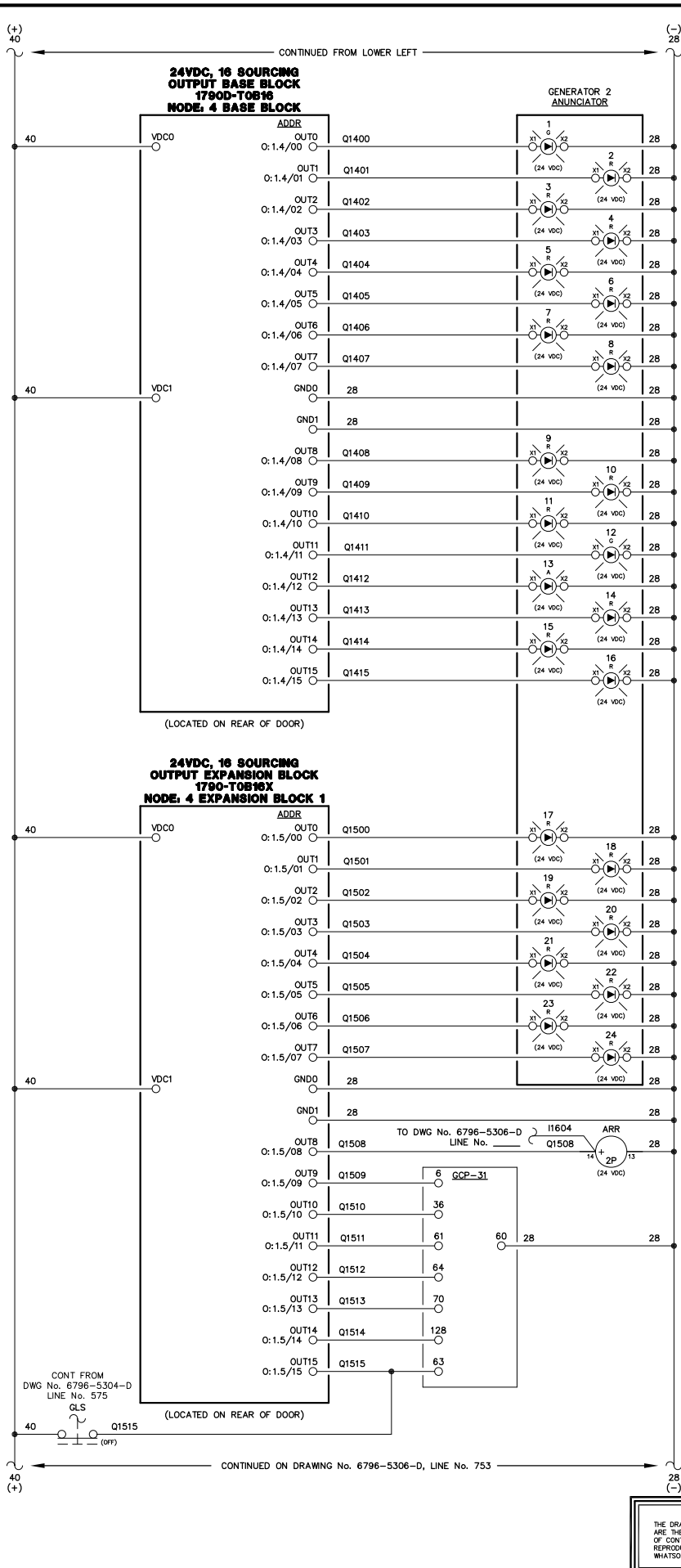
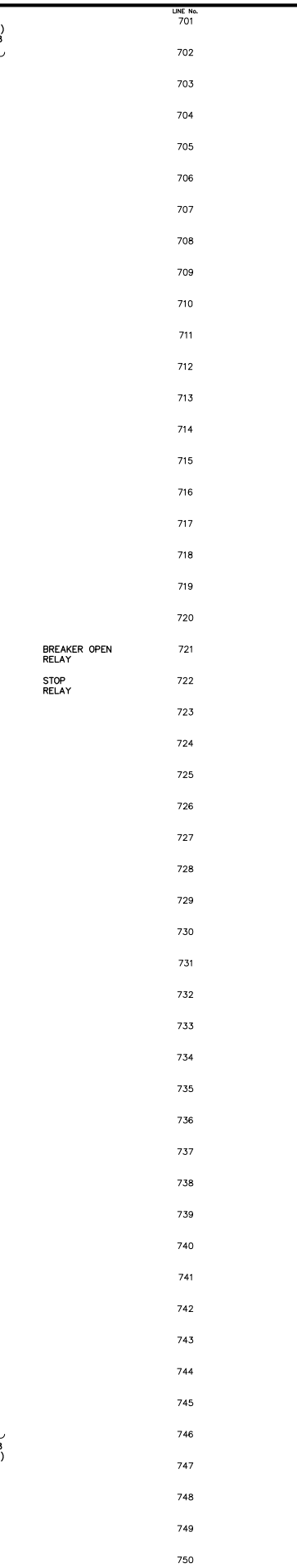
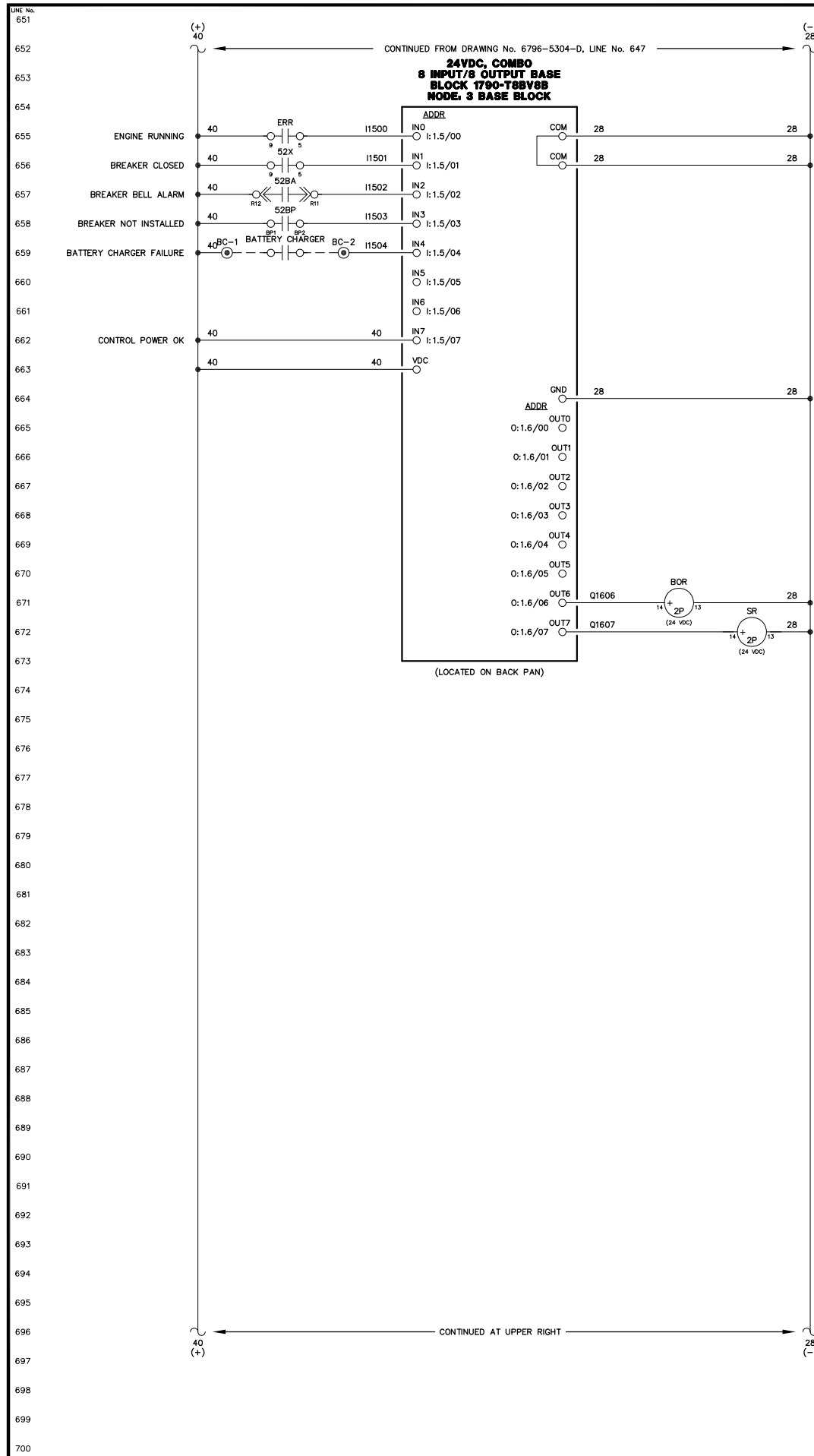
AEA PURCHASE ORDER No. REC-08-026 CONTROLLED POWER JOB No. 6796

TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 01-23-08	DWN. BY: GPN
DWG. No: 6796-5304-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: ANGOON		

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

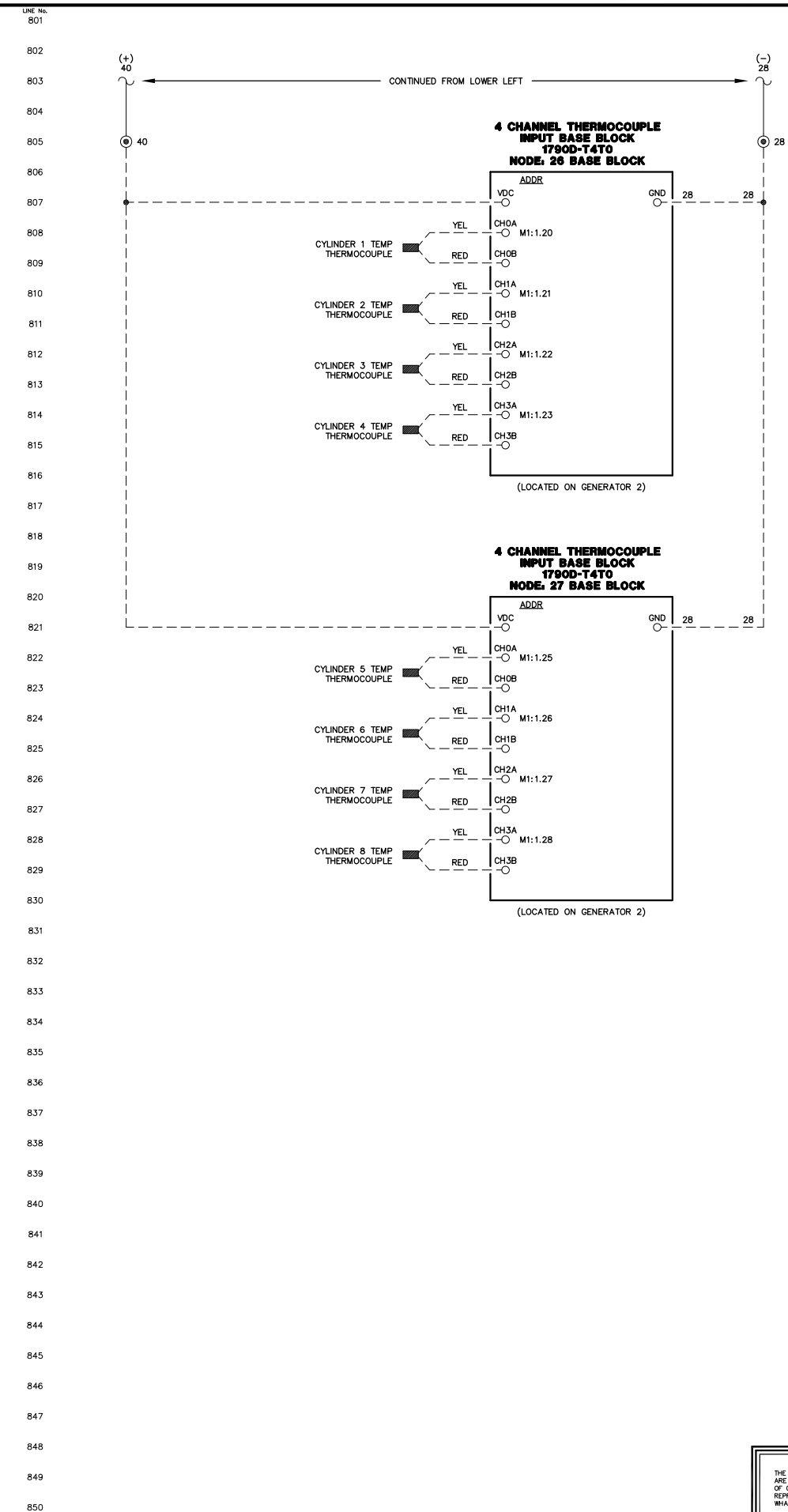
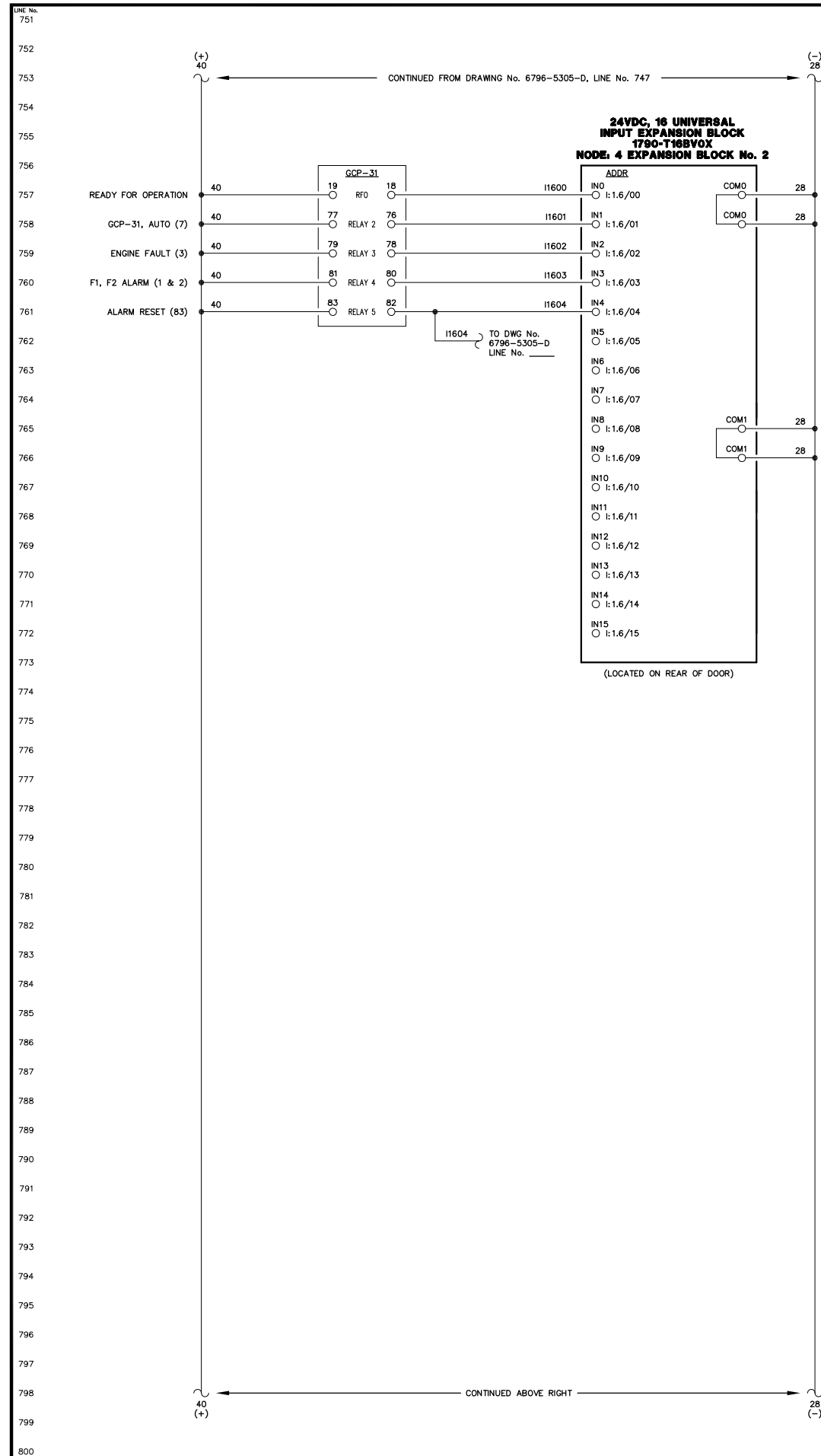
AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796

TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-5305-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: ANGOON		

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Plot date: 2009/12/15 - 11:37



NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REG-09-021 CONTROLLED POWER JOB No. 6796

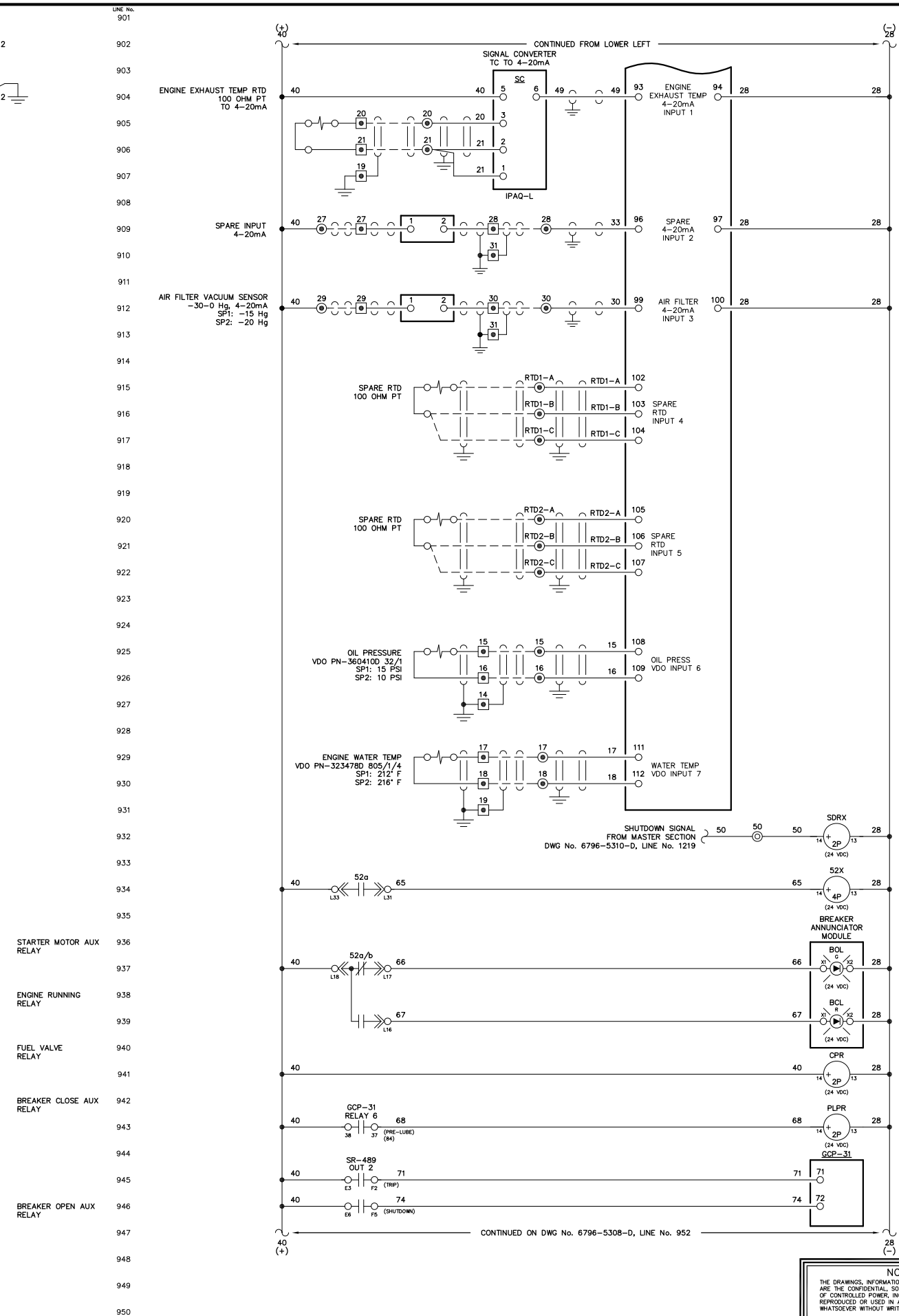
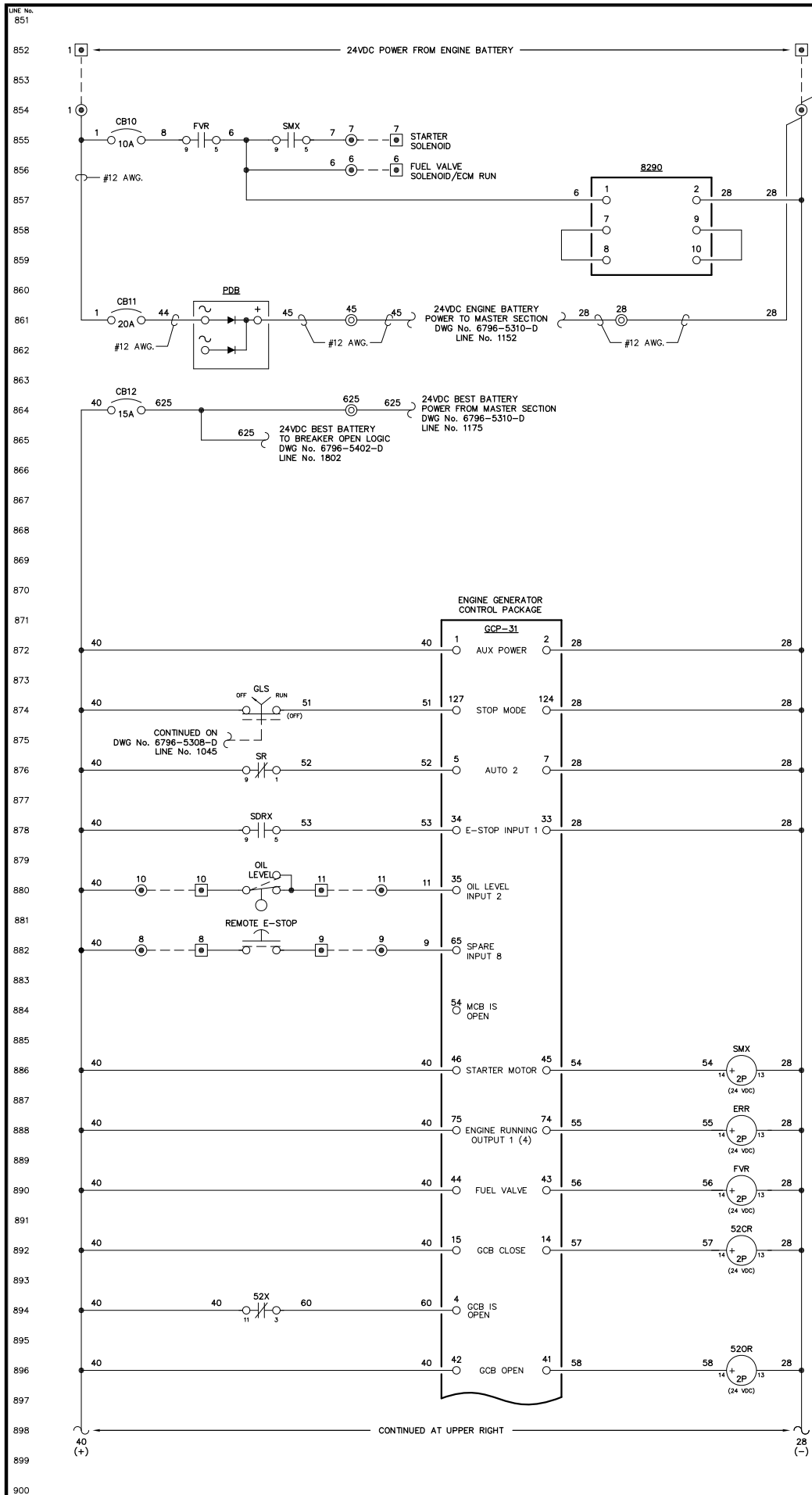
TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-5306-D	SHEET: 1 OF 1	CKD. BY: JMD

JOB: ANGOON

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PLPR

PLP-1

PLP-2

PRE-LUBE PUMP RUN COMMAND

NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796

TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-5307-D	SHEET: 1 OF 1	CKD. BY: JMD

JOB: ANGOON

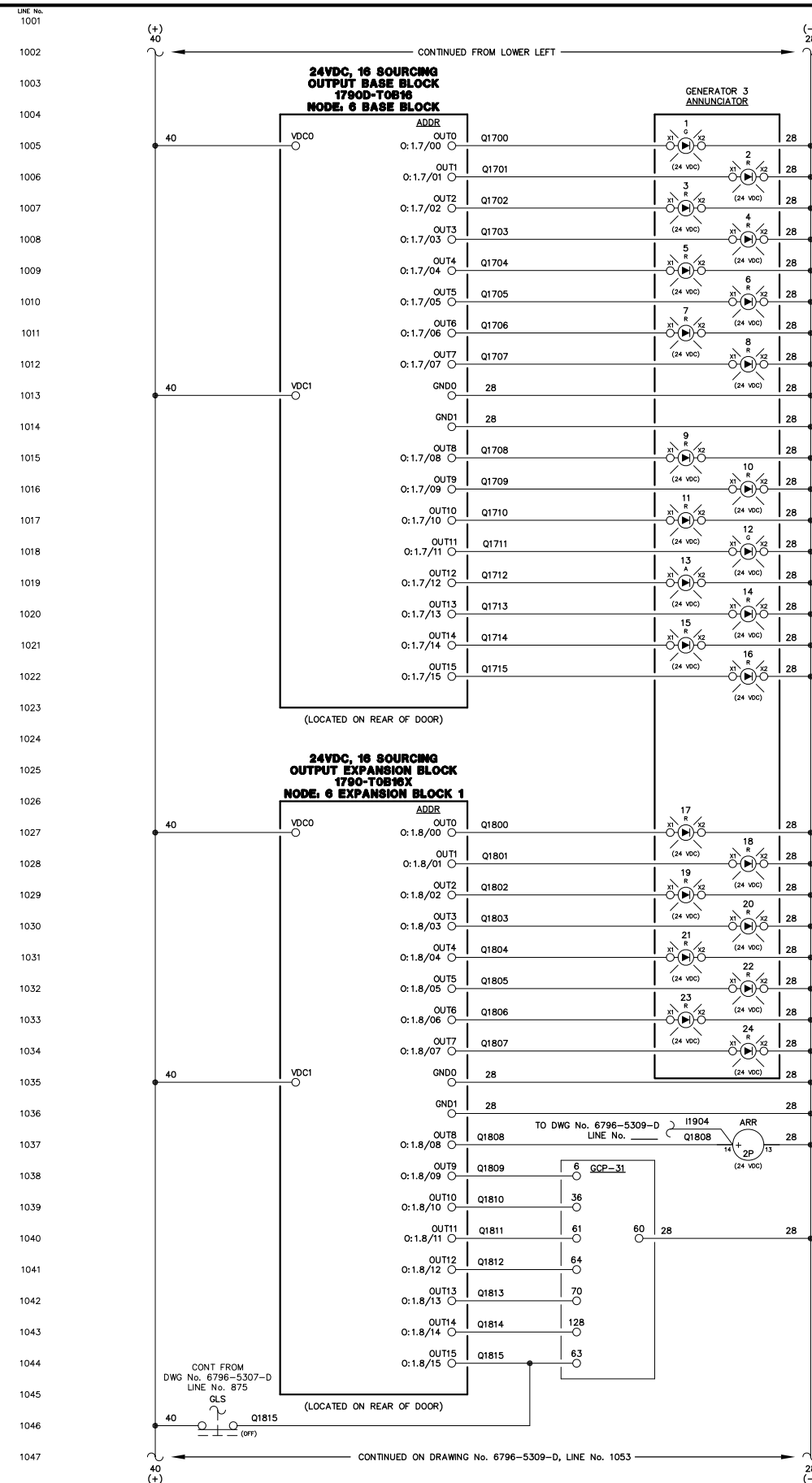
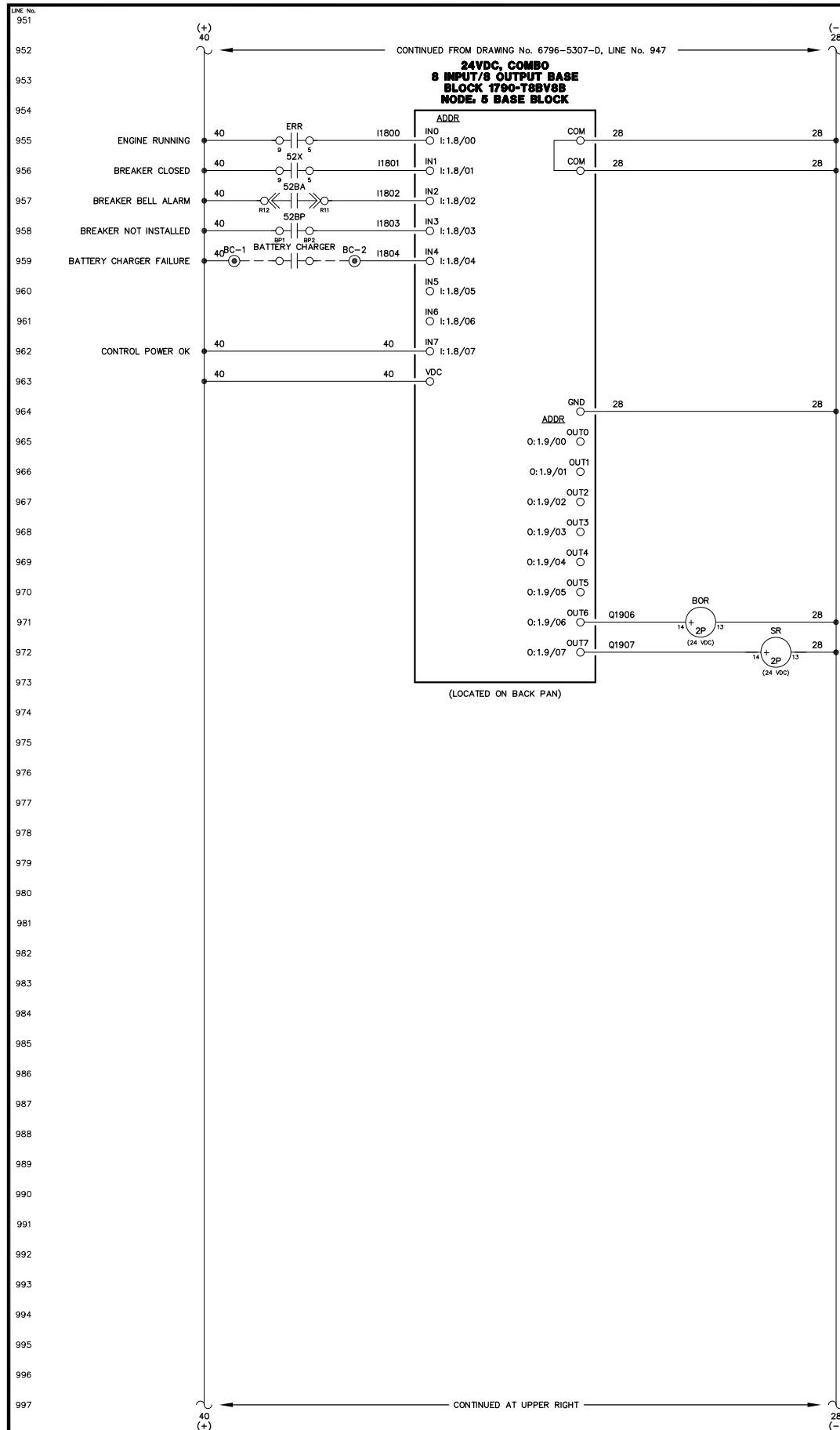
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Plot date: 2009/12/15 - 11:36



- ENGINE RUNNING LIGHT
- ALARM/LOCKOUT LIGHT
- LOW OIL PRESSURE LIGHT
- OIL LEVEL LIGHT
- HIGH COOLANT TEMPERATURE LIGHT
- OVERSPEED LIGHT
- OVERCRANK LIGHT
- RUNNING TIMEOUT LIGHT
- BATTERY CHARGER FAIL LIGHT
- AIR FILTER PLUGGED LIGHT
- HIGH EXHAUST TEMPERATURE LIGHT
- SPARE LIGHT
- LEAD GENERATOR LIGHT
- NORMAL STOP LIGHT
- NOT IN AUTO LIGHT
- SPARE LIGHT
- FAIL TO SYNC LIGHT
- OVERCURRENT LIGHT
- UNDER VOLTAGE LIGHT
- OVER VOLTAGE LIGHT
- UNDER FREQUENCY LIGHT
- OVER FREQUENCY LIGHT
- REVERSE POWER LIGHT
- SPARE LIGHT
- SR-489 ALARM RESET RELAY
- MULTIFUNCTION (REMOTE ACK)
- INPUT 3 - COOLDOWN/LOCKOUT
- INPUT 4 - MASTER SHUTDOWN
- INPUT 7 - BREAKER LOGIC
- INPUT 13 - IDLE MODE
- AUTOMATIC MODE
- MODE SELECTION LOCK

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796

TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE DATE: 02-19-09 DWN. BY: GPN

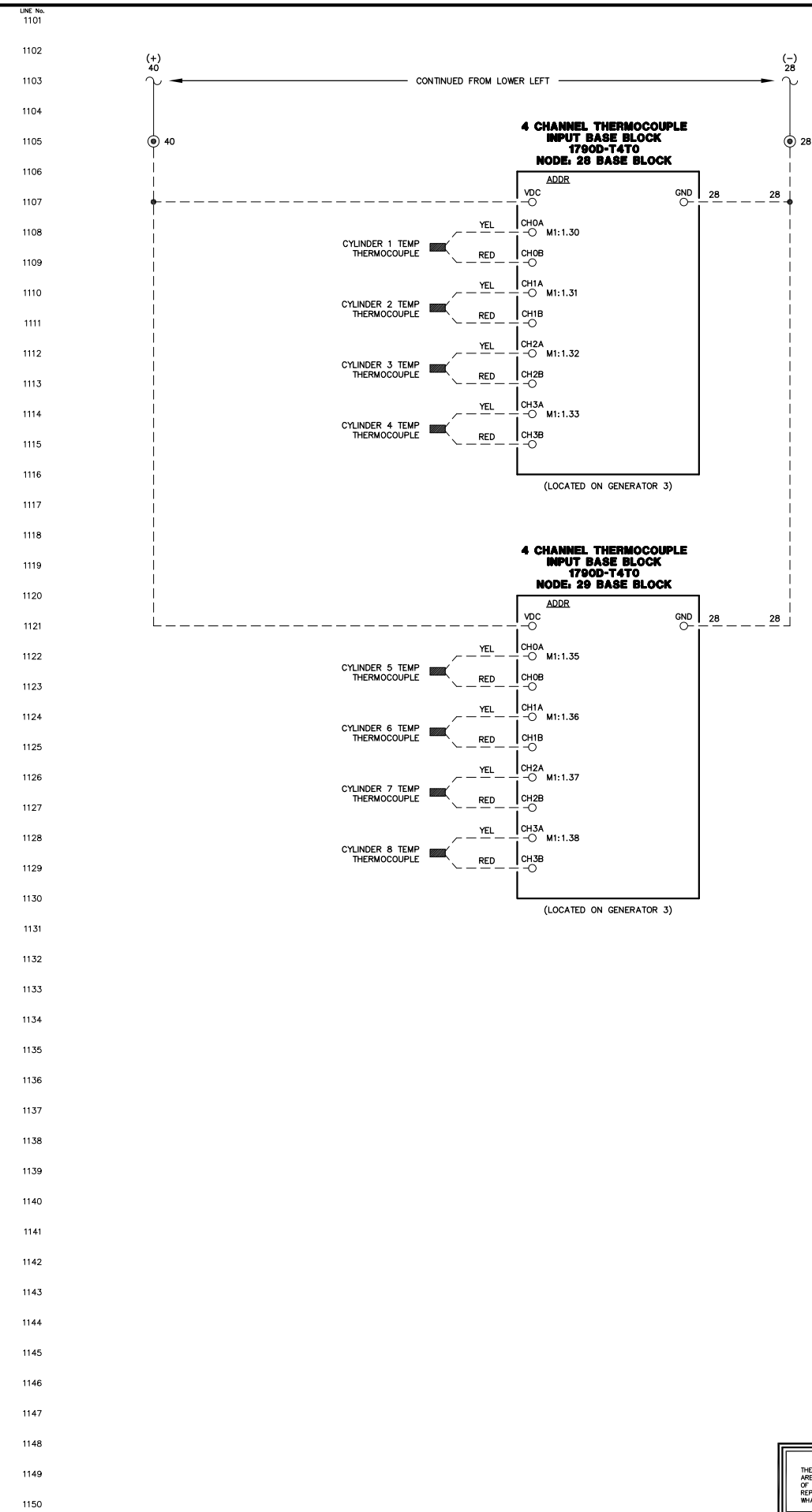
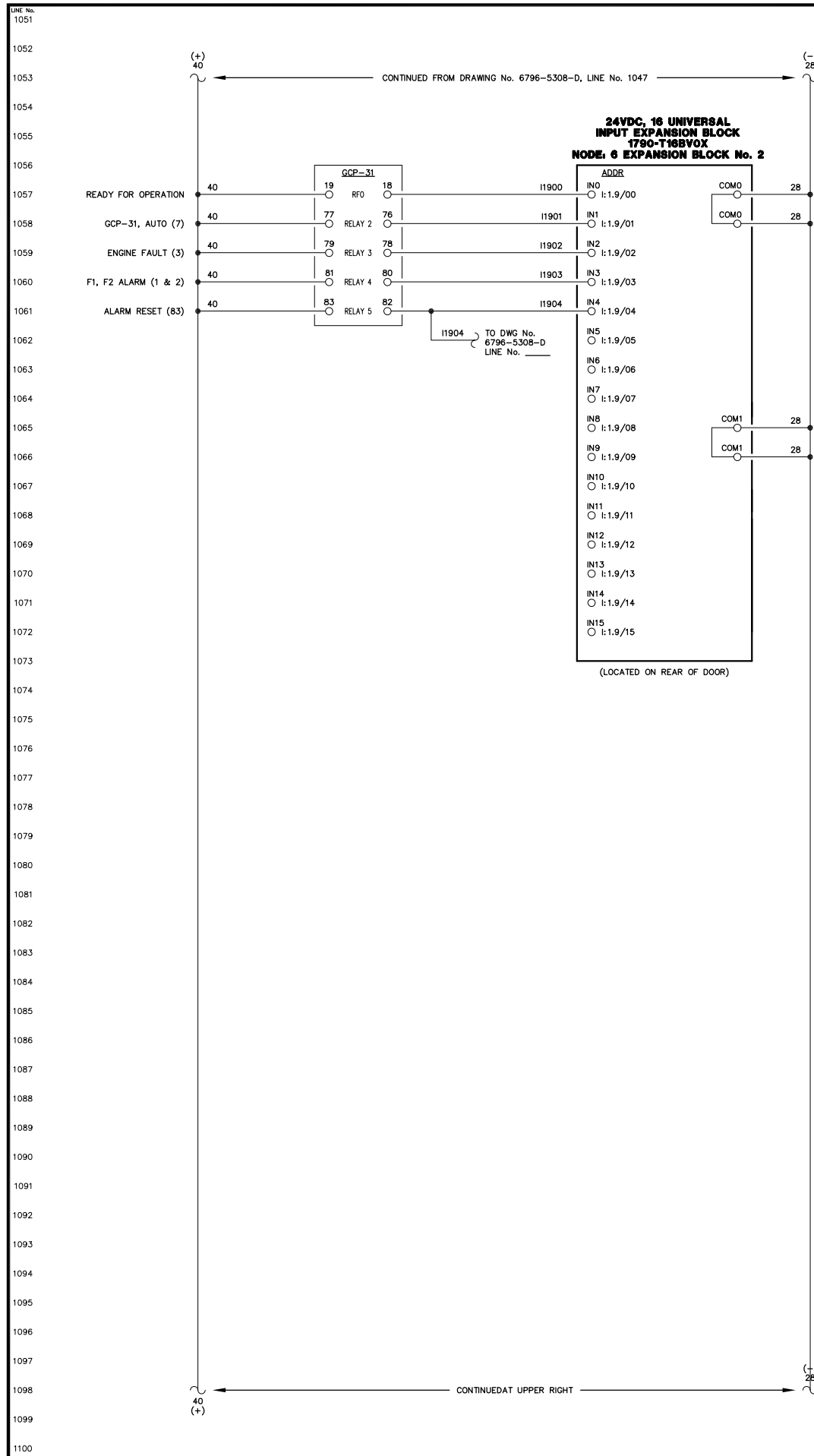
DWG. No: 6796-5308-D SHEET: 1 OF 1 CKD. BY: JMD

JOB: ANGOON

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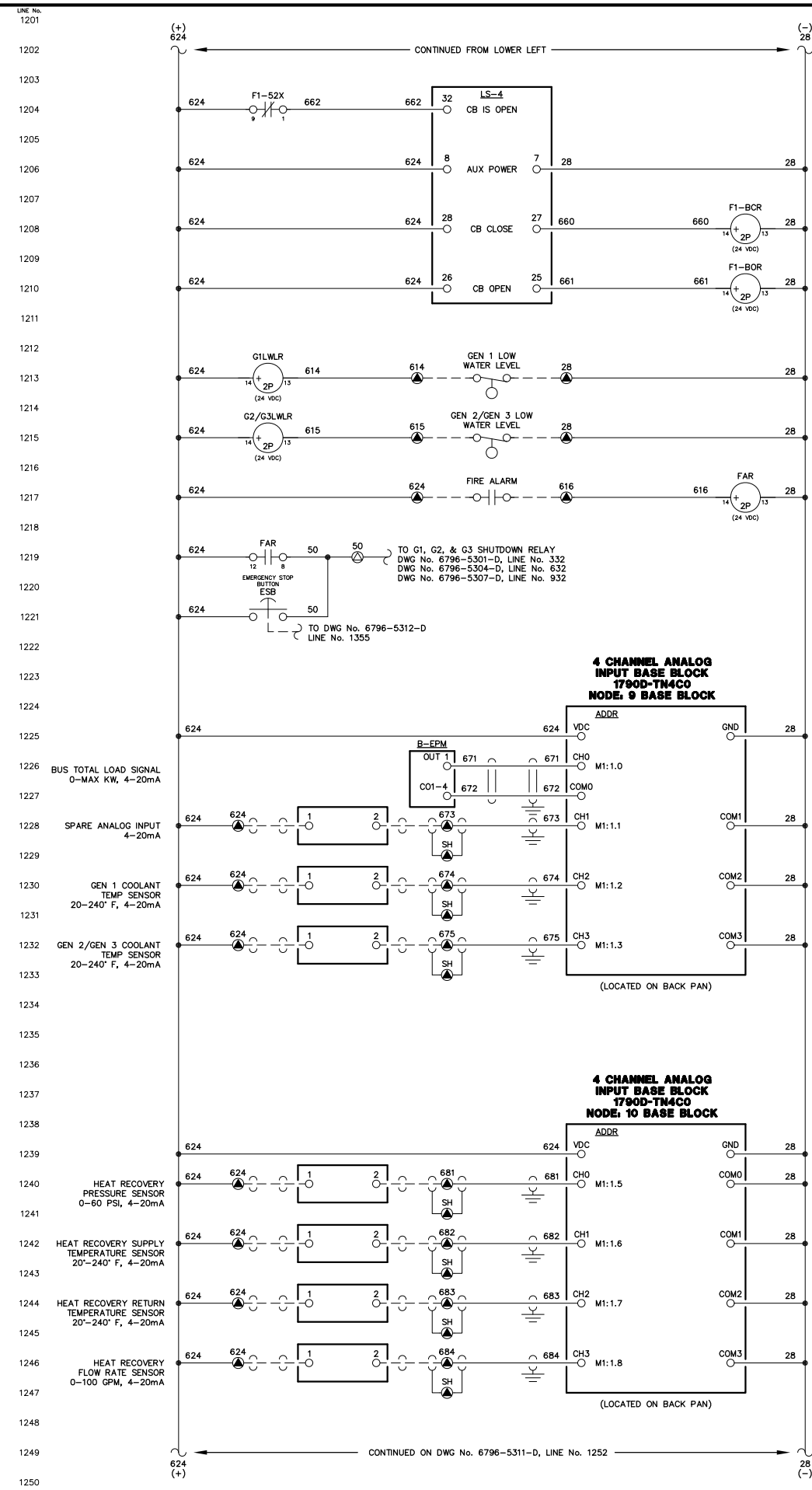
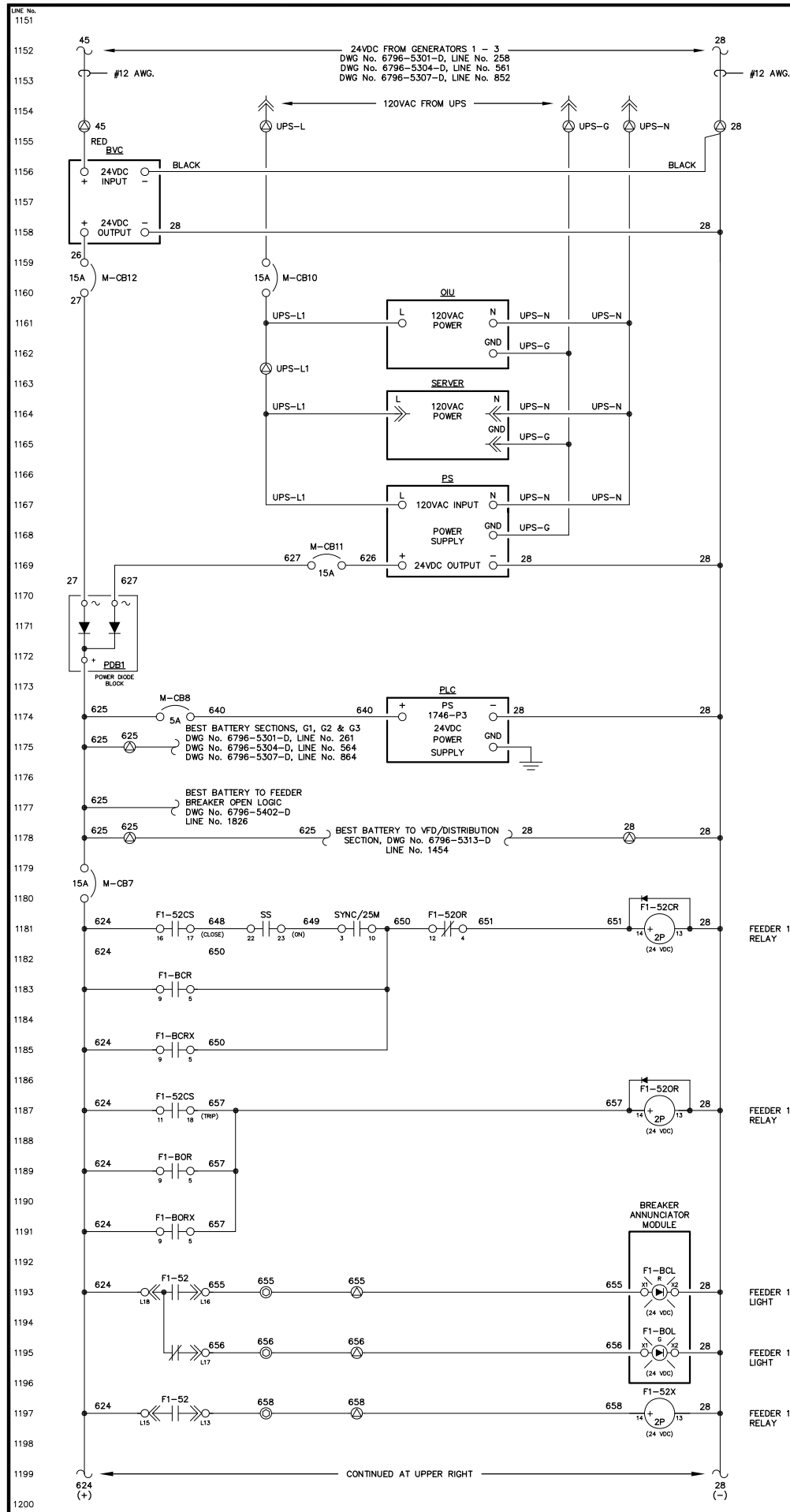


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

A	04-06-09	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5309-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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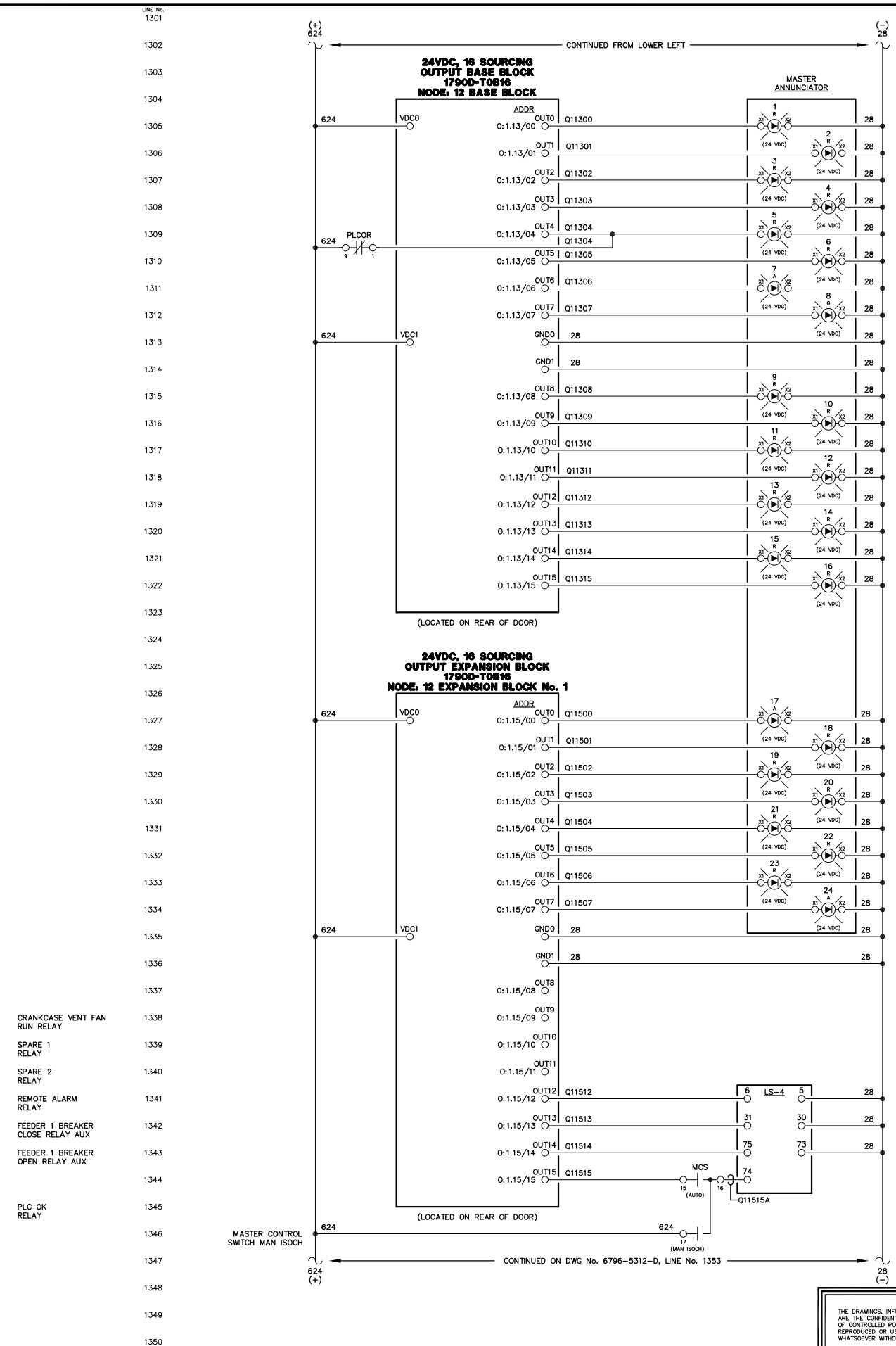
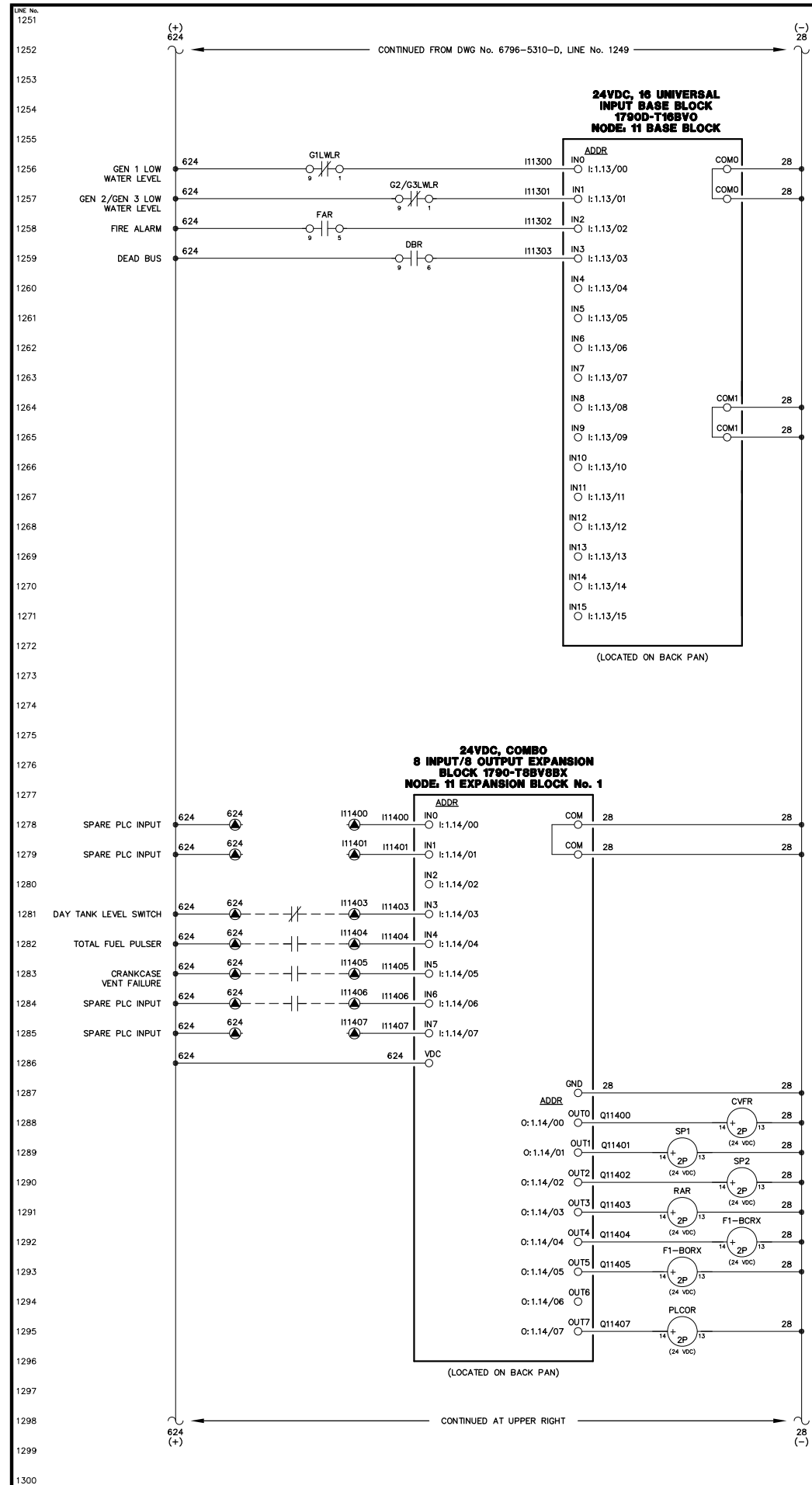


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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REG-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5310-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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RURAL ENERGY GROUP  
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ANCHORAGE, ALASKA 99503  
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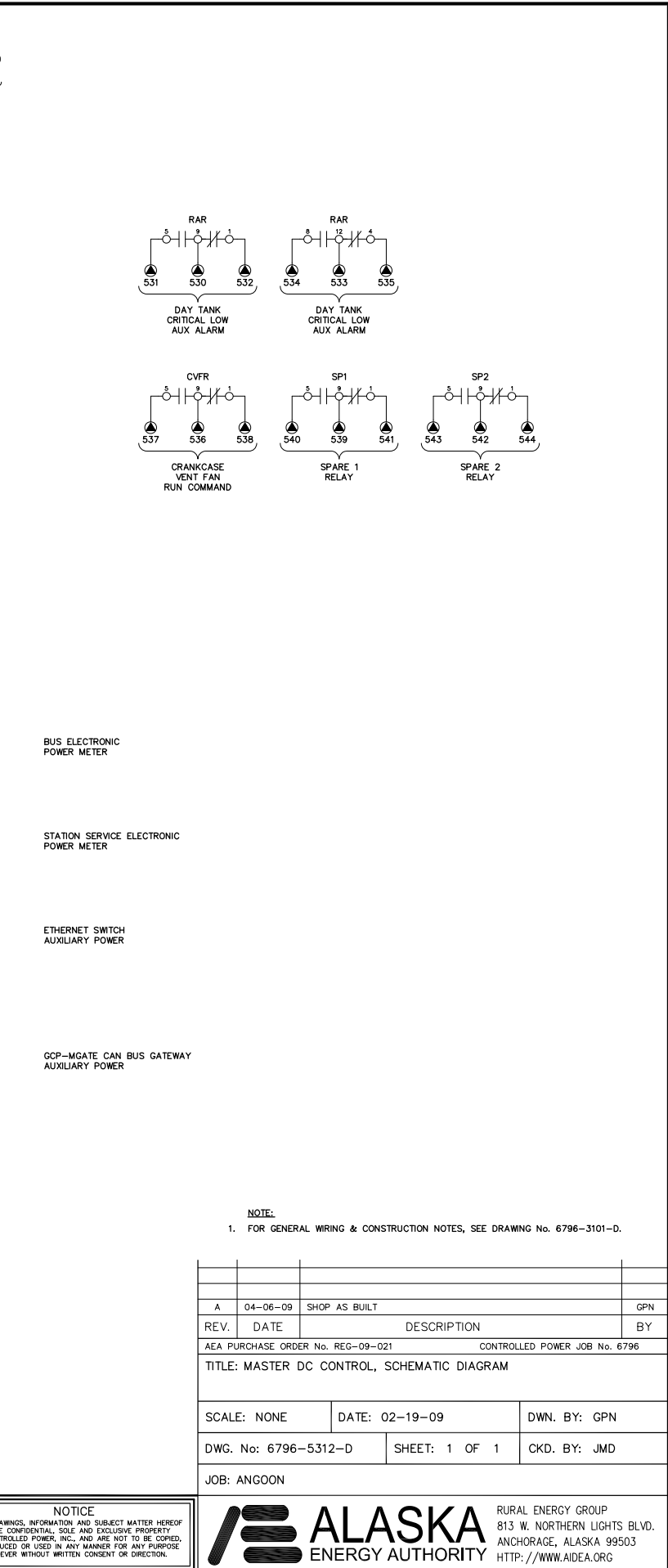
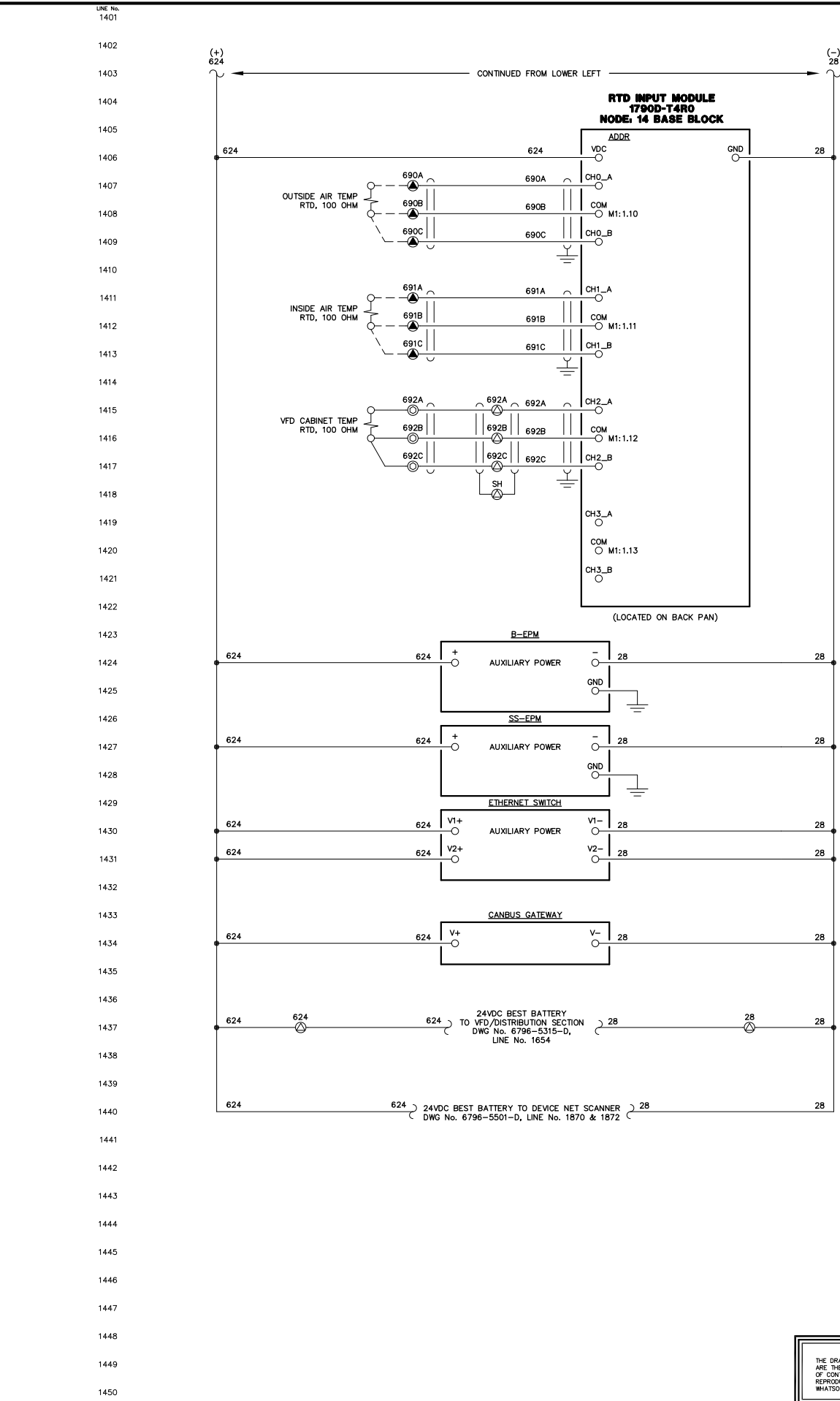
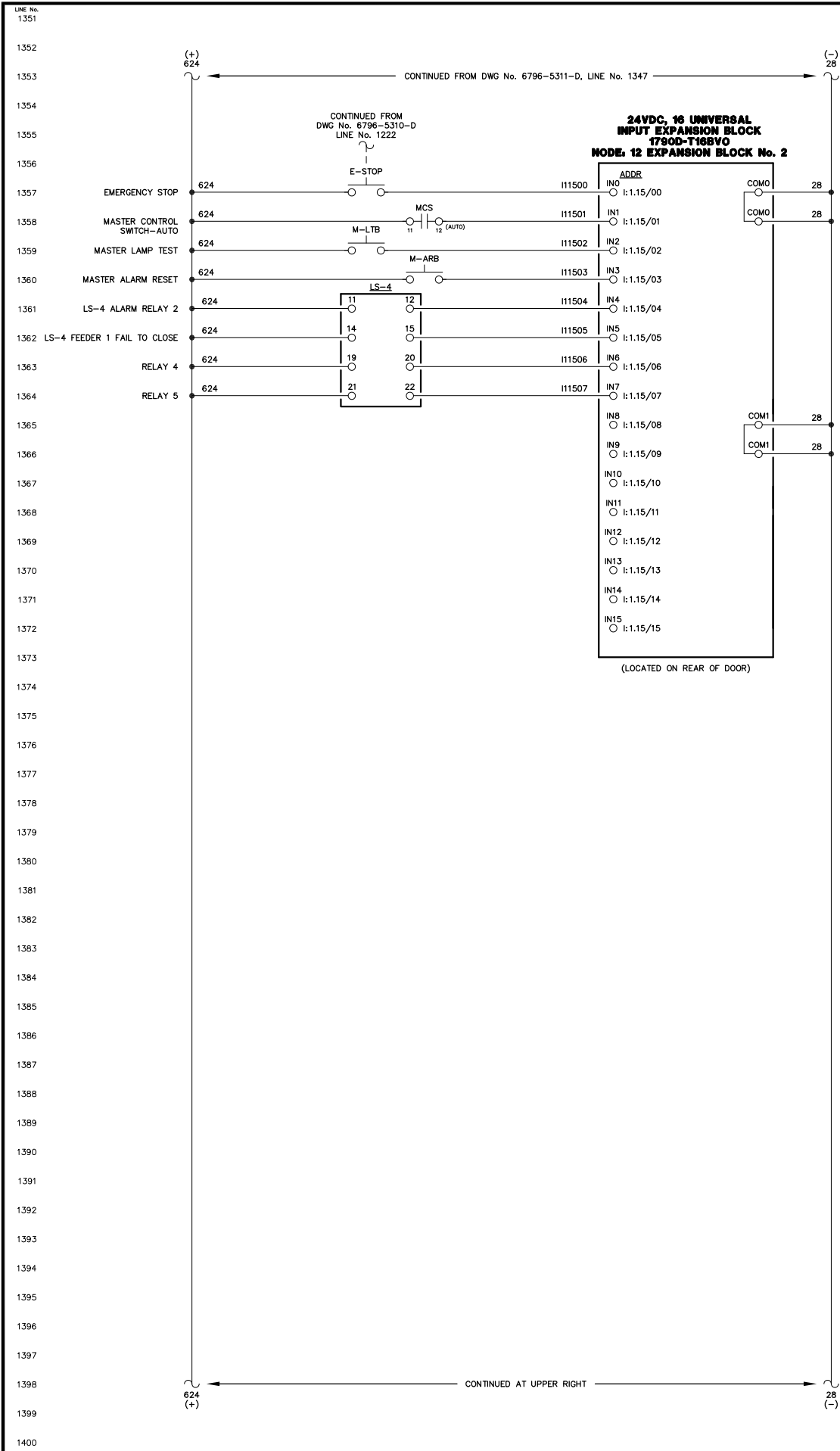
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

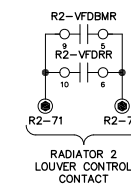
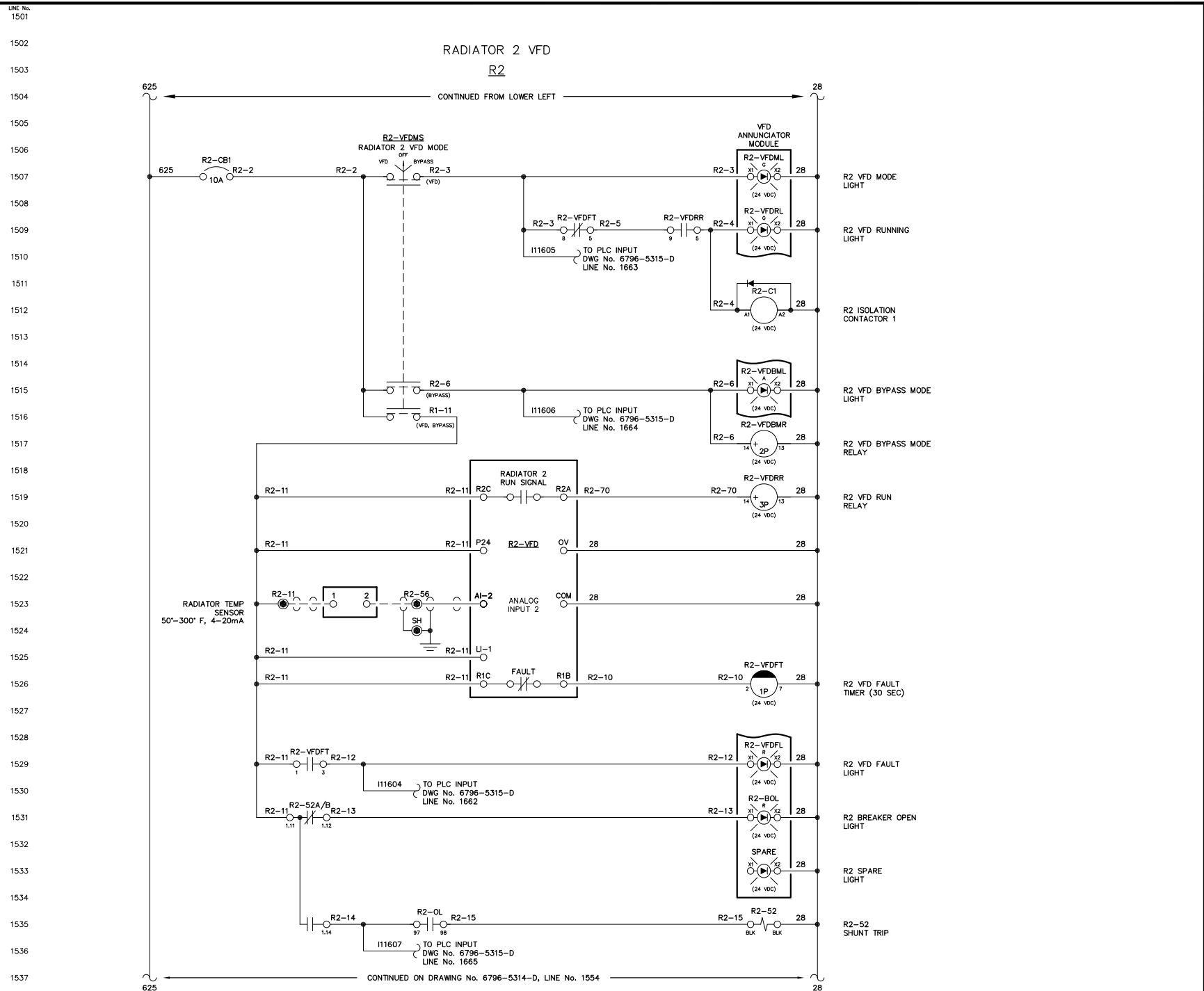
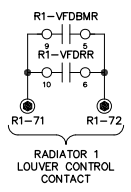
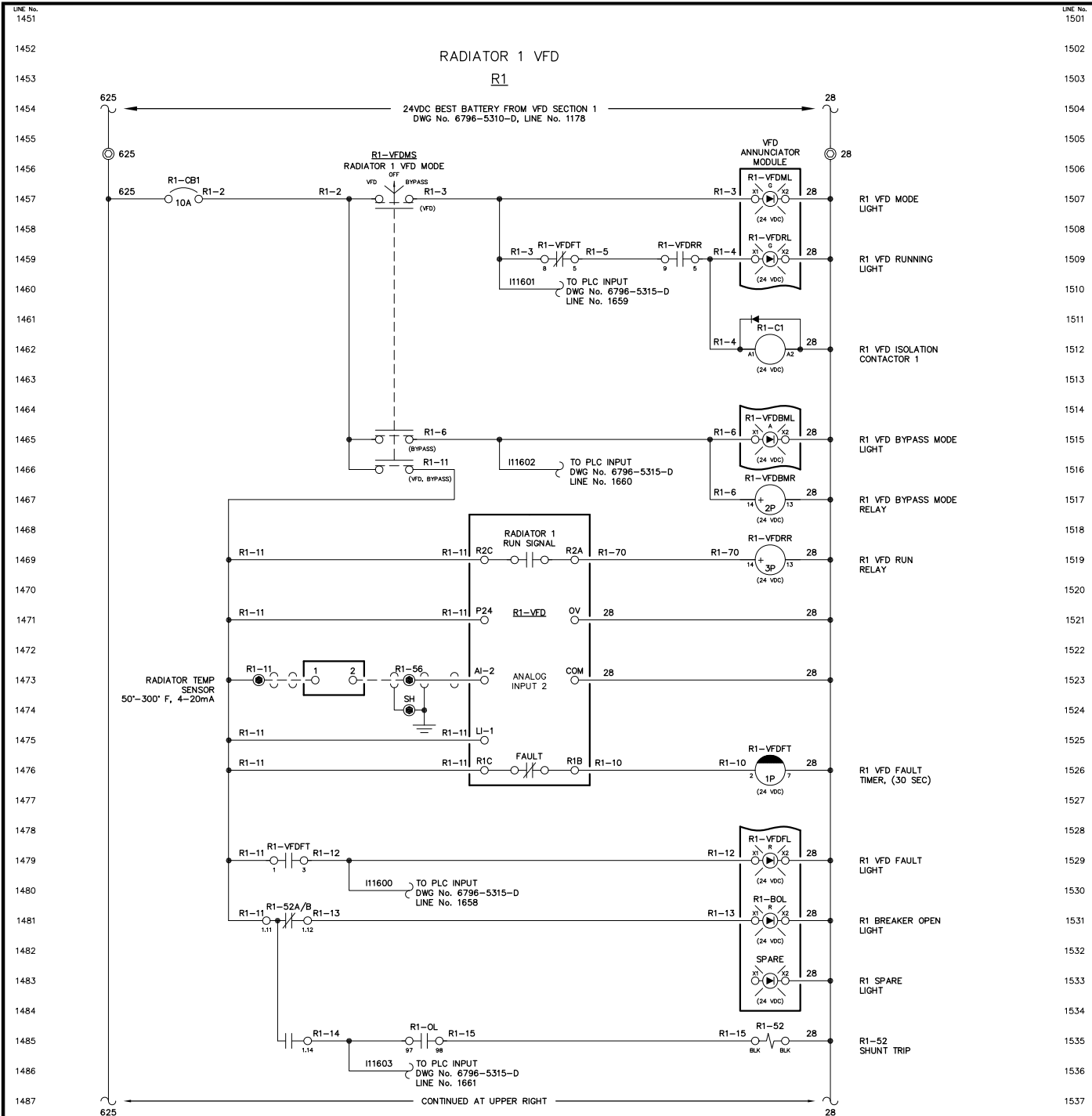
REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REC-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5311-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: ANGOON			

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Plot date: 2009/12/15 - 11:35



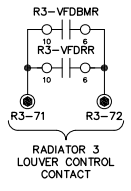
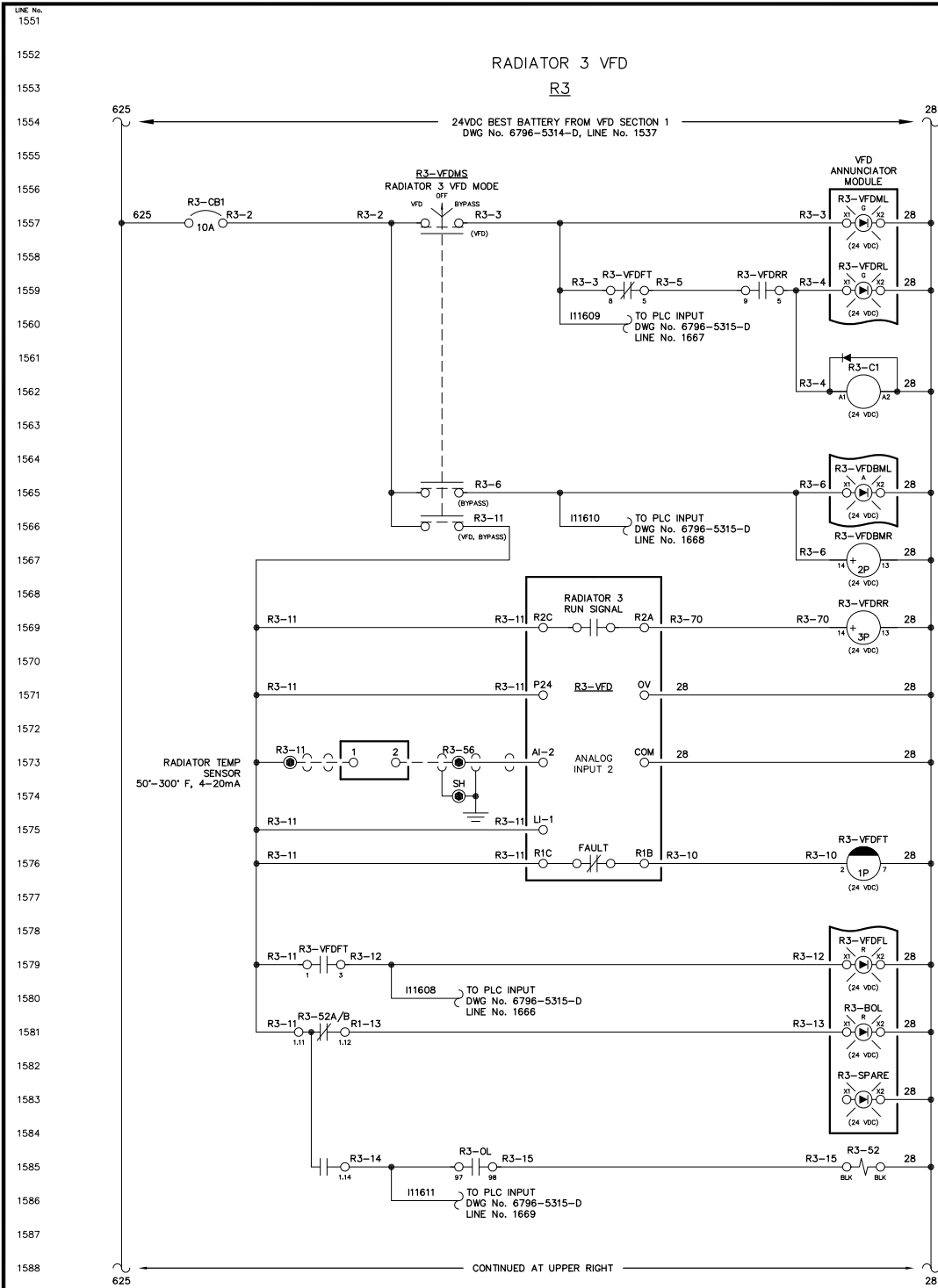


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REC-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5313-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

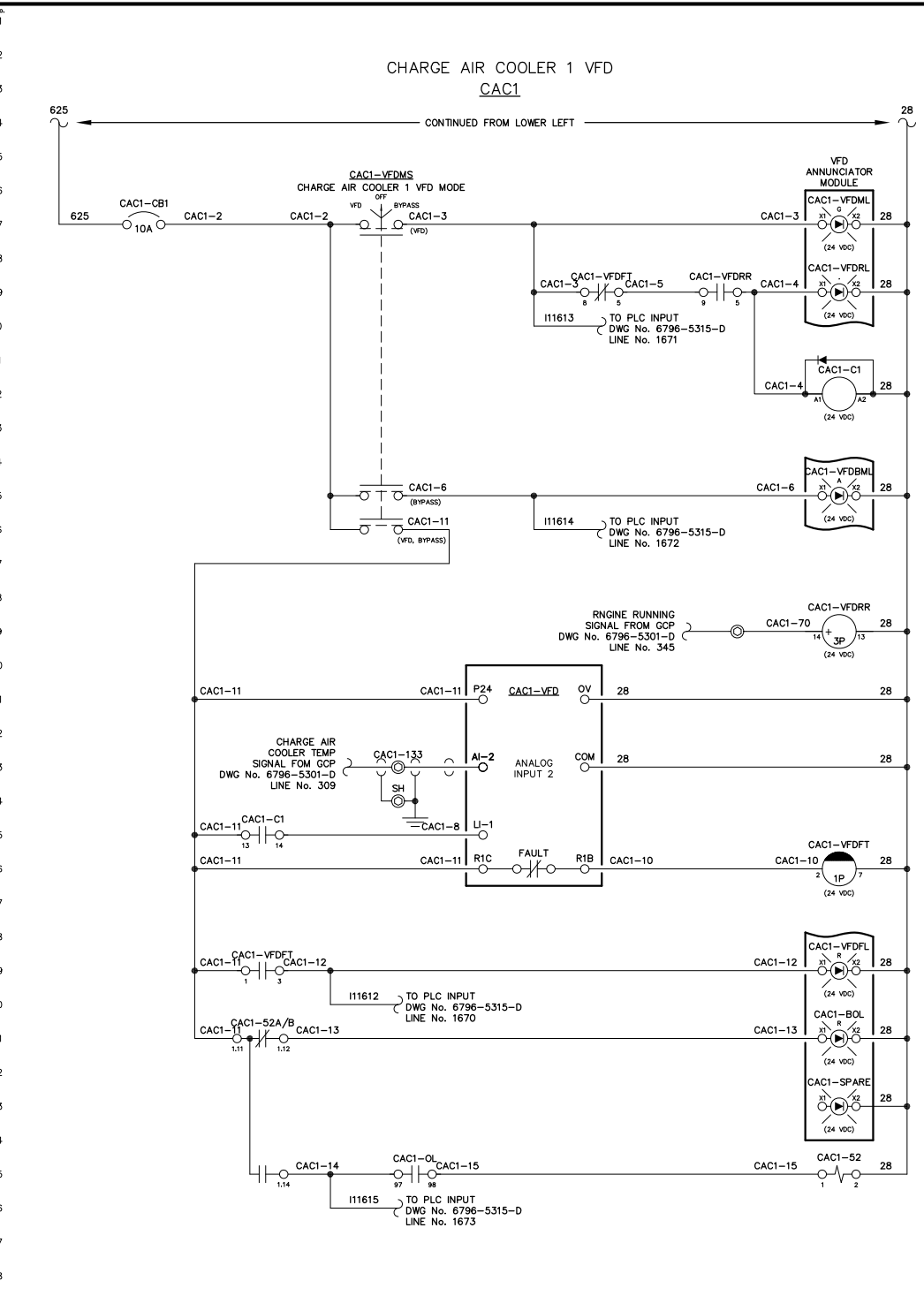
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R3 VFD MODE LIGHT  
R3 VFD RUNNING LIGHT  
R3 VFD ISOLATION CONTACTOR 1  
R3 VFD BYPASS MODE LIGHT  
R3 VFD BYPASS MODE RELAY  
R3 VFD RUN RELAY  
R3 VFD FAULT TIMER, (30 SEC)  
R3 VFD FAULT LIGHT  
R3 BREAKER OPEN LIGHT  
R3 SPARE LIGHT  
R3-52 SHUNT TRIP  
RADIATOR 3 LOUVER CONTROL CONTACT



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CAC1 VFD MODE LIGHT  
CAC1 VFD RUNNING LIGHT  
CAC1 ISOLATION CONTACTOR 1  
CAC1 VFD BYPASS MODE LIGHT  
CAC1 VFD RUN RELAY  
CAC1 VFD FAULT TIMER (30 SEC)  
CAC1 VFD FAULT LIGHT  
CAC1 BREAKER OPEN LIGHT  
CAC1 SPARE LIGHT  
CAC1-52 SHUNT TRIP

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796

TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM

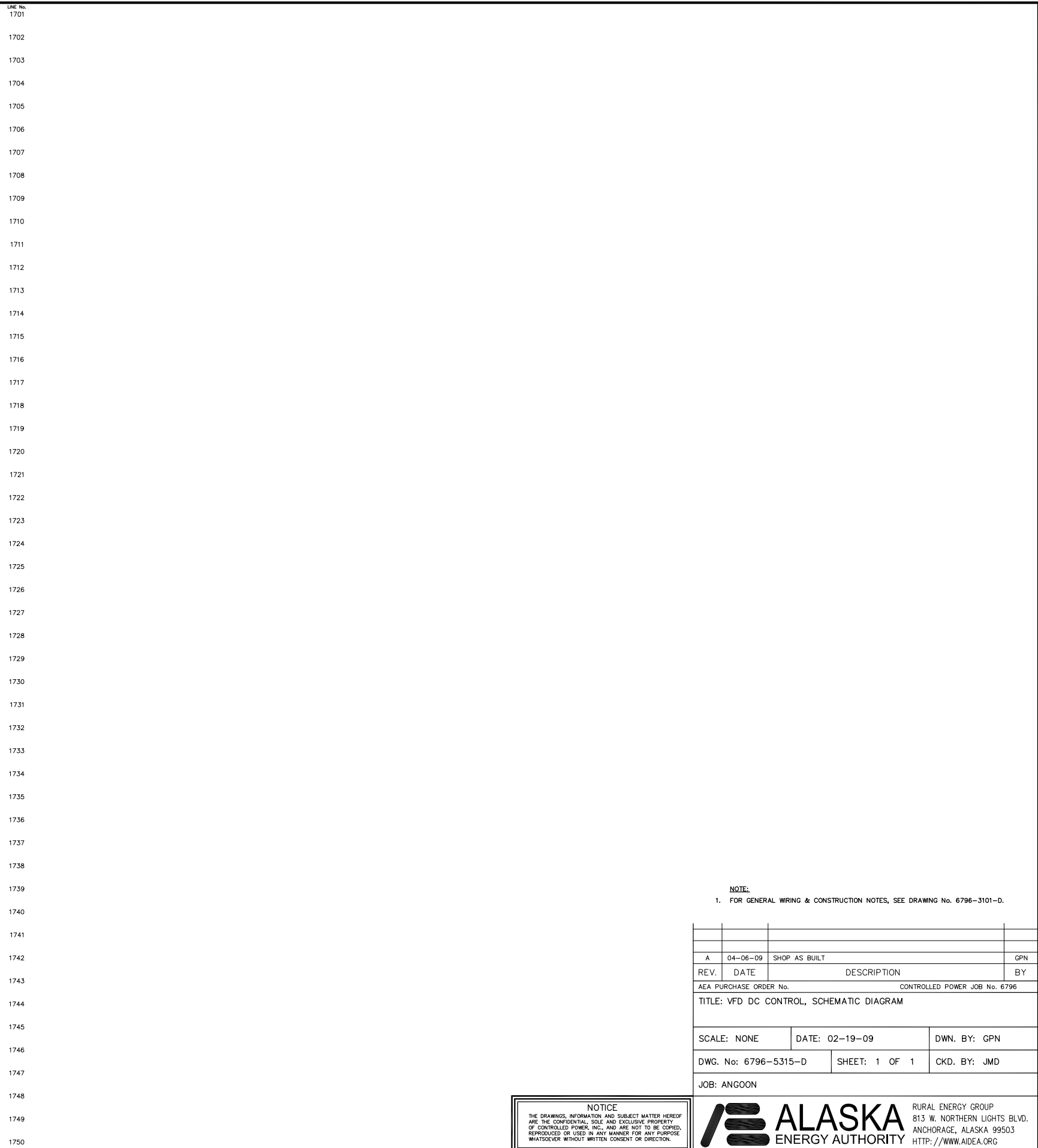
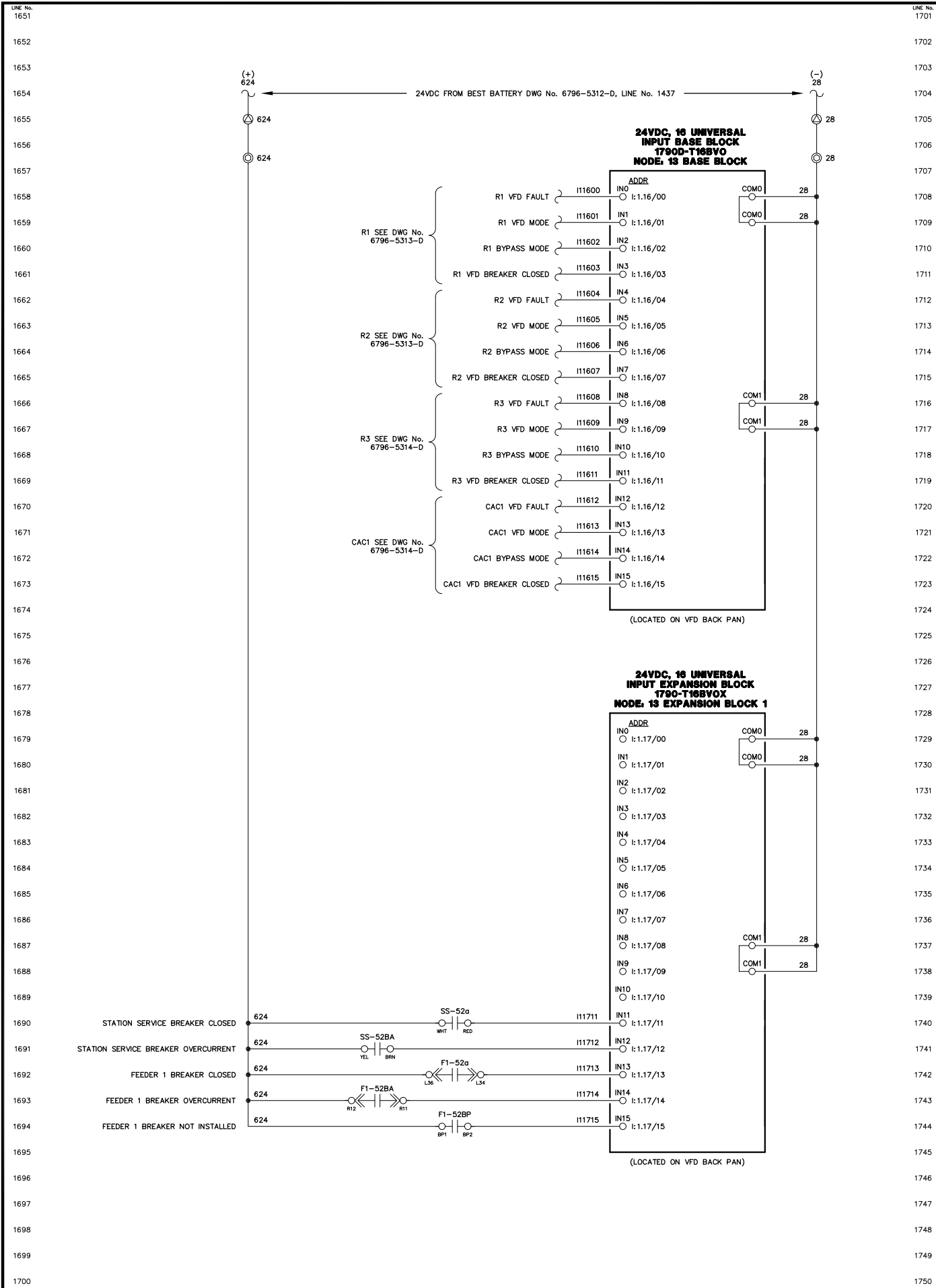
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-5314-D	SHEET: 1 OF 1	CKD. BY: JMD

JOB: ANGOON

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Plot date: 2009/12/15 - 11:34



NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. CONTROLLED POWER JOB No. 6796

TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM

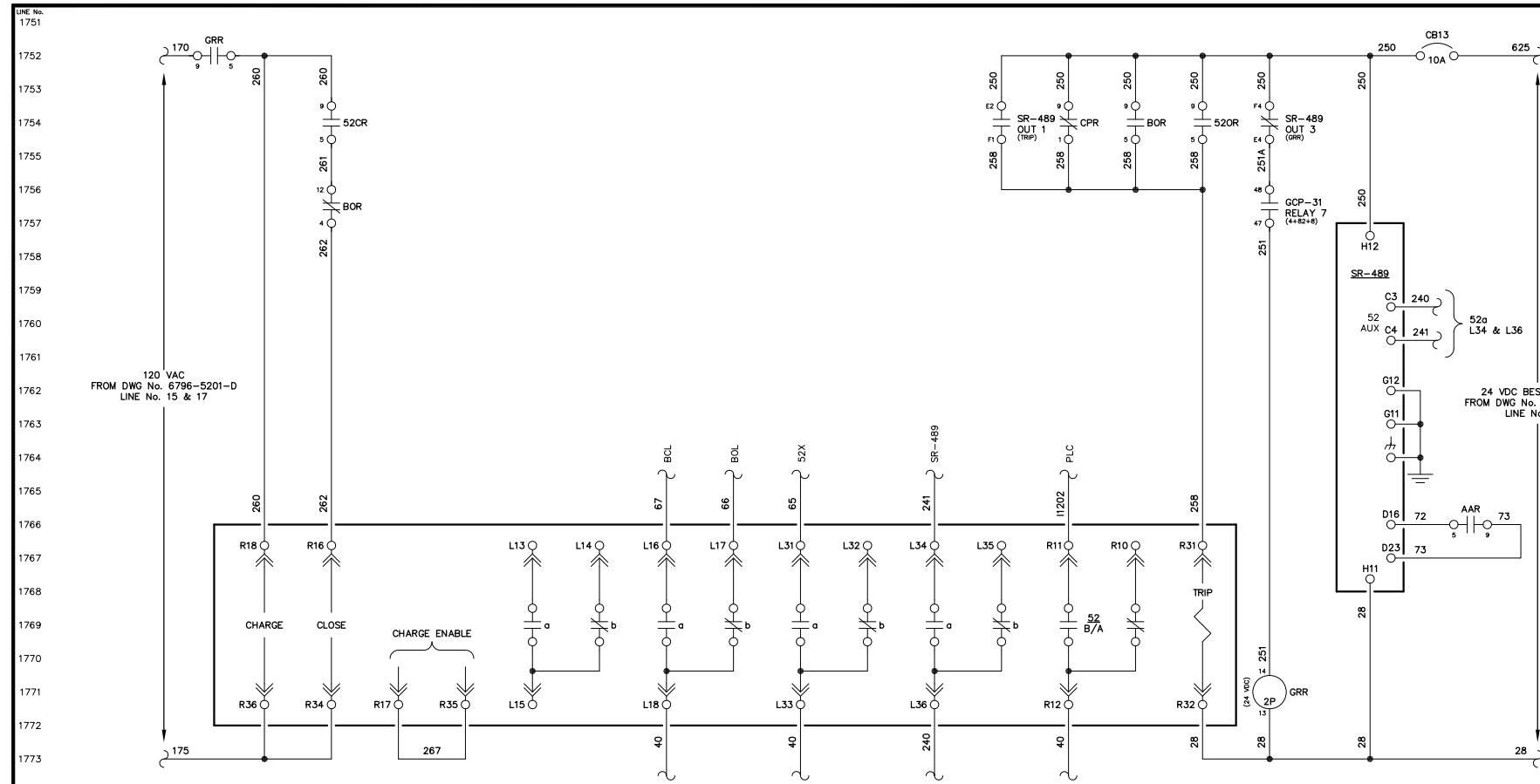
SCALE: NONE      DATE: 02-19-09      DWN. BY: GPN

DWG. No: 6796-5315-D      SHEET: 1 OF 1      CKD. BY: JMD

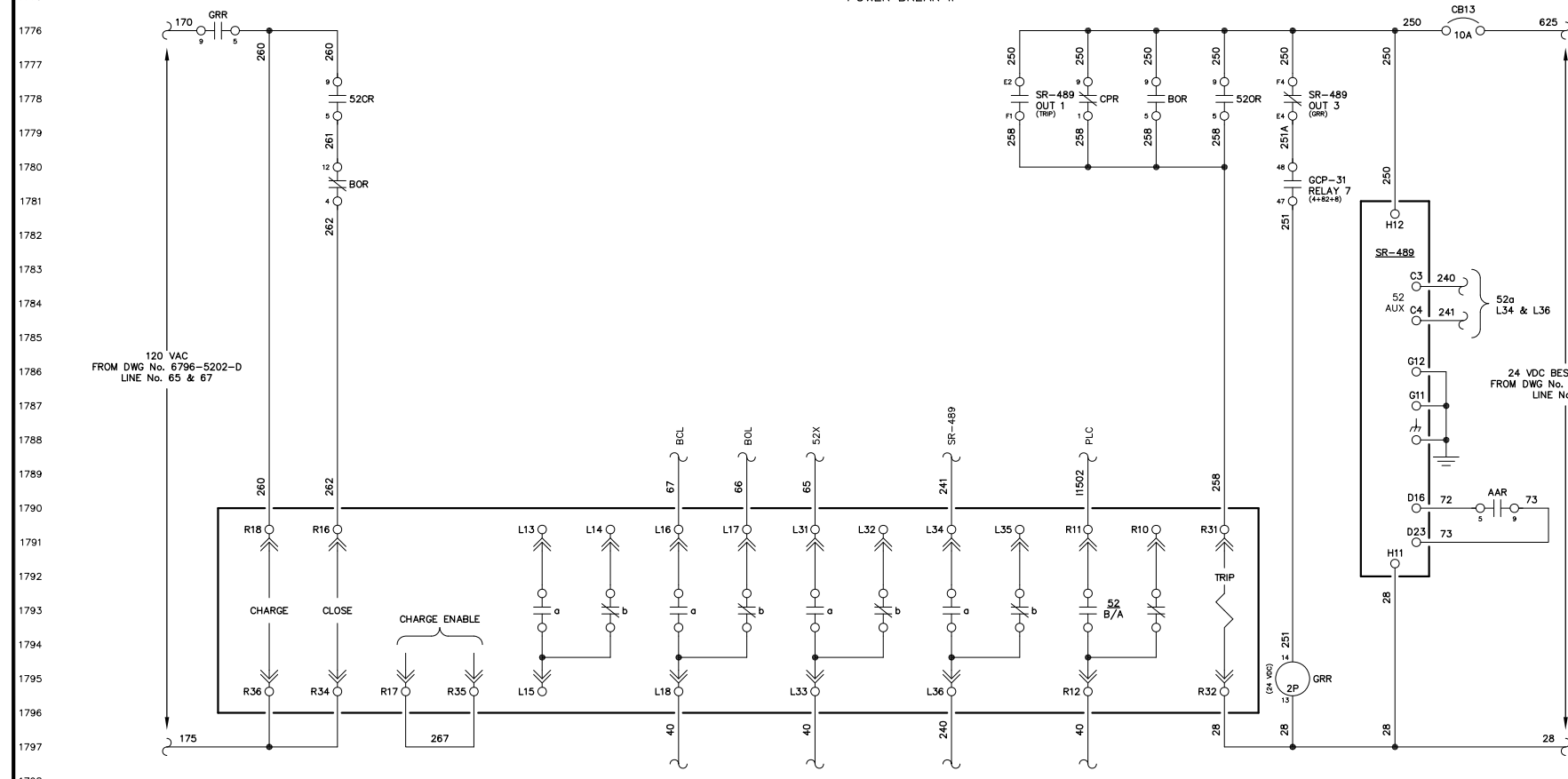
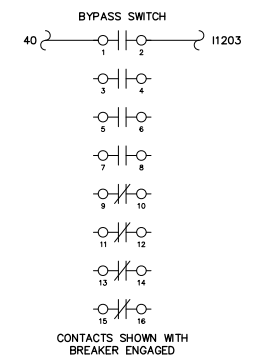
JOB: ANGOON

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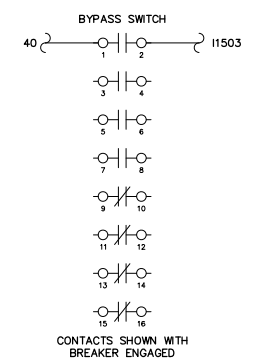




GENERATOR 1 BREAKER  
POWER BREAK II



GENERATOR 2 BREAKER  
POWER BREAK II



NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

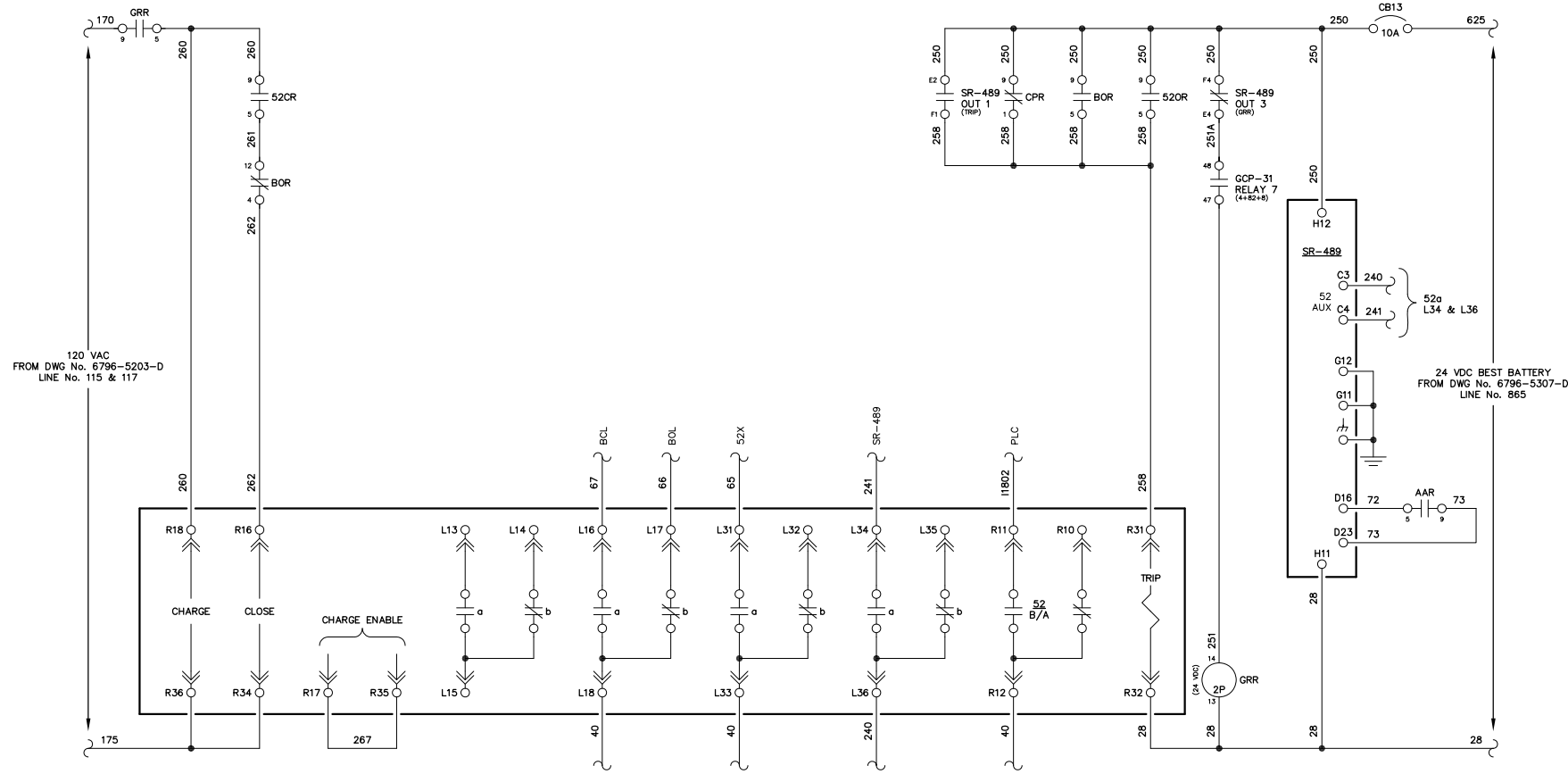
REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
TITLE: GENERATOR 1 & 2 BREAKER CONTROL, SCHEMATIC DIAGRAM		AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796	
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5401-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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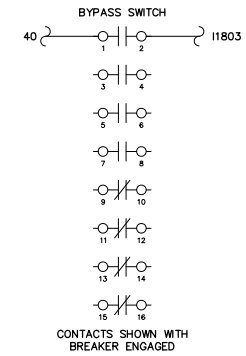
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HTTP://WWW.AIDEA.ORG



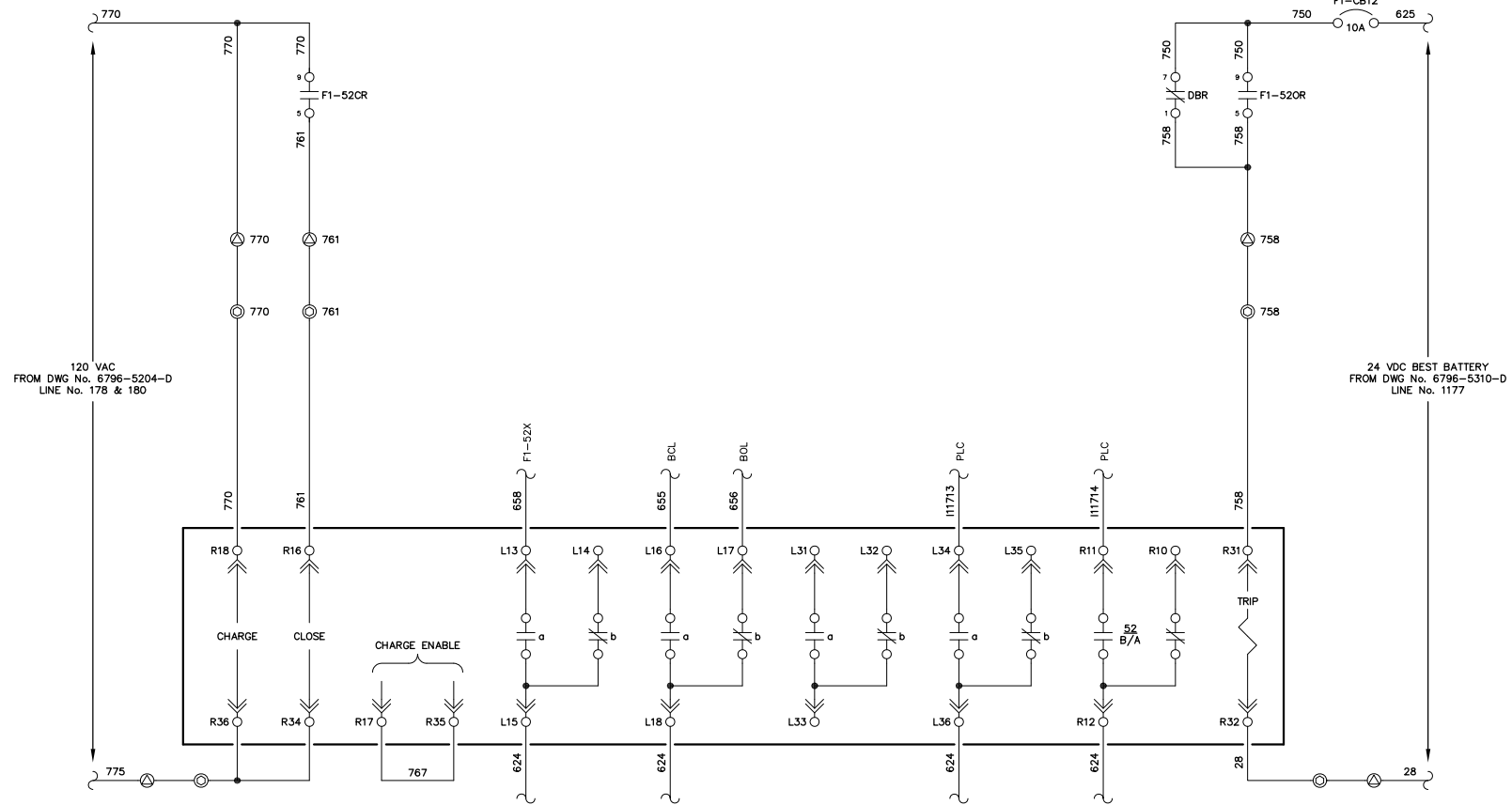
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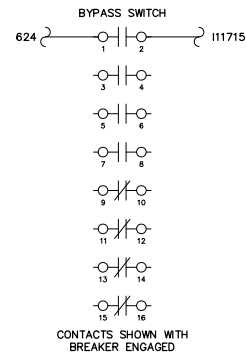
GENERATOR 3 BREAKER  
POWER BREAK II



CONTACTS SHOWN WITH  
BREAKER ENGAGED



FEEDER BREAKER  
POWER BREAK II



CONTACTS SHOWN WITH  
BREAKER ENGAGED

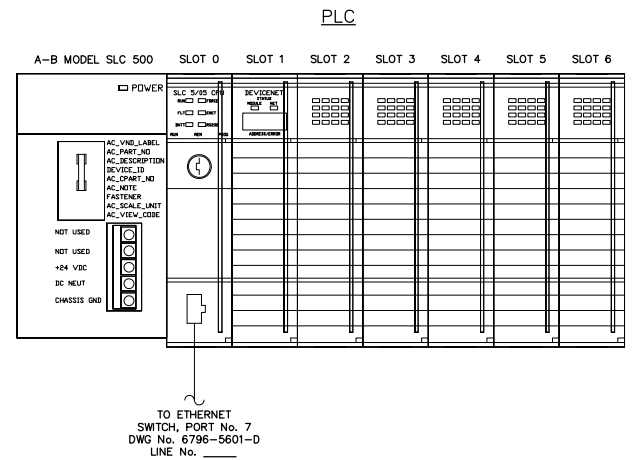
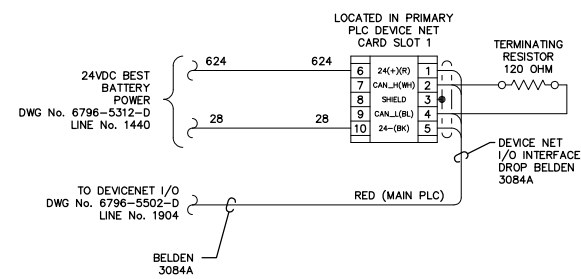
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
TITLE: GENERATOR 3 & FEEDER BREAKER CONTROL, SCHEMATIC DIAGRAM		AEA PURCHASE ORDER No. REC-09-021 CONTROLLED POWER JOB No. 6796	
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5402-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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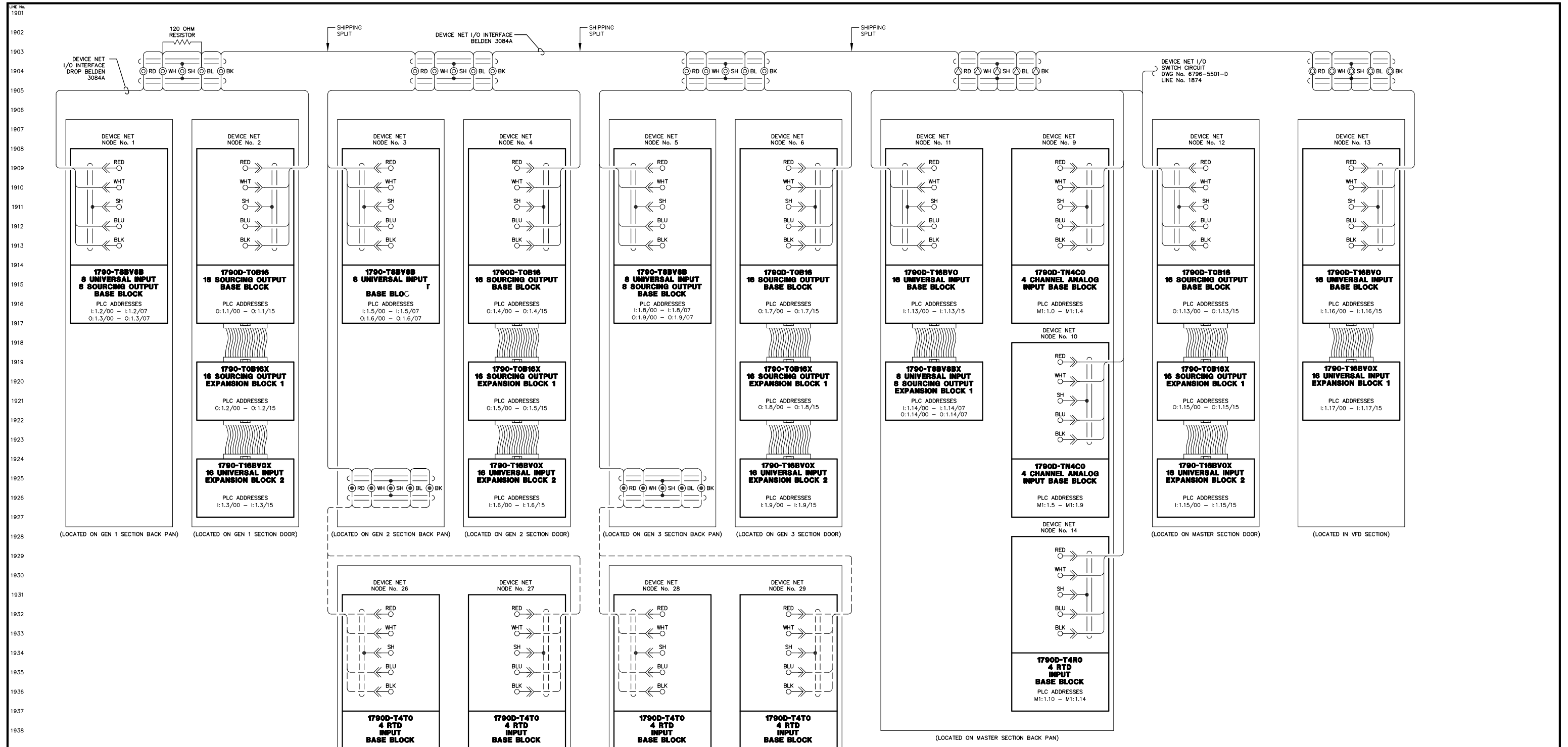
- LEGEND:**
- POWER SPPLY, 1746-P3
  - SLOT 0 CPU, 1774-LS52
  - SLOT 1 DEVICE NET SCANNER, 1747-SDN
  - SLOT 2 MV46-MNET
  - SLOT 3 (SPACE)
  - SLOT 4 (SPACE)
  - SLOT 5 (SPACE)
  - SLOT 6 (SPACE)

**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No.		CONTROLLED POWER JOB No. 6796	
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5501-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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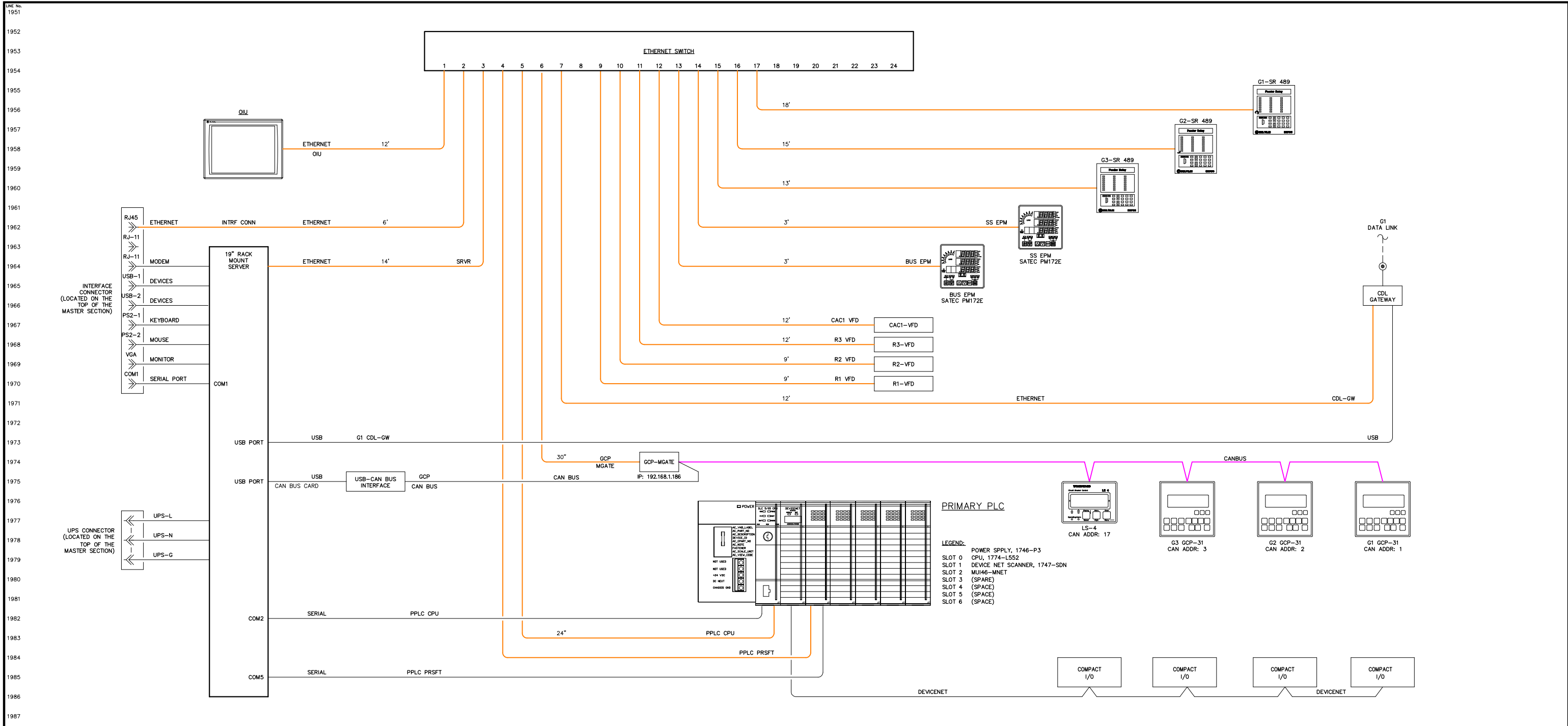
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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEV PURCHASE ORDER No. REC-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5502-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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DEVICE	IP ADDRESS
PLC CPU	192.168.1.183
MNET	192.168.1.187
R1 VFD	192.168.1.171
R2 VFD	192.168.1.172
R3 VFD	192.168.1.173
CAC1 VFD	192.168.1.174
BUS EPM	192.168.1.190
SS EPM	192.168.1.191
G1-SR 489	192.168.1.151
G2-SR 489	192.168.1.152
G3-SR 489	192.168.1.153
SERVER	192.168.1.142
GCP MGATE	192.168.1.186
CDL GATEWAY	192.168.1.161

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. \_\_\_\_\_ CONTROLLED POWER JOB No. 6796

TITLE: COMMUNICATION NETWORK DIAGRAM

SCALE: NONE      DATE: 02-19-09      DWN. BY: GPN

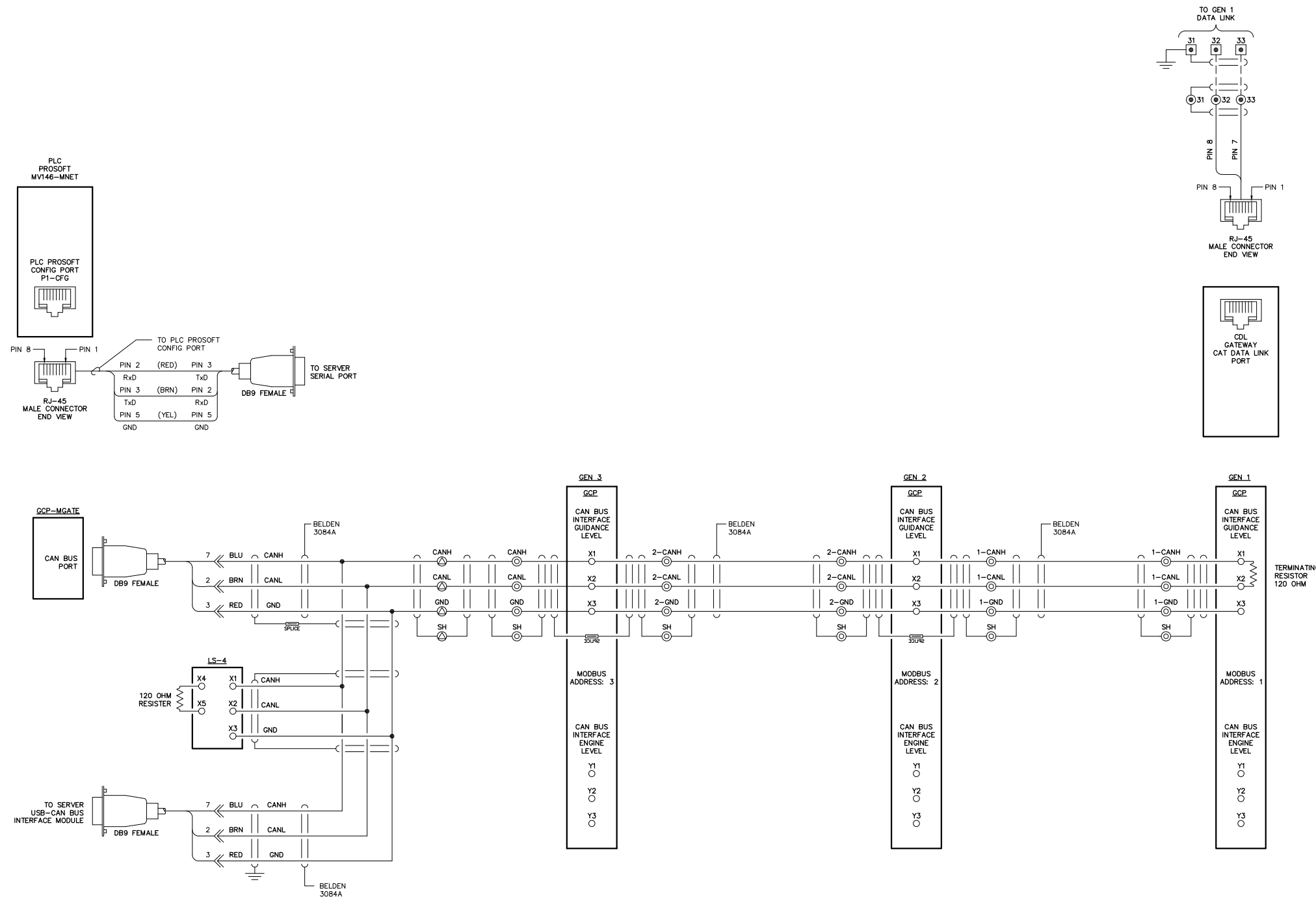
DWG. No: 6796-5601-D      SHEET: 1 OF 1      CKD. BY: JMD

JOB: ANGOON

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

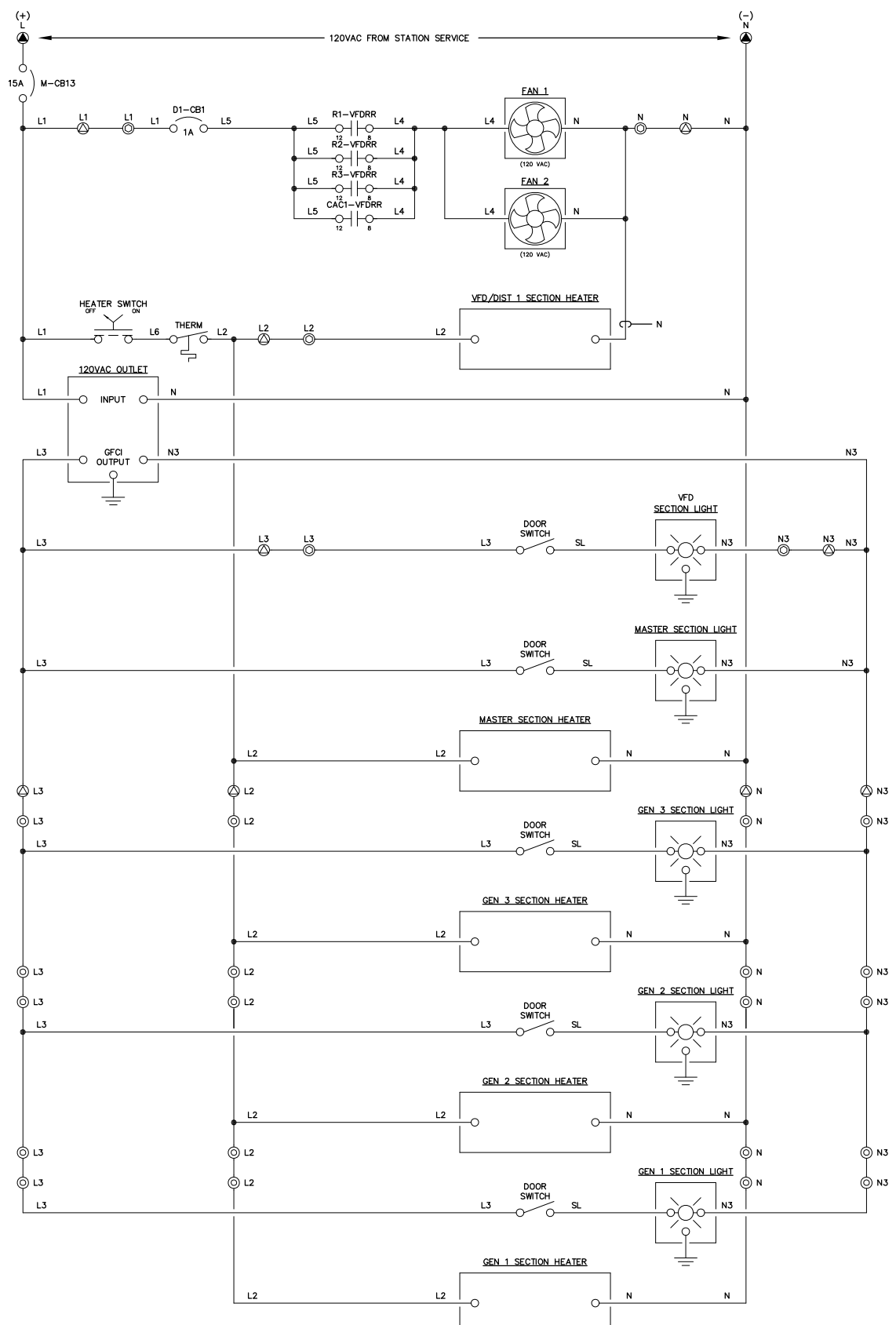
REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REG-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: COMMUNICATION NETWORK DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5602-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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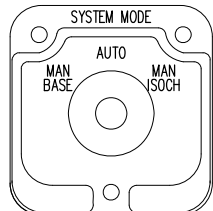
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No.		CONTROLLED POWER JOB No. 6796	
TITLE: HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-5701-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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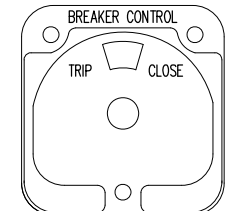
SYSTEM MODE SWITCH - SMS



(ELECTROSWITCH 24201C)  
KNURLED HANDLE  
QTY 1

DECK	CONTACTS		POS.	
	MAN BASE	AUTO	MAN ISOCH	
1	12	13	X	X
	16	17	X	X
	11	12	X	X
15	14	16	X	X

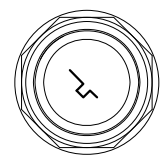
BREAKER CONTROL SWITCH - 52CS



(ELECTROSWITCH 2438D)  
PISTOL GRIP HANDLE  
SPRING RETURN TO CENTER  
QTY 1

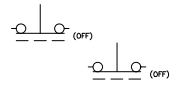
DECK	CONTACTS		POS.	
	TRIP	CLOSE	NORM	CLOSE
1	11	18	X	X
	16	17	X	X

GENERATOR LOCKOUT SWITCH - GLS

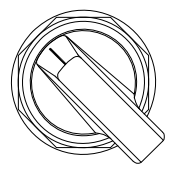


KEY OPERATED  
2 POS MAINTAINED  
QTY 3

POS	CONTACTS	
	OFF	RUN
1	X	X
	X	X



HEATER CONTROL SWITCH - HCS

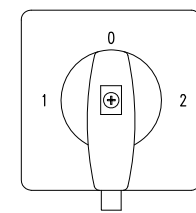
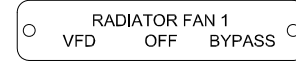


MAINTAINED  
LOCATED ON MASTER  
BACK PAN

POS	CONTACTS	
	OFF	ON
1	X	X
	X	X



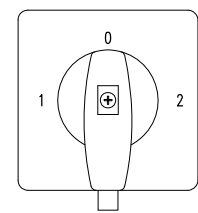
VARIABLE FREQUENCY DRIVE SWITCH - VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	POSITION	1	MD	71300						ME	2
				43	33	1T1	1T2	1T3	2T1		

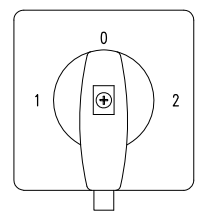
VARIABLE FREQUENCY DRIVE SWITCH - VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	POSITION	1	MD	71300						ME	2
				43	33	1T1	1T2	1T3	2T1		

VARIABLE FREQUENCY DRIVE SWITCH - VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	POSITION	1	MD	71300						ME	2
				43	33	1T1	1T2	1T3	2T1		

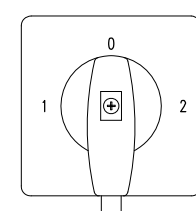
SYNCHROSCOPE SWITCH TARGET - SS



(ELECTROSWITCH 24203B)  
OVAL HANDLE  
QTY 1

DECK	CONTACTS		POS.	
	OFF	ON		
1	11	12	X	X
	12	13	X	X
	15	16	X	X
	16	17	X	X
2	21	22	X	X
	22	23	X	X
	25	26	X	X
	26	27	X	X
3	31	32	X	X
	32	33	X	X
	35	36	X	X
	36	37	X	X

VARIABLE FREQUENCY DRIVE SWITCH - VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	POSITION	1	MD	71300						ME	2
				43	33	1T1	1T2	1T3	2T1		

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REG-09-021 CONTROLLED POWER JOB No. 6796

TITLE: CONTROL SWITCH TARGET DIAGRAM

SCALE: NONE DATE: 02-19-09 DWN. BY: GPN

DWG. No: 6796-6101-D SHEET: 1 OF 1 CKD. BY: JMD

JOB: ANGOON

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TEXT 1/4" QUANTITY 1 SCALE 1/1 SEE NOTE 4

MANUFACTURED BY:



**CONTROLLED POWER, INC.**

17909 BOTHELL EVERETT HWY. S.E. #102  
 BOTHELL, WA. 98012  
 (425)-485-1778  
 SERIAL NUMBER: 6796

TEXT 1/2" QUANTITY 1 SCALE 1/1

MASTER CONTROL

TEXT 1/2" QUANTITY 1 SCALE 1/1

GENERATOR 1

TEXT 1/2" QUANTITY 1 SCALE 1/1

GENERATOR 2

TEXT 1/2" QUANTITY 1 SCALE 1/1

GENERATOR 3

TEXT 1/2" QUANTITY 1 SCALE 1/1

VFD/DISTRIBUTION

TEXT 1/2" QUANTITY 2 SCALE 1/1

550 KW

TEXT 1/2" QUANTITY 1 SCALE 1/1

475 KW

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

RADIATOR FAN 1

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

RADIATOR FAN 2

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

RADIATOR FAN 3

NP. TEXT 1/4" QUANTITY 3 SCALE 1/1

GENERATOR 1 CHARGE AIR COOLER

NP. TEXT 1/8" QUANTITY 3 SCALE 1/1

GENERATOR LOCKOUT FOR SERVICE  
OFF RUN

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

GENERATOR 1

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

GENERATOR 2

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

GENERATOR 3

NP. TEXT 1/8" QUANTITY 2 SCALE 1/1

BUS TOTALIZING

NP. TEXT 1/8" QUANTITY 2 SCALE 1/1

FEEDER 1

NP. TEXT 1/8" QUANTITY 2 SCALE 1/1

STATION SERVICE

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

RADIATOR FAN 1  
VFD OFF BYPASS

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

RADIATOR FAN 2  
VFD OFF BYPASS

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

LAMP TEST EMERGENCY STOP ALARM RESET

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

RADIATOR FAN 3  
VFD OFF BYPASS

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

GEN 1 CHARGE AIR COOLER  
VFD OFF BYPASS

NP. TEXT 1/8" QUANTITY 1 SCALE 1/1

HEATER  
OFF ON

NP. TEXT 1/8" QUANTITY 3 SCALE 1/1

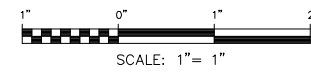
TS1  
VA VB VC IA IA IB IB IC IC VN

NP. TEXT 1/8" QUANTITY 3 SCALE 1/1

TS2  
VN G IA IA IB IB IC IC

- NOTES:
- ALL NAMEPLATES SHALL BE BLACK FACE WITH WHITE LETTERS EXCEPT AS NOTED.
  - ALL NAMEPLATES SHALL HAVE PRESSURE SENSITIVE ADHESIVE ON BACK, 100 % COVERAGE.
  - ALL NAMEPLATES SHALL HAVE MOUNTING HOLES DRILLED AS INDICATED.
- ▲ INDICATES THAT NAMEPLATE SHALL BE BRUSHED ALUMINUM WITH BLACK ENGRAVED LETTERS.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REG-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: NAMEPLATE ENGRAVING SCHEDULE, FABRICATION DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-6201-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			



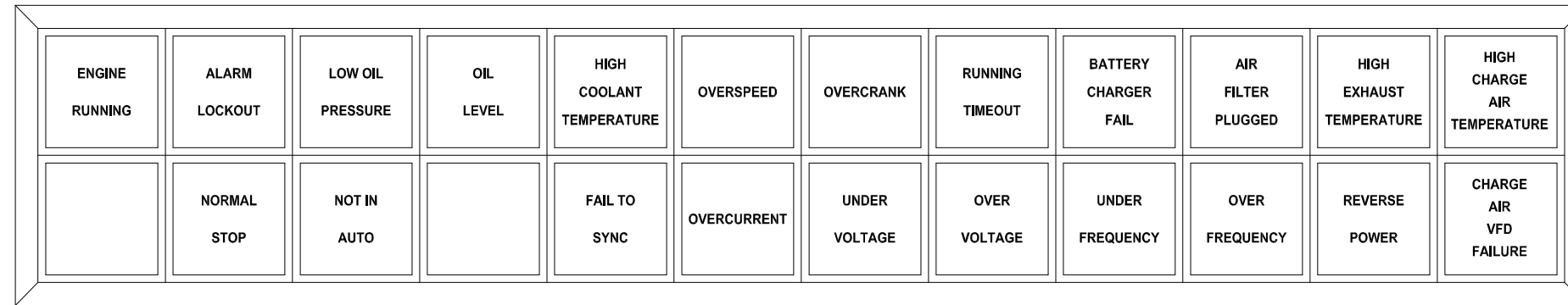
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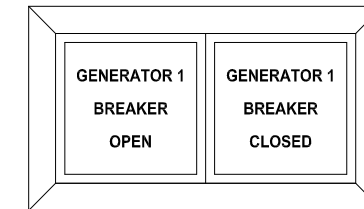
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 ANCHORAGE, ALASKA 99503  
 HTTP://WWW.AIDEA.ORG

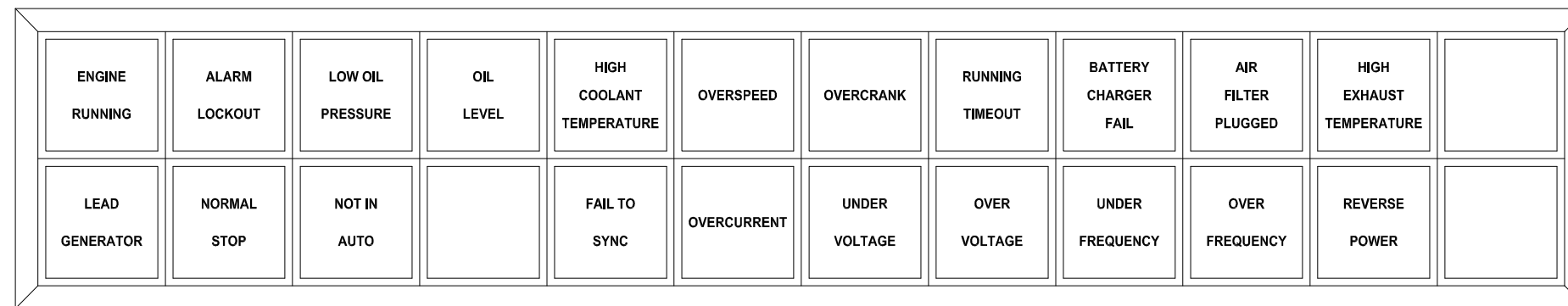




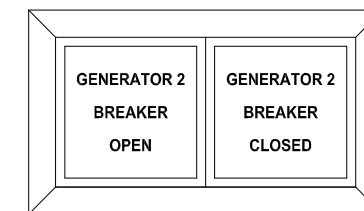
GENERATOR 1 ANNUNCIATOR



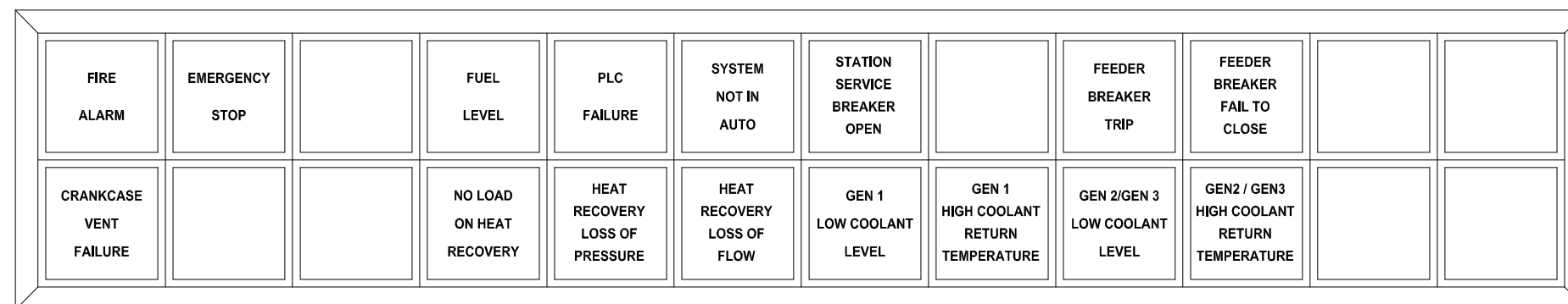
GEN 1 BREAKER ANNUNCIATOR



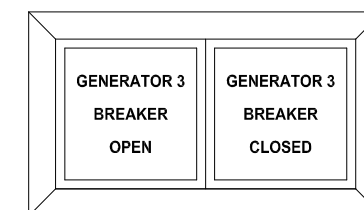
GENERATOR 2 & 3 ANNUNCIATOR



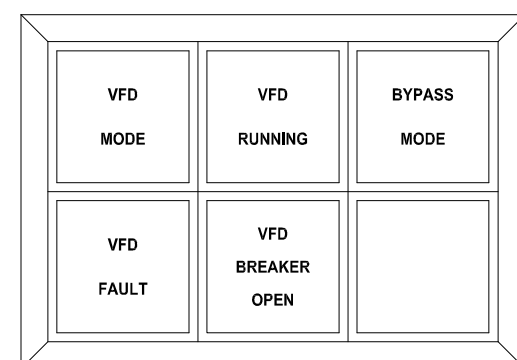
GEN 2 BREAKER ANNUNCIATOR



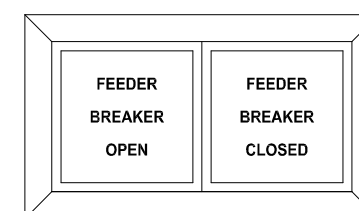
MASTER ANNUNCIATOR



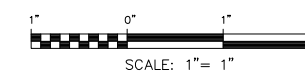
GEN 3 BREAKER ANNUNCIATOR



VFD ANNUNCIATOR



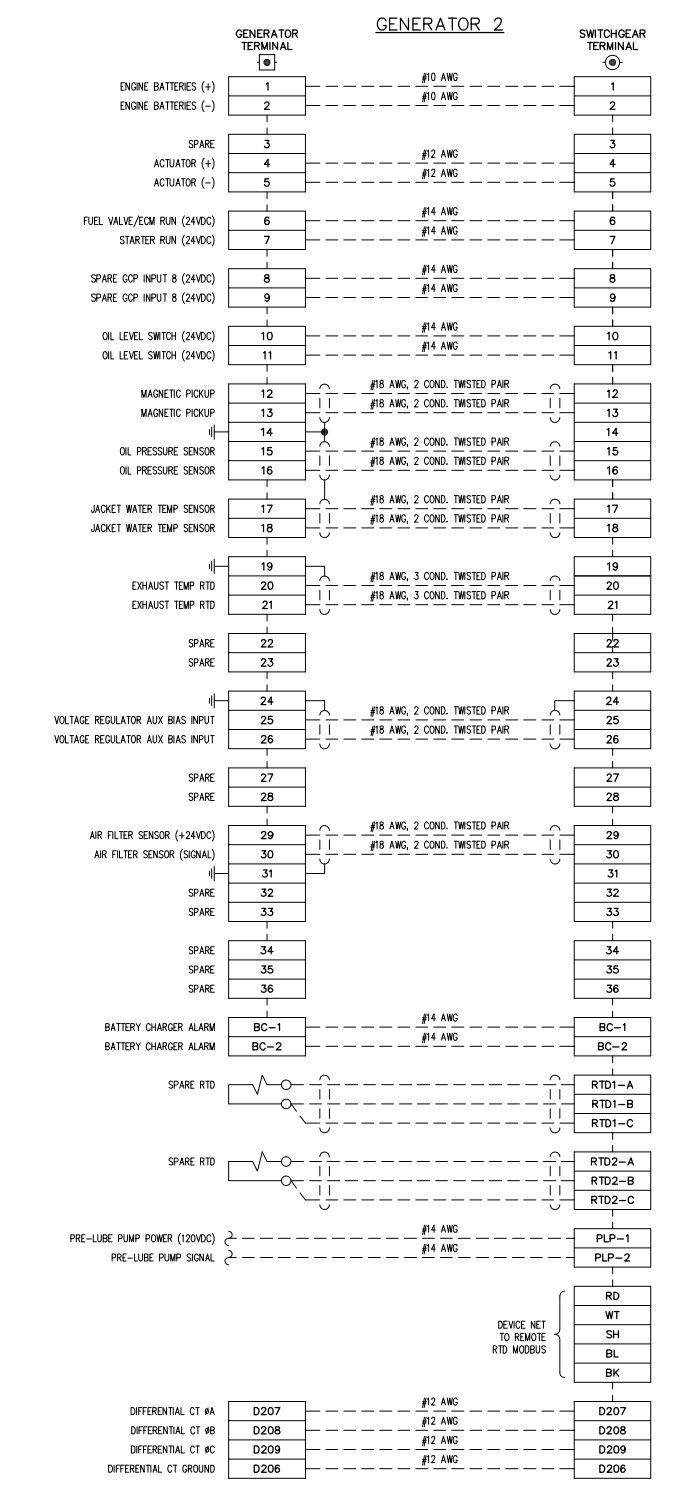
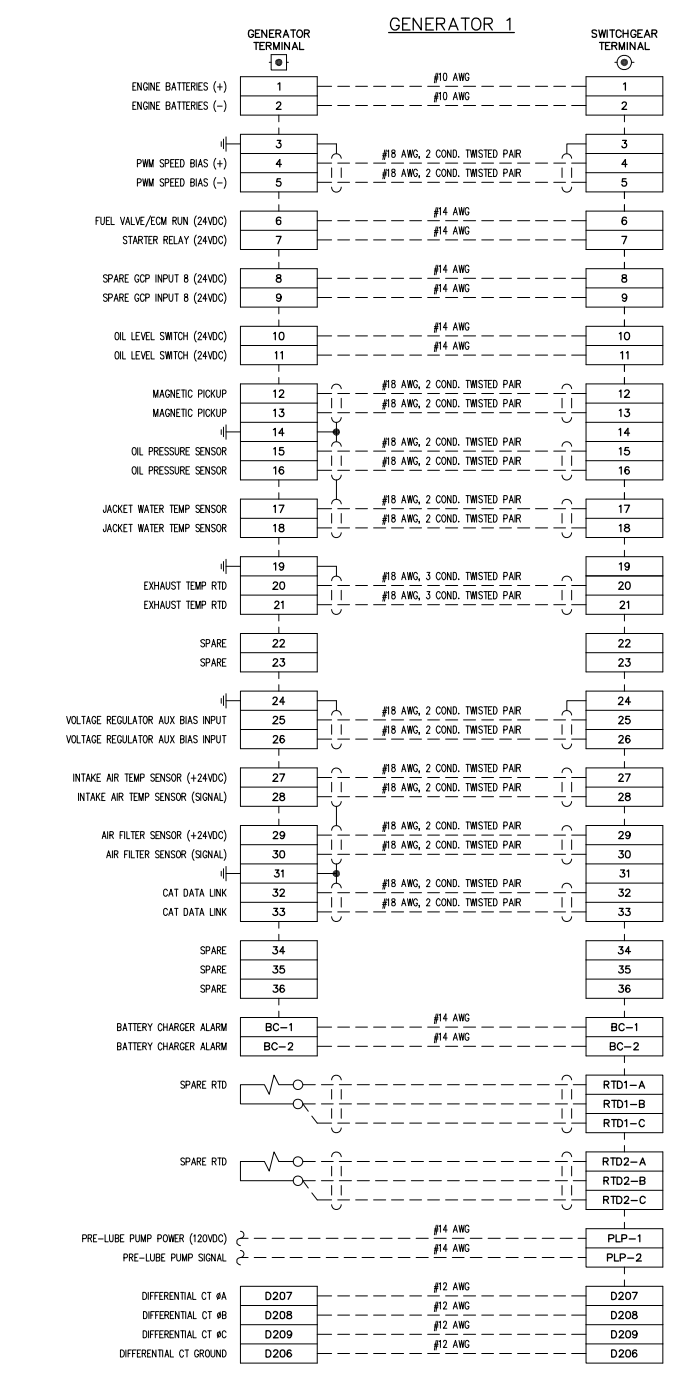
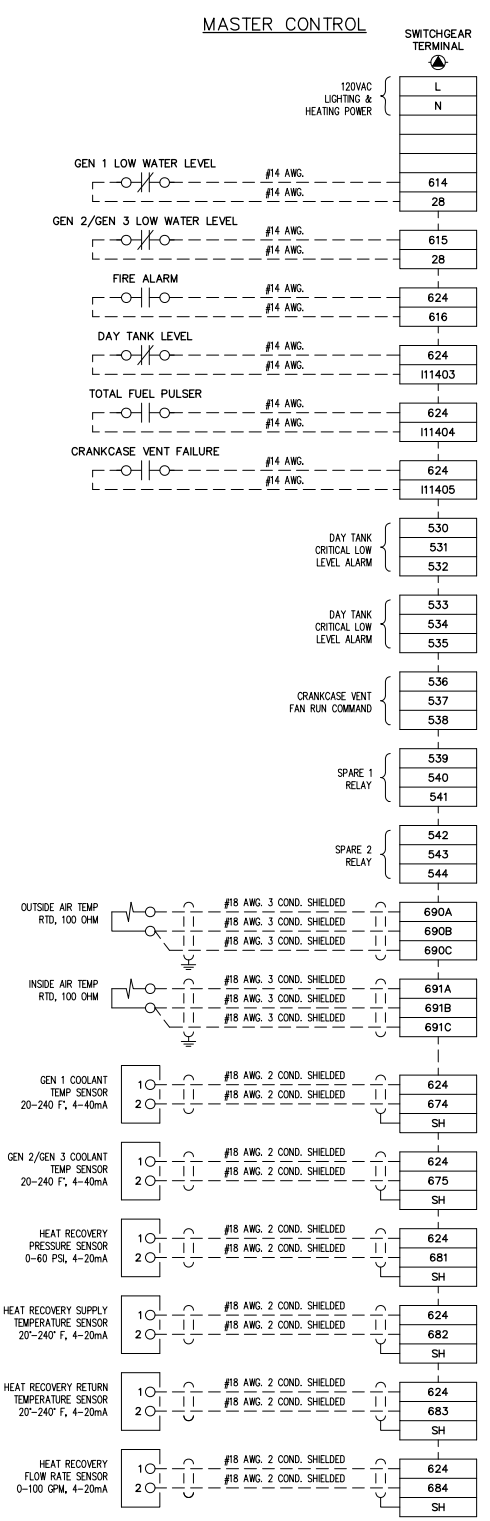
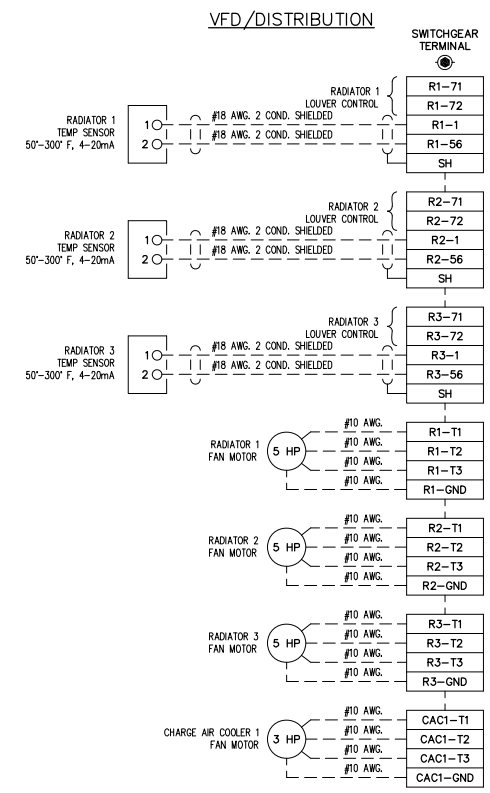
FEEDER BREAKER ANNUNCIATOR



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A	04-06-09	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: ANNUNCIATOR WINDOWS, FABRICATION DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-6202-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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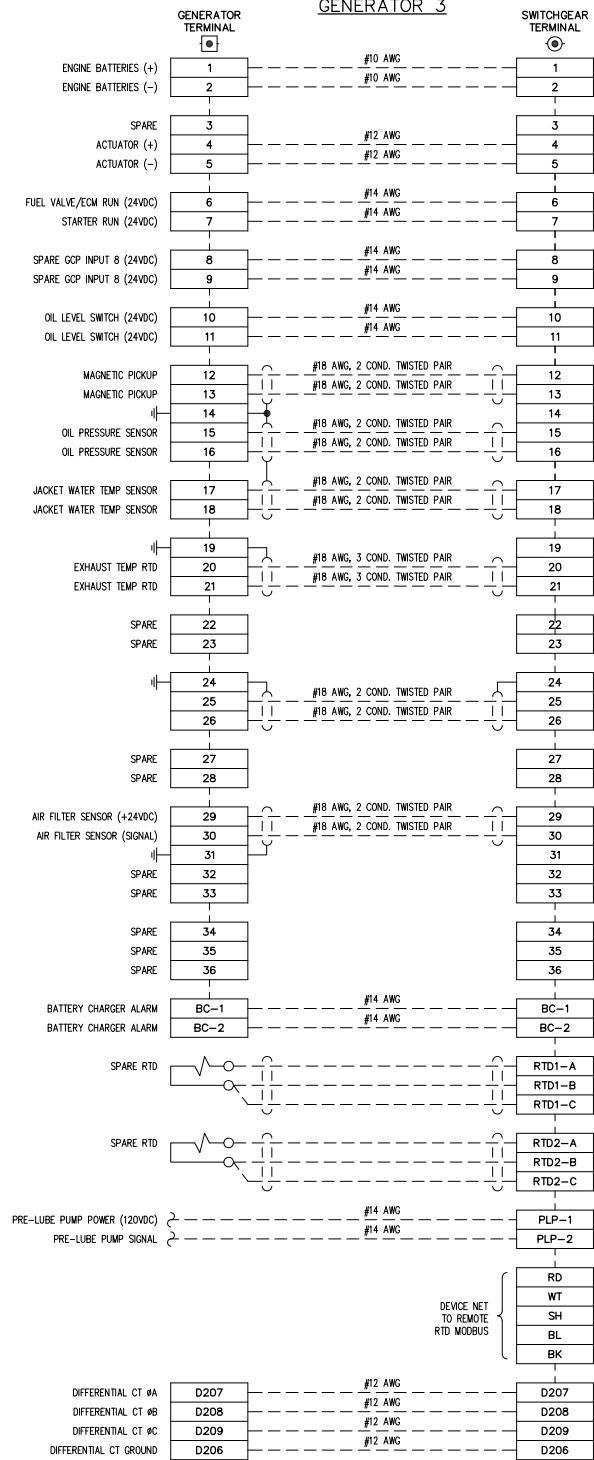
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN
AEA PURCHASE ORDER No. REC-09-021		CONTROLLED POWER JOB No. 6796	
TITLE: INTERCONNECTION DIAGRAM			
SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN	
DWG. No: 6796-7101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: ANGOON			

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**GENERATOR 3**



**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6796-3101-D.

REV.	DATE	DESCRIPTION	BY
A	04-06-09	SHOP AS BUILT	GPN

AEA PURCHASE ORDER No. REG-09-021 CONTROLLED POWER JOB No. 6796

TITLE: INTERCONNECTION DIAGRAM

SCALE: NONE	DATE: 02-19-09	DWN. BY: GPN
DWG. No: 6796-7102-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: ANGOON		

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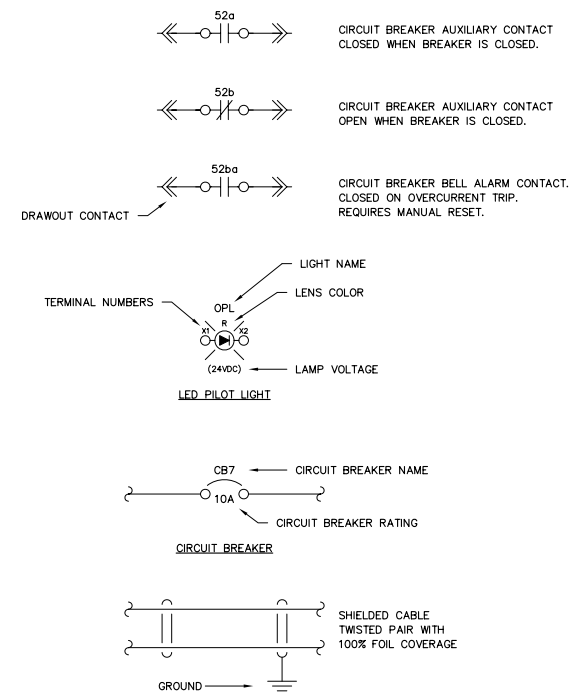
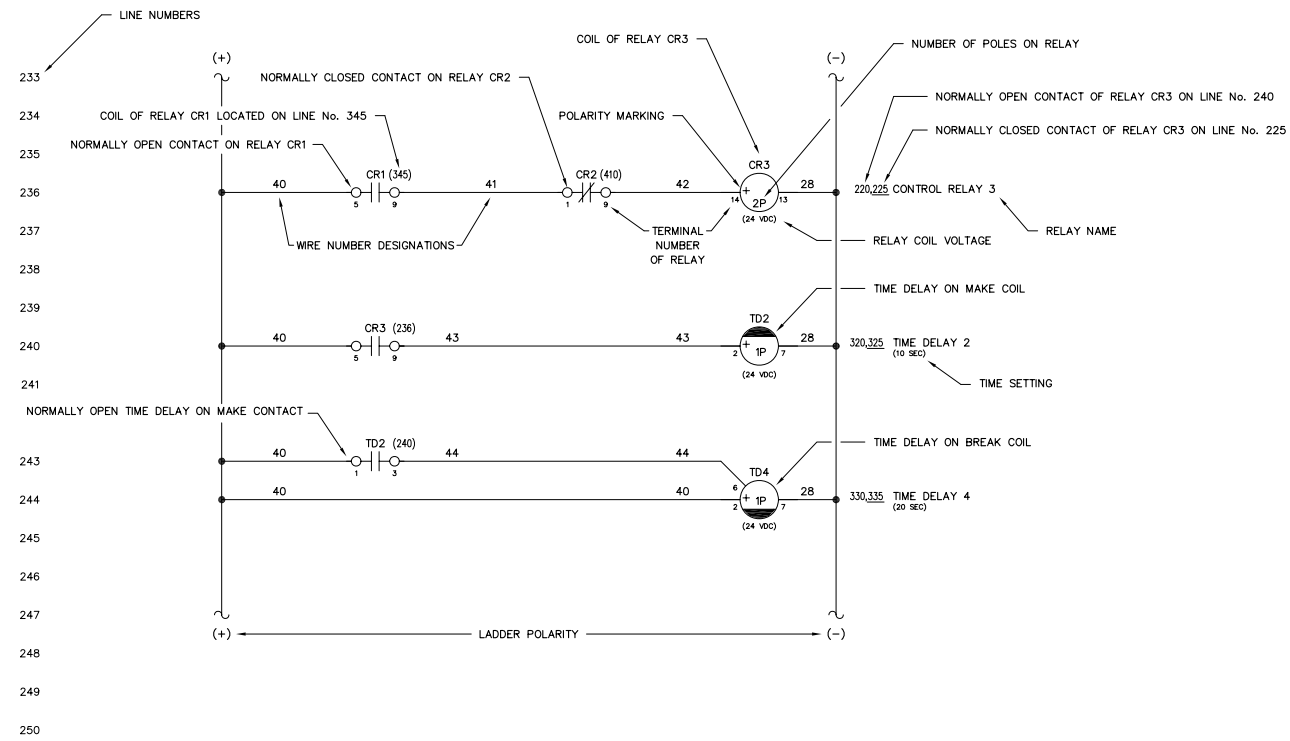




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## CHIGNIK BAY GENERATOR SWITCHGEAR ALASKA ENERGY AUTHORITY PURCHASE ORDER No. REG-08-026 CONTROLLED POWER, INC. JOB No. 6473

<u>DRAWING No.</u>	<u>DRAWING TITLE</u>	<u>DRAWING No.</u>	<u>DRAWING TITLE</u>
6473-2101-D	COVER SHEET	6473-5310-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6473-3101-D	SCHEMATIC LEGEND AND NOTES	6473-5311-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6473-4101-D	GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM	6473-5312-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
6473-4201-D	GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM	6473-5313-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6473-5101-D	GENERATOR SINGLE LINE, SCHEMATIC DIAGRAM	6473-5314-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6473-5201-D	GENERATOR 1 AC THREE LINE, SCHEMATIC DIAGRAM	6473-5315-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6473-5202-D	GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM	6473-5316-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
6473-5203-D	GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM	6473-5401-D	FEEDER BREAKER CONTROL, SCHEMATIC DIAGRAM
6473-5205-D	MASTER AC THREE LINE, SCHEMATIC DIAGRAM	6473-5501-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
6473-5206-D	VFD AC THREE LINE, SCHEMATIC DIAGRAM	6473-5502-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
6473-5207-D	VFD AC THREE LINE, SCHEMATIC DIAGRAM	6473-5601-D	COMMUNICATION NETWORK SINGLE LINE DIAGRAM
6473-5301-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM	6473-5602-D	COMMUNICATION NETWORK SCHEMATIC DIAGRAM
6473-5302-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM	6473-5701-D	HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM
6473-5303-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM	6473-6101-D	CONTROL SWITCH TARGET DIAGRAM
6473-5304-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM	6473-6201-D	NAMEPLATE ENGRAVING SCHEDULE
6473-5305-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM	6473-6202-D	ANNUNCIATOR WINDOW, FABRICATION DIAGRAM
6473-5306-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM	6473-7101-D	INTERCONNECTION DIAGRAM
6473-5307-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM	6473-7102-D	INTERCONNECTION DIAGRAM
6473-5308-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM		
6473-5309-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM		



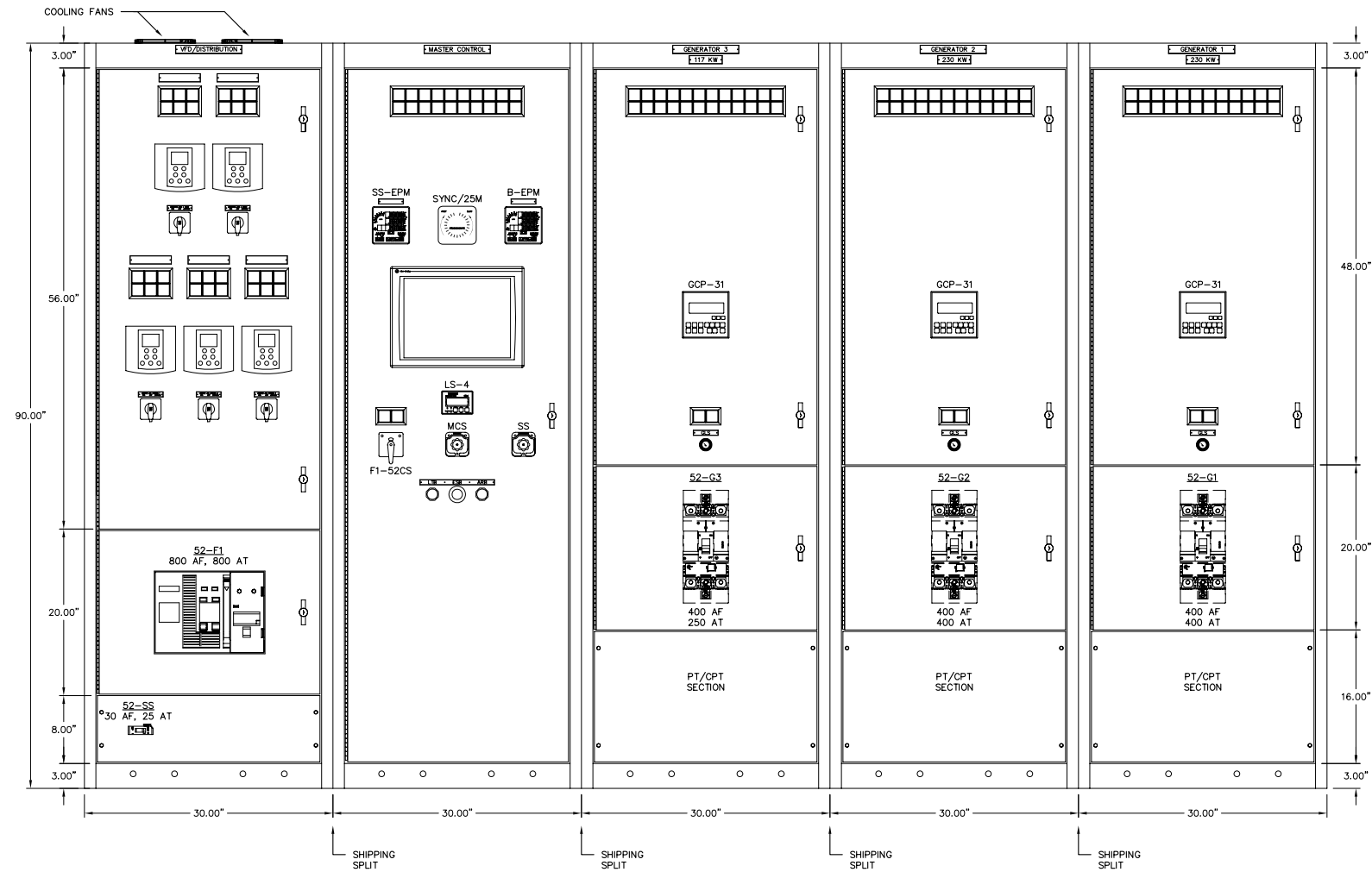
NOTES:

1. SCHEMATIC IS SHOWN AS FOLLOWS:
  - ALL AC AND DC POWER REMOVED
  - ALL RELAY CONTACTS DE-ENERGIZED
  - ALL CIRCUIT BREAKERS IN THE OPEN/RESET POSITION
  - ALL MODE SWITCHES IN THE "OFF" POSITION
  - ALL EMERGENCY STOP SWITCHES IN THE "NORMAL" POSITION
  - ALL PRESSURE SWITCHES SHOWN WITHOUT PRESSURE PRESENT
  - ALL LEVEL SWITCHES SHOWN WITHOUT FLUID PRESENT
  - ALL TEMPERATURE SWITCHES SHOWN AT AMBIENT
2. (⊙) INDICATES FIELD TERMINALS IN GENERATOR CONTROL SECTION.
3. (⊠) INDICATES TERMINALS AT ENGINE/GENERATOR.
4. (⊡) INDICATES INTERCONNECT TERMINALS IN MASTER SECTION.
5. (⊣) INDICATES FIELD TERMINALS IN MASTER SECTION.
6. (⊚) INDICATES INTERCONNECT TERMINALS IN GENERATOR CONTROL SECTION.
7. (⊙) INDICATES INTERCONNECT TERMINALS IN VFD/DIST SECTION.
8. (⊙) INDICATES FIELD TERMINALS IN VFD/DIST SECTION.
9. - - INDICATES FIELD WIRING BY OTHERS  
ALL CONTROL WIRING TO BE No. 14 AWG, 600 VOLT, TYPE SIS EXCEPT AS NOTED
10. SHIELDED WIRING TO BE No. 18 AWG, 300 VOLT, TWISTED LINE WITH 100% FOIL COVERAGE
11. ALL DIODES ARE 1N4007 EXCEPT AS NOTED

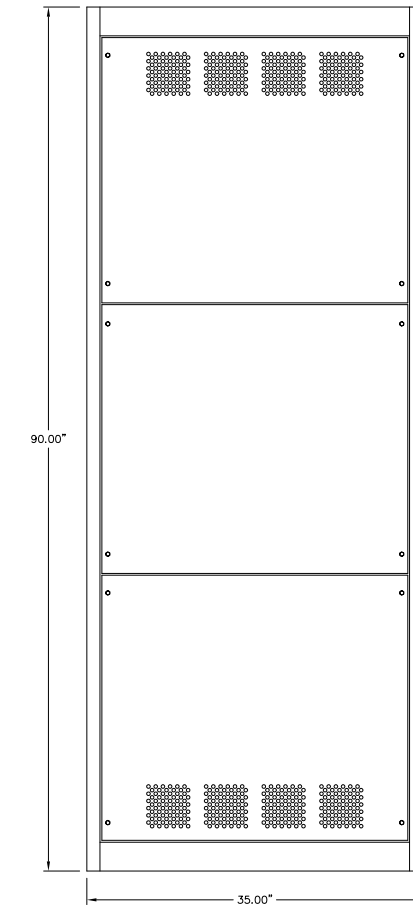
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: SCHEMATIC LEGEND & NOTES			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-3101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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GENERATOR SWITCHGEAR – FRONT VIEW  
 277/480V, 1000A, COPPER BUS, 3 $\phi$ , 4W 35 KAIC



SIDE VIEW

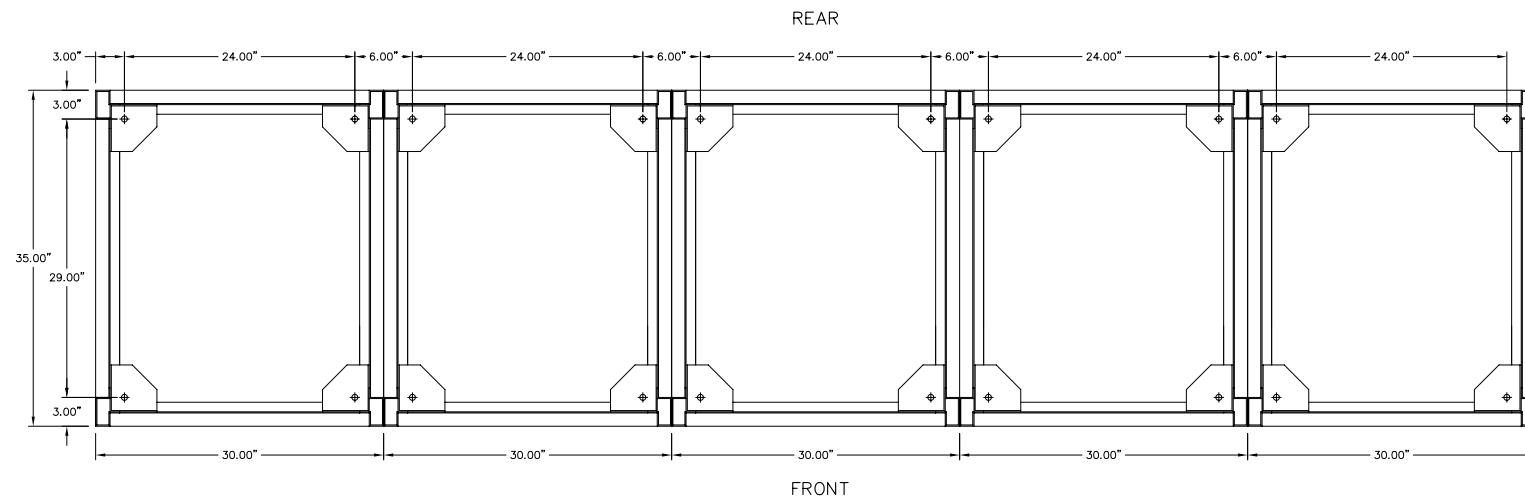
NOTES:

1. EACH SECTION SHIPPED INDIVIDUALLY.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM			
SCALE: 1/10	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-4101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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GENERATOR SWITCHGEAR - PLAN VIEW

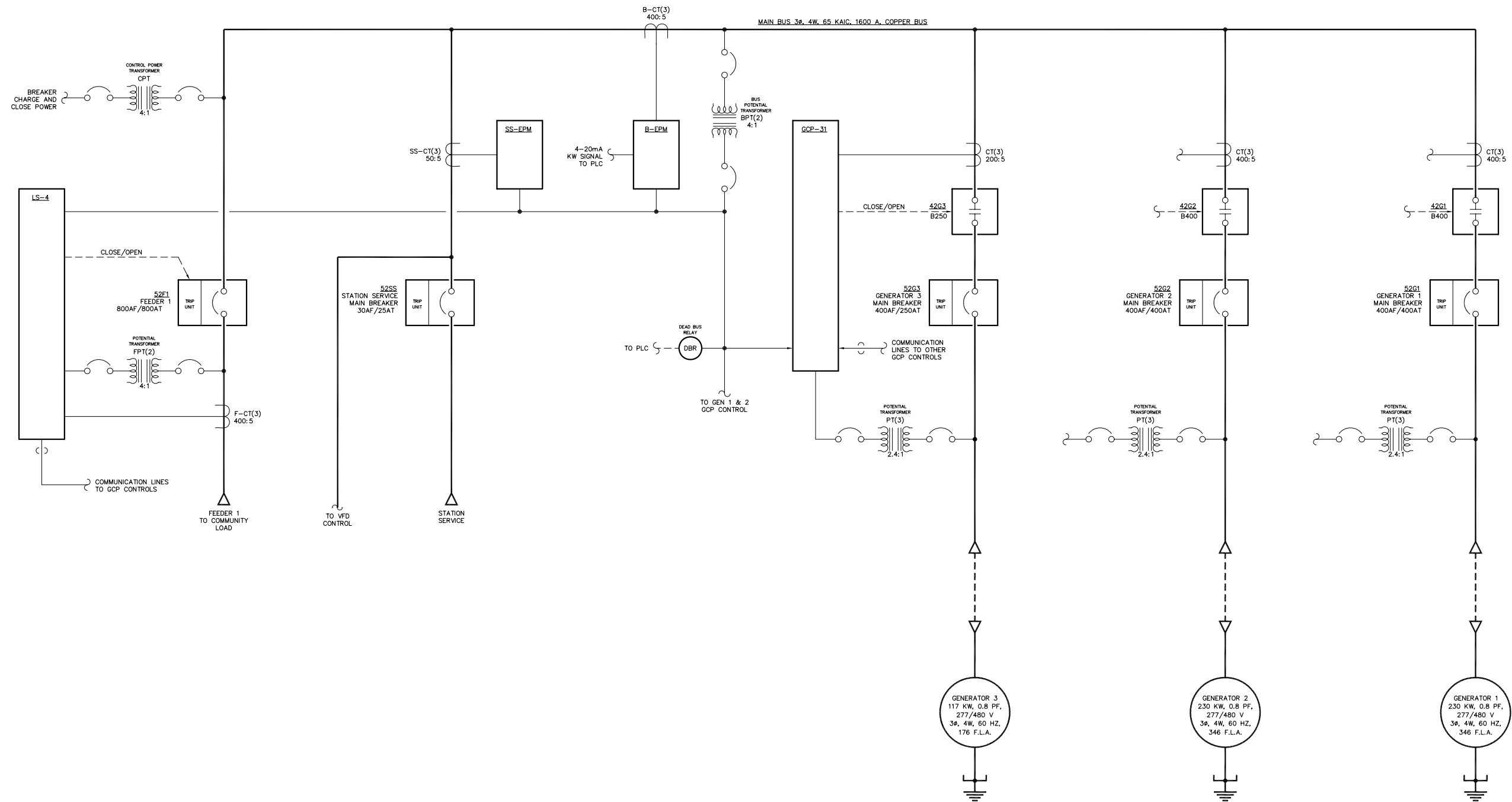
NOTES:

1. EACH SECTION SHIPPED INDIVIDUALLY.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM			
SCALE: 1/10	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-4201-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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**NOTES:**  
 1. GENERATORS 1 & 2 SIMILAR TO GENERATOR 3.

**NOTE:**  
 1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

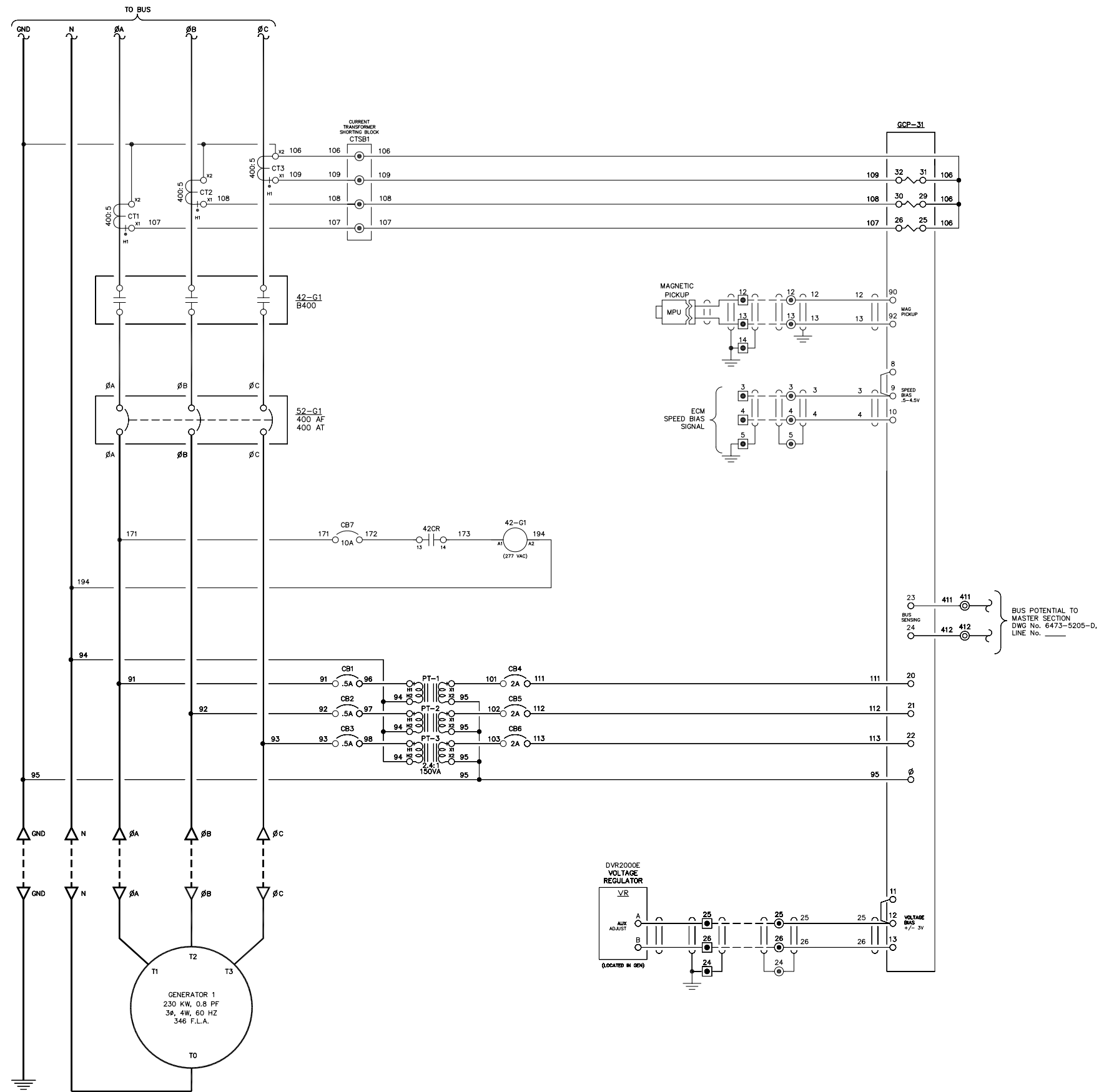
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: GENERATOR SWITCHGEAR SINGLE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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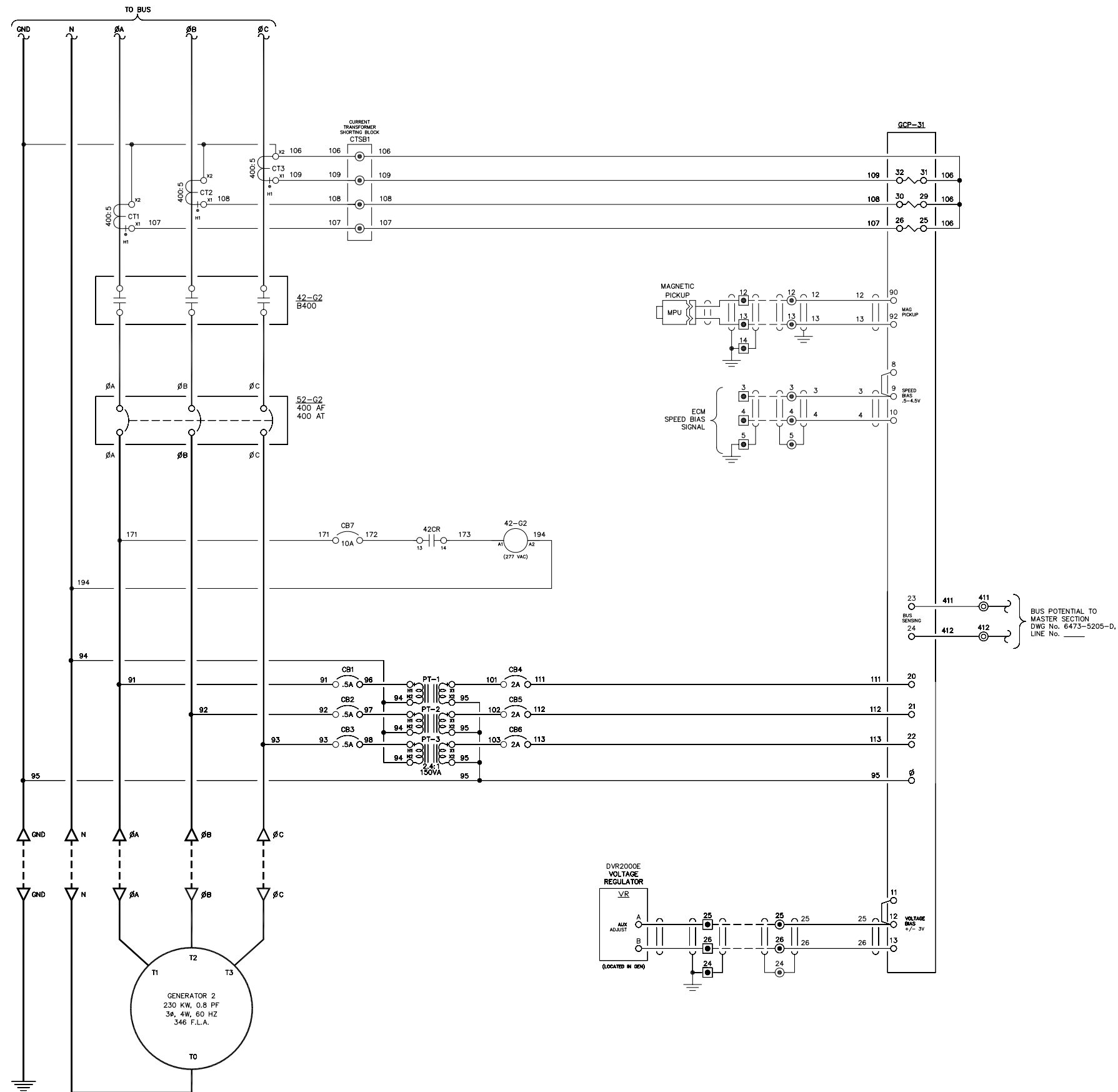
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: GENERATOR 1 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5201-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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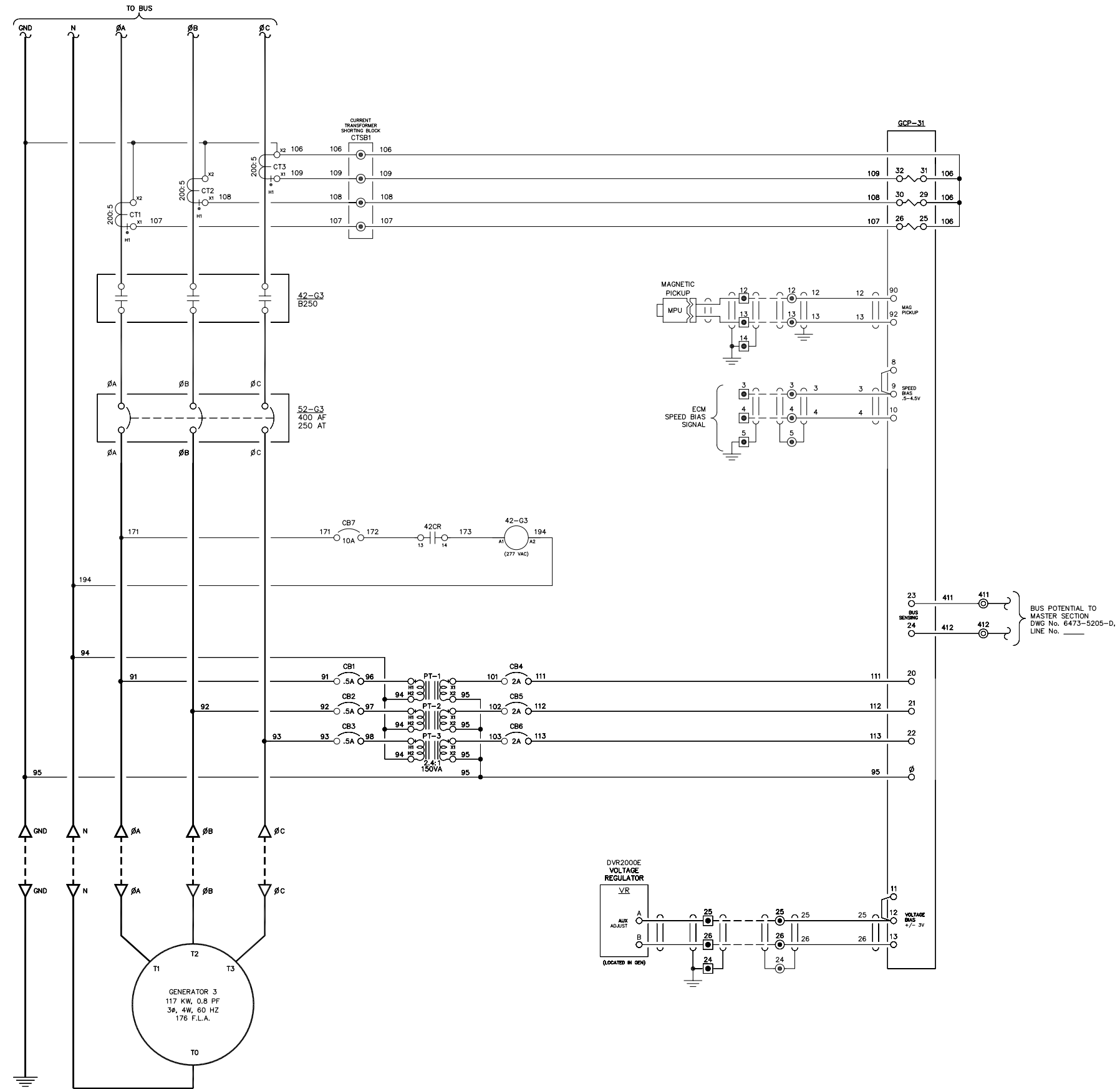
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5202-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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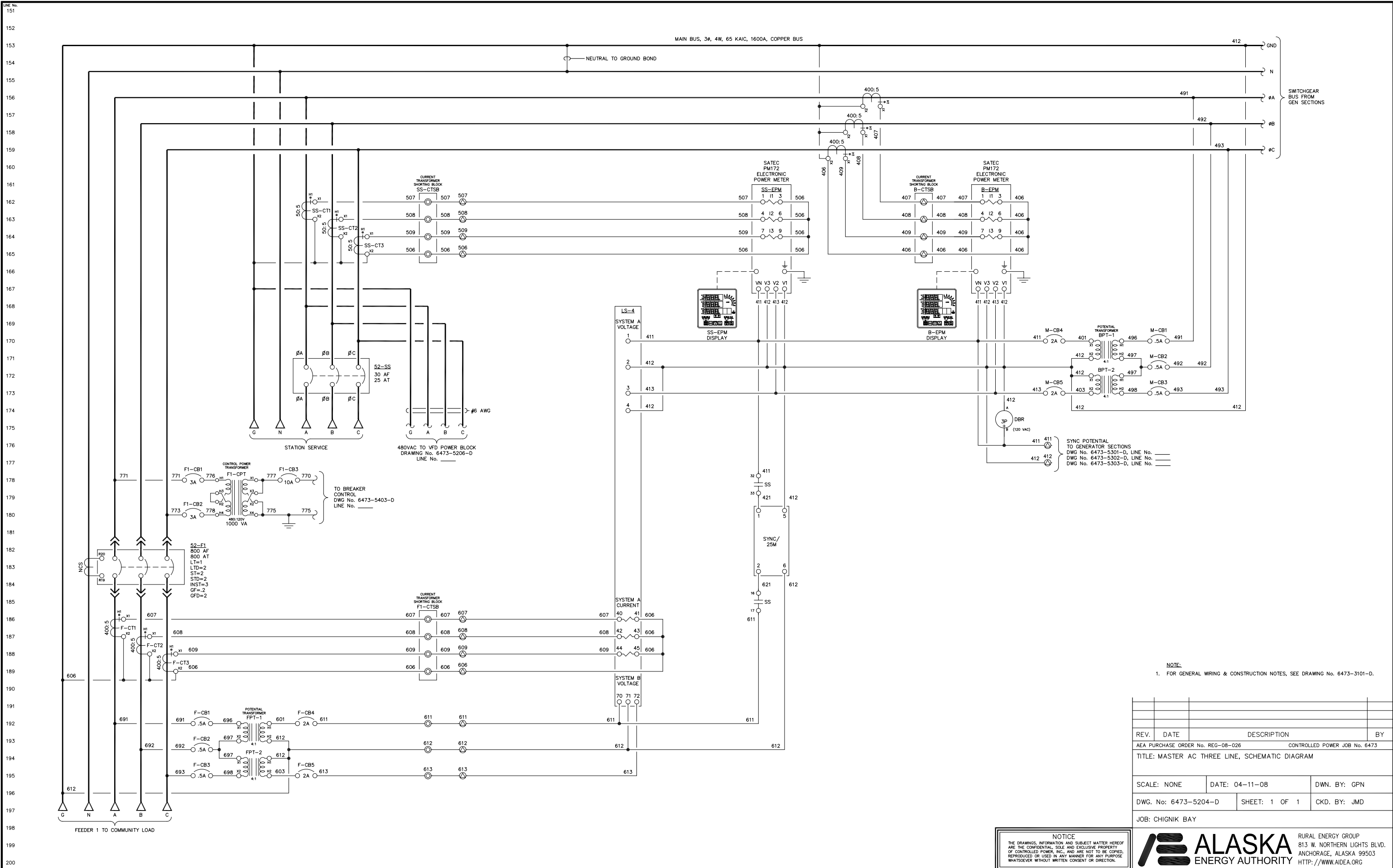


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5203-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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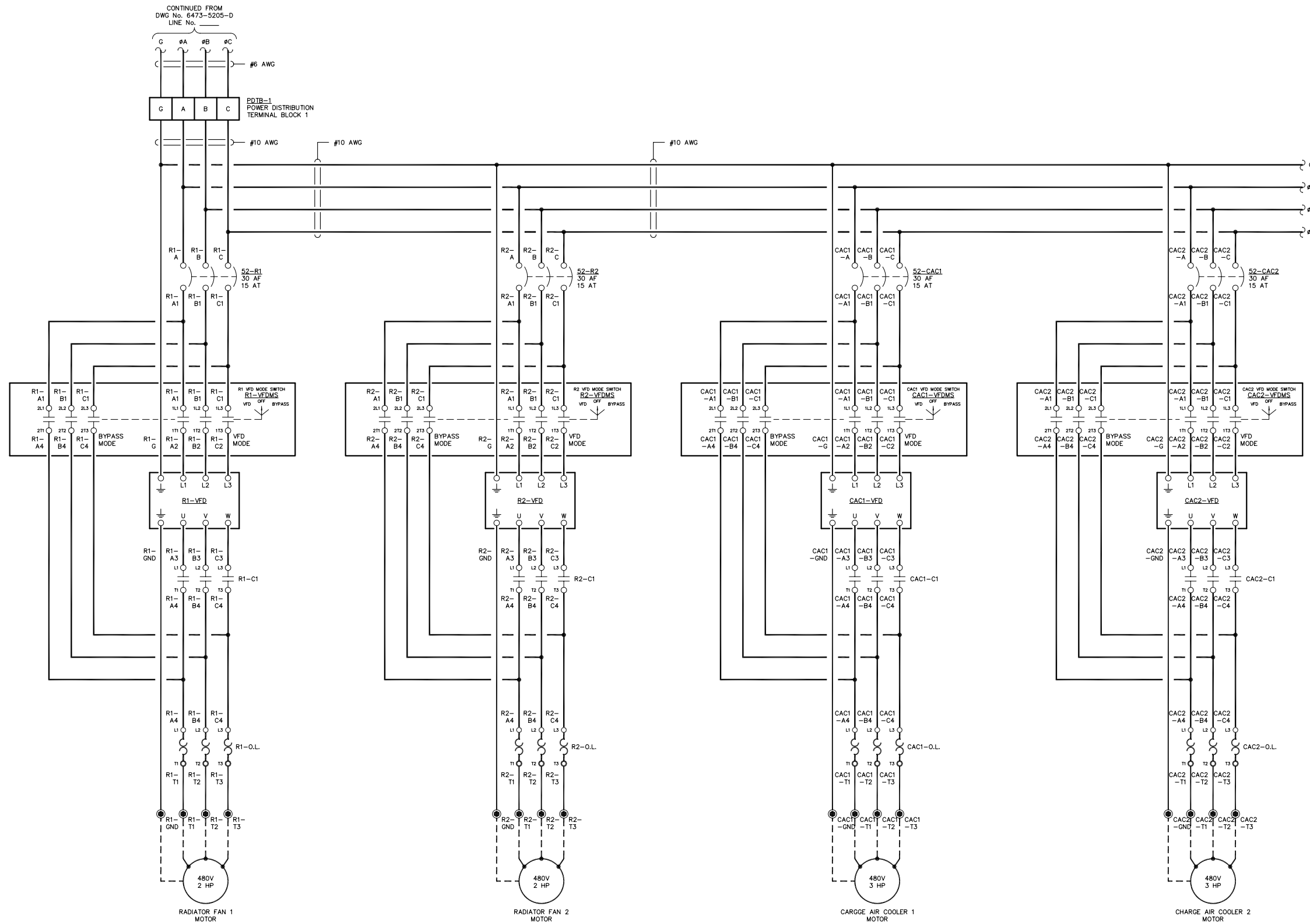
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: MASTER AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5204-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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DWG No. 6473-    -D  
LINE No.     

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473

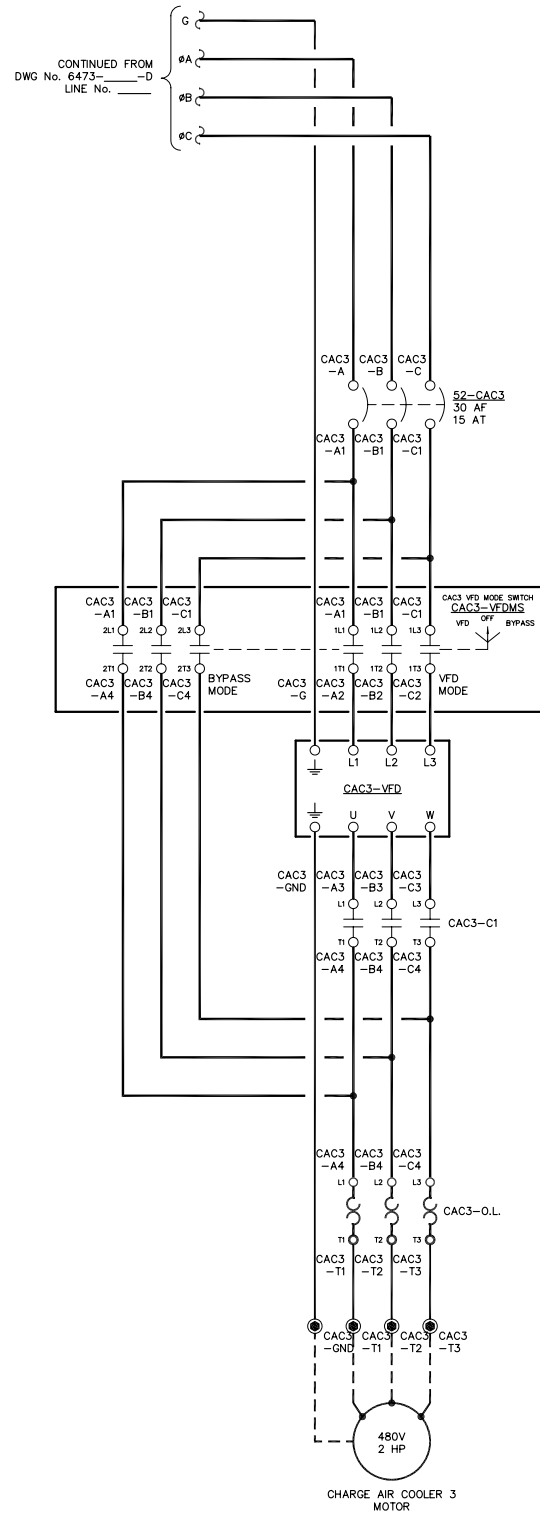
TITLE: VFD THREE LINE, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN
DWG. No: 6473-5205-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: CHIGNIK BAY		

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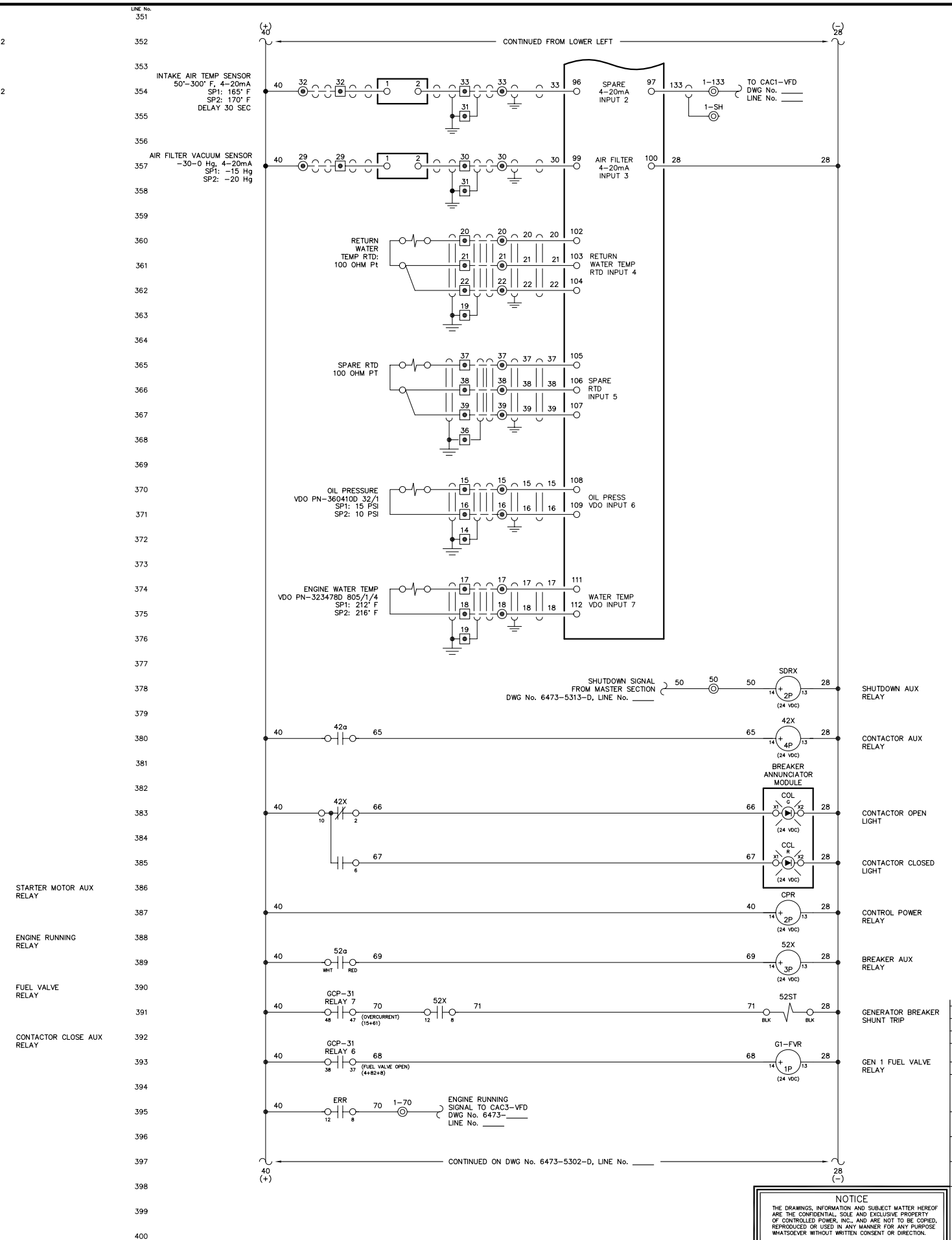
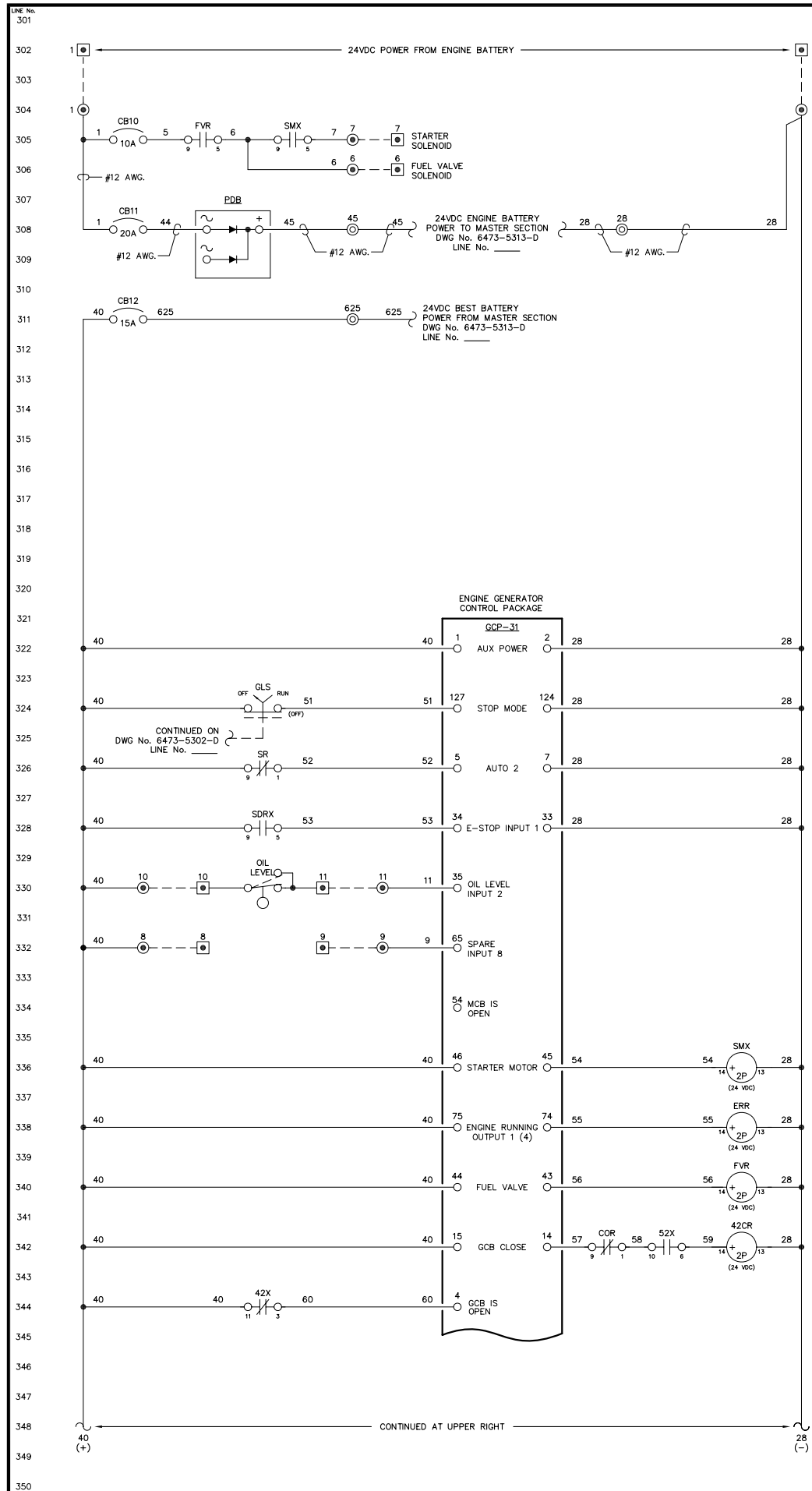


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: VFD THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5206-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473

TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM

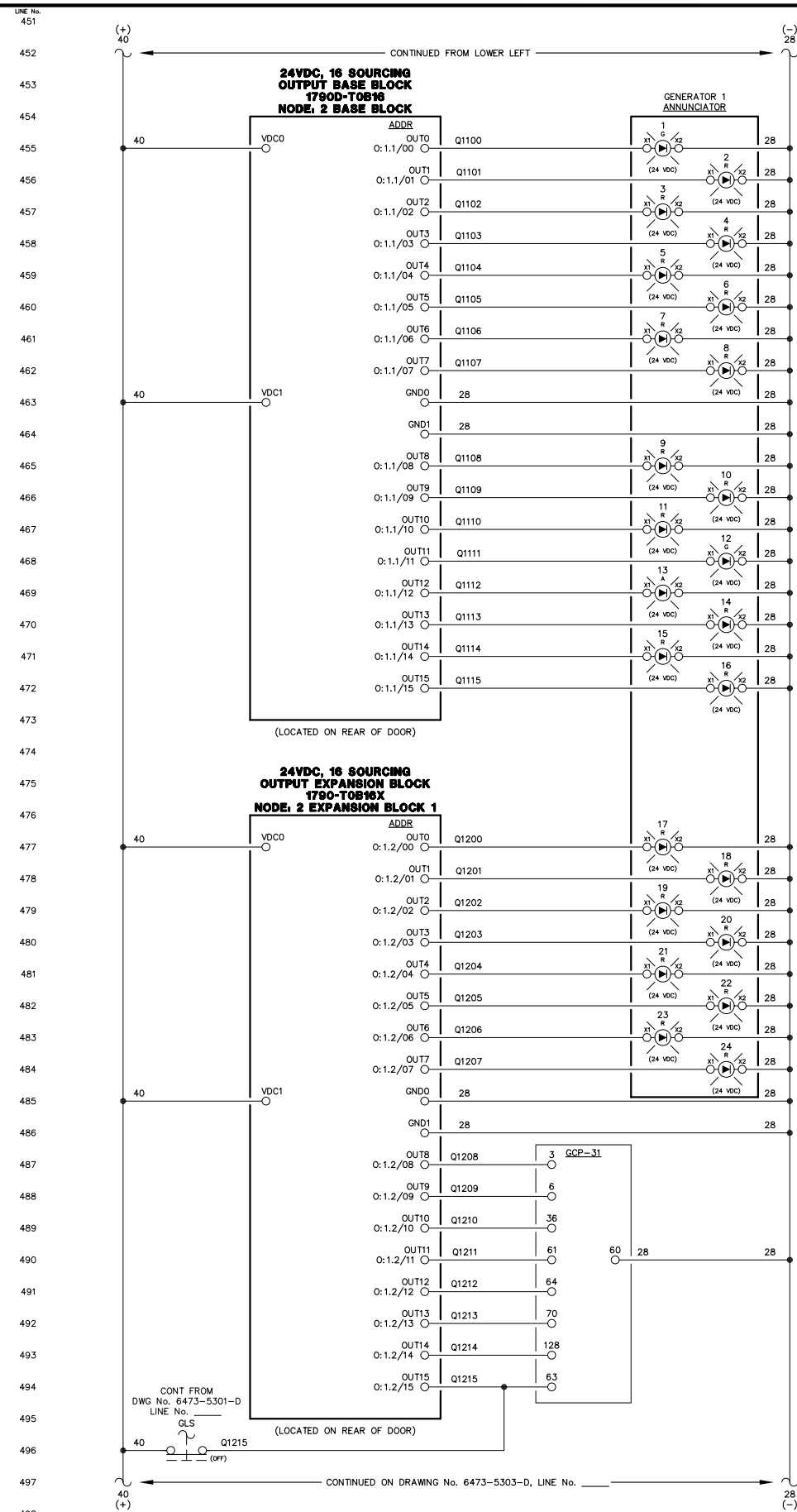
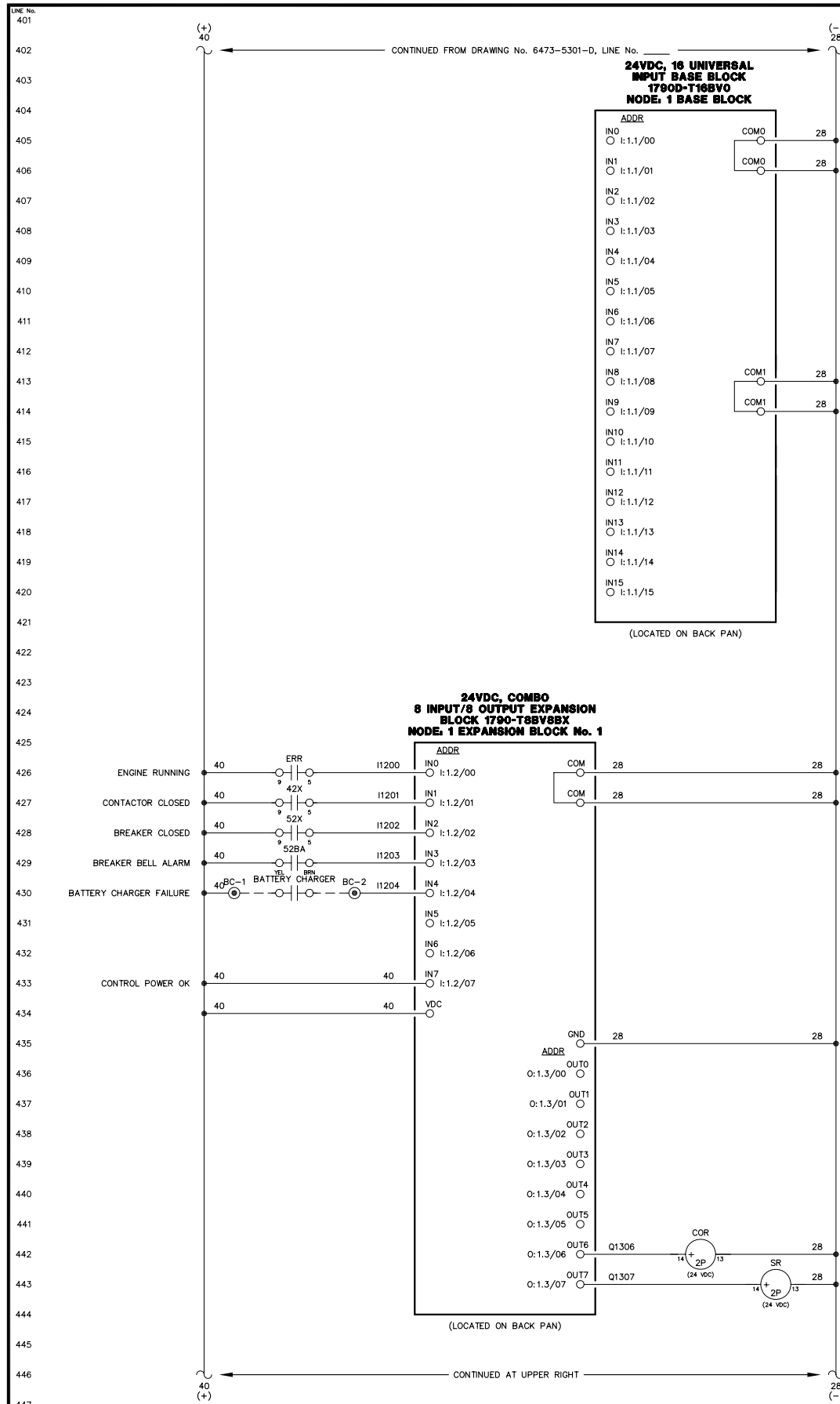
SCALE: NONE DATE: 04-11-08 DWN. BY: GPN

DWG. No: 6473-5301-D SHEET: 1 OF 1 CKD. BY: JMD

JOB: CHIGNIK BAY

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- ENGINE RUNNING LIGHT
- ALARM/LOCKOUT LIGHT
- LOW OIL PRESSURE LIGHT
- OIL LEVEL LIGHT
- HIGH WATER TEMPERATURE LIGHT
- OVERSPEED LIGHT
- OVERCRANK LIGHT
- RUNNING TIMEOUT LIGHT
- BATTERY CHARGER FAIL LIGHT
- AIR FILTER PLUGGED LIGHT
- HIGH CHARGE AIR TEMP LIGHT
- LEAD GEN LIGHT
- NORMAL STOP LIGHT
- NOT IN AUTO LIGHT
- GEN BREAKER OPEN LIGHT
- FAIL TO SYNC LIGHT
- OVERCURRENT LIGHT
- UNDER VOLTAGE LIGHT
- OVER VOLTAGE LIGHT
- UNDER FREQUENCY LIGHT
- OVER FREQUENCY LIGHT
- REVERSE POWER LIGHT
- CHARGE AIR VFD BREAKER OPEN LIGHT
- CHARGE AIR VFD FAILURE LIGHT
- AUTO 1
- MULTIFUNCTION (REMOTE ACK)
- INPUT 3 - COOLDOWN/LOCKOUT
- INPUT 4 - MASTER SHUTDOWN
- INPUT 7 - BREAKER LOGIC
- INPUT 13 - CAC VFD FAULT
- AUTOMATIC MODE
- MODE SELECTION LOCK

NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5302-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

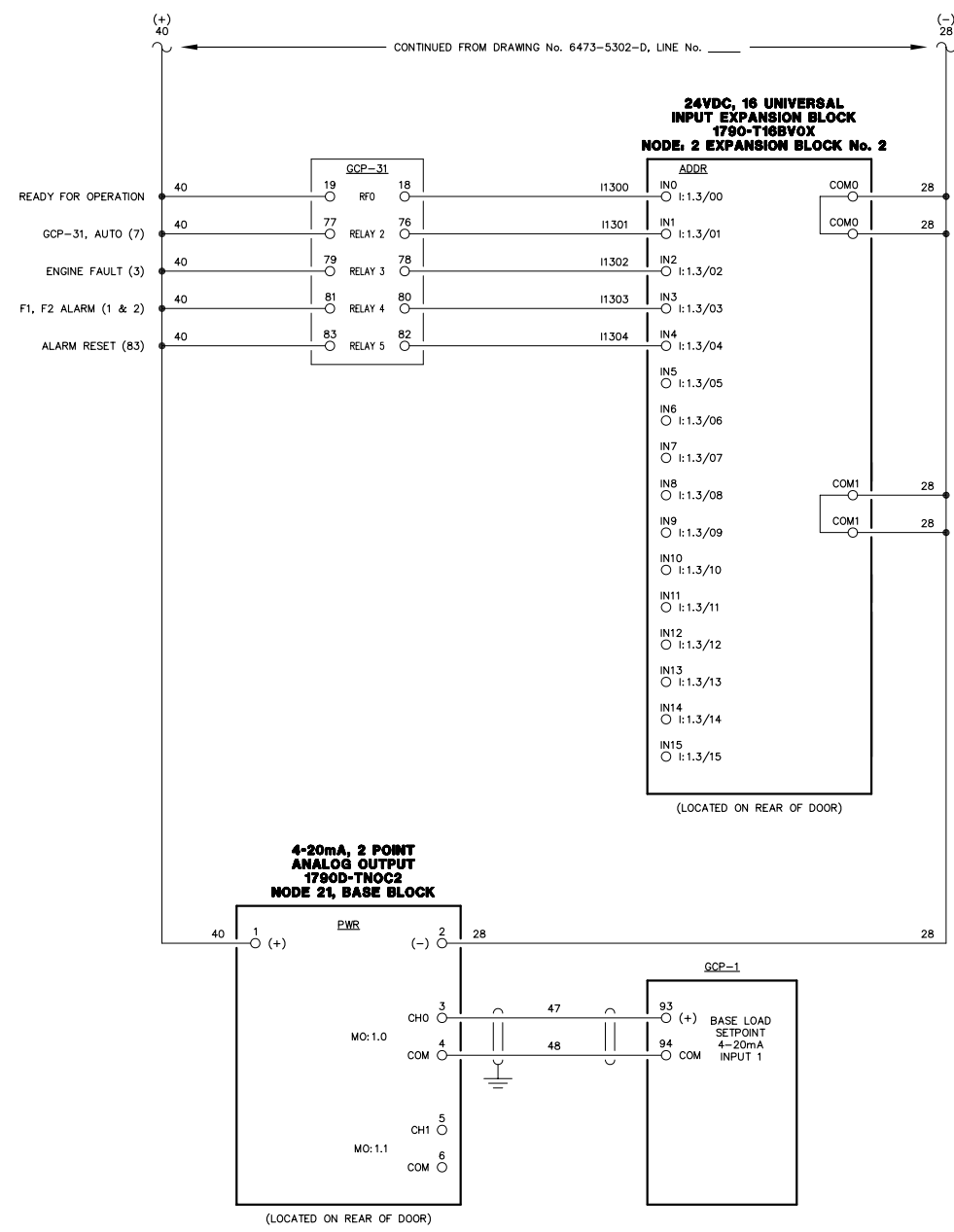
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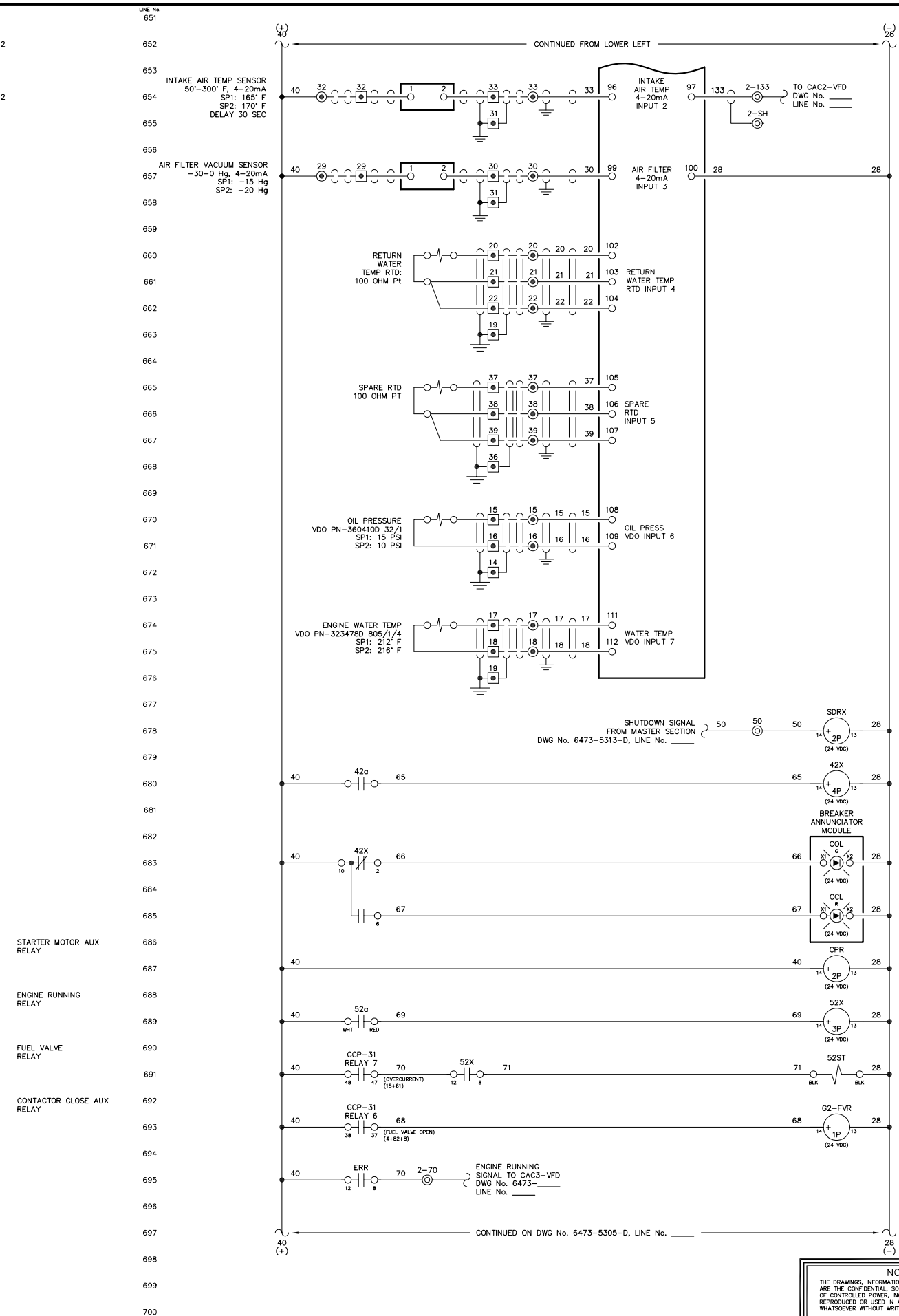
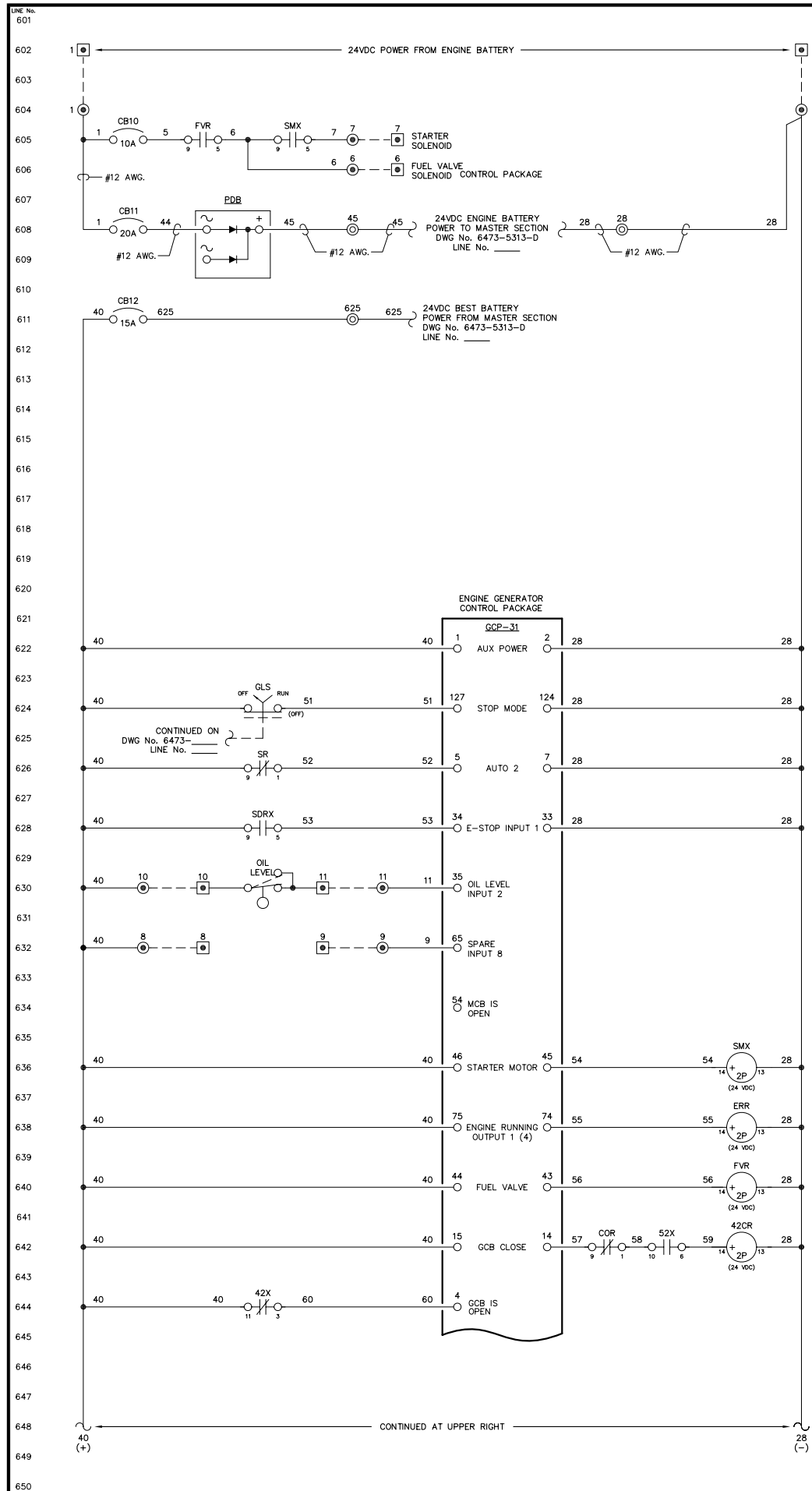


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5303-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

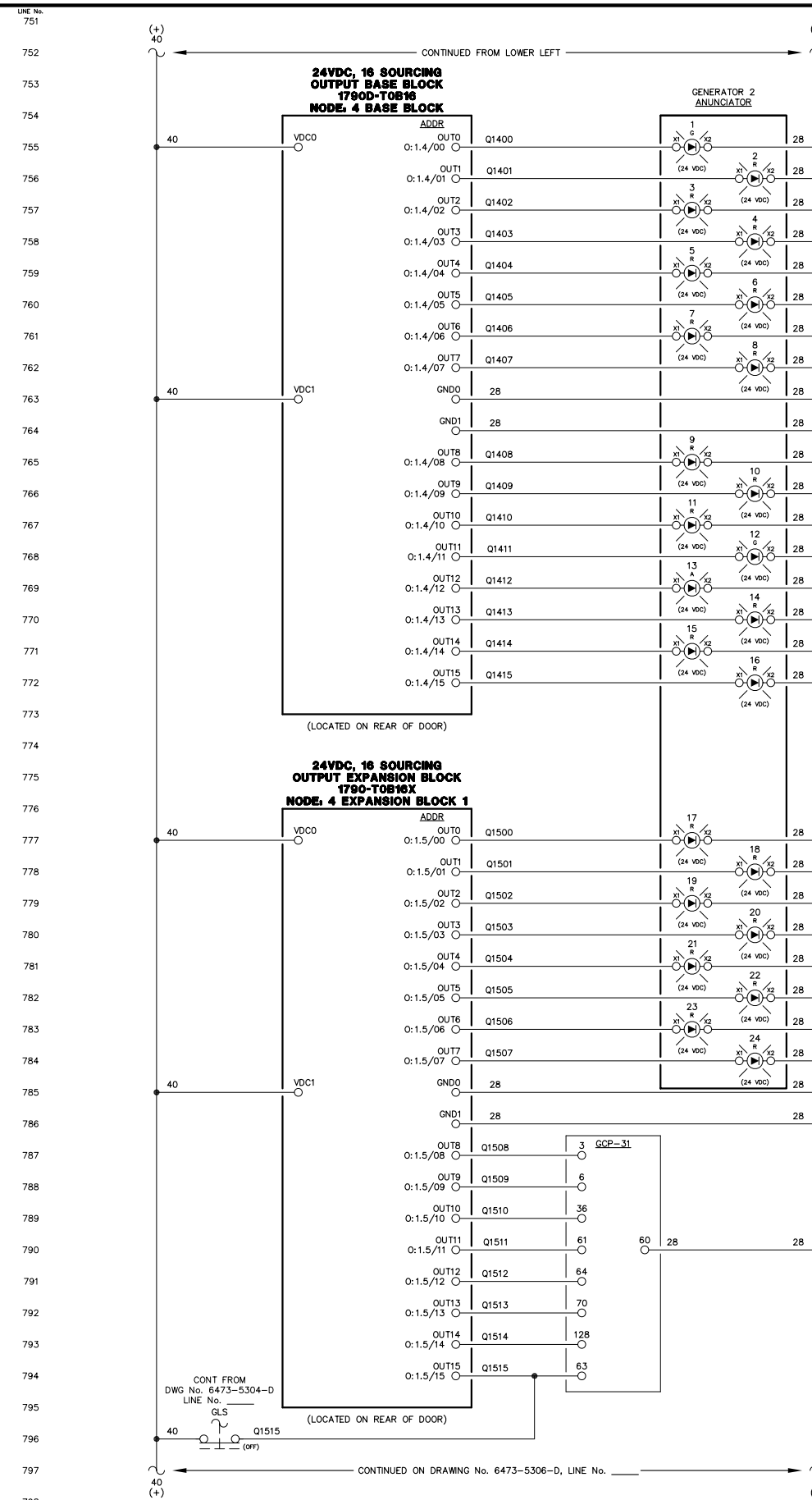
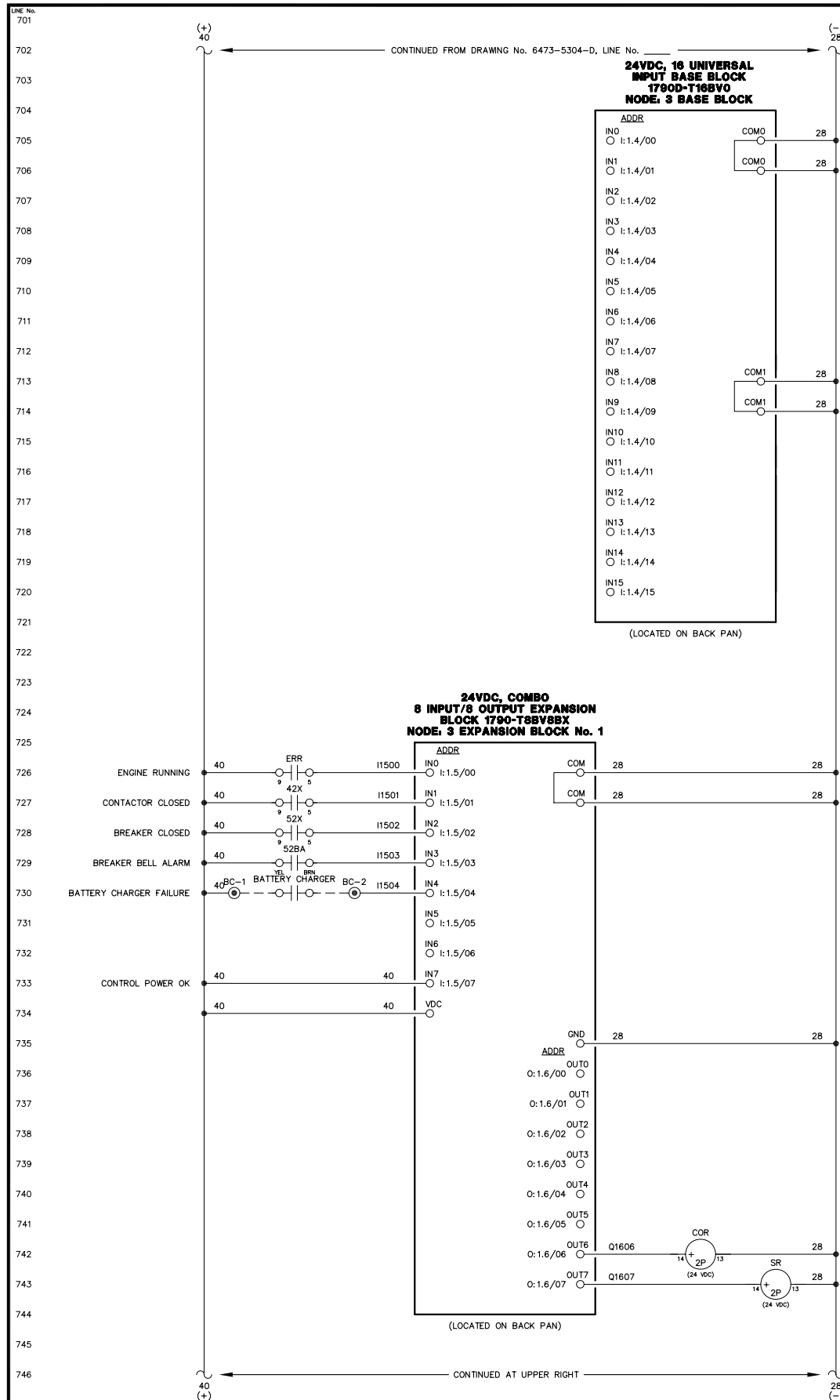
REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473  
TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE DATE: 04-11-08 DWN. BY: GPN  
DWG. No: 6473-5304-D SHEET: 1 OF 1 CKD. BY: JMD  
JOB: CHIGNIK BAY

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- ENGINE RUNNING LIGHT
- ALARM/LOCKOUT LIGHT
- LOW OIL PRESSURE LIGHT
- OIL LEVEL LIGHT
- HIGH WATER TEMPERATURE LIGHT
- OVERSPEED LIGHT
- OVERCRANK LIGHT
- RUNNING TIMEOUT LIGHT
- BATTERY CHARGER FAIL LIGHT
- AIR FILTER PLUGGED LIGHT
- HIGH CHARGE AIR TEMP LIGHT
- LEAD GEN LIGHT
- NORMAL STOP LIGHT
- NOT IN AUTO LIGHT
- GEN BREAKER OPEN LIGHT
- FAIL TO SYNC LIGHT
- OVERCURRENT LIGHT
- UNDER VOLTAGE LIGHT
- OVER VOLTAGE LIGHT
- UNDER FREQUENCY LIGHT
- OVER FREQUENCY LIGHT
- REVERSE POWER LIGHT
- CHARGE AIR VFD BREAKER OPEN LIGHT
- CHARGE AIR VFD FAILURE LIGHT
- AUTO 1
- MULTIFUNCTION (REMOTE ACK)
- INPUT 3 - COOLDOWN/LOCKOUT
- INPUT 4 - MASTER SHUTDOWN
- INPUT 7 - BREAKER LOGIC
- INPUT 13 - CAC VFD FAULT
- AUTOMATIC MODE
- MODE SELECTION LOCK

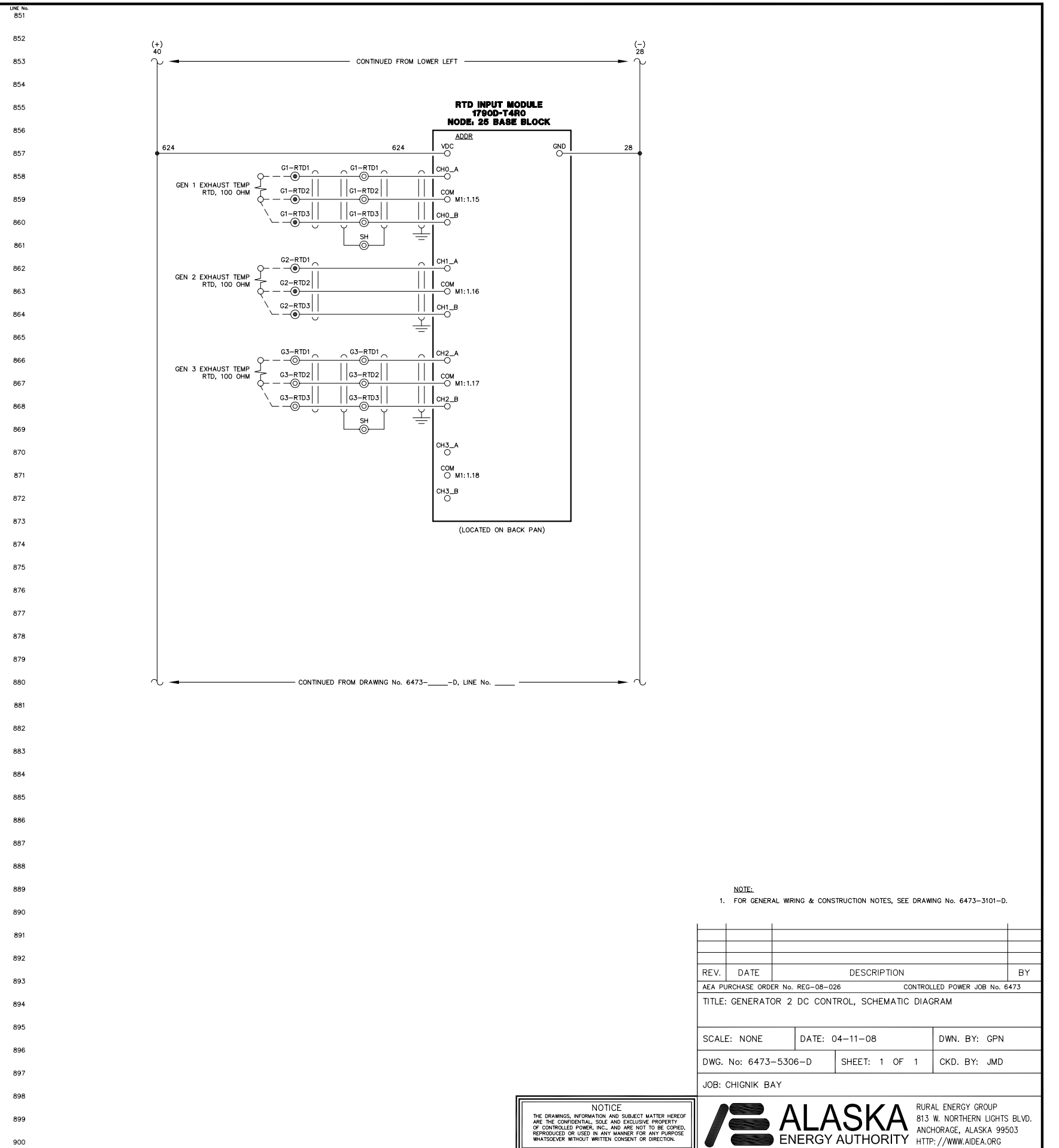
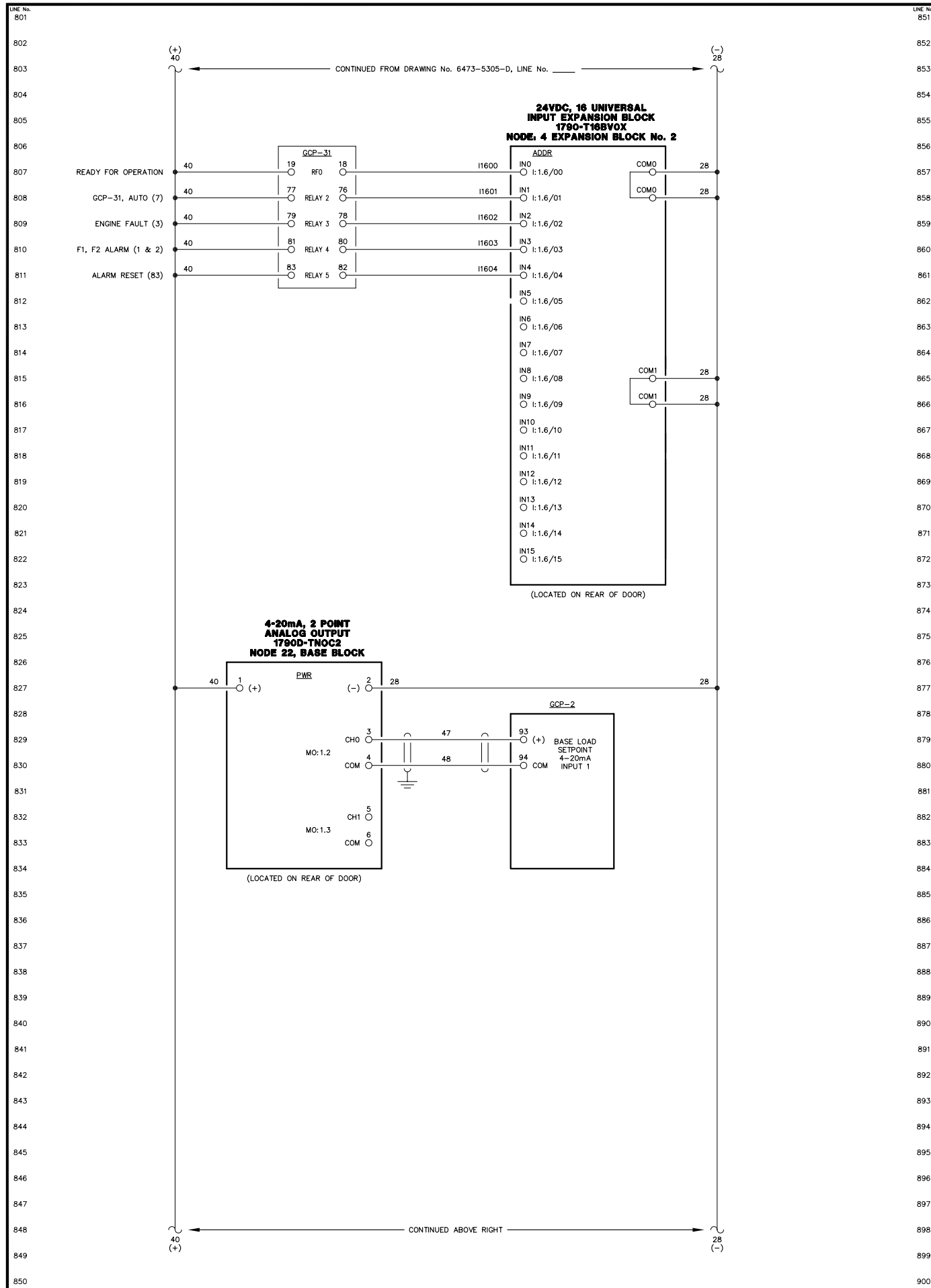
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY

SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN
DWG. No: 6473-5305-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: CHIGNIK BAY		



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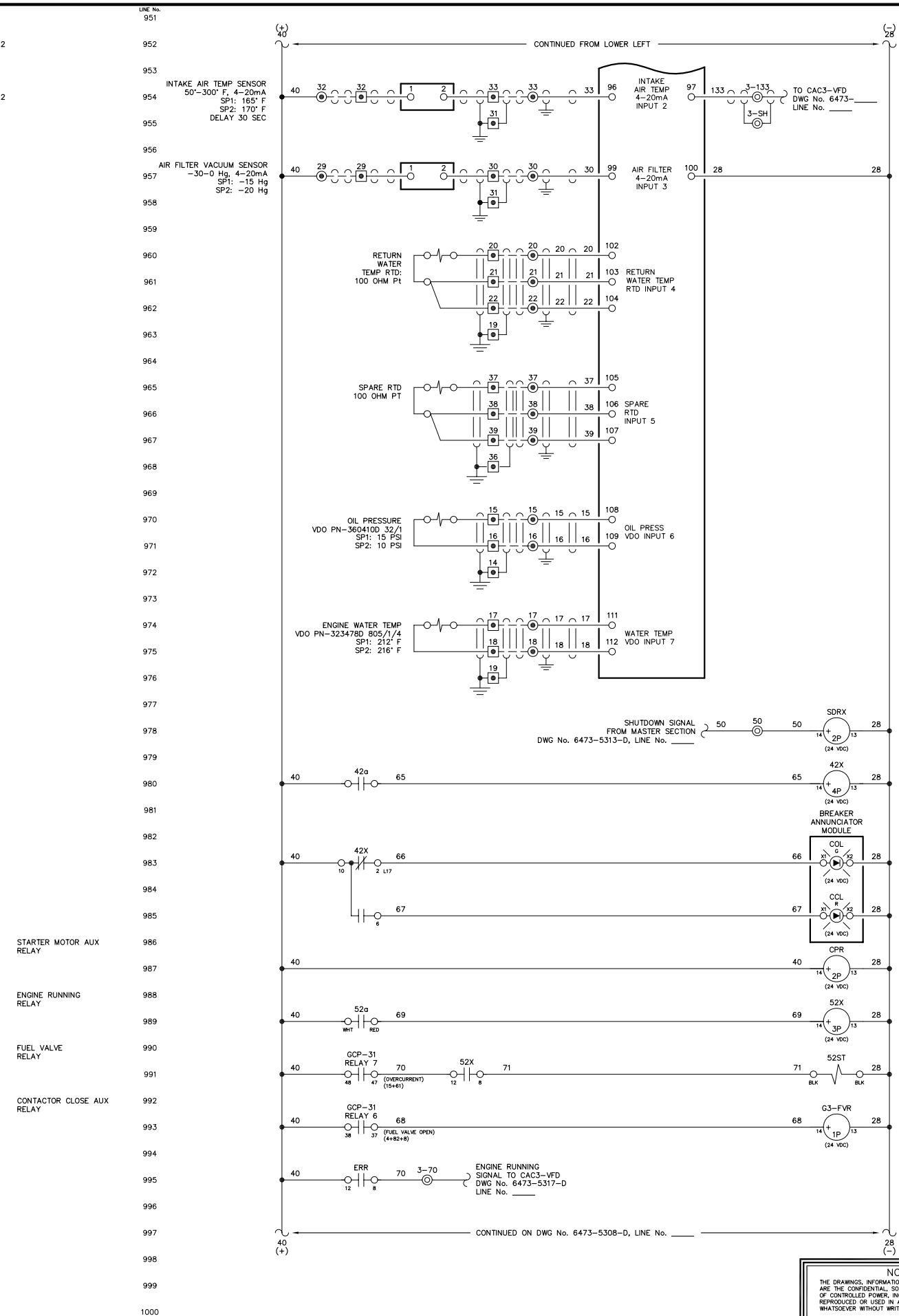
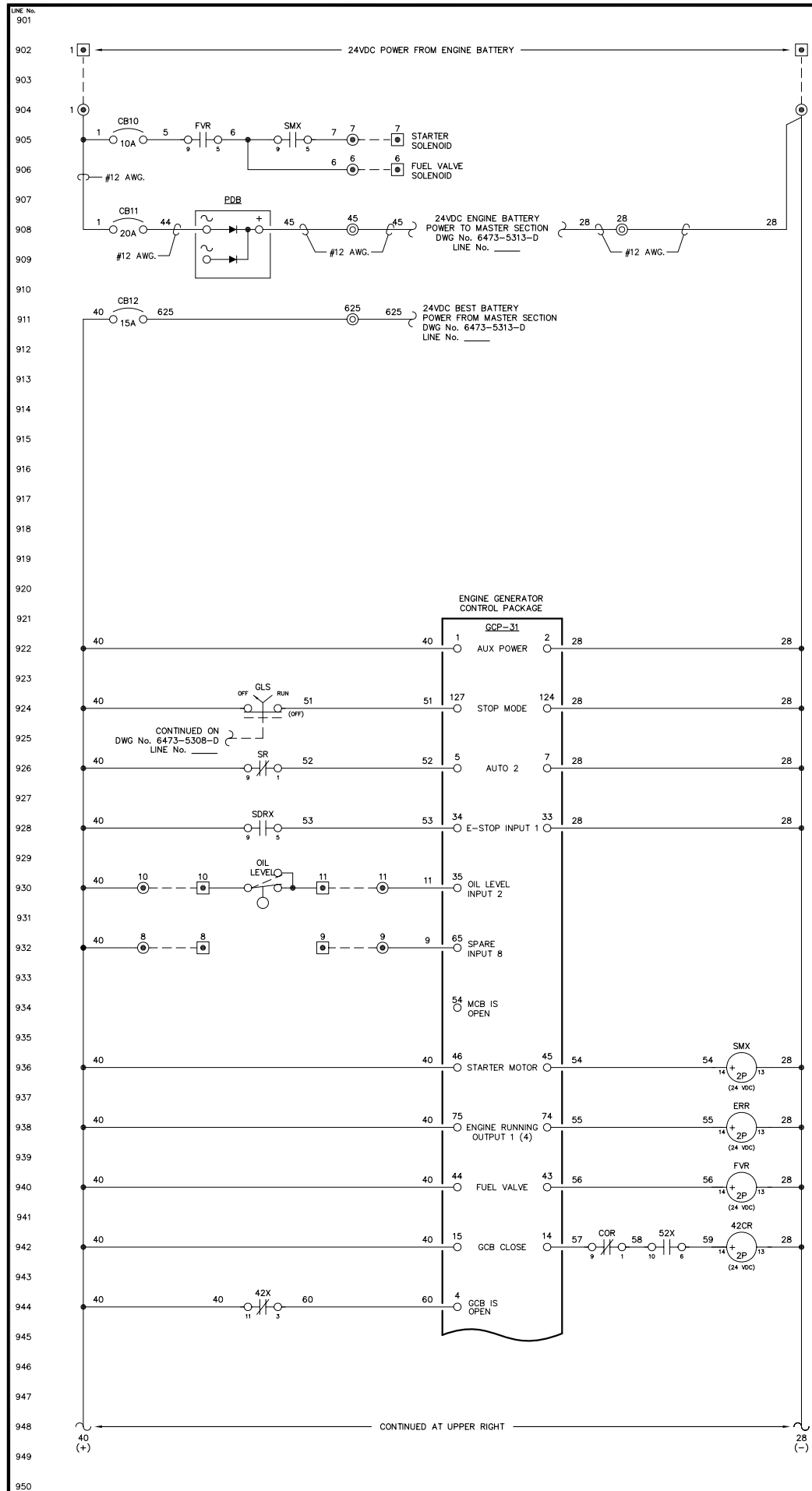


NOTE:  
 1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5306-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY

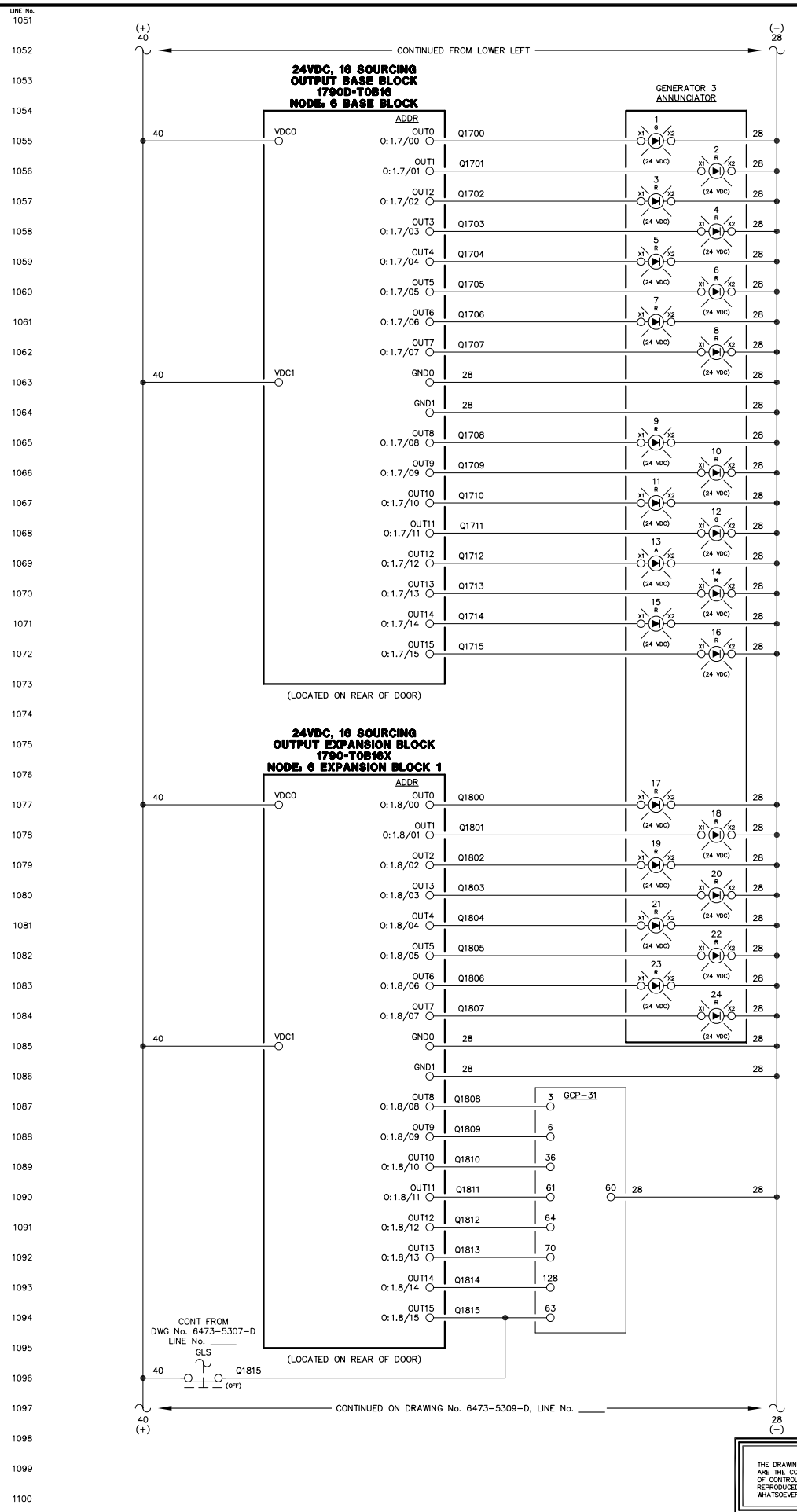
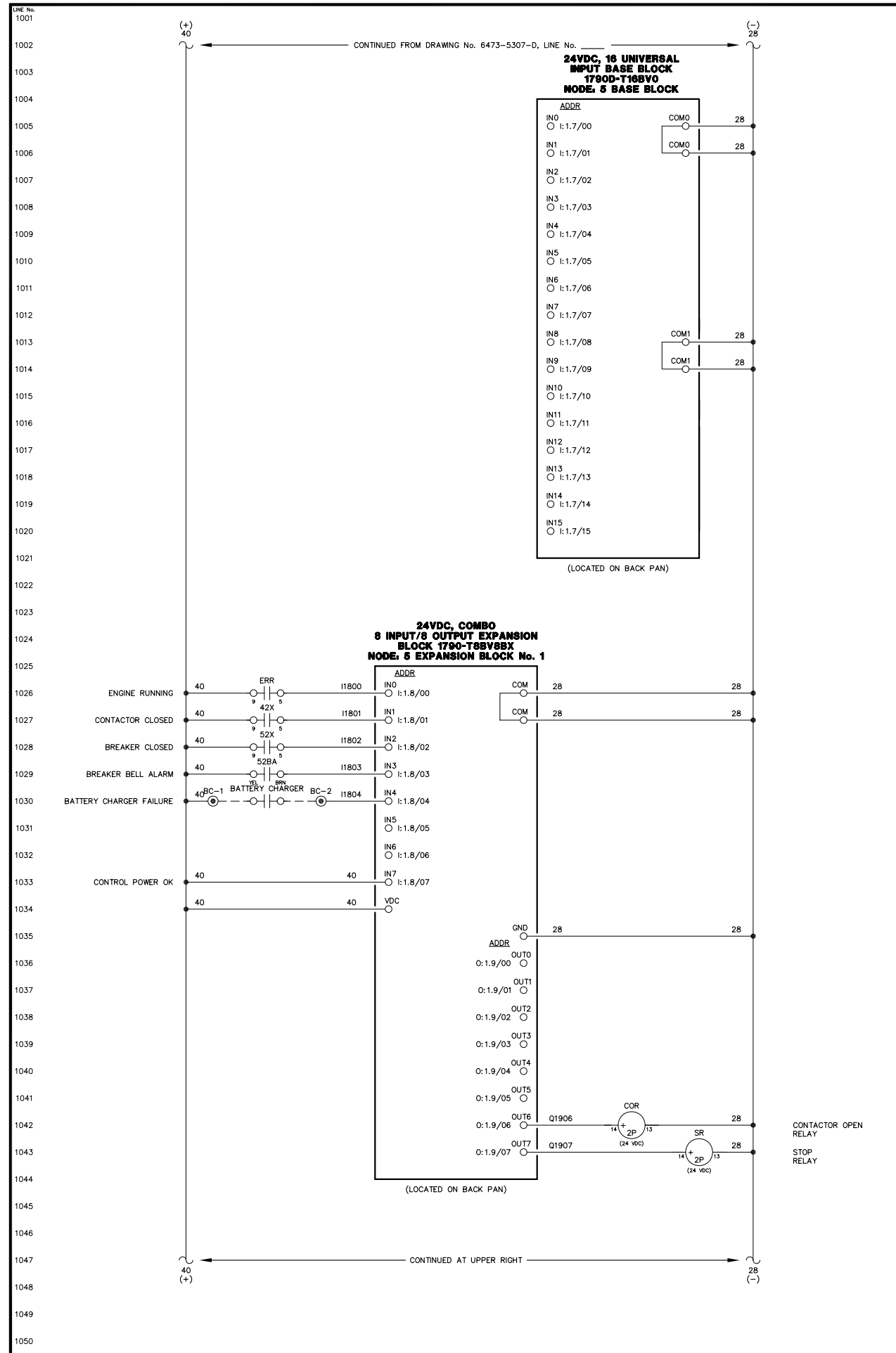
AEA PURCHASE ORDER No. REG-08-026      CONTROLLED POWER JOB No. 6473

TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN
DWG. No: 6473-5307-D	SHEET: 1 OF 1	CKD. BY: JMD
JOB: CHIGNIK BAY		

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ENGINE RUNNING LIGHT	1	Q1700	28
ALARM/LOCKOUT LIGHT	2	Q1701	28
LOW OIL PRESSURE LIGHT	3	Q1702	28
OIL LEVEL LIGHT	4	Q1703	28
HIGH WATER TEMPERATURE LIGHT	5	Q1704	28
OVERSPEED LIGHT	6	Q1705	28
OVERCRANK LIGHT	7	Q1706	28
RUNNING TIMEOUT LIGHT	8	Q1707	28
BATTERY CHARGER FAIL LIGHT	9	Q1708	28
AIR FILTER PLUGGED LIGHT	10	Q1709	28
HIGH CHARGE AIR TEMP LIGHT	11	Q1710	28
SPARE LIGHT	12	Q1711	28
NORMAL STOP LIGHT	13	Q1712	28
NOT IN AUTO LIGHT	14	Q1713	28
GEN BREAKER OPEN LIGHT	15	Q1714	28
FAIL TO SYNC LIGHT	16	Q1715	28
OVERCURRENT LIGHT	17	Q1800	28
UNDER VOLTAGE LIGHT	18	Q1801	28
OVER VOLTAGE LIGHT	19	Q1802	28
UNDER FREQUENCY LIGHT	20	Q1803	28
OVER FREQUENCY LIGHT	21	Q1804	28
REVERSE POWER LIGHT	22	Q1805	28
CHARGE AIR VFD BREAKER OPEN LIGHT	23	Q1806	28
CHARGE AIR VFD FAILURE LIGHT	24	Q1807	28
AUTO 1	3	GCP-31	28
MULTIFUNCTION (REMOTE ACK)	6		28
INPUT 3 - COOLDOWN/LOCKOUT	36		28
INPUT 4 - MASTER SHUTDOWN	61		28
INPUT 7 - BREAKER LOGIC	64		28
INPUT 13 - CAC VFD FAULT	70		28
AUTOMATIC MODE	128		28
MODE SELECTION LOCK	63		28

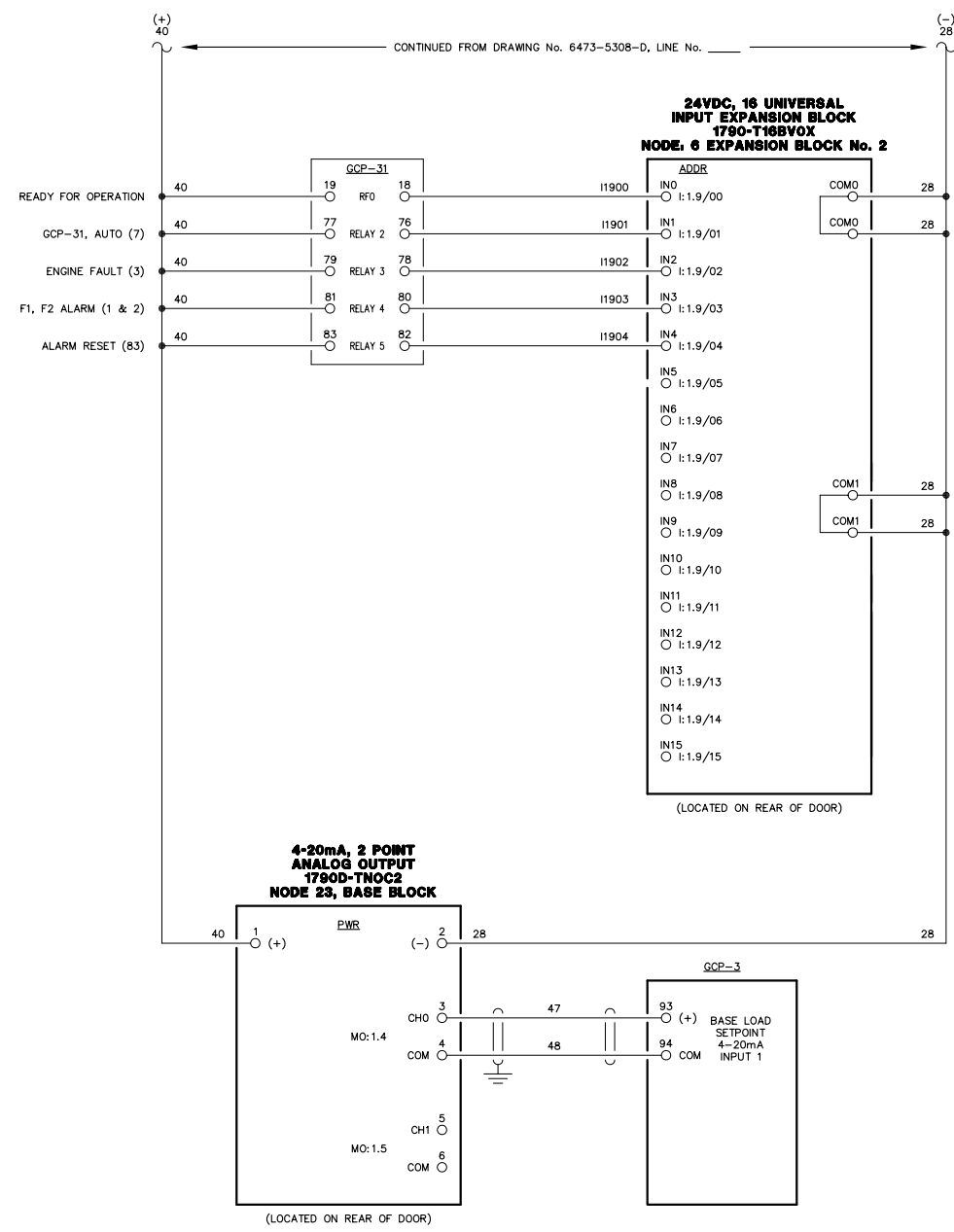
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ANCHORAGE, ALASKA 99503  
HTTP://WWW.AIDEA.ORG

Plot date: 2008/8/7 - 14:25

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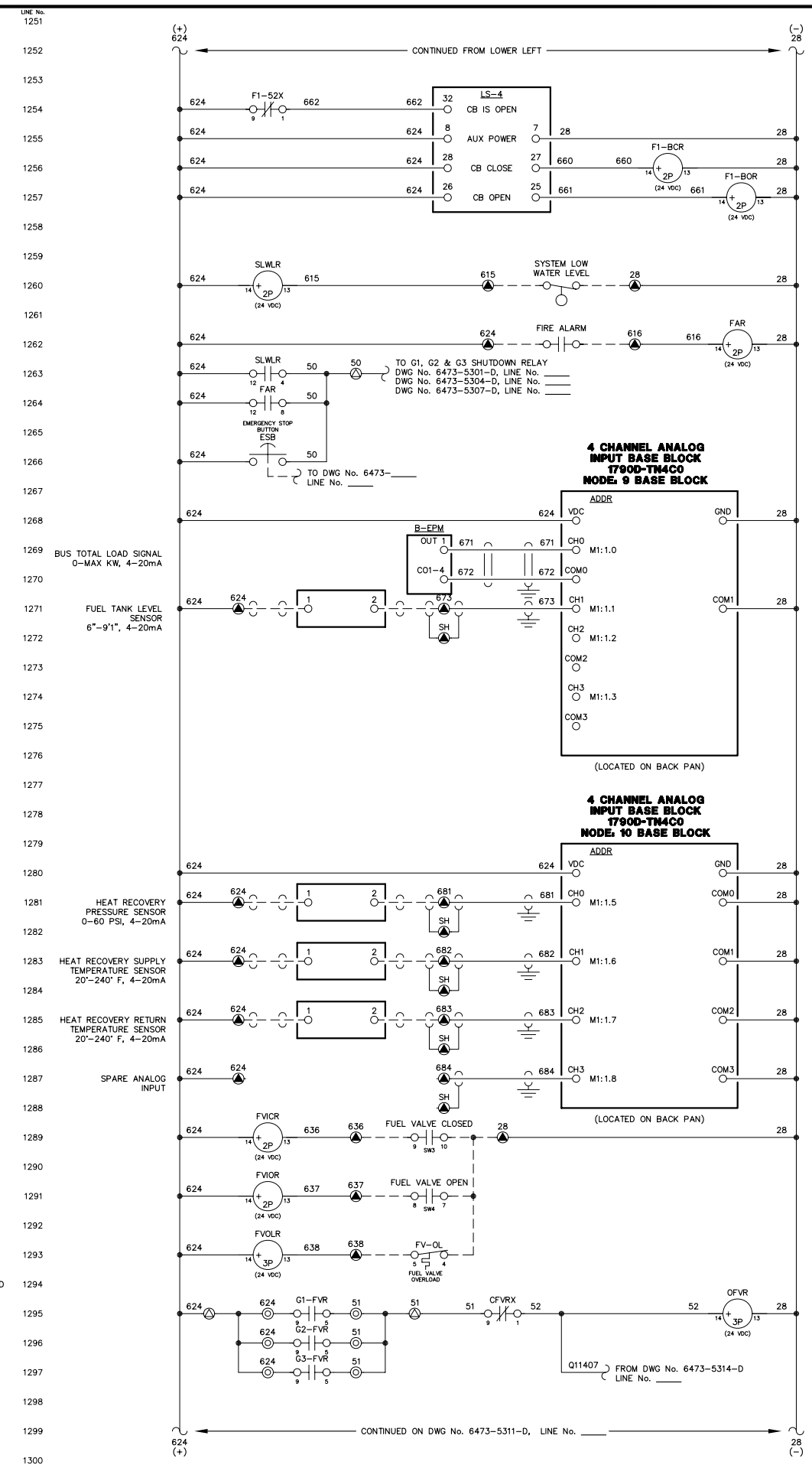
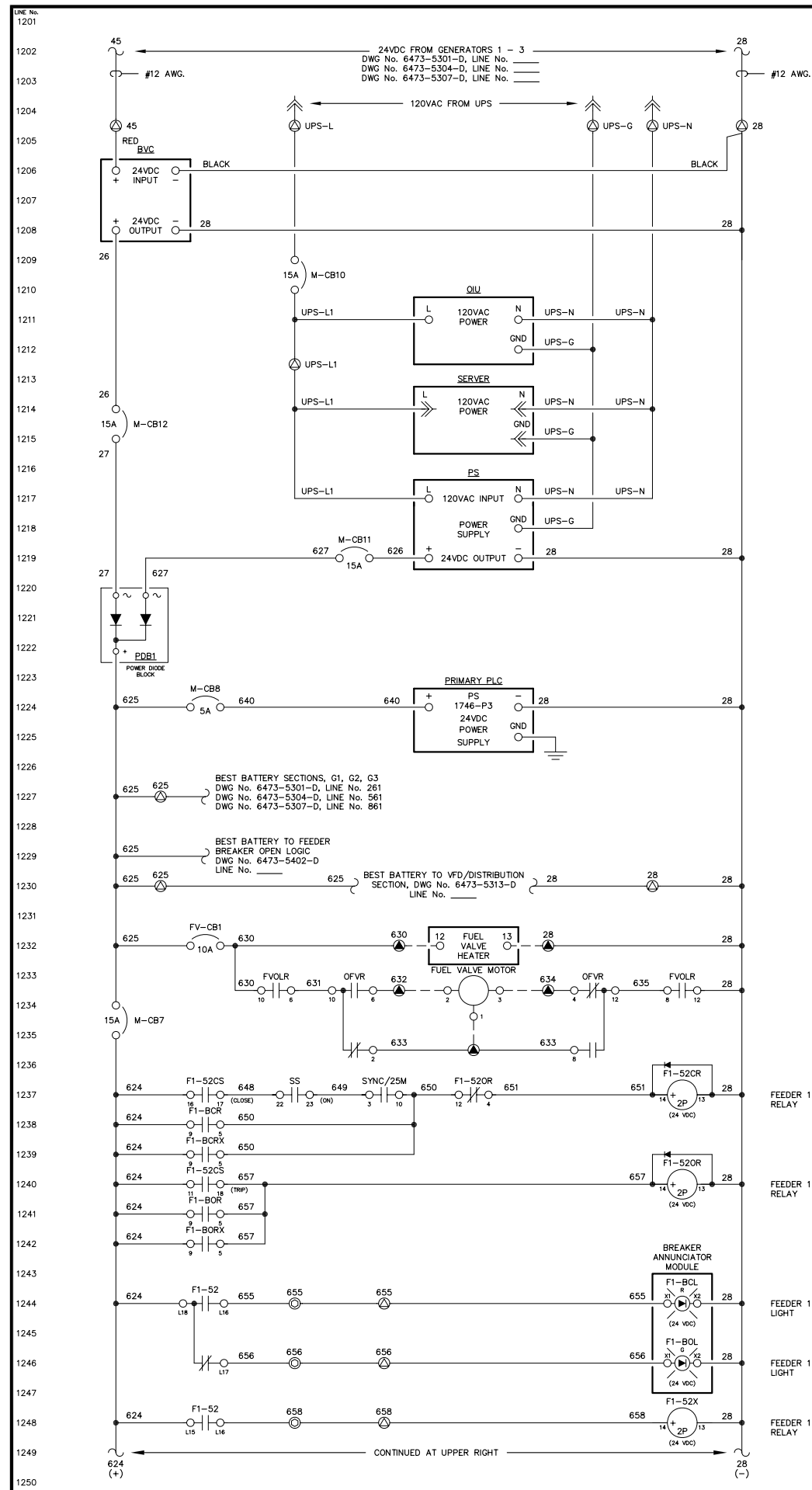


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5309-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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FEEDER 1 BREAKER CLOSE RELAY

FEEDER 1 BREAKER OPEN RELAY

SYSTEM LOW WATER LEVEL RELAY

FIRE ALARM RELAY

BUS TOTAL LOAD SIGNAL 0-MAX KW, 4-20mA

FUEL TANK LEVEL SENSOR 6"-9"1", 4-20mA

HEAT RECOVERY PRESSURE SENSOR 0-60 PSI, 4-20mA

HEAT RECOVERY SUPPLY TEMPERATURE SENSOR 20"-240" F, 4-20mA

HEAT RECOVERY RETURN TEMPERATURE SENSOR 20"-240" F, 4-20mA

SPARE ANALOG INPUT

FUEL VALVE IS CLOSED RELAY

FUEL VALVE IS OPEN RELAY

FUEL VALVE OVERLOAD RELAY

OPEN FUEL VALVE COMMAND RELAY

FEEDER 1 BREAKER CLOSED LIGHT

FEEDER 1 BREAKER OPEN LIGHT

FEEDER 1 BREAKER AUX RELAY

NOTE:  
 1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473

TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE DATE: 04-11-08 DWN. BY: GPN

DWG. No: 6473-5310-D SHEET: 1 OF 1 CKD. BY: JMD

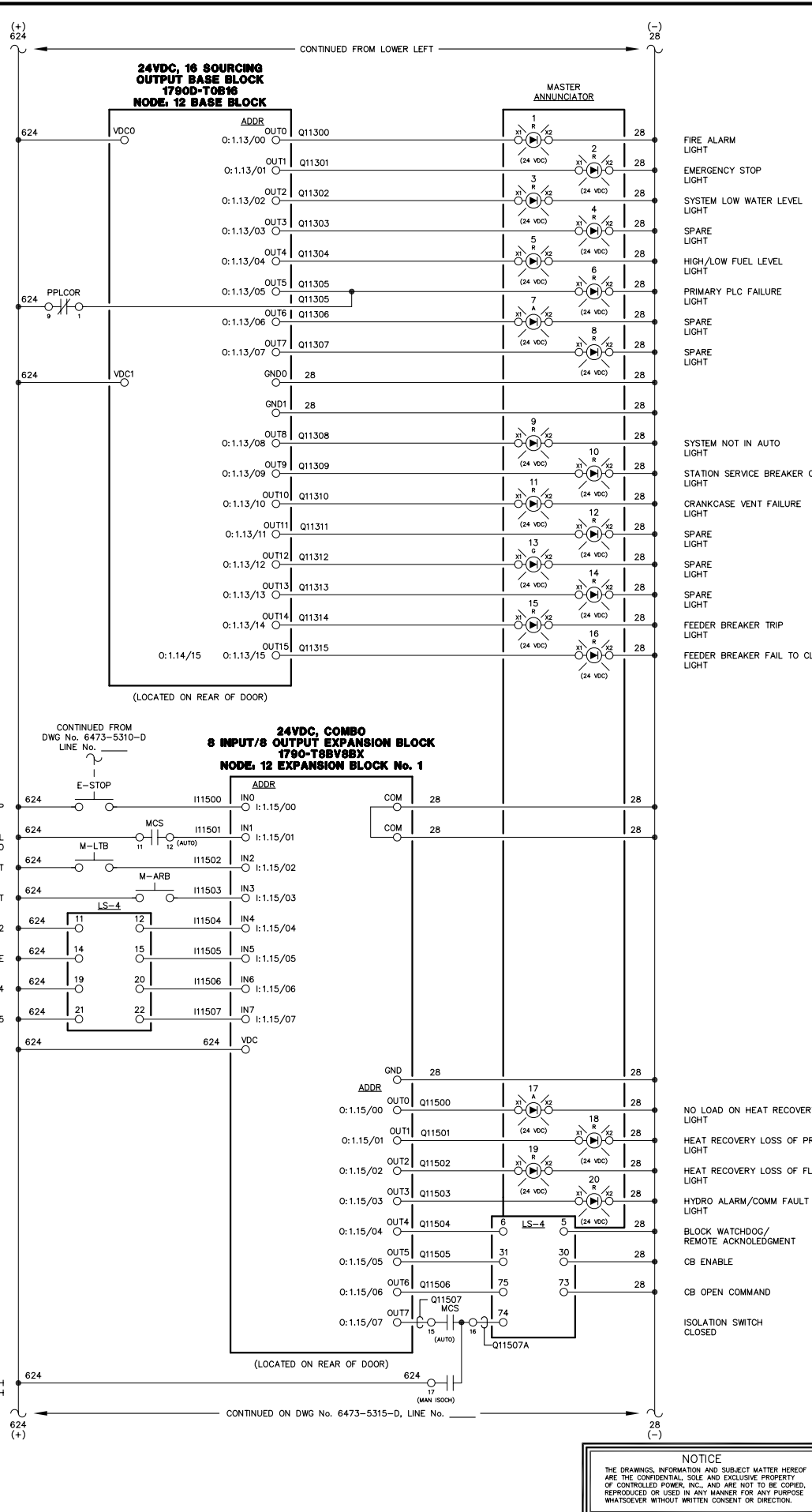
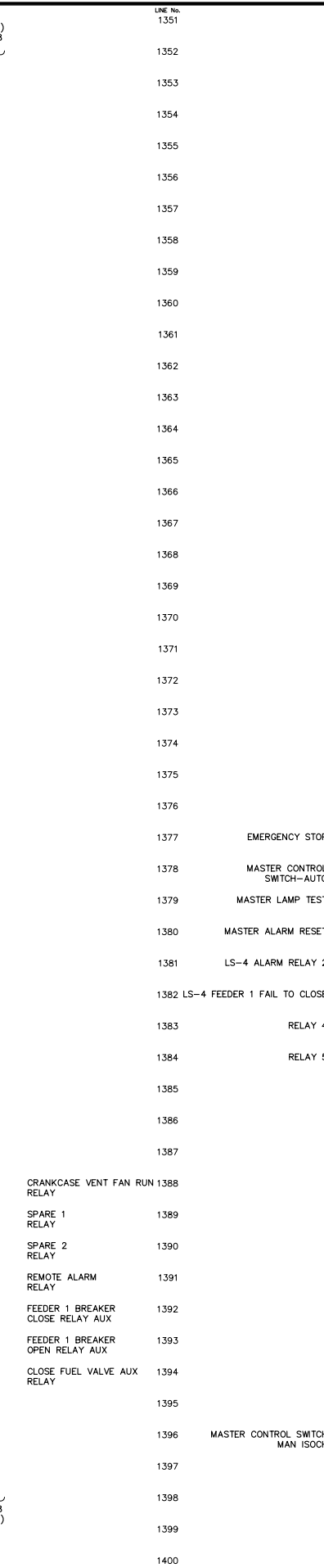
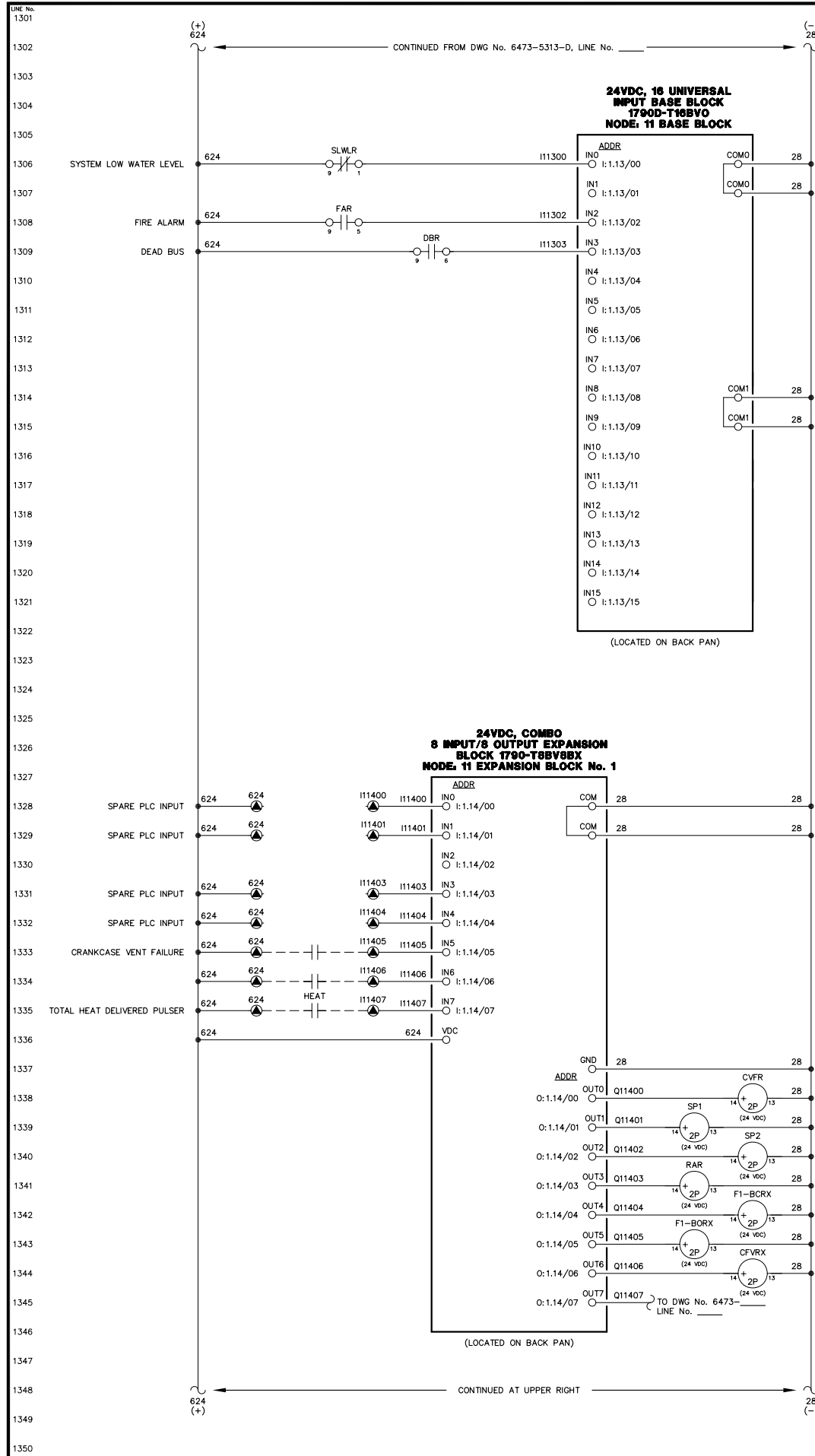
JOB: CHIGNIK BAY

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Plot date: 2008/8/7 - 14:23





NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473

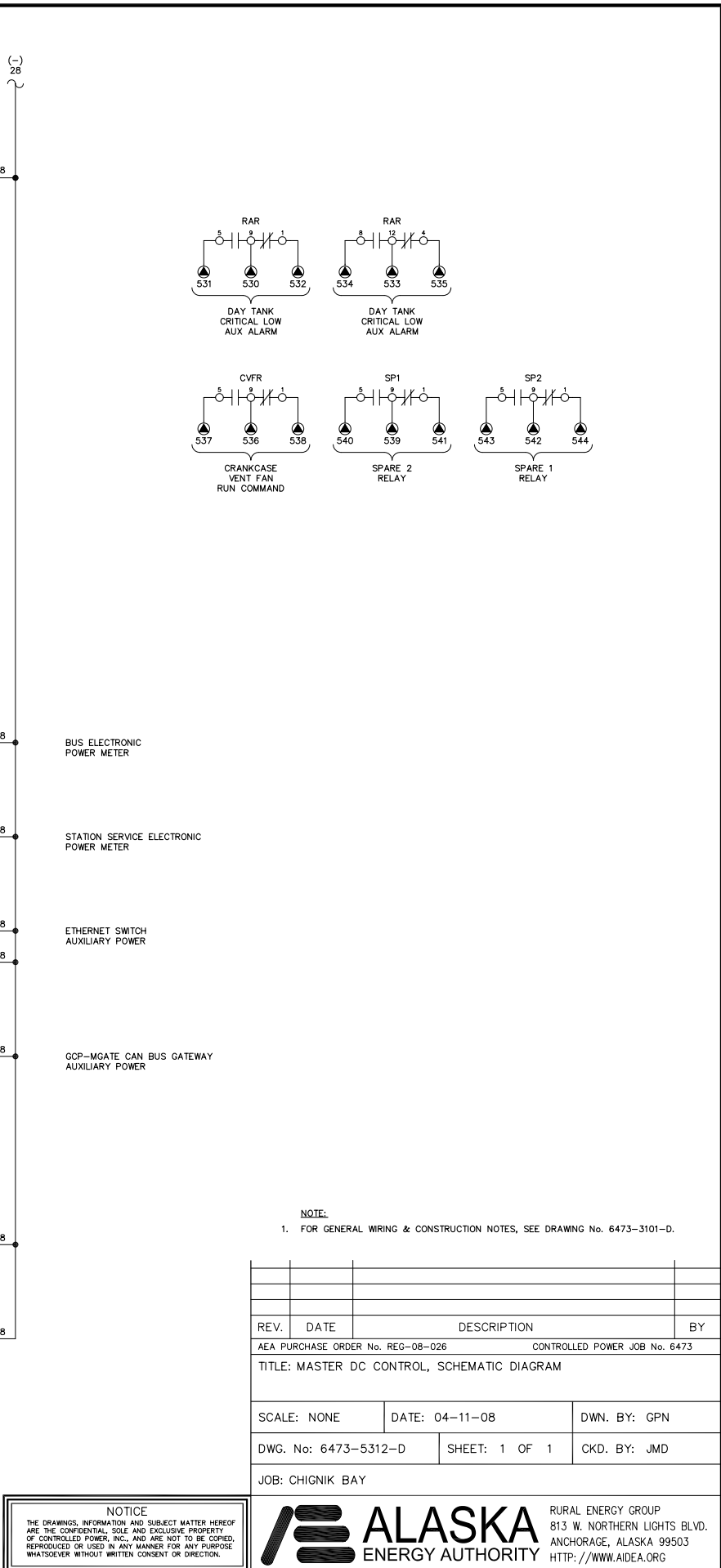
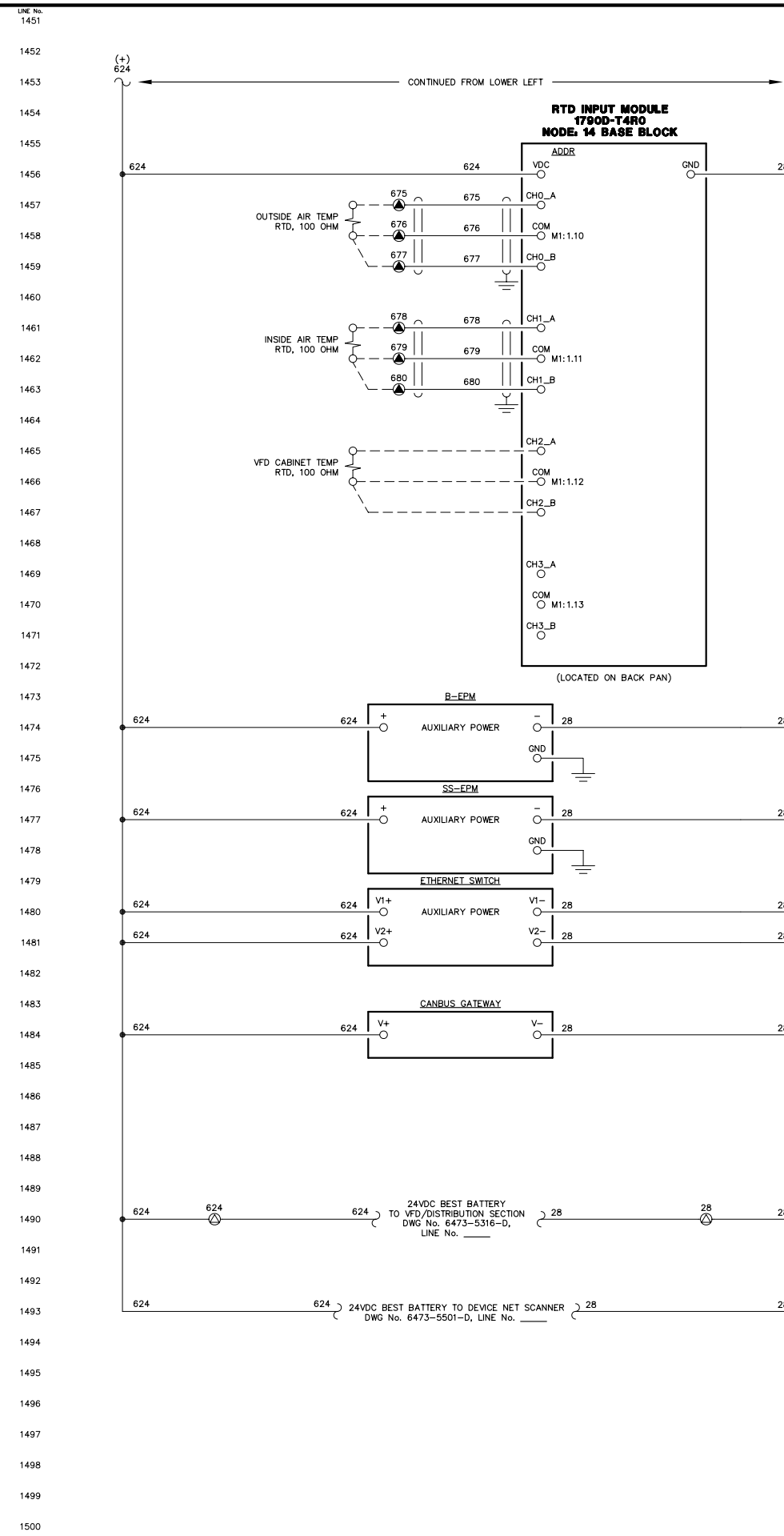
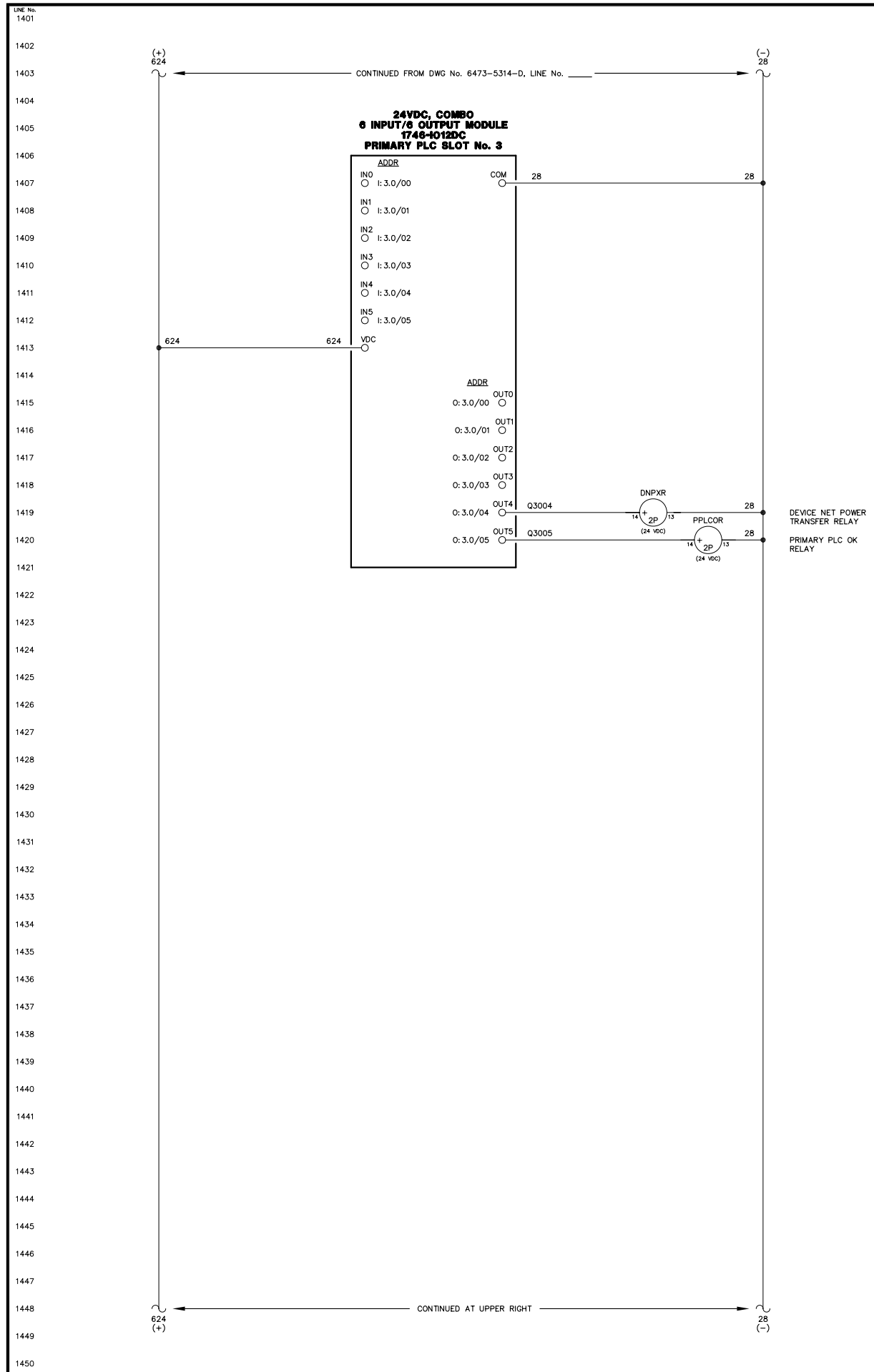
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM

SCALE: NONE DATE: 04-11-08 DWN. BY: GPN

DWG. No: 6473-5311-D SHEET: 1 OF 1 CKD. BY: JMD

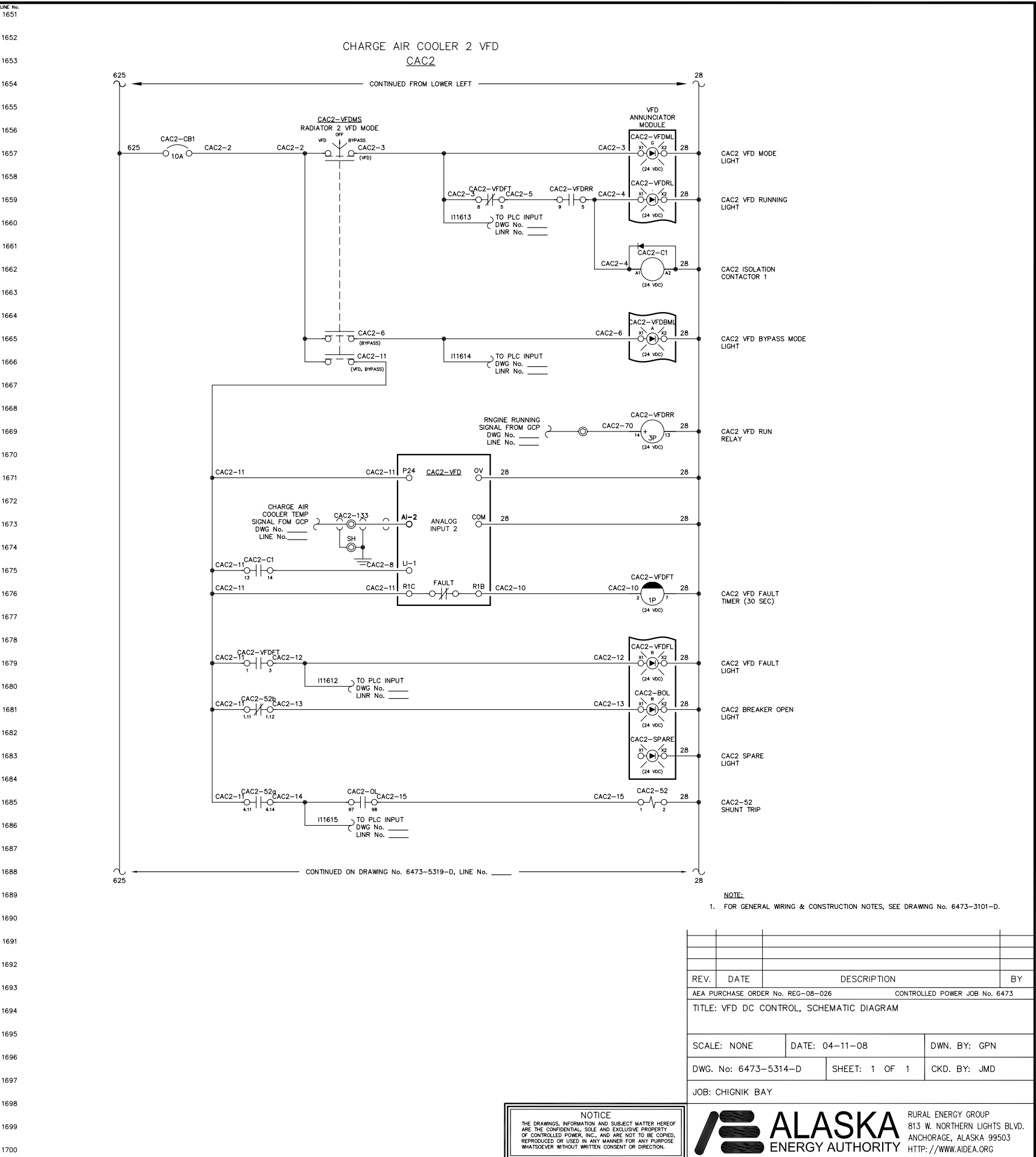
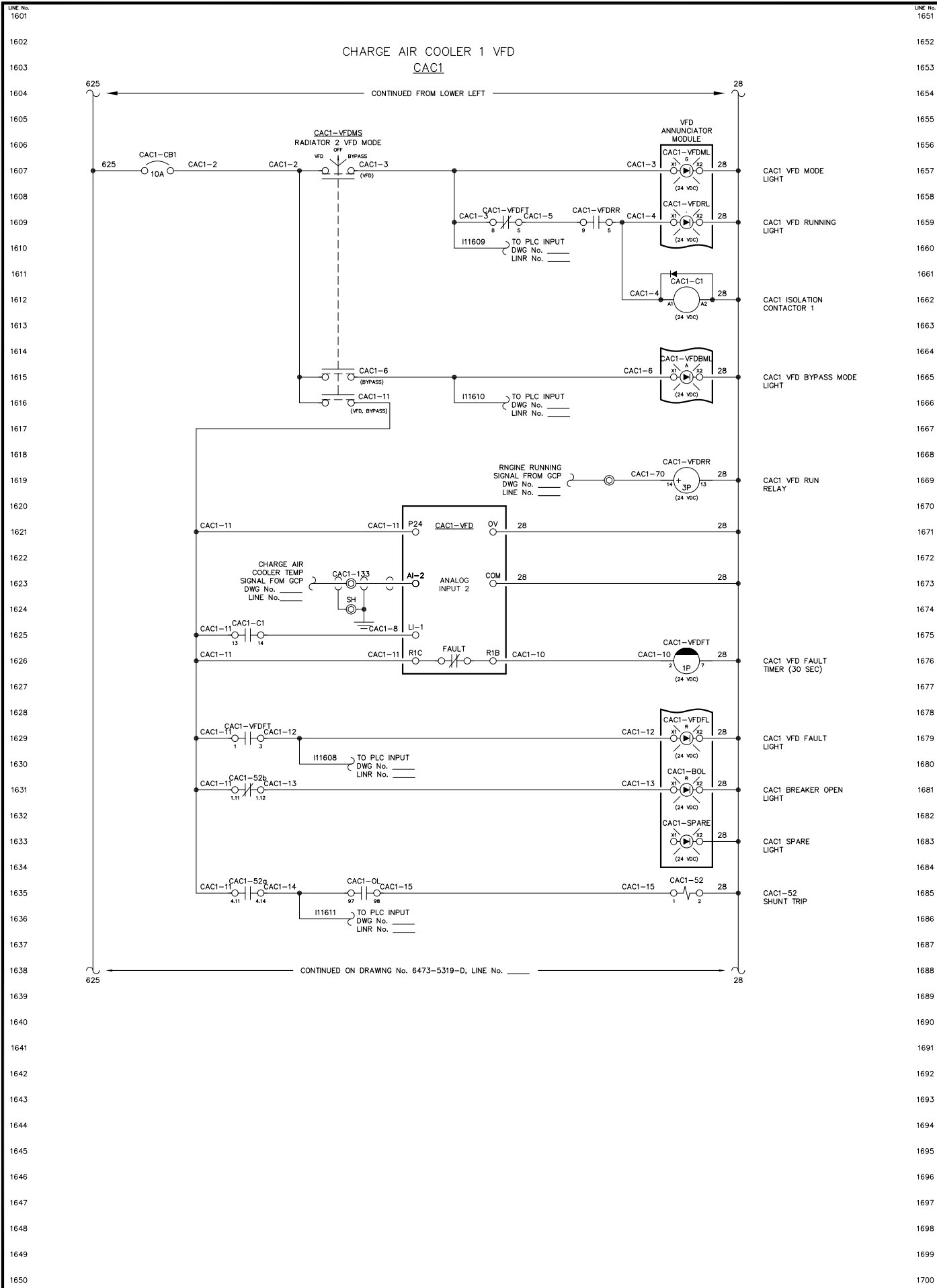
JOB: CHIGNIK BAY





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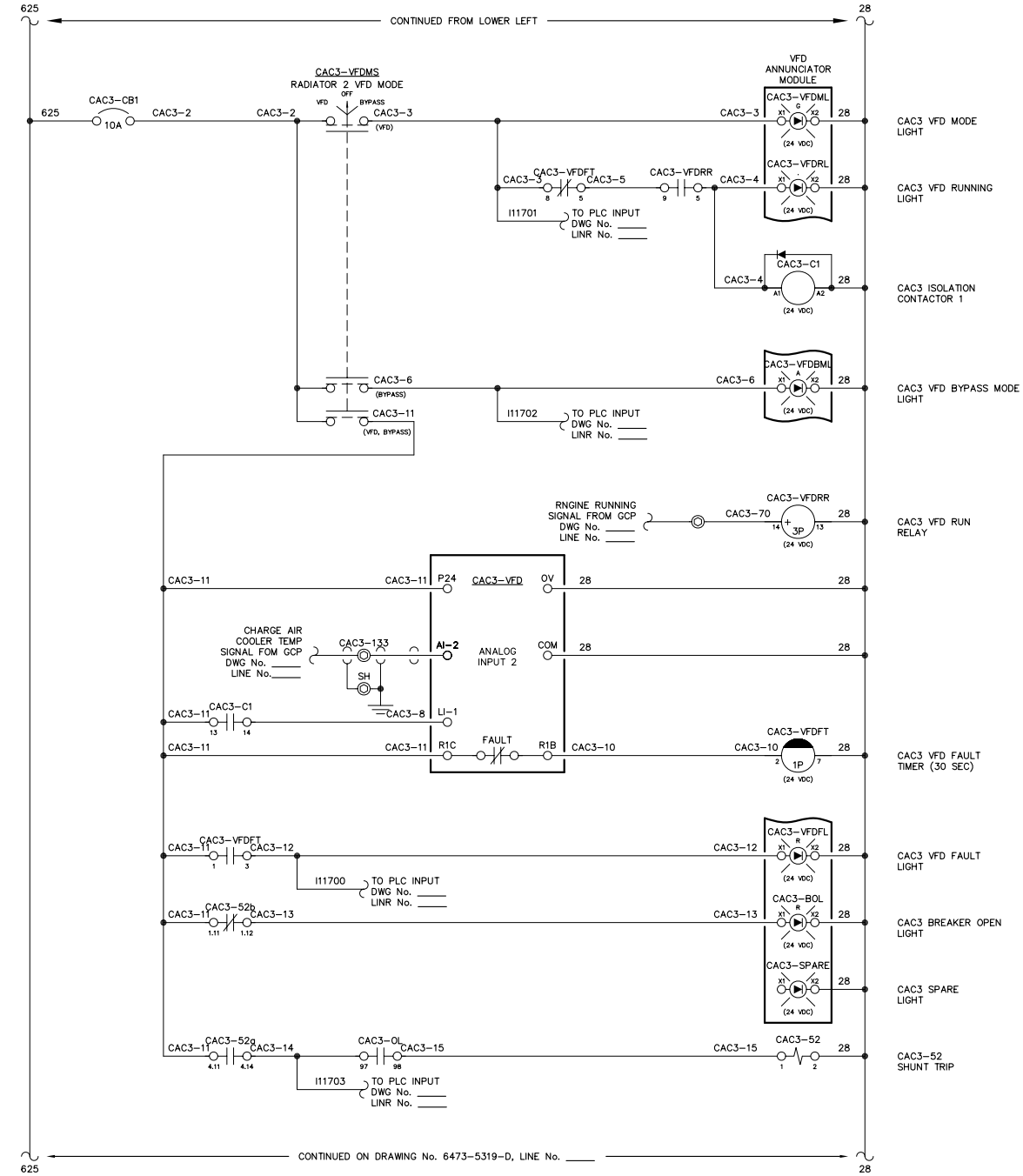
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REC-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5314-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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CHARGE AIR COOLER 3 VFD  
CAC3

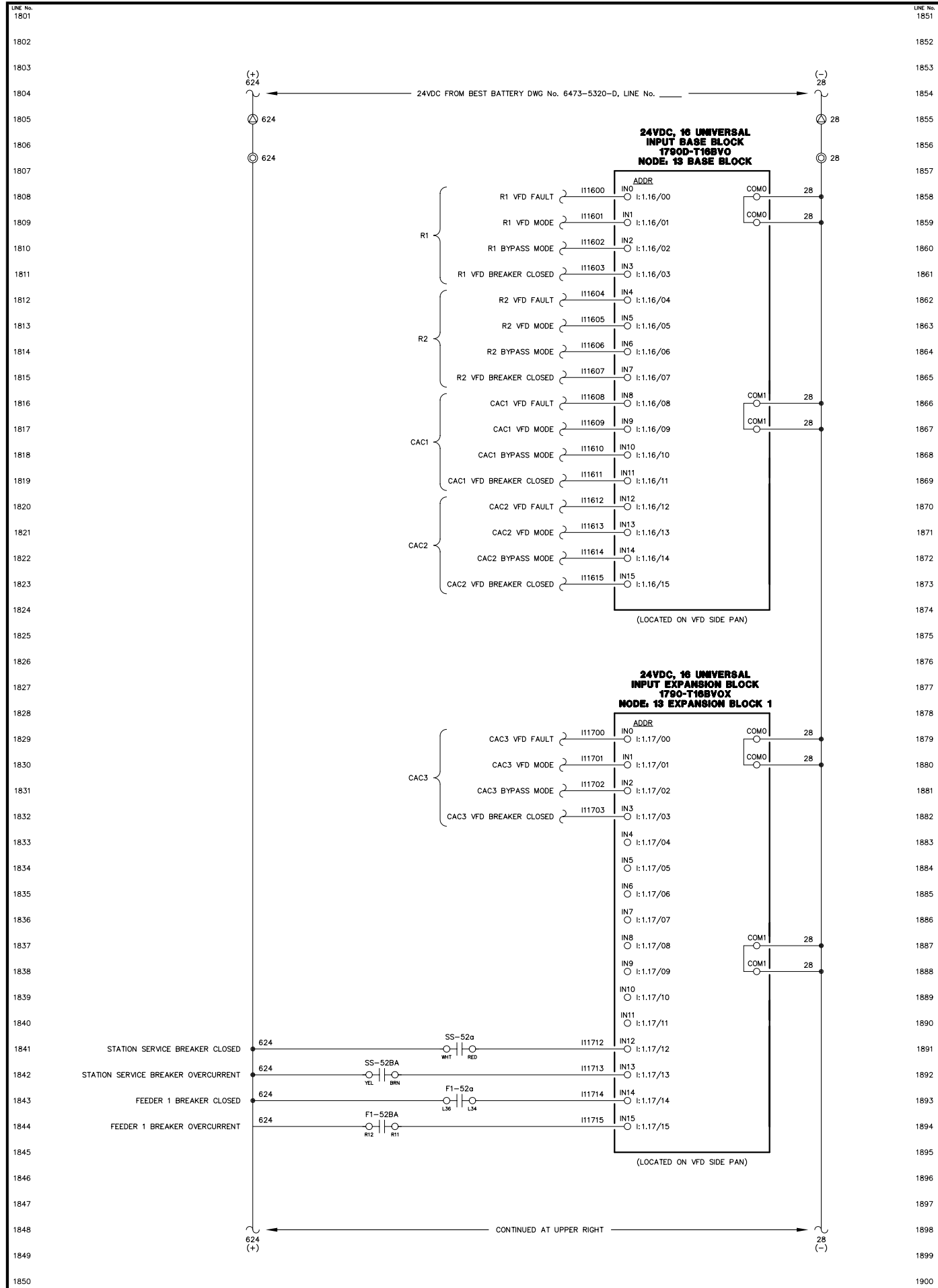


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5315-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5316-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

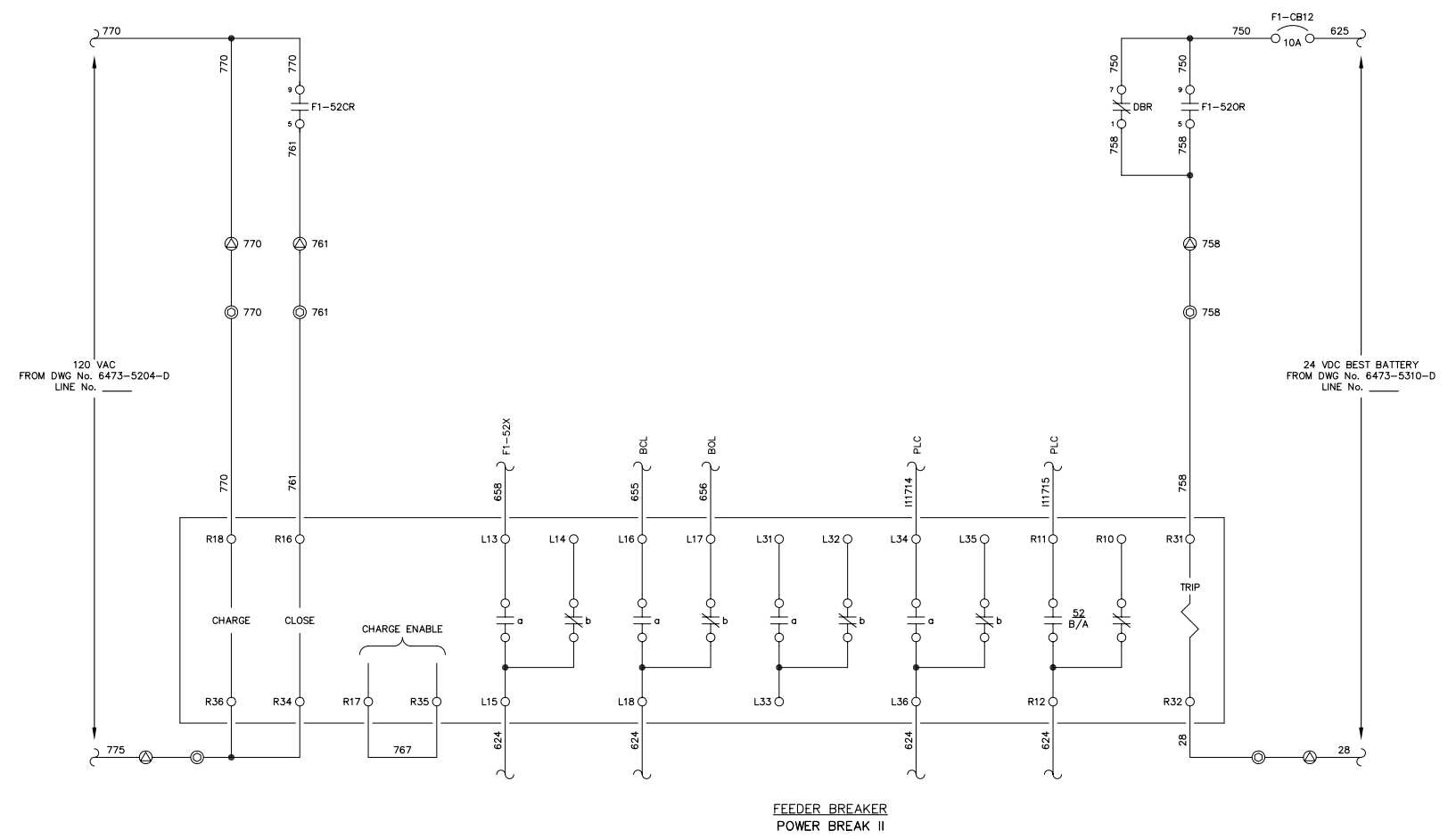
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Plot date: 2008/8/7 - 14:22

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FEEDER BREAKER  
POWER BREAK II

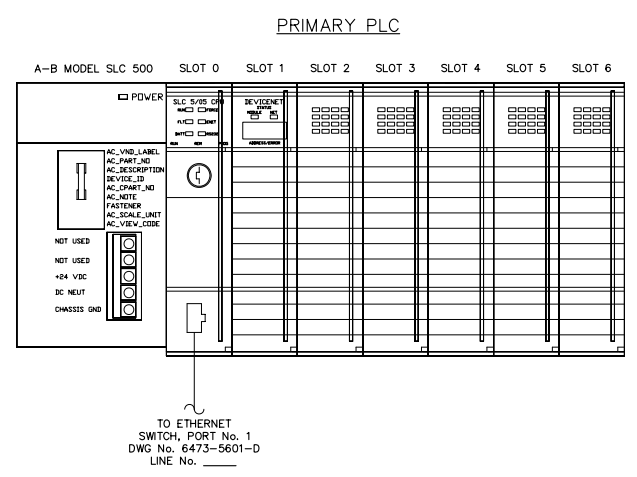
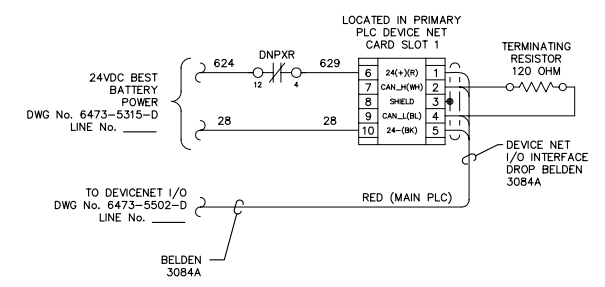
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: FEEDER BREAKER CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5401-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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- LEGEND:**
- POWER SPPLY, 1746-P3
  - SLOT 0 CPU, 1774-LS52
  - SLOT 1 DEVICE NET SCANNER, 1747-SDN
  - SLOT 2 MV46-MNET
  - SLOT 3 6 IN, 6 OUT, I/O MODULE, 1746-IO12DC
  - SLOT 4 (SPACE)
  - SLOT 5 (SPACE)
  - SLOT 6 (SPACE)

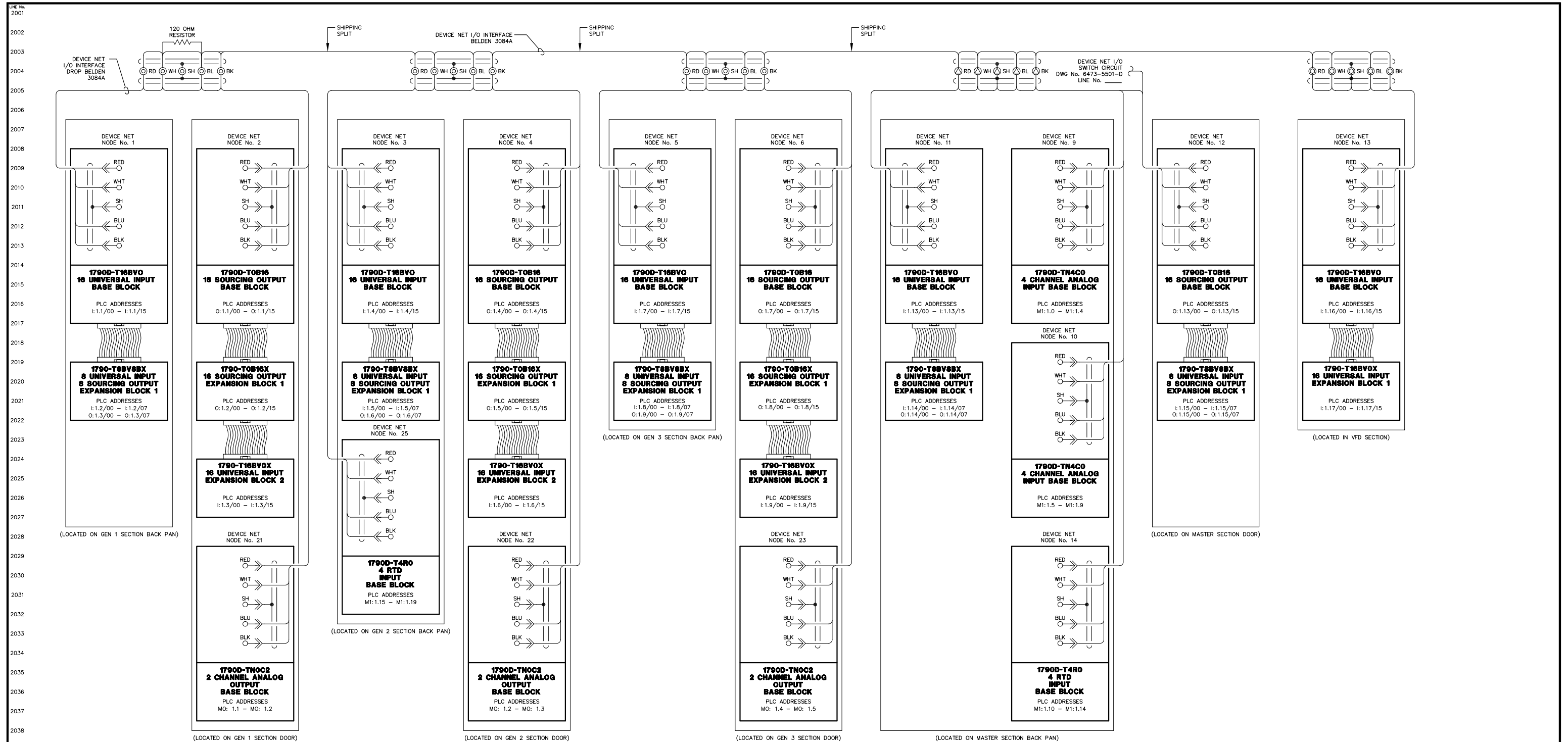
**NOTE:**  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5501-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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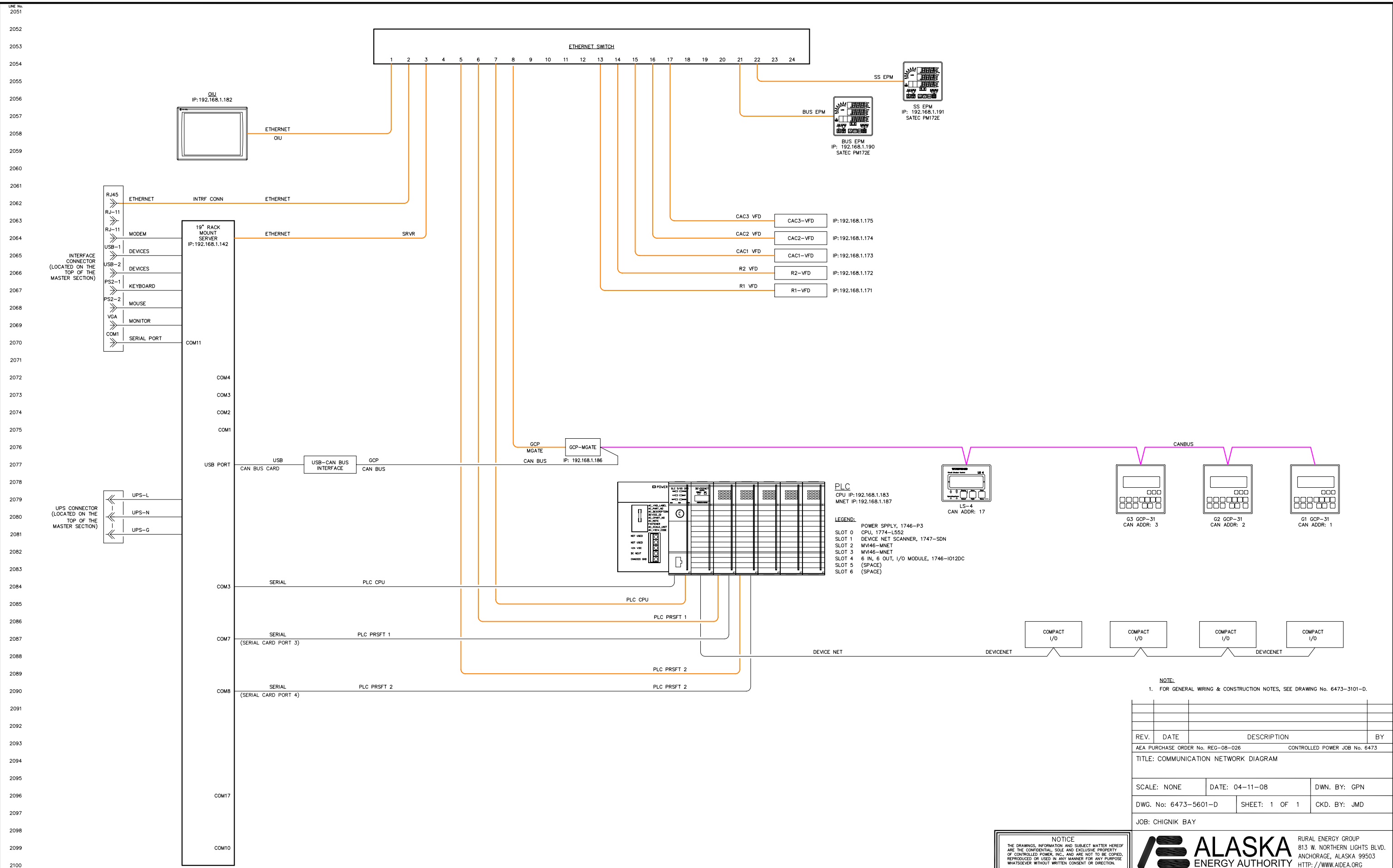


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5502-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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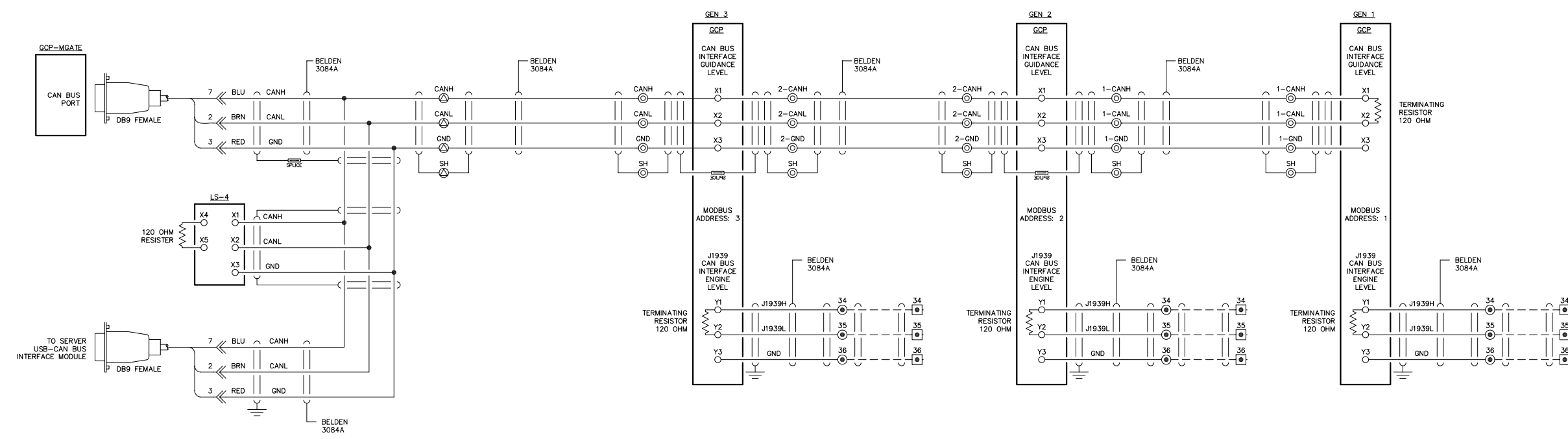
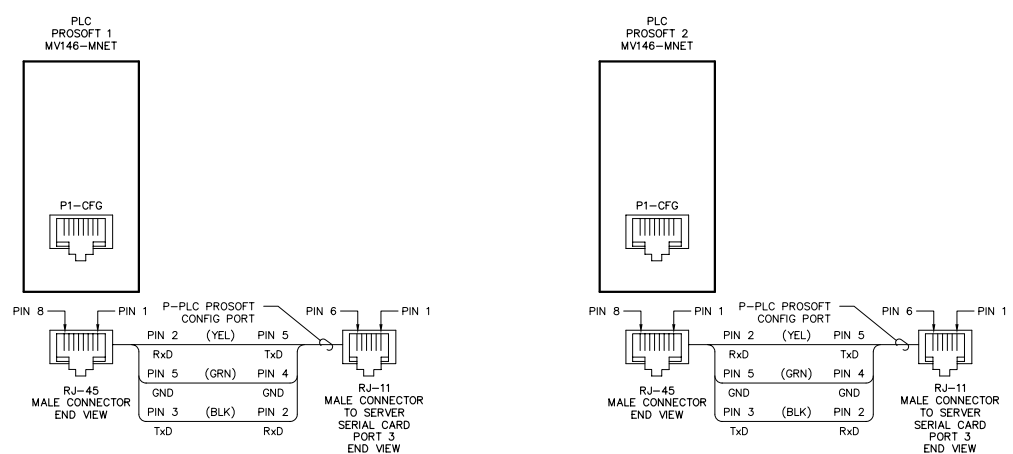




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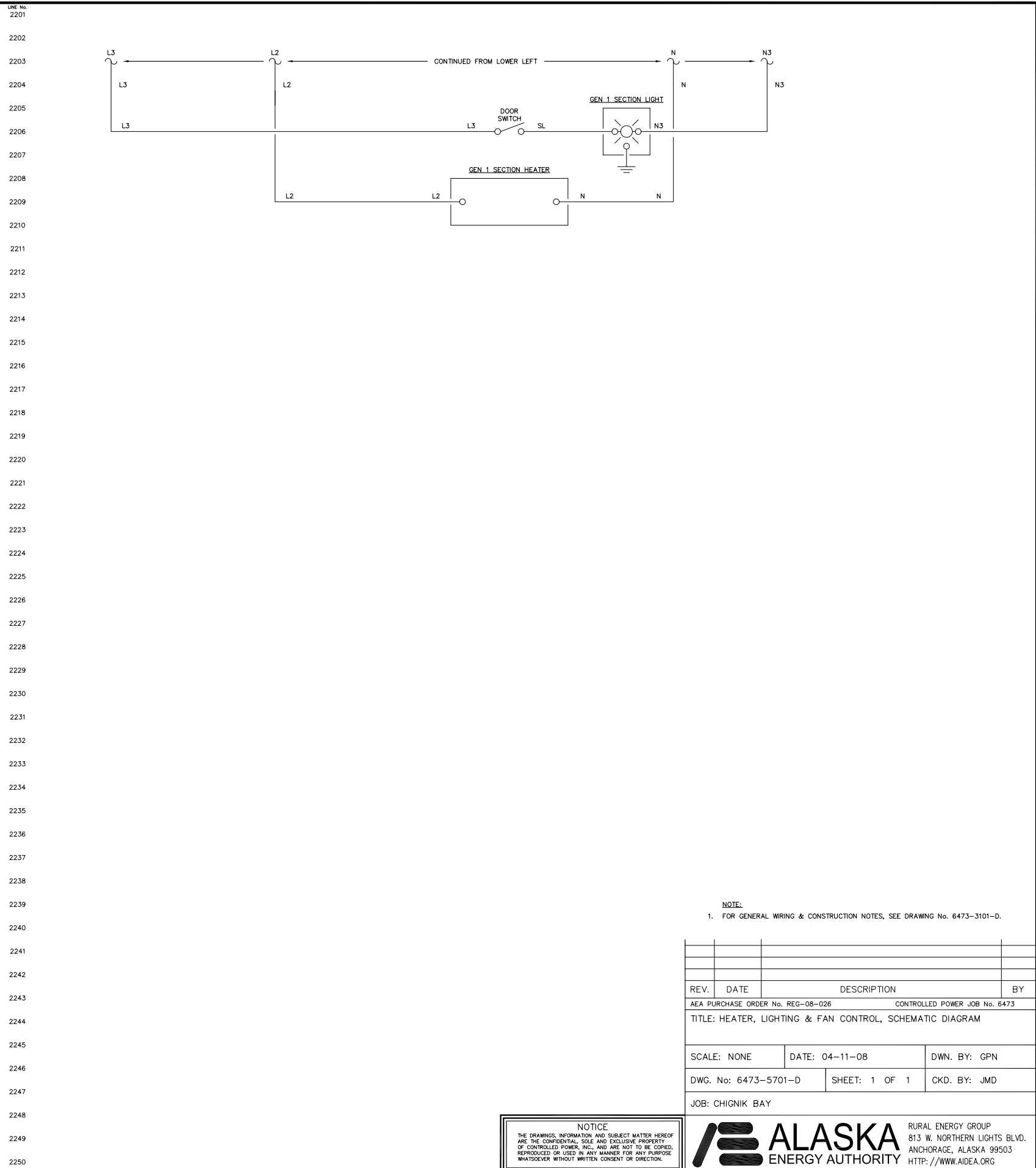
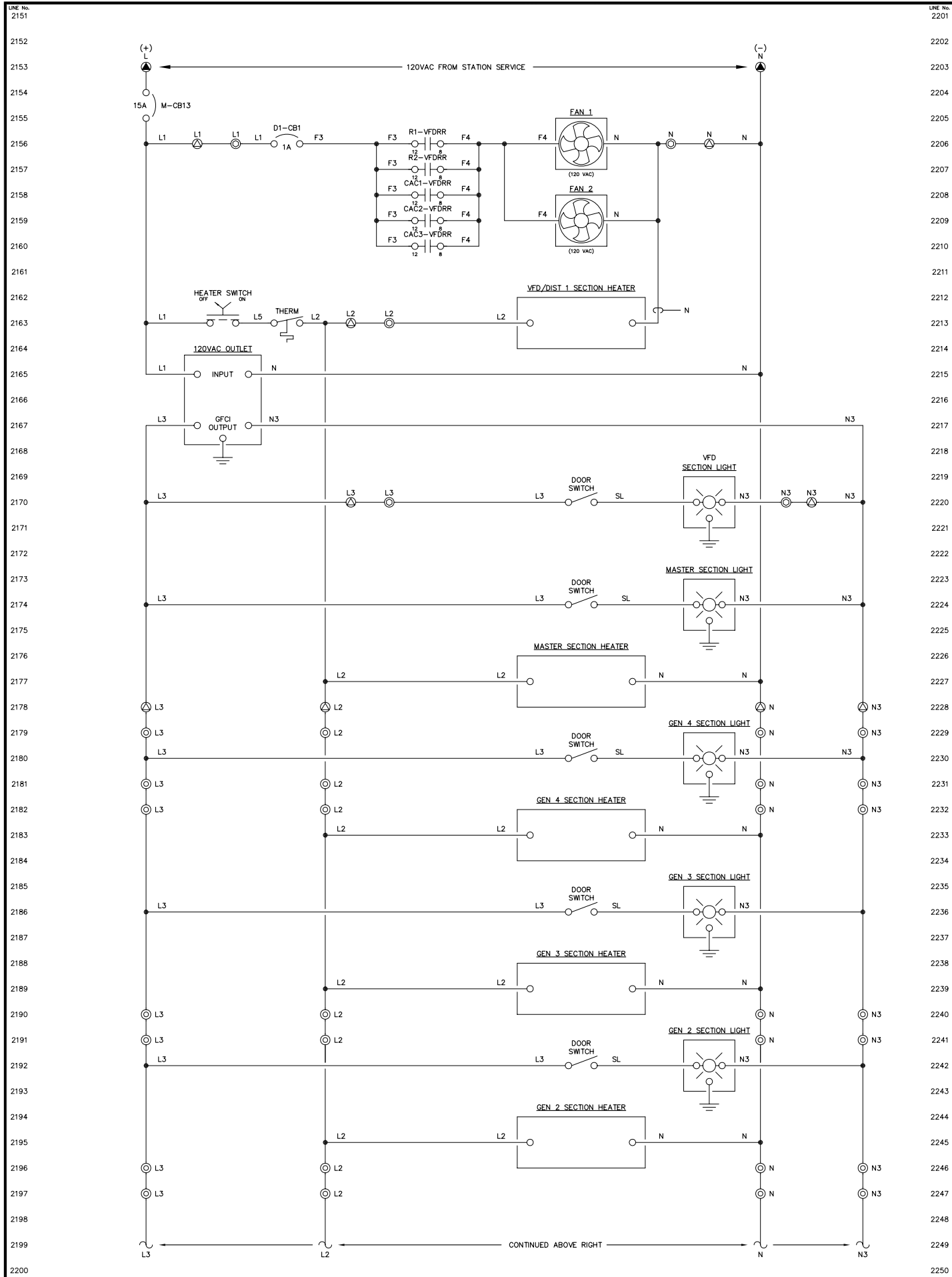


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: COMMUNICATION NETWORK DIAGRAM			
SCALE: NONE		DATE: 04-11-08	DWN. BY: GPN
DWG. No: 6473-5602-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: CHIGNIK BAY			

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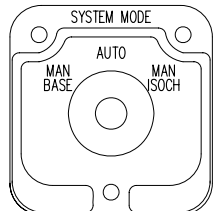
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-5701-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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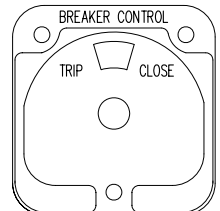
SYSTEM MODE SWITCH – SMS



(ELECTROSWITCH 24201C)  
KNURLED HANDLE  
QTY 1

DECK	CONTACTS			POS.	
	MAN BASE	AUTO	MAN ISOCH	OFF	ON
1	12	13	11	X	
	16	17	15	X	
	11	12	18	X	
	15	14	16	X	
					X

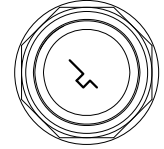
BREAKER CONTROL SWITCH – 52CS



(ELECTROSWITCH 2438D)  
PISTOL GRIP HANDLE  
SPRING RETURN TO CENTER  
QTY 1

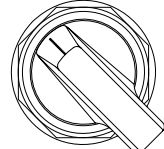
DECK	CONTACTS		POS.	
	TRIP	CLOSE	NORM	CLOSE
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	16	17	X	

ENGINE CONTROL SWITCH – ECS



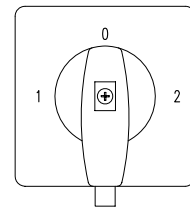
KEY OPERATED  
2 POS MAINTAINED  
QTY 3

HEATER CONTROL SWITCH – HCS



MAINTAINED  
LOCATED ON MASTER  
BACK PAN

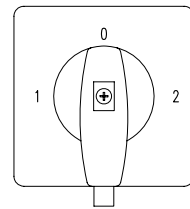
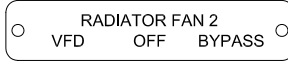
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	1	MD	POSITION	111	112	113	211	212	213	54	64
				71300	ME	2					

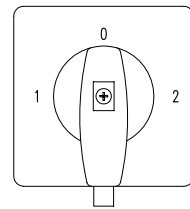
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	1	MD	POSITION	111	112	113	211	212	213	54	64
				71300	ME	2					

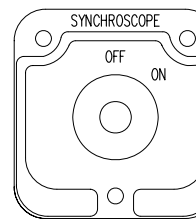
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	1	MD	POSITION	111	112	113	211	212	213	54	64
				71300	ME	2					

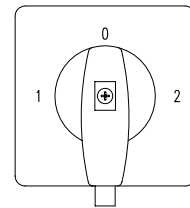
SYNCHROSCOPE SWITCH TARGET – SS



(ELECTROSWITCH 24203B)  
OVAL HANDLE  
QTY 1

DECK	CONTACTS			POS.	
	OFF	ON	ON	OFF	ON
1	11	12	13	X	
	15	16	17	X	
	21	22	23	X	
	25	26	27	X	
2	31	32	33	X	
	35	36	37	X	
3	41	42	43	X	
	45	46	47	X	

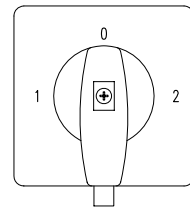
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	1	MD	POSITION	111	112	113	211	212	213	54	64
				71300	ME	2					

VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
SMD	1	MD	POSITION	111	112	113	211	212	213	54	64
				71300	ME	2					

- NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: CONTROL SWITCH TARGET DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-6101-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			

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**ALASKA ENERGY AUTHORITY**  
RURAL ENERGY GROUP  
813 W. NORTHERN LIGHTS BLVD.  
ANCHORAGE, ALASKA 99503  
HTTP://WWW.AIDEA.ORG

MANUFACTURED BY:



**CONTROLLED POWER, INC.**  
 17909 BOTHELL EVERETT HWY. S.E. #102  
 BOTHELL, WA. 98012  
 (425)-485-1778  
 SERIAL NUMBER: 6473

MASTER CONTROL

GENERATOR 1

GENERATOR 2

GENERATOR 3

VFD/DISTRIBUTION

117 KW

230 KW

RADIATOR FAN 1

RADIATOR FAN 2

GENERATOR 1  
CHARGE AIR COOLER

GENERATOR 2  
CHARGE AIR COOLER

GENERATOR 3  
CHARGE AIR COOLER

GENERATOR LOCKOUT FOR SERVICE  
OFF RUN

GENERATOR 1

GENERATOR 2

GENERATOR 3

BUS TOTALIZING

FEEDER 1

STATION SERVICE

LAMP TEST EMERGENCY STOP ALARM RESET

RADIATOR FAN 1  
VFD OFF BYPASS

RADIATOR FAN 2  
VFD OFF BYPASS

GEN 1 CHARGE AIR COOLER  
VFD OFF BYPASS

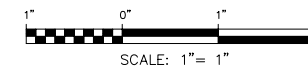
GEN 2 CHARGE AIR COOLER  
VFD OFF BYPASS

GEN 3 CHARGE AIR COOLER  
VFD OFF BYPASS

HEATER  
OFF ON

- NOTES:
1. ALL NAMEPLATES SHALL BE BLACK FACE WITH WHITE LETTERS EXCEPT AS NOTED.
  2. ALL NAMEPLATES SHALL HAVE PRESSURE SENSITIVE ADHESIVE ON BACK, 100 % COVERAGE.
  3. ALL NAMEPLATES SHALL HAVE MOUNTING HOLES DRILLED AS INDICATED.
- ▲ INDICATES THAT NAMEPLATE SHALL BE BRUSHED ALUMINUM WITH BLACK ENGRAVED LETTERS.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: NAMEPLATE ENGRAVING SCHEDULE, FABRICATION DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-6201-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			



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ENGINE RUNNING	ALARM LOCKOUT	LOW OIL PRESSURE	OIL LEVEL	HIGH WATER TEMPERATURE	OVERSPEED	OVERCRANK	RUNNING TIMEOUT	BATTERY CHARGER FAIL	AIR FILTER PLUGGED	HIGH CHARGE AIR TEMPERATURE	LEAD GENERATOR
NORMAL STOP	NOT IN AUTO	GENERATOR BREAKER OPEN	FAIL TO SYNC	OVERCURRENT	UNDER VOLTAGE	OVER VOLTAGE	UNDER FREQUENCY	OVER FREQUENCY	REVERSE POWER	CHARGE AIR VFD BREAKER OPEN	CHARGE AIR VFD FAILURE

GENERATOR 1 & 2 ANNUNCIATOR

ENGINE RUNNING	ALARM LOCKOUT	LOW OIL PRESSURE	OIL LEVEL	HIGH WATER TEMPERATURE	OVERSPEED	OVERCRANK	RUNNING TIMEOUT	BATTERY CHARGER FAIL	AIR FILTER PLUGGED	HIGH CHARGE AIR TEMPERATURE	
NORMAL STOP	NOT IN AUTO	GENERATOR BREAKER OPEN	FAIL TO SYNC	OVERCURRENT	UNDER VOLTAGE	OVER VOLTAGE	UNDER FREQUENCY	OVER FREQUENCY	REVERSE POWER	CHARGE AIR VFD BREAKER OPEN	CHARGE AIR VFD FAILURE

GENERATOR 3 ANNUNCIATOR

FIRE ALARM	EMERGENCY STOP	SYSTEM LOW WATER LEVEL		HIGH/LOW FUEL LEVEL	PLC FAILURE				SYSTEM NOT IN AUTO	STATION SERVICE BREAKER OPEN
CRANKCASE VENT FAN FAILURE		FUEL VALVE OPEN	FUEL VALVE CLOSED	FEEDER BREAKER TRIP	FEEDER BREAKER FAIL TO CLOSE	NO LOAD ON HEAT RECOVERY	HEAT RECOVERY LOSS OF PRESSURE	HEAT RECOVERY LOSS OF FLOW		HYDRO ALARM/COMM FAULT

MASTER ANNUNCIATOR

VFD MODE	VFD RUNNING	BYPASS MODE
VFD FAULT	VFD BREAKER OPEN	

VFD ANNUNCIATOR

GENERATOR 1 CONTACTOR OPEN	GENERATOR 1 CONTACTOR CLOSED
----------------------------------	------------------------------------

GEN 1 BREAKER ANNUNCIATOR

GENERATOR 2 CONTACTOR OPEN	GENERATOR 2 CONTACTOR CLOSED
----------------------------------	------------------------------------

GEN 2 BREAKER ANNUNCIATOR

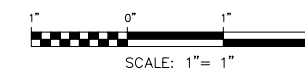
GENERATOR 3 CONTACTOR OPEN	GENERATOR 3 CONTACTOR CLOSED
----------------------------------	------------------------------------

GEN 3 BREAKER ANNUNCIATOR

FEEDER BREAKER OPEN	FEEDER BREAKER CLOSED
---------------------------	-----------------------------

FEEDER BREAKER ANNUNCIATOR

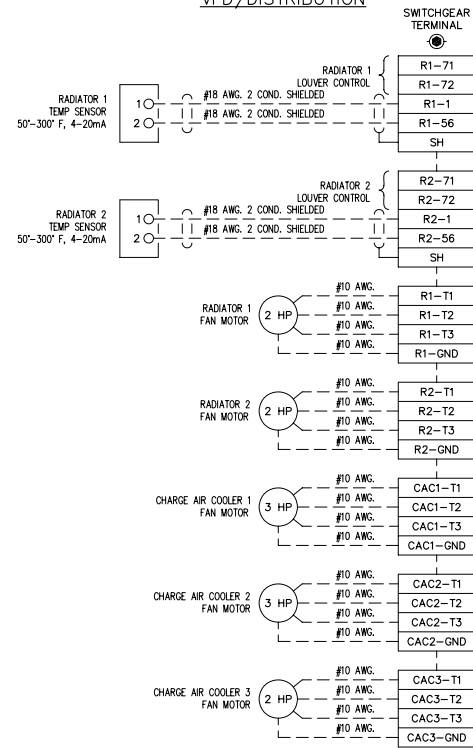
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026		CONTROLLED POWER JOB No. 6473	
TITLE: ANNUNCIATOR WINDOWS, FABRICATION DIAGRAM			
SCALE: NONE	DATE: 04-11-08	DWN. BY: GPN	
DWG. No: 6473-6202-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: CHIGNIK BAY			



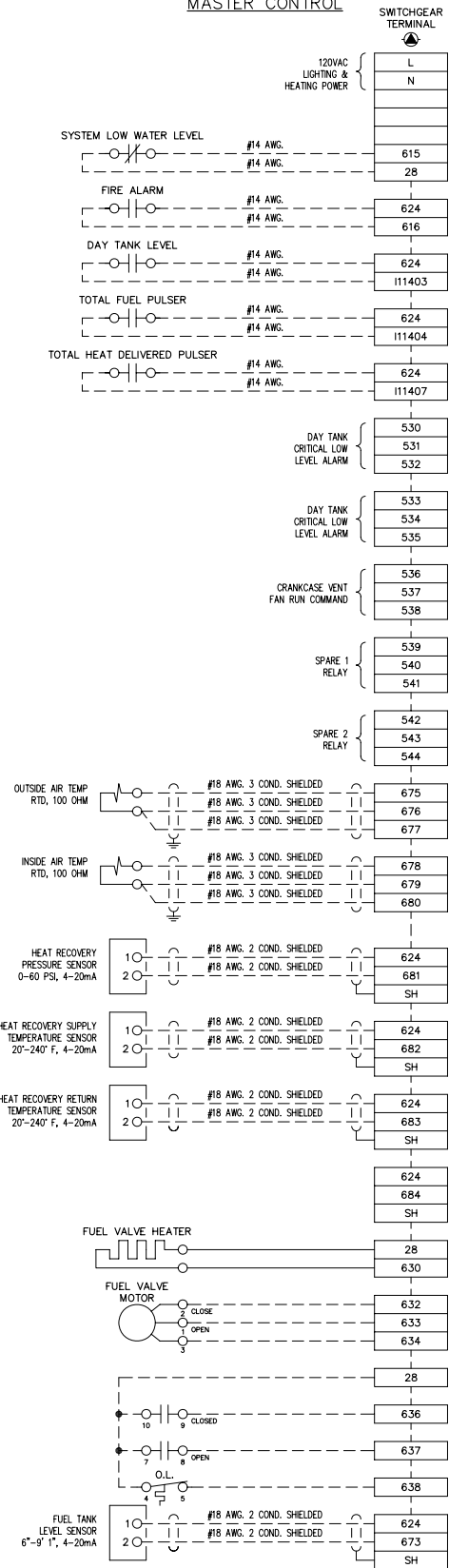
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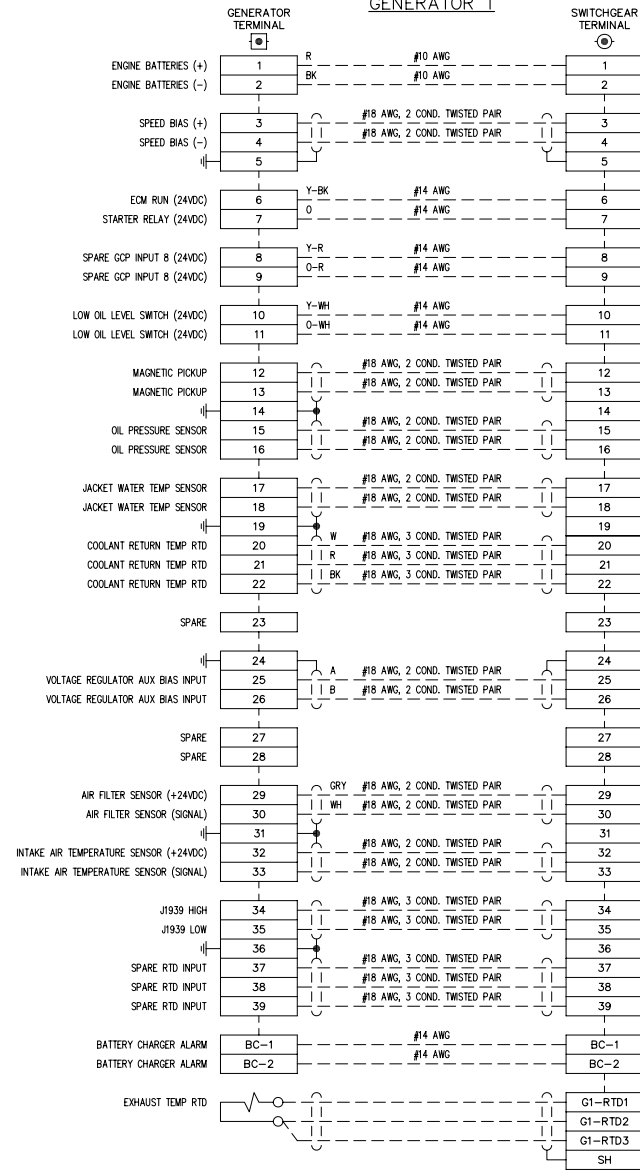
VFD/DISTRIBUTION



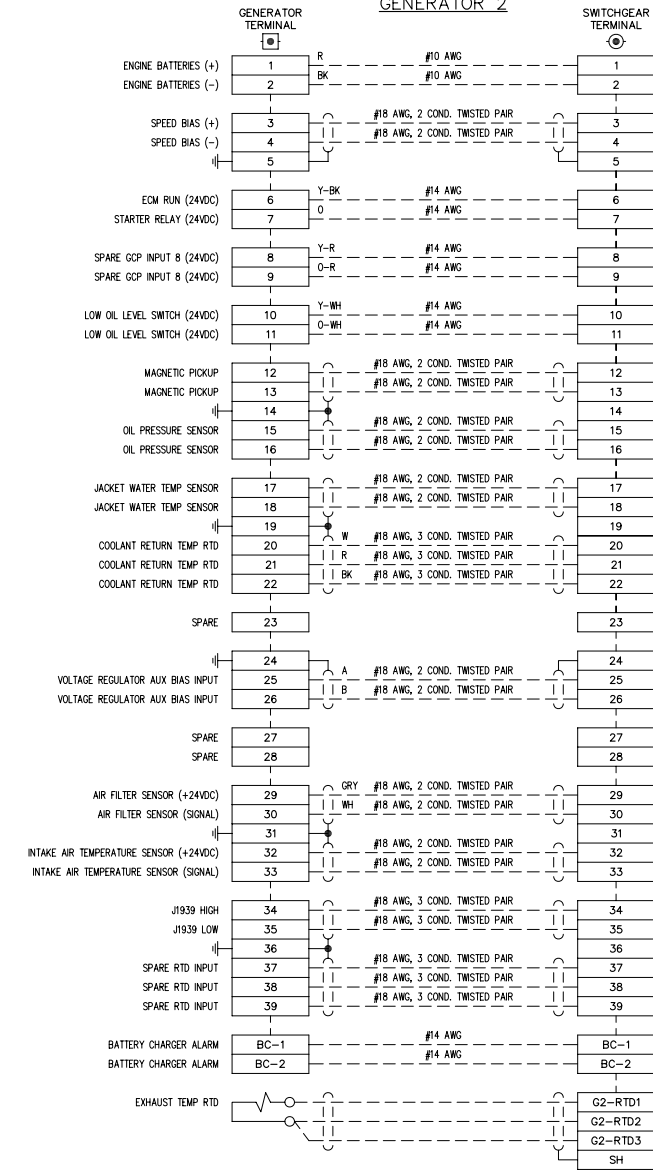
MASTER CONTROL



GENERATOR 1



GENERATOR 2



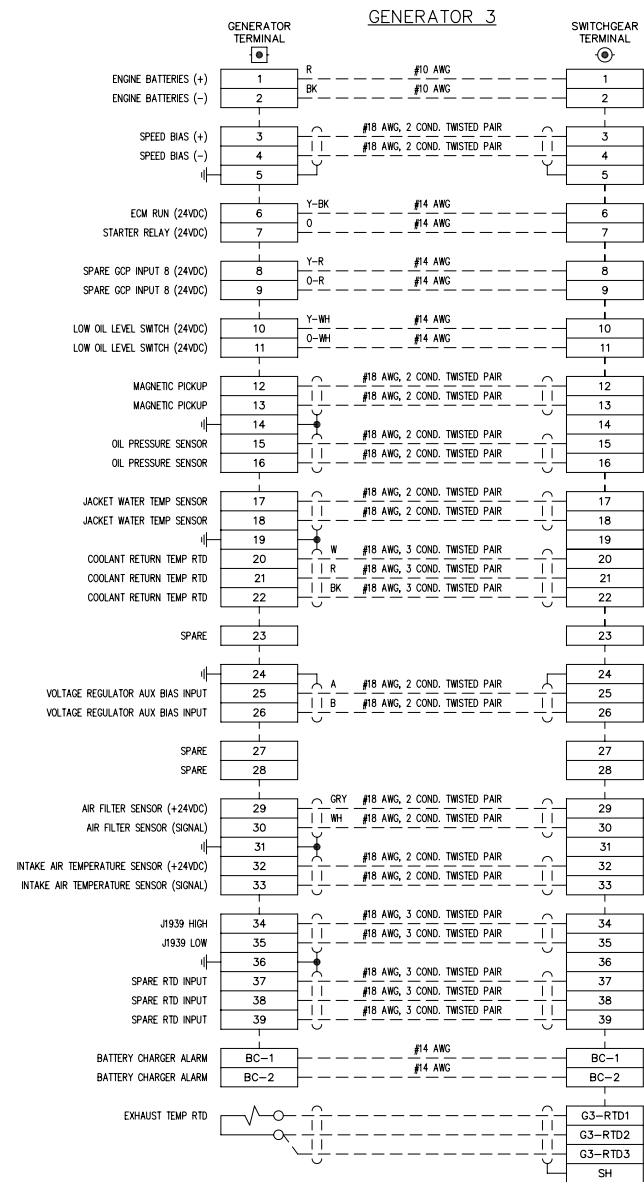
NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6473-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REC-08-026 CONTROLLED POWER JOB No. 6473			
TITLE: INTERCONNECTION DIAGRAM			
SCALE: NONE		DATE: 04-11-08	DWN. BY: GPN
DWG. No: 6473-7101-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: CHIGNIK BAY			

NOTICE  
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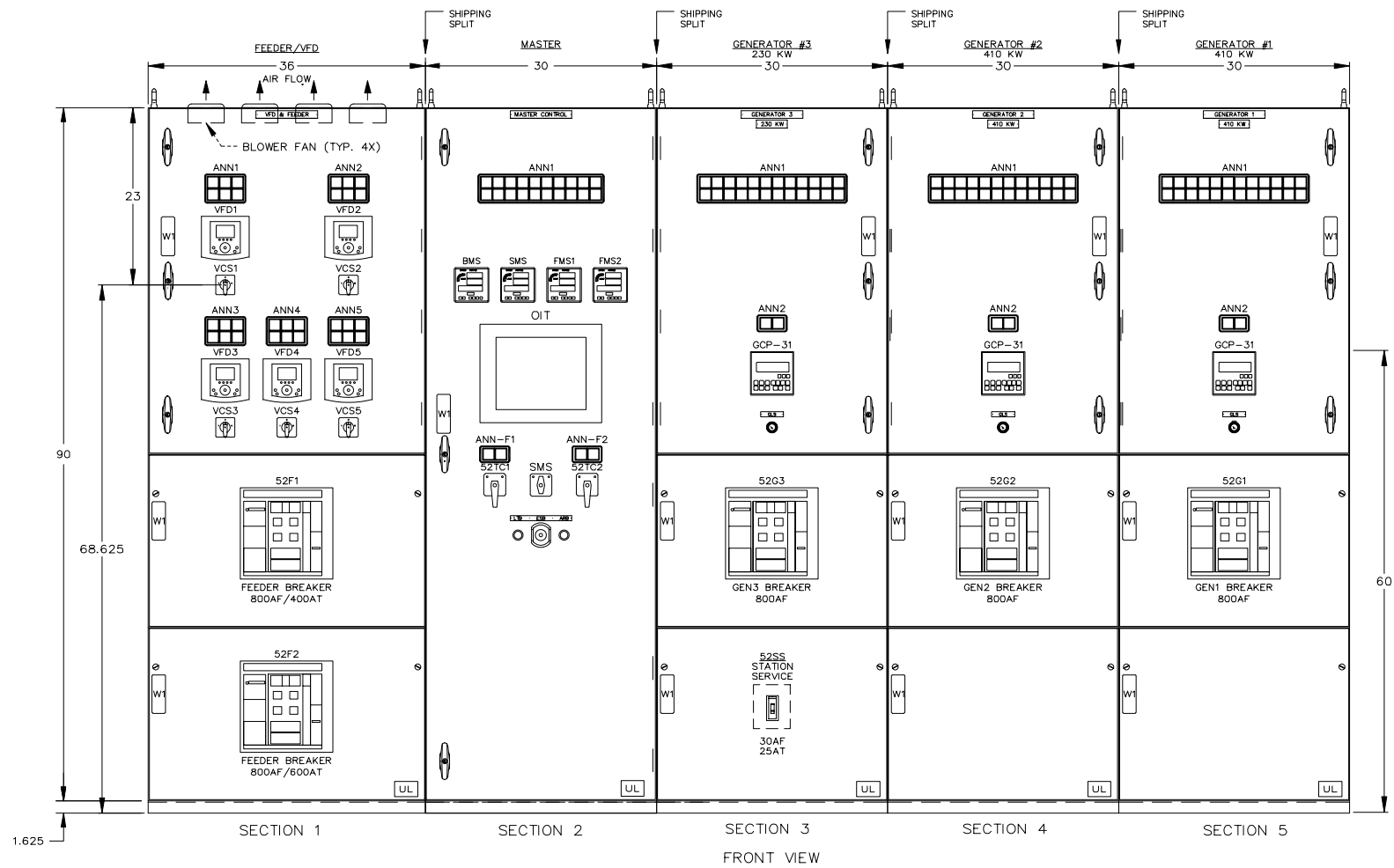


NOTE:  
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 6472-3101-D.

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-08-026 CONTROLLED POWER JOB No. 6472			
TITLE: INTERCONNECTION DIAGRAM			
SCALE: NONE	DATE: 02-18-08	DWN. BY: GPN	
DWG. No: 6472-7102-D	SHEET: 1 OF 1	CKD. BY: JMD	
JOB: KING COVE			

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ANCHORAGE, ALASKA 99503  
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DEVICE LEGEND	
ANN	ALARM/STATUS ANNUNCIATOR
ARB	ALARM RESET BUTTON
DMS	DIGITAL METER - SATEC PM172E
ESB	EMERGENCY STOP BUTTON
GCP	GENERATOR CONTROL PACKAGE
GLS	GENERATOR LOCKOUT SWITCH
OIT	OPERATOR INTERFACE UNIT
LTB	LAMP TEST BUTTON
SMS	MASTER CONTROL SWITCH (AUTO-MANUAL)
VCS	VFD CONTROL SWITCH
42xx	CONTACTOR
42CS	CONTACTOR CONTROL SWITCH
52xx	CIRCUIT BREAKER
52TC	CIRCUIT BREAKER TRIP / CLOSE SWITCH

NOTES	
1	WIRE MARKERS: HEATSHRINK TYPE c/w INDELIBLE INK MARKINGS
2	WIRE TYPE: ALL CONNECTIONS TO BUS AND BREAKERS TO BE #14AWG SIS. WIRING THAT IS TO BE PROVIDED AS PART OF OR IS AN INTEGRAL PART OF SUPERVISORY CONTROL EQUIPMENT SHALL BE #18-14AWG SIS. CT WIRING TO BE #12AWG SIS MIN.
3	WIRING COLOR CODED; NO WIRE NUMBERS TO MATCH TERMINAL NUMBERS UNLESS NOTED
4	LOAD BUS TO BE 1000A 3PH 4W SILVER PLATED COPPER BRACED AT 30KA.
5	ENCLOSURE TYPE NEMA 1 BUILT TO UL91.
6	PAINT ASA #61 GREY EXTERIOR, WHITE MOUNTING PAN
7	ENCLOSURE SUPPLIED IN FIVE PIECES
8	FULL LENGTH COPPER GROUND BUS 0.25" X 2.0" C/W (6) #6-250MCM GROUND LUGS
9	POWER CABLES: GEN & LOAD BOTTOM. REAR ACCESS ONLY REQUIRED.
10	LAMICODS BLACK C/W WHITE LETTERS, MECHANICALLY ATTACHED
11	CABLE LUG SIZES: GEN 1: (2) 4/0-500MCM Cu/AL PER PHASE GEN 2 & 3: (2) 4/0-500MCM Cu/AL PER PHASE FEEDER 1 & 2: PROVISION FOR 3 X 2 HOLE 4/0 CRIMP LUGS SS: (1) #14-3/0 Cu/AL PER PHASE
12	SEPARATE 12/24VDC FROM 120VAC TERMINAL BLOCKS
13	PROVIDE A REMOVABLE LINK TO THE GROUND BUS IN MASTER SECTION
14	1/8" THK GLASS BARRIER IS PROVIDED TO COVER PROTRUDING BOLTS THROUGH THE LOW VOLTAGE BACK PAN
15	BREAKERS AND CONTACTOR IN LOWER SECTION ARE SEPARATED FROM BUS BY GLASTIC BARRIER

DRAWING LEGEND	
1A	PHYSICAL LAYOUT
1B	BASE & SECTIONAL VIEW
2	SINGLE LINE DIAGRAM
3	NAMEPLATE DETAILS
4A	GENERATOR 1 AC SCHEMATIC
4B	GENERATOR 2 AC SCHEMATIC
4C	GENERATOR 3 AC SCHEMATIC
5A	FEEDER BREAKER/MASTER AC SCHEMATIC
5B	FEEDER BREAKER/MASTER AC SCHEMATIC
5C	VFD AC SCHEMATIC
6A	GENERATOR 1 DC CONTROL SCHEMATIC
6B	GENERATOR 2 DC CONTROL SCHEMATIC
6C	GENERATOR 3 DC CONTROL SCHEMATIC
7A	GENERATOR 1 DC CONTROL SCHEMATIC
7B	GENERATOR 2 DC CONTROL SCHEMATIC
7C	GENERATOR 3 DC CONTROL SCHEMATIC
8A	GENERATOR 1 DC CONTROL SCHEMATIC
8B	GENERATOR 2 DC CONTROL SCHEMATIC
8C	GENERATOR 3 DC CONTROL SCHEMATIC

DRAWING LEGEND	
9	MASTER DC CONTROL SCHEMATIC
10	MASTER DC CONTROL SCHEMATIC
11	MASTER DC CONTROL SCHEMATIC
12A	VFD CONTROL SCHEMATIC
12B	VFD CONTROL SCHEMATIC
13	FEEDER BREAKER DC CONTROL SCHEMATIC
14	PLC COMMUNICATION DIAGRAM
15	COMMUNICATION NETWORK DIAGRAM
16	MONITORING & SYSTEM COMMUNICATION DIAGRAM
17	HEATER & LIGHTING CONTROL SCHEMATIC
18	CONTROL SWITCH TARGET DIAGRAM
19	INTERCONNECTION DIAGRAM

GCP READOUT	
* INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING LIST OF METERING, STATUS, AND ALARMS.	
METERING LEGEND	
1. VOLTS: Aφ, Bφ, Cφ L-N, L-L	
2. AMPS: Aφ, Bφ, Cφ	
3. KW	
4. PF	
5. KWH	
ALARM LEGEND	
1. LOW OIL PRESSURE ALARM	
2. LOW OIL PRESSURE SHUTDOWN	
3. HIGH WATER TEMPERATURE ALARM	
4. HIGH WATER TEMPERATURE SHUTDOWN	
5. OVERCRANK	
6. OVERSPEED	
7. LOW OIL LEVEL	
ANALOG INPUT LEGEND	
1. OIL PRESSURE (PSI)	
2. WATER TEMP (°F)	
MISC. LEGEND	
1. ENGINE HOURS	
2. ENGINE START COUNTER	
3. MAINTENANCE CALL	

APPROVED FOR CONSTRUCTION  
 MASTER COPY     REFERENCE COPY OF \_\_\_\_\_  
 MULTIPLE UNIT WORK ORDER  
 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

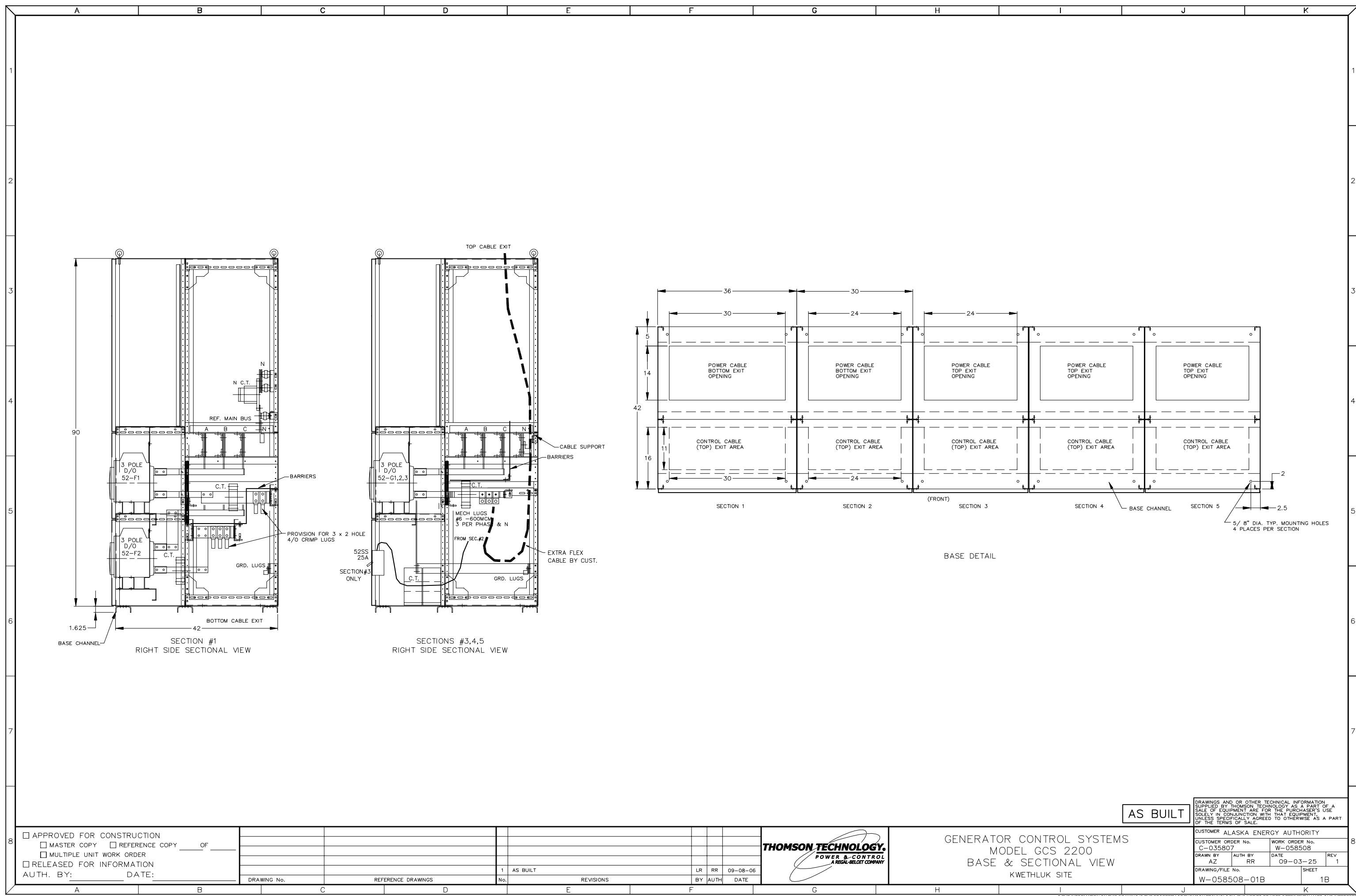
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		2	AS BUILT	LR	RR	09-08-06
		1	CUSTOMER APPROVAL MOD'S	RR	RR	09-06-15



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 PHYSICAL LAYOUT  
 KWETHLUK SITE

**AS BUILT**

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY MS	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-01A	SHEET 1A		



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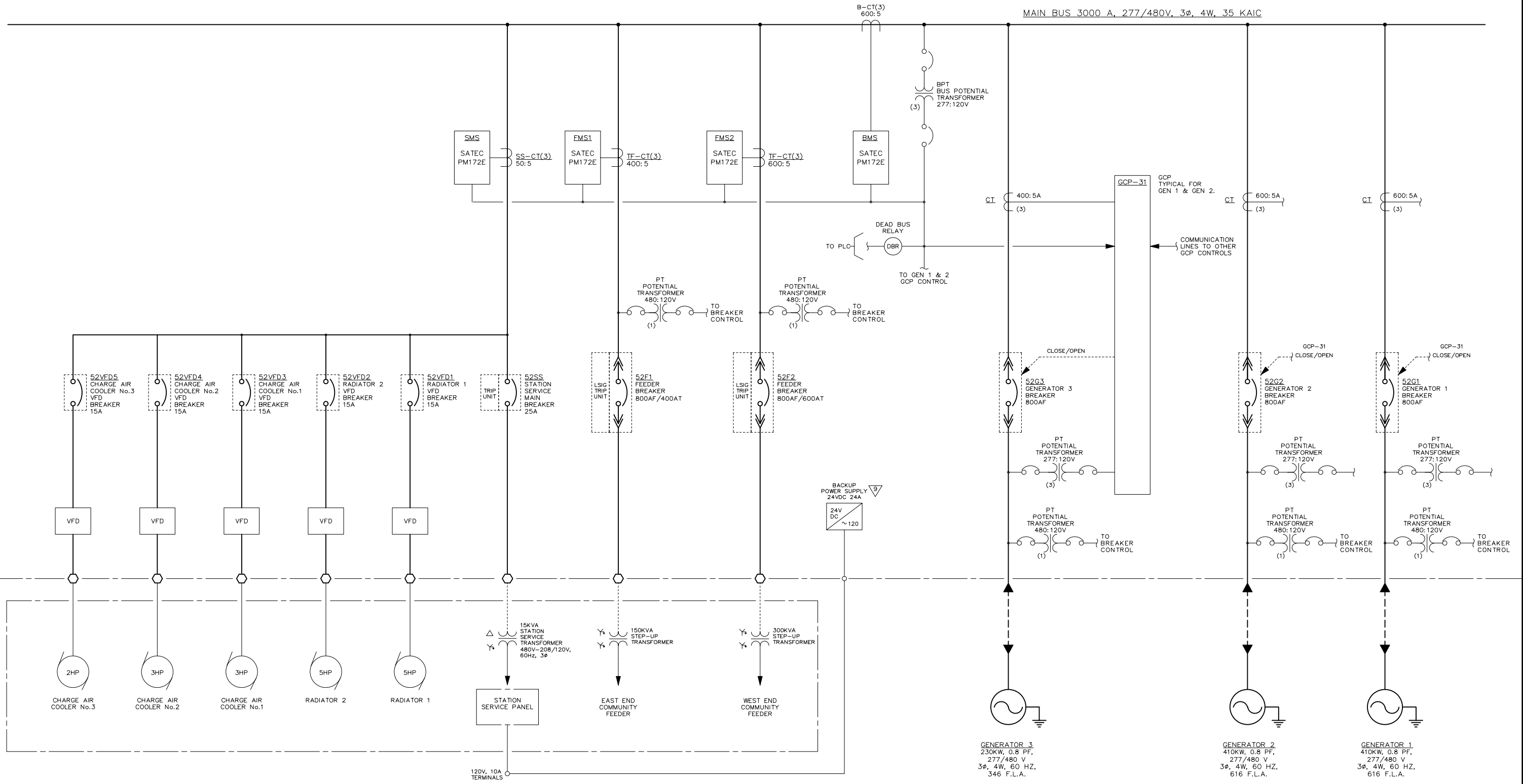
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 MULTIPLE UNIT WORK ORDER  
 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 BASE & SECTIONAL VIEW  
 KWETHLUK SITE

CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY AZ	AUTH BY RR
DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-01B	SHEET 1B



AS BUILT

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 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

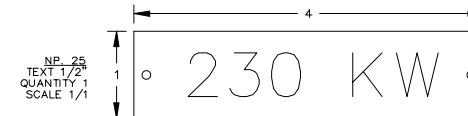
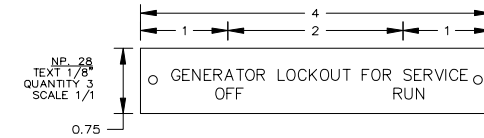
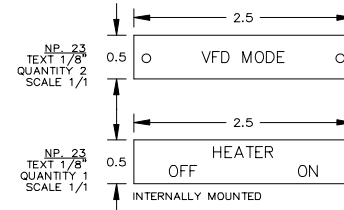
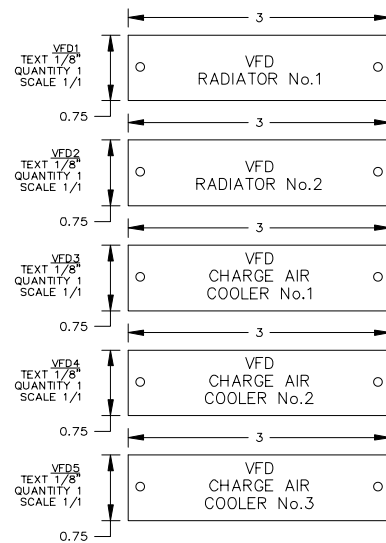
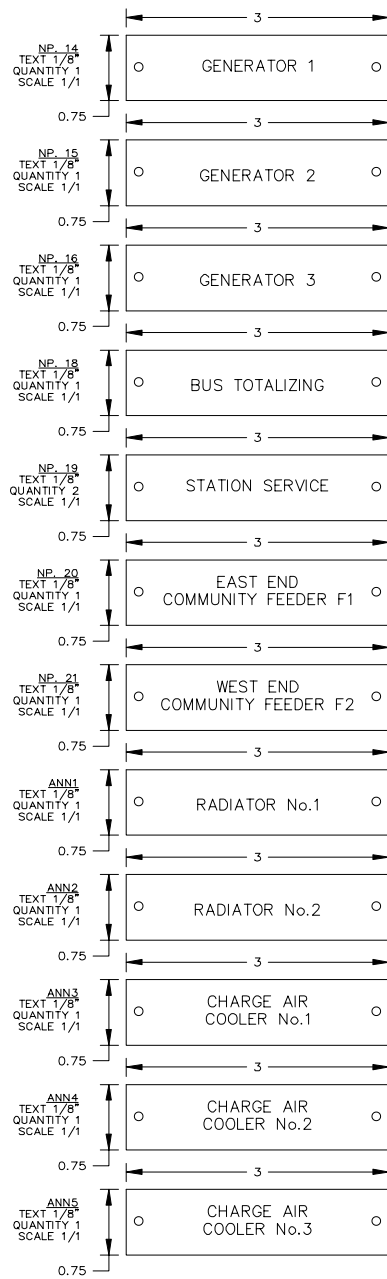
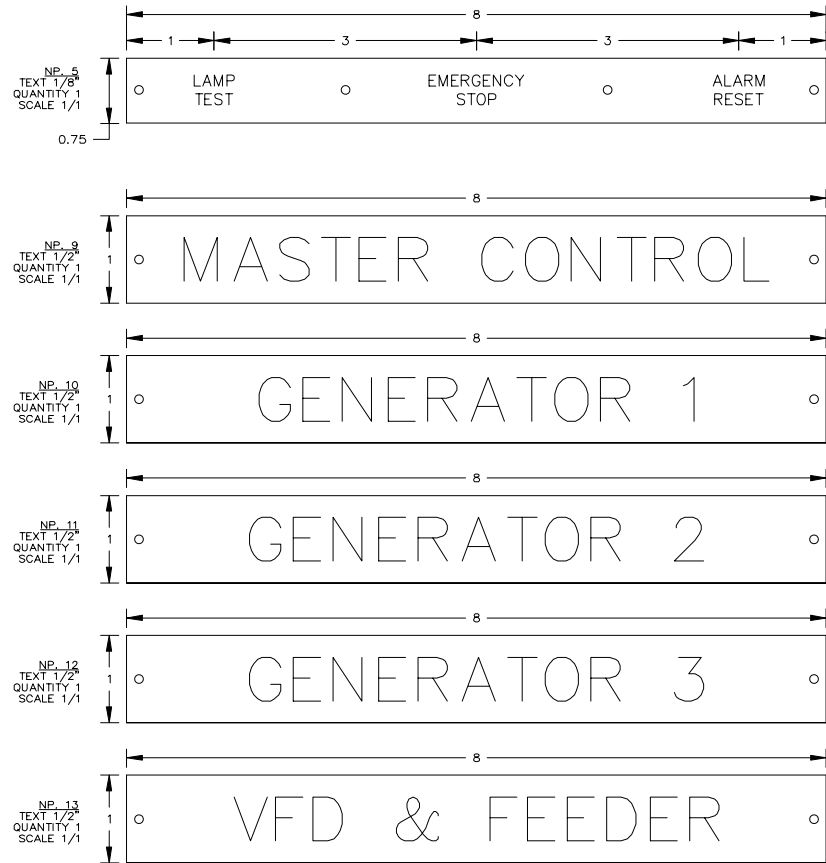
DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 SINGLE LINE DIAGRAM  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-02	SHEET 2



- NOTES:
1. ALL NAMEPLATES SHALL BE BLACK FACE WITH WHITE LETTERS EXCEPT AS NOTED.
  2. ALL NAMEPLATES SHALL HAVE PRESSURE SENSITIVE ADHESIVE ON BACK
  3. ALL NAMEPLATES MECHANICALLY ATTACHED

AS BUILT

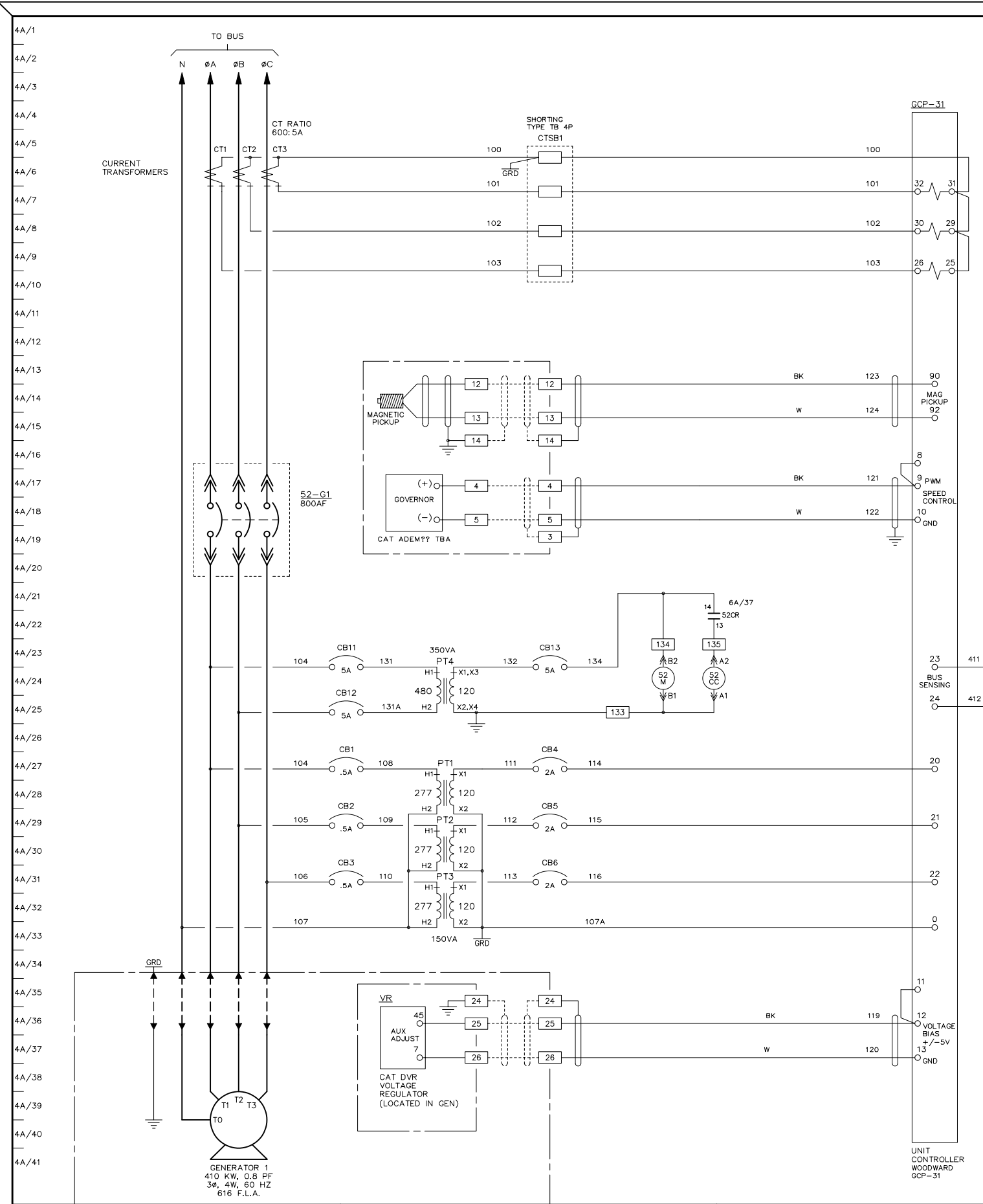
APPROVED FOR CONSTRUCTION  
 MASTER COPY  REFERENCE COPY OF \_\_\_\_\_  
 MULTIPLE UNIT WORK ORDER  
 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
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		1	CUSTOMER APPROVAL MOD'S	RR	RR	09-06-10



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 NAMEPLATE DETAILS  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 2
DRAWN BY MS	AUTH BY RR	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-03	SHEET 3		



SECTION #5

AS BUILT

DRAWINGS AND/OR OTHER TECHNICAL INFORMATION SUPPLIED BY THOMSON TECHNOLOGY AS A PART OF A SALE OF EQUIPMENT ARE FOR THE PURCHASER'S USE SOLELY IN CONJUNCTION WITH THAT EQUIPMENT, UNLESS SPECIFICALLY AGREED TO OTHERWISE AS A PART OF THE TERMS OF SALE.

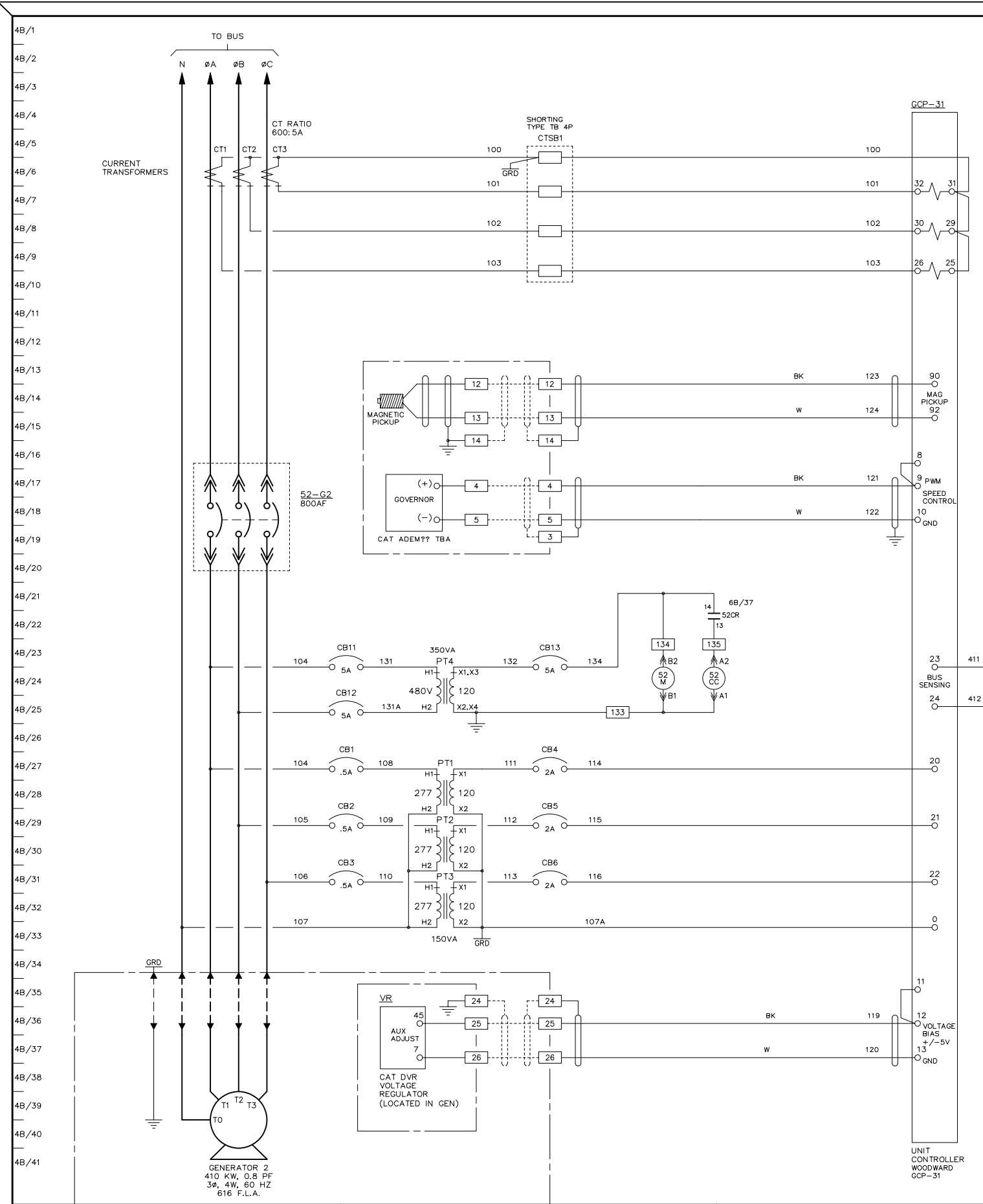
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 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
1	AS BUILT			LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 1 AC SCHEMATIC  
 LEVELOCK SITE

CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-04A	SHEET 4A



BUS POTENTIAL  
TO GEN 1 SECTION  
DWG No. W-058508-04A  
& GEN 3 SECTION  
DWG No. W-058508-04C  
LINE No. 4C/24

SECTION #4

AS BUILT

DRAWINGS AND/OR OTHER TECHNICAL INFORMATION  
SUPPLIED BY THOMSON TECHNOLOGY AS A PART OF A  
SALE OF EQUIPMENT ARE FOR THE PURCHASER'S USE  
SOLELY IN CONJUNCTION WITH THAT EQUIPMENT.  
UNLESS SPECIFICALLY AGREED TO OTHERWISE AS A PART  
OF THE TERMS OF SALE.

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 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

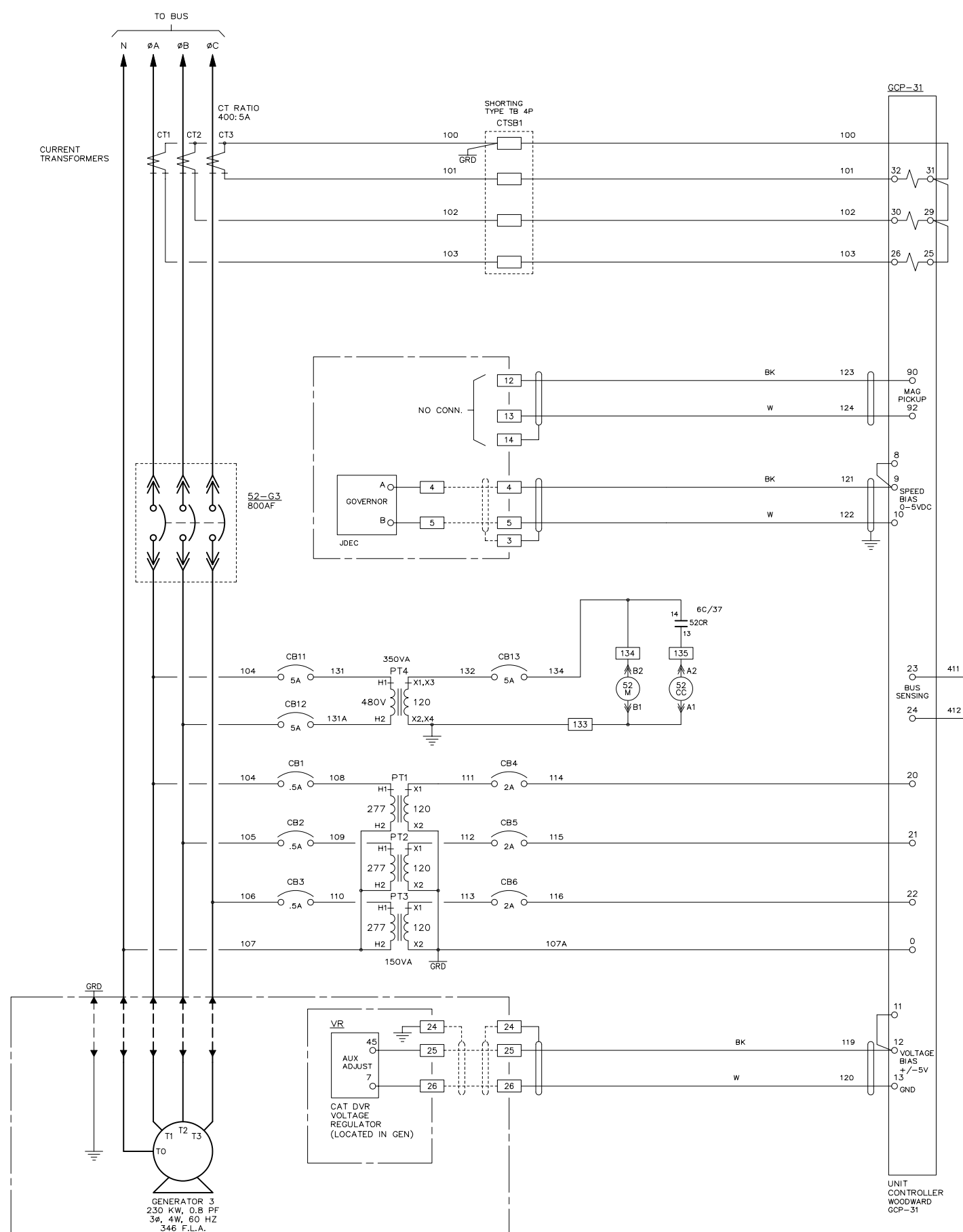
DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 2 AC SCHEMATIC  
 KWETHLUK SITE

CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-04B	SHEET 4B

4C/1  
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4C/40  
4C/41



BUS POTENTIAL TO MASTER SECTION DWG No. W-058508-05A LINE No.5A/33 AND TO GEN 2 SECTION DWG No. W-058508-04B LINE No.4B/24

SECTION #3

AS BUILT

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 MULTIPLE UNIT WORK ORDER  
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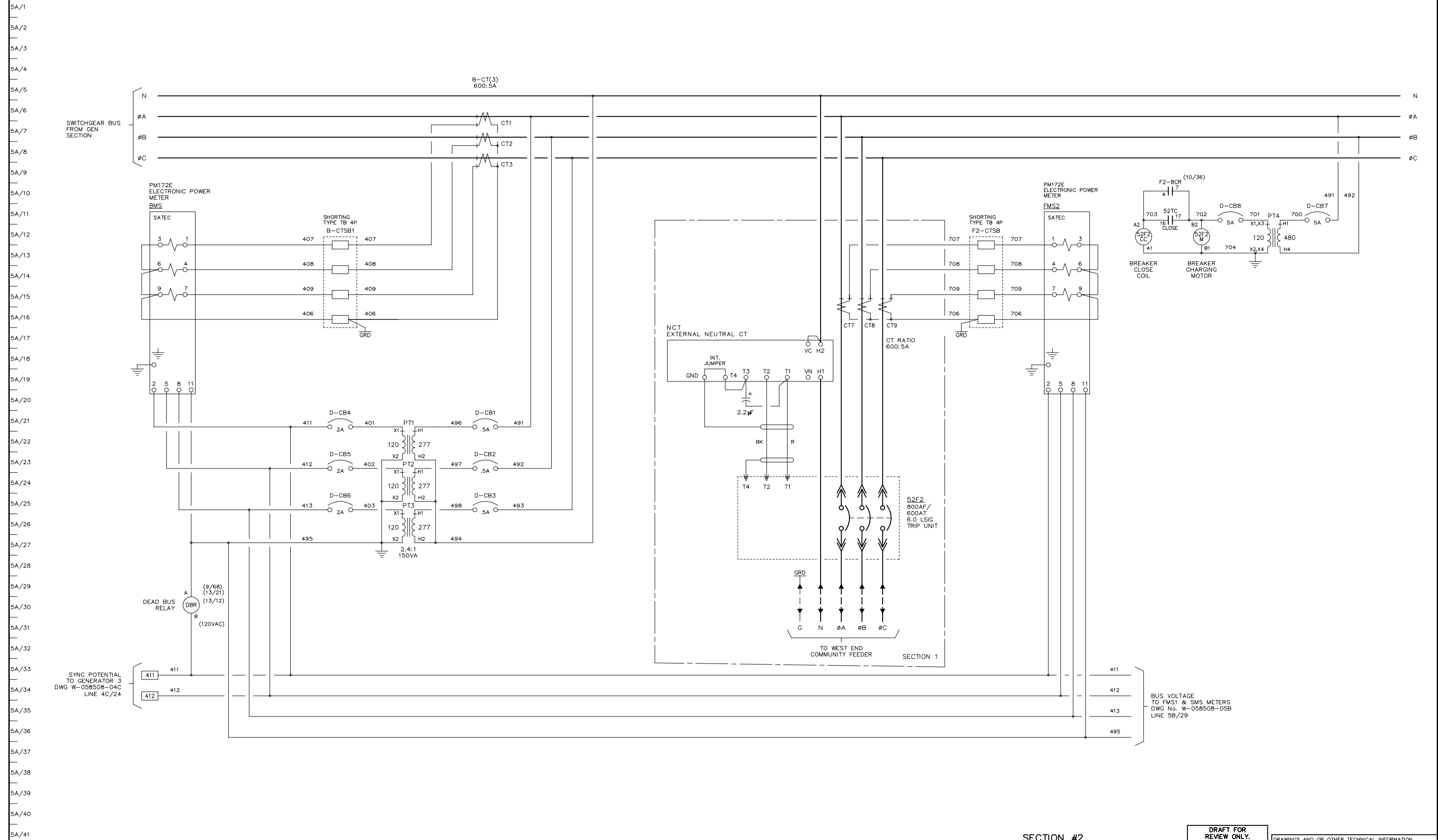
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		2	AS BUILT	LR	RR	09-08-06
		1	CUSTOMER APPROVAL MOD'S.	RR	RR	09-06-10



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 3 AC SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-04C	SHEET 4C		





BUS VOLTAGE TO FMS1 & SMS METERS  
DWG No. W-058508-05B  
LINE 5B/29

SECTION #2

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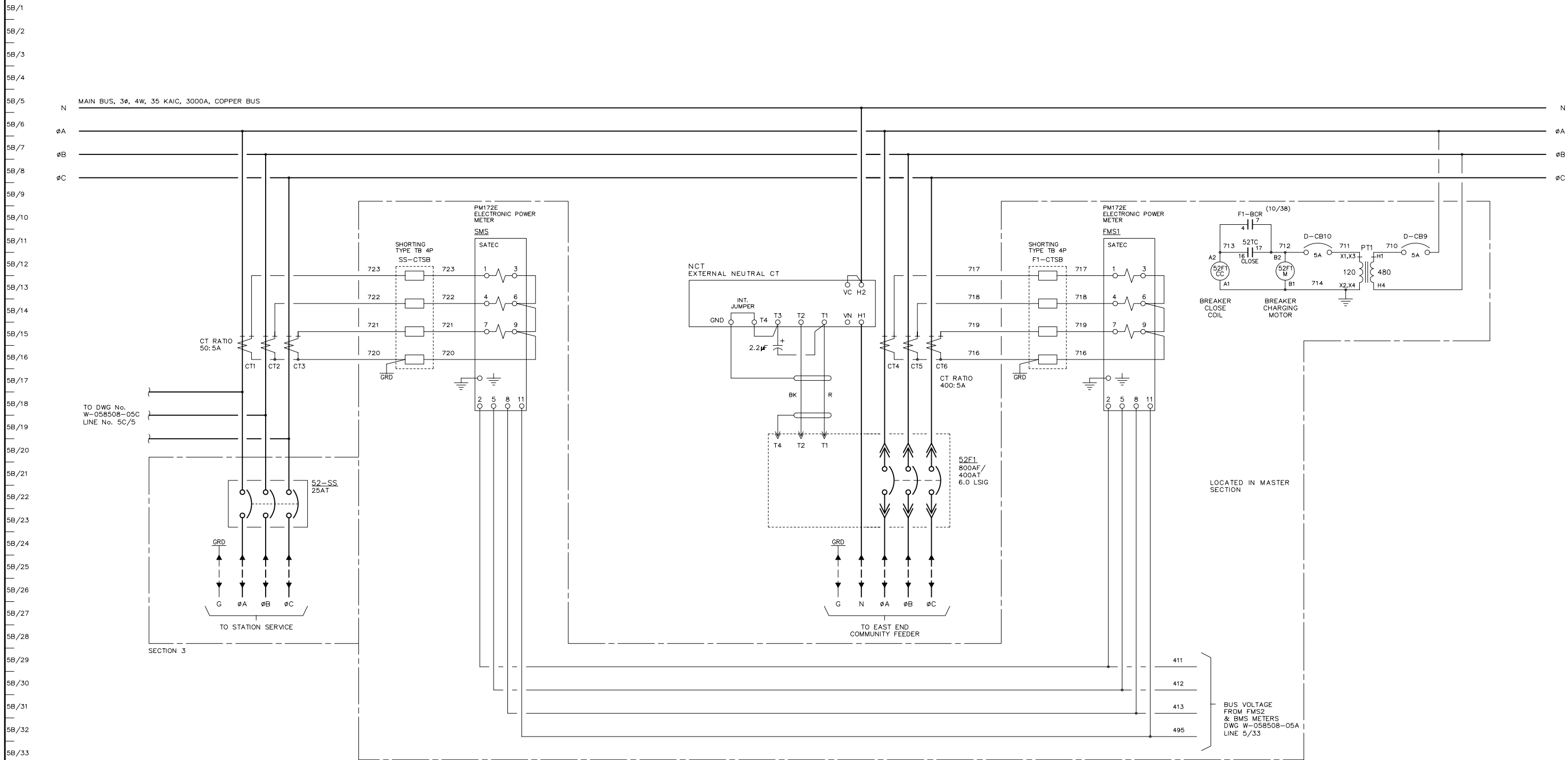
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DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	CUSTOMER APPROVAL MOD'S	LR	RR	09-06-17



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 FEEDER BREAKER/MASTER AC SCHEMATIC  
 KWETHLUK SITE

CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-05A	SHEET 5A



TO DWG No. W-058508-05C  
LINE No. 5C/5

SECTION 3

LOCATED IN MASTER SECTION

BUS VOLTAGE FROM FMS2 & BMS METERS  
DWG W-058508-05A  
LINE 5/33

SECTION #1

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 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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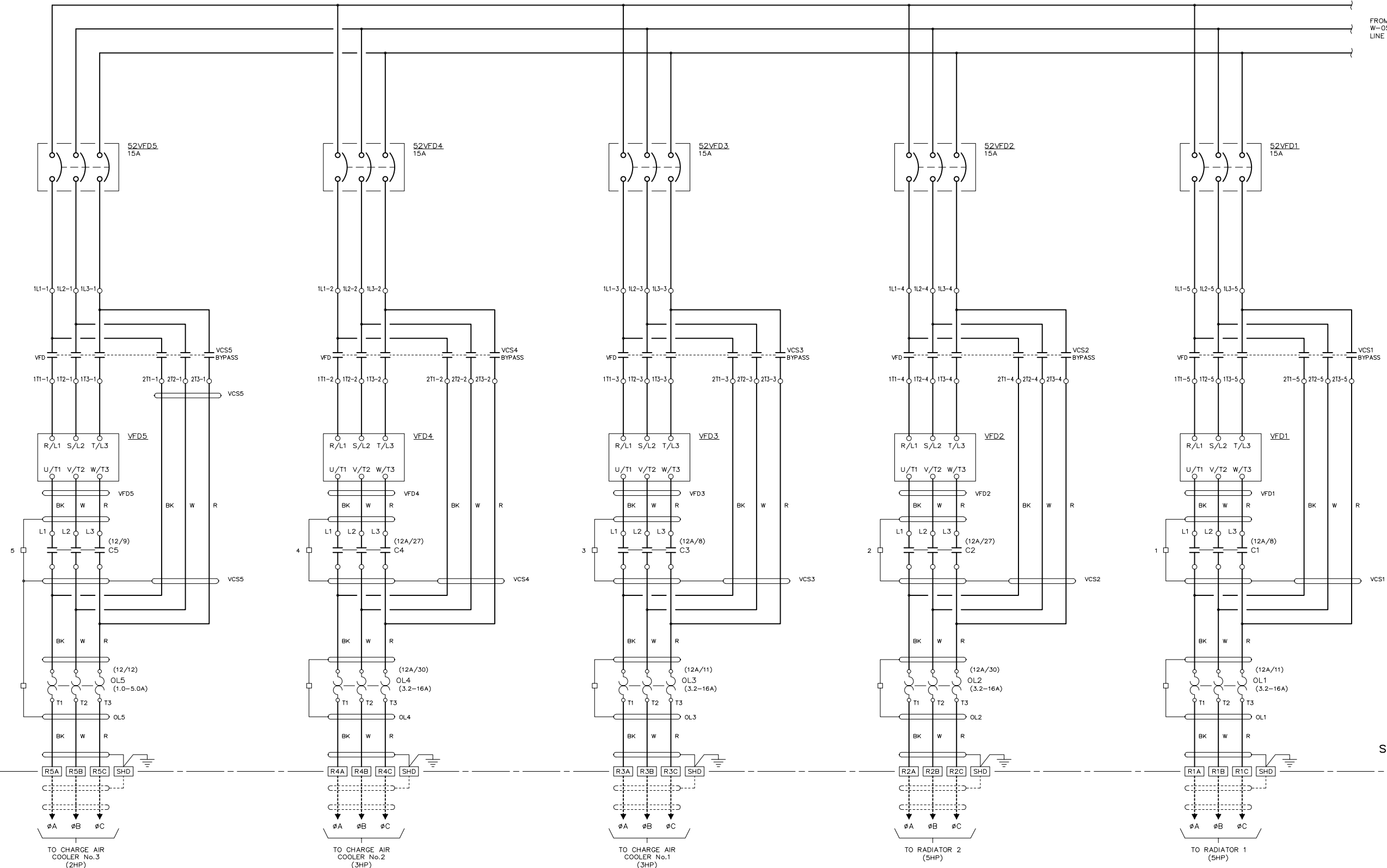


GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 FEEDER BREAKER/VFD AC SCHEMATIC  
 KWETHLUK SITE

CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-05B	SHEET 5B

5C/1  
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5C/41

FROM DWG No.  
W-058508-05B  
LINE No. 5B/18



SECTION #1

AS BUILT

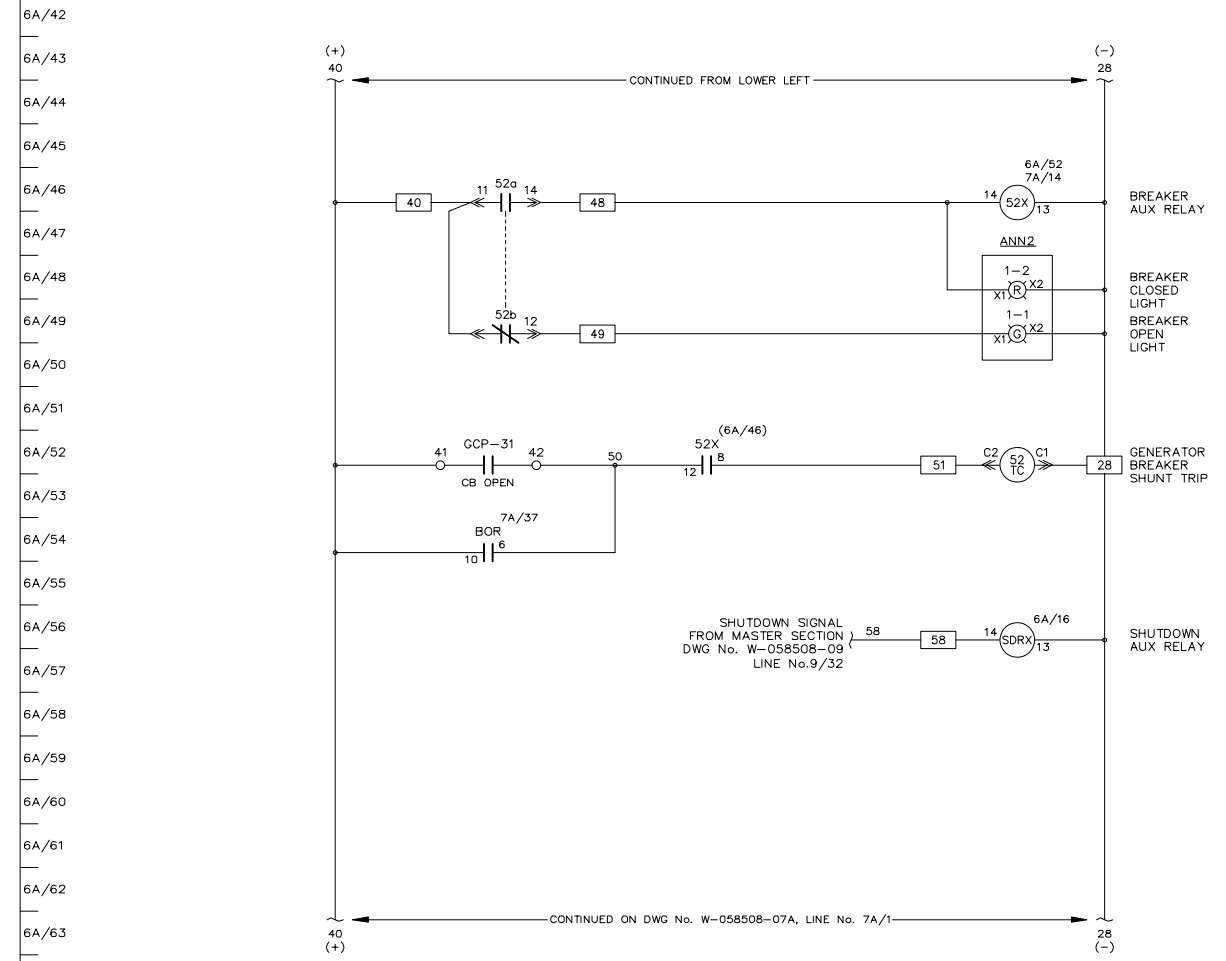
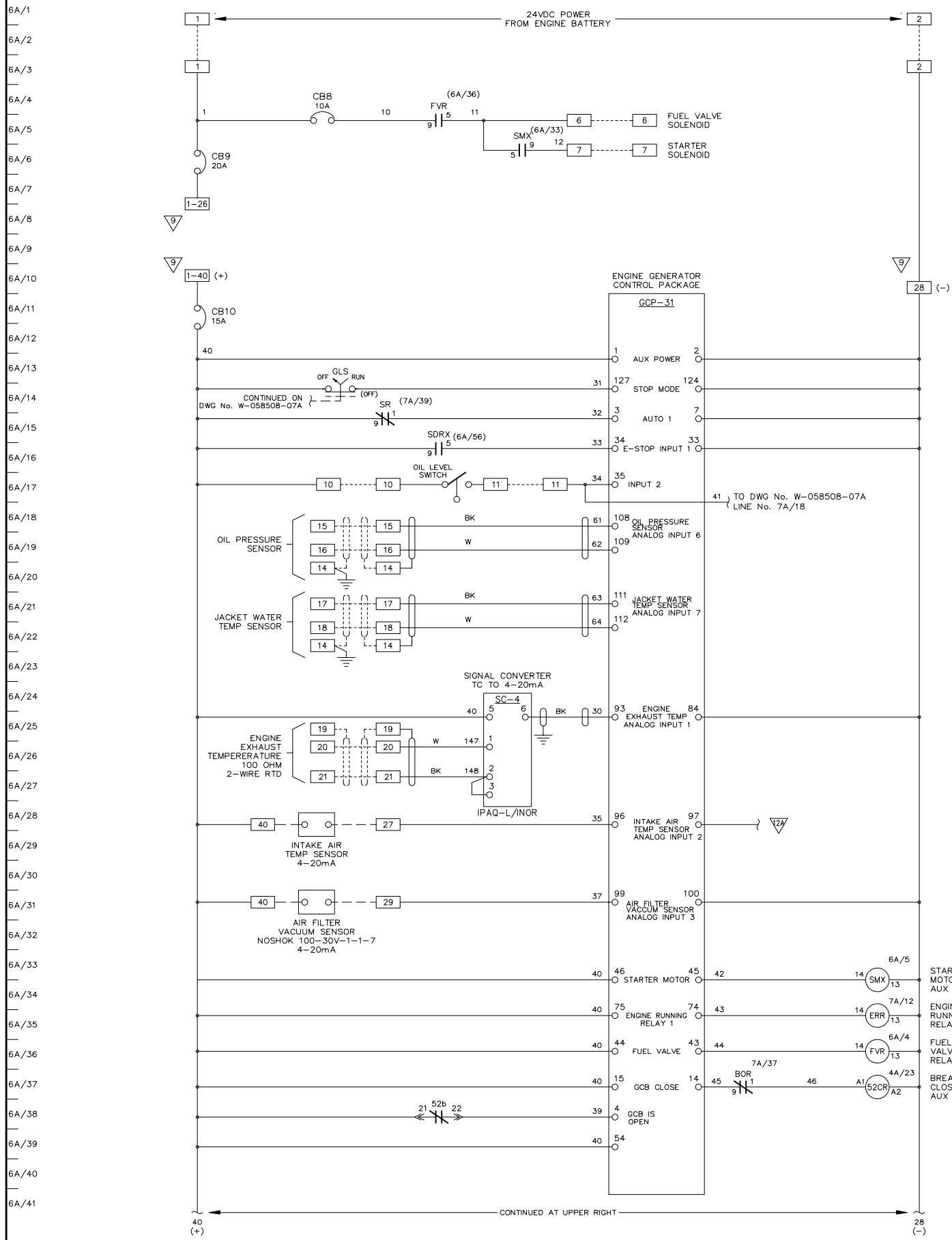
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DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 3300  
 VFD AC SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-35	REV 1
DRAWN BY MS	AUTH BY RR	DATE 09-03-35	REV 1
DRAWING/FILE No. W-058508-05C	SHEET		1



SECTION #5

AS BUILT

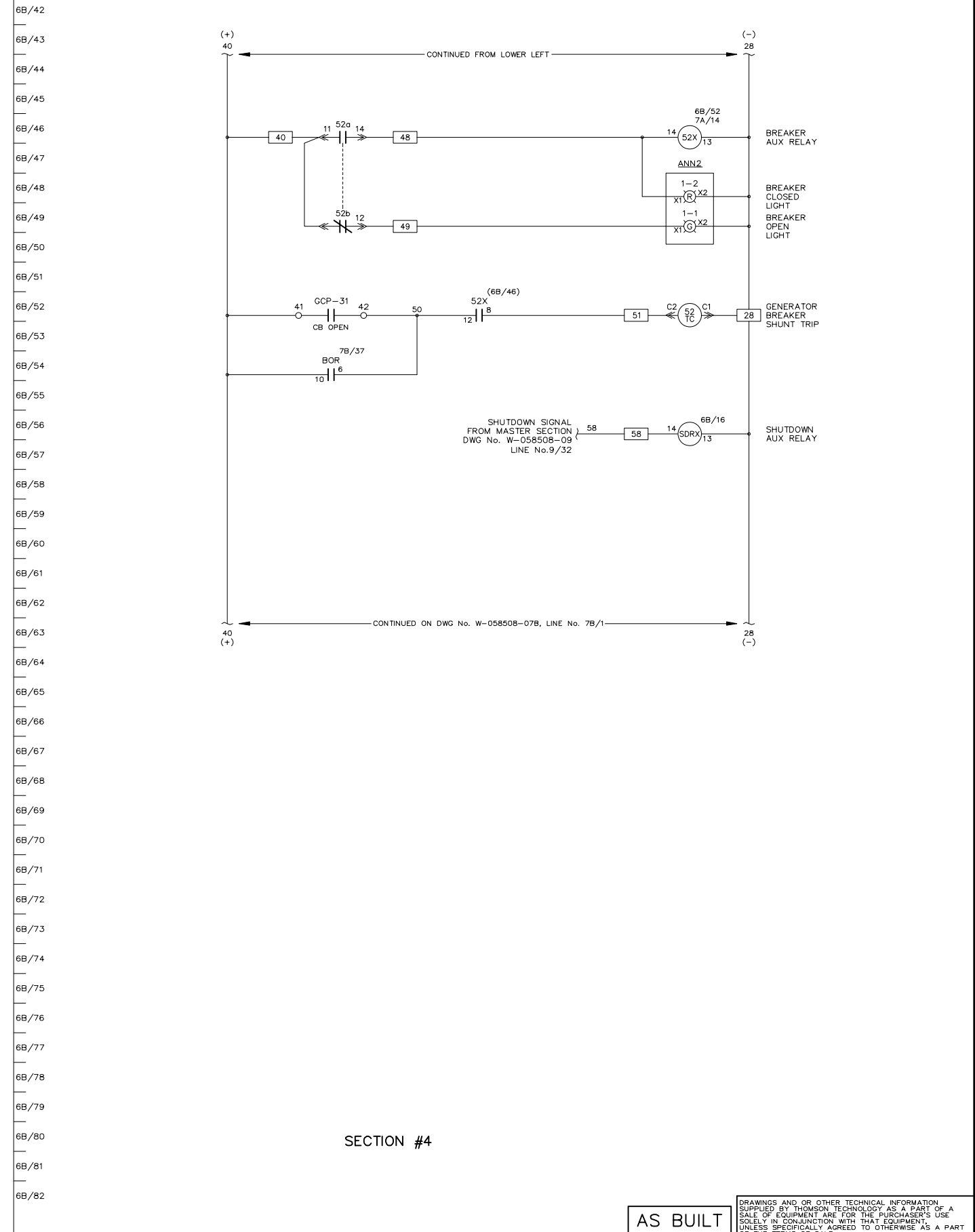
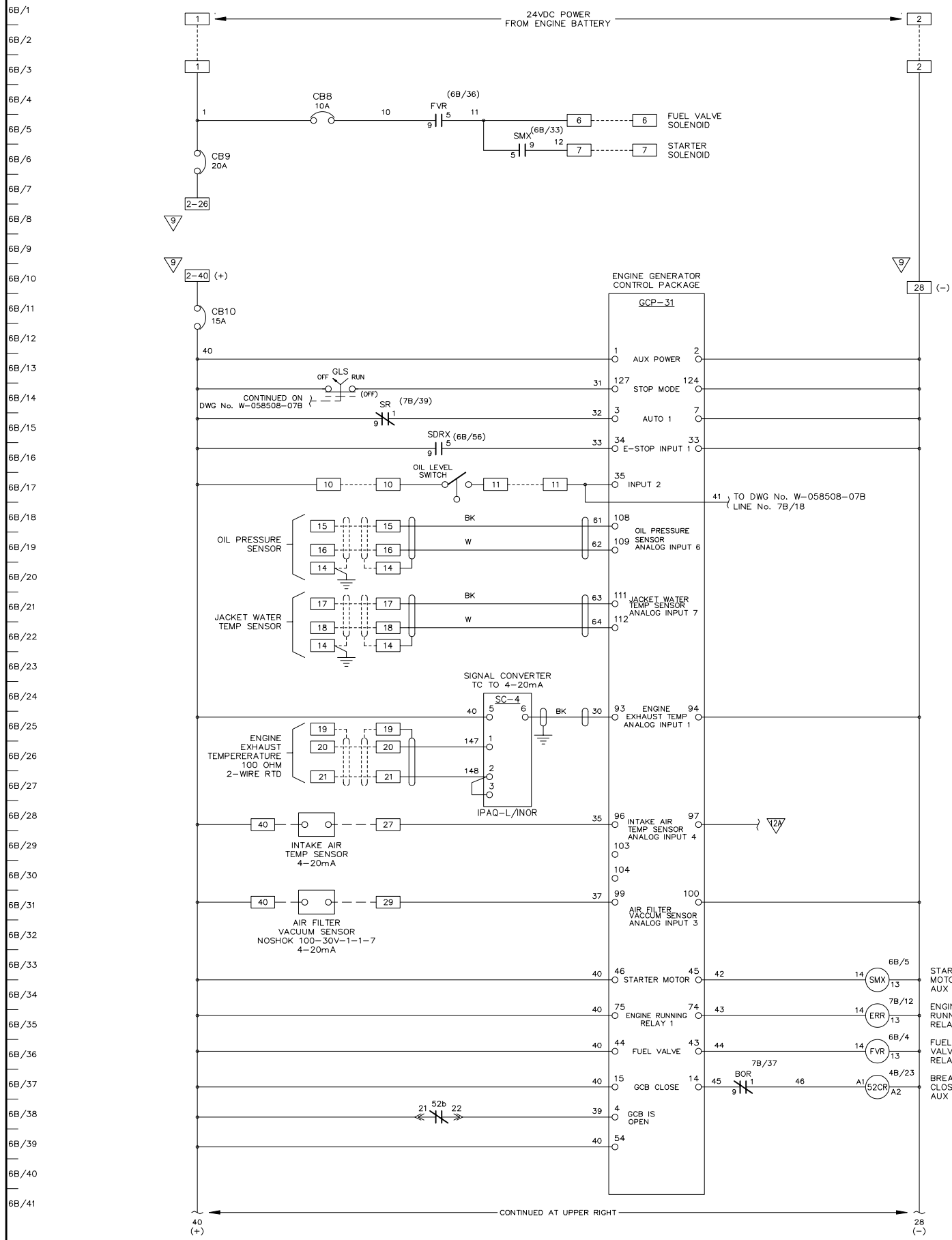
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DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 1 - DC CONTROL SCHEMATIC  
 KWETHLUK SITE

DRAWINGS AND/OR OTHER TECHNICAL INFORMATION SUPPLIED BY THOMSON TECHNOLOGY AS A PART OF A SALE OF EQUIPMENT ARE FOR THE PURCHASER'S USE SOLELY IN CONJUNCTION WITH THAT EQUIPMENT, UNLESS SPECIFICALLY AGREED TO OTHERWISE AS A PART OF THE TERMS OF SALE.			
CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 1
DRAWN BY MS	AUTH BY RR	DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-06A	SHEET 6A		



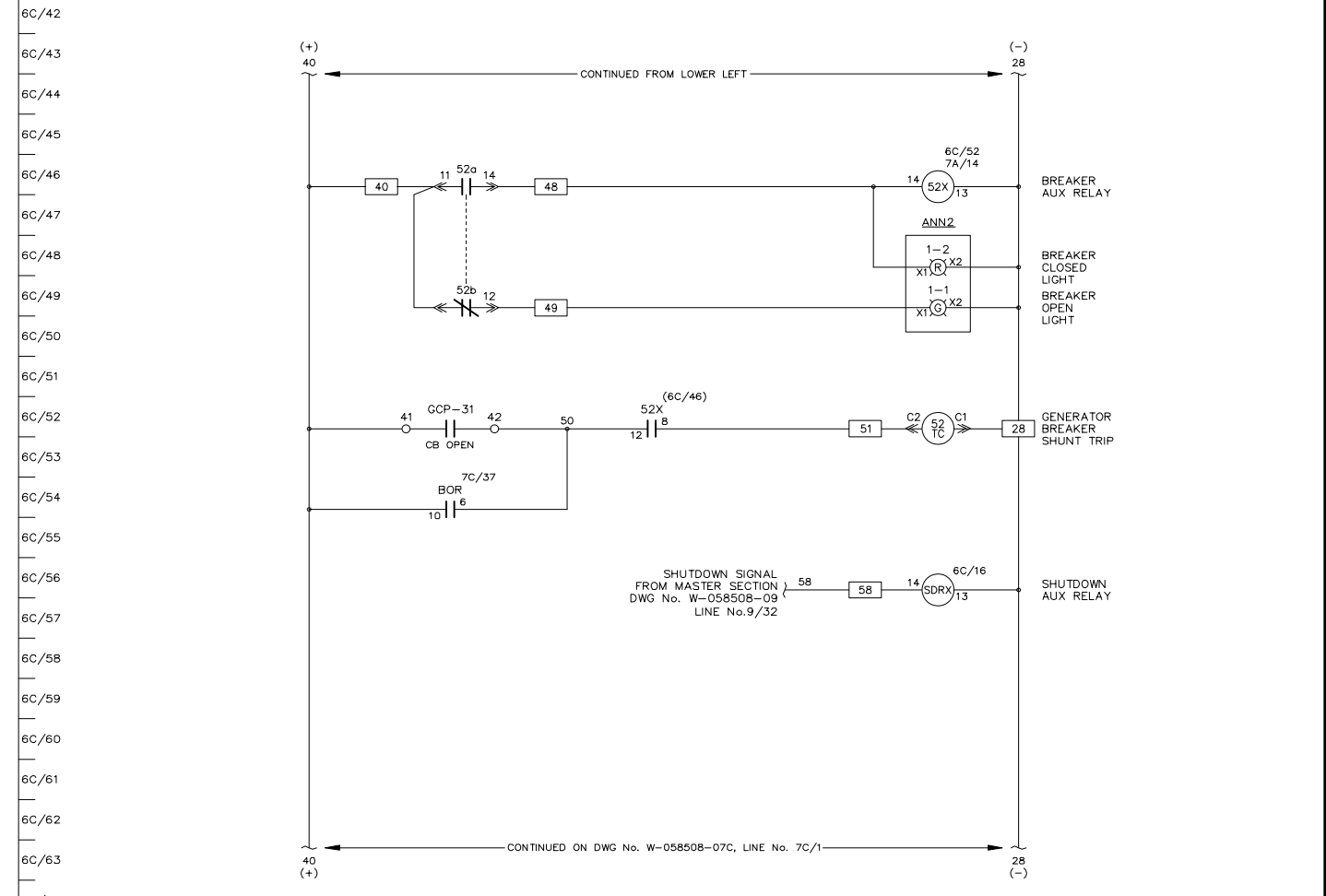
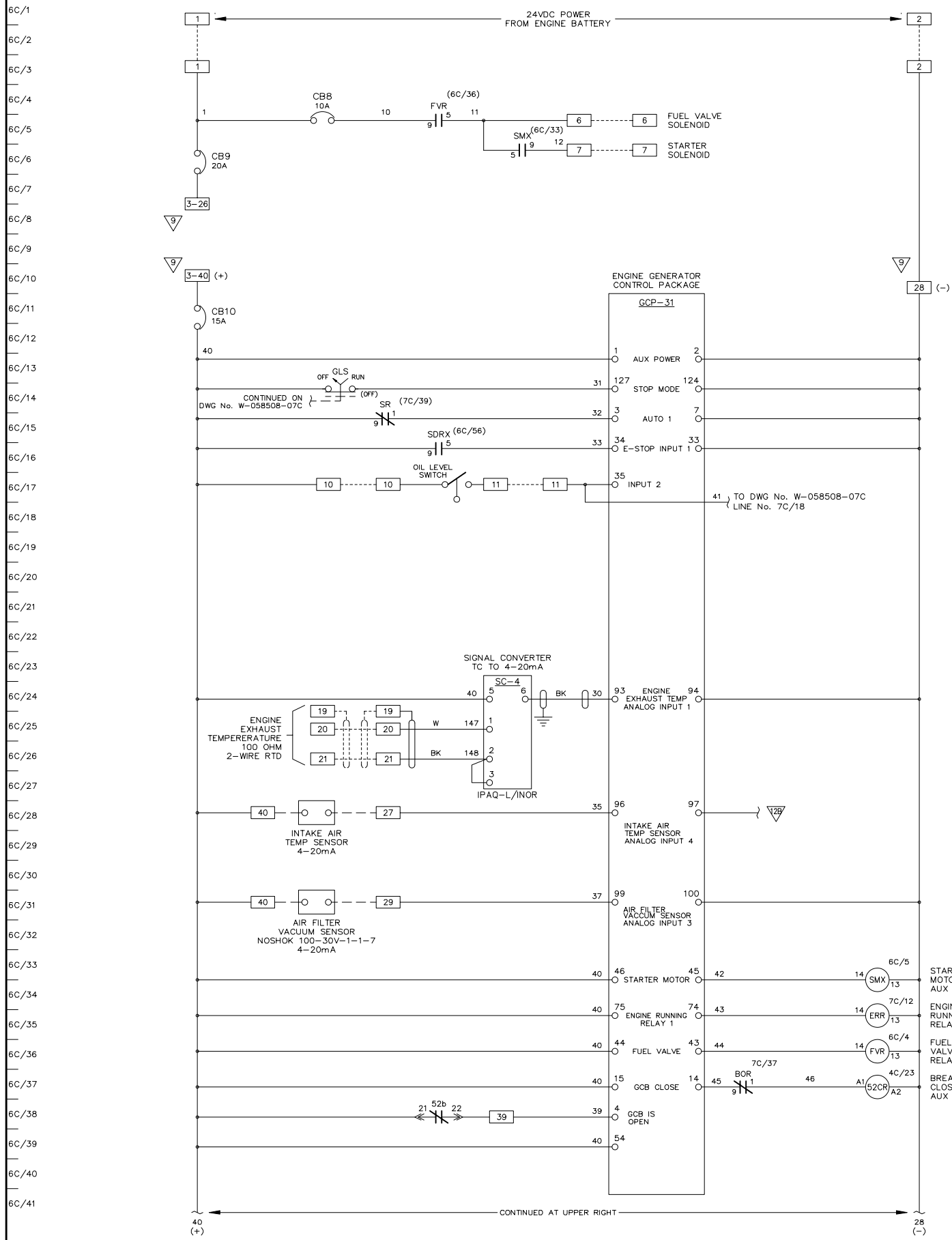
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 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 2 - DC CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 1
DRAWN BY MS	DRAWING/FILE No. W-058508-06B	SHEET 6B	



SECTION #3

AS BUILT

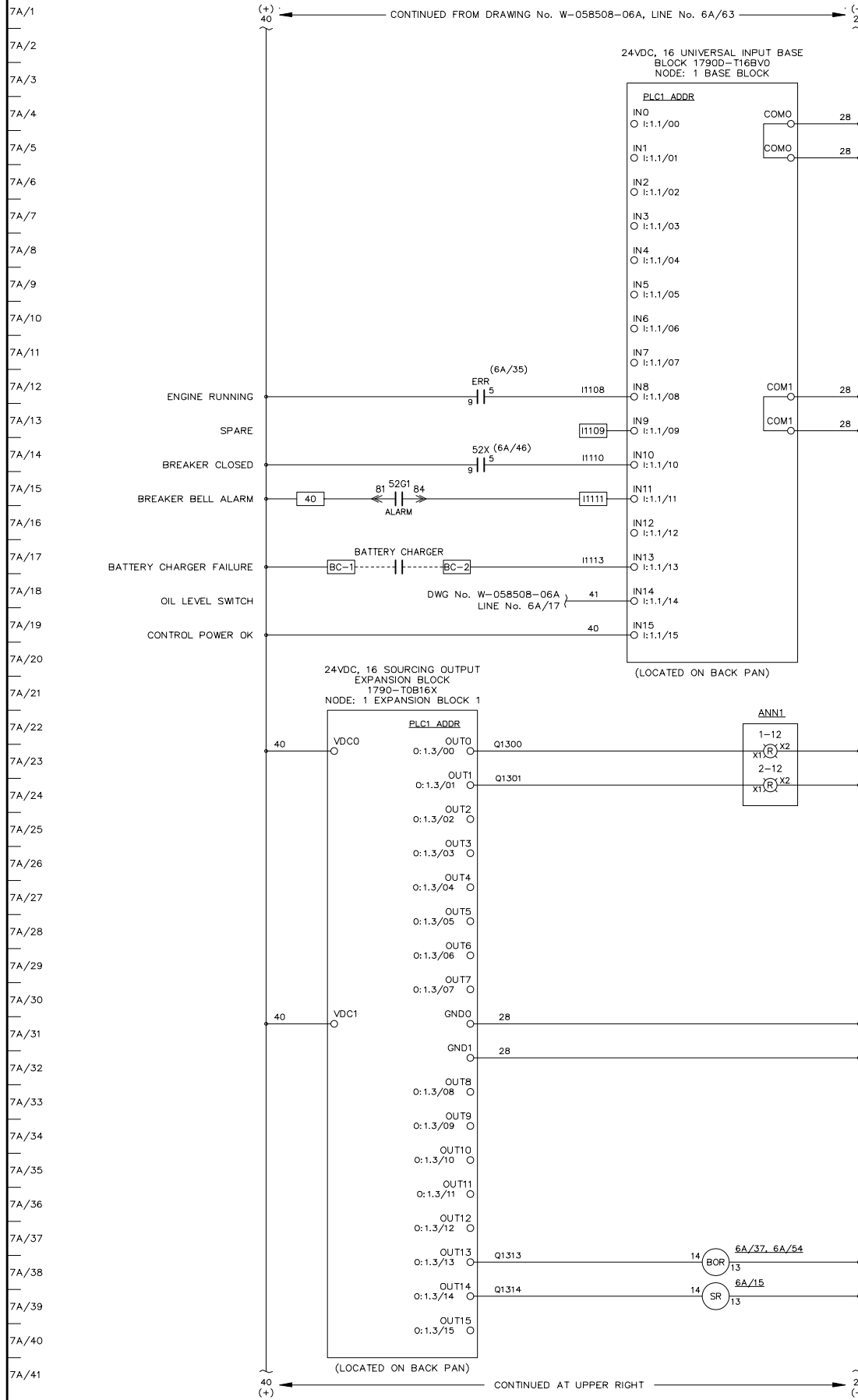
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DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 3 - DC CONTROL SCHEMATIC  
 KWETHLUK SITE

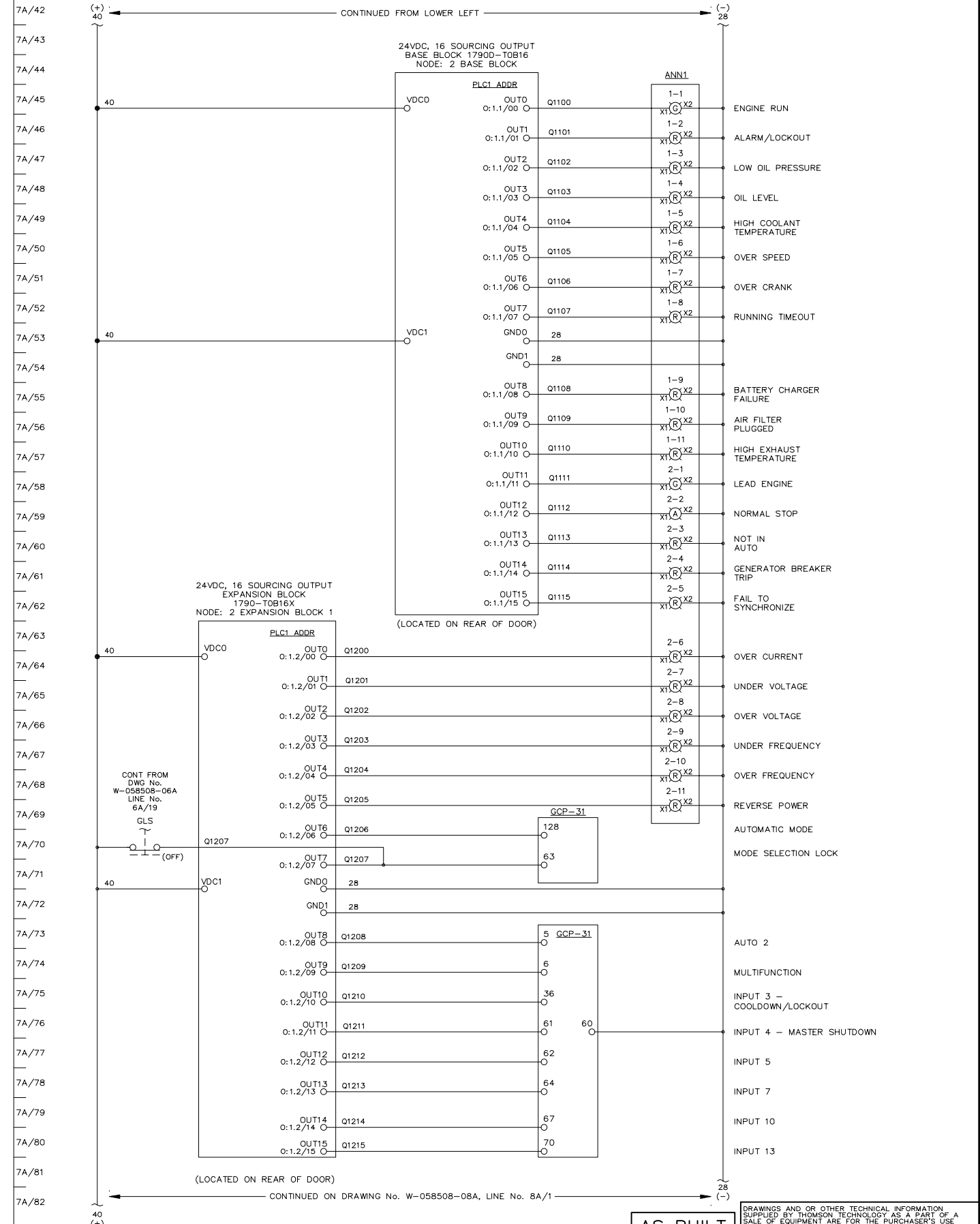
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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 1
DRAWN BY MS	AUTH BY RR	DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-06C	SHEET 6C		



ANNUNCIATOR LAYOUT (TYPICAL)

1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12
2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12

LOCATION	COLOUR	DESCRIPTION
1-1	G	ENGINE RUN
1-2	R	ALARM/LOCKOUT
1-3	R	LOW OIL PRESSURE
1-4	R	OIL LEVEL
1-5	R	HIGH COOLANT TEMPERATURE
1-6	R	OVER SPEED
1-7	R	OVER CRANK
1-8	R	RUNNING TIMEOUT
1-9	R	BATTERY CHARGER FAILURE
1-10	R	AIR FILTER PLUGGED
1-11	R	HIGH EXHAUST TEMPERATURE
1-12	R	HIGH CHARGE AIR TEMP
2-1	G	LEAD ENGINE
2-2	A	NORMAL STOP
2-3	R	NOT IN AUTO
2-4	R	GENERATOR BREAKER TRIP
2-5	R	FAIL TO SYNCHRONIZE
2-6	R	OVER CURRENT
2-7	R	UNDER VOLTAGE
2-8	R	OVER VOLTAGE
2-9	R	UNDER FREQUENCY
2-10	R	OVER FREQUENCY
2-11	R	REVERSE POWER
2-12	R	CHARGE AIR VFD FAILURE

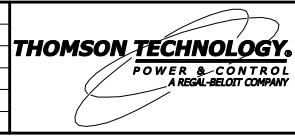


SECTION #5

AS BUILT

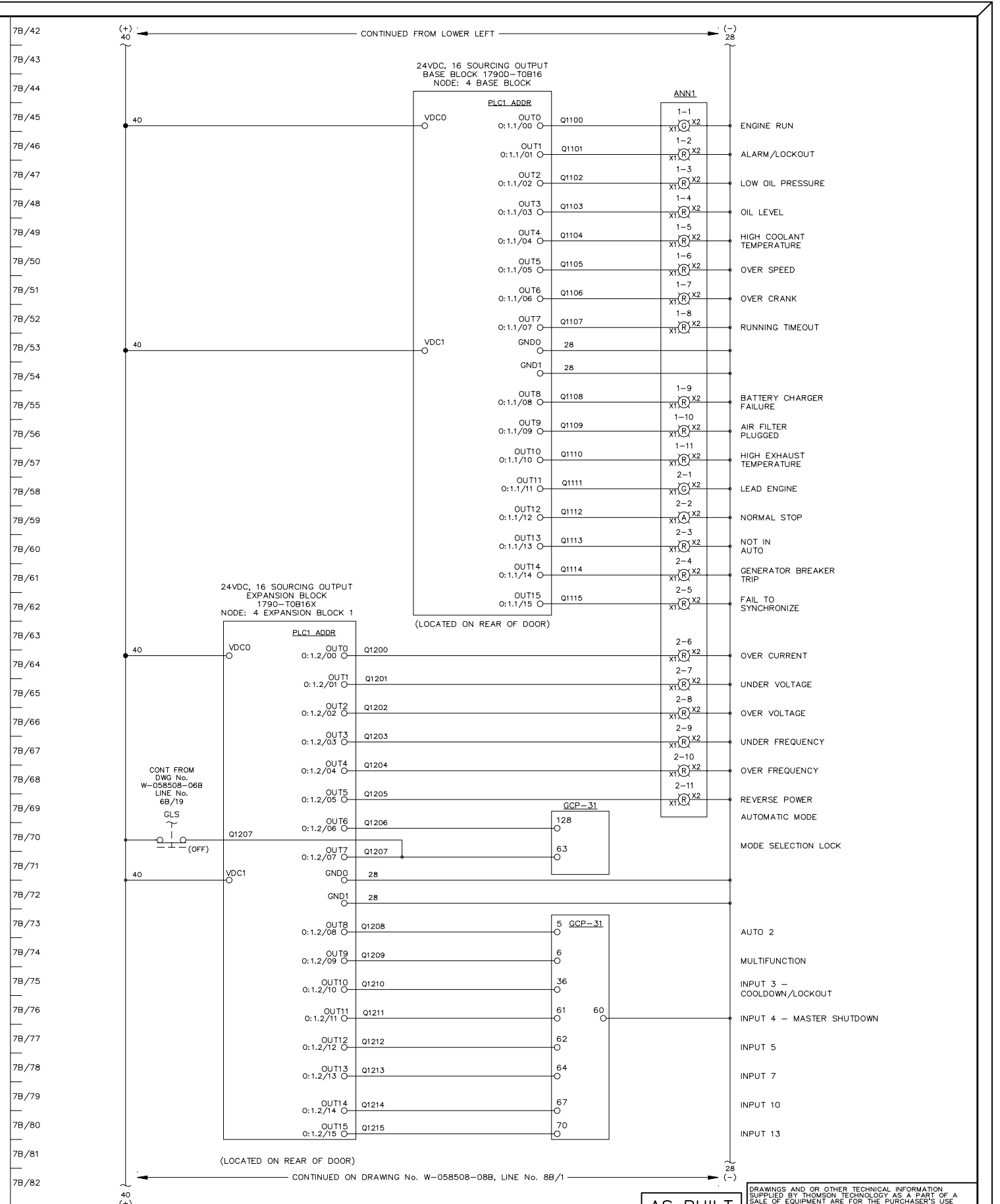
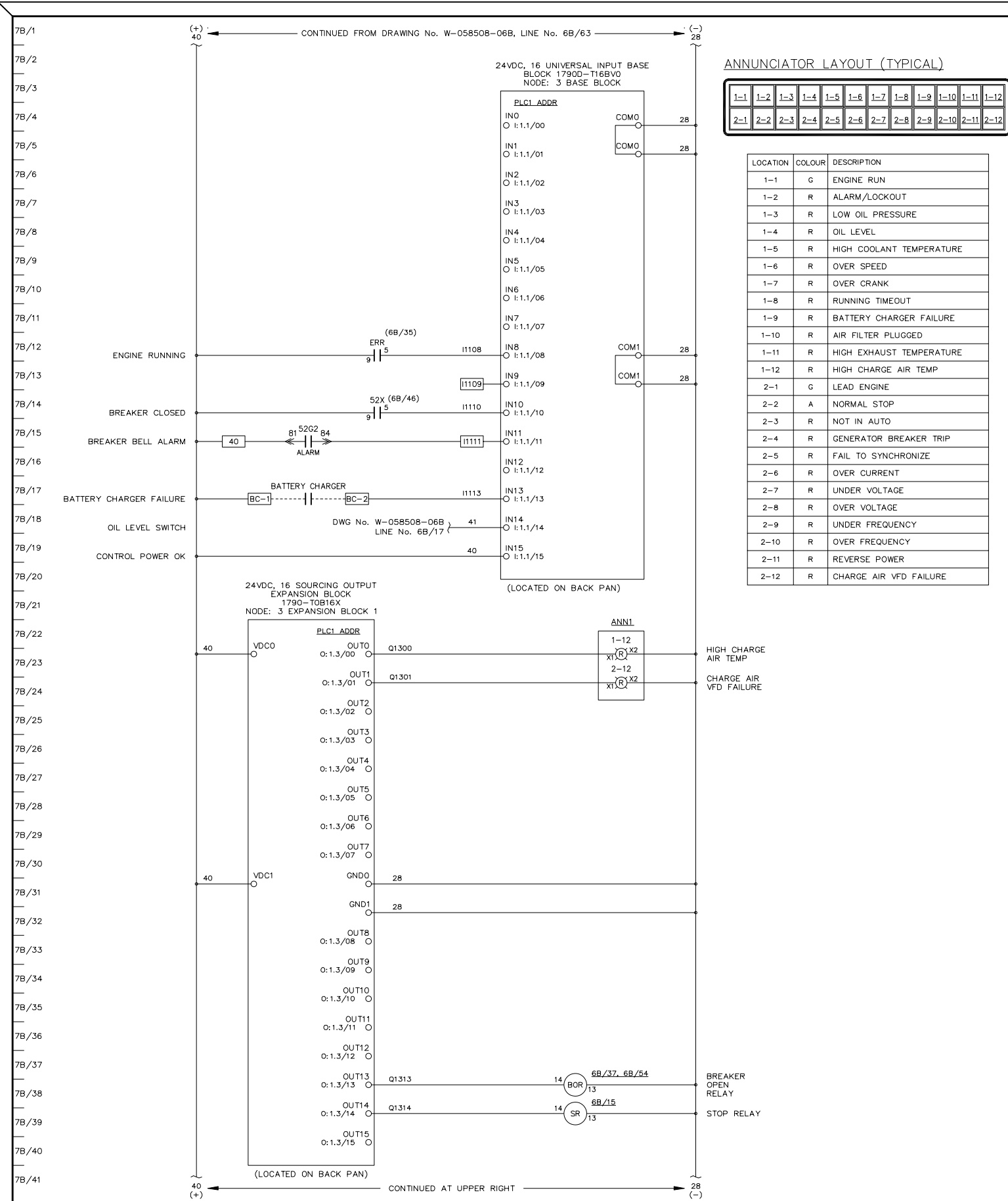
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DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 1 - DC CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508	DATE 09-03-25	REV 1
DRAWN BY MS	AUTH BY RR	DATE	REV
DRAWING/FILE No. W-058508-07A	SHEET 7A		



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LR RR 09-08-06

BY AUTH DATE

THOMSON TECHNOLOGY  
POWER & CONTROL  
A REGAL BELLOTT COMPANY

SECTION #4

GENERATOR CONTROL SYSTEMS  
MODEL GCS 2200  
GENERATOR 2 - DC CONTROL SCHEMATIC  
KWETHLUK SITE

AS BUILT

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CUSTOMER ALASKA ENERGY AUTHORITY

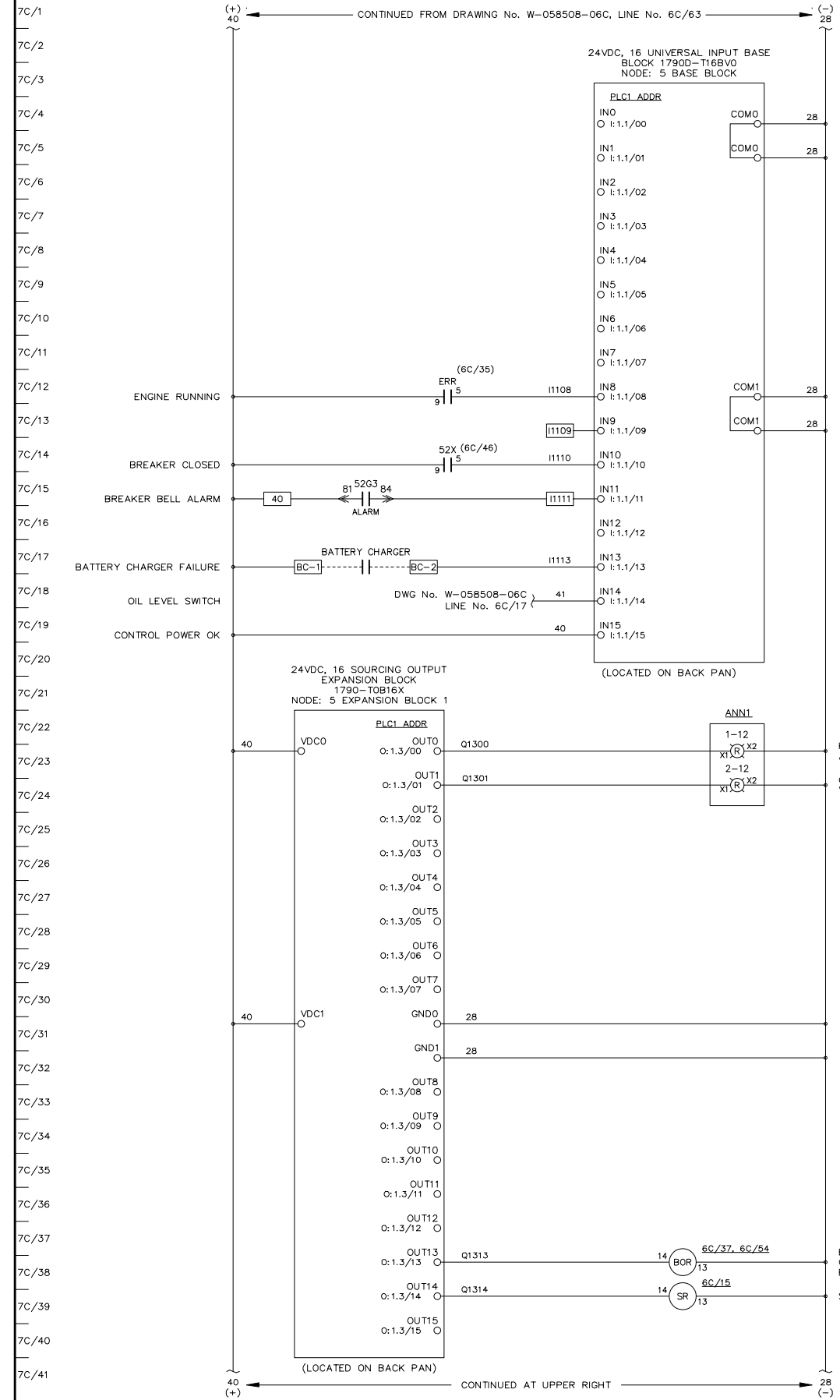
CUSTOMER ORDER No. C-035807 WORK ORDER No. W-058508

DRAWN BY MS AUTH BY RR DATE 09-03-25 REV 1

DRAWING/FILE No. W-058508-07B SHEET 7B

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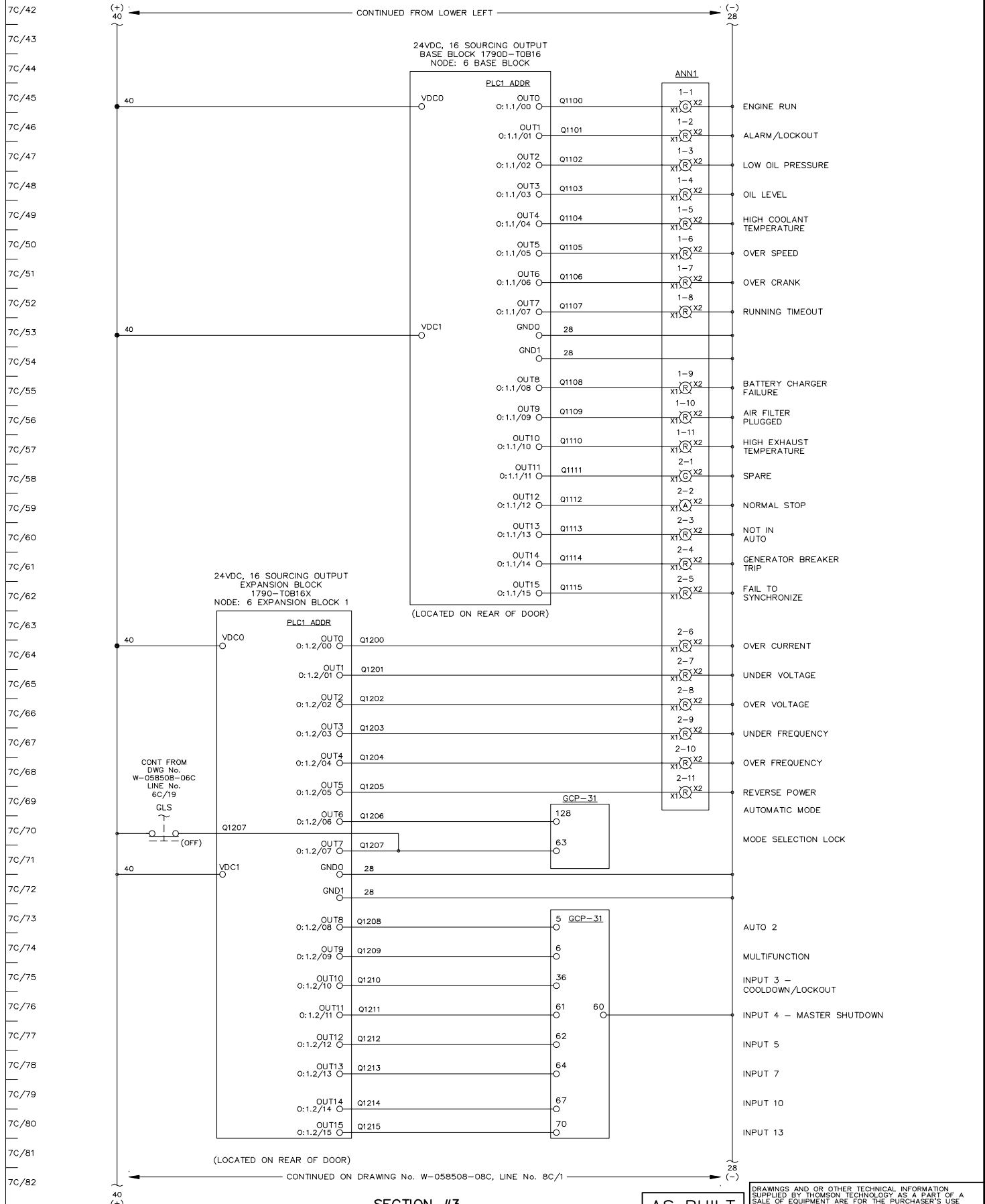
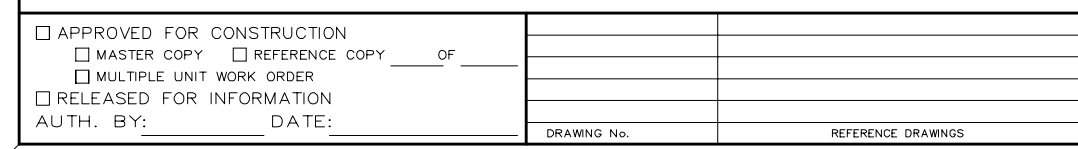




ANNUNCIATOR LAYOUT (TYPICAL)

1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12
2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12

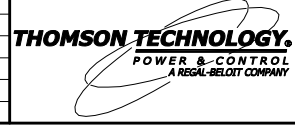
LOCATION	COLOUR	DESCRIPTION
1-1	G	ENGINE RUN
1-2	R	ALARM/LOCKOUT
1-3	R	LOW OIL PRESSURE
1-4	R	OIL LEVEL
1-5	R	HIGH COOLANT TEMPERATURE
1-6	R	OVER SPEED
1-7	R	OVER CRANK
1-8	R	RUNNING TIMEOUT
1-9	R	BATTERY CHARGER FAILURE
1-10	R	AIR FILTER PLUGGED
1-11	R	HIGH EXHAUST TEMPERATURE
2-1	G	SPARE
2-2	A	NORMAL STOP
2-3	R	NOT IN AUTO
2-4	R	GENERATOR BREAKER TRIP
2-5	R	FAIL TO SYNCHRONIZE
2-6	R	OVER CURRENT
2-7	R	UNDER VOLTAGE
2-8	R	OVER VOLTAGE
2-9	R	UNDER FREQUENCY
2-10	R	OVER FREQUENCY
2-11	R	REVERSE POWER
2-12	R	CHARGE AIR VFD FAILURE



SECTION #3

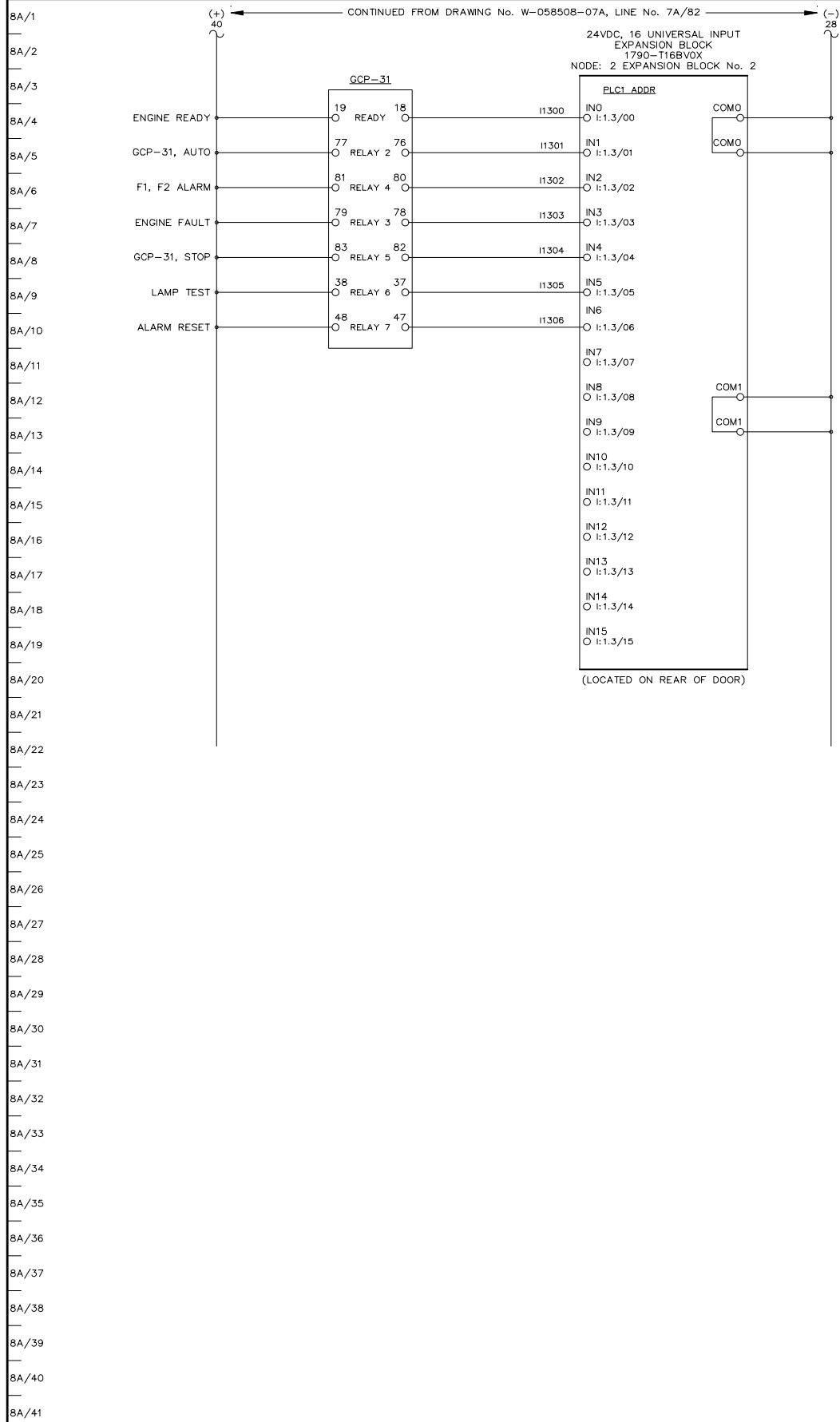
AS BUILT

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 2
DRAWN BY MS	DATE 09-03-25	REV 2	
DRAWING/FILE No. W-058508-07C	SHEET 7C		



GENERATOR CONTROL SYSTEMS  
MODEL GCS 2200  
GENERATOR 3 - DC CONTROL SCHEMATIC  
KWETHLUK SITE

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1	CUSTOMER APPROVAL MOD'S	RR	RR	09-06-10					



SECTION #5

AS BUILT

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 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

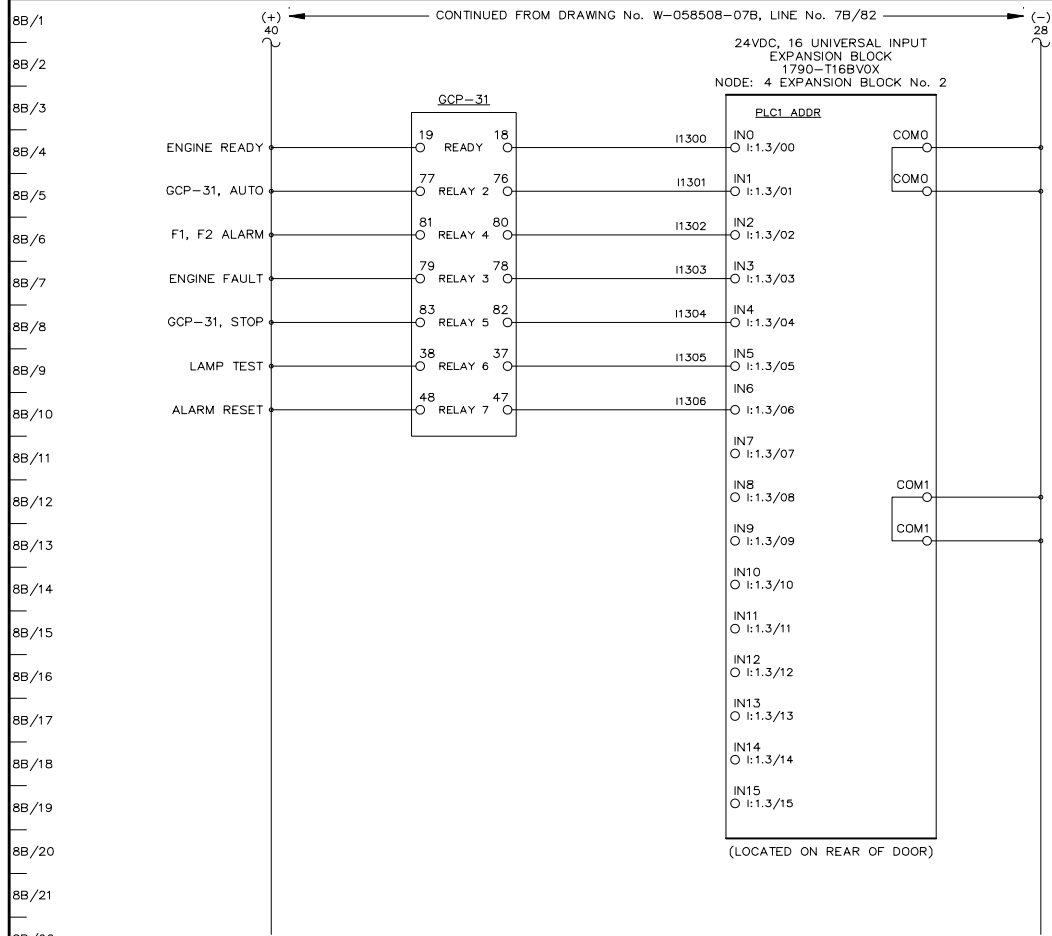
DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 1 - DC CONTROL SCHEMATIC  
 KWETHLUK SITE

CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-08A	SHEET 8A

CONTINUED FROM DRAWING No. W-058508-07B, LINE No. 7B/82



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SECTION #4

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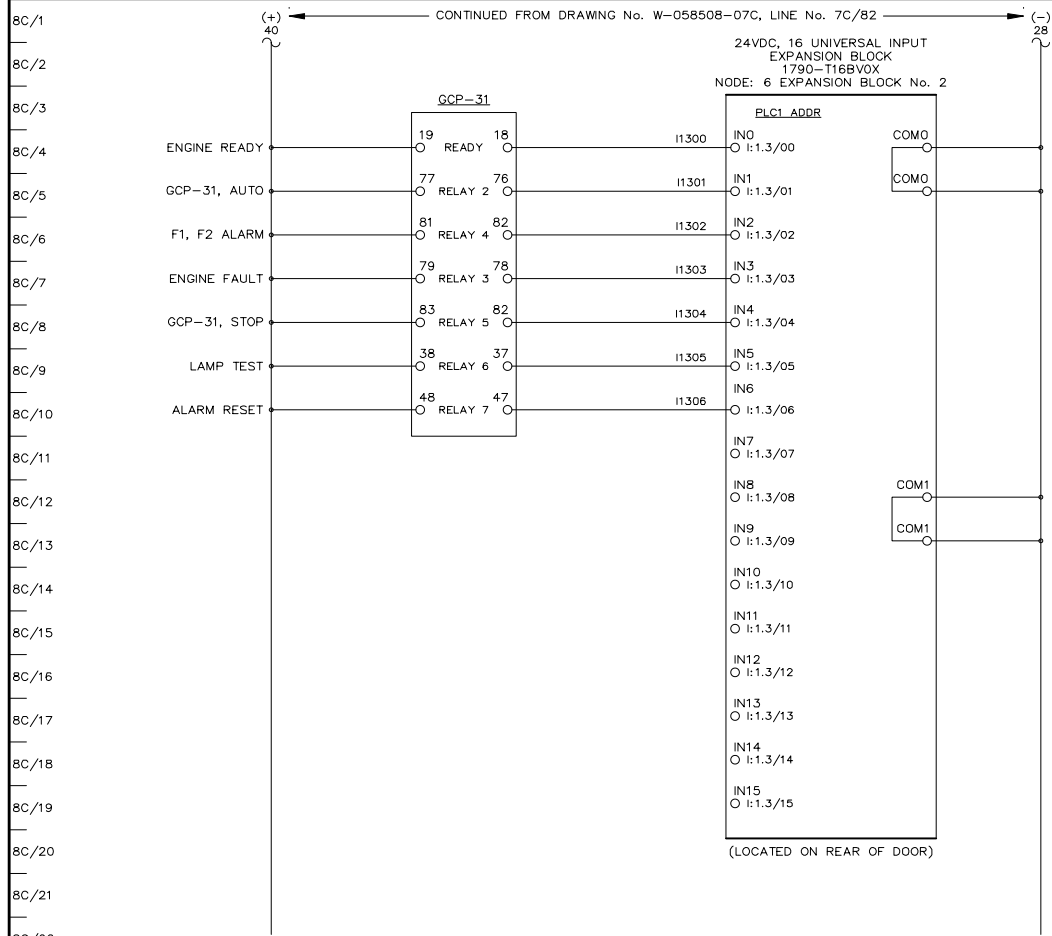
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 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		1	AS BUILT	LR	RR	09-08-06



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 2 - DC CONTROL SCHEMATIC  
 KWETHLUK SITE

CUSTOMER ALASKA ENERGY AUTHORITY			
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508		
DRAWN BY MS	AUTH BY RR	DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-08B			SHEET 8B



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SECTION #3

AS BUILT

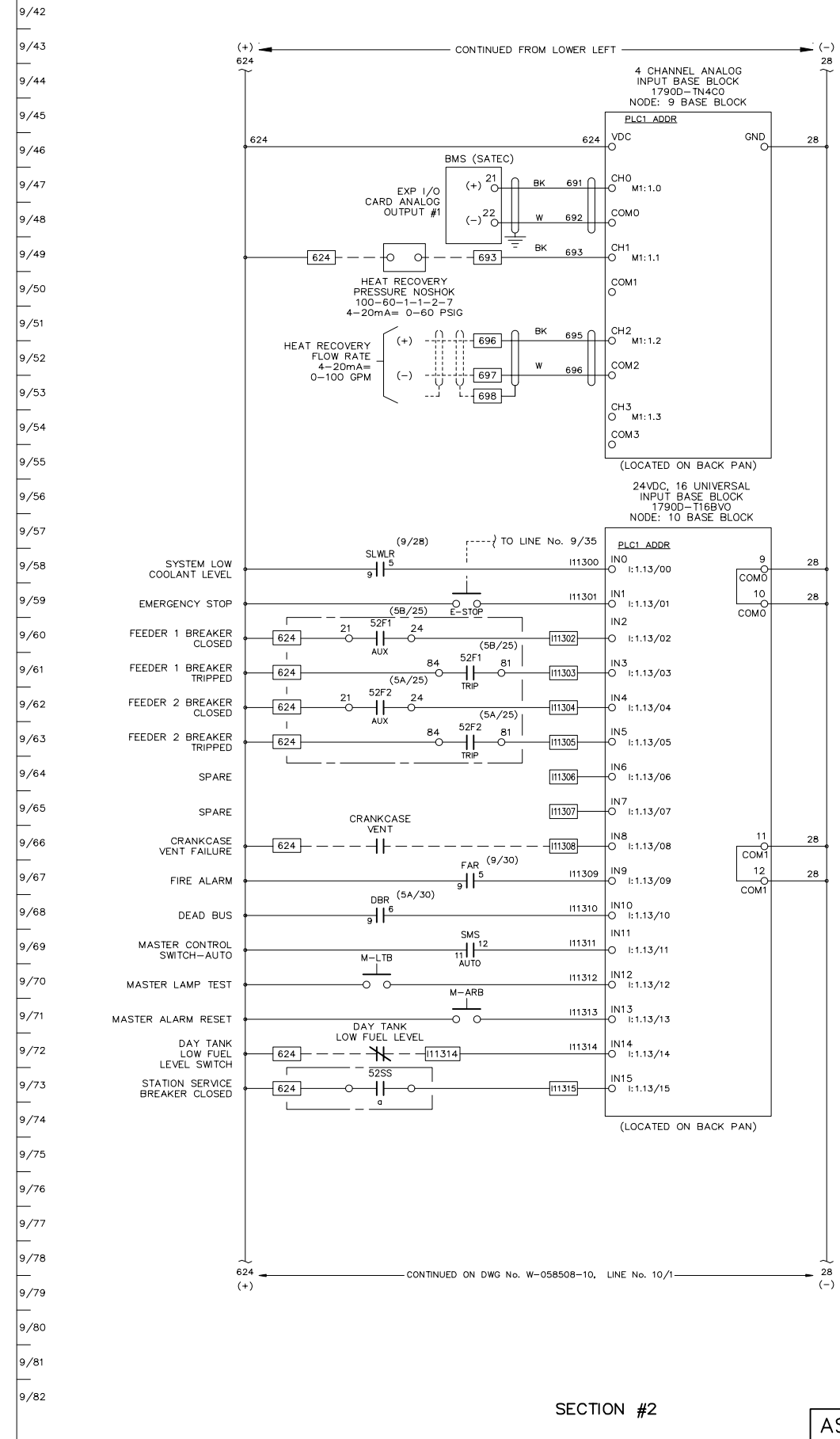
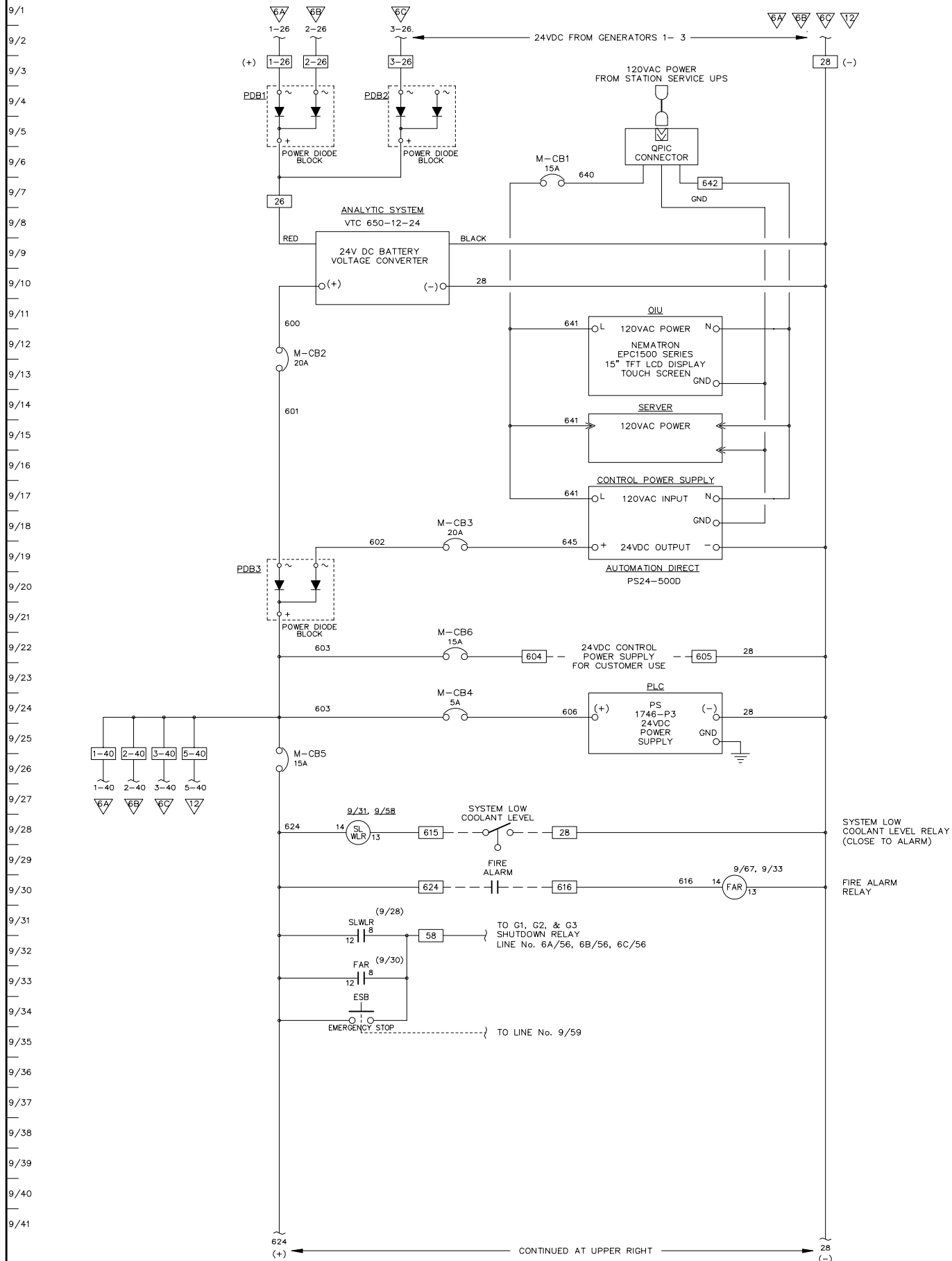
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 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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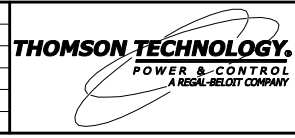
GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 GENERATOR 3 - DC CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-08C	SHEET 8C		



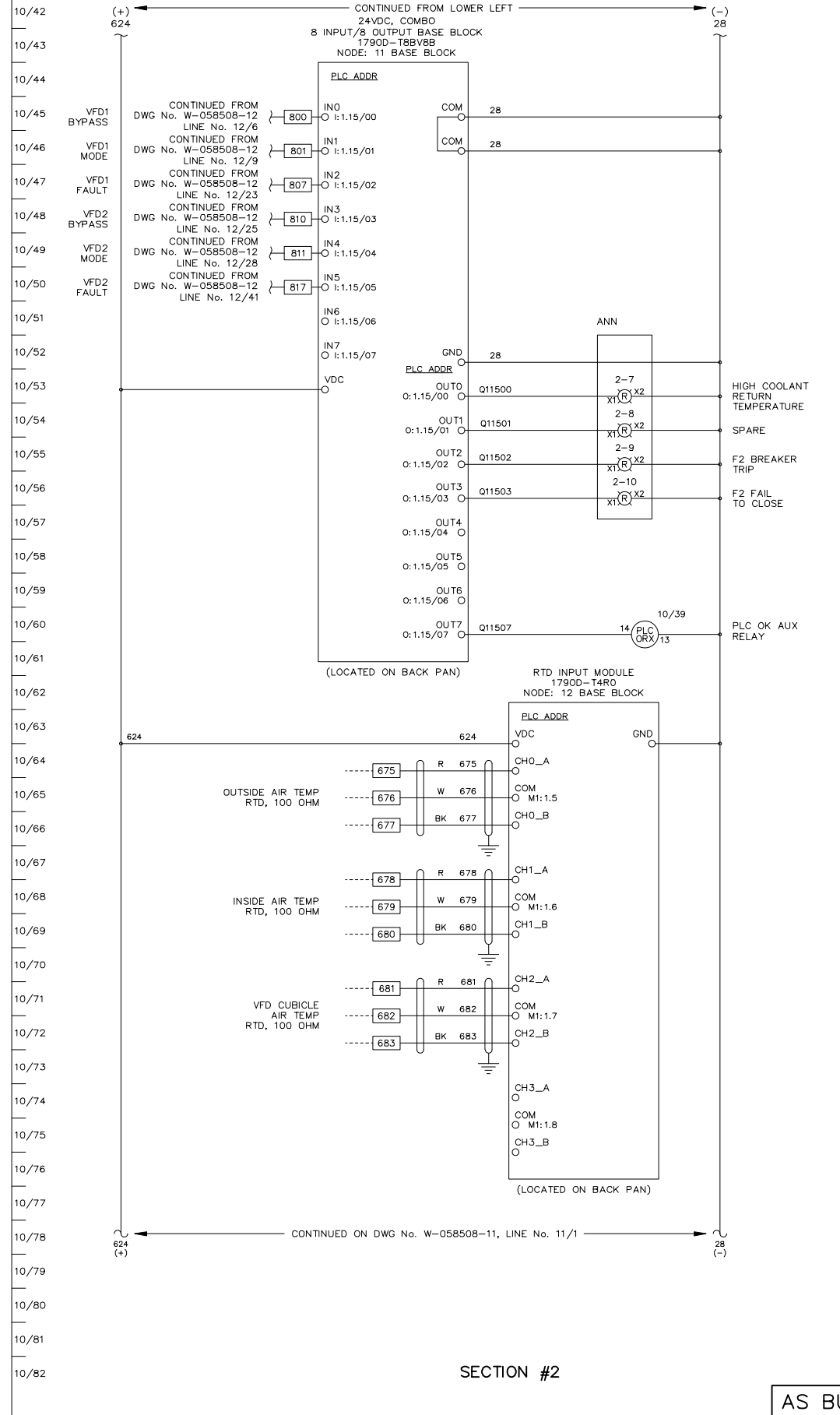
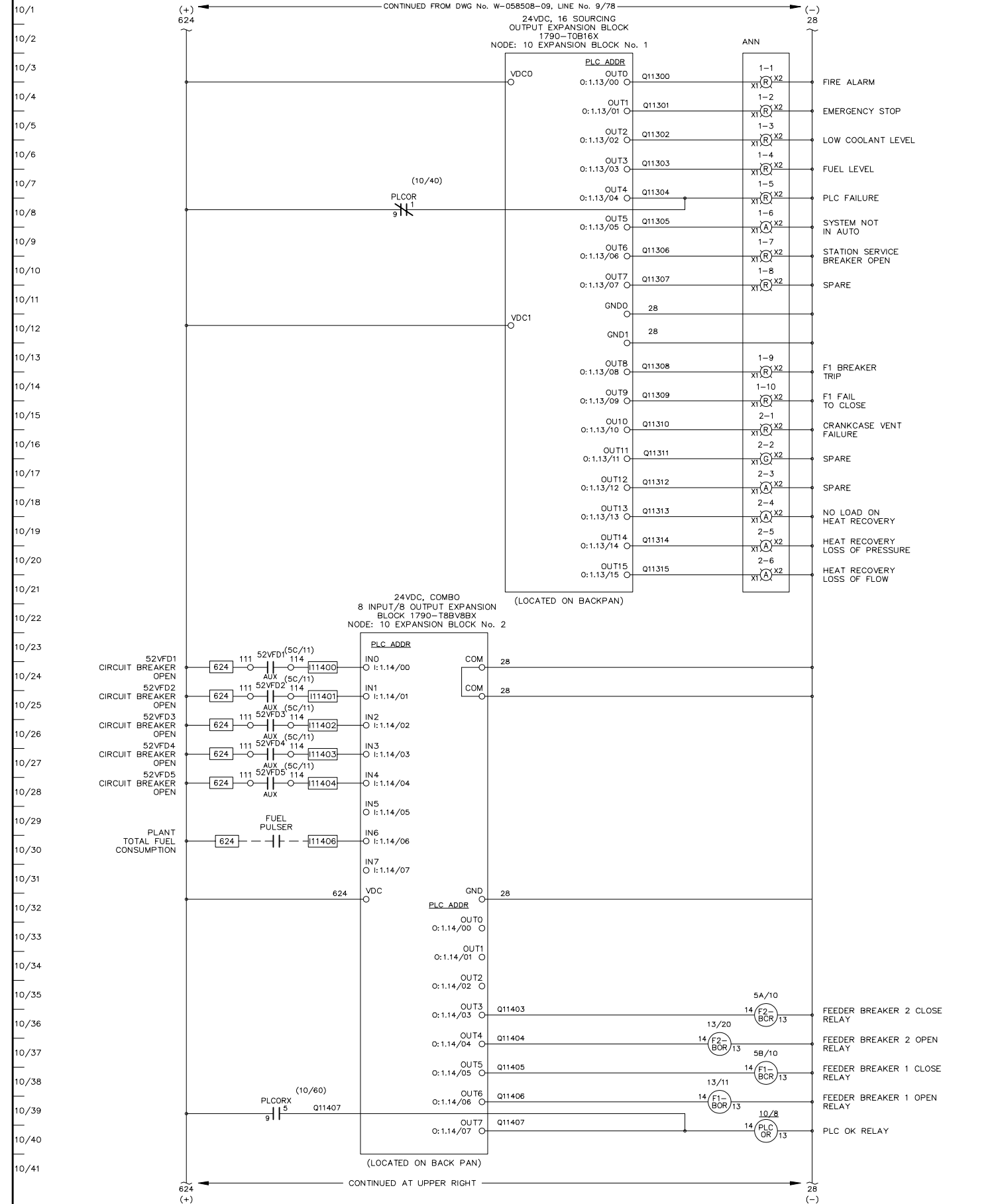
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		1	CUSTOMER APPROVAL MOD'S	RR	RR	09-06-10



SECTION #2  
**AS BUILT**  
 GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 MASTER DC CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-09	SHEET 9		



ANNUNCIATOR LAYOUT (TYPICAL)

1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10
2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10

LOCATION	COLOUR	DESCRIPTION
1-1	R	FIRE ALARM
1-2	R	EMERGENCY STOP
1-3	R	LOW COOLANT LEVEL
1-4	R	FUEL LEVEL
1-5	R	PLC FAILURE
1-6	A	SYSTEM NOT IN AUTO
1-7	R	STATION SERVICE BREAKER OPEN
1-8	R	SPARE
1-9	R	F1 BREAKER TRIP
1-10	R	F1 FAIL TO CLOSE
2-1	R	CRANKCASE VENT FAILURE
2-2	G	SPARE
2-3	A	SPARE
2-4	A	NO LOAD ON HEAT RECOVERY
2-5	A	HEAT RECOVERY LOSS OF PRESSURE
2-6	A	HEAT RECOVERY LOSS OF FLOW
2-7	R	HIGH COOLANT RETURN TEMPERATURE
2-8	R	SPARE
2-9	R	F2 BREAKER TRIP
2-10	R	F2 FAIL TO CLOSE

SECTION #2

AS BUILT

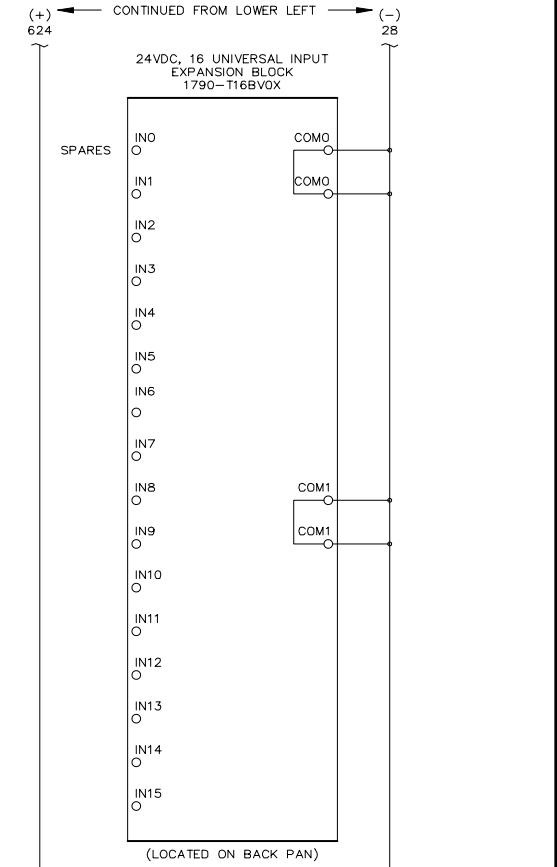
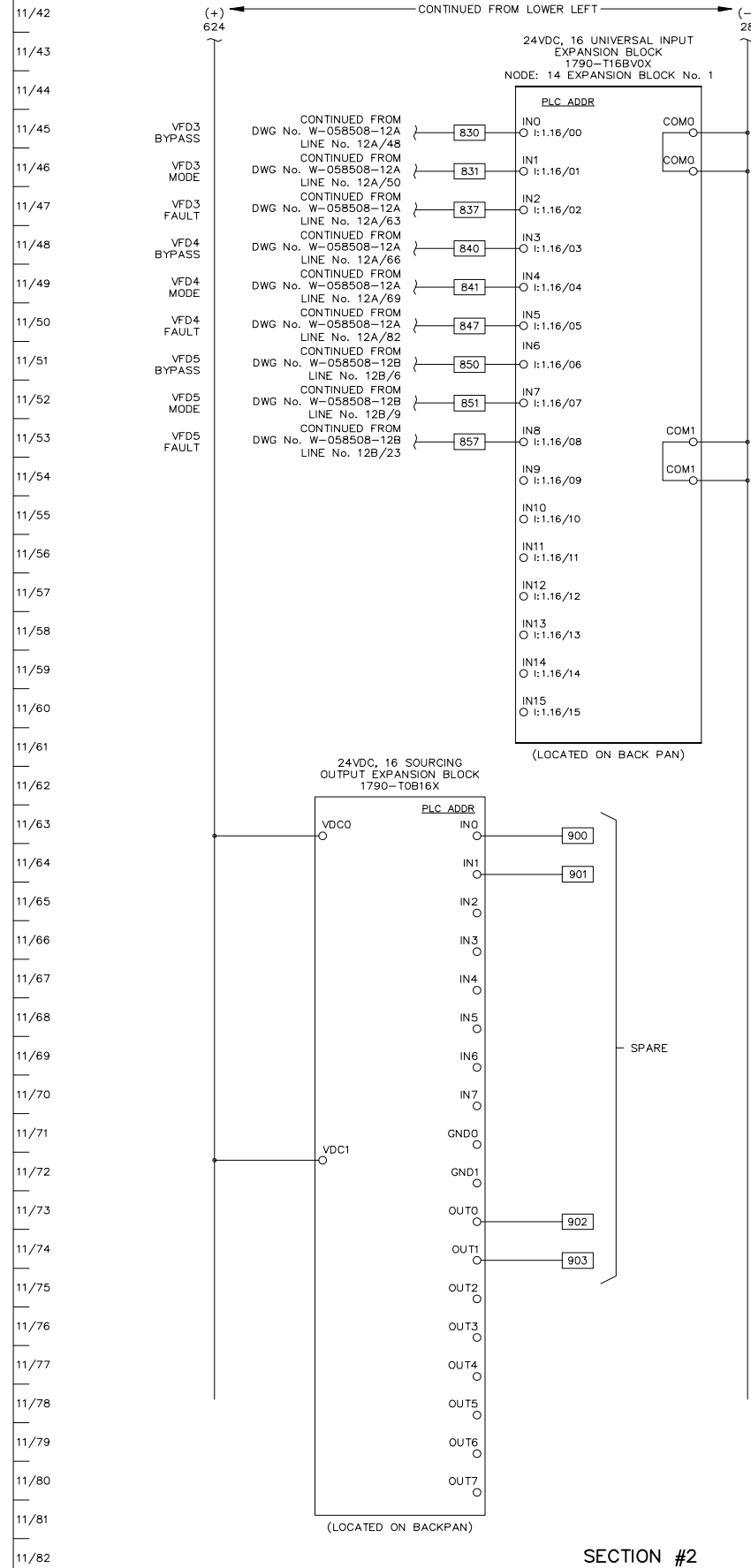
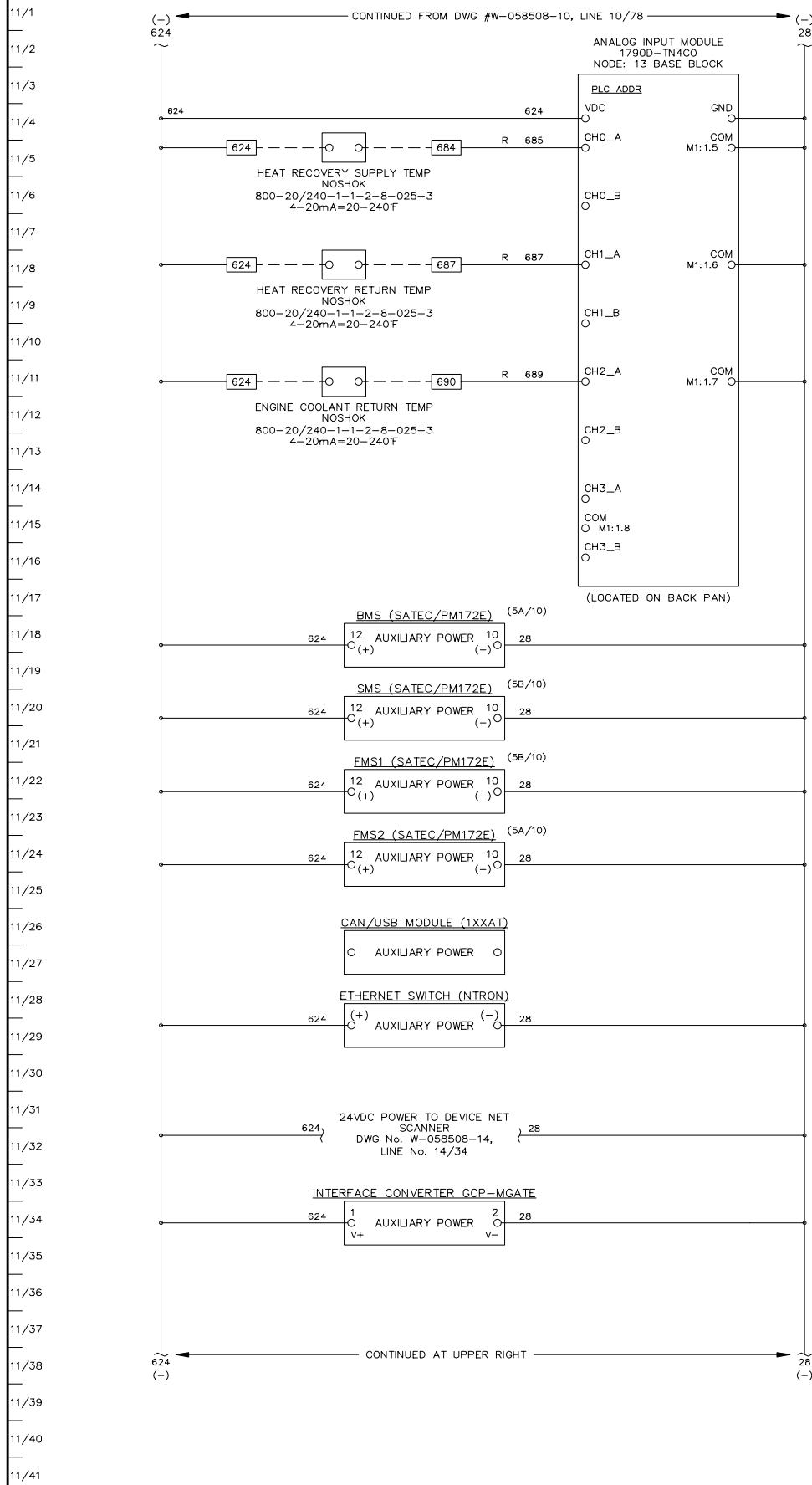
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1	AS BUILT					



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 MASTER DC CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 1
DRAWING/FILE No. W-058508-10	SHEET 10		



SECTION #2

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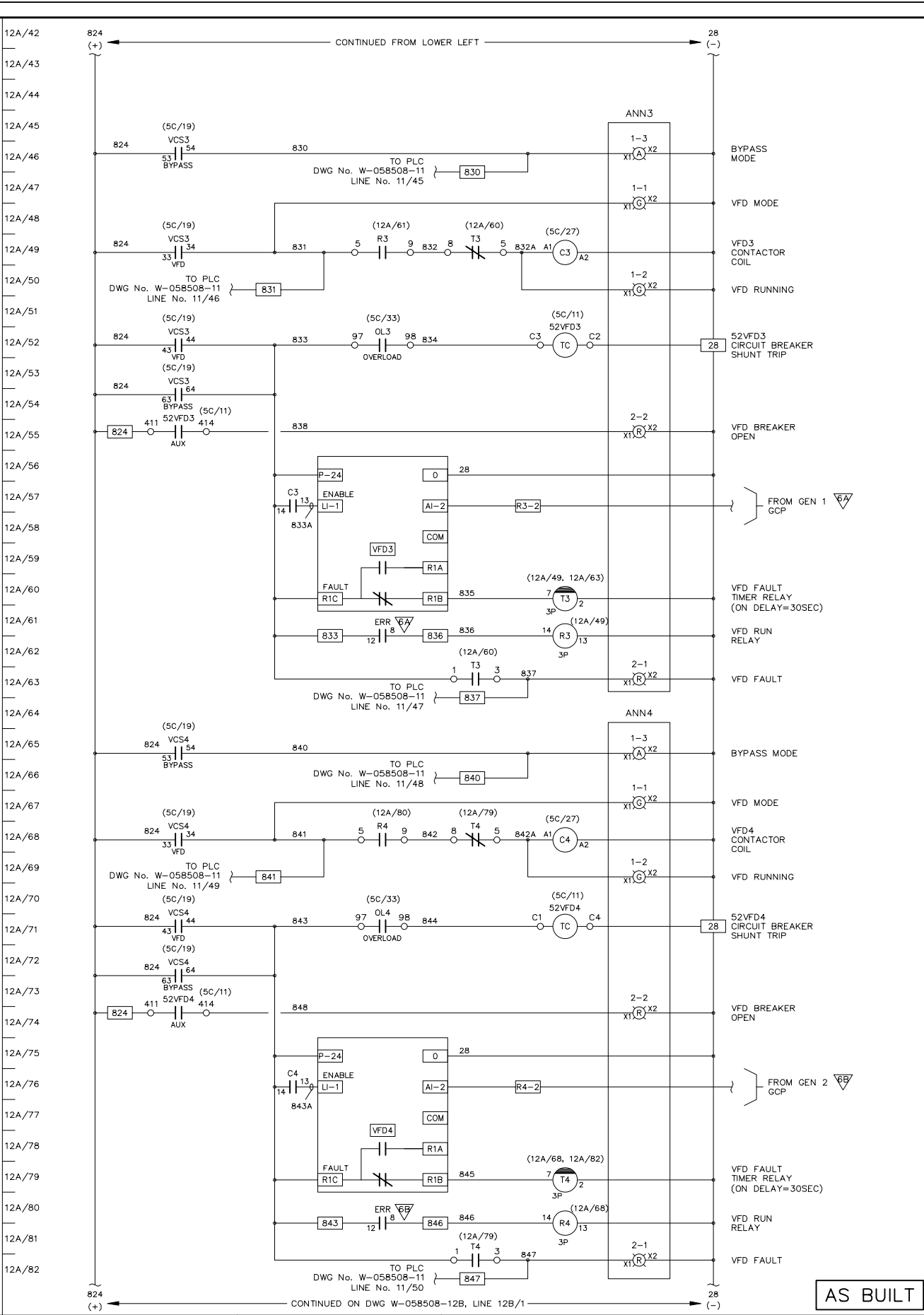
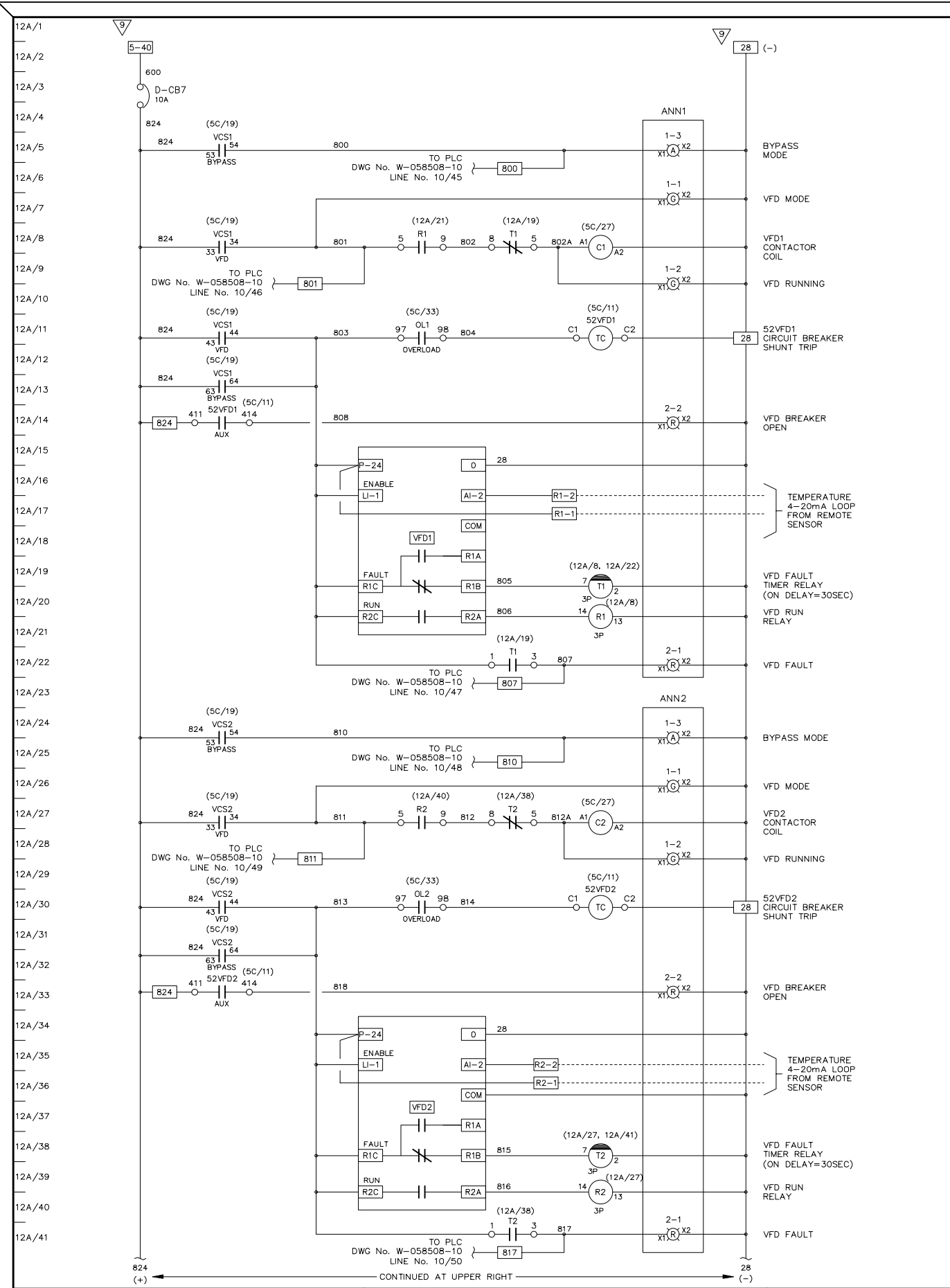
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		2	AS BUILT	LR	RR	09-08-06
		1	PRE-PRODUCTION MOD'S	LR	RR	09-06-16



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 MASTER DC CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 2
DRAWN BY MS	AUTH BY RR	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-11	SHEET 11		



ANNUNCIATOR LAYOUT (TYPICAL) ANN1 TO ANN5

LOCATION	COLOUR	DESCRIPTION
1-1	G	VFD MODE
1-2	G	VFD RUNNING
1-3	A	BYPASS MODE
2-1	R	VFD FAULT
2-2	R	VFD BREAKER OPEN
2-3	R	SPARE

SECTION #1

AS BUILT

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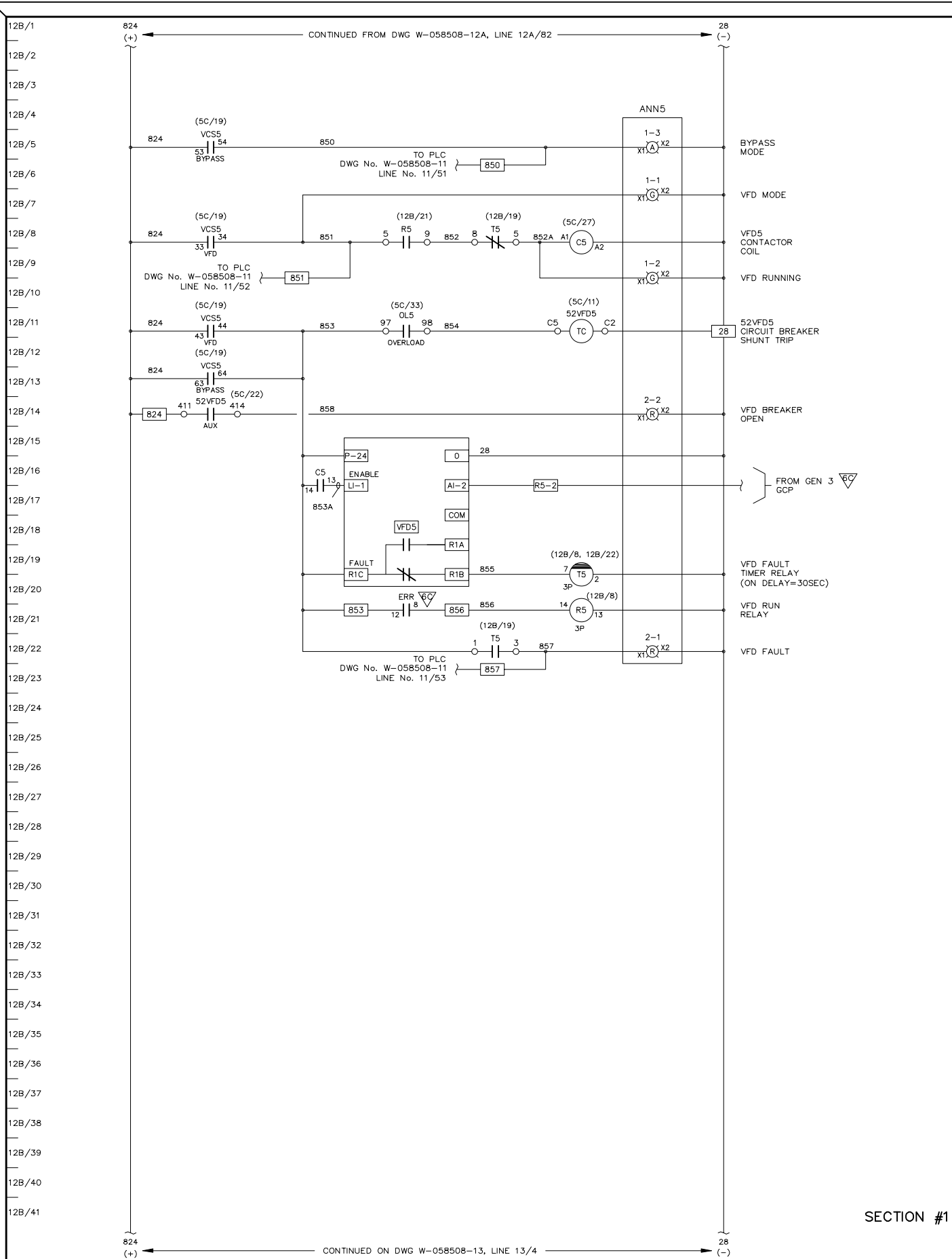
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		1	CUSTOMER APPROVAL MOD'S	RR	RR	09-06-10



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 VFD CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	DATE 09-03-25	REV 2	
DRAWN BY MS	AUTH BY RR	DATE	REV
DRAWING/FILE No.	SHEET		
W-058508-12A	12A		





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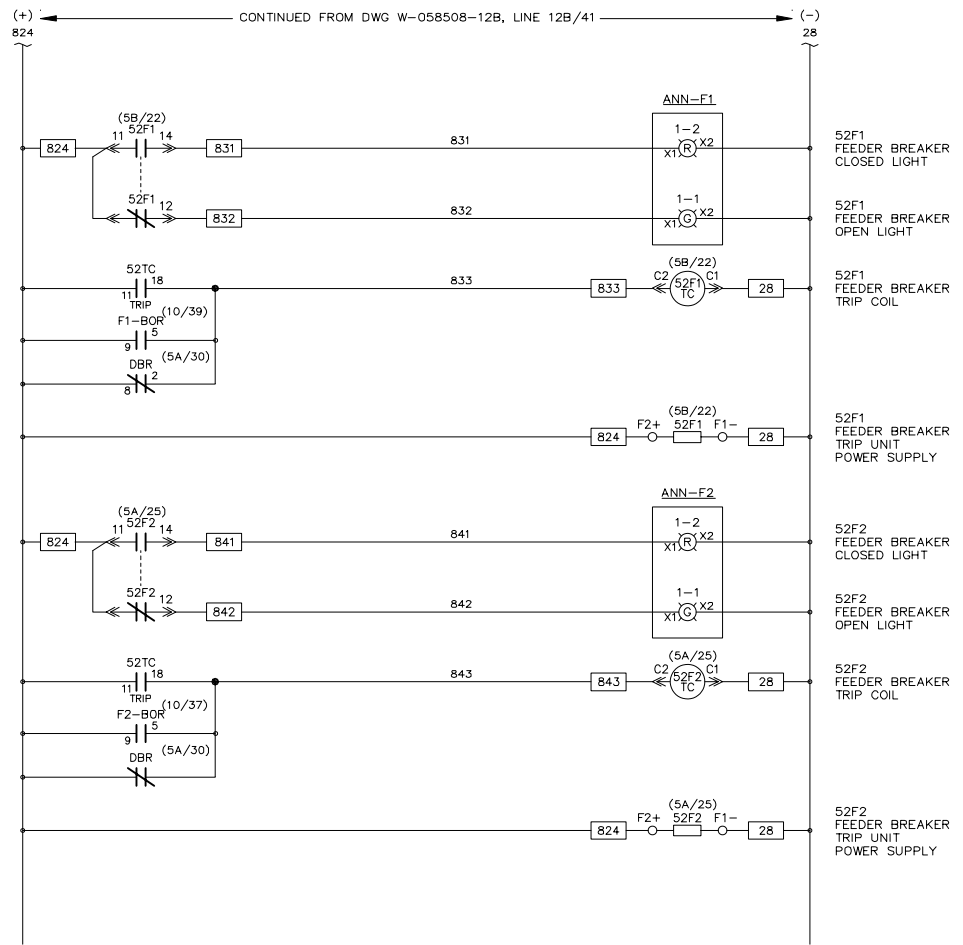
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		1	CUSTOMER APPROVAL MOD'S	RR	RR	09-06-10



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 VFD CONTROL SCHEMATIC  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-12B	SHEET 12B		

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SECTION #2

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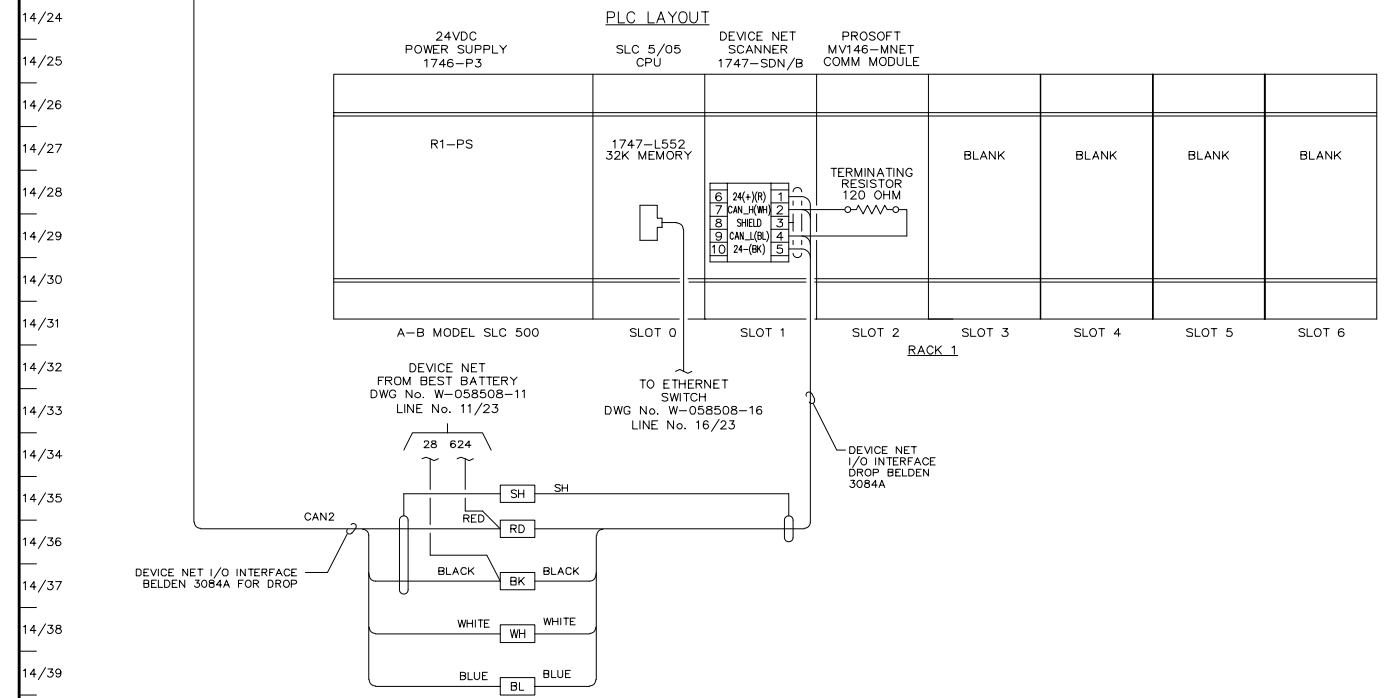
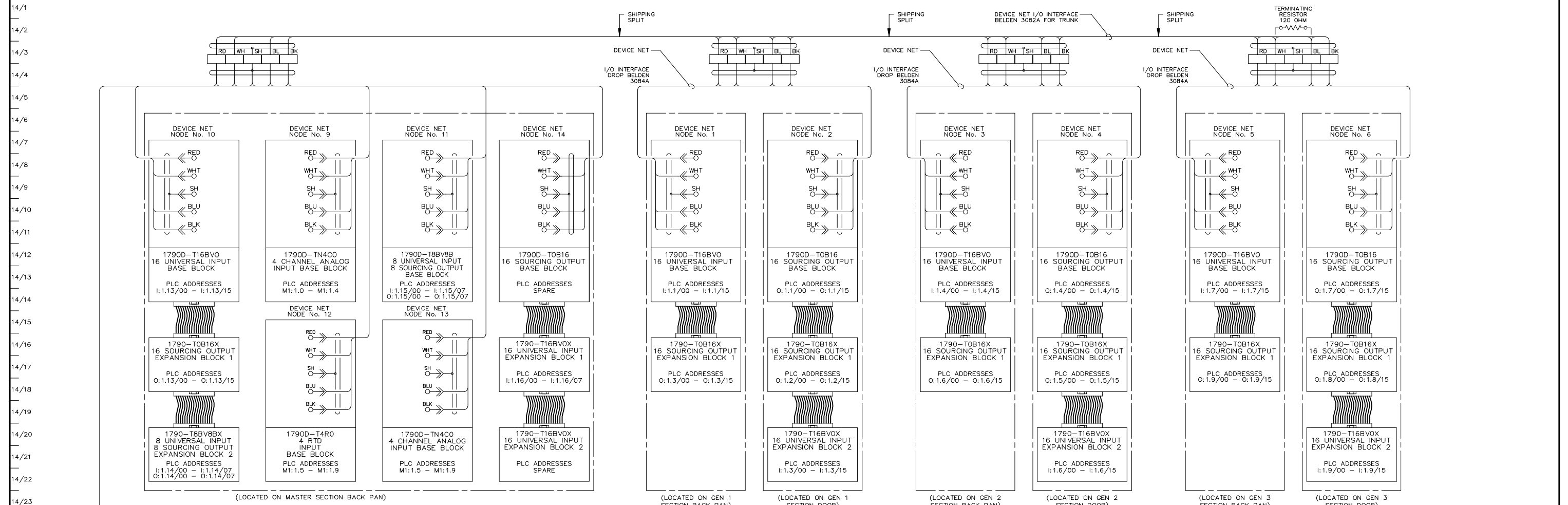
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GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 FEEDER BREAKER DC CONTROL SCHEMATIC  
 KWETHLUK SITE

CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 0
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SECTION #2

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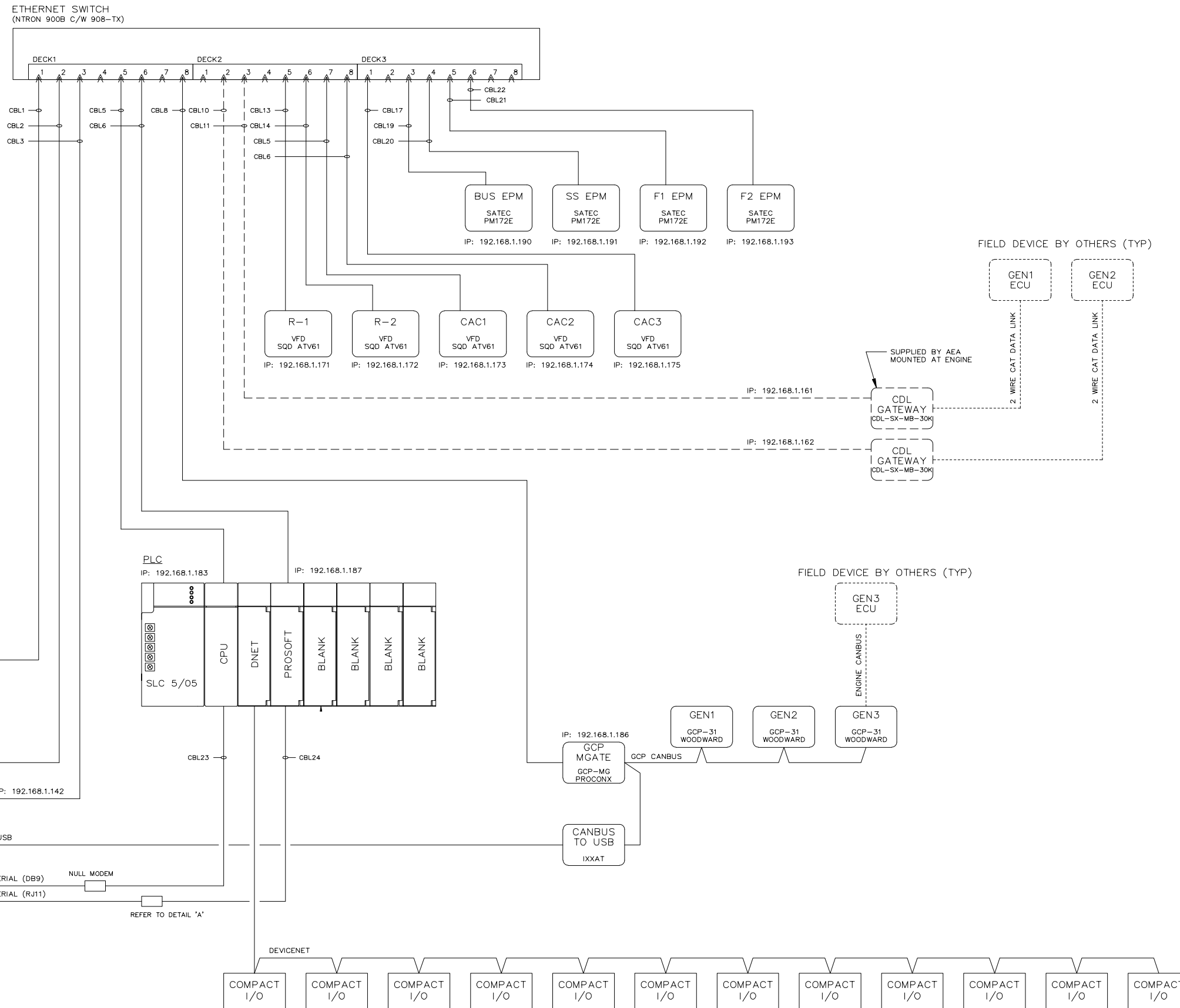
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DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
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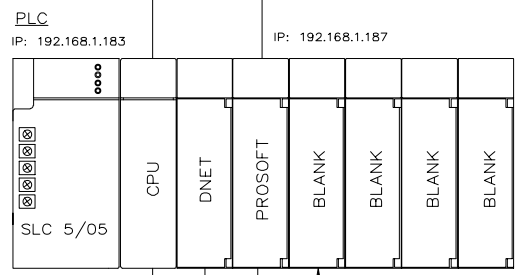
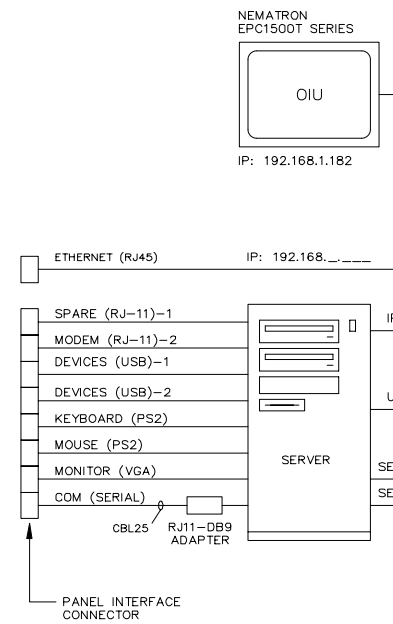
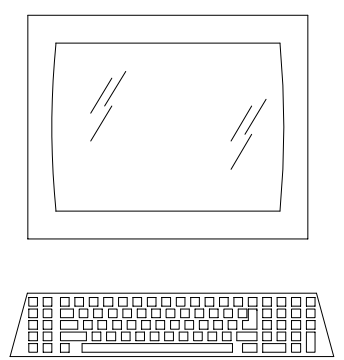
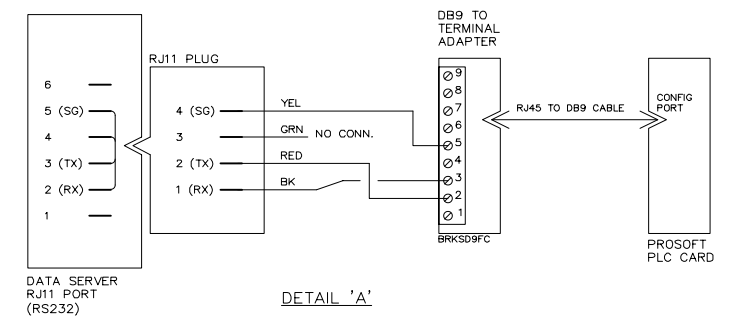


GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 PLC COMMUNICATION DIAGRAM  
 KWETHLUK SITE

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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY MS	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-14	SHEET 14		



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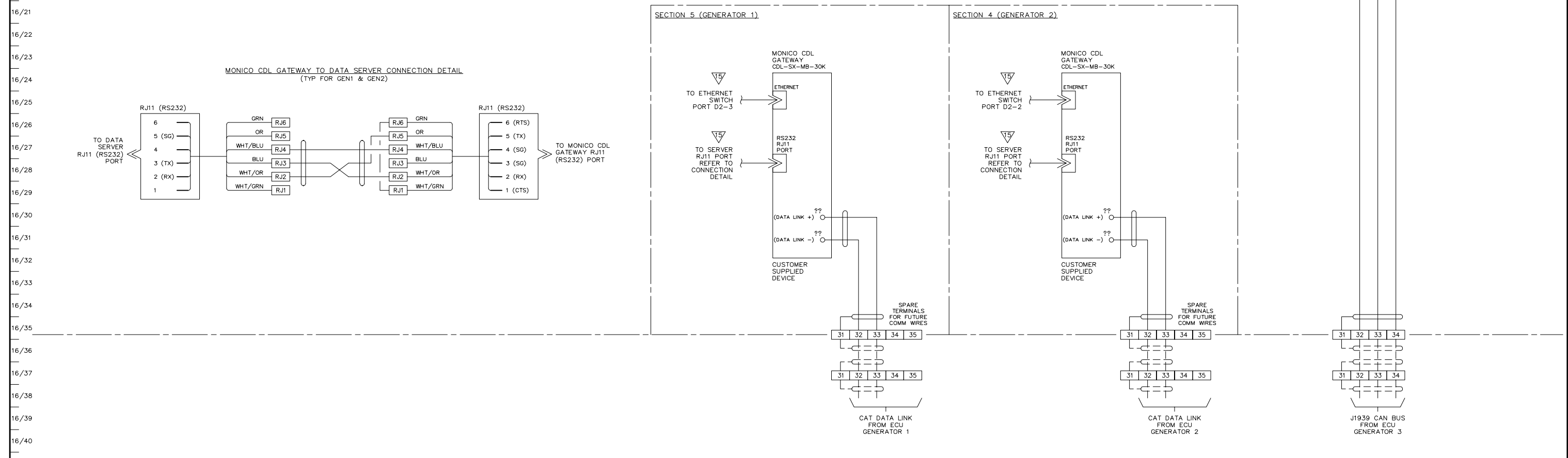
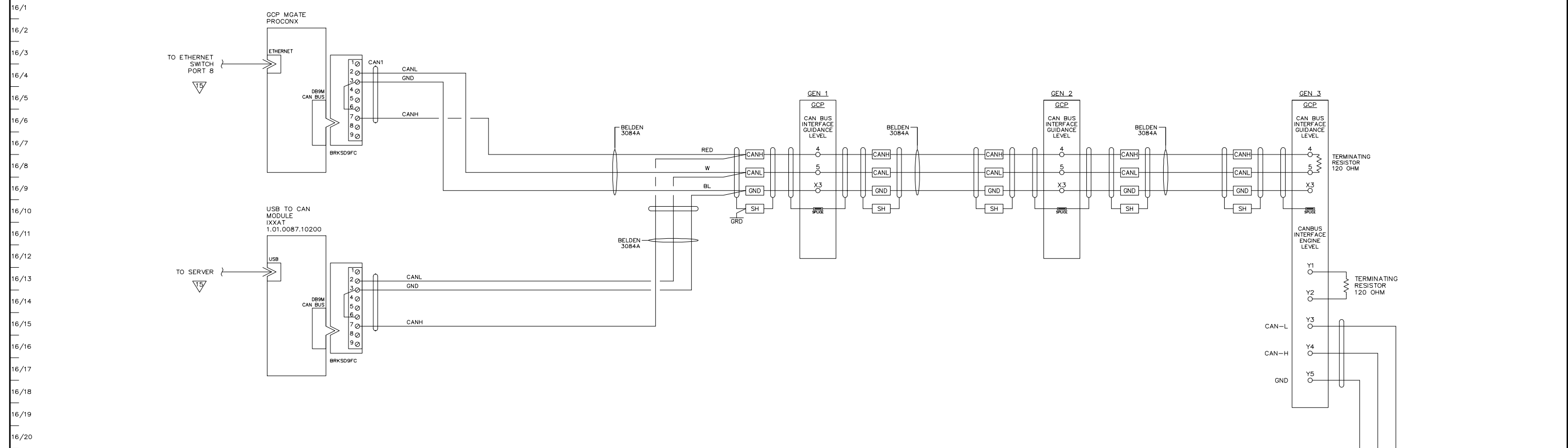
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		1	CUSTOMER APPROVAL MOD'S	RR	RR	09-06-10



GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 COMMUNICATION NETWORK DIAGRAM  
 KWETHLUK SITE

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CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
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DATE 09-03-25	REV 3
DRAWING/FILE No. W-058508-15	SHEET 15



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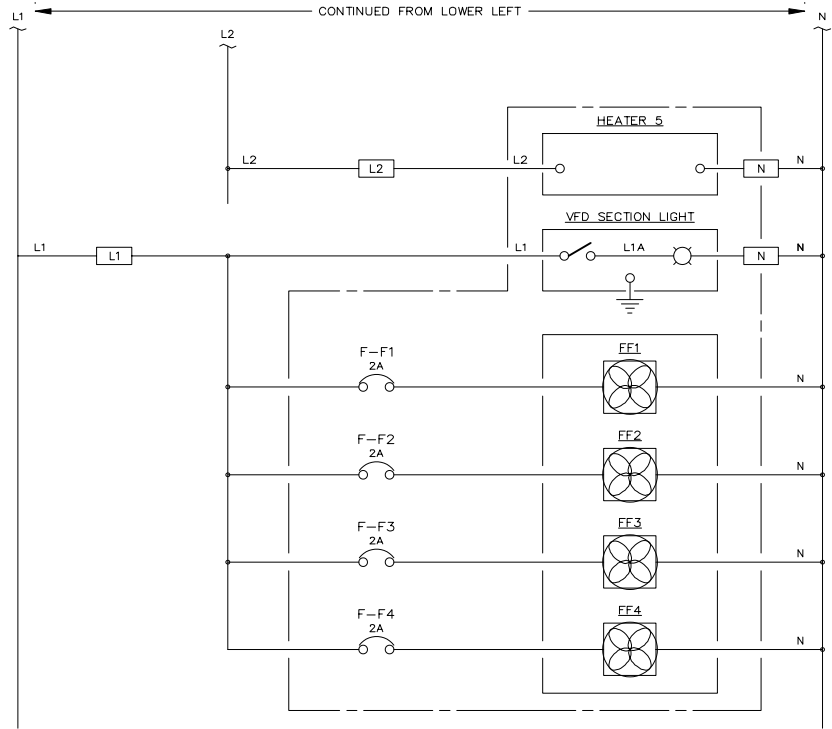
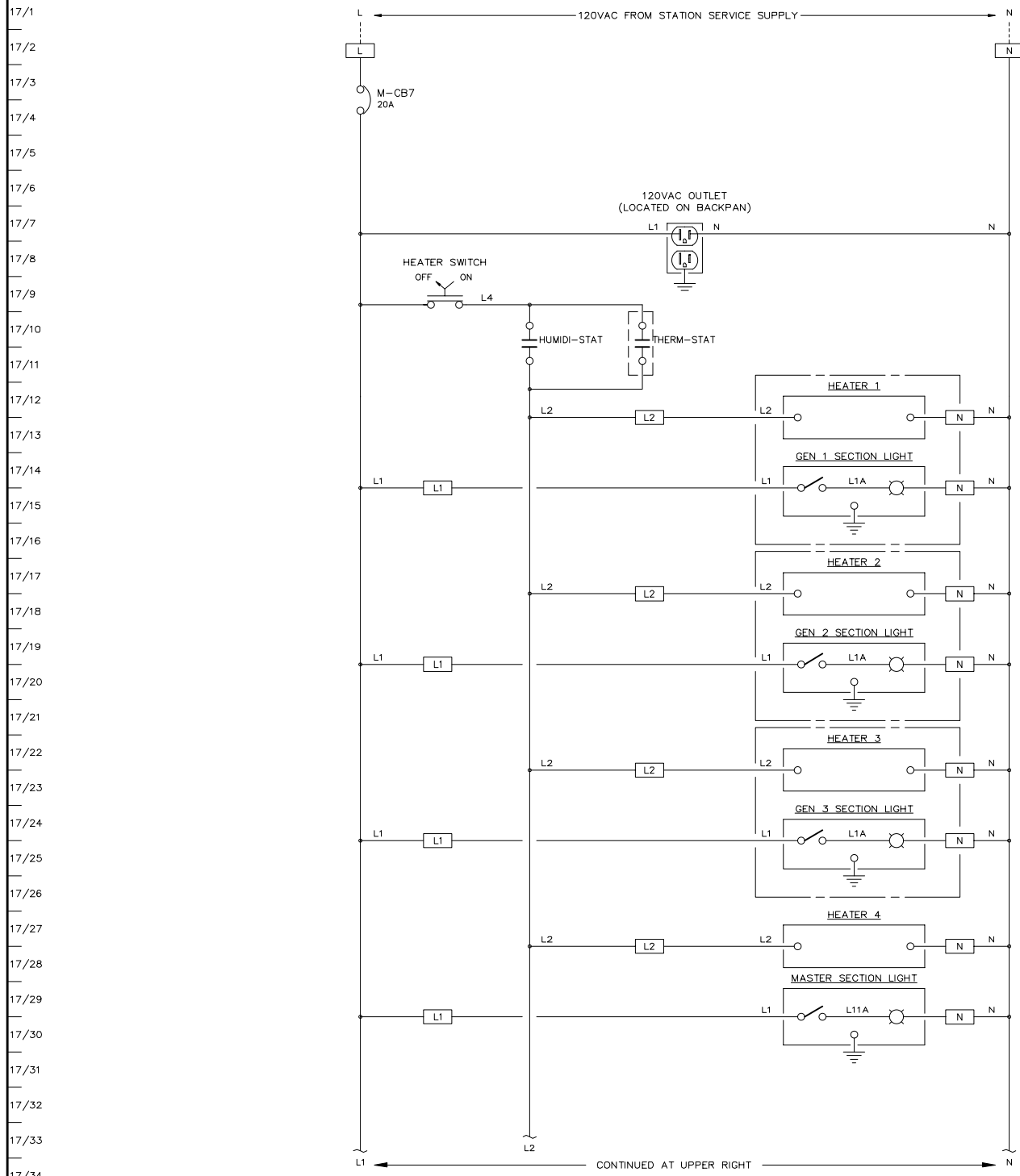
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2	PRE-PRODUCTION MOD'S.			RR	RR	09-06-23
1	CUSTOMER APPROVAL MOD'S			RR	RR	09-06-10

**THOMSON TECHNOLOGY**  
POWER & CONTROL  
A REGAL-BELDON COMPANY

GENERATOR CONTROL SYSTEMS  
MODEL GCS 2200  
GEN CANBUS COMMUNICATION DIAGRAM  
KWETHLUK SITE

**AS BUILT**

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C-035807		W-058508	
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DRAWING/FILE No.			SHEET
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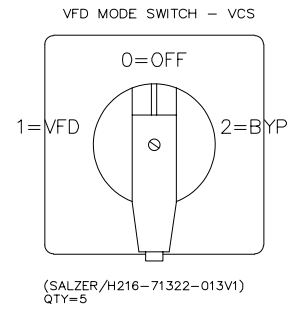
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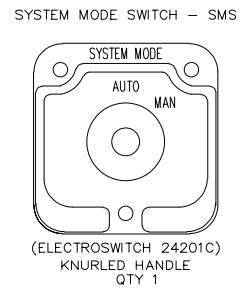


GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 HEATER & LIGHTING CONTROL SCHEMATIC  
 KWETHLUK SITE

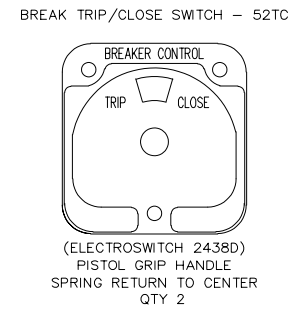
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CUSTOMER ALASKA ENERGY AUTHORITY		WORK ORDER No. W-058508	
CUSTOMER ORDER No. C-035807	AUTH BY RR	DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-17	SHEET 17		



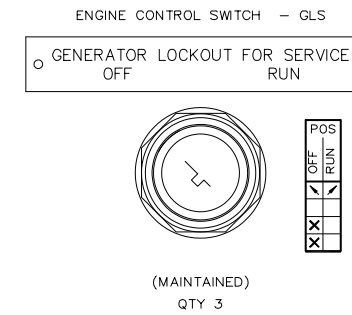
1	POSITION
MD	43o -o44
	33o -o34
71300	1T1o -o1L1
	1T2o -o1L2
	1T3o -o1L3
	2T1o -o2L1
	2L2
	2L3
ME	54o -o53
	64o -o63
2	POSITION



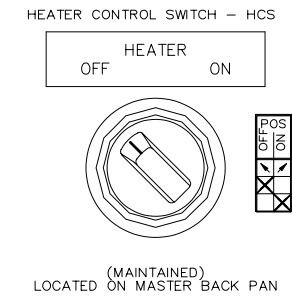
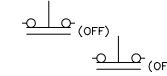
DECK	CONTACTS	POS.
		AUTO
		MAN
1	12o -o11	X
	13o -o13	X
	16o -o15	X
	17o -o17	X



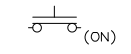
DECK	CONTACTS	TRIP	POS.
		NORM.	CLOSE
1	11o -o18	X	
	16o -o17	X	



POS.
OFF
RUN
X
X



POS.
OFF
ON
X
X



AS BUILT

APPROVED FOR CONSTRUCTION  
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 MULTIPLE UNIT WORK ORDER  
 RELEASED FOR INFORMATION  
 AUTH. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

DRAWING No.	REFERENCE DRAWINGS	No.	REVISIONS	BY	AUTH	DATE
		2	AS BUILT	LR	RR	09-08-06
		1	ADDED SWITCH POSITION DESCRIPTION ON THE VFD SWITCH	RR	RR	09-06-11

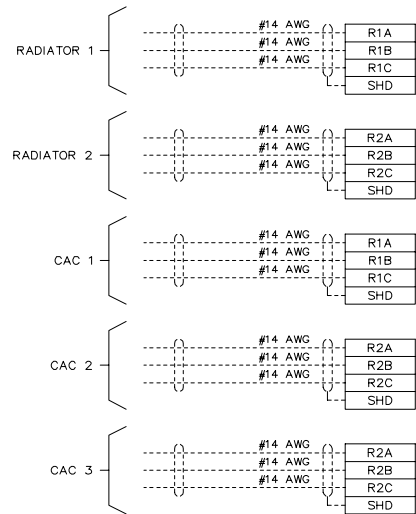


GENERATOR CONTROL SYSTEMS  
 MODEL GCS 2200  
 CONTROL SWITCH TARGET CHART  
 KWETHLUK SITE

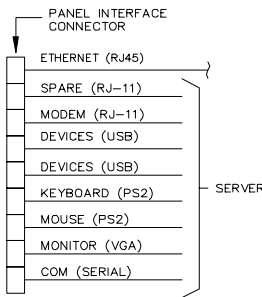
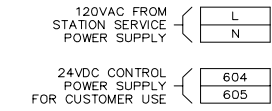
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CUSTOMER ALASKA ENERGY AUTHORITY	
CUSTOMER ORDER No. C-035807	WORK ORDER No. W-058508
DRAWN BY MS	AUTH BY RR
DATE 09-03-25	REV 2
DRAWING/FILE No. W-058508-18	SHEET 18

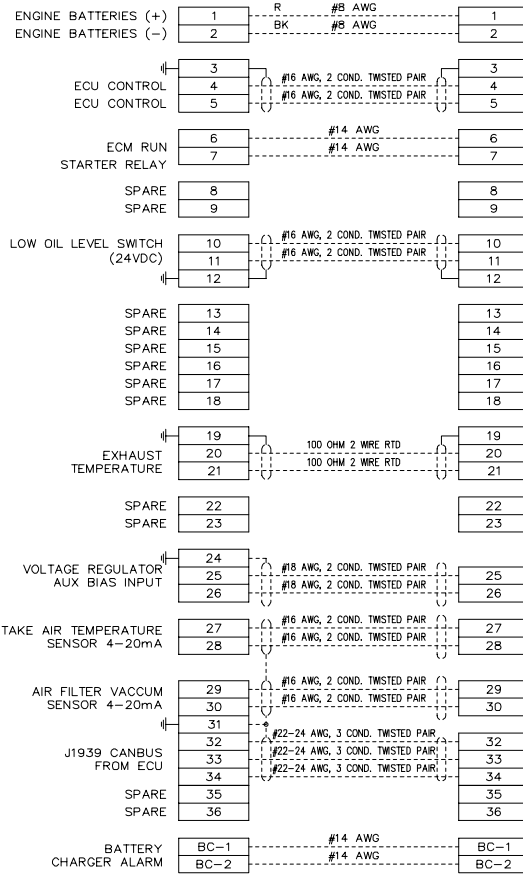
VFD CONTROL



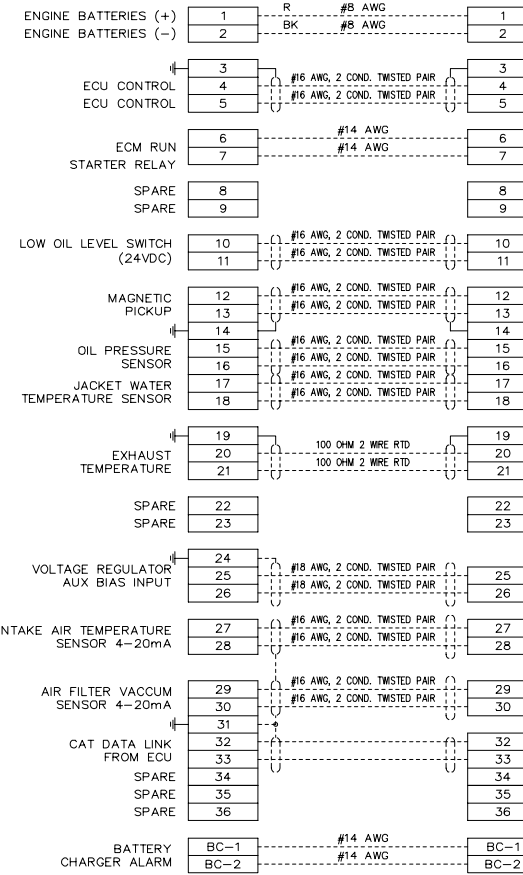
MASTER CONTROL



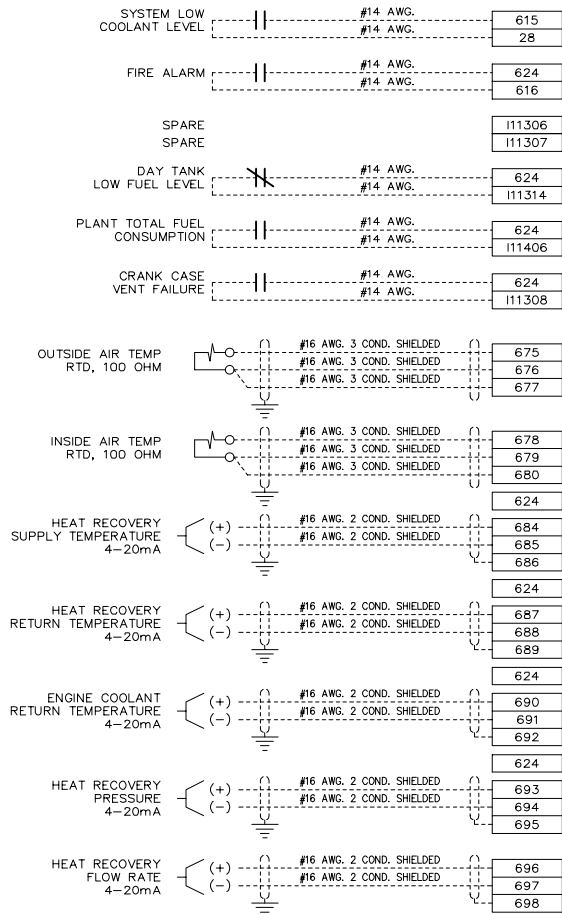
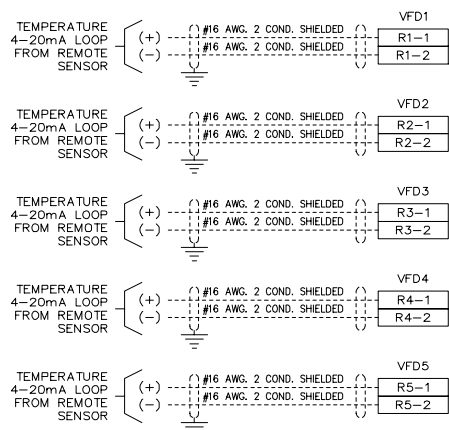
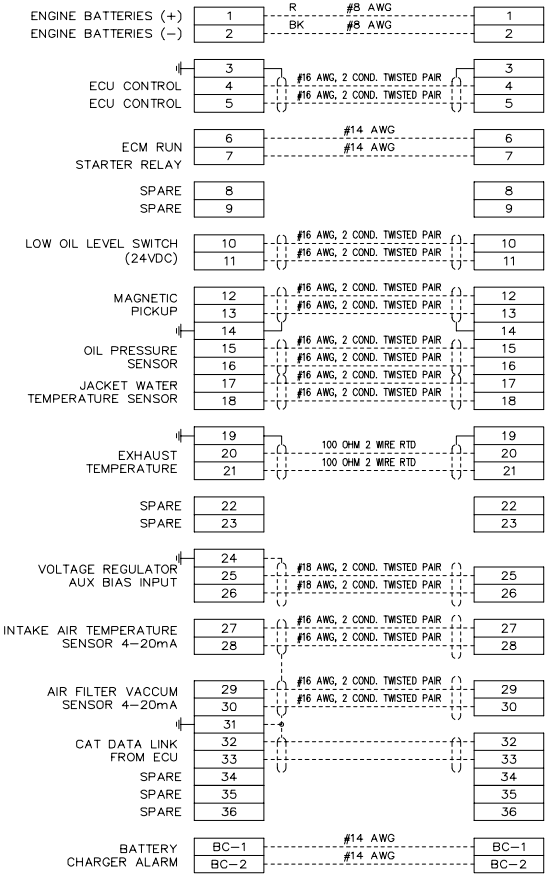
GENERATOR 3



GENERATOR 2



GENERATOR 1



AS BUILT

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Table with columns for Drawing No., Reference Drawings, No., Revisions, and Date. Includes entries for 'AS BUILT' and 'CUSTOMER APPROVAL MOD'S'.

THOMSON TECHNOLOGY POWER & CONTROL A REGAL-BELOIT COMPANY logo and contact information.

GENERATOR CONTROL SYSTEMS
MODEL GCS 2200
INTERCONNECTION DIAGRAM
KWETHLUK SITE

Customer information table for Alaska Energy Authority, including Customer Order No. C-035807, Work Order No. W-058508, and drawing details.