GROUP 12
SHEET METAL AND BUMPERS

CONTENTS OF GROUP 12

12-1 DESCRIPTION OF FRONT END SHEET METAL

a. Front End Sheet Metal

NOTE: Refer to Group 13 for checking alignment of under body, front wheel house and engine compartment side rails.

The front end sheet metal parts are attached directly to body front wheel house and side rails as shown in Figures 12-1, 12-2, 12-3, 12-4 and 12-5. The adjustment points for the front fender to body are indicated on Figure 12-1.

The radiator assembly is suspended by three rubber-faced "U" shaped supports. See Figure 12-4. The two lower supports are attached to the front body rail and the upper support is part of the fan shield which is attached to the upper tie bar panel. Adjustment of the radiator alignment is provided by the screw holes in the supports being larger than the attaching screws.

IMPORTANT: Do not tighten the three fan shield retaining bolts any tighter than specified on Figure 12-4 as upper tie bar may be damaged.

b. Hood, Hinges and Latch Mechanism

The hood panel is of one piece construction, strengthened and held to shape by reinforcements of stamped sheet metal.

The rear of the hood assembly is attached to the body cowl and wheelhouse on each side by hinge assemblies which permit the front of the hood to be raised. A heavy coil spring connected between each hinge assembly assists in raising the hood and holds it in the open position. See Figure 12-7.

The front of the hood is held down by a dovetail bolt (Figure 12-6) which engages a latch mechanism in the front of the upper tie bar panel (Figure 12-4).

The hood is unlocked by pushing a release lever located beneath the front of the hood and raising the hood at the same time. The single release lever also releases a safety hook. The release lever must be held until the hood is lifted beyond the catch for the safety hook.

12-2 FENDER, BUMPER AND HOOD ALIGNMENT INSPECTION

The hood, front fenders and bumper must be aligned with each other on every car to take care of slight variations in form and dimensions of the individual parts. Sheet metal parts stamped in a given set of dies will vary somewhat in form and dimensions due to variations in the hardness of different batches of sheet metal, which cause the stampings to spring in varying amounts when released from the form dies.

The hood and front fenders are properly aligned during the installation at the factory; however, some readjustment may be required after a car has been shipped or has been in service for some time. In judging the need for readjustment it must be understood that exactly uniform fit and spacing cannot be obtained on all cars of a given model.

a. Hood Noises or Panel Flutter

Squeaks or grunting noises in the hood when driving over rough roads do not necessarily indicate misalignment of hood and fenders. These noises may be caused by metal contact at some point where clearance should exist or by worn or dry hood bumpers.

If the hood squeaks, check with 1/16" thick feeler all around the hood for clearance at

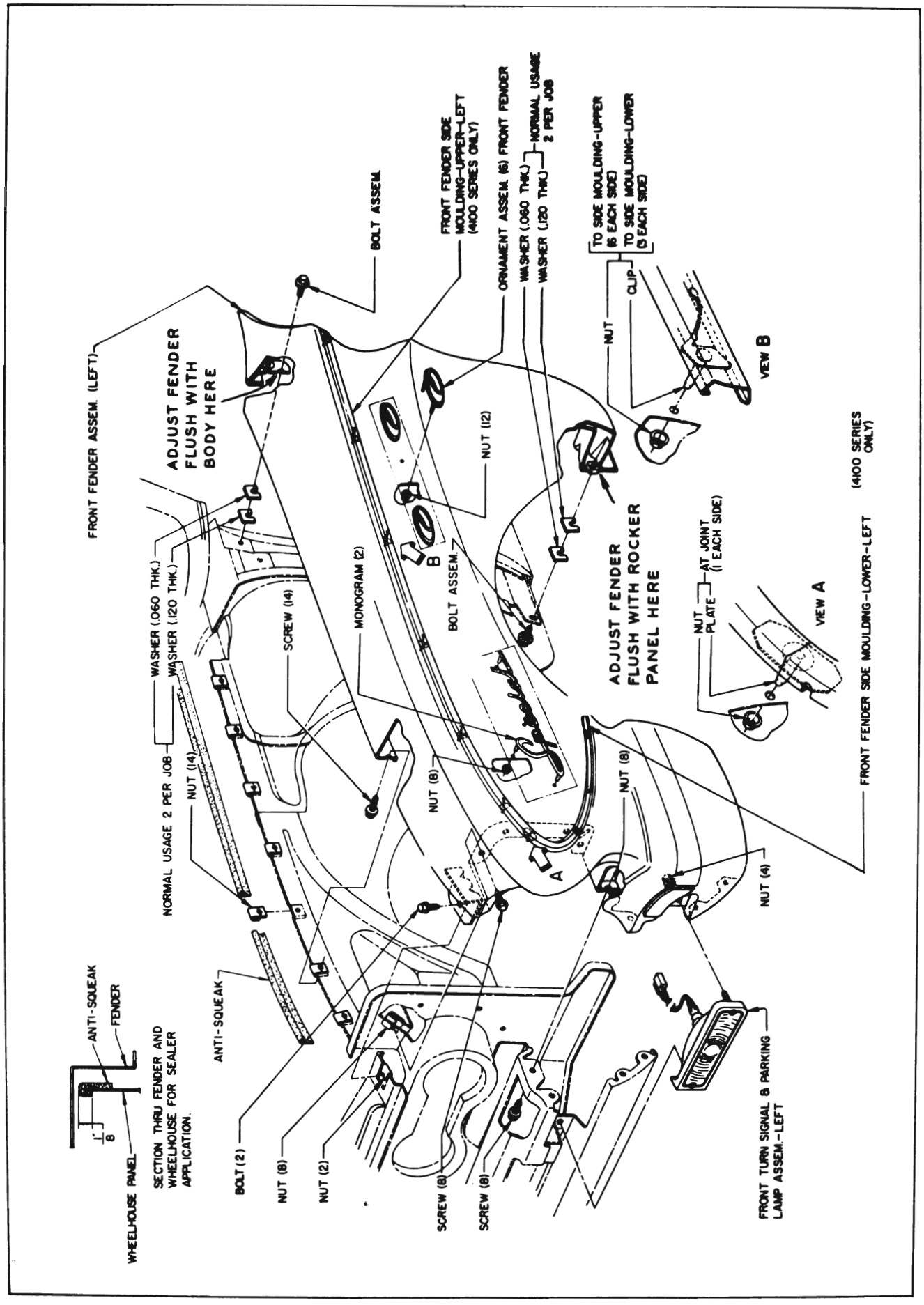

Figure 12-1—Front Fender and Parking Lamp Installation

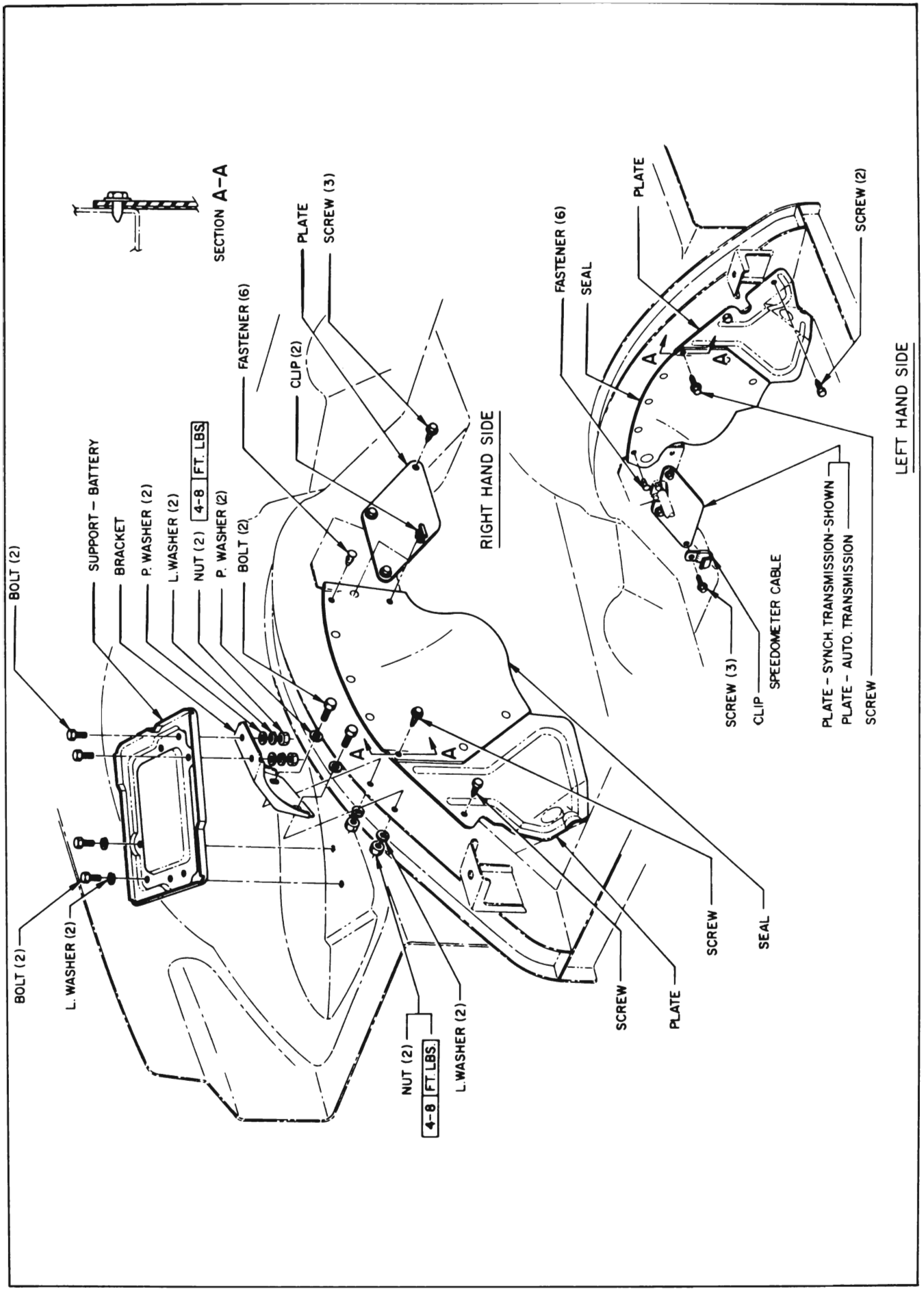

Figure 12-2— Battery Support, Engine Side Plate Fillers and Seals Installation

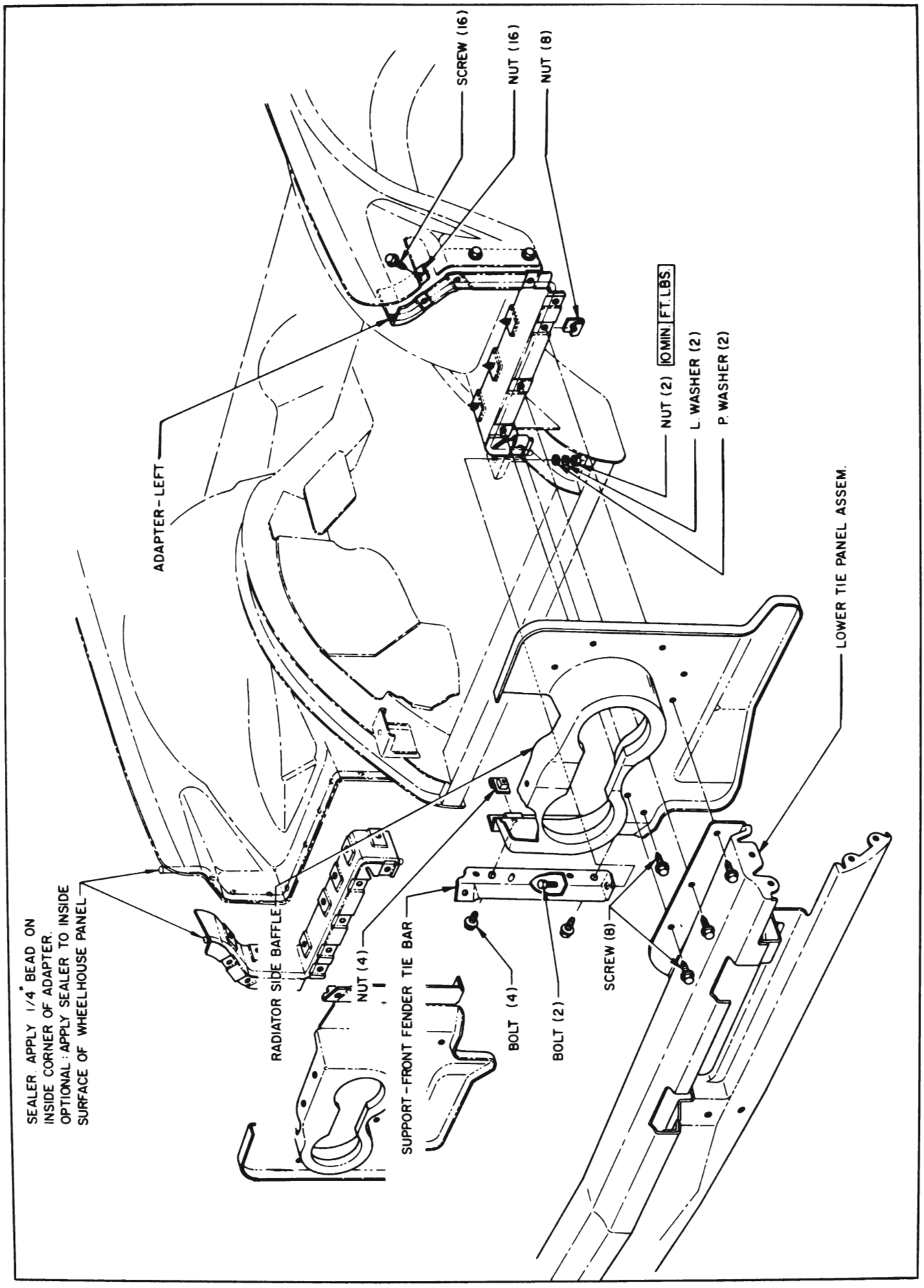

Figure 12-3—Radiator Side Baffle and Lower Tie Panel Installation

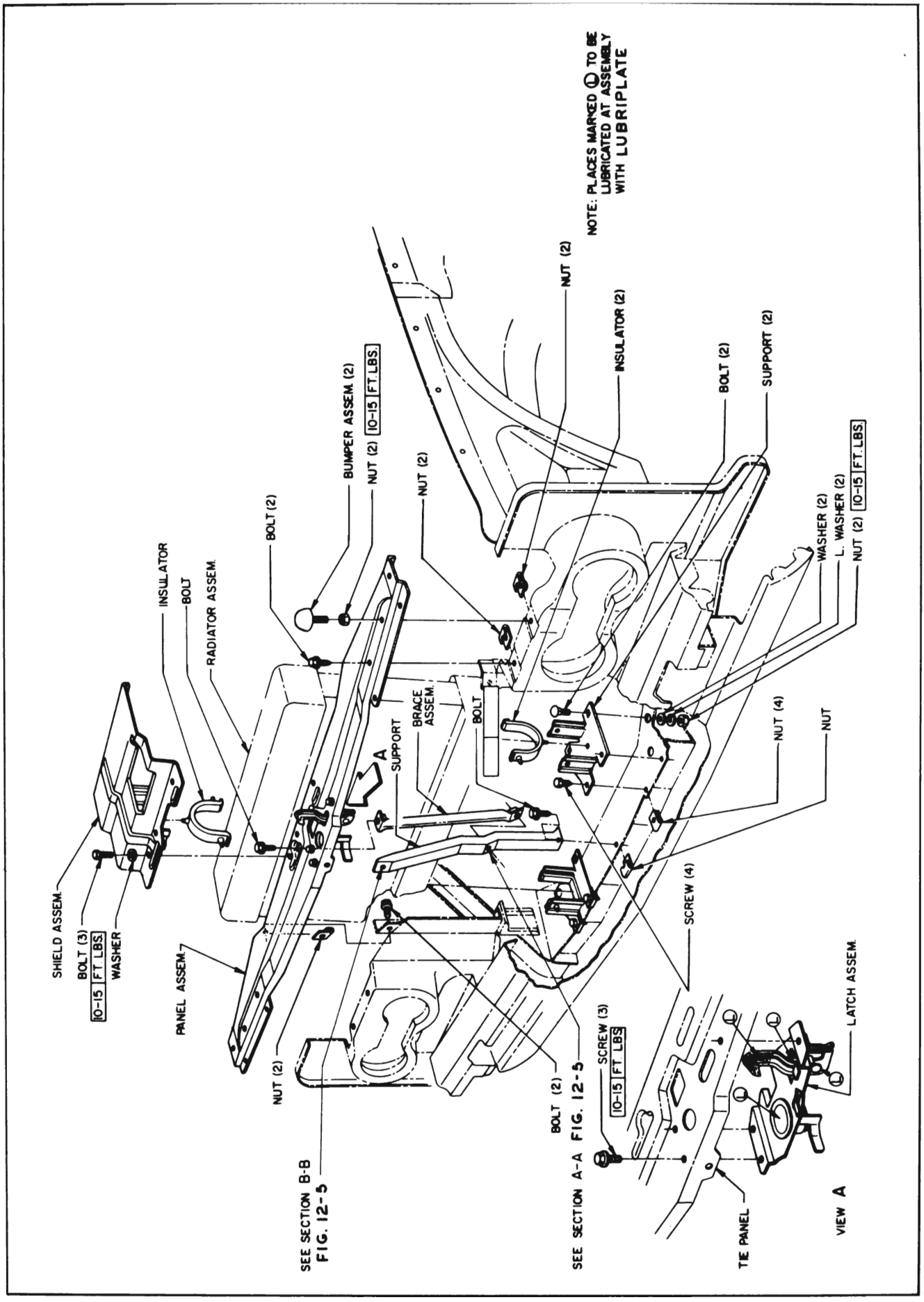

Figure 12-4 — Upper Tie Bar, Radiator Supports and Hood Latch Installation

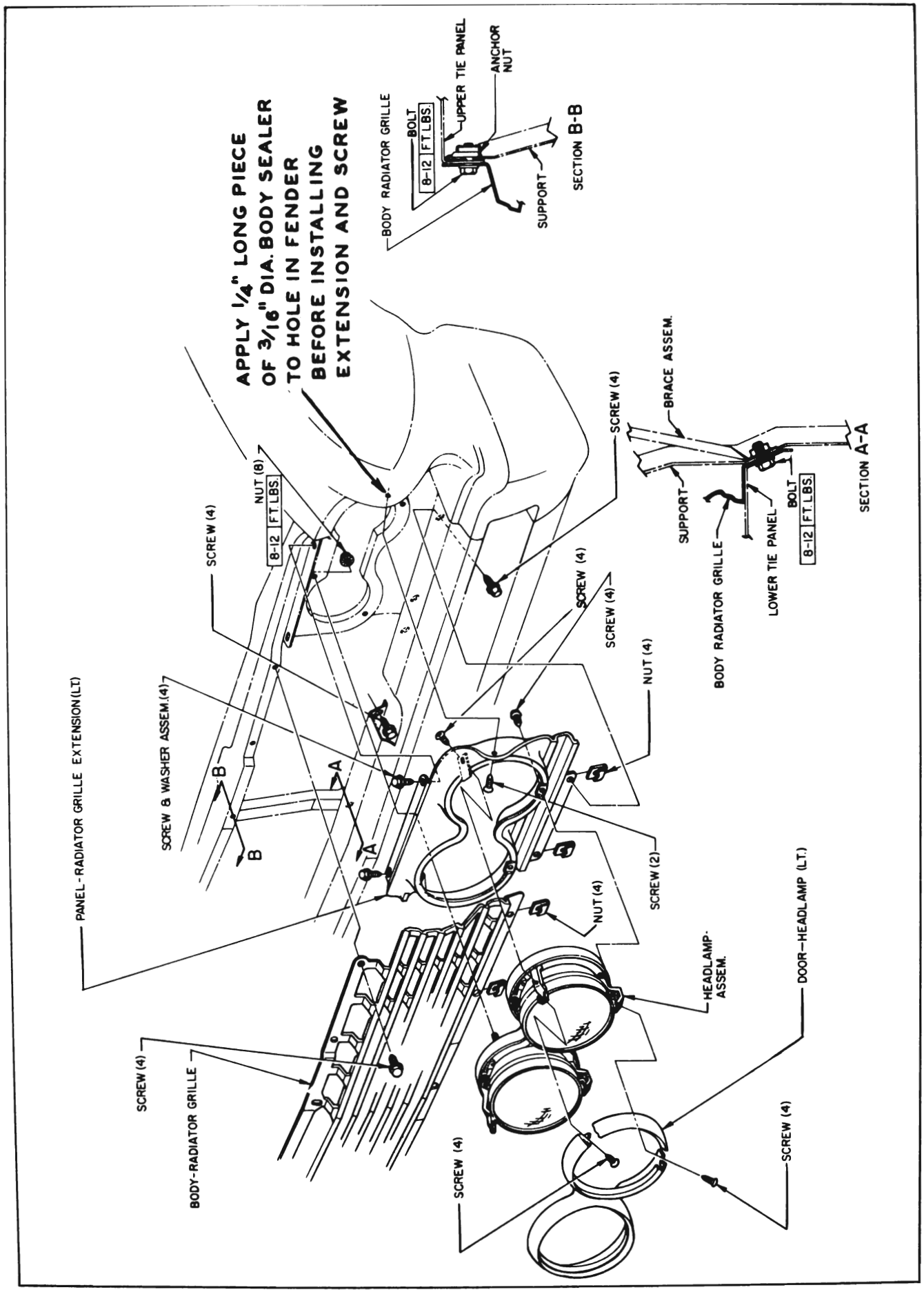

Figure 12-5—Grille and Headlamp Installation

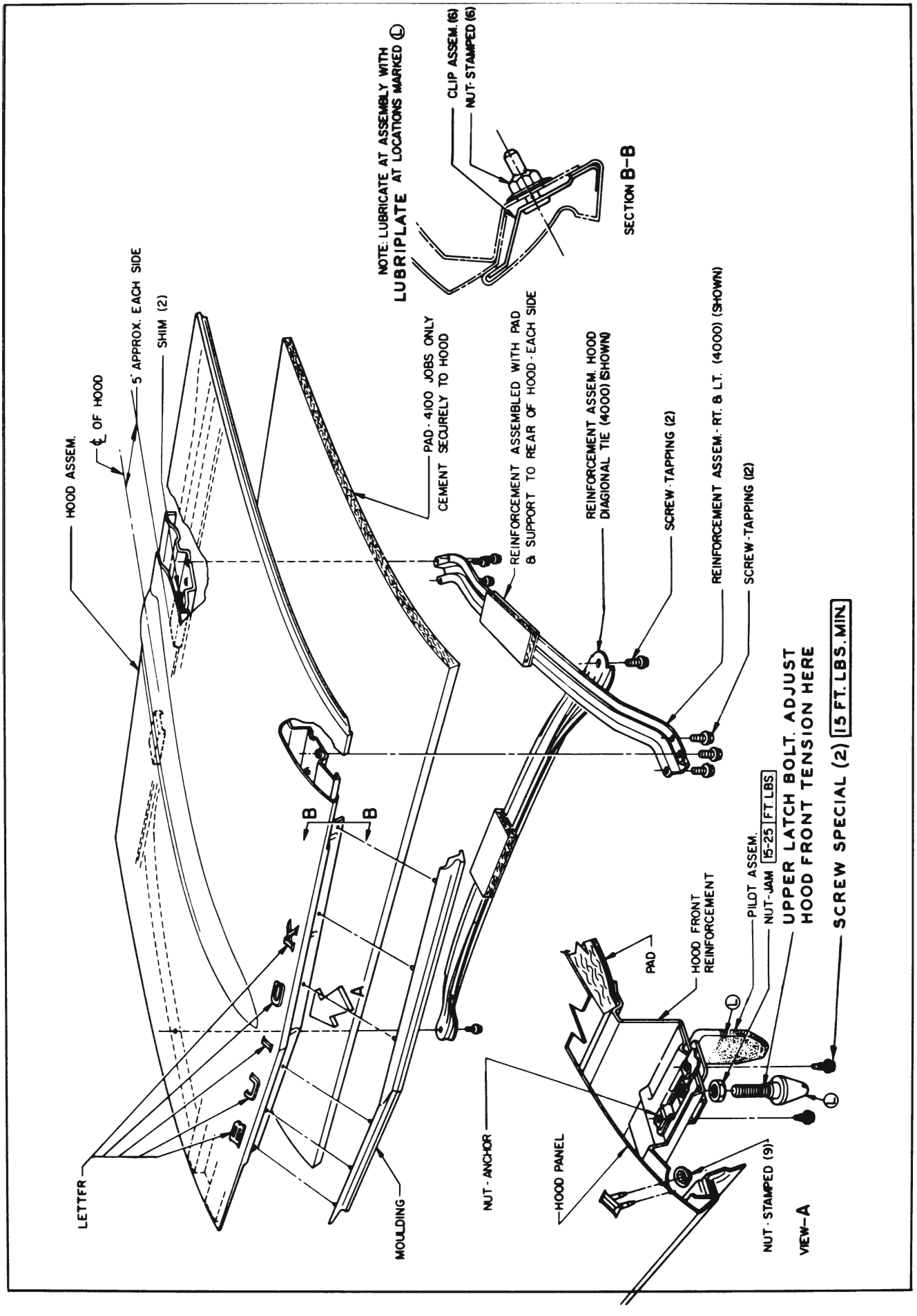

Figure 12-6—Hood Assembly

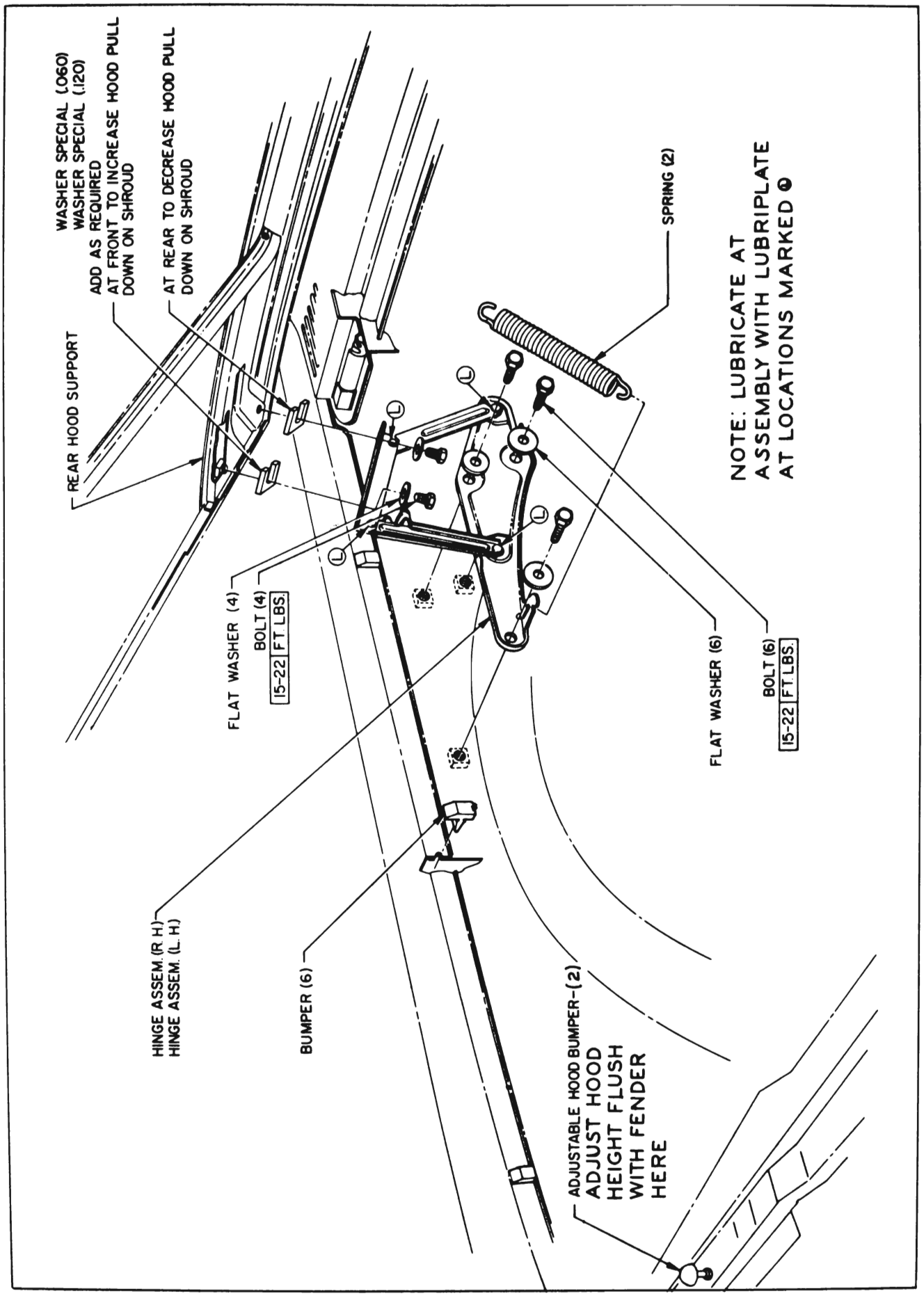

Figure 12-7—Hood Hinge Installation

fenders and cowl. If an edge of metal is making contact at any point where clearance should exist a bright metal spot will usually be found. Such spots may be depressed by spring hammering to provide clearance.

A grunting noise in the hood is usually caused by dry rubber bumpers or cowl ledge lacing. Lubricate all rubber bumpers on fender rails and cowl with silicone rubber lubricant. To correct a persistent case of squeaking or grunting where hood top panel contacts ledge lacing, even when lubricated, cement a 1/16" thick strip of felt to panel where the lacing makes contact.

To prevent hood panel flutter, the rear end of the hood panel must have firm contact with the rubber bumpers and lacing attached to cowl ledge. The hood may be raised or lowered by adjustment at hinges. See Figure 12-7.

b. Preliminary Tightening

Before deciding upon any adjustment to correct hood or fender misalignment it is advisable to check tightness of all attaching screws and bolts, since a true picture of correction requirements cannot be obtained when the sheet metal is loose and free to shift.

After all parts are properly tightened inspect fender and hood alignment (subpar. c) and hood alignment (subpar. d). Make all inspections before performing any adjustments because an adjustment at one point will usually alter alignment at other points. The preliminary inspection should determine the adjustments that will produce the best overall alignment of hood and fenders at all points.

c. Fender and Hood Alignment at Front Doors

With front doors closed there should be no metal-to-metal contact between doors and rear ends of front fenders. Check for clearance at frequent points, using a strip of fibre or other soft material 1/32" thick. The spacing between rear end of front fenders and the shoulder on front edge of doors should be approximately 1/8", and fairly uniform from top to bottom.

Before making any adjustment of sheet metal to provide necessary clearance at points mentioned, first make sure that front doors are properly aligned in the body openings. If fender and door panel surfaces are not reasonably flush correction may be made by adding or removing shims between the fender and the cowl. See Figure 12-1. Where spacing between rear edge of front fender and door is objectionably uneven from top to bottom, it may be necessary to loosen fender attaching bolts and pry between fender and rocker panel or draw fender into position and retighten bolts.

d. Hood Alignment Inspection

When closed and latched, the hood should bear firmly against the rubber bumpers on upper tie bar panel and on edge of fenders. Height of hood and width of space between hood and fenders should be reasonably even from front to rear. See paragraph 12-3 (d) for hood adjustment and paragraph 12-3 (a) for fender adjustment.

12-3 FENDER, BUMPER AND HOOD ADJUSTMENT AND REPLACEMENT

a. Front Fender and Bumper Adjustment

Slight adjustment of fender to door spacing can be made by loosening the fender attaching bolts and inserting a screw driver between the rocker panel and fender to pry opening wider at lower edge, or have a helper lean on front fender to lessen gap at bottom.

In and out adjustment of the lower rear edge of the front fender is accomplished by shimming at the two fender to body attaching points shown in Figure 12-1. The fender line should be flush with the rocker panel.

The front bumper attaching bolt holes in anchor bars and inner and outer bars are slotted to permit movement of the bumper to permit proper alignment with adjacent parts. See Figure 12-8.

b. Removal and Installation of Hood Springs

1. Remove hood.

2. To remove hood spring, insert Remover and Installer J-9214 through loop in forward end of spring with bend of tool approximately one inch from loop. Using inside corner formed by hinge as a pivot, unseat spring from notch.

3. Then push tool forward, causing hood spring to slide clear of hinge.

4. To replace hood spring, insert Remover and Installer J-9214 through loop in forward end of spring. Using hinge as a pivot, seat spring into notch.

c. Removal and Installation of Hood Assembly

1. Support hood in extreme "up" position.

2. Place folded rags under rear corners of hood to prevent possible damage to fenders.

3. Scribe a reference line along edge of each hinge flange so hood can be replaced in same position.

4. Remove four hood hinge to hood bolts.

5. Lift hood from car.

6. To install, reverse above procedure.

d. Hood Adjustments

1. Rear Height. Rear hood height is determined by special washers between hinge and hood. Removing or adding washers will shift rear of hood up or down with respect to hinge. See Figure 12-7.

2. Rear Tension. Too little tension is indicated if the rear hood area flutters. To increase tension, add special washers between the hood and the hinges at the front bolts. See Figure 12-7.

Too much tension is indicated if the rear area of the hood bends as it is closed. To decrease tension, add special washers between the hood and the hinges at the rear bolts. See Figure 12-7.

3. Front Height. This is determined by two adjustable bumpers. See Figure 12-7. However, the front of the hood may not contact these bumpers unless the hood latch is correctly adjusted as described in Step 4.

4. Latch Tension. Latch tension is determined by the length of the latch bolt. See Figure 12-6. If the front of the closed hood is not held tightly against the bumpers, the latch bolt must be shortened. If the hood can't be closed or is hard to close, the latch bolt must be lengthened.

To adjust the latch bolt, loosen the jam nut and turn the bolt by means of the screwdriver slot in the lower end. Then retighten the jam nut and close the hood to recheck latch tension.

5. Hood Alignment. Clearance at the rear of the closed hood should be approximately 1/8" to 3/16", and the spacing should be fairly uniform from side to side.

Fore-and-aft movement of the hood is allowed by slotted bolt holes in the hinges. Before adjusting, scribe a reference line along the edge of each hinge flange. Then loosen the hinge to hood bolts and shift the hood from this line as required.

Sideways the hood is self-centering in the closed position by virtue of the play in the hinge arms and the rubber bumpers on edge of fenders.

6. Latch Alignment. Raise and lower the front end of the hood slowly several times to check for proper alignment between the latch bolt and guide on the hood and the lower latch assembly on the upper tie bar panel. The latch bolt and guide should enter the opening in the lower latch without any side strain or other interference. See Figure 12-4 and 12-6.

The hood upper latch bolt and guide can be shifted by means of over-sized holes, therefore, alignment is made by shifting this latch. Make sure that the hood is properly aligned as described in Step 5. Loosen the upper latch mounting bolts and tighten finger tight. Close the hood, thereby causing the upper latch to shift into alignment. Open the hood and tighten the bolts, being careful not to disturb the position of the upper latch.

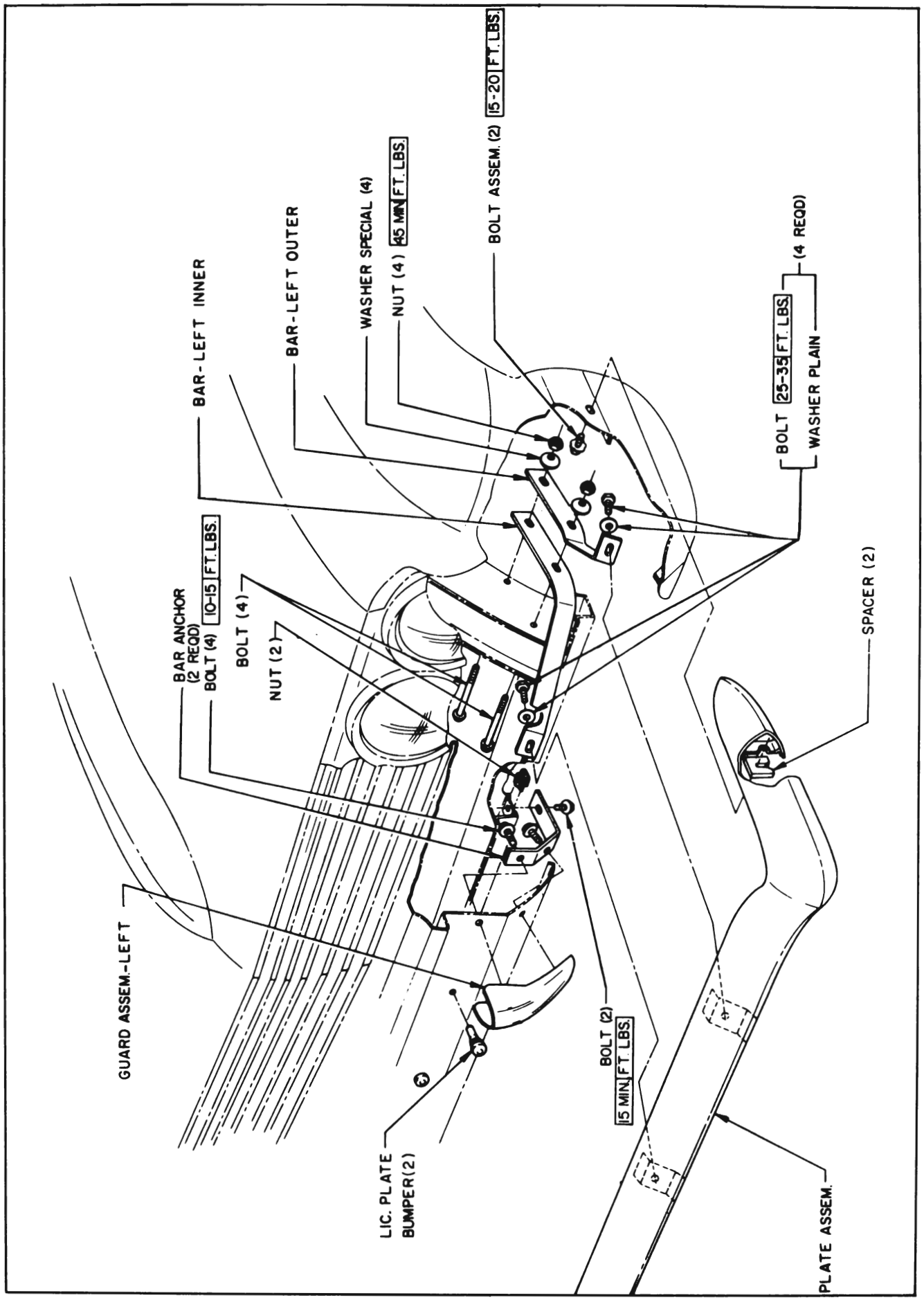

Figure 12-8—Front Bumper Installation

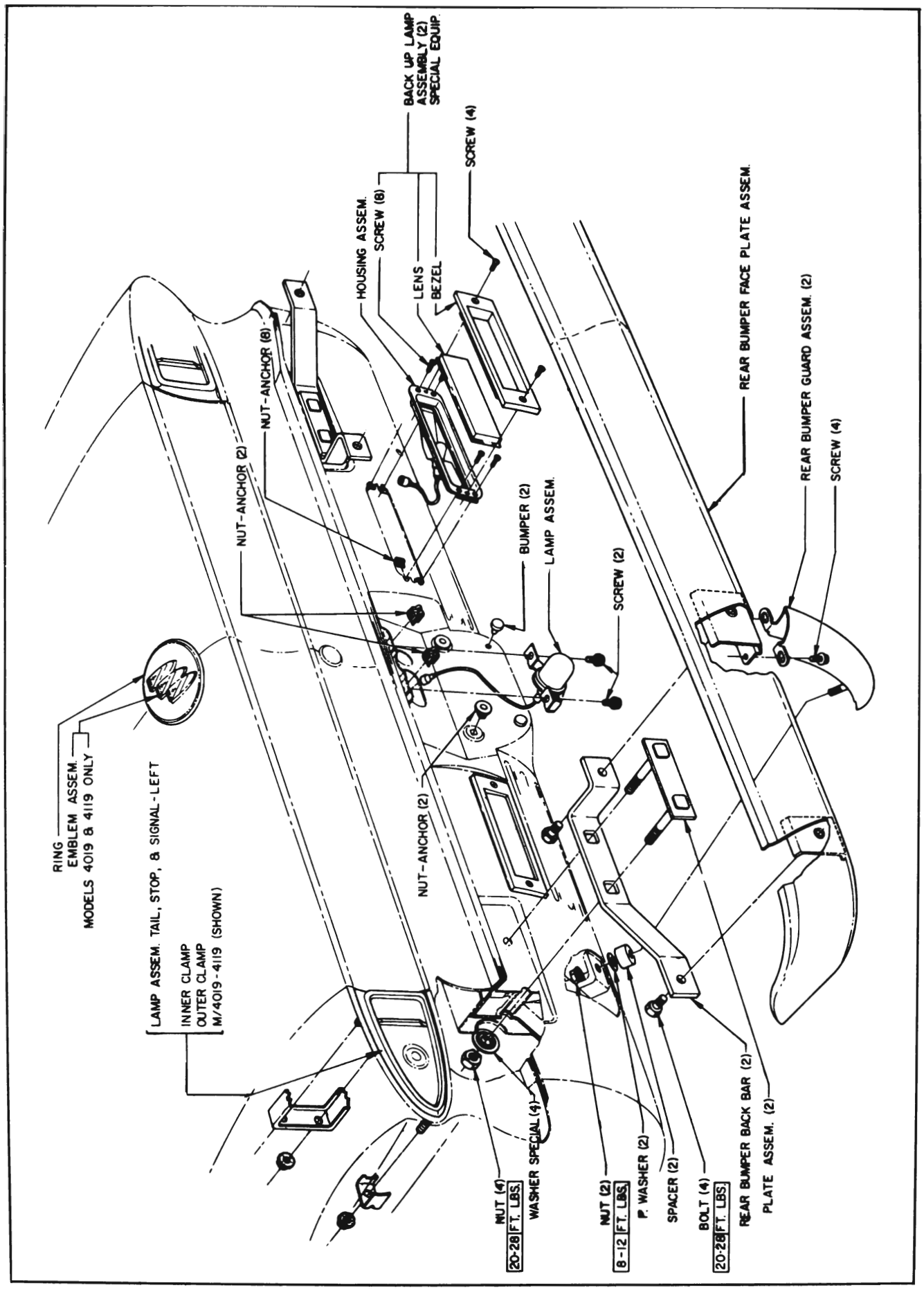

Figure 12-9—Rear Bumper, License, Tail and Back-up lamp Installation