

EXTERIOR LAMP

831000

GENERAL INFORMATION

1. SPECIFICATIONS

1) Exterior lamp

Category			Type	Capacity	Quantity
LED Headlamp	High beam		LED	12W	2EA X 2
	Low beam		LED	15W	3EA X 2
	DRL & position	DRL	LED	13.1W	10EA X 2
		Position	LED	13.1W	
	Turn signal lamp		LED	15.3W (Amber)	10EA X 2
Halogen headlamp	High beam		Bulb	H1 55W	1EA X 2
	Low beam		Bulb	H7 55W	1EA X 2
	DRL & position (with DRL)	DRL	LED	13.1W	10EA X 2
		Position	LED	13.1W	
	DRL & position (without DRL)	DRL	-	-	-
		Position	LED	W5W	1EA X 2
	Turn signal lamp		Bulb	PY21W	1EA X 2
Fog lamp	Front		LED	3W	3EA X 2
			Bulb	H1619W	1EA X 2
	Rear		Bulb	P21W	1EA X 1
Rear Combination lamp	Tail lamp/Stop lamp (surface emission type)		LED	0.2W	24EA X 2
	Stop lamp		LED	0.5W	8EA X 2
	Turn signal lamp		Bulb	PY21W	1EA X 2
	Backup lamp		Bulb	W16W	1EA X 2
Outside turn signal lamp			LED	-	-
Rear reflex reflector			Lens	-	1EA X 2
License lamp			Bulb	W5W	1EA X 2
High-mounted stop lamp	With spoiler		LED	0.2W	22EA X 1
	Without spoiler		LED	0.2W	10EA X 1

EXTERIOR LAMP

INTERIOR LAMP

FUSE

SWITCH

WIPER AND

WPC

2. NOTES



NOTE

► LED

- The LED stands for "Light Emitting Diode" or "Luminescent Diode." LED is a semiconductor diode that emits incoherent narrow-spectrum light when electrically biased in the forward direction of the p-n junction, as in the common LED circuit. In short, it is an element that converts electric signals into light signals. Yellow, blue, red and white LEDs are currently available.
- The followings are the features of LED.
It is not glaring and doesn't have short circuit unlike the conventional lamps.
It is semi-permanent and doesn't generate heat.
Its power consumption is much lower than that of conventional bulbs.

► Luminous intensity

- Luminous intensity is an expression of the amount of light power emanating from a point source within a solid angle of one steradian. That is, this indicates an amount of light that passes through the unit area for the unit time. The SI unit of luminous intensity is candela (cd).

► Luminance

- Luminance describes the amount of light that passes through, is reflected, or emitted from an area, and falls within a given solid angle. It is measured in stilb (sb) or nit (nt).

► Illumination

- This indicates the amount of light reaching a given area. Measuring unit is lux (lx) and it is not directly proportional to the brightness of the area as the reflection rate is not included.

OVERVIEW

1. OVERVIEW

The exterior lamp includes headlamp, rear combination lamp (quarter panel/tailgate), fog lamp, outside turn signal lamp, high mounted stop lamp, license plate lamp.

The BCM and SKM controls the exterior lamps using the signals from the multifunction light switch, AUTO light sensor, smart key, etc.

The headlamps are divided into LED lamps and bulb lamps depending on the specifications.

The AUTO light sensor is installed to the top center of the windshield glass. This sensor detects the ambient brightness when the multifunction light switch is in the AUTO position, and sends the signals to the BCM to turn on or off the tail lamps and headlamps automatically.

EXTERIOR
LAMPINTERIOR
LAMP

FUSE

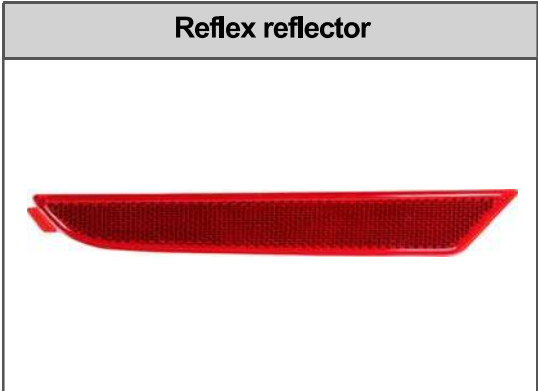
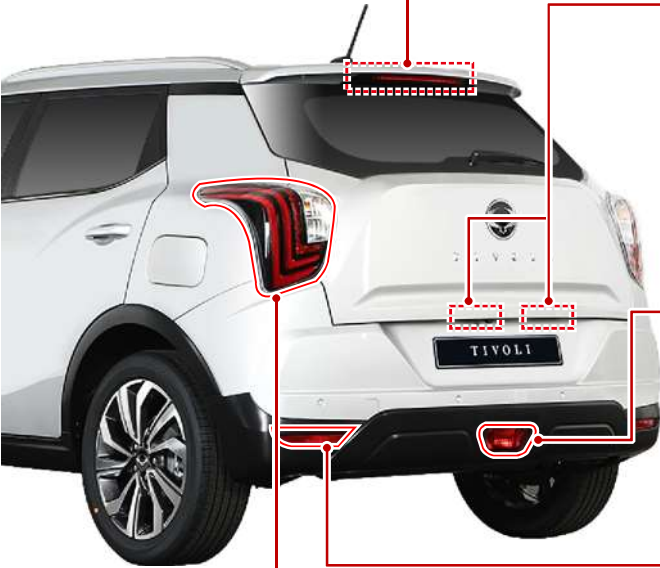
SWITCH

WIPER
AND

WPC

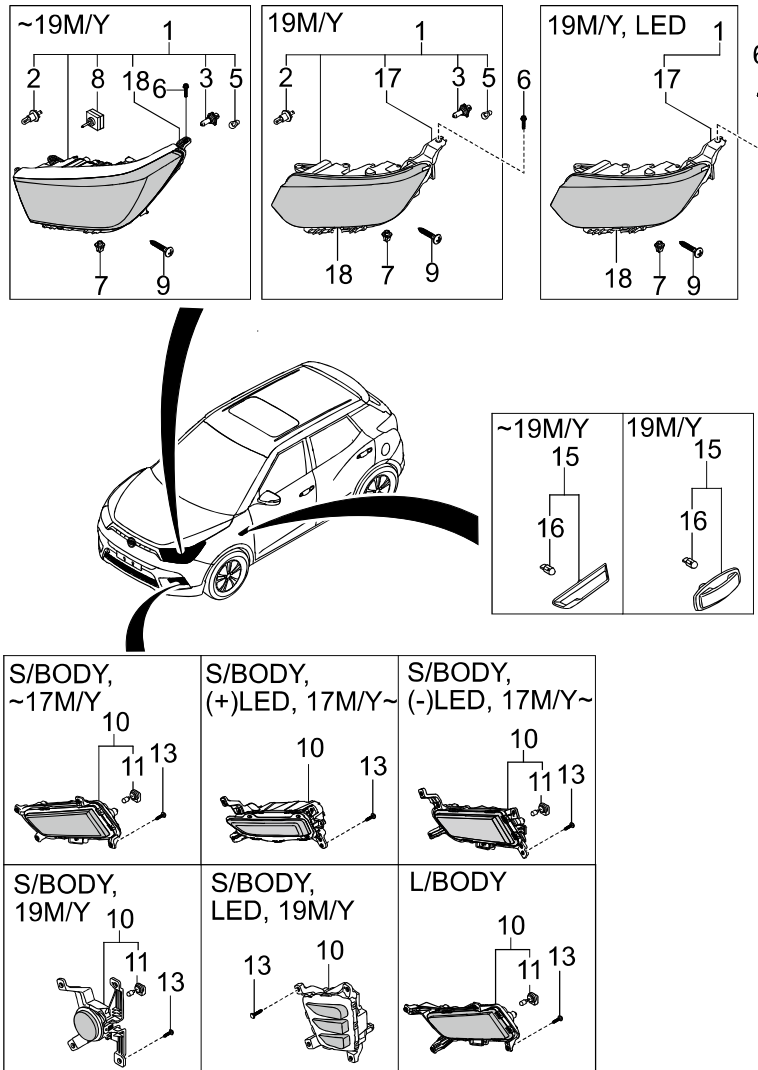
2. COMPONENTS

AUTO light sensor 	Headlamp leveling switch 	Outside turn signal lamp 
Front fog lamp LED  Bulb 		
Headlamp LED  Bulb 		



3. EPC

► 8310 FRONT LAMP



1. LAMP ASSY-HEAD

2. BULB

3. BULB

5. BULB

6. BOLT-HEAD LAMP MTG

7. SCREW-GROMMET

8. BULB-D5S

9. SCREW

10. LAMP ASSY-FOG FRT

11. BULB

11. T/SCREW-PAN SEMS_M5x0x16

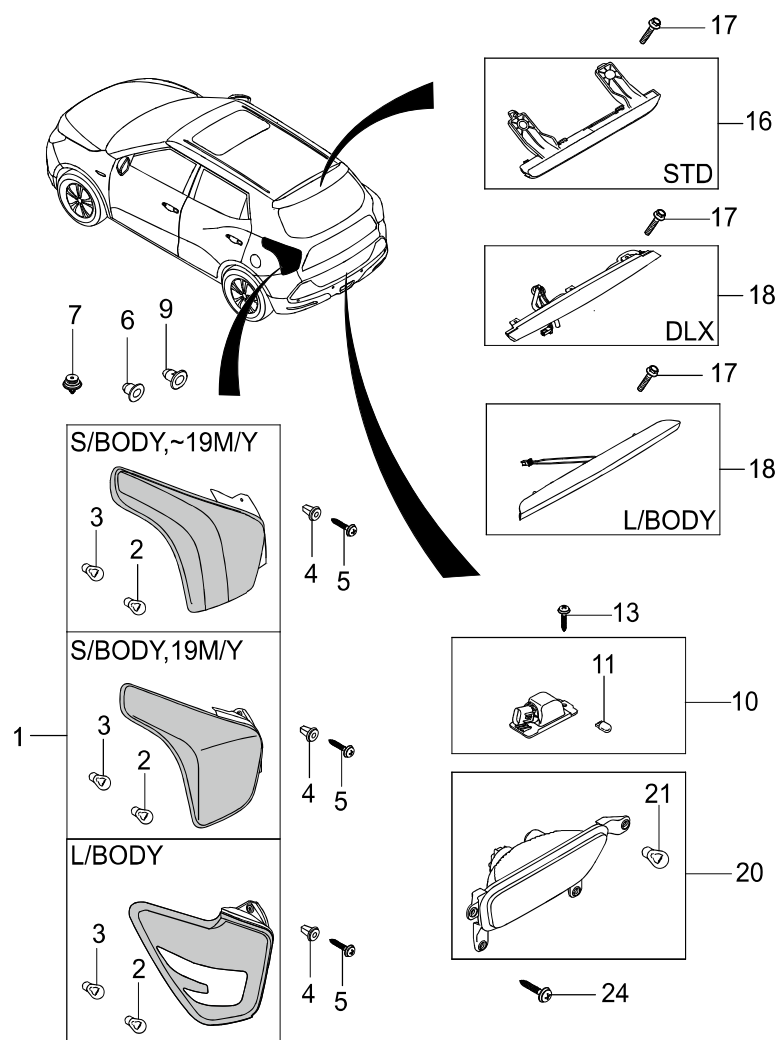
15. LAMP ASSY-SIDE REPEATER

16. BULB-WY5W

17. BRKT ASSY-FENDER MTG

18. BRKT ASSY-HEAD LAMP

► 8320 REAR LAMP



1. COMBINATION LAMP ASSY-RR
2. BULB
3. BULB-W16W
4. GROMMET
5. SCREW
6. RETAINER ASSY-RR COMBI MTG
7. CLIP ASSY-RR COMBINATION MTG
9. RETAINER ASSY-RR COMBI MTG
10. LAMP ASSY-LICENSE PLATE

11. BULB
13. SCREW
16. LAMP ASSY-HIGH MTD STOP INR
17. BOLT
18. LAMP ASSY-HIGH MOUNTED STOP
20. LAMP ASSY-FOG RR
21. BULB
24. T/SCREW-PAN SEMS_M5x0x16

EXTERIOR
LAMPINTERIOR
LAMP

FUSE

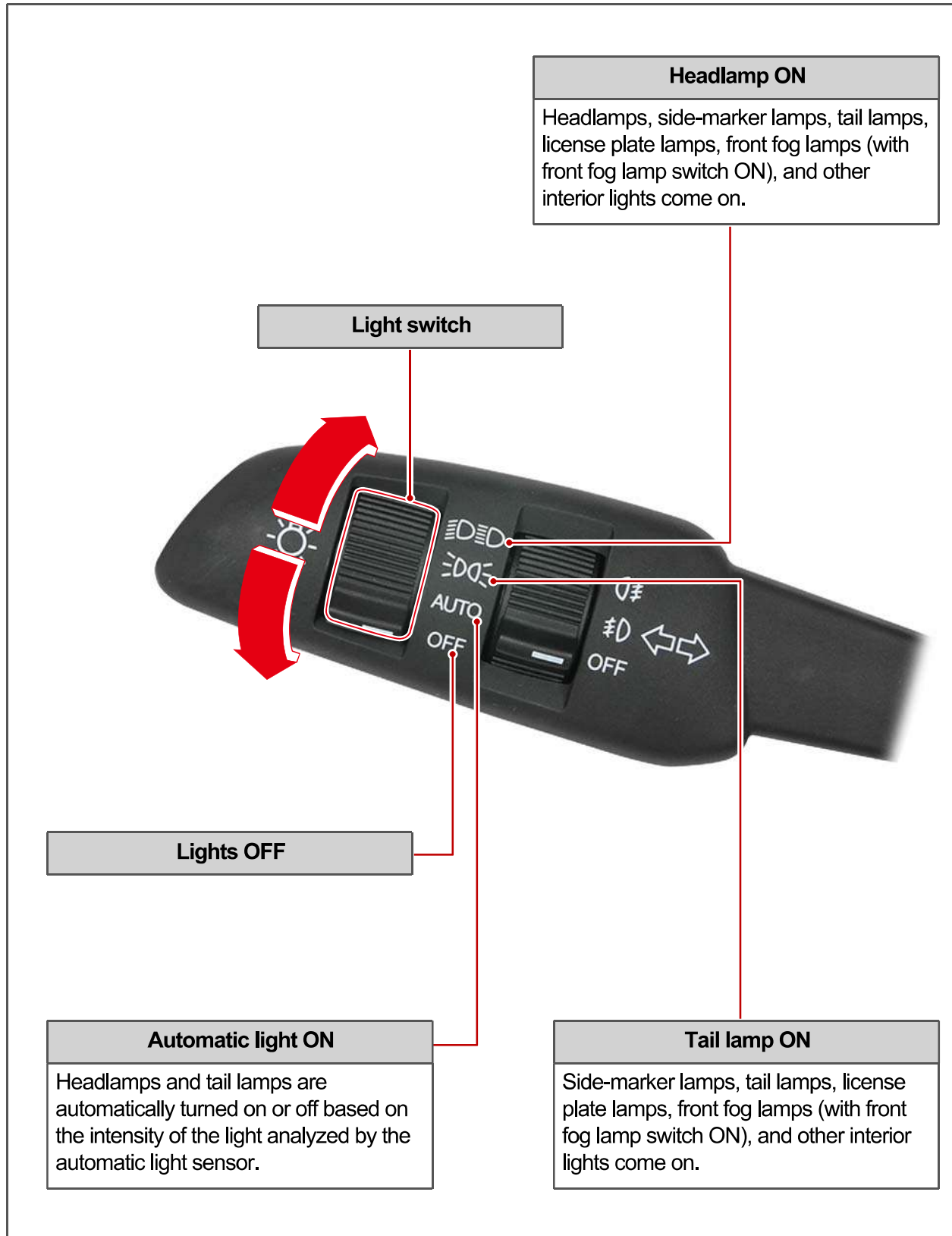
SWITCH

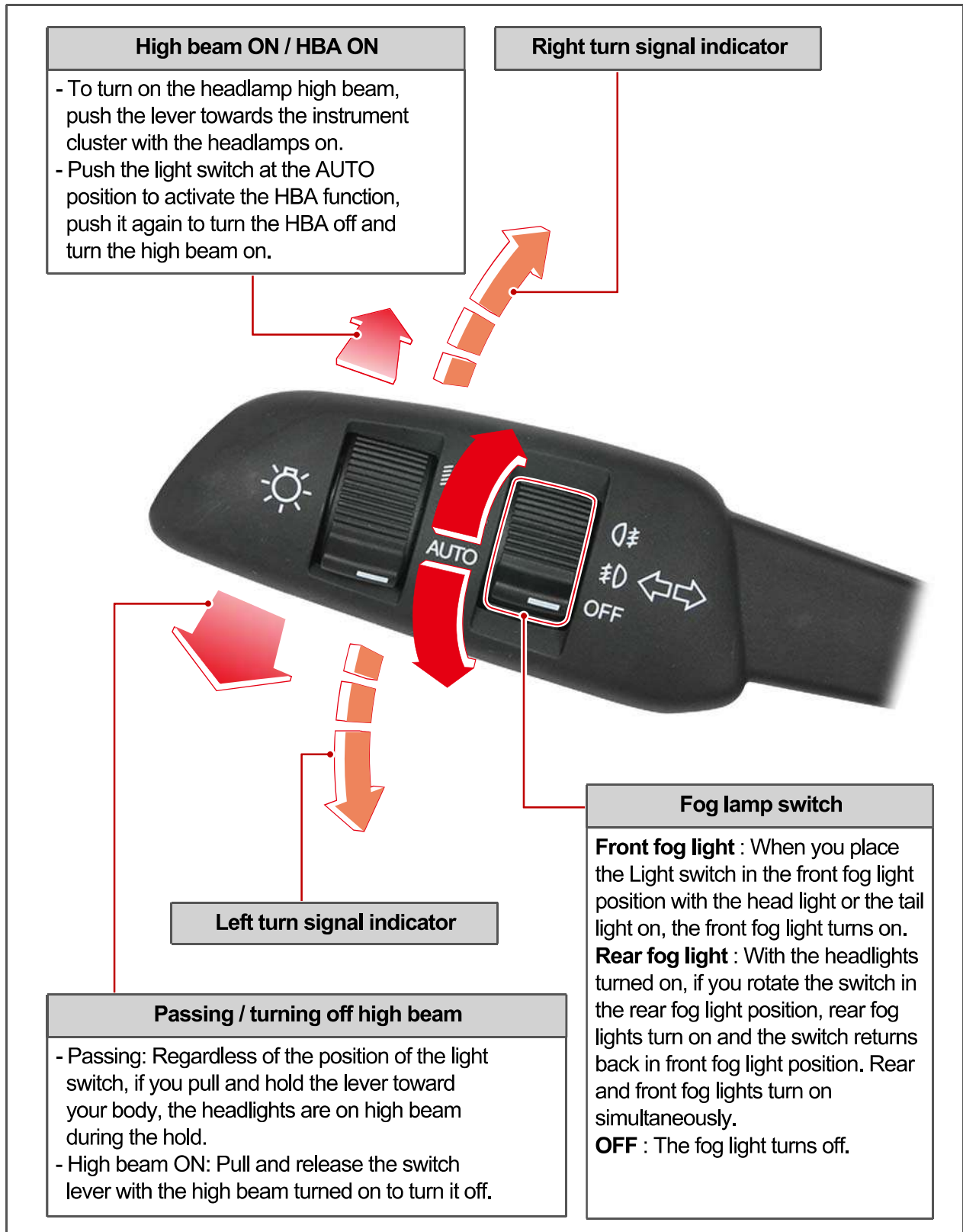
WIPER
AND

WPC

OPERATING PROCESS

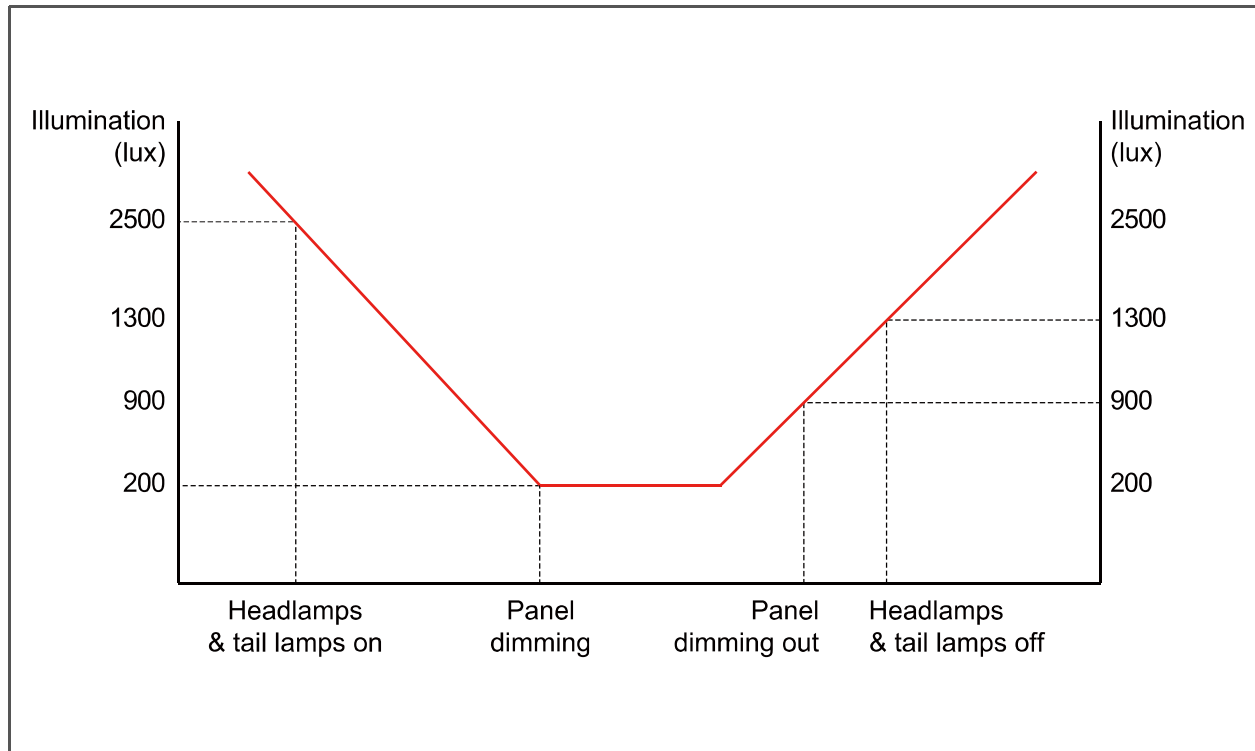
1. MULTIFUNCTION TURN SIGNAL LAMP





2. AUTO LIGHT & RAIN SENSOR MODULE

The AUTO light sensor illuminates the headlamps and tail lamps as the ambient illumination becomes low. When the ambient illumination becomes lower than this level, it dims the light on the instrument panel.



► Operating process

- Headlamp & tail lamp: both lamps come on at 2,500 lux, and go off at 1,300 lux (These lamps only operate based on the surrounding light level regardless of rain).
- Panel: dimming starts at 200 lux and is deactivated at 900 lux

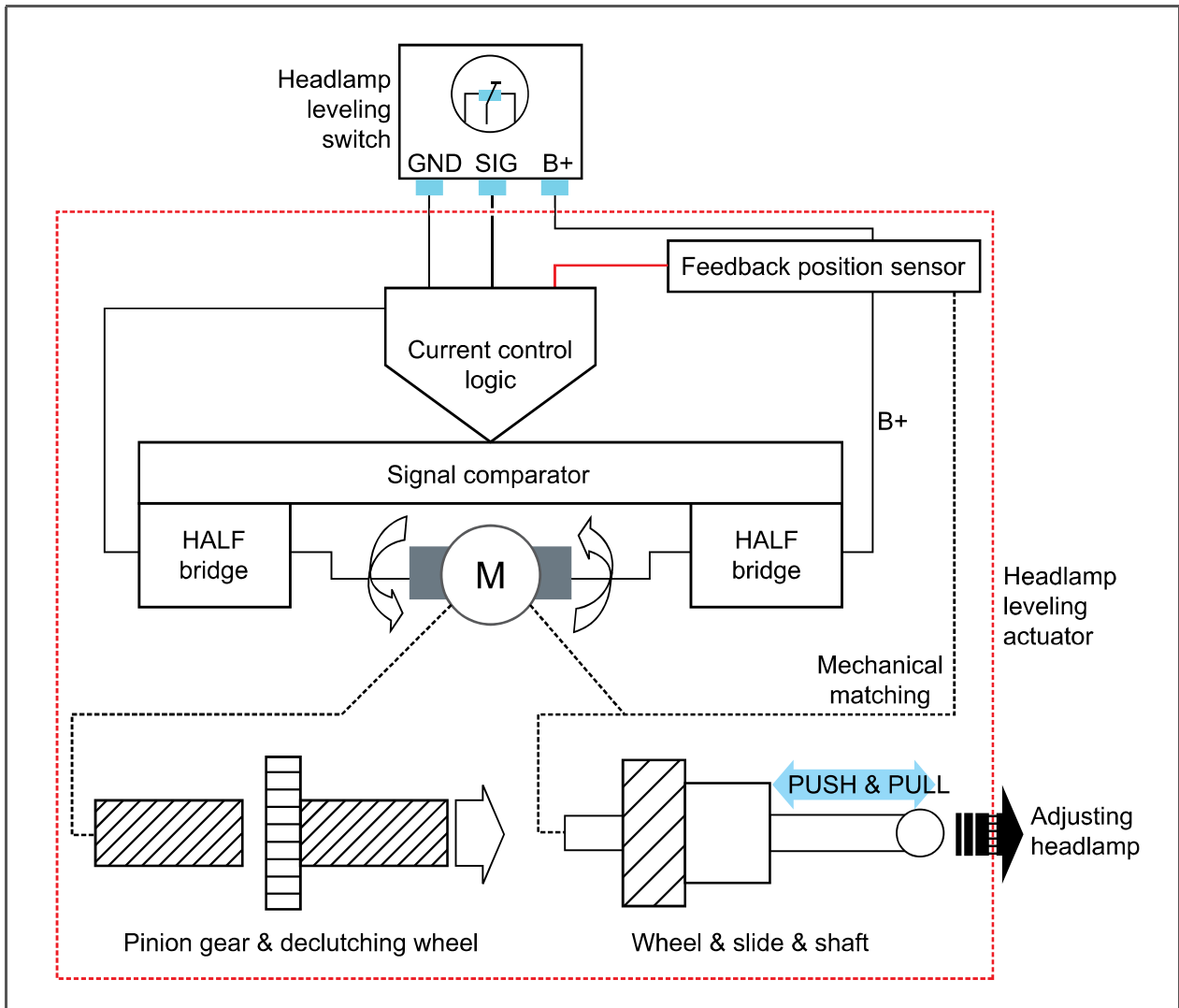


NOTE

The panel dimming refers to dimming the lights (instrument cluster, FATC and AV monitor) at night-time which illuminate at daytime.

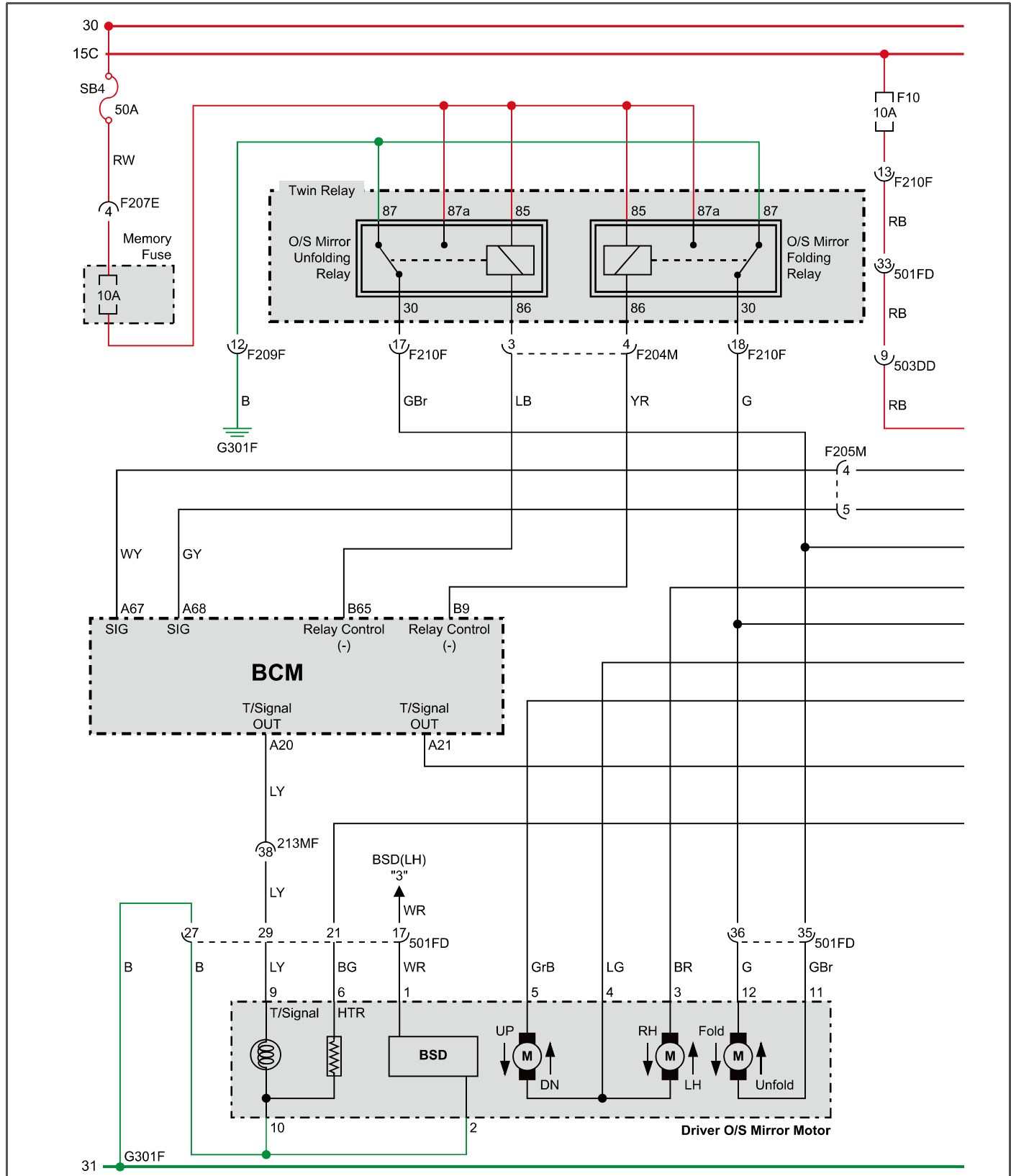
3. HEADLAMP LEVELING DEVICE

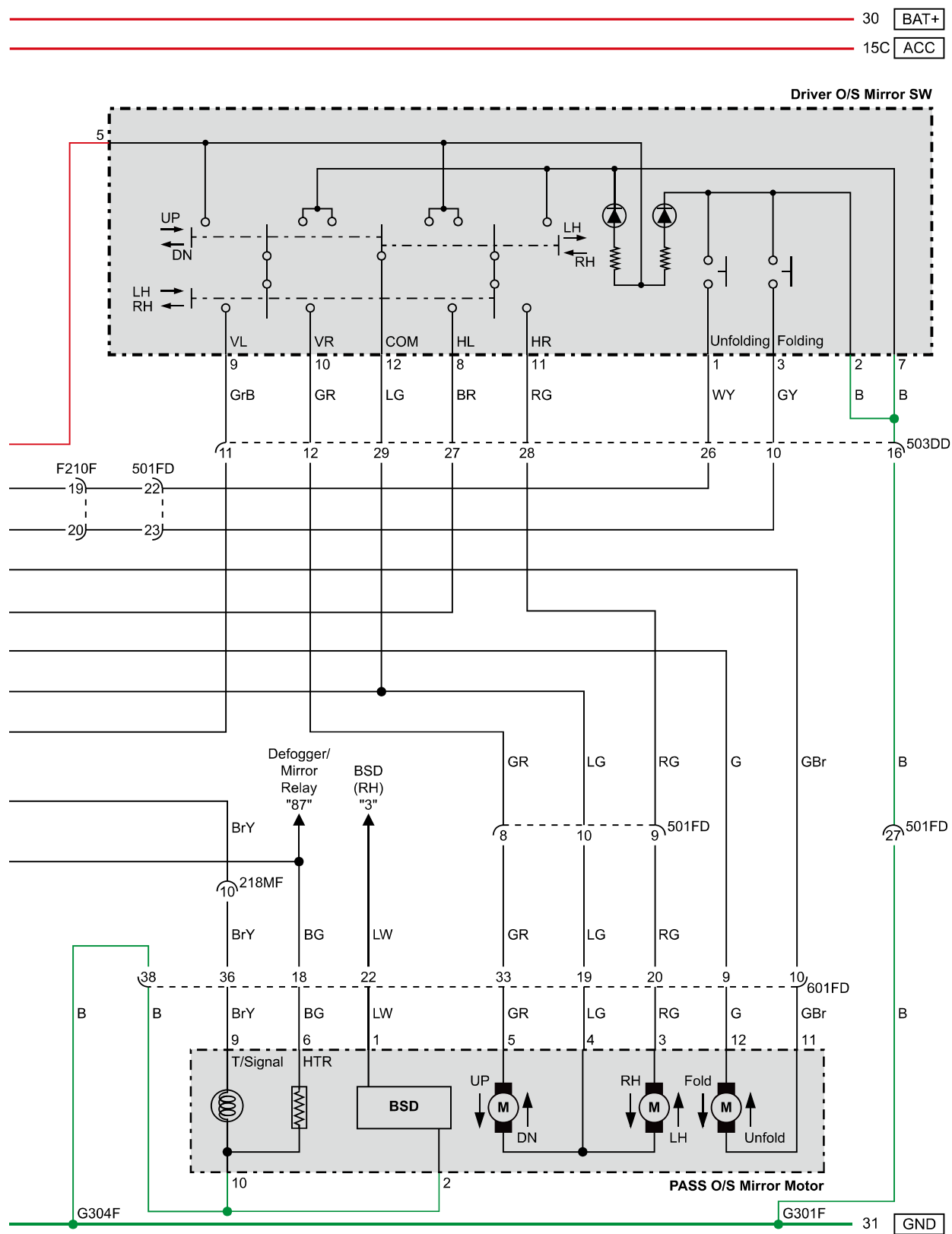
1. When the signal from the headlamp leveling switch in response to the driver operation is less than the signal from the feedback position sensor, the motor runs forward to pull the slide & shaft. As a consequence, the headlamp reflector is adjusted and the light aims lower.
2. When the signal from the headlamp leveling switch in response to the driver operation is higher than the signal from the feedback position sensor, the motor runs backwards to push the slide & shaft. This moves the headlamp reflector and the light aims higher.
3. When the two signals are equal, the motor & slide is deactivated.
4. The headlamp leveling switch is deactivated when the voltage reaches a level for each stage selected by the driver.
5. Use of headlamp leveling switch for each stage
 - Headlamp leveling switch '0': driver and front passenger occupied
 - Headlamp leveling switch '1': fixed number of passengers occupied
 - Headlamp leveling switch '2': fixed number of passengers occupied and laden up to maximum load capacity
 - Headlamp leveling switch '3': driver occupied and laden up to maximum load capacity



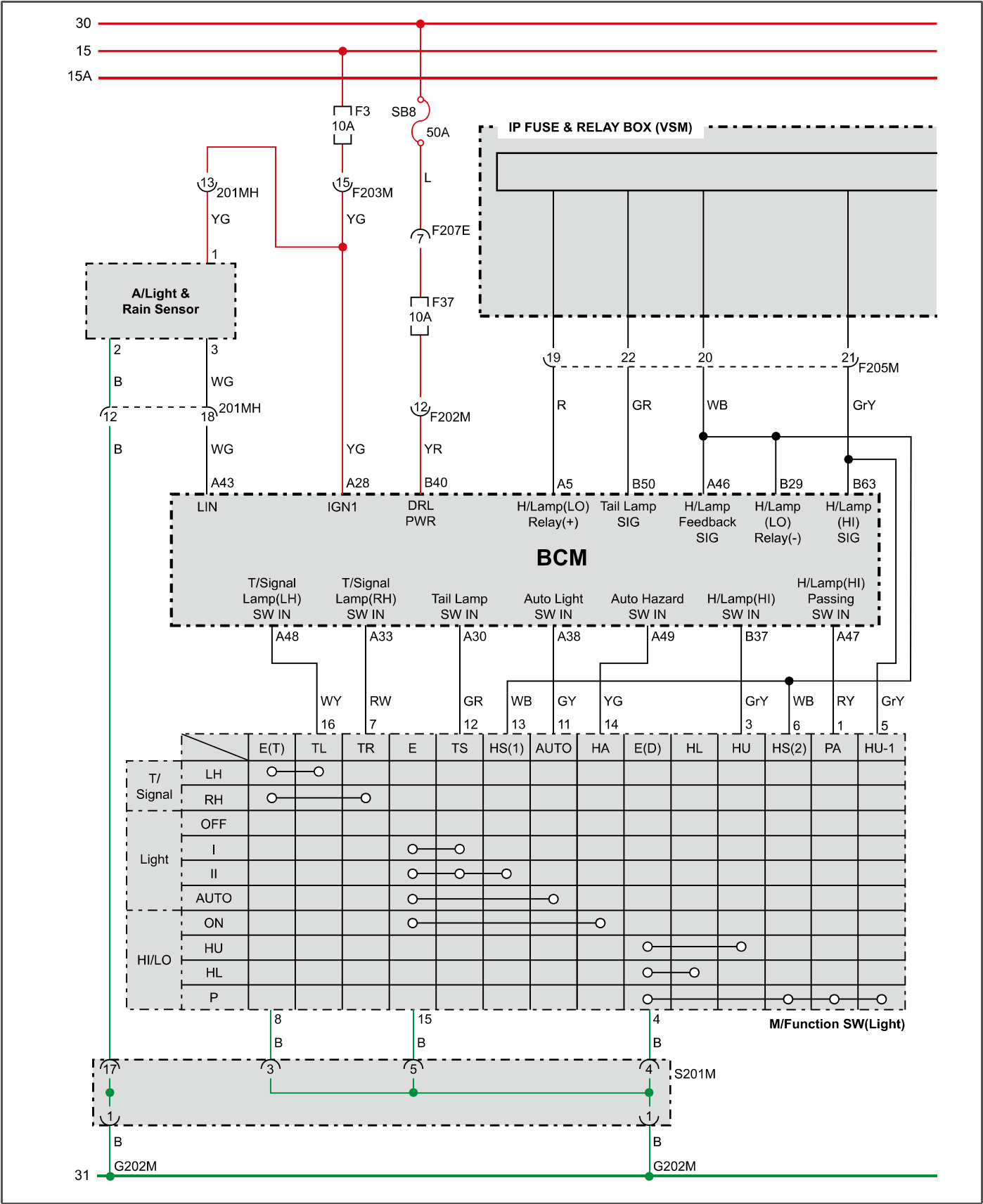
4. CIRCUIT DIAGRAM

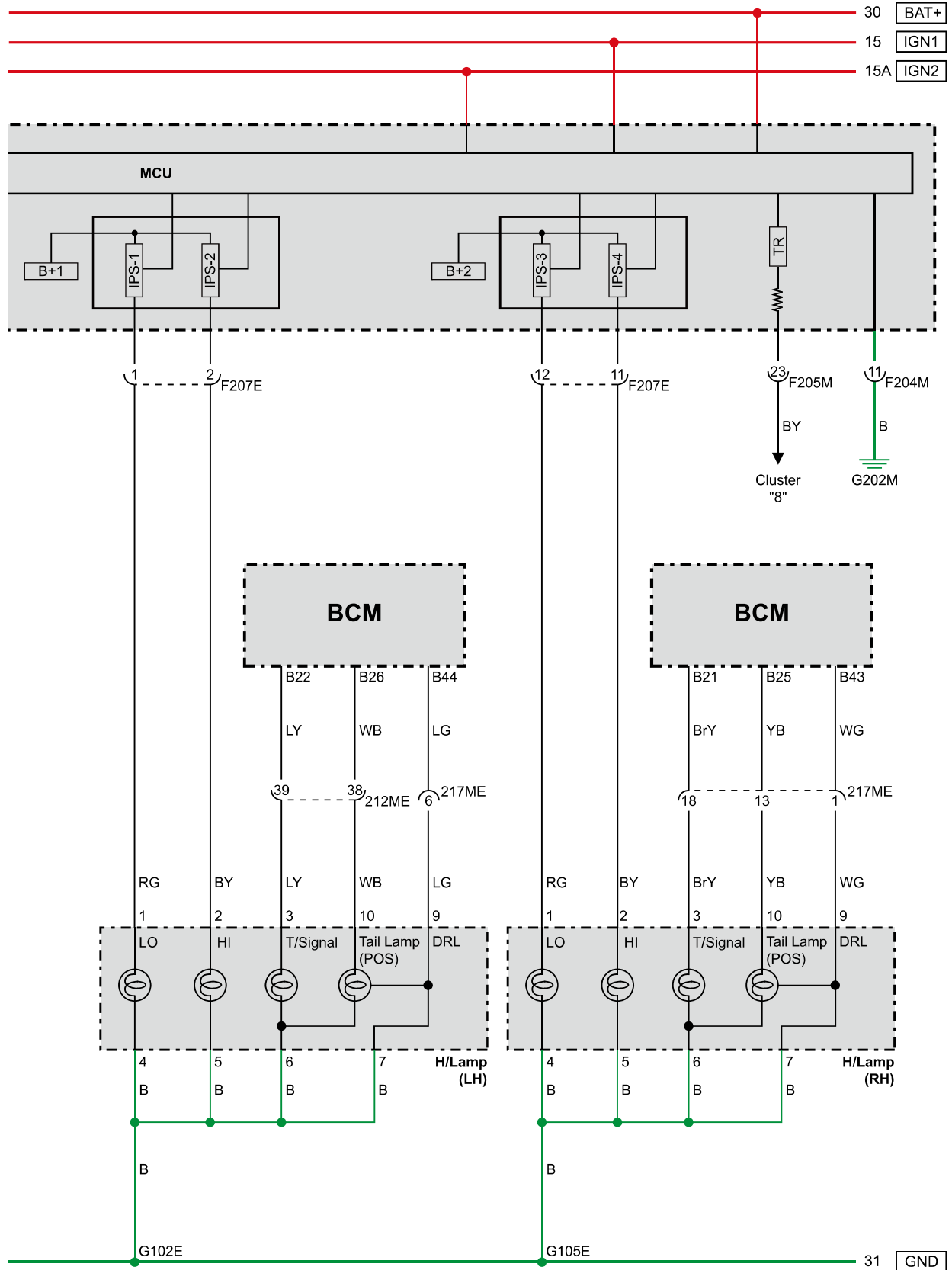
1) Outside Mirror





2) Head lamp (W/ VSM)





EXTERIOR
RLAMP

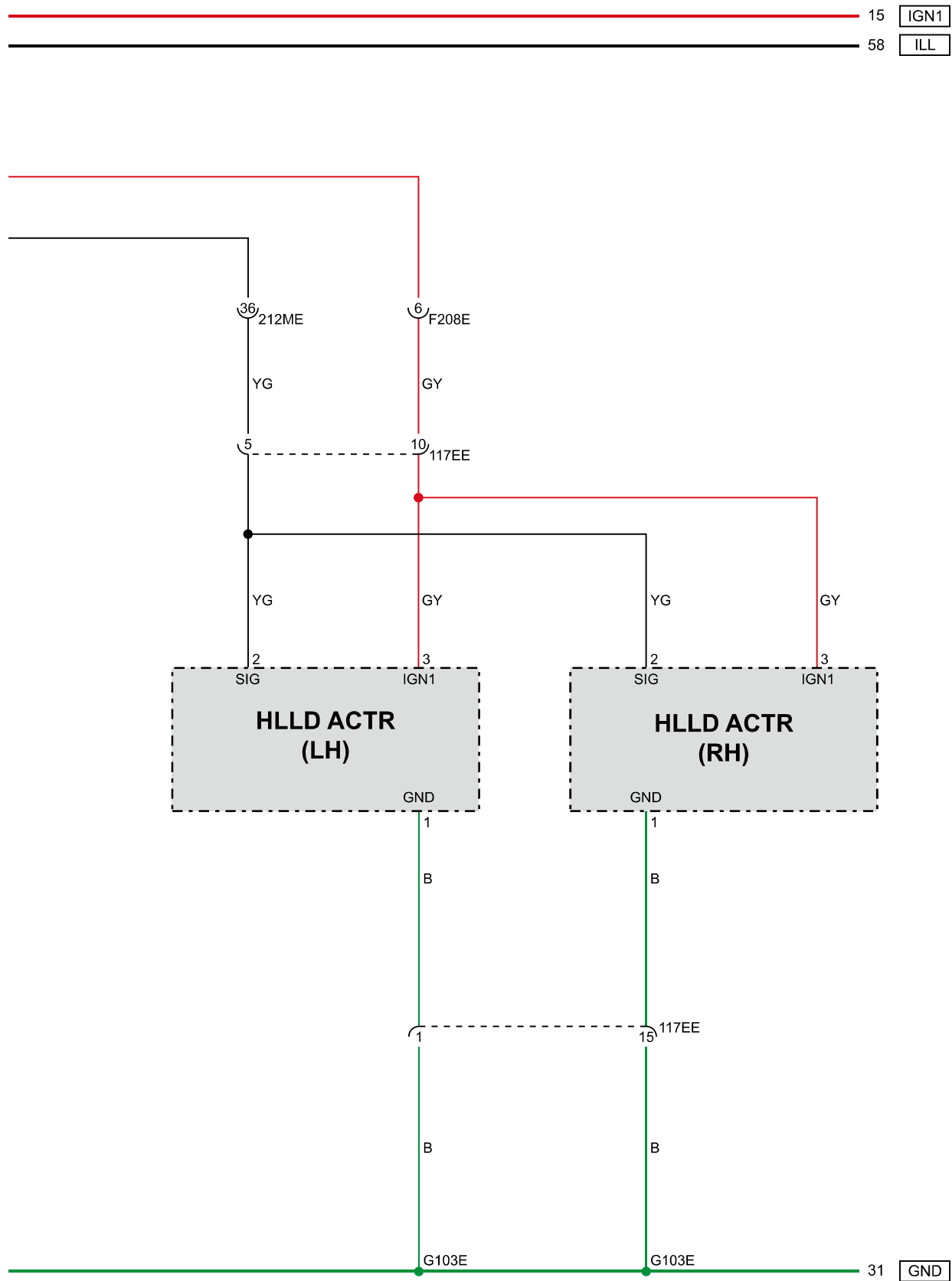
INTERIOR
LAMP

FUSE

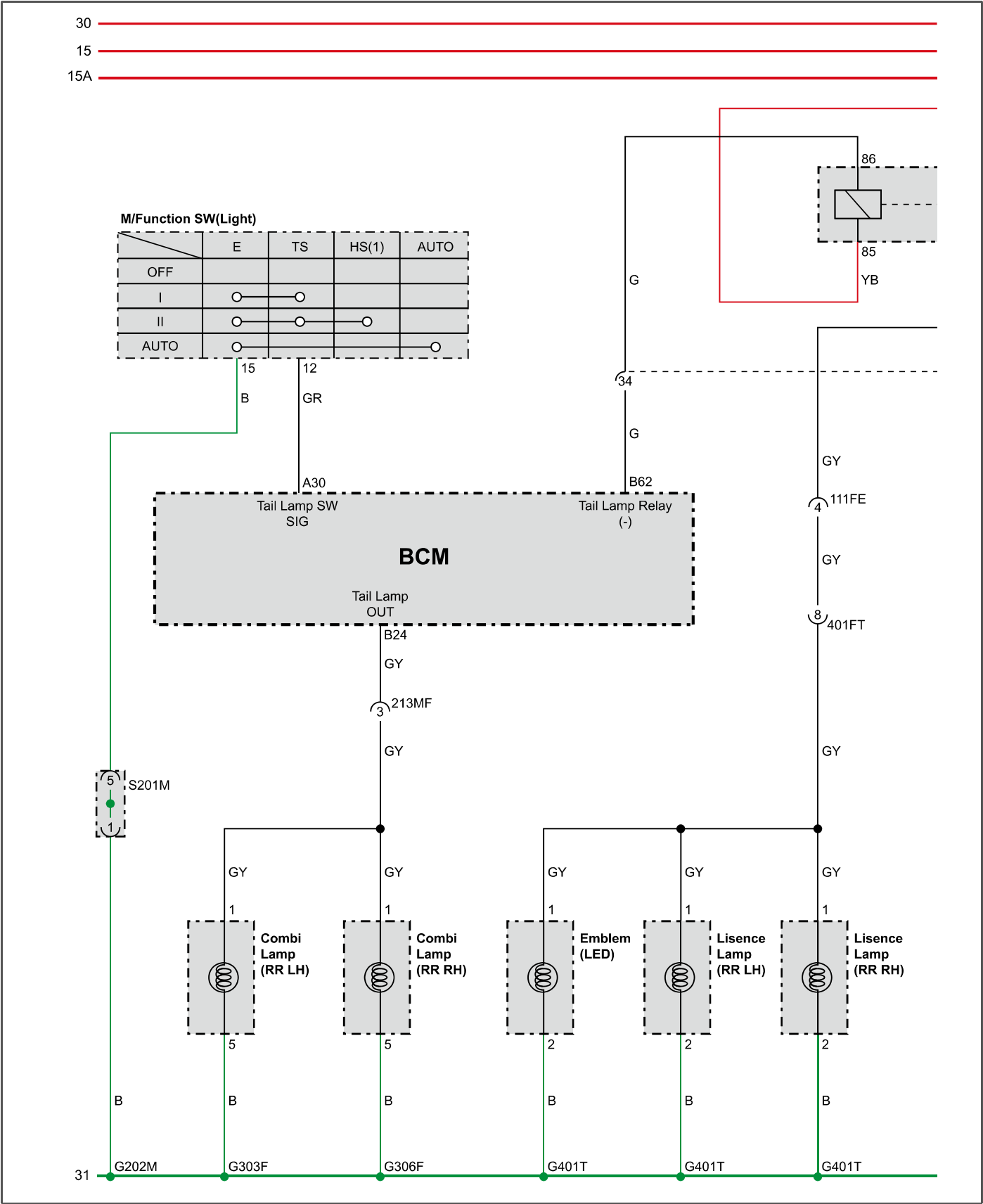
SWITCH

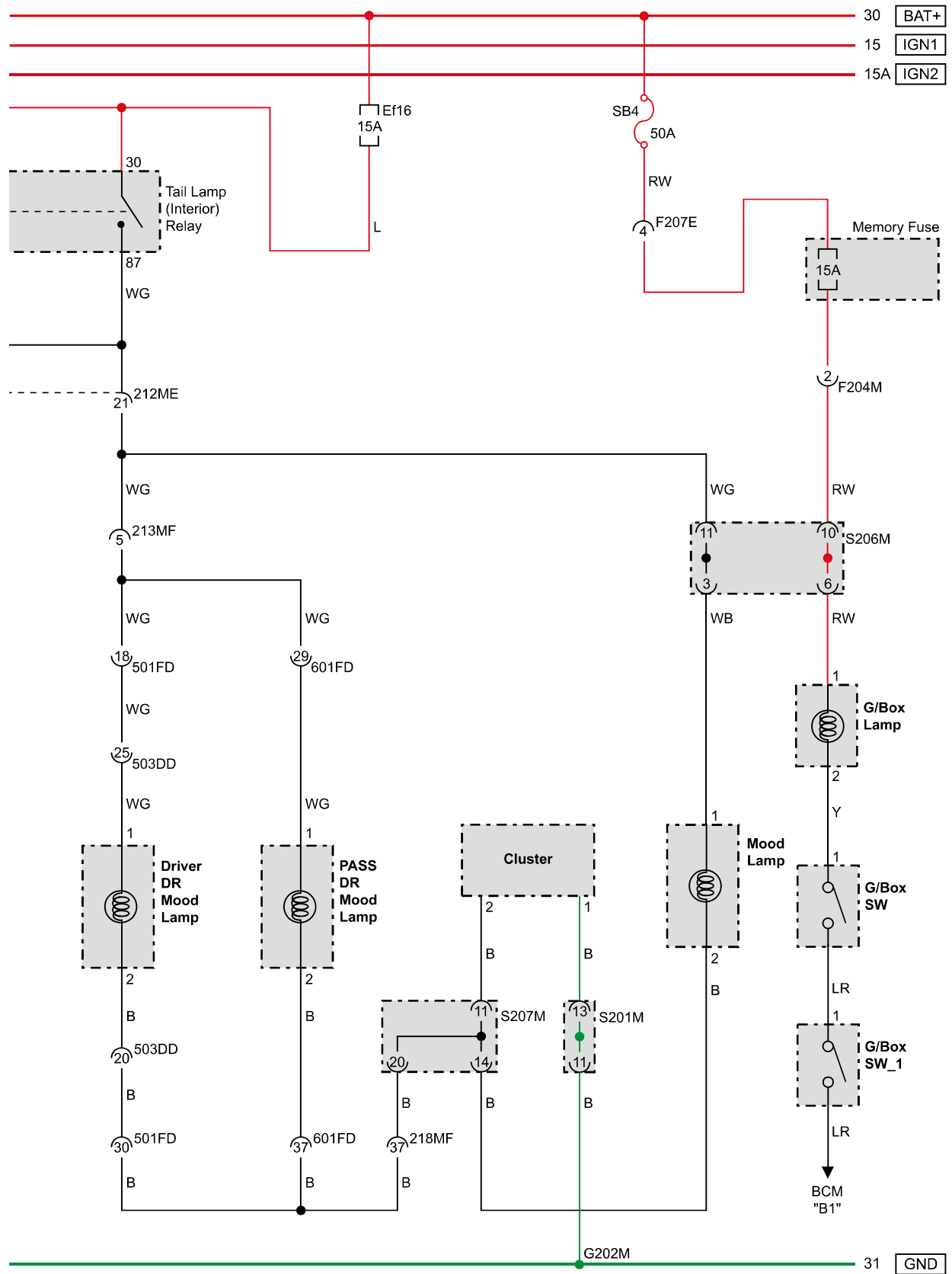
WIPER
AND

WPC

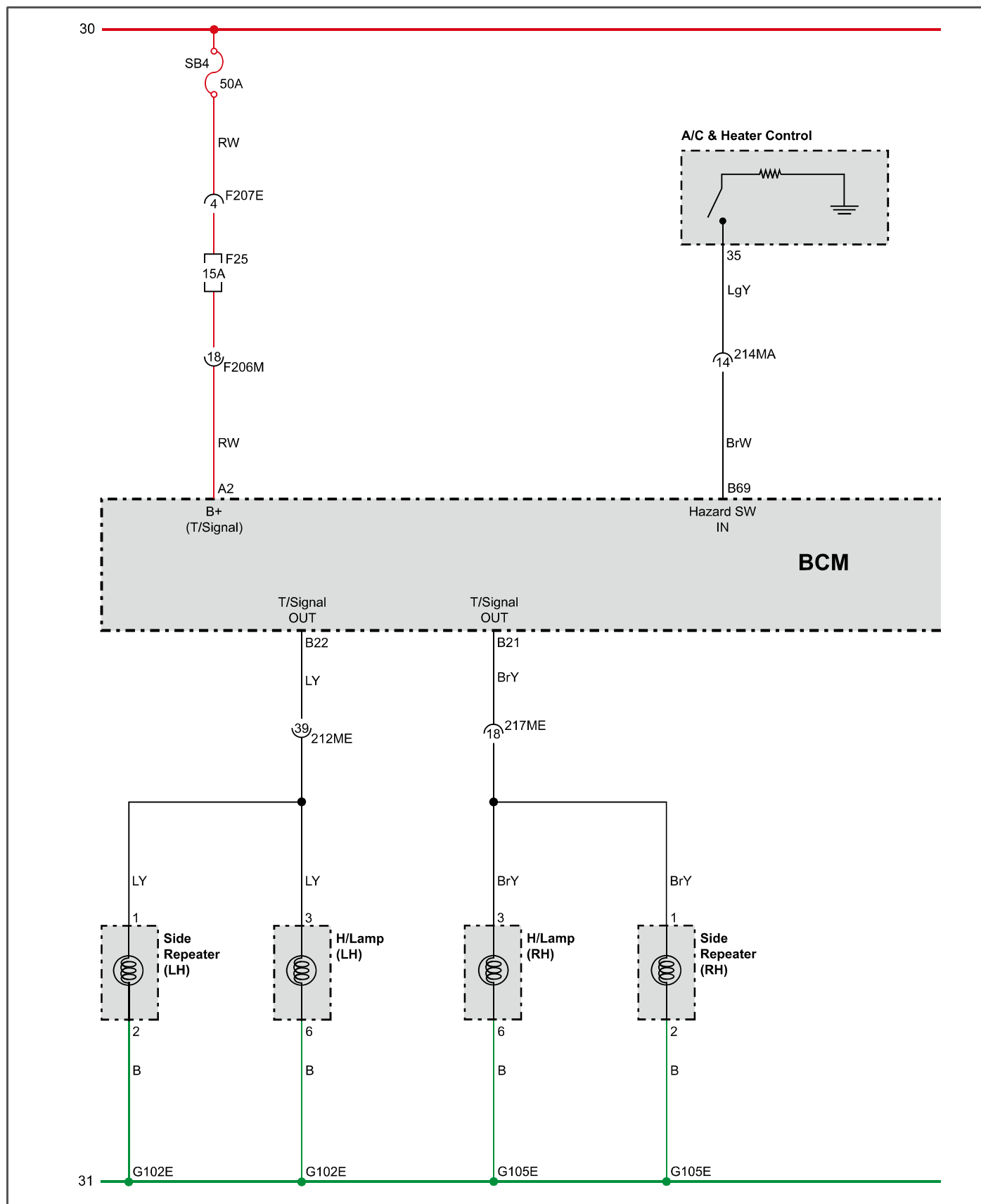


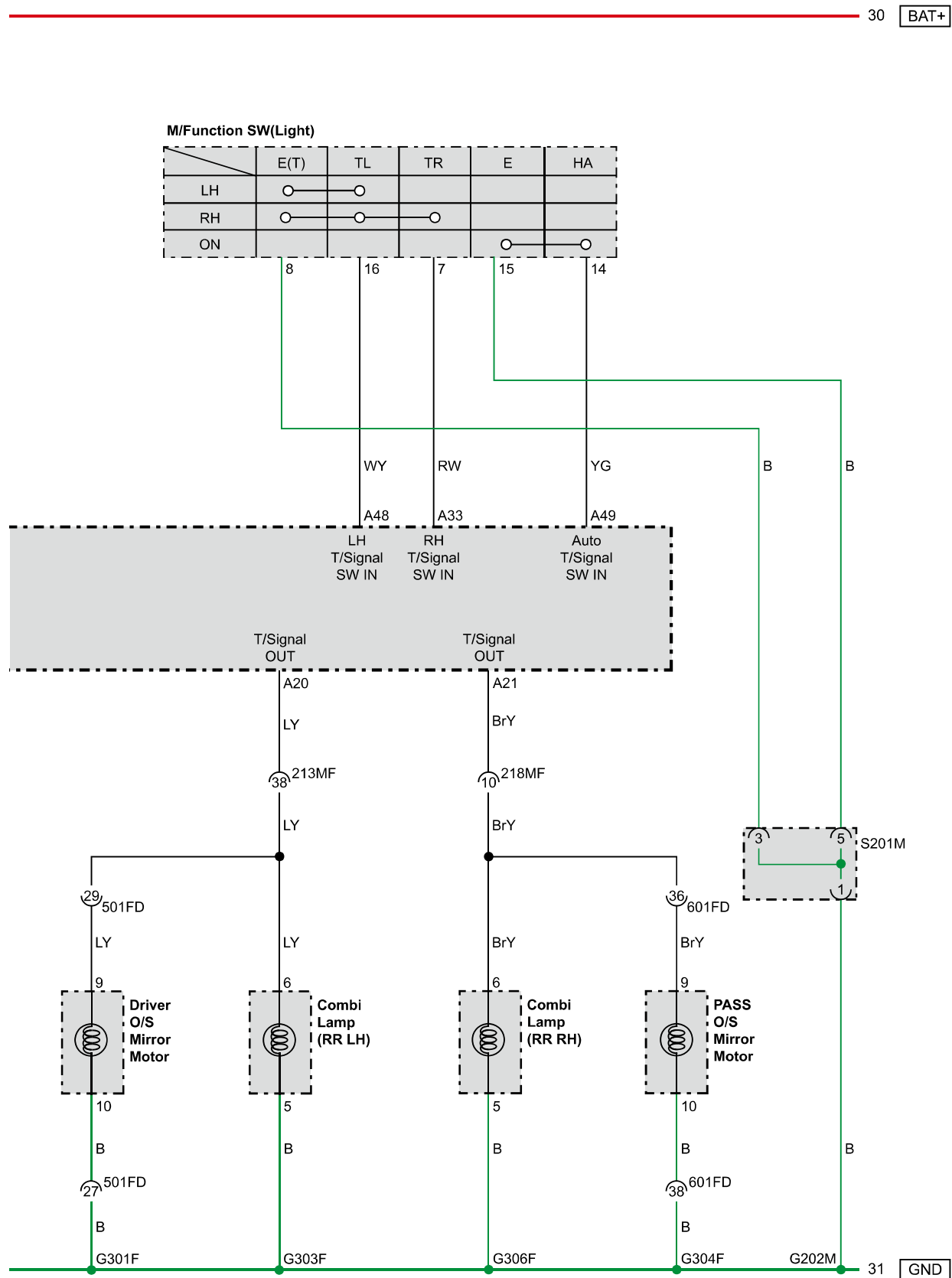
4) Tail lamp



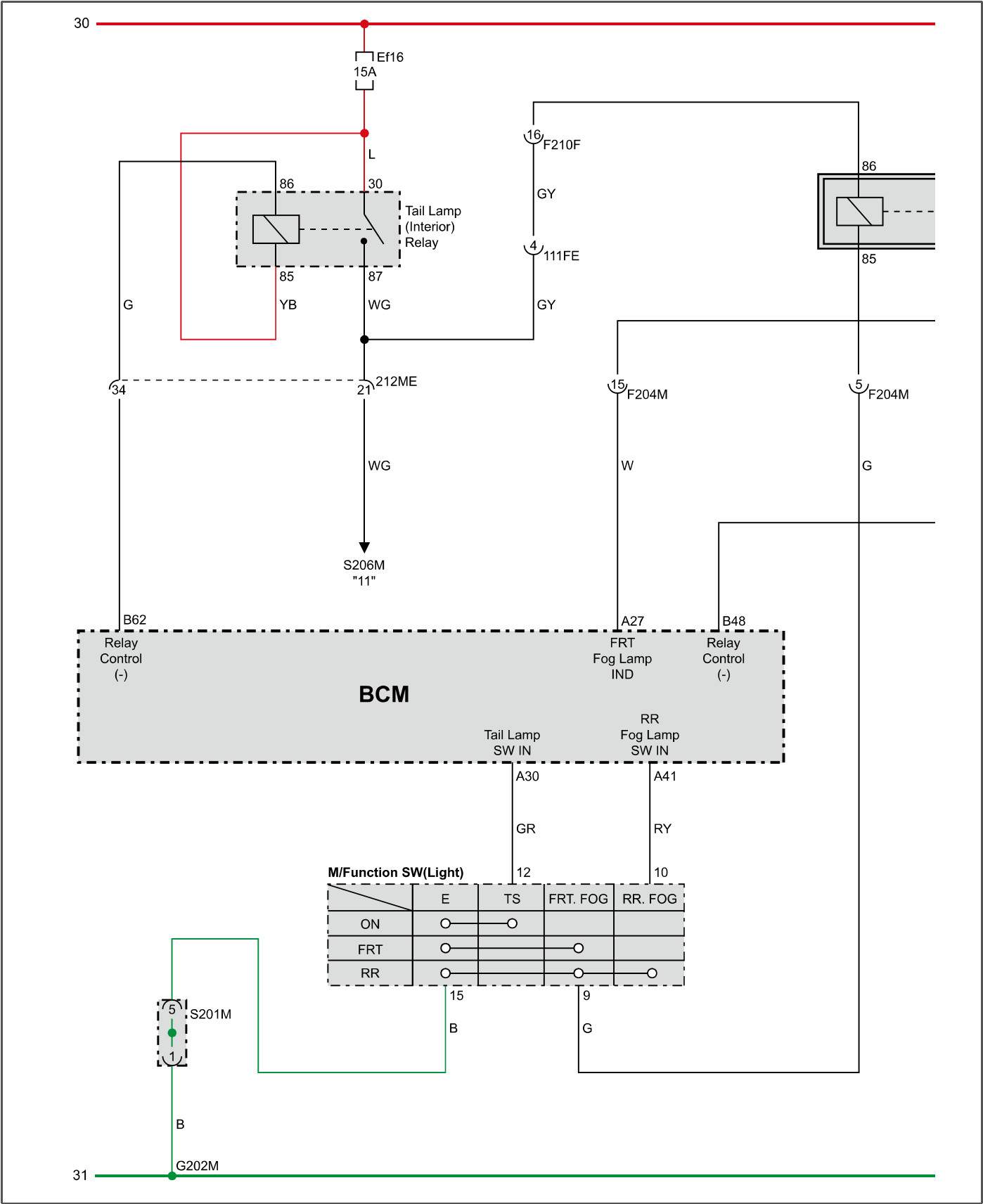


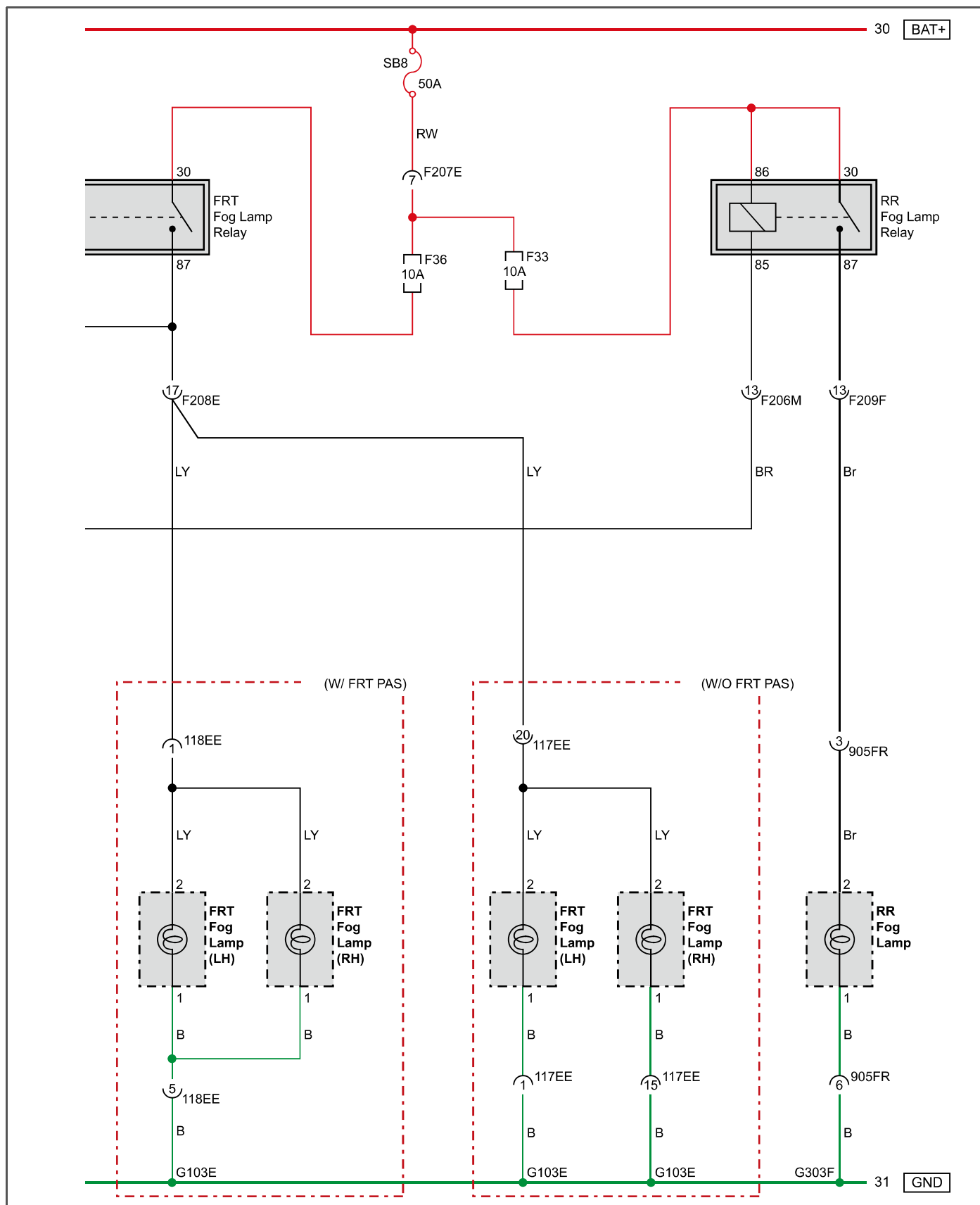
5) Turn signal lamp / Hazard lamp





6) Fog lamp





7) Stop lamp

