

FRAME**SECTION I. FRAME ALIGNMENT****1-1. Diagonal Measurements.**

a. Frames that have been subjected to severe impact or twist can be checked for proper alignment by making diagonal measurements. These will indicate which section of the frame is distorted and must be straightened or repaired to insure correct frame alignment.

b. In the event the body and engine have been removed from the frame assembly, the diagonal measurements shown in Fig. 1 can easily be taken with tram gages or a steel tape.

c. The lengths of diagonal measurements connecting corresponding check points must not vary more than 1/4".

1-2. Chalk Line Measurements.

a. The frame diagonal measurements can be obtained while the body and engine are still mounted to the frame, through the use of a plumb bob and chalk line. The check points shown in Fig. 1 are transferred from the same points on the frame being checked to the floor, facilitating diagonal measurements between the corresponding check points that have been transferred to the floor.

b. To check frame alignment by this method, proceed as follows:

(1) Inflate tires to proper measure. Then position car on a clean level floor and set brakes.

(2) Attach the plumb bob to a check point on one side of the frame. Mark this check point on the floor under the point of the plumb bob. Transfer the corresponding check point on the opposite side of the frame, and all other check points, in the same manner.

NOTE

The degree of accuracy of this check will depend upon how accurately the check points are

transferred from corresponding check points on the frame to the floor.

(3) After all check points on the frame have been transferred to the floor, release the brakes and move the car away.

(4) Connect the check points marked on the floor with diagonal chalk lines.

(5) Measure the distance between points on the floor that are connected by diagonal lines marked "J" and "K". A variance greater than 1/4" between the lengths of these two diagonal lines indicates parts of frame are misaligned. Frame must be straightened to correct unequal lengths of diagonal lines to within a 1/4" tolerance.

(6) Check the center and rear sections of the frame in the same manner. Frame straightening is required when corresponding diagonals "L" and "M", or "N" and "O", are found to be unequal.

(7) Dimensions shown at check points, A, B, C, D, E, and F, in Fig. 1, are not comparable to any other locations in the frame. However, the dimensions taken from corresponding locations on the frame being checked for correct alignment should not vary more than 1/4" from the dimensions shown.

(8) Dimensions shown at check points G, H, I, P, Q, and R, taken from corresponding check points on the frame being checked, should not vary more than 1/4" from the dimensions shown.

(9) A final check as to correct frame alignment, after frame has been straightened and a new set of check points have been transferred to the floor and connected with diagonal lines, is obtained by drawing a centerline through the intersecting points of any two pairs of equal length diagonal lines. This centerline should fall within 1/4" of the intersecting points representing the center of the front and rear cross-members.

SECTION II. FRAME STRAIGHTENING

In most cases, minor frame damage can be corrected with ordinary straightening methods. Heat should be applied cautiously during this process since it may permanently weaken the metal.

When severe frame damage is experienced, the replacement of damaged frame members is usually

more practical than attempting to repair the damaged parts.

Final frame alignment should be checked on all cars that have been subject to frame straightening or repairs before car is released for operation.

SECTION III. FRAME MEMBER REPLACEMENT

Extreme care must be used when removing damaged frame members, since excessive heat or careless cutting will weaken and damage the original mounting surface of the remaining frame structure beyond

practical reuse. All replacement members should be positioned and mounted in the frame by the same method of attachment as used in the original frame assembly.

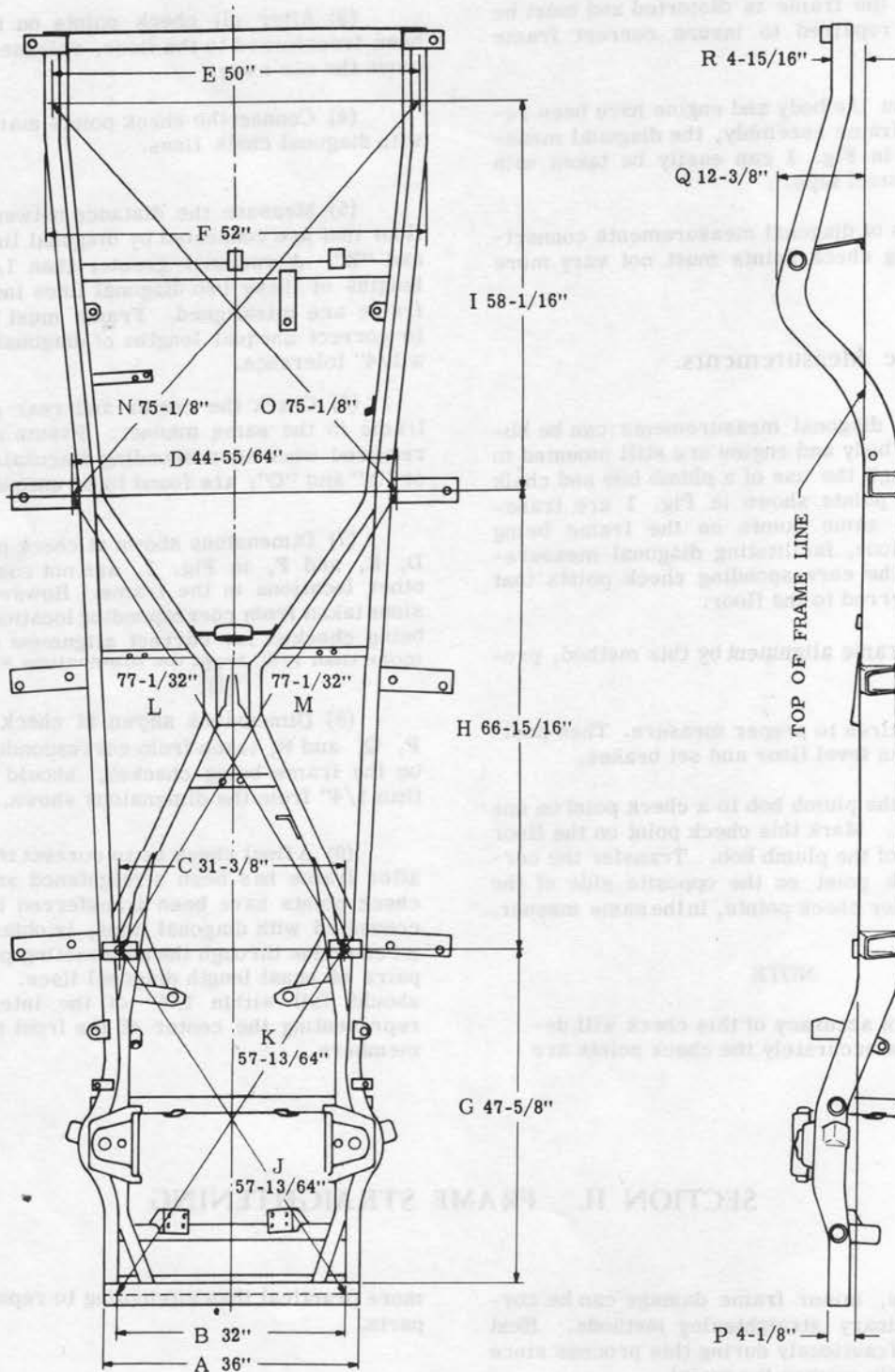


Fig. 1 - Frame Straightening Measuring Points

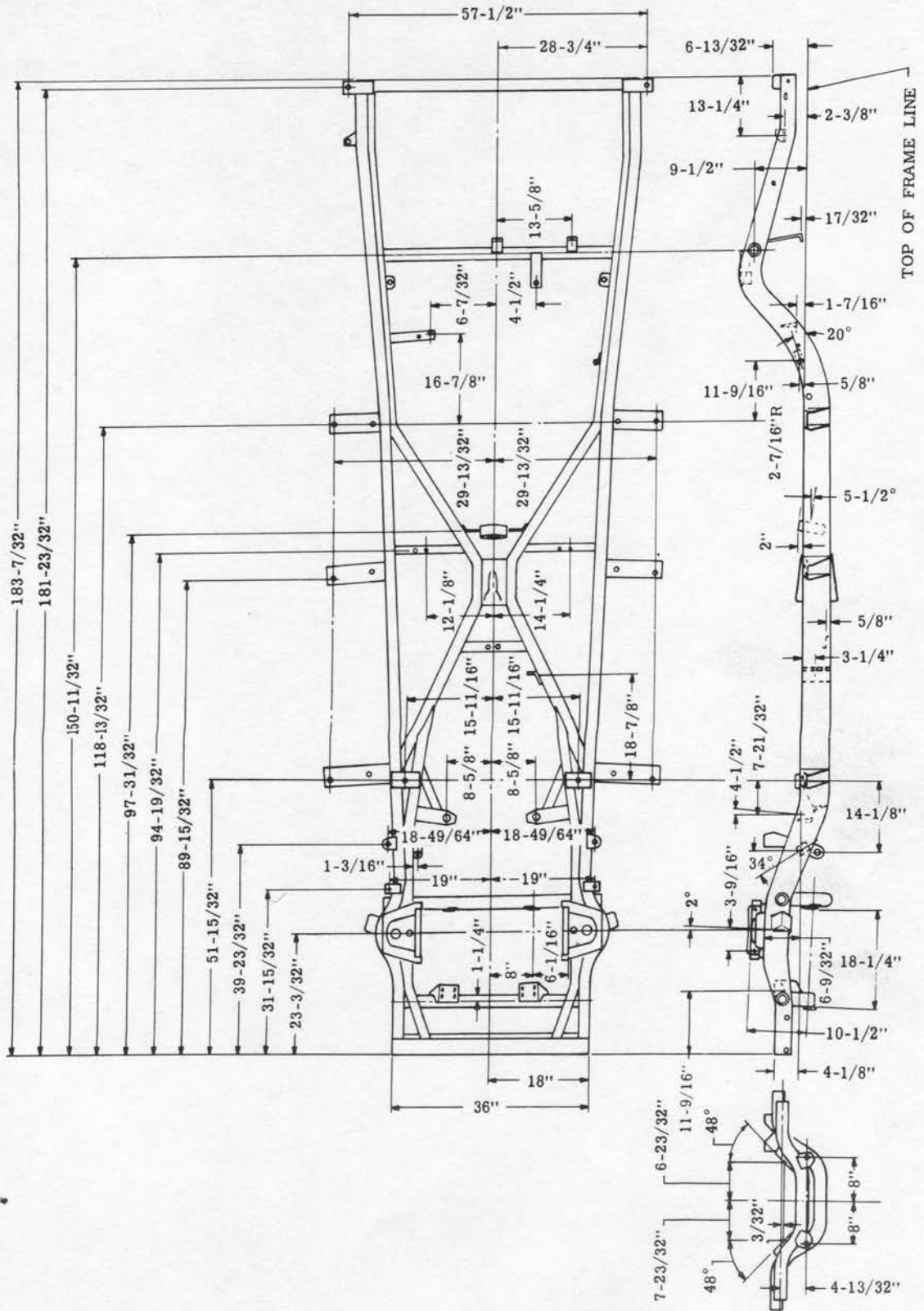


Fig. 2 - Frame and Body Mount Dimensions