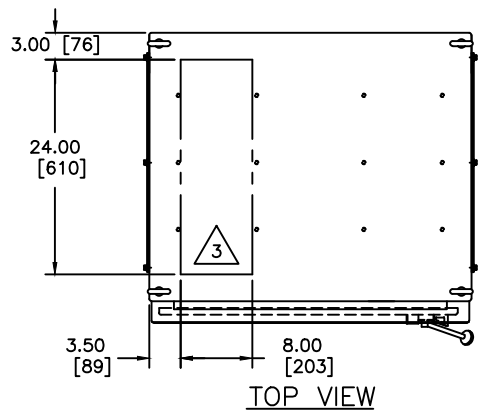
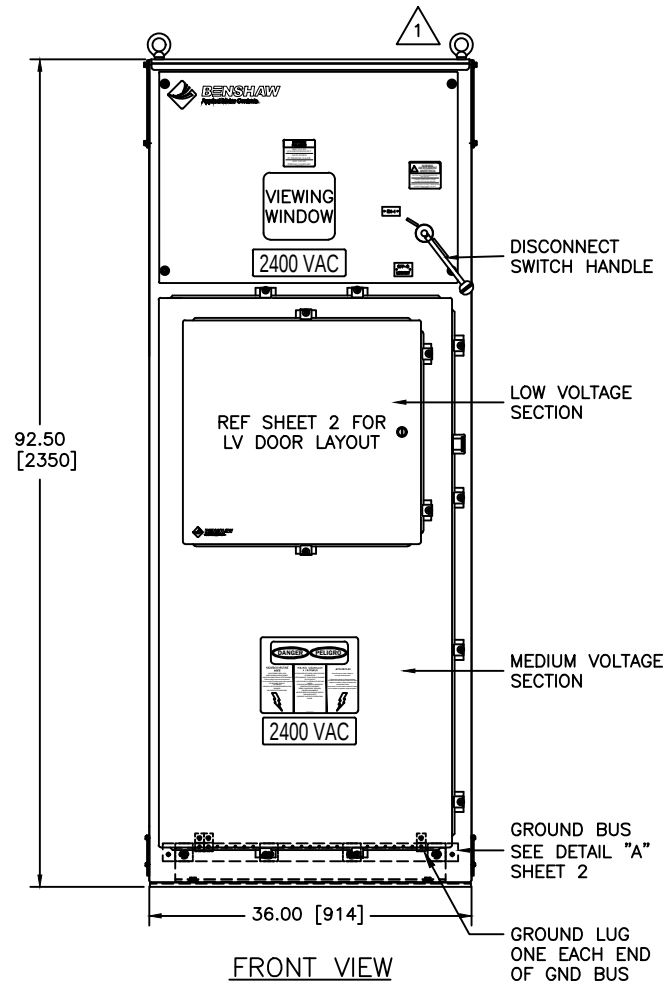


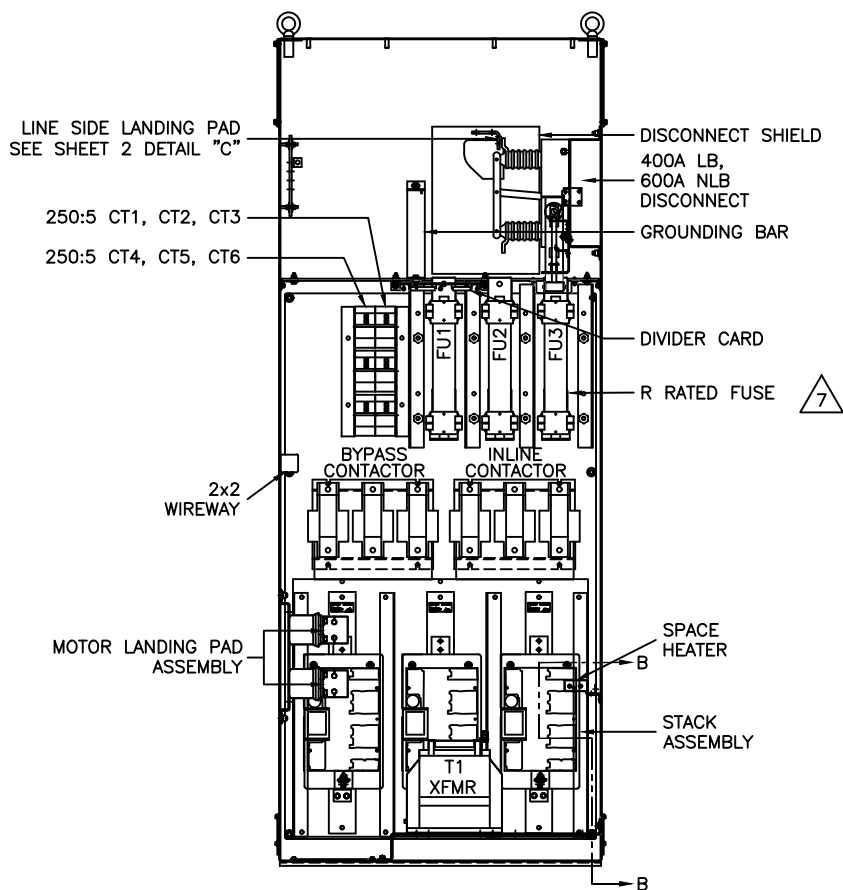
MVRXE1290023003R



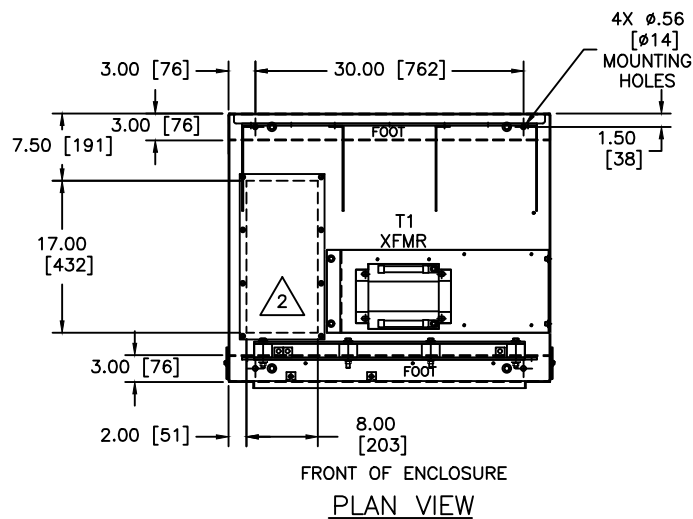
TOP VIEW



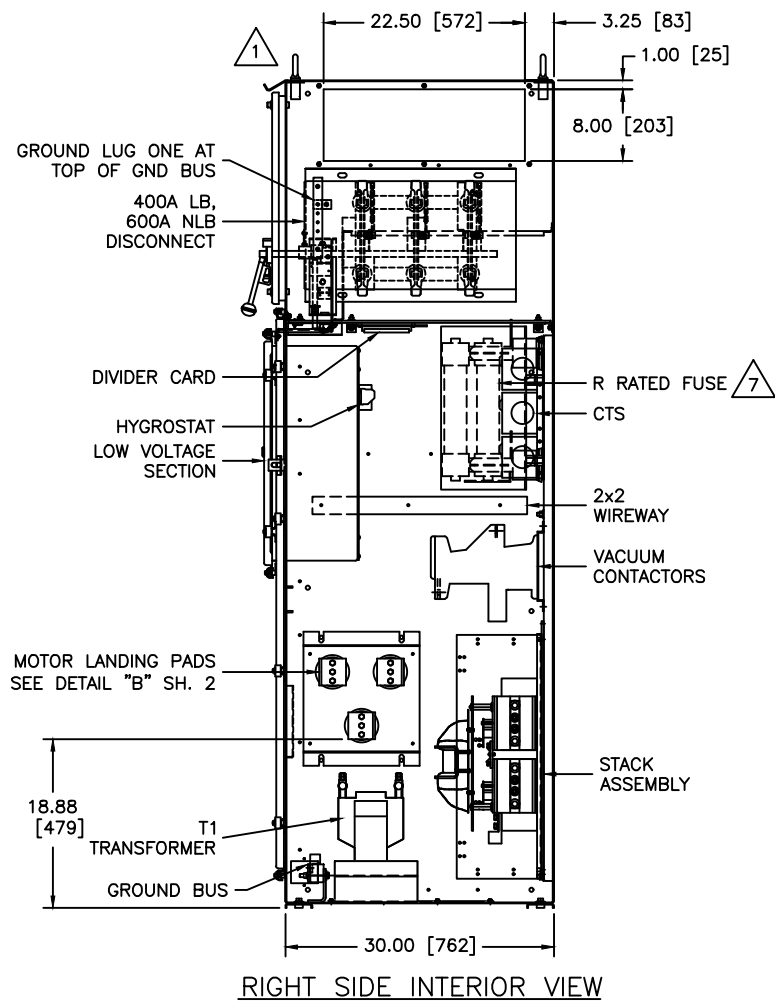
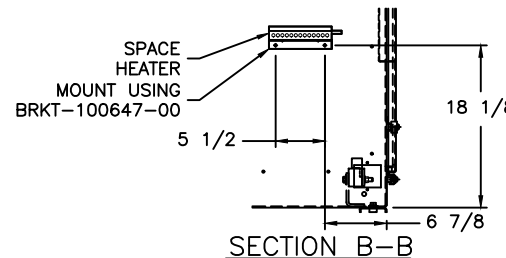
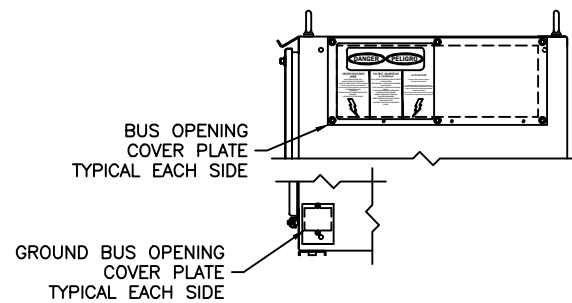
FRONT VIEW



FRONT INTERIOR VIEW



FRONT OF ENCLOSURE
PLAN VIEW



RIGHT SIDE INTERIOR VIEW

- NOTES:
- 1 REMOVABLE LIFTING EYEBOLTS
 - 2 CABLE ENTRY/EXIT AREA. CUTOUT W/ COVER PLATE SUPPLIED
 - 3 CABLE ENTRY/EXIT AREA. NO CUTOUT SUPPLIED. CUSTOMER TO CUT AS REQUIRED.
 - 4. ENCLOSURE COLOR: ANSI 61 GREY
 - 5. TIGHTEN BOLTS PER CHART BELOW

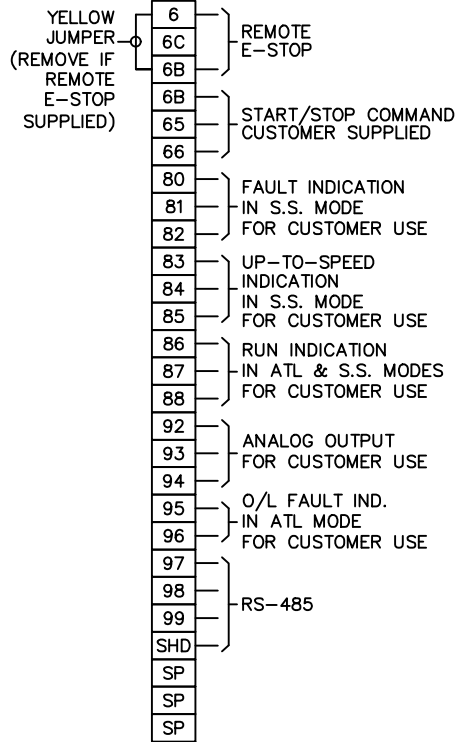
STEEL BOLT TORQUE IN POUND-FOOT [NEWTON-METER]				
1/4-20	5/16-18	3/8-16	1/2-13	5/8-11
5 [6.8]	12 [16.3]	20 [27]	50 [67.8]	95 [128.8]

- 6. APPROXIMATE WEIGHT IS 1600LBS [726KG]
- 7 R-FUSES SHOWN FOR REFERENCE. REFERENCE SALES ORDER FOR FUSE SIZE.

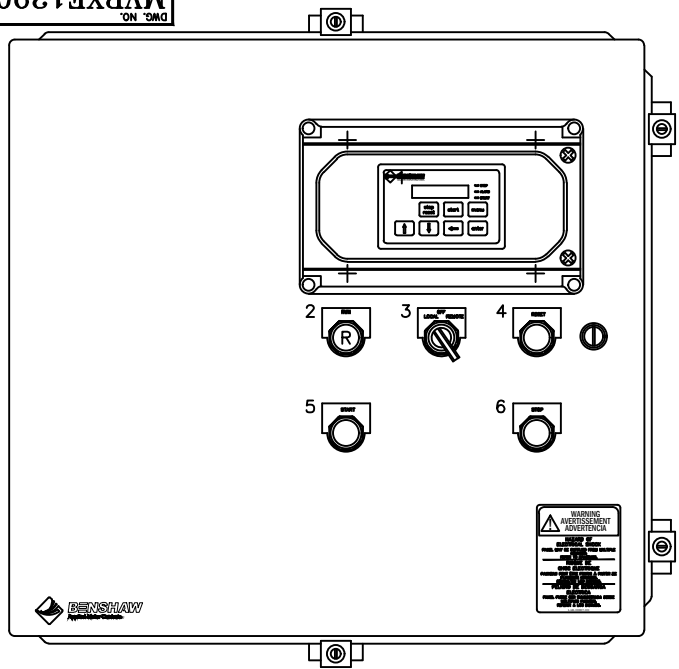
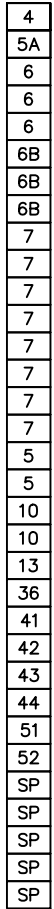
REVISION DO NOT SCALE DWG	THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES [mm] INTERPRET DRAWING PER ASME Y14.5M-1994 TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°	SIGNATURES	DATE	TITLE: UL LABELED CFMVRMX12-900-2300-3R SOLID STATE STARTER ENCLOSURE LAYOUT	 815 ALPHA DRIVE PITTSBURGH, PA. 15238 550 BRIGHT ST. E. LITTONEL, ONTARIO M4W 3W3
	THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN, IS THE PROPERTY OF BENSHAW INC., AND MAY NOT BE REPRODUCED, OR DIVULGED TO UNAUTHORIZED PERSONS WITHOUT THE EXPRESS WRITTEN CONSENT OF BENSHAW INC. IT IS PROVIDED SOLELY FOR THE CONVENIENCE OF THE USER AND SHALL BE RETURNED UPON REQUEST.	MATERIAL:	DRWN. JBU 3/3/2020	ENG. JBU 3/3/2020		
	FINISH:	SIZE	DWG. NO.	SCALE: 3/32 : 1		
	D MVRXE1290023003R			SHEET 1 OF 7		
						REV 0

MVRXE1290023003R

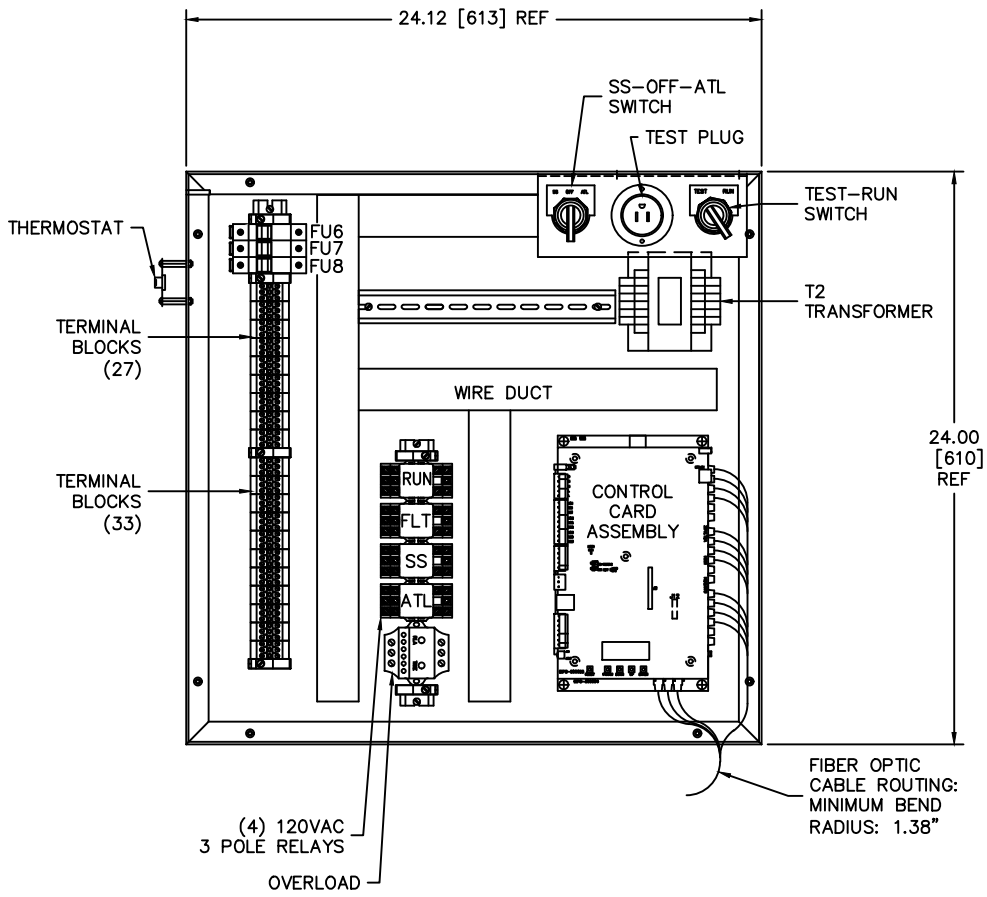
CUSTOMER
TERMINAL BLOCKS



BENSHAW
TERMINAL BLOCKS



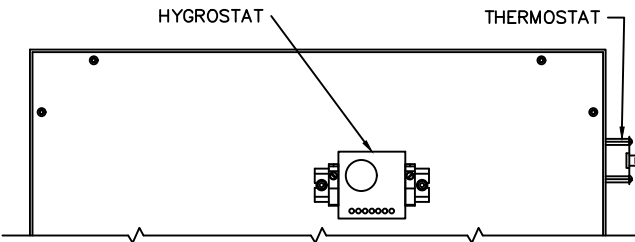
LOW VOLTAGE COMPARTMENT DOOR



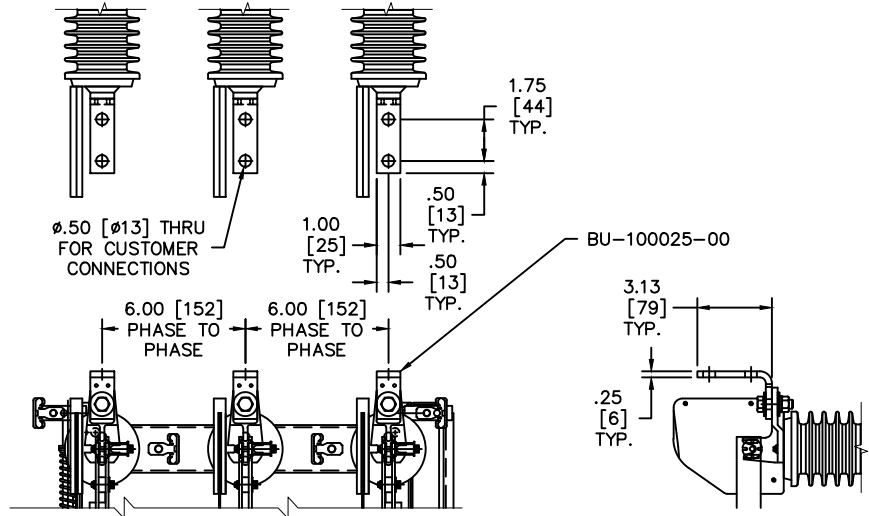
LOW VOLTAGE COMPARTMENT
INTERIOR VIEW

DEVICE LEGEND

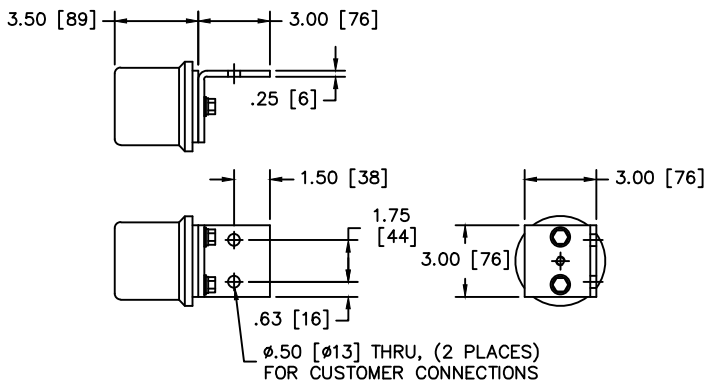
1. KEYPAD DISPLAY WITH 3R COVER
2. "RUN" (RED) PILOT LIGHT
3. "LOCAL-OFF-REMOTE" SELECTOR SWITCH
4. "RESET" (BLACK) PUSHBUTTON
5. "START" (GREEN) PUSHBUTTON
6. "STOP" (RED) RAISED PUSHBUTTON



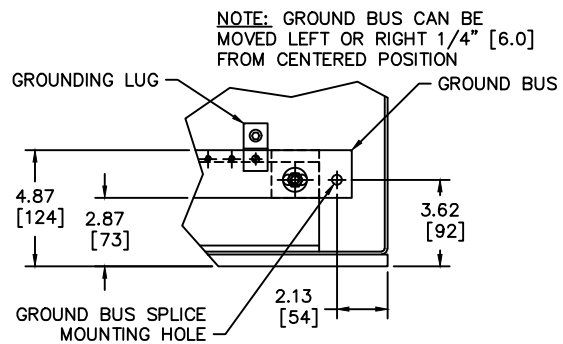
LOW VOLTAGE COMPARTMENT
REAR VIEW



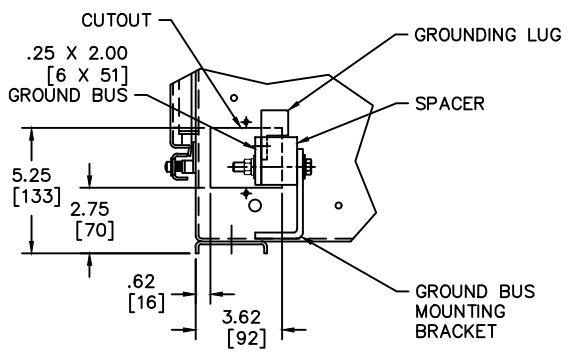
LINE SIDE LANDING PAD DETAIL "C"
MATERIAL: .25" THICK TIN PLATED COPPER



LANDING PAD DETAIL "B"
MATERIAL: .25" THICK TIN PLATED COPPER



FRONT VIEW



SIDE VIEW

GROUND BUS DETAIL "A"
MATERIAL: .25 [6] THK. X 2.00 [51] WIDE BARE COPPER

REVISION DO NOT SCALE DWG	THIRD ANGLE PROJECTION		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES [mm] INTERPRET DRAWING PER ASME Y14.5M-1994		SIGNATURES	DATE	TITLE: UL LABELED CFMVRMX12-900-2300-3R SOLID STATE STARTER LOW VOLTAGE COMPARTMENT AND ENCLOSURE DETAILS		BENSHAW	
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					CHKD. MCF 3/3/2020					
					ENG. JBU 3/3/2020					
		SIZE DWG. NO. D MVRXE1290023003R			SCALE: 1/4 : 1				SHEET 2 OF 7	

SHOP NOTES:

- S1

ALL INSTRUMENT AND CONTROL GROUND WIRES ARE #12AWG GREEN WIRE, EXCEPT WHERE NOTED, RUN SEPARATELY TO GROUND LUG POINT. DO NOT DAISY CHAIN GROUND WIRES. RUN ALL GROUND WIRES A MINIMUM OF FOUR (4) INCHES FROM POWER CABLE AND HEATSINKS.
- S2

ALL SECONDARY POWER WIRING MUST BE ROUTED SEPARATE FROM GROUND WIRES AND CONTROL WIRING.
- S3

ALL CURRENT TRANSFORMER SIGNAL WIRING TO BE COVERED WITH HIGH VOLTAGE SLEEVING. ALL CURRENT TRANSFORMERS TO BE SEPARATELY GROUNDED TO GROUND BUS.
- S4

ALL WIRING IN THE MEDIUM VOLTAGE AREA WITHIN FOUR (4) INCHES OF THE HEATSINK ASSEMBLY OR POWER CABLE MUST HAVE 5KV SLEEVING.
- S5

SEPARATE LOW VOLTAGE SUPPLY & CONTROL WIRING AS MUCH AS POSSIBLE FROM MV WIRING. MINIMUM SPACE IS 3". WIRES TO CROSS AT 90° ANGLES.
- S6

14AWG GREEN WIRE, EXCEPT WHERE OTHERWISE NOTED, RUN SEPARATELY TO GROUND LUG POINT. DO NOT DAISY CHAIN GROUND WIRES. RUN ALL GROUND WIRES A MINIMUM OF FOUR (4) INCHES FROM POWER CABLE AND HEATSINKS.
- S7

SCR GATE WIRES TO BE COVERED WITH HIGH VOLTAGE SLEEVING.
- S8

ALL CONTROL WIRING TO BE 14AWG EXCEPT WHERE NOTED.

PARAMETER SETTINGS

SEE MANUAL FOR ADDITIONAL SETTINGS

GROUP	DISPLAY	FUNCTION	AS BUILT
QST 04	LOCAL SRC	LOCAL START SOURCE	TERMINAL
QST 05	REMOTE SRC	REMOTE START SOURCE	TERMINAL
I/O/ 26	Kpd Stop	KEYPAD STOP ENABLE / DISABLE	DISABLE
I/O/ 01	DI 1 CONFIG	DIGITAL INPUT #1 CONFIGURATION	OFF
I/O/ 02	DI 2 CONFIG	DIGITAL INPUT #2 CONFIGURATION	INLINE CNFRM
I/O/ 03	DI 3 CONFIG	DIGITAL INPUT #3 CONFIGURATION	DISCONNECT
I/O/ 04	DI 4 CONFIG	DIGITAL INPUT #4 CONFIGURATION	FAULT LOW
I/O/ 05	DI 5 CONFIG	DIGITAL INPUT #5 CONFIGURATION	OFF
I/O/ 06	DI 6 CONFIG	DIGITAL INPUT #6 CONFIGURATION	FAULT RESET
I/O/ 07	DI 7 CONFIG	DIGITAL INPUT #7 CONFIGURATION	OFF
I/O/ 08	DI 8 CONFIG	DIGITAL INPUT #8 CONFIGURATION	OFF
I/O/ 10	R1 CONFIG	RELAY OUTPUT #1 CONFIGURATION	FAULT FS
I/O/ 11	R2 CONFIG	RELAY OUTPUT #2 CONFIGURATION	UTS
I/O/ 12	R3 CONFIG	RELAY OUTPUT #3 CONFIGURATION	RUNNING
I/O/ 13	R4 CONFIG	RELAY OUTPUT #4 CONFIGURATION	OFF
I/O/ 14	R5 CONFIG	RELAY OUTPUT #5 CONFIGURATION	OFF
I/O/ 15	R6 CONFIG	RELAY OUTPUT #6 CONFIGURATION	OFF
I/O/ 21	Aout Fctn	ANALOG OUTPUT FUNCTION	OFF
RTD 01	RTDMod1 Addr	RTD MODULE #1 ADDRESS	OFF
RTD 02	RTDMod2 Addr	RTD MODULE #2 ADDRESS	OFF

GROUP	DISPLAY	FUNCTION	AS BUILT
FUN 03	CT RATIO	CT RATIO	250:5
FUN 05	RATED VOLTS	RATED RMS VOLTAGE	2300
FUN 07	STARTER TYPE	STARTER TYPE	NORMAL
FUN 20	STACK OL	STACK OL ENABLE / DISABLE	ENABLE
FUN 21	STACK RATING	STACK RATING	360A

STANDARD LEGEND

- WIRE NODE SYMBOL
- BENSHAW SUPPLIED
TERMINAL BLOCK
- POWER CONNECTION
- TWISTED PAIR
- TWISTED, SHIELDED
PAIR
- SHIELDED
- FIBER OPTIC CABLE
ARROW INDICATES DIRECTION OF SIGNAL
- (C-3)

UNDERLINED CONTACT REFERENCES
ARE NORMALLY CLOSED
- (C-3)

NORMALLY OPENED CONTACT REFERENCES
ARE NOT UNDERLINED

CUSTOMER NOTES:

- C1

ITEM LOCATED IN STARTER MEDIUM VOLTAGE SECTION.
- C2

ITEM LOCATED IN STARTER LOW VOLTAGE SECTION.
- C3

R1 RELAY SHOWN IN DE-ENERGIZED STATE.
R1 N.O. CONTACT WILL OPEN AND R1 N.C. CONTACT WILL CLOSE ON SYSTEM FAULT.
R1 RELAY INDICATES FAULT ON POWER-UP UNTIL STARTER SELF-CHECK IS COMPLETE.
- C4

LED STATUS WITH POWER APPLIED.
 "ON" "OFF"
- C5

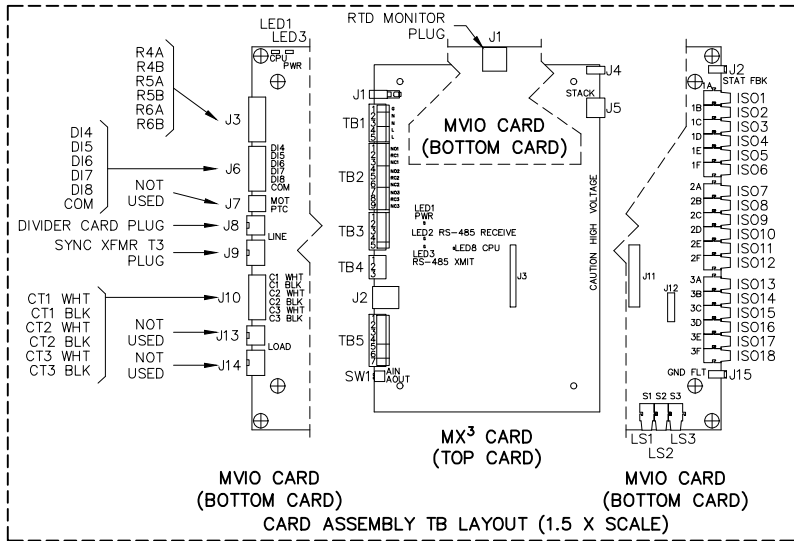
REMOVE REMOTE RUN COMMAND PRIOR TO RESETTING A FAULT TO PREVENT IMMEDIATE RESTART OF THE MOTOR.
- C6

REFERENCE SALES ORDER FOR R-FUSE SIZE.
- C7

THE ACTUAL HP AND FLA RATINGS VARY PER MOTOR. SIZE R-FUSES PER MOTOR FLA.
THE MAXIMUM SIZE R-FUSE FOR THIS MODEL MVRXE IS 24R.

	SOFTWARE VERSION	MANUAL
MX3 CARD	810023-02-xx	890034-03-xx
MVIO CARD	810024-01-xx	

xx VERSION AT TIME OF SHIPMENT



REVISION

DO NOT SCALE DWG

THIRD ANGLE PROJECTION

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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES [mm] INTERPRET DRAWING PER ASME Y14.5M-1994

TOLERANCES: .XX ± .03
.XXX ± .015
ANGLES ± 1°

MATERIAL:

FINISH:

SIGNATURES

DATE

DRWN. JBU 3/3/2020

CHKD. MCF 3/3/2020

ENG. JBU 3/3/2020

TITLE: UL LABELED CFMVRMX12-900-2300-3R SOLID STATE STARTER SCHEMATIC NOTES

SCALE: N.A.

SHEET 3 OF 7

SIZE

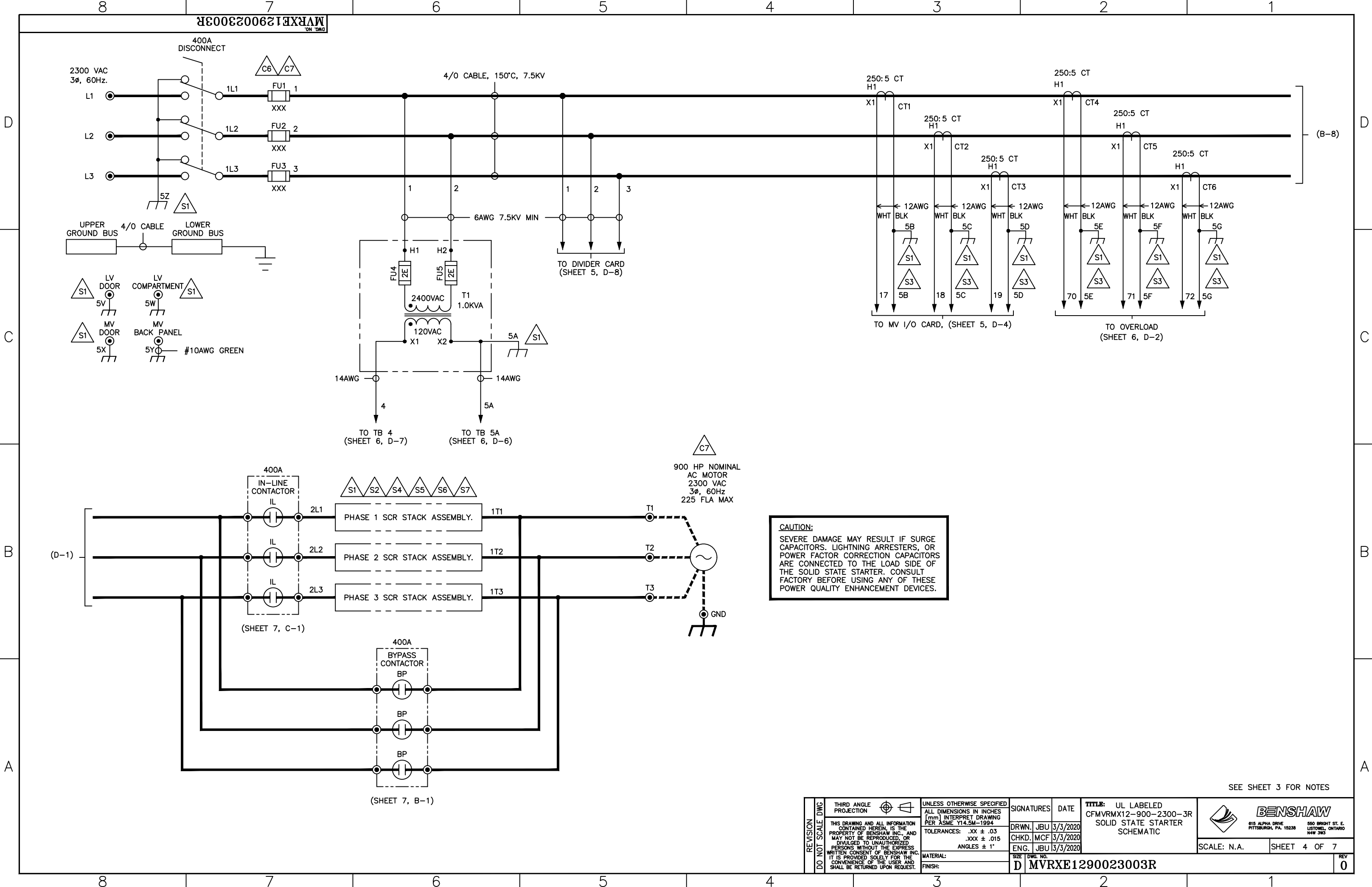
DWG. NO.

D MVRXE1290023003R

REV

0

BENSHAW
615 ALPHA DRIVE
PITTSBURGH, PA. 15238
550 BRIGHT ST. E.
LITTONEL, ONTARIO
M4W 3N3



CAUTION:
SEVERE DAMAGE MAY RESULT IF SURGE CAPACITORS, LIGHTNING ARRESTERS, OR POWER FACTOR CORRECTION CAPACITORS ARE CONNECTED TO THE LOAD SIDE OF THE SOLID STATE STARTER. CONSULT FACTORY BEFORE USING ANY OF THESE POWER QUALITY ENHANCEMENT DEVICES.

SEE SHEET 3 FOR NOTES

REVISION DO NOT SCALE DWG	THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES [mm] INTERPRET DRAWING PER ASME Y14.5M-1994	SIGNATURES	DATE	TITLE: UL LABELED CFMVRMX12-900-2300-3R SOLID STATE STARTER SCHEMATIC		 815 ALPHA DRIVE PITTSBURGH, PA. 15238 550 BRIGHT ST. E. LITTON, ONTARIO M4W 2C3		
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		MATERIAL:	CHKD. MCF	3/3/2020					
		FINISH:	ENG. JBU	3/3/2020					
		D MVRXE1290023003R				REV 0			



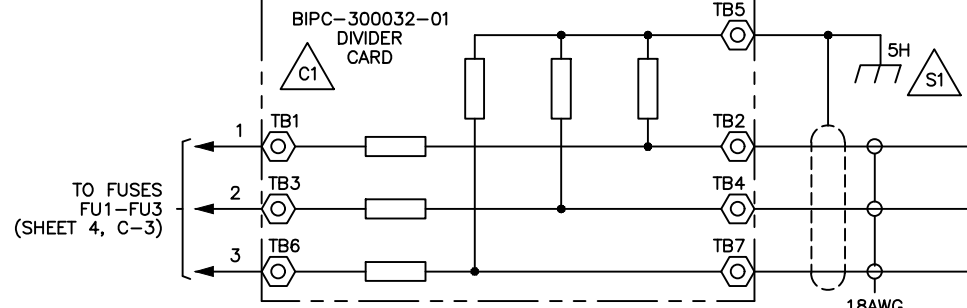
BENSHAW

615 ALPHA DRIVE
PITTSBURGH, PA. 15238

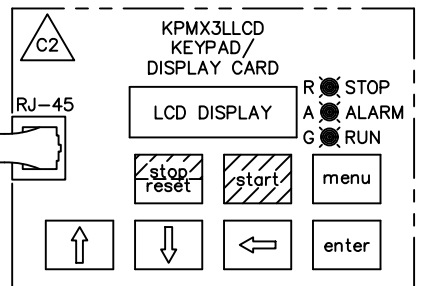
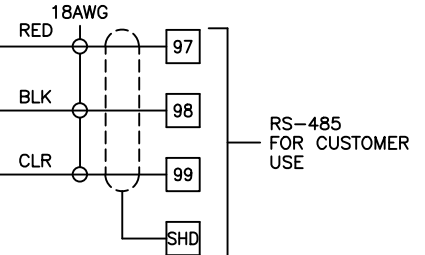
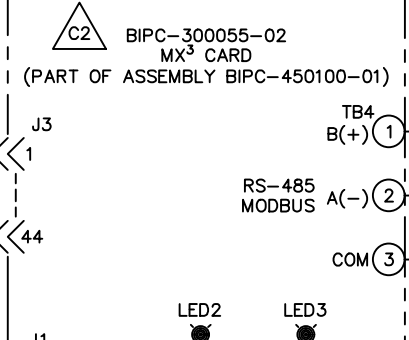
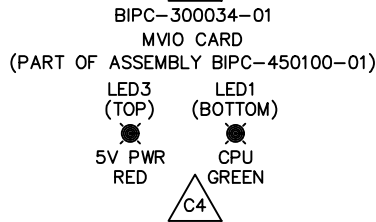
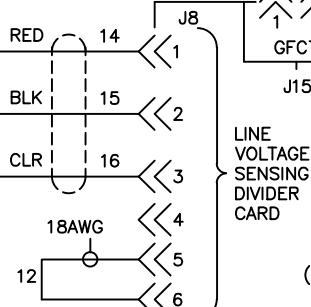
550 BRIGHT ST. E.
LITTON, ONTARIO
M4W 3N3

MVRXE1290023003R

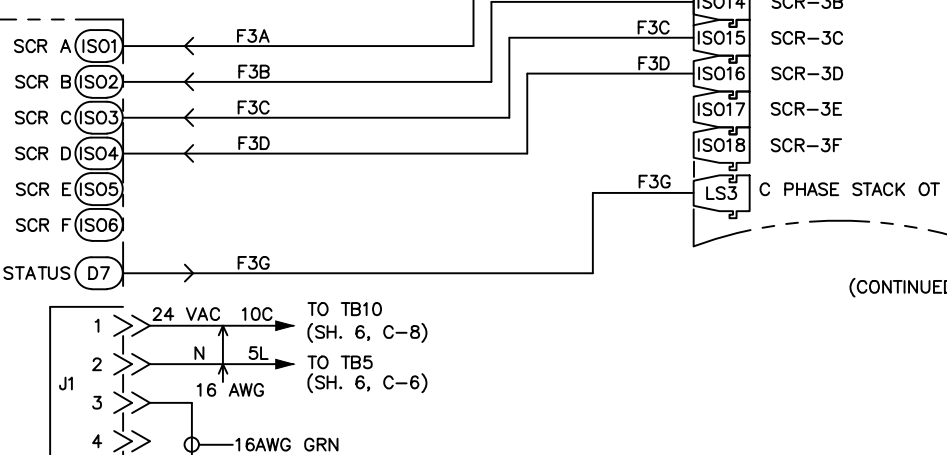
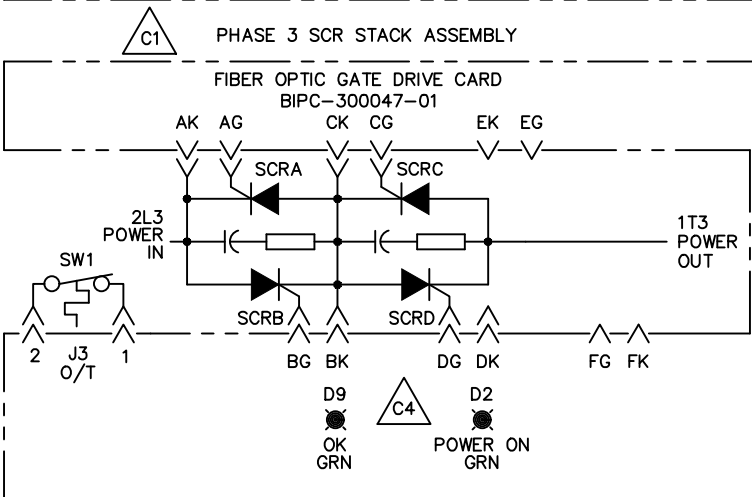
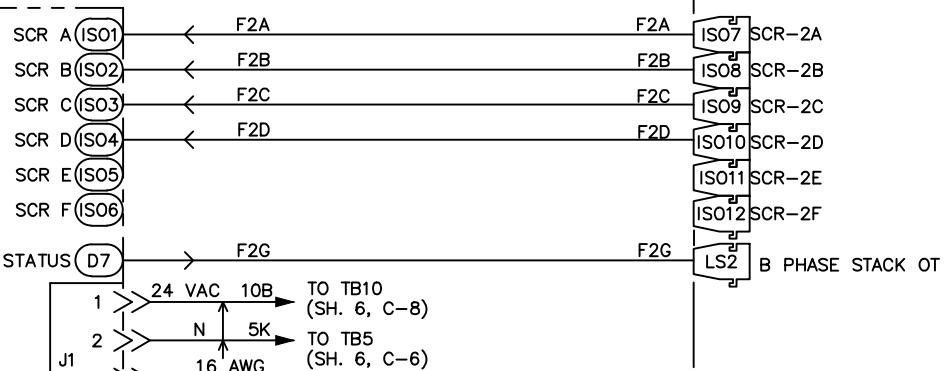
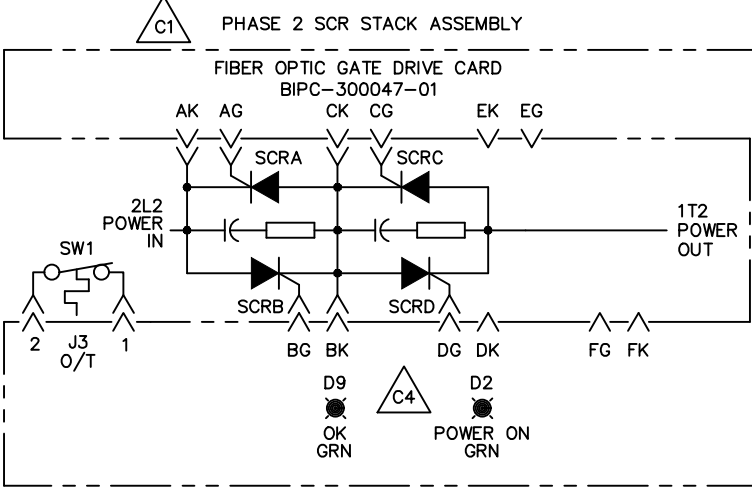
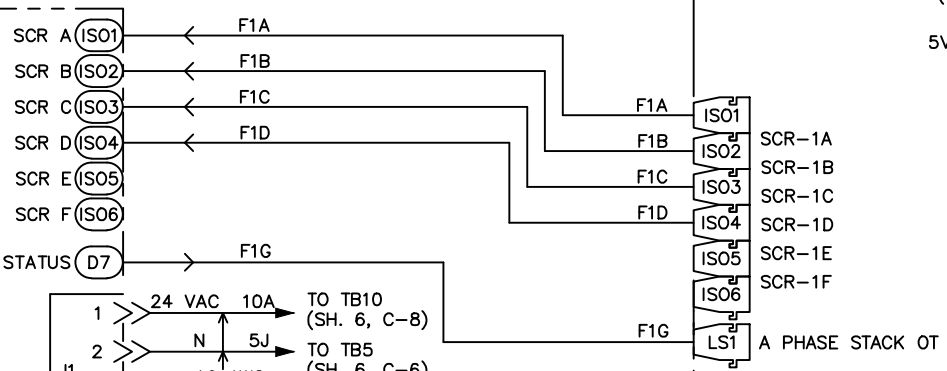
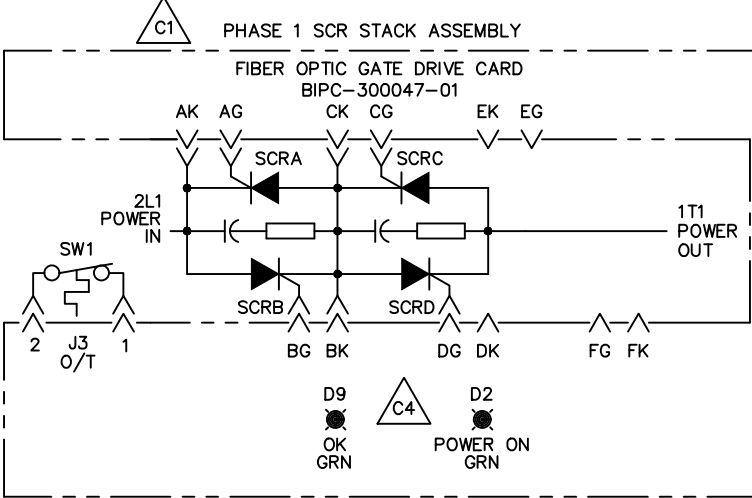
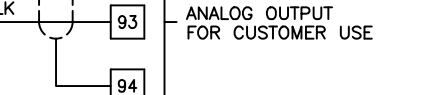
ON DWG



TO FUSES
FU1-FU3
(SHEET 4, C-3)



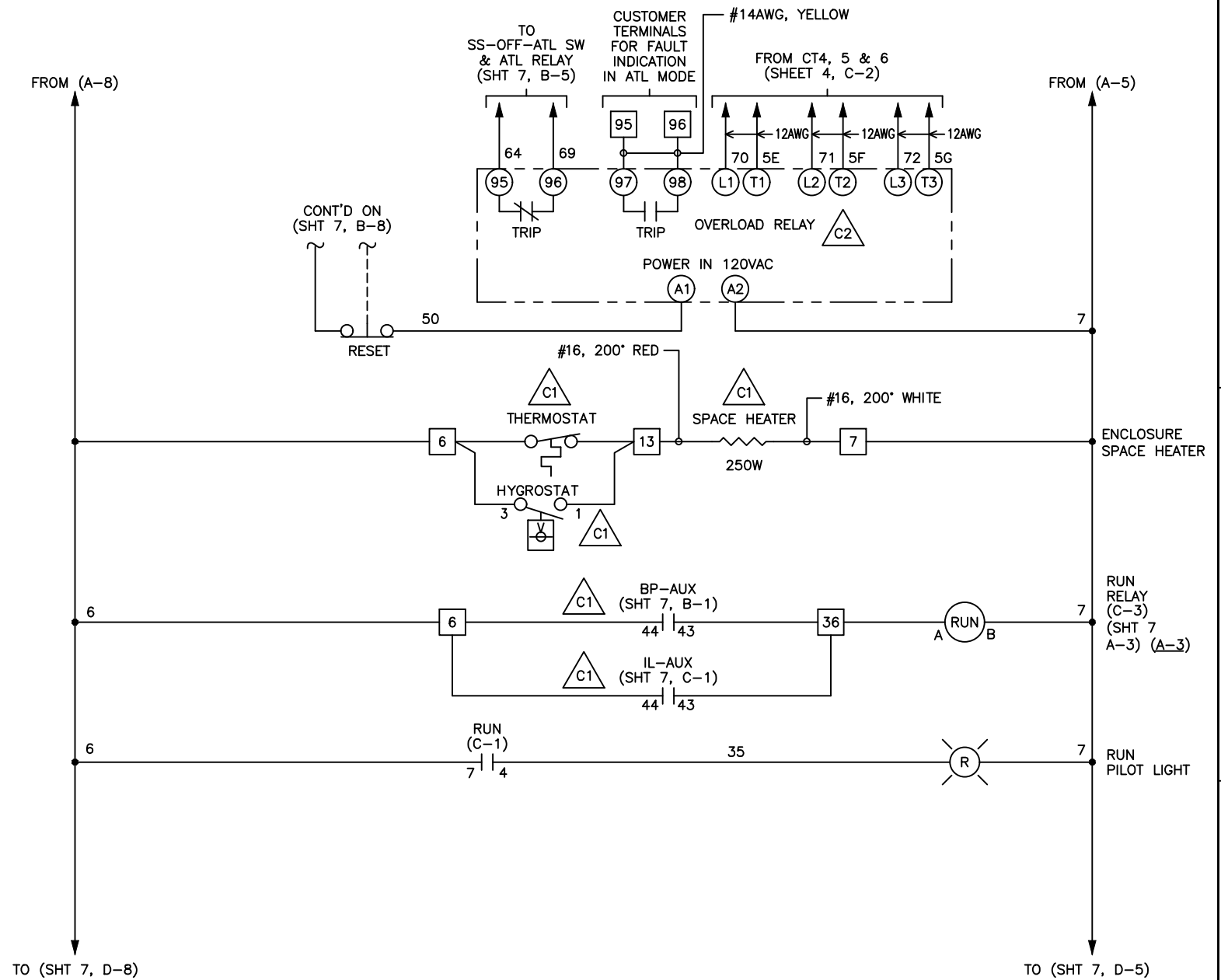
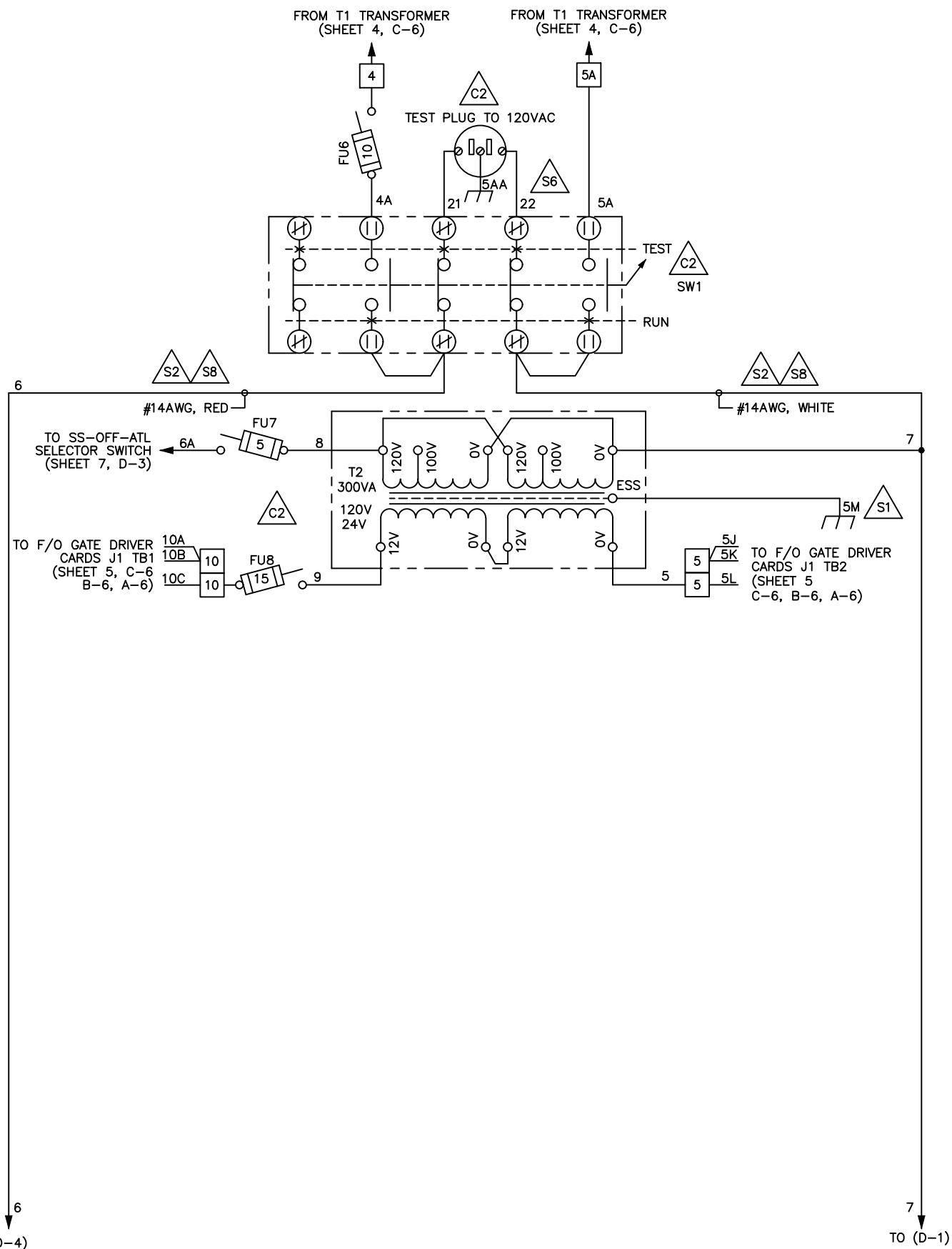
NOTE: START AND STOP BUTTONS ARE NOT ACTIVE. RESET BUTTON IS ACTIVE



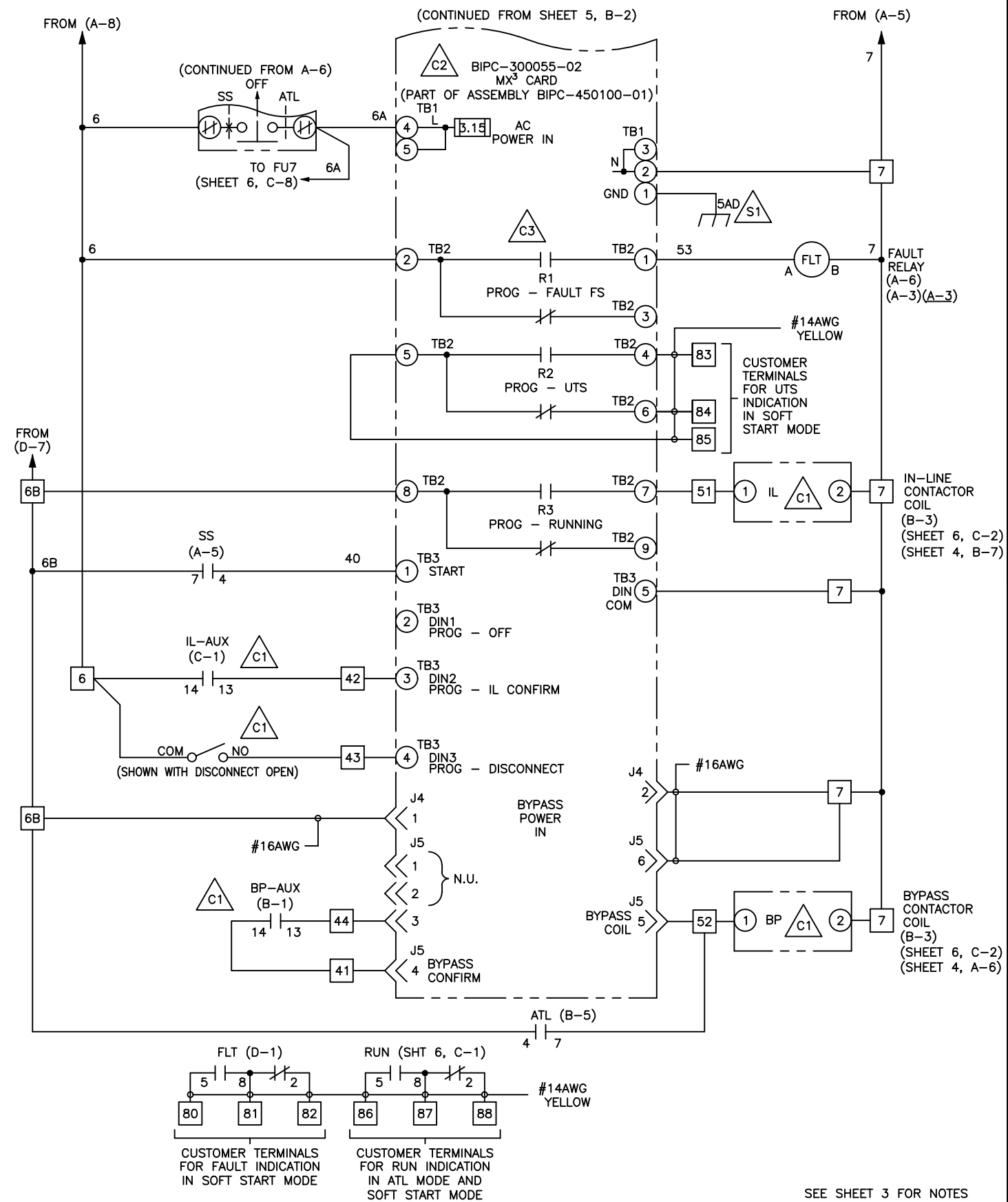
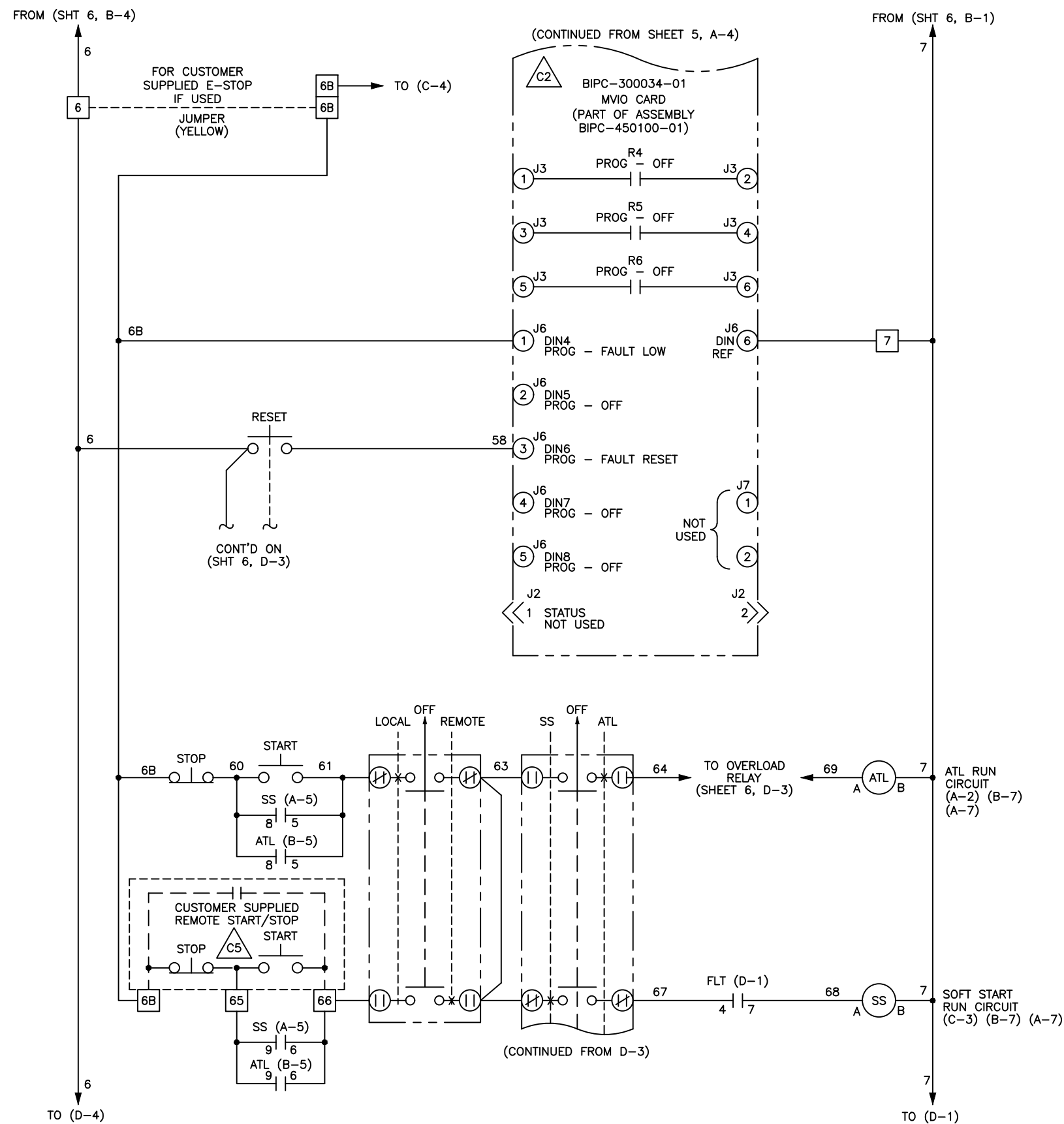
REVISION	DO NOT SCALE DWG	THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES [mm] INTERPRET DRAWING PER ASME Y14.5M-1994 TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1° MATERIAL: FINISH:	SIGNATURES	DATE	TITLE: UL LABELED CFMVRMX12-900-2300-3R SOLID STATE STARTER SCHEMATIC	SEE SHEET 3 FOR NOTES	SCALE: N.A.	SHEET 5 OF 7	REV 0

(CONTINUED ON SHEET 7, D-2)

(CONTINUED ON SHEET 7, D-6)



REVISION	DO NOT SCALE DWG	THIRD ANGLE PROJECTION		UNLESS OTHERWISE SPECIFIED	SIGNATURES	DATE	TITLE: UL LABELED CFMVRM12-900-2300-3R SOLID STATE STARTER SCHEMATIC	 BENSHAW 615 ALPHA DRIVE PITTSBURGH, PA. 15238 550 BRIGHT ST. E. LISTOWEN, ONTARIO M4W 3K3	SCALE: N.A.	SHEET 6 OF 7	REV 0
		THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN, IS THE PROPERTY OF BENSHAW, INC. AND MAY NOT BE REPRODUCED, OR DIVULGED TO UNAUTHORIZED PERSONS WITHOUT EXPRESS WRITTEN CONSENT OF BENSHAW INC. IT IS PROVIDED SOLELY FOR THE CONVENIENCE OF THE USER AND SHALL BE RETURNED UPON REQUEST.	ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED INTERPRET DRAWING PER ASME Y14.5M-1994	DRWN. JBU 3/3/2020 CHKD. MCF 3/3/2020 ENG. JBU 3/3/2020							
		TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°	MATERIAL: FINISH:	D WGR. W. D MXRVE1290023003R							



REVISION	DO NOT SCALE DWG	THIRD ANGLE PROJECTION		UNLESS OTHERWISE SPECIFIED	SIGNATURES	DATE	TITLE: UL LABELED CFMV/RMX12-900-2300-3R SOLID STATE STARTER SCHEMATIC		BENSHAW 615 ALPHA DRIVE PITTSBURGH, PA. 15238	550 BRIGHT ST. E. LITTONOW, ONTARIO M9W 3W5	REV				
		THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN, IS THE PROPERTY OF BENSHAW INC. AND MAY NOT BE REPRODUCED, OR DIVULGED TO UNAUTHORIZED PERSONS WITHOUT THE EXPRESS WRITTEN CONSENT OF BENSHAW INC. IT IS PROVIDED SOLELY FOR THE CONVENIENCE OF THE USER AND SHALL BE RETURNED UPON REQUEST.	ALL DIMENSIONS IN INCHES SHALL BE INTERPRET DRAWING PER ASME Y14.5M-1994	TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°								DRWN. JBU 3/3/2020 CHKD. MCF 3/3/2020 ENG. JBU 3/3/2020	SCALE: N.A.	SHEET 7 OF 7	0
		MATERIAL:	FINISH:	SIZE								DWG. NO.	D	MVRXE1290023003R	