

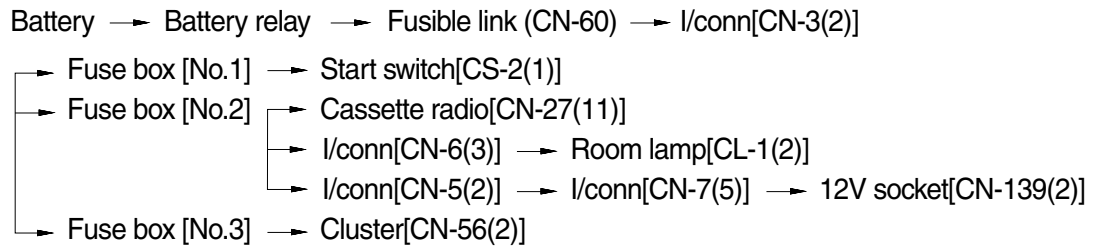


## 1. POWER CIRCUIT

The negative terminal of battery is grounded to the machine chassis.

When the start switch is in the OFF position, the current flows from the positive battery terminal as shown below.

### 1) OPERATING FLOW



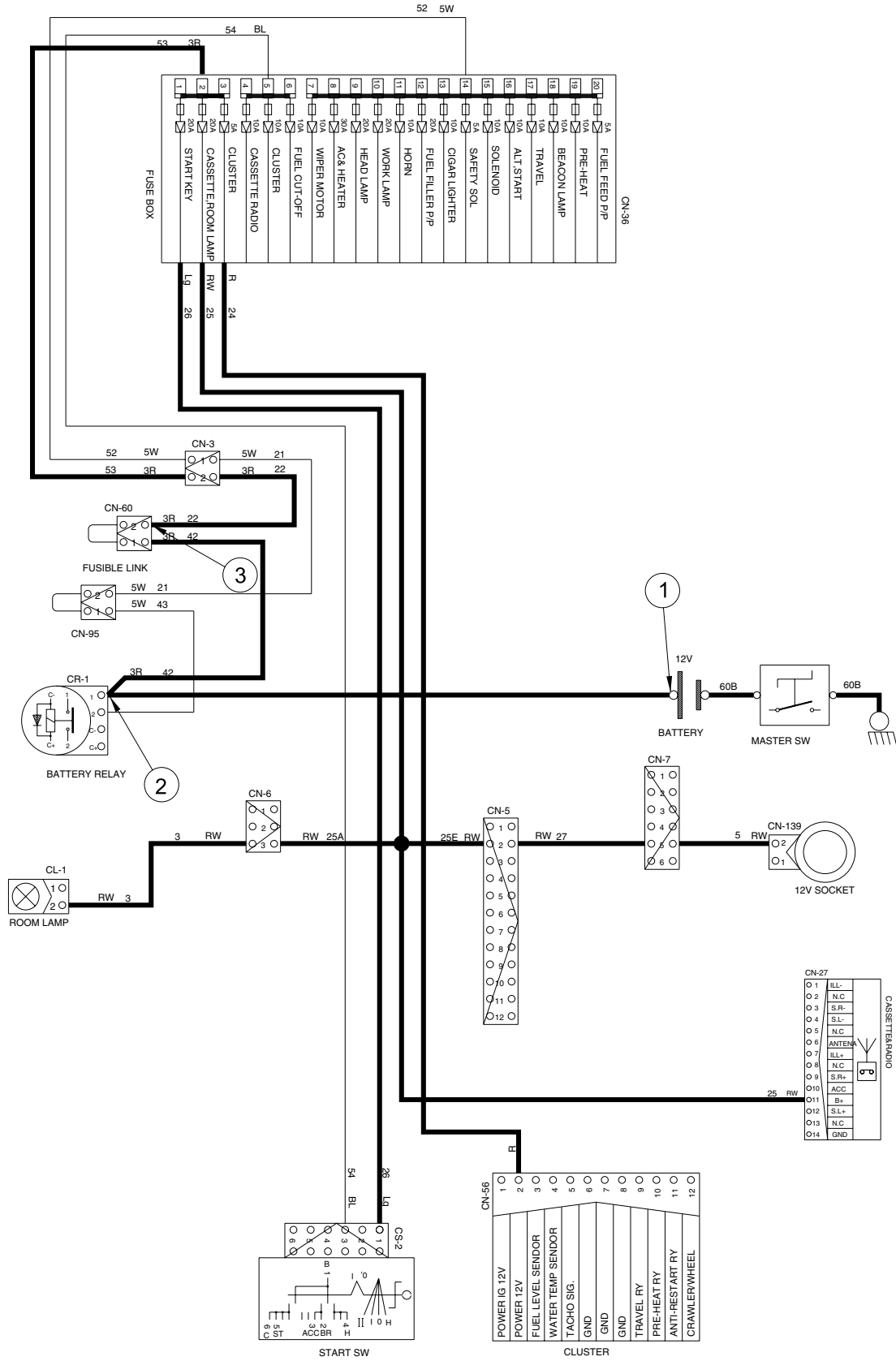
※ I/conn : Intermediate connector

### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
OFF	OFF	① - GND (Battery) ② - GND (Battery) ③ - GND (Fusible link)	10~12.5V

※ GND : Ground

# POWER CIRCUIT



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## 2. STARTING CIRCUIT

### 1) OPERATING FLOW

Battery(+) terminal → Battery relay[CR-1] → Fusible link[CN-60]  
 → I/conn[CN-3(2)] → Fuse box No.1 → Start key[CS-2(1)]

※ Start switch : ON

→ Start switch ON [CS-2(2)] → I/conn [CN-2(1)] →  
 Battery relay [CR-1]:Battery relay operating(All power is supplied with the electric component)  
 → Start switch ON [CS-2(3)] → Fuse box (All power is supplied with electric component)

※ Start switch : START

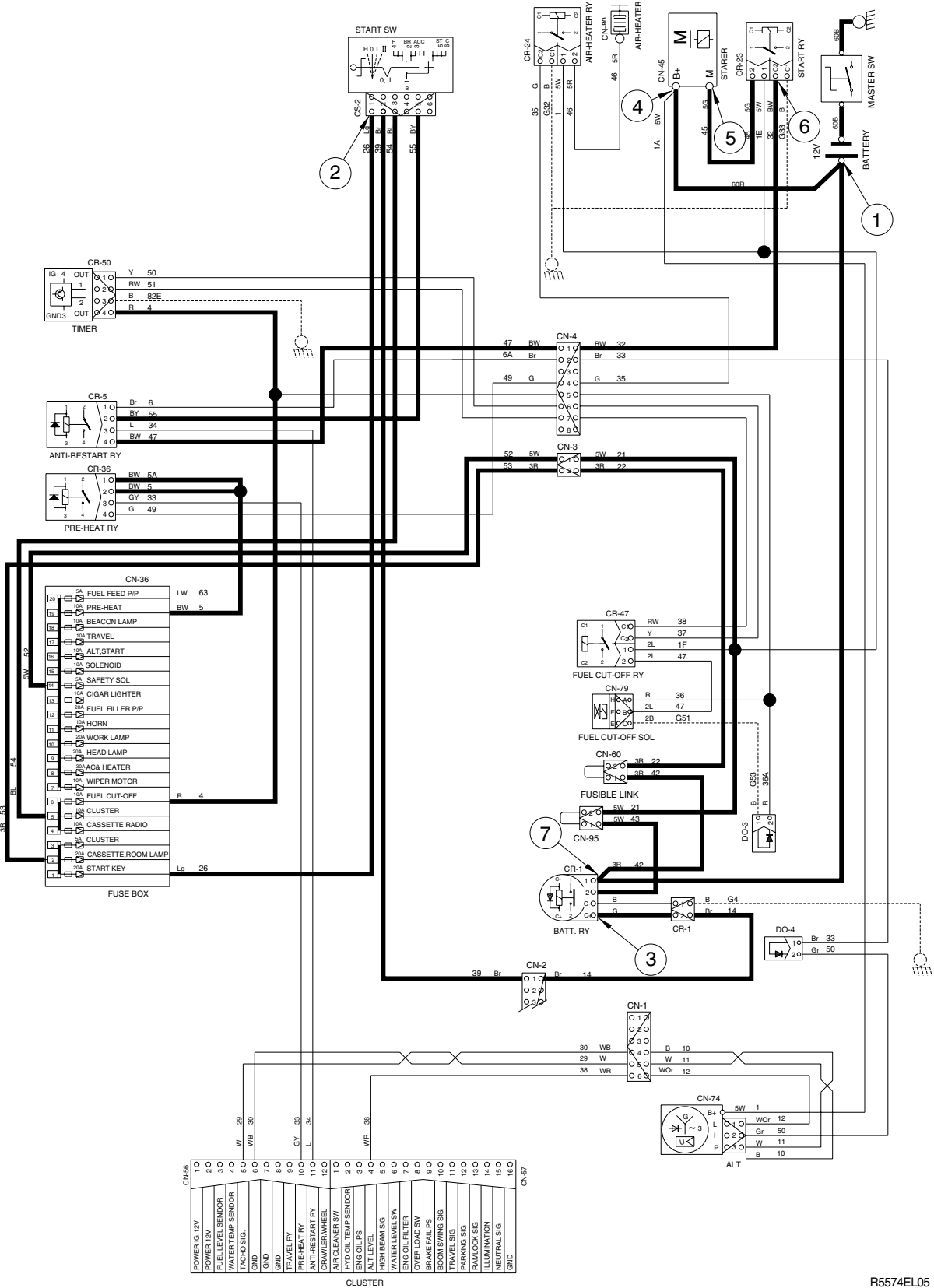
Start switch START [CS-2(5)] → Anti-restart relay [CR-5(2) → (4)] → I/conn [CN-3(2)]  
 → Start relay [CR-23(2)] → Starter motor operating

### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
Operating	Start	① - GND (Battery) ② - GND (Start key) ③ - GND (Battery relay M4) ④ - GND (Starter B <sup>+</sup> ) ⑤ - GND (Starter M) ⑥ - GND (Start relay) ⑦ - GND (Battery relay M8)	10 ~ 12.5V

※ GND : Ground

# STARTING CIRCUIT



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### 3. CHARGING CIRCUIT

When the starter is activated and the engine is started, the operator releases the key switch to the ON position.

Charging current generated by operating alternator flows into the battery through the Battery relay(CR-1).

The current also flows from alternator to each electrical component and controller through the fuse box.

#### 1) OPERATING FLOW

##### (1) Warning flow

Alternator "L" terminal → I/conn [CN-1(6)] → Cluster [CN-57(4)] → Cluster warning lamp

##### (2) Charging flow

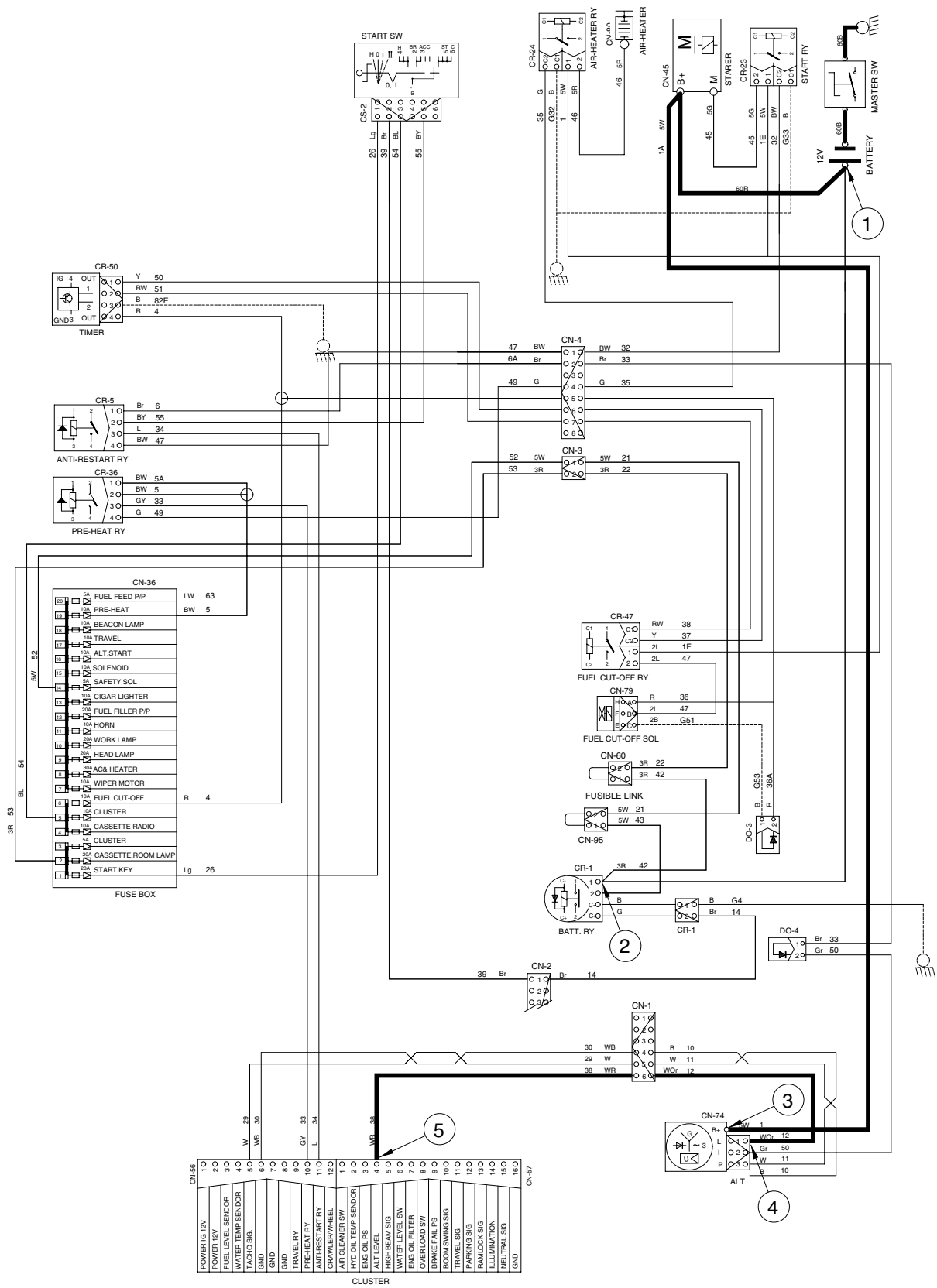
Alternator "B+" terminal → Battery relay → Battery(+) terminal

#### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
ON	ON	① - GND (Battery voltage) ② - GND (Battery relay) ③ - GND (Alternator B+ terminal) ④ - GND (Alternator L terminal) ⑤ - GND (Cluster)	10~12.5V

※ GND : Ground

# CHARGING CIRCUIT



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## 4. HEAD AND WORK LIGHT CIRCUIT

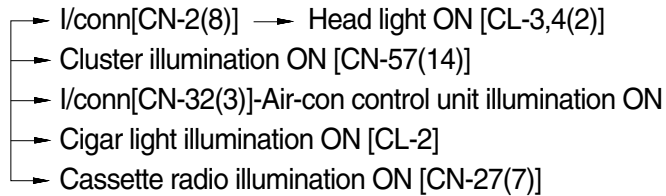
### 1) OPERATING FLOW

Fuse box (No.9) → Light switch[CS-21(1)]

Fuse box (No.10) → Light switch[CS-21(4)]

#### (1) Main light switch ON

Head light switch ON [CS-21(5)]



#### (2) Main light switch ON

Work light switch ON [CS-21(2)] → I/conn[CN-2(2)] → I/conn[CN-12(1)]

→ Work light ON [CL-5(2)]

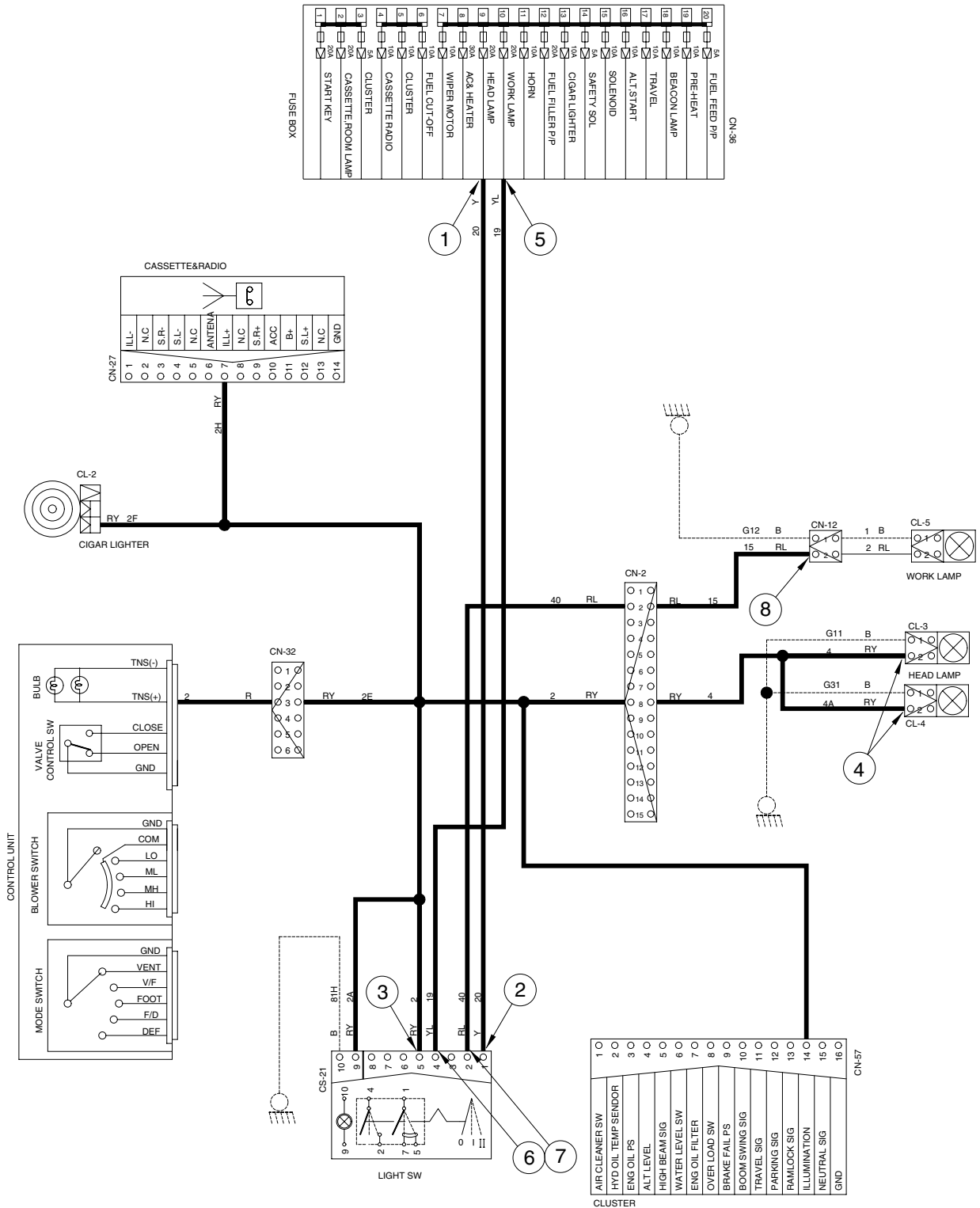
### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	① - GND(Fuse box) ② - GND(Switch power input) ③ - GND(Switch power output) ④ - GND(Head light)	10~12.5V
STOP	ON	⑤ - GND(Fuse box) ⑥ - GND(Switch power input) ⑦ - GND(Switch power output) ⑧ - GND(Work light)	10~12.5V

※ GND : Ground



# HEAD AND WORK LAMP CIRCUIT



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## 5. BEACON LAMP CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.19) → Beacon lamp switch[CN-23(5)]

#### (1) Beacon lamp switch ON

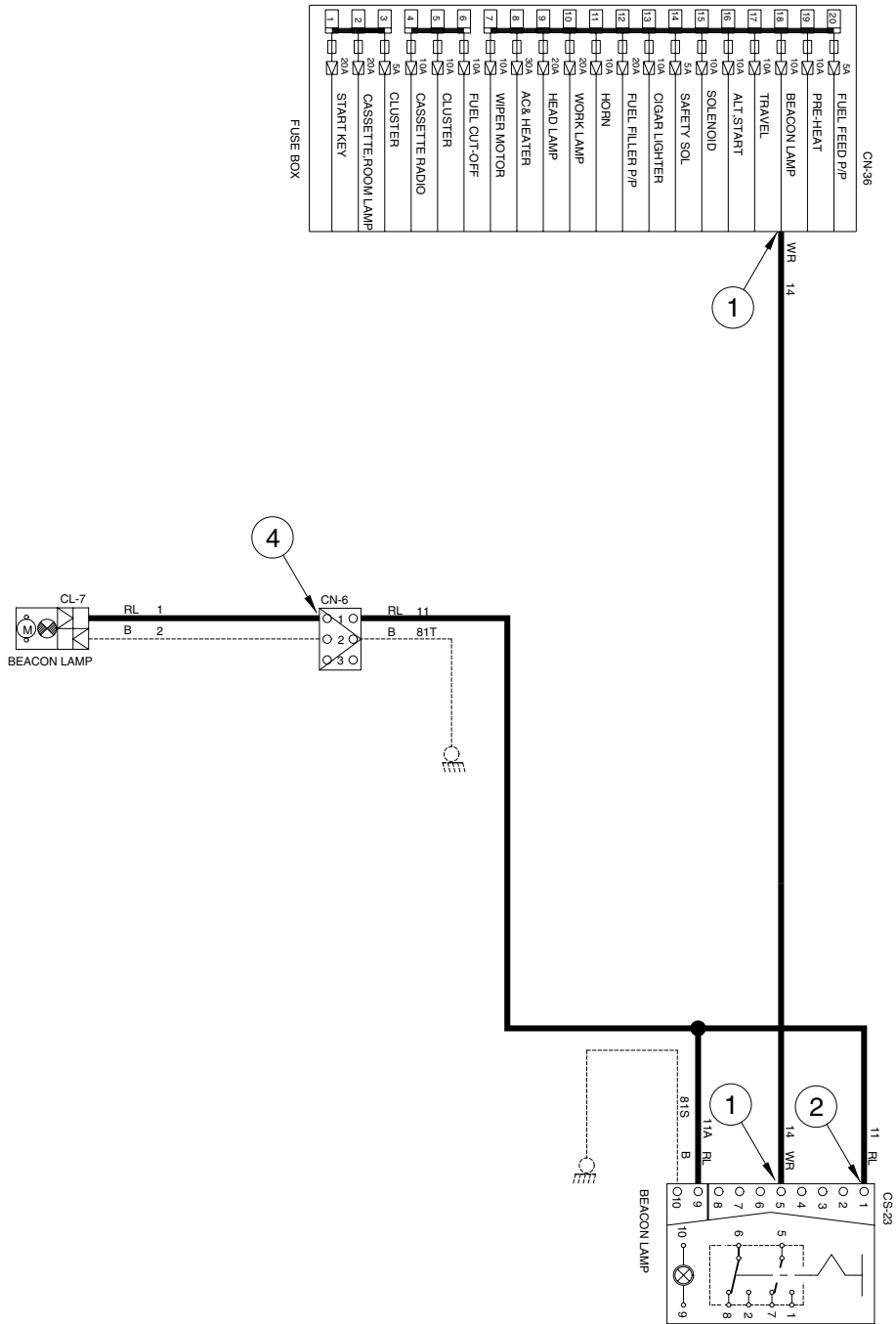
Beacon lamp switch ON [CS-23(1)] → Switch Indicator lamp ON [CS-23(9)]  
→ I/conn[CN-6(1)] → Beacon lamp ON [CL-7]

### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	① - GND(Fuse box) ② - GND(Switch power input) ③ - GND(Switch power output) ④ - GND(Beacon lamp)	10~12.5V

※ GND : Ground

# BEACON LAMP CIRCUIT

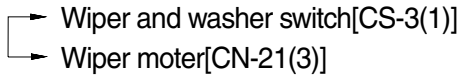


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## 6. WIPER AND WASHER CIRCUIT

### 1) OPERATING FLOW

#### (1) Key switch ON

Fuse box (No.7) 

#### (2) Wipe switch ON : 1st step(Low speed)

Wiper switch ON [CS-3(6)] → Wiper motor operating[CN-21(4)]

#### (3) Wiper switch ON : 2nd step(Washer)

Wiper switch ON [CS-3(6)] → Wiper motor operating[CN-21(4)]

Wiper switch ON [CS-3(3)] → I/conn[CN-2(10)] → Washer pump operating[CN-22(2)]

#### (4) Auto parking(When switch OFF)

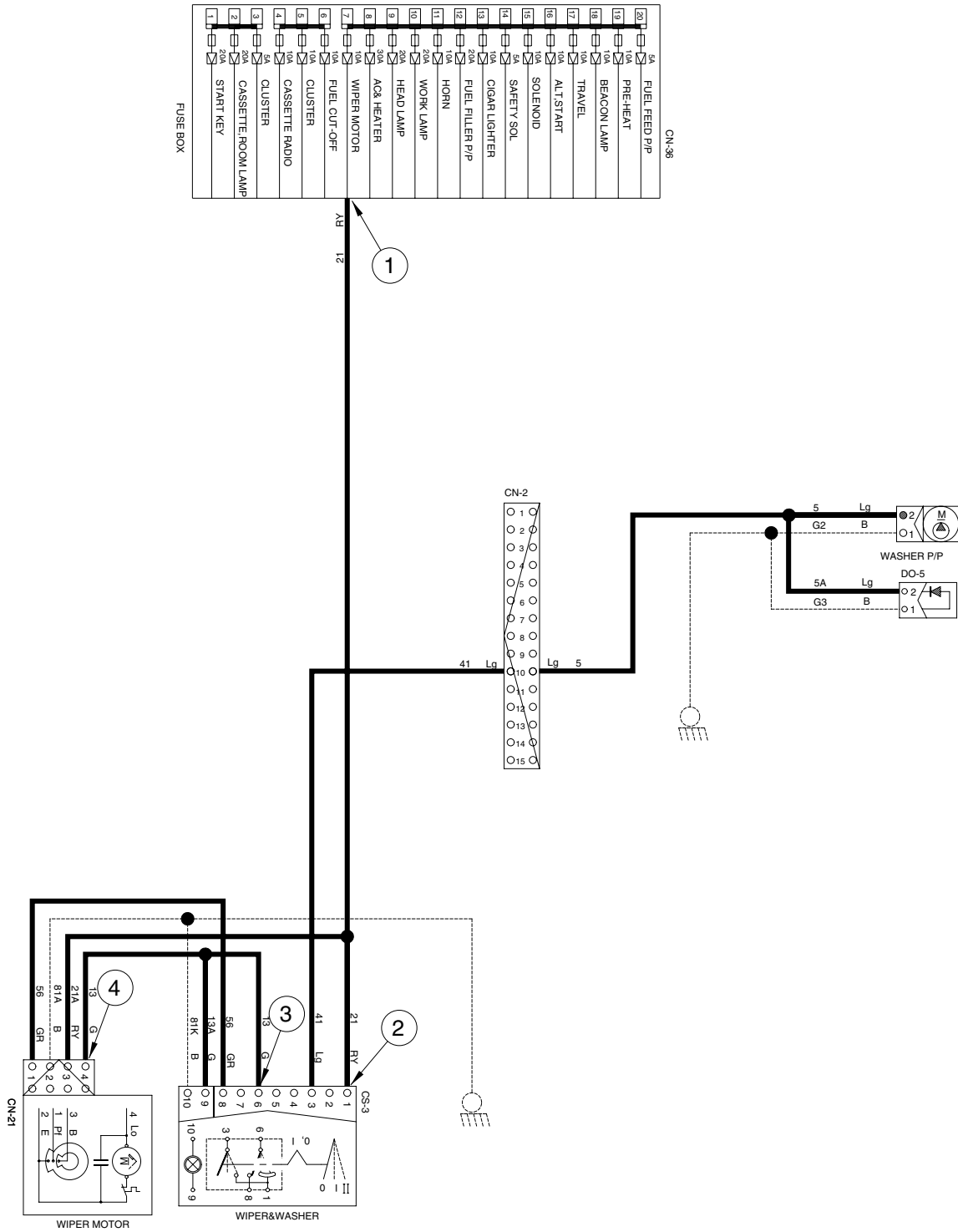
Switch OFF → Wiper motor[CN-21(1)] → Wiper switch[CS-3(8)→(6)] → Wiper motor[CN-21(4)]  
 → Wiper motor parking position by wiper motor controller

### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	① - GND(Fuse box) ② - GND(Switch power input) ③ - GND(Switch power output) ④ - GND(Wiper motor)	10~12.5V

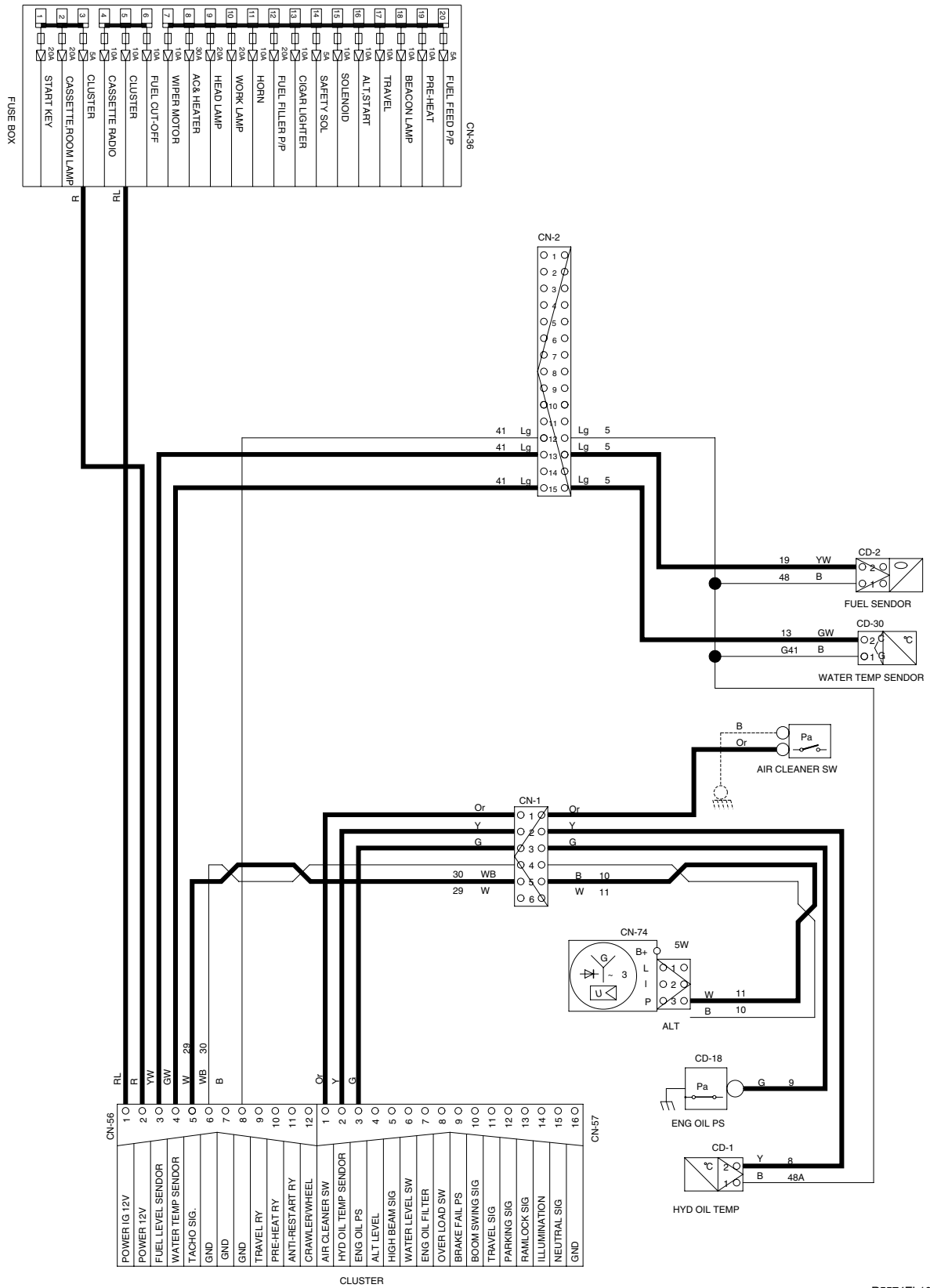
※ GND : Ground

# WASHER CONTROL CIRCUIT



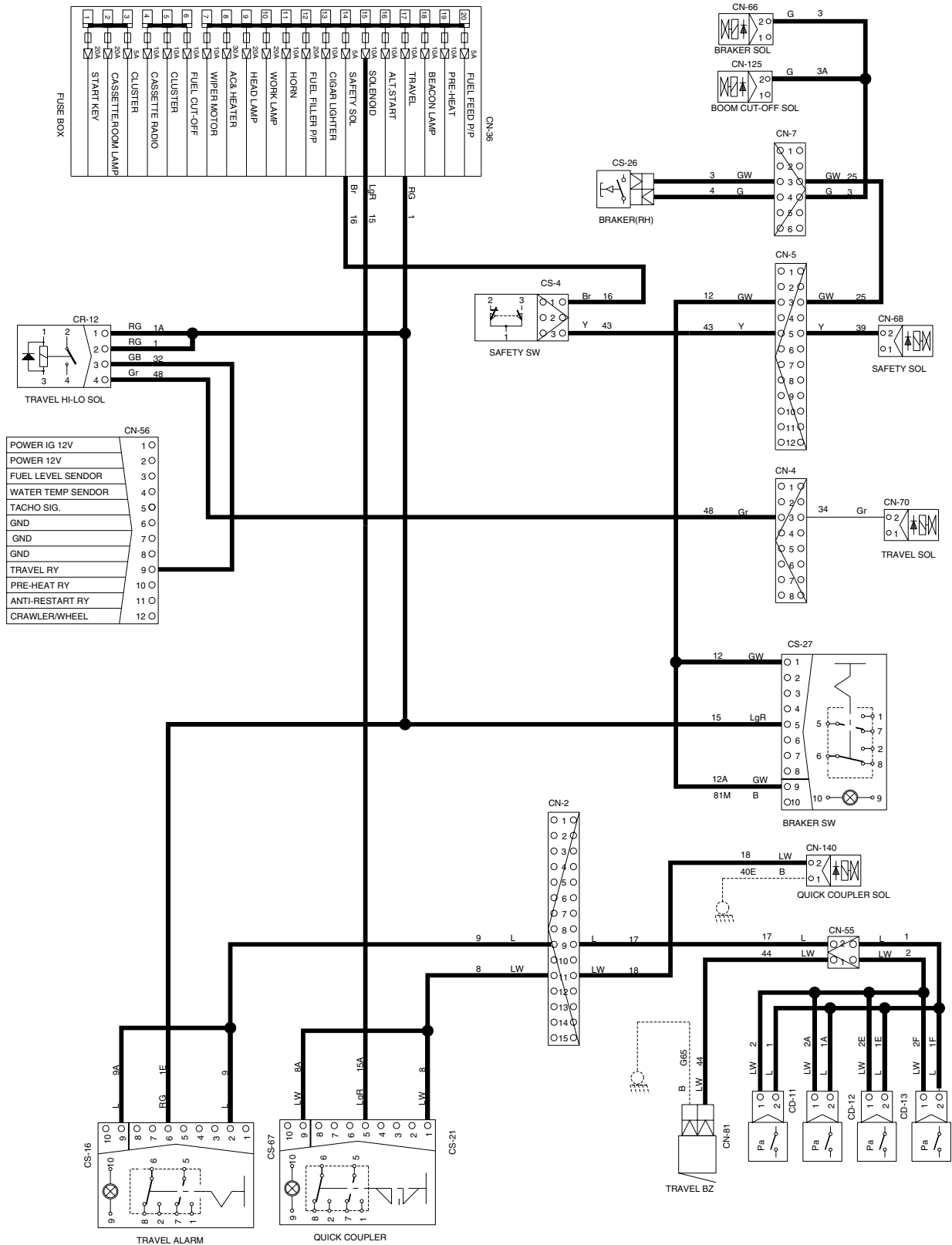
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# MONITORING CIRCUIT



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# ELECTRIC CIRCUIT FOR HYDRAULIC



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