

No. NHVI-50(21)/79

Dated 25th Jan. 1980

To

The Chief Engineers dealing with
National Highways and other centrally
financed works in States/Union Territories.

Subject : Investigations and design for high embankments at approaches to bridges and overbridges on National Highways and other centrally financed roads.

There have been many instances where inordinate delays, increases in cost and other execution difficulties (including some cases of inadequate performance) have been associated with the construction of high approaches to bridges over river crossings and to railway overbridges on National Highways and other centrally financed roads. There have been even cases where completed bridge or overbridge structures had remained unutilized for some time because of the approaches not having been completed in time. Such difficulties have been found to be mostly associated with adequate or timely attention not having been paid to the planning and design of high embankments constituting the approaches.

2. High embankments at approaches to bridges and over-bridges should be appropriately treated as critical project components, since they usually involve large outlays, large volumes of work, large right-of-way widths and, quite often, problems of site constraints in the form of restricted spaces, non-availability of local borrow areas, weak substrata (requiring in some cases construction in stages) susceptibility to erosion, etc. In addition, there is the vital requirement of coordination between approach and bridge components, particularly, as regards design and construction programming.
3. The requirement of soil investigations and embankment design for high approaches as mentioned above, was earlier dealt with in this Ministry's letter No. PL-86(41)/72-SP, dated 13.8.73. In the light of the experience gained since then, the updating of the earlier recommendations was called for. Accordingly a Note has been prepared in this Ministry for highlighting important aspects of investigations and design for high embankments on approaches to bridges and overbridges. Part I of the note outlines in brief the basic steps and procedures involved, while in Part II of the note, the details of procedures and technical considerations are explained. A copy of this Note is enclosed for your information and guidance. It is requested that the suggestions contained in the enclosed Note may kindly be kept in view while formulating proposals for high approach components of bridge-cum-approach projects on National Highways and other centrally financed roads. As regards the broader technical aspects of embankment design, your attention is invited to the forthcoming Indian Roads Congress publication entitled "Guidelines for High Embankment Design".
4. You may also kindly get prepared a list of bridges and overbridges involving high approaches that are likely to be taken up for execution during the current five years plan period, and initiate appropriate actions for taking up soil investigations design etc. in good time. This will not only avoid unforeseen delays and difficulties in execution of the type mentioned in para 1 above, but also make it possible to effect economies in construction costs through adoption of advanced methods of design combined with proper phasing of construction in the light of actual site conditions.
5. Suggestions for additions and alterations to the enclosed Note with a view to improving its usefulness will be welcome.