GROUP 3 ELECTRICAL CIRCUIT OPERATION

1. POWER CIRCUIT

The negative terminal of battery is grounded to the machine chassis.
When the start switch is the OFF position, the current flows from the positive battery terminal as shown below.

1) OPERATING FLOW

Battery → Battery relay → Fusible link [CN-60A(1)] → I/conn [CN-15] → I/conn [CN-41(2)]
→ Fuse box [No.17] → I/conn [CN-40(3)] → Horn switch [CS-5]
→ I/conn [CN-11(11)] → I/conn [CN-9(4)] → Horn relay [CR-2(2)]
→ Fuse box [No.16] → I/conn [CN-40(2)] → Start key switch [CS-2(1)]
→ Fuse box [No.15] → I/conn [CN-40(1)] → I/conn [CN-91(6)] → Cluster [CN-57(6)]
→ I/conn [CN-13(7)] → I/conn [CN-5(3)] → Room lamp [CL-1(1)]
→ Cassette radio [CN-27(7)]

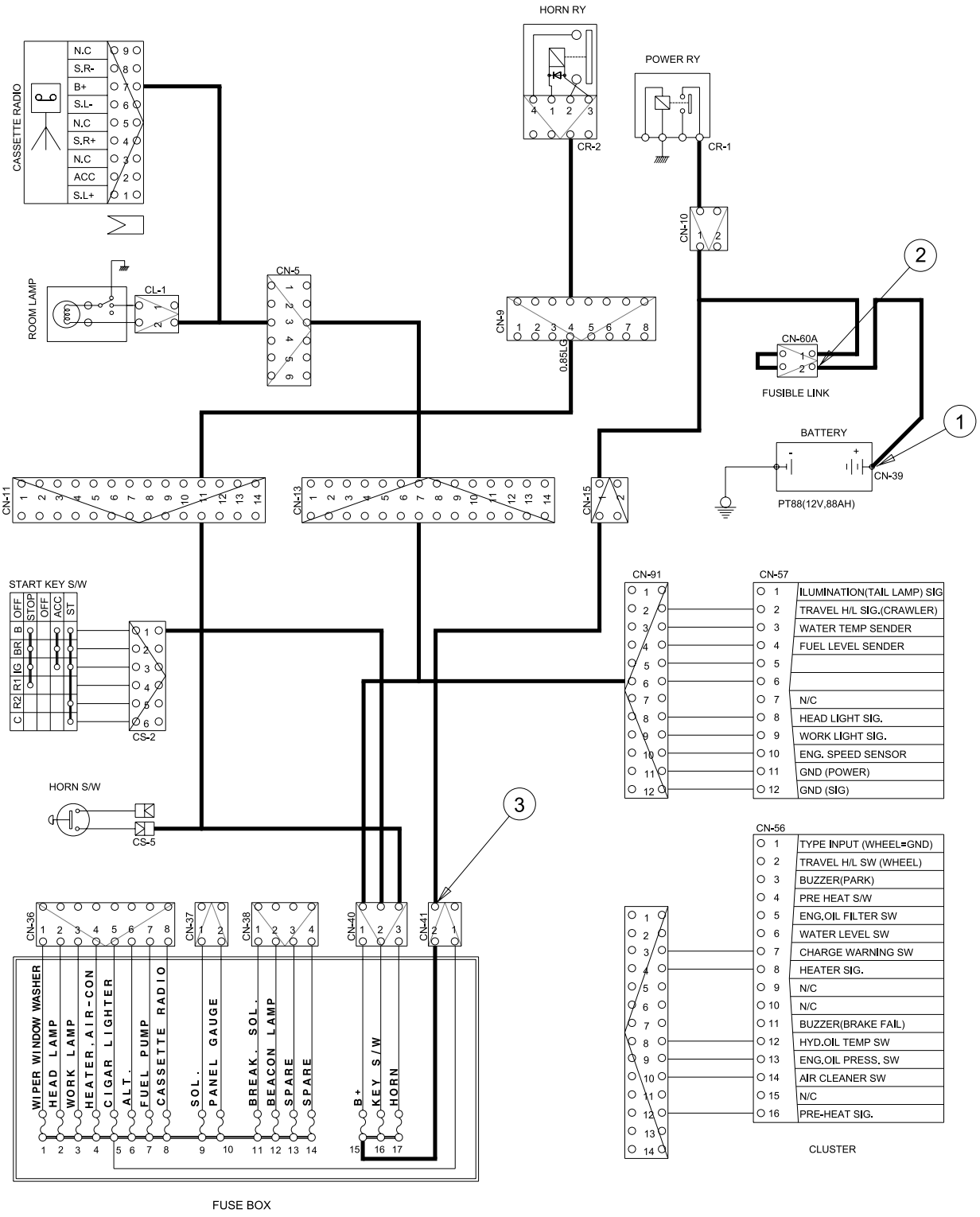
※ I/conn : Intermediate cinnector

2) CHECKPOINT

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

※ GND : Ground

POWER CIRCUIT



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2. STARTING CIRCUIT

1) OPERATING FLOW

Battery(+) terminal → Fusible link [CN-60A(1)]
→ I/conn [CN-15(1)] → I/conn [CN-41(2)] → Fuse box [No.16] → I/conn [CN-40(2)]
→ Start switch [CS-2(1)]

(1) When start key switch is in ON position

Startswitch ON [CS-2(3)] → I/conn [CN-11(14)] → I/conn [CN-9(8)] → Battery relay [M4 terminal]
→ Battery relay operating (All power is supplied with the electric component)
→ Fuse box [No.11] → I/conn [CN-38(1)] → I/conn [CN-11(13)] → I/conn [CN-3(8)]
→ Fuel stop sol [CN-20(1)] → I/conn [CN-8(10)] → Timer [CN-62(4)]
(Activate for 1 sec)

(2) When start key switch is in START position

Start switch START [CS-2(5)] → I/conn [CN-12(8)] → I/conn {CN-7(11)] → Anti-restart relay [CR-34(1,2)]
→ I/conn [CN-7(1)] → I/conn [CN-3(4)] → Start relay [CR-23(1)]

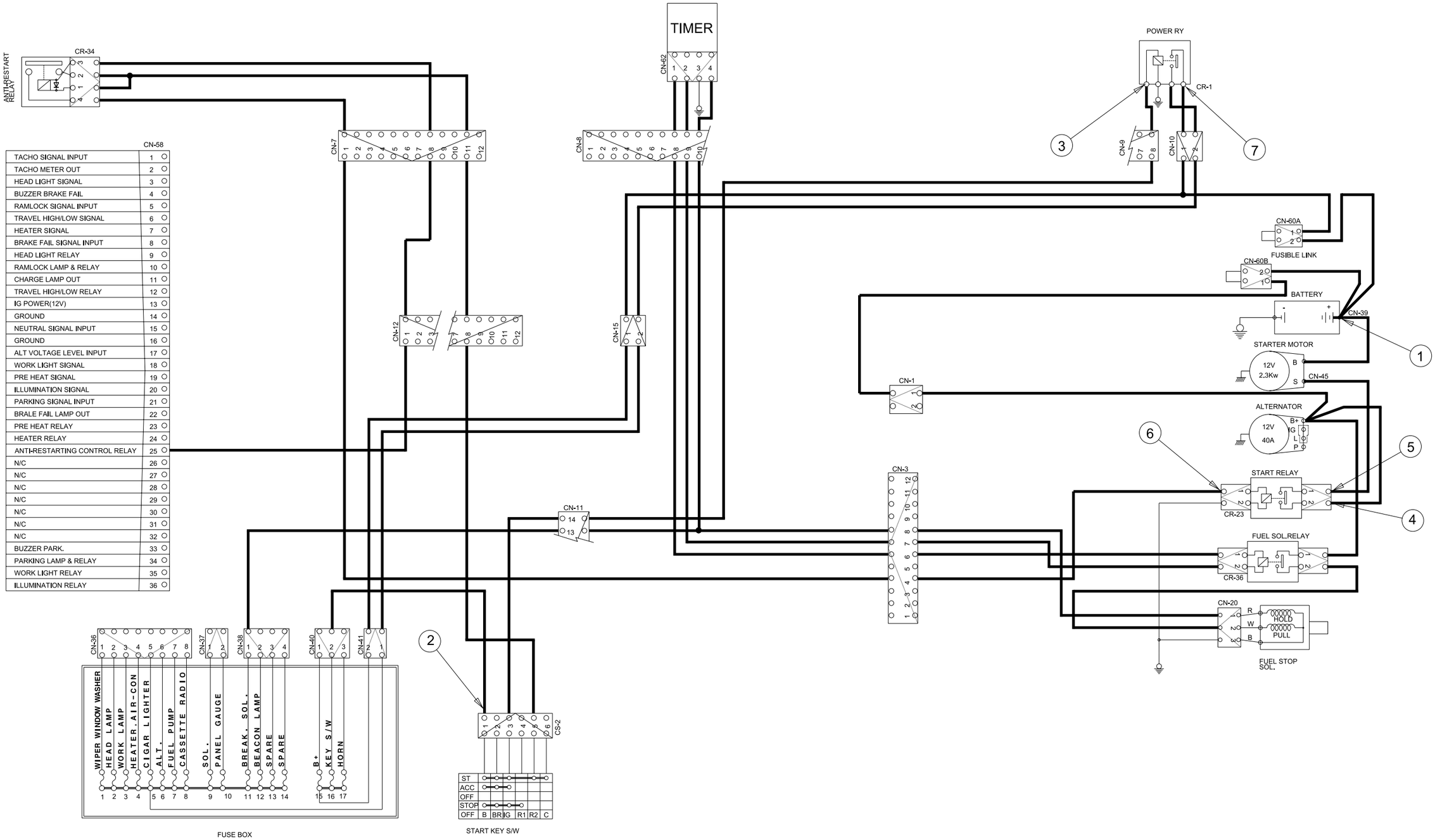
※ I/conn : Intermediate connecter

2) CHECKPOINT

Engine	Start switch	Check point	Voltage
Operating	Start	① - GND (Battery) ② - GND (Start key) ③ - GND (Battery relay) ④ - GND (Start relay) ⑤ - GND (Start relay) 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 fusible link (CN-60B).

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-74(2)] → I/conn [CN-2(1)] → I/conn [CN-12(9)]
→ Alter voltage level input [CN-58(17)], Charging lamp output [CN-58(11)] → I/conn [CN-92(3)]
→ Cluster charging warning lamp [CN-56(7)]

(2) Charging flow

Alternator "B+" terminal → I/conn [CN-1(1)] → Fusible link [CN-60B] → Battery terminal [CN-39]

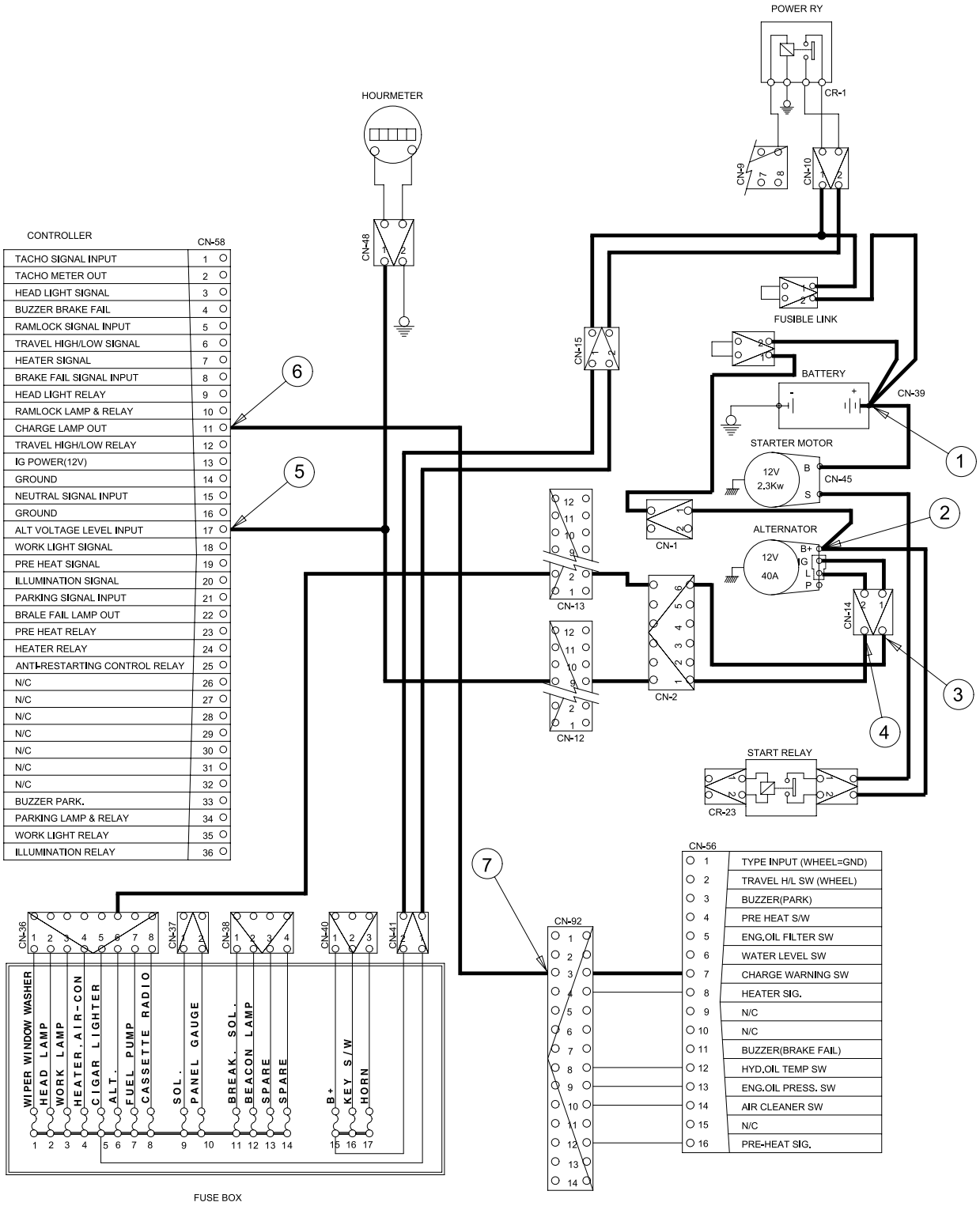
※ I/conn : Intermediate connector

2) CHECKPOINT

Engine	Start switch	Check point	Voltage
Operating	ON	① - GND (Battery) ② - GND (Alternator "B+" terminal) ③ - GND (Alternator "IG" terminal) ④ - GND (Alternator "L" terminal) ⑤ - GND (Controller) ⑥ - GND (Controller) ⑦ - GND (Cluster)	10~14V

※ GND : Ground

CHARGING CIRCUIT



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4. HEAD AND WORK LAMP CIRCUIT

1) OPERATING FLOW

Fuse box (No.2) → I/conn [CN-11(3)] → I/conn [CN-9(7)] → Head light relay [CR-13(2),(1)]
Fuse box (No.3) → I/conn [CN-11(2)] → I/conn [CN-9(6)] → Work light relay [CR-3(2),(1)]

(1) Head light switch ON

Head light relay [CR-13(3)] → I/conn [CN-7(5)] → I/conn [CN-11(5)] → Cluster [CN-58(9)] → GND
※ When Head light relay ON [CR-13(4)] → I/conn [CN-8(4)] → Head light [CL-3(1)]
→ I/conn [CN-13(3)] → Cigar light [CL-2]
Cluster illumination lamp ON (Control of cluster inner circuit)

(2) Work light switch ON

Work light relay [CR-3(3)] → I/conn [CN-7(6)] → I/conn [CN-11(6)] → Cluster [CN-58(35)] → GND
※When Work light relay ON [CR-3(4)] → I/conn [CN-8(5)] → I/conn [CN-16] → Work light [CL-5(1)]
→ Work light [CL-6(1)]
Cluster illumination lamp ON (Control of cluster inner circuit)
Cluster work lamp indicator ON (Control of cluster inner circuit)

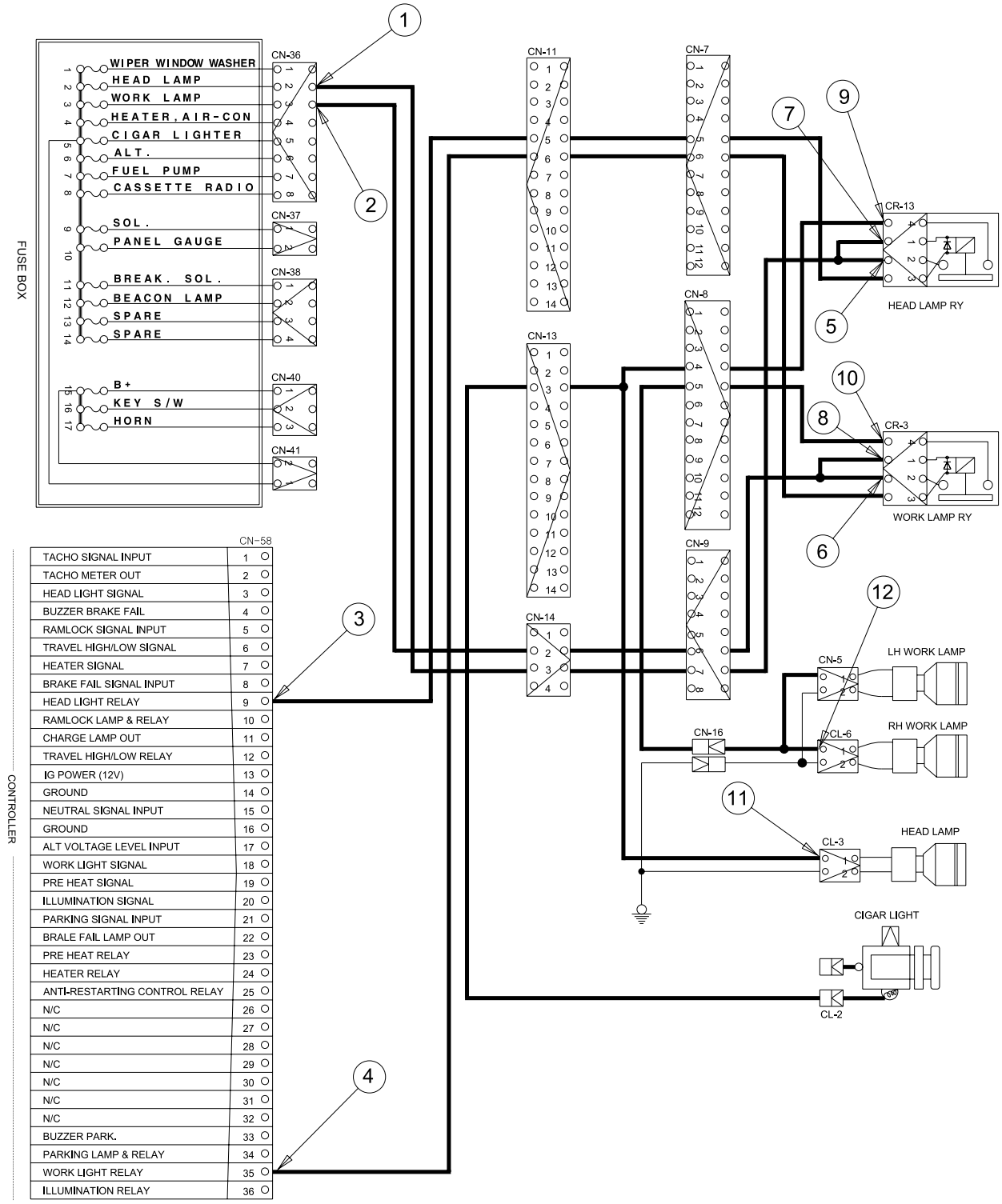
※ I/conn : Intermediate connector

2) CHECKPOINT

Engine	Start switch	Check point	Voltage
Stop	ON	① - GND (Fuse box) ③ - B+ (Switch power output) ⑤ - GND (Relay input) ⑦ - GND (Relay coil) ⑨ - GND (Relay output) ⑪ - GND (Head lamp)	10~12.5V
Stop	ON	② - GND (Fuse box) ④ - B+ (Switch power output) ⑥ - GND (Relay input) ⑧ - GND (Relay coil) ⑩ - GND (Relay output) ⑫ - GND (Work lamp)	10~12.5V

※ GND : Ground

HEAD AND WORK LAMP CIRCUIT



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5. BEACON LAMP CIRCUIT

1) OPERATING FLOW

Fuse box (No.12) → I/conn [CN-36(11)] → Beacon lamp switch [CS-23(1)]

※ When lamp switch ON

Beacon lamp switch ON [CS-23(5)] → I/conn [CN-12(12)] → I/conn [CN-5(5)]
→ Beacon lamp [CL-7]

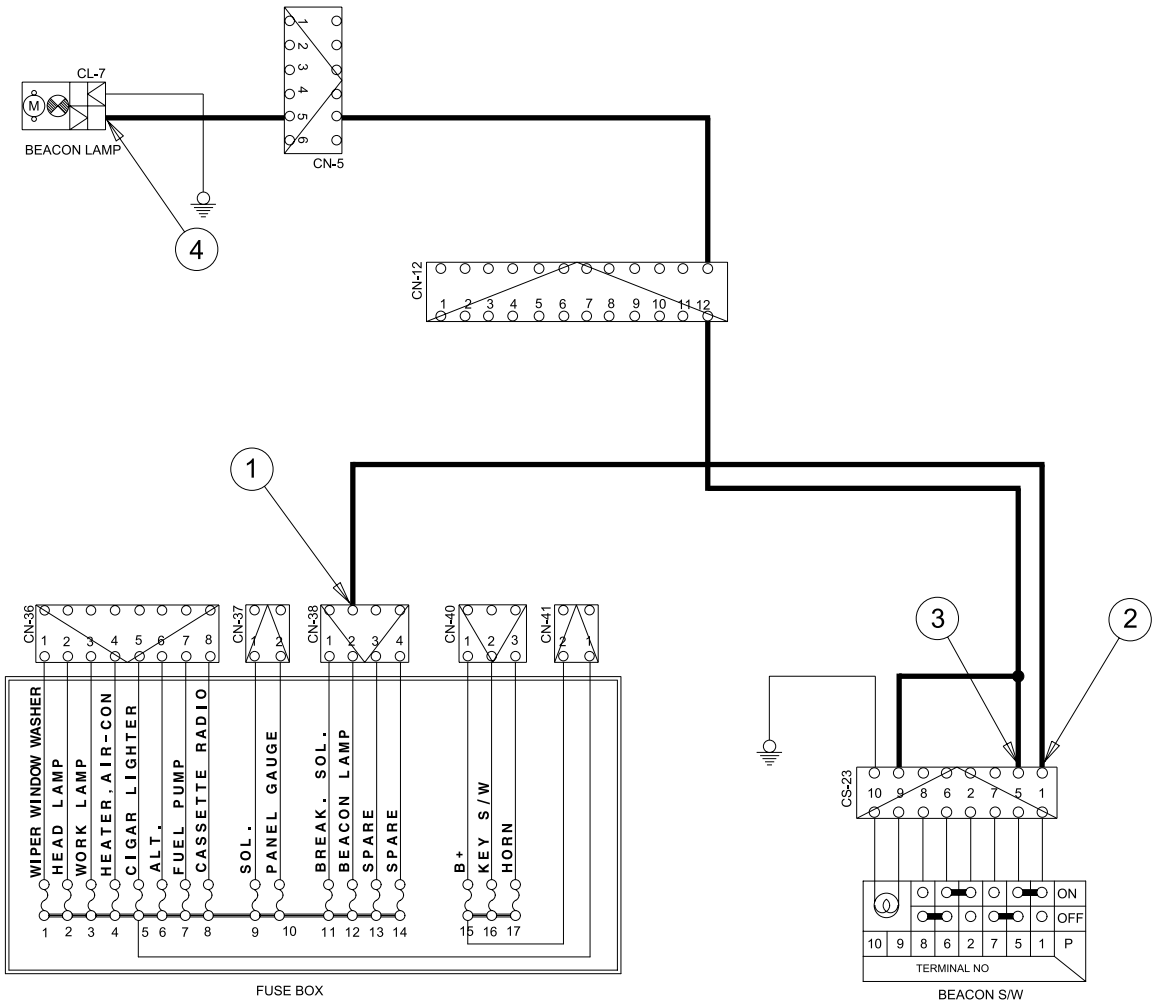
※ I/conn : Intermediate connector

2) CHECKPOINT

Engine	Start switch	Check point	Voltage
Operating	ON	① - GND (Fuse box) ② - GND (Switch power input) ③ - GND (Switch power ouput) 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) Wiper motor switch ON : 1st step

Fuse box (No.1) → Wiper and washer switch [CS-3(1) → (6)] → I/conn [CN-13(12)] → Wiper operation [CN-21(1)]

(2) Washer switch ON : 2nd step

Fuse box (No.1) → Wiper and washer switch [CS-3(1) → (3)] → Washer tank [CN-22(2) → (1)] → I/conn [CN-13(9)] → Washer operation

→ I/conn [CN-13(13)] → Wiper operation [CS-21(1)]

(3) Auto-parking(when switch OFF)

Fuse box (No.1) → Wiper motor [CN21(3) → (4)] → I/conn [CN-13(11)] → Wiper and washer switch [CS-3(8) → (6)] → I/conn [CN-13(12)] → I/conn [CN-21(1)] → Wiper motor stop

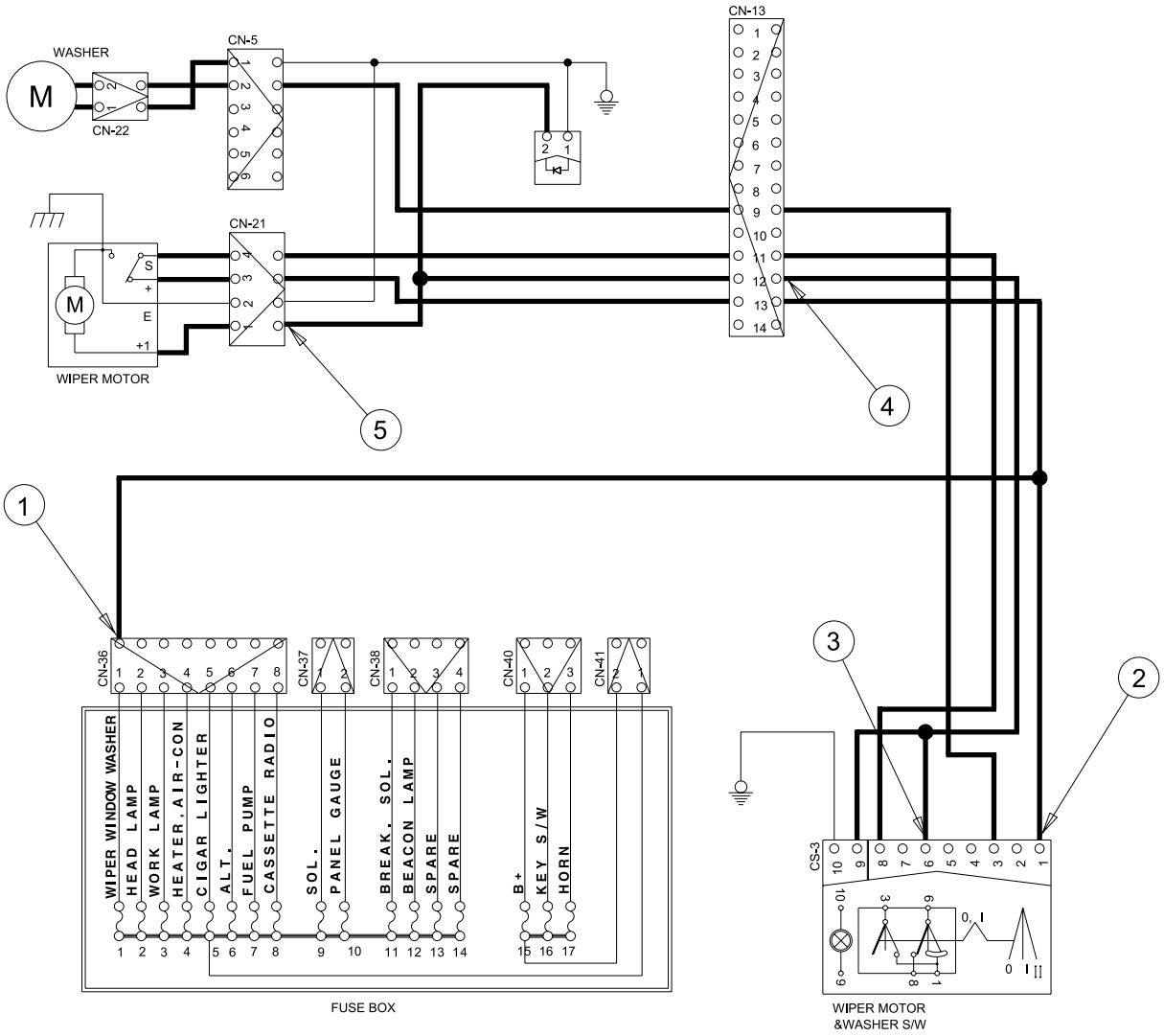
※ I/conn : Intermediate connector

2) CHECKPOINT

Engine	Start switch	Check point	Voltage
OFF	ON	① - GND (Fuse box) ② - GND (Switch power input) ③ - GND (Switch power output) ④ - GND (Wiper power input) ⑤ - GND (Wiper motor) ⑥ - GND (Switch power output)	10~12.5V

※ GND : Ground

WIPER AND WASHER CIRCUIT



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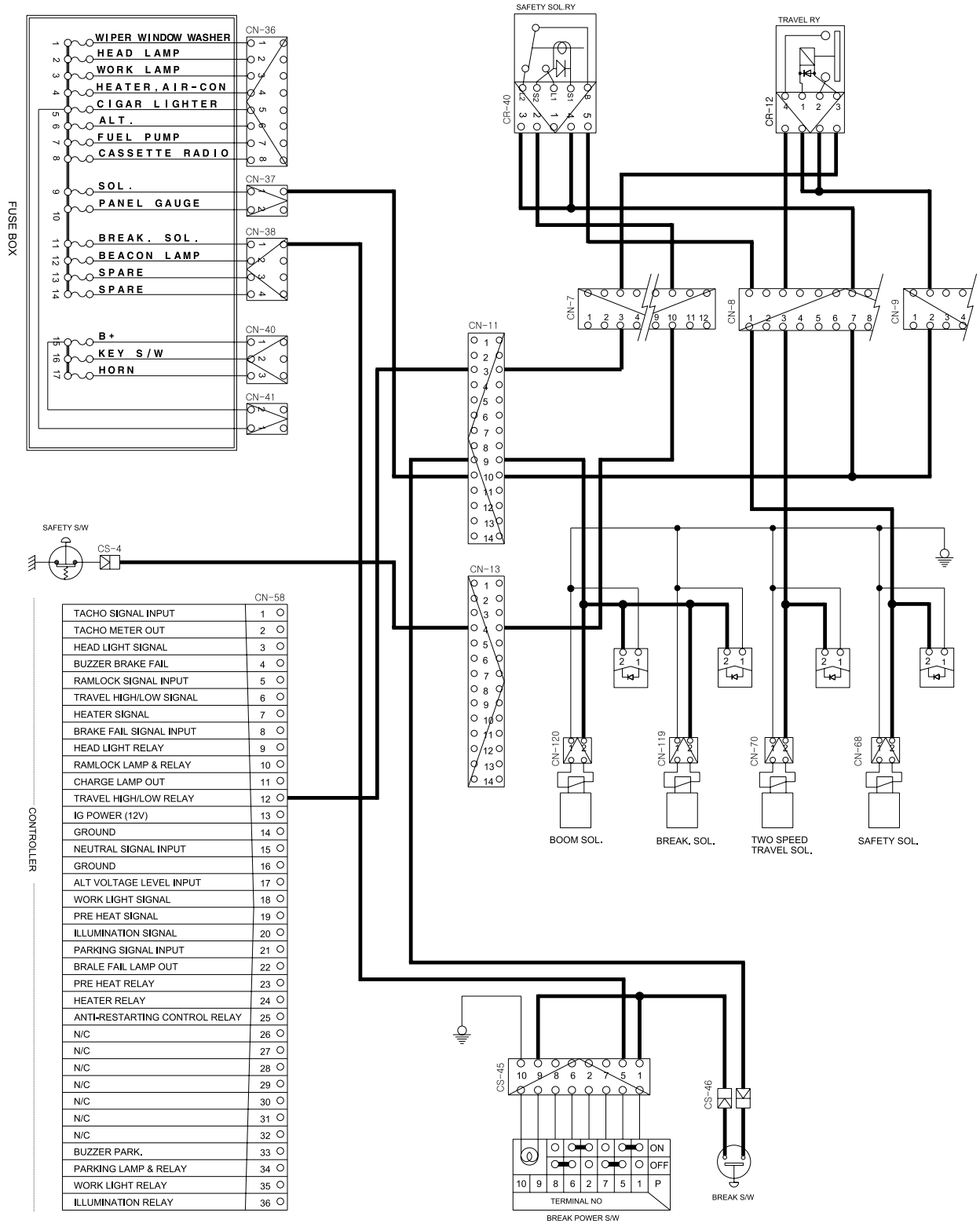
ELECTRIC CIRCUIT FOR HYDRAULIC



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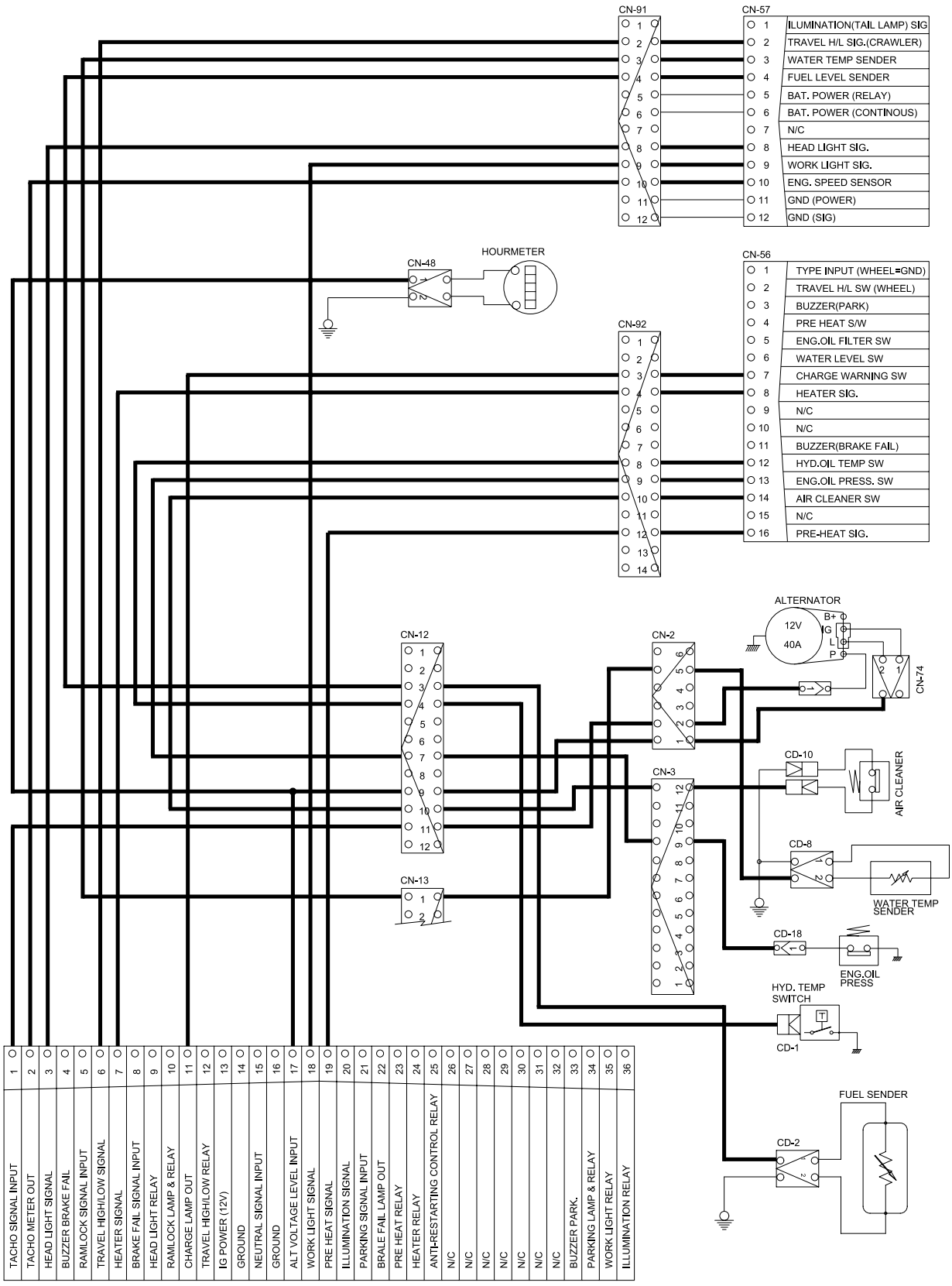
MONITORING CIRCUIT



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