

4

3

2

1

SIMPLEX

SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE
PROPERTY OF SIMPLEX, INC., AND/OR
ITS SUBSIDIARIES. WITHOUT WRITTEN
PERMISSION ANY COPYING,
TRANSMITTAL TO OTHERS AND USE
EXCEPT THAT FOR WHICH IT IS
LOANED IS PROHIBITED.
©2013 SIMPLEX, INC.
ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION

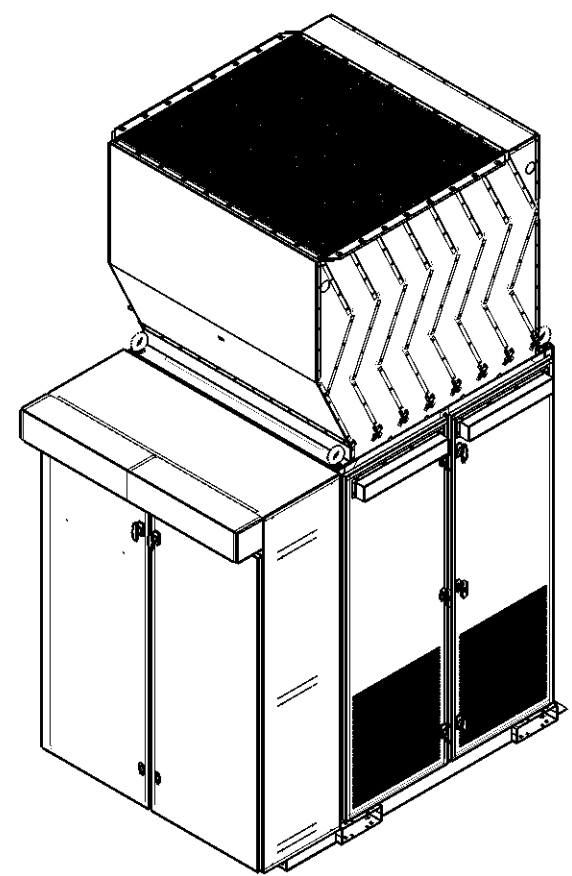
REV	DATE	DESCRIPTION	INT	APPR
A	03/25/2014	drawn for submittal		

TOLERANCES
X.XXX ± 0.005"
X.XX ± 0.010"
X.X ± 0.020"
FRACTIONAL ± 1/32"
ANGLES ± 1°
SURFACES 125/

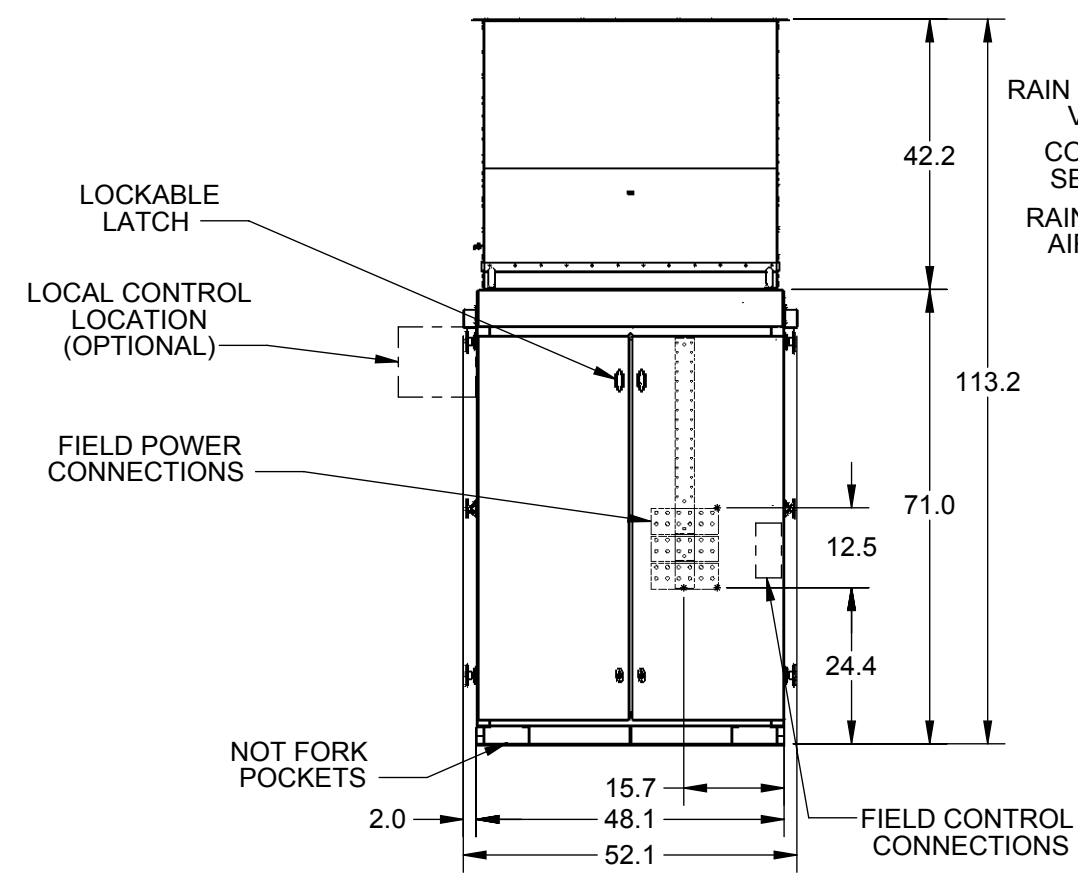
APPROVED BY:	JLW
DRAWN BY:	PWC
SCALE:	1:30
SHEET SIZE:	B-SIZE
SHEET TITLE:	Submittal
W.O. #:	NA
WEIGHT:	2700 lbs

PROJECT	Mars
PART DESCRIPTION	Cabinet Assembly Mars
PART NUMBER	ASM-00004054
PART REVISION:	A
DRAWING NUMBER	DWG-00008870

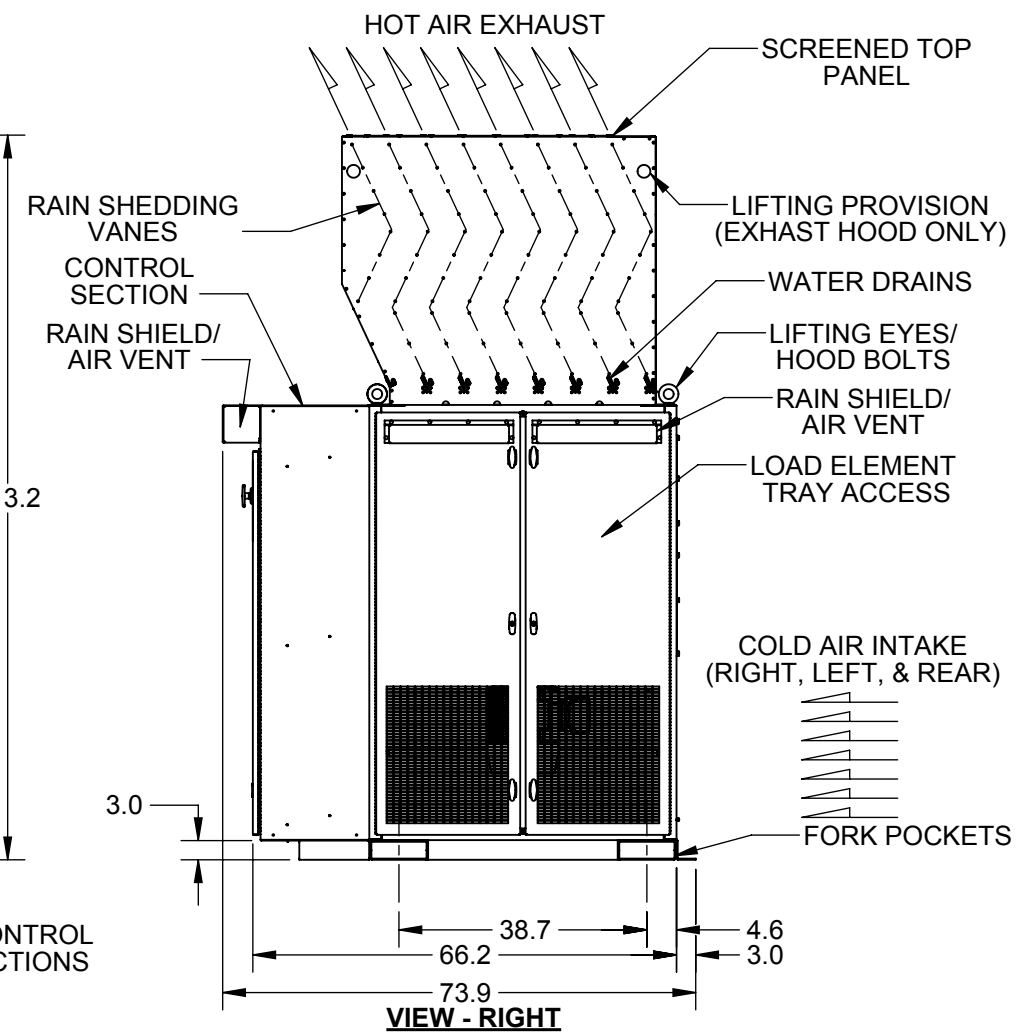
SHEET NUMBER	1 / 2
REVISION	A



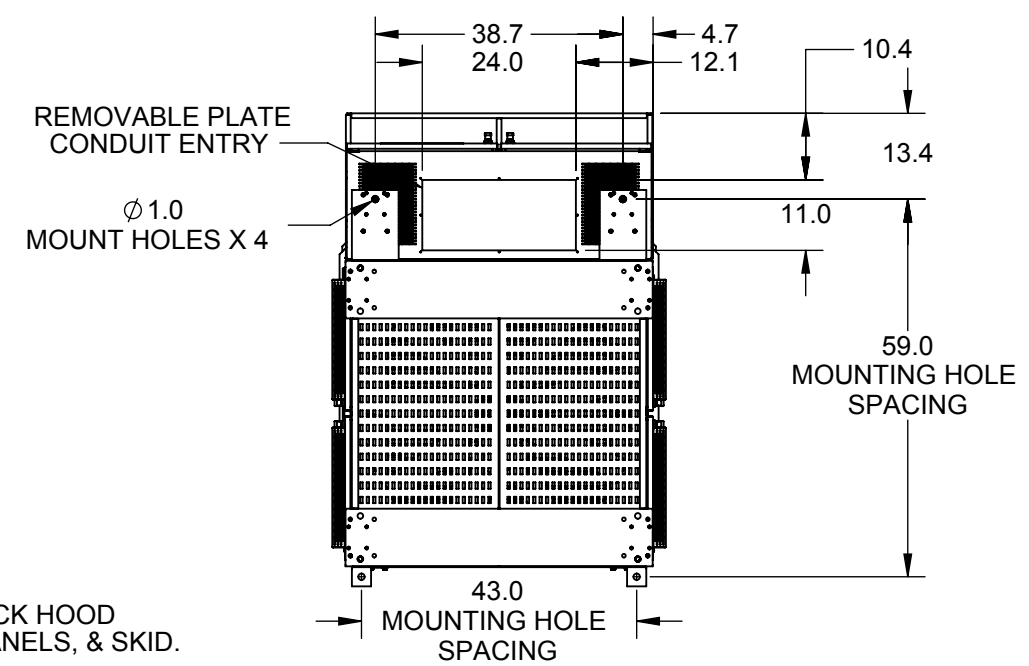
**VIEW - ISOMETRIC
(REFERENCE ONLY)**



VIEW - FRONT



VIEW - RIGHT

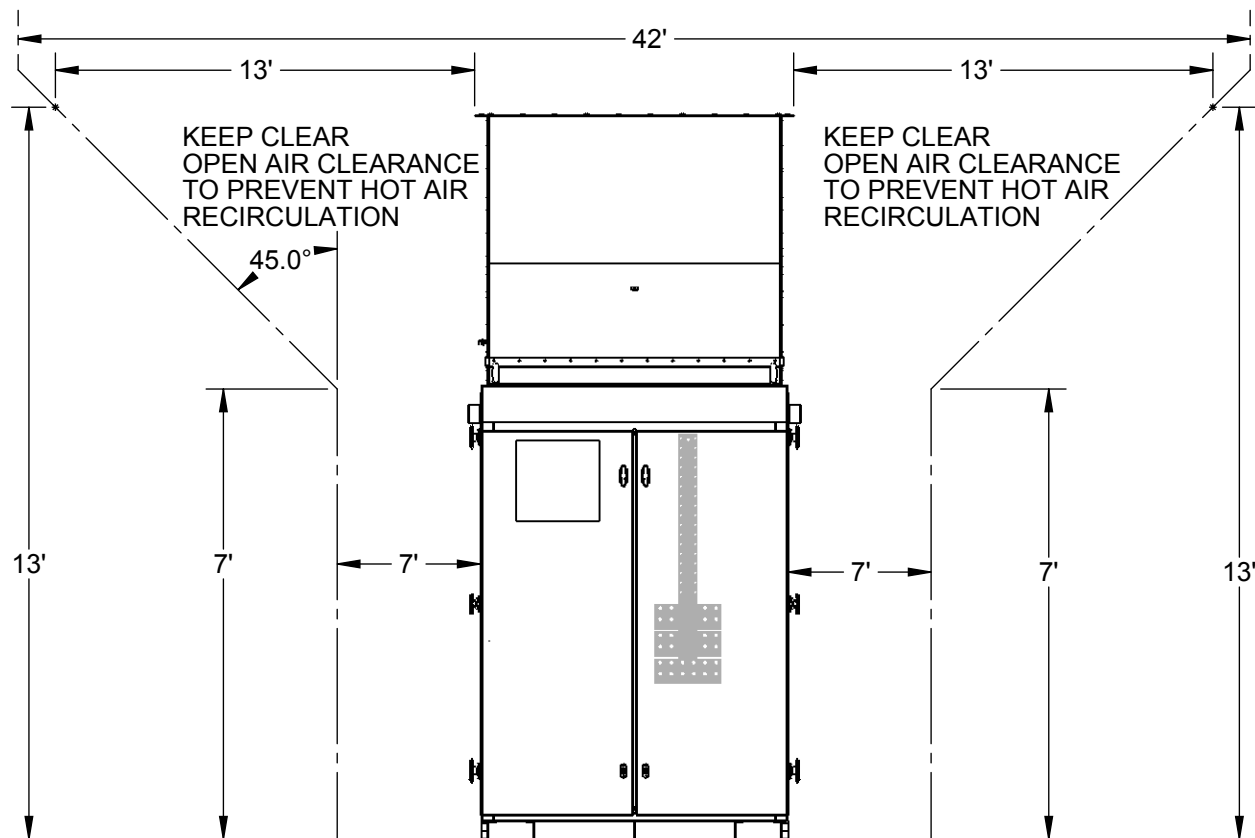


VIEW - BOTTOM

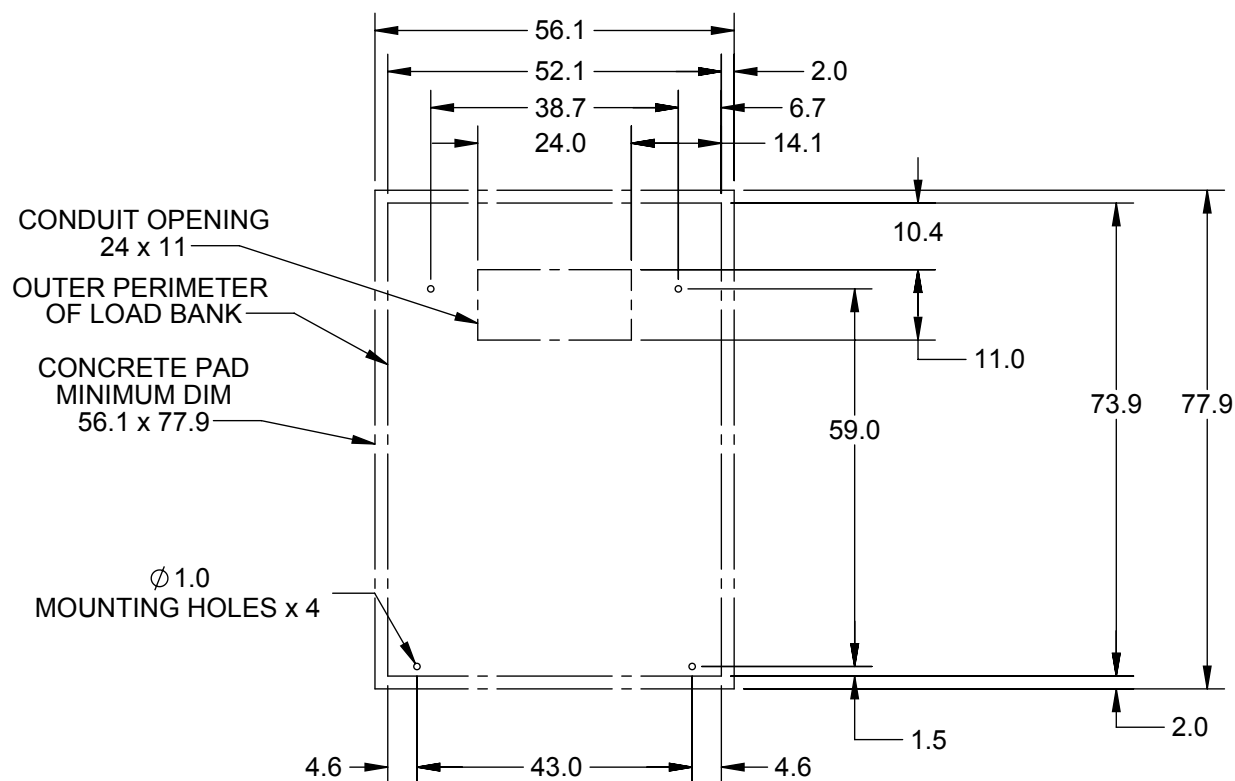
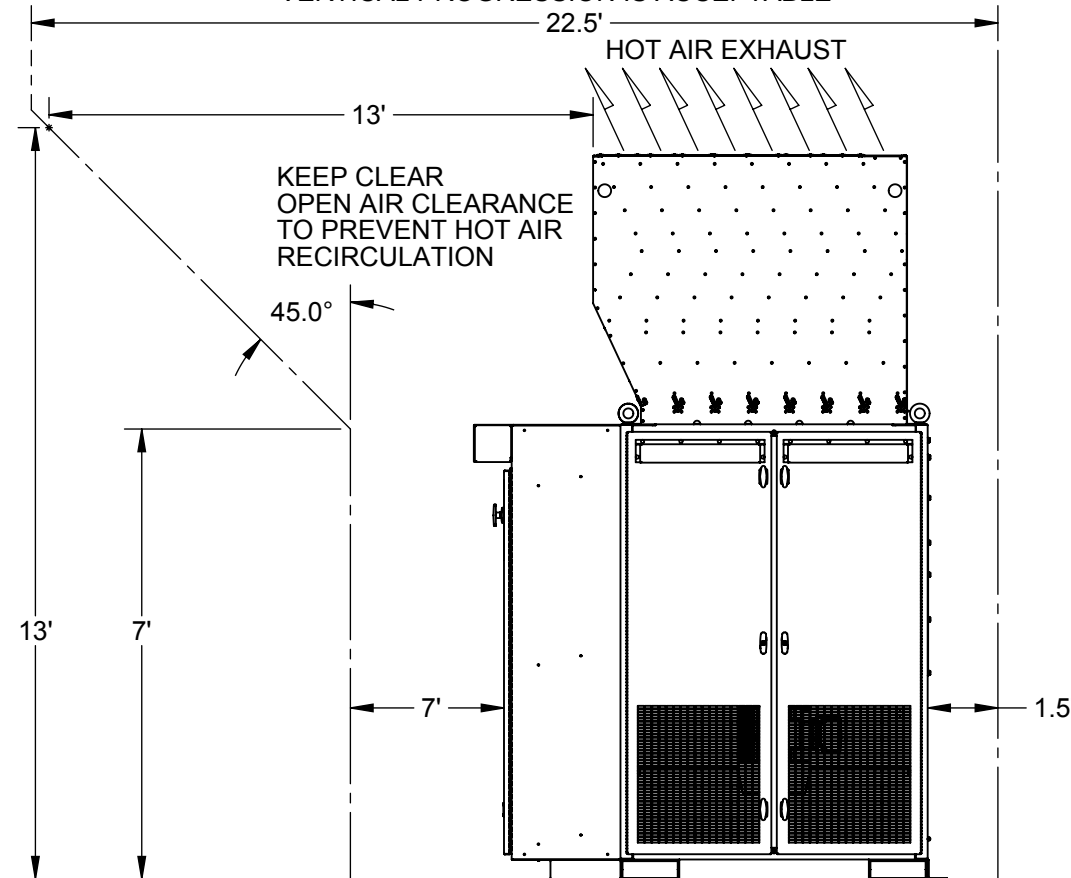
- NOTES:**
(UNLESS OTHERWISE SPECIFIED)
1. ENVIRONMENTAL TYPE - 3R UL APPROVED
 2. FINISH - UL POWDER COAT DAR GRAY CABINETS & HIGH-TEMP BLACK HOOD
 3. CONSTRUCTION: ALL WELDED, FORMED, STEEL FRAME, DOORS, PANELS, & SKID.
 4. AIR FLOW - 21600 CFM
 5. MAX INLET TEMP: 125°F
 6. MAX ΔT: 150°F
 7. MAX EXHAUST TEMP: 600°F
 8. APPROXIMATE WEIGHT - 2700 LBS, 2200 LBS CABINET & 500 LBS EXHAUST HOOD



ONCE 42' OF CLEARANCE IS OBTAINED
VERTICAL PROGRESSION IS ACCEPTABLE



ONCE 22.5' OF CLEARANCE IS OBTAINED
VERTICAL PROGRESSION IS ACCEPTABLE



NOTES:
(UNLESS OTHERWISE SPECIFIED)
1. FOR QUESTIONS REGARDING INSTALLATION
OR CLEARANCE PLEASE CALL SIMPLEX (217-483-1600)

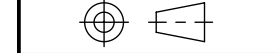


SIMPLEX

SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE
PROPERTY OF SIMPLEX, INC., AND/OR
ITS SUBSIDIARIES. WITHOUT WRITTEN
PERMISSION ANY COPYING,
TRANSMITTAL TO OTHERS AND USE
EXCEPT THAT FOR WHICH IT IS
LOANED IS PROHIBITED.
©2013 SIMPLEX, INC.
ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION



REV	DATE	DESCRIPTION	INT	APPR
A	03/25/2014	drawn for submittal		

TOLERANCES
X.XXX ± 0.005"
X.XX ± 0.010"
X.X ± 0.020"
FRACTIONAL ± 1/32"
ANGLES ± 1°
SURFACES 125/√

APPROVED BY: JLW
DRAWN BY: PWC
SCALE: 1:30
SHEET SIZE: B-SIZE
SHEET TITLE: Clearance
W.O. #: NA
WEIGHT: 2700 lbs

PROJECT
Mars

PART DESCRIPTION
Cabinet Assembly Mars

PART NUMBER
ASM-00004054

PART REVISION: A

DRAWING NUMBER
DWG-00008870

SHEET NUMBER	REVISION
2 / 2	A

4

3

2

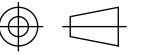
1

SIMPLEX

SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE
PROPERTY OF SIMPLEX, INC., AND/OR
ITS SUBSIDIARIES. WITHOUT WRITTEN
PERMISSION ANY COPYING,
TRANSMITTAL TO OTHERS AND USE
EXCEPT THAT FOR WHICH IT IS
LOANED IS PROHIBITED.
© 2014 SIMPLEX, INC.
ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION



REV	DATE	DESCRIPTION	INT	APPR
A	03/24/2014	Original Revision		

TOLERANCES
X.XXX ± 0.005"
X.XX ± 0.010"
X.X ± 0.020"
FRACTIONAL ± 1/32"
ANGLES ± 1°
SURFACES 125

APPROVED BY: PWC

DRAWN BY: JLW

SCALE:

SHEET SIZE: ANSI B

WORK ORDER: NA

DESCRIPTION: Mars 750-480 Load Tray Layout

Approved 03/24/2014

DRAWING NUMBER:
ACD-00002516

SHEET NUMBER: **1 / 1**
REVISION: **A**

D

D

C

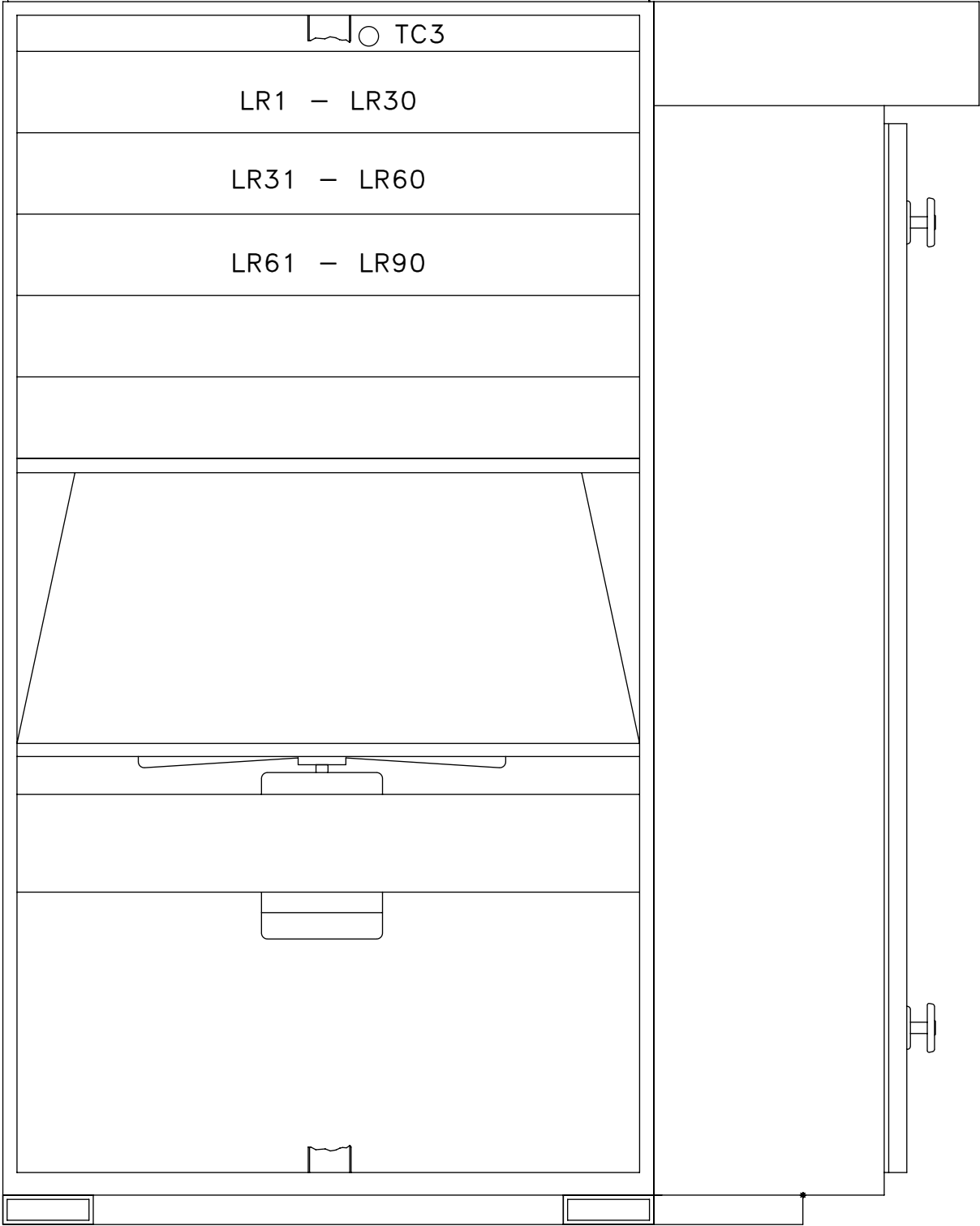
C

B

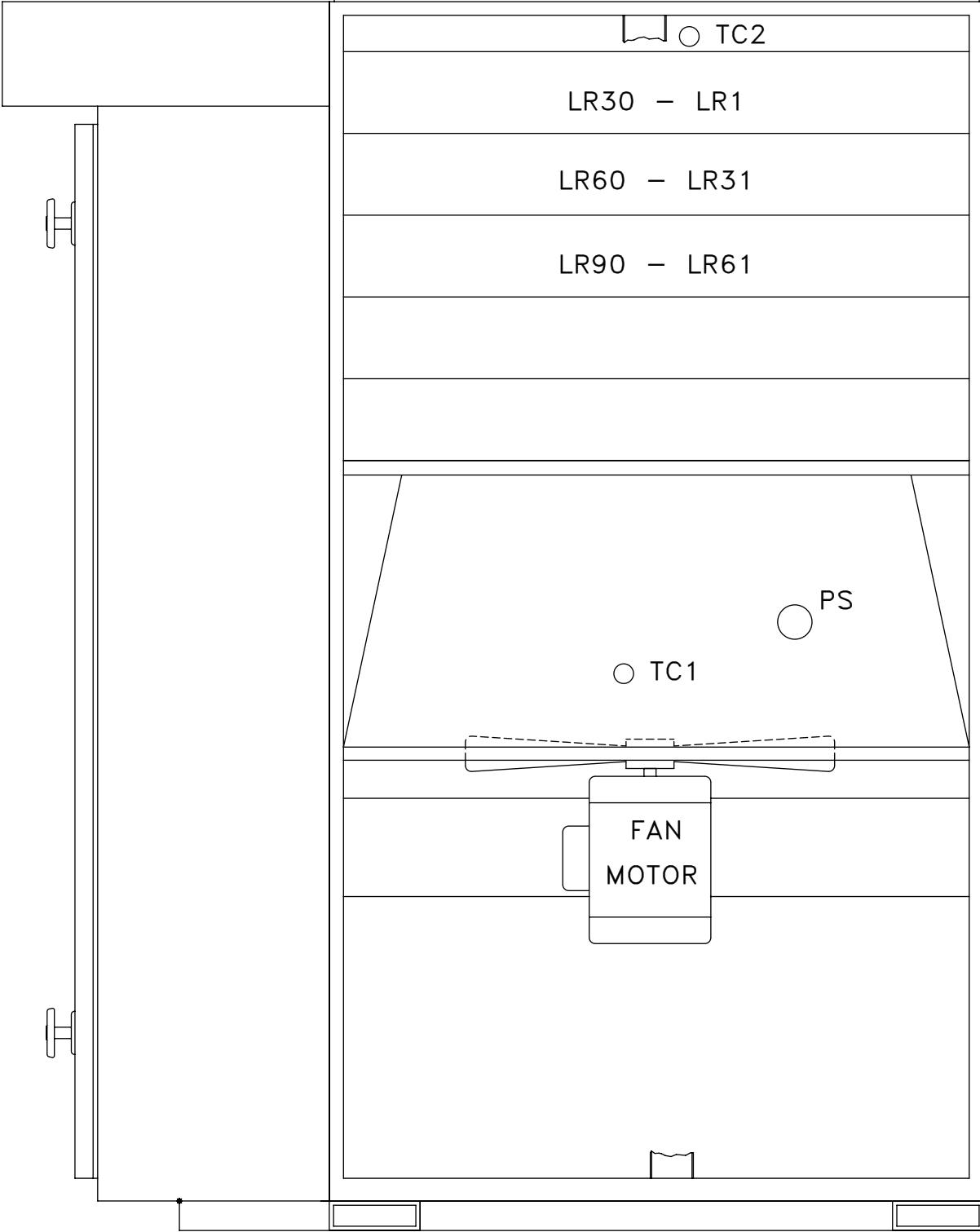
B

A

A



LEFT - VIEW
FRONT OF TRAY



RIGHT - VIEW
REAR OF TRAY

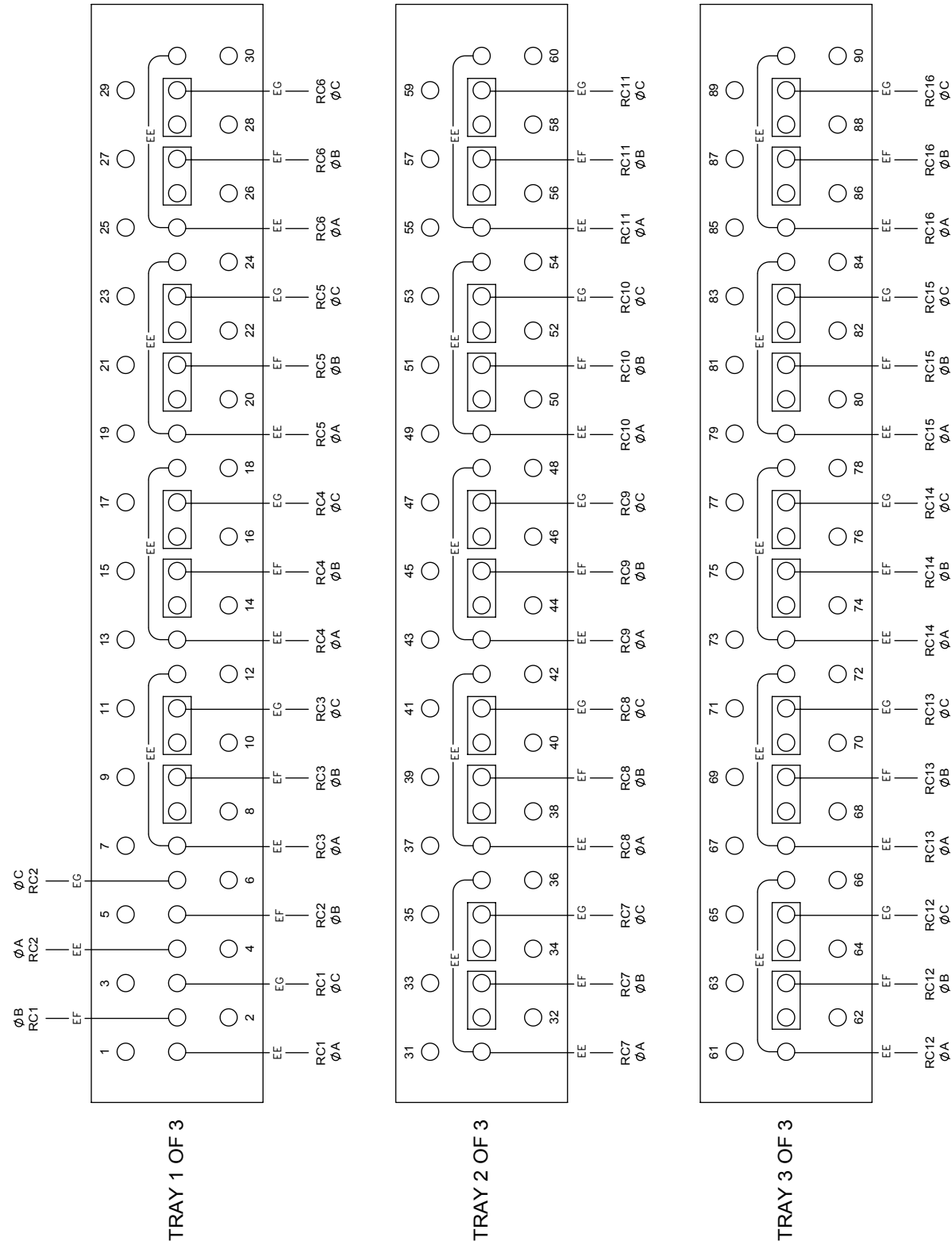
4

3

2

1

FRONT OF TRAY/LEFT SIDE/TERMINAL 1



WIRE COLOR CHART

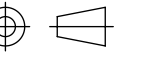
CODE	WIRE GAUGE	INSULATION TEMPERATURE RATING	WIRE COLOR	SIMPLEX PART NUMBER	APPLICATION
EE	8 AWG	150°C	BLACK	25533100	φA LOAD
EF	8 AWG	150°C	RED	25533200	φB LOAD
EG	8 AWG	150°C	BLUE	25533300	φC LOAD
EH	8 AWG	150°C	WHITE	25533350	LOAD JUMPER



SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
© 2014 SIMPLEX, INC.
ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION



REV	DATE	DESCRIPTION	INT APPR	
			JLW	PWC
A	03/24/2014	Original Revision		

TOLERANCES
X.XXX ± 0.005"
X.XX ± 0.010"
X.X ± 0.020"
FRACTIONAL ± 1/32"
ANGLES ± 1°
SURFACES 125

APPROVED BY: PWC

DRAWN BY: JLW

SCALE:

SHEET SIZE: ANSI B

WORK ORDER

NA

DESCRIPTION

Mars 750-480 Load Strapping - 1

Approved 03/24/2014

DRAWING NUMBER
ACD-0002518

SHEET NUMBER	REVISION
1 / 1	A

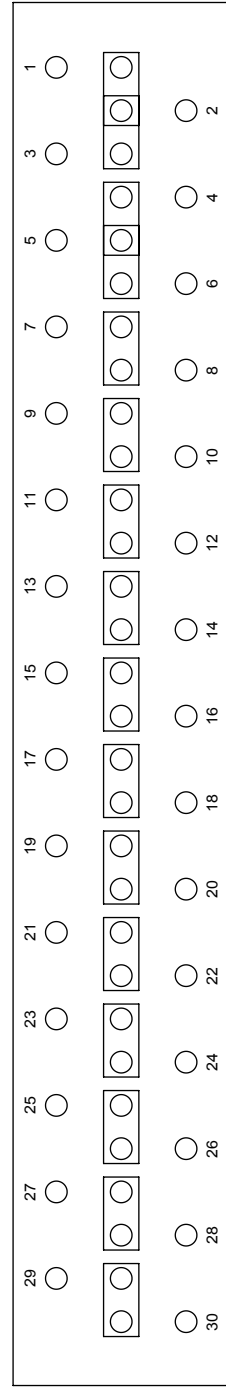
4

3

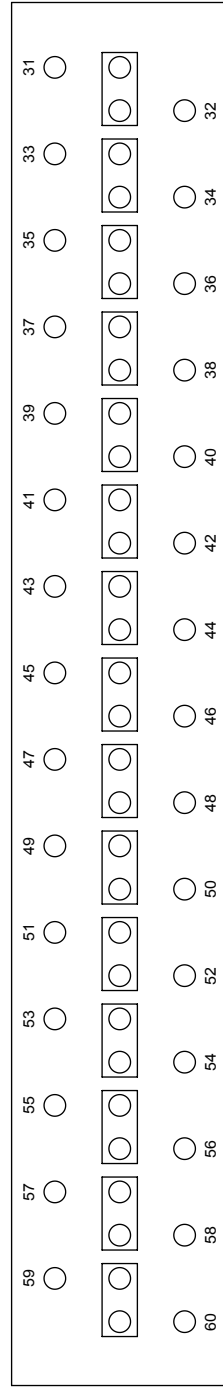
2

1

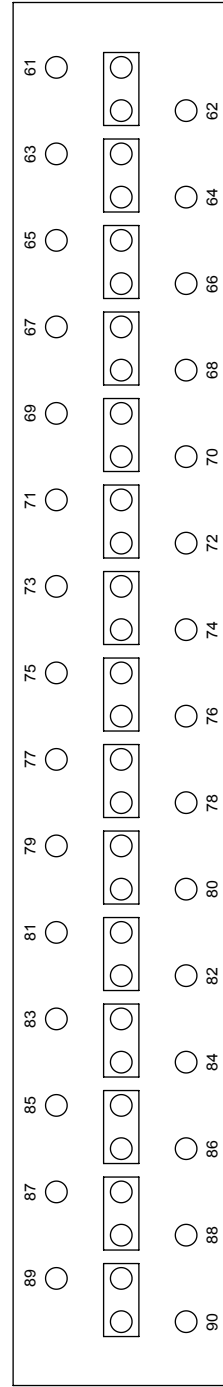
REAR OF TRAY/RIGHT SIDE/TERMINAL 0



TRAY 1 OF 3



TRAY 2 OF 3



TRAY 3 OF 3

WIRE CHART

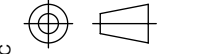
CODE	WIRE GAUGE	INSULATION TEMPERATURE RATING	WIRE COLOR	SIMPLEX PART NUMBER	APPLICATION
EE	8 AWG	150°C	BLACK	25533100	φA LOAD
EF	8 AWG	150°C	RED	25533200	φB LOAD
EG	8 AWG	150°C	BLUE	25533300	φC LOAD
EH	8 AWG	150°C	WHITE	25533350	LOAD JUMPER



SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
© 2014 SIMPLEX, INC.
ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION



REV	DATE	DESCRIPTION	INT APPR
A	03/24/2014	Original Revision	JLW PWC

TOLERANCES
X.XXX ± 0.005"
X.XX ± 0.010"
X.X ± 0.020"
FRACTIONAL ± 1/32"
ANGLES ± 1°
SURFACES 125

APPROVED BY: PWC

DRAWN BY: JLW

SCALE: 1:1.1135

SHEET SIZE: ANSI B

WORK ORDER
NA

DESCRIPTION
Mars 750-480 Load Strapping - 0

Approved 03/24/2014

DRAWING NUMBER

ACD-00002517

SHEET NUMBER REVISION

1 / 1 A

4

3

2

1

4

3

2

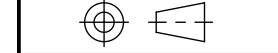
1



SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
©2013 SIMPLEX, INC.
ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION



REV	DATE	DESCRIPTION	REVISIONS & UPDATES		
			JLW	PWC	APPR
B	03/25/2014	Added MF1-3			
A	03/24/2014	Original Revision			

TOLERANCES
 X.XXX ± 0.005"
 X.XX ± 0.010"
 X.X ± 0.020"
 FRACTIONAL ± 1/32"
 ANGLES ± 1°
 SURFACES 125/

APPROVED BY: PWC
 DRAWN BY: JLW
 SCALE: 1:9
 SHEET SIZE: B-SIZE
 SHEET TITLE: Sheet 1
 W.O. #: NA
 WEIGHT: 189.75346177 lbs

PROJECT: Electrical

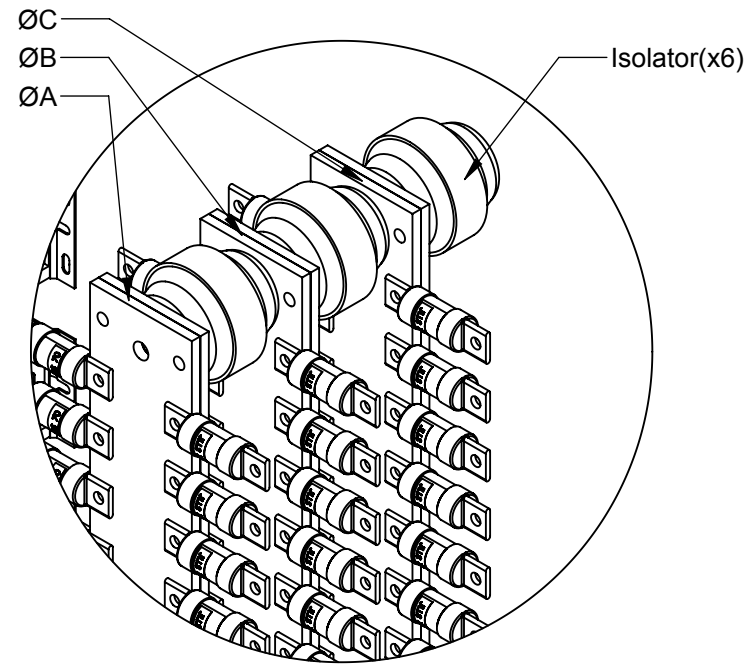
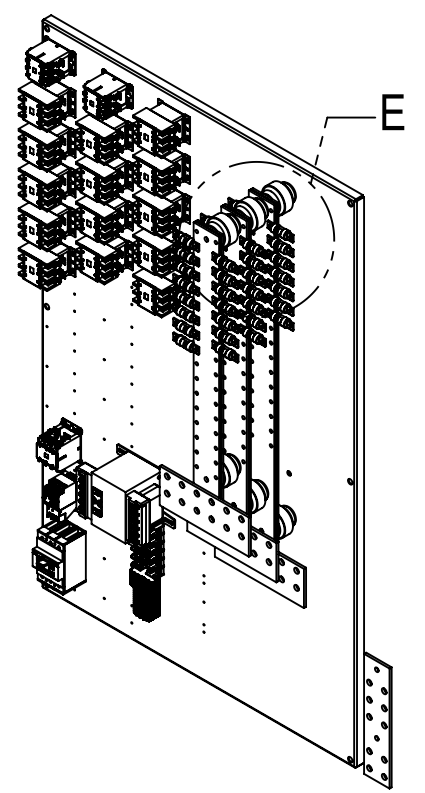
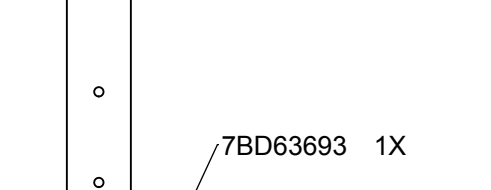
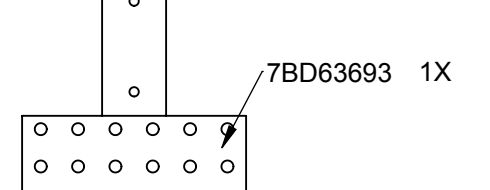
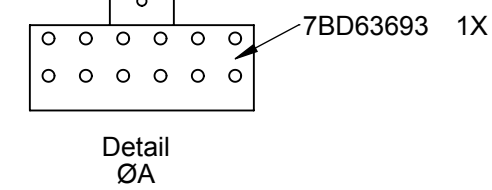
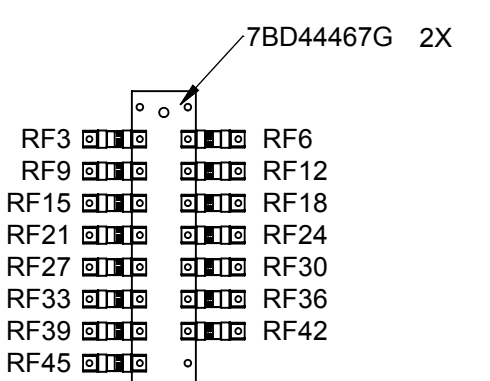
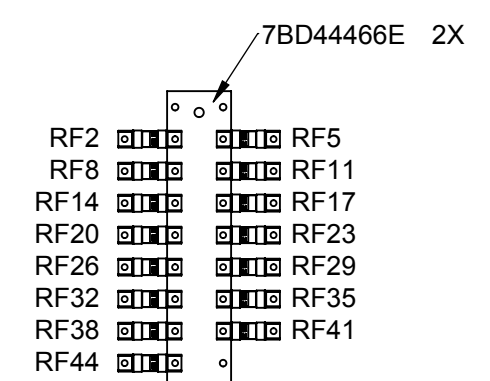
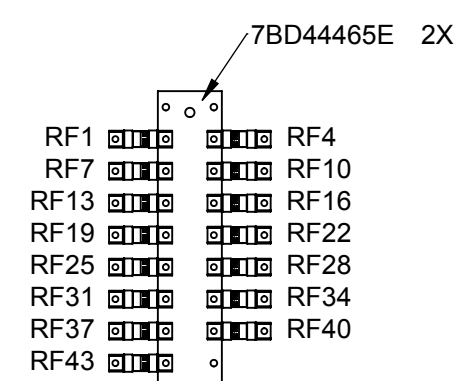
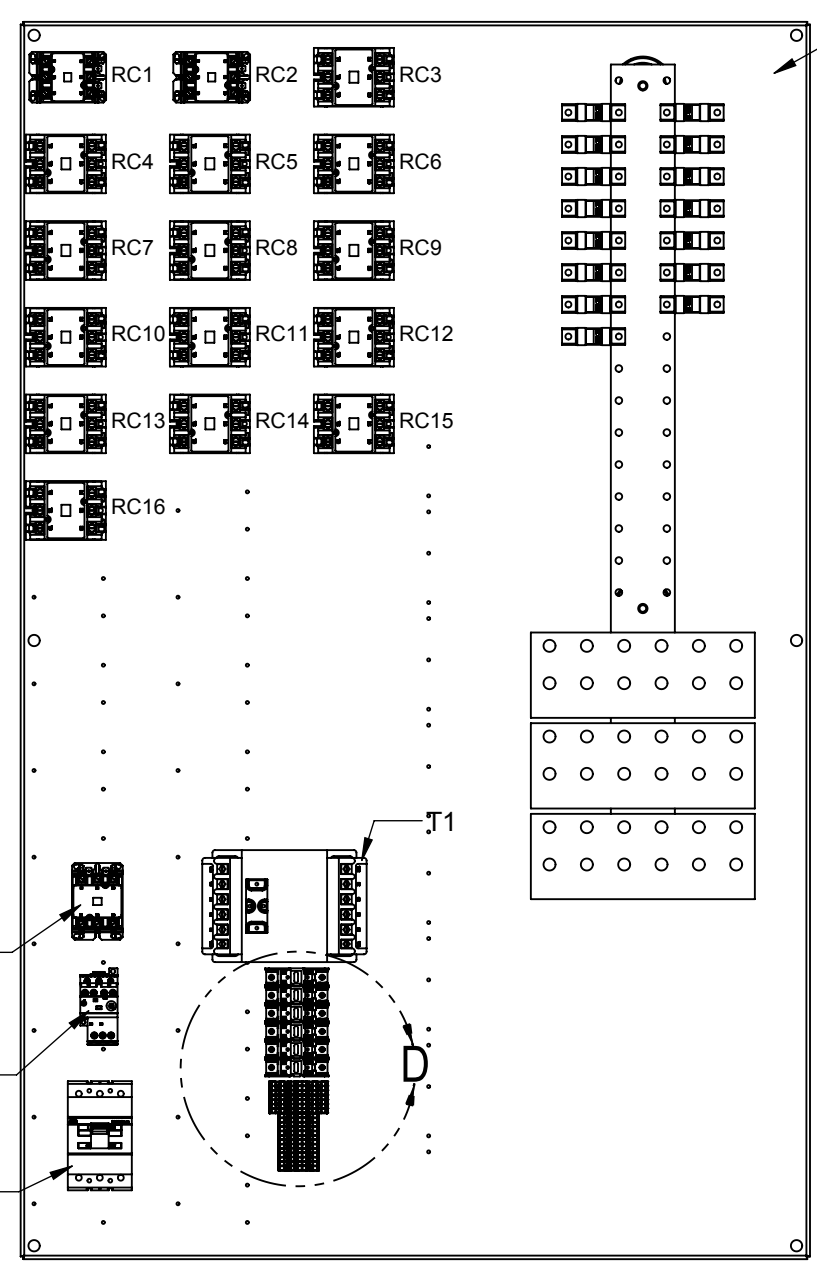
PART DESCRIPTION: Mars Load Bank Subpanel Layout

PART NUMBER: **ASM-00006214**

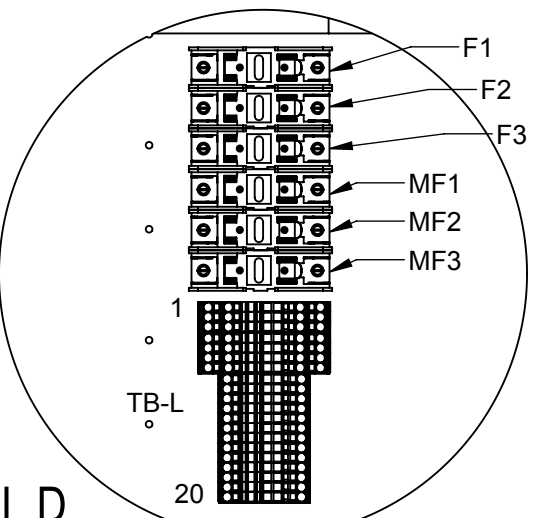
PART REVISION: **B**

DRAWING NUMBER: **DWG-00015520**

SHEET NUMBER	REVISION
1 / 1	B



DETAIL E
SCALE 1:4



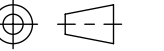
DETAIL D
SCALE 1:4

4

3

2

1



REV	DATE	DESCRIPTION	INT	APPR
H	02/14/2014	Swapped D/E Positions		
G	01/27/2014	Updated TB-SH		
F	11/06/2013	Changed Fuseblock type		
E	10/25/2013	Removed MF 1-3		
D	10/02/2013	Moved Header		
C	09/12/2013	Moved DCI for airflow considerations		
B	08/12/2013	Corrected Views, added TB-SH 1-3 Label		
A	08/06/2013	Original Revision		

TOLERANCES
X.XXX ± 0.005"
X.XX ± 0.010"
X.X ± 0.020"
FRACTIONAL ± 1/32"
ANGLES ± 1°
SURFACES 125/

APPROVED BY:	PWC
DRAWN BY:	JLW
SCALE:	1:6
SHEET SIZE:	B-SIZE
SHEET TITLE:	Base Control
W.O. #:	NA
WEIGHT:	33.10 lbs

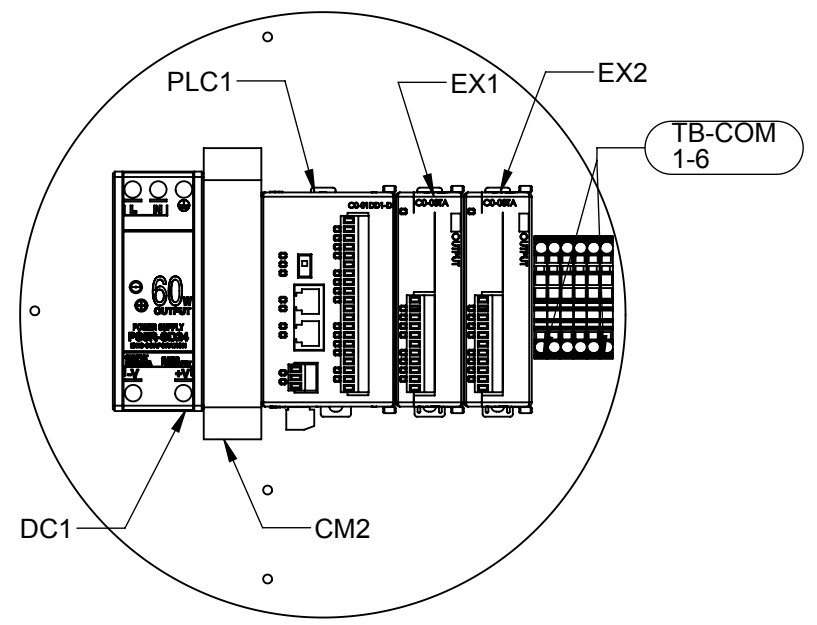
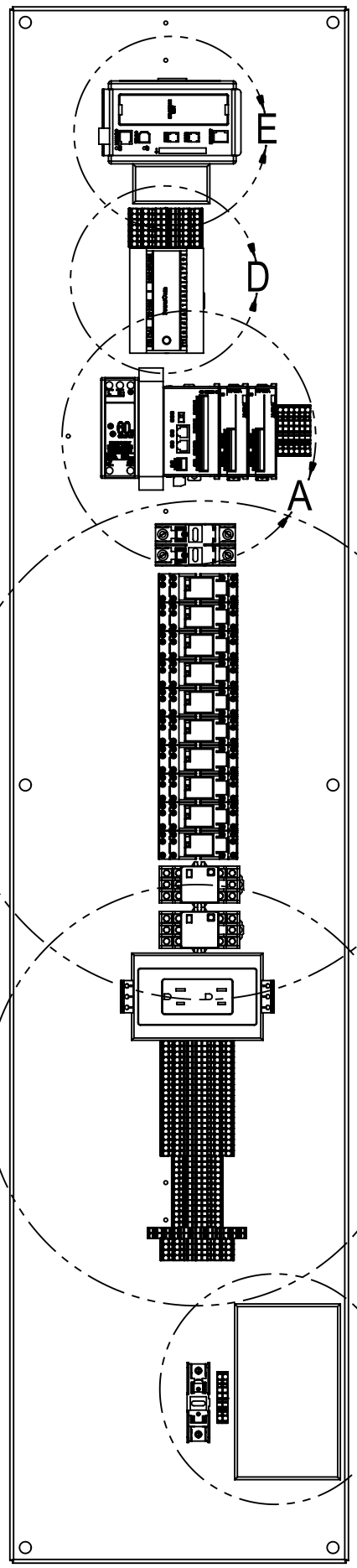
PROJECT
Control Sections
PART DESCRIPTION
Right Subpanel Layout

PART NUMBER
ASM-00007660

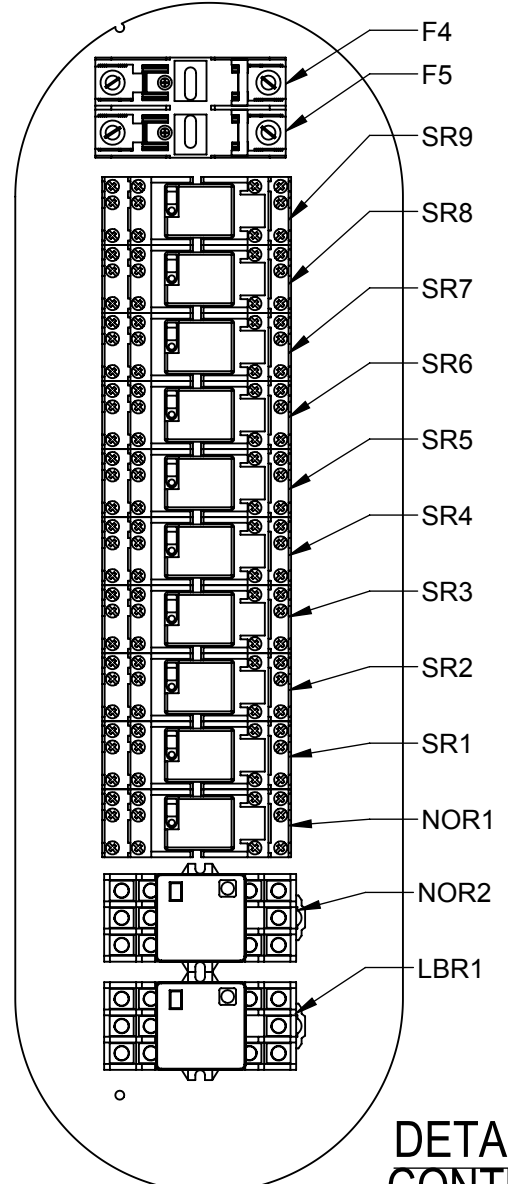
PART REVISION: **G**

DRAWING NUMBER
DWG-00009305

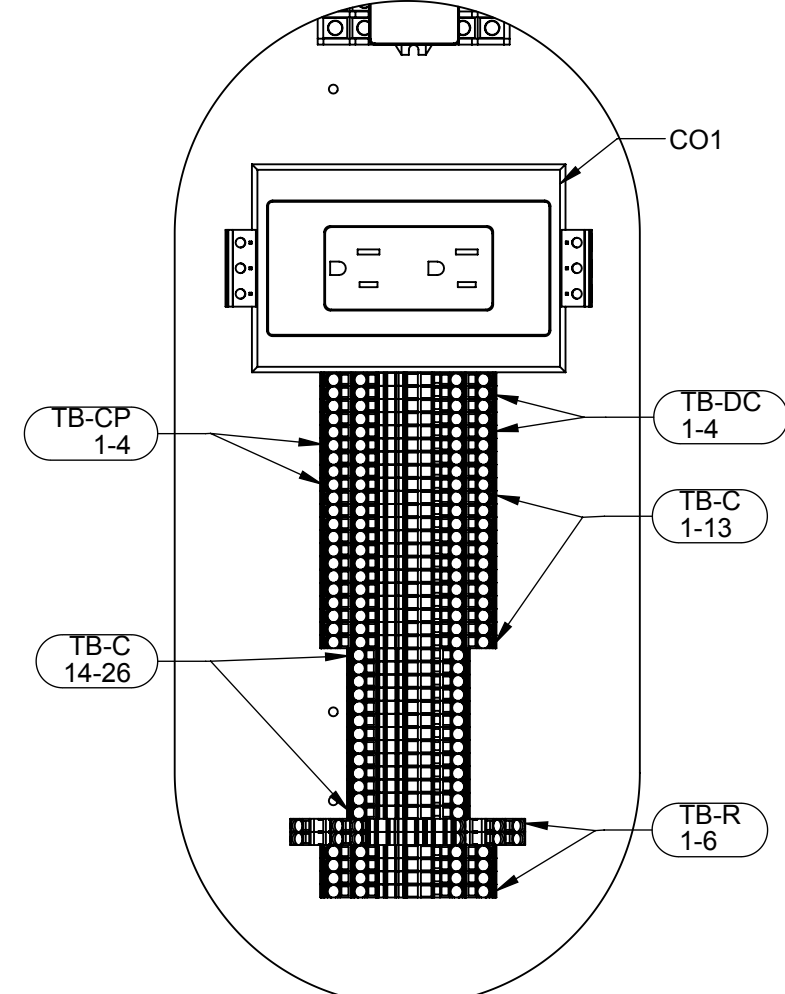
SHEET NUMBER	REVISION
1 / 1	H



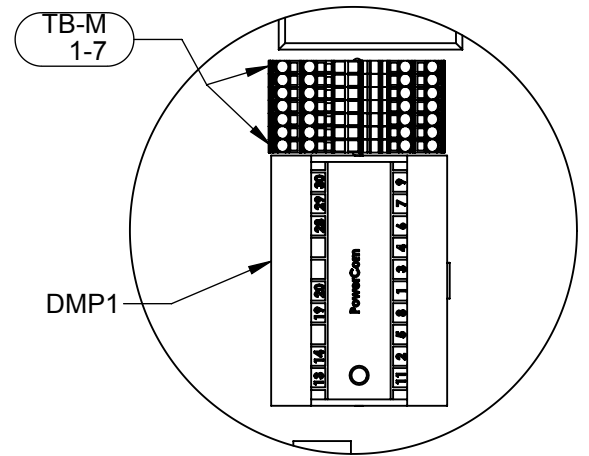
DETAIL A
PLC



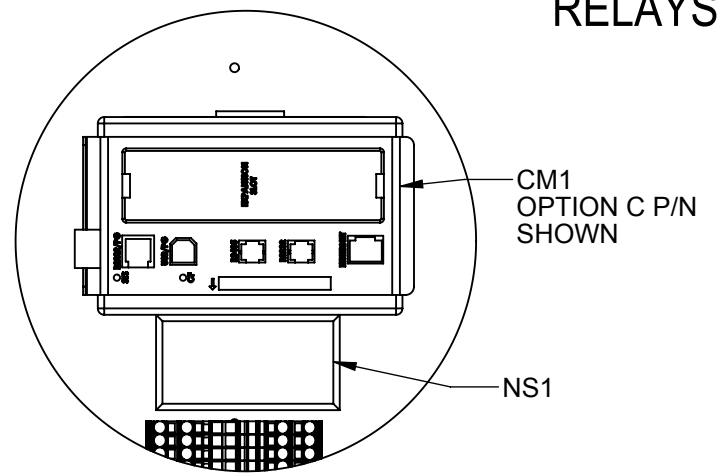
DETAIL B
CONTROL RELAYS



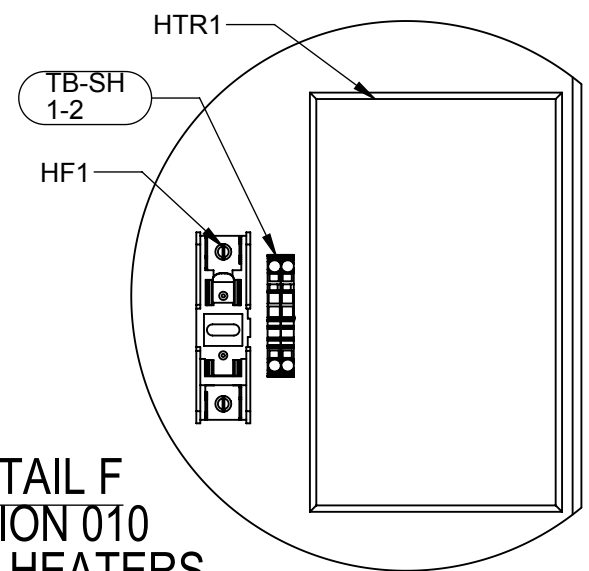
DETAIL C
TERMINAL BLOCKS



DETAIL D
OPTION A
AUTOMATION



DETAIL E
OPTIONS B/C
MODBUS TCP
ADVANCED CONTROL



DETAIL F
OPTION 010
SPACE HEATERS

PRT-00025506



Work Order: Mars

Load Section, 480V, 3Ø, 750KW

Electrical Package

Simplex - Atlanta
270 Riverside Parkway
Austell, GA 30168

1

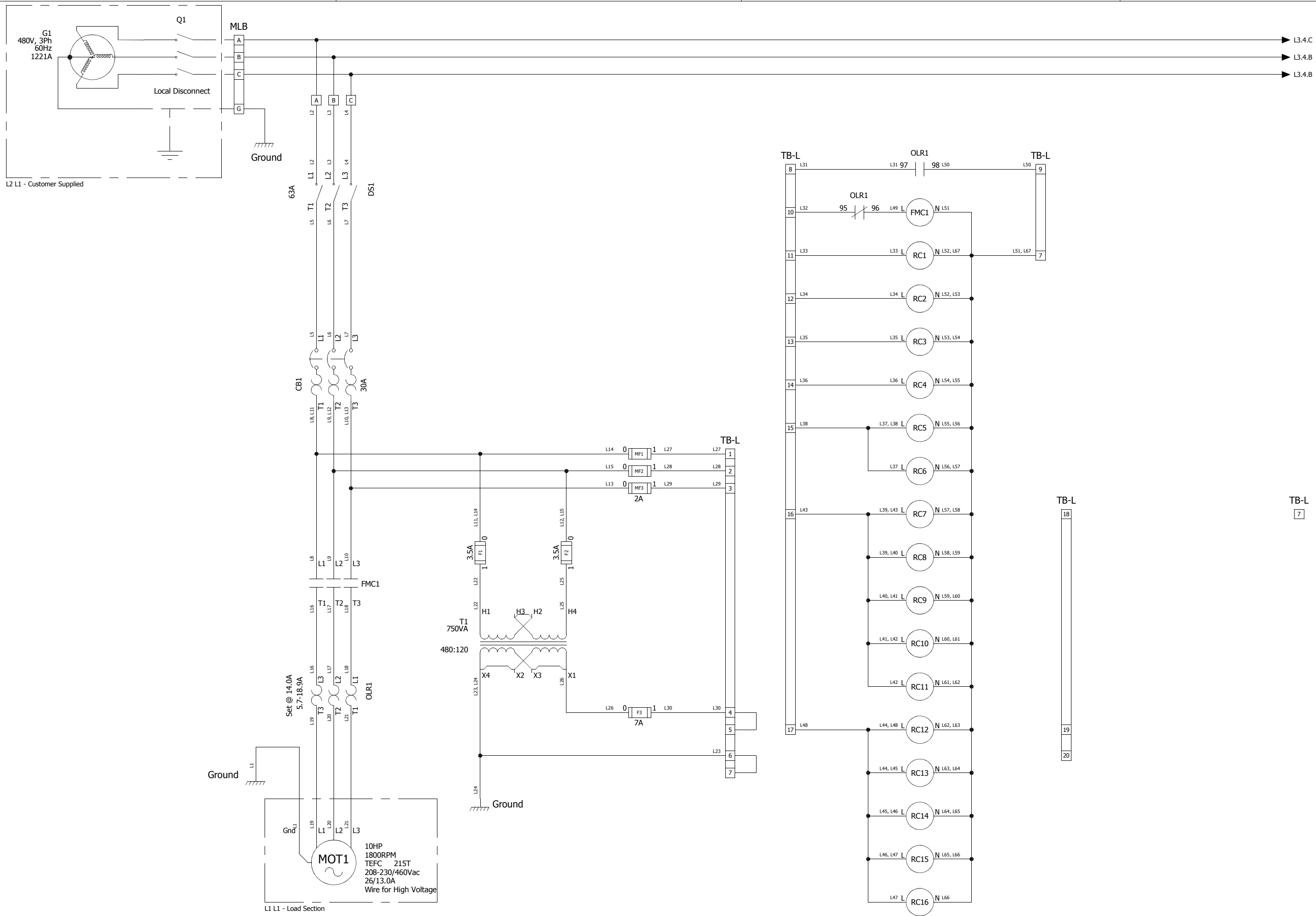
Page	Description	Created By	Folder Designation
L1	Drawing Listing	JLW	
L2	Motor / Contactor Wiring	JLW	
L3	Load Section	JLW	
L5	Parts Legend - By Location	JLW	
L7	Wire List - By Number 1/1	JLW	
L9	Bill Of Materials - By Location	JLW	Simplex Reference Only
L10	Terminal Block Schedule	JLW	Simplex Reference Only
L11	Load Elements (Sectional)	JLW	Simplex Reference Only
L12	Control Wire List - By Location 1/1	JLW	Simplex Reference Only
L13	Load Wire List - By Location 1/1	JLW	Simplex Reference Only

Drawing Number
SWE-00228

Revision
A

Revision Date
3/24/2014

Customer: Simplex Load Banks
Engineer: JLW
Environmental Type: 3R



SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
©2012 SIMPLEX, INC.
ALL RIGHTS RESERVED

REVISIONS & UPDATES		DATE	DESCRIPTION	REV
JLW				APPROVED
Original Submittal				
3/24/2014				
A				

WORK ORDER

Mars

PROJECT DESCRIPTION

Load Section, 480V, 3Ø, 750KW

BOOK

Mars 750

LOCATION

Center Subpanel

FUNCTION

Main Function

DESCRIPTION

Motor / Contactor Wiring

DRAWN BY

JLW

FOLDER

DRAWING NUMBER

SWE-00228

PAGE NUMBER

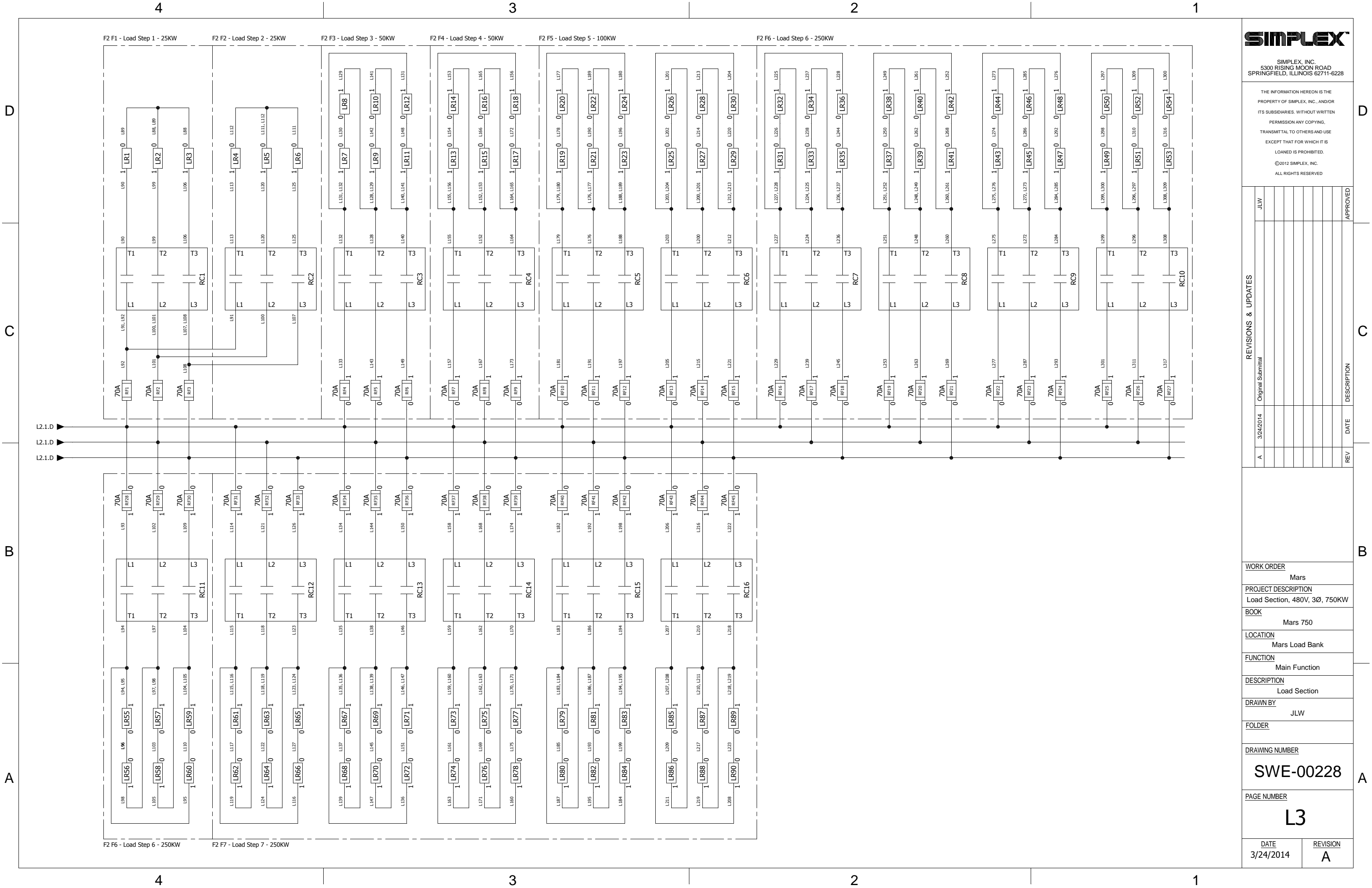
L2

DATE

3/24/2014

REVISION

A



SIMPLEX
SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
©2012 SIMPLEX, INC.
ALL RIGHTS RESERVED

REVISIONS & UPDATES

REV	DATE	DESCRIPTION	APPROVED
A	3/24/2014	Original Submittal	JLW

WORK ORDER: Mars
PROJECT DESCRIPTION: Load Section, 480V, 3Ø, 750KW
BOOK: Mars 750
LOCATION: Mars Load Bank
FUNCTION: Main Function
DESCRIPTION: Load Section
DRAWN BY: JLW
FOLDER:
DRAWING NUMBER: SWE-00228
PAGE NUMBER: L3
DATE: 3/24/2014
REVISION: A

Parts Legend - By Location

Center Subpanel

Mark	Part Number	Description
F1	14019775 15012300	Fuse, 3.5A, Class CC, Time Delay Fuseblock, Three Pole, Class CC, 30A
F2	14019775	Fuse, 3.5A, Class CC, Time Delay
F3	14039000	Fuse, 7A, Class CC, Time Delay
FMC1	13011040	Contactora, Definite Purpose, 3 Pole, 40A Resistive, 30FLA, 120Vac Coil, Box Lugs
MF1	14014500 15012300	Fuse, 2A, Class CC, Fast Acting Fuseblock, Three Pole, Class CC, 30A
MF2-3	14014500	Fuse, 2A, Class CC, Fast Acting
MLB-A	15400000 60044465G 60063693	Isolator, 2.75, .325-16 Bus Bar, Single Pole, 750A, Phase A Splice Bus Bar, Nept/Mars, 0.250" x 4.00" x10.50"
MLB-B	15400000 60044466E 60063693	Isolator, 2.75, .325-16 Bus Bar, Single Pole, 750A, Phase B Splice Bus Bar, Nept/Mars, 0.250" x 4.00" x10.50"
MLB-C	15400000 60044467G 60063693	Isolator, 2.75, .325-16 Bus Bar, Single Pole, 750A, Phase C Splice Bus Bar, Nept/Mars, 0.250" x 4.00" x10.50"
MLB-G	60063191	Ground Bus Bar, 3.0" x 12.25"
OLR1	24827710 24827750	Overload Relay, Three Pole, 5.7-18.9A, E16DU Overload Relay Base, E16DU Series
RC1-2	13011040	Contactora, Definite Purpose, 3 Pole, 40A Resistive, 30FLA, 120Vac Coil, Box Lugs
RC3-16	13011065	Contactora, Definite Purpose, 3 Pole, 65A Resistive, 50FLA, 120Vac Coil, Box Lugs
RF1-45	14087000	Fuse, 70A, Class T, Fast Acting
T1	25457670	Transformer, 750VA, 480/240:240/120
TB-L-	25678547 25678546 25678538 25678557 25678536 25678539 25678532 25678533	Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Black Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Red End And Intermediate Plate, 4 Connections Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Blue Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Grey Push In Jumper Bar, 2 Way Terminal Block, Spring Type, 20A, 600Vac, 2 Connections, Grey End And Intermediate Plate, 2 Connections
A1	PRT-00012074	Subpanel, Mars, Rear
CB1	12046630	Circuit Breaker, Three Pole, 30A Trip, 100A Frame

Door Frame

Mark	Part Number	Description
DS1	25317000	Disconnect Switch, 3 Pole, 63A

Load Section

Mark	Part Number	Description
MOT1	13860080 24646015	Fan Blade 42", 1-3/8" Hub 27700-CFM Motor, 10HP, Three Phase, 208-230/460Vac, TEFC, 1800RPM



SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE
PROPERTY OF SIMPLEX, INC., AND/OR
ITS SUBSIDIARIES. WITHOUT WRITTEN
PERMISSION ANY COPYING,
TRANSMITTAL TO OTHERS AND USE
EXCEPT THAT FOR WHICH IT IS
LOANED IS PROHIBITED.
©2012 SIMPLEX, INC.
ALL RIGHTS RESERVED

REV	DATE	DESCRIPTION	APPROVED
JLW			
Original Submittal			
3/24/2014			
A			

REVISIONS & UPDATES

WORK ORDER
Mars

PROJECT DESCRIPTION
Load Section, 480V, 3Ø, 750KW

BOOK
Mars 750

LOCATION
Mars Load Bank

FUNCTION
Main Function

DESCRIPTION
Parts Legend - By Location

DRAWN BY
JLW

FOLDER

DRAWING NUMBER
SWE-00228

PAGE NUMBER
L5

DATE 3/24/2014	REVISION A
-------------------	---------------

Wire List - By Number 1/1

Note: Unless specified otherwise, all wiring copper



SIMPLEX, INC. 5300 RISING MOON ROAD SPRINGFIELD, ILLINOIS 62711-6228 THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED. ©2012 SIMPLEX, INC. ALL RIGHTS RESERVED

Table with 6 columns: #, End A, End B, Gauge, Wire Color, Temp. Rows L1-L49.

Table with 6 columns: #, End A, End B, Gauge, Wire Color, Temp. Rows L50-L134.

Table with 6 columns: #, End A, End B, Gauge, Wire Color, Temp. Rows L135-L218.

Table with 6 columns: #, End A, End B, Gauge, Wire Color, Temp. Rows L221-L317.

Table with 10 columns: REVISIONS & UPDATES, Original Submittal, DATE, DESCRIPTION, REV. Includes dates like 3/24/2014 and initials like JLW.

WORK ORDER Mars

PROJECT DESCRIPTION Load Section, 480V, 3Ø, 750KW BOOK Mars 750

LOCATION Mars Load Bank

FUNCTION Main Function

DESCRIPTION Wire List - By Number 1/1

DRAWN BY JLW

FOLDER

DRAWING NUMBER SWE-00228

PAGE NUMBER L7

DATE 3/24/2014 REVISION A



Work Order: Neptune / Mars Control Section - Local HMI

Electrical Package

Simplex - Atlanta
270 Riverside Parkway
Austell, GA 30168

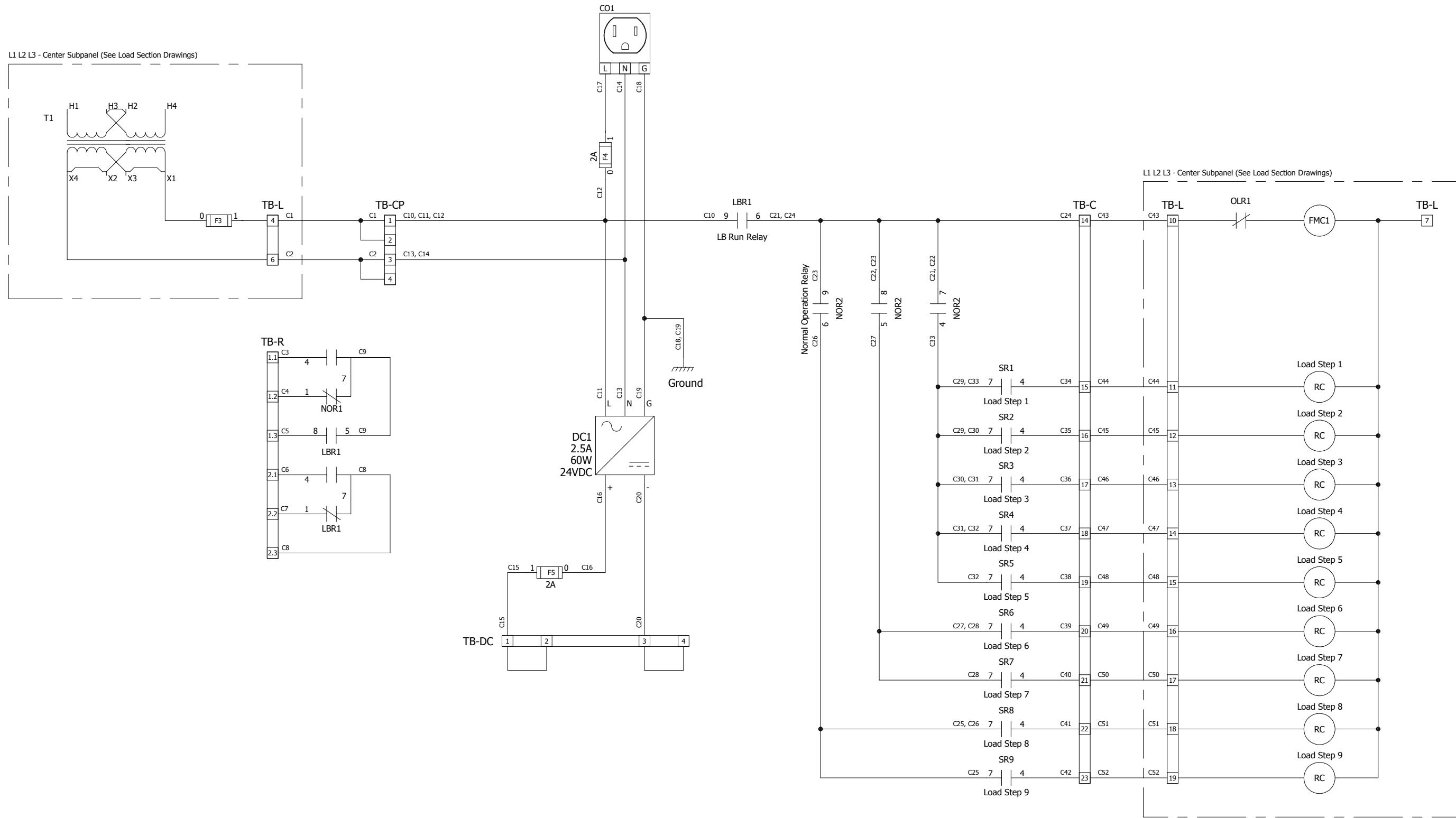
1

File	Drawing Number	Designation	Created By	Folder Designation
C1		Drawing Listing	JLW	
C2	263651	Control Section	JLW	
C3	263652	PLC Inputs	JLW	
C4	263653	PLC Outputs	JLW	
C5	263654	Parts Legend - By Location	JLW	
C6	263655	Wire List - By Number 1/1	JLW	
C7	263656	Bill Of Materials - By Location	JLW	Simplex Reference Only
C8	263657	Terminal Block Schedule	JLW	Simplex Reference Only
C9	263658	Control Wire List - By Location 1/1	JLW	Simplex Reference Only

Customer: Simplex Load Banks
Engineer: JLW
Environmental Type: 3R

Revision: A
Revision Date: 12/10/2013

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
©2012 SIMPLEX, INC.
ALL RIGHTS RESERVED



REVISIONS & UPDATES			
REV	DATE	DESCRIPTION	APPROVED
A	12/10/2013	Original Submittal	JLW

WORK ORDER	Neptune / Mars
PROJECT DESCRIPTION	Control Section - Local HMI
BOOK	Neptune / Mars
LOCATION	Right Subpanel
FUNCTION	Main Function
DESCRIPTION	Control Section
DRAWN BY	JLW
FOLDER	

PROJECT FILE NUMBER	C2
DRAWING NUMBER	263651
DATE	12/10/2013
REVISION	A

REVISIONS & UPDATES			APPROVED
REV	DATE	DESCRIPTION	
A	12/10/2013	Original Submittal	JLW

WORK ORDER
Neptune / Mars

PROJECT DESCRIPTION
Control Section - Local HMI

BOOK
Neptune / Mars

LOCATION
Right Subpanel

FUNCTION
Main Function

DESCRIPTION
PLC Inputs

DRAWN BY
JLW

FOLDER

PROJECT FILE NUMBER

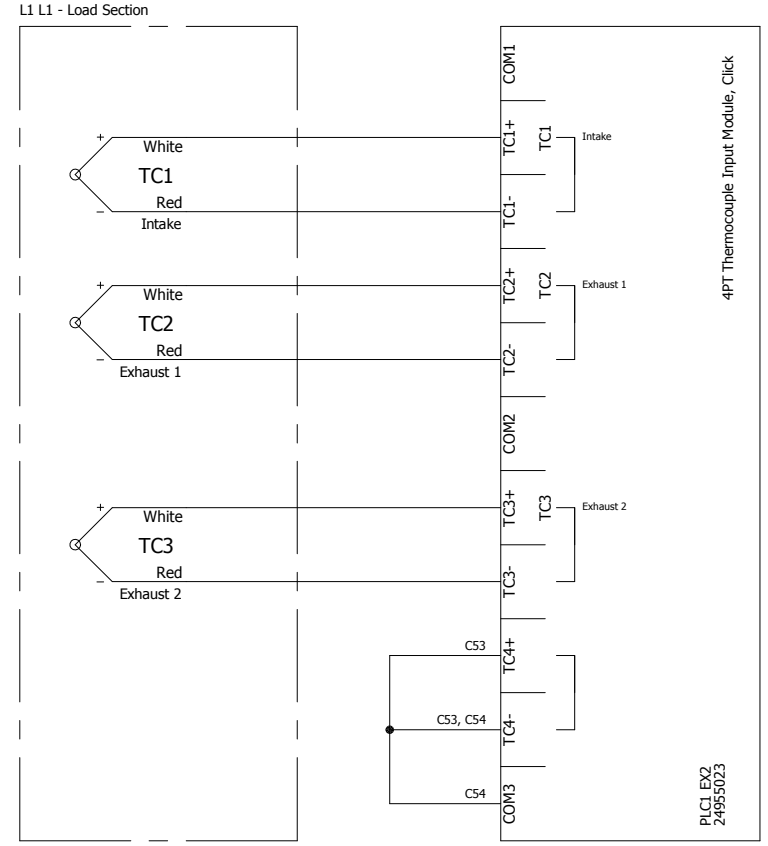
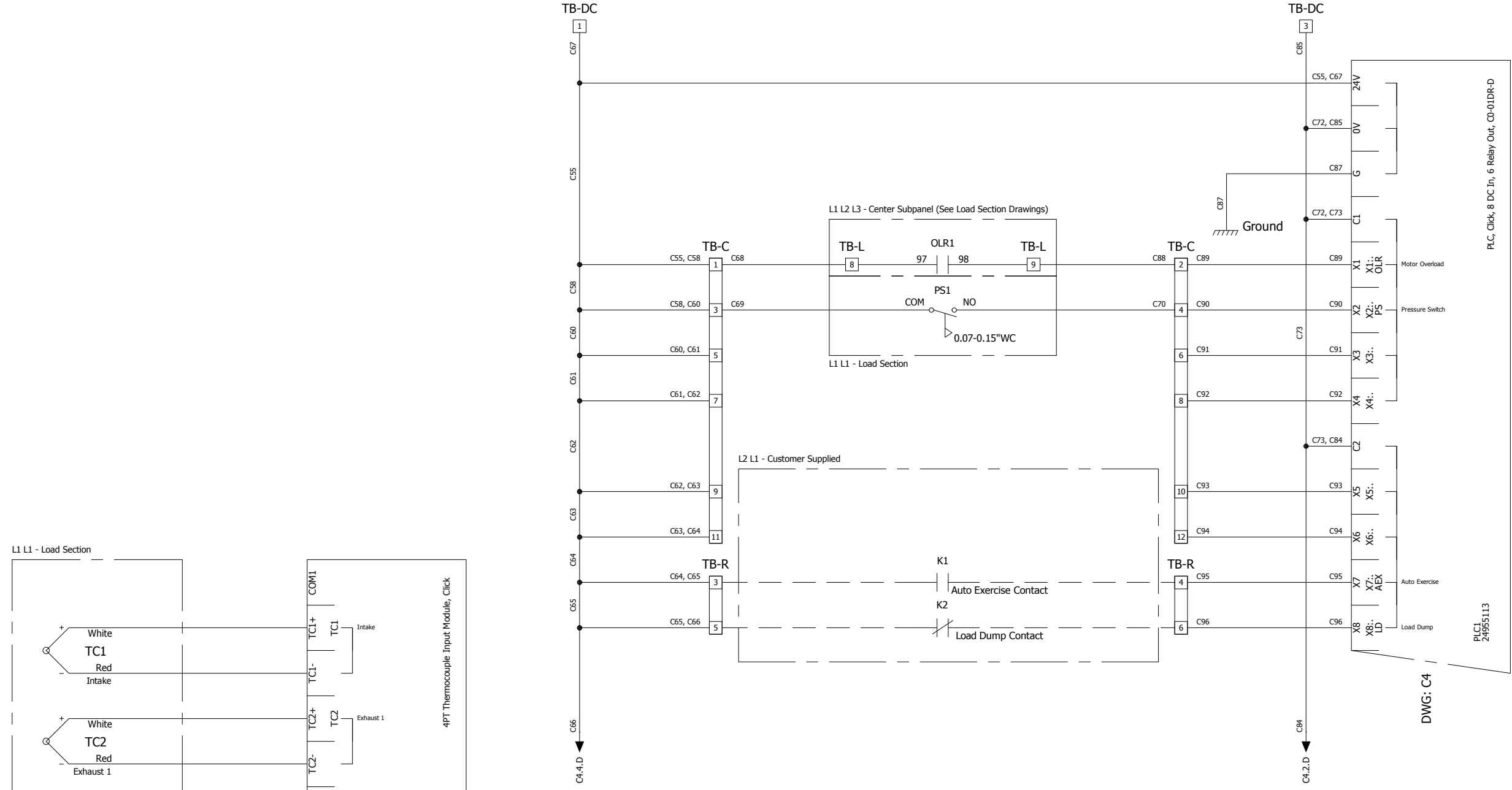
C3

DRAWING NUMBER

263652

DATE
12/10/2013

REVISION
A



4

3

2

1

D

D

C

C

B

B

A

A

4

3

2

1

REV	DATE	DESCRIPTION	APPROVED
A	12/10/2013	Original Submittal	JLW

WORK ORDER
Neptune / Mars

PROJECT DESCRIPTION
Control Section - Local HMI

BOOK
Neptune / Mars

LOCATION
Right Subpanel

FUNCTION
Main Function

DESCRIPTION
PLC Outputs

DRAWN BY
JLW

FOLDER

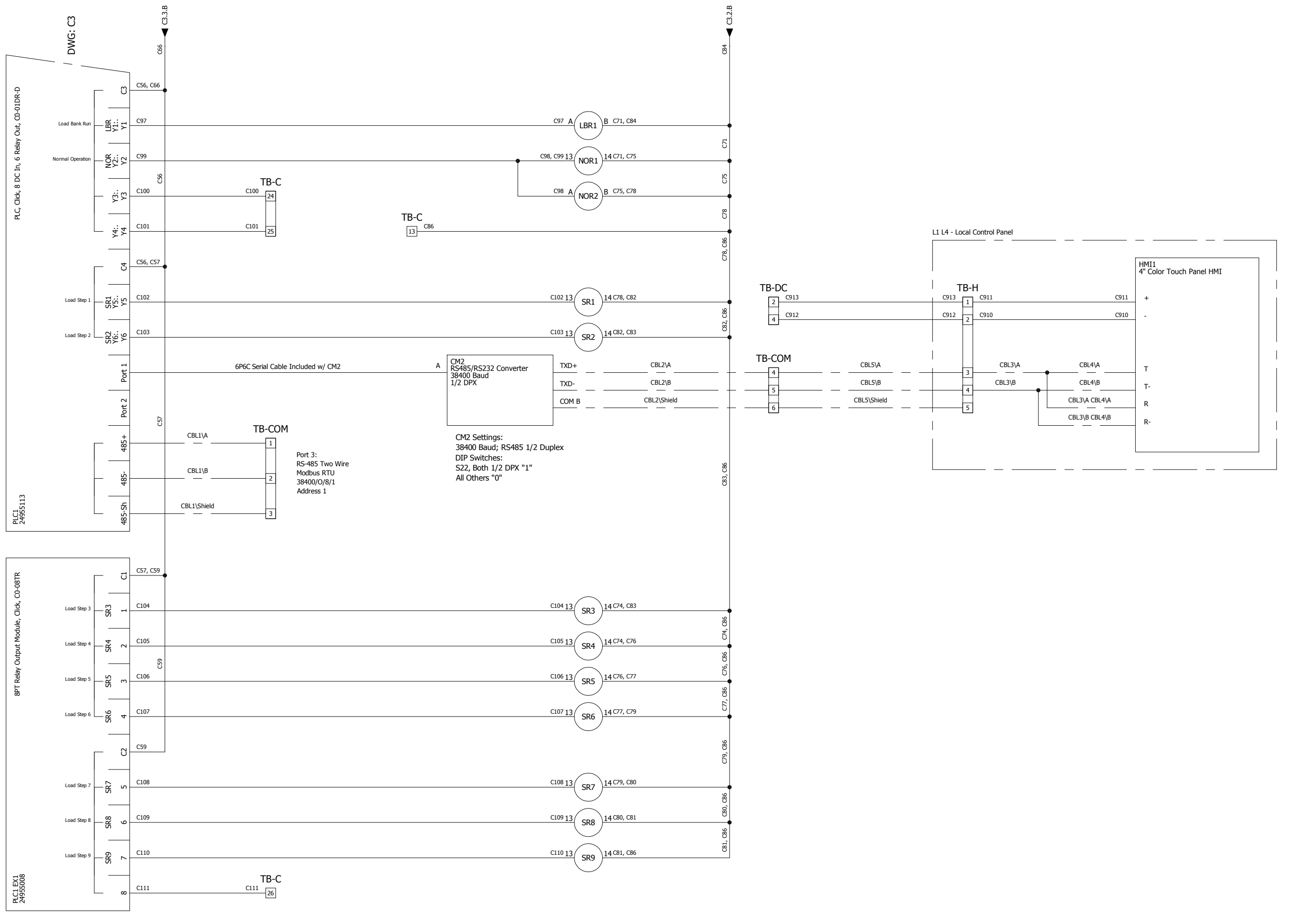
PROJECT FILE NUMBER

C4

DRAWING NUMBER

263653

DATE	REVISION
12/10/2013	A



D

C

B

A

D

C

B

A

4

3

2

1

4

3

2

1

DWG: C3

PLC1 24955113

8PT Relay Output Module, Click, CO-08TR

PLC1 EX1 24955008

CM2 RS485/RS232 Converter
 38400 Baud
 1/2 DPX

CM2 Settings:
 38400 Baud; RS485 1/2 Duplex
 DIP Switches:
 S22, Both 1/2 DPX "1"
 All Others "0"

Port 3:
 RS-485 Two Wire
 Modbus RTU
 38400/O/8/1
 Address 1

L1 L4 - Local Control Panel

HMI1
 4" Color Touch Panel HMI

TB-DC

TB-H

TB-COM

TB-C

TB-C

TB-COM

TB-C

Load Bank Run
 LBR Y1
 Normal Operation
 NOR Y2
 Y3
 Y4
 Load Step 1
 SR1 Y5
 Load Step 2
 SR2 Y6
 Port 1
 Port 2
 485+
 485-
 485-Sh

Load Step 3 SR3 1
 Load Step 4 SR4 2
 Load Step 5 SR5 3
 Load Step 6 SR6 4
 Load Step 7 SR7 5
 Load Step 8 SR8 6
 Load Step 9 SR9 7
 8
 C1
 C2
 C3
 C4
 C5
 C6
 C7
 C8
 C9
 C10
 C11

C97 A

C98, C99 13

C98 A

C102 13

C103 13

A

C104 13

C105 13

C106 13

C107 13

C108 13

C109 13

C110 13

C111

LBR1

NOR1

NOR2

SR1

SR2

SR3

SR4

SR5

SR6

SR7

SR8

SR9

B C71, C84

14 C71, C75

B C75, C78

14 C78, C82

14 C82, C83

CBL2\A

CBL2\B

CBL2\Shield

14 C74, C83

14 C74, C76

14 C76, C77

14 C77, C79

14 C79, C80

14 C80, C81

14 C81, C86

C11

2 C913

4 C912

4

5

6

1 C911

2 C912

3

4

5

+

-

T

T-

R

R-

C911

C912

CBL3\A

CBL3\B

CBL4\A

CBL4\B

CBL3\A CBL4\A

CBL3\B CBL4\B

C3.3.B

C84

C71

C75

C78

C82, C86

C83, C86

C83, C86

C83, C86

Parts Legend - By Location

Load Section

Mark	Part Number	Part Description	Component Description
PS1	25256500	Pressure Switch, SPDT, Differential Sensing	Pressure Switch
TC1	25512400	Thermocouple, Type J	Intake
TC2	25512400	Thermocouple, Type J	Exhaust 1
TC3	25512400	Thermocouple, Type J	Exhaust 2

Local Control Panel

Mark	Part Number	Part Description	Component Description
A2	13819113 13819114 13819115 13819116	Enclosure, Type 4X,8x8x4 Swing Out Panel, 8x8x4 Type 4X Enclosure Subpanel, 8x8x4 Type 4X Enclosure Mounting Feet, 8x8x4 Type 4X Enclosure	Remote Control Box Assembly
HMI1	24955041	4" Micro HMI, Color w/ Ethernet	4" Color Touch Panel HMI
CBL3	25512880	Wire, Shielded Pair	
CBL4	25512880	Wire, Shielded Pair	
TB-H	25678532 25678533	Terminal Block, Spring Type, 20A, 600Vac, 2 Connections, Grey End And Intermediate Plate, 2 Connections	

Right Subpanel

Mark	Part Number	Part Description	Component Description
A1	PRT-00025506	Subpanel, Neptune/Mars, Side	Right Subpanel
CM2	24953500	RS232/RS485 Converter, RJ12 Port	RS485/RS232 Converter
CO1	25629900	Outlet, 120Vac, DIN Rail Mount, 15A	Service Power Outlet
DC1	25457900	DC Power Supply, 60W, 24VDC	Controls DC Power Supply
F4	14014500 15012100	Fuse, 2A, 600V, Instantaneous, Class CC Fuseblock, Two Pole, Class CC, 30A	Control Fuse
F5	14012000	Fuse, 2A, 600V, Time Delay, Class CC	Control Fuse
LBR1	24816000 24891000	Relay, Large, 24VDC Coil, 3PDT, 16A/250 Relay Base, 3PDT	LB Run Relay
NOR1	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Normal Operation Relay
NOR2	24816000 24891000	Relay, Large, 24VDC Coil, 3PDT, 16A/250 Relay Base, 3PDT	Normal Operation Relay
PLC1	24955113 24956000	PLC, Click, 8 DC In, 6 Relay Out, C0-01DR-D Battery, CR2354, PLC Memory Backup	
SR1	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 1
SR2	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 2
SR3	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 3
SR4	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 4
SR5	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 5
SR6	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 6
SR7	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 7
SR8	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 8

-> Right Subpanel

Mark	Part Number	Part Description	Component Description
SR9	24827045 24882100 24885650	Relay, General Purpose, 24VDC Coil, 3PDT, Relay Base, 3PDT, General Relay Retaining Clip	Load Step 9
CBL1	25512880	Wire, Shielded Pair	
CBL2	25512880	Wire, Shielded Pair	
CBL5	25512880	Wire, Shielded Pair	
EX1	24955008	8PT Relay Output Module, Click, C0-08TR	
EX2	24955023	4PT Thermocouple Input Module, Click	
TB-C	25678536 25678538 25678547 25678532 25678533	Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Grey End And Intermediate Plate, 4 Connections Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Black Terminal Block, Spring Type, 20A, 600Vac, 2 Connections, Grey End And Intermediate Plate, 2 Connections	
TB-COM	25678532 25678533	Terminal Block, Spring Type, 20A, 600Vac, 2 Connections, Grey End And Intermediate Plate, 2 Connections	
TB-CP	25678536 25678539 25678538	Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Grey Push In Jumper Bar, 2 Way End And Intermediate Plate, 4 Connections	
TB-DC	25678539 25678546 25678547 25678538	Push In Jumper Bar, 2 Way Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Red Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Black End And Intermediate Plate, 4 Connections	
TB-R	25678550 25678551 25678536 25678538	Triple Deck Terminal Block, Spring Type, 24A, Blue End and Intermediate Plate for Triple Deck Terminal Block Terminal Block, Spring Type, 20A, 600Vac, 4 Connections, Grey End And Intermediate Plate, 4 Connections	



SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
©2012 SIMPLEX, INC.
ALL RIGHTS RESERVED

REV	DATE	DESCRIPTION	APPROVED
JLW			
Original Submittal			
12/10/2013			
A			

WORK ORDER	Neptune / Mars
PROJECT DESCRIPTION	Control Section - Local HMI
BOOK	Neptune / Mars
LOCATION	LBS Load Bank
FUNCTION	Main Function
DESCRIPTION	Parts Legend - By Location
DRAWN BY	JLW
FOLDER	
PROJECT FILE NUMBER	C5
DRAWING NUMBER	263654
DATE	12/10/2013
REVISION	A

Wire List - By Number 1/1



SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE
PROPERTY OF SIMPLEX, INC., AND/OR
ITS SUBSIDIARIES. WITHOUT WRITTEN
PERMISSION ANY COPYING,
TRANSMITTAL TO OTHERS AND USE
EXCEPT THAT FOR WHICH IT IS
LOANED IS PROHIBITED.
©2012 SIMPLEX, INC.
ALL RIGHTS RESERVED

#	End A	End B	Gauge	Color	Temp
C1	TB-L-4	TB-CP-1	16	Black	105C
C2	TB-L-6	TB-CP-3	16	White	105C
C3	TB-R-1.1	-NOR1:4	16	Blue	105C
C4	TB-R-1.2	-NOR1:1	16	Blue	105C
C5	TB-R-1.3	-LBR1:8	16	Blue	105C
C6	TB-R-2.1	-LBR1:4	16	Blue	105C
C7	TB-R-2.2	-LBR1:1	16	Blue	105C
C8	-LBR1:7	TB-R-2.3	16	Blue	105C
C9	-NOR1:7	-LBR1:5	16	Blue	105C
C10	TB-CP-1	-LBR1:9	16	Black	105C
C11	TB-CP-1	DC1.0:L	16	Black	105C
C12	TB-CP-1	-F4:0	16	Black	105C
C13	TB-CP-3	DC1.0:N	16	White	105C
C14	-CO1:N	TB-CP-3	16	White	105C
C15	-F5:1	TB-DC-1	18	Red	105C
C16	DC1.1:+	-F5:0	18	Red	105C
C17	-CO1:L	-F4:1	16	Black	105C
C18	-CO1:G	Ground	14	Green	105C
C19	DC1.0:G	Ground	14	Green	105C
C20	DC1.1:-	TB-DC-3	18	Black	105C
C21	-LBR1:6	-NOR2:7	16	Black	105C
C22	-NOR2:7	-NOR2:8	16	Black	105C
C23	-NOR2:8	-NOR2:9	16	Black	105C
C24	-LBR1:6	TB-C-14	16	Black	105C
C25	-SR8:7	-SR9:7	16	Black	105C
C26	-NOR2:6	-SR8:7	16	Black	105C
C27	-NOR2:5	-SR6:7	16	Black	105C
C28	-SR6:7	-SR7:7	16	Black	105C
C29	-SR1:7	-SR2:7	16	Black	105C
C30	-SR2:7	-SR3:7	16	Black	105C
C31	-SR3:7	-SR4:7	16	Black	105C
C32	-SR4:7	-SR5:7	16	Black	105C
C33	-NOR2:4	-SR1:7	16	Black	105C
C34	-SR1:4	TB-C-15	16	Black	105C
C35	-SR2:4	TB-C-16	16	Black	105C
C36	-SR3:4	TB-C-17	16	Black	105C
C37	-SR4:4	TB-C-18	16	Black	105C
C38	-SR5:4	TB-C-19	16	Black	105C
C39	-SR6:4	TB-C-20	16	Black	105C
C40	-SR7:4	TB-C-21	16	Black	105C
C41	-SR8:4	TB-C-22	16	Black	105C
C42	-SR9:4	TB-C-23	16	Black	105C
C43	TB-C-14	TB-L-10	16	Black	105C
C44	TB-C-15	TB-L-11	16	Black	105C
C45	TB-C-16	TB-L-12	16	Black	105C
C46	TB-C-17	TB-L-13	16	Black	105C
C47	TB-C-18	TB-L-14	16	Black	105C
C48	TB-C-19	TB-L-15	16	Black	105C
C49	TB-C-20	TB-L-16	16	Black	105C
C50	TB-C-21	TB-L-17	16	Black	105C
C51	TB-C-22	TB-L-18	16	Black	105C

#	End A	End B	Gauge	Color	Temp
C52	TB-C-23	TB-L-19	16	Black	105C
C53	PLC1-EX2:TC4+	PLC1-EX2:TC4-	18	White	105C
C54	PLC1-EX2:TC4-	PLC1-EX2:COM3	18	White	105C
C55	-PLC1:24V	TB-C-1	18	Red	105C
C56	-PLC1:C3	-PLC1:C4	18	Red	105C
C57	-PLC1:C4	EX1.1:C1	18	Red	105C
C58	TB-C-1	TB-C-3	18	Red	105C
C59	EX1.1:C1	EX1.2:C2	18	Red	105C
C60	TB-C-3	TB-C-5	18	Red	105C
C61	TB-C-5	TB-C-7	18	Red	105C
C62	TB-C-7	TB-C-9	18	Red	105C
C63	TB-C-9	TB-C-11	18	Red	105C
C64	TB-C-11	TB-R-3	18	Red	105C
C65	TB-R-3	TB-R-5	18	Red	105C
C66	TB-R-5	-PLC1:C3	18	Red	105C
C67	TB-DC-1	-PLC1:24V	18	Red	105C
C68	TB-C-1	TB-L-8	18	Red	105C
C69	TB-C-3	-PS1:COM	18	Red	105C
C70	-PS1:NO	TB-C-4	18	Red	105C
C71	-LBR1:B	-NOR1:14	18	Black	105C
C72	-PLC1:0V	-PLC1:C1	18	Black	105C
C73	-PLC1:C1	-PLC1:C2	18	Black	105C
C74	-SR3:14	-SR4:14	18	Black	105C
C75	-NOR1:14	-NOR2:B	18	Black	105C
C76	-SR4:14	-SR5:14	18	Black	105C
C77	-SR5:14	-SR6:14	18	Black	105C
C78	-NOR2:B	-SR1:14	18	Black	105C
C79	-SR6:14	-SR7:14	18	Black	105C
C80	-SR7:14	-SR8:14	18	Black	105C
C81	-SR8:14	-SR9:14	18	Black	105C
C82	-SR1:14	-SR2:14	18	Black	105C
C83	-SR2:14	-SR3:14	18	Black	105C
C84	-PLC1:C2	-LBR1:B	18	Black	105C
C85	TB-DC-3	-PLC1:0V	18	Black	105C
C86	-SR9:14	TB-C-13	18	Black	105C
C87	-PLC1:G	Ground	14	Green	105C
C88	TB-L-9	TB-C-2	18	Red	105C
C89	TB-C-2	-PLC1:X1	18	Red	105C
C90	TB-C-4	-PLC1:X2	18	Red	105C
C91	TB-C-6	-PLC1:X3	18	Red	105C
C92	TB-C-8	-PLC1:X4	18	Red	105C
C93	TB-C-10	-PLC1:X5	18	Red	105C
C94	TB-C-12	-PLC1:X6	18	Red	105C
C95	TB-R-4	-PLC1:X7	18	Red	105C
C96	TB-R-6	-PLC1:X8	18	Red	105C
C97	-PLC1:Y1	-LBR1:A	18	Red	105C
C98	-NOR1:13	-NOR2:A	18	Red	105C
C99	-PLC1:Y2	-NOR1:13	18	Red	105C
C100	-PLC1:Y3	TB-C-24	18	Red	105C
C101	-PLC1:Y4	TB-C-25	18	Red	105C
C102	-PLC1:Y5	-SR1:13	18	Red	105C

#	End A	End B	Gauge	Color	Temp
C103	-PLC1:Y6	-SR2:13	18	Red	105C
C104	EX1.1:1	-SR3:13	18	Red	105C
C105	EX1.1:2	-SR4:13	18	Red	105C
C106	EX1.1:3	-SR5:13	18	Red	105C
C107	EX1.1:4	-SR6:13	18	Red	105C
C108	EX1.2:5	-SR7:13	18	Red	105C
C109	EX1.2:6	-SR8:13	18	Red	105C
C110	EX1.2:7	-SR9:13	18	Red	105C
C111	EX1.2:8	TB-C-26	18	Red	105C
C910	-HMI1:-	TB-H-2	18	Black	105C
C911	-HMI1:+	TB-H-1	18	Red	105C
C912	TB-DC-4	TB-H-2	18	Black	105C
C913	TB-DC-2	TB-H-1	18	Red	105C

REV	DATE	DESCRIPTION	APPROVED
A	12/10/2013	Original Submittal	JLW

REVISIONS & UPDATES

WORK ORDER
Neptune / Mars

PROJECT DESCRIPTION
Control Section - Local HMI

BOOK
Neptune / Mars

LOCATION
LBS Load Bank

FUNCTION
Main Function

DESCRIPTION
Wire List - By Number 1/1

DRAWN BY
JLW

FOLDER

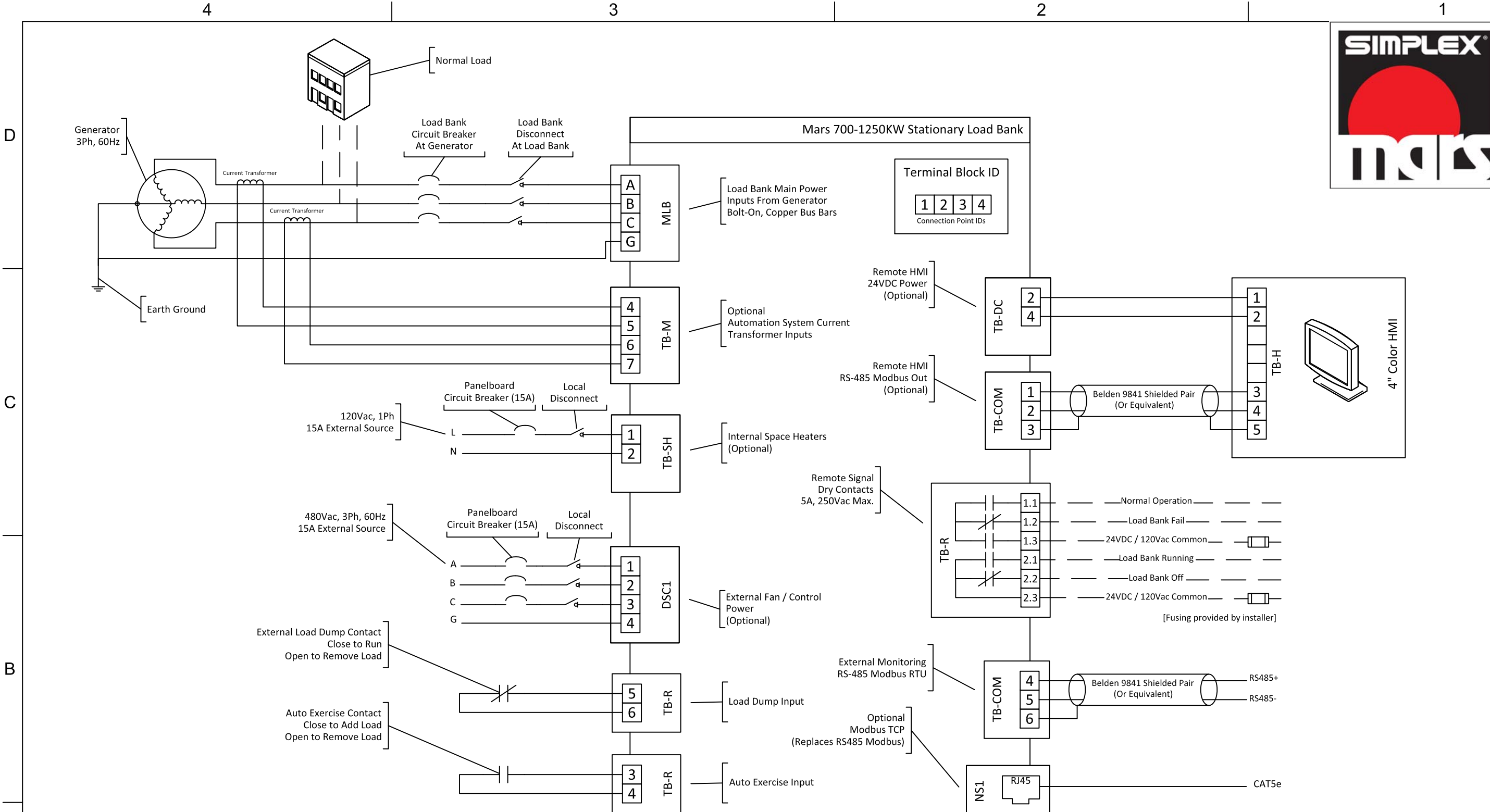
PROJECT FILE NUMBER

C6

DRAWING NUMBER
263655

DATE 12/10/2013	REVISION A
--------------------	---------------

Note: All wiring copper unless noted otherwise

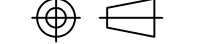


SIMPLEX
SIMPLEX, INC.
5300 RISING MOON ROAD
SPRINGFIELD, ILLINOIS 62711-6228



THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC. AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
© 2013 SIMPLEX, INC. ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION



REV	DATE	DESCRIPTION	INT	APPR
Original Revision				
01/07/2014				
A				

TOLERANCES
X.XXX ± 0.005"
X.XX ± 0.010"
X.X ± 0.020"
FRACTIONAL ± 1/32"
ANGLES ± 1°
SURFACES 125/

APPROVED BY: PWC
DRAWN BY: JLW
SCALE:
SHEET SIZE: ANSI B
WORK ORDER
NA

DESCRIPTION
Mars Customer Connections

Approved 01/07/2014

DRAWING NUMBER
ACD-00001933

SHEET NUMBER 1/1
REVISION A



Ampacities			
KW	Voltage, 3Ph		
	416	480	600
750	1041	902	722
800	1110	962	770
900	1249	1083	866
1000	1388	1203	962
1100	1527	1323	1059
1200	1665	1443	1155
1250	1735	1504	1203

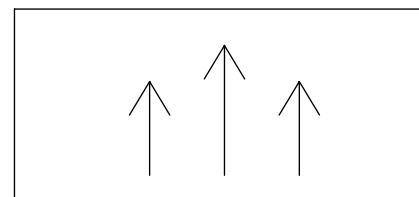
- Installation Notes**
1. Generator neutral must be connected to earth ground and connected to load bank as shown.
 2. Provide external circuit protection for dry contacts as shown.
 3. Field installed wiring must be rated 600V, 60C or higher for circuits < 100A, 75C or higher for circuits >= 100A. Use copper conductors only. Size conductors in accordance with NEC Table 310.15, with 14AWG being the minimum required gauge for any field connection.
 4. See NEC Table 310.15 for allowable ampacities of cables in free air or conduit and at site ambient temperature.

- DANGER**
1. High Voltage (600Vac Class)
 2. High Temperatures - Air Exhaust Up to 600F
 3. Elevated Interior Temperatures - Up to 175F
 4. Rotating Fan Blade - 1800RPM, 10.0HP

SIMPLEX™ FORCED AIR-COOLED RESISTIVE LOAD BANK

MODEL: MARS 750
 CAPACITY: 750KW AT 1.0 P.F.
 COOLING: FORCED AIR
 AIRFLOW: 21,600 CFM
 MAXIMUM AIR INTAKE TEMP.: 120°F
 NOMINAL AIR TEMP.RISE:90°F-500°F MAX
 TEMPERATURE RISE: $\frac{F=KW \times 3000}{CFM}$
 DUTY CYCLE: Continuous
 SHORT CIRCUIT CURRENT RATING 5kA
 RMS SYMMETRICAL AT 480VAC

LOAD\CONTROL POWER CIRCUIT:
 VOLTAGE: 480VAC
 CONNECTION: 3-PHASE, 3-WIRE
 FREQUENCY: 60HZ
 FAN POWER: 480VAC
 CONTROL POWER: 480:120V TRANSFORMER
 FULL LOAD AMPS: 1221A
 FAN MOTOR CURRENT: 13A
 ENVIRONMENTAL TYPE 3R



AIRFLOW
DIRECTION

WORK ORDER 84743-14-43/2

WARNING

High Voltage: Turn off and disconnect power source before opening any compartment
High Temperature: Allow equipment to cool before servicing or opening any compartment
Rotating Equipment: Assure that fan has stopped before opening any compartment
For Operator Safety: Make sure this equipment is properly grounded when in use

All compression type connections on fuse blocks, load blocks, and contactors where used, should be checked for tightness frequently. This check should be established as a part of routine maintenance.

SIMPLEX · 5300 RISING MOON ROAD SPRINGFIELD, IL. 62711 217-483-1600 24 HR. 217-528-3130 FAX 217-483-1616

FUSE REPLACEMENT CHART

F1-2: 3.5A,600V,200KAIC
 KLDL-3.5
 F3: 7A,600V,200KAIC
 KLDL-7
 MF1-MF3: 2A,600V,200KAIC
 KLKR-2

SIMPLEX™

Center Subpanel

SIMPLEX™

SIMPLEX, INC., SPRINGFIELD, ILLINOIS, U.S.A.
 (217)483-1600
 www.simplexdirect.com

W.O.# 84743-14-43/2

MODEL MARS 750

SHORT CIRCUIT CURRENT RATING 5 KA

ENCLOSURE TYPE: 3R

LARGEST MOTOR FLA: 13A

LOAD\CONTROL POWER CIRCUIT:

VOLTAGE 480VAC 3-PH 60 HZ

FULL LOAD AMPS: 1221

FUSE REPLACEMENT CHART

F4: 2A,600V,200KAIC
 KLKR-2
 F5: 2A,600V,200KAIC
 KLDR-2

SIMPLEX™

Right Subpanel

FUSE REPLACEMENT CHART

RF1-RF45: 70A,600V,200KAIC
 JLLS-70

SIMPLEX™

Center Subpanel

SIMPLEX™

SIMPLEX, INC.
 5300 RISING MOON ROAD
 SPRINGFIELD, ILLINOIS 62711-6228

THE INFORMATION HEREON IS THE PROPERTY OF SIMPLEX, INC., AND/OR ITS SUBSIDIARIES. WITHOUT WRITTEN PERMISSION ANY COPYING, TRANSMITTAL TO OTHERS AND USE EXCEPT THAT FOR WHICH IT IS LOANED IS PROHIBITED.
 © 2014 SIMPLEX, INC.
 ALL RIGHTS RESERVED

THIRD ANGLE PROJECTION



REVISIONS & UPDATES	JLW/PWC	INT APPR	DESCRIPTION	DATE	REV
Original Revision				03/25/2014	A

TOLERANCES
 X.XXX ± 0.005"
 X.XX ± 0.010"
 X.X ± 0.020"
 FRACTIONAL ± 1/32"
 ANGLES ± 1°
 SURFACES 125

APPROVED BY: PWC

DRAWN BY: JLW

SCALE: 1:1

SHEET SIZE: ANSI B

WORK ORDER
 84743-14-43-2

DESCRIPTION
 Nameplates

Approved 03/25/2014

DRAWING NUMBER

ACD-00002525

SHEET NUMBER REVISION

1 / 1 A