

No. RW/NHVI-50 (3)/83

*Dated the 15th July, 1985.*

To

- (1) Secretaries of Public Works Departments and Chief Engineers of State Public Works Departments and Union Territories dealing with National Highways and other Centrally financed Roads.
- (2) Director General (Works), Central P.W.D., New Delhi
- (3) Director General (Border Roads), New Delhi

Subject :Execution of bridge works on National Highways and under other Centrally Financed Schemes—Restricting the practice of inviting lumpsum tenders on the basis of alternative designs

It has come to the notice of the Ministry that for a large number of bridge works on National Highways and under other Centrally Financed Schemes, the practice of inviting tenders on the basis of alternative designs (which are materially different from the departmental designs put to tender) is being resorted to. In this connection, your kind attention is invited to the contents of para 4 of Appendix II enclosed with the Ministry's Circular letter No. NHI-37 (2)/70 dated the 2nd April, 1970, which is reproduced hereunder for ready reference :—

"In respect of bridges with individual span lengths of 25 metres (80 feet) or less and overall length of the bridge not more than 5 spans of 25 metres (or 400 feet length approximately) tenders will have to be only on item rate basis on departmental designs as per decision arrived at in the Chief Engineers' meeting held in October, 1969 at Kulu. Hence, for such bridges, apart from detailed estimates, detailed designs will also have to be submitted alongwith the estimate. As standard designs of superstructures of various span lengths prepared in this Ministry are available with State Chief Engineers, these may be adopted as far as possible.

For further facility of reference, relevant extracts from the summary record of the meeting of Chief Engineers held at Kulu on the 11th October, 1969 (as mentioned in the above para) is also enclosed herewith.

2. It appears that the above mentioned guidelines are not being followed in toto. It may be mentioned here that in quite a number of bridge works, our experience with lumpsum tenders based on alternative designs of contractors has not been too happy to allow us to continue the practice of resorting to such type of tenders in an unrestricted fashion. There have been many instances where we had to incur time and cost over-runs because the concerned bridge works were allotted on the basis of lumpsum tenders involving alternative designs. Keeping in view the difficulties being experienced by various State PWDs as well as this Ministry in conveying expeditious approval of detailed working drawings for different components of bridges (which are let out to be constructed as per alternative designs of contractor), it has been decided that the instructions reproduced in para 1 above shall be followed invariably in future for all Centrally financed bridge works. It is reiterated that for bridges of overall length not more than 125 metres (or individual span length of 25 metres or less) lumpsum ten-

- 1.1 When the continuous stretch of road length (where the development work is to be carried out) is more than 5 kms or when tenders based on alternative designs shall not be invited. A few situations where exceptions to the above mentioned procedure could be made are indicated hereunder :—
  - (i) Where the bridge structure is of a complicated nature, as for example, a bridge involving exceptional foundation problems;
  - (ii) skew bridges (the angle of skew being more than 15°) or bridges having curved alignment in plan for the superstructure of which no standard designs/drawings are available so far; and
  - (iii) where the bridge work is of extreme urgency and requires to be executed on top priority basis in situations such as washing away/failure of an existing bridge.
3. Your kind attention is again drawn towards our earlier guidelines (reproduced in para 1 above) wherein it is mentioned that detailed designs alongwith detailed working drawings would have to be submitted alongwith the detailed estimates. However, it may please be noted that these designs and drawings would be required mostly for open/well foundations, R.C.C. box structures, abutments/piers, well cap/pier cap/abutment cap, wing return walls and bearings. If some State P.W.D. does not happen to have a fully equipped Design Cell, there should not be any difficulty in arranging the services of a Consultant.
4. It is further pointed out that as per modified procedure for submission of detailed estimates for bridge projects costing more than Rs. 10 lakhs each (as contained in our letter No. NHIII/P/31/77 dated 10.1.85) the State PWDs are required to furnish a Technical Appraisal Note (containing all relevant technical details) in the first instance concerning each bridge work for obtaining Ministry's prior approval (for all the requisite technical parameters) before preparing the detailed estimate. It may kindly be ensured that if the State PWD contemplates to invite tenders for a certain bridge work without conforming fully with the guidelines mentioned in paras 1 & 2 above, their proposal (alongwith full justification) should be clearly mentioned at the time of furnishing the Technical Appraisal Note so as to enable the Ministry to consider the matter in all its aspects.
5. It is requested that suitable instructions may kindly be issued to all concerned for complying with the guidelines given in the preceding paragraphs.

*Enclosure to letter No. RW/NHVI-50 (3)/83 dated 15.7.85*

EXTRACT FROM THE SUMMARY RECORD OF THE MEETING OF CHIEF ENGINEERS HELD AT KULU ON THE 11TH OCT. 1969

ITEM No. 7 : Avoiding delays in execution of bridge works by adopting Standard designs for bridges, wherever feasible, and also by limiting the scope of alternative designs for bridges more than 500 ft. in length

Shri Kartik Prasad (Roads Wing) explained that as indicated in the memorandum on the subject, experience had shown that the system of inviting tenders on lumpsum basis for all types of bridges had not proved very satisfactory, particularly in regard to small bridges and the matter therefore required consideration. In actual practice it had been found that after a contract had been finalised, several changes had to be made in the design received on the basis of a lumpsum tender. He felt that lumpsum contracts could be executed efficiently if the details had been meticulously worked out beforehand so as to require no subsequent changes. He felt that unless this was done the lumpsum tendering was not a feasible proposition. In many cases where lumpsum tenders were invited based on alternative designs, not only completion of the work got delayed considerably but the cost of the work also rose sufficiently higher than the tendered costs.

The Director General (Road Development) felt that in the case of lumpsum contracts, the contractors were generally in the habit of giving certain specific clauses requiring negotiation. Of these, certain are withdrawn subsequently but certain clauses, which have adverse effect on the contract and are difficult to be evaluated, stay. Thus, the alternatives have to be gone into. Once a lumpsum contract was accepted, the person who quotes has the choice. The bridge code itself is flexible and it gives an opportunity to the tenderers to reward their tender.

Shri Kartik Prasad (Roads Wing) felt that the basic issue was whether the lumpsum tendering should be limited to only large bridges or for all bridges. He felt that while it was alright to go in for lumpsum tendering in the case of large bridges which provided enough scope for alternative designs, in the case of smaller bridges limited upto certain specified lengths, say 500 ft. economic and comparative rates could be possible, if item rate tenders were invited for which standard designs could be evolved and followed.

The Chief Engineer, Orissa felt that instead of 500 ft. bridges which were rather large structures, it might be desirable to make a beginning with standard designs in the case of bridges with 50 ft. 100 ft. lengths on item rate basis.

The representative of Bihar (Shri Das Gupta) suggested that 250 ft. length might be the limiting factor.

The Director General (Road Development) suggested that the scope of alternative designs might be limited to bridges with 5 spans say of 80 ft./25 metres length. The idea was that if there were bridges with smaller spans, there would be large number of prospective tenderers to give alternative designs which enlarged the field of competition and afforded the chance of economic design.