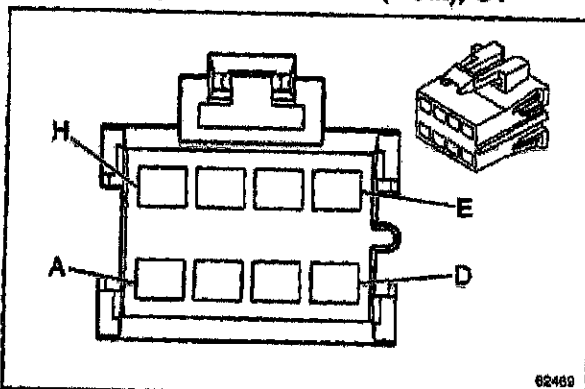


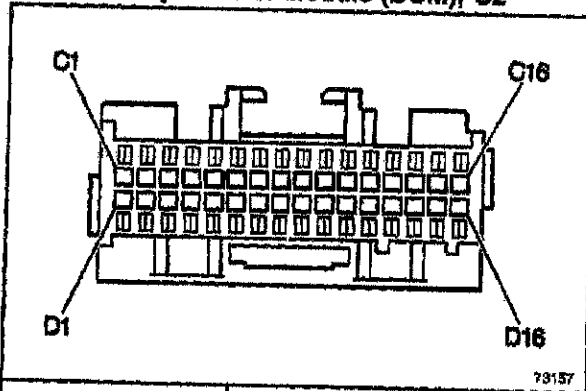
**Body Control Module (BCM), C1**



| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 12089297</li> <li>• 8-Way F Metri-Pack 280 Series (NAT)</li> </ul> |  |
|----------------------------|------------|---|--|
| Pin                        | Wire Color | Circuit No.   | Function                                 |
| A                          | TAN        | 894   | Driver Door Lock Actuator Unlock Control |
| B                          | TAN        | 294   | Door Lock Actuator Unlock Control        |
| C                          | GRY        | 295   | Door Lock Actuator Lock Control          |
| D                          | BLK        | 1550  | Ground                                   |
| E                          | DK BLU     | 1399  | Courtesy Lamps Supply Voltage            |
| F                          | GRY/BLK    | 890   | Courtesy Lamp Low Control                |
| G                          | ORN        | 240   | Battery Positive Voltage                 |
| H                          | ORN        | 1540  | Battery Positive Voltage                 |

**Body Control Module (BCM), C1**

**Body Control Module (BCM), C2**

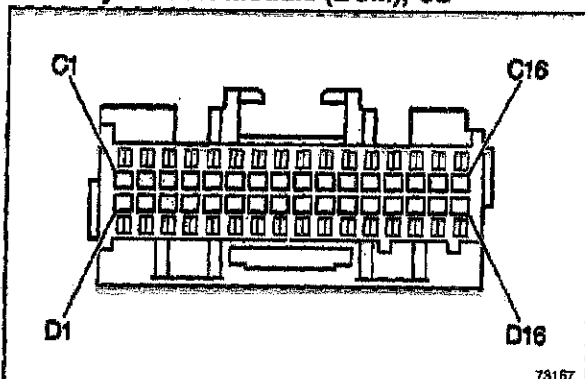


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| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 12110207</li> <li>• 32-Way F Micro-Pack 100 Series (BLU)</li> </ul> |  |
|----------------------------|------------|--|--|
| Pin                        | Wire Color | Circuit No.  | Function                               |
| C1                         | TAN        | 159  | Drivers Door Switch Signal             |
| C2                         | WHT        | 156  | Courtesy Lamp Switch Signal            |
| C3                         | DK BLU     | 49   | Door Open Switch Signal                |
| C4                         | —          | —  | Not Used                               |
| C5                         | ORN/ BLK   | 781  | Driver Door Lock Switch Unlock Signal  |
| C6                         | WHT        | 194  | Door Unlock Control                    |
| C7                         | LT BLU     | 195  | Door Lock Control                      |
| C8                         | LT GRN     | 377  | Keyless Entry Serial Data              |
| C9                         | ORN/ BLK   | 1445   | BCM Program Enable Signal              |
| C10-C11                    | —          | —  | Not Used                               |
| C12                        | DK BLU     | 15   | Right Turn Signal Lamps Supply Voltage |
| C13                        | PNK        | 39   | Ignition 1 Voltage                     |
| C14                        | LT BLU     | 14   | Left Turn Signal Lamps Supply Voltage  |
| C15                        | DK GRN     | 389  | Vehicle Speed Signal                   |
| C16                        | —          | —  | Not Used                               |

**Body Control Module (BCM), C2 Part 1**

**Body Control Module (BCM), C2**

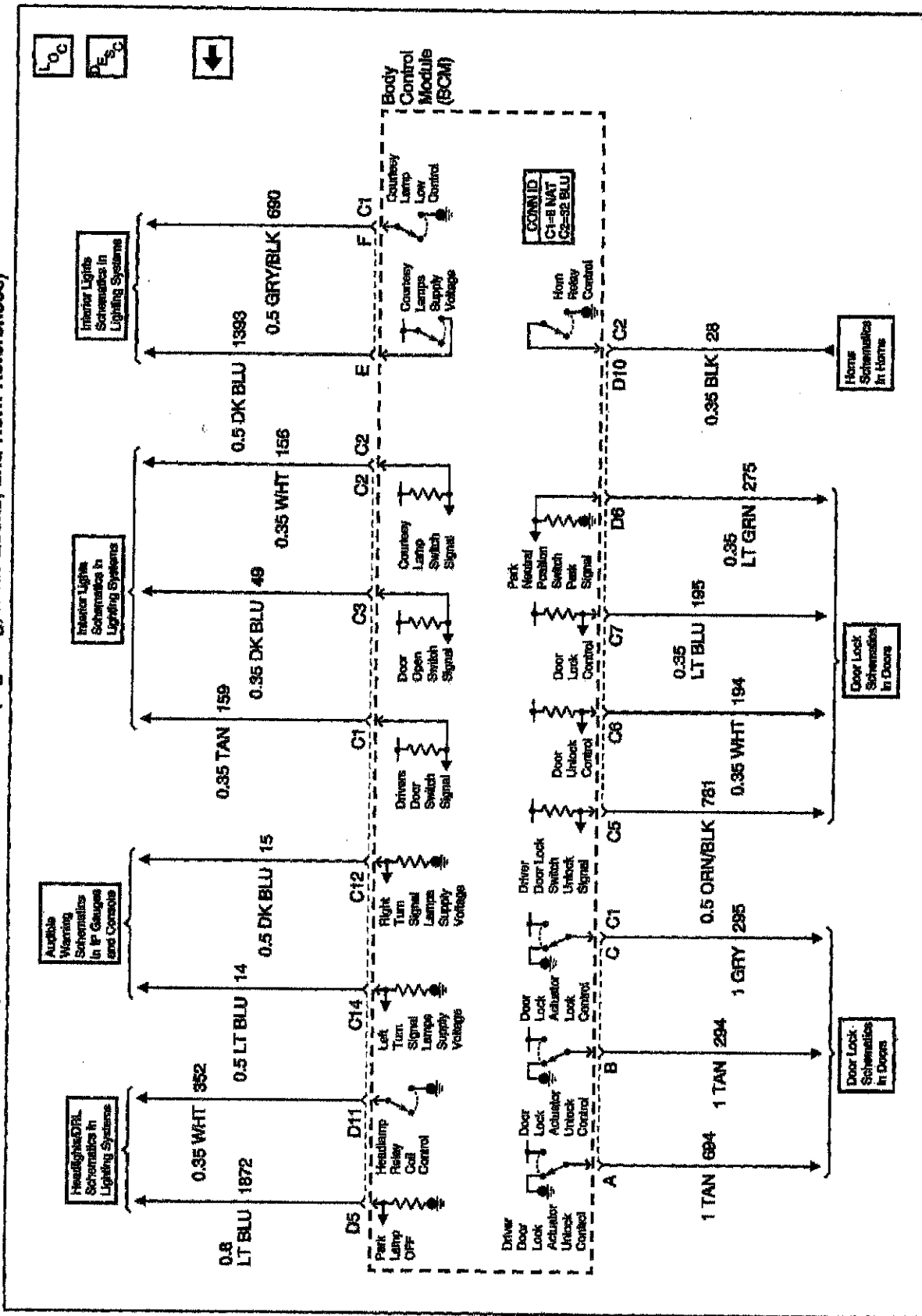


| Connector Part Information |             | <ul style="list-style-type: none"> <li>• 12110207</li> <li>• 32-Way F Micro-Pack 100 Series (BLU)</li> </ul> |  |
|----------------------------|-------------|--|--|
| Pin                        | Wire Color  | Circuit No.  | Function                                 |
| D1                         | BLK/ WHT    | 238  | Seat Belt Switch - Left                  |
| D2                         | LT GRN      | 80   | Key In Ignition Switch Signal            |
| D3                         | DK BLU/ WHT | 653  | Chime Module Bit 1 Signal                |
| D4                         | YEL         | 443  | Accessory Voltage                        |
| D5                         | LT BLU      | 1872   | Park Lamp OFF                            |
| D6                         | LT GRN      | 275  | Park Neutral Position Switch Park Signal |
| D7-D8                      | —           | —  | Not Used                                 |
| D9                         | BLK         | 707  | RAP Relay Coil Control                   |
| D10                        | BLK         | 28   | Horn Relay Control                       |
| D11                        | WHT         | 352  | Headlamp Relay Coil Control              |
| D12                        | DK GRN/ WHT | 529  | Seat Belt Indicator Supply Voltage       |
| D13                        | RED/BLK     | 744  | Trunk Ajar Switch Signal                 |
| D14                        | LT GRN      | 1828   | Shock Sensor Signal (RPO UA6)            |
| D15                        | YEL         | 748  | Security Indicator Control (RPO UA6)     |
| D16                        | —           | —  | Not Used                                 |

**Body Control Module (BCM), C2 Part 2**

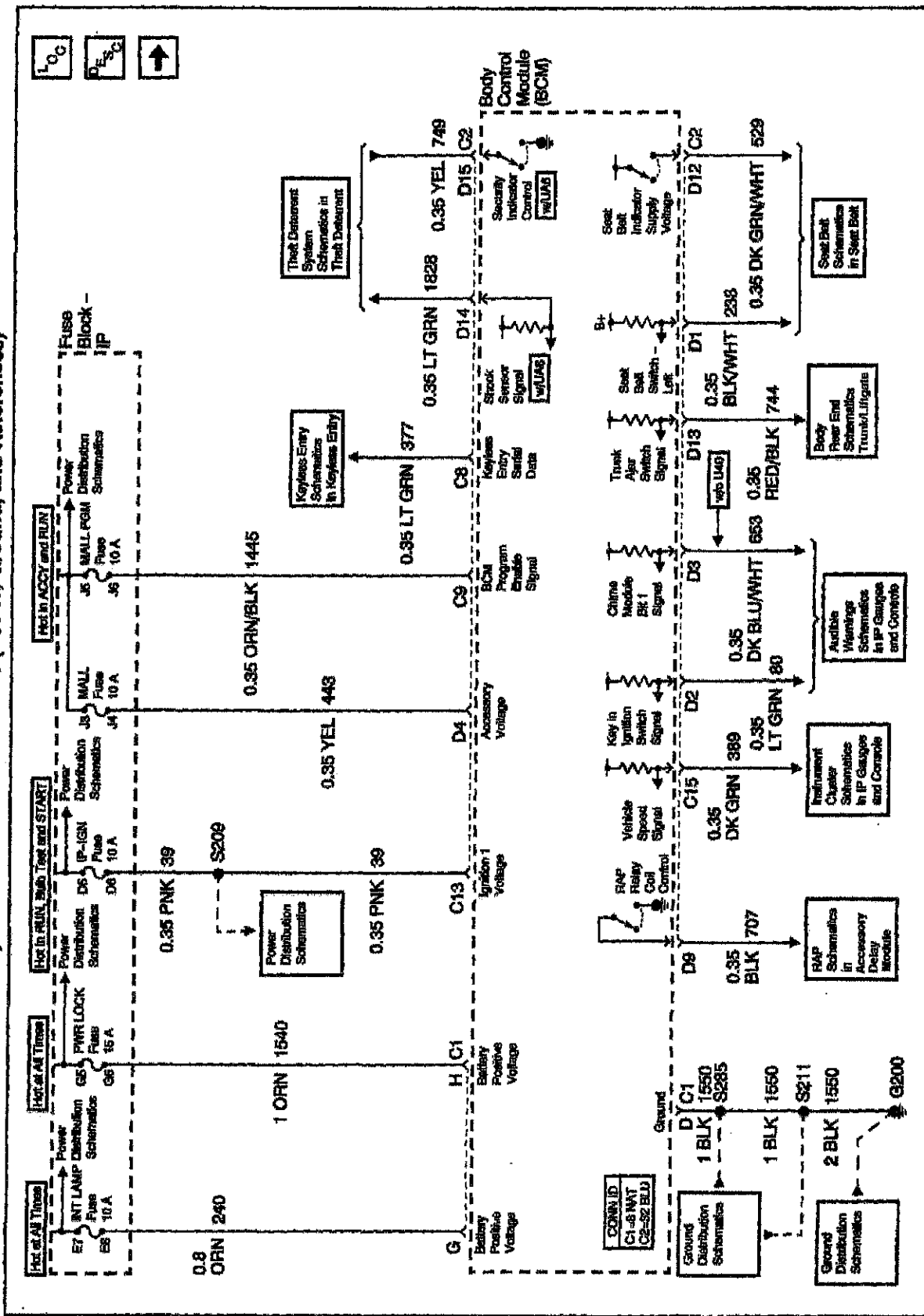
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Body Control Module Schematics (Lighting, Door Locks, and Horn References)



Body Control Module Schematics: Lighting, Door Locks, And Horn References

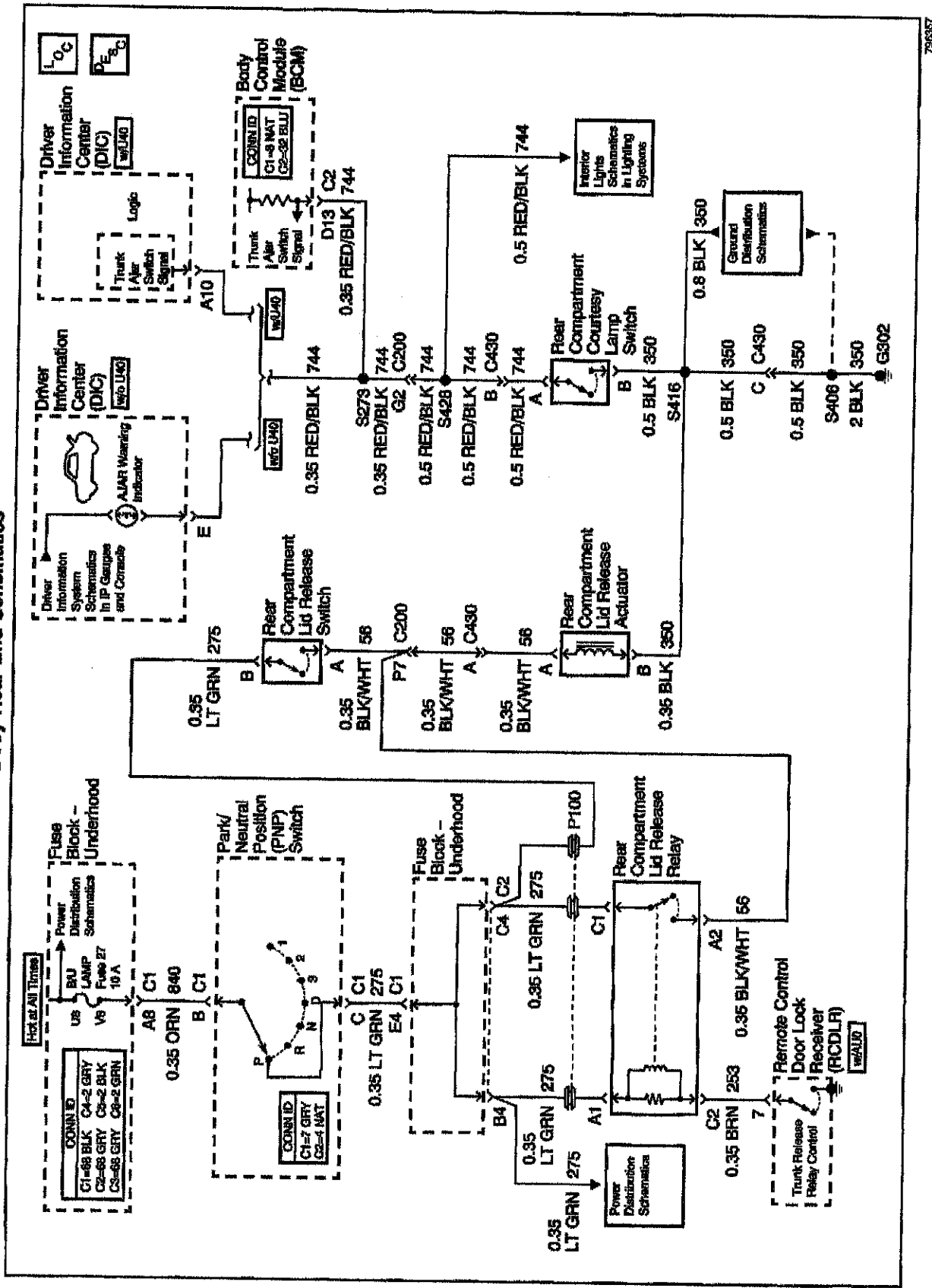
Body Control Module Schematics (Power, Ground, and References)



Body Control Module Schematics: Power, Ground, And References

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Body Rear End Schematics



Body Rear End Schematics

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# Antilock Brakes / Traction Control Systems: Testing and Inspection

## C0245

### DTC C0245

| Step                                       | Action  | Yes  | No                                  |
|--|---|--|-------------------------------------|
| <b>Schematic Reference: ABS Schematics</b> |   |  |                                     |
| 1  | Did you perform the diagnostic system check?  | Go to Step 2                                 | Go to Diagnostic System Check - ABS |
| 2  | Is the following DTC(s) set concurrently with a history DTC C0245?<br>• DTC C0036<br>• DTC C0041<br>• DTC C0048<br>• DTC C0051<br>• DTC C0056   | Go to DTC Diagnostic Trouble Code (DTC) List | Go to Step 3                        |
| 3  | Inspect the WSS for physical damage.<br>Is physical damage of the WSS evident?  | Go to Step 4                                 | Go to Step 5                        |
| 4  | Replace the WSS.<br>Is the replacement complete?  | Go to Step 14                                | —                                   |
| 5  | Inspect the jumper harness for physical damage.<br>Is physical damage of the jumper harness evident?  | Go to Step 6                                 | Go to Step 7                        |
| 6  | Replace the jumper harness.<br>Is the replacement complete?   | Go to Step 14                                | —                                   |
| 7  | Check for Proper routing of the wheel speed sensor harness.<br>Check that the wheel speed sensor harness is routed away from the spark plug wires.<br>Is the wheel speed sensor harness properly routed?  | Go to Step 9                                 | Go to Step 8                        |
| 8  | Reroute the wheel speed sensor harness away from the spark plug wires.<br>Is the reroute complete?  | Go to Step 14                                | —                                   |
| 9  | 1. Install a scan tool.<br>2. Turn the ignition switch to the RUN position.<br>3. Set the scan tool to Snap Shot Auto Trigger mode and monitor the wheel speed sensors.<br>4. Carefully drive the vehicle above 12 Km/h (8 mph) for several minutes<br>Did the scan tool trigger on any of the wheel speed sensors? | Go to Step 10                                | Go to Step 11                       |
| 10   | Note which wheel speed sensor triggered the scan tool. Follow the appropriate Wheel Speed Sensor Malfunction DTC table for the wheel speed sensor that triggered.<br>Is the repair complete?  | Go to Step 14                                | —                                   |
| 11   | 1. Reconnect all previously disconnected components.<br>2. Using a scan tool clear the DTC.<br>3. Remove the scan tool from the DLC.<br>4. Carefully drive the vehicle above 12 Km/h (8 mph) for several minutes.<br>Does the DTC reset as a current DTC?   | Go to Step 13                                | Go to Step 12                       |
| 12   | Malfunction is Intermittent. Inspect all connectors and harnesses for damage that may result in an open or high resistance when connected.<br>Is the repair complete?   | Go to Diagnostic System Check - ABS          | —                                   |
| 13   | Replace the EBCM.<br>Is the replacement complete?   | Go to Step 14                                | —                                   |
| 14   | 1. Use the scan tool in order to clear the DTCs.<br>2. Operate the vehicle within the conditions for running the DTC as specified in the supporting text.<br>Does the DTC reset?  | Go to Step 2                                 | System OK                           |

### Circuit Description

The speed sensors used on the front of this vehicle are multiple pole and the rear uses a single pole magnetic pickup. This sensor produces an AC signal that the EBCM uses the frequency from to calculate the wheel speed.

### Conditions for Running the DTC

The ignition switch is ON

### Conditions for Setting the DTC

- The EBCM detects a deviation between the left and right rear wheel speeds of greater than **6 km/h (3.75 mph)** at a vehicle speed of less than **100 km/h (62 mph)** on vehicles equipped with TCS.
- The EBCM detects a deviation between the left and right front wheel speeds of greater than **10 km/h (6.25 mph)** at a vehicle speed of less than **100 km/h (62 mph)**.
- The EBCM detects a deviation between the left and right rear wheel speeds of greater than 6 percent of the vehicle speed at greater than **100 km/h (62 mph)** on vehicles equipped with TCS.
- The EBCM detects a deviation between the left and right front wheel speeds of greater than 4 km/h plus 6 percent of the vehicle speed at greater than **100 km/h (62 mph)**.

This DTC will set when the EBCM cannot specifically identify which wheel speed sensor is causing the malfunction. If the EBCM can identify the specific wheel speed sensor causing the malfunction, DTC: C0245 will become a history DTC, and the DTC associated with the sensor (DTC C0036, DTC C0041, DTC C0046, DTC C0051, or DTC C0056) will be set concurrent with DTC C0245.

### Action Taken When the DTC Sets

If equipped, the following actions occur:

- A malfunction DTC stores.
- The ABS/TCS disables.
- The amber ABS/TCS indicator(s) turn on.
- The Red BRAKE Warning indicator turn on.

### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists and the scan tool Clear DTCs function is used.
- 100 ignition cycles pass with no DTCs detected.

### Diagnostic Aids

- It is very important that a thorough inspection of the wiring and connectors be performed. Failure to carefully and fully inspect wiring and connectors may result in misdiagnosis, causing part replacement with reappearance of the malfunction.
- Thoroughly inspect any circuitry that may be causing the complaint for the following conditions:
  - Backed out terminals
  - Improper mating
  - Broken locks
  - Improperly formed or damaged terminals
  - Poor terminal-to-wiring connections
  - Physical damage to the wiring harness
- The following conditions may cause an intermittent malfunction:
  - A poor connection
  - Rubbed-through wire insulation
  - A broken wire inside the insulation
- If the customer's comments reflect that the amber ABS/TCS indicator is on only during moist environmental conditions (rain, snow, vehicle wash), inspect all the wheel speed sensor circuitry for signs of water intrusion. If the DTC is not current, clear all DTCs and simulate the effects of water intrusion by using the following procedure:
  1. Spray the suspected area with a five percent saltwater solution. Add two teaspoons of salt to twelve ounces of water to make a five percent saltwater solution.
  2. Test drive the vehicle over various road surfaces (bumps, turns, etc.) above **40 km/h (25 mph)** for at least 30 seconds.
  3. If the DTC returns, replace the suspected harness.
- If an intermittent malfunction exists refer to Testing for Intermittent and Poor Connections.

### Test Description

The numbers below refer to step numbers on the diagnostic table.

2. If DTC C0245 is a history code, this step checks if a specific Wheel Speed Circuit Malfunction DTC is set concurrently with DTC C0245.
7. This step checks if the wheel speed sensor harness is routed in close proximity to the spark plug wires.
9. In this step, if the scan tool can record any erroneous wheel speed sensor signals, diagnose that sensor(s) first.



## Computers and Control Systems: Testing and Inspection Procedures

### P0102

#### CIRCUIT DESCRIPTION

The mass air flow (MAF) sensor is an air flow meter that measures the amount of air entering the engine. The powertrain control module (PCM) uses the MAF sensor signal in order to provide the correct fuel delivery for a wide range of engine speeds and loads. A small quantity of air entering the engine indicates a deceleration or idle. A large quantity of air entering the engine indicates an acceleration or high load condition. The MAF sensor has the following circuits:

- ^ An ignition 1 voltage circuit
- ^ A ground circuit
- ^ A signal circuit

The PCM applies a voltage to the sensor on the signal circuit. The sensor uses the voltage in order to produce a frequency based on inlet air flow through the sensor bore. The frequency varies within a range of around **2,000 Hertz** at idle to about **10,000 Hertz** at maximum engine load. DTC P0102 sets if the PCM detects a frequency signal lower than the possible range of a properly operating MAF sensor.

#### CONDITIONS FOR RUNNING THE DTC

- ^ The engine is cranking for **0.5 second** or running for **1 second**.
- ^ The engine speed is more than **50 RPM**.
- ^ The ignition 1 signal is more than **8 volts**.
- ^ The idle air control (IAC) position is more than 5 counts.
- ^ The above conditions are met for more than **0.5 seconds**.

#### CONDITIONS FOR SETTING THE DTC

The PCM detects that the MAF sensor frequency signal is less than **1,200 Hz**. for more than **12 seconds**.

#### ACTION TAKEN WHEN THE DTC SETS

- ^ The control module illuminates the malfunction indicator lamp (MIL) on the second consecutive ignition cycle that the diagnostic runs and fails.
- ^ The control module records the operating conditions at the time the diagnostic fails. The first time the diagnostic fails, the control module stores this information in the Failure Records. If the diagnostic reports a failure on the second consecutive ignition cycle, the control module records the operating conditions at the time of the failure. The control module writes the operating conditions to the Freeze Frame and updates the Failure Records.

#### CONDITIONS FOR CLEARING THE MIL/DTC

- ^ The control module turns OFF the malfunction indicator lamp (MIL) after 3 consecutive ignition cycles that the diagnostic runs and does not fail.
- ^ A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
- ^ A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
- ^ Clear the MIL and the DTC with a scan tool.

#### DIAGNOSTIC AIDS

Inspect for the following conditions:

- ^ A misrouted harness
  - Inspect the harness of the MAF sensor in order to verify that the harness is not routed too close to the following components:
    - The secondary ignition wires or coils
    - Any solenoids
    - Any relays
    - Any motors
- ^ A low minimum air rate through the sensor bore may cause this DTC to set at idle or during deceleration. Inspect for any vacuum leaks downstream of the MAF sensor.
- ^ A wide open throttle (WOT) acceleration from a stop should cause the MAF sensor g/s display on the scan tool to increase rapidly. This increase should be from **4-7 g/s** at idle to **150 g/s** or more at the time of the 1-2 shift. If the increase is not observed, inspect for a restriction in the induction system or the exhaust system.
- ^ A resistance of **20 ohms** or more on the ground circuit of the MAF sensor can cause this DTC to set.

If you suspect the condition may be related to aftermarket accessories, refer to Checking Aftermarket Accessories in Diagnostic Aids.

If the condition is intermittent, refer to Intermittent Conditions. See: Diagnosis By Symptom (Computers and Control Systems)/Intermittent Conditions

#### TEST DESCRIPTION

## DTC P0102

| Step   | Action  | Values  | Yes           | No   |
|--|---|---------|---------------|--|
| <b>Schematic Reference: Engine Controls Schematics</b> |   |         |               |  |
| 1  | Did you perform the Diagnostic System Check—Computers and Control Systems?  | —       | Go to Step 2  | Go to <i>Diagnostic System Check - Computers and Control Systems</i> |
| 2  | 1. Start the engine.<br>2. Observe the mass air flow (MAF) sensor frequency with a scan tool.<br>Is the MAF sensor frequency less than the specified value?   | 1200 Hz | Go to Step 4  | Go to Step 3   |
| 3  | 1. Observe the Freeze Frame/Failure Records data for this DTC.<br>2. Turn OFF the Ignition for 30 seconds.<br>3. Start the engine.<br>4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text or as close to the Freeze Frame/Failure Records data that you observed.<br>Does the DTC fail this ignition?  | —       | Go to Step 4  | Go to Diagnostic Aids  |
| 4  | 1. Observe the MAF sensor frequency with a scan tool.<br>2. Move the harness and the connector of the MAF sensor.<br>Does the movement of the harness or the connector affect the MAF sensor frequency?   | —       | Go to Step 25 | Go to Step 5   |
| 5  | 1. Turn OFF the ignition.<br>2. Inspect for the following conditions: <ul style="list-style-type: none"> <li>• A restricted air intake duct</li> <li>• A collapsed air intake duct</li> <li>• A dirty air filter element</li> <li>• A deteriorating air filter element</li> <li>• Any objects blocking the air inlet screen of the MAF sensor</li> <li>• Any debris on the sensing elements of the MAF sensor</li> <li>• Any vacuum leak downstream of the MAF sensor</li> <li>• A MAF sensor that is installed backwards</li> <li>• A restricted exhaust system</li> </ul> Did you find and correct the condition? | —       | Go to Step 30 | Go to Step 6   |
| 6  | Inspect the fuse in the ignition 1 voltage circuit of the MAF sensor.<br>Is the fuse open?  | —       | Go to Step 12 | Go to Step 7   |
| 7  | 1. Disconnect the harness connector of the MAF sensor.<br>2. Turn ON the ignition, with the engine OFF.<br>3. Connect a test lamp between the Ignition 1 voltage circuit of the MAF sensor and a good ground. Refer to Diagnostic Aids for Circuit Testing and Wiring Repair procedures.<br>Does the test lamp illuminate?  | —       | Go to Step 8  | Go to Step 18  |
| 8  | Measure the resistance from the ground circuit of the MAF sensor to battery ground.<br>Is the resistance less than the specified value?   | 5Ω      | Go to Step 9  | Go to Step 19  |
| 9  | Measure the voltage from the signal circuit of the MAF sensor to a good ground.<br>Is the voltage near the specified value?   | 5 V     | Go to Step 10 | Go to Step 11  |

Steps 1-9

## DTC P0102

| Step | Action  | Values | Yes           | No            |
|------|---|--------|---------------|---------------|
| 10   | <p>1. Connect a 3-amp fused jumper wire between the signal circuit of the MAF sensor and a good ground. Refer to Diagnostic Aids for Circuit Testing and Wiring Repair procedures.</p> <p>2. Start the engine.</p> <p>Do any additional DTCs set?</p>   | —      | Go to Step 23 | Go to Step 26 |
| 11   | Is the voltage less than the specified value?   | 4.5 V  | Go to Step 13 | Go to Step 15 |
| 12   | <p><b>Important:</b> The Ignition 1 voltage circuit of the MAF sensor is spliced to other components of the vehicle.</p> <p>Test for continuity between the Ignition 1 voltage circuit of the MAF sensor and ground.</p> <p>Does the DMM indicate continuity?</p>   | —      | Go to Step 17 | Go to Step 26 |
| 13   | <p>1. Turn OFF the ignition.</p> <p>2. Disconnect the PCM.</p> <p>3. Test the signal circuit between the PCM and the MAF sensor for the following conditions:</p> <ul style="list-style-type: none"> <li>• A high resistance</li> <li>• An open circuit</li> </ul> <p>Does the DMM indicate continuity?</p>   | —      | Go to Step 14 | Go to Step 20 |
| 14   | <p>Test for continuity from the signal circuit of the MAF sensor to ground.</p> <p>Does the DMM indicate continuity?</p>  | —      | Go to Step 21 | Go to Step 16 |
| 15   | <p><b>Important:</b> Disconnecting the PCM connectors may eliminate the short to voltage if the signal circuit is shorted to another PCM circuit.</p> <p>1. Turn OFF the ignition.</p> <p>2. Disconnect the PCM.</p> <p>3. Turn ON the Ignition, with the engine OFF.</p> <p>4. Measure the voltage from the signal circuit of the MAF sensor to a good ground.</p> <p>Is the voltage near the specified value?</p> | 0 V    | Go to Step 16 | Go to Step 22 |
| 16   | <p>Test for continuity at the harness connector of the PCM from the signal circuit of the MAF sensor to all other circuits at both PCM connectors.</p> <p>Does the DMM indicate continuity between any other circuit?</p>   | —      | Go to Step 24 | Go to Step 27 |
| 17   | <p>1. Repair the short to ground in the ignition 1 voltage circuit of the MAF sensor.</p> <p>2. Replace the fuse if necessary.</p> <p>Did you complete the repair?</p>  | —      | Go to Step 30 | —             |
| 18   | <p>Repair the open in the ignition 1 voltage circuit of the MAF sensor.</p> <p>Did you complete the repair?</p>   | —      | Go to Step 30 | —             |
| 19   | <p>Repair the high resistance or an open in the ground circuit of the MAF sensor.</p> <p>Did you complete the repair?</p>   | —      | Go to Step 30 | —             |

Steps 10-19

**DTC P0102**

| Step | Action   | Values | Yes                                      | No            |
|------|--|--------|--|---------------|
| 20   | Repair the high resistance or an open in the signal circuit of the MAF sensor. Refer to Diagnostic Aids for Circuit Testing and Wiring Repair procedures.<br>Did you complete the repair?  | —      | Go to Step 30                            | —             |
| 21   | Repair the short to ground in the signal circuit of the MAF sensor.<br>Did you complete the repair?  | —      | Go to Step 30                            | —             |
| 22   | Repair the short to voltage in the signal circuit of the MAF sensor.<br>Did you complete the repair?   | —      | Go to Step 30                            | —             |
| 23   | Repair the short between the signal circuit of the MAF sensor and the circuit for which the DTC set.<br>Did you complete the repair?   | —      | Go to Step 30                            | —             |
| 24   | Repair the circuits that are shorted together.<br>Did you complete the repair?   | —      | Go to Step 30                            | —             |
| 25   | Repair the harness or the connections as needed.<br>Did you complete the repair?   | —      | Go to Step 30                            | —             |
| 26   | Test for an intermittent and for a poor connection at the MAF sensor.<br>Did you find and correct the condition?   | —      | Go to Step 30                            | Go to Step 28 |
| 27   | Test for an intermittent and for a poor connection at the PCM.<br>Did you find and correct the condition?  | —      | Go to Step 30                            | Go to Step 29 |
| 28   | Replace the MAF sensor.<br>Did you complete the replacement?   | —      | Go to Step 30                            | —             |
| 29   | Replace the PCM.<br>Did you complete the replacement?  | —      | Go to Step 30                            | —             |
| 30   | 1. Clear the DTCs with a scan tool.<br>2. Turn OFF the ignition for 30 seconds.<br>3. Start the engine.<br>4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.<br>Does the DTC run and pass? | —      | Go to Step 31                            | Go to Step 2  |
| 31   | With a scan tool, observe the stored information, Capture Info.<br>Does the scan tool display any DTCs that you have not diagnosed?  | —      | Go to Diagnostic Trouble Code (DTC) List | System OK     |

**Steps 20-31**

The numbers below refer to the step numbers on the diagnostic table.

- 5. This step determines if any mechanical faults have caused this DTC to set.
- 9. This step verifies the signal circuit from the MAF sensor electrical connector to the PCM. A voltage reading of less than 4 volts or more than 6 volts indicates a malfunction in the wiring or a poor connection.
- 10. This step tests the signal circuit of the MAF sensor for a short to another 5-volt reference circuit.
- 16. This step verifies that the signal circuit is not shorted to any other PCM circuit.

## Computers and Control Systems: Testing and Inspection Procedures

### P0420\*

#### CIRCUIT DESCRIPTION

To control emissions of hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx), a 3-way catalytic converter is used. The catalyst within the converter promotes a chemical reaction which oxidizes the HC and CO present in the exhaust gas, converting them into harmless water vapor and carbon dioxide. The catalyst also reduces NOx by converting the NOx to nitrogen. The converter also has the ability to store excess oxygen and release the stored oxygen to promote these reactions. This oxygen storage capacity (OSC) is a measurement of the catalysts ability to control emissions. The powertrain control module (PCM) monitors this process using a heated oxygen sensor (HO2S) located in the exhaust stream past the three-way converter. When the catalyst is functioning properly, the HO2S 2 is slow to respond to a large change in the HO2S 1 signal. When the HO2S 2 responds quickly to a large change in the HO2S 1 signal, the OSC and efficiency of the catalyst is considered to be bad and if subsequent tests also indicate a failure DTC P0420 will set.

#### CONDITIONS FOR RUNNING THE DTC

1. Meet the conditions for engine warm up. Use the scan tool catalyst data list in order to verify the following:
  - ^ DTCs P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0116, P0117, P0118, P0121, P0122, P0123, P0130, P0131, P0132, P0133, P0134, P0135, P0137, P0138, P0140, P0141, P0171, P0172, P0201-P0206, P0300, P0336, P0341, P0401, P0403, P0404, P0405, P0410, P0412, P0418, P0440, P0442, P0443, P0446, P0449, P0502, P0503, P0506, P0507, P1133, P1134, P1336, P1351, P1352, P1361, P1374, or P1441 are not set.
  - ^ The engine has been running more than **10 minutes**.
  - ^ The engine coolant temperature (ECT) is above **70°C (158°F)** and below **124°C (255°F)**.
  - ^ The barometric pressure (BARO) is above **75 kPa**.
  - ^ The vehicle is in Closed Loop.
  - ^ The intake air temperature (IAT) is above **-20°C (-4°F)**, and is less than **+100°C (+212°F)**.
  - ^ The battery voltage above **10.7 volts**
2. Warm the catalyst.
  - ^ Fully open the hood.
  - ^ Transmission is in park (automatic) or neutral (manual).
  - ^ Set the parking brake.
  - ^ Press and hold the service brake.
  - ^ Each time the engine is started the diagnostic can run up to 18 times. After the **10-minute** run time and before the diagnostic runs the first time, the engine must run an additional **5 minutes** between **1,500-2,500 RPM**.

Any additional tests on the same key cycle, the engine speed must be between **1,500-2,500 RPM for 1 minute**.

  - ^ To activate the diagnostic, return to idle and put the vehicle in drive (depress the clutch for manual).
3. Test the catalyst.
  - ^ Transmission is in drive (automatic) or neutral (for manuals with the clutch depressed).
  - ^ VIN K California Emissions-Within **60 seconds** the air fuel ratio will go rich below 14.1 for up to **6 seconds**, then may go lean above 15.3 for up to **8 seconds**.
  - ^ VIN K FED Emissions-Within **60 seconds** the air fuel ratio will go lean above 15.3 for up to **6 seconds**, then may go rich below 14.1 for up to **7 seconds**.
  - ^ VIN 1-Within **60 seconds** the air fuel ratio will go rich below 14.1 for up to **7 seconds**, then may go lean above 15.3 for up to **9 seconds**.
  - ^ Verify if DTC P0420 has passed or failed this key cycle using the scan tool.

#### CONDITIONS FOR SETTING THE DTC

The PCM determines that the catalysts oxygen storage capacity is below a threshold considered acceptable.

#### ACTION TAKEN WHEN THE DTC SETS

- ^ The control module illuminates the malfunction indicator lamp (MIL) when the diagnostic runs and fails.
- ^ The control module records the operating conditions at the time the diagnostic fails. The control module stores this information in the Freeze Frame/Failure Records.

#### CONDITIONS FOR CLEARING THE MIL/DTC

- ^ The control module turns OFF the malfunction indicator lamp (MIL) after 3 consecutive ignition cycles that the diagnostic runs and does not fail.
- ^ A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
- ^ A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
- ^ Clear the MIL and the DTC with a scan tool.

#### DIAGNOSTIC AIDS

- ^ The PCM will NOT enable the catalyst test until following conditions are met:
  - The engine idle speed is within **150 RPM** of the desired idle.
  - The throttle position is **1.5 percent** or less.
  - The short term integrator is between 20 to **+20 percent**.
- ^ The catalyst test will abort if the vehicle falls outside the conditions listed below while the test is running:

- The short term integrator is between -20 to +20 percent.

- ^ The catalyst test may abort due to a change in the engine load from the A/C, the coolant fan, or other components. If this condition occurs, use the scan tool to force the cooling fans ON, then return to Step 2 in the table.

**IMPORTANT:** When using a scan tool to command the cooling fans ON use the next list and previous list soft keys to enter the catalyst data list. If the catalyst data list is not entered this way the cooling fan control will be canceled.

- ^ The number of attempted tests is limited to 18 per key cycle.  
 ^ More than 6 tests may have to be attempted to achieve 6 completed tests. An aborted test counts as an attempted test.  
 ^ If 18 tests have been attempted, and a decision has not been made this key cycle, turn the key OFF for **30 seconds**. Start the vehicle and perform the Conditions for Running the DTC, including the **10 minute** engine run time.  
 ^ After returning to an idle the HO2S 1 signal may stay rich or lean for **several seconds** causing the test to be delayed.

If the condition is intermittent, refer to Intermittent Conditions. See: Diagnosis By Symptom (Computers and Control Systems)/Intermittent Conditions

## TEST DESCRIPTION

### DTC P0420

| Step | Action   | Yes   | No   |
|------|--|---|--|
| 1    | Did you perform the Diagnostic System Check—Computers and Control Systems?   | Go to Step 2                                    | Go to <i>Diagnostic System Check - Computers and Control Systems</i> |
| 2    | Are any other DTCs set?  | Go to <i>Diagnostic Trouble Code (DTC) List</i> | Go to Step 3   |
| 3    | 1. Turn the A/C OFF.<br><b>Important:</b> If the A/C is left ON the diagnostic may not run.<br>2. Start the engine and wait until the vehicle is fully warmed up at least ten minutes, then above 1,500 RPM for 5 additional minutes. (One minute for each additional attempt at 1,500 RPM on same key cycle). The vehicle may be driven for the 5 minute run time.<br>3. Fully open the hood.<br>4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.<br><b>Important:</b> If more than 6 tests have been attempted and the DTC has not passed or failed this ignition cycle the test may be aborted. Refer to Diagnostic Aids.<br>5. The test may need to be completed up to 6 times in order to pass or fail.<br>Does the DTC reset? | Go to Step 4                                    | System OK  |

Steps 1-3

**DTC P0420**

| Step | Action   | Yes                                      | No            |
|------|--|--|---------------|
| 4    | 1. Inspect the 3-way catalytic converter for the following damage: <ul style="list-style-type: none"> <li>• Dents</li> <li>• Severe discoloration caused by excessive temperatures</li> <li>• Holes</li> <li>• Internal rattle caused by damaged catalyst substrate</li> </ul> 2. Verify that the 3-way catalytic converter is a proper original equipment manufacturer part.<br>Did your inspection reveal a condition?   | Go to Step 9                             | Go to Step 5  |
| 5    | 1. Inspect the exhaust system for leaks.<br>2. Test the exhaust system for restrictions. Refer to <i>Restricted Exhaust</i> in Exhaust System.<br>Did you find any of the conditions?  | Go to Step 7                             | Go to Step 6  |
| 6    | Inspect the oxygen sensors and the oxygen sensor wiring harness for damage.<br>Did you find any of the conditions?   | Go to Step 8                             | Go to Step 9  |
| 7    | Repair the exhaust system as necessary.<br>Did you complete the repair?  | Go to Step 10                            | —             |
| 8    | Repair as necessary. Refer to Diagnostic Aids for Circuit Testing and Wiring Repair procedures.<br>Did you complete the repair?  | Go to Step 10                            | —             |
| 9    | <b>Notice:</b> A misfiring condition may damage the replacement three-way catalytic converter. Check for a misfiring condition. If a misfire is present, repair the misfiring condition before replacing the three-way catalytic converter.<br>Replace the three way catalytic converter.<br>Did you complete the replacement?   | Go to Step 10                            | —             |
| 10   | 1. Use a scan tool to clear the DTCs.<br>2. Turn the A/C OFF.<br><b>Important:</b> If the A/C is left ON the following diagnostic may not run.<br>3. Start the engine. Allow the engine to warm for at least ten minutes, then above 1,500 RPM for 5 additional minutes. (One minute for each additional attempt at 1,500 RPM on same key cycle). The vehicle may be driven for the 5 minute run time.<br>4. Fully open hood.<br>5. Operate the vehicle within the Conditions for Running the DTC, as specified in the supporting text.<br><b>Important:</b> If more than 6 tests have been attempted and the DTC has not passed or failed this ignition cycle the test may be aborted. Refer to Diagnostic Aids.<br>6. Test may need to be completed up to 6 times in order to pass or fail.<br>Does the DTC reset? | Go to Step 4                             | Go to Step 11 |
| 11   | With a scan tool, observe the stored information, Capture Info.<br>Does the scan tool display any DTCs that you have not diagnosed?  | Go to Diagnostic Trouble Code (DTC) List | System OK     |

**Steps 4-11**

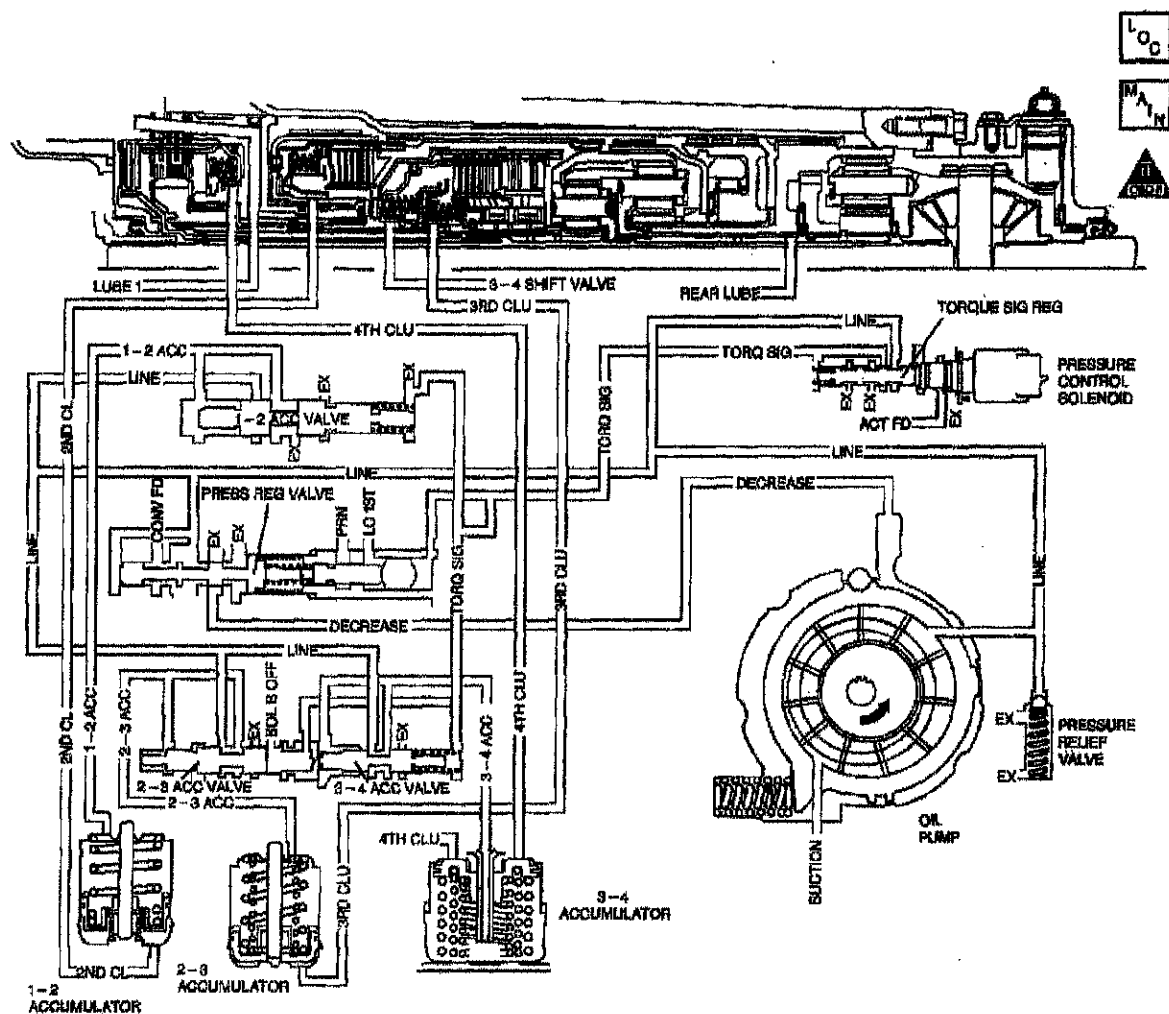
The numbers below refer to the step numbers on the diagnostic table.

1. The Diagnostic System Check-Computers and Controls Systems prompts the technician to complete some basic tests and store the Freeze Frame/Failure Records data on the scan tool, if applicable.
2. If any component DTCs are set, diagnose those DTCs first. A fault in a component can cause the converter to appear degraded or may have caused the failure.
3. Clearing the DTCs allows the catalyst test to be tested up to 18 times and completed up to 6 times this ignition cycle. If the NC is not turned OFF the diagnostic may not run. The engine must be warm. Warm the converter by raising the engine speed above idle for the specified time prior to each attempted test. Has the DTC passed or failed this ignition cycle? If the DTC does not pass or fail look for a possible reason that would cause the test to abort.
4. This step includes tests for conditions that can cause the 3-way converter to appear degraded. Repair any conditions before proceeding with this table.
9. If the 3-way converter needs to be replaced, ensure that another condition which could damage the converter is not present. These conditions may include misfire, leaking or plugged fuel injectors, high engine oil or coolant consumption, retarded spark timing, or weak

# Computers and Control Systems: Testing and Inspection Procedures

## P1811

### DTC P1811



#### Circuit Description

The transmission pressure is modified by an adaptive modifier which controls the shift execution time. This diagnostic tests the time required to accomplish the shift. If the shift takes longer than 0.65 seconds and the adaptive modifier cannot shorten this time, then a counter increases by one.

If the PCM detects a counter value of 2 during one trip, then DTC P1811 sets. DTC P1811 is a type C DTC.

#### Conditions for Running the DTC

- ^ The shift is adaptable.
- ^ The 1-2, the 2-3 or the 3-4 shift adapt cell has reached its limit.

#### Conditions for Setting the DTC

The 1-2, 2-3 or 3-4 shift is longer than 0.65 seconds, twice in one trip.

#### Action Taken When the DTC Sets

- ^ The PCM does not illuminate the Malfunction Indicator Lamp (MIL).
- ^ The PCM commands maximum line pressure.
- ^ The PCM freezes shift adapts. The PCM records the operating conditions when the Conditions for Setting the DTC are met. The PCM stores this information as Failure Records.
- ^ The PCM stores DTC P1811 in PCM history.

#### Conditions for Clearing the DTC

- ^ A scan tool can clear the DTC.
- ^ The PCM clears the DTC from PCM history if the vehicle completes 40 warm-up cycles without a non-emission-related diagnostic fault occurring.
- ^ The PCM cancels the DTC default actions when the ignition switch is OFF long enough in order to power down the PCM.

#### Diagnostic Aids



| Step | Action  | Value(s)     | Yes                   | No  |
|------|---|--------------|-----------------------|---|
| 1    | Did you perform the Powertrain Diagnostic System Check?   | —            | Go to Step 2          | Go to Diagnostic System Check - Engine Controls |
| 2    | Did you perform the transmission fluid checking procedure?  | —            | Go to Step 3          | Go to Transmission Fluid Checking Procedure     |
| 3    | <p>1. Install a <i>Scan Tool</i>.</p> <p>2. Turn ON the ignition with the engine OFF.</p> <p><b>Important:</b> Before clearing the DTCs, use the <i>Scan Tool</i> in order to record the Failure Records for reference. Using the Clear Info function will erase the stored Failure Records from the PCM.</p> <p>3. Record the Failure Records.</p> <p>4. Clear the DTCs.</p> <p>Are any of the following DTCs set: P0121, P0122, P0123, P0216, P0502, P0503, P0711, P0712, P1121 or P1122?</p> | —            | Go to Step 4          | Go to Step 5                                    |
| 4    | <p>Diagnose the above DTCs first.</p> <p>Is the diagnosis and repair complete?</p>  | —            | Go to Step 14         | —   |
| 5    | <p>1. Use the <i>Scan Tool</i> snapshot mode in order to record the shift times.</p> <p>2. Drive the vehicle in D4 in order to obtain a 1-2, 2-3 and 3-4 upshift.</p> <p>3. Record the shift times.</p> <p>Did all the shift times exceed the specified value?</p>  | 0.65 seconds | Go to Step 6          | Go to Step 8                                    |
| 6    | <p>Perform the line pressure check.</p> <p>Is the line pressure within specifications?</p>  | —            | Go to Diagnostic Aids | Go to Step 7                                    |

| Step | Action  | Value(s)     | Yes           | No                    |
|------|---|--------------|---------------|-----------------------|
| 7    | Inspect the transmission for the following conditions: <ul style="list-style-type: none"> <li>• Fluid level low</li> <li>• Oil filter and seal missing, plugged or damaged</li> <li>• Spacer plate and gasket damaged or misassembled</li> <li>• PC solenoid valve damaged or contaminated</li> <li>• Pressure regulator valve line-up binding or damaged</li> <li>• Torque signal valve line-up binding or damaged</li> <li>• Oil pump assembly damaged or missing components</li> </ul> Did you complete the repair?  | —            | Go to Step 14 | —                     |
| 8    | Did the 1-2 shift time exceed the specified value?  | 0.65 seconds | Go to Step 9  | Go to Step 10         |
| 9    | Inspect the transmission for the following conditions: <ul style="list-style-type: none"> <li>• 1-2 accumulator piston seals rolled or damaged</li> <li>• 1-2 accumulator piston and pin missing, binding or damaged</li> <li>• Forward servo assembly damaged or misassembled</li> <li>• Oil pump assembly damaged or missing components</li> <li>• Spacer plate and gaskets damaged or misassembled</li> <li>• Driven sprocket support seals damaged or missing</li> <li>• Second clutch piston and seal assembly binding or damaged</li> <li>• Second clutch fiber and steel plates misassembled, burned or damaged</li> <li>• Second clutch spring assembly damaged or misassembled</li> <li>• Forward band burned, damaged or misassembled</li> <li>• 1-2 support roller clutch assembly damaged or misassembled</li> </ul> Did you complete the repair? | —            | Go to Step 14 | —                     |
| 10   | Did the 2-3 shift time exceed the specified value?  | 0.65 seconds | Go to Step 11 | Go to Step 12         |
| 11   | Inspect the transmission for the following conditions: <ul style="list-style-type: none"> <li>• 2-3 accumulator piston seals rolled or damaged</li> <li>• 2-3 accumulator piston and pin missing, binding or damaged</li> <li>• Oil pump assembly damaged or missing components</li> <li>• Spacer plate and gaskets damaged or misassembled</li> <li>• Driven sprocket support seals damaged or missing</li> <li>• Third clutch piston seal rolled or damaged</li> <li>• Third clutch piston damaged or misassembled</li> <li>• Third clutch fiber and steel plates misassembled, burned or damaged</li> <li>• Third clutch spring assembly damaged or misassembled</li> <li>• Third sprag clutch assembly damaged or misassembled</li> </ul> Did you complete the repair?  | —            | Go to Step 14 | —                     |
| 12   | Did the 3-4 shift time exceed the specified value?  | 0.65 seconds | Go to Step 13 | Go to Diagnostic Aids |

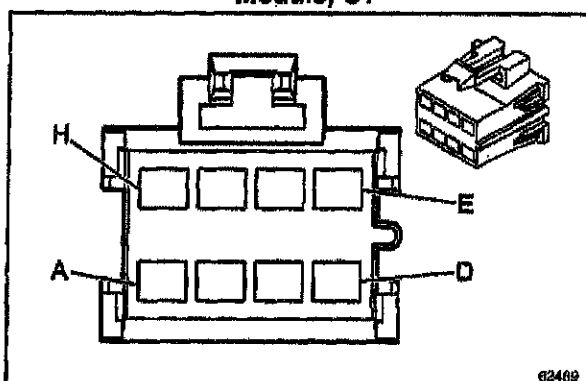
| Step | Action  | Value(s) | Yes           | No           |
|------|---|----------|---------------|--------------|
| 13   | Inspect the transmission for the following conditions: <ul style="list-style-type: none"> <li>• Oil pump assembly damaged or missing components</li> <li>• Spacer plate and gaskets damaged or misassembled</li> <li>• 3-4 accumulator piston seals rolled or damaged</li> <li>• 3-4 accumulator piston and pin missing, binding or damaged</li> <li>• Fourth clutch piston seal rolled or damaged</li> <li>• Fourth clutch piston damaged, misassembled or seized</li> <li>• Fourth clutch fiber and steel plates misassembled, burned or damaged</li> <li>• Fourth clutch spring assembly damaged or misassembled</li> </ul> Did you complete the repair? | —        | Go to Step 14 | —            |
| 14   | 1. Change the AT fluid and filter.<br>2. Inspect for correct transmission fluid level.<br><br>3. Add new AT fluid as necessary.<br><b>Important:</b> The Clear TAPS function will clear all adapt cells. This may affect transmission performance. The PCM will update the transmission adapt cell as the vehicle is driven.<br>4. Using the <i>Scan Tool</i> , perform the Clear TAPS function.<br>Did you complete the above procedure?   | —        | Go to Step 15 | —            |
| 15   | Perform the following procedure in order to verify the repair: <ol style="list-style-type: none"> <li>1. Select DTC.</li> <li>2. Select Clear Info.</li> <li>3. Drive the vehicle in D4.</li> <li>4. Observe Last Shift Time on the <i>Scan Tool</i>. Ensure that the 1-2, 2-3 and 3-4 shift times are less than 0.65 seconds.</li> </ol> Is each shift time less than 0.65 second?   | —        | System OK     | Go to Step 1 |

**Test Description**

The numbers below refer to the step numbers on the diagnostic table.

- 7. This step inspects components that may cause low line pressure.
- 9. This step inspects or repairs components that may cause a maximum adapt and long 1-2 upshift.
- 11. This step inspects or repairs components that may cause a maximum adapt and long 2-3 upshift.
- 13. This step inspects or repairs components that may cause a maximum adapt and long 3-4 upshift.

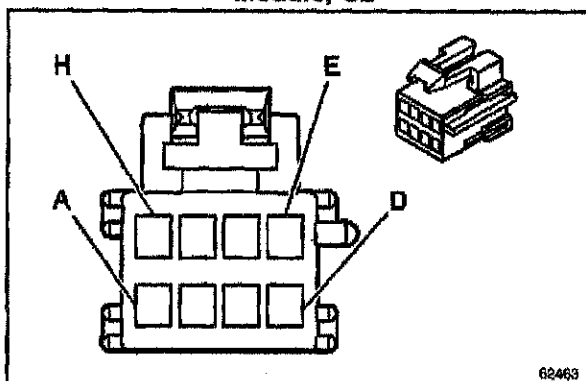
**Daytime Running Lamps (DRL) Control Module, C1**



| Connector Part Information |            | • 12064998<br>• 8-Way F Metri-Pack 280 Series (BLK) |                                      |
|----------------------------|------------|---|--------------------------------------|
| Pin                        | Wire Color | Circuit No.   | Function                             |
| A                          | ORN        | 1340  | Battery Positive Voltage             |
| B-C                        | —          | —   | Not Used                             |
| D                          | DK GRN     | 306   | Headlamp Switch Headlamps Off Signal |
| E                          | DK BLU     | 593   | DRL Headlamp Low Beam Supply Voltage |
| F                          | YEL        | 10  | Headlamp Switch Signal               |
| G                          | YEL        | 307   | Headlamp Switch Flash to Pass Signal |
| H                          | BRN        | 9   | Park Lamp Supply Voltage             |

**Daytime Running Lamps (DRL) Control Module, C1**

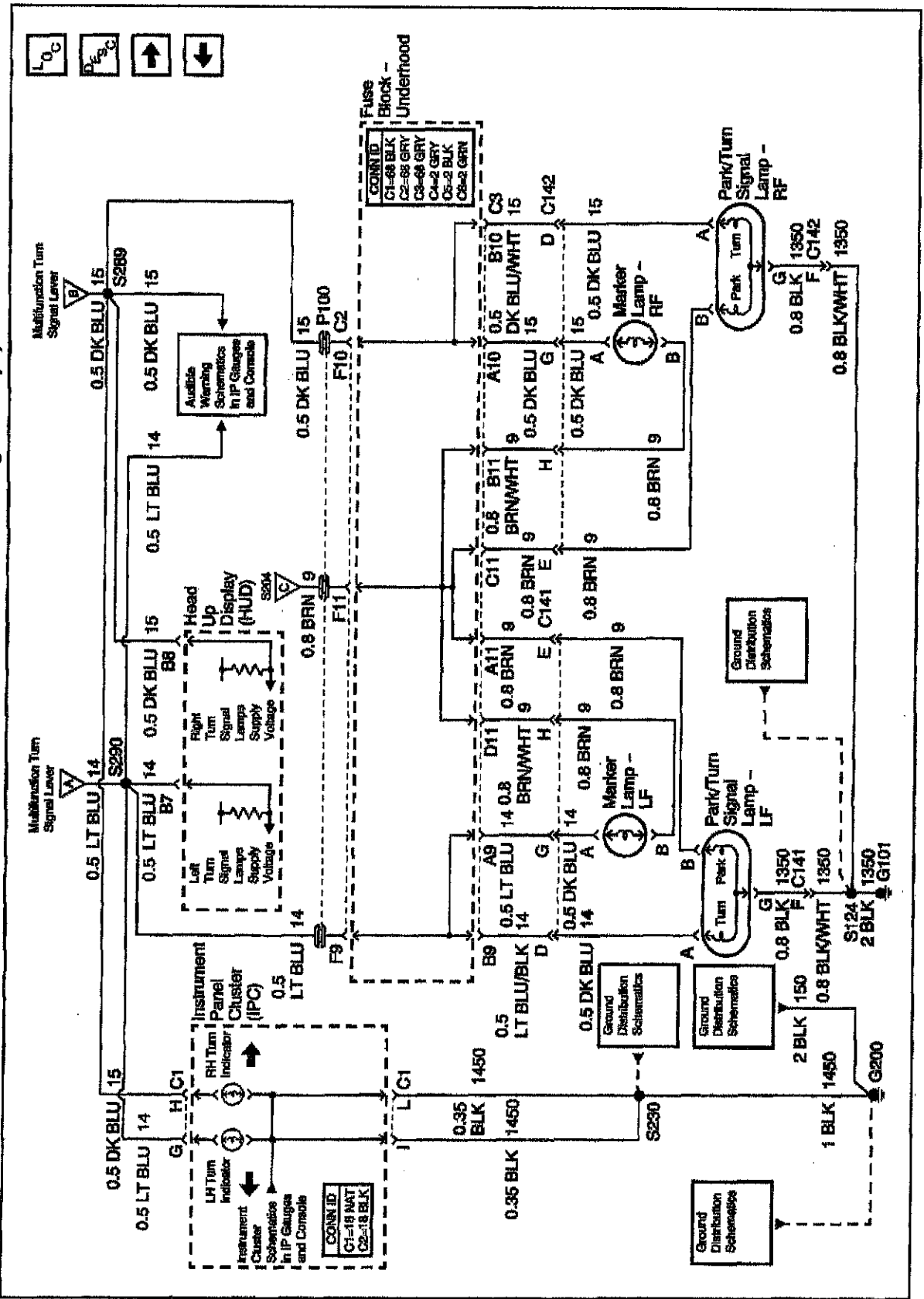
**Daytime Running Lamp (DRL) Control Module, C2**



| <b>Connector Part Information</b> |                | <ul style="list-style-type: none"> <li>• 12064766</li> <li>• 8-Way F Metri-Pack 150 Series (BLU)</li> </ul> |  |
|-----------------------------------|----------------|---|--|
| Pin                               | Wire Color     | Circuit No.   | Function                               |
| A                                 | BLK            | 1550  | Ground                                 |
| B                                 | WHT            | 352   | Headlamp Relay Coil Control            |
| C                                 | PNK            | 1239  | Ignition 1 Voltage                     |
| D                                 | TAN/WHT        | 39  | Brake Warning Indicator Control        |
| E                                 | LT BLU         | 1134  | Park Brake Switch Signal               |
| F                                 | BRN            | 541   | Ignition 3 Voltage                     |
| G                                 | LT GRN/<br>BLK | 1137  | DRL Ambient Light Sensor Low Reference |
| H                                 | YEL/BLK        | 1138  | DRL Ambient Light Sensor Signal        |

**Daytime Running Lamp (DRL) Control Module, C2**

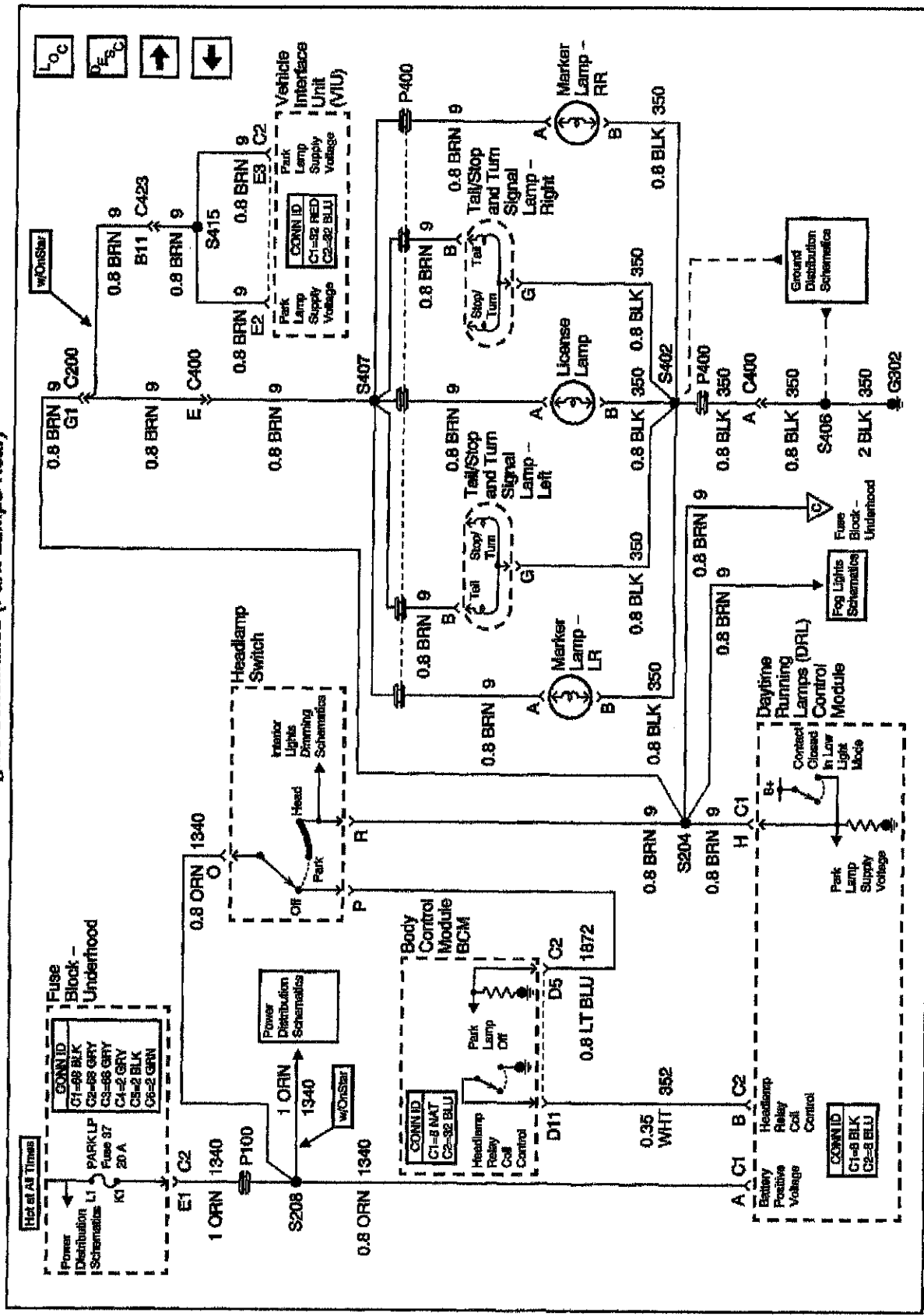
Exterior Lights Schematics (Front Park and Turn Signal Lamps)



Exterior Lights Schematics: Front Park And Turn Signal Lamps

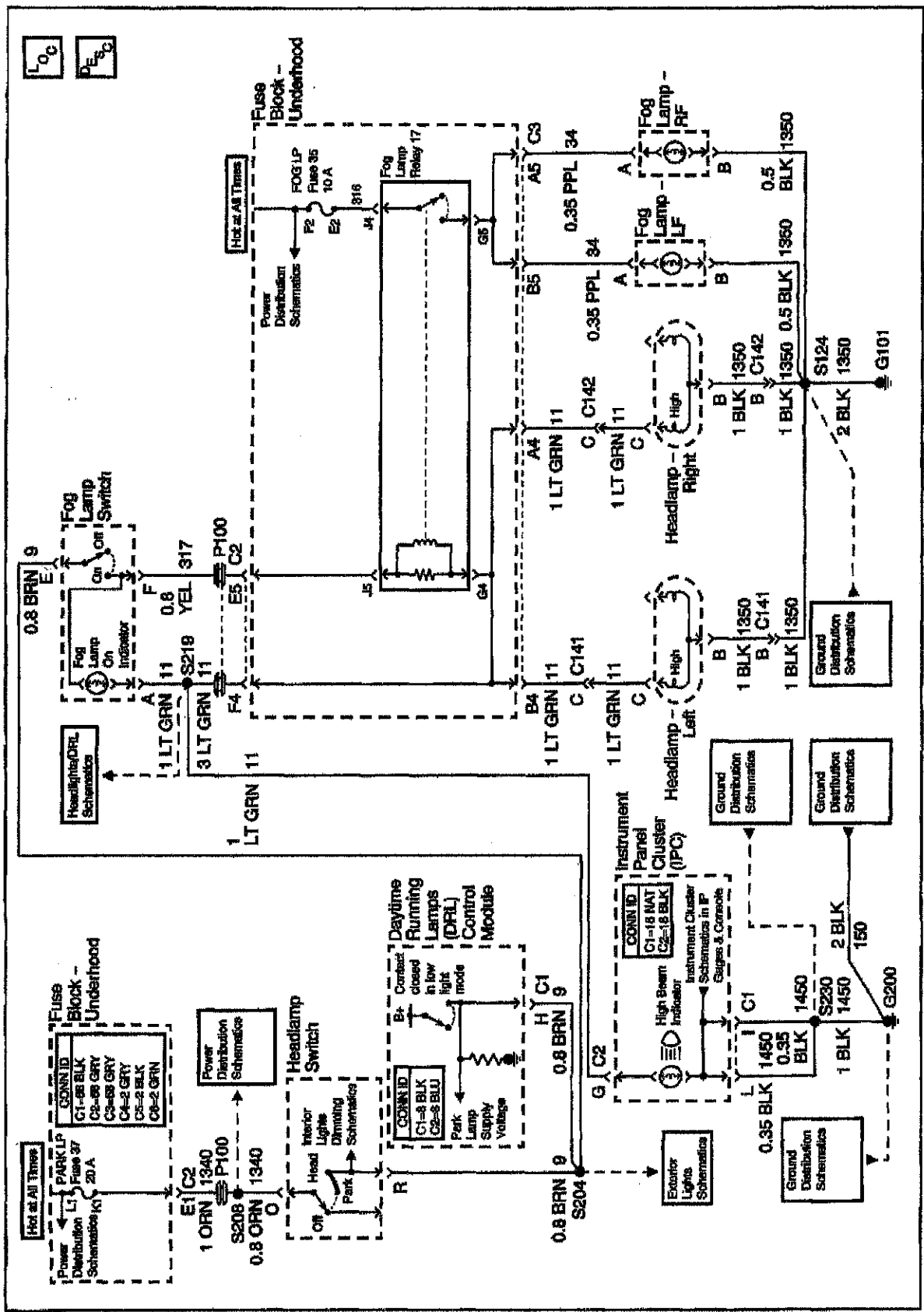
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Exterior Lights Schematics (Park Lamps Rear)



Exterior Lights Schematics: Park Lamps Rear

Fog Lights Schematics

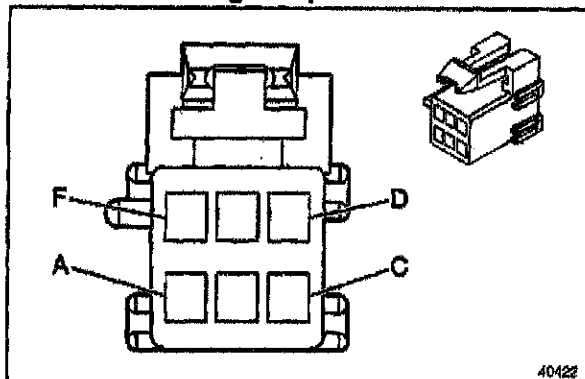


Fog Lights Schematics

789522



**Fog Lamp Switch**



40422

| <b>Connector Part Information</b> |            | <ul style="list-style-type: none"> <li>• 120654762</li> <li>• 6-Way F Metri-Pack 150 Series (GRY)</li> </ul> |  |
|-----------------------------------|------------|--|--|
| Pin                               | Wire Color | Circuit No.  | Function                                 |
| A                                 | LT GRN     | 11   | Headlamp High Beam Supply Voltage        |
| B                                 | BLK        | 1450   | Ground                                   |
| C                                 | GRY        | 8  | Instrument Panel Lamp Supply Voltage - 1 |
| D                                 | —          | —  | Not Used                                 |
| E                                 | BRN        | 9  | Park Lamp Supply Voltage                 |
| F                                 | YEL        | 317  | Fog Lamp Relay Coil Supply Voltage       |

**Fog Lamp Switch**

Fuse Block - IP (Label)

| FUSE USAGE CHART |                  |                      | See Underhood Electrical Center For Spare Fuses |                       |                  |
|------------------|------------------|----------------------|---|-----------------------|------------------|
| CIRCUIT BREAKERS |                  |                      | MALL PGM<br>10 A                                | MALL<br>10 A          | WIPER<br>25 A    |
|                  | HEADLAMP<br>20 A | STR WHL ILLUM<br>2 A | STR WHL CTRL<br>2 A                             | SUNROOF<br>20 A       | RADIO<br>10 A    |
|                  | SEAT<br>20 A     |                      | RADIO AMP<br>20 A                               | HSEAT/LUM<br>15 A     | R DEFOG<br>30 A  |
|                  |                  | PASSKEY III<br>10 A  | RAP<br>10 A                                     | HAZARD<br>15 A        | PWR MIR<br>10 A  |
|                  |                  | CIG LTR<br>15 A      | INT LAMP<br>10 A                                | STOP LAMP<br>15 A     | ONSTAR<br>15 A   |
|                  | PWR WDO<br>25 A  | ECM<br>10 A          | CRUISE<br>10 A                                  | I/P-IGN<br>10 A       | SIR<br>15 A      |
|                  |                  |                      |   |                       | TURN<br>10 A     |
|                  |                  |                      |   |                       | BTSI<br>10 A     |
|                  |                  |                      |   | HVAC CTRL<br>20 A     | DIC/HVAC<br>10 A |
|                  |                  |                      | PWR DROP<br>10 A                                | CANISTER VENT<br>10 A | DRL<br>10 A      |

For More Information, See Owner's Manual

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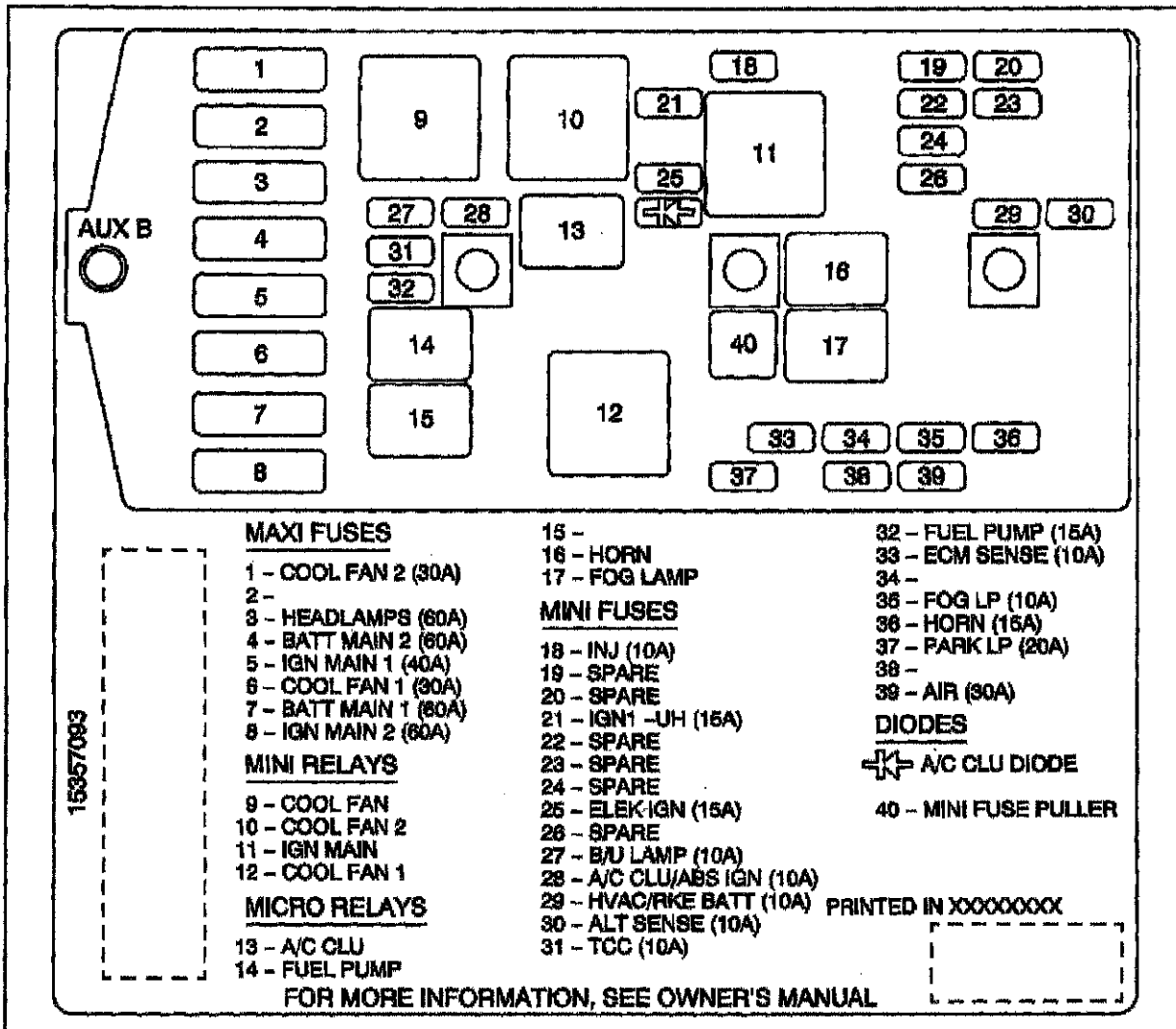
Fuse Block - IP (Label)

**Fuse Block - IP (Application Table)**

| Fuse/Circuit Breaker     | Rating | Description  |
|--------------------------|--------|--|
| BTSI Fuse                | 10A    | Instrument Panel Cluster (IPC), Stoplamp Switch, Automatic Transmission Shift Lock Actuator  |
| CANISTER VENT Fuse       | 10A    | Evaporative Emission (EVAP) Canister Vent Solenoid   |
| CIG LTR Fuse             | 15A    | Data Link Connector (DLC), Accessory Power Outlet - Console, Cigar Lighter, Auxillary Power Drop Connector   |
| CRUISE Fuse              | 10A    | Cruise Control Module (CCM), Cruise Control Release Switch, Cruise Control On/Off Switch   |
| DIC/HVAC Fuse            | 10A    | Heated Seat Switch - Driver, Driver Information Center (DIC) (W/U40), Daytime Running Lamps (DRL) Control Module, Rear Window Defogger Relay, Air Temperature Actuator - Left, Air Temperature Actuator - Right, HVAC Control Module |
| DRL Fuse                 | 10A    | Daytime Running Lamps (DRL) Control Module   |
| ECM Fuse                 | 10A    | IGN Main Relay Coil, Powertrain Control Module (PCM), Theft Deterrent Control Module   |
| H SEAT/LUM Fuse          | 15A    | Heated Seat Control Module - Driver, Seat Lumbar Switch - Driver,  |
| HAZARD Fuse              | 15A    | Turn Signal Switch   |
| HEADLAMP Circuit Breaker | 20A    | Headlamp Switch, Daytime Running Lamps (DRL) Control Module  |
| HVAC CTRL Fuse           | 10A    | HVAC Control Module  |
| HVAC HI Fuse             | 30A    | Blower Motor Resistor Assembly   |
| INT LAMP Fuse            | 10A    | Body Control Module (BCM)  |
| IP IGN Fuse              | 10A    | Instrument Panel Cluster (IPC), Body Control Module (BCM), Driver Information Center (DIC), Head Up Display (HUD) Switch   |
| MALL Fuse                | 10A    | Body Control Module (BCM)  |
| MALL PGM Fuse            | 10A    | Body Control Module (BCM)  |
| ONSTAR Fuse              | 15A    | Vehicle Interface Unit (VIU)   |
| PASS - KEY Fuse          | 10A    | Theft Deterrent Control Module   |
| PWR DROP Fuse            | 10A    | Auxillary Power Drop Connector, Vehicle Interface Unit (VIU)   |
| PWR LOCK Fuse            | 15A    | Body Control Module (BCM)  |
| PWR MIR Fuse             | 10A    | Outside Rearview Mirror Switch   |
| PWR WDO Circuit Breaker  | 25A    | Window Switch - Driver, Window Switch - Front Passenger  |
| R DEFOG Fuse             | 30A    | Rear Window Defogger Relay   |
| Radio Fuse               | 10A    | Radio, Vehicle Interface Unit (VIU)  |
| RADIO AMP Fuse           | 20A    | Audio Amplifier, Radio   |
| RAP Fuse                 | 10A    | Retained Accessory Power (RAP) Relay   |
| SEAT Circuit Breaker     | 20A    | Seat Adjuster Switch - Driver, Seat Lumbar Vertical Adjuster Relay, Lumbar Horizontal Adjuster Relay   |
| SIR Fuse                 | 15A    | Inflatable Restraint Sensing and Diagnostic Module (SDM)   |
| STOP LAMP Fuse           | 15A    | Stoplamp Switch  |
| STR WHL CTRL Fuse        | 2A     | Inflatable Restraint Steering Wheel Module Coil, Steering Wheel Controls - Left  |
| STR WHL ILLUM Fuse       | 2A     | Steering Wheel Controls Switch - Left, Steering Wheel Controls Switch - Right  |
| SUNROOF Fuse             | 20A    | Inside Rearview Mirror, Sunroof Module   |
| TURN Fuse                | 10A    | Turn Signal Switch   |
| WIPER Fuse               | 25A    | Windshield Wiper Motor, Windshield Wiper/Washer Switch   |

**Fuse Block - IP (Application Table)**

Fuse Block – Underhood (Label)



599185

Fuse Block - Underhood (Label)

**Fuse Block – Underhood (Application Table)**

| No. | Fuse/Circuit Breaker | Rating | Description   |
|-----|----------------------|--------|---|
| 1   | COOL FAN 2 Fuse      | 30A    | COOL FAN Relay, and COOL FAN 2 Relay  |
| 2   | —                    | —      | Not Used  |
| 3   | HEADLAMPS Fuse       | 60A    | HVAC HI, PWR MIR, HAZARD, RAP, and PASS-KEY Fuses, and HEADLAMP Circuit Breaker   |
| 4   | BATT MAIN 2 Fuse     | 60A    | R DEFOG, H SEAT/LUM, PWR LOCK, and RADIO AMP Fuses, and SEAT Circuit Breaker  |
| 5   | IGN MAIN 1 Fuse      | 40A    | Ignition Switch, Park/Neutral Position (PNP) Switch, BTSI, DRL, CANISTER VENT, PWR DROP, TURN, SIR, IP-IGN, CRUISE, and ECM Fuses |
| 6   | COOL FAN 1 Fuse      | 30A    | COOL FAN 1 Relay  |
| 7   | BATT MAIN 1 Fuse     | 60A    | Ignition Switch, Park/Neutral Position (PNP) Switch, BTSI, DRL, CANISTER VENT, PWR DROP, TURN, SIR, IP-IGN, CRUISE, and ECM Fuses |

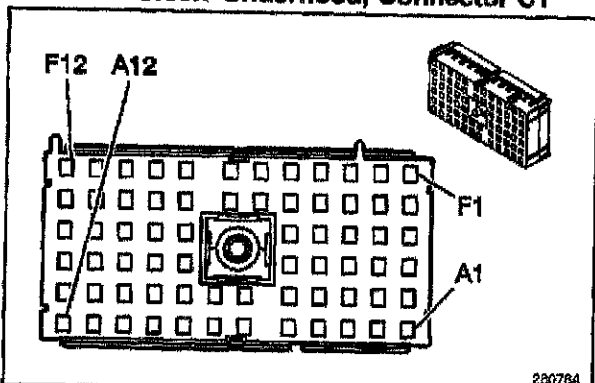
**Fuse Block - Underhood (Application Table) Part 1**

**Fuse Block – Underhood (Application Table)**

| No. | Fuse/Circuit Breaker | Rating | Description   |
|-----|----------------------|--------|---|
| 8   | IGN MAIN 2 Fuse      | 60A    | Ignition Switch, Retained Accessory Power (RAP) Relay, RADIO, SUNROOF, STR WHL CTRL, WIPER, MALL, MALL PGM, DIC/HVAC, HVAC CTRL Fuses and PWR WDO Circuit Breaker   |
| 9   | COOL FAN Relay       | —      | Cooling Fan - Right 3.1L, Cooling Fan - Left 3.8L (During Low Fan Speed Operation)  |
| 10  | COOL FAN 2 Relay     | —      | Cooling Fan - Right 3.1L, Cooling Fan - Left 3.8L (During High Fan Speed Operation)   |
| 11  | IGN MAIN Relay       | —      | INJ, IGN 1-UH, ELEK IGN, TCC, and A/C Clutch/ABS IGN Fuses  |
| 12  | COOL FAN 1 Relay     | —      | Cooling Fan - Left 3.1L, Cooling Fan - Right 3.8L   |
| 13  | A/C CLU Relay        | —      | A/C Compressor Clutch Coil, and A/C CLU Diode   |
| 14  | FUEL PUMP Relay      | —      | Fuel Pump (FP)  |
| 15  | —                    | —      | Not Used  |
| 16  | HORN Relay           | —      | Horns   |
| 17  | FOG LAMP Relay       | —      | Fog Lamp - LF, Fog Lamp - RF  |
| 18  | INJ Fuse             | 10A    | Fuel Injectors (1 –6)   |
| 19  | Spare Fuse           | 15A    | Not Used  |
| 20  | —                    | —      | Not Used  |
| 21  | IGN1 – UH Fuse       | 15A    | Secondary Air Injection (AIR) Pump Relay, Supercharger Boost Control Solenoid, Heated Oxygen sensor (HO2S) Sensor 1, Heated Oxygen Sensor (HO2S) Sensor 2, Evaporative Emissions (EVAP) Canister Purge Solenoid, Mass Air Flow (MAF) Sensor, and Secondary Air Injection (AIR) Solenoid |
| 22  | Spare Fuse           | 30A    | Not Used  |
| 23  | Spare Fuse           | 10A    | Not Used  |
| 24  | Spare Fuse           | 25A    | Not Used  |
| 25  | ELEK IGN Fuse        | 15A    | Ignition Control Module (ICM)   |
| 26  | Spare Fuse           | 20A    | Not Used  |
| 27  | B/U LAMP Fuse        | 10A    | Park Neutral Position (PNP) Switch, Body Control Module (BCM), Rear Compartment Lid Release Relay, and Rear Compartment Lid Release Switch  |
| 28  | A/C CLU/ABS IGN Fuse | 10A    | A/C Clutch Relay, and Electronic Brake Control Module (EBCM)  |
| 29  | HVAC/RKE BATT Fuse   | 10A    | HVAC Control Module, Remote Control Door Lock Receiver (RCDLR), Theft LED, and Driver Information Center (W/U40)  |
| 30  | ALT SENSE Fuse       | 10A    | Generator   |
| 31  | TCC Fuse             | 10A    | Stoptlamp Switch, 1-2 Shift Solenoid (1-2 SS) Valve, 2-3 Shift Solenoid (2-3 SS) Valve, Torque Converter Clutch (TCC) Solenoid Valve  |
| 32  | FUEL PUMP Fuse       | 15A    | FUEL PUMP Relay   |
| 33  | ECM SENSE Fuse       | 10A    | Powertrain Control Module (PCM)   |
| 34  | —                    | —      | Not Used  |
| 35  | FOG LP Fuse          | 10A    | FOG LAMP Relay  |
| 36  | HORN Fuse            | 15A    | Horn Relay  |
| 37  | PARK LP Fuse         | 20A    | Headlamp Switch, and Vehicle Interface Unit (VIU)   |
| 38  | —                    | —      | Not Used  |
| 39  | AIR Fuse             | 30A    | Secondary Air Injection (AIR) Pump Relay  |

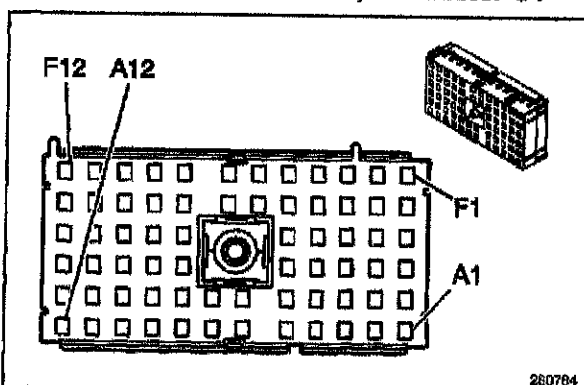
**Fuse Block - Underhood (Application Table) Part 2**

Fuse Block-Underhood, Connector C1



| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 15303513</li> <li>• 68-Way F Metri-Pack 280 Series Flex Lock (BLK)</li> </ul> |                                       |
|----------------------------|------------|--|---------------------------------------|
| Pin                        | Wire Color | Circuit No.  | Function                              |
| A1                         | DK GRN     | 35   | Coolant Temperature Indicator Control |
| A2-A4                      | —          | —  | Not Used                              |
| A5                         | DK GRN/WHT | 465  | Fuel Pump Relay Control               |
| A6-A7                      | —          | —  | Not Used                              |
| A8                         | ORN        | 840  | Battery Positive Voltage              |
| A9                         | PNK        | 339  | Ignition 1 Voltage                    |
| A9                         | PNK        | 339  | Ignition 1 Voltage                    |
| A10                        | GRY        | 532  | Cooling Fan Motor Ground              |
| A11                        | —          | —  | Not Used                              |
| A12                        | PNK        | 639  | Ignition 1 Voltage                    |
| A12                        | PNK        | 639  | Ignition 1 Voltage (w/RPO L36, L67)   |
| B1-B2                      | —          | —  | Not Used                              |
| B3                         | PNK        | 339  | Ignition 1 Voltage (w/RPO L67)        |
| B4                         | —          | —  | Not Used                              |
| B5                         | BLK/WHT    | 451  | Ground                                |
| B6                         | —          | —  | Not Used                              |
| B7                         | PNK        | 1339   | Ignition 1 Voltage                    |
| B8                         | —          | —  | Not Used                              |
| B9                         | PNK        | 339  | Ignition 1 Voltage                    |
| B9                         | PNK        | 339  | Ignition 1 Voltage                    |
| B10                        | YEL/BLK    | 68   | Low Coolant Level Indicator Control   |
| B11                        | —          | —  | Not Used                              |
| B12                        | PNK        | 639  | Ignition 1 Voltage (w/RPO L36, L67)   |
| B12                        | PNK        | 639  | Ignition 1 Voltage (w/RPO L36, L67)   |
| C1                         | BRN/WHT    | 419  | MIL Control                           |
| C2-C3                      | —          | —  | Not Used                              |
| C4                         | BLK/WHT    | 451  | Ground                                |

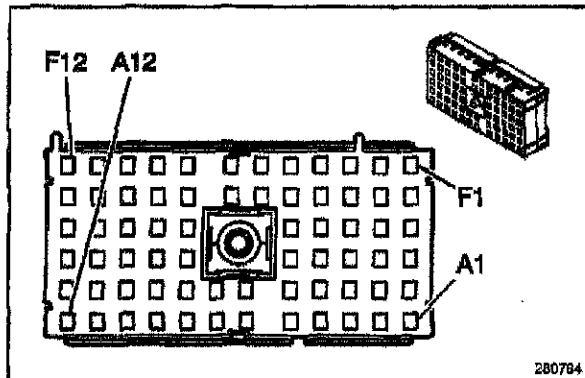
Fuse Block-Underhood, Connector C1



| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 15303513</li> <li>• 68-Way F Metri-Pack 280 Series Flex Lock (BLK)</li> </ul> |  |
|----------------------------|------------|--|--|
| Pin                        | Wire Color | Circuit No.  | Function                                 |
| C5-C9                      | —          | —  | Not Used                                 |
| C10                        | DK BLU     | 473  | High Speed Cooling Fan Relay Control     |
| C11                        | BLK        | 1050   | Ground                                   |
| C12                        | PNK        | 639  | Ignition 1 Voltage (w/RPO L36, L67)      |
| C12                        | PNK        | 639  | Ignition 1 Voltage (w/RPO L36, L67)      |
| D1                         | —          | —  | Not Used                                 |
| D2                         | ORN/BLK    | 434  | Neutral Safety Switch Signal             |
| D3                         | BRN        | 436  | Air Pump Relay Control (w/RPO L68, L36)  |
| D4                         | BLK/WHT    | 451  | Ground                                   |
| D5                         | BLK/WHT    | 451  | Ground                                   |
| D6-D9                      | —          | —  | Not Used                                 |
| D10                        | YEL        | 772  | Transmission Range Switch Signal B       |
| D10                        | YEL        | 772  | Transmission Range Switch Signal B       |
| D11                        | PNK        | 439  | Ignition 1 Voltage                       |
| D12                        | TAN        | 31   | Oil Pressure Indicator Control           |
| E1                         | PNK        | 339  | Ignition 1 Voltage (w/RPO L36)           |
| E2                         | ORN        | 540  | Battery Positive Voltage                 |
| E3                         | PPL        | 420  | TCC Brake Switch Signal                  |
| E4                         | LT GRN     | 275  | Park Neutral Position Switch Park Signal |
| E5                         | DK GRN     | 389  | Vehicle Speed Signal                     |
| E5                         | DK GRN     | 389  | Vehicle Speed Signal                     |
| E6                         | GRY        | 773  | Transmission Range Switch Signal C       |
| E6                         | GRY        | 773  | Transmission Range Switch Signal C       |

Fuse Block - Underhood, Connector C1 Part 1

**Fuse Block-Underhood, Connector C1**



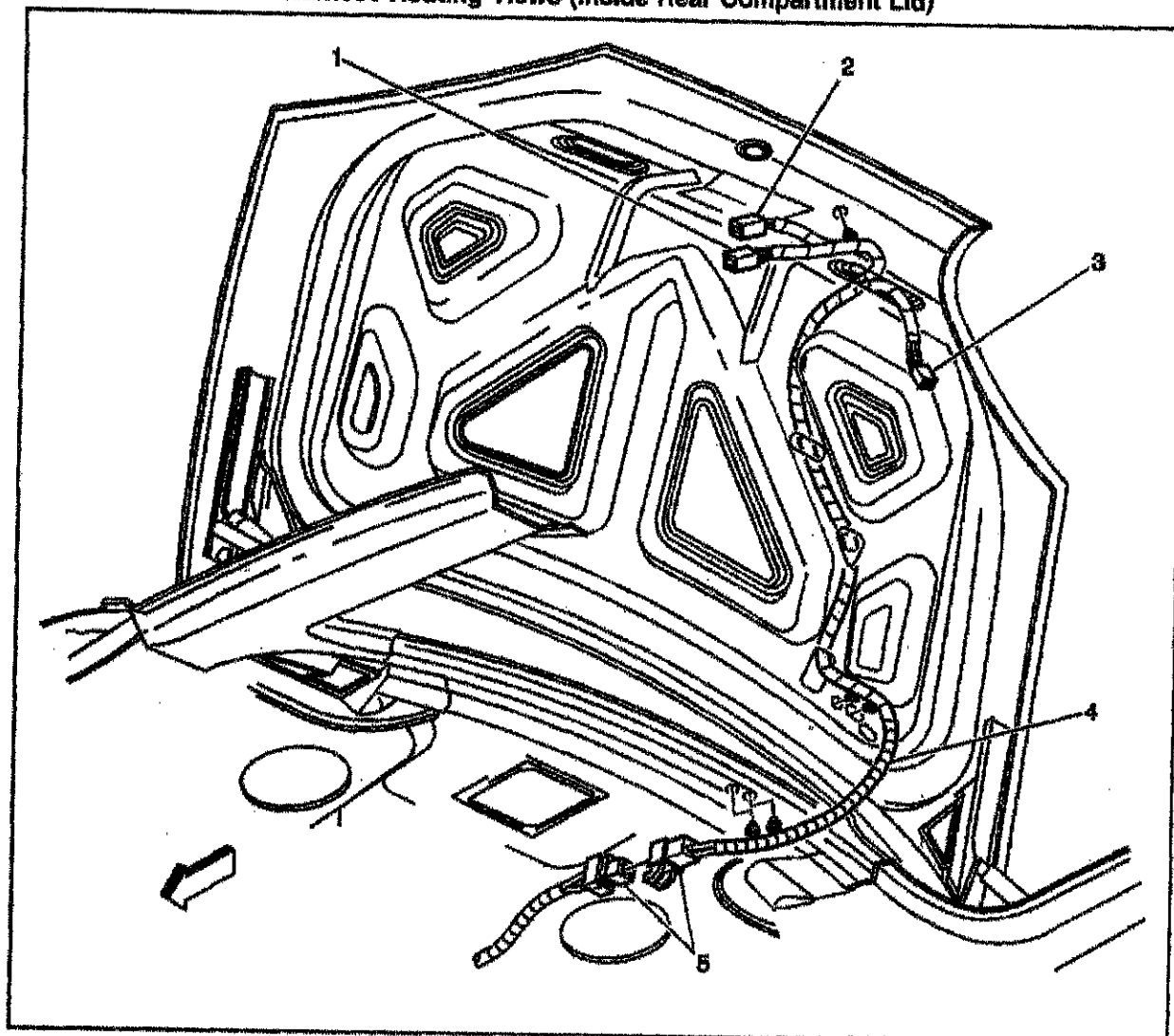
280784

| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 15303513</li> <li>• 68-Way F Metri-Pack 280 Series Flex Lock (BLK)</li> </ul> |                                      |
|----------------------------|------------|--|--------------------------------------|
| Pin                        | Wire Color | Circuit No.  | Function                             |
| E7                         | —          | —  | Not Used                             |
| E8                         | PNK        | 1239   | Ignition 1 Voltage                   |
| E9-E11                     | —          | —  | Not Used                             |
| E12                        | ORN        | 2740   | Battery Positive Voltage             |
| F1                         | BRN/WHT    | 1173   | Oil Level Indicator Control          |
| F2                         | WHT        | 504  | Cooling Fan Motor Supply Voltage     |
| F3                         | DK GRN     | 335  | Low Speed Cooling Fan Relay Control  |
| F4                         | WHT        | 776  | Transmission Range Switch Signal P   |
| F4                         | WHT        | 776  | Transmission Range Switch Signal P   |
| F5                         | BRN        | 25   | Charge Indicator Control             |
| F6                         | WHT        | 121  | Engine Speed Signal                  |
| F6                         | WHT        | 121  | Engine Speed Signal                  |
| F7                         | DK GRN/WHT | 459  | A/C Clutch Relay Control             |
| F8                         | DK GRN     | 59   | A/C Compressor Clutch Supply Voltage |
| F9                         | PNK        | 239  | Ignition 1 Voltage                   |
| F10                        | DK GRN     | 135  | Coolant Temperature Sensor Signal    |
| F11                        | LT BLU     | 408  | Cooling Fan Motor Supply Voltage     |
| F12                        | BLK/WHT    | 771  | Transmission Range Switch Signal A   |
| F12                        | BLK/WHT    | 771  | Transmission Range Switch Signal A   |

**Fuse Block - Underhood, Connector C1 Part 2**



### Harness Routing Views (Inside Rear Compartment Lid)



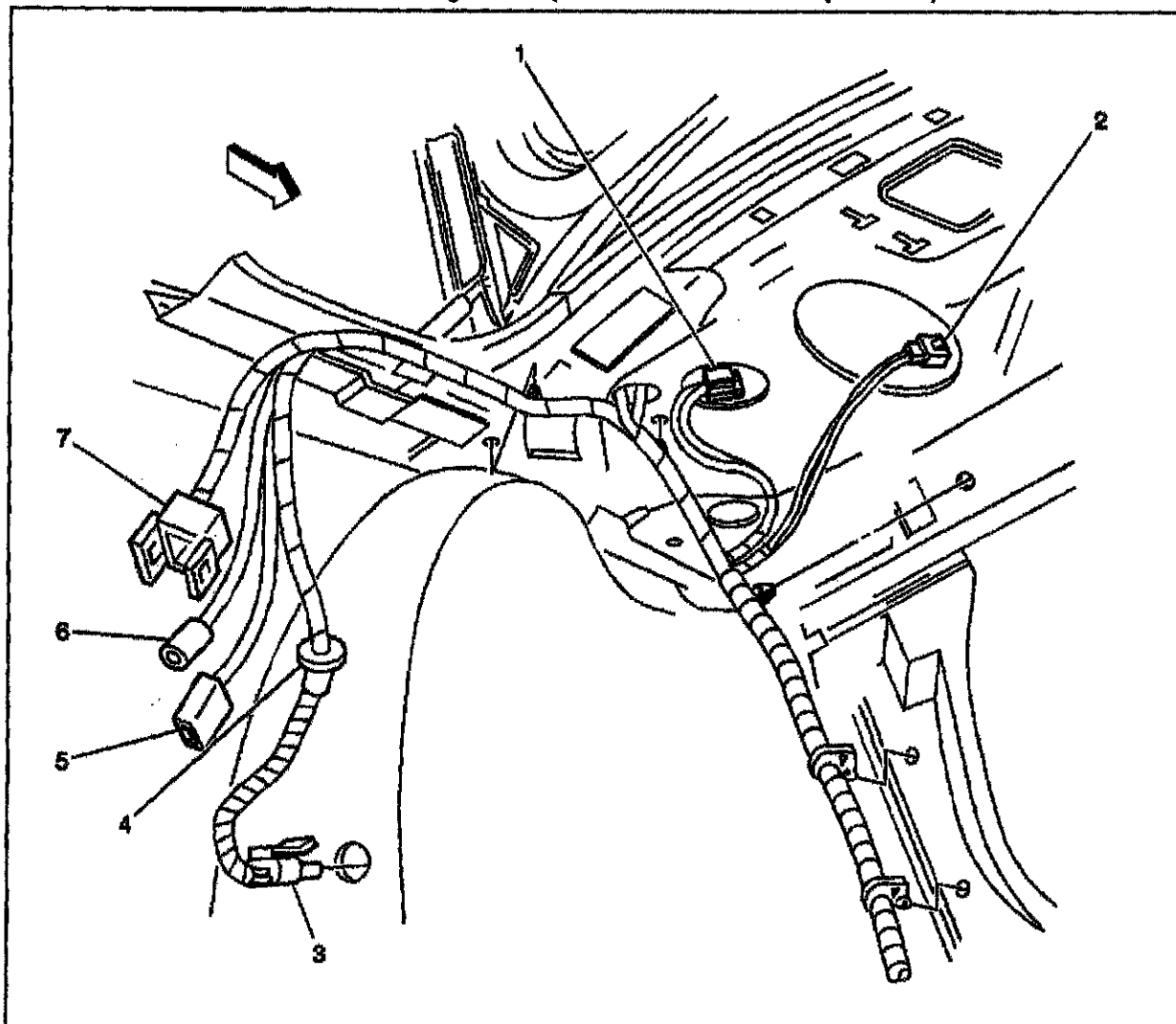
752824

#### Legend

- |  |                           |
|--|---------------------------|
| (1) Rear Compartment Courtesy Lamp Switch, Connector             | (4) Rear Deck Lid Harness |
| (2) Rear Compartment Lid Lock release Actuator, Connector        | (5) C430                  |
| (3) Rear Compartment Key Cylinder Lock Switch, Connector (W/UA6) |                           |

### Harness Routing Views (Inside Rear Compartment Lid)

### Harness Routing Views (Left Side of Rear Compartment)



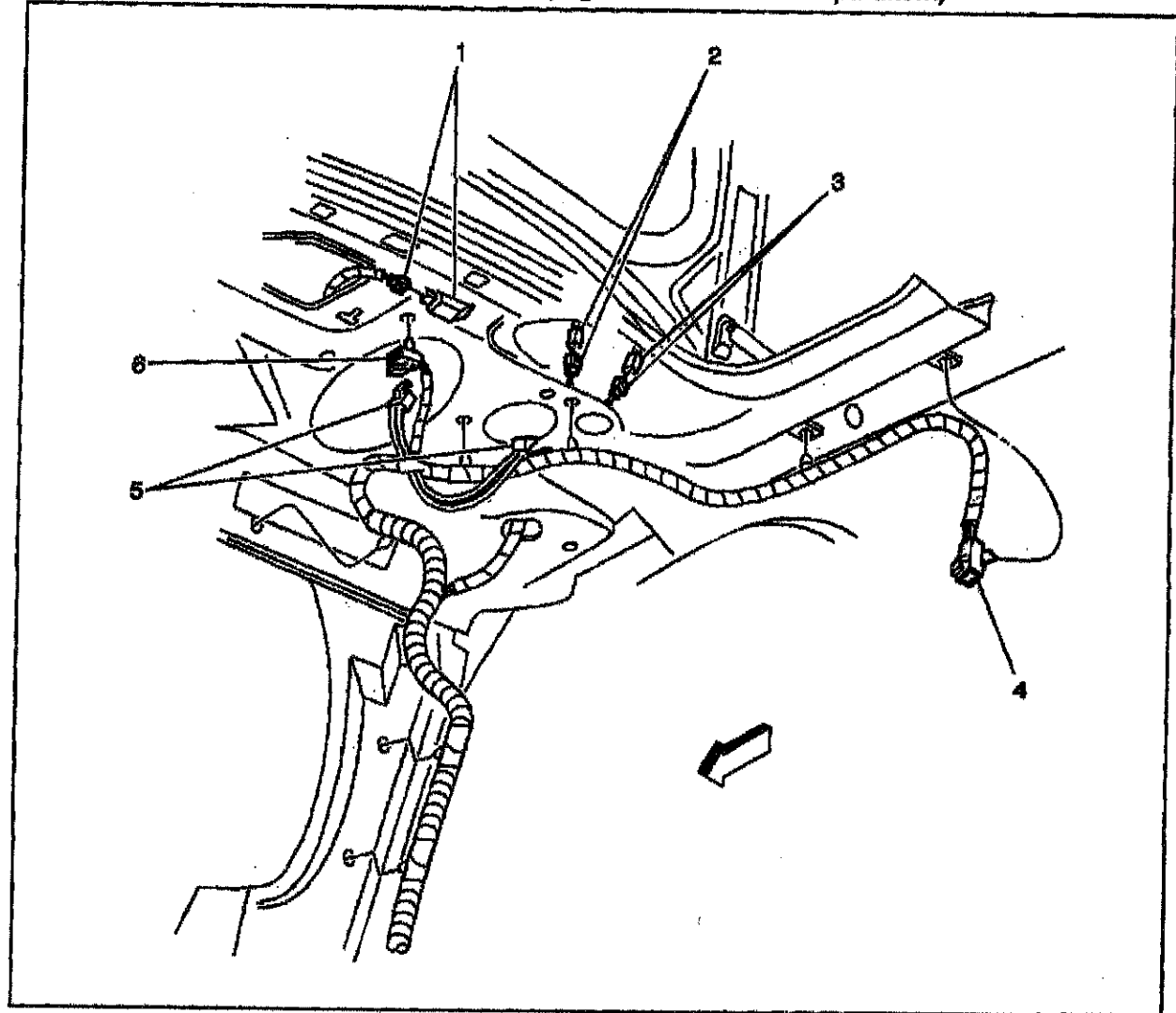
752517

#### Legend

- |   |  |
|---|--|
| (1) Speaker - LR, Connector                                       | (5) C423   |
| (2) Speaker - LR Subwoofer, Connector                             | (6) Cellular Telephone Antenna Coaxial Cable Connector                 |
| (3) Evaporative Emission (EVAP) Canister Vent Solenoid, Connector | (7) Global Positioning Satellite (GPS) Antenna Coaxial Cable Connector |
| (4) P425  |  |

### Harness Routing Views (Left Side Of Rear Compartment)

Harness Routing Views (Right Side of Rear Compartment)



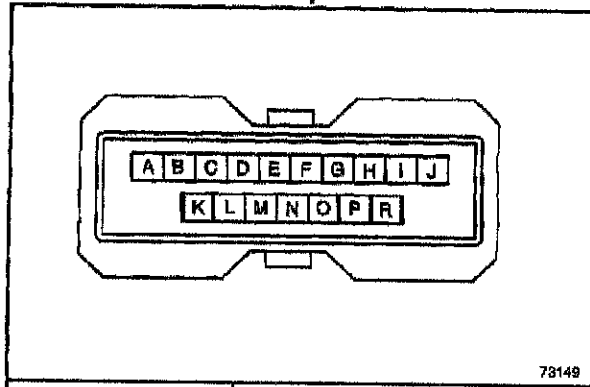
762620

Legend

- (1) Rear Compartment Courtesy Lamp
- (2) C390
- (3) C395
- (4) C400
- (5) Speaker RR Subwoofer, Connector (RPO U85)
- (6) C430

Harness Routing Views (Right Side Of Rear Compartment)

**Headlamp Switch**

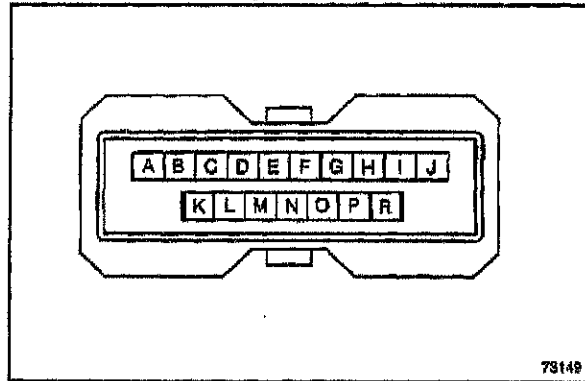


78149

| <b>Connector Part Information</b> |            | <ul style="list-style-type: none"> <li>• 12059993</li> <li>• 17-Way F Metri-Pack Mixed Series (BLK)</li> </ul> |  |
|-----------------------------------|------------|--|--|
| Pin                               | Wire Color | Circuit No.  | Function                               |
| A                                 | BLK        | 1460   | Ground                                 |
| B                                 | WHT        | 156  | Courtesy Lamp Switch Signal            |
| C-F                               | —          | —  | Not Used                               |
| G                                 | BRN/WHT    | 230  | Instrument Panel Lamps Dimming Control |
| H                                 | GRY        | 8  | Instrument Panel Lamp Supply Voltage   |
| I                                 | GRY/BLK    | 308  | Park Lamp Switch On Input              |

**Headlamp Switch Part 1**

### Headlamp Switch

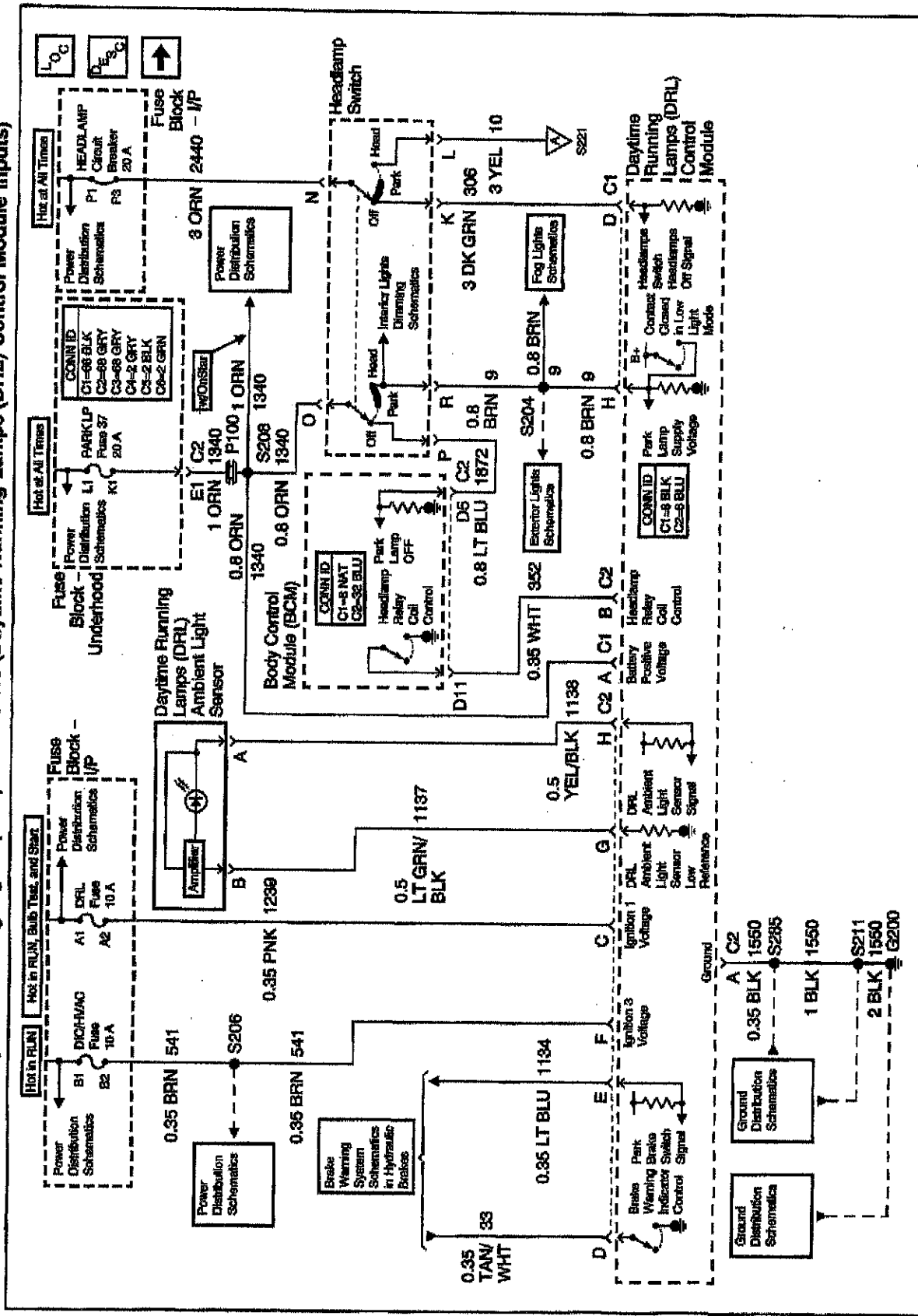


73149

| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 12059993</li> <li>• 17-Way F Metri-Pack Mixed Series (BLK)</li> </ul> |                                      |
|----------------------------|------------|--|--------------------------------------|
| Pin                        | Wire Color | Circuit No.  | Function                             |
| J                          | —          | —  | Not Used                             |
| K                          | DK GRN     | 306  | Headlamp Switch Headlamps Off Signal |
| L                          | YEL        | 10   | Headlamp Switch Signal               |
| M                          | —          | —  | Not Used                             |
| N                          | ORN        | 2440   | Battery Positive Voltage             |
| O                          | ORN        | 1340   | Battery Positive Voltage             |
| P                          | LT BLU     | 1872   | Park Lamp OFF                        |
| R                          | BRN        | 9  | Park Lamp Supply Voltage             |

### Headlamp Switch Part 2

Headlights/Daytime Running Lights (DRL) Schematics (Daytime Running Lamps (DRL) Control Module Inputs)

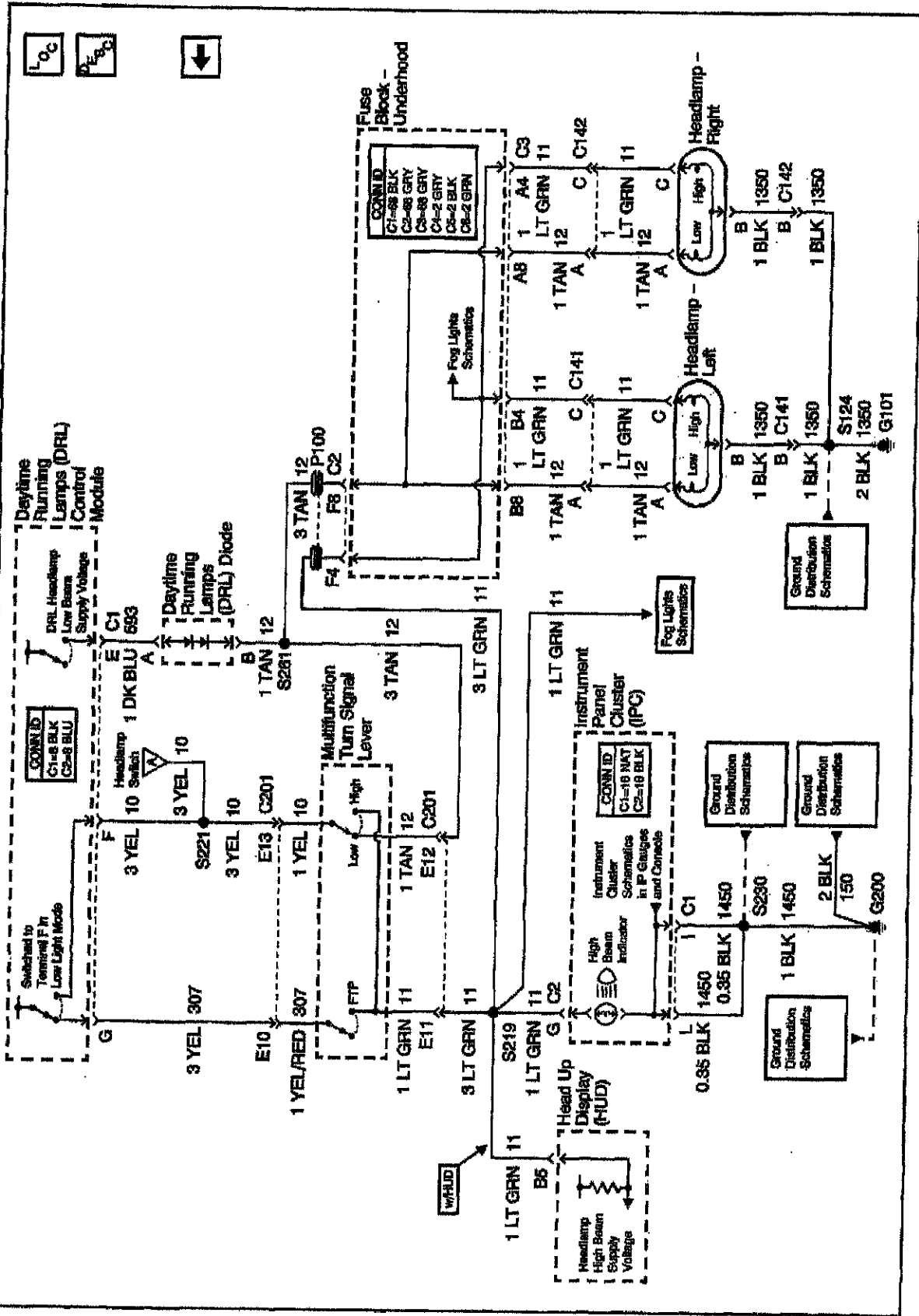


796873

Headlights/Daytime Running Lights (DRL) Schematics: Daytime Running Lamps (DRL) Control Module Inputs

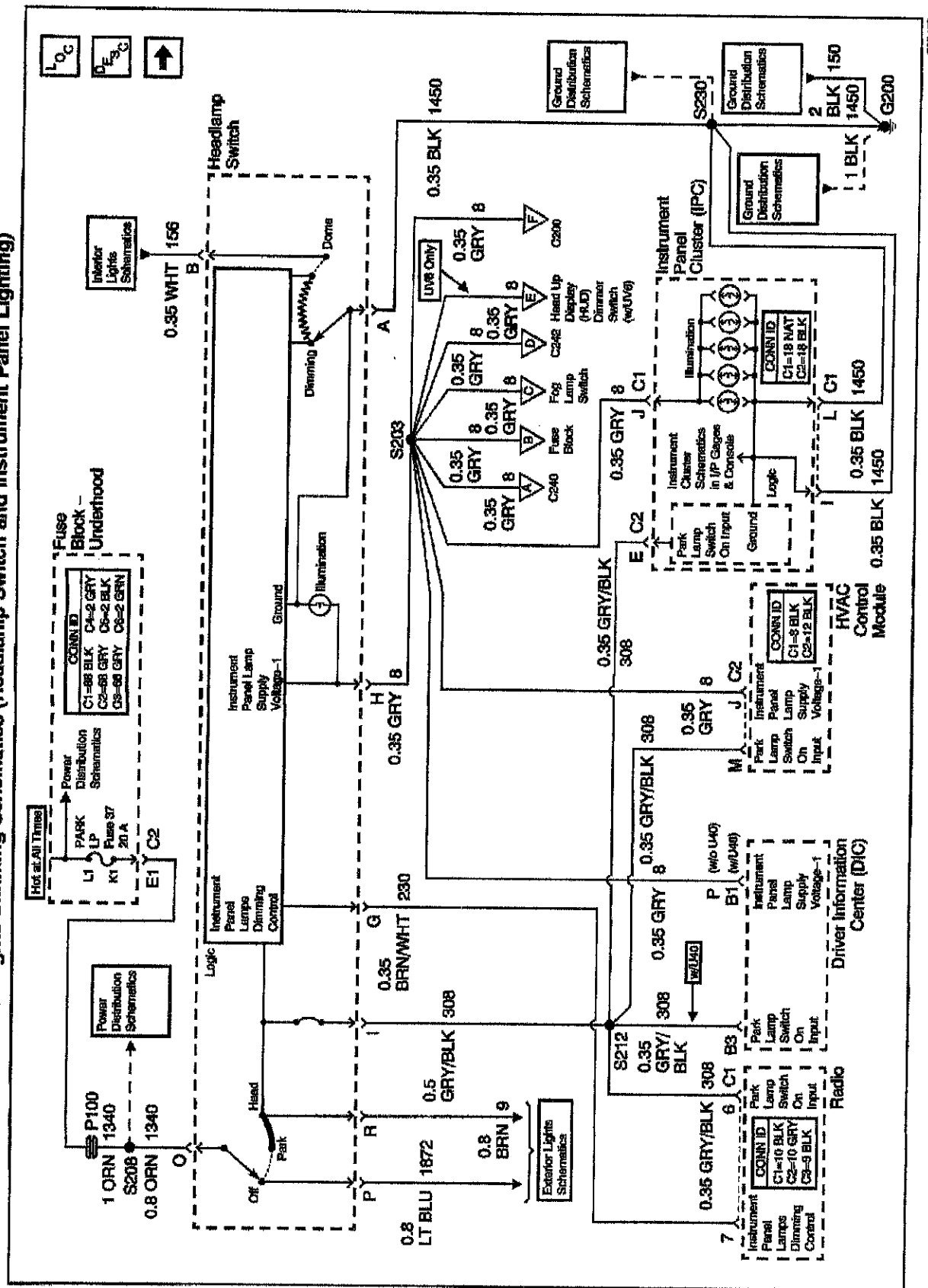
758674

### Headlights/Daytime Running Lights (DRL) Schematics (Daytime Running Lamps (DRL) Control Module Outputs)



Headlights/Daytime Running Lights (DRL) Schematics: Daytime Running Lamps (DRL) Control Module Outputs

Interior Lights Dimming Schematics (Headlamp Switch and Instrument Panel Lighting)

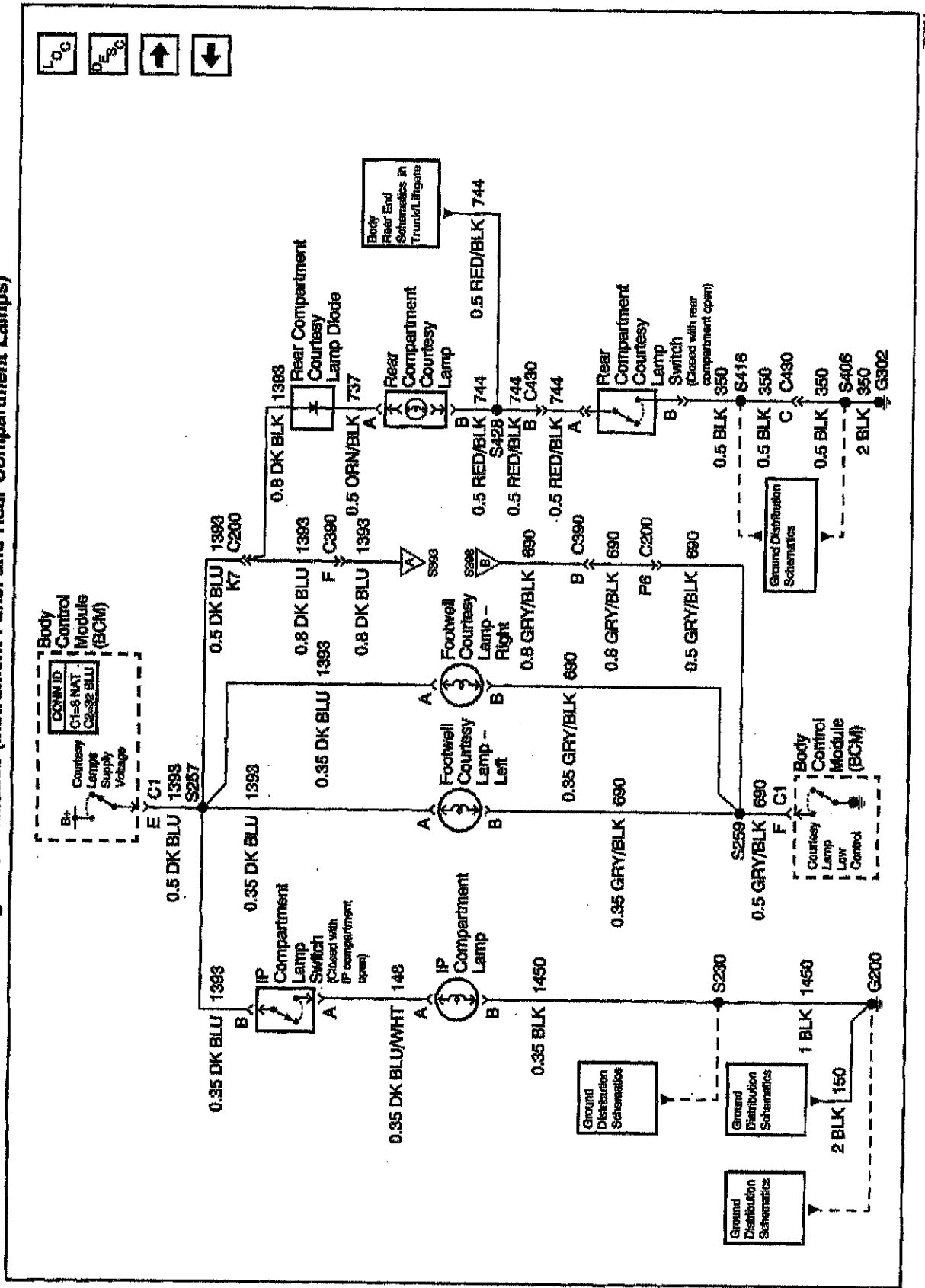


Interior Lights Dimming Schematics: Headlamp Switch And Instrument Panel Lighting

787488



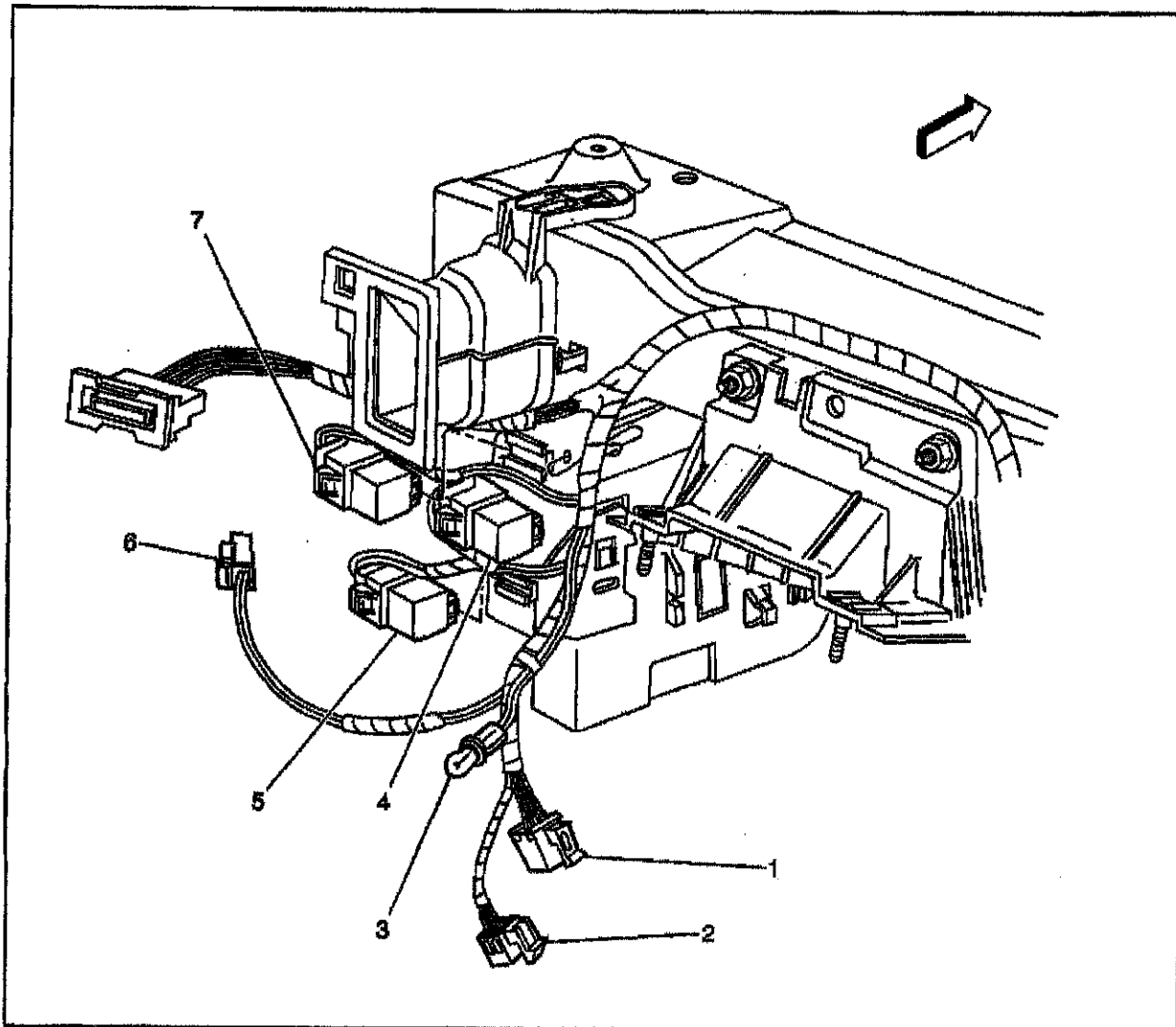
Interior Lights Schematics (Instrument Panel and Rear Compartment Lamps)



Interior Lights Schematics: Instrument Panel And Rear Compartment Lamps

79721

LH Side of V/P



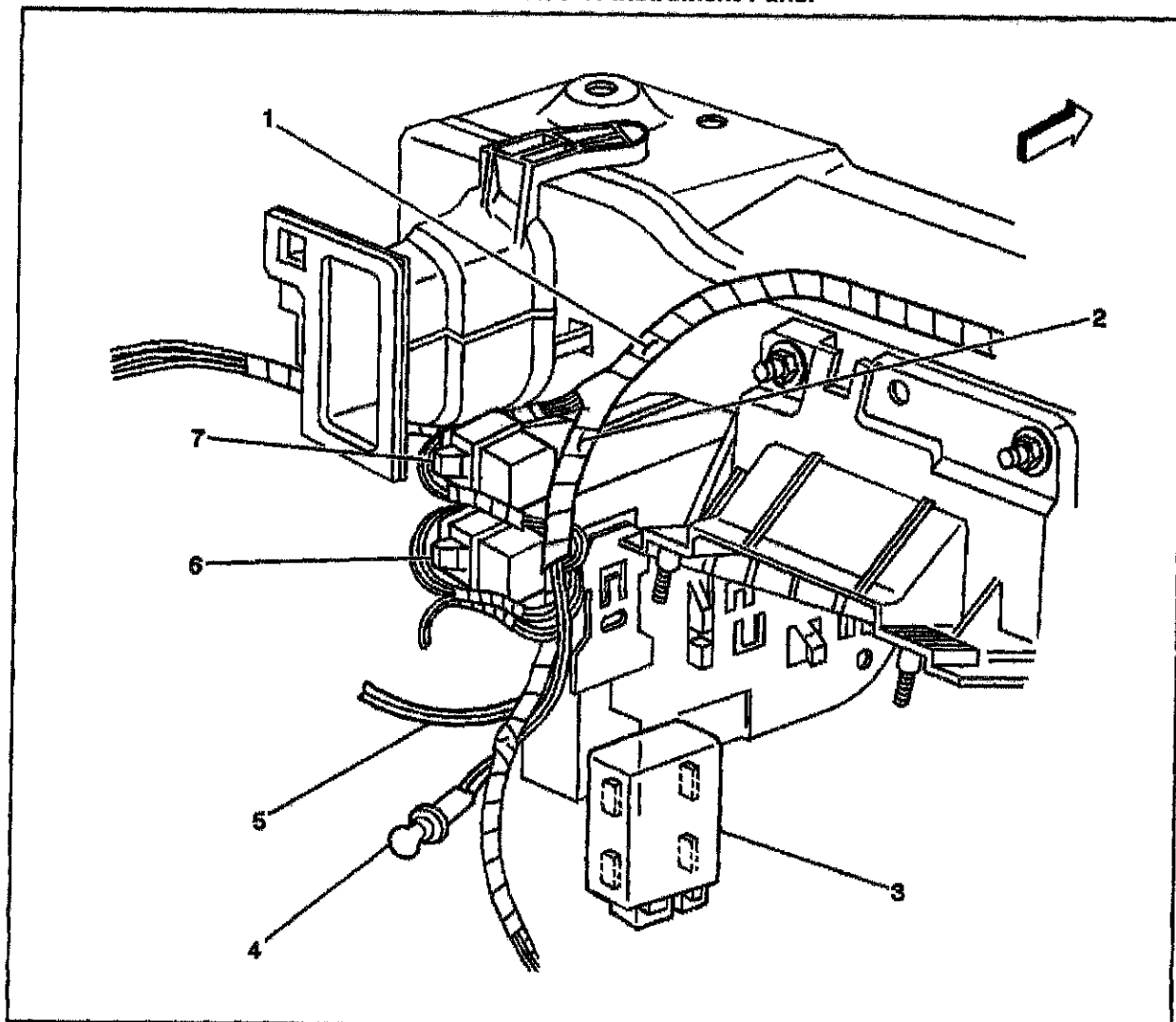
588743

**Legend**

- |  |  |
|--|--|
| (1) Daytime Running Lamps (DRL) Control Module, C2 | (4) Theft Deterrent Relay              |
| (2) Daytime Running Lamps (DRL) Control Module, C1 | (5) Rear Compartment Lid Release Relay |
| (3) Footwell Courtesy Lamp - Left                  | (6) Headlamp Switch, Connector         |
|  | (7) Turn Signal/Hazard Flasher Module  |

**Locations View**

## Below LH Side of Instrument Panel



621726

**Legend**

- |  |  |
|--|--|
| (1) S282                                       | (5) Daytime Running Lamps (DRL) Diode  |
| (2) S265                                       | (6) Turn Signal/Hazard Flasher Module  |
| (3) Daytime Running Lamps (DRL) Control Module | (7) Rear Compartment Lid Release Relay |
| (4) Footwell Courtesy Lamp - Left              |  |

**Locations View**

**Master Electrical Component List**

| Name                      | Location  |
|---------------------------|---|
| C101 (20 cavities)        | IP wiring harness to the engine wiring harness, on the left side of the engine compartment, on the front of the strut tower     |
| C102 (16 cavities)        | Engine wiring harness to the fuel injector wiring harness, on the top of the engine, near the generator                         |
| C103 (3 cavities)         | IP wiring harness to the engine wiring harness, on the left side of the engine compartment, on the front of the strut tower     |
| C105 (4 cavities) (3.1L)  | Engine wiring harness to the coolant fan wiring harness, on the radiator, between the coolant fans                              |
| C105 (4 cavities) (3.8L)  | Engine wiring harness to the coolant fan wiring harness, on the radiator, between the coolant fans                              |
| C108 (5 cavities)         | Engine wiring harness to the fuel injector wiring harness, on the top of the engine near the generator                          |
| C110 (10 cavities) (3.8L) | Engine wiring harness to the ignition control module wiring harness, on the top of the engine, near the ignition control module |
| C113 (14 cavities)        | Engine to the automatic transaxle harness, on the left side of the engine compartment, on the top of the transmission           |
| C120 (3 cavities)         | Lower right side of engine compartment below battery tray   |
| C126 (3 cavities)         | Engine wiring harness to the ECT sensor jumper harness, on the top center of the engine, on the Intake manifold                 |
| C141 (8 cavities)         | Forward lamp wiring harness to the left headlamp wiring harness, behind the headlamp  |

C101 (20 Cavities) - C141 (8 Cavities)

**Master Electrical Component List**

| <b>Name</b>        | <b>Location</b>   |
|--------------------|---|
| C142 (8 cavities)  | Forward lamp wiring harness to the right headlamp wiring harness, behind the headlamp                                       |
| C181 (10 cavities) | IP wiring harness to the engine wiring harness, on the left side of the engine compartment, on the front of the strut tower |
| C200 (56 cavities) | IP wiring harness to the body wiring harness, behind the right side of the IP, near the shroud                              |
| C201 (48 cavities) | IP wiring harness to the steering column wiring harness, behind the IP on the right side of the steering column             |
| C204 (22 cavities) | IP wiring harness to the body wiring harness, behind the right side of the IP, near the shroud                              |
| C205 (4 cavities)  | IP wiring harness to the SIR coil wiring harness, behind the IP, on the right side of the steering column                   |
| C215 (2 cavities)  | IP wiring harness to the SIR coil wiring harness, behind the IP, on the right side of the steering column                   |
| C216 (2 cavities)  | IP wiring harness to the IP inflator module wiring harness, behind the IP, on the right side of the steering column         |
| C240 (10 cavities) | IP wiring harness to the front floor console wiring harness, behind the front end of the console                            |
| C242 (3 cavities)  | IP wiring harness to the ashtray wiring harness, behind the ashtray   |
| C290 (1 cavity)    | IP antenna to the body harness antenna lead, behind the right side of the IP, near the base of the A pillar (kick panel)    |
| C301 (40 cavities) | Body wiring harness to the left front door wiring harness, behind the trim at the base of the A-pillar                      |
| C302 (40 cavities) | Body wiring harness to the right front door wiring harness, behind the trim at the base of the A-pillar                     |
| C311 (6 cavities)  | Body wiring harness to the driver seat wiring harness, below the driver seat  |
| C312 (Cavities)    | Seat wiring harness to the seat back wiring harness below the drivers seat  |
| C325 (2 cavities)  | Body wiring harness to console harness under the center console   |
| C355 (8 cavities)  | Body wiring harness to the left rear door wiring harness, behind the trim at the base of the B-pillar                       |
| C356 (8 cavities)  | Body wiring harness to the right door wiring harness, behind the trim at the base of the B-pillar                           |

C142 (8 Cavities) - C356 (8 Cavities)

**Master Electrical Component List**

| <b>Name</b>        | <b>Location</b>   |
|--------------------|---|
| C390 (8 cavities)  | Body wiring harness to the roof wiring harness, in the rear compartment, under the right side of the rear window panel                                    |
| C391 (8 cavities)  | Body wiring harness to the roof wiring harness, above the rear package shelf near the left rear C-pillar.   |
| C393               | Body wiring harness cellular telephone COAX to the roof wiring harness cellular telephone COAX, above the rear package shelf near the left rear C-pillar. |
| C398 (2 cavities)  | Roof harness to the sunroof harness, above the headliner, near the right sunshade   |
| C399 (1 cavity)    | Body harness antenna to the radio antenna module lead, under the right rear deck trim panel   |
| C400 (6 cavities)  | Body wiring harness to the rear lamp wiring harness, behind the trim at the right rear corner of the rear compartment                                     |
| C405 (8 cavities)  | Body wiring harness to the fuel tank wiring harness, in the rear compartment floor, forward of the spare tire well  |
| C423 (22 cavities) | Body wiring harness to the OnStar jumper harness, in the rear compartment near the vehicle interface unit (VIU)   |
| C430 (4 cavities)  | Body wiring harness to the rear compartment lid lock release wiring harness, in the rear compartment, under the left side of the rear window panel        |

C390 (8 Cavities) - C430 (4 Cavities)

**Master Electrical Component List**

| <b>Name</b> | <b>Location</b>  |
|-------------|--|
| G100        | (CKT 50) Right side of the engine compartment, at the base of the battery                                    |
| G101        | (CKT 1350) Left side of the front end upper tie bar, near the headlamp                                       |
| G111 (3.8L) | (CKT 51) Right side of the engine, on the ignition control module bracket                                    |
| G113        | (CKT'S 50, 451) (and CKT 51 on 3.1L) Lower left front of the engine, on the transaxle stud, near the starter |
| G117 (3.1L) | (CKT 1050) Lower left front of the engine, on the transaxle stud, above the starter                          |
| G117 (3.8L) | (CKT 1050) Lower left front of the engine on transaxle stud, near the starter                                |
| G119        | (CKT's 250, 1650) Left side of the engine compartment, at the base of the left strut tower                   |
| G200        | (CKT'S 150, 1450, 1550) Right side of the IP cross beam, behind the fuse block                               |
| G201        | (CKT 351) Below the IP, on the right side of the steering column, on the steering column support             |
| G205        | (CKT's 251, 1751) Left side of the IP, at the base of the steering column                                    |
| G301        | (CKT 750) Inside the left door sill, forward of the left front seat  |
| G302        | (CKT 350) Right door sill, forward of the right front seat   |

G100 - G302

**Master Electrical Component List**

| <b>Name</b> | <b>Location</b>   |
|-------------|---|
| S105        | (CKT 1050) Engine wiring harness, in the front of the engine compartment, approximately 4 cm (2 in) from the C105 (engine coolant fan jumper connector) breakout                |
| S106        | (CKT 451) Engine wiring harness, on the left side of the engine compartment, approximately 44 cm (17 in) from the PCM   |
| S109        | (CKT 639) Fuel injector wiring harness, on the top of the engine, approximately 2 cm (1 in) from the fuel injector 2 breakout   |
| S115        | (CKT 839) Automatic transaxle wiring harness, inside the transaxle housing, approximately 19 cm (7 in) from C113  |
| S121        | (CKT 469) Fuel Injector Wiring Harness  |
| S124        | (CKT 1350) Forward lamp wiring harness, behind the left headlamp, approximately 30 cm (12 in) from the G101 breakout  |
| S125        | (CKT 1650) IP wiring harness, on the left rear of the engine compartment, approximately 7 cm (3 in) from the windshield wiper motor breakout                                    |
| S131        | (CKT 800) Engine wiring harness, on the left side of the engine compartment, approximately 4 cm (2 in) from the EBTCM breakout  |
| S144        | (CKT 644) Ignition control module wiring harness, on the top of the engine near the ignition control module, approximately 12 cm (5 in) from the inline connector C110 breakout |
| S145        | (CKT 836) Ignition control module wiring harness, on the top of the engine near the ignition control module, approximately 12 cm (5 in) from the inline connector C110 breakout |
| S202        | (CKT 640) IP harness, behind the center of the IP, approximately 17 cm (7 in) from the data link connector breakout   |

S105 - S202



**Master Electrical Component List**

| <b>Name</b> | <b>Location</b>  |
|-------------|--|
| S203        | (CKT 8) IP harness, above the instrument cluster, approximately 4 cm (2 in) from the fog lamp switch, instrument cluster breakout                    |
| S204        | (CKT 9) IP wiring harness, behind the IP near right side of the steering column, approximately 4 cm (2 in) from the data link connector breakout     |
| S205        | (CKT 17) IP wiring harness, below the IP near C201, approximately 14 cm (6 in) from the G201 breakout  |
| S206        | (CKT 541) IP wiring harness, right side of the steering column, approximately 4 cm (2 in) from the data link connector breakout                      |
| S207        | (CKT 33) IP wiring harness, behind the left side of IP, approximately 38 cm (14 in) from the body control module                                     |
| S208        | (CKT 1340) IP Wiring Harness, left side of the IP Approximately 8 cm (2 in) from the Headlamp Switch breakout towards the driver information center. |
| S209        | (CKT 39) IP wiring harness, behind the right side of the instrument cluster, approximately 20 cm (8 in) from the driver information center breakout  |
| S210        | (CKT 1450) Cigar Lighter Jumper Harness  |
| S211        | (CKT 1550) IP wiring harness, behind the center of the IP, approximately 11 cm (4 in) from the data link connector                                   |
| S212        | (CKT 308) IP wiring harness, behind the right side of the instrument cluster, approximately 13 cm (5 in) from the driver information center breakout |
| S213        | (CKT 150) IP wiring harness, approximately 4 cm (2 in) from the blower motor resistors/control module breakout                                       |
| S218        | (CKT 1807) IP wiring harness, below right side of IP compartment, approximately 4 cm (2 in) from the blower motor resistor breakout                  |
| S219        | (CKT 11) IP wiring harness, behind the top of the instrument panel cluster, approximately 9 cm (4 in) from the instrument panel cluster breakout     |
| S220        | (CKT 75) IP wiring harness, below the right side of the IP compartment, approximately 8 cm (3 in) from the C200 breakout                             |
| S221        | (CKT 10) IP wiring harness, right side of the steering column, approximately 17 cm (7 in) from the data link connector breakout                      |
| S225        | (CKT 835) IP wiring harness, right side of the steering column, approximately 5 cm (2 in) from the data link connector                               |
| S228        | (CKT 3) IP wiring harness right side of IP approximately 1 cm (1 in) from the SDM breakout towards the fuse block - IP                               |

S203 - S228

## Master Electrical Component List

| Name | Location  |
|------|---|
| S229 | (CKT 26) IP wiring harness left side of IP approximately 6 cm (2 in) from the data link connector breakout towards the stoplamp switch                                |
| S230 | (CKT 1450) IP wiring harness, on the right side of the steering column, approximately 4 cm (2 in) from the data link connector breakout                               |
| S236 | (CKT 740) IP wiring harness, on the right side of the steering column, approximately 20 cm (8 in) from C200   |
| S237 | (CKT 800) IP wiring harness, behind the center of IP, approximately 30 cm (12 in) from the data link connector breakout   |
| S238 | (CKT 440) IP wiring harness, below the center of the IP, approximately 27 cm (11 in) from C240  |
| S239 | (CKT 351) IP wiring harness, on the left center of IP, approximately 4 cm (2 in) from the C200 breakout   |
| S240 | (CKT 239) IP wiring harness right side of IP approximately 17 cm (7 in) from the fuse block - IP  |
| S249 | (CKT 243) IP wiring harness, below the IP near C201, approximately 4 cm (2 in) from the G201 breakout   |
| S257 | (CKT 1393) IP wiring harness, behind the center of IP, approximately 24 cm (9 in) from the data link connector breakout   |
| S259 | (CKT 690) IP wiring harness, below the right side of the IP, near the blower motor, approximately 8 cm (3 in) from the blower motor resistors/control module breakout |
| S261 | (CKT 12) IP wiring harness approximately 5 cm (2 in) from P100 behind the IP  |
| S264 | (CKT 1020) IP wiring harness, below the center of IP, approximately 34 cm (13 in) from C240   |
| S266 | (CKT 739) IP wiring harness, below the steering column near C201, approximately 21 cm (8 in) from the stoplamp switch   |
| S273 | (CKT 744) IP wiring harness, behind the right side of the instrument panel cluster, approximately 22 cm (9 in) from the remote control door lock receiver breakout    |
| S285 | (CKT 1550) IP wiring harness, on the right side of the steering column, approximately 14 cm (5 in) from the data link connector breakout                              |
| S289 | (CKT 15) IP wiring harness, behind the right side of the instrument cluster, approximately 7 cm (3 in) from the driver information center breakout                    |
| S290 | (CKT 14) IP wiring harness, behind the right side of the instrument cluster, approximately at the driver information center breakout                                  |
| S303 | (CKT 750) Body wiring harness, below the left side of the driver seat, approximately 5 cm (2 in) from the G301 breakout   |

S229 - S303

**Master Electrical Component List**

| <b>Name</b> | <b>Location</b>   |
|-------------|---|
| S307        | (CKT 1307) Body wiring harness, on the floor near center of the vehicle, approximately 20 cm (8 in) from the C325 in-line to the front floor console wiring harness                 |
| S308        | (CKT 194) Body wiring harness, below the right side of the front passenger seat, approximately 11 cm (4 in) from the G302 breakout  |
| S309        | (CKT 49) Body wiring harness, below the right side of the front passenger seat, approximately 4 cm (2 in) from the G302 breakout  |
| S310        | (CKT 143) Body Harness near right kick panel approximately 16 cm (6 in) from the C302 breakout  |
| S314        | (CKT 294) Body wiring harness, below the right side of the front passenger seat, approximately 4 cm (2 in) from the G302 breakout   |
| S315        | (CKT 295) Body wiring harness, below the right front passenger seat, approximately 10 cm (4 in) from the right wiring channel   |
| S316        | (CKT 351) Body wiring harness, below the right front passenger seat, approximately 17 cm (7 in) from the right wiring channel   |
| S330        | (CKT 750) Driver seat wiring harness, below the driver seat, approximately 26 cm (10 in) from C311  |
| S331        | (CKT 340) Driver seat wiring harness, below the driver seat, approximately 36 cm (14 in) from C311  |
| S332        | (CKT 2040) Driver seat wiring harness, below the driver seat, approximately 10 cm (4 in) from the lumbar adjuster relay breakout  |
| S374        | (CKT 8) Front floor console wiring harness, near the automatic transaxle control, approximately 22 cm (9 in) from the automatic transaxle control position indicator bulb connector |
| S375        | (CKT 150) Front floor console wiring harness, near the automatic transaxle control, approximately 11 cm (4 in) from the automatic transaxle control connector                       |
| S376        | (CKT 1020) Front floor console wiring harness, near the automatic transaxle control, approximately 4 cm (2 in) from the automatic transaxle control connector                       |
| S390        | (CKT 350) Dome lamp wiring harness, near the center of the windshield header approximately 4 cm (2 in) from the windshield header courtesy/reading lamps breakout                   |
| S393        | (CKT 1393) Dome lamp wiring harness, approximately 4 cm (2 in) from the right courtesy lamp breakout  |

S307 - S393

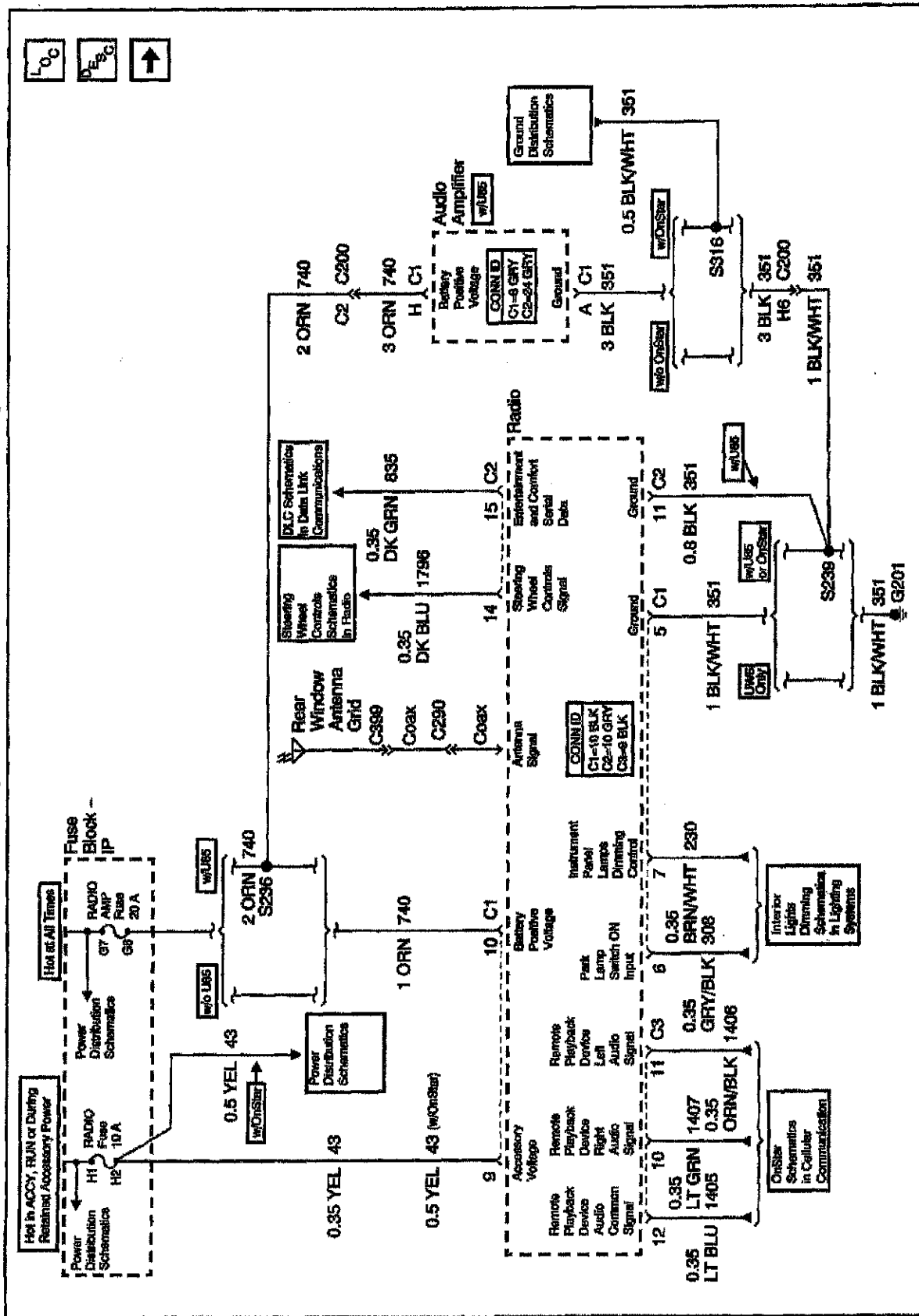
**Master Electrical Component List**

| <b>Name</b> | <b>Location</b>   |
|-------------|---|
| S394        | (CKT 349) Dome lamp wiring harness, near the center of windshield header, approximately 12 cm (5 in) from the inside rearview mirror breakout towards the vanity mirror lamp - right          |
| S398        | (CKT 690) Dome lamp wiring harness, near the right center pillar, approximately 4 cm (2 in) from the left courtesy lamp breakout  |
| S402        | (CKT 350) Rear lamp wiring harness, behind the right tail lamp, approximately 4 cm (2 in) from the right tail/stop/turn signal lamp breakout  |
| S406        | (CKT 350) Body wiring harness, below the rear window panel, approximately 10 cm (4 in) from the C405 (inline connector to fuel tank harness) breakout   |
| S407        | (CKT 9) Rear lamp wiring harness, inside the right side of the rear compartment, approximately 12 cm (5 in) from pass-through P400  |
| S409        | (CKT 2759) Body wiring harness, below the rear window panel between C405 (Inline connector to the fuel tank harness) and the C405 breakout, approximately 10 cm (4 in) from the C405 breakout |
| S416        | (CKT 350) Rear compartment lid wiring harness, approximately 19 cm (8 in) from the rear compartment lid lock release actuator   |
| 423         | (CKT 1340) OnStar jumper harness approximately 4 cm (2 in) from the vehicle communications unit (VCU) breakout towards C423   |
| S428        | (CKT 744) Body wiring harness, below the rear window panel, approximately 18 cm (7 in) from C405 (inline connector to the fuel tank harness)  |
| S504        | (CKT 750) Left front door wiring harness, approximately 8 cm (3 in) from the door lock switch - driver breakout towards the door lock - driver  |
| S505        | (CKT 750) Left front door wiring harness, approximately 8 cm (3 in) from the door lock switch - driver breakout towards C301  |
| S506        | (CKT 8) Left front door wiring harness, approximately 4 cm (2 in) from the door lock switch - driver breakout   |
| S604        | (CKT 350) Right front door wiring harness, approximately 8 cm (3 in) from the door lock switch - front passenger breakout towards the door lock - front passenger                             |
| S606        | (CKT 8) right front door wiring harness, approximately 4 cm (2 in) from the right door lock switch - front passenger breakout towards C302  |

S394 - S606

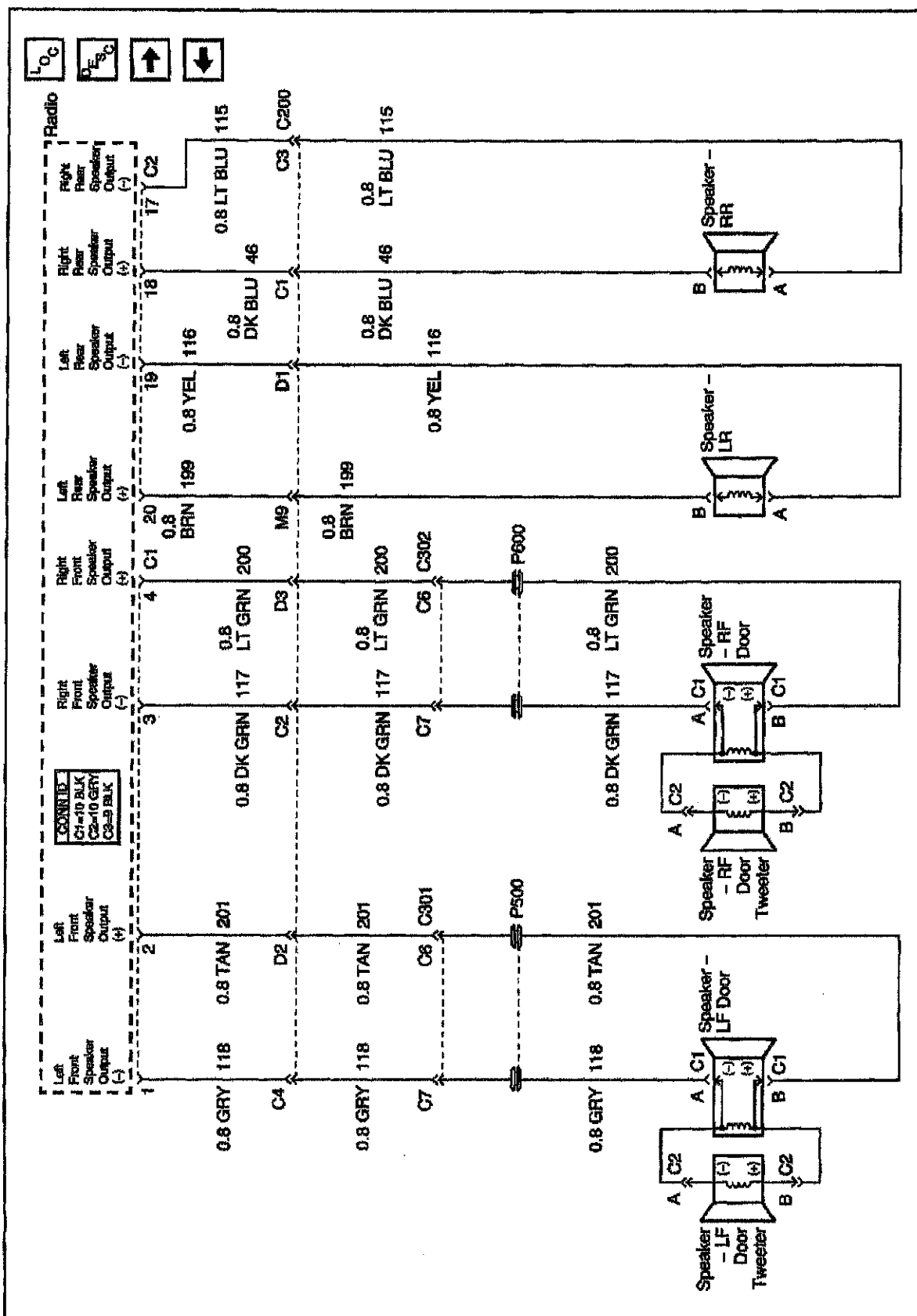
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Radio/Audio System Schematics (Power and Ground)



Radio/Audio System Schematics: Power And Ground

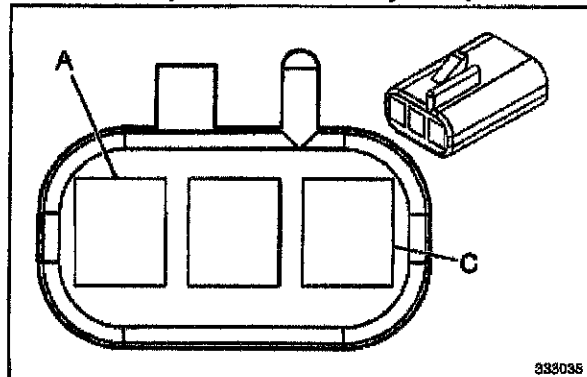
Radio/Audio System Schematics (Radio to Speakers (w/o U85))



Radio/Audio System Schematics: Radio To Speakers (W/O U85)

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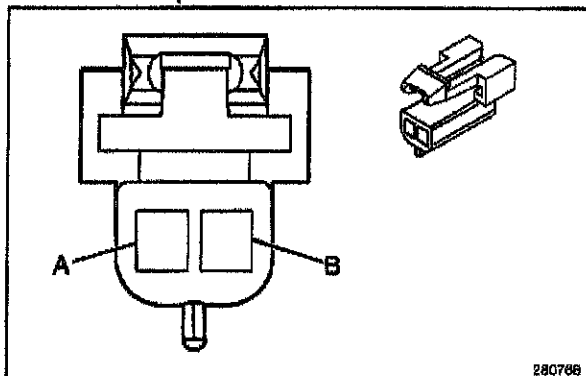
**Rear Compartment Courtesy Lamp Switch**



| <b>Connector Part Information</b> |            | <ul style="list-style-type: none"> <li>• 12047781</li> <li>• 3-Way F Metri-Pack 150 Series (BLK)</li> </ul> |                          |
|-----------------------------------|------------|---|--------------------------|
| Pin                               | Wire Color | Circuit No.   | Function                 |
| A                                 | RED/BLK    | 744   | Trunk Ajar Switch Signal |
| B                                 | BLK        | 350   | Ground                   |
| C                                 | —          | —   | Not Used                 |

**Rear Compartment Courtesy Lamp Switch**

**Rear Compartment Lid Release Actuator**



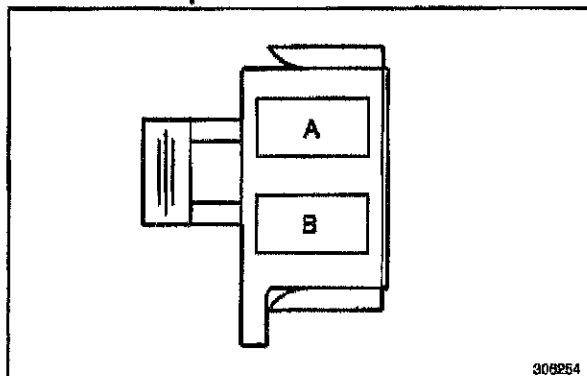
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|                                   |                   |   |                             |
|-----------------------------------|-------------------|---|-----------------------------|
| <b>Connector Part Information</b> |                   | <ul style="list-style-type: none"> <li>• 12052832</li> <li>• 2-Way F Metri-Pack 150 Series (BLK)</li> </ul> |                             |
| <b>Pin</b>                        | <b>Wire Color</b> | <b>Circuit No.</b>  | <b>Function</b>             |
| A                                 | BLK/WHT           | 56  | Trunk Release Motor Control |
| B                                 | BLK               | 350   | Ground                      |

**Rear Compartment Lid Release Actuator**



**Rear Compartment Lid Release Switch**

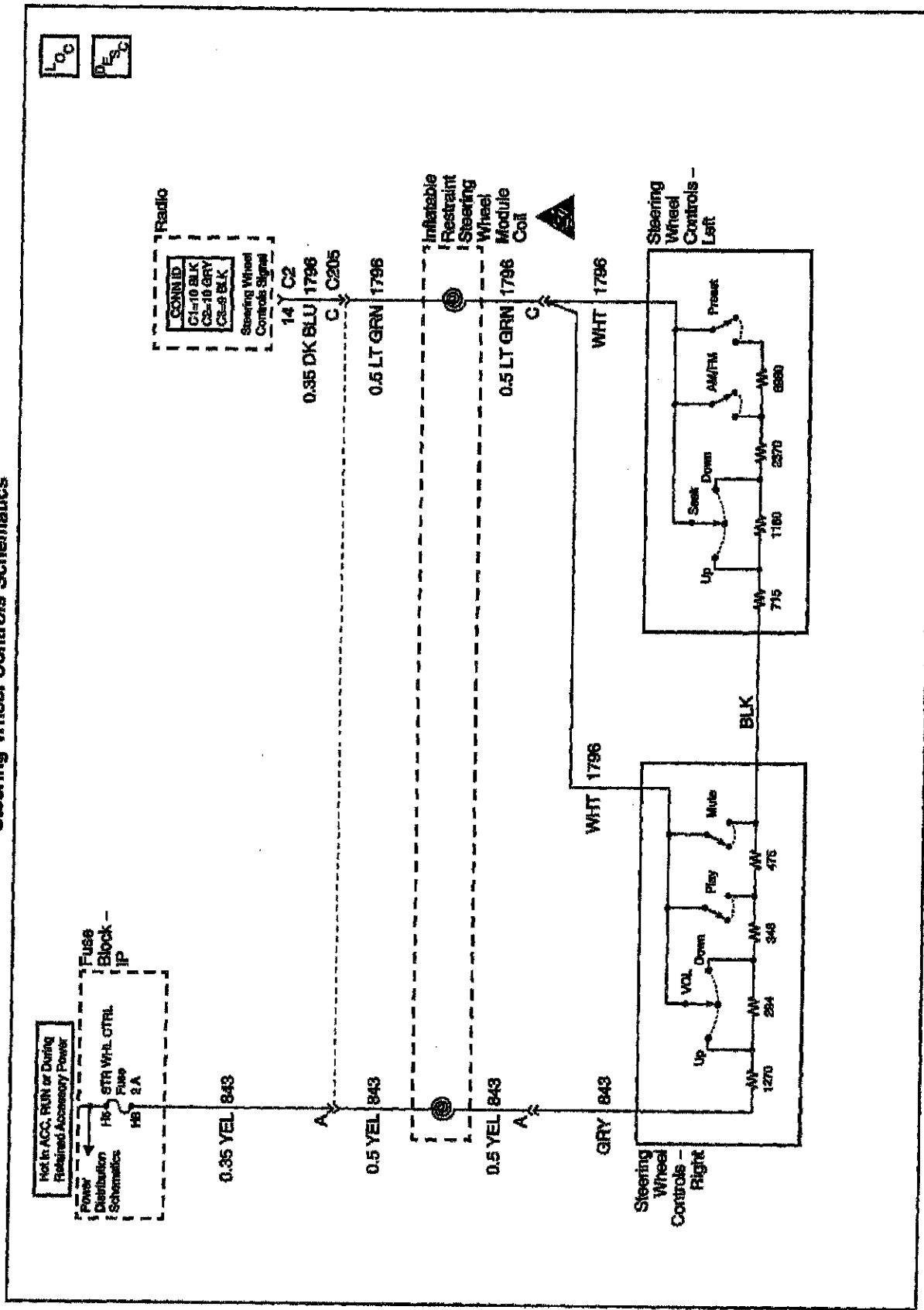


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| <b>Connector Part Information</b> |            | <ul style="list-style-type: none"> <li>• 12034577</li> <li>• 2-Way F Metri-Pack 150 Series (NAT)</li> </ul> |  |
|-----------------------------------|------------|---|--|
| Pin                               | Wire Color | Circuit No.   | Function                                 |
| A                                 | BLK/WHT    | 56  | Trunk Release Motor Control              |
| B                                 | LT GRN     | 275   | Park Neutral Position Switch Park Signal |

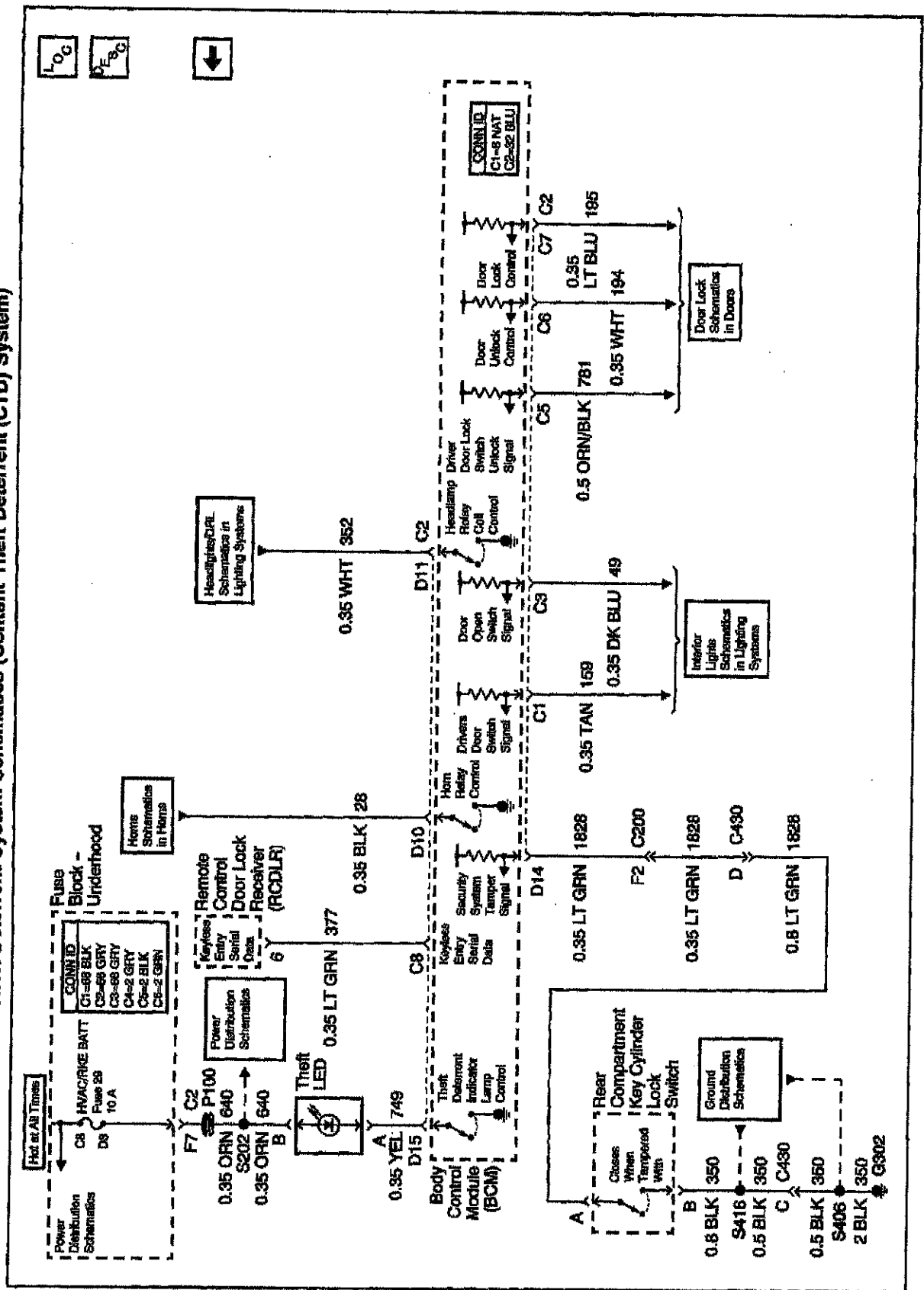
**Rear Compartment Lid Release Switch**

Steering Wheel Controls Schematics



Steering Wheel Controls Schematics

Theft Deterrent System Schematics (Content Theft Deterrent (CTD) System)



Theft Deterrent System Schematics: Content Theft Deterrent (CTD) System

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