

SECTION A

FUEL TANK AND FUEL SYSTEM

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DIVISION II

DESCRIPTION AND OPERATION

80-1 DESCRIPTION OF FUEL TANK AND FUEL SYSTEM

In all models except station wagons, the fuel tank is attached under the trunk floor pan by two straps and is of the center fill design. The filler neck extends from the rear upper center of the tank to a point just forward of the rear bumper. See Figures 80-1, 4 and 5. To fill the tank, pull down the spring-loaded license plate bracket and remove the filler cap.

All station wagons have the fuel tank mounted in the left rear quarter panel area. See Figure 80-3. To fill the tank, lift the spring-loaded filler door and remove the filler cap.

Filler necks are soldered into the tank in all series cars, (except Riviera). See Figures 80-1 thru 5.

In all models except station wagons and cars build for California deliveries (see paragraph 80-2 for explanation of California built cars), the tank is vented by a special breather, rather than at the filler cap. (A "NO VENT" type filler cap is used.) This breather consists of two pipes extending from the upper right front corner of the tank; one pipe vents the left rear corner and the other pipe leads to the right front corner. Two rubber hoses are held in position vertically to prevent fuel loss from fuel sloshing. See Figures 80-1 and 4. With this arrangement of vents, the uppermost part of the tank is always vented, whether the car is sideways to a slope or straight with the slope. This prevents fuel loss due to expansion of trapped air.

In Rivas, this breather is an inverted U-shaped pipe extending upward from the right front corner of the tank and is fastened to the body. See Figure 80-5. In Rivas, this pipe provides the venting both during operation and during filling.

In all models except Rivas and

station wagons, the tank is vented during filling by a baffle which extends from the lower end nearly to the upper end in the upper inside of the filler.

In station wagons, the tank is vented only at the filler cap. See Figure 80-3

In all models except Riviera the tank outlet consists of a combination fuel pick-up, filter and fuel gage tank unit. In Rivas, the tank outlet consists of a combination fuel pick-up, filter, fuel gage tank unit and fuel pump assembly. The tank unit can be removed by removing a cam ring which retains the unit.

The fuel line is coated, welded steel tubing. Connections from the tank unit to the line and from the line to the fuel pump are made with synthetic rubber hose attached with spring clamps.

All engines have a replaceable pleated paper filter located in the carburetor inlet.

All air conditioner cars (except L-6

and the 49000 series, which has an electric fuel pump) have a vapor return system. These cars have a special fuel pump which has a metering outlet. Any vapor which forms is bled off and returned to the fuel tank, along with continuously circulating fuel, through a separate line. This system keeps cool fuel recirculating to the pump, thereby greatly reducing any possibility of vapor lock. All 455 cubic inch engine cars (except 49000 series) have the vapor return system, regardless of whether or not they are equipped with an air conditioner.

80-2 DISCRPTION OF EVAPORATIVE EMISSION CONTROL SYSTEM

All 1970 Buicks sold in California will be equipped with a system designed to prevent escape of fuel vapor to the atmosphere. Vapor generated by evaporation of fuel in the tank, previously exhausted to atmosphere, will be transferred by a vapor line to the engine compartment. During periods of operation, vapors are fed directly to the engine for consumption. During periods of inoperation, an activated charcoal accumulator located in the vapor line stores any vapor generated for consumption during the next period of operation.

The amount of vapor drawn into the engine at any time is too small to have any noticeable effect on fuel economy or engine operation.

With this closed system it is extremely important that only vapors be transferred to the engine. To avoid the possibility of liquid fuel being drawn into the system, these following features are included as part of the total system:

1. A fuel tank overfill protector is provided to assure adequate volume for expansion of liquid fuel volume with temperature change.
2. A three point fuel tank venting

system is provided to assure that the tank will be vented under any conceivable car attitude.

3. A liquid vapor separator, located immediately forward and above the tank, transfers the multiple tank vents to the single vapor transfer line, and assures that no liquid fuel will pass that point.

4. To protect the tank from mechanical damage in the event of excessive internal or external pressures resulting from the operation of this closed system, a pressure-vacuum relief valve, located in the vapor line, will control the tank internal pressure to not less than seven inches of water pressure (about one-half pound per square inch) less than and not more than twenty-one inches of water pressure more than the surrounding atmospheric pressure.

Maintenance requirements demand only that the accumulator purge air filter, an oiled foam filter assembled in the bottom of the canister, be replaced every 12,000 miles or 12 months. Under extremely dusty conditions, more frequent attention may be required.

DIVISION III

SERVICE PROCEDURES

80-3 REMOVAL OF FUEL TANK OR FUEL GAUGE TANK UNIT

43-44-45-46-48000 Series The fuel gage tank unit is combined with the pick-up pipe and the tank filter. All series require lowering the fuel tank to replace the tank unit.

To lower a fuel tank, proceed as follows:

1. Disconnect battery.
2. Syphon all fuel from tank into a clean container.
3. Disconnect fuel hose and vapor

return hose from gage tank unit.

4. Remove ground (black) wire screw.
5. Unplug tan wire from gage unit.
6. Disconnect vent hoses.
7. Disconnect support straps and lower tank.
8. To install fuel tank, reverse above procedure.

To remove fuel gage tank unit, proceed as follows:

1. Disconnect battery.
2. Unscrew cam ring using Wrench J-21518 for Specials or Skylarks; use Wrench J-22554 for LeSabres, Wildcats or Electras.
3. Remove fuel gage tank unit.
4. Make sure "O" ring seal is in place. Install new tank unit, being careful not to bend or damage it.
5. Complete gage unit installation by reversing above steps. Make sure tan wire and black wire connections are clean and tight.

43-46000 Series Wagons

1. Drain gas from tank into suitable container and disconnect fuel gauge tank wire.
2. Raise car on hoist.
3. Remove left rear tire and wheel assembly.
4. Remove left quarter panel to wheelhouse filler panel (mud deflector) and bend lower attaching tab out of way.
5. Disconnect gas tank to wheelhouse ground wire.
6. Disconnect both rear shocks at lower ends.
7. Disconnect tail pipe hanger.

8. Disconnect fuel lines from gas tank.

9. Remove the end and bottom tank support straps.

10. Using suitable equipment, support rear of car under frame and lower rear axle assembly.

11. Work tank forward and remove.

12. For installation reverse previous steps making note at step 6, the axle assembly will have to be raised to normal height before shocks can be reinstalled. At step 4 tabs must be

straightened and in position to make sure mud deflector fits securely.

49000 Series

The fuel gage tank unit is combined with the pick-up pipe, fuel filter and fuel pump assembly. It is not necessary to remove the fuel tank to remove this unit.

1. Disconnect battery.

2. Fold back trunk floor covering over access hole cover.

3. Remove access hole cover.

4. Raise rear of car and support on jack stands.

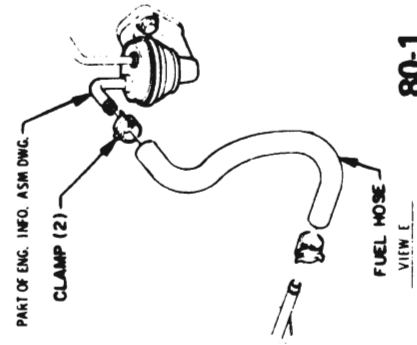
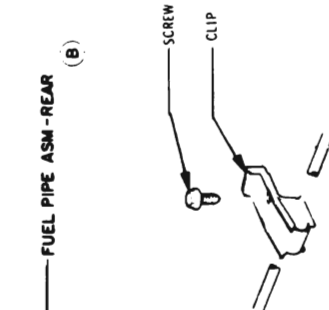
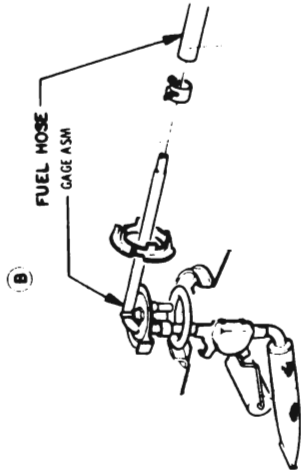
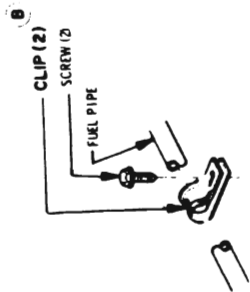
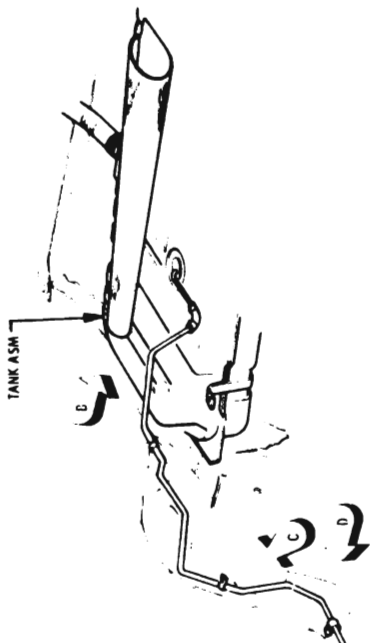
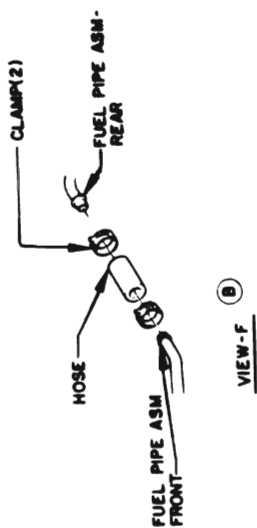
5. Remove ground (black) wire screw.

6. Disconnect electrical harness plug.

7. Unscrew cam ring using Wrench J-21518.

8. Remove fuel gage tank unit.

9. To install, reverse removal procedures being careful not to damage unit. Be sure to reseal access cover during installation.



80-1

Figure 80-1 - Fuel System (L-6) Skylark and Skylark 350

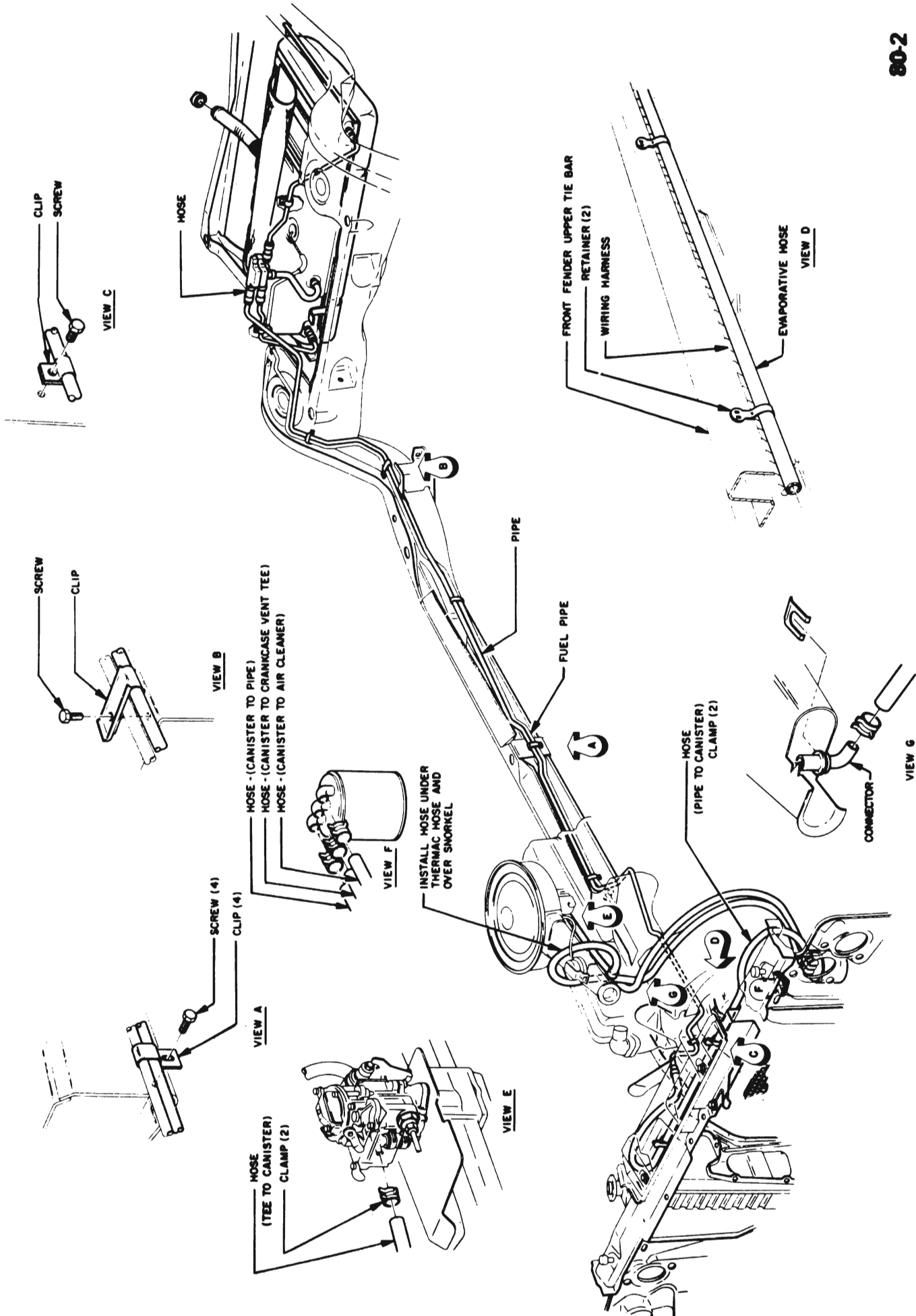
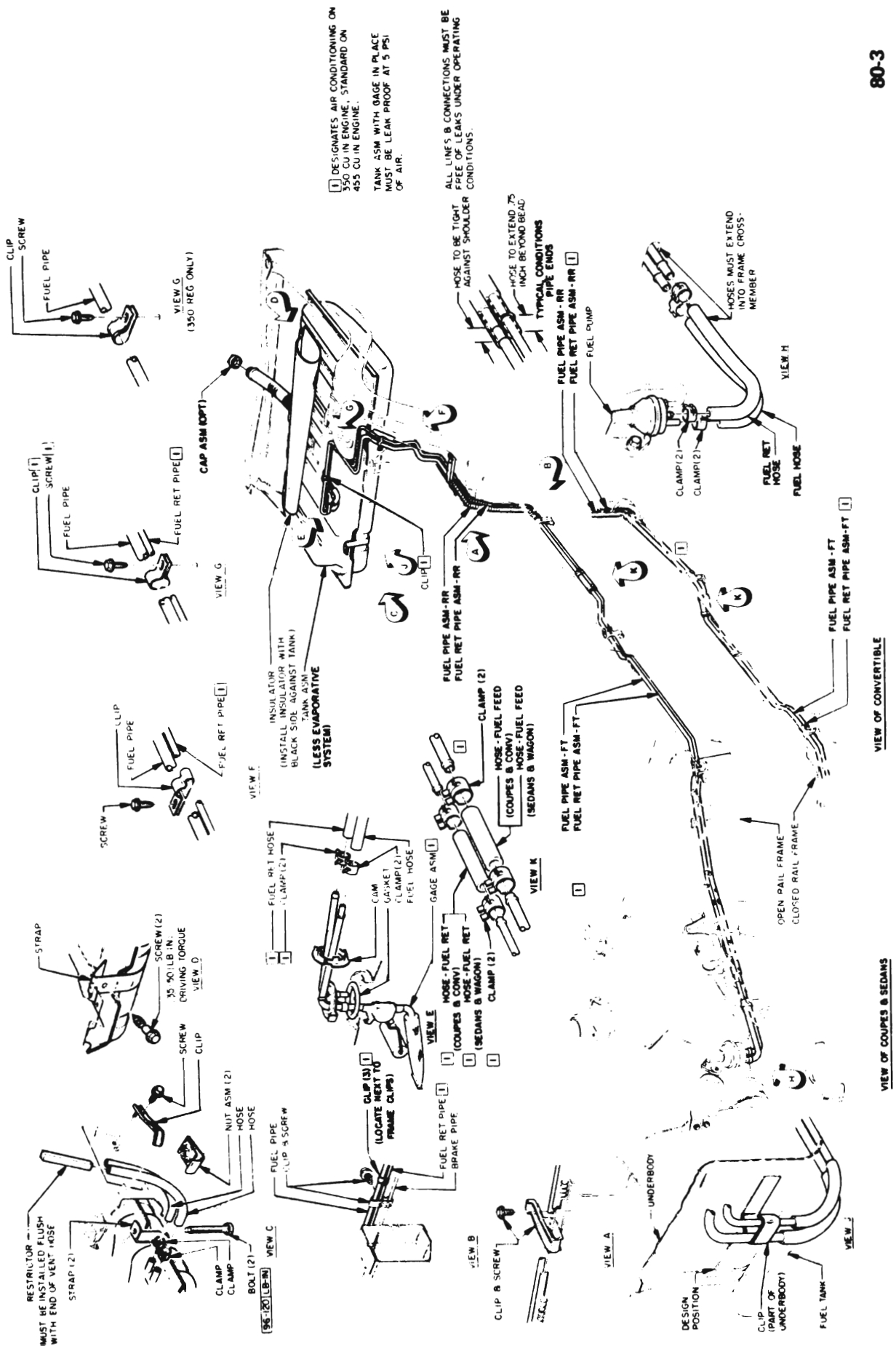


Figure 80-2 - Evaporative Emission Control System (L-6) Skylark and Skylark 350



80-3

Figure 80-3 Fuel System (V-8) Skylark and Skylark 350 - Except Sportwagon

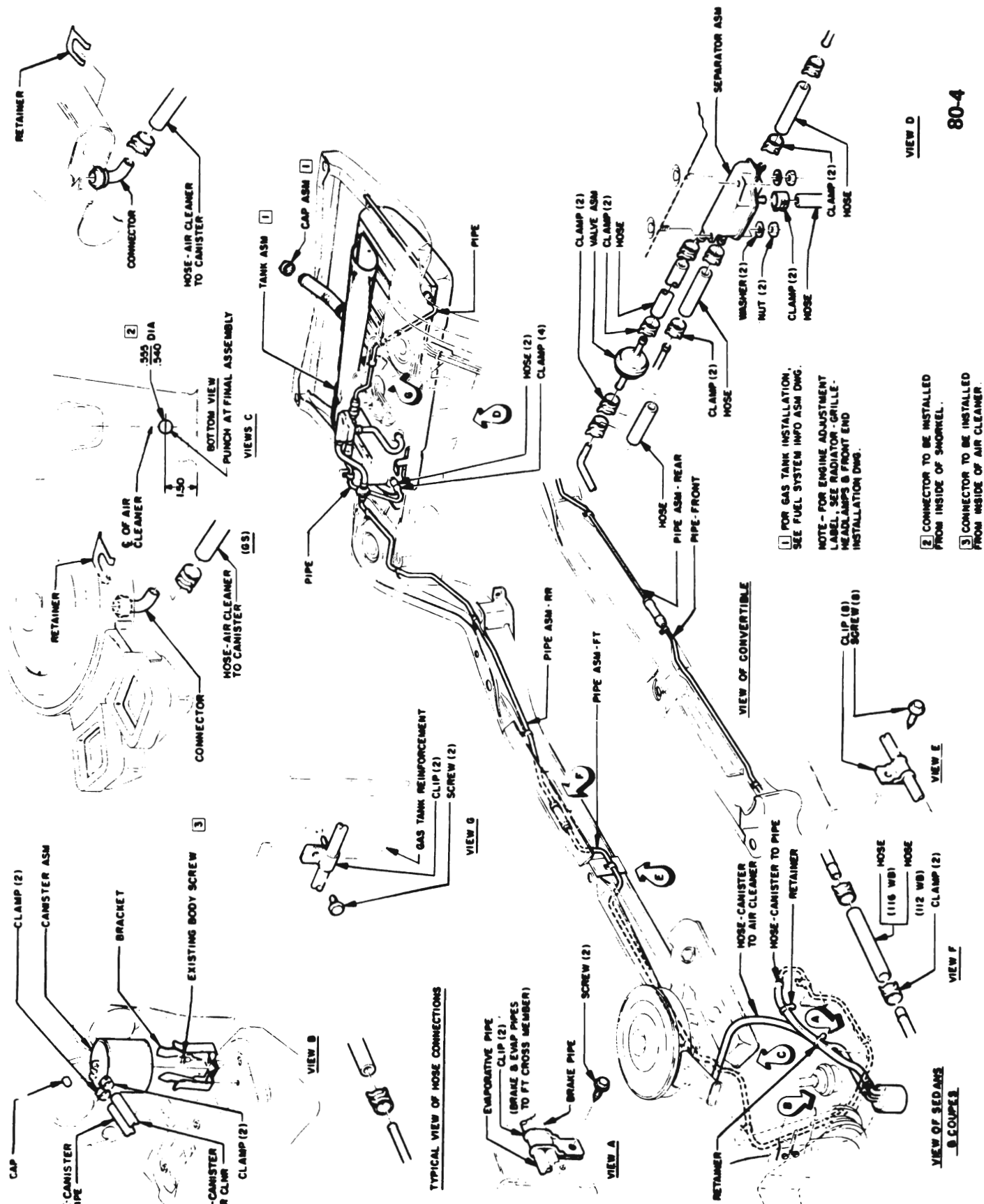


Figure 80-4 Evaporative Emission Control System - (V-8) Skylark and Skylark 350 Except Sport W.

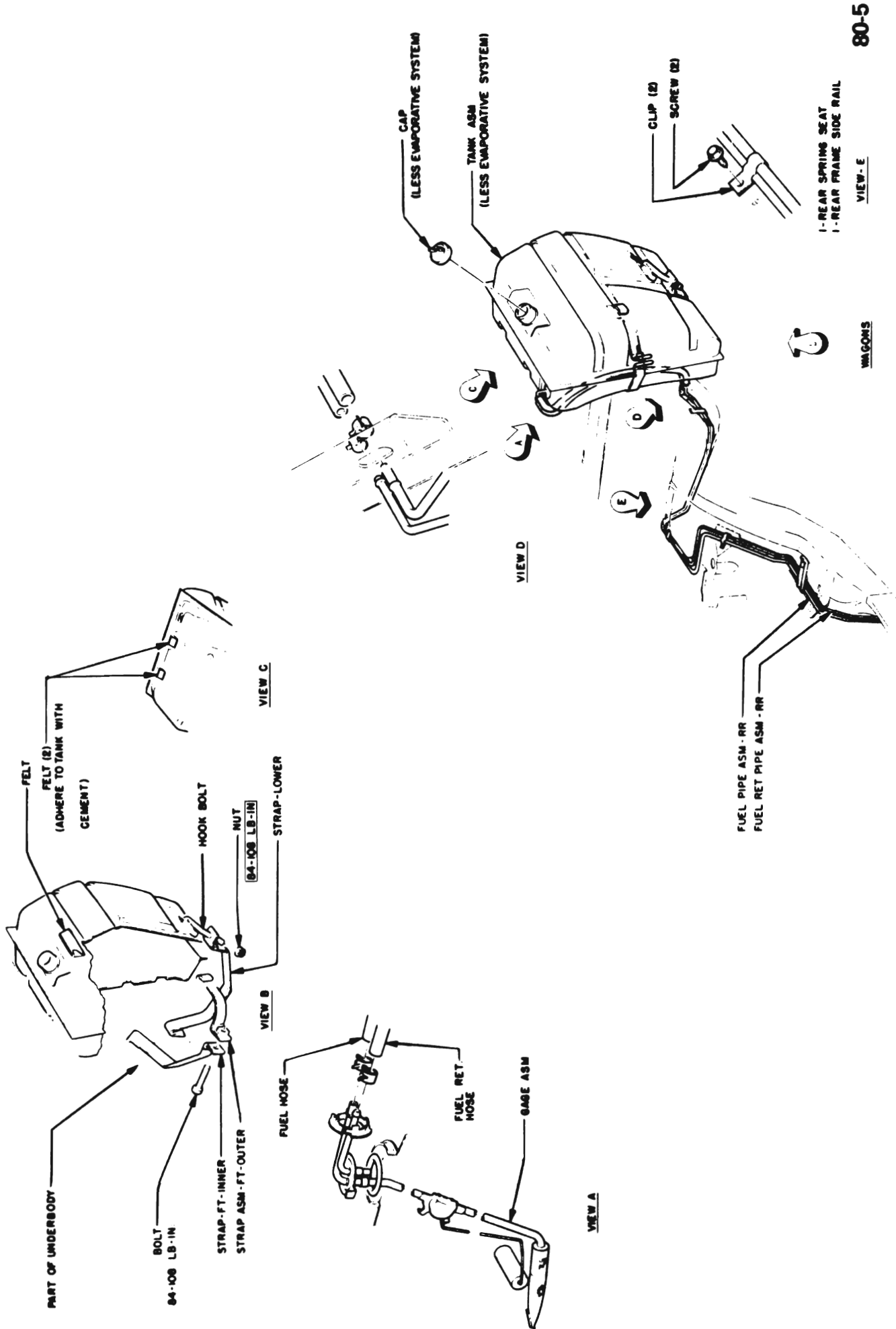


Figure 80-5 Fuel System - Sportwagon

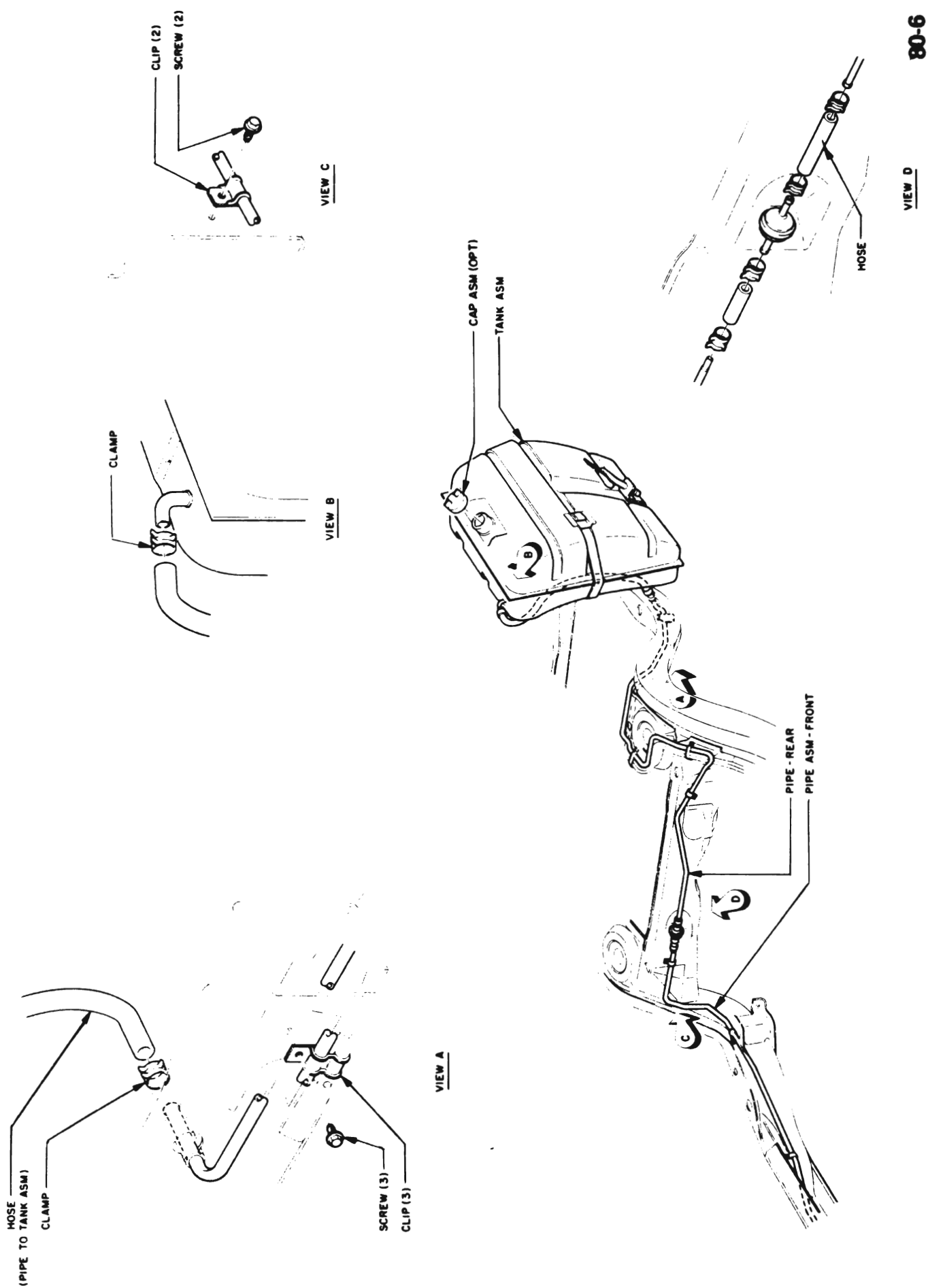
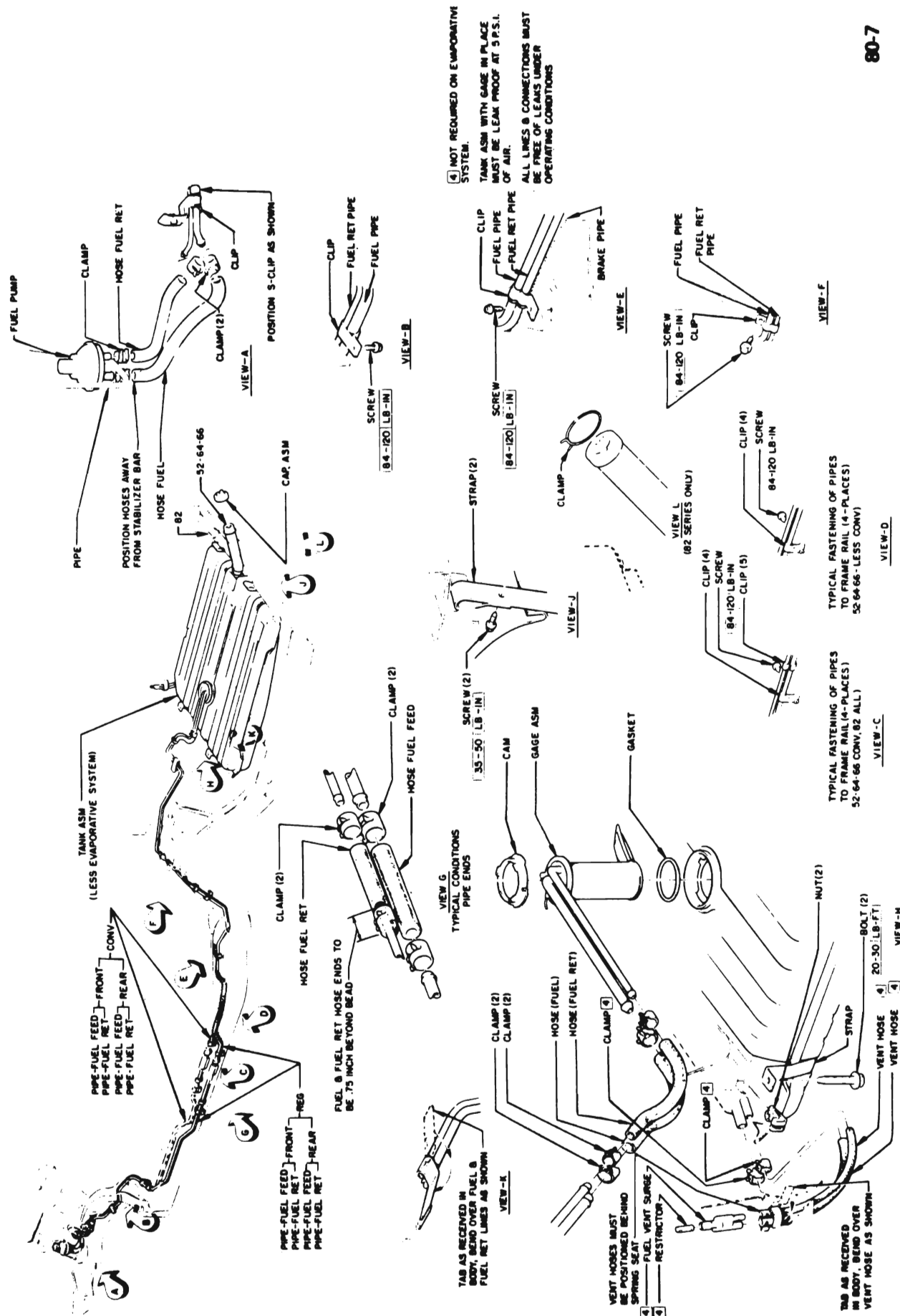
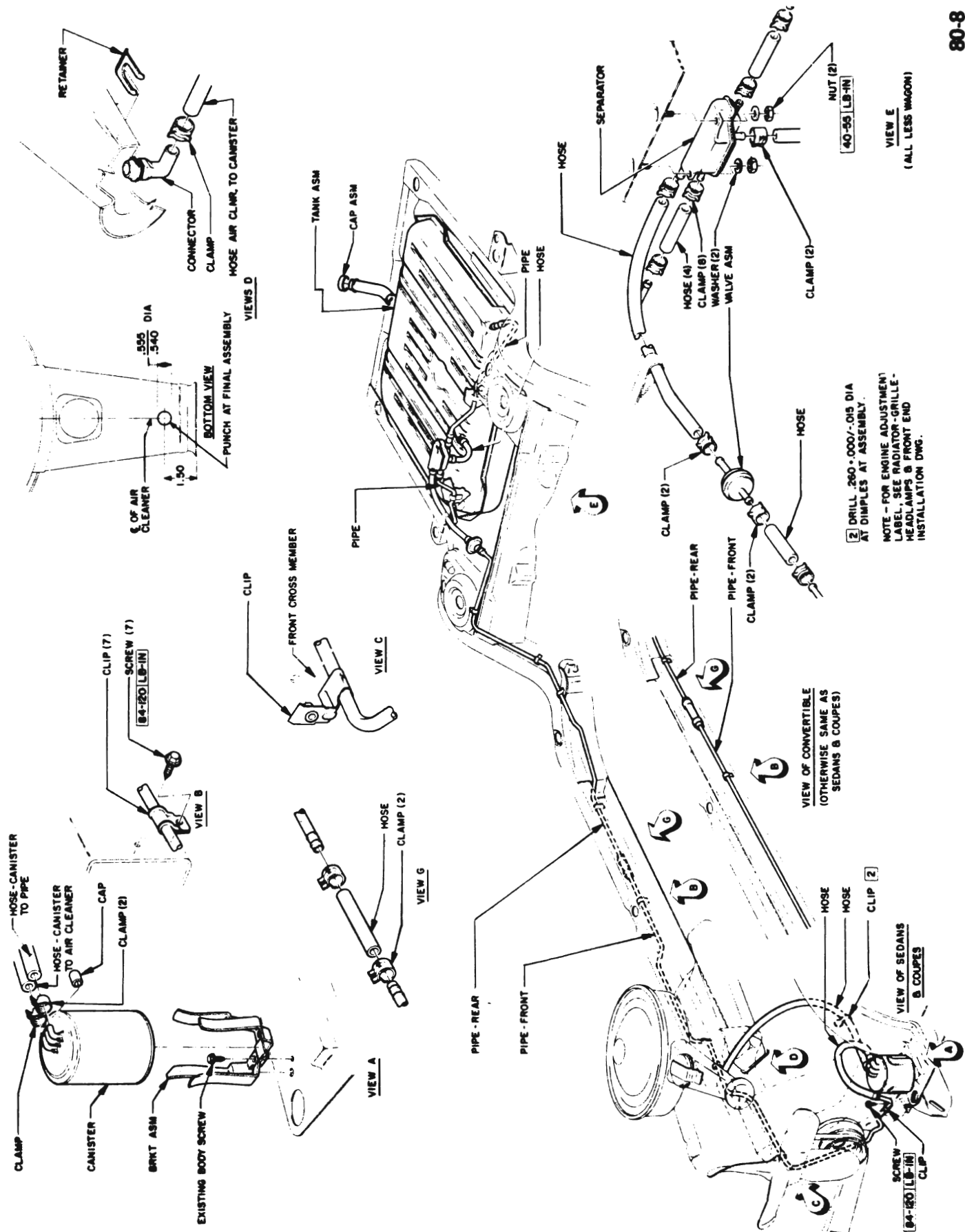


Figure 80-6 Evaporative Emission Control System Sportwagon



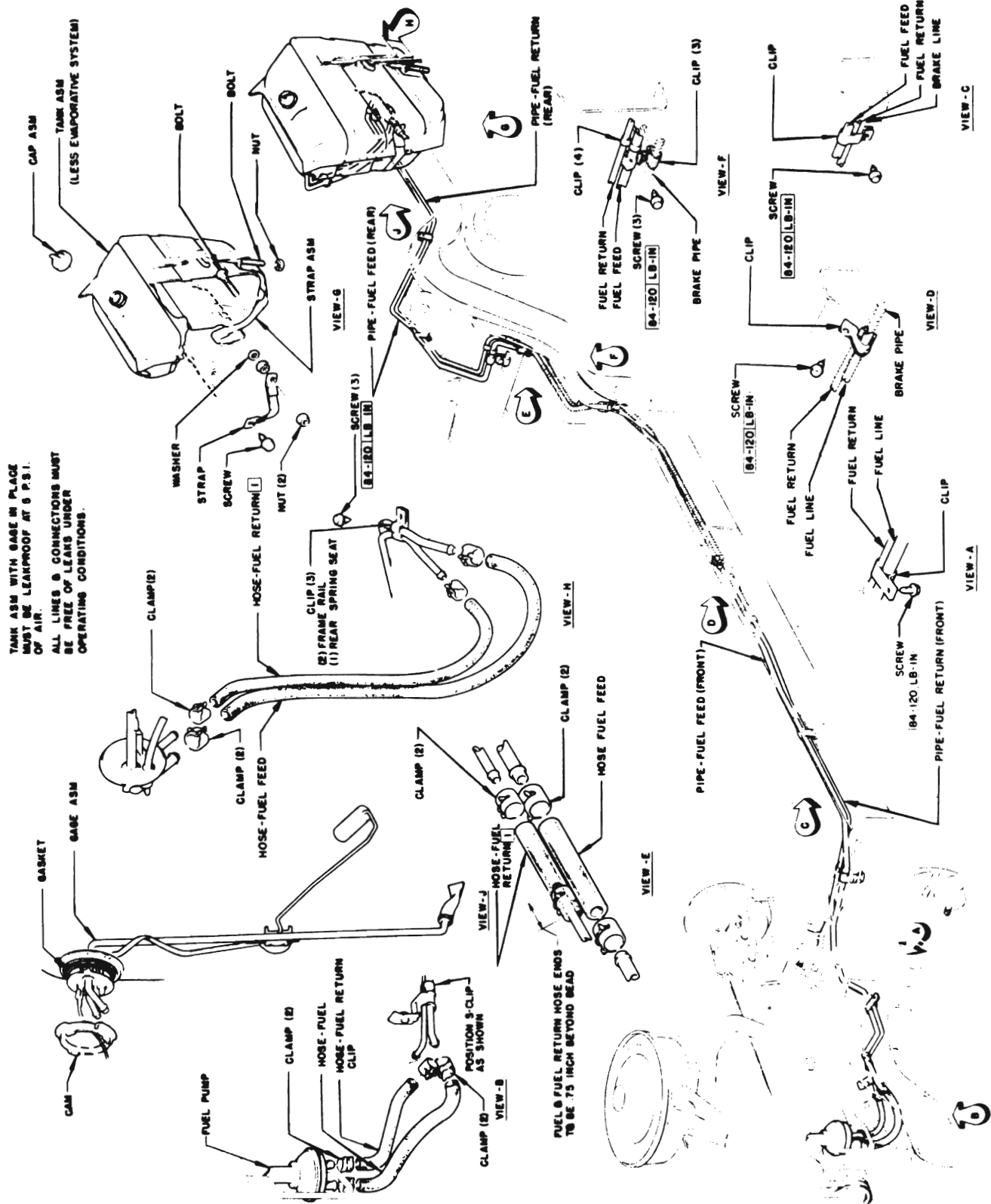
80-7

Figure 80-7 Fuel System - LeSabre, Wildcat and Electra



80-8

Figure 80-8 Evaporative Emission Control System LeSabre, Wilcat and Electra



80-9

Figure 80-9 Fuel System - Esate Wagon

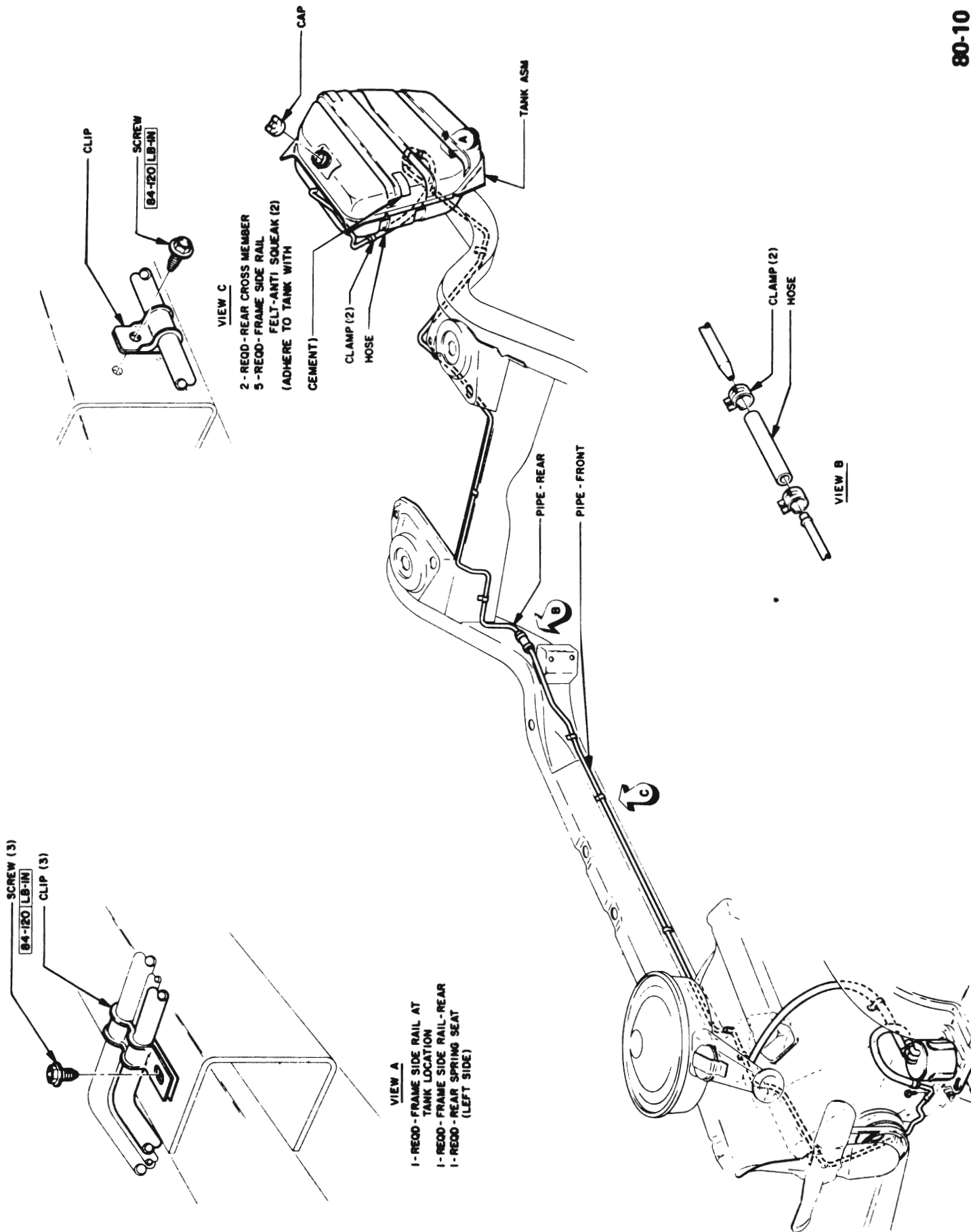
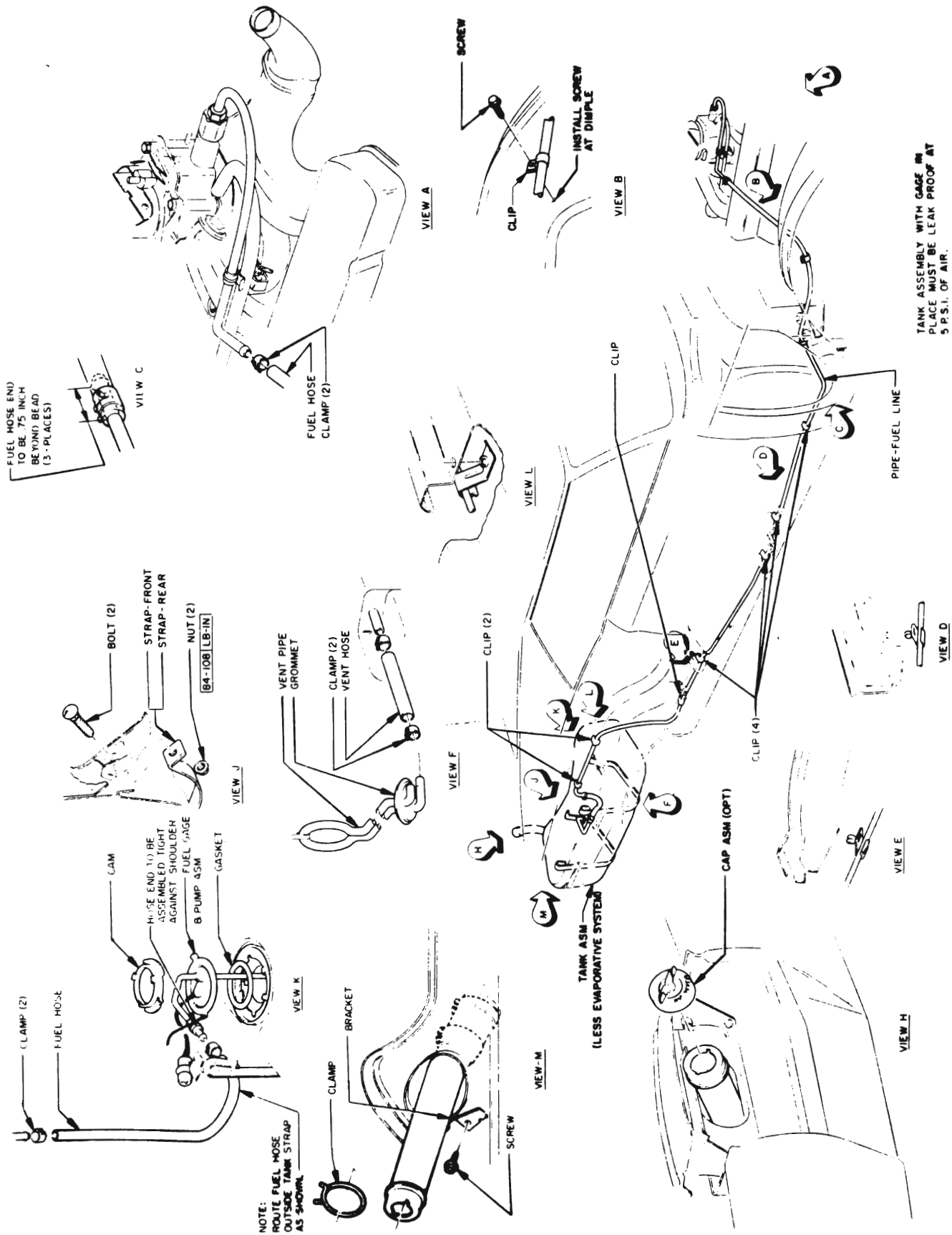


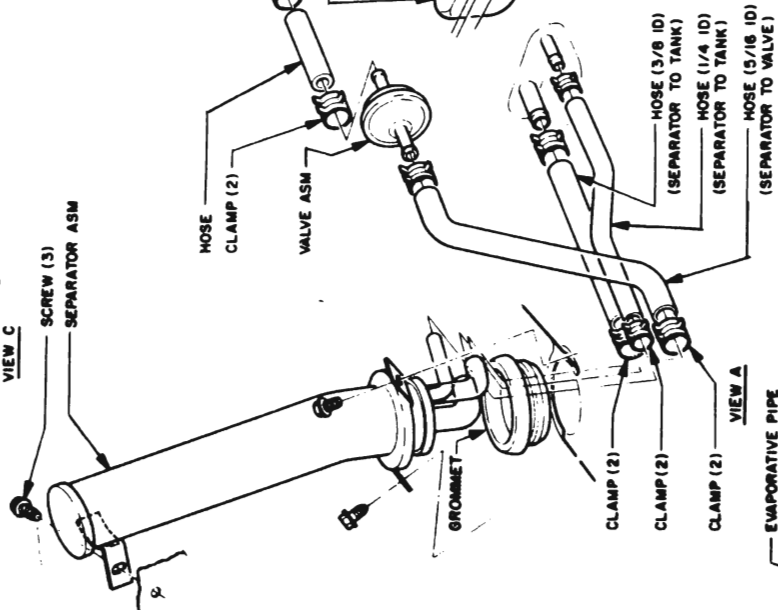
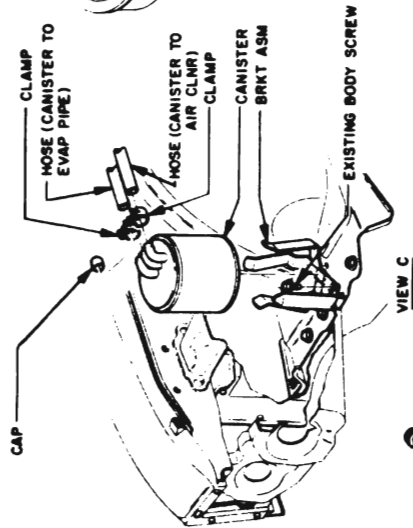
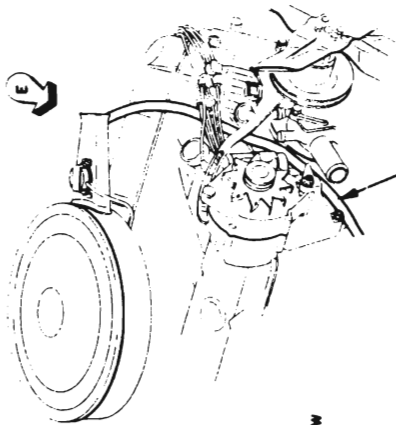
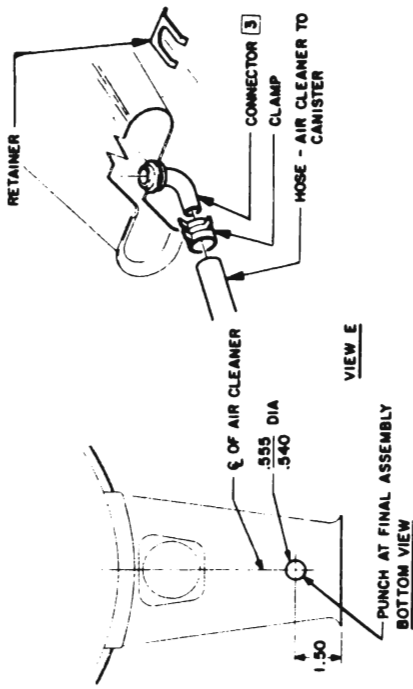
Figure 80-10 Evaporative Emission Control System Estate Wagon



TANK ASSEMBLY WITH GAGE OR PLACE MUST BE LEAK PROOF AT 5 P.S.I. OF AIR.

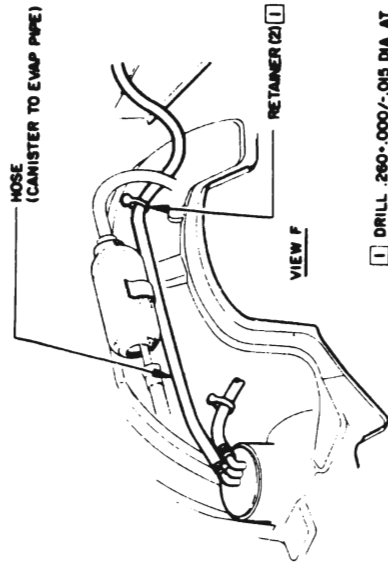
ALL LINES AND CONNECTIONS MUST BE FREE OF LEAKS UNDER OPERATING CONDITIONS.

Figure 80-11 Evaporative Emission Control System - Riviera



VIEW D

HOSE (AIR CLNR TO CANISTER) (HOSE ROUTING AT FRONT OF ENGINE - FROM AIR CLEANER, PASS BEHIND DISTRIBUTOR, OVER WATER PUMP & UNDER DELCOTRON TO CANISTER.)



- 1 DRILL .260-.000/-.015 DIA AT DIMPLES AT ASSEMBLY.
- NOTE - FOR INSTRUCTION LABEL, SEE RADIATOR-GRILLE-HEADLAMPS AND FRONT END INSTALLATION DWG.
- 3 CONNECTOR TO BE INSTALLED FROM INSIDE SNORKEL.

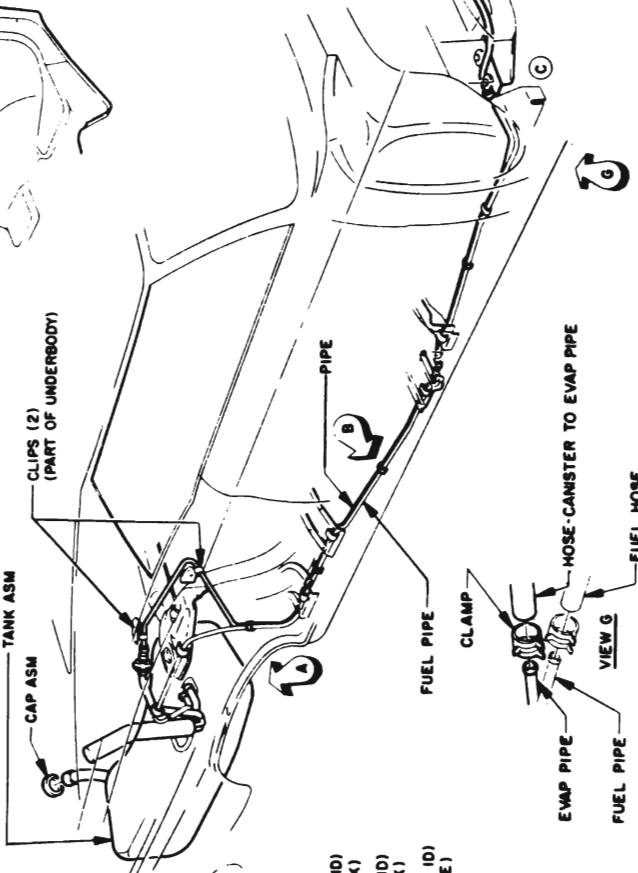


Figure 80-12 Evaporative Emission Control System - Riviera