



GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS

*Indian Academy of Highway Engineers,
A-5, Sector-62, Noida – 201301.*

No. RW-NH-35075/9/2006-S&R (B)

Dated: September 2, 2016.

To:

1. The Chief Secretaries of all the State Governments / UTs.
2. The Principal Secretaries / Secretaries of all States / UTs Public Works Department dealing with National Highways, other Centrally sponsored schemes.
3. The Engineers-in-Chief and Chief Engineers of Public Works Department of States/UTs dealing with National Highways, other Centrally sponsored schemes.
4. The Director General (Border Roads), Seema Sadak Bhavan, Ring Road, Delhi 110 010.
5. The Chairman, National Highways Authority of India, Plot G-5 & 6, Sector-10, Dwarka, New Delhi 110 075.
6. The Managing Director, NHIDCL, PTI Building, Parliament Street, New Delhi 110 001.

Sub: Design and General Features for bridge structures to be constructed on National Highways.

Sir,

Bridge structures and its components shall be planned, designed, constructed and maintained so that they will perform adequately and safely during construction and in-service period. To achieve this goal, the following general norms shall be strictly adhered for all bridge structures to be constructed on National Highways:

- i. **Objective:** A bridge structure and its components needs to be planned, designed, and constructed so that
 - a. It satisfy the performance requirements expressed in terms of structural safety and serviceability, durability, economy, and sustainability considerations defined in IRC:5 – 2015, and
 - b. It needs to be amenable for future widening requirements as far as possible.
- ii. **Design life:** Design (or service) life for all bridge structures (except ancillary items like bearings, expansion joints, wearing course etc.) shall be 100 years. For important and strategic bridges, depending upon its location, importance, and other parameters (e.g. strategic, social requirements etc.), it may be increased suitably as decided case to case basis by Ministry.
- iii. **Structural Design:** Henceforth, all new bridges and its components shall be structurally designed strictly as per IRC:112 after following the “Limit State Design Philosophy” except those components for which IRC codes and standards based on limit state are not available. Loading will considered as per IRC:6 including 385 Tonnes Special Vehicle. Latest edition of the code notified/published either at the time of project consideration/ conceptualization or at least 60 days prior to the last date of bid submission need to be considered for this purpose. It will supersede the

Ministry's earlier circular issued vide letter no. RW-NH-35075/9/2006-S&R (B) dated 18.06.2014.

- iv. **Return Period:** The design discharge for computing the waterway and length of the bridge, shall be based on maximum flood discharge at least for a return period of 100 years.
- v. **Minimum spacing between new bridge and existing bridge:** In situations where a replacement/new bridge is to be constructed adjacent (or parallel) to an existing structure, width of the gap between the two bridges shall be decided on the basis of clear distances between their foundations with a view to not disturb the structural safety and stability of the foundation of existing bridge structure. In any case, minimum clear gap of 2.50 m measured at deck level between their outermost faces should be provided at any place between the two bridges.
- vi. **Road Safety Measures:** Adequate and appropriate provisions for road safety measures such as road signage, markings, studs, delineators, signals (if necessary) and proper illumination should be made invariably as an integral part of cost estimates for all bridge structures.

Yours faithfully,



(Sanjay Garg),
Superintending Engineer (S,R&T) (Bridges),
For Director General (Road Development) & SS.
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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.
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 (SRT&H) / PS to Hon'ble MOS (SRT&H).
2. Sr. PPS to Secretary (RT&H).
3. PPS to DG (RD) & SS.
4. PPS to SS & FA.
5. PPS to ADG-I / AD-II / Coordinators – I/II/III.

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