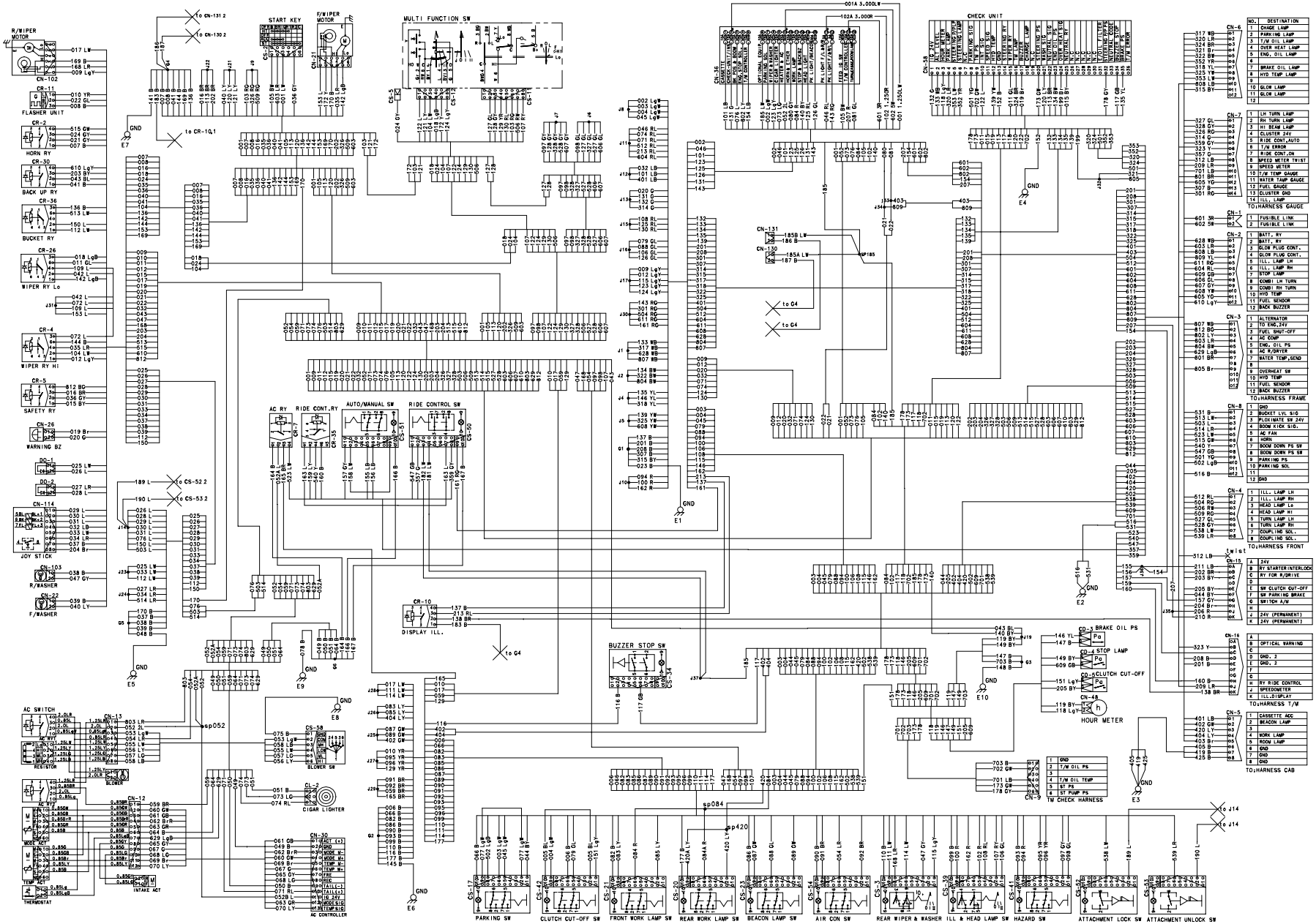
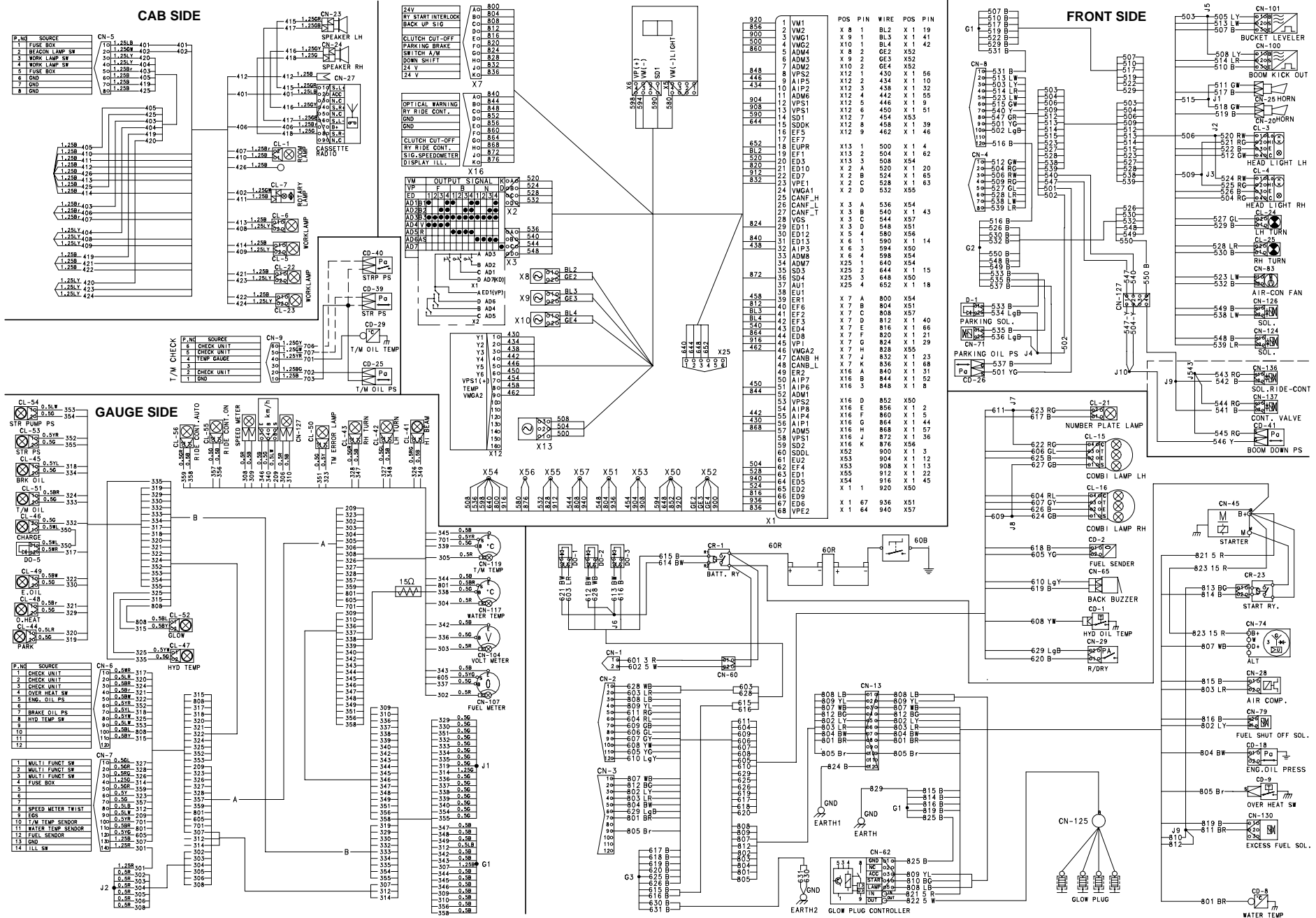


# GROUP 2 ELECTRICAL CIRCUIT

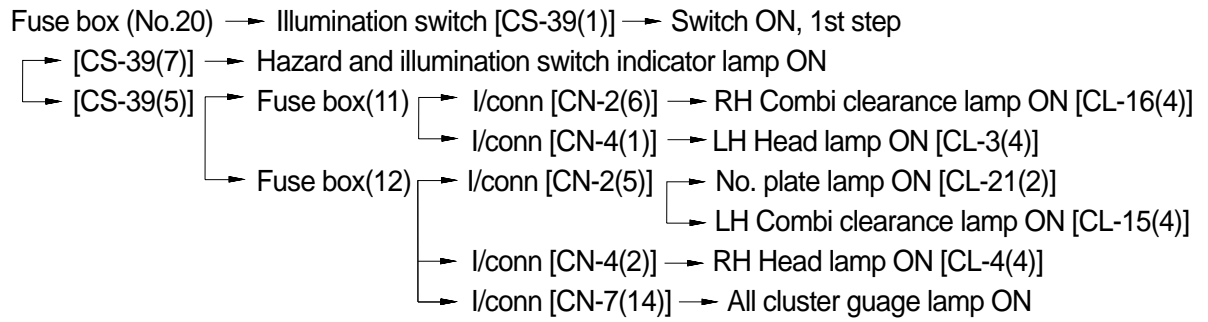


NO.	DESTINATION
1	CHARGE LAMP
2	PARKING LAMP
3	1/2W OIL LAMP
4	CLUSTER 24V
5	END. OIL LAMP
6	WATER TEMP GAUGE
7	WATER TEMP GAUGE
8	WATER TEMP GAUGE
9	WATER TEMP GAUGE
10	WATER TEMP GAUGE
11	WATER TEMP GAUGE
12	WATER TEMP GAUGE
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92	WATER TEMP GAUGE
93	WATER TEMP GAUGE
94	WATER TEMP GAUGE
95	WATER TEMP GAUGE
96	WATER TEMP GAUGE
97	WATER TEMP GAUGE
98	WATER TEMP GAUGE
99	WATER TEMP GAUGE
100	WATER TEMP GAUGE



## 1. ILLUMINATION CIRCUIT

### 1) OPERATING FLOW



### 2) CHECK POINT

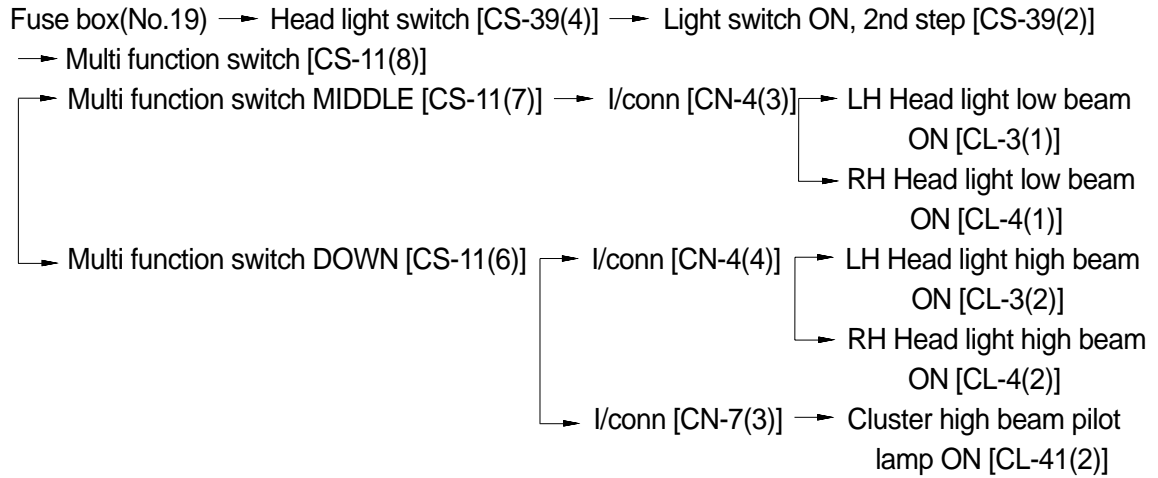
Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (Switch input) ② - GND (Switch output) ③ - GND (To light) ④ - GND (To gauge lamp)	20~25V

※ GND : Ground

## ILLUMINATION CIRCUIT

## 2. HEAD LIGHT CIRCUIT

### 1) OPERATING FLOW

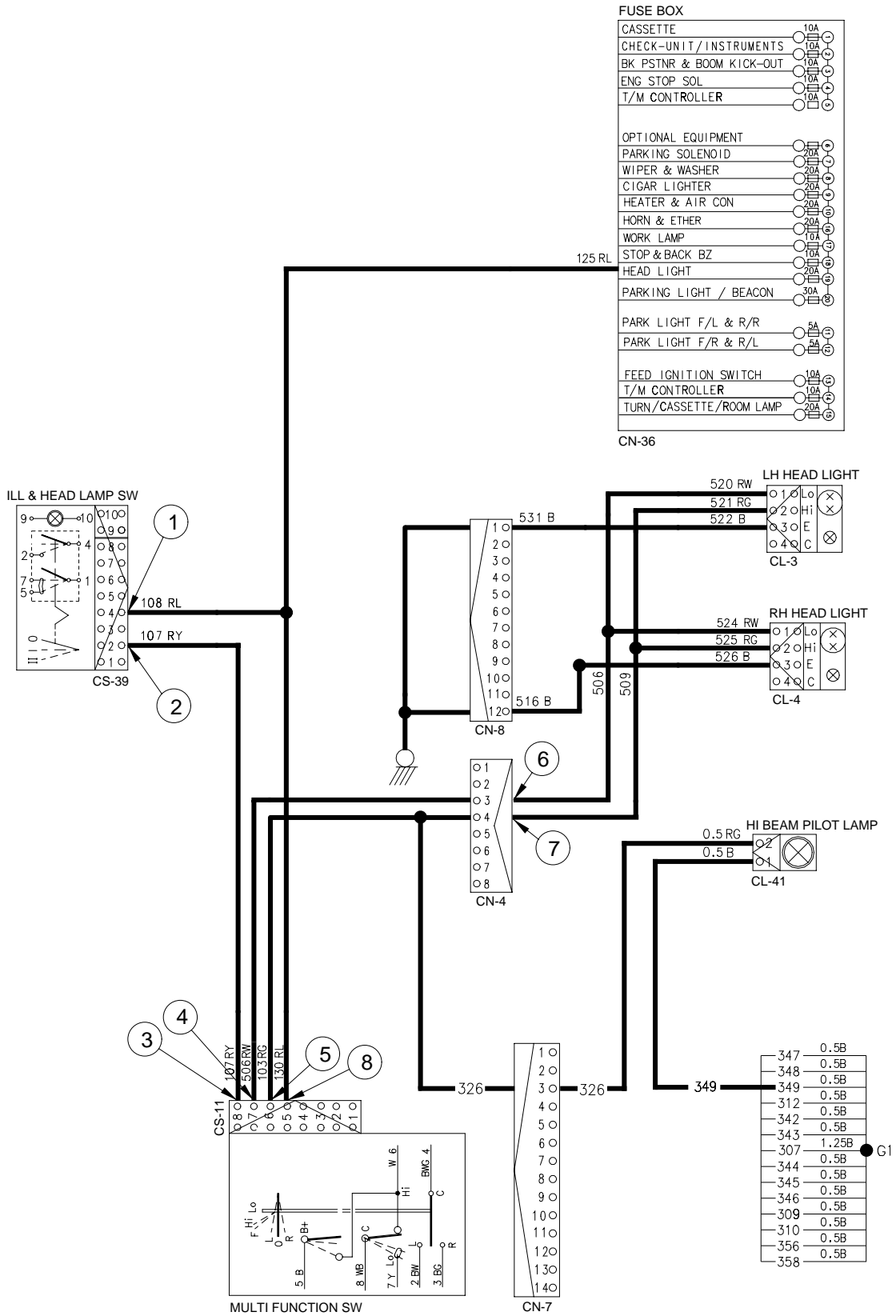


### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (Switch input) ② - GND (Switch output) ③ - GND (Multi function input) ④ - GND (Multi function output) ⑤ - GND (Multi function output) ⑥ - GND (Low beam) ⑦ - GND (High beam) ⑧ - GND (Passing B+)	20~25V

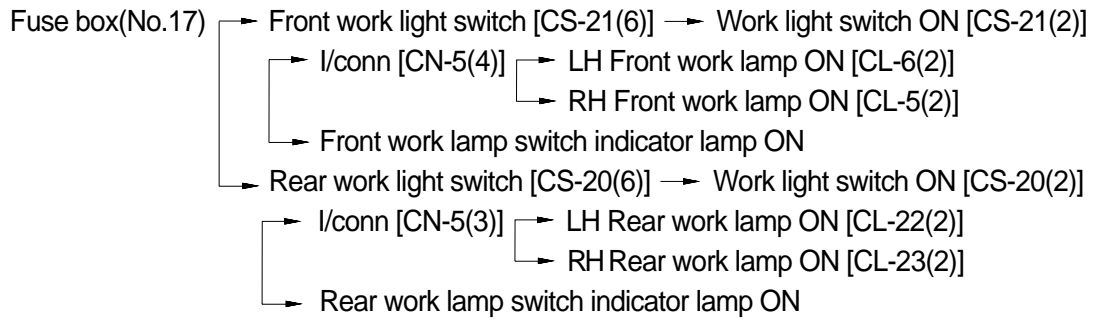
※ GND : Ground

# HEAD LIGHT CIRCUIT



### 3. WORK LIGHT SWITCH

#### 1) OPERATING FLOW

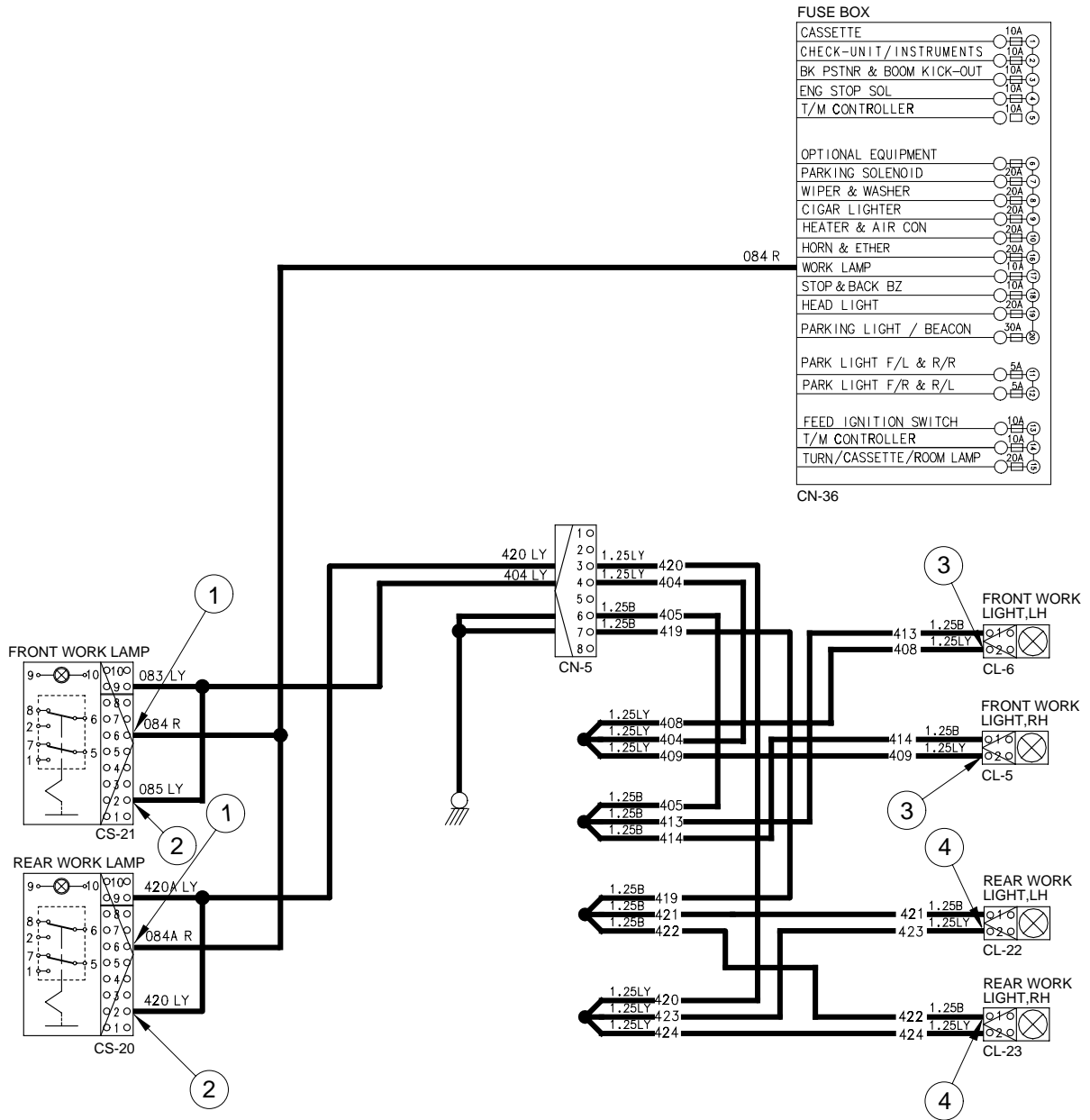


#### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (Switch input) ② - GND (Switch output) ③ - GND (Front work light) ④ - GND (Rear work light)	20~25V

※ GND : Ground

# WORK LIGHT SWITCH





## 4. STARTING CIRCUIT

### 1) OPERATING FLOW

Battery(+) terminal → Battery relay(M8, B<sup>+</sup> terminal) → Fusible link [CN-60(1)]

→ I/conn [CN-1(1)] → Fuse box (No.13) → Start switch [CS-2(1)]

※ The gear selector lever is neutral position. It is necessary condition before the starting.

The gear selector lever has an output signal which is activated whenever the shift lever is in the neutral position. This signal can be used to control a relay and prevent engine from starting whenever the shift lever is not in the neutral position.

#### (1) When start key switch is in ON position

Start switch ON → Start switch [CS-2(2)] → I/conn [CN-2(2)] → Battery relay [CR-1]  
 → Battery relay operating(All power is supplied with the electric component)  
 → Start switch [CS-2(3)] → Fuse box [No.4] → I/conn [CN-3(3)]  
 → I/conn [CN-13(5)] → Fuel shut off solenoid [CN-79]

#### (2) When start key switch is in START position

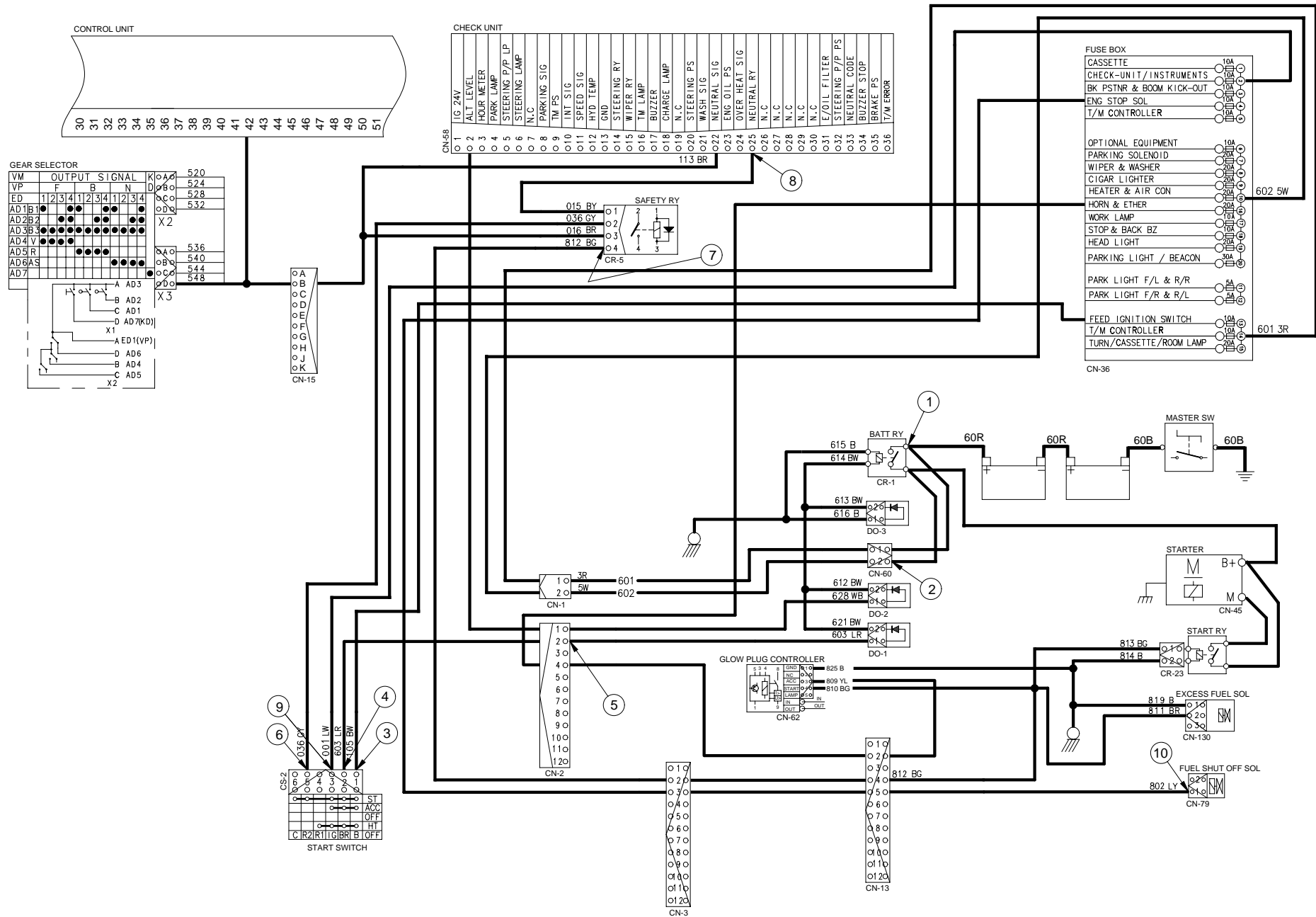
Start switch START [CS-2(5)] → Start safety relay [CR-5(2)] → Start safety relay [CR-5(4)]  
 → I/conn [CN-3(2)] → I/conn [CN-13(4)] → Start relay [CR-23(1)]  
 → Starter(Terminal B<sup>+</sup> and M connector of start motor)

### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
Running	ON	① - GND (Battery B <sup>+</sup> ) ② - GND (Fusible link) ③ - GND (Start key B <sup>+</sup> ) ④ - GND (Start key BR terminal) ⑤ - GND (I/conn CN-2(2)) ⑥ - GND (Start key R2 terminal) ⑦ - GND (Start safety relay output) ⑧ - GND (Check unit) ⑨ - GND (Start key IG terminal) ⑩ - GND (Fuel shut off solenoid)	20~28V

※ GND : Ground

# STARTING CIRCUIT



## 5. FUEL SHUT OFF CIRCUIT

### 1) OPERATING FLOW

Start key OFF [CS-2(3)] → Fuse box (No.4) → I/conn [CN-3(3)] → I/conn [CN-13(5)]  
→ Fuel shut off solenoid [CN-79(1)]

### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
OFF	OFF	⑨ - GND (Start key IG terminal) ⑩ - GND (Fuel shut off solenoid)	0V

※ GND : Ground

### 3) WIRING DIAGRAM - See page 7-12.

## 6. 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 [CN-74(D<sup>+</sup>)] → I/conn [CN-13(3)] → I/conn [CN-3(1)]

↳ Check unit [CN-58(2)]

↳ I/conn [CN-6(1)] → Cluster charge warning lamp ON [CL-46(1), Below 24V]

↳ JI [(332)→(336)] → Volt meter [CN-104(B)]

#### (2) Charging flow

Alternator [CN-74(B<sup>+</sup>)] → Starter [CN-45(B<sup>+</sup>)] → Battery relay [CR-1]

↳ Battery(+) terminal → Charging

↳ I/conn [CN-60(1),(2)] → I/conn [CN-1(1),(2)] → Fuse box

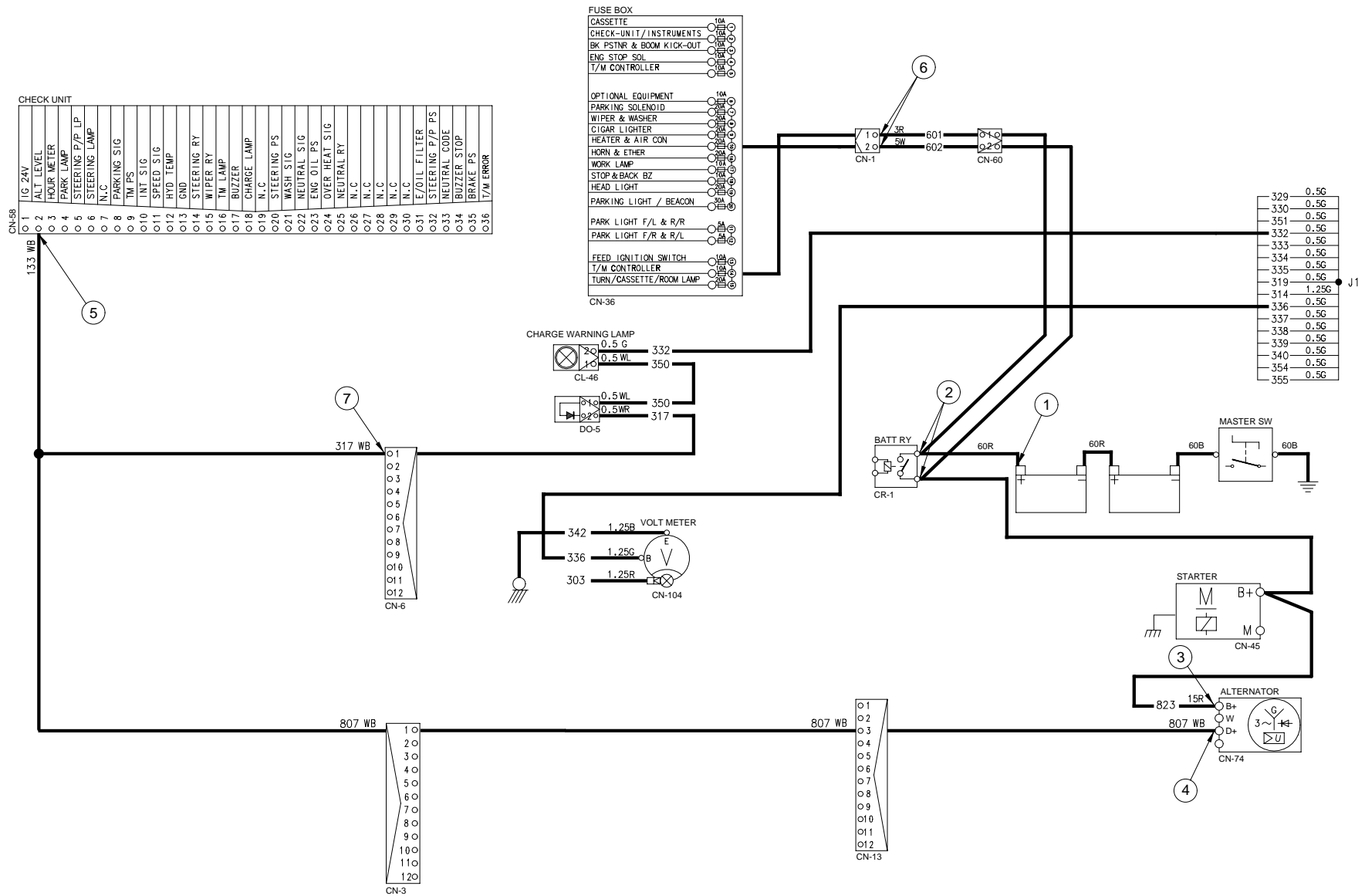
### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
Running	ON	① - GND (Battery) ② - GND (Battery relay) ③ - GND (ALT B <sup>+</sup> ) ④ - GND (ALT D <sup>+</sup> ) ⑤ - GND (Check unit) ⑥ - GND (Fuse box)	20~28V

Engine	Key switch	Check point	Resistance
Running	ON	⑦ - GND (Cluster)	∞ Ω

※ GND : Ground

# CHARGING CIRCUIT



## 7. ELECTRIC PARKING, DECLUTCH CIRCUIT

### 1) OPERATING FLOW

#### (1) Parking OFF

Fuse box (No.6) → Parking switch OFF [CS-17(6)→(8)] → I/conn [CN-8(10)]  
 → Parking solenoid ON(Activated) → Parking brake released(By hydraulic pressure)

#### (2) Parking ON

Fuse box (No.6) → Parking switch ON

- Parking solenoid [CN-71] OFF
  - Parking brake applied [By spring force]
- [CS-17(6)→(2)] → Parking switch indicator lamp ON
- [CS-17(5)→(1)] → I/conn [CN-15(F)]
  - Control unit [X1(21)] → T/M declutch

#### (3) Declutch ON

Fuse box (No.20) → Clutch cut-off switch ON

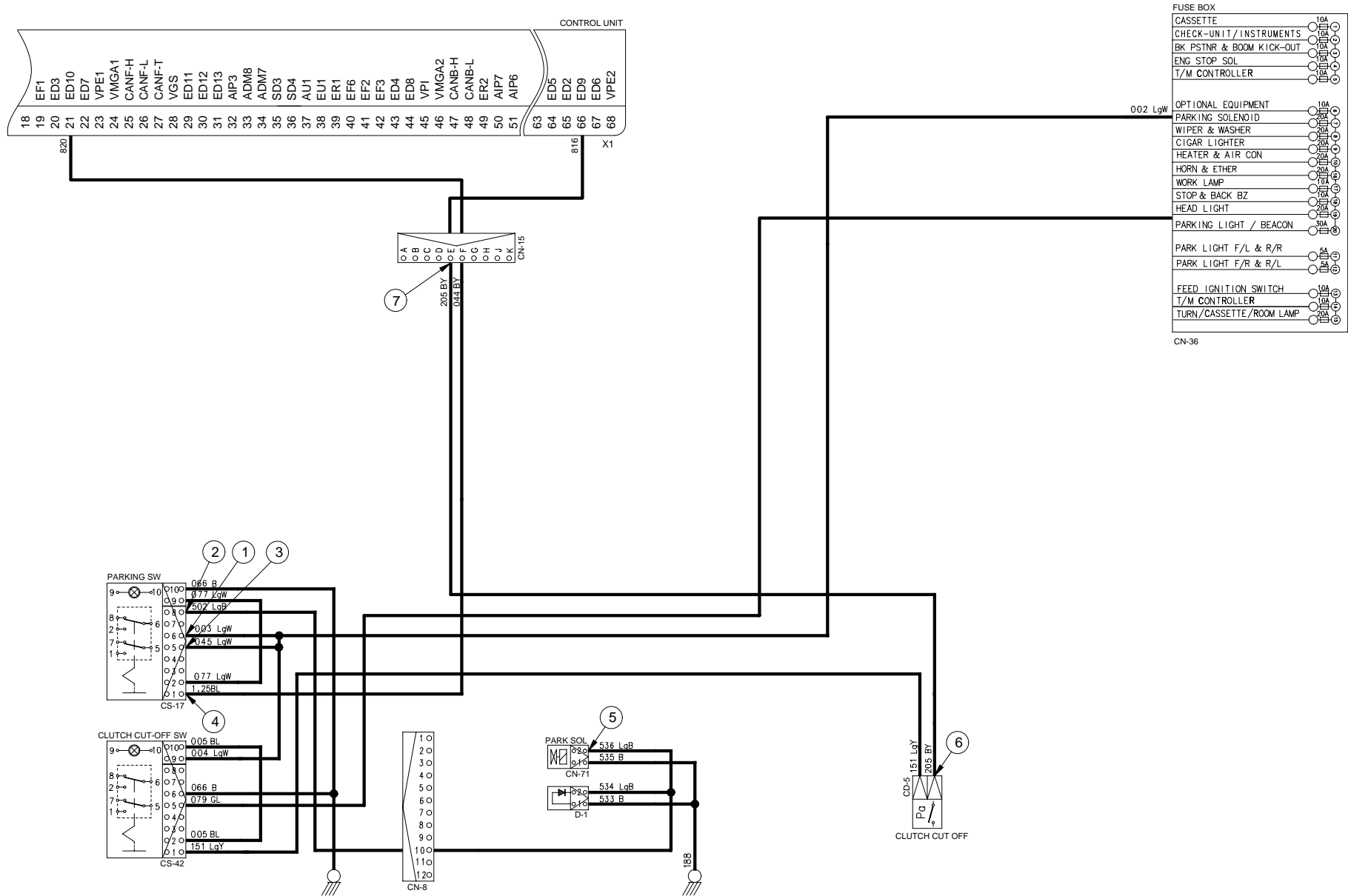
- Clutch cut-off switch [CS-42(6)→(2)]
  - Clutch cut-off switch indicator lamp ON
- Clutch cut-off switch [CS-42(5)→(1)]
  - Service brake applied
  - Service brake pressure switch ON [CD-5]
    - I/conn [CN-15(E)] → Control unit [X1(66)] → Declutch
    - Clutch oil pressure switch

### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
Running	ON	① - GND (Parking switch input) ② - GND (Parking switch output) ③ - GND (Parking switch input) ④ - GND (Parking switch output) ⑤ - GND (Parking solenoid) ⑥ - GND (Clutch cut-off press switch) ⑦ - GND (Declutch input signal)	20~28V

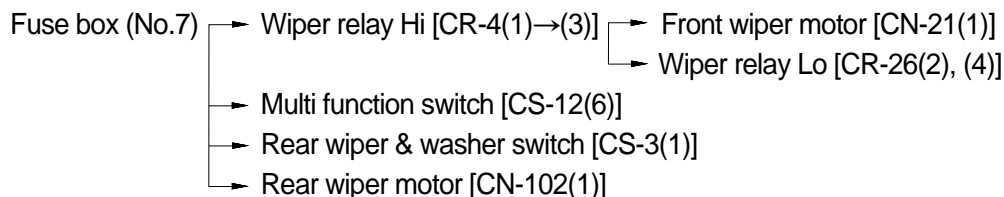
※ GND : Ground

# ELECTRIC PARKING, DECLUTCH CIRCUIT

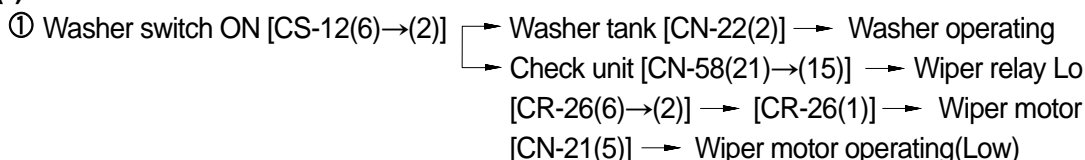


## 8. WIPER AND WASHER CIRCUIT

### 1) OPERATING FLOW



#### (1) Front washer switch ON



#### (2) Front wiper switch ON

##### ① INT position

Wiper switch ON [CS-12(6)→(1)] → Check unit [CN-58(10)→(15)] intermittent signal → Wiper relay Lo [CR-26(4)→(1)] → Wiper motor [CN-21(5)] → Wiper motor intermittently operating

##### ② Lo position

Wiper switch ON [CS-12(6)→(4)] → Wiper relay Lo [CR-26(3)→(1)] → Wiper motor [CN-21(5)] → Wiper motor operating (Low)

##### ③ Hi position

Wiper switch ON [CS-12(6)→(3)] → Wiper relay Hi [CR-4(2)→(6)] → [CR-4(1)→(4)] → Wiper motor [CN-21(4)] → Wiper motor operating(High)

#### (3) Auto-parking(When switch OFF)

Switch OFF → Fuse box (No.7) → Wiper relay Hi [CR-4(1)→(3)] → Wiper motor [CN-21(1)→(2)] → Multi function switch [CS-12(5)→(4)] → Wiper relay Lo [CR-26(3)→(1)] → Front wiper motor [CN-21(5)] → Wiper motor stop

#### (4) Rear wiper and washer switch

##### ① Wiper switch ON(1st step)

Wiper switch ON [CS-3(1)→(6)] → Wiper motor [CN-102(5)] → Wiper motor operating  
→ Rear wiper and washer switch indicator lamp ON

##### ② Washer switch ON(2nd step)

Washer switch ON [CS-3(1)→(3)] → Rear washer tank [CN-103(2)] → Washer operating

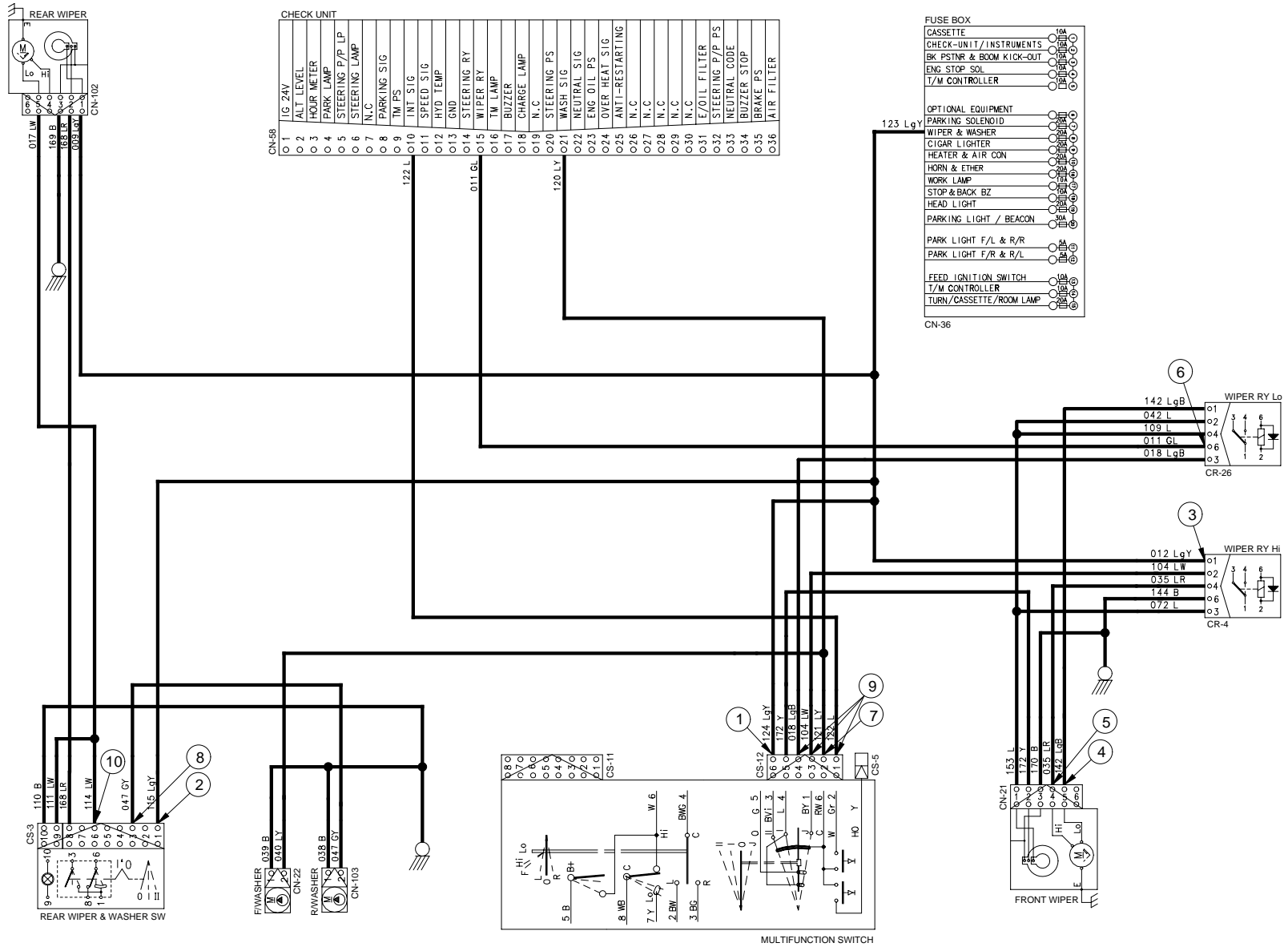
### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
Stop	ON	① - GND (Front wiper switch power input) ② - GND (Rear wiper switch power input) ③ - GND (Wiper relay power input) ④ - GND (Front wiper motor Lo power input) ⑤ - GND (Front wiper motor High power input) ⑥ - GND (Wiper relay power input) ⑦ - GND (Front washer power output) ⑧ - GND (Rear washer power output) ⑨ - GND (Front wiper motor power output) ⑩ - GND (Rear wiper motor power output)	20~25V

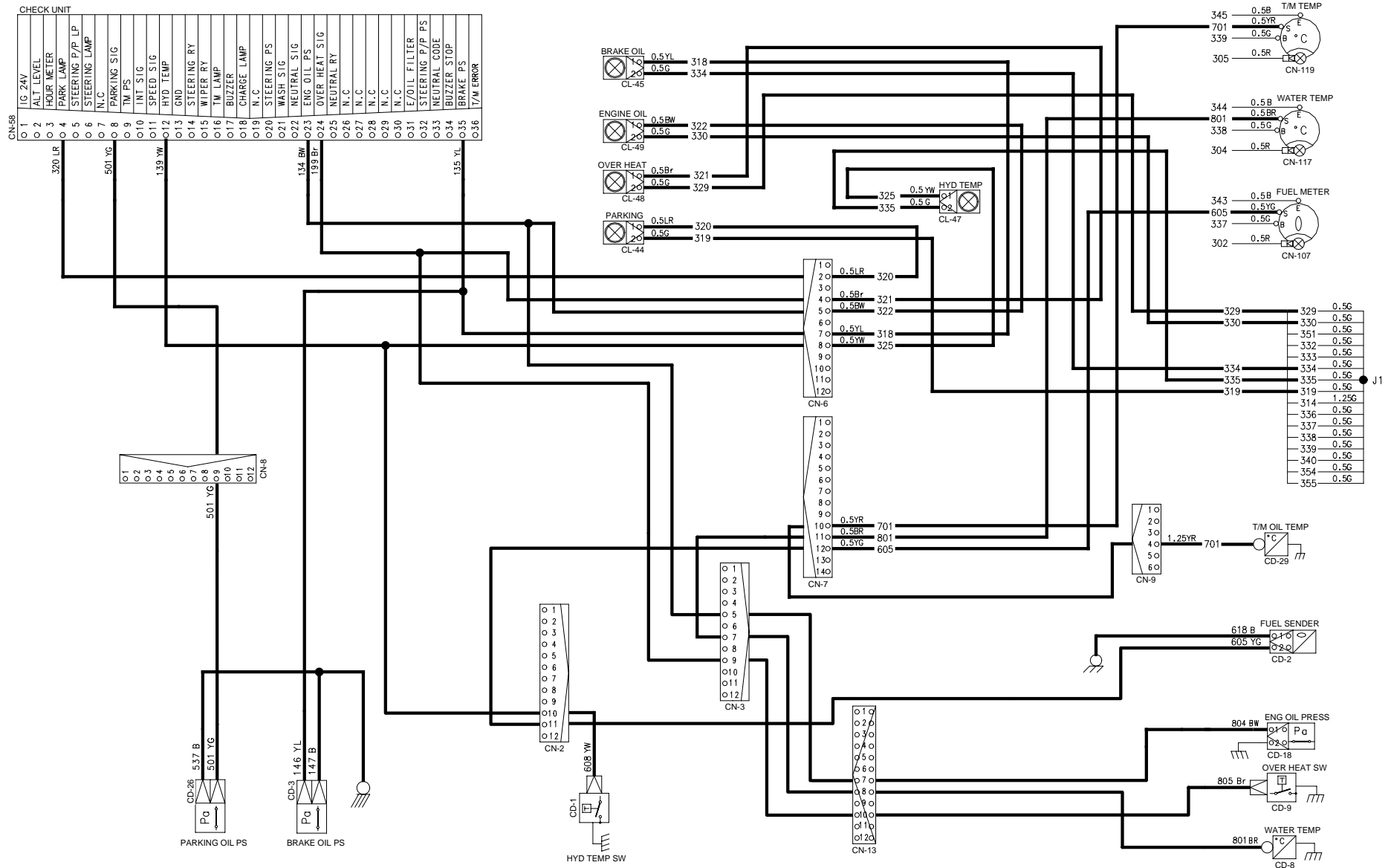
※ GND : Ground



# WIPER AND WASHER CIRCUIT



# MONITORING CIRCUIT



# HAZARD, TURN AND ROTARY CIRCUIT

