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To

Dated the 14th January, 1977

All the Chief Engineers of States/Union Territories (connected with roads)

Subject: Construction of bridges across irrigation canals and distributories on National Highways and other centrally financed roads

It has been observed that the execution of several bridges across irrigation canals and distributories gets delayed due to the restrictions in working periods because of the perennial flowing nature of such canals. In the case of some such bridges, the Irrigation Authorities have had to be specially approached for getting closure in the canals for the execution of bridges. Such special closures affect the normal irrigation activities and therefore are not only not easily possible but also are not desirable in the overall national interest.

2. In order to obviate such difficulties in future and to ensure completion of such bridges as per the pre-determined schedule, the following guidelines may henceforth be followed in their planning and execution.

- (i) In case of all bridges proposed for construction across irrigation channels, the assured closure periods and the periods during which these channels are expected to run at low supply levels should be determined and got authenticated by the Irrigation Authorities so as to determine the type of structure most suitable from this consideration. The report prefacing the estimate for such works should contain unambiguous information on this aspect.
- (ii) In cases where adequate and assured closure periods are not expected to be available, foundations requiring open excavation in the canal portions should be avoided even though that may be the most suitable type from other technical considerations viz., scour depth and safe bearing capacity of subsoil. In such cases, either pile foundation or shallow/deep well foundations depending on the suitability of the subsoil strata should be adopted. Since such contingencies of non-availability of adequate closure periods would normally arise in the cases of major canals only, it should generally be possible in such situations to construct well foundations by constructing temporary islands without creating appreciable constriction of waterway of the canals.
- (iii) The selection of the type of substructure should also be made to suit the expected, assured closure periods and the normal supply level of the canals. In case, adequate canal closures for executing conventional type of substructure are not expected to be available, the foundation wells themselves may be continued upto the normal supply level.
- (iv) The number of spans should be minimum consistent with economy so as to have minimum possible number of foundations located in the canal bed. In case of smaller canals, it may even be preferable to provide a single span so as to altogether avoid the problems, associated with the construction of foundations and piers in the canal bed.
- (v) As the centering for superstructure would have to be supported on piles driven in running water, the type of superstructure should be selected from considerations of availability of centring and shuttering equipment. In some cases, it may be preferable to adopt superstructures which can be laid without any centering or alternatively suspended centering should be used.