

Patriot 3230 and 3330 Sprayers

Service Manual

CASE IH AGRICULTURE

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NOTE: *Engine repair information is not contained within this Service Manual. For engine repair, refer to appropriate engine service manual as follows:*

84202702 - For 6-Cylinder 6.7L NEF Engine

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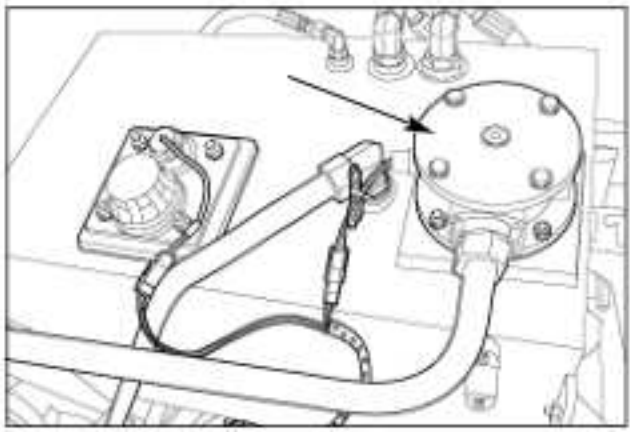
STEP 15

⚠ WARNING ⚠

Air has been introduced into the hydraulic circuit for this valve block. Air in the hydraulic lines can cause the circuit to act abnormally. Components may drop or move unexpectedly. Keep everyone clear of the machine and use caution when testing operation of the circuit after valve block service. Cycle the hydraulic circuit several times to remove air from the system. Failure to comply could result in death or serious injury.

M990A

1. Install a new in-tank return filter on the auxiliary hydraulic circuit.
2. Start the engine and run in neutral at a minimum of 1500 RPM.
3. Allow the engine to run at 1500 RPM with the vehicle in neutral for a minimum of 20 minutes to filter and warm the hydraulic oil prior to any operation.
4. Run the machine for at least one hour under light load to complete the hydraulic oil filtration.
5. Shut down the machine and check for leaks.



BD0508115

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ATC FAULT CODES

ATC fault codes display on the Instrument Cluster display. The display toggles between the current cab temperature setpoint and the fault code.

ATC fault codes are not recorded or stored.

If more than one fault code is active, the codes display sequentially on the Instrument Cluster Display and alternate with the temperature setpoint. The service required icon also flashes on the Instrument Cluster Display whenever a fault code is active.

Except for codes **129** and **134**, all fault codes display immediately when the fault is detected and disappear if the fault condition clears.

With the smart pressure switch counting feature, code **129** for high pressure does not display until two occurrences within a 60 second interval; code **134** for low pressure does not display until four occurrences within a 60 second internal. The interval starts with the first occurrence, but may be as short as 10 seconds if the pressure problem is constant.

Only fault codes **129** and **134** "latch" the compressor clutch OFF. The keyswitch must be toggled OFF and ON, or the ATC switch must be toggled OFF and then to the "A" or "snowflake" position before the clutch is reenabled.

ATC Fault Code 111
Cab temp sensor open or shorted to power

Cause:

Wire harness/connector failure
Temperature sensor failure
ATC module failure

Possible failure modes:

ATC module defaults to manual mode.

Solution:

1. Disconnect cab temp sensor and check its resistance. It should measure around 10K ohms at room temperature. Replace if faulty.

2. Inspect harness and connectors for possible shorting between cab temp sensor wire and other wires or possible open condition. If a short or open exists, then replace harness.

3. If no fault found with cab temp sensor, wire harness, or connectors, then replace ATC module.

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Evaporator Temperature Sensor

Background

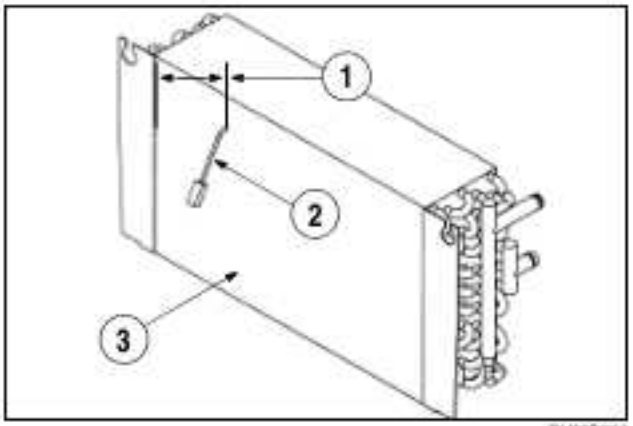
The evaporator temperature sensor, sometimes called the "freeze" or "core" sensor, is located in the evaporator/heater assembly. The sensor measures the effectiveness of system response to the current demand for heating or cooling.

"Freeze" Control

The evaporator sensor also prevents the system from operating in low ambient temperatures where damage to the system might occur. When temperature sensed at the evaporator falls to 0°C (32°F), the controller cycles the compressor clutch OFF. When temperature sensed at the evaporator rises to 3°C (37°F), the controller cycles the clutch back ON. At the maximum cooling setting where the compressor runs continuously, the freeze range controls the cycling of the compressor OFF or ON.

Sensor Location

Proper location of the evaporator sensor is essential to system performance. The evaporator temperature sensor must be installed 107 mm (4.2 in) from the left hand rear side of the evaporator. The sensor must be installed below the second refrigeration tube row at a 30° downward angle. Insert the sensor in the evaporator core up to the angled section, being careful not to kink the sensor.



Evaporator Core Rear View

1. 107 MM (4.2 IN)
2. EVAP TEMP SENSOR
3. EVAPORATOR CORE

Electrical Test – Sensor

NOTICE: *See Electrical Schematic Sections 58, 60 and 61.*

The sensor has a well known resistance vs temperature response: It should measure 10-25K ohms at room temperature for normal operation.

The sensor is a thermistor - thermal resistors. With this thermistor, the colder the environment, the greater the electrical resistance; and the warmer the environment, the less electrical resistance.

The sensor can fail without indicating an open condition. Measure the resistance of the sensor and the ambient temperature at the sensor, and compare the readings to the Resistance versus Temperature table in this section. If the readings are not within the minus or plus 2.5% range, replace the sensor.

NOTICE: *For the test to be valid, the thermometer used must be accurate, and the temperature recorded must be the temperature at the sensor.*

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Book 2
Hydraulics

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Patriot 3230 and 3330 Sprayers

Service Manual

Book 3

HVAC, Cab, Wheels, Brakes,
Boom, Product Handling

84258781
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COLOR ABBREVIATION

NUMBER	COLOR	NUMBER	COLOR
0	--- BLACK	5	--- GREEN
1	--- BROWN	6	--- BLUE
2	--- RED	7	--- VIOLET (PURPLE)
3	--- ORANGE	8	--- GRAY
4	--- YELLOW	9	--- WHITE

CIRCUIT LABEL IDENTIFICATION

0.8-29-123

"0.8" WIRE GAUGE IN mm2 (SAE) (18 GAUGE)

"29" COLOR; 1st DIGIT= BASE COLOR, 2nd DIGIT = TRACER (RED WITH WHITE STRIPE)

"123" CIRCUIT ID NUMBER

CAN BUSS CABLES DO NOT HAVE ID NUMBERS.
C=CABLE, ??=A CABLE NUMBER, G,B,Y&R=COLOR.

NOTES:

1 FOR ELECTRICAL SYSTEM INSTRUCTION SEE ES-A7384.

2 DIAGRAM SHOWN WITH VEHICLE OFF & IN PARK

3 (X-X)= GOTO (SH#-SECTION#) OR PAGE#

4 [XXX]=WIRE ID OF WIRE NOT SHOWN.

5 RELAYS WITH 2 PAGE#s, 1st=COIL LOC. PAGE & 2nd=CONTACT LOC. PAGE

6 FLYBACK DIODE ARE ALWAYS REVERSED BIAS. THIS MEANS ANODE TO GROUND.

7 GS-X IS A RING TERMINALS WITH MULITPLE WIRES

SYMBOLS

- • WIRE(S) SPLICED TOGETHER
- ┼ WIRE CROSSING NO CONNECTIONS
- ≻ FEMALE TERMINAL (SOCKETS)
- → MALE TERMINAL (PINS)
- ⟨XX⟨ BULKHEAD CONNECTOR WITH POSITION VALUE
- ⏚ CHASSIS GROUND
- RELAY CONTACTS NORMALLY OPEN
- RELAY CONTACTS NORMALLY CLOSED

1

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FUSE

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13	ACC PORT	15	23
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18	KEYED POWER	10	39
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22	ECU KEYED PWR	20	41
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28	AC CNTRL	10	25

NUM	CIRCUIT DESCRIPTION	SIZE	PAGE SH-PG
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34	ELECT MIRRORS	15	22
35	SEAT HEATER	10	24
36	CHASSIS POWER	10	26
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38	UNUSED		
39	ACC PORT	15	23
40	BACKLIGHTS	10	16
41	AIM CMD	10	33
42	BOOM SECTION SW	15	33
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45	AUX PORT	10	23
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47	LH HIGH BEAM	15	17
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51	LH FRONT WKLTS	25	19
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COMPONENT LOCATION CHART

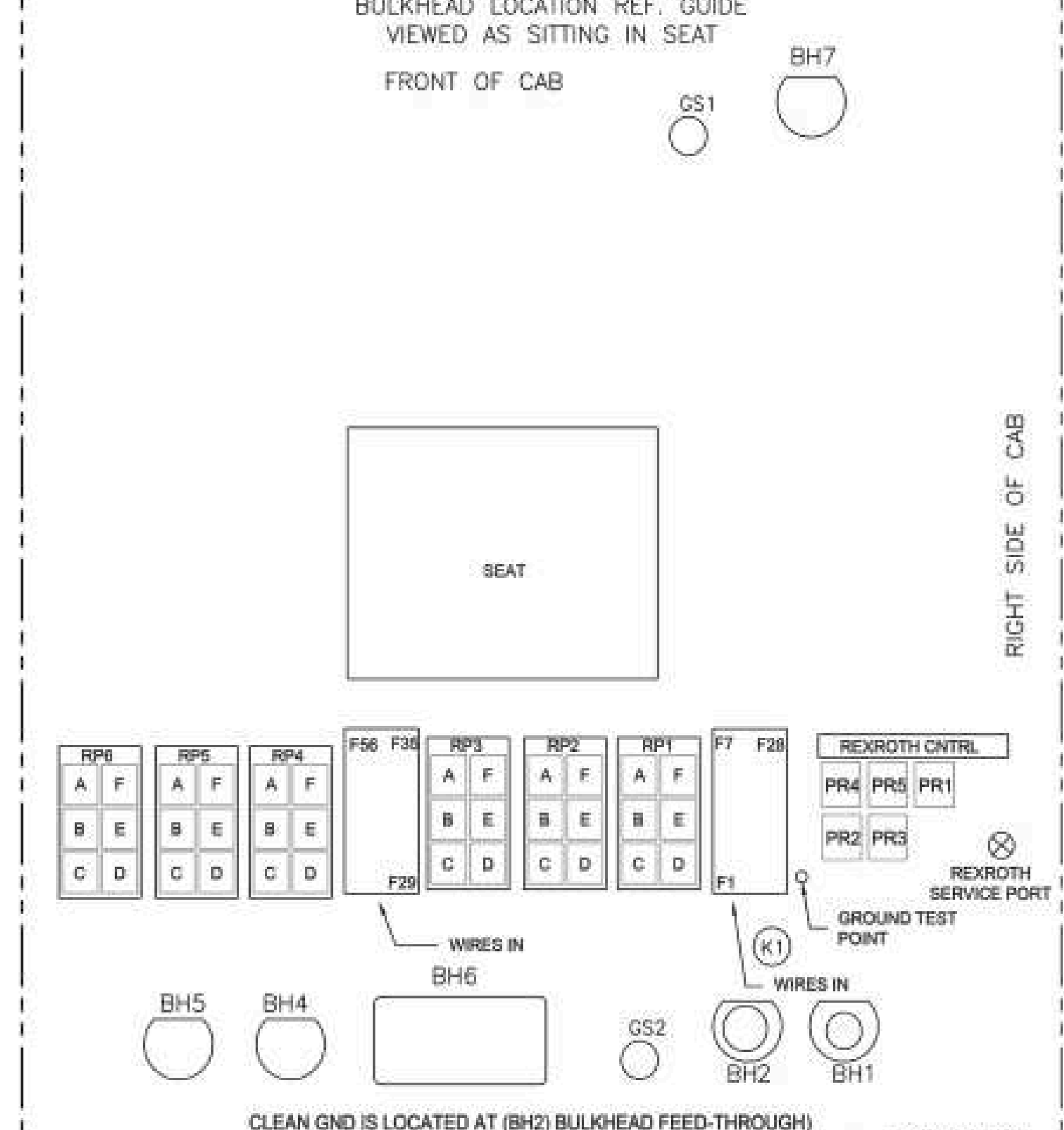
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BULKHEAD LOCATIONS

BULKHEAD LOCATION REF. GUIDE VIEWED AS SITTING IN SEAT



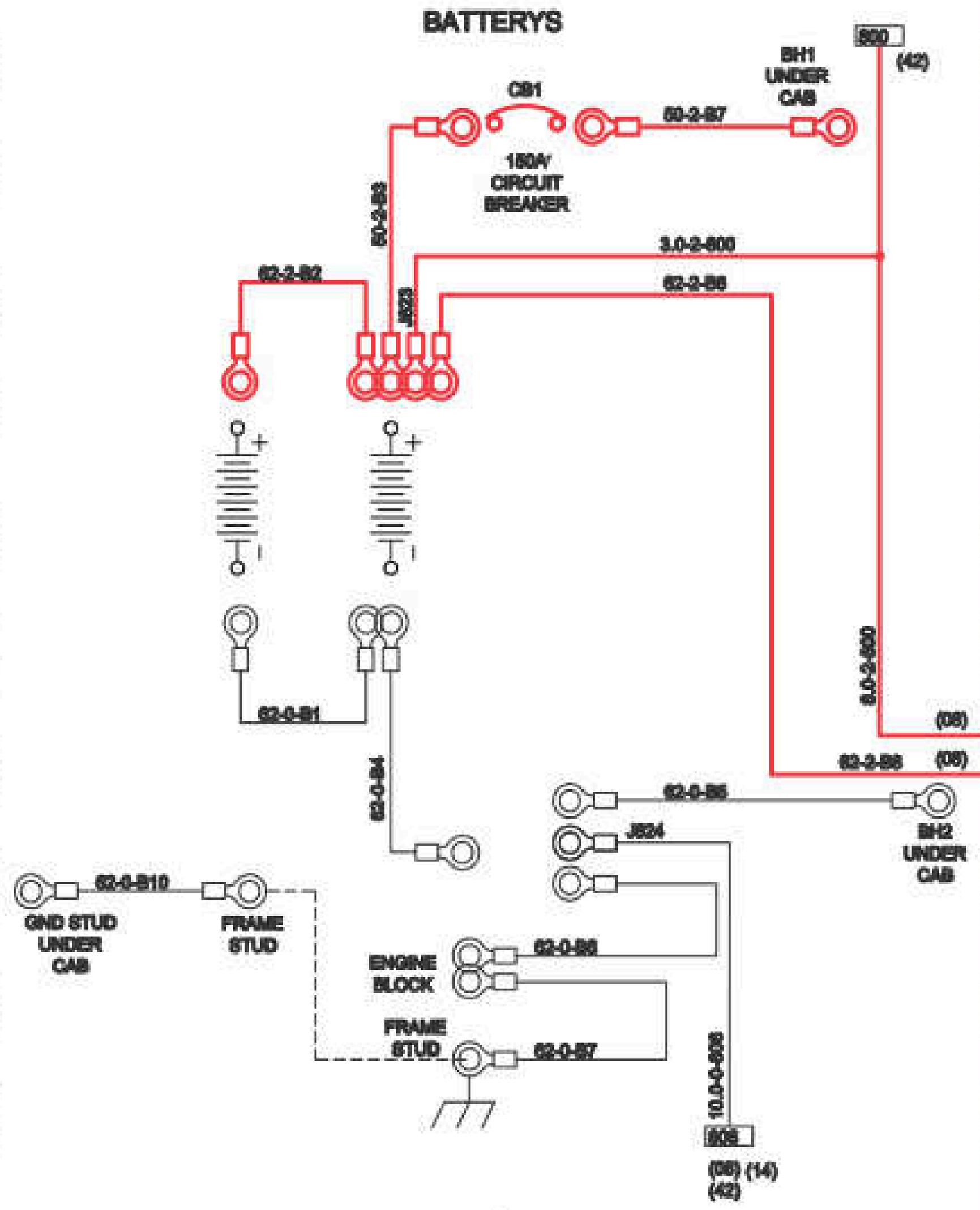
CLEAN GND IS LOCATED AT (BH2) BULKHEAD FEED-THROUGH)
BATTERY POWER IS LOCATED AT (BH1) BULKHEAD FEED-THROUGH)

POWER RELAYS LOCATED TO THE RIGHT OF THE FUSES

REAR OF CAB

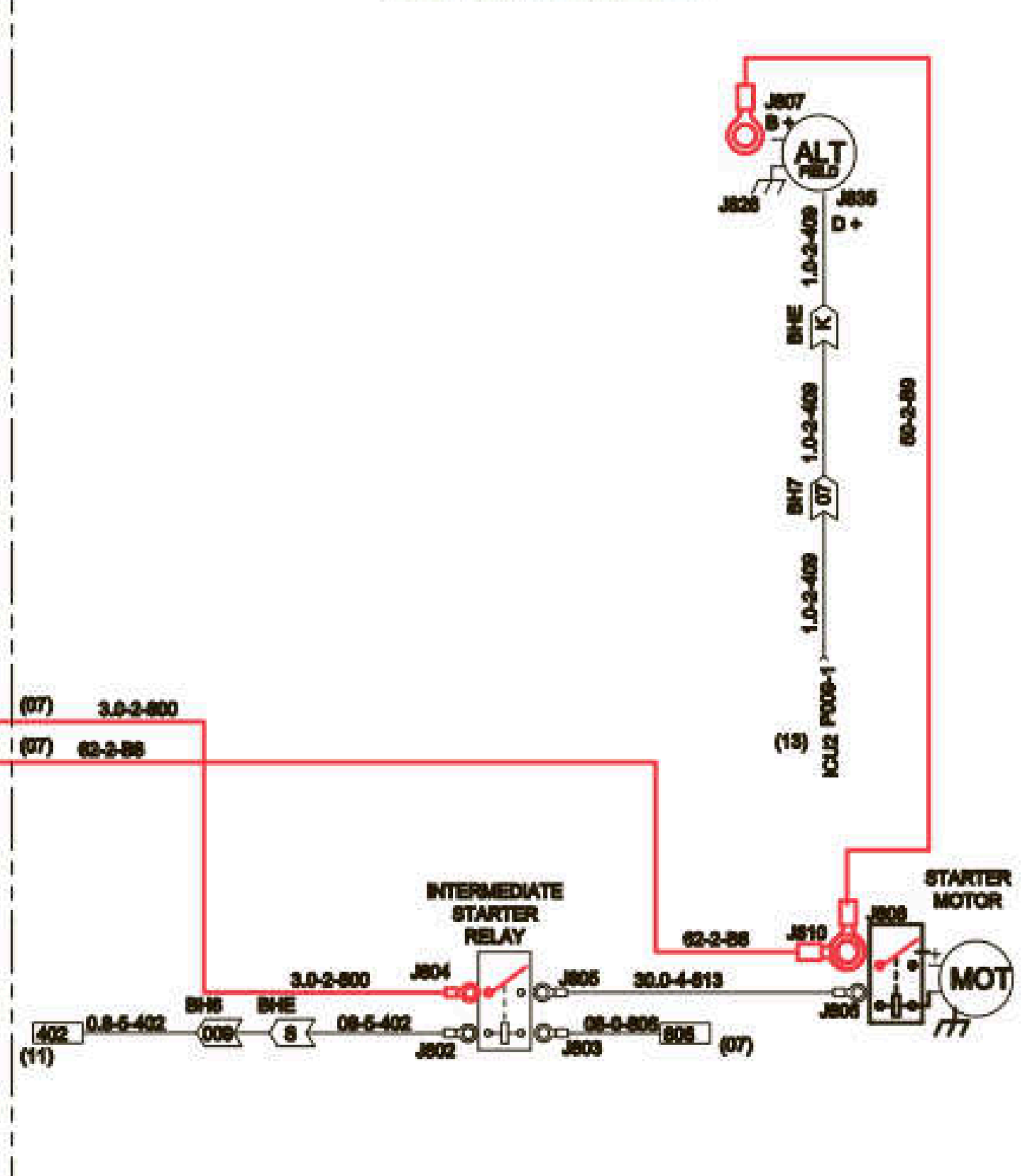
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BATTERYS



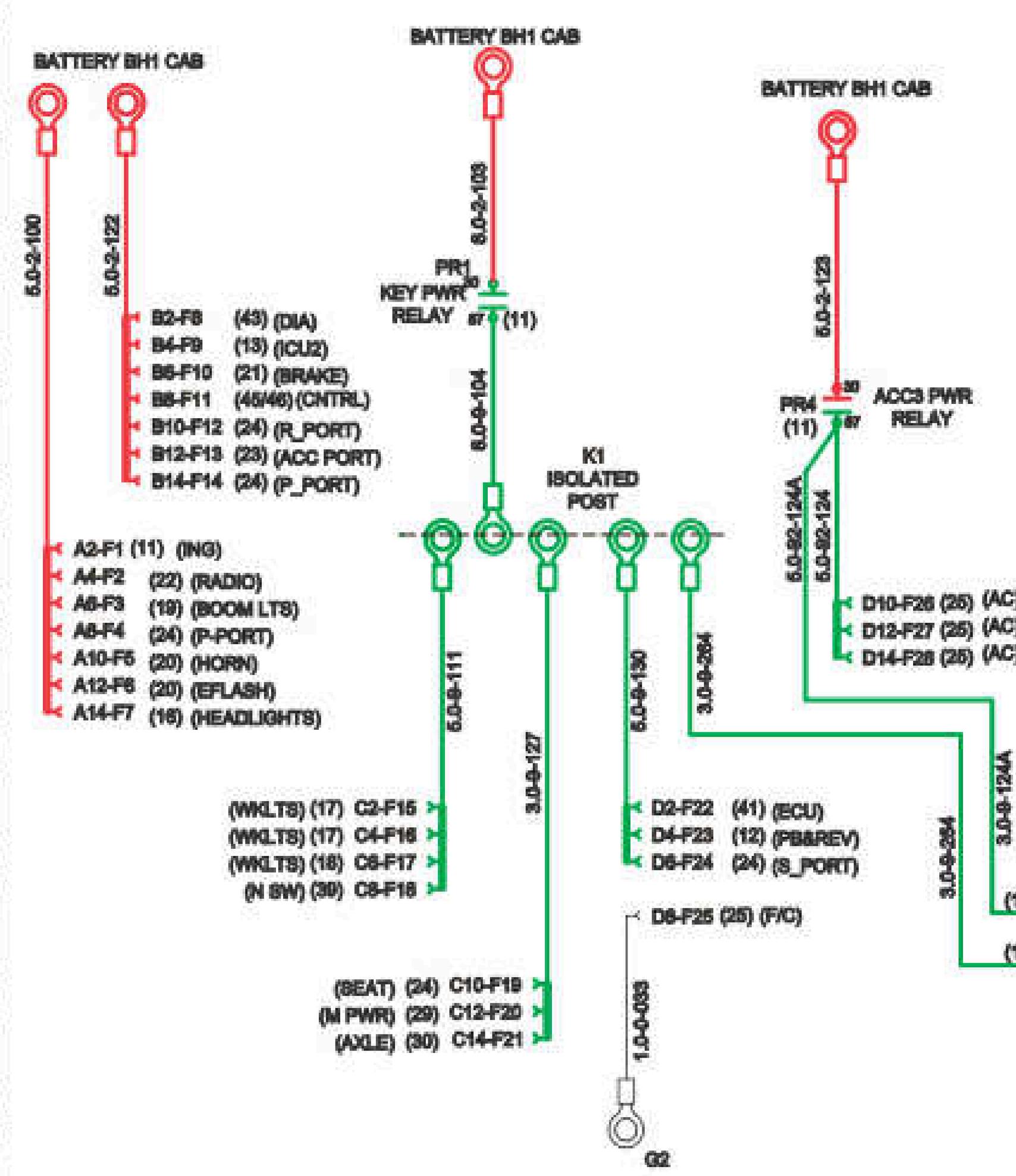
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STARTER / ALTENATOR



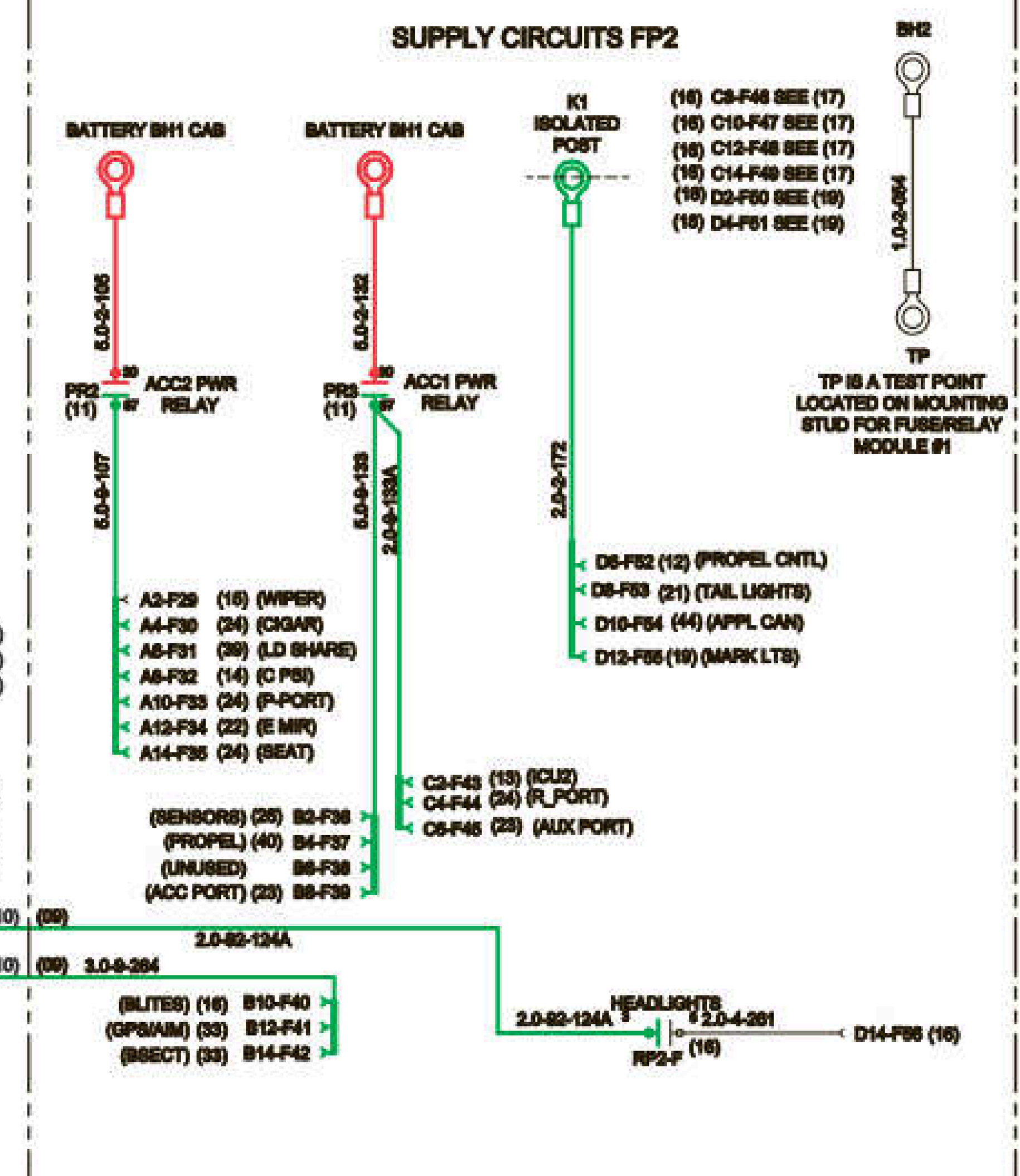
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SUPPLY CIRCUITS FP1



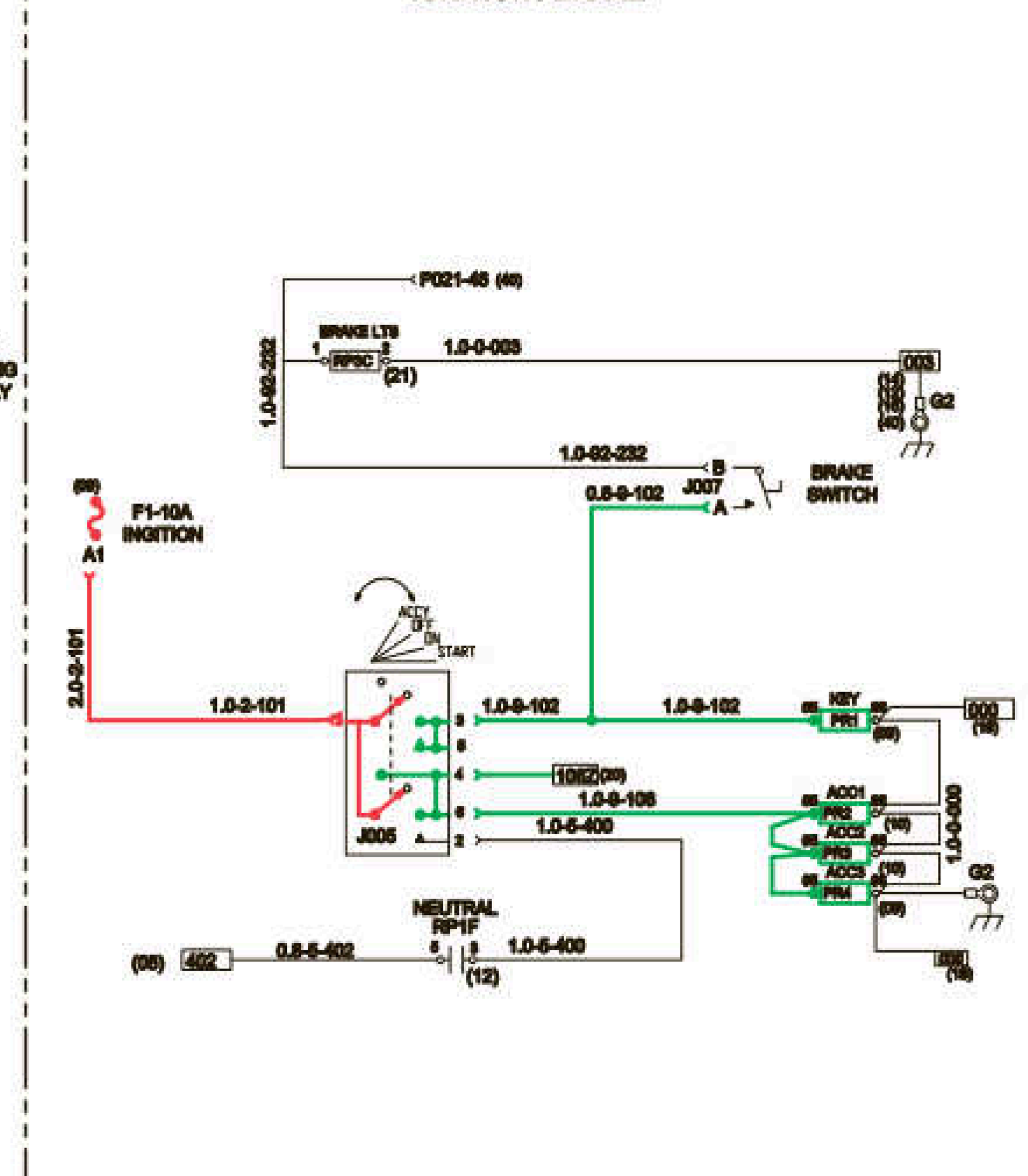
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SUPPLY CIRCUITS FP2



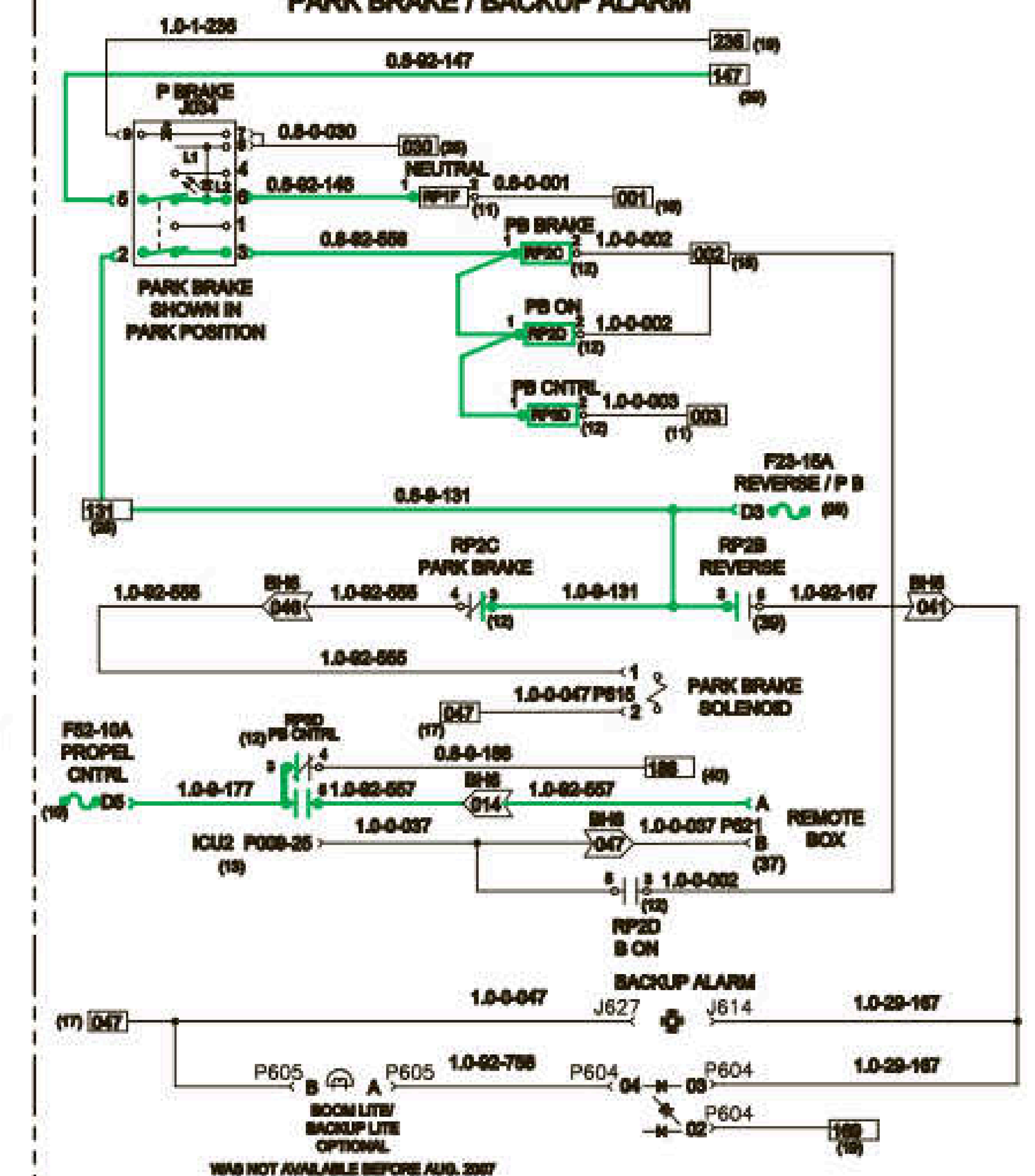
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IGNITION / BRAKE



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PARK BRAKE / BACKUP ALARM



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ICU2 DISPLAY

CN1

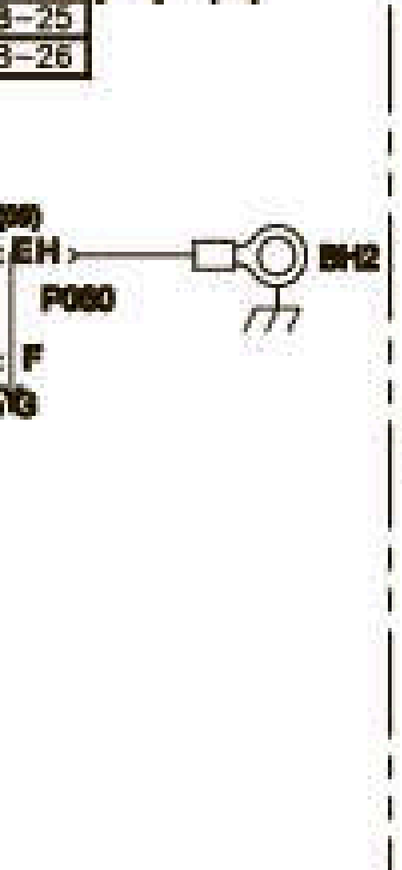
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HIGH BEAM	P010-03	[216]	(16)
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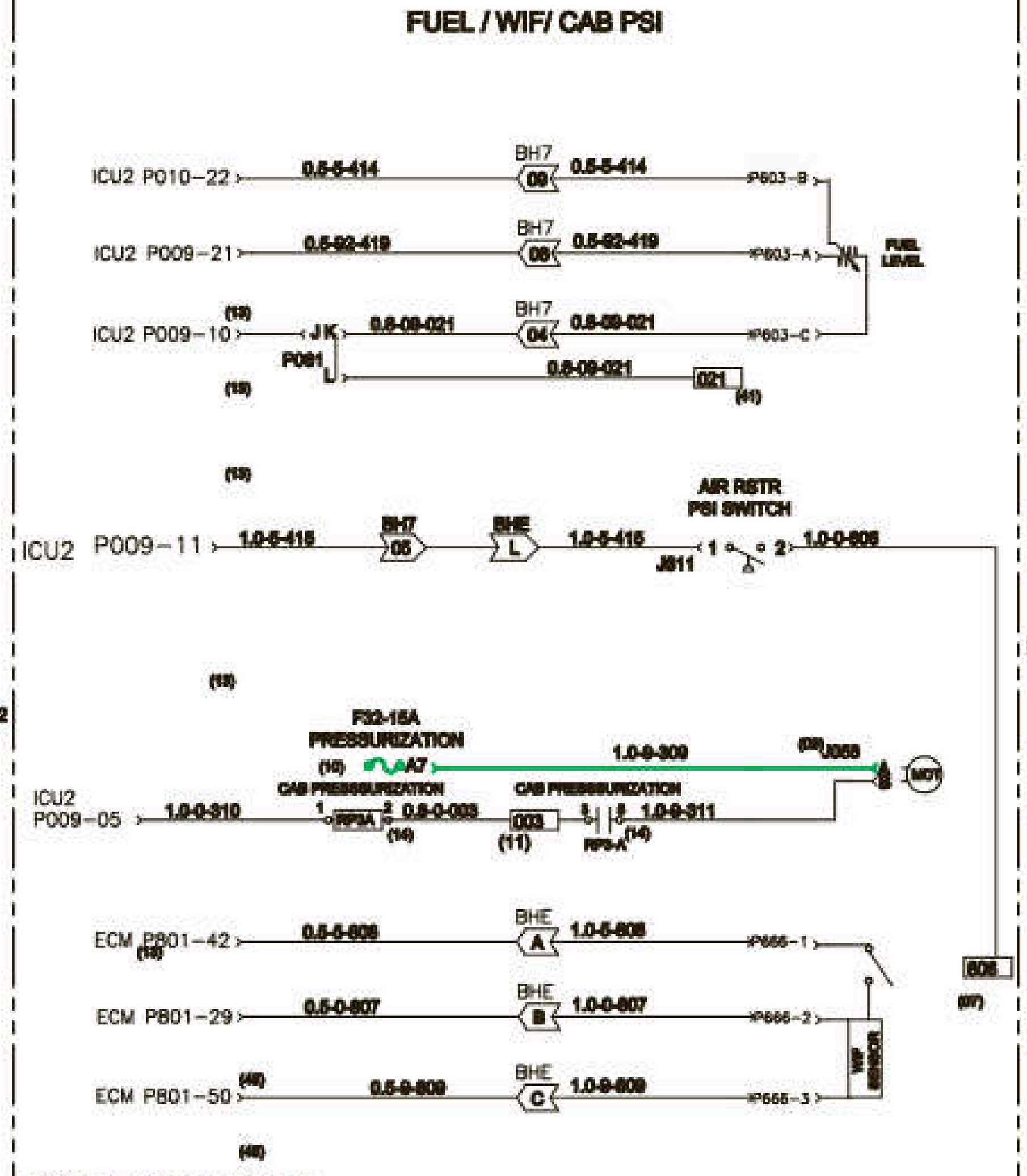
CN3

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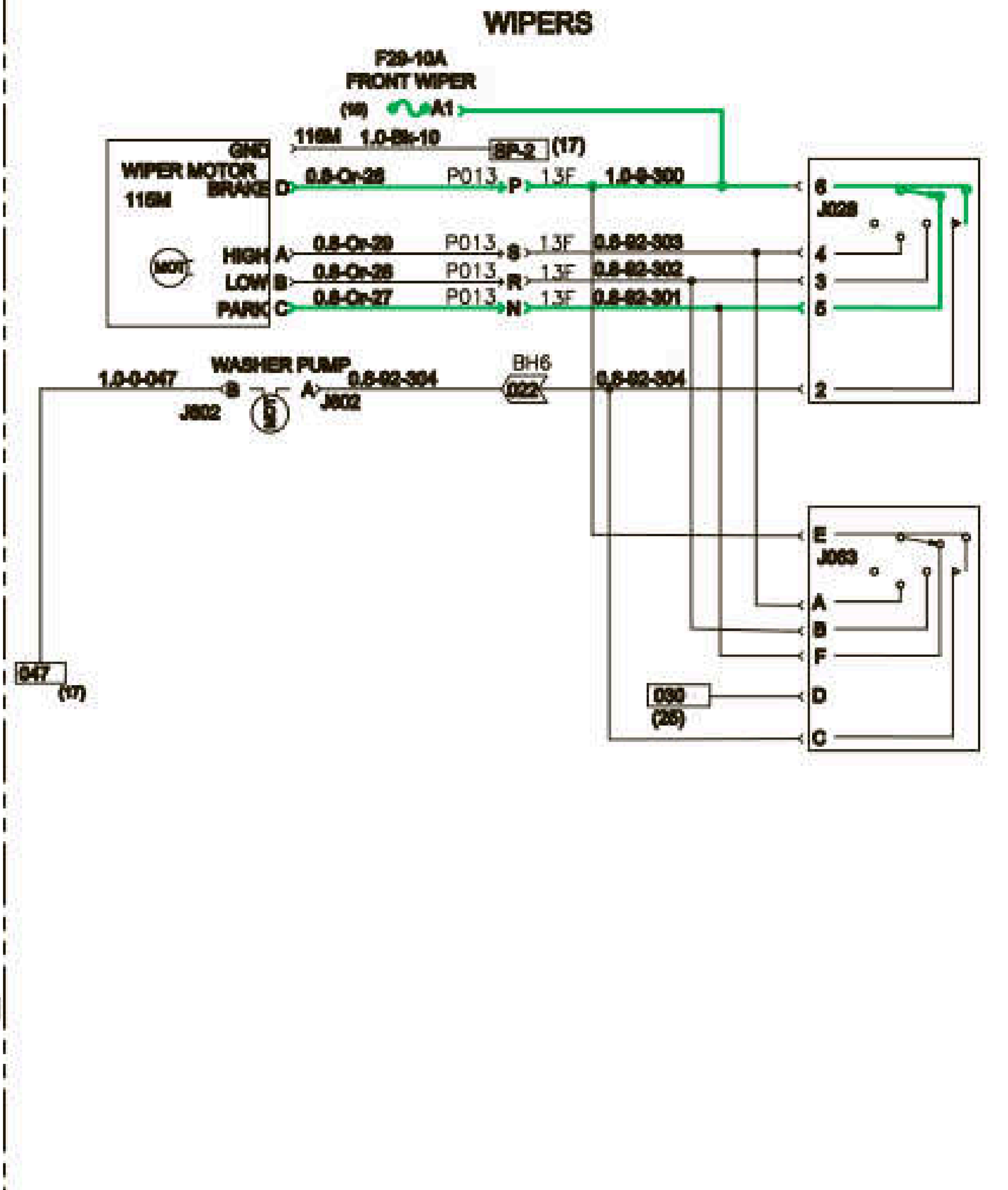
FUEL / WIF/ CAB PSI



ENGINE ECU (P801) ON PAGE 48

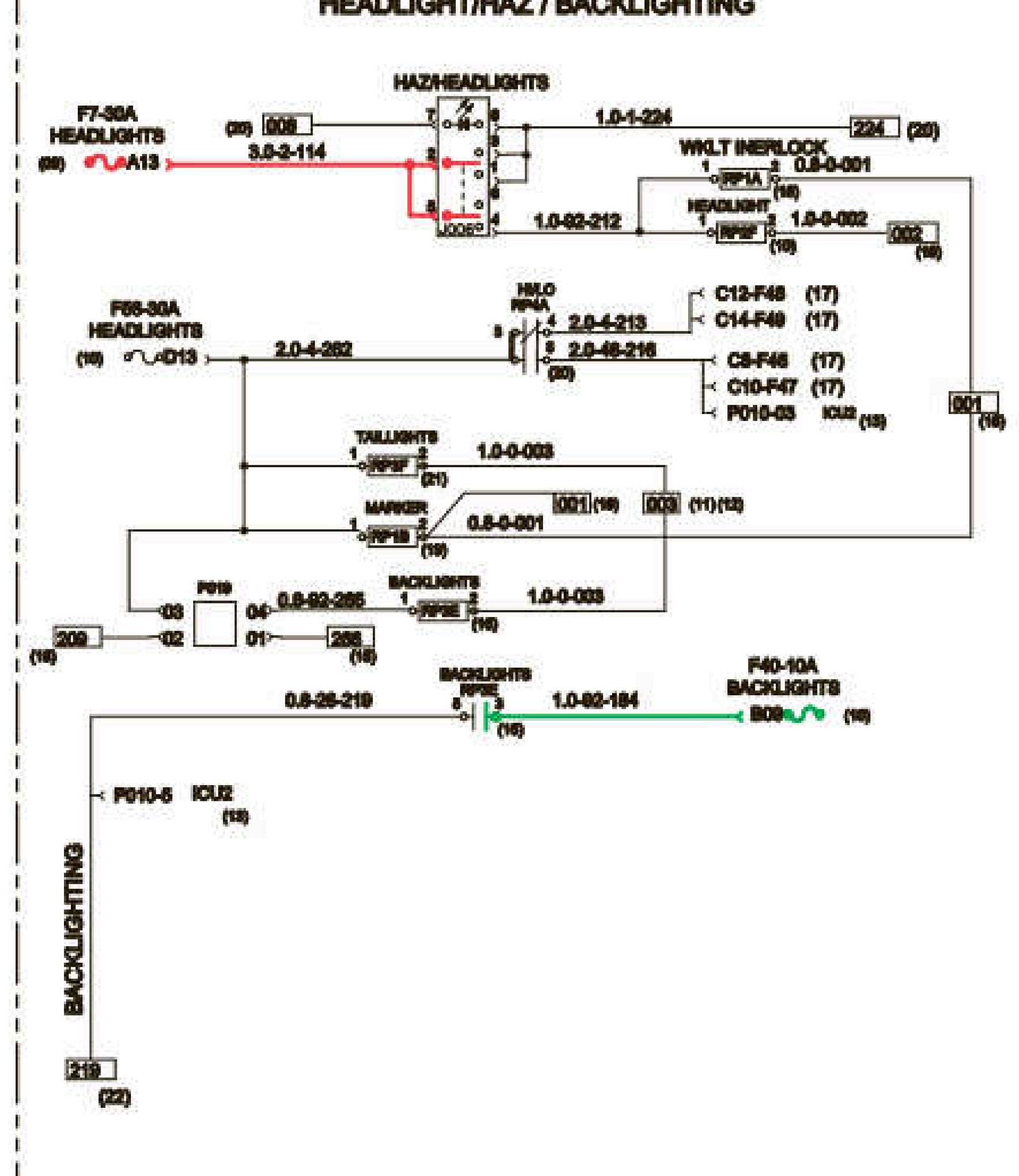
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WIPERS



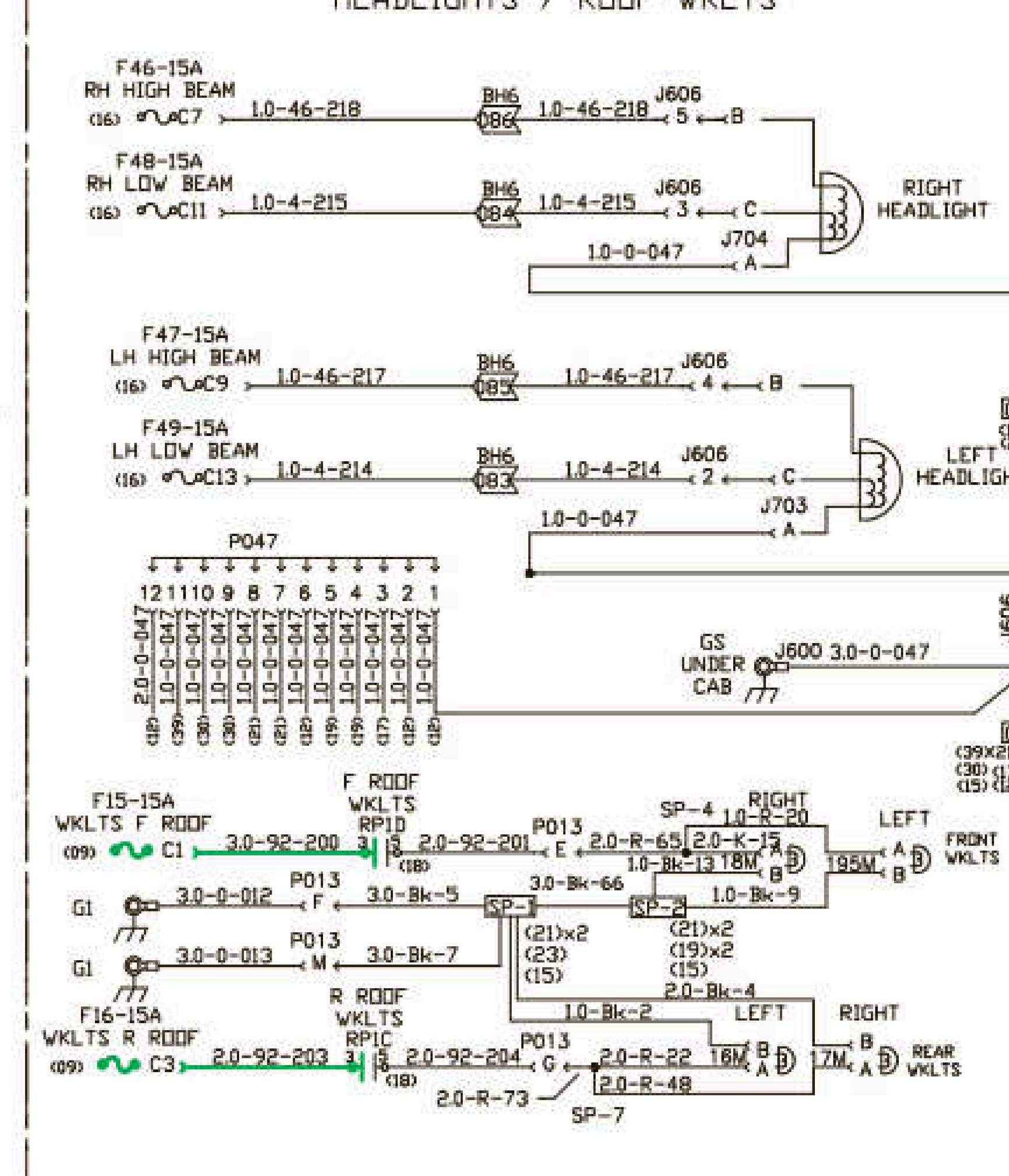
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HEADLIGHT/HAZ / BACKLIGHTING



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HEADLIGHTS / ROOF WKLTS



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ELECTRICAL SCHEMATIC PATRIOT 3230 AND 3330 SPRAYERS RAC 84242809

LEGEND

INDICATES CONSTANT POWER (red)

INDICATES POWER WHEN KEY SWITCH IS ON (green)

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