TO:

MAIN OFFICE

REGIONAL OFFICES

SUPERSEDED BY EB 97-020
EFFECTIVE 4/4/1997

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: PROJECTS WITH EXISTING BRIDGES OF SUBSTANDARD WIDTHS

Subject Code: 7.35

Distribution: [G] Main Office [G] Regions [ ] Special

Code: EI 76-12

Date: January 27, 1976

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Supersedes:
MODIFIES EI 74-087 DATE 9/10/74
EI 75-063 DATE 9/22/75

The Federal Highway Administration currently has a rigid policy of disapproving Federal participation in any project which includes a bridge with a roadway width less than the "minimum" shown on Table 8 of A.A.S.H.T.O., "Geometric Design Standards for Highways Other Than Freeways" or Table 8 of A.A.S.H.T.O., "Geometric Design Guide for Local Roads and Streets." It is important to note that this restriction on Federal aid applies not only to bridge reconstruction work, but also to any highway work for a segment of highway which includes a bridge or culvert of substandard width, whether or not any work on the bridge is proposed.

To avoid loss of Federal funds, it is essential that bridges of substandard widths be identified at the earliest possible stage in the design process and provisions be made in the plans for widening. The means of widening may be as simple as removing safety walks or as extensive as complete bridge replacement.

If there are situations which the Regional Office believes require special consideration, the Deputy Chief Engineer (Structures) should be advised of the circumstances as soon as possible so it can be discussed with the FHWA. However, it is highly unlikely that exceptions will be approved.

In the submission of the Project Proposal and Evaluation Form (Highways), Form TEM 382, bridges of substandard width must be identified and widening of the bridge must be included in the project work. The need for widening should be explained under "Why do we need it?" This work should be categorized under "Project Type" on the Capital Project Progress Report as "bridge widening" or, if the bridge is of a type which cannot be widened sufficiently, such as a through truss, it should be categorized as "bridge replacement." If it is necessary to widen a bridge, it is appropriate to correct structural deficiencies at the same time so the scope of work may be broadened to "bridge reconstruction."

The Federal requirements for minimum bridge width, which are also A.A.S.H.T.O. requirements, are not unreasonable. Generally, they should be followed whether or not Federal funds are used. However, there may be special cases in which Federal funding of a desirable safety or R&P project is jeopardized because of the existence of substandard features in a

bridge which would be very expensive to correct, possibly more costly than the primary project itself. If the Regional Office believes that the project should be progressed without the structure improvements and without Federal aid, the project initiation should identify the substandard bridge features and explain why that recommendation is being made. The cost to improve the bridge must be indicated.

The Regional Office must review all projects which have already been initiated to ascertain if there are bridges which must be widened. If so, a scope change to reflect the appropriate bridge work should be initiated. It is essential that this be done immediately for all projects under design since the time required for bridge design will often exceed the listed phase duration for detail plans.

The existing structural condition of the bridge must be documented for all bridge widening and bridge reconstruction projects. "Procedure for Bridge Reconstruction Work Included in Highway Projects" issued under EI 75-63 applies to these projects. If complete reconstruction is warranted, "Procedure for Bridge Reconstruction Projects," issued under EI 74-87 as amended by EI 74-115 and EI 75-37, shall be followed.

Bridge replacement projects require a design report as described in the unofficial Engineering Instruction distributed to Regional Directors on August 28, 1975 entitled "Design Reports for Bridge Replacement Projects."

Attached is page 13 of A.A.S.H.T.O., "Geometric Design Standards for Highways Other Than Freeways" which includes the aforementioned Table 8. Table 9 of "Geometric Design Guide for Local Roads and Streets" has the same widths. However, the following paragraph appears in that Guide:

> "The values in Table 9 do not apply to structures with a total length greater than 100 feet. These structures should be analyzed individually, taking into consideration the clear width provided, traffic volumes, remaining life of the structure, design speed, as well as other pertinent factors."

It should be noted that DHV in the table refers to two-way design hour traffic. "Approach travel way" is defined by A.A.S.H.T.O. as "The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes."

Attachment

TABLE 8

MINIMUM STRUCTURAL CAPACITIES AND MINIMUM ROADWAY WIDTHS FOR BRIDGES TO REMAIN IN PLACE

Traffic		Design loading structural capacity		Roadway clear width*, feet	
Current ADT	DHV	Desirable minimum	Minimum	Desirable minimum	Minimum**
50-250	---	H-15	H-15	26	20
250-400	---	H-15	H-15	28	22
400-750	100-200	H-15	H-15	28	22
	200-400	HS-15	H-15	32	24
	Over 400	H-20	H-15	36	30

* Clear width between curbs or rails, whichever is the lesser.

** For design speeds of 50 mph or less, minimum clear widths that are two feet narrower may be used on minor roads with few trucks. In no case shall the minimum clear width be less than the approach traveled way width.

protection of vehicles at grade crossings the width of median should be at least 30 to 40 feet. Where left turn lanes are to be provided in the median area a width of 22 feet or more is preferable and at least 14 feet should be provided.

The median adjacent to the left edge of each pavement should be designed to enable vehicles to safely encroach thereon in emergencies.

Where a divided highway is being considered, the advantages of independent roadway design should be explored to secure a pleasing and economical design that fits the topography.

On high speed, high volume highways with medians 30 feet or less in width, a suitable median barrier should be installed. Where the median is 30 feet or less in width and a median barrier is used, median curbs should not be used.

Right-of-Way Width

Right-of-way width should be not less than that required for all elements of the cross section and appropriate border areas. Additional width may be necessary for construction.

Curbs

Except where necessary to control traffic or drainage, the use of curbs on roadways should be avoided for safety in enabling vehicles to veer from the pavement in emergencies, for economy and for simplicity. Where barrier curbs are continuous along a low speed highway they should be offset at least 1 foot and preferably at least 2 feet from edge of traffic lane and so carried across all structures. Barrier curbs introduced on bridges or intermittently elsewhere should be offset at least 2 feet and preferably at least 3 feet.