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*Dated the 21st September, 1990*

To

All the Chief Engineers of State PWDs and Union Territories dealing with National Highways and other Centrally sponsored Schemes; Director General (Works) CPWD; Director General Border Roads

**Subject:** Width of bridges on National Highways.

Instructions were issued vide this Ministry's letters of even number dated 4th January, 1989 and 1st June, 1989 regarding width of roadway on minor bridges on National Highways. The matter has been reconsidered and the following revised guidelines are issued in supersession of earlier instructions referred to above. The guidelines are applicable essentially to future cases. For situations not explicitly covered by these guidelines, the Ministry will take the decision on a case to case basis.

## 2. Bridges upto 30 m Length

2.1 The basic approach is that the overall width of bridges upto 30 m length shall be compatible with that of the road adjacent to it. As such, on 4-lane sections, the inner face of the raised median kerb on the road and that on the bridge on the right hand side will be in line with each other. Likewise, the outer edge of road formation and the outer face of the railing kerb on the left hand side will be in line with each other. On a 2-lane section, edges of the road formation will be in line with the outer faces of the railing kerbs.

### 2.2 New Bridges and those being reconstructed on two-lane National Highways.

- (i) Overall width of bridge between the outer faces of railing kerbs shall be 12 m, as shown in the sketch at Annexure I.
- (ii) These bridges will have a two-directional camber. However, where future widening to 4-lanes is anticipated, the design of the structure should cater for additional dead load caused by camber correction required for changing it to unidirectional cross slope.

### 2.3 Existing Bridges on two-lane National Highways

On 2-lane National Highways being improved by way of provision of 1.5 m paved shoulders on either side, widening of the existing bridges should, as far as possible, be done simultaneously so that the cross sections on the bridge and approaches match each other i.e. the width of the bridge shall be kept as 12 m between the outer faces of railing kerbs. If widening is not feasible, the existing bridge deck may be replaced. In some cases an entirely new bridge may have to be constructed for which decision shall be taken on a case to case basis. The provision of para 2.2 will apply in all such cases.

### 2.4 New Bridges on four-lane National Highways

- (i) On four-lane National Highways, the overall width of the bridge deck shall be identical to that of the approaches. Normally the total width shall be 24 m ( $9.75 + 4.5 + 9.75$ ) between the outer faces of railing kerbs as shown in sketch at Annexure II.
- (ii) Where median width is more than 4.5 m or where the two carriageways are at different levels, two independent bridges may be provided for each direction of travel. The width of each independent bridge shall be such that the outer edge of the railing kerb on the left hand side shall be in line with the outer edge of the road formation. Further, the width of the bridge between outer face of the left railing kerb and the inner face of the right railing kerb shall be 9.75 m.
- (iii) Each carriageway shall have unidirectional cross slope.

### 2.5 Bridges on four-lane National Highways where an additional two-lane bridge is being constructed parallel to the existing two-lane bridge.

- (i) For the additional two-lane bridge total width shall be 9.75 m (between inner face of median/right railing kerb and the outer face of left railing kerb) with unidirectional cross slope, as shown in Section BB at Annexure II,
- (ii) The existing two-lane bridge shall also be widened to 9.75 m and provided with unidirectional cross slope. If widening is not feasible, the existing bridge deck may be replaced. In some cases an entirely new bridge may have to be constructed for which decision shall be taken on a case to case basis.

### 2.6 Median Treatment

- (i) Medians of upto 4.5 m width between the two carriageways of a four-lane bridge shall be covered with slabs, except at locations where the two carriageways are at different levels.
- (ii) Where two separate two-lane bridges have been provided, suitably designed transition guard rails with buried ends or a New Jersey type barrier shall be provided on the immediate approaches.

### 2.7 Footpaths

No raised footpaths should be provided unless the same are otherwise existing on the approaches.

## 3. Bridges over 30 m length

- (i) For two-lane National Highways, carriageway width of bridges shall be kept as 7.5 m within the inner faces of kerbs. In such cases adequate safety measures like properly designed guard rails with buried ends or New Jersey type barrier must be adopted on the approaches to achieve gradual transition from total approach roadway width to 7.5 m at the bridge. In addition, provision of reflectors, appropriate road markings and delineators must be made.
- (ii) For two-lane bridges, raised footpaths, at least 1.5 m wide, on each side of the carriageway shall be provided, wherever considered necessary.
- (iii) For new four-lane National Highways, the carriageway width of each two-lane bridge shall be kept as 7.5 m within the inner faces of railing kerbs. Raised footpaths, if required, shall be provided on the left side of each carriageway.
- (iv) In the case of two-lane National Highways being widened to four lanes, raised footpath for the additional two-lane bridge, if required may be provided only on the left side of the carriageway.

## 4. Road Over Bridges

The above provisions shall also generally apply to all road over bridges except where any deviations have to be made due to specific site constraints.

## 5. Bridges on Hill Roads

Cross section of bridges on hill roads should also be decided on similar lines. On minor bridges upto 30 m length, the overall width should match the design roadway width on the approaches.

- 6. It is requested that the contents of this circular be brought to the notice of all officers in your Department concerned with National Highways and other centrally sponsored schemes.