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**Drone Tamper
w/Jupiter II Control System
PARTS MANUAL**

Model: DT-2A-J2
BNSF

Catalog No. 5001032
December, 2010



- **THIS MANUAL CONTAINS VITAL INFORMATION FOR THE SAFE USE AND EFFICIENT OPERATION OF THIS MACHINE. CAREFULLY READ THIS MANUAL BEFORE USING THE MACHINE. FAILURE TO ADHERE TO THE INSTRUCTIONS COULD RESULT IN BODILY INJURY AND/OR PROPERTY DAMAGE.**

When this manual is received, record the machine serial number, engine serial number and all other information from the serial number tags in the spaces provided in the General Information Section for future reference, in case the serial number tags ever become unreadable.

A MANUAL MUST REMAIN WITH THE MACHINE. Additional or replacement manuals may be obtained by calling or writing Harsco Rail, Harsco Corporation.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. Harsco Rail, Harsco Corporation reserves the right to make changes at any time without notice.

FACILITY LOCATIONS

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

Harsco Rail
2401 Edmund Road, Box 20
Cayce-West Columbia, SC
29171-0020
Tel: (803) 822-9160
Fax: (803) 822-7471

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

Harsco Rail
Giltway, Giltbrook
Nottingham, NG16 2GQ
England
Tel: 0115 938 7000
Fax: 0115 938 7001

Harsco Rail
4 Strathwyn Street, PO Box 5287
Brendale, Queensland 4500
Australia
Tel: 61 7 205 6500
Fax: 61 7 205 7369

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Introduction

About This Manual

This manual is separated into seven (7) sections. Listed under these major Sections are sub-sections that contain the assembly drawings and the corresponding parts list showing item numbers, descriptions, part numbers, and quantities.

How to Use This Manual

1. Locate the *Contents* page. Then, locate the assembly that contains the item(s) to be replaced.
2. Locate the appropriate assembly drawing in this manual. Then, locate the appropriate item number on the assembly drawing.
3. Examine the parts list to locate the description and part number that corresponds to the part(s) to be replaced.

How to Order a Replacement Part

1. Determine the correct part number, quantity, and description using the procedure described in the previous section.
2. Make sure you have the correct purchase order number and the appropriate shipping and billing addresses.

3. If you want to order replacement parts by mail, the address is:

Harsco Rail

Harsco Corporation
2401 Edmund Rd.
P. O. Box 20
Cayce -West Columbia, SC 29171-0020
USA
ATTN: Parts Sales

4. If you want to order replacement parts by telephone, the number is **1-800-345-9160**. Make sure you ask to speak to the Parts Sales Department and make sure you have your purchase order number, bill to address, ship to address, part number(s), and quantity. Also, if possible, make sure you have the model number and serial number of your machine(s).
5. If you want to FAX the order, the number is **1-803-822-7403** or Web address: www.harscorail.com

Model DT-2A-J2 Drone Tamper Specifications

Weights & Dimensions

Front Axle Weight.....22,750-lbs. (10,320-kg)

Rear Axle Weight.....34,250-lbs. (15,536-kg)

Machine Weight..... 57,000-lbs. (25,856-kg)

Length.....366.30 inches (9812 mm)

Width.....101.93 inches (2588.9 mm)

Height..... 130.67 inches (3318.9 mm)

Frame – Heavy duty, welded, steel construction.

Wheels and Axles - 28 inch (711 mm) cast steel (AAR profile) wheels on solid forged steel axles.

Brakes - Air operated tread-type shoe brakes with cobra-type shoes on all four wheels. Spring-applied, air-released, parking/emergency brake for automatic brake actuation in case of pressure loss.

Tamping Units - Four heavy duty vibrators drive 16 abrasion-resistant tamping tools. The hydraulically driven vibrators operate at 3,000 VPM (50 Hz) and develop a positive displacement of 3/8 inch (9.5 mm).

Engine - Cummins 8.3L Tier 3, electronic control charged air cooled and turbocharged, 305 HP @ 2200 RPM.

Controls - All working functions are under control of a Jupiter II Distributed Input/Output Control System with interactive operator interface.

24 VDC

Capacities:

Hydraulic Tank:	350 gal
Fuel Tanks (2)	100 gal ea
Total Fuel Capacity	200 gal

TABLE OF CONTENTS

Model DT-2A-J2 Drone Tamper Parts Manual

Engine and Fuel System

B-1	2019247	Engine Installation
B-2	2019238	Engine Skid Assembly
B-3	2019238	Engine Assembly (Cummins 8.3)
B-4	4029215	2 Pad Pump Drive
B-5	4017711	Fuel Tank Installation

Drive Train, Suspension and Coupler

C-1	2019404	Drive Axle Installation
C-2	2019161	Drive and Brake Assembly
C-3	2019160	Drive Axle Sub-Assembly
C-4	2019159	Drive Axle Assembly
C-5	2019120	Front Truck Assembly
C-6	2019162	Front Axle Assembly
C-7	2019461	Tow Bar Installation
C-8	2019469	Tow Bar Assembly
C-9	4031112	Remote Grease Fitting Installation
C-10	2019217	Encoder Installation

Workheads (Tamping Components)

D-1	2019347	Workhead Installation
D-2	2019306	Roller Workhead Assembly
D-3	4014782	Workhead Grease Kit
D-4	B4750XAD	Auto Oiler Installation
D-5	4031089	Run Away Wiper Arm
D-5A	4031090	Run Away Wiper Arm
D-6	2019353	Wiper Assembly

Workheads (Tamping Components) Cont'd

D-7.....	C0607VAA	Vibrator Assembly
D-8.....	0-220082-0-01	Vibrator Housing
D-9.....	P753281H	Tamping Tool Kit
D-10.....	Y684448-01	Swivel Bracket Assembly
D-11.....	2019222	Tie Finder Installation
D-12.....	5002425	Safety Wire Installation

Hydraulic System and Components

J-1	4029749	Hydraulic Tank Installation
J-2	4027891	Hydraulic Tank Assembly
J-3	4029618	Hydraulic Interconnect and Schematic
.....		
J-4	4029775	Workhead Slide Cylinder (Lower)
J-5	4029776	Workhead Slide Cylinder (Smart/Upper)
.....		
J-6	B5761XAA	Workhead Cylinder
J-7	4030164	Workhead Squeeze Cylinder
J-8	4030552	Emergency Pump Installation
J-9	2019273	UCC Assembly

Pneumatic System and Components

K-1	4029596	Pneumatic Interconnect and Schematic
.....		
K-2.....	4030330	Transmission Air valve Assembly
K-3.....	C9785X01	Air Dryer and Purge Tank Kit

Electrical System and Components

L-1	4029587	Control Box Installation
L-2	4029586	Control Box Assembly

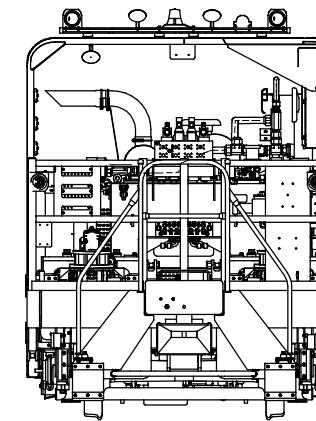
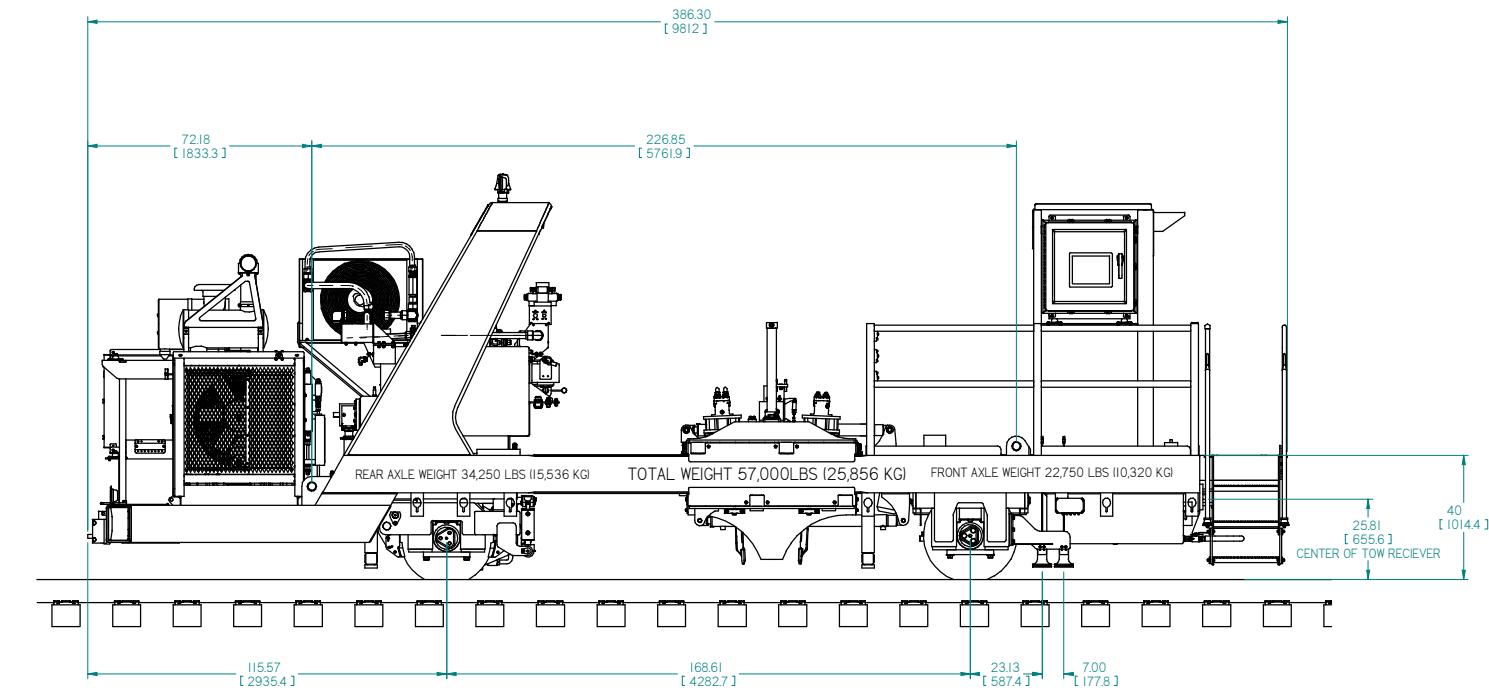
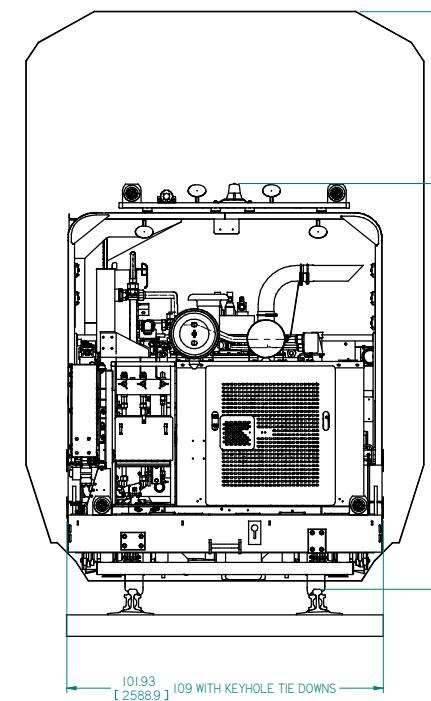
Electrical System and Components Cont'd

L-3	4029353	Control Box Wiring
L-4	4029588	Power Distribution Box Installation
L-5	4029579	Power Distribution Assembly
L-6	4029352	Power Distribution Wiring
L-7	4029836	Light Installation
L-8	4031490	Lead Machine Connection Kit
.....		(Parts – List Only)
L-9	4029351	Interconnect Wiring
L-10	4029350	Electrical Schematic
L-11	4029354	Jupiter Module Installation
L-12	5005863	Radar Installation
L-13	4029355	Engine and Emergency Pump
.....		Wiring

Miscellaneous Components

O-1	4030364	Spare Parts Listing
O-2	Z780613	Fire Extinguisher and Bracket
O-3	173987	Water Cooler and Bracket
O-4	0-3381010-0-12	Filler Cap
O-5	4031212	Mud Flaps
.....		

Physical Data



CONFIDENTIAL		APPLIED TOLERANCES		CHANGE R/L	REVISION	DATE	Description	COMPONENT LOCATION
ITEM NO.	PLUS OR MINUS	ITEM NO.	PLUS OR MINUS					
1	.000 .005	2	.000 .005				A SURFACE FINISH HARMONIC CONCENTRATION WITHIN 0.10	
3	.000 .005	4	.000 .005				A SURFACE FINISH HARMONIC CONCENTRATION WITHIN 0.10	
5	.000 .005	6	.000 .005				A SURFACE FINISH HARMONIC CONCENTRATION WITHIN 0.10	
7	.000 .005	8	.000 .005				A SURFACE FINISH HARMONIC CONCENTRATION WITHIN 0.10	
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13	.000 .005	14	.000 .005				A SURFACE FINISH HARMONIC CONCENTRATION WITHIN 0.10	
15	.000 .005	16	.000 .005				A SURFACE FINISH HARMONIC CONCENTRATION WITHIN 0.10	

SOLID EDGE DRAWING

HARSCO INDUSTRIAL

DRONE TAMPER

ea/er 12-11-10

Weight 57,000 lbs

Code EC

Size 30mm

Component Location E 1 of 1

Inch
[mm]

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

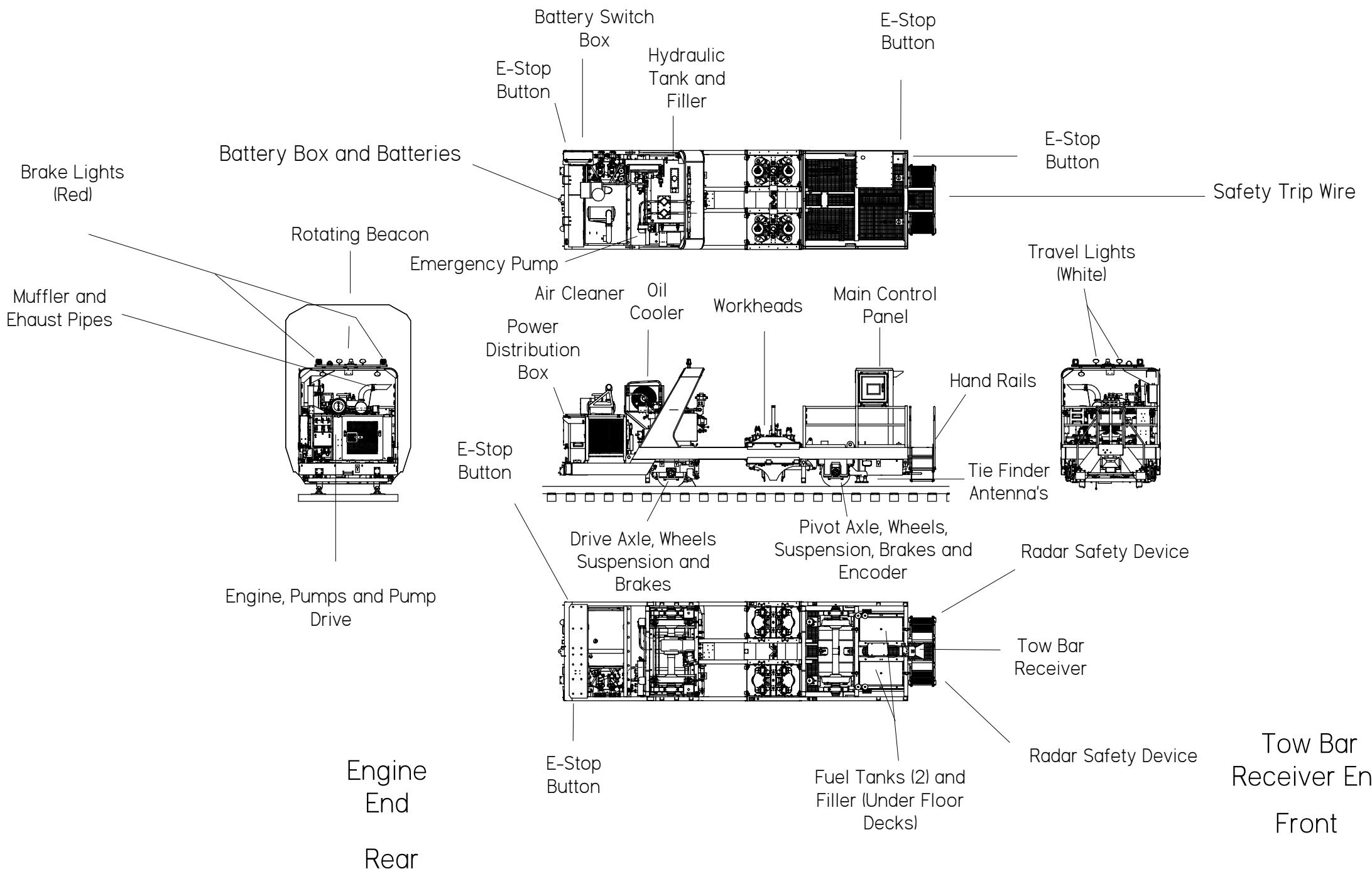
W

X

Y

Z

Drone Tamper
Component Location
Model DT-2A - J2



Engine
End

Rear

Tow Bar
Receiver End
Front

CONFIDENTIAL		APPLIED TOLERANCES			CHANGE	R/L	REVISION	DATE	Description
ITEM	UNIT	MIN. SIZE	MAX. SIZE	UNLESS OTHERWISE SPECIFIED					
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15	in	.24	.208	.262					Error: No reference
16	in	.24	.208	.262					Error: No reference

Inch
[mm]

HARSCO
RAILS

Plotted by pturner on 12/15/2010 component location.drl
E 1 of 1

DRONE TAMPER ENERGY CONTROL PROCEDURE

PURPOSE

This procedure informs appropriate personnel of the location and proper means of removal and restoration of electrical, mechanical, hydraulic and pneumatic energy for this machine. This procedure is provided to help protect personnel from the unexpected release of energy while performing maintenance, making adjustments or dealing with emergency shutdown conditions.

This procedure will be used by personnel responsible for lockout and tagout.

SCOPE

This procedure must comply with railroad safety rules. It is to be used in conjunction with an operator's manual, when servicing or repairing machine. Any alterations to this machine may invalidate this Energy Control Procedure and/or lockout tagout procedures.

MODEL DRONE	MANUFACTURER	Harsco Rail	ISSUE DATE	7/22/09
ENERGY SOURCES:			COMPRESSED AIR	X
	ELECTRICAL	24 VDC		X
	HYDRAULIC	X		
STORED ENERGY:			COIL SPRINGS	X
	RAISED LOAD	X		X
	BATTERY	X	AIR TANK	
	HYDRAULIC PRESSURE	X		

PROCEDURE TO REMOVE MACHINE FROM ENERGY SOURCE

1. The person who will be doing the maintenance or adjustments must familiarize themselves with the type of energy sources for this machine and understand fully the hazards of the energy.
2. Stop machine parking brake, will automatically set.
3. Lock Workheads, in the travel position unless one or more of these work components is in the area to be worked on and the anticipated work will require the work component to be resting on the rail or ballast. Any work component not locked in travel position should be lowered until its full weight is on the rail or ballast.
4. Return throttle to idle position. (Throttle is the top right button of remote control)
5. Stop engine. (Ignition switch is located on Engine control panel)
6. Turn battery master switch to "OFF" position. (Switch is located inside the rear battery box on left side of machine)
7. Switch circuit breakers "OFF" in ECM breaker box. (Box is located near battery switch.)
8. Drain air system by pulling air reservoir drain valve control ring until all air pressure has escaped. (Air reservoir drain is located on left side near the front wheel)
9. Verify that all energy sources are de-energized by operating the controls to make sure the equipment will not operate (attempt to start engine).

PROCEDURE TO RESTORE MACHINE TO SERVICE

1. Check the machine and surrounding area to make sure all tools, etc. have been removed from machine.
2. Verify that everyone is clear of the machine while it is being restored to power.
3. Verify that all controls are in neutral or off position.
4. Turn battery master switch to "ON" position.
5. Switch circuit breakers "ON" in ECM breaker box.
6. Start engine then push "IN" the Jupiter Control button located on the left of the key switch.
7. Verify that all energy sources are energized by observing information on computer screen.
8. Test all functions of the machine which were affected by the repairs.

Limited Warranty

Harsco Rail, Harsco Corporation products are designed to give high quality service and are manufactured from high grade material, by competent workmen under careful supervision. Harsco Rail, Harsco Corporation warrants this product of its manufacture to be free of defects in material and workmanship, under normal use and service for a period of six (6) months from date of delivery to the original user. The obligation of Harsco Rail, Harsco Corporation under this warranty is limited to repairing or replacing at its factories, or other location designated by it, any part or parts thereof which are returned within 30 days of the date when failure occurs or defect is noted, with transportation charges prepaid, and which upon examination appears to the satisfaction of Harsco Rail, Harsco Corporation to have been defective. Such free repair or replacement does not include transportation charges, or the cost of installing the new part or any other expense incident thereto. Harsco Rail, Harsco Corporation will not be liable for other loss, damage, or expense directly or indirectly arising from the use of its products, nor will Harsco Rail, Harsco Corporation be liable for special, incidental or consequential damages.

Ordinary wear and tear, and damage from abuse, misuse, neglect or alteration are not covered by this warranty. Harsco Rail, Harsco Corporation assumes no liability for expenses incurred or repairs made outside its factories except by written consent. This warranty is null and void if instructions and operating procedures are not followed.

Equipment or parts not manufactured by this company, but which are furnished in connection with Harsco Rail products, are covered directly by the warranty of the manufacturer supplying them. However, Harsco Rail, Harsco Corporation will assist in obtaining adjustment on such equipment or parts when necessary.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND OF ANY OTHER OBLIGATION OR LIABILITY OF Harsco Rail, HARSCO CORPORATION.

Product Improvement Liability Disclaimer

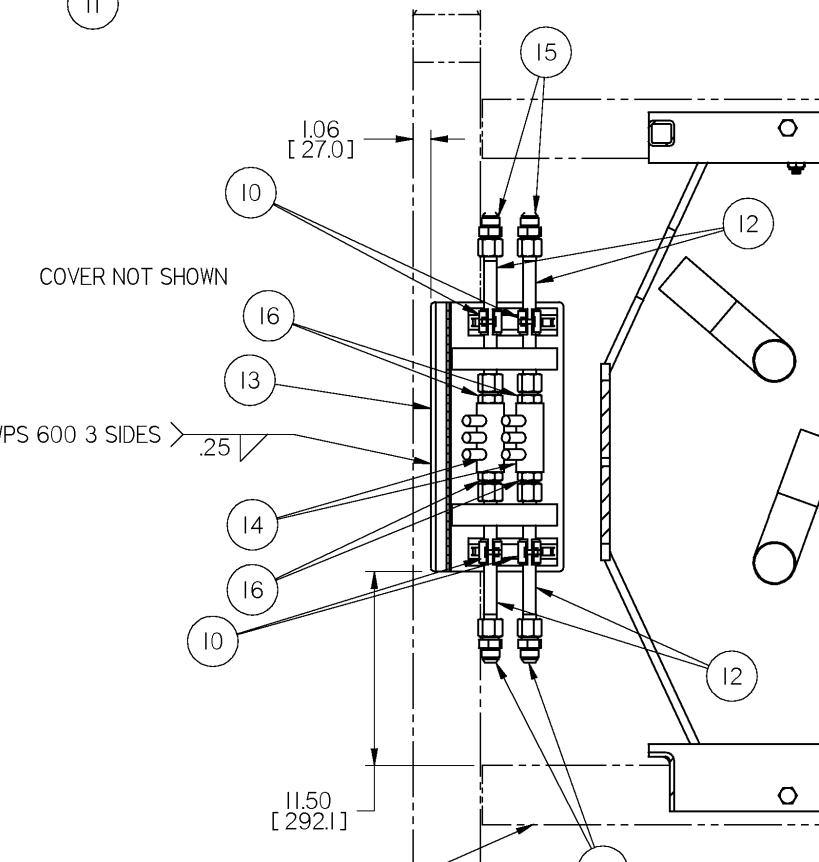
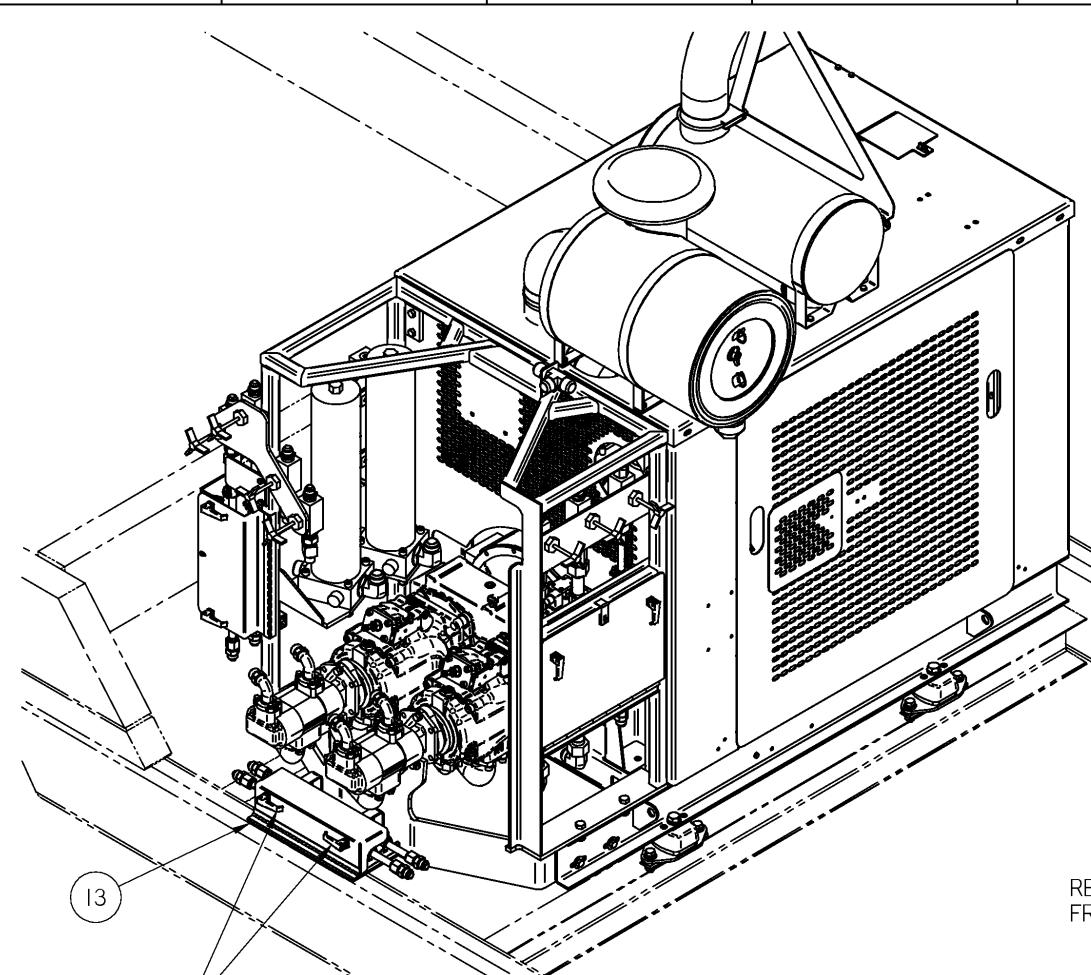
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Hazardous Material Disclaimer

THE PARTS/ASSEMBLIES THAT ARE USED IN THIS PRODUCT ARE CLASSIFIED AS "ARTICLES" ACCORDING TO 29 CFR 1910.1200 (C). THEY ARE FORMED TO A SPECIFIC SHAPE OR DESIGN DURING MANUFACTURE, HAVE END USE FUNCTION DEPENDENT UPON THEIR SHAPE OR DESIGN, AND DO NOT RELEASE ANY HAZARDOUS CHEMICAL UNDER NORMAL CONDITIONS OF USE. ACCORDINGLY, WE ARE NOT REQUIRED TO SUPPLY MATERIAL SAFETY DATA SHEETS (MSDS) OR TO LABEL SHIPPING CONTAINERS FOR "ARTICLES". HOWEVER, LUBRICANTS, LIQUIDS, GASEOUS CHEMICALS AND SOLIDS USED IN OPERATION OR MAINTENANCE OF THE PRODUCT MAY REQUIRE THAT USER'S TAKE OCCUPATIONAL PROTECTIVE MEASURES. MSDS SHEETS FOR SUCH MATERIALS WILL BE SUPPLIED TO YOUR PURCHASING MANAGER/SAFETY DIRECTOR TO BE USED IN YOUR EMPLOYEE SAFETY TRAINING EDUCATION AND ENVIRONMENTAL HEALTH TRAINING.

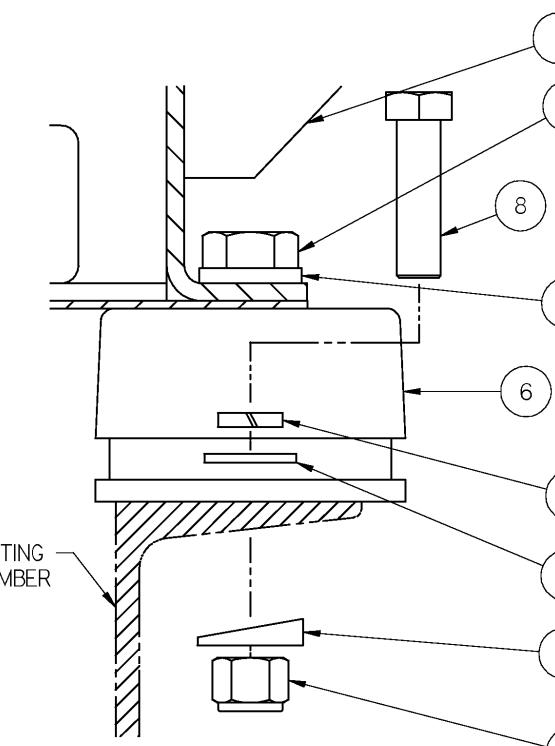
Section B

Engine and Fuel System

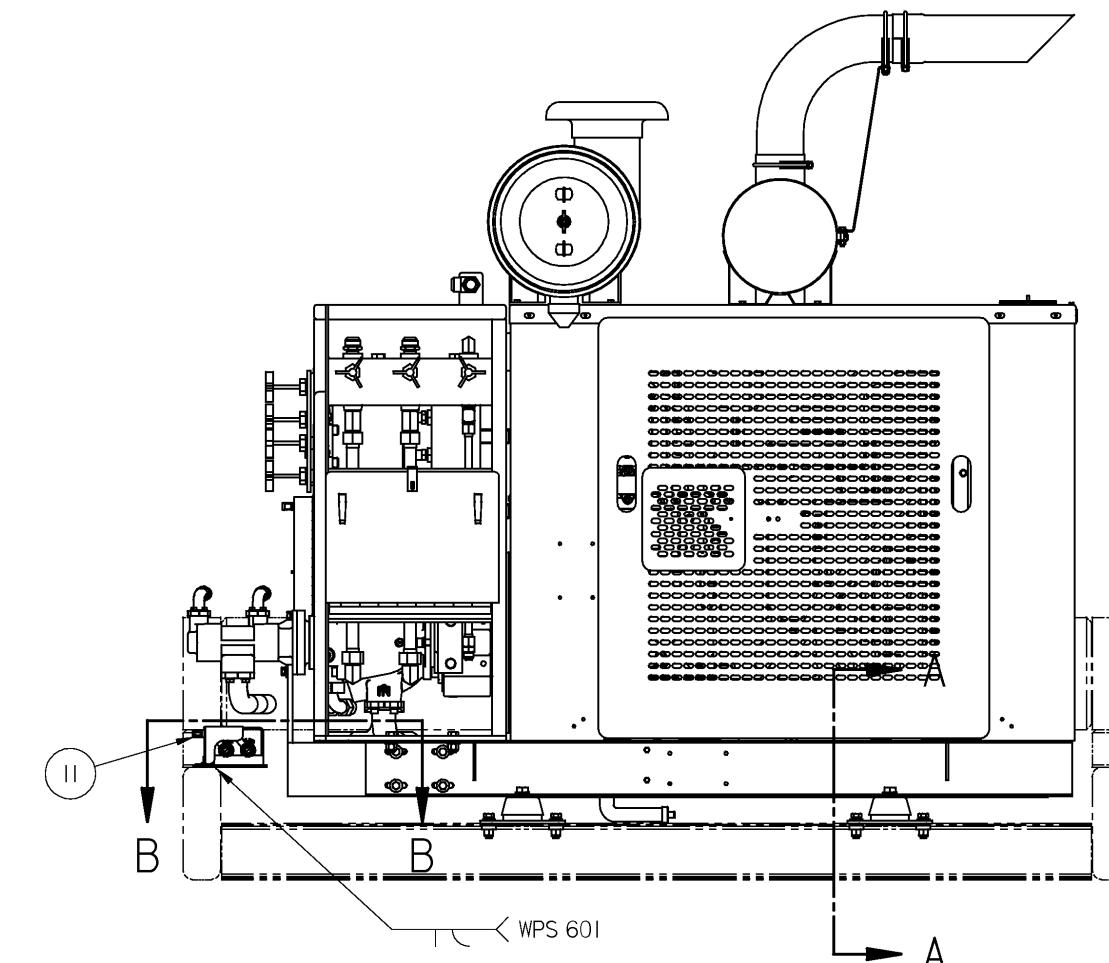


SECTION B-B

CONFIDENTIAL
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SECTION A-A



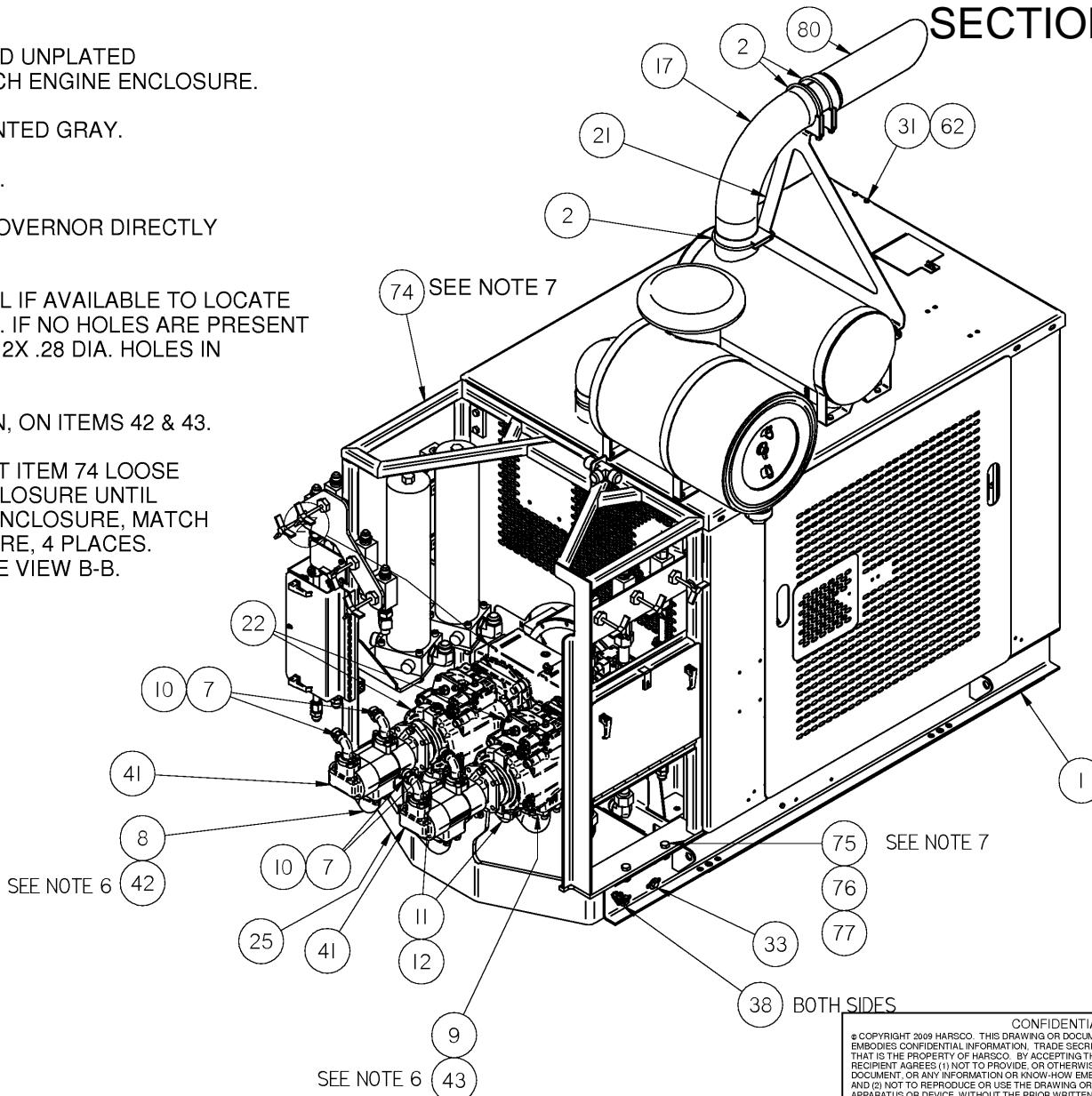
SECTION B-1

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	2019238	ENGINE SKID ASSEMBLY	1	ea		
2	F012452	DC-5/8 ELASTIC STOP NUT	8	ea		
3	F003138K	5/8 BEVEL WASHER	8	ea		
4	F009425	DC-SAE WASHER 5/8 ZP	8	ea		
5	F011533	DC-5/8 LW *	8	ea		
6	4013293	SHOCK MOUNT	4	ea		
7	3403528	METRIC SPRING LOCK WASHER M20	4	ea		
8	700566225	HEX HD CS 5/8-11X2 1/4 GR8 ZP	8	ea		
9	408660	HEX HD CS M20X2.5X60 CL10.9 ZP	4	ea		
10	153728-6	CLAMP ASSY	4	ea		
11	2000033	LIFT-AND-TURN LATCH- PAWL POSI	2	ea		
12	2019289	TUBE ASSY, .75 OD X 7.83 LG	4	ea		
13	2019459	MOUNT WELDMENT	1	ea		
14	C9677Y02	MONITORING SYSTEM	2	ea		
15	F012243	DC-STR 12X12	4	ea		
16	F014253	DC-STR 12X12SAE	4	ea		

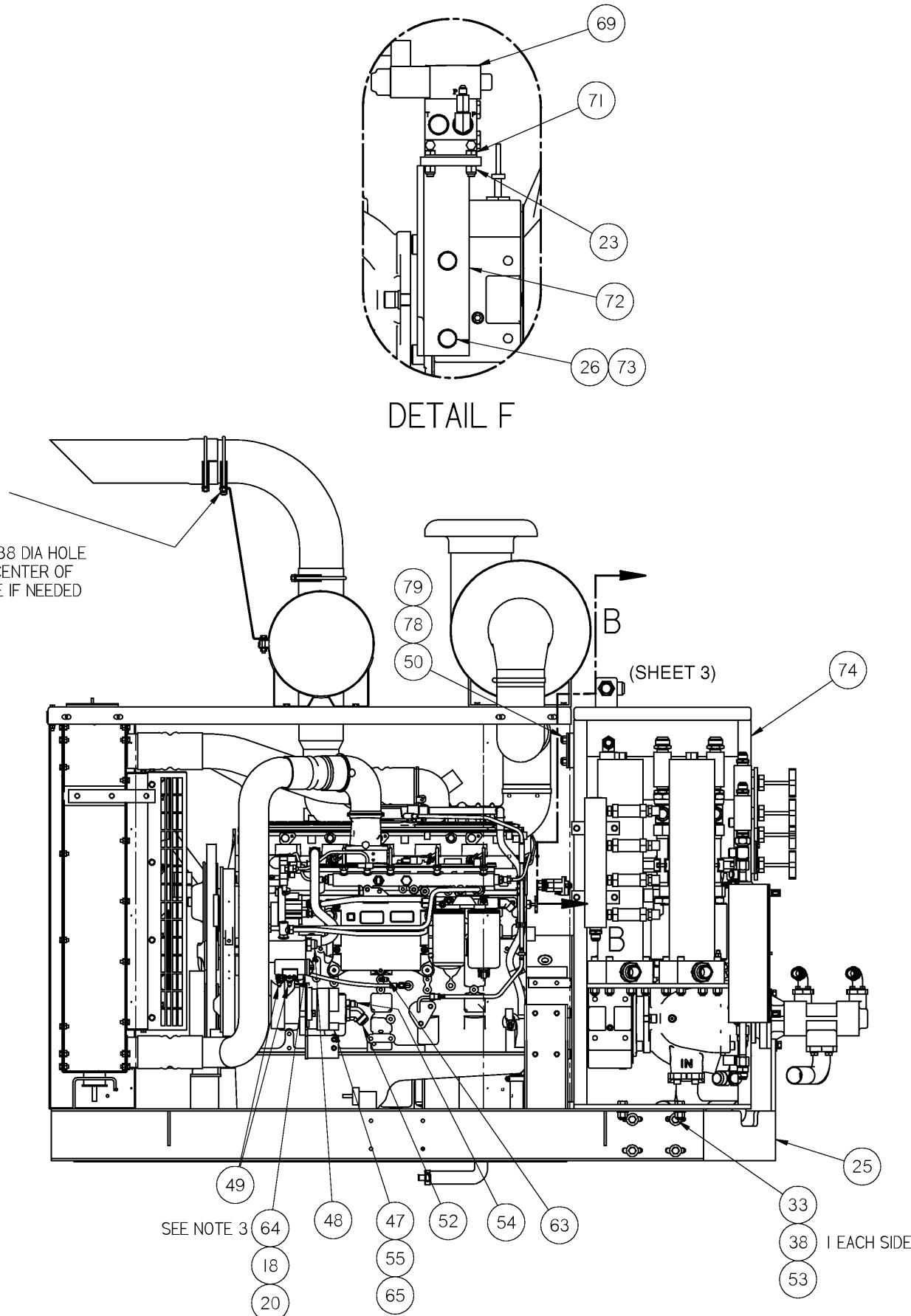
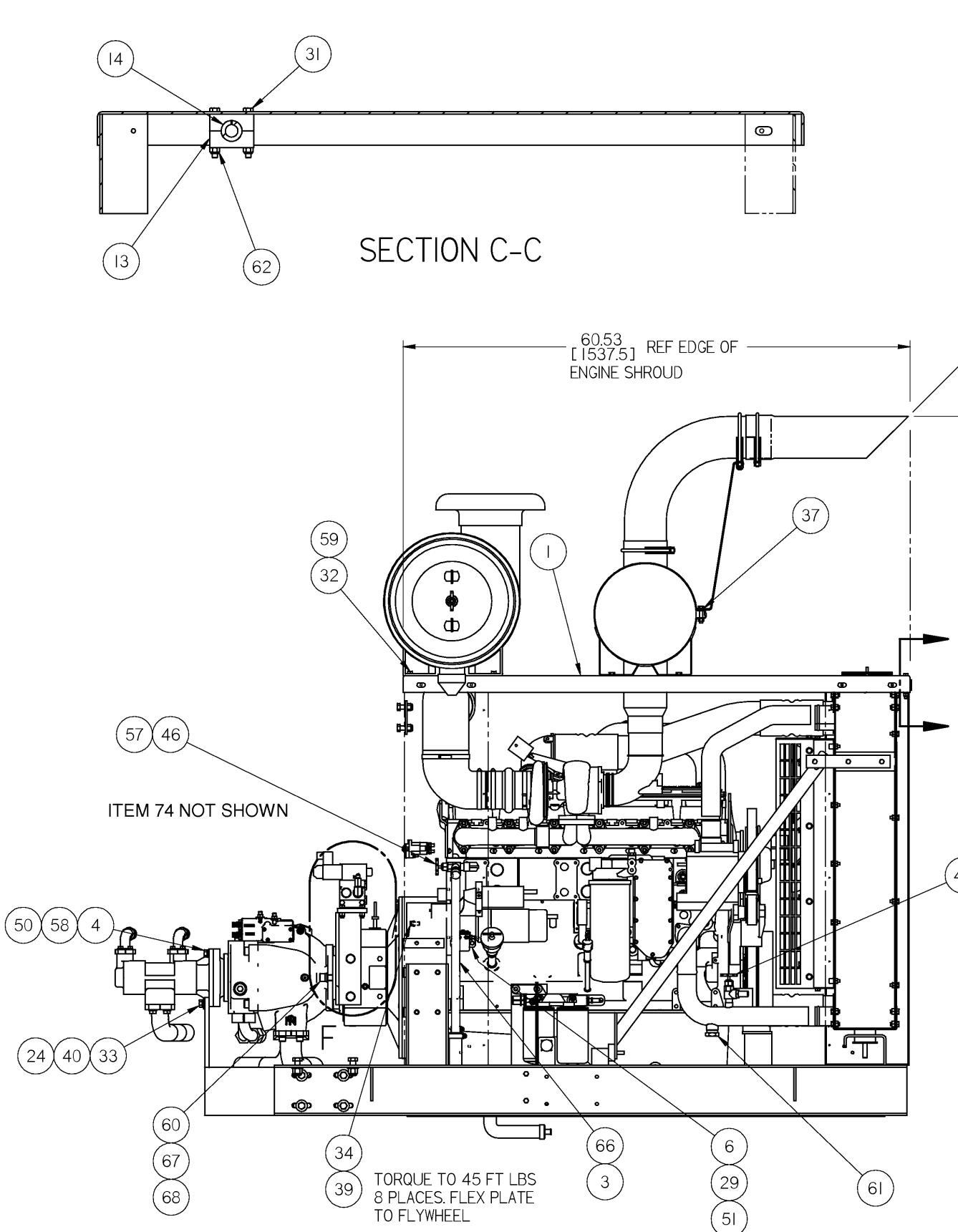
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2019247
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REF NUM				PART NUMBER			HTT Description			Quantity			UOM			Length			Cut Length																																																																															
59	L40387	NUT ELASTIC STOP	5	ea																																																																																														
60	F012277	SKT HD CS 5/8-11X1 3/4	4	ea																																																																																														
61	L40672	PLUG SQ. HEAD	1	ea																																																																																														
62	F014476	5/16 ELASTIC STOP NUT	4	ea																																																																																														
63	F015687	DC-TEE 4X2NPTX4	1	ea																																																																																														
64	L423613	GOVERNOR	1	ea																																																																																														
65	F040754	HEX HD CS M10X1.5X35 CL8.8 ZP	2	ea																																																																																														
66	F040286	HEATER HOSE	1	in	24		24.00 lg																																																																																											
67	F011533	DC-5/8 LW *	6	ea																																																																																														
68	F023457	DC-WASHER *	4	ea																																																																																														
69	2019249	MANIFOLD ASSEMBLY, 2- STATION	1	ea																																																																																														
70	F014736	DC-STR 4X4SAE	4	ea																																																																																														
71	F001125	DC-HEX HD CS 3/8-16X1 1/4 GR5	4	ea																																																																																														
72	2019272	2 STATION MOUNT	1	ea																																																																																														
73	F005869	DC-HEX HD CAP SCR 5/8-11X1 1/4	2	ea																																																																																														
74	2019273	UCC ASSEMBLY	1	ea																																																																																														
75	F009425	DC-SAE WASHER 5/8 ZP	4	ea																																																																																														
76	F012452	DC-5/8 ELASTIC STOP NUT	4	ea																																																																																														
77	F019501	DC- 5/8-11X1.75 GR8 HHCS	4	ea																																																																																														
78	F013500	DC-1/2 ELASTIC STOP NUT *	4	ea																																																																																														
79	2019293	BACKING PLATE	2	ea																																																																																														
80	0-3612011-0-36	STACK PIPE 5 DIA X 36	1	ea																																																																																														
SECTION B-2																																																																																																		
<p>NOTES:</p> <ol style="list-style-type: none"> PUMP DRIVE, PUMPS, BRACKETS, AND UNPLATED HARDWARE TO BE PAINTED TO MATCH ENGINE ENCLOSURE. RADIATOR FILLER COVER TO BE PAINTED GRAY. CAP ALL OPEN HOSES AND FITTINGS. USE EXISTING GASKET TO MOUNT GOVERNOR DIRECTLY TO COMPRESSOR. USE PUNCHED HOLES IN REAR PANEL IF AVAILABLE TO LOCATE ITEM 19 APPROXIMATELY AS SHOWN. IF NO HOLES ARE PRESENT USE ITEM 19 AS TEMPLATE TO DRILL 2X .28 DIA. HOLES IN REAR PANEL. DO NOT PAINT HOSE STEMS, 4.00 MIN, ON ITEMS 42 & 43. INSTALL ITEMS 75, 76, & 77 TO MOUNT ITEM 74 LOOSE SLIDE ITEM 74 TOWARD ENGINE ENCLOSURE UNTIL UPPER MOUNT TABS ARE AGAINST ENCLOSURE, MATCH DRILL .54 DIA HOLES THRU ENCLOSURE, 4 PLACES. INSTALL REMAINING HARDWARE, SEE VIEW B-B. 																																																																																																		
<p style="text-align: right;">Inch [mm]</p> <p>CONFIDENTIAL © COPYRIGHT 2009 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 PRODUCE OR OTHERWISE MAKE AVAILABLE THE DRAWING OR DOCUMENT OR ANY PART THEREOF, OR KNOW-HOW CONTAINED THEREIN, TO A 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.</p> <table border="1"> <tr> <td colspan="2">NOMINAL SIZE OVER</td><td colspan="2">INCH PLUS OR MINUS DECIMAL</td><td colspan="2">NOMINAL SIZE OVER</td><td colspan="2">METRIC PLUS OR MINUS DECIMAL</td><td colspan="2">UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE ANGULAR TOLERANCE OF +/- 5° CONCENTRICITY WITHIN .015"</td><td colspan="2">CHANGE R/L</td><td colspan="2">DATE</td><td colspan="2">Description</td></tr> <tr> <td>0</td><td>6</td><td>.03</td><td>.005</td><td>0</td><td>150</td><td>8</td><td>.13</td><td colspan="2"></td><td>A</td><td>27APR10</td><td colspan="2">ENGINE SKID ASSEMBLY</td><td colspan="2"></td></tr> <tr> <td>300351</td><td></td><td></td><td></td><td>300352</td><td></td><td></td><td></td><td colspan="2"></td><td>B</td><td>30MAY10</td><td colspan="2">Machine Type</td><td colspan="2"></td></tr> <tr> <td>300374</td><td></td><td></td><td></td><td>300374</td><td></td><td></td><td></td><td colspan="2"></td><td>C</td><td>20JUL10</td><td colspan="2">Weight</td><td colspan="2"></td></tr> <tr> <td colspan="10">UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS.</td><td>Drawn CTR</td><td>Date Drawn 27APR10</td><td colspan="2">SOLID EDGE DRAWING</td><td colspan="2">DO NOT SCALE</td></tr> </table>																			NOMINAL SIZE OVER		INCH PLUS OR MINUS DECIMAL		NOMINAL SIZE OVER		METRIC PLUS OR MINUS DECIMAL		UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE ANGULAR TOLERANCE OF +/- 5° CONCENTRICITY WITHIN .015"		CHANGE R/L		DATE		Description		0	6	.03	.005	0	150	8	.13			A	27APR10	ENGINE SKID ASSEMBLY				300351				300352						B	30MAY10	Machine Type				300374				300374						C	20JUL10	Weight				UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS.										Drawn CTR	Date Drawn 27APR10	SOLID EDGE DRAWING		DO NOT SCALE	
NOMINAL SIZE OVER		INCH PLUS OR MINUS DECIMAL		NOMINAL SIZE OVER		METRIC PLUS OR MINUS DECIMAL		UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE ANGULAR TOLERANCE OF +/- 5° CONCENTRICITY WITHIN .015"		CHANGE R/L		DATE		Description																																																																																				
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<p>HARSCO RAIL Part Number 2019238 Size D Sheet 1 of 4</p>																																																																																																		



SECTION B-2

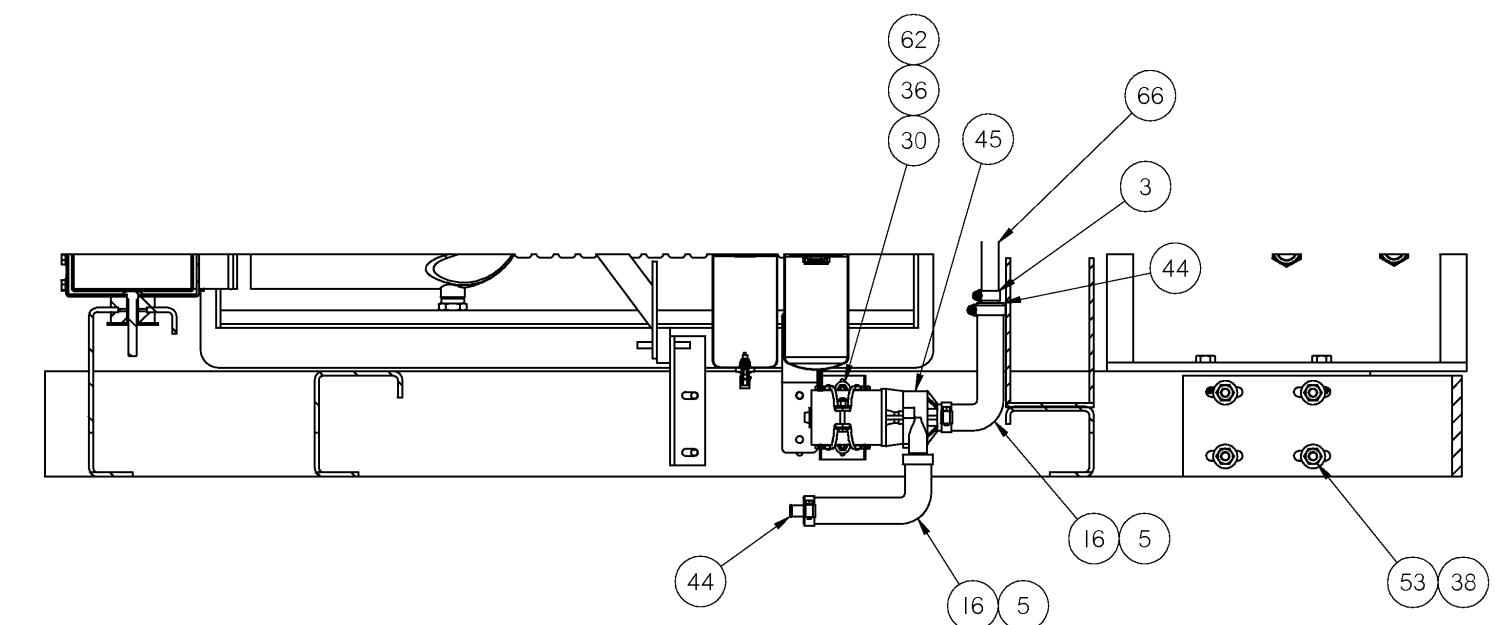
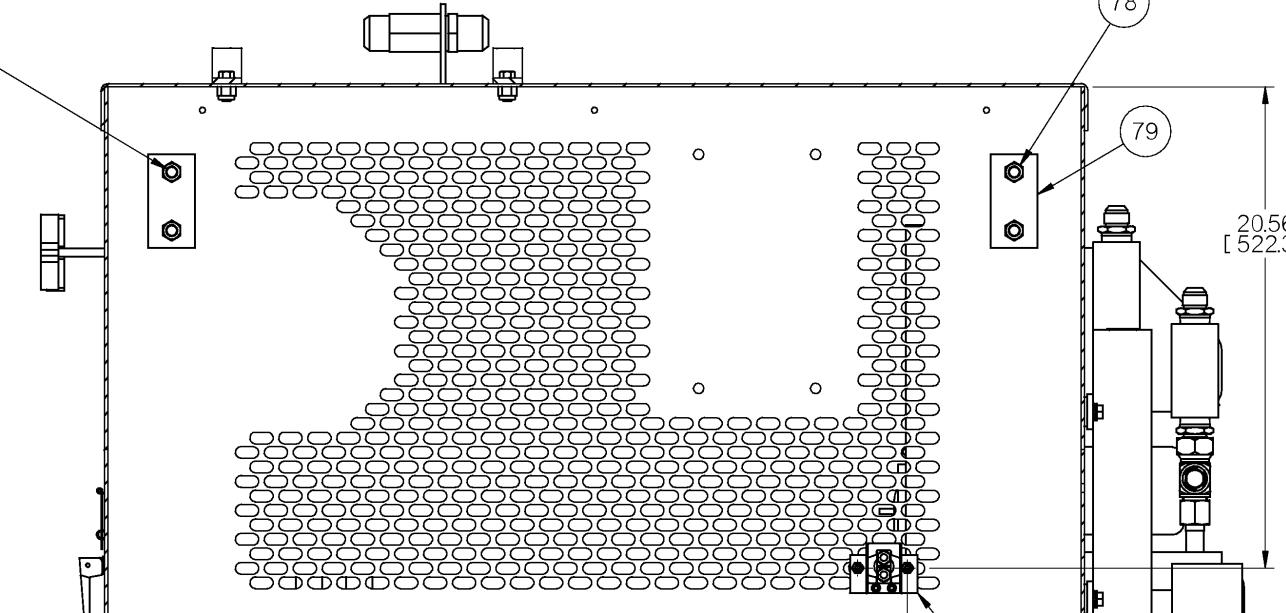
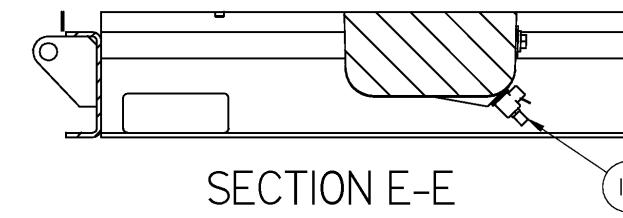
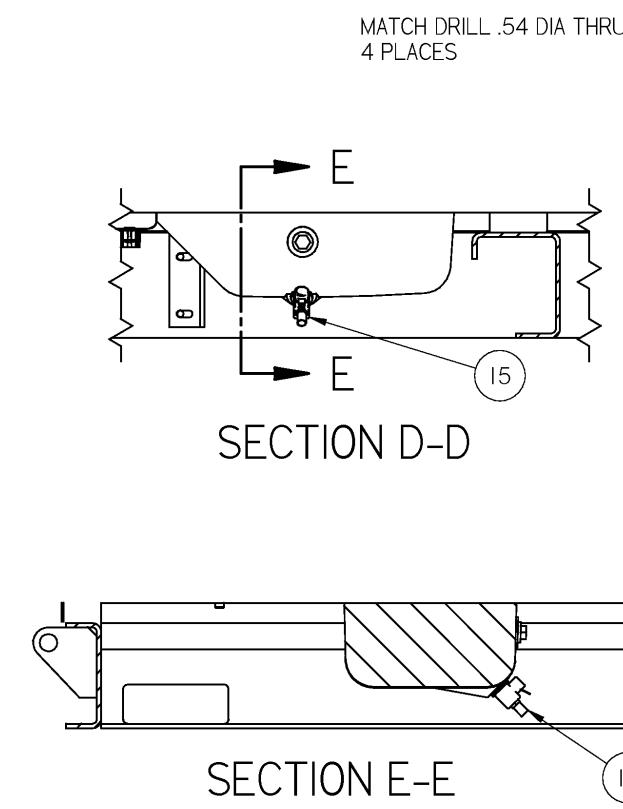
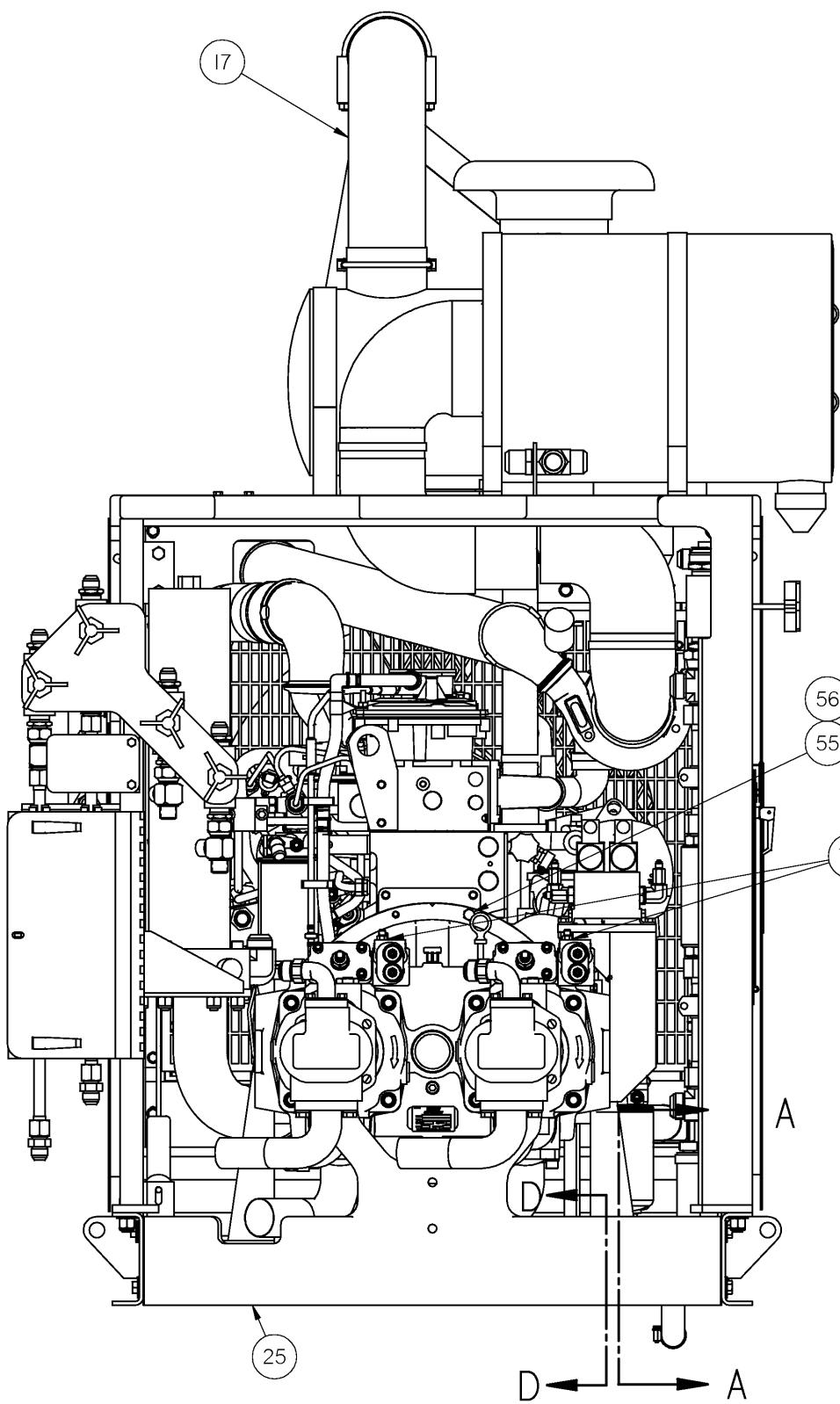


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ITEM NO. REF. NO./ NAME	QUANTITY	SIZE INCH [mm]	SIZE INCH [mm]	SIZE INCH [mm]	SIZE INCH [mm]	SIZE INCH [mm]	SIZE INCH [mm]	UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE AN INCH SURFACE FINISH OF 125 MICRON/INCHES OR EQUIVALENT. ANGULAR TOLERANCE OF ± 10° CONCENTRICITY WITHIN .005 INCH. UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS.	CHANGE R/L	DATE	Description
300351	A	27APR10									ENGINE SKID ASSEMBLY
300352	B	30MAY10									Machine Type
300374	C	20JUL10									Weight
											Date Drawn
											Drawn CTR
											Sheet 2 of 4
											SOLID EDGE DRAWING
											DO NOT SCALE

HARSCO
RAIL
2019238
Part Number
Size
D
Sheet
2 of 4

SECTION B-2

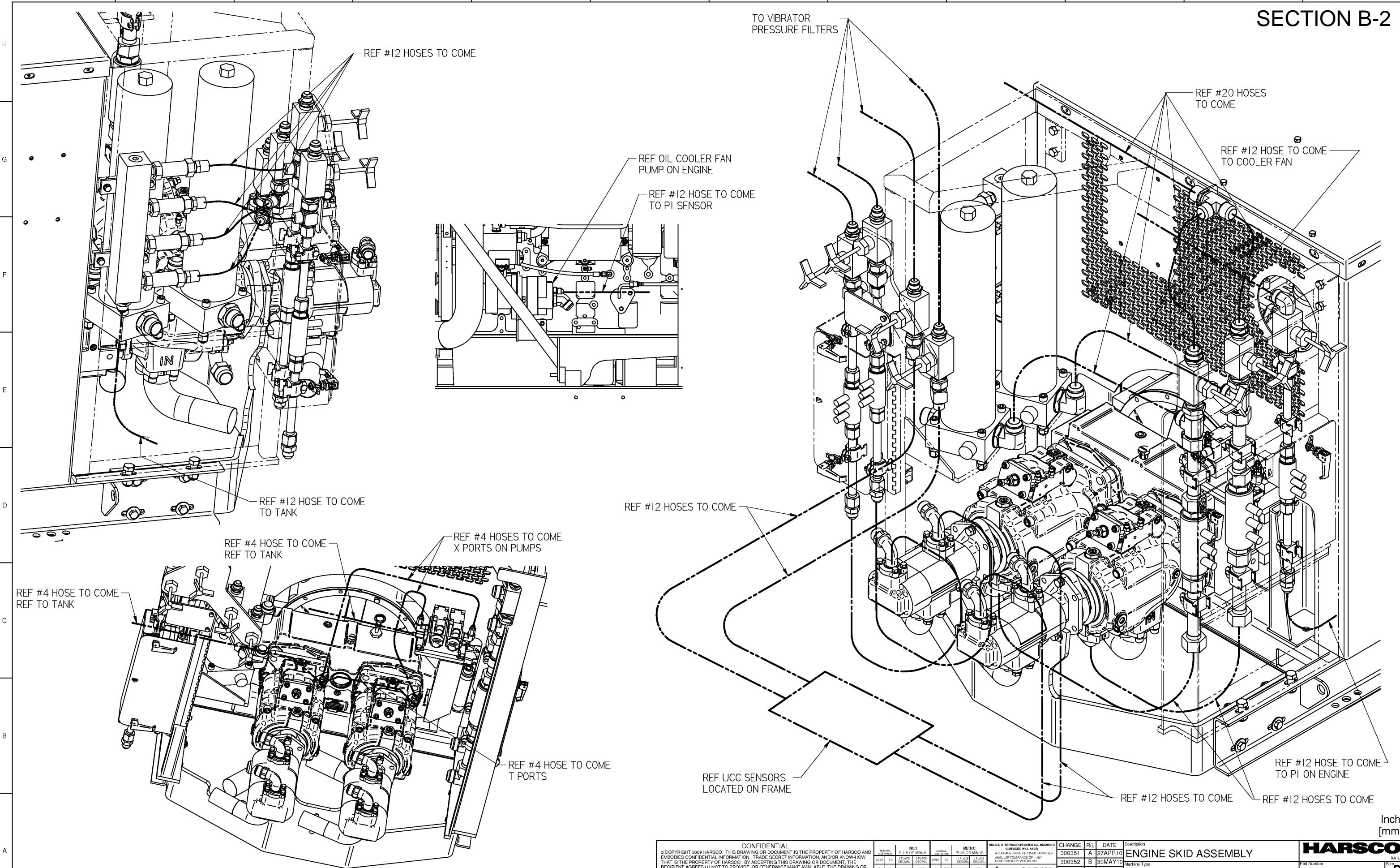


SECTION A-A

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CHARGE	R/L	DATE	Description
300351	A	27APR10	ENGINE SKID ASSEMBLY
300352	B	30MAY10	Machine Type
300374	C	20JUL10	Weight
SOLID EDGE DRAWING DO NOT SCALE			
HARSCO RAIL			
Part Number D 2019238 Sheet D 3 of 4			

SECTION B-2

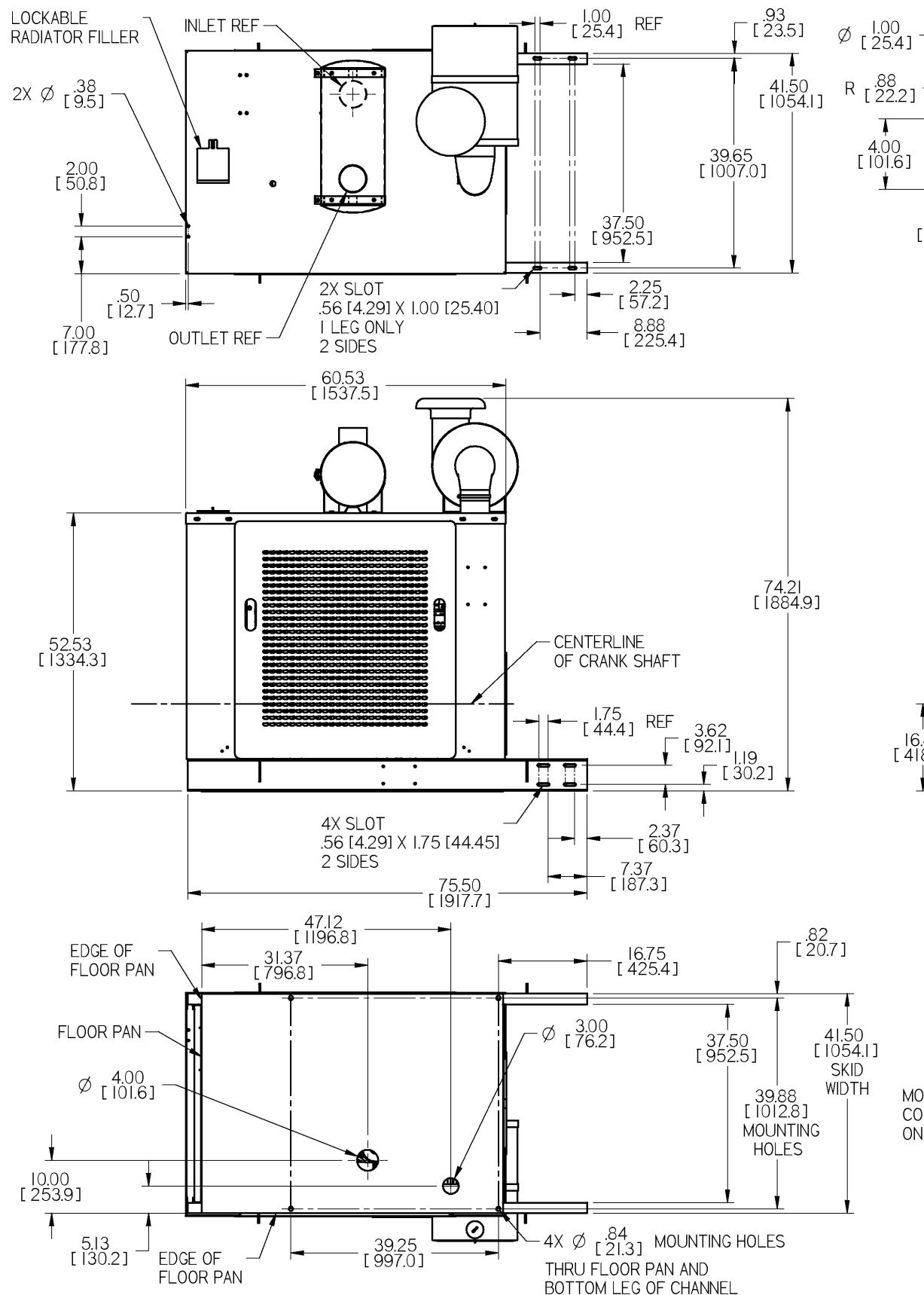


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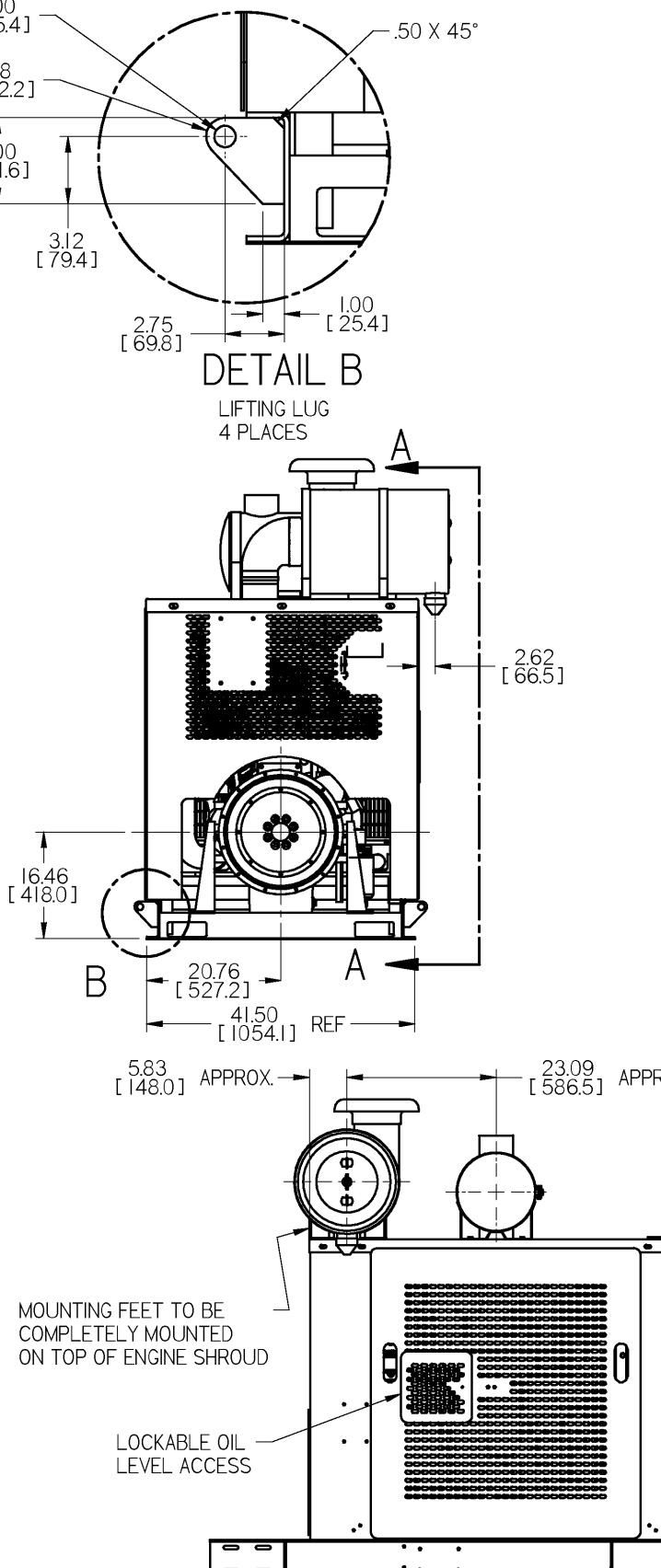
CHARGE	R/L	DATE	Description
300351	A	27APR10	ENGINE SKID ASSEMBLY
300352	B	30MAY10	Machine Type
300374	C	20JUL10	Weight
			Draen CTR Date Drawn 27APR10
			SOLID EDGE DRAWING DO NOT SCALE

HARSCO
RAIL
2019238
Sheet D
of 4

SECTION B-3



NOTE:
AIR FILTER AND MUFFLER ASSEMBLIES TO BE SHIPPED MOUNTED
IN CONFIGURATIONS AS SHOWN.



SECTION B-3

ENGINE OPTIONS:
CONFIG NO:--- D413055CX03
AH 9155-----AIR HEATER STARTING AID
AP 9455-----APPROVAL, AGENCY
BR 9215-----BREATHER, CRANK CASE
CC 9322-----PLUMBING, COMPRESSOR COOLANT
CH 9066-----AID, COOLANT HEATER STARTING (PLUG ONLY)
CI 9177-----ARRANGEMENT, COMPRESSOR AIR INLET
CONS 523-----ENGINE MODEL QSC 305HP
CP 9414-----COMPRESSOR, AIR
DF 9098-----DRIVE, FRONT GEAR TRAIN ACCESSORY
DL 9200-----LOCATION, FUEL DRAIN
DO90145-----ENGINE, CALIBRATION SOFTWARE
EH97425-----MOUNTING, ALTERNATOR (MOUNT, PULLEY, TENSIONER)3289470DRIVE BELT
EM 9305-----SUPPORT, FRONT ENGINE
FA 9322-----DRIVE, FAN (SUCTION FAN)
FF 9609-----FUEL FILTER (LEFT SIDE)
FH 9349-----HOUSING, FLYWHEEL SAE 2
FI 9048-----FUEL INLET FITTING
FR 91506-----RATING, FUEL
FW 9861-----FLYWHEEL
HC 9046-----PLUMBING, CAB HEATER (PLUG ONLY)
IC 9274-----AIR INTAKE HOSE
IC 9274-----AIR INTAKE HOSE
IC 9431-----AIR INTAKE HOSE
IC 9437-----AIR INTAKE HOSE
IT 9043-----CONNECTION, AIR
LA 9151-----ARRANGEMENT, LIFTING
LP-110-258---ALTERNATOR 24V, 175A
LF 9093-----FILTER, LUBRICATING OIL
LG 90252-----GAUGE, OIL LEVEL (DIPSTICK LEFT SIDE)
LT 9304-----CUMMINS PARTS CATALOG, ALSO OPERATIONS AND MAINTENANCE MANUAL
OB 9464-----ARRANGEMENT, OIL FILL (LEFT SIDE)
OP 9348-----PAN, OIL
PA 9001-----ACCESSORY DRIVE PULLEY
RP 9042-----RADIATOR PLUMBING
SK 9022-----SHIPPING ARRANGEMENT
SP 9077-----FAN PILOT SPACER (SUCTION FAN)
SP 9080-----SPACER, FAN (SUCTION FAN)
SP 9081-----SPACER, FAN (SUCTION FAN)
SS 9473-----PAINT
ST 9341-----MOTOR, STARTING
SV 9002-----OPERATING VOLTAGE
TB91057-----ARRANGEMENT, TURBOCHARGER
TK 9022-----COOLER, TORQUE CONVERTER OIL (FITTING ONLY)
VC 9156-----COVER, VALVE
WF 9122-----CORROSION RESISTOR
WI 9161-----CONNECTION, WATER INLET
WO 9052-----CONNECTION, WATER OUTLET
WR 9159-----WIRING FROM 100 PIN TO 23 PIN CONNECTOR
XS 9253-----CONNECTION, EXHAUST OUTLET
XX XXX----- SINGLE PIECE FAN SHROUD
XX XXX----- SINGLE CENTER CAM-STYLE DOOR LATCH
XX XXX----- LARGE GRAB HANDLES ON DOORS

SFF NOTE

VENDOR	SPECIFICATIONS
	<ul style="list-style-type: none"> <li data-bbox="2758 1615 3025 1634">▪ CUMMINS POWER UNIT 8.3 LITER QSC <li data-bbox="2758 1634 3045 1689">▪ ELECTRONIC CONTROL CHARGE AIR COOLED TIER III CERTIFIED <li data-bbox="2758 1689 3045 1721">▪ 305 HORSEPOWER @ 2200 RPM <li data-bbox="2758 1721 3045 1797">▪ COMPLETE WITH SKID, ENCLOSURE, RADIATOR/CHARGE AIR COOLER, MUFFLER, AND AIR CLEANER <li data-bbox="2758 1797 3045 1833">▪ SEE DRAWING FOR COMPLETE SPECIFICATIONS

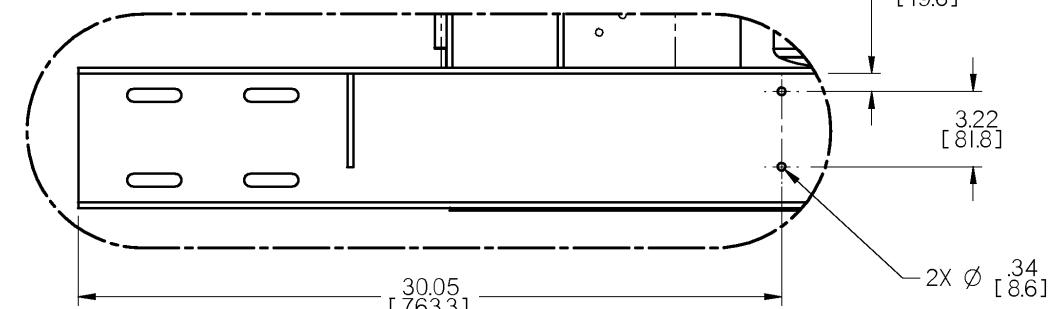
Inch
[mm]

The image shows a metal identification plate from ARSOCO RAIL. The top part features the company name "ARSOCO" in a large, bold, sans-serif font, with "RAIL" in a smaller font below it. A vertical line separates this from the bottom section. The bottom section contains the identification number "2019237" on the left and "Sheet D" on the right, where "D" is enclosed in a small rectangular box.

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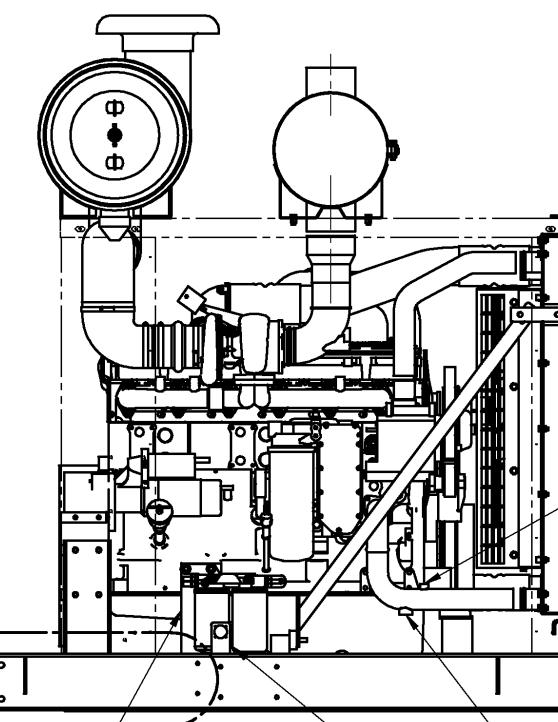
CONFIDENTIAL												HARSCO			
NUMBER OVER 225 HOURS	INCH		METRIC		UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE:		CHANGE 300351	R/L A	DATE 30APR10	Description			Part Number 2019237	Size D	
	2 PLACE DECIMAL	PLUS OR MINUS	2 PLACE DECIMAL	PLUS OR MINUS	OVER .001 TO .005	1 PLACE DECIMAL				A SURFACE FINISH OF NO MORE THAN ANGULAR TOLERANCE OF .50° CONCENTRICITY WITHIN .005"					
0 6	.03	.005	0	.150	8	.15				THIRD ANGLE PROJECTION			Machine Type *	Weight Drawn CTR 30APR10	
6 24	.04	.009	.150	.600	1.0	.20				UNLESS OTHERWISE SPECIFIED ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS					
24	.06	.010	.600	-	1.5	.25				SOLID EDGE DRAWING			DO NOT SCALE		
										Plotted by cross on 7/22/2010 2019237.dft			1 of 2		

12 11 10 9 8 7 6 5 4 3 2 1



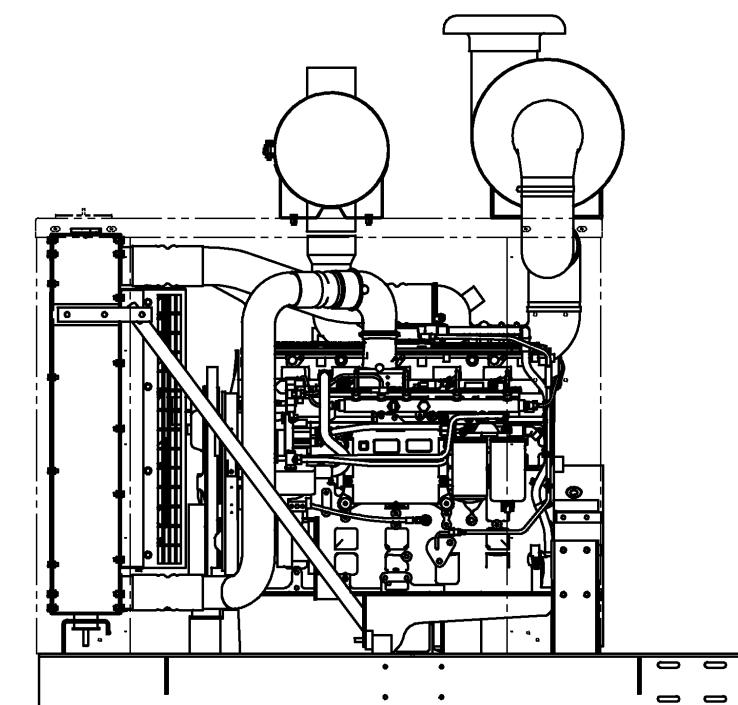
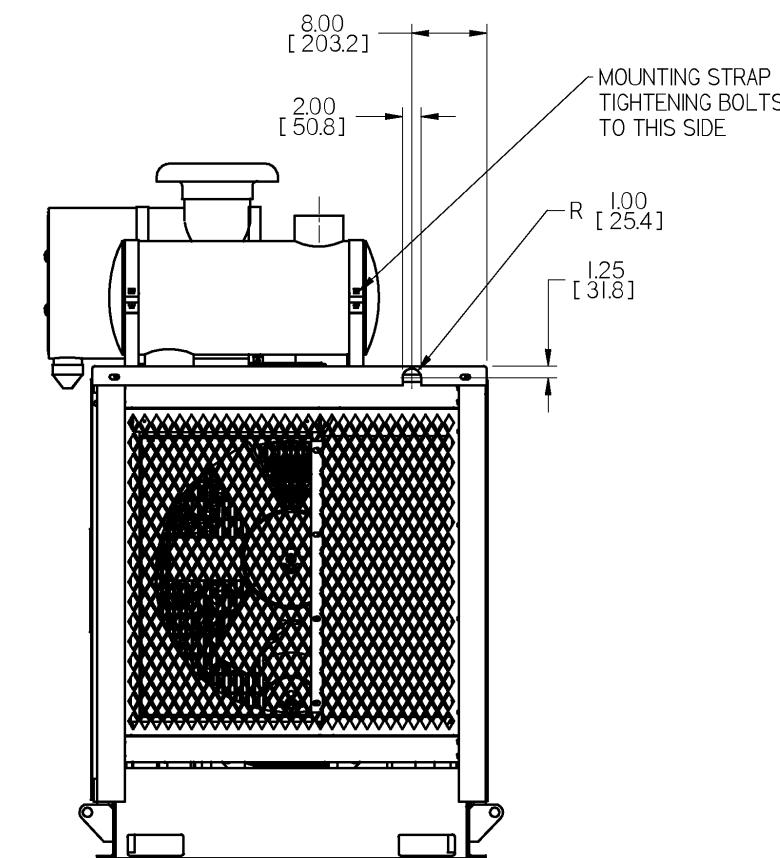
DETAIL C

SECTION B-3



APPROXIMATE LOCATION FOR
REMOTE FILTER MOUNT
SUPPLIER TO PROVIDE
MOUNTING CONFIGURATION

SOME ITEMS REMOVED
FOR CLARITY



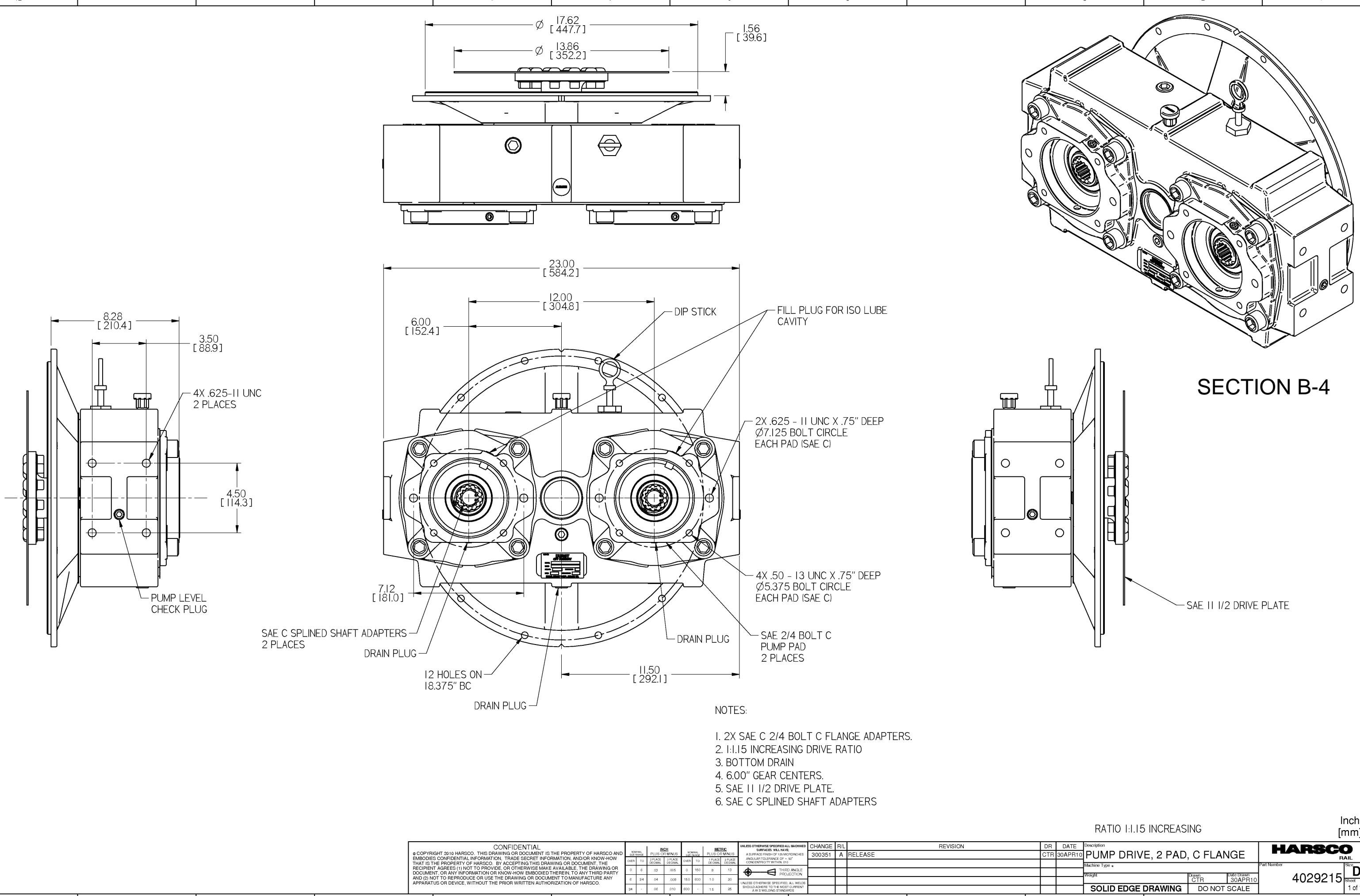
SOME ITEMS REMOVED
FOR CLARITY

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ITEM NO.	REF. NO.	DESCRIPTION	SIZE	DATE
300351	A	CUMMINS POWER UNIT	Inch [mm]	30APR10
300374	B	MACHINE TYPE *		21JUL10
		WEIGHT		
		DRAINED CTR		30APR10
		SOLID EDGE DRAWING		DO NOT SCALE

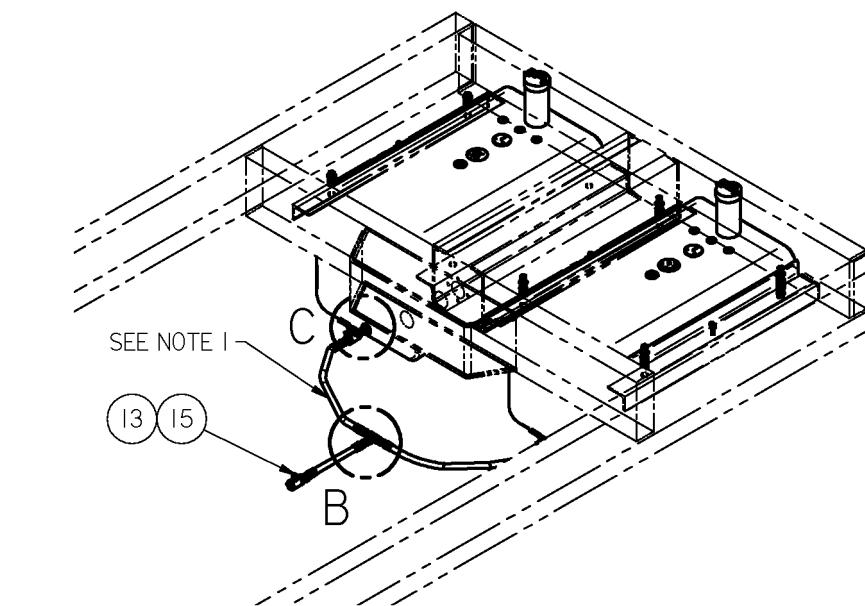
Sheet 2 of 2

2019237



ITEM NO	PART NO	DESCRIPTION	QTY
1	4017645	FUEL TANK, 24 X 24 X 44	2
2	F00I267	WROUGHT WASHER - .500	8
3	F014487	HEX ELASTIC STOP NUT .500-I3	8
4	F00I761	HHCS .500-I3X4.00	8
5	A0066006	EYE BOLT	4
6	414823	LIQUID LEVEL SENDER	1
7	0-3641000-0-20	COMPRESSION SPRING	8
8	F0I0580	DC-STR I6X16 NPT	4
9	F00I378	BUSHING, REDUCING I.00X.50	2
I0	F012503	TEE	1
I1	0-33300I1-0-01	I" PAD LOCKING BALL VALVE	2
I2	F014383	SWIVEL HOSE FITTING	6
I3	F0I0033	DC-STR I0X8NPT	6
I4	F024303	STR I6FS X I6NPT	2
I5	0-33300I9-0-08	BALL VALVE, I/2-I4 NPT	1
I6	I76I54	DC-STR I0FSX8NPT	2
I7	0-33300I1-0-07	BALL VALVE, I/2", BRASS, PAD LOCKING	2
I8	F0I4385	SWIVEL HOSE FITTING	2

SECTION B-5



NOTE:
I. FOR LINES, USE PART NO. F014374. CUT LENGTH
AS NEEDED.

AS NEEDED
NOTE:
2. FOR LINES, USE PART NO. F014376. CUT LENGTH
AS NEEDED

IN
[mm]

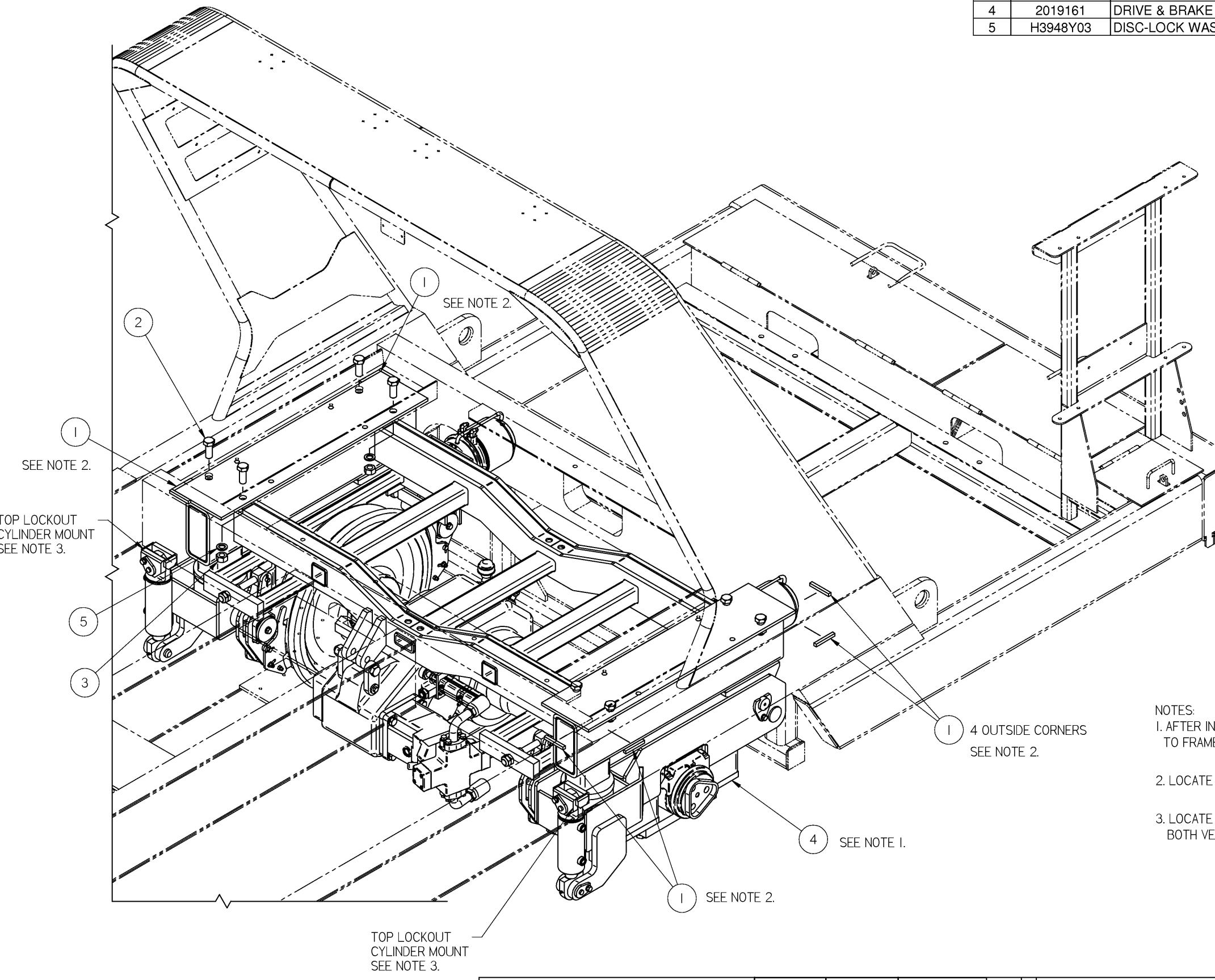
EDGE DRAWING

Section C

Drive Train, Suspension and Coupler

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	Z753210-070	KEY (GO4)	8	ea		
2	700571250	HEX HD CS 1-8X2 1/2 GR8 ZP	8	ea		
3	175372	HEX NUT 1-8 GR8 ZP	8	ea		
4	2019161	DRIVE & BRAKE INSTALLATION	1	ea		
5	H3948Y03	DISC-LOCK WASHER	8	ea		

SECTION C-1



NOTE

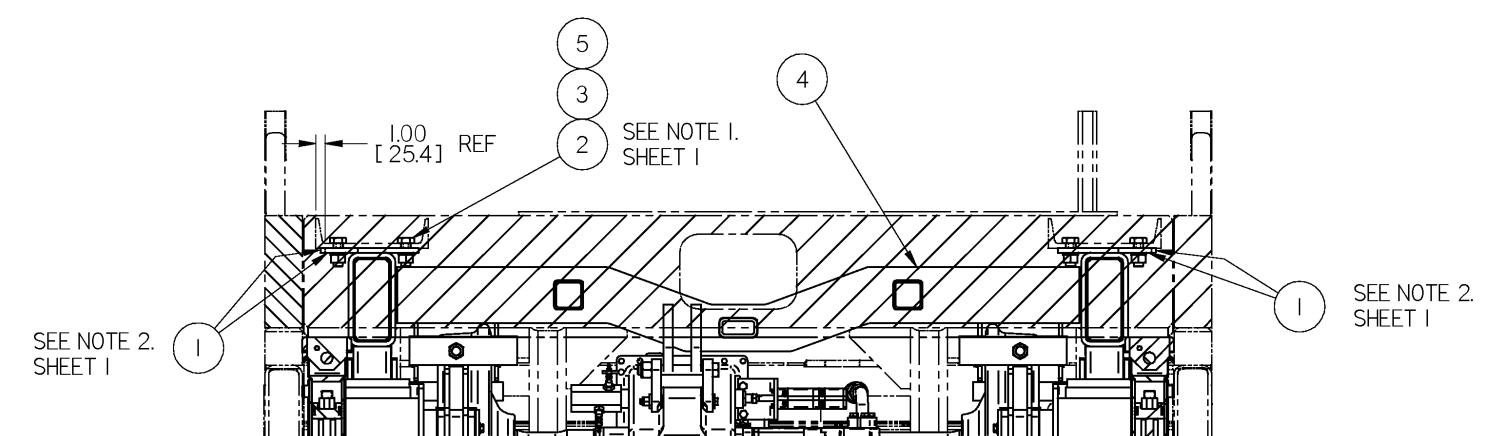
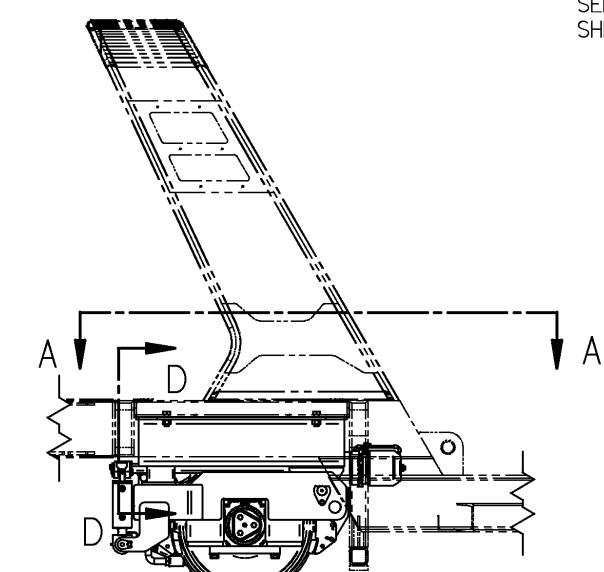
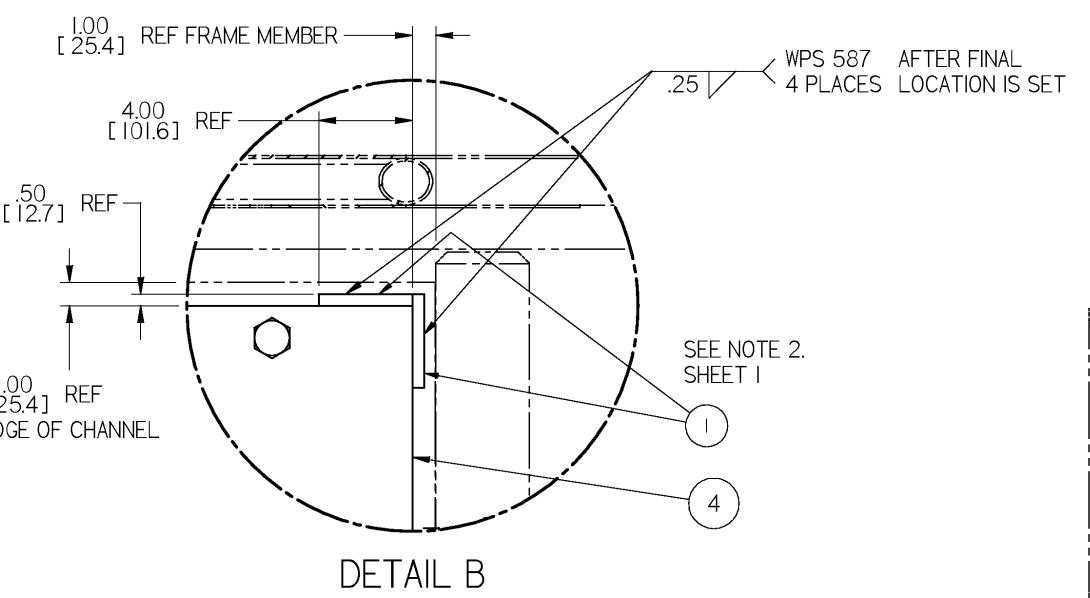
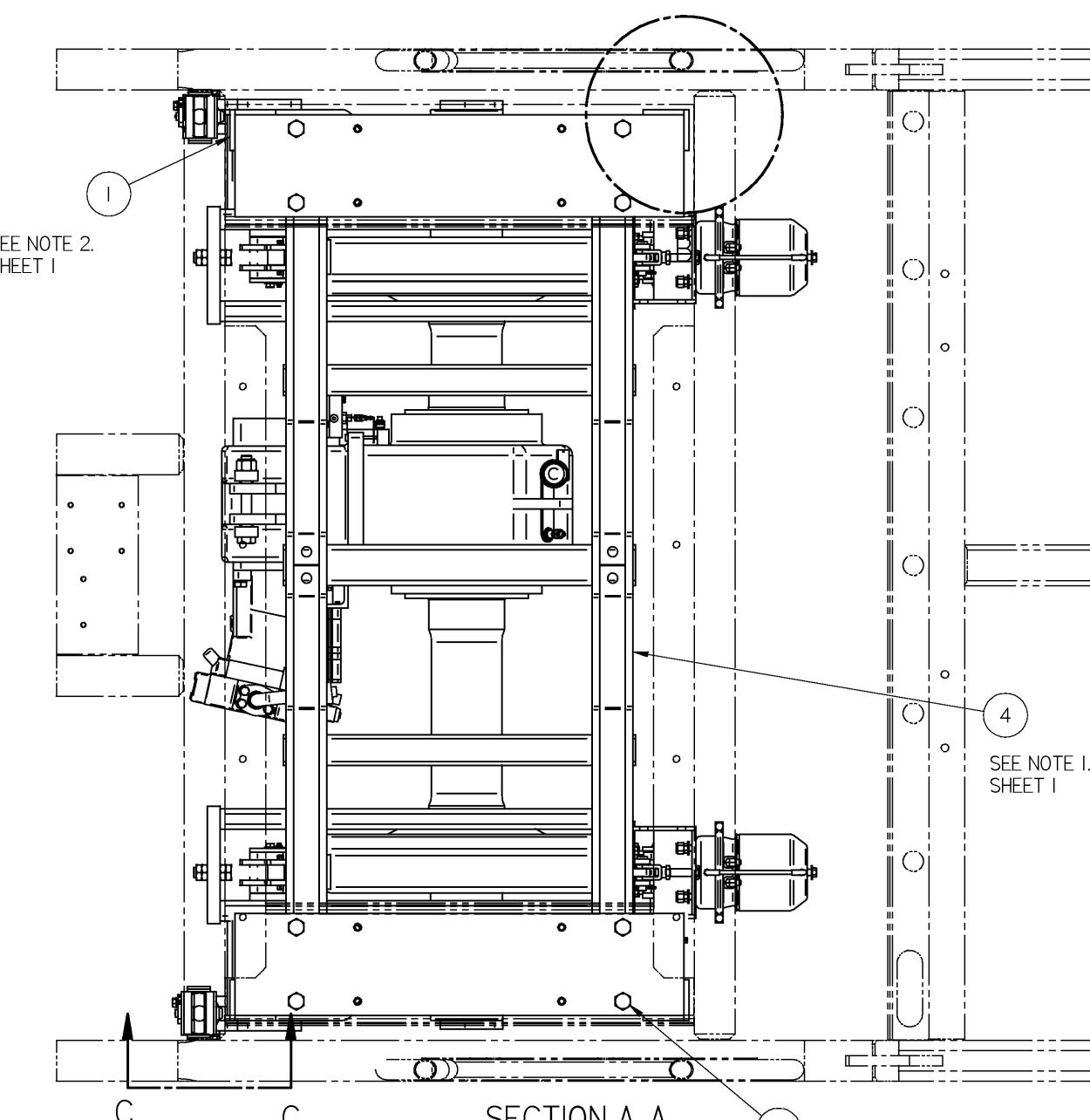
1. AFTER INSTALLING MOUNTING HARDWARE, ITEMS 2, 3, & 5, VERIFY TRUENESS OF AXLE TO FRAME CENTERLINE, TORQUE MOUNTING HARDWARE TO SPECIFIED VALUE.
 2. LOCATE ITEM 1 TO THE FOUR CORNERS AND WELD AS SPECIFIED
 3. LOCATE TOP LOCKOUT CYLINDER MOUNTAS SHOWN, VERIFY CYLINDER IS PLUMB IN BOTH VERTICAL PLANES BEFORE WELDING AS SPECIFIED.

TOP LOCKOUT
CYLINDER MOU
SEE NOTE 3.

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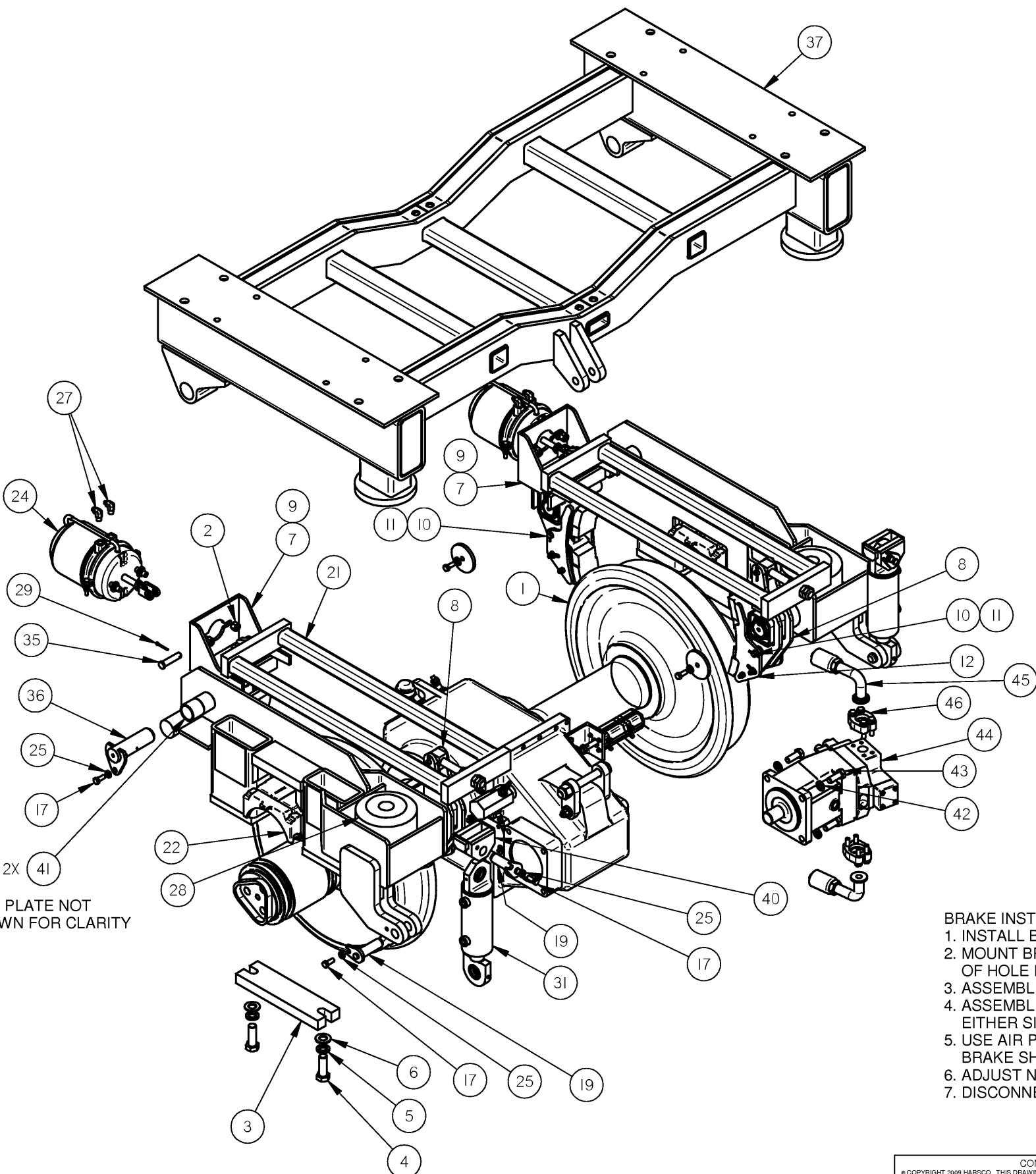
SECTION C-1



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DRIVE AXLE INSTALLATION												HARSCO
Part Number 2019404 Size D Sheet 2 of 2												
NOMINAL OVER TO	INCH PLUS OR MINUS 2 PLACES DECIMAL 0.005	INCH PLUS OR MINUS 3 PLACES DECIMAL 0.005	NOMINAL OVER TO	INCH PLUS OR MINUS 1 PLACE DECIMAL 0.100	INCH PLUS OR MINUS 2 PLACES DECIMAL 0.100	UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE A SURFACE FINISH OF 125 MICRONES ANGULAR TOLERANCE OF +/- 50' CONCENTRICITY WITHIN .015	CHANGE 300354	R/L A	REVISION RELEASE	DR CTR	DATE 1JULY10	Description
0	6 .03	0 .005	0	160 8	10 .13							Machine Type
6 .24	.04 .008	.005	150 600	1 .10	.20							Weight 0.0 lbm
24 .	.06 .010	.005	150 .	.15	.25	UNLESS OTHERWISE SPECIFIED ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S. WELDING STANDARDS						Drawn CTR Date Drawn 6/30/2010

SECTION C-2



BRAKE INSTALLATION:

1. INSTALL BRAKE ARMS (REF 7 & 8) ON BRAKE PIVOT SHAFTS WITH KEYS (REF 9) AND RETAINER PLATES (REF 16).
2. MOUNT BRAKE CHAMBER (REF 24) ON BRAKE ARM (REF 7). DIMENSION BETWEEN FRONT SURFACE OF BRAKE CHAMBER AND CENTER OF HOLE IN CLEVIS SHOULD BE 5.25 WITH ROD RETRACTED. TIGHTEN BRAKE RELEASE BOLT TO 40-45 FT-LBS.
3. ASSEMBLE BRAKE BEAM (REF 21) & RESTRICTOR BAR (REF 34) TO BRAKE CHAMBER WITH PIN (REF 35).
4. ASSEMBLE ADJUSTING SCREW (REF 33) TO OPPOSITE END OF BRAKE BEAM USING (2) JAM NUTS (REF 26) ON EITHER SIDE OF BEAM. ATTACH ADJUSTING SCREW TO BRAKE ARM (REF 8) WITH PIN (REF 30).
5. USE AIR PRESSURE TO RETRACT BRAKE CHAMBER ROD AND INSTALL BRAKE SHOE HOLDERS (REF 12 & 20) AND BRAKE SHOES (REF 15). FLANGE SIDE OF BRAKE SHOE HOLDERS MUST BE TOWARDS OUTSIDE OF MACHINE.
6. ADJUST NUTS ON ADJUSTING SCREW (REF 33) TO OBTAIN A GAP OF .06 BETWEEN THE WHEEL AND BRAKE SHOE AND TIGHTEN.
7. DISCONNECT AIR PRESSURE FROM BRAKE CHAMBER.

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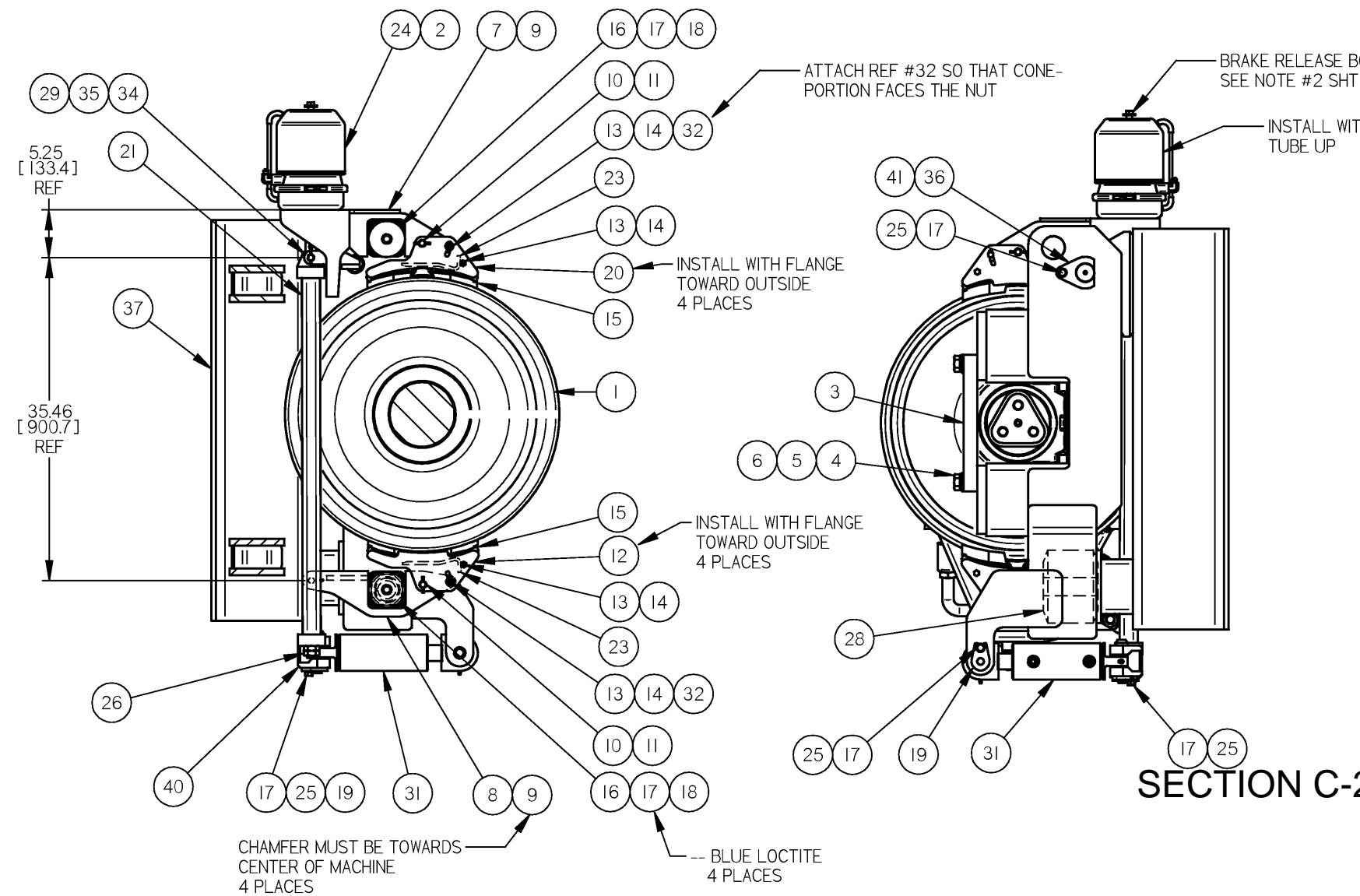
REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	2019160	DRIVE AXLE SUB-ASSEMBLY	1	ea		
2	F012452	DC-5/8 ELASTIC STOP NUT	4	ea		
3	219067-1	TIE PLATE	2	ea		
4	183743	HEX HD CS 1-8X3 GR8 ZP	4	ea		
5	F001657	SAE RGLR LOCK WASHER 1" ZP	4	ea		
6	183744	HARDENED WASHER	4	ea		
7	330871-1	BRAKE ARM WELD	2	ea		
8	330872-1	BRAKE ARM ASSY	2	ea		
9	222947-1	KEY	4	ea		
10	112496-1	PIN	4	ea		
11	F012413	SPRING PIN 3/16 X 1 3/4	8	ea		
12	314075-1	SHOE HOLDER WELD.LH SEE TEXT	2	ea		
13	F001530	DC-HEX HD CAP SCR 3/8-16X5 GR5	8	ea		
14	F015922	DC-3/8-16 ELASTIC STOP NUT *	8	ea		
15	218045-1	BRAKE SHOE	4	ea		
16	222938-1	RETAINER-BRAKE ARM	4	ea		
17	F001539	DC-HEX HD CAP SCR 1/2-13X1 1/4	10	ea		
18	F002965	DC-SAE WASHER 1/2 ZP *	4	ea		
19	217959-2	TEARDROP PIN- 1.250 DIA	4	ea		
20	314076-1	SHOE HOLDER WELD.RH SEE TEXT	2	ea		
21	314011-1	BRAKE BEAM WELD	2	ea		
22	411214-1	BEAR.ADAPTOR-MACHND	2	ea		
23	112482-1	BRAKE SHOE RETAINER	4	ea		
24	350886-1	AIR BRAKE CHAMBER	2	ea		
25	H3948Y05	DISC LOCK WASHER	6	ea		
26	F001506	HEX JAM NUT 1"-8 GR2 ZP	8	ea		
27	F020522	DC-ELB90 6X6NPT	4	ea		
28	250741-1	RUBBER SPRING	2	ea		
29	F001324	DC-3/16 X 1 1/2 COTTER PIN *	6	ea		
30	217282-1	PIN	2	ea		
31	330840-1	CYLINDER- HYD.SERV.USE172196-1	2	ea		
32	F019282	SPRING WASHER	4	ea		
33	223021-1	ADJ.SCREW-BRAKE	2	ea		
34	222323-1	RESTRICT. BAR	2	ea		
35	222324-1	PIN-RESTRICT BAR	2	ea		
36	2011912	PIN WELDMENT	2	ea		
37	2019367	TRUCK FRAME WELDMENT	1	ea		
38	2019386	MTG BRKT RH DR AXLE	1	ea		
39	2019394	MTG BRKT LH DR AXLE	1	ea		
40	2019400	TOP MOUNT WELDMENT	2	ea		
41	254740-1	BUSHING-STEEL 2.00 ID X 2.375	4	ea		
42	F001354	DC-SAE RGLR LOCK WASHER 3/4 ZP	4	ea		
43	F007985	HHCS 3/4-10 X 2 GR5 ZP	4	ea		
44	4029264	MOTOR, VAR. DISP.	1	ea		
45	414908	HOSE END 90 DEGREE SF	2	ea		
46	F040260	SPLIT FLANGE KIT	2	ea		

REF	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	2019160	DRIVE AXLE SUB-ASSEMBLY	1	ea		
2	F012452	DC-5/8 ELASTIC STOP NUT	4	ea		
3	219067-1	TIE PLATE	2	ea		
4	183743	HEX HD CS 1-8X3 GR8 ZP	4	ea		
5	F001657	SAE RGLR LOCK WASHER 1" ZP	4	ea		
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7	330871-1	BRAKE ARM WELD	2	ea		
8	330872-1	BRAKE ARM ASSY	2	ea		
9	222947-1	KEY	4	ea		
10	112496-1	PIN	4	ea		
11	F012413	SPRING PIN 3/16 X 1 3/4	8	ea		
12	314075-1	SHOE HOLDER WELD.LH SEE TEXT	2	ea		
13	F001530	DC-HEX HD CAP SCR 3/8-16X5 GR5	8	ea		
14	F015922	DC-3/8-16 ELASTIC STOP NUT *	8	ea		
15	218045-1	BRAKE SHOE	4	ea		
16	222938-1	RETAINER-BRAKE ARM	4	ea		
17	F001539	DC-HEX HD CAP SCR 1/2-13X1 1/4	10	ea		
18	F002965	DC-SAE WASHER 1/2 ZP *	4	ea		
19	217959-2	TEARDROP PIN- 1.250 DIA	4	ea		
20	314076-1	SHOE HOLDER WELD.RH SEE TEXT	2	ea		
21	314011-1	BRAKE BEAM WELD	2	ea		
22	411214-1	BEAR.ADAPTOR-MACHND	2	ea		
23	112482-1	BRAKE SHOE RETAINER	4	ea		
24	350886-1	AIR BRAKE CHAMBER	2	ea		
25	H3948Y05	DISC LOCK WASHER	6	ea		
26	F001506	HEX JAM NUT 1"-8 GR2 ZP	8	ea		
27	F020522	DC-ELB90 6X6NPT	4	ea		
28	250741-1	RUBBER SPRING	2	ea		
29	F001324	DC-3/16 X 1 1/2 COTTER PIN *	6	ea		
30	217282-1	PIN	2	ea		
31	330840-1	CYLINDER- HYD.SERV.USE172196-1	2	ea		
32	F019282	SPRING WASHER	4	ea		
33	223021-1	ADJ.SCREW-BRAKE	2	ea		
34	222323-1	RESTRICT. BAR	2	ea		
35	222324-1	PIN-RESTRICT BAR	2	ea		
36	2011912	PIN WELDMENT	2	ea		
37	2019367	TRUCK FRAME WELDMENT	1	ea		
38	2019386	MTG BRKT RH DR AXLE	1	ea		
39	2019394	MTG BRKT LH DR AXLE	1	ea		
40	2019400	TOP MOUNT WELDMENT	2	ea		
41	254740-1	BUSHING-STEEL 2.00 ID X 2.375	4	ea		
42	F001354	DC-SAE RGLR LOCK WASHER 3/4 ZP	4	ea		
43	F007985	HHCS 3/4-10 X 2 GR5 ZP	4	ea		
44	4029264	MOTOR, VAR. DISP.	1	ea		
45	414908	HOSE END 90 DEGREE SF	2	ea		
46	F040260	SPLIT FLANGE KIT	2	ea		

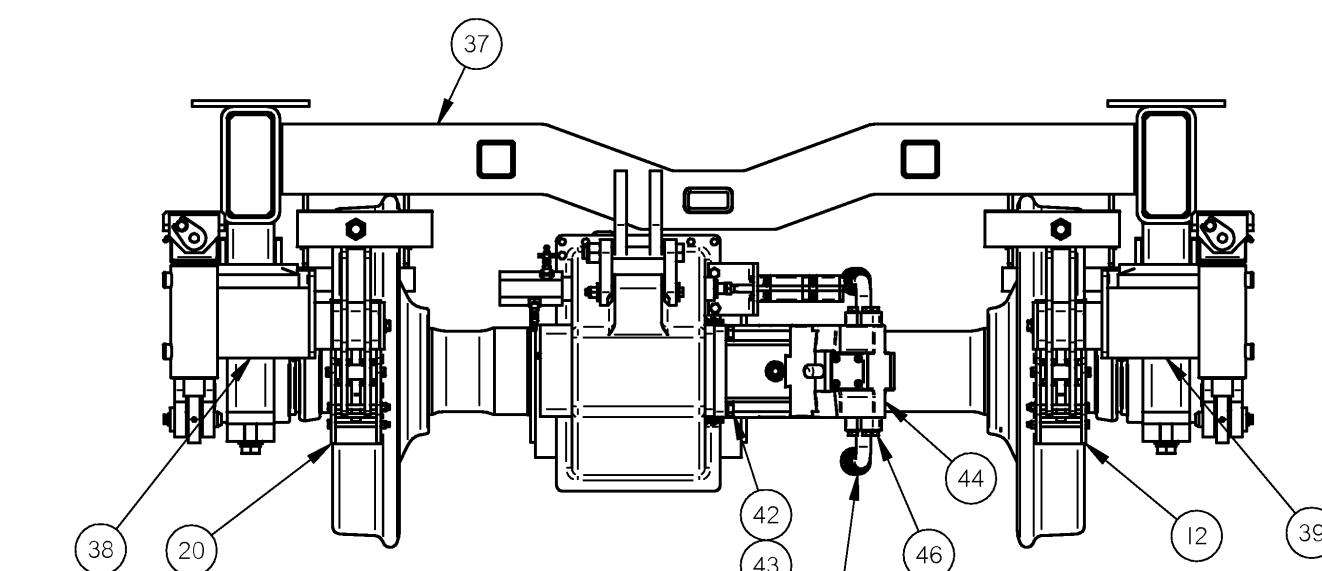
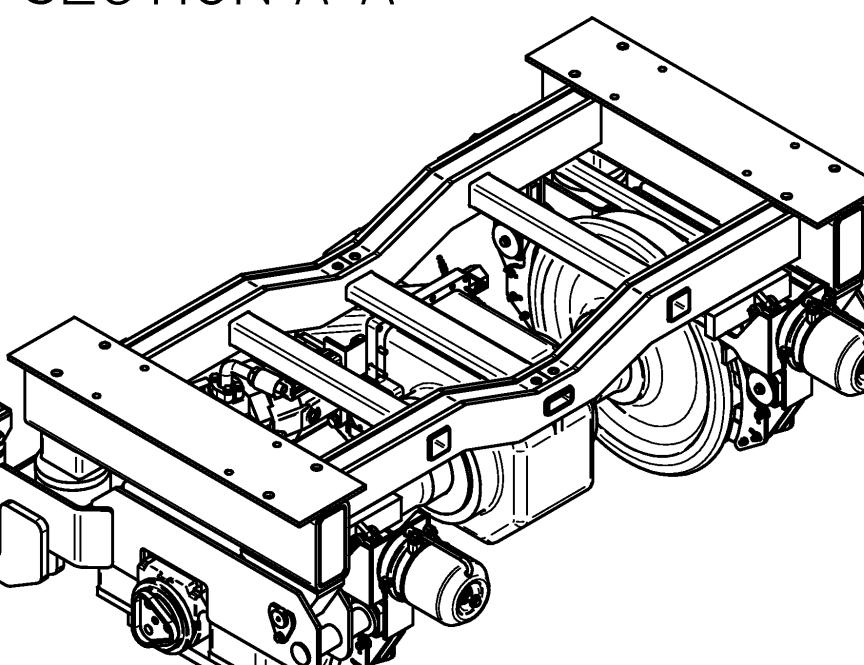
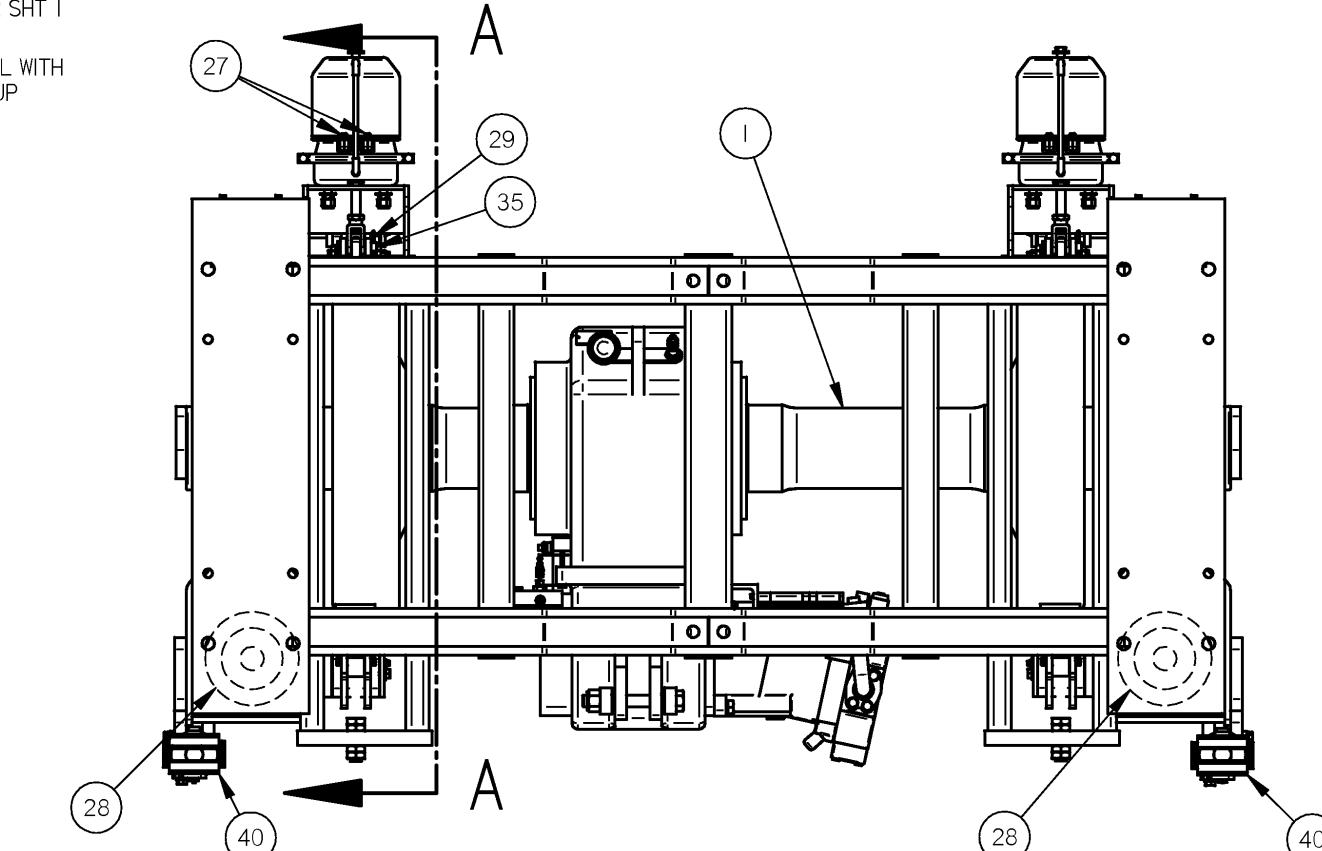
Inch
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HARSCO
RAIL
2019161
Sheet 1 of 2

SECTION C-2



SECTION C-2



SIMILAR TO 2013623

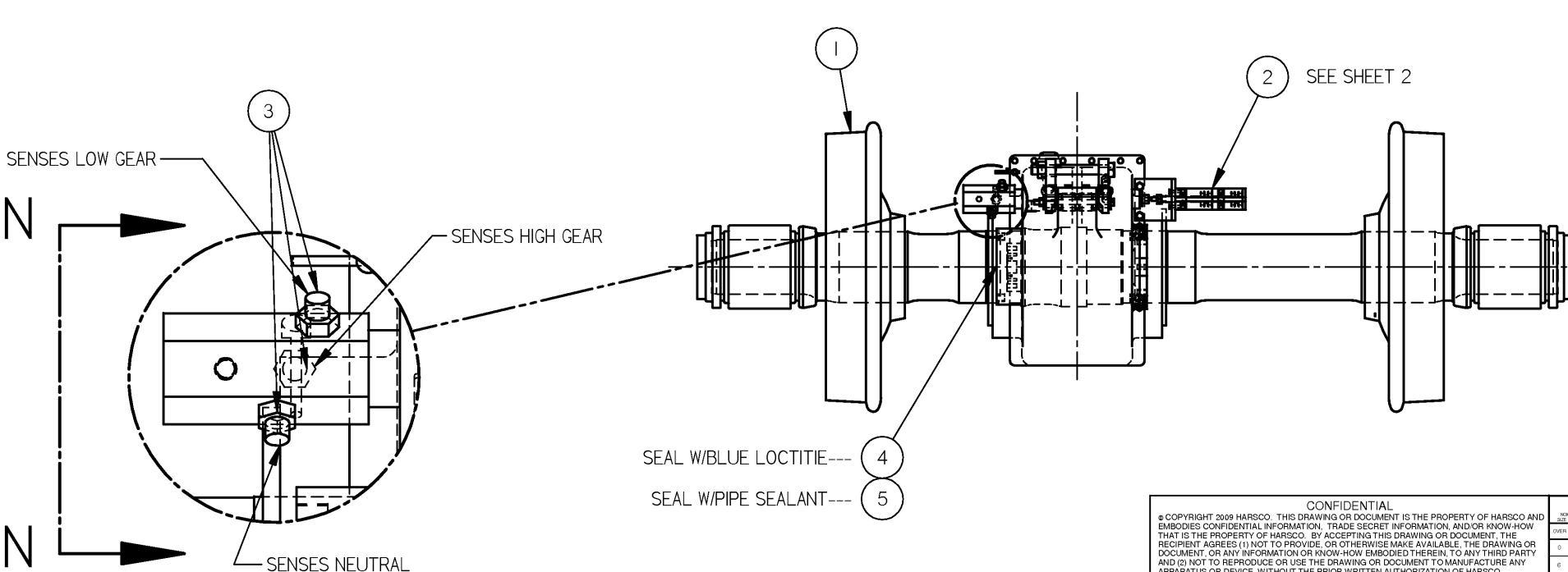
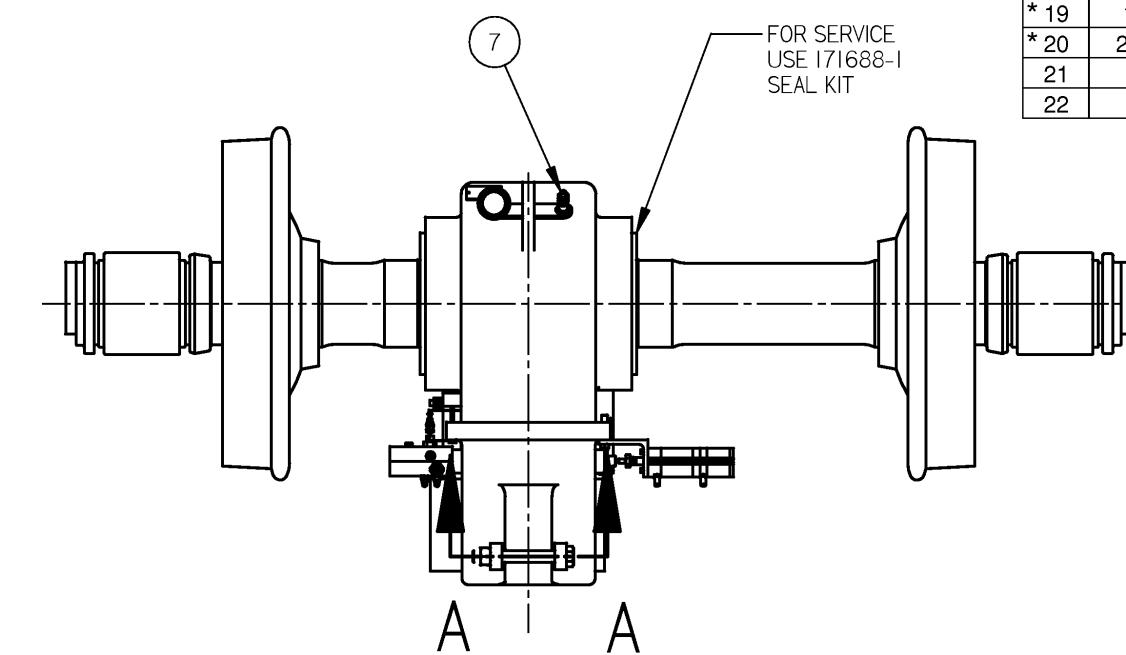
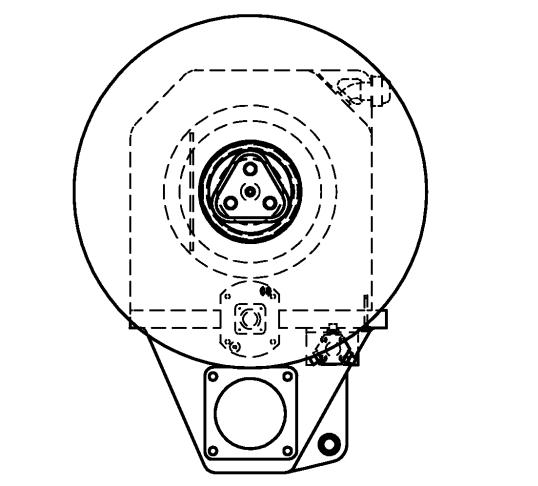
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ITEM NUMBER	DESCRIPTION	SIZE INCH [mm]	SIZE METRIC [mm]	UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE AN INCH SURFACE FINISH OF 125 MICRON/INCHES OR EQUIVALENT. ANGULAR TOLERANCE OF + 10° CONCENTRICITY WITHIN .005 INCH. UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS.	CHANGE NUMBER	R/L	DATE	Part Number	Size inch [mm]
300347	A	19MAR10		DRIVE & BRAKE ASSEMBLY				HARSCO	
300354	B	29JUN10		Machine Type					
				Weight 3900.3 lbm					
				Drawn CTR					
				Date Drawn 19MAR10					
				SOLID EDGE DRAWING					
				DO NOT SCALE					

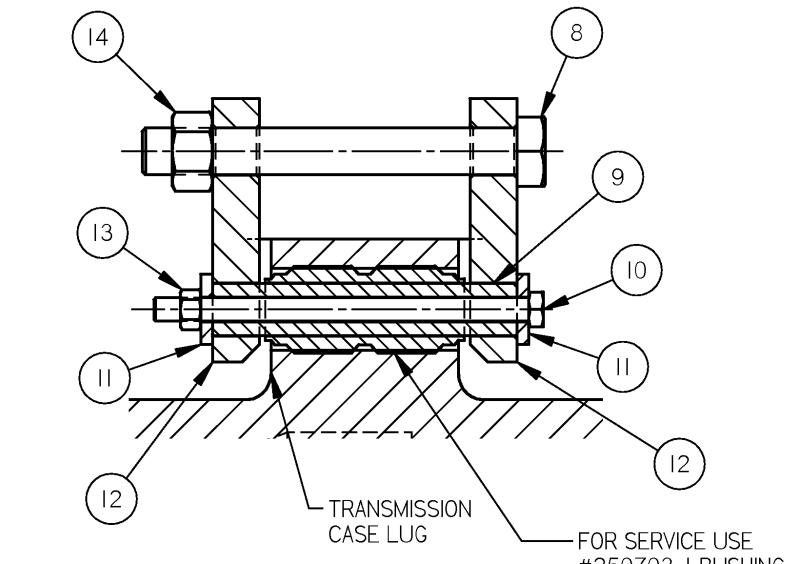
12	11	10	9	8	7	6	5	4	3	2	1
H											H
G	SPEED SENSOR (REF #7) INSTALLATION:										G
F	THE AIR GAP BETWEEN THE GEAR AND THE PICKUP MUST BE SET FOR .048 TO .062. THIS CAN BE SET BY TURNING IN THE PICKUP UNTIL IT TOUCHES THE GEAR O.D. AND THEN SCREW OUT THE PICKUP 3/4 TO 1 TURN TO OBTAIN .048 TO .062										F
E											E
D											D
C											C
B											B
A											A

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	2019159	DRIVE AXLE ASSEMBLY	1	ea		
2	2013625	AIR CYLINDER - DOUBLE	1	ea		
3	2000770	SENSOR-PROX.	3	ea		
4	220782-1	ADAPTER, SPECIAL	1	ea		
* 5	391	PLUG- SQ HD, .38-18 NPT BLACK	0	ea		QTY 1
6	2019164	KIT-HDWR, DRIVE SUB-ASSM	1	ea		
7	2006509	SPEED SENSOR	1	ea		
* 8	250010-552	SCREW-HHC, 1.00-14UNS X 8.00 L	0	ea		QTY 1
9	222221-1	BUSHING-STEEL .53 ID X 1.124 O	1	ea		
* 10	250010-270	SCREW-HHC, .50-20 X 8.00 LG	0	ea		QTY 1
11	MT223-B	WASHER	2	ea		
12	220378-1	LINK	2	ea		
* 13	153140-820	LOCKNUT- GRADE 5, .50-20	0	ea		QTY 1
* 14	153140-1614	LOCKNUT- GRADE 5, 1.00-14	0	ea		QTY 1
* 15	150129-3	ADAPTER STRT - 2NPT X 4JIC	0	ea		QTY 4
16	2013624	MOUNTING BRACKET-TRANSMISSION SHIFT C	1	ea		
* 17	250630-48	SCREW-SOC HD CAP, M6X1.0 F X 2	0	ea		QTY 4
* 18	250648-6	WASHER- LOCK, M6	0	ea		QTY 4
* 19	150964-14	NUT- HEX JAM, .62-18	0	ea		QTY 1
* 20	252272-225	SCREW-HHC, GRADE 8, .50-13 X 2	0	ea		QTY 2
21	253123-2	CORDSET, INDUCT.PROX.FEM	3	ea		
22	2019163	KIT-DRIVE AXLE SUB-ASSM	1	ea		

SECTION C-3



NOTE:
*ALL HARDWARE INCLUDED IN KIT-HDWR, DRIVE
SUB-ASSM (PART NO. 2019164) & KIT-DRIVE AXLE
SUB-ASSM (PART NO. 2019163).



SECTION A-A

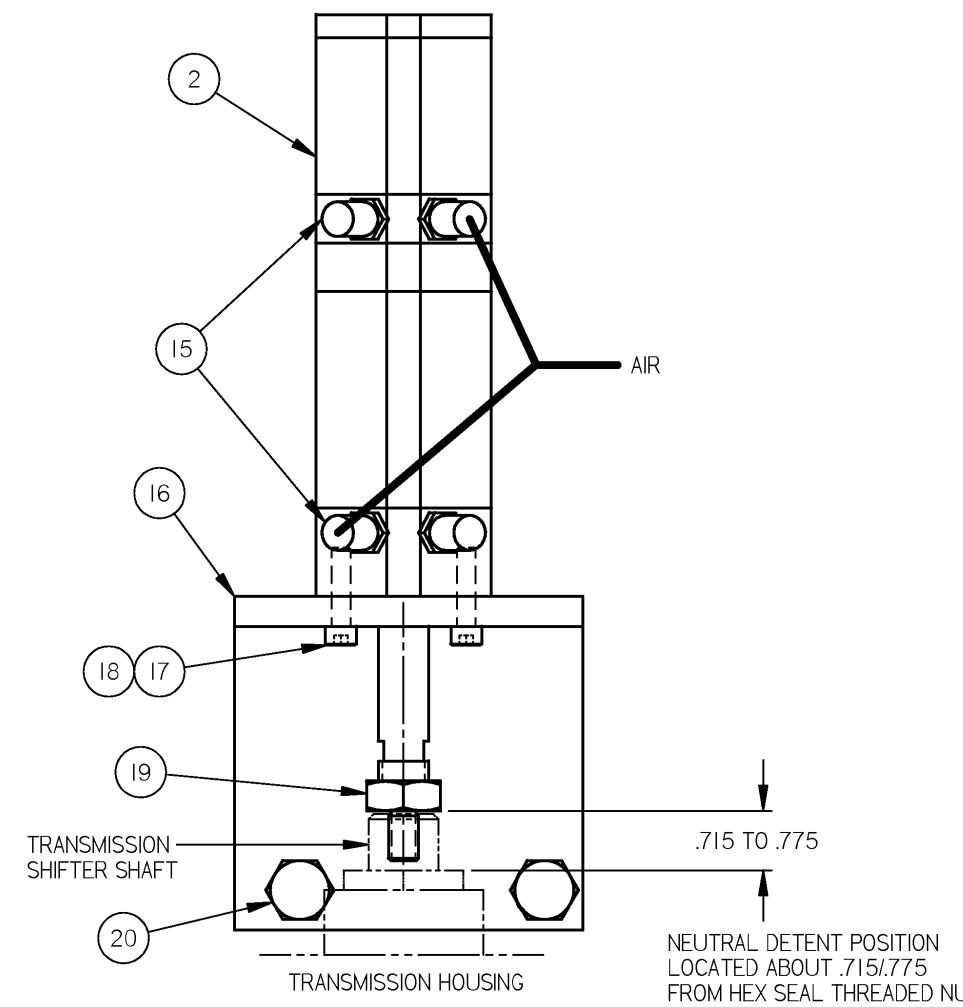
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REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
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2	2013625	AIR CYLINDER - DOUBLE	1	ea		
3	2000770	SENSOR-PROX.	3	ea		
4	220782-1	ADAPTER, SPECIAL	1	ea		
* 5	391	PLUG- SQ HD, .38-18 NPT BLACK	0	ea		QTY 1
6	2019164	KIT-HDWR, DRIVE SUB-ASSM	1	ea		
7	2006509	SPEED SENSOR	1	ea		
* 8	250010-552	SCREW-HHC, 1.00-14UNS X 8.00 L	0	ea		QTY 1
9	222221-1	BUSHING-STEEL .53 ID X 1.124 O	1	ea		
* 10	250010-270	SCREW-HHC, .50-20 X 8.00 LG	0	ea		QTY 1
11	MT223-B	WASHER	2	ea		
12	220378-1	LINK	2	ea		
* 13	153140-820	LOCKNUT- GRADE 5, .50-20	0	ea		QTY 1
* 14	153140-1614	LOCKNUT- GRADE 5, 1.00-14	0	ea		QTY 1
* 15	150129-3	ADAPTER STRT - 2NPT X 4JIC	0	ea		QTY 4
16	2013624	MOUNTING BRACKET-TRANSMISSION SHIFT C	1	ea		
* 17	250630-48	SCREW-SOC HD CAP, M6X1.0 F X 2	0	ea		QTY 4
* 18	250648-6	WASHER- LOCK, M6	0	ea		QTY 4
* 19	150964-14	NUT- HEX JAM, .62-18	0	ea		QTY 1
* 20	252272-225	SCREW-HHC, GRADE 8, .50-13 X 2	0	ea		QTY 2
21	253123-2	CORDSET, INDUCT.PROX.FEM	3	ea		
22	2019163	KIT-DRIVE AXLE SUB-ASSM	1	ea		

Inch
[mm]

HARSCO
RAIL
Part Number 2019160
Sheet D
1 of 2

SECTION C-3



DETAIL OF AIR SHIFT ASSEMBLY

ASSEMBLY NOTES TO ADJUST DETENT:

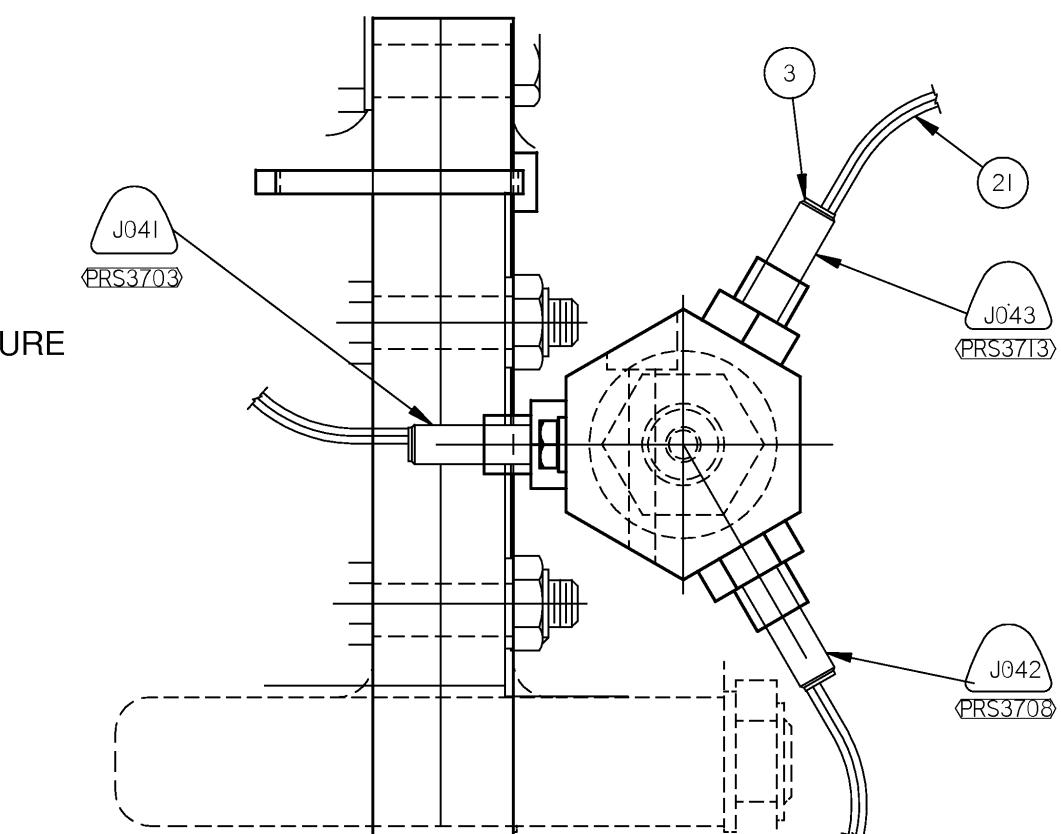
1. PLACE TRANSMISSION IN NEUTRAL GEAR
2. ADJUST HIGH GEAR DETENT SO THAT DETENT TIP JUST CONTACTS SHIFT SHAFT
3. TURN IN 3/4 TURN (.068 IN/1.7 MM)
4. TIGHTEN JAM NUT TO 75 FT-LB (102 Nm) MAX ENSURE THAT DETENT DOES NOT TURN WHEN TIGHTING JAM NUT
5. REPEAT FOR LOW GEAR DETENT WHILE IN NEUTRAL GEAR
6. SHIFT TO EITHER HIGH OR LOW GEAR. REPEAT STEPS 2 THROUGH 4 FOR NEUTRAL DETENT.
7. SHIFT THROUGH THE 3 POSITIONS TWO OR THREE TIMES TO ENSURE SMOOTH SHIFTING

TRANSMISSION SHIFT CYLINDER INSTALLATION

- 1) PLACE TRANSMISSION SHIFT SHAFT IN THE NEUTRAL DETENT POSITION. SEE VIEW WITH APPROXIMATE DIMENSION. NEUTRAL DETENT MAY NEED TO BE ADJUSTED IN TO INSURE DETENT IS SEATED AND SHIFT SHAFT HAS MINIMAL MOVEMENT
- 2) INSTALL MOUNTING BRACKET (REF #16) ON TO TRANSMISSION, LEAVING BOLTS LOOSE.
- 3) INSTALL JAM NUT (REF #19) ON TO CYLINDER ROD.
- 4) APPLY BLUE LOCTITE 242 ON TO 3/8-24 THREADS OF CYLINDER ROD AND THREAD AGAINST SHIFT SHAFT.
- 5) APPLY BLUE LOCTITE 242 TO 5/8-18 THREADS OF CYLINDER ROD AND TIGHTEN AGAINST SHIFT SHAFT.
- 6) APPLY BLUE LOCTITE 242 TO CYLINDER MOUNTING SCREWS (REF #17) AND MOUNT CYLINDER TO MOUNT BRACKET WITH LOCKWASHER (REF #18).
- 7) PUT AIR CYLINDER IN NEUTRAL POSITION BY APPLYING AIR TO PORTS SHOWN ON DRAWING.
- 8) TIGHTEN MOUNTING BRACKET BOLTS.

PROX SWITCH (REF 3) SETTING PROCEDURE

1. PLACE TRANSMISSION IN NEUTRAL
2. INSTALL REF 3 PROX SWITCH INTO NEUTRAL SWITCH LOCATION UNTIL IT CONTACTS THE INTERNAL SHIFT SHAFT MECHANISM
3. BACK OUT 1 TURN (1...039 IN)
4. LOCTITE IN PLACE (BLUE) AND TIGHTEN JAMNUT TO 4 FT. LBS MAX.
5. SHIFT TRANSMISSION TO HIGH AND LOW AND REPEAT STEPS 3 AND 4.



VIEW N-N

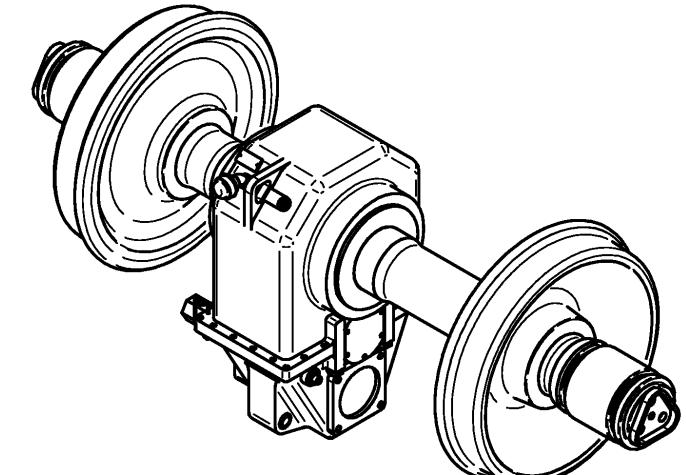
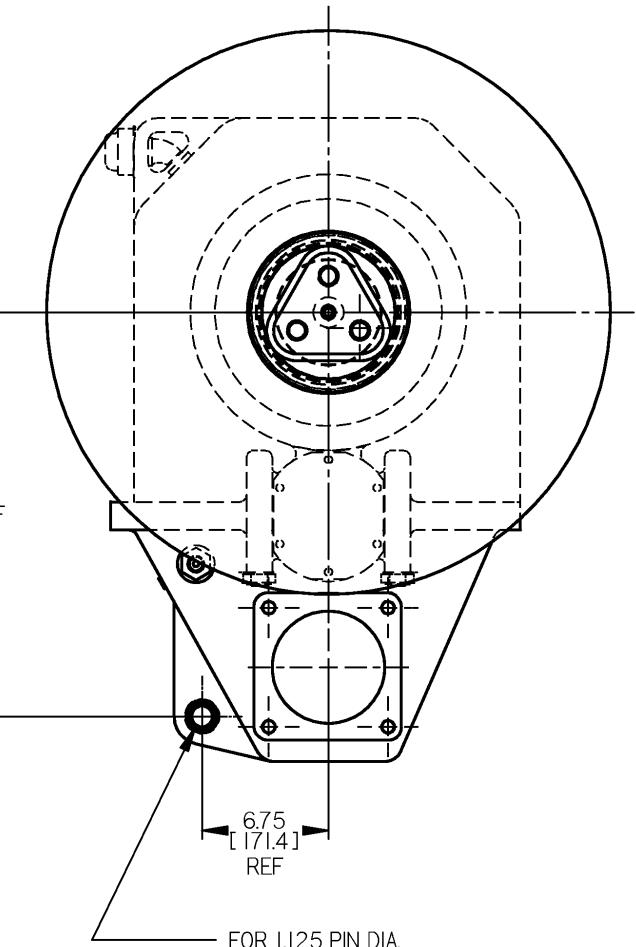
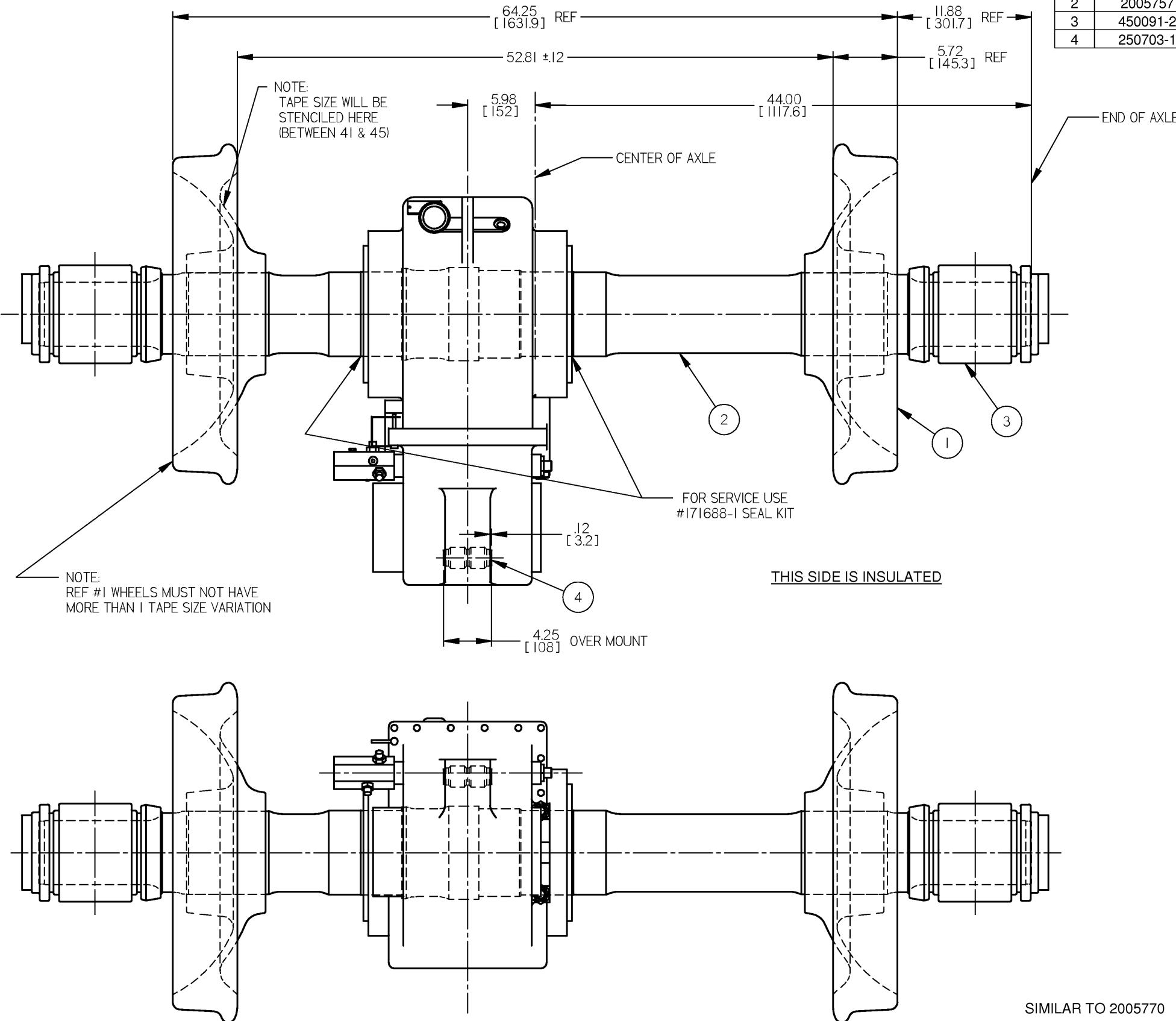
REF SHT 1 FOR HIGH, NEUTRAL, LOW SENSOR LOCATION.
NOTE: WHEN INSTALLING ITEM 3 (3) PLCS
CARE TO BE TAKEN NOT TO TWIST CABLE.
REMOVE ALL TWIST AFTER SETTING SENSORS.
TORQUE ON JAM NUTS TO BE 4 FT. LBS. MAX.

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DRIVE AXLE SUB-ASSEMBLY										Part Number	Size	HARSCO
Change	R/L	Date	Description	Machine Type	Weight	Drawn	Date Drawn	Sheet				
300347	A	19MAR10			3221.4 lbm	XX	XXX		2019160	D	RAIL	
			SOLID EDGE DRAWING	DO NOT SCALE								

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	411428-1	WHEEL- PROFILE MACHINED	2	ea		
2	2005757	AXLE WITH GEAR BOX	1	ea		
3	450091-2	NEW BEARING (ASSEMBLY)	2	ea		
4	250703-1	CENTER BONDED JOINT	1	ea		

SECTION C-4



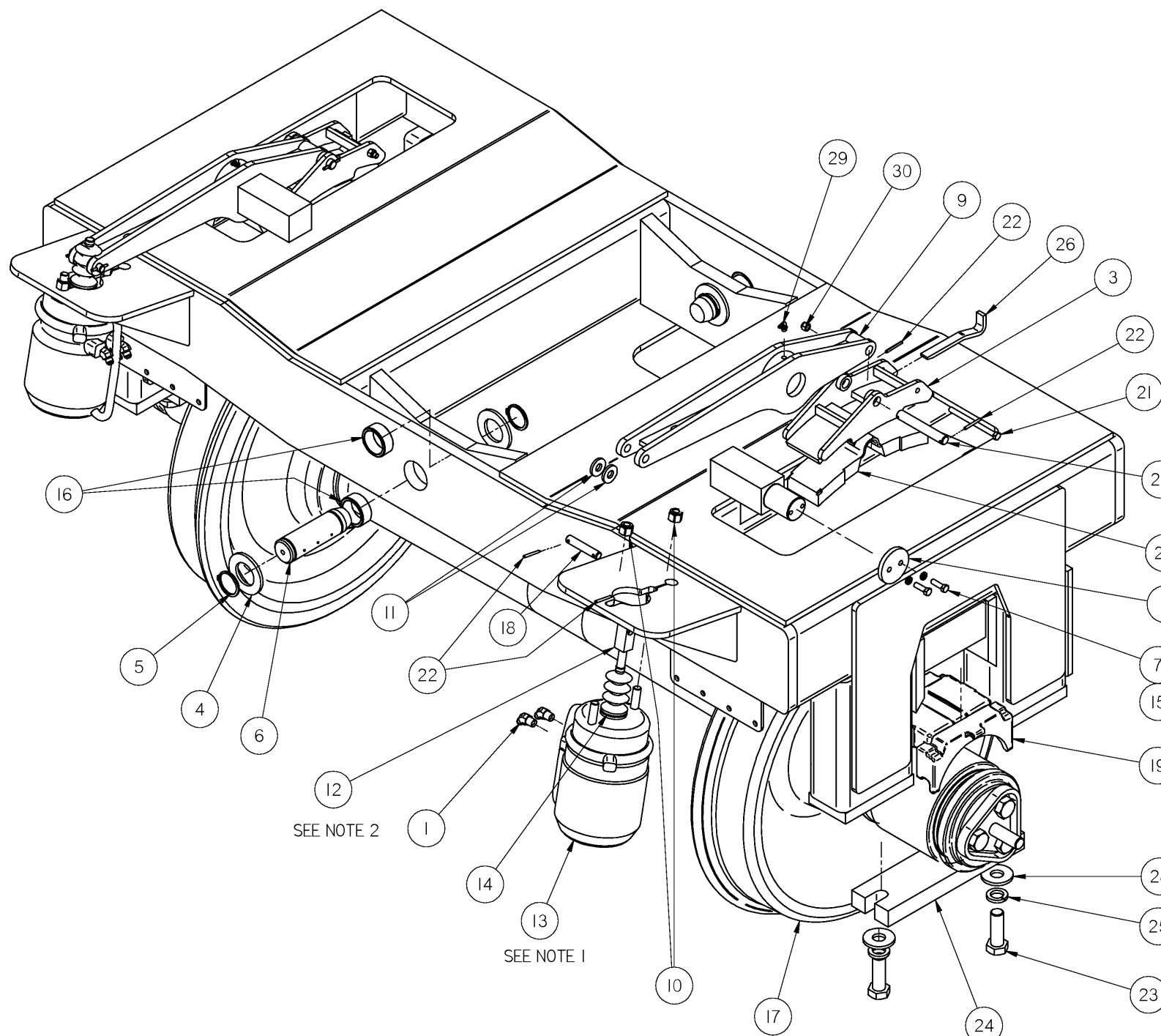
SIMILAR TO 2005770

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NON- STANDARD		INCH PLUS OR MINUS		MILLIMETER PLUS OR MINUS		UNLESS OTHERWISE SPECIFIED ALL INCHES SHALL BE IN INCHES		CHANGE R/L		DATE		Description			
OVER	TO	2 PLACE DEIMAL	3 PLACE DEIMAL	OVER	TO	1 PLACE DEIMAL	2 PLACE DEIMAL					DRIVE AXLE ASSEMBLY			
0	6	.03	.005	0	150	8	13					Machine Type			
6	24	.04	.008	150	600	10	20					Weight 2959.9 lbm Drawn CTR Date Drawn 19MAR10			
24	-	.06	.010	600	-	15	25					SOLID EDGE DRAWING DO NOT SCALE			
A SURFACE FINISH OF 1/16 INCHES-ES ANGULAR TOLERANCE OF .10° CONCENTRICITY WITH CENTER LINE												Part Number 2019159			
THIRD ANGLE PROJECTION												Size D Sheet 1 of 1			
UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS															

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	F018562	ELB45 6X6NPT	4	ea		
2	2019100	TRUCK WELDING	1	ea		
3	312252-1	SHOE HOLDER	2	ea		
4	112497-1	SPACER	4	ea		
5	F016971	RETAINING RING	4	ea		
6	218177-1	PIVOT PIN	2	ea		
7	F010277	HEX HD CAP SCR 3/8-24X1 1/4 GR	4	ea		
8	217281-1	RETAINER	2	ea		
9	312289-1	ARM WELDING	2	ea		
10	F012452	DC-5/8 ELASTIC STOP NUT	4	ea		
11	217280-1	SPACER	4	ea		
12	217283-1	ROD END - REAR	2	ea		
13	223027-1	BRAKE CHAMBER REWORK	2	ea		
14	2012366	PROTECTIVE BOOT	2	ea		
15	F011455	DC-3/8 LW *	4	ea		
16	4166	BUSHING-STEEL 2.00 ID X 2.209	4	ea		
17	2019162	FRONT AXLE ASSEMBLY	1	ea		
18	217282-1	PIN	2	ea		
19	411214-1	BEAR.ADAPTOR-MACHND	2	ea		
20	218045-1	BRAKE SHOE	2	ea		
21	F001530	DC-HEX HD CAP SCR 3/8-16X5 GR5	2	ea		
22	F012413	SPRING PIN 3/16 X 1 3/4	8	ea		
23	F013119	HEX HD CAP SCR 1-8X3 GR5 ZP	4	ea		
24	219067-1	TIE PLATE	2	ea		
25	F001657	SAE RGLR LOCK WASHER 1" ZP	4	ea		
26	112482-1	BRAKE SHOE RETAINER	2	ea		
27	112496-1	PIN	2	ea		
28	111560-1	WASHER	4	ea		
29	F009217	DC-ZERK ELB90 X 02NPT *	2	ea		
30	F015922	DC-3/8-16 ELASTIC STOP NUT *	2	ea		

SECTION C-5



NOTES:

1. TIGHTEN BRAKE RELEASE BOLT TO 40-45 FT. LBS.
(2) PLACES.
2. USE AIR PRESSURE TO RETRACT BRAKE CHAMBER,
ITEM 13, AND ADJUST ROD END, ITEM 12 TO OBTAIN
A GAP OF .06" BETWEEN BRAKE SHOE, ITEM 20, AND
WHEEL.

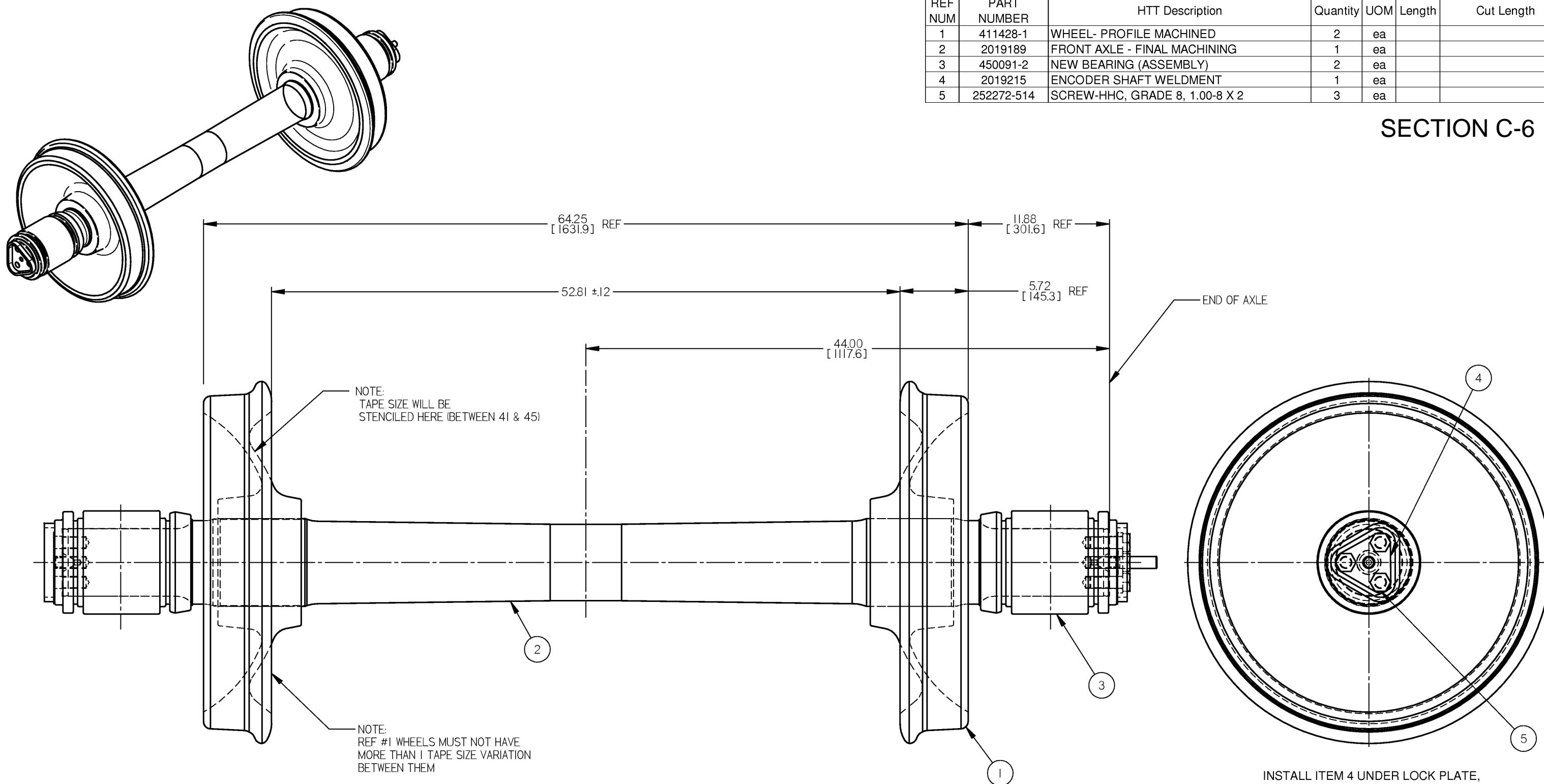
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REF. NO.	SIZE	INCH	Metric	UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL BE	CHANGE	R/L	DATE	Description	Part Number	Size
300347	A	16MAR10		A SURFACE FINISH OF 125 MICRON/INCHES ANGULAR TOLERANCE OF + ¹⁰ / ₀ DEGREE CONCENTRICITY WITHIN .010				FRONT TRUCK ASSEMBLY	HARSCO	RAIL
300350	B	14APR10		UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWWS WELDING STANDARDS				Machine Type		
								Weight 3995.6 lbm	Date Drawn	
								Drawn CTR	19MAR10	
								SOLID EDGE DRAWING	DO NOT SCALE	

Sheet 1 of 1
2019120
Plotted by crosso on 4/15/2010 2019120.dft

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	411428-1	WHEEL- PROFILE MACHINED	2	ea		
2	2019189	FRONT AXLE - FINAL MACHINING	1	ea		
3	450091-2	NEW BEARING (ASSEMBLY)	2	ea		
4	2019215	ENCODER SHAFT WELDMENT	1	ea		
5	252272-514	SCREW-HHC, GRADE 8, 1.00-8 X 2	3	ea		

SECTION C-6



THIS WHEEL IS INSULATED

NOTE

1. HEAT WHEELS TO 450° F FOR 3 HOURS
 2. INSTALL HEATED WHEELS IN POSITION ON AXLE
 3. WAIT 5 MINUTES TO COOL

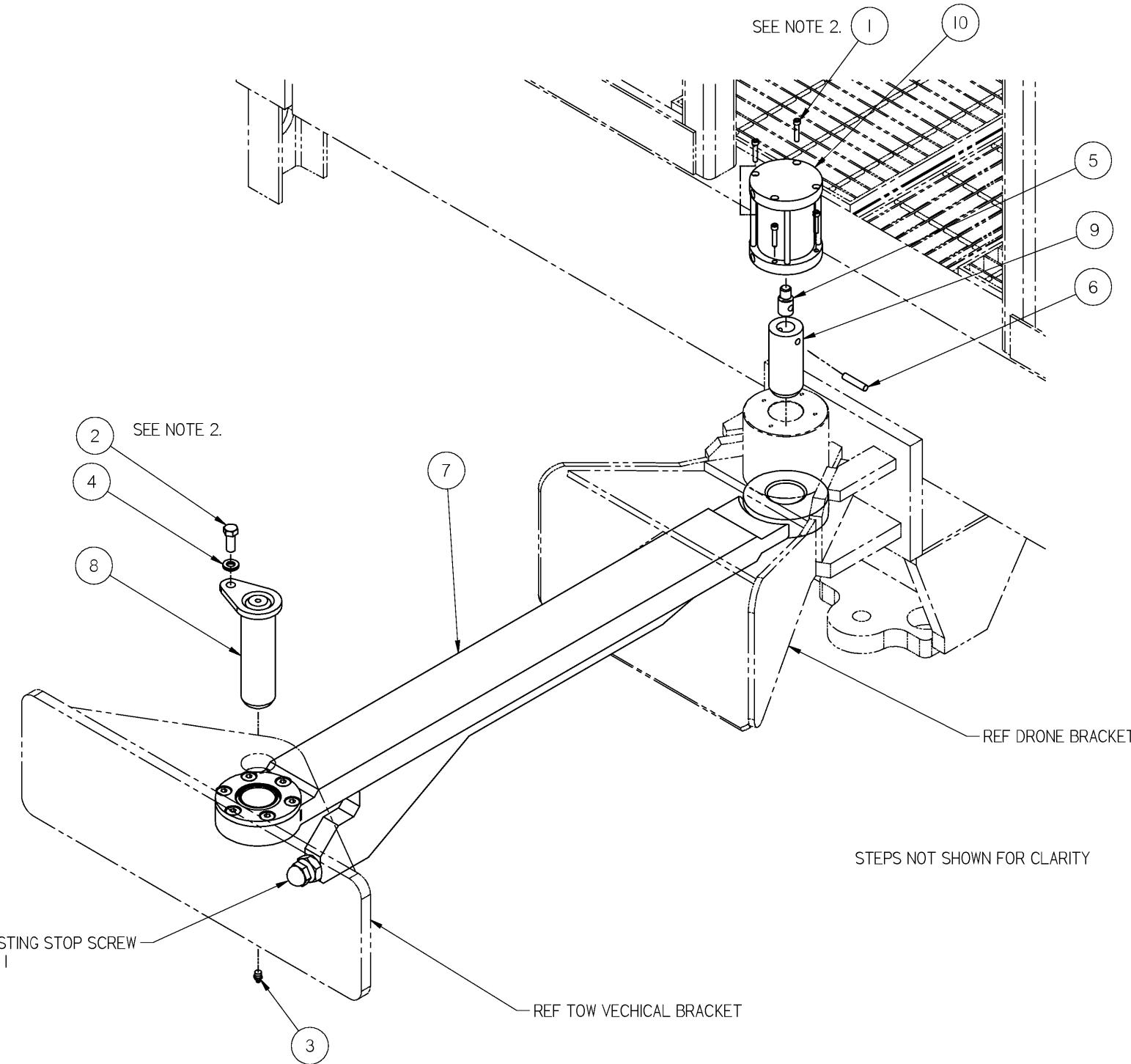
INSTALL ITEM 4 UNDER LOCK PLATE,
TORQUE ITEM 5 TO BEARING
MANUFACTURE SPECIFICATIONS

CONFIDENTIAL

CONFIDENTIAL										HARSCO			
NOMINAL SIZE & RADIUS	INCH			MILLIMETER			UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE:	CHANGE NO.	R/L	DATE	Description		
	OVER	UNDER	PLUS OR MINUS	OVER	UNDER	PLUS OR MINUS							
0	.06	.03	.005	0	.150	.8	13		A SURFACE FINISH OF 150 MICRO INCHES ANGLED 10 DEGREES FROM THE SURFACE, WITH A CONCENTRICITY WITHIN .010	300347	A	18MAR10	FRONT AXLE ASSEMBLY
6	.24	.04	.008	.15	.600	1.0	.20		THIRD ANGLE PROJECTION	300350	B	14APR10	Machine Type
24	.1	.06	.010	.600	.15	.25			Weight 2013.0 lbm		Drawn CTR	Date Drawn 18MAR10	
									SOLID EDGE DRAWING			DO NOT SCALE	

12	11	10	9	8	7	6	5	4	3	2	1
H											
G											
REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length					
1	F021674	SOCKET HEAD CAP SCREW	4	ea							
2	F026036	HEX HD CS 1/2-20X1 1/4 GR8 ZP	1	ea							
3	F004252	DC-ZERK STR X 02NPT	1	ea							
4	H3948Y05	DISC LOCK WASHER	1	ea							
5	A3642Y03	CYL EYE	1	ea							
6	7190	DOWEL PIN	1	ea							
7	2019469	TOW BAR, DRONE ASSEMBLY	1	ea							
8	2019472	PIN, DRONE	1	ea							
9	2019473	LOCK PIN	1	ea							
10	4031344	AIR CYLINDER	1	ea							

SECTION C-7



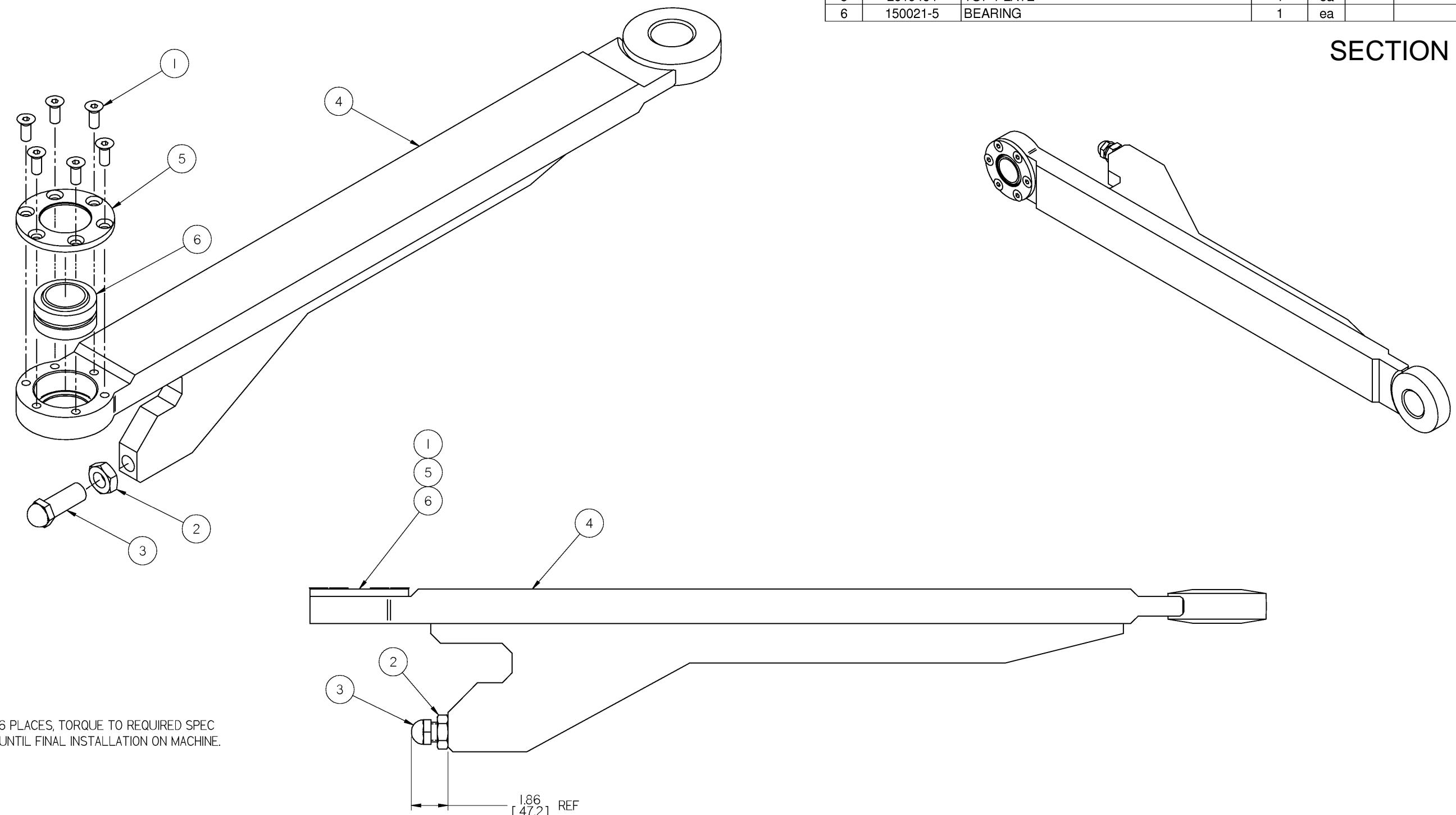
NOTES:
 1. FINAL ADJUSTMENT TO STOP SCREW TO BE DONE AT MACHINE TESTING.
 2. TIGHTEN TO CORRECT TORQUE SPEC.

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TOW BAR INSTALLATION												HARSCO	
												RAIL	
												2019461	
Part Number	Size											D	
Sheet												1 of 1	
DR	DATE	Description	TOW BAR INSTALLATION										
CTR	02AUG10												
Machine Type													
Weight	149.8 lbm	Date Drawn	Drawn	CTR	7/29/2010								
SOLID EDGE DRAWING	DO NOT SCALE												

12	11	10	9	8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A				
REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length					
1	F014208	DC-1/2-13 X 1 1/4 SKT FLT HD C	6	ea							
2	F001506	HEX JAM NUT 1"-8 GR2 ZP	1	ea							
3	2019468	STOP SCREW 1.00-8	1	ea							
4	2019467	TOW BAR, DRONE	1	ea							
5	2019464	TOP PLATE	1	ea							
6	150021-5	BEARING	1	ea							

SECTION C-8



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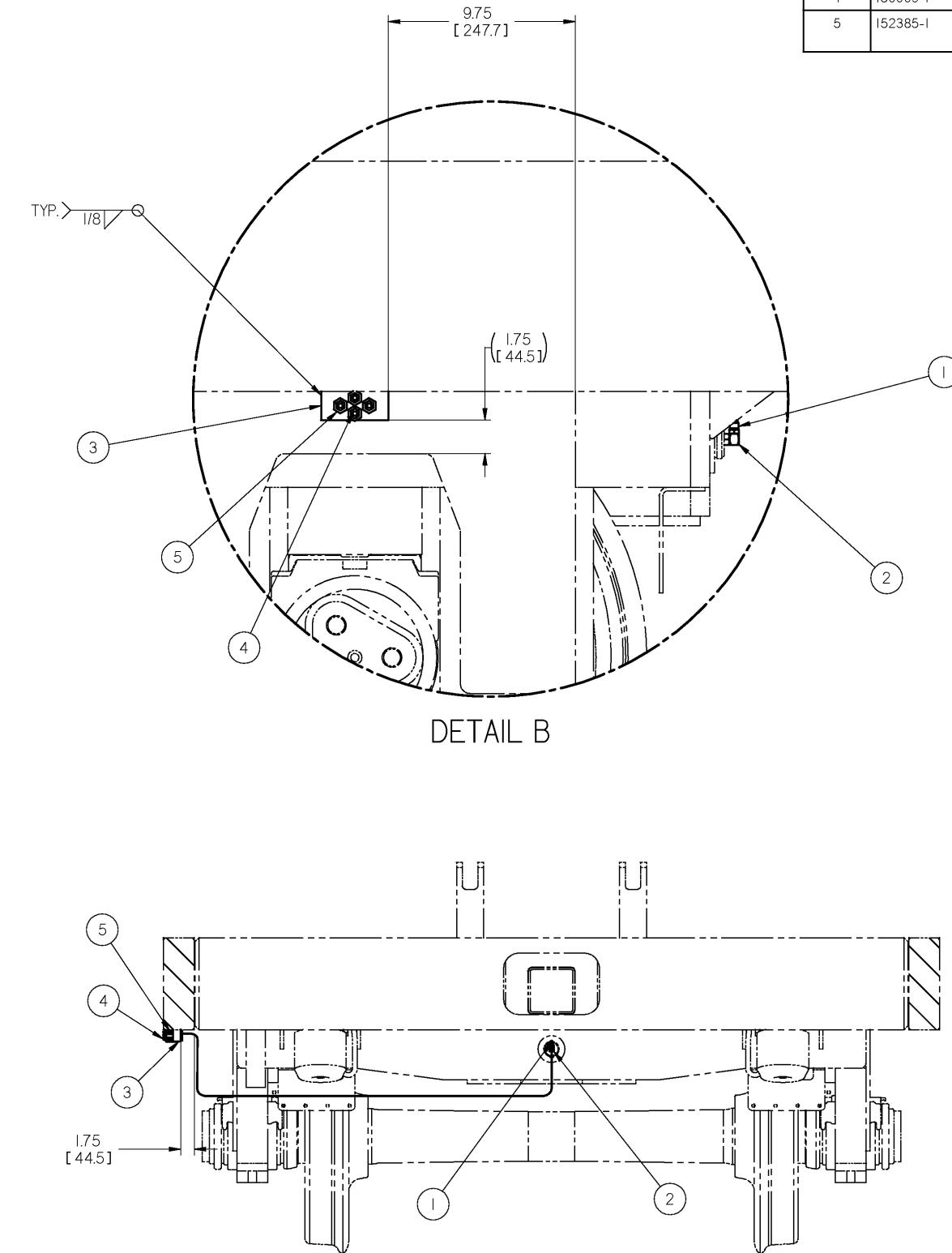
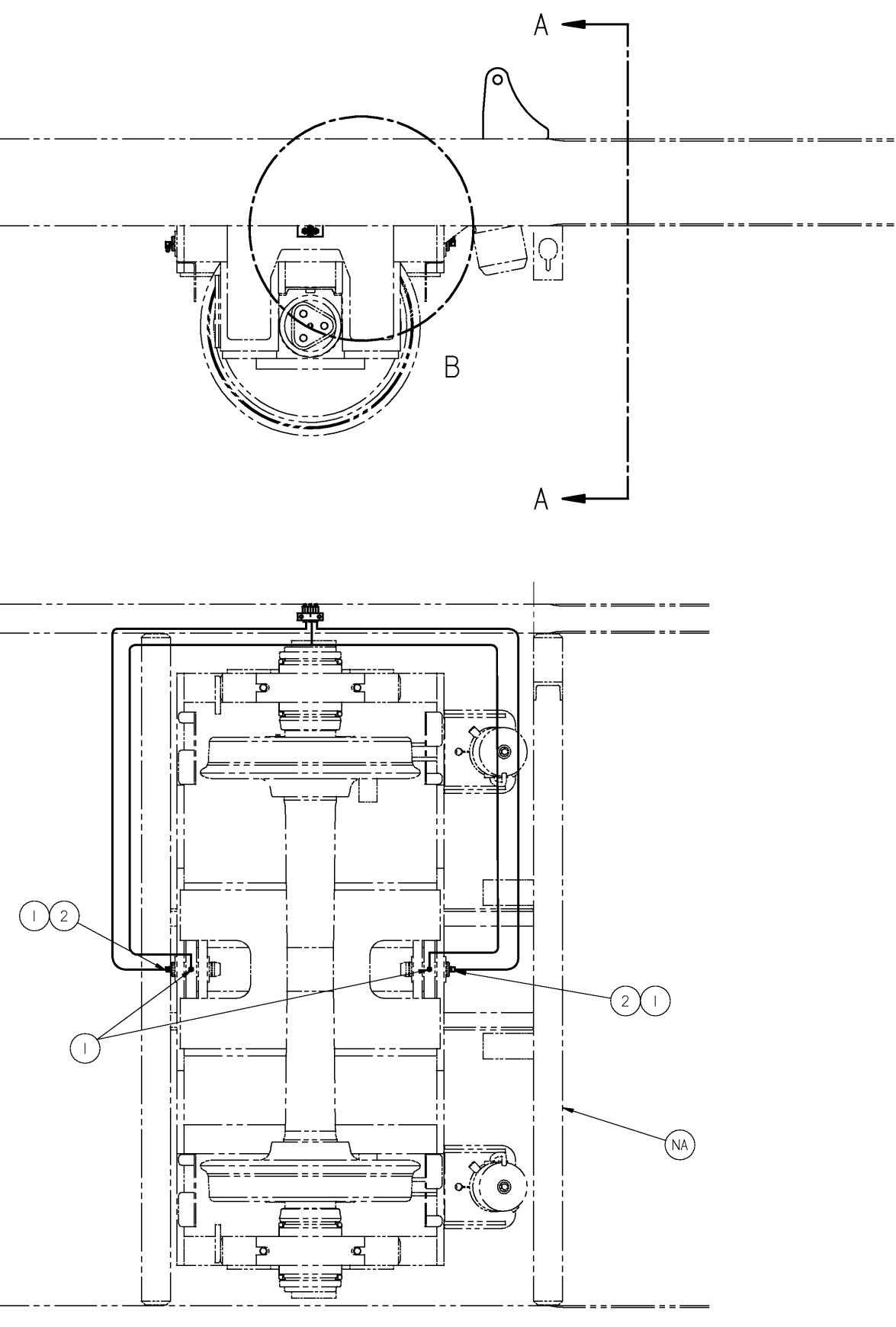
REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length					
1	F014208	DC-1/2-13 X 1 1/4 SKT FLT HD C	6	ea							
2	F001506	HEX JAM NUT 1"-8 GR2 ZP	1	ea							
3	2019468	STOP SCREW 1.00-8	1	ea							
4	2019467	TOW BAR, DRONE	1	ea							
5	2019464	TOP PLATE	1	ea							
6	150021-5	BEARING	1	ea							

Inch
[mm]

HARSCO
RAIL
2019469
Size
D
Sheet
1 of 1

Item Number	Document Number	Title	Material	Quantity
1	150129-3	MALE CONNECTOR	Steel	4
2	158318-I	ANGLE SWIVEL	Steel	2
3	D8544Y03	REMOTE LUBE BLOCK	Steel	1
4	150009-I	GREASE FITTING		4
5	152385-I	BULKHEAD ADAPTER-FEMALE PIPE TO MALE JIC	steel	4

SECTION C-9



SECTION A-A

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CONFIDENTIAL				IMPLIED TOLERANCES				CHAN-
				ALL DIMENSIONS ARE IN INCHES. TOLERANCE UNLESS OTHERWISE SPECIFIED.				ECN-105
HORIZONTAL SIZE RANGE	INCH		MILLIMETER SIZE RANGE	INCH		MILLIMETER SIZE RANGE	UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE:	
	OVER TO	2 PLACE DECIMAL		3 PLACE DECIMAL	OVER TO		1 PLACE DECIMAL	2 PLACE DECIMAL
0 - 6	.03	.008	0 - 150	.150	.13	-	.8	.13
6 - 24	.04	.008	150 - 600	1.0	20	-	-	-
24 -	.06	.010	600 -	.15	25	-	-	-

THREE ANGLE
PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL WELDS
SHOULD BE MADE WITH THE CURRENT
A W 3 WELDING STANDARDS

SOLID EDGE DRAW

TE 6-10	Description REMOTE GREASE FITTING INSTALL.
Drawing Number -----	Machine Type DRONE TAMPER

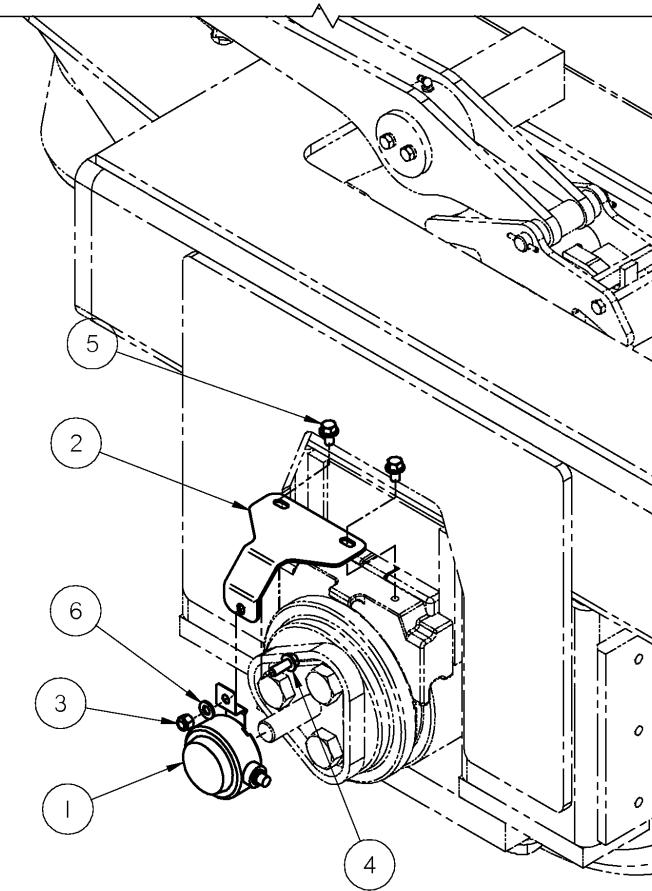
HARSCO
BAU

Part Number Size Sheet

4031112 D 1 of 1

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	2006934	ENCODER	1	ea		
2	2019213	TOP PLATE	1	ea		
3	F015922	DC-3/8-16 ELASTIC STOP NUT *	1	ea		
4	F023255	HFHCS .375-16 X 1.00 GR 5 ZP	1	ea		
5	F025097	DC-HEX FLG SCR 3/8-16X5/8 GR5	2	ea		
6	F009681	SAE WASHER 3/8 ZP	1	ea		

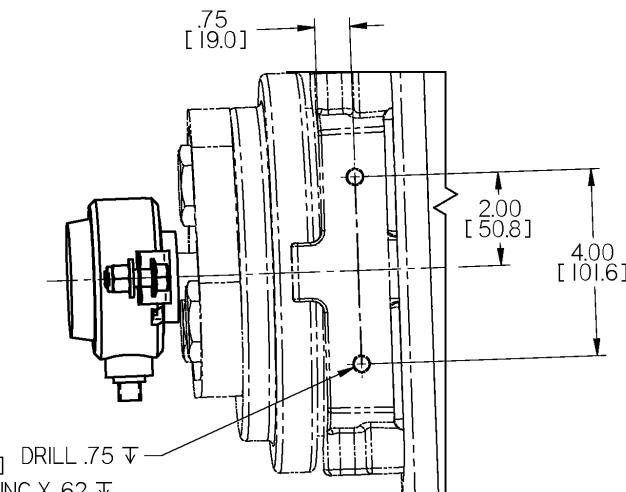
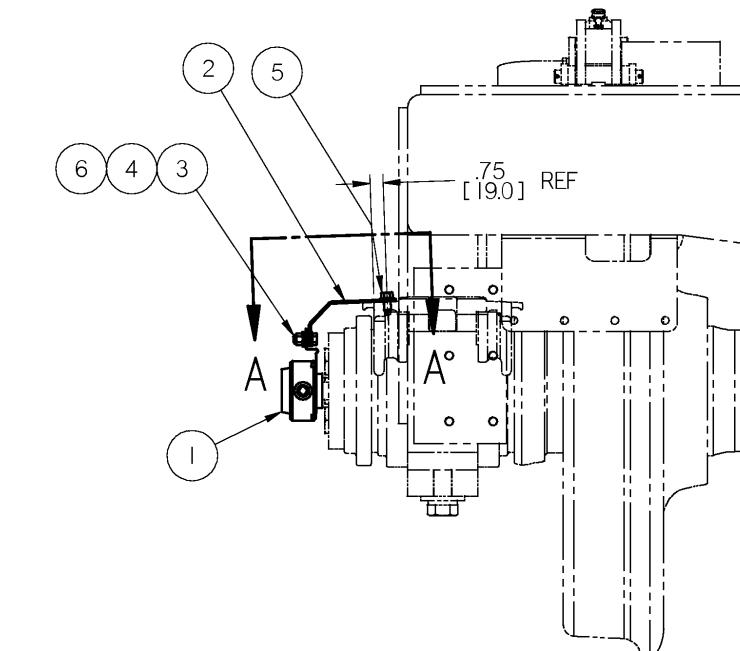
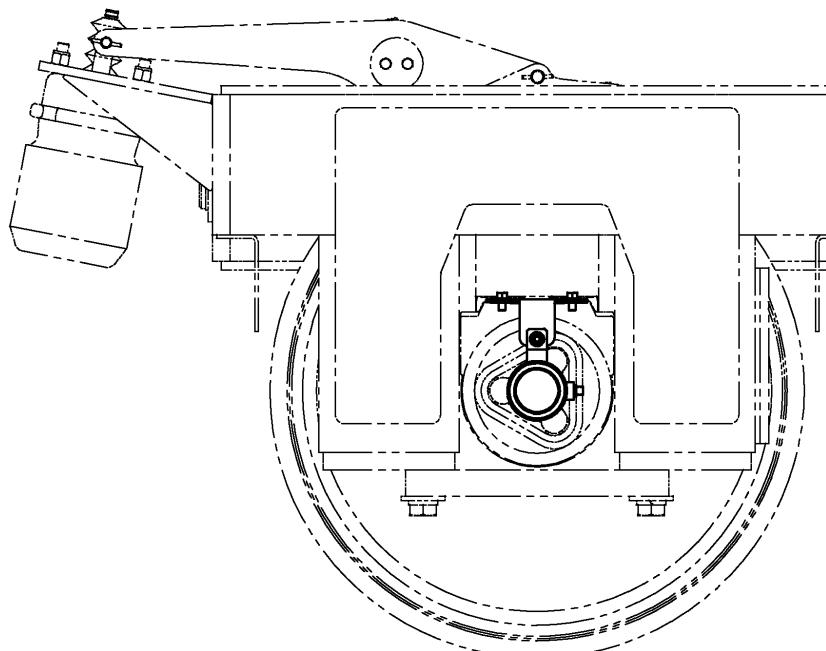
SECTION C-10



Change Pending

INSTALL NOTE

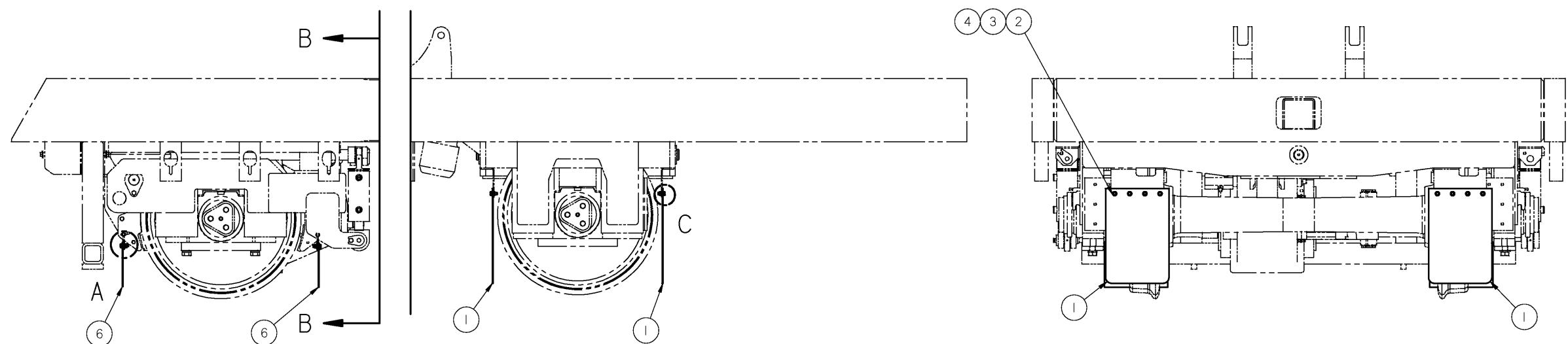
1. DRILL AND TAP AS NOTED
 2. INSTALL ITEMS 2 AND 5, TORQUE SCREWS TO 25-28 FT LBS.
 3. INSTALL ITEM 1 ONTO SHAFT UNTIL TETHER MATES WITH ITEM 2, USING A 7/64" HEX WRENCH, TIGHTEN SET SCREW 8-10 IN LBS.
ORIENT MOUNTING HARDWARE AS SHOWN. DO NOT CRUSH NYLON BUSHING BY OVER TIGHTENING.



VIEW A-A
ITEMS 2 & 5 NOT SHOWN

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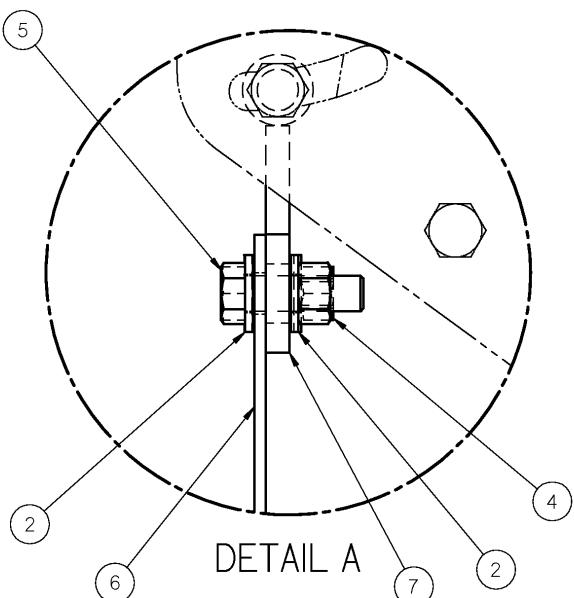
CONFIDENTIAL										ENCODER INSTALLATION			HARSCO	
NOMINAL DIMENSION	INCH			METRE			UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE:	CHANGE	R/L	DATE	Description	Part Number	Size	
	OVER	TO	2 PLACES DECIMAL	OVER	TO	2 PLACES DECIMAL								
0 . 6	.03	0 . 05	0 . 150	8	13		A SURFACE FINISH OF 125 RMS MICRO INCHES ANGULAR TOLERANCE OF .05° CONCENTRICITY WITHIN .010"				Machinist Type		D	
6 . 24	.04	.08	.150	600	1000	20	THIRD ANGLE PROJECTION				Weight	0.0 lbm	Date Drawn	09APR10
24	.06	.10	.000	-	15	25	UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE REQUIREMENT A W 5 WELDING STANDARDS				Drawn	CTR		
SOLID EDGE DRAWING										DO NOT SCALE				



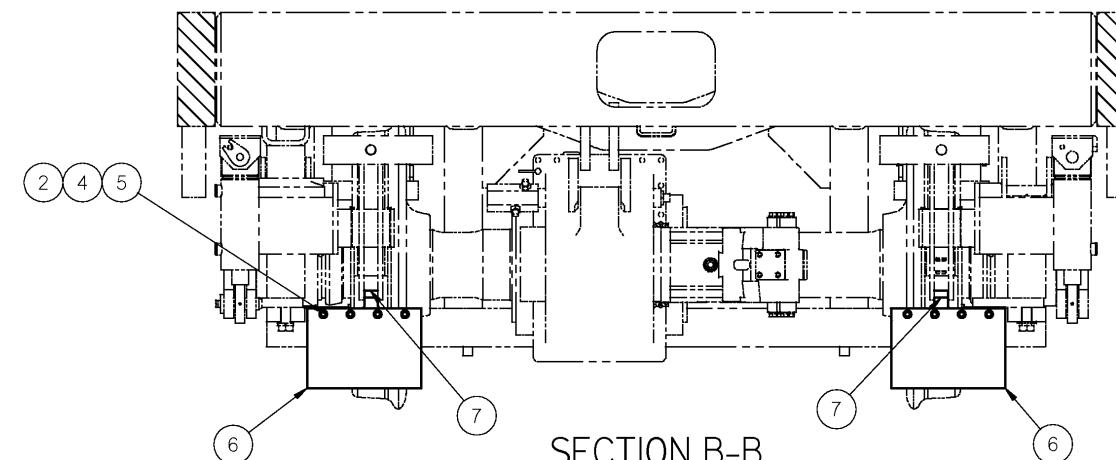
REAR

FRONT

FRONT

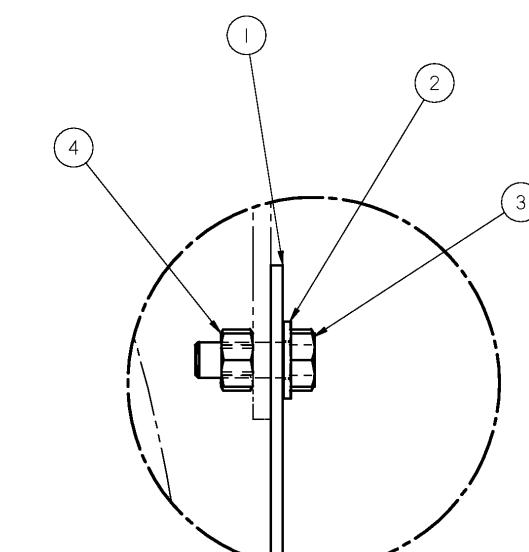


DETAIL A



SECTION B-B

REAR



DETAIL C

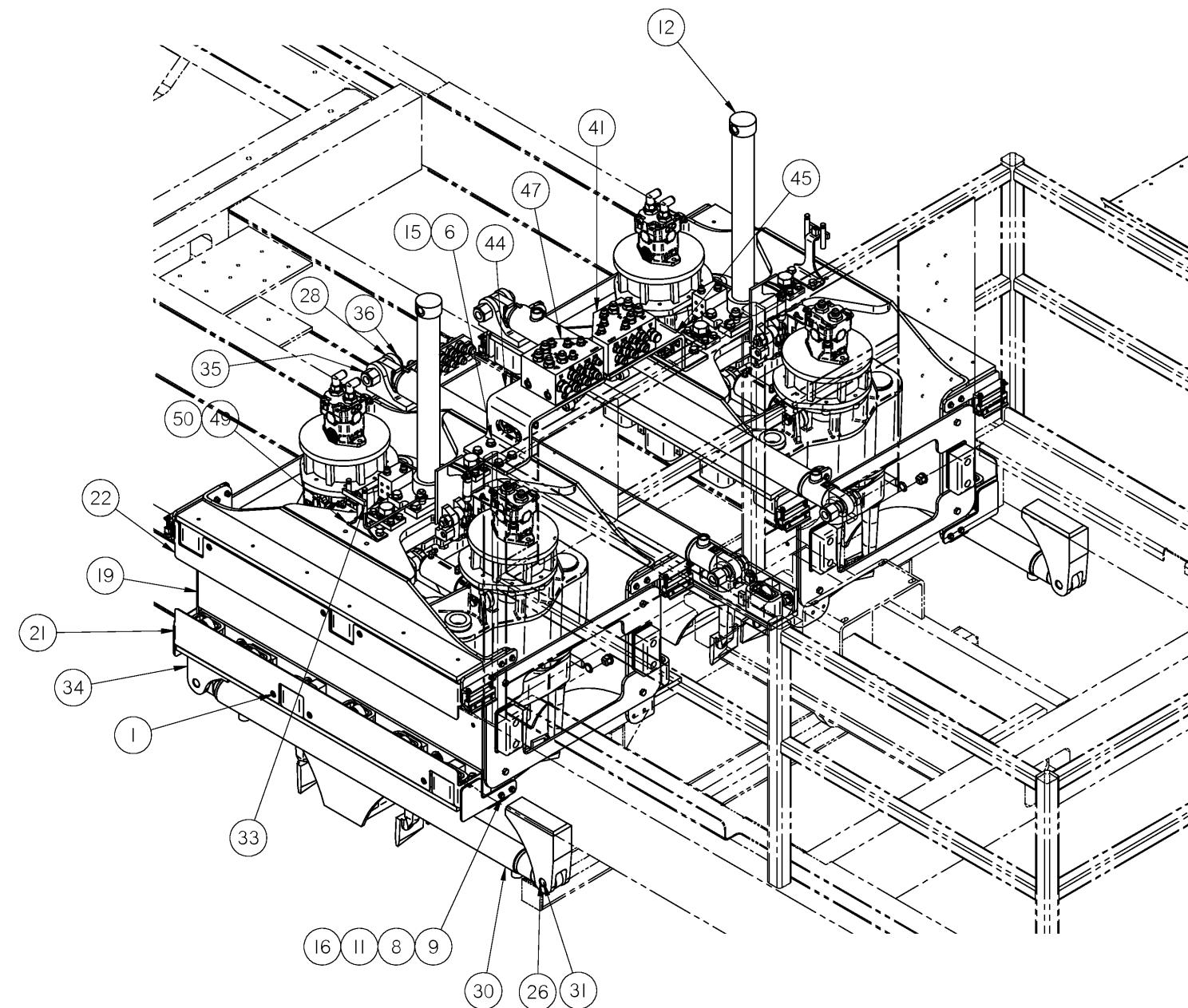
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CONFIDENTIAL		IMPLIED TOLERANCES										CHANGE	R/L	REVISION	DATE	Description			
		ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED													07-25-10	MUDFLAP INSTALL			
		INCH PLUS OR MINUS																	
		OVER	TO	2 PLACES	DECIMAL	OVER	TO	1 PLACES	DECIMAL	OVER	TO	UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES HAVE A SURFACE FINISH OF 16 MICROINCHES AND A TOLERANCE OF +/- .005 INCHES CONCENTRICITY WITHIN .005 INCHES							
		.0	.0	.00	.00	.0	.150	.1	.20	.0	.13								
		6	24	.04	.008	150	800	1.0	.20										

Section D

Workheads (Tamping Components)

SECTION D-1



NOTES:

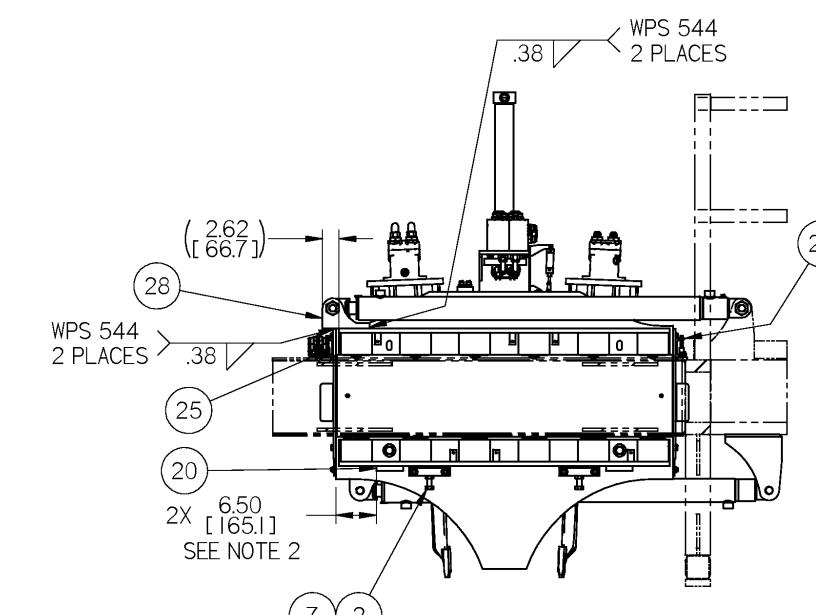
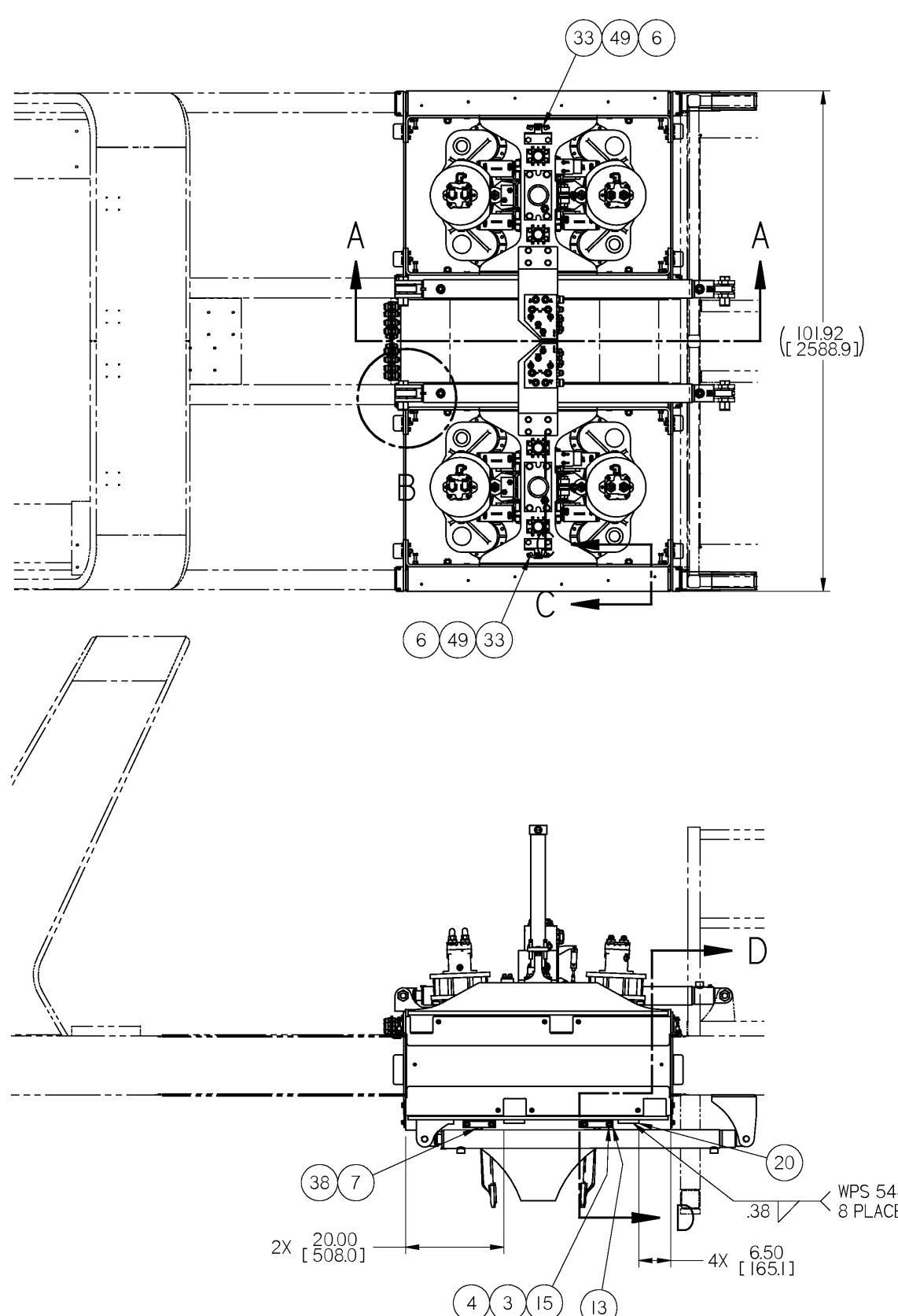
- I. REMOVE BOTTOM ROLLER PANEL PRIOR TO INSTALLING WORK HEADS INTO FRAME, ENSURE ROLLERS AND SPRINGS ARE INTO RESPECTIVE LOCATIONS, USE TAPE IF NEEDED. AFTER INSTALLING ITEM 12, INSTALL ITEM 19 AND REINSTALL BOTTOM ROLLER WITH ALL SPRINGS, ROLLERS & MOUNTING HARDWARE.
2. INSTALL ITEMS 2, 3, 4, 5, 7, 10, 13, 14, & 15. TIGHTEN ITEM 2 OR 38 UNTIL BOTTOM ROLLERS TOUCH MAINFRAME, TAKE MEASUREMENT, TIGHTEN ITEM 2 TO LIFT BOTTOM ROLLER PANEL 1/8 OF AN INCH. TAKE MEASUREMENT TO VERIFY. LOCATE ITEM 20 WITH DIMENSIONS GIVEN AND WELD IN PLACE AS SPECIFIED.
3. TIGHTEN ITEM 5 UNTIL ITEM 19 IS IN CONTACT WITH SIDE OF MAINFRAME, MEASURE TO LOCATE ITEM 12 TO DIMENSIONS GIVEN, ITEM 12 MUST BE BETWEEN MAIN FRAME RAILS EVENLY, MOVE ITEM 12 TO VERIFY FREE MOVING THRU ENTIRE LENGTH OF WORKHEAD TRACK. TIGHTEN ITEM 10, 16 PLACES.

ITEM NO	ITEM NO	DESCRIPTION	QTY
1	F02203I	BUTTON SKT HD CS.375-16 X 1.00 SELF-LOCKING	12
2	F020904	HHCS .750-16X3.25	4
3	F019503	HEX NUT .625-II	16
4	F016378	HHCS .625-IIX3.50	16
5	F009643	HHCS .500-13X2.50	16
6	F001304	HHCS .625-IIX2.00	12
7	I98730	HEX JAM NUT .750-16	8
8	F007020	HEX NUT .375-16	24
9	F001024	HHCS .375-16XI.50	24
10	F003598	HEX NUT .500-13	16
11	F00968I	SAE FLAT WASHER .375	24
12	2019306	ROLLER WORKHEAD ASSY, DRONE	2
13	4026713	JACKING BLOCK, DRONE	8
14	H3948Y05	DISC LOCK WASHER	28
15	H3948Y06	DISC-LOCK WASHER	24
16	H3948Y01	DISC-LOCK WASHER	36
19	4018966	WEAR PLATE ASSY	4
20	A1004T52	KEY, STEEL	8
21	2019360	GUARD WELDMENT, LOWER	2
22	2019359	GUARD WELDMENT, UPPER	2
25	4031089	RUNWAY WIPER ARM	2
26	F00874I	RETAINING RING I.250 INTERNAL	8
27	4031090	RUNWAY WIPER ARM	2
28	4017907	CLEVIS, 2.5 BORE HYD CYLINDER	2
29	4029776	SLIDE CYL, DRONE, HD, SMART	2
30	4029775	SLIDE CYL, DRONE, HD	2
31	4031310	PIN, I.25 DIA, PLAIN	4
32	4031287	SPACER, SLIDE CYLINDER	16
33	B1657Y02	NEEDLE VALVE MANIFOLD	2
34	4031280	CLEVIS, 2.5 BORE HYD CYLINDER	2
35	F01832I	HEX ELASTIC STOP NUT I.25-7	4
36	F040654	HHCS I.25-7X4.50	4
37	4031281	CLEVIS, 2.5 BORE HYD CYLINDER	2
38	4031275	SET SCREW 3/4 -16 X 2 FULL THD	4
39	L423607	NYLON TUBING II/4 OD	100
40*	4014782	WORKHEAD GREASE KIT	1
41	4031427	MANIFOLD, WORKHEAD	1
42	F023798	DC-CLAMP - 3/16" ID SIZE	4
43	4031842	BRACKET, BULKHEAD ASSY	1
44	4031796	MOUNT, WORKHEAD MANIFOLD	1
45	4031797	MOUNT, WORKHEAD MANIFOLD	1
46	F013516	STR 8X8SAE	14
47	4031578	MANIFOLD, WORKHEAD	1
48	F001539	HHCS .500-13XI.25	12
49	403166I	BRACKET, OILER	2
50	F001075	LW .500	4
51	4003275	-12 TTC 90 HOSE END	4
52	F014253	STR I2X12SAE	20
53	F016074	STR I6 X 16 SAE	2

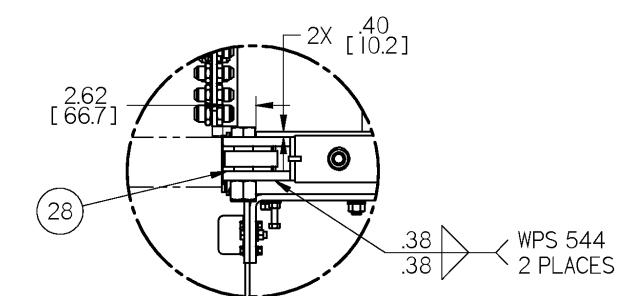
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CONFIDENTIAL												REVISION				DR	DATE	Description		HARSCO			
ITEM	TO	NOMINAL		INCH		NOMINAL		METRIC		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL BE		CHANGE	R/L	RELEASE	CTR	16JUN10	INSTALLATION, ROLLER WKHD		Part Number	Size			
		OVER	TO	2 PLACES	DECIMAL	3 PLACES	DECIMAL	OVER	TO	1 PLACES	DECIMAL	2 PLACES	DECIMAL	ANGULAR TOLERANCE OF ±10° CONCENTRICITY WITHIN .015									
300353	A	0	6	.03	.005	0	.160	8	.13	A SURFACE FINISH OF 125 MICRONES		A SURFACE FINISH OF 125 MICRONES		A SURFACE FINISH OF 125 MICRONES		A SURFACE FINISH OF 125 MICRONES		A SURFACE FINISH OF 125 MICRONES		A SURFACE FINISH OF 125 MICRONES			
105904	B	6	24	.04	.008	150	.600	1.0	.20	ANGULAR TOLERANCE OF ±10° CONCENTRICITY WITHIN .015		ANGULAR TOLERANCE OF ±10° CONCENTRICITY WITHIN .015		ANGULAR TOLERANCE OF ±10° CONCENTRICITY WITHIN .015		ANGULAR TOLERANCE OF ±10° CONCENTRICITY WITHIN .015		ANGULAR TOLERANCE OF ±10° CONCENTRICITY WITHIN .015		ANGULAR TOLERANCE OF ±10° CONCENTRICITY WITHIN .015			
106391	C	6	24	.04	.008	150	.600	1.0	.20	UNLESS OTHERWISE SPECIFIED, ALL WHEELS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS		UNLESS OTHERWISE SPECIFIED, ALL WHEELS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS		UNLESS OTHERWISE SPECIFIED, ALL WHEELS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS		UNLESS OTHERWISE SPECIFIED, ALL WHEELS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS		UNLESS OTHERWISE SPECIFIED, ALL WHEELS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS		UNLESS OTHERWISE SPECIFIED, ALL WHEELS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS			

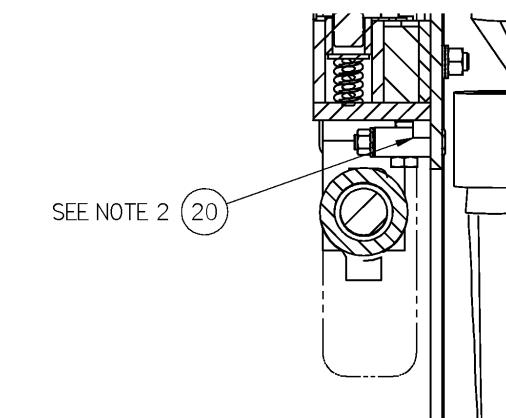
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2019347
Sheet 1 of 4



② SECTION A-



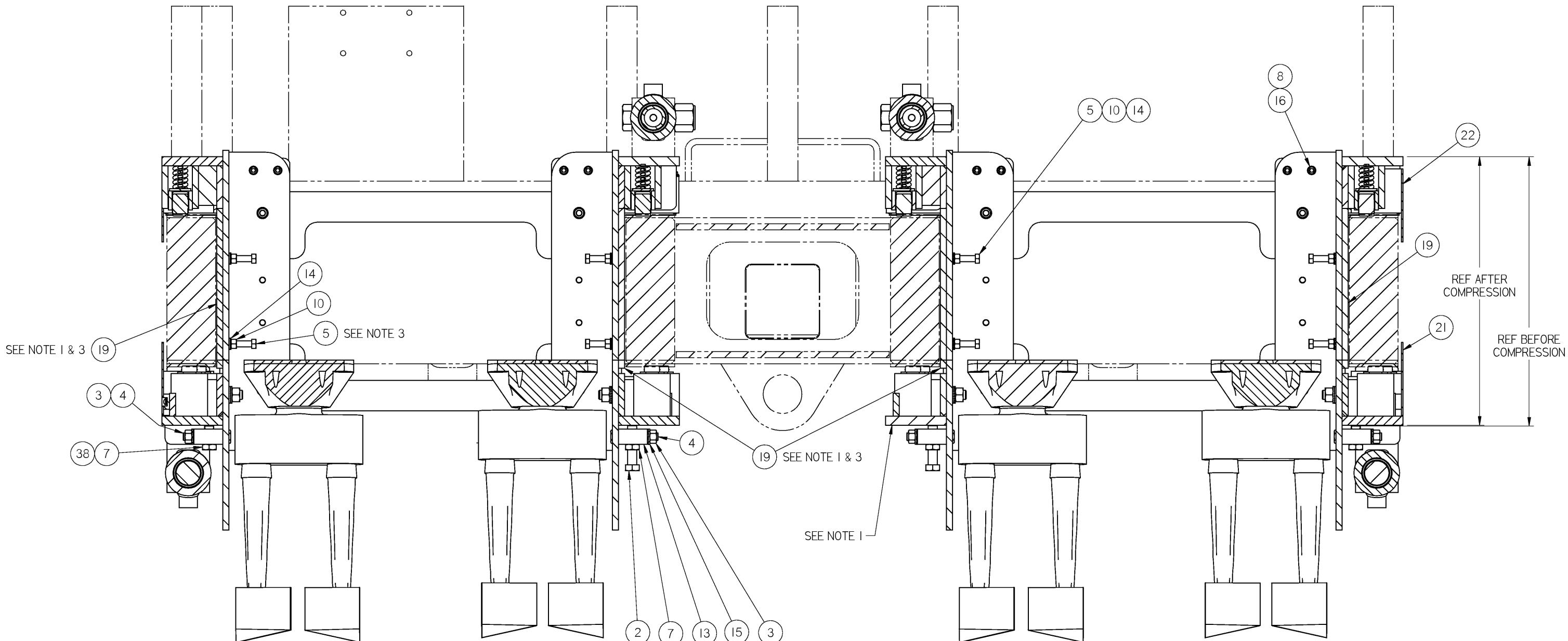
DETAIL B



SECTION C-(

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SECTION D-1

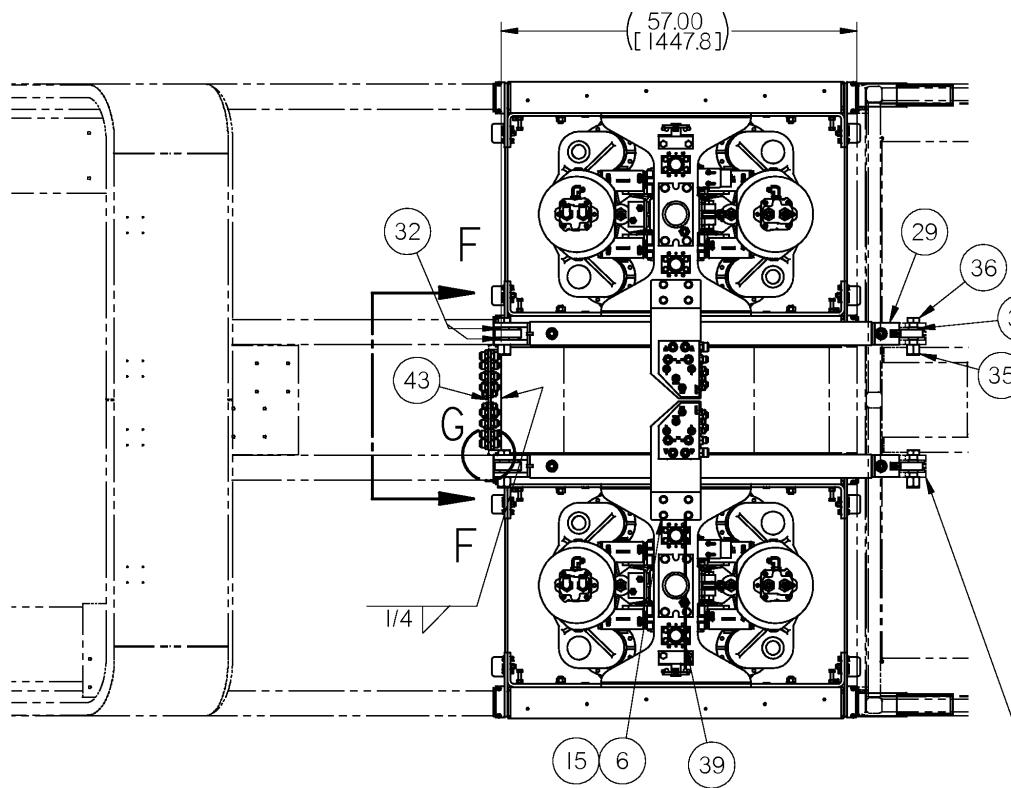


SECTION D-1

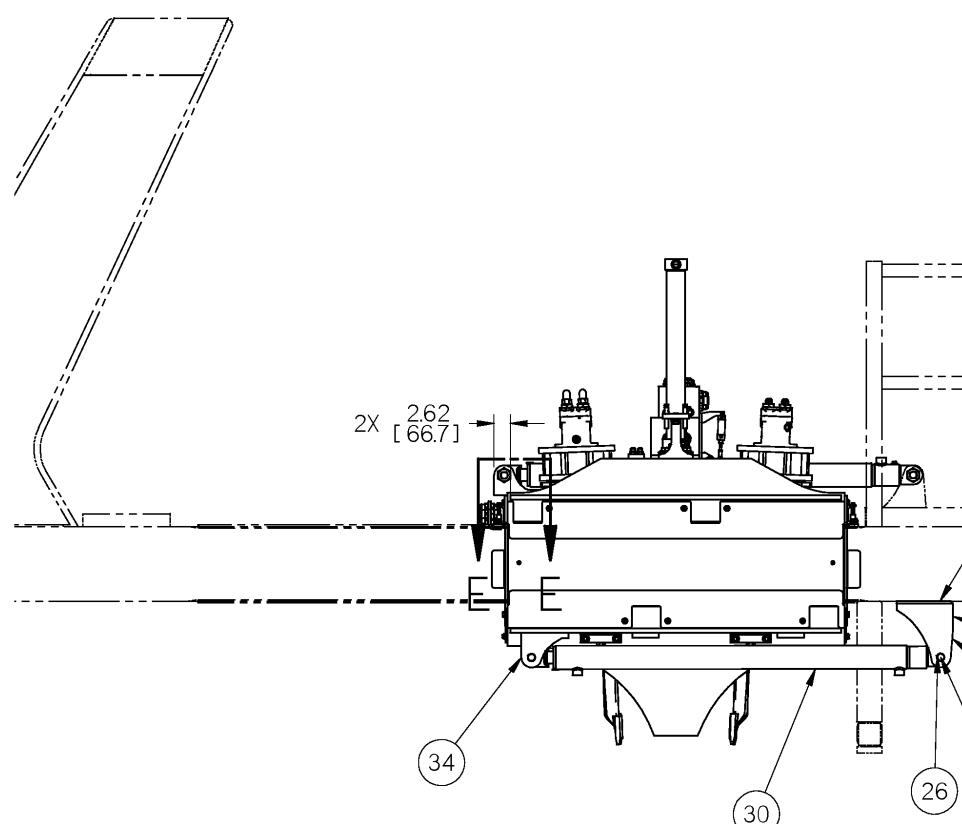
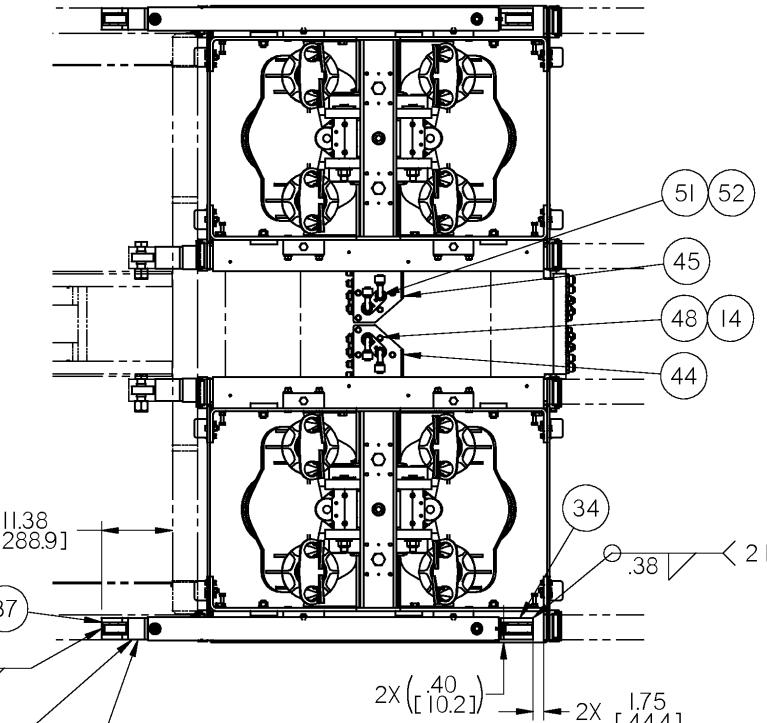
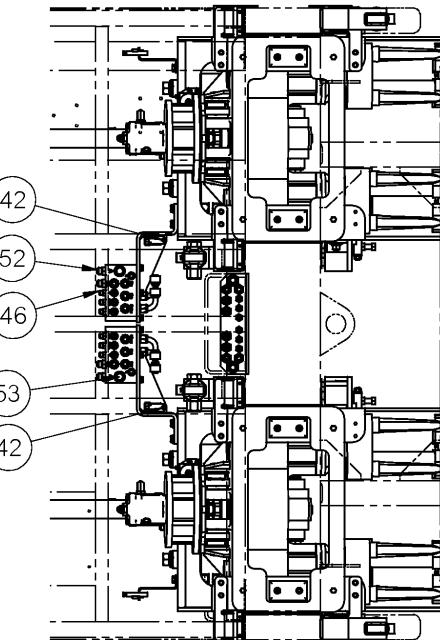
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HOW THAT IS THE PROPERTY OF HARSCO. BY ACCEPTING THIS DRAWING OR DOCUMENT,
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PARTY; AND (2) NOT TO REPRODUCE OR USE THE DRAWING OR DOCUMENT TO MANUFACTURE
APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

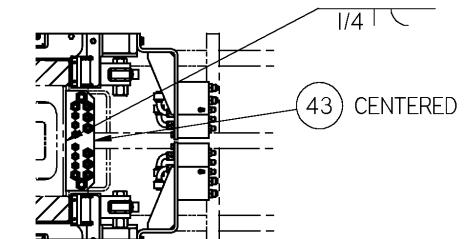
SECTION D-1



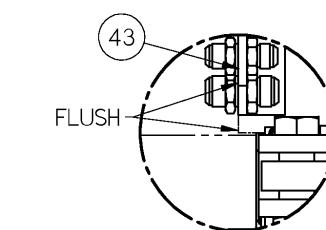
INSTALL CYLINDER INTO LUG.
EXTEND CYLINDER AND LOCATE
OPPOSITE MOUNTING LUG POSITION.
CHECK FOR BEST POSSIBLE ALIGNMENT.



- LOCATE LUG
- WELD IN PLACE
- INSTALL CYLINDER
- EXTEND CYLINDER
- LOCATE OPPOSITE MOUNTING LUG
- AND WELD IN PLACE WITH BEST POSSIBLE ALIGNMENT

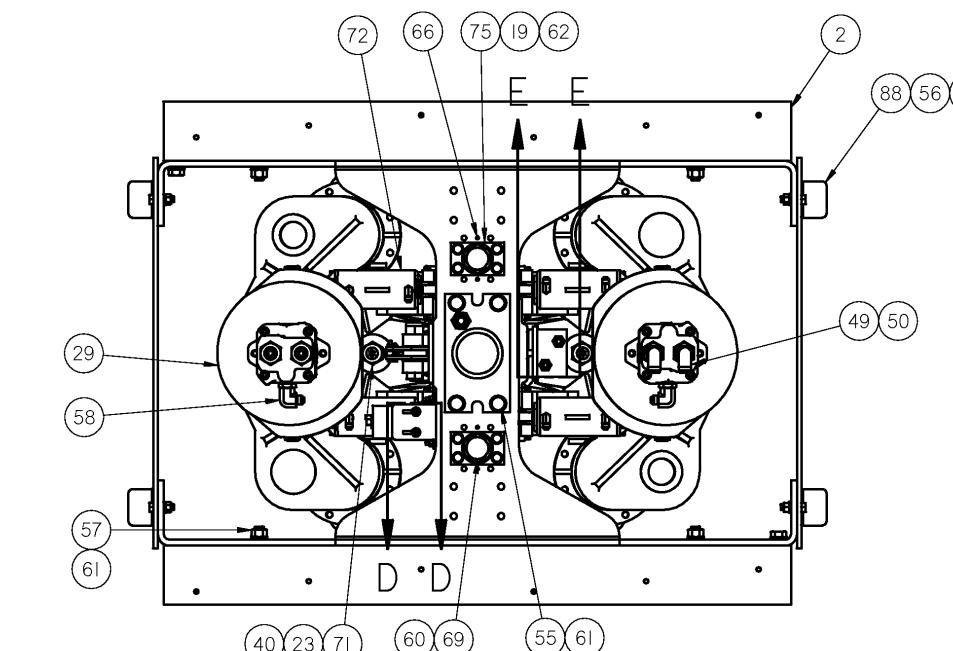


SECTION F-F

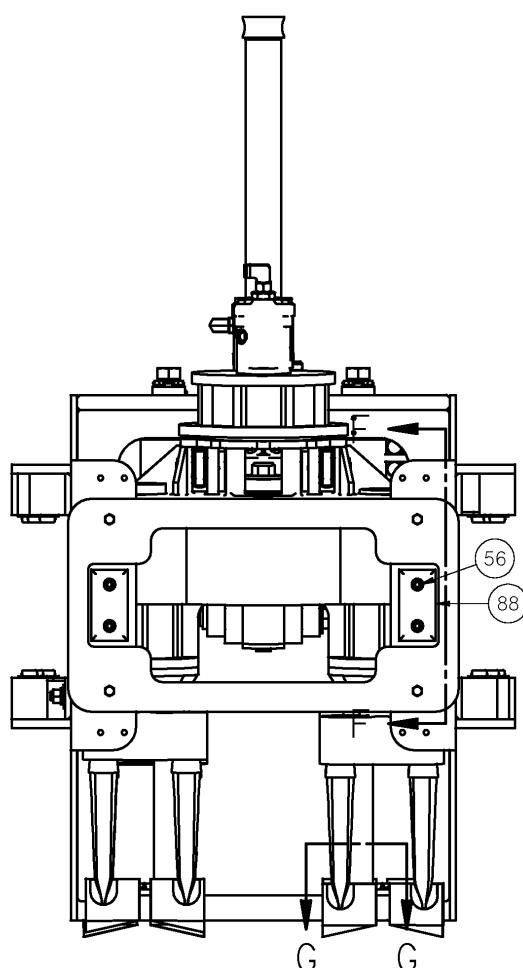


DETAIL G

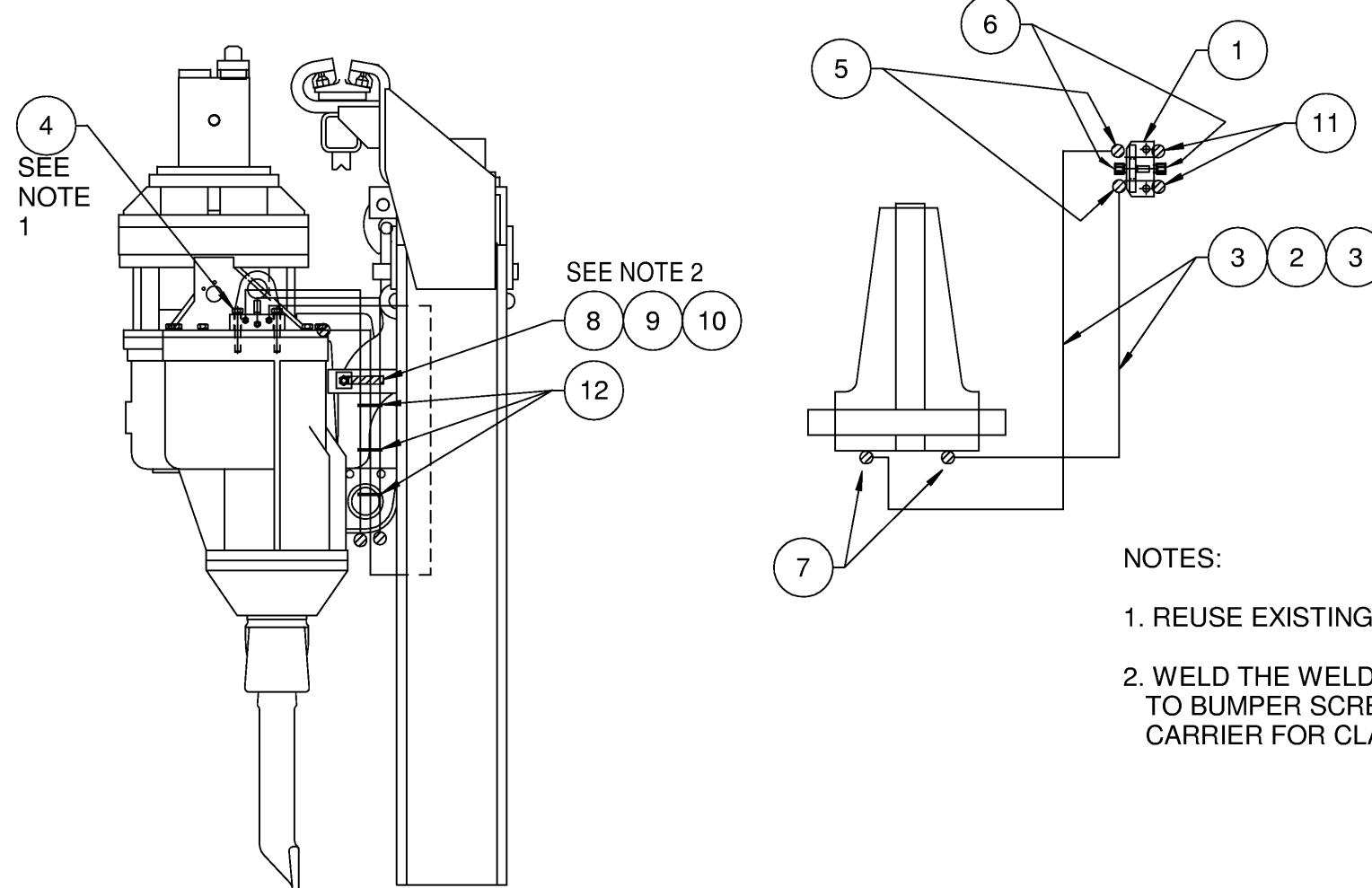
SECTION D-2



SECTION E-E



ITEM	PART NUMBER	DESCRIPTION	QTY
1	G5330YAA	LUBE BLOCK WELDMENT	4
2	C8555Y14	MICRO HOSE (FT)	30
3	C8555Y15	MICRO HOSE FITTING	18
4	A0036070	3/8-16 X 2 1/2 CAPSCREW	8
5	L420853	90DEG. MALE PIPE USE F010677	8
6	F002035	1/8 PIPE PLUG	8
7	L424112	ORDER F024035	8
8	0-3305022-0-20	WELD ADAPTER	4
9	L40388	NUT ELASTIC STOP 5/16-18	4
10	0-3202000-0-22	HOSE CLAMP	4
11	L425183	90 DEG. FITTING	8
12	L420492	STANDARD TIE	16



TYPICAL FOR ALL VIBRATORS

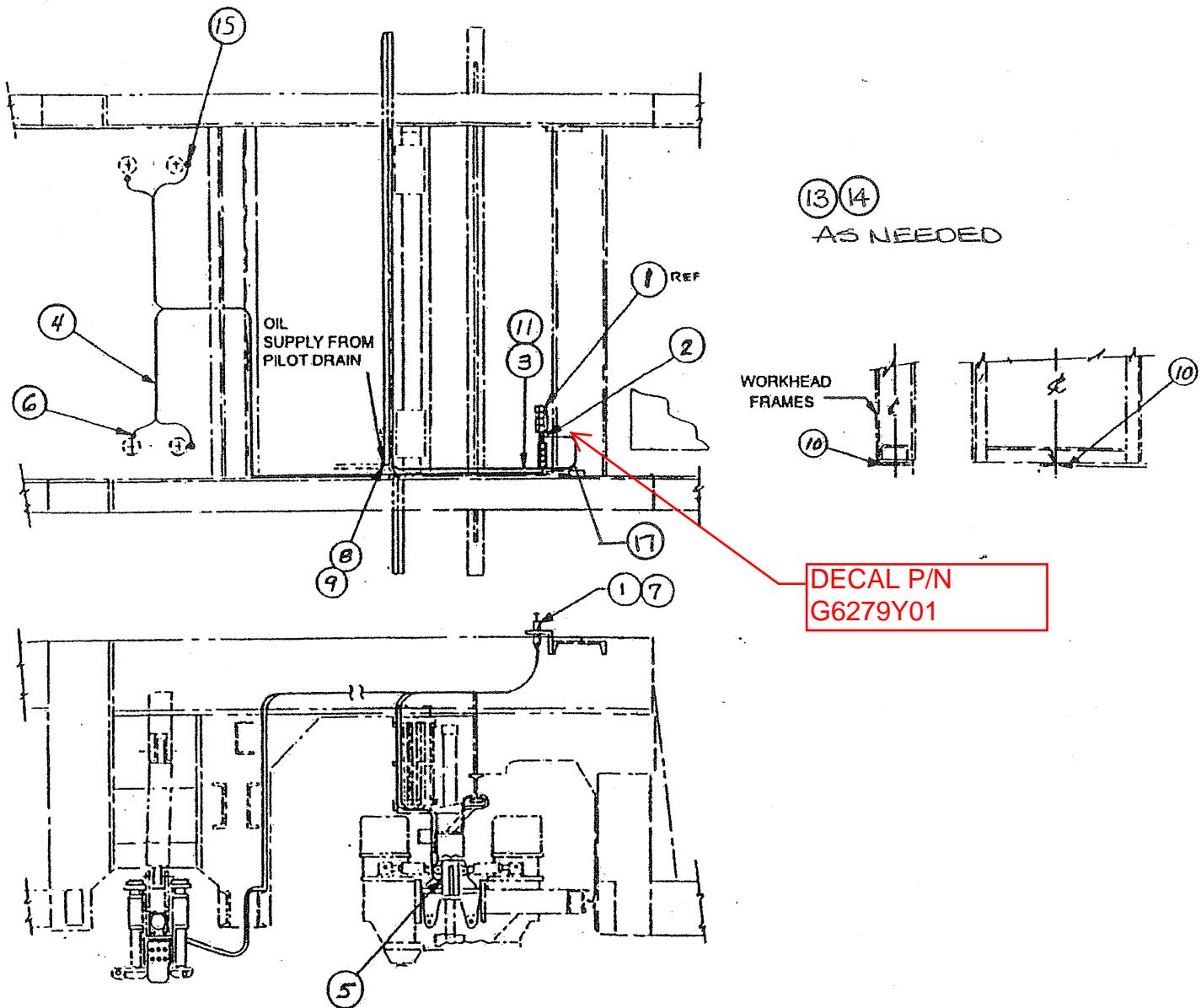
NOTES:

1. REUSE EXISTING LOCKWASHERS
2. WELD THE WELD ADAPTOR W/ 5/16 BOLT TO BUMPER SCREW BOSS ON VIBRATOR CARRIER FOR CLAMP INSTALLATION.

SECTION D-3

CONFIDENTIAL		IMPLIED TOLERANCES ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED										CHANGE	R/L	REVISION	DATE	Description	WORKHEAD GREASE KIT				
		NOMINAL DIM. INCH DECIMAL PLUSES OR MINUS NOMINAL DIM. DECIMAL PLUSES OR MINUS MILLIMETER DECIMAL PLUSES OR MINUS UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE A SURFACE FINISH OF 125 MICRO INCHES ANGULAR TOLERANCE OF ±5° CONCENTRICITY WITHIN .015 RADIAL RUNOUT PRODUCTION										101272	A	RELEASE	8-27-07	Drawing Number	Machine Type	MARK VI			
		OVER	TO	2 PLACE DECIMAL	2 PLACE DECIMAL	OVER	TO	2 PLACE DECIMAL	2 PLACE DECIMAL	OVER	TO	2 PLACE DECIMAL	2 PLACE DECIMAL	OVER	TO	2 PLACE DECIMAL	2 PLACE DECIMAL	Model	Drawn by	Date Drawn	Harsco Track Technologies
		0	.03	.005	0	.150	.050	.010	8	.13								4014782.dft	hwiggins	8-27-07	Harsco Columbia, SC
		8	.24	.04	.058	.150	.090	.10	.20									Weight	Scale	1:4	APD JBR
		24																Matl			
																		Part Number	Size	Sheet	
																		4014782	D	1 OF 1	

SECTION D-4



ITEM	DESCRIPTION	PART NUMBER	QTY
1	NEEDLE VALVE MANIFOLD	B1657Y08	1
2	1/4-90 MP-JIC	L420002	1
5	1/4 MP- 1/4 TUBE FITTING	A5443Y10	4
6	1/8 MP- 1/4 TUBE FITTING	A5443Y03	2
7	STEEL ANGLE	B4739Y01	1
8	3/8 SWIVEL RUN TEE	0-3304057-0-08	1
9	3/8 X 1/4 REDUCER	0-3304132-0-01	1
10	OIL DEFLECTOR	A774Y01	2
13	TIE WRAP (6")	L420492	50
14	TIE WRAP (14")	L420493	6
15	1/8 MP X 1/4 X 90 FITTING	A5443Y04	2
17	HOSE KIT	H2353W05	1

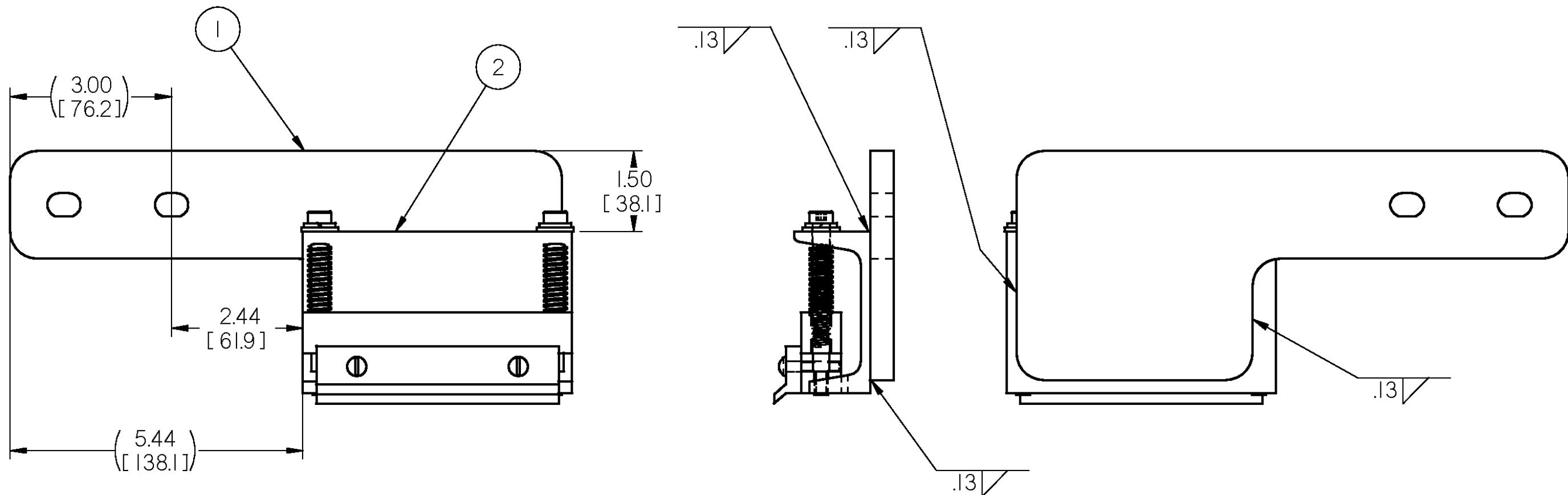
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SOLID EDGE DRAWING

ITEM NO	PART NO	DESCRIPTION	QTY
1	2019350	MOUNT, WIPER	1
2	2019353	WIPER ASSEMBLY, SHORT	1

SECTION D-5



OPPOSITE HAND 4031090

Inch
[mm]

IMPLIED TOLERANCES ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED								CHANGE	R/L	REVISION	DATE	Description				
NOMINAL SIZE RANGE	INCH PLUS OR MINUS		NOMINAL SIZE RANGE	METRIC PLUS OR MINUS		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE: A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF ±.50° CONCENTRICITY WITHIN .010		ECN-105904	A	RELEASE	7-14-10	RUNWAY WIPER ARM				
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL					Drawing Number	Machine Type			
0	6	.03	.005	0	150	.8	.13					4031089.asm	DRONE TAMPER			
6	24	.04	.008	150	600	1.0	.20					Model	Drawn by	Date Drawn		
24	-	.06	.010	600	-	1.5	.25					Weight	e Carter	7-14-10		
												Scale:	APVD Desg	EC	APVD ChEng	EC
												Mat'l				
												Part Number	4031089	Size	B	Sheet 1 of 1

HARSCO
RAIL

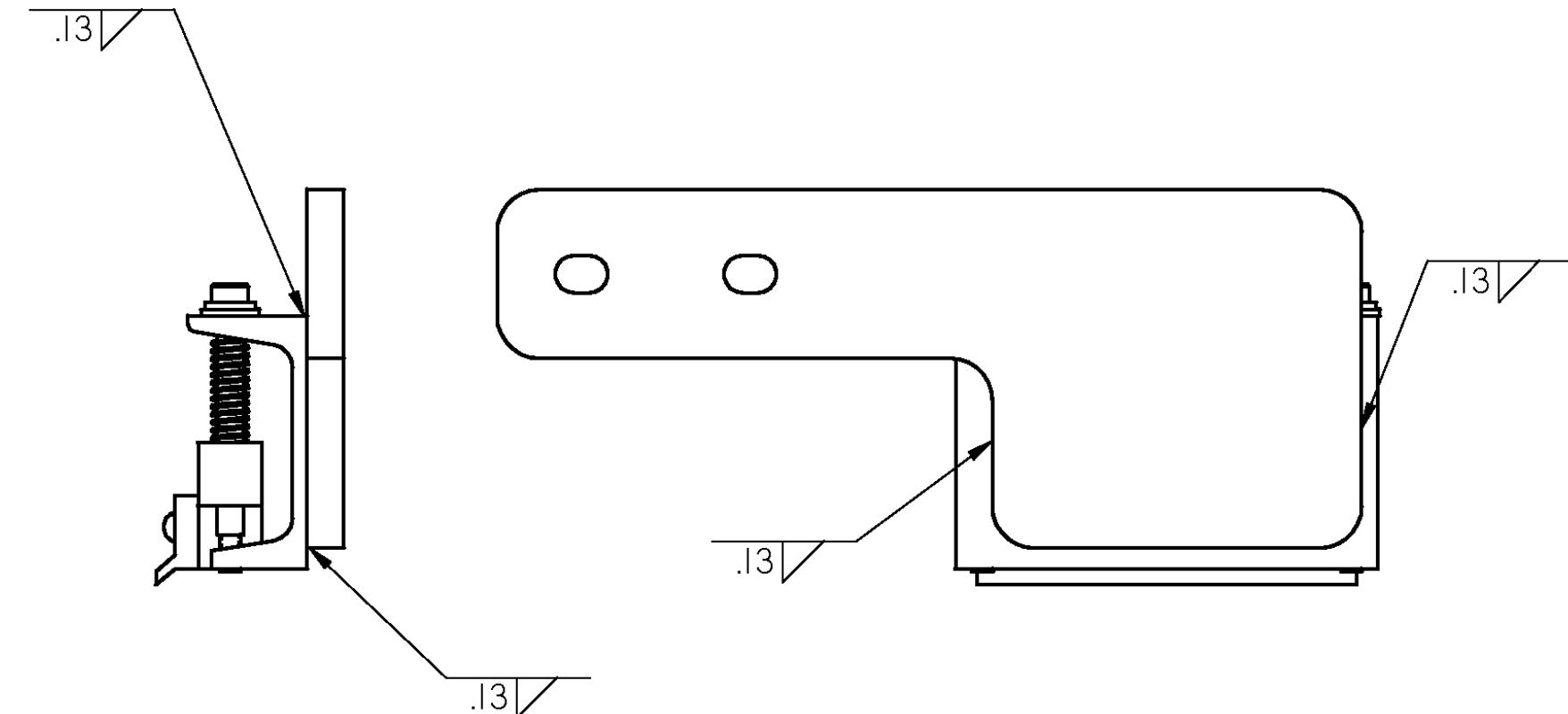
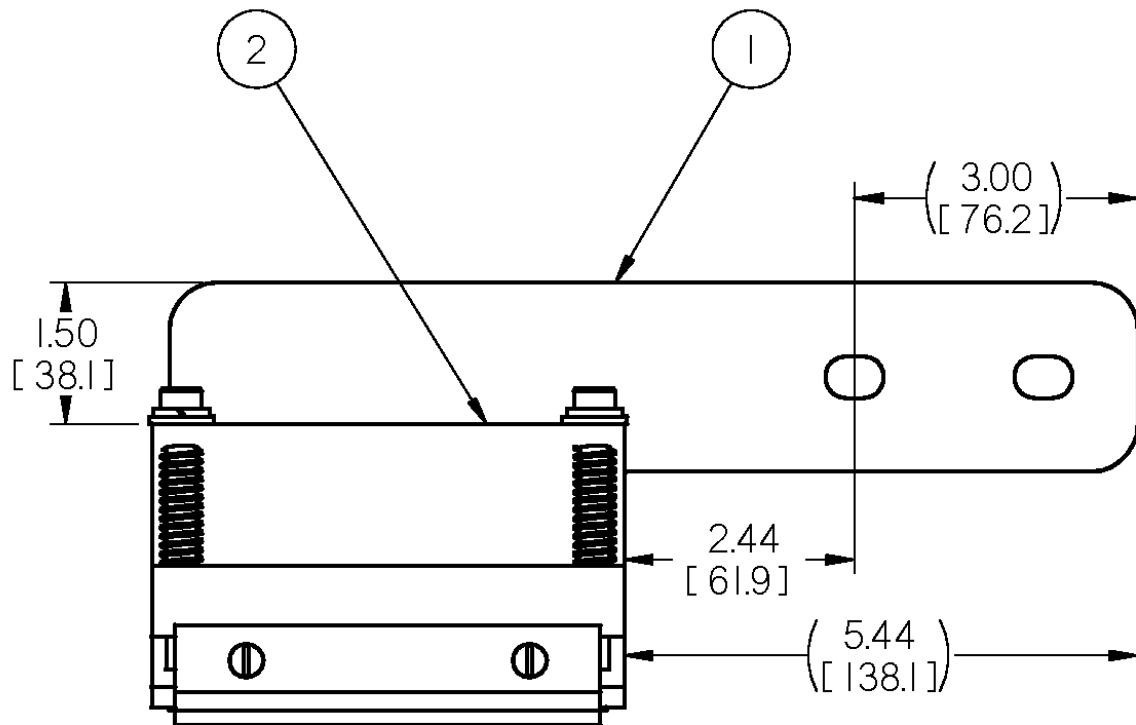
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SOLID EDGE DRAWING

ITEM NO	PART NO	DESCRIPTION	QTY
1	2019350	MOUNT, WIPER	1
2	2019353	WIPER ASSEMBLY, SHORT	1

SECTION D-5A



OPPOSITE HAND 4031089

Inch
[mm]

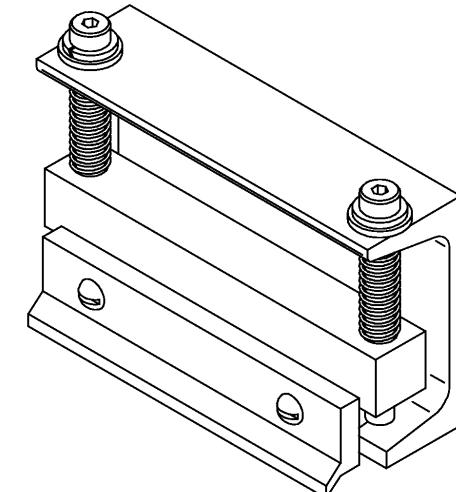
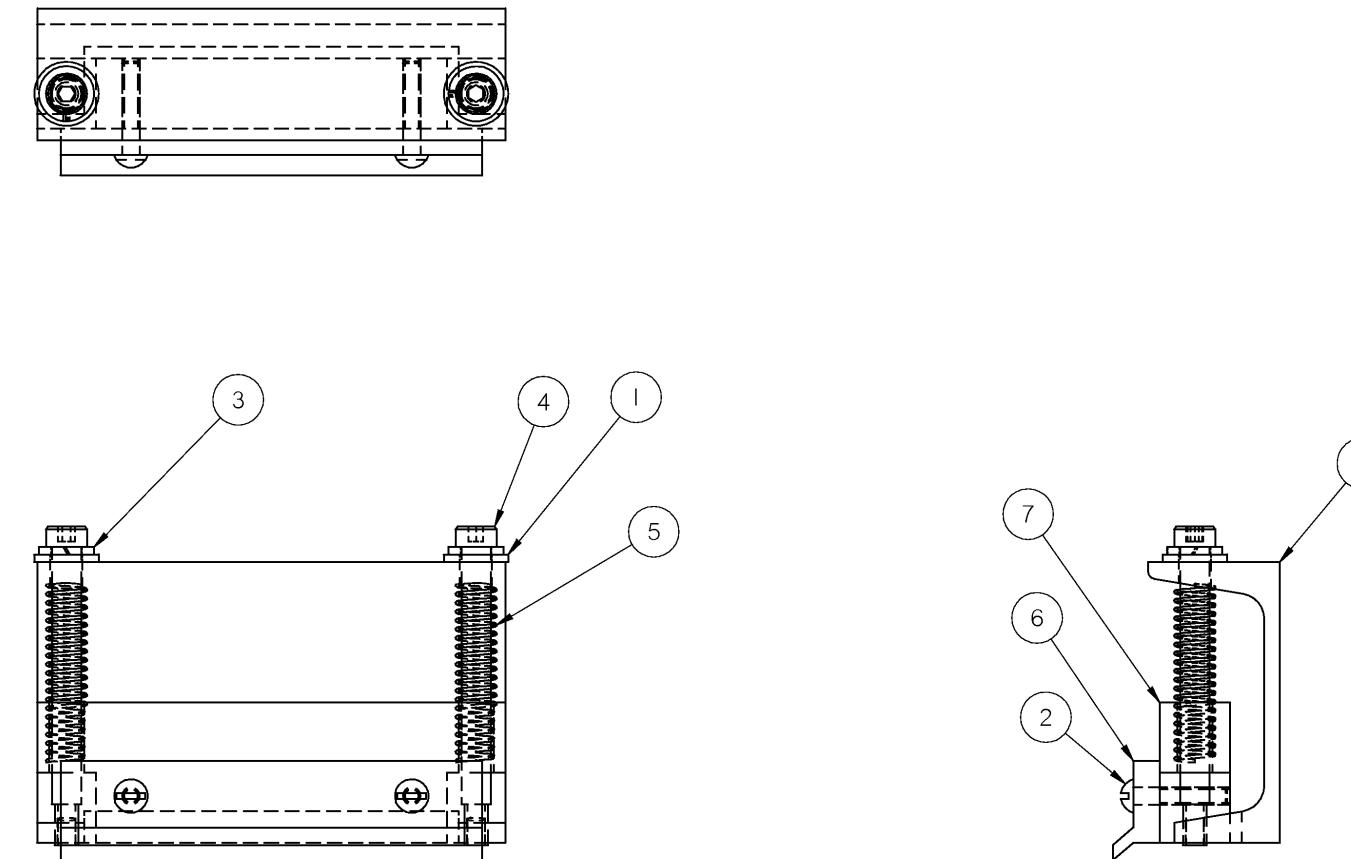
IMPLIED TOLERANCES ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED								CHANGE	R/L	REVISION	DATE	Description				
NOMINAL SIZE RANGE	INCH PLUS OR MINUS		NOMINAL SIZE RANGE	METRIC PLUS OR MINUS		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE: A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF $\pm .50^\circ$ CONCENTRICITY WITHIN .010		ECN-105904	A	RELEASE	7-14-10	RUNWAY WIPER ARM				
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL					Drawing Number	Machine Type			
0	6	.03	.005	0	150	.8	.13					4031090.asm	DRONE TAMPER			
6	24	.04	.008	150	600	1.0	.20					Model	Drawn by	Date Drawn		
24	-	.06	.010	600	-	1.5	.25					Weight	e Carter	7-14-10		
												Scale:	APVD Desg	EC	APVD ChEng	EC
												Mat'l				
												Part Number	4031090	Size	B	Sheet 1 of 1

HARSCO

RAIL

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	F018615	SAE WASHER 5/16 ZP	2	ea		
2	F016227	DC-#10-24 X 1 RD HD MS	2	ea		
3	F001100	DC-SAE RGLR LOCK WASHER 5/16 Z	2	ea		
4	4019925	SHOULDER BOLT, SS	2	ea		
5	4019923	SPRING, 1 7/8	2	ea		
6	2019354	WIPER, 4.50 INCH	1	ea		
7	2019352	WIPER MOUNT, NYLON	1	ea		
8	2019351	CHANNEL, WIPER	1	ea		

SECTION D-6



Inch
[mm]

CONFIDENTIAL										Description										HARSCO								
NOMINAL SIZE RANGE				INCH		NOMINAL SIZE RANGE				METRIC		UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE A SURFACE FINISH OF 12.5 MICRONES AND A TOLERANCE OF +/- .050 CONCENTRICITY WITHIN .010				CHANGE		R/L		REVISION		DR		DATE		RAIL		
OVER	TO	PLUS OR MINUS	DECIMAL	OVER	TO	PLUS OR MINUS	DECIMAL	OVER	TO	DECIMAL	OVER	TO	DECIMAL	OVER	TO	DECIMAL	CTR	15JUN10	WIPER ASSEMBLY, SHORT									
0	6	.03	.015	0	150	.8	.13												Machine Type		TIGER CUB		Part Number		Size			
6	24	.04	.008	150	600	1.0	.20												Weight		1.6 lbm		Drawn		Date Drawn		Sheet	
24	-	.06	.010	600	-	.15	.25												CTR		15JUN10				D			
																			SOLID EDGE DRAWING		DO NOT SCALE				Sheet			
																			1 of		2019353							

PARTS LIST

ASSEMBLY IDENTIFIER

ITEM NO	PART NUMBER	DESCRIPTION	QUANTITY				
			1	1	1	0	
1	0-2200082-0-01	VIBRATOR HOUSING ASSY	1	1	1	0	
2	W682436	VIBRATOR HOUSING COVER	1	1	1	1	
3	W681200	BEARING SLEEVE	2	2	2	2	
4	W684189	VIBRATOR SHAFT, LONG	1	0	0	1	
5	W684188	VIBRATOR SHAFT, SHORT	1	0	0	1	
6	0-3010037-0-01	WOODRUFF KEY #807	2	2	2	2	
7	A3476Y01	LOCKNUT	2	2	2	2	
8	W68378-02	IMPELLER HOUSING	1	1	1	1	
9	C2261WAA	HYDR MOTOR & MOUNT ASSY	1	1	1	-	
10	A3476Y03	LOCKNUT	2	2	2	2	
11	X68308-01	ECCENTRIC CONN. ROD	2	2	2	2	
12	Y68313-01	VIBRATOR PIN	2	2	2	2	
13	X688056	VIBR. FORK LINK ASSY	2	2	2	2	
14	0-1303686-0-01	SHIELD	1	1	1	1	
15	A0062029	3/8-16x3/4 S.H. CUP S.S.	3	3	3	3	
16	Z68053	STOP PLATE	2	2	2	2	
17	Z68337-01	UPPER BEARING SPACER	2	2	2	2	
18	Z68323-01	LOWER BEARING SPACER	2	2	2	2	
19	0-1305995-0-01	COUPLING SPACER	1	1	1	1	
20	0-1201169-0-01	ECCENTRIC SHAFT, FULL AMP	1	1	0	1	
21	X682452	TOP BEARING COVER	1	1	1	1	
22	Z68338-01	VIBRATOR SPACER RING	1	1	1	1	
23	Z682451	VIBR. TOP SPACER RING	1	1	1	1	
24	L410180	NEEDLE BEARING O.R.	2	2	2	2	
25	L41785	NEEDLE BEARING I.R.	2	2	2	2	
26	X681042	VIBR. COVER PL. GASKET	1	1	1	1	
27	Y682459	TOP BRG. HSG. GASKET	1	1	1	1	
28	Z682461	IMPELLER HSG. GASKET	1	1	1	1	
29	L40552	SFERICAL ROLLER BRG.	2	2	2	2	
30	L40559	SFERICAL ROLLER BRG.	1	1	1	1	
31	L40732	CYLINDRICAL ROLLER BRG.	1	1	1	1	
32	L410181	NEEDLE BEARING O.R.	2	2	2	2	
33	L410182	NEEDLE BEARING I.R.	2	2	2	2	

SHEET		REVISIONS					
NO	ER	DESCRIPTION		DR	CK	APP	
1	1	S02163	NEW RELEASE		CJW		
2	2		NO CHANGE				
3	3	S02163	IT.9 WAS C0688WAA		FCH		
4	4	62081	DELETED IT. 9. ALL TABS		DAS	DGV	AML

SECTION D-7

ORIGINAL

ASSEMBLY DESCRIPTION

DATE	APP
1/23/90	

Fairmont
Tamper

2401 Edmund Road-Box 20
Coyce-West Columbia,
South Carolina 29171-0020
(803) 822-5160

PARTS LIST

ASSEMBLY IDENTIFIER
AAABACAD

DWG NO
0607V

ITEM NO	PART NUMBER	DESCRIPTION	QUANTITY					SHEET 2	CONT'D 3	DESCRIPTION (2)	DRAWN C.J. WOLF	DATE 5-11-90	CHECKED D.V.
			2	2	2	2	2						
34	L41055	SINGLE THRUST BALL BRG	2	2	2	2							
35	L40551	SINGLE THRUST BALL BRG	2	2	2	2							
36	L41057	OIL SEAL	1	1	1	1							
37	L40550	OIL SEAL	2	2	2	2							
38	0-3381010-0-02	OIL FILLER & AIR FILTER	1	1	1	1							
39	L40450	RETAINING RING	2	2	2	2							
40	L40885	RETAINING RING	2	2	2	2							
41	L41058	RETAINING RING	2	2	2	2							
42	L41059	RETAINING RING	1	1	1	1							
43	L40522	O-RING	2	2	2	2							
44	A0061009	5/16 LKWSHR	9	9	9	9							
45	A0036032	5/16-18x3/4 H/H CPSCR	9	9	9	9							
46	0-1303949-0-01	SHROUD	1	1	1	1							
47	A0036002	1/4-20x5/8 H/H CPSCR	4	4	4	4							
48	L40567	OIL GAUGE	1	1	1	1							
49	L40564	ROLL PIN	2	2	2	2							
50	L41068	SWAGELOCK MALE CONN.	3	3	3	3							
51	L41069	SWAGELOCK MALE ELBOW	1	1	1	1							
52	L41070	PIPE BUSHING	2	2	2	2							
53	L410945	NYLON TUBING (FT)	2	2	2	2	2						
54	Z687027	VIBRATOR PUMP SEAL	1	1	1	1							
55	A0041126	1/2-13x1 1/4 SOC HD SCR	12	12	12	12							
56	A0041145	1/2-20x1 1/4 SOC HD SCR	8	8	8	8							
57	A0036126	1/2-13x2 1/4 H/H CPSCR	16	16	16	16							
58	TZ767816-004	HEX HD CAPSCREW	6	6	6	6							
59	A0041089	3/8-16x1 1/4 SOC HD SCR	6	6	6	6							
60	A0041088	3/8-16x1* SOC HD SCR	6	6	6	6							
61	A0036065	3/8-16x1 1/4 H/H CPSCR	22	22	22	22							
62	A0049001	#10-24x3/8 FILLISTER SCR	6	6	6	6							
63	L41075	SQ HD MAGNETIC PLUG	2	2	2	2							
64	L420110	HEX HEAD PLUG	2	2	2	2							
65	0-3304080-0-02	HEX HEAD PLUG	2	2	2	2							
66	L40767	NUT	16	16	16	16							

SHEET
2
CONT'D
3
LAST
REV
5-11-90
CHECKED
2092-S3-95

DWG NO
0607V

REVISIONS

DESCRIPTION

DR CK APP MF

CZECH MK IV
DOUBLE TE
SAFRICAN TOOLS
2/3 AMPLITUDE
SAFRICAN TOOLS
FULL AMPLITUDE
MK IV. FULL AMPLITUDE

ASSEMBLY DESCRIPTION

ER	5288.6	5674.2	7332
&		BB	A0 2092
CK		GGY	AM
APP		AM	
MF			

SECTION D-7

ORIGINAL

*Fairmont
Tamper*

2401 Egland Road-Box 20
Coyce-West Columbia,
South Carolina 29171-0020
(609) 622-3760

PARTS LIST

ASSEMBLY IDENTIFIER

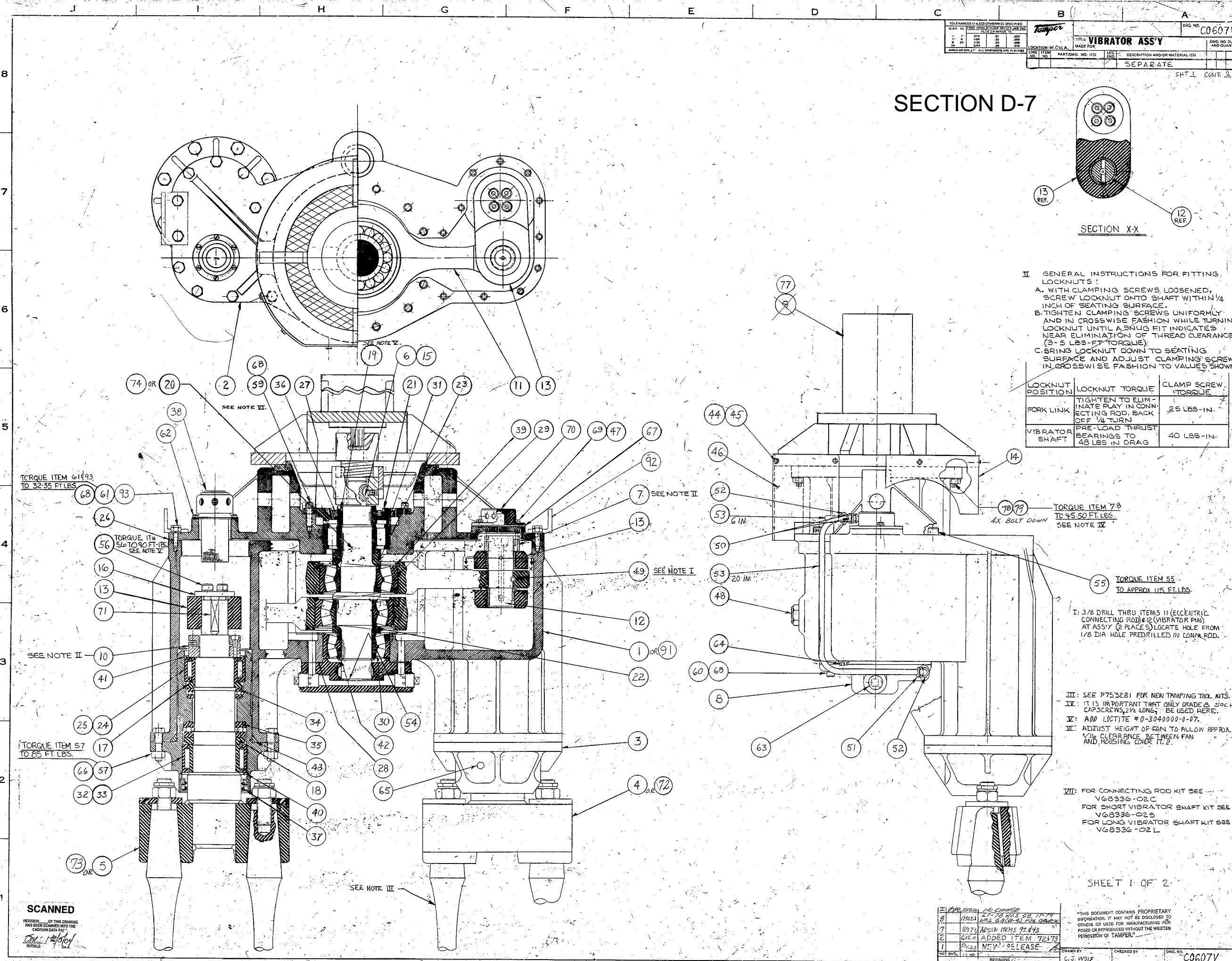
SHEET NO	ER	REVISIONS	DR	CK	APP	MF
		DESCRIPTION				
1	1	S12163 NEW RELEASE	CJW			
2	2	S26811 ADDED IT'S. 72 & 73	SP80	D.V.	RJM	
3	4	62881 ADDED IT'S. 75-89. ALL TABS	DAS	D.V.	AMU	
4	5	62883 IT. 89 WAS C9825Y01	DAS	D.V.	AMU	
5	6	7182 DELETED IT'S.84-89 ALL TABS. .1 ADDED IT. 90 ALL TABS.	MLT		OGV	AD
6	7	89791 ADDED IT'S 92 & 93	VTP	OGV	MAD	
7	8	12302 IT-78 WAS A0036069 & OTY OF IT-68 WAS 40 ALL TABS.	PJG	3V	Qm	

SECTION D-7

ORIGINAL

*Fairmont
Tampér*

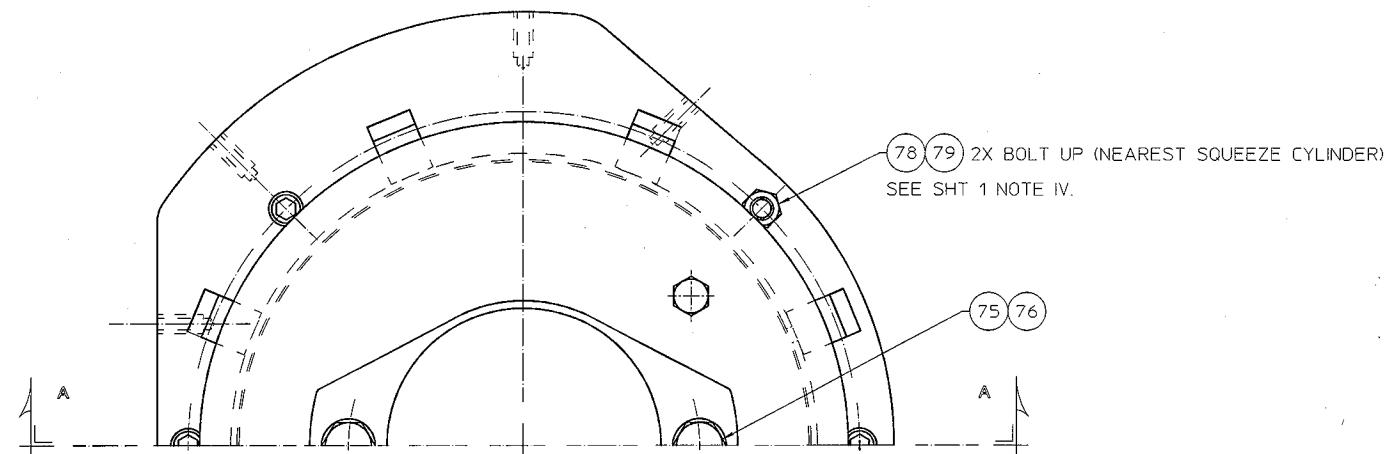
2401 Edmund Road-Box 20
Coyote, West Colorado,
South Colorado 29171-0020
(303) 822-9160



A
ENG.DWG.NO.
C0607V

REVISIONS						
ER	DESCRIPTION	ZONE	DR	CK	APP	HIP
A2081	ADDED SHEET 2	DAS		ANL		
I1021.1	ADDED IT. 90. CH. INST. NOTES	MLT	DGV	AD		
12302	ADDED NOTE @ IT-78 & 79.	PJO			OMRQ	
I10508	NO CHANGE			NH		

SECTION D-7

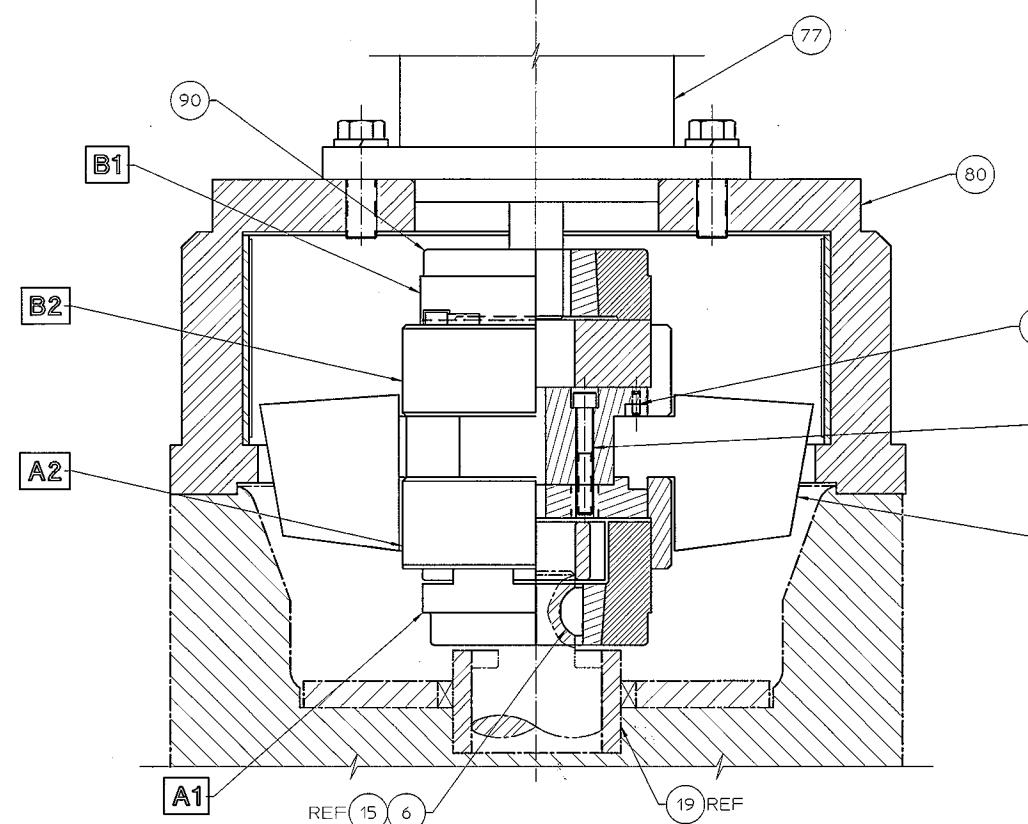


SEE SHT 1 NOTE IV.

SEE SHT 1 NOTE 1

INSTALLATION PROCEDURES :

- 1) FIT ROLL PIN, ITEM "82", FLUSH WITH ELEMENT SIDE OF COUPLING HALF, "B2", AND ASSEMBLE FAN BLADES, ITEM "83" BETWEEN COUPLING HALVES, "A2" AND "B2", WITH LOCTITE AT SCREWS, ITEM "81". (SCREWS MUST NOT PROJECT THROUGH COUPLING HALF)
 - 2) INSTALL COUPLING HALF, "A1", FLUSH AGAINST COUPLING SPACER, ITEM "19".
 - 3) BOLT THE HYDRAULIC MOTOR, ITEM "77", TO ADAPTER, ITEM "80", BEFORE INSTALLING COUPLING HALF, "B1" (WITH BUSHING) TO BE FLUSH WITH THE END OF THE MOTOR SHAFT.
 - 4) INSTALL FLEXIBLE ELEMENTS, AND THE FAN ASSEMBLY (NOTE 1).
 - 5) BEFORE INSTALLING AIR SHROUDS, CHECK FOR COUPLING END FLOAT: 0.030 - 0.050 (ADJUST PROJECTION OF MOTOR SHAFT THROUGH BUSHING, IF REQUIRED)
 - 6) 2 EACH 3/8-16x5/8 SHSS FURNISHED WITH TAPER LOCK BUSHING



SECTION "A-A"

PLOT SCALE 1

SEPARATE PARTS LIST

PLOT SCALE 1										SEE SEPARATE PARTS LIST							
FIG. NO.	ITEM NO.	PART NUMBER		DESCRIPTION AND MATERIAL SIZE (REF.ONLY)								QTY					
IMPLIED TOLERANCES ALL DIMENSIONS IN INCHES-TOLERANCE UNLESS OTHERWISE SPECIFIED										WELDING SPECIFICATION							
NOMINAL SIZE RANGE	PLUS OR MINUS	NOMINAL SIZE RANGE	PLUS OR MINUS	VIBRATOR ASSY													
OVER TO	FRACTION	2 PLACE DECIMAL	3 PLACE DECIMAL	MARK IV													
-	1	.32	.01	.003	6	.24	.31	.03	.008	Fairmont tamper							
1	6	.32	.02	.008	24	+	.18	.05	.010	2401 Standard Road-Box 2D 1000 Series 1000-1000 South Catalog 2919-0020 Mach 222-9003							
ANGULAR DIMENSIONS PLUS OR MINUS 1 DEGREE ALL MACHINED SURFACES TO A SURFACE FINISH OF 125 RMS MAXIMUM										DO NOT SCALE							
<input checked="" type="checkbox"/> ALL MACHINED SURFACES TO A SURFACE FINISH OF 125 RMS MAXIMUM										SHEET 2	CONT.	LAST REV. 1957	REMOVED BY	UNQUOTE NO.			
										DATE	10-19-97	DATE	10-19-97				

SCANNED

REVISION _____ OF THIS DRAWING
HAS BEEN SCANNED INTO THE
CAD/CAM DATA BASE.

[Signature] **INITIALS** **DATE**
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WITHOUT THE WRITTEN PERMISSION OF FARNYON TAMPERS

A

B

C

D

IMPLIED TOLERANCES SEE TOLERANCES IMPLICITES VOIR	STD 1001
DEFINITION OF SYMBOLS SEE DEFINITION DE SYMBOLES VOIR	STD 1002
PROJECTION	

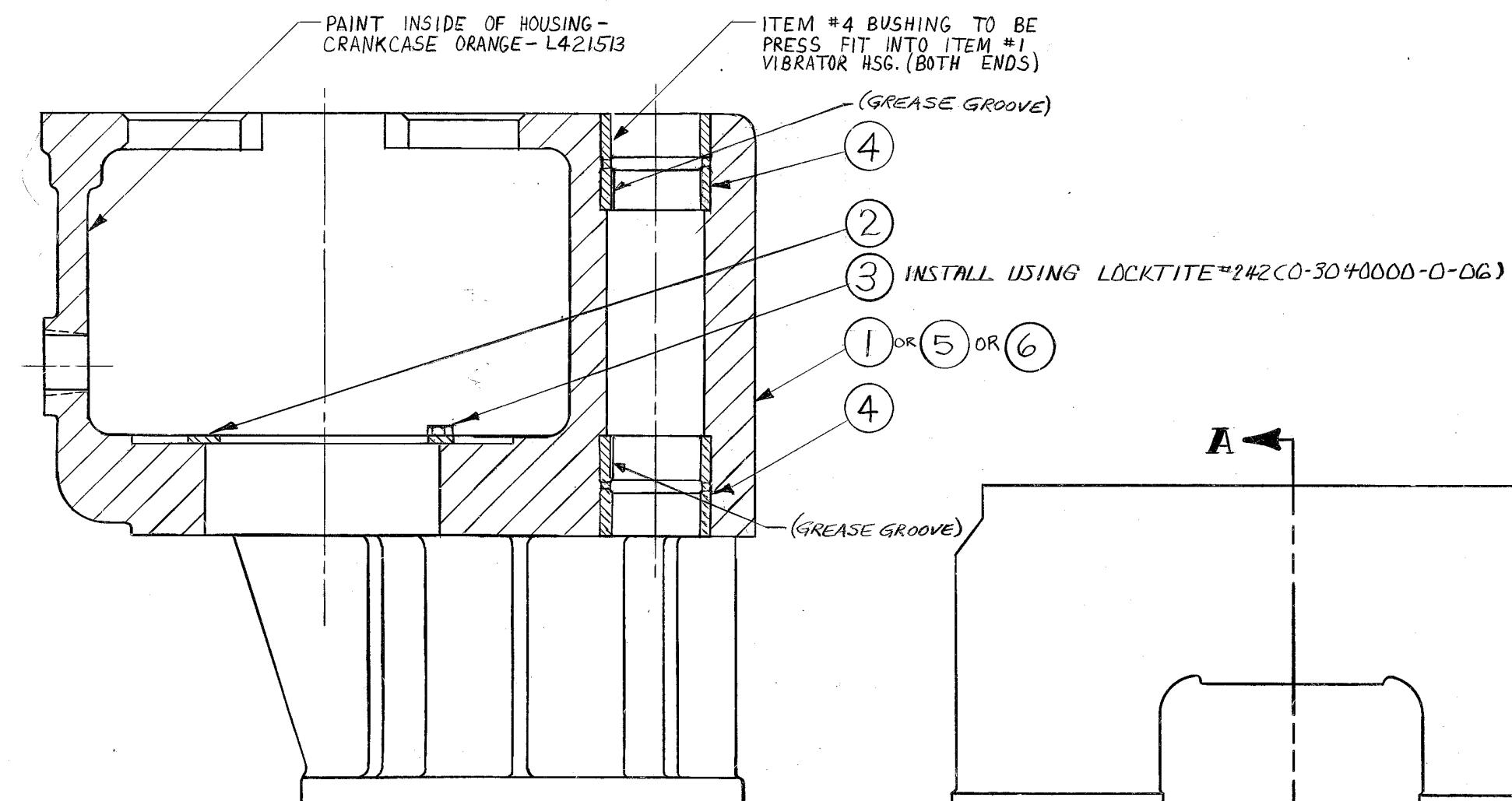
CANRON
RAIL GROUP
TAMPER

DESCRIPTION (30)

LOCATION W.COLA. VIBRATOR HOUSING Ass'Y.

ENG DWG. NO./DESSIN DEPT. TECH. NO.
20-2200082-0SHEET NO.
FEUILLE NO.CONT ON
CONT. SUR.ASSEM. IDENTIFIER
01 02 03

ITEM NO.	PART NO.	LEG	DESCRIPTION (30) / MATERIAL (50)	Quantity/Quantité
1	W68347-02	M	VIBRATOR HOUSING	1 0 0
2	Z682424	M	BEARING RETAINER	1 1 1
3	A0036001		HEX HD CAP SCR 1/4-20 x 1/2 LG	4 4 4
4	B7487Y01	M	SWIVEL BRACKET BUSHING	2 2 2
5	X766300-001	M	VIBRATOR MODIFICATION	0 1 0
6	W683107		VIBRATOR HOUSING	0 0 1

SECTION D-8ENG DWG. NO./DESSIN DEPT. TECH. NO.
20-2200082-00-2200082-0-02
0-2200082-0-01ENG DWG. NO./DESSIN DEPT. TECH. NO.
20-2200082-0

8	12397 ECR 4801	PICT. UPDATE IT-4, PIG IT. 4 WAS Z68273.	On UNC DRAFT
7	12397 ECR 4801	DEL. IT 7 & 8 IT 243 TAB-DIWEREO NOW SAME AS KEV-4	UNC DRAFT
6	12397 ECR 4801	NONE	AtmP

 NC. DER DTJ Description of Change / Description du Changement APP. Drawn by / Dessiné par C.J. WOLF Checked by / Vérifié par APP. LOCN DIST. COD' DEPT
 REVISION 2,4 1 ASSEM. PAR. NO.

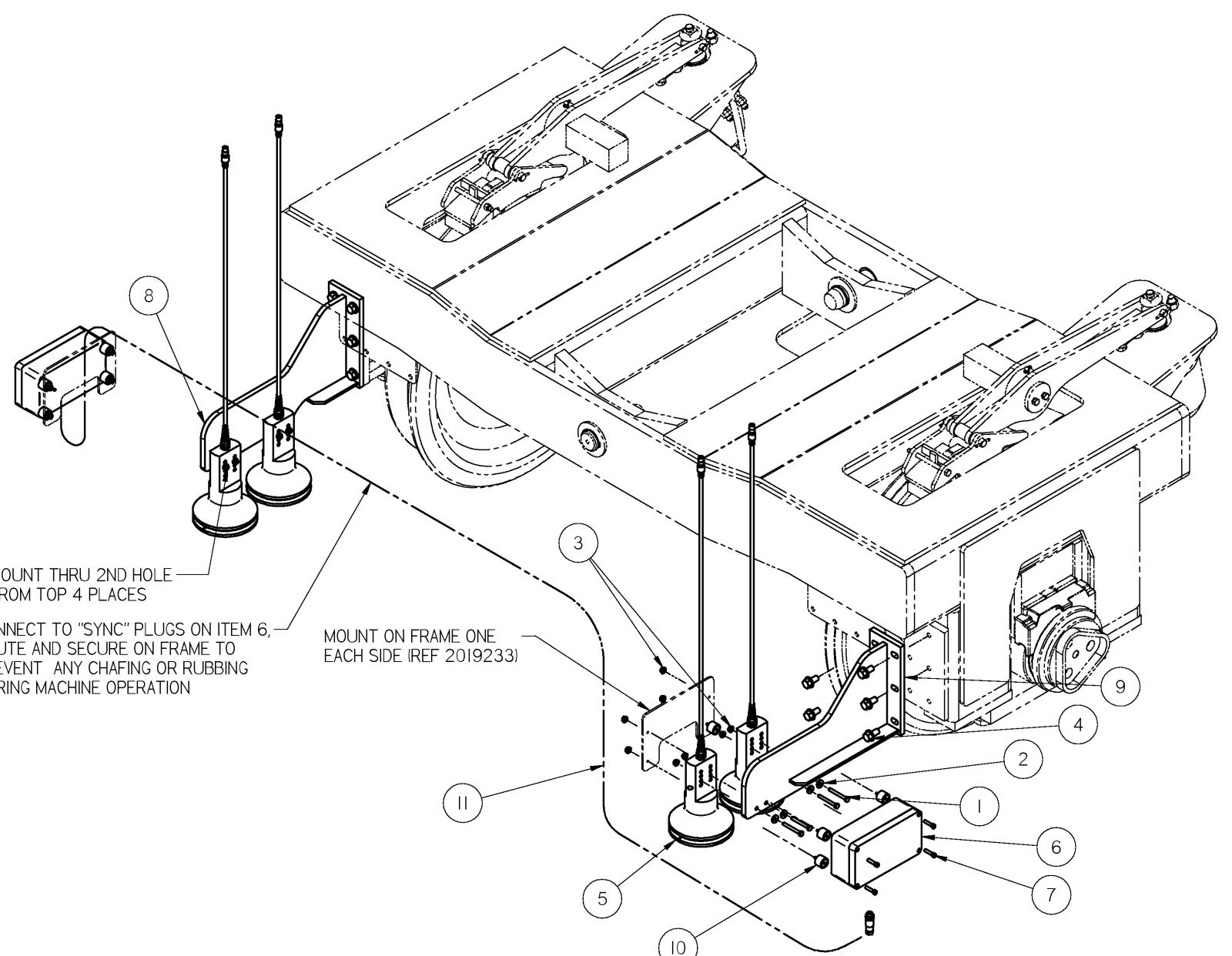
**Tamping Tools Kit
Part No. P753281H
Section D-9**

Kit Items:

- Vibrator Washers	A8236Y01	16
- BTI Tamping Tool, Left	D2752Y01	8
- BTI Tamping Tool, Right	D2752Y01	8

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	F010211	HEX HD CAP SCR 1/4-20X2 1/4 GR	8	ea		
2	148606	WASHER	8	ea		
3	F022138	DC-HX FLG NUT 1/4-20 GR5 ZP US	16	ea		
4	F023226	DC-HEX FLG CR 1/2-13 X 1 GR5 Z	12	ea		
5	4012592	ANTENNA ASSEMBLY	4	ea		
6	4016560	BOX ASSEMBLY, AUTOMAG TIE SENSOR	2	ea		
7	A0041043	1/4-20 X 1 SOCHD C SCR	8	ea		
8	2019232	MOUNT, (RH) ANTENNA MOUNT	1	ea		
9	2019229	MOUNT, (LH) ANTENNA MOUNT	1	ea		
10	4016513	MOUNT, VIBRATION ISOLATORS	8	ea		
11	4018523	CABLE, DUAL PROBE AUTOMAG SYNC	1	ea		

SECTION D-11



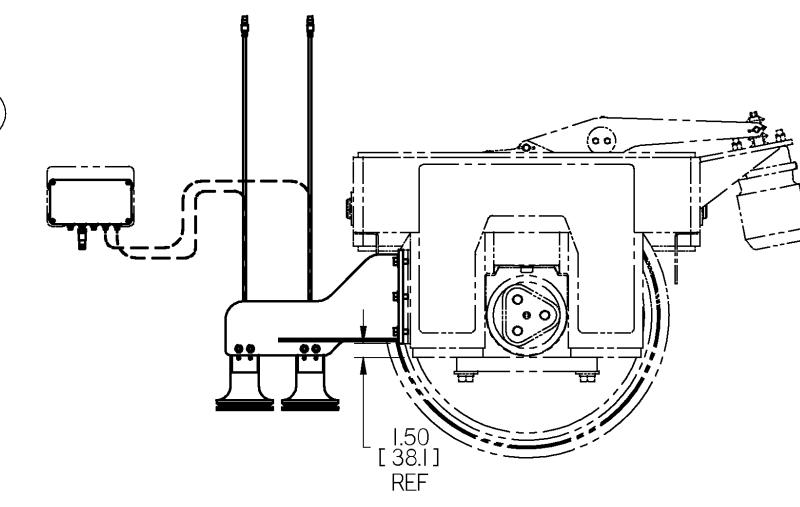
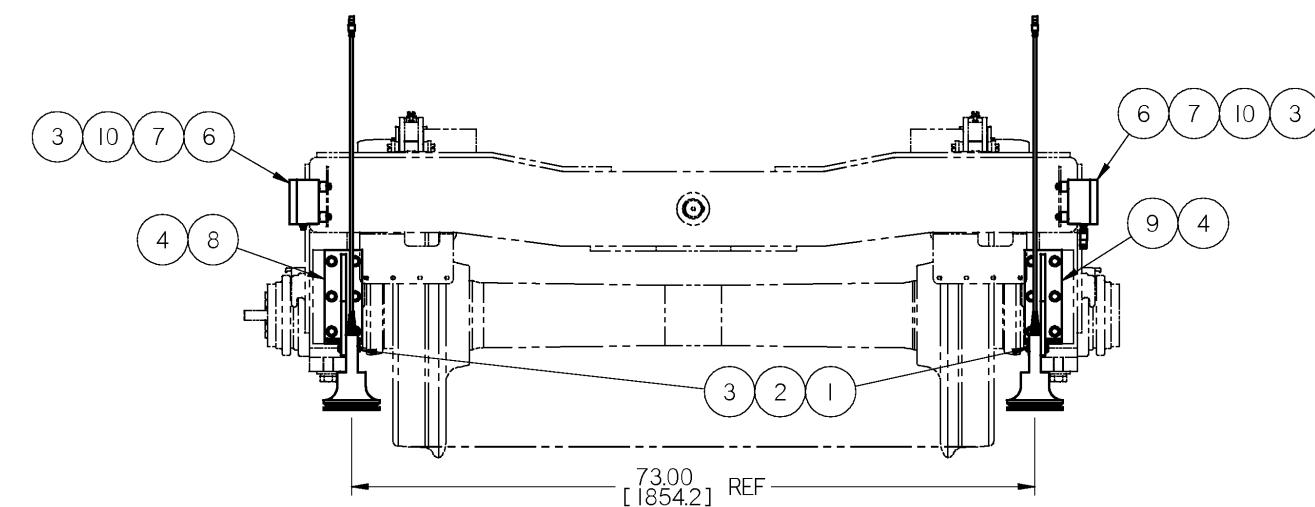
MOUNT THRU 2ND HOLE
FROM TOP 4 PLACES

CONNECT TO "SYNC" PLUGS ON ITEM
ROUTE AND SECURE ON FRAME TO
PREVENT ANY CHAFING OR RUBBING
DURING MACHINE OPERATION

MOUNT ON FRAME ONE
EACH SIDE (REF 20192)

NOTES:

1. MOUNT ITEMS 8 & 9 AT CORRESPONDING DIMENSIONS SHOWN
2. MOUNT ITEM 5 USING HOLE SETS 2ND FROM TOP AS SHOWN.
3. ANTENNA CABLES TO BE ROUTED AND SECURED TO PREVENT ANY CHAFING OR RUBBING DURING OPERATION OF MACHINE
4. CONNECT ITEM 11 TO "SYNC" PLUGS ON ITEM 6, ROUTE AND SECURE ON FRAME TO PREVENT ANY CHAFING OR RUBBING DURING MACHINE OPERATION



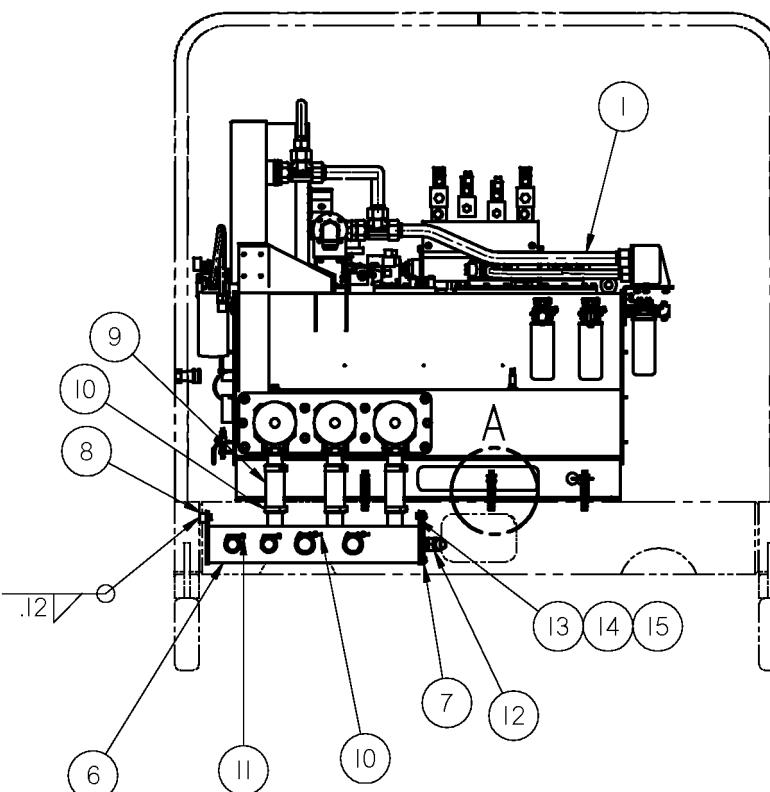
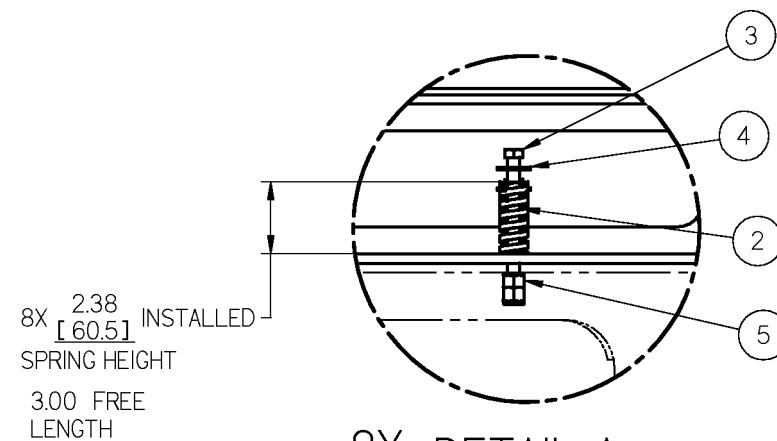
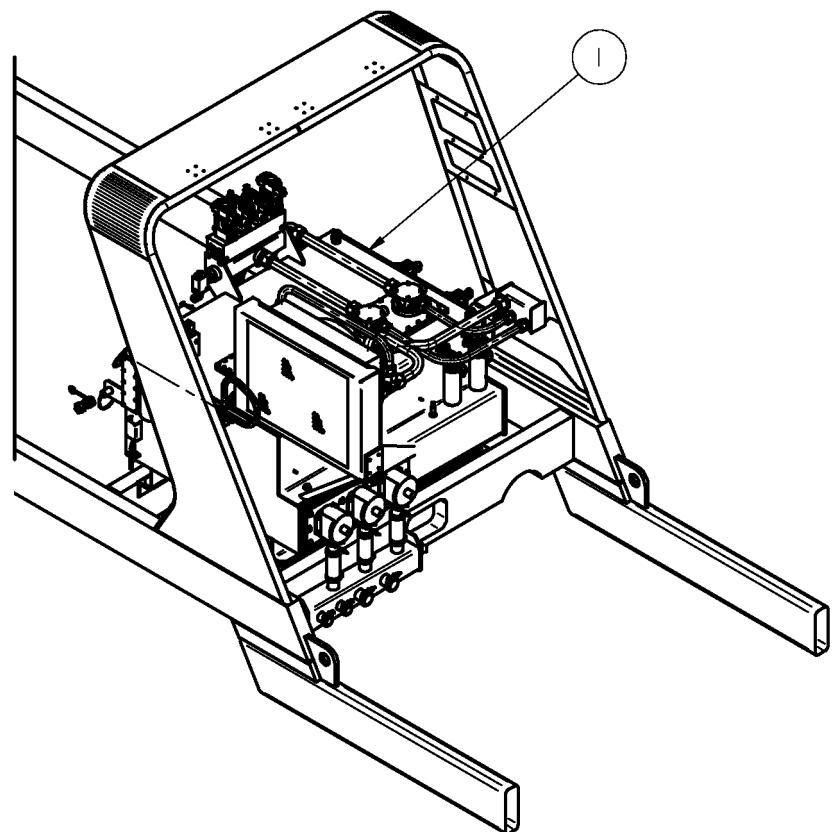
2025 RELEASE UNDER E.O. 14176

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Section J

Hydraulic System and Components)

1	2	3	4	5	6	7	8
F							F
E							E
D							D
C							C
B							B
A							A



SOLID EDGE DRAWING

CONFIDENTIAL		IMPLIED TOLERANCES										CHANGE	R/L	REVISION	DATE	Description						
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		NOMINAL SIZE RANGE	INCH	PLUSE OR MINUS	NOMINAL SIZE RANGE	METRIC	PLUSE OR MINUS					ECN-I05714	B	ADDED PICTORIAL & ITS 2-5. DWG WAS "B" SIZE	A0 EC	05-05-10	Drawing Number	Machine Type	HTT			
		OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL			ECN-I05763	C	ADD IT-6 TO I5		07-14-10	-----	BNSF DRONE TAMPER	Harsco Track Technologies			
		0	6	.03	.000	0	150	8	.13							Model	4029749.asm	Drawn by	fsami	Date Drawn	05-05-10	
		6	24	.04	.008	150	600	1.0	.20							Weight	0.0 lbm	Scale	1:4	APVD Deg	EMC	APVD CEng EMC
		24	-	.06	.010	-	600	1.5	.25							Matt						
		UNLESS OTHERWISE SPECIFIED ALL WELDS SHOULD ADHERE TO THE LATEST HTI WELDING SPECIFICATION 151														Part Number	4029749	Size	C	Sheet	1 of 1	

1 2 3 4 5 6 7 8 Plotted by fsami on 7/14/2010 4029749.dft

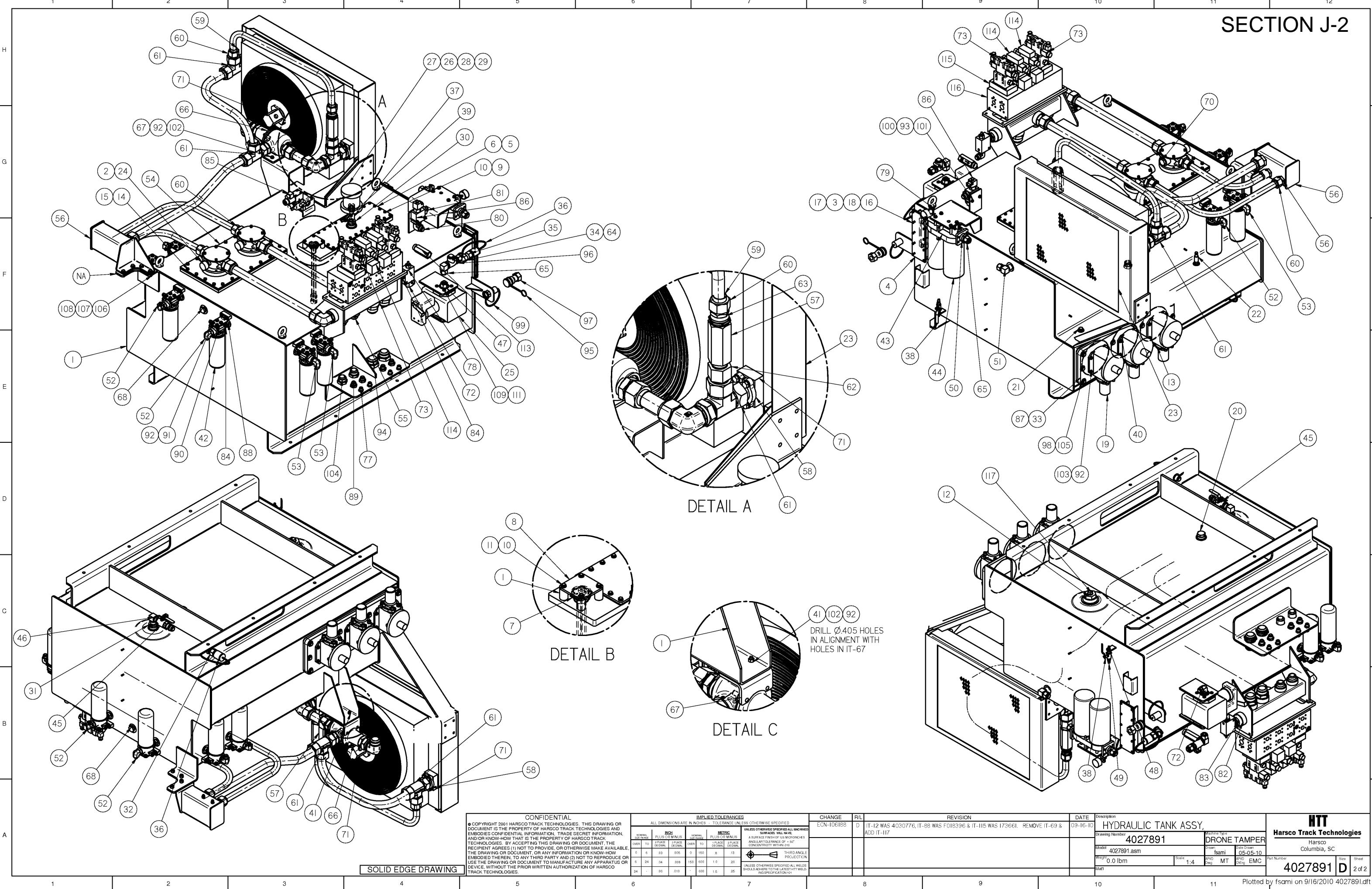
Item Number	Part Number	Description	Quantity	Item Number	Part Number	Description	Quantity	Item Number	Part Number	Description	Quantity
95	F023038	DUST PLUG, I" NPT	1	46	F022682	ELB90 I6NPTXI6NPT	1	1	4027994	HYDRAULIC TANK WLDT, DRONE	1
96	O-3336022-0-10	VALVE, CHECK	1	47	F010580	DC-STR 16X16 NPT	3	2	0-1404519-0-01	TANK FLANGE GASKET	1
97	F023037	COUPLER BODY	1	48	f023041	I/4 MP - I/4 JIC BULKHEAD STR.	1	3	4013490	GAUGE LEVEL/SIGHT	1
98	F001090	HHCS .500-13X1.50	10	49	F012318	DC STR 4X4NPT	2	4	G4220Y01	SIGHT GLASS COVER	1
99	O-3304086-0-08	I" MALE Q/D COVER	1	50	F024442	ADAPTOR -24 NPT X-I6JIC	2	5	4030353	TANK FLANGE GASKET	1
100	F004635	HEX ELASTIC STOP NUT .312-18	4	51	F010685	ELB90 I6X16NPT	2	6	4030755	PLATE COVER WLDT	1
101	F003724	HHCS .3125-18X3.00	4	52	0-3304017-0-23	-16 ORING BOSS -8 JIC 90 ELBOW	3	7	0-3613031-0-10	FUEL GAUGE - 16 LG	1
102	F002837	HHCS .375-16X1.38	6	53	F019288	ELB90 I2X16SAE	3	8	175095	GUARD	1
103	F001007	HHCS .375-16X1.00	12	54	4028451	TANK FILTER COVER WELDMENT	1	9	A0061009	5/16 LOCK WASHER	28
104	I91808	JIC BLKHD STR -24	2	55	F040679	STR-24 X 24SAE	2	10	A0036032	5/16-18 X 3/4 HEX HD CS	32
105	F001267	WROUGHT WASHER -.500	10	56	4001209	HYD TANK MANIFOLD WLDT	1	11	A0060012	5 /16 SAE WASHER	4
106	F016095	HEX ELASTIC STOP NUT .4375-14	4	57	L425375	I I/2 CHECK VALVE	1	12	F010628	BUSHING	1
107	F023111	WROUGHT WASHER	4	58	0-3304142-0-06	SPLIT FLANGE KIT	2	13	0-3304142-0-07	-40 FLG MOUNTING KIT (6I)	3
108	F003935	HHCS .4375-14X1.50	4	59	0-3304121-0-12	I I/2 JIC TUBE SLEEVE	6	14	A0061010	WASHER, 3/8 MEDIUM PLATED LOCK	22
109	F009825	HHCS .250-20X1.00	8	60	0-3304120-0-11	I I/2 JIC TUBE NUT	6	15	A0036063	3/8-16 X I" HHCS GR5	22
III	F014346	WASHER .31 STAINLESS	8	61	3401807	TEE 32 X 32 FS X 32	3	16	F016734	SKT HD CS #10I.190-24 X 1.00	10
II3	O-3336021-0-50	INLINE CHECK VALVE	1	62	407979	ADAPTER -24 NPT X -24 JIC	1	17	F018029K	HEX ELASTIC STOP NUT .I90I#10I-24	10
II4	4031214	D07 PROPORTIONAL UP/DOWN VALVE	2	63	F011928	DC-STR 24X24NPT	1	18	A0060006	I0 SAE FLAT WASHER PLATED	10
II5	4031834	ADAPTER PLATE D07-D05HE	2	64	F017956	SLEEVE	6	19	4017271	2.5" BARB TO SPLIT FLANGE	3
II6	4030802	D07 4 STATION MANIFOLD	1	65	F017955	NUT	6	20	L423277	HEX PIPE PLUG, I I/4	1
II7	F009873	MAGNETIC PIPE PLUG	1	66	A4327Y01	VALVE, THERMAL BYPASS	1	21	L410817	I/2 NPT, HEX HD SOCKET PLUG	1
			67	4028678	BRACKET, BYPASS VALVE	1	22	H5133WAT	M12 TEMP SENDER COND	1	
			68	F018554	PLUG #-#16 JIC	1	23	4007518	OIL COOLER GUARD ASSY	1	
			70	F017193	-16 ORB HEX PLUG	2	24	4027889	FILTER, TANK RETURN	2	
			71	4027655	OIL COOLER	1	25	3400138	PUMP MOTOR, 24 VDC	1	
			72	F014252	-16 ORB JIC 90	2	26	182217	VALVE PRESSURE VACUM	1	
			73	4017267	PROPORTIONAL VALVE	2	27	200148	BREATHER, AIR SENTRY	1	
			77	F014861	STR 8 X 8BH	4	28	182778	ADAPTER	1	
			78	0-3334049-0-05	RELIEF VALVE	1	29	F014738	0-RING I.3IX1.56X.I2	1	
			79	0-3304195-0-01	I/4 JIC/I/8 FP BULKHD FIT.	1	30	F010998	PIPE BUSHING, I I/4 NPT - 3/4 NPT	1	
			80	F022270	DC-ELB90 I6X20SAE	1	31	F001335	BUSHING	1	
			81	F014197	STR I6X20SAE	1	32	0-3304058-0-02	I" MP-I" JIC BULKHEAD FTG	1	
			82	0-3304016-0-15	ORB BUSHING -32X-24	1	33	4028335	PLATE, FILTER MOUNTING,	1	
			83	F024266	DC-STR I6X24SAE	1	34	L41I417	I" NPT X 90 DEG. MALE ELBOW	1	
			84	F022967	STR I6FSXI6SAE	7	35	F023029	NOSE PIECE ASSEMBLY	2	
			85	C1I40Y04	SOL RELIEF VALVE	1	36	F023030	DUST CAP	2	
			86	A0729Y08	SOLENOID VALVE 2-WAY	1	37	F014249	DC-TEE12FPTXI2NPTXI2FPT	1	
			87	L422788	O-RING, 9 I/4 OD X 9 ID X I/8 W	3	38	4013252	VALVE BALL I/4	1	
			88	G5787Y03	NPT X ORB ADAPTOR	6	39	F01I008	PIPE BUSHING, 3/4 TO I/4 NPT	1	
			89	F040408	STR I2X12 BH	4	40	4013633	FILTER SUCTION	3	
			90	4030350	BRACKET, CASE-DRAIN FILTER	6	41	F015922	HEX ELASTIC STOP NUT .375-16	2	
			91	F006917	HHCS .375-16X.88	36	42	200756	FILTER ASSEMBLY	6	
			92	F009681	SAE FLAT WASHER .3I25	78	43	D5688X01	FILTER HEAD, DUAL	1	
			93	F018615	SAE FLAT WASHER .3I25	4	44	0-3354000-0-12	FITLER ELEMENT	2	
			94	4030804	BULKHEAD UNION, -32 JIC	2	45	0-3330011-0-01	I" PAD LOCKING BALL VALVE	1	

SECTION J-2

SIMILAR TO 4031166
DIFFERENCES INCLUDE BREATHER
CASE DRAIN FILTERS
SUCTION FILTERS
OIL COOLER

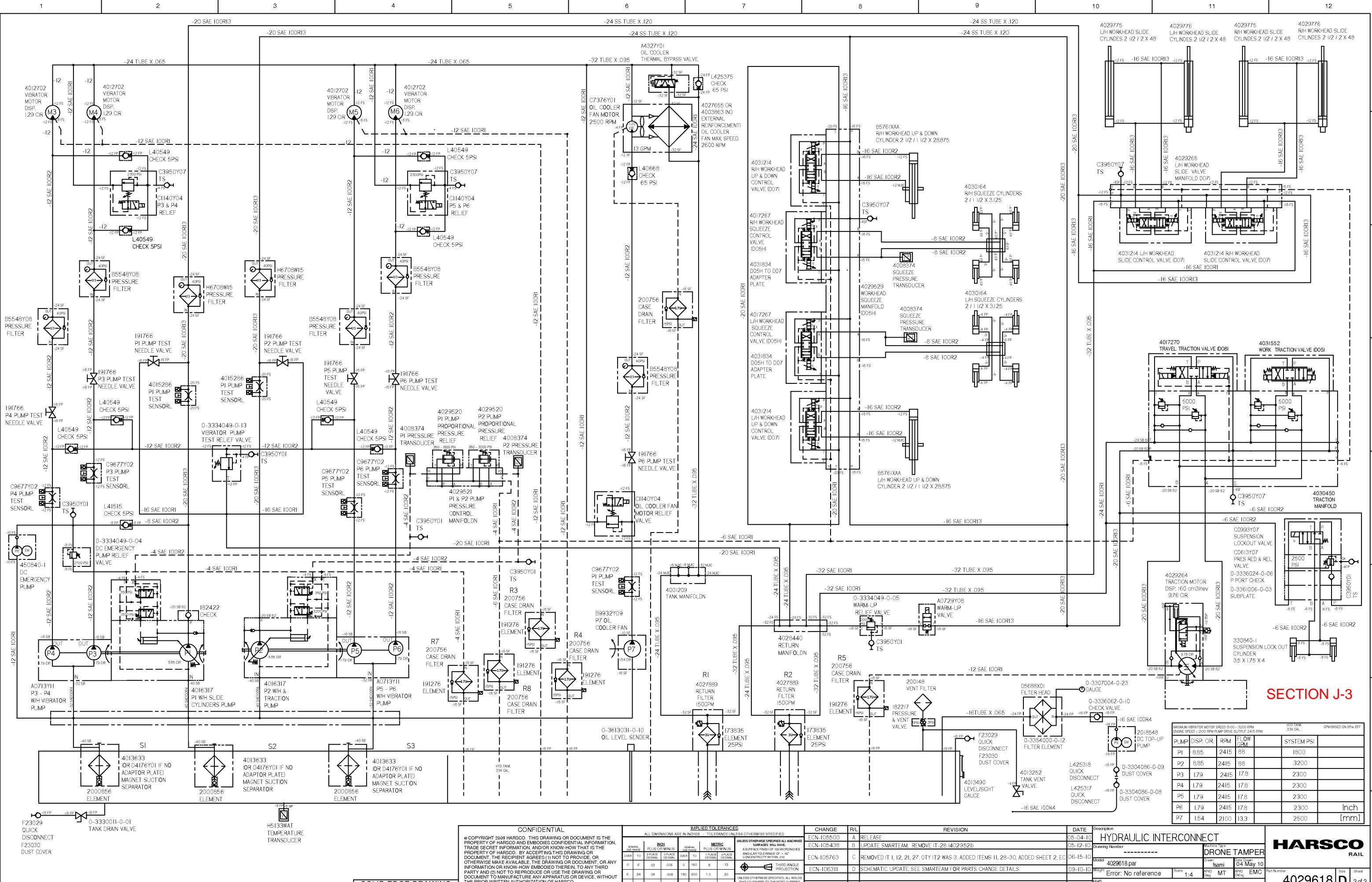
SOLID EDGE DRAWING

SECTION J-2



SECTION J-3

0-3354005-0-09 - Filter Element



SECTION J-3

FOR SPEED 3100 - 3200 RPM PM PUMP DRIVE OUTPUT 2415 RPM		HTD TANK 334 GAL.	GPM BASED ON 95% EFF.
R.	RPM	FLOW GPM	SYSTEM PSI
2415	88		1800
2415	88		3200
2415	17.8		2300
2415	17.8		2300
2415	17.8		2300
2415	17.8		Inch
2100	13.3	2500	[mm]

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IMPLIED TOLERANCE						
ALL DIMENSIONS ARE IN INCHES						
NOMINAL SIZE RANGE	INCH			MIL	MM	
OVER	TO	2 PLACES	3 PLACES	OVER	TO	1 PLACES
0	.06	.03	.006	0	.150	.003
6	24	.04	.008	150	600	1.0
24	-	.06	.010	600	-	1.5

TOLERANCES FOR UNLESS OTHERWISE SPECIFIED		CHANGE
ETRIC OR MINUS	UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE:	ECN-I05500
1/2 PLACE DEG MINUS	A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF .30° CONCENTRICITY WITHIN .010	ECN-I05438
15	 THIRD ANGLE PROJECTION	ECN-I05763
20	UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S. WELDING STANDARDS	ECN-I06311
25		

R/L	REVISION
A	RELEASE
B	UPDATE SMARTTEAM REMOVE IT-28 14029521
C	REMOVED IT 1, 12, 21, 27. QTY IT2 WAS 3. ADDE
D	SCHEMATIC UPDATE SEE SMARTTEAM FOR PART

	DATE	Desc
	05-04-10	
	05-12-10	Draw
D ITEMS II, 28-30, ADDED SHEET 2, EC	06-15-10	
S. CHANGE DETAILS	09-10-10	Mod
		Weg
		Marti

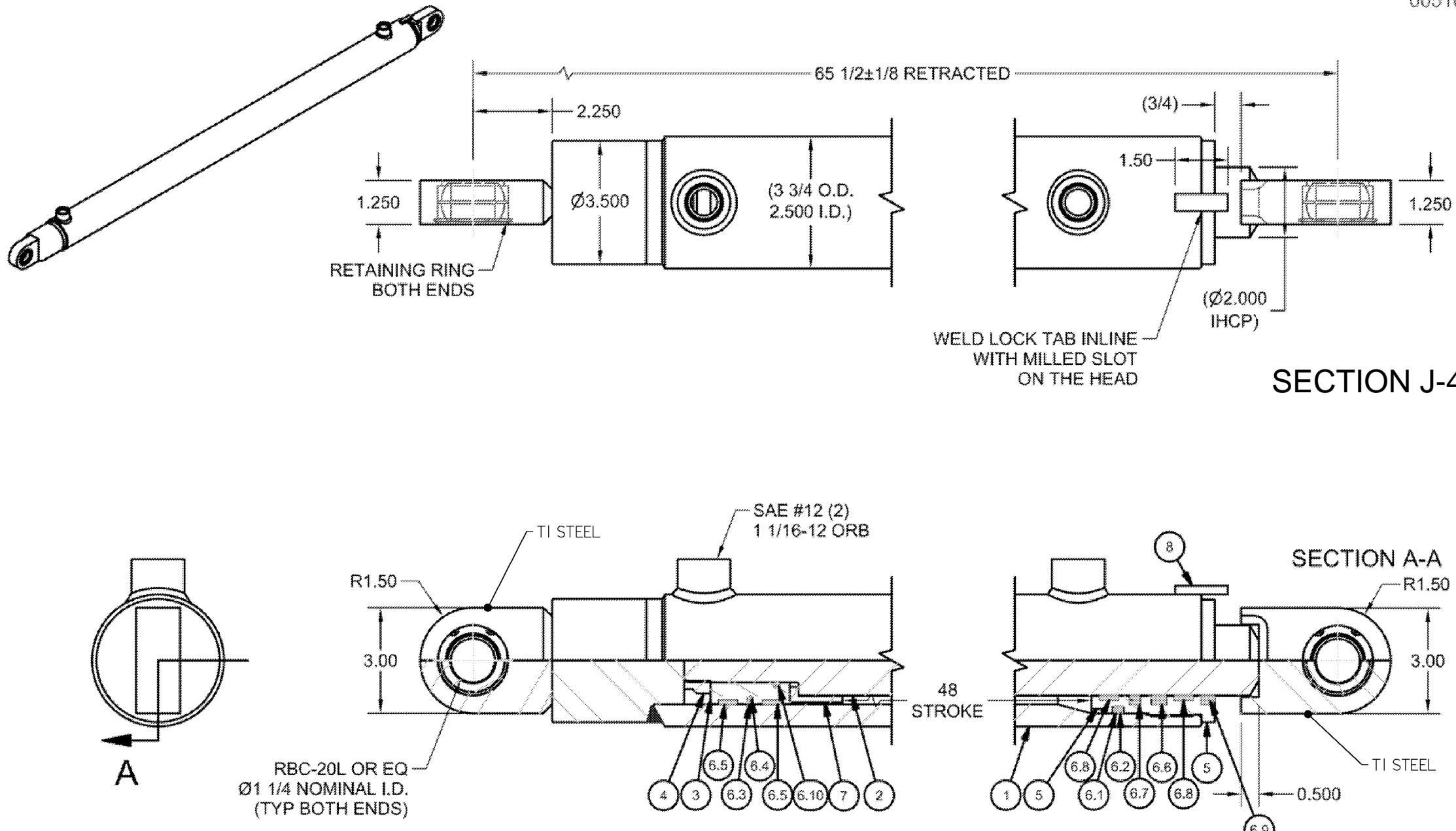
Description		HYDRAULIC INTERCONNECT	
Part Number	Machine Type		
-----	DRONE		
3 4029618.par	Drawn by	fsmi	
mt Error: No reference	Scale	1:4	Design MT

HARSCO
RAIL
Part Number 4029618 D
2 of 2

1 2 3 4 5 6 7 8

005101

F E D C B A F E D C B A



SUGGESTED VENDOR	SPECIFICATIONS
	<u>OPERATING PRESSURE: 2700 PSI</u>
	<u>TUBE BURST PRESSURE: 18,389 PSI</u>
	<u>MAX PUSHLOAD: FULL PSI</u>
	<u>MAX OPERATING TEMP: 200° F</u>
	<u>MAX ROD SPEED: 60 IN/SEC</u>
	<u>FINISH: PRIME PAINT</u>
	<u>SEAL KIT (HTT P/N): 4017812</u>

Inch
[mm]SOLID EDGE DRAWING

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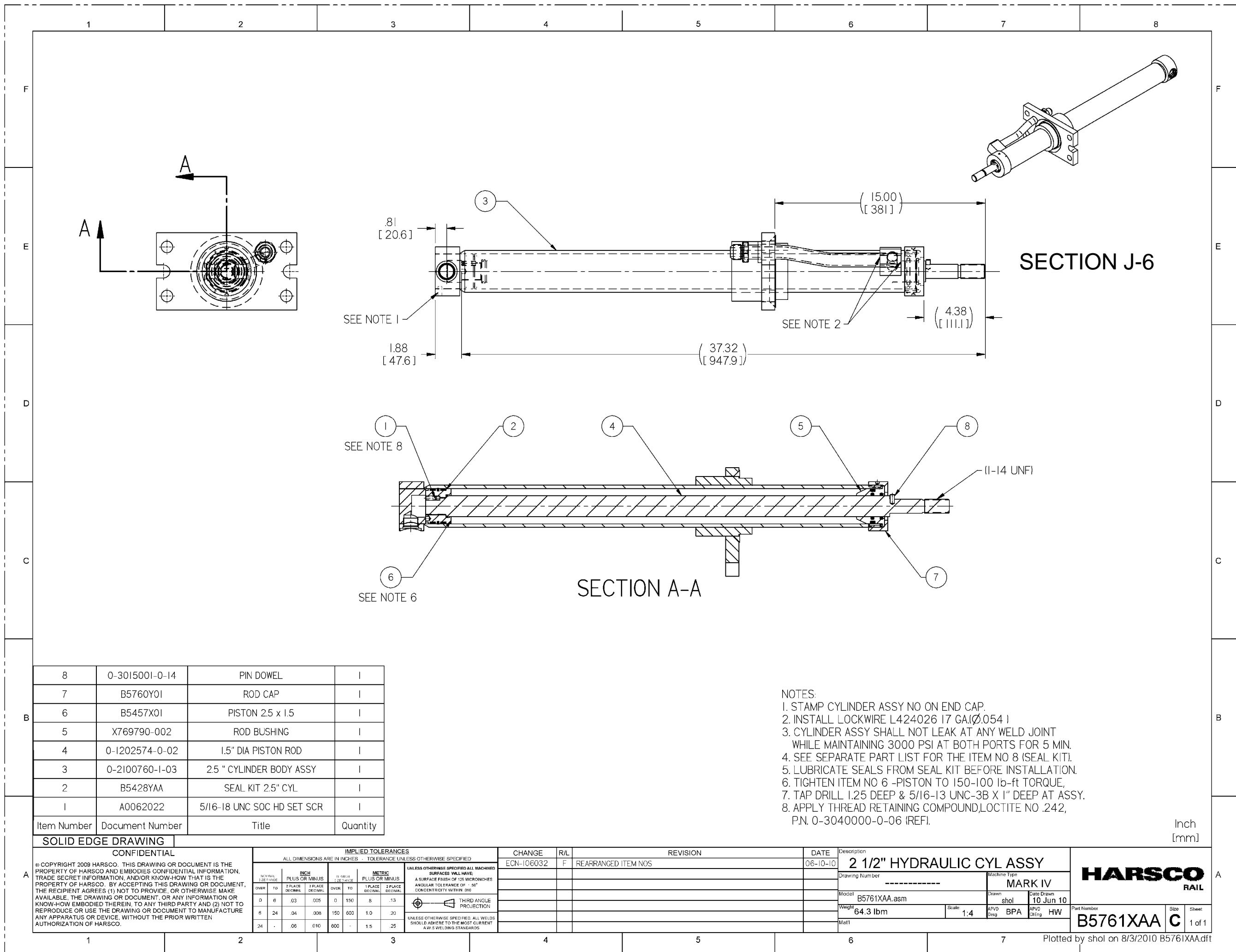
IMPLIED TOLERANCES									
NOMINAL SIZE RANGE		INCH		NOMINAL SIZE RANGE		METERIC		UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES HAVE AN EQUAL TOLERANCE OF ± .005 INCHES	
OVER	TO	PLUSE OR MINUS	DECIMAL	OVER	TO	1 PLUSE DECIMAL	2 PLUSE DECIMAL	A SURFACE FINISH OF 125 MICRO INCHES ANGULAR TOLERANCE OF ± 50° CONCENTRICITY WITHIN .010	
0	6	.03	.005	0	150	.8	.13		
6	24	.04	.008	150	600	1.0	.20		
24	.	.06	.010	600	.	1.5	.25	UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S. WELDING STANDARDS	

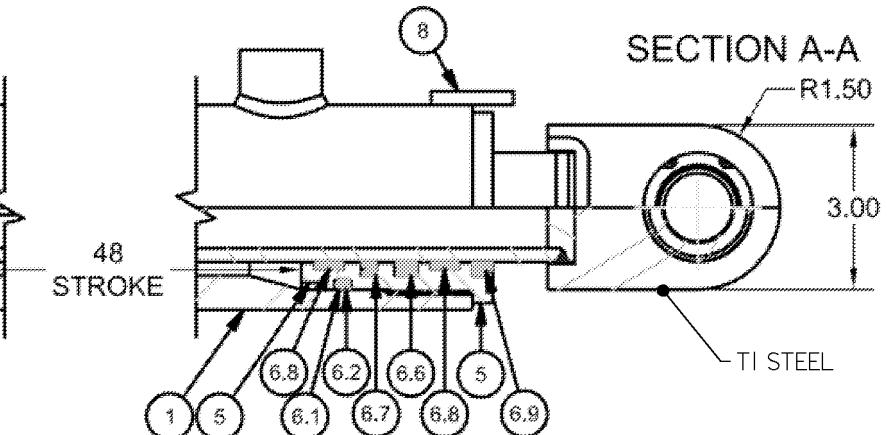
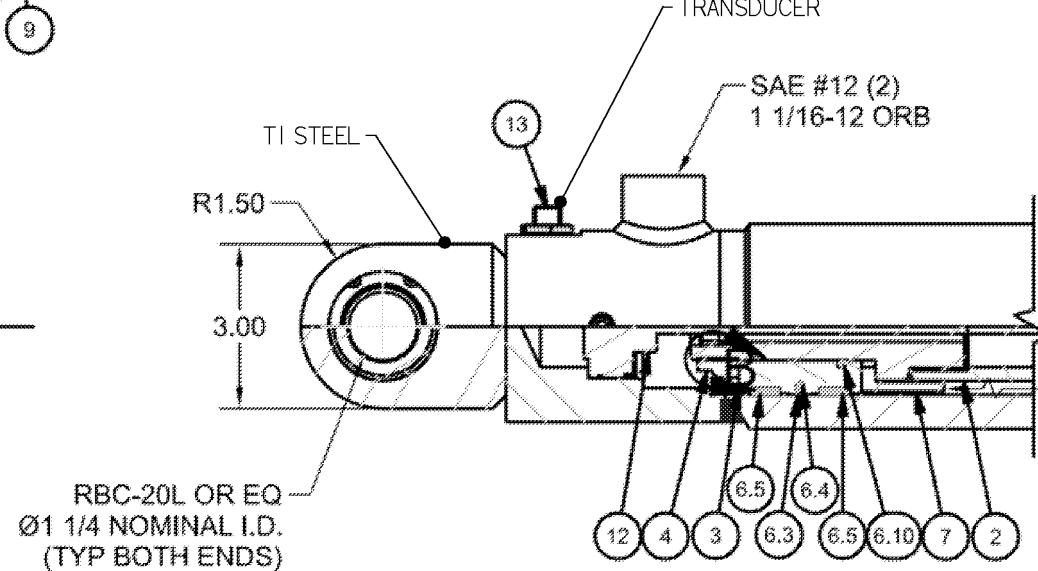
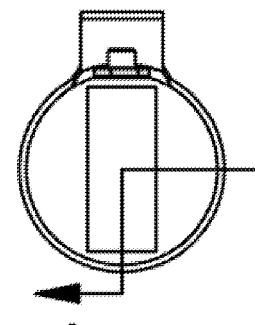
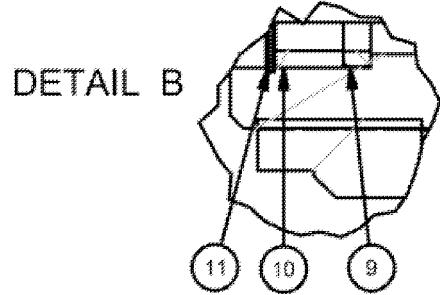
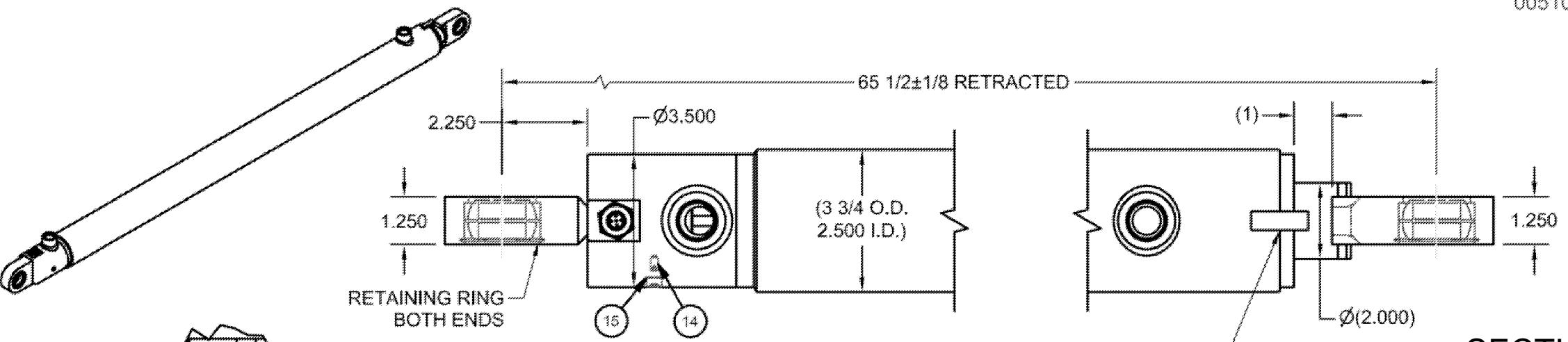
CHANGE	R/L	REVISION	DATE	Description
ECN-105597	A	RELEASE	5-10-10	SLIDE CYL, DRONE, HD
				Drawing Number -----
				Machine Type DRONE TAMPER
				Model 4029775.asm
				Drawn by ecarter Date Drawn 5-10-10
				Weight 0.0 lbm Scale ---- APVD Deg EC APVD Deg EC
				Matl

HARSCO
RAIL

4029775 C Sheet 1 of 1

Plotted by ecarter on 5/10/2010 4029775.dft





SUGGESTED VENDOR	SPECIFICATIONS
	<u>OPERATING PRESSURE: 2700 PSI</u>
	<u>TUBE BURST PRESSURE: 18,389 PSI</u>
	<u>MAX PUSHLOAD: FULL PSI</u>
	<u>MAX OPERATING TEMP: 200° F</u>
	<u>MAX ROD SPEED: 60 IN/SEC</u>
	<u>FINISH: PRIME PAINT</u>
	<u>SEAL KIT (HTT P/N): 4017812</u>

Inch
[mm]

SOLID EDGE DRAWING

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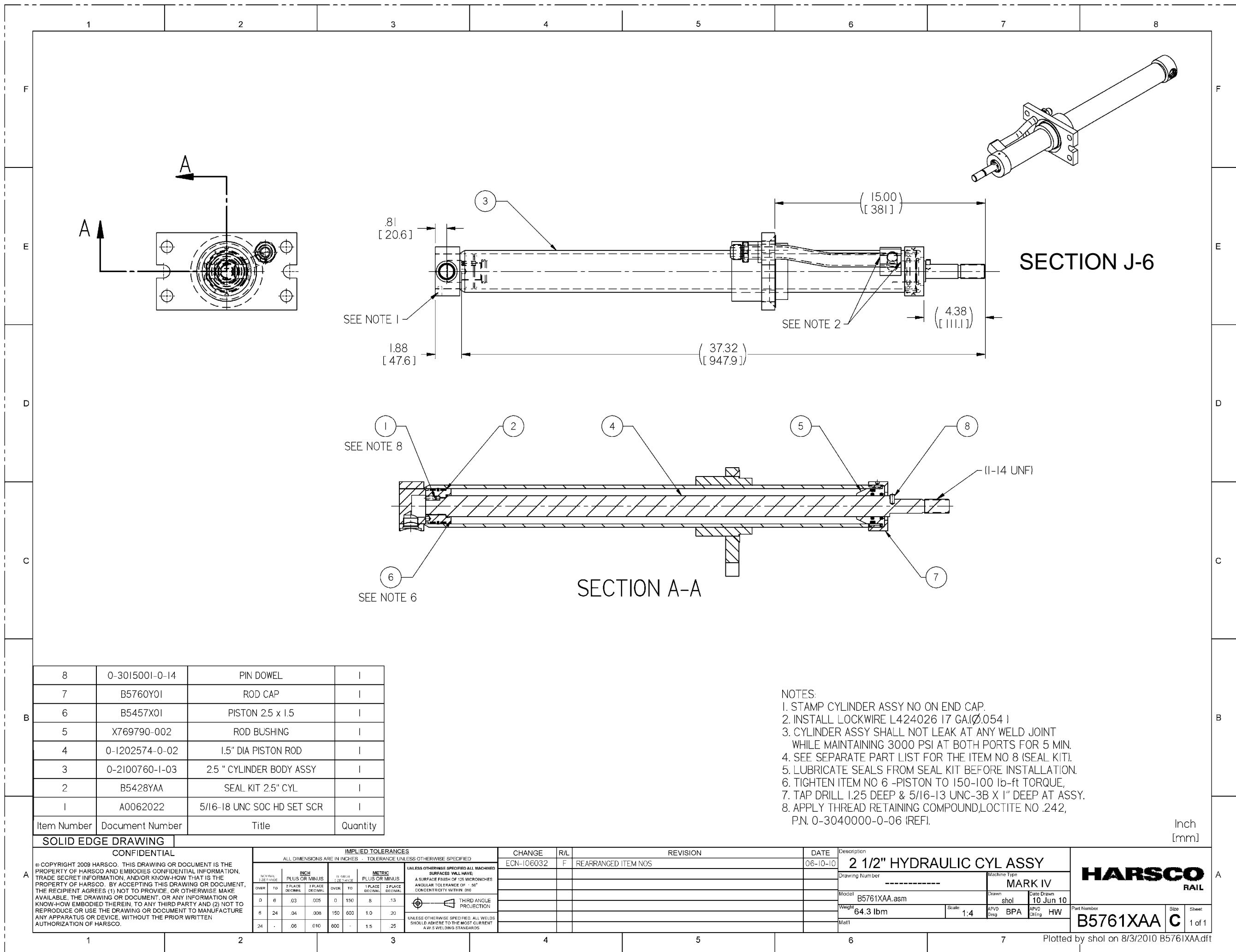
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IMPLIED TOLERANCES									
NOMINAL SIZE RANGE		INCH		MILLIMETER		NOMINAL SIZE RANGE		INCH	
OVER	TO	PLUSE OR MINUS	DECIMAL	OVER	TO	PLUSE OR MINUS	DECIMAL	OVER	TO
0	6	.03	.005	0	150	.8	13		
6	24	.04	.008	150	600	1.0	.20		
				1.5		25			
UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS									

CHANGE R/L
ECN-105597 A RELEASE
A SURFACE FINISH OF 125 MICRO INCHES
ANGULAR TOLERANCE OF ± 50°
CONCENTRICITY WITHIN .010

DATE	Description
5-10-10	SLIDE CYL, DRONE, HD, SMART
	Drawing Number -----
	Machine Type DRONE TAMPER
	Model 4029776.asm
	Drawn by ecarter Date Drawn 5-10-10
	Weight 0.0 lbm Scale ---- APVD Deg EC APVD Deg EC
	Matl

HARSCO
RAIL
Part Number 4029776 Size C Sheet 1 of 1



1	2	3	4	5	6	7	8
F							F
E							E
D							D
C							C
B							B
A							A

SOLID EDGE DRAWING

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IMPLIED TOLERANCES											
ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED											
NOMINAL SIZE RANGE			INCH PLUS OR MINUS			NOMINAL SIZE RANGE			MILLIMETER PLUS OR MINUS		
OVER	TO	3 PLACES DECIMAL	OVER	TO	1 PLACES DECIMAL	OVER	TO	3 PLACES DECIMAL	OVER	TO	1 PLACES DECIMAL
0	6	.03	.005	0	150	8	13				
6	24	.04	.008	150	600	1.0	20				
24	-	.06	.010	-	600	1.5	25				

UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE A SURFACE FINISH OF 125 MICRO INCHES ANGULAR TOLERANCE ON + .5° CONCENTRICITY WITHIN .015

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED ALL WELDS SHOULD ADHERE TO THE LATEST HTT WELDING SPECIFICATION 101

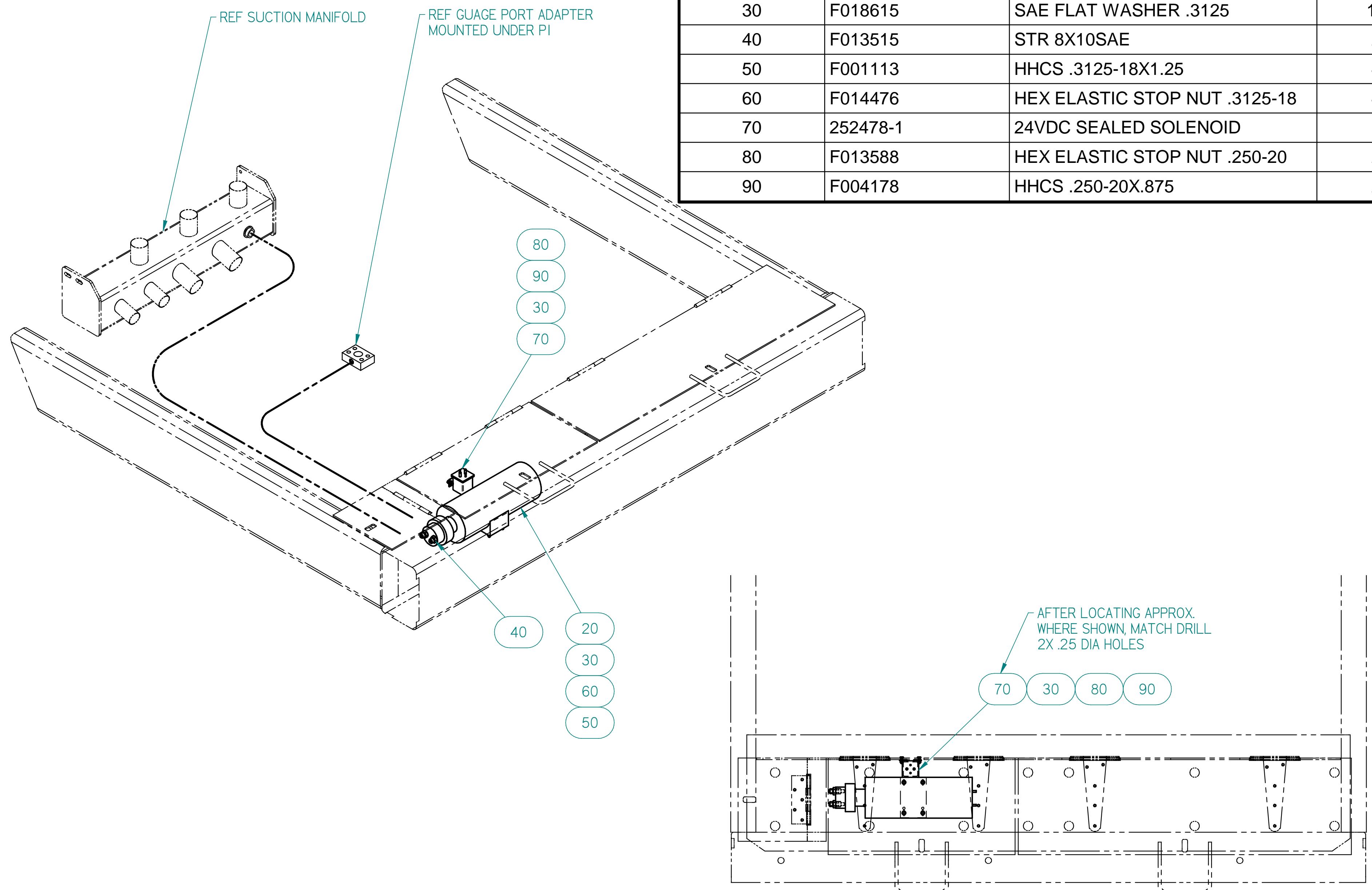
Item No.	Part No.	Description	Qty.
1	0-2300077-0-01	CYL & BEARING ASSY	1
2	4030156	SPACER, SQUEEZE CYLINDER	1
3	0-2300076-0-01	PISTON ROD & BEARING ASSY	1
4	Z68I208	RETAIN WASHER	1
5	D4676X01	UNITIZED PISTON W/ SEAL	1
6	Z68I209	RETAIN WASHER	1
7	L420520	3/4-16 FLEX NUT	1
8	Y68I210	CAP BUSHING	1
9	A0043058	5/16-24 UNF-3A X 7/8 LG HHCS (NYLOK)	6
10	Z687I07	SEAL KIT	1

SECTION J-7

NOTE :

- 1. THESE COMPONENTS ARE INCLUDED IN ITEM #10 SEAL KIT.
- 2. THIS CYLINDER IS SIMILAR TO STANDARD SQUEEZE CYLINDER, X68297, BUT ADDS ITEM #2, SPACER.

Item Number	Document Number	Title	Quantity
20	450840-1	EMERGENCY PUMP	1
30	F018615	SAE FLAT WASHER .3125	10
40	F013515	STR 8X10SAE	2
50	F001113	HHCS .3125-18X1.25	4
60	F014476	HEX ELASTIC STOP NUT .3125-18	4
70	252478-1	24VDC SEALED SOLENOID	1
80	F013588	HEX ELASTIC STOP NUT .250-20	2
90	F004178	HHCS .250-20X.875	2



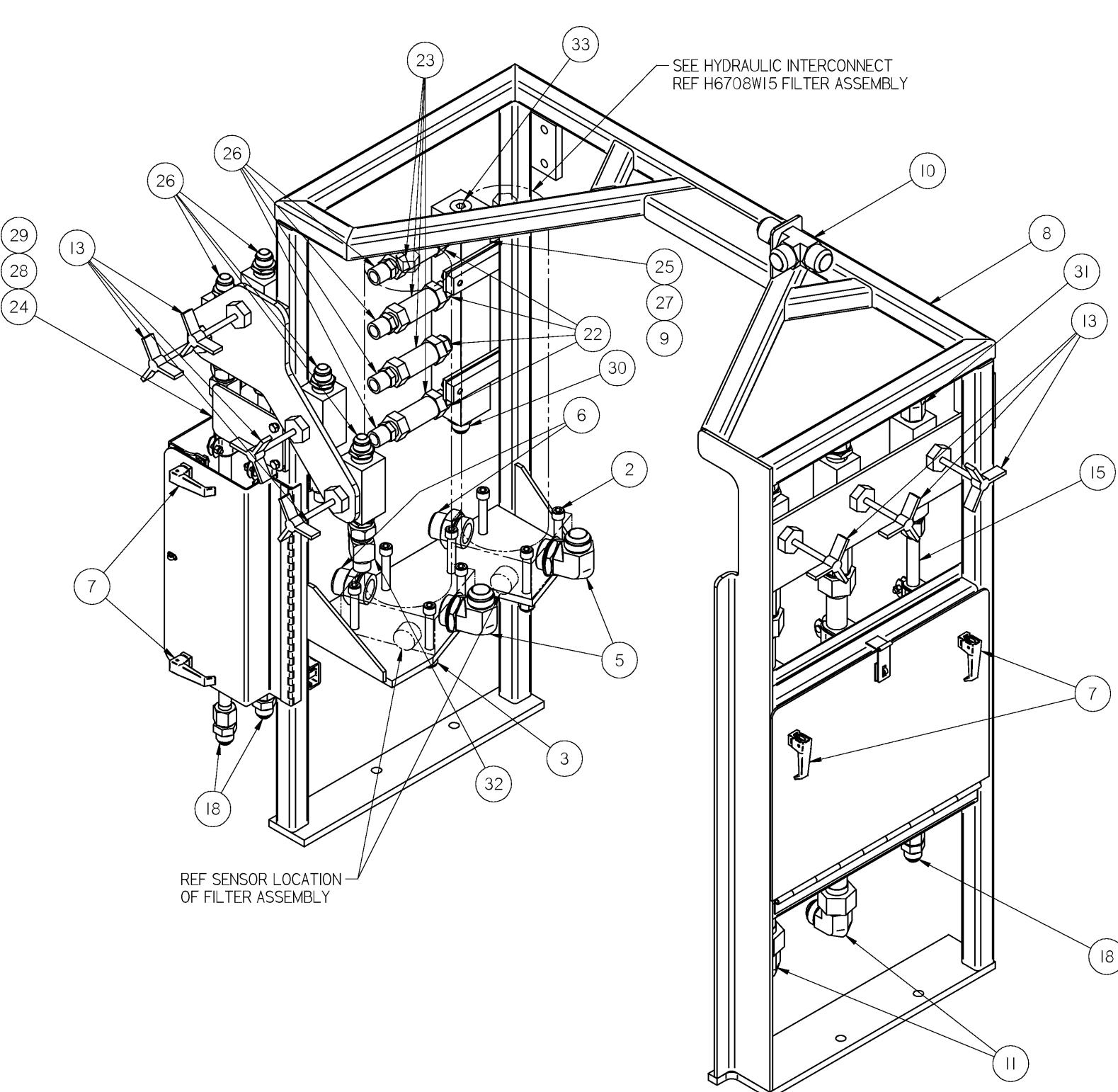
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INCH			MILLIMETER			UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE:		
NOMINAL SIZE RANGE	PLUS OR MINUS	NOMINAL SIZE RANGE	PLUS OR MINUS	MATERIAL	FINISH	A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF ±5° CONCENTRICITY WITHIN .010		
OVER .06	.03 .005	OVER .150	.8 .13			105764	A	RELEASE
6	.04 .008	150	600	1.0	.20	500475	B	ADD ITEMS 70, 80, 90, ITEM 30 QTY WAS (8)
24	.06 .010	600	-	1.5	.25			CTR 03FEB11

UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS

CHANGE	R/L	REVISION	DR	DATE	Description
105764	A	RELEASE	EC	6-25-10	EMERGENCY PUMP INSTALL, DRONE
500475	B	ADD ITEMS 70, 80, 90, ITEM 30 QTY WAS (8)	CTR	03FEB11	
					Material: - / Machine Type: DRONE TAMPER
					Weight: 0.0 lbm / Drawn by: ecarter / Date Drawn: 2/3/2011 / Part Number: 4030552
					Sheet: C / Sheet: 1 of 1
					SOLID EDGE DRAWING / DO NOT SCALE

12	11	10	9	8	7	6	5	4	3	2	1
H											
G											
F											
E											
D											
C											
B											
A											



SEE HYDRAULIC INTERCONNECT
REF H6708WI5 FILTER ASSEMBLY

REF SENSOR LOCATION
OF FILTER ASSEMBLY

REF NUM	PART NUMBER	HTT Description	Quantity	UOM	Length	Cut Length
1	F040386	DC-CLAMP - 1 1/4" ID SIZE	4	ea		
2	F020164	1/2-13 X 4 SKT HD CS	8	ea		
3	F014487	DC-1/2-13 ELASTIC STOP NUT	8	ea		
4	F019898	CLAMP - 3/4" ID SIZE	6	ea		
5	F040697	DC-ELB90 20X24SAE	2	ea		
6	F023358	DC-STR 20X24SAE	2	ea		
7	2000033	LIFT-AND-TURN LATCH- PAWL POSI	4	ea		
8	2019257	UCC FRAME WELDMENT	1	ea		
9	H3948Y01	DISC-LOCK WASHER	4	ea		
10	F026114	DC-TEE 20X20BXH20	1	ea		
11	150130-11	ADAPTER-90 DEG UNION 20 JIC X	2	ea		
12	F021990	DC-TEE 20X20FSX20	2	ea		
13	191766	NEEDLE VALVE	7	ea		
14	313887-3	TUBE ASSEMBLY	4	ea		
15	2019289	TUBE ASSY, .75 OD X 7.83 LG	6	ea		
16	4015286	SENSOR, SYSTEM 20	2	ea		
17	C9677Y02	MONITORING SYSTEM	3	ea		
18	F012243	DC-STR 12X12	3	ea		
19	F014253	DC-STR 12X12SAE	6	ea		
20	F012592	ADAPTER -16NPT/-20 JIC STR	4	ea		
21	F020162	DC-STR 20X20SAE	4	ea		
22	150033-10	STR.	4	ea		
23	L40549	INLINE CHECK VALVE (UCC-	4	ea		
24	2019435	DECAL PLATE	1	ea		
25	2019438	MANIFOLD WELDMENT	1	ea		
26	2397	FITTING	4	ea		
27	F001007	HHCS 3/8-16X 1" GR5	4	ea		
28	F002911	HEX HD CS 5/16-18X5/8 GR5 ZP	2	ea		
29	F011527	DC-5/16 HC LW	2	ea		
30	F012016	DC-STR 12X16NPT	10	ea		
31	F012497	ELB90 16X12NPT	1	ea		
32	F015536	DC-TEE 12X12FSX12	5	ea		
33	F017297	DC-PLG 16NPT SKT	1	ea		

SECTION J-9

NOTES:

1. CAP ALL FITTINGS
2. DIMENSIONS SHOWN FOR REF ONLY.

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NOMINAL SIZE RANGE	INCH	METRIC	REVISION	DR	DATE	Description
OVER TO	PLUS OR MINUS	OVER TO	PLUS OR MINUS	CHANGE	R/L	
0 .6	.03 .05	0 160	.8 1.3	300352	A	RELEASE
6 24	.04 .008	150 600	1.0 .20	300374	B	SEE EC
24 -	.06 .010	600 -	.15 .25			

UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE A SURFACE FINISH OF 125 MICRONES ANGULAR TOLERANCE OF +/- 5° CONCENTRICITY WITHIN .016" A/W S WELDING STANDARDS

NOMINAL SIZE RANGE	INCH	METRIC	REVISION	DR	DATE	Description
OVER TO	PLUS OR MINUS	OVER TO	PLUS OR MINUS	CHANGE	R/L	
0 .6	.03 .05	0 160	.8 1.3	300352	A	RELEASE
6 24	.04 .008	150 600	1.0 .20	300374	B	SEE EC
24 -	.06 .010	600 -	.15 .25			

UNLESS OTHERWISE SPECIFIED, ALL WELDED SURFACES WILL HAVE A SURFACE FINISH OF 125 MICRONES ANGULAR TOLERANCE OF +/- 5° CONCENTRICITY WITHIN .016" A/W S WELDING STANDARDS

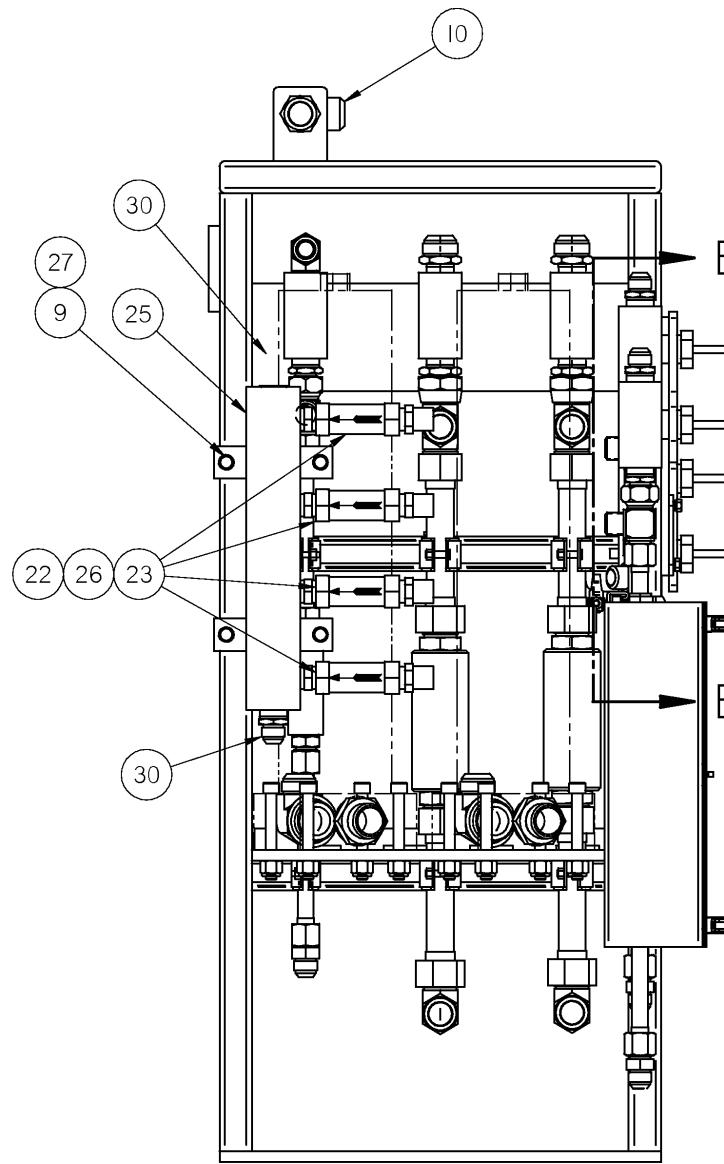
Inch
[mm]

HARSCO
 RAIL
 2019273
 D
 1 of 2

Plotted by crosso on 7/26/2010 2019273.dft

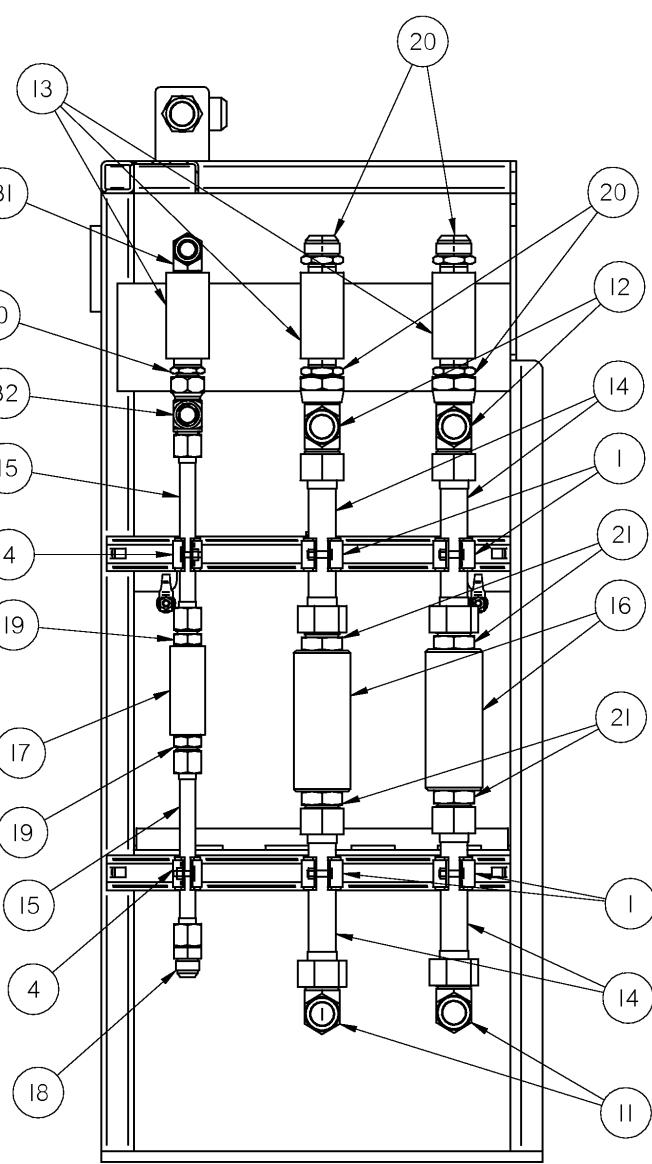
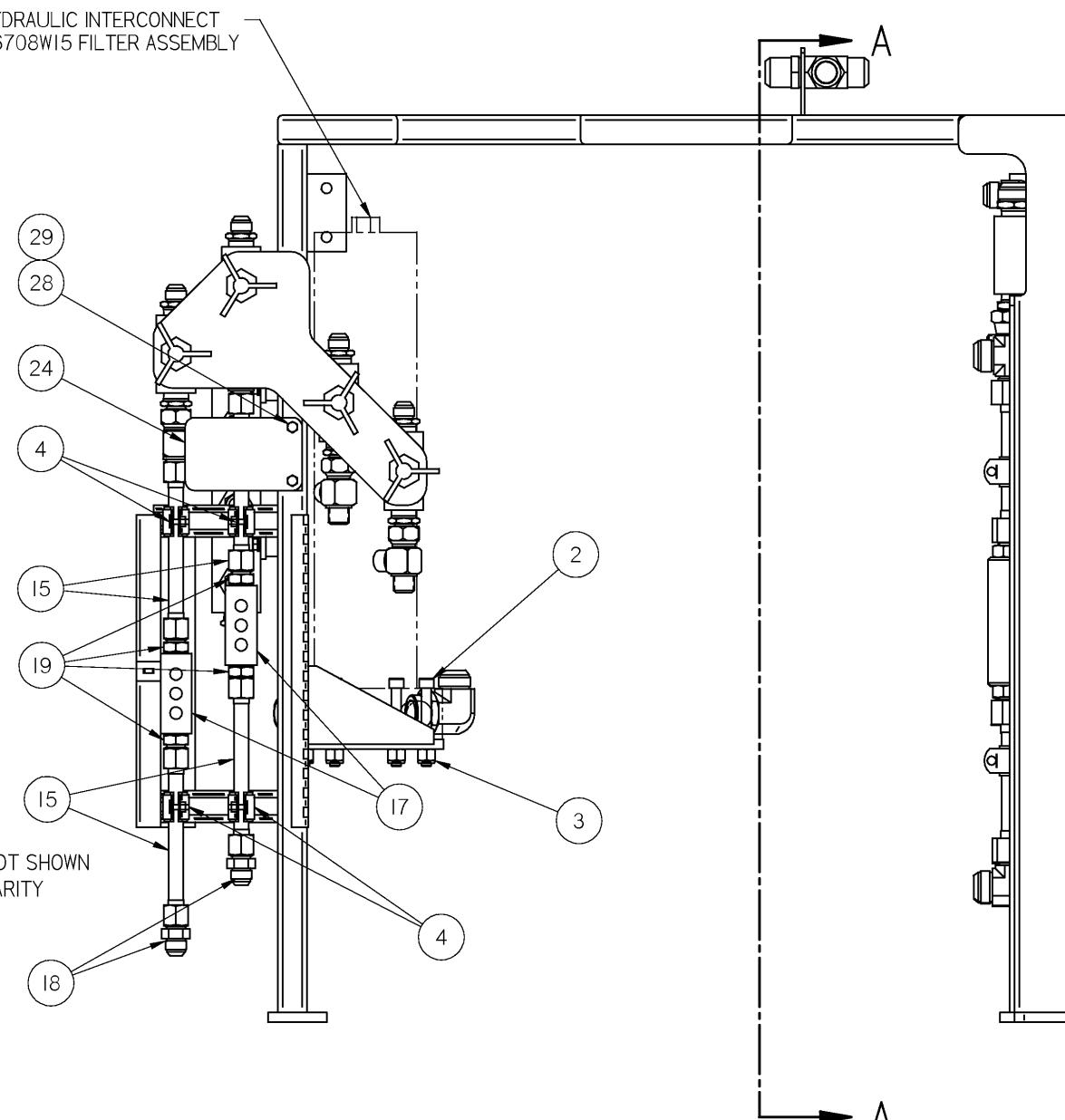
Section K

Pneumatic System and Components)



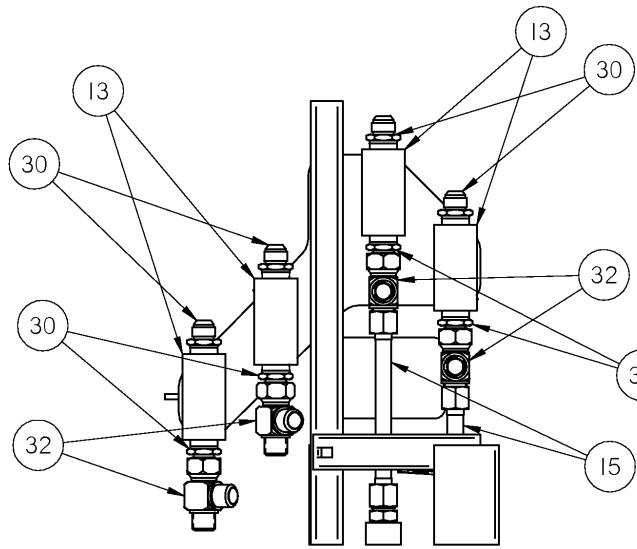
SEE HYDRAULIC INTERCONNE
REF H6708W15 FILTER ASSE

DOOR NOT SHOWN
FOR CLARITY

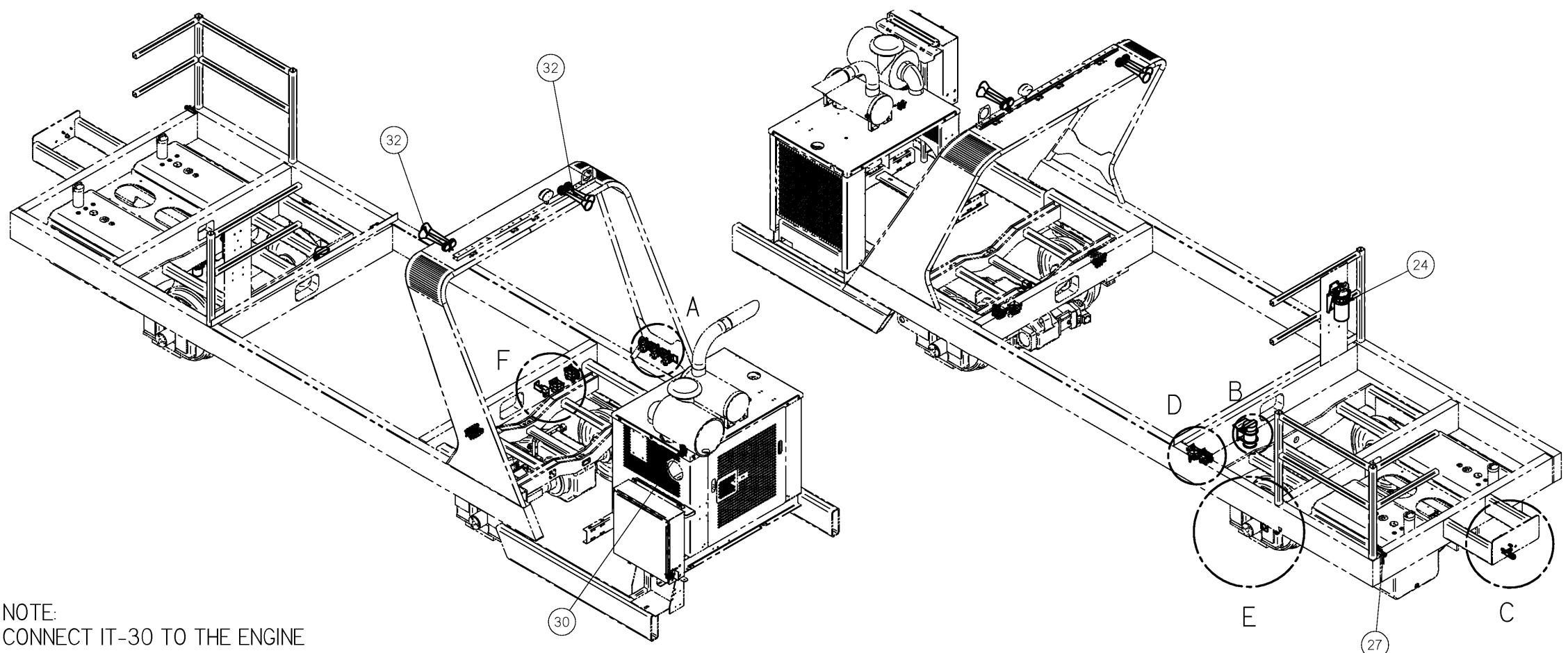


SECTION A-A

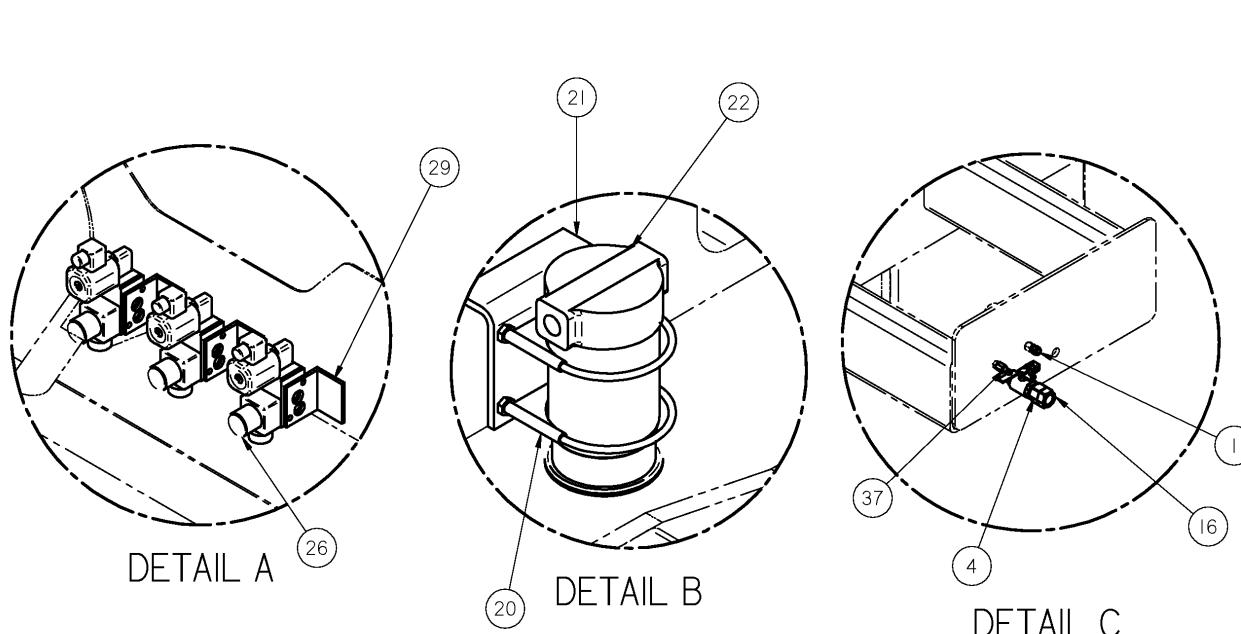
SECTION J-9



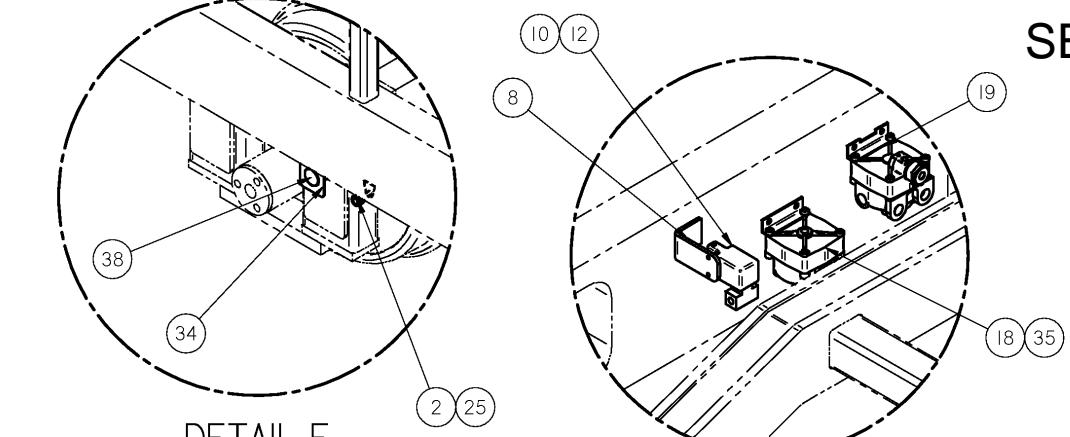
SECTION B-B



NOTE:
CONNECT IT-30 TO THE ENGINE

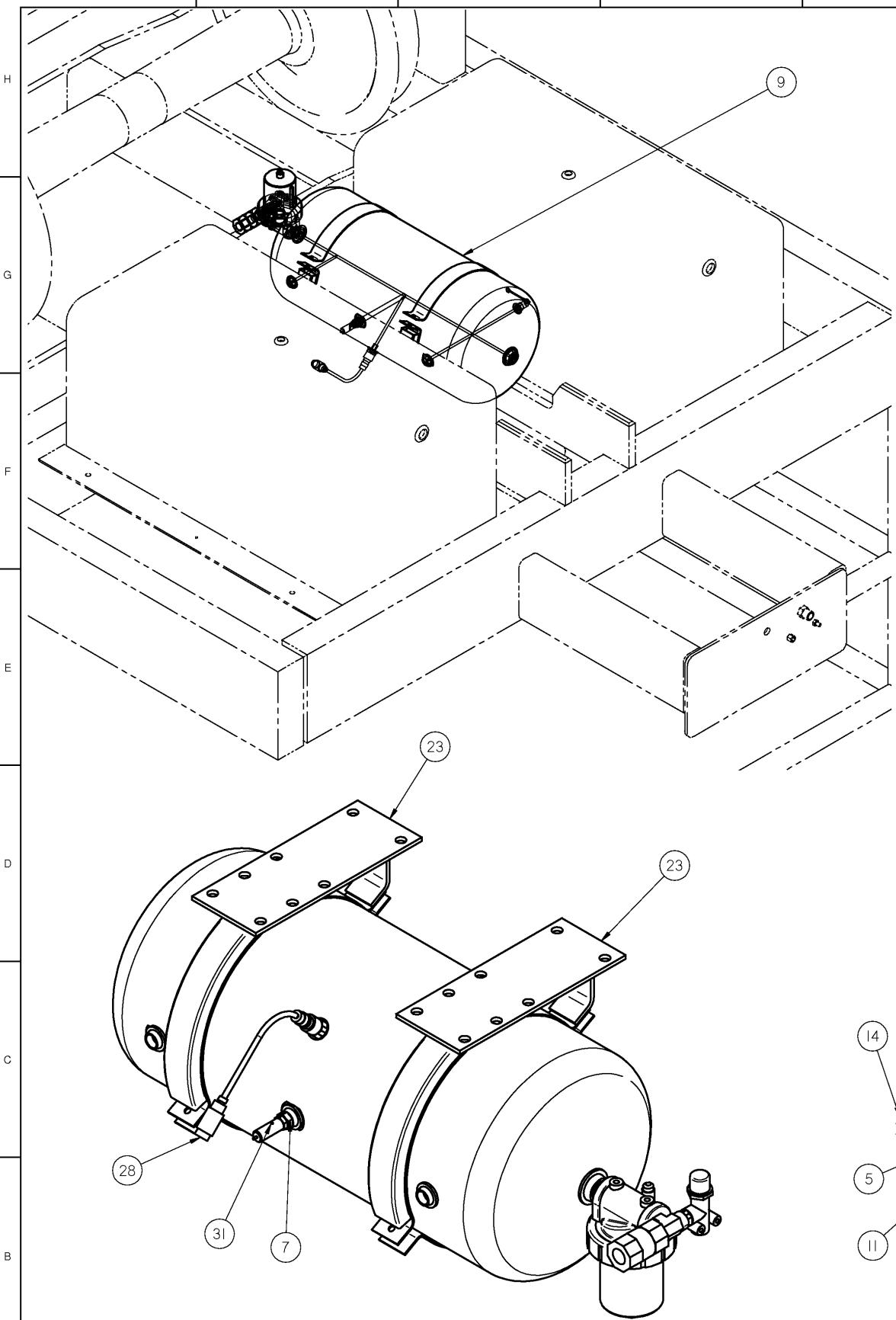


DETAIL (

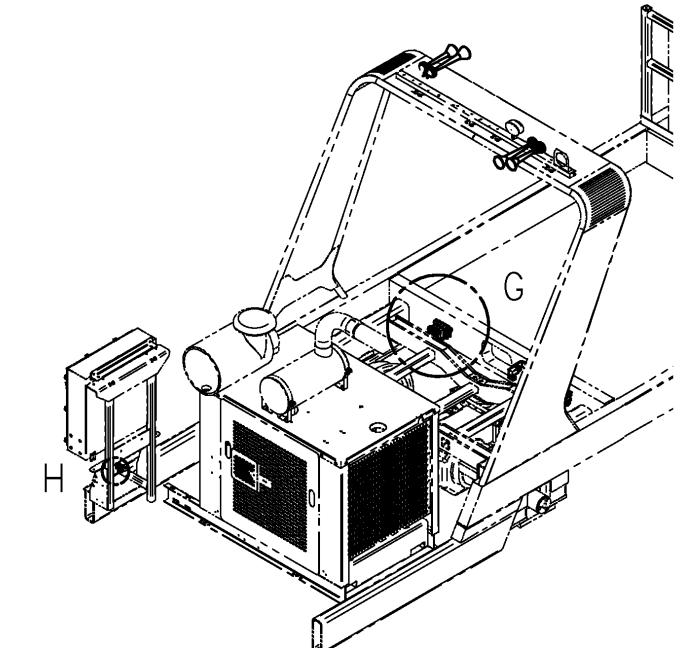
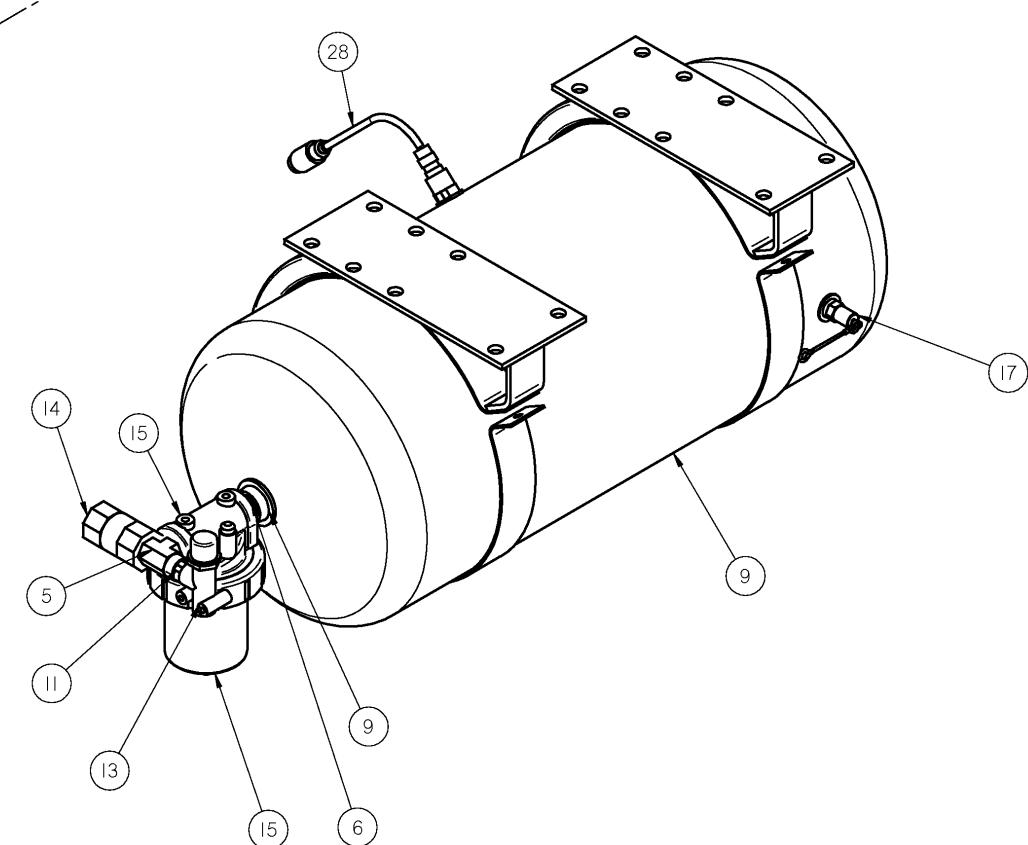


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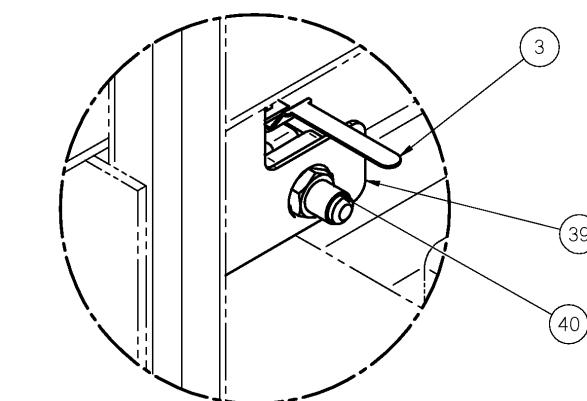
SECTION K-1



AIR RECEIVER TANK
INSTALLATION



DETAIL G



DETAIL H

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IMPLIED TOLERANCES
ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED

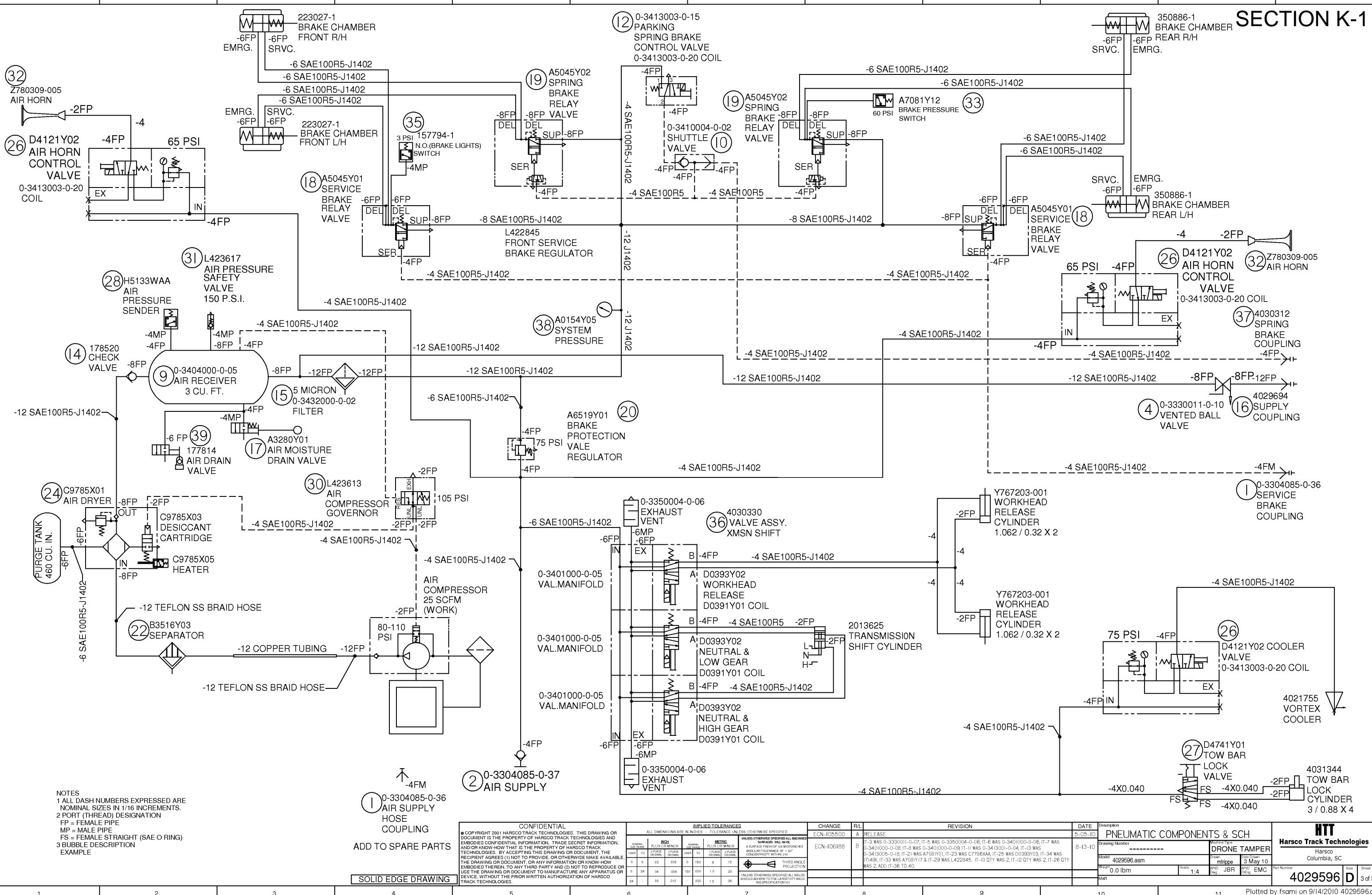
NUMBER SHEET PAGE	T.O. 2 PLACE DECIMAL	INCH PLUS OR MINUS	NORMAL DEGREE	MILLIMETER PLUS OR MINUS	UNLESS OTHERWISE SPECIFIED ALL MACHINED ANGULAR FINISH OF 125 MILIGRADS ANGULAR TOLERANCE OF 1° 30' CONCENTRICITY WITHIN .005 RADIAL TOLERANCE OF .005 THIRD ANGLE PROJECTION	CHANGE ECN-105500 ECN-106188	R/L A B	REVISION RELEASE 5-05-10 8-13-10	DATE 5-05-10 8-13-10	Description PNEUMATIC COMPONENTS & SCH DRONE TAMPER
0	0	.03	.005	0	.150	8				
6	24	.04	.008	160	600	1.0	20			
24		.06	.010	600		1.5	25			

UNLESS OTHERWISE SPECIFIED ALL WELDING SHOULD ADHERE TO THE LATEST HTW WELDING SPECIFICATION 101

SOLID EDGE DRAWING

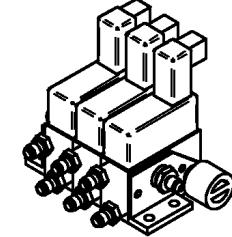
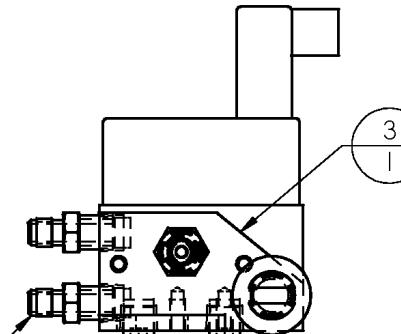
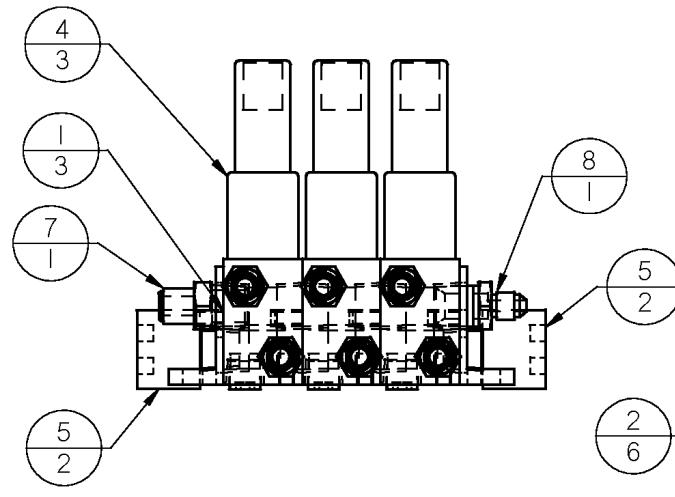
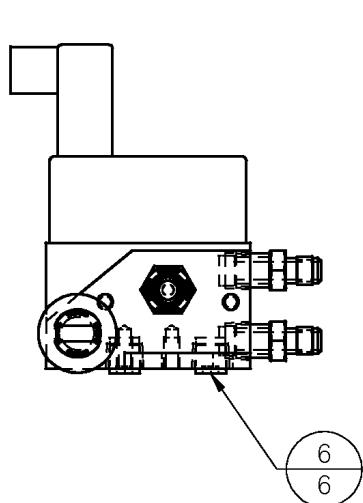
HTT
Harsco Track Technologies
Harsco
Columbia, SC
Model 4029596.asm
Weight 0.0 lbm
Scale 1:4
JBR Cfg EMC
Part Number 4029596 D Sheet 2 of 3

SECTION K-1

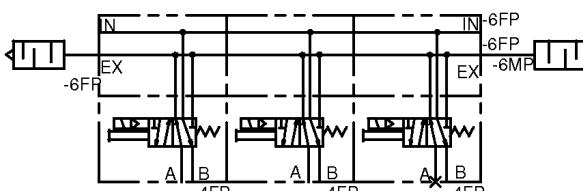


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SECTION K-2



VALVE PARTS SEE D0391Y

Item Number	Document Number	Title	Quantity
1	0-3401000-0-05	MANIFOLD, INPILOT	3
2	L4II385	I/4 MP - JIC	6
3	0-3401000-0-08	MOUNTING BRACKET	1
4	D0393Y02	AIR VALVE	3
5	0-3350004-0-06	DUST EXCLUDER	2
6	0-3304II8-0-II	I/4 NPT PLUG ADAPTER	6
7	F0I2056	STR 6X6NPT	1
8	L4II387	3/8 MNPT-I/4 JIC STR	1

IMPLIED TOLERANCES									
ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED									
NOMINAL SIZE RANGE	INCH		NOMINAL SIZE RANGE		METRIC		UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE:		
OVER TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER TO	1 PLACE DECIMAL	2 PLACE DECIMAL	1 PLACE DECIMAL	A SURFACE FINISH OF 125 MICRONCHES ANGULAR TOLERANCE OF + .50 CONCENTRICITY WITHIN .010		
0 .6 .03 .005 0 150 .8 .13									
6 24 .04 .008 150 600 1.0 .20									
24 - .06 .010 - 600 1.5 .25									

CHANGE	R/L	REVISION	DATE
ECN-106188	A	RELEASE	8-13-10

THIRD ANGLE PROJECTION
 UNLESS OTHERWISE SPECIFIED ALL WELDS SHOULD ADHERE TO THE LATEST HTT WELDING SPECIFICATION 101

VALVE ASSY. XMSN SHIFT

Drawing Number

Machine Type

BNSF DRONE

Model 4030330.asm

Drawn

Date Drawn

mtrippe 10 June 10

Weight 0.0 lbm

Scale

1:4 APID Cheng EMC

Matl

HTT
Harsco Track Technologies
 Harsco Columbia, SC
 Part Number 4030330 Size B Sheet 1 of 1

Section L

Electrical System and Components)

6

5

4

3

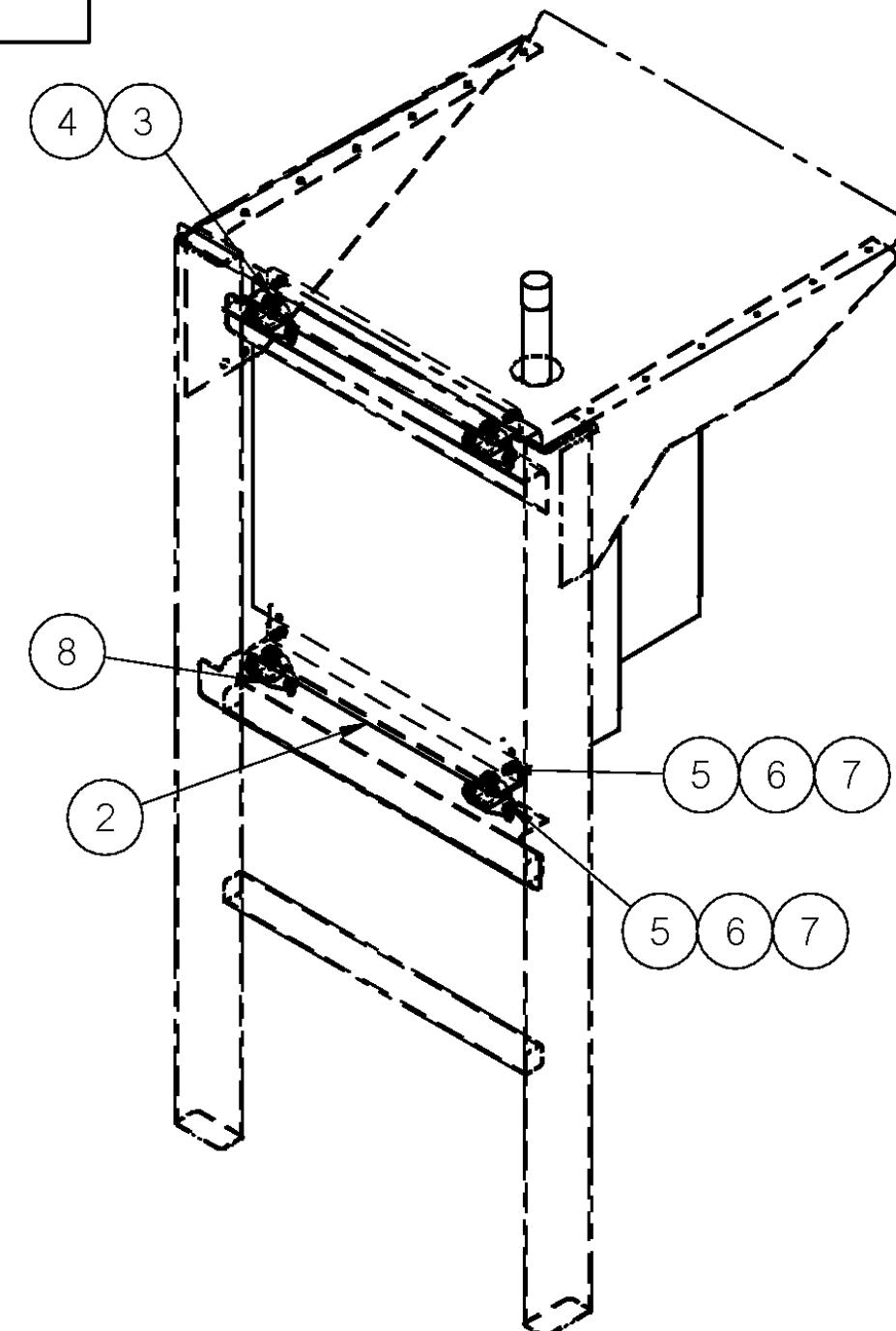
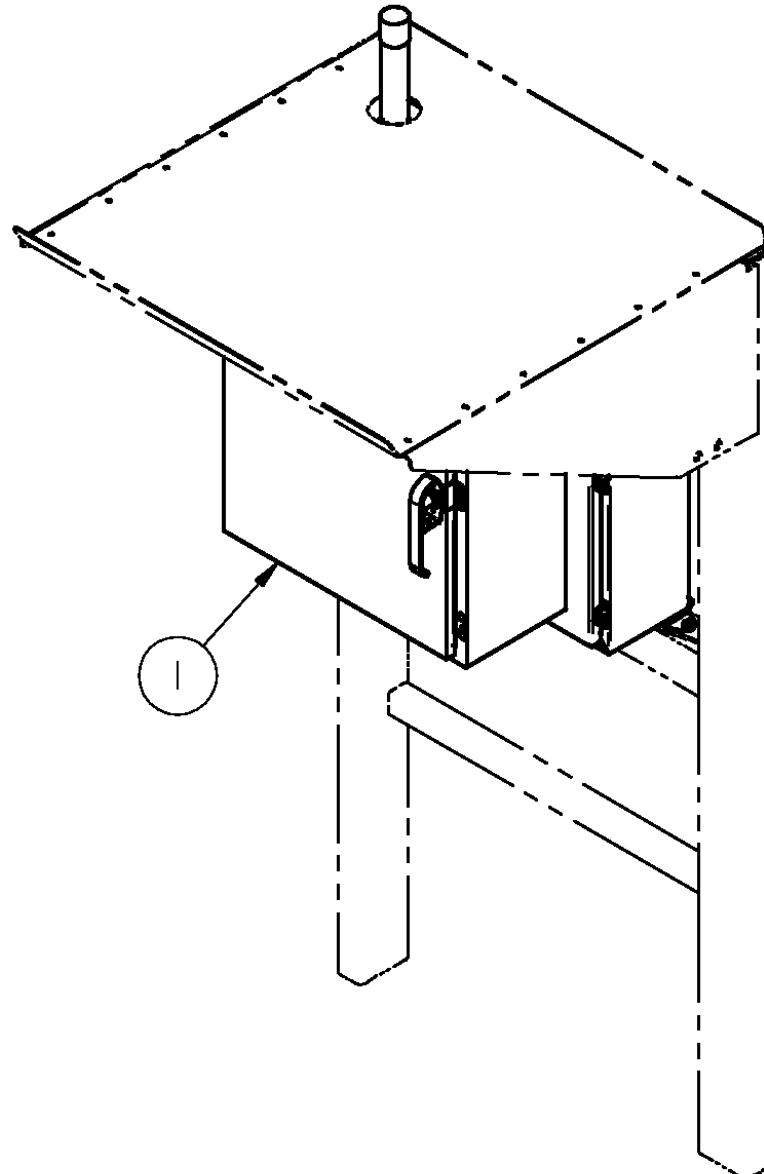
2

1

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SOLID EDGE DRAWING



Item Number	Document Number	Title	Material	Quantity
1	4029353	CONTROL BOX WIRING		1
2	4029571	MOUNT BRACKET, CONT BOX	Steel	2
3	F040753	HHCS MI2XI.25X35		4
4	A006904I	MI2 PLAIN WASHER		4
5	F022405	HHCS .375-16XI.00 STAINLESS	stainless steel	12
6	F009681	SAE FLAT WASHER .375	steel	12
7	F002913	HEX JAM NUT .375-24		12
8	4028535	MOUNT, ISOLATION	Steel	4

SECTION L-1

Inch
[mm]

IMPLIED TOLERANCES

ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED

NOMINAL SIZE RANGE		INCH PLUS OR MINUS		NOMINAL SIZE RANGE		METRIC PLUS OR MINUS		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE: A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF $\pm .50^\circ$ CONCENTRICITY WITHIN .010
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL	
0	6	.03	.005	0	150	.8	.13	
6	24	.04	.008	150	600	1.0	.20	
24	-	.06	.010	600	-	1.5	.25	UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS

CHANGE

R/L

REVISION

DATE

Description

CONTROL BOX INSTALL.

Drawing Number

Machine Type

DRONE TAMPER

Model

Drawn

Date Drawn

fsami 04-30-10

Weight

APVD

DM

Desg

EC

Scale:

1:4

Mat'l

HARSCO

RAIL

Part Number 4029587

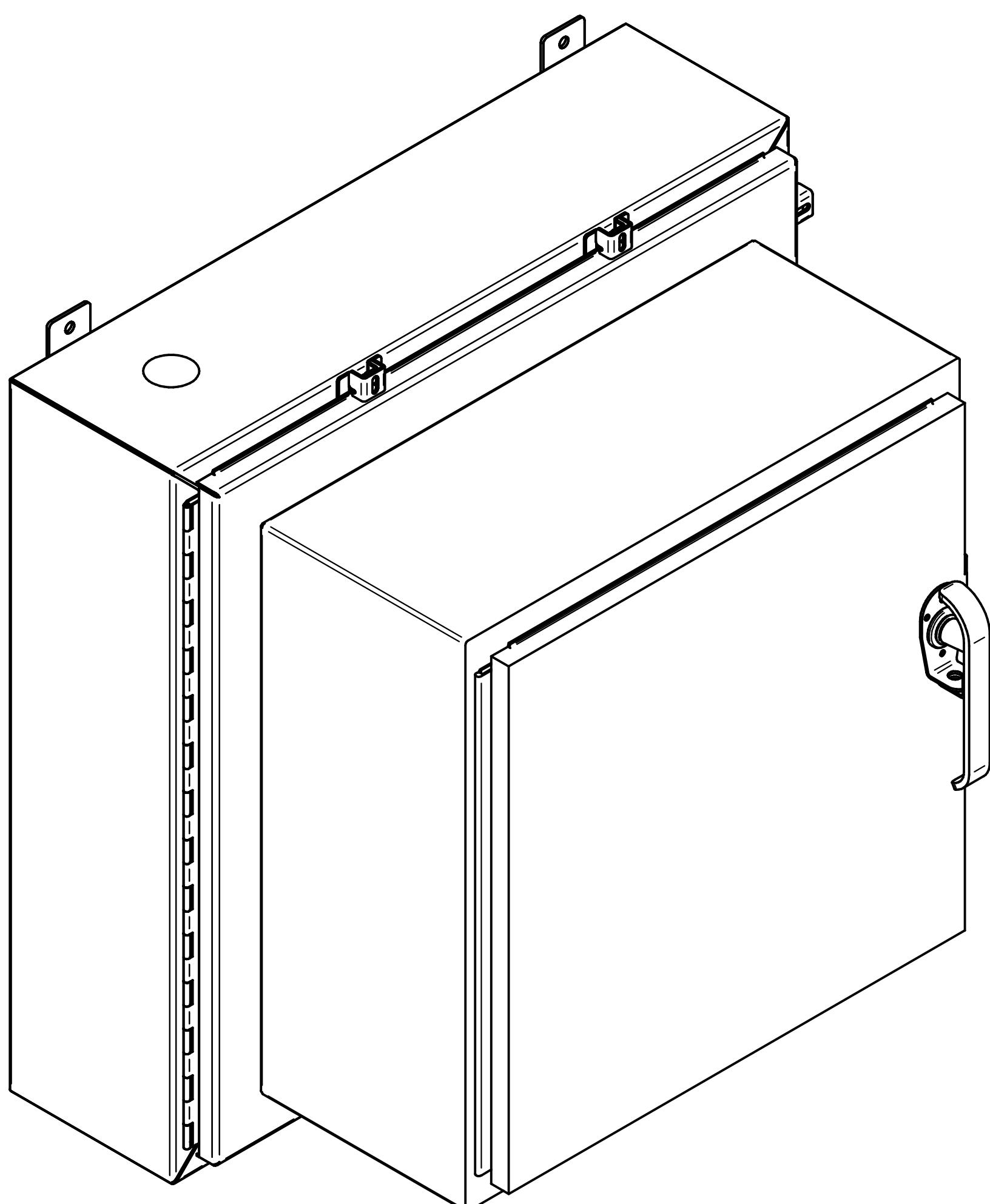
Size

B

Sheet

1 of 1

Item No.	Part Number	Description	Quantity	Item No.	Part Number	Description	Quantity
20	F040972	LIGHT	1	530	3403587	WIRE HARNESS	1
30	4018385	CONVERTER 24-12 VDC, 100 WATTS	1	540	3417440	SWITCH, ETHERNET 5 PORT	1
40	4015854	JAM BOX, G4	1	550	0-3121010-0-23	E-STOP SAFETY RELAY	1
50	4015646	MONITOR, LCD TOUCH 15IN FLAT	1	560	A1920Y14	FILM INSERT, OIL WARM-UP	1
60	200081	ORANGE MUSHROOM PUSH-PULL MAINTAINED	1	570	A0653Y03	CONTACT BLOCK, (NO NC)	1
80	4018381	THERMOSTAT, 24VDC, 16 AMP	2	580	B1382Y08	END CAP, SIEMENS BUSBAR	6
90	D0650Y07	PLUG-IN RELAY, 24V	1	590	B1382Y09	FEEDER LUG, SIEMENS	3
100	4011819	TERM BLOCK, 4 COND, 20-10AWG	52	600	C9678Y08	5 AMP DIN RAIL C.B.	3
110	4029585	DRILLING, CONTROL BOX	1	610	C9678Y09	10 AMP DIN RAIL C.B.	7
130	3402529	SWITCH, Wobble	1	620	C9678Y10	15 AMP DIN RAIL C.B.	2
140	4022695	JII J42 PIC MODULE ASSY	1	630	C9678Y12	30 AMP DIN RAIL C.B.	2
150	3423018	GAUGE, DIAGNOSTIC	1	640	H4985Y03	BUSBAR, SIEMENS, 6 C.B.	1
160	4030691	HEATER, WITH FAN-24VDC 250W	2	650	3406646	WIRE, 16 AWG, RED	116
180	158090-1	IGNITION SWITCH	1	660	3406648	WIRE, 16 AWG, GRAY	200
190	0-3101019-0-09	MINIATURE BULB	4	670	A9297Y02	18 AWG COPPER WIRE	53
200	A0653Y01	CONTACT BLOCK, (NO NO)	1	680	405597	MOUNTING RAIL	2
210	A0655Y01	PUSH BUTTON, MAINT, LIGHTED	2	690	405607	MOUNTING RAIL	2
220	A3993Y01	LIGHT INDICATOR, RED	2	700	2014888	LABEL - STROBE MODE SET SWITCH	1
230	D0650Y04	PLUG-IN RELAY SOCKET	1	710	4011838	JUMPER, TB STEP-DOWN, 20-4AWG	3
240	H1828Y59	FILM INSERT, WAIT TO START	1	720	4011839	TERM BLOCK, 2 COND, 20-4AWG	2
250	F041270	END STOP	15	730	4011840	END PLATE, TB 2 COND, 20-4AWG	1
270	4021755	VORTEX COOLER, 900 BTUH	1	740	H4985Y01	BUSBAR SIEMENS 4 C B	2
280	174771	24V BULB	1	750	3406649	WIRE, 16 AWG, GREEN	84
310	4018495	CONNECTOR. TNC F/F BULKHEAD	1	760	3406657	WIRE, 10 AWG, GREEN	2
320	4022330	7M NETWORK CABLE, M12 MALE/FEMALE	1	770	3413146	WIRE, 12 AWG, RD	7
340	4016767	TERMINAL MARKER CARD, WAGO	AS REQ'D	780	413221	FAN & GUARD	2
350	4018386	WIRELESS DATA TRANSCEIVER	1	790	413222	FILTER GUARD ASSY	4
370	008672000	1 NO NC CONTACTS AC/DC	3	800	2009755	RELAY, SOLID-STATE, DC, 60 AMP	2
380	A1920Y20	EMER PUMP FILM INSERT	1	810	4032054	BREATHER/DRAIN, NEMA 4X	2
410	4031432	WOBBLE SWITCH MOUNT	1	820	A3993Y07	LIGHT INDICATOR, AMBER	1
420	4031433	BRACKET, MONITOR	4	830	5004771	STOP, ENCLOSURE DOOR	2
430	4018429	TAPE, ACRYLIC FOAM VHB	1				
440	154538-1	SWITCH, TOGGLE 2 POLE	1				
450	4011820	END PLATE, TB 4 COND, 20-10AWG	5				
460	4011821	JUMPER, TB 2-WAY, 20-10AWG	9				
470	4011822	JUMPER, TB 3-WAY, 20-10AWG	1				
480	4011823	JUMPER, TB 4-WAY, 20-10AWG	2				
490	199053	RECEPTACLE, BULKHEAD	2				
500	405605	MOUNTING RAIL	1				
510	408397	LIGHT FLUORESCENT 24 VOLT	1				
520	2014763	SOUND ALARM, DUAL	1				



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IMPLIED TOLERANCES

ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED
 NORMAL SIZE RANGE INCH PLUS OR MINUS NORMAL SIZE RANGE METRIC PLUS OR MINUS
 OVER TO 2 PLACE 3 PLACE OVER TO 1 PLACE 2 PLACE OVER TO
 .00 .005 .005 .008 .005 .008 .005 .008 .005 .008
 0 .03 .03 .005 0 .150 .150 .08 .13
 6 .04 .04 .008 150 600 1.0 .20
 24 .06 .06 .010 600 1.5 .25
 UNLESS OTHERWISE SPECIFIED ALL MACHINED SURFACES WILL HAVE AN SURFACE FINISH OF 125 MICRONCHES. ANGULAR TOLERANCE OF ± 30' FOR ALL SURFACES. THIRD ANGLE PROJECTION
 SHOULD ADHERE TO THE LATEST HTT WELDING SPECIFICATION 101.

CHANGE

R/L

REVISION

DATE

Description

SECTION L-2

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PRODUCT STRUCTURE

ITEM	QTY	PART #	PART DESCRIPTION	
10	4	3756	CABLE GRIP	: CABLE FROM: .25-.31 1/2 NPT
20	1	5571	CABLE GRIP	: CABLE FROM: 0.25-0.37, 1/2 NPT
30	1	5964	CABLE GRIP	: CABLE FROM: 0.37-0.50, 1/2 NPT
40	1	187919	CABLE ASSEMBLY, DB9	: DB9 MALE/FEMALE 3 FOOT CABLE ASSY
50	1	3401324	CABLE ASSEMBLY, M12	: 1 M W/M12 MALE/FEMALE SHIELDED
60	1	3405078	CABLE ASSEMBLY, M12	: 7 M W/M12 FEMALE CONN + SHIELDED
70	30	3406646	WIRE	: 16AWG / RED, TYPE MTW
80	30	3406648	WIRE	: 16AWG / GRAY, TYPE MTW
90	30	3406649	WIRE	: 16AWG / GREEN, TYPE MTW
100	30	3406657	WIRE	: 10AWG / GREEN, TYPE MTW
110	30	3413146	WIRE	: 12AWG / RED, TYPE MTW
120	2	4015775	CABLE ASSEMBLY, M12	: CABLE, M12 F/PT, 10M BLK HF 5CON
130	24	4019171	TAGS, CABLE	: PLASTIC CABLE TAG SLEEVE
140	1	4022329	CABLE ASSEMBLY, M12	: 5M NETWORK CABLE, M12 MALE/FEMALE
150	2	4022333	CABLE ASSEMBLY, M12	: 3 M W/M12 FEMALE CONN
160	1	4022350	CABLE ASSEMBLY, M12	: 10 M W/M12 MALE + DIN-A STYLE +DIODE
170	1	4029446	CABLE ASSEMBLY, COAXIAL	: 10 FT N-MALE/MALE SHIELDED, 50 OHM, WATERTIGHT
180	1	4029472	CABLE ASSEMBLY, COAXIAL	: 3 FT N-MALE/MALE SHIELDED, 50 OHM, WATERTIGHT
190	1	4029586	ASSEMBLY, BOX	: CONTROL BOX ASSEMBLY
200	1	150957-2	CABLE GRIP	: CABLE FROM: .19-.25, 1/2" NPT
210	30	A9297Y02	WIRE	: 18 AWG - WHITE WIRE TYPE-SXL
220	1	B9689Y37	CABLE ASSEMBLY, USB	: 6FT, USB-USB PANEL MOUNT
230	60FT	F012388	CABLE, MULTICONDUCTOR	: 16AWG/2 CONDUCTOR .405 O.D 13A/CONDUCTOR
240	24	F018229	TY-RAP	: SMALL TY-RAP 3 1/2"
250	60FT	F018778	CABLE, MULTICONDUCTOR	: 16AWG/3 CONDUCTOR .43 O.D 13A/CONDUCTOR
260	7	F019878	LOCK NUT	: 1/2" NUT
270	2	L41359	CABLE GRIP	: CABLE FROM: 0.700 - 0.800 1" NPT

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DRAWING TITLE/DESCRIPTION:
CONTROL BOX WIRING
Bill Of Material

MACHINE TYPE-MODEL:
DRONE TAMPER

E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER	DRAWN BY:
1	D. MILLER
NUMBER OF JUPITER SHEETS	REL. DATE:
0	04-30-2010
TOTAL NUMBER OF SHEETS	SIZE:
12	D
	SCALE:

HARSCO

RAIL

WIRING CHART								
RUN	WIRE	SIZE	COLOR	FROM	TERM NO.	TO	TERM NO.	PART NO
1	1600	16 AWG	Gray	LS5260:-		TB-MCB:5		3406648
2	1600	16 AWG	Gray	DS5250:X-2		TB-MCB:5		3406648
3	1602	16 AWG	Gray	DS5270:X-2		TB-MCB:6		3406648
4	1602	16 AWG	Gray	LS5260:C		TB-MCB:6		3406648
5	2460	16 AWG	Gray	S4310:13		S4150:1B1		3406648
6	4135	16 AWG	Gray	KJ02125:2		K4270:13		3406648
7	4137	16 AWG	Gray	K4270:14		TB-MCB:2		3406648
8	4138	16 AWG	Gray	S4150:2A1		S4130:I		3406648
9	4138	16 AWG	Gray	S4130:I		KJ02125:6		3406648
10	4148	16 AWG	Gray	S4150:1A1		S4130:S		3406648
11	4150	16 AWG	Gray	S4150:1A2		TB-MCB:1		3406648
12	4160	16 AWG	Gray	S4150:2A2		TB-MCB:12		3406648
13	4190	16 AWG	Gray	S4150:1B2		TB-MCB:3		3406648
14	4310	16 AWG	Gray	S4310:14		TB-MCB:11		3406648
15	4548	16 AWG	Gray	S4550:1		TB-MCB:20		3406648
16	4580	16 AWG	Gray	K4270:23		TB-MCB:23		3406648
17	4590	16 AWG	Gray	K4270:24		TB-MCB:7		3406648
18	4620	16 AWG	Gray	S4610:+X2		S4610:14		3406648
19	4620	16 AWG	Gray	S4610:14		TB-MCB:13		3406648
20	5128	16 AWG	Gray	S5120:2		TB-MCB:17		3406648
21	5128	16 AWG	Gray	HR5180:1		TB-MCB:17		3406648
22	5128	16 AWG	Gray	HR5210:1		TB-MCB:17		3406648
23	5130	16 AWG	Gray	B5300:R		TB-MCB:30		3406648
24	5130	16 AWG	Gray	B5290:R		TB-MCB:30		3406648
25	5130	16 AWG	Gray	S5120:1		TB-MCB:29		3406648
26	5130	16 AWG	Gray	S5133:NO		TB-MCB:29		3406648
27	5134	16 AWG	Gray	K5128:3		HR5180:2		3406648
28	5140	16 AWG	Gray	K5140:3		HR5210:2		3406648
29	6245	16 AWG	Gray	K4270:A1		TB-MCB:10		3406648
30	000W	10 AWG	Green	TB-MCB-FP:3		TB-MCB-000W:2		3406657
31	000W	10 AWG	Green	TB-MCB-FP:7		TB-MCB-000W:3		3406657
32	000W	10 AWG	Green	TB-MCB-FP:11		TB-MCB-000W:3		3406657
33	000	16 AWG	Green	HR5180:-		TB-MCB-000:7		3406649
34	000	16 AWG	Green	HR5210:-		TB-MCB-000:7		3406649
35	000	16 AWG	Green	LT5320:BR		TB-MCB-000:9		3406649
36	000	16 AWG	Green	B5300:BK		TB-MCB-000:9		3406649
37	000	16 AWG	Green	S4610:-X1		TB-MCB-000:5		3406649
38	000	16 AWG	Green	K5128:4		TB-MCB-000:7		3406649
39	000	16 AWG	Green	K5140:4		TB-MCB-000:4		3406649
40	000	16 AWG	Green	B5290:BK		TB-MCB-000:9		3406649
41	000	16 AWG	Green	LT4510:BLK		TB-MCB-000:4		3406649
42	000	16 AWG	Green	K5140:4		K5128:4		3406649
43	000	16 AWG	Green	K5128:4		TB-MCB-000:3		3406649
44	000	16 AWG	Green	K5140:4		TB-MCB-000:2		3406649
45	000	16 AWG	Green	K4270:A2		TB-MCB-000:1		3406649
46	000W	16 AWG	Green	MODJ01500:2		TB-MCB-000W:4		3406649
47	000W	16 AWG	Green	ARJ01300:-		TB-MCB-000W:2		3406649
48	000W	16 AWG	Green	J01463:RTN		TB-MCB-000W:2		3406649
49	1590	16 AWG	Green	DS5240:X-2		TB-MCB:4		3406649
50	J01492	16 AWG	Green	CAN:1:GND		J01463:RTN		3406649
51	2570	12 AWG	Red	K5128:2		CB2570:2		3413146
52	2580	12 AWG	Red	K5140:2		CB2580:2		3413146
53	4160	12 AWG	Red	S4610:13		S4150:2A2		3413146
54	2460	16 AWG	Red	S4150:1B1		TB-MCB:26		3406646
55	2460	16 AWG	Red	CB2460:2		TB-MCB:26		3406646
56	2470	16 AWG	Red	CB2470:2		TB-MCB:21		3406646
57	2470	16 AWG	Red	S4550:2		TB-MCB:21		3406646
58	2470	16 AWG	Red	LT4510:RED		TB-MCB:21		3406646
59	2480	16 AWG	Red	DS5240:X-1		TB-MCB:24		3406646
60	2480	16 AWG	Red	DS5250:X-1		TB-MCB:24		3406646
61	2480	16 AWG	Red	LS5260:+		TB-MCB:25		3406646
62	2480	16 AWG	Red	DS5270:X-1		TB-MCB:25		3406646
63	2480	16 AWG	Red	CB2480:2		TB-MCB:24		3406646
64	2490	16 AWG	Red	S4130:B		CB2490:2		3406646
65	2560	16 AWG	Red	CB2560:2		TB-MCB:19		3406646
66	2560	16 AWG	Red	S5133:C		TB-MCB:19		3406646
67	3470	16 AWG	Red	J01463:+24		CB3470:2		3406646
68	3480	16 AWG	Red	ARJ01300:+		TB-MCB:28		3406646
69	3480	16 AWG	Red	MODJ01500:1		TB-MCB:28		3406646
70	3480	16 AWG	Red	CB3480:2		TB-MCB:28		3406646
71	3500	16 AWG	Red	CB3500:2		TB-MCB:FP:1		3406646
72	3510	16 AWG	Red	CB3510:2		TB-MCB:FP:5		3406646
73	3520	16 AWG	Red	CB3520:2		TB-MCB:FP:9		3406646
74	5210	16 AWG	Red	HR5210:+		K5140:1		3406646
75	5240	16 AWG	Red	HR5180:+		K5128:1		3406646
76	J01458	16 AWG	Red	CAN:1:PWR		J01463:+24V		3406646
77	000	18 AWG	White	S5120:-		TB-MCB-000:3		A9297Y02
78	000	18 AWG	White	S5150:-		TB-MCB-000:2		A9297Y02
79	2560	18 AWG	White	S5120:+		TB-MCB:19		A9297Y02
80	2560	18 AWG	White	S5150:+		TB-MCB:19		A9297Y02

WIRING CHART								
RUN	WIRE	SIZE	COLOR	FROM	TERM NO.	TO	TERM NO.	PART NO
81	5132	18 AWG	White	S5120:4		S5150:1		A9297Y02
82	5158	18 AWG	White	S5150:2		TB-MCB:18		A9297Y02

JUMPER CHART

RUN	FROM	TO	PART NO.
1	TB-MCB:29	TB-MCB:J3	no match
2	TB-MCB:30	TB-MCB:J3	no match
3	TB-MCB:		

J42 SERIAL 4029353		CAN01 SER 187919		CABLE ASSEMBLY, DB9 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	-	J01225	-	-	CAN:1:COM3
2	-	J01550	-	-	J01463:DB9

AIR DRYER 4029586		C-MCB1 F016022		CABLE, MULTICONDUCTO 4029596	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	BK	2590	CB2590:2	-	HR5460:A
2	WH	000	TB-MCB-000:6	-	HR5460:B

ROPE PULL SAFETY SWITCH 4029353		C-MCB10 3405078		CABLE ASSEMBLY, M12 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	W-1	2460	S4230	EXISTS	TB-MCB:27
2	W-2	**NC**	S4230	EXISTS	-
3	W-3	4240	S4230	EXISTS	TB-MCB:14
4	W-4	**NC**	S4230	EXISTS	-
5	W-5	**NC**	S4230	EXISTS	-

INTERNAL ESTOP 4029353		C-MCB2 4022333		CABLE ASSEMBLY, M12 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	W-1	2460	-	-	TB-MCB:27
2	W-2	2460	-	-	TB-MCB:27
3	W-3	000	-	-	TB-MCB-000:1
4	W-4	6120	-	-	TB-MCB:9
5	W-5	**NC**	-	-	-
6	-	6115	-	-	P6115:MAL

CONTROL BOX TO CONTROL BOX ESTOP 4029353		C-MCB3 3401324		CABLE ASSEMBLY, M12 4029351	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	BK	C-MCB3	P6115:FEM	EXISTS	SJ02800:IN
					EXISTS

VORTEX COOLER 4029353		C-MCB4 2009874/CUT		CABLE ASSEMBLY, M12 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	WH-1	5158	-	-	TB-MCB:18
2	WH-2	000	-	-	TB-MCB-000:2
3	WH-3	**NC**	-	-	-

POWERVIEW METER 4029353		C-MCB5 4022329		CABLE ASSEMBLY, M12 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	-	5538	-	-	C-MCB5
2	-	5535	-	-	NET5530:YE
3	-	5538	-	-	C-MCB5
4	-	6534	-	-	P6540A:FEM

STROBE LIGHT 4029586		C-MCB6 F018778		CABLE, MULTICONDUCTO 4029836	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	BK	2470	TB-MCB:21	-	LT4530:RD
2	WH	4548	TB-MCB:20	-	LT4530:YE
3	GN	000	TB-MCB-000:4	-	LT4530:BK

USB EXTENSION CABLE 4029353		C-MCB7 B9689Y37		CABLE ASSEMBLY, USB	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	FEM	**NC**	-	-	-

Note: INSTALL 1 EACH OF:
TO EACH END OF EACH CABLE.

130 240
24 24

INTERNAL EHTERNET RADIO ANTENNA 4029353		C-MCB8 4029472		CABLE ASSEMBLY, COAX 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	BK	C-MCB8	ARJ01300:ANT	EXISTS	ADJ01167:FEM

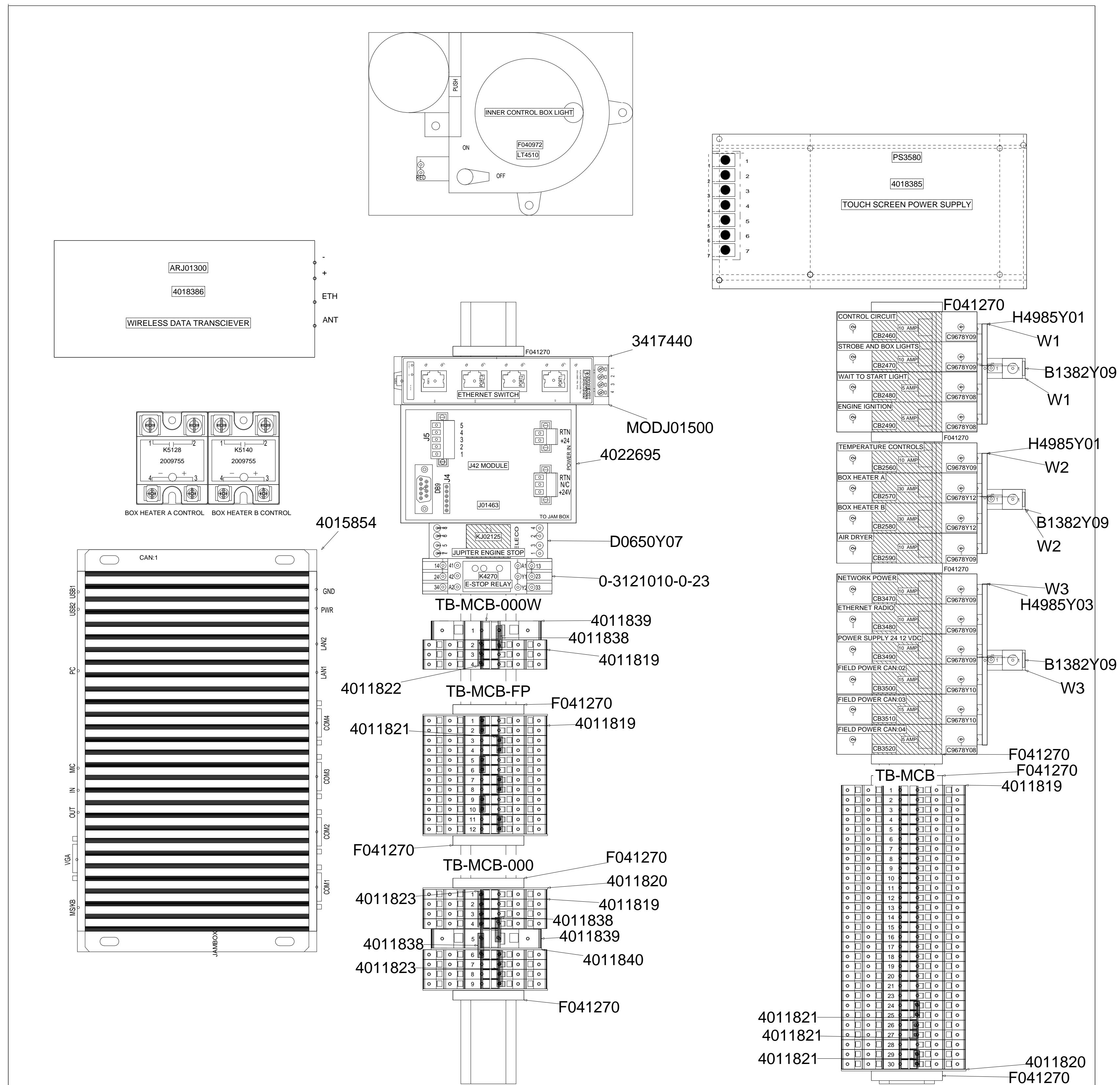
EXTERNAL ETHERNET RADION ANTENNA 4029353		C-MCB9 4029446		CABLE ASSEMBLY, COAX 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	BK	C-MCB9	EJ01167:ANT	EXISTS	ADJ01167:FEM

FIELD POWER CAN:02 4029353		J02FP 4022333		CABLE ASSEMBLY, M12 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	W-1	3500	-	-	TB-MCB-FP:1
2	W-2	3500	-	-	TB-MCB-FP:1
3	W-3	000W	-	-	TB-MCB-FP:3
4	W-4	000W	-	-	TB-MCB-FP:3
5	W-5	**NC**	-	-	-
6	-	J02550	-	-	CAN:02:FPA

FIELD POWER CAN:03 4029353		J03FP 4015775		CABLE ASSEMBLY, M12 4029586	
RUN	COLOR	WIRE #	FROM	TERM NO.	TO
1	W-1	3510	CAN:03:FPA	EXISTS	TB-MCB-FP:5
2	W-2	3510	CAN:03:FPA	EXISTS	TB-MCB-FP:5
3	W-3	000W	CAN:03:FPA	EXISTS	TB-MCB-FP:7
4	W-4	000W	CAN:03:FPA	EXISTS	TB-MCB-FP:7
5	W-5	**NC**	CAN:03:FPA	EXISTS	-

FIELD POWER CAN:04 4029353		J04FP 4015775		CABLE ASSEMBLY, M12 4029586	

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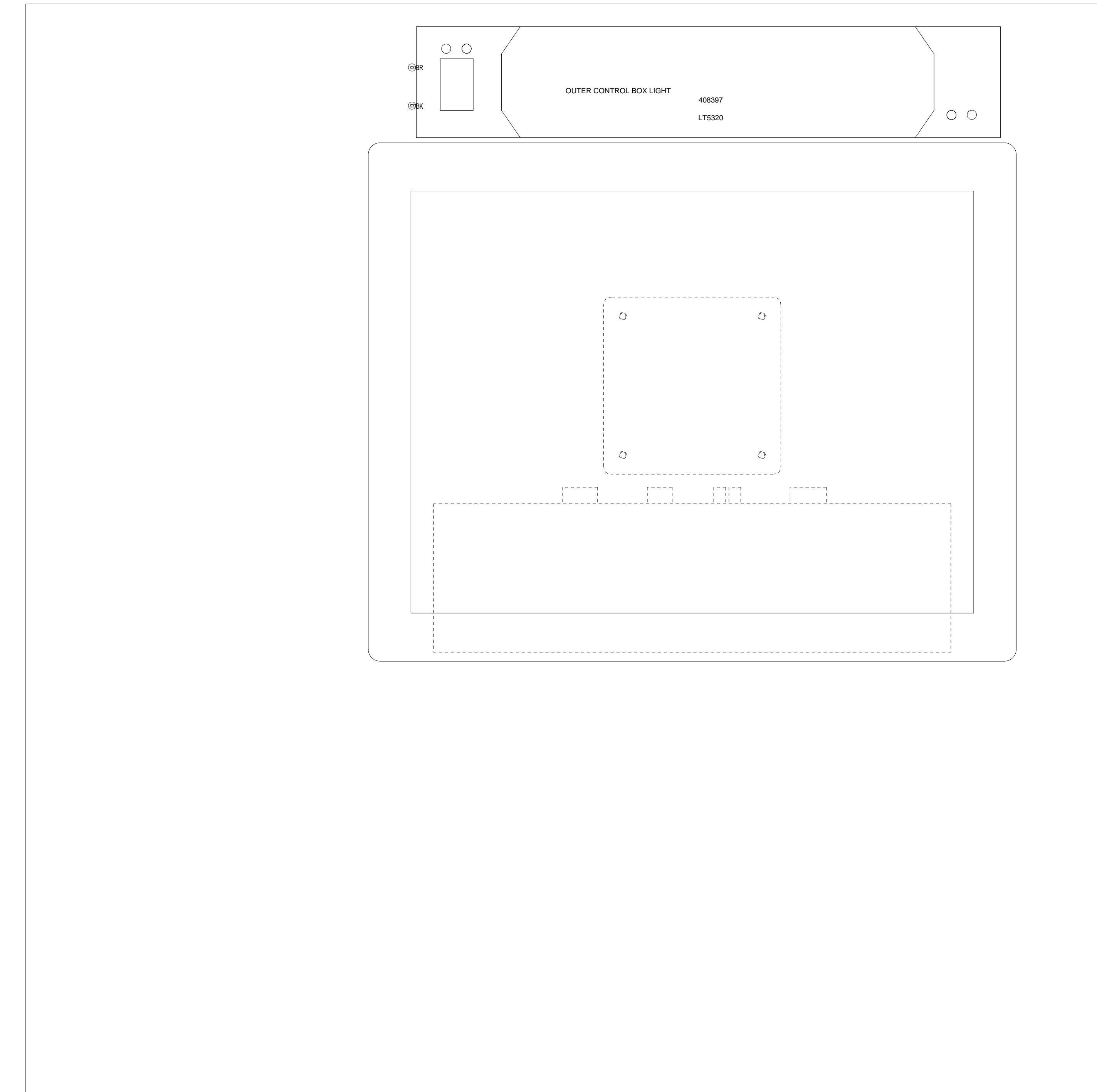
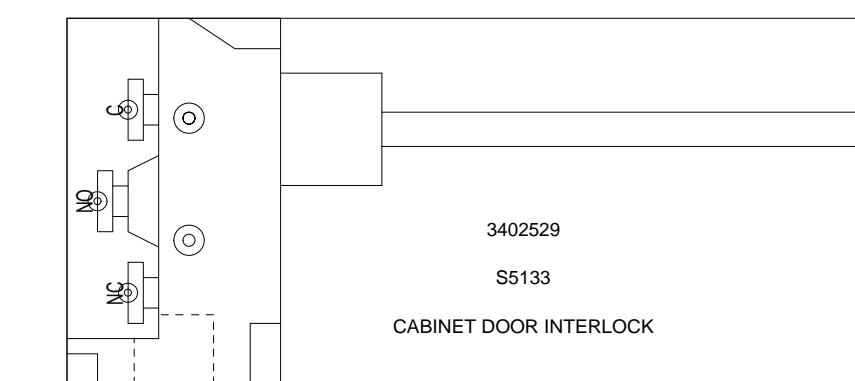


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RSCO AND W-HOW THE VING OR O PARTY E ANY	CHANGE #		REVISION
	ECN-105500	A	NEW RELEASE
	EC500286	B	AS BUILT RELEASE

DR	DATE	DRAWING TITLE/DESCRIPTION: CONTROL BOX WIRING BACK PANEL	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
ACM	04-30-2010		4	D. MILLER	
ACM	01-21-2011	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS	REL. DATE:	E3 DRAWING
			0	04-30-2010	
		E3 PROJECT FILE NAME: DRONE TAMPER 3	SIZE:	D	4029353
			TOTAL NUMBER OF SHEETS	SCALE:	
			12		



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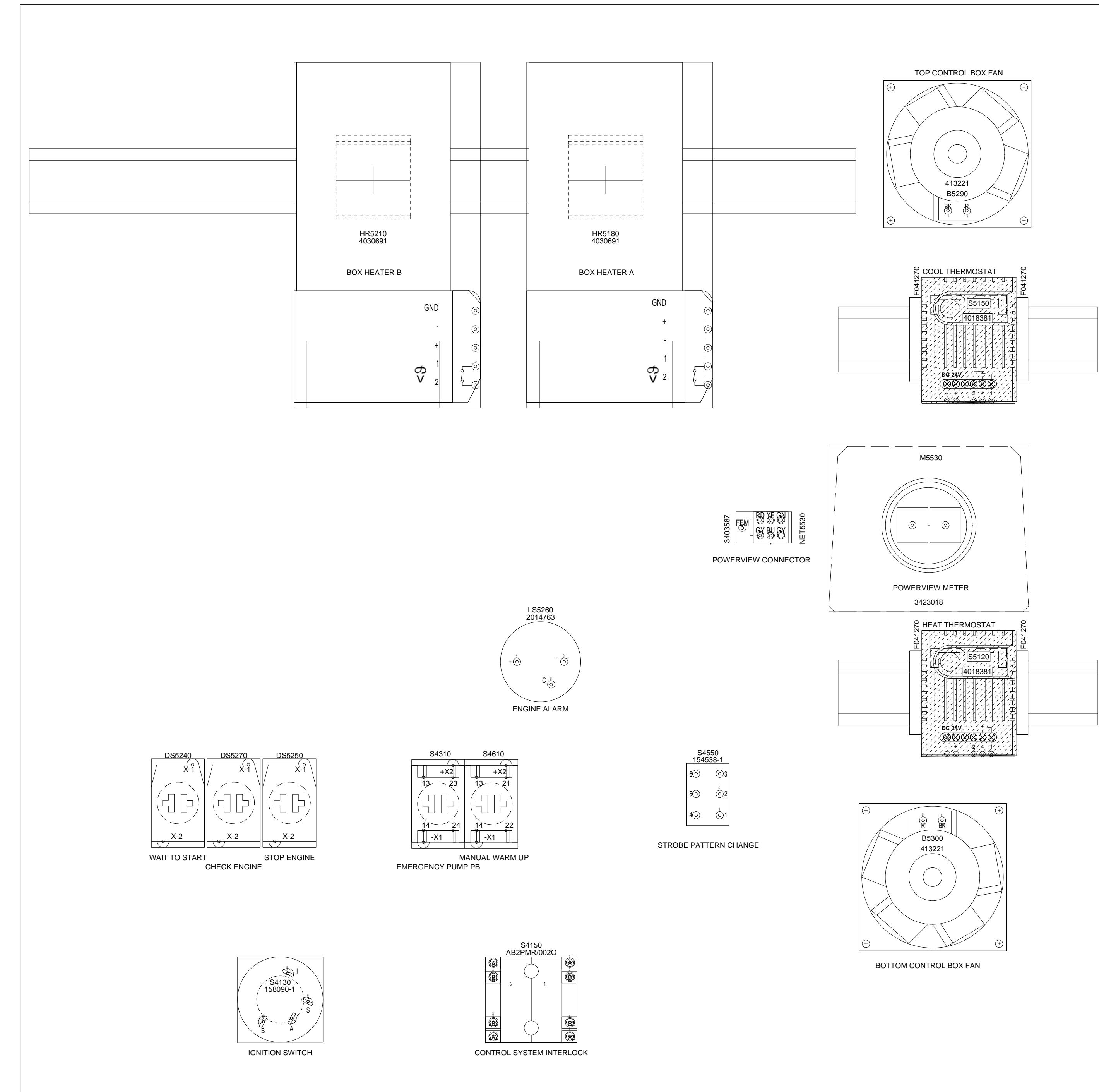
CHANGE #		REVISION	DR	DATE
ECN-105500	A	NEW RELEASE	ACM	04-30-2010
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011

DRAWING TITLE/DESCRIPTION:
**CONTROL BOX WIRING
INSIDE OF OUTER ENCLOSURE**
MACHINE TYPE-MODEL:
DRONE TAMPER
E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER
5
NUMBER OF JUPITER SHEETS
0
TOTAL NUMBER OF SHEETS
12

DRAWN BY:
D. MILLER
REL. DATE:
04-30-2010
SIZE:
D
SCALE:

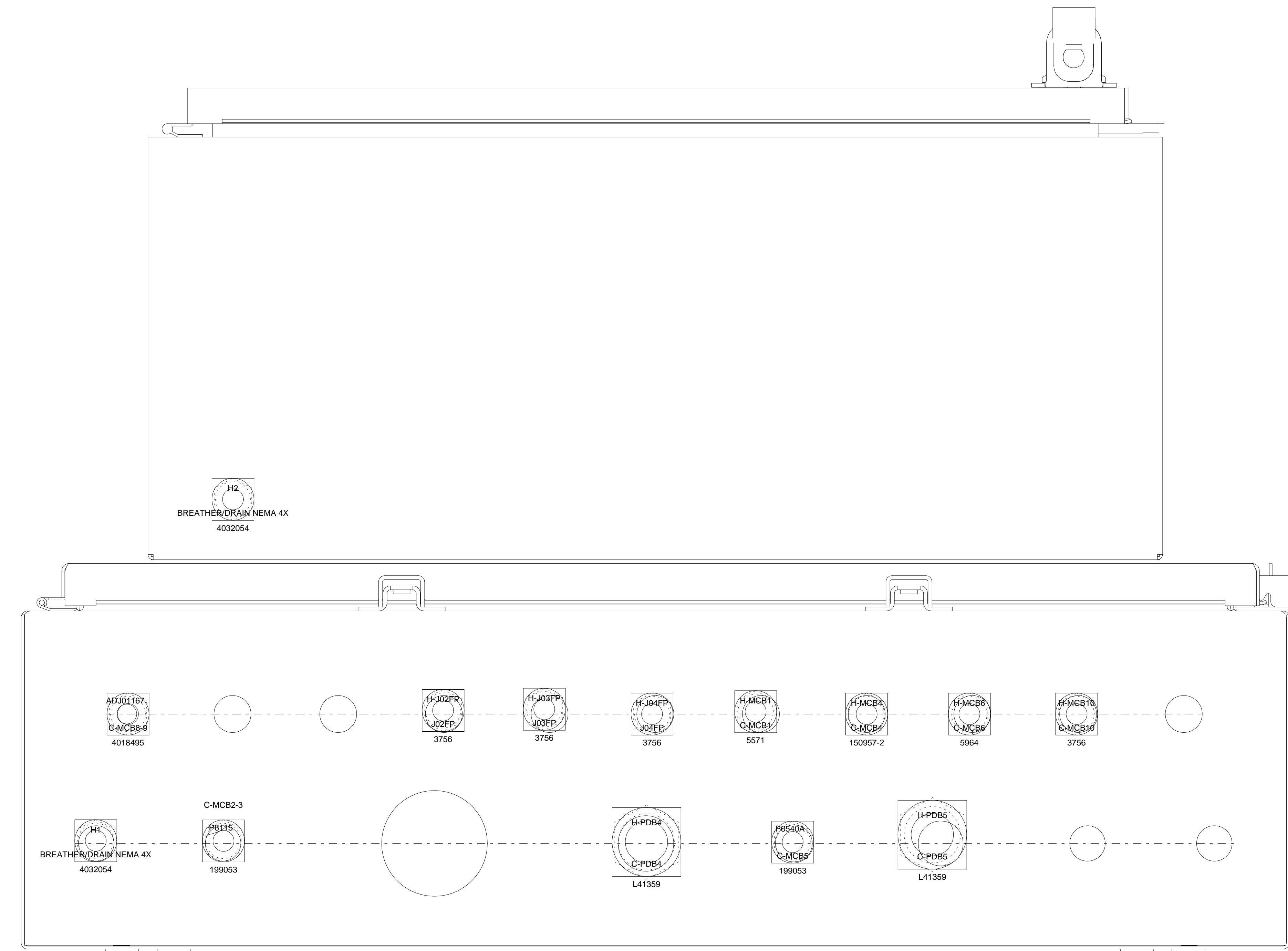
HARSCO
RAIL
E3 DRAWING
4029353



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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: CONTROL BOX WIRING BACK OF MAIN ENCLOSURE DOOR	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010		6	D. MILLER	
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011	NUMBER OF JUPITER SHEETS		REL. DATE: 04-30-2010	
					0		SIZE: D	
					TOTAL NUMBER OF SHEETS		E3 DRAWING	
					12		SCALE: 4029353	
					E3 PROJECT FILE NAME: DRONE TAMPER 3			



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 APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: CONTROL BOX WIRING CABLE ENTRY LOCATIONS	SHEET NUMBER 7	DRAWN BY: D. MILLER	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010	SIZE: D	HARSCO RAIL
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011				
					E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS 12	SCALE: 4029353	E3 DRAWING

SECTION L

terminal strip

terminal 4011819 [1 - 29]

Terminal type terminal _____

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AND W R Y	CHANGE #		DATE	DRAWING TITLE/DESCRIPTION: CONTROL BOX WIRING TERMINAL PLAN	SHEET NUMBER 8	DRAWN BY: D. MILLER	HARSCO RAIL	
	ECN-105500	A	04-30-2010	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010		
	EC500286	B	01-21-2011					
				E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS 12	SIZE: D	E3 DRAWING 4029353	

SECTION L-3

terminal strip
TB-MCB

cable designations	cable type	cable designations	cable type	target external	target terminal	wire number	terminal number	jumpers	target internal	target terminal	Placement in Schematics	cable designations	cable type
						5130				:NO /5130			
						5130				:J3 /5130			
						5130	30			:29 /5290			
						5130				:R /5290			
						5130				:R /5290			
						5130				:J3 /5290			
						2480	J1			:24			
						2480				:25			
						2460	J2			:26			
						2460				:27			
						5130	J3			:29			
						5130				:30			

terminal 4011819 [29 - 30]

Terminal type terminal 4011821 [J1 - J3]

terminal _____

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CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
ECN-105500	A 04-30-2010	CONTROL BOX WIRING	9	D. MILLER	
EC500286	B 01-21-2011	TERMINAL PLAN	NUMBER OF JUPITER SHEETS	REL. DATE:	
		MACHINE TYPE-MODEL:	0	04-30-2010	
		DRONE TAMPER	SIZE:		
		E3 PROJECT FILE NAME:	TOTAL NUMBER OF SHEETS		E3 DRAWING
		DRONE TAMPER 3	12	D	
				SCALE:	4029353

SECTION L-3

terminal strip

TB-MCB-000

target external	cable designations	target terminal	wire number	terminal number	jumpers	target internal	target terminal	Placement in Schematics	cable designations	target terminal	wire number	terminal number	cable type
		CONTROL BOX WIRING 4029353 C-MCB2	:W-3	000	1	•	CONTROL BOX ASSMBLY 4029586 K4270	:A2 /4.270					
				000			CONTROL BOX ASSMBLY 4029586 J1464	:1 /4.270					
		CONTROL BOX WIRING 4029353 C-MCB4	:W-2	000	2	•	CONTROL BOX ASSMBLY 4029586 S5150	:· /5.150					
				000			CONTROL BOX ASSMBLY 4029586 K5140	:4 /5.150					
				000			CONTROL BOX ASSMBLY 4029586 J1464	:1 /5.150					
				000			CONTROL BOX ASSMBLY 4029586 S5120	:· /5.120					
				000			CONTROL BOX ASSMBLY 4029586 K5128	:4 /5.120					
				000			CONTROL BOX ASSMBLY 4029586 J1464	:1 /5.120					
				000			CONTROL BOX ASSMBLY 4029586 LT4510	:BLK /4.510					
				000			CONTROL BOX ASSMBLY 4029586 K5140	:4 /4.510					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:J1 /4.510					
				000			CONTROL BOX ASSMBLY 4029586 J1464	:1 /4.510					
				000			CONTROL BOX ASSMBLY 4029586 S4610	:X1 /4.610					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:J1 /4.610					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:J2 /4.610					
				000			CONTROL BOX ASSMBLY 4029586 J1465	:1 /2.590					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:J2 /2.590					
				000			CONTROL BOX ASSMBLY 4029586 HR5210	:· /4.120					
				000			CONTROL BOX ASSMBLY 4029586 HR5180	:· /4.120					
				000			CONTROL BOX ASSMBLY 4029586 NET5530	:GY /4.120					
				000			CONTROL BOX ASSMBLY 4029586 K5128	:4 /4.120					
				000			CONTROL BOX ASSMBLY 4029586 J1465	:1 /4.120					
				000			CONTROL BOX ASSMBLY 4029586 J1465	:1 /2.560					
				000			CONTROL BOX ASSMBLY 4029586 B5300	:BK /5.290					
				000			CONTROL BOX ASSMBLY 4029586 LT5320	:BR /5.290					
				000			CONTROL BOX ASSMBLY 4029586 B5290	:BK /5.290					
				000			CONTROL BOX ASSMBLY 4029586 J1465	:1 /5.290					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:·					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:6					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:4					
				000			CONTROL BOX ASSMBLY 4029586 TB-MCB-000	:5					

terminal 4011819[1-4, 6-9]

Terminal type terminal 4011839[5]

terminal 4011838[J1-J2]

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CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:		SHEET NUMBER	DRAWN BY:
ECN-105500	A 04-30-2010	CONTROL BOX WIRING		10	D. MILLER
EC500286	B 01-21-2011	TERMINAL PLAN			
		MACHINE TYPE-MODEL:			
		DRONE TAMPER			
		E3 PROJECT FILE NAME:			
		DRONE TAMPER 3			
NUMBER OF JUPITER SHEETS		SHEET NUMBER	DRAWN BY:		
		0			
REL. DATE:		REL. DATE:			
		04-30-2010			
SIZE:		SIZE:			
		D			
TOTAL NUMBER OF SHEETS		TOTAL NUMBER OF SHEETS			
		12			
SCALE:		SCALE:			

HARSCO
RAIL

E3 DRAWING

4029353

SECTION L-3

terminal strip
TB-MCB-000W

GN	POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-000W	cable designations	target external	target terminal	wire number	terminal number	jumpers	target internal	target terminal	Placement in Schematics	cable designations	cable type	
				:1	000W	1			:J1	/3.463			
					000W	2			:RTN	/3.468			
					000W				:AR01300	/3.468			
					000W				:3	/3.468			
					000W				:J1	/3.468			
					000W				:J2	/3.468			
					000W				:AR01300	/3.478			
					000W				:11	/3.478			
					000W				:7	/3.478			
					000W				:J2	/3.478			
					000W				:2	/3.488			
					000W				:1				
					000W				:3				
					000W				:4				
					000W				:2				

terminal 4011839 [1]
 Terminal type terminal 4011819 [2-4]
 terminal 4011838 [J1]

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CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSOCO RAIL
ECN-105500	A 04-30-2010	CONTROL BOX WIRING	11	D. MILLER	
EC500286	B 01-21-2011	TERMINAL PLAN	NUMBER OF JUPITER SHEETS	REL. DATE: 04-30-2010	
		MACHINE TYPE-MODEL: DRONE TAMPER	0	SIZE: D	
		E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS	SCALE: 12	E3 DRAWING 4029353

SECTION L

terminal st

TB-MCB-FI

SECTION L-3

terminal strip
TB-MCB-FP

cable type

cable designations

target
external

target terminal

wire number

terminal number

jumpers

target
internal

cable type

cable designations

target terminal

Placement in
Schematics

CONTROL BOX WIRING 4029353 J02FP	:W-2	3500	1	•	CONTROL BOX ASSMBLY 4029586 CB3500	:2	/J02.534
CONTROL BOX WIRING 4029353 J02FP	:W-1	3500			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J1	/J02.534
		3500	2		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J1	
CONTROL BOX WIRING 4029353 J02FP	:W-4	000W	3	•	CONTROL BOX ASSMBLY 4029586 TB-MCB-000W	:2	/J02.567
CONTROL BOX WIRING 4029353 J02FP	:W-3	000W			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J2	/J02.567
		000W	4		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J2	
CONTROL BOX WIRING 4029353 J03FP	:W-2	3510	5	•	CONTROL BOX ASSMBLY 4029586 CB3510	:2	/J03.525
CONTROL BOX WIRING 4029353 J03FP	:W-1	3510			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J3	/J03.525
		3510	6		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J3	
CONTROL BOX WIRING 4029353 J03FP	:W-4	000W	7	•	CONTROL BOX ASSMBLY 4029586 TB-MCB-000W	:3	/J03.559
CONTROL BOX WIRING 4029353 J03FP	:W-3	000W			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J4	/J03.559
		000W	8		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J4	
CONTROL BOX WIRING 4029353 J04FP	:W-2	3520	9	•	CONTROL BOX ASSMBLY 4029586 CB3520	:2	/J04.534
CONTROL BOX WIRING 4029353 J04FP	:W-1	3520			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J5	/J04.534
		3520	10		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J5	
CONTROL BOX WIRING 4029353 J04FP	:W-4	000W	11	•	CONTROL BOX ASSMBLY 4029586 TB-MCB-000W	:3	/J04.567
CONTROL BOX WIRING 4029353 J04FP	:W-3	000W			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J6	/J04.567
		000W	12		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:J6	
		3500	J1		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:1	
		3500			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:2	
		000W	J2		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:3	
		3510	J3		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:4	
		3510			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:5	
		000W	J4		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:6	
		3520	J5		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:7	
		3520			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:8	
		000W	J6		CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:9	
		000W			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:10	
		000W			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:11	
		000W			CONTROL BOX ASSMBLY 4029586 TB-MCB-FP	:12	

terminal 4011819 [1 - 1]

Terminal type terminal 4011821 [J1 -

terminal

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HARSCO AND KNOW-HOW IT, THE RAWING OR HIRD PARTY TURE ANY CO.	CHANGE #		DATE	DRAWING TITLE/DESCRIPTION: CONTROL BOX WIRING TERMINAL PLAN	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
	ECN-105500	A	04-30-2010		12	D. MILLER	
	EC500286	B	01-21-2011		NUMBER OF JUPITER SHEETS	REL. DATE:	
						04-30-2010	
						SIZE:	
				MACHINE TYPE-MODEL: DRONE TAMPER	TOTAL NUMBER OF SHEETS	D	
						E3 DRAWING	
						SCALE:	
				E3 PROJECT FILE NAME: DRONE TAMPER 3	12		4029353

HARSCO

RAIL

E3 DRAWING

4029353

6

5

4

3

2

1

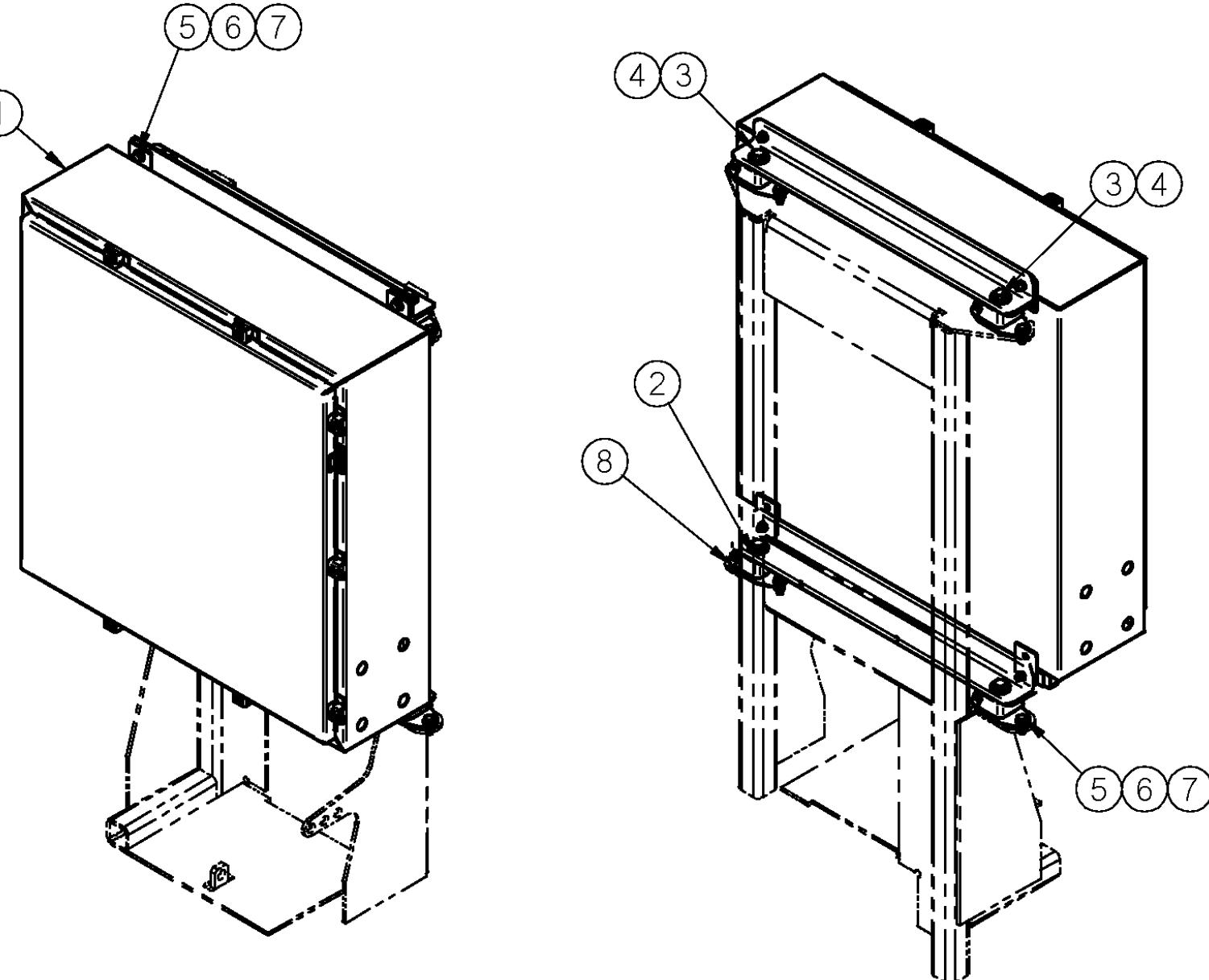
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SOLID EDGE DRAWING

Item Number	Document Number	Title	Material	Quantity
1	4029352	POWER DISTRIBUTION BOX WIRING		1
2	4029571	MOUNT BRACKET, CONT BOX	Steel	2
3	F040753	HHCS MI2XI.25X35		4
4	A006904I	MI2 PLAIN WASHER		4
5	F022405	HHCS .375-16XI.00 STAINLESS	stainless steel	12
6	F00968I	SAE FLAT WASHER .375	steel	12
7	F002913	HEX JAM NUT .375-24		12
8	4028535	MOUNT, ISOLATION	Steel	4

SECTION L-4

Inch
[mm]

IMPLIED TOLERANCES

ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED

IMPLIED TOLERANCES								CHANGE	R/L	REVISION	DATE	Description							
NOMINAL SIZE RANGE	INCH		NOMINAL SIZE RANGE		METRIC		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE:	ECN-105500	A	RELEASE	04-30-10	POWER DISTRIBUTION BOX INSTALL.							
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL	ECN-105404	B	PICTORAL UPDATE. ADD IT-2 TO IT-8. A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF ±.50° CONCENTRICITY WITHIN .010	05-20-10	Drawing Number	-----	Machine Type	DRONE TAMPER				
0	6	.03	.005	0	150	.8	.13					Model	4029588.asm	Drawn	fsami	Date Drawn 30 May 10			
6	24	.04	.008	150	600	1.0	.20					Weight	0.0 lbm	Scale:	1:4	APVD Desg	DM	APVD ChEng	EMC
24	-	.06	.010	600	-	1.5	.25					Mat'l							
												Part Number	4029588	Size	B	Sheet 1 of 1			

HARSCO

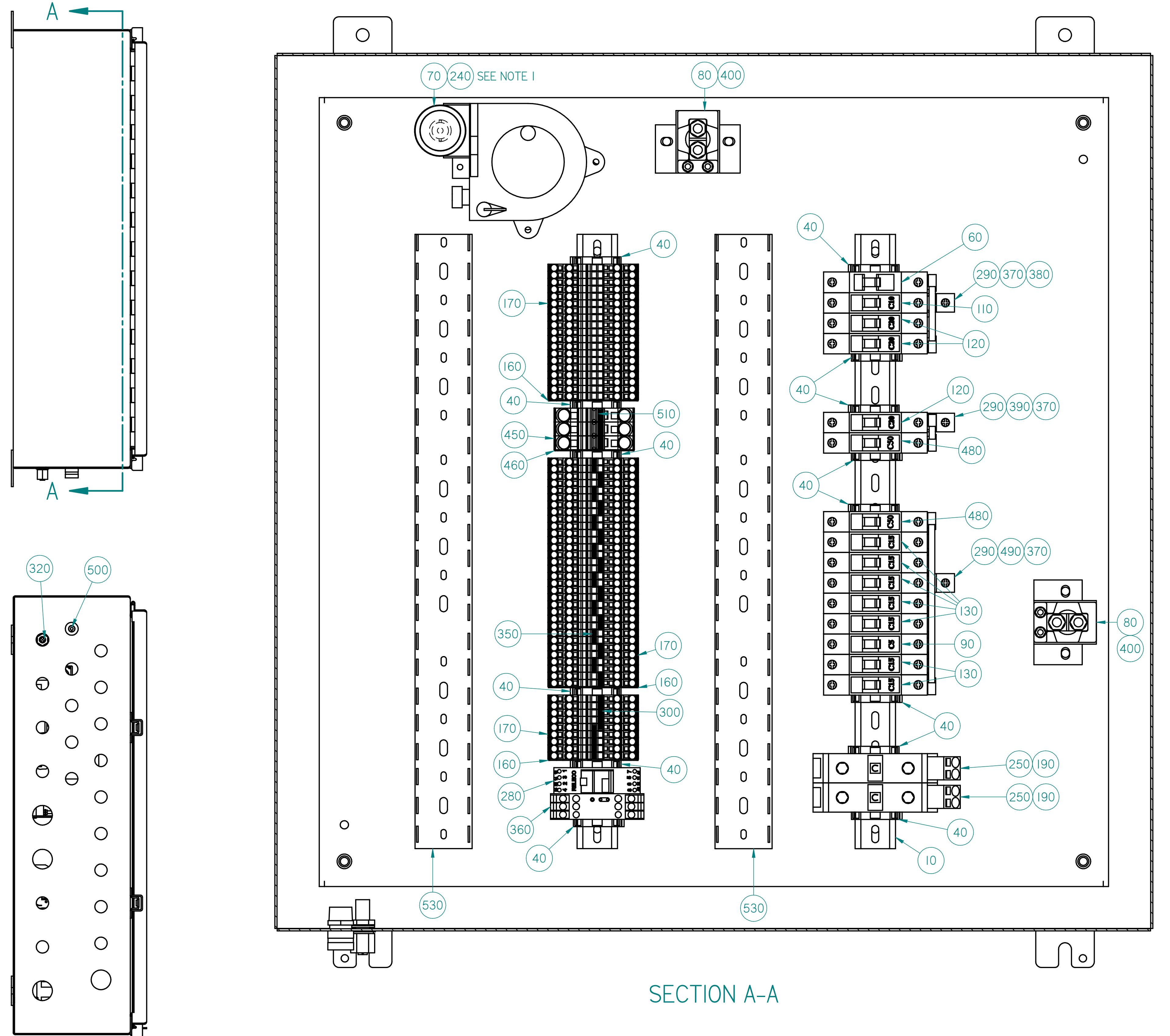
RAIL

Item No.	Part Number	Description	Quantity
10	B0971T24	MTG. RAIL (21")	2
40	F041270	END STOP	14
60	C9678Y31	1 AMP DIN RAIL C.B.	1
70	F040972	LIGHT	1
80	172164	POWER CONTACTOR	2
90	C9678Y08	5 AMP DIN RAIL C.B.	1
110	C9678Y09	10 AMP DIN RAIL C.B.	1
120	C9678Y11	20 AMP DIN RAIL C.B.	3
130	C9678Y10	15 AMP DIN RAIL C.B.	7
150	D0650Y07	PLUG-IN RELAY, 24V	1
160	4011820	END PLATE, TB 4 COND, 20-10AWG	3
170	4011819	TERM BLOCK, 4 COND, 20-10AWG	60
190	3402461	TERMINAL BLOCK	2
230	4029580	DRILLING, PDB ENCLOSURE	1
240	174771	24V BULB	1
250	3402469	TERMINAL BLOCK ADAPTOR	4
280	D0650Y04	PLUG-IN RELAY SOCKET	1
290	B1382Y09	FEEDER LUG, SIEMENS	3
300	4011824	JUMPER, TB 5-WAY, 20-10AWG	2
320	199053	RECEPTACLE, BULKHEAD	1
350	4011821	JUMPER, TB 2-WAY, 20-10AWG	16
360	0-3121010-0-23	E-STOP SAFETY RELAY	1
370	B1382Y08	END CAP, SIEMENS BUSBAR	6
380	H4985Y01	BUSBAR SIEMENS 4 CB	1
390	H4985Y10	BUSBAR SIEMENS 2 CB	1
400	404558	DIODE ASSEMBLY	2
450	4011839	TERM BLOCK, 2 COND, 20-4AWG	3
460	4011840	END PLATE, TB 2 COND, 20-4AWG	1
480	C9678Y14	50 AMP DIN RAIL CB	2
490	H4985Y07	BUSBAR, SIEMENS, 9 CB	1
500	4032054	BREATHER/DRAIN, NEMA 4X	1
510	4011842	JUMPER, TB 3-WAY, 20-4AWG	1
520	5004771	STOP, ENCLOSURE DOOR	1
530	5006691	WIRE DUCT	2

SECTION L-5

NOTE:
REMOVE 12V BULB IN IT-70 AND REPI ACE WITH IT-240

SECTION A-A



PRODUCT STRUCTURE			
ITEM	QTY	PART #	PART DESCRIPTION
10	2	2700	CABLE GRIP : CABLE FROM: .500-.625 1/2"NPT
20	8	3756	CABLE GRIP : CABLE FROM: .25-.31 1/2 NPT
30	4	5571	CABLE GRIP : CABLE FROM: 0.25-0.37, 1/2 NPT
40	20FT	164834	CABLE, SINGLE CONDUCTOR : 6 AWG, BLACK 600V
50	60FT	3406642	WIRE : 14AWG / RED TYPE MTW
60	60FT	3406644	WIRE : 14AWG / GREEN, TYPE MTW
70	60FT	3406646	WIRE : 16AWG / RED, TYPE MTW
80	60FT	3406648	WIRE : 16AWG / GRAY, TYPE MTW
90	60FT	3406649	WIRE : 16AWG / GREEN, TYPE MTW
100	60FT	3406657	WIRE : 10AWG / GREEN, TYPE MTW
110	7	4015775	CABLE ASSEMBLY, M12 : CABLE, M12 F/PT, 10M BLK HF 5CON
120	40	4019171	TAGS, CABLE : PLASTIC CABLE TAG SLEEVE
130	2	4022333	CABLE ASSEMBLY, M12 : 3 M W/M12 FEMALE CONN
140	1	4022346	CABLE ASSEMBLY, M12 : 2 M W/M12 MALE + DIN-A STYLE +DIODE
150	1	4029579	ASSEMBLY, BOX : POWER DISTRIBUTION BOX ASSEMBLY
160	1	150957-2	CABLE GRIP : CABLE FROM: .19-.25, 1/2" NPT
170	20FT	0-3212004-0-32	CABLE, SINGLE CONDUCTOR : 4 AWG, BLACK 600V, WELDING CABLE
180	30FT	0-3212004-0-83	CABLE, MULTICONDUCTOR : 6 AWG/4 CONDUCTOR
190	1	D2892Y04	NAME PLATE : PDB NAMEPLATE
200	60FT	F012388	CABLE, MULTICONDUCTOR : 16AWG/2 CONDUCTOR .405 O.D 13A/CONDUCTOR
210	40	F018229	TY-RAP : SMALL TY-RAP 3 1/2"
220	60FT	F018250	CABLE, MULTICONDUCTOR : 12AWG/2 CONDUCTOR .78 O.D 25A/CONDUCTOR
230	15	F019878	LOCK NUT : 1/2" NUT
240	60FT	L411078	CABLE, SINGLE CONDUCTOR : 1/0 AWG, BLACK 600V
250	3	L41359	CABLE GRIP : CABLE FROM: 0.700 - 0.800 1" NPT
260	60FT	L421290	CABLE, MULTICONDUCTOR : 16AWG/16 CONDUCTOR .74 O.D 5A
270	1	L421302	CABLE GRIP : CABLE FROM: 0.800 - 0.900 1" NPT

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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	POWER DISTRIBUTION BOX WIRING	1	D. MILLER	
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011		NUMBER OF JUPITER SHEETS	REL. DATE:	HARSCO RAIL
					MACHINE TYPE-MODEL:	0	04-30-2010	
					DRONE TAMPER	SIZE:	D	E3 DRAWING
					E3 PROJECT FILE NAME:	TOTAL NUMBER OF SHEETS	11	
					DRONE TAMPER 3	SCALE:		4029352

STARTER TO PDB
4029355

		C-PDB1 L411078		CABLE, SINGLE CONDUC		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1120	B1180:B	-	-	-

PDB TO REAR ESTOP BUTTONS
4029352

		C-PDB10 4022333		CABLE ASSEMBLY, M12 4029579		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	6120	-	-	TB-PDB:9	-
2	W-2	2460	-	-	TB-PDB:15	-
3	W-3	000	-	-	-	-
4	W-4	6245	-	-	TB-PDB:10	-
5	-	6240	-	-	P6240:MAL	-

PDB TO E-PUMP RELAY
4029579

		C-PDB11 F016022		CABLE, MULTICONDUCTO 4029552		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	4310	TB-PDB:11	-	K4310:+	-
2	WH	000	K4310	-	-	-

MANUAL WARM UP TEMP SWITCH
4029579

		C-PDB12 F016022		CABLE, MULTICONDUCTO 4027891		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	4620	TB-PDB:13	-	S4620:3	-
2	WH	4622	K4620:7	-	S4620:4	-

GROUND BAR TO PDB
4029761

		C-PDB2 L411078		CABLE, SINGLE CONDUC		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	000	-	-	GROUND BAR:5	-

CONTROL BOX POWER
4029579

		C-PDB3 0-3212004-0-83		CABLE, MULTICONDUCTO		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	2230	CB2230:2	-	W2:1	-
2	WH	**NC**	-	-	-	-
3	RD	3140	CB3140:2	-	W3:1	-
4	GN	000W	TB-PDB-000W:1	-	TB-MCB-000W:1	-

UNSWITCHED POWER PDB TO CB
4029579

		C-PDB4 F018250		CABLE, MULTICONDUCTO		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	2140	CB2140:2	-	W1:1	-
2	WH	000	TB-PDB-000:4	-	-	-

120 210
40 40

Note: INSTALL 1 EACH OF:

TO EACH END OF EACH CABLE.

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CONTROLWIRING PDB TO CONTOL BOX
4029579

		C-PDB5 L421290		CABLE, MULTICONDUCTO		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	4150	TB-PDB:1	-	TB-MCB:1	-
2	WH	4137	TB-PDB:2	-	TB-MCB:2	-
3	RD	4190	TB-PDB:3	-	TB-MCB:3	-
4	GN	1590	TB-PDB:4	-	TB-MCB:4	-
5	OR	1600	TB-PDB:5	-	TB-MCB:5	-
6	BU	1602	TB-PDB:6	-	TB-MCB:6	-
7	WH/BK	4590	TB-PDB:7	-	TB-MCB:7	-
8	RD/BK	4594	TB-PDB:8	-	TB-MCB:8	-
9	GN/BK	6120	TB-PDB:9	-	TB-MCB:9	-
10	OR/BK	6245	TB-PDB:10	-	TB-MCB:10	-
11	BU/BK	4310	TB-PDB:11	-	TB-MCB:11	-
12	BK/WH	4160	TB-PDB:12	-	TB-MCB:12	-
13	RD/WH	4620	TB-PDB:13	-	TB-MCB:13	-
14	GN/WH	4240	TB-PDB:14	-	TB-MCB:14	-
15	BU/WH	2460	TB-PDB:15	-	TB-MCB:15	-
16	BK/RD	**NC**	-	-	-	-

ENGINE OIL PRESSURE SWITCH
4029579

		C-PDB6 F016022		CABLE, MULTICONDUCTO		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	4591	K4240:24	-	SJ08809:C	-
2	WH	4592	TB-PDB:17	-	SJ08809:NO	-

SPRING BRAKE VALVE
4029579

		C-PDB7 F016022		CABLE, MULTICONDUCTO		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	4592	TB-PDB:17	-	LJ08809:+	-
2	WH	4594	TB-PDB:8	-	LJ08809	-

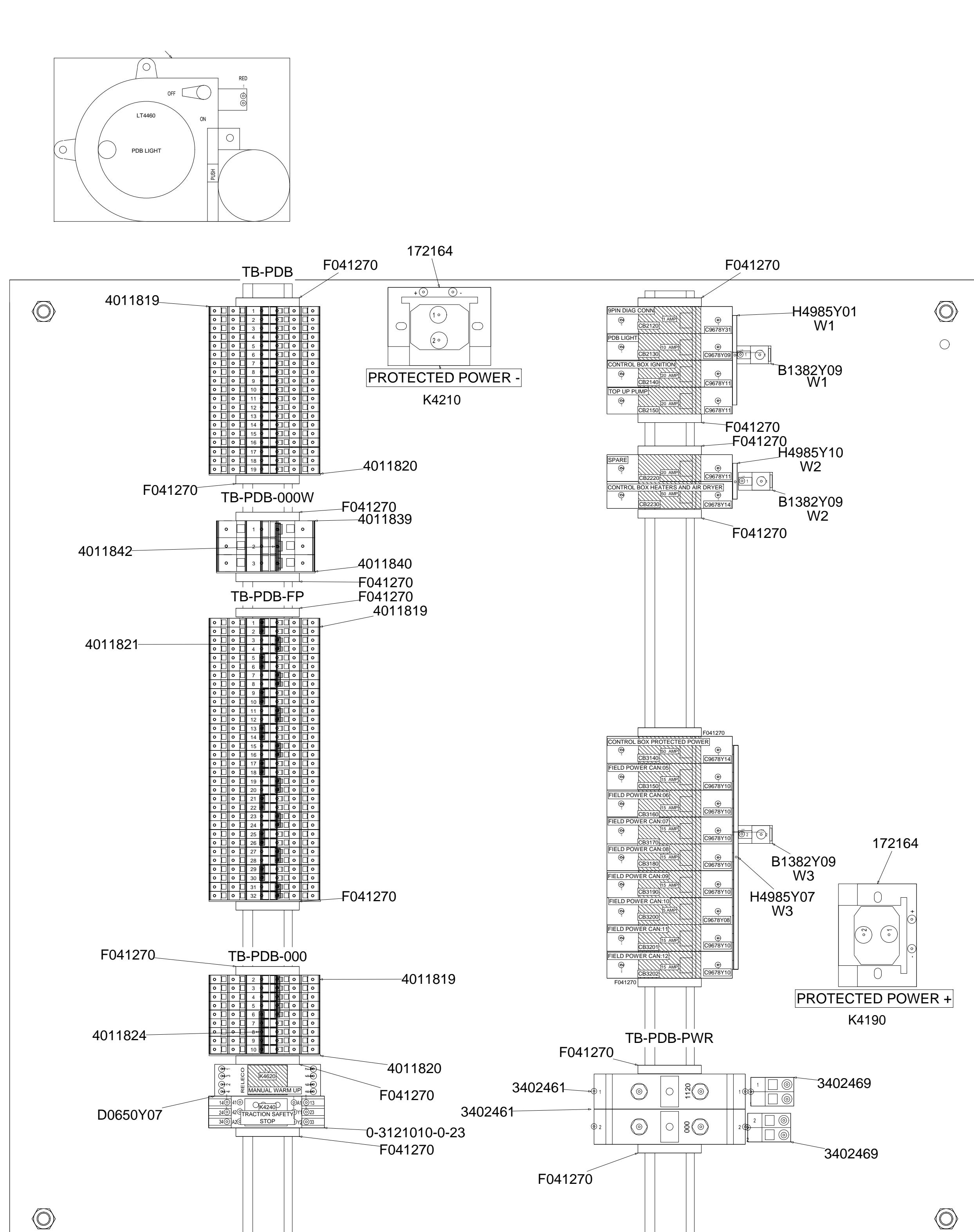
PDB TO TOP UP PUMP BUTTON BOX
4029579

		C-PDB8 F018250		CABLE, MULTICONDUCTO		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.

</tbl

WIRING CHART							
RUN	WIRE	SIZE	COLOR	FROM	TERM NO.	TO	TERM NO.
1	000	4 AWG	Black	K4210:1		TB-PDB-PWR:2	0-3212004-0-32
2	1120	4 AWG	Black	W1:1		TB-PDB-PWR:1	0-3212004-0-32
3	000W	6 AWG	Black	K4210:2		TB-PDB-000W:1	164834
4	1120	6 AWG	Black	W2:1		TB-PDB-PWR:1	164834
5	1120	6 AWG	Black	K4190:1		TB-PDB-PWR:1	164834
6	3130	6 AWG	Black	W3:2	K4190:2		164834
7	2460	16 AWG	Gray	K4240:42		TB-PDB:15	3406648
8	4160	16 AWG	Gray	K4620:3		TB-PDB:12	3406648
9	4160	16 AWG	Gray	K4620:6		TB-PDB:12	3406648
10	4190	16 AWG	Gray	K4210:+		TB-PDB:3	3406648
11	4190	16 AWG	Gray	K4190:+		TB-PDB:3	3406648
12	4240	16 AWG	Gray	K4240:A1		TB-PDB:14	3406648
13	4245	16 AWG	Gray	K4240:Y1		K4240:Y2	3406648
14	4590	16 AWG	Gray	K4240:23		TB-PDB:7	3406648
15	4620	16 AWG	Gray	K4620:4		TB-PDB:13	3406648
16	000W	10 AWG	Green	TB-PDB-FP:3		TB-PDB-000W:2	3406657
17	000W	10 AWG	Green	TB-PDB-FP:19		TB-PDB-000W:3	3406657
18	000W	14 AWG	Green	TB-PDB-FP:7		TB-PDB-FP:4	3406644
19	000W	14 AWG	Green	TB-PDB-FP:11		TB-PDB-FP:8	3406644
20	000W	14 AWG	Green	TB-PDB-FP:15		TB-PDB-FP:12	3406644
21	000W	14 AWG	Green	TB-PDB-FP:23		TB-PDB-FP:20	3406644
22	000W	14 AWG	Green	TB-PDB-FP:27		TB-PDB-FP:24	3406644
23	000W	14 AWG	Green	TB-PDB-FP:31		TB-PDB-FP:28	3406644
24	000	16 AWG	Green	K4210:-		TB-PDB-000:4	3406649
25	000	16 AWG	Green	TB-PDB-000:9		TB-PDB-000:8	3406649
26	000	16 AWG	Green	K4190:-		TB-PDB-000:8	3406649
27	000	16 AWG	Green	K4190:-		TB-PDB-000:2	3406649
28	000	16 AWG	Green	K4210:-		TB-PDB-000:2	3406649
29	000	16 AWG	Green	K4240:A2		TB-PDB-000:7	3406649
30	000	16 AWG	Green	K4620:8		TB-PDB-000:5	3406649
31	000	16 AWG	Green	K4240:A2		TB-PDB-000:3	3406649
32	000	16 AWG	Green	K4620:8		TB-PDB-000:7	3406649
33	000	16 AWG	Green	LT4460:BLK		TB-PDB-000:3	3406649
34	000	16 AWG	Green	K4210:-		TB-PDB-000:3	3406649
35	000W	16 AWG	Green	TB-PDB-FP:23		TB-PDB-FP:24	3406649
36	3150	14 AWG	Red	CB3150:2		TB-PDB-FP:2	3406642
37	3150	14 AWG	Red	CB3150:2		TB-PDB-FP:1	3406642
38	3160	14 AWG	Red	CB3160:2		TB-PDB-FP:6	3406642
39	3160	14 AWG	Red	CB3160:2		TB-PDB-FP:5	3406642
40	3170	14 AWG	Red	CB3170:2		TB-PDB-FP:10	3406642
41	3170	14 AWG	Red	CB3170:2		TB-PDB-FP:9	3406642
42	3180	14 AWG	Red	CB3180:2		TB-PDB-FP:14	3406642
43	3180	14 AWG	Red	CB3180:2		TB-PDB-FP:13	3406642
44	3190	14 AWG	Red	CB3190:2		TB-PDB-FP:18	3406642
45	3190	14 AWG	Red	CB3190:2		TB-PDB-FP:17	3406642
46	3200	14 AWG	Red	CB3200:2		TB-PDB-FP:22	3406642
47	3200	14 AWG	Red	CB3200:2		TB-PDB-FP:21	3406642
48	3212	14 AWG	Red	CB3201:2		TB-PDB-FP:26	3406642
49	3212	14 AWG	Red	CB3201:2		TB-PDB-FP:25	3406642
50	3222	14 AWG	Red	CB3202:2		TB-PDB-FP:30	3406642
51	3222	14 AWG	Red	CB3202:2		TB-PDB-FP:29	3406642
52	2130	16 AWG	Red	LT4460:RED		CB2130:2	3406646

JUMPER CHART			
RUN	FROM	TO	PART NO.
1	TB-PDB-000:6	TB-PDB-000:J2	no match
2	TB-PDB-000:7	TB-PDB-000:J2	no match
3	TB-PDB-000:10	TB-PDB-000:J2	no match
4	TB-PDB-000:W1	TB-PDB-000W:J1	no match
5	TB-PDB-000:W2	TB-PDB-000W:J1	no match
6	TB-PDB-000:W3	TB-PDB-000W:J1	no match
7	TB-PDB-FP:1	TB-PDB-FP:J1	no match
8	TB-PDB-FP:3	TB-PDB-FP:J2	no match
9	TB-PDB-FP:4	TB-PDB-FP:J2	no match
10	TB-PDB-FP:5	TB-PDB-FP:J3	no match
11	TB-PDB-FP:7	TB-PDB-FP:J4	no match
12	TB-PDB-FP:8	TB-PDB-FP:J4	no match
13	TB-PDB-FP:9	TB-PDB-FP:J5	no match
14	TB-PDB-FP:11	TB-PDB-FP:J6	no match
15	TB-PDB-FP:12	TB-PDB-FP:J6	no match
16	TB-PDB-FP:13	TB-PDB-FP:J7	no match
17	TB-PDB-FP:15	TB-PDB-FP:J8	no match
18	TB-PDB-FP:16	TB-PDB-FP:J8	no match
19	TB-PDB-FP:17	TB-PDB-FP:J9	no match
20	TB-PDB-FP:19	TB-PDB-FP:J10	no match
21	TB-PDB-FP:20	TB-PDB-FP:J10	no match
22	TB-PDB-FP:21	TB-PDB-FP:J11	no match
23	TB-PDB-FP:24	TB-PDB-FP:J12	no match
24	TB-PDB-FP:25	TB-PDB-FP:J13	no match
25	TB-PDB-FP:27	TB-PDB-FP:J14	no match
26	TB-PDB-FP:28	TB-PDB-FP:J14	no match
27	TB-PDB-FP:29	TB-PDB-FP:J15	no match
28	TB-PDB-FP:31	TB-PDB-FP:J16	no match
29	TB-PDB-FP:32	TB-PDB-FP:J16	no match
30	TB-PDB-PWR:1	TB-PDB-PWR:1	3402469
31	TB-PDB-PWR:2	TB-PDB-PWR:2	3402469



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CHANGE #

ECN-105500	A	NEW RELEASE
EC500286	B	AS BUILT RELEASE

REVISION

ACM	04-30-2010
ACM	01-21-2011

DR

DATE

DRAWING TITLE/DESCRIPTION:
POWER DISTRIBUTION BOX WIRING
Wire Chart

NUMBER OF JUPITER SHEETS
0

MACHINE TYPE-MODEL:
DRONE TAMPER

E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER
3

DRAWN BY:
D. MILLER

REL. DATE:
04-30-2010

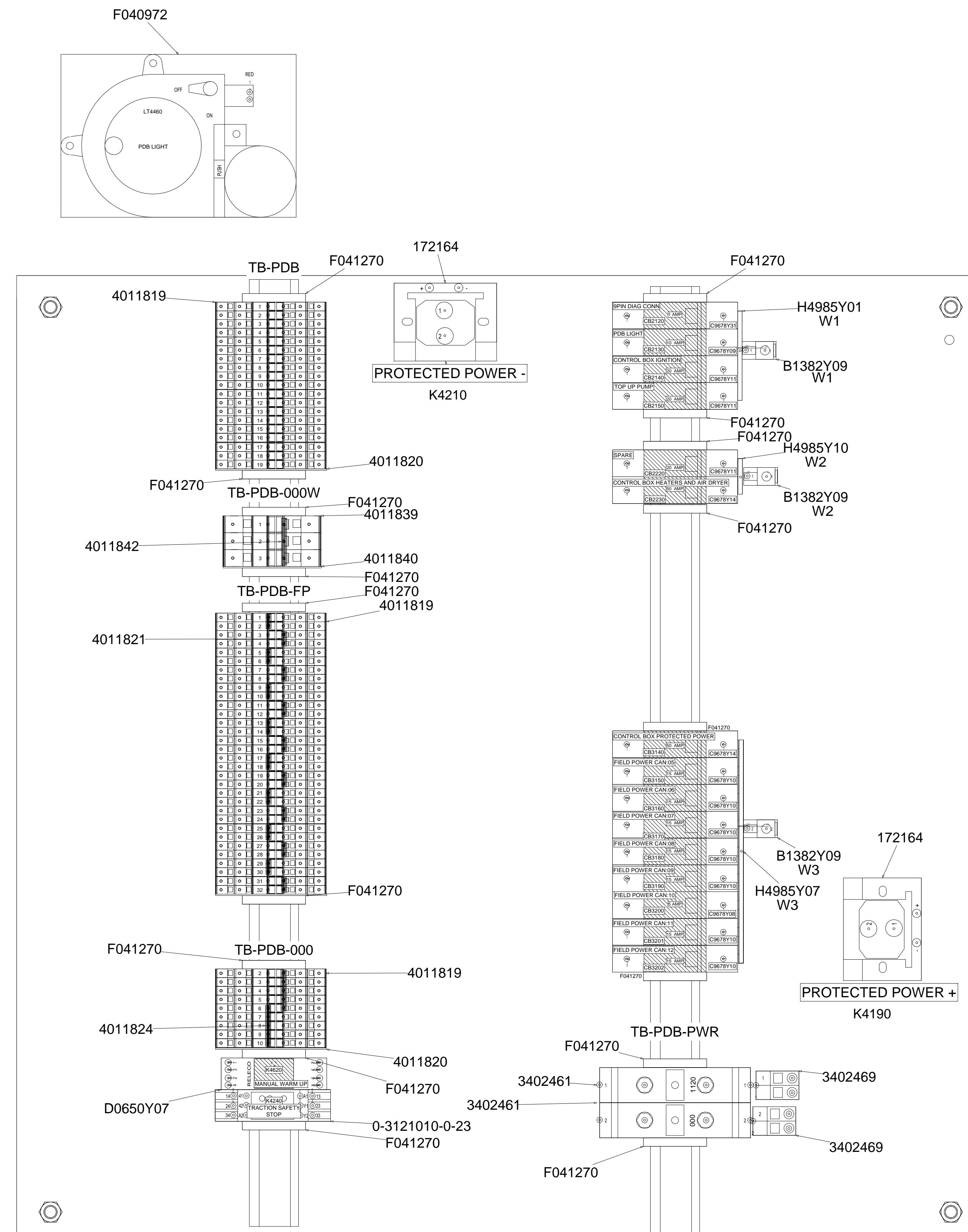
SIZE:
D

TOTAL NUMBER OF SHEETS
11

SCALE:
E3 DRAWING

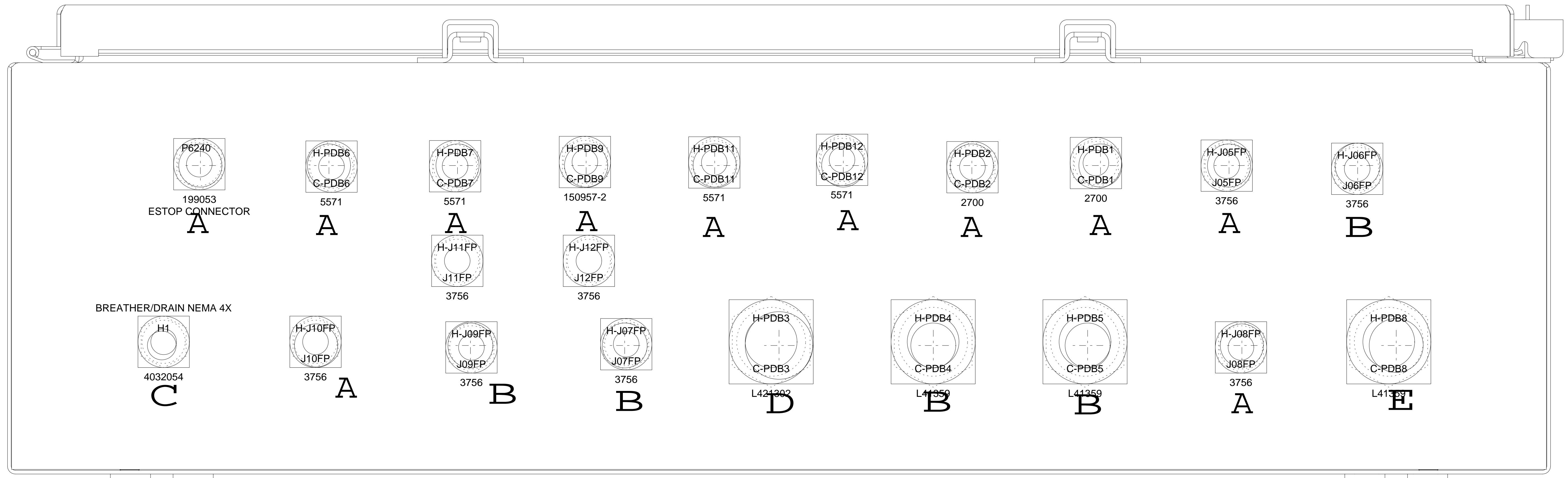
HARSCO
RAIL

4029352



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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	POWER DISTRIBUTION BOX WIRING		D. MILLER	
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011	Internal Layout		REL. DATE:	
					MACHINE TYPE-MODEL:		04-30-2010	
					DRONE TAMPER		SIZE:	
					E3 PROJECT FILE NAME:		D	
					DRONE TAMPER 3		TOTAL NUMBER OF SHEETS	
						11	SCALE:	4029352



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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	POWER DISTRIBUTION BOX WIRING	5	D. MILLER	
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011	Cable Layout	NUMBER OF JUPITER SHEETS	REL. DATE:	04-30-2010
					MACHINE TYPE-MODEL:	0	SIZE:	
					DRONE TAMPER	E3 PROJECT FILE NAME:	E3 DRAWING	
					DRONE TAMPER 3	TOTAL NUMBER OF SHEETS	SCALE:	4029352
						11		

SECTION L-6

terminal strip

TB-PDB

		target external		target terminal		jumper		target internal		target terminal	
		cable designations	cable type		wire number				cable designations		
	BK	CONTROL BOX ASSMBLY 4029586 TB-MCB ENGINE SKID ASSMBLY 2019238 K4150		:1	4150	1				/4.150	
	WH	CONTROL BOX ASSMBLY 4029586 TB-MCB ENGINE SKID ASSMBLY 2019238 E1453		:2	4137	2				/4.135	
	RD	CONTROL BOX ASSMBLY 4029586 TB-MCB		:3	4190	3				/4.135	
	GN	CONTROL BOX ASSMBLY 4029586 TB-MCB ENGINE SKID ASSMBLY 2019238 E1453		:4	1590	4				/5.240	
	OR	CONTROL BOX ASSMBLY 4029586 TB-MCB ENGINE SKID ASSMBLY 2019238 E1453		:5	1600	5				/5.240	
	BU	CONTROL BOX ASSMBLY 4029586 TB-MCB ENGINE SKID ASSMBLY 2019238 E1453		:6	1602	6				/5.250	
	WH/BK	CONTROL BOX ASSMBLY 4029586 TB-MCB		:7	4590	7				/5.250	
	R/D/BK	CONTROL BOX ASSMBLY 4029586 TB-MCB		:8	4594	8				/5.270	
	WH	PNEUMATIC COMPONENTS & SCH 4029596 LJ08809		:9	6120	9				/5.270	
	GN/BK	CONTROL BOX ASSMBLY 4029586 TB-MCB		:W-1	6120					/6.178	
		POWER DISTRIBUTION BOX WIRING 4029352 C-PDB10		:W-2	6245	10				/6.178	
	OR/BK	CONTROL BOX ASSMBLY 4029586 TB-MCB		:W-4	6245					/6.178	
	BUBK	CONTROL BOX ASSMBLY 4029586 TB-MCB		:11	4310	11				/6.178	
	BK	ENGINE AND E-PUMP WIRING 4029355 K4310		:12	4160	12				/6.310	
	BKWH	CONTROL BOX ASSMBLY 4029586 TB-MCB		:13	4160					/4.310	
	BK	HYDRAULIC TANK ASSY 4027891 S4620		:3	4620	13				POWER DISTRIBUTION BOX ASSY 4029579 K4620	
	RD/WH	CONTROL BOX ASSMBLY 4029586 TB-MCB		:13	4620					:6 /4.630	
	GN/WH	CONTROL BOX ASSMBLY 4029586 TB-MCB		:14	4240	14				:3 /4.630	
	BU/WH	CONTROL BOX ASSMBLY 4029586 TB-MCB		:15	2460	15				:4 /4.620	
		POWER DISTRIBUTION BOX WIRING 4029352 C-PDB10		:W-2	2460					:A1 /4.240	
	WH	BK	PNEUMATIC COMPONENTS & SCH 4029596 LJ08809	:+	4592	16				:42 /4.293	
		ENGINE AND E-PUMP WIRING 4029355 SJ08809		:NO	4592	17				:23 /4.390	
		JUPITER MODULE INSTALLATION 4029354 J08700B		:W-2	J08744	18				:4 /4.590	
		JUPITER MODULE INSTALLATION 4029354 J08700A		:W-3	J08744					:6 /4.590	
		POWER DISTRIBUTION BOX WIRING 4029352 C-PDB9		:W-1	4642	19				:1 /4.590	
										:108.742	
										:108.742	
										POWER DISTRIBUTION BOX ASSY 4029579 K4620	
										:5 /4.643	

terminal 4011819 [1 - 19]

Terminal type terminal
terminal

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 APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:		SHEET NUMBER	DRAWN BY:
ECN-105500	A 04-30-2010	POWER DISTRIBUTION BOX WIRING		6	D. MILLER
EC500286	B 01-21-2011	TERMINAL PLAN			
		MACHINE TYPE-MODEL:			
		DRONE TAMPER			
		E3 PROJECT FILE NAME:			
		DRONE TAMPER 3			
		TOTAL NUMBER OF SHEETS			
		11			
		SCALE:			

HARSCO
RAIL
4029352

SECTION L-

terminal strip

terminal 4011819 [2 - 10]

Terminal type terminal 4011824 [J1 -

terminal

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F HARSCO AND KNOW-HOW NT, THE RAWING OR THIRD PARTY TURE ANY CO.	CHANGE #		DATE	DRAWING TITLE/DESCRIPTION: POWER DISTRIBUTION BOX WIRING TERMINAL PLAN	SHEET NUMBER 7	DRAWN BY: D. MILLER	HARSCO RAIL	
	ECN-105500	A	04-30-2010	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010 SIZE: D		
	EC500286	B	01-21-2011					
					TOTAL NUMBER OF SHEETS 11	SCALE: E3 DRAWING		
				E3 PROJECT FILE NAME: DRONE TAMPER 3				

SECTION L-6

terminal strip

TB-PDB-000W

		target external		target internal		target internal	
GN	CONTROL BOX ASSMBLY 4029586 TB-MCB-000W	target terminal	wire number	terminal number	jumper	target terminal	Placement in Schematics
		:1	000W	1			cable designations
			000W	2			
			000W	3			
			000W	J1			
			000W				
			000W				

terminal 4011839 [1 - 3]

Terminal type terminal 4011842 [J1]

terminal _____

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CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:
ECN-105500	A 04-30-2010	POWER DISTRIBUTION BOX WIRING	8	D. MILLER
EC500286	B 01-21-2011	TERMINAL PLAN		
		MACHINE TYPE-MODEL:	NUMBER OF JUPITER SHEETS	REL. DATE:
		DRONE TAMPER	0	04-30-2010
		E3 PROJECT FILE NAME:	SIZE:	
		DRONE TAMPER 3	TOTAL NUMBER OF SHEETS	E3 DRAWING
			11	SCALE:

HARSCO
RAIL

4029352

SECTION L-6

terminal strip
TB-PDB-FP

cable designations	cable type	target external	target terminal	wire number	terminal number	jumpers	target internal	target terminal	Placement in Schematics	cable designations	cable type
POWER DISTRIBUTION BOX WIRING 4029352 J05FP		:W-2	3150	1			POWER DISTRIBUTION BOX ASSY 4029579 CB3150	:2	/J05.525		
POWER DISTRIBUTION BOX WIRING 4029352 J05FP		:W-1	3150				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:11	/J05.525		
			3150	2			POWER DISTRIBUTION BOX ASSY 4029579 CB3150	:2			
POWER DISTRIBUTION BOX WIRING 4029352 J05FP		:W-4	000W	3		•	POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J1			
POWER DISTRIBUTION BOX WIRING 4029352 J05FP		:W-3	000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-000W	:2	/J05.559		
			000W	4			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J2	/J05.559		
POWER DISTRIBUTION BOX WIRING 4029352 J06FP		:W-2	3160	5			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J7			
POWER DISTRIBUTION BOX WIRING 4029352 J06FP		:W-1	3160				POWER DISTRIBUTION BOX ASSY 4029579 CB3160	:2	/J06.525		
			3160	6			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J3	/J06.525		
POWER DISTRIBUTION BOX WIRING 4029352 J06FP		:W-4	000W	7		•	POWER DISTRIBUTION BOX ASSY 4029579 CB3160	:2			
POWER DISTRIBUTION BOX WIRING 4029352 J06FP		:W-3	000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J3	/J06.559		
			000W	8			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J4	/J06.559		
POWER DISTRIBUTION BOX WIRING 4029352 J07FP		:W-2	3170	9			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J11			
POWER DISTRIBUTION BOX WIRING 4029352 J07FP		:W-1	3170				POWER DISTRIBUTION BOX ASSY 4029579 CB3170	:2	/J07.525		
			3170	10			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J5	/J07.525		
POWER DISTRIBUTION BOX WIRING 4029352 J07FP		:W-4	000W	11		•	POWER DISTRIBUTION BOX ASSY 4029579 CB3170	:2			
POWER DISTRIBUTION BOX WIRING 4029352 J07FP		:W-3	000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J5	/J07.559		
			000W	12			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J6	/J07.559		
POWER DISTRIBUTION BOX WIRING 4029352 J08FP		:W-2	3180	13			POWER DISTRIBUTION BOX ASSY 4029579 CB3180	:2	/J08.525		
POWER DISTRIBUTION BOX WIRING 4029352 J08FP		:W-1	3180				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J7	/J08.525		
			3180	14			POWER DISTRIBUTION BOX ASSY 4029579 CB3180	:2			
POWER DISTRIBUTION BOX WIRING 4029352 J08FP		:W-4	000W	15		•	POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J7			
POWER DISTRIBUTION BOX WIRING 4029352 J08FP		:W-3	000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J6	/J08.559		
			000W	16			POWER DISTRIBUTION BOX ASSY 4029579 CB3190	:2	/J09.525		
POWER DISTRIBUTION BOX WIRING 4029352 J09FP		:W-2	3190	17			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J8	/J09.525		
POWER DISTRIBUTION BOX WIRING 4029352 J09FP		:W-1	3190				POWER DISTRIBUTION BOX ASSY 4029579 CB3190	:2			
			3190	18			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J9			
POWER DISTRIBUTION BOX WIRING 4029352 J09FP		:W-4	000W	19		•	POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J7			
POWER DISTRIBUTION BOX WIRING 4029352 J09FP		:W-3	000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-000W	:J10	/J09.559		
			000W	20			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J10	/J09.559		
POWER DISTRIBUTION BOX WIRING 4029352 J10FP		:W-2	3200	21			POWER DISTRIBUTION BOX ASSY 4029579 CB3200	:2	/J10.517		
POWER DISTRIBUTION BOX WIRING 4029352 J10FP		:W-1	3200				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J11	/J10.517		
			3200	22			POWER DISTRIBUTION BOX ASSY 4029579 CB3200	:2			
POWER DISTRIBUTION BOX WIRING 4029352 J10FP		:W-4	000W	23		•	POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J11			
POWER DISTRIBUTION BOX WIRING 4029352 J10FP		:W-3	000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J20	/J10.550		
			000W	24			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J24	/J10.550		
POWER DISTRIBUTION BOX WIRING 4029352 J11FP		:W-2	3212	25			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J27			
POWER DISTRIBUTION BOX WIRING 4029352 J11FP		:W-1	3212				POWER DISTRIBUTION BOX ASSY 4029579 CB3201	:2			
			3212	26			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J13			
POWER DISTRIBUTION BOX WIRING 4029352 J11FP		:W-4	000W	27		•	POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J24	/J11.559		

terminal 4011819 [1 - 27]

Terminal type terminal

terminal

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CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:	
ECN-105500	A 04-30-2010	POWER DISTRIBUTION BOX WIRING	
EC500286	B 01-21-2011	TERMINAL PLAN	
MACHINE TYPE-MODEL: DRONE TAMPER			
E3 PROJECT FILE NAME: DRONE TAMPER 3			

SHEET NUMBER
9
NUMBER OF JUPITER SHEETS
0
TOTAL NUMBER OF SHEETS
11

DRAWN BY:
D. MILLER
REL. DATE:
04-30-2010
SIZE:
D
SCALE:
11

HARSCO
RAIL
E3 DRAWING
4029352

SECTION L-6

terminal strip
TB-PDB-FP

cable designations	cable type	target external	target terminal	wire number	terminal number	jumpers	target internal	target terminal	Placement in Schematics	cable designations	cable type
POWER DISTRIBUTION BOX WIRING 4029352 J11FP		:W-3	000W	28			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J14	/J11.559		
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J1			
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J14			
POWER DISTRIBUTION BOX WIRING 4029352 J12FP		:W-2	3222	29			POWER DISTRIBUTION BOX ASSY 4029579 CB3202	:J14			
POWER DISTRIBUTION BOX WIRING 4029352 J12FP		:W-1	3222				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J15	/J12.517		
			3222				POWER DISTRIBUTION BOX ASSY 4029579 CB3202	:J1			
			3222				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J15	/J12.517		
POWER DISTRIBUTION BOX WIRING 4029352 J12FP		:W-4	000W	31			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J15			
POWER DISTRIBUTION BOX WIRING 4029352 J12FP		:W-3	000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J16	/J12.550		
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J16	/J12.550		
			3150	J1			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J1			
			3150				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J2			
			000W	J2			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J3			
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J4			
			3160	J3			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J5			
			3160				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J6			
			000W	J4			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J7			
			3170	J5			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J8			
			3170				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J9			
			000W	J6			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J10			
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J11			
			3180	J7			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J12			
			3180				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J13			
			000W	J8			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J14			
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J15			
			3190	J9			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J16			
			3190				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J17			
			000W	J10			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J18			
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J19			
			3200	J11			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J20			
			3200				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J21			
			000W	J12			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J22			
			3212	J13			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J24			
			3212				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J25			
			000W	J14			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J26			
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J27			
			3222	J15			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J28			
			3222				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J29			
			000W	J16			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J30			
			000W				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J31			
							POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-FP	:J32			

terminal 4011819 [27 - 32]

Terminal type terminal 4011821 [J1 - J16]

terminal _____

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CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
ECN-105500	A 04-30-2010	POWER DISTRIBUTION BOX WIRING		10	
EC500286	B 01-21-2011	TERMINAL PLAN		REL. DATE: 04-30-2010	
		MACHINE TYPE-MODEL: DRONE TAMPER		SIZE: D	
		E3 PROJECT FILE NAME: DRONE TAMPER 3		TOTAL NUMBER OF SHEETS 11	E3 DRAWING SCALE: 4029352

SECTION L-6

terminal strip

TB-PDB-PWR

cable designations	cable type	target external	target terminal	wire number	terminal number	jumpers	target internal	target terminal	cable type	cable designations
ENGINE INSTALLATION 2019247 B1180		:B	1120	1			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-PWR	:1	/2.113	
			1120				POWER DISTRIBUTION BOX ASSY 4029579 W1	:1	/2.113	
MAINFRAME , BNSF DRONE 4029761 GROUND BAR		:5	000	2			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-PWR	:2	/2.110	
			000				POWER DISTRIBUTION BOX ASSY 4029579 K4210	:1	/2.110	
			1120	1			POWER DISTRIBUTION BOX ASSY 4029579 K4190	:1	/2.120	
			1120				POWER DISTRIBUTION BOX ASSY 4029579 W2	:1	/2.120	
			1120				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-PWR	:1	/2.120	
			1120				POWER DISTRIBUTION BOX ASSY 4029579 W1	:1	/2.120	
			000	2			POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-PWR	:2	/2.120	
			000				POWER DISTRIBUTION BOX ASSY 4029579 TB-PDB-000	:7	/2.120	

terminal 3402469 [1, 2]

Terminal type terminal 3402461 [1, 2]

terminal

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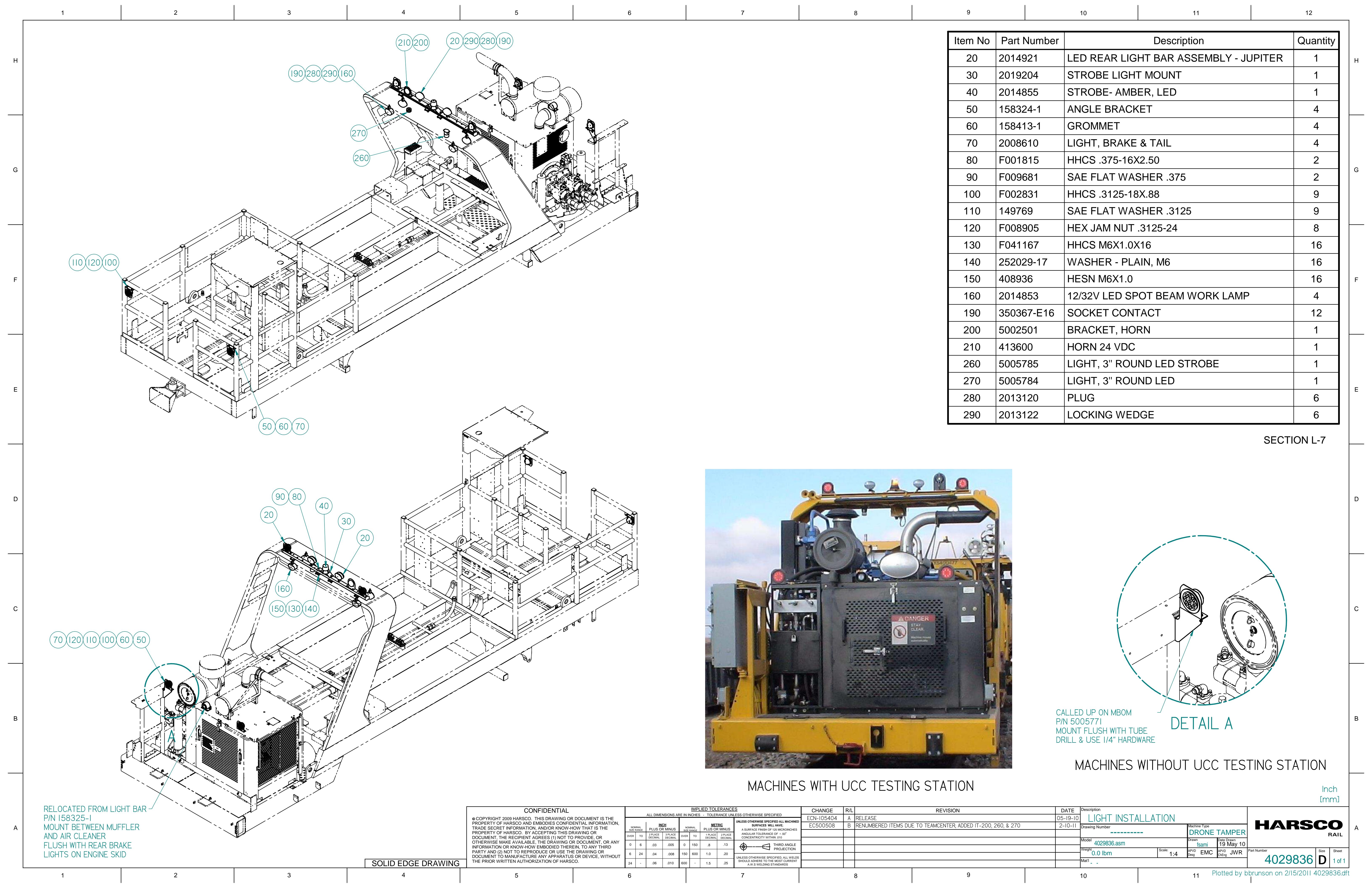
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CHANGE #	DATE	DRAWING TITLE/DESCRIPTION:		SHEET NUMBER	DRAWN BY:
ECN-105500	A 04-30-2010	POWER DISTRIBUTION BOX WIRING		11	D. MILLER
EC500286	B 01-21-2011	TERMINAL PLAN			
		MACHINE TYPE-MODEL:			
		DRONE TAMPER			
		E3 PROJECT FILE NAME:			
		DRONE TAMPER 3			

NUMBER OF JUPITER SHEETS	REL. DATE:
0	04-30-2010
TOTAL NUMBER OF SHEETS	SIZE:
11	D

HARSCO
RAIL

E3 DRAWING
4029352



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SOLID EDGE DRAWING

SECTION L-8

ITEM	PART NUMBER	PART DESCRIPTION	QTY
1	4015646	MONITOR, TOUCH SCREEN	1
2	4015854	JAM BOX, G4	1
3	4016607	J42 MODULE ASSY	1
4	4018386	WIRELESS DATA TRANSCEIVER	1
5	4021221	ANTENNA, WI-FI	1
6	4021222	CONNECTOR, MALE-MALE	1
7	4018472	CABLE, LMR-400 25FT	1
8	4018447	ADAPTOR, TNC- MALE TO FEMALE	1
9	4018495	CONNECTOR, TNC F/F BULKHEAD	1
10	4018449	CABLE, LMR 240 M/M 5FT	1

NOTE:

IT-4 INCLUDES ONE POWER SUPPLY, ONE ETHERNET CABLE
& 1 CD MANUAL (PER PAIR)

Inch
[mm]

IMPLIED TOLERANCES								CHANGE	R/L	REVISION	DATE	Description			
ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED															
NOMINAL SIZE RANGE	INCH		NOMINAL SIZE RANGE		METRIC	PLUS OR MINUS		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE:							
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL	A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF $\pm .50^\circ$ CONCENTRICITY WITHIN .010							
0	6	.03	.005	0	150	.8	.13								
6	24	.04	.008	150	600	1.0	.20	 THIRD ANGLE PROJECTION							
24	-	.06	.010	600	-	1.5	.25	UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS							
								Drawing Number	Machine Type		KIT, LEAD MACH. conn.				
								-----	DRONE TAMPER						
								Model	Drawn Date Drawn						
								4031490.asm	fsami 08 Aug 10						
								Weight	0.0 lbm	Scale:	1:4	APVD Desg	EMC	APVD ChEng EMC	Part Number
								Mat'l							

PRODUCT STRUCTURE			
ITEM	QTY	PART #	PART DESCRIPTION
10	1	2007154	CONTROLLER, REMOTE : OMNEX WIRELESS CONTROL TRANSMITTER
20	1	2007155	MODULE, RECEIVER : OMNEX R170 WIRELESS RECEIVER
30	1	2007807	CONNECTOR : 12 CONTACT DEUTSCH GRAY, SOCKET
40	1	3401324	CABLE ASSEMBLY, M12 : 1 M W/M12 MALE/FEMALE SHIELDED
50	2	3401325	CABLE ASSEMBLY, M12 : 2 M W/M12 MALE/FEMALE SHIELDED
60	1	3401326	CABLE ASSEMBLY, M12 : 3 M W/M12 MALE/FEMALE SHIELDED
70	10	4019171	TAGS, CABLE : PLASTIC CABLE TAG SLEEVE
80	1	4021221	ANTENNA : ANTENNA, 750-950 MHZ, OMNI, N-FEMALE, 100W
90	5	4032038	SWITCH, PENDANT : JUPITER COMPATIBLE ESTOP AND HORN
100	2	5005002	CONNECTOR ASSEMBLY : M12-ESTOP TERMINATOR CONNECTOR
110	2	158325-1	ALARM : 10.5-32VDC, FREQ 960Hz-1440Hz, 87-112dB
120	10	F018229	TY-RAP : SMALL TY-RAP 3 1/2"
130	10FT	F018250	CABLE, MULTICONDUCTOR : 12AWG/2 CONDUCTOR .78 O.D 25A/CONDUCTOR

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CHANGE #		REVISION	DR	DATE
ECN-105500	A	RELEASE PARTS LIST	ACM	04-30-2010
ECN-105980	B	UPDATE PARTS LIST	ACM	07-29-2010
EC500286	C	AS BUILT RELEASE	ACM	01-21-2011

DRAWING TITLE/DESCRIPTION:
INTERCONNECT WIRING
Bill Of Material
MACHINE TYPE-MODEL:
DRONE TAMPER
E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER
1
DRAWN BY:
D. MILLER
NUMBER OF
JUPITER SHEETS
0
REL. DATE:
4-30-2010
SIZE:
D
TOTAL NUMBER
OF SHEETS
3
SCALE:

HARSCO
RAIL
E3 DRAWING
4029351

CONTROL BOX ESTOP TO FRONT LEFT ESTOP 4029351	C-IC1 3401324	CABLE ASSEMBLY, M12 4029351
RUN COLOR WIRE # FROM TERM NO. TO TERM NO.		
1 BK C-IC1 SJ02800:OUT EXISTS SJ02600:IN EXISTS		

LEFT FRONT ESTOP TO RIGHT FRONT ESTOP 4029351	C-IC2 3401325	CABLE ASSEMBLY, M12 4029351
RUN COLOR WIRE # FROM TERM NO. TO TERM NO.		
1 BK C-IC2 SJ02600:OUT EXISTS SJ02700:IN EXISTS		

PDB TO LEFT REAR ESTOP 4029351	C-IC3 3401325	CABLE ASSEMBLY, M12 4029351
RUN COLOR WIRE # FROM TERM NO. TO TERM NO.		
1 BK C-IC3 P6240:FEM EXISTS SJ11400:IN EXISTS		

LEFT REAR ESTOP TO RIGHT REAR ESTOP 4029351	C-IC4 3401326	CABLE ASSEMBLY, M12 4029351
RUN COLOR WIRE # FROM TERM NO. TO TERM NO.		
1 BK C-IC4 SJ11400:OUT EXISTS SJ11500:IN EXISTS		

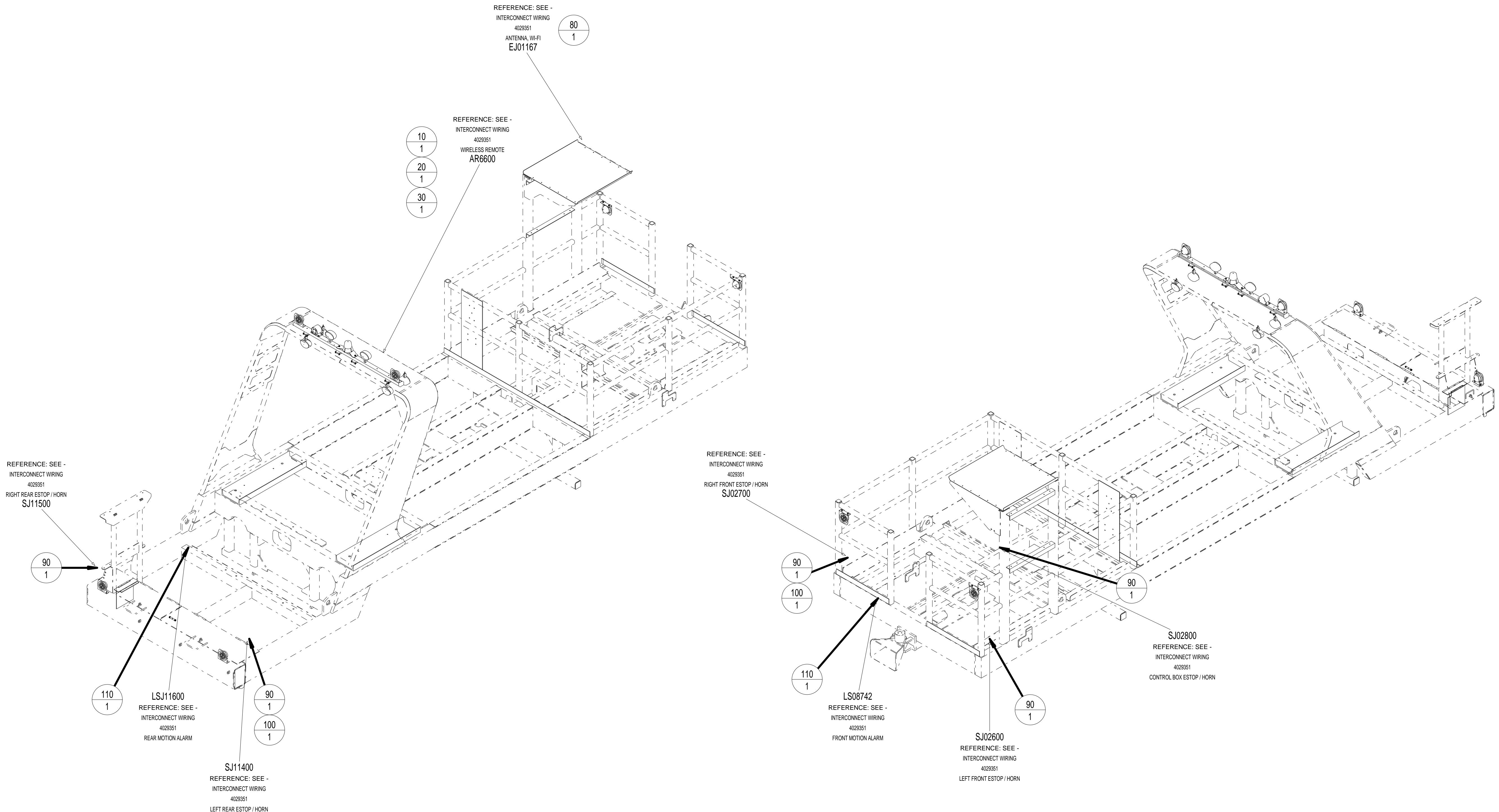
TOP UP PUMP BUTTON TO PUMP BUTTON	C-IC5 F018250	CABLE, MULTICONDUCTO 4027891
RUN COLOR WIRE # FROM TERM NO. TO TERM NO.		
1 BK 5130 S5490:14 - B5490:POS -		
2 WH 000 WN1 - B5490:GND -		

Note: INSTALL 1 EACH OF:

TO EACH END OF EACH CABLE.

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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: INTERCONNECT WIRING Cable Chart	SHEET NUMBER 2	DRAWN BY: D. MILLER	HARSOCO RAIL	
ECN-105500	A	RELEASE PARTS LIST	ACM	04-30-2010					
ECN-105980	B	UPDATE PARTS LIST	ACM	07-29-2010					
EC500286	C	AS BUILT RELEASE	ACM	01-21-2011					
					MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 4-30-2010		
					E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS 3	SIZE: D		
							SCALE: 4029351		



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CO AND HOW : G OR PARTY NY	CHANGE #		REVISION	DR	DATE
	ECN-105500	A	RELEASE PARTS LIST	ACM	04-30-20
	ECN-105980	B	UPDATE PARTS LIST	ACM	07-29-20
	EC500286	C	AS BUILT RELEASE	ACM	01-21-20

DRAWING TITLE/DESCRIPTION:
INTERCONNECT WIRING
Device Locations
MACHINE TYPE-MODEL:
DRONE TAMPER
E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER	DRAWN BY:
3	D. MILLER
NUMBER OF JUPITER SHEETS	REL. DATE:
0	4-30-2010
TOTAL NUMBER OF SHEETS	SIZE:
3	D
	SCALE:

HARSCO

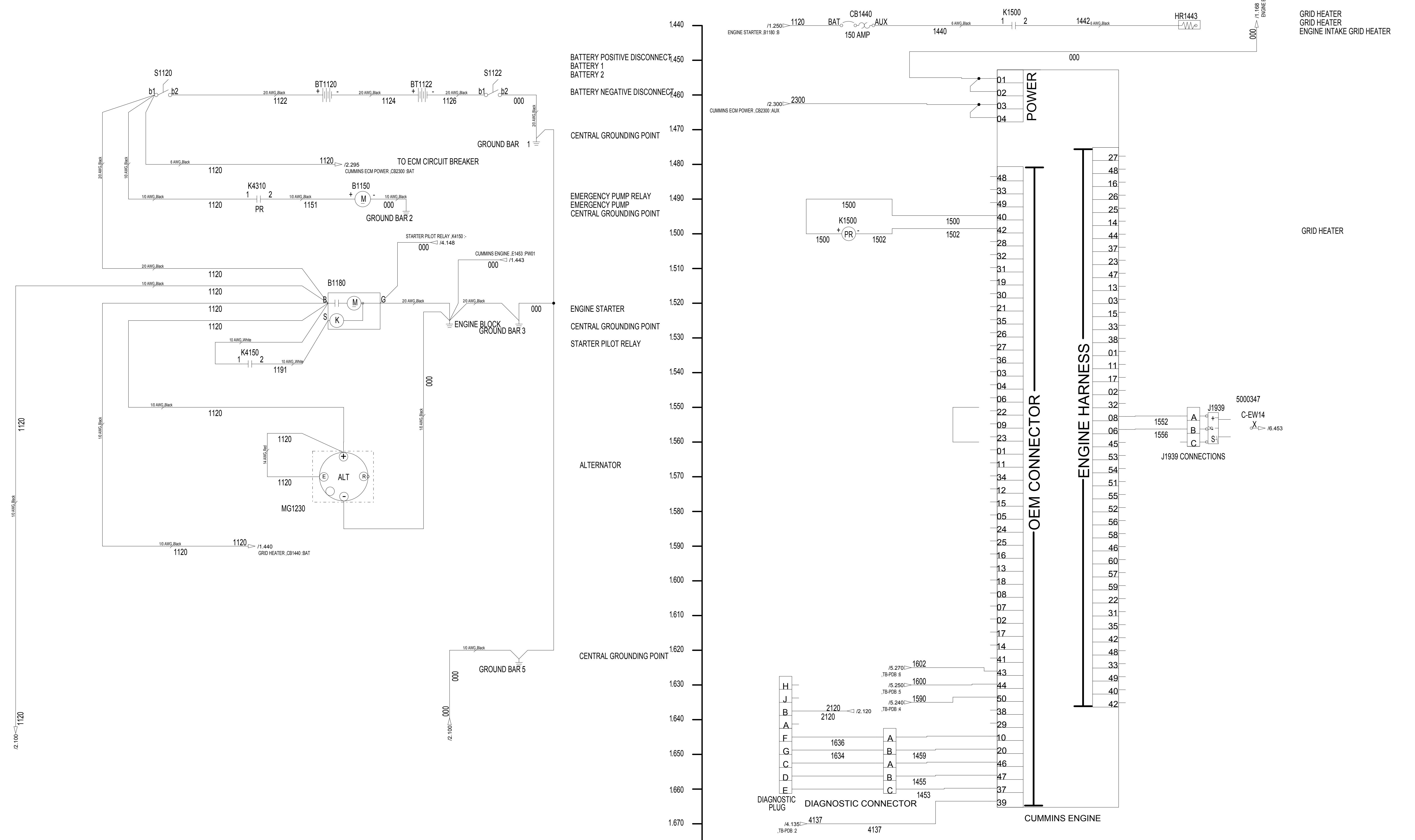
RAIL

E3 DRAWING

4029351

**Electrical Schematic
DWG NO. 4029350
Section L-10**

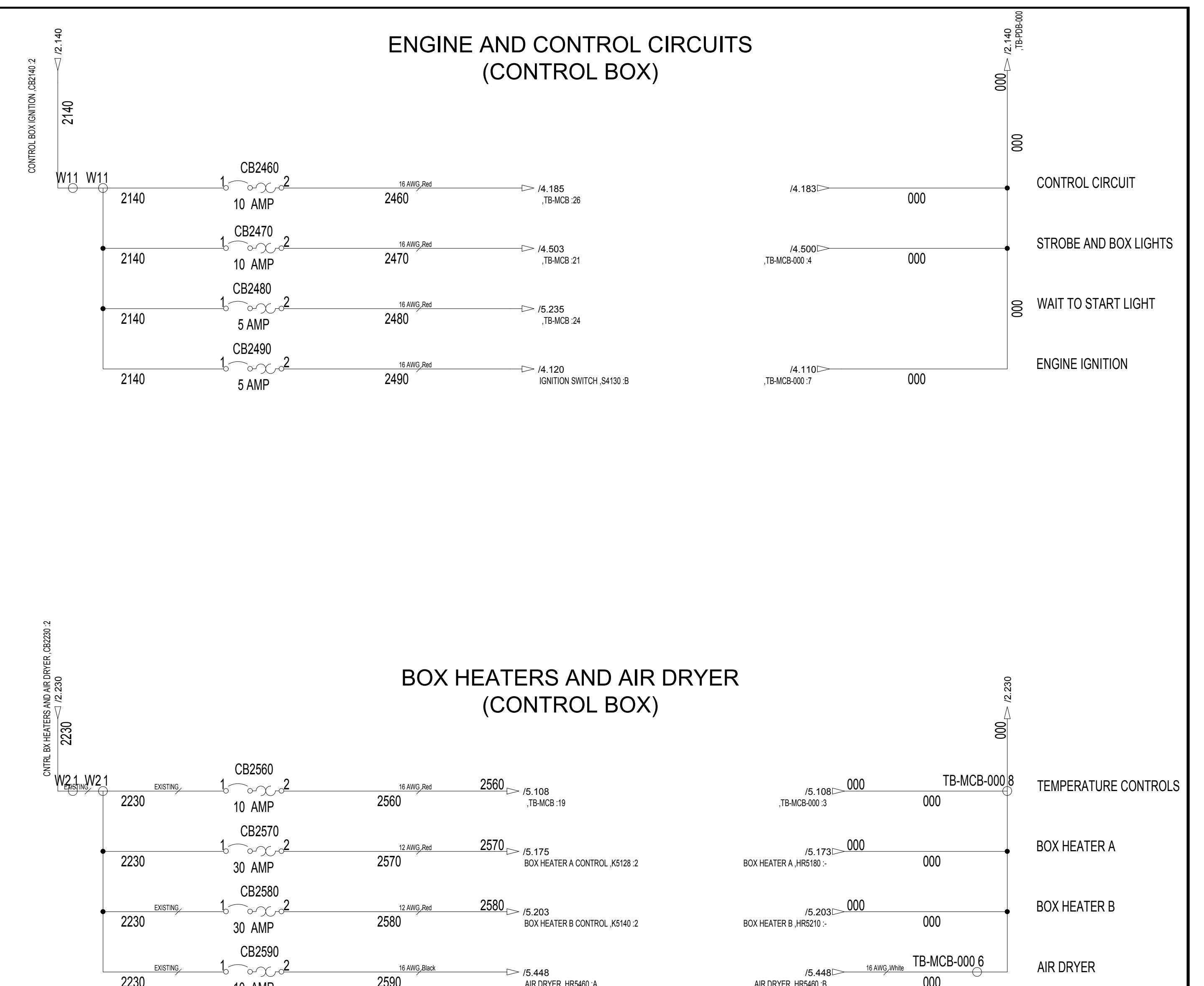
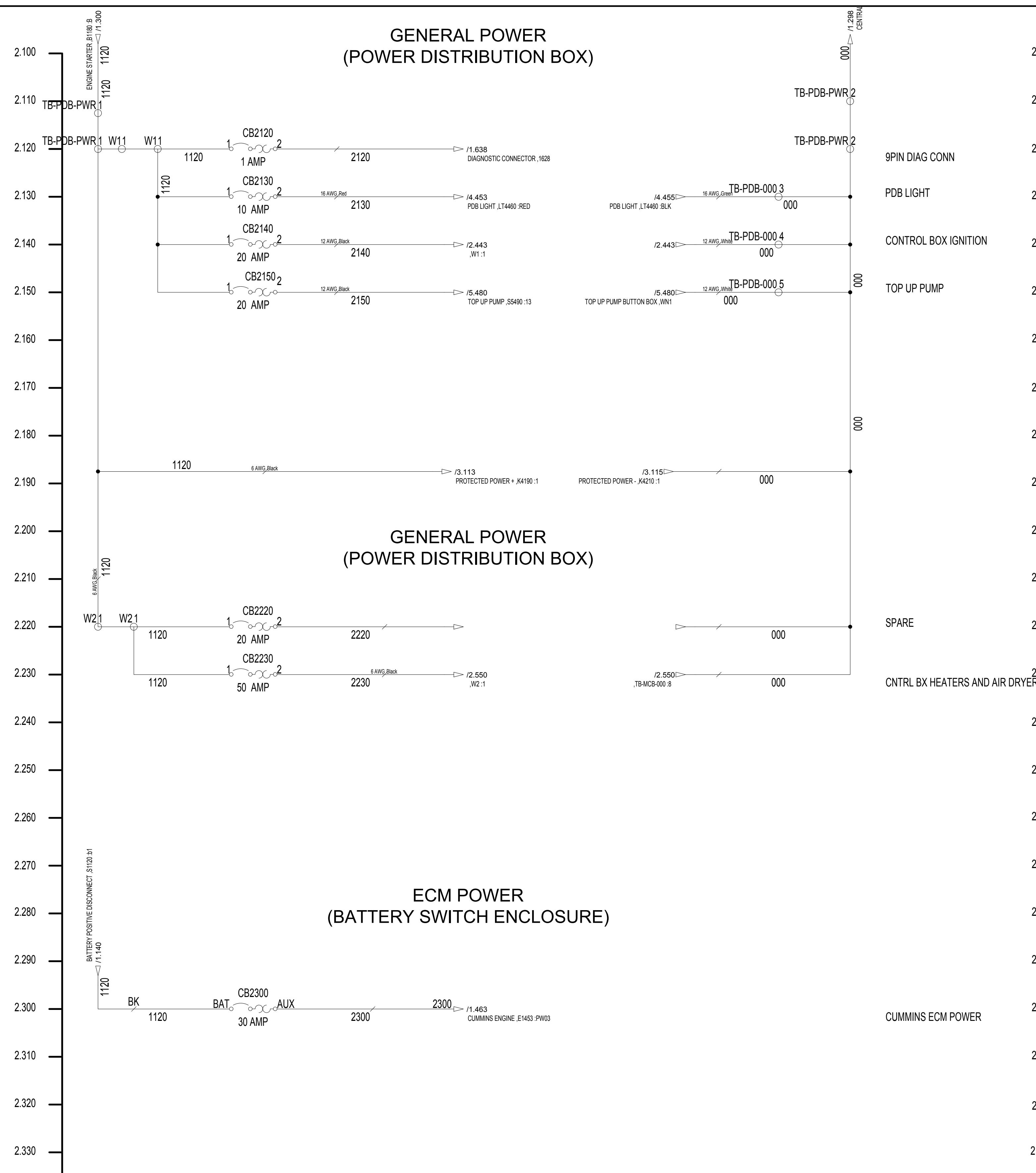
(21 Sheets)



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CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
EC500286	A AS BUILT RELEASE	ACM	01-21-2011	ELECTRICAL SCHEMATIC Power Distribution and Hardwired Controls	1	D. MILLER	
				MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS	REL. DATE: 01-21-2008	
				E3 PROJECT FILE NAME: DRONE TAMPER 3	12	SIZE: D	
					TOTAL NUMBER OF SHEETS	SCALE: E3 DRAWING	4029350



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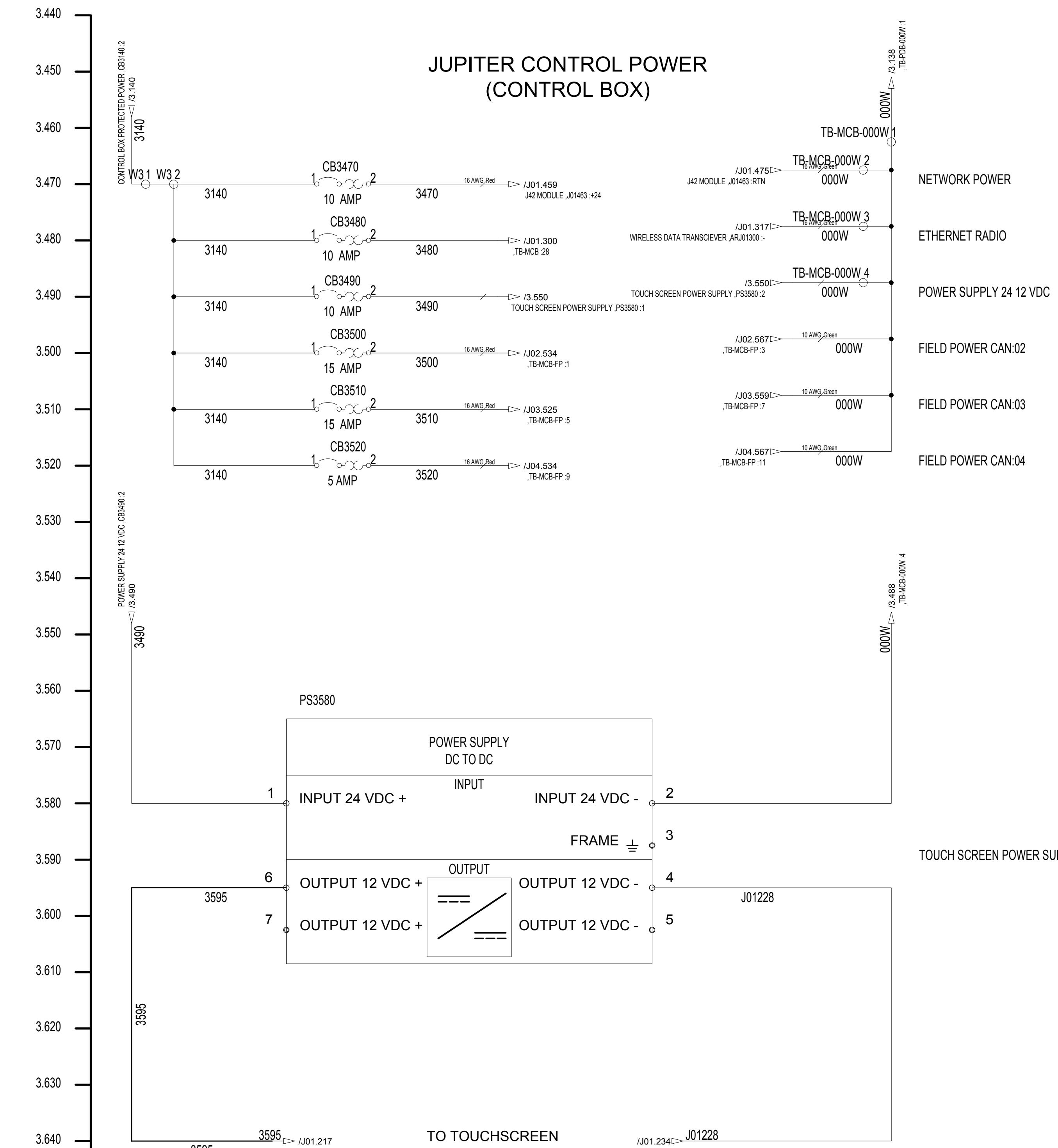
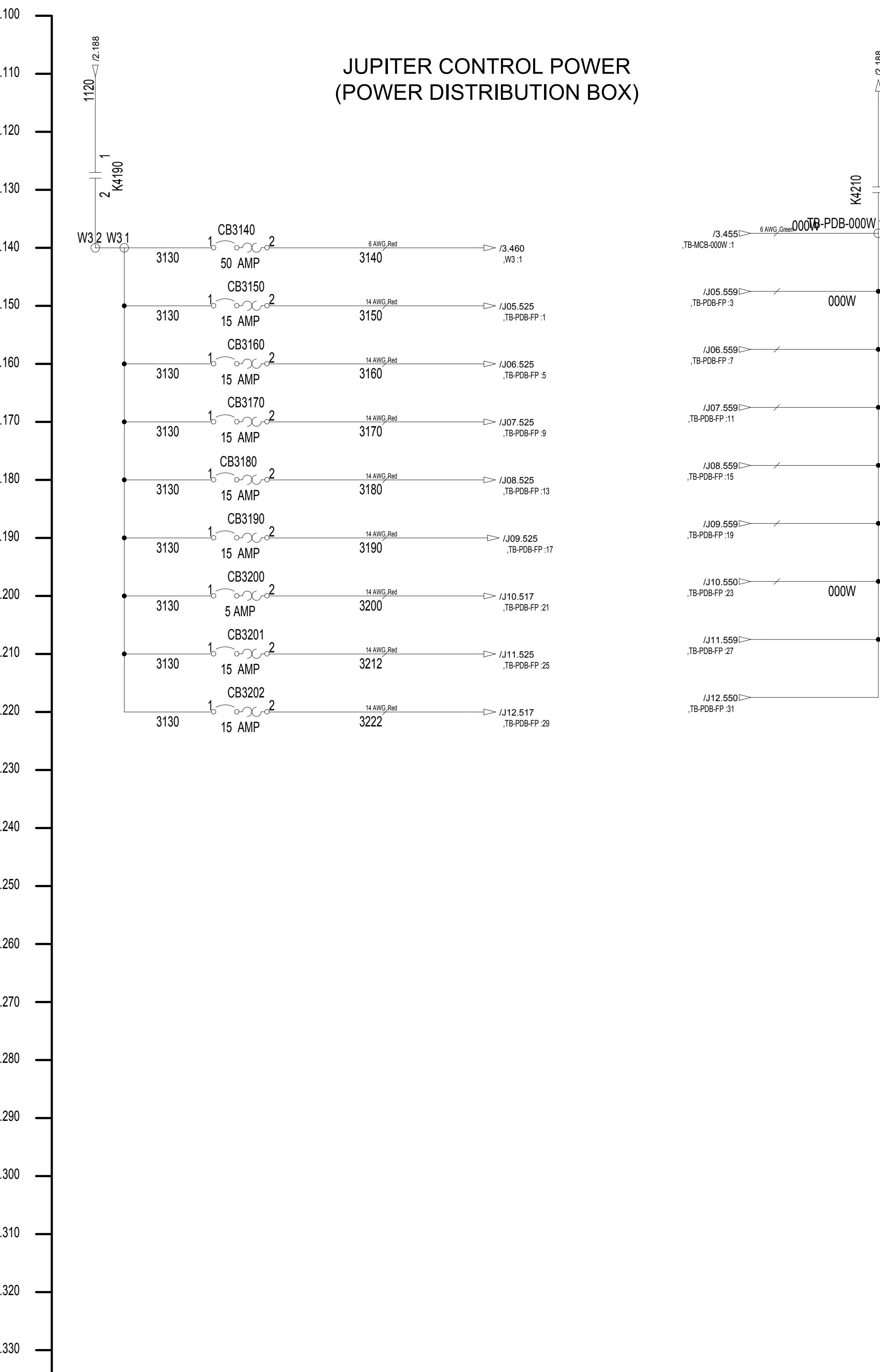
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DATE	DRAWING TITLE/DESCRIPTION: ELECTRICAL SCHEMATIC Power Distribution and Hardwired Controls
21-2011	
	MACHINE TYPE-MODEL: DRONE TAMPER
	E3 PROJECT FILE NAME: DRONE TAMPER 3

SHEET NUMBER	DRAW
2	D. M
NUMBER OF JUPITER SHEETS	REL. D
12	01-2
TOTAL NUMBER OF SHEETS	SIZE:
21	SCALE

HARSCO

RAIL



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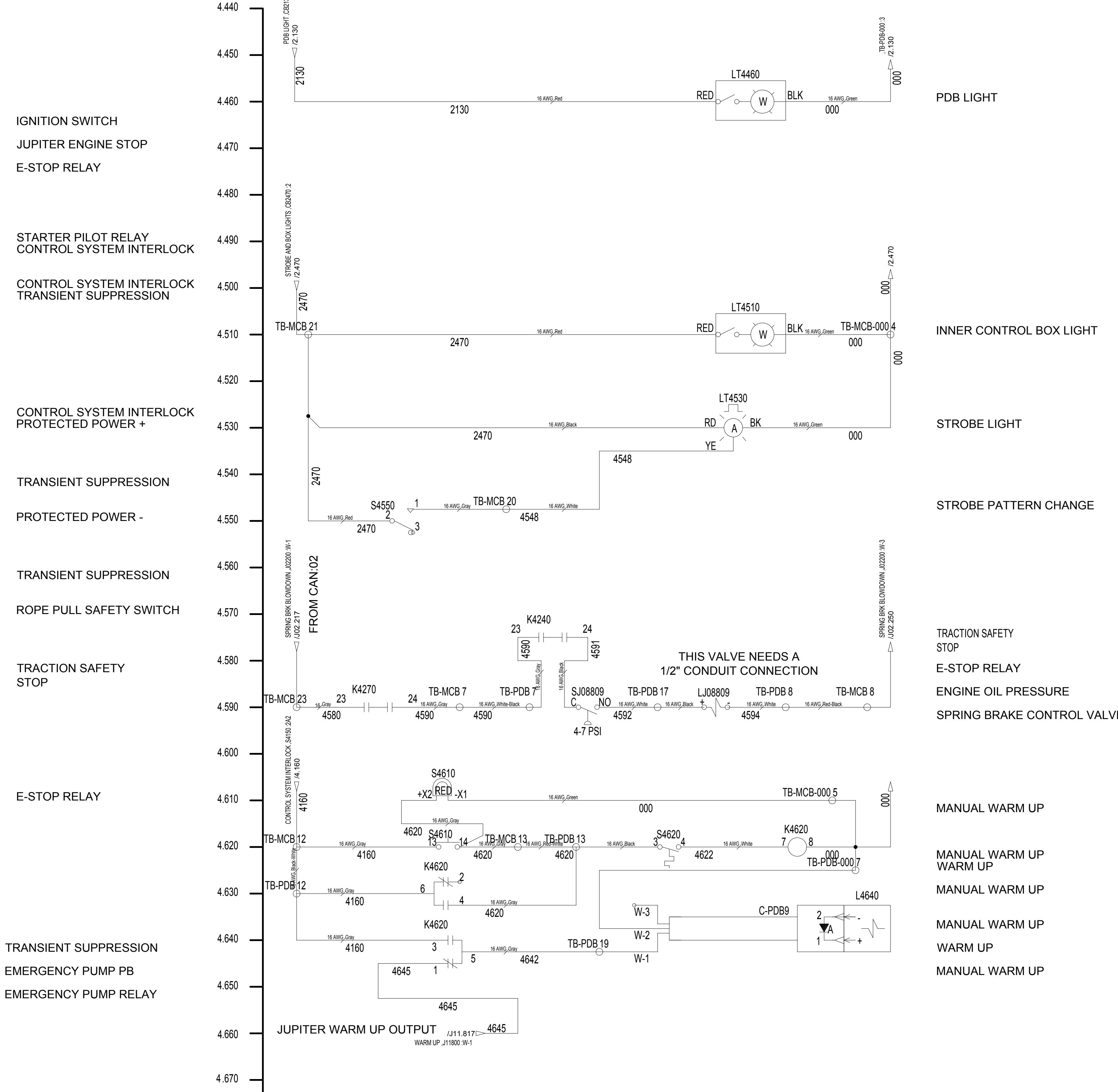
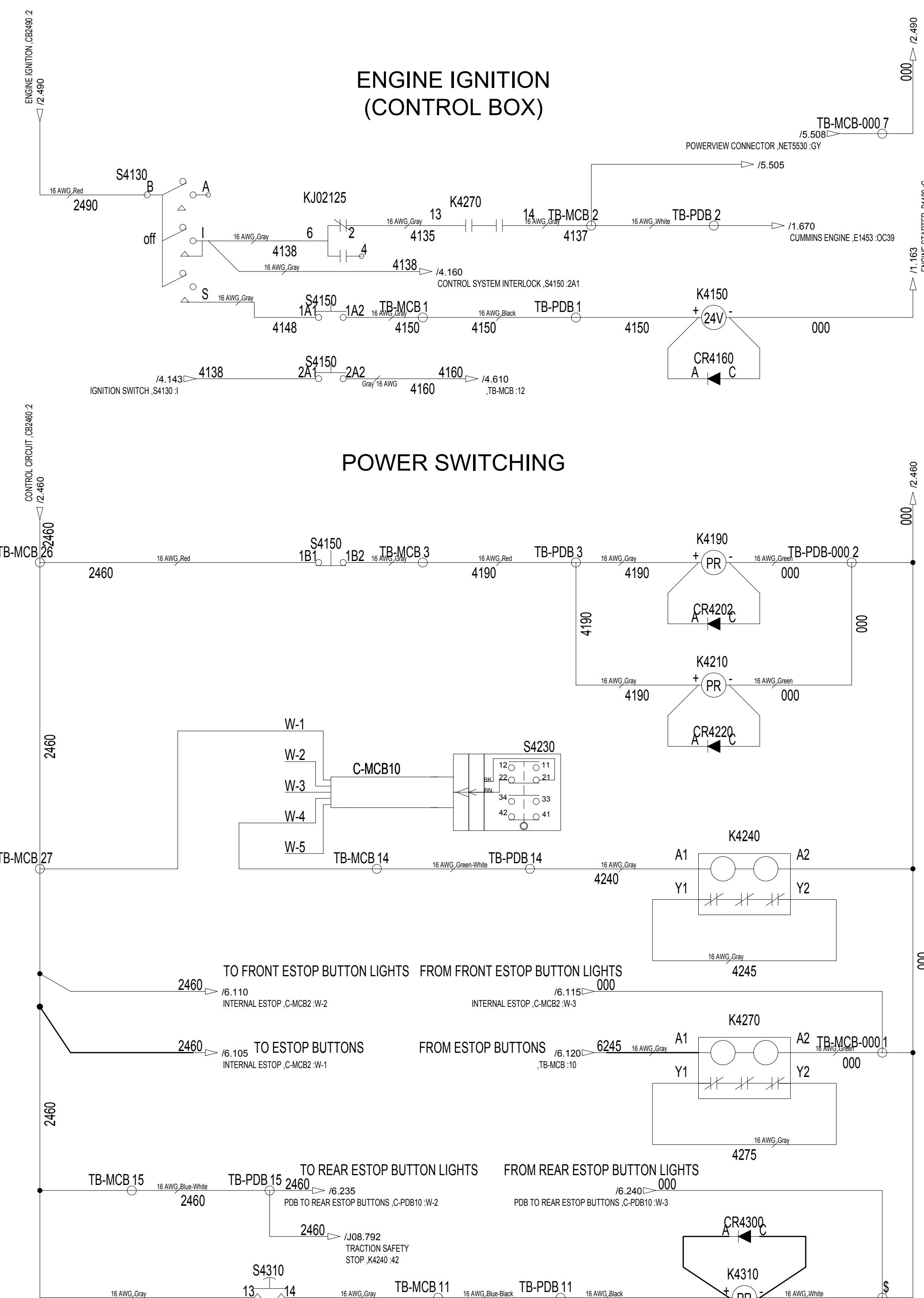
	CHANGE #		REVISION
D AND OW	EC500286	A	AS BUILT RELEASE
OR			
RTY			
Y			

	DR	DATE	DRAWING TITLE/DESCRIPTION: ELECTRICAL SCHEMATIC
	ACM	01-21-2011	Power Distribution and Hardwired Controls
			MACHINE TYPE-MODEL:
			DRONE TAMPER
			E3 PROJECT FILE NAME:
			DRONE TAMPER 3

	SHEET NUMBER
	3
	NUMBER OF JUPITER SHEETS
	12
	TOTAL NUMBER OF SHEETS
	21

HARSCO

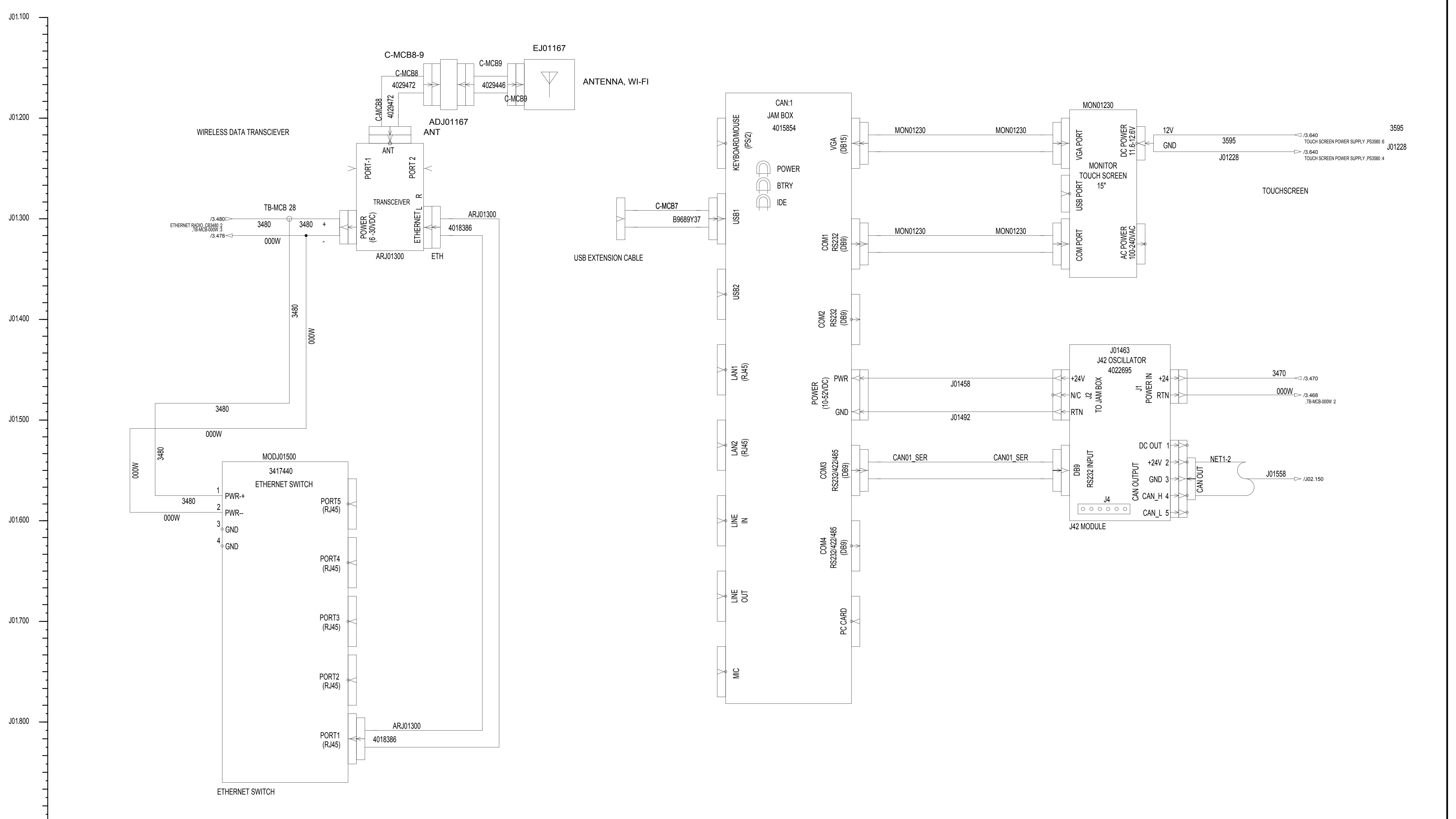
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CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:
EC500286	A AS BUILT RELEASE	ACM	01-21-2011	ELECTRICAL SCHEMATIC Power Distribution and Hardwired Controls	4	D. MILLER
				MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS	REL. DATE: 01-21-2008
				E3 PROJECT FILE NAME: DRONE TAMPER 3	12	SIZE: D
					TOTAL NUMBER OF SHEETS	SCALE: E3 DRAWING
					21	4029350

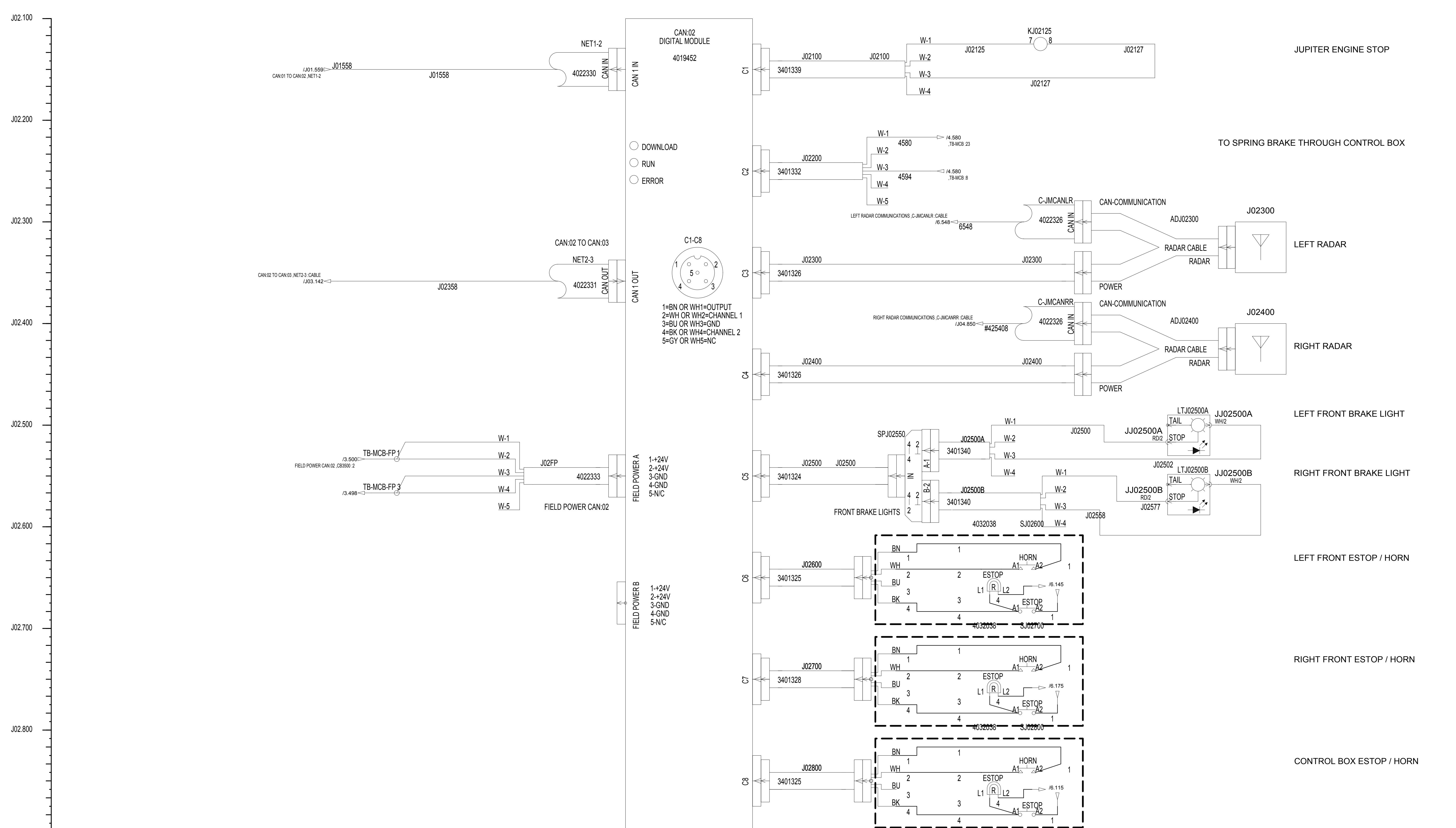
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CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:
EC500286	A	ACM	01-21-2011	ELECTRICAL SCHEMATIC Jupiter Control System	J01	D. MILLER
				MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS	REL. DATE: 01-21-2008
				E3 PROJECT FILE NAME: DRONE TAMPER 3	12	SIZE: D
					TOTAL NUMBER OF SHEETS	SCALE: E3 DRAWING
					21	4029350

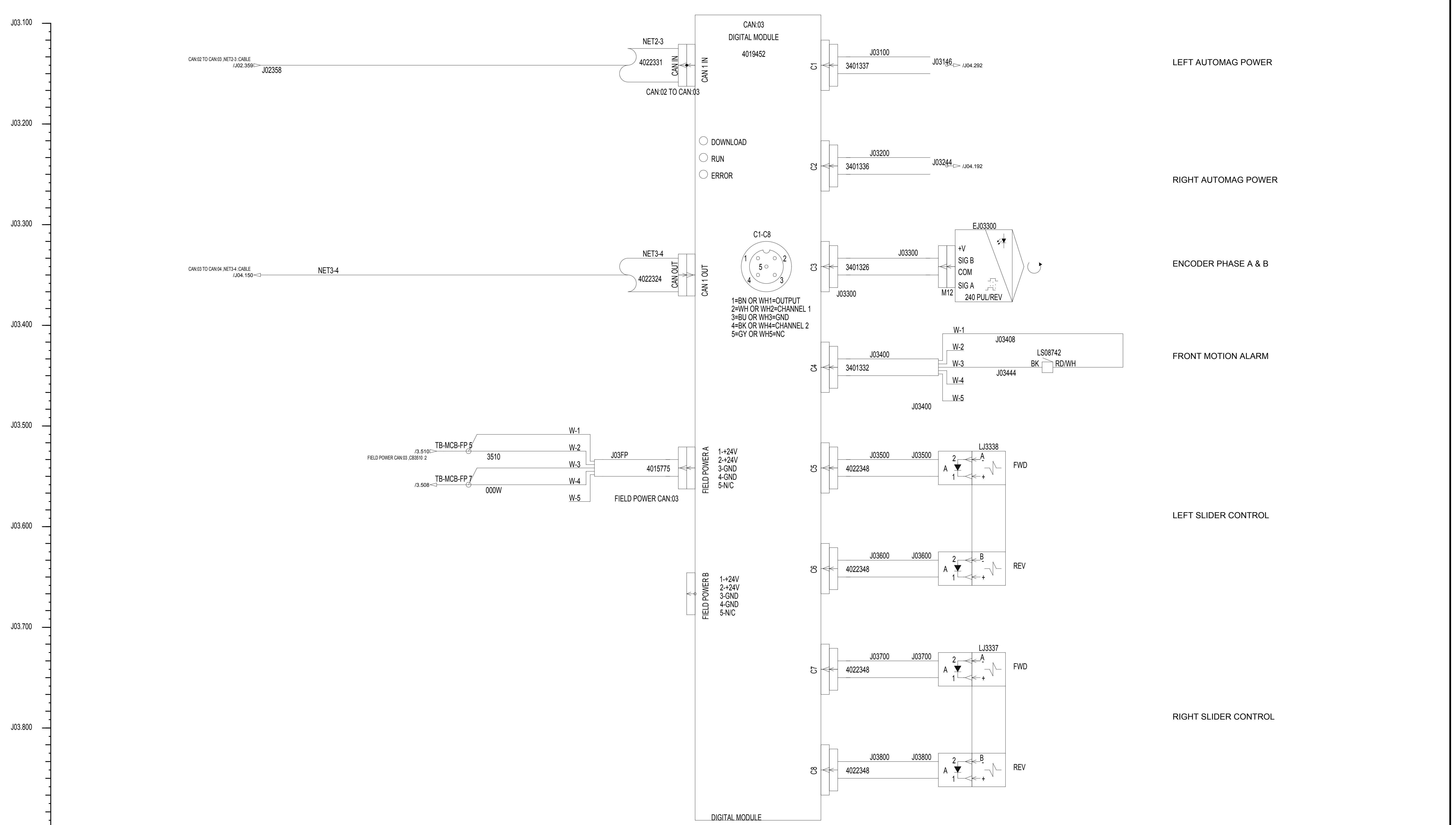
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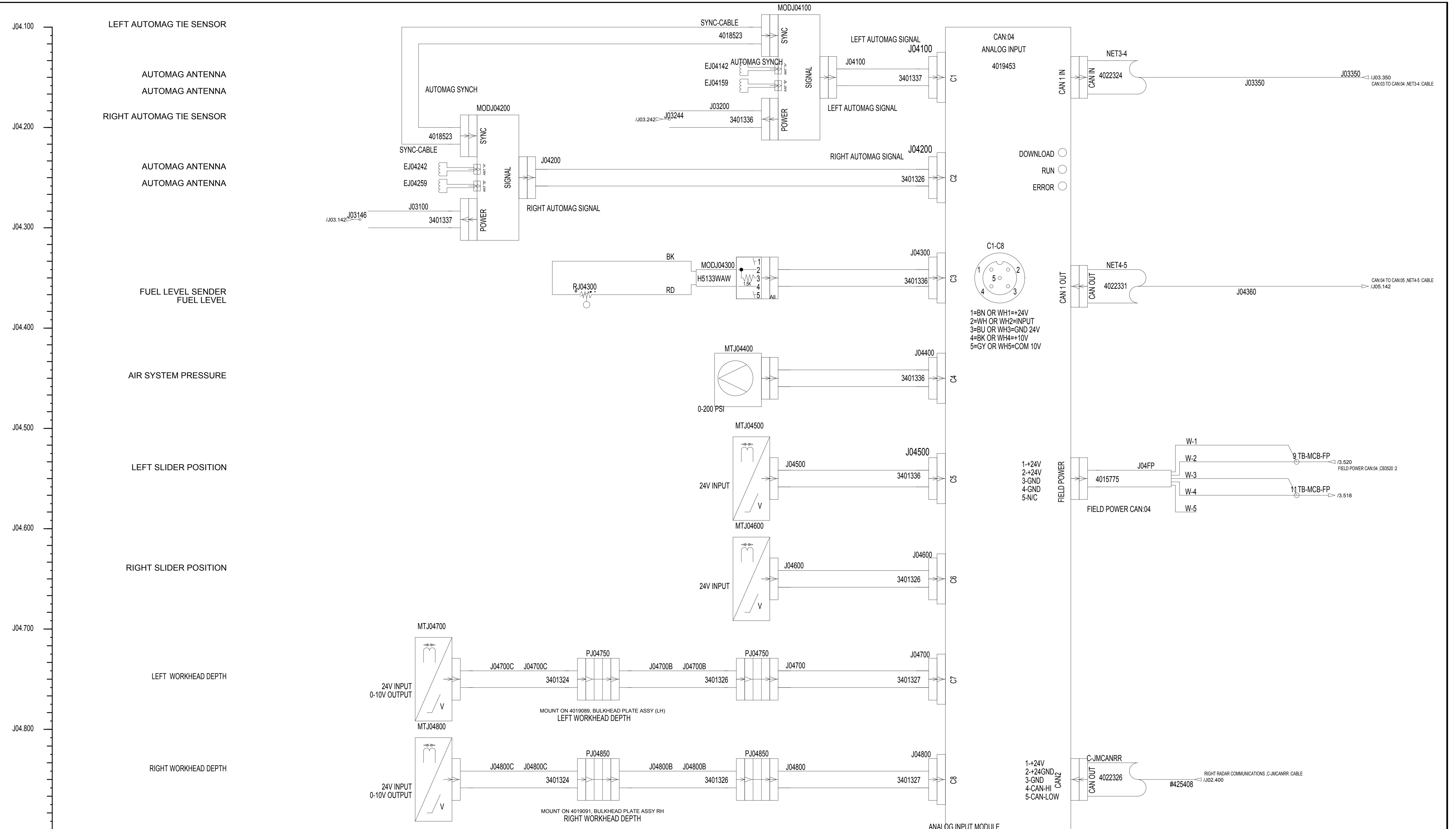
CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: ELECTRICAL SCHEMATIC Jupiter Control System MACHINE TYPE-MODEL: DRONE TAMPER E3 PROJECT FILE NAME: DRONE TAMPER 3	SHEET NUMBER	DRAWN BY:			
EC500286	A	AS BUILT RELEASE	ACM	01-21-2011		J02	D. MILLER			
NUMBER OF JUPITER SHEETS	REL. DATE: 01-21-2008	SIZE: D								
TOTAL NUMBER OF SHEETS	E3 DRAWING	SCALE:								
					21					



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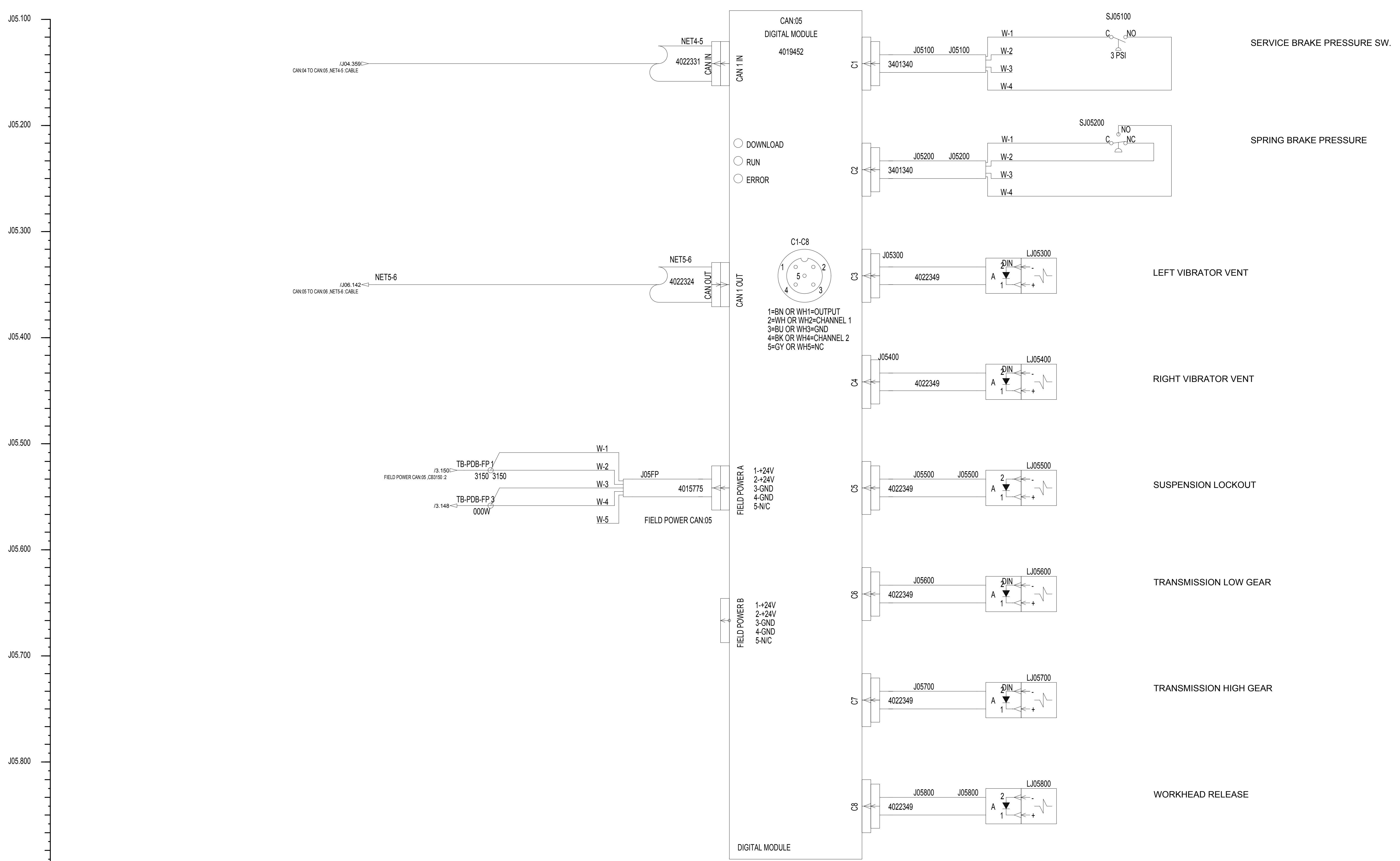
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EC500286	A	AS BUILT RELEASE	ACM	01-21-2011	ELECTRICAL SCHEMATIC Jupiter Control System	J03	D. MILLER	
					MACHINE TYPE-MODEL:	NUMBER OF JUPITER SHEETS	REL. DATE:	
					DRONE TAMPER	12	01-21-2008	
					E3 PROJECT FILE NAME:	TOTAL NUMBER OF SHEETS	SIZE:	
					DRONE TAMPER 3	21	D	
							SCALE:	

4029350



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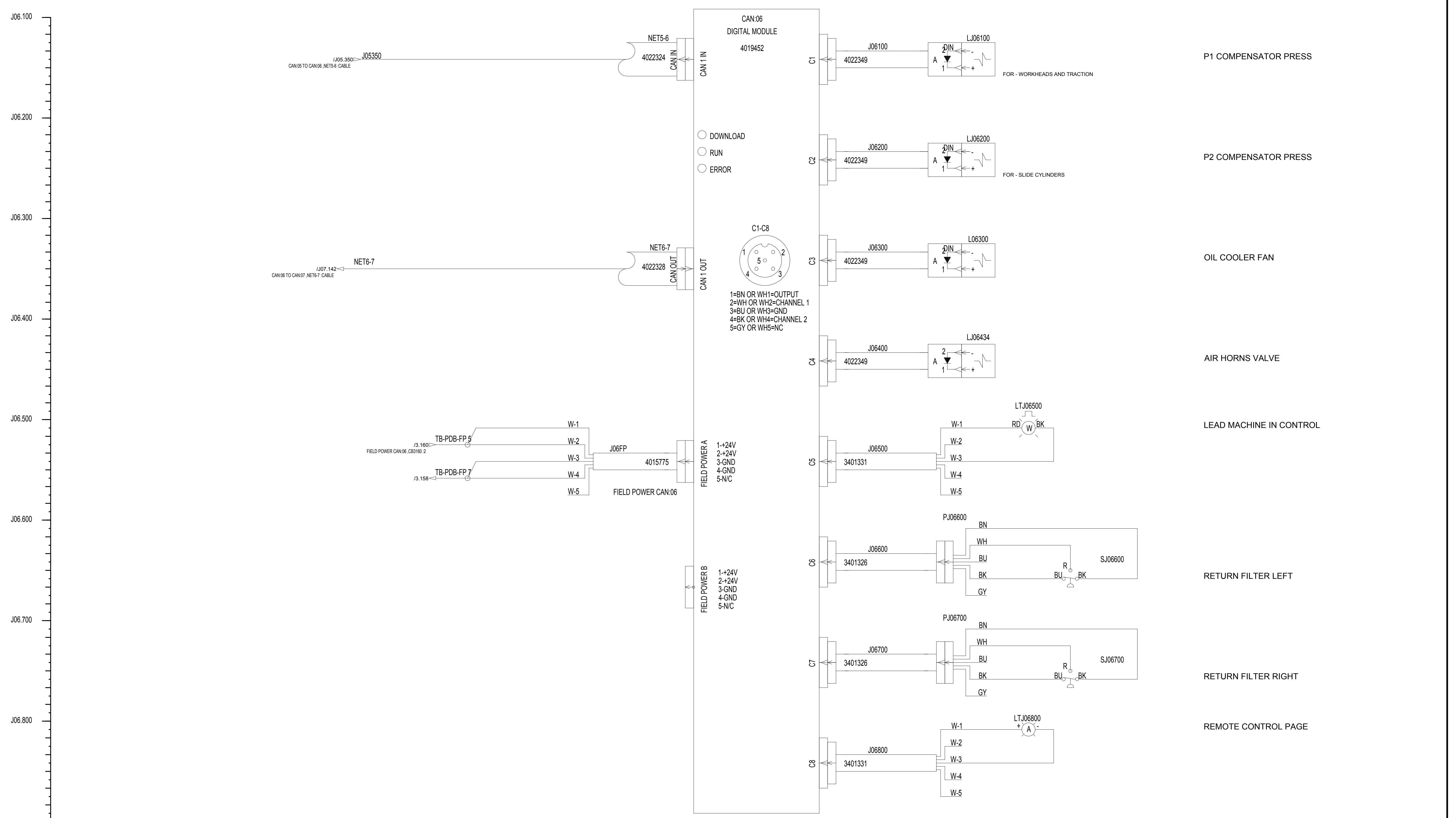
CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
EC500286	A	ACM	01-21-2011	ELECTRICAL SCHEMATIC Jupiter Control System	J04	D. MILLER	
				MACHINE TYPE-MODEL:	NUMBER OF JUPITER SHEETS	REL. DATE:	
				DRONE TAMPER	12	01-21-2008	
				E3 PROJECT FILE NAME:	TOTAL NUMBER OF SHEETS	SIZE:	
				DRONE TAMPER 3	21	D	SCALE: E3 DRAWING 4029350



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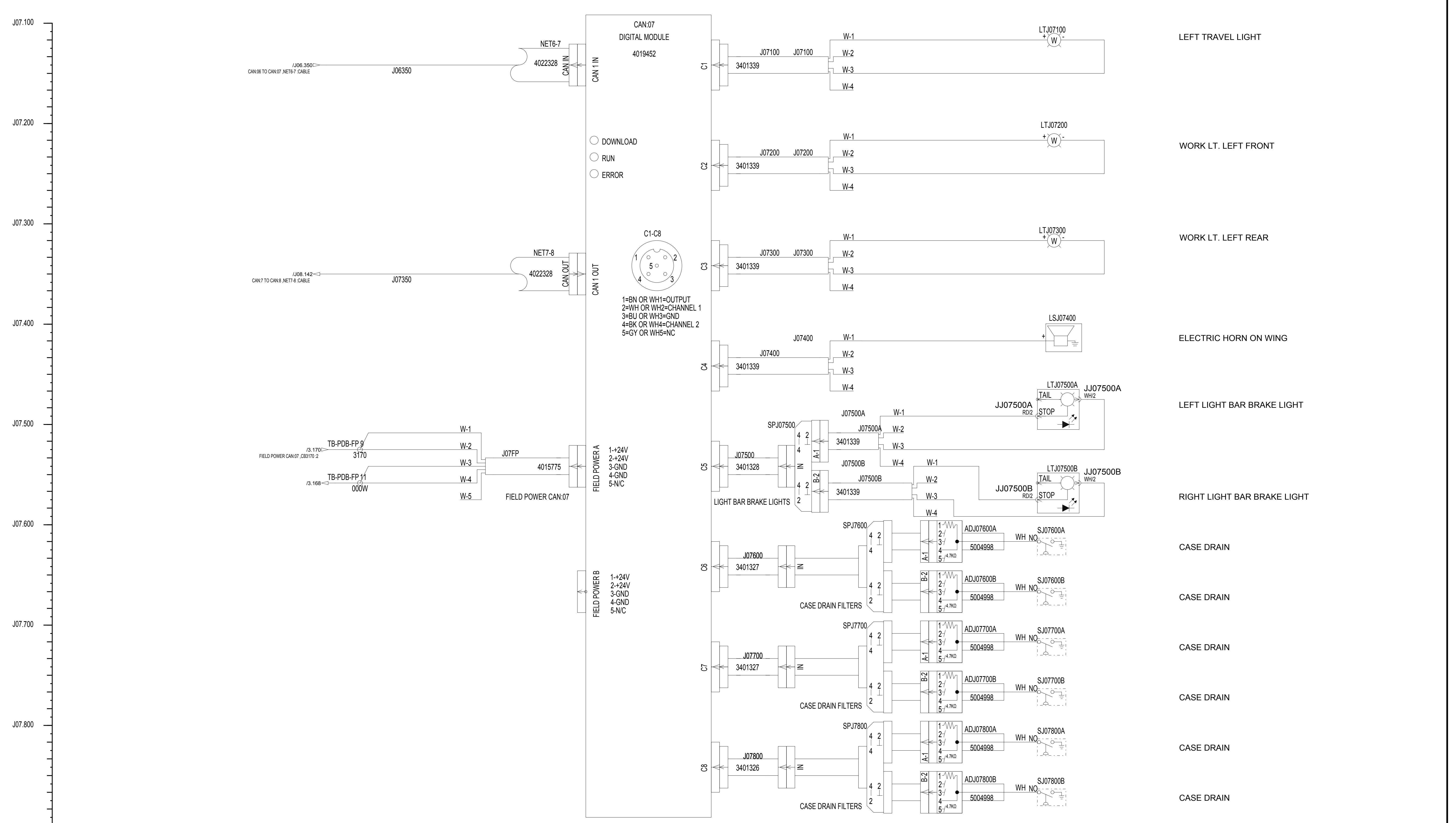
HARSCO AND HOW-HOW THE WING OR RD PARTY RE ANY .	CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: ELECTRICAL SCHEMATIC Jupiter Control System	SHEET NUMBER J05	DRAWN BY: D. MILLER	HARSCO RAIL	
	EC500286	A	AS BUILT RELEASE	ACM	01-21-2011	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 12	REL. DATE: 01-21-2008		
E3 PROJECT FILE NAME: DRONE TAMPER 3						TOTAL NUMBER OF SHEETS 21	SIZE: D	SCALE:	E3 DRAWING 4029350	



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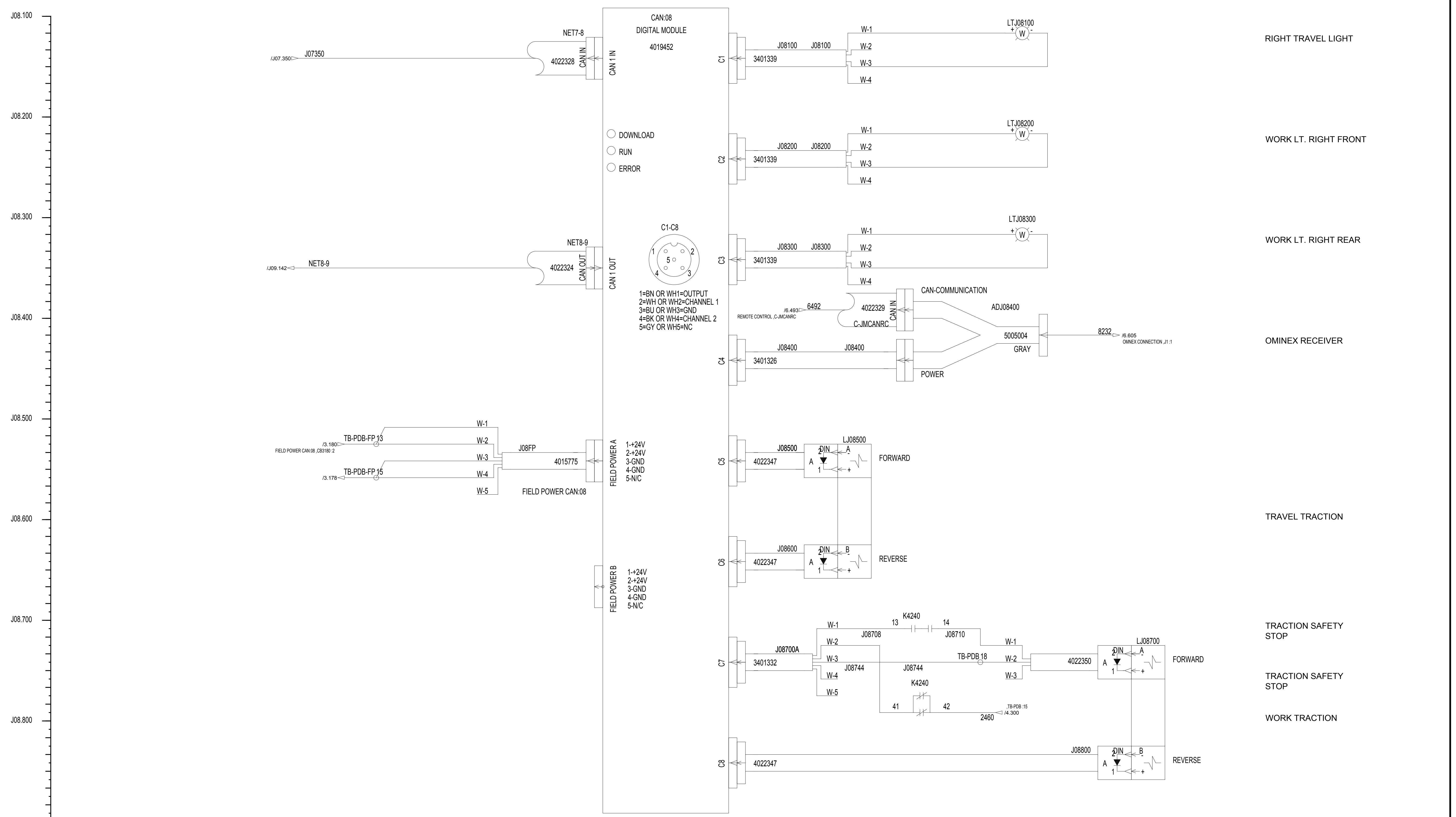
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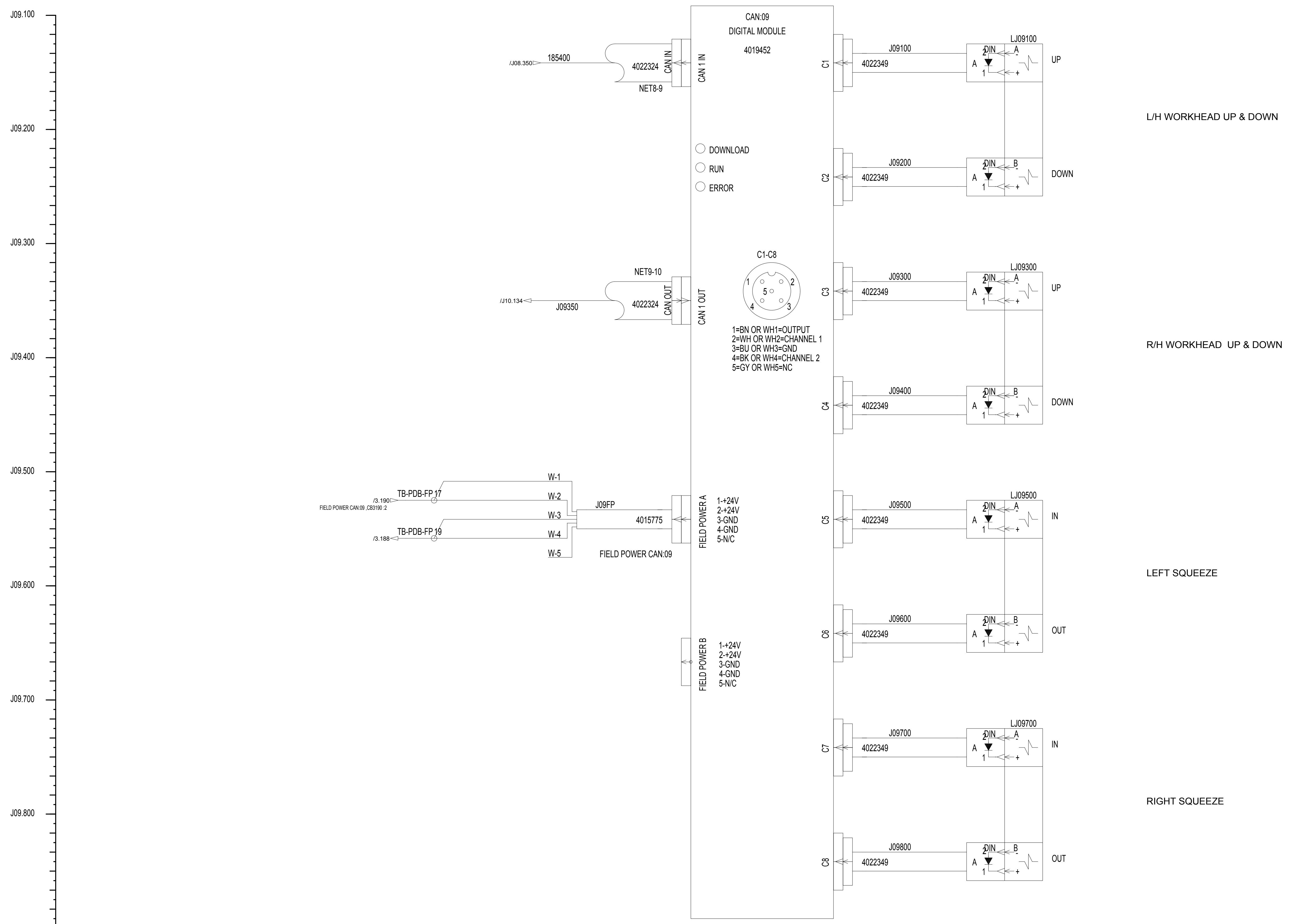
CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
EC500286	A	ACM	01-21-2011	ELECTRICAL SCHEMATIC Jupiter Control System	J06	D. MILLER	
				MACHINE TYPE-MODEL:	NUMBER OF JUPITER SHEETS	REL. DATE:	
				DRONE TAMPER	12	01-21-2008	
				E3 PROJECT FILE NAME:	TOTAL NUMBER OF SHEETS	SIZE:	
				DRONE TAMPER 3	21	D	
						SCALE:	4029350



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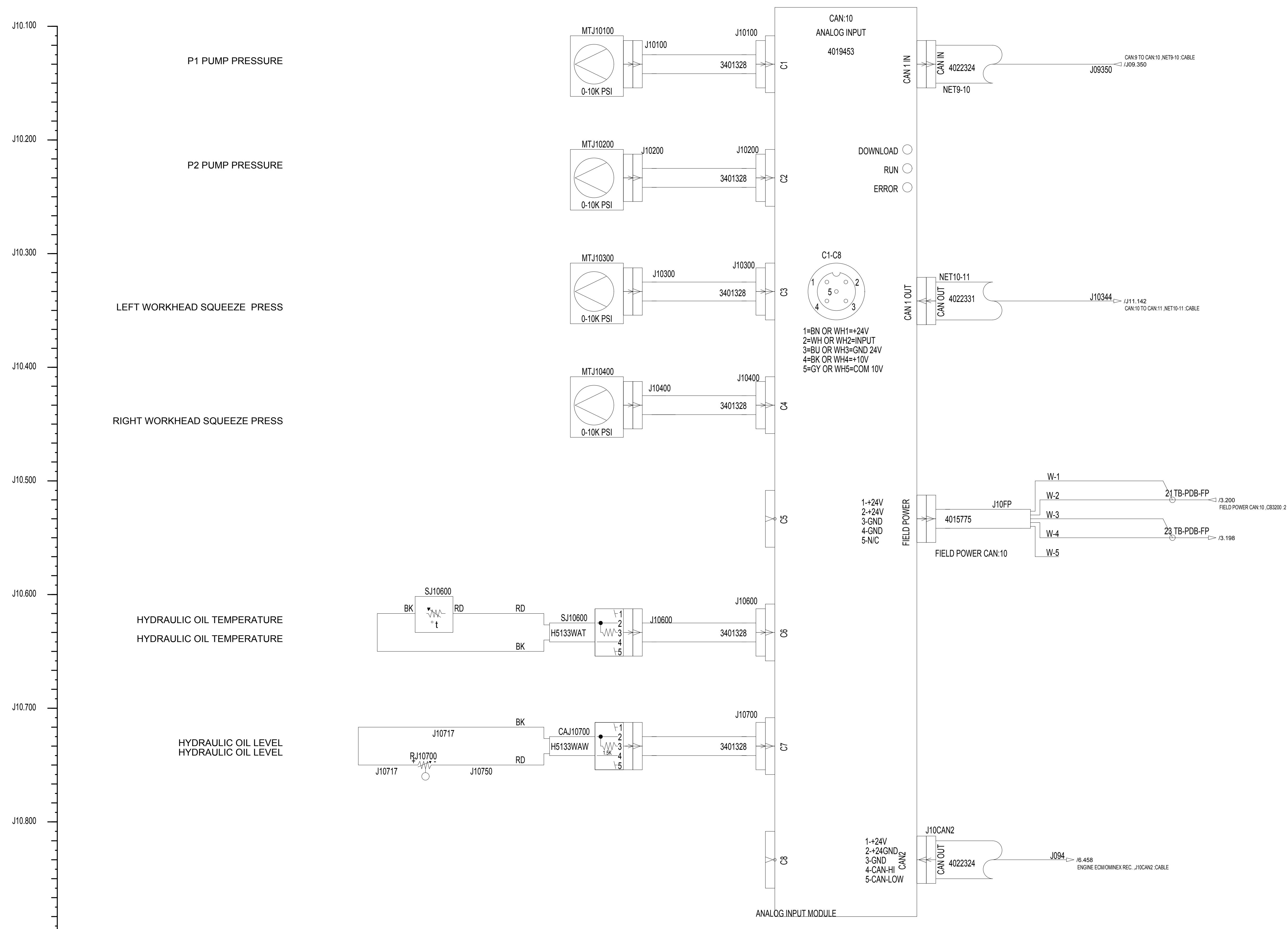
CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL	
EC500286	A	ACM	01-21-2011	ELECTRICAL SCHEMATIC Jupiter Control System	J07	D. MILLER		
				MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS	REL. DATE: 01-21-2008		
				E3 PROJECT FILE NAME: DRONE TAMPER 3	12	SIZE: D		
					TOTAL NUMBER OF SHEETS	SCALE: E3 DRAWING	21	4029350

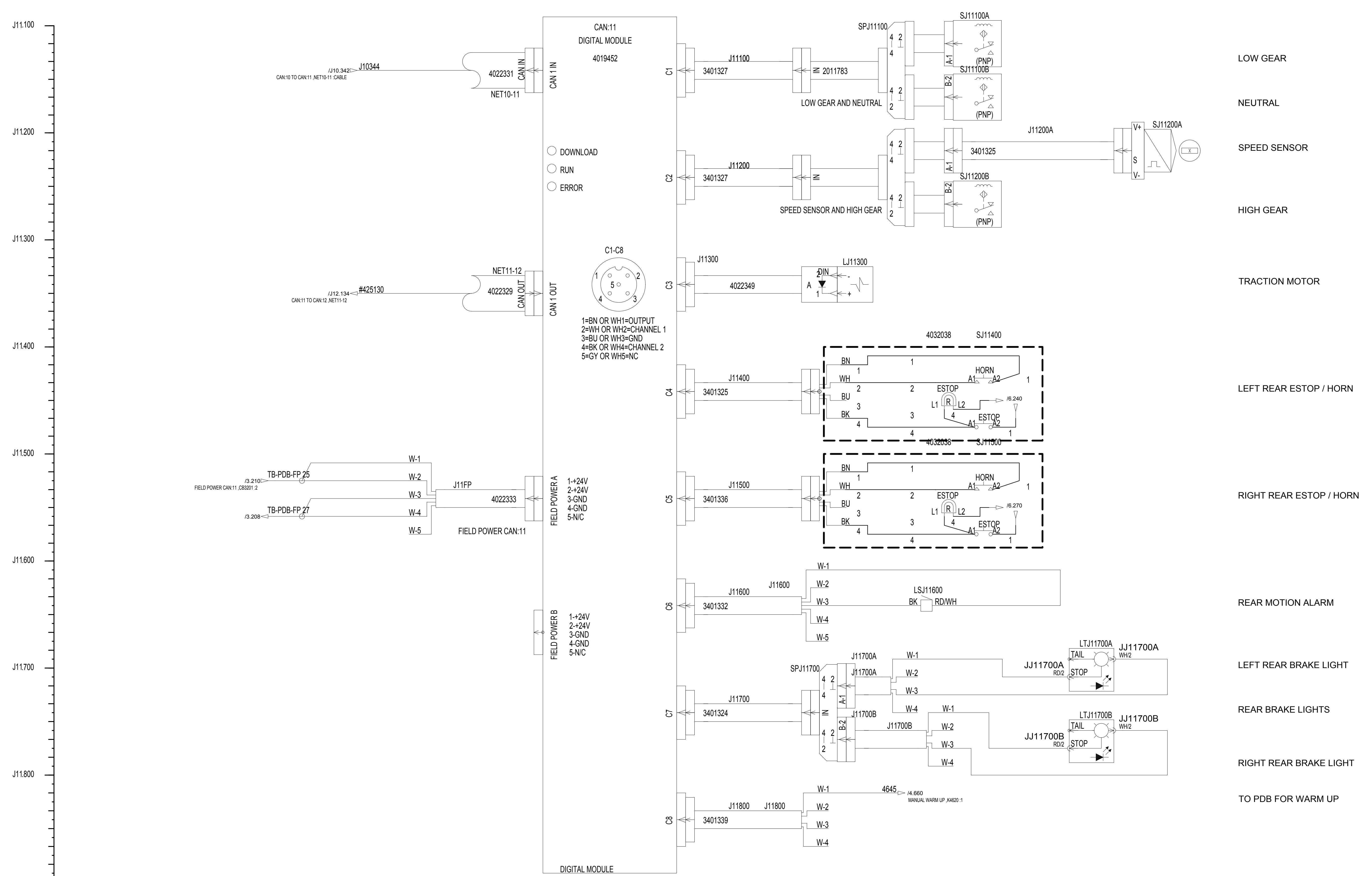




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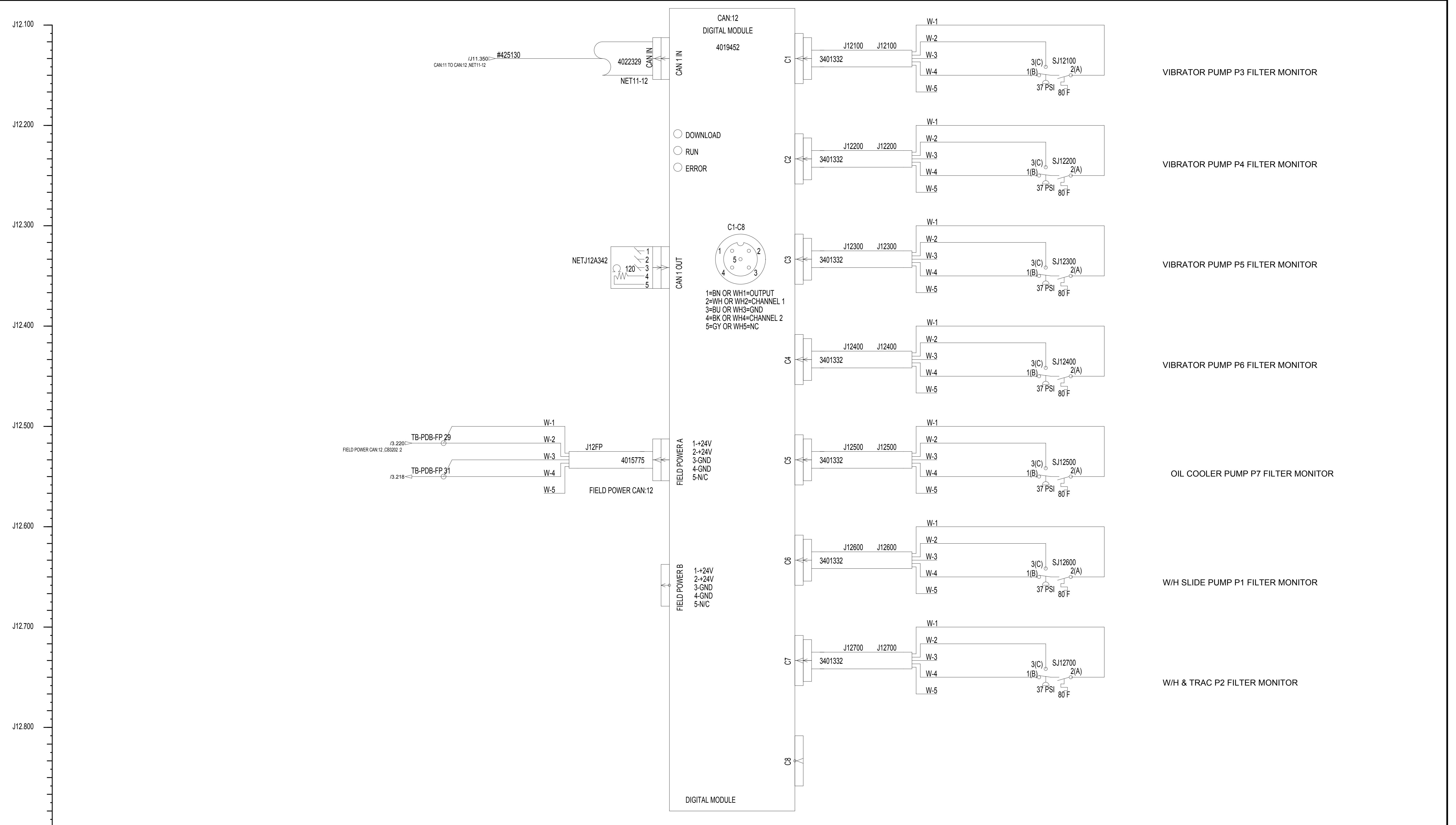
CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
EC500286	A	AS BUILT RELEASE	ACM	01-21-2011	ELECTRICAL SCHEMATIC Jupiter Control System	J09	D. MILLER	
					MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS	REL. DATE: 01-21-2008	
					E3 PROJECT FILE NAME: DRONE TAMPER 3	12	SIZE: D	
						TOTAL NUMBER OF SHEETS 21	SCALE: E3 DRAWING	4029350





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CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL
EC500286	A	ACM	01-21-2011	ELECTRICAL SCHEMATIC Jupiter Control System	J11	D. MILLER	
				MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS	REL. DATE: 01-21-2008	
				E3 PROJECT FILE NAME: DRONE TAMPER 3	12	SIZE: D	
					TOTAL NUMBER OF SHEETS	SCALE: 4029350	E3 DRAWING



ADAPTERS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
ADJ01167	J/01.167	C-MCB8-9	4029586	4018495	
ADJ02300	J/02.325	LEFT RADAR CABLE	XXXXXXX	RADAR CABLE	
ADJ02400	J/02.425	RIGHT RADAR CABLE	XXXXXXX	RADAR CABLE	
ADJ07600A	J/07.617	CASE DRAIN FILTER ADAPTER	4027891	5004998	
ADJ07600B	J/07.667	CASE DRAIN FILTER ADAPTER	4027891	5004998	
ADJ07700A	J/07.717	CASE DRAIN FILTER ADAPTER	4027891	5004998	
ADJ07700B	J/07.767	CASE DRAIN FILTER ADAPTER	4027891	5004998	
ADJ07800A	J/07.817	CASE DRAIN FILTER ADAPTER	4027891	5004998	
ADJ07800B	J/07.867	CASE DRAIN FILTER ADAPTER	4027891	5004998	
ADJ08400	J/08.417	OMNEX CABLE	4029354	5005004	

AMPLIFIERS AND RADIO TRANSCIVERS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
AR6000	/6.600	WIRELESS REMOTE	4029351	2007154	
ARJ01300	J/01.309	WIRELESS DATA TRANSCIEVER	4029586	4018386	

MOTORS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
B1150	J/1.150	EMERGENCY PUMP	4030552	450840-1	
B1180	J/1.180	ENGINE STARTER	2019247	3 TERMINAL STARTER	
B5290	J/5.290	TOP CONTROL BOX FAN	4029586	413221	
B5300	J/5.300	BOTTOM CONTROL BOX FAN	4029586	413221	
B5490	J/5.490	TOP UP PUMP	4027891	3400138	

BATTERIES					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
BT1120	J/1.120	BATTERY 1	4029355	2013244	
BT1122	J/1.120	BATTERY 2	4029355	2013244	

JUPITER MODULES					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
CAN:02	J/02.100	DIGITAL MODULE	4029354	4019452	
CAN:03	J/03.092	DIGITAL MODULE	4029354	4019452	
CAN:04	J/04.109	ANALOG INPUT MODULE	4029354	4019453	
CAN:05	J/05.092	DIGITAL MODULE	4029354	4019452	
CAN:06	J/06.092	DIGITAL MODULE	4029354	4019452	
CAN:07	J/07.092	DIGITAL MODULE	4029354	4019452	
CAN:08	J/08.092	DIGITAL MODULE	4029354	4019452	
CAN:09	J/09.092	DIGITAL MODULE	4029354	4019452	
CAN:1	J/01.225	JAMBOX	4029586	4015854	
CAN:10	J/10.092	ANALOG INPUT MODULE	4029354	4019453	
CAN:11	J/11.092	DIGITAL MODULE	4029354	4019452	
CAN:12	J/12.084	DIGITAL MODULE	4029354	4019452	

CIRCUIT BREAKERS					
NO	DEVICE	SHT LOC	AMP	DESCRIPTION	LOCATION
CB1440	J/1.440	150 AMP	GRID HEATER	4029355	H6206Y35
CB2120	J/2.120	1 AMP	9PIN DIAG CONN	4029579	C9678Y31
CB2130	J/2.130	10 AMP	PDB LIGHT	4029579	C9678Y09
CB2140	J/2.140	20 AMP	CONTROL BOX IGNITION	4029579	C9678Y11
CB2150	J/2.150	20 AMP	TOP UP PUMP	4029579	C9678Y11
CB2220	J/2.220	20 AMP	SPARE	4029579	C9678Y11
CB2230	J/2.230	50 AMP	CNTRL BX HEATERS AND AIR DRYER	4029579	C9678Y14
CB2300	J/2.300	30 AMP	CUMMINS ECM POWER	4029355	4024977
CB2460	J/2.460	10 AMP	CONTROL CIRCUIT	4029586	C9678Y09
CB2470	J/2.470	10 AMP	STROBE AND BOX LIGHTS	4029586	C9678Y09
CB2480	J/2.480	5 AMP	WAIT TO START LIGHT	4029586	C9678Y08
CB2490	J/2.490	5 AMP	ENGINE IGNITION	4029586	C9678Y08
CB2560	J/2.560	10 AMP	TEMPERATURE CONTROLS	4029586	C9678Y09
CB2570	J/2.570	30 AMP	BOX HEATER A	4029586	C9678Y12
CB2580	J/2.580	30 AMP	BOX HEATER B	4029586	C9678Y12
CB2590	J/2.590	10 AMP	AIR DRYER	4029586	C9678Y09
CB3140	J/3.140	50 AMP	CONTROL BOX PROTECTED POWER	4029579	C9678Y14
CB3150	J/3.150	15 AMP	FIELD POWER CAN:05	4029579	C9678Y10
CB3160	J/3.160	15 AMP	FIELD POWER CAN:06	4029579	C9678Y10
CB3170	J/3.170	15 AMP	FIELD POWER CAN:07	4029579	C9678Y10
CB3180	J/3.180	15 AMP	FIELD POWER CAN:08	4029579	C9678Y10
CB3190	J/3.190	15 AMP	FIELD POWER CAN:09	4029579	C9678Y10

CIRCUIT BREAKERS					
NO	DEVICE	SHT LOC	AMP	DESCRIPTION	LOCATION
CB3200	J/3.200	5 AMP	FIELD POWER CAN:10	4029579	C9678Y08
CB3201	J/3.210	15 AMP	FIELD POWER CAN:11	4029579	C9678Y10
CB3202	J/3.220	15 AMP	FIELD POWER CAN:12	4029579	C9678Y10
CB3470	J/3.470	10 AMP	NETWORK POWER	4029586	C9678Y09
CB3480	J/3.480	10 AMP	ETHERNET RADIO	4029586	C9678Y09
CB3490	J/3.490	10 AMP	POWER SUPPLY 24 12 VDC	4029586	C9678Y09
CB3500	J/3.500	15 AMP	FIELD POWER CAN:02	4029586	C9678Y10
CB3510	J/3.510	15 AMP	FIELD POWER CAN:03	4029586	C9678Y10
CB3520	J/3.520	5 AMP	FIELD POWER CAN:04	4029586	C9678Y08

DIODES					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
CR4160	J/4.160	TRANSIENT SUPPRESSION	4029355	404558	
CR4200	J/4.200	TRANSIENT SUPPRESSION	4029579	404558	
CR4202	J/4.220	TRANSIENT SUPPRESSION	4029579	404558	
CR4220	J/4.220	TRANSIENT SUPPRESSION	4029579	404558	
CR4300	J/4.300	TRANSIENT SUPPRESSION	4029355	404558	

PILOT LIGHTS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
DS5					

SOLENOIDS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
L5160	/J5.160	VORTEX COOLER	4029596	D4121Y02	
L06300	/J06.334	OIL COOLER FAN	4027891	C1140Y04	
LJ05300	/J05.334	LEFT VIBRATOR VENT	4016715	C1140Y04	
LJ05400	/J05.434	RIGHT VIBRATOR VENT	4016715	C1140Y04	
LJ05500	/J05.534	SUSPENSION LOCKOUT	4016715	C0993Y07	
LJ05600	/J05.634	TRANSMISSION LOW GEAR	4029596	D0393Y02	
LJ05700	/J05.734	TRANSMISSION HIGH GEAR	4029596	D0393Y02	
LJ05800	/J05.834	WORKHEAD RELEASE	4029596	D0393Y02	
LJ06100	/J06.134	P1 COMPENSATOR PRESS	2019238	4029520	
LJ06200	/J06.234	P2 COMPENSATOR PRESS	2019238	4029520	
LJ06434	/J06.434	AIR HUMS VALVE	4029596	D4121Y02	
LJ08500	/J08.534	TRAVEL TRACTION	4016715	4017270	
LJ08700	/J08.734	WORK TRACTION	4016715	4031552	
LJ08809	/J4.590	SPRING BRAKE CONTROL VALVE	4029596	0-3413003-0-15	
LJ09100	/J09.134	L/H WORKHEAD UP & DOWN	4027891	4031214	
LJ09300	/J09.334	R/H WORKHEAD UP & DOWN	4027891	4031214	
LJ09500	/J09.534	LEFT SQUEEZE	4027891	4017267	
LJ09700	/J09.734	RIGHT SQUEEZE	4027891	4017267	
LJ11300	/J11.334	TRACTION MOTOR	2019161	4029264	
LJ3337	/J03.734	RIGHT SLIDER CONTROL	4016715	4031214	
LJ3338	/J03.534	LEFT SLIDER CONTROL	4016715	4031214	

SENSORS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
MTJ04400	/J04.450	AIR SYSTEM PRESSURE	4029596	3400894	
MTJ10100	/J10.134	P1 PUMP PRESSURE	4016715	4008374	
MTJ10200	/J10.234	P2 PUMP PRESSURE	4016715	4008374	
MTJ10300	/J10.334	LEFT WORKHEAD SQUEEZE PRESS	4016715	4008374	
MTJ10400	/J10.434	RIGHT WORKHEAD SQUEEZE PRESS	4016715	4008374	

CONNECTORS, MALE					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
P6115	/6.115	C-MCB2-3	4029586	199053	
P6240	/6.240	ESTOP CONNECTOR	4029579	199053	
P6540A	/6.533	C-MCB5	4029586	199053	
PJ04750	/J04.750	LEFT WORKHEAD DEPTH	2019347	199053	
PJ04750	/J04.750	LEFT WORKHEAD DEPTH	2019306	199053	
PJ04850	/J04.850	RIGHT WORKHEAD DEPTH	2019347	199053	
PJ04850	/J04.850	RIGHT WORKHEAD DEPTH	2019306	199053	

POWER SUPPLIES					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
PS3580	/J3.580	TOUCH SCREEN POWER SUPPLY	4029586	4018385	

LOUDSPEAKERS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
LS5260	/J5.260	ENGINE ALARM	4029586	2014763	
LS08742	/J03.442	FRONT MOTION ALARM	4029351	158325-1	
LSJ07400	/J07.417	ELECTRIC HORN ON WING	4029336	413600	
LSJ11600	/J11.642	REAR MOTION ALARM	4029351	158325-1	

RESISTORS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
RJ04300	/J04.367	FUEL LEVEL SENDER	4017111	414823	
MTJ04700		LEFT WORKHEAD DEPTH	2019306	2006042	
MTJ04800		RIGHT WORKHEAD DEPTH	2019306	2006042	
RJ10700	/J10.750	HYDRAULIC OIL LEVEL	4027891	0-3613031-0-10	

LIGHTS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	BULB PART NO.
LT4460	/J4.460	PDB LIGHT	4029579	F040972	F041170
LT4510	/J4.510	INNER CONTROL BOX LIGHT	4029586	F040972	F041170
LT4530	/J4.530	STROBE LIGHT	4029336	2014855	
LT5320	/J5.320	OUTER CONTROL BOX LIGHT	4029586	408397	409752
LTJ02500A	/J02.500	LEFT FRONT BRAKE LIGHT	4029336	2008610	
LTJ02500B	/J02.559	RIGHT FRONT BRAKE LIGHT	4029336	2008610	
LTJ06500	/J06.509	LEAD MACHINE IN CONTROL	4029336	CLEAR STROBE	
LTJ06800	/J06.809	REMOTE CONTROL PAGE	4029336	SPEAKER SIGNAL LIGHT	
LTJ07100	/J07.117	LEFT TRAVEL LIGHT	4029336	2014852	
LTJ07200	/J07.217	WORK LT. LEFT FRONT	4029336	2014853	
LTJ07300	/J07.317	WORK LT. LEFT REAR	4029336	2014853	
LTJ07500A	/J07.475	LEFT LIGHT BAR BRAKE LIGHT	4029336	2008610	
LTJ07500B	/J07.559	RIGHT LIGHT BAR BRAKE LIGHT	4029336	2008610	
LTJ08100	/J08.117	RIGHT TRAVEL LIGHT	4029336	2014852	
LTJ08200	/J08.217	WORK LT. RIGHT FRONT	4029336	2014853	
LTJ08300	/J08.317	WORK LT. RIGHT REAR	4029336	2014853	
LTJ11700A	/J11.692	LEFT REAR BRAKE LIGHT	4029336	2008610	
LTJ11700B	/J11.759	RIGHT REAR BRAKE LIGHT	4029336	2008610	

RADIO RECEIVERS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
RE6575	/J6.575	REMOTE CONTROL	4029351	2007155	

SWITCHES					
NO	DEVICE	SHEET LOCATION	DESCRIPTION	LOCATION	PART NUMBER
S1120	/J1.120	BATTERY POSITIVE DISCONNECT	4029355	F025527	
S1122	/J1.120	BATTERY NEGATIVE DISCONNECT	4029355	F025527	
S4130	/J4.130	IGNITION SWITCH	4029586	158090-1	
S4150	/J4.190	/J4.160	CONTROL SYSTEM INTERLOCK	4029586	ASSEMBLY
S4230	/J4.228	ROPE PULL SAFETY SWITCH	YYYYYY	5002492	
S4310	/J4.310	EMERGENCY PUMP PB	4029586	ASSEMBLY	
S4550	/J4.550	STROBE PATTERN CHANGE	4029586		

SWITCHES					
NO	DEVICE	SHEET LOCATION	DESCRIPTION	LOCATION	PART NUMBER
SJ1200	J12.250		VIBRATOR PUMP P4 FILTER MONITOR	4016715	172325-1
SJ12300	J12.350		VIBRATOR PUMP P5 FILTER MONITOR	4016715	172325-1
SJ12400	J12.450		VIBRATOR PUMP P6 FILTER MONITOR	4016715	172325-1
SJ12500	J12.550		OIL COOLER PUMP P7 FILTER MONITOR	4016715	172325-1
SJ12600	J12.650		W/H SLIDE PUMP P1 FILTER MONITOR	4016715	172325-1
SJ12700	J12.750		W/H & TRAC P2 FILTER MONITOR	4016715	172325-1

CONNECTORS, SPLITTERS					
NO	DEVICE	SHT LOC	DESCRIPTION	LOCATION	PART NUMBER
SP6460	J6.460		AUXILLARY CAN COMM	4029354	2014920
SP6500	J6.500		AUXILLARY CAN COMM	4029354	2014920
SP6540	J6.540		AUXILLARY CAN COMM	4029354	2014920
SPJ02550	J02.550		FRONT BRAKE LIGHTS	4029354	414260
SPJ07500	J07.542		LIGHT BAR BRAKE LIGHTS	4029354	414260
SPJ11100	J11.142		LOW GEAR AND NEUTRAL	2019161	2011783
SPJ11200	J11.242		SPEED SENSOR AND HIGH GEAR	2019161	2011783
SPJ11700	J11.742		REAR BRAKE LIGHTS	4029354	414260
SPJ7600	J07.642		CASE DRAIN FILTERS	4027891	2011783
SPJ7700	J07.742		CASE DRAIN FILTERS	4027891	2011783
SPJ7800	J07.842		CASE DRAIN FILTERS	4027891	2011783

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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: ELECTRICAL SCHEMATIC Cross Reference	SHEET NUMBER X3	DRAWN BY: D. MILLER	HARSCO RAIL
EC500286	A	AS BUILT RELEASE	ACM	01-21-2011	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 12	REL. DATE: 01-21-2008	
					E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS 21	SIZE: D	E3 DRAWING
							SCALE:	4029350

PRODUCT STRUCTURE			
ITEM	QTY	PART #	PART DESCRIPTION
10	200	4413	TY-RAP : MED 7.4"
20	3	414260	CONNECTOR, SPLITTER : M12 T STYLE CONNECTOR SENSOR WIRED SWITCH
30	3	2011783	CONNECTOR, SPLITTER : M12 T STYLE CONNECTOR SENSOR W/CABLE ENDS
40	3	2014920	CONNECTOR, SPLITTER : 5 PIN M12 T SPLITTER W/CABLE ENDS
50	4	3401324	CABLE ASSEMBLY, M12 : 1 M W/M12 MALE/FEMALE SHIELDED
60	4	3401325	CABLE ASSEMBLY, M12 : 2 M W/M12 MALE/FEMALE SHIELDED
70	11	3401326	CABLE ASSEMBLY, M12 : 3 M W/M12 MALE/FEMALE SHIELDED
80	6	3401327	CABLE ASSEMBLY, M12 : 5 M W/M12 MALE/FEMALE SHIELDED
90	8	3401328	CABLE ASSEMBLY, M12 : 7 M W/M12 MALE/FEMALE SHIELDED
100	2	3401331	CABLE ASSEMBLY, M12 : 5 M W/M12 MALE CONN + SHIELDED
110	11	3401332	CABLE ASSEMBLY, M12 : 10 M W/M12 MALE CONN + SHIELDED
120	5	3401336	CABLE ASSEMBLY, M12 : 4 M W/M12 MALE-FEMALE SHIELDED
130	2	3401337	CABLE ASSEMBLY, M12 : 6 M W/M12 MALE/FEMALE SHIELDED
140	13	3401339	CABLE ASSEMBLY, M12 : 4 M W/M12 MALE CONNECTOR
150	4	3401340	CABLE ASSEMBLY, M12 : 8 M W/M12 MALE CONNECTOR
160	1	3406480	CONNECTOR ASSEMBLY : M12-M CAN2 TERMINATOR CONNECTOR
170	198	4019171	TAGS, CABLE : PLASTIC CABLE TAG SLEEVE
180	9	4019452	MODULE, DIGITAL OUT : 8-CHANNEL DIGITAL MODULE, JUPITER 2
190	2	4019453	MODULE, ANALOG INPUT : 8-CHANNEL ANALOG INPUT 24VDC CAN BASED
200	6	4022324	CABLE ASSEMBLY, M12 : NETWORK CABLE 0.75METERS M12 MALE/FEMALE
210	2	4022326	CABLE ASSEMBLY, M12 : 2M NETWORK CABLE, M12 MALE/FEMALE
220	2	4022328	CABLE ASSEMBLY, M12 : 4M NETWORK CABLE, M12 MALE/FEMALE
230	3	4022329	CABLE ASSEMBLY, M12 : 5M NETWORK CABLE, M12 MALE/FEMALE
240	3	4022331	CABLE ASSEMBLY, M12 : 10M NETWORK CABLE, M12 MALE/FEMALE
250	3	4022347	CABLE ASSEMBLY, M12 : 3 M W/M12 MALE + DIN-A STYLE +DIODE
260	4	4022348	CABLE ASSEMBLY, M12 : 5 M W/M12 MALE + DIN-A STYLE +DIODE
270	19	4022349	CABLE ASSEMBLY, M12 : 7 M W/M12 MALE + DIN-A STYLE +DIODE
280	1	4022350	CABLE ASSEMBLY, M12 : 10 M W/M12 MALE + DIN-A STYLE +DIODE
290	1	5005004	CABLE, ADAPTER : CABLE ADAPTER TO M12 POWER AND COMMUNICATION
300	100	252236-1	TY-RAP : EX-LARGE STD 14.5"
310	200	F016578	TY-RAP : LARGE 7 5/16"
320	198	F018229	TY-RAP : SMALL TY-RAP 3 1/2"

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DRAWING TITLE/DESCRIPTION:
JUPITER MODULE INSTALLATION
Bill Of Material

MACHINE TYPE-MODEL:
DRONE TAMPER

E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER	DRAWN BY:
1	D. MILLER
NUMBER OF JUPITER SHEETS	REL. DATE:
0	04-30-2010
TOTAL NUMBER OF SHEETS	SIZE:
17	D
	SCALE:

HARSCO

RAIL

OMNEX CABLE			ADJ08400 OMNEX CABLE			CABLE, ADAPTER		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	GRAY	8232	-	-	-	-		
2	CAN-COMMUNICATION	#425452	-	-	-	-		
3	POWER	#425448	-	-	-	-		

AUXILIARY CAN COMMUNICATIONS			C-JMCAN2			CABLE ASSEMBLY, M12		
4029354			4022324			4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	-	-	SP6460:B-2	EXISTS	-	-		

AUXILIARY CAN COMMUNICATIONS			C-JMCAN2B			CABLE ASSEMBLY, M12		
4029354			4022329			4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	-	6508	-	-	C-JMCAN2B	-		
2	-	#425397	-	-	SP6540:IN	-		
3	-	6508	-	-	C-JMCAN2B	-		
4	-	#425394	-	-	SP6500:B-2	-		

LEFT RADAR COMMUNICATIONS			C-JMCANLR			CABLE ASSEMBLY, M12		
4029354			4022326			XXXXXXX		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	-	-	SP6540:B-2	EXISTS	-	-		

REMOTE CONTROL			C-JMCANRC			CABLE ASSEMBLY, M12		
4029354			4022329			4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	-	6492	-	-	C-JMCANRC	-		
2	-	#425452	-	-	ADJ08400:CAN-COMMUNICATION	-		
3	-	6492	-	-	C-JMCANRC	-		
4	-	#425393	-	-	SP6500:A-1	-		

RIGHT RADAR COMMUNICATIONS			C-JMCANRR			CABLE ASSEMBLY, M12		
4029354			4022326			XXXXXXX		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	-	-	CAN:04:CAN2	EXISTS	-	-		

JUPITER ENGINE OFF			J02100			CABLE ASSEMBLY, M12		
4029354			3401339			4029586		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	W-1	J02125	CAN:02:C1	EXISTS	KJ02125:7	-		
2	W-2	**NC**	CAN:02:C1	EXISTS	-	-		
3	W-3	J02127	CAN:02:C1	EXISTS	KJ02125:8	-		
4	W-4	**NC**	CAN:02:C1	EXISTS	-	-		

SPRING BRK BLOWDOWN			J02200			CABLE ASSEMBLY, M12		
4029354			3401332			4029586		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	W-1	4580	CAN:02:C2	EXISTS	TB-MCB:23	-		
2	W-2	**NC**	CAN:02:C2	EXISTS	-	-		
3	W-3	4594	CAN:02:C2	EXISTS	TB-MCB:8	-		
4	W-4	**NC**	CAN:02:C2	EXISTS	-	-		
5	W-5	**NC**	CAN:02:C2	EXISTS	-	-		

Note: INSTALL 1 EACH OF:
 
 

TO EACH END OF EACH CABLE.

LEFT RADAR POWER			J02300			CABLE ASSEMBLY, M12		
4029354			3401326			XXXXXXX		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		
1	BK	J02300	CAN:02:C3	EXISTS	ADJ02300:POWER	EXISTS		

RIGHT RADAR POWER			J02400			CABLE ASSEMBLY, M12		
4029354			3401326			XXXXXXX		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.		

<tbl_r cells="3" ix="2" maxcspan

LEFT SLIDER POSITION
4029354

J04500 3401336	CABLE ASSEMBLY, M12 2019347
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04500 CAN:04:C5	EXISTS RJ04500:M12 EXISTS

RIGHT SLIDER POSITION
4029354

J04600 3401326	CABLE ASSEMBLY, M12 2019347
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04600 CAN:04:C6	EXISTS RJ04600:M12 EXISTS

LEFT WORKHEAD DEPTH
4029354

J04700 3401327	CABLE ASSEMBLY, M12 2019306
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04700 CAN:04:C7	EXISTS PJ04750:MAL EXISTS

LEFT WORKHEAD DEPTH
4029354

J04700B 3401326	CABLE ASSEMBLY, M12 2019347
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04700B PJ04750:FEM	EXISTS PJ04750:MAL EXISTS

LEFT WORKHEAD DEPTH
4029354

J04700C 3401324	CABLE ASSEMBLY, M12 2019306
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04700C PJ04750:FEM	EXISTS RJ04700 EXISTS

RIGHT WORKHEAD DEPTH
4029354

J04800 3401327	CABLE ASSEMBLY, M12 2019306
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04800 CAN:04:C8	EXISTS PJ04850:MAL EXISTS

RIGHT WORKHEAD DEPTH
4029354

J04800B 3401326	CABLE ASSEMBLY, M12 2019347
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04800B PJ04850:FEM	EXISTS PJ04850:MAL EXISTS

RIGHT WORKHEAD DEPTH
4029354

J04800C 3401324	CABLE ASSEMBLY, M12 2019306
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J04800C PJ04850:FEM	EXISTS RJ04800 EXISTS

BRAKE PRESSURE SW.
4029354

J05100 3401340	CABLE ASSEMBLY, M12 4029596
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 W-1 J05108 CAN:05:C1	EXISTS SJ05100:C -
2 W-2 **NC** CAN:05:C1	EXISTS - -
3 W-3 **NC** CAN:05:C1	EXISTS - -
4 W-4 J05110 CAN:05:C1	EXISTS SJ05100:NO -

SPRING BRAKE PRESSURE SWITCH
4029354

J05200 3401340	CABLE ASSEMBLY, M12 4029596
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 W-1 J05208 CAN:05:C2	EXISTS SJ05200:C -
2 W-2 J05210 CAN:05:C2	EXISTS SJ05200:NC -
3 W-3 **NC** CAN:05:C2	EXISTS - -
4 W-4 J05200 CAN:05:C2	EXISTS SJ05200:NO -

LEFT VIBRATOR VENT
4029354

J05300 4022349	CABLE ASSEMBLY, M12 4016715
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J05300 CAN:05:C3	EXISTS LJ05300 EXISTS

RIGHT VIBRATOR VENT
4029354

J05400 4022349	CABLE ASSEMBLY, M12 4016715
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J05400 CAN:05:C4	EXISTS LJ05400 EXISTS

SUSPENSION LOCKOUT
4029354

J05500 4022349	CABLE ASSEMBLY, M12 4016715
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J05500 CAN:05:C5	EXISTS LJ05500 EXISTS

TRANSMISSION VALVE 1
4029354

J05600 4022349	CABLE ASSEMBLY, M12 4029596
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J05600 CAN:05:C6	EXISTS LJ05600:M12 EXISTS

TRANSMISSION VALVE 2
4029354

J05700 4022349	CABLE ASSEMBLY, M12 4029596
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J05700 CAN:05:C7	EXISTS LJ05700:M12 EXISTS

WORKHEAD RELEASE
4029354

J05800 4022349	CABLE ASSEMBLY, M12 4029596
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J05800 CAN:05:C8	EXISTS LJ05800:M12 EXISTS

P1 COMPENSATOR PRESS
4029354

J06100 4022349	CABLE ASSEMBLY, M12 2019238
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J06100 CAN:06:C1	EXISTS LJ06100 EXISTS

P2 COMPENSATOR PRESS
4029354

J06200 4022349	CABLE ASSEMBLY, M12 2019238
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J06200 CAN:06:C2	EXISTS LJ06200 EXISTS

OIL COOLER FAN
4029354

J06300 4022349	CABLE ASSEMBLY, M12 4027891
RUN COLOR	WIRE #
FROM TERM NO.	TO TERM NO.
1 BK J06300 CAN:06:C3	EXISTS L06300 EXISTS

FRONT HORN VALVE
4029354

J06400<br

FRONT ELECTRIC HORN		J07400 3401339		CABLE ASSEMBLY, M12 4029836		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J07417	CAN:07:C4	EXISTS	LSJ07400:+	-
2	W-2	**NC**	CAN:07:C4	EXISTS	-	-
3	W-3	**NC**	CAN:07:C4	EXISTS	-	-
4	W-4	**NC**	CAN:07:C4	EXISTS	-	-

LIGHT BAR BRAKE LIGHTS		J07500 3401328		CABLE ASSEMBLY, M12 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J07500	CAN:07:C5	EXISTS	SPJ07500:IN	EXISTS

LEFT LT BAR BRAKE LIGHT		J07500A 3401339		CABLE ASSEMBLY, M12 4029836		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J07492	SPJ07500:A-1	EXISTS	JJ07500A:RD	-
2	W-2	**NC**	SPJ07500:A-1	EXISTS	-	-
3	W-3	J07475	SPJ07500:A-1	EXISTS	JJ07500A:WH	-
4	W-4	**NC**	SPJ07500:A-1	EXISTS	-	-

RIGHT REAR BRAKE LIGHT		J07500B 3401339		CABLE ASSEMBLY, M12 4029836		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J07548	SPJ07500:B-2	EXISTS	JJ07500B:RD	-
2	W-2	**NC**	SPJ07500:B-2	EXISTS	-	-
3	W-3	J02558	SPJ07500:B-2	EXISTS	JJ07500B:WH	-
4	W-4	**NC**	SPJ07500:B-2	EXISTS	-	-

CASE DRAIN FILTERS		J07600 3401327		CABLE ASSEMBLY, M12 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J07600	CAN:07:C6	EXISTS	SPJ7600:IN	EXISTS

CASE DRAIN FILTERS		J07700 3401327		CABLE ASSEMBLY, M12 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J07700	CAN:07:C7	EXISTS	SPJ7700:IN	EXISTS

CASE DRAIN FILTERS		J07800 3401326		CABLE ASSEMBLY, M12 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J07800	CAN:07:C8	EXISTS	SPJ7800:IN	EXISTS

RIGHT REAR RUNNING LIGHT		J08100 3401339		CABLE ASSEMBLY, M12 4029836		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J08117	CAN:08:C1	EXISTS	LTJ08100:+	-
2	W-2	**NC**	CAN:08:C1	EXISTS	-	-
3	W-3	J08119	CAN:08:C1	EXISTS	LTJ08100	-
4	W-4	**NC**	CAN:08:C1	EXISTS	-	-

WORK LT. LEFT FRONT		J08200 3401339		CABLE ASSEMBLY, M12 4029836		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J07217	CAN:08:C2	EXISTS	LTJ08200:+	-
2	W-2	**NC**	CAN:08:C2	EXISTS	-	-
3	W-3	J07219	CAN:08:C2	EXISTS	LTJ08200	-
4	W-4	**NC**	CAN:08:C2	EXISTS	-	-

WORK LT. LEFT REAR		J08300 3401339		CABLE ASSEMBLY, M12 4029836		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J07317	CAN:08:C3	EXISTS	LTJ08300:+	-
2	W-2	**NC**	CAN:08:C3	EXISTS	-	-
3	W-3	J07319	CAN:08:C3	EXISTS	LTJ08300	-
4	W-4	**NC**	CAN:08:C3	EXISTS	-	-

OMINEX RECEIVER POWER		J08400 3401326		CABLE ASSEMBLY, M12 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J08400	CAN:08:C4	EXISTS	ADJ08400:POWER	EXISTS

TRAVEL TRACTION FWD		J08500 4022347		CABLE ASSEMBLY, M12 4016715		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J08500	CAN:08:C5	EXISTS	LJ08500:A	EXISTS

TRAVEL TRACTION REV		J08600 4022347		CABLE ASSEMBLY, M12 4016715		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.</th

HYD. LEVEL TRANSMITTER J10600 CABLE ASSEMBLY, M12
4029354 3401328 4027891

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J10600	CAN:10:C6	EXISTS	SJ10600:M12	EXISTS

HYD. LEVEL TRANSMITTER J10700 CABLE ASSEMBLY, M12
4029354 3401328 4027891

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J10700	CAN:10:C7	EXISTS	CAJ10700:M12	EXISTS

ENGINE ECM/OMINEX REC. J10CAN2 CABLE ASSEMBLY, M12
4029354 4022324 4029354

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	-	-	CAN:10:CAN2	EXISTS	-	-

LOW GEAR AND NEUTRAL J11100 CABLE ASSEMBLY, M12
4029354 3401327 2019161

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J11100	CAN:11:C1	EXISTS	SPJ11100:IN	EXISTS

SPEED SENSOR AND HIGH GEAR J11200 CABLE ASSEMBLY, M12
4029354 3401327 2019161

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J11200	CAN:11:C2	EXISTS	SPJ11200:IN	EXISTS

GEAR BOX J11200A CABLE ASSEMBLY, M12
4029354 3401325 2019160

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J11200A	SPJ11200:A-1	EXISTS	SJ11200A:M12	EXISTS

TRACTION MOTOR J11300 CABLE ASSEMBLY, M12
4029354 4022349 2019161

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J11300	CAN:11:C3	EXISTS	LJ11300:1	EXISTS

LEFT REAR ESTOP J11400 CABLE ASSEMBLY, M12
4029354 3401325 4029351

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J11400	CAN:11:C4	EXISTS	SJ11400:JUPITER	EXISTS

RIGHT REAR ESTOP J11500 CABLE ASSEMBLY, M12
4029354 3401336 4029351

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J11500	CAN:11:C5	EXISTS	SJ11500:JUPITER	EXISTS

REAR MOTION ALARM J11600 CABLE ASSEMBLY, M12
4029354 3401332 4029351

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J11608	CAN:11:C6	EXISTS	LSJ11600:RD/WH	-
2	W-2	**NC**	CAN:11:C6	EXISTS	-	-
3	W-3	J11644	CAN:11:C6	EXISTS	LSJ11600:BK	-
4	W-4	**NC**	CAN:11:C6	EXISTS	-	-
5	W-5	**NC**	CAN:11:C6	EXISTS	-	-

REAR BRAKE LIGHTS? J11700 CABLE ASSEMBLY, M12
4029354 3401324 4029354

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	J11700	CAN:11:C7	EXISTS	SPJ11700:IN	EXISTS

LEFT REAR BRAKE LIGHT J11700A CABLE ASSEMBLY, M12
4029354 3401339 4029836

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J11692	SPJ11700:A-1	EXISTS	JJ11700A:RD	-
2	W-2	**NC**	SPJ11700:A-1	EXISTS	-	-
3	W-3	J11694	SPJ11700:A-1	EXISTS	JJ11700A:WH	-
4	W-4	**NC**	SPJ11700:A-1	EXISTS	-	-

RIGHT REAR BRAKE LIGHT J11700B CABLE ASSEMBLY, M12
4029354 3401339 4029836

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J11746	SPJ11700:B-2	EXISTS	JJ11700B:RD	-
2	W-2	**NC**	SPJ11700:B-2	EXISTS	-	-
3	W-3	J11758	SPJ11700:B-2	EXISTS	JJ11700B:WH	-
4	W-4	**NC**	SPJ11700:B-2	EXISTS	-	-

WARM UP J11800 CABLE ASSEMBLY, M12
4029354 3401339 4029579

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	4645	CAN:11:C8	EXISTS	K4620:1	-
2	W-2	**NC**	CAN:11:C8	EXISTS	-	-
3	W-3	**NC**	CAN:11:C8	EXISTS	-	-
4	W-4	**NC**	CAN:11:C8	EXISTS	-	-

VIBRATOR PUMP P3 FILTER MONITOR J12100 CABLE ASSEMBLY, M12
4029354 3401332 4016715

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J12100	CAN:12:C1	EXISTS	SJ12100:2(A)	-
2	W-2	J12117	CAN:12:C1	EXISTS	SJ12100:3(C)	-
3	W-3	**NC**	CAN:12:C1	EXISTS	-	-
4	W-4	J12150	CAN:12:C1	EXISTS	SJ12100:1(B)	-
5	W-5	**NC**	CAN:12:C1	EXISTS	-	-

VIBRATOR PUMP P4 FILTER MONITOR J12200 CABLE ASSEMBLY, M12
4029354 3401332 4016715

RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	W-1	J12200	CAN:12:C2	EXISTS	SJ12200:2(A)	-
2	W-2	J12217	CAN:12:C2	EXISTS	SJ12200:3(C)	-
3	W-3	**NC**	CAN:12:C2	EXISTS	-	

CAN:04 TO CAN:05 4029354	NET4-5 4022331	CABLE ASSEMBLY, M 40293				
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	-	-	CAN:04:C-OUT	EXISTS	-	-

CAN:05 TO CAN:06 4029354			NET5-6 4022324	CABLE ASSEMBLY, M 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	-	-	CAN:05:C-OUT	EXISTS	-	-

CAN:06 TO CAN:07 4029354			NET6-7 4022328	CABLE ASSEMBLY, M 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	-	-	CAN:06:C-OUT	EXISTS	-	-

CAN:7 TO CAN:8 4029354			NET7-8 4022328	CABLE ASSEMBLY, M 40293		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	-	-	CAN:07:C-OUT	EXISTS	-	-

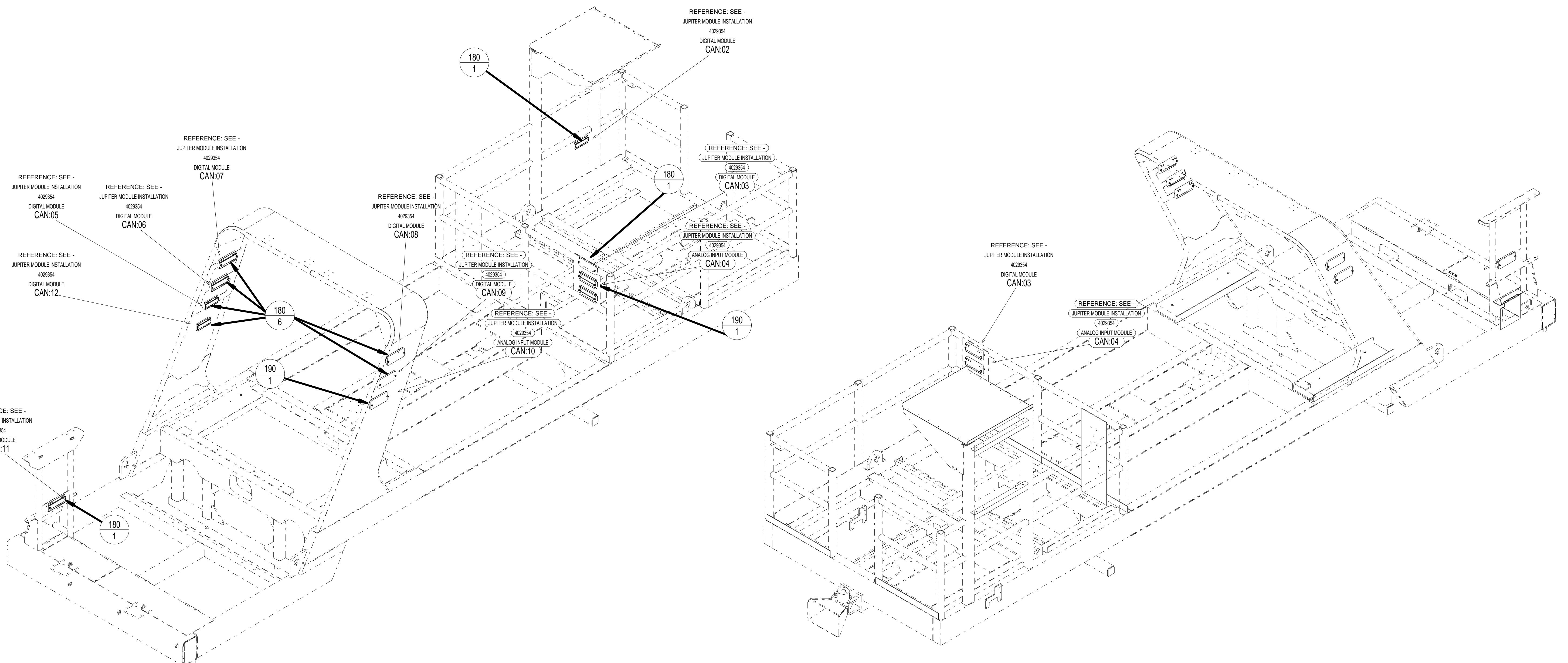
CAN:8 TO CAN:9 4029354			NET8-9 4022324	CABLE ASSEMBLY, M 4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	-	-	CAN:08:C-OUT	EXISTS	-	-

CAN:9 TO CAN:10 4029354			NET9-10 4022324	CABLE ASSEMBLY, M 40293		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	-	-	CAN:09:C-QUIT	EXISTS	-	-

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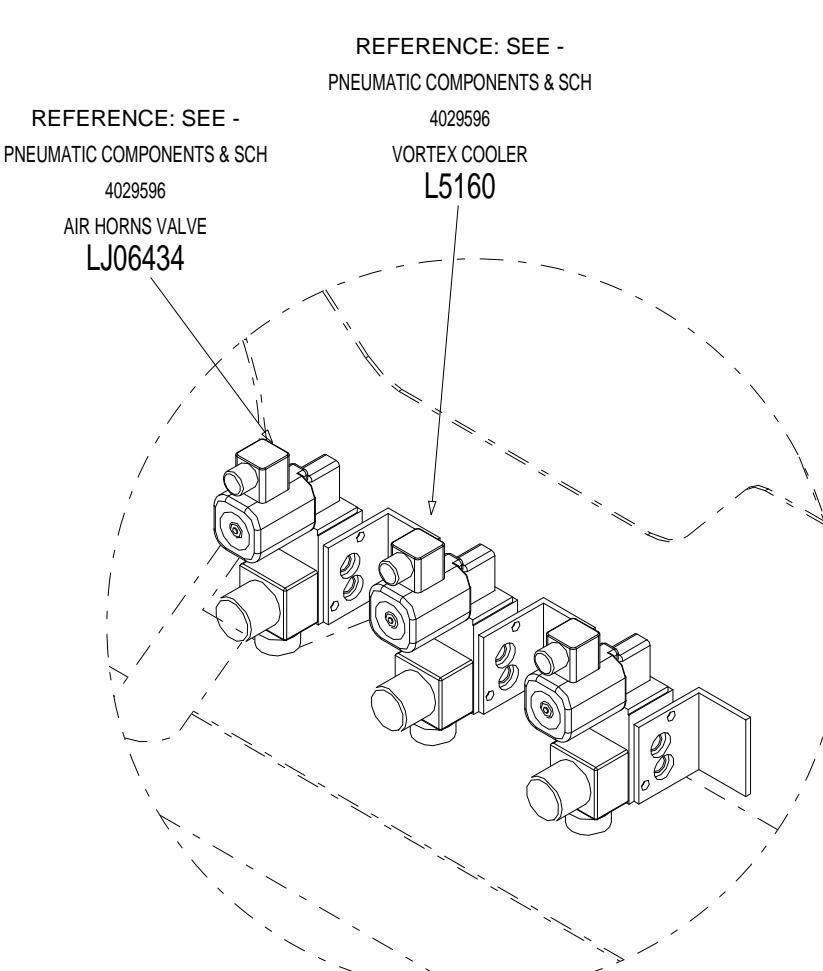
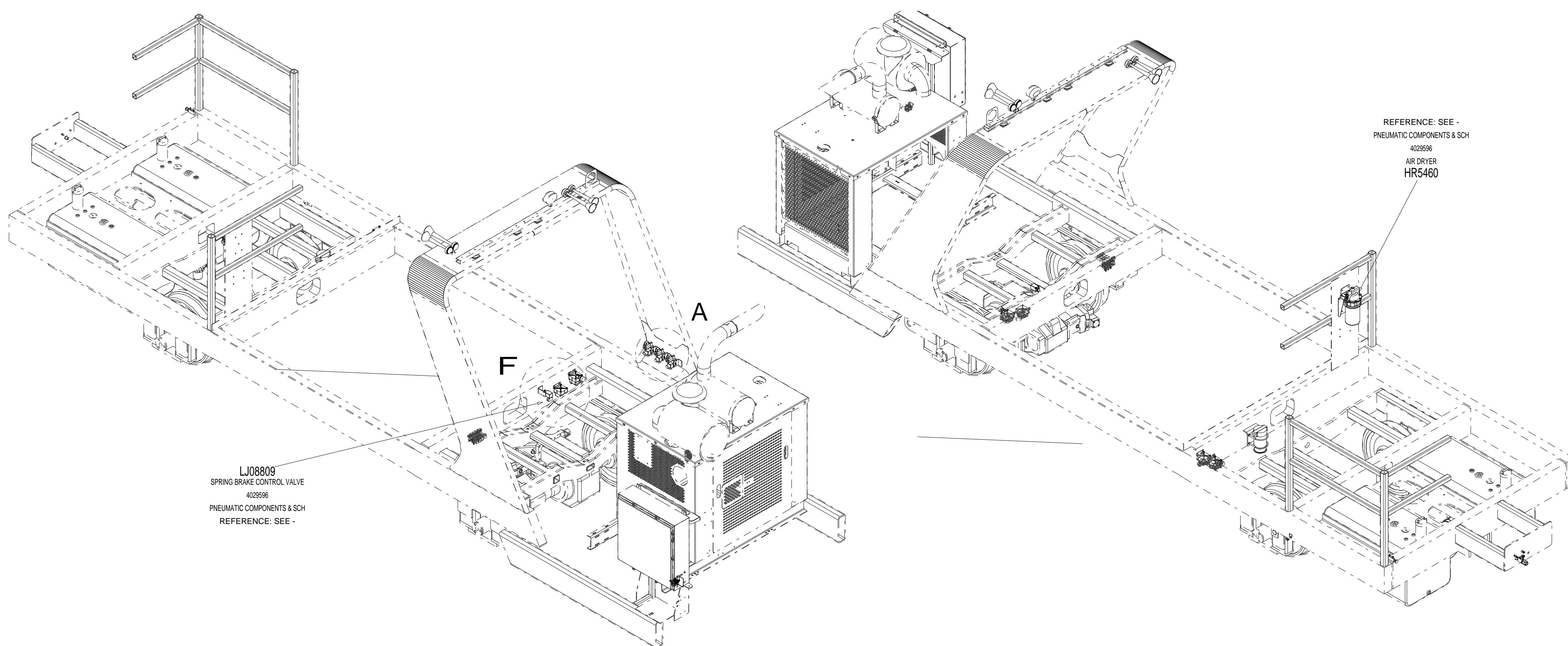
D AND OW OR RTY	CHANGE #	REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: JUPITER MODULE INSTALLATION	SHEET NUMBER 6	DRAWN BY: D. MILLER	HARSCO RAIL	
	ECN-105500	A NEW RELEASE	ACM	04-30-2010	Cable Chart	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010		
	EC500286	B AS BUILT RELEASE	ACM	01-21-2011					
					MACHINE TYPE-MODEL: DRONE TAMPER	SIZE: D	E3 DRAWING		
					E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS 17	SCALE: 1:1		



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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL	
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	JUPITER MODULE INSTALLATION	7	D. MILLER		
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011	Device Locations	NUMBER OF JUPITER SHEETS	REL. DATE: 04-30-2010		
					MACHINE TYPE-MODEL: DRONE TAMPER				
					E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS	SIZE: D	SCALE: 17	
							E3 DRAWING	4029354	



DETAIL A

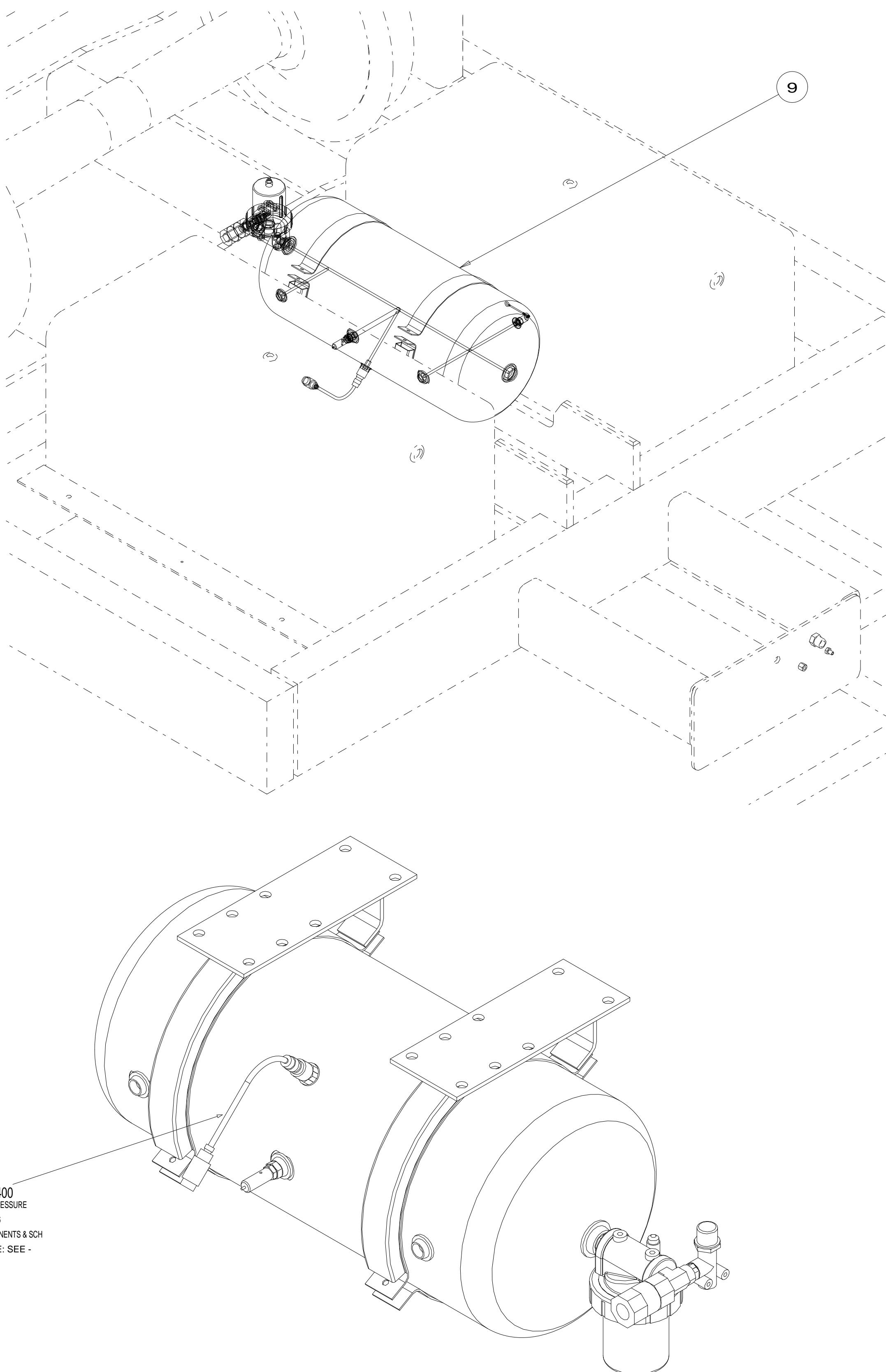


DETAIL F

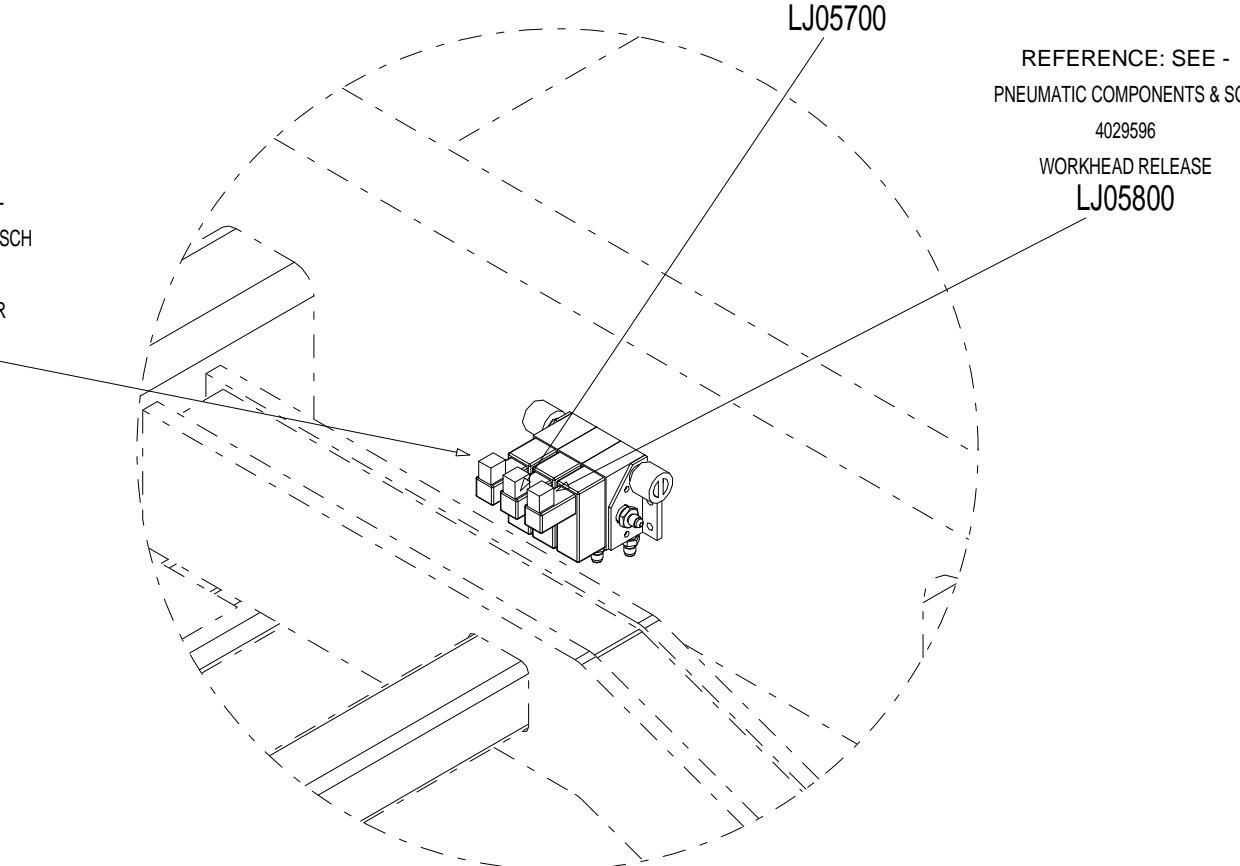
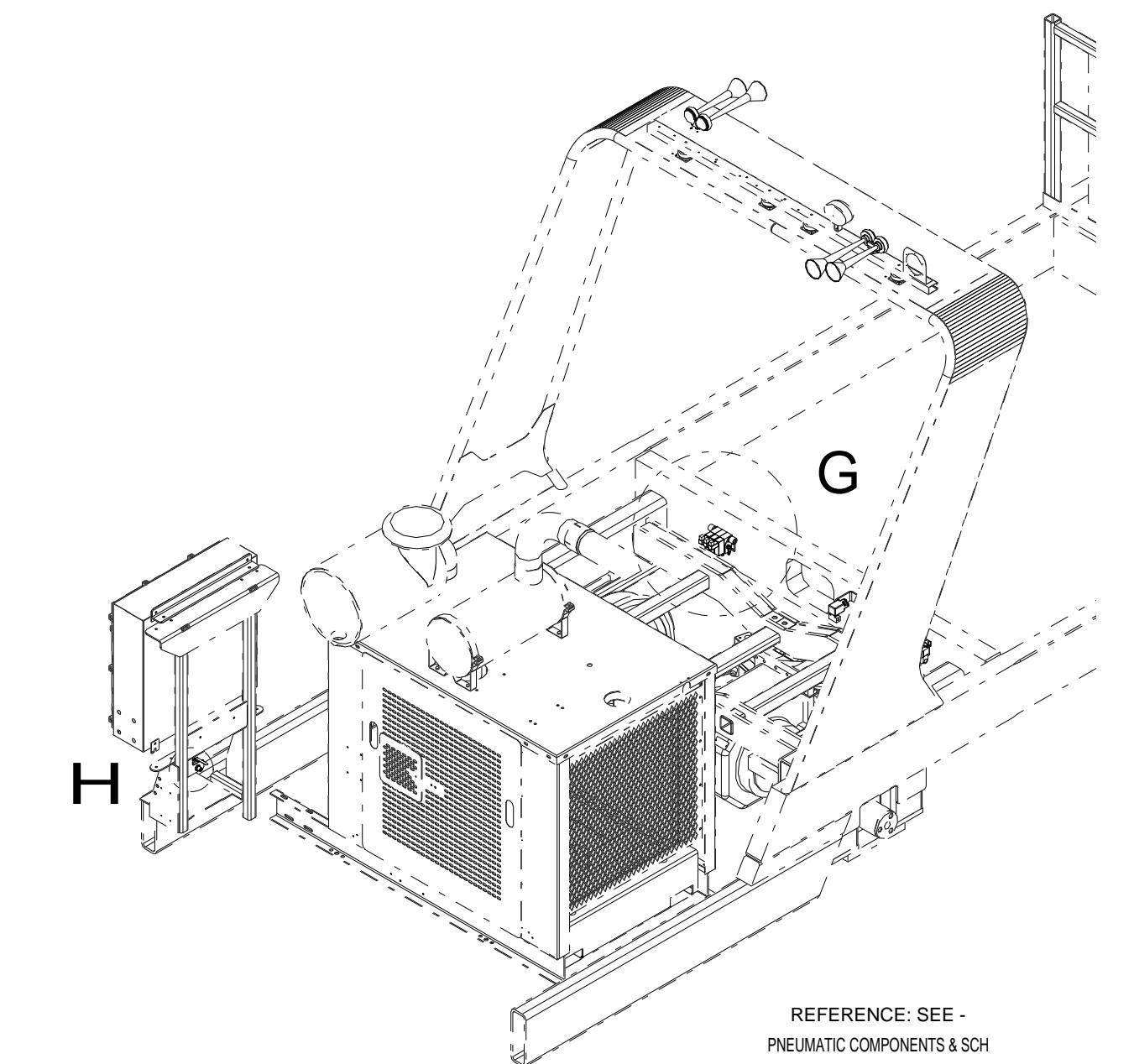
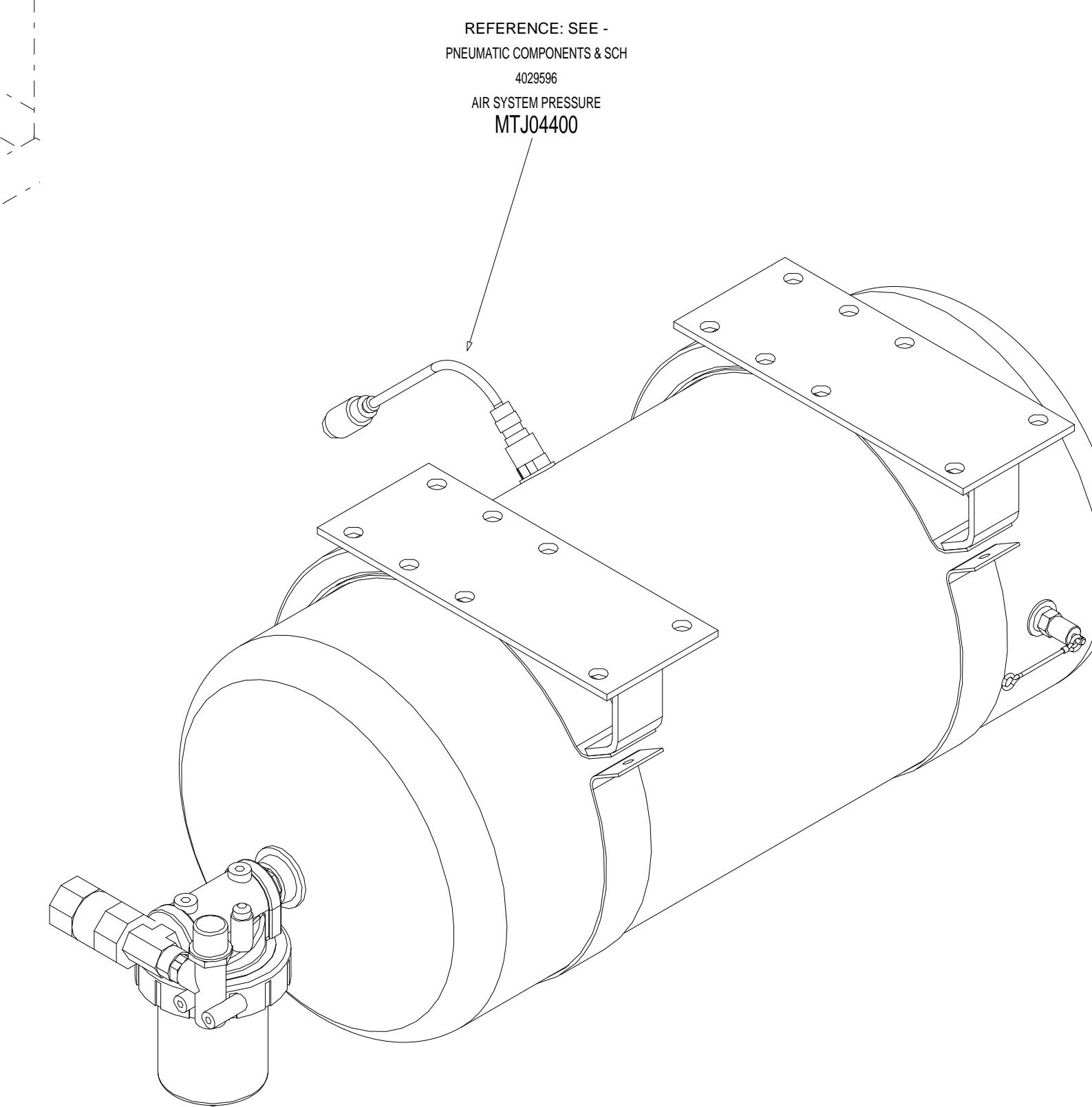
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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: JUPITER MODULE INSTALLATION	SHEET NUMBER 8	DRAWN BY: D. MILLER	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	Device Locations MACHINE TYPE-MODEL: DRONE TAMPER E3 PROJECT FILE NAME: DRONE TAMPER 3	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010	HARSCO RAIL
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011			SIZE: D	
							E3 DRAWING	
							SCALE: 17	

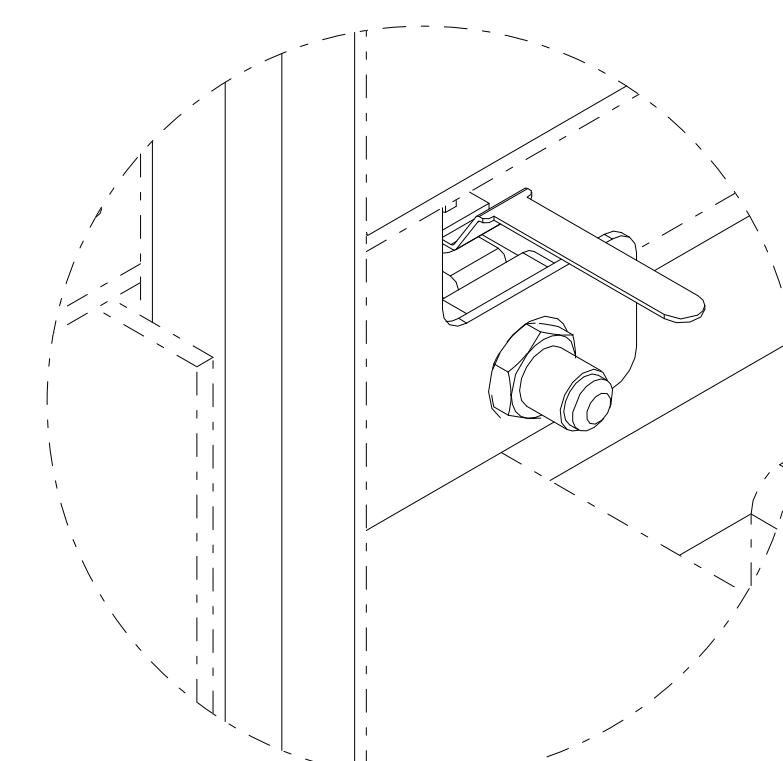
4029354



AIR RECIEVER TANK INSTALLATION



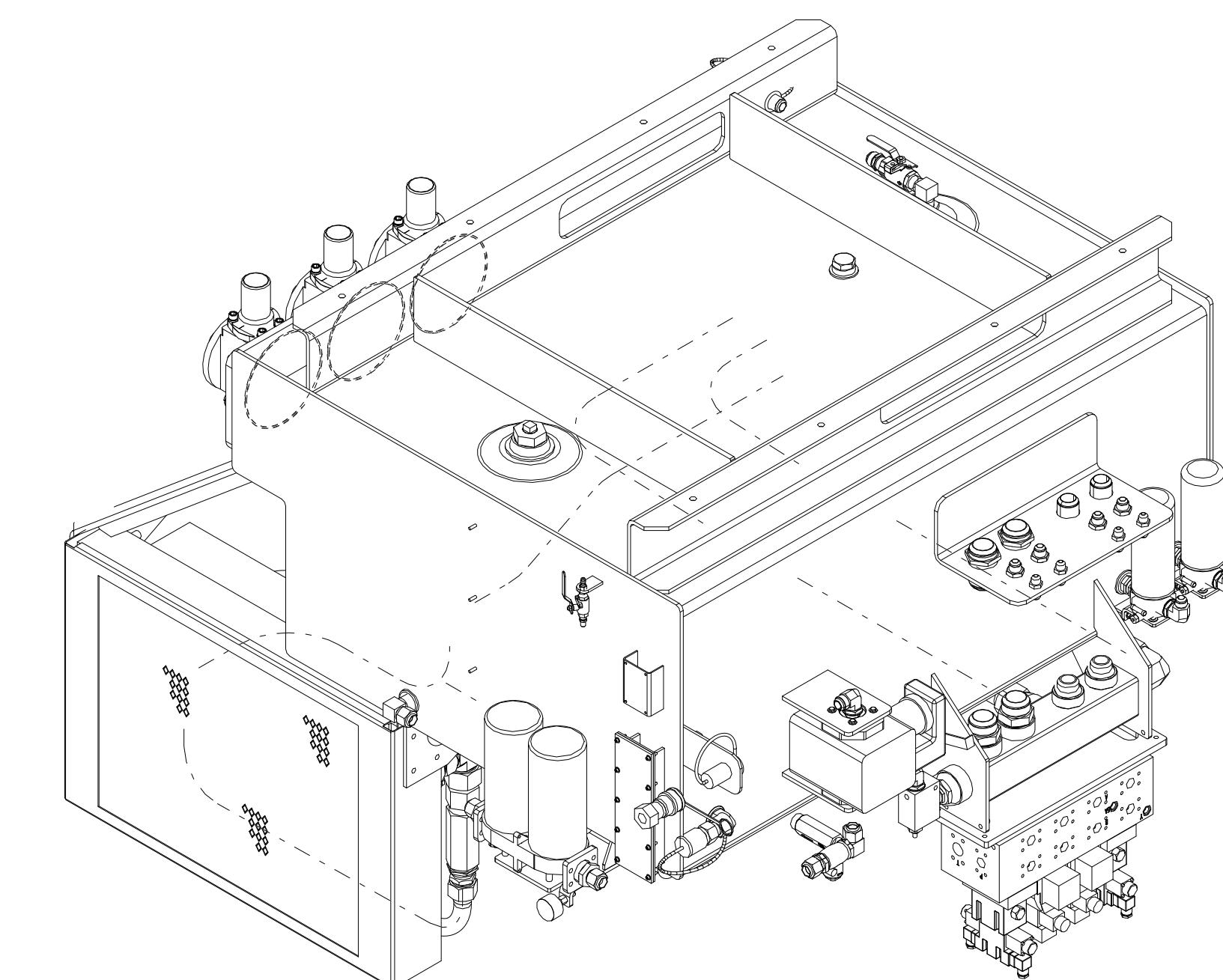
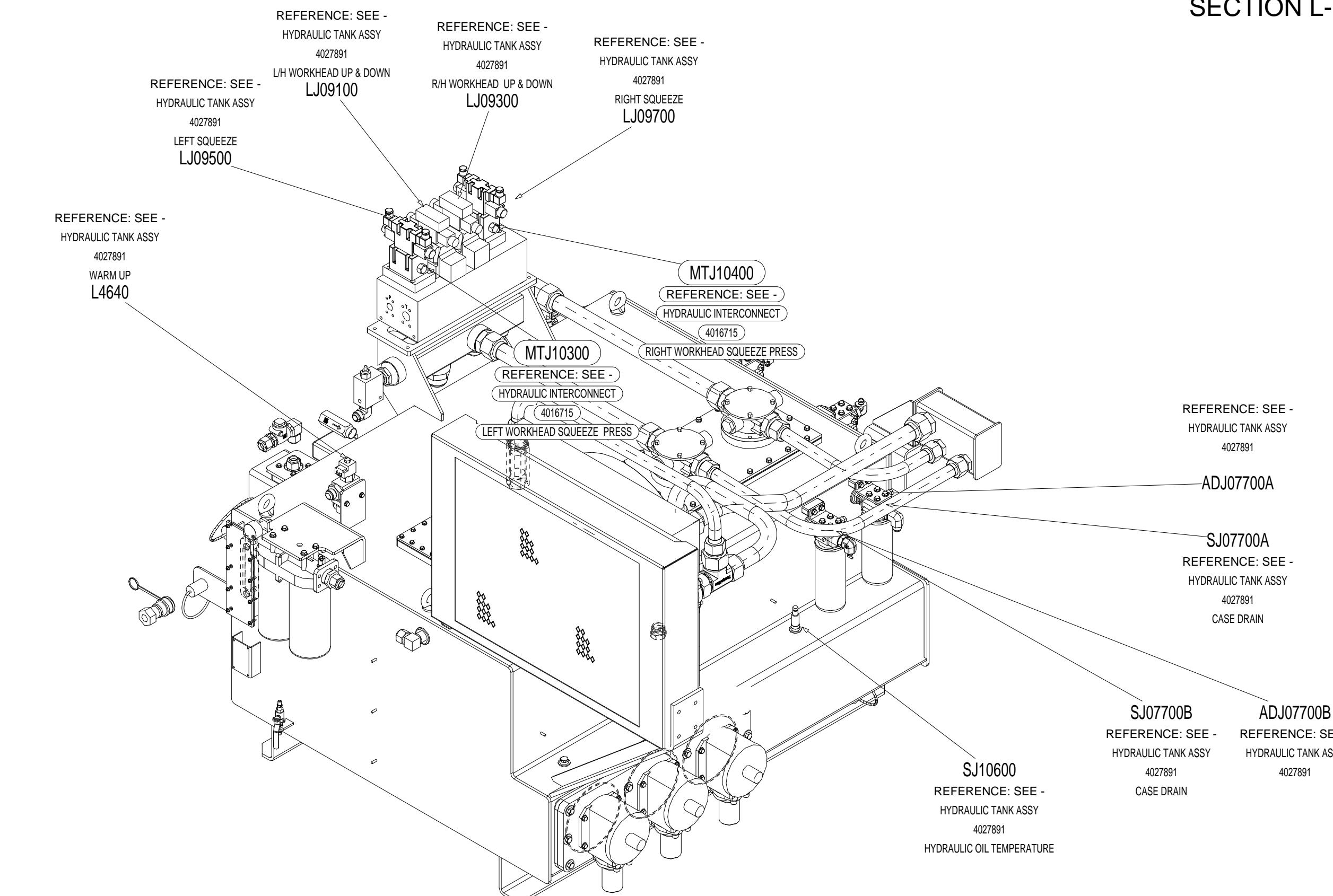
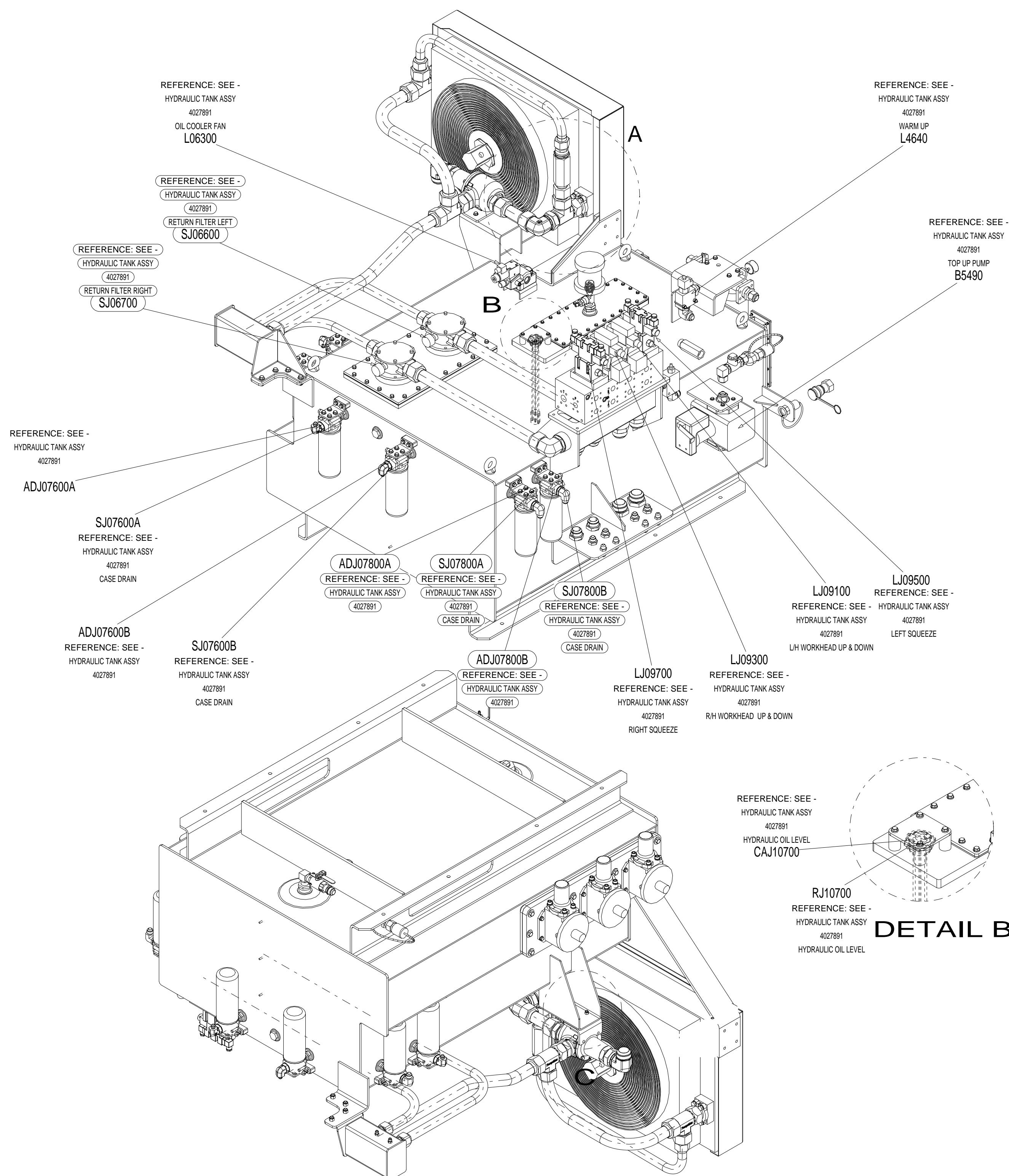
DETAIL G



DETAIL H

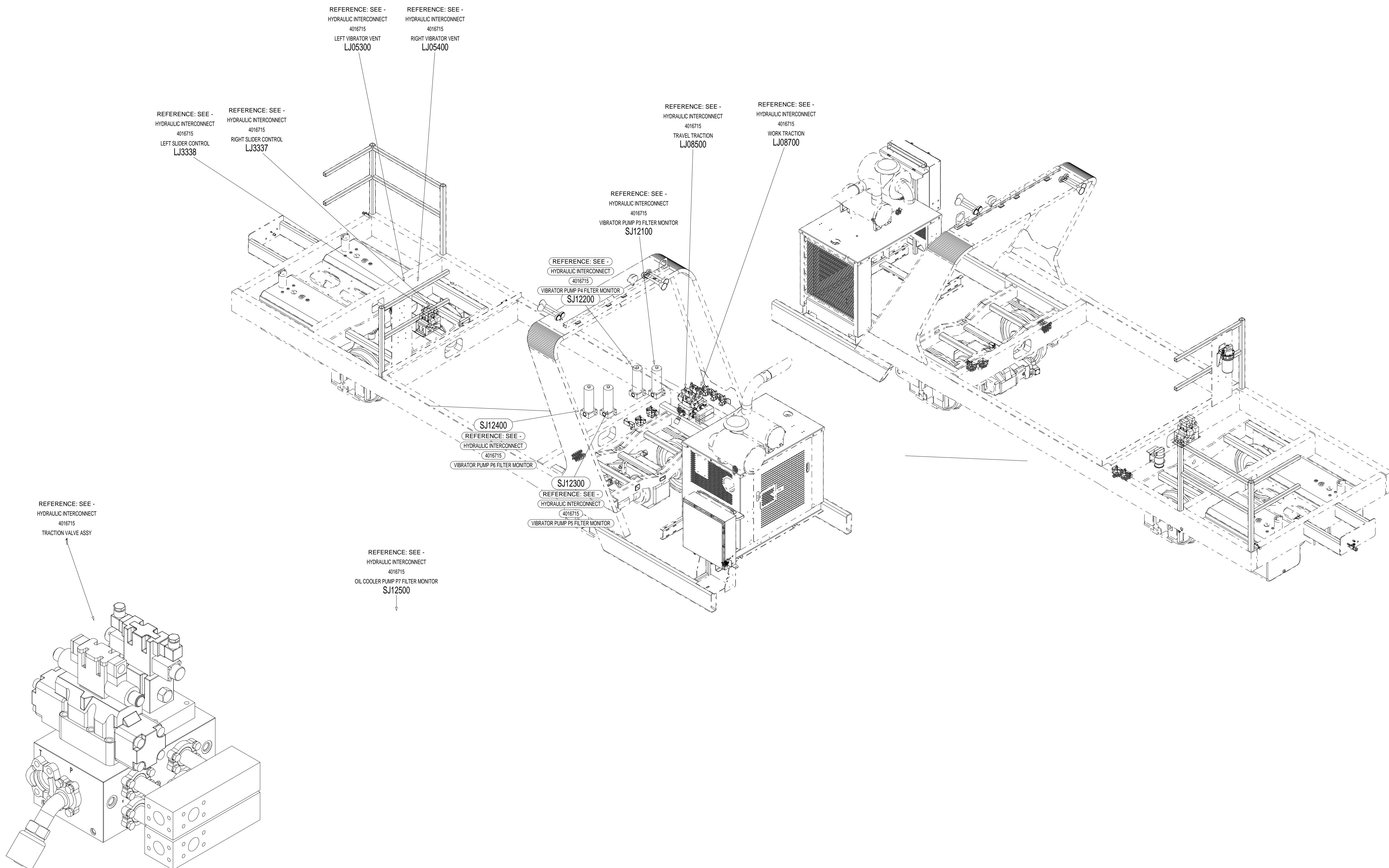
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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: JUPITER MODULE INSTALLATION	SHEET NUMBER 9	DRAWN BY: D. MILLER	HARSCO RAIL	
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	Device Locations	TOTAL NUMBER OF SHEETS 17	SCALE: 4029354		
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011					



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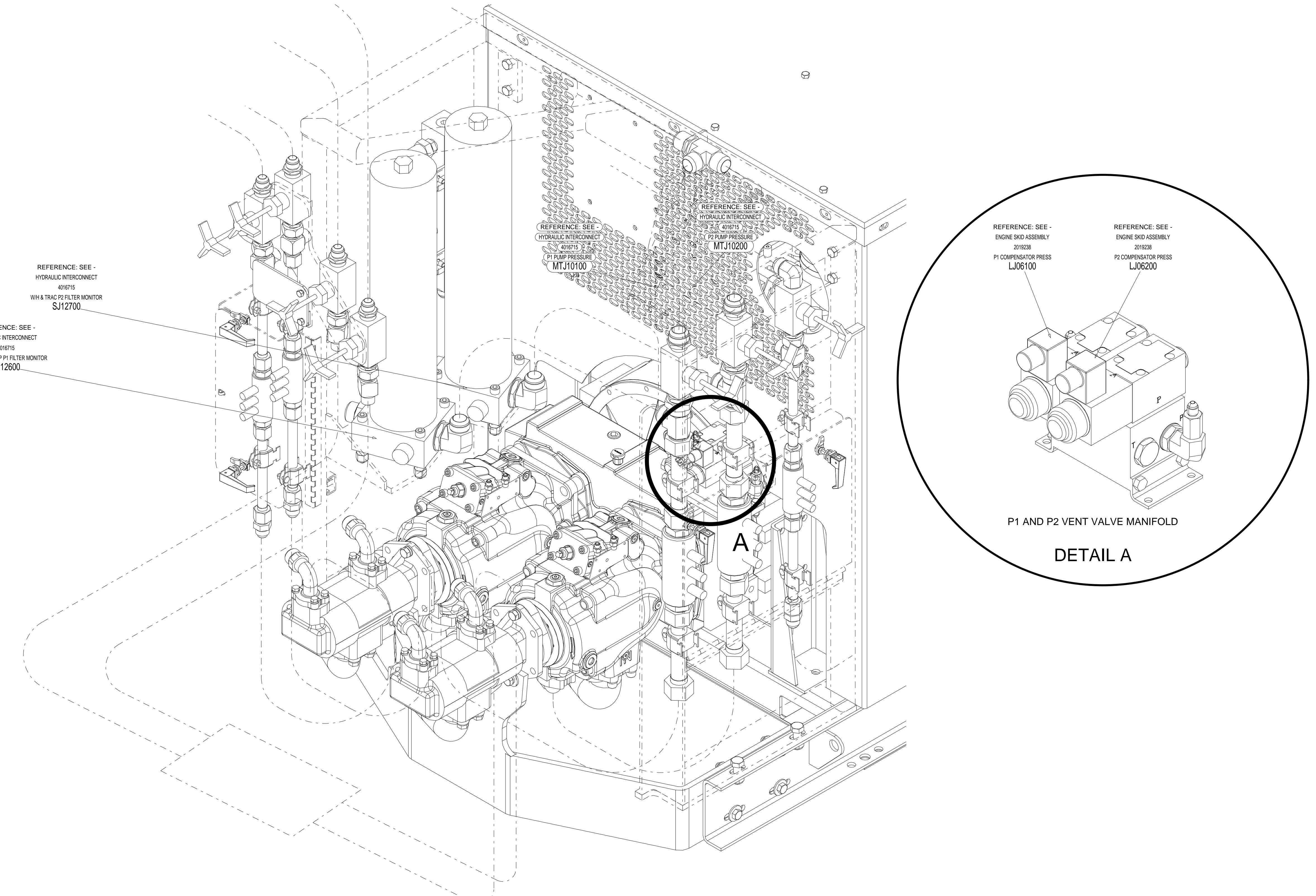
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ECN-105500	A	NEW RELEASE	ACM	04-30-2010	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010	SIZE: D	E3 DRAWING 4029354
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011				
E3 PROJECT FILE NAME:	DRONE TAMPER 3				TOTAL NUMBER OF SHEETS 17	SCALE:		



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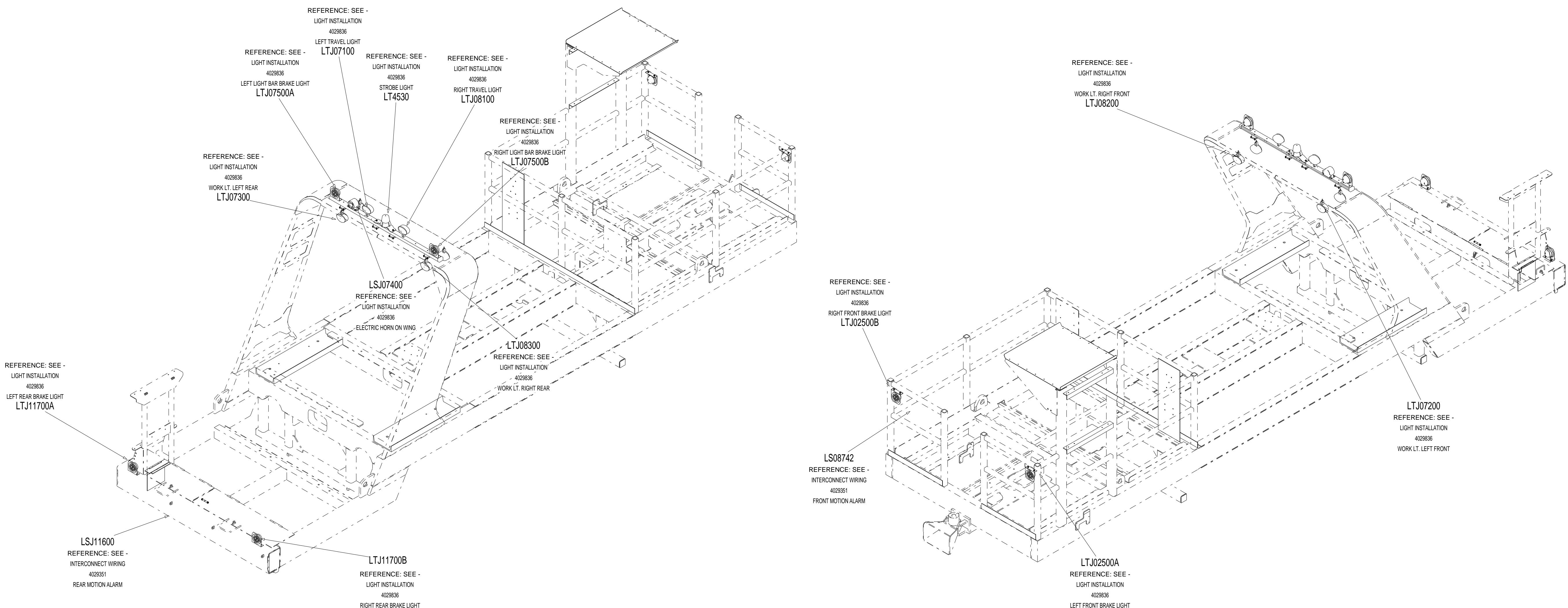
CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: JUPITER MODULE INSTALLATION Device Locations	SHEET NUMBER 11	DRAWN BY: D. MILLER	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	MACHINE TYPE-MODEL: DRONE TAMPER E3 PROJECT FILE NAME: DRONE TAMPER 3	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010	HARSCO RAIL
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011			SIZE: D	
							E3 DRAWING	
							SCALE: 17	

4029354



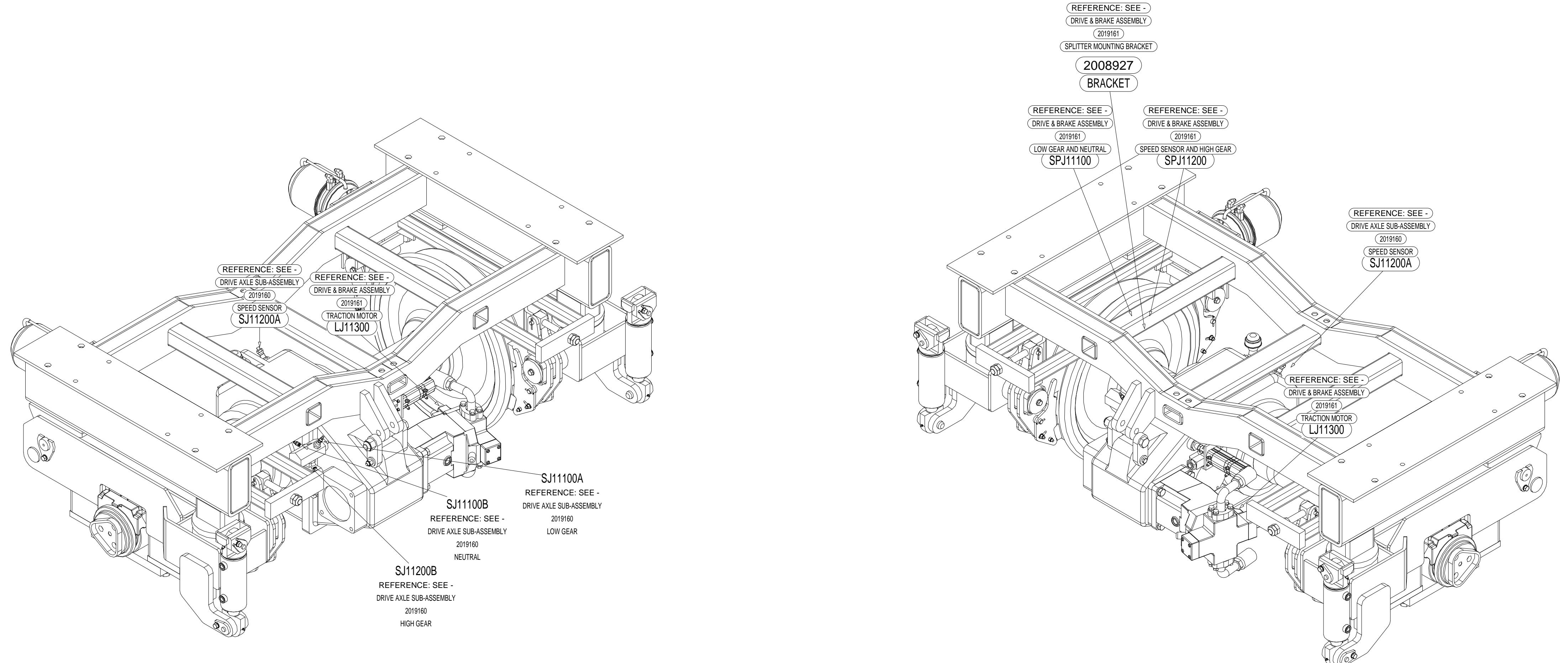
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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: JUPITER MODULE INSTALLATION Device Locations	SHEET NUMBER 12	DRAWN BY: D. MILLER	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010	HARSCO RAIL
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011			SIZE: D	
							E3 DRAWING	
						TOTAL NUMBER OF SHEETS 17	SCALE: 4029354	



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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:	HARSCO RAIL	
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	JUPITER MODULE INSTALLATION Device Locations MACHINE TYPE-MODEL: DRONE TAMPER E3 PROJECT FILE NAME: DRONE TAMPER 3	13	D. MILLER	HARSCO RAIL	
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011		0	SIZE: D		
						17	E3 DRAWING		
							SCALE: 4029354		



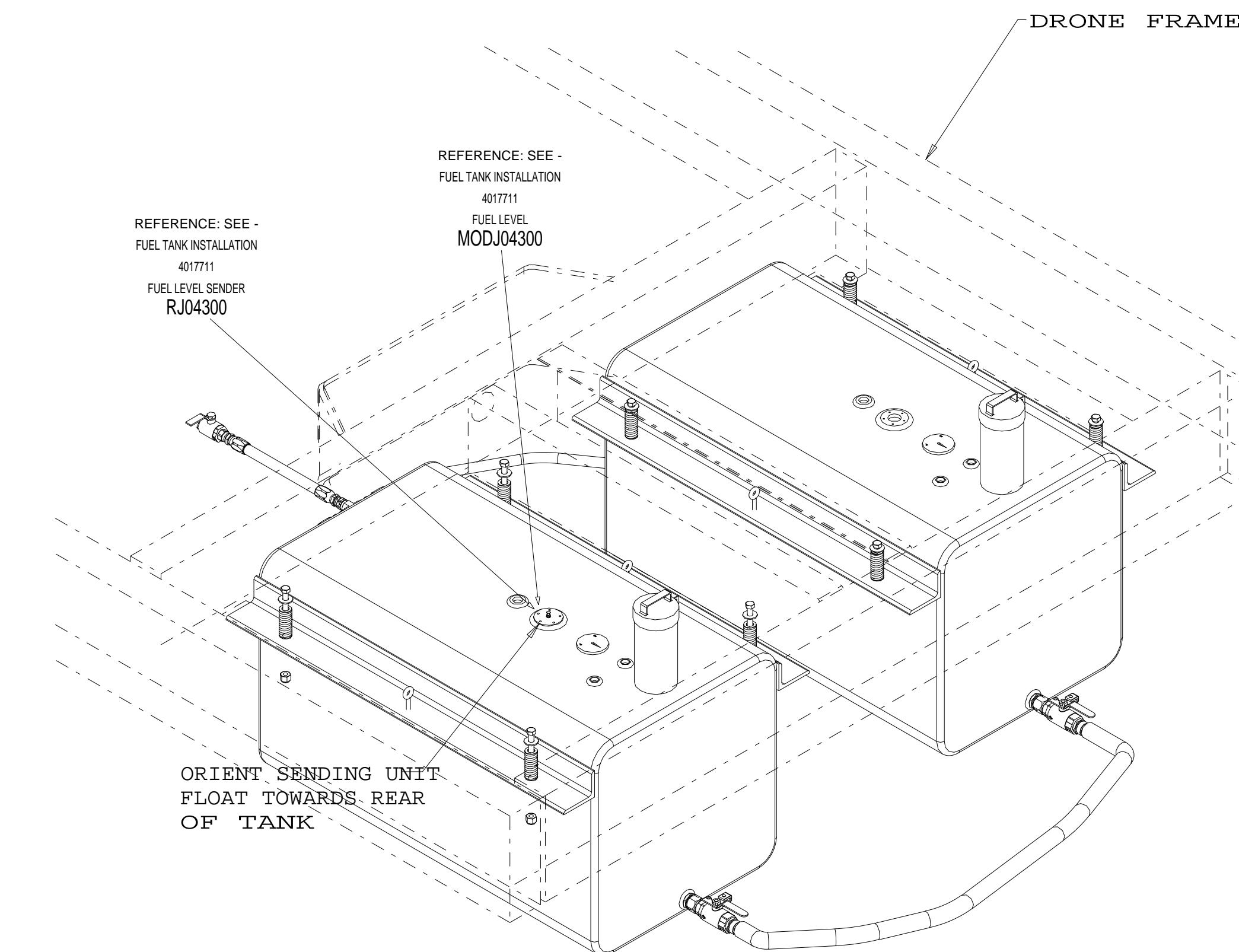
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DRAWING TITLE/DESCRIPTION:
JUPITER MODULE INSTALLATION
Device Locations
MACHINE TYPE-MODEL:
DRONE TAMPER
E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER 14	DRAWN BY: D. MILLER
NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2011 SIZE: D
TOTAL NUMBER OF SHEETS 17	SCALE:

HARSCO

RAIL



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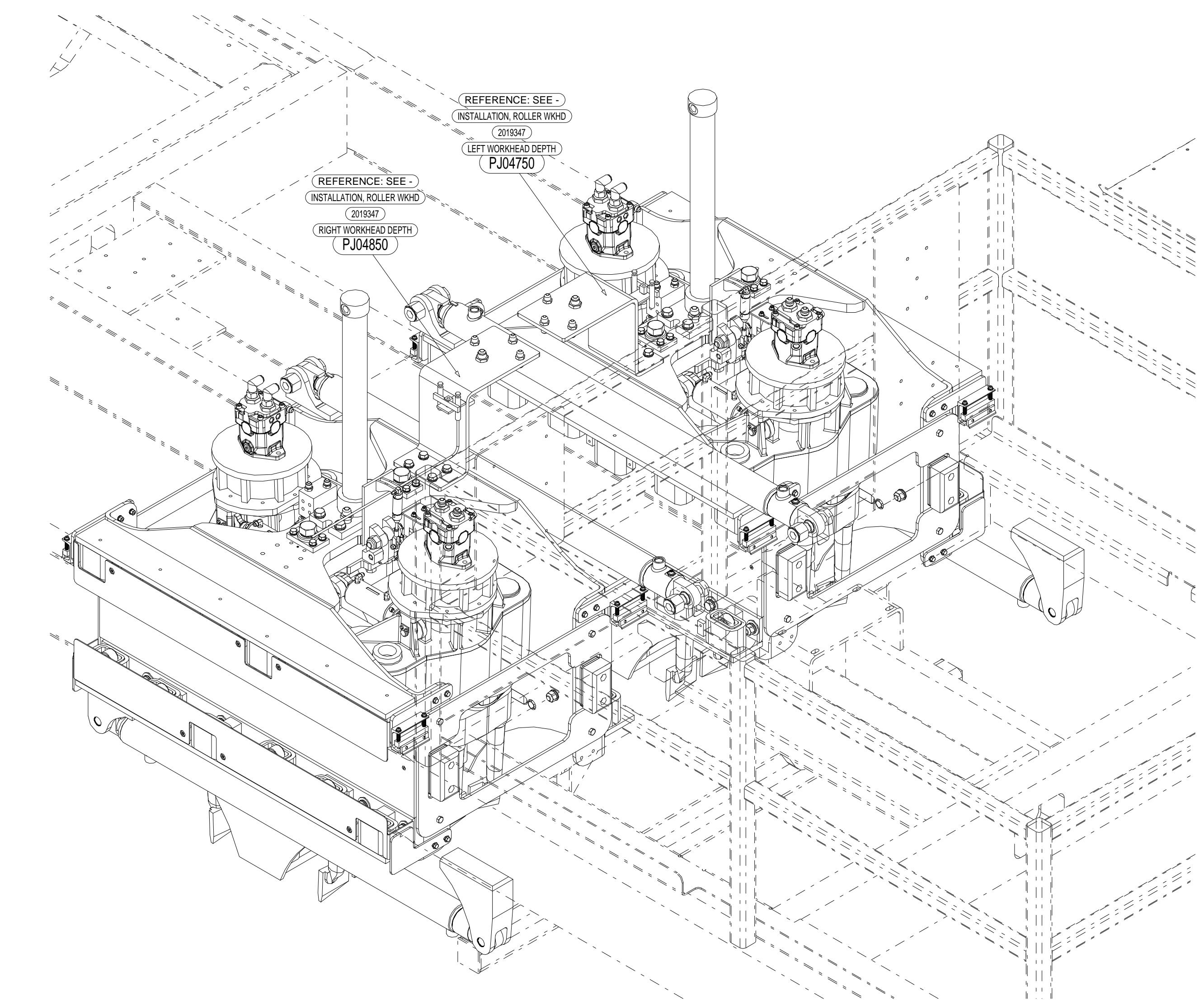
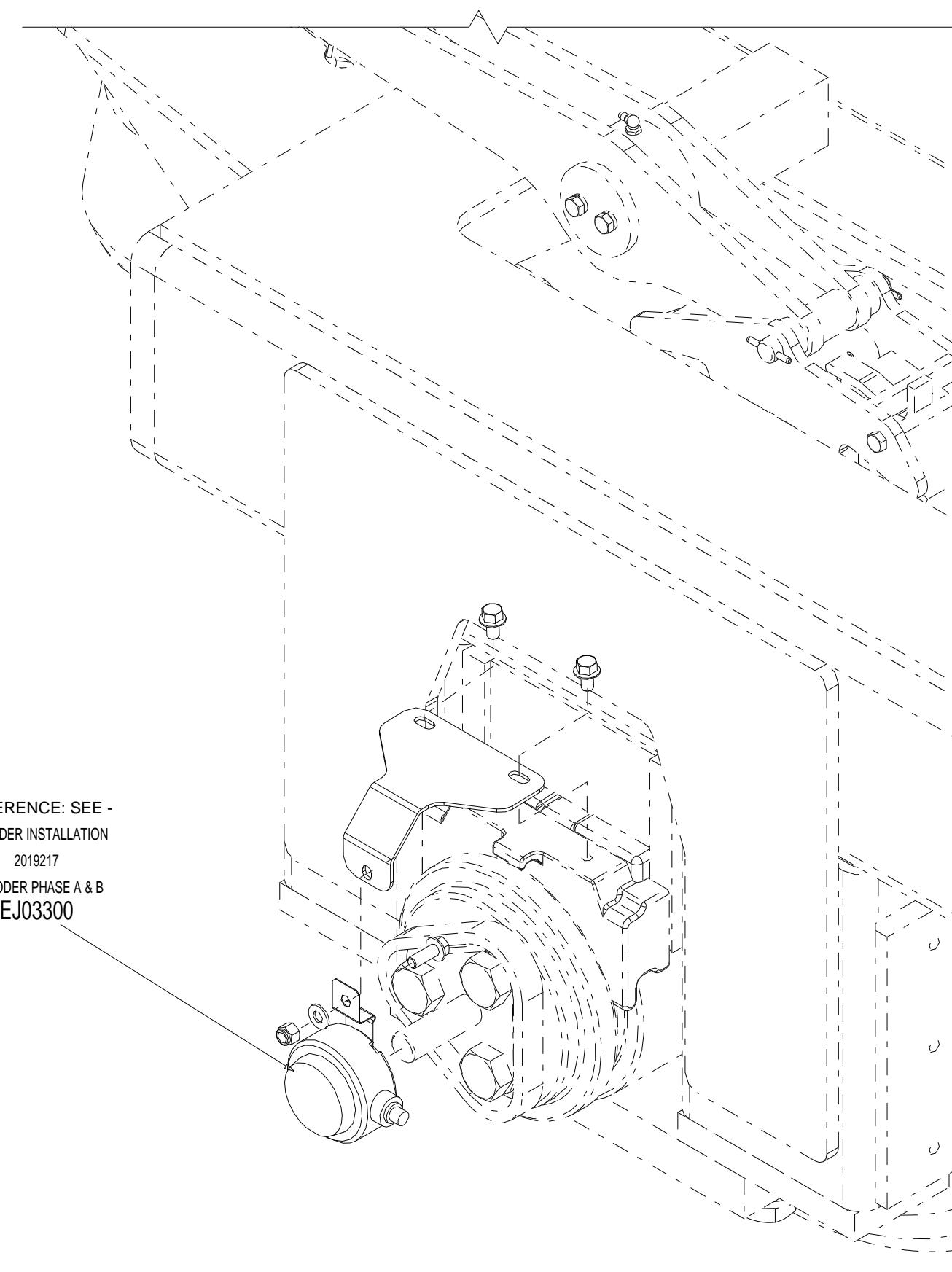
CHANGE #		REVISION	DR	DATE
ECN-105500	A	NEW RELEASE	ACM	04-30-2010
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011

DRAWING TITLE/DESCRIPTION:
JUPITER MODULE INSTALLATION
Device Locations
MACHINE TYPE-MODEL:
DRONE TAMPER
E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER
15
NUMBER OF JUPITER SHEETS
0
TOTAL NUMBER OF SHEETS
17

DRAWN BY:
D. MILLER
REL. DATE:
04-30-2010
SIZE:
D
SCALE:

HARSCO
RAIL
E3 DRAWING
4029354



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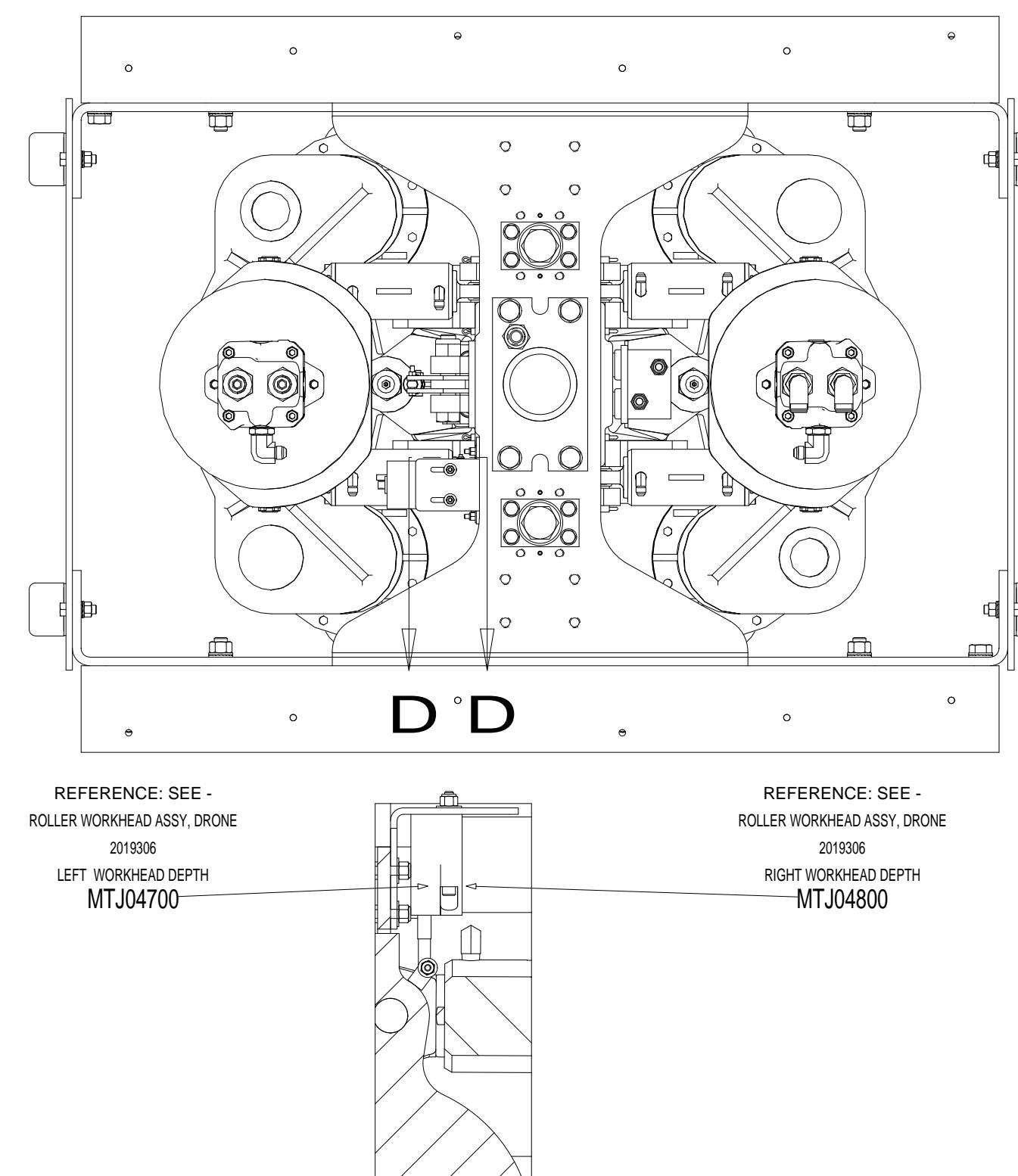
CHANGE #		REVISION	DR	DATE
ECN-105500	A	NEW RELEASE	ACM	04-30-2010
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011

DRAWING TITLE/DESCRIPTION:
JUPITER MODULE INSTALLATION
Device Locations
MACHINE TYPE-MODEL:
DRONE TAMPER
E3 PROJECT FILE NAME:
DRONE TAMPER 3

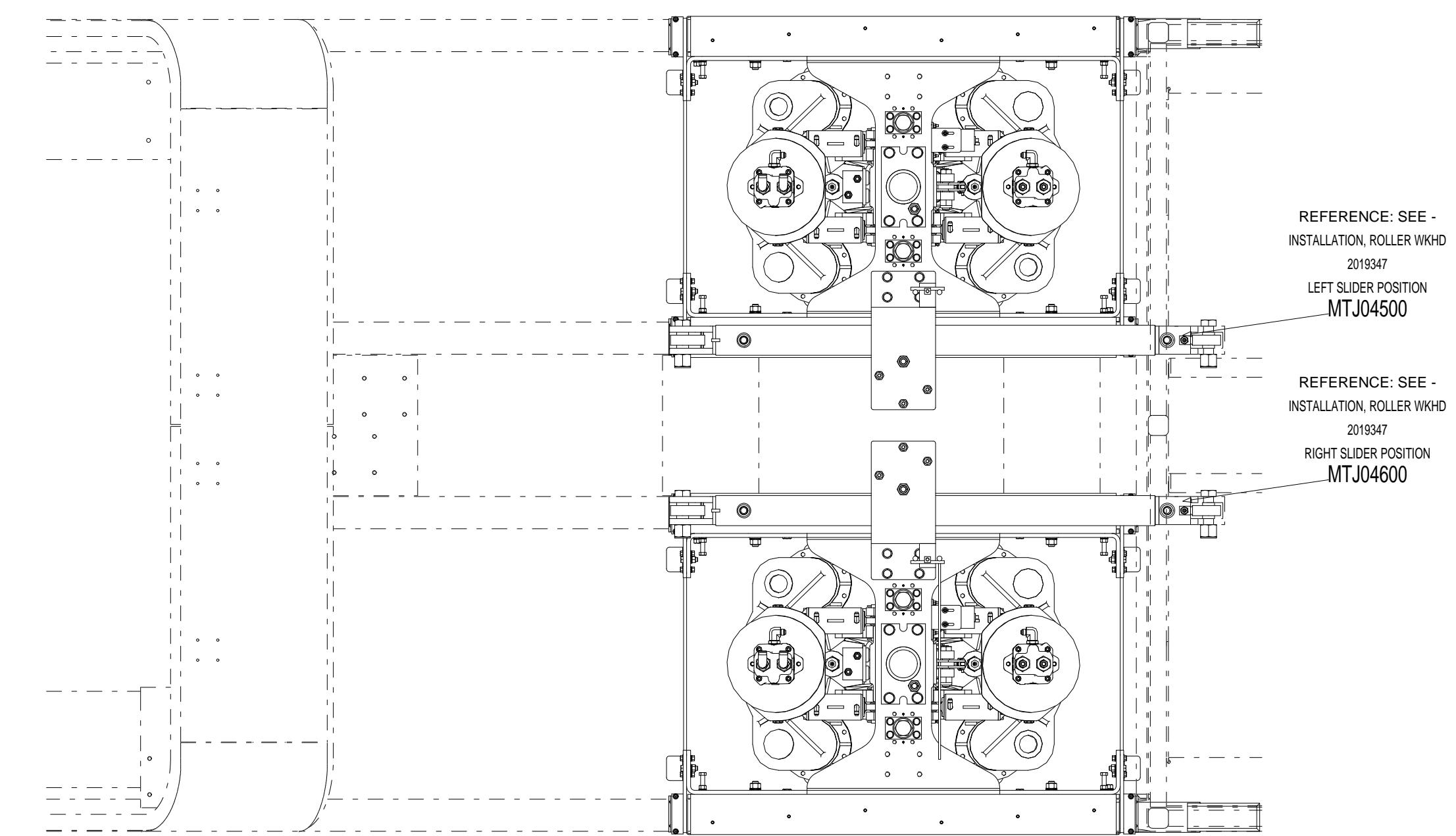
SHEET NUMBER
16
NUMBER OF
JUPITER SHEETS
0
TOTAL NUMBER
OF SHEETS
17

DRAWN BY:
D. MILLER
REL. DATE:
04-30-2010
SIZE:
D
SCALE:

HARSCO
RAIL
E3 DRAWING
4029354



SECTION D-D



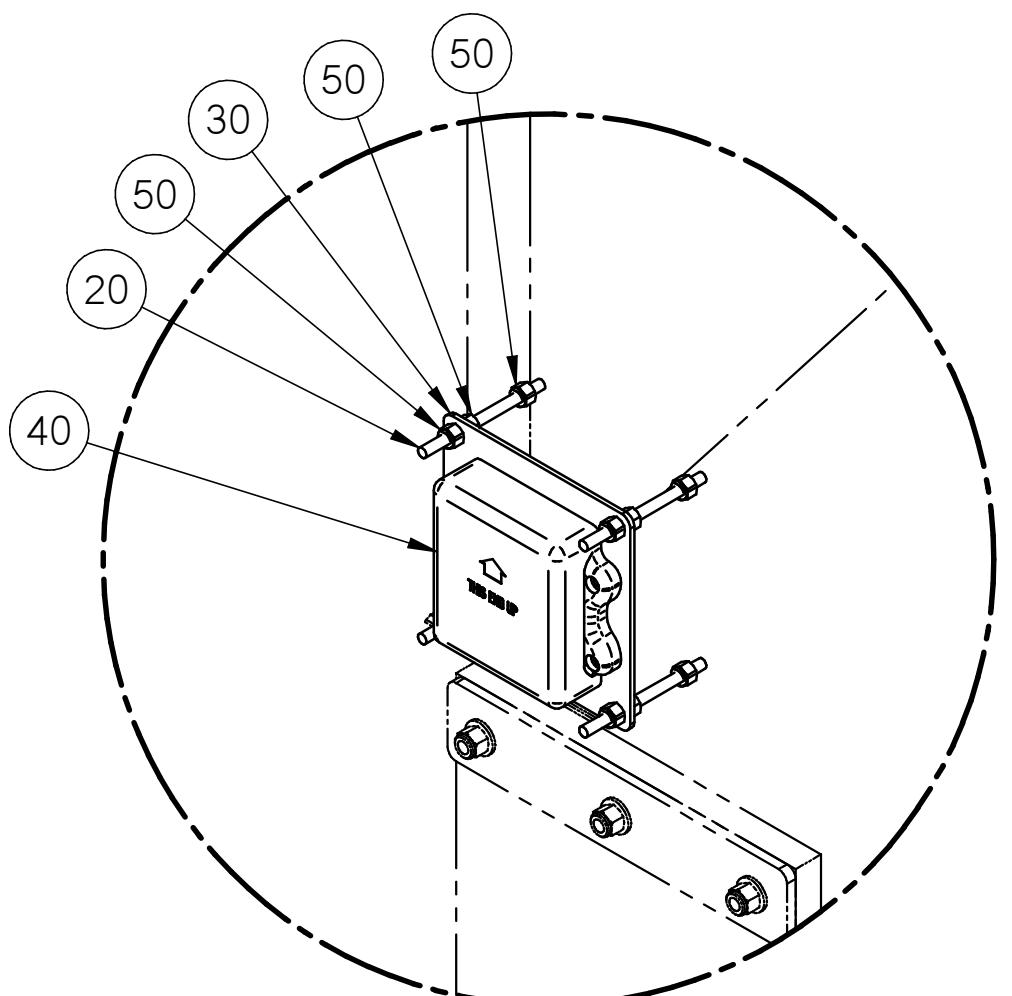
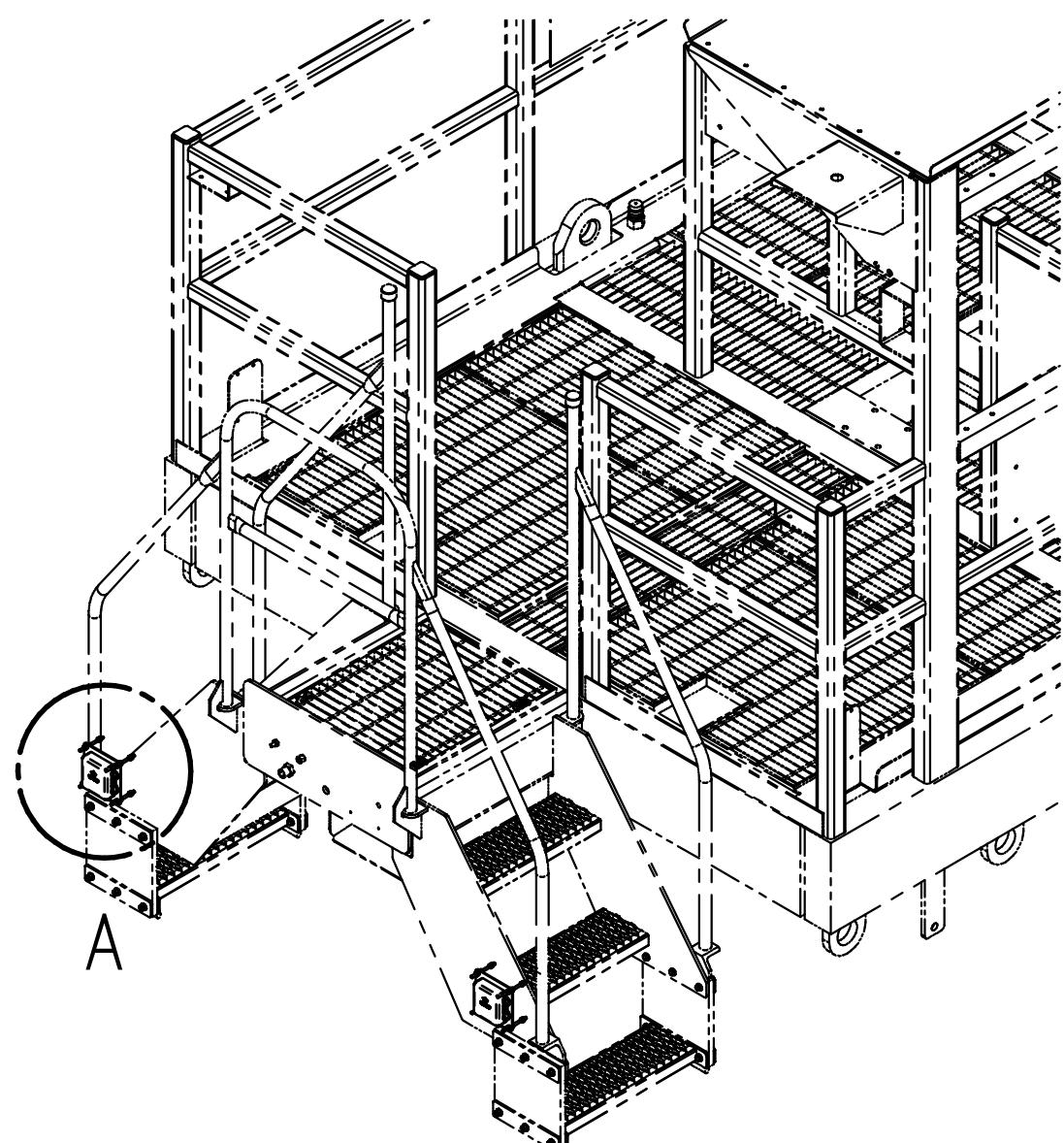
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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: JUPITER MODULE INSTALLATION Device Locations	SHEET NUMBER 17	DRAWN BY: D. MILLER	HARSCO RAIL
ECN-105500	A	NEW RELEASE	ACM	04-30-2010	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 04-30-2010	HARSCO RAIL
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011			SIZE: D	
							E3 DRAWING	
							SCALE: 4029354	
					E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS 17		

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Item Number	Part Number	Description	Quantity
20	5005868	ROD, THREADED .25-20 UNC X 3.5"	8
30	5003375	MOUNT, RADAR	2
40	5005003	REWORK, RADAR SAFETY CONTROL DEVICE	2
50	F013588	HEX ELASTIC STOP NUT .250-20	24



DETAIL A
BOTH SIDES

Inch
[mm]

NOMINAL SIZE RANGE		INCH PLUS OR MINUS		NOMINAL SIZE RANGE		METRIC PLUS OR MINUS		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE: A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF ± .50° CONCENTRICITY WITHIN .010	CHANGE	R/L	REVISION		DR	DATE	Description		HARSCO RAIL								
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL		500522	A	NEW RELEASE		BCB	2-11-11											
0	6	.03	.005	0	150	.8	.13										DRONE TAMPER								
6	24	.04	.008	150	600	1.0	.20																		
24	-	.06	.010	600	-	1.5	.25	UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS																	
THIRD ANGLE PROJECTION																									
SOLID EDGE DRAWING DO NOT SCALE																									
Plotted by bbrunson on 2/11/2011 5005863.dft																									

B

1 of 1

PRODUCT STRUCTURE			
ITEM	QTY	PART #	PART DESCRIPTION
10	1	6592	SWITCH, PRESSURE : NO 4-7 PSI MAKE
20	20FT	164834	CABLE, SINGLE CONDUCTOR : 6 AWG, BLACK 600V
30	4	174148	TERMINAL BOOT : LARGE TERMINAL BOOT .81 I.D. X .95 H.
40	2	178664	CAP, TERMINAL : RED 5/16" I.D. .62" TERM WIDTH .86" HIGH
50	2	404558	DIODE, ASSEMBLY : 3 AMP DIODE W/ FORK TERMINALS
60	1	409759	TERMINAL, RING : 3/8" RING, 4 AWG, NON-INSULATED
70	2	2013244	BATTERY : 12VDC 8D BATTERY
80	34	4019171	TAGS, CABLE : PLASTIC CABLE TAG SLEEVE
90	1	4024977	CIRCUIT BREAKER : 30 AMP BREAKER SURFACE MOUNT
100	1	4029260	TERMINAL, CAP : TERMINAL INSULATOR CAP
110	1	5000347	CABLE ASSEMBLY, J1939 : CABLE, JUPITER 2, J1939 ORANGE WEDGELOCK, NO ADDED RESISTANCE
120	20	252236-1	TY-RAP : EX-LARGE STD 14.5"
130	1	252478-1	RELAY, POWER : SPNO 200A 24VDC COIL 84 OHM
140	77FT	0-3211009-0-18	CABLE, SINGLE CONDUCTOR : 2/0 AWG, BLACK 600V
150	2	D6443Y01	BATTERY BOOT : BATTERY BOOT, BLACK
160	2	D6443Y02	BATTERY BOOT : BATTERY BOOT, RED
170	2	F016461K	TERMINAL, RING : 5/16" RING, 12-10 AWG, INSULATED
180	1	F018200	TERMINAL : RING TONGUE
190	34	F018229	TY-RAP : SMALL TY-RAP 3 1/2"
200	1	F020062K	TERMINAL, RING : 1/2" RING, 12-10 AWG, INSULATED
210	2	F025527	SWITCH, DISCONNECT : DUAL SWITCH
220	2	F040164	TERMINAL, RING : 5/16" RING, 1/0 AWG, NON-INSULATED
230	1	H6206Y35	CIRCUIT BREAKER : 150 AMP BREAKER SURFACE MOUNT
240	50FT	L411078	CABLE, SINGLE CONDUCTOR : 1/0 AWG, BLACK 600V
250	2	L422458	TERMINAL, LUG : 2/0 CABLE, POSITIVE RT ANGLE
260	2	L422459	TERMINAL, LUG : 2/0 CABLE, NEGATIVE RT ANGLE
270	6	L422508	TERMINAL, RING : 3/8" RING, 2/0 AWG, NON-INSULATED
280	5	L424722	TERMINAL, RING : 2/0 AWG, NON-INSULATED

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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: ENGINE AND E-PUMP WIRING	SHEET NUMBER 1	DRAWN BY: W. GRIER	HARSCO RAIL
ECN-105980	A	NEW RELEASE	WG	07-29-2010	Bill Of Material MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 07-29-2010 SIZE: D	
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011				
E3 PROJECT FILE NAME: DRONE TAMPER 3	TOTAL NUMBER OF SHEETS 5	SCALE: 4029355						

***** CABLES CALLED UP ON EMERGENCY PUMP INSTALLATION 4030552 *****

NEGATIVE DISCONNECT TO GROUND BAR			C-EW1	CABLE, SINGLE CONDUC		
4029355			0-3211009-0-18	4029761		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	000	S1122:b2	-	GROUND BAR:1	-

BATTERY SWITCH TO ECM CB			C-EW7	CABLE, SINGLE CONDUC		
4029355			164834	4029355		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1120	S1120:b1	-	CB2300:BAT	-

STARTER GROUND TO ENGINE BLOCK			C-EW10	CABLE, SINGLE CONDUC		
4029355			0-3211009-0-18	2019247		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	000	ENGINE_BLOCK	-	B1180:G	-

ENGINE BLOCK TO GROUND BAR			C-EW8	CABLE, SINGLE CONDUC		
4029355			0-3211009-0-18	4029761		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	000	ENGINE_BLOCK	-	GROUND BAR:3	-

STARTER TO GRID HEATER RELAY			C-EW11	CABLE, SINGLE CONDUC		
4029355			L411078	2019247		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1120	CB1440:BAT	-	B1180:B	-

ALTERNATOR TO ENGINE BLOCK			C-EW9	CABLE, SINGLE CONDUC		
4029355			L411078	2019247		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	000	ENGINE_BLOCK	-	MG1230	-

GRID HEATER RELAY TO GRID HEATER			C-EW12	CABLE, SINGLE CONDUC		
2019238			164834	2019238		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1442	K1500:2	-	HR1443	-

CIRCUIT BREAKER TO GRID HEATER RELAY			C-EW13	CABLE, SINGLE CONDUC		
4029355			164834	2019238		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1440	CB1440:AUX	-	K1500:1	-

ENGINE J1939			C-EW14	CABLE ASSEMBLY, J1939		
4029355			5000347	4029354		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	CAN2	-	-	SP6460:A-1	-	-

BATTERY - TO NEGATIVE DISCONNECT			C-EW2	CABLE, SINGLE CONDUC		
4029355			0-3211009-0-18	4029355		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1126	S1122:b1	-	BT1122	-

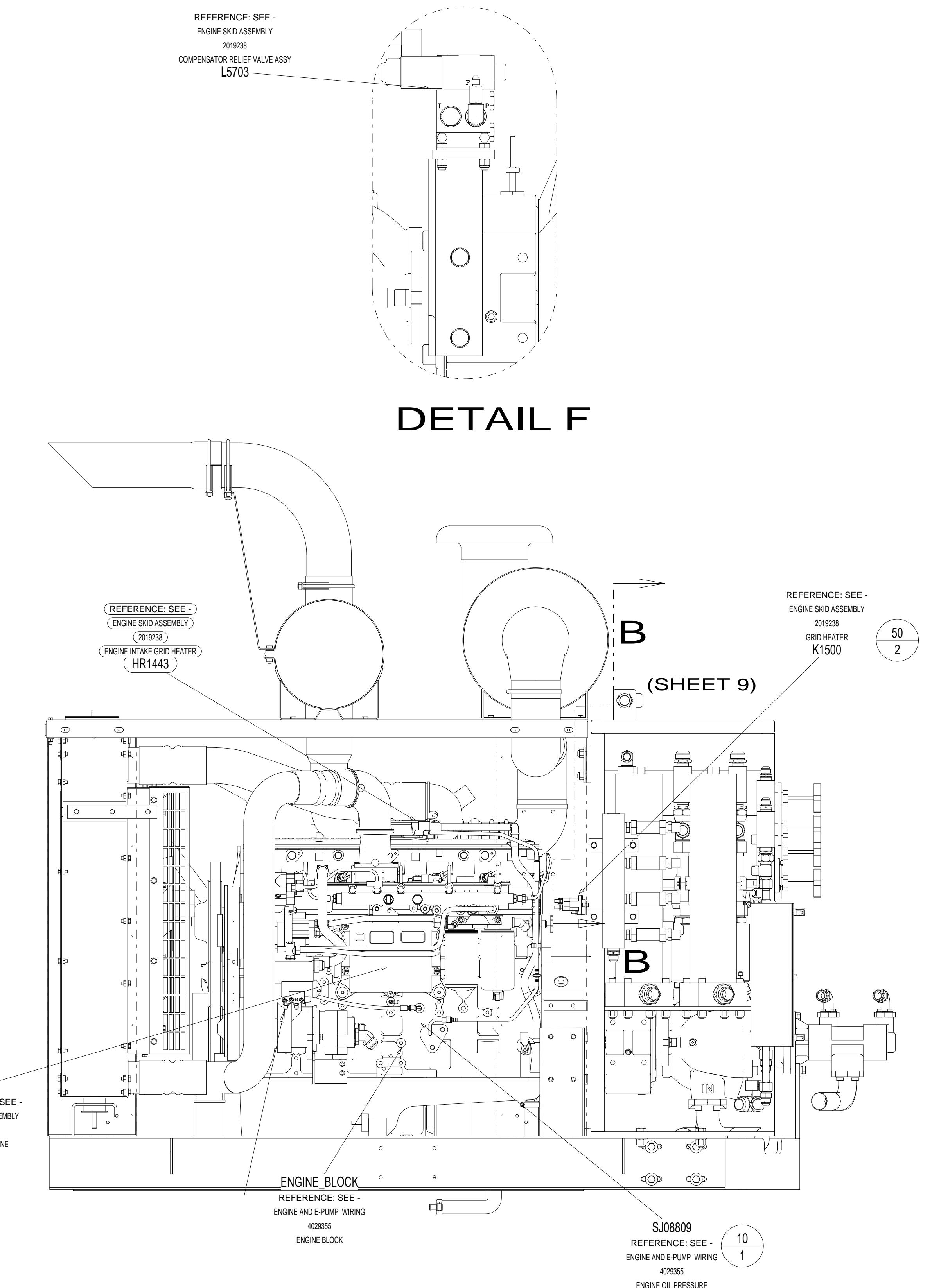
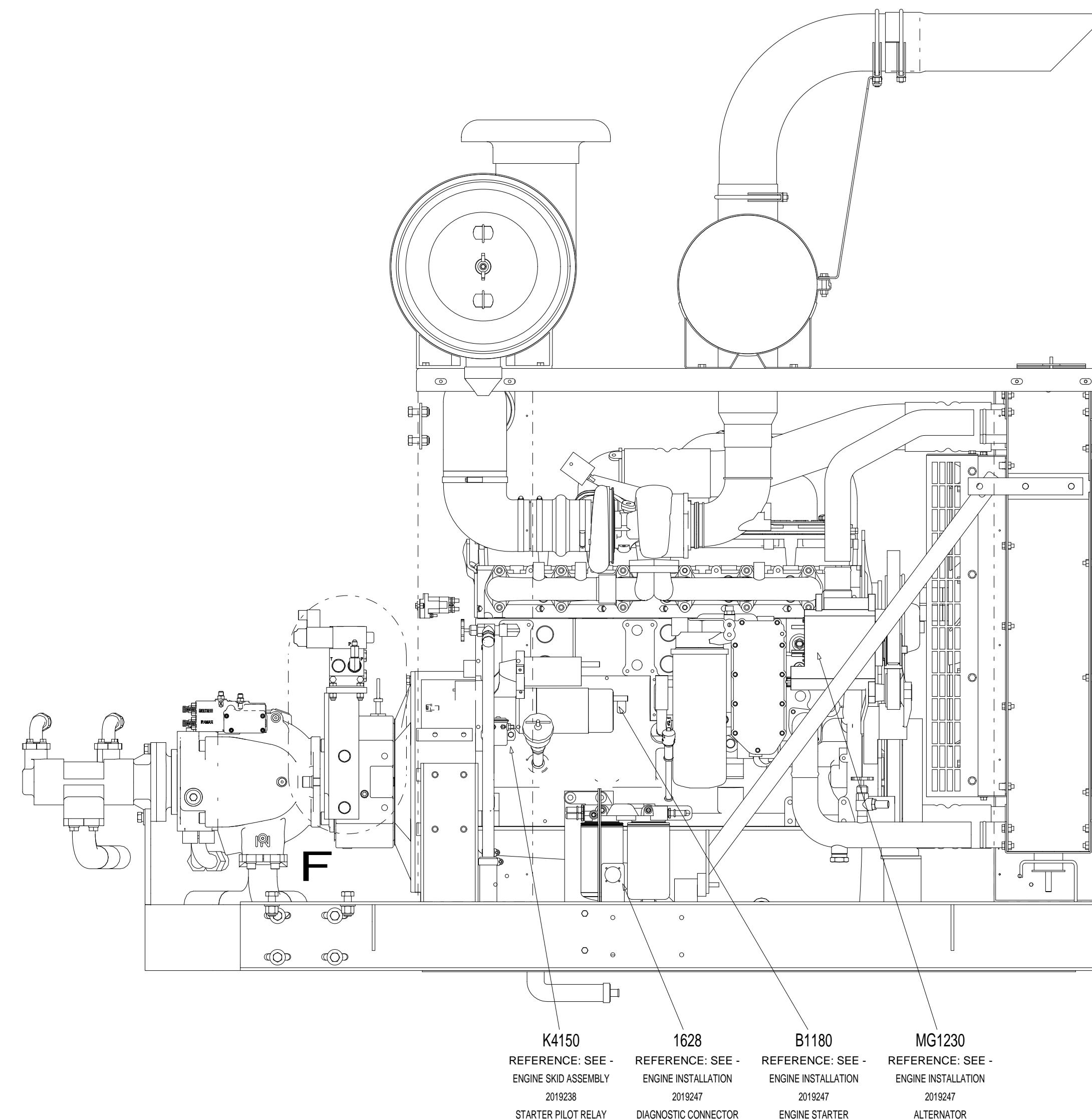
BATTERY + TO BATTERY -			C-EW3	CABLE, SINGLE CONDUC		
4029355			0-3211009-0-18	4029355		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1124	BT1122:+	-	BT1120	-

BATTERY + TO MAIN DISCONNECT			C-EW4	CABLE, SINGLE CONDUC		
4029355			0-3211009-0-18	4029355		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1122	BT1120:+	-	S1120:b2	-

BATTERY DISCONNECT TO STARTER			C-EW5	CABLE, SINGLE CONDUC		
4029355			0-3211009-0-18	2019247		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1120	S1120:b1	-	B1180:B	-

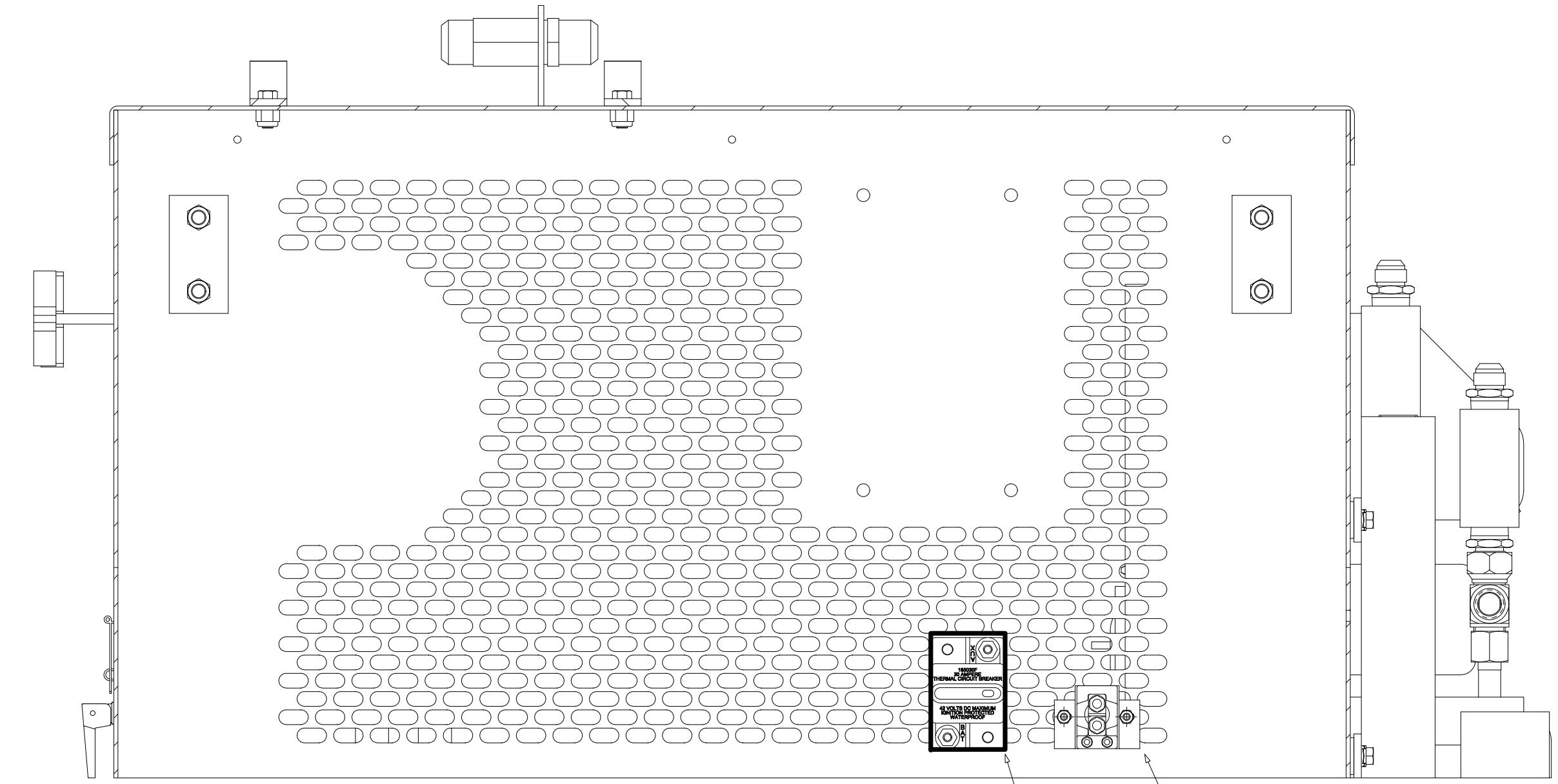
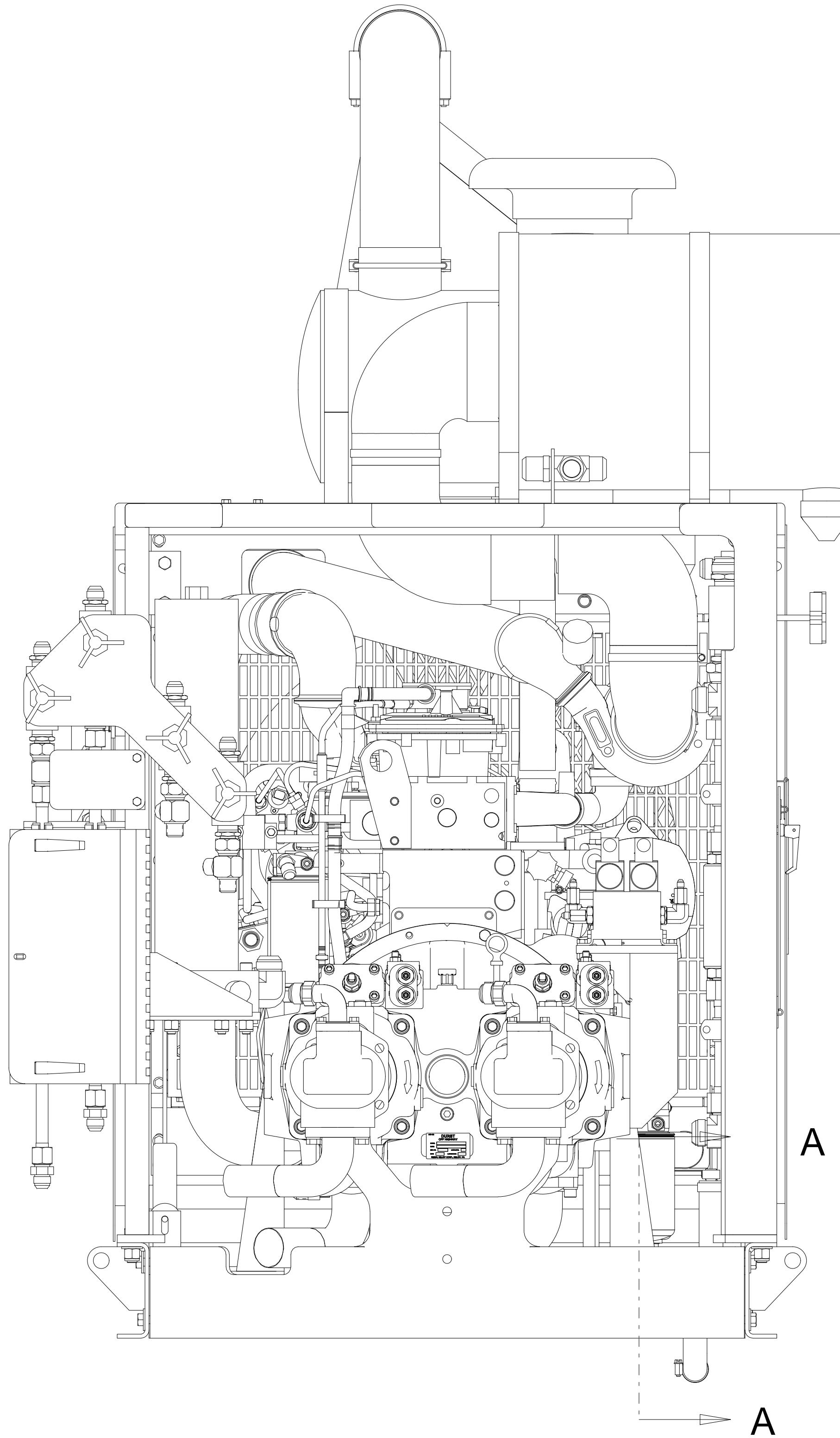
STARTER TO ALTERNATOR			C-EW6	CABLE, SINGLE CONDUC		
2019247			L411078	2019247		
RUN	COLOR	WIRE #	FROM	TERM NO.	TO	TERM NO.
1	BK	1120	B1180:B	-	MG1230	-

CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION:	SHEET NUMBER	DRAWN BY:
ECN-105980	A	NEW RELEASE	WG	07-29-2010	ENGINE AND E-PUMP WIRING	2	



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CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: ENGINE AND E-PUMP WIRING Device Locations	SHEET NUMBER 3	DRAWN BY: W. GRIER	HARSCO RAIL
ECN-105980	A	NEW RELEASE	WG	07-29-2010	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 07-29-2010	HARSCO RAIL
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011				
E3 PROJECT FILE NAME: DRONE TAMPER 3					TOTAL NUMBER OF SHEETS 5	SIZE: D	SCALE: E3 DRAWING	4029355



SECTION B-B

CB1440
REFERENCE: SEE -
ENGINE AND E-PUMP WIRING
4029355
GRID HEATER
230
1

K1500
REFERENCE: SEE -
ENGINE SKID ASSEMBLY
2019238
GRID HEATER

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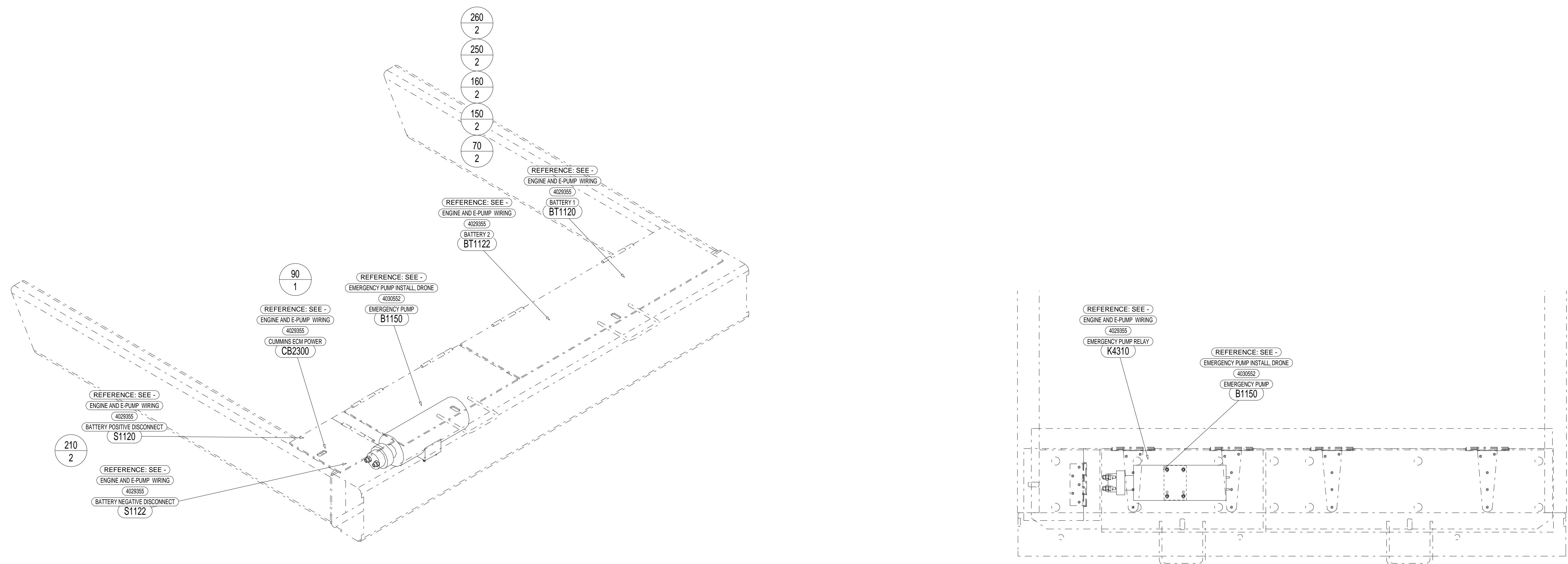
CHANGE #		REVISION	DR	DATE
ECN-105980	A	NEW RELEASE	WG	07-29-2010
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011

DRAWING TITLE/DESCRIPTION:
ENGINE AND E-PUMP WIRING
Device Locations
MACHINE TYPE-MODEL:
DRONE TAMPER
E3 PROJECT FILE NAME:
DRONE TAMPER 3

SHEET NUMBER
4
NUMBER OF
JUPITER SHEETS
0
TOTAL NUMBER
OF SHEETS
5

DRAWN BY:
W. GRIER
REL. DATE:
07-29-2010
SIZE:
D
SCALE:

HARSCO
RAIL
E3 DRAWING
4029355



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APPARATUS OR DEVICE, WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF HARSCO.

CHANGE #		REVISION	DR	DATE	DRAWING TITLE/DESCRIPTION: ENGINE AND E-PUMP WIRING Device Locations	SHEET NUMBER 5	DRAWN BY: W. GRIER	HARSCO RAIL
ECN-105980	A	NEW RELEASE	WG	07-29-2010	MACHINE TYPE-MODEL: DRONE TAMPER	NUMBER OF JUPITER SHEETS 0	REL. DATE: 07-29-2010	HARSCO RAIL
EC500286	B	AS BUILT RELEASE	ACM	01-21-2011				
E3 PROJECT FILE NAME: DRONE TAMPER 3					TOTAL NUMBER OF SHEETS 5	SIZE: D	SCALE: E3 DRAWING	4029355

Section O

Miscellaneous Components

CONFIDENTIAL

© COPYRIGHT 2009 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.

SOLID EDGE DRAWING

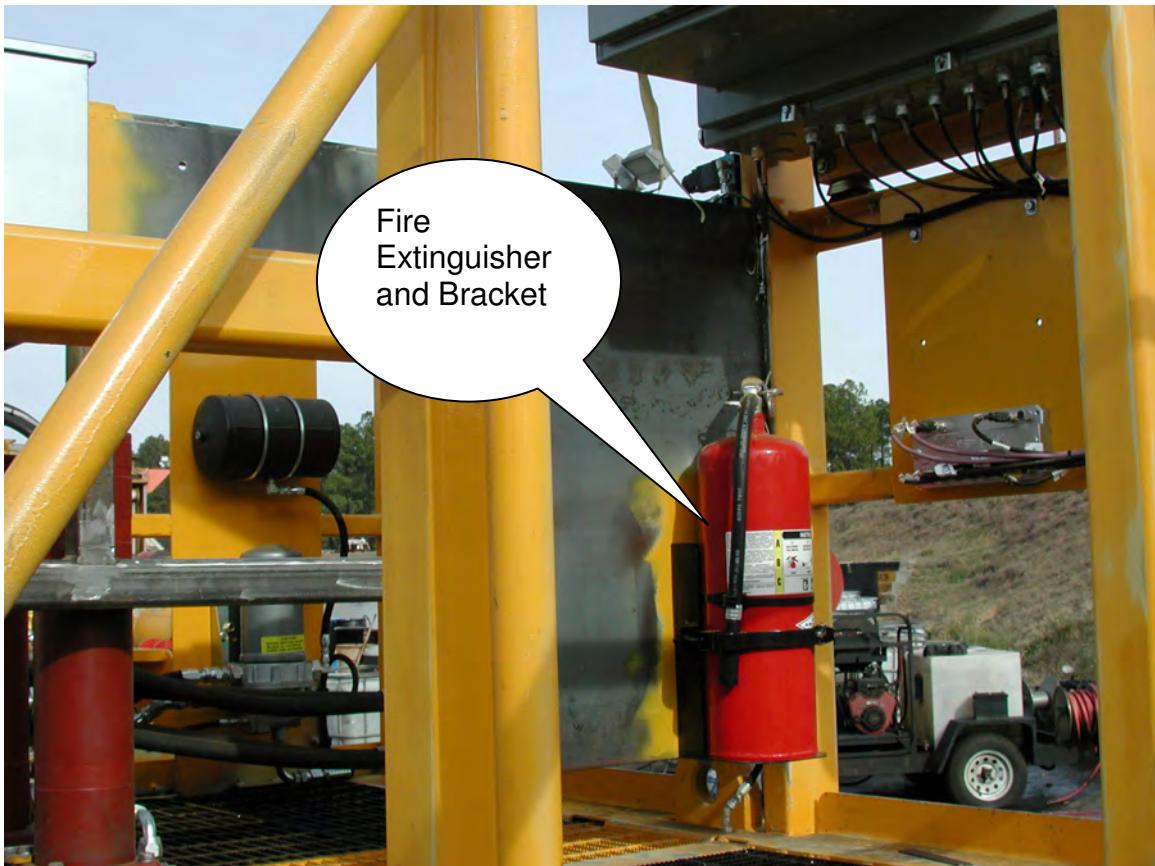
ITEM NO	PART NO	DESCRIPTION	QTY
1	173835	FILTER ELEMENT	2
2	2007154	MOBIL WIRELESS CONTROL SYS TRA	1
3	2012318	PRIMARY FUEL FILTER	1
4	4015854	JAM BOX, G4	1
5	4029520	VALVE, PROP. PRESS. RELIEF	1
6	4008374	TRANSDUCER, HYDRAULIC PRESSS	1
7	4017812	SEAL KIT	2
8	0-3137013-0-14	STG POT 30" .024 10K + M12	2
9	0-3318002-0-03	SEAL KIT, PUMP	1
10	0-3354005-0-09	FILTER ELEMENT (3M)	8
11	0-3413003-0-20	COIL, 24 VDC DIN	1
12	0-3432000-0-14	AIR LINE FILTER ELEMENT	1
13	0-3513010-0-32	AIR CLEANER ELEMENT	1
14	0-3513010-0-33	SAFETY ELEMENT	1
15	A1033Y03	COIL, SOLENOID OP VALVE	1
16	A5748Y02	FILTER ELEMENT	1
17	B5428YAA	SEAL KIT	1
18	B8980Y44	ENGINE OIL FILTER	1
19	B8980Y73	FUEL FILTER ELEMENT	1
20	B8980Y74	WATER FILTER	1
21	C3902Y01	RETAINER & SEAL KIT	2
22	C9785X03	DESICCANT CARTRIDGE	1
23	D0391Y01	COIL	2
24	D0393Y03	AIR VALVE K-SERIES	1
25	D0393Y02	AIR VALVE K-SERIES	1
26	G4661Y01	IN LINE FUEL FILTER	1
27	4019452	JUPITER 2 DIGITAL MODULE	1
28	4019453	JUPITER 2 ANALOG MODULE	1
29	P753281H	TAMPING TOOL KIT	1
30	Z687107	REPAIR KIT SQUEEZE CYL	1
31	4018385	CONVERTER 24 - 12 VDC, 100 WATTS	1
32	4019273	PROPORTIONAL VALVE, DO1 16V	1
33	4020299	COIL, 24	1

SECTION O-1

Inch
[mm]

IMPLIED TOLERANCES ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED								CHANGE	R/L	REVISION	DATE	Description SPARE PARTS, DRONE				HARSCO RAIL						
INCH PLUS OR MINUS		NOMINAL SIZE RANGE		METRIC PLUS OR MINUS		UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES WILL HAVE: A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF $\pm .50^\circ$ CONCENTRICITY WITHIN .010																
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL							Machine Type								
0	6	.03	.005	0	150	.8	.13	 THIRD ANGLE PROJECTION						DRONE TAMPER								
6	24	.04	.008	150	600	1.0	.20			Model 4030364.par		Drawn fsami		Date Drawn 14 JUN 10								
24	-	.06	.010	600	-	1.5	.25	UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS		Weight Error: No reference		Scale: 1:4		APVD Desg	MT	APVD ChEng	EMC					
										Mat'l												
														Part Number	4030364		Size B	Sheet 1 of 1				

SECTION O-2



Fire
Extinguisher
Bracket

Part No. Z780613
Part No. 0-1400876-0-01

PRINT DISTRIBUTION							STANDARD PARTS		CAT:				PARTS CLASSIFICATION														
D	S	H	P	M	T	R	S	E	SIZE:				SEC:														
									MACHINING TOLERANCE UNLESS OTHERWISE SPECIFIED											FABRICATION TOLERANCES UNLESS OTHERWISE SPECIFIED							
	1. 2 PLACE DECIMAL DIMENSIONS $\pm .02$ FOR EACH .12 (MAX. $\pm .09$)											1. MATERIAL THICKNESS DIMENSIONS \pm TOLERANCE															
D	2. 3 PLACE DECIMAL DIMENSIONS $\pm .005$ UP TO .36 $\pm .010$ OVER .36											a. LESS THAN .12 0 TO .36 .03 OVER .36 .06															
	3. CONCENTRICITY OF CYLINDRICAL SURFACES = .010 TOTAL INDICATOR READING											b. .12 TO .50 0 TO .36 .06 OVER .36 .12															
	4. PARALLELISM, SQUARENESS OR ANGULARITY BETWEEN SURFACES AND/OR HOLE CENTERLINES $\pm 0^\circ 7'$ (.002 INCH/INCH)											c. OVER .50 TO 1.00 0 TO .36 .09 OVER .36 .19															
	5. FINISH $125/\checkmark$											d. OVER 1.00 0 TO .36 .19 OVER .36 .25															
												2. BENT ANGLE $\pm 1^\circ$ (.017 INCH/INCH) FOR EACH .38 OF MATERIAL THICKNESS (MAX. $\pm 3^\circ$)															

SECTION O-3

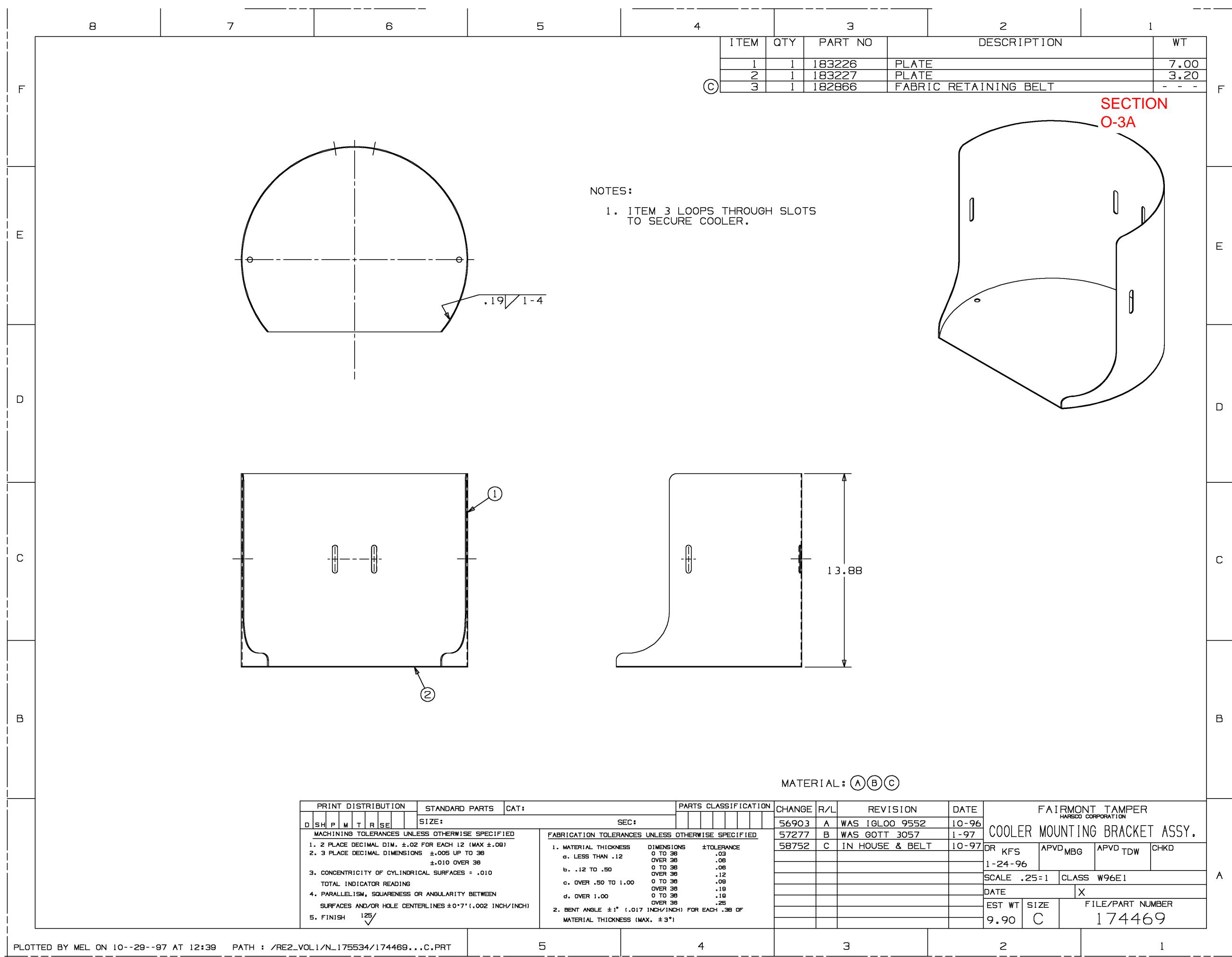
Graphic to be Made

WATER COOLER
10 GALLON (A)

USE WITH MOUNTING KIT 174469

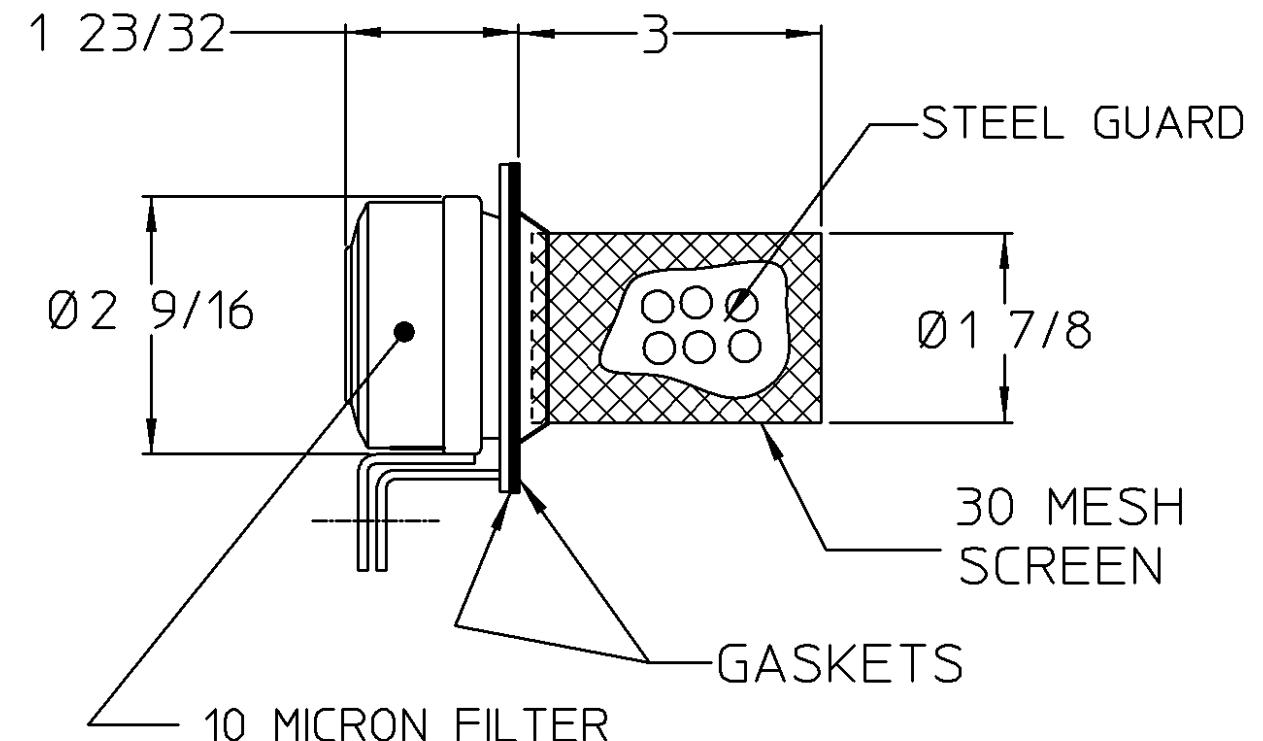
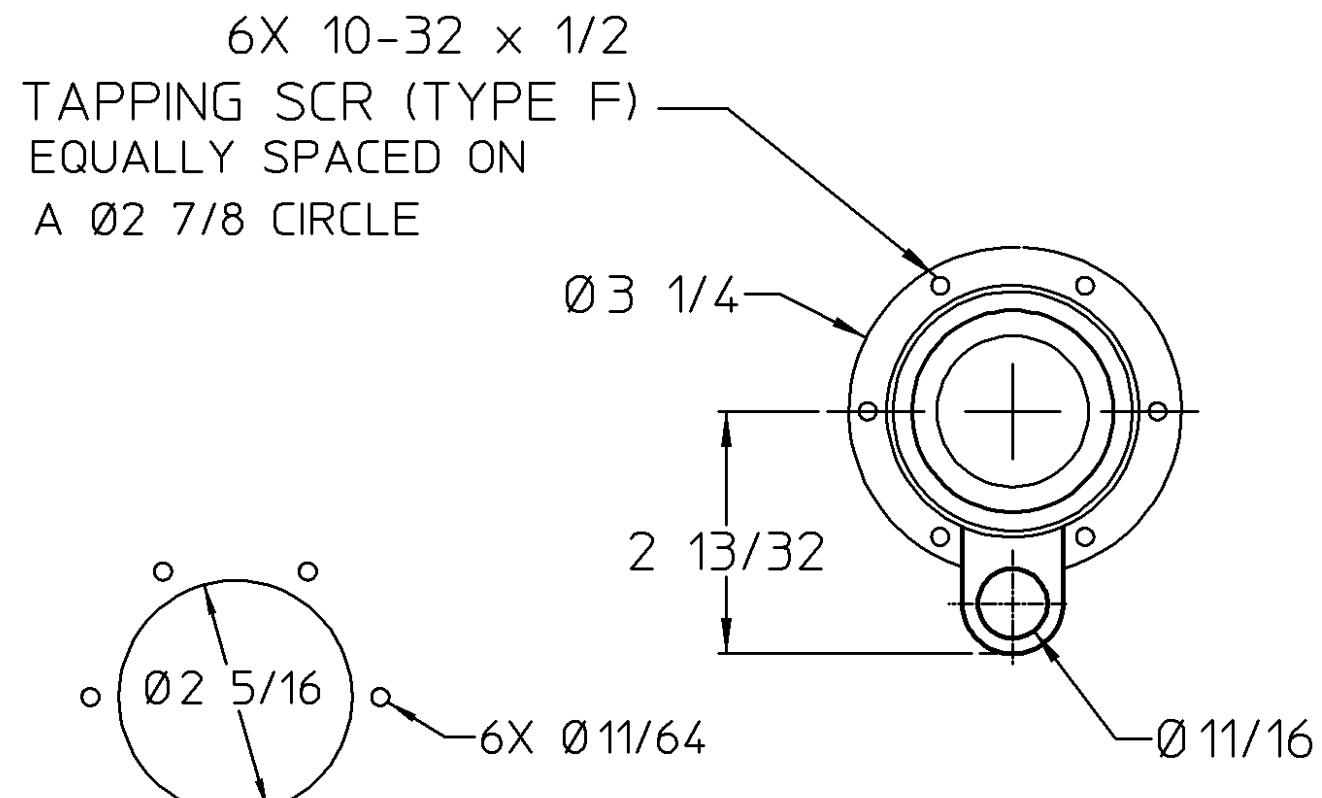
MATERIAL: IGLOO #4101

CHANGE	R/L	REVISION	DATE	FAIRMONT TAMPER HARSCO CORPORATION			
55940	A	WAS 173988	MBG 1-96	WATER COOLER-10 GAL.			
				DR KFS 12-12-95	APVD MBG	APVD TDW	CHKD
				SCALE NONE	CLASS W96-E1		
				DATE	X		
				EST WT	SIZE	FILE/PART NUMBER	
					A	173987	



ENG DWG NO	0-3381010-0-12	DESCRIPTION (24)	FILLER CAP	DRAWN	A.OUZTS	DATE	22 JUN 95	CHECKED	DATE	APP	DATE	APP	DATE	APP		
ITEM NO	PART NO	SPECIFICATIONS				APP VENDOR(S)						DER	DR	APP	CK	MF
	0-3381010-0-12	10 MIC FILTER * VENTED * PADLOCK LUGS * 30 MESH STRAINER WITH INTERNAL STEEL GUARD														

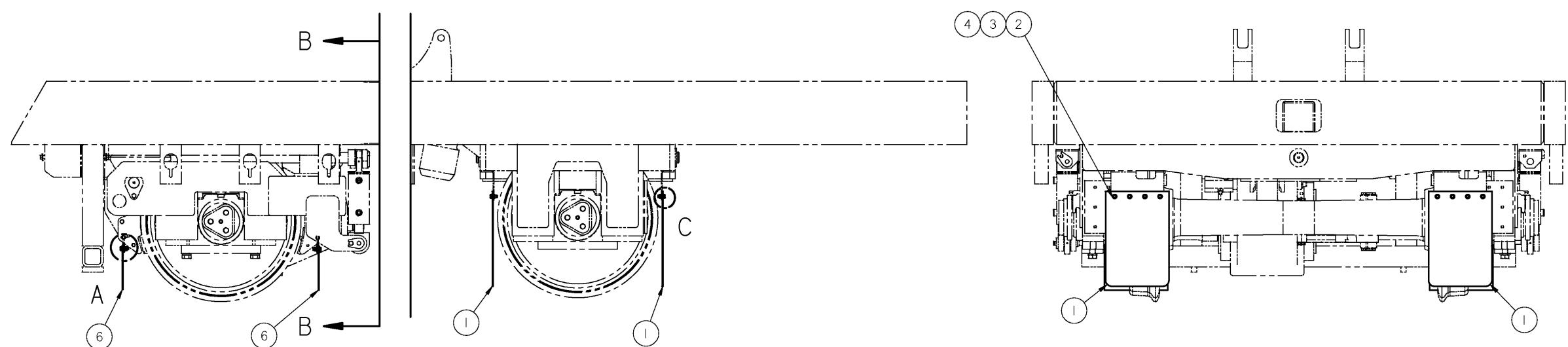
SECTION O-4



MTG REQUIREMENTS

PLOT SCALE .5

1 7592		RELEASED				<table border="1"> <tr> <td colspan="12">IMPLIED TOLERANCES ALL DIMENSIONS ARE IN INCHES-TOLERANCE UNLESS OTHERWISE SPECIFIED</td> </tr> <tr> <th colspan="2">NOMINAL SIZE RANGE</th> <th colspan="3">PLUS OR MINUS</th> <th colspan="2">NOMINAL SIZE RANGE</th> <th colspan="3">PLUS OR MINUS</th> <th colspan="2"></th> </tr> <tr> <th>OVER</th> <th>TO</th> <th>FRACTION</th> <th>2 PLACE DECIMAL</th> <th>3 PLACE DECIMAL</th> <th>OVER</th> <th>TO</th> <th>FRACTION</th> <th>2 PLACE DECIMAL</th> <th>3 PLACE DECIMAL</th> <th></th> <th></th> </tr> <tr> <td>-</td> <td>1</td> <td>1/64</td> <td>.01</td> <td>.003</td> <td>6</td> <td>24</td> <td>3/64</td> <td>.03</td> <td>.006</td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>6</td> <td>1/32</td> <td>.02</td> <td>.005</td> <td>24</td> <td>-</td> <td>1/16</td> <td>.05</td> <td>.010</td> <td></td> <td></td> </tr> </table>						IMPLIED TOLERANCES ALL DIMENSIONS ARE IN INCHES-TOLERANCE UNLESS OTHERWISE SPECIFIED												NOMINAL SIZE RANGE		PLUS OR MINUS			NOMINAL SIZE RANGE		PLUS OR MINUS					OVER	TO	FRACTION	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	FRACTION	2 PLACE DECIMAL	3 PLACE DECIMAL			-	1	1/64	.01	.003	6	24	3/64	.03	.006			1	6	1/32	.02	.005	24	-	1/16	.05	.010			DO NOT SCALE		3rd ANGLE PROJECTION		Fairmont Tamper™	
IMPLIED TOLERANCES ALL DIMENSIONS ARE IN INCHES-TOLERANCE UNLESS OTHERWISE SPECIFIED																																																																													
NOMINAL SIZE RANGE		PLUS OR MINUS			NOMINAL SIZE RANGE		PLUS OR MINUS																																																																						
OVER	TO	FRACTION	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	FRACTION	2 PLACE DECIMAL	3 PLACE DECIMAL																																																																				
-	1	1/64	.01	.003	6	24	3/64	.03	.006																																																																				
1	6	1/32	.02	.005	24	-	1/16	.05	.010																																																																				
NO	DER	DESCRIPTION		DR	APP	CK	MF							2401 Edmund Road-Box 20 Cayce-West Columbia, South Carolina 29171-0020 (803) 822-9160																																																															
REVISIONS						<table border="1"> <tr> <td colspan="2">AUGULAR DIMENSIONS PLUS OR MINUS 1 DEGREE</td> <td colspan="2">CHECKED</td> <td colspan="2">ENG DWG NO</td> </tr> <tr> <td colspan="2">✓</td> <td colspan="2">100</td> <td colspan="2">0-3381010-0-12</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">DATE</td> <td colspan="2">27-Jul-95</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">LAST ECR.</td> <td colspan="2">7592.</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">SHEET</td> <td colspan="2">1</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">CONT ON</td> <td colspan="2">-</td> </tr> </table>						AUGULAR DIMENSIONS PLUS OR MINUS 1 DEGREE		CHECKED		ENG DWG NO		✓		100		0-3381010-0-12				DATE		27-Jul-95				LAST ECR.		7592.				SHEET		1				CONT ON		-																															
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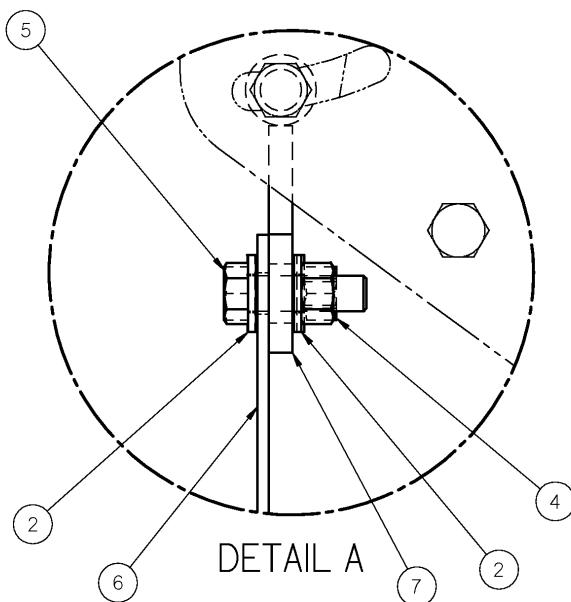


REAR

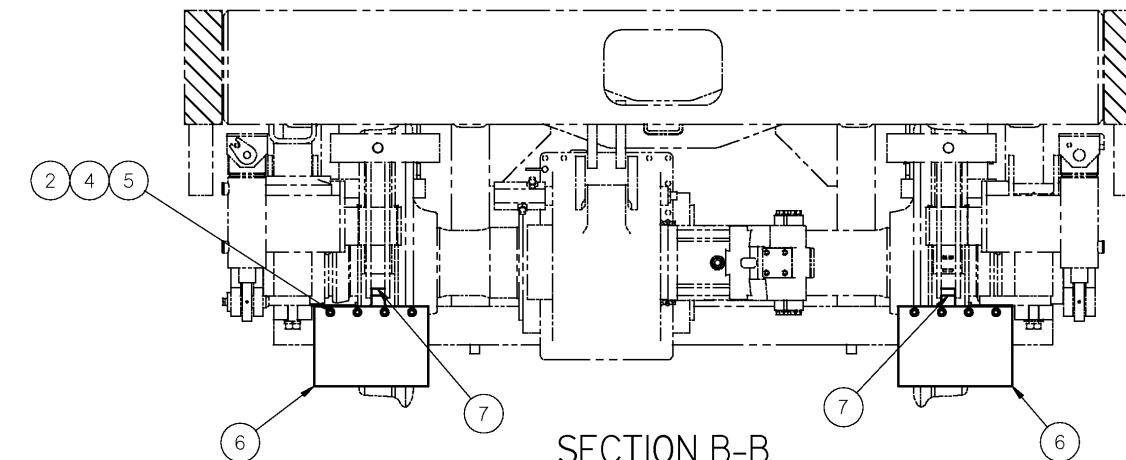
FRONT

FRONT

SECTION O-5

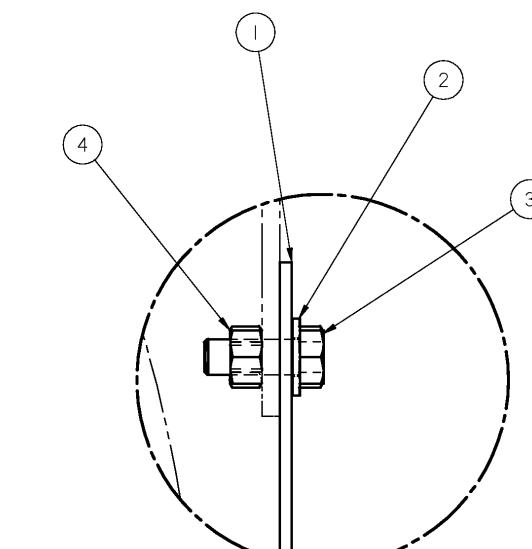


DETAIL A



SECTION B-B

REAR



DETAIL C

Inch
[mm]

CONFIDENTIAL		IMPLIED TOLERANCES										CHANGE	R/L	REVISION	DATE	Description		
		ALL DIMENSIONS ARE IN INCHES - TOLERANCE UNLESS OTHERWISE SPECIFIED													07-25-10	MUDFLAP INSTALL		
		INCH PLUS OR MINUS										Metric	UNLESS OTHERWISE SPECIFIED, ALL MACHINED SURFACES HAVE A SURFACE FINISH OF 16 MICRO INCHES (400 MICRONS). ANGULAR TOLERANCE OF +/- 90° CONCENTRICITY WITHIN .005"					
OVER	TO	2 PLACES	3 PLACES	DECIMAL	OVER	TO	1 PLACES	2 PLACES	DECIMAL	OVER	TO							
.0	.0	.00	.000		.0	.150	.000	.000	.000	.0	.13							
6	24	.04	.008		150	600	1.0	.20										
24	-	.06	.010		600	-	1.5	.25										
UNLESS OTHERWISE SPECIFIED, ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS																		

SOLID EDGE DRAWING

HARSCO
RAIL

Model: 4031212.asm
Drawn by: Isami
Date Drawn: 25 Jul 10
Weight: 0.0 lbm
Scale: 1:4
Material: SAE 1020
Part Number: 4031212
Size: D
Sheet: 1 of 1

Plotted by fsami on 7/29/2010 4031212.dft

HARSCO

RAIL

CATALOG NO. 5001032

Printed In U.S.A.

ISSUED 12- 2010

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