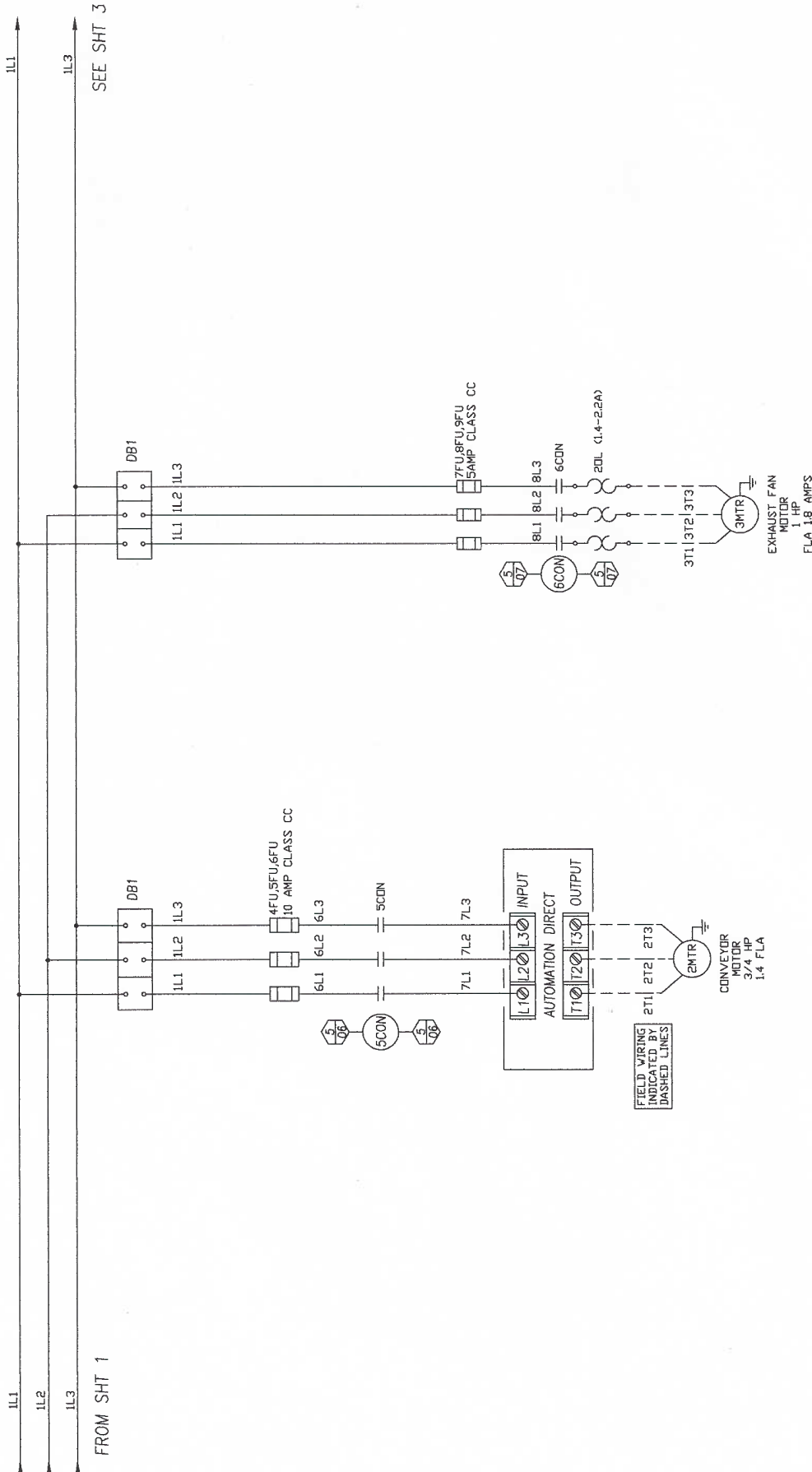
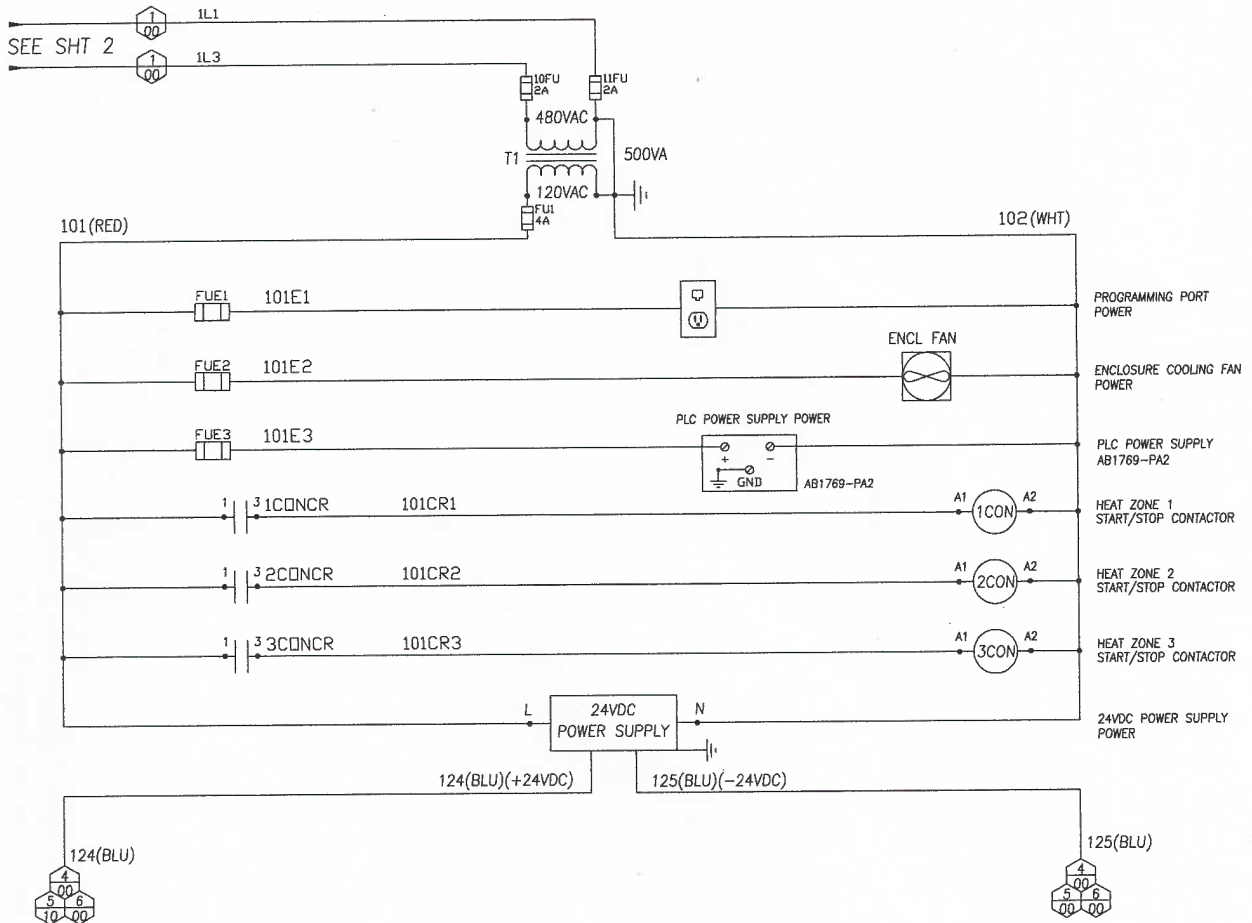




Infrared Technologies		APPROVALS:	
The Custom Furnace Company		DRAWING TITLE: ELECTRICAL SCHEMATIC	
OAK RIDGE, TN 37830	TOLERANCES:	SIZE: A	DRAWING NO: 480 VAC DIAGRAM
(865) 574-9784	X ±0.1	SCALE: NONE	SHEET: 2 OF 13
www.infraredheating.com	.X ±0.05	DATE: 7/14/2015	REV: 4
UNLESS SPECIFIED OTHERWISE DIMENSIONS ARE IN INCHES	.XX ±0.005		
	.XXX ±0.001		

REV	DESCRIPTION	BY	DATE



Infrared Technologies
The Custom Furnace Company

OAK RIDGE, TN 37830
(865) 574-9784
www.infraredheating.com

TOLERANCES:
X ±0.1
.X ±0.05
.XX ±0.005
.XXX ±0.001

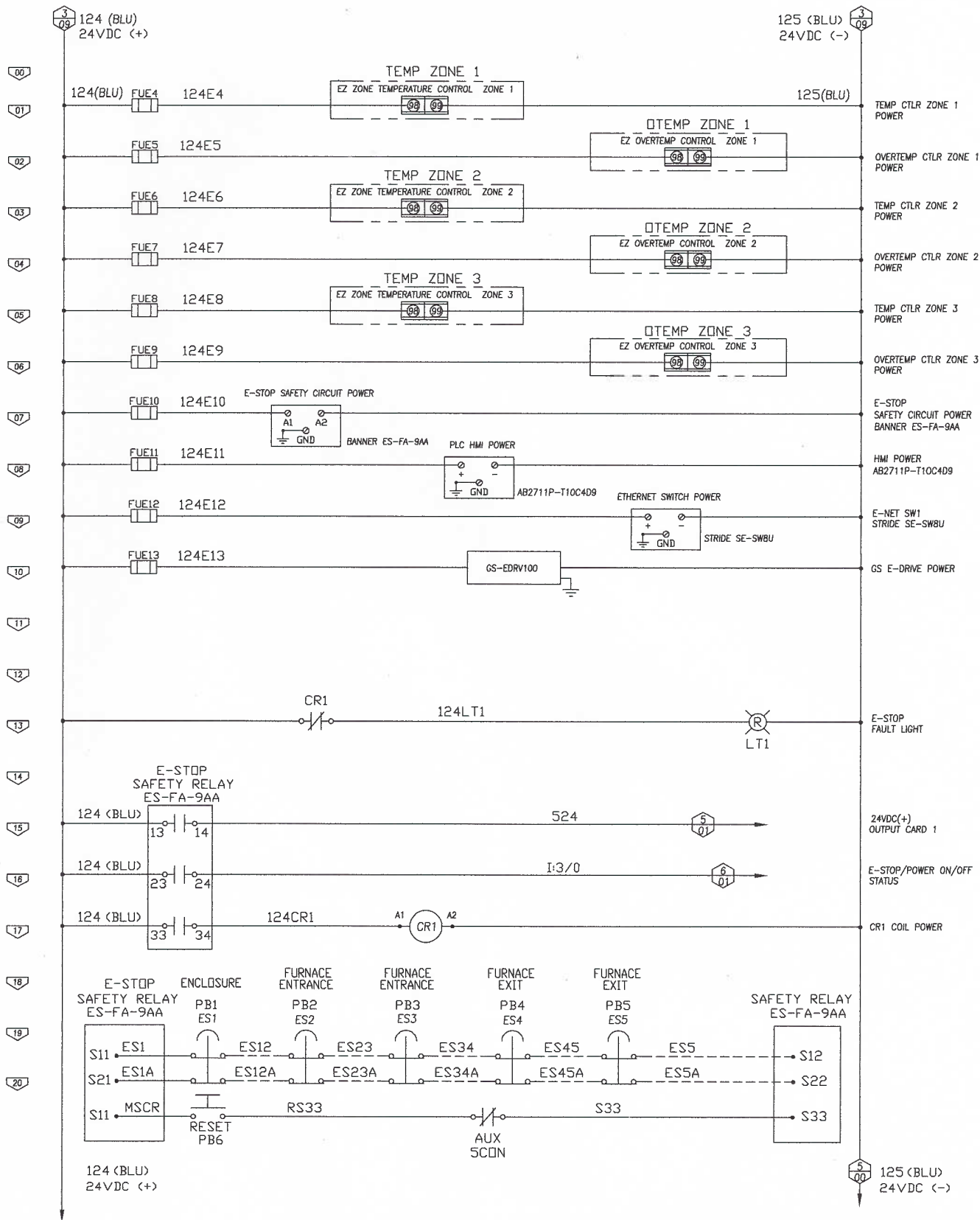
APPROVALS:

DRAWING TITLE:
ELECTRICAL SCHEMATIC
120VAC/24VDC W/MCR DIAGRAM

SIZE: A	DRAWING NO: NANO-ELEC-100	SHEET: 3 OF 13
SCALE: NONE	DRAWN: LBH	DATE: 7/14/2015
		REV: 4

REV	REVISION DESCRIPTION	BY	DATE

UNLESS SPECIFIED OTHERWISE
DIMENSIONS ARE IN INCHES



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UNLESS SPECIFIED OTHERWISE
DIMENSIONS ARE IN INCHES

TOLERANCES:
X ±0.1
.X ±0.05
.XX ±0.005
.XXX ±0.001

APPROVALS:

DRAWING TITLE:
ELECTRICAL SCHEMATIC
24VDC DIAGRAM

SIZE:
A

DRAWING NO:
NANO-ELEC-100

SHEET:
4 OF 13

SCALE:
NONE

DRAWN:
LBH

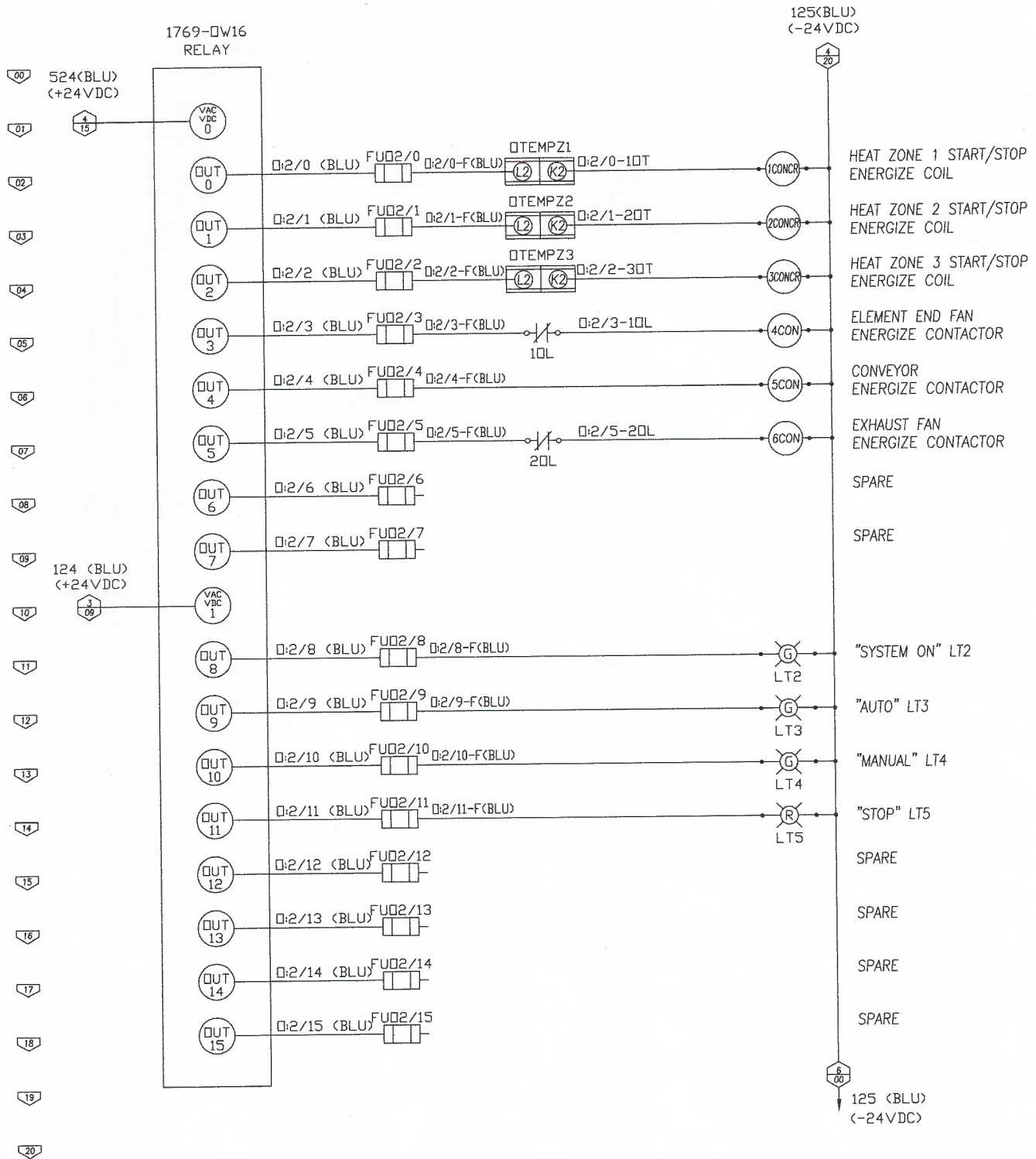
DATE:
7/14/2015

REV:
4

REV REVISION DESCRIPTION

BY DATE

OUTPUT CARD (SLOT 2) (0:2/0 - 0:2/15)

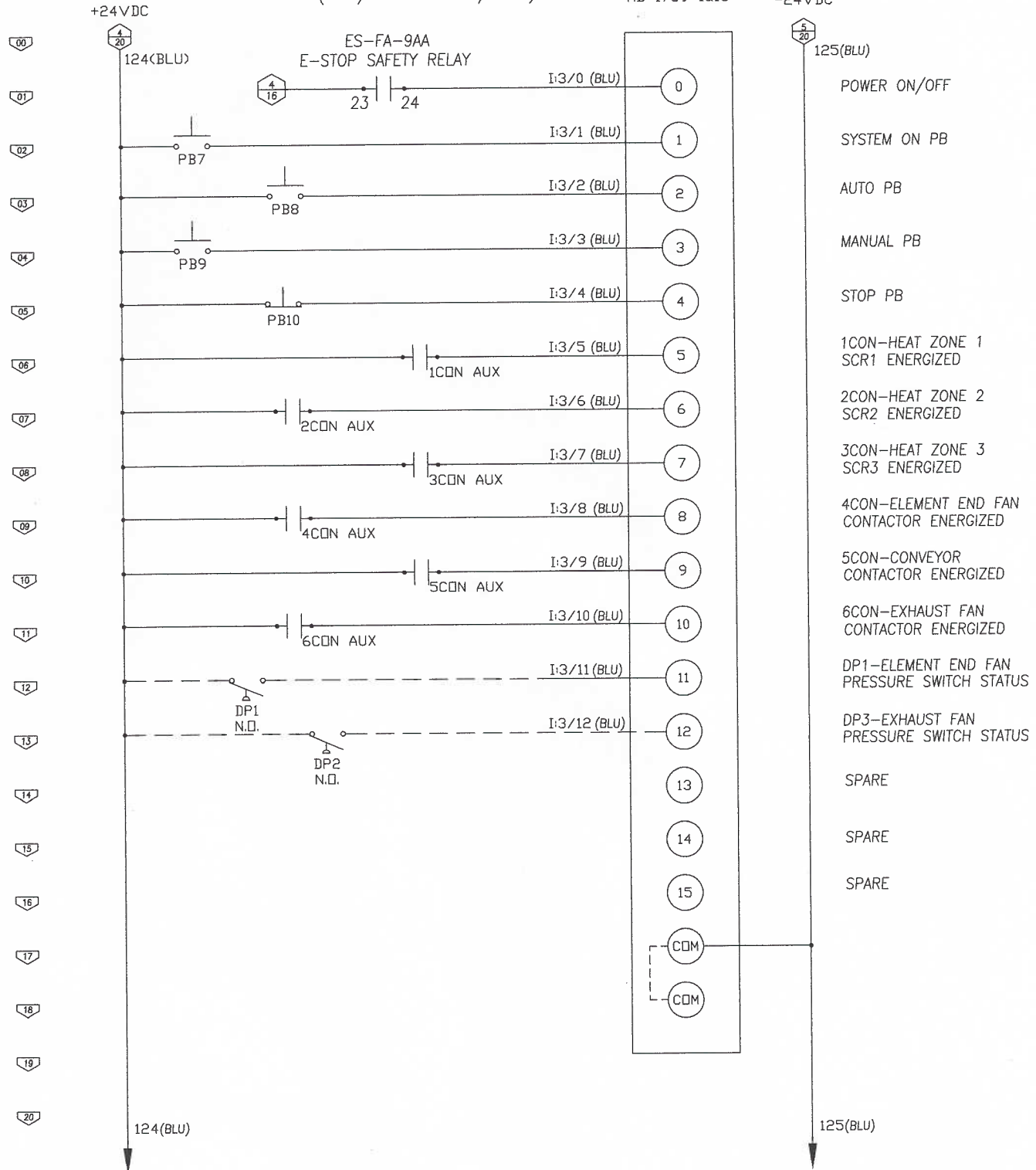


Infrared Technologies The Custom Furnace Company OAK RIDGE, TN 37830 (865) 574-9784 www.infraredheating.com		APPROVALS:	
		DRAWING TITLE: ELECTRICAL SCHEMATIC OUTPUT CARD SL2 1769-OW16	
TOLERANCES: X ±0.1 .X ±0.05 .XX ±0.005 .XXX ±0.001		SIZE: A	DRAWING NO: NANO-ELEC-100
UNLESS SPECIFIED OTHERWISE DIMENSIONS ARE IN INCHES		SCALE: NONE	DATE: 7/14/2015
REV		REVISION DESCRIPTION	BY DATE

INPUT CARD (SLOT 3) (I:3/0 - I:3/15)

AB 1769-IQ16

-24VDC



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UNLESS SPECIFIED OTHERWISE
DIMENSIONS ARE IN INCHES

TOLERANCES:
X ±0.1
.X ±0.05
.XX ±0.005
.XXX ±0.001

APPROVALS:

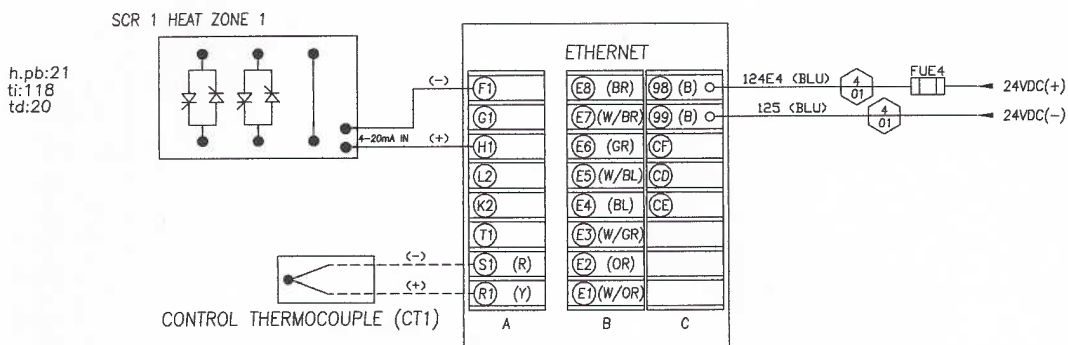
DRAWING TITLE:
ELECTRICAL SCHEMATIC
INPUT CARD SL3 1769-IQ16

SIZE: A DRAWING NO: NANO-ELEC-100 SHEET: 6 OF 13

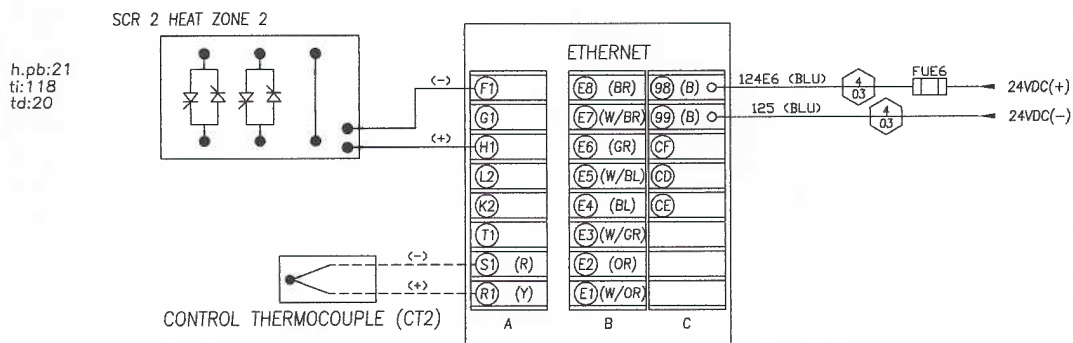
SCALE: NONE DRAWN: LBH DATE: 7/14/2015 REV: 4

REV	REVISION DESCRIPTION	BY	DATE
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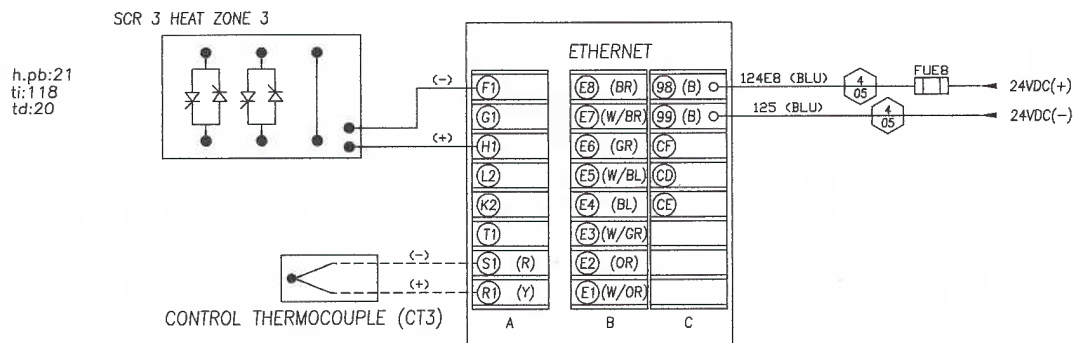
WATLOW PM6C3FJ-3AAAAAA TEMPERATURE CONTROLLER WIRING DIAGRAM



WATLOW EZ ZONE (HEAT ZONE 1)
WITH ETHERNET



WATLOW EZ ZONE (HEAT ZONE 2)
WITH ETHERNET



WATLOW EZ ZONE (HEAT ZONE 3)
WITH ETHERNET

Input/Output Settings:

O.ty: MA (milliamps)
S.Lo: 4
S.hi: 19.4
Lin: K (K-type)
SEn: tc (thermocouple)

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Technologies**

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UNLESS SPECIFIED OTHERWISE
DIMENSIONS ARE IN INCHES

TOLERANCES:
X ±0.1
.X ±0.05
.XX ±0.005
.XXX ±0.001

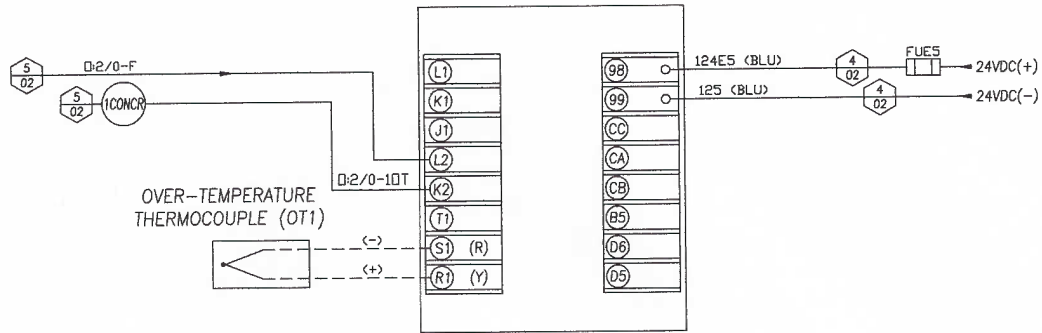
APPROVALS:

DRAWING TITLE:
ELECTRICAL SCHEMATIC
WATLOW TEMP CTLR WIRING DIAGRAM

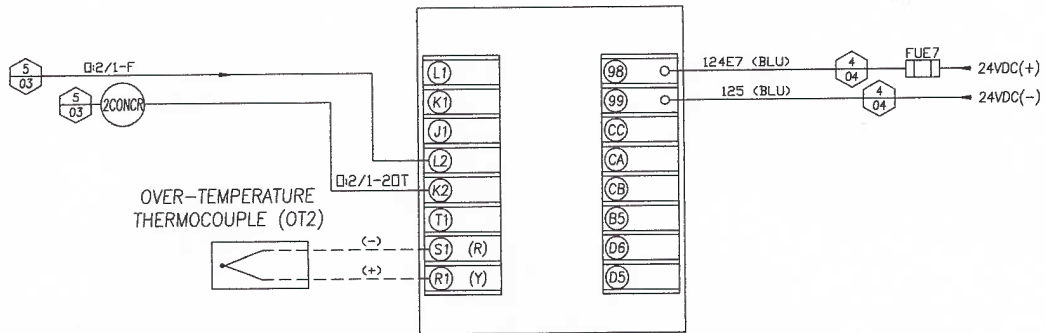
SIZE: A	DRAWING NO: NANO-ELEC-100	SHEET: 7 OF 13
SCALE: NONE	DRAWN: LBH	DATE: 7/14/2015
		REV: 4

REV	REVISION DESCRIPTION	BY	DATE

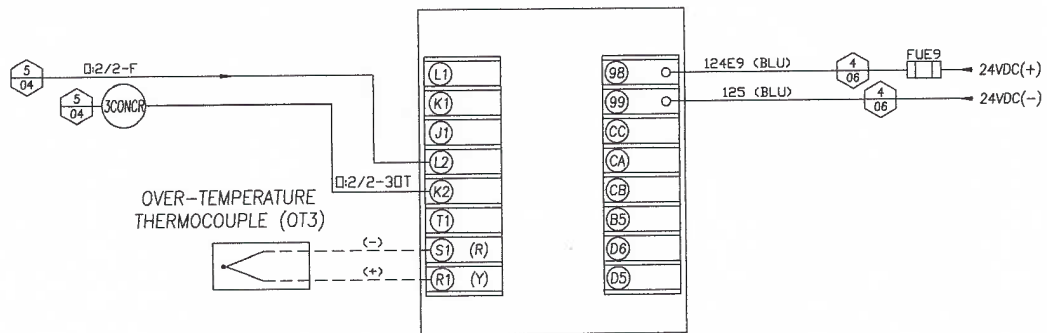
WATLOW PM6L3CJ-AAAAAAA OVER-TEMPERATURE CONTROLLER WIRING DIAGRAM



WATLOW EZ ZONE (HEAT ZONE 1)



WATLOW EZ ZONE (HEAT ZONE 2)



WATLOW EZ ZONE (HEAT ZONE 3)

Input/Output Settings: Over Temperature Alarm Factory Set at 1500°F
 Lin: K (K-type) Lh.Si: 1500°F
 SEn: tc (thermocouple)

**Infrared
Technologies**

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 (865) 574-9784
 www.infraredheating.com

TOLERANCES:
 X ±0.1
 .X ±0.05
 .XX ±0.005
 .XXX ±0.001

UNLESS SPECIFIED OTHERWISE
 DIMENSIONS ARE IN INCHES

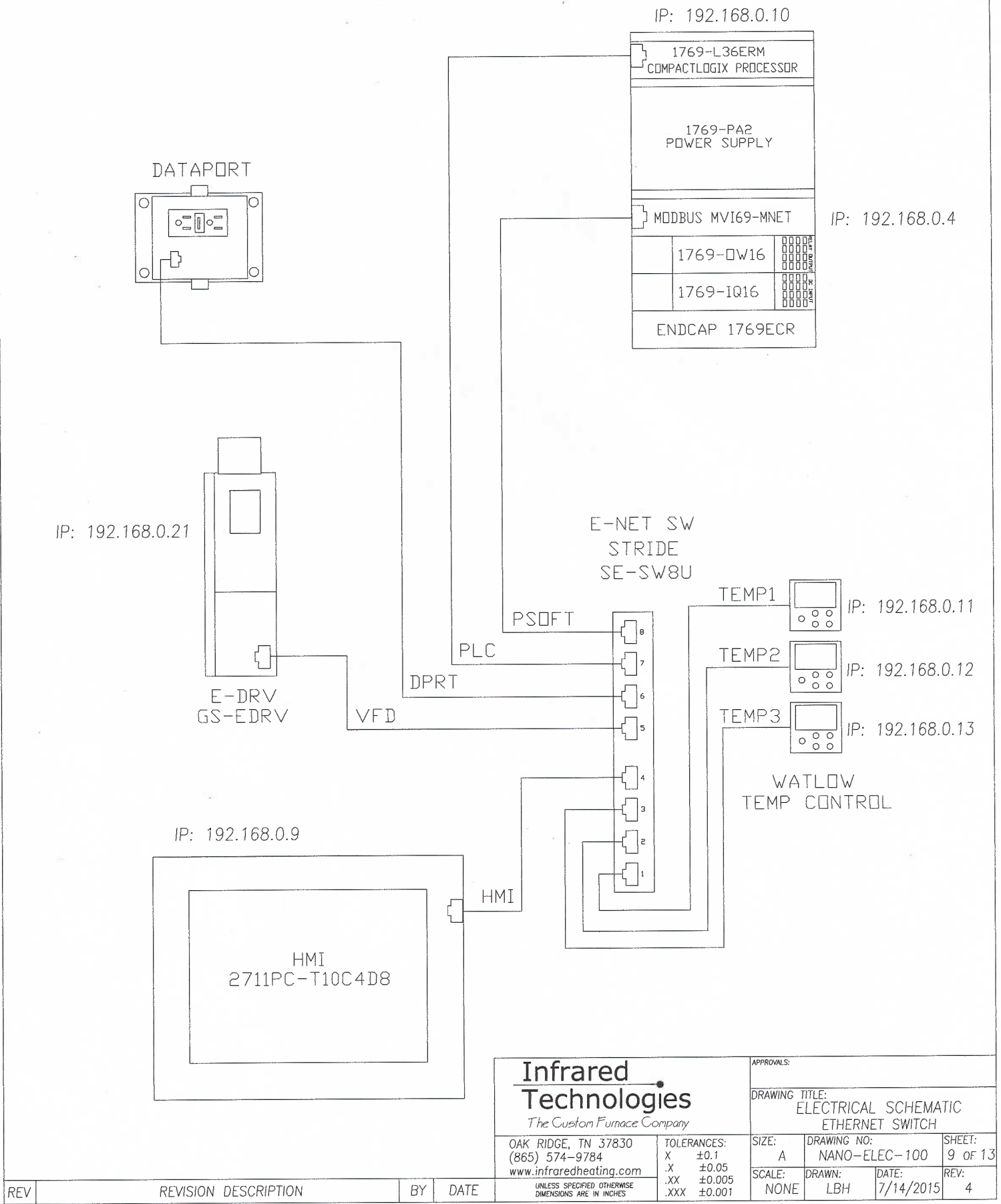
APPROVALS:

DRAWING TITLE:
 ELECTRICAL SCHEMATIC
 WATLOW OTEMP CTRLR WIRING DIAGRAM

SIZE: A	DRAWING NO: NANO-ELEC-100	SHEET: 8 OF 13
SCALE: NONE	DRAWN: LBH	DATE: 7/14/2015
		REV: 4

REV	REVISION DESCRIPTION	BY	DATE

CAT45 ETHERNET LAYOUT



Infrared Technologies
The Custom Furnace Company

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(865) 574-9784
www.infraredheating.com

TOLERANCES:
X ±0.1
.X ±0.05
.XX ±0.005
.XXX ±0.001

APPROVALS:

DRAWING TITLE:
ELECTRICAL SCHEMATIC
ETHERNET SWITCH

SIZE:
A

DRAWING NO:
NANO-ELEC-100

SHEET:
9 OF 13

SCALE:
NONE

DRAWN:
LBH

DATE:
7/14/2015

REV:
4

REV REVISION DESCRIPTION

BY

DATE

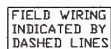
UNLESS SPECIFIED OTHERWISE
DIMENSIONS ARE IN INCHES

PLC LAYOUT

1769-L36ERM COMPACTLOGIX PROCESSOR		
1769-PA2 POWER SUPPLY		
MODBUS MVI69-MNET PROSOFT		
	1769-OW16	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ RELAY OUTPUT
	1769-IQ16	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ DC INPUT
ENDCAP 1769ECR		

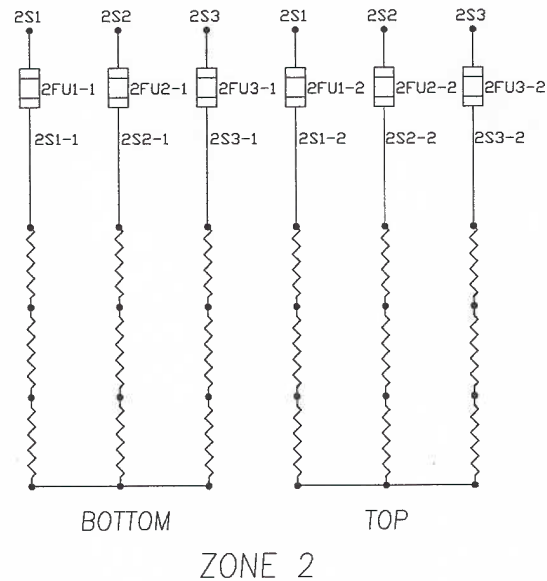
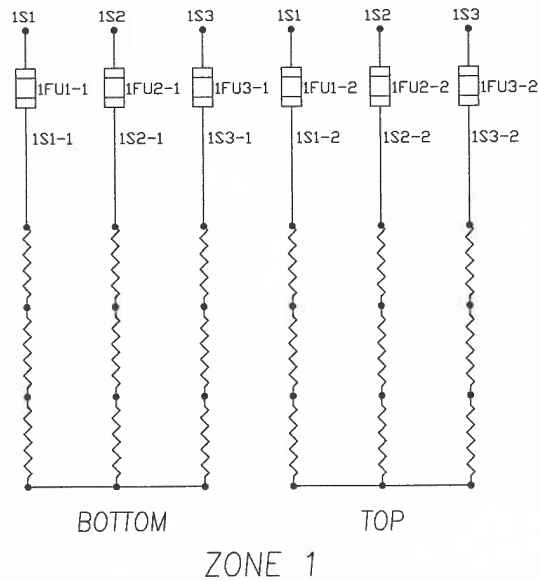
				Infrared Technologies <i>The Custom Furnace Company</i>		APPROVALS:	
				OAK RIDGE, TN 37830 (865) 574-9784 www.infraredheating.com		DRAWING TITLE: ELECTRICAL SCHEMATIC PLC LAYOUT	
				TOLERANCES: X ±0.1 .X ±0.05 .XX ±0.005 .XXX ±0.001		SIZE: A SCALE: NONE	DRAWING NO: NANO-ELEC-100 DRAWN: LBH DATE: 7/14/2015
REV	REVISION DESCRIPTION	BY	DATE	UNLESS SPECIFIED OTHERWISE DIMENSIONS ARE IN INCHES		SHEET: 10 of 13	REV: 4

PARAMETER	SETTING
P 3.0	3
P 4.0	5



				Infrared Technologies <i>The Custom Furnace Company</i>		APPROVALS:	
				OAK RIDGE, TN 37830 (865) 574-9784 www.infraredheating.com		DRAWING TITLE: ELECTRICAL SCHEMATIC CONVEYOR SPEED CONTROL	
				TOLERANCES: X ± 0.1 .X ± 0.05 .XX ± 0.005 .XXX ± 0.001		SIZE: A DRAWING NO: NANO-ELEC-100 SHEET: 11 OF 13	
				UNLESS SPECIFIED OTHERWISE DIMENSIONS ARE IN INCHES		SCALE: NONE DRAWN: LBH DATE: 7/14/2015 REV: 4	
REV		REVISION DESCRIPTION	BY	DATE			

OUTPUT BRANCH CIRCUITS



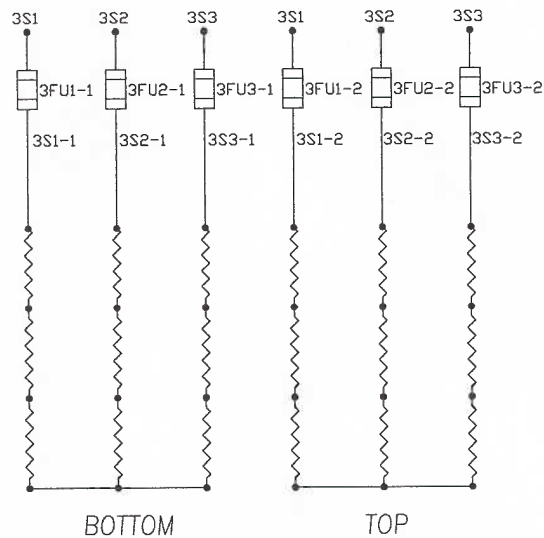
 SILICONE CARBIDE STARBAR
 2665 WATTS EACH
 MAX. CURRENT DRAW, 175A
 QTY: 18 PER ZONE, 54 TOTAL

 FUSE: 40 AMP
 QTY: 6 PER HEAT ZONE, 18 TOTAL

Infrared Technologies <i>The Custom Furnace Company</i>		APPROVALS:	
		DRAWING TITLE: ELECTRICAL SCHEMATIC HEAT ZONE 1&2 BRANCH CIRCUITS	
OAK RIDGE, TN 37830 (865) 574-9784 www.infraredheating.com		SIZE: A	DRAWING NO: NANO-ELEC-100
TOLERANCES: X ±0.1 .X ±0.05 .XX ±0.005 .XXX ±0.001		SCALE: NONE	DATE: 7/14/2015
UNLESS SPECIFIED OTHERWISE DIMENSIONS ARE IN INCHES		REV: LBH	SHEET: 12 OF 13

REV	REVISION DESCRIPTION	BY	DATE
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OUTPUT BRANCH CIRCUITS



ZONE 3

—●—●—●— SILICONE CARBIDE STARBAR
2665 WATTS EACH
QTY: 18 PER ZONE, 54 TOTAL

—□— FUSE: 40 AMP
QTY: 6 PER HEAT ZONE, 18 TOTAL

Infrared Technologies <i>The Custom Furnace Company</i>		APPROVALS:	
		DRAWING TITLE: ELECTRICAL SCHEMATIC HEAT ZONE 3 BRANCH CIRCUITS	
OAK RIDGE, TN 37830 (865) 574-9784 www.infraredheating.com		SIZE: A	DRAWING NO: NANO-ELEC-100
TOLERANCES: X ±0.1 .X ±0.05 .XX ±0.005 .XXX ±0.001		SCALE: NONE	DATE: 7/14/2015
UNLESS SPECIFIED OTHERWISE DIMENSIONS ARE IN INCHES		REV:	4

REV	REVISION DESCRIPTION	BY	DATE
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