SECTION 16

ELECTRICAL

INDEX

INTRODUCTION

The body electrical equipment for all body styles is covered in the following sections:

Power Windows
Power Tailgate Window
Power Seats
Tail and Side Marker Lamps
Electric Seat Warmer
Electric Back Window Grid Defogger
Electric Seat Back Lock Release
Electric Door Locks

Each section combines all styles and series together which incorporates the power equipment unless stated otherwise in the procedure.

Round wire is used for body wiring on all styles and for all options.

Typical body wiring and routing diagrams are located at the end of this section.

It is important that inspection for mechanical binds and alignments be completed before electrical diagnosis is attempted.

Circuit wiring for power equipment is protected by a circuit breaker (40 ampere in most cases) and is located as follows:

DIVISION	STYLE	LOCATION
Chevrolet	All	Engine Compartment Bulkhead
Pontiac	All	In fuse block (plug-in type)
Oldsmobile	All	Engine Compartment Bulkhead
Buick	All	In fuse block (plug-in type)
Cadillac	"C-E"	In fuse block (plug-in type)
Canadian		
Pontiac	All	Engine Compartment Bulkhead
Beaumont	All	Engine Compartment Bulkhead
Acadian	All	Engine Compartment Bulkhead

POWER WINDOWS

POWER OPERATED WINDOWS— All Series

Description

The wiring harness for the electrically operated windows consists of the following major sections:

1. Cross-over harness
2. Feed harness to rear doors or quarter windows
3. Left and right rear door or quarter window harness
4. Left and right front door window harness

CROSS-OVER HARNESS

This harness is installed beneath the instrument panel and completes the circuit from the right door to the left door windows on all styles except on Cadillac styles.

On Cadillac "C" styles the cross-over harness is part of the body and rear door or quarter feed harness and is installed under the front seat.

On Cadillac "E" styles the cross-over harness is installed at the front of the floor pan.

FRONT DOOR WINDOW HARNESS

The impact bar and reinforcements incorporated into some door construction reduces accessability for power window wiring harness. Therefore, if replacement of door harness should become necessary, attach a leader to the end of the harness before removal from the door.

FEED HARNESS FOR REAR DOORS OR QUARTER WINDOWS

This harness connects to the front cross-over harness on the left side of the shroud (fire wall) and extends rearward in the body wire harness under the driver's seat on all styles except Chevrolet and Pontiac "F" and Cadillac Styles. On all styles, this harness connects directly on the rear quarter window motor on 2-door style and terminates at the base of the center pillar on 4-door styles.

On Chevrolet and Pontiac "F" styles, the feed harness is connected to the cross-over harness at the left and right shroud and is routed on top of the rocker inner panel on each side to the quarter window.

On Cadillac styles the wire harness is routed from the left shroud, along the left rocker inner panel to the front of the drivers seat, then, on 2-door styles,

it crosses over to the body wire harness, is incorporated in the body wire harness conduit and extends rearward to the front of the rear seat area where is separates to each quarter window. On 4-door styles, the wire is routed from the left shroud along the rocker inner panel and separates at the front edge of the drivers seat. The left rear door wiring continues rearward to the left center pillar; the wires to the right center pillar run across the body under the front seat.

REAR DOOR WINDOW HARNESS

The left and right door harness connects to the feed harness in the base of the center pillar. To disengage the connector, pull harness inboard at base of center pillar for accessibility.

MOTOR DESCRIPTION

Power windows are operated by a rectangular shaped 12 volt series-wound motor with an internal circuit breaker and a self-locking rubber coupled gear drive. The harness to the door window motor connector is designed with a locking embossment to insure a positive connection. When disengaging the harness connector from the door motor, it is necessary to depress the thumb release. When installing the harness, the thumb release must be held depressed until the embossment on the female connector is locked in the hole of the motor connector.

RELAY

All styles - In addition to the circuit breaker, a relay is used in the circuit, which prevents the operation of the power windows until the ignition switch is turned "on".

Buick "E" and All "B-C" Styles Except Cadillac - have the ignition relay located on shroud upper panel concealed by the instrument panel assembly.

The ignition relay on Cadillac and all other styles is located on the left shroud side panel.

CUT-OUT SWITCH

A two position ("Lock-Normal") cut-out switch is installed on the left front door arm rest on Cadillac styles only.

The cut-out switch button should be left in the "NORMAL" position when ignition switch is "ON" to permit normal operation of power windows from all switch locations. If the control button is in the "LOCK" position with the ignition switch on, the windows will operate only from the master control switch.

CHECKING PROCEDURES

Generally most common failures are "open" and "short" circuits. An "open" circuit is one in which the circuit cannot be completed due to a broken wire, poor terminal contact or improper ground. A "short" circuit is one in which the current is grounding before it reaches the operating unit. This creates an overload and actuates the circuit breaker or "blows" the fuse.

1. Defective Components

Occasionally an "open" or "short" circuit exists within a component of the circuit, such as a motor, switch, relay, etc. These units may be checked as covered in the following example:

A. Checking an inoperative switch

1. Place a #12 jumper wire on the switch terminal block between the center terminal (feed) and one of the two motor wire terminals. If the motor operates, the switch is defective.

   The principle involved here is to by-pass the suspected defective component and this procedure can be applied to check almost all component parts.

2. Open Circuits

To check for a broken wire:

A. Visually inspect the area of suspected damage.

B. If no wire damage is apparent, check the wire on the battery side of the suspected area by grounding one end of a light tester and inserting the pointed end of the light tester through the insulation. If the tester lights, current is present.

   NOTE: To check for current between a switch and an operating unit, the switch must be actuated to insure current in the wire.

C. Perform the same operation on the opposite end of the wire. If the tester does not light, the break is between the two points checked.

D. Using the light tester, check for current in the wire midway between the points where current exists and where it does not exist. If the tester does not light, check the wire at intervals in the direction of the power source. If the tester does not light proceed with the tester in the opposite direction until the break is located.

E. Repair (solder) the break and tape any exposed wire.

3. Improper Ground

Many times perfectly sound operating units, such as motors, are considered defective and are replaced because an effective ground is not established.

To check for proper ground:

A. Attach one end of a #12 gauge jumper wire to the body of the inoperative unit.

B. Connect the other end to a good ground, such as a bare metal panel.

C. Energize the unit. If the unit operates, the original ground is defective.

D. Re-establish the ground.

4. "Short" Circuits

When a "short" exists in a given circuit, the circuit breaker will be actuated or a fuse will be blown. However, if the "short" is located between a switch and an operating unit, the circuit breaker will actuate or the fuse will blow only when the switch is actuated. If the "short" occurs between the circuit breaker (or fuse) and the switch, the circuit will be inoperative all the time. This will continue until the "short" is repaired or the battery runs down.

Locating a short circuit depends largely on the symptoms in any given case.

As an aid in locating a "short" in any given circuit, an instrument known as a "short tester" (J-8681 or similar type) may be employed. Its advantage lies in the fact that it is a labor saving device, since trim removal is NOT required prior to testing operations. All short testers have the following parts in common:

Two leads with alligator clips (for by-passing an existing circuit breaker or fuse).

A 10-15 amp circuit breaker (to replace the existing circuit breaker or fuse).

A meter for detecting intermitting electrical current.

The tester meter is designed to react to the magnetic lines of force that surround an energized wire or conductor. However, the current and magnetic lines of force must be interrupted, by means of the testing device circuit breaker, at intervals in order to cause the meter needle to deflect.

The use of a "short" tester should include the following steps:

A. Reference should be made to service manual electrical diagrams and particularly wire routing diagrams in order to establish the location of wiring and wire harness accurately.

B. Disconnect the affected circuit breaker (both wires) or remove blown fuse and substitute either of these items with the circuit breaker of the tester. This is accomplished by connecting the tester leads to the input and output side of the fuse clip or wires, previously removed from the existing circuit breaker.

C. The tester may respond immediately by making a snapping noise. (This sound may be accompanied by a warning light on some testers.) This response is an indication that the "short" is located in a FEED line, between the power source and a switch. If the tester does not respond, proceed as follows:

i. Turn on or actuate all switches in the suspected circuit (or body).

ii. Observe all lights or units affected by actuating all switches. The light or unit that DOES NOT operate intermittently, but causes the tester to react, is in the "shorted" circuit, and indicates the side of the car that is affected.

NOTE: When the affected circuit has been positively identified, reference should again be made to the proper wire routing diagram as an aid in the steps that follow. In addition, the switch in the circuit being checked must be held in the closed position.

D. Beginning at the power source for the suspected circuit, place the tester meter directly over the wire (or harness) with the meter arrows parallel to the wire(s) being checked. The meter needle will deflect noticeably each time the tester completes the circuit.

NOTE: Since this test will most often be made over intervening layers of trim material (cloth, rubber, plastic, metal), it may be necessary to move the meter laterally over the circuit at each check point

to achieve the strongest signal on the meter.

E. Check progressively with the meter along the circuit from the power source to the inoperative unit. A sharp DECREASE in the AMOUNT of meter needle deflection will indicate the location (within 4-5 inches) of the location of the "short". It must be remembered, however, that the above meter reaction would also occur if the wrong circuit was followed or the meter was not held directly above the circuit (reference "NOTE", in Step #4).

F. Once the location of the "short" is accurately established, necessary trim parts may be removed to perform repairs.

Wires that serve to complete a ground circuit (i.e., dome lights) may, through missing or damaged insulation, complete the circuit at all times. Such areas may be determined with a "short" tester in the following manner:

i. Disconnect the affected ground wire at all (jamb) switches, TO PREVENT DAMAGE.

ii. Connect one lead of the short tester to the source end of the ground wire and connect the other lead to a power source. This action converts a ground wire to a feed wire.

iii. Check the affected circuit with the tester meter as previously outlined beginning with Step #4.

POWER WINDOW CIRCUIT CHECKING PROCEDURES

It may be necessary to use only one or all of the procedures outlined to locate an electrical failure in the circuit. If the location of the failure is evident follow only the steps required to check the affected wire or component. If the location of the failure is not evident, follow the procedure as outlined. Be sure to check the harness connectors for proper engagement and become familiar with the typical circuit diagrams. (See Figs. 16-1 through 16-5)

a. Checking Feed Circuit Continuity at Circuit Breaker

1. Connect one test light lead to battery side of circuit breaker and ground other lead. If tester does not light, there is an open or short circuit in feed circuit to breaker.

2. To check circuit breaker, disconnect the output feed wire (the wire opposite the power source feed to the breaker) from the breaker and with test light, check terminal from which wire was disconnected. If tester does not light, circuit breaker is inoperative.

b. Checking Relay Assembly at Shroud

1. With test light, check relay feed. If tester does not light, there is an open or short circuit between relay and circuit breaker.

2. Turn ignition switch on and with test light check output terminal of relay. If tester does not light, the relay is inoperative or there is a short or open circuit between ignition switch and relay assembly. (Check fuse at dash panel).

c. Checking for Current at Cut-Out Switch—(Cadillac Only)

1. With ignition switch on, connect one test light lead to the master window control switch feed terminal (red-white stripe) of the switch block and ground other test lead.

2. If tester does not light, there is an open or short circuit between the relay and cut-out switch.

d. Checking Cut-Out Switch—(Cadillac Only)

1. With the ignition switch on, connect one end of a #12 gauge jumper wire to lower terminal (master control switch feed - red-white stripe) and the other end in the right and left rear quarter or door and right front door feed terminal (pink-black stripe).

2. Operate control switches. If any of the windows operate with the jumper but not with the cut-out switch, the switch is defective.

e. Checking Feed Circuit Continuity at Window Control Switch

1. Connect one test light lead to feed terminal of switch block and ground other tester lead to body metal (Fig. 16-6).

2. If tester does not light, there is an open or short circuit between switch and power source.

f. Checking Window Control Switch

1. Insert one end of a #12 gauge jumper wire to the switch feed terminal and the other end to one of the motor lead terminals in the switch block. Repeat this check on the remaining motor lead terminal (See Fig. 16-7).

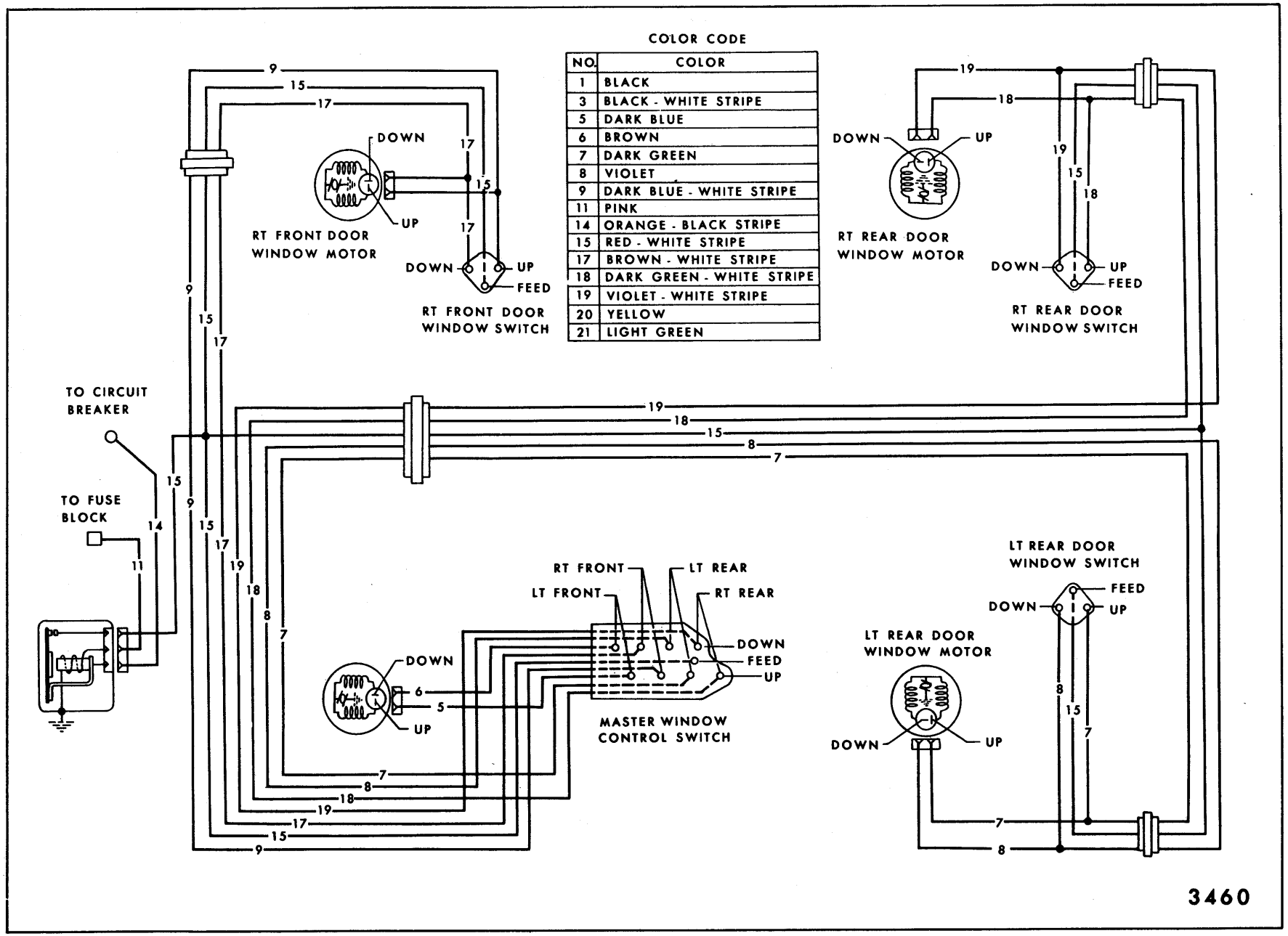


Fig. 16-1—Power Window Circuit - Typical "A" Styles

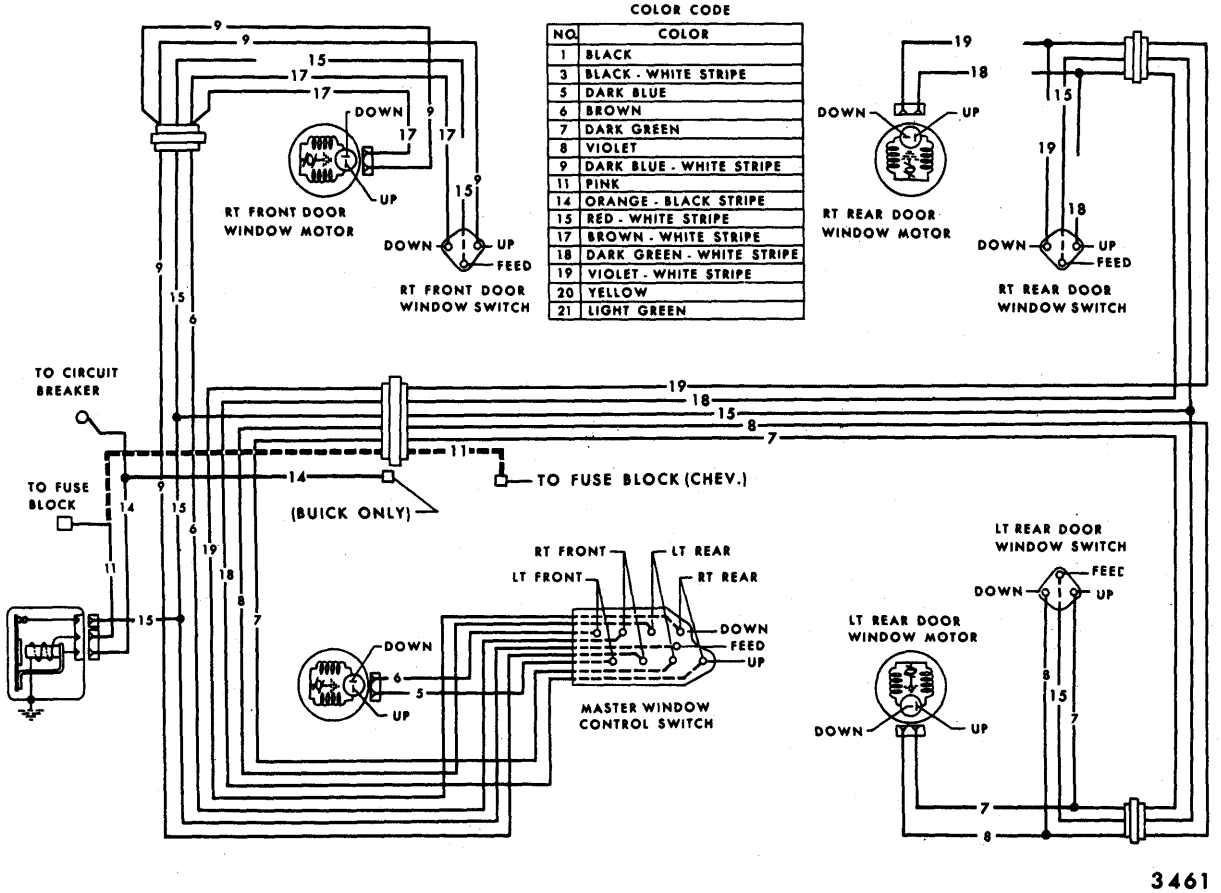


Fig. 16-2—Power Window Circuit - Typical "B" Styles

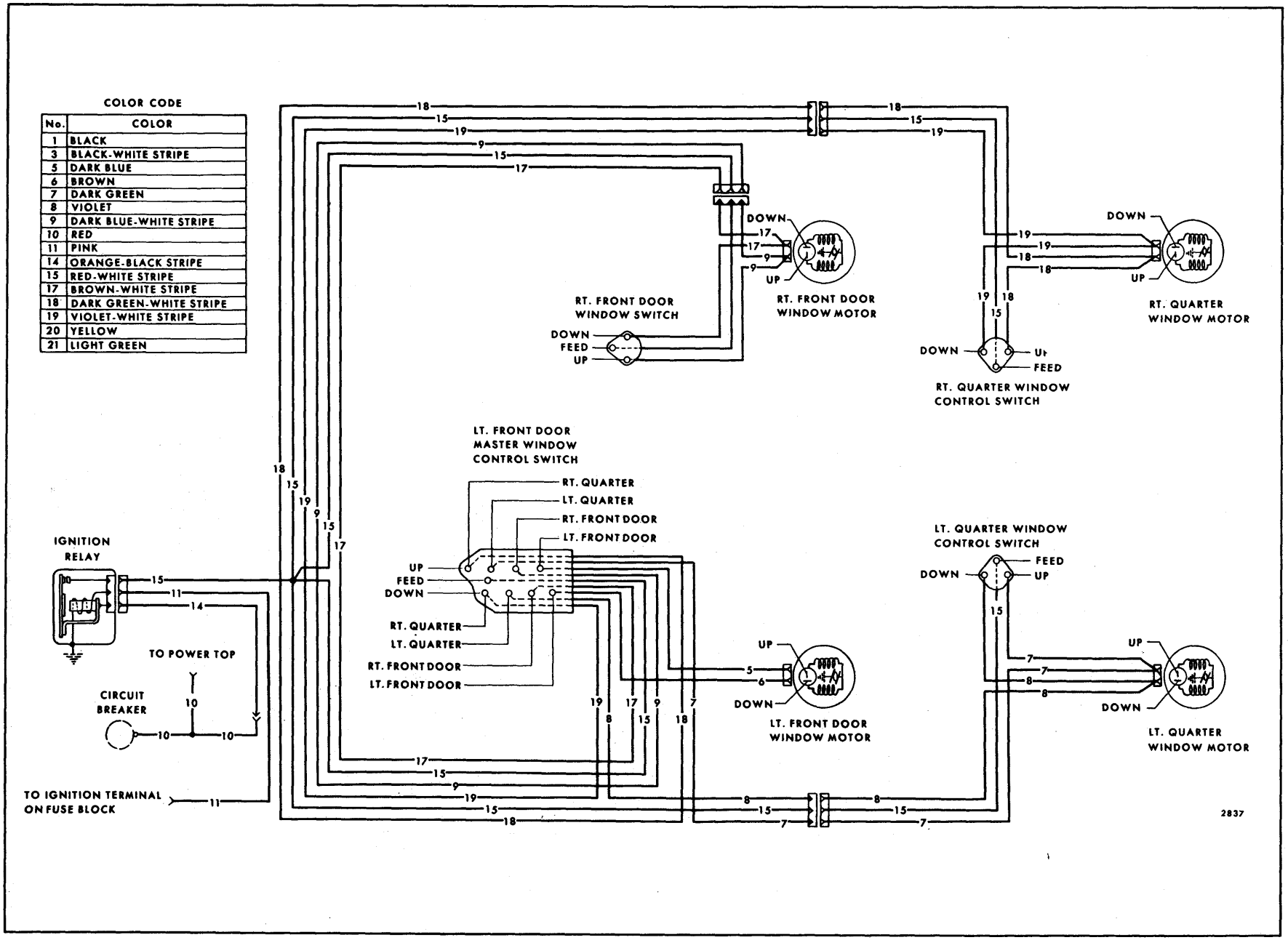


Fig. 16-3—Power Window Circuit - Chevrolet and Pontiac "F" Styles

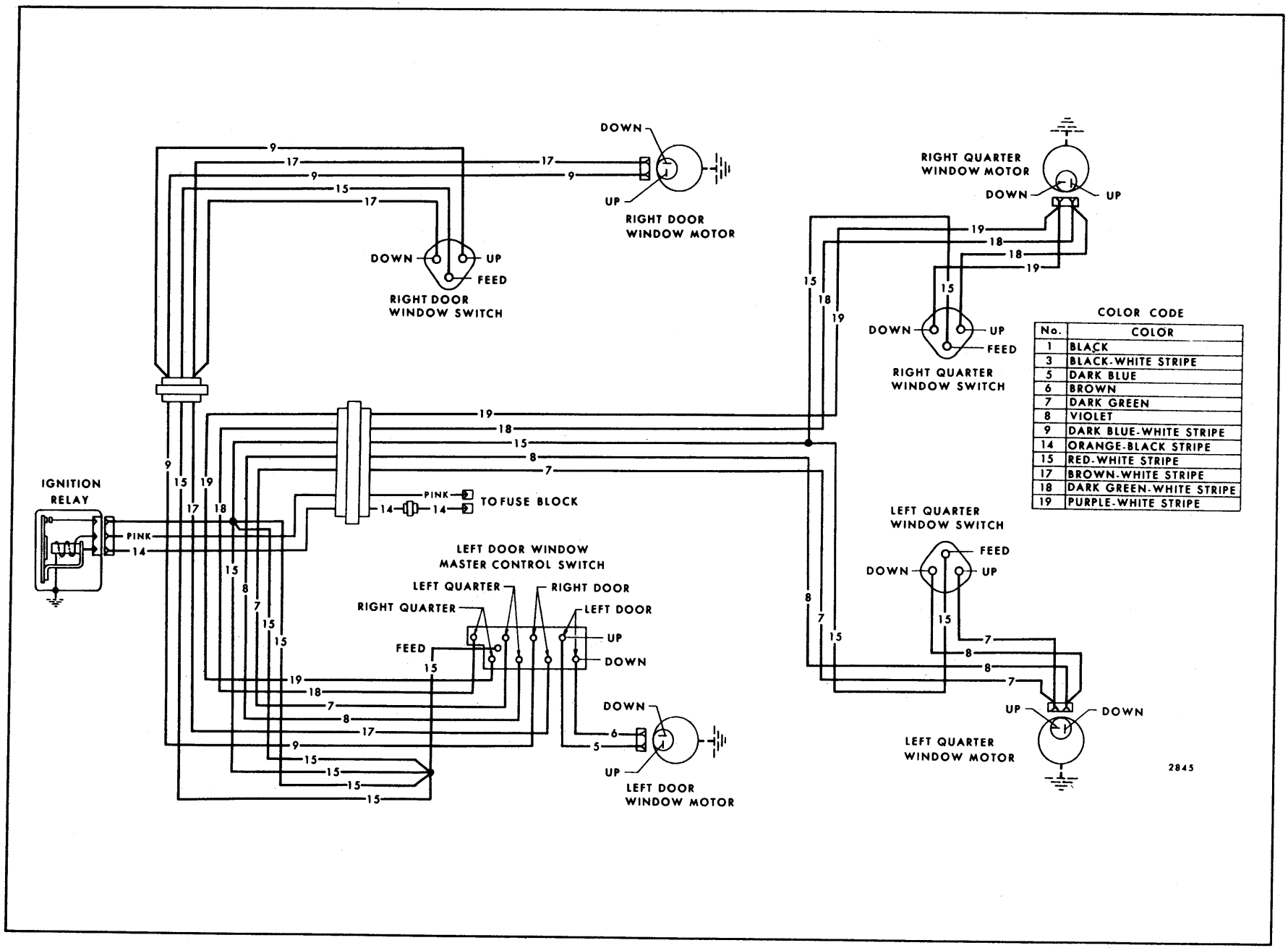


Fig. 16-4—Power Window Circuit - Buick "E" Styles

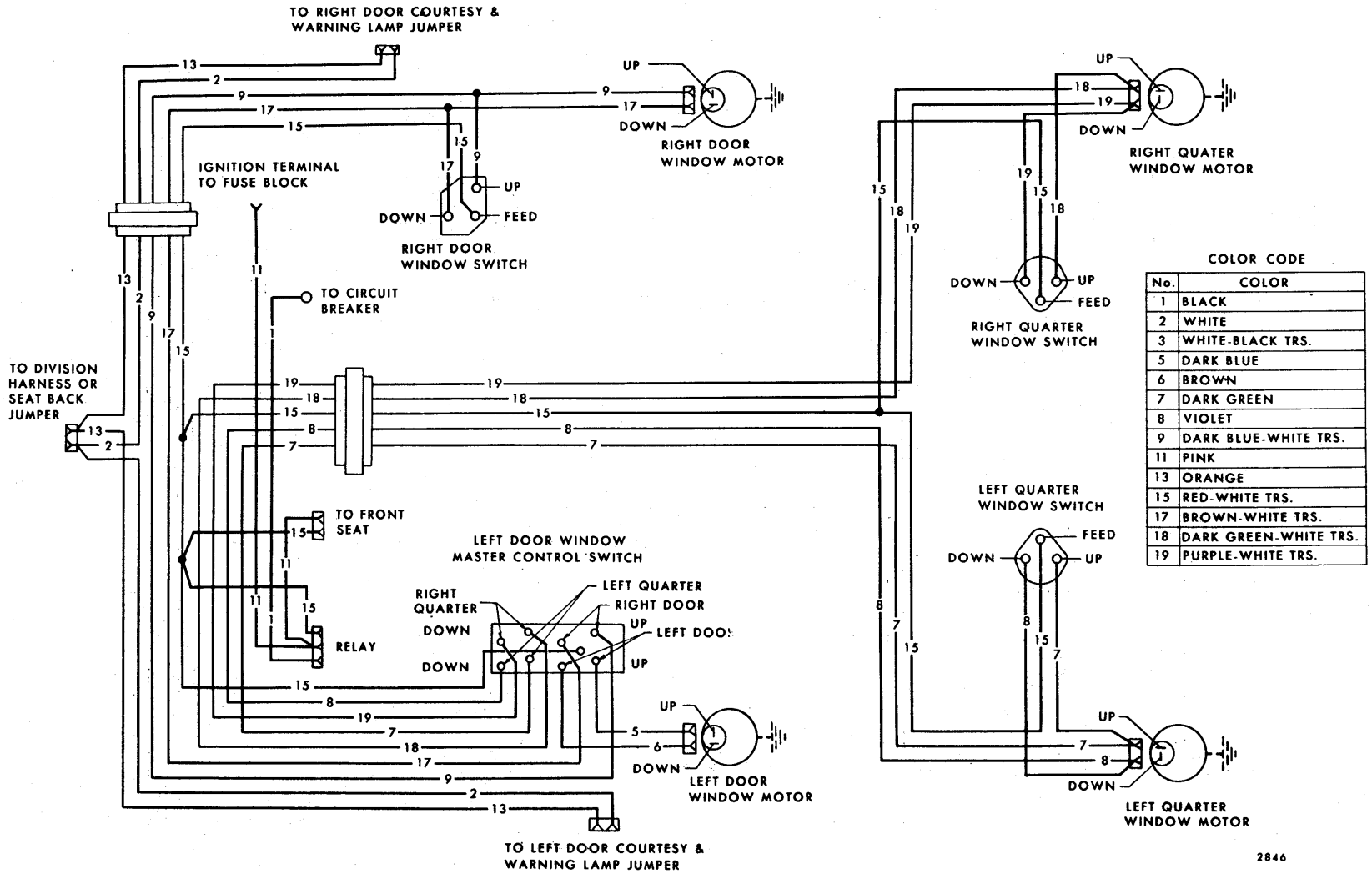


Fig. 16-5—Power Window Circuit - Oldsmobile "E" Styles

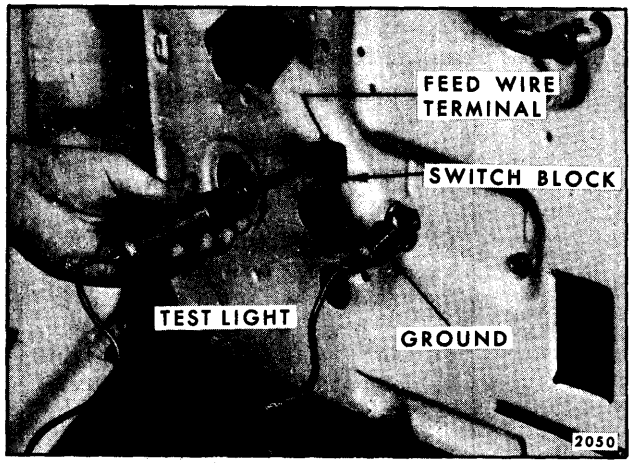


Fig. 16-6—Checking Feed Circuit

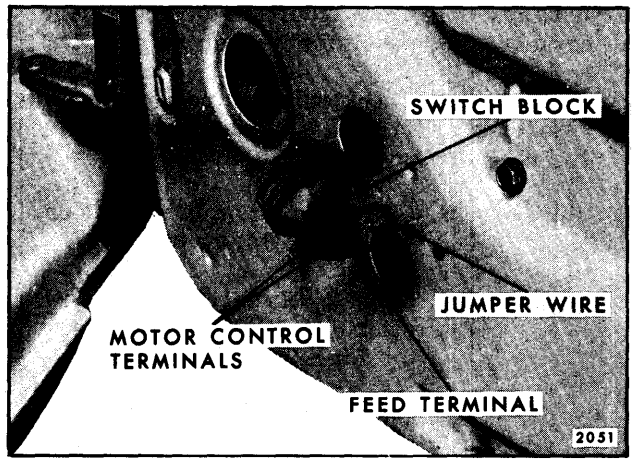


Fig. 16-7—Checking Window Control Switch

2. If the window operates with the jumper wire, but does not operate with the switch, the switch is defective.

g. Checking Wires Between Door Window Switch and Door Window Motor

1. Disengage harness connector from window motor connector. The thumb release on the harness connector must be depressed before it can be disengaged from the motor.

2. Insert one end of a #12 gauge jumper wire to the switch feed terminal and the other end to one of the motor lead terminals in the switch block (See Fig. 16-7).

3. With test light, check for current at terminal being tested. If tester does not light, there is an open or short circuit in the harness between the control switch and motor connector (See Fig. 16-8).

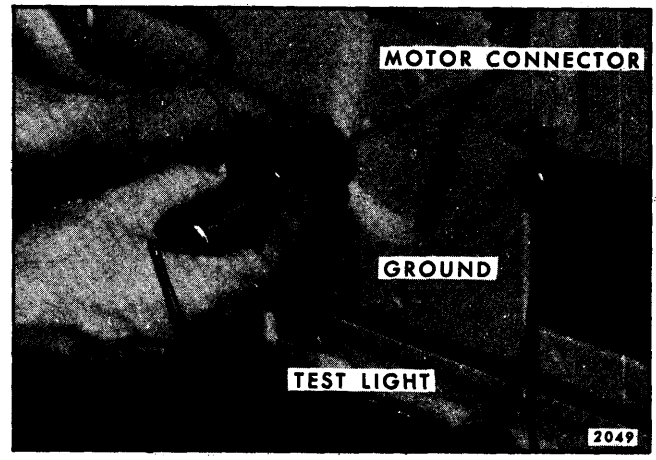


Fig. 16-8—Checking Circuit Between Switch and Motor

4. Check other terminal.

h. Checking Wires Between Quarter Window Switch and Quarter Window Motor

1. Insert one end of a #12 gauge jumper wire in the switch feed terminal and the other end in one of the motor lead terminals of the switch block (See Fig. 16-7).

2. With a test light, check for current at the corresponding terminal at the motor connector. If tester does not light, there is an open or short circuit between control switch and motor connector (See Fig. 16-8).

3. Check other terminal.

i. Checking Window Motor

1. Check window regulator and channels for possible mechanical bind of window.

2. Check attachment of window motor to insure an effective ground.

3. Connect one end of a #12 gauge jumper wire to the power source and the other end to one of the terminals on the door window motor or the connector for the quarter window motor.

4. If the motor fails to operate with a jumper wire, the motor is defective and should be replaced. Check the other motor lead in the same manner.

j. Trouble Shooting of Power Windows

The following typical failures and corrections have been listed as an aid for eliminating electrical failures in the power window electrical circuit. It should be noted that multiple failures in the circuit may lead to a combination of conditions, each of which must be checked separately.

CONDITION	CAUSE	CORRECTION
1. None of the windows will operate with ignition switch on.	Short or open circuit in power feed circuit	A. Check circuit breaker operation. B. Check relay operation C. Check feed connection to power harness beneath instrument panel D. Check the feed circuit wires for possible short or open circuit. E. Check cut-out Switch
2. Right rear door window does not operate from master control switch on left door or from control switches on right rear door. Left door window operates.	A. Short or Open circuit between right rear door harness and power window front harness. B. Short or open circuit in affected window control switch or window motor circuit. C. Possible mechanical failure or bind in window channels. D. Defective window motor.	A. Check harness connectors beneath outer end of instrument panel for proper installation. B. Check wires in power window front harness for possible short or open circuit. C. Check operation of rear door window control switch. D. Check circuit from window control switch to window motor for short or open circuit. E. Check window regulator and channels for possible mechanical failure or bind. F. Check operation of motor.
3. Right door windows will operate from left door master control switch but will not operate from right door control switches. Left door windows operate.	Open or short circuit in front harness feed wire circuit.	Follow up feed wire in front harness for possible short or open circuit.

POWER OPERATED STATION WAGON TAIL GATE WINDOW

ELECTRICAL TAIL GATE WINDOW CIRCUIT

The station wagon style power operated tail gate window is controlled by a window regulator assembly, equipped with a rectangular shaped, 12 volt D.C., reversible direction motor with an internal circuit breaker and a self-locking gear drive.

In addition to the internal circuit breaker, the wiring circuit is protected by a 40 amp circuit breaker (See Electrical Introduction for locations).

All Styles - In addition to the circuit breaker, a relay is used in the circuit. The relay prevents the operation of the tail gate window from the instrument panel switch, until the ignition switch is turned "on".

On some nine passenger station wagon styles, a tail gate window control switch is located at the rear of the left rear quarter inner trim panel.

NOTE: The "up" cycle wire is not engaged in the switch block but may be connected upon owner request.

To prevent the window from being operated to the "up" position when the tail gate has been lowered, a safety switch is located on the tail gate lock pillar. The safety switch opens the ground circuit of the tail gate window motor, making it inoperative.

The tail gate window harness is enclosed in the body wire harness conduit and consists of two sections. The front section extends from the left center of the toe pan, continues along the left wheel house just below the left quarter window and down the inside of the left body lock pillar, where it connects to the rear harness. The rear harness enters the tail gate inboard of the lower left hinge assembly. (See Figs. 16-9 and 16-10).

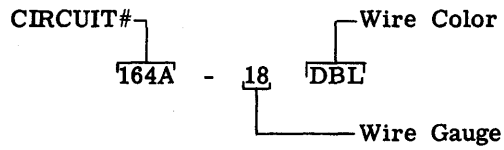
NOTE: Should replacement of front harness become necessary, access to front and rear harness connector may be gained by removing left side marker lamp. A leader should be secured to the end of the front harness to aid in installation of replacement harness.

CHECKING PROCEDURE

Before performing an intensive checking procedure to determine any failure of the circuit, check all the connectors for proper installation. The checking procedures below may be used to check the operation of a switch or motor after the cause of the electrical failure has been isolated to a particular part of the circuit. Refer to the circuit diagrams (See Figures 16-11, 16-12, 16-13, 16-14, 16-15, 16-16, 16-17, 16-18, 16-19, 16-20, 16-21, 16-22).

WIRING DIAGRAM LEGEND

EXAMPLE:



CIRCUIT #	COLOR	CODE	DESCRIPTION
9	Brown	BRN	Tail and License Lamp
18	Yellow	Y	Stop and Direction Lamp or Direction Lamp only - Rear LH
19	Dark Green	DG	Stop and Direction Lamp or Direction Lamp Only - Rear RH
24	Light Green	LG	Back-Up Lamp
30	Tan	T	Fuel Gauge to Tank Unit
31	Dark Blue	DBL	Electric Fuel Pump
39	Pink	P	Feed, Ignition Switch Controlled - Fuse Protected
40	Orange	OR	Feed, Battery - Fuse Protected
60	Orange-Black	OR/B	Feed, Battery - Circuit Breaker Protected
70	Red-White	R/W	Feed, Relay Controlled Circuit - Circuit Breaker Protected
90	Pink-Black	P/B	Feed - Cutout Switch Controlled - Circuit Breaker Protected
150	Black	B	Ground Circuit - Direct
151	Black	B	Ground Circuit - Direct
152	Black	B	Ground Circuit - Direct
153	Black	B	Ground Circuit - Direct
154	Black	B	Ground Circuit - Direct
155	Black	B	Ground Circuit - Direct
156	White	W	Ground Circuit - Switch Controlled - Body
157	White-Black	W/B	Interior Lamps, such as Dome, Courtesy,
158	White-Dark Green	W/DG	Map, Warning, Etc.
160	White	W	Power Antenna - Down

CIRCUIT #	COLOR	CODE	DESCRIPTION
161	Black	B	Power Antenna - Up
162	Gray	GY	Power Top - Up
163	Purple	PUR	Power Top - Down
164	Dark Blue	DBL	Window Control - L.F. - Up
165	Brown	BRN	Window Control - L.F. - Down
166	Dark Blue-White	DBL/W	Window Control - R.F. - Up
167	Brown-White	BRN/W	Window Control - R.F. - Down
168	Dark Green	DG	Window Control - L.R. - Up
169	Purple	PUR	Window Control - L.R. - Down
170	Dark Green-White	DG/W	Window Control - R.R. - Up
171	Purple-White	PUR/W	Window Control - R.R. - Down
172	Light Green	LG	Vent Control - L.F. - Close
173	Yellow	Y	Vent Control - L.F. - Open
174	Light Green-Black	LG/B	Vent Control - R.F. - Close
175	Yellow-Black	Y/B	Vent Control - R.F. - Open
176	Dark Green	DG	Power Seat - Fore
177	Yellow	Y	Power Seat - Aft
178	Dark Green	DG	Power Seat - 6-Way - Fore and Up
179	Tan	T	Power Seat - 6-Way Solenoid - Rear - Up and Down
180	Light Green	LG	Power Seat - 6-Way Solenoid - Front - Up and Down
181	Light Blue	LBL	Power Seat - Solenoid - Fore and Aft
182	Yellow	Y	Power Seat - 6-Way - Aft and Down
183	Light Blue	LBL	Tailgate or Center Partition Window - Up
184	Tan-White	T/W	Tailgate or Center Partition Window - Down
185	Tan	T	Vent Control - L.R. - Open
186	Gray	GY	Vent Control - L.R. - Close
187	Tan-Black	T/B	Vent Control - R.R. - Open
188	Gray-Black	GY/B	Vent Control - R.R. - Close
190	Yellow	Y	Power Seat - 4-Way - Aft and Up
191	Light Green	LG	Power Seat - 4-Way Solenoid - Up and Down
192	Purple	PUR	Defogger - High or Single Speed
193	White-Orange & Purple	W/OR & PUR	Defogger - Lower Speed - .38 OHM/FT

a. Checking Feed Circuit Continuity at Circuit Breaker

1. Connect one test light lead to battery side of circuit breaker and ground other lead. If tester does not light, there is an open or short circuit in feed circuit to breaker.

2. To check circuit breaker disconnect the output feed wire (the wire opposite the power source feed to the breaker) from the breaker. Connect one test light lead to the output terminal and ground other lead. If tester does not light, circuit breaker is inoperative.

b. Checking Relay Assembly

1. With test light check relay feed. If tester does not light, there is an open or short circuit between relay and circuit breaker.

2. Turn ignition switch on and with test light check output terminal of relay. If tester does not light, the relay is inoperative or there is a short or open circuit between ignition switch and relay assembly. (Check fuse at dash panel.)

c. Checking Feed Circuit Continuity at Control Switch on Instrument Panel

1. Disengage harness connector from switch. Connect one test light lead to feed terminal of switch connector and ground other test lead to body metal. If tester does not light, there is an open or short circuit between switch and power source.

d. Checking Control Switch at Instrument Panel

1. Disengage harness connector from switch.

2. Use a #12 gauge jumper wire and insert one end into the feed terminal and the other end into one of the other terminals. Tail gate window motor should operate.

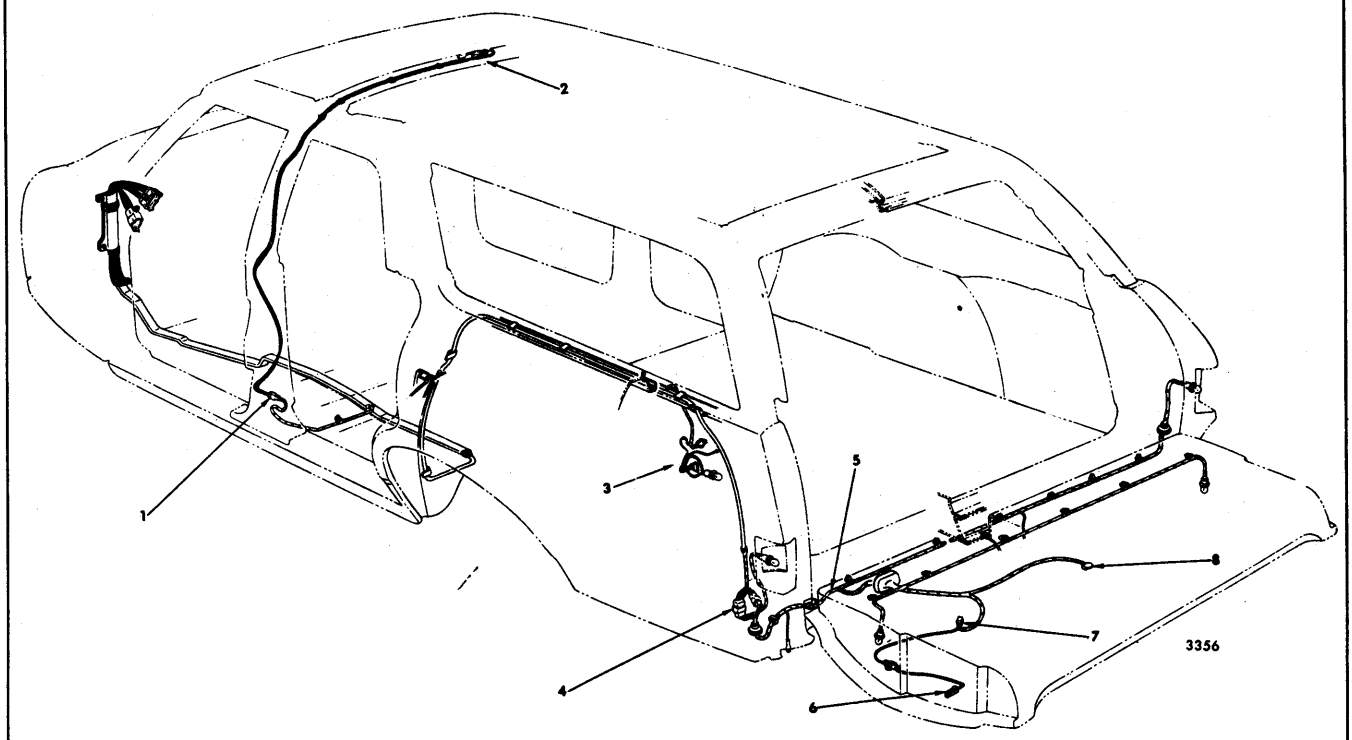


Fig. 16-9—Wire Routing - Typical "A" Style Station Wagon with Single Acting Tail Gate

1. Dome Lamp Connector
2. Dome Lamp Clips
3. Rear Quarter Courtesy Lamp and Switch Also Tail Gate Control Switch
4. Front to Rear Harness Connector
5. Rear Harness
6. Safety Switch Connector
7. Motor Connector
8. Key Switch Control Connector

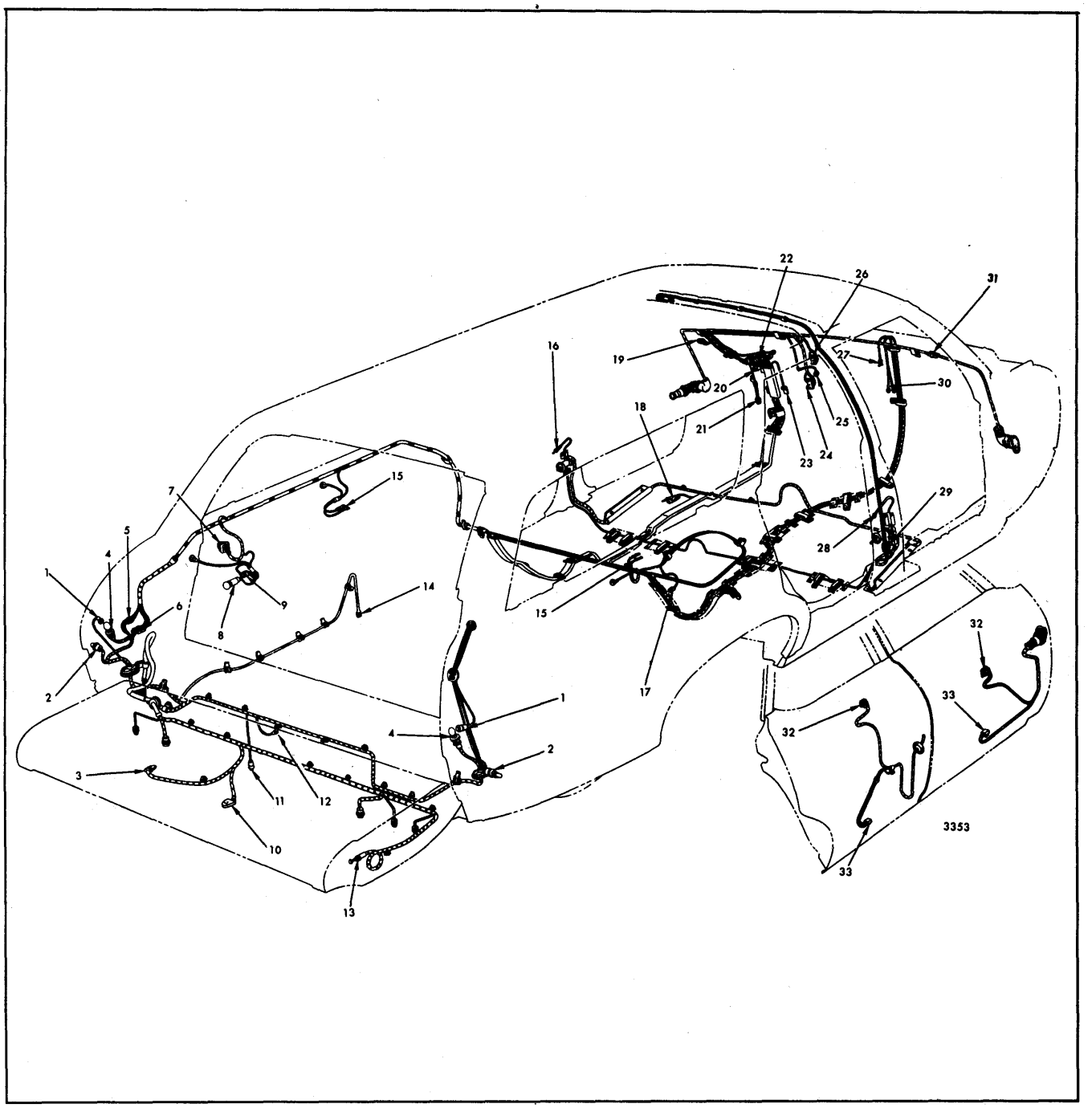


Fig. 16-10—Wire Routing - Typical "B" Style Station Wagon with Dual Acting Tail Gate

1. Direction Lamp
2. Side Marker Lamp
3. Motor Connector
4. Tail Lamp
5. Rear Power Window Harness Connector
6. Rear Harness Connector (Tail Lamps)
7. Rear Quarter Tail Gate Window Control Switch
8. Rear Quarter Courtesy Lamp
9. Rear Quarter Courtesy Lamp Switch
10. Key Switch Connector
11. License Lamp
12. Side Marker Ground
13. Safety Switch
14. Fuel Gauge Connector
15. Stereo Speaker Leads
16. Left Rear Door Jamb Switch
17. Rear Speaker Lead
18. Power Seat Feed
19. Ignition Relay Connector
20. Rear Power Window Connector
21. Rear Defogger Connector
22. Main Harness Connector
23. Fuse Block Connector
24. Rear Defogger Switch Connector
25. Circuit Breaker Connection
26. Rear Power Window Switch
27. Rear Speaker Connector to Radio
28. Right Rear Door Jamb Switch
29. Dome Lamp Connector
30. Stereo Speaker Leads to Radio
31. Right Front Door Harness Connector
32. Door Window Control Switch
33. Door Window Motor Connector

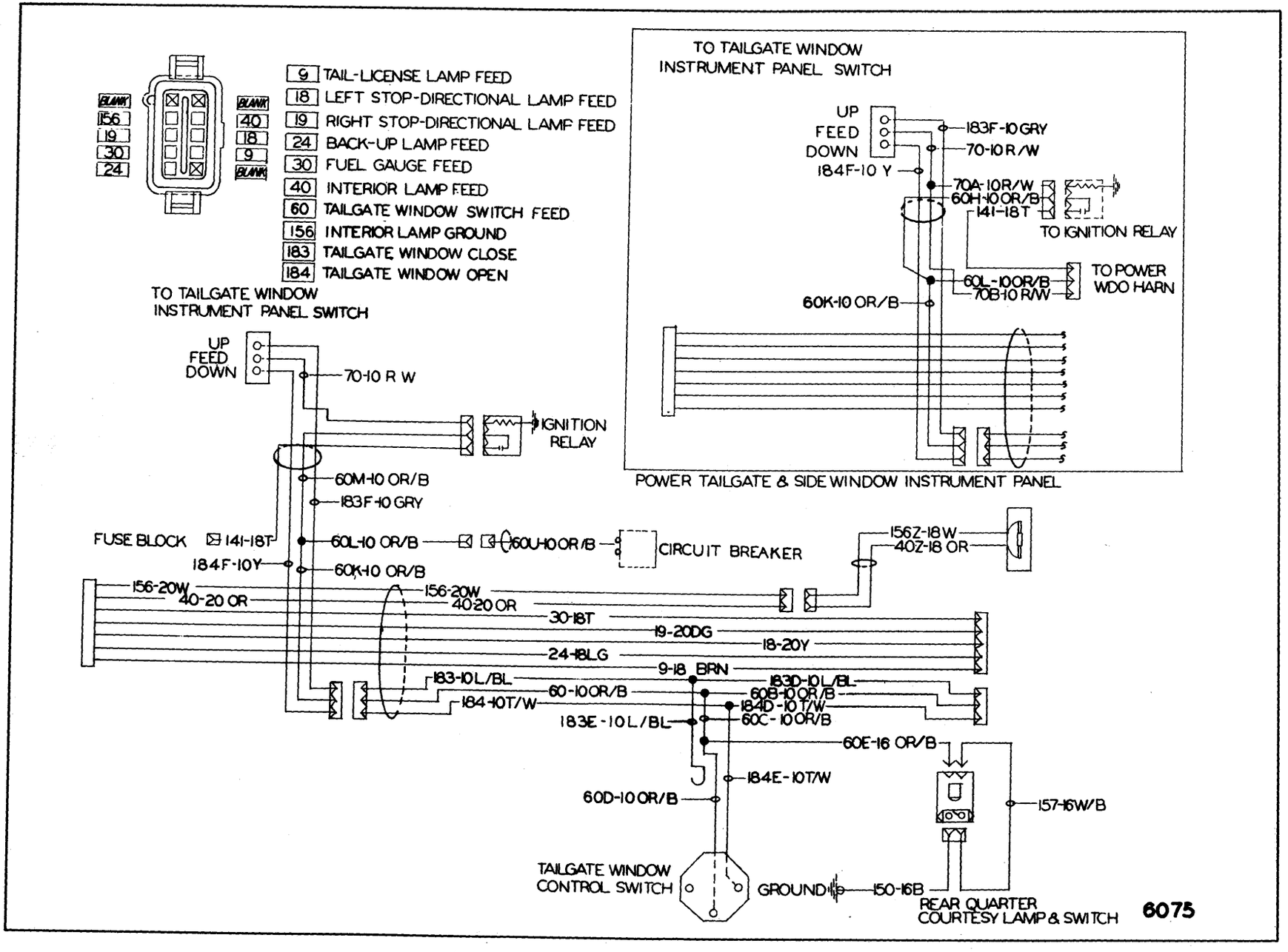


Fig. 16-11—Power Tail Gate Window Front Wiring Circuit - Chevrolet "A" Styles

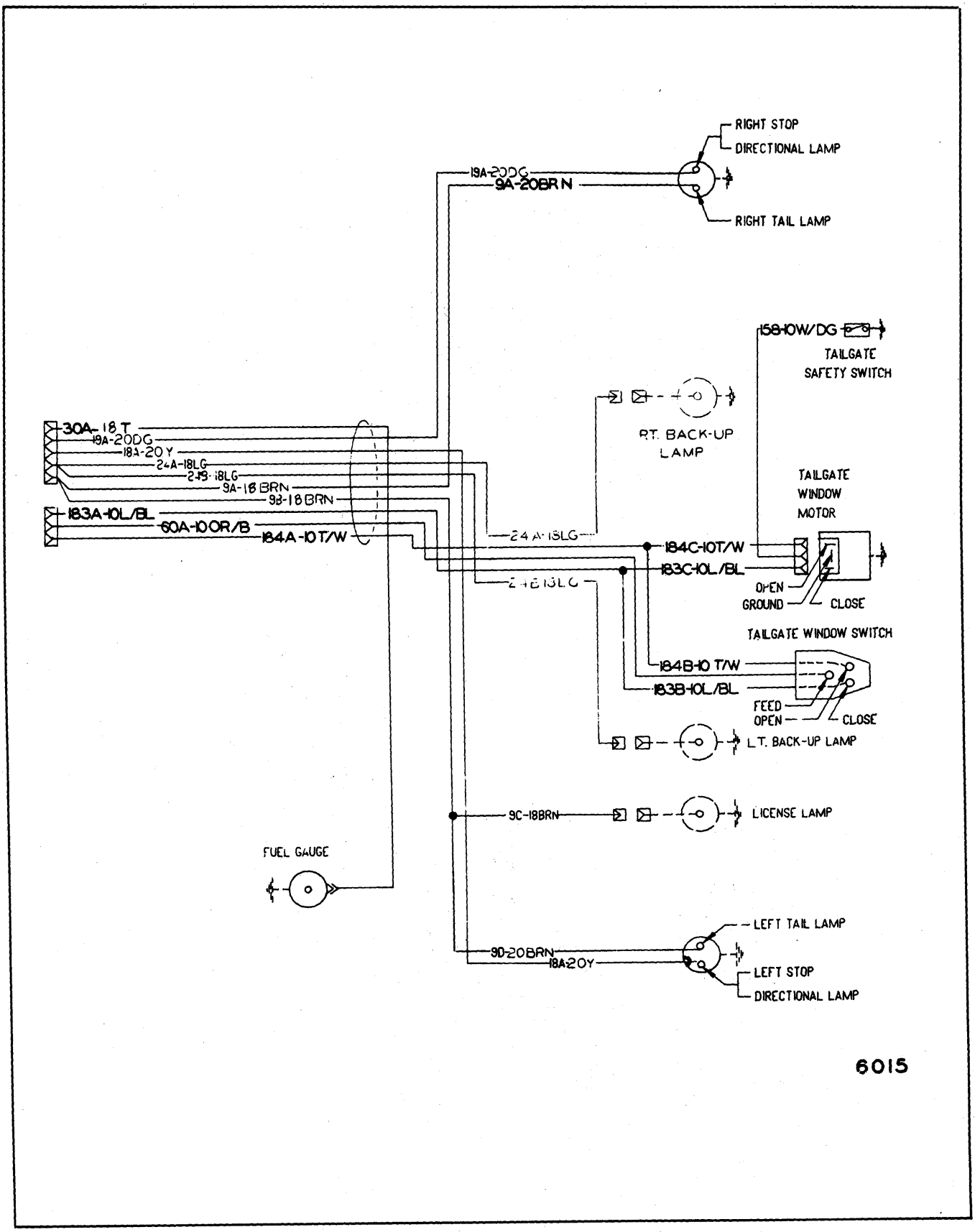
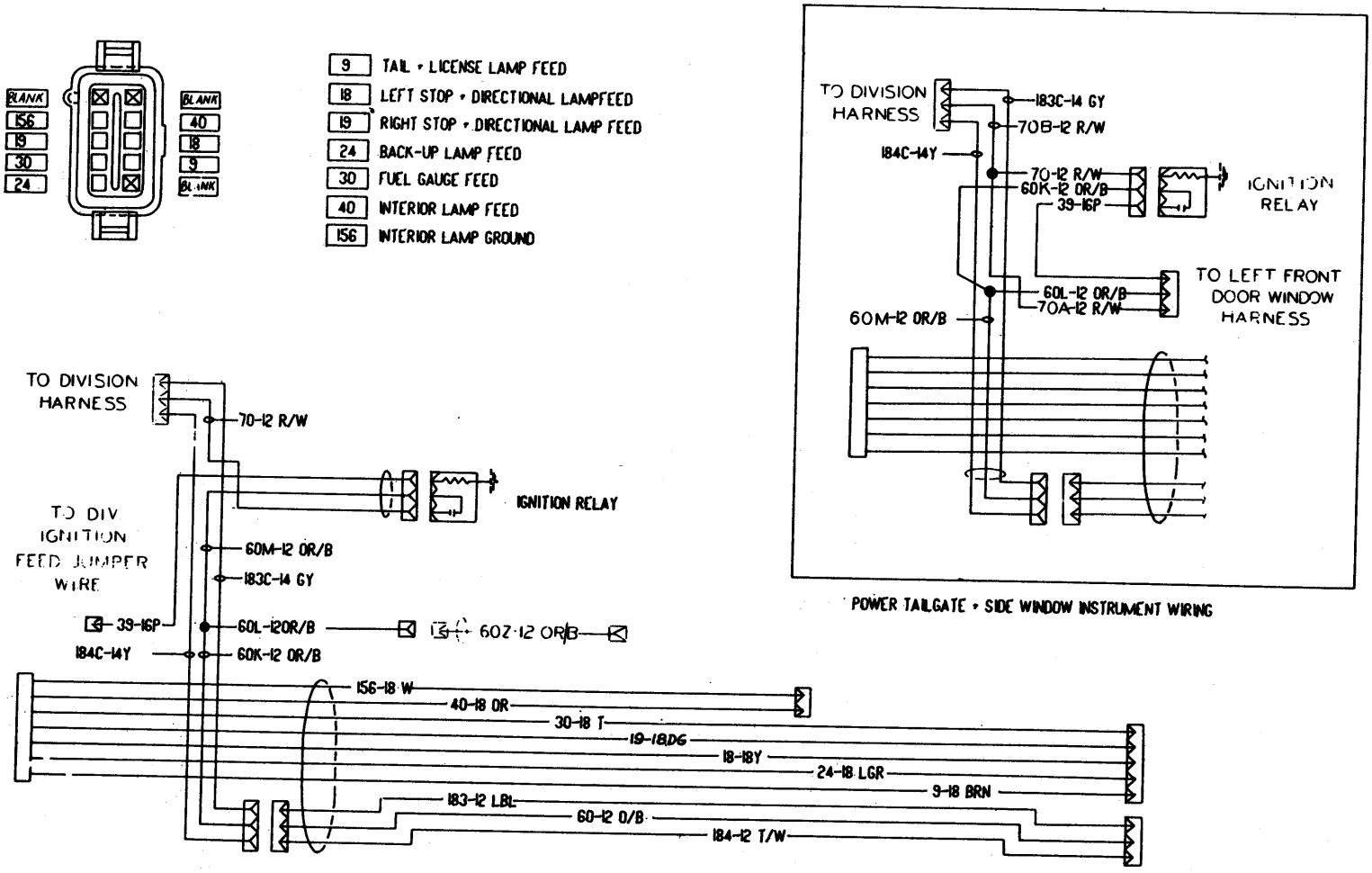


Fig. 16-12—Power Tail Gate Window Rear Wiring Circuit - Chevrolet "A" Styles



POWER TAILGATE + SIDE WINDOW INSTRUMENT WIRING

Fig. 16-13—Power Tail Gate Window Front Wiring Circuit - Pontiac "A" Styles

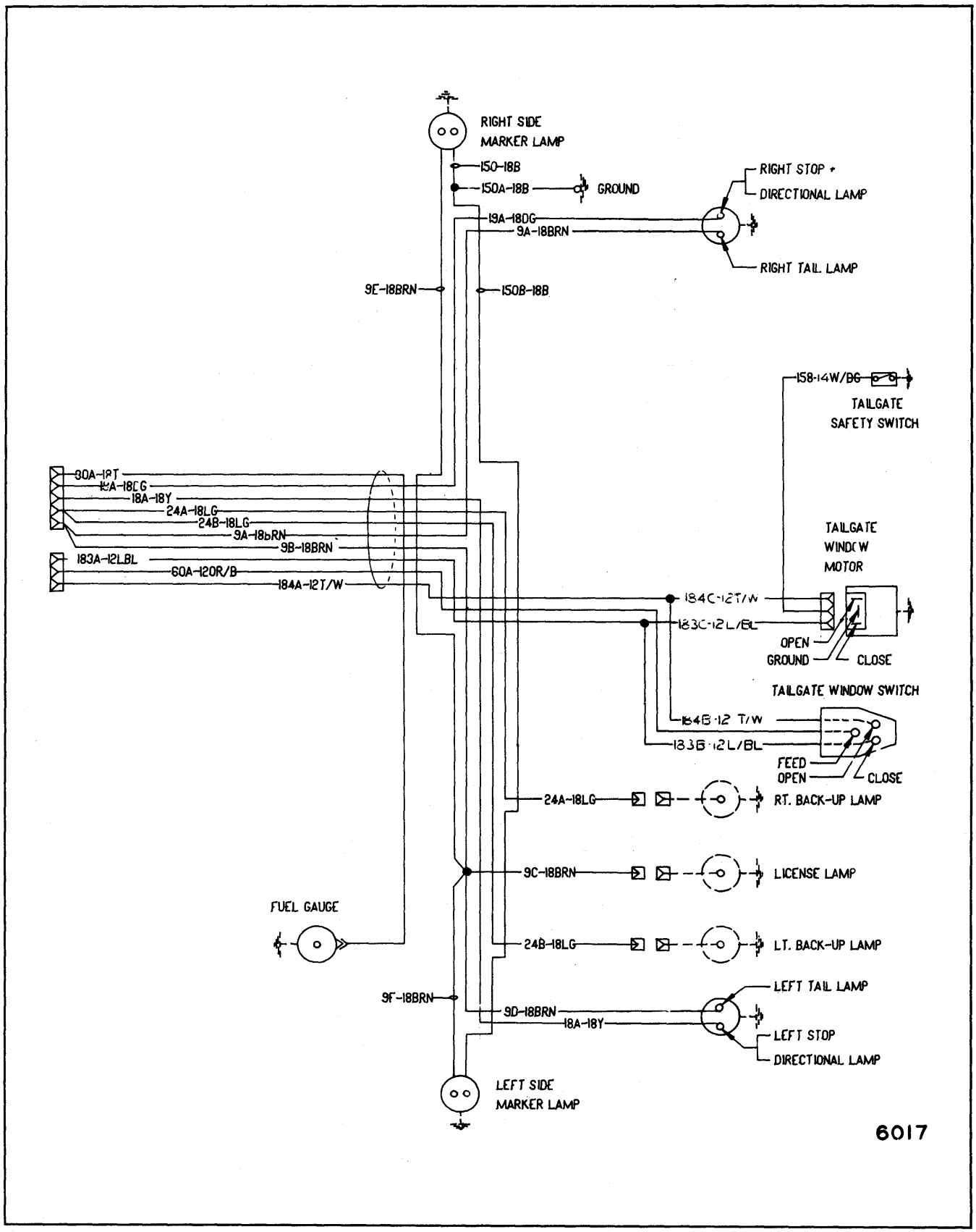


Fig. 16-14—Power Tail Gate Window Rear Wiring Circuit - Pontiac "A" Styles

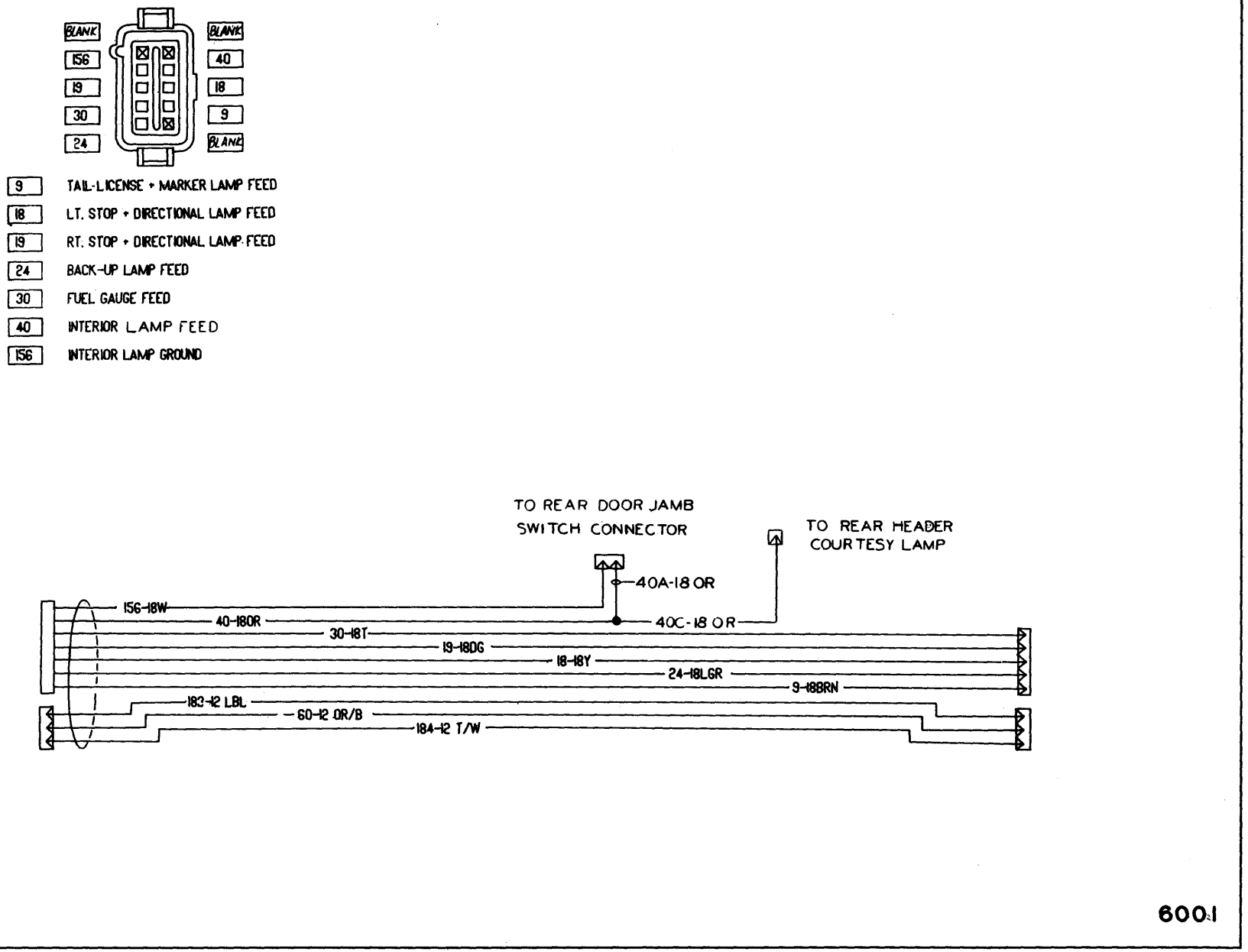


Fig. 16-15—Power Tail Gate Window Front Wiring Circuit - Oldsmobile "A" Styles

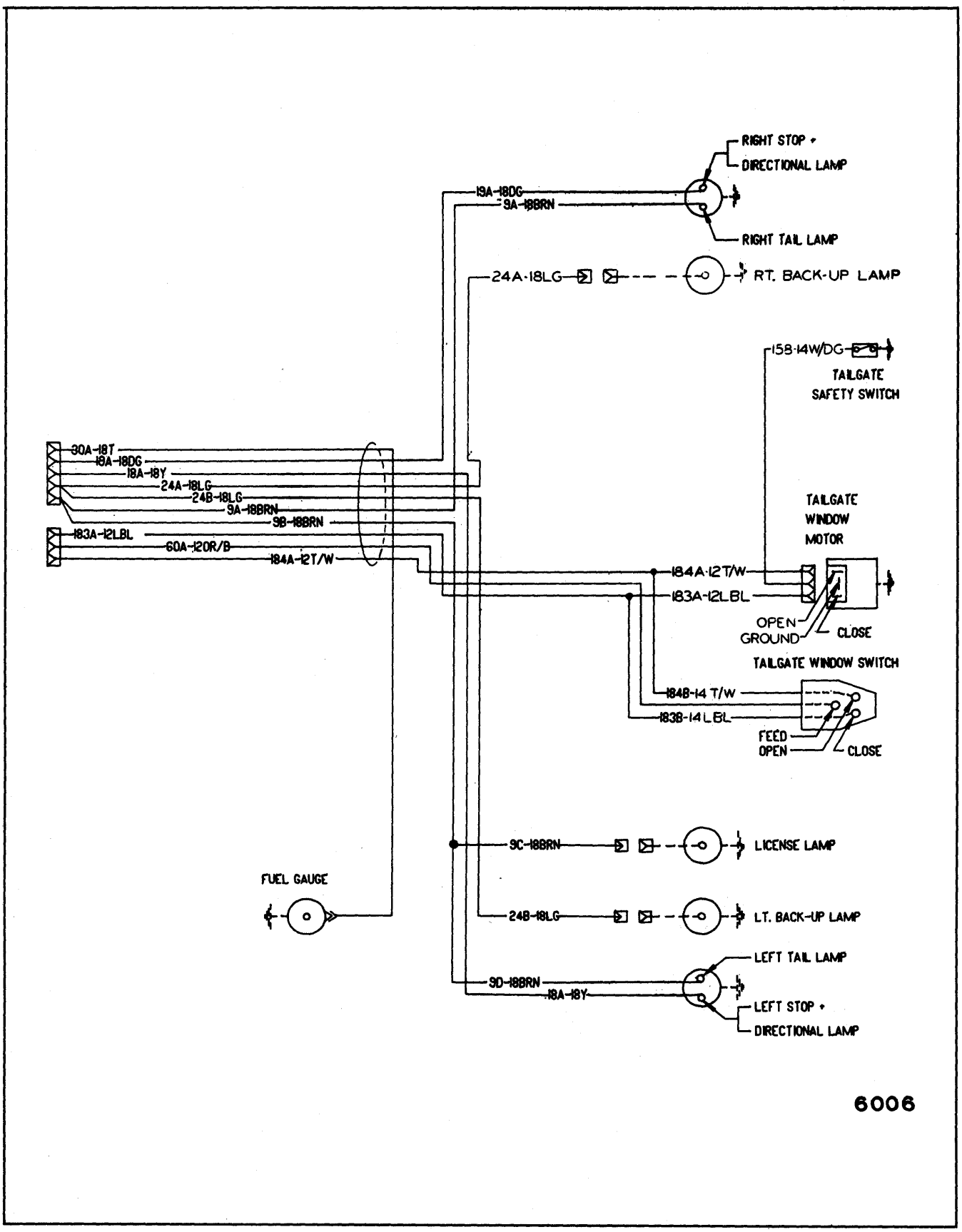


Fig. 16-16—Power Tail Gate Window Rear Wiring Circuit - Oldsmobile "A" Styles

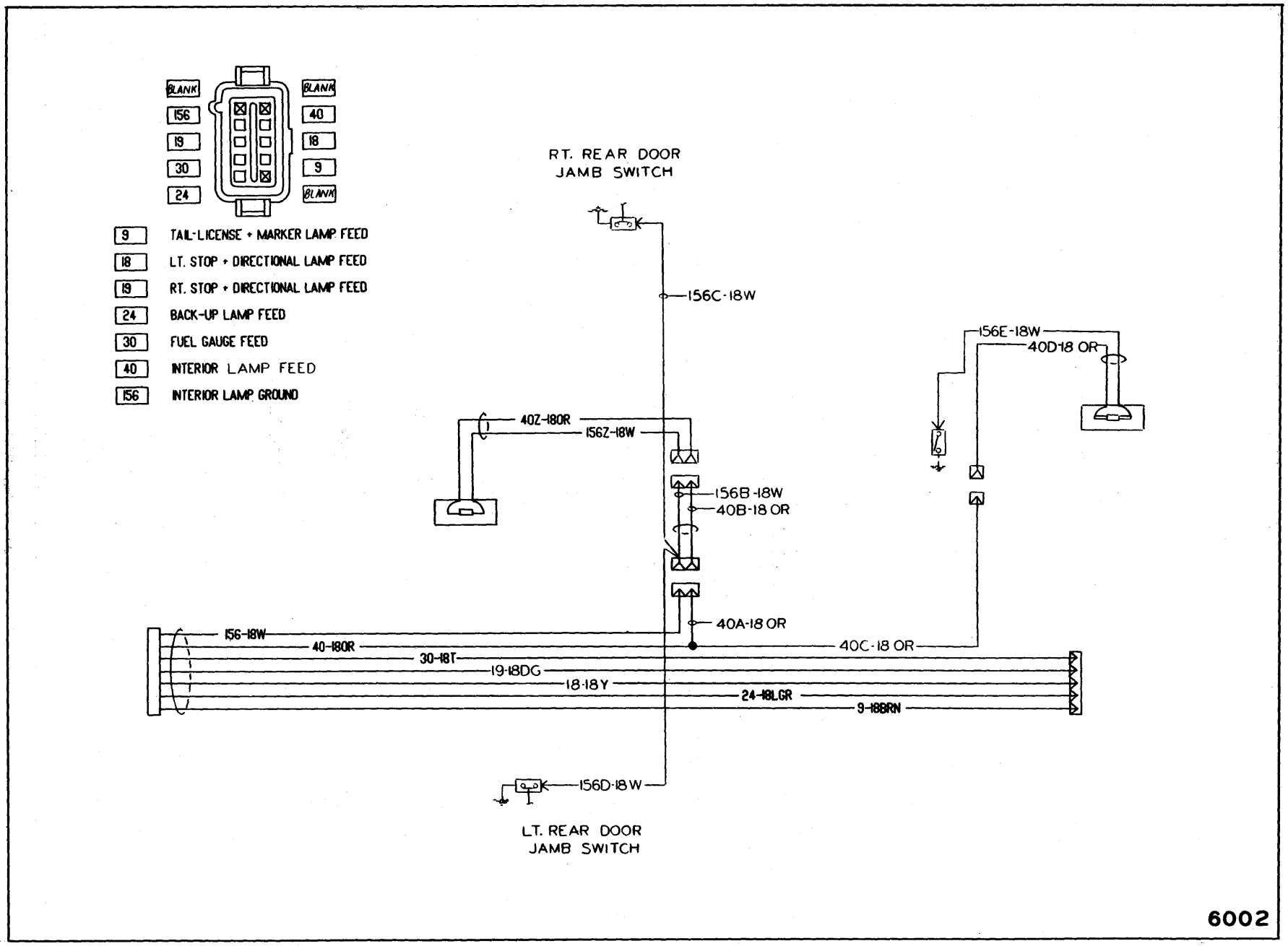


Fig. 16-17—Power Tail Gate Window Front Wiring Circuit - Buick "A" Styles

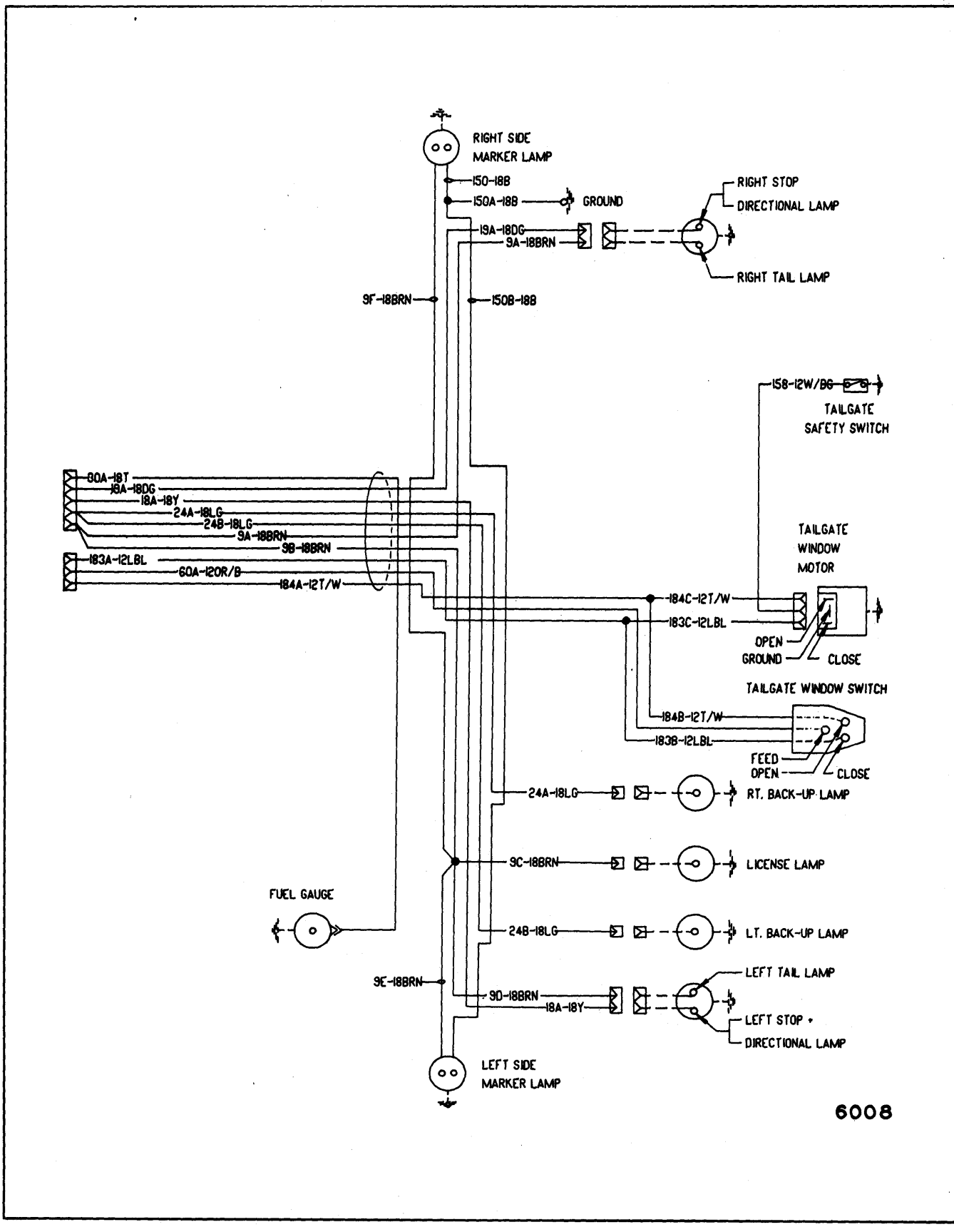


Fig. 16-18—Power Tail Gate Window Rear Wiring Circuit - Buick "A" Styles

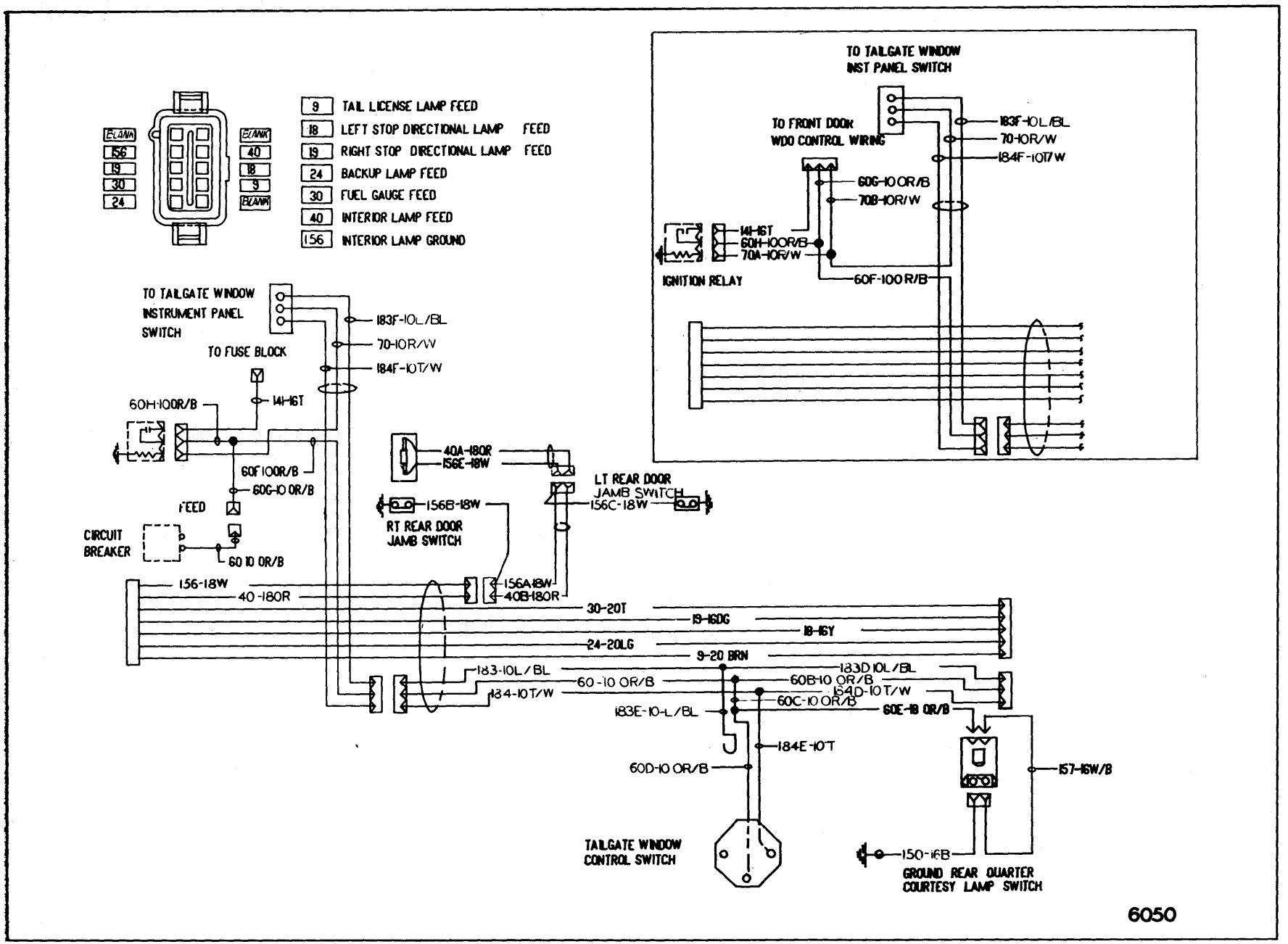


Fig. 16-19—Power Tail Gate Window Front Wiring Circuit - Chevrolet "B" Styles

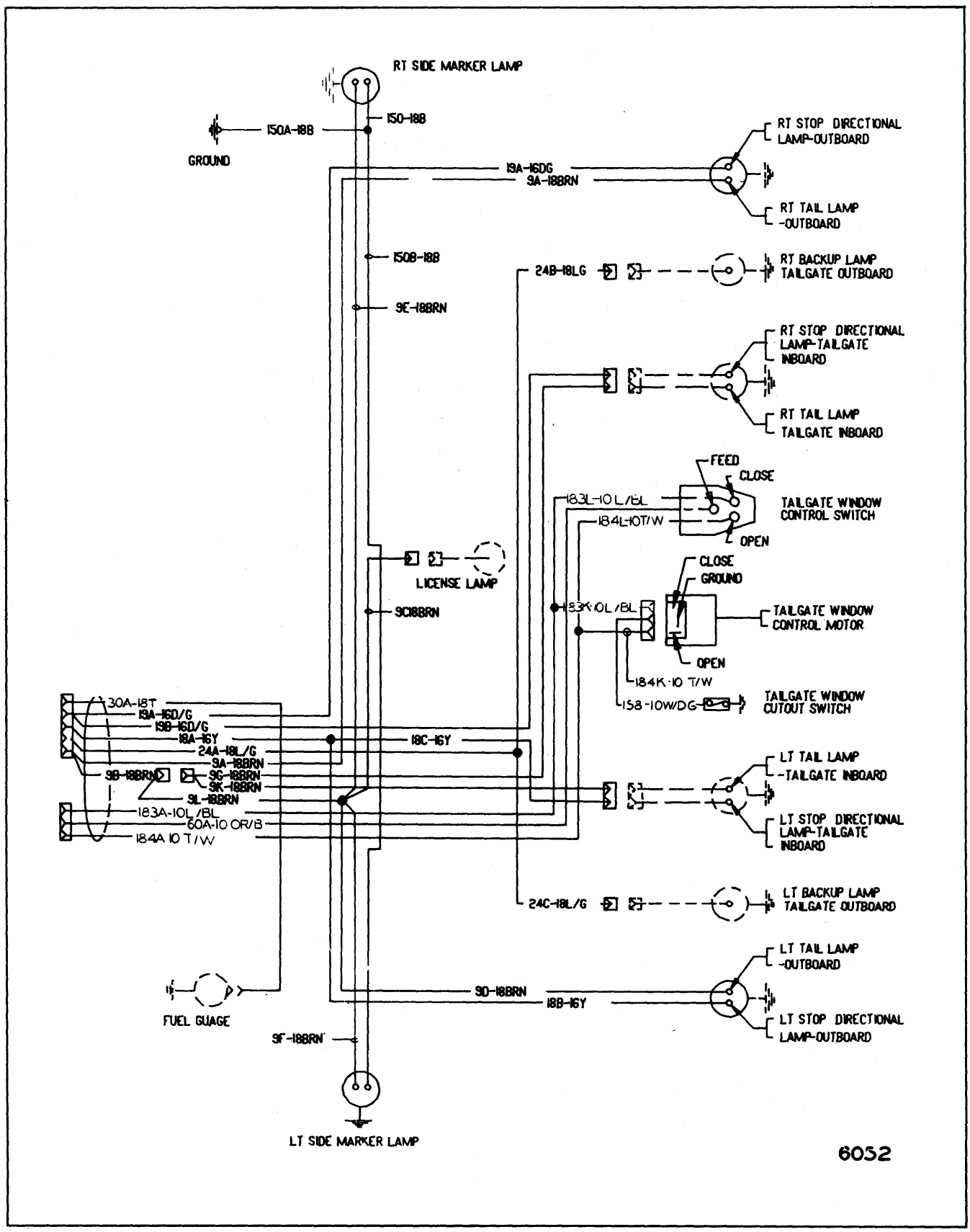


Fig. 16-20—Power Tail Gate Window Rear Wiring Circuit - Chevrolet "B" Styles

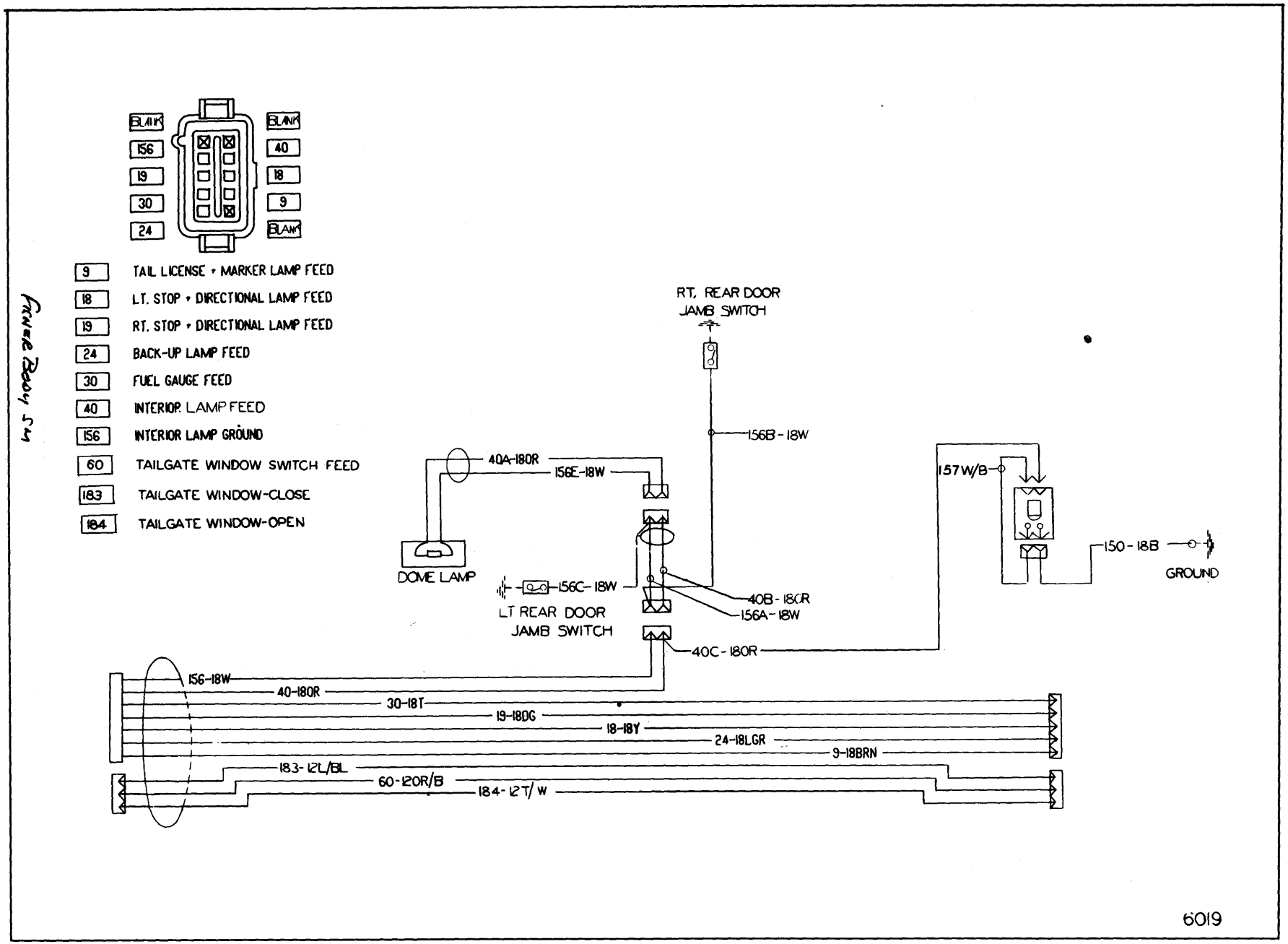


Fig. 16-21—Power Tail Gate Window Front Wiring Circuit - Pontiac "B" Styles

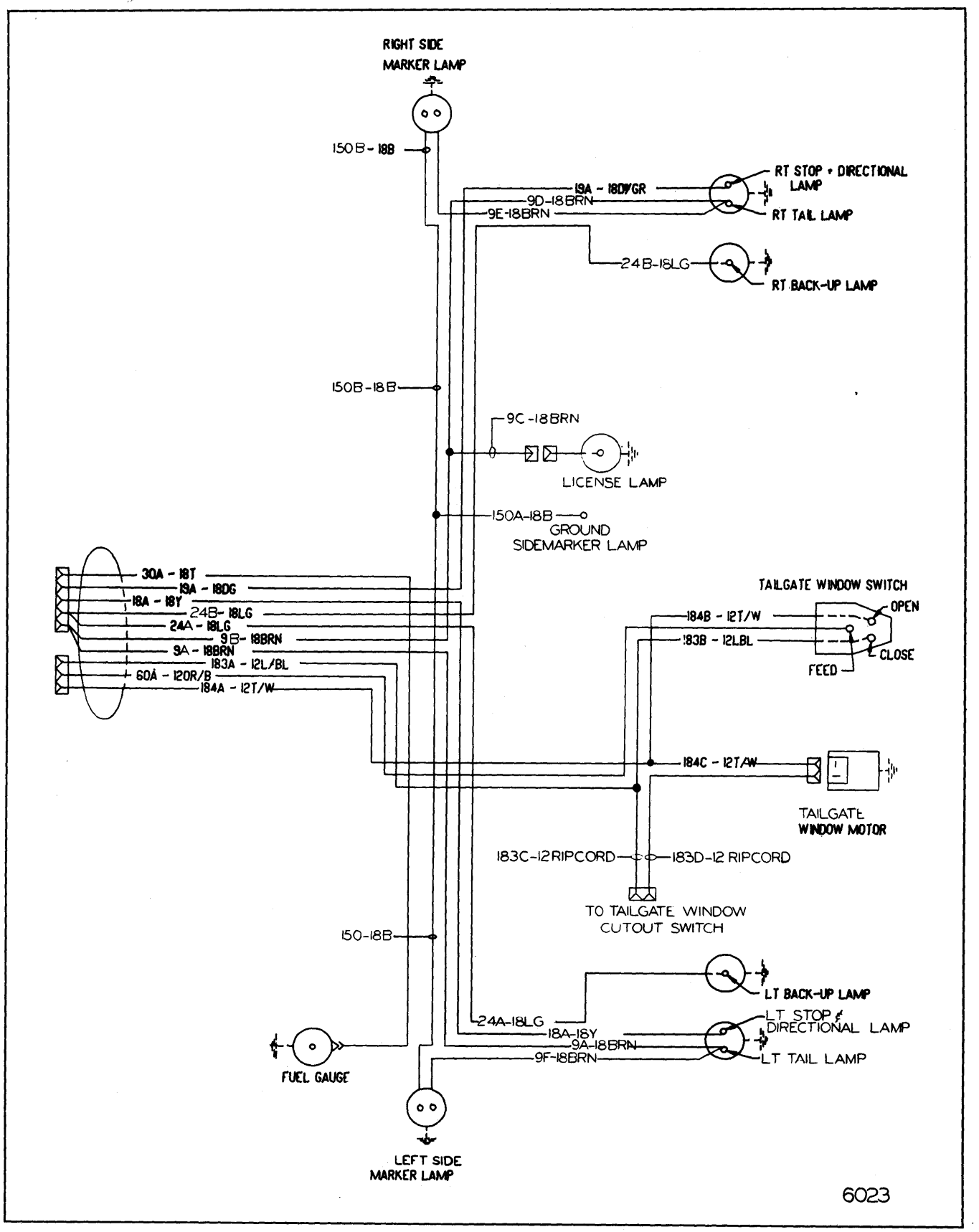


Fig. 16-22—Power Tail Gate Window Rear Wiring Circuit - Pontiac "B" Styles

3. Repeat procedure for the other terminal. If the tail gate window motor operates with the jumper wire but does not operate with the control switch, the switch is defective.

e. Checking Control Switch on Tail Gate

Remove tail gate switch and escutcheon as described in tail gate section. Disengage connector from switch and determine that there is current at terminal block; then, use a #12 gauge jumper and perform the same checking procedure as outlined for the control switch at the instrument panel.

f. Checking the Tail Gate Window Motor

1. Disconnect harness connector from motor.

2. Connect the positive side of power source to the light blue wire terminal (close cycle) on the motor connector and the negative lead to the white - dark green (ground) wire terminal. Motor should operate. To check the reverse operation of the motor connect the power source to the tan - white wire terminal (open cycle). If motor does not operate in both directions, replace motor.

g. Checking Operation of Safety Switch

1. With the single acting tail gate open, depress switch arm to simulate the tail gate being closed. (Refer to View A Fig. 16-23).

   CAUTION: Prior to actuating safety switch on dual acting tailgate place tape over inside center remote control handle.

2. With the dual acting tail gate open as a tail gate, manually trip (View B, Fig. 16-23) upper right and left lock assemblies to lock position to simulate tail gate being closed (Refer to "Tail Gate Section" of Manual).

3. Operate control switch. If motor does not operate, either switch is defective or the circuit is open from the motor to the switch.

4. To check for defective switch, connect one end of test light to a source of power and the other lead to the safety switch terminal. If the tester lights when the switch lever is actuated, the switch is operative.

   NOTE: Safety switch completes the ground circuit from the motor.

h. Trouble Shooting

CONDITION	CAUSE	CORRECTION
1. The tail gate window operates up and down from the tail gate switch but does not operate from the switch at the instrument panel.	A. Open or short circuit from power source to control switch at instrument panel. B. Defective or inoperative control switch.	A. Check affected wiring B. Check operation of switch.
2. With the tail gate closed, the window operates downward but does not operate upward when the switch at the instrument panel or tail gate is actuated.	A. Open or short circuit in up cycle feed wire. B. Defective motor	A. Check affected wiring for open or short circuit. B. Check operation of motor.
3. The window will not operate up or down from any of the control switches.	A. Open or short circuit in circuit from power source to switches or motor. B. Safety switch not connected or poor ground. C. Mechanical bind or failure in tail gate window regulator mechanism. D. Defective tail gate window regulator motor.	A. Check operation of circuit breaker. B. Check affected circuit for open or short circuit. C. Check connectors to safety switch and motor for proper engagement. D. Check tail gate mechanical parts for bind or failure. E. Check operation of motor.

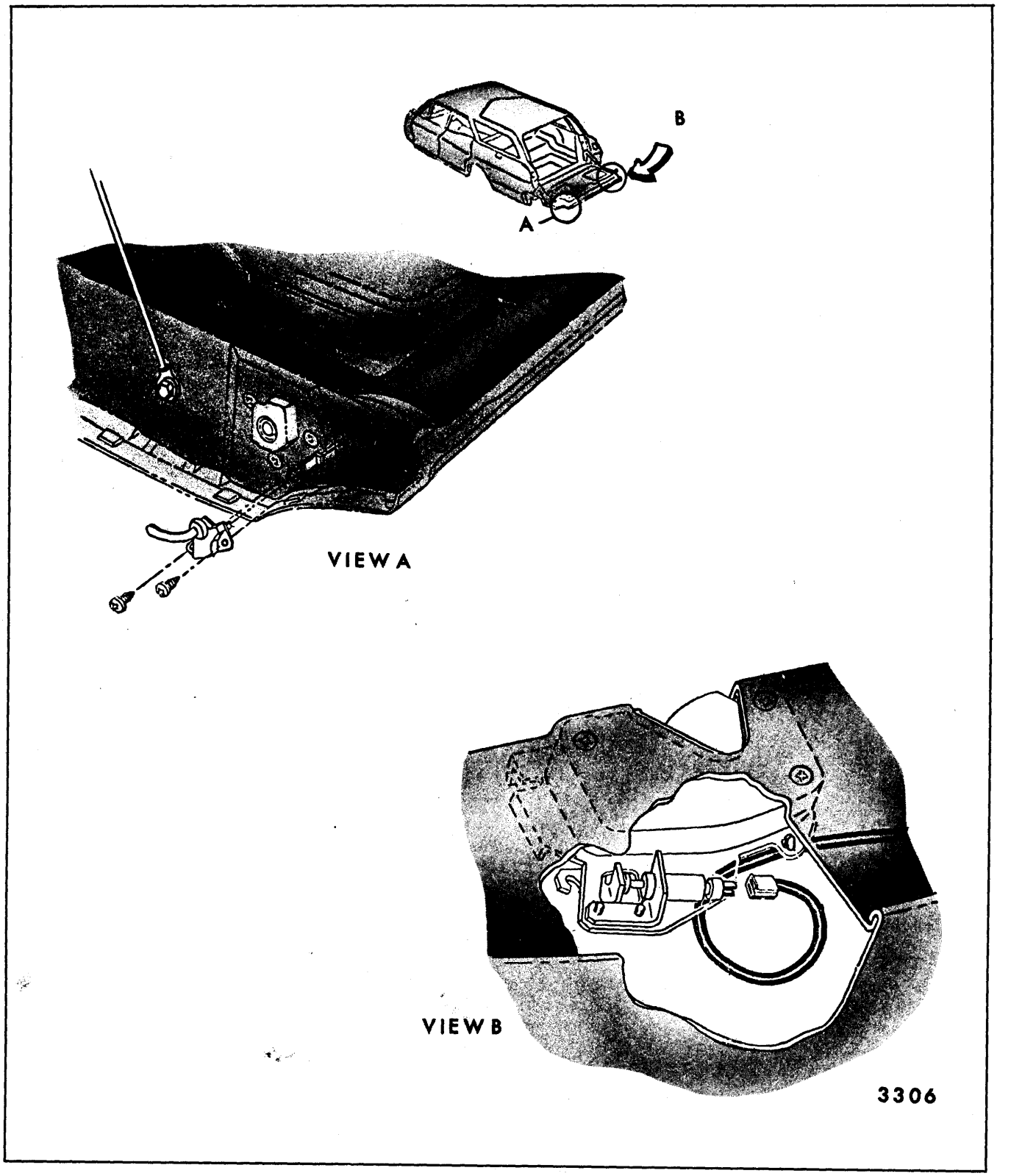


Fig. 16-23—Power Tail Gate Window Safety Switches

View "A" - Single Acting Tail Gate Safety Switch - Left Side
View "B" - Dual Acting Tail Gate Safety Switch - Right Side

POWER SEATS

HORIZONTAL SEATS

Description

The seat adjusters for the bench-type and bucket-type seat are actuated by a 12 volt series-wound motor located near the front left side of the seat bottom frame, and are energized through a control switch installed in the seat side panel or in the door arm rest. For typical wiring installations see Figure 16-24 for bucket-type seats and Figures 16-25 and 16-26 for bench-type seats.

For circuit diagram see Figure 16-27.

The horizontal seat circuit is protected by a circuit breaker (refer to Electrical Introduction for specific location).

The trouble diagnosis chart will help locate typical problems which may occur.

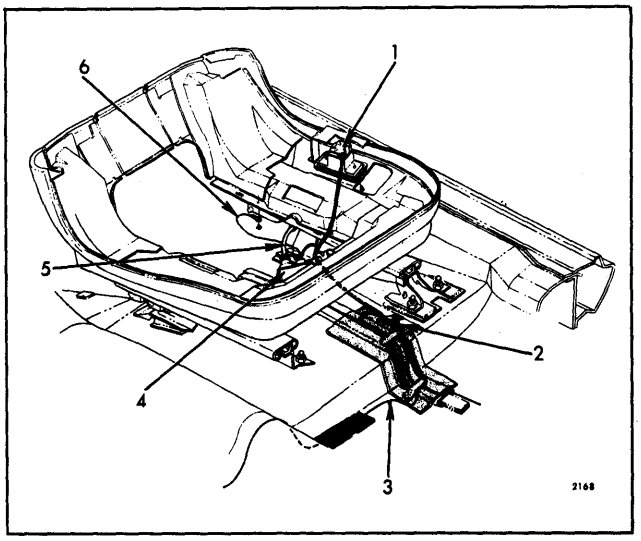


Fig. 16-24—Horizontal Bucket Seat Wiring

1. Control Switch
2. Feed Harness Connector
3. Feed Wire to Passenger Seat
4. Motor
5. Control Cable
6. Ground Wire

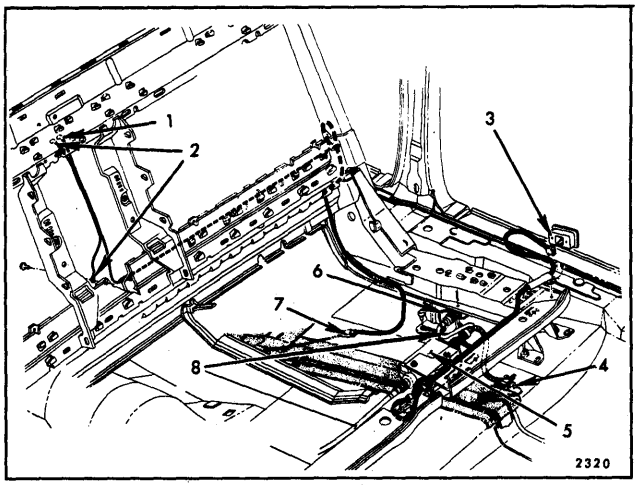


Fig. 16-25—Horizontal Bench Seat Wiring

1. Front Seat Back Switch Feed - White
2. Front Seat Back Switch Ground - Black
3. Control Switch
4. Feed Harness Connector
5. Motor
6. Ground Wire
7. Front Seat Back Courtesy Lamp Feed Connector (Cadillac Only)
8. Control Cable

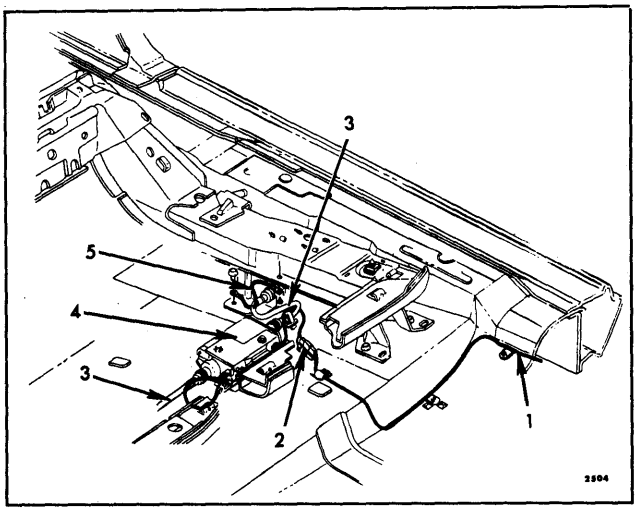


Fig. 16-26—Horizontal Bench Seat Wiring - Buick and Oldsmobile "C" Body

1. Wiring to Door Arm Rest Switch
2. Feed Harness Connector
3. Control Cable
4. Seat Motor
5. Ground Wire

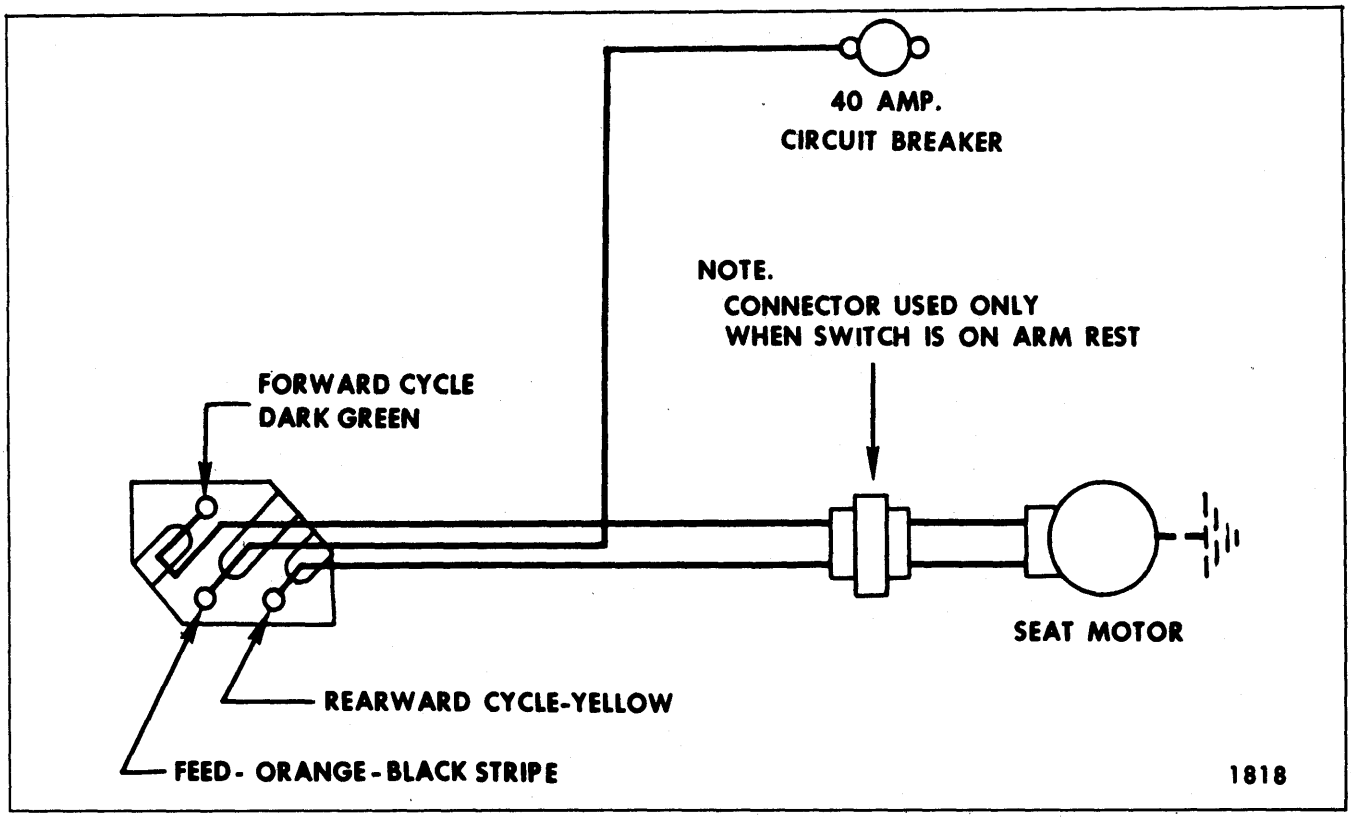


Fig. 16-27—Horizontal Seat Circuit

Trouble Shooting of Horizontal Seat Circuit

CONDITION	CAUSE	CORRECTION
1. The seat motor does not operate in either the forward or rearward direction.	A. Open or short circuit in feed harness.	A. Connect one test light lead to feed terminal of switch block and ground other tester lead to body metal. If tester does not light, there is an open or short circuit between switch and power source.
	B. Inoperative motor.	B. Check operation of seat control switch with jumper wire. See "Checking Door Window Control" for similar operation.
		C. Check circuit from control switch to motor for short or open circuit and check ground wire attachment at adjuster.
		D. Check operation of motor with #12 gauge jumper wire. Connect one end of jumper wire to power source and the other end to one of the seat motor terminals. Motor should operate. Perform same check at the other motor terminal. If motor does not operate, repair or replace motor as required.

CONDITION	CAUSE	CORRECTION
2. The seat motor operates in only one direction.	A. Defective switch.	A. Check operation of seat control switch with jumper wire.
	B. Open or short circuit in motor feed wires.	B. Check circuit from control switch to motor for short or open circuit.
	C. Defective seat motor.	C. Check operation of motor with #12 gauge jumper wire. Connect one end of jumper wire to power source and the other end to one of the seat motor terminals. Perform same check at the other motor terminal. If motor does not operate, repair or replace motor as required.

FOUR-WAY TILT SEAT

Description

The seat adjusters for the bench-type and bucket-type seats are actuated by a 12 volt, reversible, shunt-wound motor with a built-in circuit breaker. See Figures 16-28 and 16-29 for the bench seat installation and Figure 16-30 for the bucket seat installation.

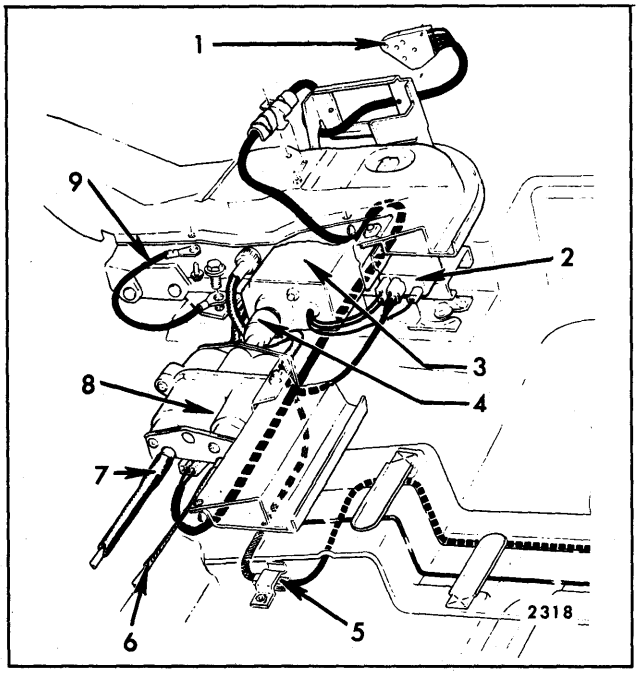


Fig. 16-28—Four-Way Bench Seat Wiring - "A" Body Styles

1. Control Switch Block
2. Motor Control Relay
3. Motor
4. Rubber Coupler
5. Feed Harness Connector
6. Vertical Drive Cable (Yellow)
7. Horizontal Drive Cable (Black)
8. Transmission Assembly
9. Seat Ground Wire

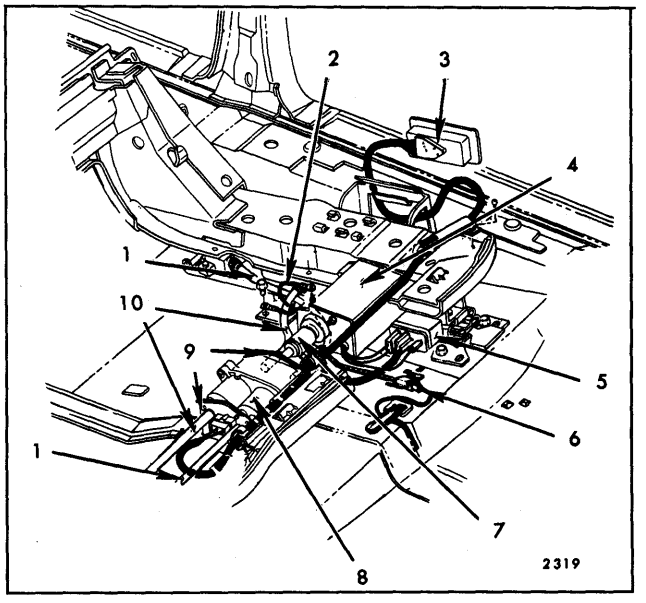


Fig. 16-29—Four-Way Bench Seat Wiring - "B & C" Styles

1. Vertical Control Cable (Yellow)
2. Ground Wire
3. Control Switch
4. Motor
5. Motor Control Relay
6. Feed Harness Connector
7. Rubber Coupler
8. Transmission Assembly
9. Transmission End Plates
10. Horizontal Control Cable (Black)

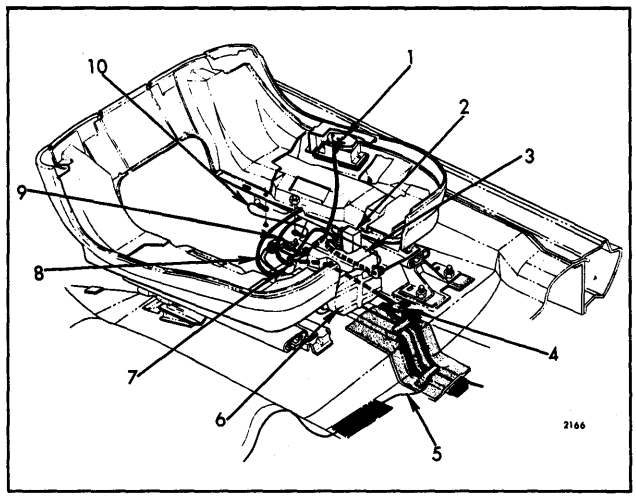


Fig. 16-30—Four-Way "Strato" Bucket Seat Wiring - All Styles

1. Control Switch
2. Motor Control Relay
3. Motor
4. Feed Harness Connector
5. Feed to Passenger Seat
6. Pulley Cover Plate
7. Transmission and Solenoid Assembly
8. Vertical Control Cable (Orange)
9. Horizontal Control Cable (Black)
10. Ground Wire

The seat motor is energized by a toggle-type control switch installed in the left seat side panel or in the left front door arm rest.

The four way seat circuit is protected by a circuit breaker (refer to Electrical Introduction for specific location).

The seat adjuster operating mechanism incorporates a transmission assembly which includes two solenoids and four drive cables on bench-type seats and two drive cables on bucket seats, leading to the seat adjusters. One solenoid controls the rear vertical movement of the seat while the other solenoid controls the horizontal movement of the seat. When the control switch is actuated, the motor and one of the solenoids are energized simultaneously. Then the solenoid plunger causes the shaft dog to engage with the large gear dog.

Power is then transmitted through the transmission shaft on bench seats and through the pulleys on bucket seats, which in turn drives the actuator cables. When the adjusters reach their limit of travel, the drive cables stop their rotating action and torque is absorbed by the rubber coupler connecting the motor and transmission on bench seats. On bucket seats torque is absorbed through the belt on the pulley. When the control switch lever is released the switch contacts open, a spring returns the shaft dog and solenoid plunger to their original position disengaging the shaft dog from the large gear dog. See "Seat Section" for exploded view of transmission.

CHECKING PROCEDURE

It may be necessary to use only one or all of the procedures outlined to locate an electrical failure in the circuit. If the location of the failure is evident, follow only the steps required to check the affected wire or component. If the location of the failure is not evident, follow the procedures as outlined. Before performing any extensive check procedures, check the seat adjuster drive cables for proper attachment. In addition, study the seat circuit diagrams to become familiar with the seat circuit (See Fig. 16-31).

a. Checking for Current at Circuit Breaker

1. Connect one test light lead to battery side of circuit breaker. If tester does not light, there is not current at battery side of circuit breaker.
2. To check circuit breaker, disconnect switch feed wire from breaker, and with a test light check for current at switch side of circuit breaker. If tester does not light, there is no current flowing through circuit breaker.

b. Checking Feed Circuit Continuity at Relay on Seat Motor—All Styles

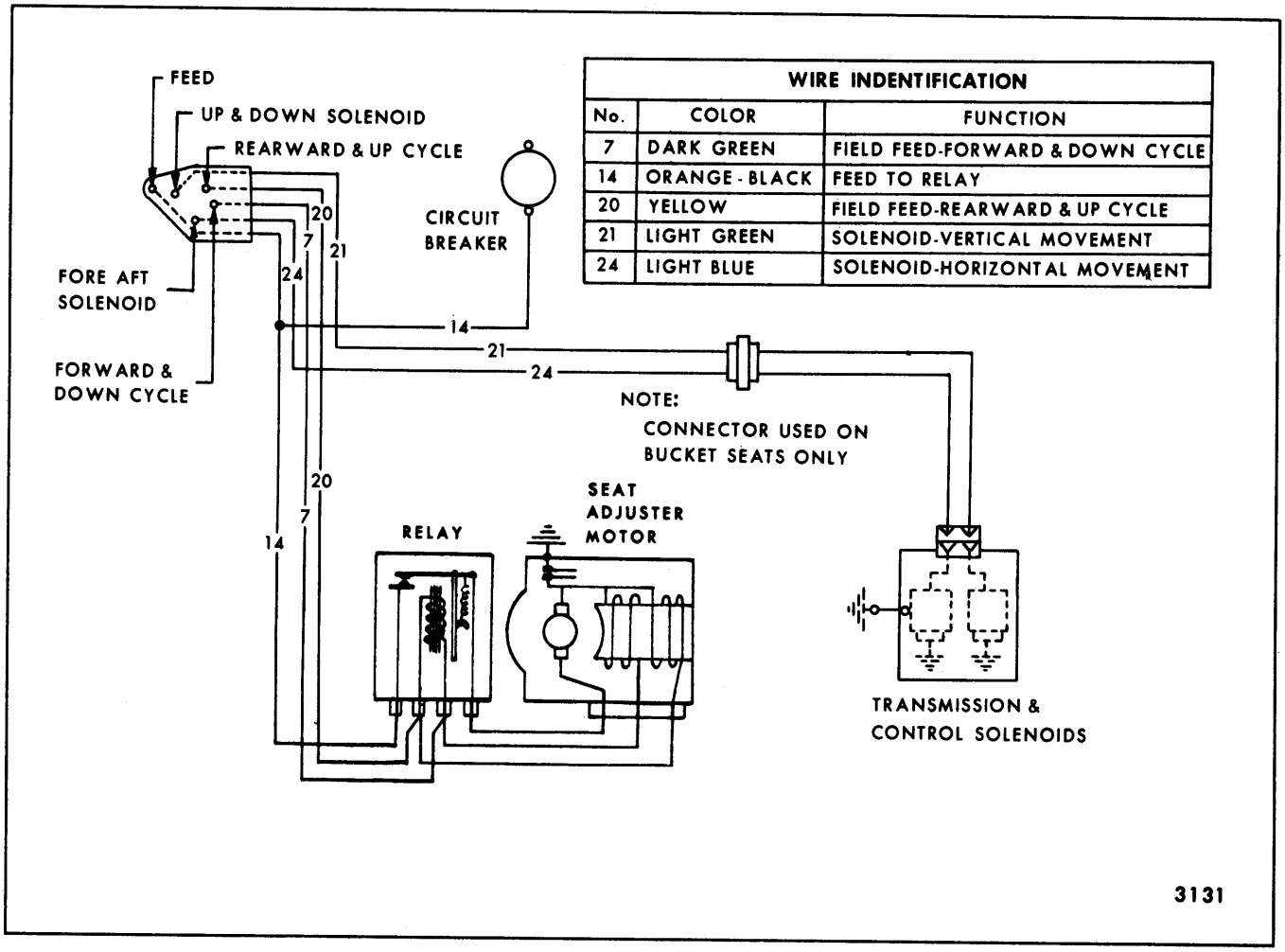
1. Disengage three-way connector body from the seat motor relay.
2. Insert one test light lead into the relay power feed connector slot on the harness, and ground other tester lead.
3. If tester does not light, there is not current at end of feed wire. Failure is caused by an open or short circuit in feed circuit.

c. Checking for Current at Seat Control Switch

1. Connect one test light lead to feed terminal of switch block and ground other test light lead to body metal.
2. If tester does not light, there is not current at switch block. Failure is caused by an open or short circuit between switch block and power source.

d. Checking the Seat Control Switch

In the following operations which specify the seat control switch to be actuated, a switch that has been



WIRE INDENTIFICATION		
No.	COLOR	FUNCTION
7	DARK GREEN	FIELD FEED-FORWARD & DOWN CYCLE
14	ORANGE - BLACK	FEED TO RELAY
20	YELLOW	FIELD FEED-REARWARD & UP CYCLE
21	LIGHT GREEN	SOLENOID-VERTICAL MOVEMENT
24	LIGHT BLUE	SOLENOID-HORIZONTAL MOVEMENT

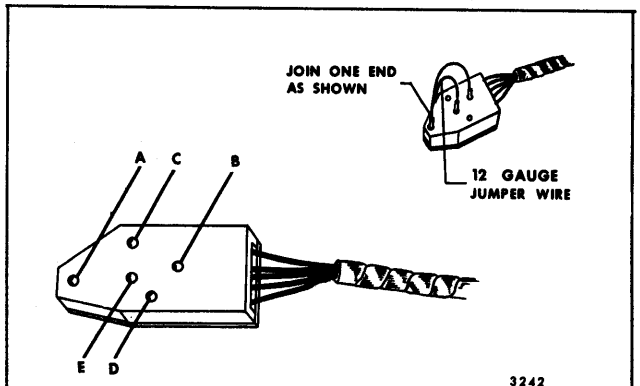
Fig. 16-31—Four-Way Seat Circuit

checked for proper operation may be connected to the switch block. If a switch is not available, a three-way jumper wire can be made to perform the switch function. The method of making the jumper wire and the switch locations to be connected to obtain a specific movement of the seat are shown in Figures 16-32 and 16-33. If a jumper wire is used, number the locations on the switch block as indicated in the illustration.

NOTE: To make jumper wire, obtain two pieces of #12 gauge wire, each 4-1/2" long. Join one end of each wire as shown in diagram. The joined end can be inserted in the feed location in the switch block; one of the remaining ends can be inserted into one of the solenoid locations.

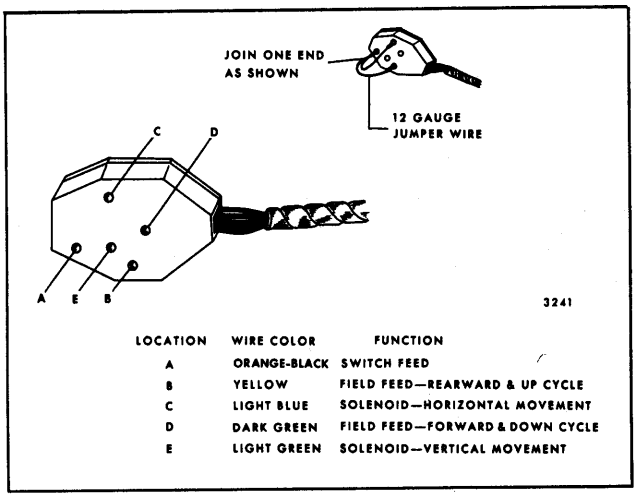
1. Obtain switch or jumper wire and connect to switch block.

2. Operate switch if used. If adjusters operate with switch or jumper wire, but did not operate with original switch, the original switch is defective or connector block was not sufficiently engaged.



LOCATION	WIRE COLOR	FUNCTION
A	ORANGE - BLACK	SWITCH FEED
B	YELLOW	FIELD FEED-REARWARD & UP CYCLE
C	LIGHT BLUE	SOLENOID-HORIZONTAL MOVEMENT
D	DARK GREEN	FIELD FEED-FORWARD & DOWN CYCLE
E	LIGHT GREEN	SOLENOID-VERTICAL MOVEMENT

Fig. 16-32—Four-Way Seat Switch Block in Trim Panel



LOCATION	WIRE COLOR	FUNCTION
A	ORANGE-BLACK	SWITCH FEED
B	YELLOW	FIELD FEED—REARWARD & UP CYCLE
C	LIGHT BLUE	SOLENOID—HORIZONTAL MOVEMENT
D	DARK GREEN	FIELD FEED—FORWARD & DOWN CYCLE
E	LIGHT GREEN	SOLENOID—VERTICAL MOVEMENT

Fig. 16-33—Four-Way Seat Switch Block in Arm Rest

IMPORTANT: To obtain a seat movement using a three-way jumper wire at the switch block, the switch feed location, one of the motor field wire locations and one of the solenoid locations have to be connected simultaneously.

The switch locations to be connected to obtain a specific seat movement are outlined as follows:

(a) To raise seat, place jumper wire in locations "A, B & E".

(b) To lower seat, place jumper wire in locations "A, D & E".

(c) To operate seat forward, place jumper wire in locations "A, C & D".

(d) To operate seat rearward, place jumper wire in locations "A, B & C".

e. Checking Wires between Control Switch and Motor Relay

1. Disengage three-wire harness connector from relay at motor.
2. Insert one test light lead into the motor field connector slot on harness and ground other lead.
3. Actuate seat switch to energize field wire being tested.
4. If tester does not light, there is not current at end of wire. Failure is caused by an open or short circuit between end of wire and switch. Check other motor field wire in the same manner.

f. Checking the Relay Assembly

1. Disconnect three leads from relay assembly. These are the wires leading from the motor to the relay.
2. Connect one end of a jumper wire to one of the motor field feed studs on the relay and ground the other end of the jumper wire.
3. Connect one test light lead to motor armature feed stud on relay and ground other tester lead.
4. With jumper wire, energize the field stud which is not grounded.

CAUTION: Do not energize grounded side. If tester does not light, the relay is defective.

g. Checking the Motor Assembly

1. Disconnect motor field feed wires from motor.
2. Connect one end of a #12 gauge jumper wire to battery positive pole and other end to one of the motor field and the armature wires.
3. If motor does not operate, motor is defective. Check the remaining motor field wire in the same manner.

h. Checking Wires between Switch and Solenoids

1. Disconnect harness connector from transmission assembly.
2. Connect one test light lead to one terminal of power feed and ground other test light lead to body metal.
3. Operate switch to wire being tested. If tester does not light, there is no current at the end of harness wire. Failure is caused by an open or short circuit between end of wire and switch or defective switch.
4. Check other wire in same manner.

NOTE: One wire in connector is a blank. Check wiring diagram for colors of wires actually used.

i. Checking the Solenoid

1. Check solenoid ground strap attachment for proper ground.
2. Connect one end of a #12 gauge jumper wire to the battery positive pole and the other end to the lead of the solenoid being checked.

CAUTION: To prevent damaging the solenoid, do not energize solenoid for more than one minute.

3. Operate switch, actuate adjuster motor and solenoid being checked.

4. If adjusters do not operate and there is no mechanical failure of the adjusters, the solenoid is defective.

NOTE: If solenoid is functioning properly, a "click" may be heard when solenoid plunger operates.

j. Trouble Shooting

CONDITION	CAUSE	CORRECTION
1. Seat adjuster motor does not operate.	A. Short or open circuit between power source or switch and motor.	A. Check circuit from power source and switch to motor to locate failure.
	B. Defective motor relay.	B. Replace relay.
	C. Defective motor.	C. Check motor. If defective, repair or replace as required.
	D. Defective switch.	D. Replace switch.
	E. Defective circuit breaker	E. Replace circuit breaker.
2. Seat adjuster motor operates in both directions but seat adjusters are not actuated.	A. Short or open circuit between switch and affected solenoid.	A. Check circuit from switch to solenoid to locate failure.
	B. Defective solenoid.	B. Check solenoid. If defective, repair or replace as required.
	C. Defective switch.	C. Replace switch.
3. Seat Adjuster motor operates in one direction only, seat moves down and forward, but does not move up and rearward.	A. Short or open circuit between one of the motor relay wires and seat control switch.	A. Check circuit between affected motor relay wire and seat switch.
	B. Defective field coil in motor.	B. Check motor. If defective, repair or replace as required.
	C. Defective switch.	C. Replace switch.

SIX-WAY TILT SEATS

Description

The seat adjuster for the standard and "STRATO" type 6-way seats are actuated by a 12-volt motor installed at the left side of the seat assembly (See Figs. 16-34 and 16-35).

The motor is energized by a three button-type control switch located in the left seat side panel or in the left front door arm rest.

The power seat circuit is protected by a circuit breaker (refer to Electrical Introduction for location).

The electrical portion of the six-way seat operates as follows:

When the control switch is actuated, current flows to the transmission solenoid which controls the desired seat movement. The energizing of the solenoid coil results in the solenoid plunger dog engaging the gear mechanism to rotate the control cable. The same switch action which energized the solenoid produces a current flow through the motor control relay to one of the motor field coils. The current flows through the relay, closes the contacts between the relay power source and the armature motor lead wire, and results in the operation of the seat motor. When the control switch lever is released, the switch contacts open, a spring returns

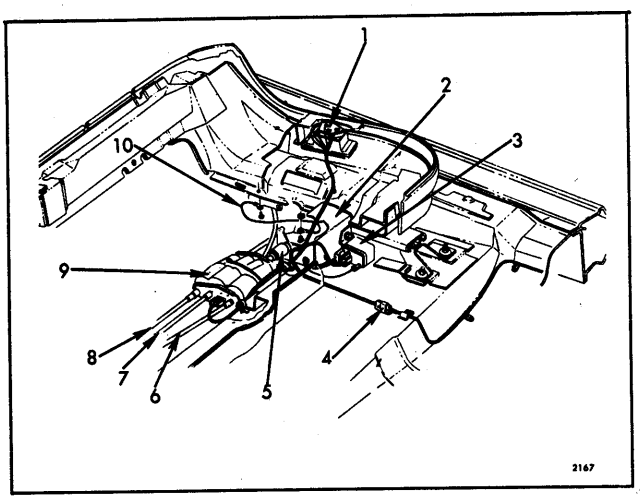


Fig. 16-34—Six-Way "Strato" Seat

1. Control Switch
2. Motor
3. Motor Control Relay
4. Feed Harness Connector
5. Rubber Coupler
6. Front Vertical Control Cable (Yellow)
7. Rear Vertical Control Cable (Blue)
8. Horizontal Control Cable (Black)
9. Transmission and Solenoid Assembly
10. Ground Wire

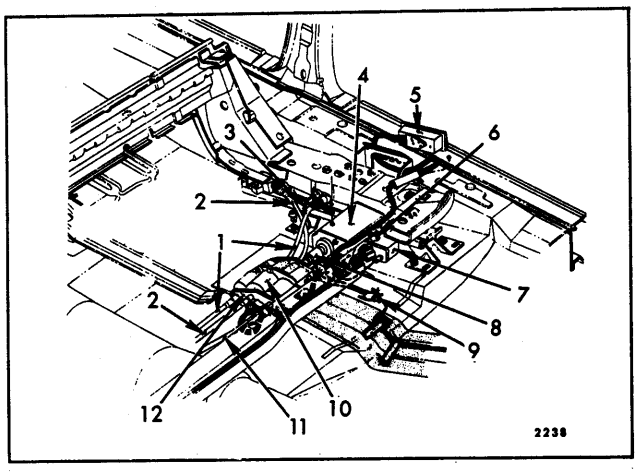


Fig. 16-35—Six-Way Standard Bench Seat

1. Horizontal Control Cable (Black)
2. Rear Vertical Control Cable (Blue)
3. Ground Wire
4. Motor
5. Control Switch
6. Front Vertical Control Cable (Yellow)
7. Motor Control Relay
8. Rubber Coupler
9. Feed Harness Connector
10. Transmission and Solenoid Assembly
11. Front Vertical Control Cable (Yellow)
12. Transmission End Plate

the shaft dog and solenoid plunger to their original position disengaging them from the gear dog.

Circuit Checking Procedures

It may be necessary to use only one or all of the procedures outlined to locate an electrical failure in the circuit. If the location of the failure is evident, follow only the steps required to check the affected wire or component. If the location of the failure is not evident, follow the procedure as outlined. Before performing any extensive check procedures, check the seat adjuster drive cables for proper attachment. In addition, study the seat circuit diagrams to become familiar with the seat circuit (See Figure 16-36).

a. Checking Feed Circuit Continuity at Circuit Breaker

1. Connect one test light lead to battery side of circuit breaker and ground other lead. If tester does not light, there is an open or short circuit in feed circuit to breaker.

2. To check circuit breaker, disconnect the output feed wire (the wire opposite the power source feed to the breaker) from the breaker and with test light check terminal from which the wire was disconnected. If tester does not light, circuit breaker is inoperative. Check feed circuit continuity at fuse block.

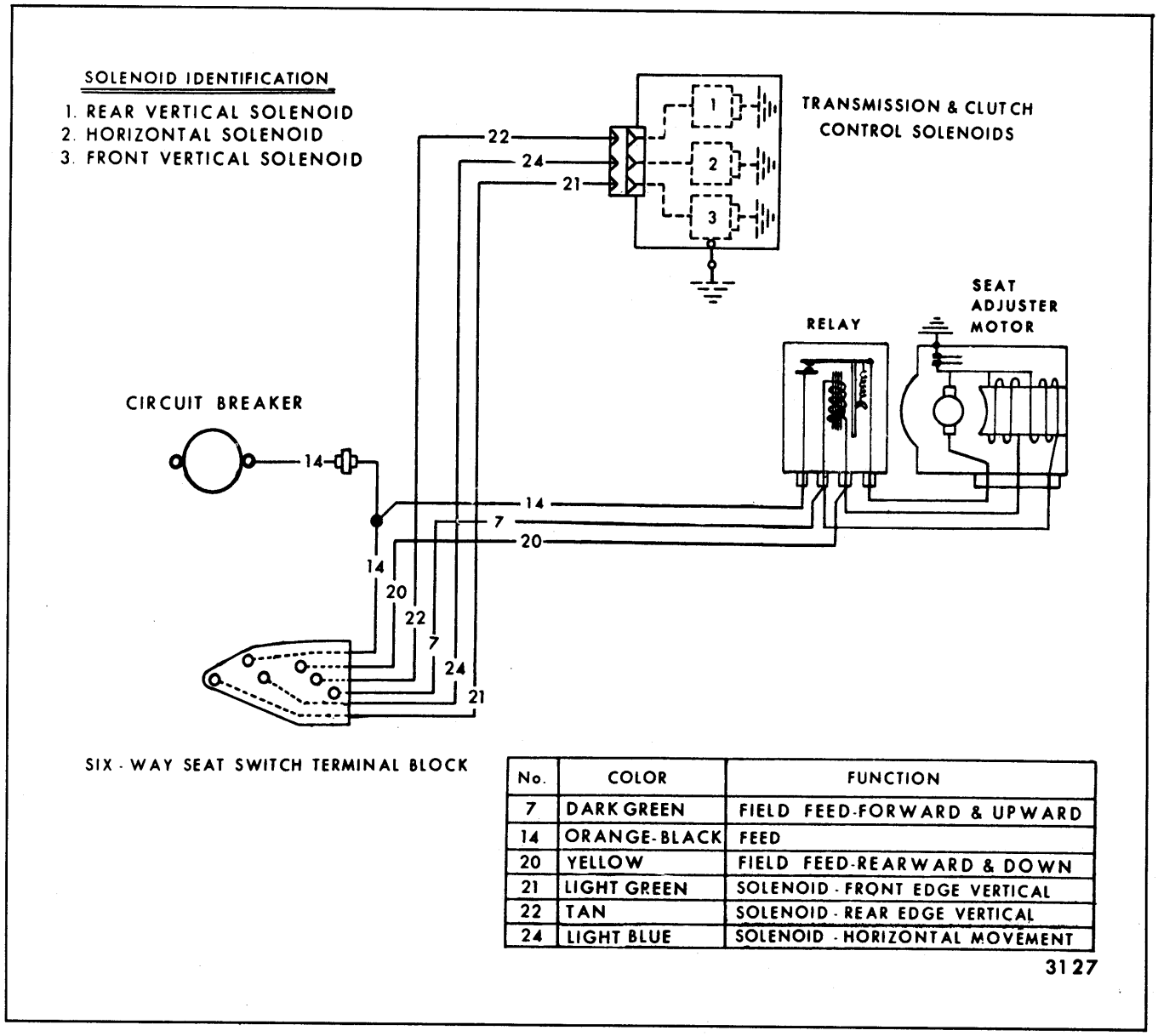
b. Check Feed Circuit Continuity at Seat Control Switch

1. Connect one test light lead to feed terminal of switch block and ground other test lead to body metal.

2. If tester does not light, there is an open or short circuit between switch and power source.

c. Checking the Seat Control Switch

NOTE: In the following operations which specify the seat control switch to be actuated, a switch that has been checked for proper operation may be connected to the switch block. If a switch is not available, a three-way jumper wire can be made to perform the switch function. The jumper wire and the switch locations to be connected to obtain a specific movement of the seat are shown in Figures 16-37 and 16-38. If a jumper wire is used, letter the locations on the switch block as indicated in the illustration. Details outlining the



No.	COLOR	FUNCTION
7	DARK GREEN	FIELD FEED-FORWARD & UPWARD
14	ORANGE-BLACK	FEED
20	YELLOW	FIELD FEED-REARWARD & DOWN
21	LIGHT GREEN	SOLENOID - FRONT EDGE VERTICAL
22	TAN	SOLENOID - REAR EDGE VERTICAL
24	LIGHT BLUE	SOLENOID - HORIZONTAL MOVEMENT

Fig. 16-36—Six-Way Seat Circuit

making and use of the jumper wire follow the checking procedure.

1. Obtain switch or jumper wire and connect to switch block.
2. Operate switch. If adjusters operate with new switch or jumper wire, but did not operate with original switch, the original switch is defective.
3. Check all six movements of seat adjuster.

d. Checking Feed Circuit Continuity at Relay on Seat Motor

1. Disengage 3-way connector body from the seat motor relay terminal.
2. Insert one test lead into the relay power feed connector slot on the harness, and ground the other test light lead.
3. If tester does not light, there is no current at end of feed wire. Failure is caused by an open or short in feed circuit.

e. Checking Wire between Control Switch and Motor Relay

1. Disengage 3-wire harness connector from relay at motor.
2. Insert one test light lead into the motor field connector slot on harness and ground the other lead.

3. Actuate seat switch to energize field wire being tested.

4. If tester does not light, there is not current at end of wire. Failure is caused by an open or short circuit between end of wire and switch. Check other motor field wire in the same manner.

f. Checking the Relay Assembly

1. Disconnect three motor leads from relay assembly. These are the wires leading from the motor to the relay.

2. Connect one end of a jumper wire to one of the motor field feed studs on the relay and ground the other end of the jumper wire.

3. Connect one end of test light to motor armature feed stud on relay and ground other tester lead.

4. With a jumper wire, energize the field stud which is not grounded. If tester does not light, the relay is defective.

g. Checking the Motor Assembly

1. Disconnect the motor armature feed lead and one of the motor field feeds from the relay assembly.

2. With a jumper wire, energize the armature feed and one of the field feeds.

3. If motor does not operate, it is defective. Check the other motor field feed in the same manner.

h. Checking the Wire between the Solenoid and Switch

1. Disengage harness connector from transmission.

2. Connect one test light lead to end of harness wire being tested and ground other lead.

3. Operate switch to energize wire being tested. If tester does not light, there is no current at end of wire. Failure is caused by an open or short circuit between end of wire and switch.

i. Checking the Solenoid

1. Check solenoid ground strap attachment for proper ground.

2. Energize solenoid being checked with jumper wire.

NOTE: If solenoid is functioning, a "click" should be heard when solenoid plunger operates "in" and "out".

CAUTION: To prevent damaging the solenoid, do not energize solenoid for more than one minute.

3. With solenoid energized, actuate seat control switch to energize adjuster motor.

4. If adjusters do not operate, and there is no mechanical failure in the seat unit, the solenoid is defective.

j. Three-Way Jumper Wire for Checking Seat Switch

To make jumper wire, obtain two pieces of #12 gauge wire, each 4-1/2" long, join one end of each wire as shown in Figure 16-37. The joined end can be inserted in the feed location in the switch block; one of the remaining ends can be inserted into one of the field locations in the switch block; the other end can be inserted into one of the solenoid locations.

IMPORTANT: To obtain a seat movement using a 3-way jumper wire at the switch block, the switch feed location, one of the motor field wire locations and one of the solenoid locations must be connected simultaneously.

On Bodies with Switch in Seat Side Panel (See Fig. 16-37)

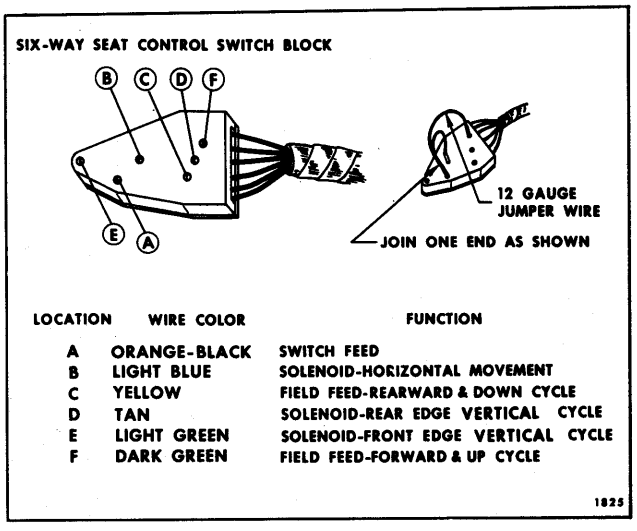


Fig. 16-37—Six-Way Seat Switch Block in Seat Side Panel

1. To raise front end of seat, place jumper in locations A, F and E.

2. To lower front edge of seat, place jumper in locations A, C and E.

3. To raise rear edge of seat, place jumper in locations A, F and D.

4. To lower rear edge of seat, place jumper in locations A, C and D.

5. To move seat forward, place jumper in locations A, B and F.

6. To move seat rearward, place jumper in locations A, C and B.

On Bodies with Switch in Arm Rest (See Fig. 16-38)

1. To raise front edge of seat, place jumper in locations A, C and E.

2. To lower front edge of seat, place jumper in locations A, F and E.

3. To raise rear edge of seat, place jumper in locations A, F and D.

4. To lower rear edge of seat, place jumper in locations A, F and D.

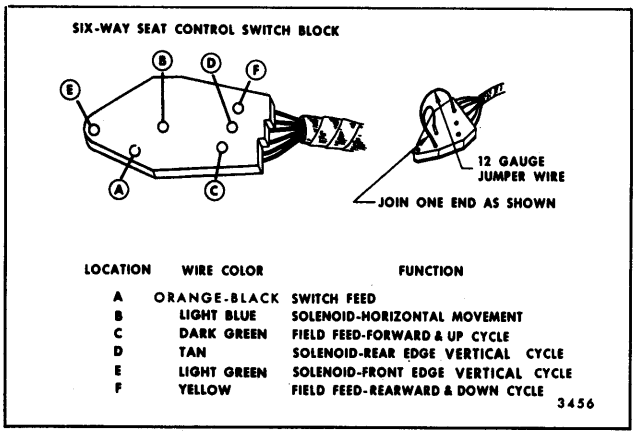


Fig. 16-38—Six-Way Seat Switch Block in Arm Rest

5. To move seat forward, place jumper in locations A, C and B.

6. To move seat rearward, place jumper in locations A, F and B.

k. Trouble-Shooting

CONDITION	CAUSE	CORRECTION
1. Seat adjuster motor does not operate	A. Short or open circuit between power source or switch and motor. B. Defective motor.	A. Check circuit from power source and switch to motor to locate failure. B. Check motor. If defective, repair or replace as required.
2. Seat adjuster motor operates, but seat adjusters are not actuated. or 3. Seat adjuster motor operates, front edge of seat moves up and down and seat moves forward and rearward. The rear edge of seat cannot be operated.	A. Short or open circuit between switch and affected solenoid. B. Defective solenoid.	A. Check circuit from switch to solenoid to locate failure. B. Check solenoid. If defective, repair or replace as required.

CONDITION	CAUSE	CORRECTION
4. Seat adjuster motor operates and seat adjusters move front and rear edge of seat up and forward but will not move the seat down and rearward	A. Short or open circuit between one of the motor field wires and seat control switch.	A. Check circuit between affected motor field wire and seat switch.
or		
5. Seat adjuster motor operates and seat adjusters move front and rear of seat down and rearward, but will not move the seat up and forward.	B. Defective field coil in motor.	B. Check motor. If defective repair or replace as required.

TAIL AND SIDE MARKER LAMPS

DESCRIPTION

Various methods are employed to remove and install the components of tail lamp assemblies. The following charts and illustrations (Figs. 16-40, 16,41, 16-42, 16-43, 16-44 and 16-45) will provide a quick reference for performing the three basic service operations for each Car Division (Bulb Replacement, Lens Replacement and Housing Replacement) on styles where the tail lamp assembly is installed on the body. If the tail lamp assembly is installed in the bumper refer to the chassis manual for service operations.

CAUTION: Do not rework or alter the reflective surface of tail lamps or side marker lamps.

SEALING

Caution should be exercised to prevent waterleaks at the tail lamp area when sealing surfaces are disturbed. Damaged gaskets should be replaced.

If new gaskets are not installed, the use of sealer (body caulking compound or equivalent) is recommended at critical areas and where the old gaskets have taken a set.

The recommended torque for attaching nuts to zinc die cast studs on tail lamp housings and rear fender extensions is 46 to 72 inch pounds. If additional tightening of casting to panel is required, a maximum of 90 inch pounds of torque may be used without stripping the nut.

SIDE MARKER LAMPS

All styles except Pontiac "G" and Oldsmobile "A" Station Wagons are equipped with rear quarter side marker lamps. The lamps operate in conjunction with the tail lamp circuit. Pontiac "G" has side marker reflector lens in the rear quarter extension housing (See Fig. 16-39).

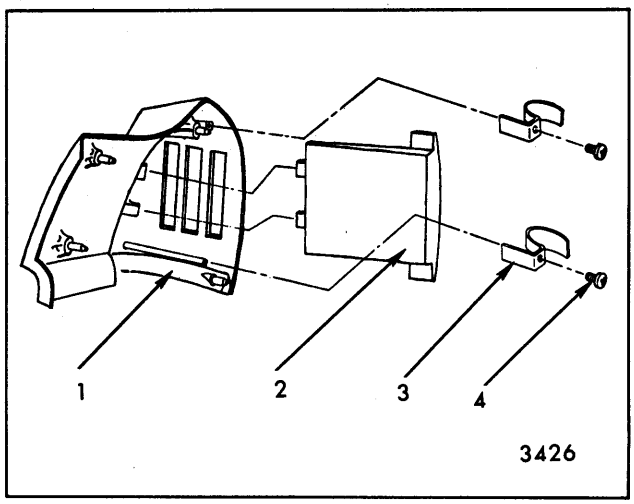


Fig. 16-39—Pontiac "G" Style Side Marker

1. Quarter Extension
2. Reflector Lens
3. Lens Retaining Clip
4. Clip Screw

There are three basic methods of retention for these lamp housings.

1. External Screws - Used on all station wagons.
2. Studs with Nuts Accessible from the Rear Compartment - all except Buick "C & E" and station wagons.
3. Slide-on Spring Retainer - Used on Buick "C & E" styles only.

Views depicting lamp installations are shown with the respective tail lamp installation drawings.

TAIL BULB USAGE CHART

Trade No.	Candle Power	Use
67	4	Tail Lamp (Inboard) Chevrolet "F"
1156	32	Back-Up Lamp
1157	32 and 4	Combination Tail, Stop and Directional Lamp
194	2	Side Marker - Cadillac "E" Chev., Buick, Oldsmobile, Pontiac (Less 23300-23527-37-39-67-69 & 23700 Styles) Beaumont & Acadian Styles
1895	2	Side Marker - 23300-23527-37-39-67-69-23700 Styles

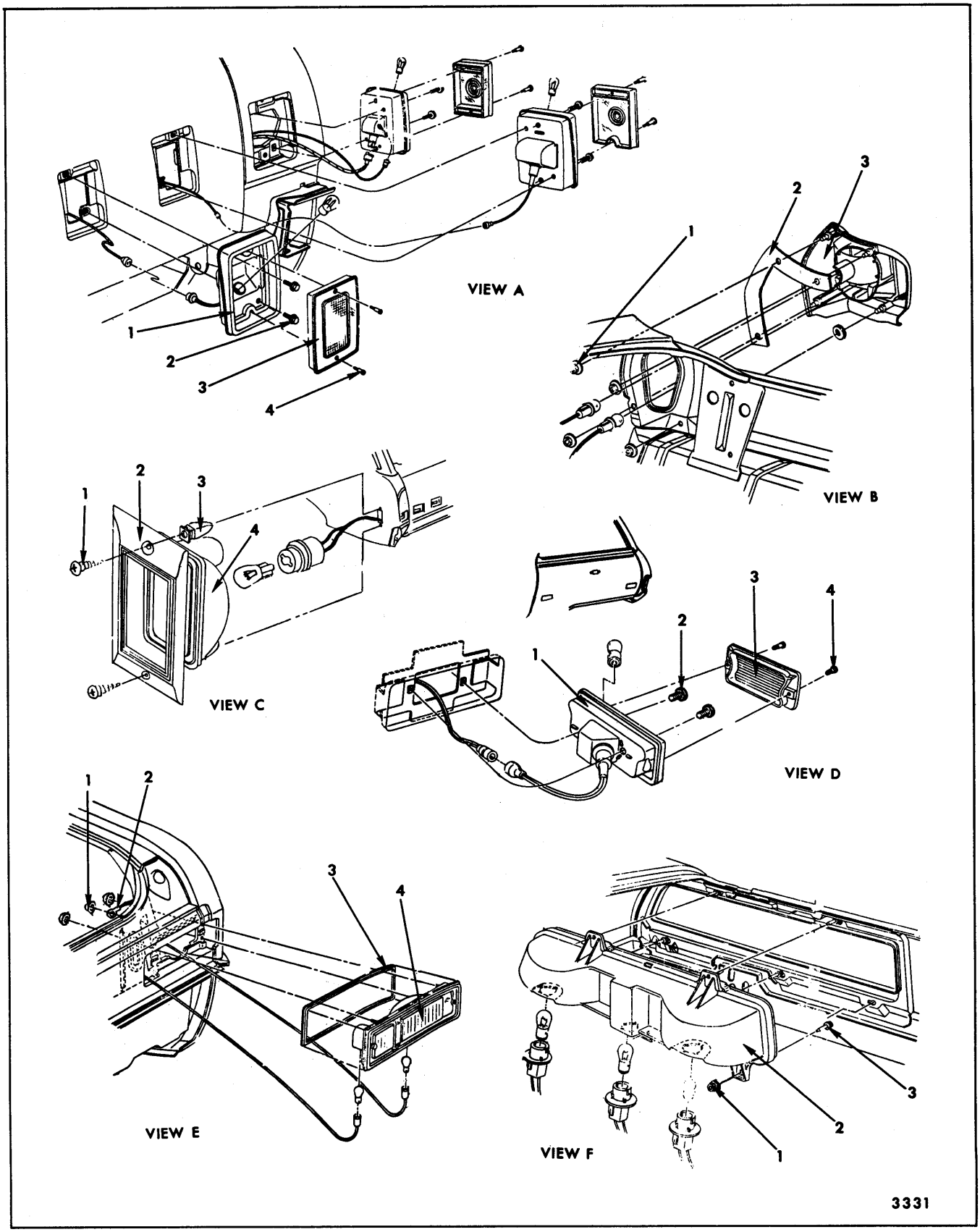


Fig. 16-40—Tail Lamp - Chevrolet - Acadian (Canadian) Styles

TAIL LAMP OPERATION—CHEVROLET—ACADIAN, BEAUMONT (CANADIAN)

Fig. 16-40 & 16-41

OPERATION	METHOD	BODY TYPE				
		A	A Sta. Wgn.	B Sta. Wgn.	F	X
Bulb Replacement	Remove Lens Outside		X	X		
	Remove Socket (Inside Rear Compartment)	X			X	X
Lens Replacement	Remøve Retaining Screws (Outside)		X	X		X
	Remove Housing and Disassemble	X			X	
Housing Replacement	Remove from Outside (Retaining nuts in Rear Compartment	X View "B"				X View "E"
	Remove From Inside				X View "F"	
	Remove from Outside (Retaining Bolts Under Lens)		X	X View "A"		
	Lower Rear Bumper	X				

CHEVROLET

View "A"
1. Lamp Housing
2. Housing Bolt
3. Lens
4. Lens Screw

View "B"
1. Housing Retaining Nut
2. Gasket
3. Lamp Housing

View "C"
1. Bezel Screw
2. Bezel
3. Retaining Nut
4. Lamp Housing Assembly

View "D"
1. Back-Up Lamp Housing
2. Housing Retaining Bolt
3. Lens
4. Lens Screw

View "E"
1. Housing Retaining Nut
2. Ground Wire
3. Gasket
4. Lamp Housing Assembly

View "F"
1. Housing Retaining Nut
2. Lamp Housing
3. Bolt and Clip Assembly

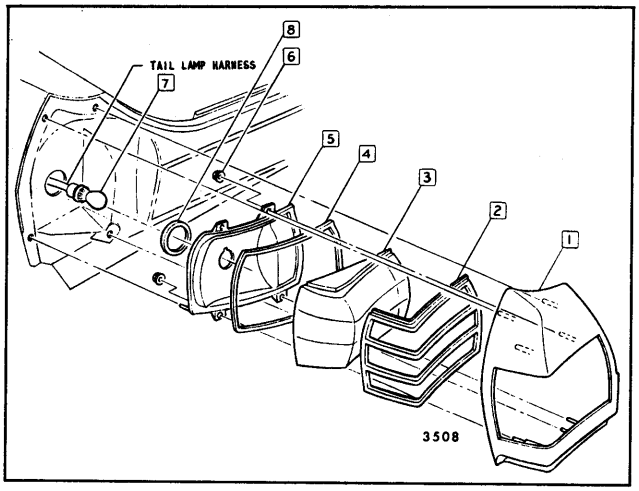


Fig. 16-41—Tail Lamp - Beaumont (Canadian) Styles

1. Rear Quarter Extension
2. Lamp Bezel
3. Lens
4. Lens Gasket
5. Lamp Housing
6. Nut
7. Bulb
8. Lamp Gasket

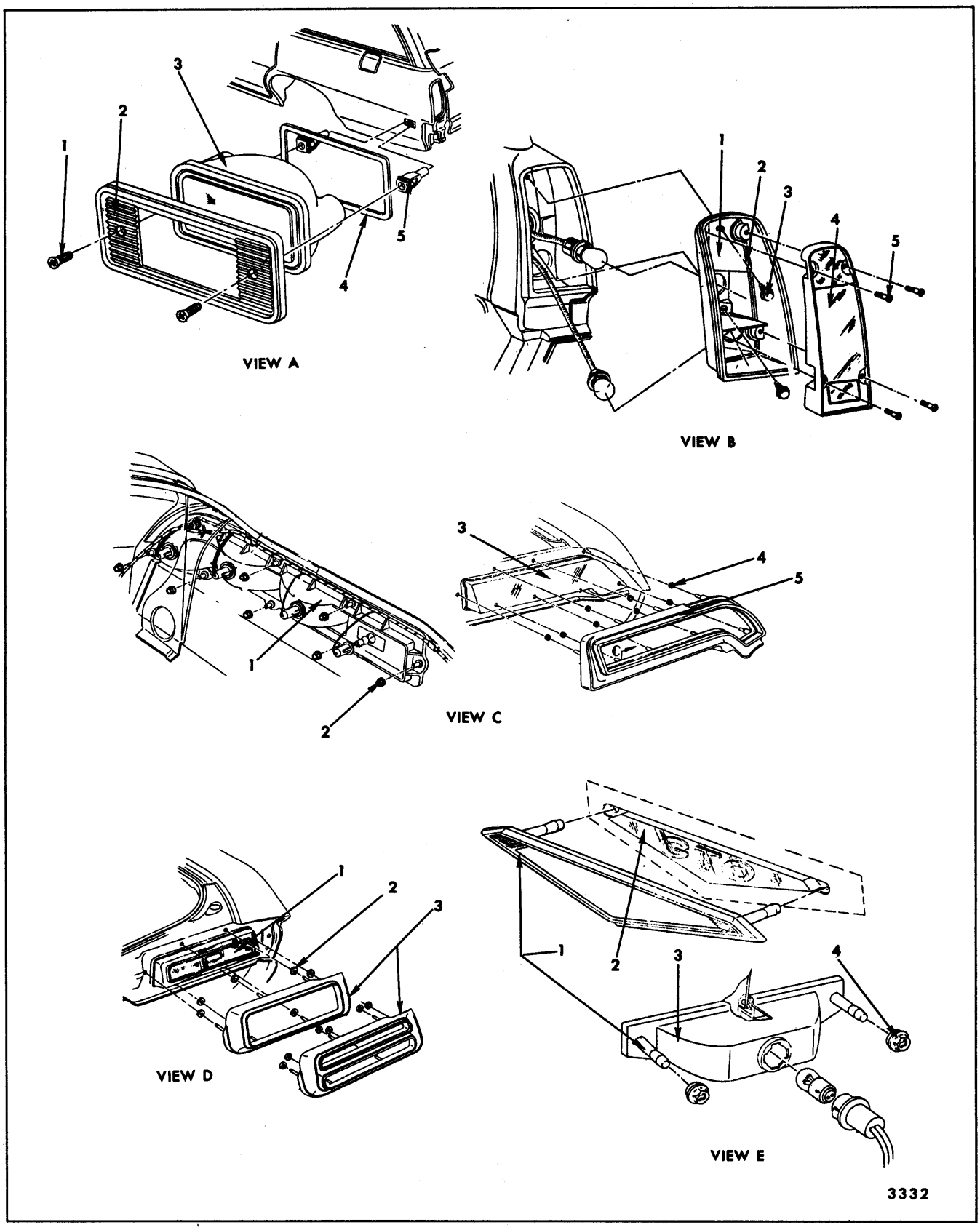


Fig. 16-42—Tail Lamp - Pontiac (U.S. and Canadian) Styles

TAIL LAMP OPERATION—PONTIAC (U.S. AND CANADIAN STYLES)

Fig. 16-42

OPERATION	METHOD	BODY TYPE				
		A	A Sta. Wgn.	B Sta. Wgn.	B	F
Bulb Replacement	Remove Lens Outside		X	X		
	Remove Socket (Inside Rear Compartment)	X			X	X
Lens Replacement	Remove Retaining Screws (Outside)		X	X		
	Remove Housing and Disassemble	X			X	X
Housing Replacement	Remove from Outside (Retaining nuts in Rear Compartment)					
	Remove From Inside	X View "D"			X View "C"	
	Remove from Outside (Retaining Bolts Under Lens)		X	X View "B"		
	Lower Rear Bumper	X			X	

PONTIAC

View "A"
1. Bezel Screw
2. Bezel
3. Lamp Housing
4. Gasket
5. Retaining Nut

View "B"
1. Lamp Housing
2. Gasket
3. Housing Bolt
4. Lens
5. Lens Screw

View "C"
1. Lamp Housing
2. Housing Bolt
3. Lens
4. Spacer
5. Bezel

View "D"
1. Lens and Lamp Housing Assembly
2. Spacer
3. Bezel

View "E"
1. Bezel
2. Lens
3. Lamp Housing
4. Bezel Nut

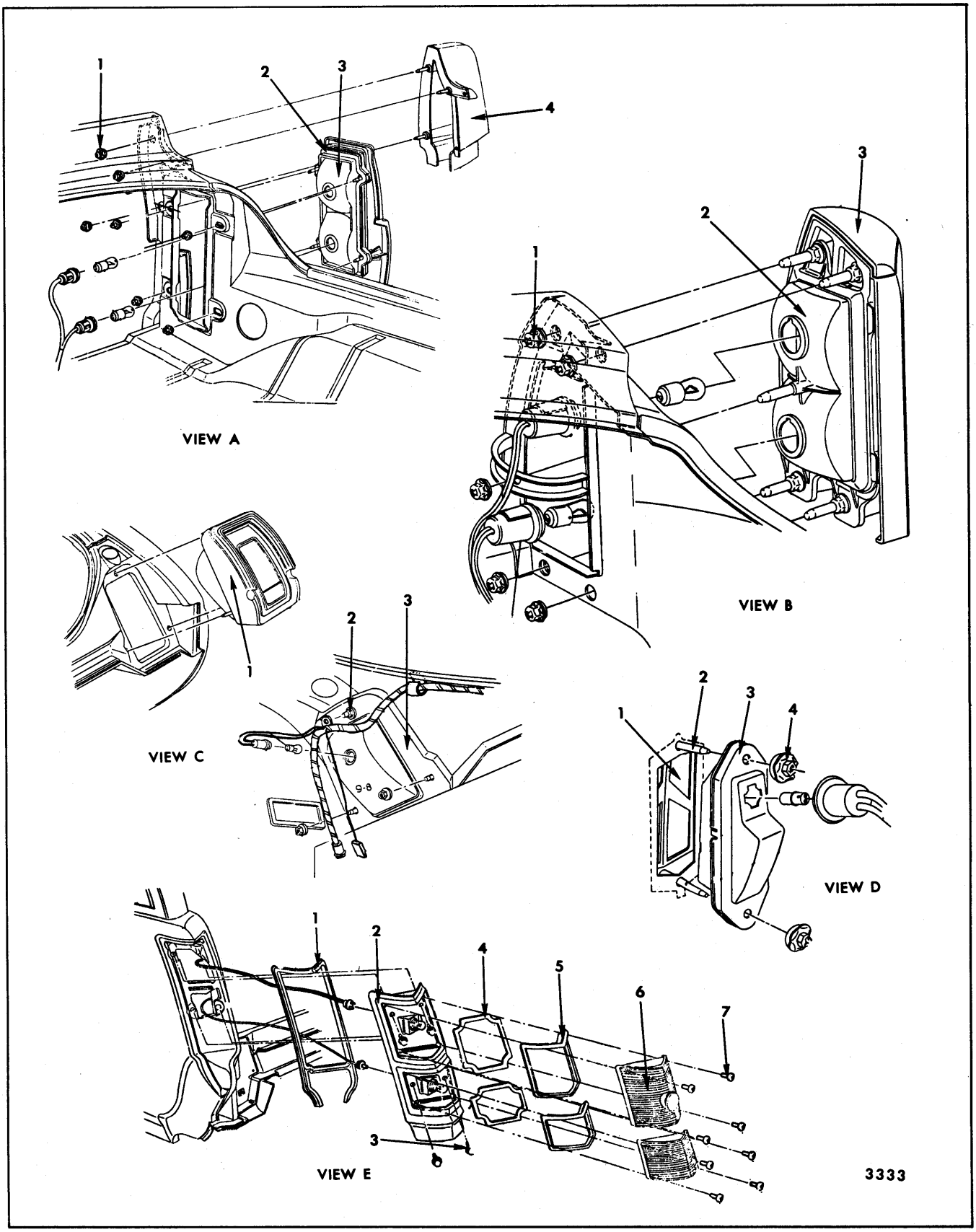


Fig. 16-43—Tail Lamp - Oldsmobile Styles

TAIL LAMP OPERATION—OLDSMOBILE

Fig. 16-43

OPERATION	METHOD	BODY TYPE			
		A	A Station Wagon	B	C
Bulb Replacement	Remove Lens Outside		X		
	Remove Socket (Inside Rear Compartment	X		X	X
Lens Replacement	Remove Retaining Screws (Outside)		X		
	Remove Housing and Disassemble	X		X	X
Housing Replacement	Remove from Outside (Retaining nuts in Rear Compartment)	X View "C"		X View "A"	X View "B"
	Remove From Inside				
	Remove from Outside (Retaining Bolts Under Lens)		X View "E"		
	Lower Rear Bumper	X		X	X

OLDSMOBILE

View "A"
1. Retaining Nut
2. Housing Gasket
3. Lamp Housing
4. Quarter Extension

View "B"
1. Retaining Nut
2. Lamp Housing
3. Quarter Extension

View "C"
1. Lamp Housing
2. Retaining Nut
3. Rear End Panel

View "D"
1. Lens
2. Bezel
3. Lamp Housing
4. Retaining Nut

View "E"
1. Housing Gasket
2. Lamp Housing
3. Housing Screw
4. Lens Gasket
5. Bezel
6. Lens
7. Lens Screw

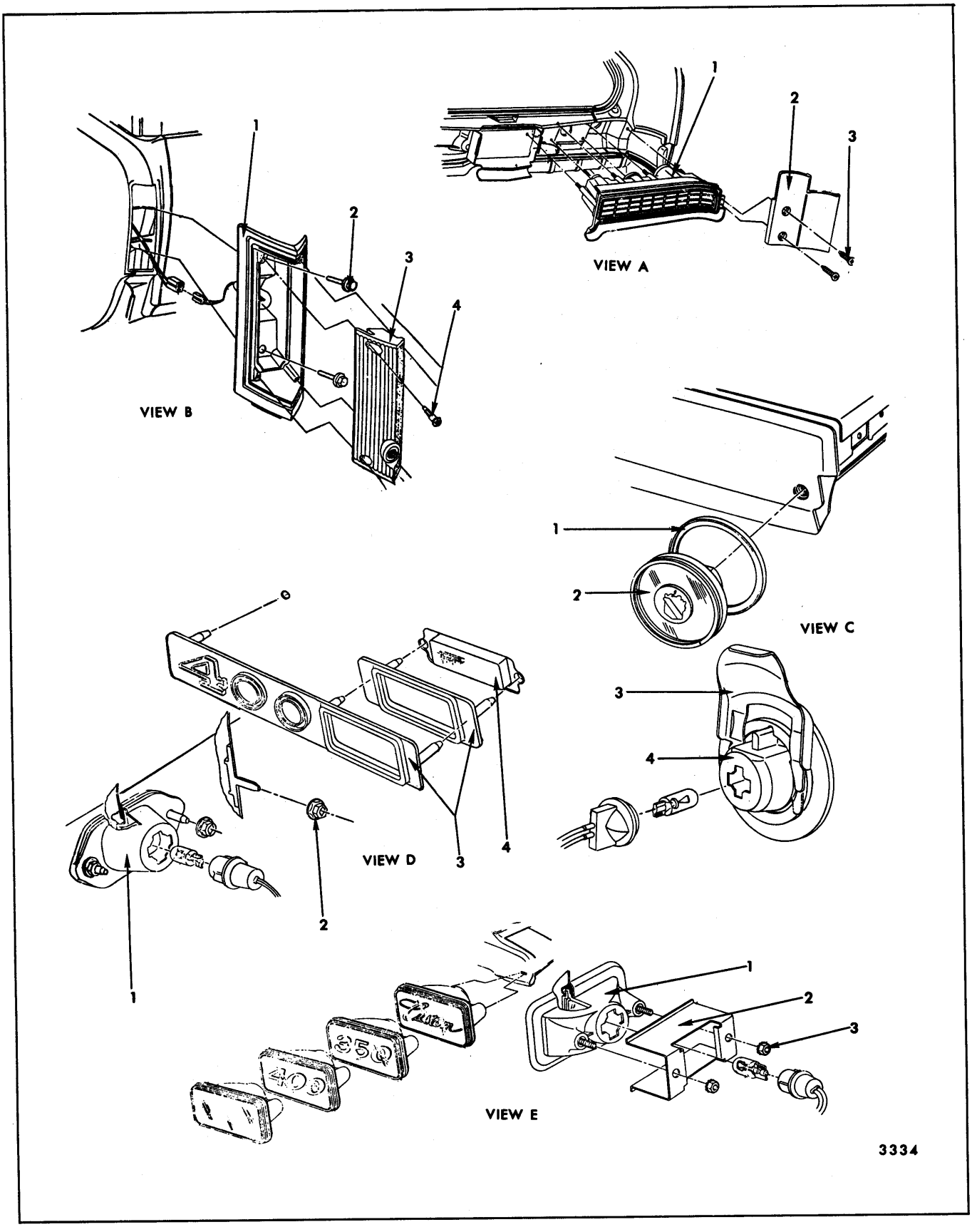


Fig. 16-44—Tail Lamp - Buick Styles

TAIL LAMP OPERATION—BUICK

Fig. 16-44

OPERATION	METHOD	BODY TYPE	
		A Station Wagon	C
Bulb Replacement	Remove Lens Outside	X	
	Remove Socket (Inside Rear Compartment)		X
Lens Replacement	Remove Retaining Screws (Outside)	X	
	Remove Housing and Disassemble		X
Housing Replacement	Remove from Outside (Retaining nuts in Rear Compartment)		X View "A"
	Remove From Inside		
	Remove From Outside (Retaining Bolts Under Lens)	X View "B"	
	Lower Rear Bumper		X

BUICK

View "A"
1. Lamp Housing
2. Filler Molding
3. Filler Screws

NOTE: Remove Filler Molding Before Lamp Housing

View "B"
1. Lamp Housing
2. Housing Screw
3. Lens
4. Lens Screw

View "C"
1. Bezel
2. Lens
3. Retainer
4. Lamp Housing

View "D"
1. Lamp Housing
2. Retaining Nut
3. Bezel
4. Lens

View "E"
1. Housing Assembly
2. Lamp Retainer
3. Retaining Nut

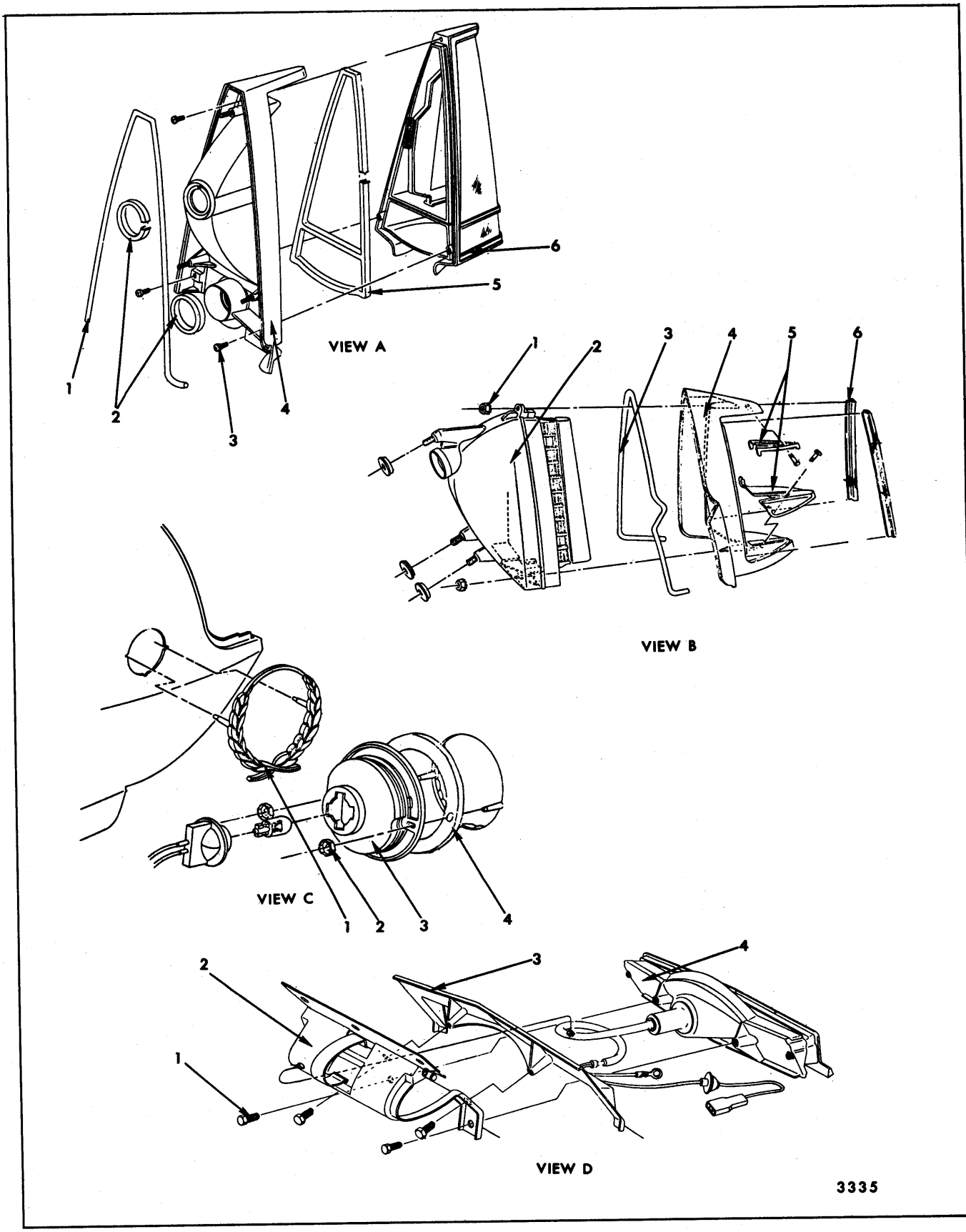


Fig. 16-45—Tail Lamp - Cadillac Styles

TAIL LAMP OPERATION—CADILLAC

Fig. 16-45

OPERATION	METHOD	BODY TYPE	
		C & D	E
Bulb Replacement	Remove Lens Outside	X	X
	Remove Socket (Inside Rear Compartment)		
Lens Replacement	Remove Retaining Screws (Outside)		
	Remove Housing and Disassemble	X	X
Housing Replacement	Remove from Outside (Retaining nuts in Rear Compartment)	X View "A"	X View "B"
	Remove From Inside		
	Remove from Outside (Retaining Bolts Under Lens)		
	Lower Rear Bumper	X	

CADILLAC

View "A"
1. Sealer Strip
2. Donut Gasket
3. Bezel Screw
4. Lamp Housing
5. Gasket
6. Lens and Bezel Assembly

View "B"
1. Extension Retaining Nut
2. Lamp Housing
3. Sealer
4. Quarter Extension
5. Trim Plates
6. Molding Strips

View "C"
1. Bezel
2. Bezel Nut
3. Lamp Housing
4. Gasket

View "D"
1. Lamp Attaching Bolt
2. Hinge Assembly
3. Gas Tank Filler Door
4. Back-Up Lamp

INTERIOR LAMP—ABOVE BELT BULB CHART

Lens Shape	Rectangular		Oval		Round		
Bulb Type	6 CP Cart.	12 CP Cart.	6 CP Cart.	12 CP Cart.	6 CP Cart.	12 CP Cart.	15 CP Bay.
Chevrolet "A" "Z-X-F" "B"		Dome		Dome		Dome	
Pontiac All						Dome	
Oldsmobile "A-B" "C" Exc. 38669 38669 "E" 34855-56-65-66	Sail 2/Sail Roof Rail				Sail Sail	Dome Dome	
Buick "A" Wagon "A-B" "A-37" Optional	Roof Rail Sail	Dome			Sail	Dome	
Cadillac 68169 "C&E" 69723-33	Sail				Front Comp.	A/C Grille	Sail
Canadian Pontiac Beaumont Acadian		Dome		Dome		Dome	

SEAT WARMERS

DESCRIPTION

Seat warmers are available as a factory installed accessory on all 1969 Cadillac styles.

The seat warmers are located in the front seats on all but 69723 and 69733 styles, which have rear seat warmers.

Cloth heating pads with electrical resistance heating elements are located in the seat cushions and backs. The cloth material has a watt density of 25 watts per square foot, requiring an approximate 22-25 ampere current draw at 12 volts. There are three different size pads used, which are identified by a colored band on each.

COLOR	Red	Blue	Yellow
SIZE	17-1/2" x 23-1/4"	17-1/2" x 26"	17-1/2" x 28-1/8"
LOCATION	Seat Cushion	Rear Seat Cushion and Back (69723-33 Styles)	Seat Back
APPROX. CURRENT RANGE IN AMPERES	6.8a to 7.1a	6.0a to 6.4a	5.5a to 5.9a

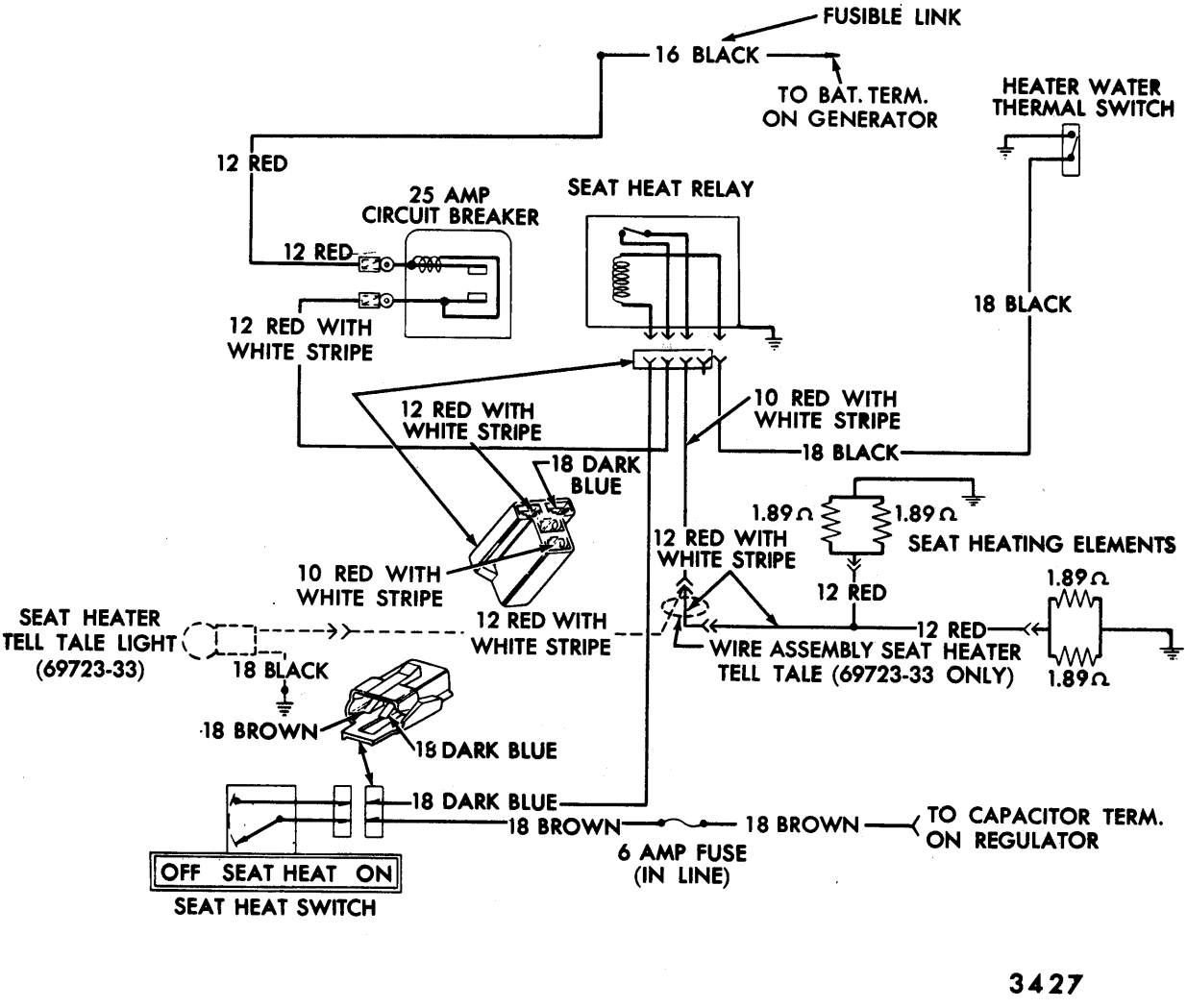


Fig. 16-46—Electric Seat Warmer

COMPONENTS

The system consists of an ON-OFF switch, thermal switch, relay, cloth heating pads, circuit breaker, fuse and wiring (See Fig. 16-46). The ON-OFF switch is mounted on the instrument panel. The relay and 25 amp. circuit breaker are mounted on the right wheelhouse, or on the evaporator blower assembly on cars equipped with air conditioning. The thermal switch is located in the heater water circuit between the water pump and heater core.

OPERATION OF SEAT WARMER

In order to operate the seat warmer, the engine must be running, the ON-OFF switch to "On" and the thermal switch closed (switch opens automatically when water temperature exceeds 150°F.). The seat warmer will shut off automatically when car heater provides adequate heat, or manually when ON-OFF control switch is set to the "Off" position. However, on cars equipped with Automatic Climate Control, the seat warmers will not automatically turn off with the climate control in the "Vent" position, or when the system is providing maximum cooling in any other position. Refer to Cadillac Shop Manual for Seat Warmer Component Testing.

ELECTRIC BACK WINDOW GRID DEFOGGER

DESCRIPTION

The optional back window defogger unit consists of ceramic silver compound element lines and bus bar applied to the inside glass surface. The bus bar is backed up by a braided wire soldered on the bus bar to provide adequate conductivity. The wire pigtails will have double insulation (loom over conventional insulation). The system operates on approximately 17 amps at 12 volts. The side garnish moldings used, must have a snap-in insulator insert.

The electric grid defogger creates a rise in temperature on the glass of approximately 30° - 40°. Therefore, in some cases finger touch may not detect heat in the glass.

See figure 16-47 for Oldsmobile "E" and Buick "E" installation, all others similar.

Connectors for timer unit are shown on left rear seat back diagonal brace.

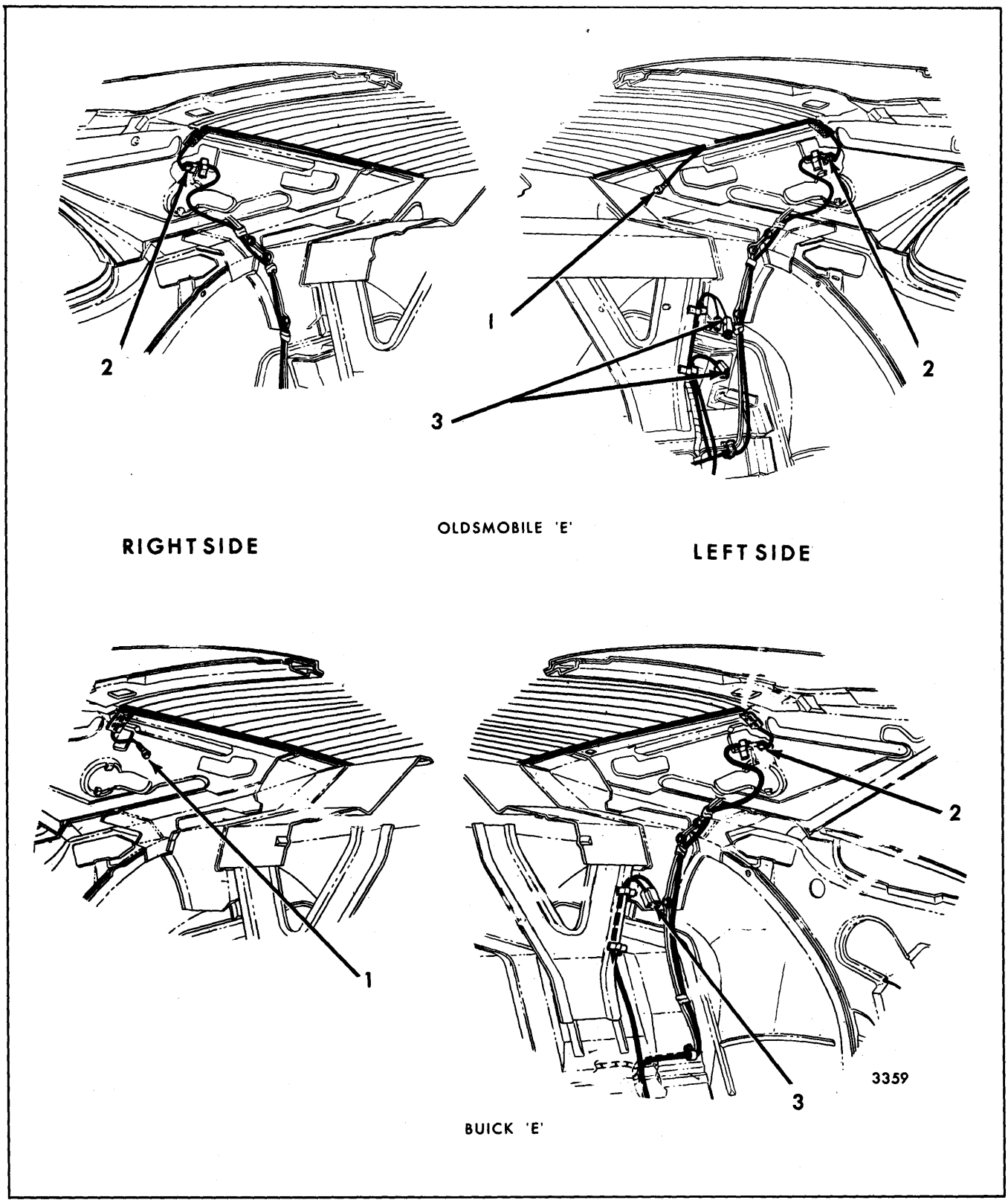


Fig. 16-47—Electric Back Window Grid Defogger

1. Ground Connector
2. Feed Connectors
3. Timer Connector

ELECTRIC SEAT BACK LOCK RELEASE

DESCRIPTION

Electric seat back lock release is optional on all 2-door styles equipped with electric door locks. The system utilizes a relay and two solenoids, one each for the driver and passengers seat backs and works in conjunction with the door jamb switches (See Fig. 16-48). When either door is opened, a ground for the lock relay is provided through the door jamb switch. This action closes a set of contacts in the lock relay and allows current to flow to the two grounded solenoids located in the front seat backs, releasing the seat back locks.

Each solenoid incorporates both an "unlock" and a "hold-in" coil. These coils are stacked in tandem around a single plunger and are energized simultaneously. The "unlock" coil draws approximately 14 amps of current and the "hold-in" coil approximately 0.6 amps. When the solenoid plunger reaches its full travel (1/4 inch), it trips an internal limit switch and opens the ground circuit for the "unlock" coil, leaving the "hold-in" coil energized.

When the door(s) is closed the relay contacts open, the solenoid de-energizes and allows the seat back locks to return to the lock position. The seat backs also incorporate a manual over-ride release.

CIRCUIT CHECKING PROCEDURES

a. Checking Seat Back Lock Release Relay

1. With test light, check orange-black feed wire at relay without removing connector. If there is no light, a short or open circuit exists in the feed wire.

   NOTE: Insert test prod from harness side of connector.

2. Check yellow wire at relay. If no light, replace relay.

b. Checking Door Jamb Switches

1. Insert jumper wire into yellow wire socket and ground. If a "click" is heard, check jamb wiring and connections.

   NOTE: "Click" sound at relay indicates energizing of relay.

2. Disconnect yellow wire from affected door jamb switch and ground. If relay "click" is heard, replace switch.

c. Checking Seat Solenoid

1. With relay energized, insert test prod into black wire socket in relay connector. If no light, replace relay.

2. Remove seat back panel (refer to Seat Section) and insert prod into solenoid connector. If no light, check for open or short circuit.

3. If lamp lights and solenoid is properly grounded, replace solenoid.

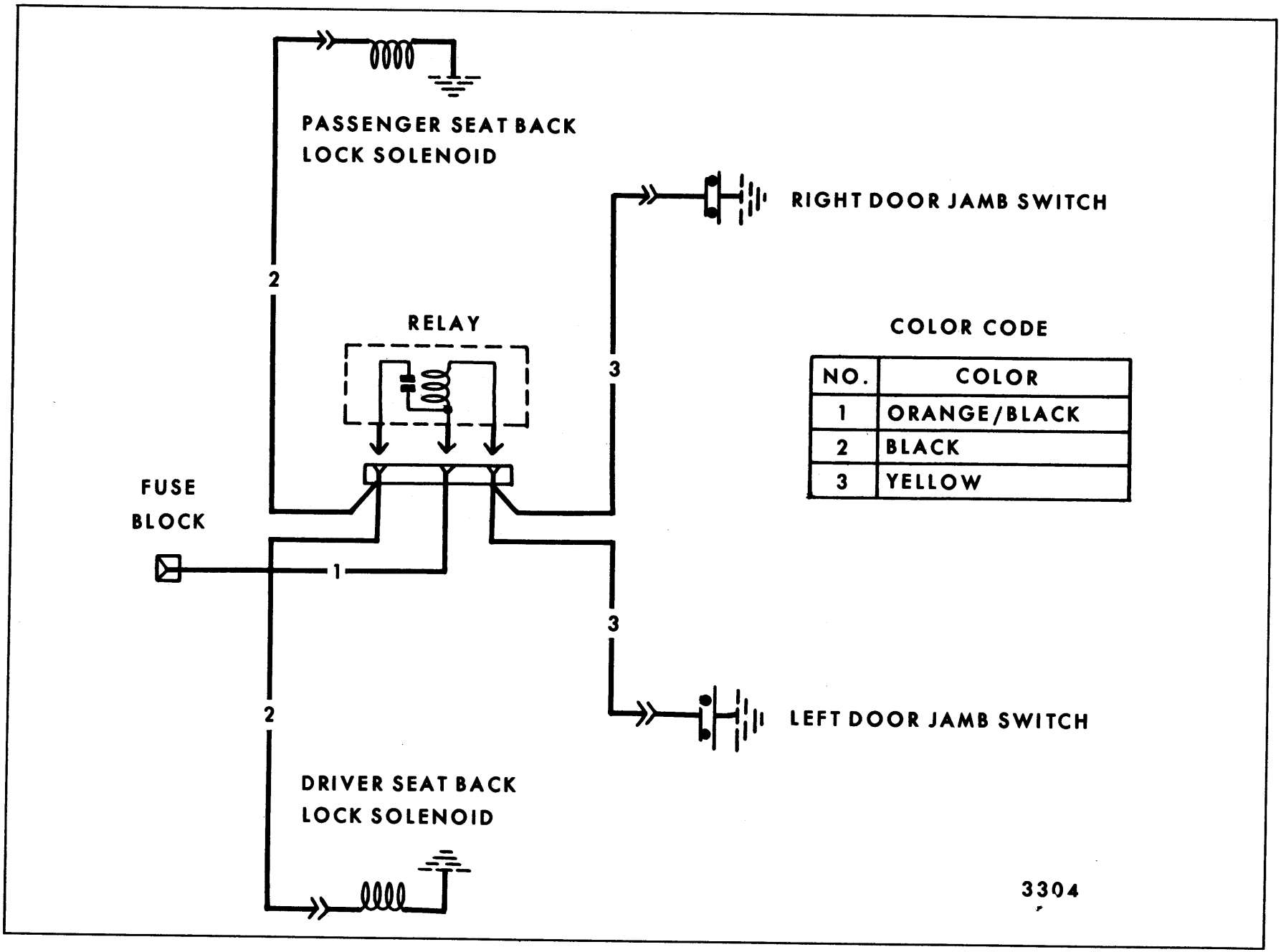


Fig. 16-48—Electric Seat Back Release Wiring Diagram

ELECTRIC DOOR LOCK

DESCRIPTION

The optional electric door lock system incorporates a solenoid for each door and a control for each front door. All doors lock and unlock electrically from either front door control and manually from each door in the conventional manner. Each solenoid has an internal circuit breaker which (under extreme conditions) may require up to three minutes to reset.

CHECKING PROCEDURE

Before beginning electrical checks, be sure system is free of mechanical binds. Refer to Fig. 16-49 for wiring diagram.

a. Electric Door Lock System does not Operate:

1. Check output at fuse block.
   a. Replace fuse if indicated.
2. Remove shroud side trim panel.
3. Check output of power feed at shroud side panel connector.
   a. Locate and repair any short or open feed wiring.

b. System Operates from one Control only:

1. Remove front door trim panel from door with inoperative switch.
2. Check output at switch block feed terminal.
3. Insert jumper from feed to lock (and unlock) position to check for defective switch.
4. Check output at solenoid connector.
   a. Repair wiring if broken or shorted.
   b. Check for properly grounded solenoid.
   c. Replace solenoid if indicated by tests.
5. Remove shroud side trim panel and check connections and wiring.

c. Rear Door Lock only, does not Operate in either or both Positions:

(Have assistant operate control switch while the following checks are performed).

1. Remove center pillar trim panel.
2. Check output at center pillar connector for lock and unlock positions.
3. Remove rear door trim panel.
4. Check output at solenoid connector (both positions).
   a. Check solenoid for proper ground.
   b. Replace solenoid if indicated by tests.

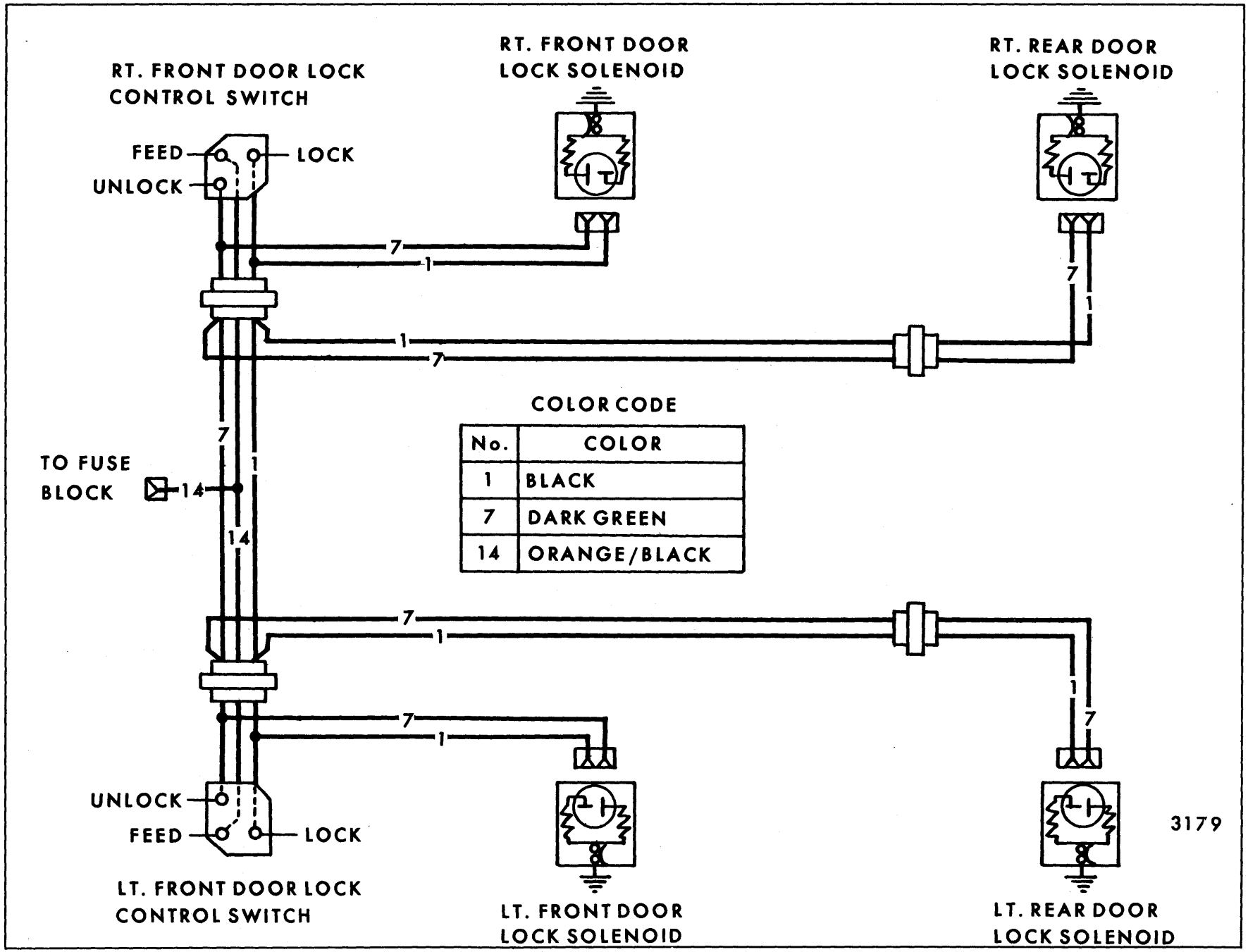


Fig. 16-49—Electric Door Lock Wiring Diagram

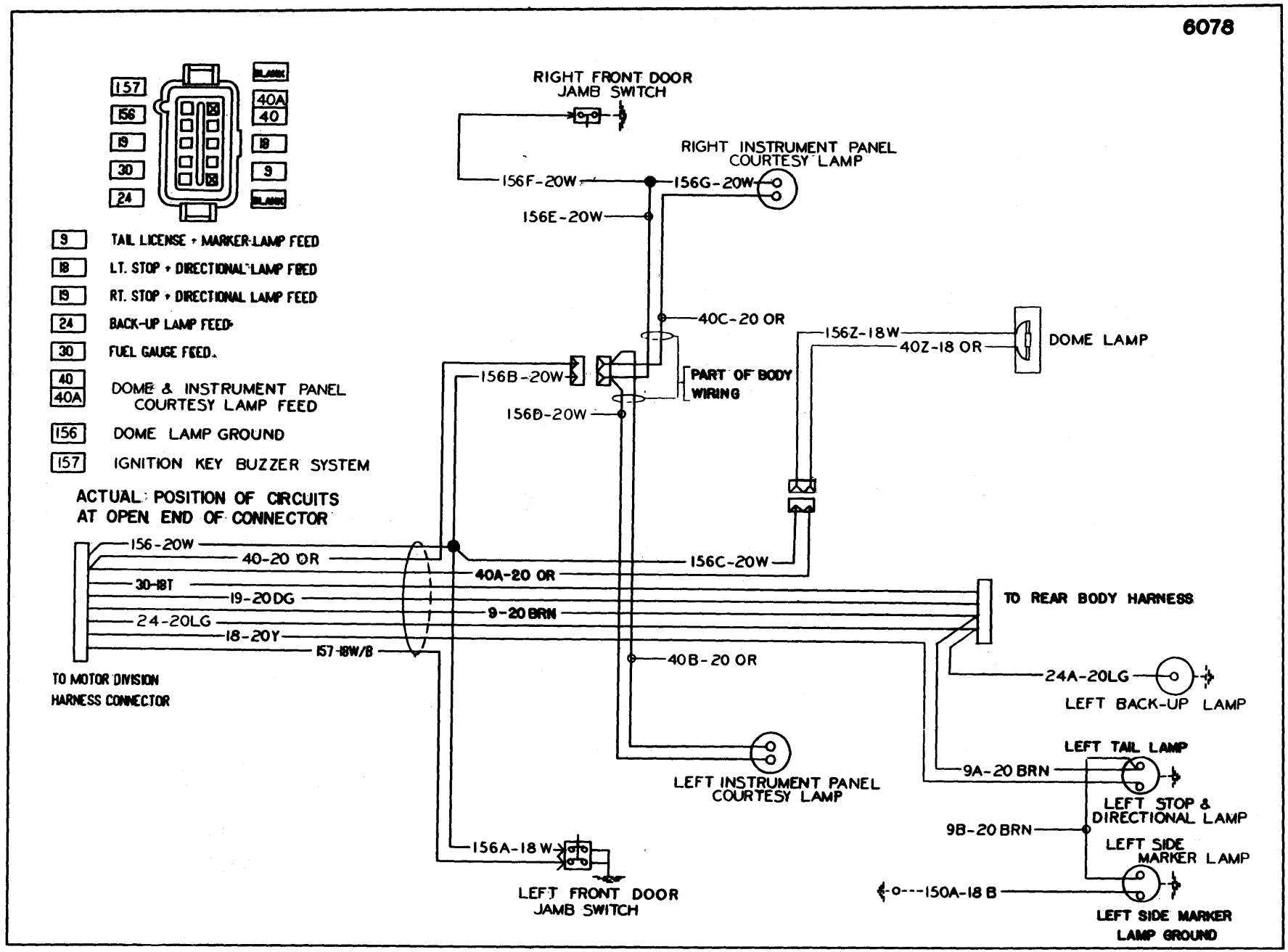


Fig. 16-50—Wiring Diagram Front - Chevrolet "X" Styles

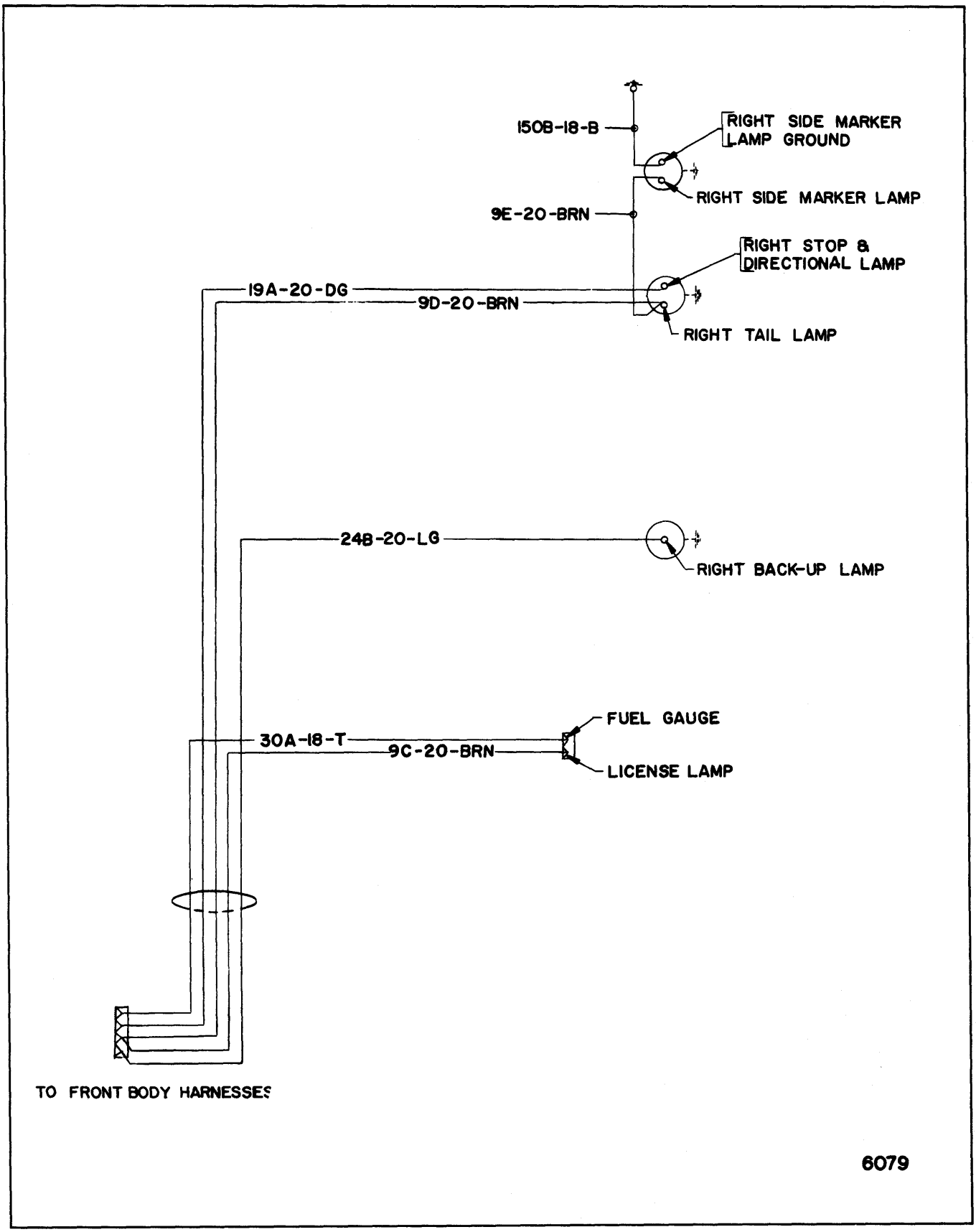


Fig. 16-51—Wiring Diagram Rear - Chevrolet "X" Styles

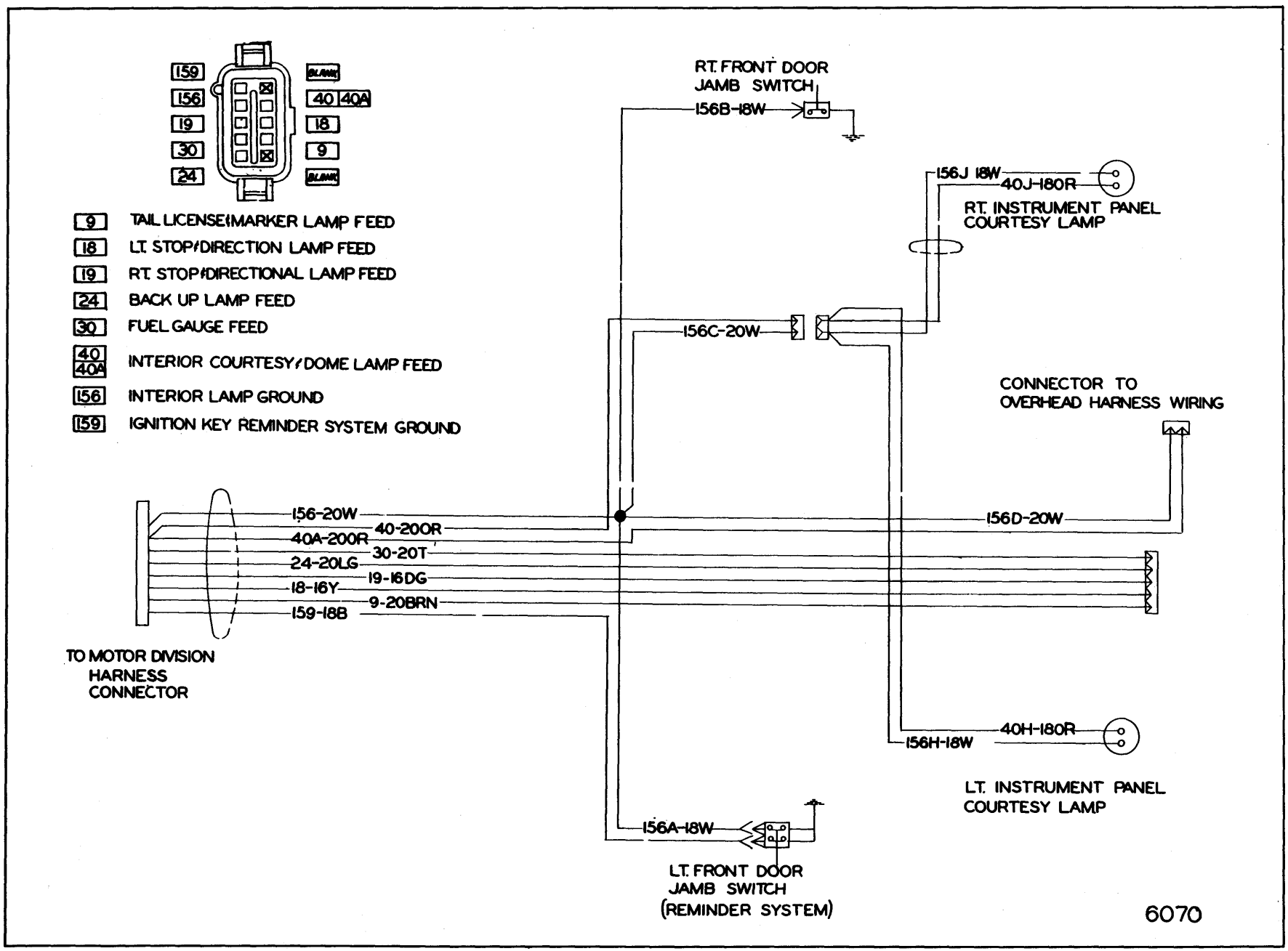


Fig. 16-52—Wiring Diagram Front - Chevrolet "F" Styles

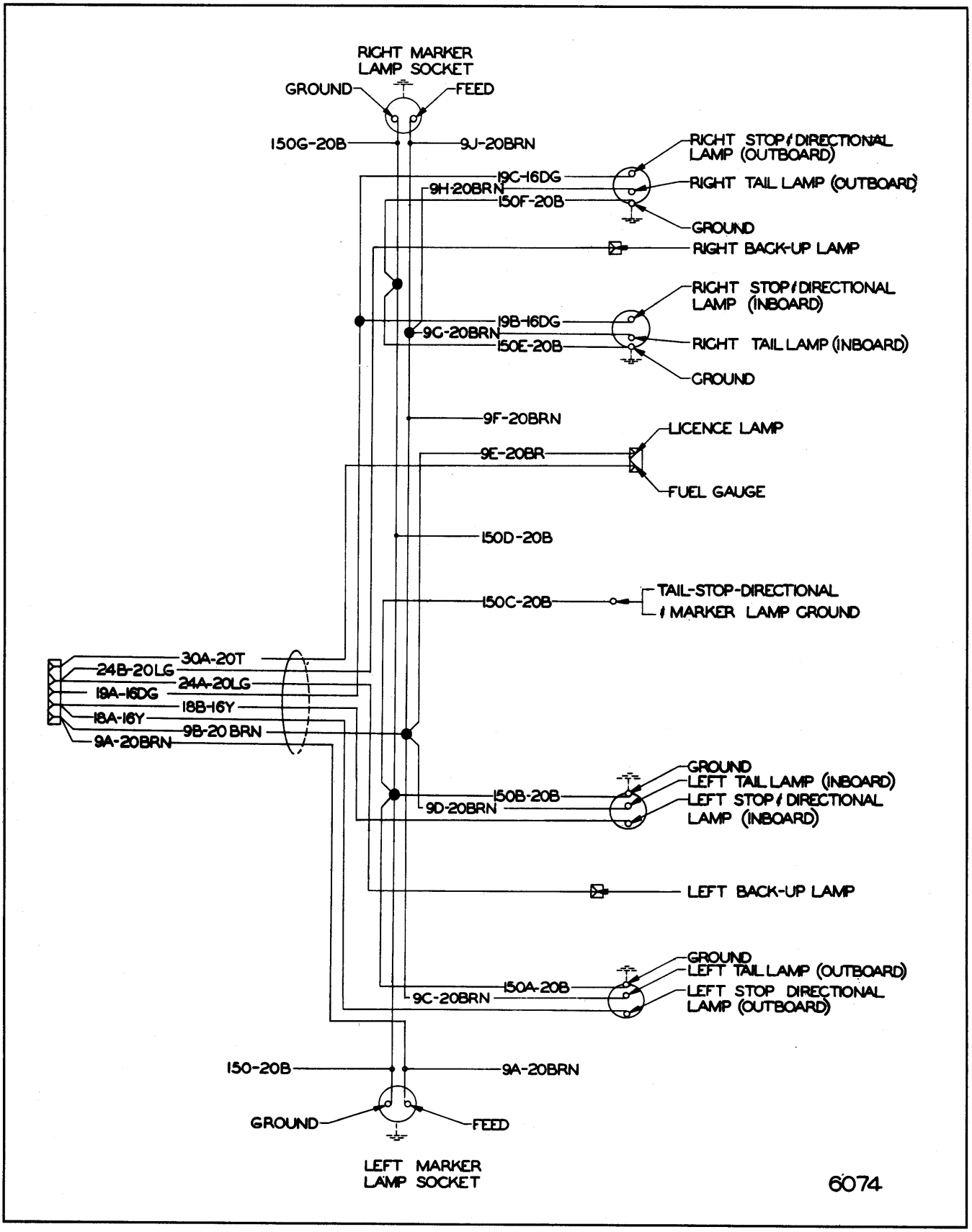


Fig. 16-53—Wiring Diagram Rear - Chevrolet "F" Styles

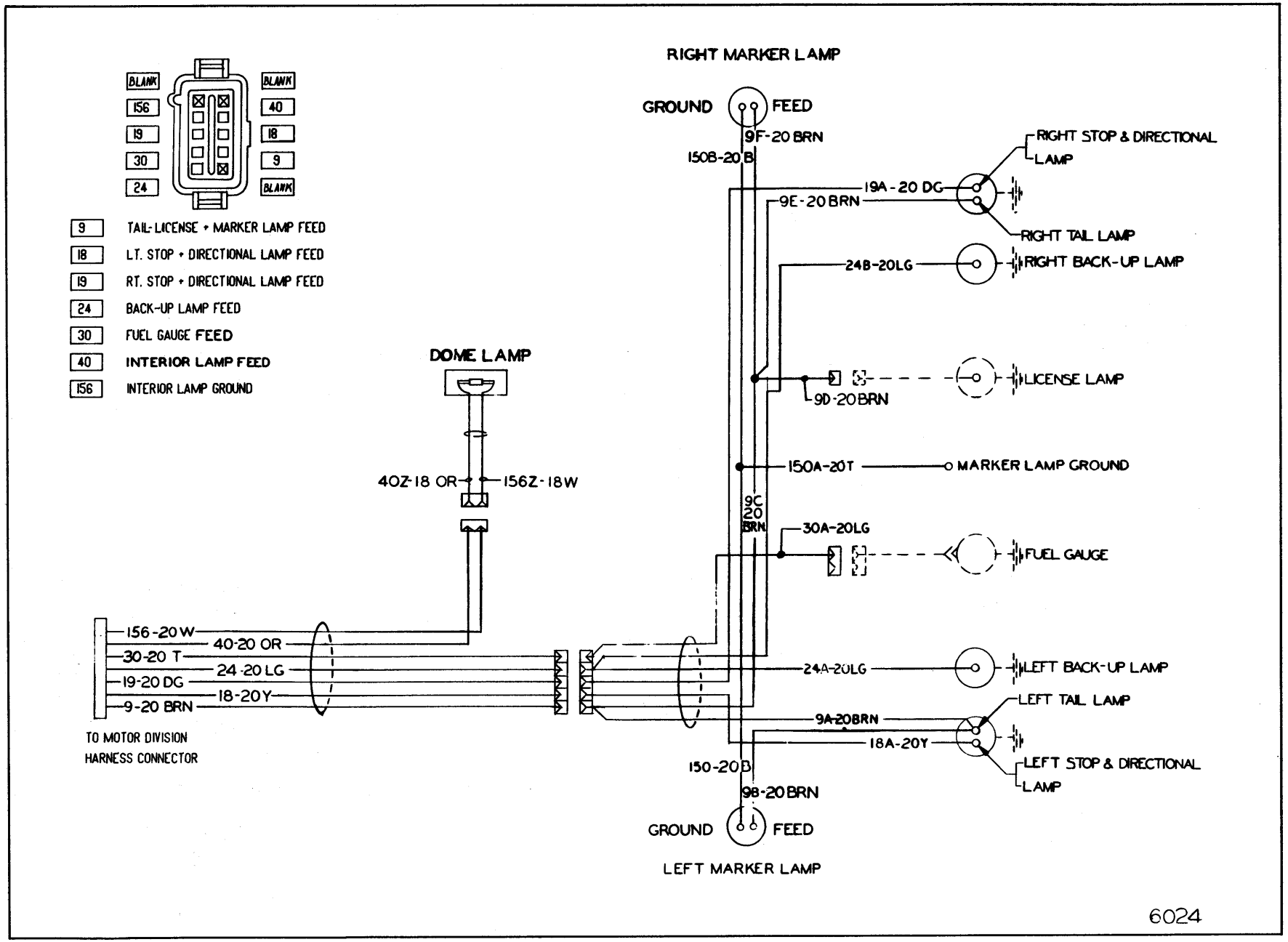


Fig. 16-54—Wiring Diagram - Chevrolet "A" Styles

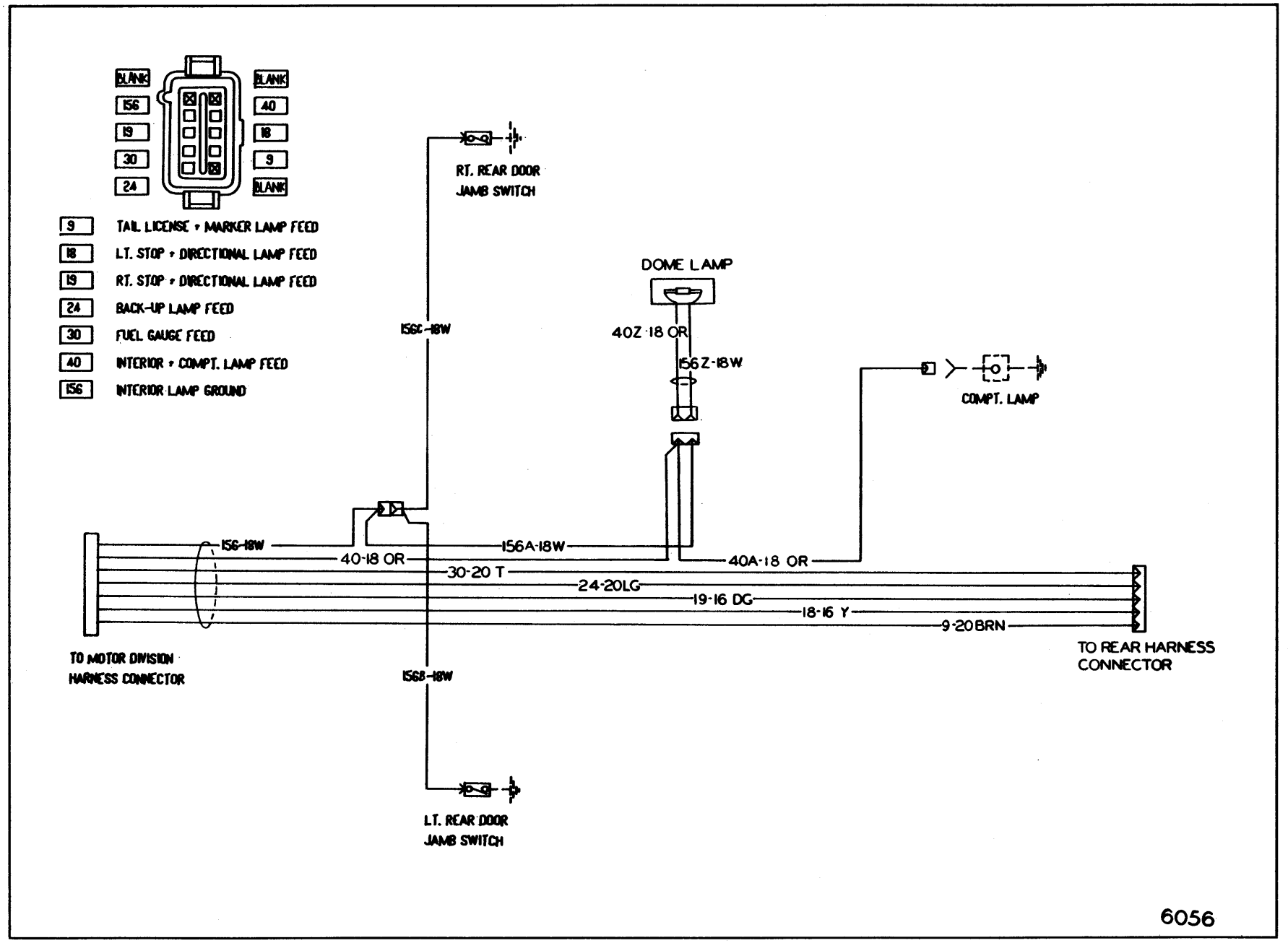


Fig. 16-55—Wiring Diagram Front - Chevrolet "B" Styles

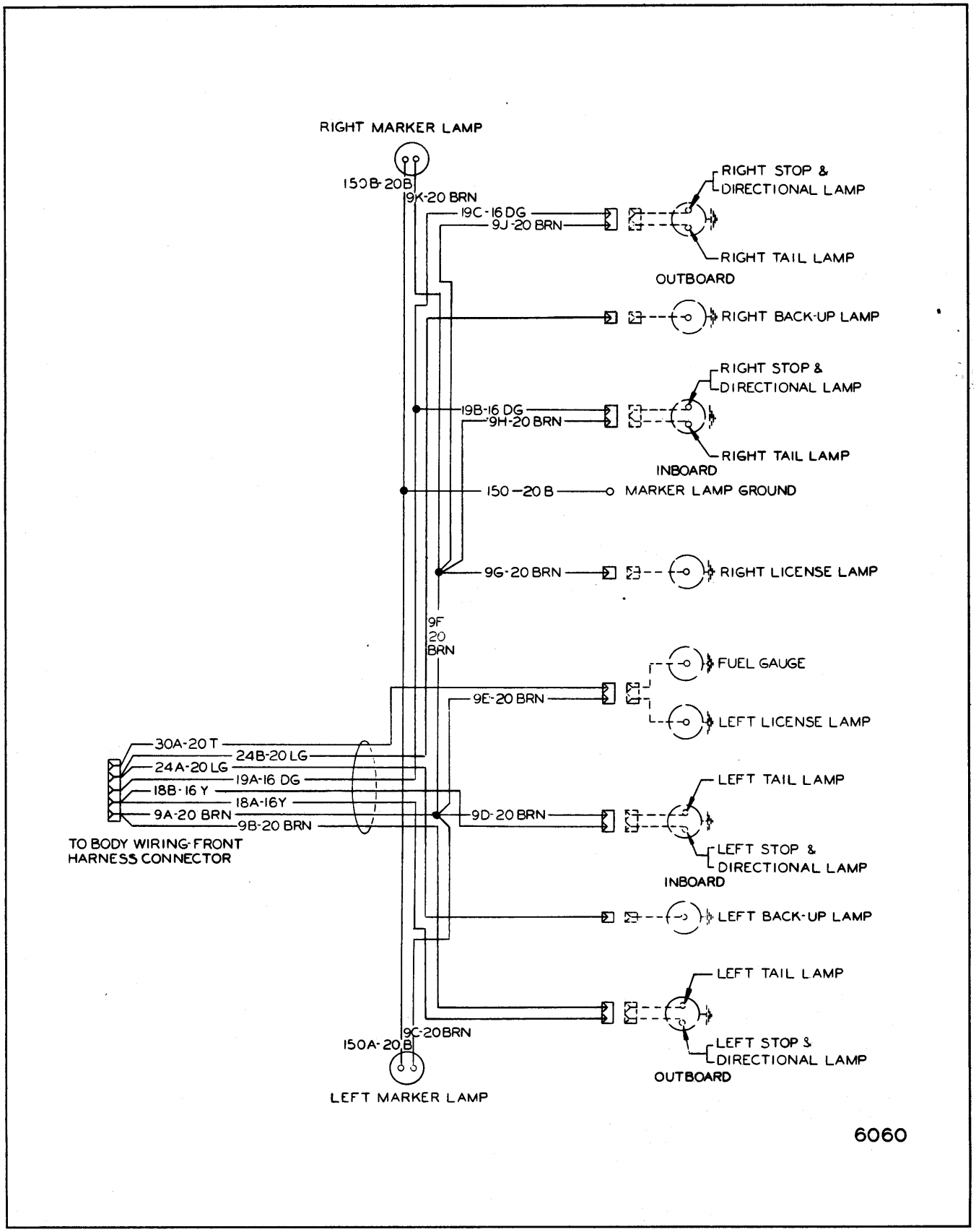


Fig. 16-56—Wiring Diagram Rear - Chevrolet "B" Styles

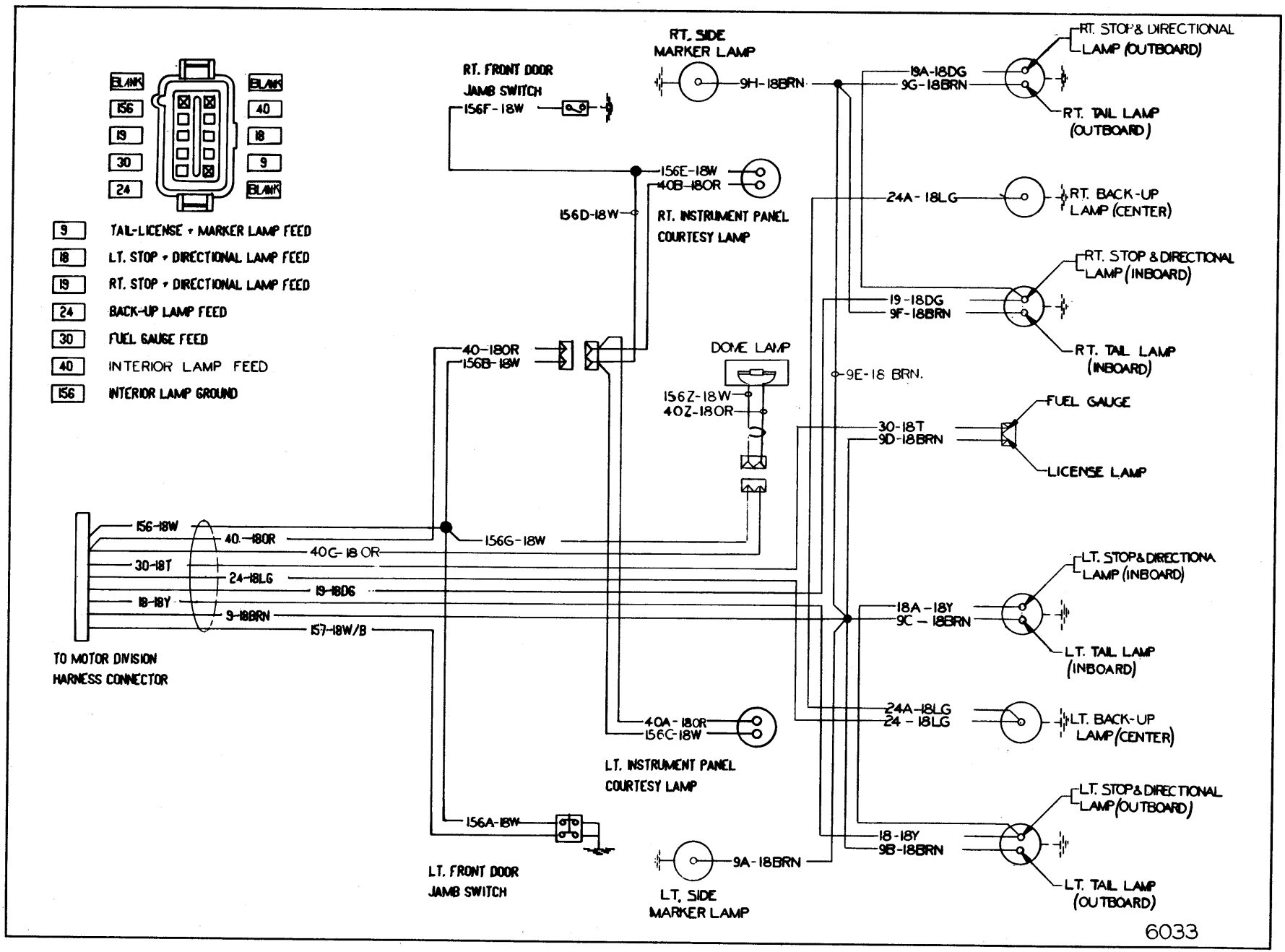


Fig. 16-57—Wiring Diagram - Pontiac "F" Styles

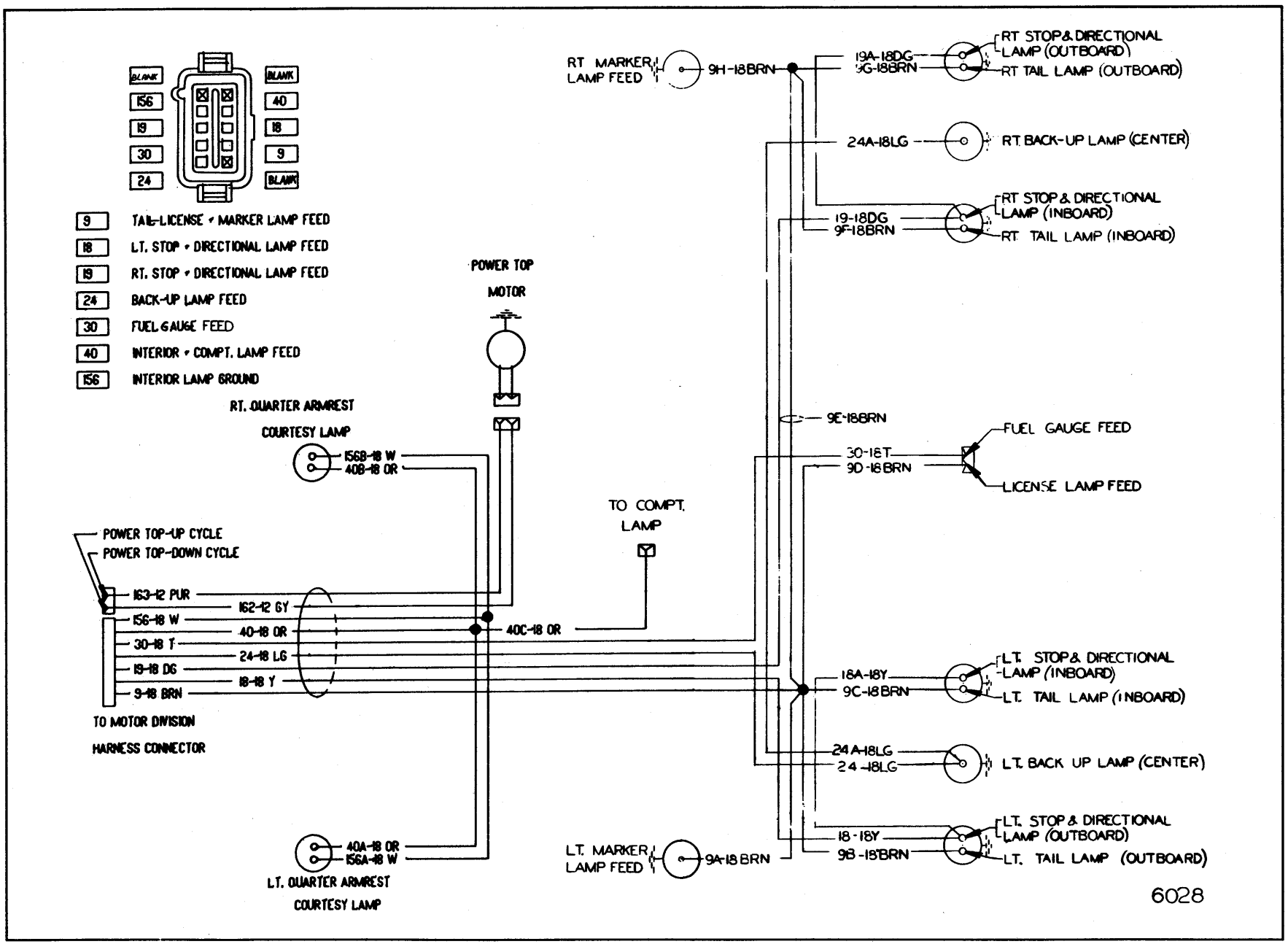


Fig. 16-58—Wiring Diagram - Pontiac "A" Styles

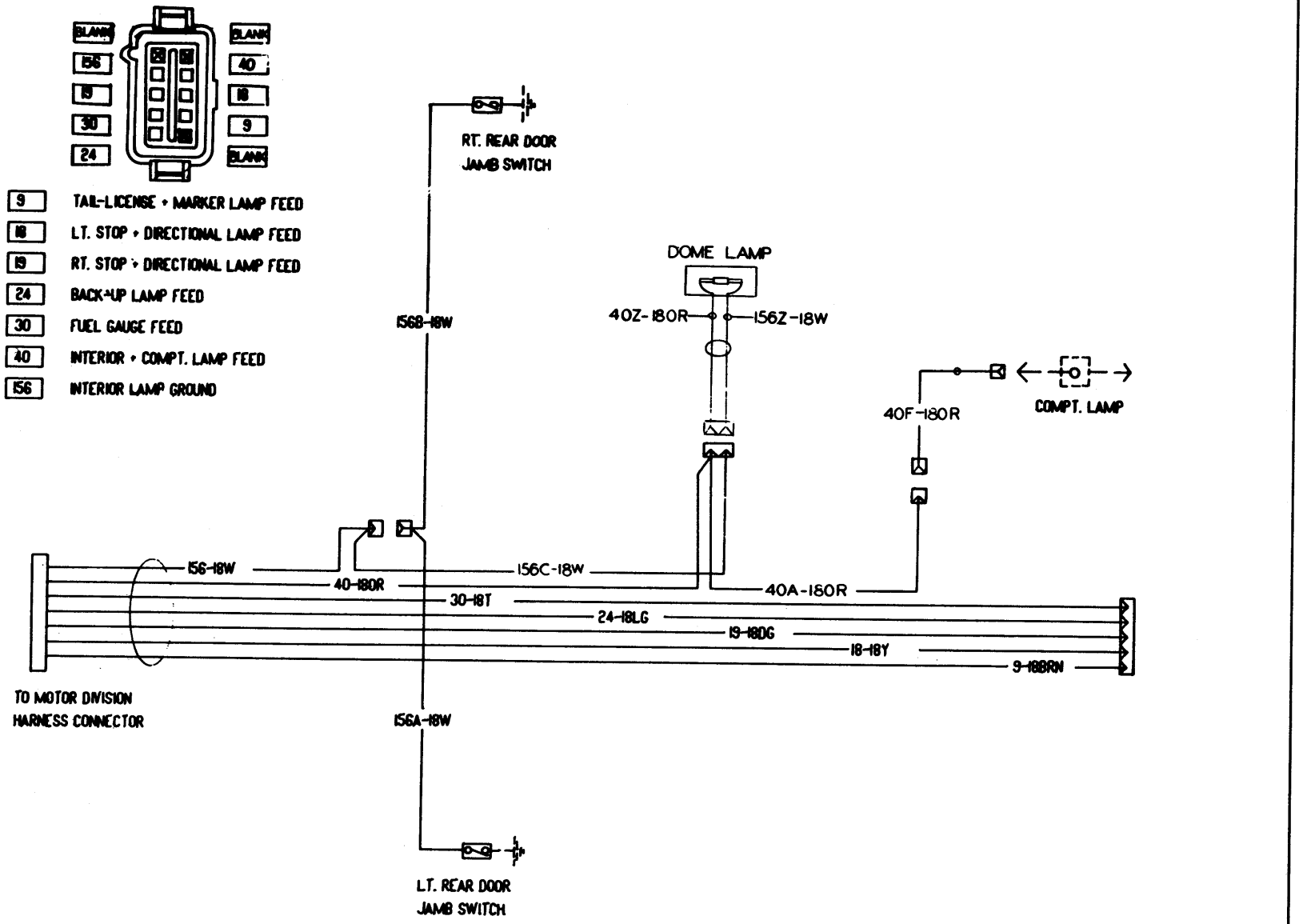


Fig. 16-59—Wiring Diagram Front - Pontiac "B" Styles

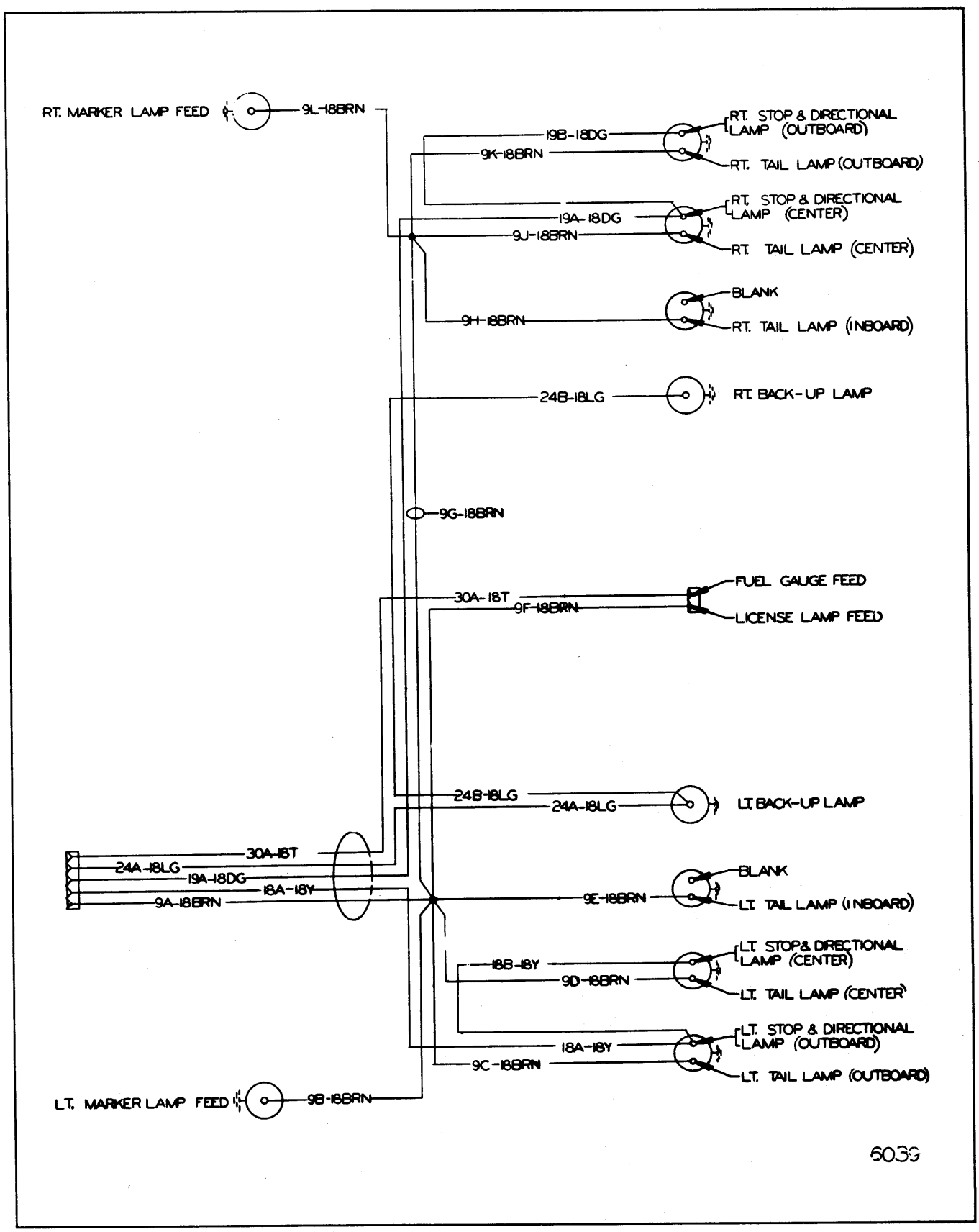


Fig. 16-60—Wiring Diagram Rear - Pontiac "B" Styles

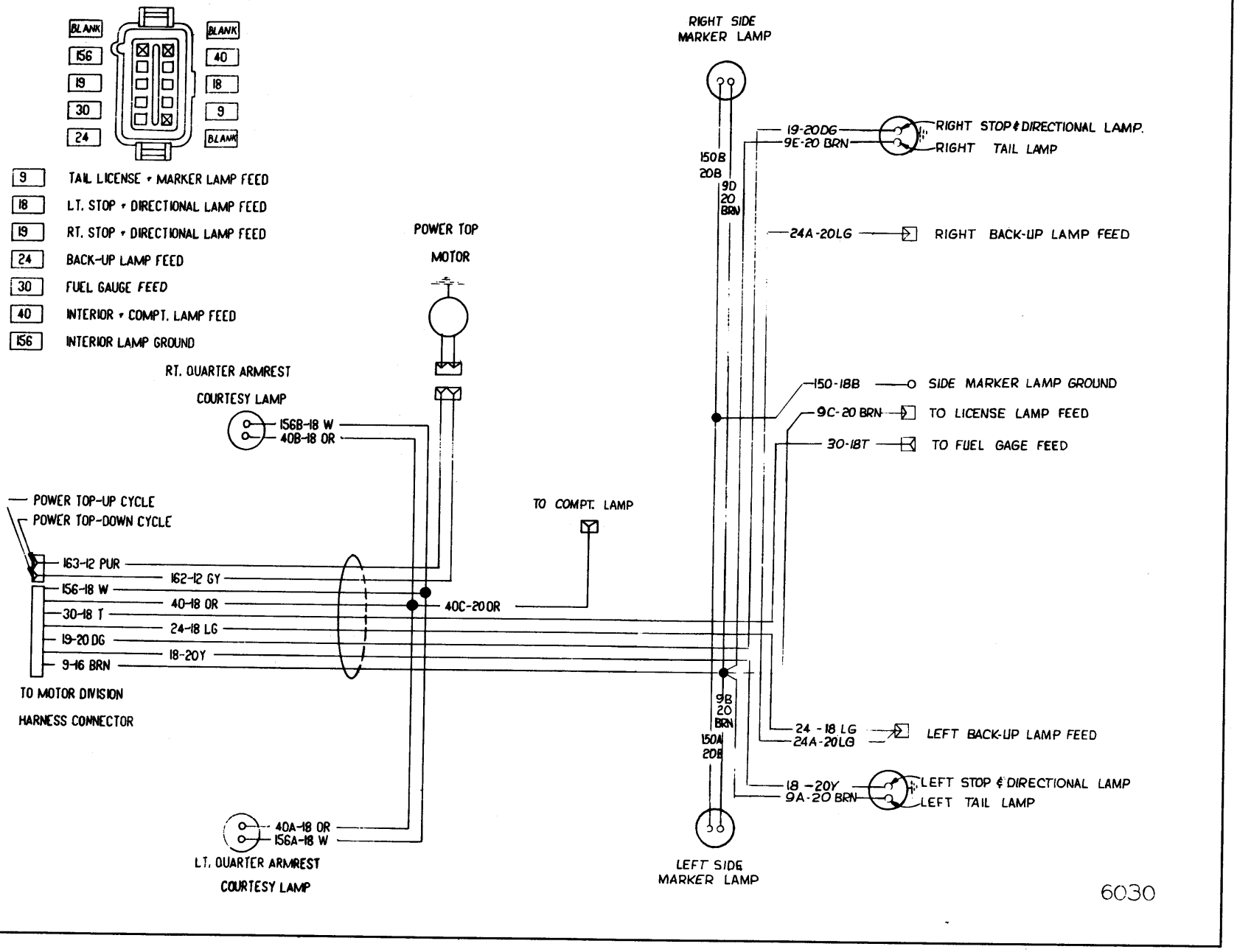


Fig. 16-61—Wiring Diagram - Oldsmobile "A" Styles

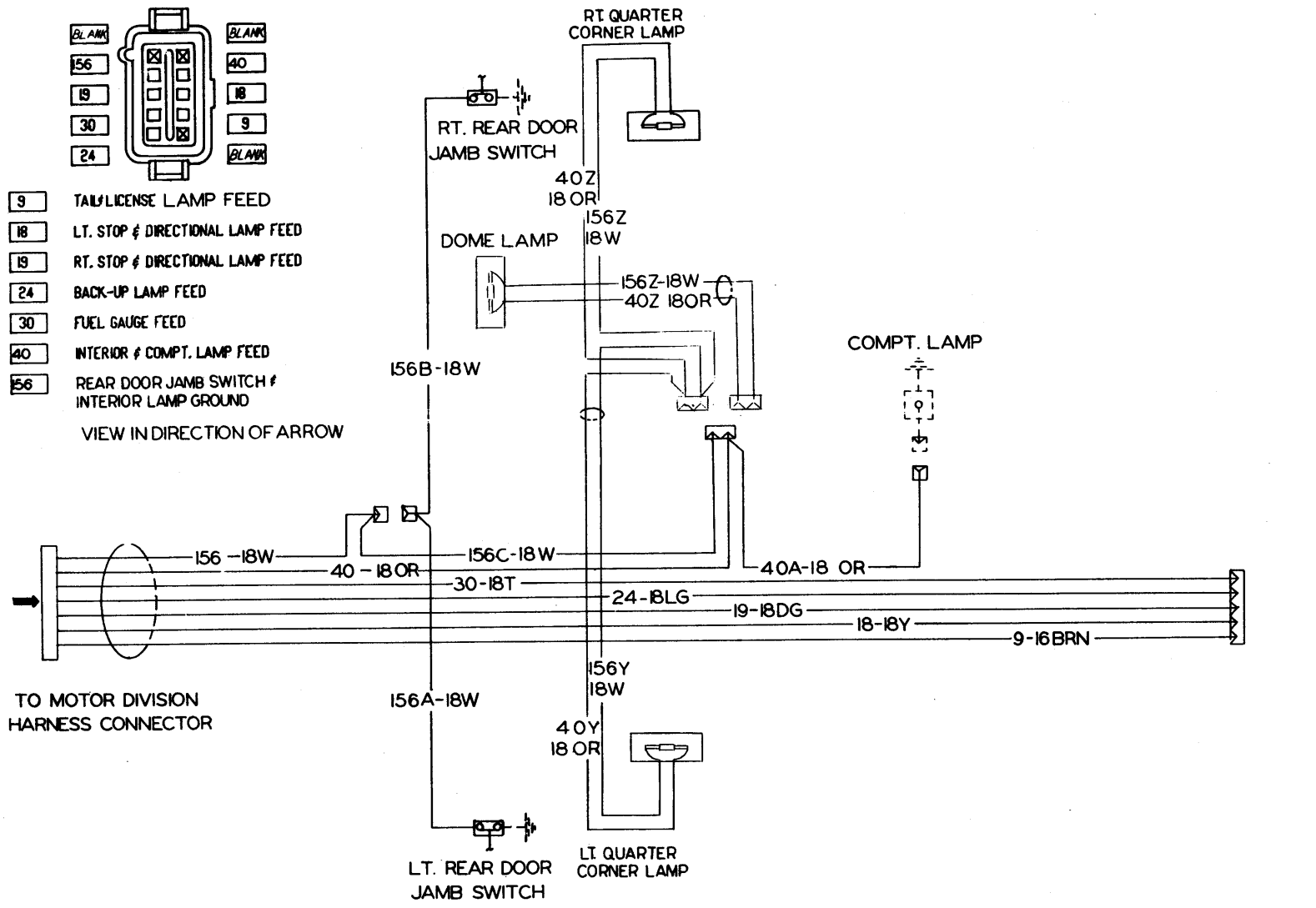


Fig. 16-62—Wiring Diagram Front - Oldsmobile "B" Styles

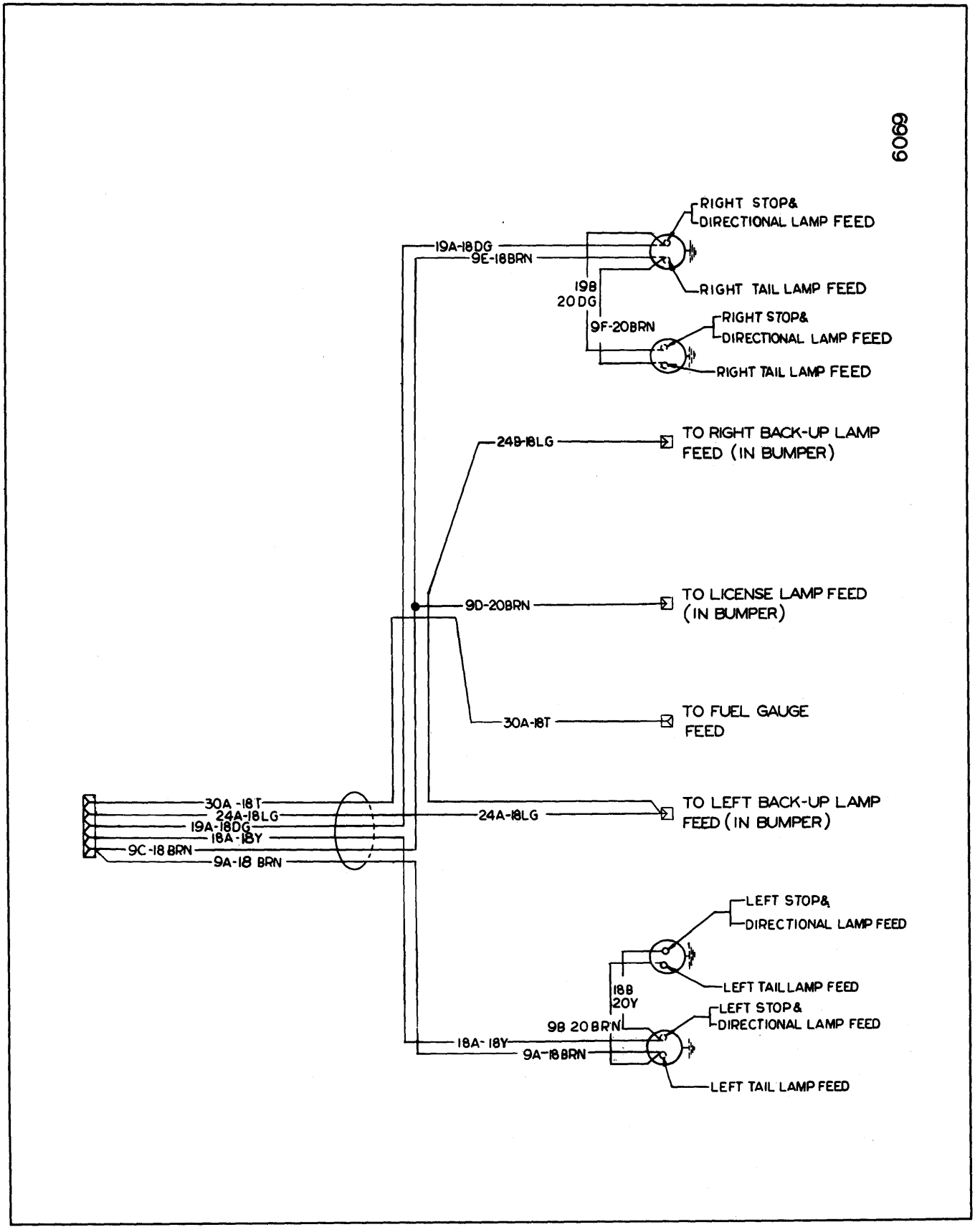


Fig. 16-63—Wiring Diagram Rear - Oldsmobile "B" Styles

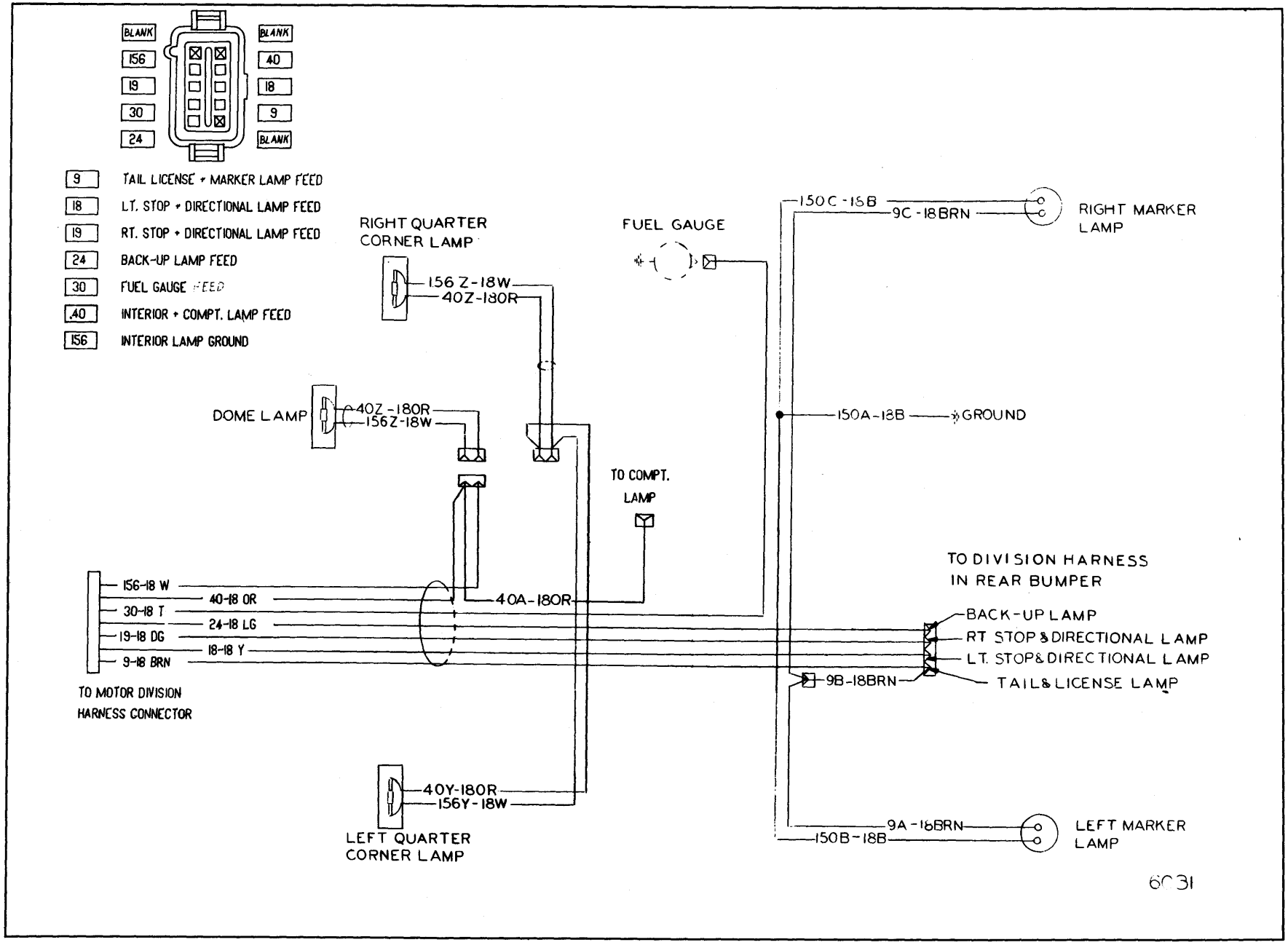


Fig. 16-64—Wiring Diagram - Buick "A" Styles

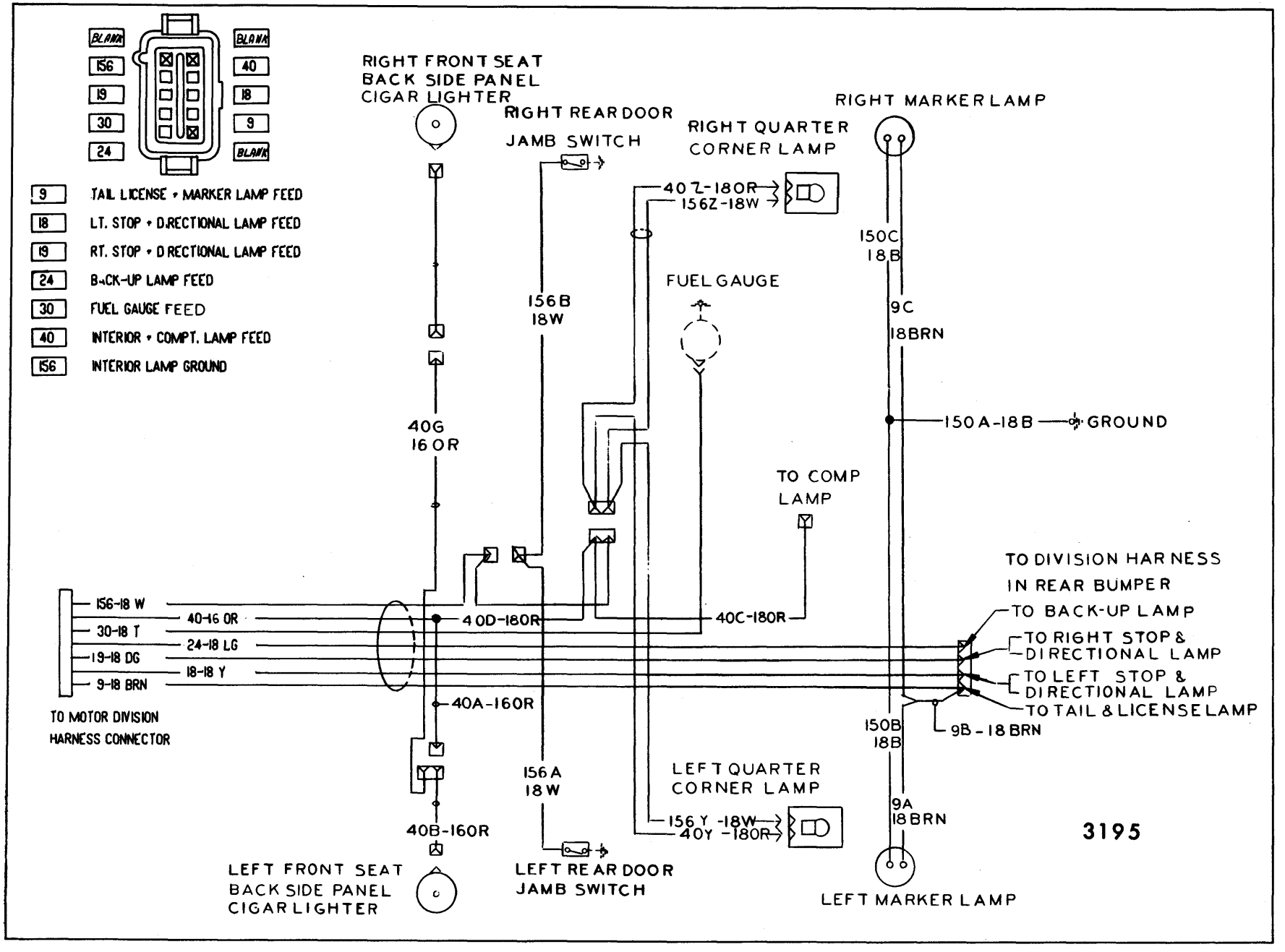


Fig. 16-65—Wiring Diagram - Buick "B" Styles

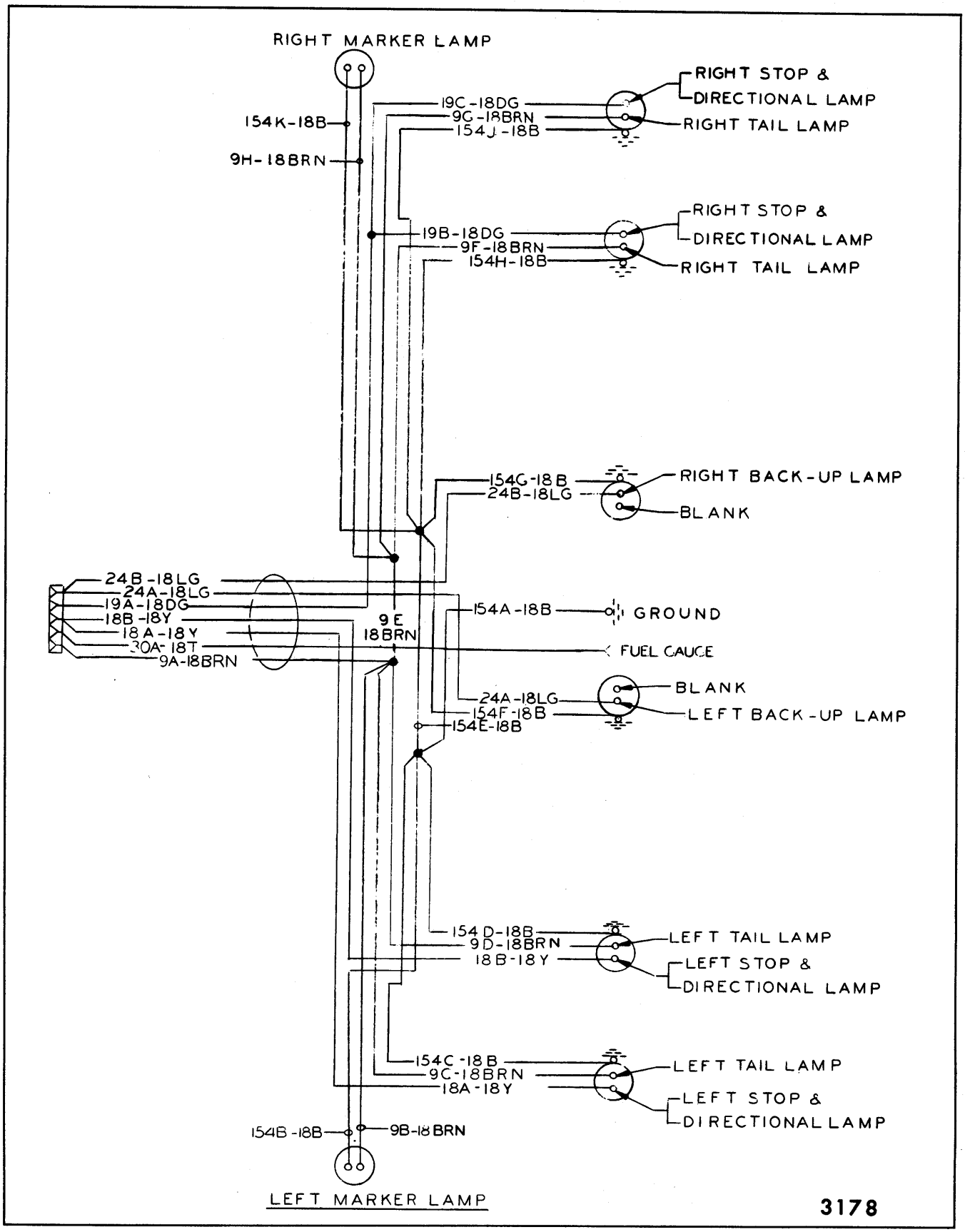


Fig. 16-66—Wiring Diagram Rear - Buick "C" Styles

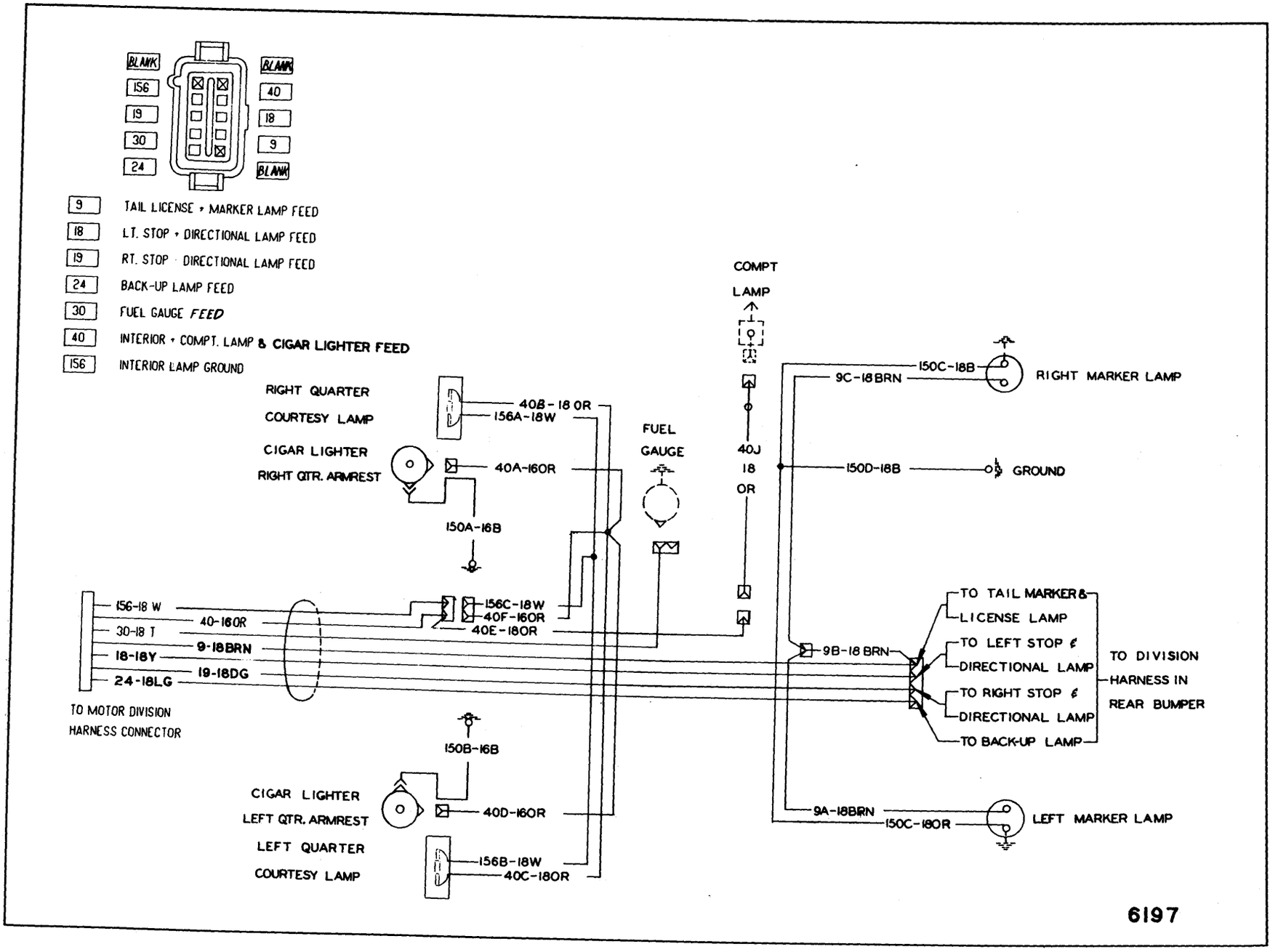


Fig. 16-67—Wiring Diagram - Buick "E" Styles

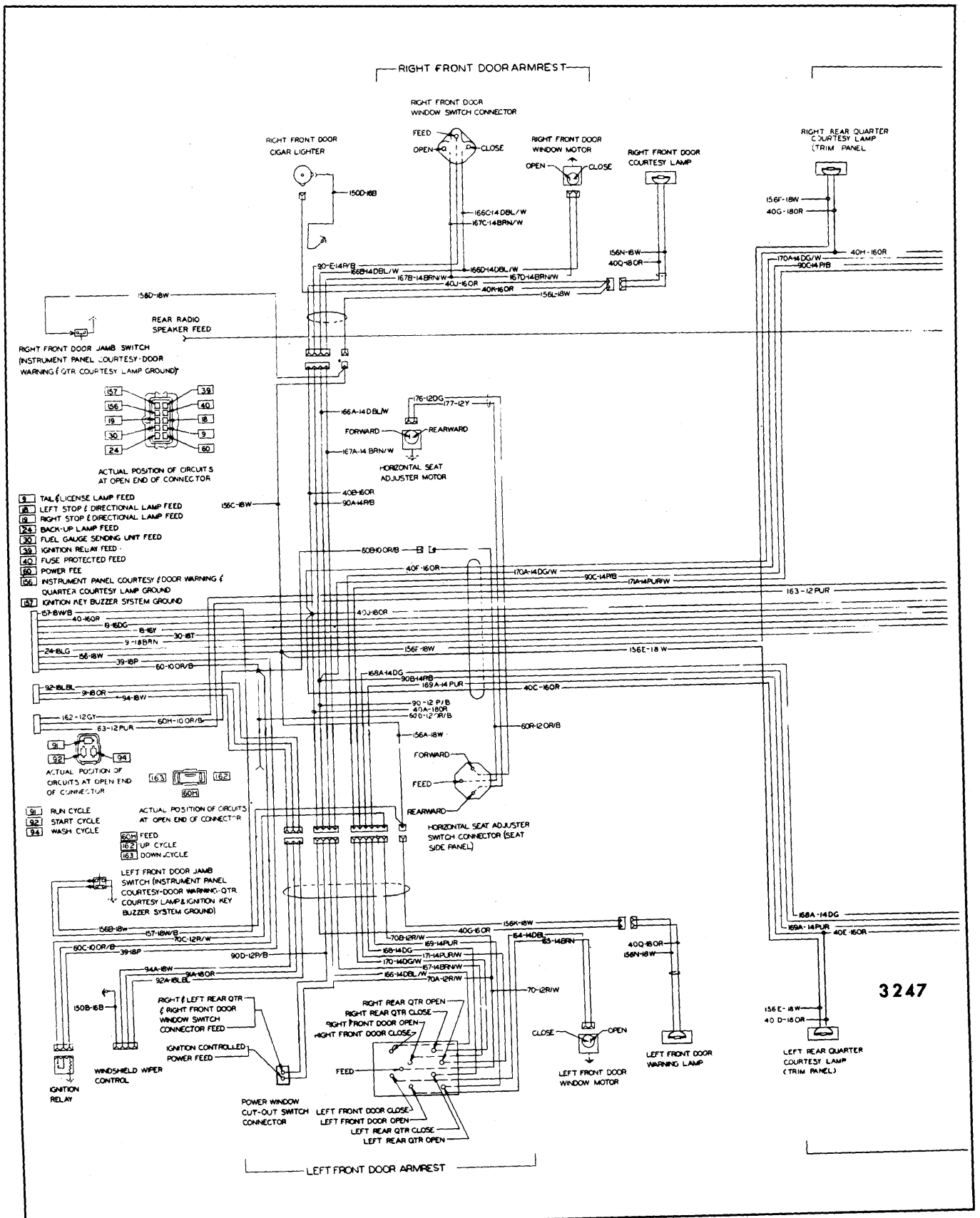


Fig. 16-68—Wiring Diagram - Cadillac "C-67" Styles

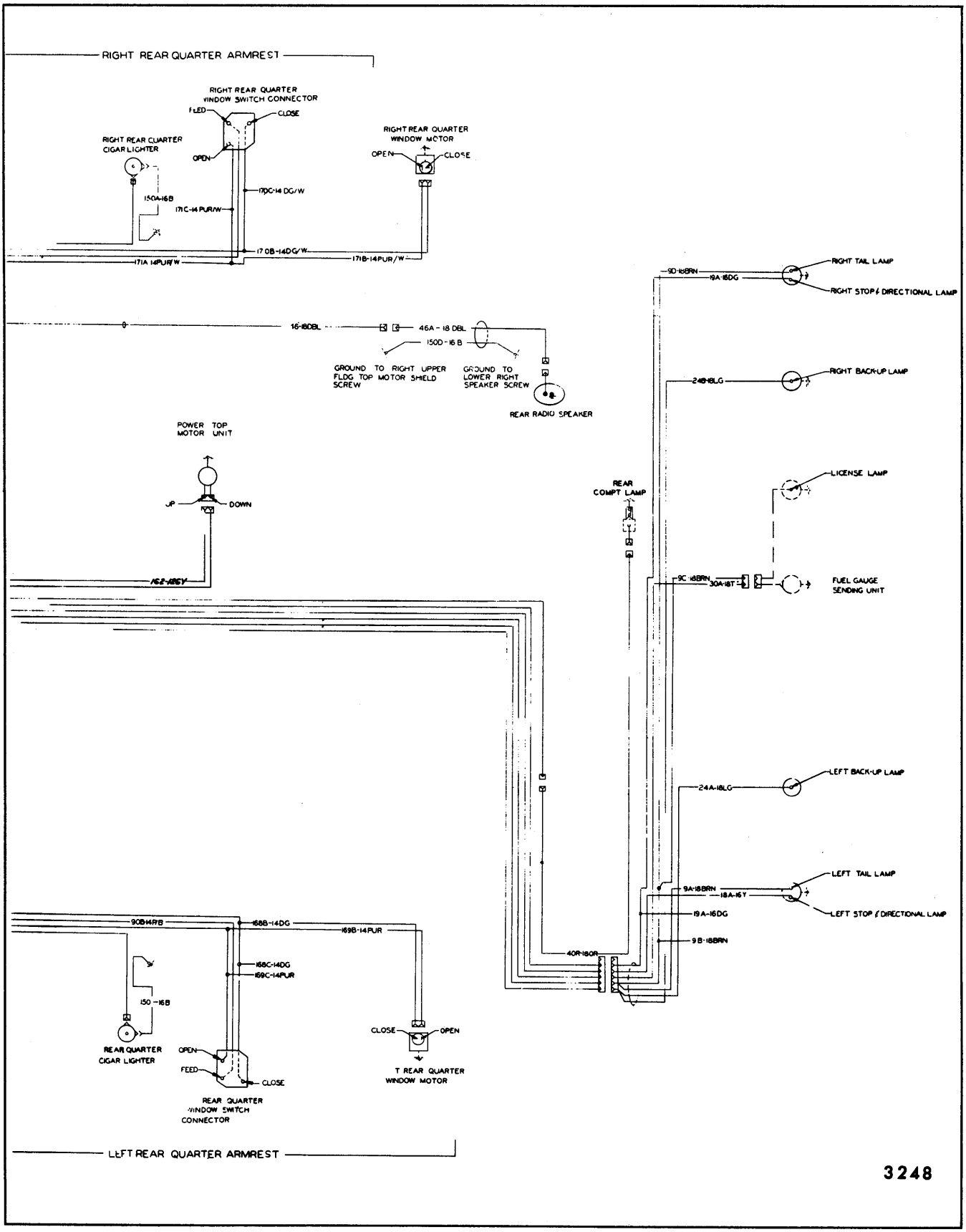


Fig. 16-69—Wiring Diagram - Cadillac "C-67" Styles

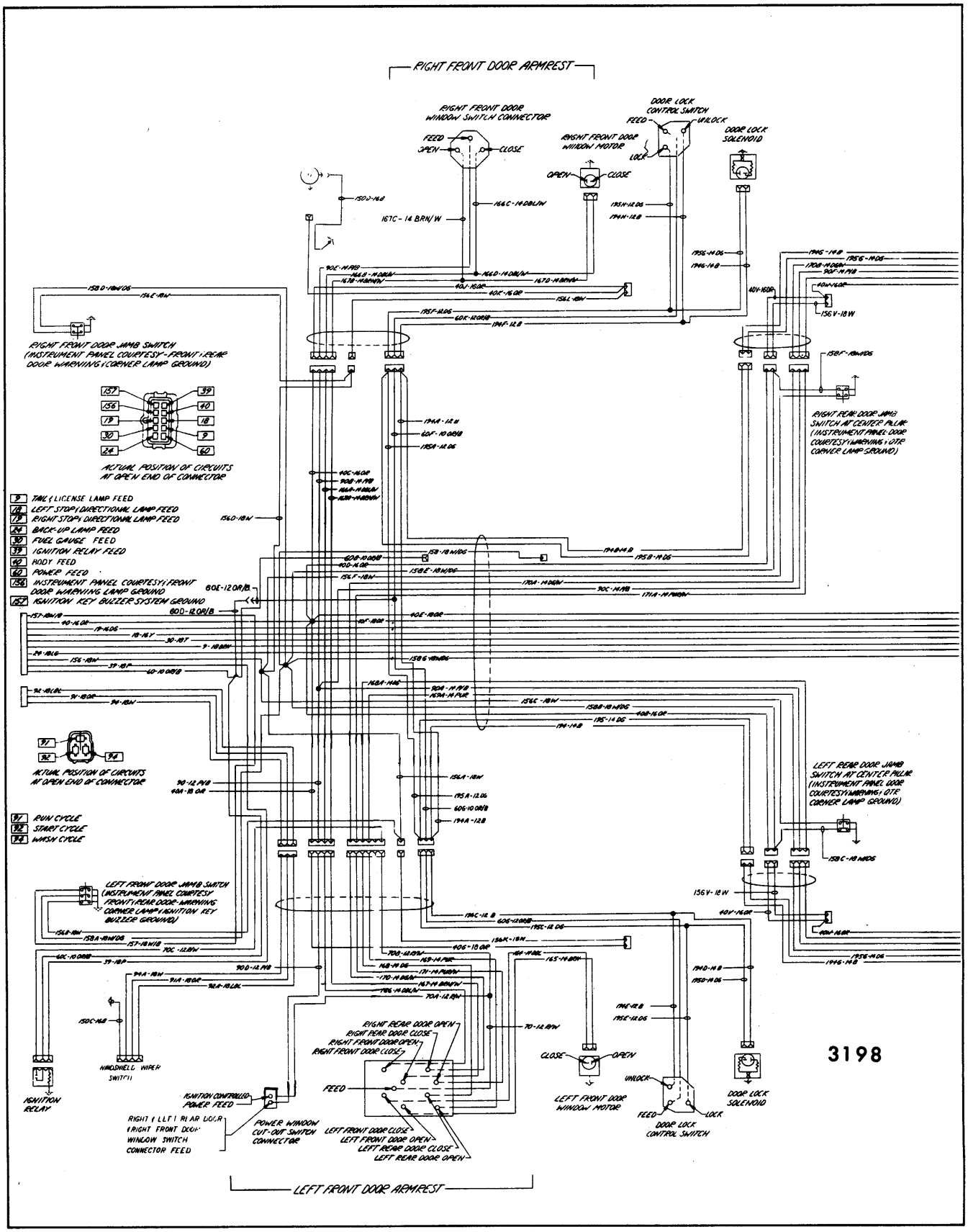


Fig. 16-70—Wiring Diagram - Cadillac "68069" Style

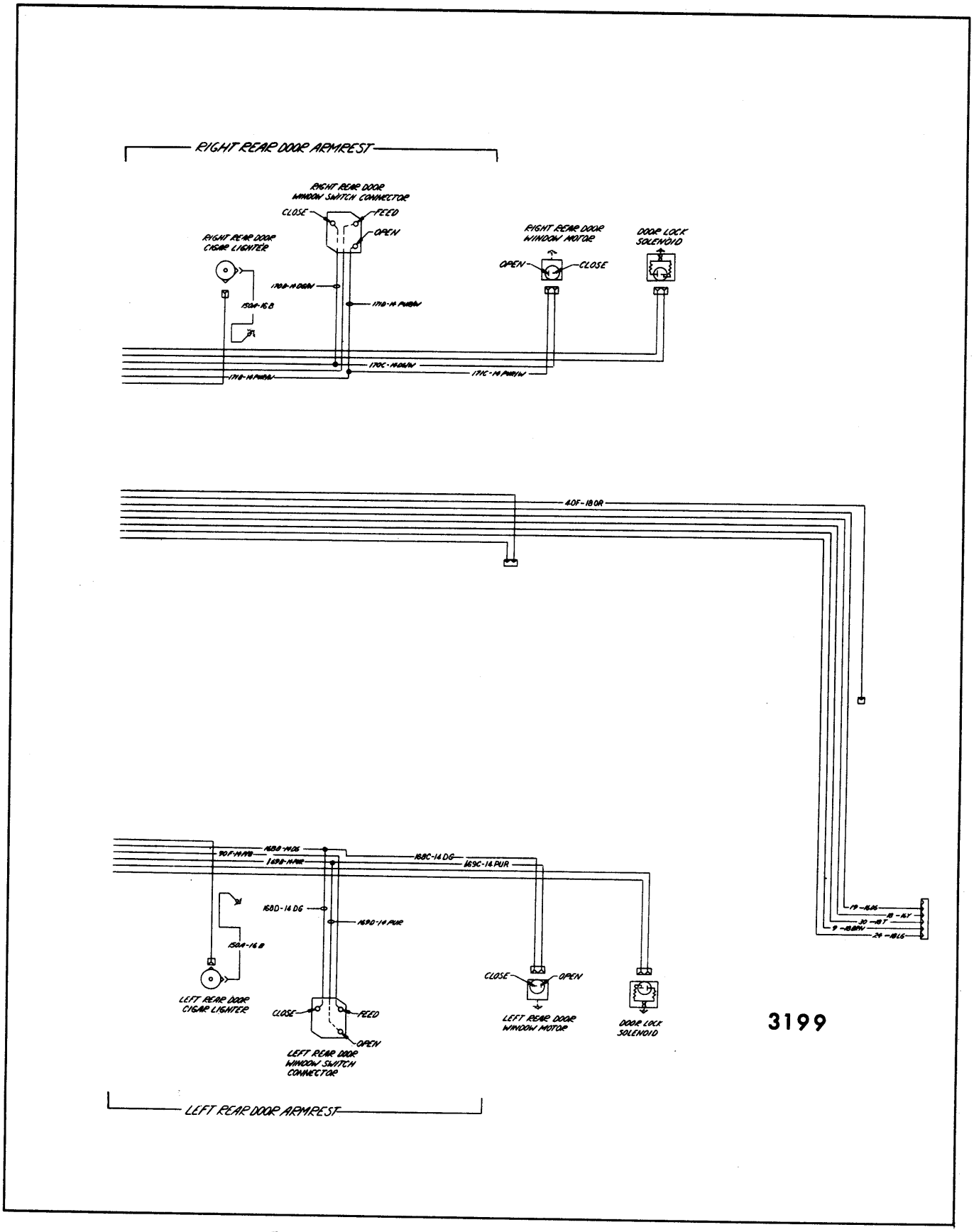


Fig. 16-71—Wiring Diagram - Cadillac "68069" Style

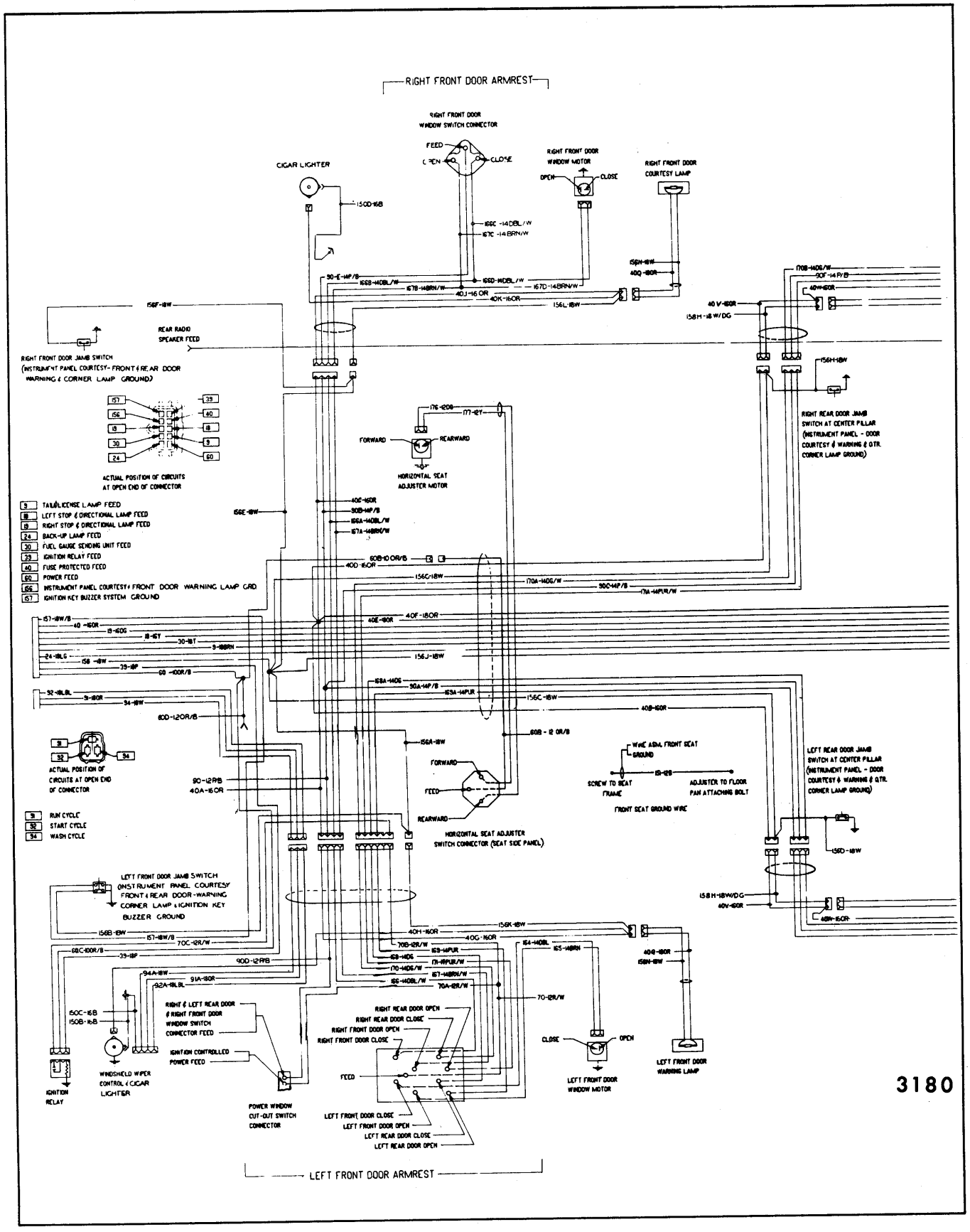


Fig. 16-72—Wiring Diagram - Cadillac "68169" Style

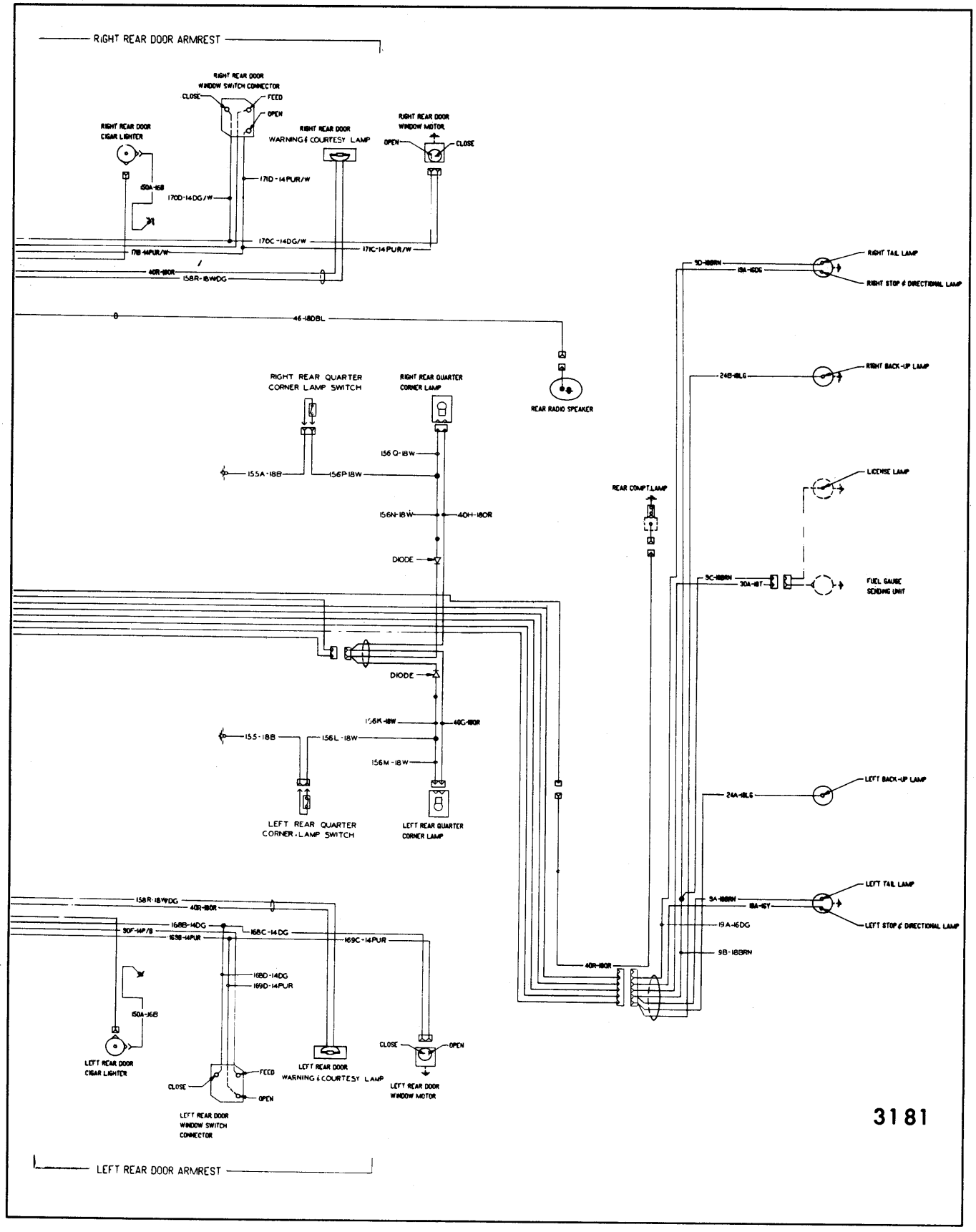


Fig. 16-73—Wiring Diagram - Cadillac "68169" Style

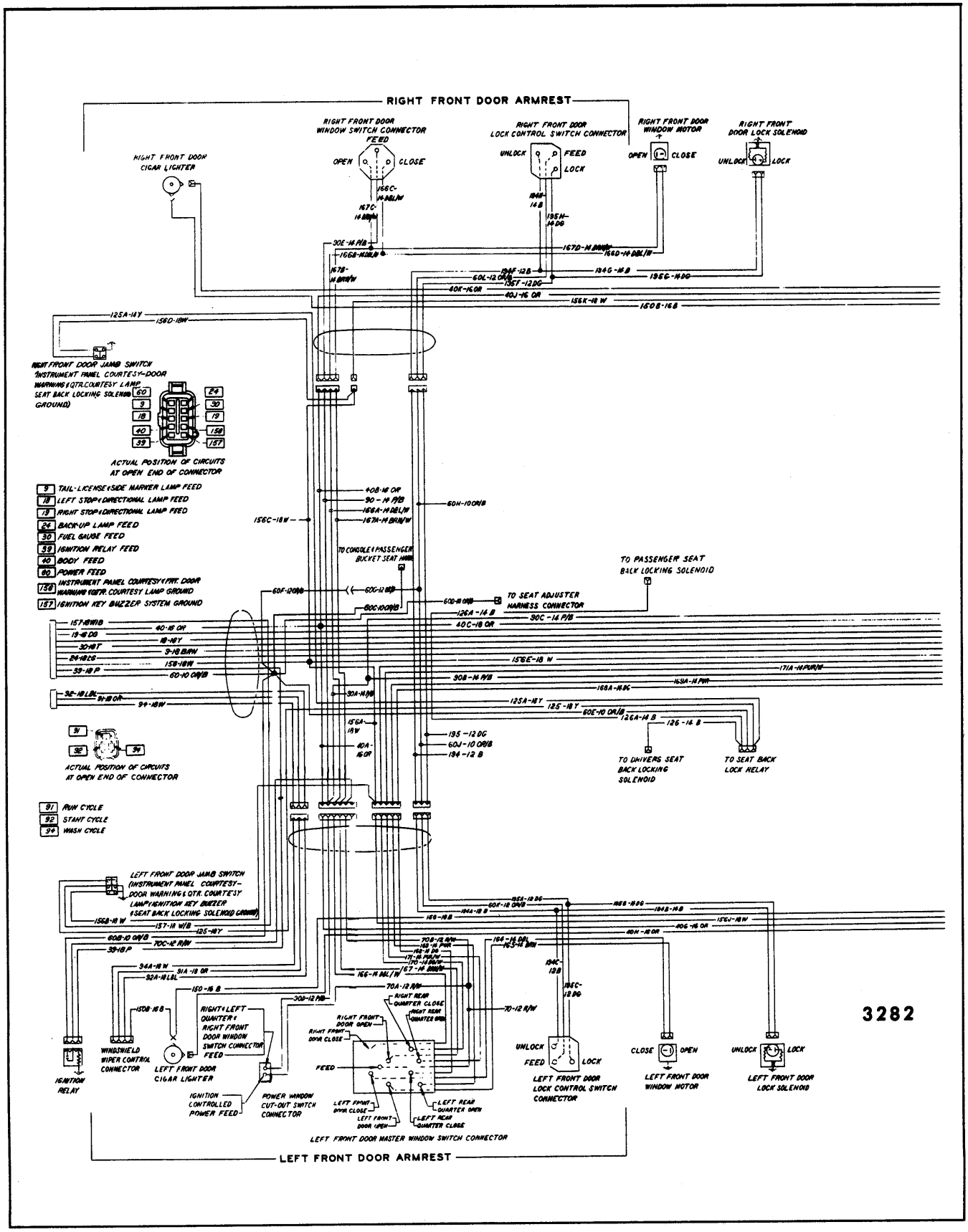


Fig. 16-74—Wiring Diagram - Cadillac "E" Styles

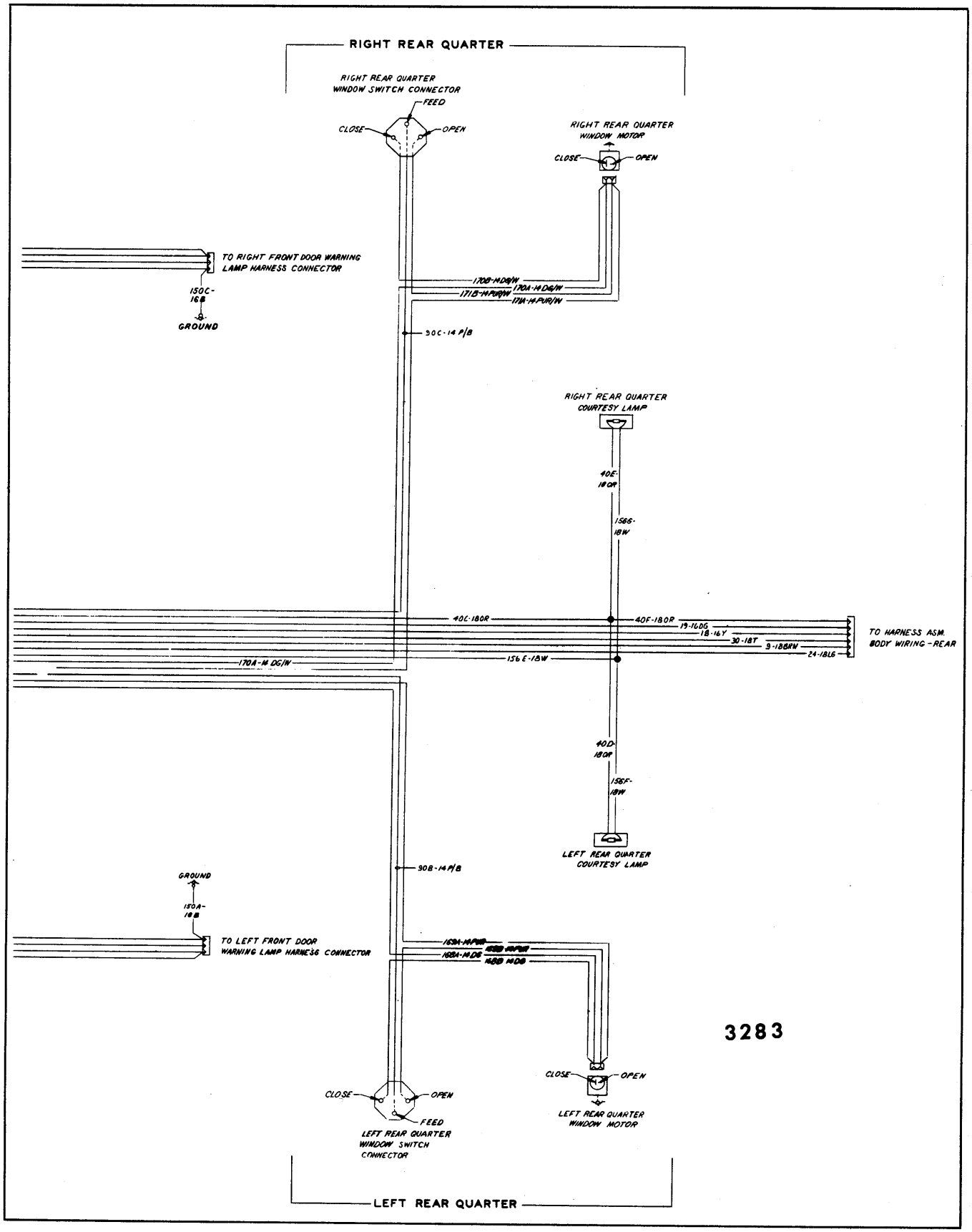


Fig. 16-75—Wiring Diagram - Cadillac "E" Styles

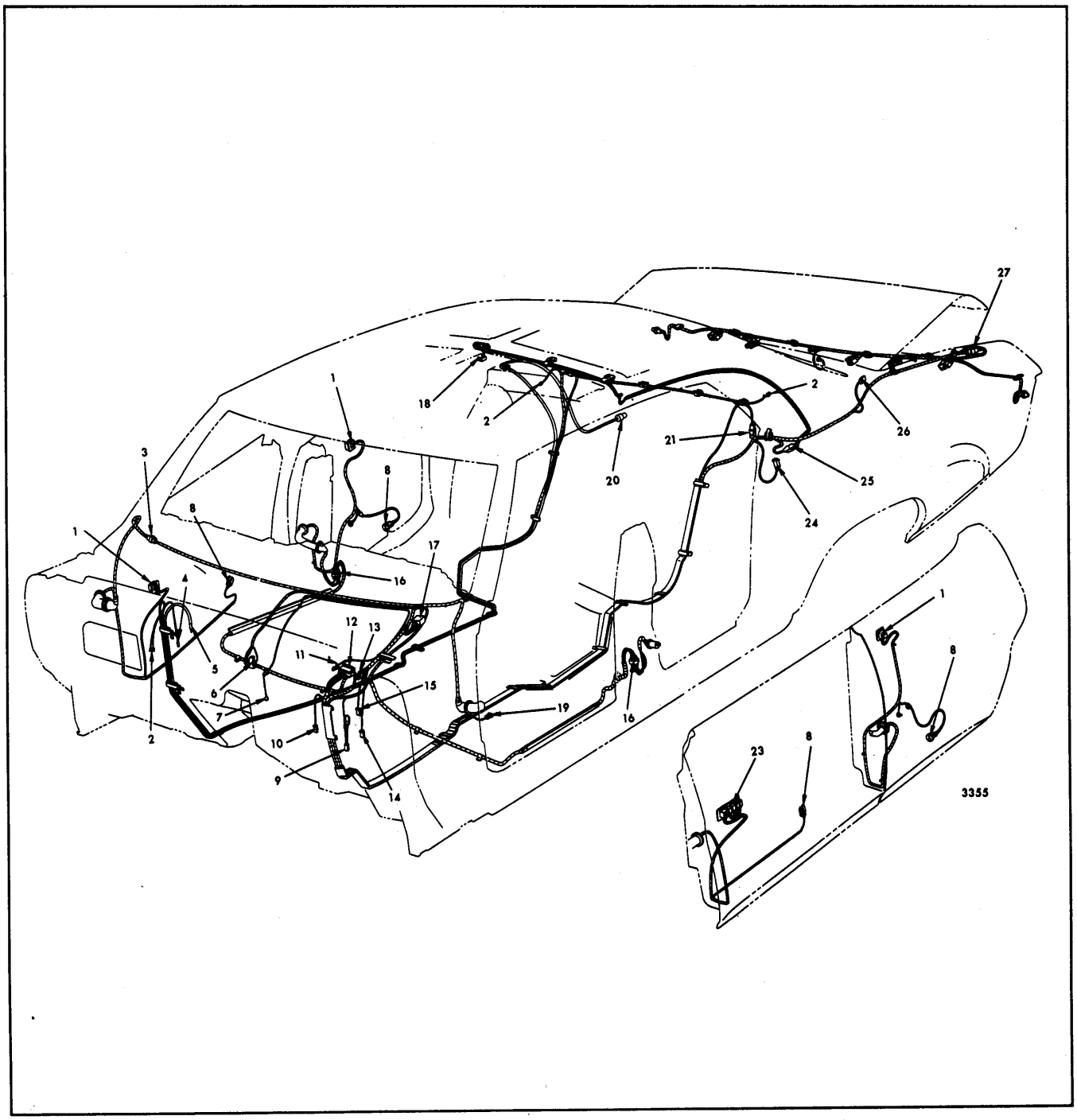


Fig. 16-76—Chevrolet "B-39" Body Wire Routing (Typical)

1. Window Control Switch
2. Stereo Speaker Leads
3. Right Front Door Harness Connector
4. Rear Speaker Lead
5. Antenna Lead
6. Rear Defogger Switch Connector
7. Circuit Breaker Connection
8. Window Motor Connector
9. Defogger Feed Connector
10. Fuse Block Connector
11. Power Feed from Circuit Breaker
12. Main Body Harness Connector
13. Rear Power Window Harness Connector
14. Ignition Terminal on Fuse Block
15. Power Feed to Front Harness
16. Center Pillar Connector
17. Ignition Relay
18. Dome Lamp Connection
19. Power Seat Feed
20. Antenna Lead
21. Power Antenna Connector
23. Master Window Control Switches
24. Rear Defogger Connector
25. Dome Lamp Connector
26. Rear Compartment Lamp Connector
27. Front to Rear Harness Connector

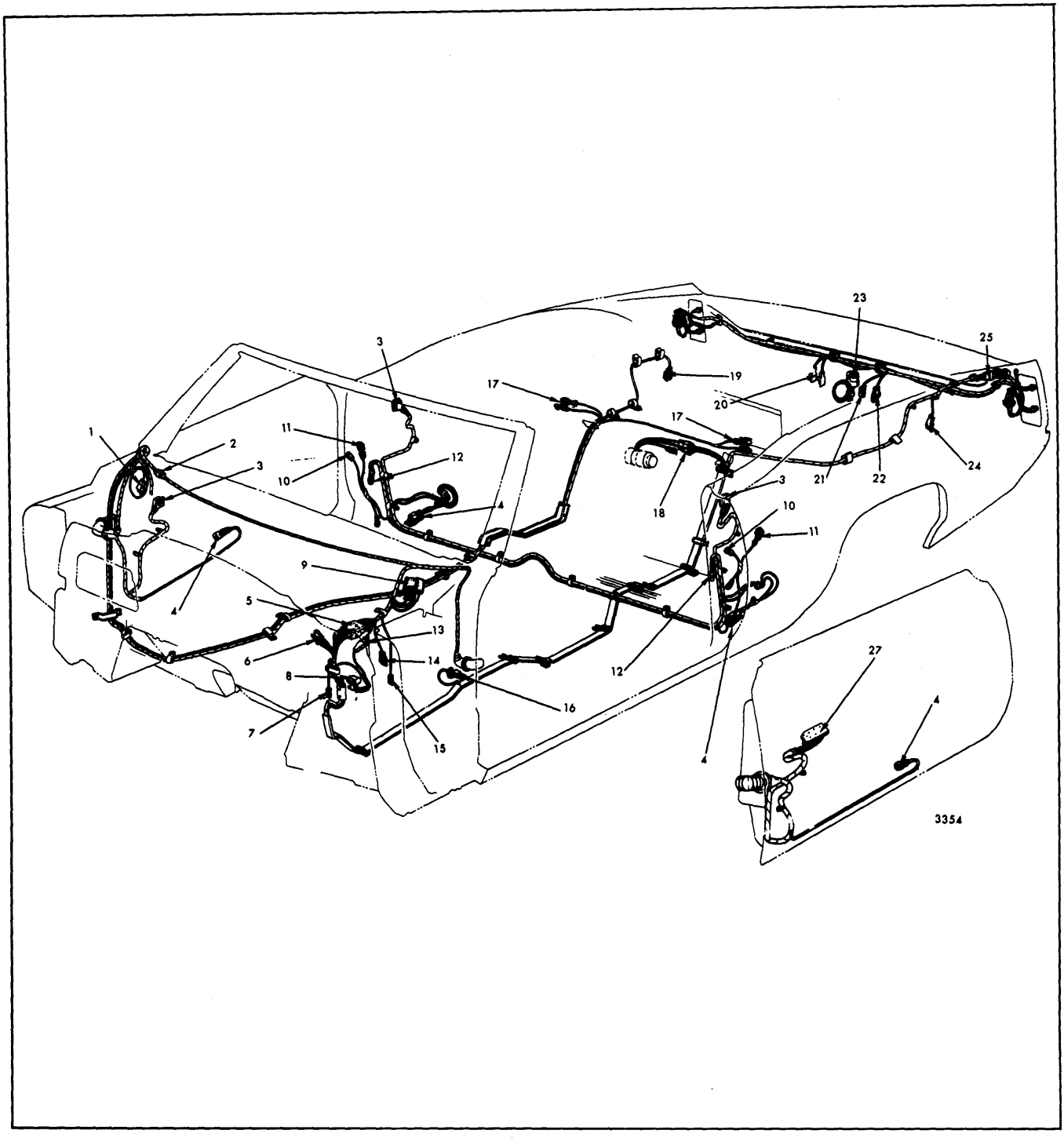


Fig. 16-77—Oldsmobile "B-67" Body Wire Routing (Typical)

1. Rear or Stereo Speaker Connector
2. Cross-Over Harness Connector
3. Window Control Switch
4. Window Motor Connector
5. Main Body Harness Connector
6. Power Top Connector
7. Harness Fuse Block Connector
8. Circuit Breaker
9. Ignition Relay
10. Quarter Cigar Lighter Feed
11. Quarter Cigar Lighter Ground
12. Quarter Courtesy Lamp
13. Power Feed to Ignition Relay
14. Power Feed to Front Harness
15. Ignition Terminal on Fuse Block
16. Power Seat Feed
17. Stereo Speaker Leads
18. Power Top Motor Connector
19. Power Antenna Feed
20. License Lamp and Right Back-up Lamp Connector
21. Fuel Gauge Feed
22. Left Back-Up Lamp Connector
23. Trailer Adapter
24. Rear Compartment Lamp
25. Front to Rear Harness Connector
27. Master Window Control

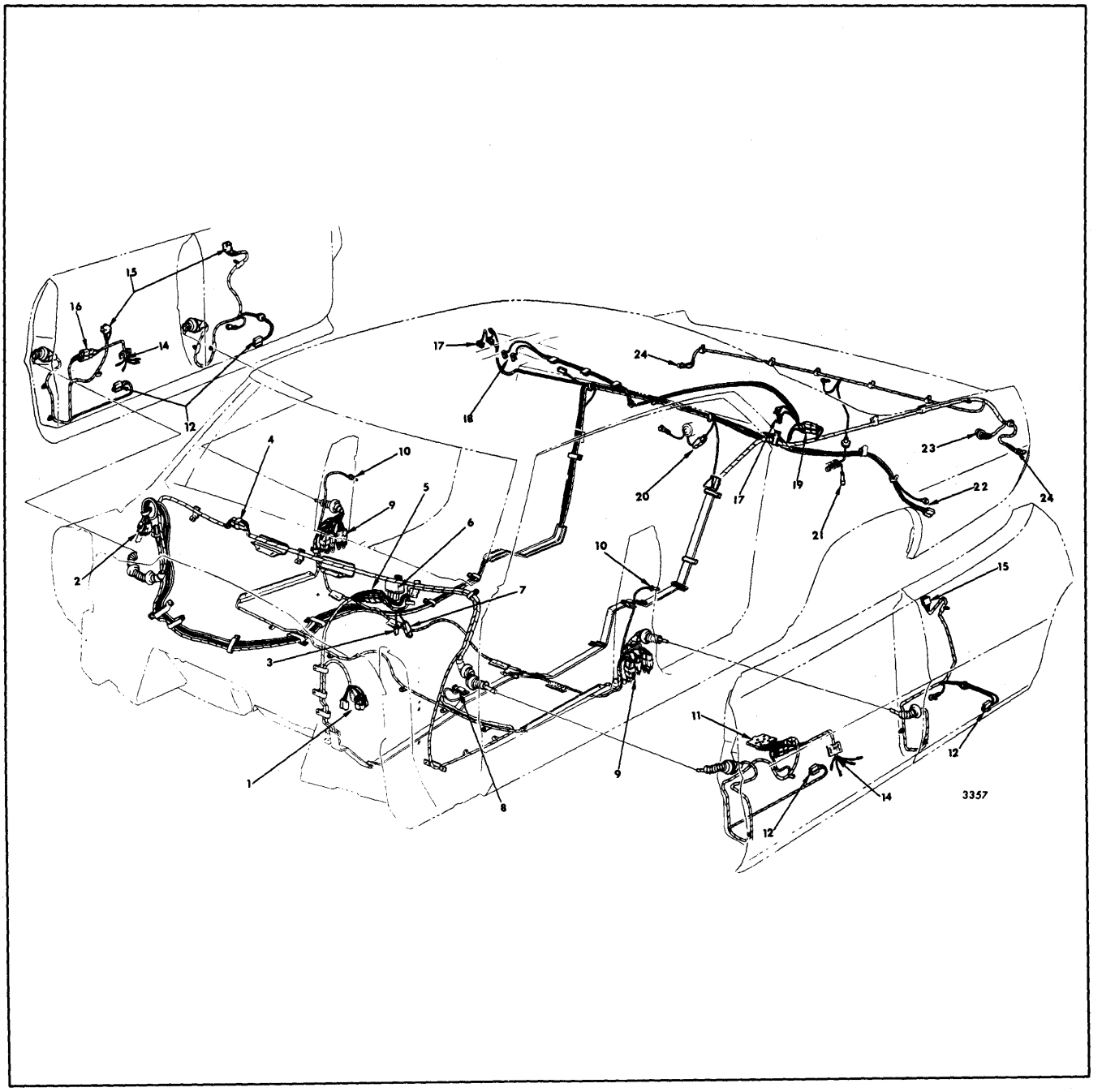


Fig. 16-78—Buick "B-39" Body Wire Routing (Typical)

1. Main Harness Connector
2. Antenna and Speaker Connections
3. Power Feed to Front Harness
4. Right Door Harness Connector
5. Rear Power Window Harness Connector
6. Ignition Relay
7. Ignition Terminal on Fuse Block
8. Power Seat Feed Connector
9. Center Pillar Connectors
10. Rear Door Jamb Switch
11. Master Window Control
12. Window Motor Connector
14. Courtesy and Warning Lamp Leads
15. Door Window Control Switch
16. Courtesy and Warning Lamp Connector
17. Sail Lamps
18. Dome Lamp
19. Dome and Sail Lamp Harness Connector
20. Blower Motor Connector
21. Gas Gauge Connector
22. Power Antenna Connections
23. Tail Lamp Harness Connector
24. Side Marker Lamp

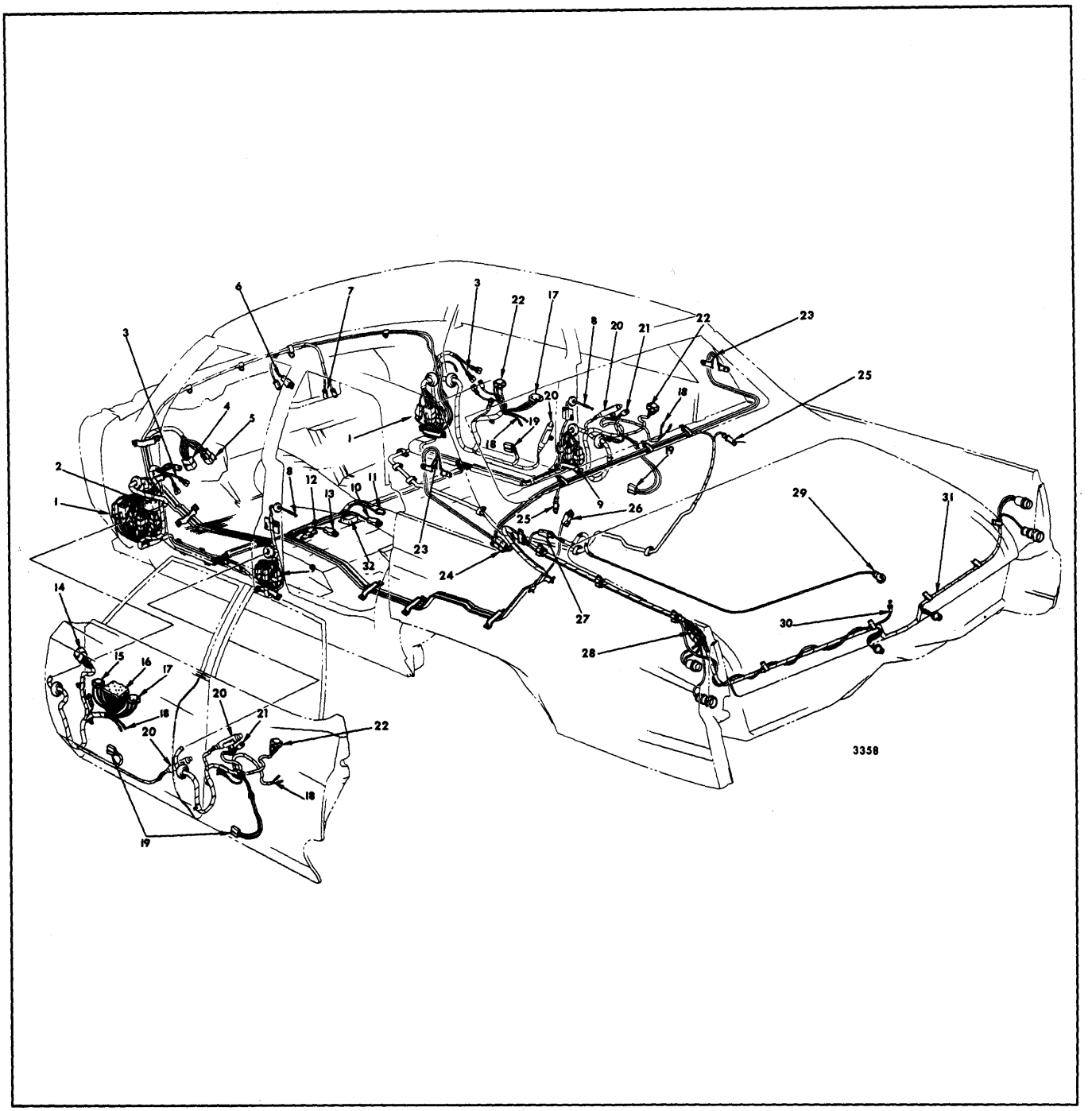


Fig. 16-79—Cadillac "C-69" Body Wire Routing (Typical)

1. Shroud Side Connectors
2. Ignition Relay
3. Front Door Jamb Switch Connectors
4. Main Body Wiring Connector
5. Windshield Wiper Harness Connector
6. Rear and Stereo Speaker Connectors
7. Rear Compartment Lid Lock and Warning Lamp
8. Rear Door Jamb Switch
9. Center Pillar Connectors
10. Electric Seat Back Release Feed (2 Door Only)
11. Seat Warmer Feed
12. Power Seat Feed Connector
13. Courtesy Lamp Switch Feed
14. Windshield Wiper Control Connector
15. Cut-Out Switch
16. Master Control Connector
17. Electric Door Lock Control Connector
18. Courtesy Lamp Feed
19. Window Motor Connector
20. Door Lock Solenoid
21. Cigar Lighter Connector
22. Window Control Switch Connector
23. Sail Lamp Connectors
24. Sail Lamp Harness Connector
25. Stereo Speaker Leads
26. Rear Defogger Feed
27. Rear Compartment Lamp Connector
28. Front to Rear Harness Connector
29. Rear Compartment Lamp
30. Rear Compartment Jamb Switch
31. Rear Lamp Harness
32. Electric Seat Back Release Relay (2 Door Only)

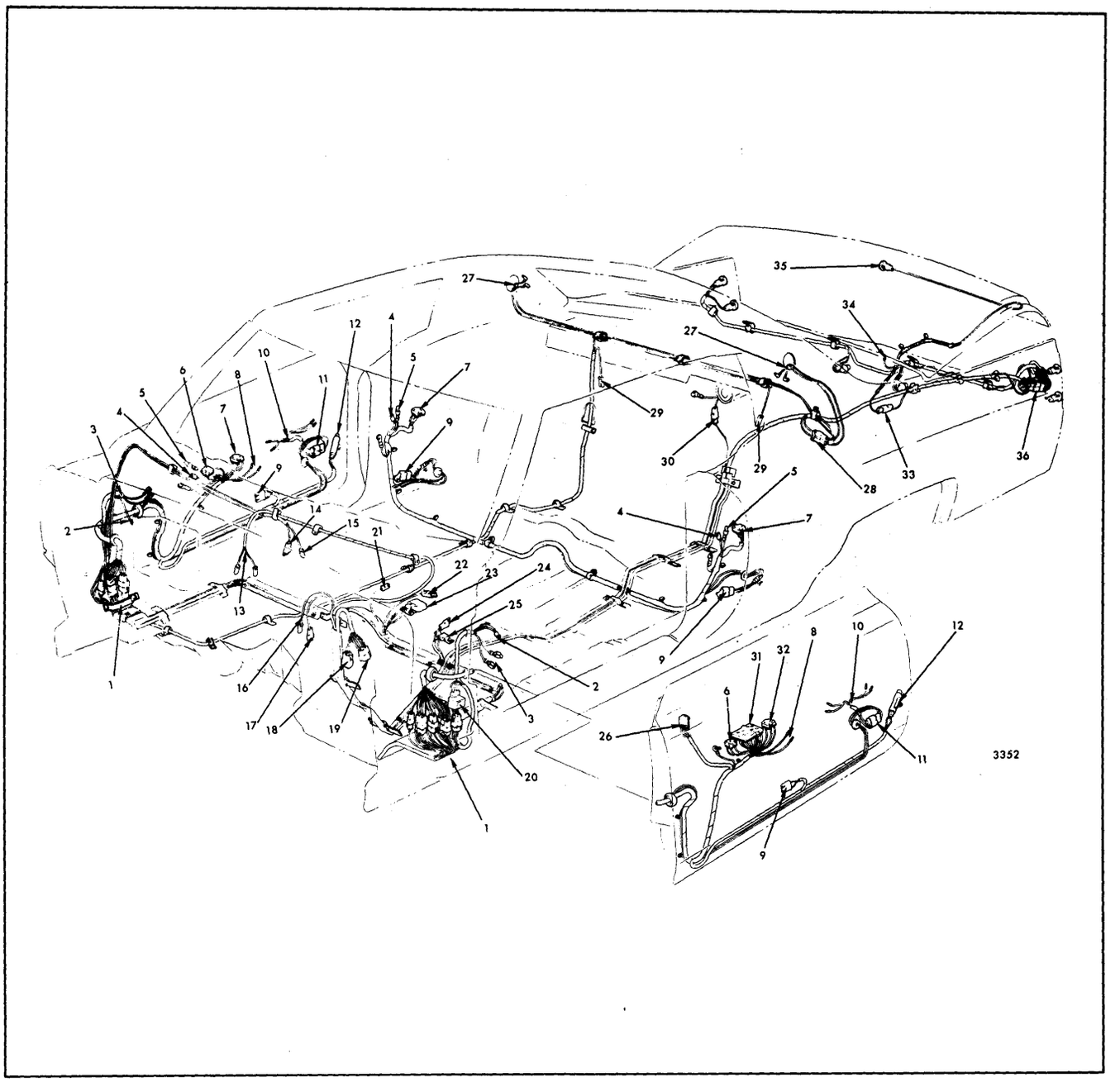


Fig. 16-80—Cadillac "C-47" Style Body Wire Routing (Typical)

1. Shroud Side Connectors
2. Front Jamb Connector with Electric Locks
3. Front Jamb Connector without Electric Locks
4. Cigar Lighter Feed Connector
5. Cigar Lighter Ground Connector
6. Electric Door Lock Control Connector
7. Window Control Switch Connector
8. Warning and Courtesy Lamp Leads (4 Door only)
9. Window Motor Connector
10. Warning & Courtesy Lamp Leads (2 Door Styles Only)
11. Warning and Courtesy Lamp Harness Connector
12. Door Lock Solenoid
13. Rear Compartment Lid Lock and Warning Lamp
14. Rear Speaker Connector
15. Stereo Speaker Connector When Used with Item 14
16. Seat Warmer Feed Connector to Fuse Block
17. Rear Defogger Feed Connector
18. Windshield Wiper Control Harness Feed
19. Main Body Harness Connector
20. Ignition Relay
21. Seat Warmer Feed
22. Electric Seat Back Release Feed
23. Electric Seat Back Release Relay
24. Courtesy Lamp Feed
25. Power Seat Feed
26. Windshield Wiper Control Connector
27. Sail Lamp Leads
28. Sail Lamp Harness Connector
29. Stereo Speaker Connectors
30. Defogger Connector
31. Window Master Control
32. Cut-Out Switch Connector
33. Rear Compartment Lamp Harness Connector
34. Rear Compartment Lamp Jamb Switch
35. Rear Compartment Lamp
36. Front to Rear Harness Connector

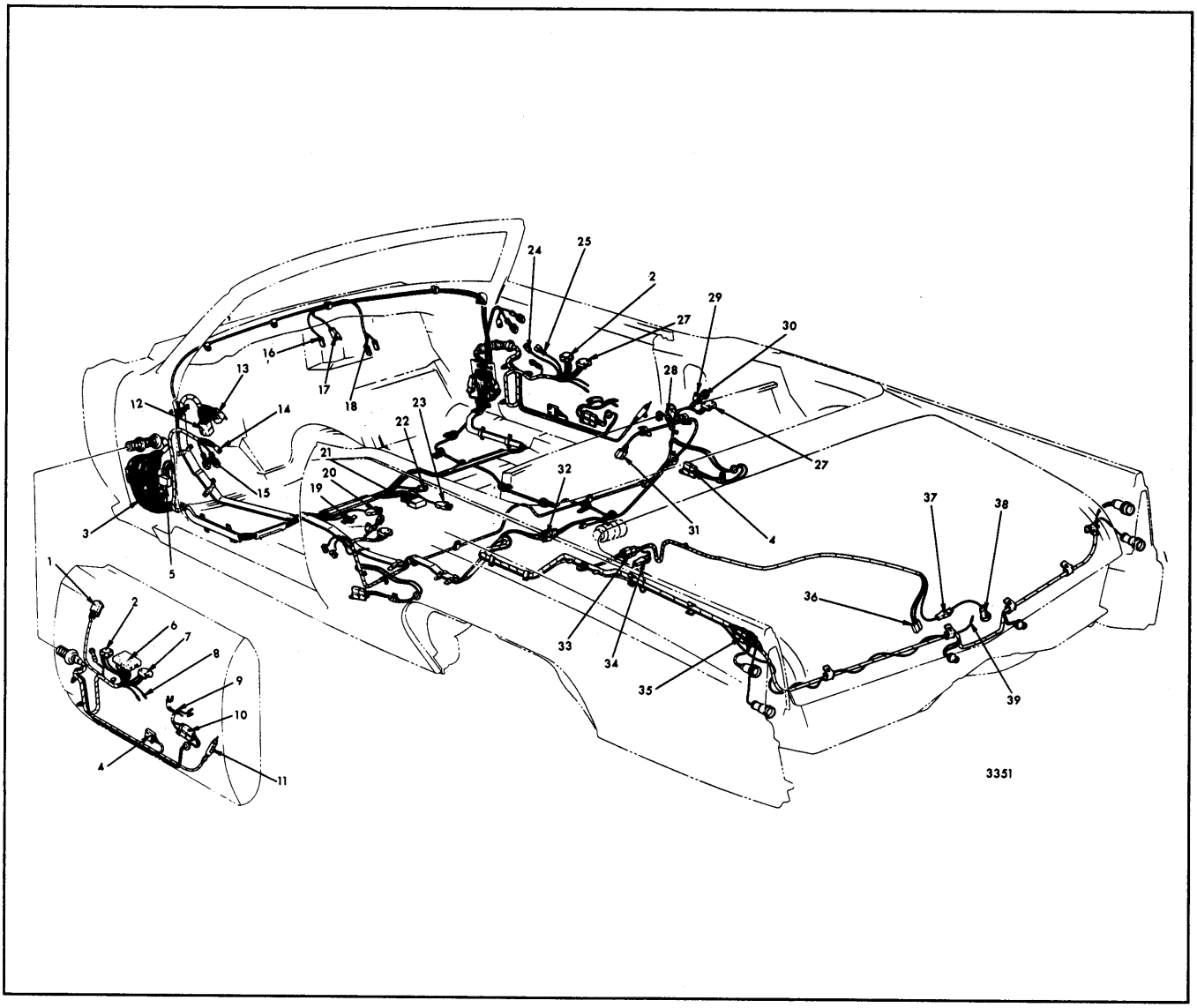


Fig. 16-81—Cadillac "C-67" Styles - Body Wire Routing (Typical)

1. Windshield Wiper Control Connector
2. Electric Door Lock Control Connector
3. Shroud Side Connectors
4. Window Motor Connector
5. Ignition Relay
6. Master Window Control
7. Cut-Out Switch
8. Warning and Courtesy Lamp Leads - 4 Door Styles
9. Warning and Courtesy Lamp Leads - 2 Door Styles
10. Warning and Courtesy Lamp Harness Connector
11. Electric Door Lock Solenoid
12. Main Body Harness Connector
13. Windshield Wiper Harness Connector
14. Front Jamb Switch Connector with Electric Door Lock
15. Front Jamb Switch Connector without Electric Door Lock
16. Stereo Speaker Connector Used with Item 17
17. Rear Speaker Connector
18. Rear Compartment Lid Lock and Warning Lamp Connector
19. Power Seat Feed
20. Courtesy Lamp Switch Feed
21. Electric Seat Back Release Relay
22. Electric Seat Warmer Feed
23. Electric Seat Back Release Feed
24. Cigar Lighter Feed Connector
25. Cigar Lighter Ground Connector
27. Window Control Switch Connector
28. Quarter Courtesy Lamp Leads
29. Quarter Cigar Lighter Feed
30. Quarter Cigar Lighter Ground Connector
31. Rear Speaker Connector
32. Power Top Motor Connector
33. Rear Compartment Lid Lock Harness Connector
34. Rear Compartment Lid Lamp Harness Connector
35. Front to Rear Harness Connector
36. Rear Compartment Lid Lock Connector
37. Rear Compartment Lid Lamp Connector
38. Rear Compartment Lid Lamp Socket
39. Rear Compartment Lid Lamp Jamb Switch