

# SECTION B

## EXHAUST SYSTEM

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## DIVISION II DESCRIPTION AND OPERATION

### 80-3 DESCRIPTION OF EXHAUST SYSTEM

Only single exhaust is available on all lower series Buicks, except the Skylark Gran Sport. On Skylark Gran Sport models, dual exhaust is standard equipment. Single exhaust is standard on all upper series cars, except the Riviera, with dual exhaust available as an option. On Rivieras, dual exhaust is standard equipment.

All lower series exhaust systems have no resonators (except the Sport Wagon). The Sport Wagon has a resonator mounted crosswise just behind the rear axle. Since all Buick single exhaust systems are located to the right of the car, this is the only single exhaust system where the tail pipe exits at the left rear corner.

All upper series exhaust pipes, plus the Skylark Gran Sport, are of the double wall laminated type.

This double layer pipe is used to muffle pipe "ring" which is set-up by the firing impulses of the individual cylinders; the life of the pipe is also greatly increased, of course. In other words, all upper series pipes between exhaust manifolds and mufflers are of double wall construction.

For long life, all mufflers and resonators are aluminized. All tail pipes are also aluminized inside and out. Since rusting is more rapid on the "cold" side of a dual exhaust system (the side having the exhaust manifold shut off valve), all cold side mufflers have stainless steel inner shells, baffles and end caps. Both dual exhaust resonators are of stainless steel construction.

All exhaust pipe connections to exhaust manifolds are of the ball joint type to allow angular movement for alignment purposes. On all single exhaust systems, the rear end of the front exhaust pipe (crossover) assembly is also of the ball joint type. Rivieras have ball joints between the mufflers and resonators to allow accurate

resonator alignment. All other connections are of the slip joint type. No gaskets are used in the entire system.

The muffler is of the oval-shaped, dynamic flow type having very low back pressure. It is double wrapped of heavy gauge galvanized steel with a layer of asbestos placed between wrappings to aid in reduction of noise transfer and

to prevent any "oil-canning" effect. The exhaust system is supported by free hanging rubber-fabric mountings which permit free movement of the system but do not permit transfer of noise and vibration into the passenger compartment.

## DIVISION III SERVICE PROCEDURES

### 80-4 REMOVAL AND INSTALLATION OF EXHAUST SYSTEM PARTS

**a. Removal and Installation of Muffler**  
The following instructions apply, in general, to all exhaust systems. For specific information,

see the illustrations following this paragraph.

1. Remove U-bolts and clamps from muffler inlet and outlet nipples.
2. Split muffler inlet and outlet nipples on opposite sides so that they are loose on inner pipes. Be careful not to damage inner pipes.
3. Disconnect front or intermediate exhaust pipe at forward end ball joint by removing bolts or nuts.
4. Pull exhaust pipe forward and twist to disengage from muffler. Lay exhaust pipe on floor.
5. Remove old muffler by pulling forward and twisting.
6. Subassemble exhaust pipe and new muffler on floor, tightening new U-bolt and nuts just snug so that muffler will move but will stay where moved.
7. Raise exhaust pipe - muffler subassembly into position and install new bolts or nuts at forward ball joint just snug.
8. Install new U-bolt and nuts at rear of muffler just snug.
9. Align muffler and exhaust pipe. See drawing that applies - Figures 80-7 through 15.
10. Tighten all bolts and nuts.

#### **b. Removal and Installation of Resonator**

1. Remove tail pipe clamp bolt

and spread clamp so that resonator-tail pipe assembly will slide through clamp.

2. Split resonator inlet nipple on opposite sides so that it is loose on rear exhaust pipe. Be careful not to damage exhaust pipe.
3. Slide old resonator to rear and then forward out of tail pipe clamp.
4. Install new hanger where necessary.
5. Install new resonator-tail pipe assembly.
6. Install new U-bolt and clamp. Install new tail pipe hanger bolt. Tighten all nuts so that resonator can be moved, but will stay where moved.
7. Align resonator assembly. See drawing that applies - Figures 80-10 through 15.
8. Tighten all clamps.

#### **c. Removal and Installation of Front or Intermediate Exhaust Pipe**

1. Cut off defective exhaust pipe just forward of muffler nipple.
2. Remove U-bolt and clamp from forward muffler nipple. Disconnect exhaust pipe at forward end ball joint by removing bolts or nuts.
3. Split stub end of exhaust pipe in muffler, being careful not to

damage muffler nipple. Collapse stud end and remove.

4. Raise new exhaust pipe into position and install new bolts or nuts at forward ball joint just snug.
5. Install new U-bolt and clamp just snug.
6. Align exhaust pipe. See drawing that applies - Figures 80-7 through 15.
7. Tighten all bolts and nuts.

#### **d. Removal and Installation of Tail Pipe**

1. Raise car so that rear axle and frame are separated as far as possible.
2. Cut off defective tail pipe just rearward of muffler nipple.
3. Remove tail pipe clamp bolt and spread clamp. Remove old tail pipe.
4. Split stub end of tail pipe in muffler, being careful not to damage muffler nipple. Collapse stub end and remove.
5. Jockey new tail pipe over rear axle and into position.
6. Install new U-bolt and clamp. Install new tail pipe hanger clamp bolt. Tighten all nuts just snug.
7. Align tail pipe. See Figure 80-7 or 8.
8. Tighten all nuts.

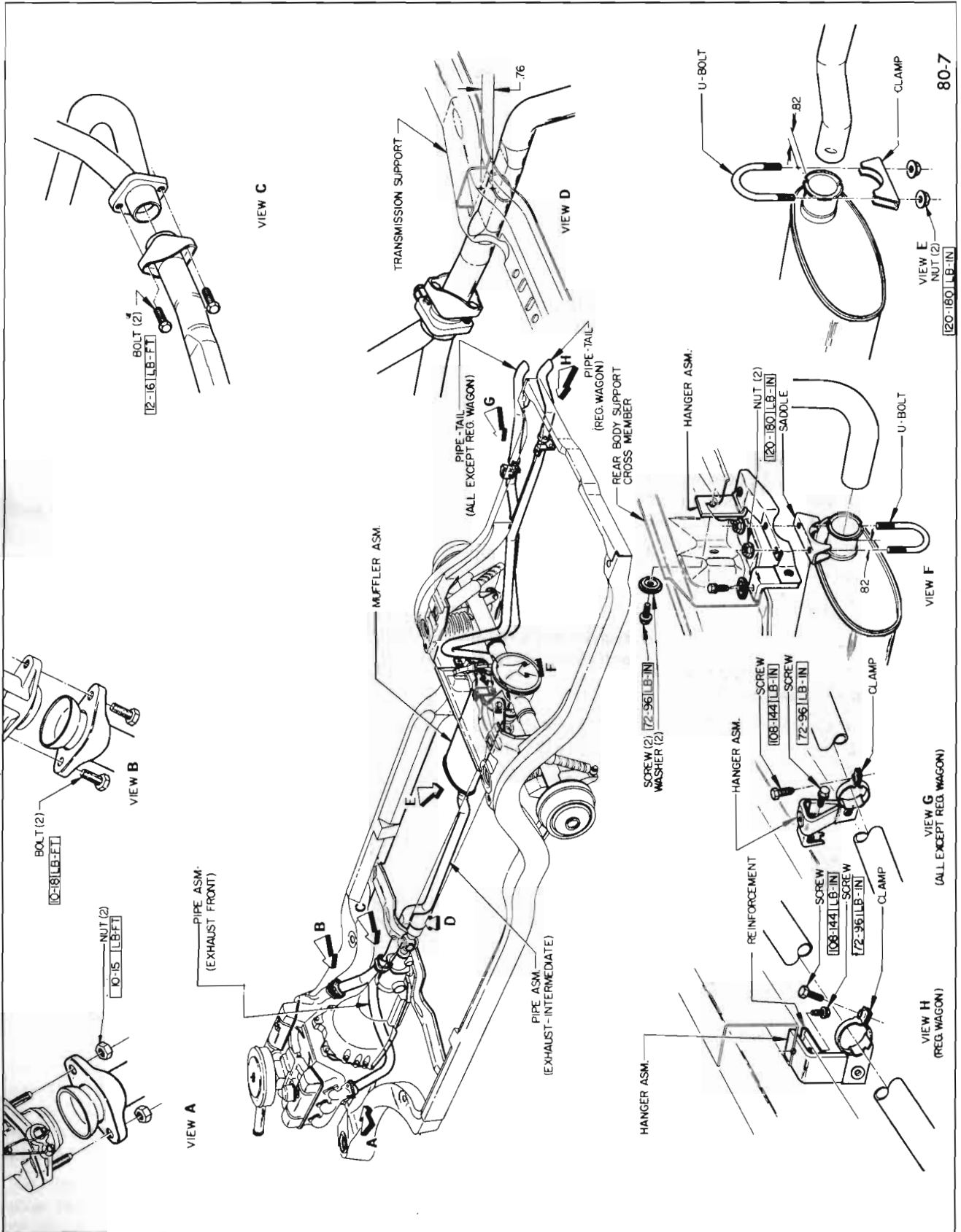


Figure 80-7 Single Exhaust System - V-6

80-7

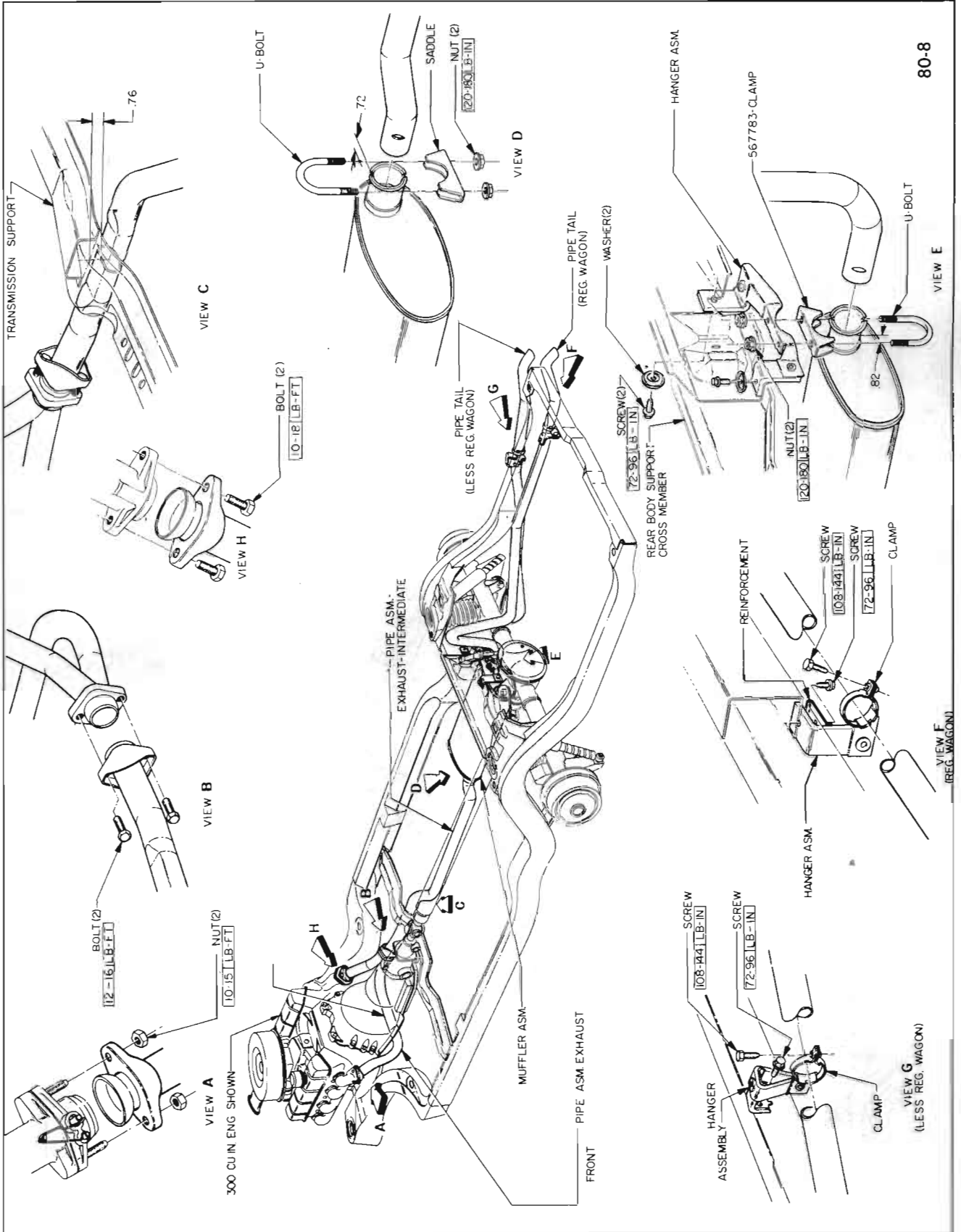


Figure 80-8—Single Exhaust System - Special and Skylark 340 V-8

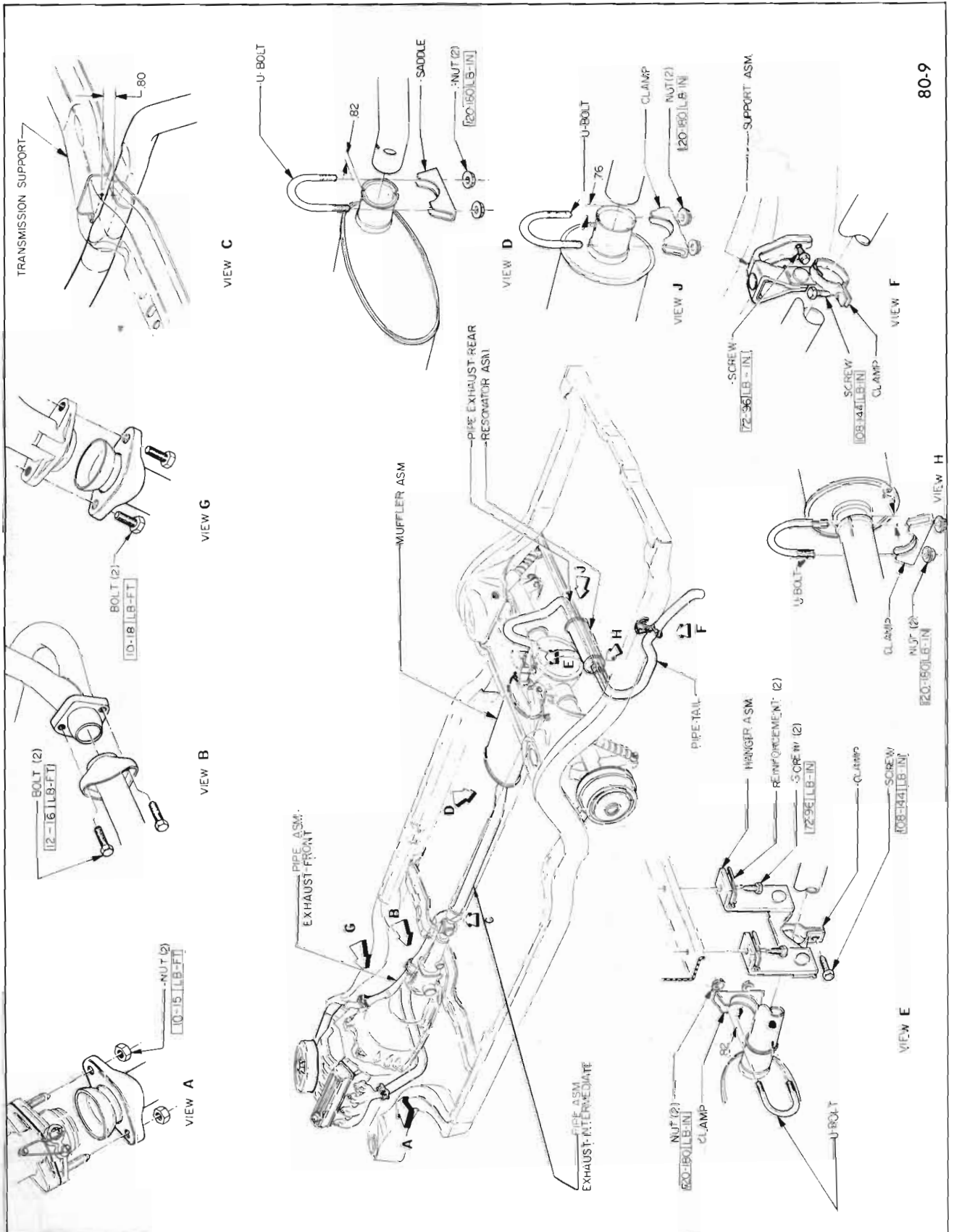


Figure 80-9—Single Exhaust System - Sport Wagon

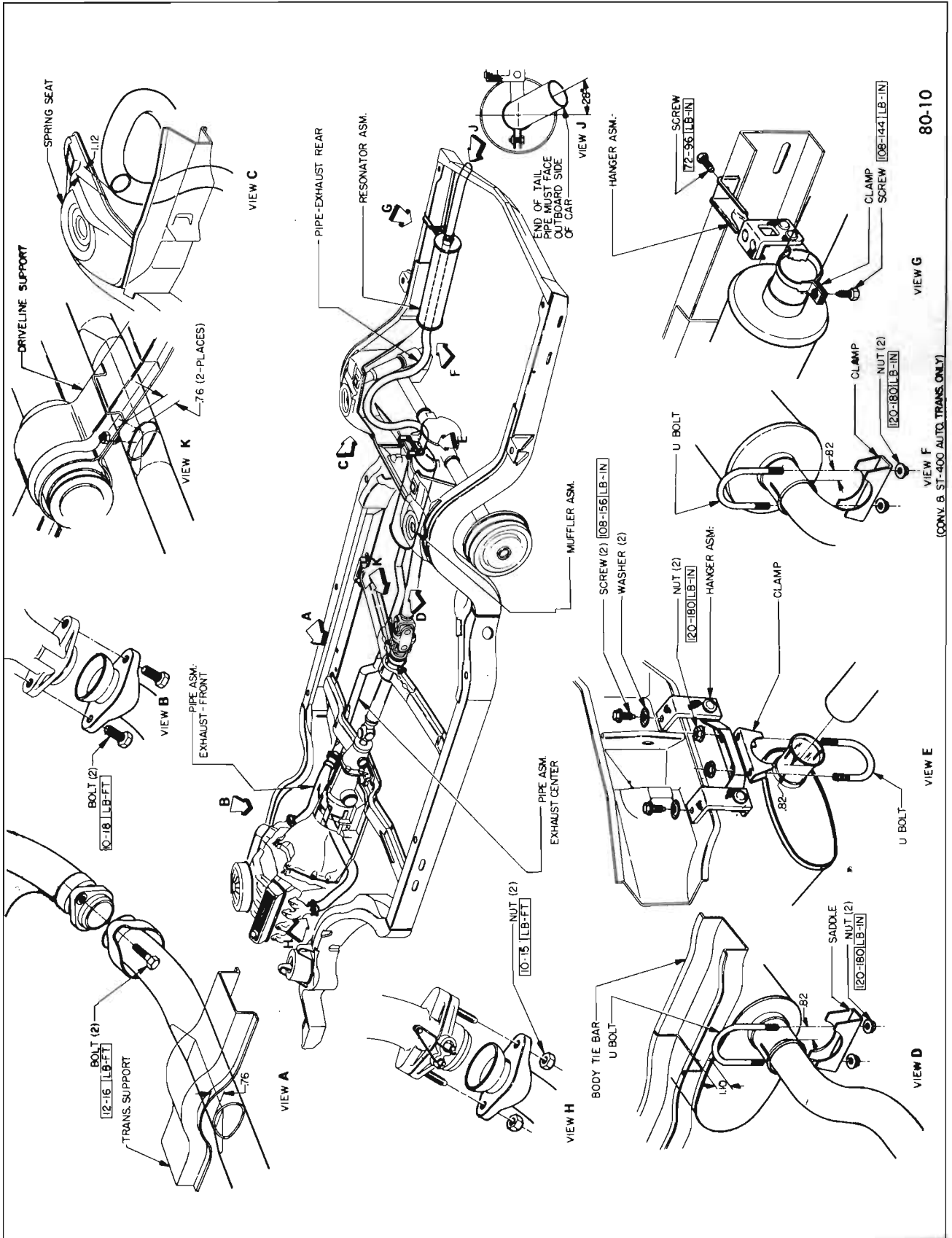
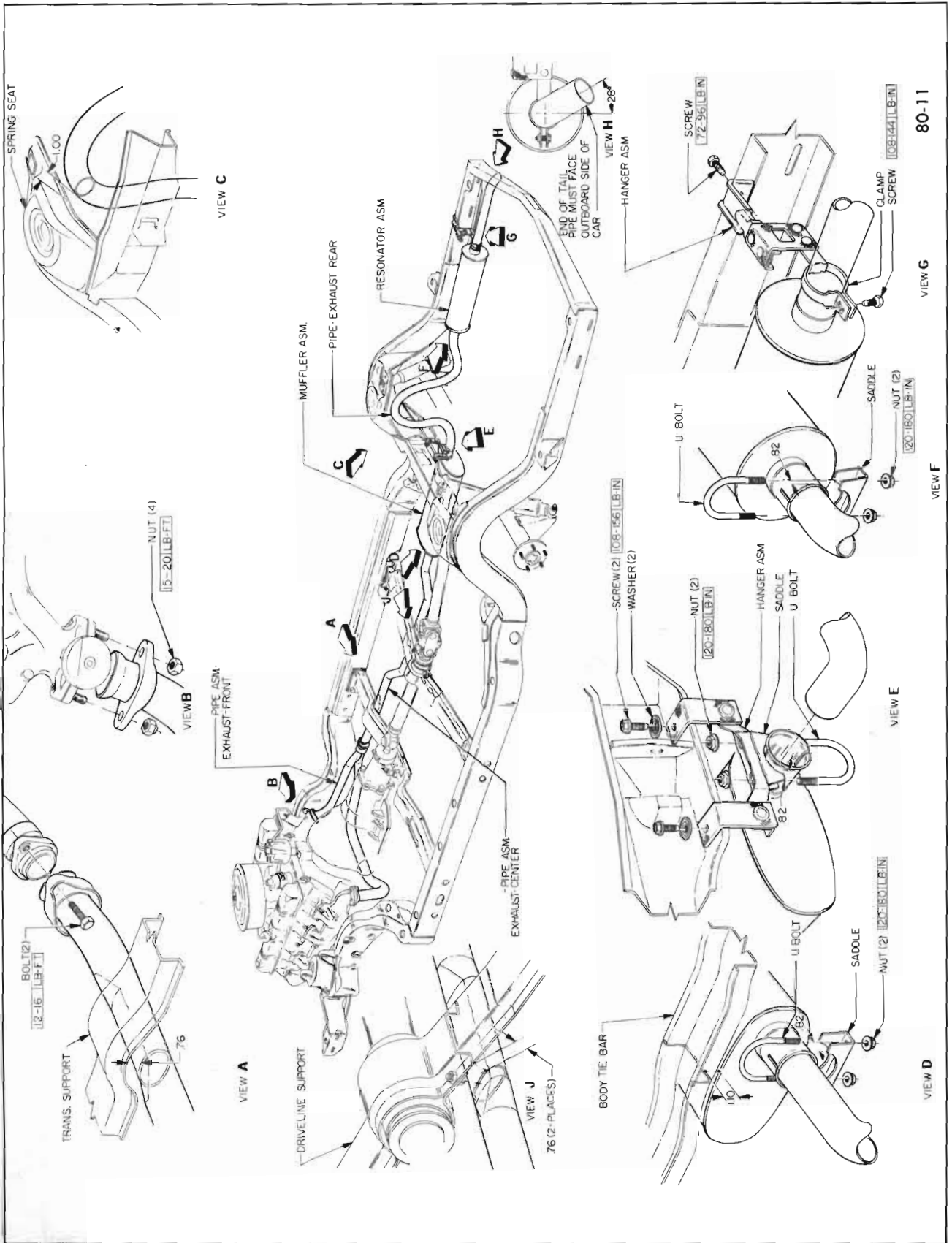
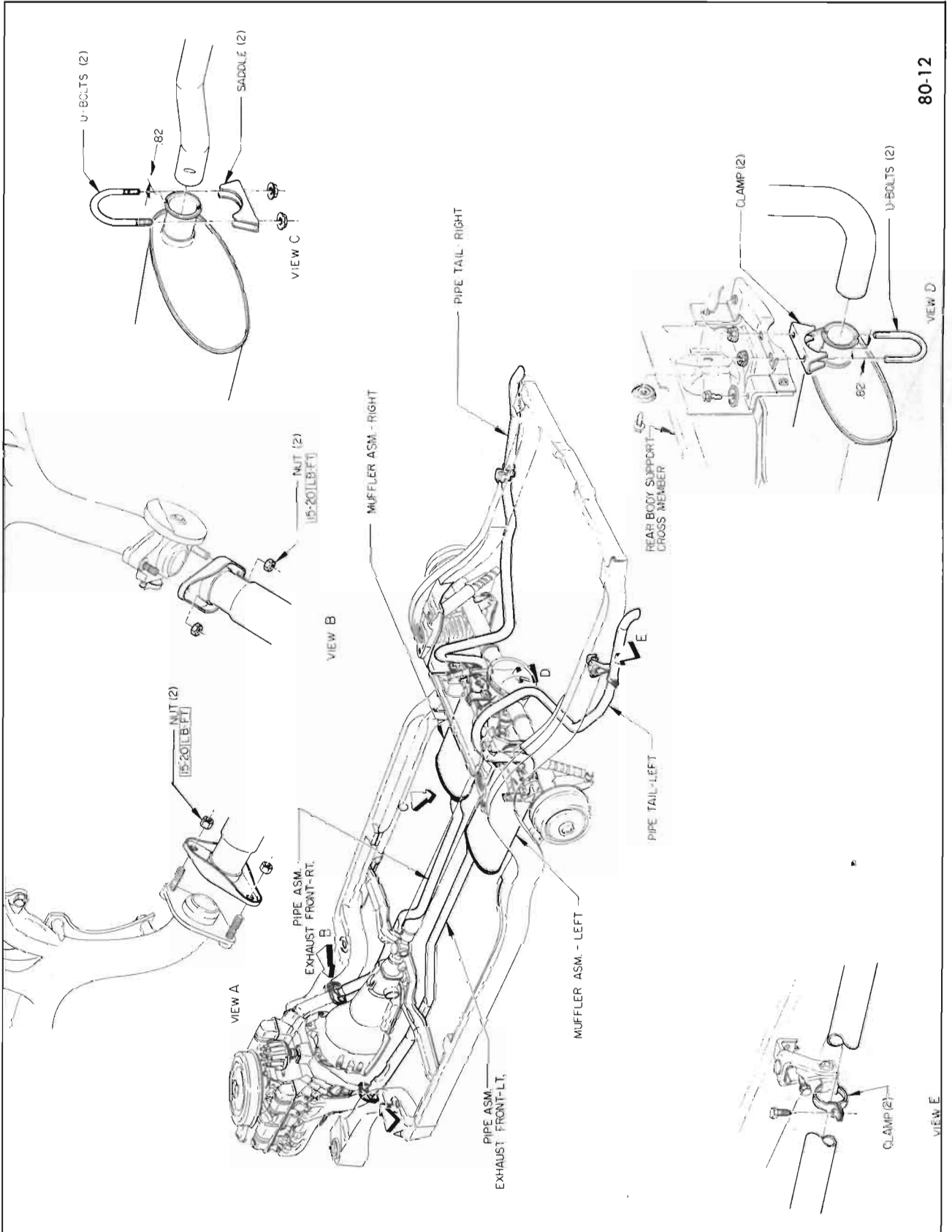


Figure 80-10—Single Exhaust System - LeSabre

(CONV. B. ST.-400 AUTO. TRANS. ONLY)



• Figure 80-11—Single Exhaust System - Wildcat and Electra



80-12

Figure 80-12—Dual Exhaust System - Skylark Gran Sport





