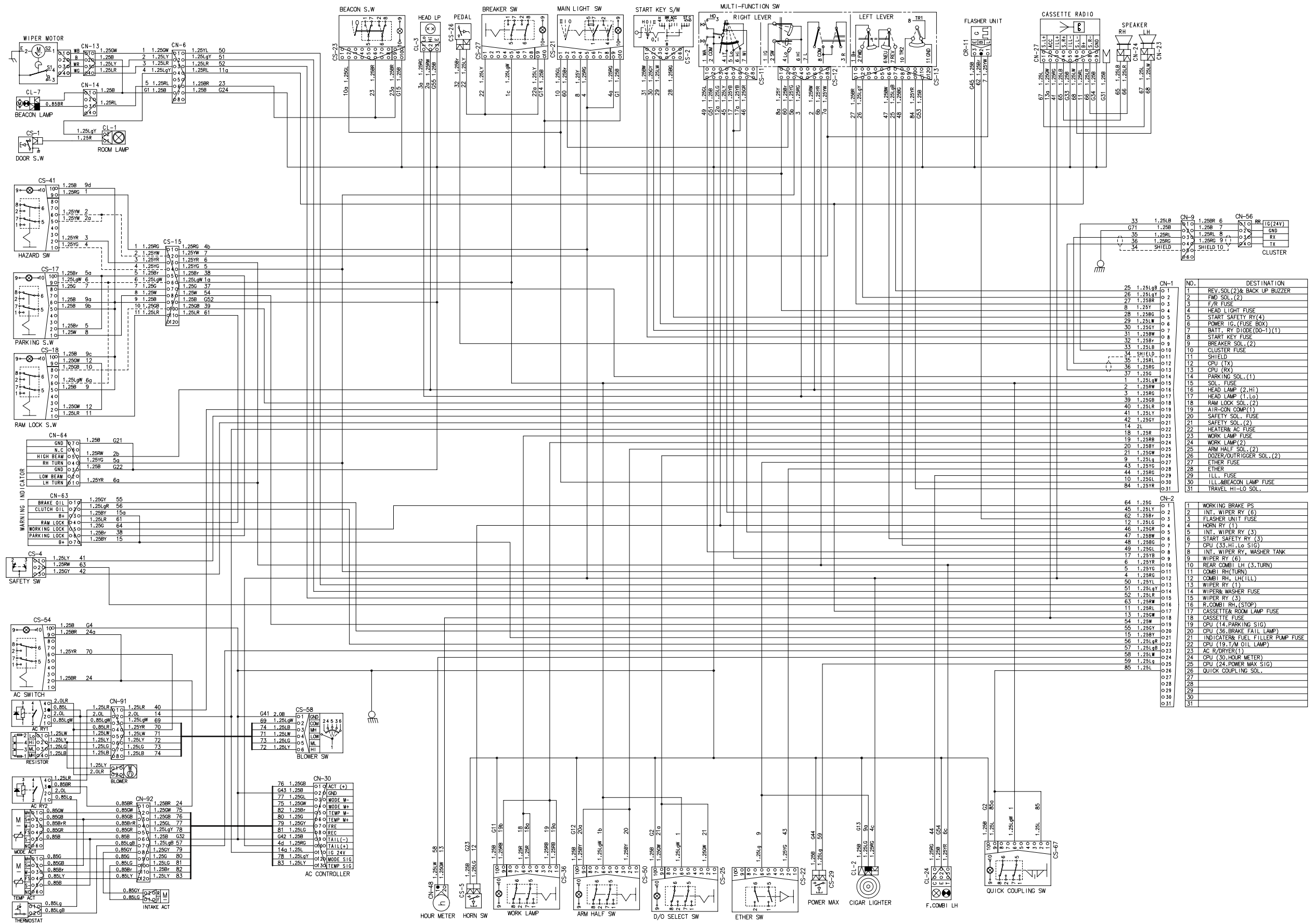
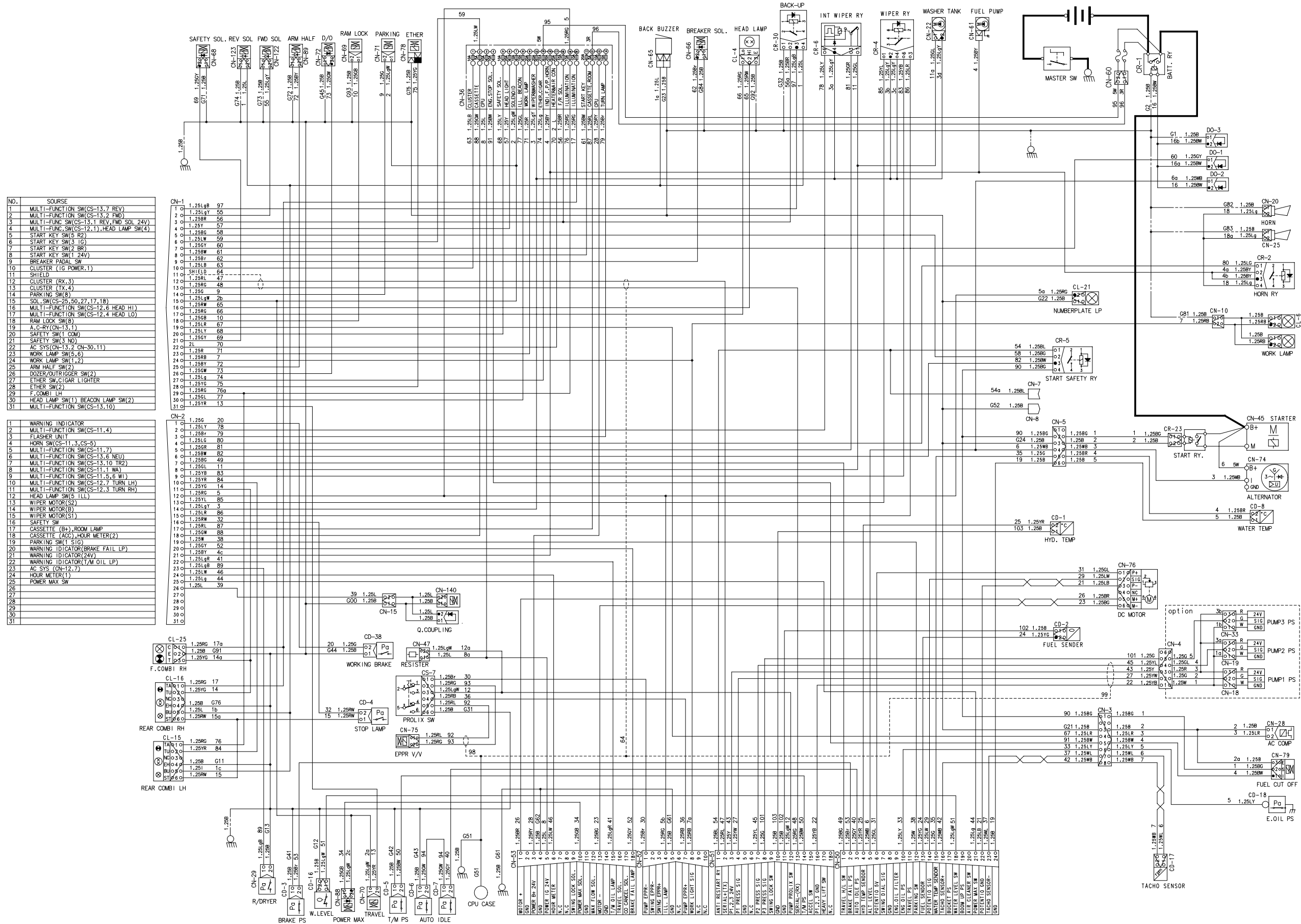


GROUP 2 ELECTRICAL CIRCUIT





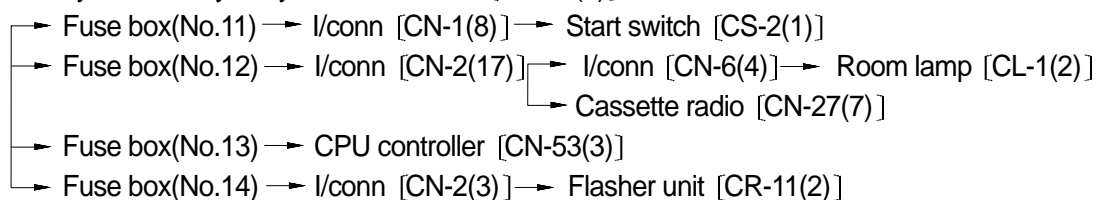
1. POWER CIRCUIT

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

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

1) OPERATING FLOW

Battery → Battery relay → Fusible link [CN-60(1)]



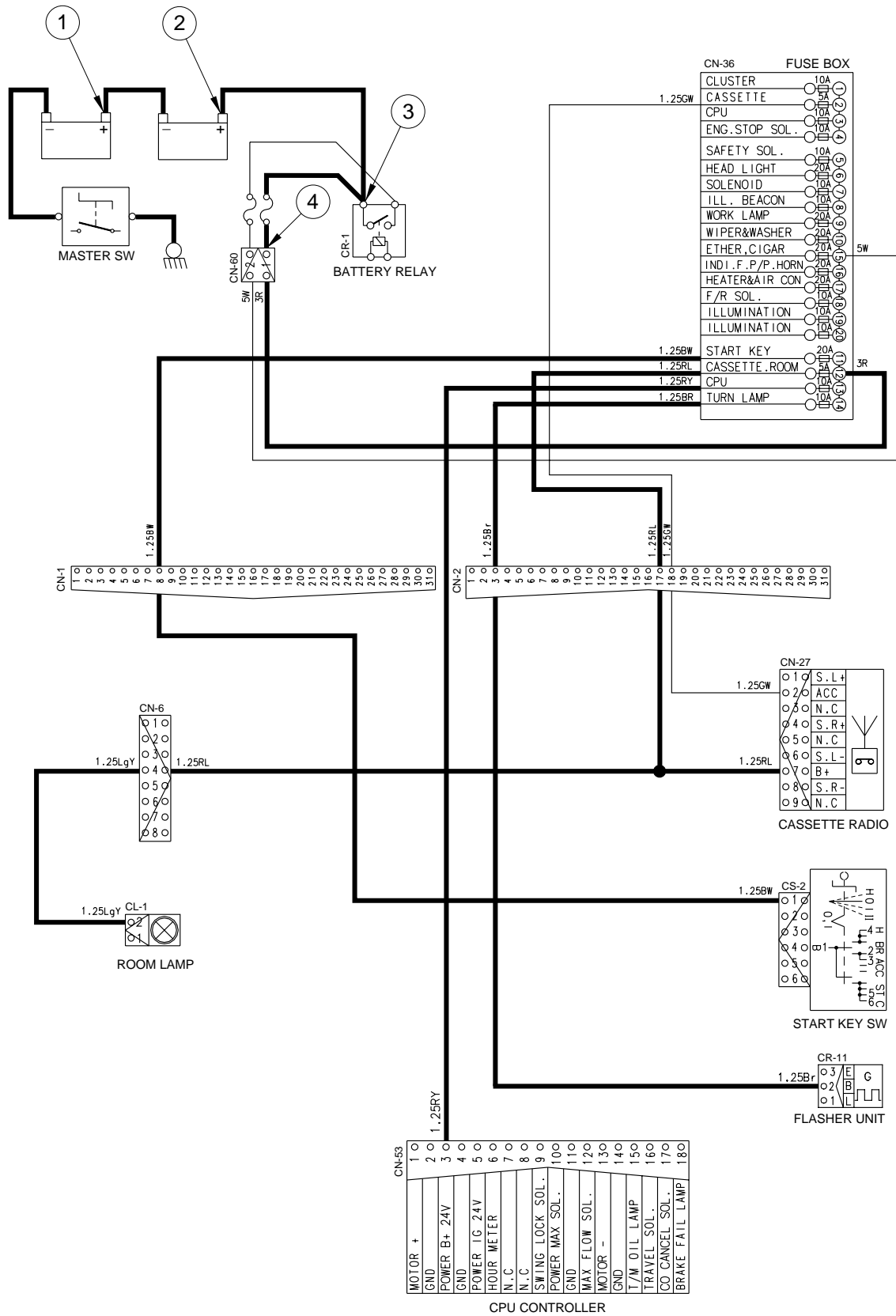
※I/conn : Intermediate connector

2) CHECK POINT

Engine	Start switch	Check point	Voltage
OFF	OFF	①- GND(Battery 1EA)	10~12.5V
		②- GND(Battery 2EA)	20~25V
		③- GND(Battery 2EA)	20~25V
		④- GND(Fusible link)	20~25V

※ GND : Ground

POWER CIRCUIT



2. STARTING CIRCUIT

1) OPERATING FLOW

Battery(+) terminal → Battery relay(M8, B⁺ terminal) → Fusible link [CN-60(1)]
 → Fuse box(No.11) → I/conn [CN-1(8)] → Start switch [CS-2(1)]

(1) When start key switch is in ON position

→ Start switch ON [CS-2(2)] → I/conn [CN-1(7)] → Battery relay [M4 terminal]
 → Battery relay operating(All power is supplied with the electric component)
 → Start switch ON [CS-2(3)] → I/conn [CN-1(6)] → Fuse box(No.4) → I/conn [CN-3(5)]
 → Fuel cut-off [CN-79(1)]

When start key switch is in START position

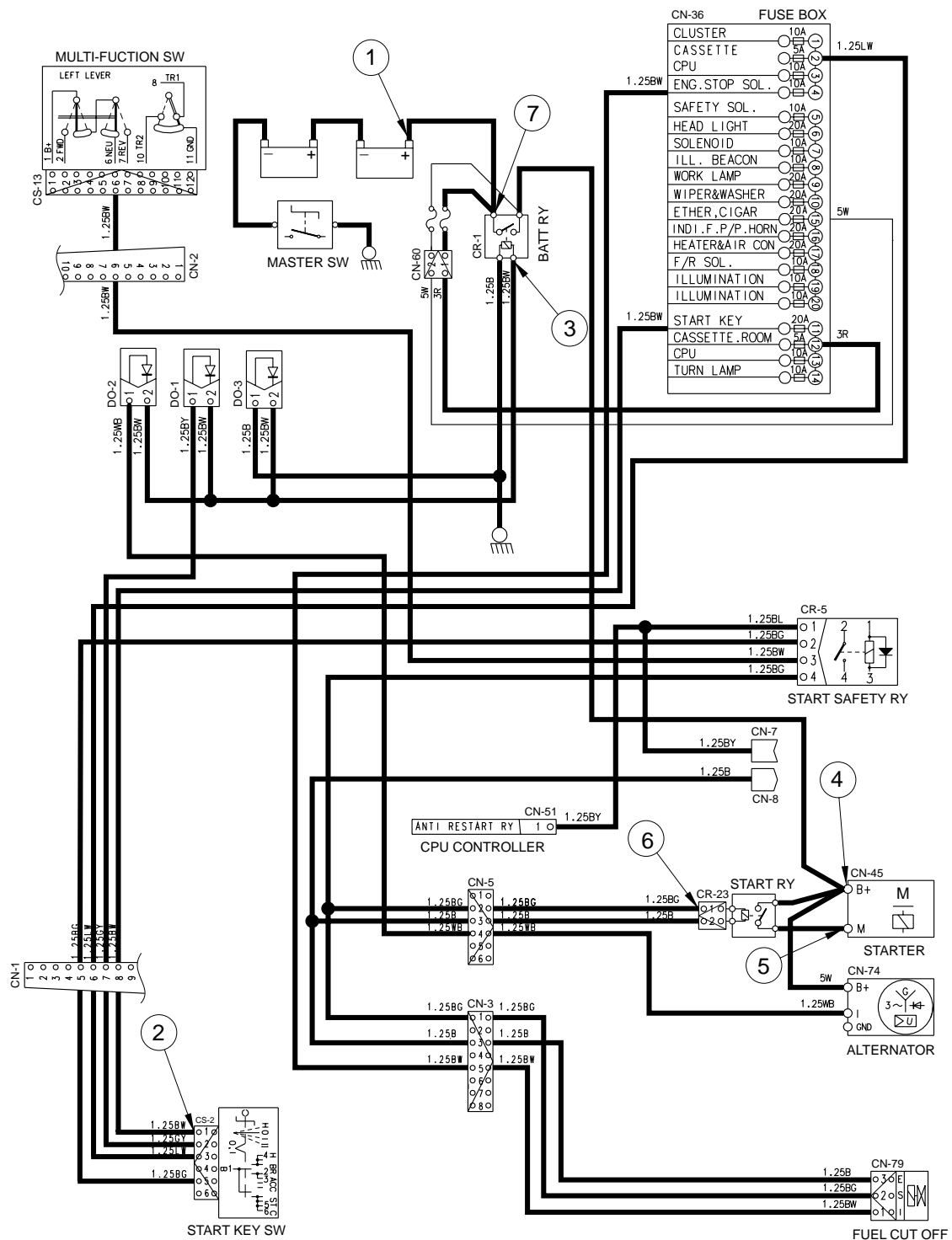
(2) Start switch START [CS-2(5)] → I/conn [CN-1(5)] → Start safety relay [CR-5(2) → (4)]
 → I/conn [CN-5(2)] → Start relay [CR-23(1)]

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(Start B+) ⑤- GND(Start M) ⑥- GND(Start relay) ⑦- GND(Battery relay M8)	20~25V

※ 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 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 "I" terminal → I/conn [CN-5(4)] → CPU Alternator power level [CN-50(5)]
→ Cluster charging warning lamp

(2) Charging flow

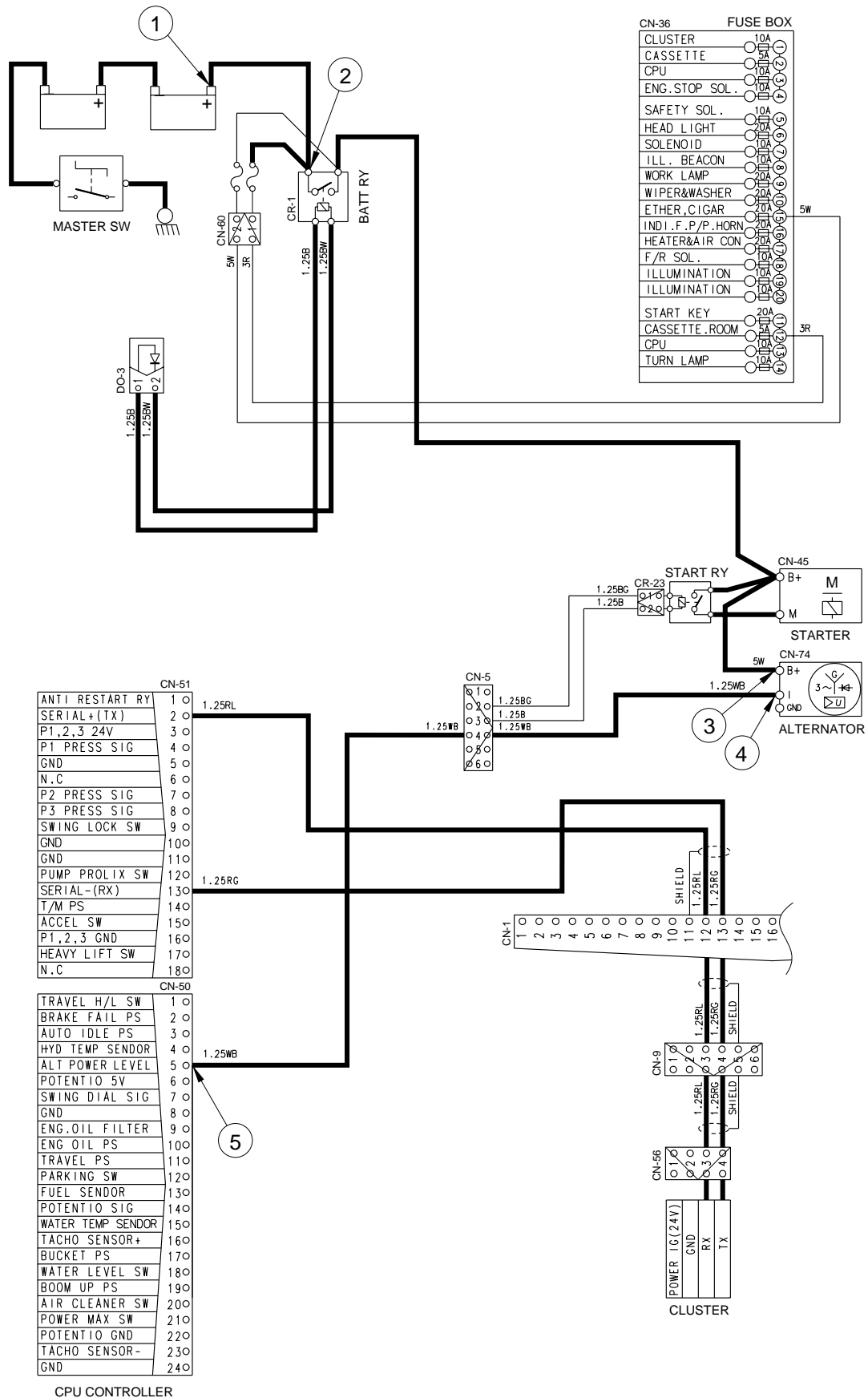
Alternator B⁺ terminal → Battery relay(M8) → Battery(+) terminal

2) CHECK POINT

Engine	Start switch	Check point	Voltage
RUN	ON	①- GND(Battery voltage) ②- GND(Battery relay) ③- GND(Alternator B terminal) ④- GND(Alternator I terminal)	20~30V

※ GND : Ground

CHARGING CIRCUIT



4. HEAD LIGHT AND CLEARANCE LAMP CIRCUIT

1) OPERATING FLOW

Fuse box(No.6) → I/conn [CN-1(4)] → Main light switch [CS-21(4)]
 I/conn [CS-12(1)] → RH multifunction switch(IG) →
 passing function operating by RH multifunction
 up and down.

(1) Main light switch ON : 1st step

Main light switch ON [CS-21(5)] → Switch indicator lamp ON [CS-21(9)]
 I/conn [CN-2(12)]
 Cluster illumination lamp ON [CN-52(4)]
 Fuse box(No.19) → LH clearance lamp ON →
 [Rear : CL-15(1), Front : CL24(1)]
 Fuse box(No.20) → RH clearance lamp ON →
 [Rear : CL-16(1), Front : CL25(1)]
 Number plate lamp ON [CL-21(2)]

(2) Main light switch ON : 2nd step

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

① RH multifunction switch : Lo

I/conn [CS-12(4)] → Head light low beam ON [CL-3(1), CL-4(1)]

② RH multifunction switch :Hi

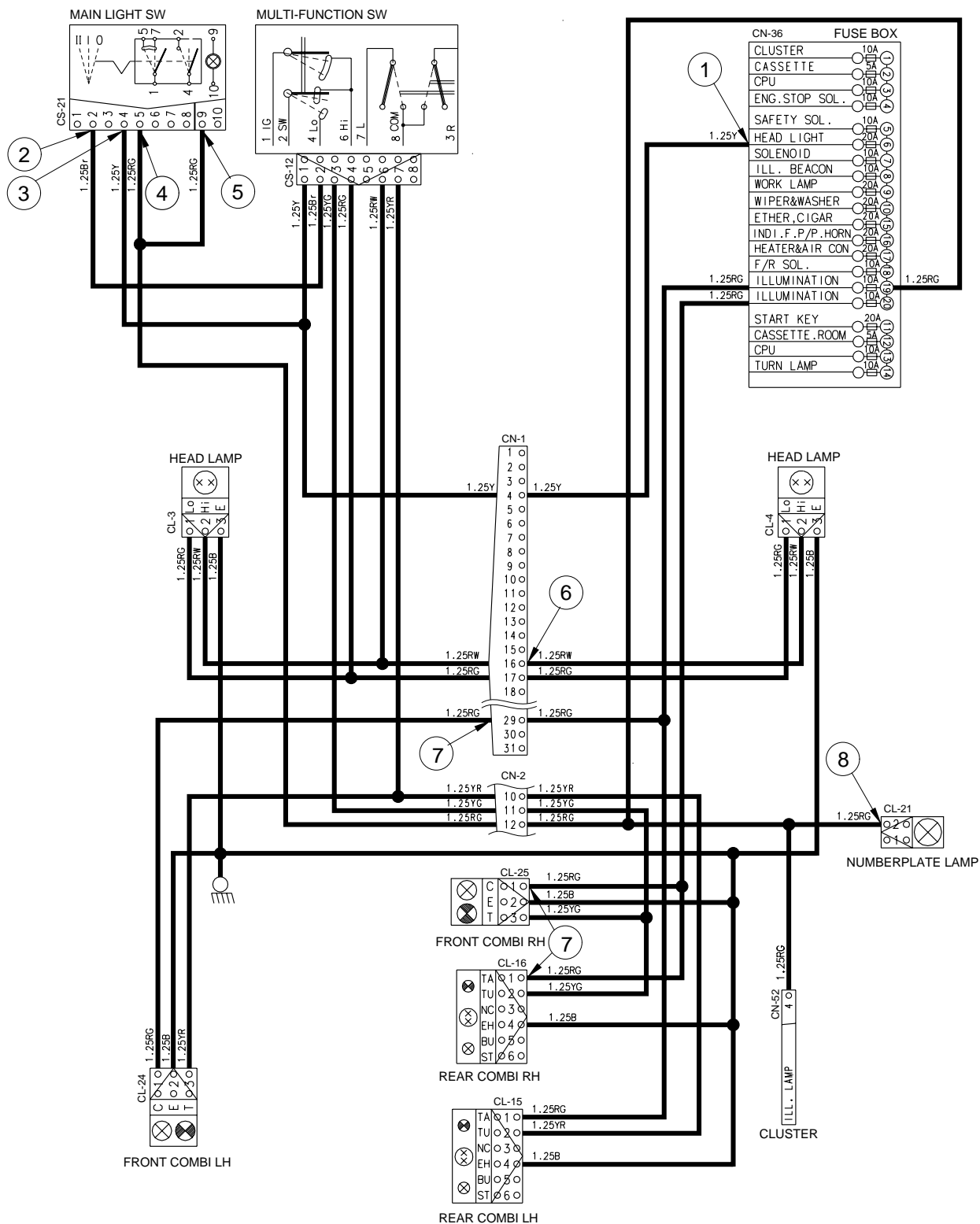
I/conn [CS-12(6)] → Head light low beam ON [CL-3(2), CL-4(2)]

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(Switch power output) ⑤- GND(Switch power input) ⑥- GND(Head lamp) ⑦- GND(Clearance lamp) ⑧- GND(Numberplate lamp)	20~25V

※ GND : Ground

HEAD LIGHT AND CLEARANCE LAMP CIRCUIT



5. WORK LAMP CIRCUIT

1) OPERATING FLOW

Fuse box(No.9) → I/conn [CN-1(23)] → Work light switch [CS-36(5)]
→ Work light switch [CS-36(6)]

※ When work light switch ON

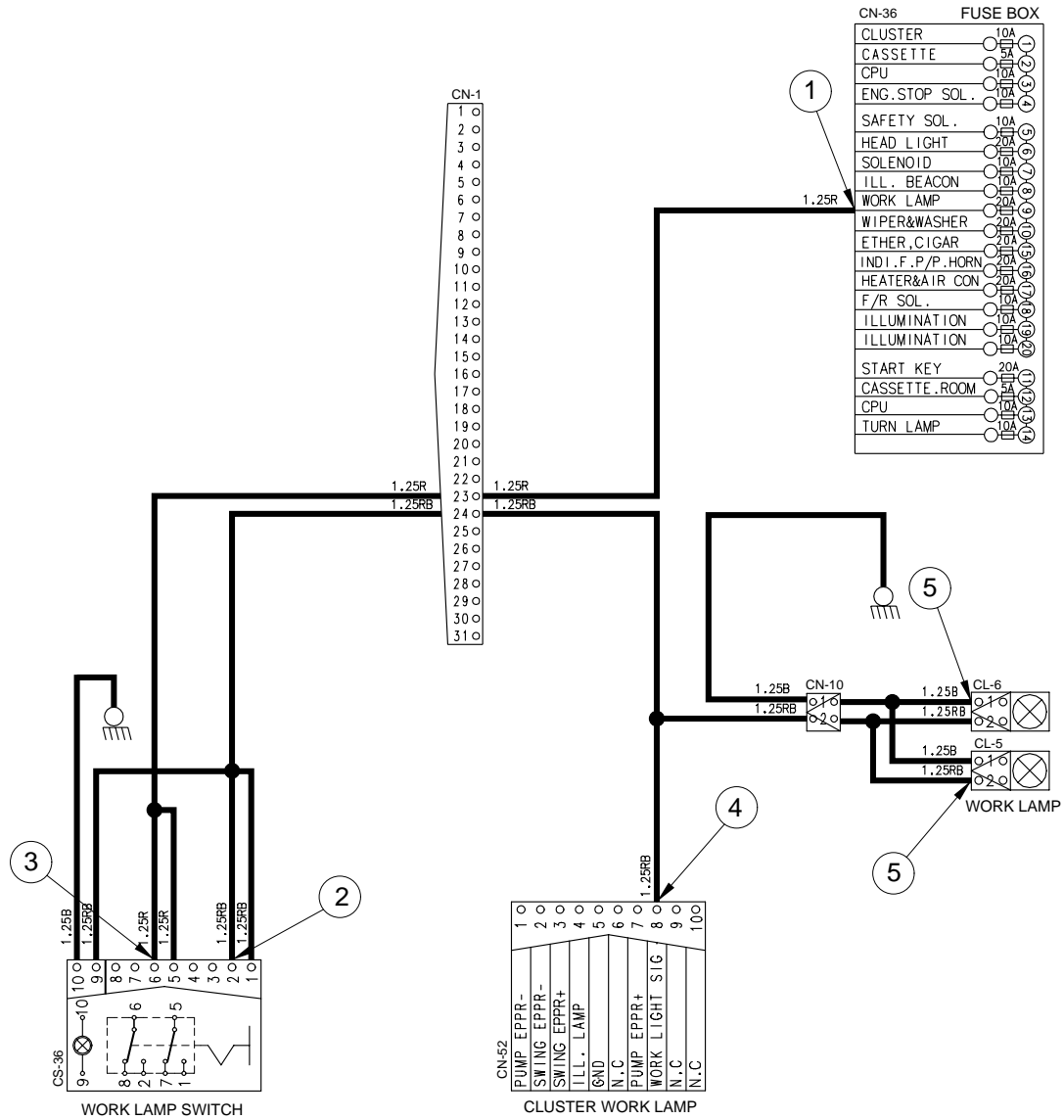
Work light switch ON [CS-36(1), (2)] → I/conn [CN-1(24)] → Cluster work lamp ON [CN-52(8)]
→ I/conn [CN-10(2)] → Work light ON [CL-5(2), CL-6(2)]
→ Switch indicator lamp ON [CS-36(9)]

2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	①- GND(Fuse box) ②- GND(Switch power output) ③- GND(Switch power input) ④- GND(Cluster work lamp) ⑤- GND(Work lamp)	20~25V

※ GND : Ground

WORK LAMP CIRCUIT



6. BEACON LAMP CIRCUIT

1) OPERATING FLOW

Fuse box(No.8) → I/conn [CN-1(30)] → Beacon lamp switch [CS-23(2)]

※ When Lamp switch ON

Beacon lamp switch ON [CS-23(6)]

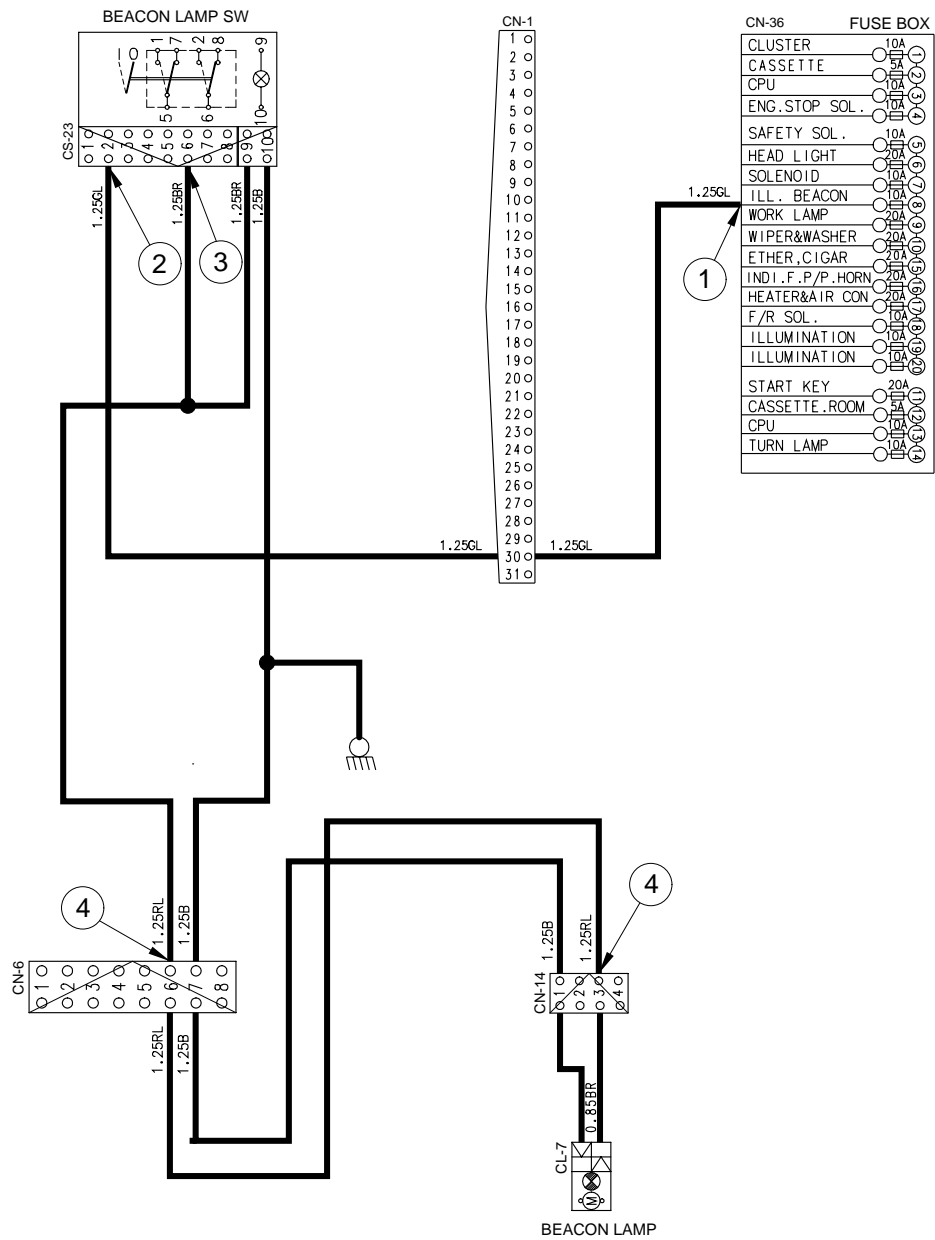
- Switch indicator lamp ON [CS-23(9)]
- I/conn [CN-6(6)] → I/conn [CN-14(3)]
→ Beacon lamp ON [CL-7]

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)	20~25V

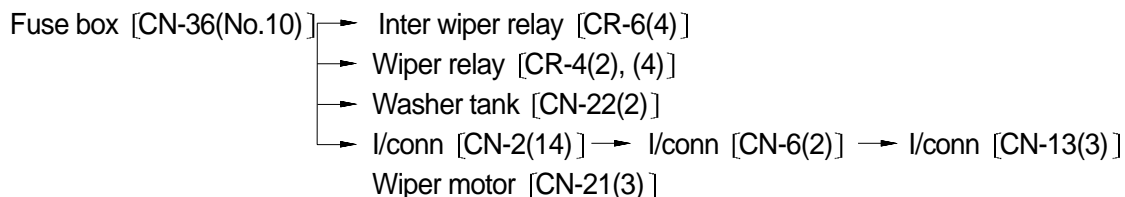
※ GND : Ground

BEACON LAMP CIRCUIT

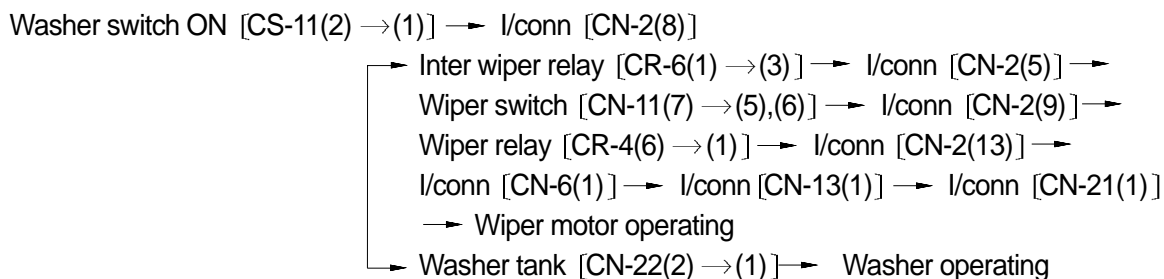


7. WIPER AND WASHER CIRCUIT

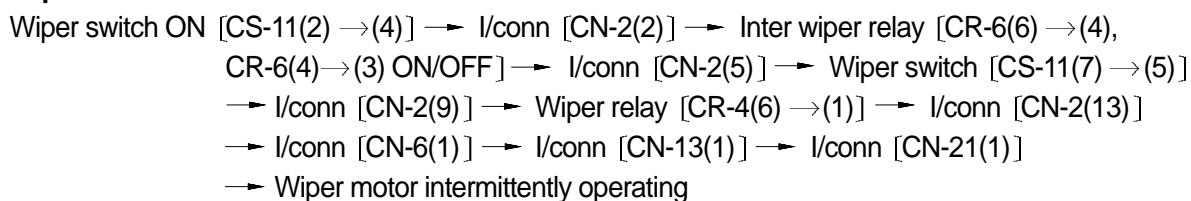
1) OPERATING FLOW



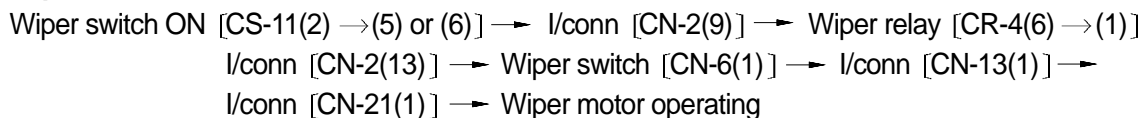
(1) Washer switch ON



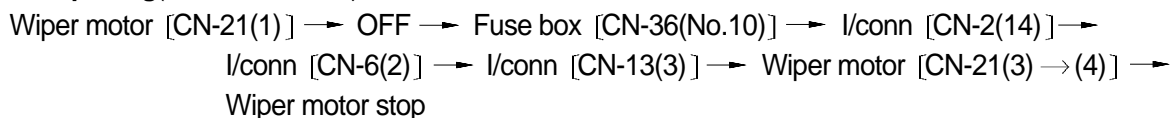
(2) Wiper switch ON : INT Position



(3) Wiper switch ON : Low and Hi Position



(4) Auto-parking(When switch OFF)

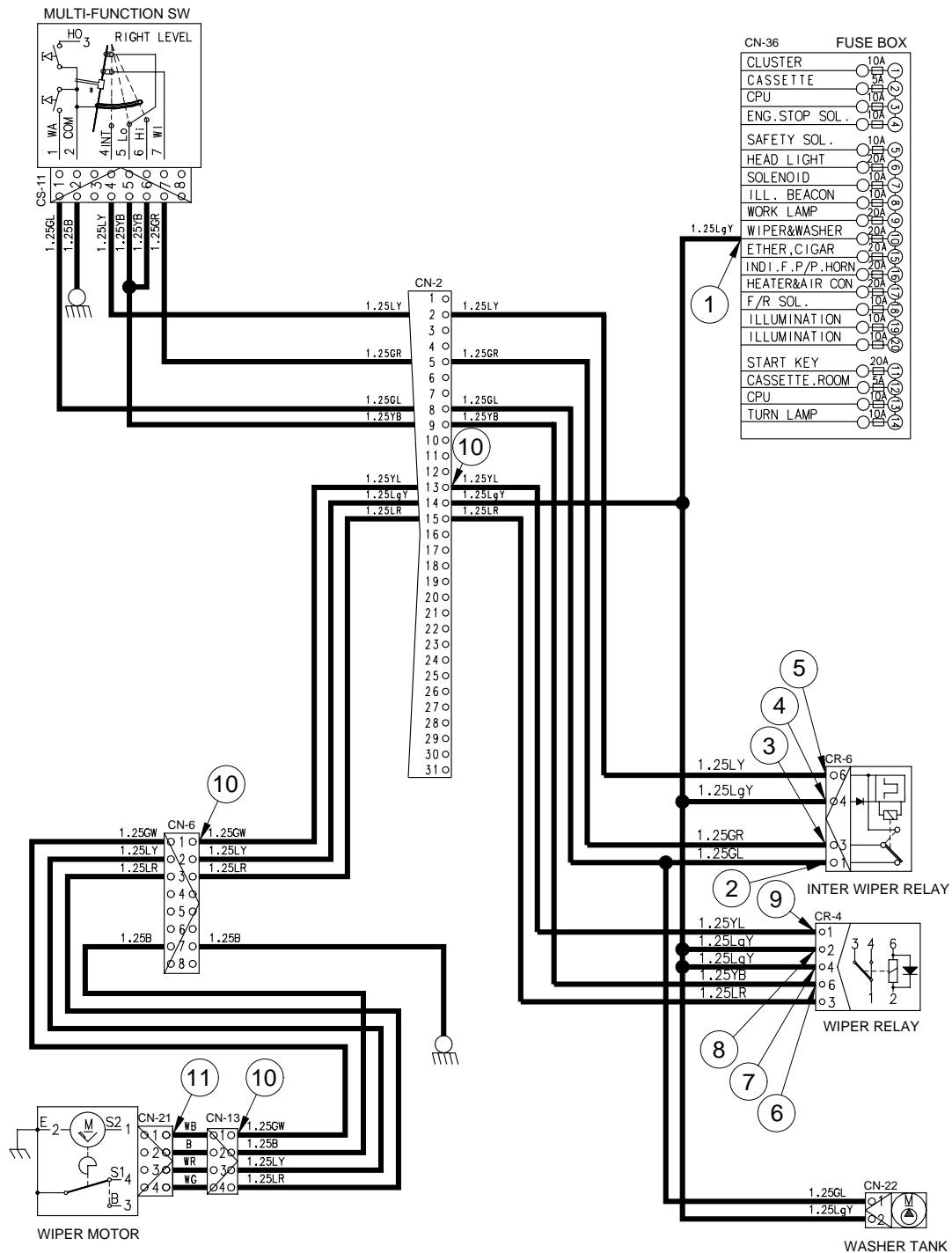


2) CHECK POINT

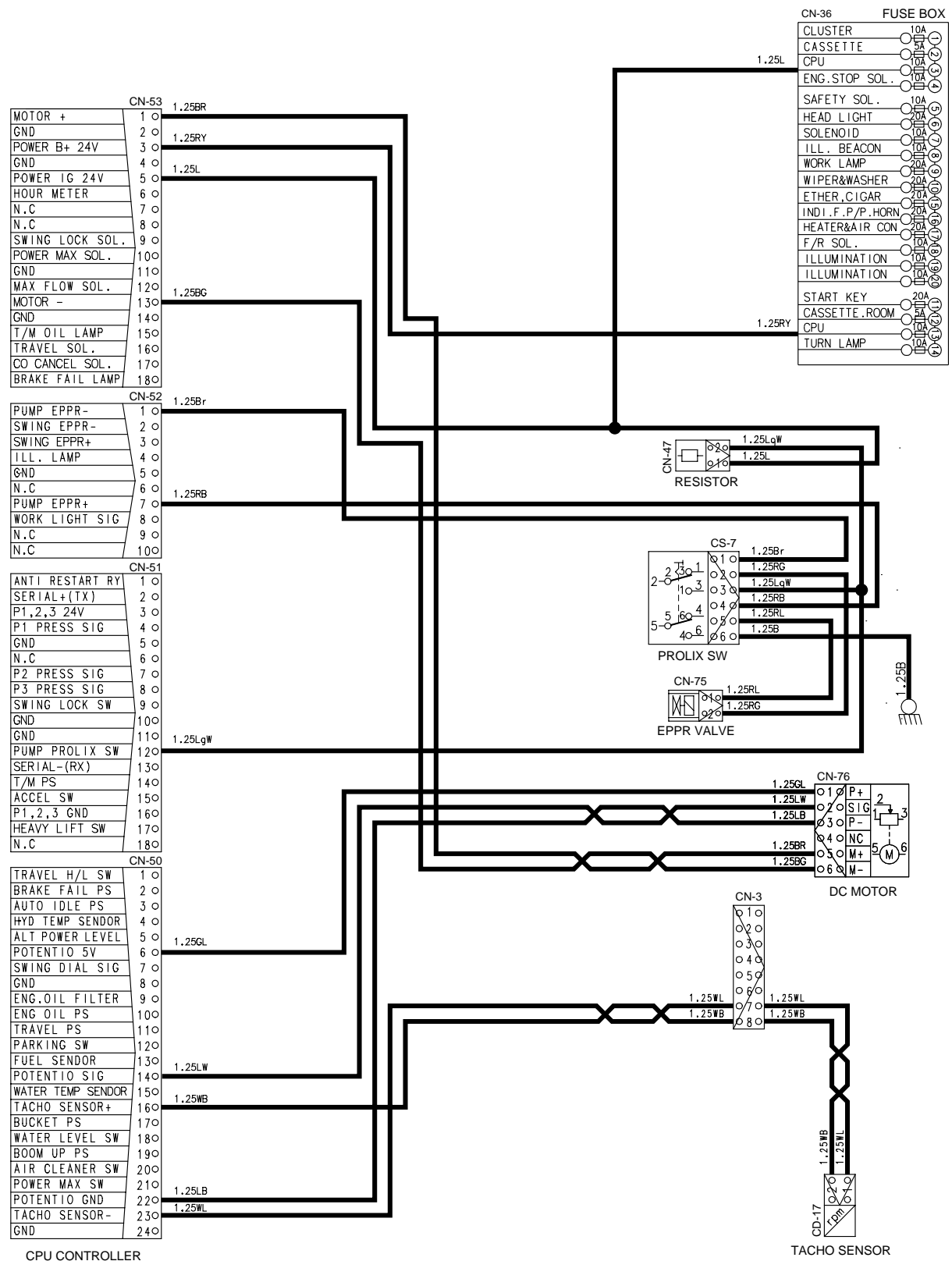
Engine	Start switch	Check point	Voltage
STOP	ON	①- GND(Fuse box) ②- GND(INT wiper relay) ③- GND(INT wiper RY washer output) ④- GND(INT wiper RY INT power output) ⑤- GND(INT wiper RY power input) ⑥- GND(INT power RY INT output) ⑦- GND(Relay power input) ⑧- GND(Relay coil) ⑨- GND(Relay output) ⑩- GND(Wiper power input) ⑪- GND(Wiper motor)	20~25V

※ GND : Ground

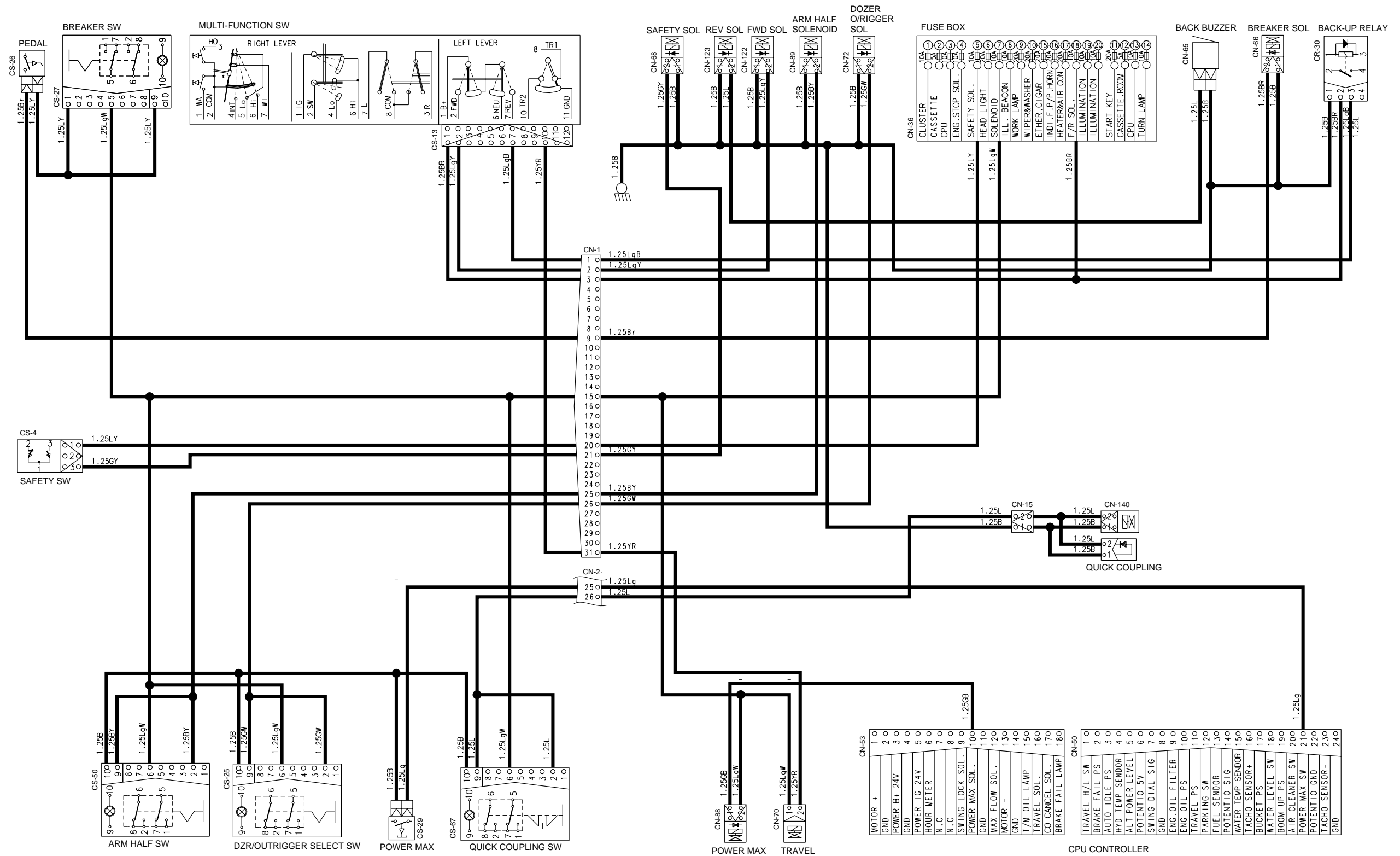
WIPER AND WASHER CIRCUIT



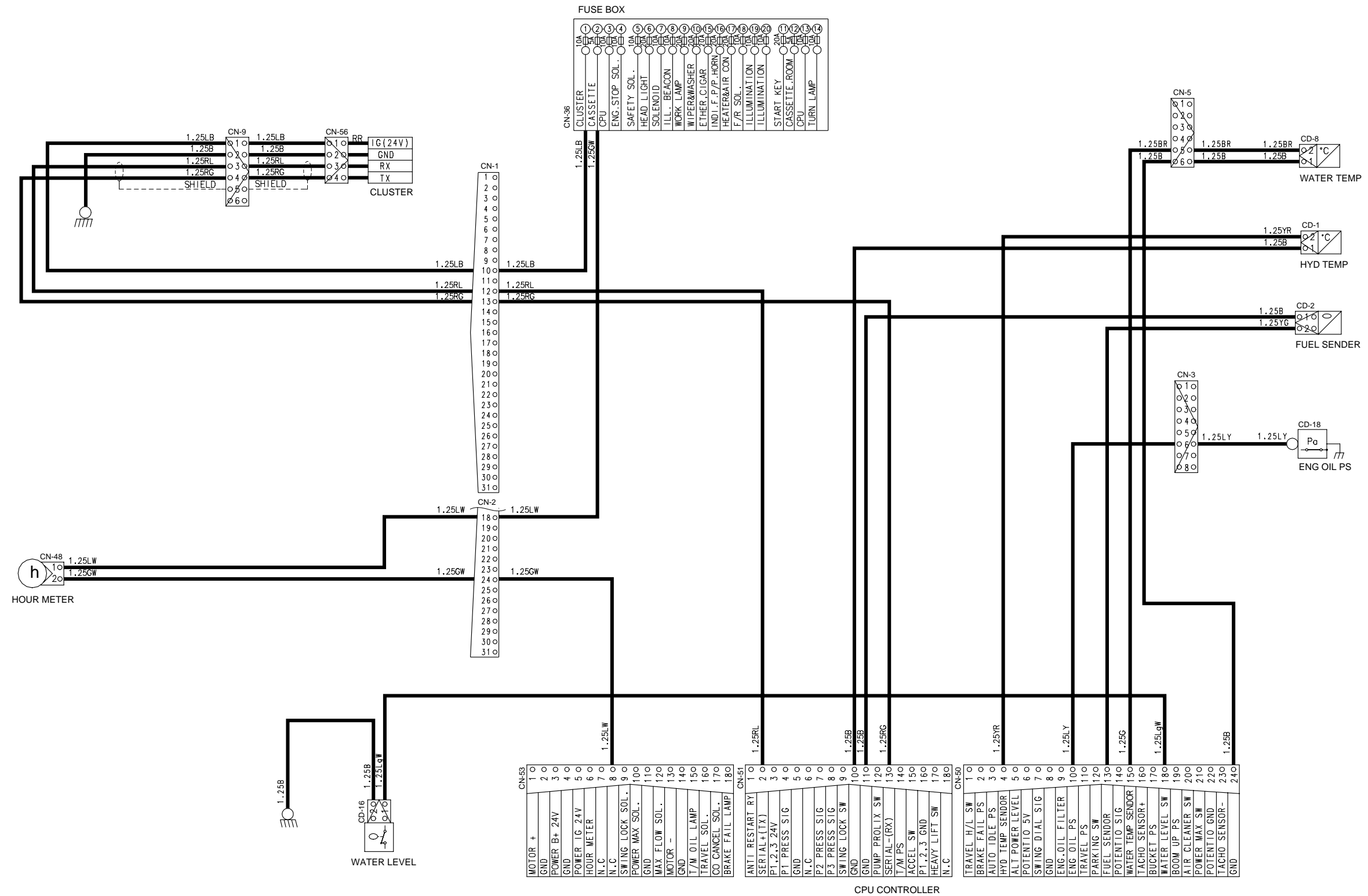
CONTROLLER CIRCUIT



ELECTRIC CIRCUIT FOR HYDRAULIC



MONITORING CIRCUIT



INDICATOR CIRCUIT

