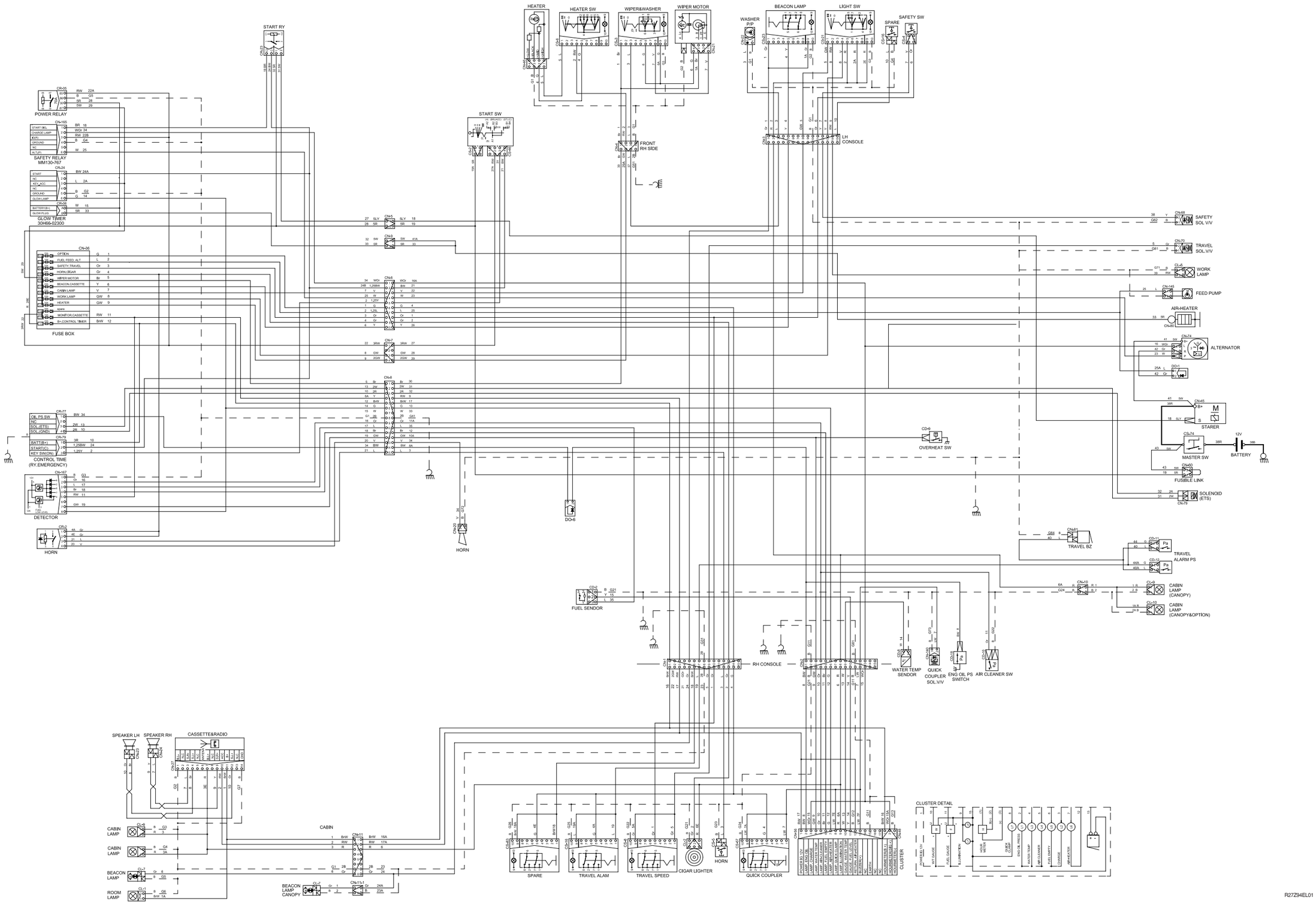

START RY
HEATER
HEATER SW
WIPER&WASHER
WIPER MOTOR
BEACON LAMP
LIGHT SW
SAFETY SW
WASHER P/P
SPARE
POWER RELAY
START SW
FRONT RH SIDE
LH CONSOLE
SAFETY RELAY MM130-767
GLOW TIMER 30H66-02300
FUSE BOX
SAFETY SOL V/V
TRAVEL SOL.V/V
WORK LAMP
FEED PUMP
AIR-HEATER
ALTERNATOR
STARER
MASTER SW
BATTERY
FUSIBLE LINK
SOLENOID (ETS)
OVERHEAT SW
CONTROL TIME (RY,EMERGENCY)
DETECTOR
HORN
TRAVEL BZ
TRAVEL ALARM PS
CABIN LAMP (CANOPY)
CABIN LAMP (CANOPY&OPTION)
FUEL SENDOR
RH CONSOLE
WATER TEMP SENDOR
QUICK COUPLER SOL.V/V
ENG OIL PS SWITCH
AIR CLEANER SW
SPEAKER LH
SPEAKER RH
CASSETTE&RADIO
CABIN LAMP
BEACON LAMP
ROOM LAMP
BEACON LAMP CANOPY
SPARE
TRAVEL ALAM
TRAVEL SPEED
CIGAR LIGHTER
QUICK COUPLER
CLUSTER DETAIL
R27Z94EL01

MEMORANDUM


Robex
HYUNDAI HEAVY INDUSTRIES CO., LTD.
CONSTRUCTION EQUIPMENT DIV.

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

Battery → Master switch [CS-74] → Fusible link (CN-60) → Start switch [CS-2 (1)]
Fusible link (CN-60) → I/conn [CN-5 (2)] →

Fuse box [No.1] → I/conn [CN-8 (5)] → I/conn [CN-1 (1)] → Cluster [CN-48 (1)]
Fuse box [No.1] → Control timer [CR-79 (1)]
I/conn [CN-1 (1)] → I/conn [CN-11 (1)] →
I/conn [CN-11 (1)] → Room lamp [CL-1 (1)]
I/conn [CN-11 (1)] → Cassette & radio [CN-27 (11)]

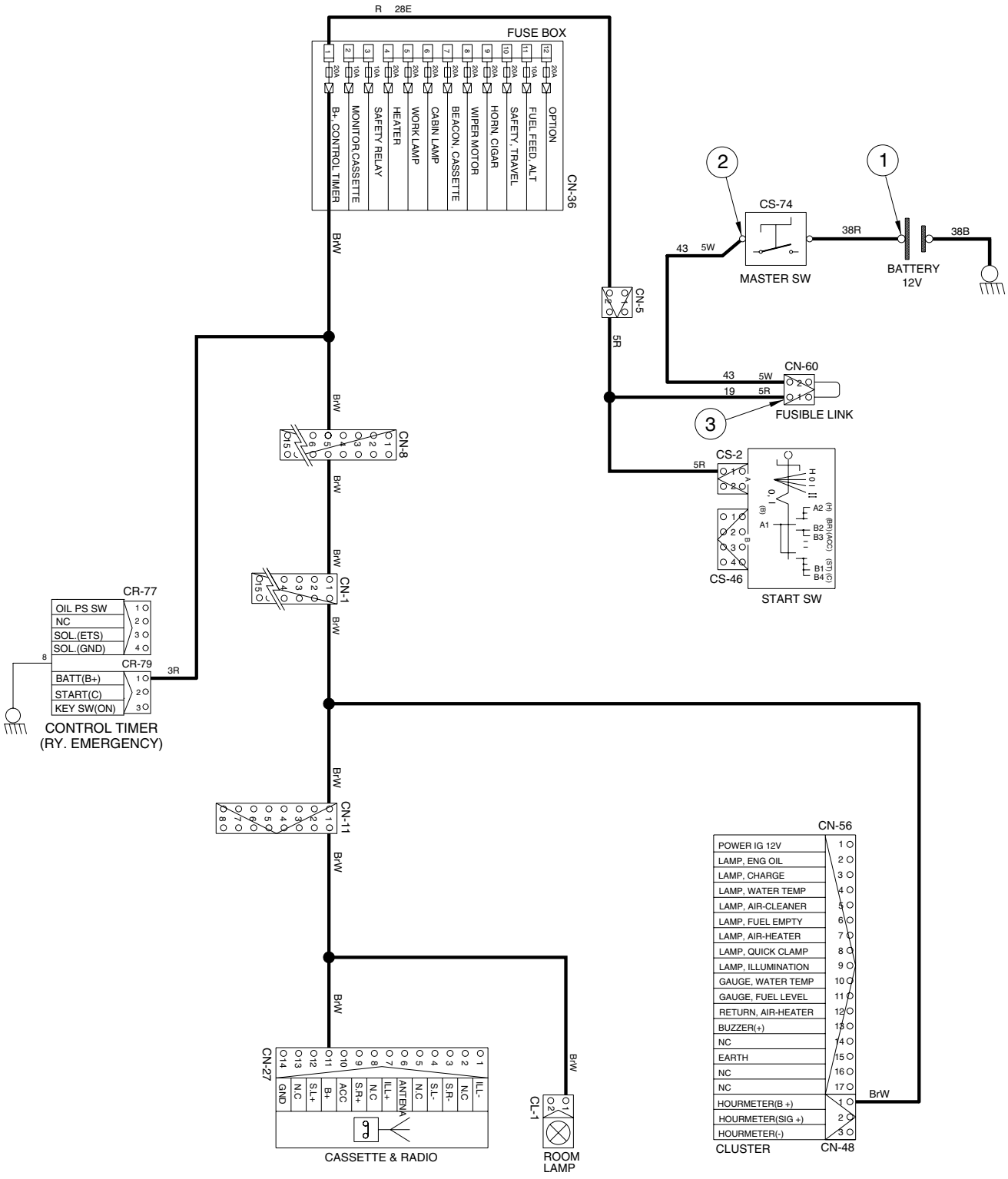
※ I/conn : Intermediate connector

2) CHECK POINT

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

※ GND : Ground

POWER CIRCUIT



R27Z94EL04

2. STARTING CIRCUIT

1) OPERATING FLOW

Battery(+) terminal → Master switch [CS-74] → Fusible link [CN-60]
- → Start key [CS-2 (1)]
- → I/conn [CN-5 (2)]
  - → Fuse box No.1
  - → Glow timer [CR-36 (1)]
  - → Power relay [CR-35 (30)]

※ **Start switch : ON**

Start switch ON
- → [CS-46 (2)] → I/conn [CN-7 (1)]
  - → Fuse box No. 2, 3 (power is supplied) → Safety relay [CN-165 (3)]
  - → Power relay [CR-35 (85) → (87)] → Fuse box (all power is supplied with electric component)
- → [CS-46 (3)] → I/conn [CN-6 (5)] → Control timer [CR-79 (3)]

※ **Start switch : START**

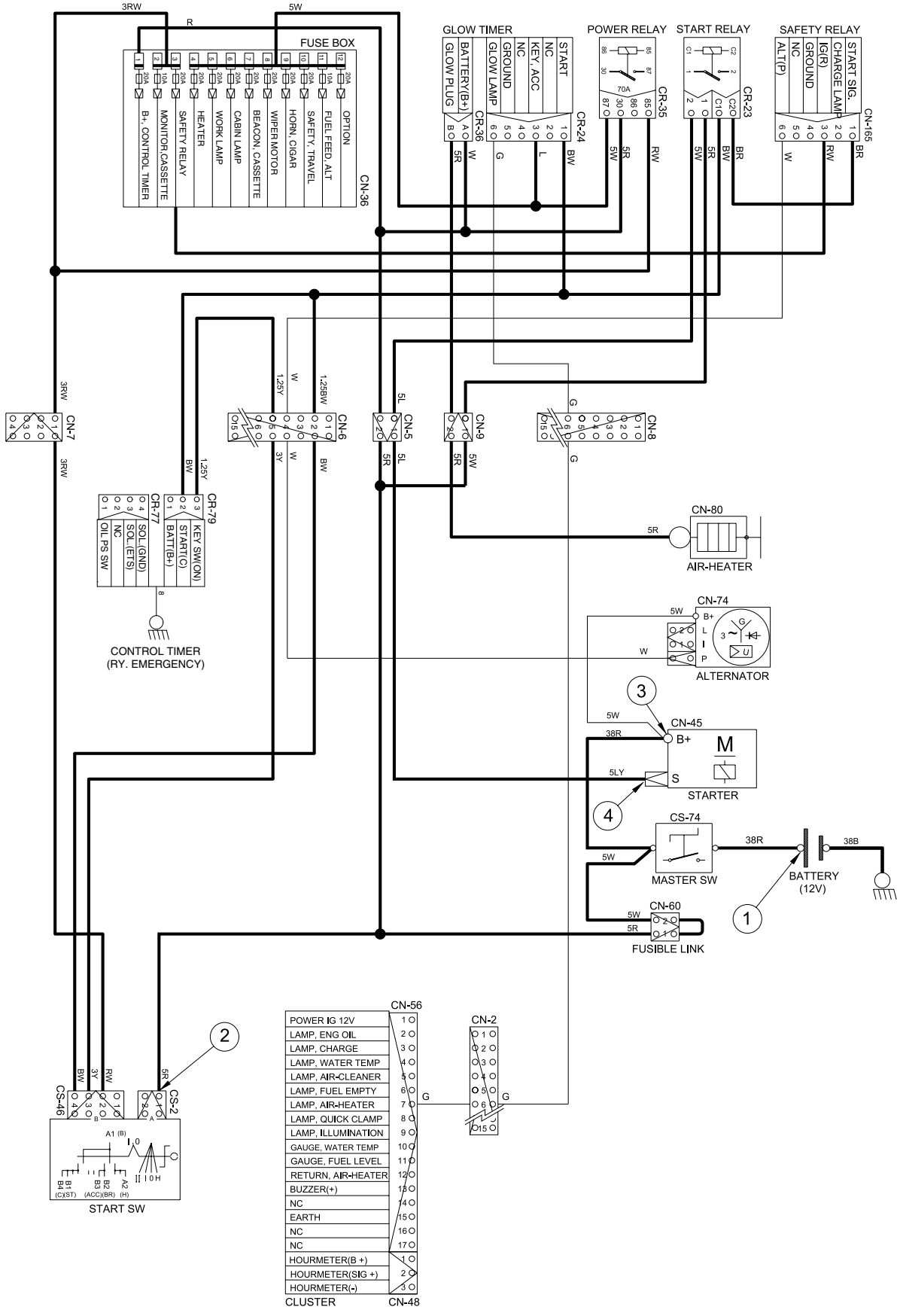
Start switch START [CS-46 (4)] → I/conn [CN-6 (2)]
- → Start relay [CR-23 (C1) → (2)] → I/conn [CN-5 (1)] → Starter [CN-45 (S)] → Start motor operating
- → Glow timer [CR-24(1)]
- → Control timer [CR-79(2)]

2) CHECK POINT

Engine	Start switch	Check point	Voltage
Operating	Start	① - GND (Battery) ② - GND (Start key) ③ - GND (Starter B^+) ④ - GND (Starter M)	10~12.5 V

※ GND : Ground

STARTING CIRCUIT



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.

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-2 (13)] → Cluster [CN-56 (3)] → Cluster warning lamp ON

(2) Charging flow

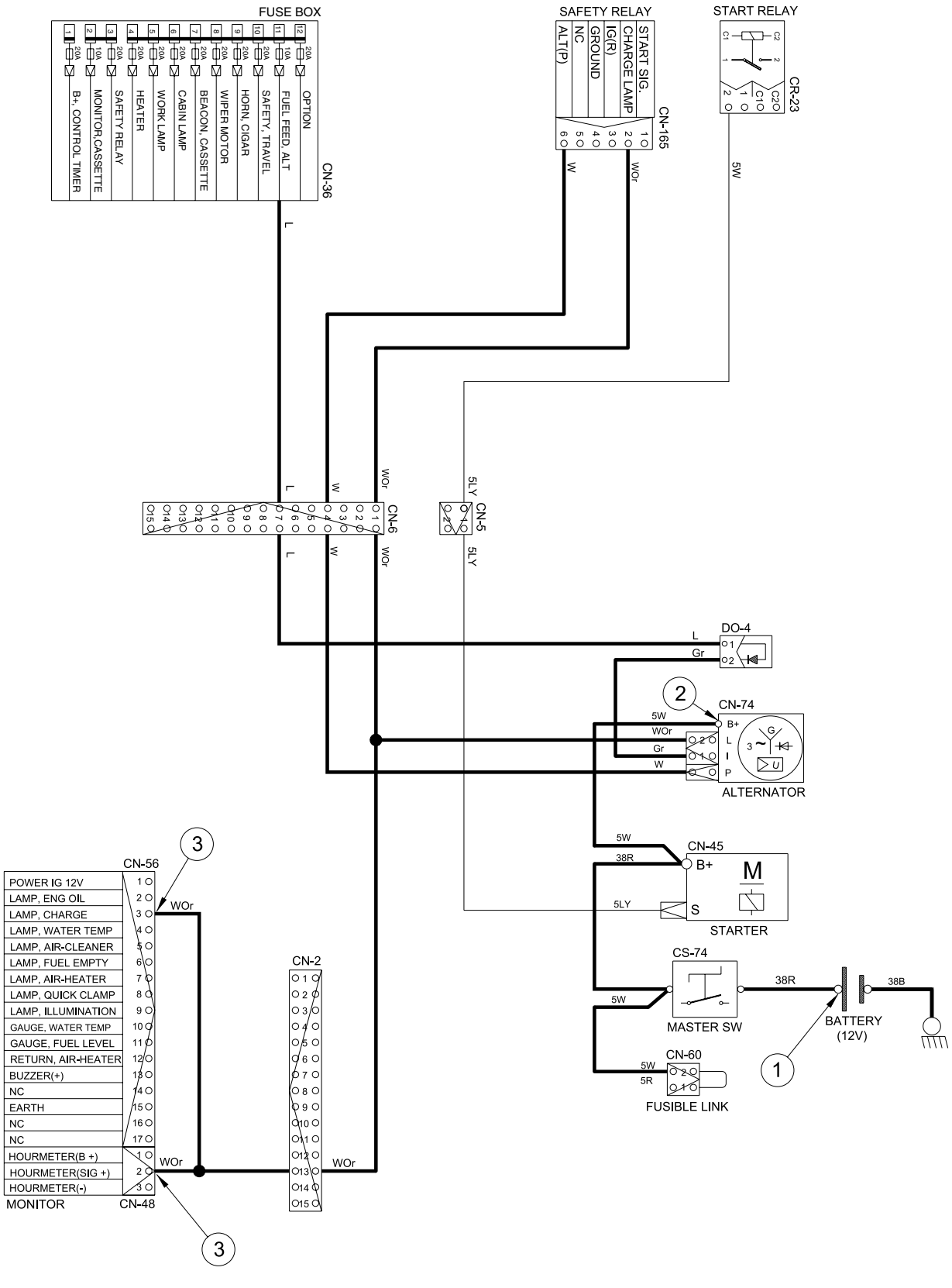
Alternator "B^+" terminal → Battery(+) terminal

2) CHECK POINT

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

※ GND : Ground

CHARGING CIRCUIT



R27Z94EL06

4. HEAD AND WORK LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.6) → Light switch [CS-21 (1)]
Fuse box (No.5) → Light switch [CS-21 (4)]

(1) Main light switch ON : 1st step

Cabin light switch ON [CS-21 (5,7)] → I/conn [CN-3 (2)] → I/conn [CN-2 (8)]
- → Cluster illumination ON [CN-56 (9)]
- → Cigar light illumination ON [CL-2]
- → I/conn [CN-11 (3)]
  - → Cabin Lamp ON [CL-9,10 (2)]
  - → Cassette radio illumination ON [CN-27 (7)]

(2) Main light switch ON : 2nd step

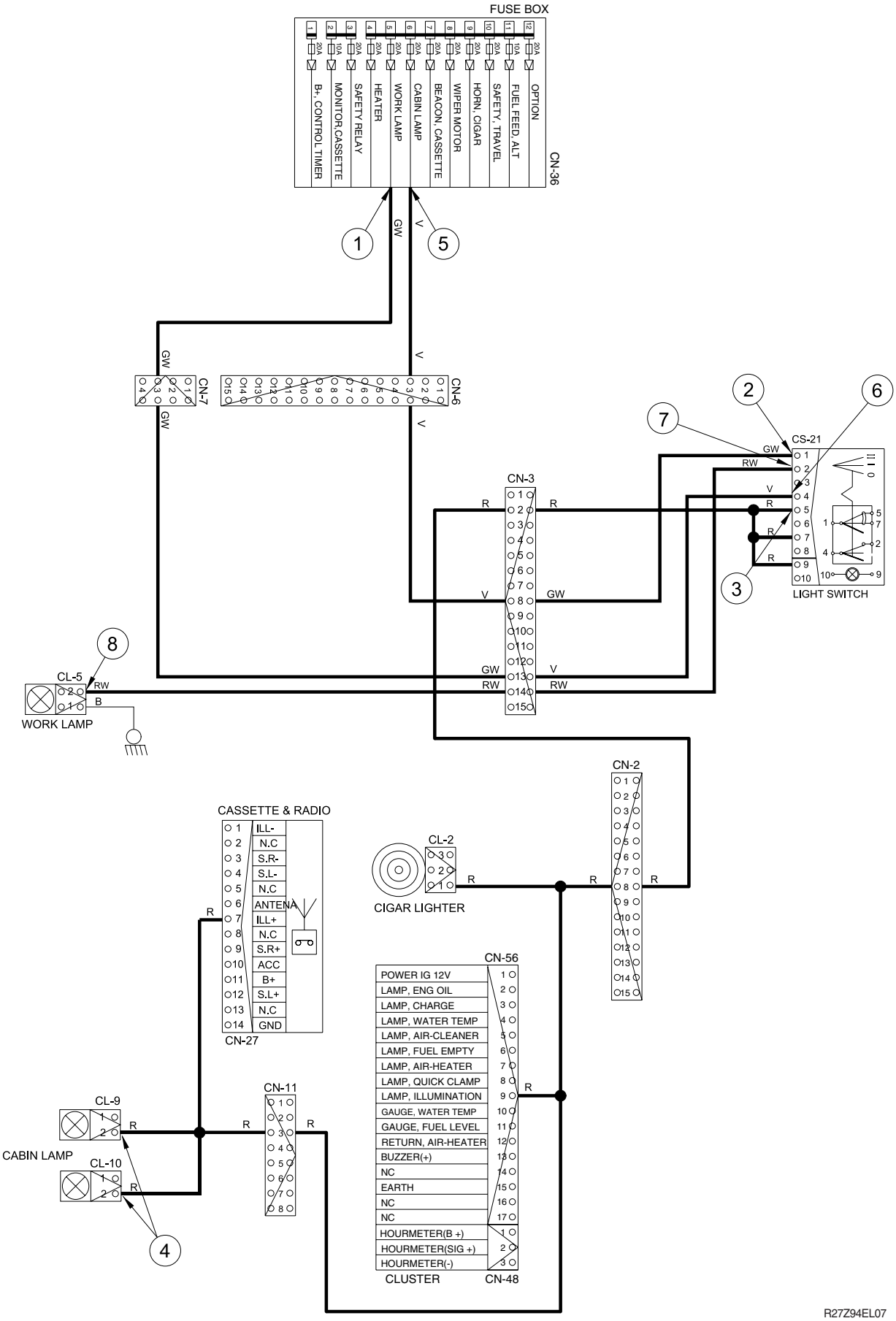
Work light switch ON [CS-21 (2)] → I/conn [CN-3 (14)] → Work light ON [CL-5 (2)]

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) ⑤ - GND (Fuse box) ⑥ - GND (Switch power input) ⑦- GND (Switch power output) ⑧ - GND (Work light)	10~12.5 V

※ GND : Ground

HEAD AND WORK LAMP CIRCUIT



5. BEACON LAMP CIRCUIT

1) OPERATING FLOW

Fuse box (No.7) → I/conn [CN-6 (10)] → I/conn [CN-3 (5)] → Beacon lamp switch [CS-23 (5)]

(1) Beacon lamp switch ON

Beacon lamp switch ON [CS-23 (1)]

→ Switch Indicator lamp ON [CS-23 (9)]

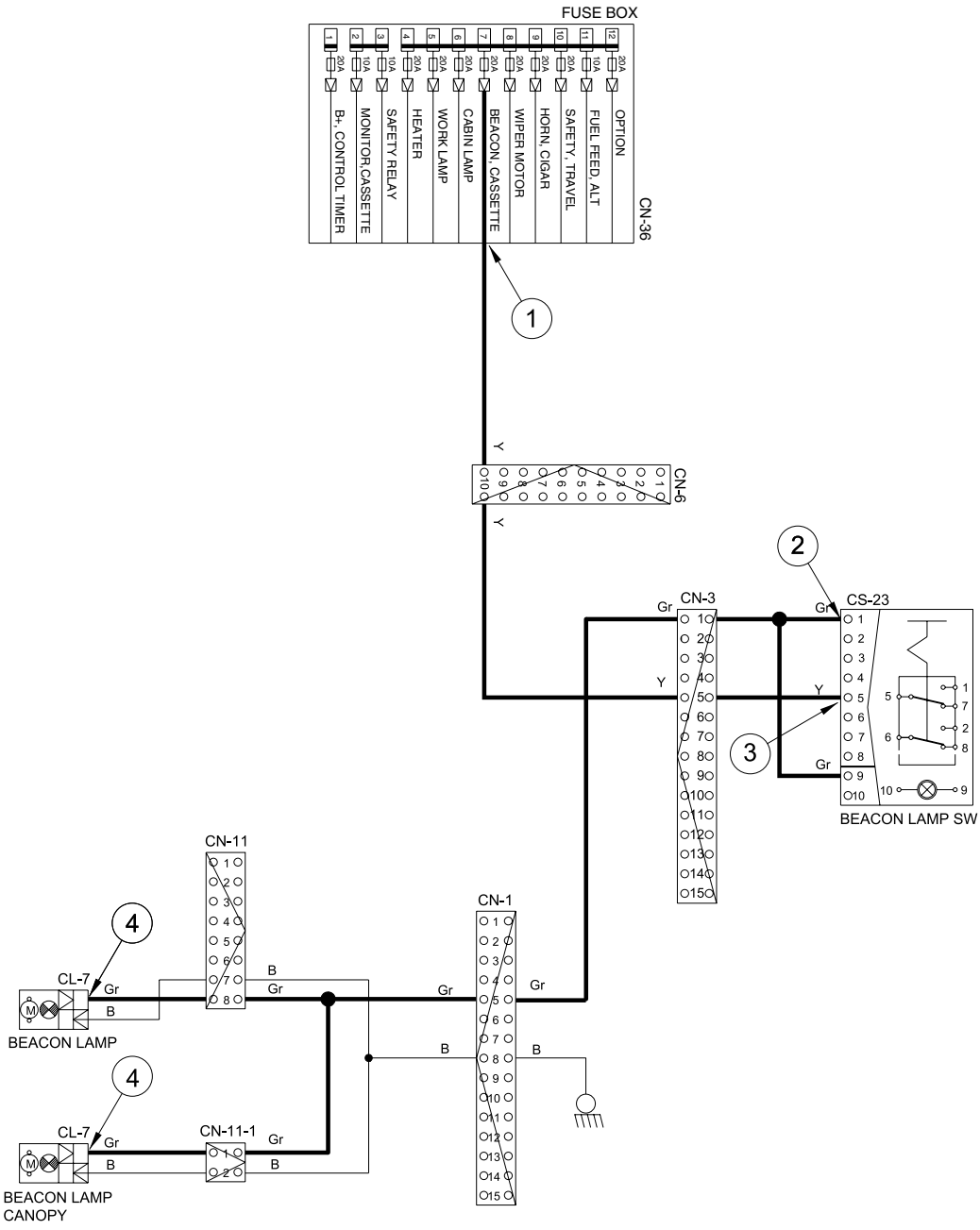
→ I/conn [CN-3 (1)] → I/conn [CN-1 (5)] → I/conn [CN-11 (8)] → Beacon lamp ON [CL-7]

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)	10~12.5 V

※ GND : Ground

BEACON LAMP CIRCUIT



R27Z94EL08

6. WIPER AND WASHER CIRCUIT

1) OPERATING FLOW

(1) Key switch ON

Fuse box (No.8) → I/conn [CN-8 (1)] → I/conn [CN-4 (1)]
→ Wiper and washer switch [CS-3 (1)]
→ Wiper motor [CN-21 (3)]

(2) Wipe switch ON : 1st step (low speed)

Wiper switch ON [CS-3 (6)] → Wiper motor operating [CN-21 (4)]
→ Wiper & washer switch lamp ON [CS-3 (9)]

(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-4 (3)] → I/conn [CN-3 (3)]
→ Washer pump operating [CN-22 (2)]

(4) Auto parking (when switch OFF)

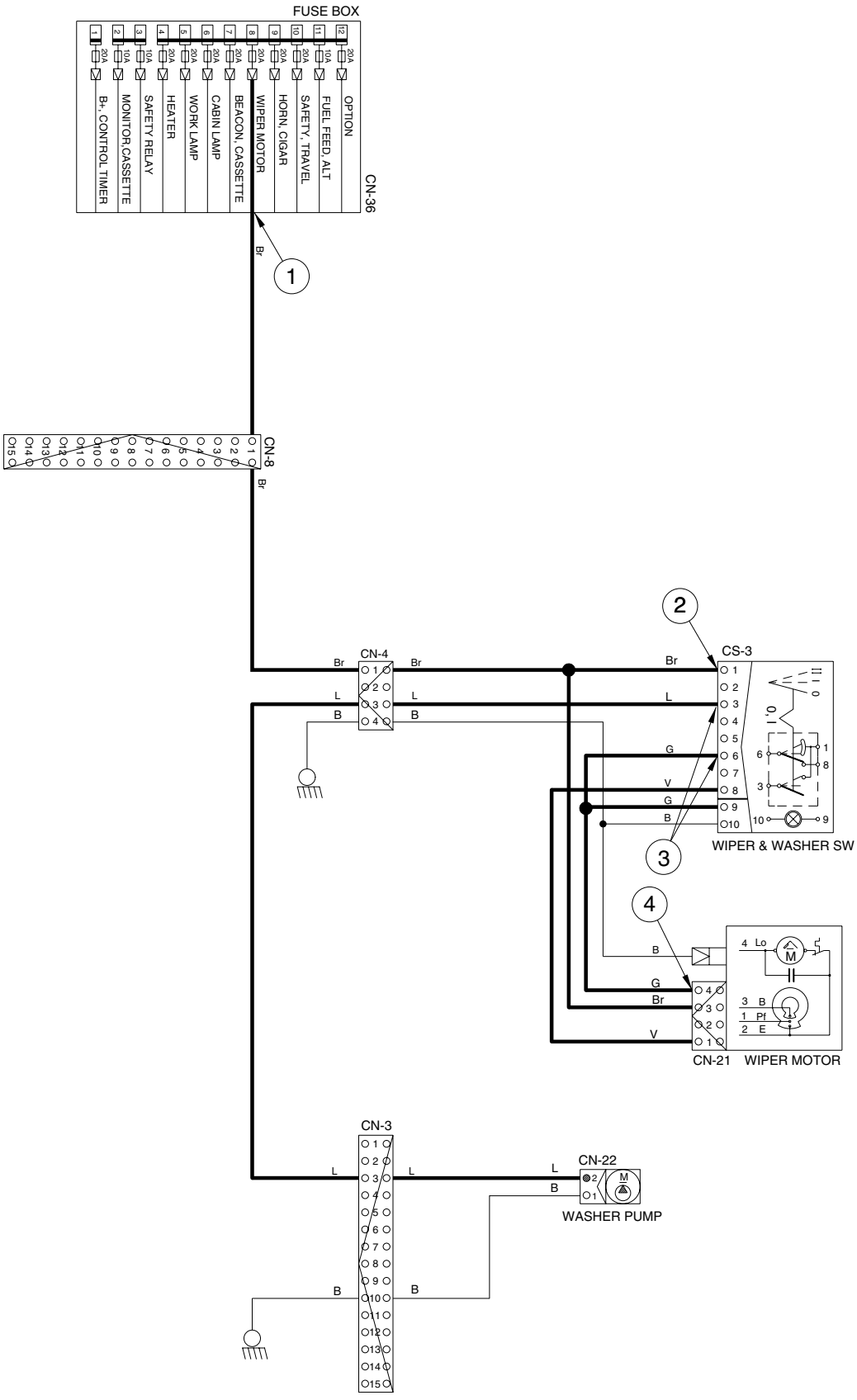
Switch OFF → Wiper motor [CN-21 (1)] → Wiper switch [CS-3 (8) → (6)]
→ Wiper motor [CN-21 (4)] → Wiper motor parking position by wiper motor controller

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)	10~12.5 V

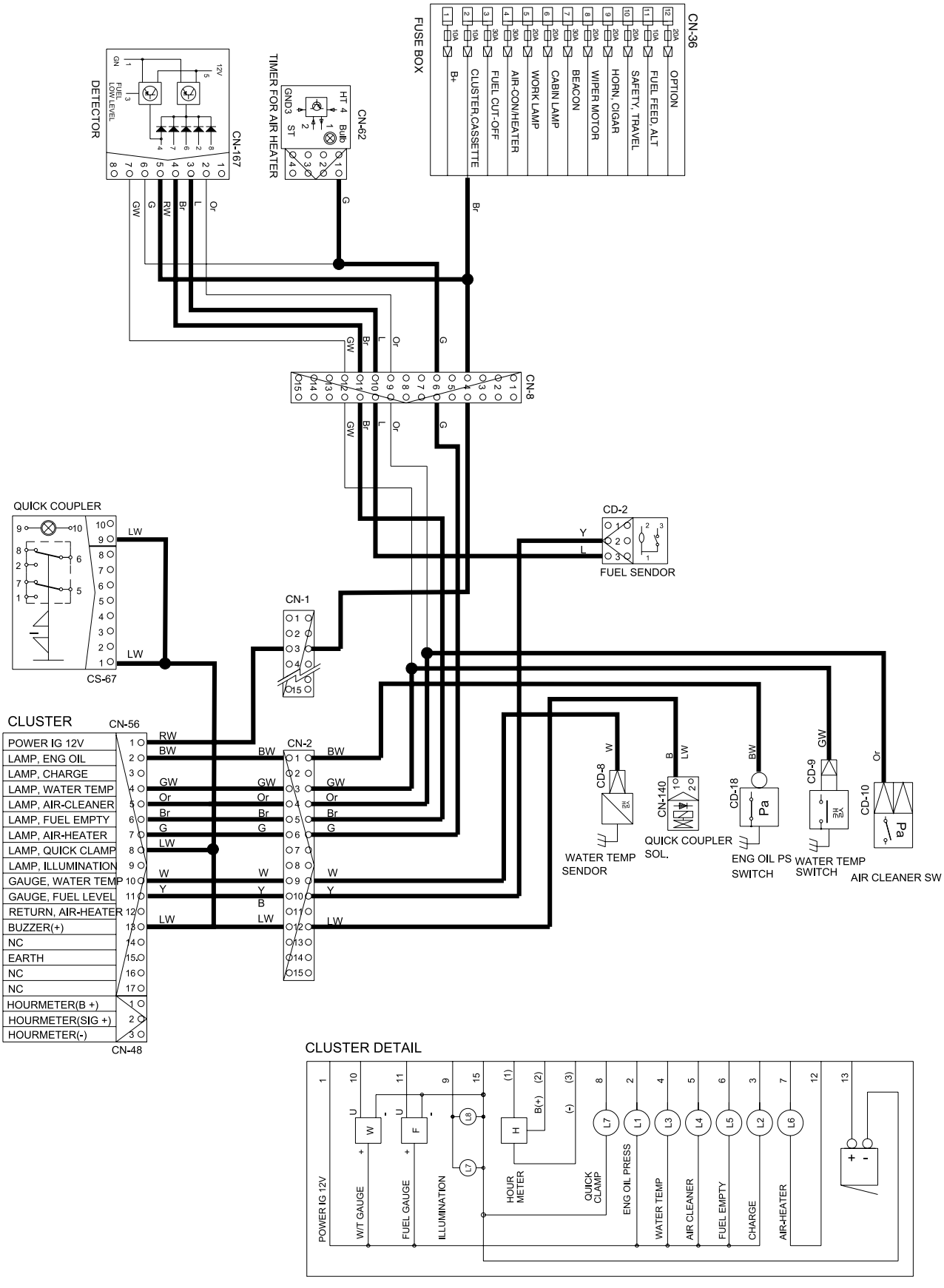
※ GND : Ground

WIPER AND WASHER CIRCUIT



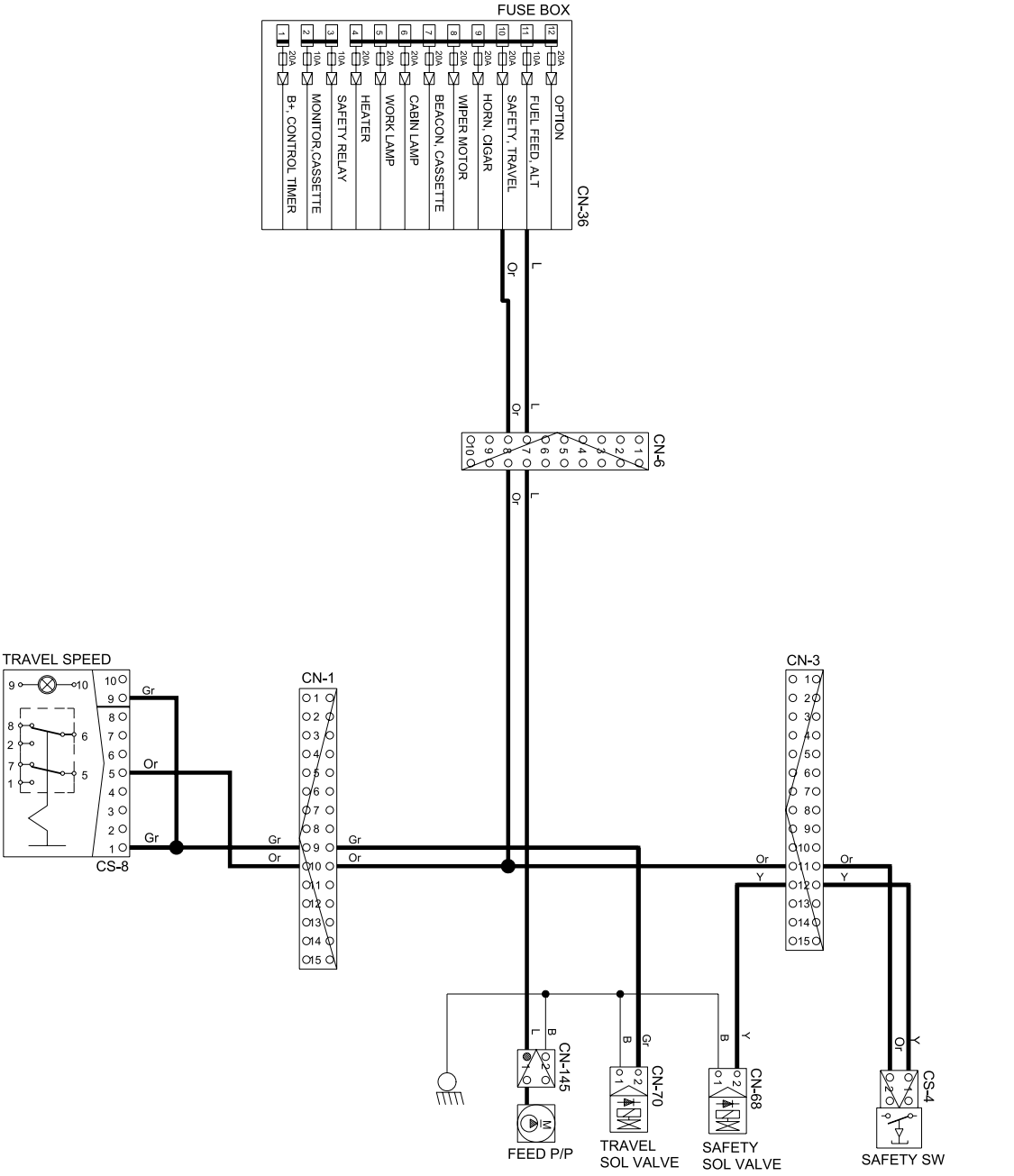
R27Z94EL09

MONITORING CIRCUIT



R35Z74EL10

ELECTRIC CIRCUIT FOR HYDRAULIC



R27Z94EL11