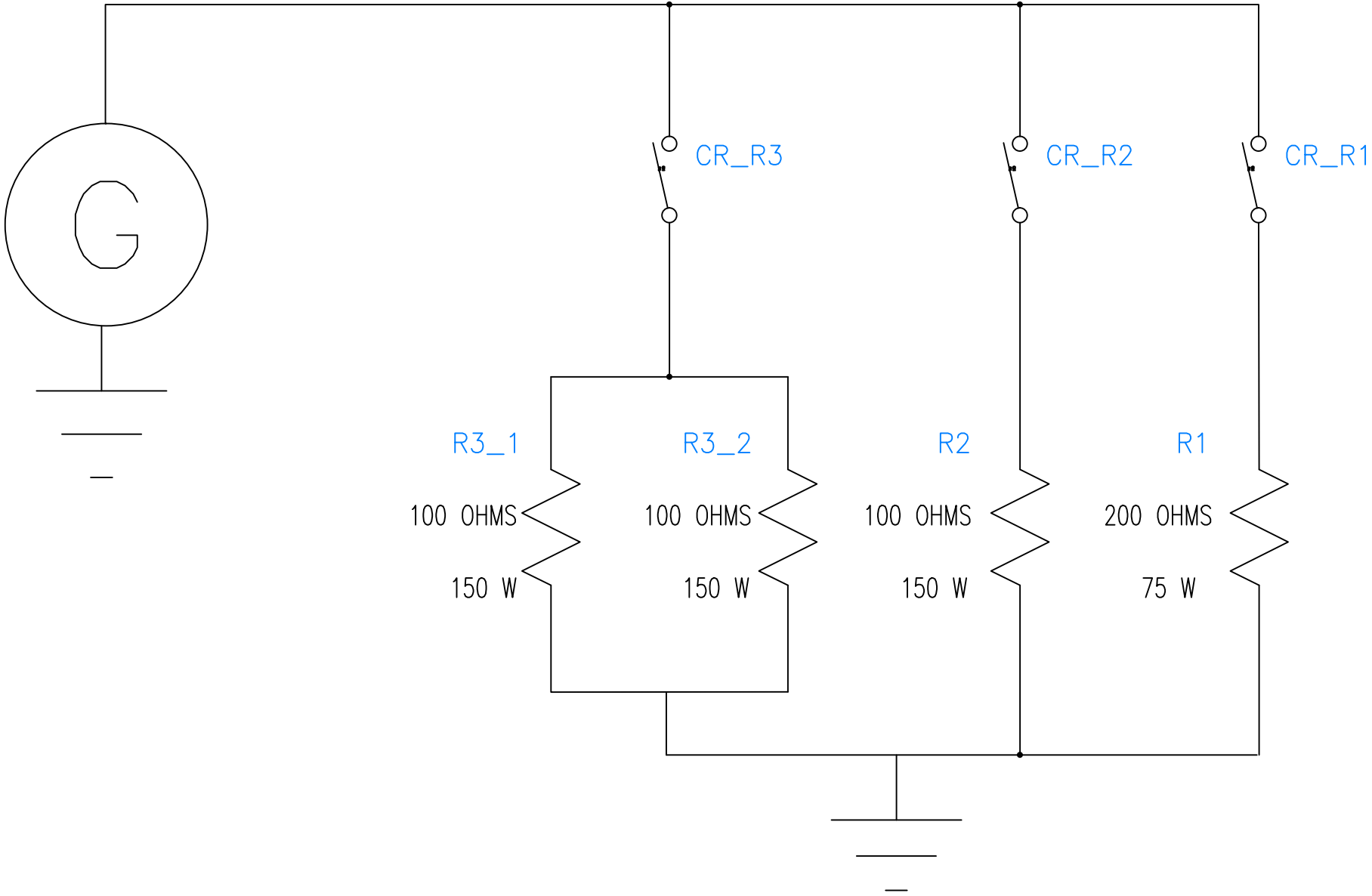




GENERAL NOTES:

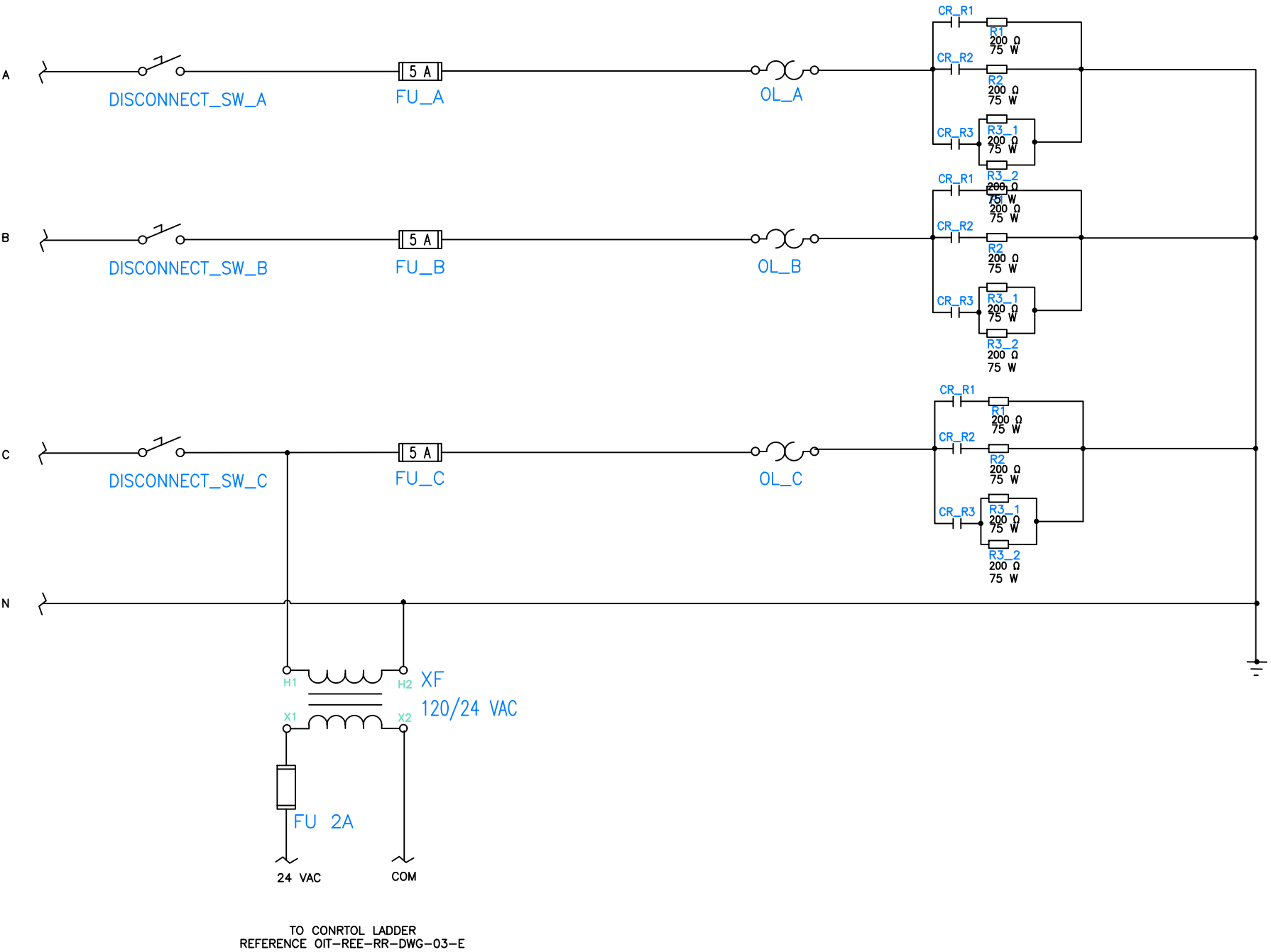


1	06/06/2011	ISSUED FOR DOCUMENTATION	
REV	DATE	REASON	
UNLESS OTHERWISE NOTED: .X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS ± 1/64 ANGLES ± 1°		REE 243 R-BANK	
		SINGLE PHASE DRAWING	
SIZE B	SCALE NTS	DWG NO. OIT-REE-RR-DWG-01-E	
DESIGNED BY	BH	CHECKED BY	JF
APPROVED BY	JF		



GENERAL NOTES:

1	06/06/2011	ISSUED FOR DOCUMENTATION	
REV	DATE	REASON	
UNLESS OTHERWISE NOTED: .X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS ± 1/64 ANGLES ± 1°		REE 243 R-BANK	
		THREE PHASE DRAWING	
SIZE B	SCALE NTS	DWG NO. OIT-REE-RR-DWG-02-E	
DESIGNED BY	SC	CHECKED BY	DM
APPROVED BY		JF	

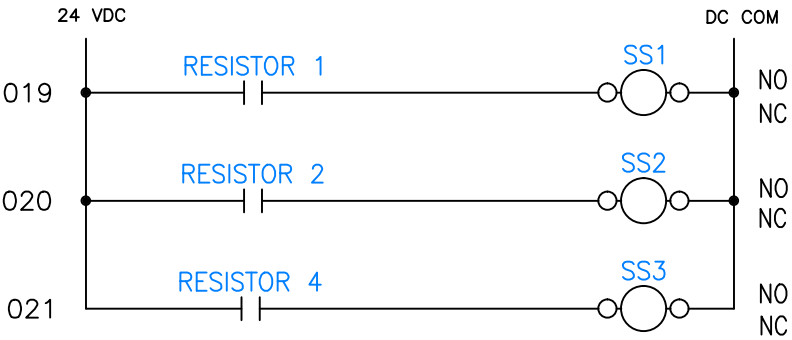




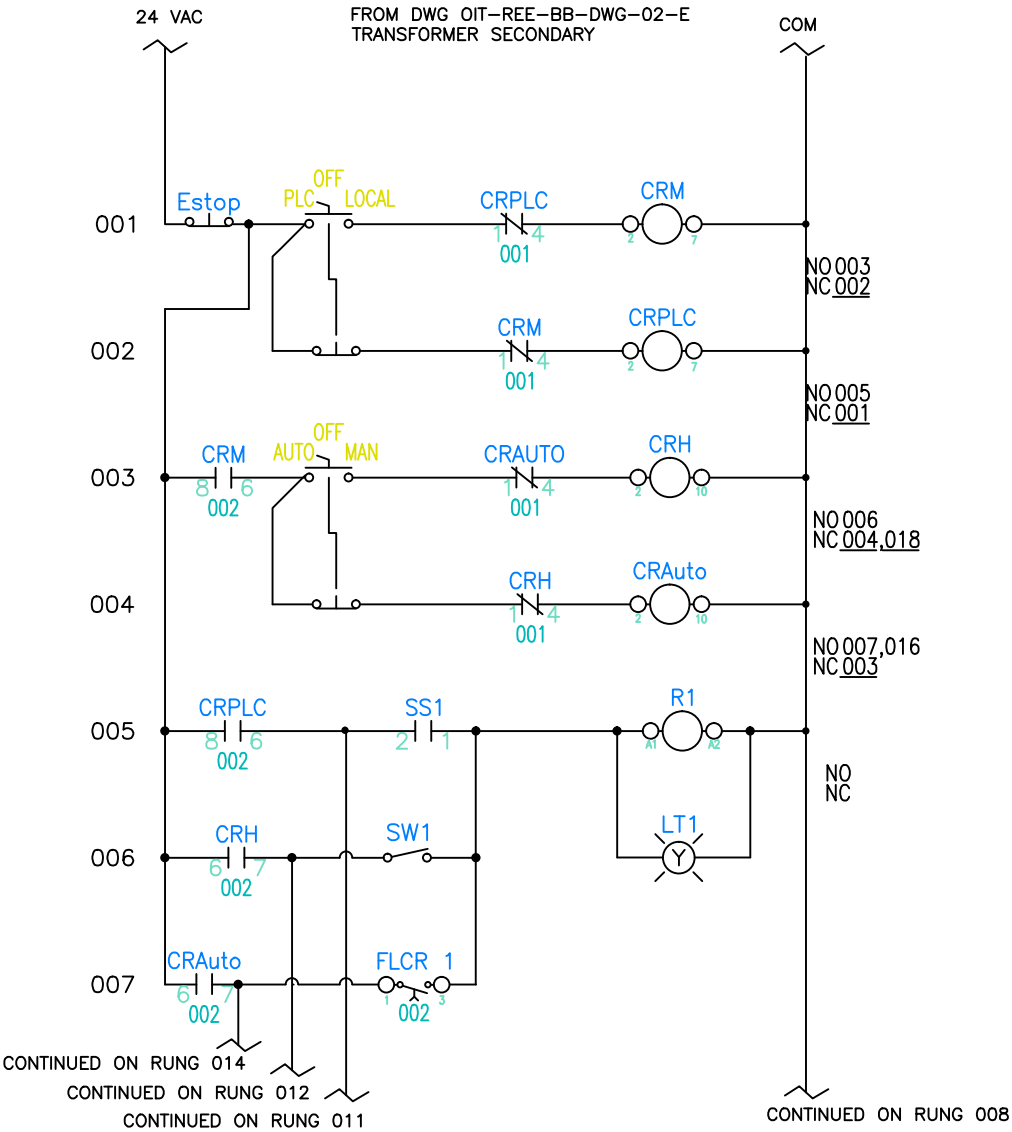
GENERAL NOTES:

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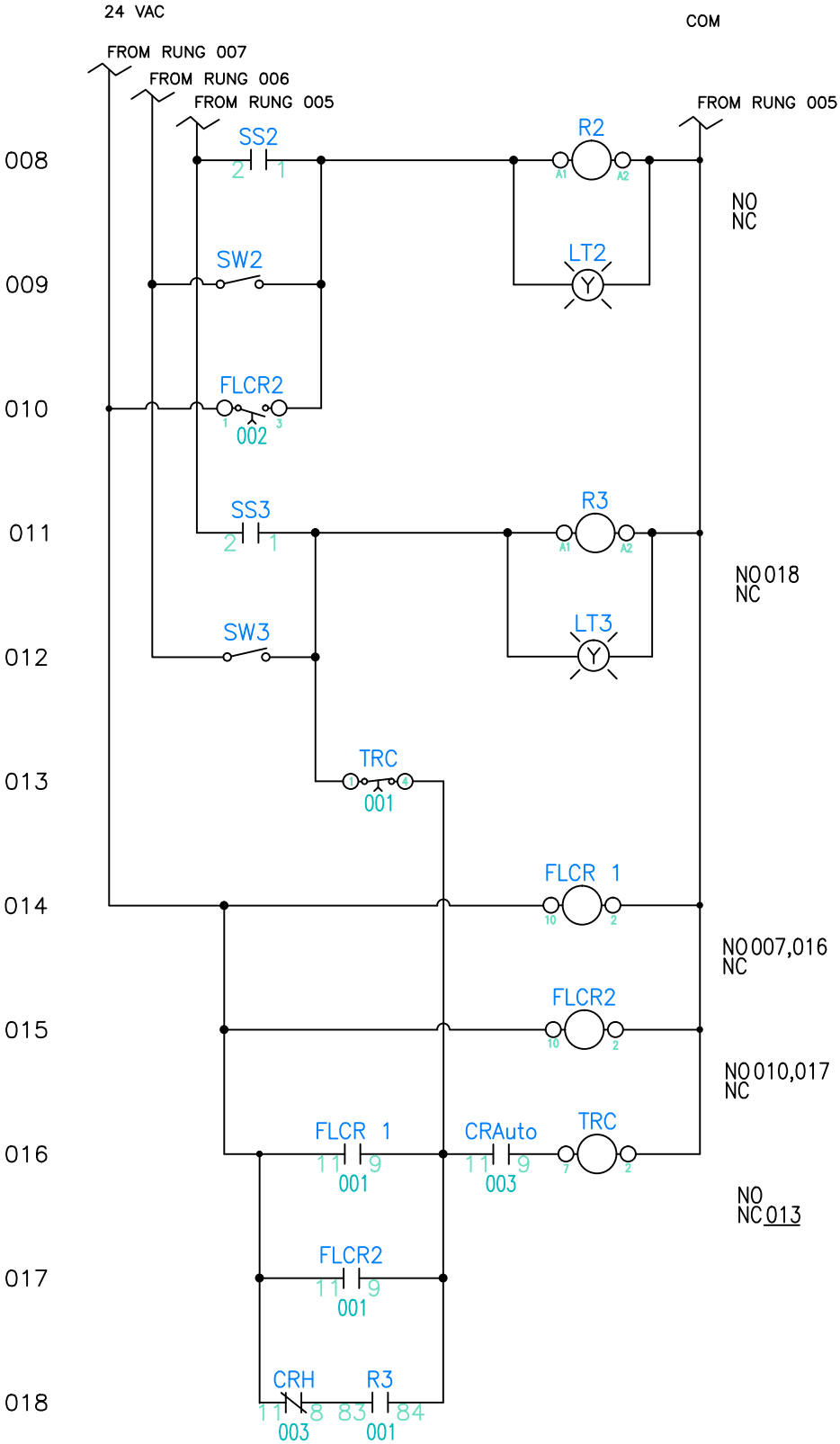
PLC LADDER DIAGRAM



CONTROL LADDER DIAGRAM



CONTROL LADDER DIAGRAM CON'T



1	06/06/2011	ISSUED FOR DOCUMENTATION
REV	DATE	REASON
UNLESS OTHERWISE NOTED: .X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS ± 1/64 ANGLES ± 1°		
REE 243 R-BANK		
CONTROLS AND PLC LADDER		
SIZE B	SCALE NTS	DWG NO. OIT-REE-RR-DWG-03-E
DESIGNED BY DM	CHECKED BY SC	APPROVED BY JF



GENERAL NOTES:

1. DRAWING SCALE 1:3

1	06/06/2011	ISSUED FOR DOCUMENTATION		
REV	DATE	REASON		
UNLESS OTHERWISE NOTED: .X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS ± 1/64 ANGLES ± 1°		REE 243 R-BANK		
		HMI CONTROL BOX		
		SIZE B	SCALE 1:1	DWG NO. OIT-REE-RR-DWG-05-E
		DESIGNED BY BH	CHECKED BY AM	APPROVED BY JF

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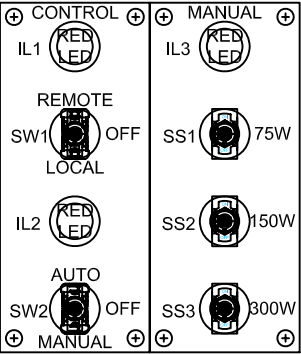
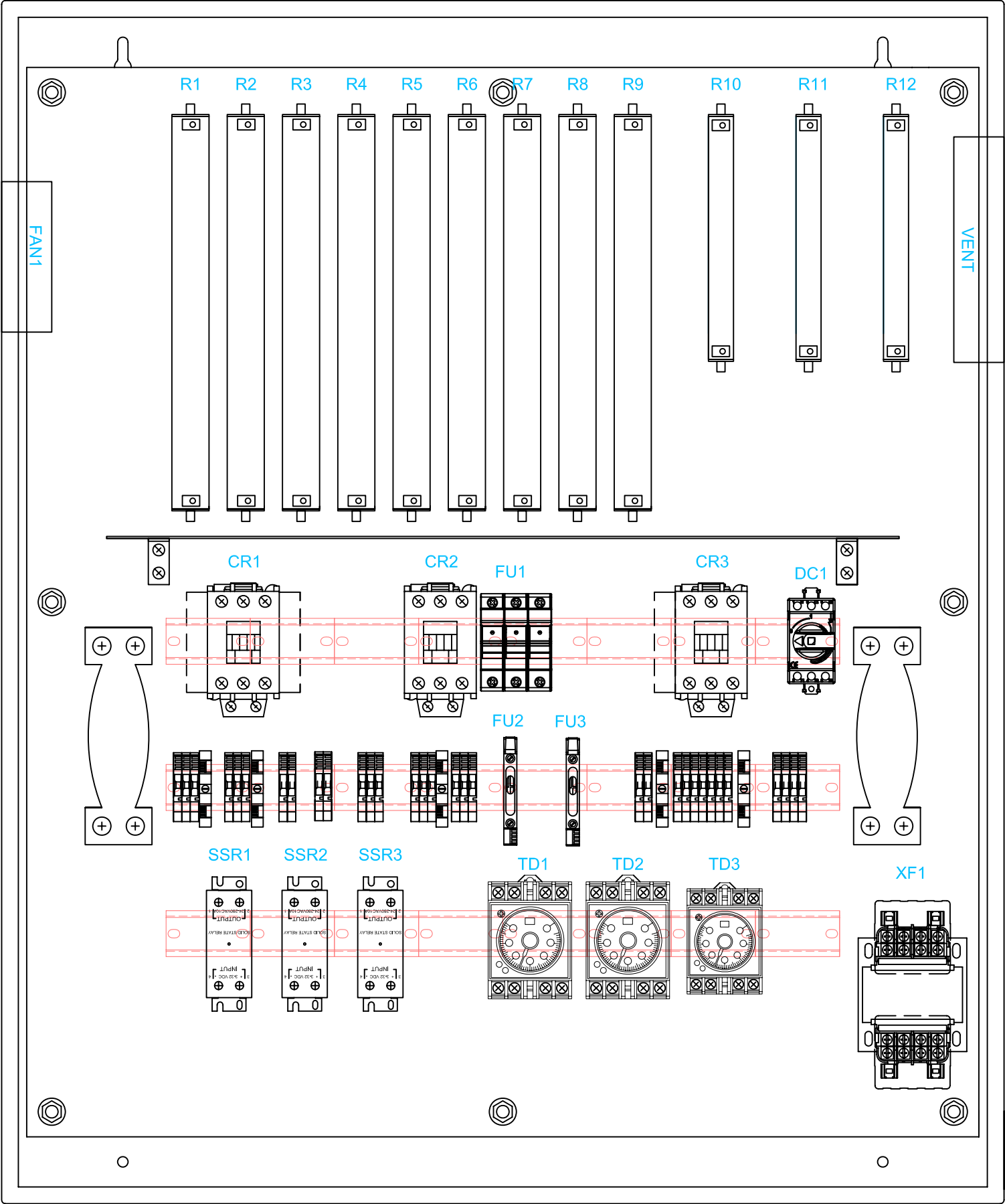


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GENERAL NOTES:

1. ALL LOCATIONS SHOWN ARE APPROXIMATE.

1	05/08/2011	ISSUED FOR GENSET RESISTIVE LOAD PROJECT	
REV	DATE	REASON	
UNLESS OTHERWISE NOTED:		OIT ELECTRICAL POWER	
.X = ± .015		GENSET RESISTIVE LOAD 2D	
.XX = ± .015		SIZE B	SCALE INCHES
.XXX = ± .002		DWG NO.	OITREE-MP-101
.XXXX = ± .0002		DESIGNED BY	BHC
FRACTIONS ± 1/64		CHECKED BY	PH
ANGLES ± 1°		APPROVED BY	RD



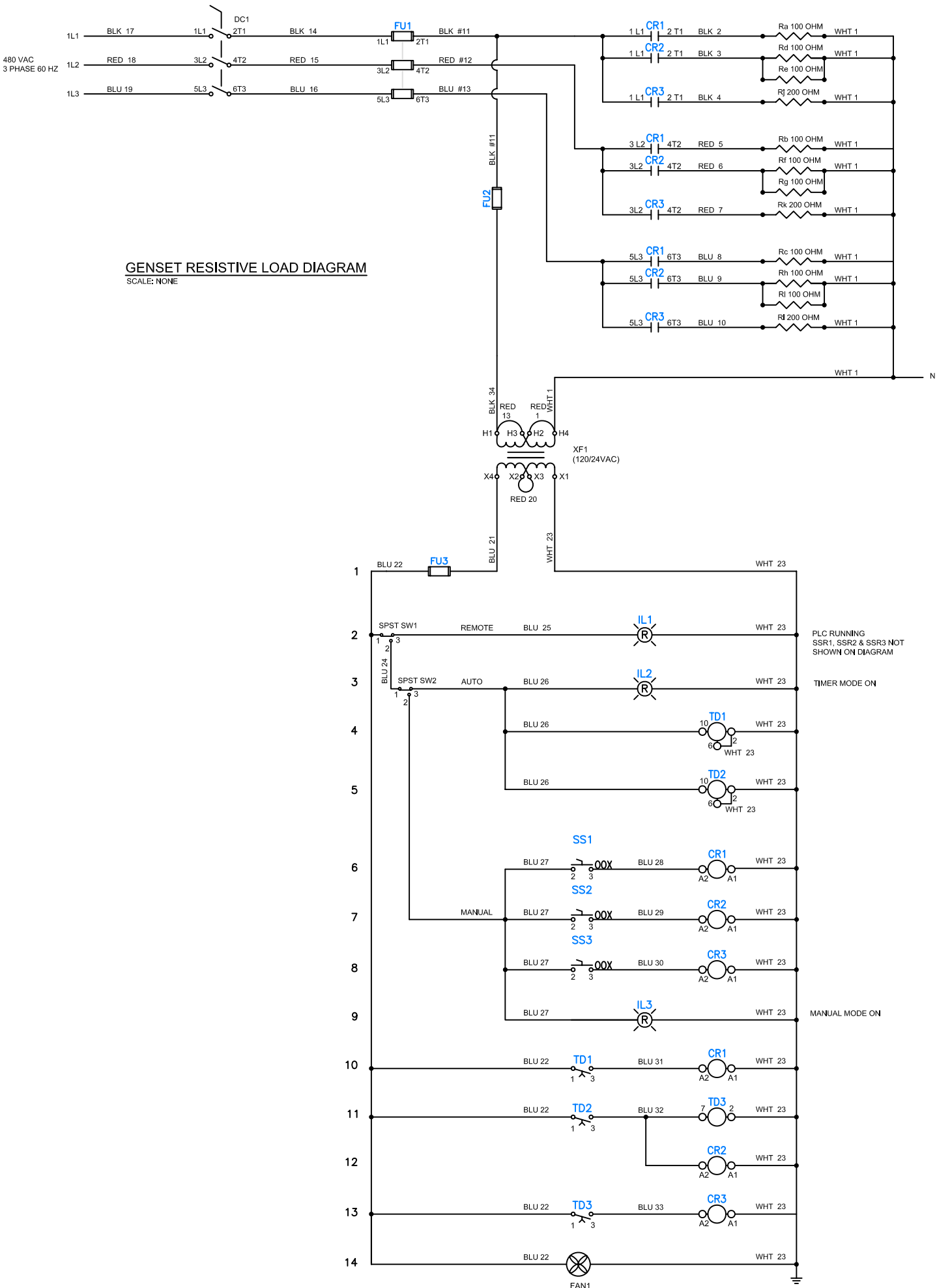


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GENERAL NOTES:

1. USE 18 AWG WIRE FOR CONTROL CONNECTIONS.
2. USE 12 AWG WIRE FOR POWER CONNECTIONS.

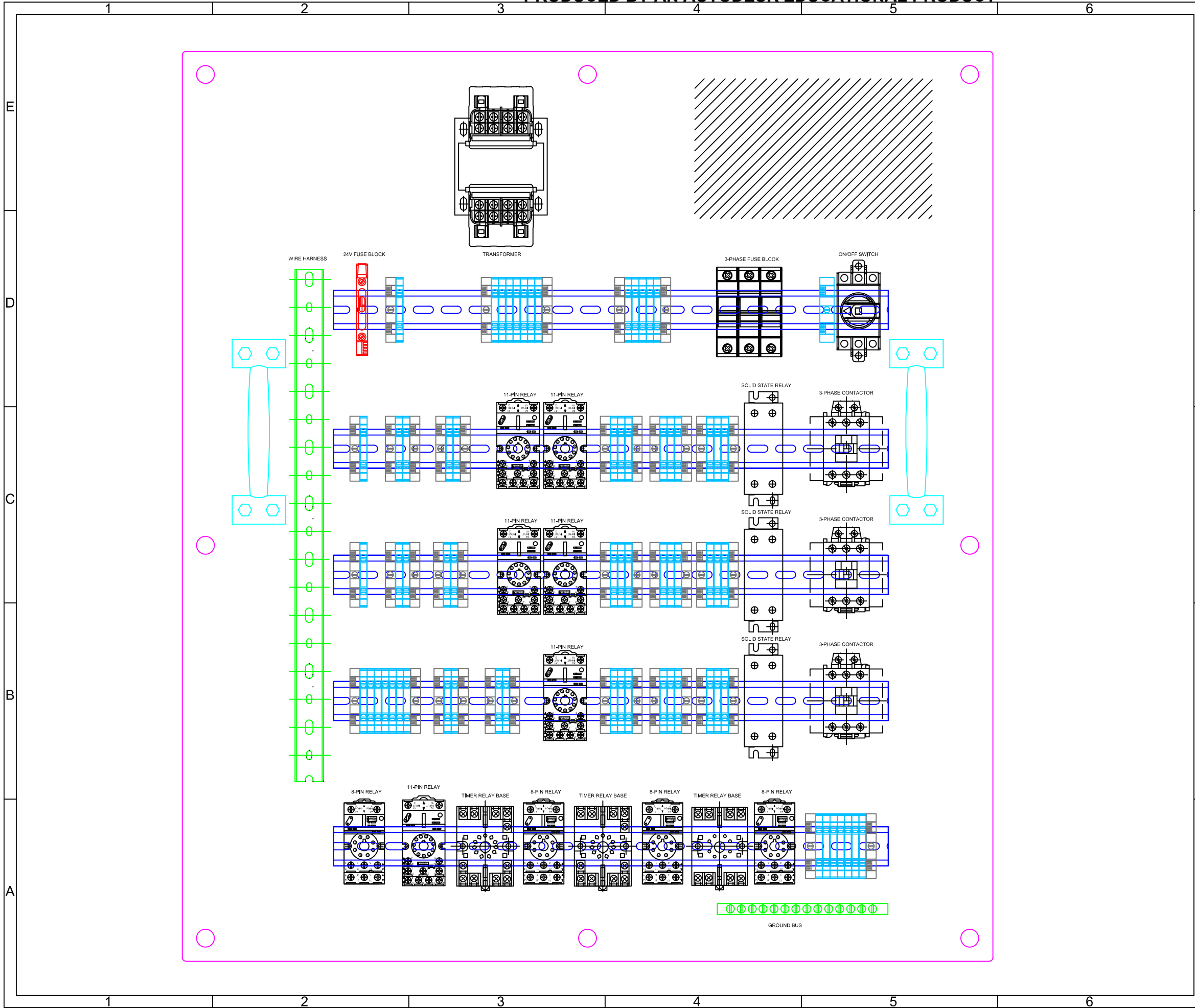
1	05/08/2011	ISSUED FOR GENSET RESISTIVE LOAD PROJECT	
REV	DATE	REASON	
UNLESS OTHERWISE NOTED: .X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS ± 1/64 ANGLES ± 1°		OIT ELECTRICAL POWER	
		REE 243 LADDER LOGIC	
SIZE B	SCALE NTS	DWG NO. OITREE-EP-601	
DESIGNED BY	BHC	CHECKED BY	PH
APPROVED BY	RD		



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REV	DATE	REASON
UNLESS OTHERWISE NOTED: .X = ±.015 .XX = ±.015 .XXX = ±.002 .XXXX = ±.0002 FRACTIONS ± 1/64 ANGLES ± 1°		
GENSET		
PANEL LAYOUT		
SIZE B	SCALE NTS	DWG NO. EI-501
DESIGNED BY RL	CHECKED BY JG	APPROVED BY RB



KEYED NOTES:

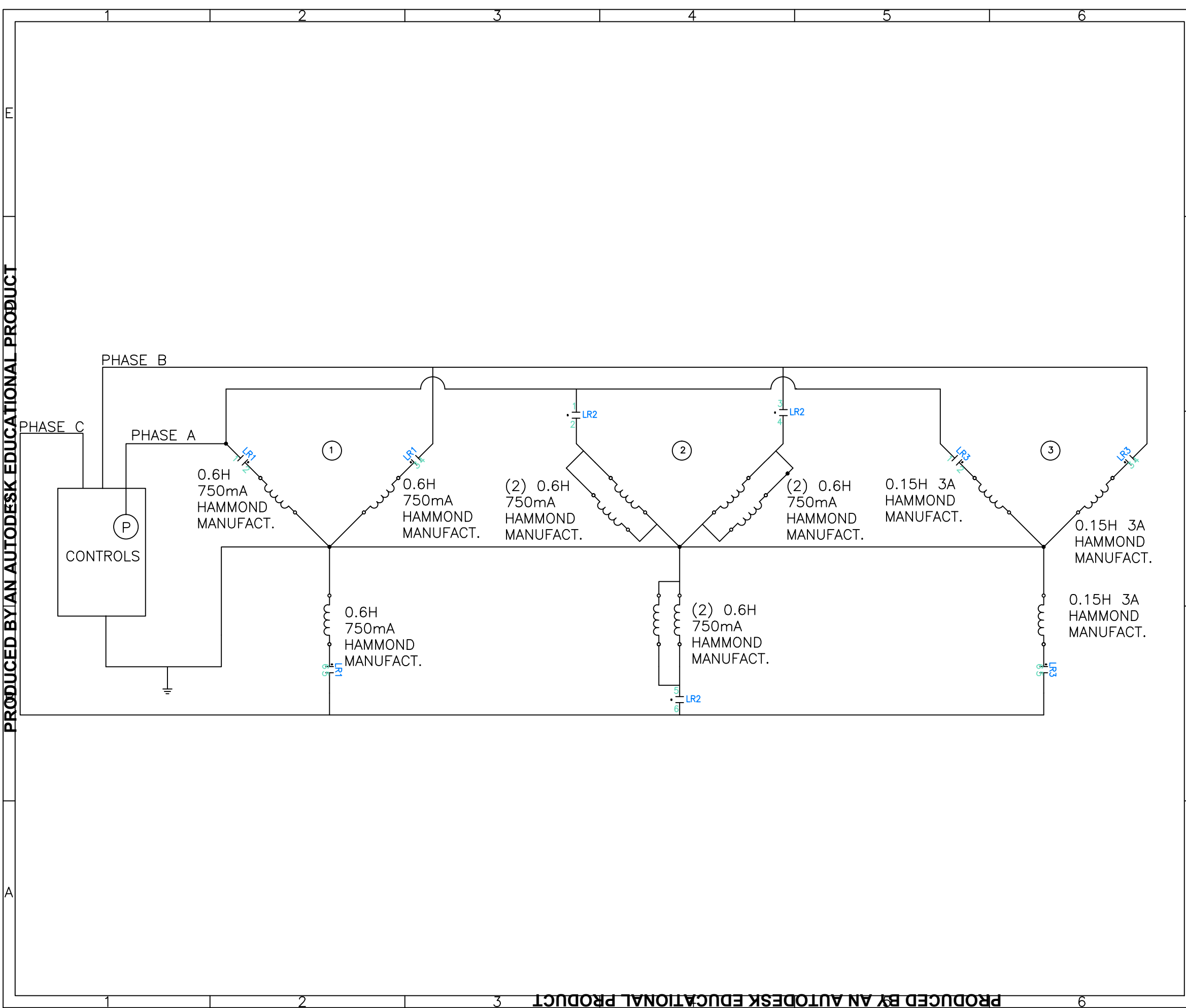
- 1. LOAD 1
63.662 VAR/PHASE
- 2. LOAD 2
127.32 VAR/PHASE
- 3. LOAD 3
254.65 VAR/PHASE

GENERAL NOTES:

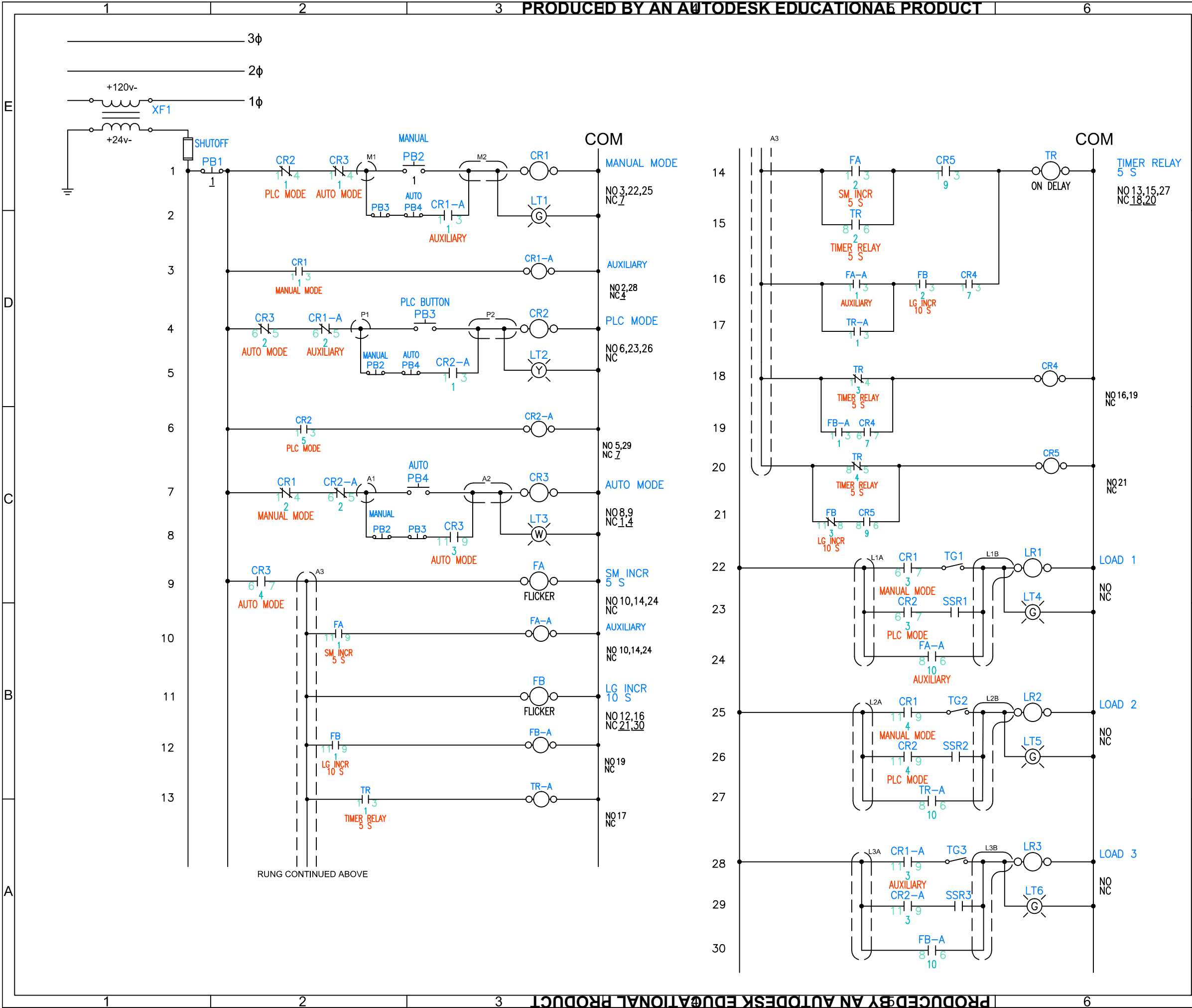
CONTROLS ARE POWERED BY 120 V FROM PHASE A.

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B	05/29/11	GENERAL CORRECTIONS			
A	05/11/11	ISSUED FOR REVIEW			
REV	DATE	REASON			
UNLESS OTHERWISE NOTED:		GENSET INDUCTIVE LOAD			
.X = ± .015		3 PHASE DRAWING			
.XX = ± .015					
.XXX = ± .002		SIZE B SCALE NTS DWG NO. EI-602			
.XXXX = ± .0002					
FRACTIONS ± 1/64		DESIGNED BY AP CHECKED BY APPROVED BY			
ANGLES ± 1°					



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GENERAL NOTES:

- A. TIMER RELAY SETTINGS:
TDA SET TO FLICKER AT 5S
TDB SET TO FLICKER AT 20S
TD ON DELAY 5S
- B. AUTOMATIC CYCLE MODE
CREATES 7 DIFFERENT VAR
LOADS TO BE CONNECTED TO
GRID SEE CYCLE PATTERN
BELOW
- C. SEAL-IN CONTACTS FOR EACH
MODE BROKEN BY NC
CONTACTS GANGED TO PUSH
BUTTONS FOR OTHER TWO
MODES
- D. SSR CONTACTS CONTROLLED BY
PLC

AUTOMATIC CYCLE PATTERN

	1	2	3	VARs
0				0
1	X			199.09
2		X		381.96
3	X	X		581.05
4			X	763.95
5	X		X	963.04
6		X	X	1145.91
7	X	X	X	1345

B	05/31/11	ISSUED FOR REVIEW AND COMMENT	CAYLEIGH ALLEN
A	05/10/11	ISSUED FOR HW#4	Cayleigh Allen
REV	DATE	REASON	ISSUED BY
UNLESS OTHERWISE NOTED: .X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS ± 1/64 ANGLES ± 1°			
REE 243 INDUCTIVE LOAD			
LADDER LOGIC			
SIZE	SCALE	DWG NO.	
B	NTS	000001	
DESIGNED BY	CA	CHECKED BY	APPROVED BY



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SOUTHWIRE E51503F AWG 14 STRANDED
CU

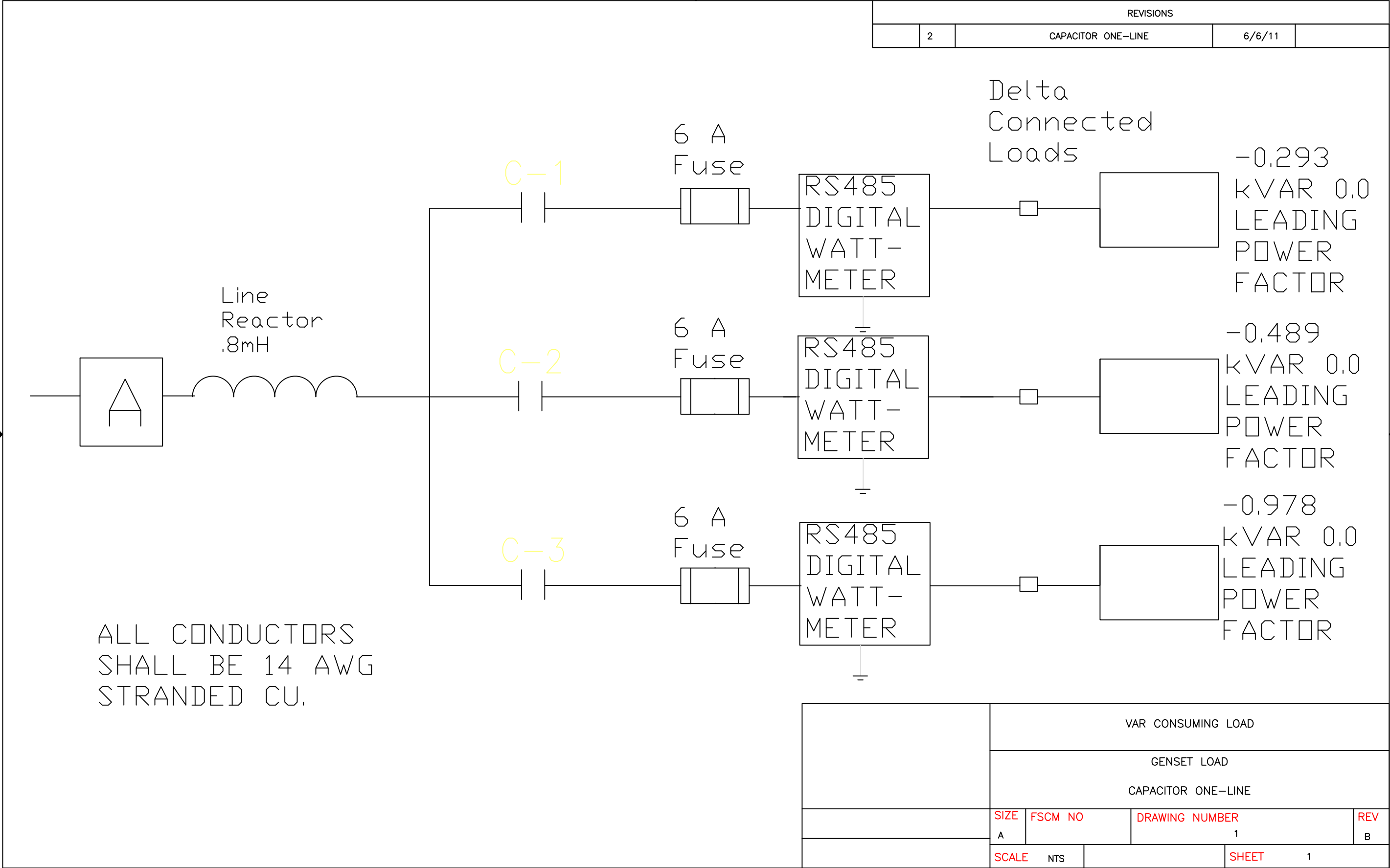
- 20 FT WHITE
- 20 FT BLACK
- 40 FT RED

GENERAL NOTES

- REFER TO E-001 FOR SYMBOLS PERTAINING TO ELECTRICAL DIAGRAMS.
- PERFORM INSTALLATION IN ACCORDANCE WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND APPLICABLE DOE ORDERS. EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- USE 600 VAC CIRCUIT BREAKERS AND WIRING IN 480V AND 480Y/277V SWITCHBOARDS, PANELBOARDS AND MOTOR CONTROL CENTERS.
- PROVIDE CIRCUIT BREAKERS WITH UL LISTED INTERRUPTING RATING (RMS SYMMETRICAL AMPERES) R. GREATER THAN THE AVAILABLE FAULT CURRENT SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM.
- PROVIDE PADLOCKING PROVISIONS FOR EACH TWO- AND THREE-POLE CIRCUIT BREAKER.
- BOND RACEWAYS AND THE FRAMES AND ENCLOSURES OF MOTORS, BREAKERS, SWITCHES, AND OTHER ELECTRICAL EQUIPMENT TO THE BUILDING GROUNDING T. SYSTEM. INSTALL AN INSULATED EQUIPMENT GROUND CONDUCTOR IN EACH RACEWAY OR CONDUIT. SIZE EQUIPMENT GROUND CONDUCTOR IN ACCORDANCE WITH NEC.
- IDENTIFY NEW BRANCH CIRCUITS AT THE PANEL AND AT THE LOAD OUTLET, RECEPTACLE AND SWITCH.
- IDENTIFY THE PURPOSE OF INDIVIDUAL CIRCUIT BREAKERS, SAFETY SWITCHES AND MOTOR STARTERS BY MEANS OF NAMEPLATES AS INDICATED.
- ROUTE CONDUITS TO SUIT EQUIPMENT AND BUILDING STRUCTURE. LIMIT THE USE OF ELECTRICAL METALLIC TUBING (EMT) TO AREAS WHERE IT WILL NOT BE SUBJECT TO PHYSICAL DAMAGE OR CORROSION. USE INTERMEDIATE METAL CONDUIT (IMC) OR RIGID GALVANIZED STEEL CONDUIT (RGS) FOR WORK EMBEDDED IN CONCRETE OR EXPOSED TO PHYSICAL DAMAGE. USE MINIMUM 3/4 INCH CONDUIT EXCEPT AS FOLLOWS: 1/2" CONDUIT MAY BE USED FOR 20 AMP GENERAL LIGHT AND POWER CIRCUITS AND FOR CONTROL CIRCUITS; 3/8" FLEXIBLE METAL CONDUIT MAY BE USED TO CONNECT LIGHT FIXTURES IN SUSPENDED CEILING; USE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR FLEXIBLE CONNECTIONS TO EQUIPMENT IN MECHANICAL ROOMS OR OUTDOORS.
- SEAL AROUND CONDUIT PENETRATIONS THROUGH INTERIOR WALLS AND FLOORS SEPARATING AREAS TO RESTORE ORIGINAL FIRE RATING. USE A UL CLASSIFIED FIRE SEALANT. SEAL PENETRATIONS THROUGH ROOF AND EXTERIOR WALLS TO MAKE WATERPROOF. REQUEST INSPECTION OF FIRE SEALS BY ELECTRICAL INSPECTOR FROM AUTHORITY HAVING JURISDICTION BEFORE AND AFTER PLACEMENT OF FIRE SEAL MATERIALS.
- ARRANGE CONNECTIONS FOR SINGLE PHASE CIRCUITS TO ACHIEVE THREE PHASE LOAD BALANCE WITHIN 20% OF THE AVERAGE PHASE LOAD CURRENT. UNGROUNDED CONDUCTORS USING A COMMON NEUTRAL MUST ORIGINATE FROM DIFFERENT PHASES.
- INSTALL OUTDOOR EQUIPMENT TO BE WEATHERPROOF AND TO EXCLUDE BIRDS AND RODENTS WITH MAXIMUM 1/2" DIAMETER UNPROTECTED OPENINGS IN ENCLOSURES.
- ITEMS DESIGNATED BY A NUMBER IN A HEXAGON ARE DESCRIBED IN THE ELECTRICAL EQUIPMENT LIST. ITEMS DESIGNATED BY A NUMBER IN A DIAMOND ARE DESCRIBED IN THE MECHANICAL EQUIPMENT LIST. NAMEPLATES ARE DESIGNATED BY A NUMBER IN A RECTANGLE AND ARE DESCRIBED IN THE NAMEPLATE SCHEDULE.
- PROVIDE LIGHTNING PROTECTION IN ACCORDANCE WITH NFPA 780. PROVIDE MATERIAL THAT IS UL LABELED FOR LIGHTNING PROTECTION SERVICE. THE LIGHTNING PROTECTION SYSTEM DESIGN AND INSTALLATION SHALL FOLLOW THAT SHOWN ON THE DRAWINGS.
- TEST CONDUCTORS FOR CONTINUITY AND FREEDOM FROM SHORTS AND UNINTENTIONAL GROUNDS.
- ELECTRICAL EQUIPMENT SPECIFIED IN THIS DOCUMENT SHALL BE ACCEPTANCE TESTED AND INSPECTED IN ACCORDANCE WITH NETA ATS BY THE ELECTRICAL CONTRACTOR.
- ELECTRICAL MATERIALS AND CONSTRUCTION SHALL CONFORM TO CLIENT STANDARD CONSTRUCTION SPECIFICATIONS WHERE APPLICABLE.
- DISPOSE OF ITEMS REMOVED AS DIRECTED BY THE CLIENT CONSTRUCTION INSPECTOR.
- REPAIR AREAS DAMAGED DURING CONSTRUCTION TO MATCH ADJACENT AREAS WITH RESPECT TO BOTH COLOR AND FINISH.
- KEEP JOB SITE IN AN ORDERLY CONDITION AT ALL TIMES. AT PROJECT COMPLETION, REMOVE ALL WASTE. LEAVE THE JOB SITE IN A CONDITION ACCEPTABLE TO THE CLIENT CONSTRUCTION INSPECTOR.
- IF A CONFLICT ARISES BETWEEN THE FIELD CONDITIONS AND THESE GENERAL ELECTRICAL REQUIREMENTS, CONTACT THE CLIENT PROJECT LEADER FOR DIRECTIONS.
- TIE-INS TO EXISTING POWER SYSTEMS WILL BE PERFORMED BY THE CLIENT ELECTRICAL DIVISION.
- CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT HANGERS INCLUDING SEISMIC RESTRAINTS IN ACCORDANCE WITH SPECIFICATION HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS FOR CONDUIT HANGER SUPPORT. SEE STRUCTURAL DETAILS.
- STRUCTURAL LOAD ANALYSIS TO BE PERFORMED BY CONTRACTOR FOR REUSE OF EXISTING CONDUIT OR HANGERS. SUBMIT CALCULATIONS TO AIE FOR APPROVAL.
- CONDUITS CROSSING SEISMIC JOINTS SHALL HAVE LFMT CONDUIT INSTALLED ACROSS THE JOINT THAT ALLOWS FOR 6" OF MOVEMENT MINIMUM. BOND ACROSS LFMT SECTION USING BARE COPPER WIRE AND LISTED GROUNDING CLAMPS.
- CONDUCTORS AND CONDUIT TO BE SIZED BASED ON THHN/THWN. CIRCUITS THROUGH 100 A SIZED BASED ON 80°C. CIRCUITS GREATER THAN 100 A SIZED BASED ON 75°C.

3	6/6/11	FINAL REPORT	
REV	DATE	REASON	
UNLESS OTHERWISE NOTED:		GENSET CAPACITOR BANK	
.X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS = ± 1/64 ANGLES = ± 1°			
SIZE B		SCALE NTS	DWG NO. 3
DESIGNED BY		SWH	CHECKED BY
			APPROVED BY

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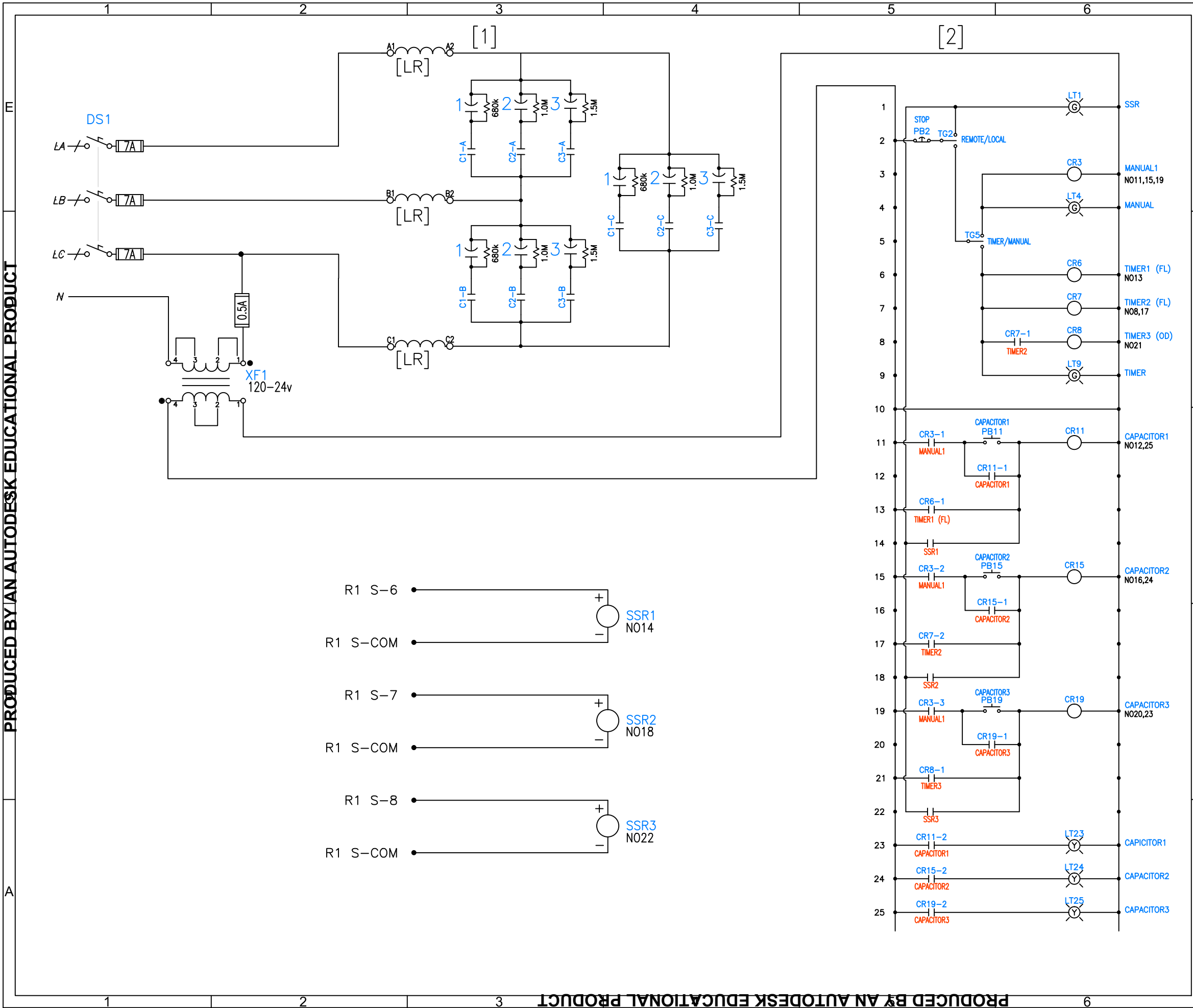
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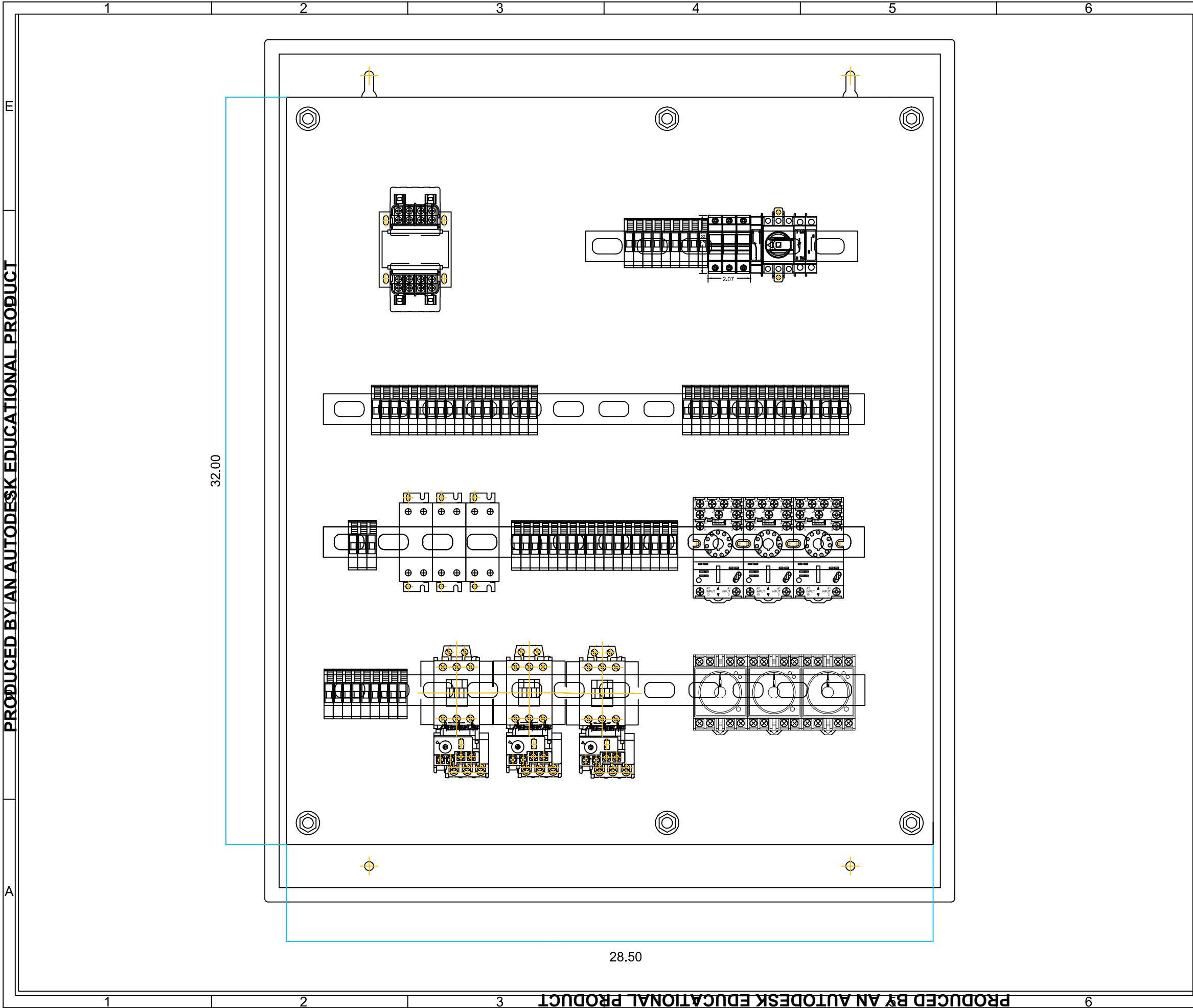
[1] POWER CIRCUIT CONDUCTOR SIZING - 14 AWG
[1] POWER CIRCUIT CONDUCTOR LENGTH - 3 FT.
[2] CONTROL CIRCUIT CONDUCTOR SIZING - 18 AWG
[2] CONTROL CIRCUIT CONDUCTOR LENGTH - 3 FT.
CAPACITOR SIZING
CAP 1 - 15 μ F, 370 VAC, 245 VAR
CAP 2 - 10 μ F, 370 VAC, 163 VAR
CAP 3 - 6 μ F, 370 VAC, 98 VAR
[LR] LINE REACTOR RATING - 0.8 mH, 370 VAC

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REV	DATE	REASON
UNLESS OTHERWISE NOTED:		
.X = ± .015		
.XX = ± .015		
.XXX = ± .002		
.XXXX = ± .0002		
FRACTIONS ± 1/64		
ANGLES ± 1°		
REE 243 INERTIAL LOAD		
SIZE	SCALE	DWG NO.
B	NTS	EI-601
DESIGNED BY	JMC	CHECKED BY
		APPROVED BY



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A	D	05/30/11	ISSUED FOR REE 243 LAB				
	REV	DATE	REASON				
	UNLESS OTHERWISE NOTED:		INERTIAL LOAD, GROUP 4				
	.X = ± .015 .XX = ± .015 .XXX = ± .002 .XXXX = ± .0002 FRACTIONS ± 1/64 ANGLES ± 1°						
			LADDER LOGIC				
			SIZE B	SCALE NTS	DWG NO. EP-601		
			DESIGNED BY	RMW	CHECKED BY	CF	APPROVED BY