

No. NHI-40 (3)/71

Dated the 29th January, 1971

To

All the Chief Engineers,
(dealing with roads)

Subject : Siting of bridges and fixation of alignment of approaches thereto on National Highways and other Centrally financed road projects.

It has been observed that while fixing sites for highway bridges, due consideration is sometimes not given, to the geometrics of the approach alignments. Besides, there is lack of coordination in the work of project preparation for bridges and their approaches, resulting in frequent timelags between their execution and completion. This sometimes results in higher costs and a definite loss to the exchequer on account of non-utilisation of the facility till the bridge and the approaches thereto are finally completed and opened to traffic. There is thus an urgent need for a greater coordination in the matter of planning, design and execution of both components of the projects with a view to achieving overall economy, sound engineering results and speedy completion of the entire job.

2. While it is recognised that route selection for a highway is influenced by the sites of bridges in the case of large rivers, it is generally not so in the case of smaller bridges upto a length of 1000 ft. or so, unless there are any special problems. For achieving overall economy consistent with sound engineering in any highway scheme, it is, however, essential to blend suitably the requirements of both road and the bridge components of the project. The following broad principles consistent with the overall economy for the siting of bridges and their approach alignments are suggested for guidance in this regard :

- (i) In the case of large bridges of length more than 1000 ft., the hydraulics and other design considerations for the bridge and its training works etc. would generally govern **site selection** and the alignment of the approaches would be adjusted to suit, keeping in view need for suitable geometrics.
- (ii) In the case of medium bridges of lengths 200 to 1000 ft., collective consideration of requirements of both proper road alignment for approaches and bridge design would determine **site selection**. While in the case of bridges of lengths nearer the upper limit of the range, the hydraulic and other **design** considerations of the bridge may be given greater weightage in the selection of the site, the **geometrics** of the road **alignment** should generally govern a decision about the selection of the site in the case of bridges of lengths nearer to the **lower** limit of the range, unless there are any special problems of bridge design.
- (iii) In the case of small bridges of lengths below 200 ft. **road alignment** would essentially govern site selection unless there are any special problems of bridge design.

3. In the case of all bridges of length 200 ft. and above, it would be necessary to carry out a reconnaissance survey of the area and prepare preliminary report on the location of the bridge and its approaches explaining the pros and cons of the various alternative proposals, together with comparative rough cost estimates, to be forwarded in duplicate for the consideration of this office with one copy to its regional officer. After the preliminary report has been examined in this office, the states would be suitably advised to conduct necessary detailed investigations for the final selection of the bridge site and alignment of approaches. Before finally deciding upon the bridge site and the alignment for approaches thereto, it may be necessary for the officers of the Roads and Bridges Directorate of this Ministry to make a joint inspection of the site (s) on the basis of the investigations carried out by the State. As in the case of medium and large bridges, it would be necessary to prepare and submit to this office preliminary reports together with rough estimates of cost for bridges of lengths less than 200 ft., also for according approval to bridge sites and alignments of approaches thereto. In such cases, the site inspections would be made, where necessary, by the Regional Officers or when so required by an officer of the Roads Directorate of this Ministry.
4. After the bridge site and the alignment of approaches thereto have been finally selected, detailed plans and estimates for the project may be prepared and forwarded to this office for obtaining technical approval and financial sanction of the Government of India. These estimates which would include both bridge and its approaches should be prepared in two parts one comprising bridge proper with protective works, where necessary, and the other for approaches.

5. **It is requested that the above procedure may please be followed in future while forwarding proposals for bridges and approaches thereto on National Highways and Centrally financed road projects in your charge.**

Copy to all the Regional Superintending Engineers/Engineer Liaison Officers.

Copy to all Technical Officers/Secretariat Sections in the Roads Wing for information and future guidance.

On receipt of the preliminary project report as in para 3 above, each shall simultaneously be examined in the Roads and Bridges Directorates for arriving at a coordinated decision by mutual consultation governed by considerations laid down in para 2 of the circular. Similarly on receipt of the final detailed project estimates as in para 4, the concerning components shall be examined in the Roads and Bridges Directorates simultaneously and thereafter as far as possible shall be collectively processed for financial sanction, separate processing being resorted to only sparingly where so held necessary by both Chief Engineer, Roads and Bridges concerned.