Collision Repair

Specifications

Fastener Tightening Specifications

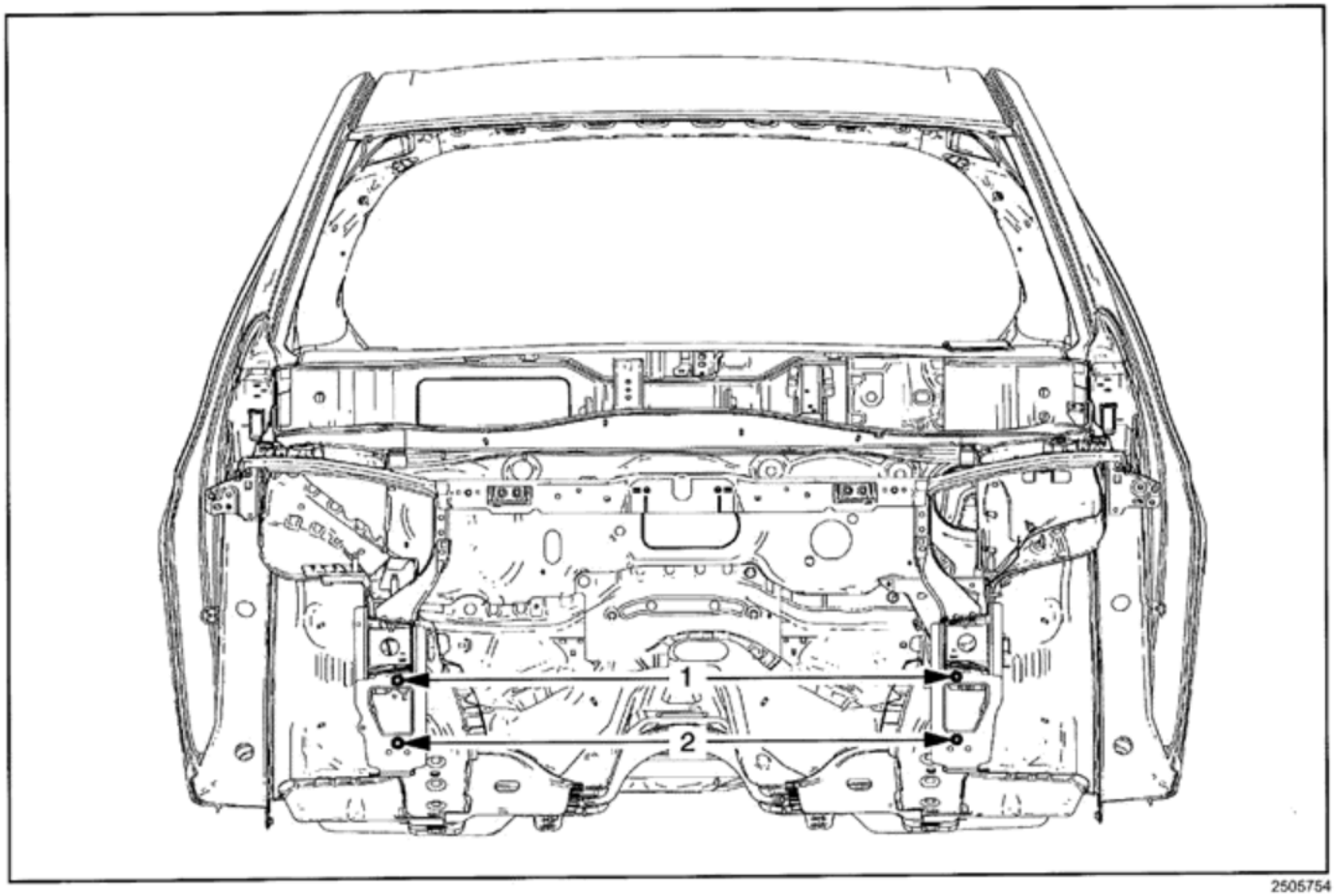
Application	Specification	
	Metric	English
Front Upper Tie Bar Bolts	9 N•m	80 lb in
Front Upper Tie Bar Support Bolts	22 N•m	16 lb ft

Dimensions - Body (5HB)

Point-to-point measurements are for reference only. All measurements are given in millimeters. Use these measurements for diagnosing and estimating. Point-to-point measurements are duplicated with tram bar pointers set at equal lengths. All die marks, holes, slots, and fasteners are measured to the center. All dimensions are symmetrical unless otherwise specified.

Point-to-Point Measurements

Front End



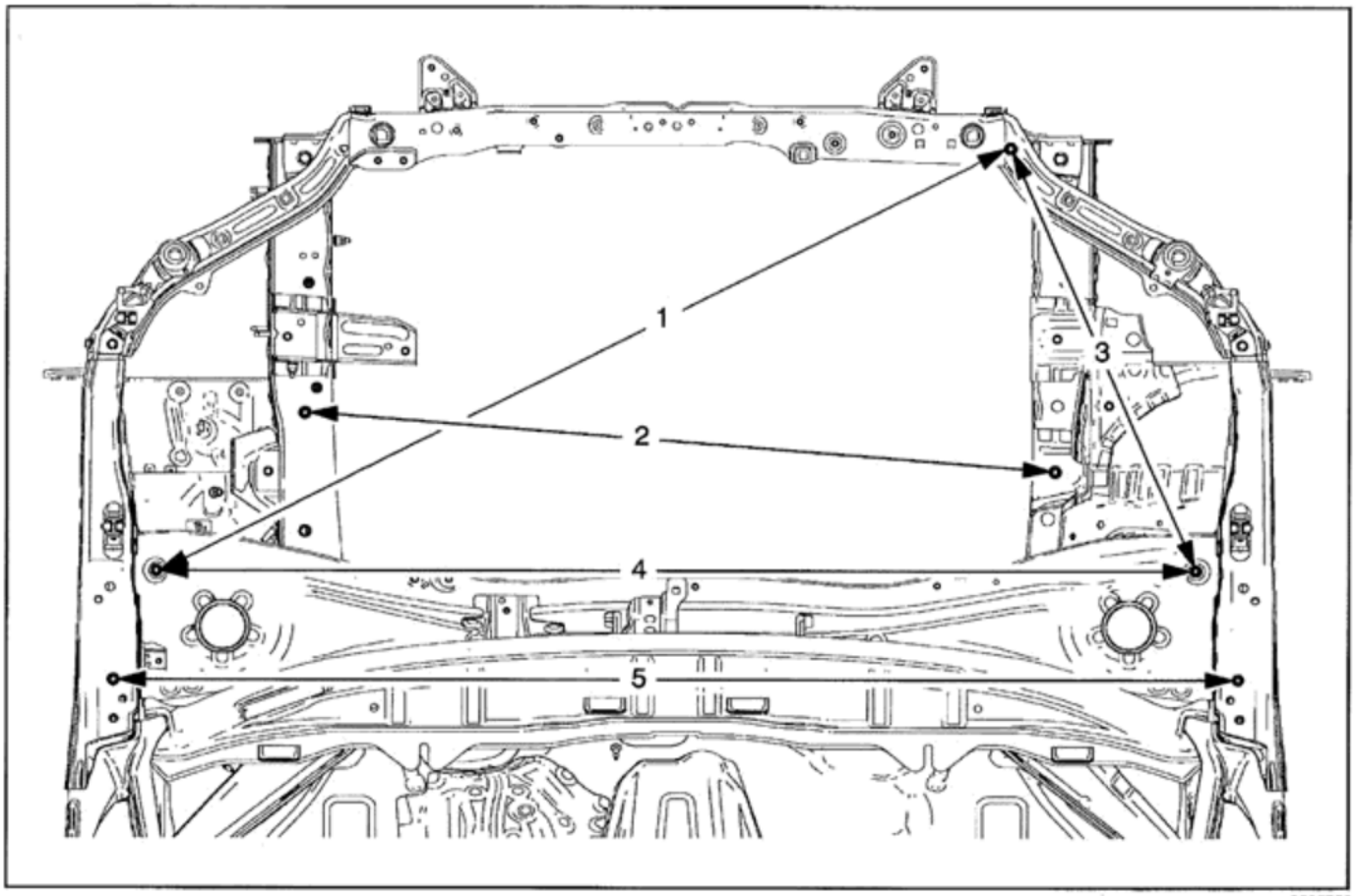
2505754

Legend

(1) 926 mm

(2) 926 mm

Engine Compartment

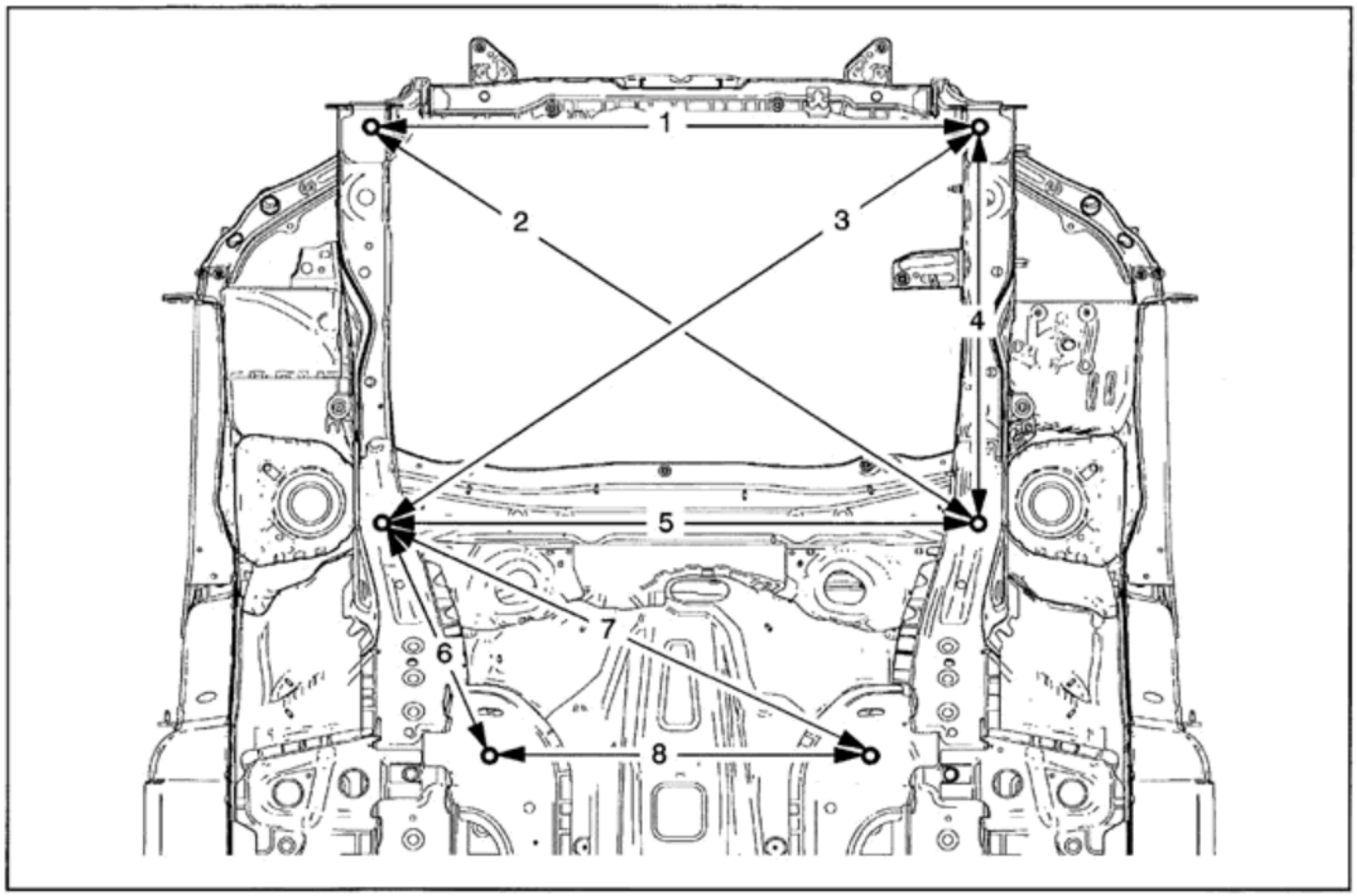


2505756

Legend

(1) 1201 mm
(2) 944 mm
(3) 599 mm
(4) 1300 mm
(5) 1409 mm

Front End Lower

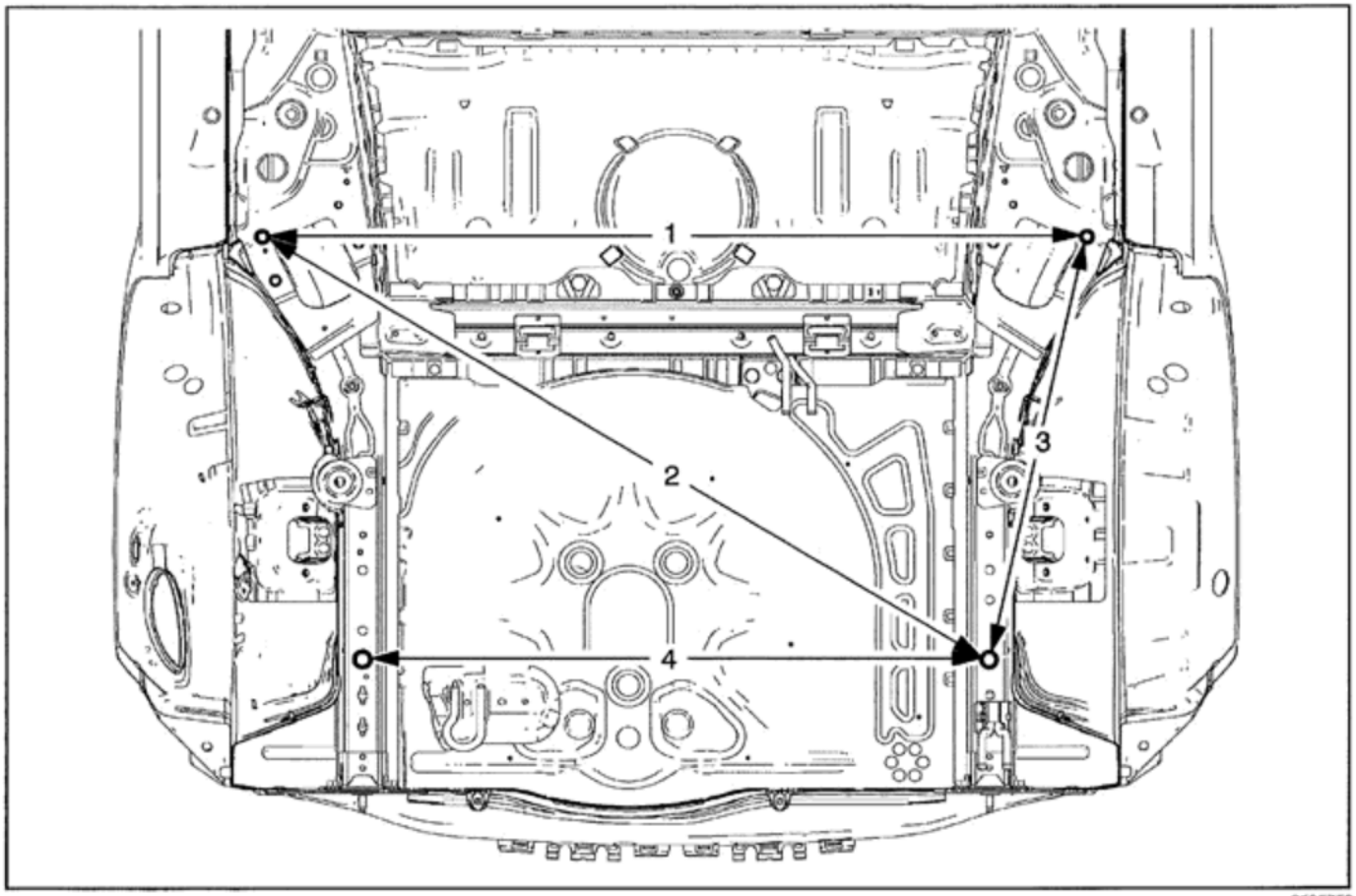


2505757

Legend

(1) 928 mm
(2) 1122 mm
(3) 1110 mm
(4) 633 mm
(5) 910 mm
(6) 440 mm
(7) 852 mm
(8) 584 mm

Rear End Lower

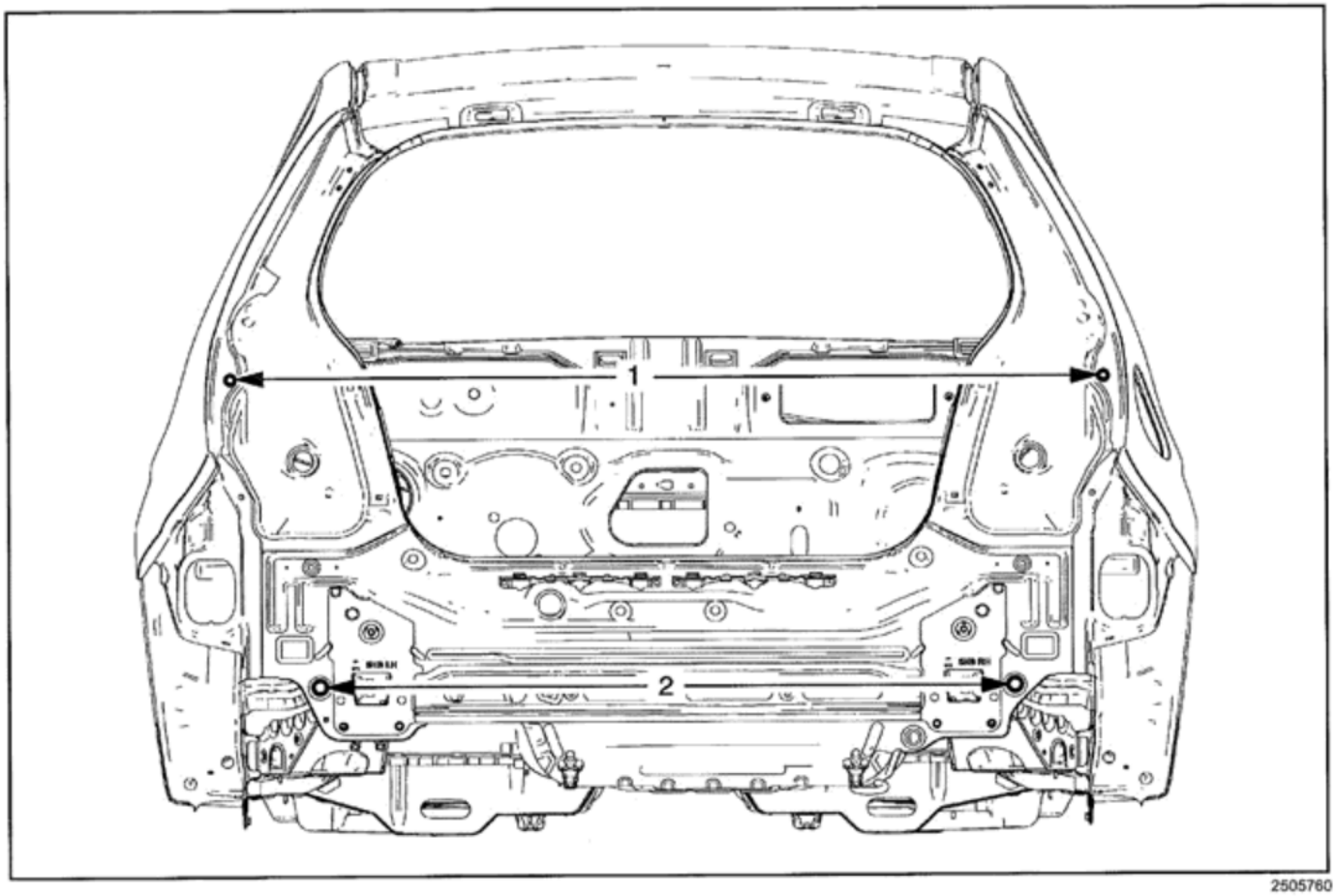


2505758

Legend

(1) 1233 mm
(2) 1259 mm
(3) 627 mm
(4) 966 mm

Rear End



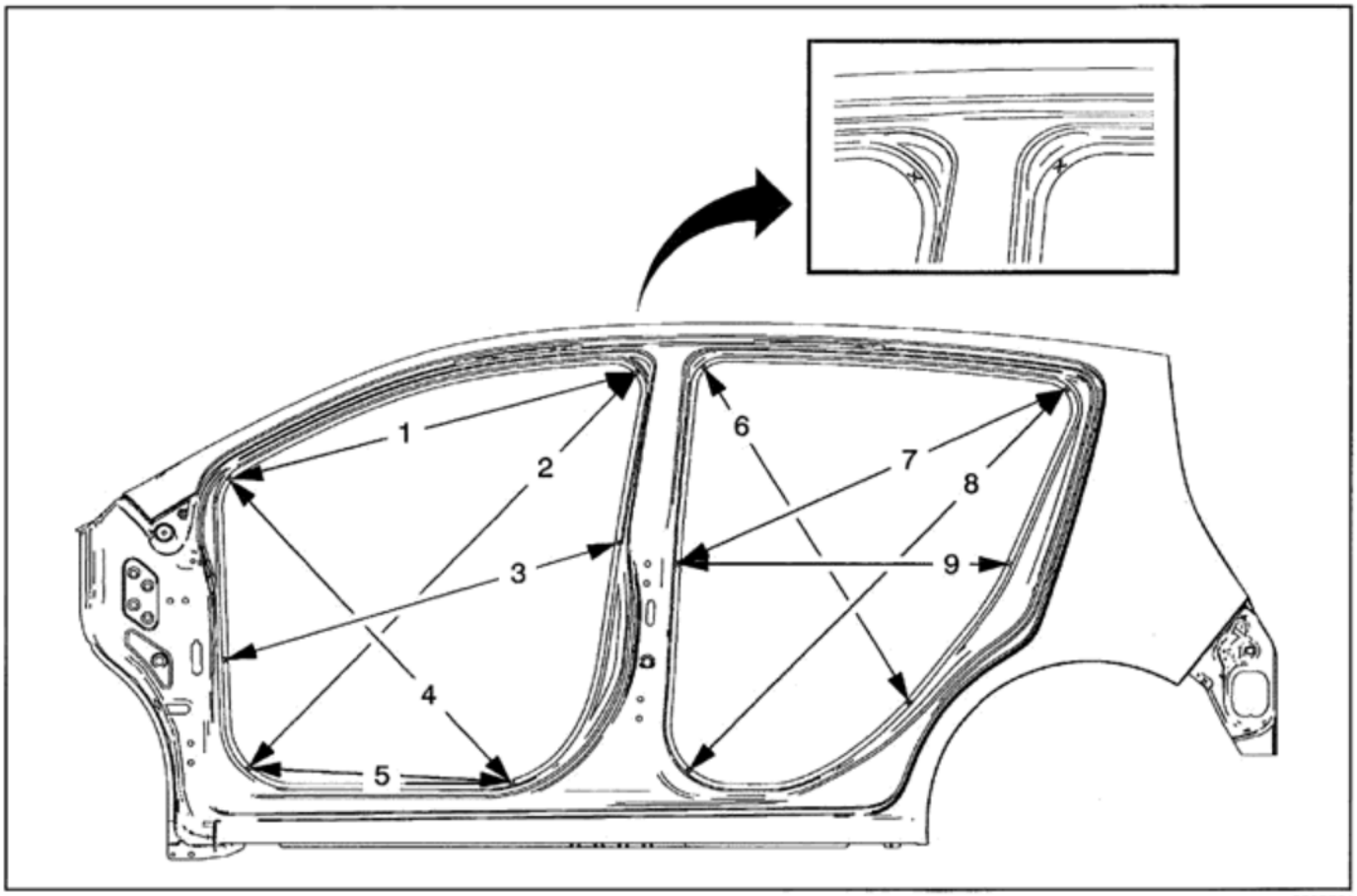
2505760

Legend

(1) 1425 mm

(2) 1132 mm

Side



2505761

Legend

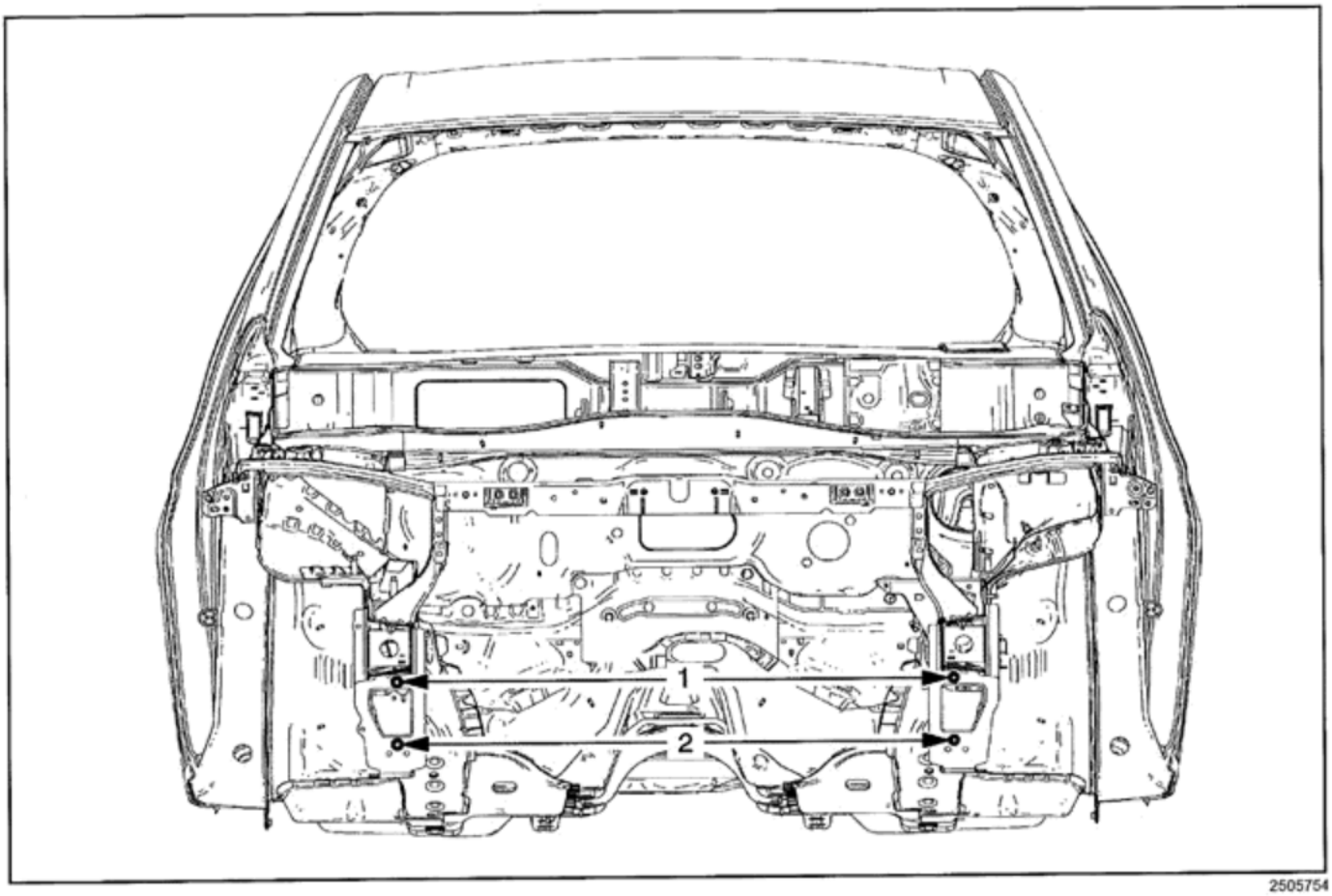
(1) 985 mm
(2) 1319 mm
(3) 955 mm
(4) 981 mm
(5) 611 mm
(6) 946 mm
(7) 1005 mm
(8) 1277 mm
(9) 772 mm

Dimensions - Body (4NB)

Point-to-point measurements are for reference only. All measurements are given in millimeters. Use these measurements for diagnosing and estimating. Point-to-point measurements are duplicated with tram bar pointers set at equal lengths. All die marks, holes, slots, and fasteners are measured to the center. All dimensions are symmetrical unless otherwise specified.

Point-to-Point Measurements

Front End



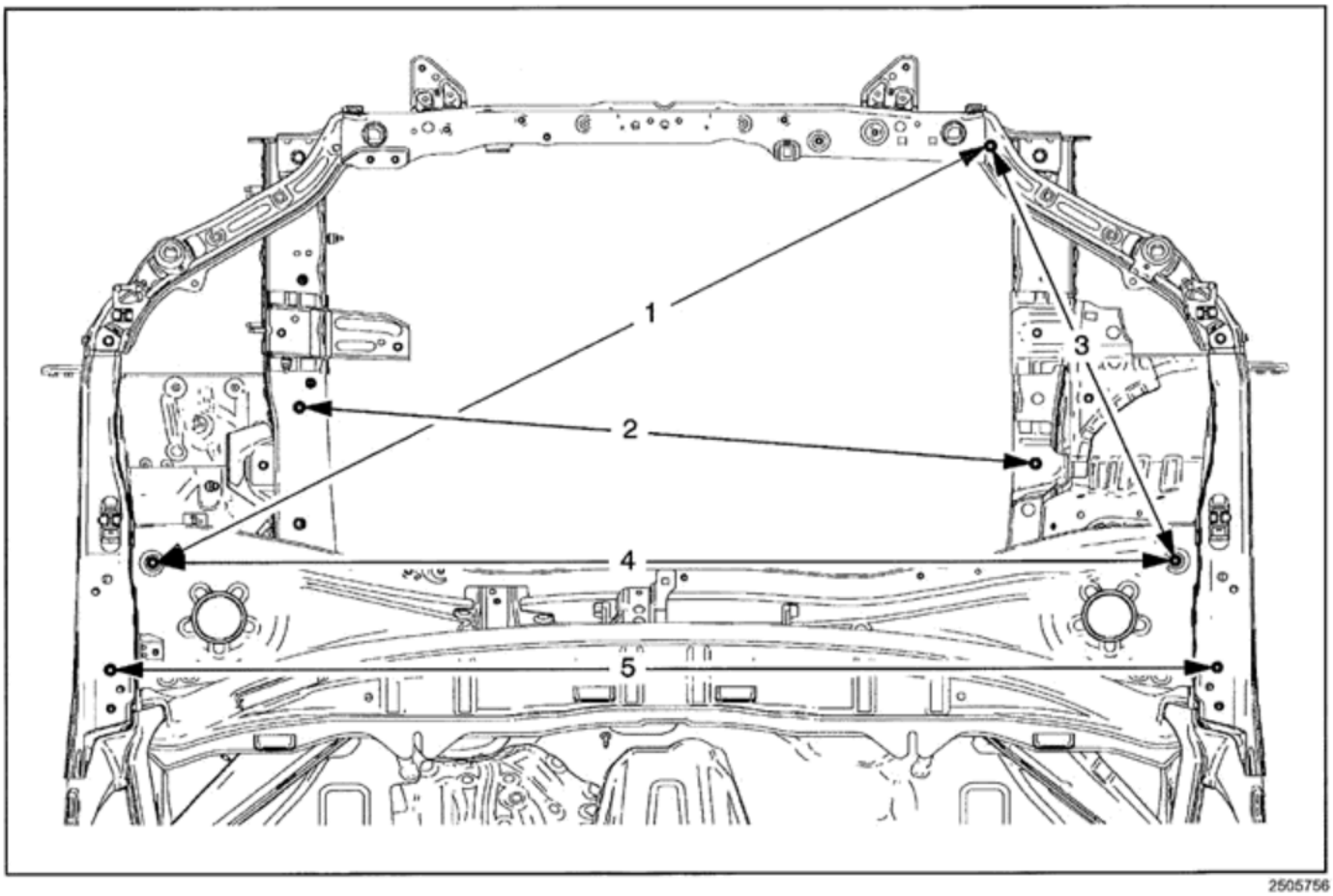
2505754

Legend

(1) 926 mm

(2) 926 mm

Engine Compartment

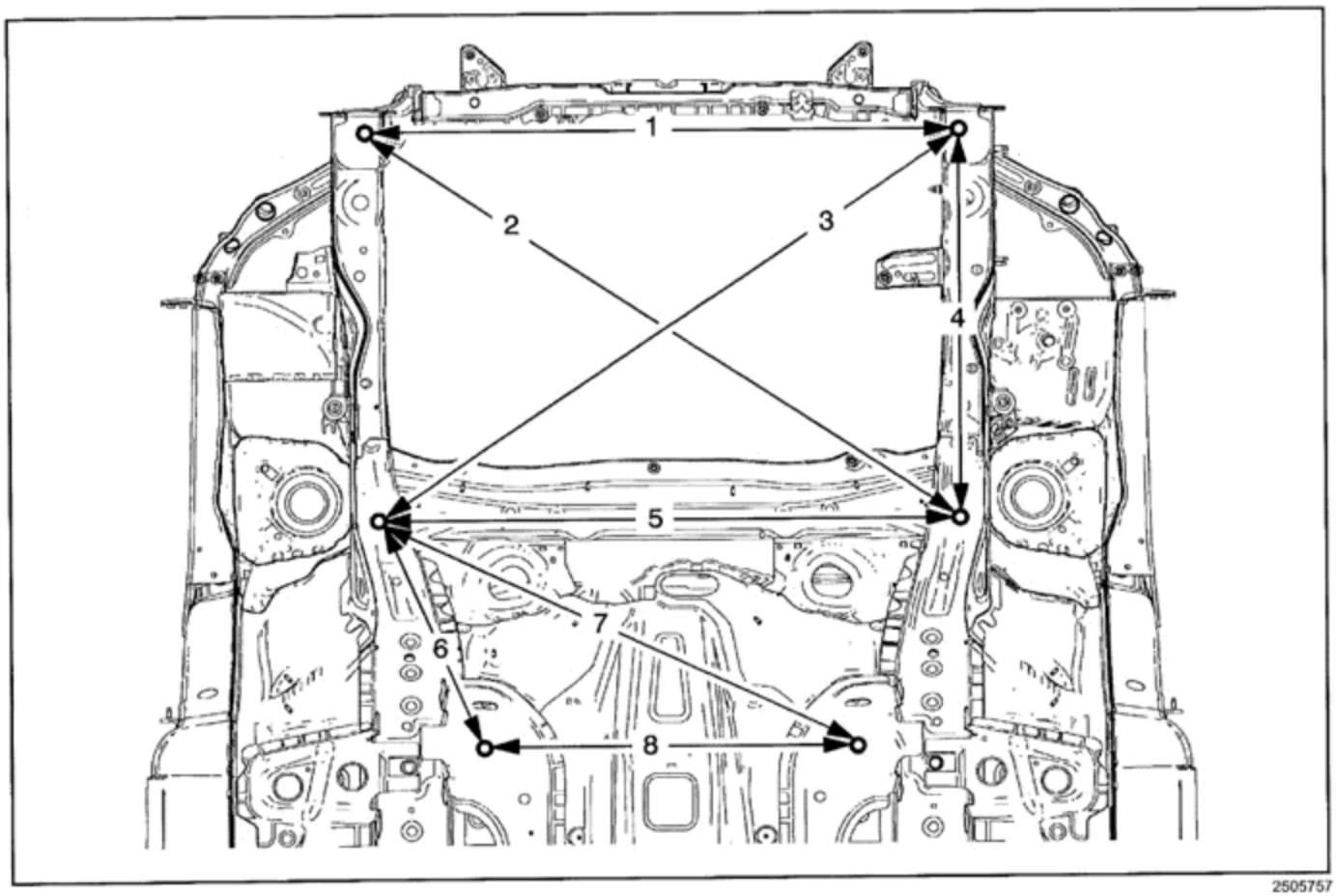


2505756

Legend

(1) 1201 mm
(2) 944 mm
(3) 599 mm
(4) 1300 mm
(5) 1409 mm

Front End Lower

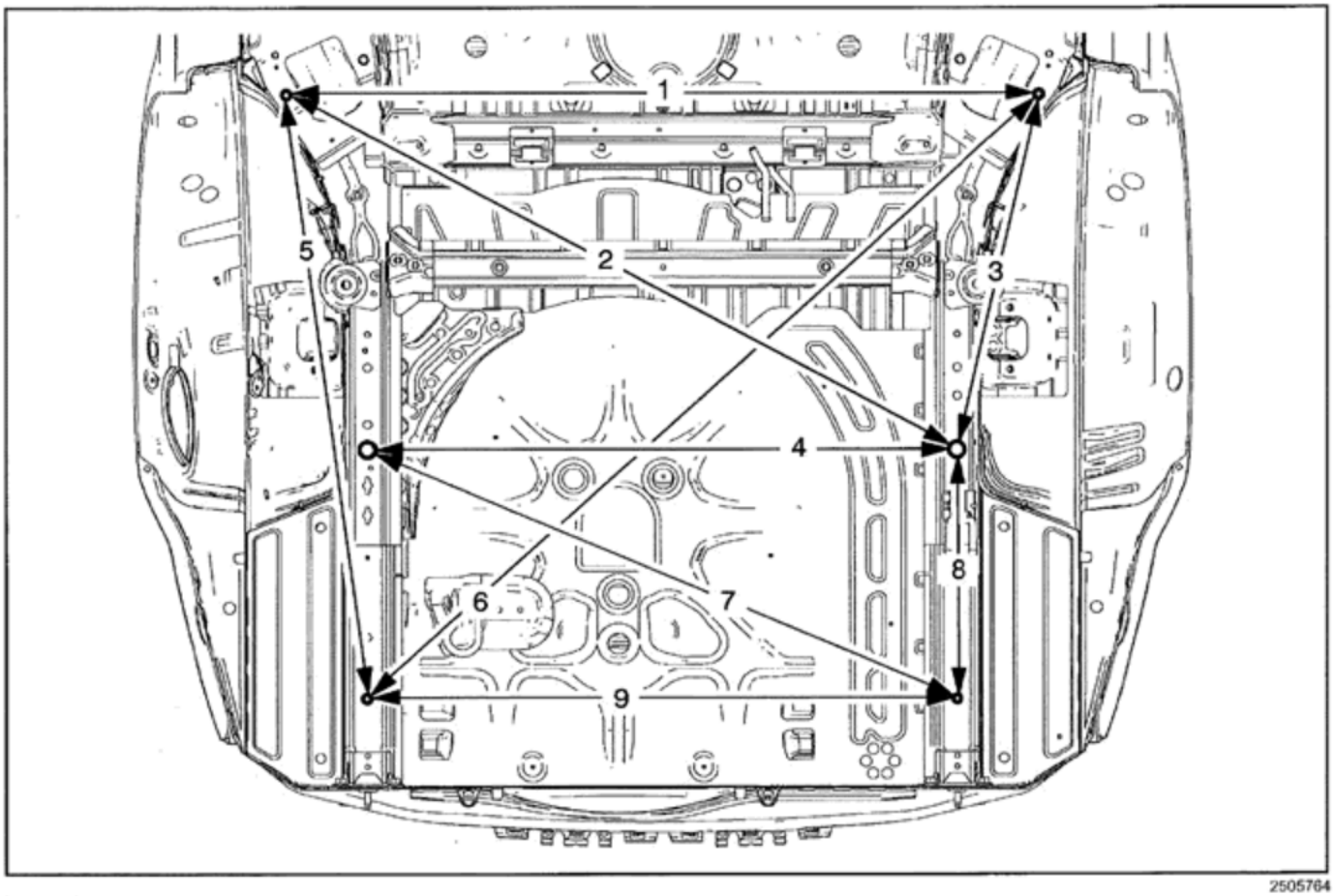


2505757

Legend

(1) 928 mm
(2) 1122 mm
(3) 1110 mm
(4) 633 mm
(5) 910 mm
(6) 440 mm
(7) 852 mm
(8) 584 mm

Rear End Lower

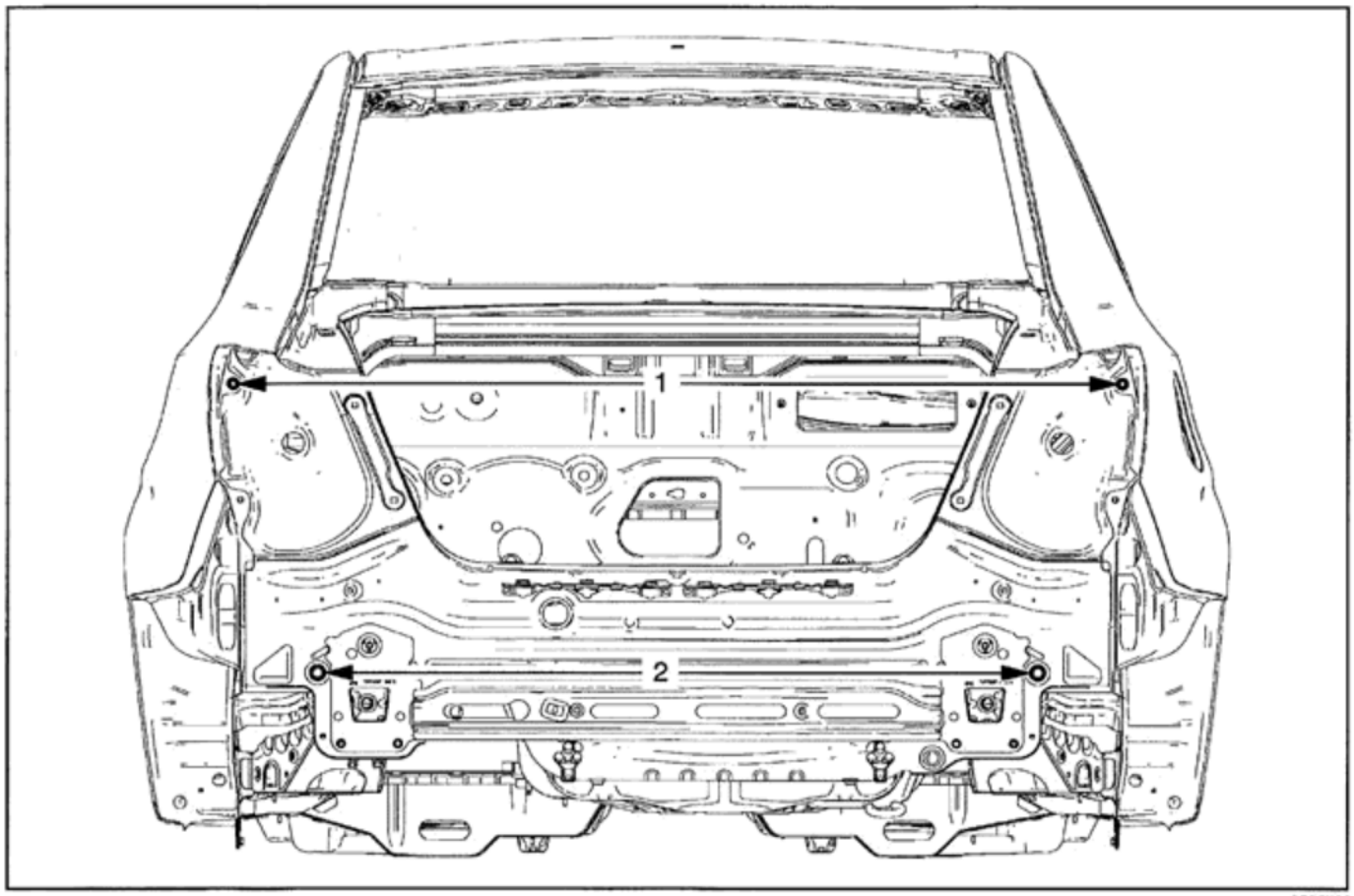


2505764

Legend

(1) 1233 mm
(2) 1259 mm
(3) 627 mm
(4) 966 mm
(5) 1035 mm
(6) 1504 mm
(7) 1052 mm
(8) 417 mm
(9) 965 mm

Rear End



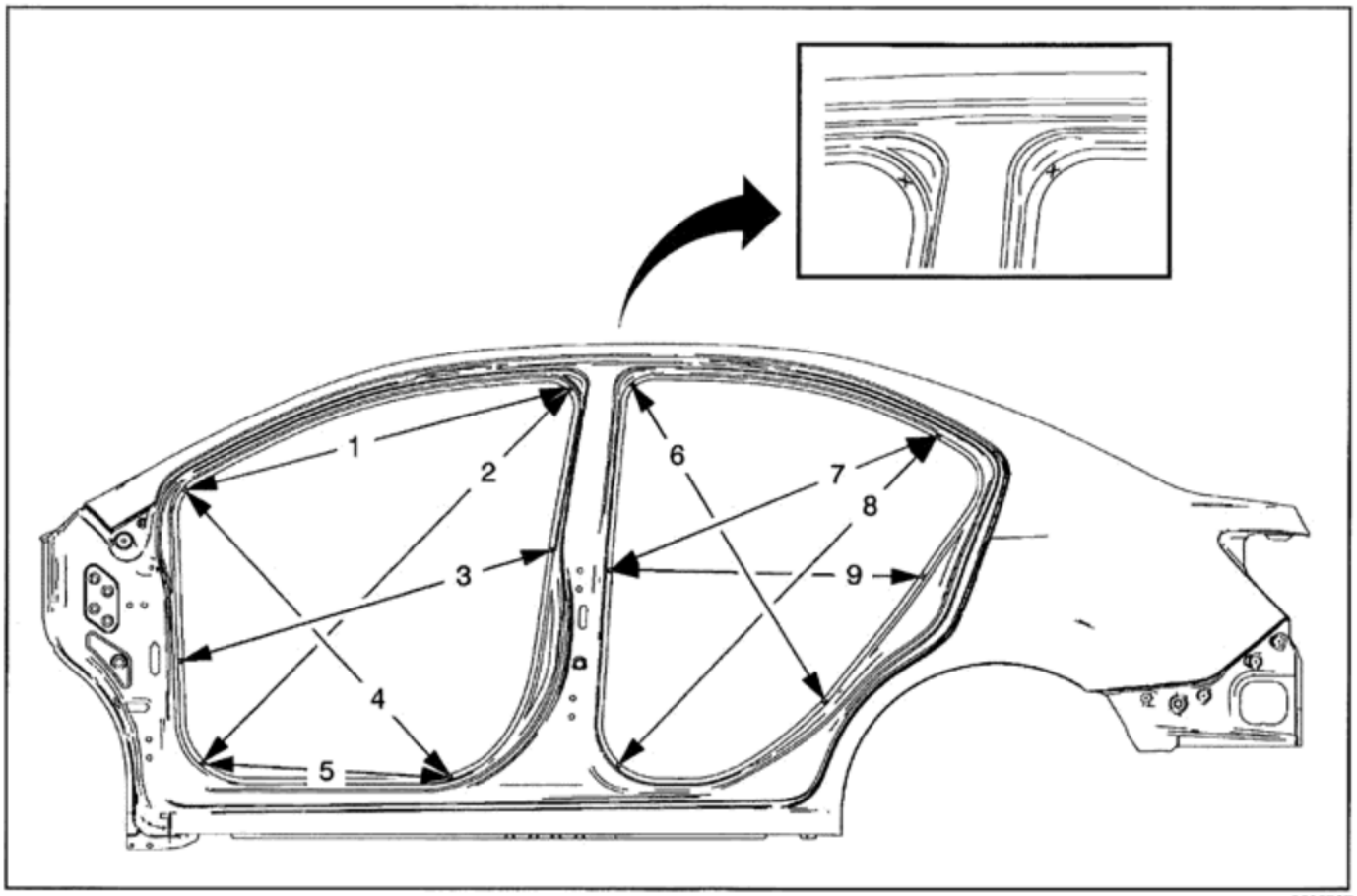
2505766

Legend

(1) 1396 mm

(2) 1130 mm

Side



2505767

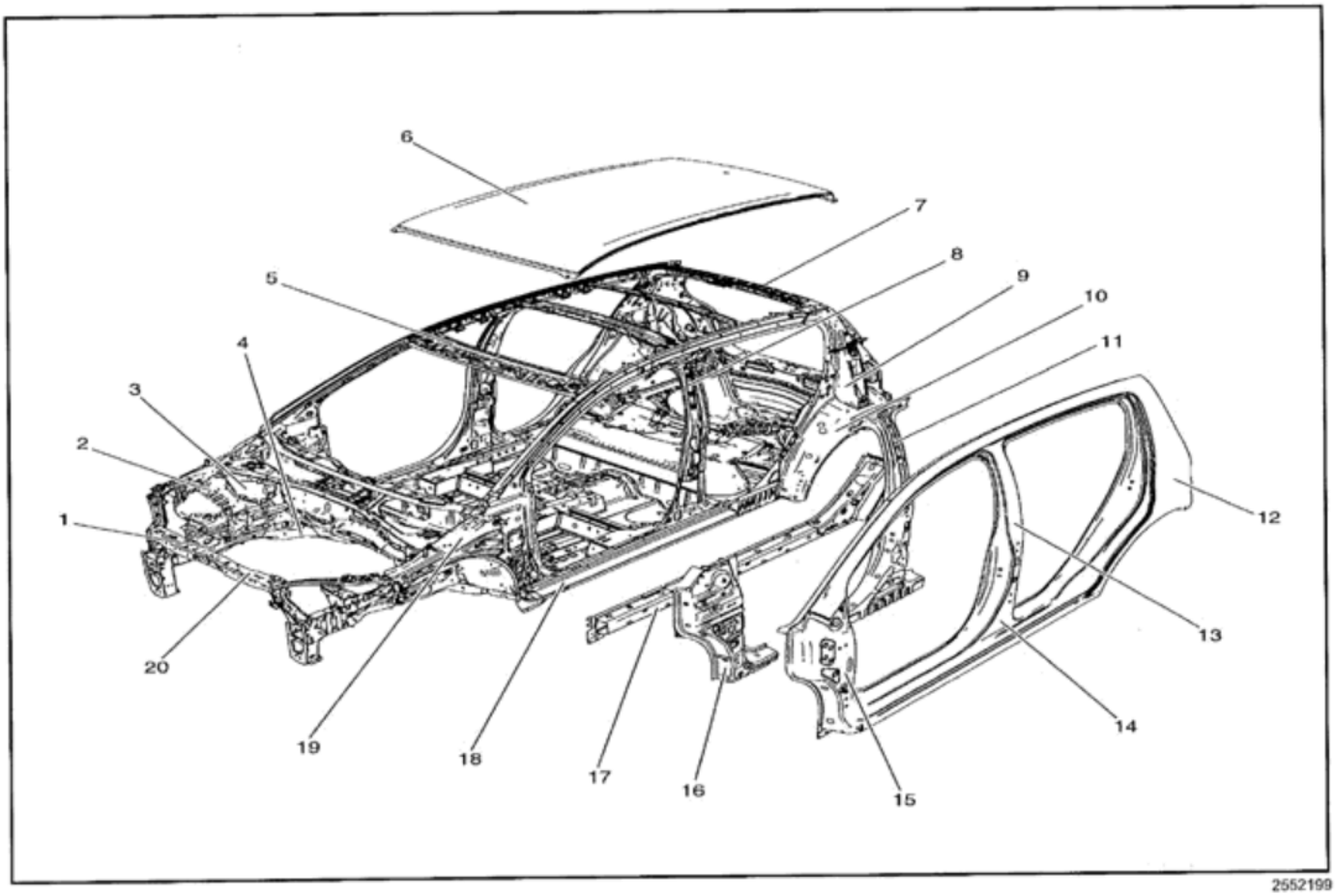
Legend

(1) 985 mm
(2) 1319 mm
(3) 955 mm
(4) 981 mm
(5) 611 mm
(6) 946 mm
(7) 886 mm
(8) 1155 mm
(9) 776 mm

Visual Identification

Structure Identification (5HB)

Front View



2552199

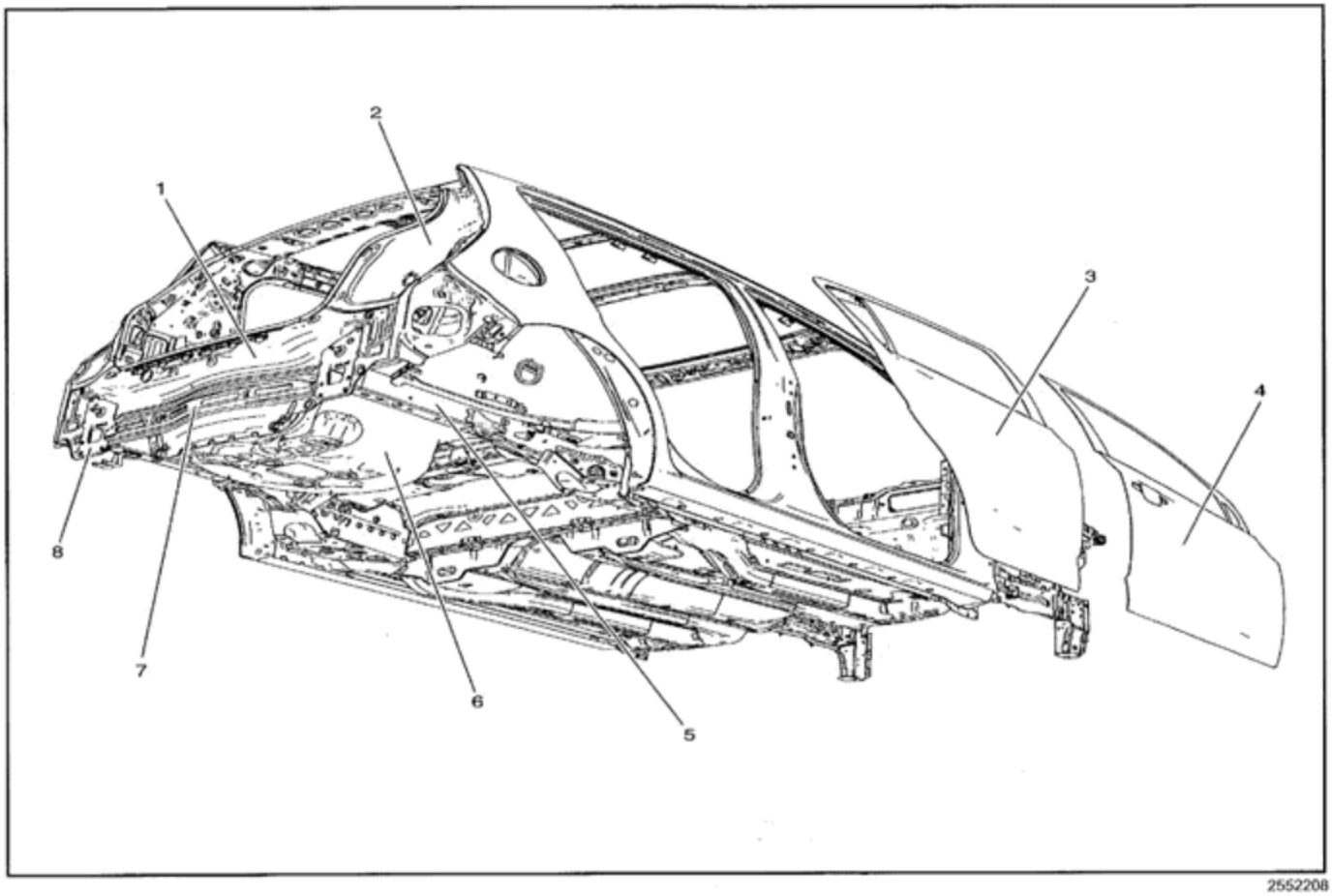
View Front

Number	Description	Material	Procedure
1	Front Compartment Side Rail (Front)	• Inner Side Rail– *High Strength Low Alloy Steel on page 3-141* • Outer Side Rail– *High Strength Low Alloy Steel on page 3-141*	*Front Compartment Side Rail Replacement on page 3-92*
2	Front Wheelhouse Panel Reinforcement	*Mild Steel on page 3-141*	*Front Wheelhouse Panel Reinforcement Replacement on page 3-90*
3	Front Wheelhouse Front Panel	• Front Wheelhouse Front Panel– *Mild Steel on page 3-141* • Front Suspension Strut Housing– *High Strength Low Alloy Steel on page 3-141*	*Front Wheelhouse Front Panel Replacement on page 3-88*
4	Front Compartment Side Rail (Rear)	*High Strength Low Alloy Steel on page 3-141*	*Front Compartment Side Rail Replacement on page 3-92*
5	Roof Front Header Panel	*Ultra High Strength Steel on page 3-142*	*Roof Front Header Panel Replacement on page 3-101*
6	Roof Outer Panel	*Mild Steel on page 3-141*	*Roof Outer Panel Replacement (5HB) on page 3-97* or *Roof Outer Panel Replacement (4NB) on page 3-99*
7	Roof Rear Inner Panel	*Mild Steel on page 3-141*	*Roof Rear Header Panel Replacement (5HB) on page 3-102*

View Front (cont'd)

Number	Description	Material	Procedure
8	Center Pillar Inner Panel	*Dual Phase Steel on page 3-140*	*Center Pillar Inner Panel Replacement on page 3-125*
9	Body Lock Pillar Inner Reinforcement	*Mild Steel on page 3-141*	*Quarter Inner Panel Sectioning (5HB) on page 3-121*
10	Rear Wheelhouse Outer Panel	*Mild Steel on page 3-141*	*Quarter Inner Panel Sectioning (5HB) on page 3-121*
11	Center Pillar Reinforcement	• Center Pillar Reinforcement– *High Strength Low Alloy Steel on page 3-141* • Center Pillar Upper Stiffener– *Ultra High Strength Steel on page 3-142* • Center Pillar Lower Stiffener– *High Strength Low Alloy Steel on page 3-141*	*Center Pillar Reinforcement Replacement on page 3-126*
12	Quarter Outer Panel	*Mild Steel on page 3-141*	Quarter Outer Panel Sectioning
13	Center Pillar– Outer	*Mild Steel on page 3-141*	*Center Pillar Sectioning - Outer on page 3-128*
14	Rocker Outer Panel	*Mild Steel on page 3-141*	*Rocker Outer Panel Sectioning on page 3-105*
15	Front Hinge Pillar Body	*Mild Steel on page 3-141*	*Front Hinge Pillar Body Sectioning on page 3-94*
16	Body Hinge Pillar Lower Reinforcement	*High Strength Low Alloy Steel on page 3-141*	*Body Hinge Pillar Lower Reinforcement Replacement on page 3-96*
17	Rocker Inner Panel	*Ultra High Strength Dual Phase Steel on page 3-141*	*Rocker Inner Panel Replacement on page 3-104*
18	Body Side Frame Rocker Reinforcement	*Ultra High Strength Dual Phase Steel on page 3-141*	*Body Side Frame Rocker Reinforcement Replacement on page 3-108*
19	Front Compartment Upper Side Rail	*High Strength Low Alloy Steel on page 3-141*	*Front Compartment Upper Side Rail Replacement on page 3-91*
20	Front End Upper Tie Bar	*Mild Steel on page 3-141*	*Front End Upper Tie Bar Replacement on page 3-87*

Rear View

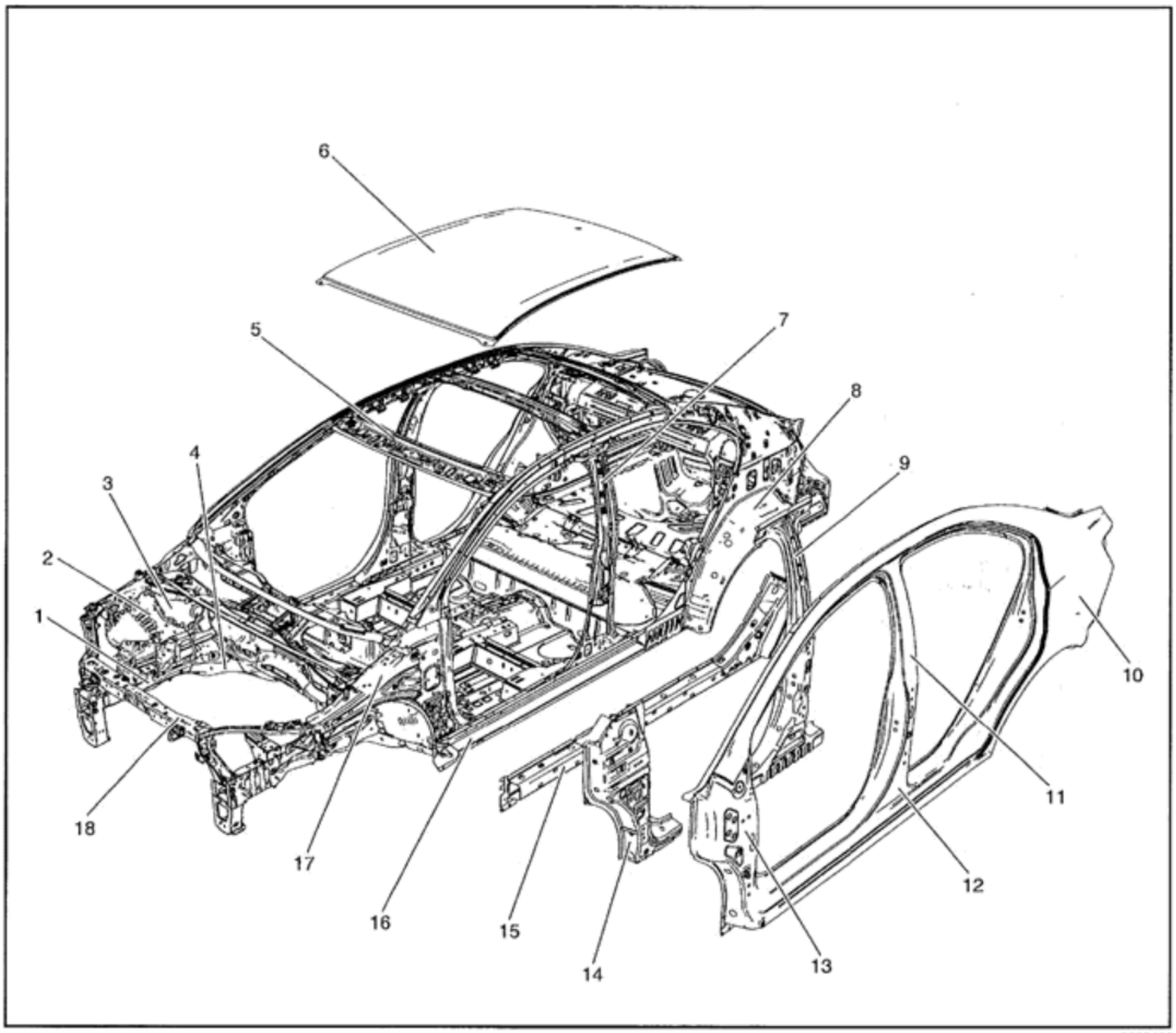


2552208

View Rear

Number	Description	Material	Procedure
1	Rear End Panel	*Mild Steel on page 3-141*	Rear End Panel Replacement
2	Tail Lamp Pocket	*Mild Steel on page 3-141*	*Tail Lamp Pocket Replacement (5HB) on page 3-137* or *Tail Lamp Pocket Replacement (4NB) on page 3-139*
3	Rear Side Door Outer Panel	*Mild Steel on page 3-141*	Rear Side Door Outer Panel Replacement
4	Front Side Door Outer Panel	*Mild Steel on page 3-141*	Front Side Door Outer Panel Replacement
5	Underbody Rear Side Rail	*High Strength Low Alloy Steel on page 3-141*	Rear Rail Sectioning
6	Rear Compartment Floor Panel	*Mild Steel on page 3-141*	*Rear Compartment Floor Panel Replacement on page 3-112*
7	Rear End Lower Panel Reinforcement	*High Strength Low Alloy Steel on page 3-141*	Rear End Panel Replacement
8	Rear End Lower Panel Reinforcement Extension	*Ultra High Strength Dual Phase Steel on page 3-141*	Rear End Panel Replacement

Structure Identification (4NB)
Front View



2552196

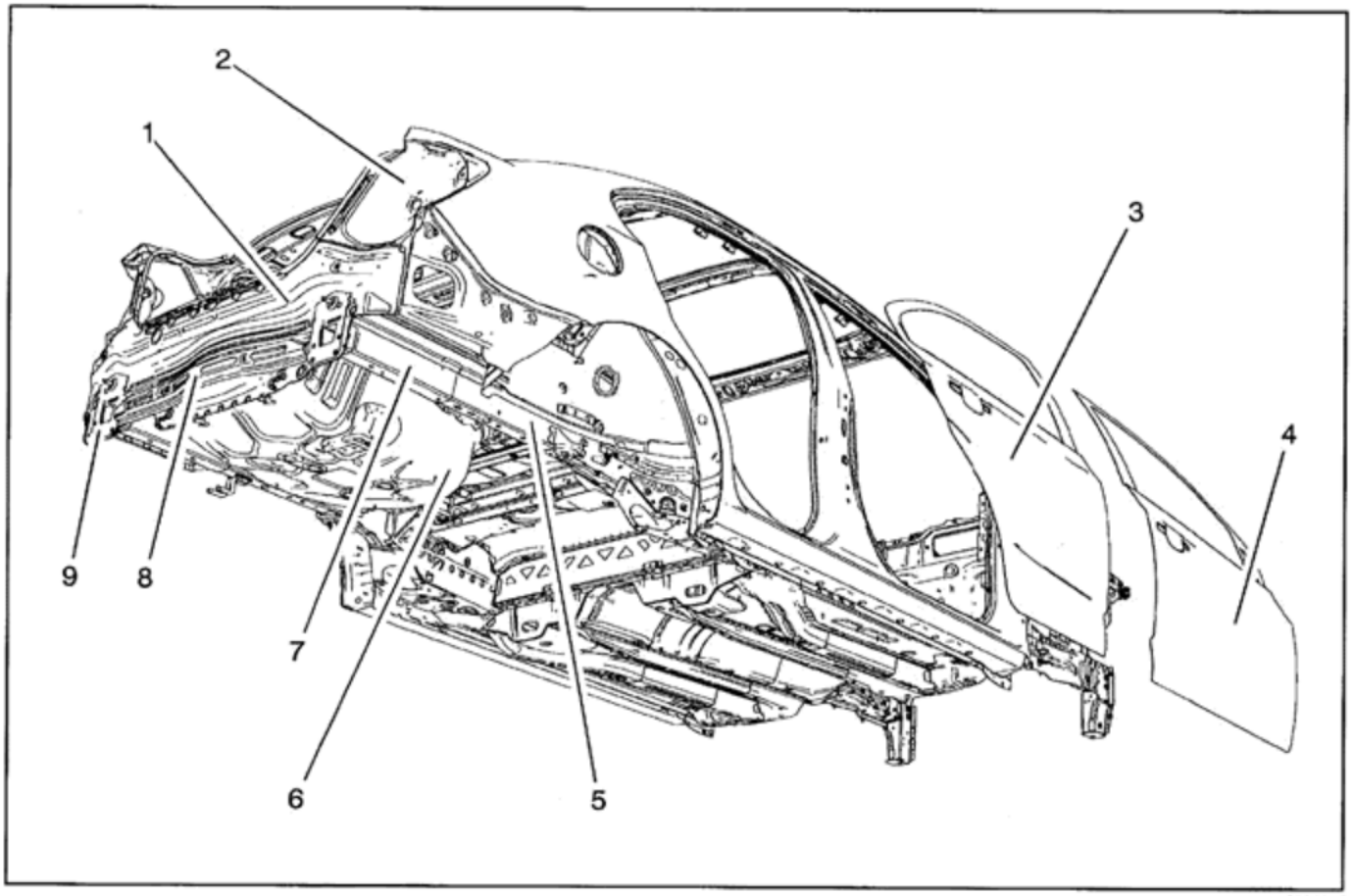
View Front

Number	Description	Material	Procedure
1	Front Compartment Side Rail (Front)	• Inner Side Rail– *High Strength Low Alloy Steel on page 3-141* • Outer Side Rail– *High Strength Low Alloy Steel on page 3-141*	*Front Compartment Side Rail Replacement on page 3-92*
2	Front Wheelhouse Front Panel	*Mild Steel on page 3-141*	*Front Wheelhouse Front Panel Replacement on page 3-88*
3	Front Wheelhouse Panel	• Front Wheelhouse Front Panel– *Mild Steel on page 3-141* • Front Suspension Strut Housing– *High Strength Low Alloy Steel on page 3-141*	*Front Wheelhouse Front Panel Replacement on page 3-88*
4	Front Compartment Side Rail (Rear)	*High Strength Low Alloy Steel on page 3-141*	*Front Compartment Side Rail Replacement on page 3-92*
5	Roof Front Header Panel	*Ultra High Strength Steel on page 3-142*	*Roof Front Header Panel Replacement on page 3-101*

View Front (cont'd)

Number	Description	Material	Procedure
6	Roof Outer Panel	*Mild Steel on page 3-141*	*Roof Outer Panel Replacement (5HB) on page 3-97* or *Roof Outer Panel Replacement (4NB) on page 3-99*
7	Center Pillar Inner Panel	*Dual Phase Steel on page 3-140*	*Center Pillar Inner Panel Replacement on page 3-125*
8	Rear Wheelhouse Outer Panel	*Mild Steel on page 3-141*	*Quarter Inner Panel Sectioning (5HB) on page 3-121*
9	Center Pillar Reinforcement	• Center Pillar Reinforcement– *High Strength Low Alloy Steel on page 3-141* • Center Pillar Upper Stiffener– *Ultra High Strength Steel on page 3-142* • Center Pillar Lower Stiffener– *High Strength Low Alloy Steel on page 3-141*	*Center Pillar Reinforcement Replacement on page 3-126*
10	Quarter Outer Panel	*Mild Steel on page 3-141*	Quarter Outer Panel Sectioning
11	Center Pillar– Outer	*Mild Steel on page 3-141*	*Center Pillar Sectioning - Outer on page 3-128*
12	Rocker Outer Panel	*Mild Steel on page 3-141*	*Rocker Outer Panel Sectioning on page 3-105*
13	Center Pillar– Outer Front Hinge Pillar Body	*Mild Steel on page 3-141*	*Front Hinge Pillar Body Sectioning on page 3-94*
14	Body Hinge Pillar Lower Reinforcement	*High Strength Low Alloy Steel on page 3-141*	*Body Hinge Pillar Lower Reinforcement Replacement on page 3-96*
15	Rocker Inner Panel	*Ultra High Strength Dual Phase Steel on page 3-141*	*Rocker Inner Panel Replacement on page 3-104*
16	Body Side Frame Rocker Reinforcement	*Ultra High Strength Dual Phase Steel on page 3-141*	*Body Side Frame Rocker Reinforcement Replacement on page 3-108*
17	Front Compartment Upper Side Rail	*High Strength Low Alloy Steel on page 3-141*	*Front Compartment Upper Side Rail Replacement on page 3-91*
18	Front End Upper Tie Bar	*Mild Steel on page 3-141*	*Front End Upper Tie Bar Replacement on page 3-87*

Rear View



2505771

View Rear

Number	Description	Material	Procedure
1	Rear End Panel	*Mild Steel on page 3-141*	Rear End Panel Replacement
2	Tail Lamp Pocket	*Mild Steel on page 3-141*	*Tail Lamp Pocket Replacement (5HB) on page 3-137* or *Tail Lamp Pocket Replacement (4NB) on page 3-139*
3	Rear Side Door Outer Panel	*Mild Steel on page 3-141*	Rear Side Door Outer Panel Replacement
4	Front Side Door Outer Panel	*Mild Steel on page 3-141*	Front Side Door Outer Panel Replacement
5	Underbody Rear Side Rail	*High Strength Low Alloy Steel on page 3-141*	Rear Rail Sectioning
6	Rear Compartment Floor Panel	*Mild Steel on page 3-141*	*Rear Compartment Floor Panel Replacement on page 3-112*
7	Underbody Rear Side Rear Rail	*High Strength Low Alloy Steel on page 3-141*	*Underbody Rear Side Rail Extension Replacement on page 3-134*
8	Rear End Lower Panel Reinforcement	*High Strength Low Alloy Steel on page 3-141*	Rear End Panel Replacement
9	Rear End Lower Panel Reinforcement Extension	*Ultra High Strength Steel on page 3-142*	Rear End Panel Replacement

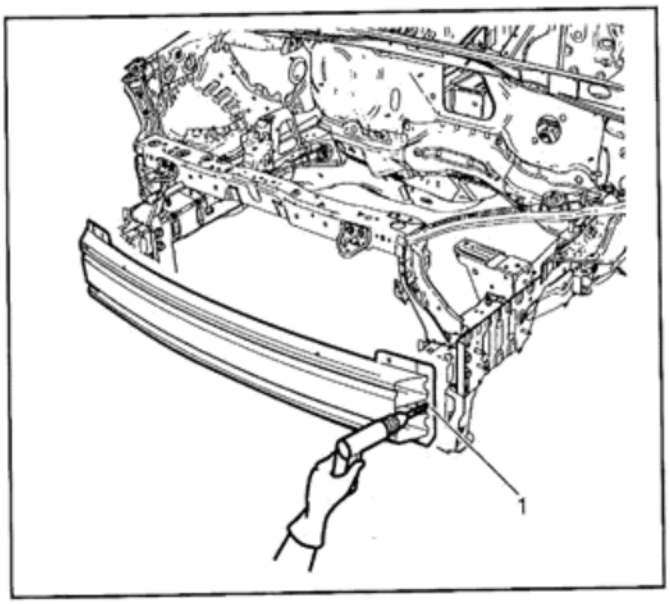
Repair Instructions

Front Bumper Impact Bar Replacement

Removal Procedure

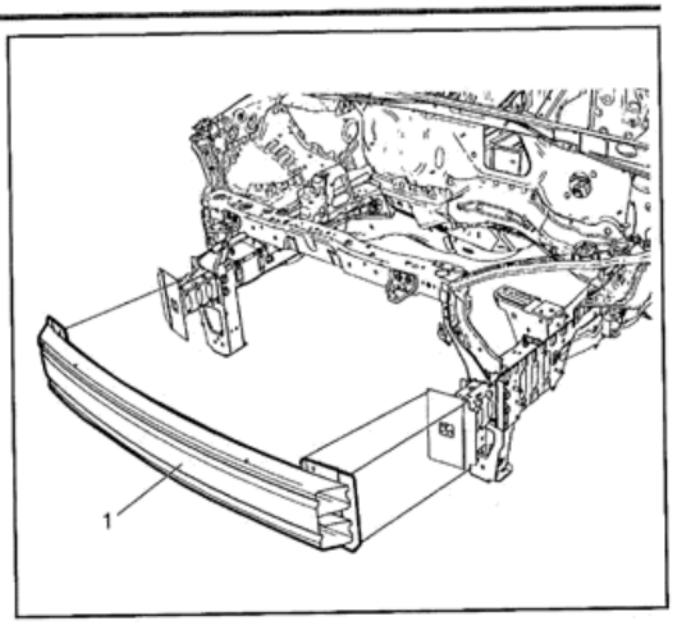
Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to *Dimensions - Body (5HB) on page 3-68* or *Dimensions - Body (4NB) on page 3-73*.
5. Remove the sealers and anti-corrosion materials from the repair area. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all factory welds.



2745549

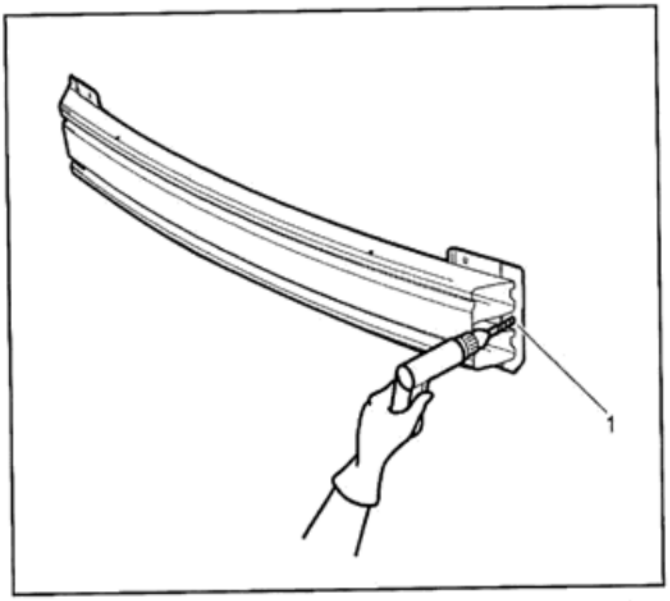
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2745550

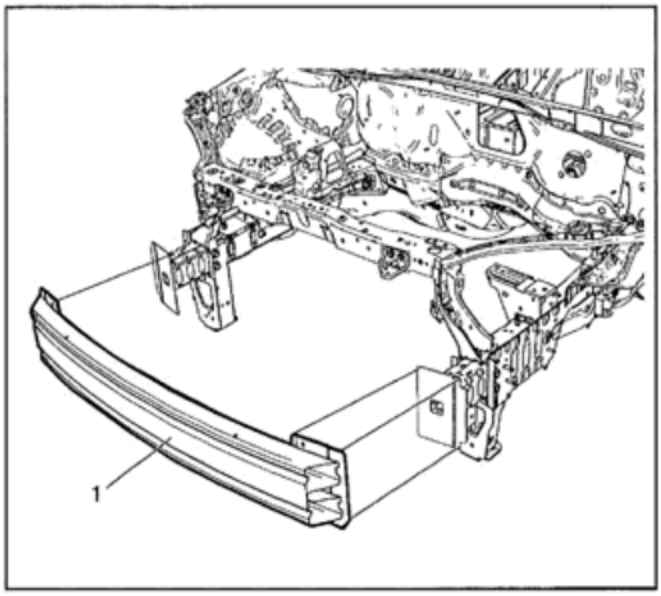
8. Remove the damaged impact bar (1).

Installation Procedure



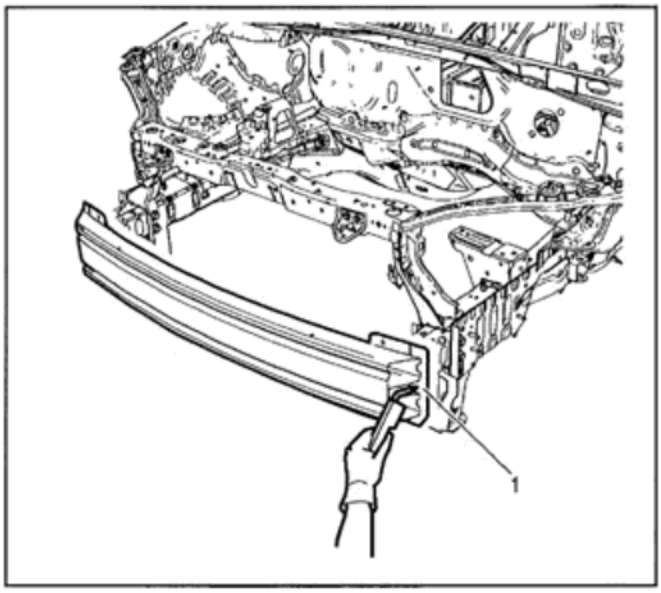
2745552

1. Drill 8 mm (5/16 in) holes for plug welding along the edges of the service panel (1) as noted from the original panel.
2. Clean and prepare the attaching surfaces for welding.



2745550

3. Position the impact bar (1) on the vehicle.
4. Verify the fit of the bar.
5. Clamp the impact bar into position.



2745554

6. Plug weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

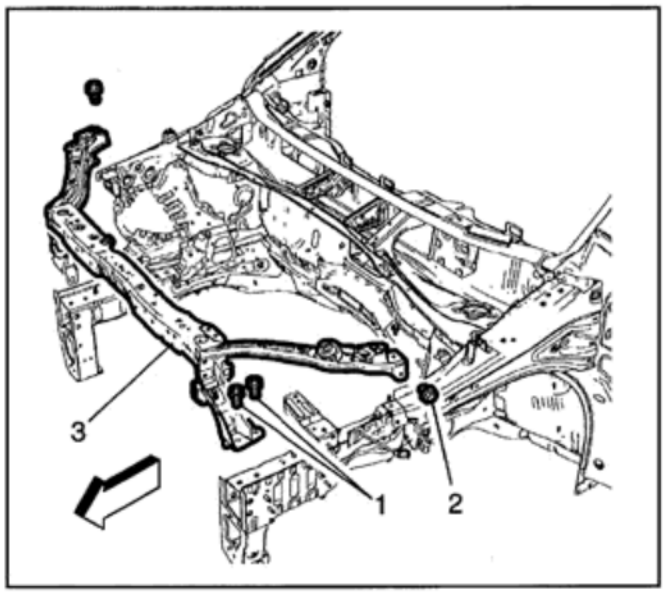
Front End Upper Tie Bar Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

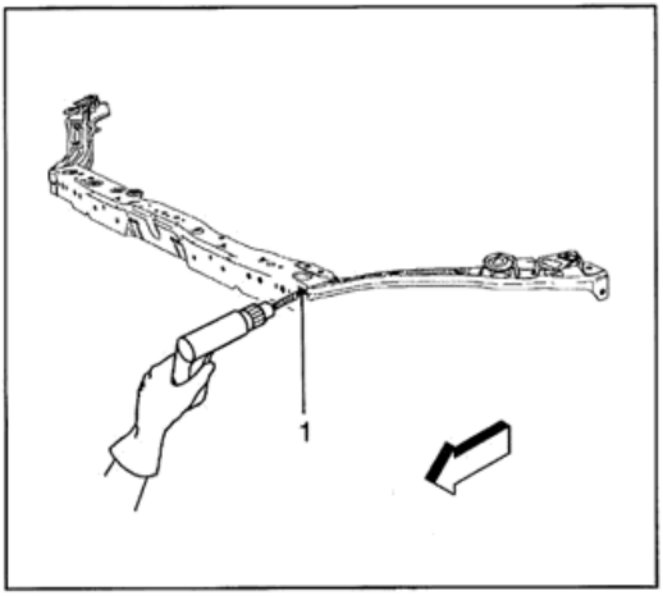
1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505772

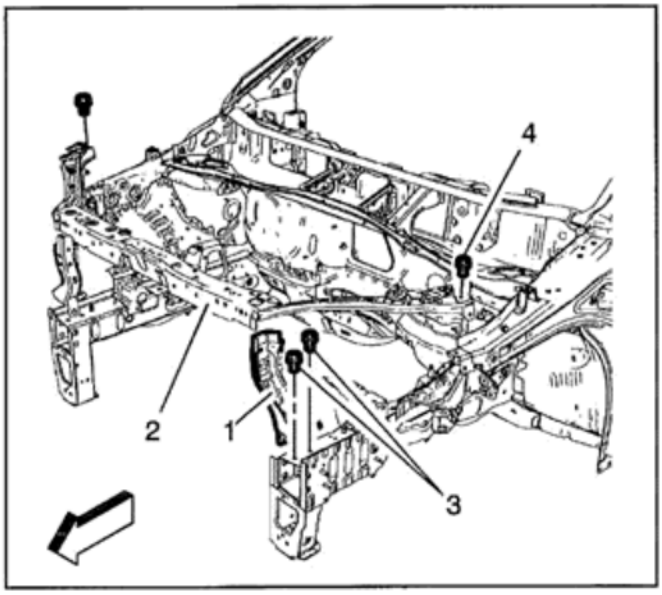
6. Locate and mark all the necessary factory welds of the front upper tie bar assembly.
7. Drill all factory welds. Note the number and location of welds for installation of the service assembly.
8. Remove the front end upper tie bar support bolts (1) and front end upper tie bar bolts (2).
9. Remove the front end upper tie bar assembly (3).

Installation Procedure



2505773

1. Drill 8 mm (5/16 in) plug weld holes as necessary on service parts, in the locations noted from the original assembly (1).
2. Clean and prepare the mating surface for welding, as necessary.

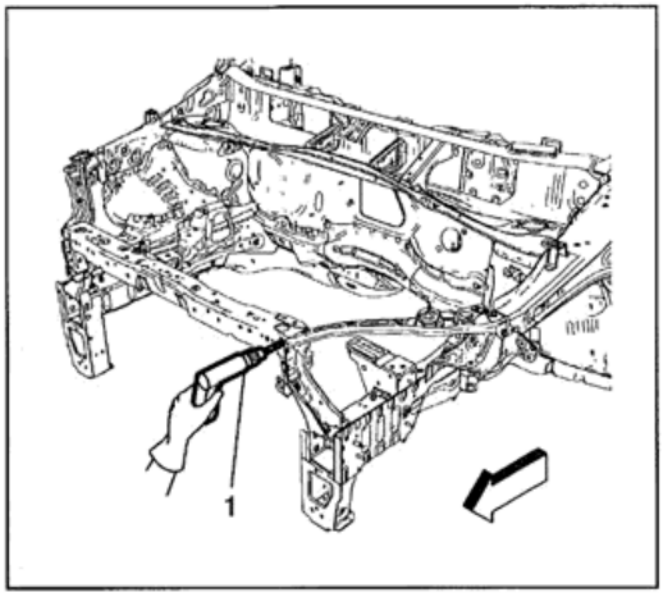


2505774

3. Position the front upper tie bar support (1) and front upper tie bar (2) on the vehicle
4. Verify the fit of the front end upper tie bar.

Caution: Refer to *Fastener Caution on page 0-8*.

5. Install the front upper tie bar support bolts (3) and tighten to **22** N•m **(16 lb ft)**.
6. Install the front upper tie bar bolts (4) and tighten to **9** N•m **(80 lb in)**.



2505775

7. When the service assembly is correctly positioned, plug weld accordingly (1).
8. Measure frequently to ensure proper fit and alignment.
9. Clean and prepare all welded surfaces.
10. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
11. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
12. Install all related panels and components.
13. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
14. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Front Wheelhouse Front Panel Replacement

Removal Procedure

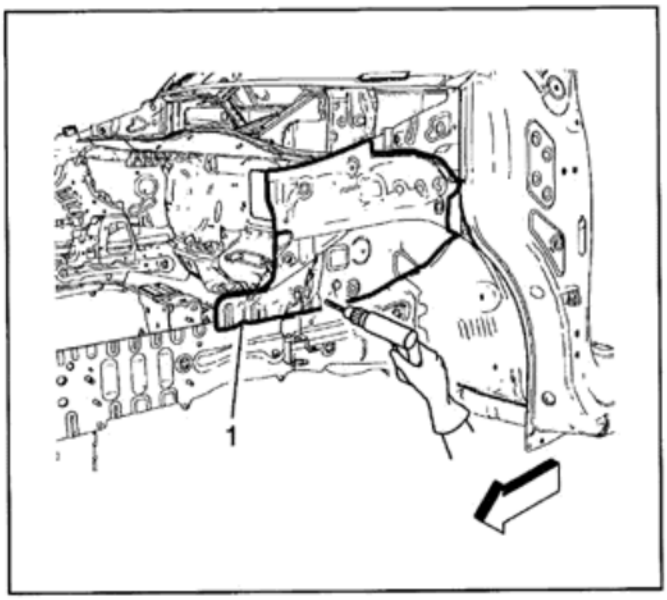
1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.

Note: Sectioning of the front wheelhouse assembly is not recommended. The front wheelhouse service panel is serviced as a complete assembly, which includes the upper front strut mounting surface. The upper strut mounting surface is a dimensionally critical area.

3. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.

Note: Inspect the front of the cowl for damage. If the metal surface is damaged, the cowl panel must be repaired to restore the structural integrity of the vehicle.

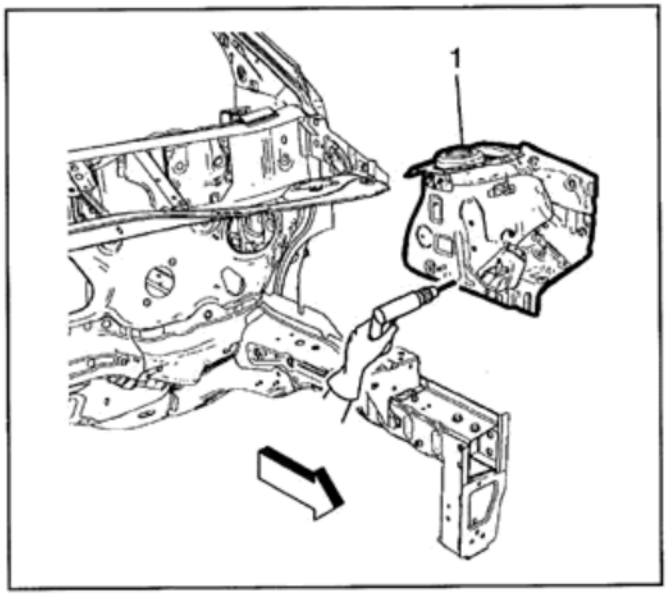
4. Repair as much of the damage as possible.



2505781

5. Locate, mark, and drill out all factory welds (1). Note the number and location of welds for installation of the service assembly.
6. Remove the front wheelhouse from the vehicle.

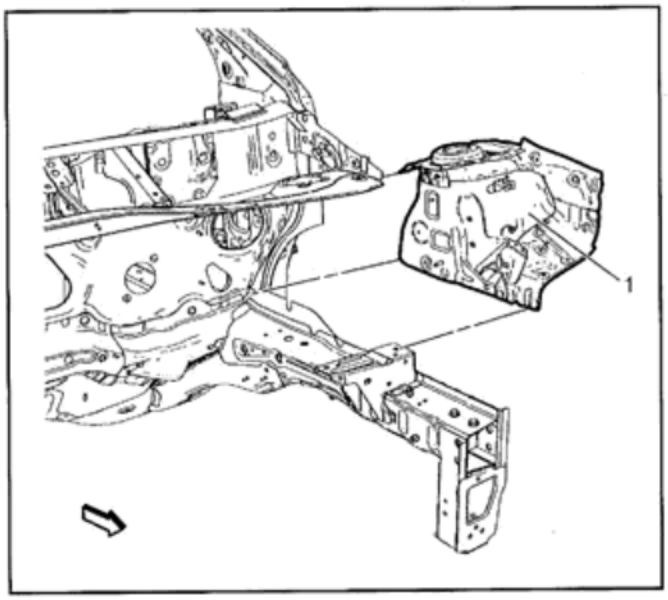
Installation Procedure



2505782

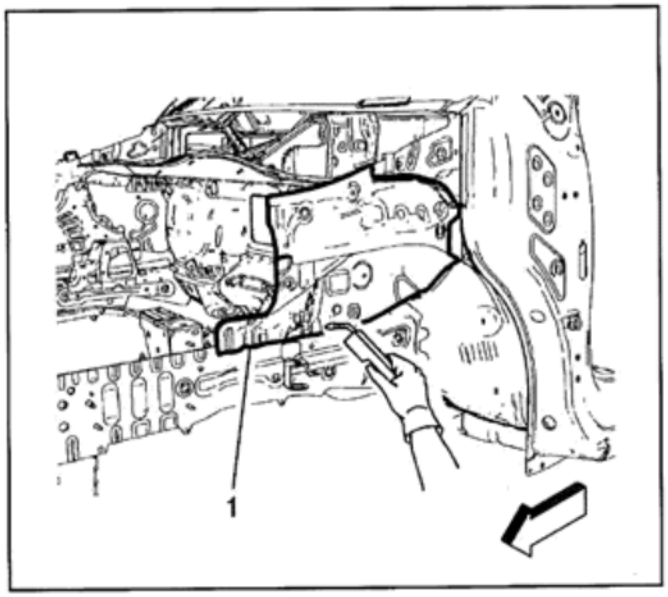
Note: If the location of the original plug weld holes cannot be determined, or if structural weld-thru adhesive is present, space the plug weld holes every **40 mm (1 in)**.

1. Drill **8 mm (5/16 in)** plug weld holes as necessary on service part, in the locations noted from the original assembly (1).
2. Clean and prepare the mating surfaces for welding, as necessary.
3. Apply GM-approved weld-thru coating or equivalent to all mating surfaces. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505783

4. Position the service front wheelhouse front panel to the vehicle (1). Clamp the front wheelhouse in place.



2505785

5. When the service assembly is correctly positioned, plug weld accordingly (1).
6. Measure frequently to ensure proper fit and alignment.
7. Clean and prepare all welded surfaces.
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
9. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.

10. Install all related panels and components.
11. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
12. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

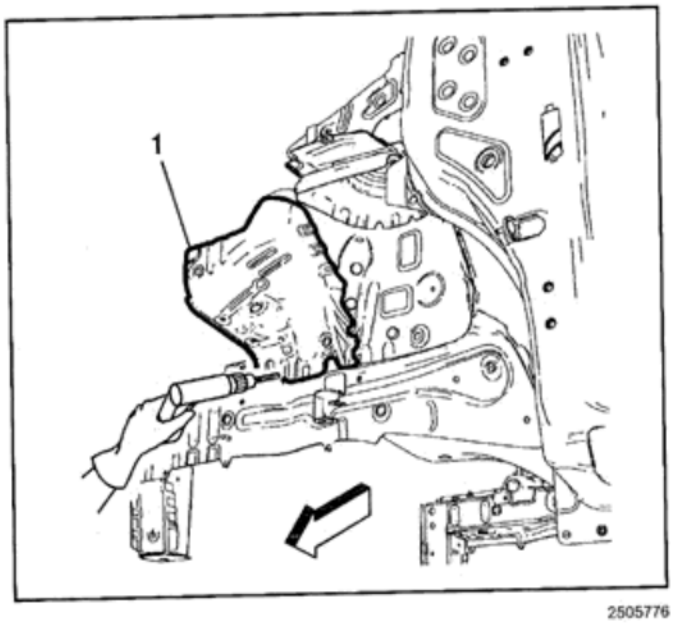
Front Wheelhouse Panel Reinforcement Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

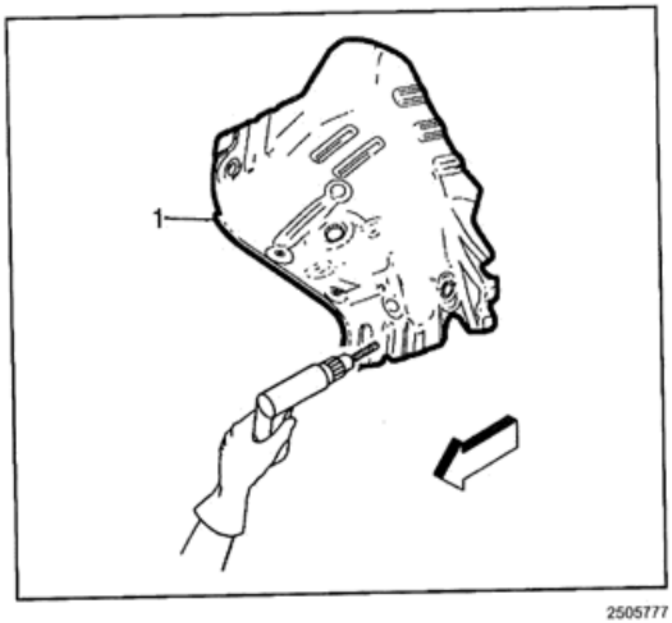
1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505776

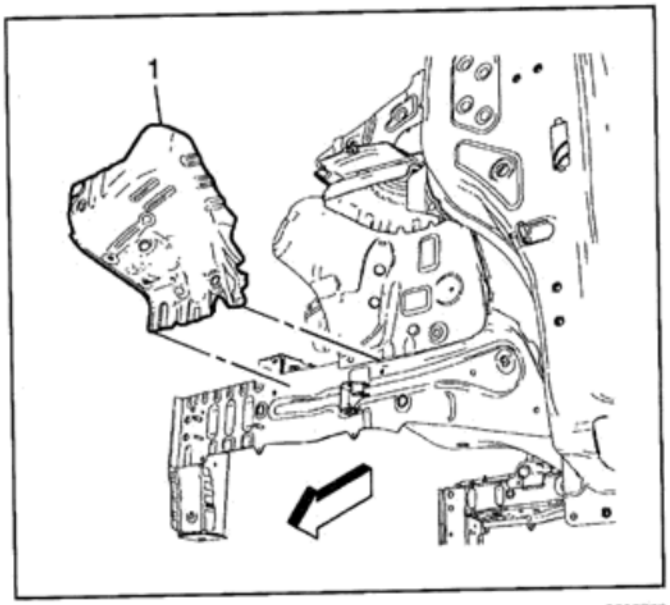
6. Locate and mark all the necessary factory welds of the front wheelhouse panel reinforcement.
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.
8. Remove the front wheelhouse panel reinforcement.

Installation Procedure



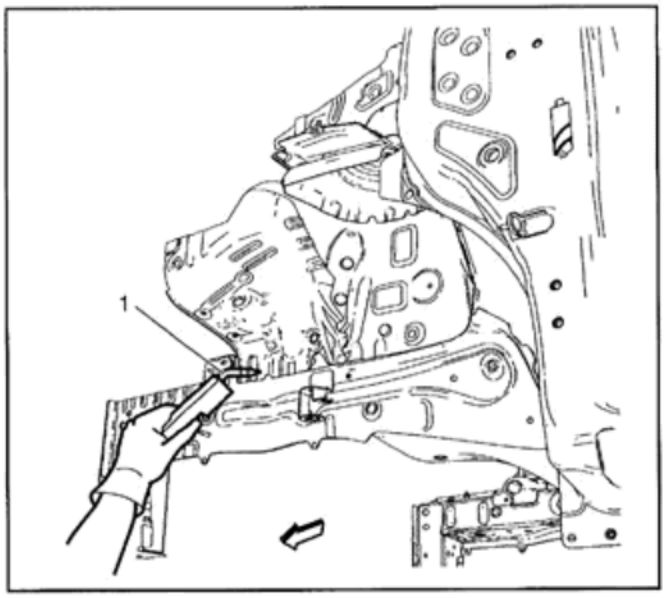
2505777

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the front wheelhouse panel reinforcement as noted from the original panel (1).
2. Clean and prepare the attaching surfaces for welding.



2505778

3. Position the front wheelhouse panel reinforcement on the vehicle (1).
4. Verify the fit of the front wheelhouse panel reinforcement.
5. Clamp the front wheelhouse panel reinforcement into position.



2505780

6. Plug weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Front Compartment Upper Side Rail Replacement

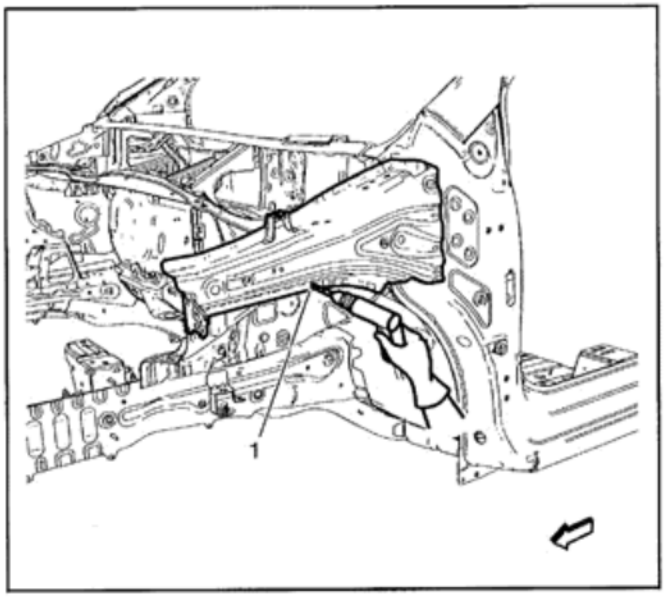
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to *Dimensions - Body (5HB) on page 3-68* or *Dimensions - Body (4NB) on page 3-73*.
5. Remove the sealers and anti-corrosion materials from the repair area. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.

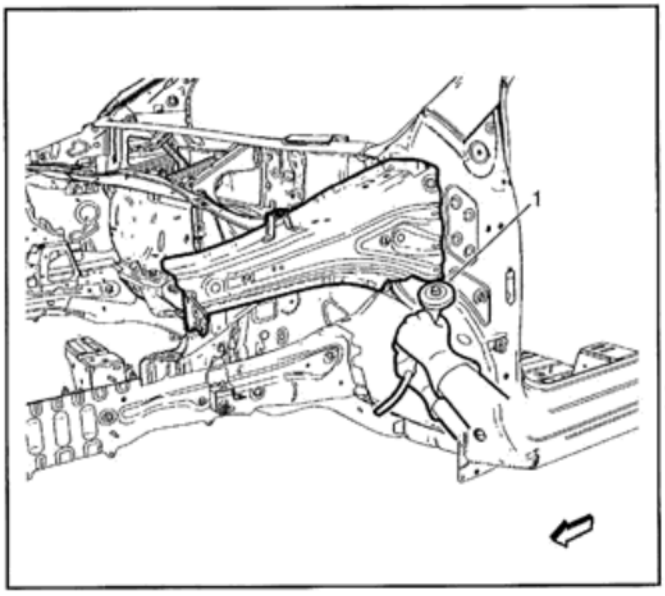
Note: Do not damage any inner panels or reinforcements.

6. Locate and mark all the necessary factory welds and weld seams of the front compartment upper side rail.



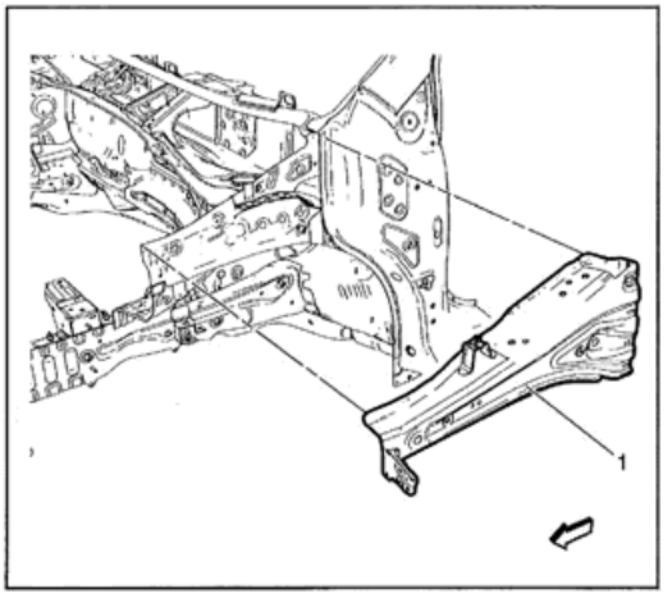
2551807

7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2551809

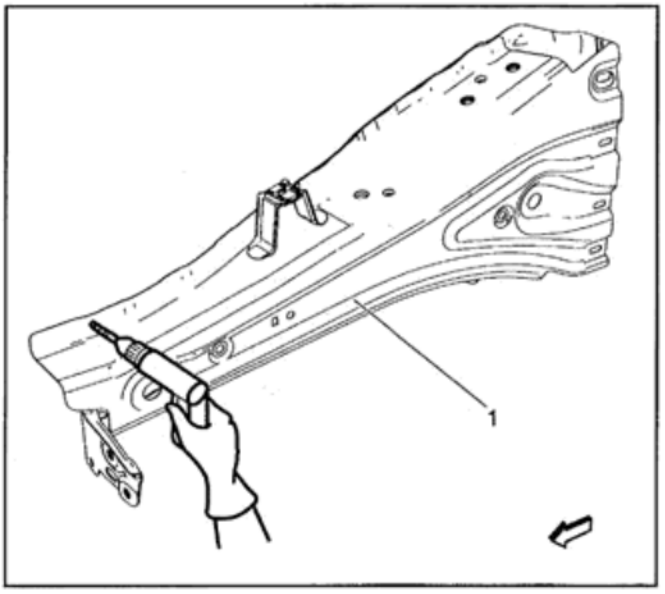
8. Grind factory weld seams (1).



2551810

9. Remove the front compartment upper side rail (1).

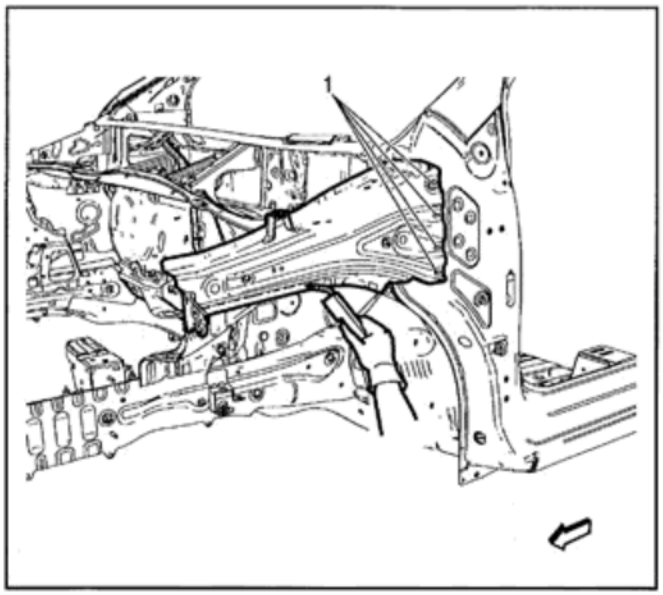
Installation Procedure



2552930

Note: If the location of the original plug weld holes cannot be determined, or if structural weld-thru adhesive is present, space the plug weld holes every 40 mm (1 in) apart.

1. Drill **8 mm (5/16 in)** holes for plug weld as necessary on service part, in the locations noted from the original assembly (1).
2. Clean and prepare the mating surfaces for welding, as necessary.
3. Position the front compartment upper side rail on the vehicle.
4. Verify the fit of the front compartment upper side rail.
5. Clamp the front compartment upper side rail into position.



2552931

Note: Plug weld factory slots in the front hinge pillar body area (1) as noted from the original panel.

6. Plug weld accordingly (1).
7. Clean and prepare all welded surfaces.
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
9. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
10. Install all related panels and components.
11. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
12. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

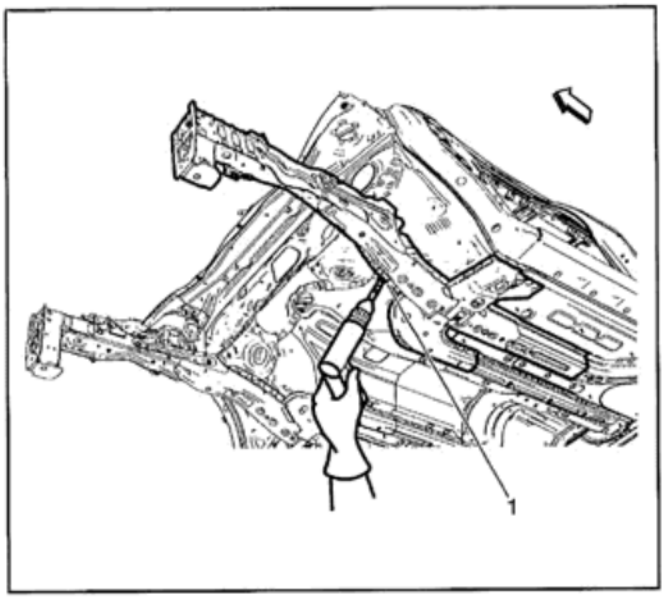
Front Compartment Side Rail Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

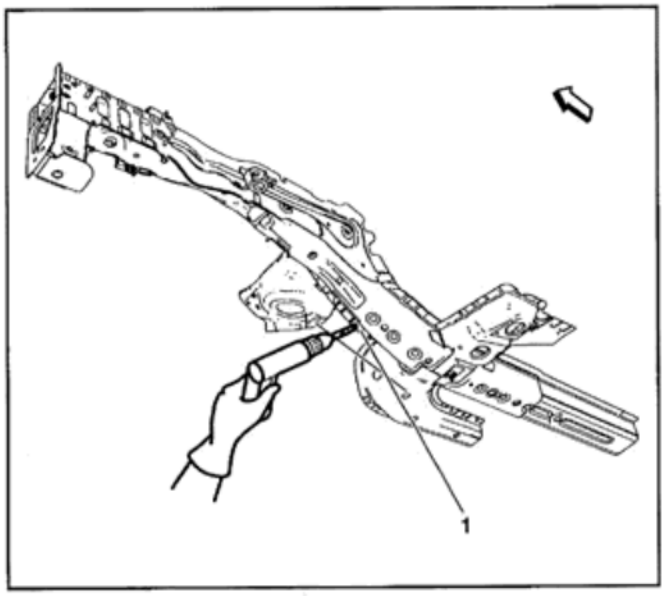
1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505795

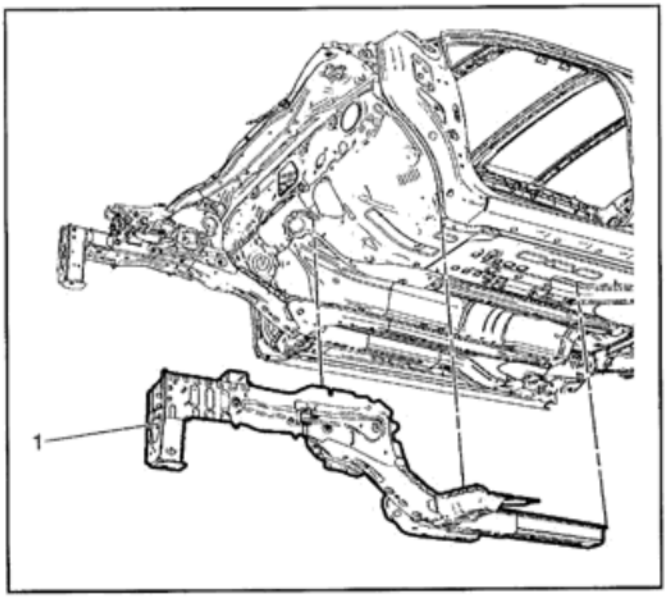
6. Locate and mark all the necessary factory welds of the front compartment side rail.
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.
8. Remove the front compartment side rail.

Installation Procedure



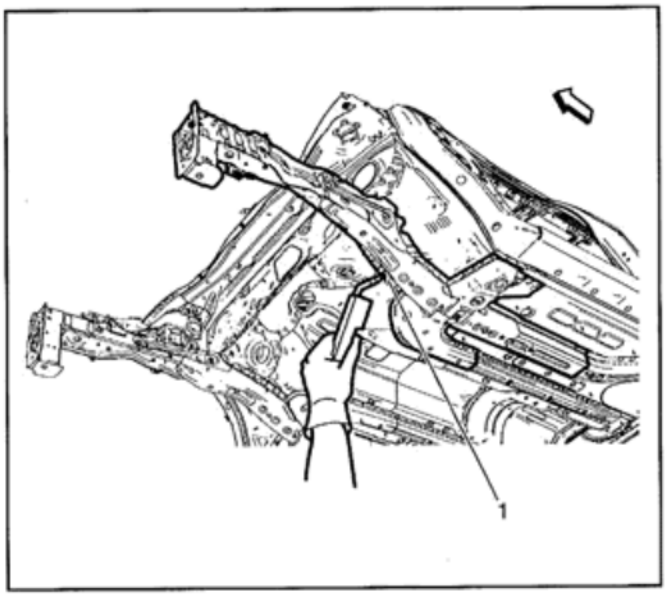
2505796

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the front compartment side rail as noted from the original panel (1).
2. Clean and prepare the attaching surfaces for welding.



2505798

3. Position the front compartment side rail on the vehicle (1).
4. Verify the fit of the front compartment side rail.
5. Clamp the front compartment side rail into position.



2505800

6. Plug weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Front Hinge Pillar Body Sectioning

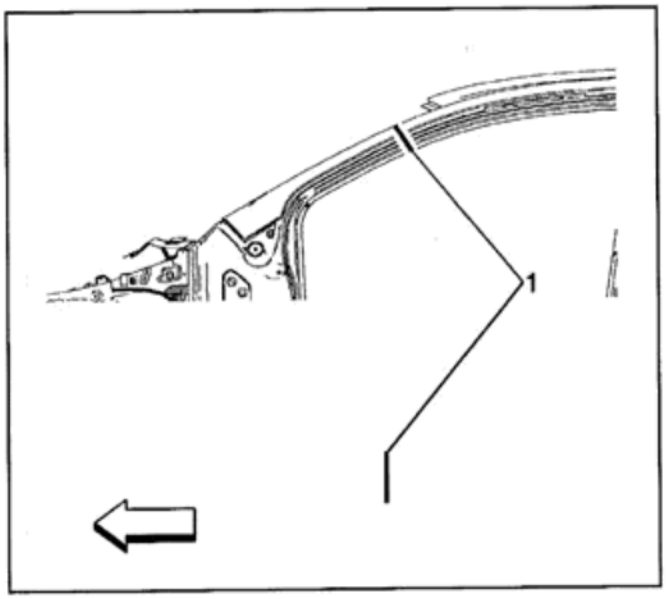
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Collision Sectioning Warning on page 0-4.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

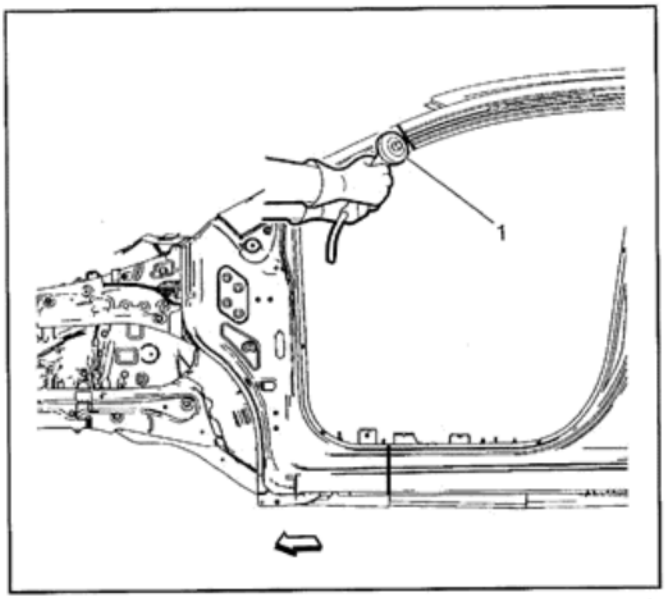
1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all the related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505817

Note: Sectioning can be done anywhere in the straight area along the rocker panel.

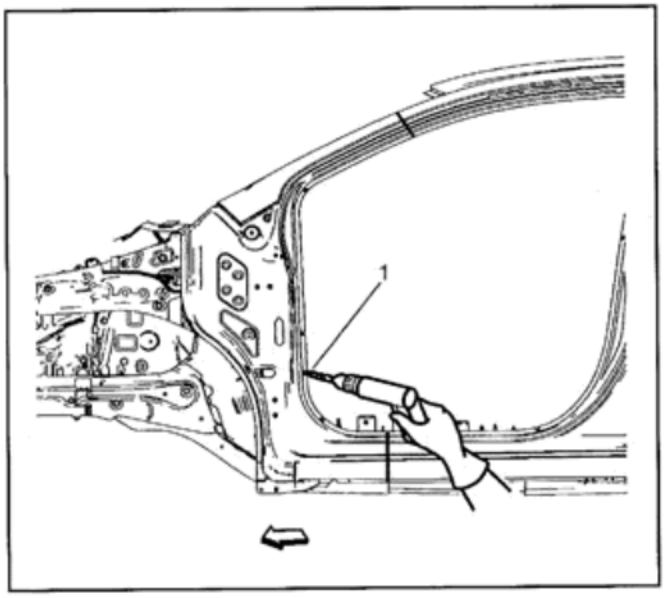
6. Create cut lines (1) on the front hinge pillar body.



2505818

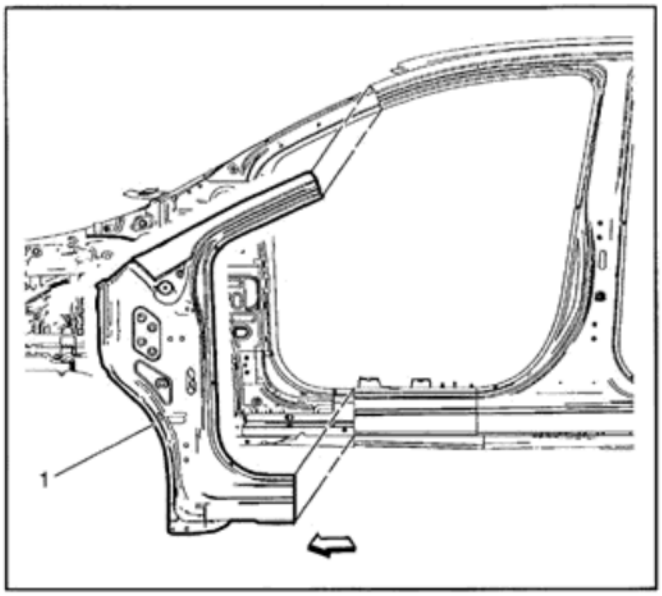
Note: Do not damage any inner panels or reinforcements.

7. Cut the panel where sectioning is to be performed (1).
8. Locate and mark all the necessary factory welds of the front hinge pillar body.



2505819

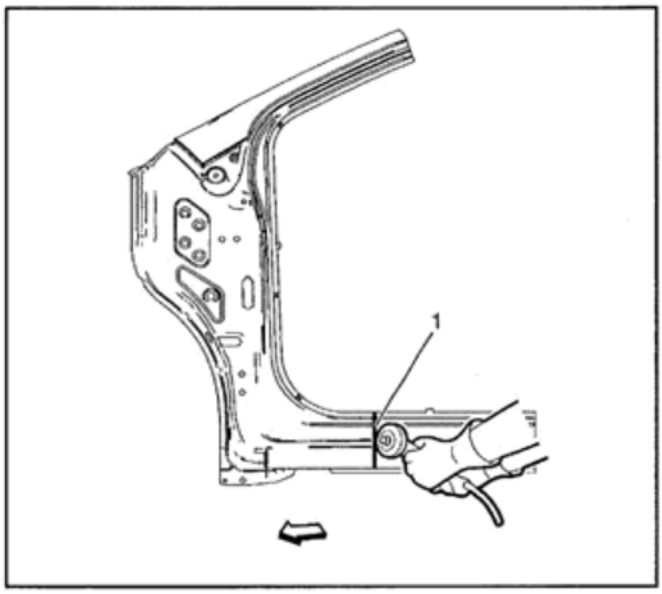
9. Drill all the factory welds (1). Note the number and location of welds for installation of the service assembly.



2505820

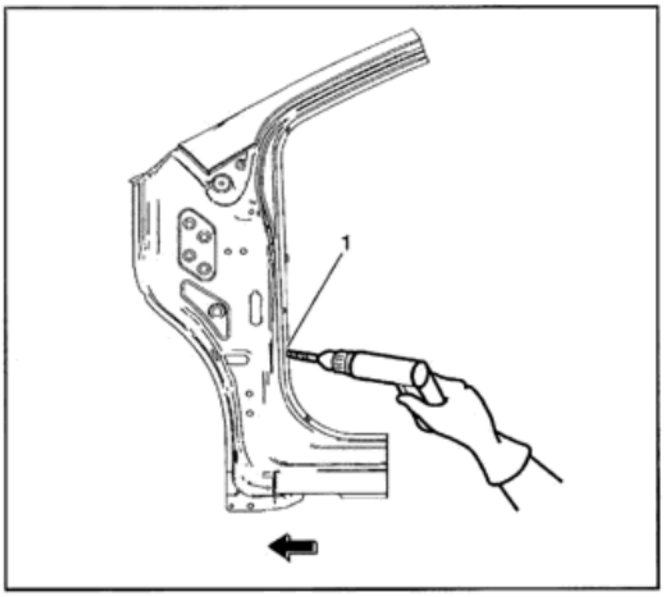
10. Remove the damaged front hinge pillar body (1).

Installation Procedure



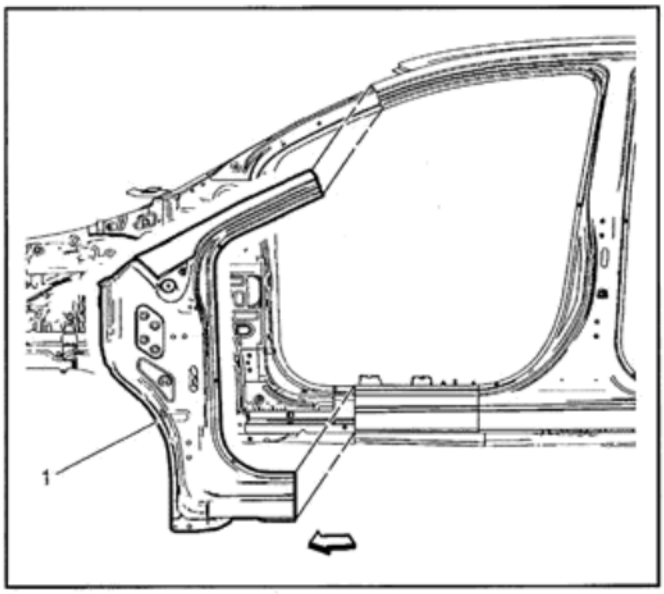
2505821

1. Cut the front hinge pillar body in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to overlap the remaining original panel by **25 mm (1 in)** at each joint location (1).
2. Prepare all mating surfaces as necessary.



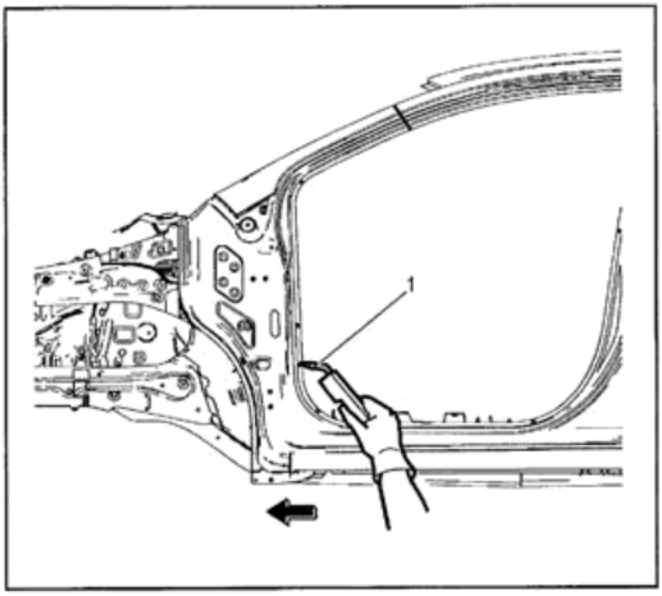
2505823

3. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the front hinge pillar body as noted from the original panel (1).
4. Clean and prepare the attaching surfaces for welding.

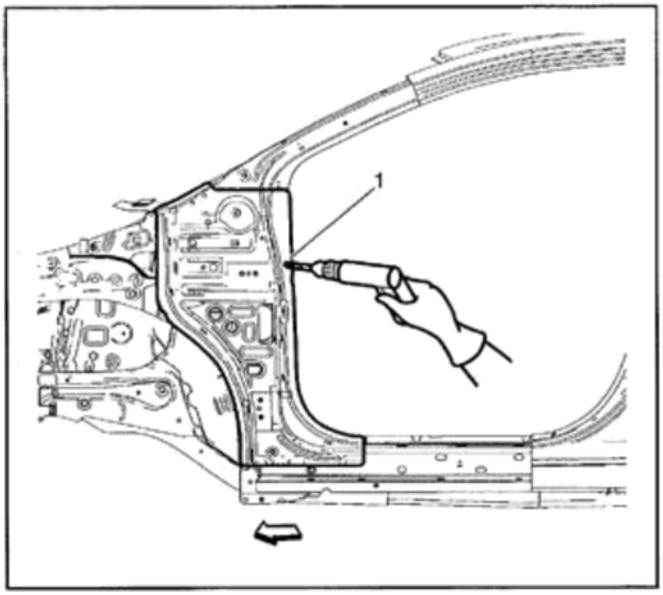


2505820

5. Position the front hinge pillar body on the vehicle (1).
6. Verify the fit of the front hinge pillar body.
7. Clamp the front hinge pillar body into position.



2505824



2505825

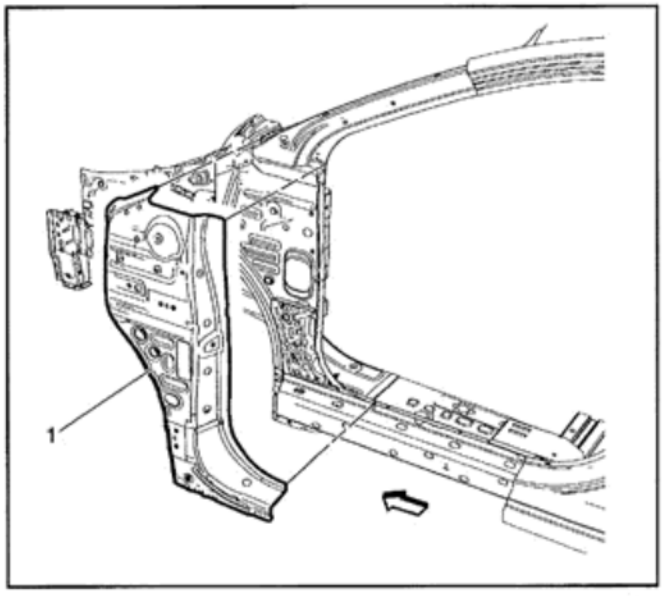
8. Plug weld accordingly (1).
9. To create a solid weld at the sectioning joint, with minimum heat distortion, make **25 mm (1 in)** stitch welds along the seam with **25 mm (1 in)** gaps between them. Then go back and complete the stitch weld.
10. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to Anti-Corrosion Treatment and Repair.
11. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
12. Install all related panels and components.
13. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
14. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Body Hinge Pillar Lower Reinforcement Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Repair as much of the damage as possible. Refer to *Dimensions - Body (5HB) on page 3-68* or *Dimensions - Body (4NB) on page 3-73*.
5. Remove the sealers and anti-corrosion materials from the repair area. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all the necessary factory welds of the front hinge pillar body.
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.

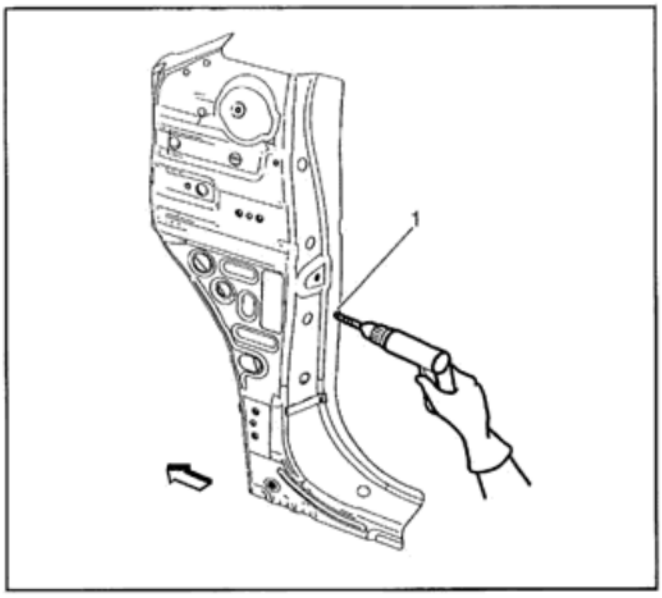


2505826

8. Remove the damaged front hinge pillar body reinforcement (1).

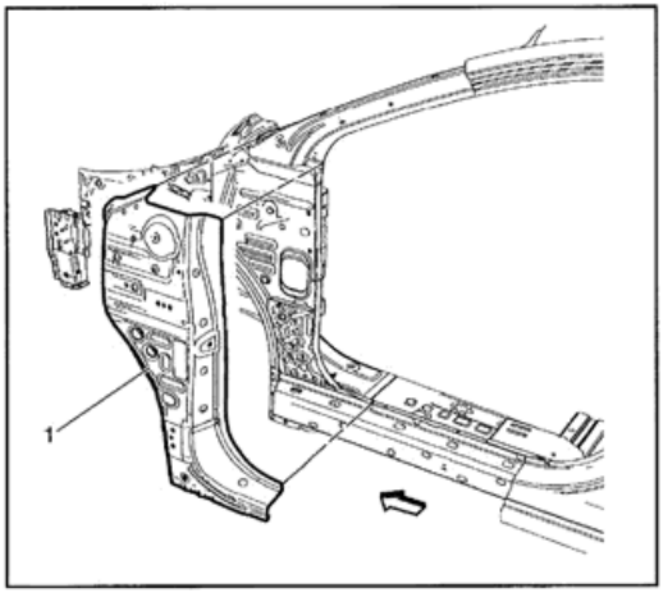
Installation Procedure

1. Prepare all mating surfaces as necessary.
2. Align the front hinge pillar body reinforcement.



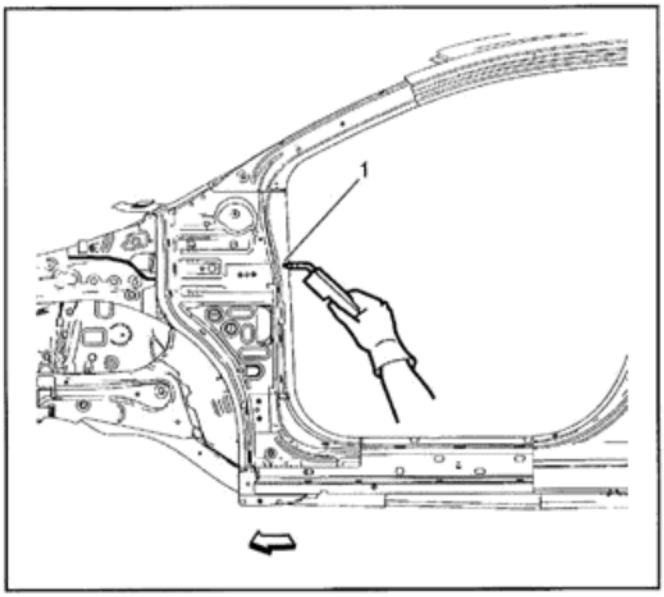
2505827

3. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the front hinge pillar body as noted from the original panel (1).
4. Clean and prepare the attaching surfaces for welding.



2505826

5. Position the front hinge pillar body reinforcement on the vehicle (1).
6. Verify the fit of the front hinge pillar body reinforcement.
7. Clamp the front hinge pillar body reinforcement into position.



2505829

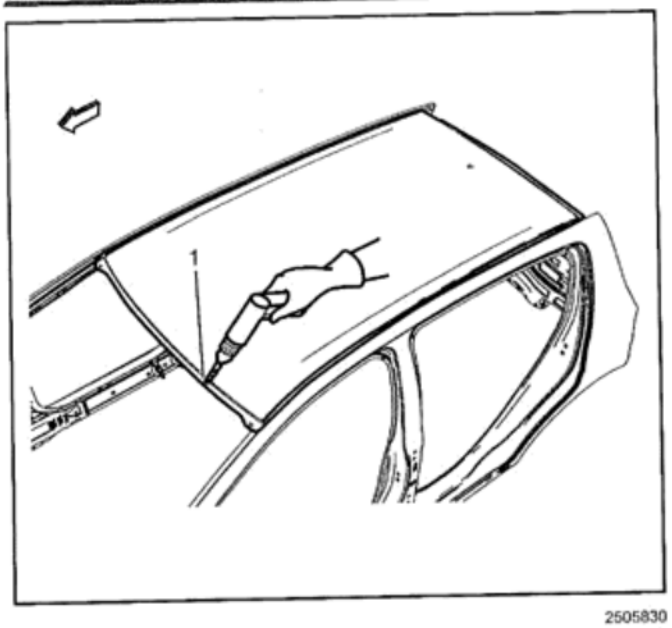
8. Plug weld accordingly (1).
9. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
10. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
11. Install all related panels and components.
12. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
13. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Roof Outer Panel Replacement (5HB)

Removal Procedure

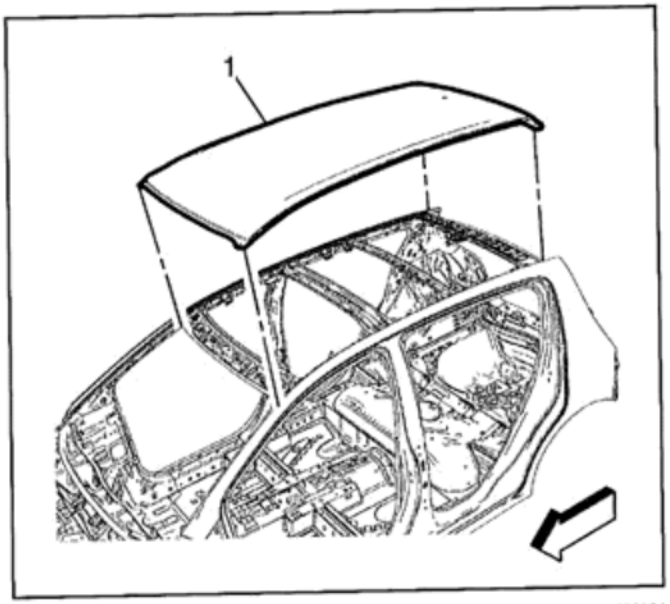
Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all factory welds.



2505830

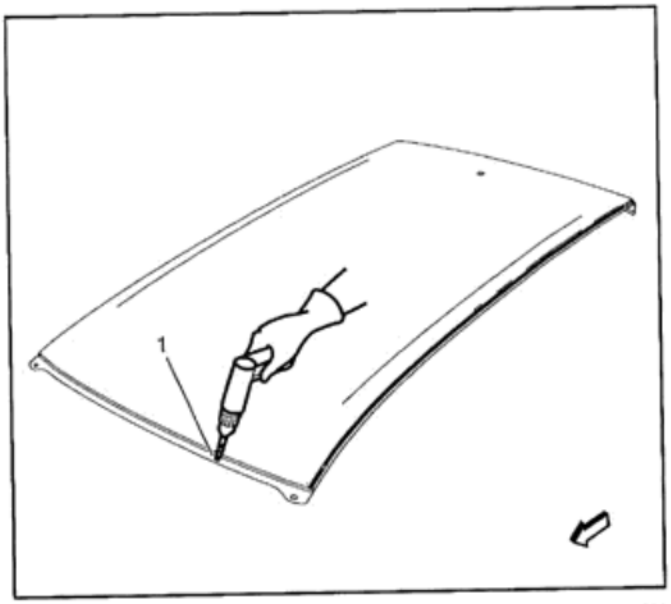
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.
8. Cut the adhesive with an appropriate tool.



2505831

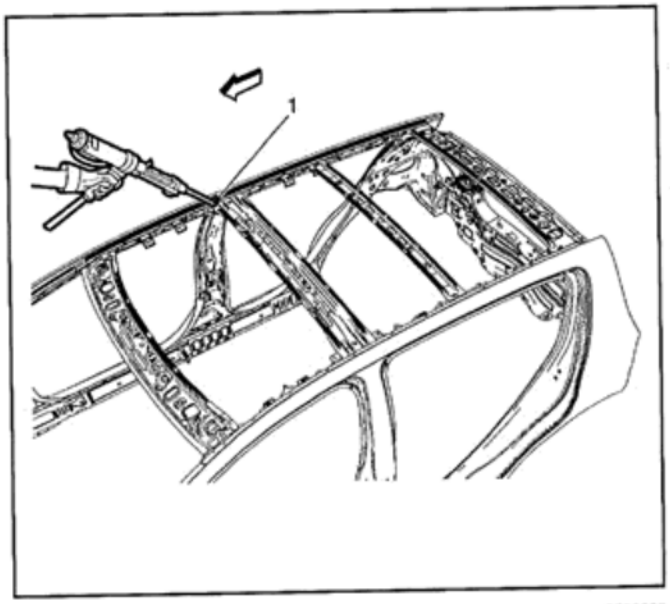
9. Remove the damaged roof panel (1).

Installation Procedure



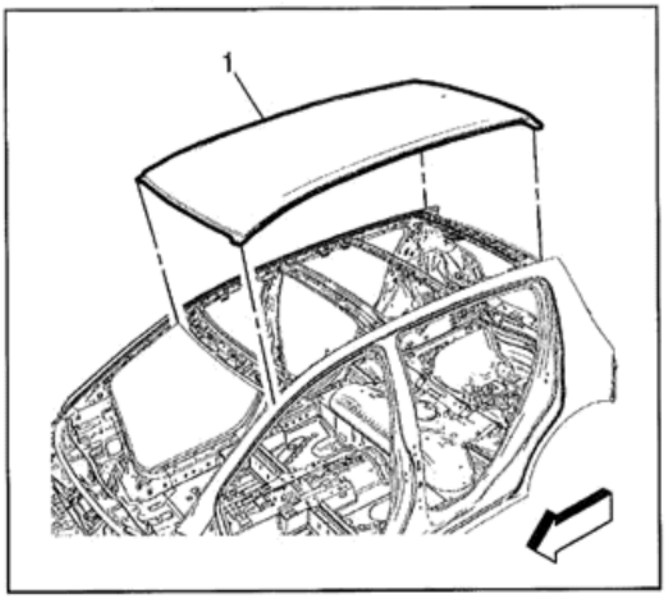
2505832

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the service panel as noted from the original panel (1).
2. Clean and prepare the attaching surfaces for welding.



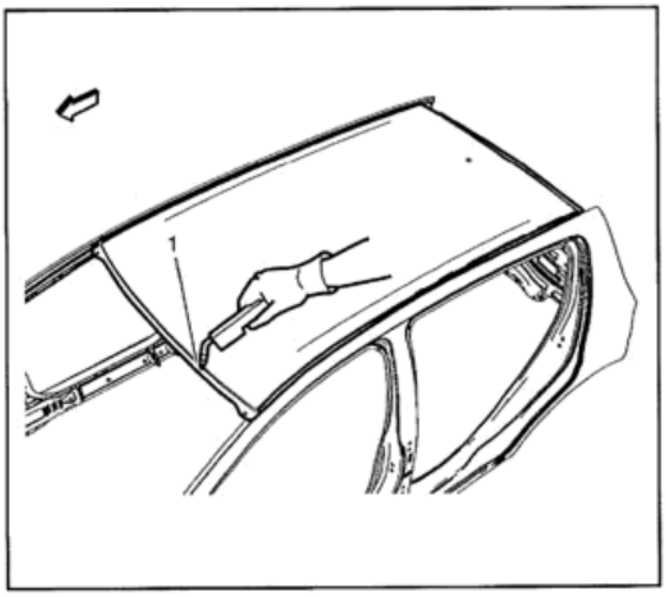
2505833

3. Apply one-part windshield urethane adhesive as noted from the original panel (1).



2505831

4. Position the roof panel (1) on the vehicle.
5. Verify the fit of the panel.
6. Clamp the panel into position.



2505834

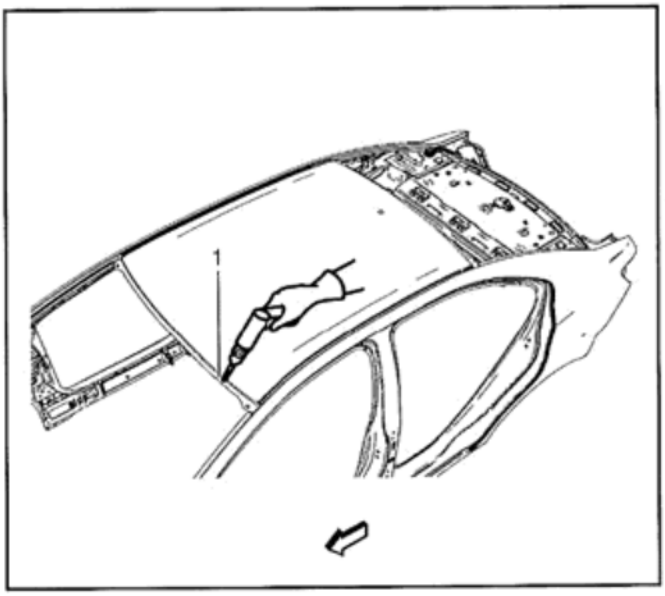
7. Plug weld accordingly (1).
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
9. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
10. Install all related panels and components.
11. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
12. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Roof Outer Panel Replacement (4NB)

Removal Procedure

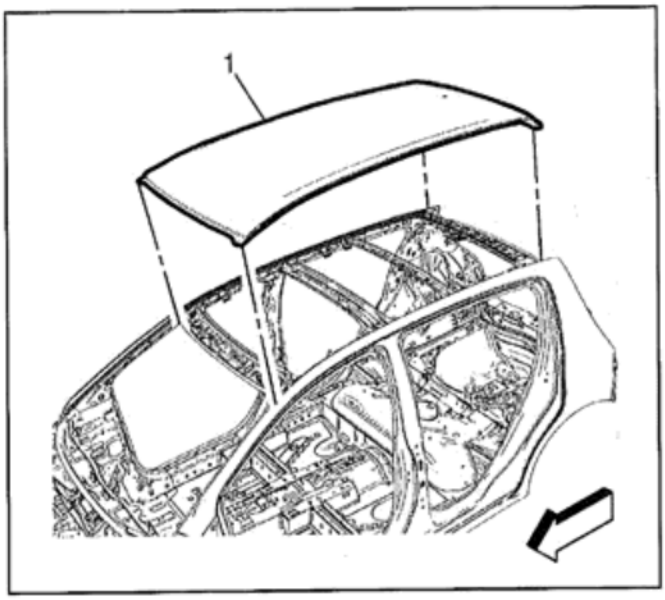
Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all factory welds.



2505835

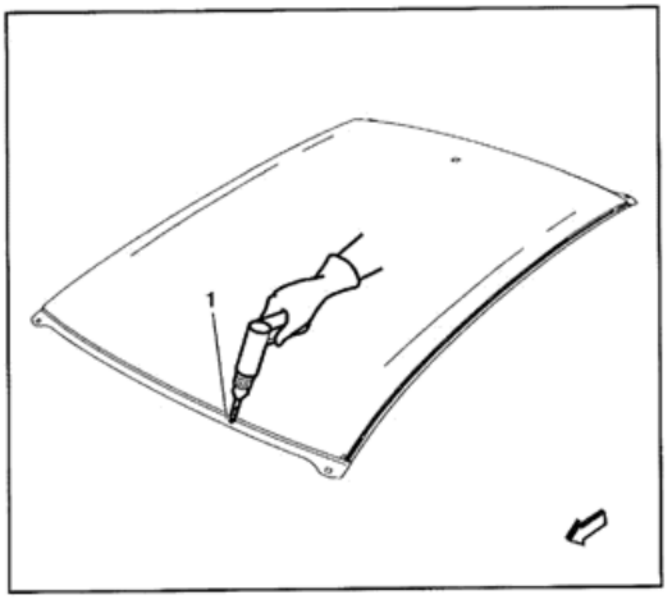
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.
8. Cut the adhesive with an appropriate tool.



2505837

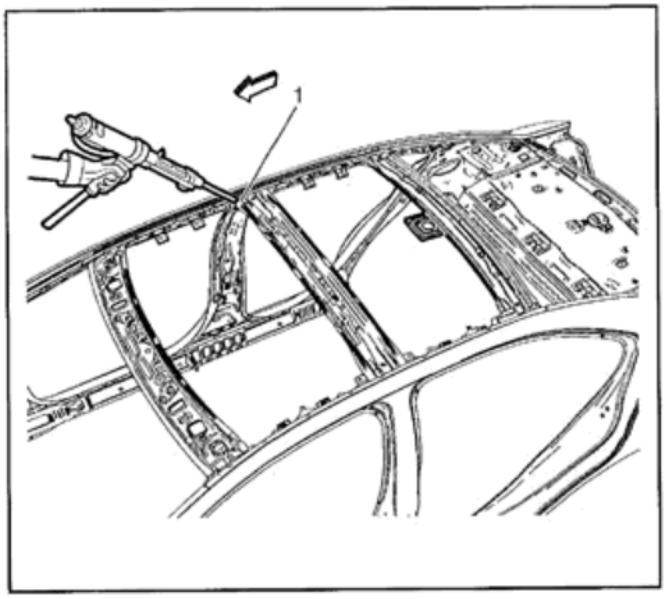
9. Remove the damaged roof panel (1).

Installation Procedure



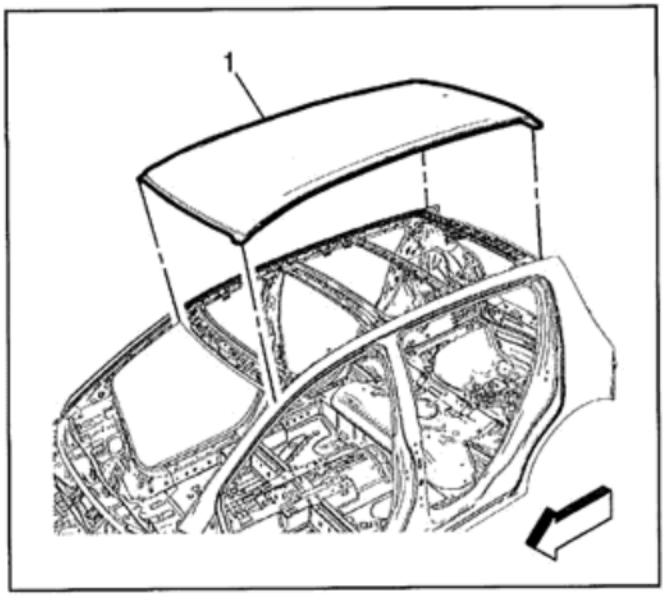
2505838

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the service panel as noted from the original panel (1).
2. Clean and prepare the attaching surfaces for welding.



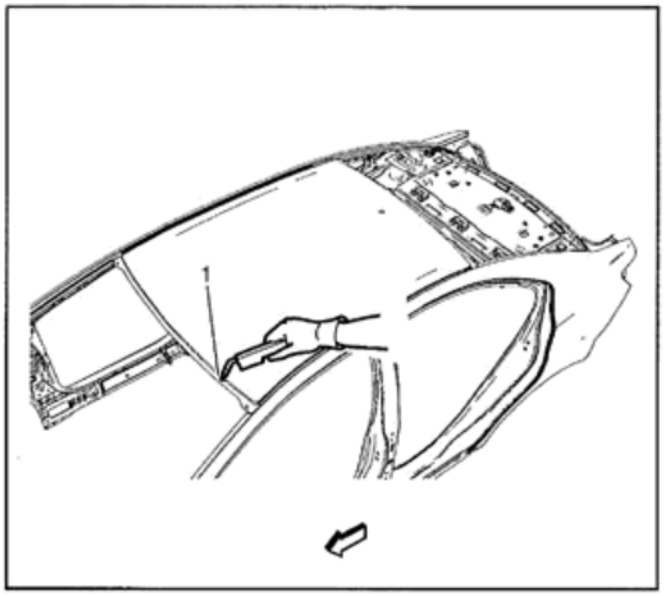
2505840

3. Apply one-part windshield urethane adhesive (1) as noted from the original panel.



2505837

4. Position the roof panel (1) on the vehicle.
5. Verify the fit of the panel.
6. Clamp the panel into position.



2505841

7. Plug weld accordingly (1).
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
9. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
10. Install all related panels and components.
11. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
12. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

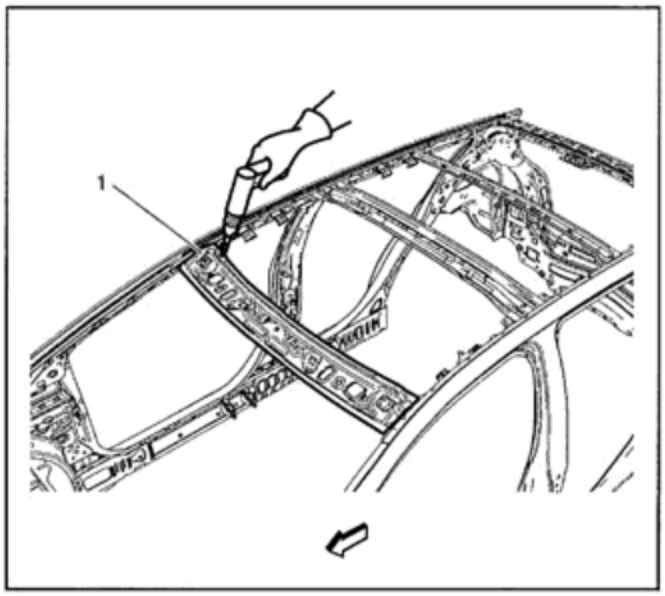
Roof Front Header Panel Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

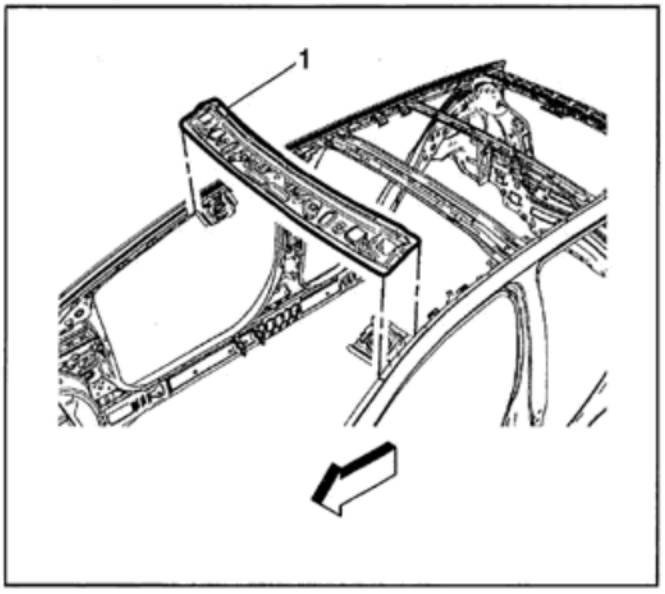
Note: The roof front header panel is made of Ultra High Strength Steel and should be replaced only at factory joints. Repairing or sectioning of this part is not recommended. Refer to *Ultra High Strength Steel on page 3-142*.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to *Dimensions - Body (5HB) on page 3-68* or *Dimensions - Body (4NB) on page 3-73*.
5. Remove the sealers and anti-corrosion materials from the repair area. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all factory welds.



2505843

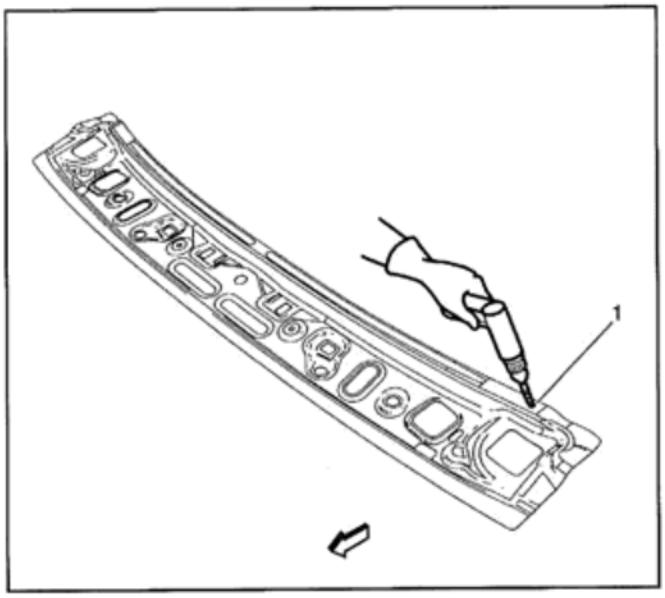
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505844

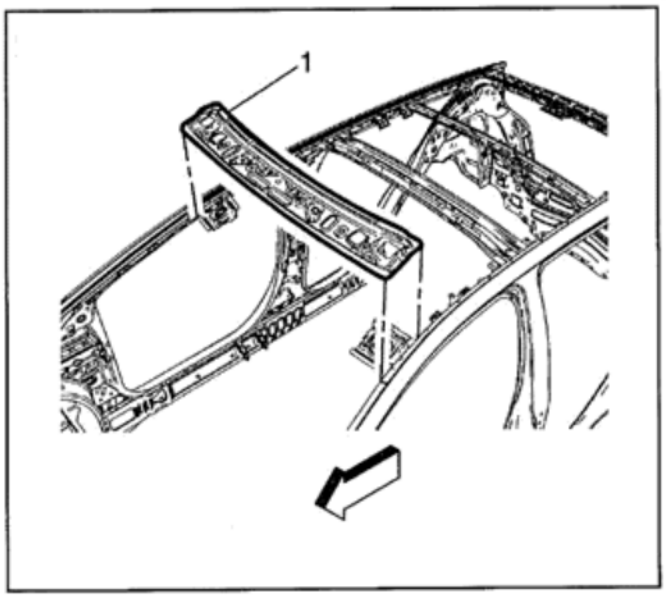
8. Remove the damaged roof front header panel (1).

Installation Procedure



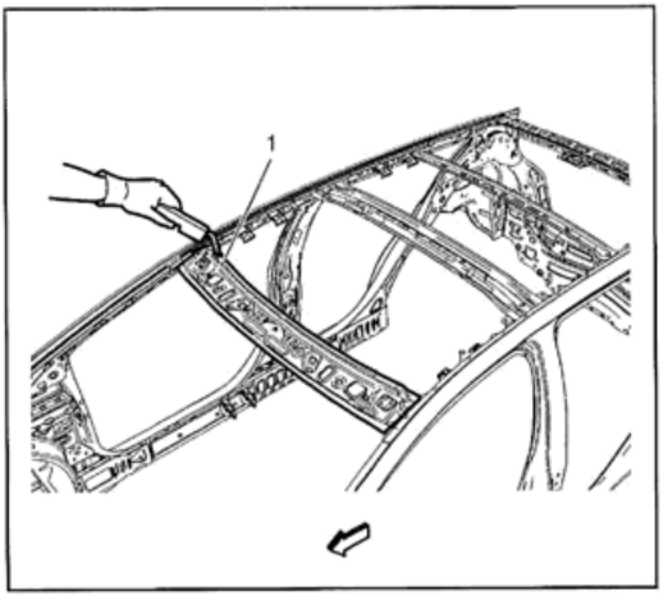
2505845

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the service panel as noted from the original panel (1).
2. Clean and prepare the attaching surfaces for welding.



2505844

3. Position the roof front header (1) panel on the vehicle.
4. Verify the fit of the panel.
5. Clamp the roof front header panel into position.



2505846

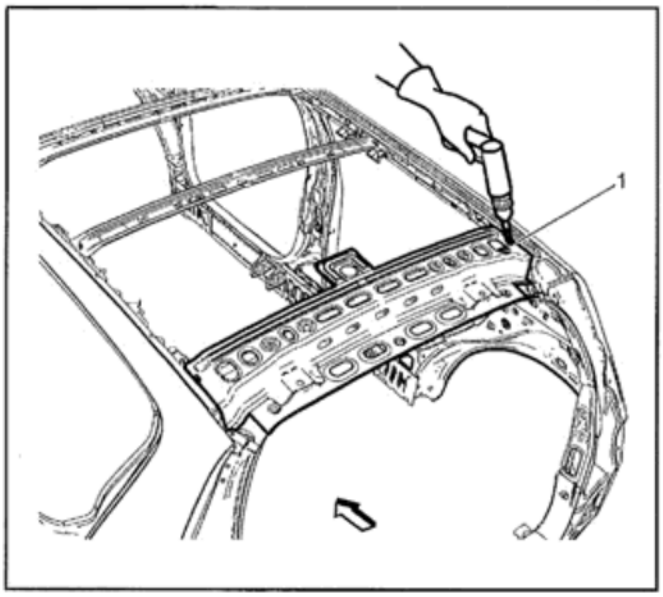
6. Plug weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Roof Rear Header Panel Replacement (5HB)

Removal Procedure

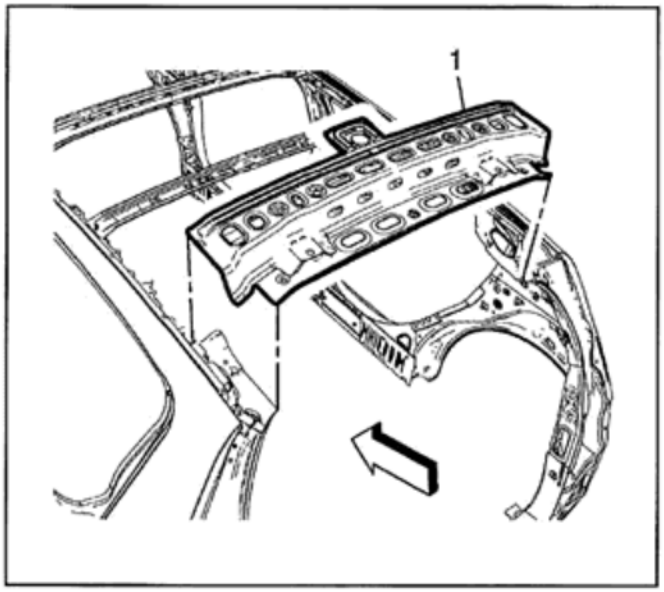
Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to *Dimensions - Body (5HB) on page 3-68* or *Dimensions - Body (4NB) on page 3-73*.
5. Remove the sealers and anti-corrosion materials from the repair area. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all factory welds.



2505847

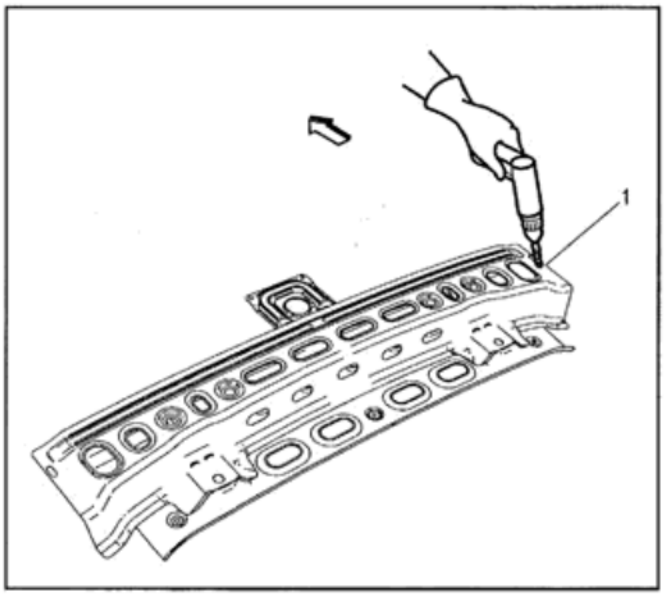
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505848

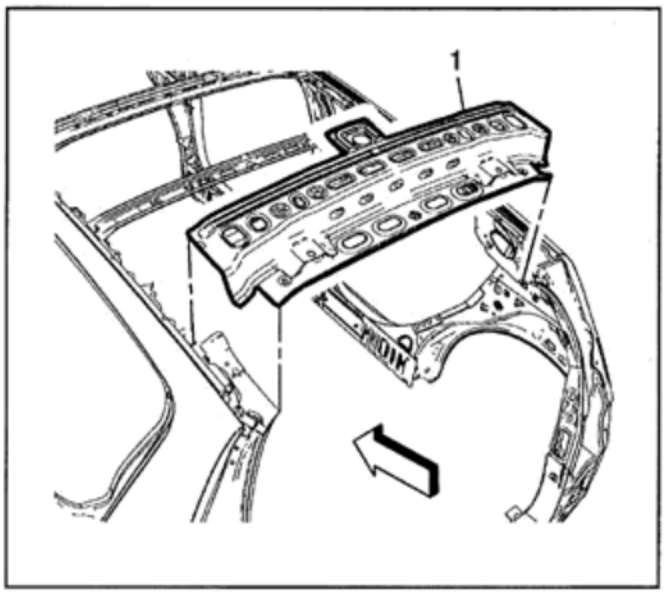
8. Remove the damaged rear header panel (1).

Installation Procedure



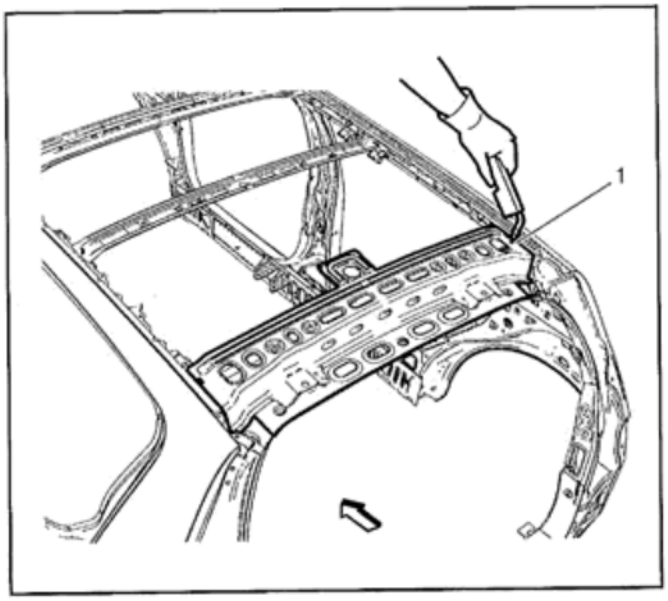
2505849

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the service panel (1) as noted from the original panel.
2. Clean and prepare the attaching surfaces for welding.



2505848

3. Position the roof rear header (1) panel on the vehicle.
4. Verify the fit of the panel.
5. Clamp the roof rear header panel into position.



2505850

6. Plug weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

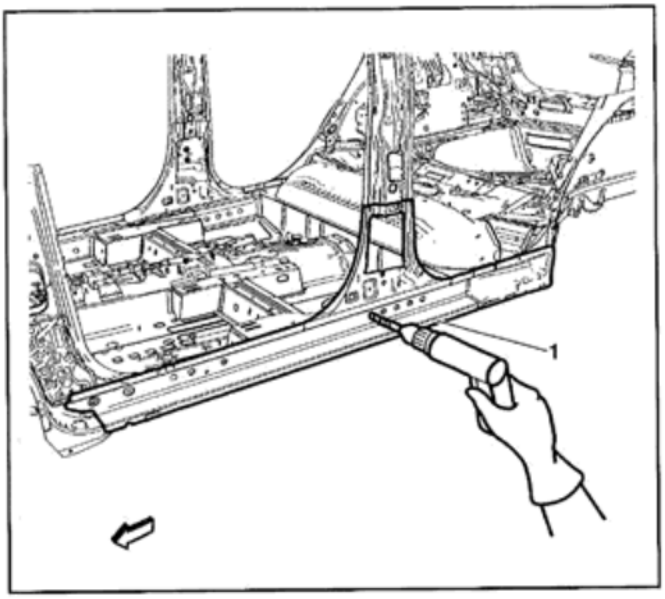
Rocker Inner Panel Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

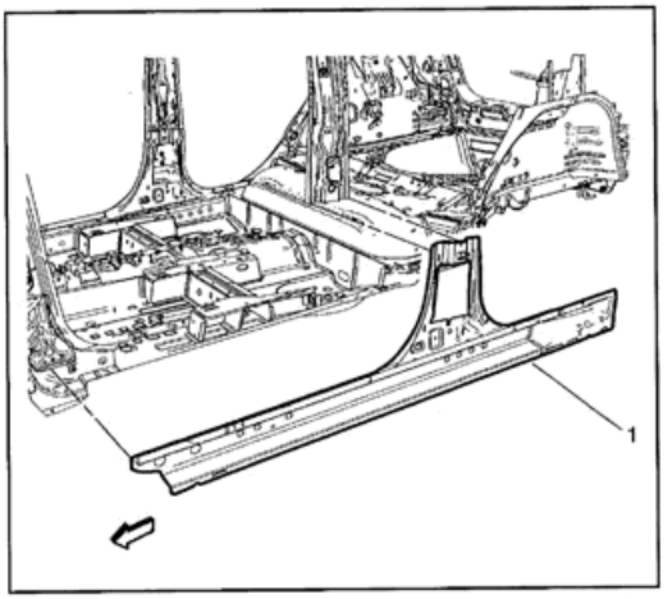
Note: The rocker inner panel is made of Ultra High Strength Dual Phase Steel and should be replaced only at factory joints. Repairing or sectioning of this part is not recommended. Refer to *Ultra High Strength Dual Phase Steel on page 3-141*.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to *Dimensions - Body (5HB) on page 3-68* or *Dimensions - Body (4NB) on page 3-73*.
5. Remove the sealers and anti-corrosion materials from the repair area. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505851

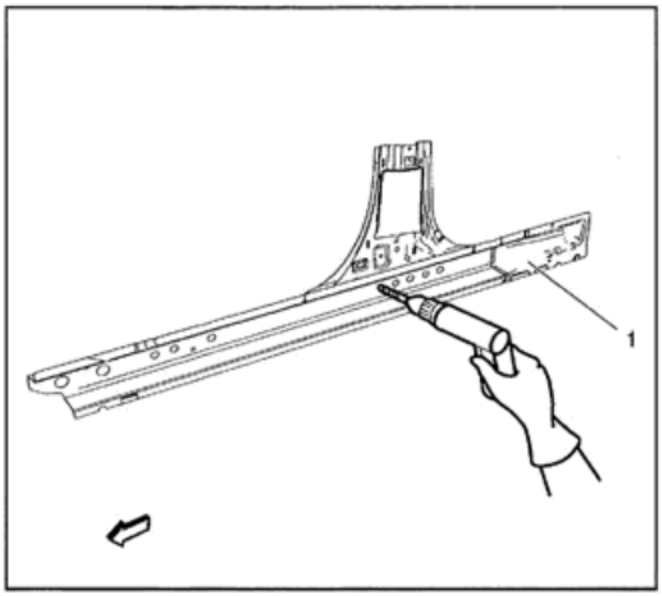
6. Locate and mark all the necessary factory welds of the rocker inner panel.
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505852

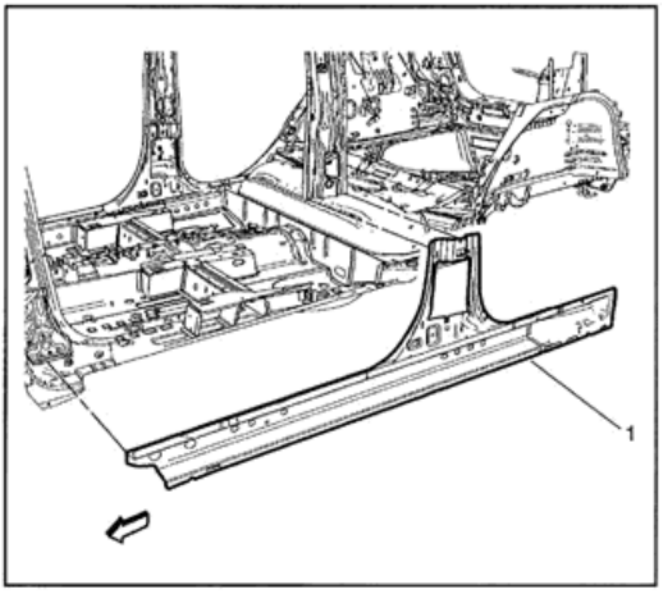
8. Remove the damaged rocker inner panel (1).

Installation Procedure



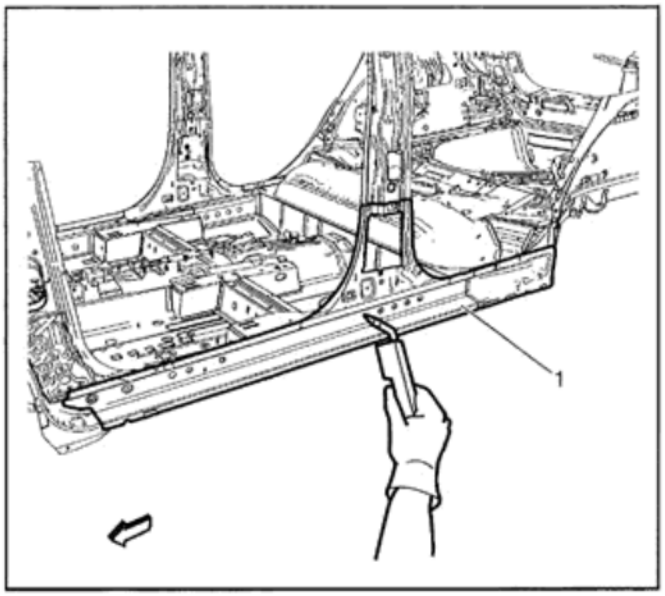
2505853

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the quarter outer panel (1) as noted from the original panel.
2. Clean and prepare the attaching surfaces for welding.



2505852

3. Position the rocker inner panel on the vehicle (1).
4. Verify the fit of the panel.
5. Clamp the rocker inner panel into position.



2505854

6. Plug the weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Rocker Outer Panel Sectioning

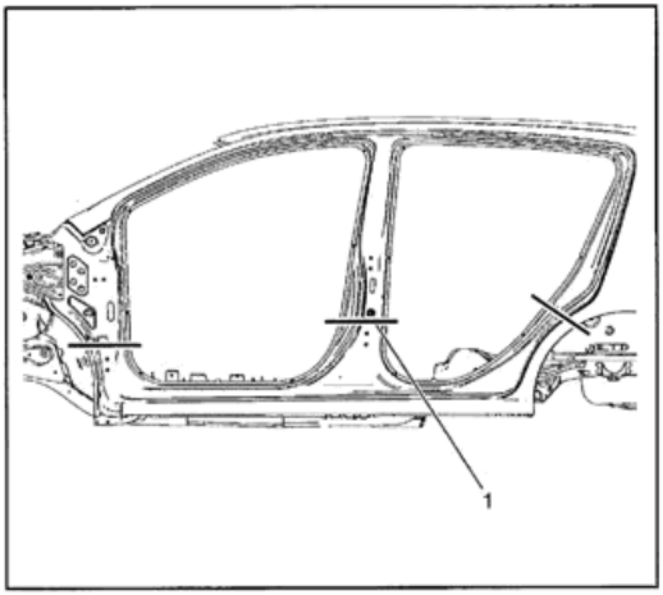
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Collision Sectioning Warning on page 0-4.

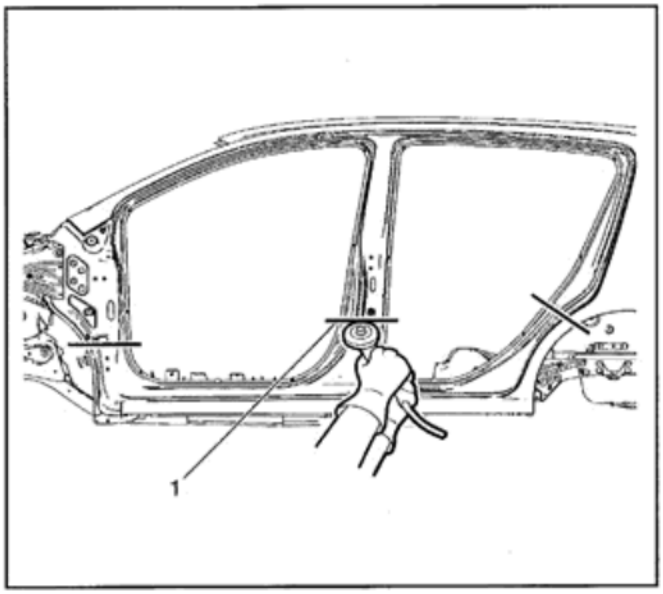
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505872

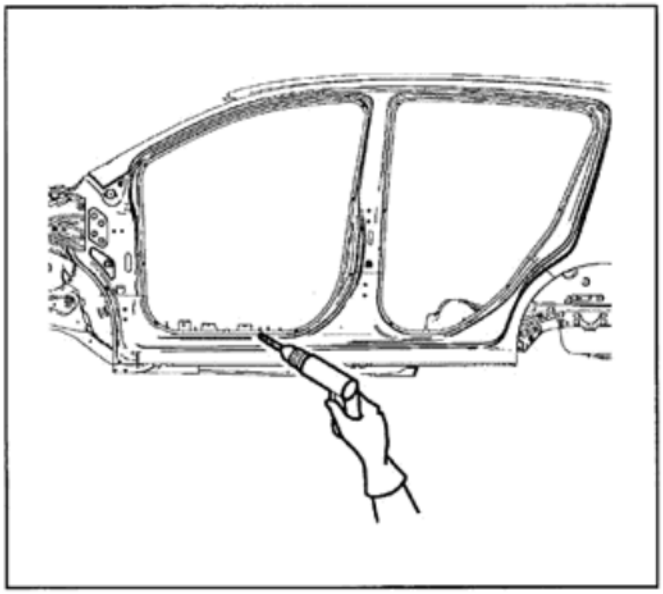
6. Create cut lines on the rocker outer panel (1).



2505873

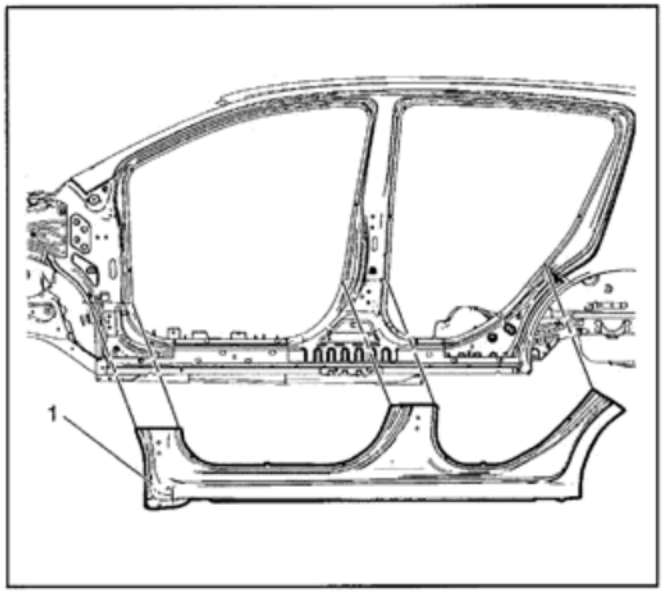
Note: Do not damage any inner panels or reinforcements.

7. Cut the panel where sectioning is to be performed (1).



2505874

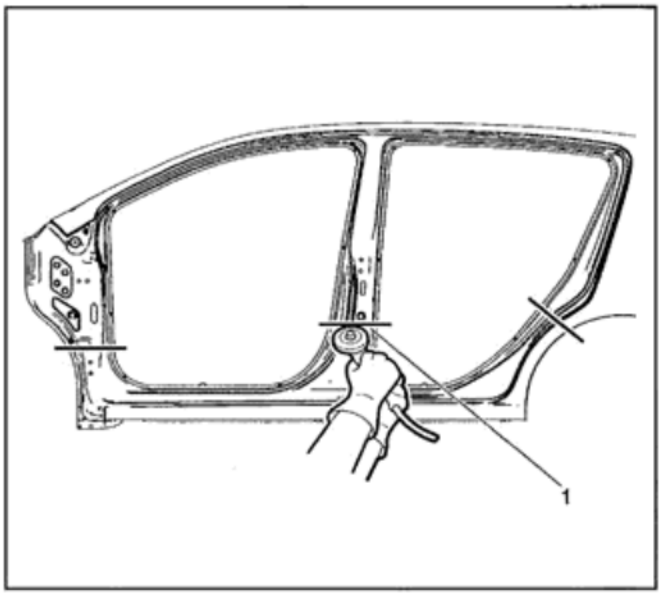
8. Locate and mark all the necessary factory welds of the rocker outer panel.
9. Drill all factory welds. Note the number and location of welds for installation of the service assembly.



2505875

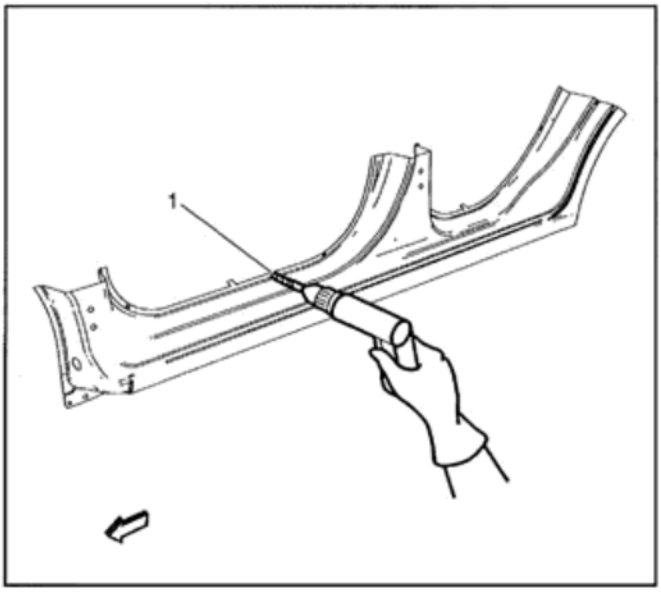
10. Remove the damaged rocker outer panel (1).

Installation Procedure



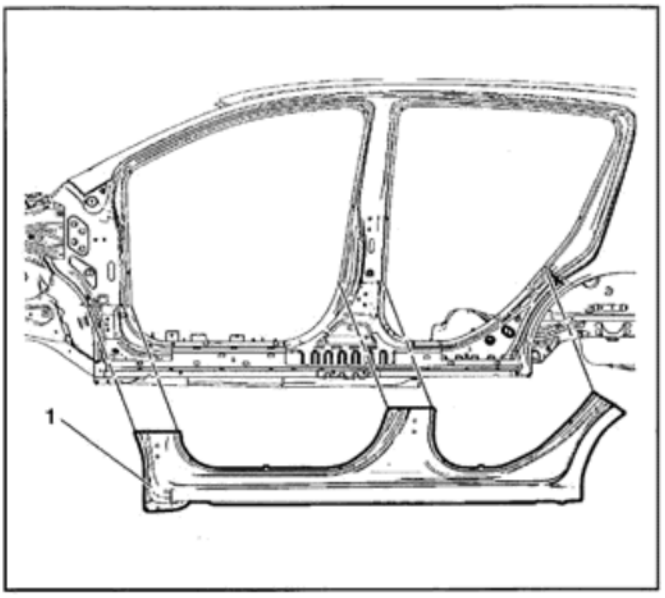
2505877

1. Cut the rocker outer panel in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to overlap the remaining original panel by **25 mm (1 inch)** at each joint location (1).
2. Prepare all mating surfaces as necessary.



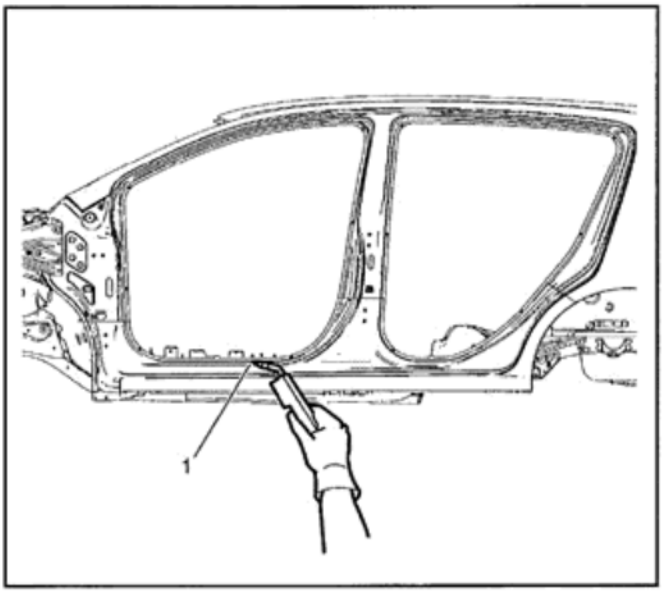
2505878

3. Drill a **8 mm (5/16 in)** holes for plug welding along the edges of the rocker outer panel as noted from the original panel (1).
4. Clean and prepare the attaching surfaces for welding.



2505875

5. Position the rocker outer panel on the vehicle (1).
6. Verify the fit of the rocker outer panel.
7. Clamp the rocker outer panel into position.



2505880

8. Plug weld accordingly (1).
9. To create a solid weld with minimum heat distortion, make **25 mm (1 in)** stitch welds along the seam with **25 mm (1 in)** gaps between them. Then go back and complete the stitch weld.
10. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
11. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
12. Install all related panels and components.
13. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.

14. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Body Side Frame Rocker Reinforcement Replacement

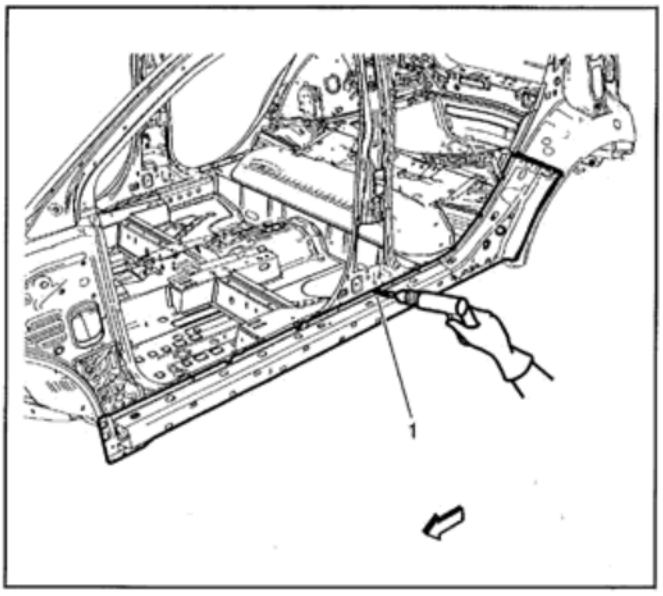
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

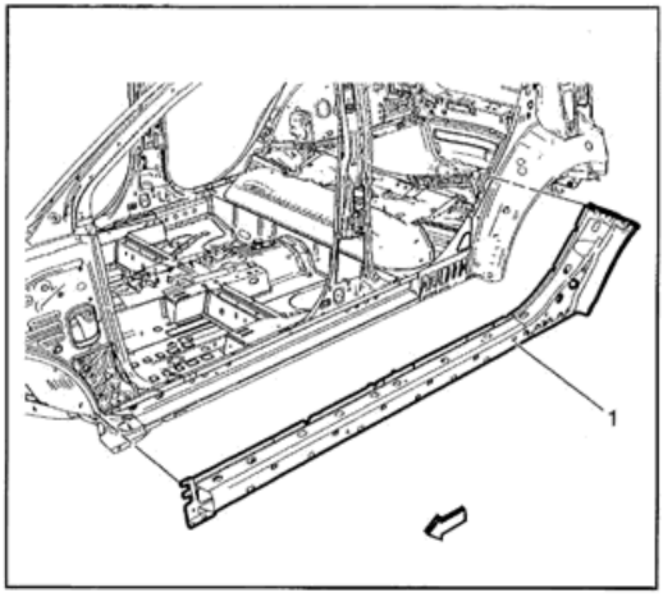
Note: The body side frame rocker reinforcement is made of Ultra High Strength Dual Phase Steel and should be replaced only at factory joints. Repairing or sectioning of this part is not recommended. Refer to *Ultra High Strength Dual Phase Steel on page 3-141*.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to *Dimensions - Body (5HB) on page 3-68* or *Dimensions - Body (4NB) on page 3-73*.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all the necessary factory welds of the body side frame rocker reinforcement.



2505900

7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.

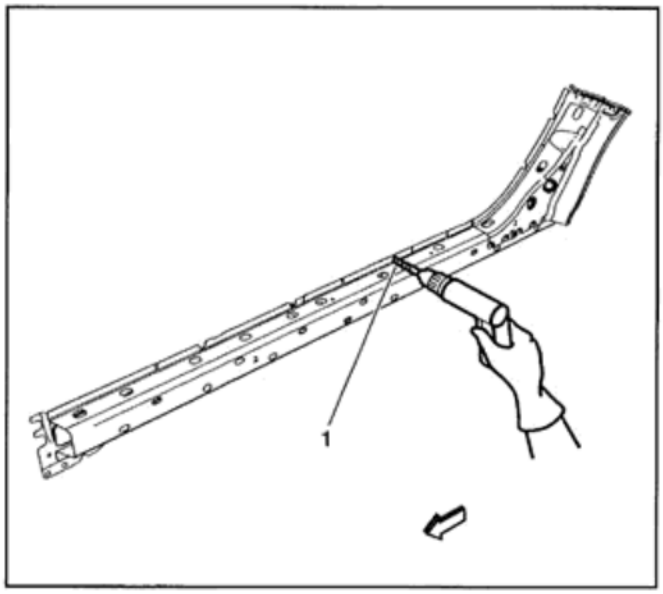


2505903

8. Remove the damaged body side frame rocker reinforcement (1).

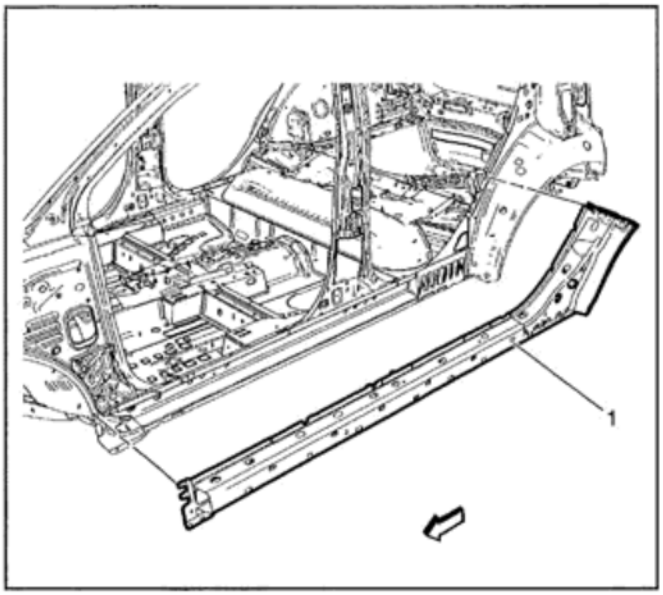
Installation Procedure

1. Align the body side frame rocker reinforcement.



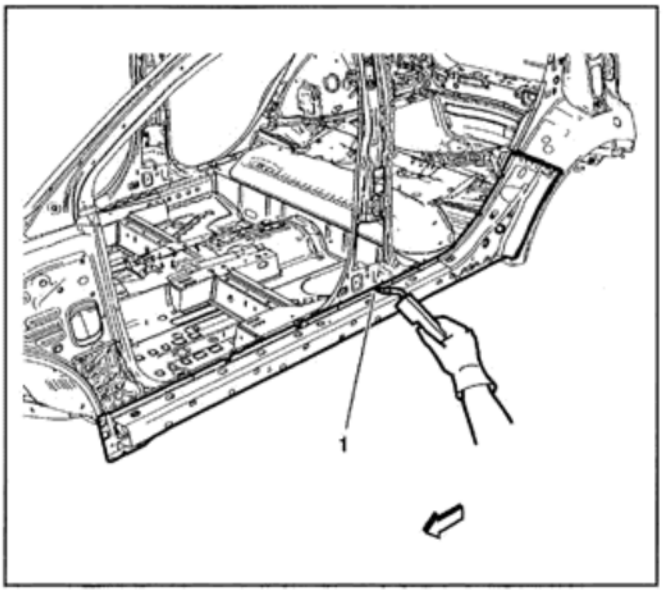
2505904

2. Drill a **8 mm (5/16 in)** holes for plug welding along the edges of the quarter outer panel (1) as noted from the original panel.
3. Clean and prepare the attaching surfaces for welding.



2505903

4. Position the body side frame rocker reinforcement on the vehicle (1).
5. Verify the fit of the body side frame rocker reinforcement.
6. Clamp the body side frame rocker reinforcement into position.



2505905

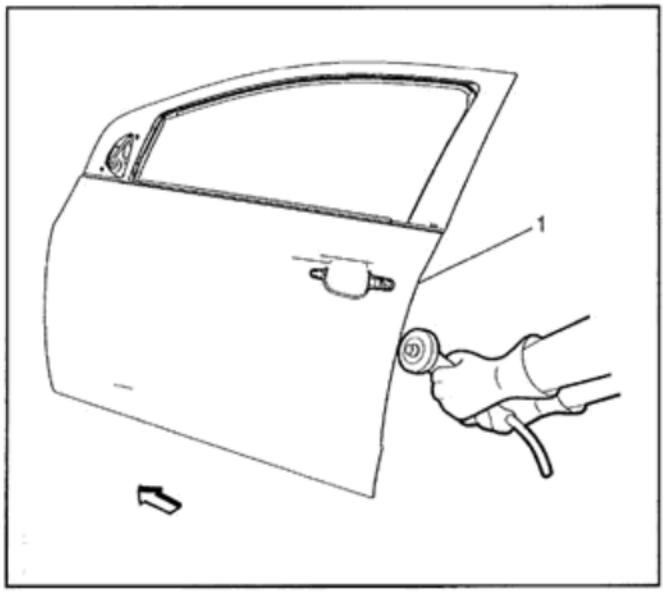
7. Plug the weld accordingly (1).
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
9. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
10. Install all related panels and components.
11. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
12. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Front Side Door Outer Panel Replacement

Removal Procedure

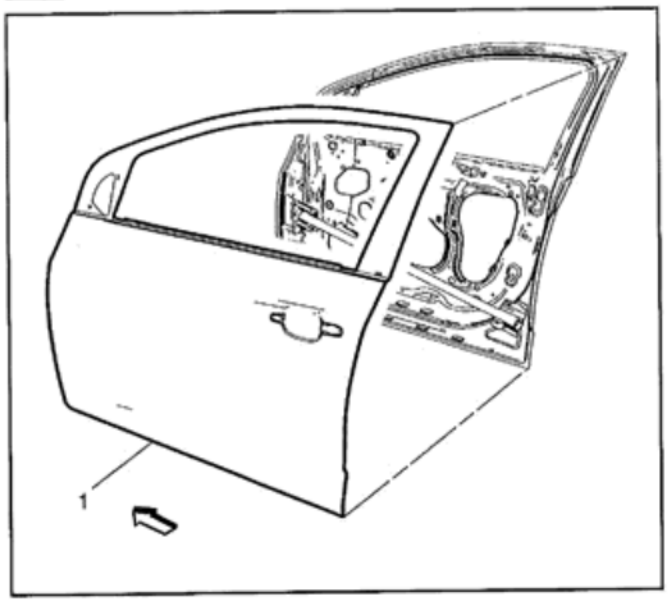
Note: According to different corrosion warranties, only the regional mandatory joining methods are allowed.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove the front side door. Refer to *Front Side Door Replacement on page 3-11*.
4. Remove the front side door outside handle. Refer to *Front Side Door Outside Handle Replacement on page 4-291*.
5. Remove the outside rearview mirror. Refer to *Outside Rearview Mirror Replacement (Power) on page 4-229* or *Outside Rearview Mirror Replacement (Manual) on page 4-228*.
6. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505989

7. Grind the edges of the front side door outer panel (1) to separate the outer door panel from the door shell.



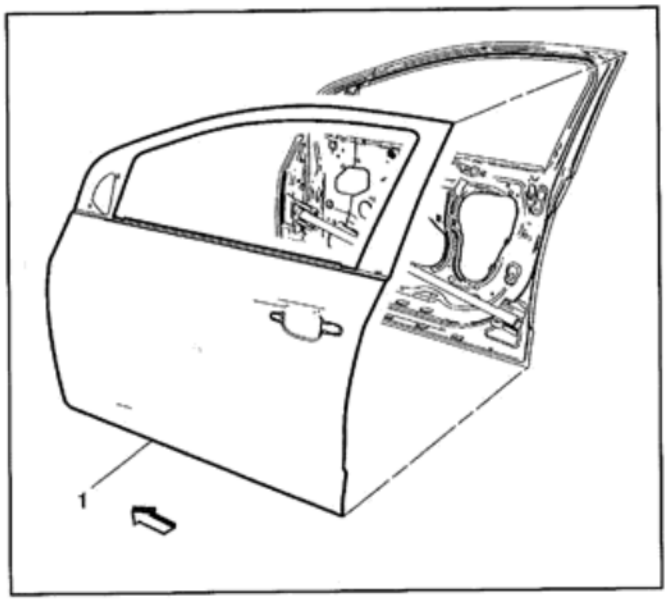
2505990

Warning: Inspection of the door guard beam for damage must be performed before replacement of the door outer panel. If damage to the door guard beam is found the door must be replaced. Failure to do so may compromise the structural integrity of the vehicle and may cause personal injury if the vehicle is involved in a collision.

8. Remove the front side door outer door panel (1).
9. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*
10. Straighten the edges of the door shell.

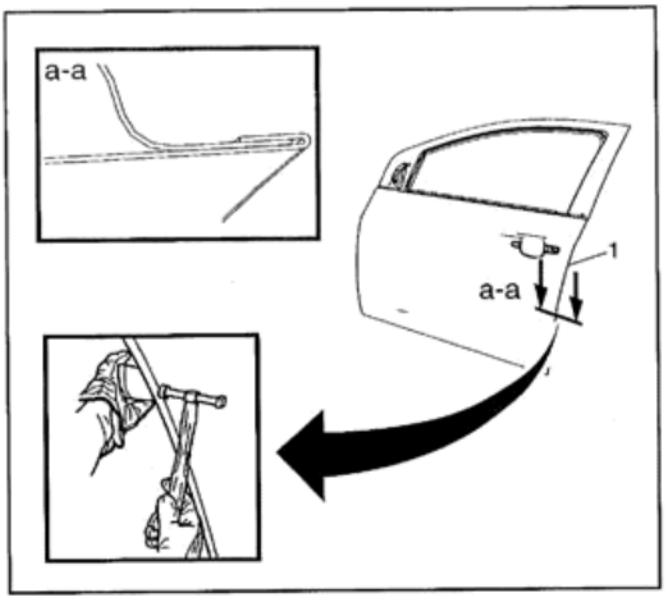
Installation Procedure

1. Align the front side door outer panel.
2. Verify the fit of the front side door outer panel.



2505990

3. Clamp the front side door outer panel (1) into position.



2505991

4. Continue to hammer in stages along the hem flanges (1).
5. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159.*
6. Install the outside rearview mirror. Refer to *Outside Rearview Mirror Replacement (Power) on page 4-229* or *Outside Rearview Mirror Replacement (Manual) on page 4-228.*
7. Install the front side door outside handle. Refer to *Front Side Door Outside Handle Replacement on page 4-291.*
8. Install the front side door. Refer to *Front Side Door Replacement on page 3-11.*
9. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159.*
10. Install all related panels and components.
11. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713.*
12. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112.*

Rear Side Door Outer Panel Replacement

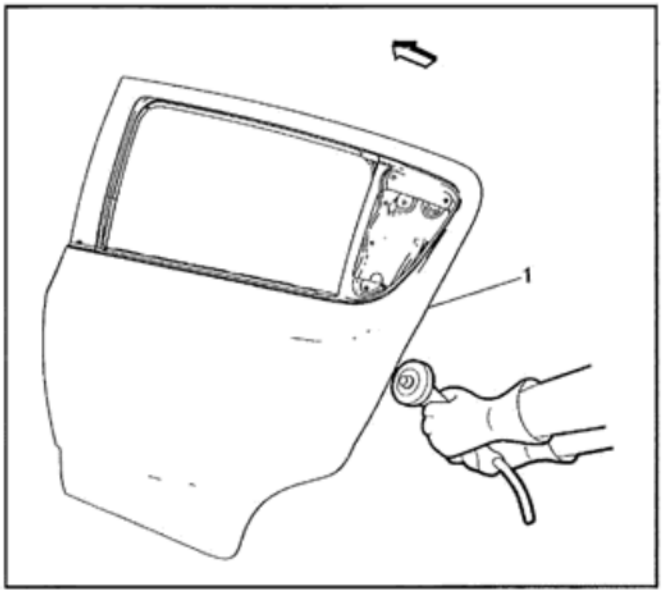
Removal Procedure

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

Note: According to different corrosion warranties, only the regional mandatory joining methods are allowed.

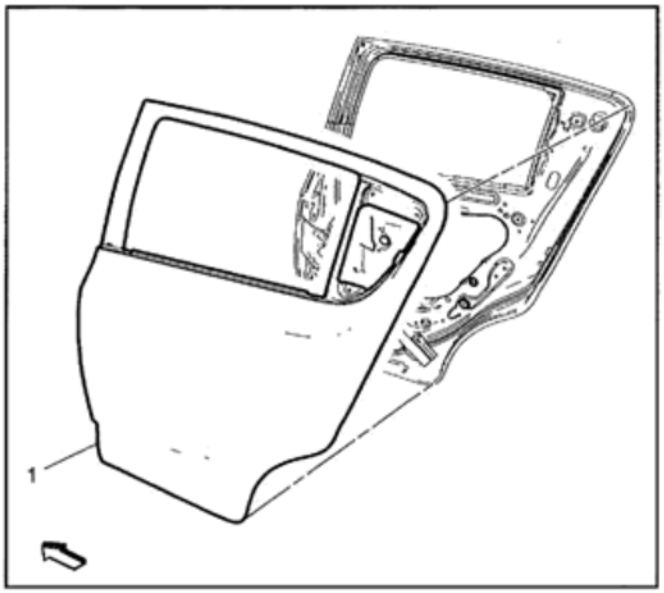
1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112.*
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713.*
3. Remove the rear side door. Refer to *Rear Side Door Replacement on page 3-13.*

4. Remove the rear side door outside handle. Refer to *Rear Side Door Outside Handle Replacement (Hatchback) on page 4-298* or *Rear Side Door Outside Handle Replacement (Sedan) on page 4-297*.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505992

6. Grind the edges of the rear side door outer panel (1) to separate the outer door panel from the door shell.



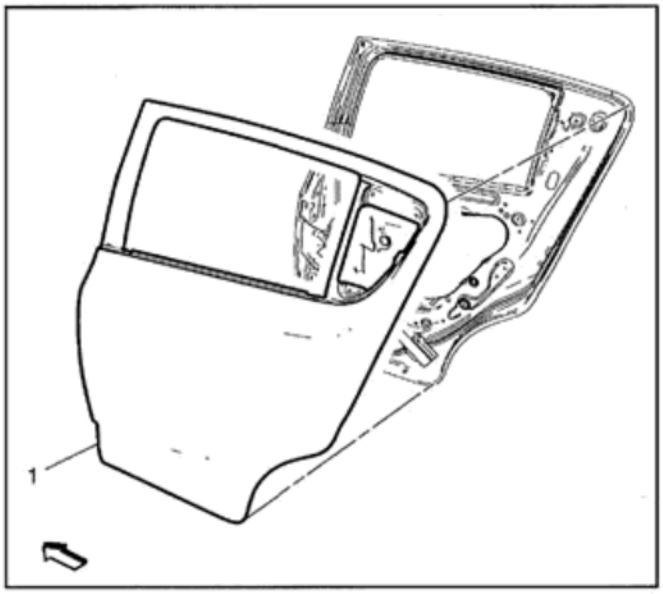
2505993

Warning: Inspection of the door guard beam for damage must be performed before replacement of the door outer panel. If damage to the door guard beam is found the door must be replaced. Failure to do so may compromise the structural integrity of the vehicle and may cause personal injury if the vehicle is involved in a collision.

7. Remove the rear side door outer door panel (1).
8. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
9. Straighten the edges of the door shell.

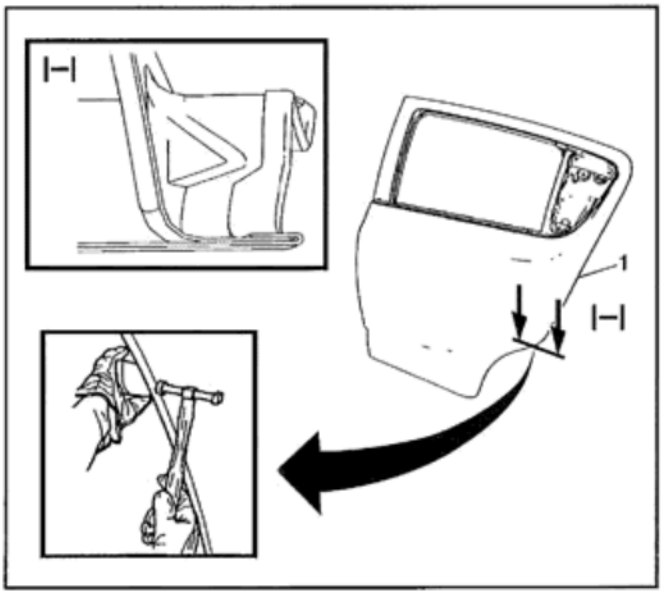
Installation Procedure

1. Align the rear side door outer panel.
2. Verify the fit of the rear side door outer panel.



2505993

3. Clamp the rear side door outer panel (1) into position.



2505996

4. Continue to hammer in stages along the hem flanges (1).
5. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.

6. Install the rear side door outside handle. Refer to *Rear Side Door Outside Handle Replacement (Hatchback) on page 4-298* or *Rear Side Door Outside Handle Replacement (Sedan) on page 4-297*.
7. Install the rear side door. Refer to *Rear Side Door Replacement on page 3-13*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

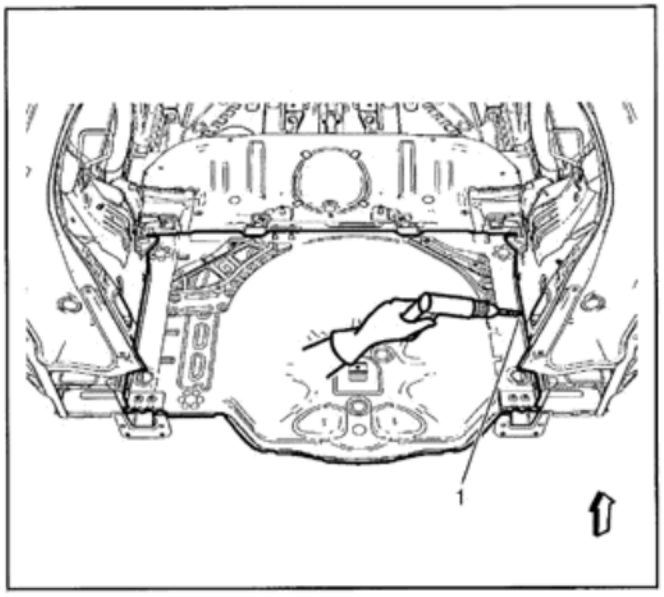
Rear Compartment Floor Panel Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

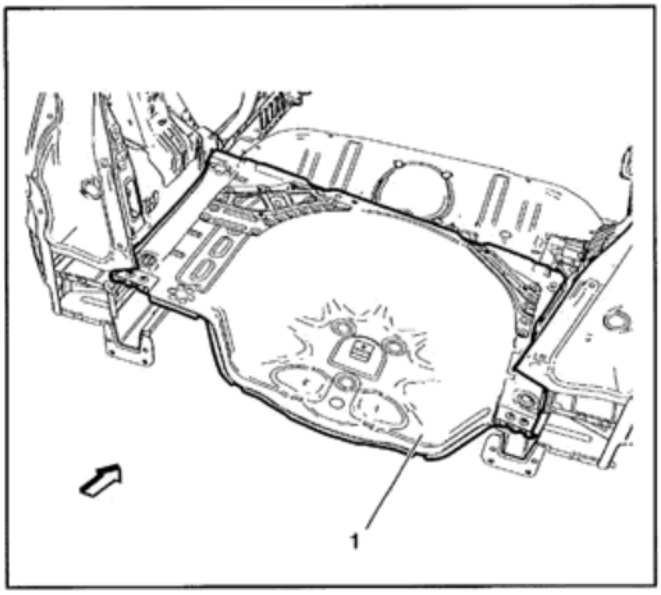
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all the necessary factory welds of the rear compartment floor panel.
7. Note the number and location of weld studs for installation of the service assembly.



2505906

8. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.

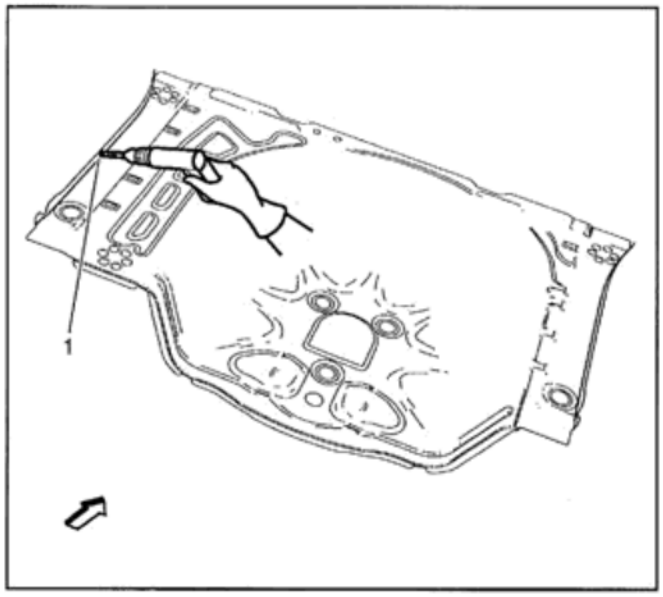


2505908

9. Remove the damaged rear compartment floor panel (1).

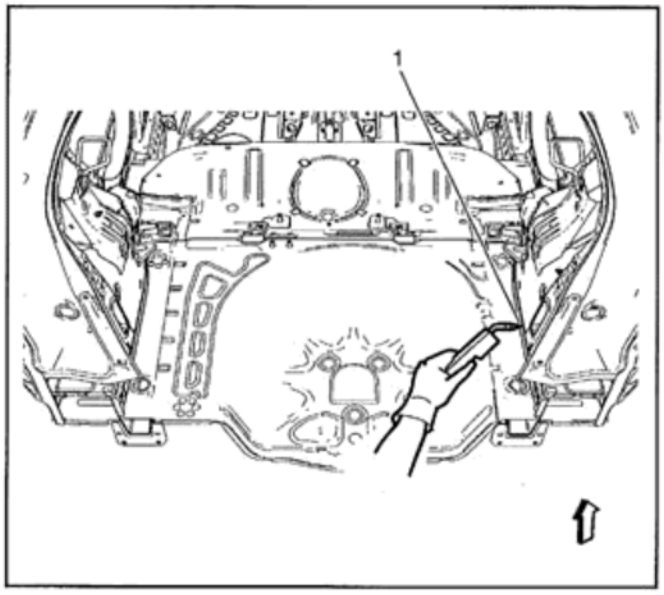
Installation Procedure

1. Align the rear compartment floor panel.



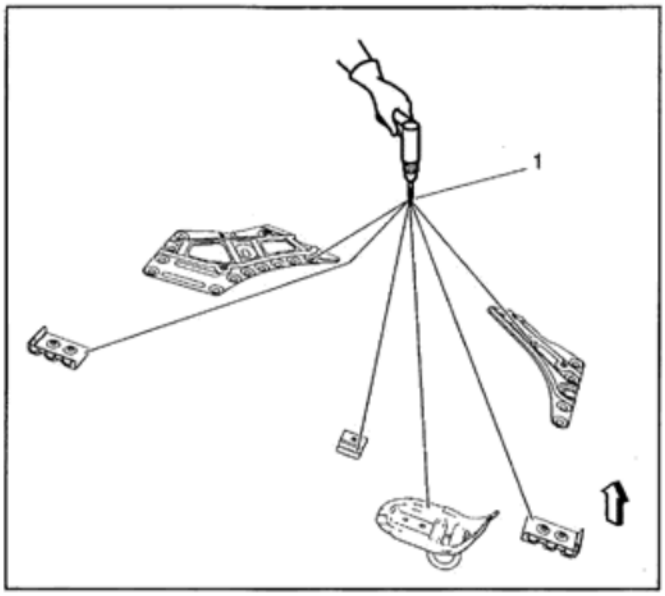
2505913

2. Drill a **8 mm (5/16 in)** holes for plug welding along the edges of the rear compartment floor panel as noted from the original panel (1).
3. Clean and prepare the attaching surfaces for welding.
4. Position the rear compartment floor panel on the vehicle.
5. Verify the fit of the rear compartment floor panel.
6. Clamp the rear compartment floor panel into position.



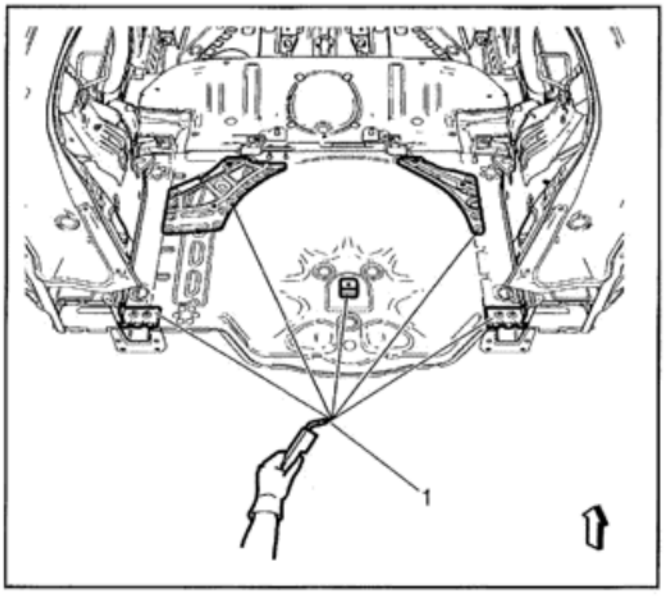
2505914

7. Plug the weld accordingly (1).



2505915

8. Drill **8 mm (5/16 in)** for plug welding along the edges of the floor panel rear reinforcement, the spare wheel carrier bracket, the shipping device and the floor panel reinforcement as noted from the original panel (1).
9. Clean and prepare the attaching surfaces for welding.
10. Position the floor panel rear reinforcement, the spare wheel carrier bracket, the shipping device and the floor panel reinforcement on the vehicle.
11. Verify the fit of the floor panel rear reinforcement, the spare wheel carrier bracket, the shipping device and the floor panel reinforcement.



2505916

12. Plug weld accordingly (1).
13. Weld accordingly the weld studs as noted.
14. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.

15. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
16. Install all related panels and components.
17. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
18. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Quarter Outer Panel Sectioning (5HB)

Removal Procedure

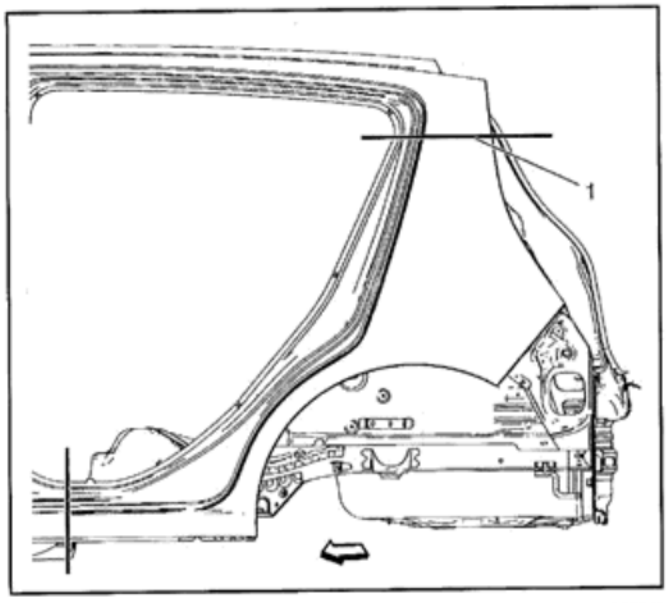
Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Collision Sectioning Warning on page 0-4.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

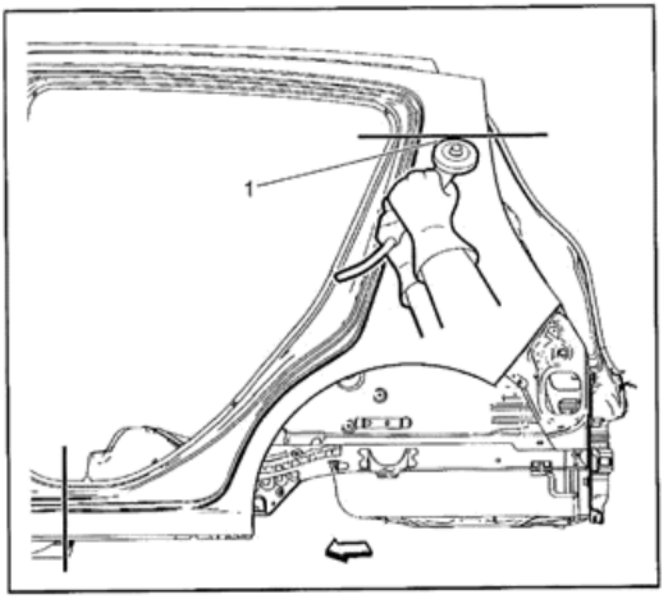
Note: According to different corrosion warranties, only the regional mandatory joining methods are allowed.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505918

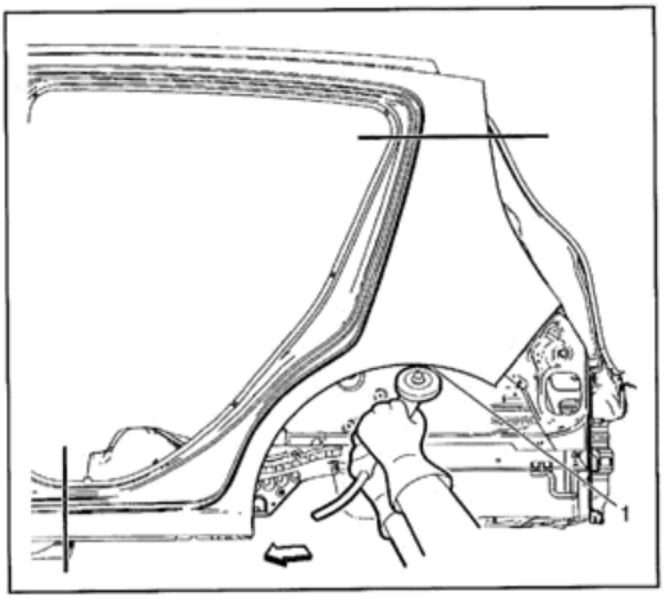
6. Create cut lines on the quarter outer panel (1).



2505920

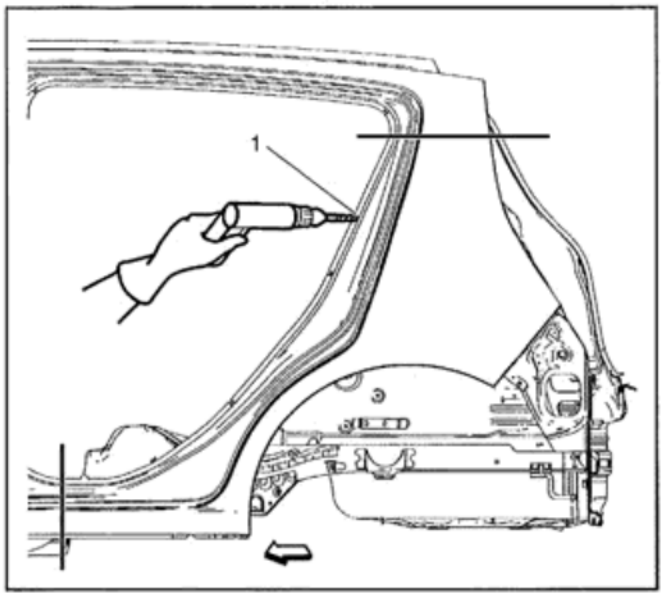
Note: Do not damage any inner panels or reinforcements.

7. Cut the panel where sectioning is to be performed (1).



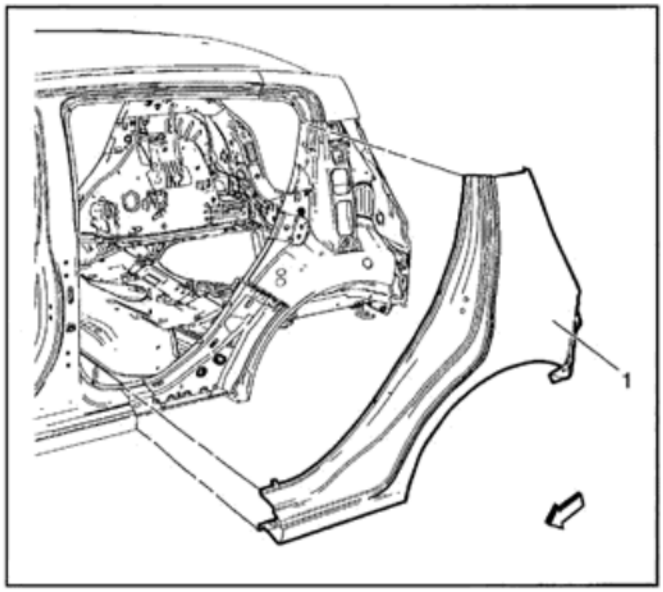
2505921

8. Open the wheelhouse flanging (1).
9. Locate and mark all the necessary factory welds of the quarter outer panel.



2505922

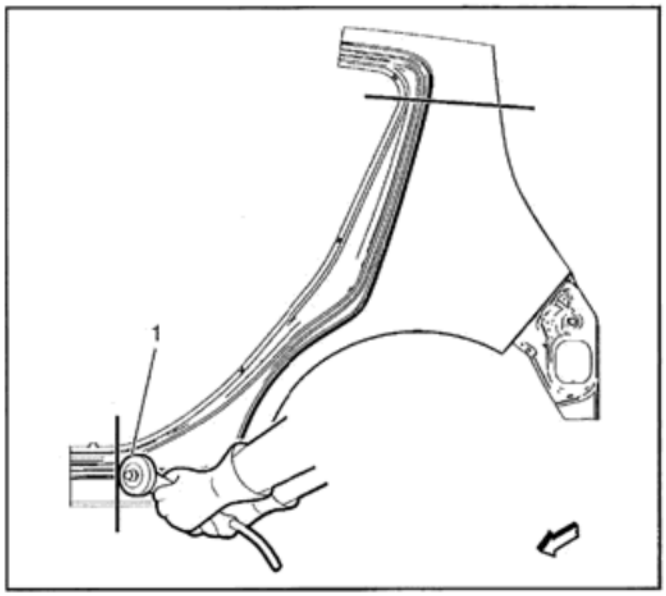
10. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505924

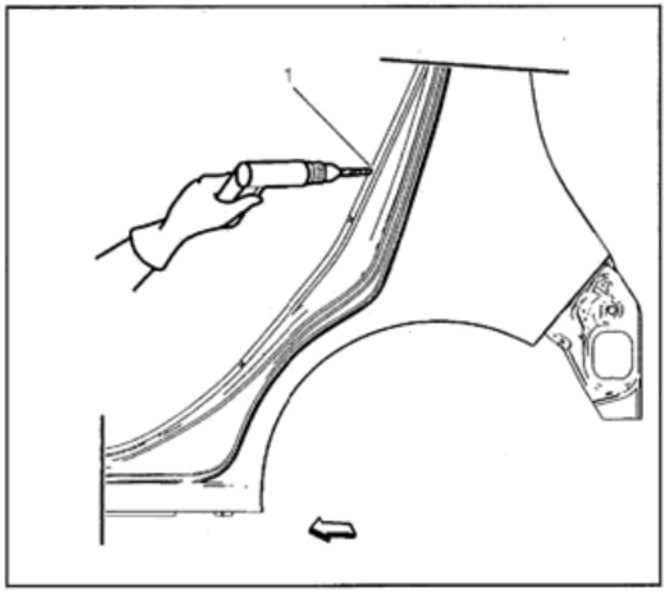
11. Remove the damaged quarter outer panel (1).

Installation Procedure



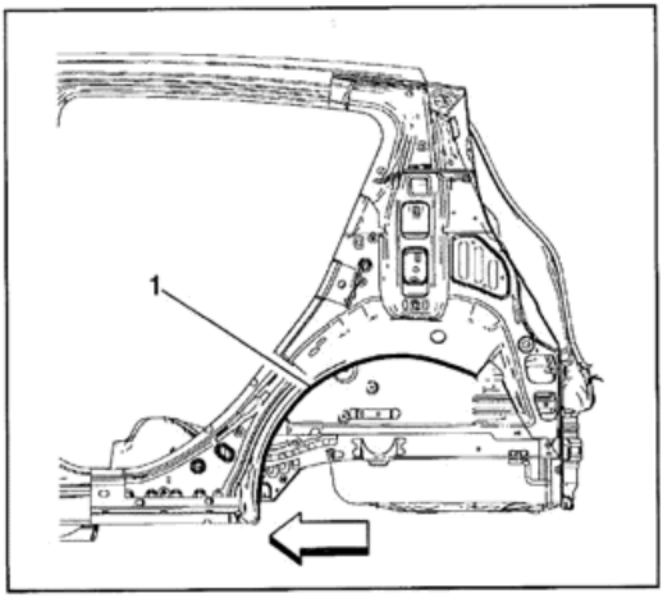
2505925

1. Cut the quarter outer panel in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to overlap the remaining original panel by 25 mm (1 inch) at each joint location (1).
2. Prepare all mating surfaces as necessary.



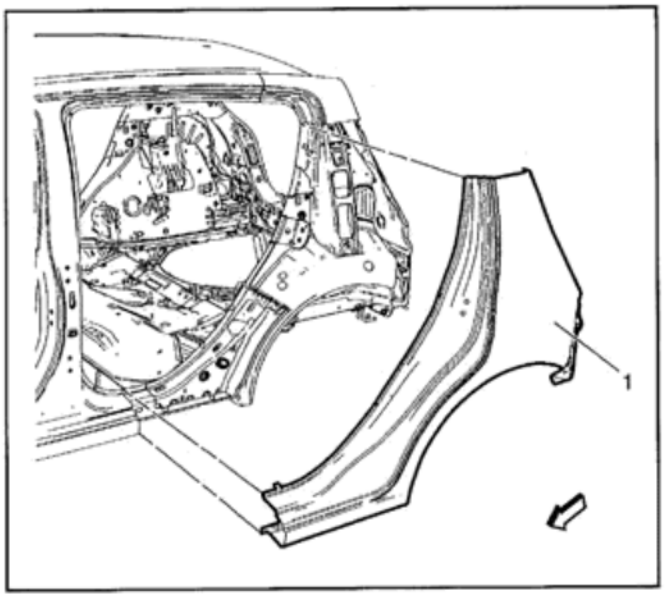
2505926

3. Drill 8 mm (5/16 in) holes for plug welding along the edges of the quarter outer panel as noted from the original panel (1).
4. Clean and prepare the attaching surfaces for welding.



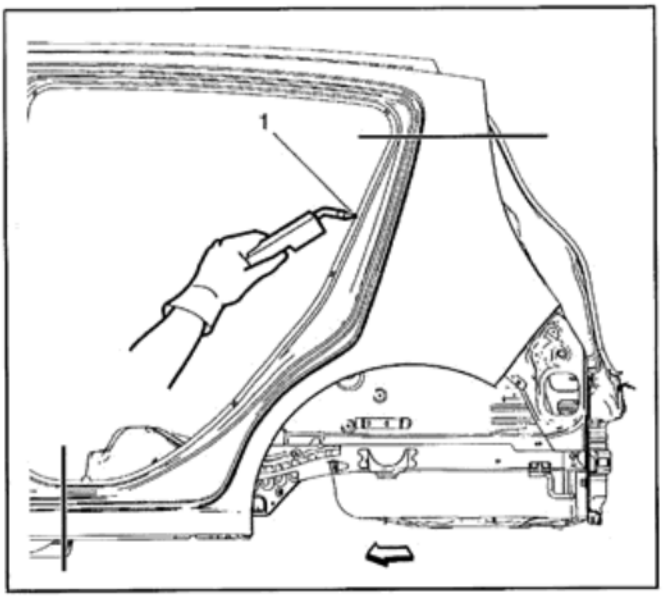
2505928

5. Apply one-part windshield urethane adhesive (1) as noted from the original panel.



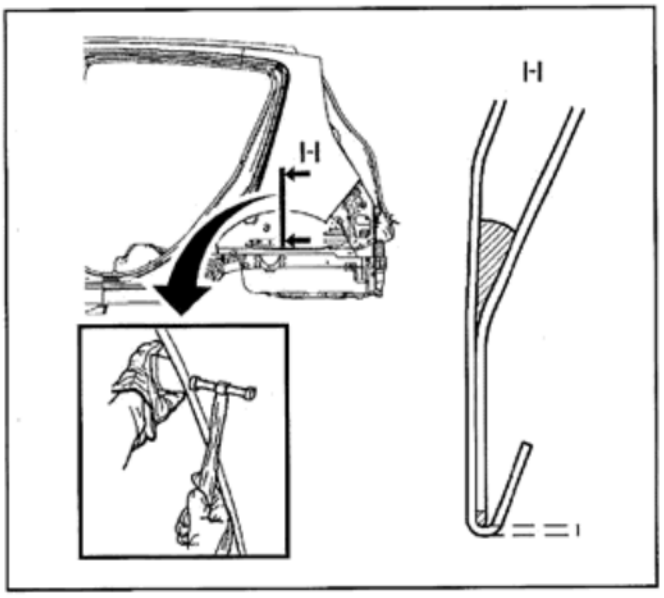
2505924

6. Position the quarter outer panel on the vehicle (1).
7. Verify the fit of the quarter outer panel.
8. Clamp the quarter outer panel into position.



2505929

9. Plug weld accordingly (1).
10. To create a solid weld with minimum heat distortion, make **25 mm (1 in)** stitch welds along the seam with **25 mm (1 in)** gaps between them. Then go back and complete the stitch weld.



2505931

11. Pre-flange wheel housing. Using a flat faced body hammer, bend over the flanged edge 45, at the same time holding a hard rubber block against it. Use structural adhesive in the area. Continue to hammer in stages along the hem flanges.
12. Bend the wheel arch.
13. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
14. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
15. Install all related panels and components.

16. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713.*
17. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112.*

Quarter Outer Panel Sectioning (4NB)

Removal Procedure

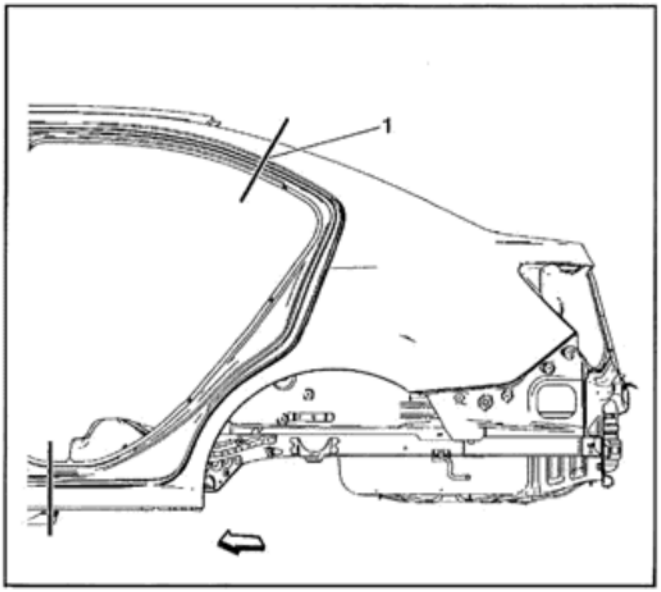
Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Collision Sectioning Warning on page 0-4.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

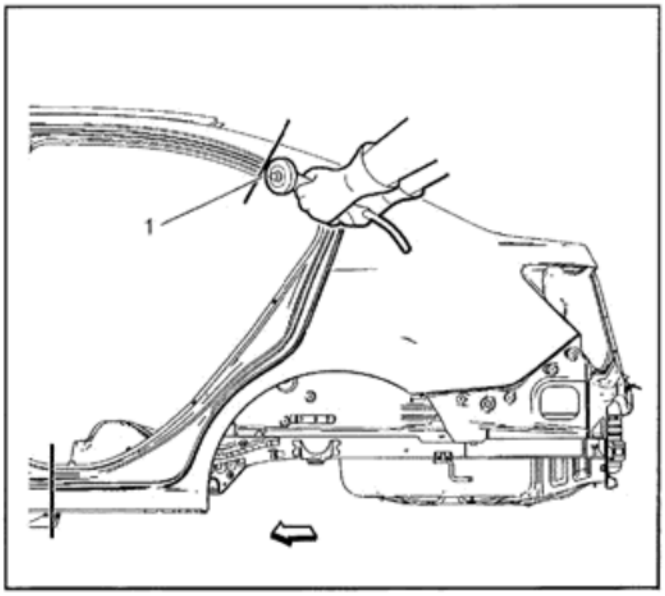
Note: According to different corrosion warranties, only the regional mandatory joining methods are allowed.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112.*
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713.*
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159.*



2505932

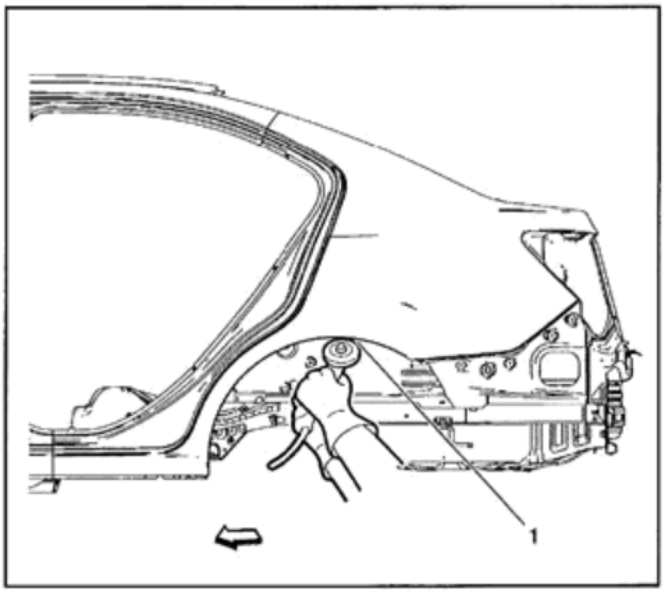
6. Create cut lines on the quarter outer panel (1).



2505933

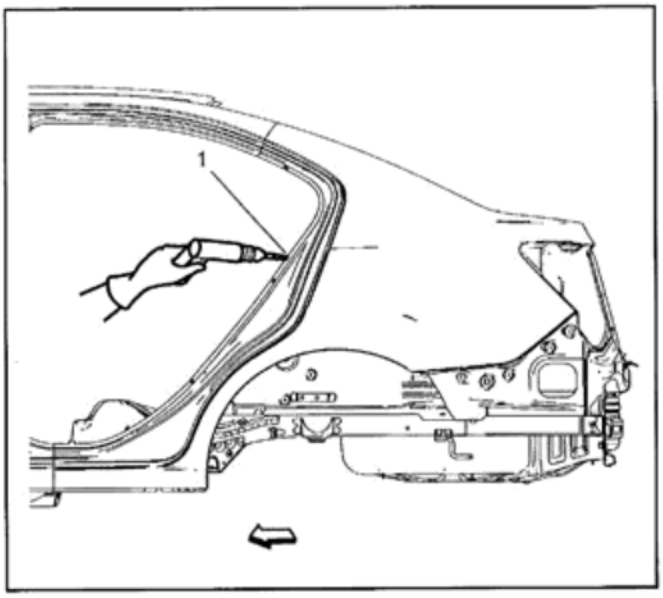
Note: Do not damage any inner panels or reinforcements.

7. Cut the panel where sectioning is to be performed (1).



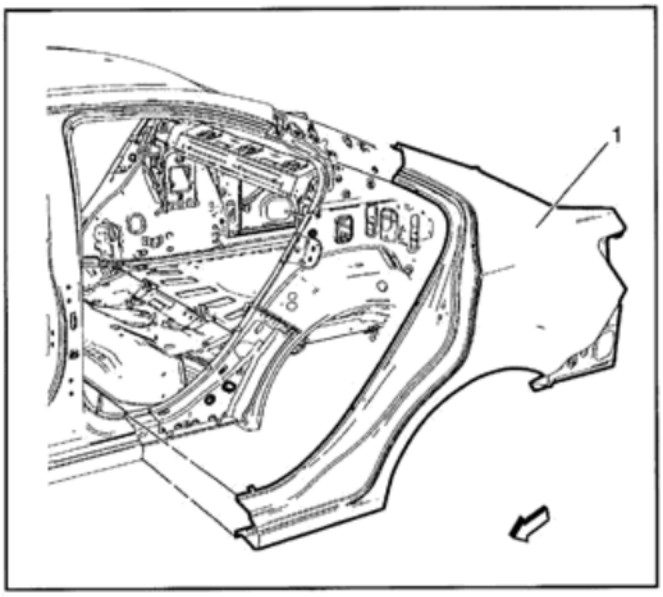
2505935

8. Open the wheelhouse flanging (1).
9. Locate and mark all the necessary factory welds of the quarter outer panel.



2505936

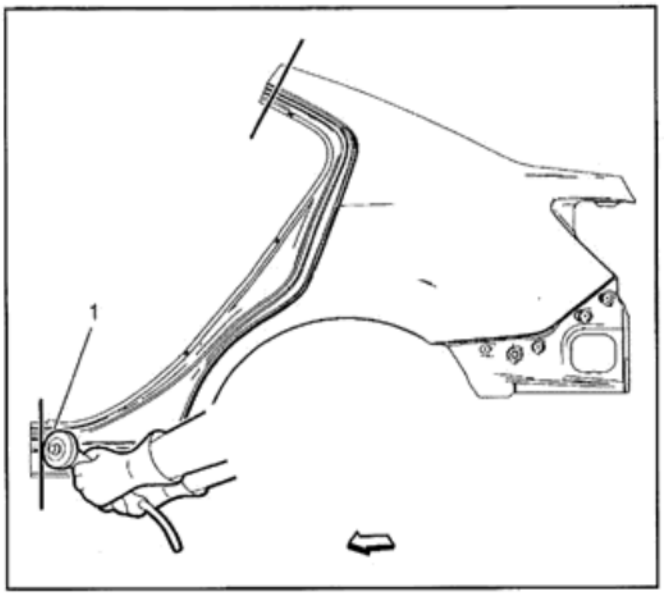
10. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505938

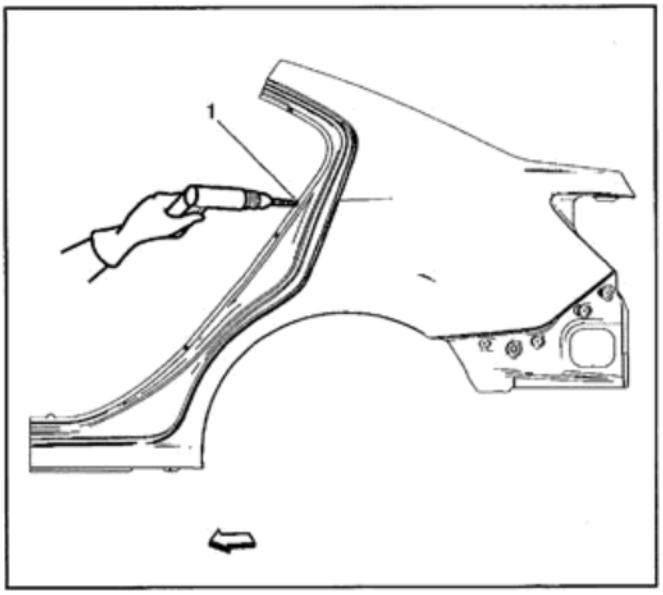
11. Remove the damaged quarter outer panel (1).

Installation Procedure



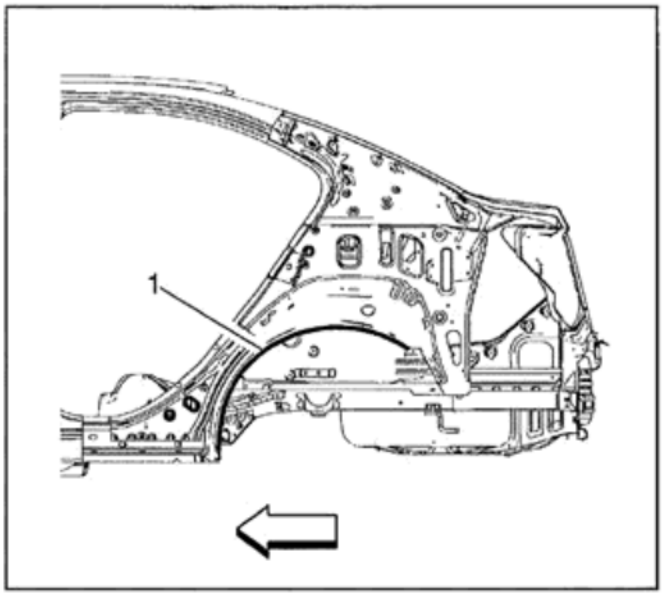
2505939

1. Cut the quarter outer panel in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to overlap the remaining original panel by 25 mm (1 inch) at each joint location (1).
2. Prepare all mating surfaces as necessary.



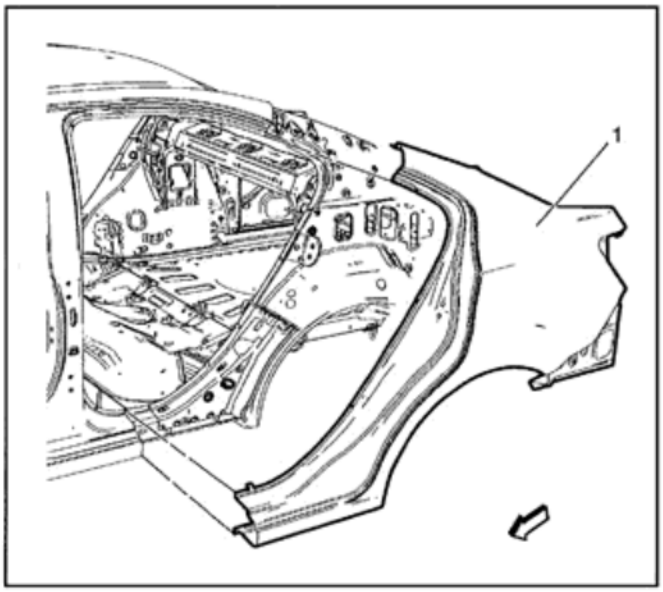
2505940

3. Drill a **8 mm (5/16 in)** holes for plug welding along the edges of the quarter outer panel as noted from the original panel (1).
4. Clean and prepare the attaching surfaces for welding.



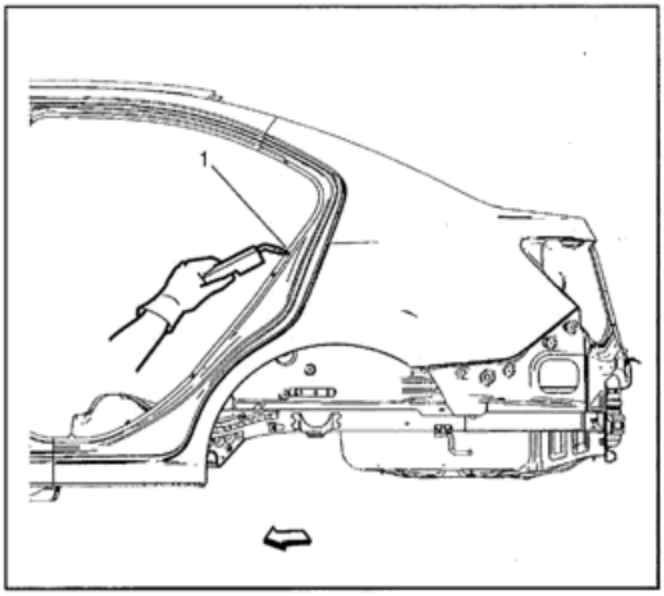
2505941

5. Apply one-part windshield urethane adhesive (1) as noted from the original panel.



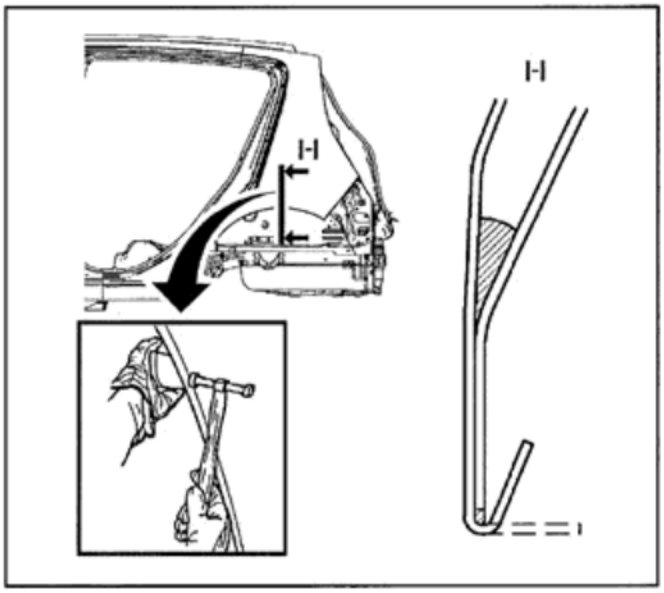
2505938

6. Position the quarter outer panel on the vehicle (1).
7. Verify the fit of the quarter outer panel.
8. Clamp the quarter outer panel into position.



2505942

9. Plug weld accordingly (1).
10. To create a solid weld with minimum heat distortion, make **25 mm (1 in)** stitch welds along the seam with **25 mm (1 in)** gaps between them. Then go back and complete the stitch weld.



2505931

11. Pre-flange wheel housing. Using a flat faced body hammer, bend over the flanged edge 45, at the same time holding a hard rubber block against it. Use structural adhesive in the area. Continue to hammer in stages along the hem flanges.
12. Bend the wheel arch.
13. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
14. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
15. Install all related panels and components.

16. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713.*
17. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112.*

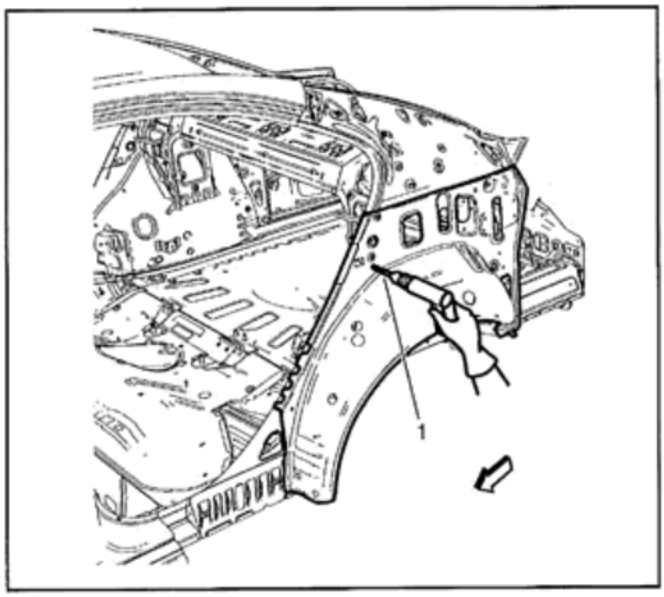
Quarter Inner Panel Replacement (4NB)

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

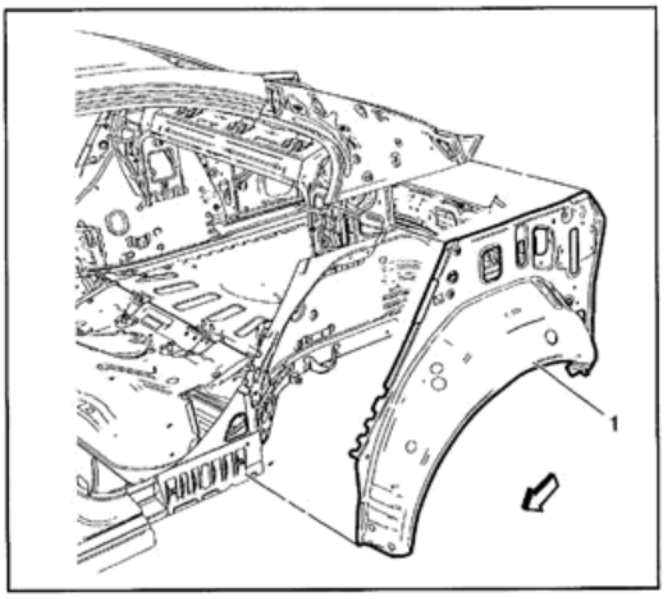
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112.*
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713.*
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159.*
6. Locate and mark all the necessary factory welds of the rear wheelhouse outer panel.



2505957

7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.

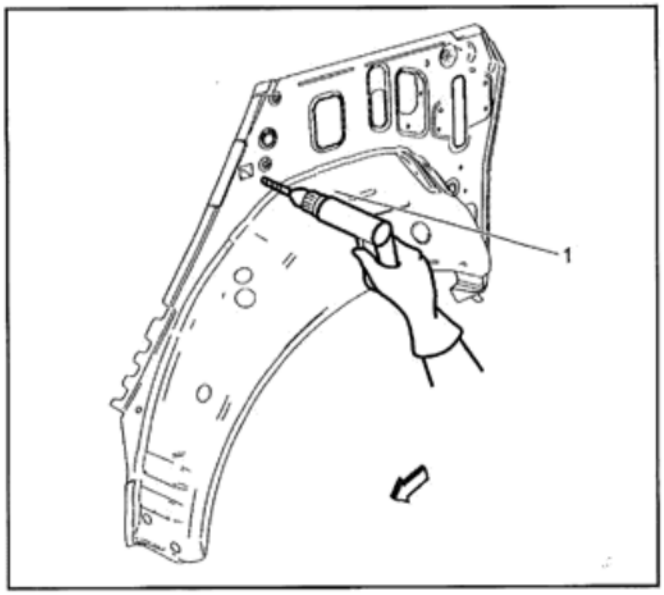


2505958

8. Remove the damaged rear wheelhouse outer panel (1).

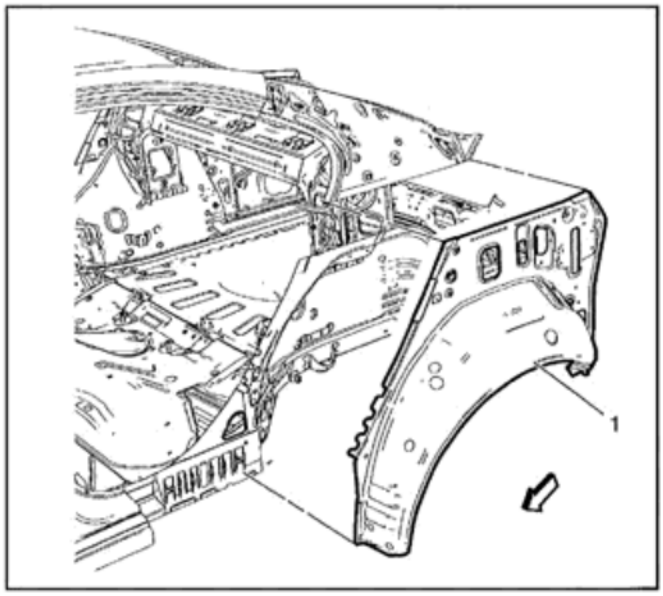
Installation Procedure

1. Prepare all mating surfaces as necessary.
2. Align the rear wheelhouse outer panel.



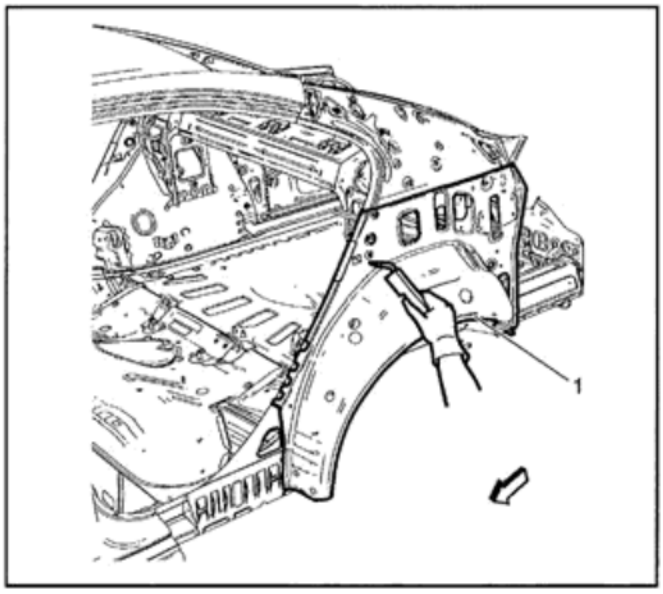
2505959

3. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the rear wheelhouse outer panel as noted from the original panel (1).
4. Clean and prepare the attaching surfaces for welding.



2505958

5. Position the rear wheelhouse outer panel on the vehicle (1).
6. Verify the fit of the rear wheelhouse outer panel.
7. Clamp the rear wheelhouse outer panel into position.



2505961

8. Plug weld accordingly (1).
9. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
10. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
11. Install all related panels and components.
12. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
13. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Quarter Inner Panel Sectioning (5HB)

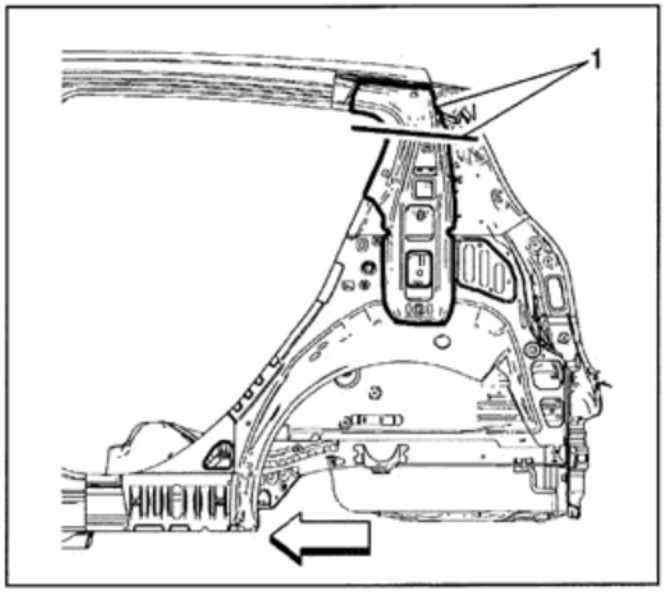
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Collision Sectioning Warning on page 0-4.

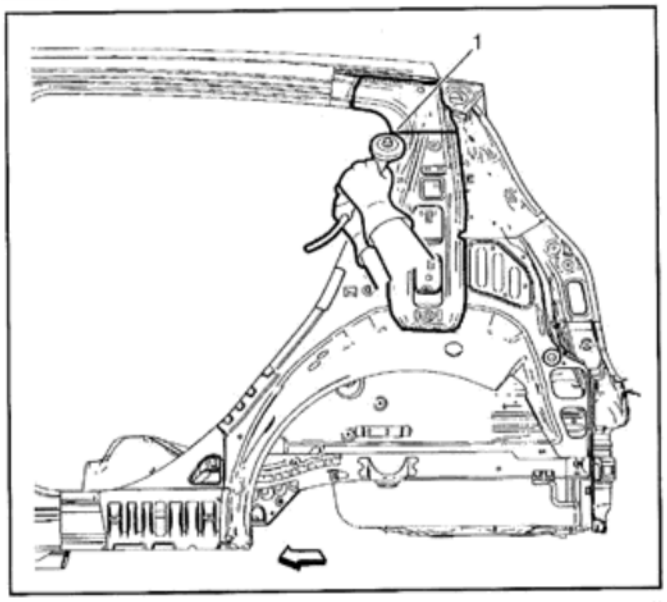
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



2505943

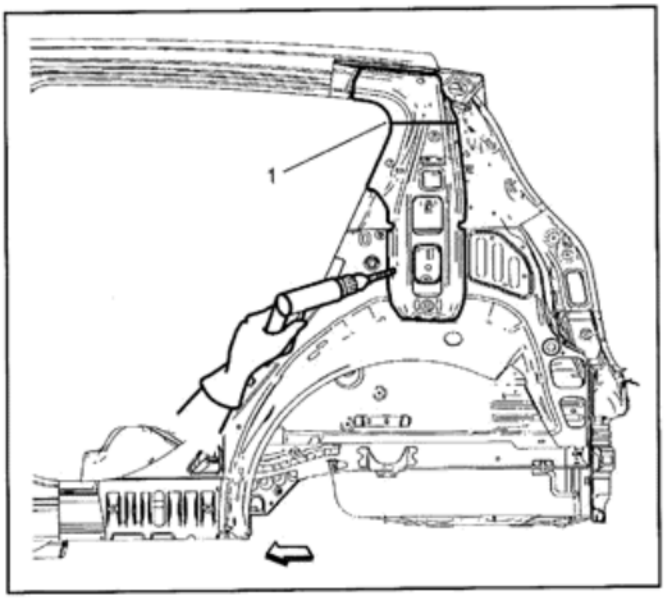
6. Create cut lines on the body lock pillar inner reinforcement (1).



2505944

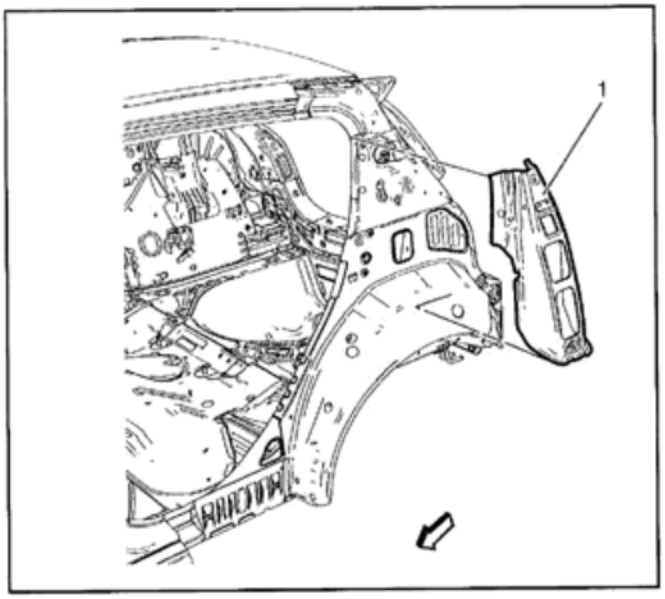
Note: Do not damage any inner panels or reinforcements.

7. Cut the panel where sectioning is to be performed (1).
8. Locate and mark all the necessary factory welds of the body lock pillar inner reinforcement.



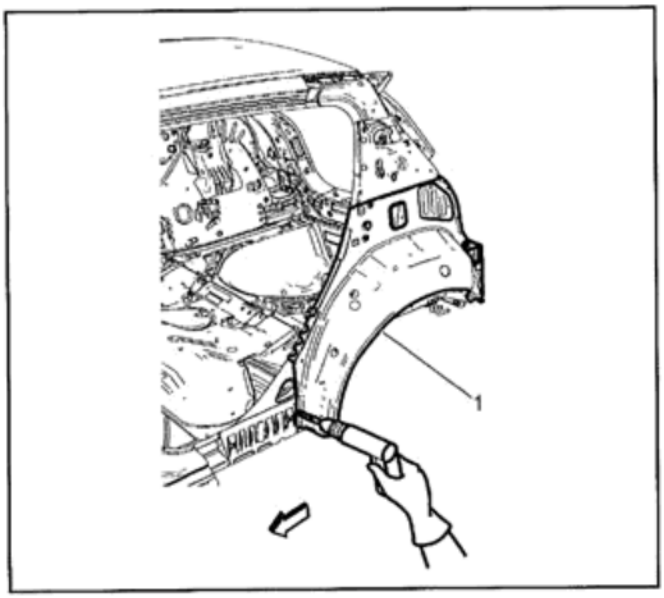
2505947

9. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



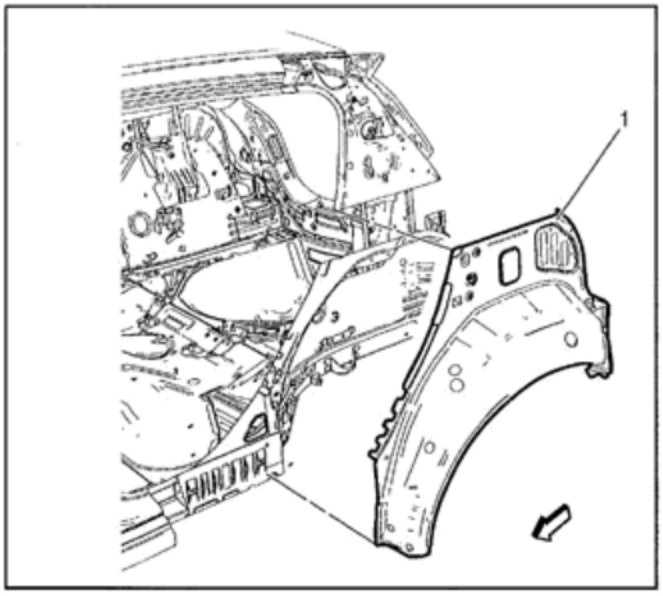
2505948

10. Remove the damaged body lock pillar inner reinforcement (1).



2505949

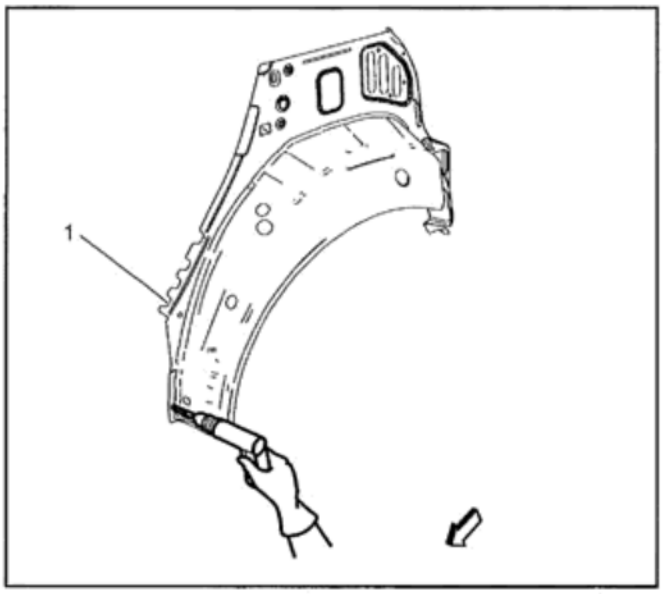
11. Locate and mark all the necessary factory welds of the rear wheelhouse outer panel.
12. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505950

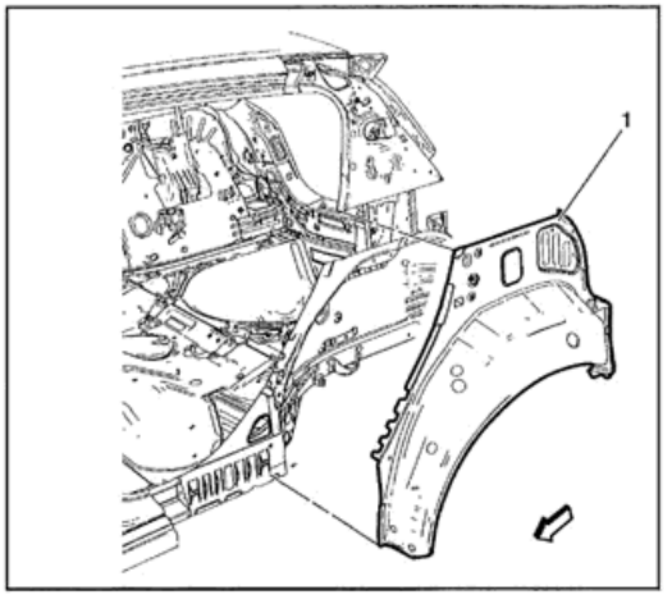
13. Remove the damaged rear wheelhouse outer panel (1).

Installation Procedure



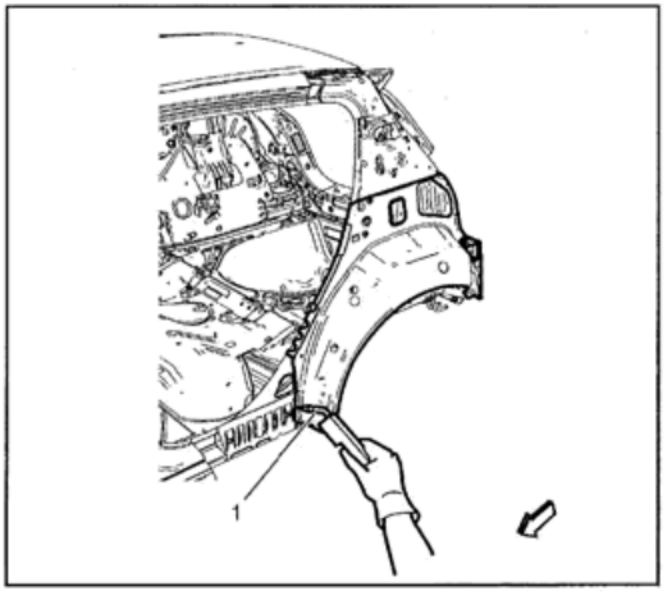
2505952

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the rear wheelhouse outer panel as noted from the original panel (1).
2. Clean and prepare the attaching surfaces for welding.



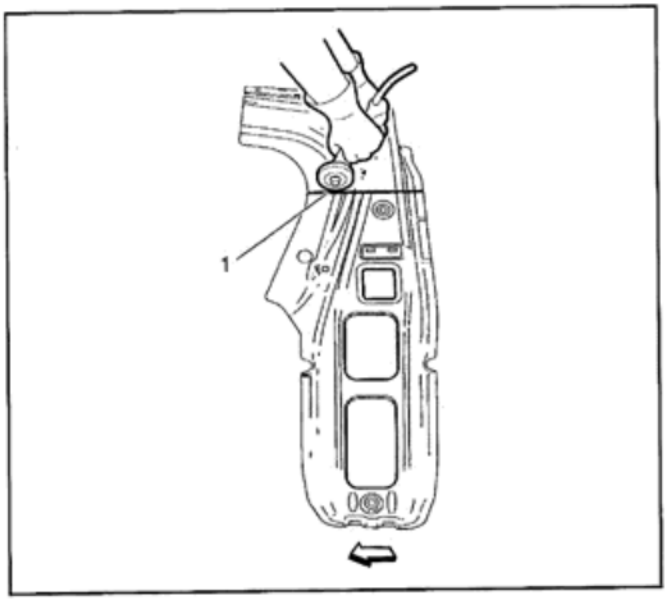
2505950

3. Position the rear wheelhouse outer panel (1).
4. Verify the fit of the panel.
5. Clamp the rear wheelhouse outer panel into position.



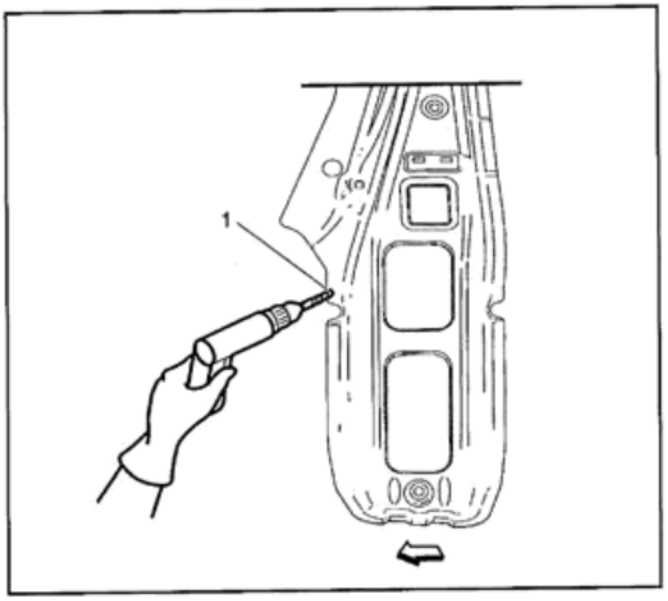
2505953

6. Plug weld accordingly (1).



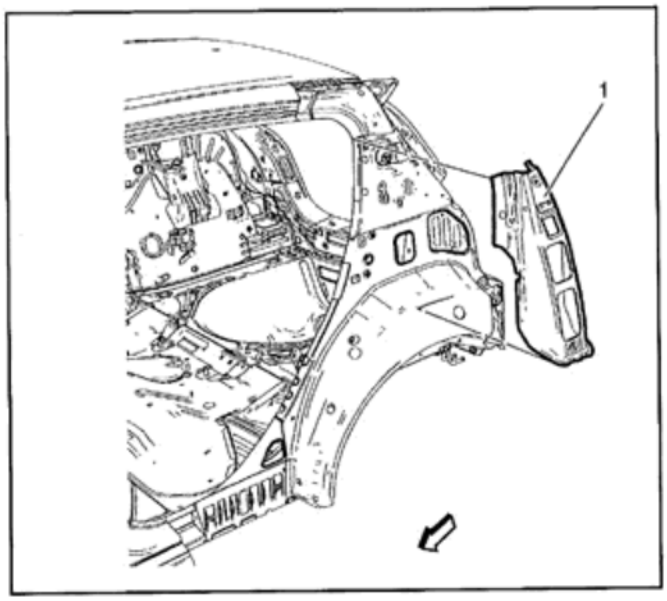
2505954

7. Cut the body lock pillar inner reinforcement in corresponding locations to fit the remaining original panel (1). The sectioning joint should be trimmed to allow a gap of one-and-one-half-times the metal thickness at the sectioning joint.
8. Create a **50 mm (2 in)** backing plate from the unused portion of the service part.
9. Drill **8 mm (5/16 in)** along the sectioning cut on the remaining original part. Locate these holes **13 mm (1/2 in)** from the edge of part and spaced **40 mm (1 1/2 in)** apart.
10. Prepare all mating surfaces as necessary.
11. Fit the backing plates halfway into the sectioning joints, clamp in place and plug weld to the vehicle.
12. Align the body lock pillar inner reinforcement.



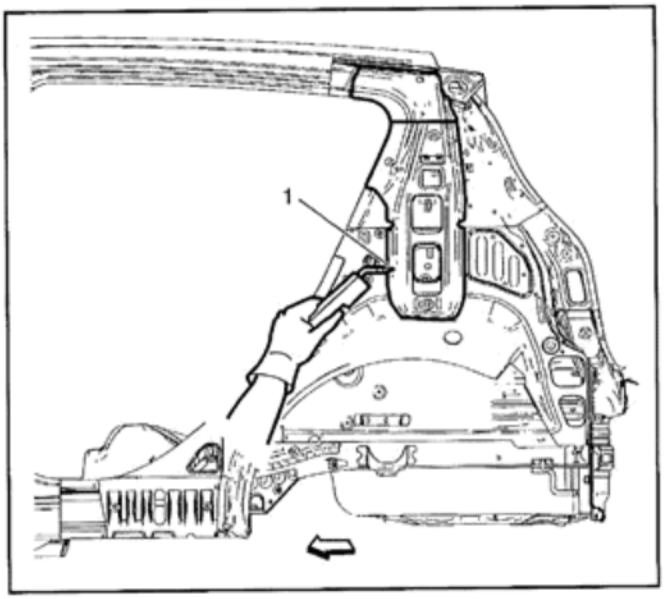
2505955

13. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the body lock pillar inner reinforcement as noted from the original panel (1).
14. Clean and prepare the attaching surfaces for welding.



2505948

15. Position the body lock pillar inner reinforcement (1).
16. Verify the fit of the panel.
17. Clamp the body lock pillar inner reinforcement into position.



2505956

18. Plug weld accordingly (1).
19. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
20. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
21. Install all related panels and components.

22. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
23. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

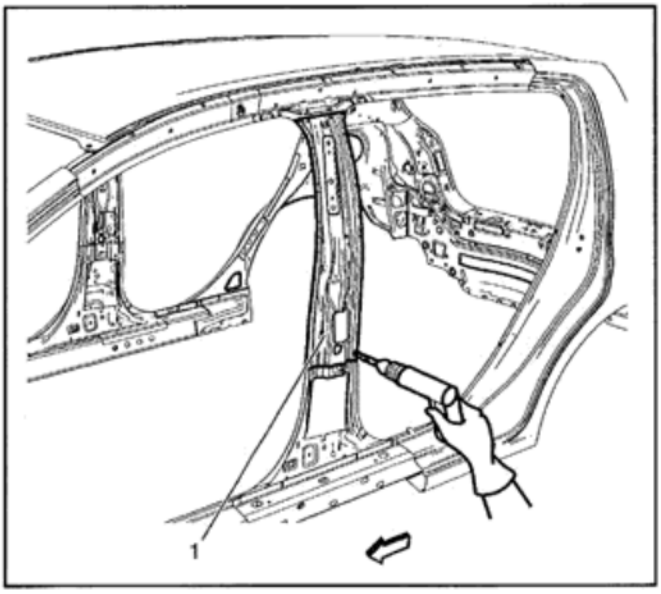
Center Pillar Inner Panel Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

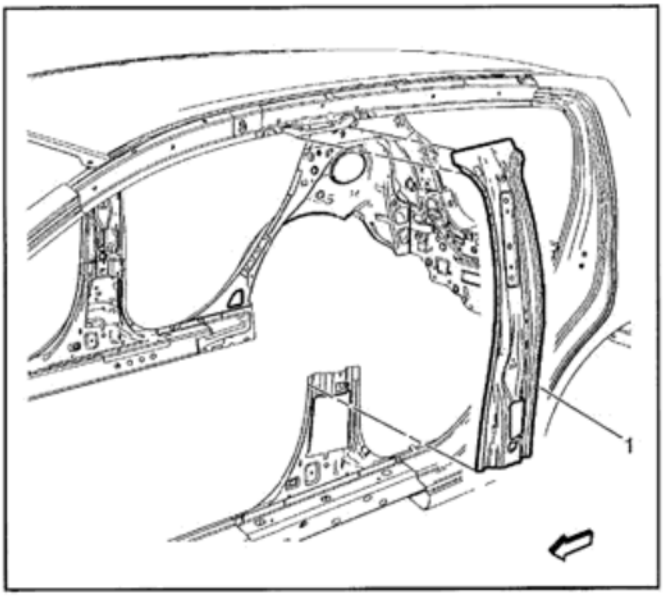
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all factory welds.



2505867

7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.

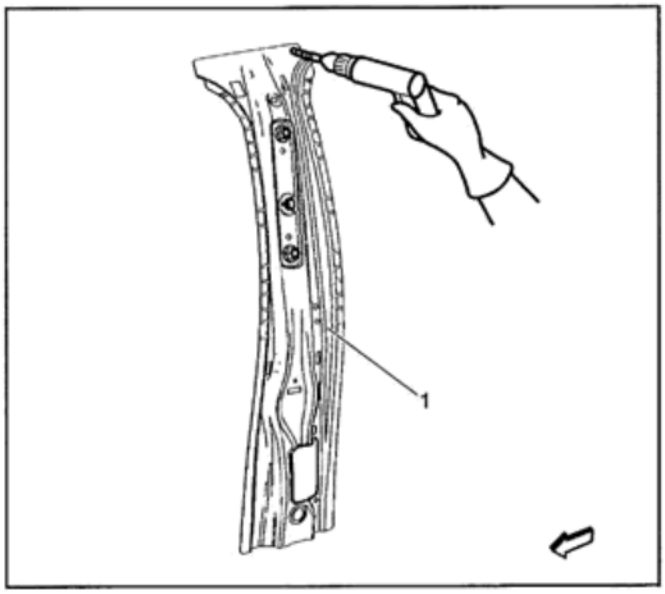


2505869

8. Remove the damaged center pillar inner panel (1).

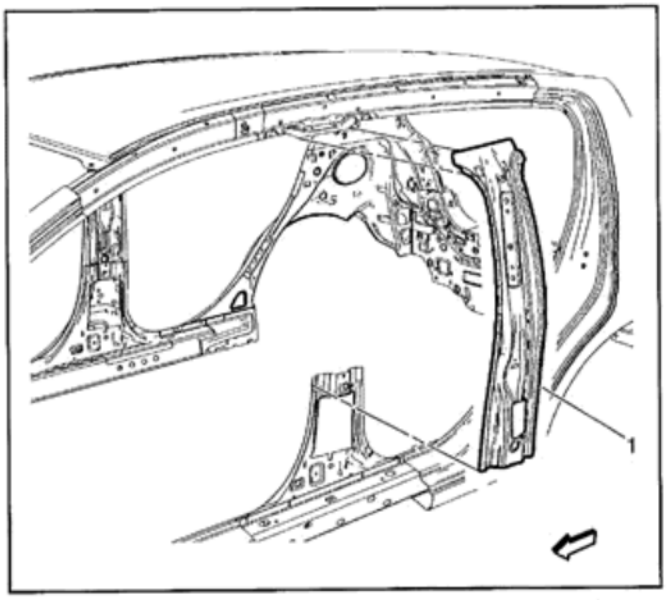
Installation Procedure

1. Prepare all mating surfaces as necessary.
2. Align the center pillar inner panel.



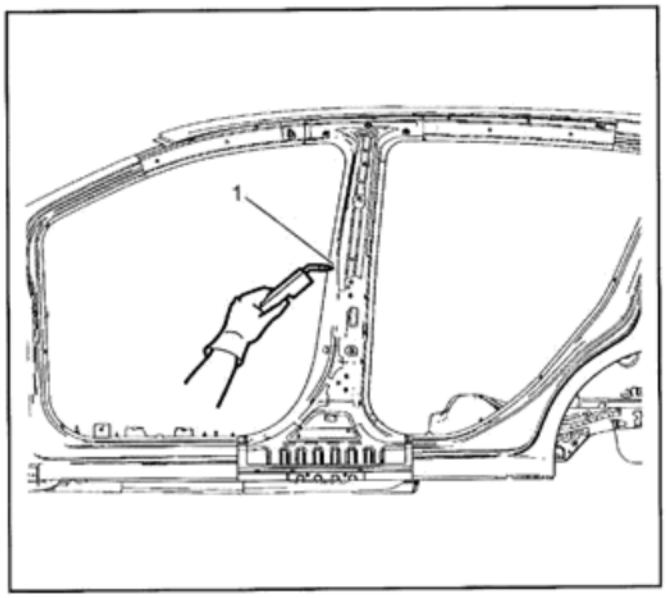
2505870

3. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the center pillar inner panel (1) as noted from the original panel.
4. Clean and prepare the attaching surfaces for welding.



2505869

5. Position the center pillar inner panel on the vehicle (1).
6. Verify the fit of the center pillar inner panel.
7. Clamp the center pillar inner panel into position.



2505866

8. Plug weld accordingly (1).
9. To create a solid weld with minimum heat distortion, make **25 mm (1 in)** stitch welds along the seam with **25 mm (1 in)** gaps between them. Then go back and complete the stitch weld.
10. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
11. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
12. Install all related panels and components.
13. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
14. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Center Pillar Reinforcement Replacement

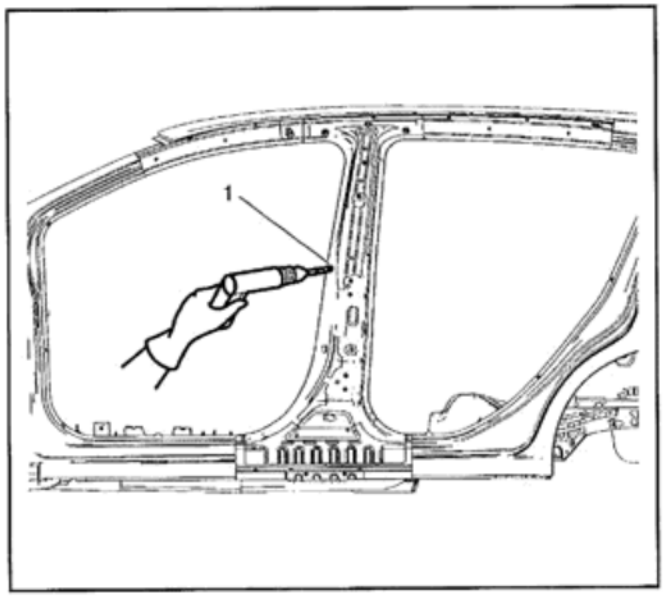
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

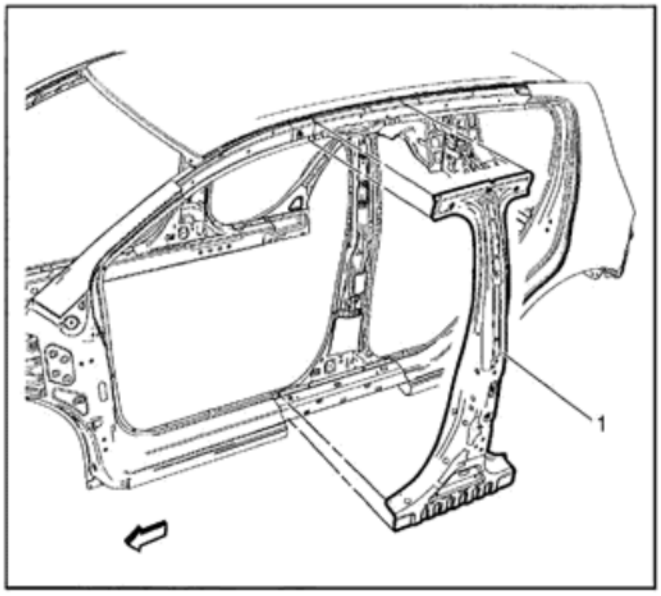
Note: The center pillar upper stiffener is made of Dual Phase Steel and should be replaced only at factory joints. Repairing or sectioning of this part is not recommended. Refer to *Dual Phase Steel on page 3-140*.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all the necessary factory welds of the center pillar reinforcement.



2505863

7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.

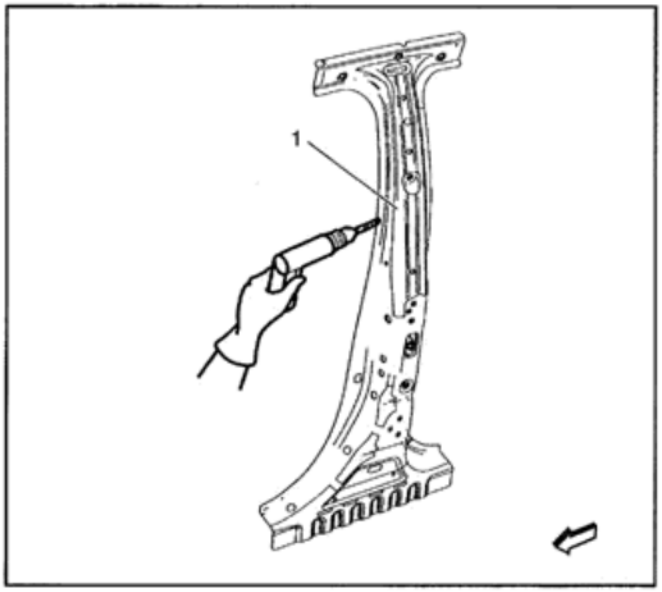


2505864

8. Remove the damaged center pillar reinforcement (1).

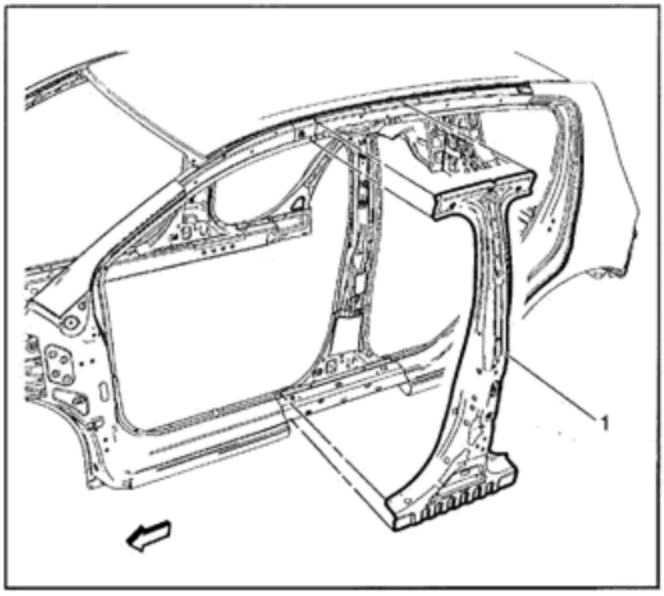
Installation Procedure

1. Prepare all mating surfaces as necessary.
2. Align the center pillar reinforcement.



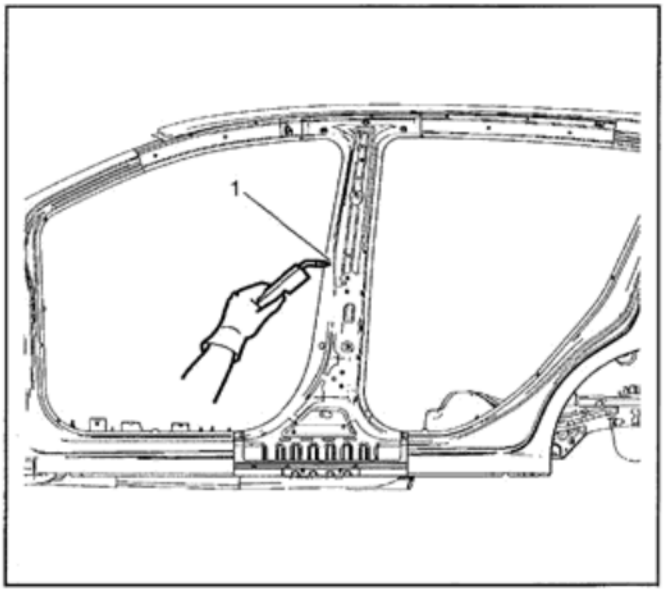
2505865

3. Drill a **8 mm (5/16 in)** holes for plug welding along the edges of the center pillar reinforcement as noted from the original panel (1).
4. Clean and prepare the attaching surfaces for welding.



2505864

5. Position the center pillar reinforcement on the vehicle (1).
6. Verify the fit of the center pillar reinforcement.
7. Clamp the center pillar reinforcement into position.



2505866

8. Plug weld accordingly (1).
9. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
10. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
11. Install all related panels and components.
12. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
13. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Center Pillar Sectioning - Outer

Removal Procedure

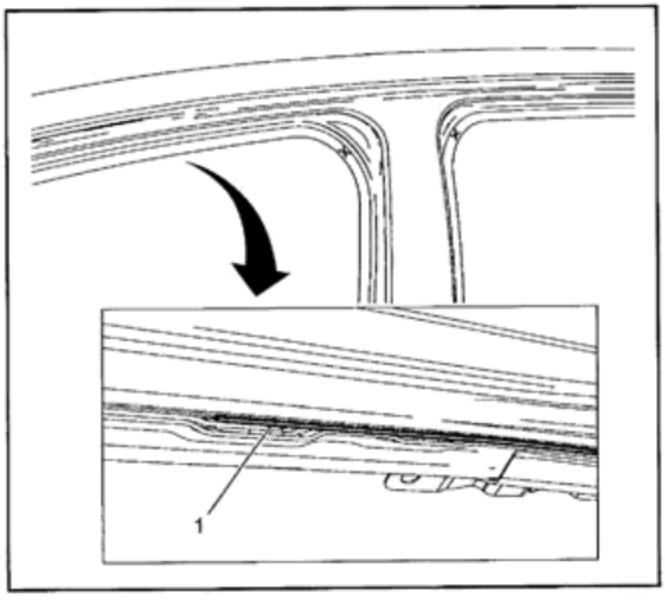
Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Collision Sectioning Warning on page 0-4.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

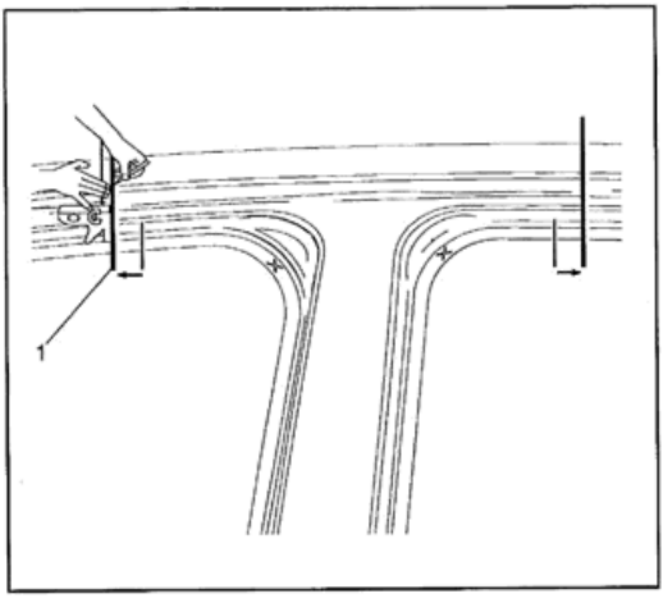
Note: This procedure was developed to allow full access for the replacement of the center pillar reinforcement replacement since sectioning is not endorsed or recommended to the reinforcement due to the *Ultra High Strength Steel on page 3-142*.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.



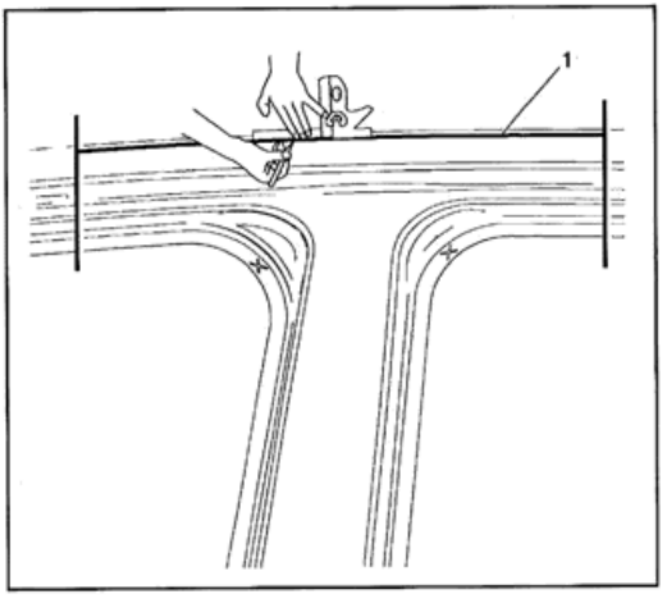
2505855

6. Remove the weather-strip, observe the flange in the center pillar area. There will be a 3-metal stack-up. The center layer is the center pillar reinforcement (1).



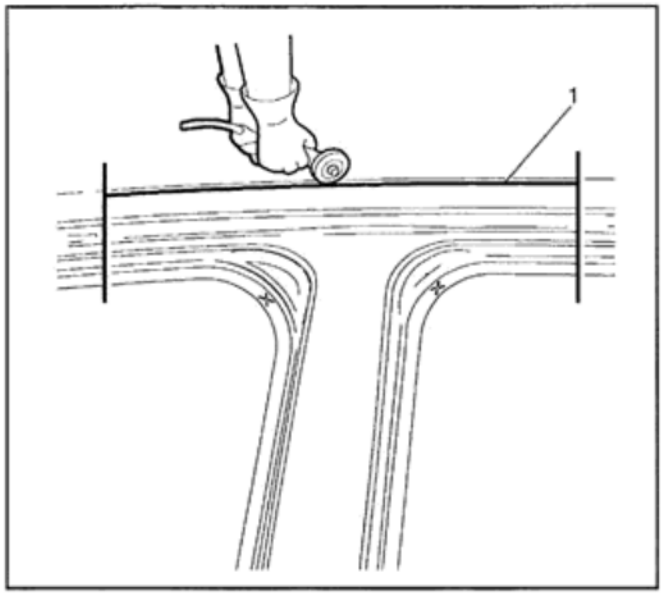
2551445

7. Measure **13 mm (1/2 in)** from the forward and rearward edges of the center pillar reinforcement and mark a vertical line (1).



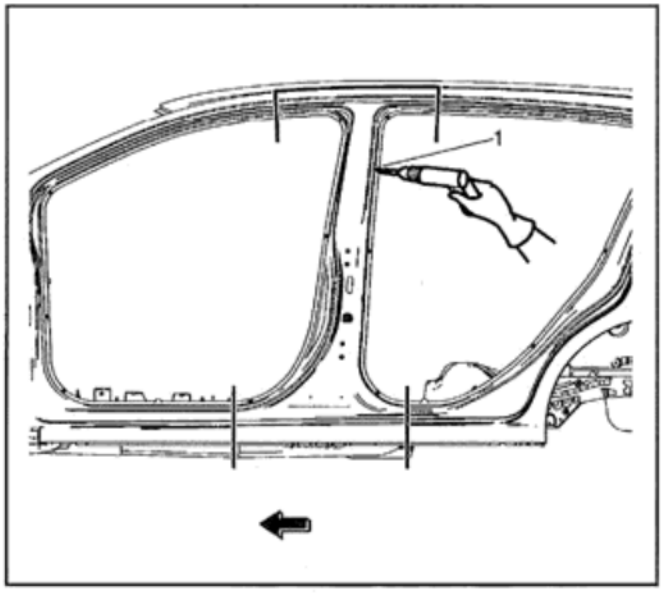
2551447

8. Measure up 1 inch from the door opening feature line (1) and mark a horizontal line.



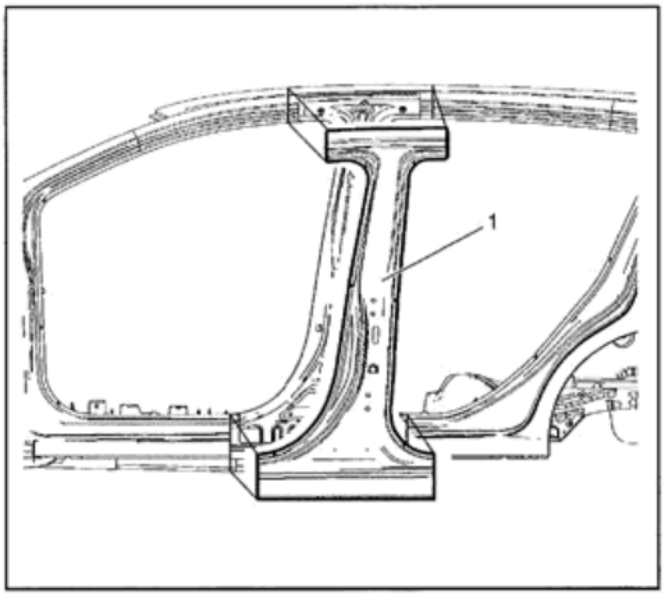
2551448

9. Cut access window (1) in the center pillar outer.
10. Perform additional sectioning procedures as needed depending on damage to vehicle. Refer to *Rocker Outer Panel Sectioning on page 3-105* or *Front Hinge Pillar Body Sectioning on page 3-94*.



2505857

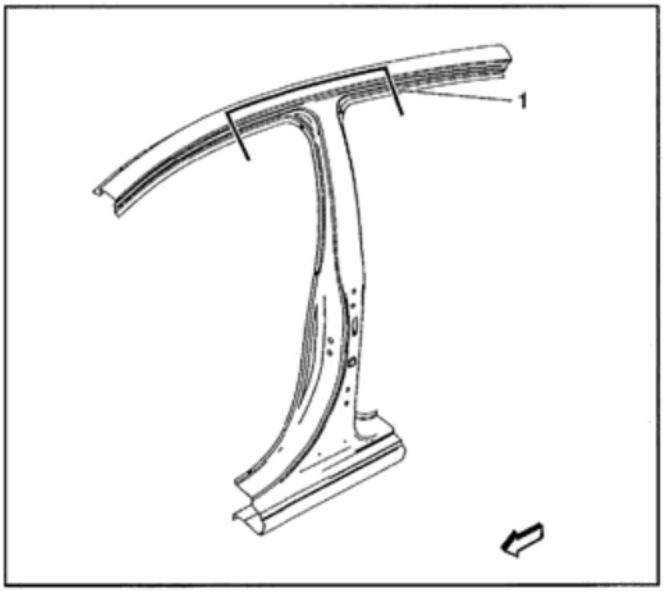
11. Locate and drill out all factory welds (1). Note the number and location of welds for installation of the service part.



2505858

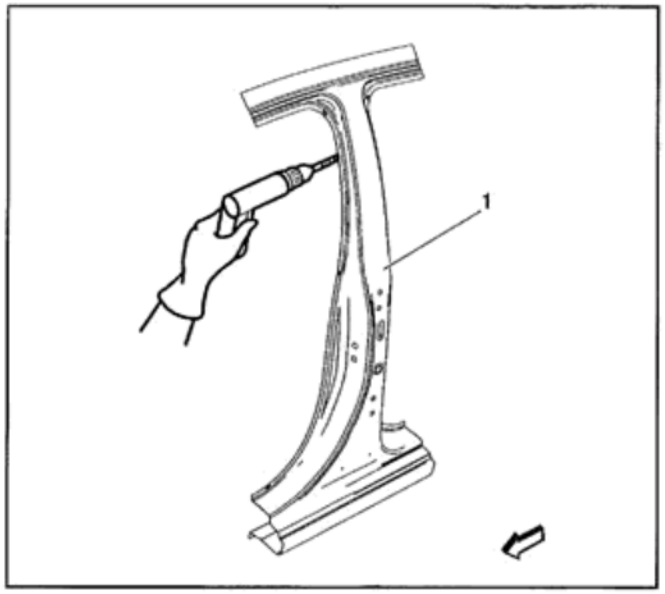
12. Remove the damaged center pillar outer panel section (1).

Installation Procedure



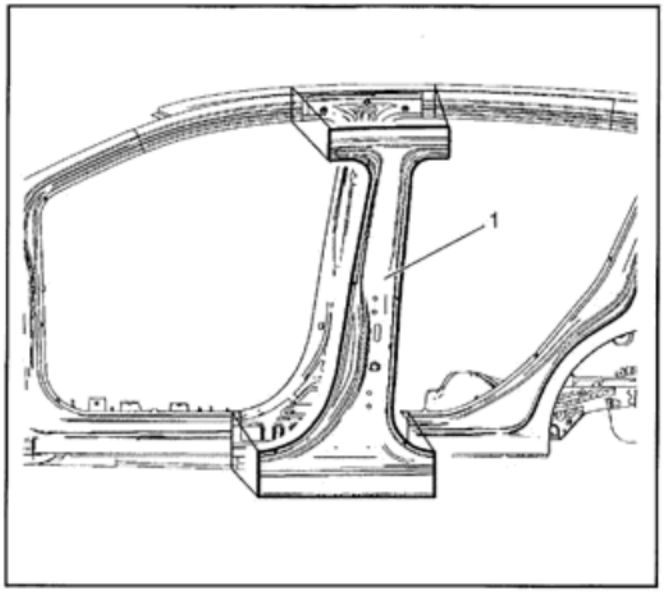
2505859

1. From the service part, cut the panel in corresponding locations to overlap the remaining original panel by 25 mm (1 in) at each joint location (1).



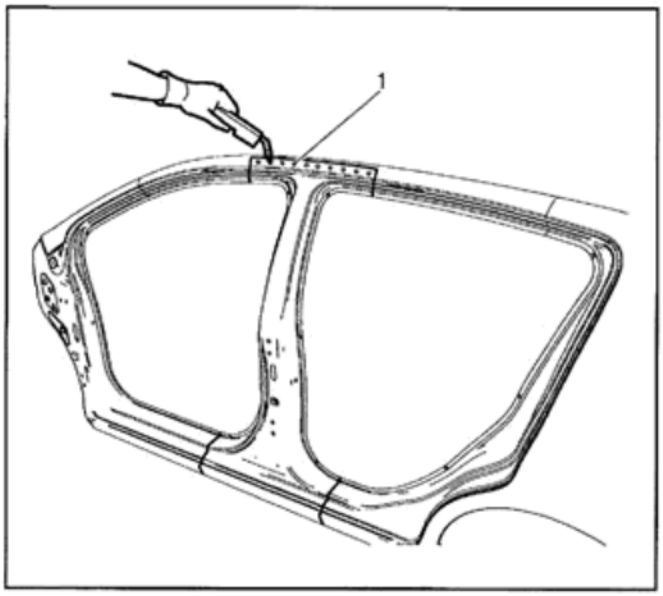
2505861

2. Drill 8 mm (5/16 in) holes for plug welding in the service part (1), as necessary, in the corresponding locations noted on the original panel and along sectioned joint.
3. Clean and prepare the attaching surfaces for welding.



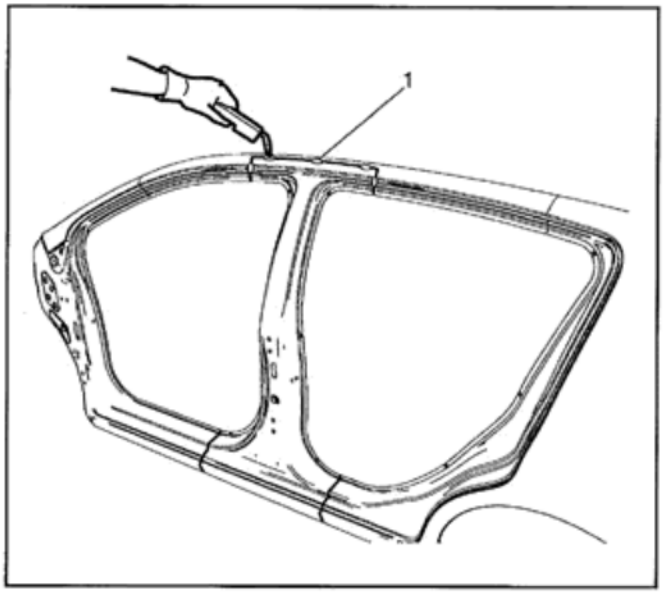
2505858

4. Position the center pillar outer panel (1) to the vehicle. Clamp the pillar in place.



2551449

5. Plug weld accordingly (1).



2551450

6. To create a solid weld with minimum heat distortion, make a 25 mm (1 in) stitch weld along the seam with gaps of 25 mm (1 in) gaps between them. Go back and complete the stitch weld (1).
7. Clean and prepare all of the welded surfaces
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary.Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
9. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
10. Install all related panels and components.
11. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
12. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Rear Rail Sectioning (5HB)

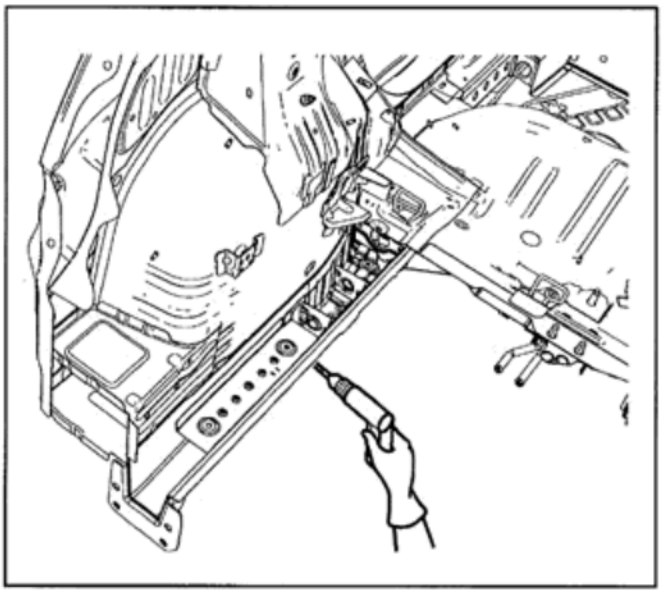
Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Collision Sectioning Warning on page 0-4.

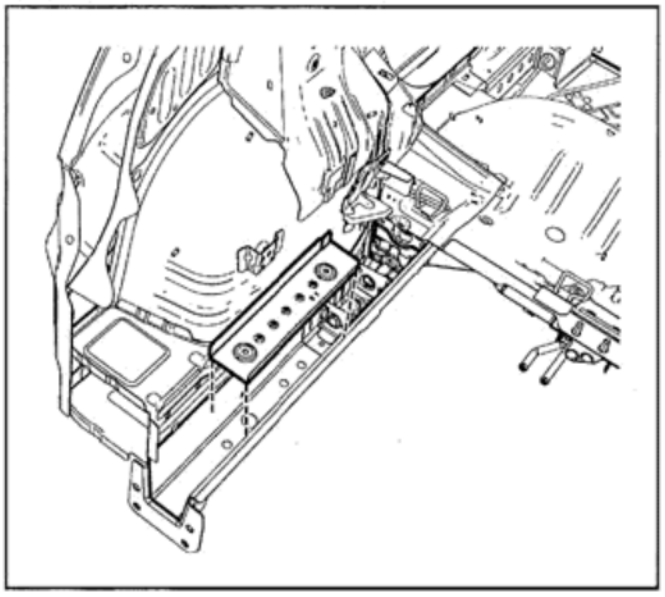
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all the necessary factory welds of the rear side rail gusset.



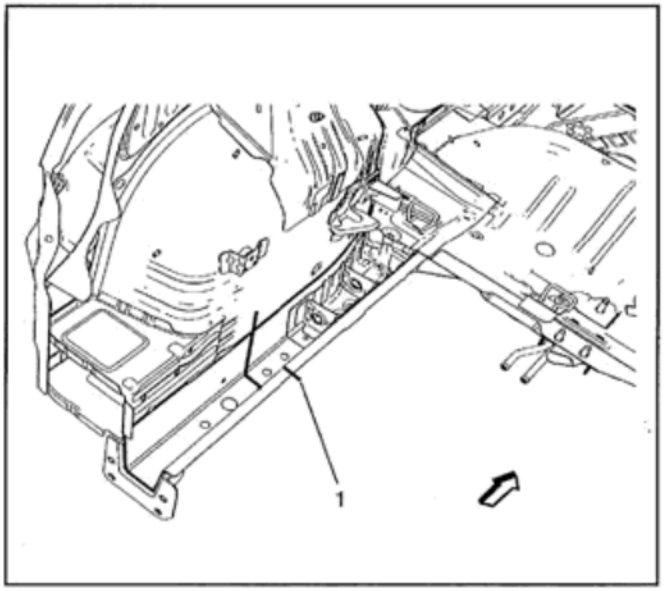
2726039

7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



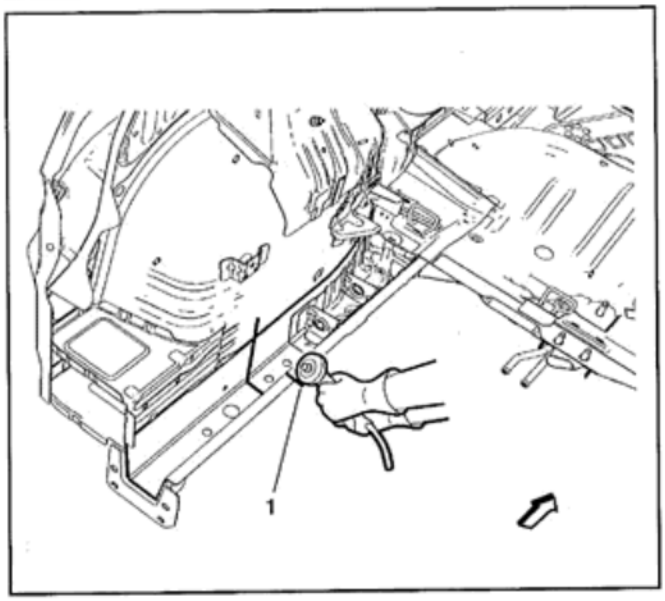
2726040

8. Remove the damaged the rear side rail gusset (1).



2505962

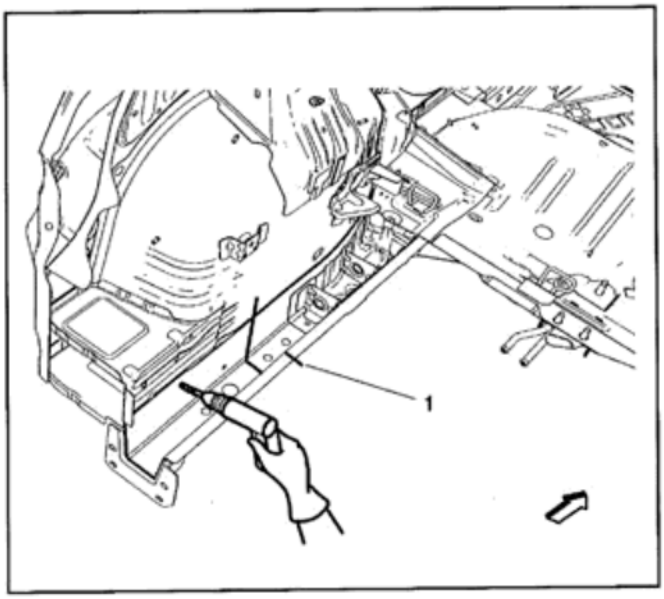
9. Create cut lines on the rear side rail (1).



2505963

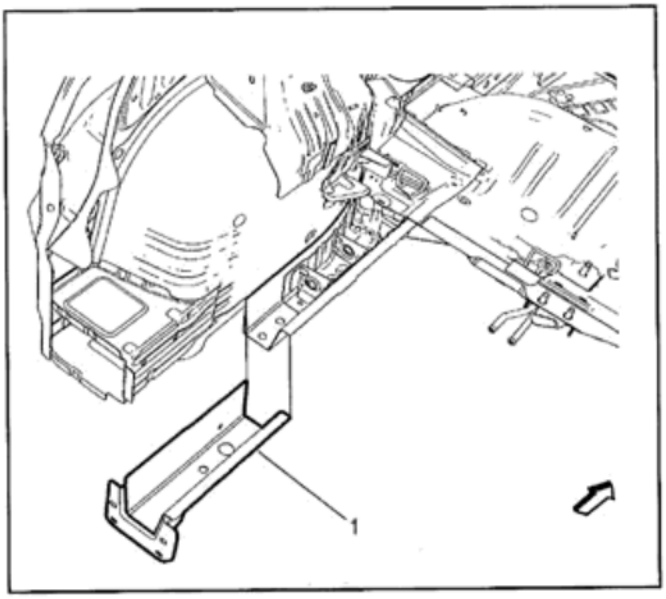
Note: Do not damage any other panels or reinforcements.

10. Cut the panel where sectioning is to be performed (1).
11. Locate and mark all the necessary factory welds of the rear side rail.



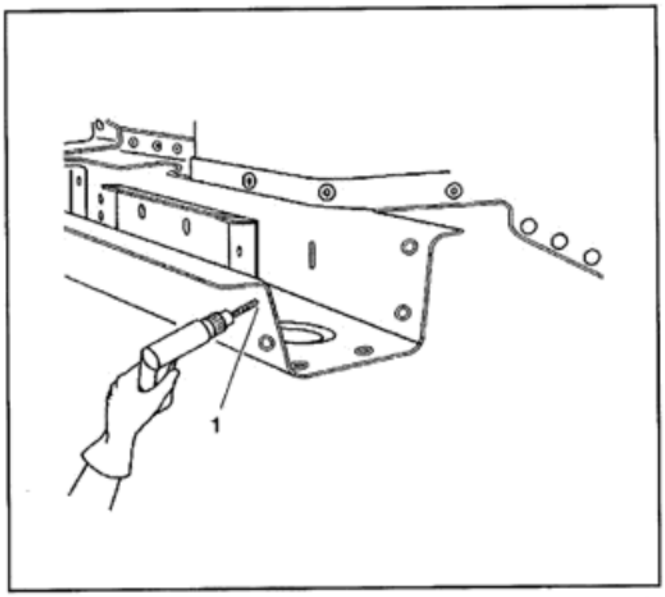
2505964

12. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505965

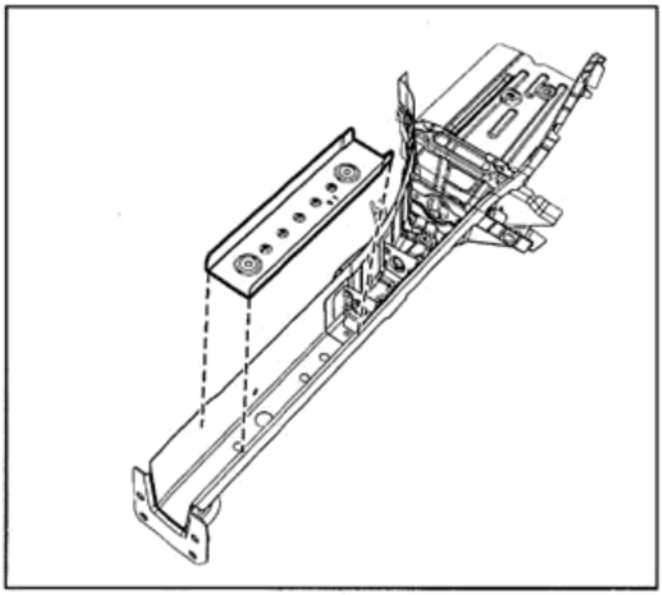
13. Remove the damaged rear side rail (1).



2551452

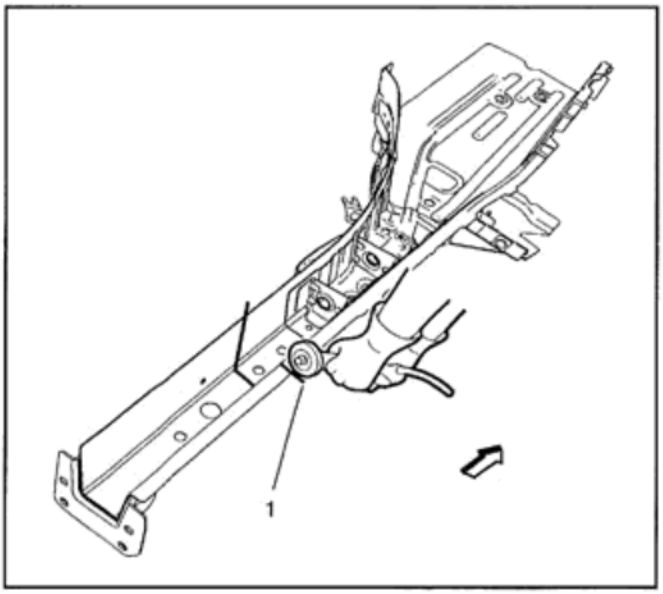
14. Drill two 8 mm (5/16 in) plug weld holes on each of the 3 sides of the rear rail (1). Position the center of the holes 10 mm (3/8 in) from the cut edge.

Installation Procedure



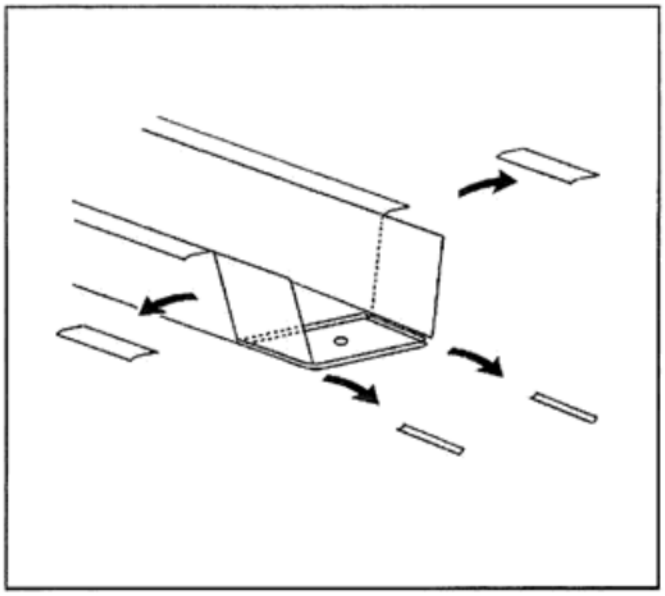
2726043

1. Remove the rear side rail gusset (1) from service part.
2. Locate the original cutting line on the service part rear rail.
3. Align a sliding square or similar tool to the original cutting line and scribe a line across the rail.
4. Use the same tool to transfer this scribed line onto the sides and the weld flanges of the rail.
5. Place a mark forward, 25 mm (1 in) from the scribed line on all 3 sides of the service rail.
6. Use the tool to scribe a line on all 3 sides and weld flanges of the rail.



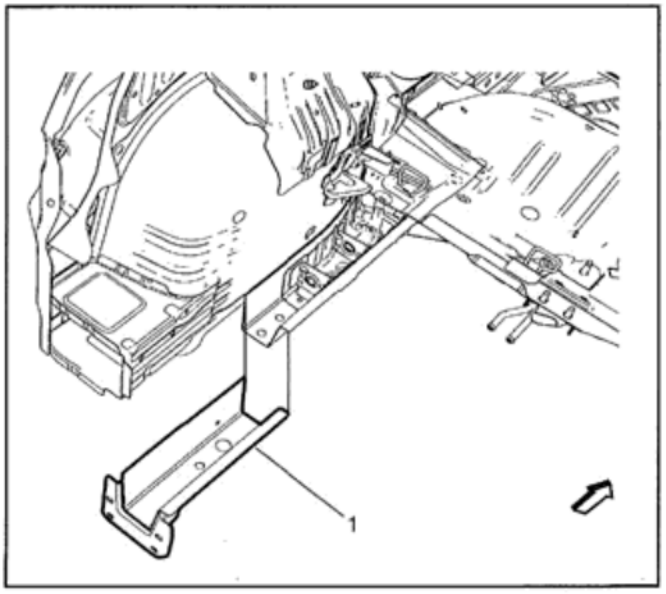
2505966

7. Cut at the scribe line (1).
8. Remove the rear portion of the rail.



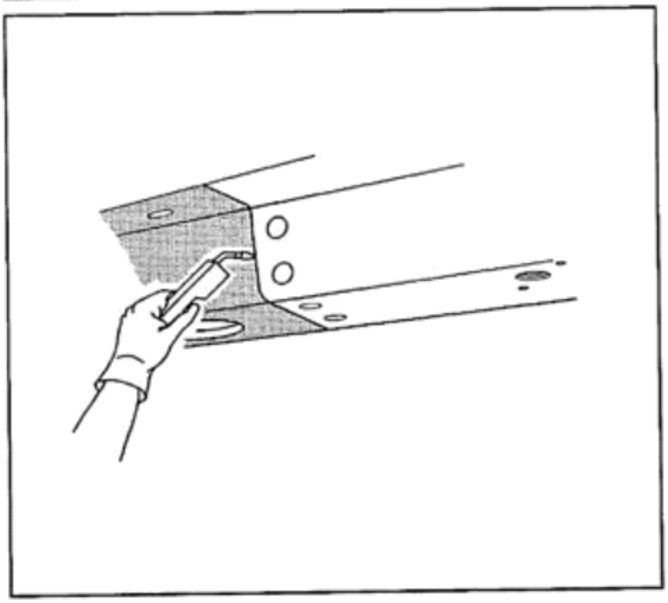
2551453

9. Cut the upper outer flanges of the rear portion of the rear rail service part. Cut the flanges back to the first scribe line and remove the tabs
10. Cut the lower radius corners of the service part back to the first scribe line and remove the small corners.
11. Bend the bottom side of the service part at the sectioning location inward slightly by aligning a vice grip flanging tool or similar tool at the first scribed line.
12. Clean and prepare the attaching surfaces for welding.



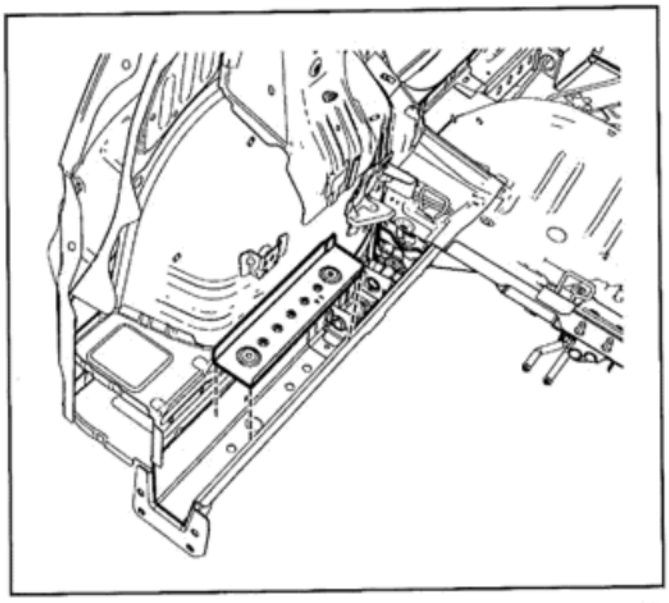
2505965

13. Position the rear side rail (1) on the vehicle.



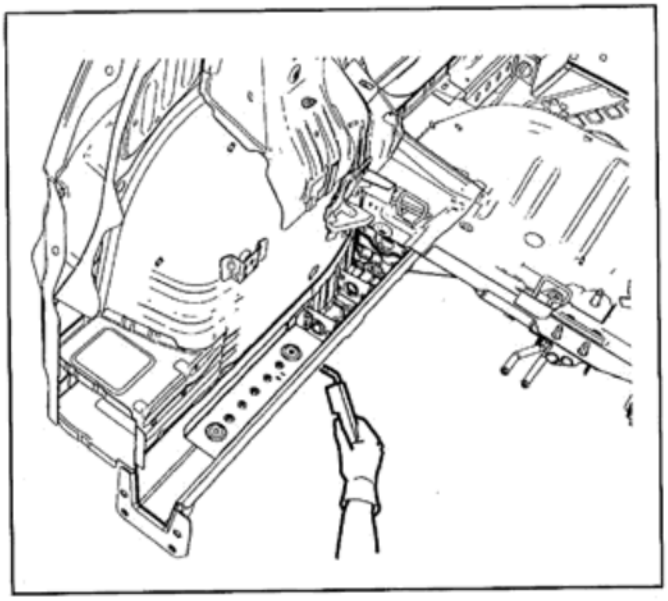
2551455

14. Tack weld the part into position (1).
15. Inspect the service rear rail for proper dimensions, using 3-dimensional measuring equipment.
16. Plug weld at each 8 mm (5/16 in) plug weld hole location.
17. Stitch weld along the entire sectioning joint. Make welds along the seam with 25 mm (1 in) gaps between. Weld the gaps.



2726040

18. Position the rear side rail gusset on the vehicle (1).
19. Verify the fit of the rear side rail gusset.
20. Clamp the rear side rail gusset into position.



2726048

21. Plug the weld accordingly (1).
22. Clean and prepare the welded surfaces.
23. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*
24. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159* Basecoat/ Clearcoat Paint Systems.
25. Install all related panels and components.
26. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
27. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

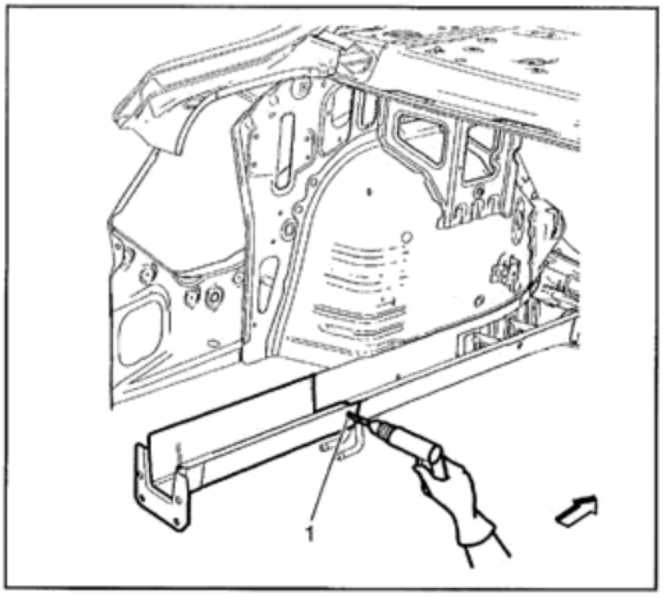
Underbody Rear Side Rail Extension Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

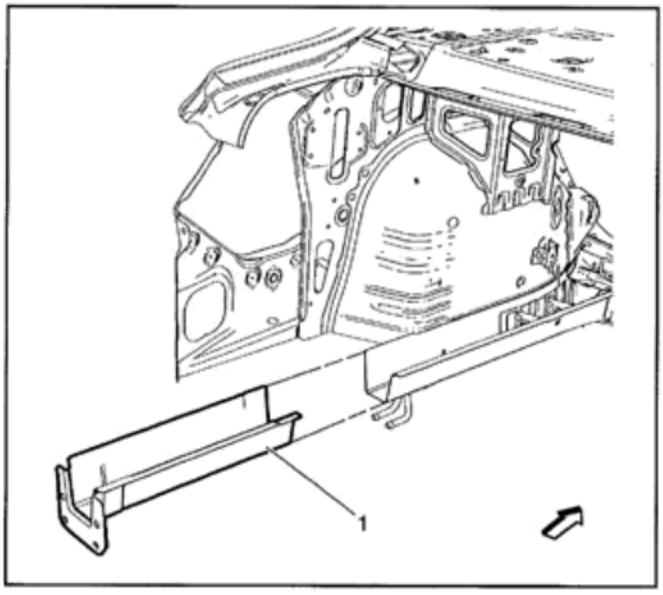
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all factory welds.



2505970

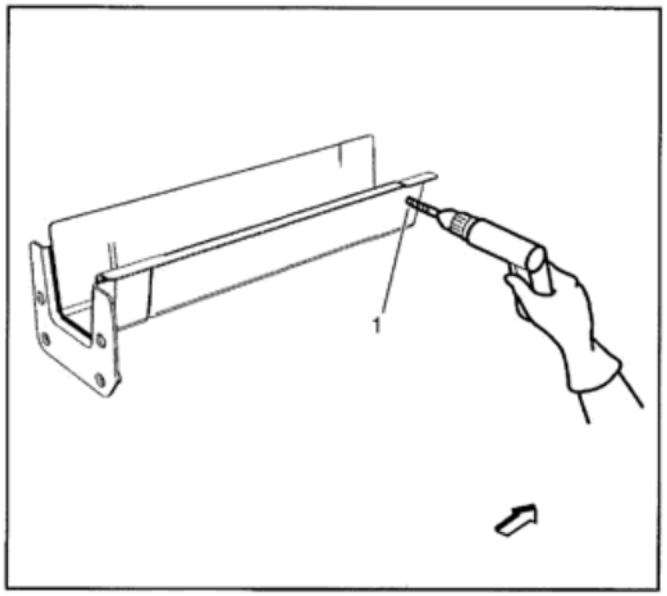
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505971

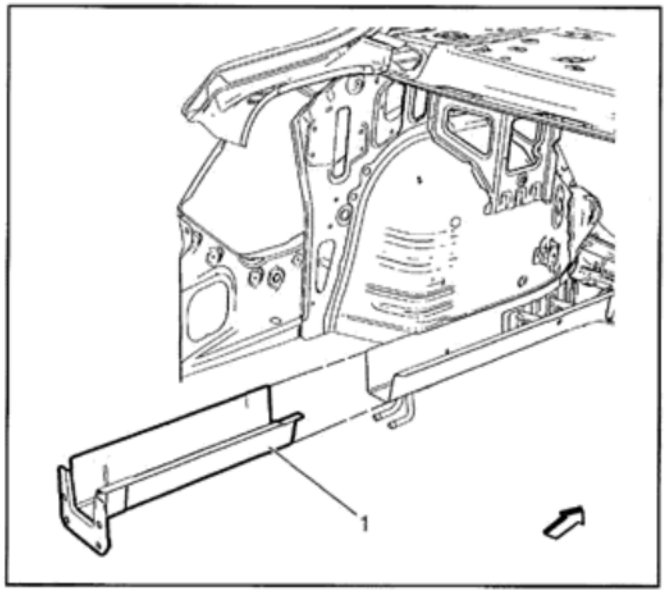
8. Remove the damaged rear side rail extension (1).

Installation Procedure



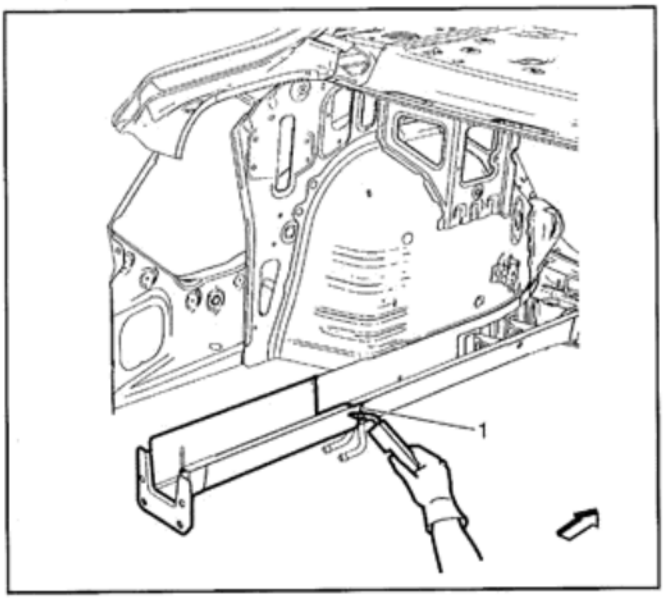
2505972

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the rear side rail extension (1) as noted from the original panel.
2. Clean and prepare the attaching surfaces for welding.



2505971

3. Position the rear side rail extension on the vehicle (1).
4. Verify the fit of the rear side rail extension.
5. Clamp the rear side rail extension into position.



2505973

6. Plug weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Rear End Panel Replacement

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

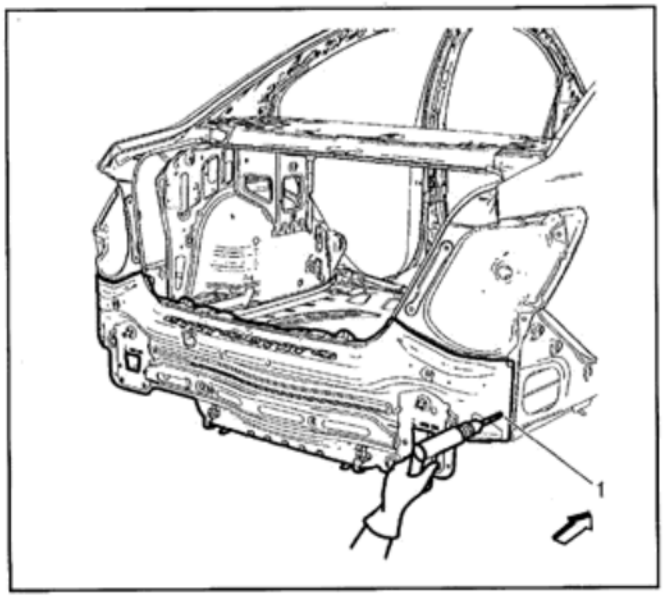
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

Note: The rear end lower panel reinforcement extension is made of Ultra High Strength Dual Phase Steel and should be replaced only at factory joints. Repairing or sectioning of this part is not recommended. Refer to *Ultra High Strength Dual Phase Steel on page 3-141*.

1. Disable the SIR System. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.

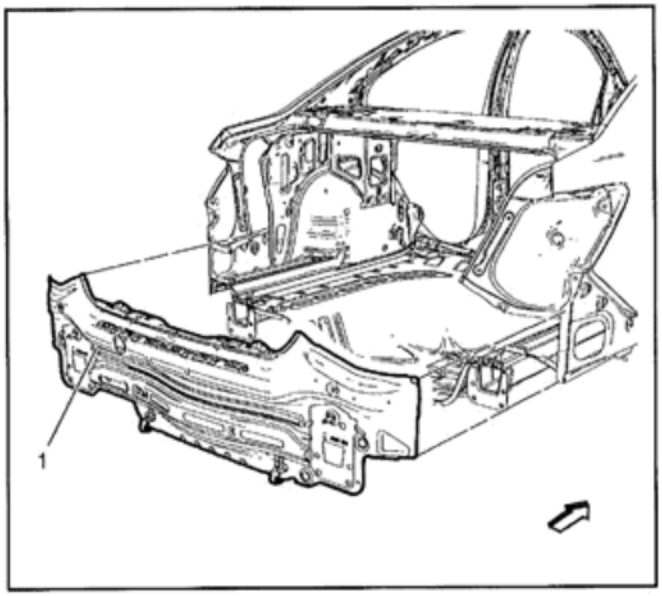
Note: Note the number and location of welds for installation of the service assembly.

6. Locate and mark all the necessary factory welds of the body rear end panel.



2505974

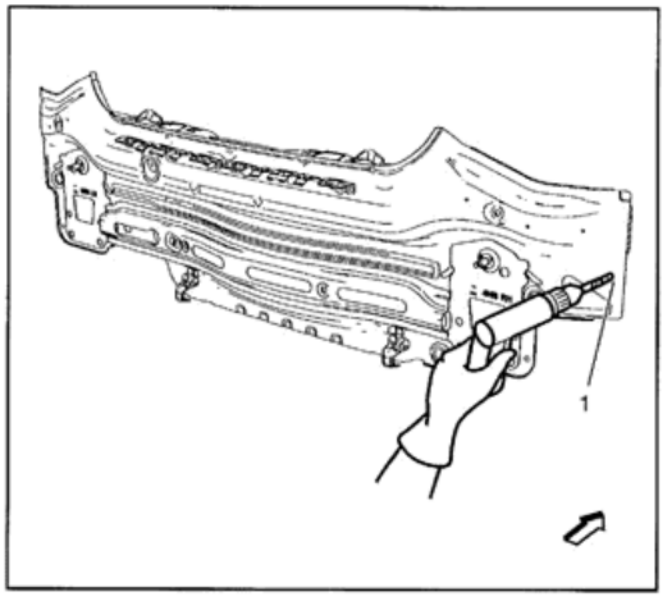
7. Drill all factory welds (1).



2505975

8. Remove the body rear end panel (1).

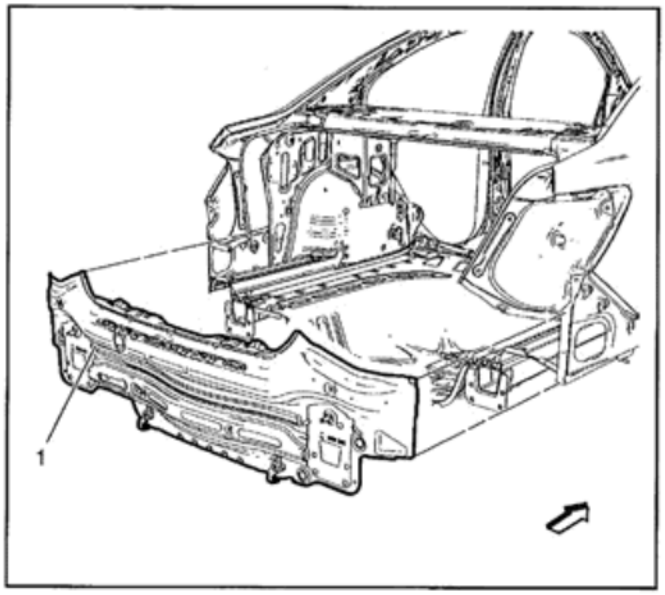
Installation Procedure



2505977

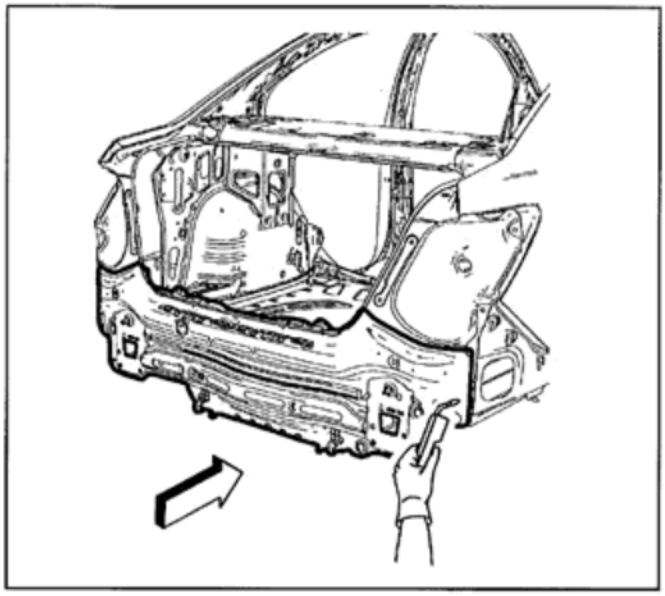
Note: If the location of the original plug weld holes can not be determined, space the plug weld holes every **40 mm (1 1/2 in)**.

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the body rear end panel (1) as noted from the original panel.
2. Clean and prepare the attaching surfaces for welding.



2505975

3. Position the body rear end panel on the vehicle (1).
4. Verify the fit of the body rear end panel.
5. Clamp the body rear end panel into position.



2505978

6. Plug weld accordingly.
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

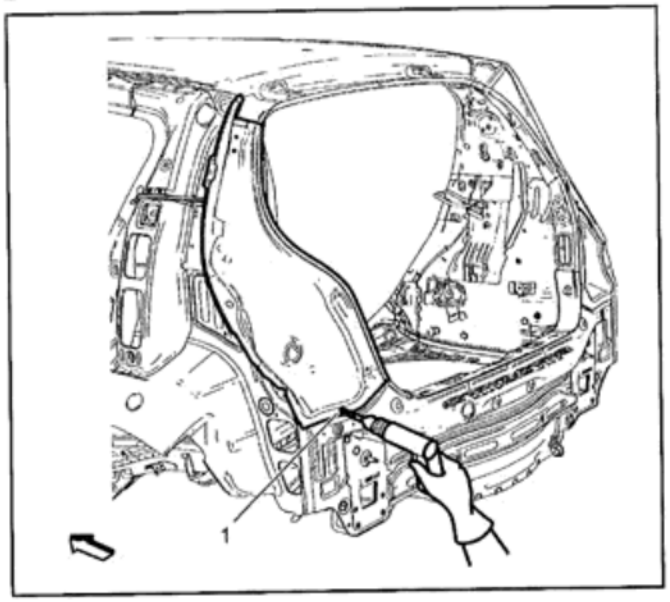
Tail Lamp Pocket Replacement (5HB)

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

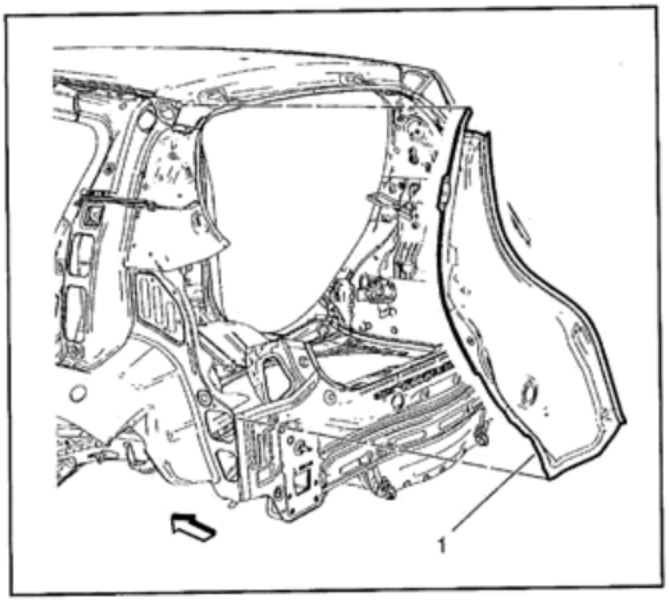
Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all the necessary factory welds of the body rear end panel.



2505980

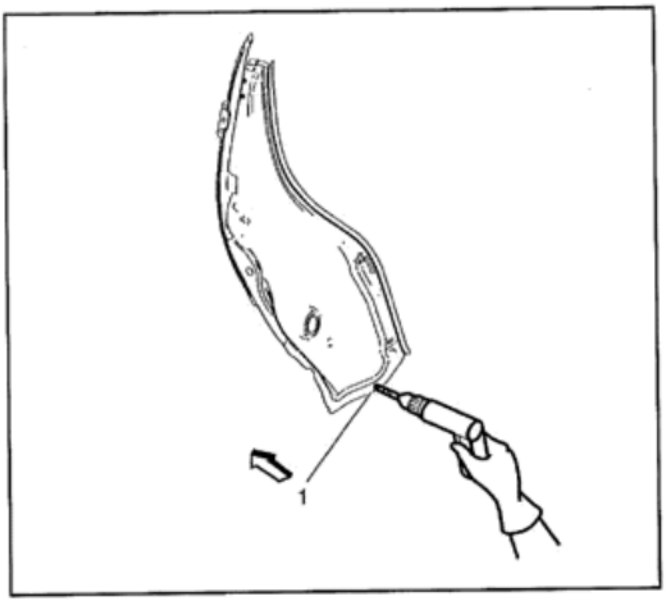
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505981

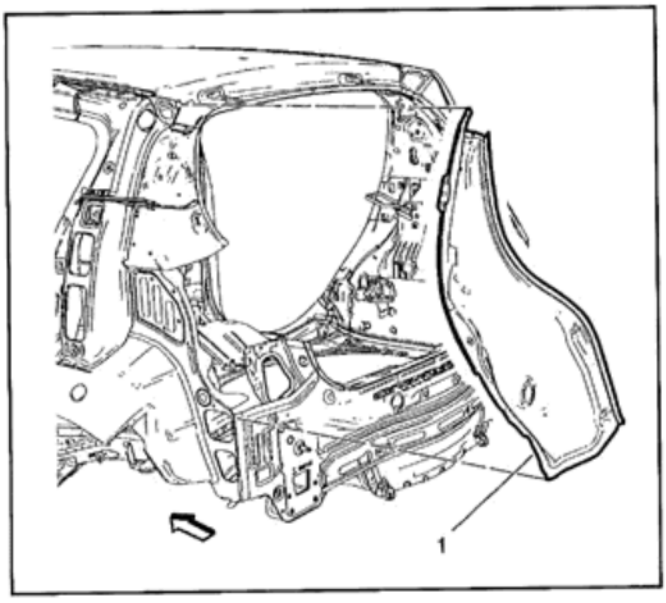
8. Remove the tail lamp pocket (1).

Installation Procedure



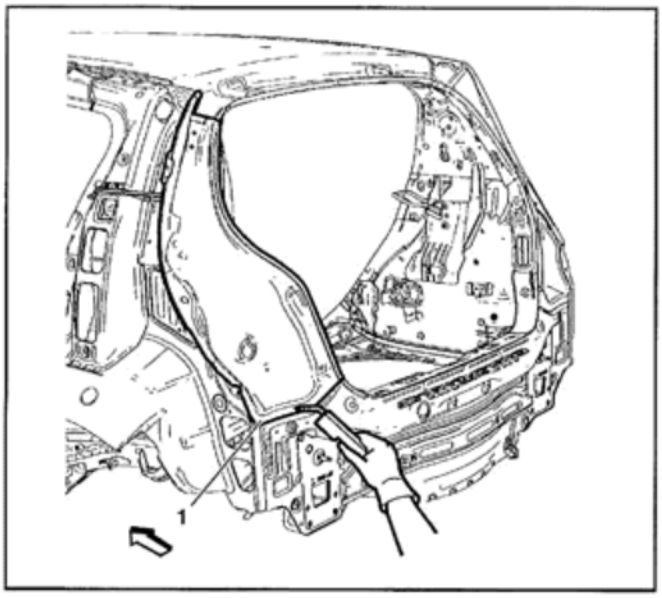
2505982

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the tail lamp pocket (1) as noted from the original panel.
2. Clean and prepare the attaching surfaces for welding.

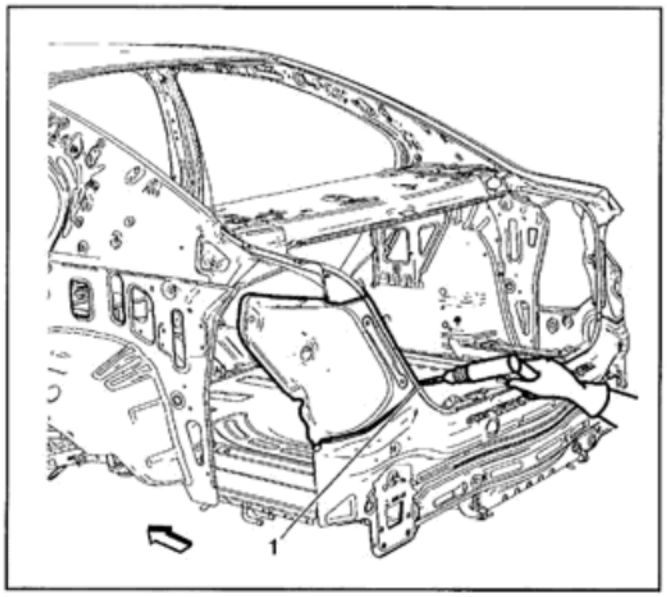


2505981

3. Position the tail lamp pocket on the vehicle (1).
4. Verify the fit of the tail lamp pocket.
5. Clamp the tail lamp pocket into position.



2505983



2505984

6. Plug the weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

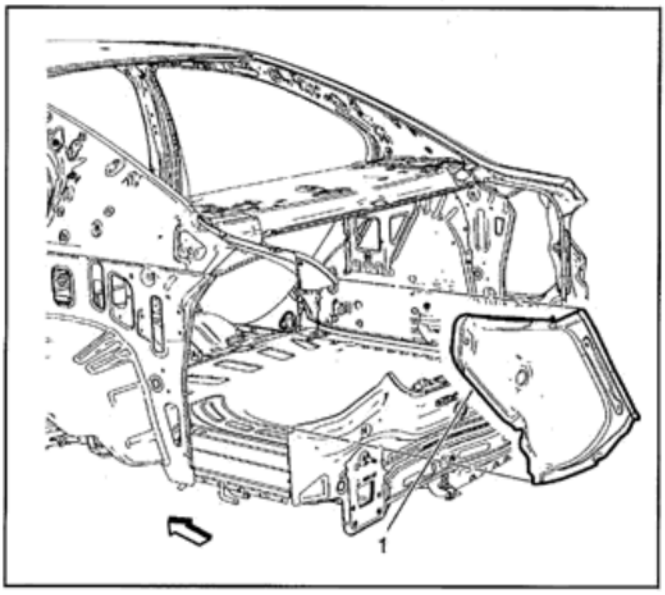
Tail Lamp Pocket Replacement (4NB)

Removal Procedure

Warning: Refer to Approved Equipment for Collision Repair Warning on page 0-3.

Warning: Refer to Glass and Sheet Metal Handling Warning on page 0-5.

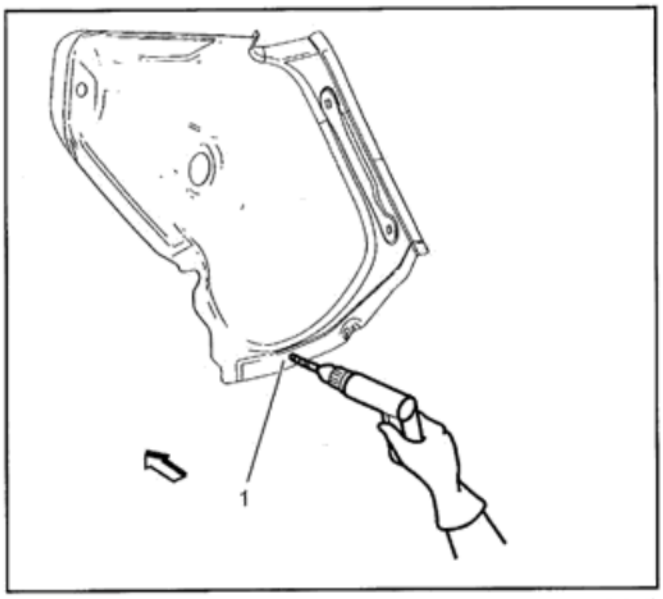
1. Disable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.
2. Disconnect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
3. Remove all related panels and components.
4. Visually inspect the damage. Repair as much of the damage as possible.
5. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
6. Locate and mark all the necessary factory welds of the body rear end panel.
7. Drill all factory welds (1). Note the number and location of welds for installation of the service assembly.



2505985

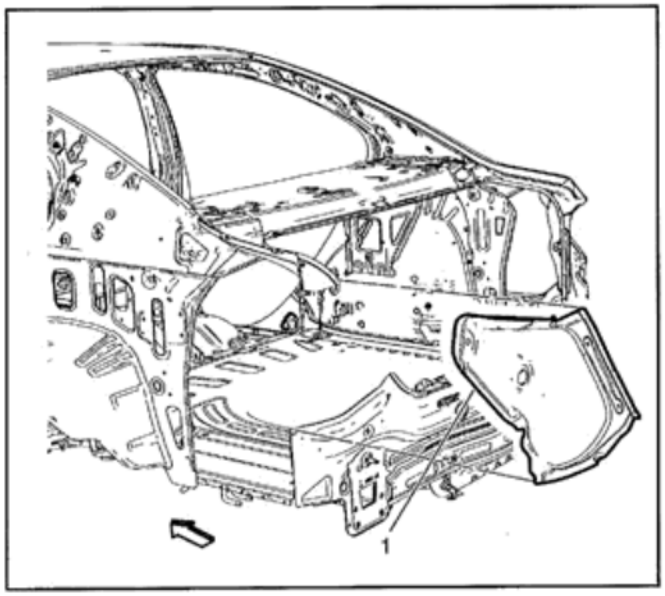
8. Remove the tail lamp pocket (1).

Installation Procedure



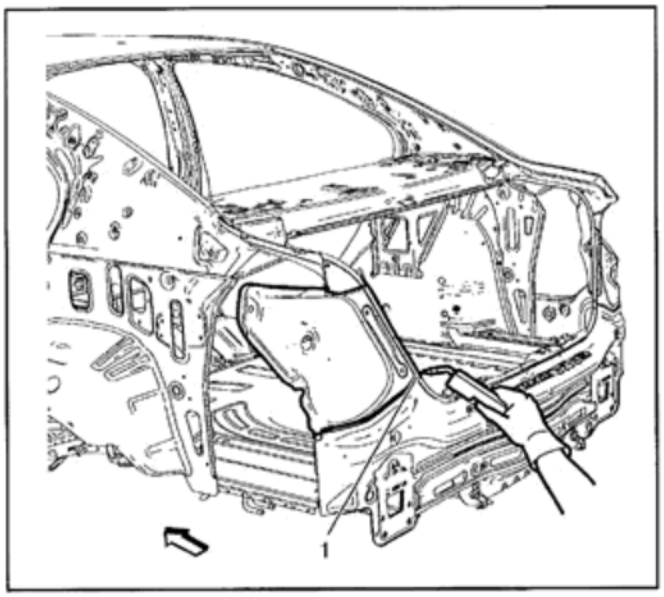
2505986

1. Drill **8 mm (5/16 in)** holes for plug welding along the edges of the tail lamp pocket (1) as noted from the original panel.
2. Clean and prepare the attaching surfaces for welding.



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3. Position the tail lamp pocket on the vehicle (1).
4. Verify the fit of the tail lamp pocket.
5. Clamp the tail lamp pocket into position.



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6. Plug the weld accordingly (1).
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to *Anti-Corrosion Treatment and Repair (Base) on page 3-159*.
8. Paint the repaired area. Refer to *Basecoat/ Clearcoat Paint Systems on page 3-159*.
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to *Battery Negative Cable Disconnection and Connection on page 9-713*.
11. Enable the SIR system. Refer to *SIR Disabling and Enabling on page 13-112*.

Description and Operation

Dual Phase Steel

This information provides repair recommendations and general guidelines for steel classified as Dual Phase Steel (dual phase steel with a tensile strength up to and including 800 MPa), also known as DP.

General Motors recommends the following when repairing or replacing this type of steel during collision repair.

Note: The use of heat to repair damage is not recommended for this classification of steel.

Recommended Repairs

- Cold repairs can be performed on this type of steel, unless the damage includes kinks. If the damage includes kinks, the part should be replaced.
- Sectioning or partial replacement of this type of steel is recommended only at approved locations, in a specific sectioning procedure.
- This type of steel can be used as a sleeve, or backer plate, when recommended in a specific sectioning procedure.
- Squeeze resistance spot welding can be used to replace factory spot welds, where applicable.

- MIG plug welding and MIG stitch welding can be used on this type of steel.
- MIG brazing can be used on this type of steel.

High Strength Low Alloy Steel

This information provides repair recommendations and general guidelines for steel classified as High Strength Low Alloy Steel, also known as HSLA. This type of steel normally has a tensile strength range from 300–700 MPa.

General Motors recommends the following when repairing or replacing this type of steel during collision repair.

Recommended Repairs

- Cold repairs can be performed on this type of steel, unless the damage includes kinks. If the damage includes kinks, the part should be replaced.
- Controlled use of heat can be used to repair damage, if the heat does not exceed 650° C (1200° F). The heat should be applied a maximum of 2 times, for up to 90 seconds.
- Sectioning or partial replacement of this type of steel is recommended only at approved locations, in a specific sectioning procedure.
- This type of steel can be used as a sleeve, or backer plate, during sectioning procedures.
- Squeeze resistance spot welding can be used to replace factory spot welds, where applicable.
- MIG plug welding and MIG stitch welding can be used on this type of steel.
- MIG brazing can be used on this type of steel.

Mild Steel

This information provides repair recommendations and general guidelines for steel classified as Mild Steel. This type of steel normally has a tensile strength less than 270 MPa. This includes the common steel, names of:

- Mild Steel
- Bake Hardenable Steel (BH)
- Solid Solution Strengthened Steel

General Motors recommends the following when repairing or replacing this type of steel during collision repair.

Recommended Repairs

- Cold repairs can be performed on this type of steel, unless the damage includes kinks. If the damage includes kinks, the part should be replaced.
- Controlled use of heat can be used to repair damage, if the heat does not exceed 650° C (1200° F). The heat should be applied a maximum of 2 times, for up to 90 seconds.
- Sectioning or partial replacement of this type of steel is recommended only at approved locations, in a specific sectioning procedure.
- This type of steel can be used as a sleeve, or backer plate, when recommended in a specific sectioning procedure.
- Squeeze resistance spot welding can be used to replace factory spot welds, where applicable
- MIG plug welding and MIG stitch welding can be used on this type of steel.
- MIG brazing can be used on this type of steel.

Ultra High Strength Dual Phase Steel

This information provides repair recommendations and general guidelines for steel classified as Ultra High Strength Dual Phase Steel (dual phase steel with a tensile strength greater than 800 MPa), also known as DPX.

General Motors recommends the following when repairing or replacing this type of steel during collision repair.

Note:

- Repair of this type of steel is not recommended.
- This type of steel should be replaced at factory joints only. Sectioning or partial replacement is not recommended.
- The use of heat to repair damage is not recommended for this type of steel.
- Stitch welding is not recommended for this type of steel.
- This classification of steel cannot be used as a backing reinforcement or a sleeve for a sectioning joint, unless a specific procedure is available.

Recommended Repairs

- Squeeze resistance spot welding can be used to replace factory spot welds, where applicable.
- MIG plug welding can be used to replace factory spot welds.
- MIG brazing can be used to replace factory spot welds.

Ultra High Strength Steel

This information provides repair recommendations and general guidelines for steel classified as Ultra High Strength Steel, also know as UHSS. This type of steel normally has a tensile strength greater than 700 MPa.

This includes the common steel names of:

- Ultra High Strength Steel (UHSS)
- Martensitic Steel (MS)
- Press Hardened Steel (PHS)
- Boron Steel

Note:

- Repair of this type of steel is not recommended.
- This type of steel should be replaced at factory joints only. Sectioning or partial replacement is not recommended.
- The use of heat to repair damage is not recommended for this type of steel.
- Stitch welding is not recommended for this type of steel.
- This type of steel can not be used as a backing reinforcement or a sleeve for a sectioning joint.

Recommended Repairs

- Squeeze resistance spot welding can be used to replace factory spot welds, where applicable.
- MIG plug welding can be used to replace factory spot welds.
- MIG brazing can be used to replace factory spot welds.