



www.harscorail.com

SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 8-2014

BULLETIN NO: 14-009

TITLE: 5046361 Kit, Solid State Relay

RATING:

| | | | |
|--------------------------|--|-------------------------------------|---|
| <input type="checkbox"/> | DIRECTIVE (Action Is Required) | <input type="checkbox"/> | ALERT (Potential Problem) |
| <input type="checkbox"/> | INFORMATION (Action Is Optional) | <input checked="" type="checkbox"/> | PRODUCT IMPROVEMENT (Enhance Product) |

PRODUCT SERIES / MODEL: RMC306 Series C1 - 34 / 35 Anchor Boxer

SERIAL NO: N/A

SUMMARY: Reports from the field have suggested that the mechanical relays that control the propel functions on RMC306 Series C1 - 34 / 35 Anchor Boxers have been failing. Under normal operating conditions, cases have been reported where these relays have malfunctioned due to auxiliary contact failure.

When the relays are cycled at a high frequency, heat tends to build up from current loads as the auxiliary device is cycled on and off. Over time, wear on the auxiliary contact points causes them to degrade. Most failures are due to contacts being welding closed due to heat build-up despite operational function of the relay coil.

In operation, the solid state relay uses a cycle controlling device that will provide longer service life. The solid state relay has no moving parts and is not easily affected by contact wear.

OPERATIONAL IMPACT: Failure of the propel function mechanical relay will result in propel function failure.

ACTION: Solid State Relay Kit #5046361 is available from HarSCO Rail. Order one kit for each Anchor Boxer. Follow the instructions in this Service Bulletin and on the attached 5046361 Kit, Solid State Relay drawing to install the kit on your RMC306 Series C1 - 34 / 35 Anchor Boxer.

CONTACT: HarSCO Rail Service Department
Columbia, SC Facility
(803) 822-7546

SAFETY INFORMATION



■ **FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURES TO DISABLE ENERGY SOURCES WHEN PERFORMING MAINTENANCE, MAKING ADJUSTMENTS OR REPAIRS TO THE EQUIPMENT. FAILURE TO HEED THESE WARNINGS COULD RESULT IN SEVERE BODILY INJURY.**

Solid State Relay Kit Instructions

1. Make sure the machine's engine is stopped. Rotate the battery disconnect switch (S1100) to the OFF position.
2. Using a voltage meter, verify that power has been disconnected: 0 Volts from (S1100 - 1) to (000) ground.
3. Apply lockout / tagout devices to prevent accidental energizing of the electrical system.
4. Locate Forward Propel (K2488) and Reverse Propel (K2498) mechanical relays in the CPU enclosure. Removed existing wiring from both relays. Remove mechanical relays (K2488 and K2498).
5. Refer to the attached 5046361 Kit, Solid State Relay drawing. Use the wiring chart and the instructions on the drawing to install and wire the solid state relays.



■ **VERIFY ALL NON ESSENTIAL PERSONNEL ARE CLEAR OF MACHINE BEFORE BATTERY DISCONNECT SWITCH IS TURNED BACK ON. INCORRECT WIRING COULD CAUSE THE MACHINE TO PROPEL IN A UNEXPECTED MANNER. FAILURE TO HEED THIS WARNINGS COULD RESULT IN SEVERE BODILY INJURY.**

6. Remove all lockout / tagout devices.
7. Rotate the battery disconnect switch to the ON position.
8. Start machine's engine and verify travel functions properly.

5046361 Kit, Solid State Relay

| ITEM | PART NO | DESCRIPTION | QTY |
|------|---------|------------------------------|-----|
| 1 | 5044231 | Relay, Socket | 2 |
| 2 | 5044218 | Relay, Solid State | 2 |

© 2014 HARSCO CORPORATION, ALL RIGHTS RESERVED

415 North Main Street
 Fairmont, MN
 56031-1837
 Tel: (507) 235-3361
 Fax: (507) 235-7370

401 Edmund Road, Box 20
 Cayce-West Columbia, SC
 29171-0020
 Tel: (803) 822-9160
 Fax: (803) 822-7471

200 South Jackson Road
 Ludington, MI
 49431
 Tel: (231) 843-3431
 Fax: (231) 843-1644

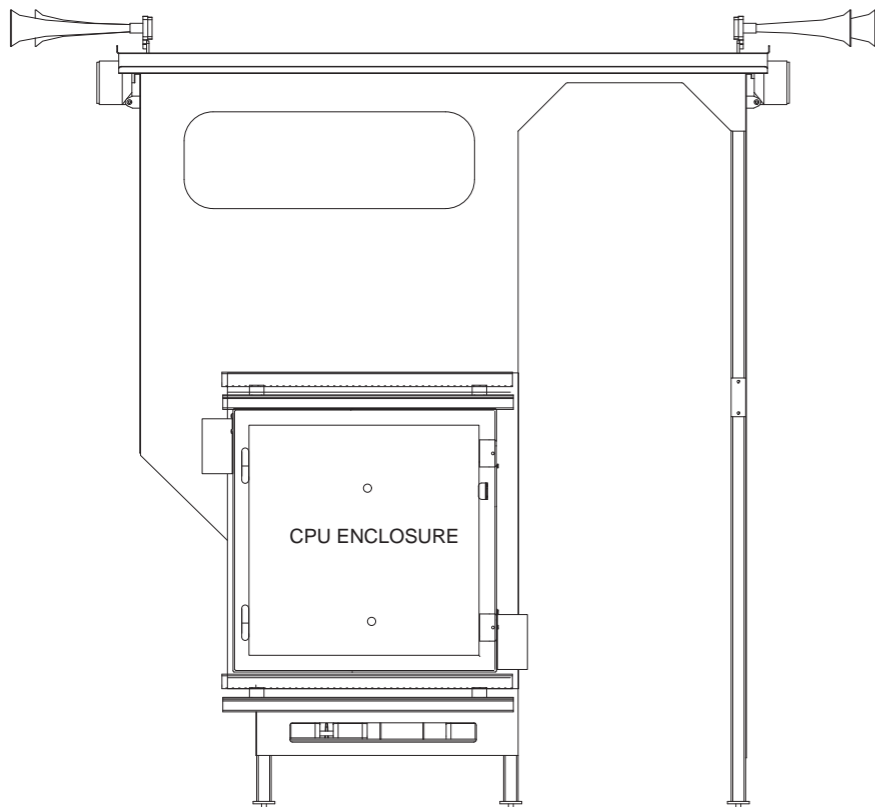
Printed In USA

BILL OF MATERIAL

| ITEM | PART # | QTY | PART DESCRIPTION |
|------|---------|-----|--|
| 1 | 5044231 | 2 | RELAY, SOCKET : DIN RAIL RELAY SOCKET, USE WITH 5044218 |
| 2 | 5044218 | 2 | RELAY, SOLID STATE : INPUT 18-32VDC OUTPUT 1-48VDC @ 5AMPS |

WIRING CHART

| RUN | WIRE | SIZE | COLOR | FROM | TERM NO. | TO | TERM NO. | PART NO |
|-----|------|--------|-------|---------|----------|----------|----------|---------|
| 1 | 2570 | 16 AWG | Red | K2488:3 | NONE | TB6-7:- | NONE | 3406646 |
| 2 | 2570 | 16 AWG | Red | K2498:3 | NONE | K2488:3 | NONE | 3406646 |
| 3 | 2490 | 16 AWG | White | K2488:5 | NONE | TB2:23:- | NONE | 3407024 |
| 4 | 2492 | 16 AWG | White | K2488:1 | NONE | K2498:1 | NONE | 3407024 |
| 5 | 2500 | 16 AWG | White | K2498:5 | NONE | TB2:24:- | NONE | 3407024 |
| 6 | 2572 | 16 AWG | White | K2488:4 | NONE | TB2:41:+ | NONE | 3407024 |
| 7 | 2580 | 16 AWG | White | K2498:4 | NONE | TB2:42:+ | NONE | 3407024 |

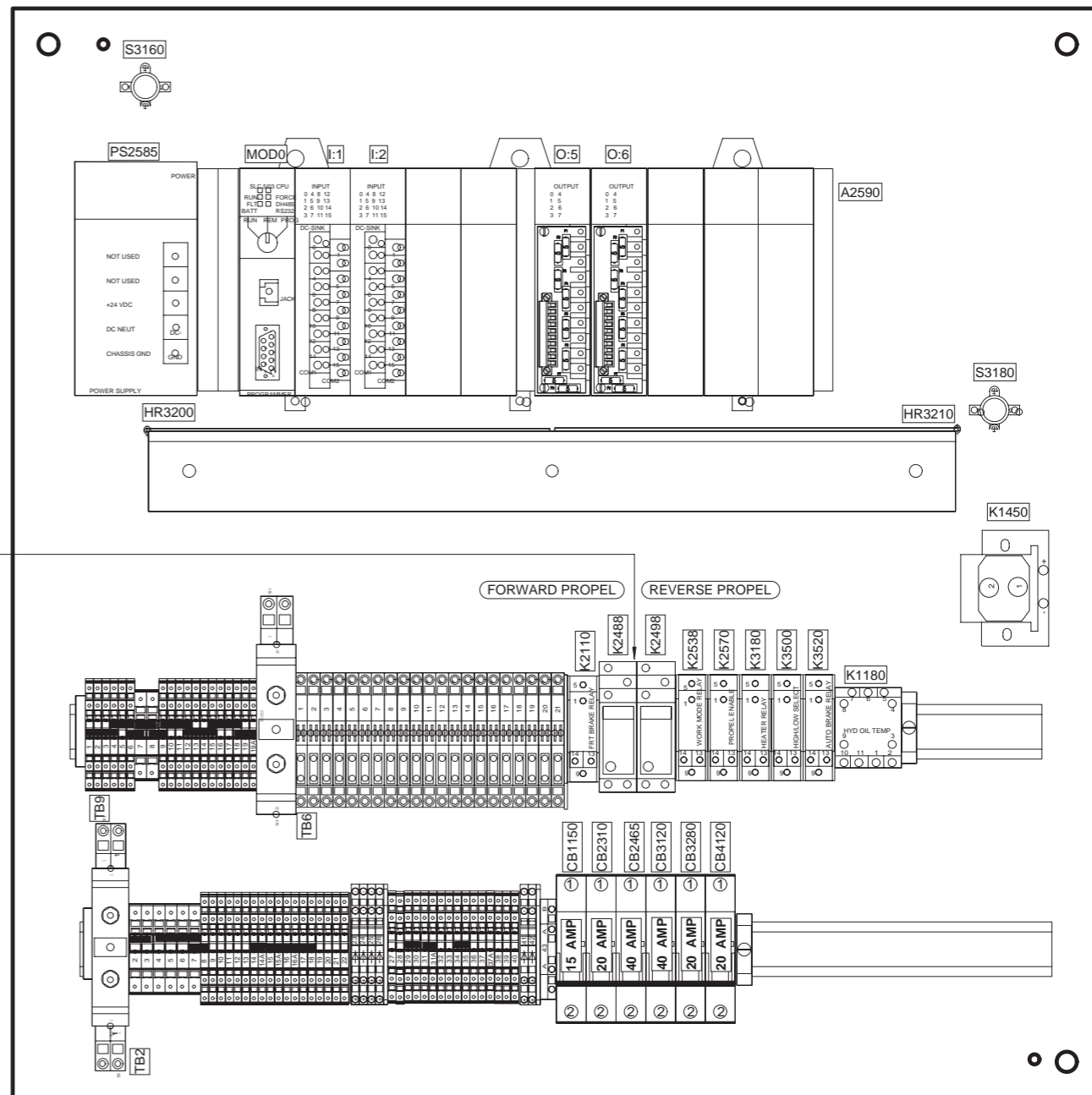


LEFT, OUTSIDE CAB VIEW

NOTES:

- ALL WIRES & CONDUCTORS SHALL BE LABELED (WIRE MARKERS) USING A SLEEVE TYPE NUMBERING SYSTEM. WIRES ARE TO BE LABELED ON BOTH ENDS EXCEPT WHERE:
 - OVERALL WIRE LENGTH IS LESS THAN 4"
 - WIRES ARE TERMINATED IN A CONNECTOR (VEAM, CANNON, DIN, ECT.)
- ROUTE WIRES PER WIRE CHART. MAKE ALL CORNERS AS SQUARE AS POSSIBLE.
- REMOVE AND DISCARD ORIGINAL MECHANICAL RELAY.
- INSTALL SOLID STATE RELAY PER PRINT LAYOUT.
- REFERENCE SCHEMATIC 5001004

1 2
2 2
SEE NOTE 3 & 4



CPU ENCLOSURE

CONFIDENTIAL

© COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|-------------|-----|----------|
| EC510546 | A | NEW RELEASE | JES | 07-03-14 |

| | |
|---|--|
| DRAWING TITLE/DESCRIPTION: KIT, SOLID STATE RELAY RMC306C1-34 | |
| MACHINE TYPE-MODEL: ANCHOR BOXER | |
| E3 PROJECT FILE NAME: 5046361_0 | |

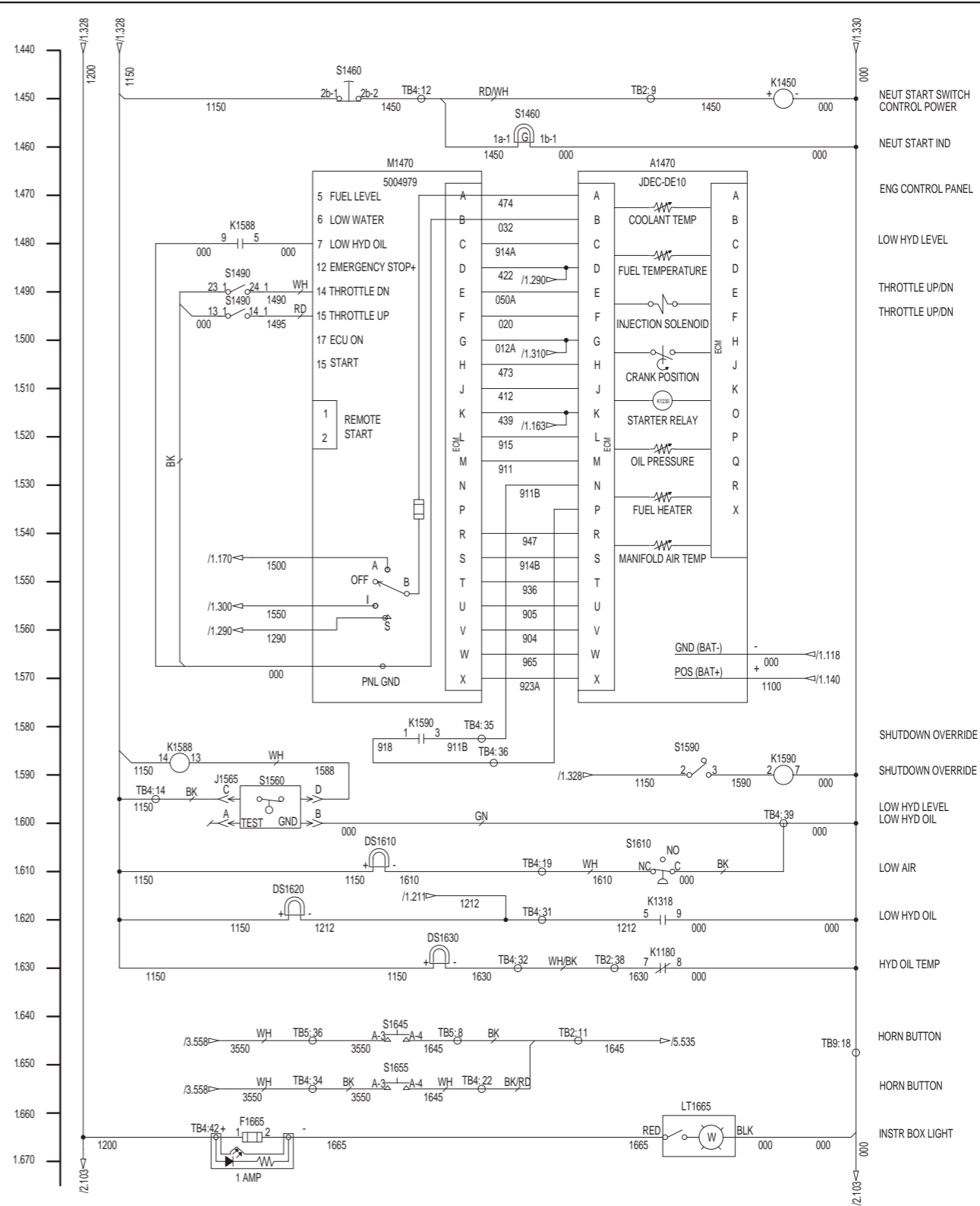
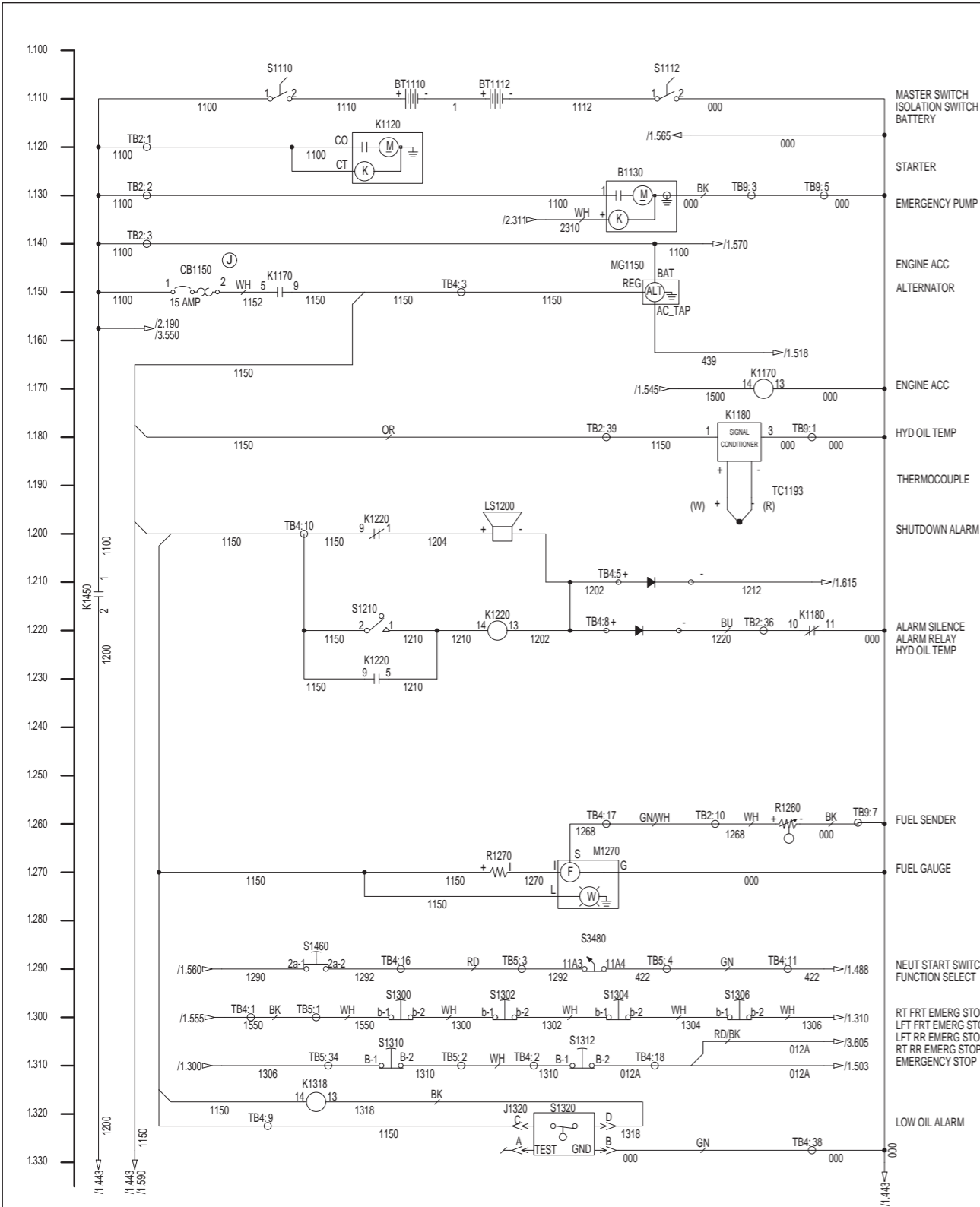
| | |
|--------------------------------------|-------------------------------|
| SHEET NUMBER 1 | DRAWN BY: |
| NUMBER OF JUPITER SHEETS - | REL. DATE: 07-03-14 |
| TOTAL NUMBER OF SHEETS 1 | SCALE: D |

HARSCO RAIL

E3 DRAWING
DRAWING NUMBER:
5046361

NOTES

Lined paper for taking notes



CONFIDENTIAL
 © COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2 12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADAPTER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

DRAWING TITLE/DESCRIPTION:
ELECTRICAL SCHEMATIC

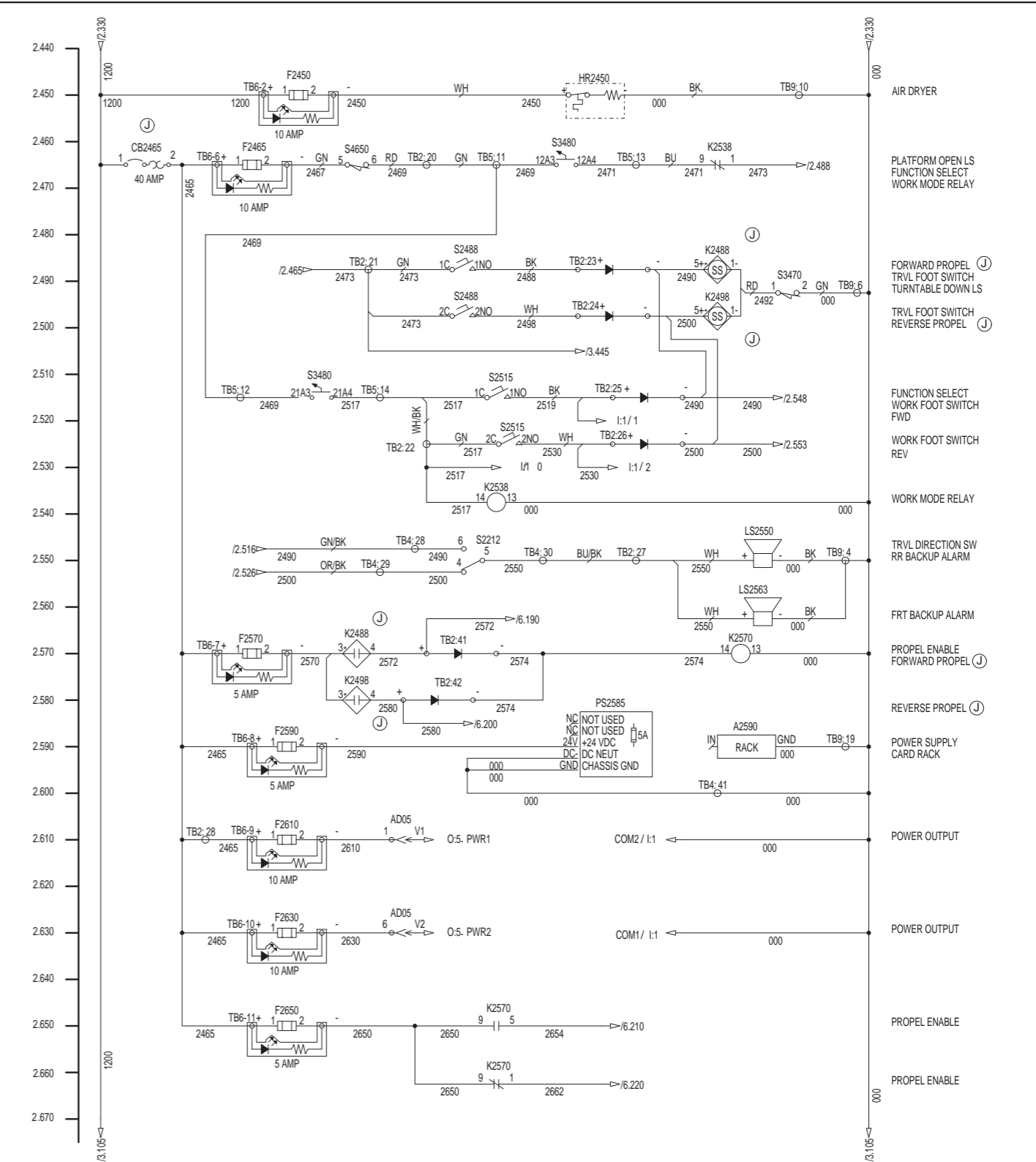
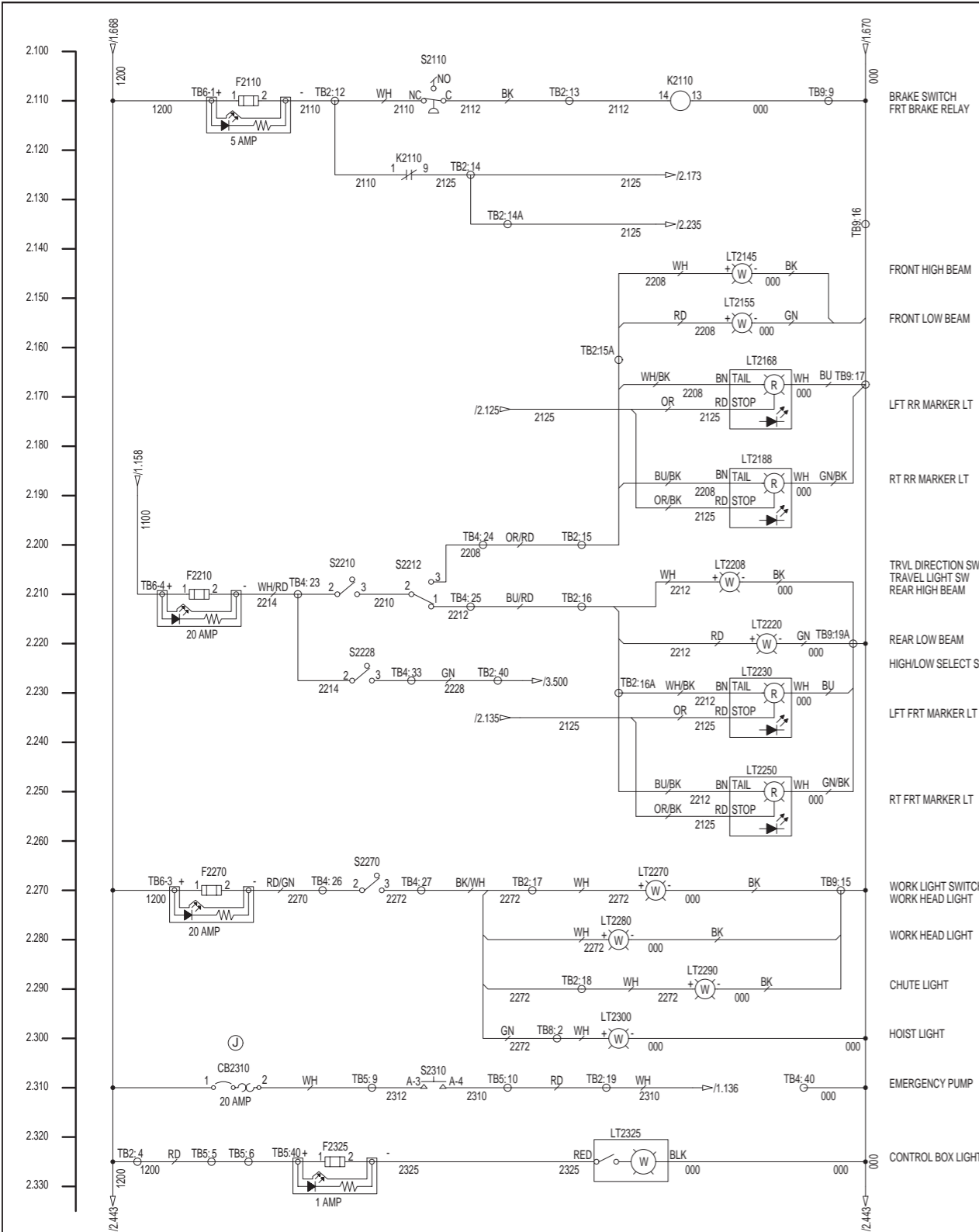
MACHINE TYPE-MODEL:
RMC306C1-34

E3 PROJECT FILE NAME:
RMC306C1-34_12

| | |
|--------------------------------------|-------------------------------|
| SHEET NUMBER 1 | DRAWN BY: WGL |
| NUMBER OF JUPITER SHEETS 0 | REL. DATE: 03/11/11 |
| TOTAL NUMBER OF SHEETS 9 | SCALE: D |

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004



CONFIDENTIAL
 © COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2 12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADAPTER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

DRAWING TITLE/DESCRIPTION:
ELECTRICAL SCHEMATIC

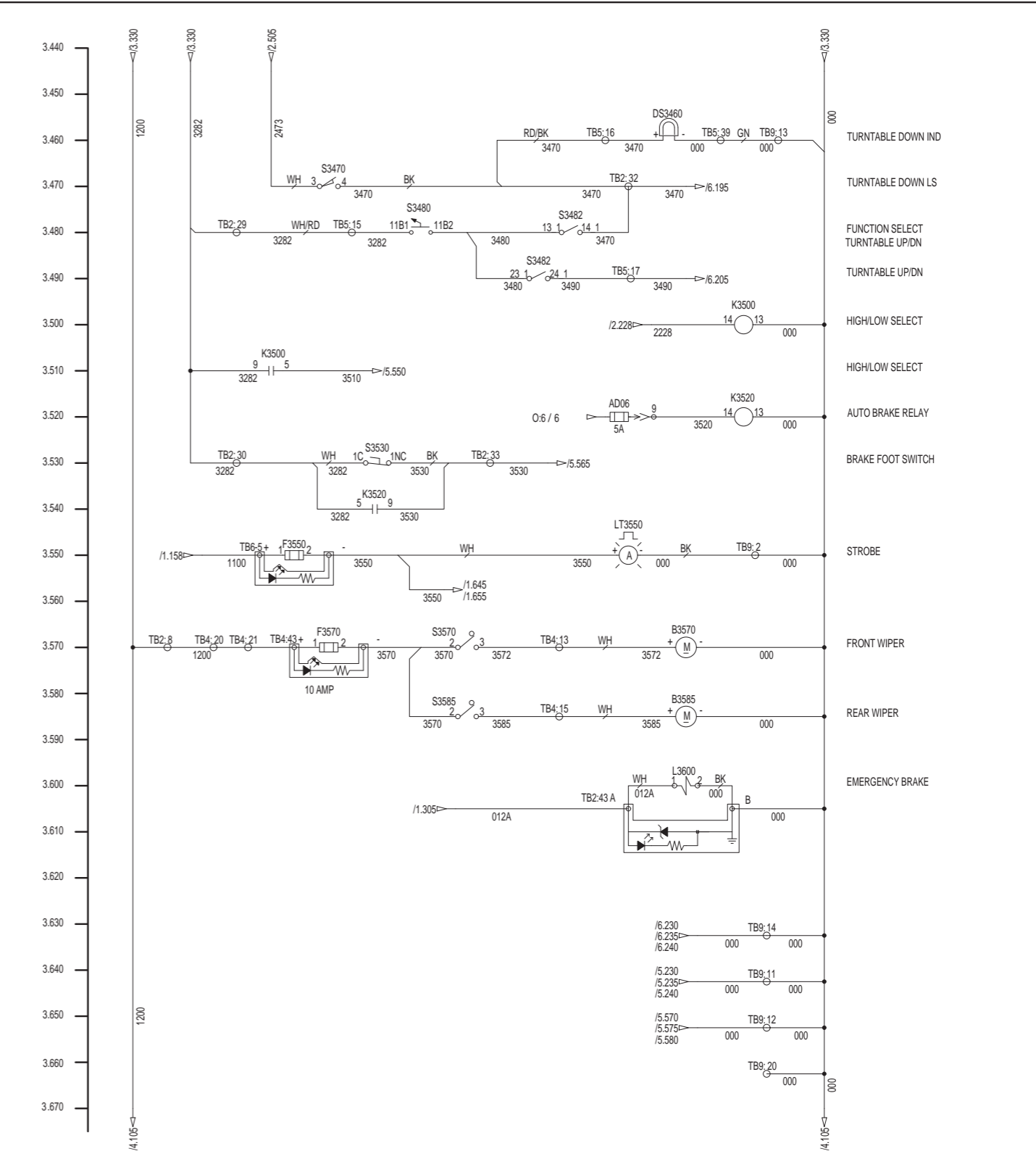
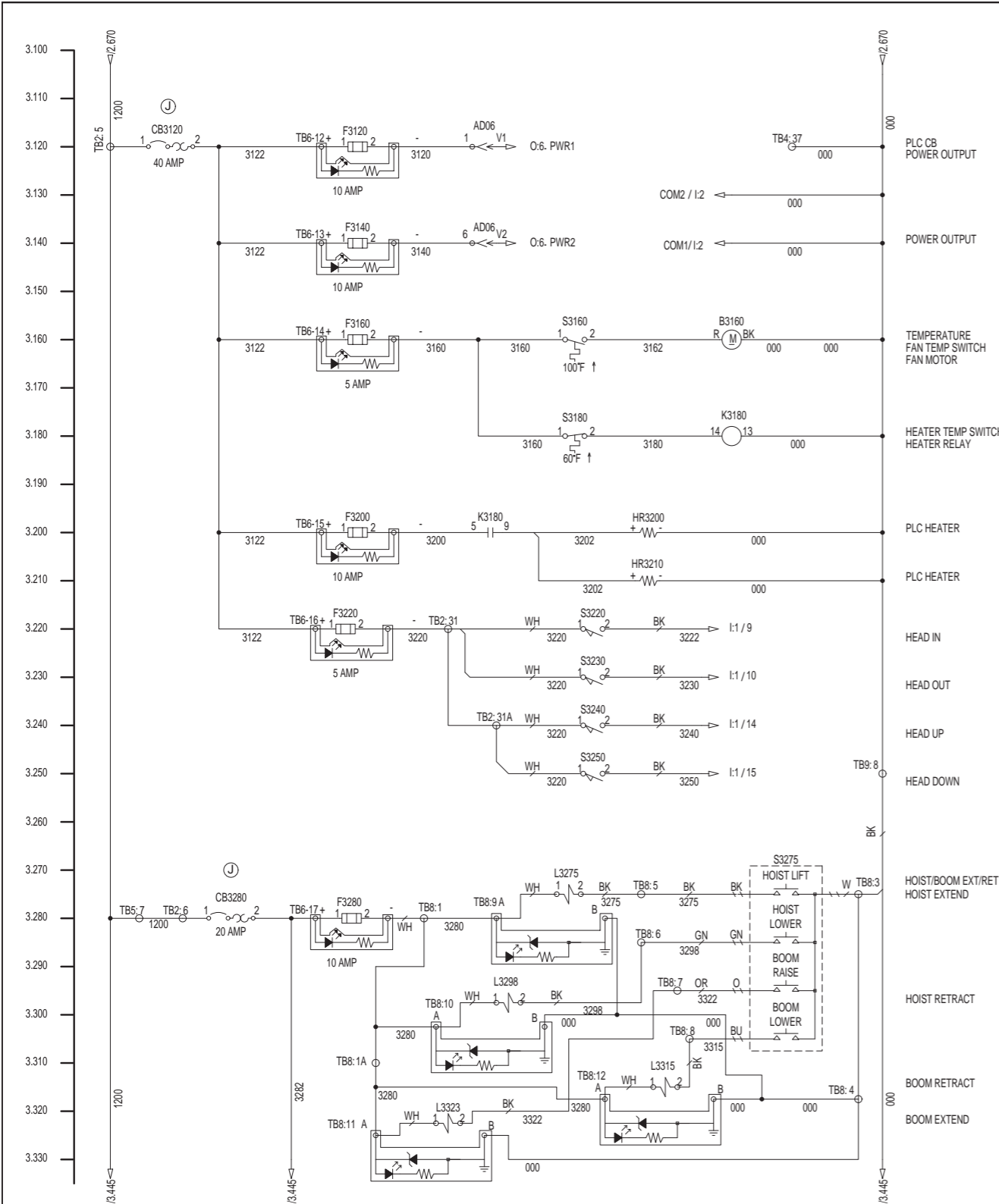
MACHINE TYPE-MODEL:
RMC306C1-34

E3 PROJECT FILE NAME:
RMC306C1-34_12

| | |
|--------------------------------------|-------------------------------|
| SHEET NUMBER 2 | DRAWN BY: WGL |
| NUMBER OF JUPITER SHEETS 0 | REL. DATE: 03/11/11 |
| TOTAL NUMBER OF SHEETS 9 | SIZE: D |
| | SCALE: |

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004



CONFIDENTIAL
 © COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2 12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADAPTER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

DRAWING TITLE/DESCRIPTION:
ELECTRICAL SCHEMATIC

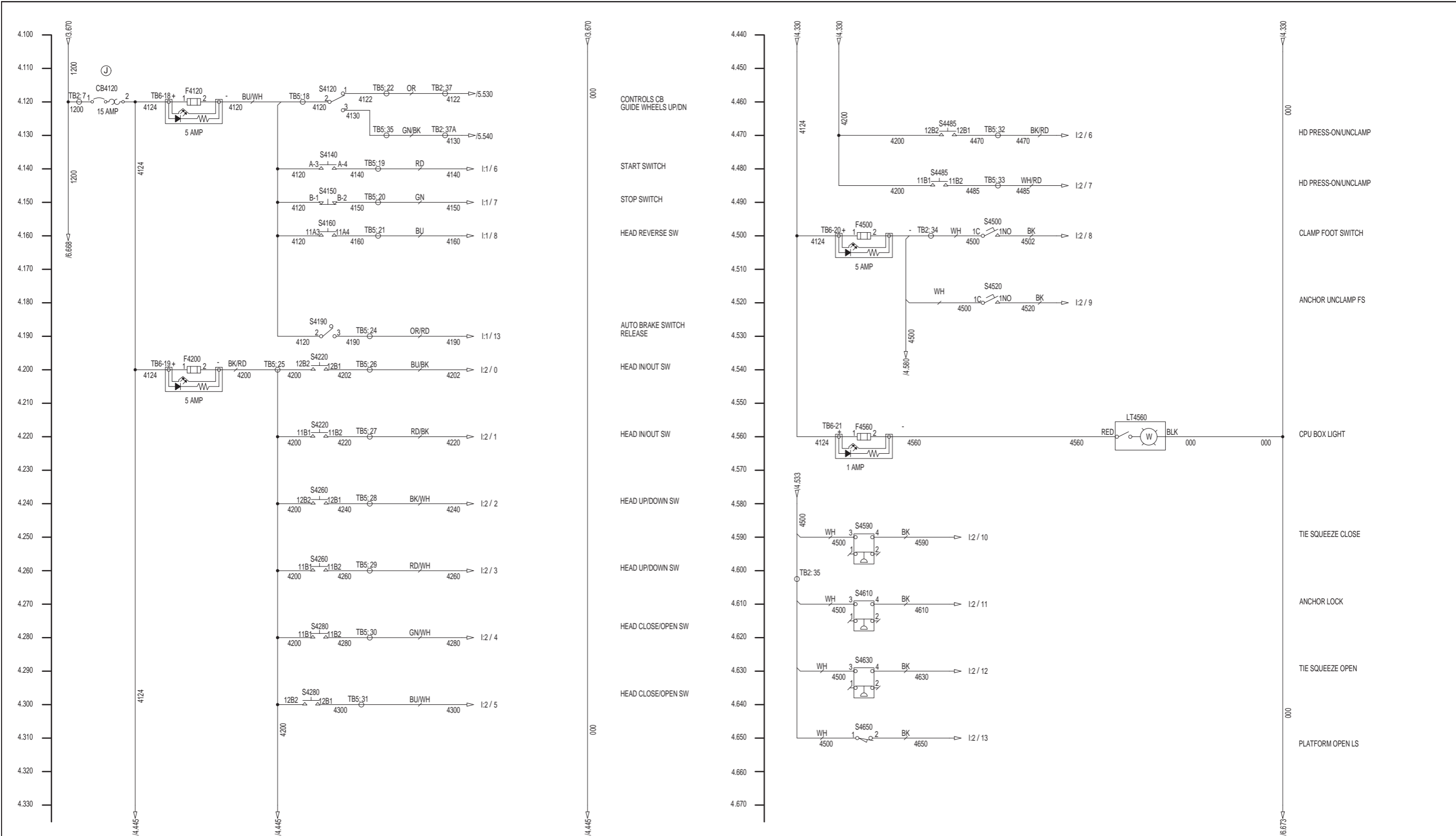
MACHINE TYPE-MODEL:
RMC306C1-34

E3 PROJECT FILE NAME:
RMC306C1-34_12

| | |
|--------------------------------------|-------------------------------|
| SHEET NUMBER 3 | DRAWN BY: WGL |
| NUMBER OF JUPITER SHEETS 0 | REL. DATE: 03/11/11 |
| TOTAL NUMBER OF SHEETS 9 | SCALE: D |

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004



CONFIDENTIAL
 © COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2 12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADAPTER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

DRAWING TITLE/DESCRIPTION:
ELECTRICAL SCHEMATIC

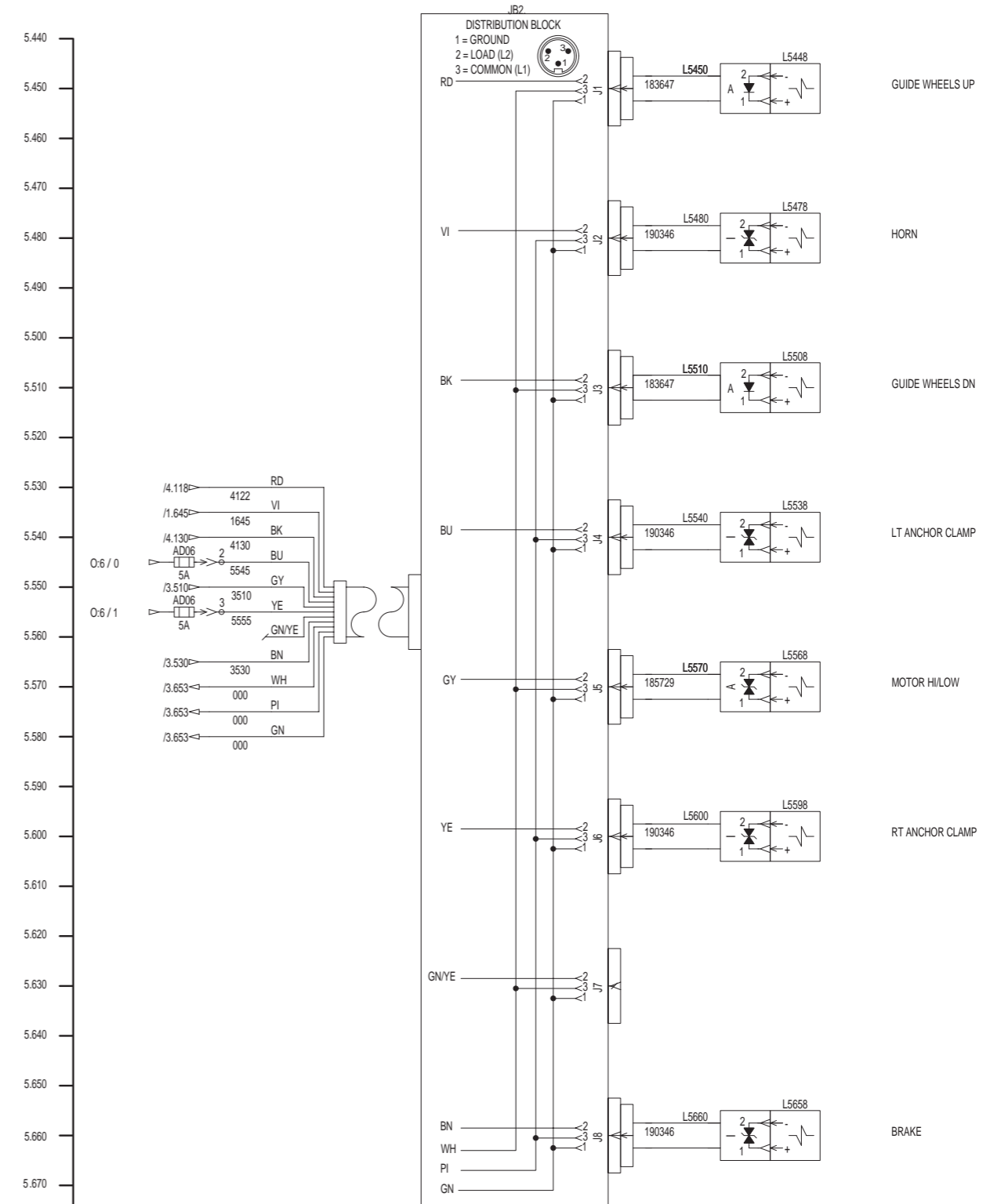
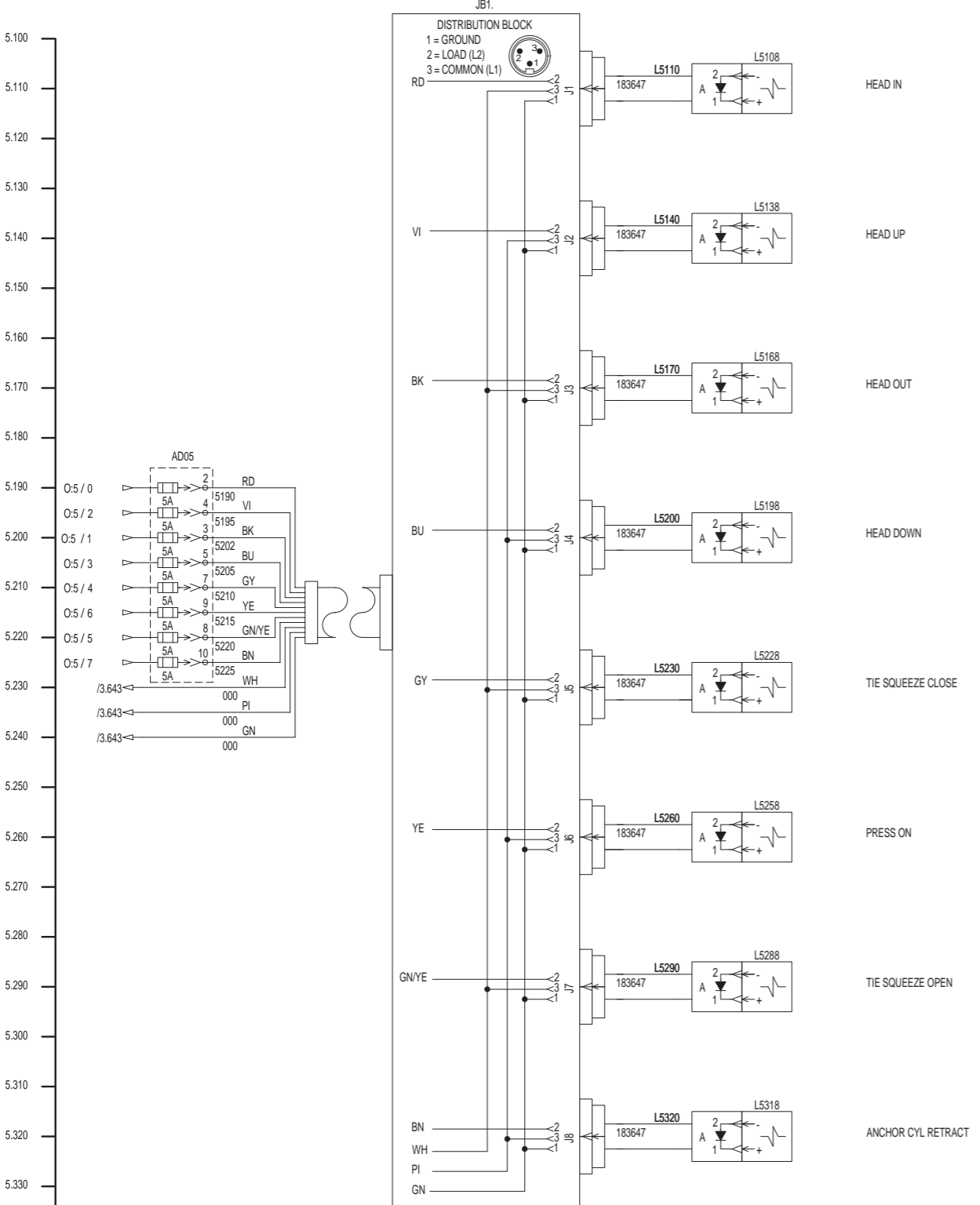
MACHINE TYPE-MODEL:
RMC306C1-34

E3 PROJECT FILE NAME:
RMC306C1-34_12

| | |
|--------------------------------------|-------------------------------|
| SHEET NUMBER 4 | DRAWN BY: WGL |
| NUMBER OF JUPITER SHEETS 0 | REL. DATE: 03/11/11 |
| TOTAL NUMBER OF SHEETS 9 | SCALE: D |

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004



CONFIDENTIAL
 © COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR_2_12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADAPTER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

DRAWING TITLE/DESCRIPTION:
ELECTRICAL SCHEMATIC

MACHINE TYPE-MODEL:
RMC306C1-34

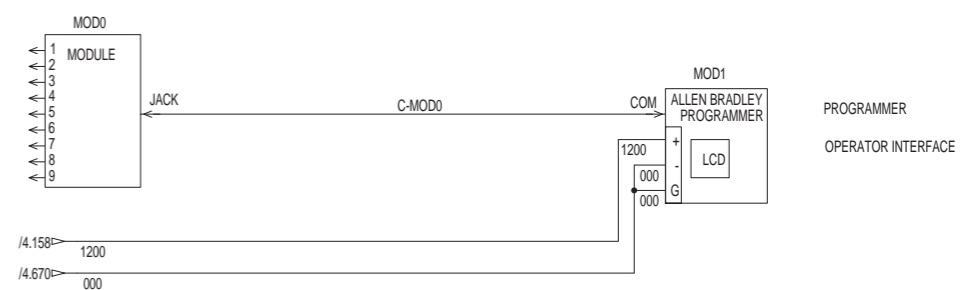
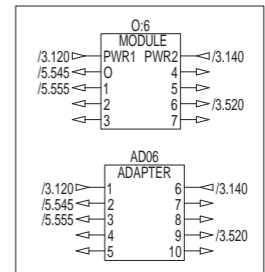
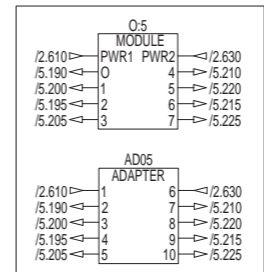
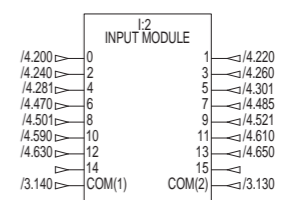
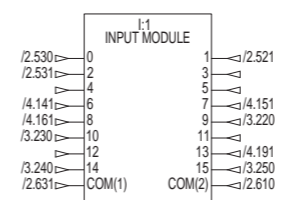
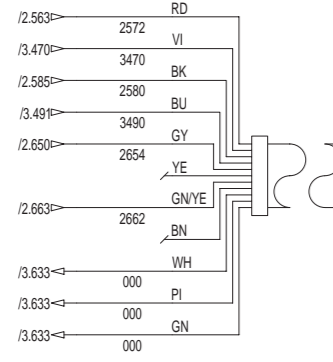
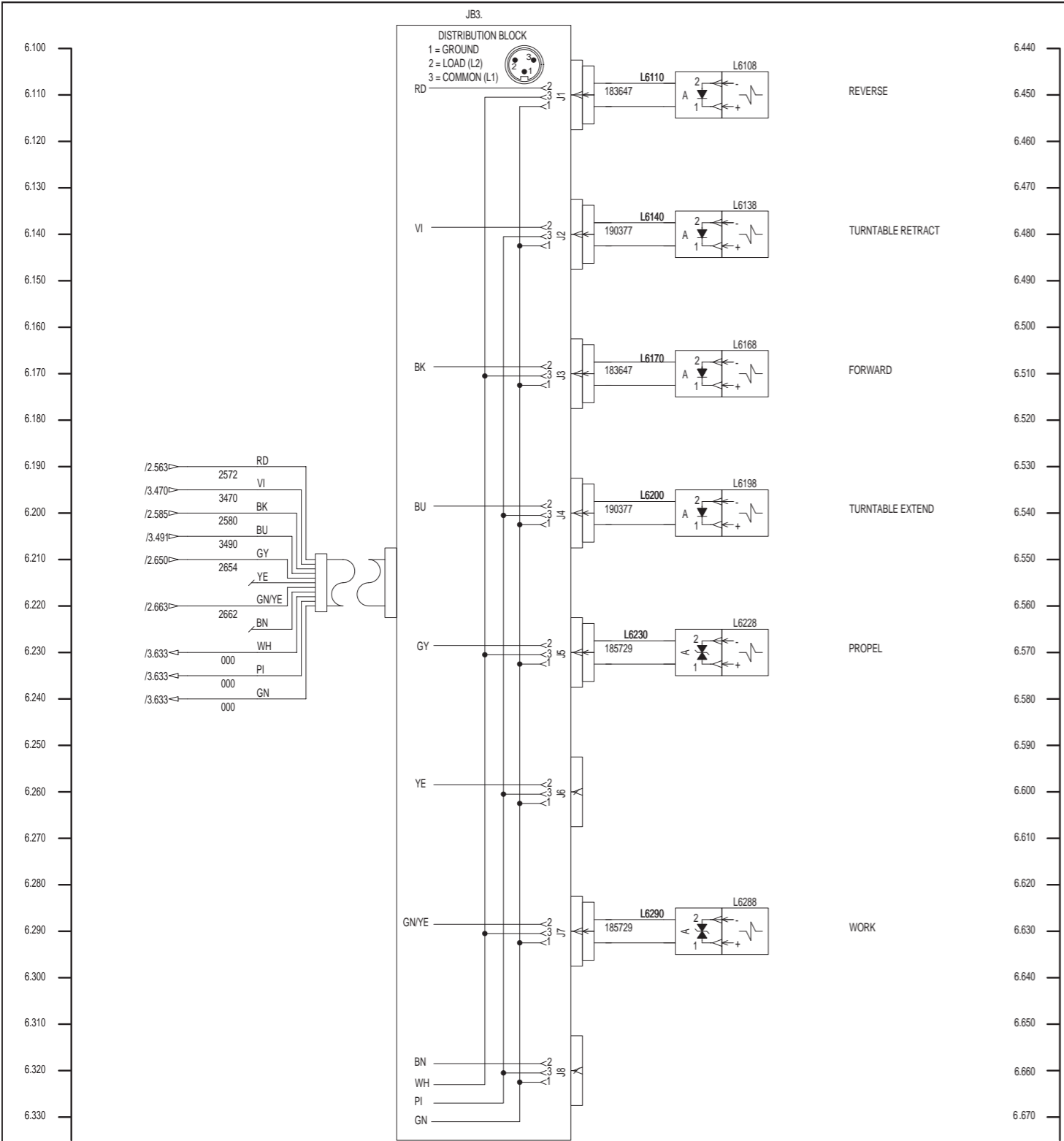
E3 PROJECT FILE NAME:
RMC306C1-34_12

| | |
|--------------------------|---|
| SHEET NUMBER | 5 |
| NUMBER OF JUPITER SHEETS | 0 |
| TOTAL NUMBER OF SHEETS | 9 |

DRAWN BY: WGL
 REL. DATE: 03/11/11
 SIZE: D
 SCALE:

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004



CONFIDENTIAL

© COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2 12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADPATER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

DRAWING TITLE/DESCRIPTION:
ELECTRICAL SCHEMATIC

MACHINE TYPE-MODEL:
RMC306C1-34

E3 PROJECT FILE NAME:
RMC306C1-34_12

| | |
|--------------------------|---|
| SHEET NUMBER | 6 |
| NUMBER OF JUPITER SHEETS | 0 |
| TOTAL NUMBER OF SHEETS | 9 |

DRAWN BY: WGL
 REL. DATE: 03/11/11
 SIZE: D
 SCALE:

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004

MODULE CHARTS

| MODULE I:1 | | PART NUMBER F025845 | |
|------------|--------|---------------------|------------------------|
| TERMINAL | WIRE # | LOCATION | FUNCTION |
| I:1-0 | 2517 | 2530 | WORK SELECTOR SWITCH |
| I:1-1 | 2519 | 2520 | WORK FORWARD DIRECTION |
| I:1-2 | 2530 | 2530 | WORK REVERSE DIRECTION |
| I:1-3 | **NC** | - | SPARE |
| I:1-4 | **NC** | - | SPARE |
| I:1-5 | **NC** | - | SPARE |
| I:1-6 | 4140 | 4140 | HEAD START |
| I:1-7 | 4150 | 4150 | HEAD STOP |
| I:1-8 | 4160 | 4160 | HEAD REVERSE |
| I:1-9 | 3220 | 3220 | HEAD IN |
| I:1-10 | 3230 | 3230 | HEAD OUT |
| I:1-11 | **NC** | - | SPARE |
| I:1-12 | **NC** | - | SPARE |
| I:1-13 | 4190 | 4190 | AUTO BRAKE |
| I:1-14 | 3240 | 3240 | HEAD UP |
| I:1-15 | 3250 | 3250 | HEAD DOWN |
| I:1-COM(1) | 000 | 2630 | MODULE GND 1 |
| I:1-COM(2) | 000 | 2610 | MODULE GND 2 |

| MODULE I:2 | | PART NUMBER F025845 | |
|------------|--------|---------------------|-------------------------|
| TERMINAL | WIRE # | LOCATION | FUNCTION |
| I:2-0 | 4202 | 4200 | HEAD IN |
| I:2-1 | 4220 | 4220 | HEAD OUT |
| I:2-2 | 4240 | 4240 | HEAD UP |
| I:2-3 | 4260 | 4260 | HEAD DOWN |
| I:2-4 | 4280 | 4280 | TIE SQUEEZE CLOSE |
| I:2-5 | 4300 | 4300 | TIE SQUEEZE OPEN |
| I:2-6 | 4470 | 4470 | HEAD PRESS ON |
| I:2-7 | 4485 | 4485 | ANCHOR CYLINDER RETRACT |
| I:2-8 | 4502 | 4500 | CLAMP |
| I:2-9 | 4520 | 4500 | UNCLAMP |
| I:2-10 | 4590 | 4590 | TIE SQUEEZE CLOSE |
| I:2-11 | 4610 | 4610 | PRESS ON |
| I:2-12 | 4630 | 4630 | TIE SQUEEZE OPEN |
| I:2-13 | 4650 | 4650 | PLATFORM OPEN |
| I:2-14 | **NC** | - | SPARE |
| I:2-15 | **NC** | - | SPARE |
| I:2-COM(1) | 000 | 3140 | MODULE GND 1 |
| I:2-COM(2) | 000 | 3130 | MODULE GND 2 |

| MODULE O:5 | | PART NUMBER 5031123 | |
|------------|--------|---------------------|-------------------------|
| TERMINAL | WIRE # | LOCATION | FUNCTION |
| O:5-0 | 5190 | 5190 | HEAD IN |
| O:5-1 | 5202 | 5200 | HEAD OUT |
| O:5-2 | 5195 | 5195 | HEAD UP |
| O:5-3 | 5205 | 5205 | HEAD DOWN |
| O:5-4 | 5210 | 5210 | TIE SQUEEZE CLOSE |
| O:5-5 | 5220 | 5220 | TIE SQUEEZE OPEN |
| O:5-6 | 5215 | 5215 | ANCHOR LOCK |
| O:5-7 | 5225 | 5225 | ANCHOR CYLINDER RETRACT |
| O:5-PWR1 | 2610 | 2610 | MODULE POWER 1 |
| O:5-PWR2 | 2630 | 2630 | MODULE POWER 2 |

| MODULE O:6 | | PART NUMBER 5031123 | |
|------------|--------|---------------------|-----------------|
| TERMINAL | WIRE # | LOCATION | FUNCTION |
| O:6-0 | 5545 | 5545 | LT ANCHOR CLAMP |
| O:6-1 | 5555 | 5555 | RT ANCHOR CLAMP |
| O:6-2 | **NC** | - | SPARE |
| O:6-3 | **NC** | - | SPARE |
| O:6-4 | **NC** | - | SPARE |
| O:6-5 | **NC** | - | SPARE |
| O:6-6 | 3520 | 3520 | AUTO BRAKE |
| O:6-7 | **NC** | - | SPARE |
| O:6-PWR1 | 3120 | 3120 | MODULE POWER 1 |
| O:6-PWR2 | 3140 | 3140 | MODULE POWER 2 |

FUNCTION SELECT SWITCH

(S2222)

| POS# | OFF | TURNTABLE | TRAVEL | WORK | MODE |
|------|-----|-----------|--------|------|---------------|
| 11A | X | - | - | - | NEUTRAL START |
| 11B | - | X | - | - | TURNTABLE |
| 12A | - | - | X | X | TRAVEL |
| 12B | - | - | - | - | - |
| 21A | - | - | - | X | WORK |
| 21B | - | - | - | - | - |

CONFIDENTIAL

© COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2 12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADAPTER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

| | | |
|---|--------------------------------------|-------------------------------|
| DRAWING TITLE/DESCRIPTION: ELECTRICAL SCHEMATIC | SHEET NUMBER X1 | DRAWN BY: WGL |
| MACHINE TYPE-MODEL: RMC306C1-34 | NUMBER OF JUPITER SHEETS 0 | REL. DATE: 03/11/11 |
| E3 PROJECT FILE NAME: RMC306C1-34_12 | TOTAL NUMBER OF SHEETS 9 | SIZE: D |
| | | SCALE: |

| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |



HARSCO RAIL

E3 DRAWING
DRAWING NUMBER:
5001004

| SWITCHES | | | | | | |
|----------|--------|-----------------------------|---------------|---------------------|----------|-------------|
| NO | DEVICE | SHEET LOCATION | | DESCRIPTION | LOCATION | PART NUMBER |
| 1 | S1110 | /1.110 | | MASTER SWITCH | I C | F014685 |
| 2 | S1112 | /1.110 | | ISOLATION SWITCH | I C | F014685 |
| 3 | S1210 | /1.221 | | ALARM SILENCE | INSTR | F017149 |
| 4 | S1460 | /1.460 | /1.450 /1.291 | NEUT START SWITCH | INSTR | ASSEMBLY |
| 5 | S1300 | /1.300 | | RT FRT EMERG STOP | I C | ASSEMBLY |
| 6 | S1302 | /1.300 | | LFT FRT EMERG STOP | I C | ASSEMBLY |
| 7 | S1304 | /1.300 | | LFT RR EMERG STOP | I C | ASSEMBLY |
| 8 | S1306 | /1.300 | | RT RR EMERG STOP | I C | ASSEMBLY |
| 9 | S1310 | /1.310 | | EMERGENCY STOP | CTRL | 501028000 |
| 10 | S1312 | /1.310 | | EMERGENCY STOP | INSTR | 501028000 |
| 11 | S1320 | /1.323 | | LOW OIL ALARM | I C | 416078 |
| 12 | S4140 | /4.140 | | START SWITCH | CTRL | ASSEMBLY |
| 13 | S1560 | /1.595 | | LOW HYD OIL | I C | 416078 |
| 14 | S1590 | /1.590 | | SHUTDOWN OVERRIDE | INSTR | F014868 |
| 15 | S1610 | /1.610 | | LOW AIR | I C | F025303 |
| 16 | S1645 | /1.645 | | HORN BUTTON | CTRL | ASSEMBLY |
| 17 | S1655 | /1.655 | | HORN BUTTON | I C | ASSEMBLY |
| 18 | S2110 | /2.110 | | BRAKE SWITCH | I C | 171893 |
| 19 | S2210 | /2.210 | | TRAVEL LIGHT SW | INSTR | F014868 |
| 20 | S2212 | /2.210 /2.550 | | TRVL DIRECTION SW | INSTR | F016261 |
| 21 | S3480 | /3.481 /1.291 /2.515 /2.465 | | FUNCTION SELECT | CTRL | A SSEMBLY |
| 22 | S2228 | /2.228 | | HIGH/LOW SELECT SW | INSTR | F014868 |
| 23 | S2270 | /2.270 | | WORK LIGHT SWITCH | INSTR | F014868 |
| 24 | S2310 | /2.310 | | EMERGENCY PUMP | CTRL | ASSEMBLY |
| 25 | S2488 | /2.488 | /2.498 | TRVL FOOT SWITCH | I C | 502214000 |
| 26 | S2515 | /2.515 | /2.525 | WORK FOOT SWITCH | I C | 502214000 |
| 27 | S3160 | /3.160 | | FAN TEMP SWITCH | CPU | F023823 |
| 28 | S3180 | /3.180 | | HEATER TEMP SWITCH | CPU | F023786 |
| 29 | S3220 | /3.220 | | HEAD IN | I C | 023082000 |
| 30 | S3230 | /3.230 | | HEAD OUT | I C | 023082000 |
| 31 | S3240 | /3.240 | | HEAD UP | I C | 023082000 |
| 32 | S3250 | /3.250 | | HEAD DOWN | I C | 023082000 |
| 33 | S3275 | /3.275 | | HOIST/BOOM EXT/RET | I C | 108433000 |
| 34 | S3470 | /3.470 /2.493 | | TURNTABLE DOWN LS | I C | 023082000/H |
| 35 | S3482 | /3.490 /3.480 | | TURNTABLE UP/DN | CTRL | ASSEMBLY |
| 36 | S3530 | /3.530 | | BRAKE FOOT SWITCH | I C | 502525000 |
| 37 | S3570 | /3.570 | | FRONT WIPER | INSTR | F014868 |
| 38 | S3585 | /3.585 | | REAR WIPER | INSTR | F014868 |
| 39 | S4120 | /4.120 | | GUIDE WHEELS UP/DN | CTRL | 3000330 |
| 40 | S4150 | /4.150 | | STOP SWITCH | CTRL | ASSEMBLY |
| 41 | S4160 | /4.160 | | HEAD REVERSE SW | CTRL | ASSEMBLY |
| 42 | S4190 | /4.190 | | AUTO BRAKE SWITCH | CTRL | F014868 |
| 43 | S4220 | /4.220 | /4.200 | HEAD IN/OUT SW | CTRL | 050750000 |
| 44 | S4260 | /4.260 | /4.240 | HEAD UP/DOWN SW | CTRL | 050750000 |
| 45 | S4280 | /4.280 | /4.300 | HEAD CLOSE/OPEN SW | CTRL | 050750000 |
| 46 | S4485 | /4.485 | /4.470 | HD PRESS-ON/UNCLAMP | CTRL | 050750000 |
| 47 | S4500 | /4.500 | | CLAMP FOOT SWITCH | I C | 502525000 |
| 48 | S4520 | /4.520 | | ANCHOR UNCLAMP FS | I C | 502525000 |
| 49 | S4590 | /4.595 | | TIE SQUEEZE CLOSE | I C | 179813 |
| 50 | S4610 | /4.615 | | ANCHOR LOCK | I C | 179813 |
| 51 | S4630 | /4.635 | | TIE SQUEEZE OPEN | I C | 179813 |
| 52 | S4650 | /4.650 | /2.465 | PLATFORM OPEN LS | I C | 023082000/H |
| 53 | S1490 | /1.490 /1.495 | | THROTTLE UP/DN | CTRL | ASSEMBLY |

| GAUGES | | | | | | |
|--------|--------|---------|-------------|----------|-------------|---------------|
| NO | DEVICE | SHT LOC | DESCRIPTION | LOCATION | PART NUMBER | BULB PART NO. |
| 1 | M1270 | /1.270 | FUEL GAUGE | INSTR | F017241/24 | 171972 |
| 2 | | | | | | |

| LIGHTS & INDICATORS | | | | | | |
|---------------------|--------|---------|--------------------|----------|-------------|---------------|
| NO | DEVICE | SHT LOC | DESCRIPTION | LOCATION | PART NUMBER | BULB PART NO. |
| 1 | DS1610 | /1.610 | LOW AIR | INSTR | 181375 | |
| 2 | DS1620 | /1.620 | LOW HYD OIL | INSTR | 181375 | |
| 3 | DS1630 | /1.630 | HYD OIL TEMP | INSTR | 181375 | |
| 4 | DS3460 | /3.460 | TURNTABLE DOWN IND | CTRL | 181375 | |
| 5 | LT1665 | /1.665 | INSTR BOX LIGHT | INSTR | F040972/24 | 174771 |
| 6 | LT2145 | /2.145 | FRONT HIGH BEAM | I C | 200644 | |
| 7 | LT2155 | /2.155 | FRONT LOW BEAM | I C | 174287 | 174289 |
| 8 | LT2168 | /2.168 | LFT RR MARKER LT | I C | 199960 | |
| 9 | LT2188 | /2.188 | RT RR MARKER LT | I C | 199960 | |
| 10 | LT2208 | /2.208 | REAR HIGH BEAM | I C | 200644 | |
| 11 | LT2220 | /2.220 | REAR LOW BEAM | I C | 174287 | 174289 |
| 12 | LT2230 | /2.230 | LFT FRT MARKER LT | I C | 199960 | |
| 13 | LT2250 | /2.250 | RT FRT MARKER LT | I C | 199960 | |
| 14 | LT2270 | /2.270 | WORK HEAD LIGHT | I C | 174288 | 174290 |
| 15 | LT2280 | /2.280 | WORK HEAD LIGHT | I C | 174288 | 174290 |
| 16 | LT2290 | /2.290 | CHUTE LIGHT | I C | 174288 | 174290 |
| 17 | LT2300 | /2.300 | HOIST LIGHT | I C | 174288 | 174290 |
| 18 | LT2325 | /2.325 | CONTROL BOX LIGHT | CTRL | F040972/24 | 174771 |
| 19 | LT3550 | /3.550 | STROBE | I C | 3000871 | |
| 20 | LT4560 | /4.560 | CPU BOX LIGHT | CPU | F040972/24 | 174771 |

| MOTOR | | | | | | |
|-------|--------|----------------|----------|----------------|----------|-------------|
| NO | DEVICE | SHEET LOCATION | | DESCRIPTION | LOCATION | PART NUMBER |
| | | COIL | CONTACTS | | | |
| 1 | B1130 | /1.130 | | EMERGENCY PUMP | I C | 171634 |

| RELAYS | | | | | | |
|--------|--------|----------------|---------------|-------------------|----------|-------------|
| NO | DEVICE | SHEET LOCATION | | DESCRIPTION | LOCATION | PART NUMBER |
| | | COIL | CONTACTS | | | |
| 1 | K1170 | /1.170 | /1.150 | ENGINE ACC | INSTR | 171956 |
| 2 | K1180 | /1.180 | /1.630 /1.221 | HYD OIL TEMP | CPU | 189623 |
| 3 | K1220 | /1.221 | /1.231 /1.201 | ALARM RELAY | INSTR | 171956 |
| 4 | K1318 | /1.318 | /1.620 | LOW OIL ALARM | INSTR | 171956 |
| 5 | K1450 | /1.450 | /1.210 | CONTROL POWER | CPU | 172164 |
| 6 | | | | | | |
| 7 | K1588 | /1.588 | /1.480 | LOW HYD LEVEL | INSTR | 171956 |
| 8 | K1590 | /1.590 | /1.583 | SHUTDOWN OVERRIDE | INSTR | 2005190 |
| 9 | K2110 | /2.110 | /2.125 | FRT BRAKE RELAY | CPU | 171956 |
| 10 | K2488 | /2.488 | /2.570 | FORWARD PROPEL | CPU | 5044218 |
| 11 | K2498 | /2.498 | /2.580 | REVERSE PROPEL | CPU | 5044218 |
| 12 | K2538 | /2.538 | /2.465 | WORK MODE RELAY | CPU | 171956 |
| 13 | K2570 | /2.570 | /2.663 | PROPEL ENABLE | CPU | 171956 |
| 14 | K3180 | /3.180 | /3.200 | HEATER RELAY | CPU | 171956 |
| 15 | K3500 | /3.501 | /3.510 | HIGH/LOW SELECT | CPU | 171956 |
| 16 | K3520 | /3.520 | /3.540 | AUTO BRAKE RELAY | CPU | 171956 |

TB LOCATION

- TBE = ENG
- TB2 = CPU
- TB4 = INSTR
- TB5 = CTRL
- TB6 = CPU
- TB8 = HOIST
- TB9 = CPU

COMPONENT KEY

- MG = ALTERNATOR
- ENG = ENGINE
- FRT = FRONT
- FS = FOOT SWITCH
- FWD = FORWARD
- IND = INDICATOR
- ISO = ISOLATION
- LFT = LEFT
- LS = LIMIT SWITCH
- LT = LIGHT
- PS = POWER SUPPLY
- PSW = PRESSURE SWITCH
- REV = REVERSE
- RT = RIGHT
- RR = REAR
- L = SOLENOID
- SW = SWITCH
- TRVL = TRAVEL
- TB = TERMINAL BLOCK

LOCATION KEY

- CTRL = CONTROL BOX
- CPU = CENTRAL PROCESSING UNIT BOX
- ENG = ENGINE
- INSTR = INSTRUMENT BOX
- MISC = OTHER LOCATIONS

CONFIDENTIAL
 © COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2 12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADPATER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

| DRAWING TITLE/DESCRIPTION: | |
|----------------------------|--|
| ELECTRICAL SCHEMATIC | |
| MACHINE TYPE-MODEL: | |
| RMC306C1-34 | |
| E3 PROJECT FILE NAME: | |
| RMC306C1-34_12 | |

| SHEET NUMBER | DRAWN BY: |
|--------------------------|------------|
| X2 | WGL |
| NUMBER OF JUPITER SHEETS | REL. DATE: |
| 0 | 03/11/11 |
| TOTAL NUMBER OF SHEETS | SCALE: |
| 9 | D |

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004

| SOLENOIDS | | | | | |
|-----------|--------|---------|--------------------|----------|-------------|
| NO | DEVICE | SHT LOC | DESCRIPTION | LOCATION | PART NUMBER |
| 1 | L3275 | /3.275 | HOIST EXTEND | HOIST | F025600 |
| 2 | L3298 | /3.298 | HOIST RETRACT | HOIST | F025600 |
| 3 | L3600 | /3.600 | EMERGENCY BRAKE | MISC | 185440 |
| 4 | L5108 | /5.108 | HEAD IN | MISC | F025600 |
| 5 | L5168 | /5.168 | HEAD OUT | MISC | F025600 |
| 6 | L5228 | /5.228 | TIE SQUEEZE CLOSE | MISC | F025600 |
| 7 | L5288 | /5.288 | TIE SQUEEZE OPEN | MISC | F025600 |
| 8 | L5138 | /5.138 | HEAD UP | MISC | F025600 |
| 9 | L5198 | /5.198 | HEAD DOWN | MISC | F025600 |
| 10 | L5258 | /5.258 | PRESS ON | MISC | F025600 |
| 11 | L5318 | /5.318 | ANCHOR CYL RETRACT | MISC | F025600 |
| 12 | L5448 | /5.448 | GUIDE WHEELS UP | MISC | F025600 |
| 13 | L5478 | /5.478 | HORN | MISC | 190032 |
| 14 | L5508 | /5.508 | GUIDE WHEELS DN | MISC | F025600 |
| 15 | L5538 | /5.538 | LT ANCHOR CLAMP | MISC | 190032 |
| 16 | L5568 | /5.568 | MOTOR HI/LOW | MISC | 190296 |
| 17 | L5658 | /5.658 | BRAKE | MISC | 190032 |
| 18 | L6108 | /6.108 | REVERSE | MISC | F025600 |
| 19 | L6138 | /6.138 | TURNTABLE RETRACT | MISC | F025600 |
| 20 | L6168 | /6.168 | FORWARD | MISC | F025600 |
| 21 | L6198 | /6.198 | TURNTABLE EXTEND | MISC | F025600 |
| 22 | L6228 | /6.228 | PROPEL | MISC | F025600 |
| 23 | L6288 | /6.288 | WORK | MISC | F025600 |
| 24 | L3315 | /3.315 | BOOM RETRACT | HOIST | F025600 |
| 25 | L3323 | /3.323 | BOOM EXTEND | HOIST | F025600 |
| 26 | L5598 | /5.598 | RT ANCHOR CLAMP | MISC | 190032 |

| MISCELLANEOUS | | | | | |
|---------------|--------|---------|--------------------|----------|-------------|
| NO | DEVICE | SHT LOC | DESCRIPTION | LOCATION | PART NUMBER |
| 1 | MG1150 | /1.150 | ALTERNATOR | ENG | ALTERNATOR |
| 2 | B3570 | /3.570 | FRONT WIPER | I_C | 171965 |
| 3 | B3585 | /3.585 | REAR WIPER | I_C | 171965 |
| 4 | LS1200 | /1.201 | SHUTDOWN ALARM | INSTR | F040126 |
| 5 | BT1110 | /1.110 | BATTERY | I_C | 179351 |
| 6 | BT1112 | /1.110 | BATTERY | I_C | 179351 |
| 7 | HR2450 | /2.450 | AIR DRYER | INTER | F023211 |
| 8 | HR3200 | /3.200 | PLC HEATER | CPU | 171962 |
| 9 | HR3210 | /3.210 | PLC HEATER | CPU | 171962 |
| 10 | LS2550 | /2.550 | RR BACKUP ALARM | I_C | 174532 |
| 11 | LS2563 | /2.563 | FRT BACKUP ALARM | I_C | 174532 |
| 12 | B3160 | /3.160 | FAN MOTOR | CPU | 171961 |
| 13 | MOD0 | /6.648 | PROGRAMMER | CPU | F026078 |
| 14 | MOD1 | /6.648 | OPERATOR INTERFACE | CTRL | 5025283 |
| 15 | | | | | |
| 16 | PS2585 | /2.585 | POWER SUPPLY | CPU | F025843 |
| 17 | A2590 | /2.590 | CARD RACK | CPU | 171898 |
| 18 | TC1193 | /1.193 | THERMOCOUPLE | I_C | 189624 |

| RESISTORS/SENDERS | | | | | |
|-------------------|--------|---------|-----------------|----------|----------------|
| NO | DEVICE | SHT LOC | DESCRIPTION | LOCATION | PART NUMBER |
| 1 | R1260 | /1.260 | FUEL SENDER | I_C | 0-3613031-0-13 |
| 2 | R1270 | /1.270 | VOLTAGE ADAPTER | INSTR | 171970 |

| BREAKERS & FUSES | | | | | | |
|------------------|--------|---------|--------|--------------------|----------|-------------|
| NO | DEVICE | SHT LOC | AMP | DESCRIPTION | LOCATION | PART NUMBER |
| 1 | CB1150 | /1.150 | 15 AMP | IGNITION CB | CPU | 5022143 |
| 2 | CB2310 | /2.310 | 20 AMP | EMERGENCY PUMP CB | CPU | 5022144 |
| 3 | CB2465 | /2.465 | 40 AMP | PROPEL CB | CPU | 5022146 |
| 4 | CB3120 | /3.120 | 40 AMP | PLC CB | CPU | 5022146 |
| 5 | CB3280 | /3.280 | 20 AMP | HOIST | CPU | 5022144 |
| 6 | CB4120 | /4.120 | 15 AMP | CONTROLS CB | CPU | 5022143 |
| 7 | F1665 | /1.665 | 1 AMP | INSTR BOX LIGHT | INSTR | 179960 |
| 8 | F2110 | /2.110 | 5 AMP | BRAKE LIGHTS FUSE | CPU | F023533 |
| 9 | F2210 | /2.210 | 20 AMP | TRAVEL LIGHTS FUSE | CPU | F023547 |
| 10 | F2270 | /2.270 | 20 AMP | WORK LIGHT FUSE | CPU | F023547 |
| 11 | F2325 | /2.325 | 1 AMP | CONTROL BOX LIGHT | CTRL | 179960 |
| 12 | F2450 | /2.450 | 10 AMP | AIR DRYER FUSE | CPU | F023546 |
| 13 | F2465 | /2.465 | 10 AMP | TRAVEL FUSE | CPU | F023546 |
| 14 | F2570 | /2.570 | 5 AMP | PROPEL SOL FUSE | CPU | F023533 |
| 15 | F2590 | /2.590 | 5 AMP | PS 2 FUSE | CPU | F023533 |
| 16 | F2610 | /2.610 | 10 AMP | POWER OUTPUT | CPU | F023546 |
| 17 | F2630 | /2.630 | 10 AMP | POWER OUTPUT | CPU | F023546 |
| 18 | F2650 | /2.650 | 5 AMP | PROPEL POWER | CPU | F023533 |
| 19 | F3120 | /3.120 | 10 AMP | POWER OUTPUT | CPU | F023546 |
| 20 | F3140 | /3.140 | 10 AMP | POWER OUTPUT | CPU | F023546 |
| 21 | F3160 | /3.160 | 5 AMP | TEMPERATURE | CPU | F023533 |
| 22 | F3200 | /3.200 | 10 AMP | HEATER | CPU | F023546 |
| 23 | F3220 | /3.220 | 5 AMP | PS FUSE | CPU | F023533 |
| 24 | F3280 | /3.280 | 10 AMP | HOIST FUSE | CPU | F023546 |
| 25 | F3550 | /3.550 | 5 AMP | STROBE | CPU | F023533 |
| 26 | F3570 | /3.570 | 10 AMP | WIPERS | INSTR | F023546 |
| 27 | F4120 | /4.120 | 5 AMP | INPUT FUSE | CPU | F023533 |
| 28 | F4200 | /4.200 | 5 AMP | INPUT FUSE | CPU | F023533 |
| 29 | F4500 | /4.500 | 5 AMP | INPUT FUSE | CPU | F023533 |
| 30 | F4560 | /4.560 | 1 AMP | CPU BOX LIGHT | CPU | 179960 |

CONFIDENTIAL
 © COPYRIGHT 2014 HARSCO. THIS DRAWING OR DOCUMENT IS THE PROPERTY OF HARSCO AND EMBODIES CONFIDENTIAL INFORMATION, TRADE SECRET INFORMATION, AND/OR KNOW-HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT, THE RECIPIENT AGREES (1) NOT TO PROVIDE, OR OTHERWISE MAKE AVAILABLE, THE DRAWING OR DOCUMENT, OR ANY INFORMATION OR KNOW-HOW EMBODIED THEREIN, TO ANY THIRD PARTY AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE ANY APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

| CHANGE # | R/L | REVISION | DR | DATE |
|----------|-----|---|-----|-----------|
| EC500748 | B | ADD EMERGENCY BRAKE | | 03/11 BJB |
| EC500854 | C | CHANGE TURNTABLE UP/DN SWITCH | | 04/11 KMS |
| EC501877 | D | CHANGES AS BUILT | | 09/11 ZSJ |
| EC502812 | E | UPDATE TO ENABLE LIGHTS & HORNS W/MASTER SW | WGL | 02-12 WGL |
| EC505842 | F | UPDATE PER ECR 2_12325-001 | WGL | 01-16-13 |
| EC506076 | G | REMOVE ADVANCE INTERFACE CONVERTER 3417589 | KMS | 02-04-13 |
| EC507421 | H | ADDED ADPATER BOARD 5030164 TO OUTPUT MODULES | JES | 06-04-13 |
| EC510546 | J | DOCUMENTATION UPDATE, SEE EC FOR DETAILS | JES | 07-03-14 |

| DRAWING TITLE/DESCRIPTION: | |
|----------------------------|--|
| ELECTRICAL SCHEMATIC | |
| MACHINE TYPE-MODEL: | |
| RMC306C1-34 | |
| E3 PROJECT FILE NAME: | |
| RMC306C1-34_12 | |

| SHEET NUMBER | DRAWN BY: |
|--------------------------|------------|
| X3 | WGL |
| NUMBER OF JUPITER SHEETS | REL. DATE: |
| 0 | 03/11/11 |
| TOTAL NUMBER OF SHEETS | SCALE: |
| 9 | D |

HARSCO RAIL

E3 DRAWING
 DRAWING NUMBER:
5001004