



[RW/NH-34049/1/2014-S&R\(B\)\(pt\)](#)

Government of India
Ministry of Road Transport and Highways
Zone-S&R (P&B)

Transport Bhawan, 1 Parliament Street, New Delhi-110001

Dated December, 2022

To

1. The Chief Secretaries of all the State Governments/ UTs
2. The Principal Secretaries/ Secretaries of all States/ UTs Public Works Department/ Road Construction Department/ Highways Department (dealing with National Highways and other centrally sponsored schemes).
3. All Engineer-in-Chief and Chief Engineers of Public Works Department of States/ UTs dealing with National Highways and other centrally sponsored schemes,
4. The Chairperson, National Highways Authority of India, G-5 U 6, Sector-10, Dwarka, New Delhi-110 075.
5. The Managing Director, NHIDCL, PTI Building, New Delhi-110001.
6. The Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi-110 010.

Subject: Replacement of railing of existing bridges by crash barrier

Madam/Sir,

As per typical cross sections of the bridges given in 2/4/6 laning manual, crash barrier is to be provided on all new bridges with /without footpath at the edge of the carriageway. As per 2 laning manual wherever the existing bridges are to be retained with/without widening, crash barrier in the inside and pedestrian railings on outer side of the footpath shall be provided unless otherwise provided in Schedule D. It is also specified in 2 laning manual that parapet/railings of the existing bridges to be repaired/replaced shall be mentioned in Scheduled B. In the four laning manual, it is specified that the railing of existing bridges shall be replaced by crash barrier where specified in Scheduled B.

2. It is seen that in existing bridges retained without widening, existing railing is usually not replaced by crash barrier. The provision of crash barrier is essentially

required for safety of vehicular traffic but there are apprehension about structural suitability of replacing railing of existing bridges retained without widening by crash barrier.

3. The matter has been carefully examined in Ministry and followings are decided:

3.1 In case width existing kerb is 450 mm or more, depth of the deck slab is minimum 200 mm at its tip and the reinforcement of the kerb projecting out of deck slab is of Fe 415 grade or higher, the vertical reinforcement of crash barrier on its traffic face can be connected to kerb reinforcement and other reinforcement of crash barrier laid in position before casting of crash barrier. The exposed horizontal face of kerb and old reinforcement shall be thoroughly cleaned and suitable bonding coat provided before connection of reinforcement and casting of crash barrier.

3.2 In case reinforcement of kerb is of Fe 250 grade, adequacy of same shall be checked with respect to design loads.

3.3 If kerb reinforcement are in bad condition or missing and if depth of slab is 400mm or more, crash barrier vertical reinforcement on traffic face shall be connected with deck slab by rebaring (chemical connection) and all other reinforcement of crash barrier laid in position before casting of crash barrier.

3.4 Quality of concrete in deck slab shall be ascertained by non-destructive testing before replacing railing by crash barrier.

4 If a structure is highly sensitive to superimposed deadload, effect additional load of crash barrier shall be design checked before hand.

5. This issues with the approval of Competent Authority.

Yours faithfully,

(Jitendra Kumar)
SE, S&R (Bridge)
For DG (RD) & SS

Copy to:

1. All Technical Officers in the Ministry of Road Transport & Highways.
2. All Joint Secretaries in the Ministry of Road Transport & Highways.
3. All ROs & ELOs of the Ministry of Road Transport & Highways.
4. The Secretary General, Indian Roads Congress with a request to incorporate the contents of this circular in the revised Ministry's Specifications for Road and Bridge Works.
5. The Director, IAHE.
6. Technical circular file of S, R&T (B) Section.
7. NIC for uploading on Ministry's website under "what's new".

Copy for kind information to:

1. PS to Hon'ble Minister (RT&H) / PS to Hon'ble MOS (RT&H).
2. Sr. PPS to Secretary (RT&H).
3. PPS to DG (RD) & SS.
4. PPS to AS & FA
5. PPS to ADG