

Design Standards Letter

Letter Number: **D-1960-02**

Letter Date: **02/09/1960**

Effective Date: **02/09/1960**

Section/Plan No.: **None**

Subject: **Bridge Clearance Interstate Routes**

Body

BRIDGES' NO. 1, 1960

TO ALL DIVISION, DISTRICT AND URBAN ENGINEERS:

Reference is made to Design Letter No. 33, 1959, and to Design Letter No. 1, 1960, both of which pertained to bridge clearances for Interstate Routes. This letter supersedes and voids the two previous Design Letters relative to this subject.

Attached hereto is a copy of Instructional Memorandum 20-2-60 dated January 27, 1960 and signed by Mr. B. D. Tallamy, Federal Highway Administrator, relative to this matter.

In order to comply with Mr. Tallamy's memorandum, we have decided to use a minimum vertical clearance of 16' 6".

We are particularly concerned at this time with the method to be used in obtaining this 16' 6" minimum clearance for those projects on which the detailed road and/or bridge plans have been completed, and on those projects now under contract where such vertical clearances are less than the 16' 6" now required. We believe the most practical method of revising such plans so that changes in both road and bridge plans will be held to a minimum, will be to simply raise the grade across the overhead structure parallel to present grade as necessary to obtain the required 16' 6" vertical clearance. In this manner the bridge superstructure, except for elevation, would remain unchanged; earth slopes under the end spans would have to be slightly steeper than 2:1, but this slight change would be acceptable. The crossroad grades beyond the limits of structure or ramp terminals and the ramp grades would have to be increased slightly; in the case of ramps, this increase in grade should be made along the ramp proper so as not to require changing the nose layout where ramps connect to the freeway. Cut and/or fill slopes can be increased slightly, if necessary, to stay within previously established right-of-way limits.

Attached hereto are some sketches showing several methods of adjusting bridge elevations with the minimum amount of changes on the ramp and crossroad grades, where plans have been completed. When a single apex vertical curve has been used over the structure, the use of a shorter vertical may accomplish the desired raise in grade provided the design speed for the crossroad can be maintained. However, this method changes the shape of the vertical curve and would require redesign of the bridge, therefore, this method should be used as a last resort. Where possible, the method to be used should accomplish the desired revision in grades without disturbing the nose layout of the ramp or the grade line profile of the bridge as designed.

In urban areas where the minimum clearance requirements are to be limited to a single routing, you will be advised later as to the route or routes to which the 16' 6" clearance will apply.

On projects where the detailed road and/or bridge plans have not been completed, the plans are to be prepared to obtain a minimum vertical clearance of 16' 6", following the presently established policy for the type of construction involved.

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Bridge Engineer**