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Dated the 9th December, 1976

To

The All State Chief Engineers/Addl. Chief Engineers of State PWDs and Union Territories, (dealing with National Highways)

Subject : Construction of new bridges on national highways at the sites of existing bridges-Guidelines to be followed in case of

Some instances have recently come to the notice of this Ministry where delay in completion of new bridges taken up for construction at the site of existing bridges has led to washing away of the bed level diversions and consequent disruption of traffic on the national highway. The matter has been considered in all its aspects and it has been decided that the following policy guidelines shall be followed in all such cases in future :

(i) Type of bridges to be considered for construction at the sites of existing bridges :

Only those bridges which can be conveniently completed within one working seasons should be considered for construction at the sites of existing bridges. Although it is difficult to lay down any hard and fast rule in this regard, generally only medium or minor bridges should be considered for construction at the same sites as those of existing bridges. In case of major bridges which require two or more working seasons for completion, the site of the new bridge should invariably be selected away from the existing bridge though some changes in the alignment and construction of new approach roads are involved. In such cases, the existing bridge can be used to carry the traffic during the time of construction of the new bridge, as construction of an all-weather diversion capable of functioning for two or more years would prove to be very costly and uneconomical.

(ii) Diversions :

The diversions shall be constructed along the bed of the river and shall be of sufficient width and specifications to carry the volume of traffic passing on the concerned national highway. Hume pipes should be provided on the liberal side, the number being sufficient to carry not only the normal dry weather flow but also any minor floods that may be expected during the working season.

(iii) Dismantling :

The dismantling of the existing bridge should be carefully planned and carried out so that it is completed within the shortest possible time. The actual method of dismantling employed will depend largely on the type and material of the existing bridge. However, blasting can be conveniently employed after taking the usual precautions.

(iv) Preliminary preparations :

All the designs and working drawings of the new bridge shall be got approved and kept ready before the start of the working season. It would be preferable to collect in advance all the materials required for completion of the bridge so that shortage of materials will not affect the progress of the work. The tenders for the work, clearly stating that the time of completion will be strictly limited to one working season, should be called during the slack season so that they can be decided early. The agency for the work should be fixed and informed well in advance so that their initial mobilisation can be completed before the start of the working season.

(v) Sequence of operations :

The construction of the bed level diversion should be taken up first as soon as the water level in the river has gone down sufficiently to permit the work being started. Thereafter when the traffic has started using the diversion, the dismantling of the existing bridge should be taken up. The construction of the new bridge should be so programmed that it can be completed in all respects at least 15 days before the normal on-set of floods in the river. It is desirable that a CPM chart should be drawn up for the construction so that snags and bottlenecks can be identified well in time and corrective action taken during the course of construction. It should be ensured at all times that sufficient labour force, machinery and equipments are available at the site to carry out the work continuously without any slackening in the pace of progress. If considered necessary, night shifts should also be arranged so that the target date of completion can be adhered to. After the new bridge has been completed, the bed level diversion should be fully dismantled and the hume pipes removed before the floods so that there is no undue obstruction to the normal flow of the river.

(vi) Type of decks to be adopted :

It would be desirable to adopt RCC superstructure of standard spans for which approved standard drawings of this Ministry are already available. However, where the volume of work is larger, adoption of a deck consisting of a number of prestressed concrete girders can also be considered. In such cases, it can be examined whether the prestressed concrete girders can be cast and stored during the rainy season itself so as to gain time. If necessary, widening of the approach embankments on either side of the existing bridge to serve as temporary casting yards can also be considered.

The prime requisite is to ensure that the traffic on the national highway is not disrupted under any circumstances. It is requested that the above guidelines may please be meticulously followed in all cases where it is proposed to construct new bridges at the sites of existing bridges. With proper planning, management and co-ordination, it should be possible to complete such works well before the advent of the first floods in the rivers and thus avoid any threat of disruption of traffic on the National Highways.