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No. NHII/Misc./12/75

Dated the 2nd July, 1975

To

All Chief Engineers/Addl. Chief Engineers, of States PWDs and Union Territories dealing with National Highways

Subject : Level surveying for National Highway Road and Bridge projects-Reference to G.T.S. Bench Marks

You will kindly recall that in this Ministry's letter No. PL-2 (1)/70, dated the 18th January, 1971 regarding standardisation of the procedure and data for preparation of Bridge projects relating to National Highways and other Centrally aided schemes, the guide lines for preparation and presentation of bridge projects were

also given therein. The bench Marks preferably correlated to G.T.S. Bench Marks were requested to be adopted for carrying out the surveys.

2. It has been observed that there is general lack of appreciation on the part of the field officers incharge of surveys and investigations of the projects regarding accuracy of levelling and fixing of appropriate Bench Marks. In many cases the Bench Marks to which the level for the projects are related, are fixed temporarily and in an arbitrary manner without relating their levels to some standard and stable Bench Marks. During course of execution of works quite often the temporary Bench Marks established for the purpose of surveying are not traceable and, therefore, the levels could not be correlated. Even in case of different projects in the near vicinity different temporary Bench Marks are adopted. This has, in general, resulted in serious complications during construction, delay in completion of work, possibly excess over the sanctioned estimate and even calling for fresh survey. In few cases the Bench Marks used for road and bridge works forming part of the same project located very near to each other have been found to be different making it difficult to correlate the levels of the integral part of the project in respect of the very vital data like Highest Flood Level, Lower Water Level, the bed levels and the natural surface levels etc.

3. It is, therefore, requested that the instructions may please be issued to your staff engaged on surveying and investigation of National Highway works that in all surveys permanent Bench Marks should be established and their levels fixed with reference to the nearest G.T.S. Bench Mark and in a very accurate manner by carrying out the circuit levelling and double levelling. The position of the reference Bench Marks used for survey of the project as well as that of nearest G.T.S. Bench Mark from where the levels have been carried over and also other necessary details needed for locating them during the course of construction must be clearly indicated in the survey plans. These Bench Marks should be preferably fixed and their levels checked by a responsible officer not below the rank of Assistant Engineer to ensure accuracy of framing and execution of the projects in order to avoid complications.