

BODY CONTROL MODULE

1998 Pontiac Bonneville

1997-98 ACCESSORIES & EQUIPMENT
General Motors Corp. - Body Control Module

Buick; LeSabre & Riviera
Oldsmobile; Aurora, Eighty Eight, LSS & Regency
Pontiac; Bonneville

* PLEASE READ THIS FIRST *

WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEM article. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

DESCRIPTION & OPERATION

NOTE: Body Control Module (BCM) may also be referred to as Multifunction Alarm, Lock & Lighting (MALL) module.

The Multifunction Alarm, Lock and Lighting (MALL) controls different body systems by obtaining information from various sensors and switches, then using this information to command the output to each body system. MALL module provides a set of internal service diagnostic features to assist technician in troubleshooting electrical short conditions that may affect MALL. If electrical short occurs during vehicle operation, MALL module stores history codes. These codes can be accessed by entering MALL module diagnostic mode. After providing history codes, MALL module enters Input/Output (I/O) mode. I/O mode enables verification that inputs to MALL module are functioning properly.

COMPONENT LOCATIONS

COMPONENT LOCATIONS TABLE

Component	Location
Multifunction Alarm, Lock & Lighting Module (MALL) (1)	Under Right Side Of Instrument Panel, Near Glove Compartment
Instrument Panel Fuse Block	Attached To Left Front Door Pillar
RH Rear Junction Block	Under Right Rear Seat Cushion

(1) - Multifunction Alarm, Lock and Lighting (MALL) module may also be referred to as Body Control Module (BCM).

TROUBLE SHOOTING

* PLEASE READ THIS FIRST *

NOTE: For more information and testing on Multifunction Alarm, Lock and Lighting (MALL) functions and related systems, see appropriate INSTRUMENT PANEL article.

- * INSTRUMENT PANEL - Aurora & Riviera - 1997
- * INSTRUMENT PANEL - Aurora - 1998
- * INSTRUMENT PANEL - Riviera - 1998
- * INSTRUMENT PANEL - Bonneville - 1997
- * INSTRUMENT PANEL - Bonneville - 1998
- * INSTRUMENT PANEL - Eighty-Eight, LSS & Regency - 1997
- * INSTRUMENT PANEL - Eighty-Eight, LSS & Regency - 1998
- * INSTRUMENT PANEL - LeSabre - 1997
- * INSTRUMENT PANEL - LeSabre - 1998

PRELIMINARY CHECKS

- 1) Check PWR DR LK fuse (15- or 20-amp) and INT LP (20-amp) fuse in RH rear junction block. See WIRING DIAGRAMS.
- 2) Check for poor terminal contacts at component and harness connectors.
- 3) Check for proper installation of aftermarket electronic equipment which may affect other systems.
- 4) Check for broken or partially broken wire inside insulation which could cause system malfunction but check good in continuity/voltage check.

SELF-DIAGNOSTICS SYSTEM

ENTERING DIAGNOSTIC MODE

- 1) Turn ignition switch to ON position. Depress and hold power door UNLOCK switch. Cycle headlights 6 times within 20 seconds of depressing UNLOCK switch. Release power door lock UNLOCK switch.
- 2) MALL module will sound stored history codes by audible bongs. Number of bongs correspond to history code number. FASTEN BELTS indicator flashes with each bong. MALL module will cycle through history codes 3 times, pausing 2 seconds between cycles. If no history codes exist, MALL will immediately enter input/output mode. History codes may be erased by holding power door unlock switch for four seconds. See MALL HISTORY CODES table for identification and description. To exit diagnostic mode, turn ignition switch to OFF position or accelerate vehicle above 8 MPH.

MALL HISTORY CODES TABLE

History Code	Affected Circuit
1	FASTEN BELTS indicator (SBTELL)
2	Battery Protection (PBATT)
3	Courtesy Lights (CTSY)

INPUT/OUTPUT (I/O) MODE

While in Input/Output mode, each input to MALL module can be tested by activating/deactivating input device (door lock switch, seat belt switch, etc.). Each input transition is acknowledged with a single bong with a simultaneous flash of FASTEN BELTS indicator. See MALL INPUTS/OUTPUTS table for inputs and outputs that should be checked.

Keyless Entry (RKE) I/O Mode Feedback

When using RKE transmitter, audible feedback is different when activating MALL inputs power door lock switch, transaxle gear selector and keyless entry unlock. Each input is acknowledged with 2 bongs with simultaneous flashes of FASTEN BELTS. On Bonneville, no

bongs will occur when shifting into Park position, due to ignition-OFF door unlock feature.

MALL INPUTS/OUTPUTS TABLE

FUNCTION/FEATURE	ACTIVATE/DEACTIVATE
Auxiliary Chime	Park Brake &/Or Instrument Cluster Warning
Interior Lights	Interior Light Switches
Dome Light	Dome Light Switch
Door Latch (Jamb) Switches	Left & Right Front Door Latch (Jamb) Switch
Power Door Lock	Power Door Lock & Unlock Switch
Automatic Door Lock & Door Lock	Gear Selector
Battery Protection	Interior Light Switch
Light On Reminder Chime	Headlight Switch
Fasten Seat Belts Chime & FASTEN BELTS Indicator	Driver's Seat Belt Switch
Turn Signal On Reminder Chime ...	Left & Right Turn Signal
Trunk Lid Ajar Light	Trunk Lid Latch Switch

SYSTEM TESTS

* PLEASE READ THIS FIRST *

CAUTION: To prevent damage to terminals, Connector Test Adaptor Kit (J-35616-A) must be used whenever a diagnostic procedure requires checking or probing terminals. To locate and identify terminals, see WIRING DIAGRAMS.

SYSTEM CHECK

1) Check operation of power door lock system. Move left door lock/window switch to LOCK, then UNLOCK position. Move right door lock/window switch to LOCK, then UNLOCK position. When each switch is activated, all doors should lock and remain locked until UNLOCK switch is depressed, which should unlock all doors. If some door lock functions do not operate as specified, see appropriate POWER DOOR LOCKS article:

- * POWER DOOR LOCKS - "G" Body
- * POWER DOOR LOCKS - "H" Body

If all power door lock functions are inoperative, see ALL MALL FUNCTIONS INOPERATIVE.

2) Check operation of Remote Keyless Entry (RKE) system. See REMOTE KEYLESS ENTRY SYSTEM DIAGNOSTIC CHECK table. If some RKE functions do not operate as specified, see REMOTE KEYLESS ENTRY SYSTEM article:

- * REMOTE KEYLESS ENTRY SYSTEM - "G" Body
- * REMOTE KEYLESS ENTRY SYSTEM - "H" Body

If all RKE functions are inoperative, see ALL MALL FUNCTIONS INOPERATIVE.

REMOTE KEYLESS ENTRY DIAGNOSTIC CHECK TABLE

Action	Result
Depress Door LOCK Button (1)	All Doors Should Lock
Depress Door UNLOCK Button Once (1)	Driver's Door Should Unlock
Depress Door UNLOCK Button	All Doors Should Unlock
Twice Within 4 Seconds (1)	
Depress TRUNK Release Button (1)	Rear Trunk Lid Should Open
Depress PANIC Button (1)	Horn Should Sound & Lights Should Flash
Depress Any Button (1)	Selected Function Should Actuate
Shift Transmission In &	Doors Should Lock When Out Of Park
	Shifted Out Of Park & Unlock When Shifted Into Park

(1) - Using Remote Keyless Entry (RKE) transmitter.

3) Check operation of interior lighting system. See INTERIOR LIGHTING SYSTEM DIAGNOSTIC CHECK table. If some interior lighting functions do not operate as specified, see WIRING DIAGRAMS. If all interior lighting functions are inoperative, see ALL MALL FUNCTIONS INOPERATIVE.

INTERIOR LIGHTING SYSTEM DIAGNOSTIC CHECK TABLE

Action	Result
Depress UNLOCK Button On	Courtesy Lights Should RKE Transmitter Illuminate For 40 Seconds
With All Doors Closed, Move	Courtesy Lights Should Interior Light Switch Illuminate To ON Position
Open & Close Each Door	Courtesy Light Should One At A Time Illuminate For 25 Seconds, Then Fade Out
With All Doors Closed, Lift ...	All Interior Lights Should Each Door Handle Illuminate For 25 Seconds, One At A Time (1) Then Fade Out
Close All Doors. Turn	Courtesy Light Should Ignition Switch To RUN, Illuminate For 25 Seconds, then OFF Position. Then Fade Out
Remove Key	
Depress Cigarette Lighter(s)	Cigarette Lighter(s) Should Pop Up & Heating Element Should Be Red Hot
Open Glove Box	Glove Box Light Should Illuminate
Open Rear Compartment Lid	Rear Compartment Light Should Illuminate
Move Headlight Switch To	Engine Compartment Light Park Position. Open Engine Should Illuminate Compartment Lid (2)
Open Each Vanity Mirror	Vanity Mirror Lights Should Illuminate

- (1) - On Bonneville, Eighty Eight, LeSabre, LSS and Regency only (with remote keyless entry, illuminated entry and retained accessory power).
(2) - Bonneville, LeSabre and Riviera only.

4) Check audible warnings system. See AUDIBLE WARNING SYSTEM DIAGNOSTIC CHECK table. If some audible warning functions do not operate, see WIRING DIAGRAMS. If all audible warning functions are inoperative, see ALL MALL FUNCTIONS INOPERATIVE.

AUDIBLE WARNING SYSTEM DIAGNOSTIC CHECK TABLE

Action	Result
Close Left Front Door. Turn Ignition Switch To RUN Position. Disconnect Seat Belt	Seat Belt Chime Should Sound For 4-8 Seconds. Seat Belt Indicator Should Illuminate For 70 Seconds.
Turn Ignition Switch To OFF Position. Buckle Seat Belt. Turn Ignition Switch To RUN Position	Seat Belt Chime Does Not Sound. Seat Belt Indicator Should Illuminate For 5 Seconds (Bulb Check)
Turn Ignition Switch To OFF Position. With Key In Ignition Switch, Open Left Front Door	Key-In-Ignition Chime Should Sound
Remove Key From Ignition Switch	Key-In-Ignition Chime Should Not Sound
Turn Headlight Switch To Park Position	Lights On Chime Should Sound
Turn Headlight Switch To Off Position	Lights On Chime Should Not Sound
Close Left Front Door. Start Engine. Turn Left Or Right Turn Signal On. Drive Vehicle 3/4 Mile	Turn Signal Chime Sounds After Driving 3/4 Mile
Apply Parking Brake. Drive Vehicle About 40 Feet	Parking Brake On Chime Should Sound

ALL MALL FUNCTIONS INOPERATIVE

1) Perform body control module diagnostic system check. See SYSTEM CHECK. Go to next step.

2) Disconnect MALL module Black, 8-pin connector C1. Using DVOM, check voltage between MALL module connector C1, terminal "H" (Orange wire) and ground. See Fig. 1. If battery voltage exists, go to step 6). If battery voltage does not exist, go to next step.

3) Check PWR DR LK fuse (15- or 20-amp) in RH rear junction block. If fuse is open, go to next step. If fuse is not open, go to step 5).

4) Check for short to ground in Orange wire between RH Rear Junction Block and MALL module. Repair as necessary. Recheck system operation. If circuit is okay, go to SYSTEM CHECK.

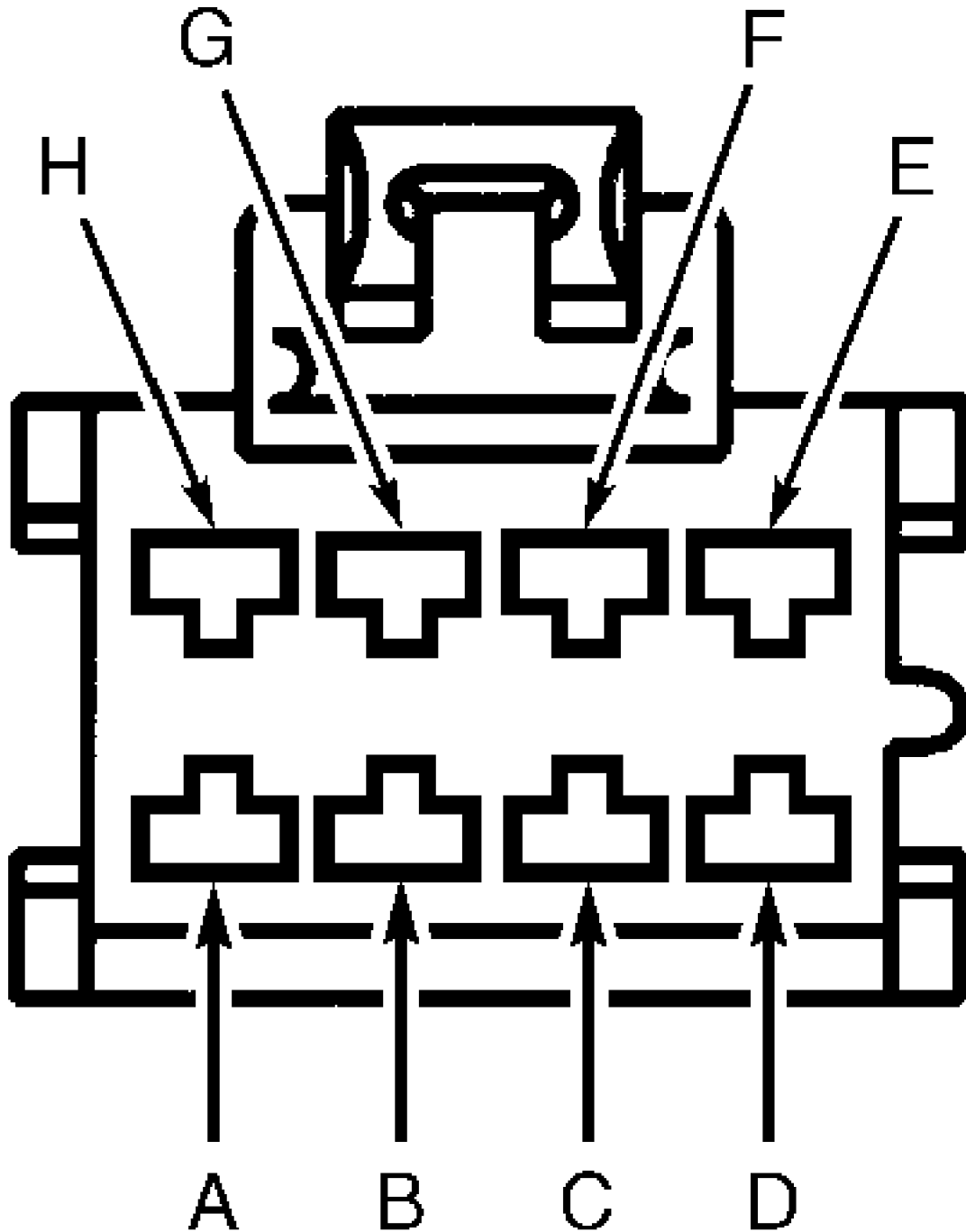
5) Repair open in power feed to PWR DR LK fuse in RH rear junction block or in Orange wire between RH Rear Junction Block and MALL module. Recheck system operation.

6) Using DVOM, check voltage between MALL module connector C1, terminals "H" (Orange wire) and "D" (Black wire). If battery voltage exists, go to step 8). If battery voltage does not exist, go to next step.

7) Repair open in Black wire between MALL module and ground. See WIRING DIAGRAMS. Recheck system operation.

8) Check for poor terminal contact at MALL module connector C1. If terminal contact is okay, replace MALL module. Recheck system operation. If terminal contact is not okay, repair as necessary.

Recheck system operation.



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Fig. 1: Identifying MALL Module Connector C1 Terminals
Courtesy of General Motors Corp.

REMOVAL & INSTALLATION

MULTIFUNCTION ALARM, LOCK & LIGHTING (MALL) MODULE

Removal & Installation

Turn ignition switch to OFF position. Disconnect negative battery cable. Locate MALL under right side of instrument panel, near rear of instrument panel glove box. Remove lower instrument panel sound insulator. Disconnect MALL module harness connectors. Remove MALL module from vehicle. To install, reverse removal procedure.

WIRING DIAGRAMS

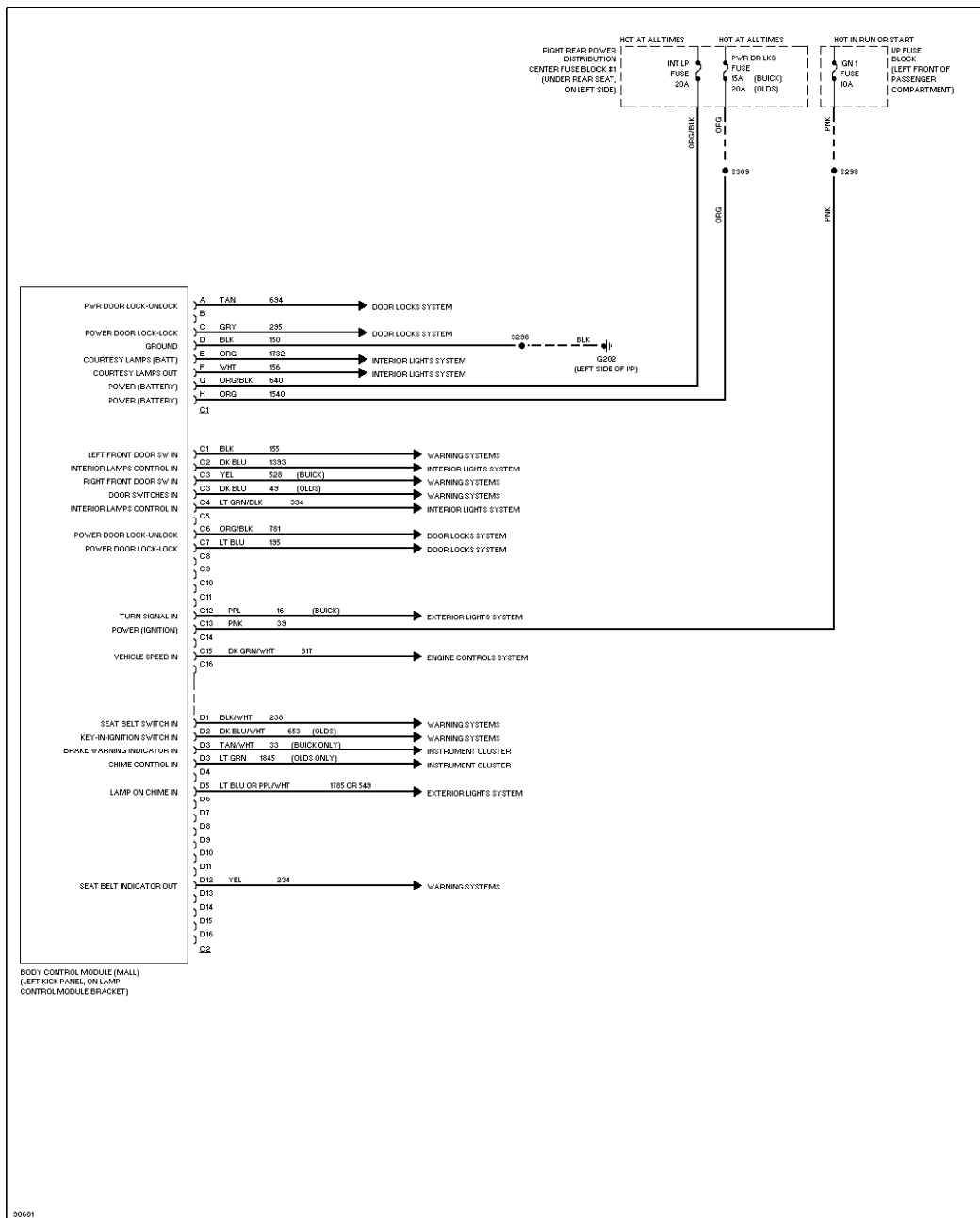


Fig. 2: Body Control Module (BCM) Wiring Diagram (1997 - Aurora & Riviera)

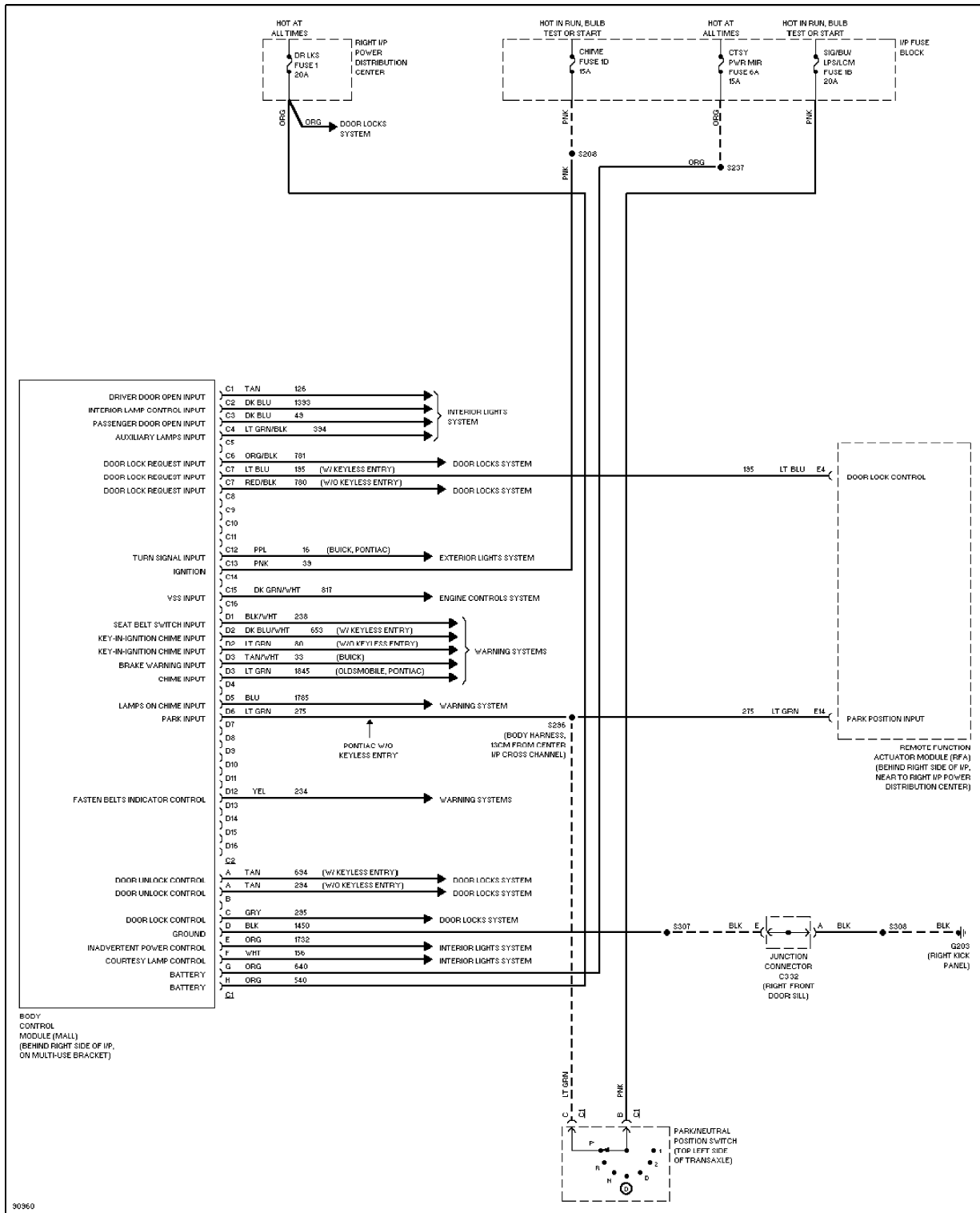


Fig. 3: Body Control Module (BCM) Wiring Diagram (1997 - Bonneville, Eighty Eight, LeSabre, LSS & Regency)

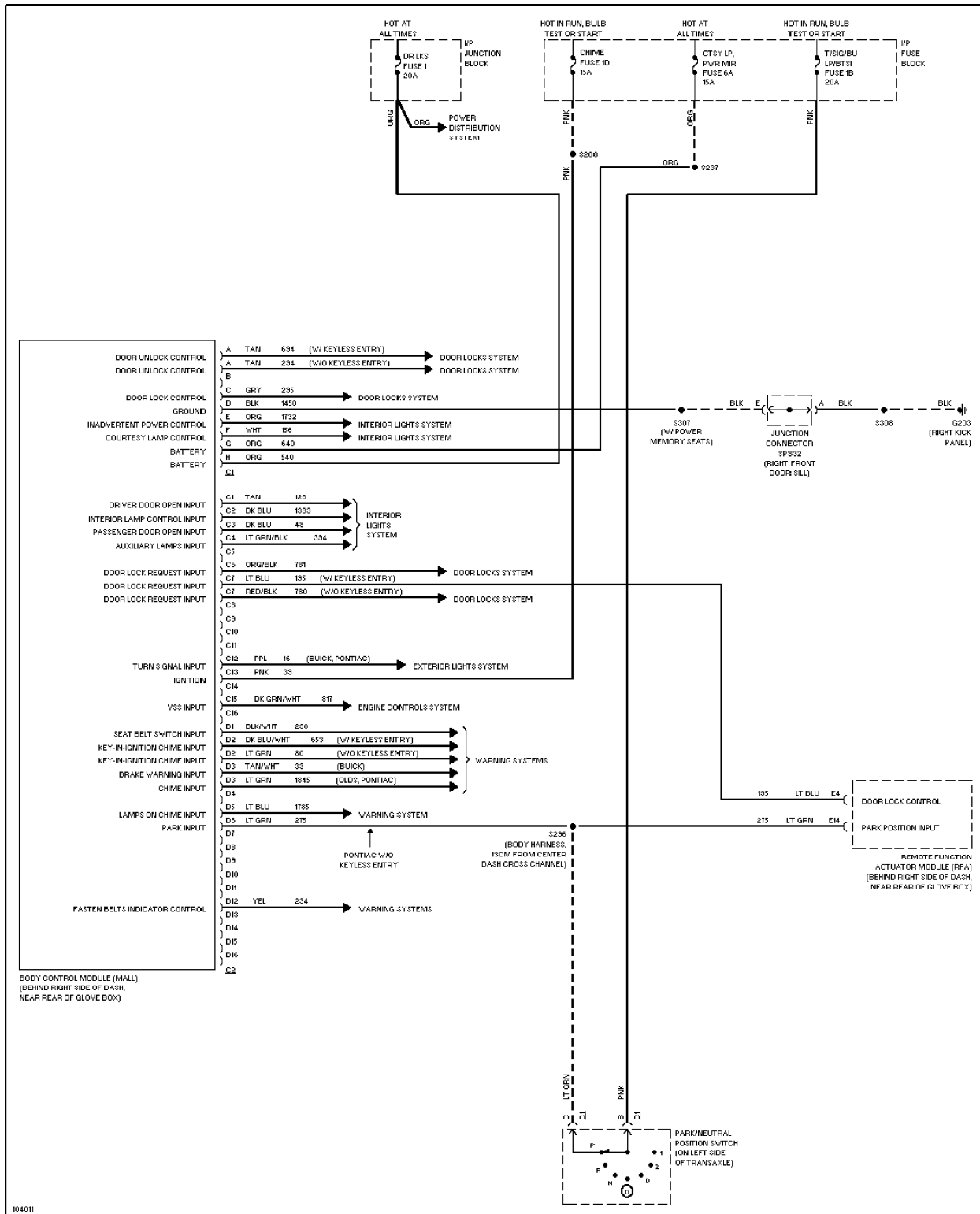


Fig. 5: Body Control Module (BCM) Wiring Diagram (1998 - Bonneville, Eighty Eight, LeSabre, LSS & Regency)

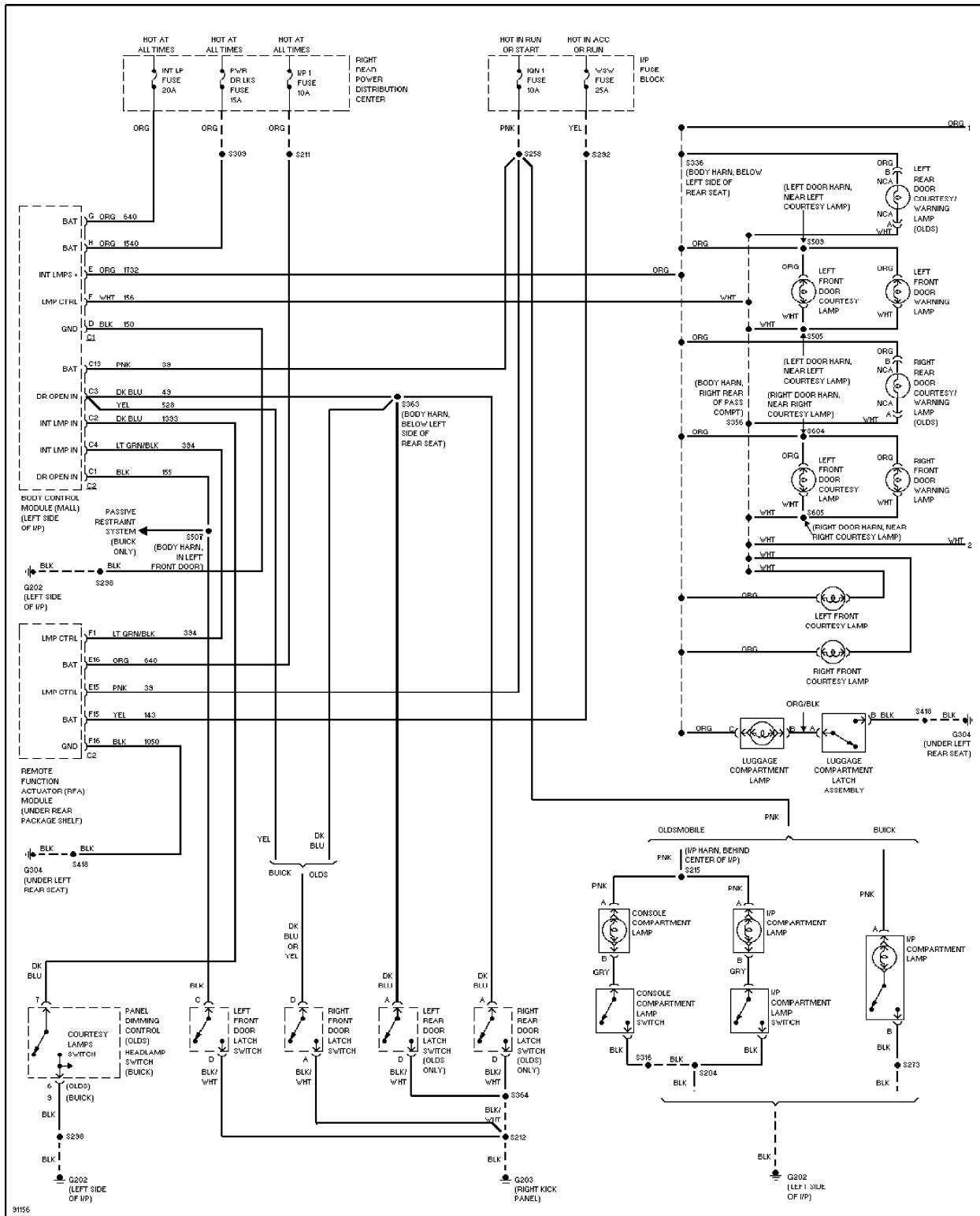


Fig. 6: Interior Lights Wiring Diagram (1997 - Aurora & Riviera - 1
Of 4)

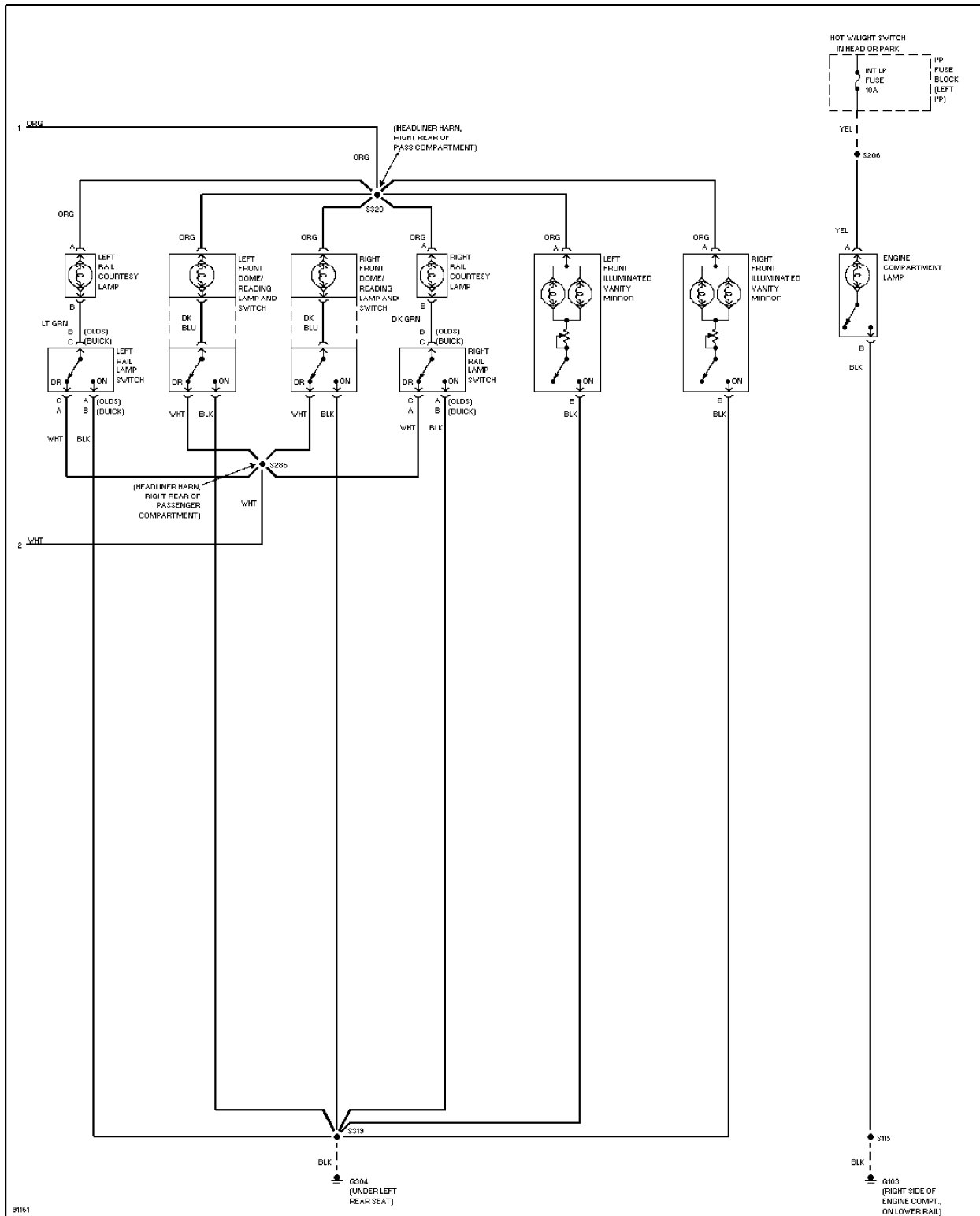


Fig. 7: Interior Lights Wiring Diagram (1997 - Aurora & Riviera - 2 Of 4)

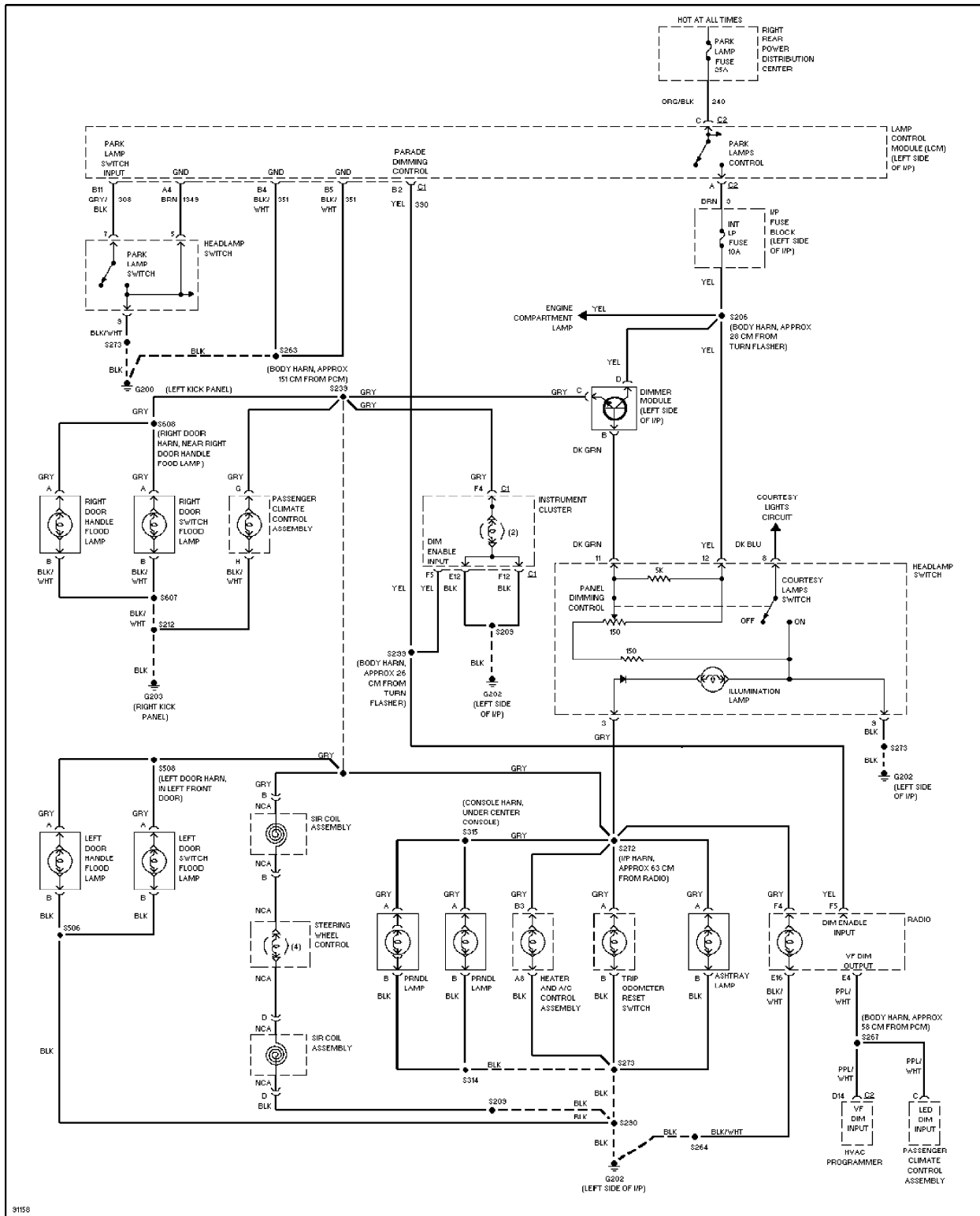


Fig. 9: Instrument Panel Illumination Wiring Diagram (1997 - Riviera
 - 4 Of 4)

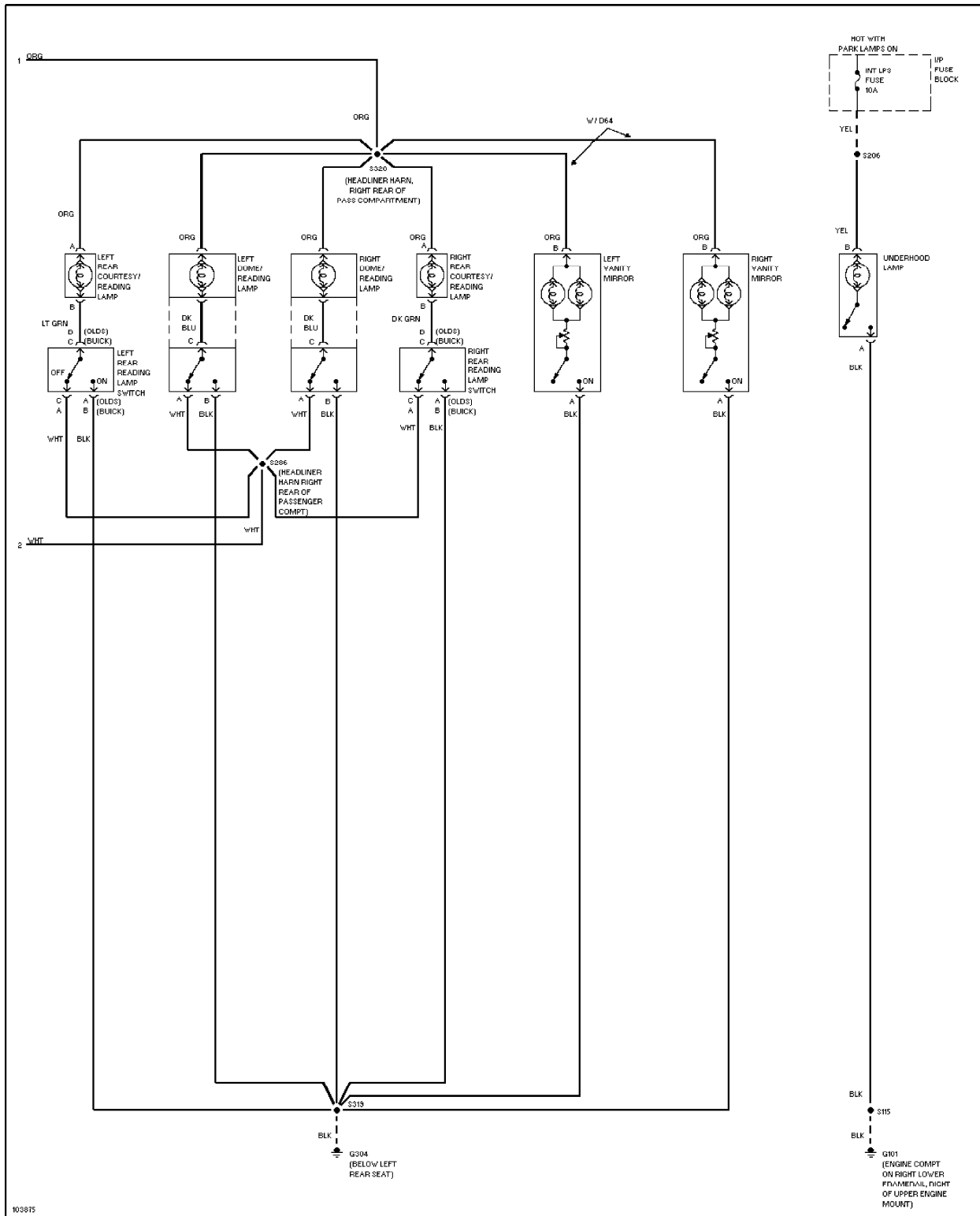


Fig. 11: Illumination/Interior Light Wiring Diagram (1998 - Aurora & Riviera - 2 Of 4)

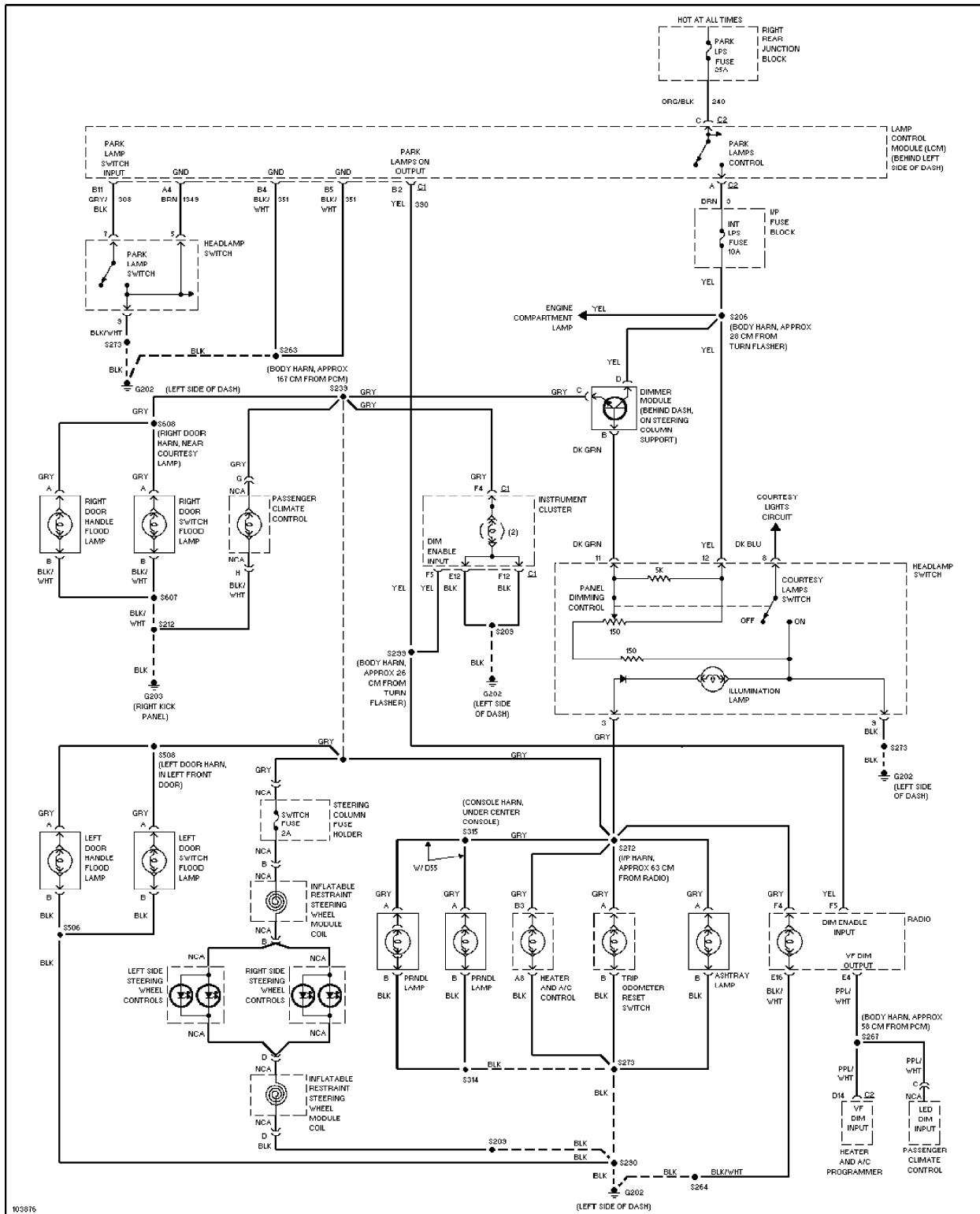


Fig. 13: Illumination/Interior Light Wiring Diagram (1998 - Riviera - 4 Of 4)

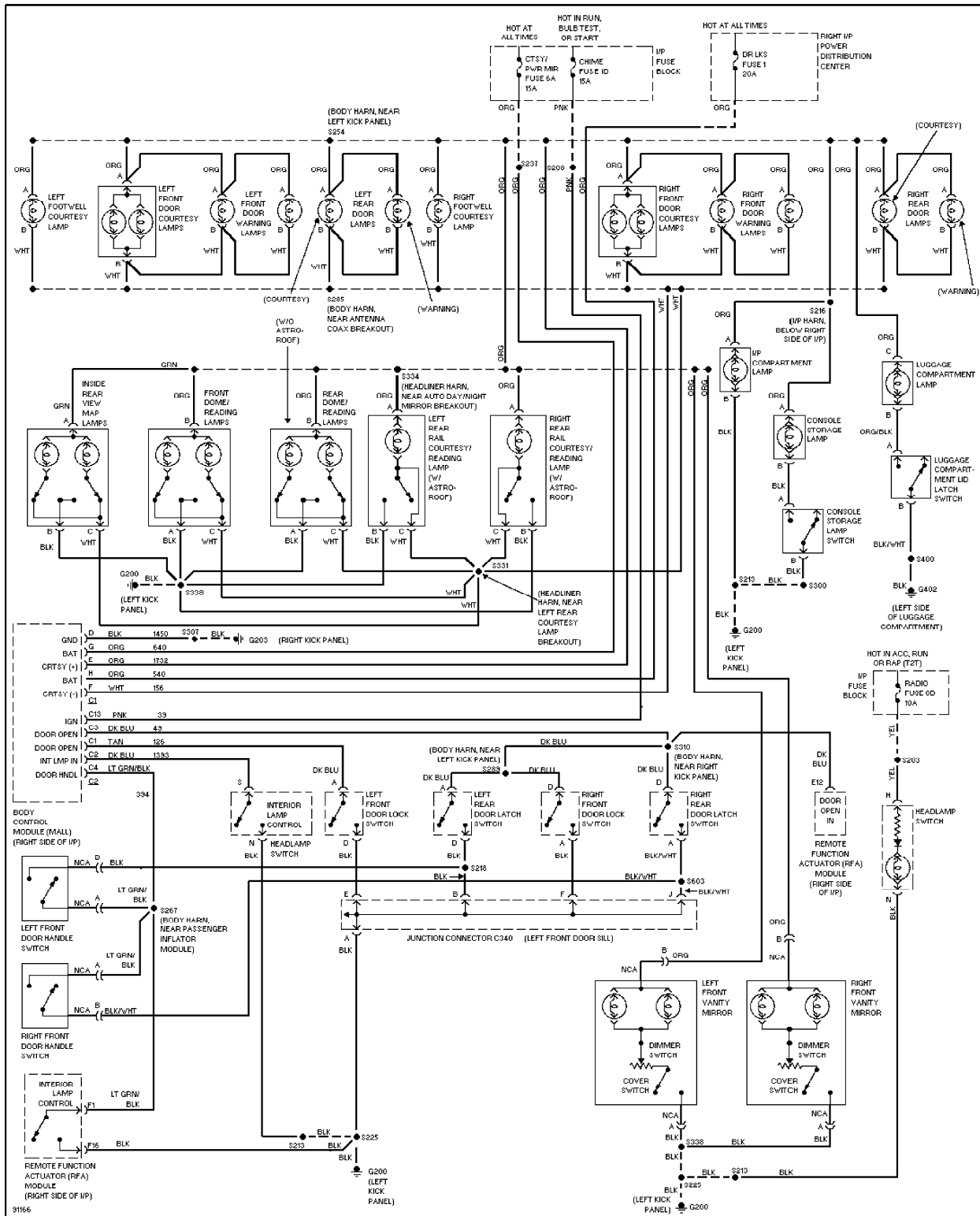


Fig. 14: Interior Lights Wiring Diagram (1997 - Bonneville, Eighty Eight, LeSabre, LSS & Regency)

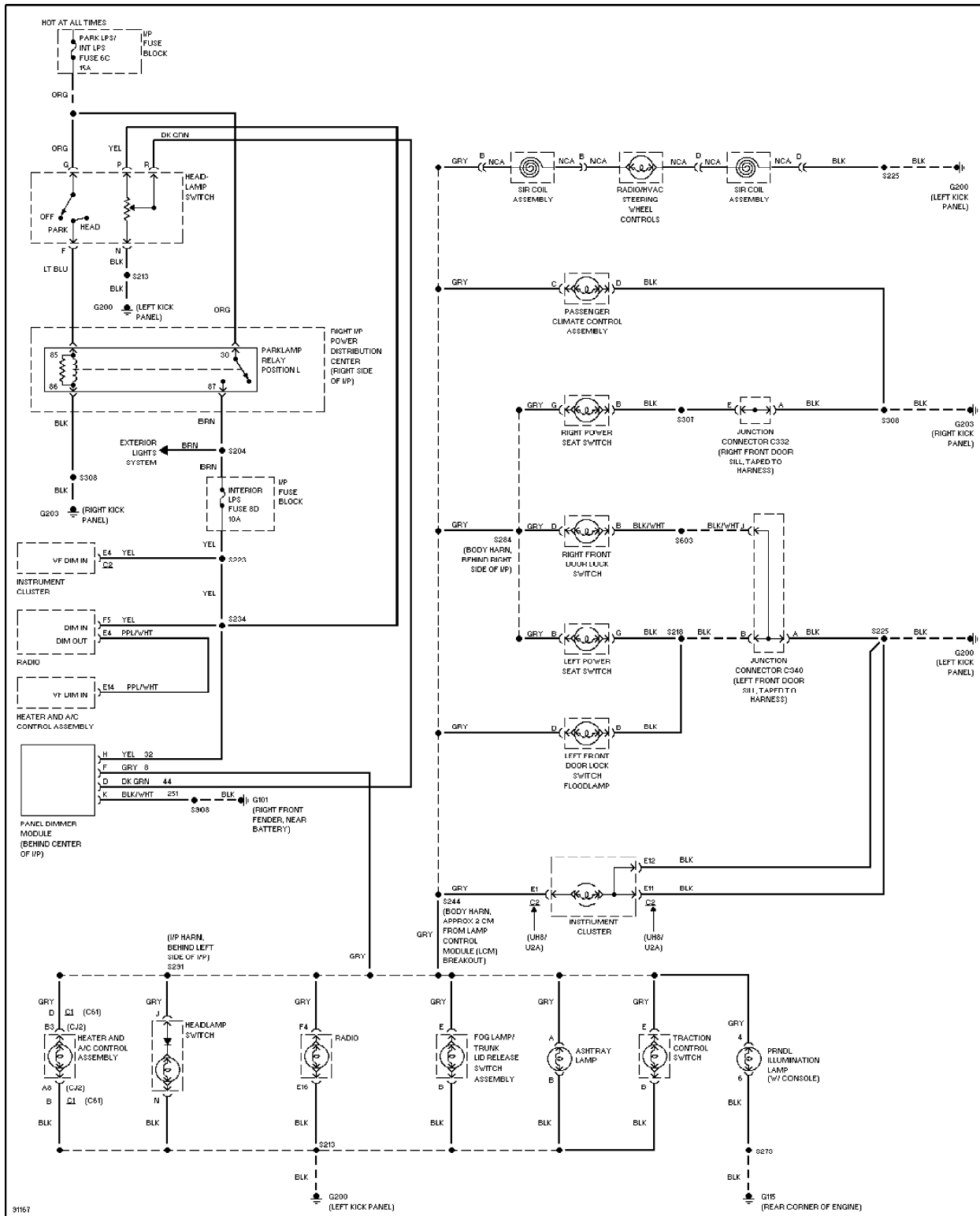


Fig. 15: Instrument Panel Illumination Wiring Diagram (1997 - Bonneville, Eighty-Eight, LeSabre, LSS & Regency)

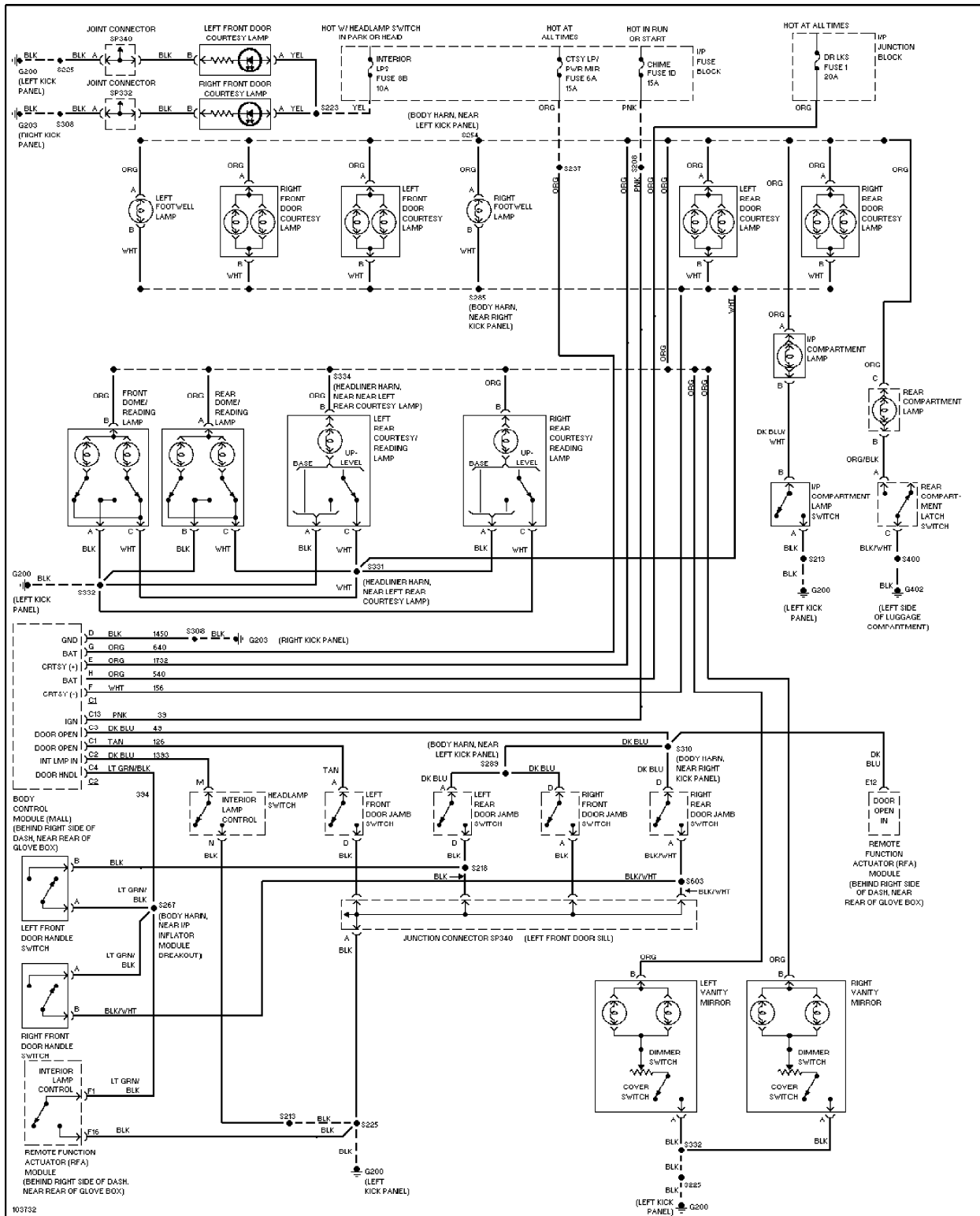


Fig. 16: Illumination/Interior Lights Wiring Diagram (1998 - Bonneville - 1 Of 2)

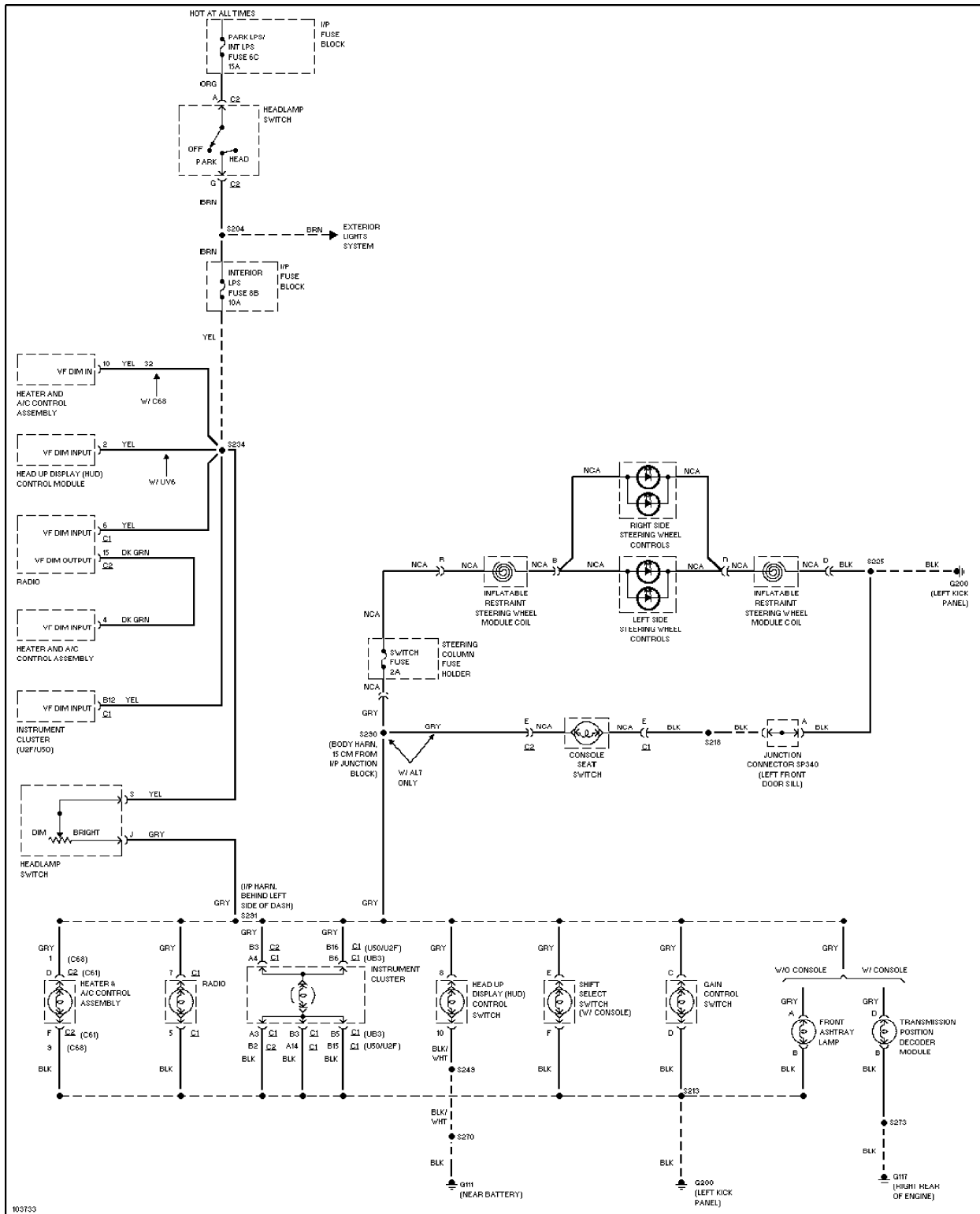


Fig. 17: Illumination/Interior Lights Wiring Diagram (1998 - Bonneville - 2 Of 2)

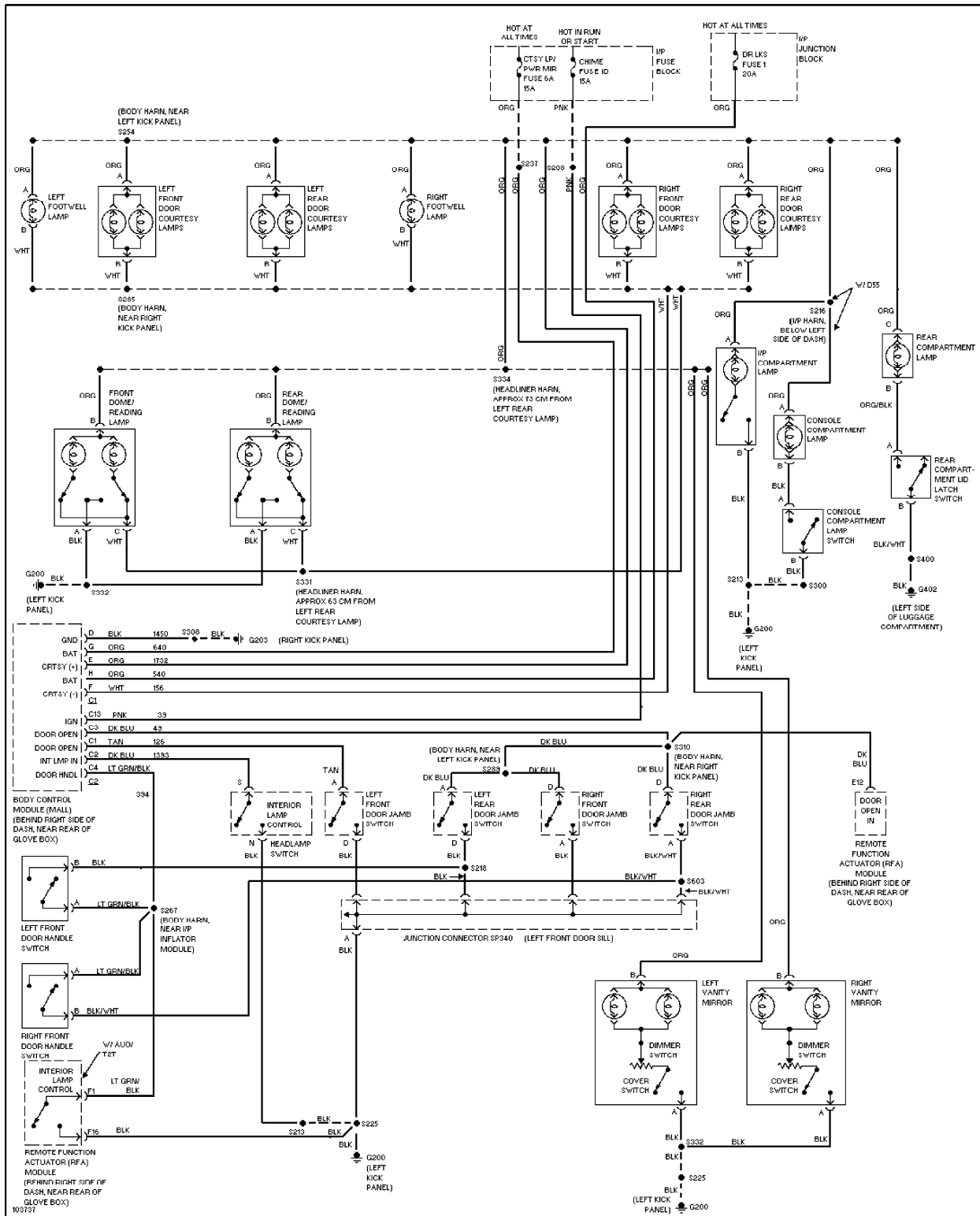


Fig. 18: Illumination/Interior Lights Wiring Diagram (1998 - Eighty Eight, LSS & Regency - 1 Of 2)

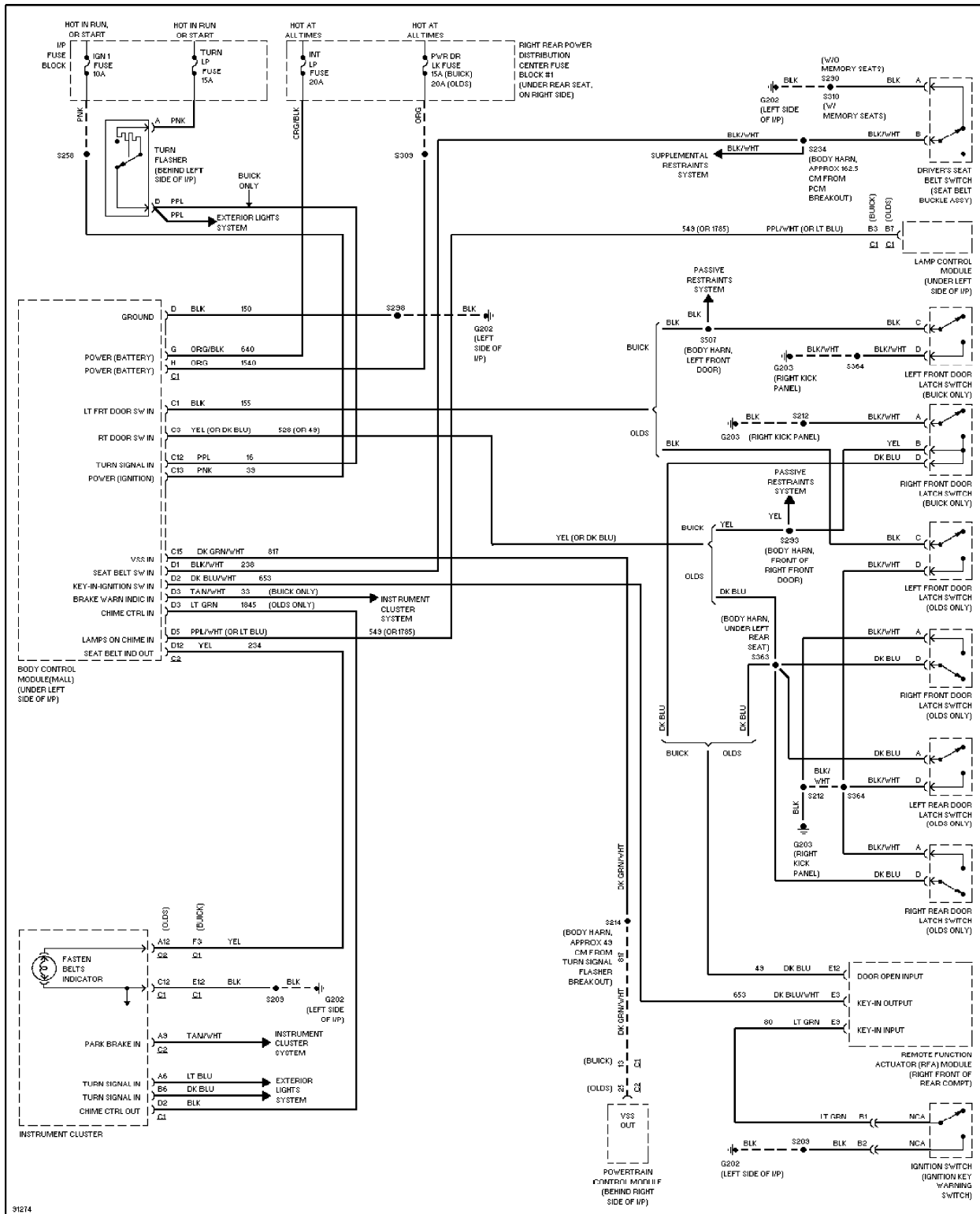


Fig. 22: Warning System Wiring Diagram (1997 - Aurora & Riviera)

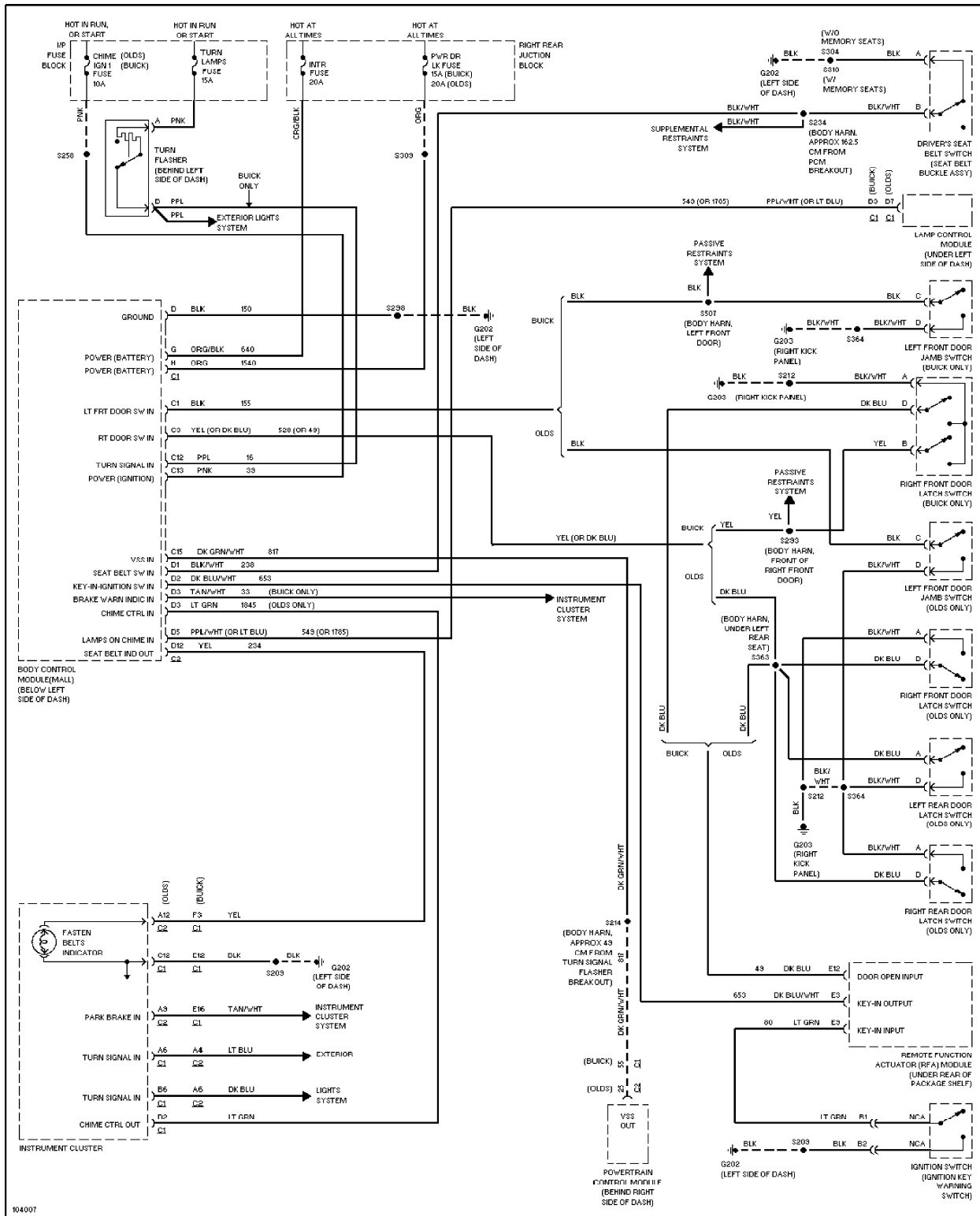


Fig. 23: Warning System Wiring Diagram (1998 - Aurora & Riviera)

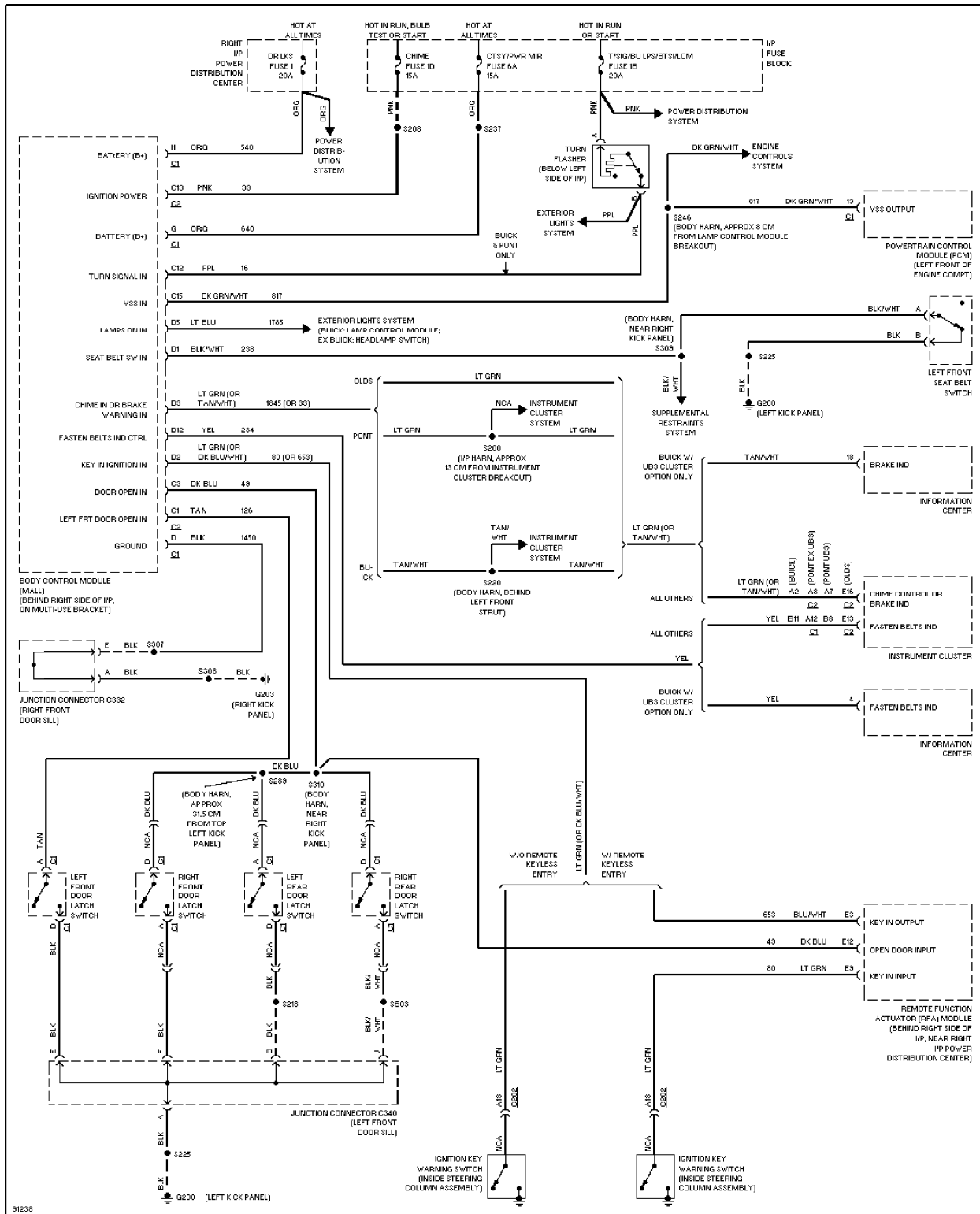


Fig. 24: Warning System Wiring Diagram (1997 - Bonneville, Eighty Eight, LeSabre, LSS & Regency)

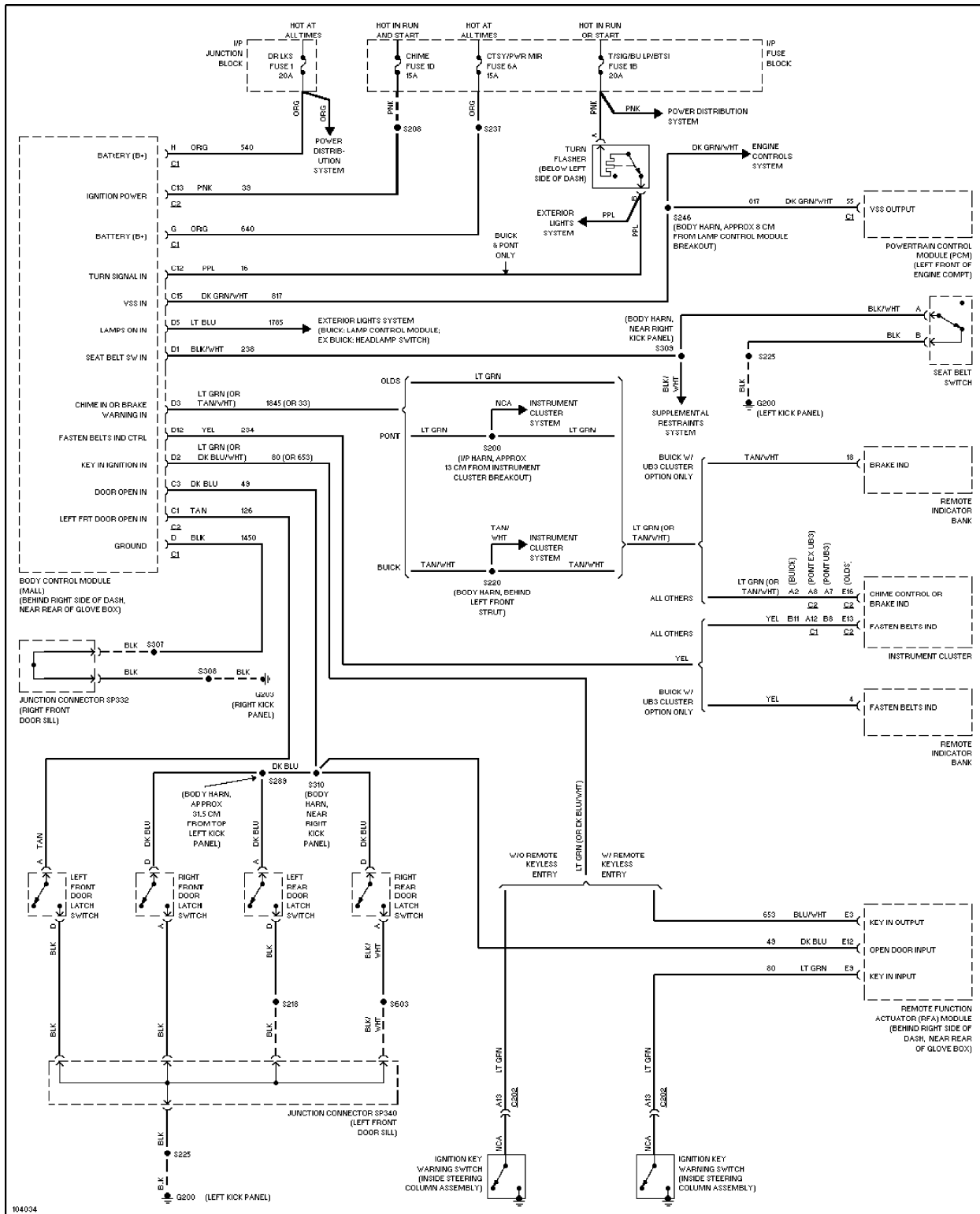


Fig. 25: Warning System Wiring Diagram (1998 - Bonneville, Eighty Eight, LeSabre, LSS & Regency)