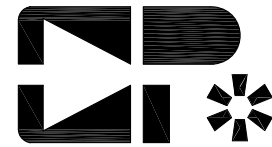




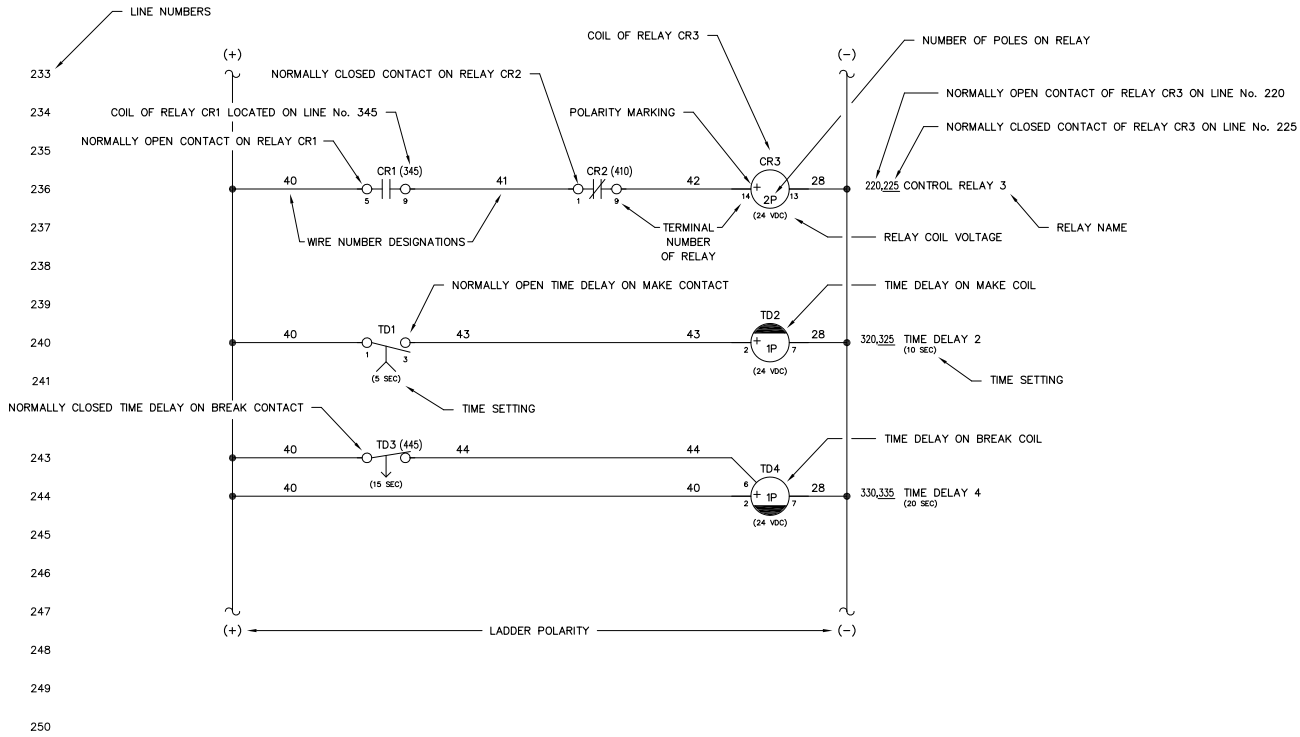
RURAL ENERGY GROUP
813 W. NORTHERN LIGHTS BLVD.
ANCHORAGE, ALASKA 99503
HTTP: //WWW.AIDEA.ORG



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

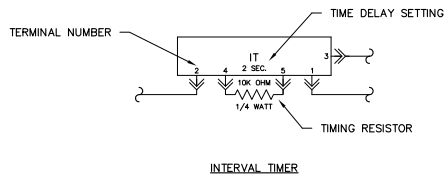
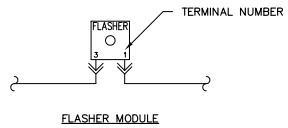
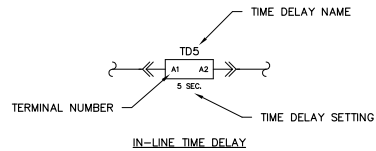
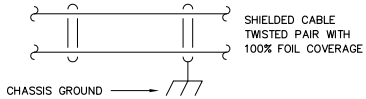
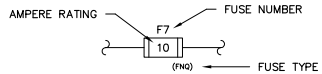
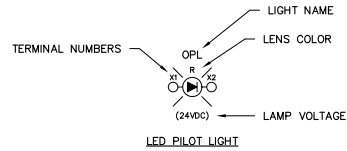
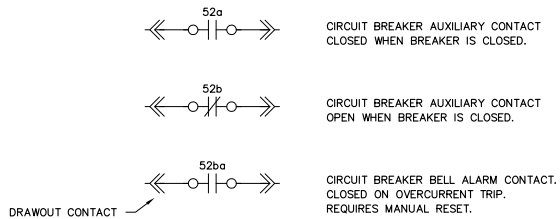
**NIKOLSKI VILLAGE GENERATOR SWITCHGEAR UPGRADE
ALASKA ENERGY AUTHORITY PURCHASE ORDER No. PREPAID
CONTROLLED POWER, INC. JOB No. 8555**

<u>DRAWING No.</u>	<u>DRAWING TITLE</u>
8555-2101-D	COVER SHEET
8555-3101-D	SCHEMATIC LEGEND AND NOTES
8555-4101-D	GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM
8555-4102-D	WALLMOUNT ENCLOSURE ELEVATION VIEW, OUTLINE DIAGRAM
8555-4103-D	BOILER PANEL ELEVATION VIEW, OUTLINE DIAGRAM
8555-5101-D	SINGLE LINE, SCHEMATIC DIAGRAM
8555-5201-D	GENERATOR 1 AC THREE LINE, SCHEMATIC DIAGRAM
8555-5202-D	GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM
8555-5203-D	GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM
8555-5204-D	MASTER AC THREE LINE AND DISTRIBUTION, SCHEMATIC DIAGRAM
8555-5301-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
8555-5302-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
8555-5303-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
8555-5304-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
8555-5305-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
8555-5306-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
8555-5307-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
8555-5308-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
8555-5309-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
8555-5310-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
8555-5311-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
8555-5312-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
8555-5313-D	FUEL FLOW SYSTEM WIRING, SCHEMATIC DIAGRAM
8555-5501-D	PLC COMMUNICATION DIAGRAM
8555-5601-D	COMMUNICATION NETWORK DIAGRAM
8555-5602-D	EPM MONITORING AND SYSTEM COMMUNICATION DIAGRAM
8555-5701-D	HEATER & LIGHTING CONTROL, SCHEMATIC DIAGRAM
8555-6101-D	CONTROL SWITCH TARGET DIAGRAM
8555-6201-D	NAMEPLATE ENGRAVING SCHEDULE, FABRICATION DETAIL
8555-7101-D	INTERCONNECTION DIAGRAM



NOTES:

- 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
- ⊙ INDICATES FIELD TERMINALS IN GENERATOR CONTROL SECTION.
- ⊠ INDICATES TERMINALS AT ENGINE/GENERATOR.
- ⊕ INDICATES INTERCONNECT TERMINALS IN MASTER SECTION.
- ⊗ INDICATES FIELD TERMINALS IN MASTER SECTION.
- ⊙ INDICATES INTERCONNECT TERMINALS IN GENERATOR CONTROL SECTION.
- INDICATES FIELD WIRING BY OTHERS
 - ALL CONTROL WIRING TO BE No. 14 AWG, 600 VOLT, TYPE SIS EXCEPT AS NOTED
- SHIELDED WIRING TO BE No. 18 AWG, 300 VOLT, TWISTED LINE WITH 100% FOIL COVERAGE
- ALL DIODES ARE 1N4007 EXCEPT AS NOTED



NOTE:

- FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

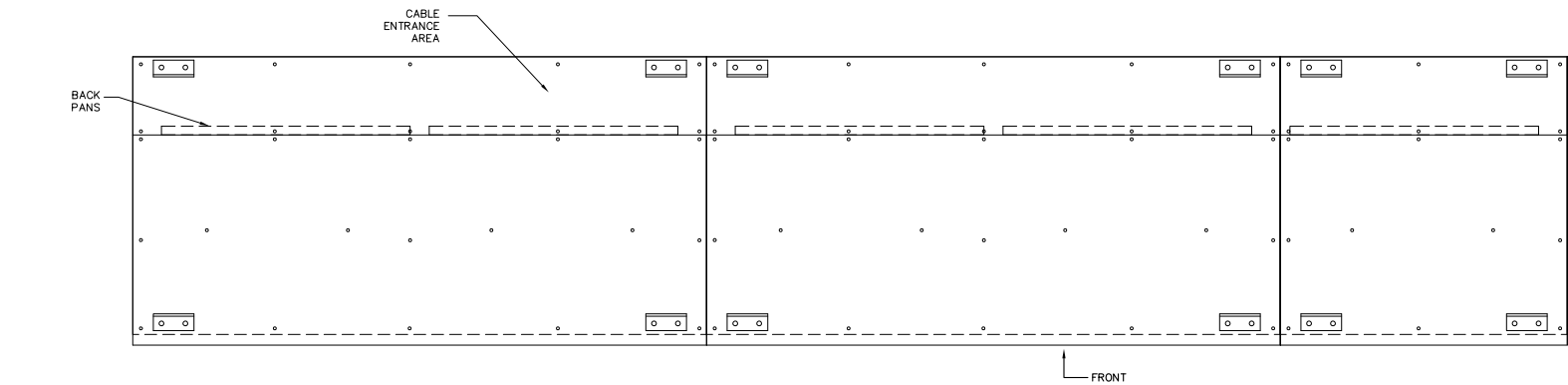
A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: SCHEMATIC LEGEND & NOTES			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-3101-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	

NOTICE

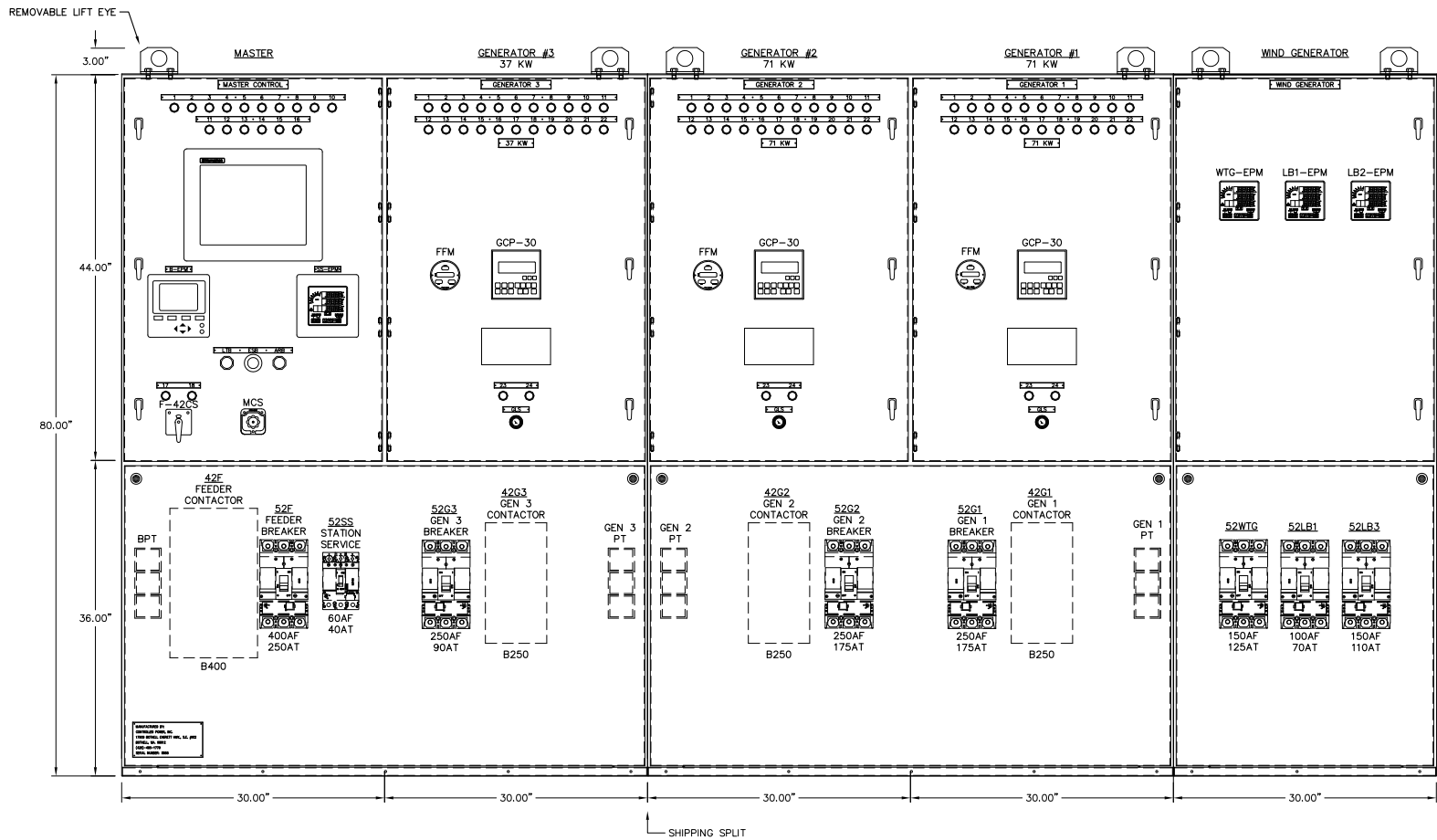
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



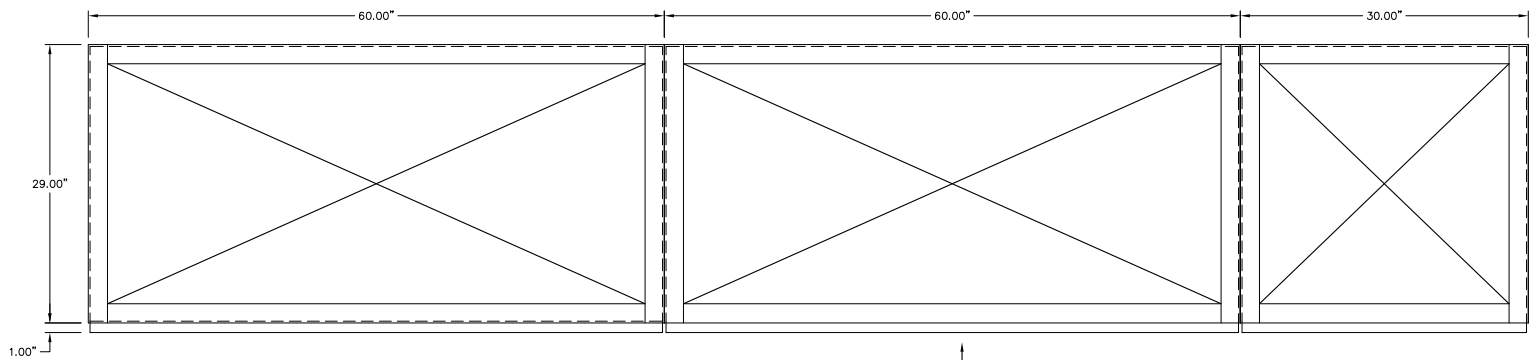
ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com



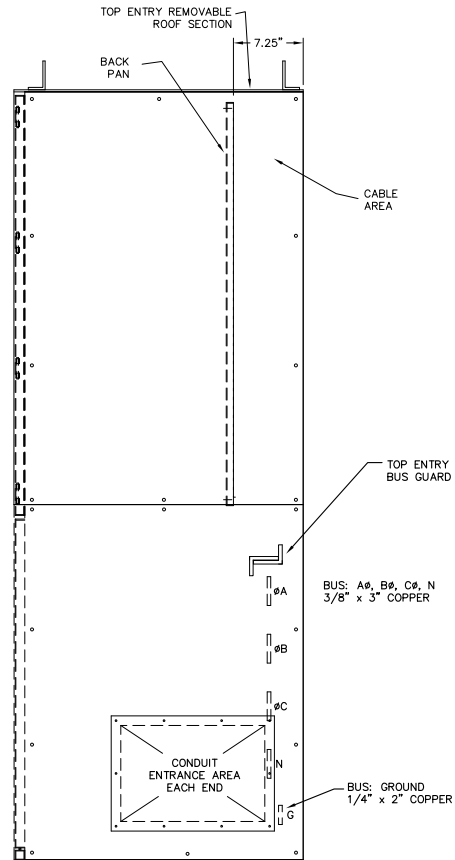
GENERATOR SWITCHGEAR – TOP VIEW



GENERATOR SWITCHGEAR – FRONT VIEW



GENERATOR SWITCHGEAR – PLAN VIEW



GENERATOR SWITCHGEAR – SIDE VIEW

GCP HEADOUT

* INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING LIST OF METERING, STATUS, AND ALARMS.

METERING LEGEND

1. VOLTS: A₀, B₀, C₀
L-N₀, L-L
2. AMPS: A₀, B₀, C₀
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

GCP FUNCTIONS

* INCLUDES, BUT NOT LIMITED TO:

- 27/59
- 81 o/u
- 32
- 50/51
- 40
- 47

SYMBOL

- | SYMBOL | DESCRIPTION |
|--------|---|
| ARB | ALARM RESET BUTTON |
| B-EPM | BUS ELECTRONIC POWER METER – 6200ION |
| ESB | EMERGENCY STOP BUTTON |
| F-EPM | FEEDER ELECTRONIC POWER METER – 7500ION |
| FFM | FUEL FLOW METER |
| GCP | GENERATOR CONTROL PACKAGE |
| GLS | GENERATOR LOCKOUT SWITCH |
| OIU | OPERATOR INTERFACE UNIT |
| LTB | LAMP TEST BUTTON |
| MCS | MASTER CONTROL SWITCH |
| SS-EPM | STATION SERVICE POWER METER – 6200ION |
| 42xx | CONTACTOR |
| 52CS | BREAKER CONTROL SWITCH |
| 52xx | CIRCUIT BREAKER |

GENERATOR ANNUNCIATOR LEGEND:

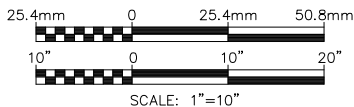
1. ENGINE RUNNING
2. ENGINE IDLE
3. ENGINE ALARM
4. LOW OIL PRESSURE
5. OIL LEVEL
6. HIGH OIL TEMPERATURE
7. HIGH WATER TEMPERATURE
8. OVERSPEED
9. OVERCRANK
10. COOLDOWN/LOCKOUT
11. BATTERY CHARGER FAILURE
12. NORMAL STOP
13. NOT IN AUTO POSITION
14. GENERATOR BREAKER OPEN
15. FAIL TO SYNCHRONIZE
16. OVERCURRENT
17. UNDER VOLTAGE
18. OVER VOLTAGE
19. UNDER FREQUENCY
20. OVER FREQUENCY
21. LOSS OF EXCITATION
22. REVERSE POWER
23. CONTACTOR OPEN
24. CONTACTOR CLOSED

MASTER ANNUNCIATOR LEGEND

1. FIRE ALARM LIGHT
2. EMERGENCY STOP LIGHT
3. SYSTEM LOW WATER LEVEL LIGHT
4. DAY TANK CRITICAL LOW LIGHT
5. BUS UNDER/OVER VOLTAGE LIGHT
6. BUS UNDER/OVER FREQUENCY LIGHT
7. FEEDER BREAKER OVERCURRENT LIGHT
8. PRIMARY PLC FAILURE
9. OPERATING ON BACKUP PLC
10. BACKUP PLC FAILURE
11. SPARE 1
12. SPARE 2
13. SPARE 3
14. SPARE 4
15. SPARE 5
16. WIND TURBINE ON
17. FEEDER CONTACTOR OPEN
18. FEEDER CONTACTOR CLOSED

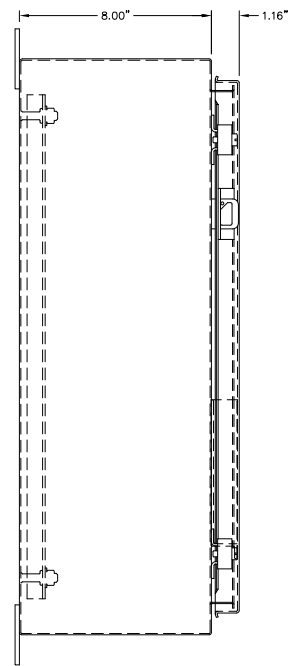
NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

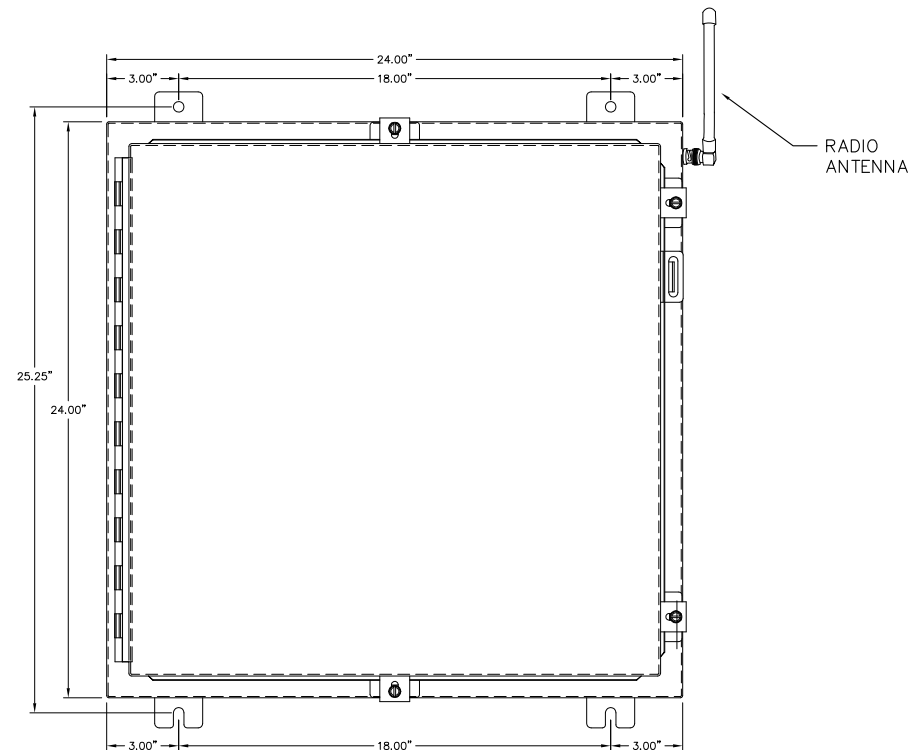


NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

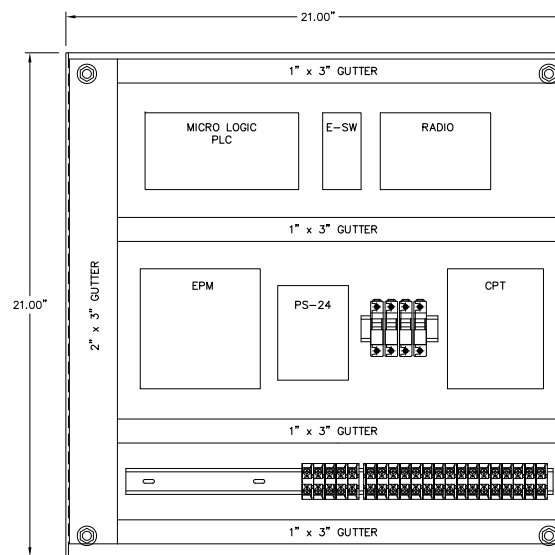
A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-4101-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
		ENGINEERED & MANUFACTURED BY Controlled Power, Inc. BOTHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com	



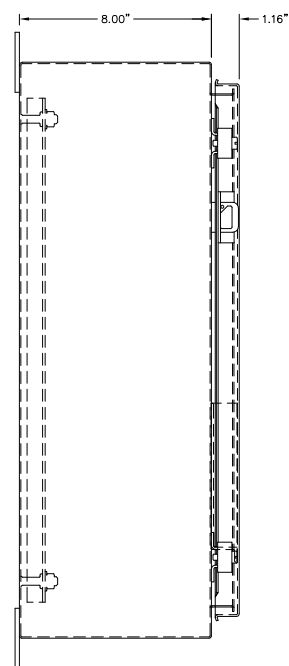
SIDE VIEW



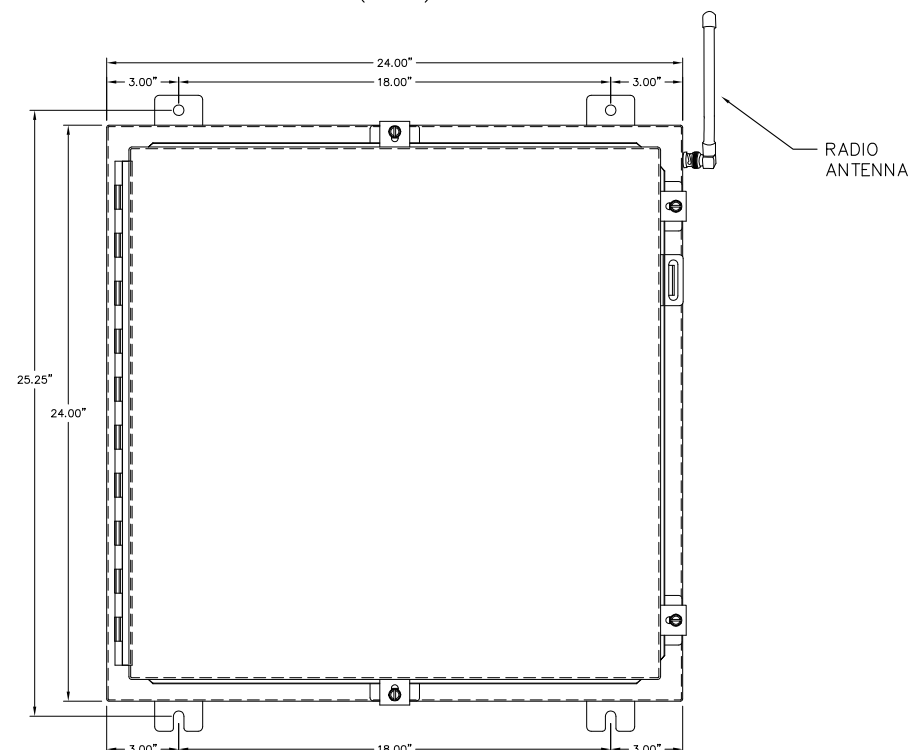
THERMAL NODE 2
(LODGE)



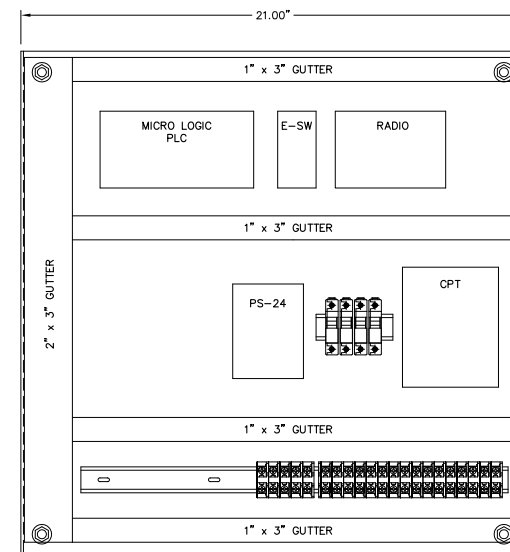
INTERNAL BACK PAN



SIDE VIEW



THERMAL NODE 1
(SHCOOL)



INTERNAL BACK PAN

- NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: WALLMOUNT ENCLOSURE & BACK PAN, OUTLINE DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-4102-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			

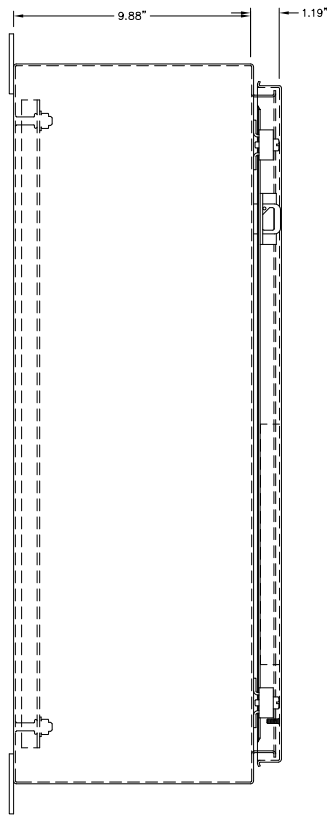
ALASKA
ENERGY AUTHORITY

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

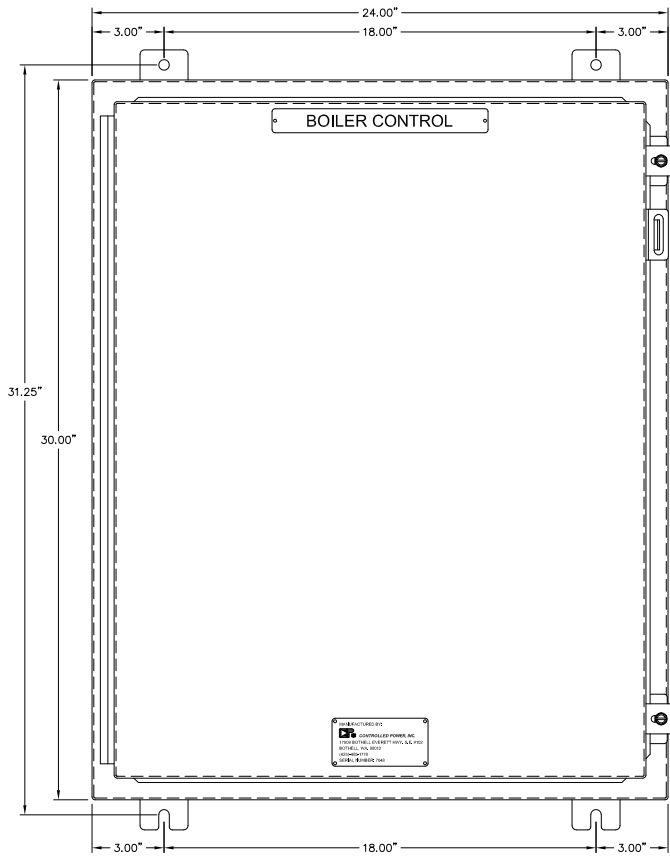


ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

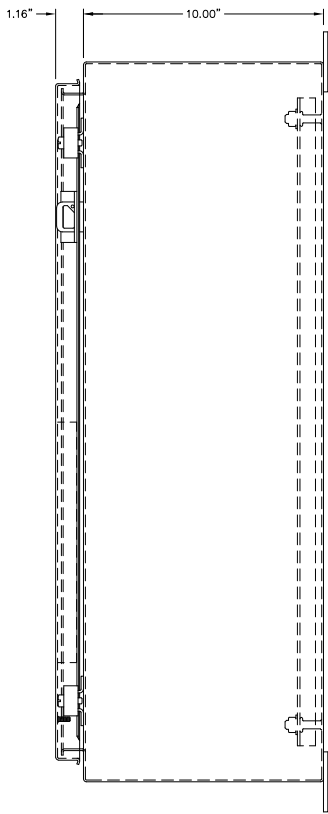
NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



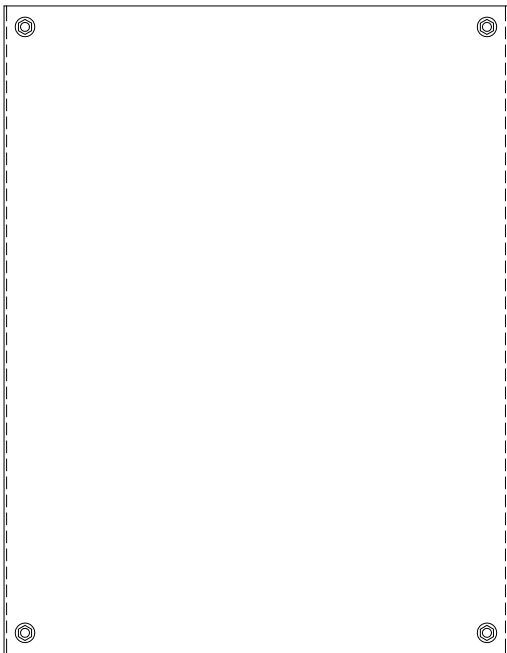
LEFT SIDE VIEW



BOILER PANEL – TYPICAL FRONT VIEW



RIGHT SIDE VIEW



INTERNAL BACK PAN



TYPICAL BOTTOM VIEW

- NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: BOILER PANEL ELEVATION VIEW, OUTLINE DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-4103-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			

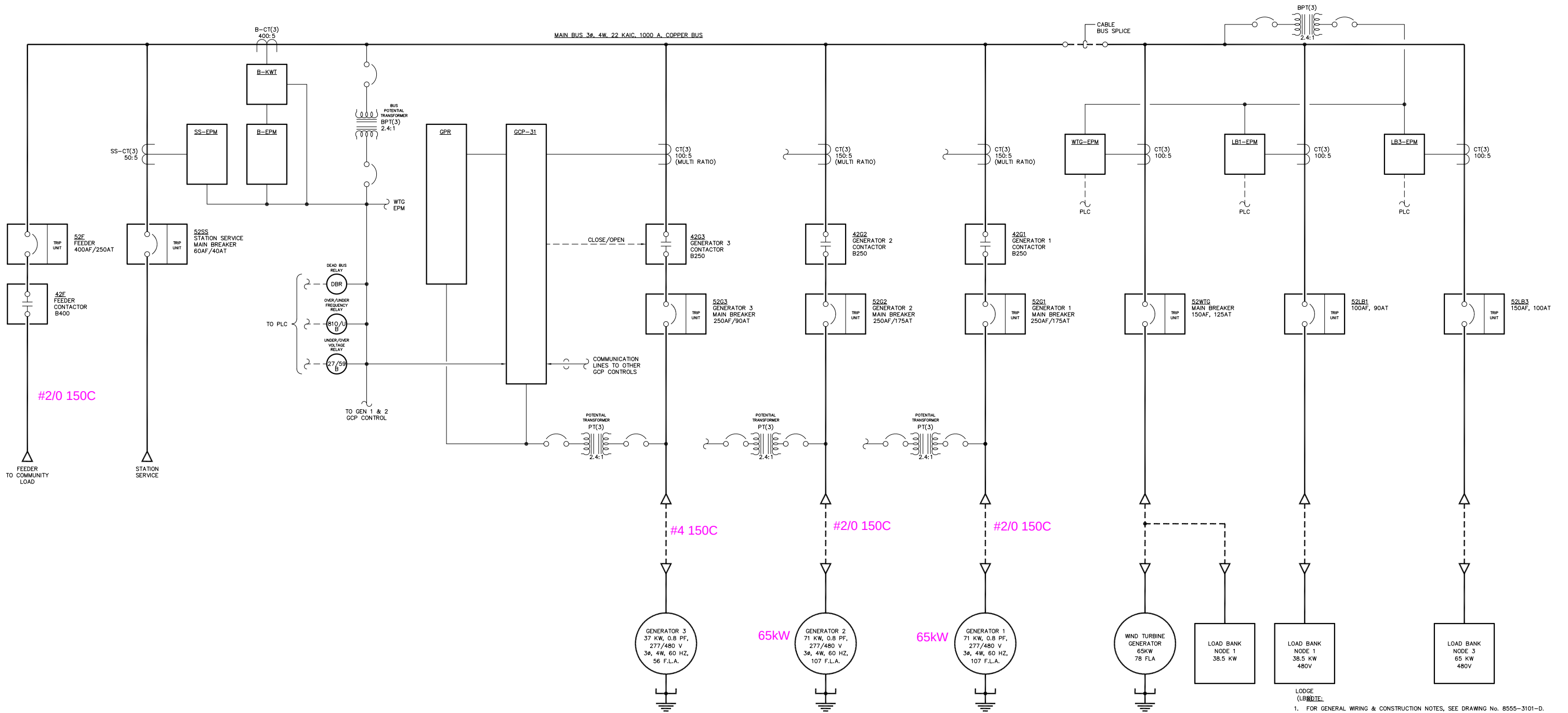
 **ALASKA**
ENERGY AUTHORITY

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

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com



#2/0 150C

#4 150C

#2/0 150C

#2/0 150C

65kW

65kW

NOTES:

1. GENERATORS 1 & 2 SIMILAR TO GENERATOR 3.

Notes:

- 1) Conductor sizes and temperature ratings shown based on original design and have not been confirmed. Field verify.
- 2) Breaker trip setpoints shown based on 2017 field revision and may not match present operating conditions. Field verify.

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

REV.	DATE	DESCRIPTION	BY
A	03-24-17	FIELD REVISION	GPN
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: SINGLE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5101-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHILL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



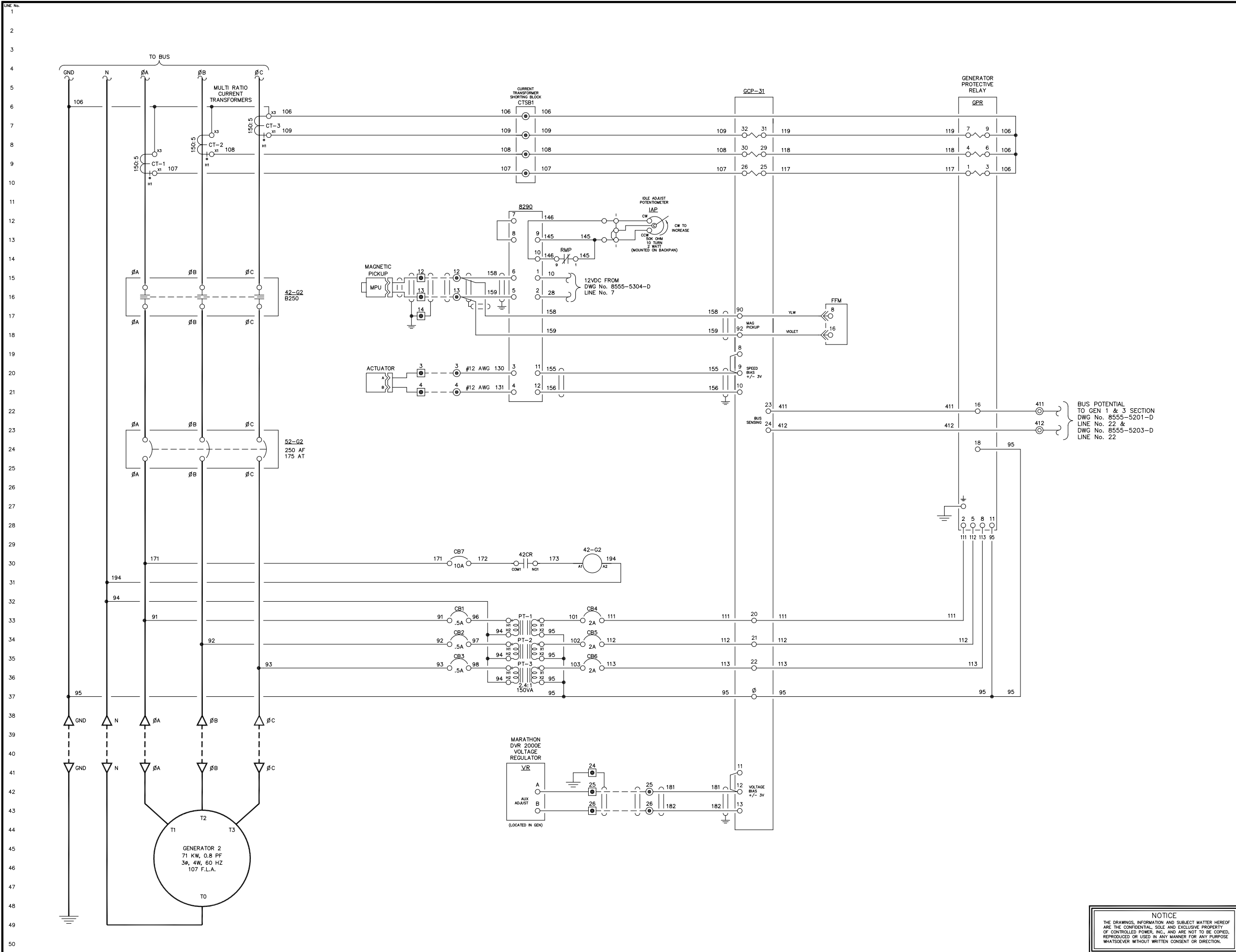
ALASKA
ENERGY AUTHORITY

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

ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.





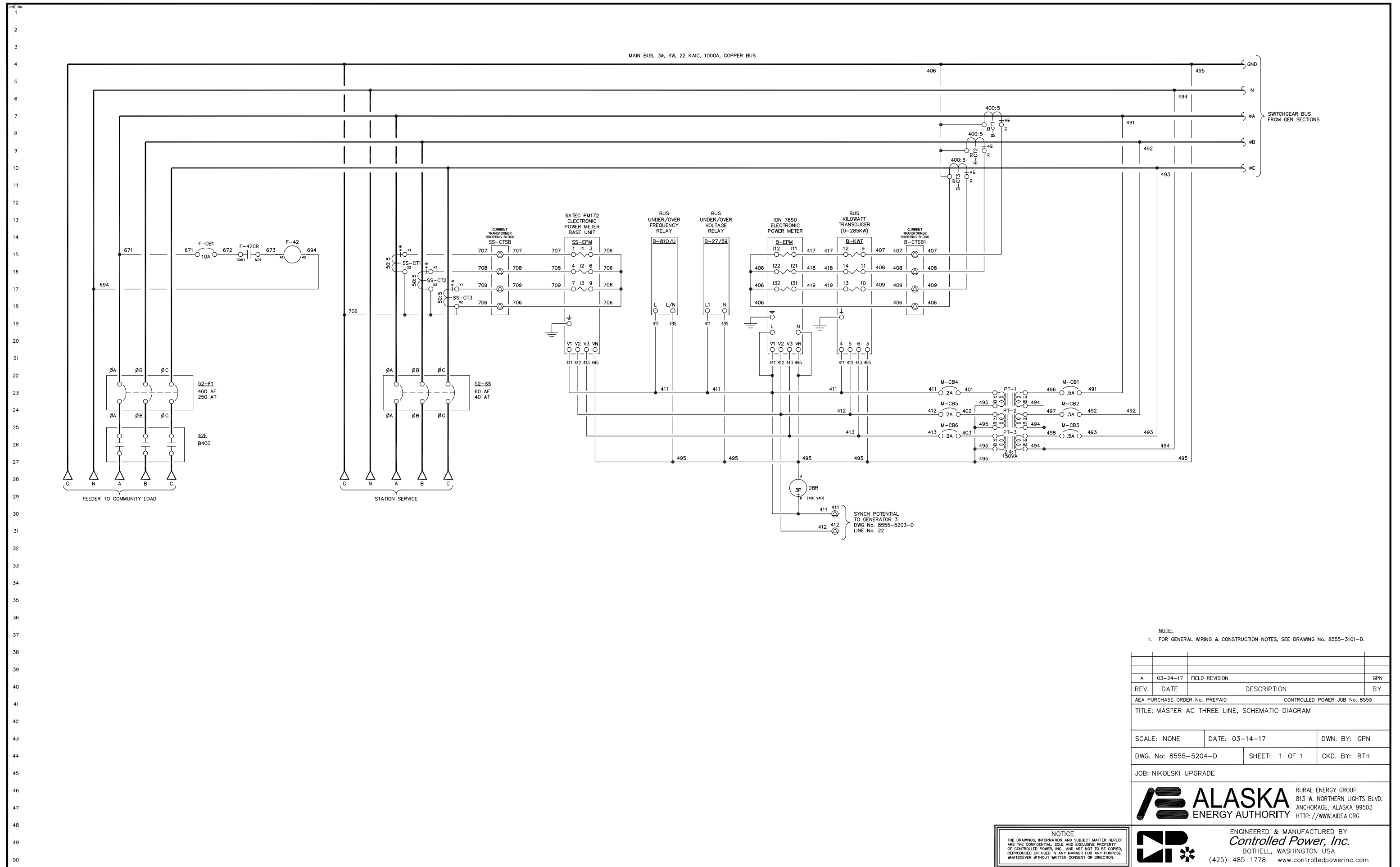
ALASKA
ENERGY AUTHORITY

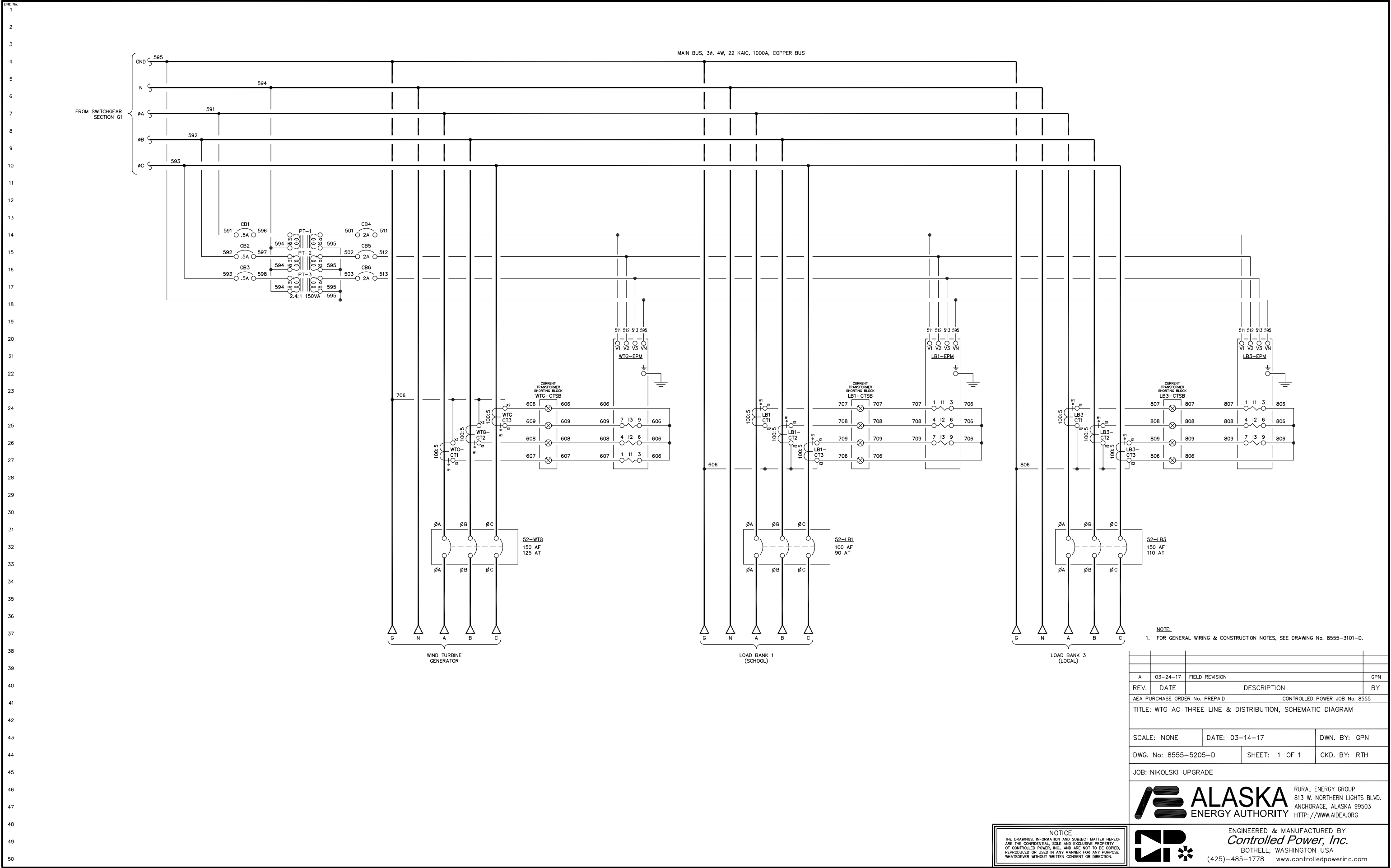
RURAL ENERGY GROUP
813 W. NORTHERN LIGHTS BLVD.
ANCHORAGE, ALASKA 99503
HTTP://WWW.AIDEA.ORG

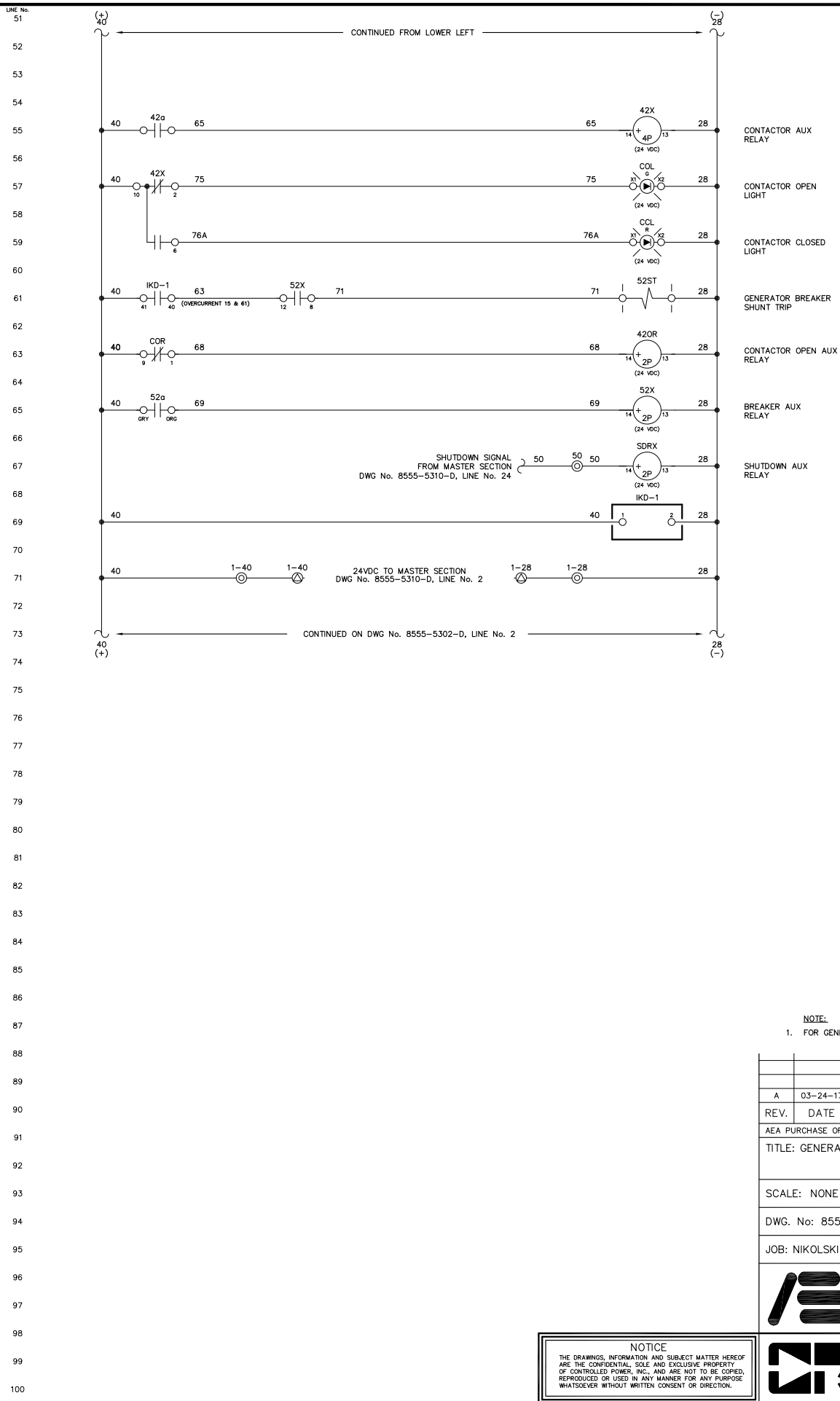
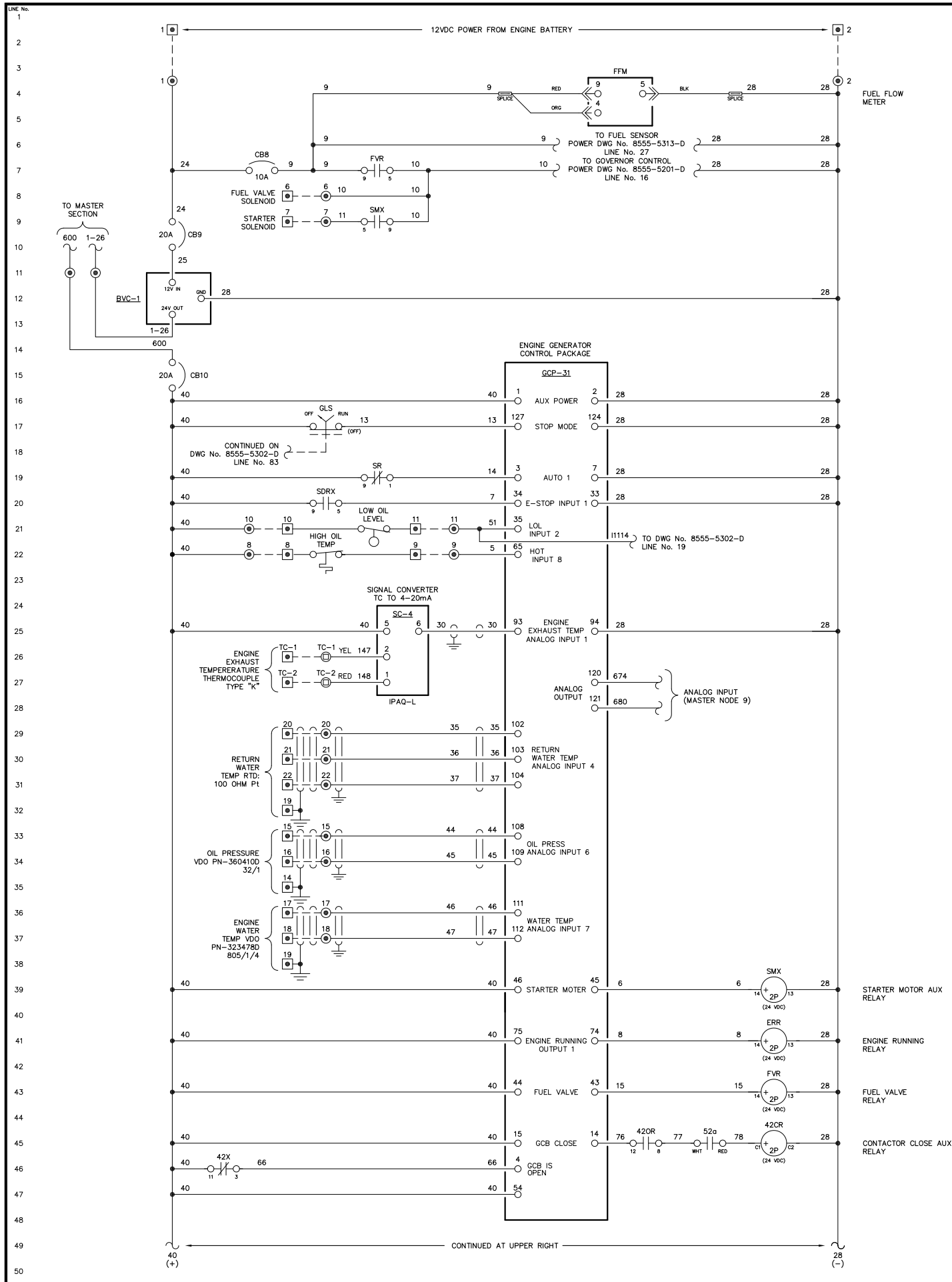
ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



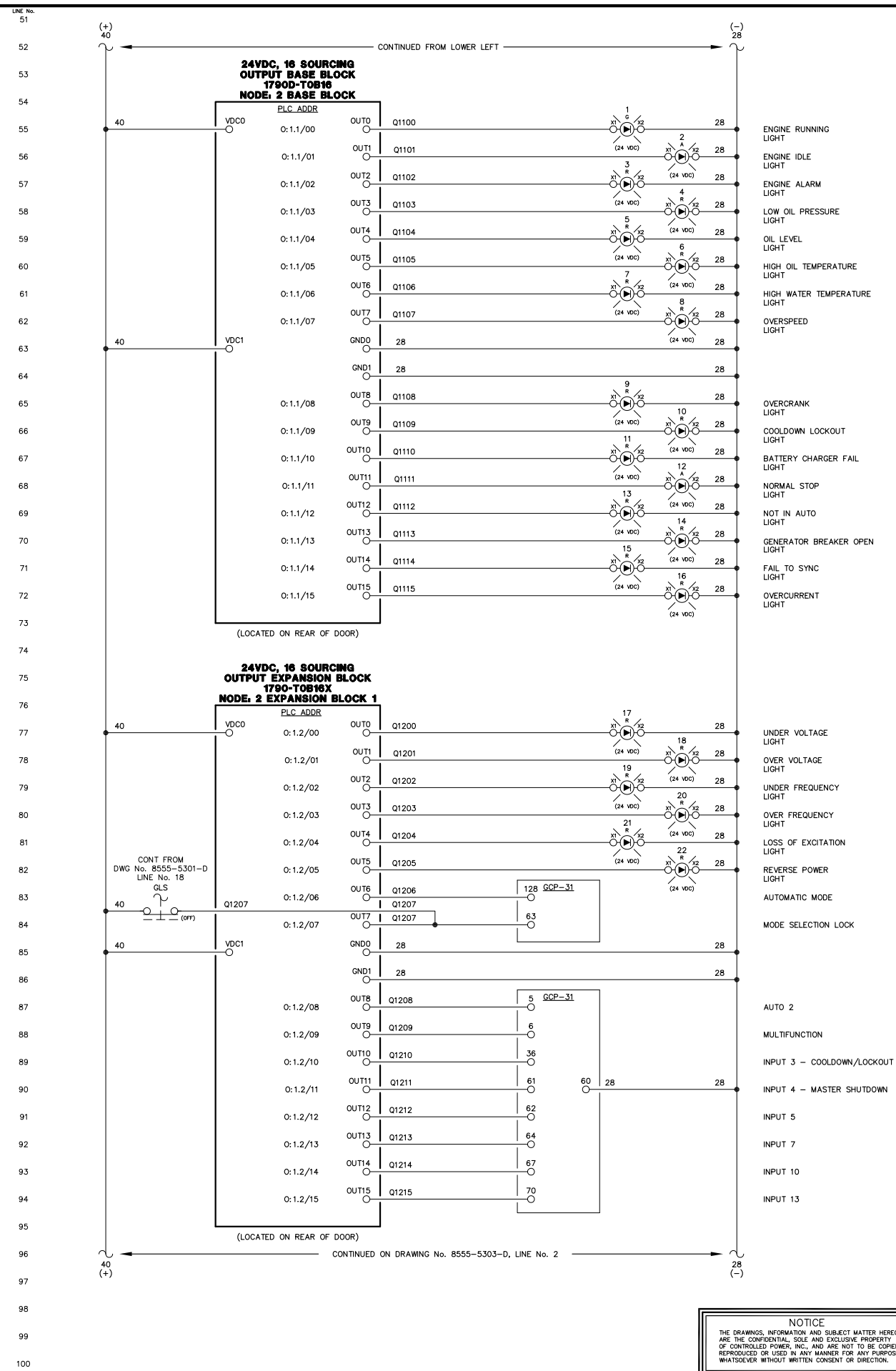
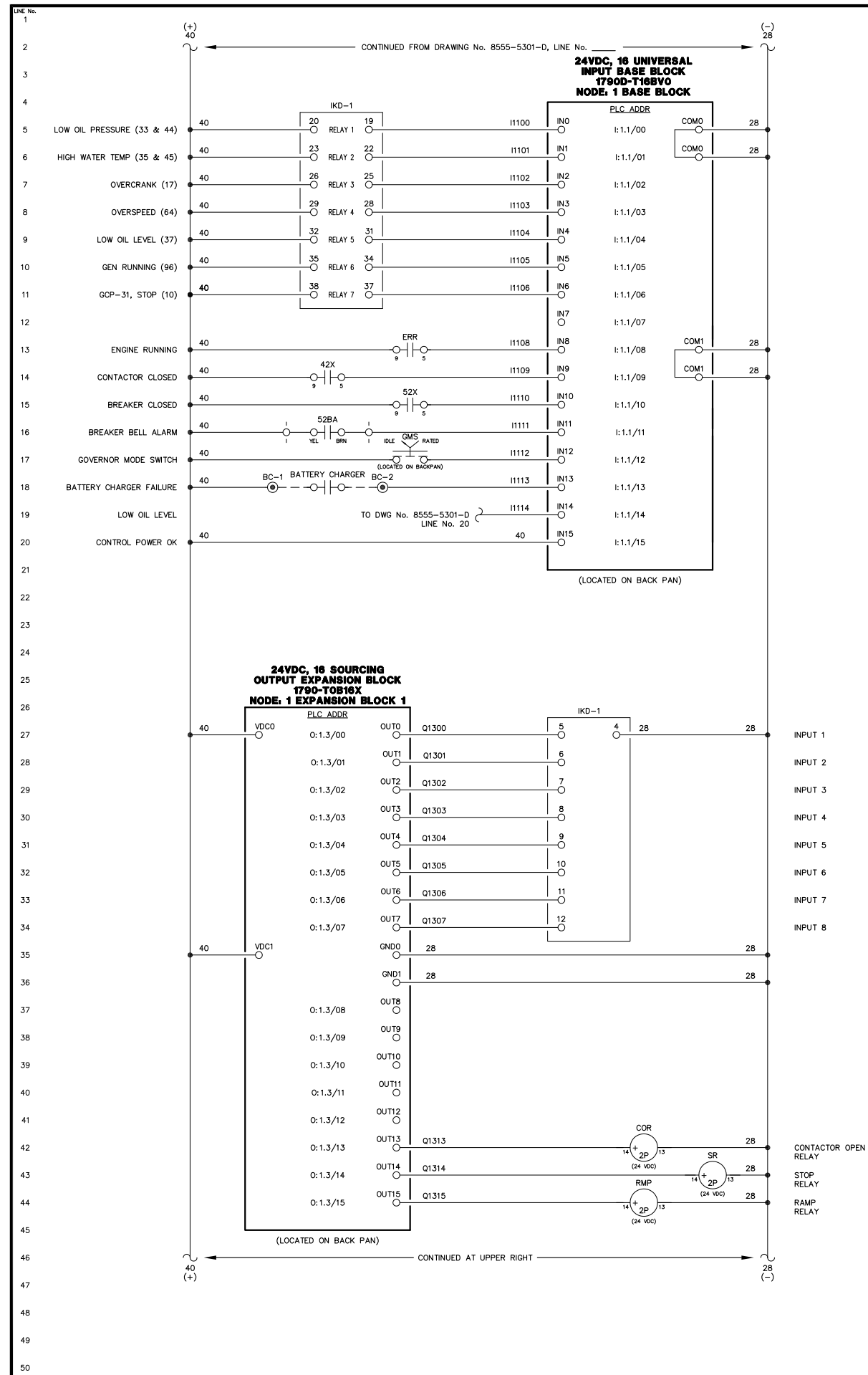




NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5301-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
		ENGINEERED & MANUFACTURED BY <i>Controlled Power, Inc.</i> BOTHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com	

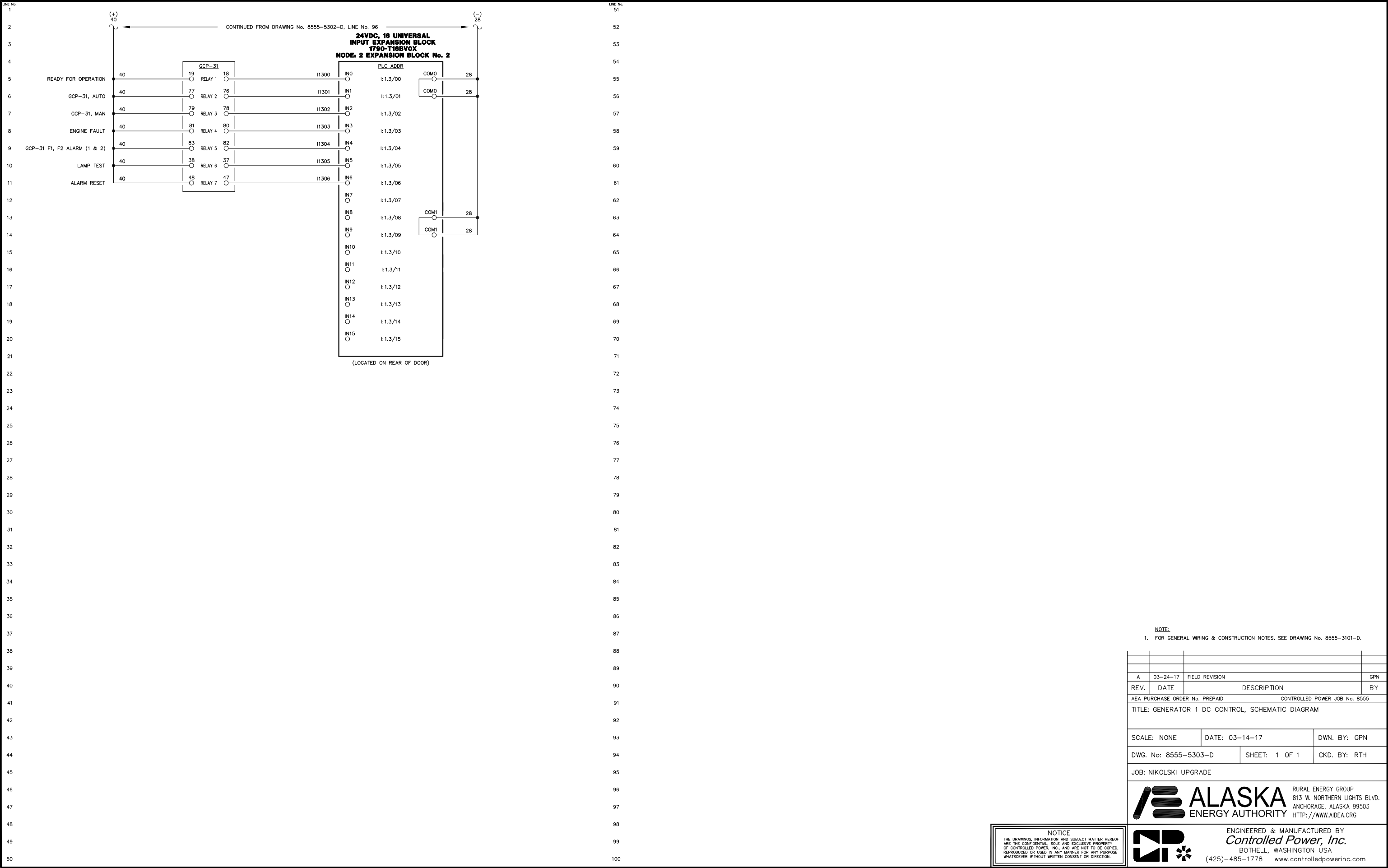
NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

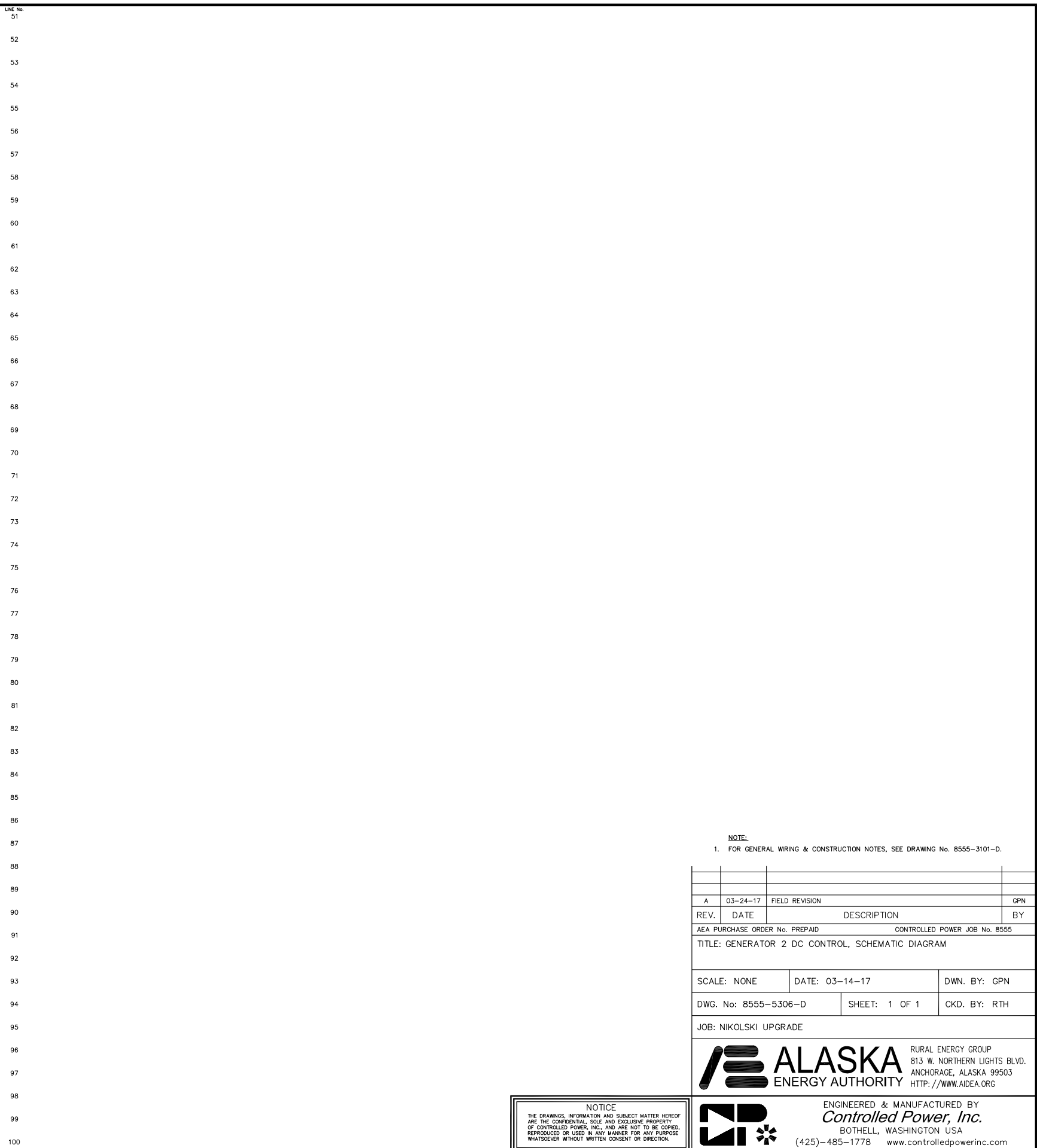


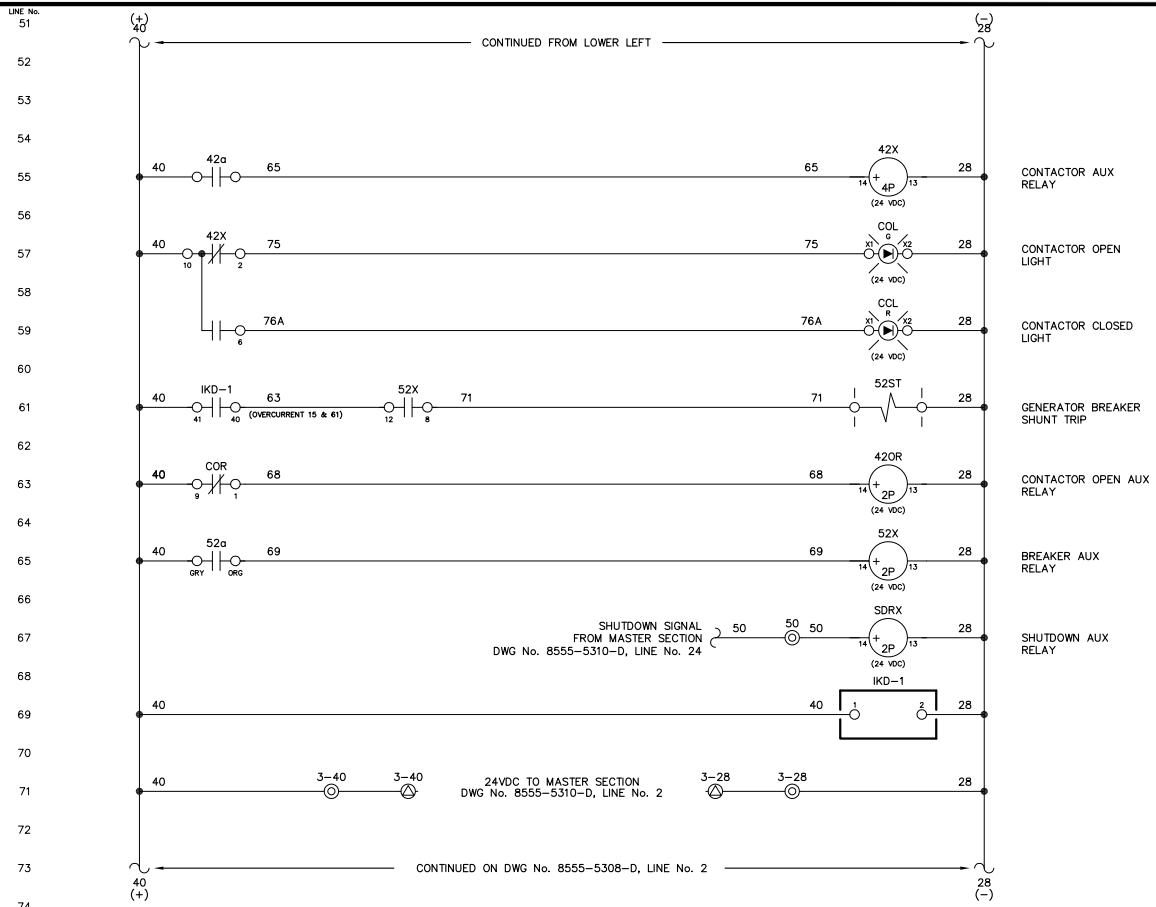
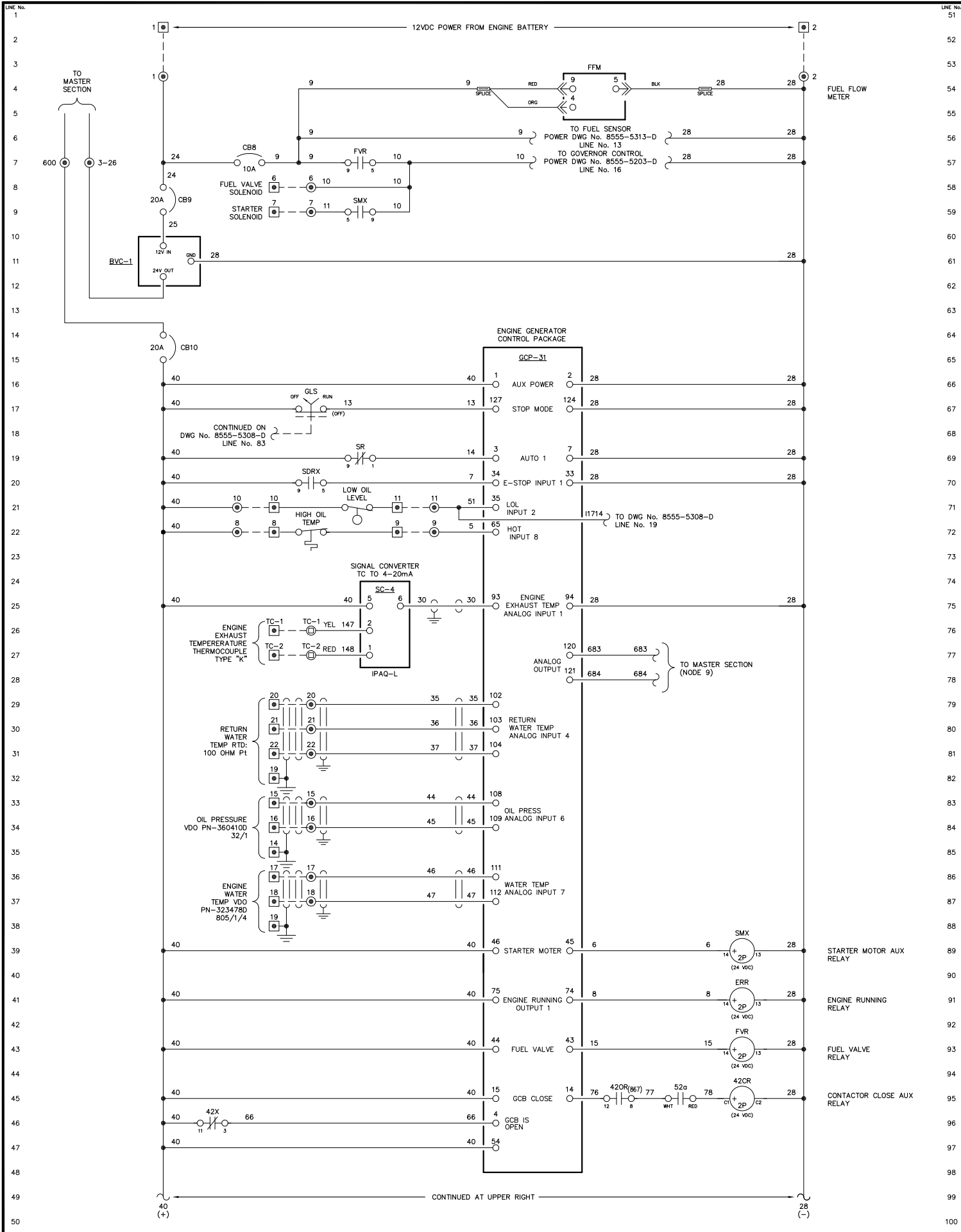
NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

NOTE:			
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.			
A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5302-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
		ENGINEERED & MANUFACTURED BY <i>Controlled Power, Inc.</i> BOTHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com	



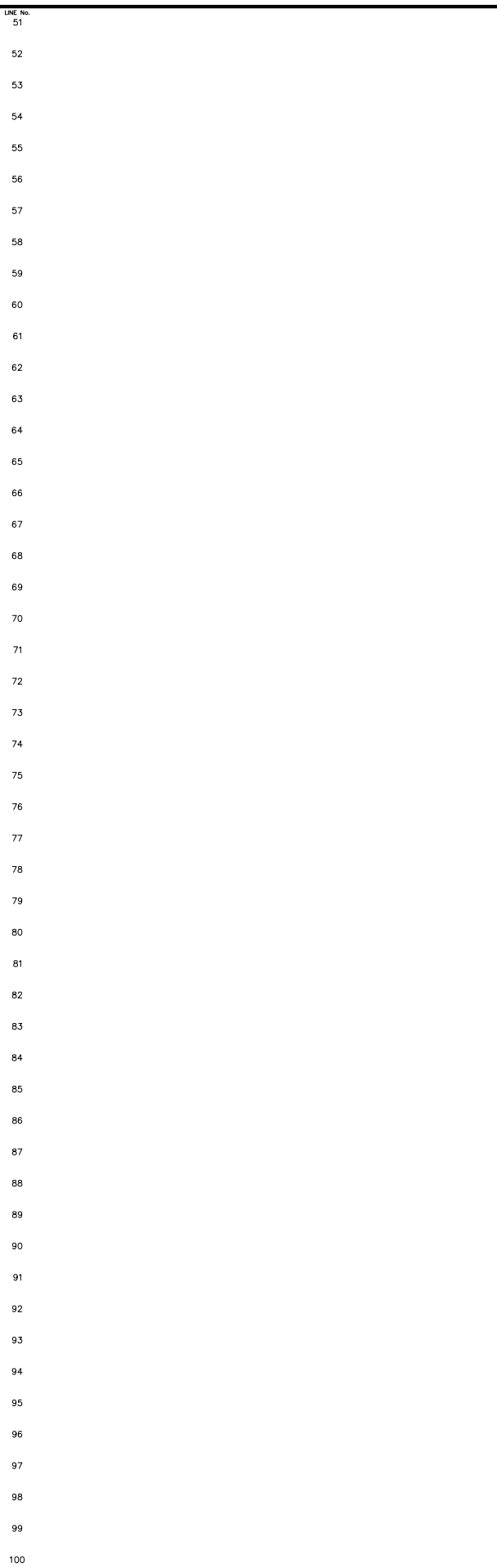




NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

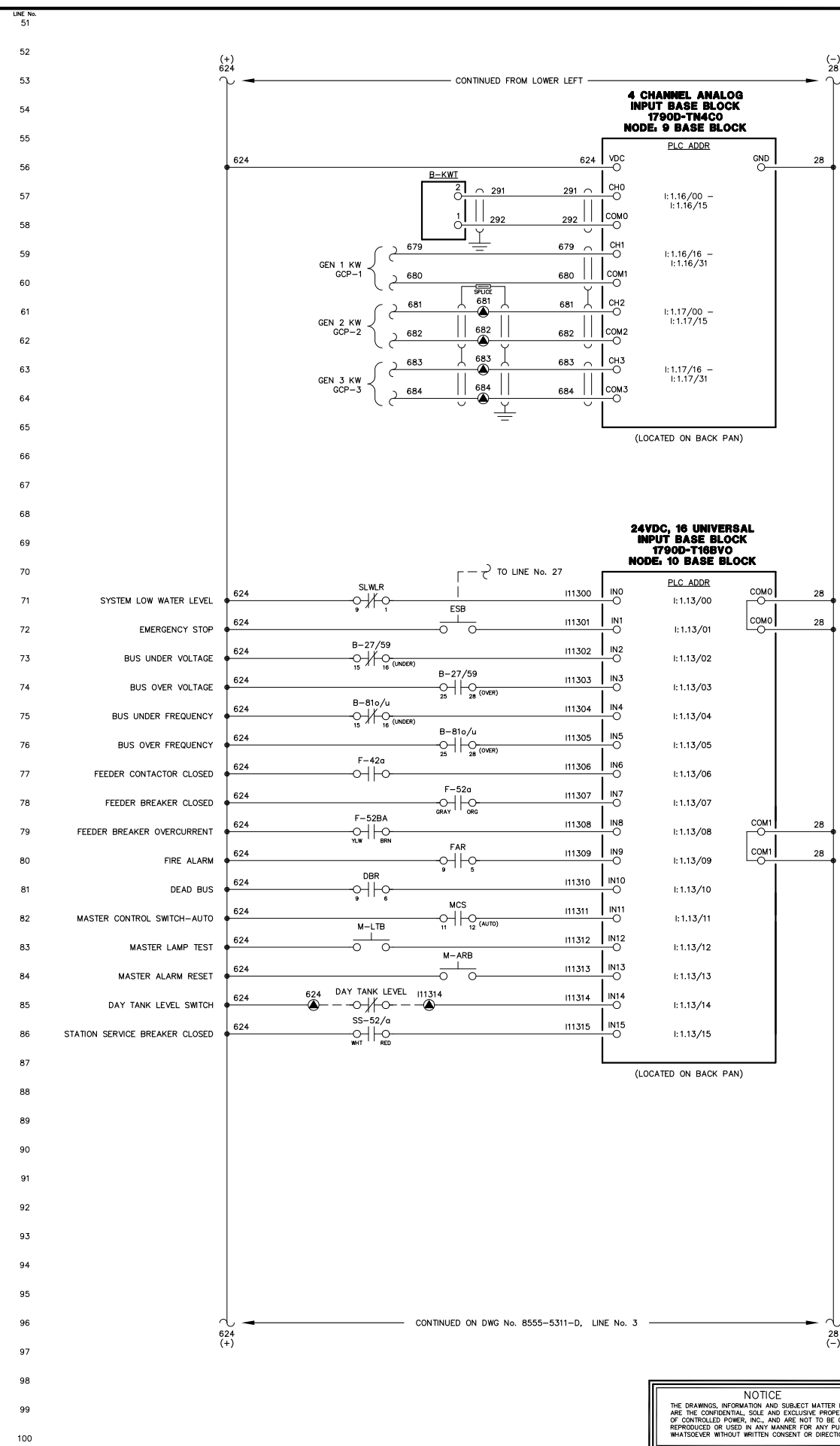
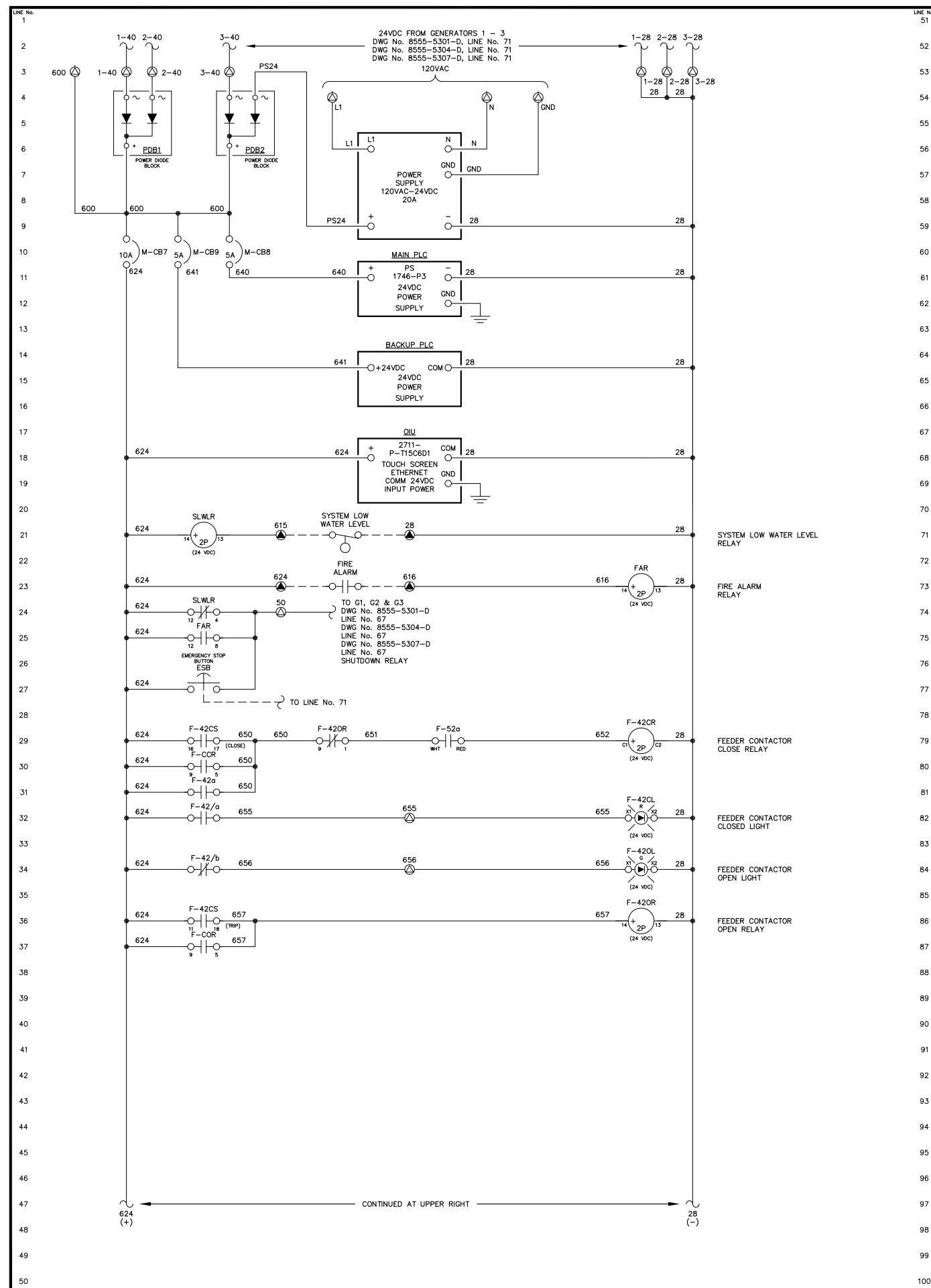
A	03-24-17	FIELD REVISION			GPN
REV.	DATE	DESCRIPTION			BY
AEA PURCHASE ORDER No. PREPAID			CONTROLLED POWER JOB No. 8555		
TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM					
SCALE: NONE		DATE: 03-14-17		DWN. BY: GPN	
DWG. No: 8555-5307-D		SHEET: 1 OF 1		CKD. BY: RTH	
JOB: NIKOLSKI UPGRADE					
		ALASKA		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
		ENGINEERED & MANUFACTURED BY <i>Controlled Power, Inc.</i> BOTHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



A	03-24-17	FIELD REVISION			GPN
REV.	DATE	DESCRIPTION			BY
AEA PURCHASE ORDER No. PREPAID			CONTROLLED POWER JOB No. 8555		
TITLE: GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM					
SCALE: NONE		DATE: 03-14-17		DWN. BY: GPN	
DWG. No: 8555-5309-D		SHEET: 1 OF 1		CKD. BY: RTH	
JOB: NIKOLSKI UPGRADE					
 ALASKA ENERGY AUTHORITY			RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG		

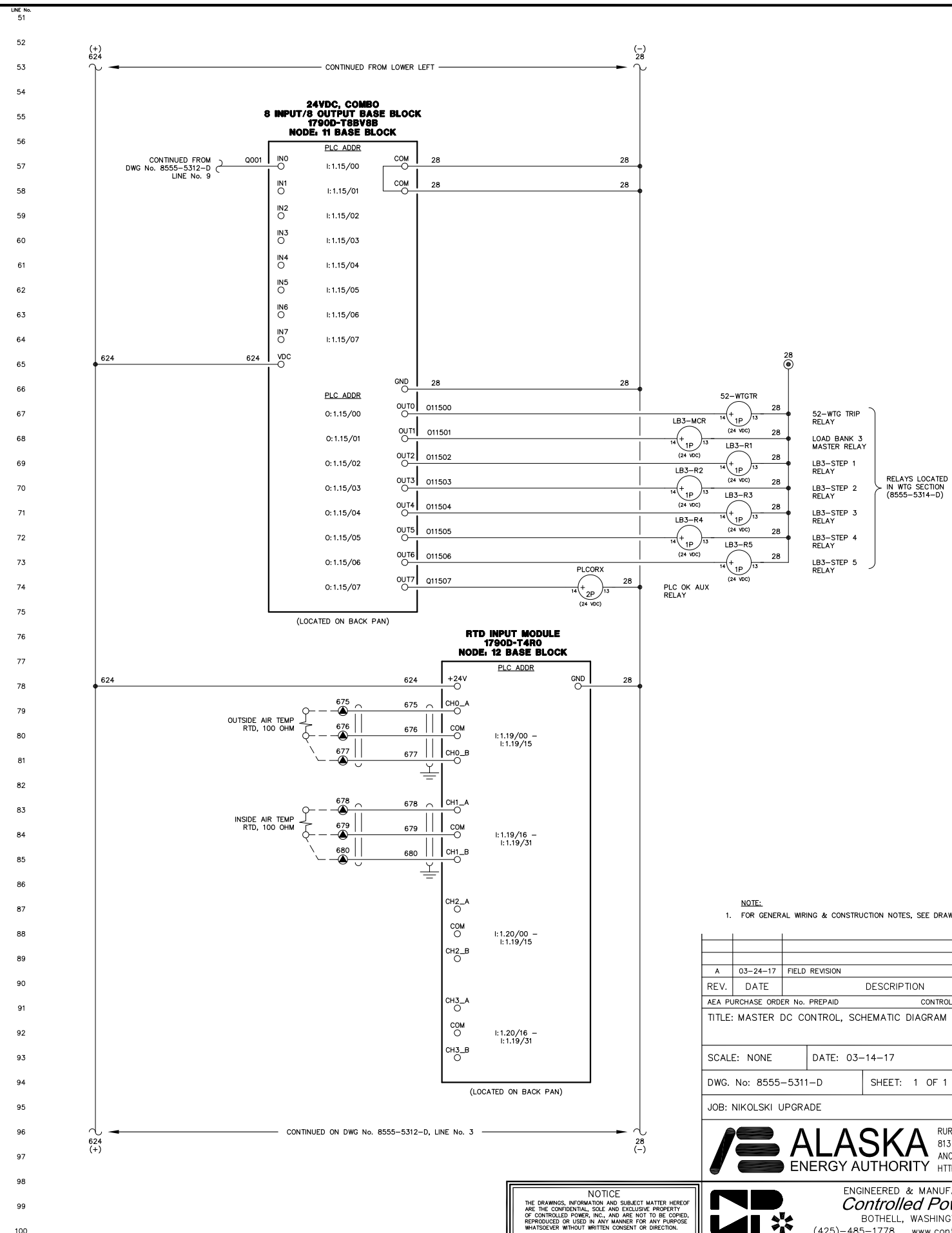
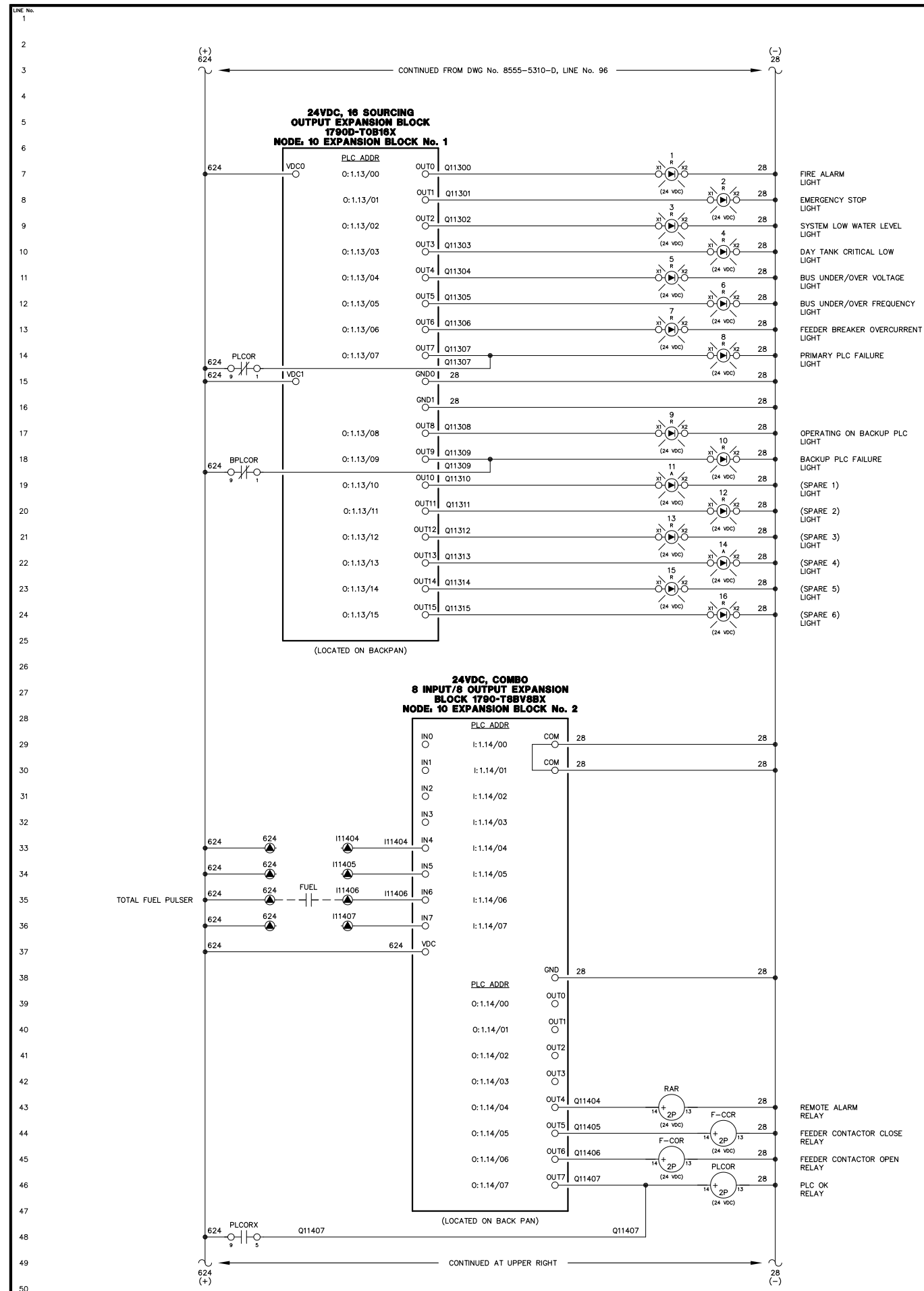
 ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com



NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GP#
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5310-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
		ENGINEERED & MANUFACTURED BY <i>Controlled Power, Inc.</i> BOTHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com	



A	03-24-17	FIELD REVISION	GNP
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GNP
DWG. No: 8555-5311-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			

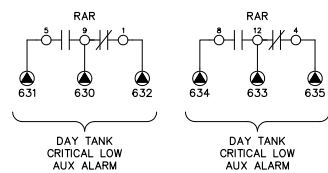
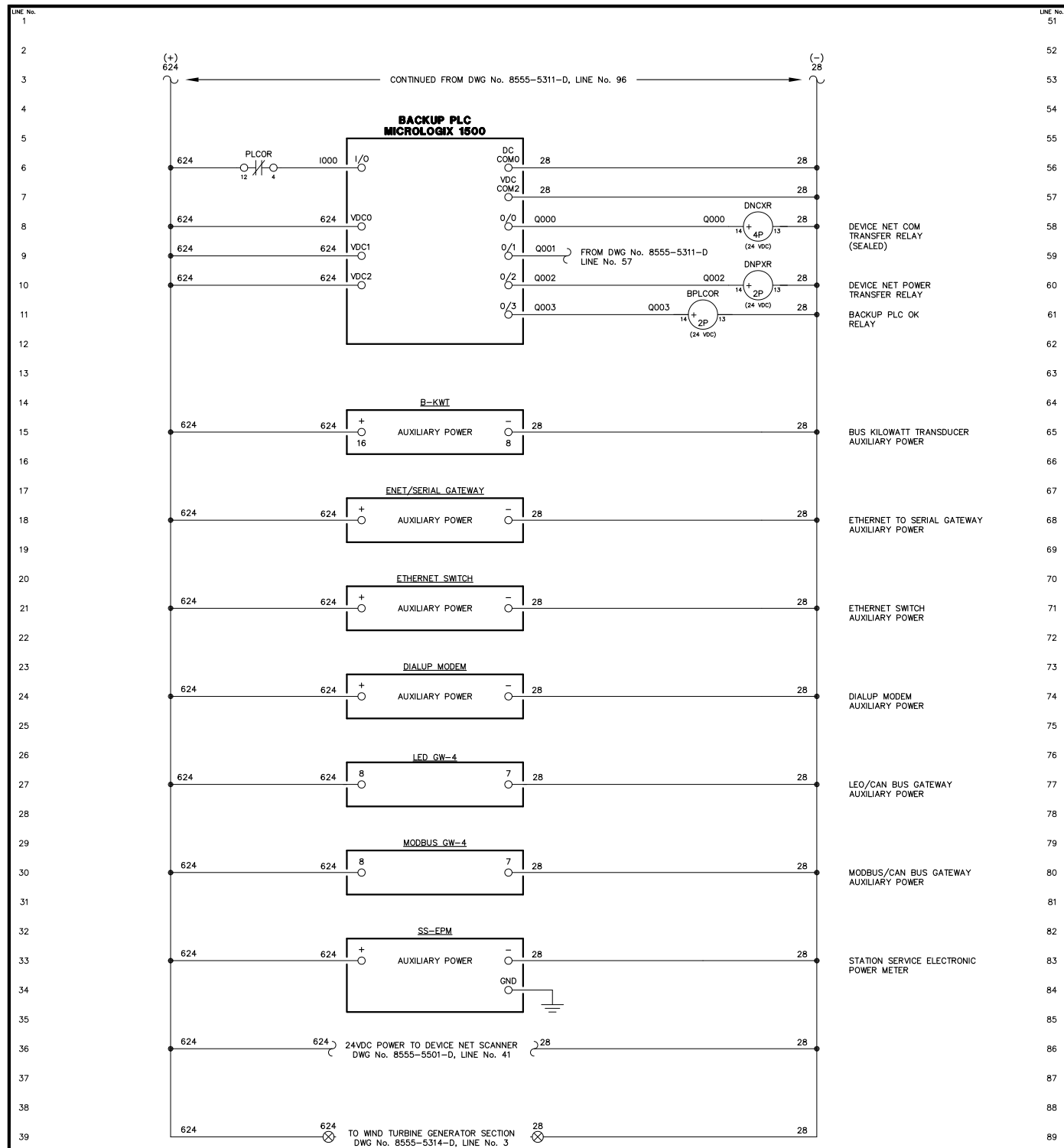

ALASKA
 ENERGY AUTHORITY

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



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREON
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY

AEA PURCHASE ORDER No. PREPAID	CONTROLLED POWER JOB No. 8555
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM	

SCALE: NONE	DATE: 03-14-17	DWN. BY: GPN
-------------	----------------	--------------

DWG. No: 8555-5312-D	SHEET: 1 OF 1	CKD. BY: RTH
----------------------	---------------	--------------

JOB: NIKOLSKI UPGRADE

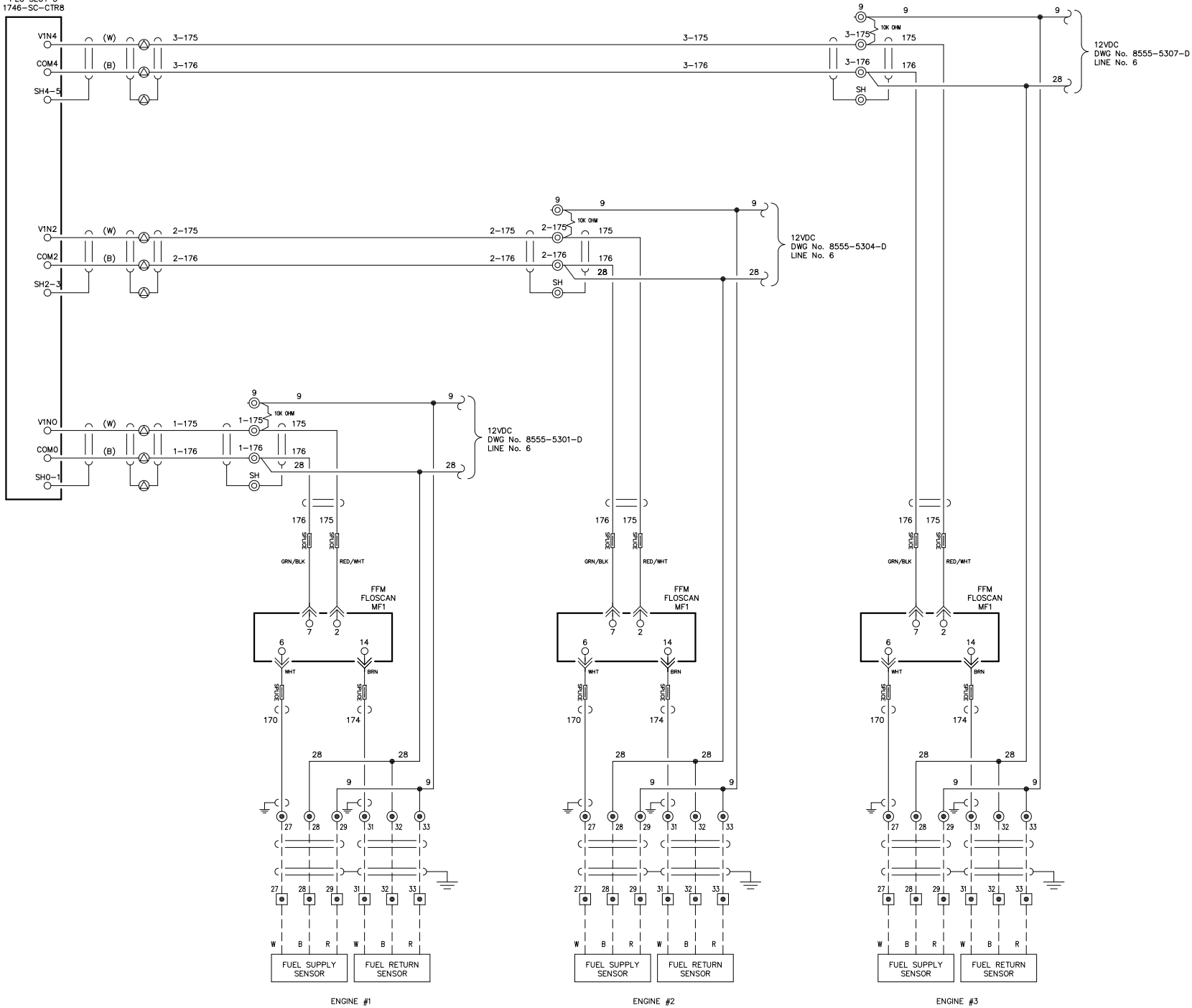


ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

LINE No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

SPECTRUM
FUEL FLOW
COUNTER
PLC SLOT 3
1746-SC-CTR8



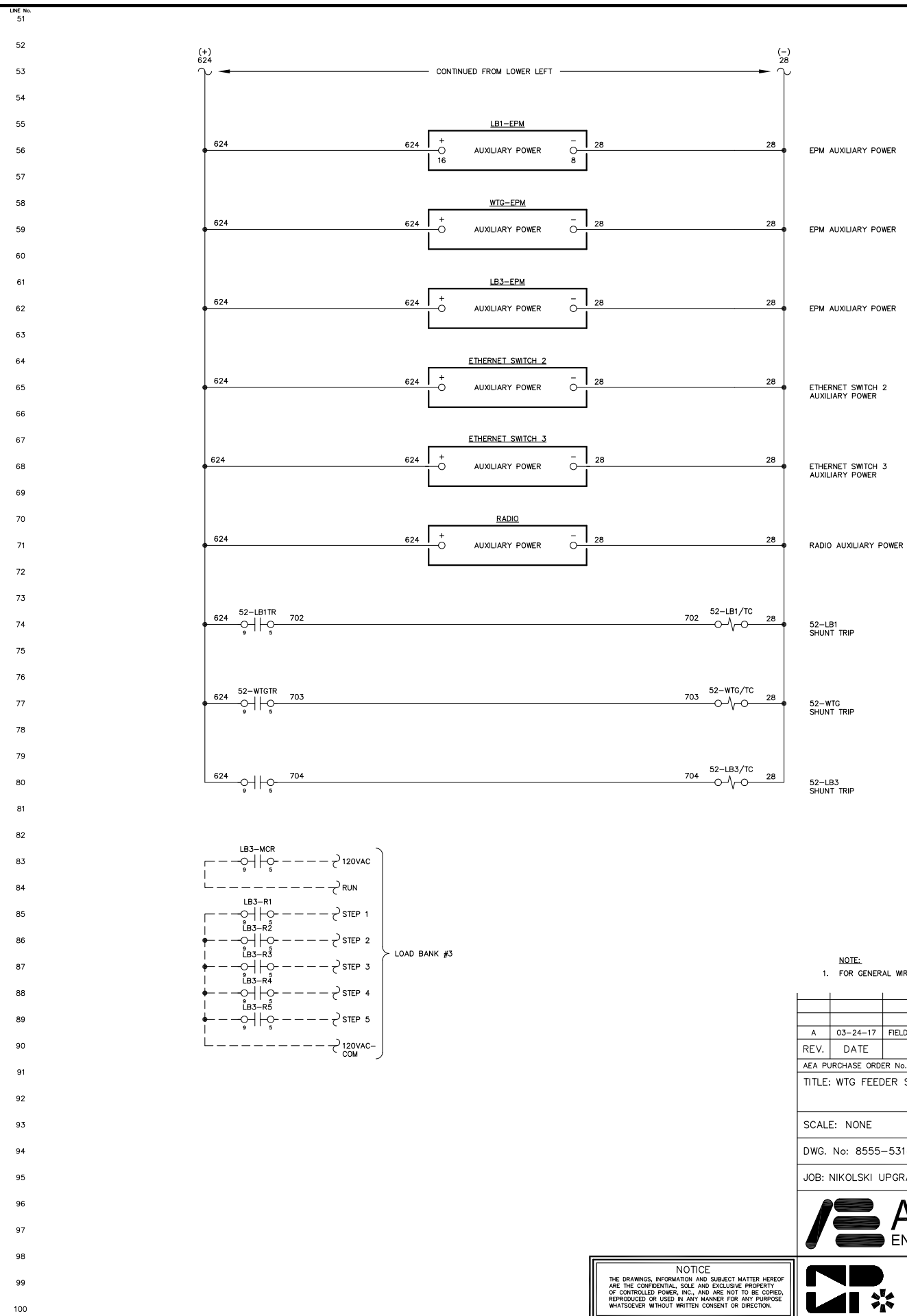
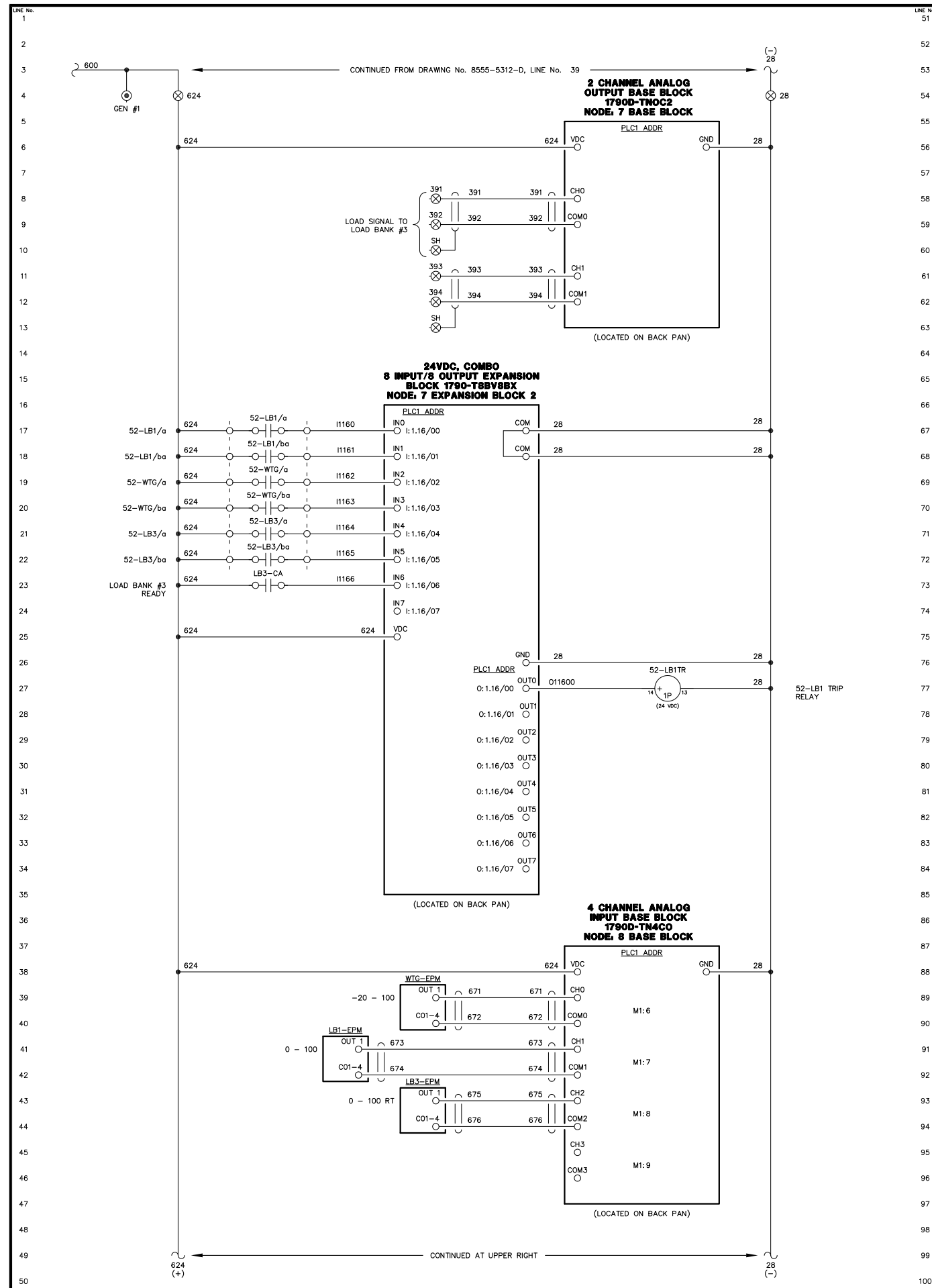
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: FUEL FLOW SYSTEM, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5313-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com



NOTE:

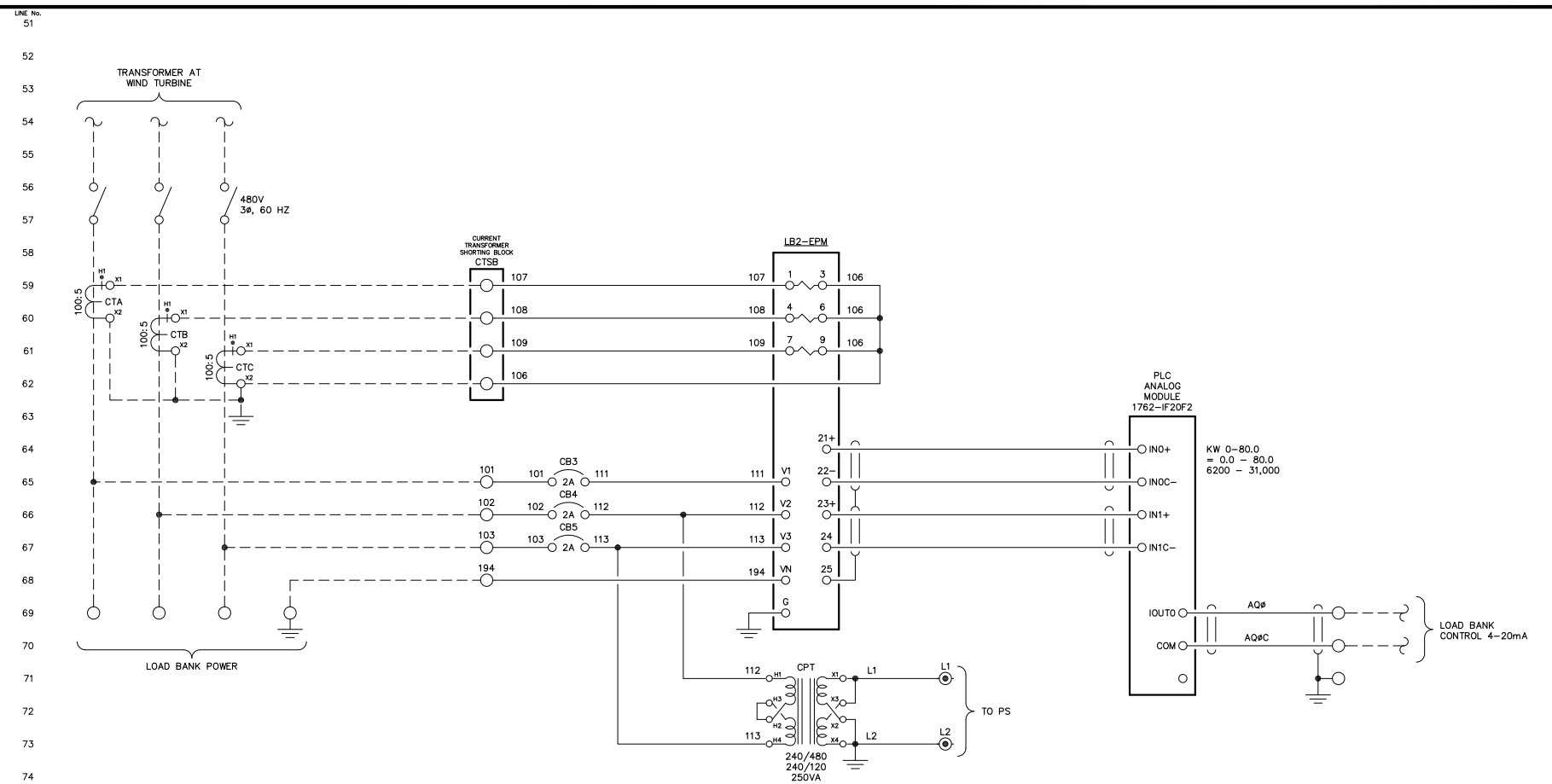
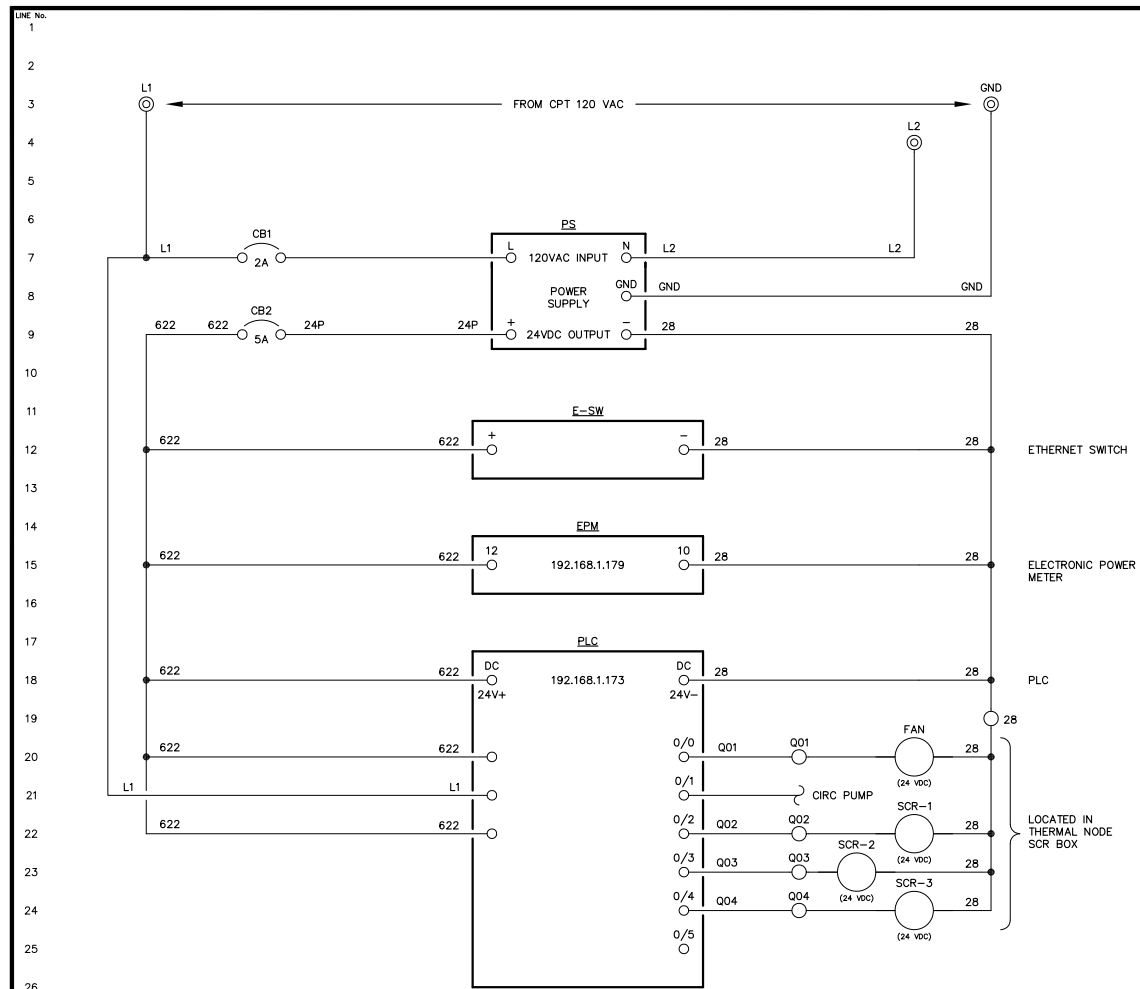
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION			GPN
REV.	DATE	DESCRIPTION			BY
AEA PURCHASE ORDER No. PREPAID			CONTROLLED POWER JOB No. 8555		
TITLE: WTG FEEDER SECTION, SCHEMATIC DIAGRAM					
SCALE: NONE		DATE: 03-14-17		DWN. BY: GPN	
DWG. No: 8555-5314-D			SHEET: 1 OF 1		CKD. BY: RTH
JOB: NIKOLSKI UPGRADE					
 ALASKA ENERGY AUTHORITY			RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG		



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREON
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



NOTE:

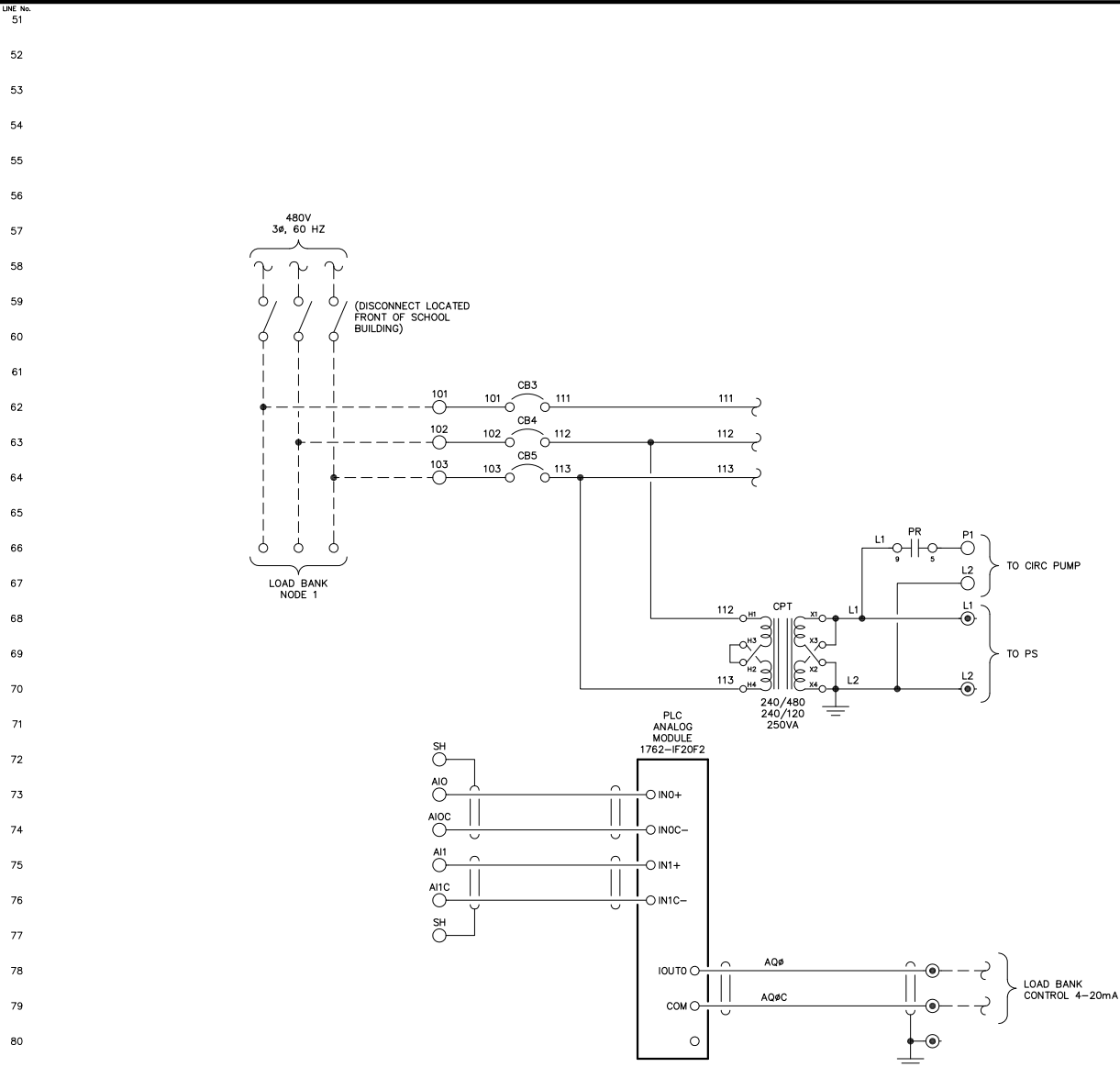
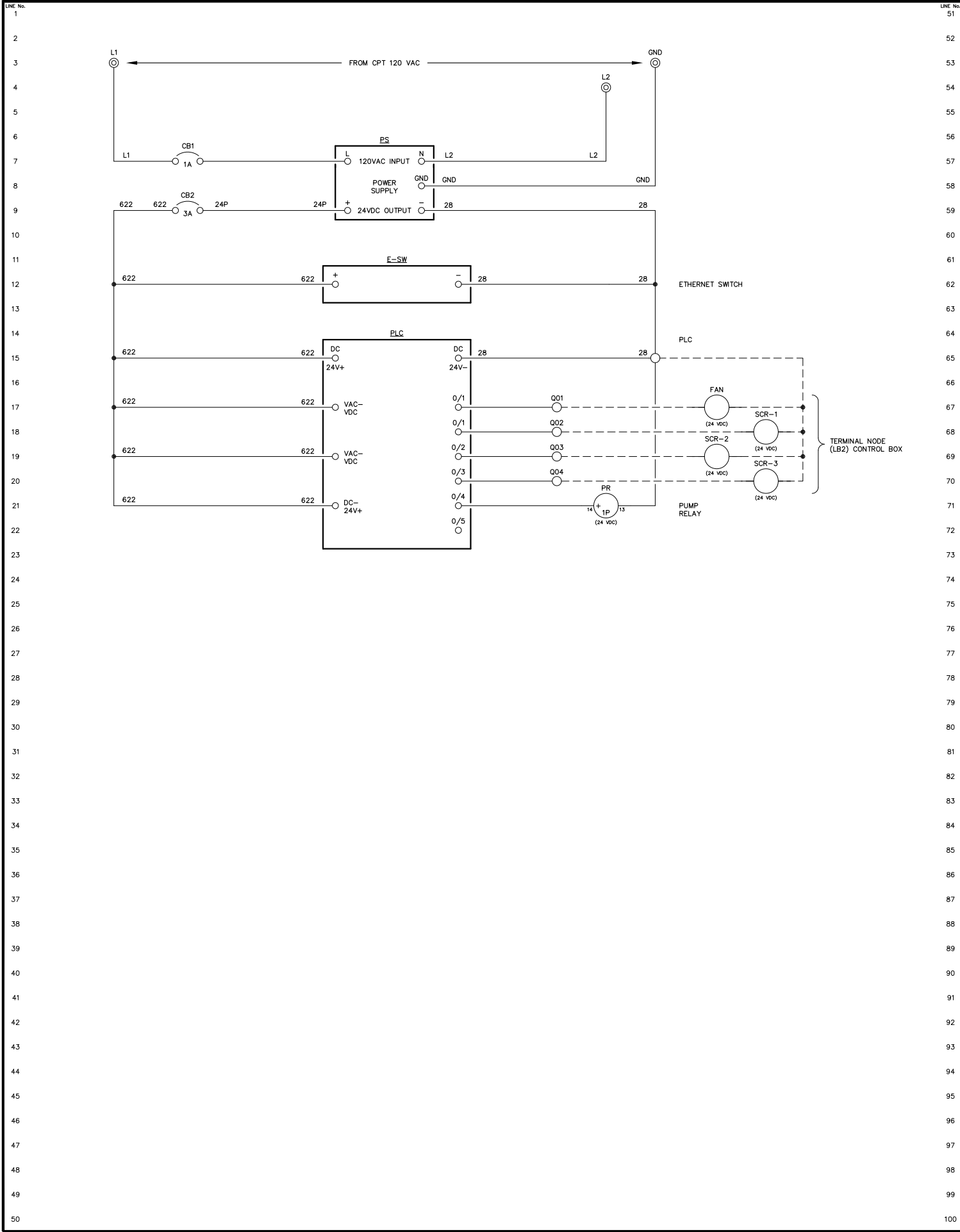
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: AC & DC CONTROL, SCHEMATIC DIAGRAM THERMAL NODE 2 (LOADGE)			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GN
DWG. No: 8555-5316-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

REV.	DATE	DESCRIPTION	BY
A	03-24-17	FIELD REVISION	GPN
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: AC & DC CONTROL, SCHEMATIC DIAGRAM INTERNAL NODE 1 (SCHOOL)			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5317-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			

ALASKA
ENERGY AUTHORITY

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

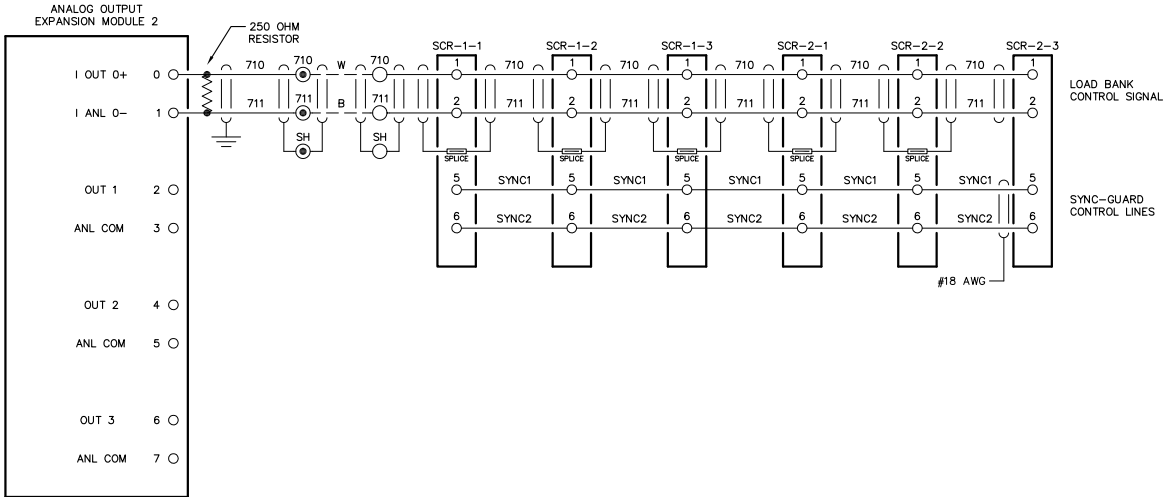


ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

LINE No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

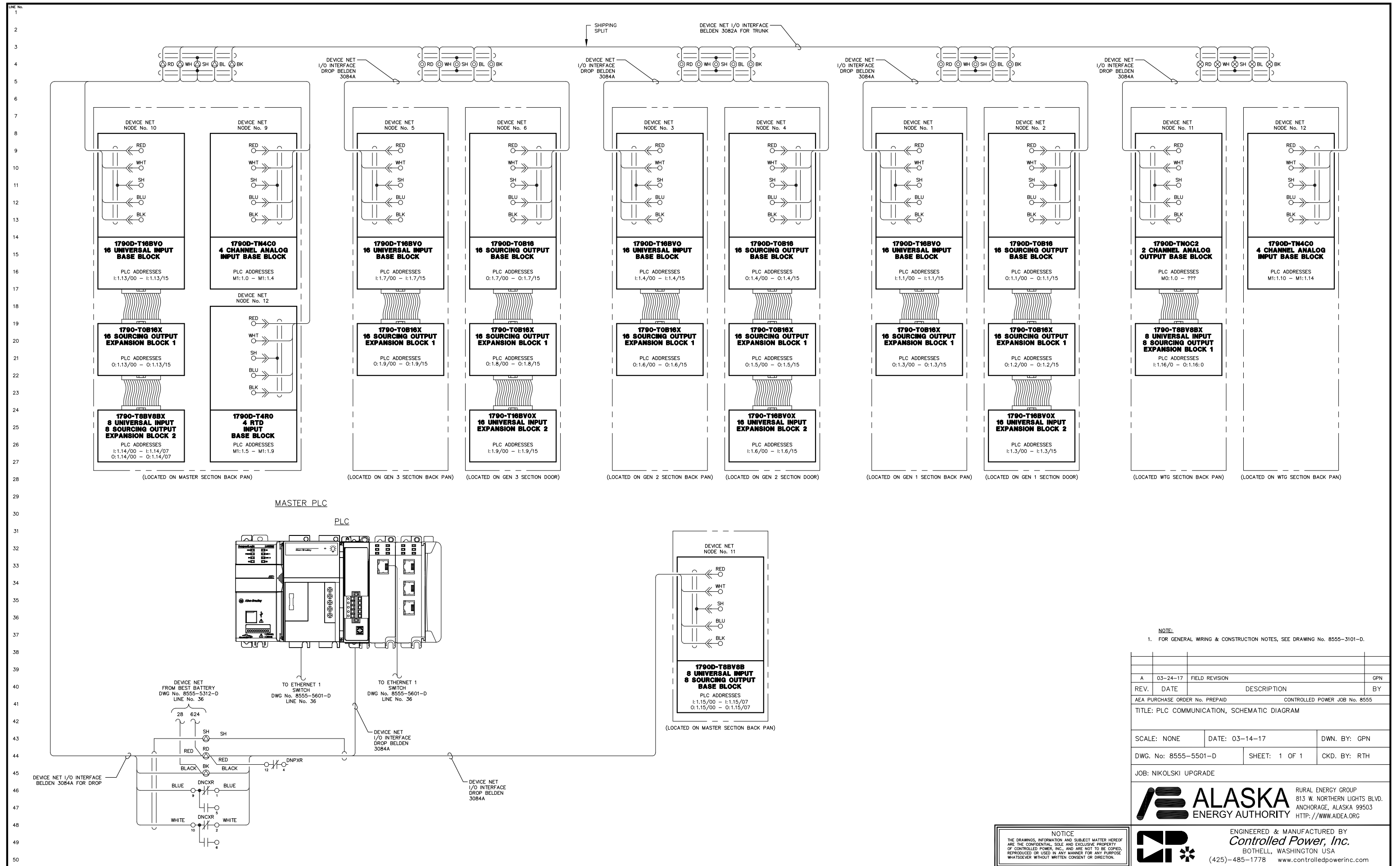
LINE No.
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



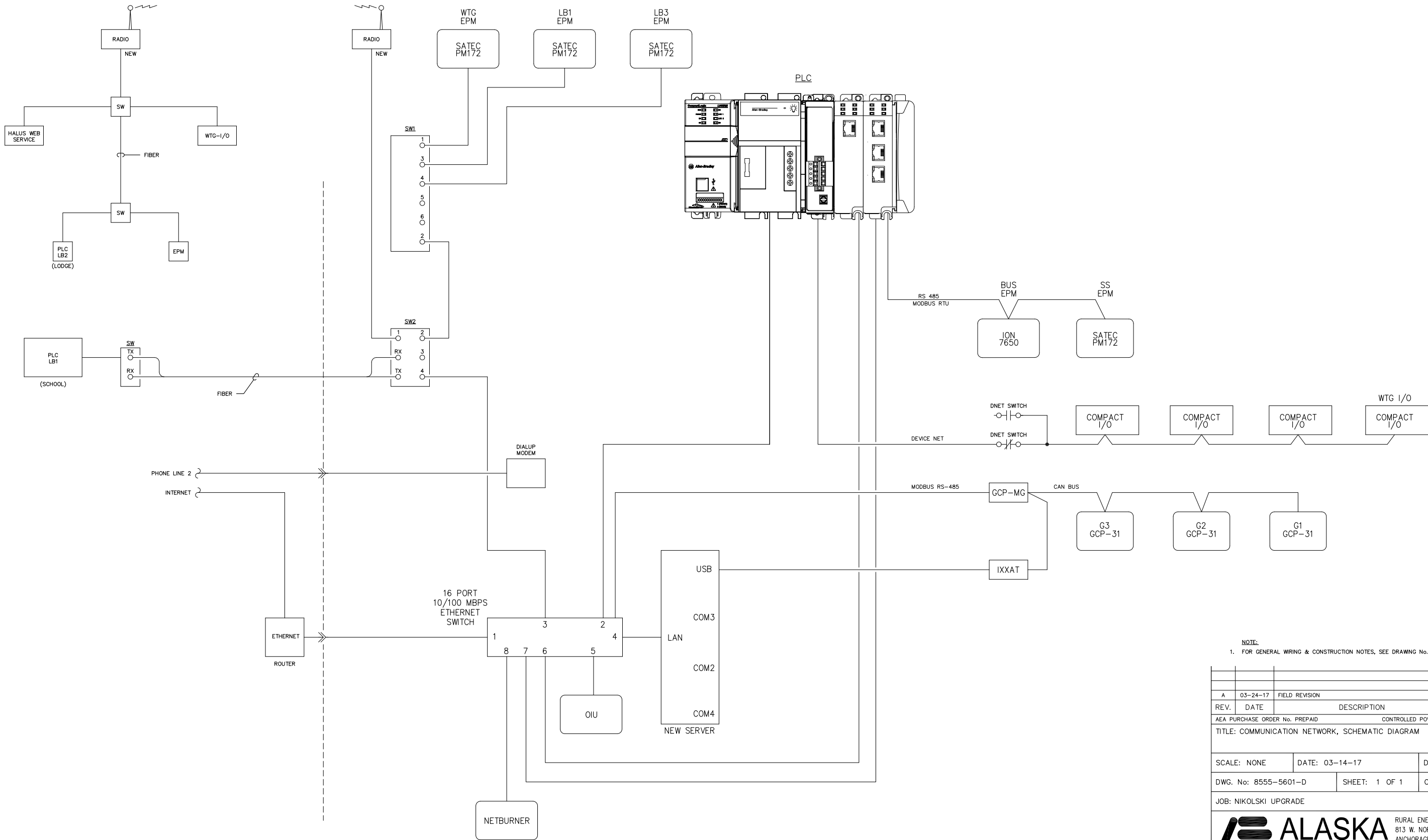
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: ANALOG OUTPUTS, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5318-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
		ENGINEERED & MANUFACTURED BY Controlled Power, Inc. BOTHHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com	

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



LINE No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50



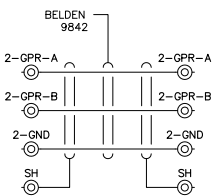
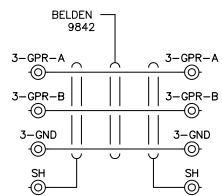
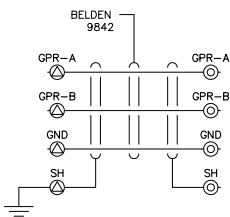
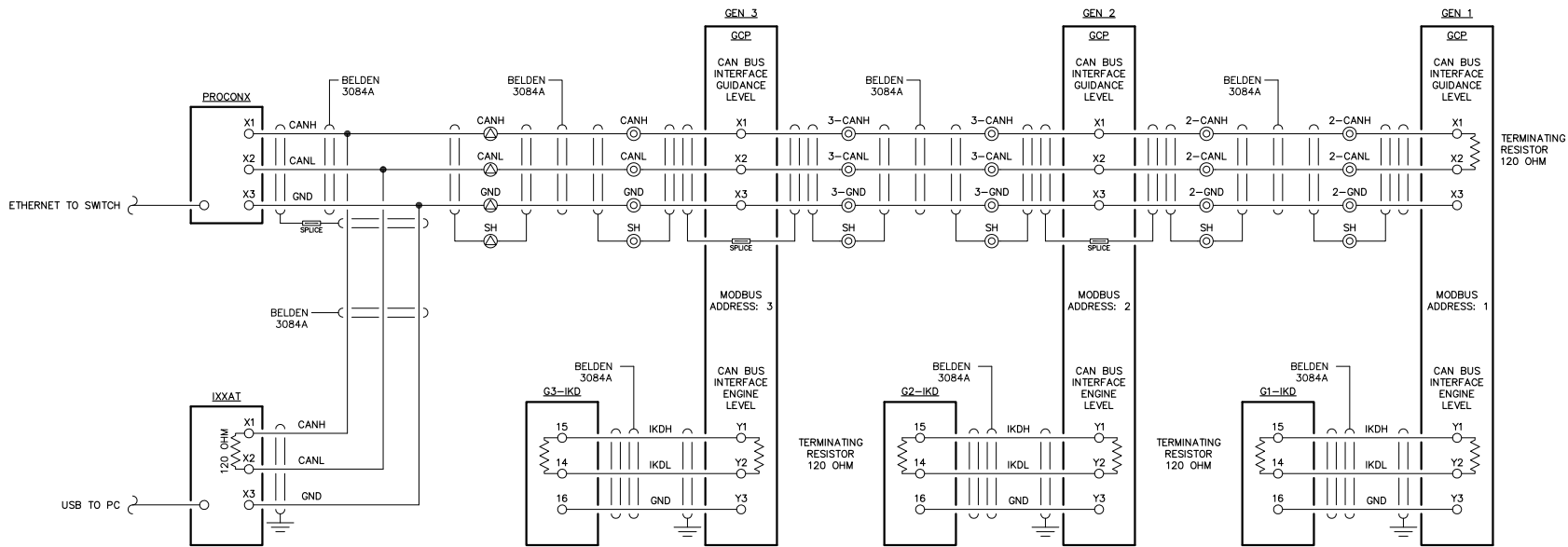
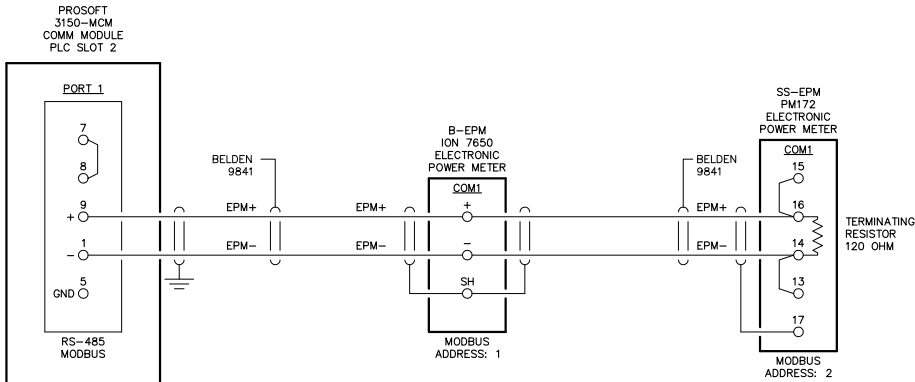
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: COMMUNICATION NETWORK, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5601-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

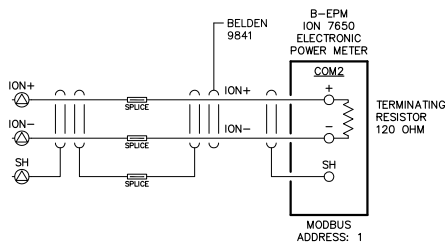
ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

LINE No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50



NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

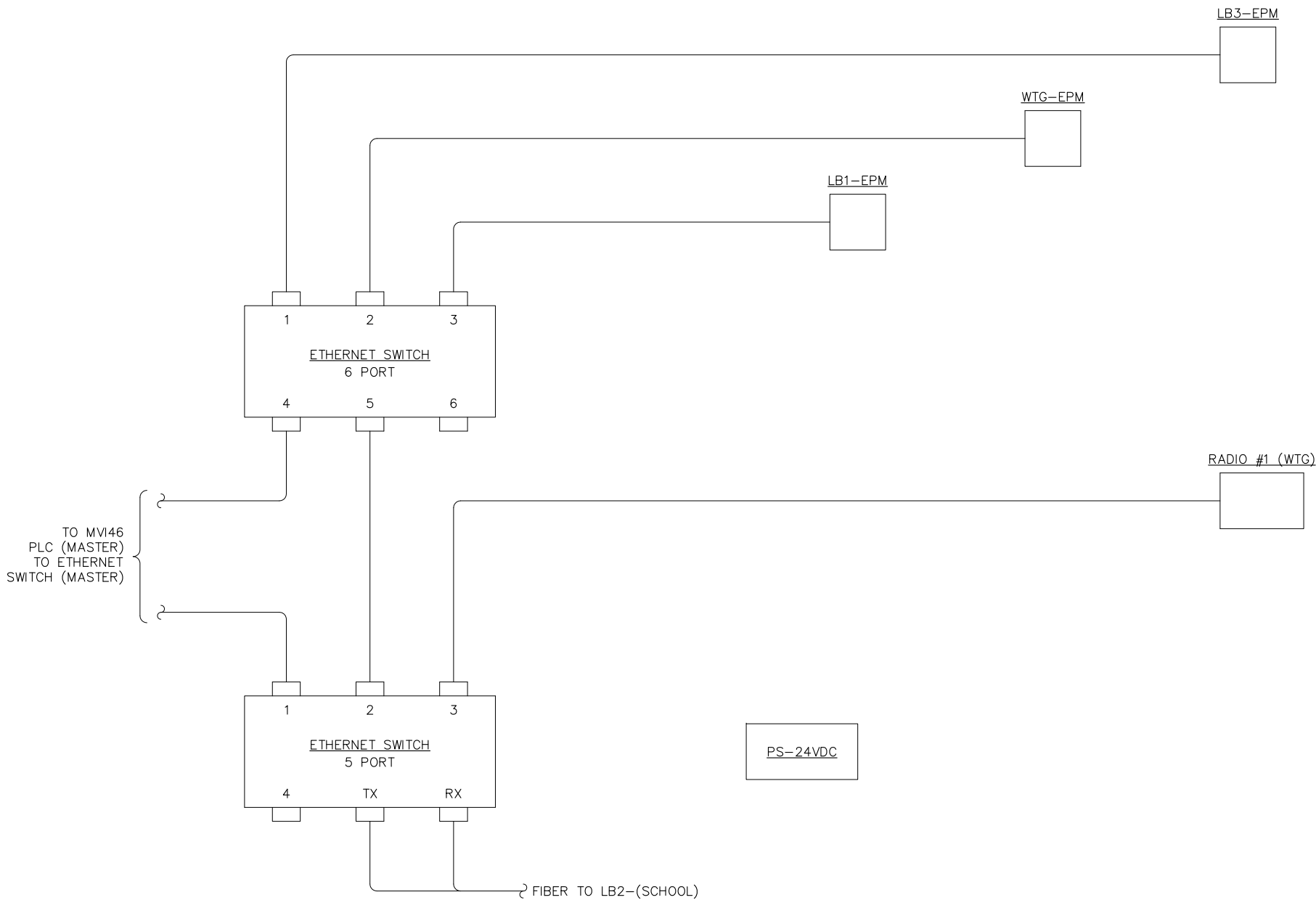


NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: EPM MONITORING & SYSTEM COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5602-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
		ENGINEERED & MANUFACTURED BY <i>Controlled Power, Inc.</i> BOTHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com	

LINE No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50



NIKOLSKI ETHERNET NETWORK, JOB No. 8555.		
DEVICE	I/P ADDRESS	LOCATION
PLC PRIMARY	192.168.1.183	GEN SWITCHGEAR
SERVER / SCADA	192.168.1.242	POWERHOUSE
OIU	192.168.1.182	GEN SWITCHGEAR
SERIAL GATEWAY	192.168.1.164	GEN SWITCHGEAR
MVI46 PROSOFT ® PLC	192.168.1.170	GEN SWITCHGEAR
RADIO 1, ACCESS POINT SN 402915, SUBNET ID=WTG-1	192.168.1.161	GEN SWITCHGEAR
WTG CONTROLLER I/O MODULE	192.168.1.189	WIND TURBINE
RADIO 2, REMOTE SN 403032, SUBNET ID=WTG-1	192.168.1.163	WIND TURBINE
PLC LOAD BANK 2	192.168.1.173	LODGE
PLC LOAD BANK 1	192.168.1.171	SCHOOL
EPM - WTG	192.168.1.175	GEN SWITCHGEAR
EPM - LB1	192.168.1.177	GEN SWITCHGEAR
EPM - LB2	192.168.1.179	LODGE
EPM - LB3	192.168.1.181	GEN SWITCHGEAR
WTG WEB SERVER, UN & PW = SERVIC OR ADMINI	192.168.1.201	WIND TURBINE
ROUTER	?	POWERHOUSE
WEB CAM	?	POWERHOUSE

NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

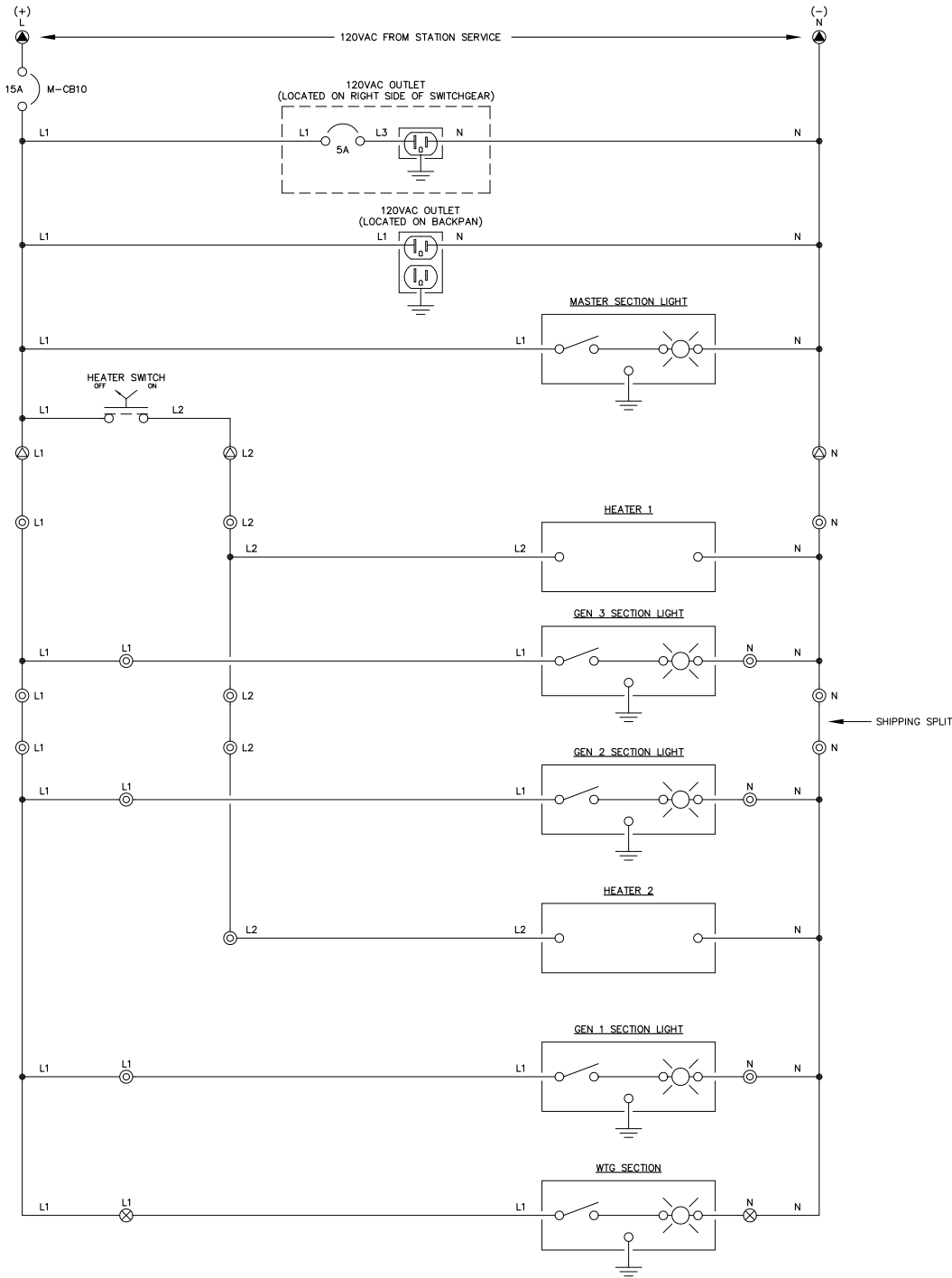
A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: ETHERNET NETWORK, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5603-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
 RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

LINE No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50



LINE No.
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: HEATER & LIGHTING CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-5701-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			

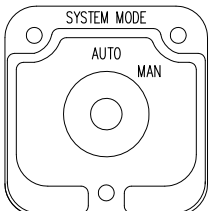
ALASKA ENERGY AUTHORITY
RURAL ENERGY GROUP
813 W. NORTHERN LIGHTS BLVD.
ANCHORAGE, ALASKA 99503
HTTP://WWW.AIDEA.ORG

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com

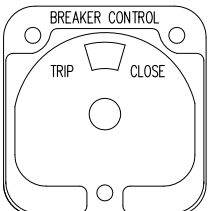
SYSTEM MODE SWITCH – SMS



(ELECTROSWITCH 24201C)
KNURLED HANDLE
QTY 1

DECK	CONTACTS	POS.
1	12	11
	13	15
	16	17

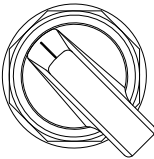
BREAKER CONTROL SWITCH – 52CS



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

DECK	CONTACTS	POS.
1	11	18
	16	17

GOVERNOR MODE SWITCH – GMS

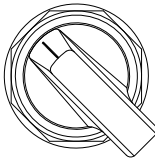


(MAINTAINED)
LOCATED ON BACK PAN

POS.
IDL.
RATED



HEATER CONTROL SWITCH – HCS

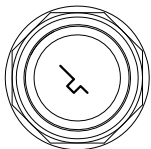


(MAINTAINED)
LOCATED ON MASTER BACK PAN

POS.
OFF
ON



ENGINE CONTROL SWITCH – ECS



(MAINTAINED)

POS.
OFF
RUN



NOTE:

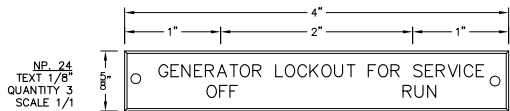
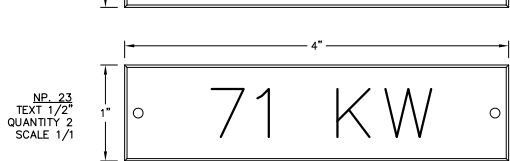
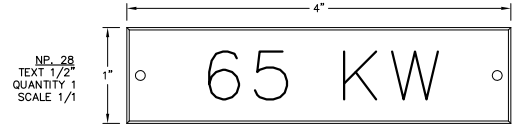
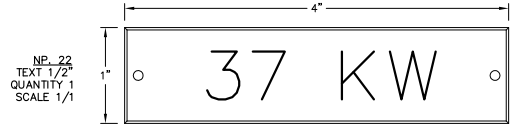
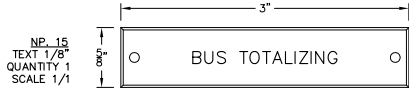
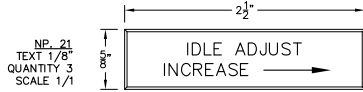
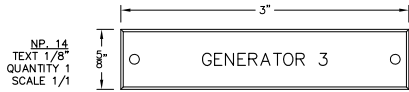
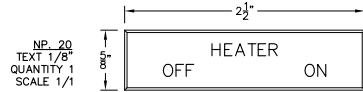
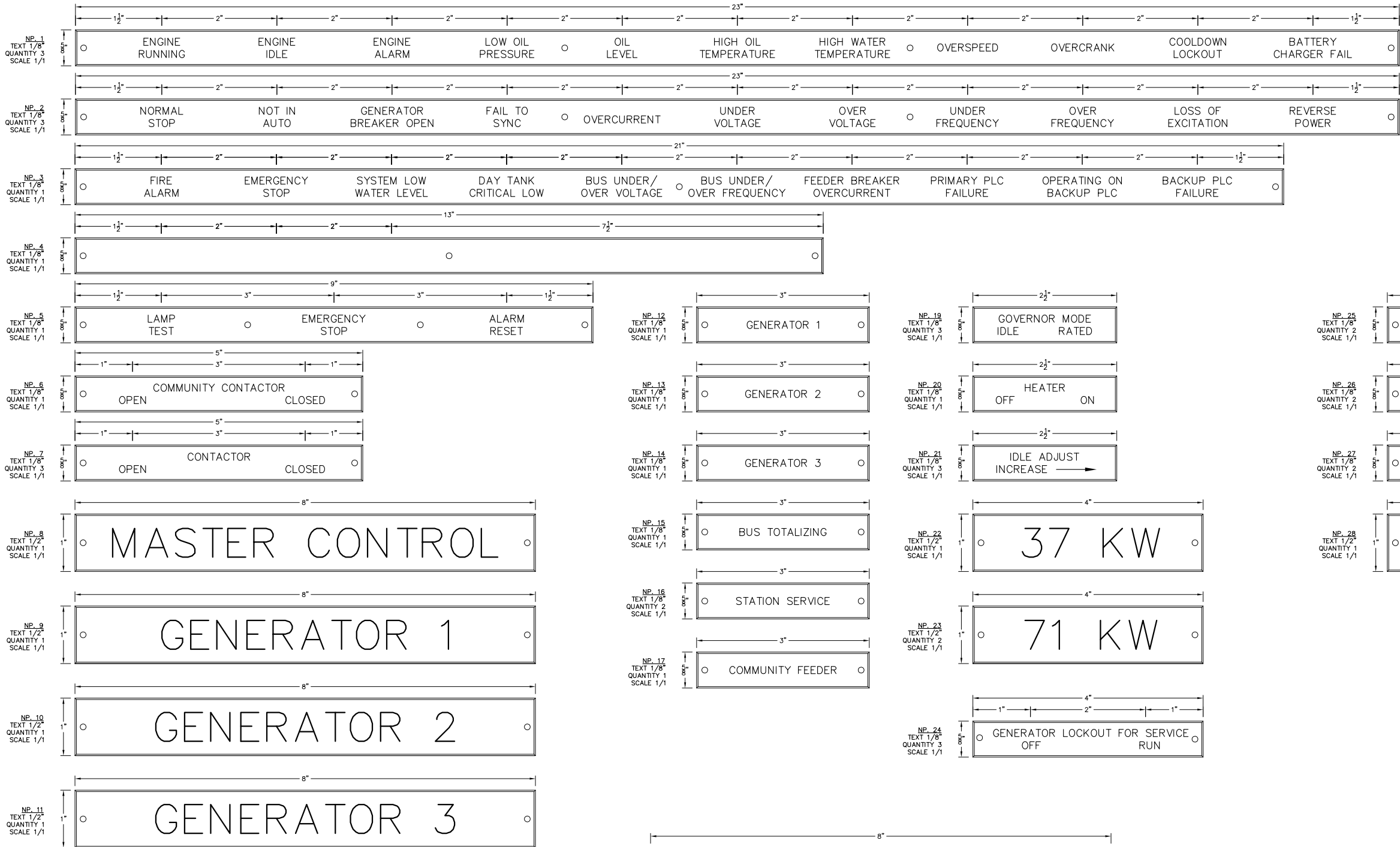
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555–3101–D.

A	03—24—17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: CONTROL SWITCH TARGET DIAGRAM			
SCALE: NONE		DATE: 03—14—17	DWN. BY: GPN
DWG. No: 8555—6101—D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)–485–1778 www.controlledpowerinc.com



- 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, (1) EACH END.
- INDICATES THAT NAMEPLATE SHALL BE BRUSHED ALUMINUM WITH BLACK ENGRAVED LETTERS.

NP_18
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: 8555

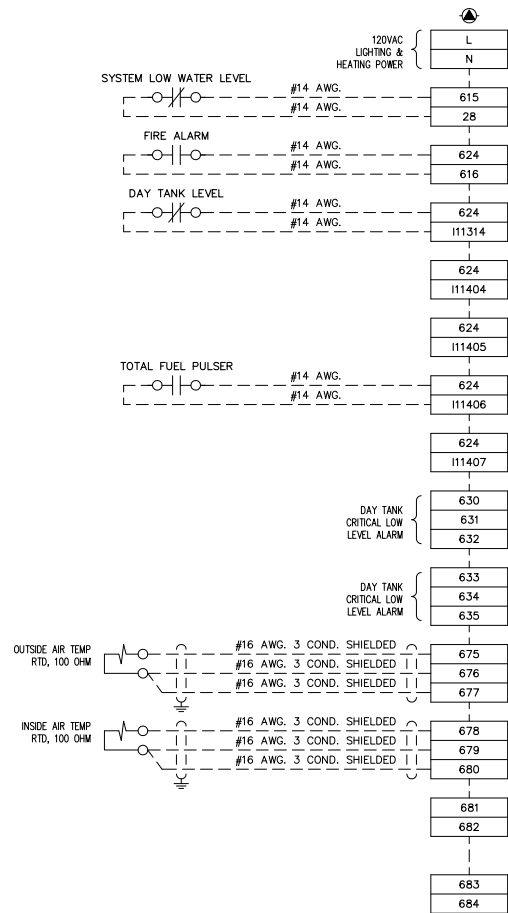
1" 0" 1" 2"
SCALE: 1"= 1"

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

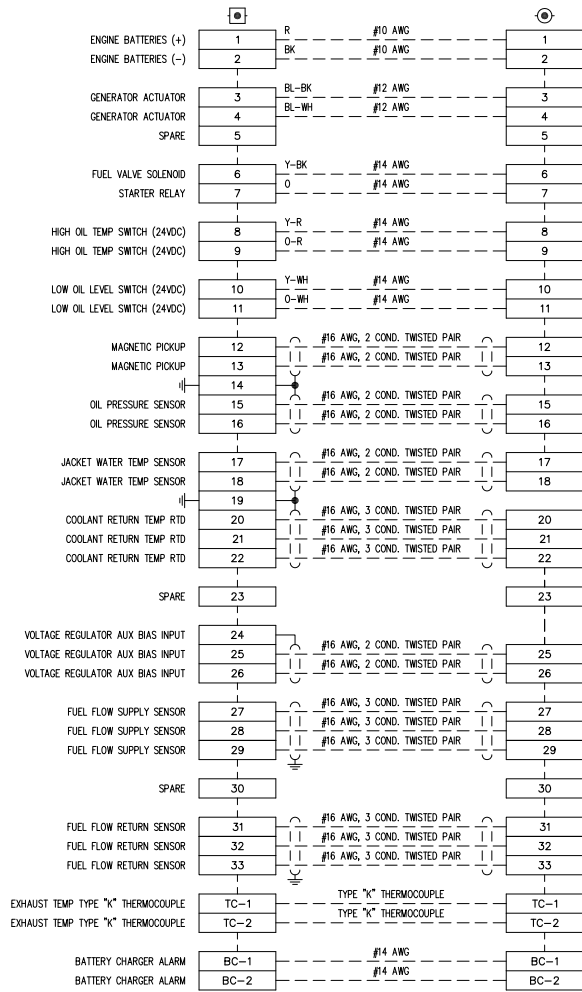
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID CONTROLLED POWER JOB No. 8555			
TITLE: NAMEPLATE ENGRAVING SCHEDULE, FABRICATION DIAGRAM			
SCALE: NONE	DATE: 03-14-17	DWN. BY: GPN	
DWG. No: 8555-6201-D	SHEET: 1 OF 1	CKD. BY: RTH	
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	
ENGINEERED & MANUFACTURED BY Controlled Power, Inc. BOTHELL, WASHINGTON USA (425)-485-1778 www.controlledpowerinc.com			

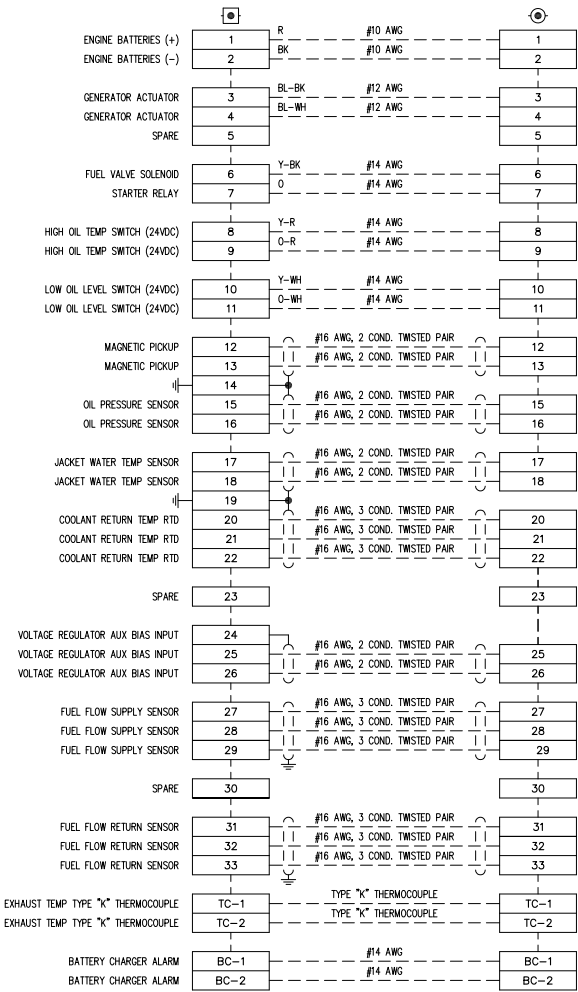
MASTER CONTROL



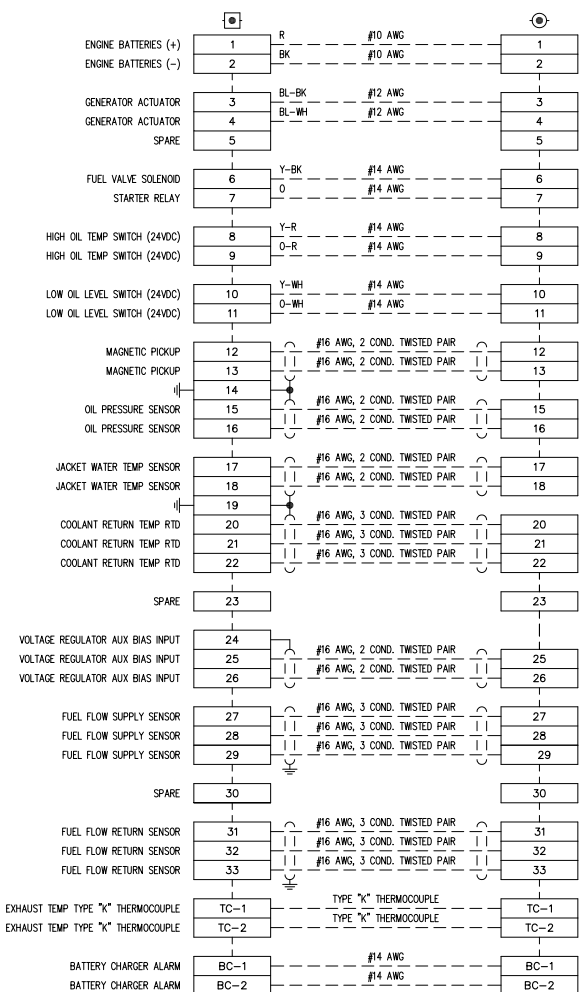
GENERATOR 3



GENERATOR 2



GENERATOR 1



NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 8555-3101-D.

A	03-24-17	FIELD REVISION	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. PREPAID		CONTROLLED POWER JOB No. 8555	
TITLE: INTERCONNECTION DIAGRAM			
SCALE: NONE		DATE: 03-14-17	DWN. BY: GPN
DWG. No: 8555-7101-D		SHEET: 1 OF 1	CKD. BY: RTH
JOB: NIKOLSKI UPGRADE			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



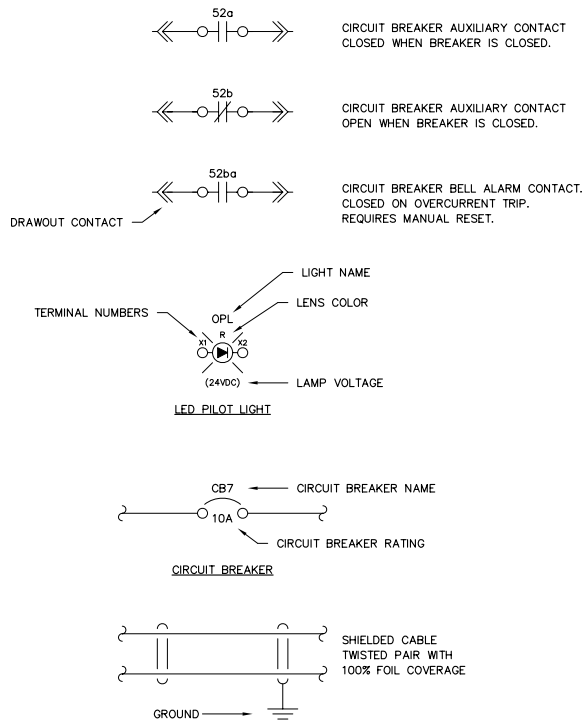
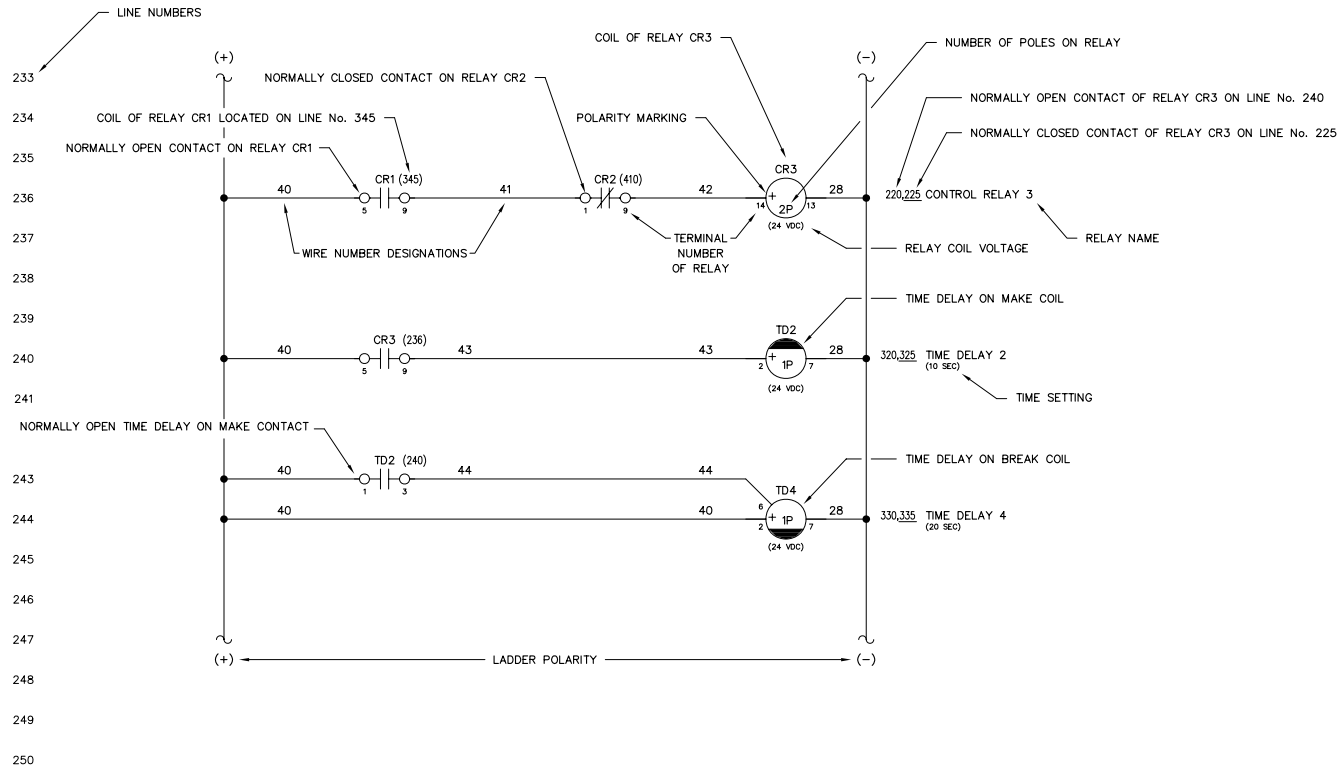
ENGINEERED & MANUFACTURED BY
Controlled Power, Inc.
BOTHELL, WASHINGTON USA
(425)-485-1778 www.controlledpowerinc.com



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

RUBY GENERATOR SWITCHGEAR
ALASKA ENERGY AUTHORITY PURCHASE ORDER No. REG-11-044
CONTROLLED POWER, INC. JOB No. 7146

<u>DRAWING No.</u>	<u>DRAWING TITLE</u>
7146-2101-D	COVER SHEET
7146-3101-D	SCHEMATIC LEGEND AND NOTES
7146-4101-D	GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM
7146-4201-D	GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM
7146-5101-D	GENERATOR SINGLE LINE, SCHEMATIC DIAGRAM
7146-5201-D	GENERATOR 1 AC THREE LINE, SCHEMATIC DIAGRAM
7146-5202-D	GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM
7146-5203-D	GENERATOR 3 AC THREE LINE, SCHEMATIC DIAGRAM
7146-5204-D	MASTER AC THREE LINE, SCHEMATIC DIAGRAM
7146-5205-D	VFD AC THREE LINE, SCHEMATIC DIAGRAM
7146-5301-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
7146-5302-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
7146-5303-D	GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM
7146-5304-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
7146-5305-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
7146-5306-D	GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM
7146-5307-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
7146-5308-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
7146-5309-D	GENERATOR 3 DC CONTROL, SCHEMATIC DIAGRAM
7146-5310-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
7146-5311-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
7146-5312-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
7146-5313-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
7146-5314-D	MASTER DC CONTROL, SCHEMATIC DIAGRAM
7146-5315-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
7146-5316-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
7146-5317-D	VFD DC CONTROL, SCHEMATIC DIAGRAM
7146-5318-D	VFD/DISTRIBUTION DC CONTROL, SCHEMATIC DIAGRAM
7146-5401-D	FEEDER BREAKER CONTROL, SCHEMATIC DIAGRAM
7146-5501-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
7146-5502-D	PLC COMMUNICATION, SCHEMATIC DIAGRAM
7146-5601-D	COMMUNICATION NETWORK DIAGRAM
7146-5602-D	COMMUNICATION NETWORK DIAGRAM
7146-5701-D	HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM
7146-6101-D	CONTROL SWITCH TARGET DIAGRAM
7146-6201-D	NAMEPLATE ENGRAVING SCHEDULE, FABRICATION DIAGRAM
7146-6202-D	ANNUNCIATOR WINDOWS, FABRICATION DIAGRAM
7146-7101-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

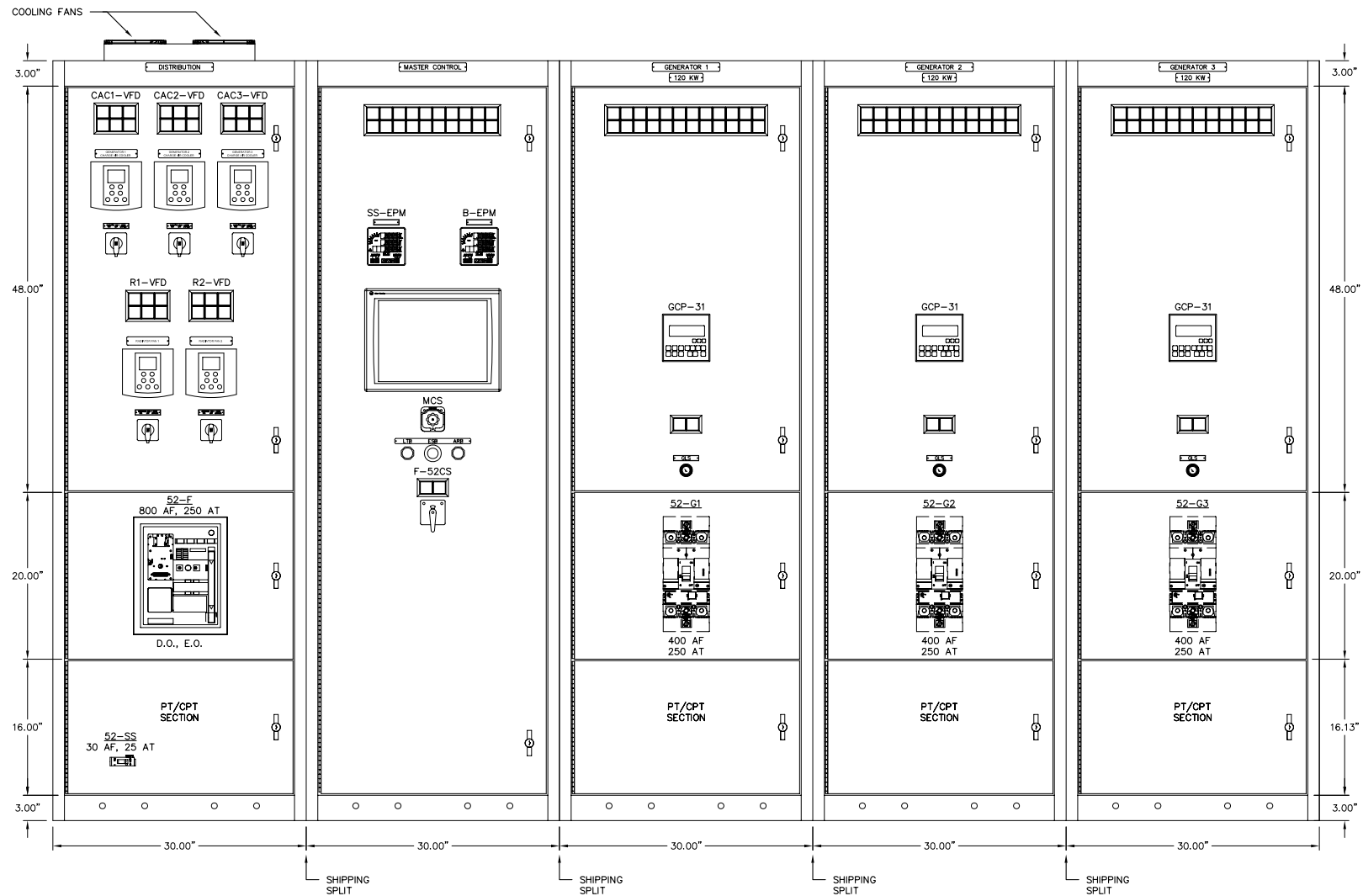
NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

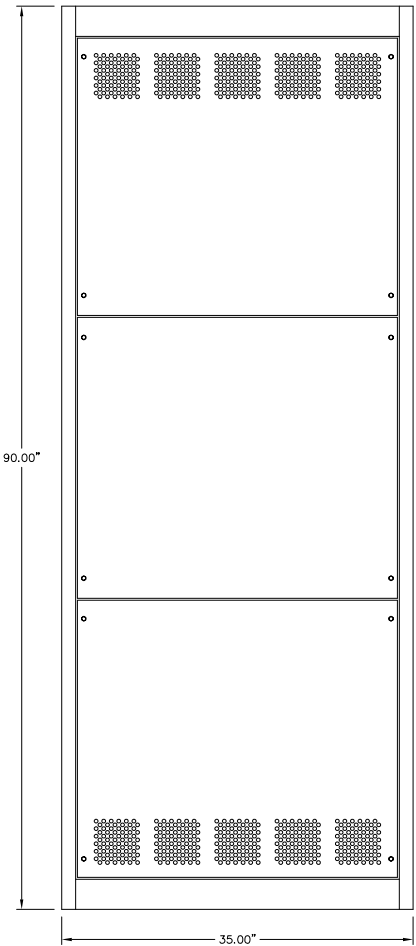
ALASKA
ENERGY AUTHORITY

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

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044			
CONTROLLED POWER JOB No. 7146			
TITLE: SCHEMATIC LEGEND & NOTES			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-3101-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			



GENERATOR SWITCHGEAR — FRONT VIEW
277/480V, 1600A, COPPER BUS, 3Ø, 4W 65 KAIC



SIDE VIEW

- NOTES:
1. EACH SECTION SHIPPED INDIVIDUALLY.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044 CONTROLLED POWER JOB No. 7146			
TITLE: GENERATOR SWITCHGEAR ELEVATION VIEW, OUTLINE DIAGRAM			
SCALE: 1/10		DATE: 02-09-11	DWN. BY: GPN
DWG. No: 7146-4101-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

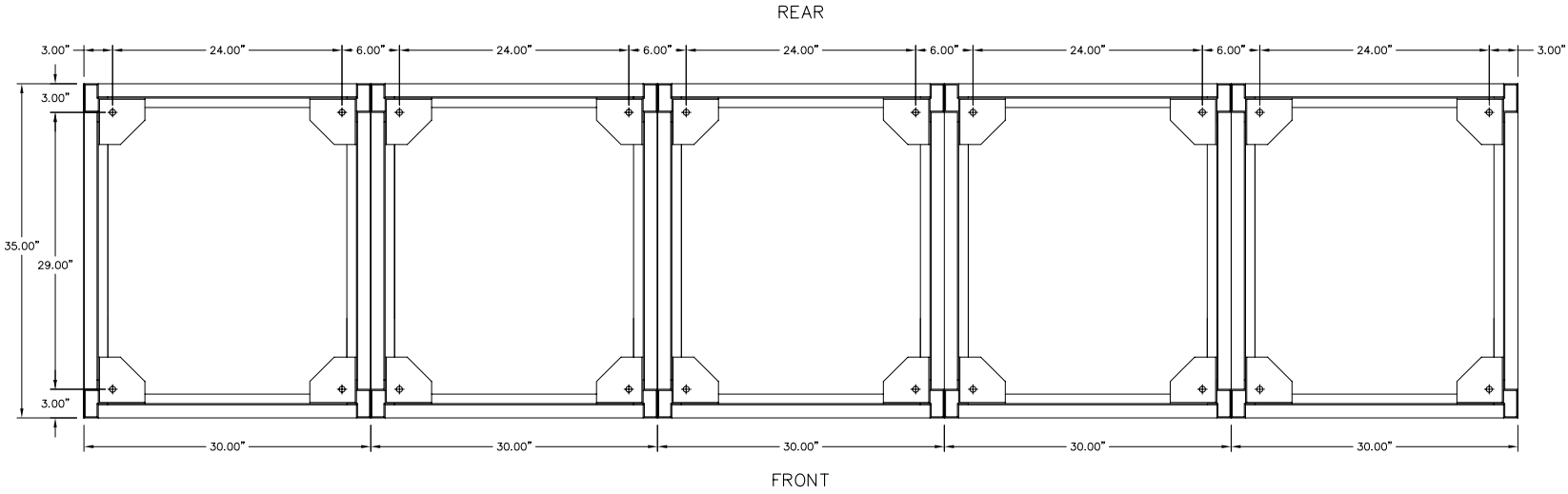
NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

ALASKA

ENERGY AUTHORITY

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



GENERATOR SWITCHGEAR — PLAN VIEW

- NOTES:
1. EACH SECTION SHIPPED INDIVIDUALLY.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: GENERATOR SWITCHGEAR PLAN VIEW, OUTLINE DIAGRAM			
SCALE: 1/10		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-4201-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

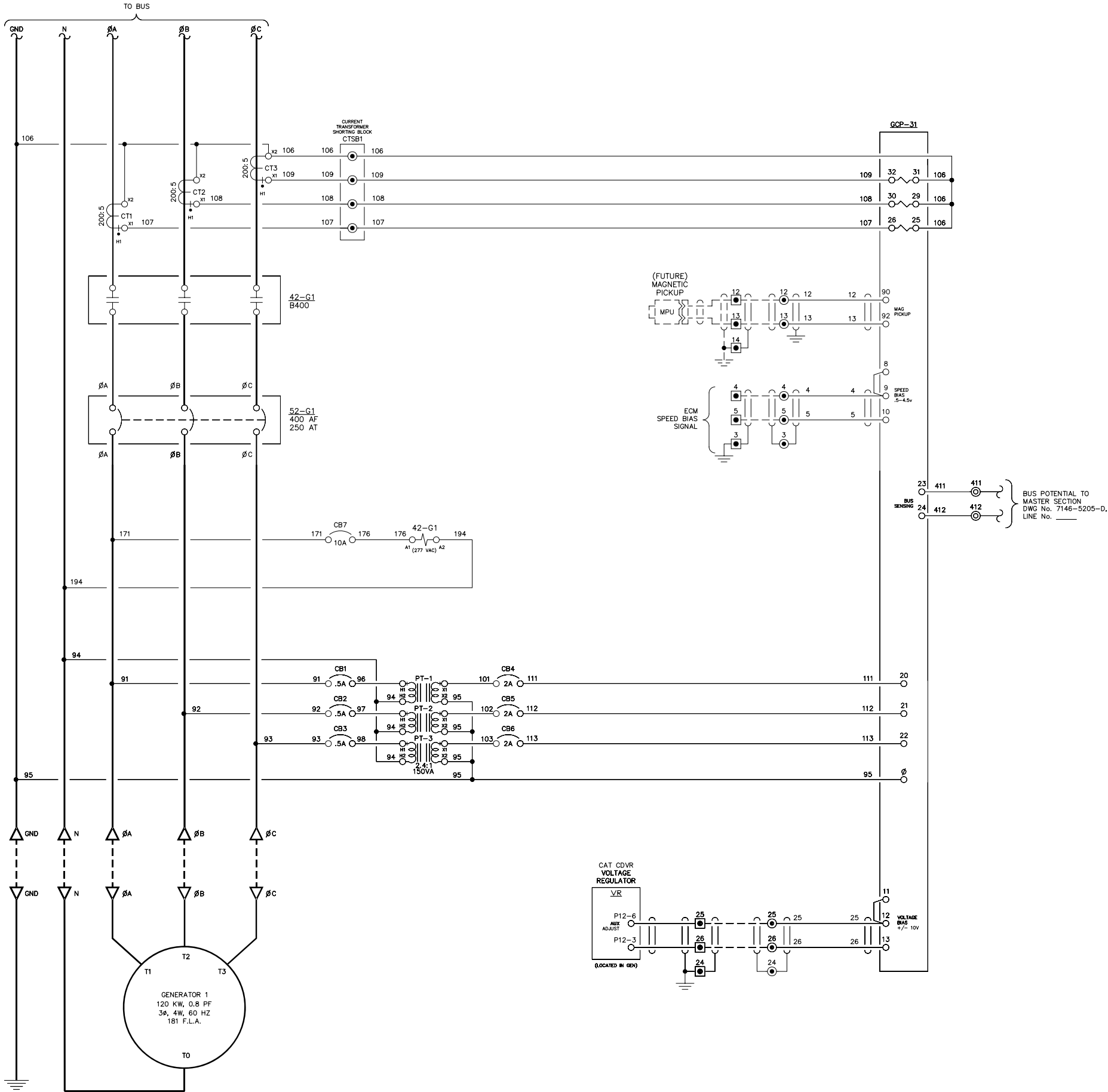
NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



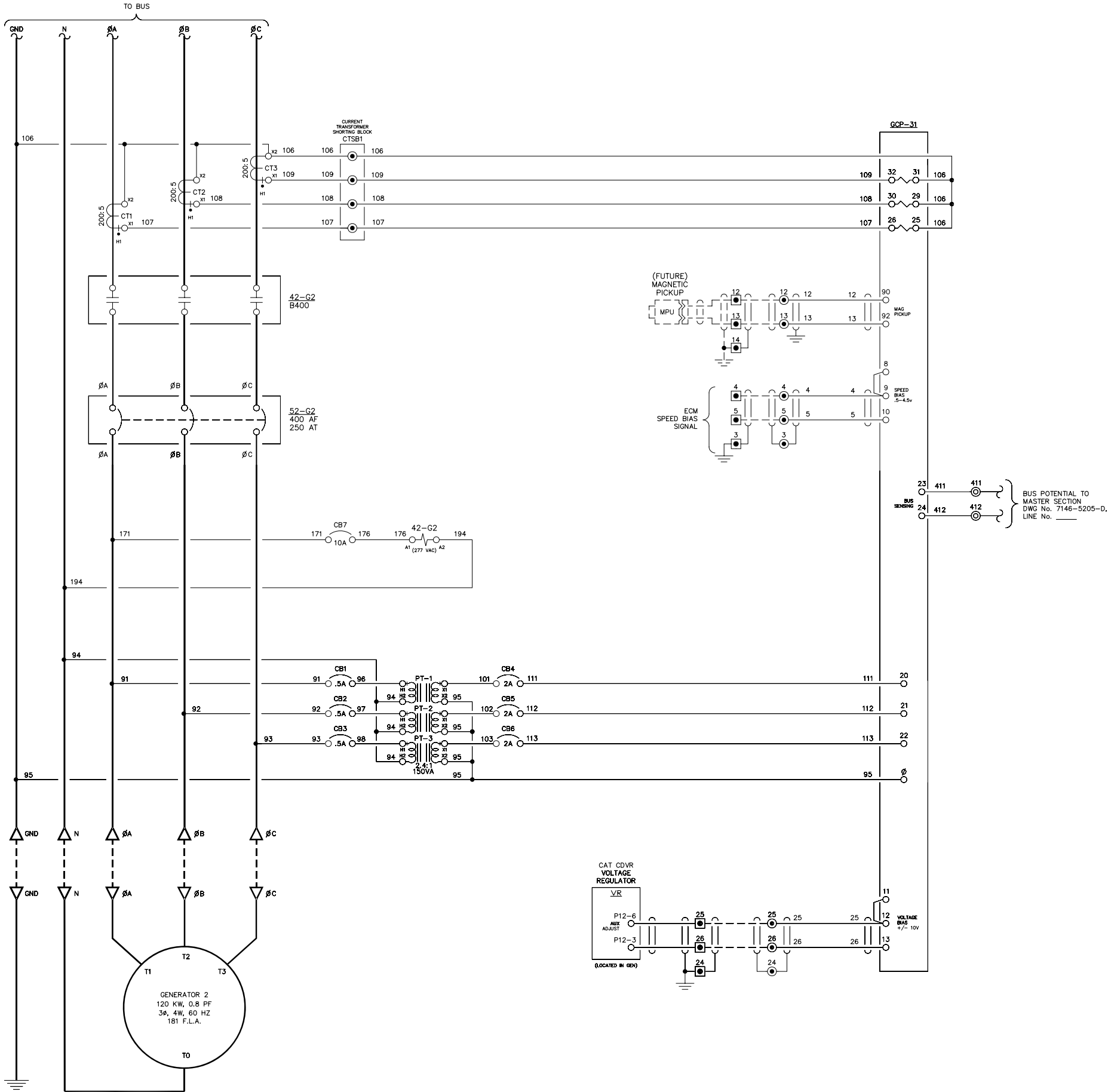
ALASKA
ENERGY AUTHORITY

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

LINE No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50



LINE No.
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

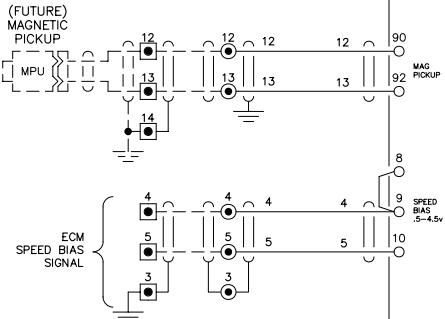


NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044 CONTROLLED POWER JOB No. 7146			
TITLE: GENERATOR 2 AC THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5202-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

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

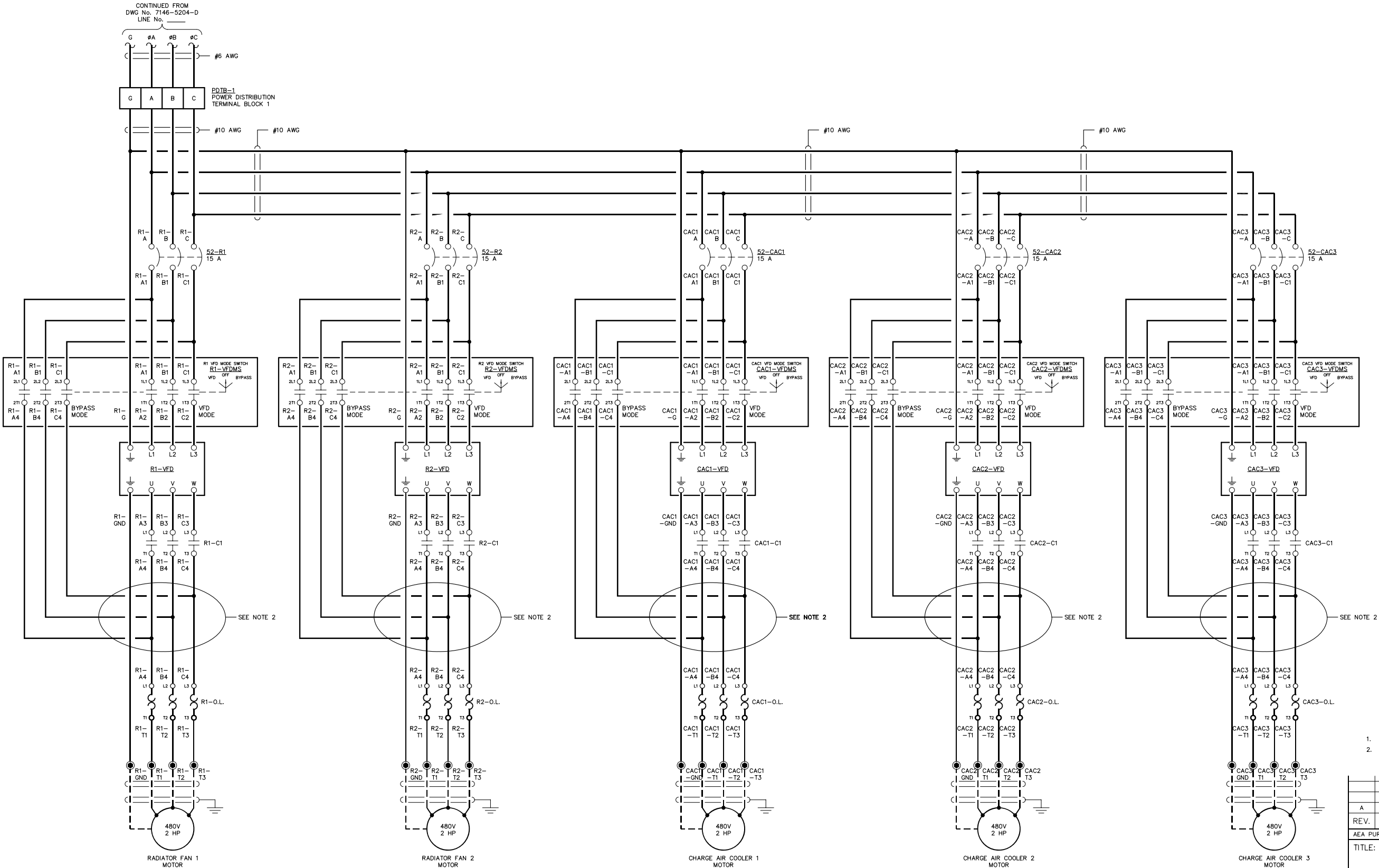


ALASKA
ENERGY AUTHORITY

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

Plot date: 2011/4/27 - 9:5

201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250



- NOTE:
- FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.
 - VFD LOAD WIRES SHALL BE ROUTED SEPARATE FROM ALL OTHER WIRING OR SHIELDED TO AVOID RF INTERFERENCE.

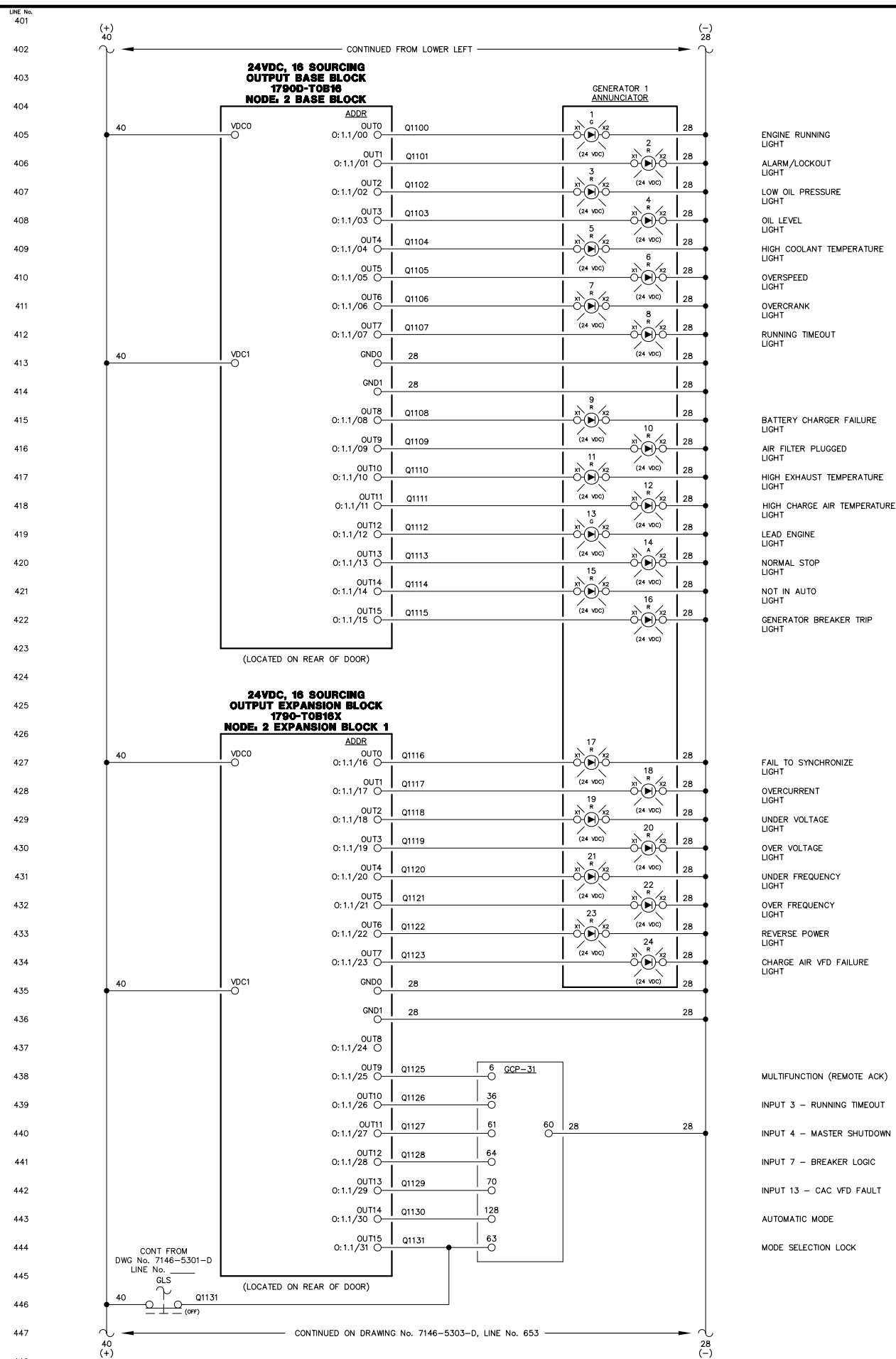
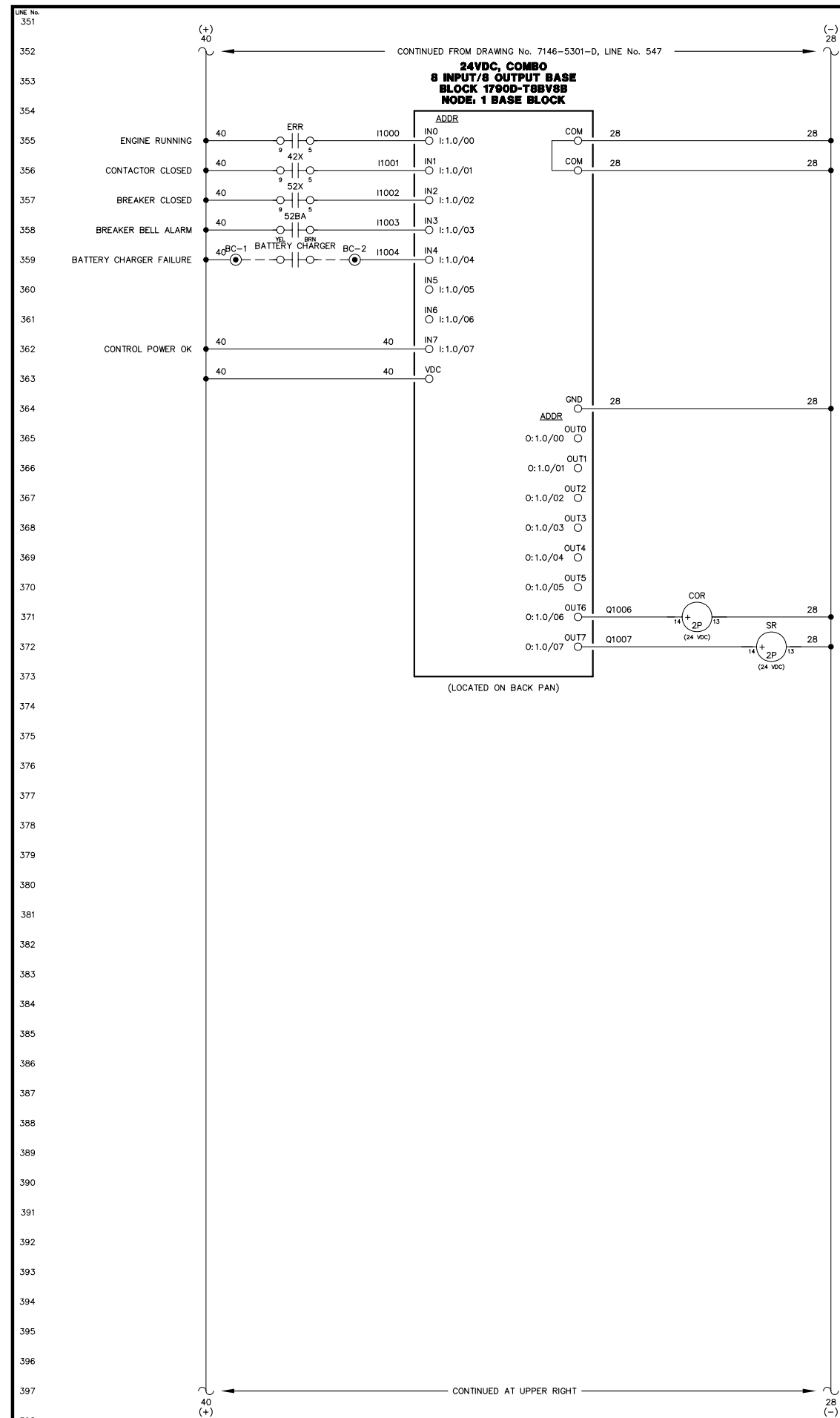
A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044			
CONTROLLED POWER JOB No. 7146			
TITLE: VFD THREE LINE, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5205-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



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

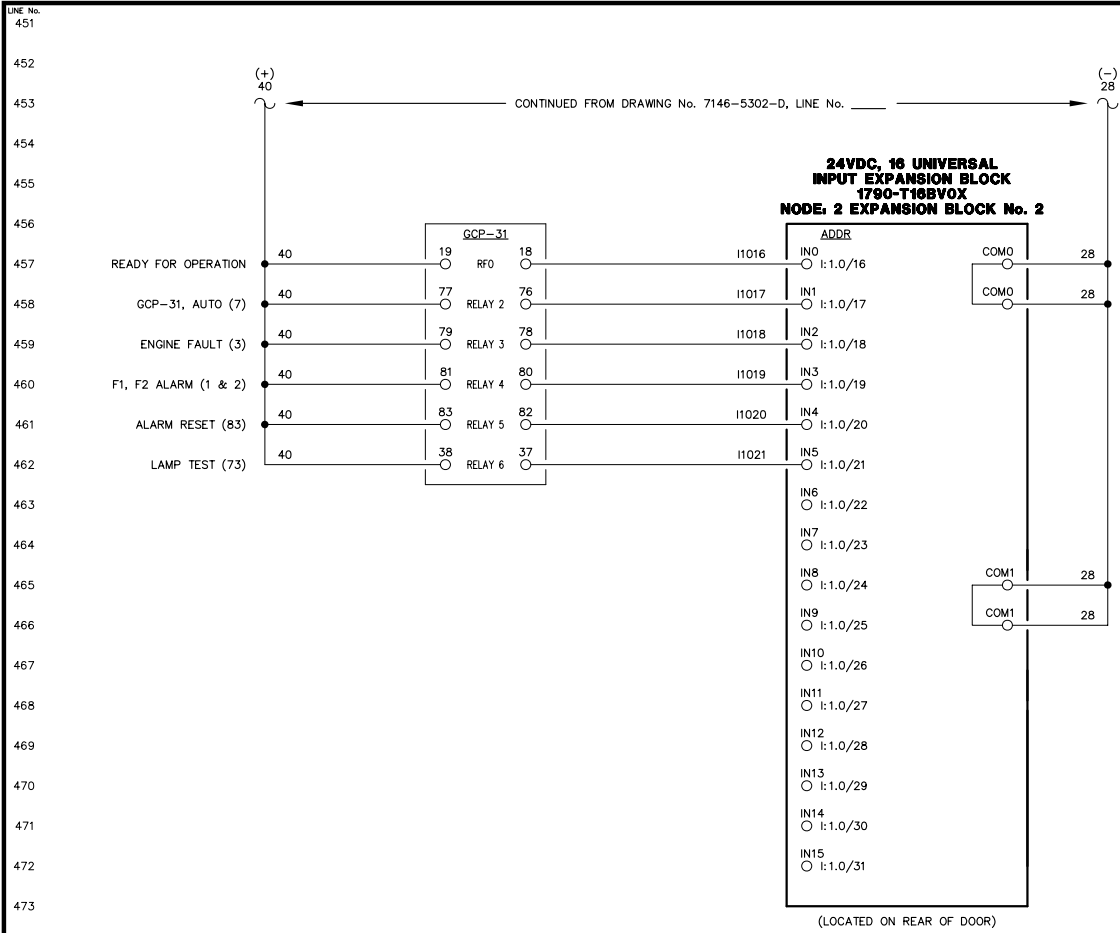


NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



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



LINE No. 501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: GENERATOR 1 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5303-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

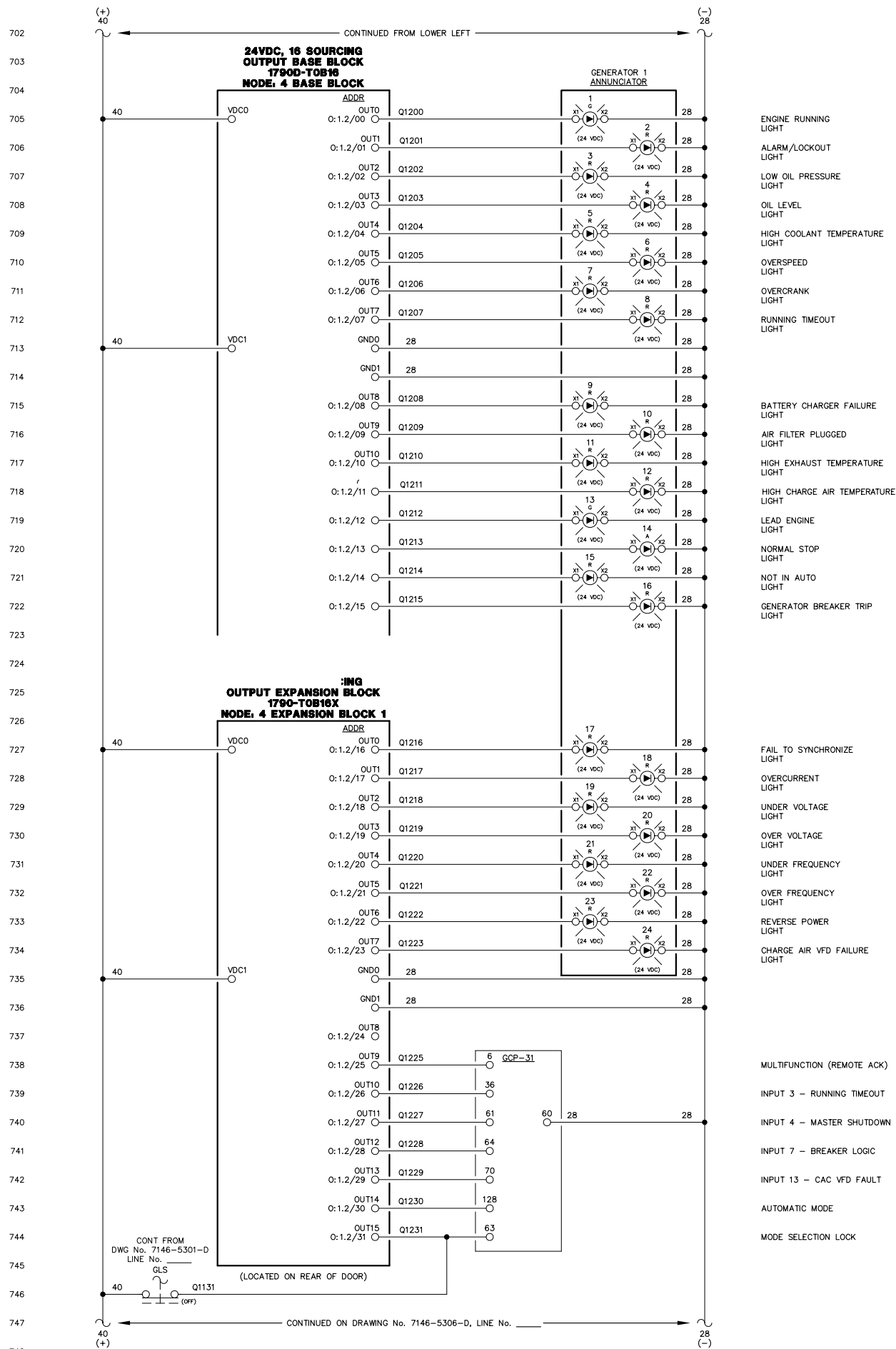
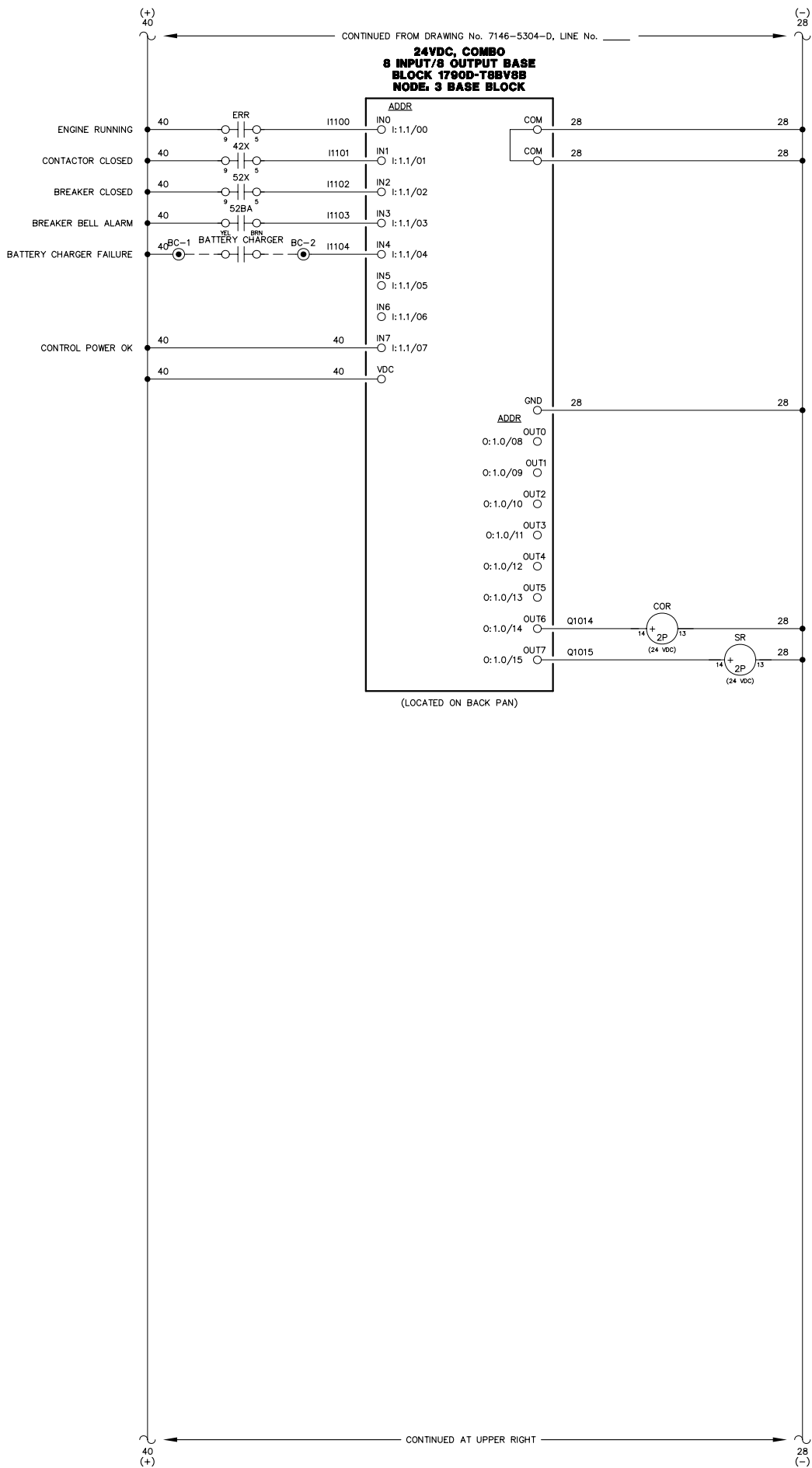
RURAL ENERGY GROUP

813 W. NORTHERN LIGHTS BLVD.

ANCHORAGE, ALASKA 99503

HTTP://WWW.AIDEA.ORG

Plot date: 2011/4/27 - 9:53



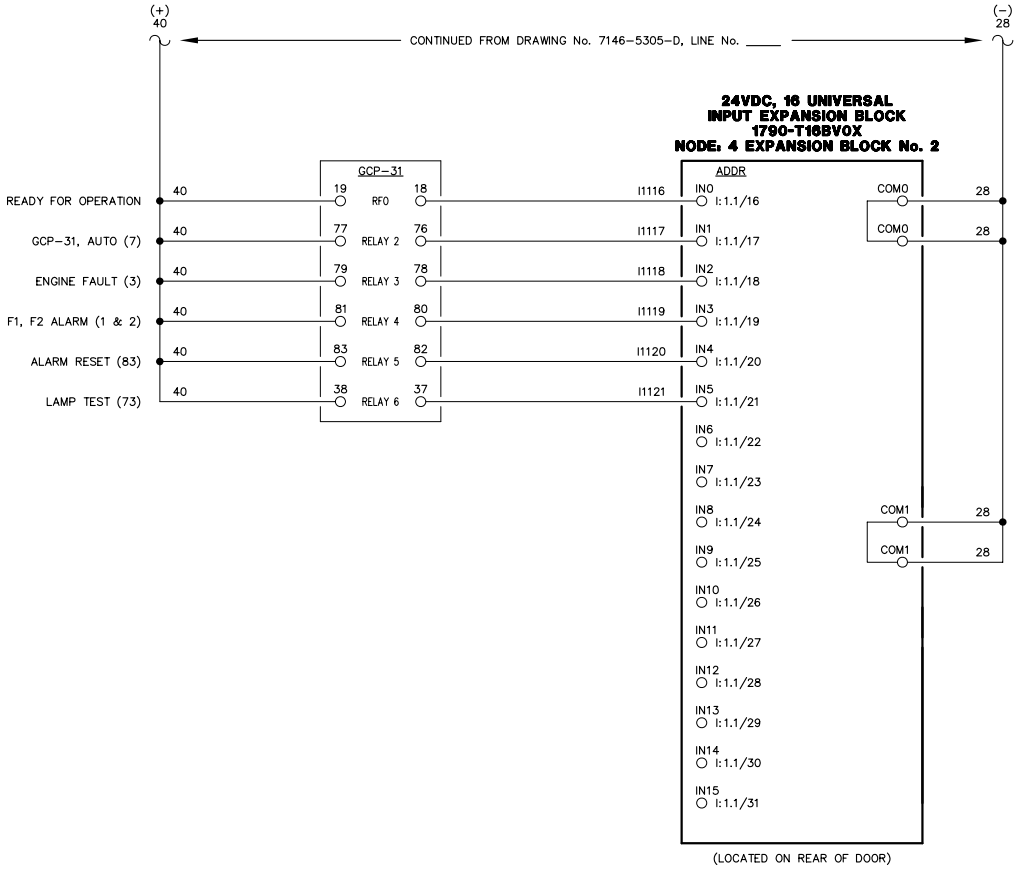
NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



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

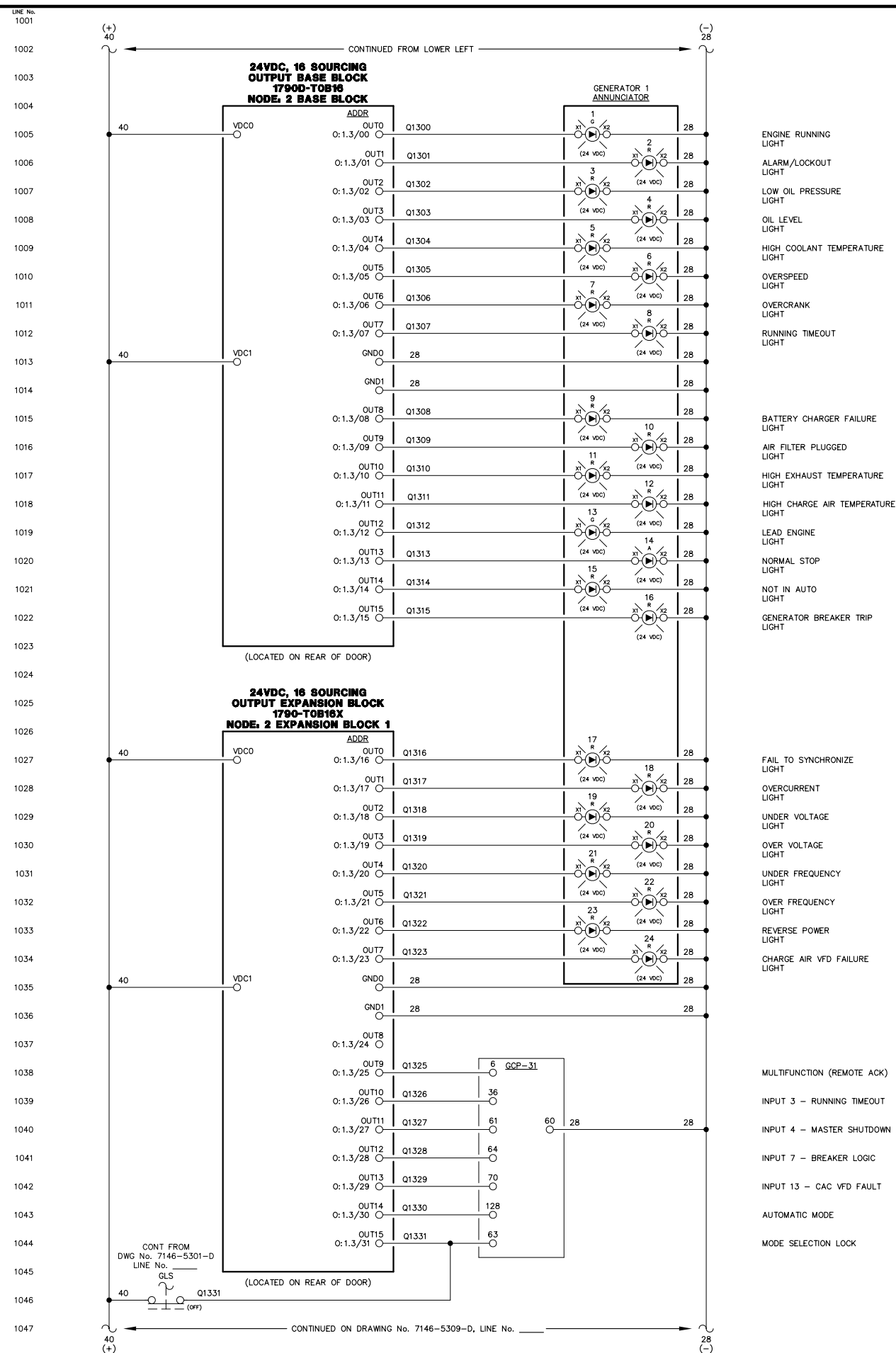
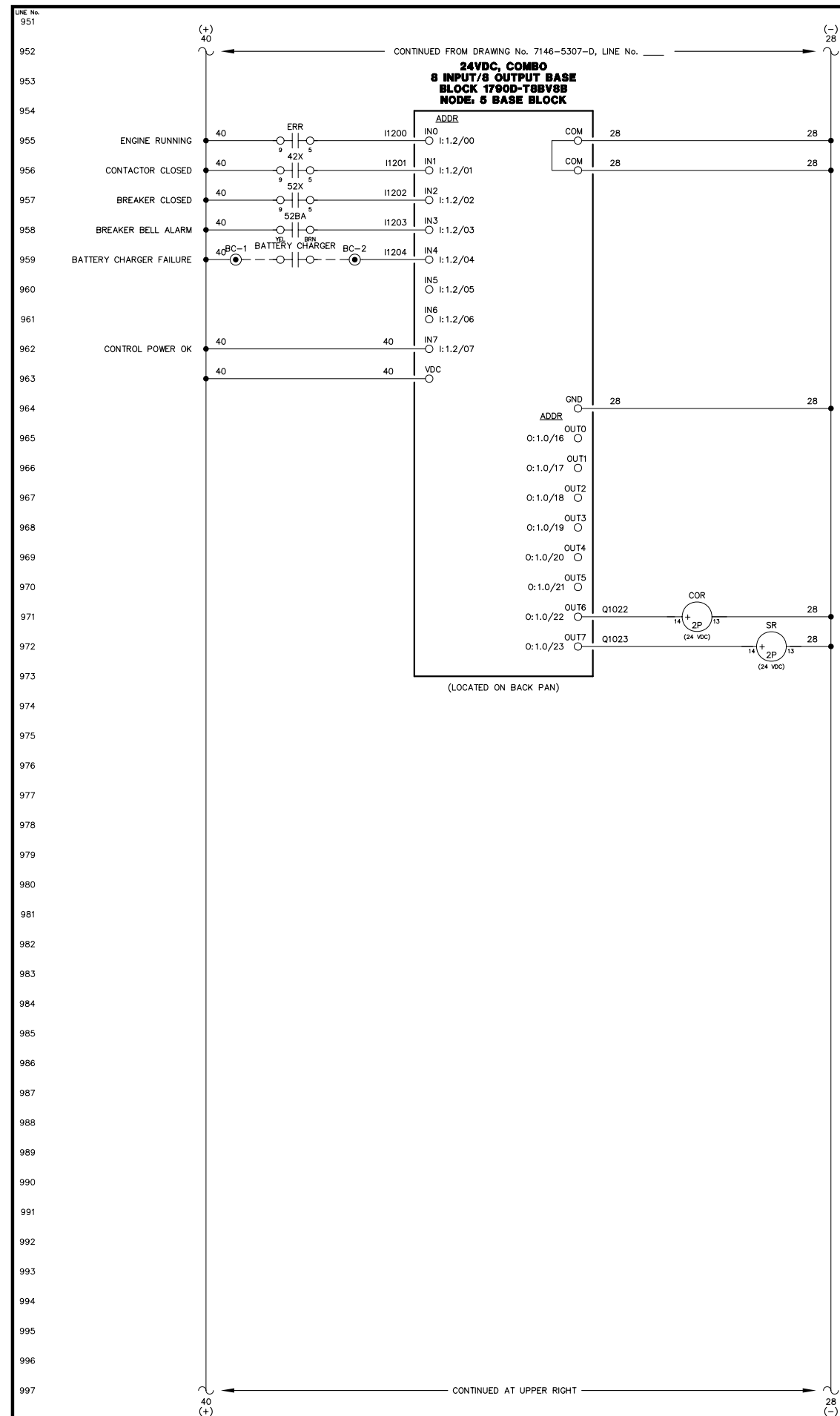
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800



801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850

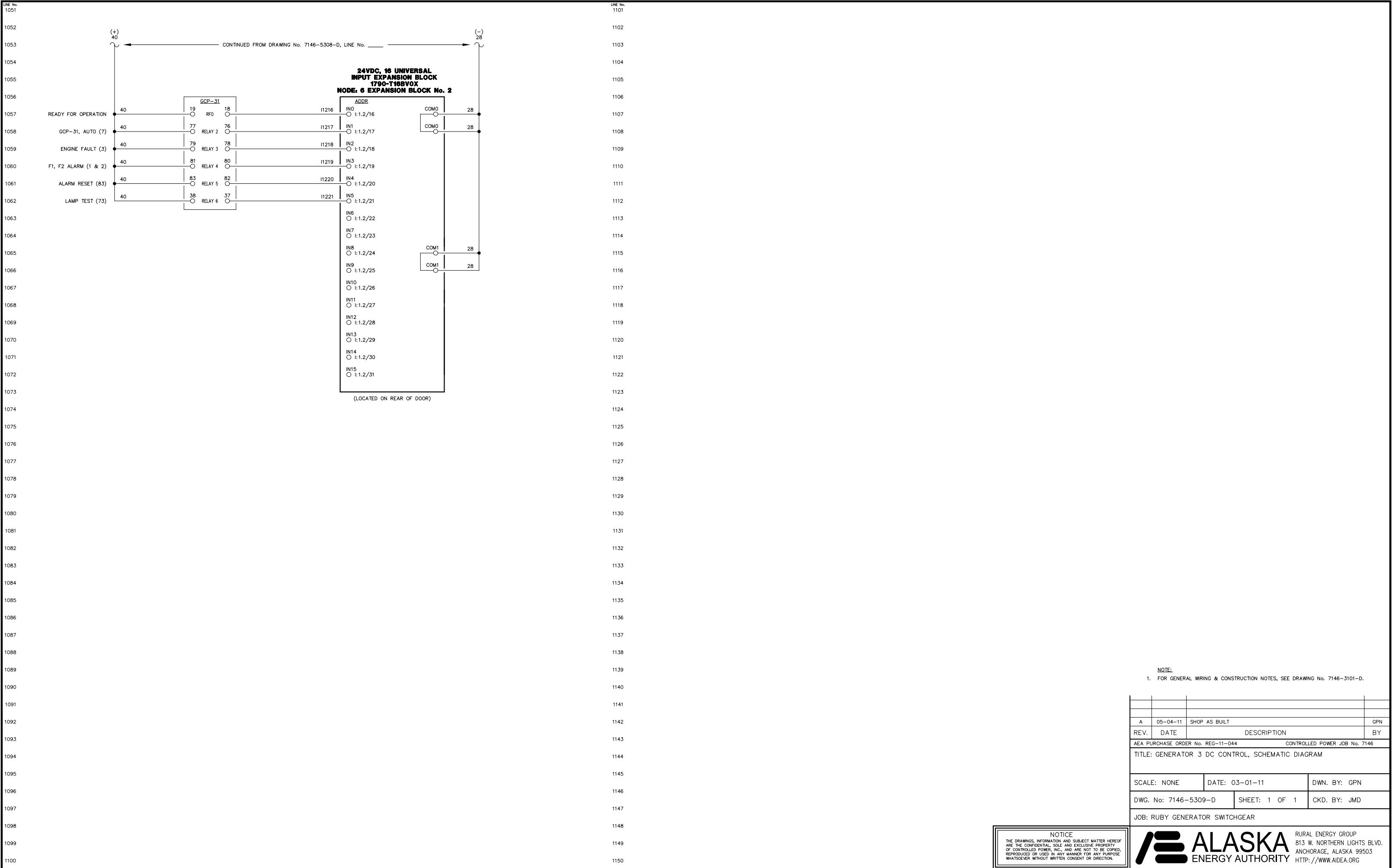
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

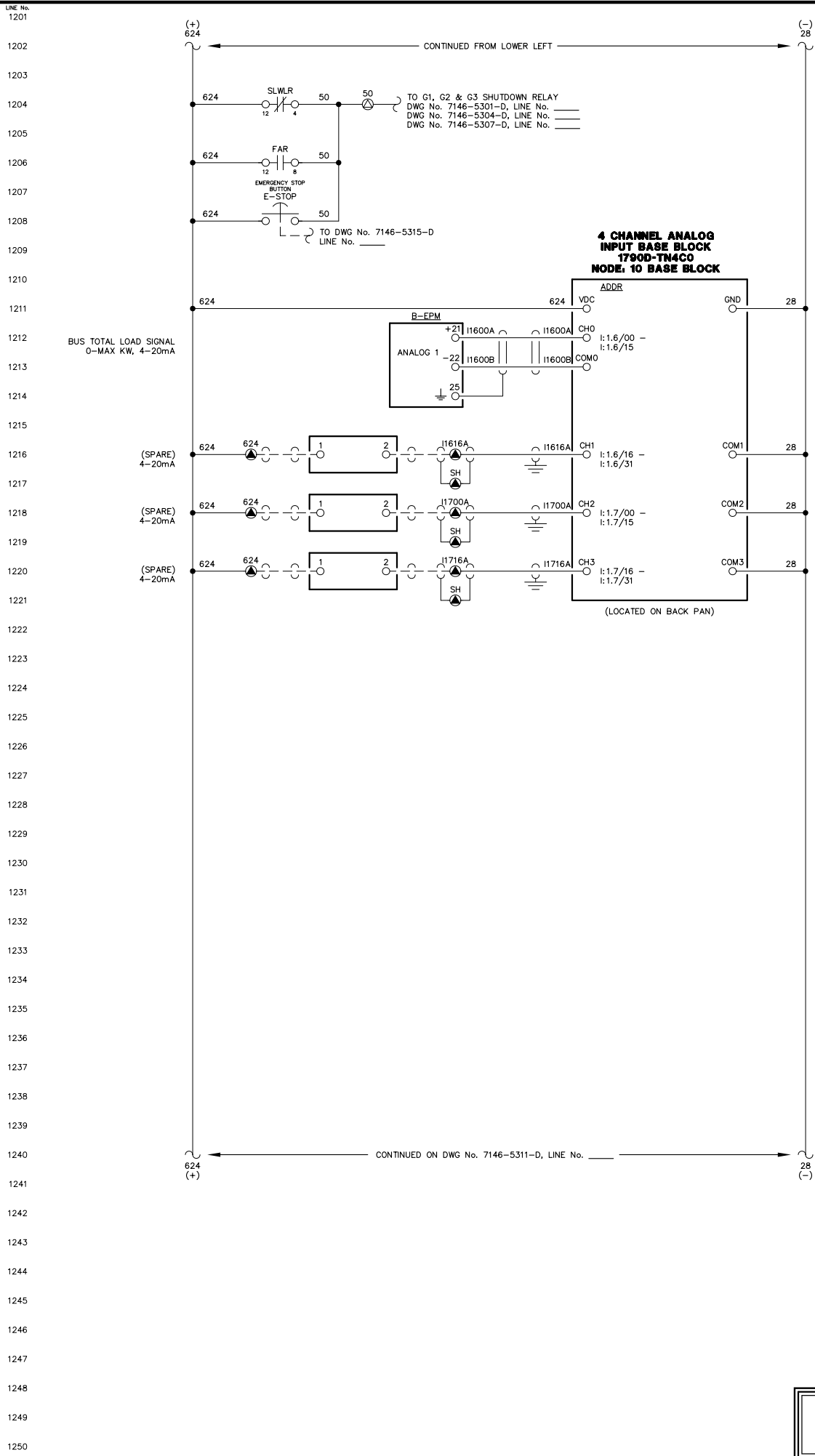
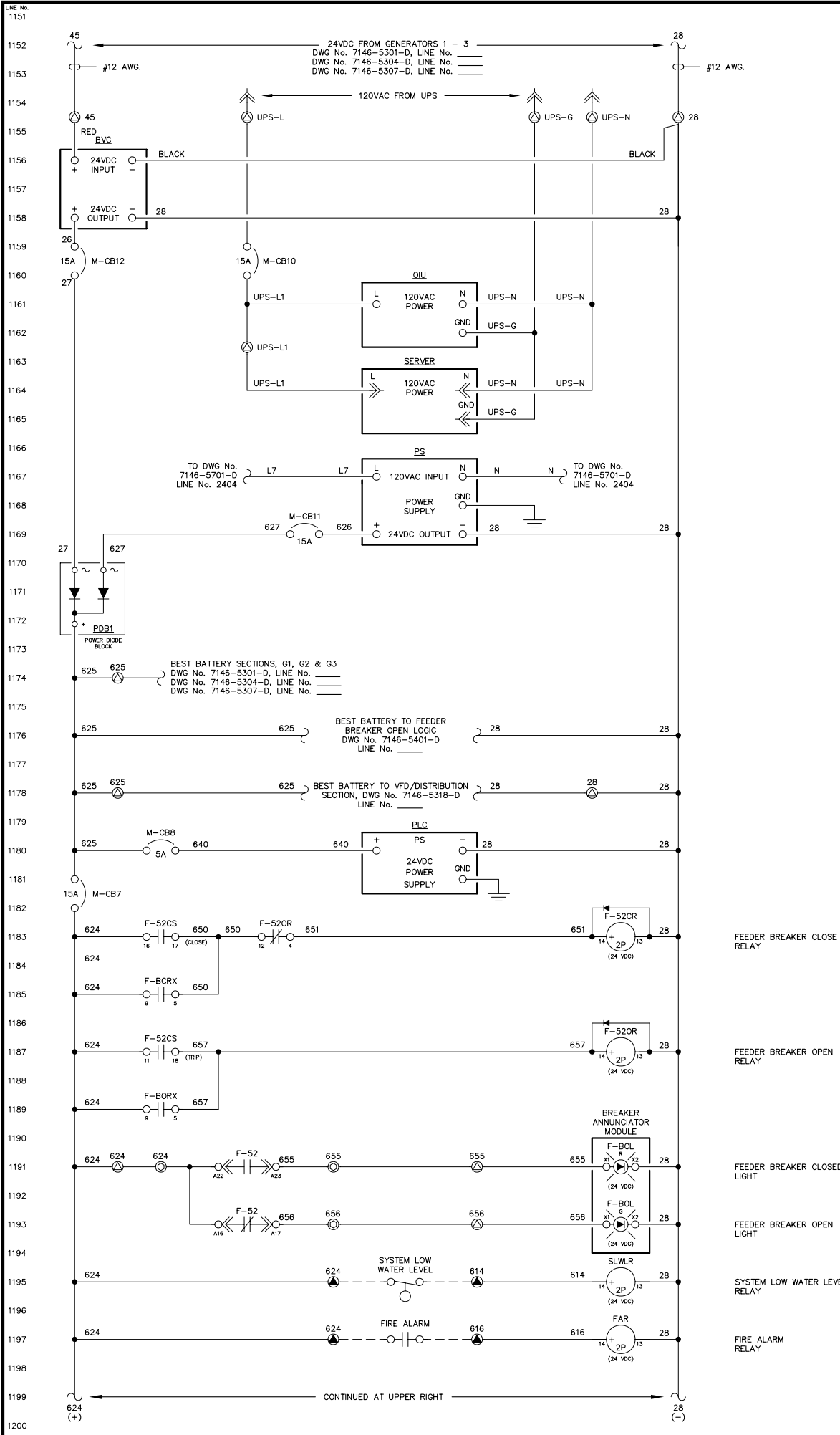
A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: GENERATOR 2 DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5306-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP: //WWW.AIDEA.ORG	



NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



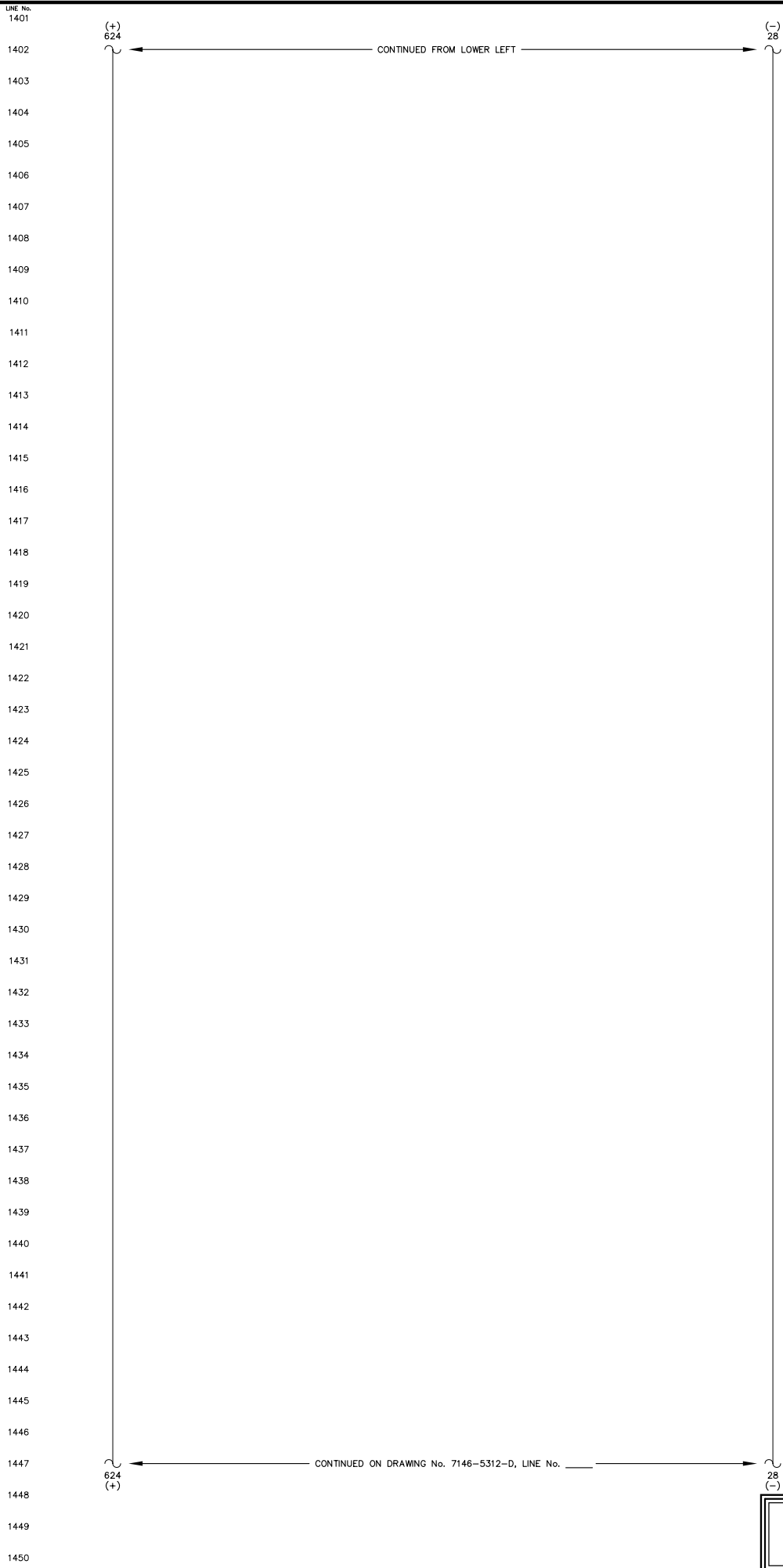
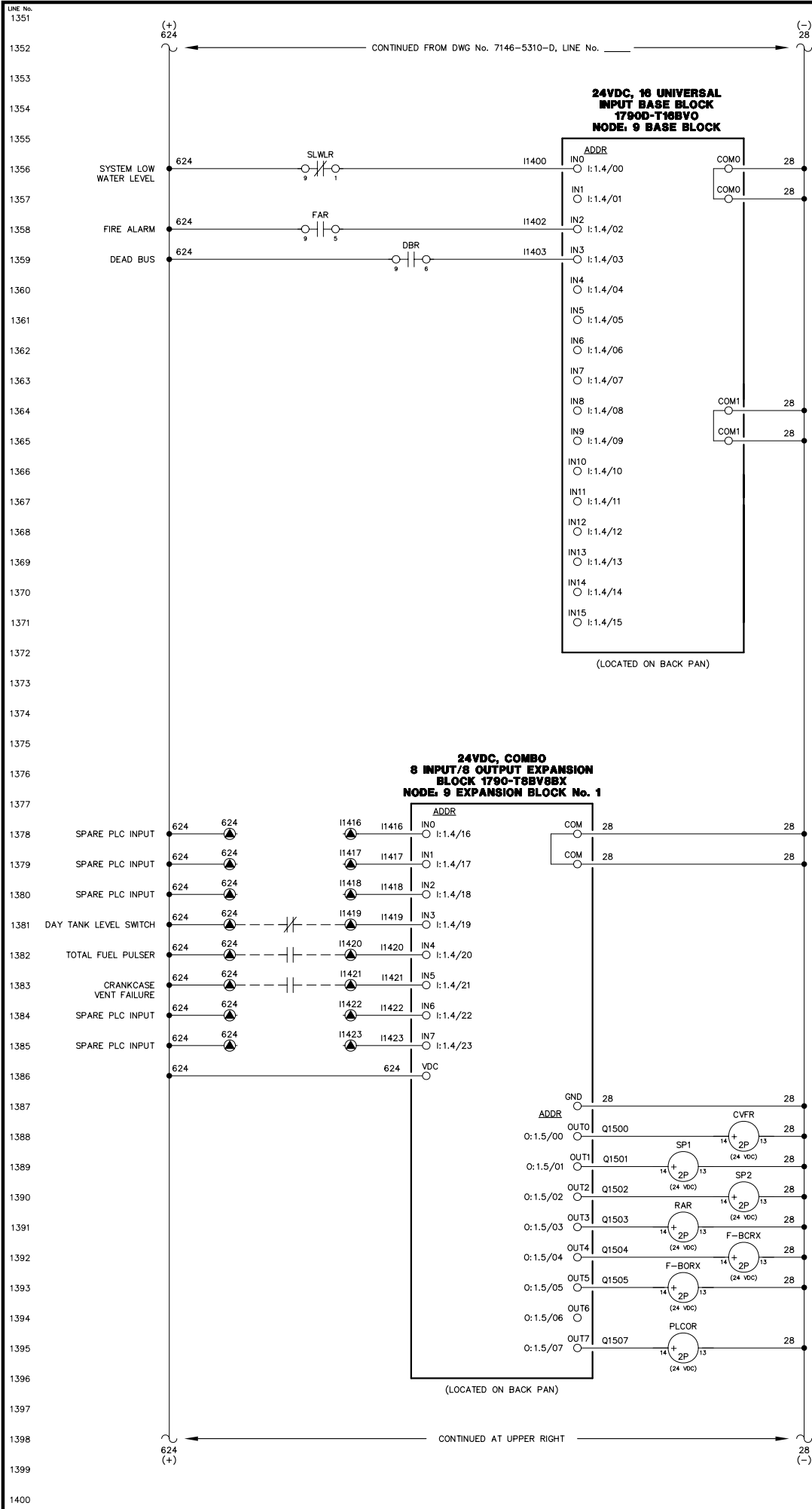




NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

NOTE:			
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.			
A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REC-11-044			
CONTROLLED POWER JOB No. 7146			
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5310-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP://WWW.AIDEA.ORG	



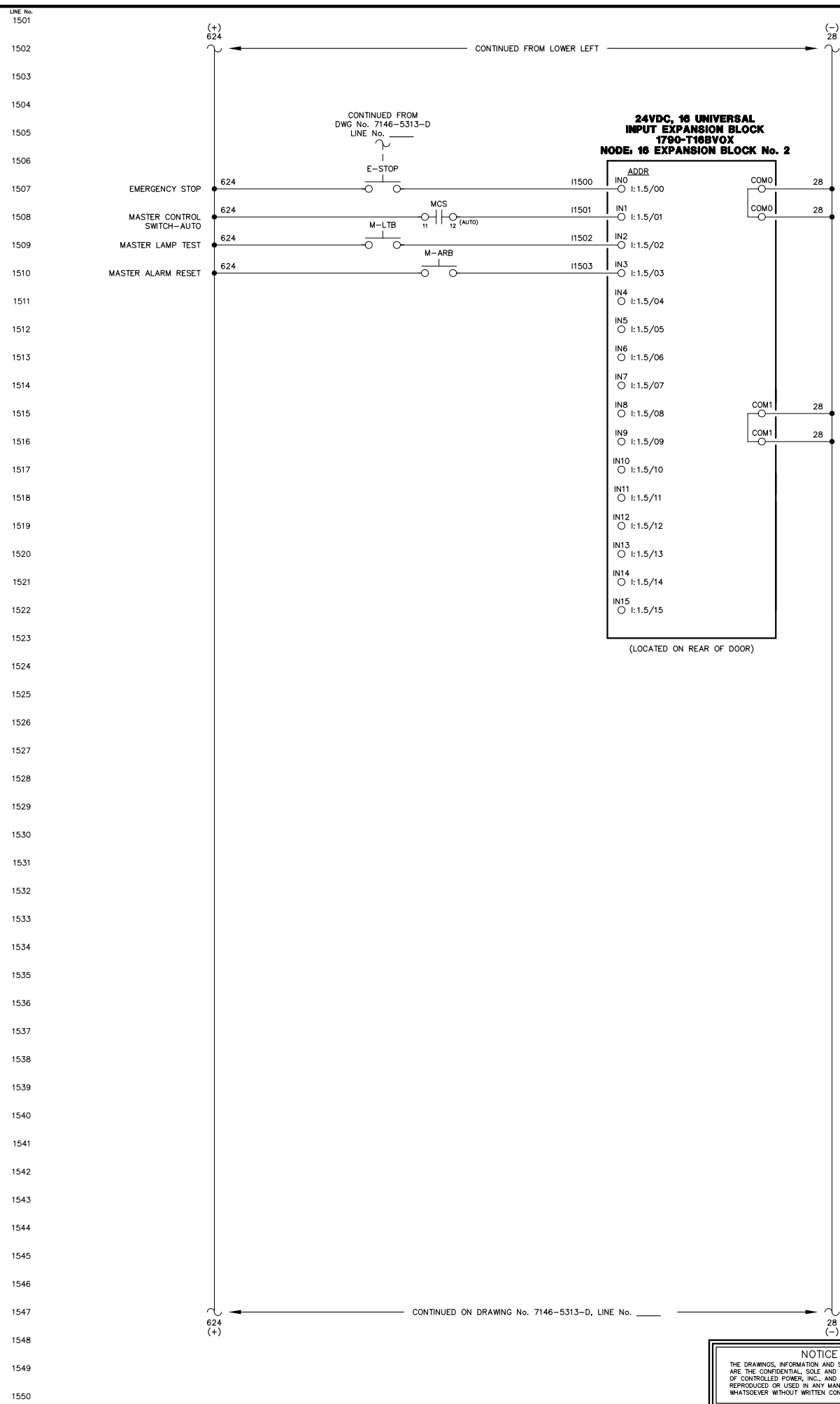
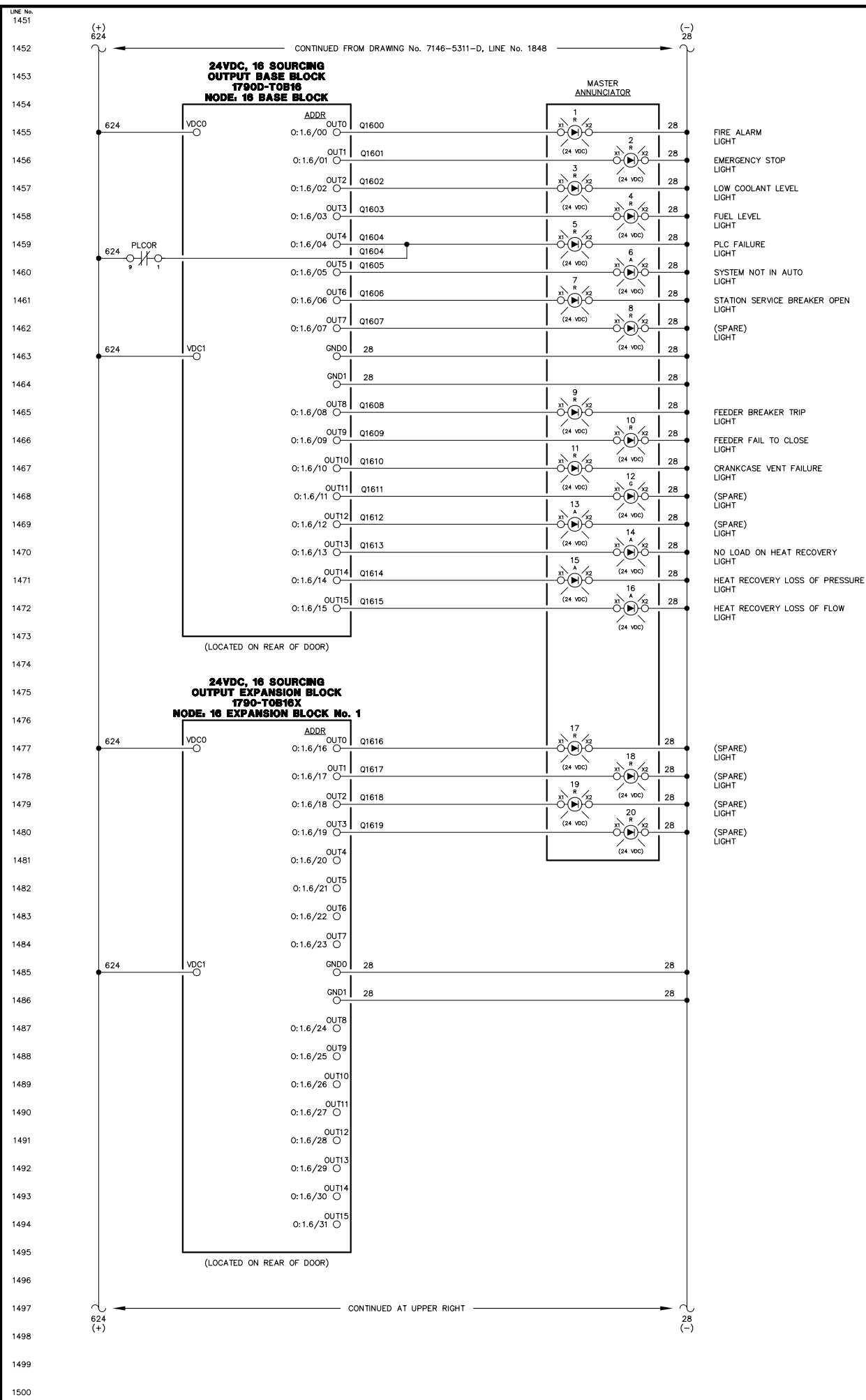
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-10-042 CONTROLLED POWER JOB No. 7146			
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5311-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

ALASKA
ENERGY AUTHORITY

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



NOTE:
FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GN
DWG. No: 7146-5312-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

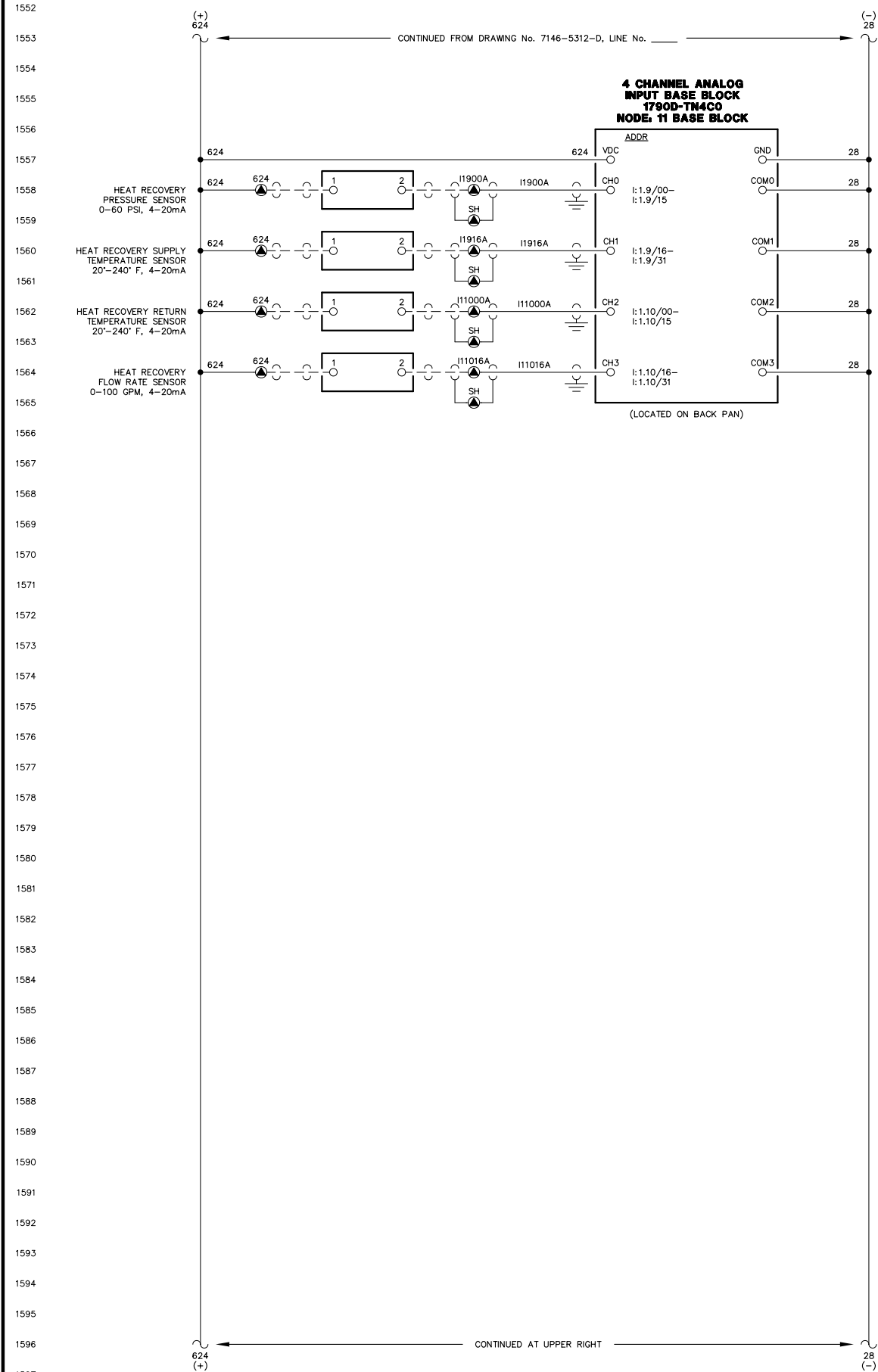
NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

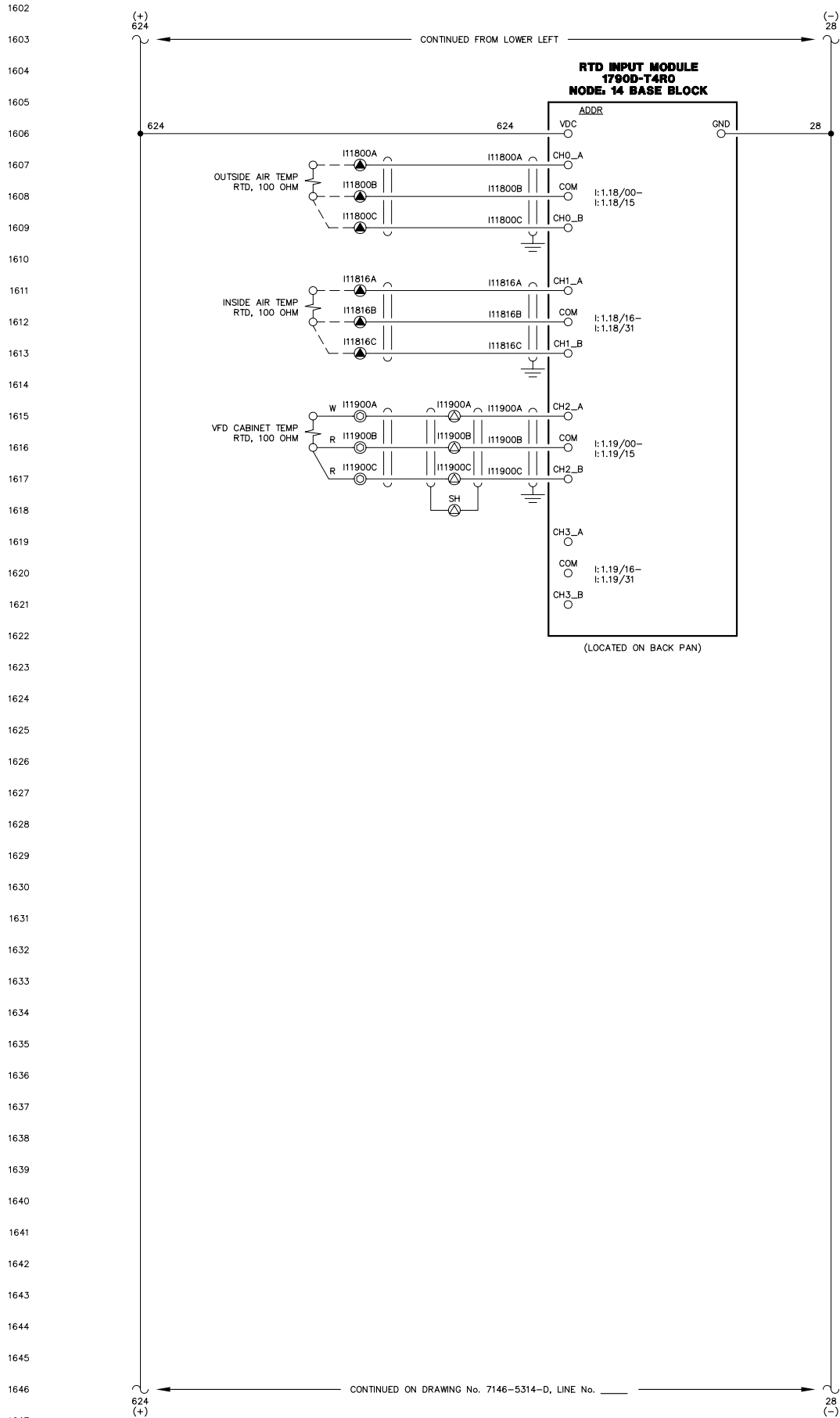


RURAL ENERGY GROUP
813 W. NORTHERN LIGHTS BLVD.
ANCHORAGE, ALASKA 99503
HTTP://WWW.AIDEA.ORG

LINE No.
1551



LINE No.
1601



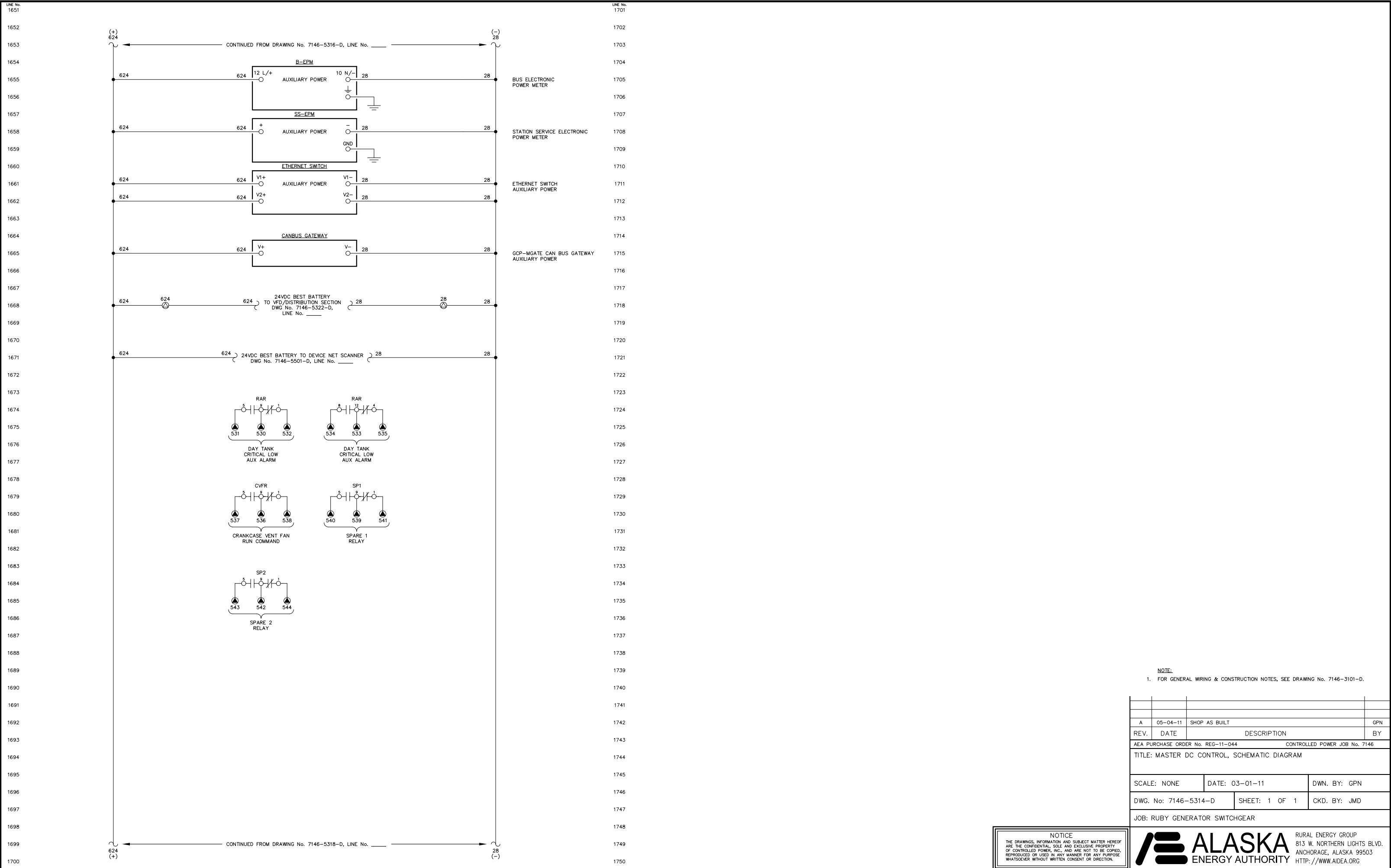
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044 CONTROLLED POWER JOB No. 7146			
TITLE: MASTER DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5313-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

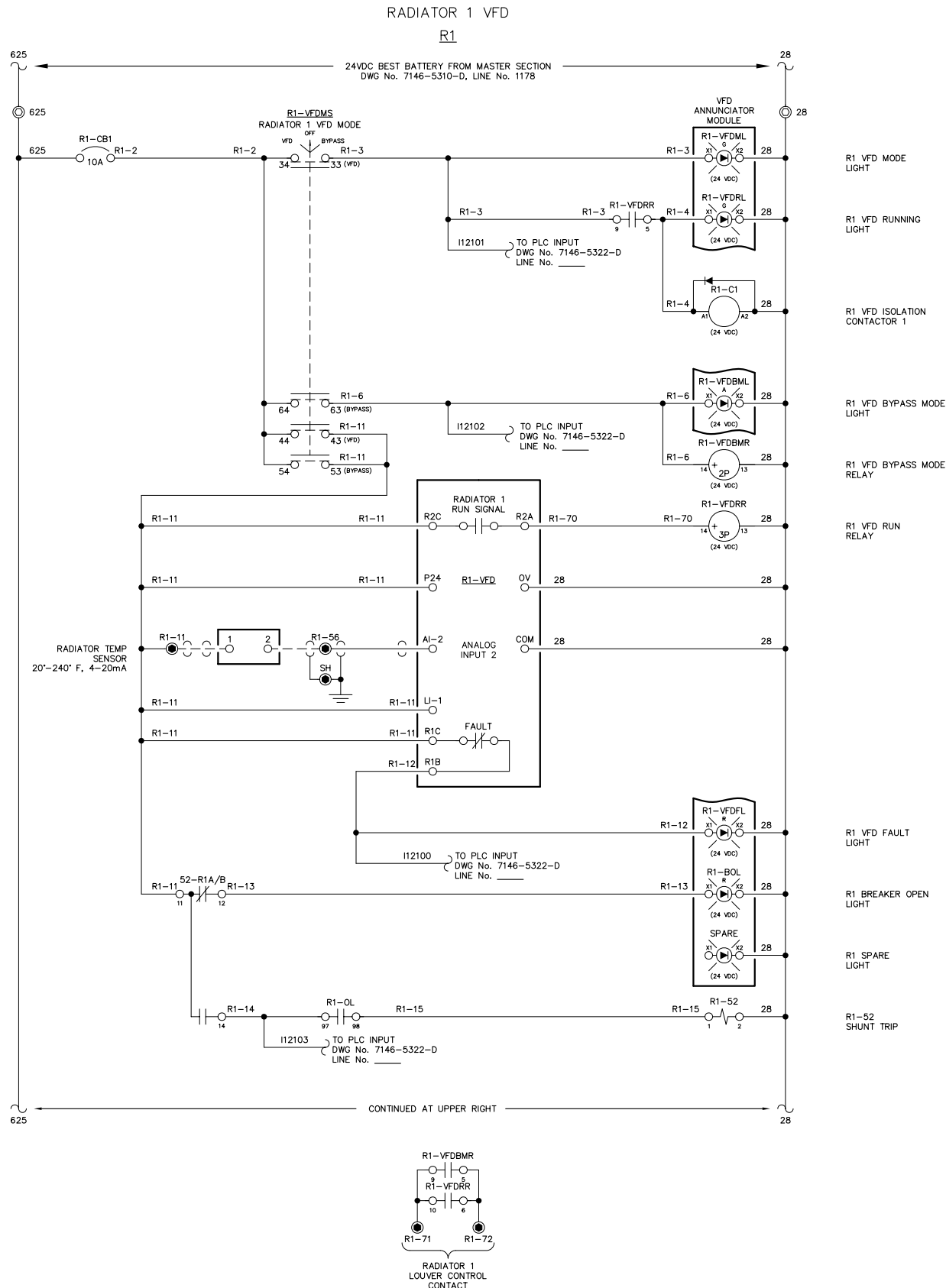
NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



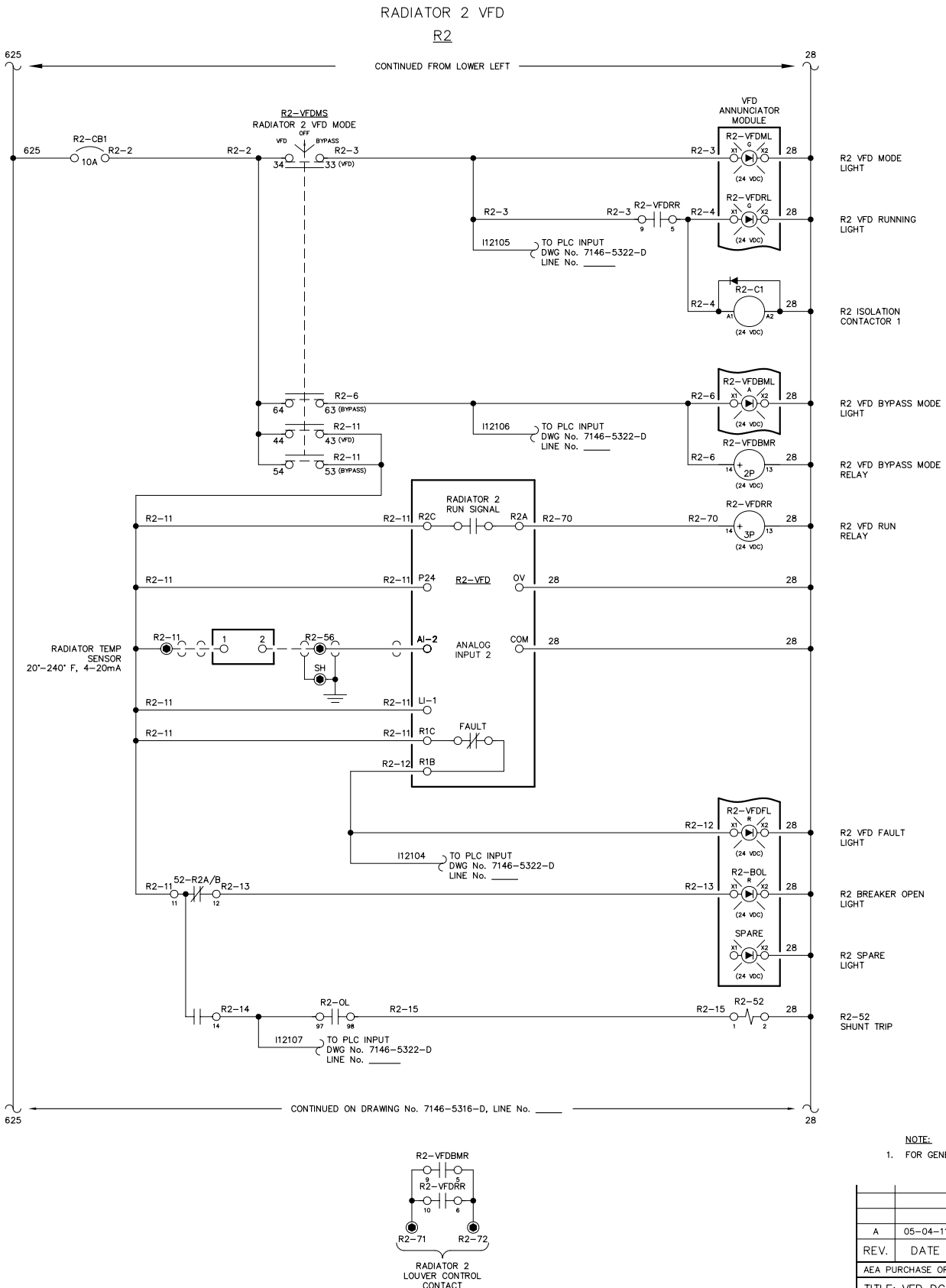
RURAL ENERGY GROUP
813 W. NORTHERN LIGHTS BLVD.
ANCHORAGE, ALASKA 99503
HTTP://WWW.AIDEA.ORG



1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800



1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850

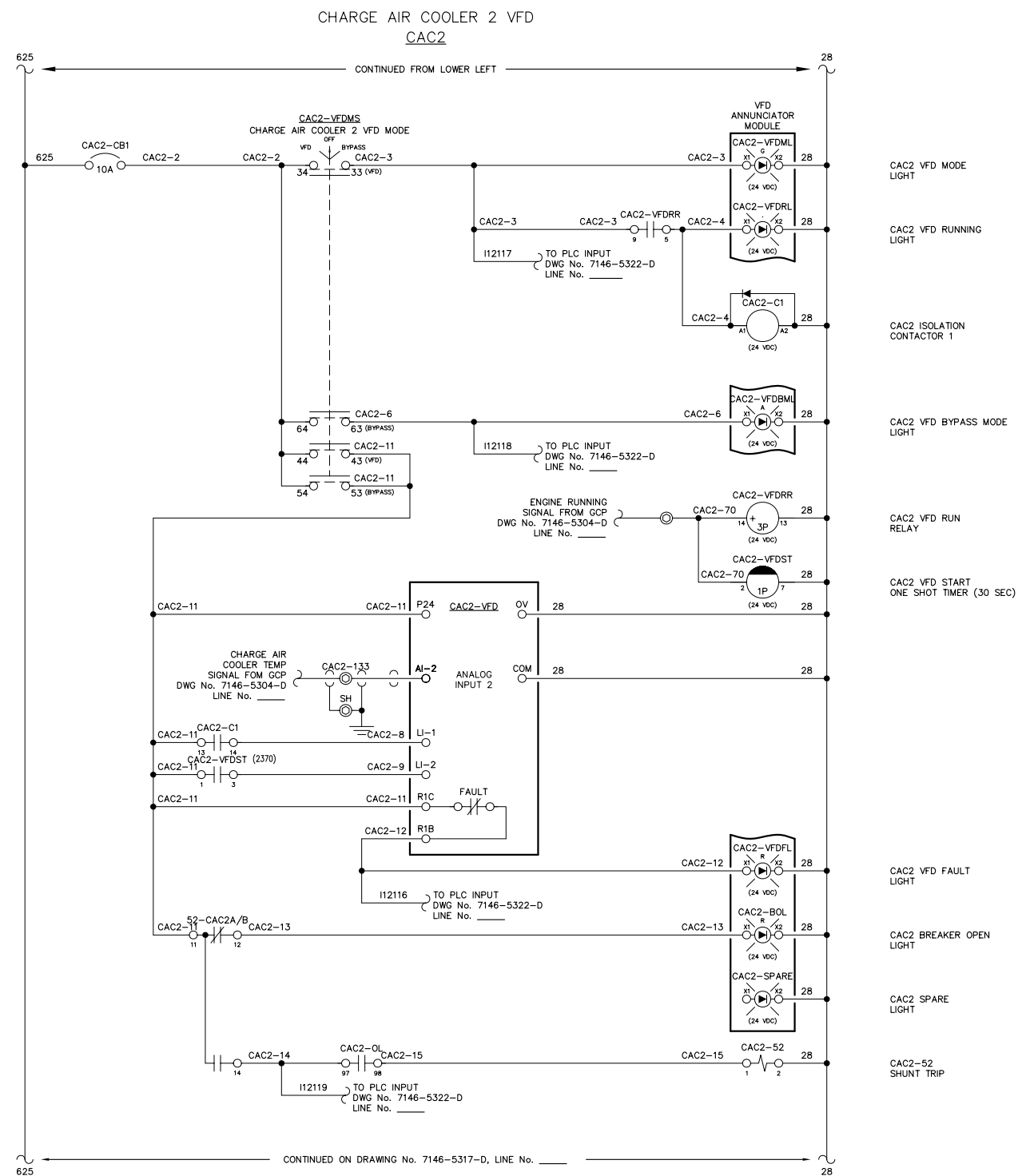
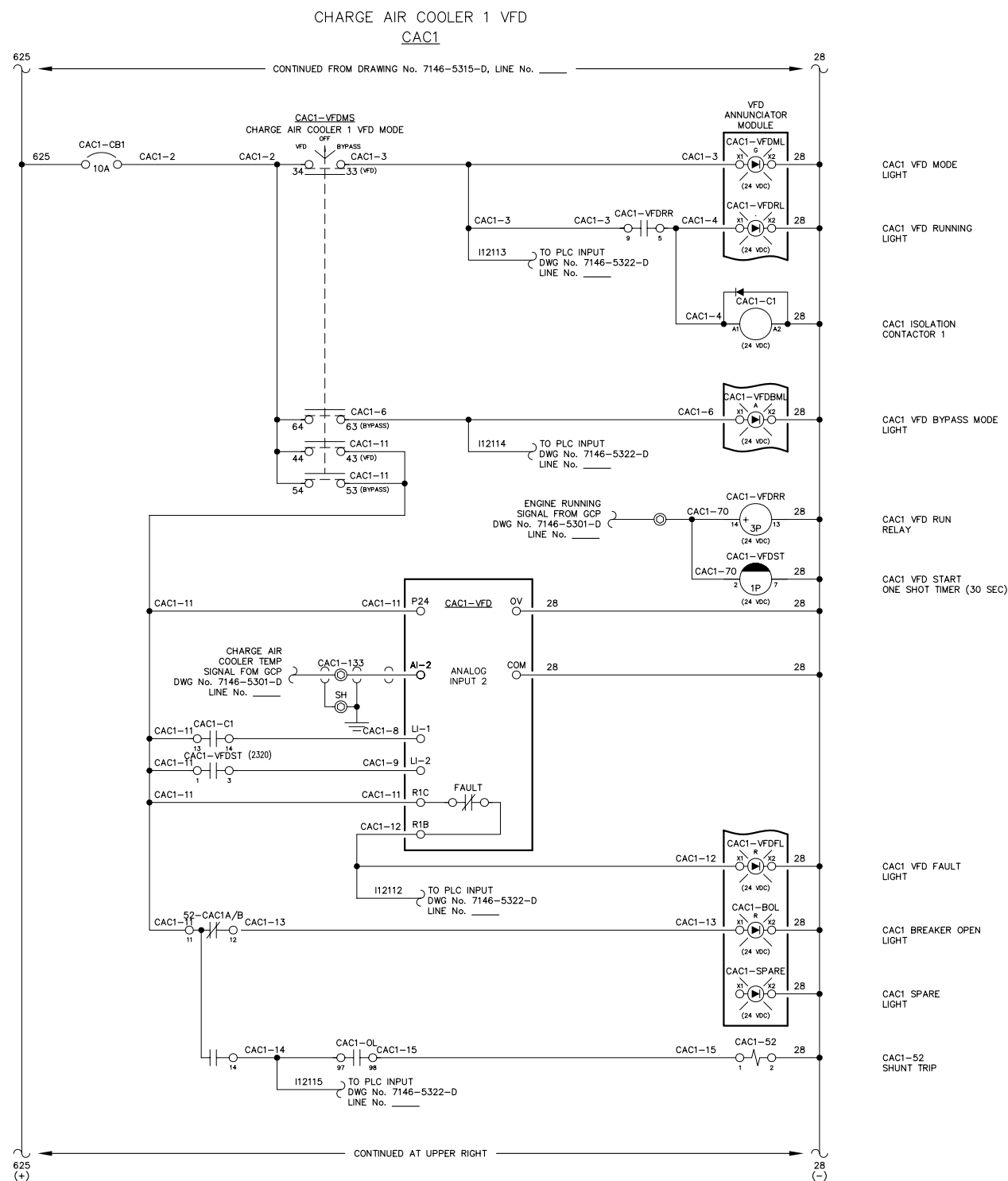


NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044 CONTROLLED POWER JOB No. 7146			
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5315-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

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



NOTE:

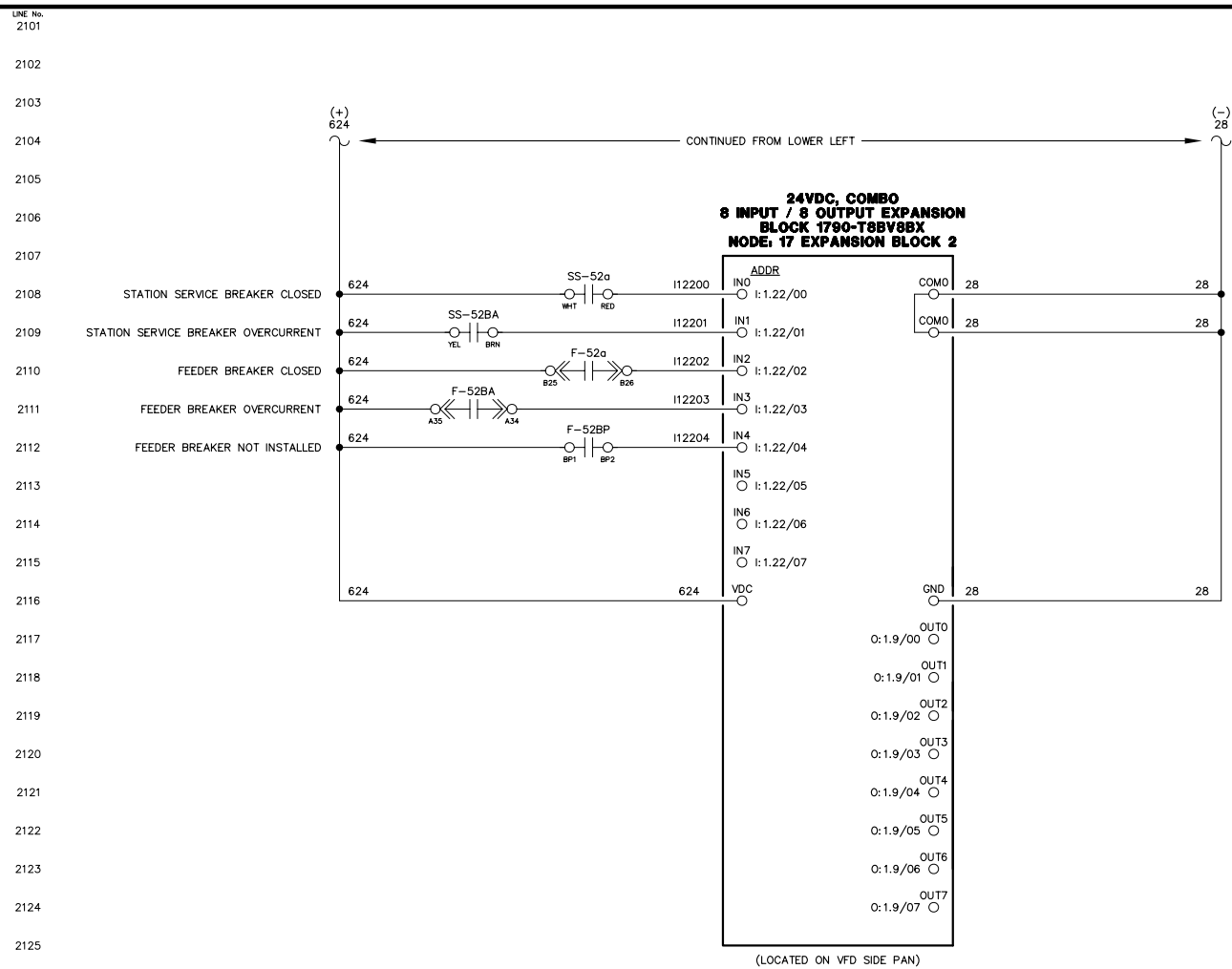
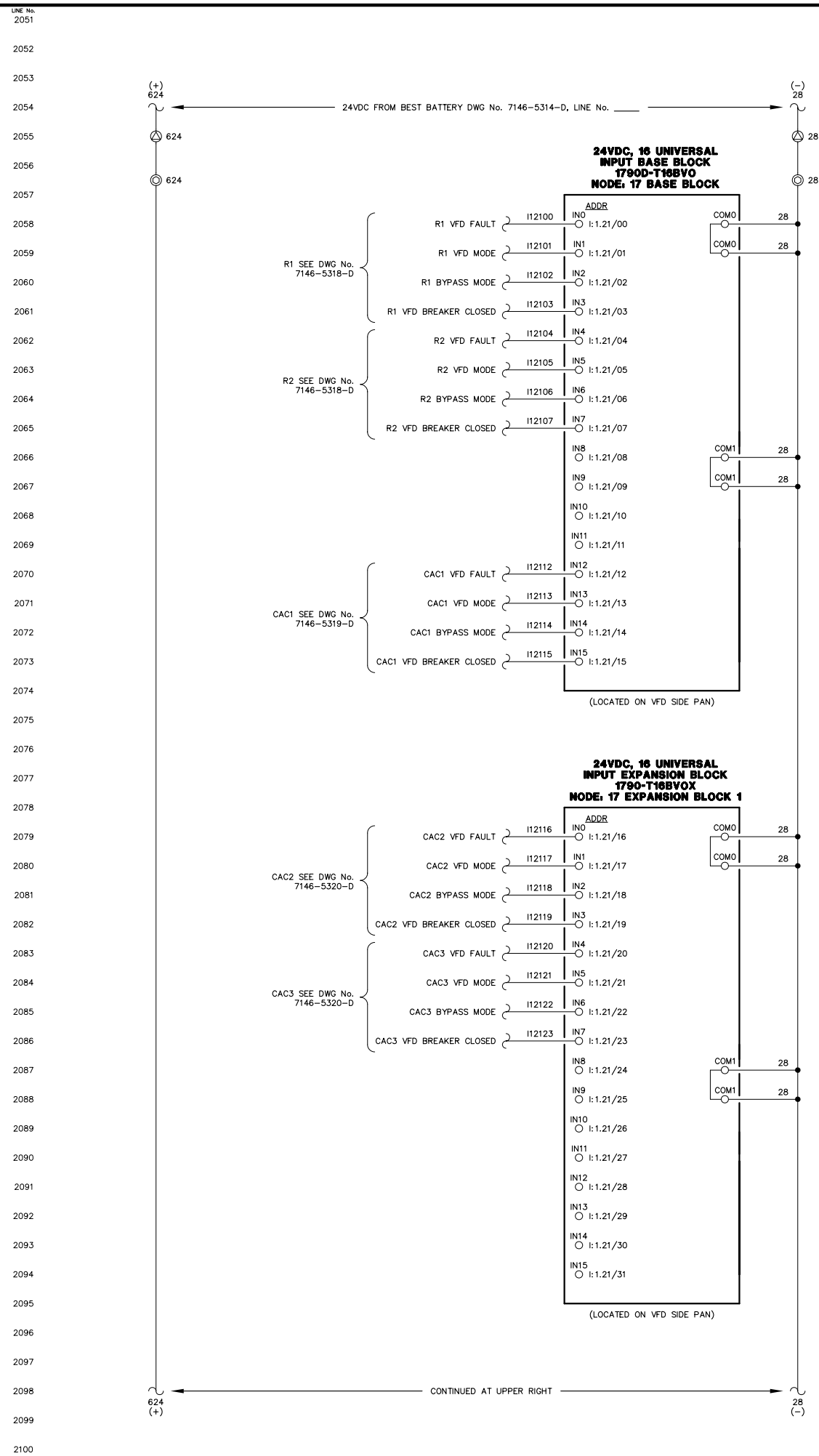
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT			GPN
REV.	DATE	DESCRIPTION			BY
AEA PURCHASE ORDER No. REG-11-044				CONTROLLED POWER JOB No. 7146	
TITLE: VFD DC CONTROL, SCHEMATIC DIAGRAM					
SCALE: NONE		DATE: 03-01-11		DWN. BY: GPN	
DWG. No: 7146-5316-D		SHEET: 1 OF 1		CKD. BY: JMD	
JOB: RUBY GENERATOR SWITCHGEAR					

NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREON ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.





NOTE:
FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

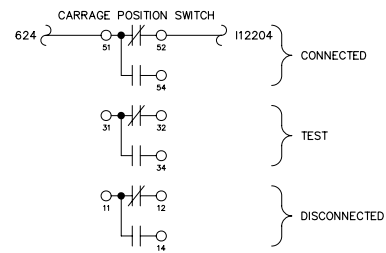
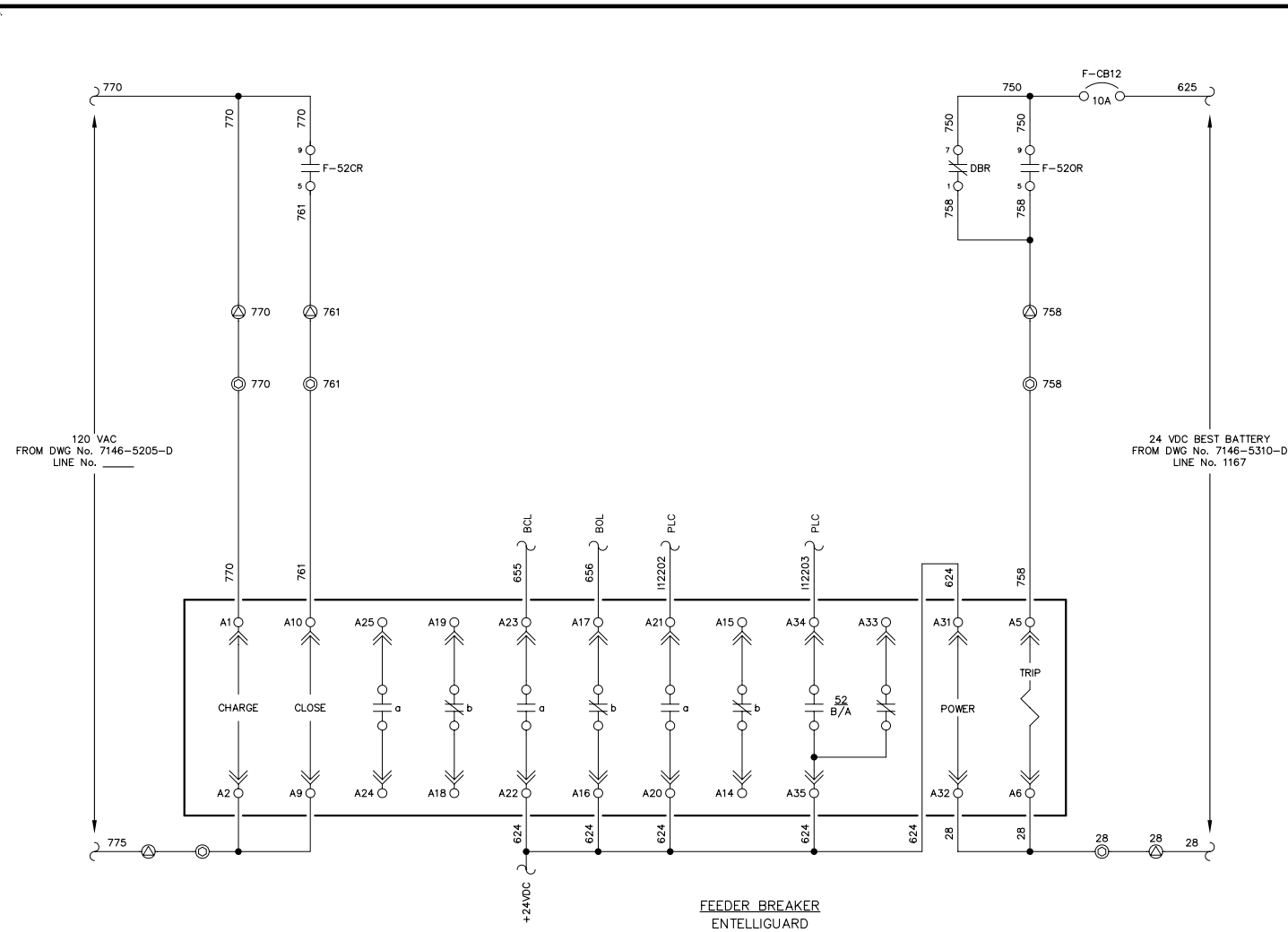
A	05-04-11	SHOP AS BUILT			GN
REV.	DATE	DESCRIPTION			BY
AEA PURCHASE ORDER No. REC-10-042		CONTROLLED POWER JOB No. 7146			
TITLE: VFD/DISTRIBUTION DC CONTROL, SCHEMATIC DIAGRAM					
SCALE: NONE		DATE: 04-06-10		DWN. BY: GPN	
DWG. No: 7146-5318-D		SHEET: 1 OF 1		CKD. BY: JMD	
JOB: RUBY GENERATOR SWITCHGEAR					

NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



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



NOTE:

1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: FEEDER BREAKER CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5401-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREON ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



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

LINE No.
2201

2202

2203

2204

2205

2206

2207

2208

2209

2210

2211

2212

2213

2214

2215

2216

2217

2218

2219

2220

2221

2222

2223

2224

2225

2226

2227

2228

2229

2230

2231

2232

2233

2234

2235

2236

2237

2238

2239

2240

2241

2242

2243

2244

2245

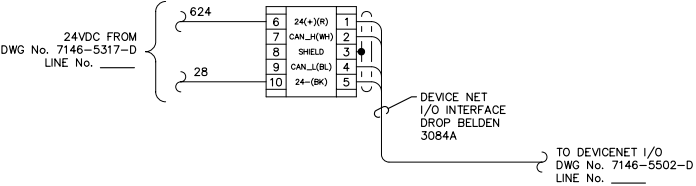
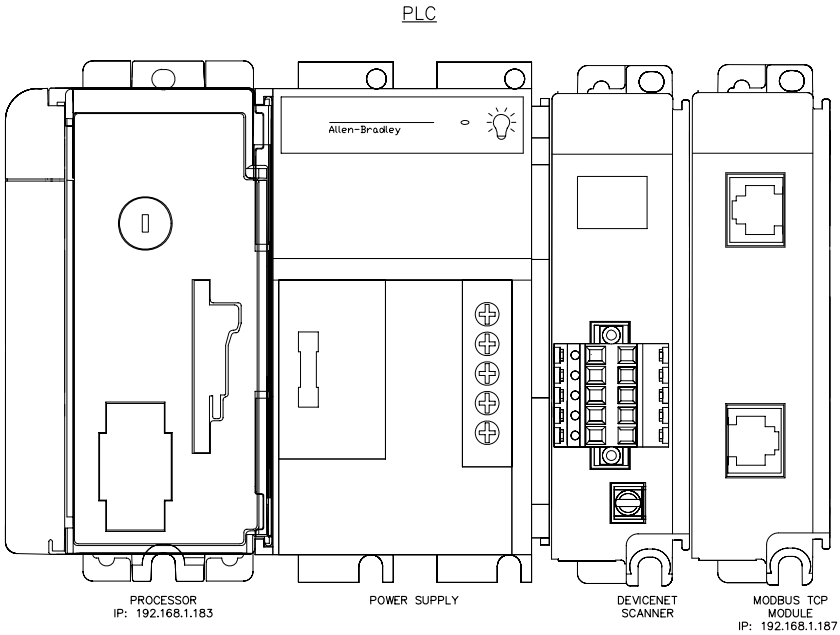
2246

2247

2248

2249

2250



NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044 CONTROLLED POWER JOB No. 7146			
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5501-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

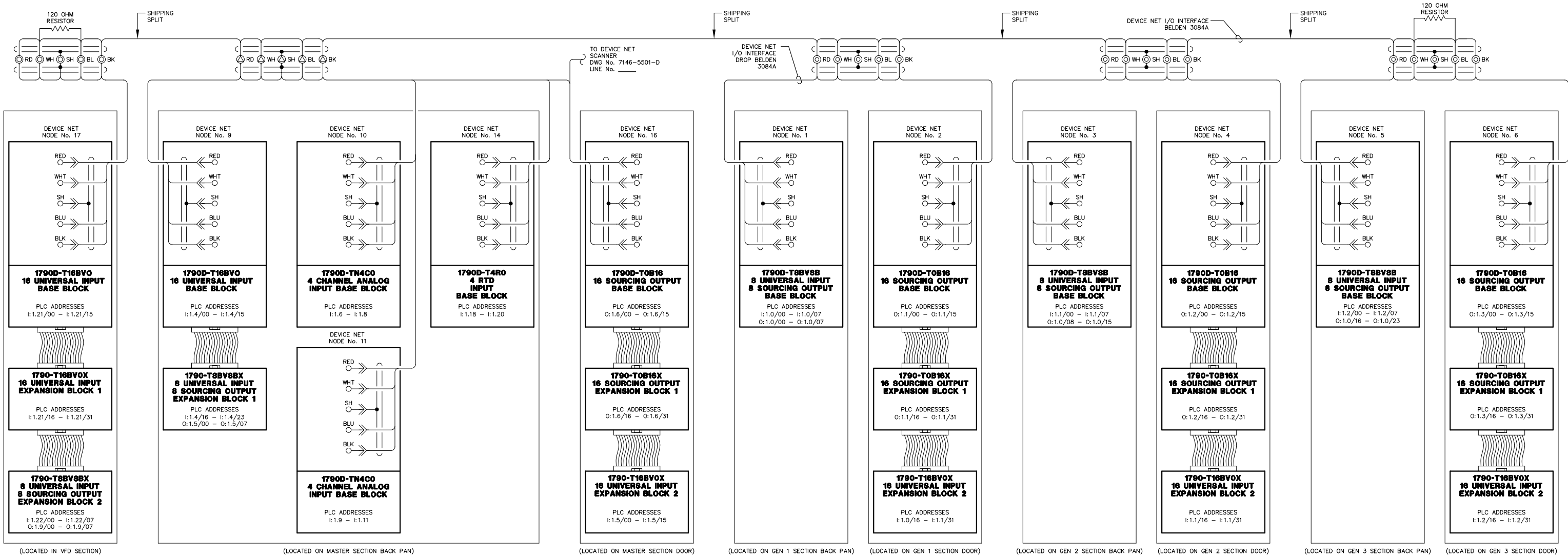
NOTICE

THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

ALASKA
ENERGY AUTHORITY

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

2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
2270
2271
2272
2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
2295
2296
2297
2298
2299
2300



NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044			
CONTROLLED POWER JOB No. 7146			
TITLE: PLC COMMUNICATION, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5502-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE

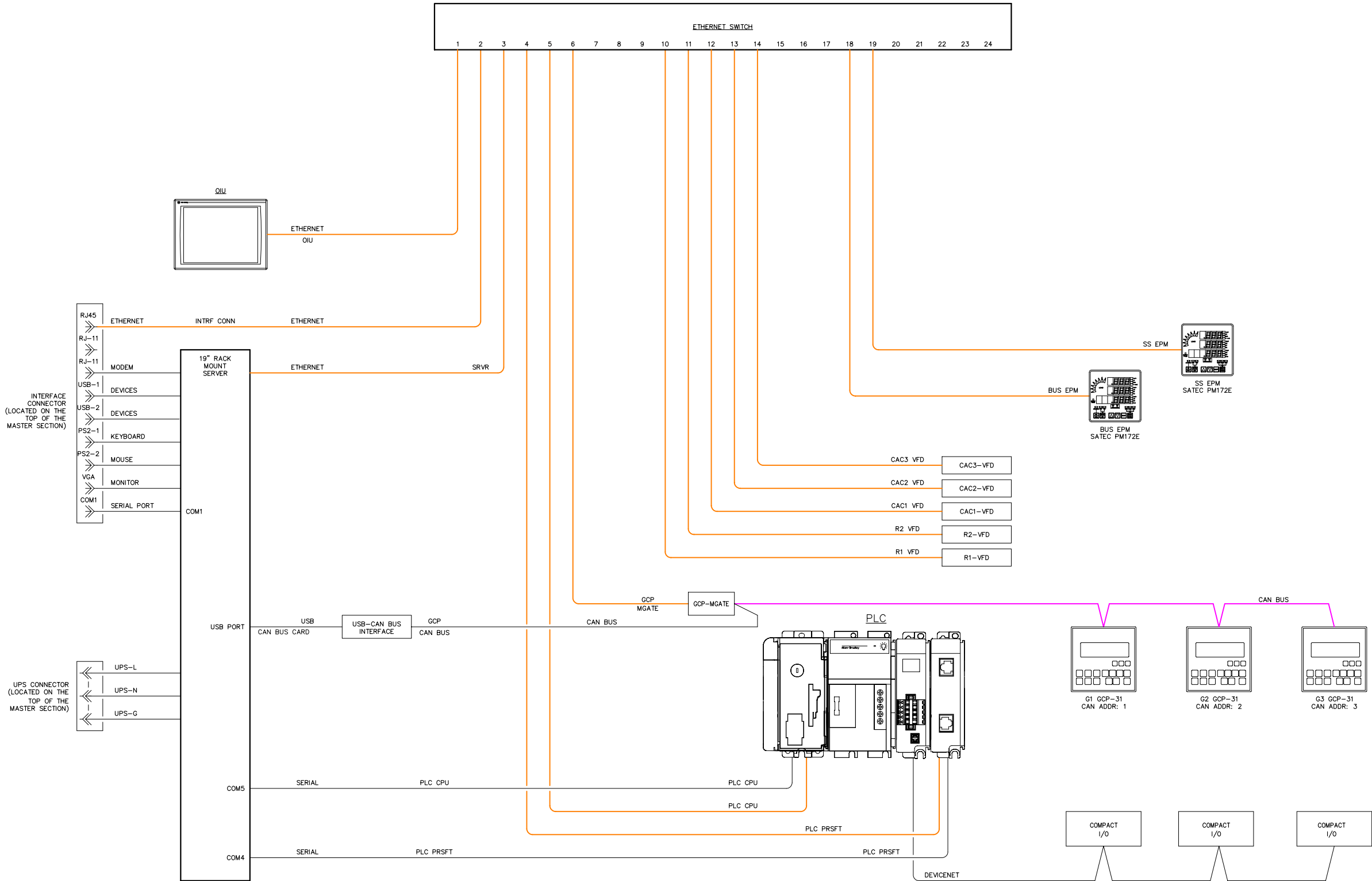
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

ALASKA

ENERGY AUTHORITY

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

LINE No.
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338
2339
2340
2341
2342
2343
2344
2345
2346
2347
2348
2349
2350



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
CAC1 VFD	192.168.1.174
CAC2 VFD	192.168.1.175
CAC3 VFD	192.168.1.176

DEVICE	IP ADDRESS
BUS EPM	192.168.1.190
SS EPM	192.168.1.191
SERVER	192.168.1.142
OIU	192.168.1.182
GCP MGATE	192.168.1.186

NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No.		CONTROLLED POWER JOB No. 7146	
TITLE: COMMUNICATION NETWORK DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5601-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



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

LINE No.
2401

2402

2403

2404

2405

2406

2407

2408

2409

2410

2411

2412

2413

2414

2415

2416

2417

2418

2419

2420

2421

2422

2423

2424

2425

2426

2427

2428

2429

2430

2431

2432

2433

2434

2435

2436

2437

2438

2439

2440

2441

2442

2443

2444

2445

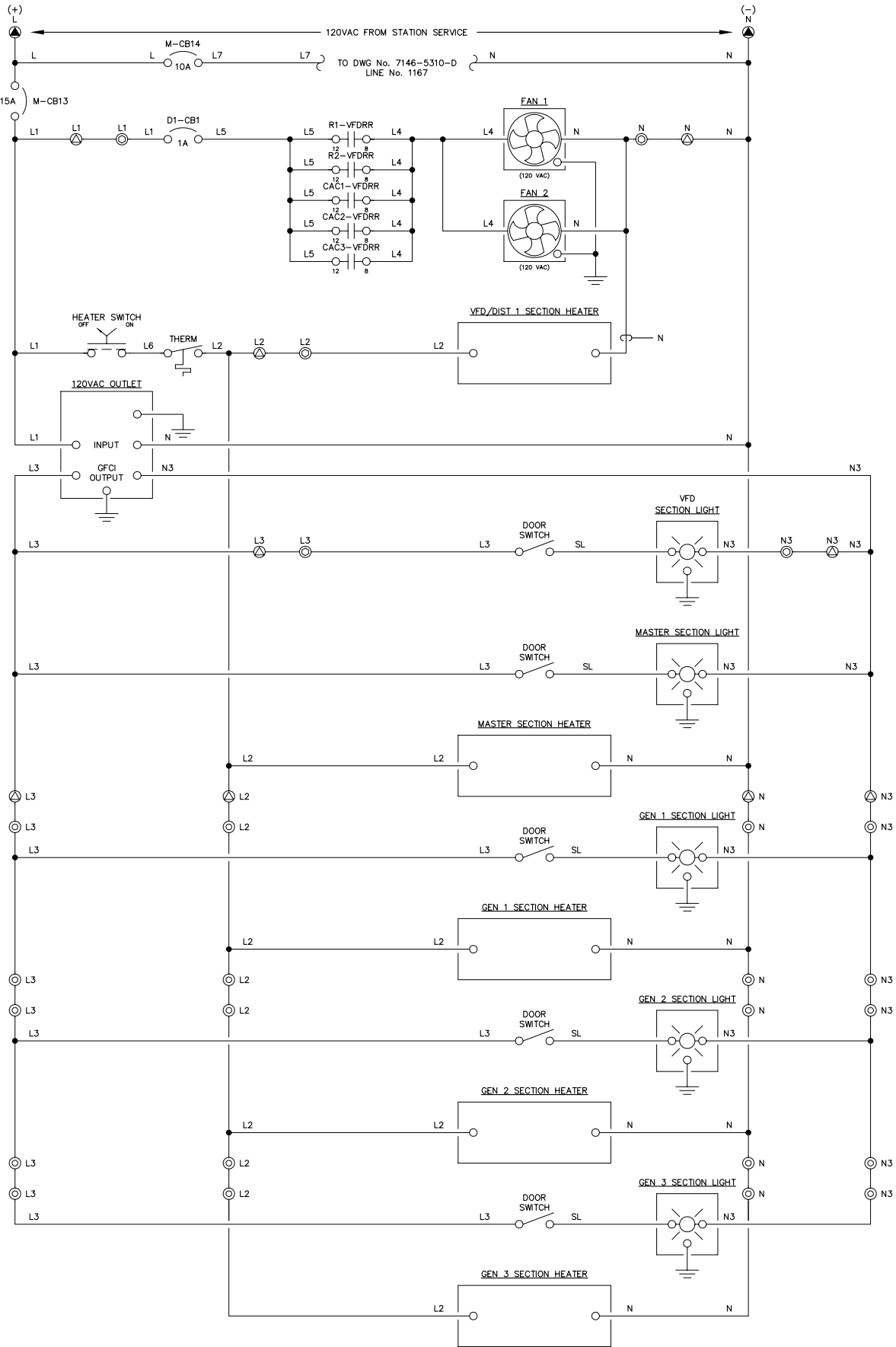
2446

2447

2448

2449

2450



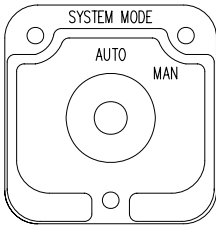
NOTE:
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: HEATER, LIGHTING & FAN CONTROL, SCHEMATIC DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-5701-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.



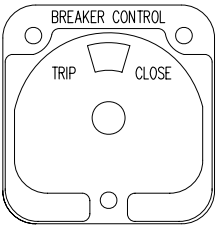
SYSTEM MODE SWITCH – SMS



(ELECTROSWITCH 24201C)
KNURLED HANDLE
QTY 1

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

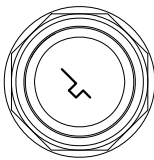
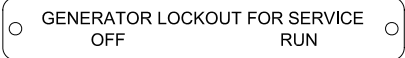
BREAKER CONTROL SWITCH – 52CS



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

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

GENERATOR LOCKOUT SWITCH – GLS

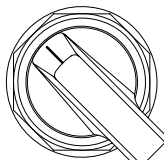


KEY OPERATED
2 POS MAINTAINED
QTY 3

POS		
	OFF	RUN
	X	
		X
	X	X



HEATER CONTROL SWITCH – HCS

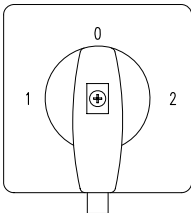


MAINTAINED
LOCATED ON MASTER
BACK PAN

POS		
	OFF	ON
	X	
		X
	X	X



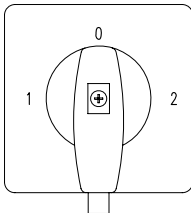
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
		POSITION									
		43	33	1T1	1T2	1T3	2T1	2T2	2T3	54	64
SMD	1	MD		71300						ME	2

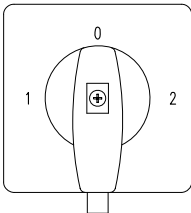
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
		POSITION									
		43	33	1T1	1T2	1T3	2T1	2T2	2T3	54	64
SMD	1	MD		71300						ME	2

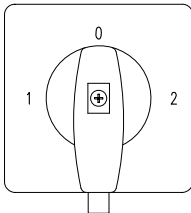
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
		POSITION									
		43	33	1T1	1T2	1T3	2T1	2T2	2T3	54	64
SMD	1	MD		71300						ME	2

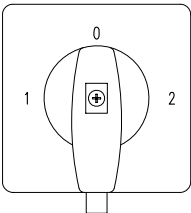
VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
		POSITION									
		43	33	1T1	1T2	1T3	2T1	2T2	2T3	54	64
SMD	1	MD		71300						ME	2

VARIABLE FREQUENCY DRIVE SWITCH – VFDS



3 POS MAINTAINED

71322		44	34	1L1	1L2	1L3	2L1	2L2	2L3	53	63
		POSITION									
		43	33	1T1	1T2	1T3	2T1	2T2	2T3	54	64
SMD	1	MD		71300						ME	2

NOTE:

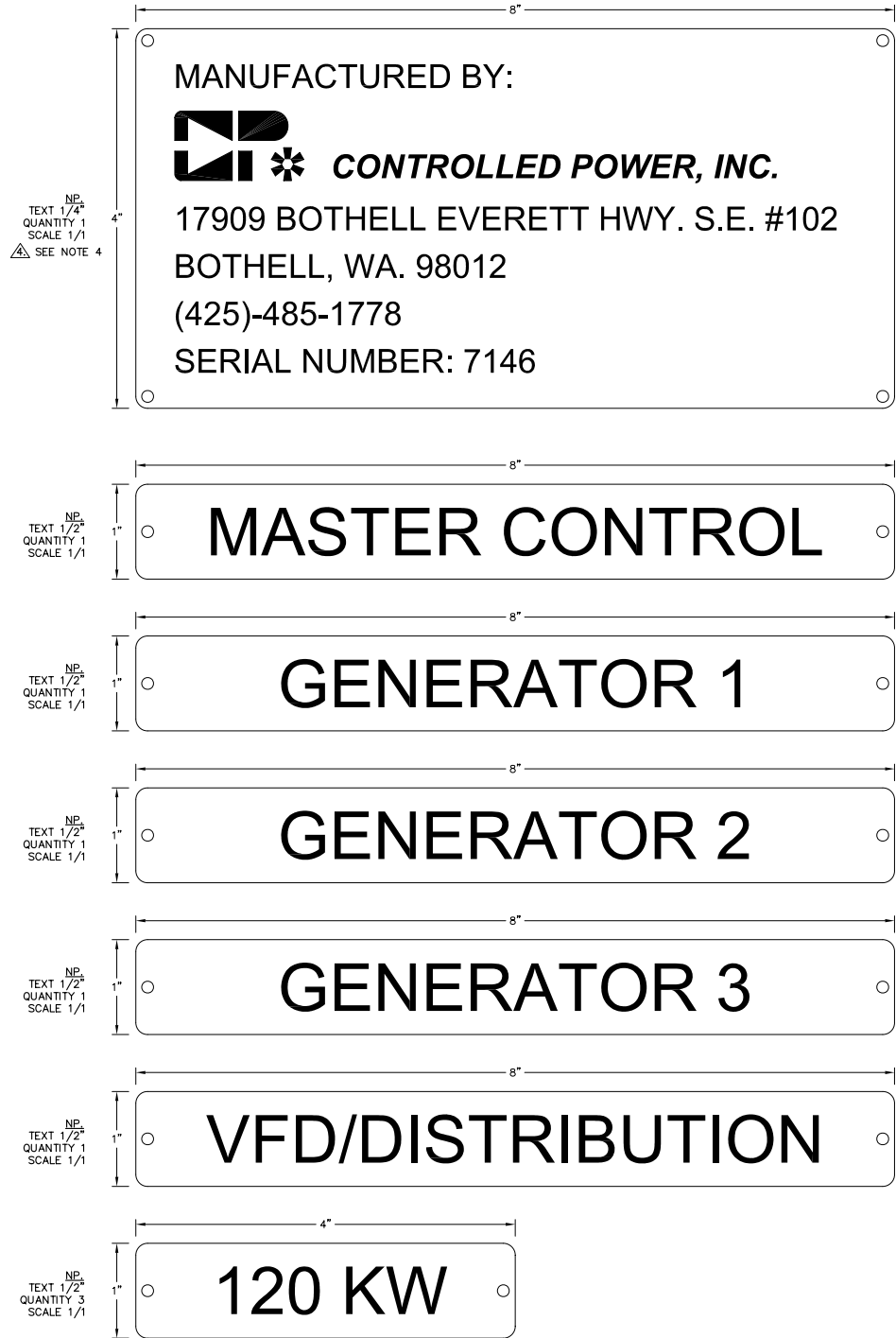
1. FOR GENERAL WIRING & CONSTRUCTION NOTES, SEE DRAWING No. 7146-3101-D.

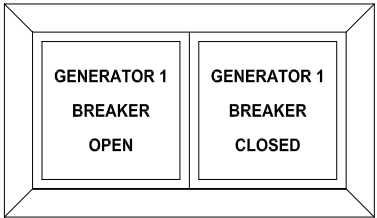
A	05-04-11	SHOP AS BUILT	GPN
REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: CONTROL SWITCH TARGET DIAGRAM			
SCALE: NONE		DATE: 03-01-11	DWN. BY: GPN
DWG. No: 7146-6101-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			

NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY OF CONTROLLED POWER, INC. AND ARE NOT TO BE COPIED, REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

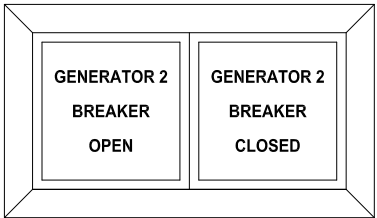


RURAL ENERGY GROUP
813 W. NORTHERN LIGHTS BLVD.
ANCHORAGE, ALASKA 99503
HTTP://WWW.AIDEA.ORG

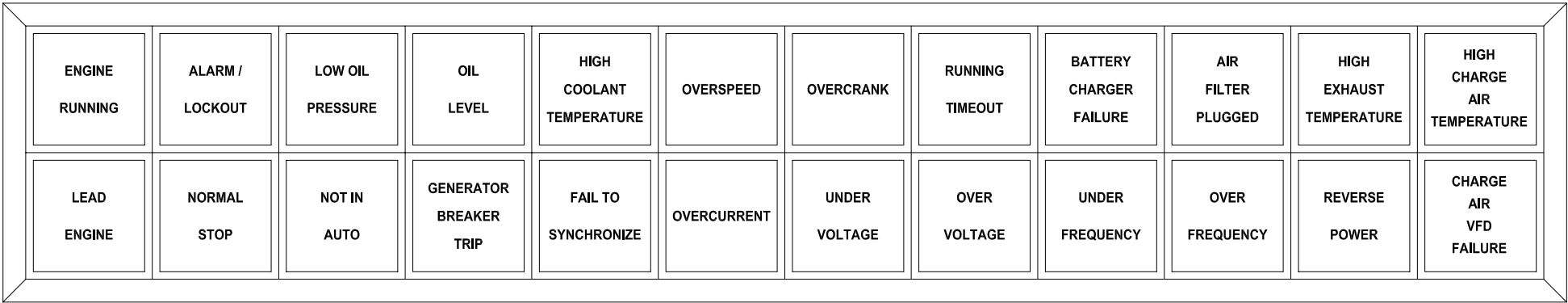




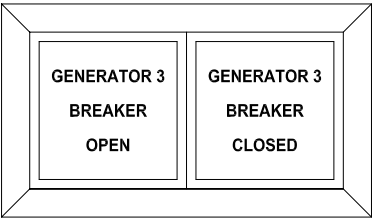
GEN 1 BREAKER ANNUNCIATOR
QTY 1



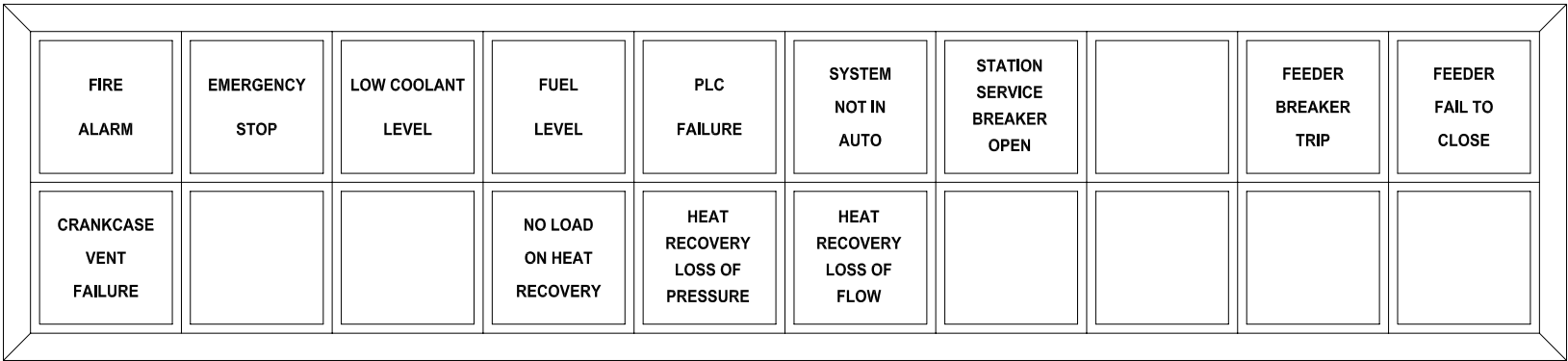
GEN 2 BREAKER ANNUNCIATOR
QTY 1



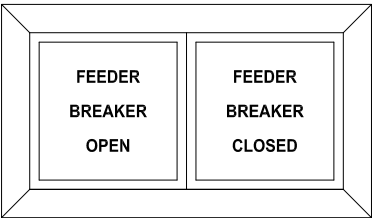
GENERATOR ANNUNCIATOR
QTY 3



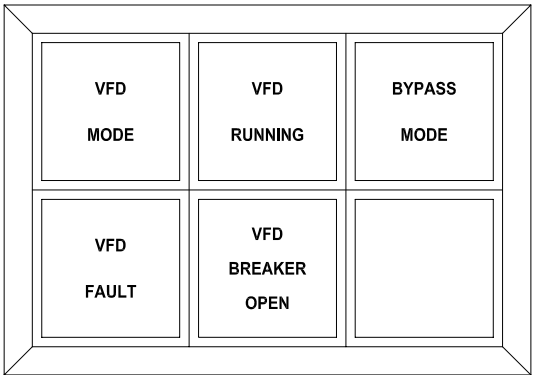
GEN 3 BREAKER ANNUNCIATOR
QTY 1



MASTER ANNUNCIATOR
QTY 1

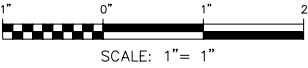


FEEDER BREAKER ANNUNCIATOR
QTY 1



VFD ANNUNCIATOR
QTY 5

REV.	DATE	DESCRIPTION	BY
AEA PURCHASE ORDER No. REG-11-044		CONTROLLED POWER JOB No. 7146	
TITLE: ANNUNCIATOR WINDOWS, FABRICATION DIAGRAM			
SCALE: NONE		DATE: 04-13-11	DWN. BY: GPN
DWG. No: 7146-6202-D		SHEET: 1 OF 1	CKD. BY: JMD
JOB: RUBY GENERATOR SWITCHGEAR			
		RURAL ENERGY GROUP 813 W. NORTHERN LIGHTS BLVD. ANCHORAGE, ALASKA 99503 HTTP: //WWW.AIDEA.ORG	



NOTICE
THE DRAWINGS, INFORMATION AND SUBJECT MATTER HEREOF
ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE PROPERTY
OF CONTROLLED POWER, INC., AND ARE NOT TO BE COPIED,
REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE
WHATSOEVER WITHOUT WRITTEN CONSENT OR DIRECTION.

