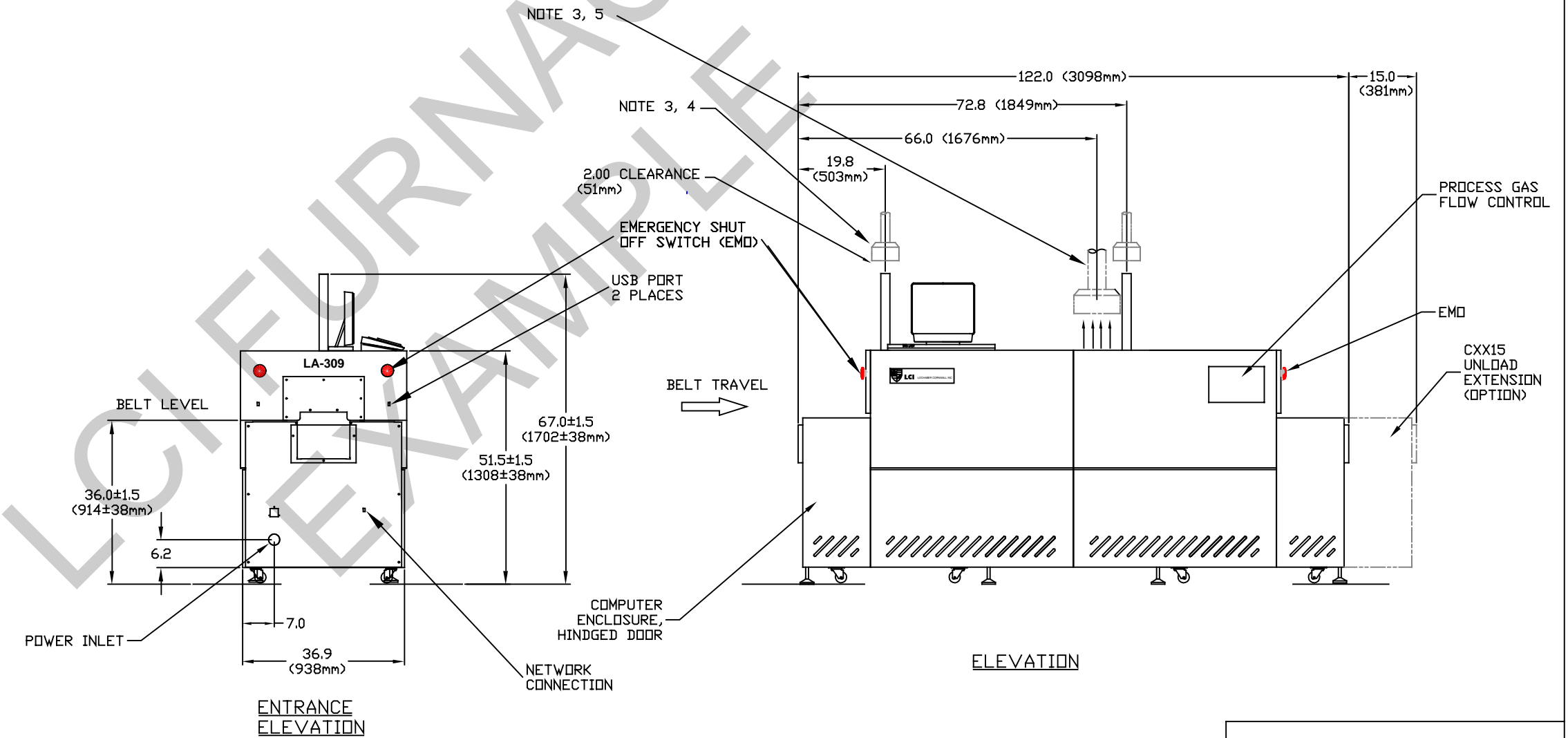
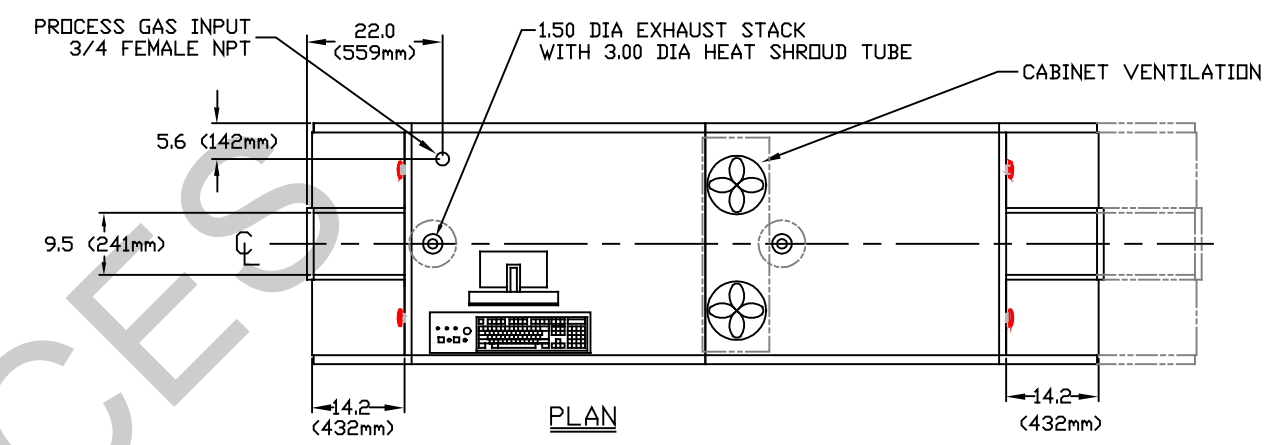


**DRAWINGS & SCHEMATICS**

Job/Master	Drawing Nbr.	Title
12-004	803-091700	FURNACE ARRANGEMENT, LA-309
STD	803-091734-02	CHAMBER ARRANGEMENT, LA-309
STD	801-090342-02	PROCESS GAS PLUMBING, SINGLE GAS
12-004	802-101701	PLC CONFIGURATION
12-004	802-101705-01	PLC PANEL LAYOUT
STD	802-101770-01	POWER CONTROL SCH
STD	802-101771	FRAME WIRING SCHEMATIC
STD	802-101774-24	CONTROL CONSOLE
STD	802-101814-309	ELEMENT WIRING

LCI FURNACES  
EXAMPLE

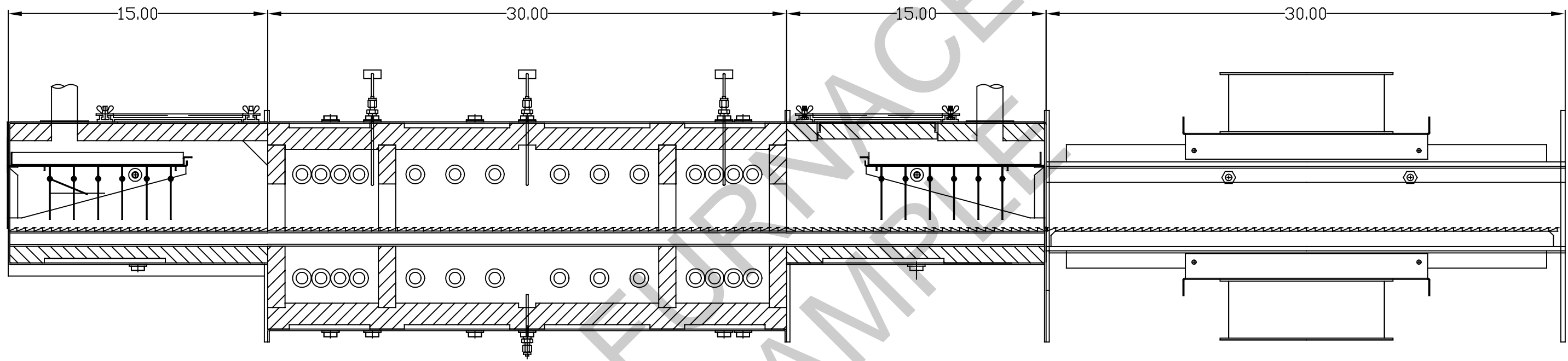
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



NOTES:

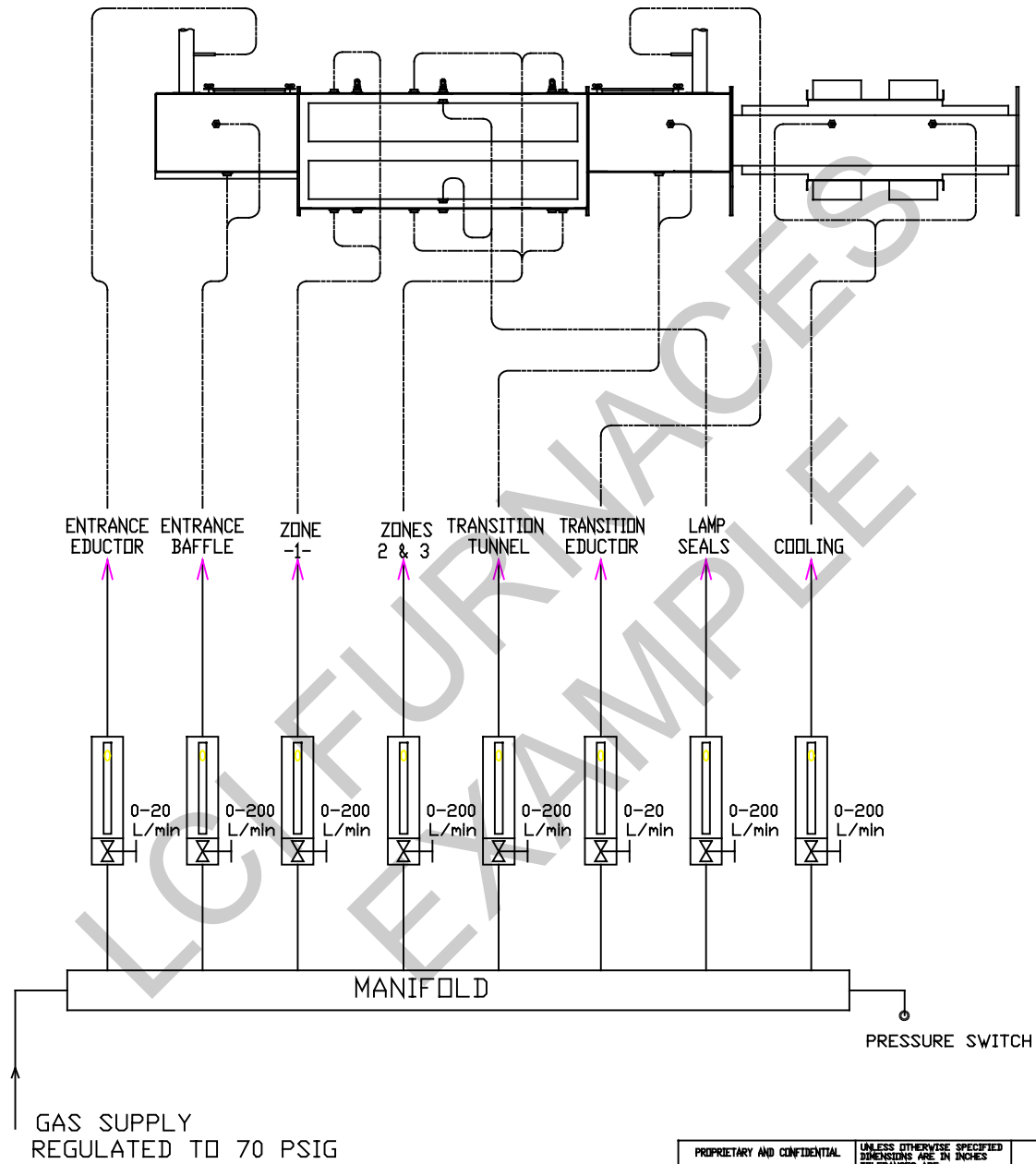
- FOR COMPLETE INSTALLATION INSTRUCTIONS CONSULT FURNACE OPERATING MANUAL.
- ALL DIMENSIONS ARE APPROXIMATE
- BY OTHERS.
- RECOMMENDED PROCESS GAS EXHAUST 4.0 DIA INSULATED DUCT WITH 8.0 DIA COLLECTOR HOOD FOR MAX 150L/MINUTE @ 60C.
- OPTIONAL CABINET VENTILATION 4.0 DIA DUCT WITH 8.0 X 12.0 RECTANGULAR HOOD FOR 250L/MINUTE @ 25C.


PROPRIETARY AND CONFIDENTIAL		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS ANGLES FRACTIONS X ±.3 XX±.5 X/XX±.2 X/XX±.4		MODEL NO. LA-309		 DIVISION OF LOCHABER CORNWALL INC	
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF LOCHABER CORNWALL, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF LOCHABER CORNWALL, INC. IS PROHIBITED.		MATERIAL		APPROVALS		DATE	
CONFIG.	USED ON	FINISH		DRAWN C ROODE		3/05/12	
APPLICATION		DO NOT SCALE DRAWING		CHECKED J CLARK		11/21/12	
				ISSUED J CLARK		11/26/12	
				SIZE		JOB NO. STD	
				DWG. NO. 803-091309-05		REV. -	
				SCALE NONE		SHEET 1 OF 1	



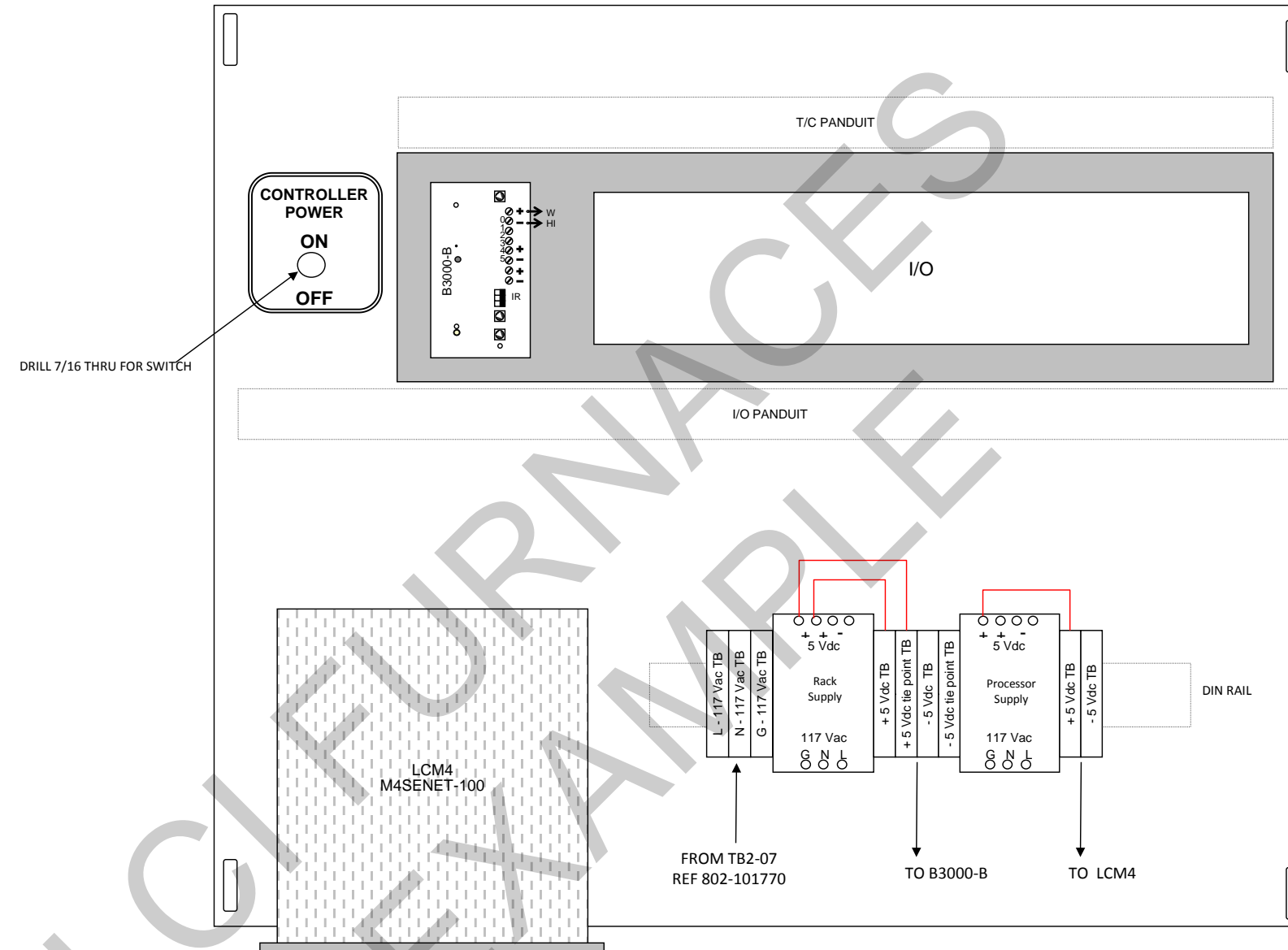
LCI FURNACES  
EXAMPLES

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		DRAWN	10/29/12	SIZE		MODEL NO.
		CHECKED	ISSUED	DWG. NO.		REV.
		DO NOT SCALE DRAWING	SCALE NONE	803-091734-02		-
					SHEET 1 OF 1	



PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF LOCHABER CORNWALL, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF LOCHABER CORNWALL, INC. IS PROHIBITED.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS ANGLES FRACTIONS .XX ± .03 .XX° ± .015" X/XX/74 .XX ± .03 .XX° ± .015" X/XX/74		LA-309		 <b>LCI Furnaces</b> DIVISION OF LOCHABER CORNWALL INC
	MATERIAL		APPROVALS	DATE	
	FINISH		DRAWN C RIDDIE	10/29/12	
	DO NOT SCALE DRAWING		CHECKED	ISSUED	
TITLE PROCESS GAS PLUMBING 3 - ZONE SINGLE GAS			SIZE STD	DWG. NO. 801-090342-02	REV. -
SCALE NONE			SHEET 1 OF 1		





Ref FO: 12-004

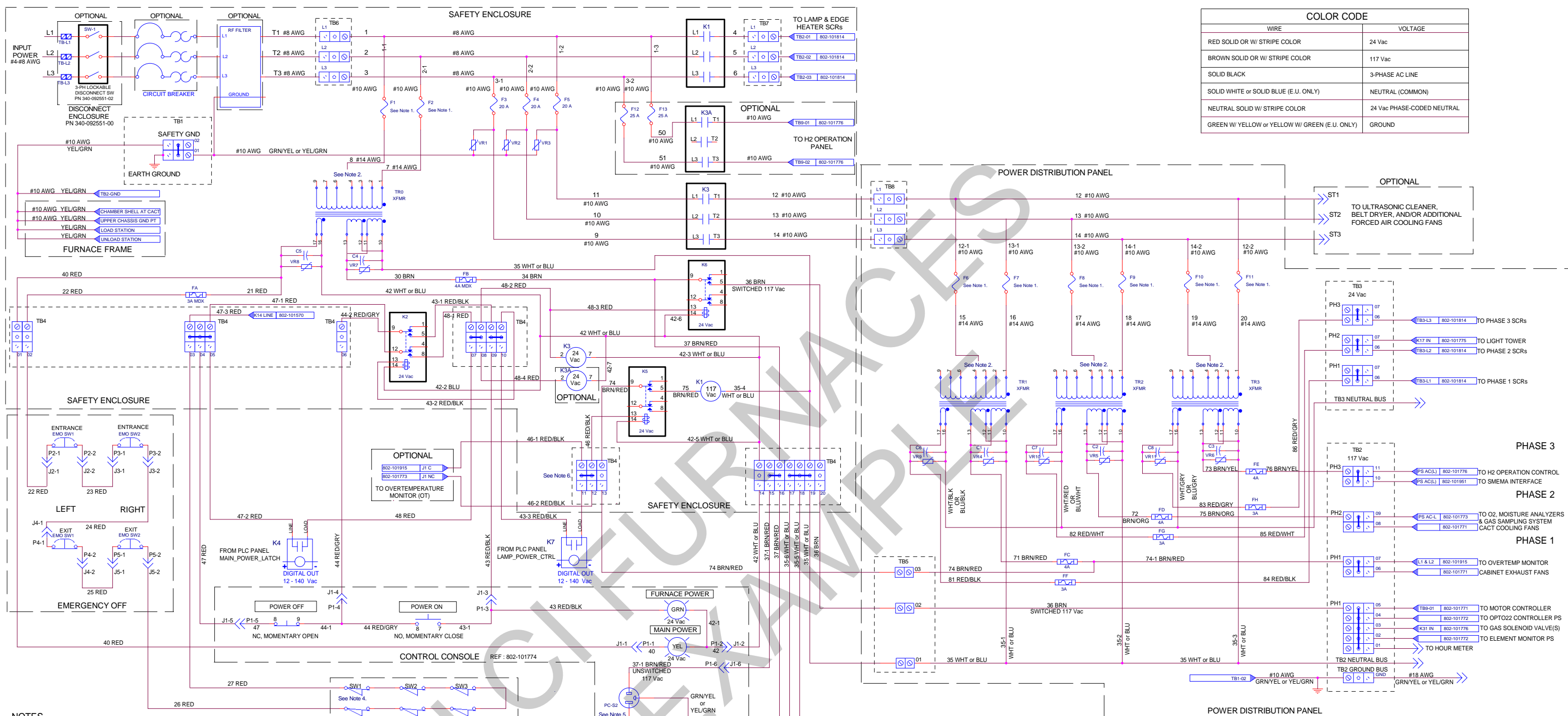
REV	DESCRIPTION	DATE	APPROVED
2	Add 12Vdc power supply when required. Horn changed to 24Vac.	6/24/2011	JMC
1	Added +/- 5 Vdc tie point TB for horn, transport motion fault, gas press sw power	5/3/2011	SLB

**LCI Furnaces**  
 DIVISION OF LOCHABER CORNWALL INC  
 675 N ECKHOFF STREET, STE D  
 ORANGE, CALIFORNIA 92868 USA  
 (714) 935-0302 www.furnacepros.com

APPROVALS	DATE	TITLE
DWN JMC	2/21/11	LA-309
CHKD SBARBER	2/22/11	PLC PANEL LAYOUT
ENGR JMC	8/31/12	12-004
PM JMC	8/31/12	802-101705-01

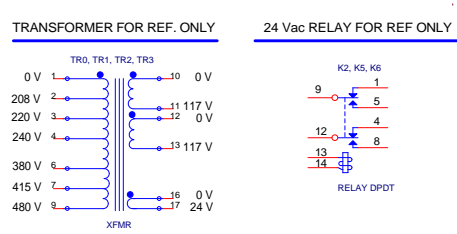
  

DOCUMENT NUMBER	REV
12-004	2
SIZE: B	PRNT: 11/28/12
SN: 1303061201	SHEET 1 OF 1



COLOR CODE	
WIRE	VOLTAGE
RED SOLID OR W/ STRIPE COLOR	24 Vac
BROWN SOLID OR W/ STRIPE COLOR	117 Vac
SOLID BLACK	3-PHASE AC LINE
SOLID WHITE or SOLID BLUE (E.U. ONLY)	NEUTRAL (COMMON)
NEUTRAL SOLID W/ STRIPE COLOR	24 Vac PHASE-CODED NEUTRAL
GREEN W/ YELLOW or YELLOW W/ GREEN (E.U. ONLY)	GROUND

- NOTES**
- K1 - MAIN SUPPLY CONTACTOR FOR HEATING ELEMENTS (117 Vac, 3PST)
  - K2 - CONTROL CIRCUIT POWER ON LATCHING RELAY (24 Vac, DPDT)
  - K3 - CONTACTOR CONTROLLING POWER TO TRANSFORMERS TR1, TR2, TR3 (24 Vac, 3PST)
  - K3A - CONTACTOR CONTROLLING POWER TO H2 OPERATION OPTION (24 Vac, 3PST)
  - K4 - PLC DIGITAL OUTPUT MAIN\_POWER\_LATCH (24 Vac)
  - K5 - RELAY CONTROLLING K1 (24 Vac, DPDT)
  - K6 - RELAY CONTROLLING SWITCHED 117 Vac OUTPUT OF TR0 (24 Vac, DPDT)
  - K7 - PLC DIGITAL OUTPUT LAMP\_POWER\_CTRL LATCH (24 Vac)
- VRX - TRANSIENT SURGE SUPPRESSOR X
- FOR INPUT VOLTAGE OF 380 VAC OR GREATER, F1, F2, AND F6 THROUGH F11 ARE 3 AMP. FOR INPUT VOLTAGE OF 277 VAC OR LESS, F1, F2, AND F6 THROUGH F11 ARE 4 AMP.
  - CONNECT TAP ACCORDING TO LINE VOLTAGE.
- | PIN # | VOLTAGE |
|-------|---------|
| 2     | 208     |
| 3     | 220     |
| 4     | 240     |
| 6     | 380     |
| 7     | 415     |
| 8     | 480     |
- ALL WIRES #18 AWG EXCEPT WHERE NOTED.
  - SWITCH LABEL STARTS FROM SW1. TOTAL # OF SWITCHES VARIES FROM MACHINE TO MACHINE.
  - USE RECEPTACLE PC-S1 FOR COMPUTER; RECEPTACLE PC-S2 FOR COMPUTER MONITOR.
  - REMOVE JUMPER BTW TB4-11 & TB4-12 IF OVERTEMPERATURE MONITOR (OT) OPTION PRESENT.



REV	DESCRIPTION	DATE	APPROVED	REV	DESCRIPTION	DATE	APPROVED
10	ADD NEW OT, XFMR, TB4 & GROUND CONNECTIONS	10/10/12	S BARBER	4	REMOVED UPS CONNECTIONS TO DRAWING 802-101770-02	6/17/10	S BARBER
9	ADD H2 POWER & K3A CONTACTOR, UPDATE RELAYS	10/18/11	S BARBER	3	ADDED TB4 & TB5, 4 EMO, NEW P1/J1, WIRES RENUMBERED	6/14/10	S BARBER
8	UPDATE TB4 CONNECTIONS	4/01/11	S BARBER	2	UNSWITCHED AND UPS POWER FOR PC & MONITOR	5/29/09	S BARBER
7	UPDATE TR0, TR1, TR2, TR3 WIRING	7/15/10	S BARBER	1	ADD 3-PH DISCONNECT SW	9/4/2010	S BARBER
6	CHANGE FURNACE POWER LAMP TO GRN	7/07/10	S BARBER				
5	NEW TB6, TB7, TB9; K2, K5 & K6 PINS; #14 AWG REPL #16 AWG	6/25/10	S BARBER				

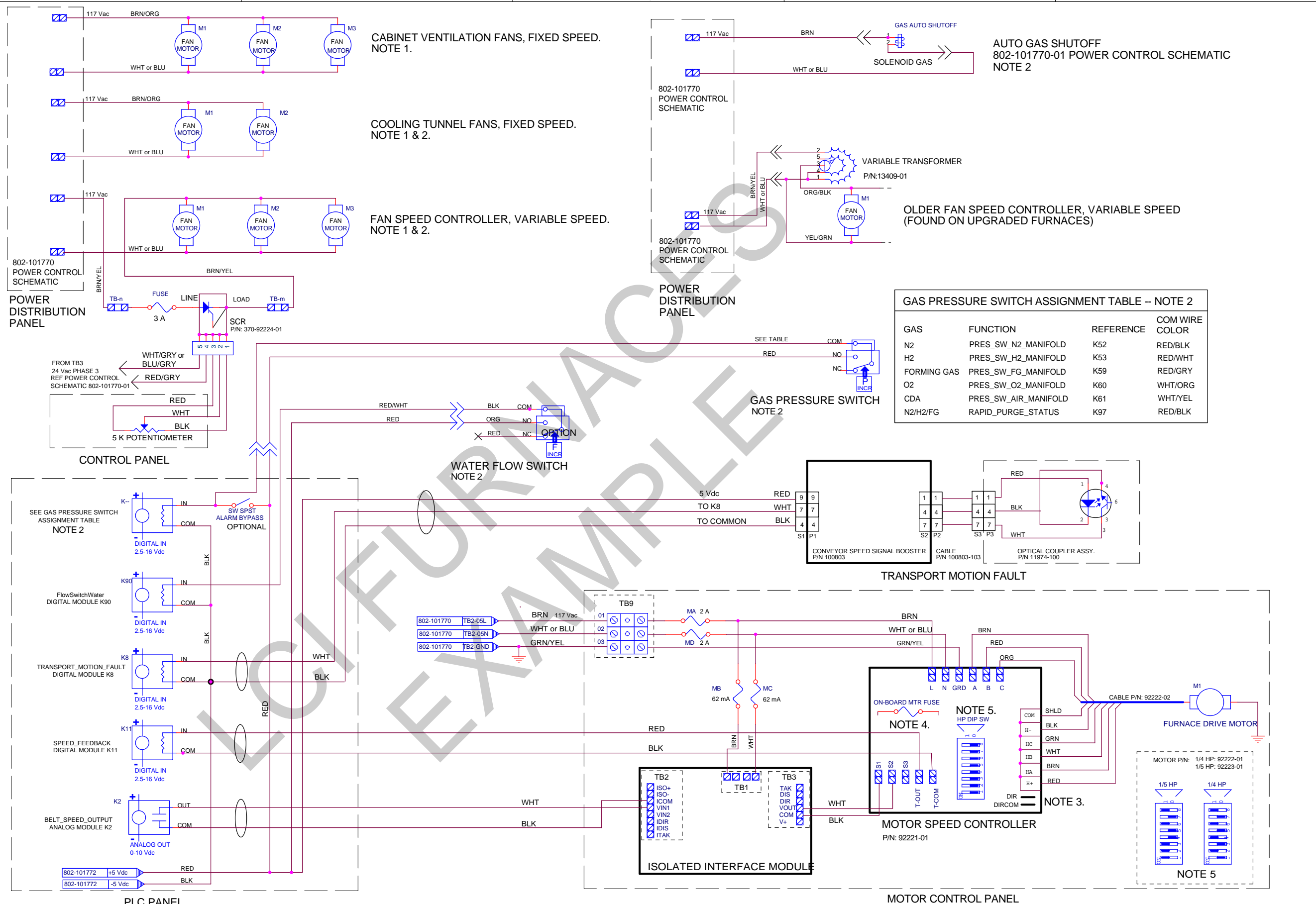
**LCI Furnaces**  
DIVISION OF LOCHABER CORNWALL, INC.  
EH 1L

**POWER CONTROL SCHEMATIC**

Document Number: **STD 802-101770-01**

Issue: 1 of 3





CABINET VENTILATION FANS, FIXED SPEED. NOTE 1.

COOLING TUNNEL FANS, FIXED SPEED. NOTE 1 & 2.

FAN SPEED CONTROLLER, VARIABLE SPEED. NOTE 1 & 2.

POWER DISTRIBUTION PANEL

AUTO GAS SHUTOFF 802-101770-01 POWER CONTROL SCHEMATIC NOTE 2

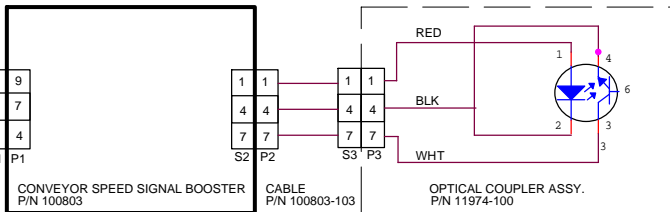
OLDER FAN SPEED CONTROLLER, VARIABLE SPEED (FOUND ON UPGRADED FURNACES)

GAS PRESSURE SWITCH ASSIGNMENT TABLE -- NOTE 2

GAS	FUNCTION	REFERENCE	COM WIRE COLOR
N2	PRES_SW_N2_MANIFOLD	K52	RED/BLK
H2	PRES_SW_H2_MANIFOLD	K53	RED/WHT
FORMING GAS	PRES_SW_FG_MANIFOLD	K59	RED/GRY
O2	PRES_SW_O2_MANIFOLD	K60	WHT/ORG
CDA	PRES_SW_AIR_MANIFOLD	K61	WHT/YEL
N2/H2/FG	RAPID_PURGE_STATUS	K97	RED/BLK

GAS PRESSURE SWITCH NOTE 2

WATER FLOW SWITCH NOTE 2

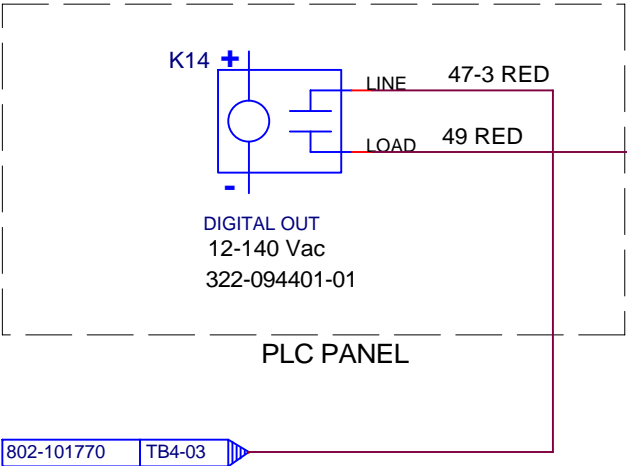
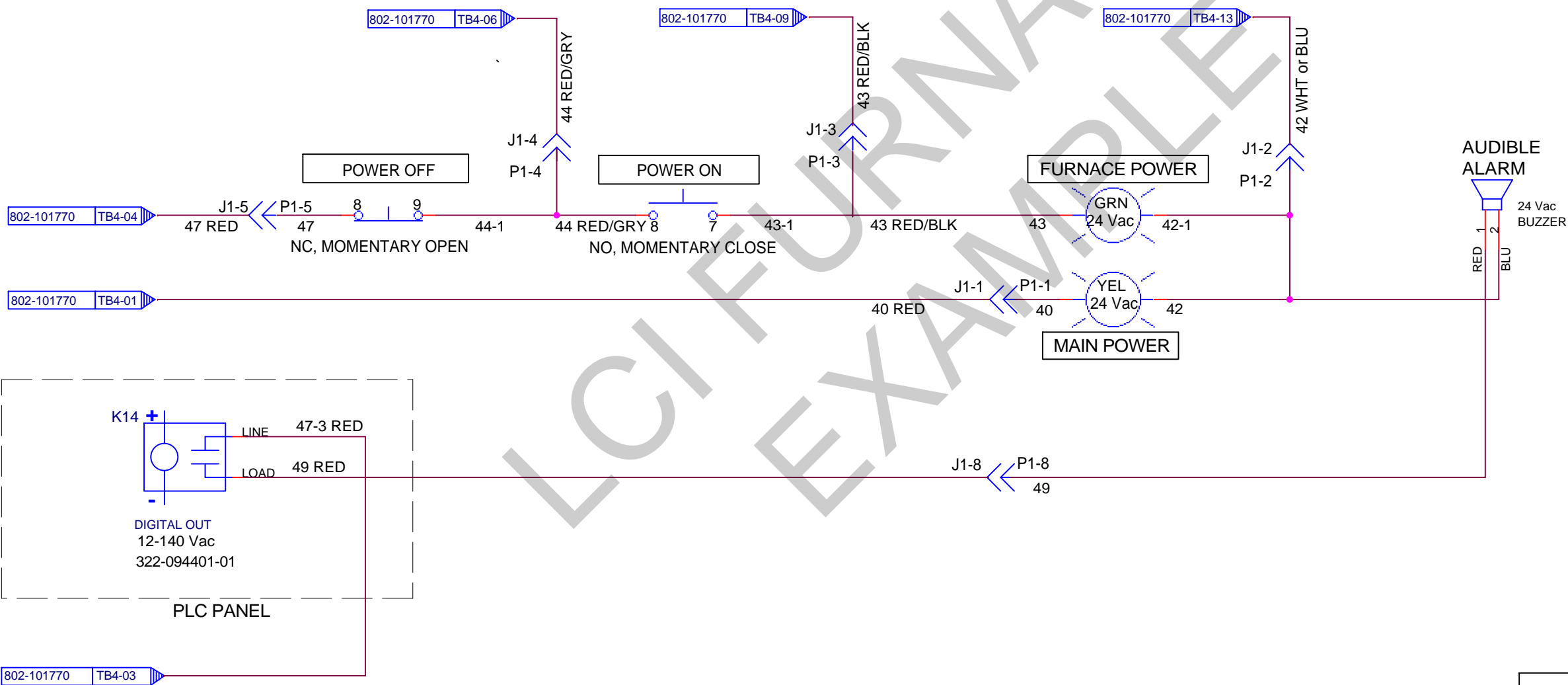
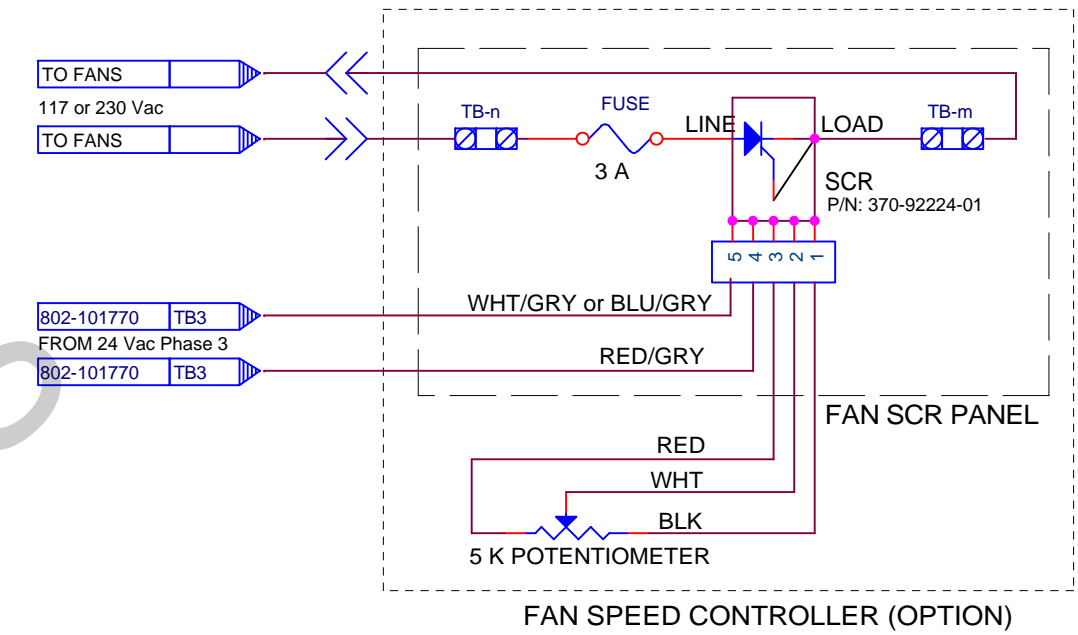
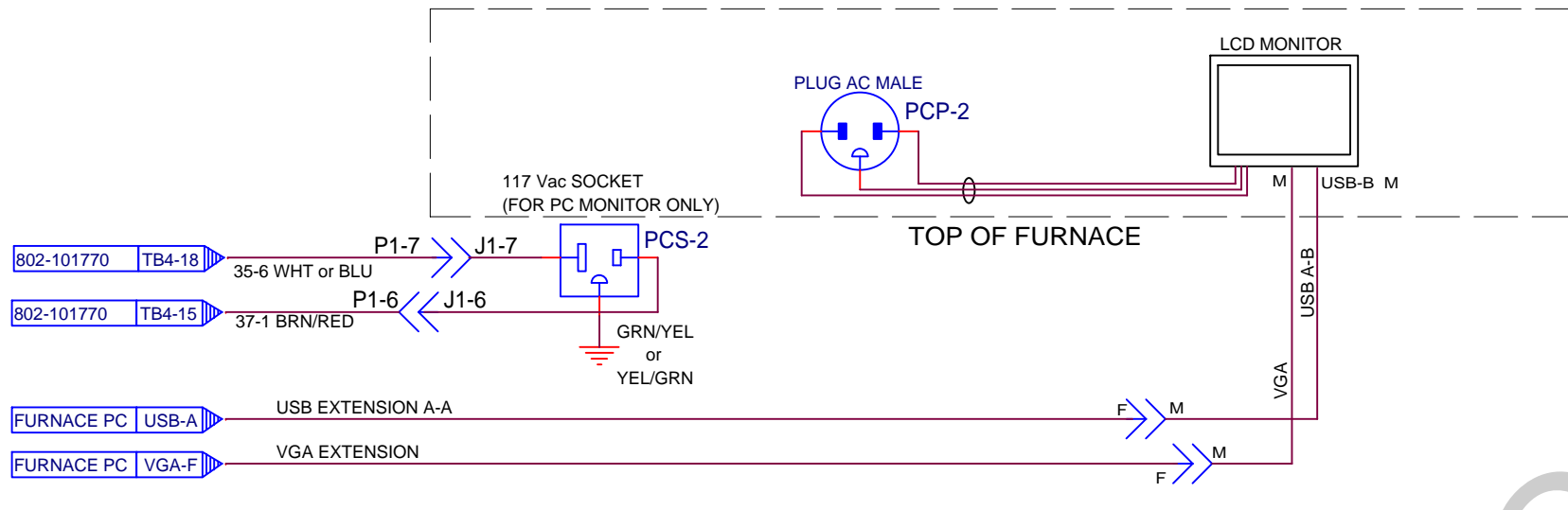


TRANSPORT MOTION FAULT

- NOTES:
- NUMBER OF FANS MAY VARY.
  - SUPPLIED WITH OPTIONAL EQUIPMENT.
  - DIR & DIRCOM MUST BE CONNECTED FOR PROPER 1/5 HP MOTOR ROTATION.
  - FUSE 1.5 A FOR 1/5 HP, 2 A FOR 1/4 HP MOTOR.
  - SET HORSEPOWER SWITCHES AS SHOWN.
  - ALL WIRES 18 AWG UNLESS OTHERWISE NOTED.
  - ALL MULTI-CONDUCTOR CABLE 22 AWG WIRES.

REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE	APPROVALS	DATE
4	ADD MOTOR CNTL SETTINGS, OLDER FAN CNTL	8/18/10	DRWN	J CLARK	10/14/08		
7	ADD WIRE SIZE NOTES & REMOVE ISO XFORMER	5/20/11	3	ADD IPS, AUTO GAS SHUTOFF	8/07/10	ENGR	S BARBER
6	ADD WATER FLOW SWITCH	5/17/11	2	ADD ISOLATED INTERFACE MODULE TO MSC	7/02/10	CHKD	B CLARK
5	ADD AUTO GAS SHUTOFF WIRE COLOR	9/16/10	1	REVERSE BELT SPEED FEEDBACK CONNECTION	10/16/08	ISSUED	J CLARK

**LCI Furnaces**  
 DIVISION OF LOCHABER CORNWALL, INC.  
 STD | 802-101814  
**FRAME WIRING SCHEMATIC**  
 Document Number  
**STD | 802-101771**  
 Date: Wednesday, October 10, 2012 Sheet 1 of 3



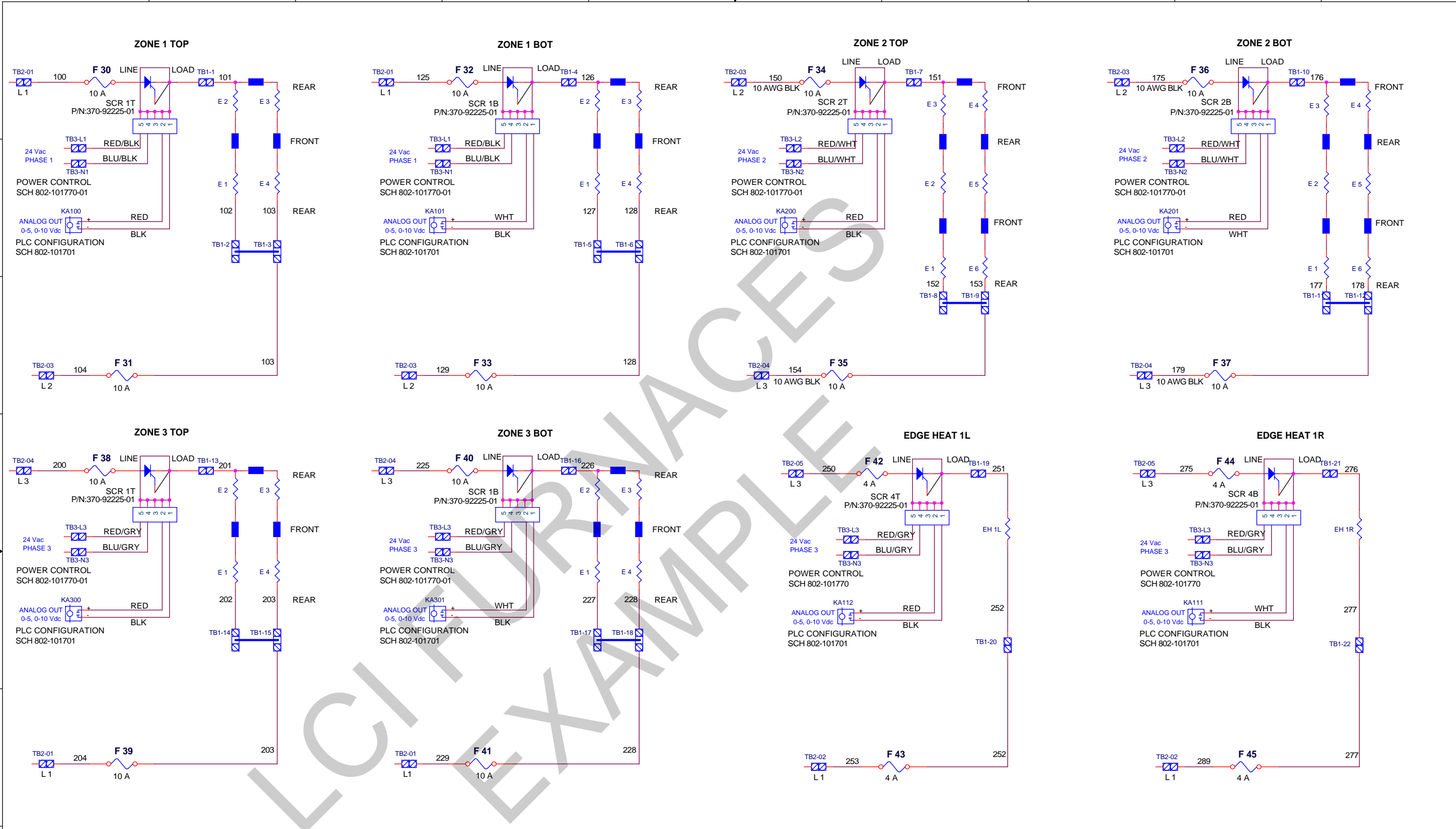
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 <OrgAddr2>

**CONTROL CONSOLE**

Size: B Document Number: STD | 803-101774-24 Rev: 1

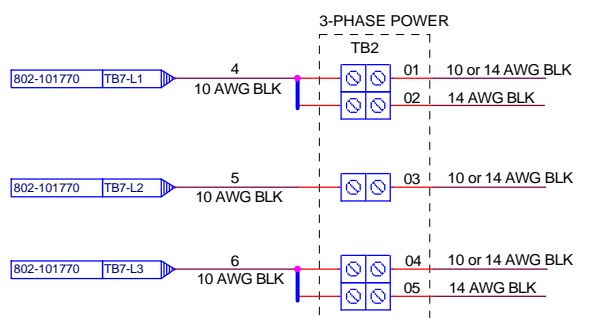
Date: Wednesday, October 10, 2012 Sheet 1 of 3

REV	DESCRIPTION	BY / DATE	DRWN	J CLARK	10/19/08	Title
			ENGR	J CLARK	10/19/08	
			CHKD	B CLARK	10/20/08	
1	CHANGE HORN TO 24 Vac	J CLARK 10/9/12	ISSUED	J CLARK	02/04/11	



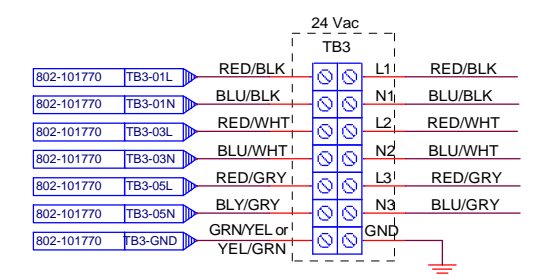
- NOTES**
1. TB3 SCR CONTROL WIRING #18 AWG.
  2. ALL OTHER WIRES #14 AWG, EXCEPT AS NOTED.
  3. ALL FUSES KTK TYPE (REF: 802-101530)

**TB2 FOR REF ONLY**



SEE TB2 OVERVIEW, REF: 802-101523 FOR DETAILS.

**TB3 OVERVIEW**



FO: 12-004  
MODEL: LA-309N

**LCI Furnaces**  
DIVISION OF LOCHABER CORNWALL, INC.  
675 NORTH ECKHOFF STREET, BLDG D, ORANGE, CA 92868 USA

**ELEMENT WIRING**

Size: STD | Document Number: 802-101814-309 | Rev: 0

Date: Wednesday, October 10, 2012 | Sheet: 1 of 3

REV	DESCRIPTION	DATE	DRWG	ENGRS	CHKD	APVD
1		10/09/12	BARBER	BARBER		J CLARK
2		10/09/12	BARBER	BARBER		

LCI FURNACES  
EXAMPLE