

No. RW/NH-34066/7/2003-S&R(B)

Dated the 17th September, 2003

To

All the Chief Engineers, MORT&H, All ROS/ELOS

**Subject: Bridges on National Highways and other Centrally sponsored Schemes:-
Provision of various types of utilities services on Bridges and Design of footpath slab**

The guidelines for accommodation of utility services like cables and pipelines for water/gas/petroleum products on National Highway Bridges have been issued by the Ministry on several occasions and the latest circular on the subject being the one issued vide letter No. RW/NH-34066/2/95-S&R dated 25th Oct. 1999 (Copies enclosed). It is clearly mentioned in these circular that as far as possible provisions of utilities on the main bridge structures should be avoided. Instructions to be followed in case carrying of the utilities on bridges becomes inescapable, have also been issued. These guidelines need to be strictly followed for the following reasons:

- (i) To avoid the possibility of any damage to the bridge and its approaches and
- (ii) To ensure that the location of these utilities on the Structure/substructures does not in any way hinder the inspection, maintenance and repair of the super structure, bearings and the substructure of bridges.

Instances have been reported where cable ducts (continuous G.I. Pipes) have been erected on bridges or along the parapet of the bridges. These continuous pipes are provided without any provisions for expansion/contraction and are cause for serious concern. They resist free movement of expansion joints. The structural members of bridges are thereby subjected to stress for which they are not designed. It is also reported that in one of the bridges, inspection could not be carried out by the Mobile Bridge Inspection Unit due to these cable ducts.

All project Chief Engineers and Regional Officers are requested that they may please ensure in consultation with the respective State Chief Engineers dealing with National Highways that services are not being allowed indiscriminately on the parapet/any part of the bridges. Safety of the bridges has to be kept in view while permitting various services along bridge. Approvals are to be accorded in this regard with the concurrence of this Ministry's Project Chief Engineers only.

(Enclsoure to Ministry's Circular No. RW/NH-34066/7/2003-S&R(B) dated 17.9.2003)

Copy of letter No. RW/NH-34066/2/95-S&R dated the 25th October, 1999 addressed to All the Chief Engineers of States/UTs, PWDs (dealing with National Highways), The Director General (Border Roads), The Chairman, NHAI.

Subject: Bridges on National Highways and other Centrally Sponsored Schemes provision of various types of utility services on bridges and Design of Footpath slab.

Your attention is invited to this Ministry circular No. on the above subject wherein it was directed that permission for carrying of water mains and sewage pipes over the bridges may be allowed only under exceptional circumstances. It was also mentioned that such pipes may be carried out only on extended portion of the substructure and should comply with certain conditions mentioned in the above circular. Following further guidelines may please be noted in this connection.

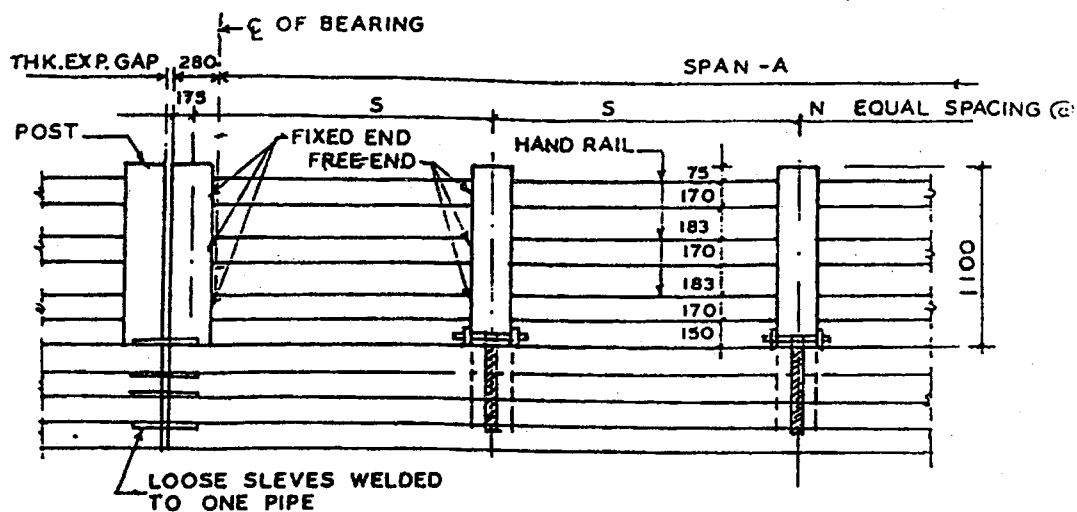
- (i) Carrying of sewage/gas pipelines on highway bridges shall not be permitted as fumes/gases from these pipes can accelerate the process of corrosion or may cause explosions thus being much more injurious than leakage of water.
- (ii) Carrying of water pipelines on bridges shall also be discouraged. However, if the water supply authorities seem to have no other viable alternative and approach the highway authority well in time before the design of the bridge is finalised, they may be permitted to carry the pipeline on independent superstructure, supported on extended portions of piers and abutments in such a manner that in the final arrangement enough free space around the superstructure of the bridge remains available for inspection and repairs etc.
- (iii) Cost of required extension of the substructure as well as that of the supporting superstructure shall be borne by the agency-in-charge of the utilities.

2. So far it has been the practice to carry lighter utilities, like electric cables, telephone cables and optical fibre cables, etc. below the precast footpath slabs or ducts provided under the footpath in the superstructure. Ministry's standard drawings also made such provisions. However, it has been noticed that in many cases, after laying the services or carrying out repairs to the services, the footpath slabs/manhole covers are not properly placed back in position causing serious hazard to pedestrian safety. In certain cases the pedestrians have even fallen into the river below through such openings. In view of the above problems, the present practices in this regard have been reviewed and it has been decided to regulate the grant of permission for carrying of services over the National Highway bridges as indicated below:

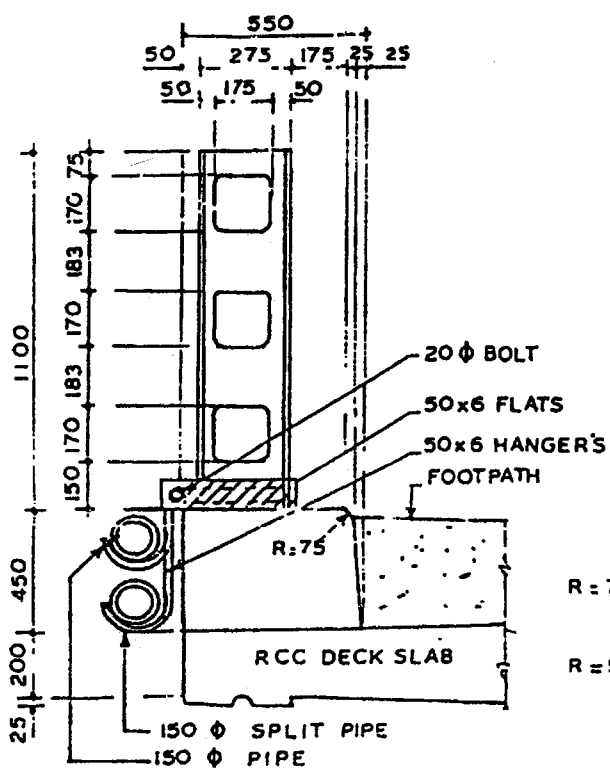
- (i) Footpath slabs shall, henceforth, be cast monolithic with Deck Slabs without any provision of ducts lighter services, like, telephone cables, optical fibre cables, electric cables, etc. should be carried over hangers fixed on the outer side of the railing kerb or below the Deck Slab without affecting the aesthetics of the bridge. Two possible arrangements are shown in the enclosed sketch (*Annexure*) which may be followed for adoption. Cost of providing this arrangement shall be borne by concerned agency.
- (ii) On approaches, the water mains/cables shall be carried along a line as close to the edge of the right-of-way as possible up-to a distance of 30 m from the bridge and subject to all other stipulations contained in this Ministry's guidelines issued with letter No. NH-III/P/66/76 dated 19.11.1976.

3. It is requested that contents of the circular may be brought to the notice of all officers in your department concerned with National Highways and other centrally sponsored schemes.

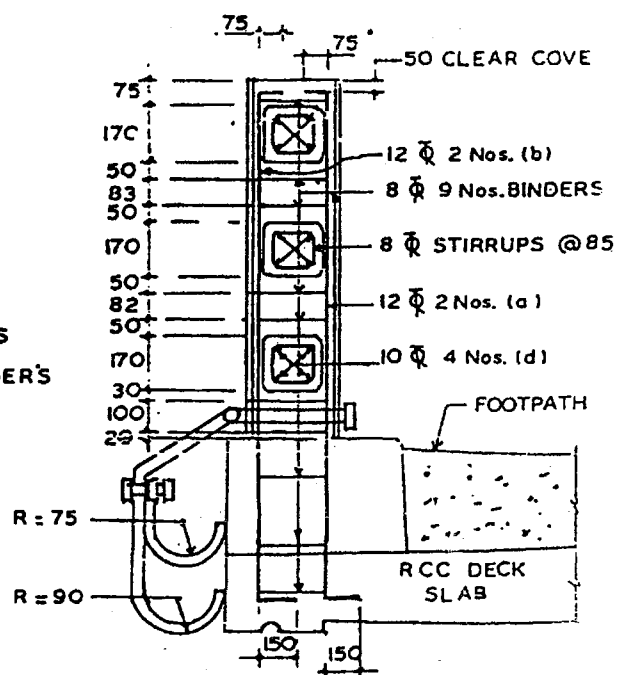
[Enclosure to Ministry's Circular No RW/NH-34066/2/95/S&R dated 25th Oct., 1999]



ELEVATION



SECTION THROUGH POST



SECTION THROUGH POST