

No. RW/NH-33044/10/2000-S&amp;R

Dated, the 1st June, 2000

To

The Chief Engineers of all States/Union Territories (dealing with National Highways and other centrally sponsored schemes); Chairman, National Highways Authority of India; Director General Border Roads

Subject: Maintenance of wearing coat on bridges and culverts vis-a-vis strengthening of approaches thereof

It has come to the notice of this Ministry that quite often the periodical renewal courses and overlay during strengthening of approaches are being continued over the bridges and culverts on National Highways. The above practice creates adverse effect on bridges by way of overstressing of the structural members due to increase in dead load besides encroaching on the height of the kerbs endangering traffic safety and impairing drainage. In Ministry's 'Circular' Letter No.LR-16(15)/166 dated 8.3.72 on maintenance of asphaltic wearing coat on bridges and culverts, it has been stressed that the total thickness of asphaltic wearing coat on bridges, after repair/renewals, must not exceed the thickness originally provided and allowed for in the design. It is, however, observed that this aspect has often been overlooked at site.

2. To avoid the above situation and also to ensure safety of the bridges, the following steps shall be taken by the field staff-in-charge of highway construction and maintenance.

2.1. Wherever the existing wearing coat on the bridges has been damaged beyond repairs, and requires reconstruction, the same shall be fully dismantled taking due care not to damage the deck slab and replaced by a new course of the same thickness as originally provided, thus avoiding any increase in dead load.

2.2. Regular/timely maintenance and repairs should be carried out to ensure that pot-hole and corrugation do not develop in the wearing-course of the bridges so as to reduce the chances of excessive impact due to live load.

2.3. The periodical renewal course of the approach road shall not be continued over the bridge. The longitudinal profile of immediate approaches should be suitably adjusted to merge with the road level of the bridge. This would also apply in case of improvement to riding quality programme being executed with marginal strengthening. The use of rich specification, like, DBM and BC, can be considered near the bridge, if found suitable. An illustrative sketch showing adjustment in approach profile is enclosed.

2.4. Where strengthening of immediate approaches to existing bridges becomes absolutely necessary considering designed overlay requirement for strengthening of road on either side and the pavement in approaches can not be left deficient on functional consideration, the work should be carried out by excavating the existing pavement in suitable length (to be determined in relation to existing vertical profile of approach) and then building up the new pavement as per design requirement so as to match with the existing profile of the bridge. This option should be adopted sparingly as the same would require work to be carried out in half width at a time with adequate traffic management.

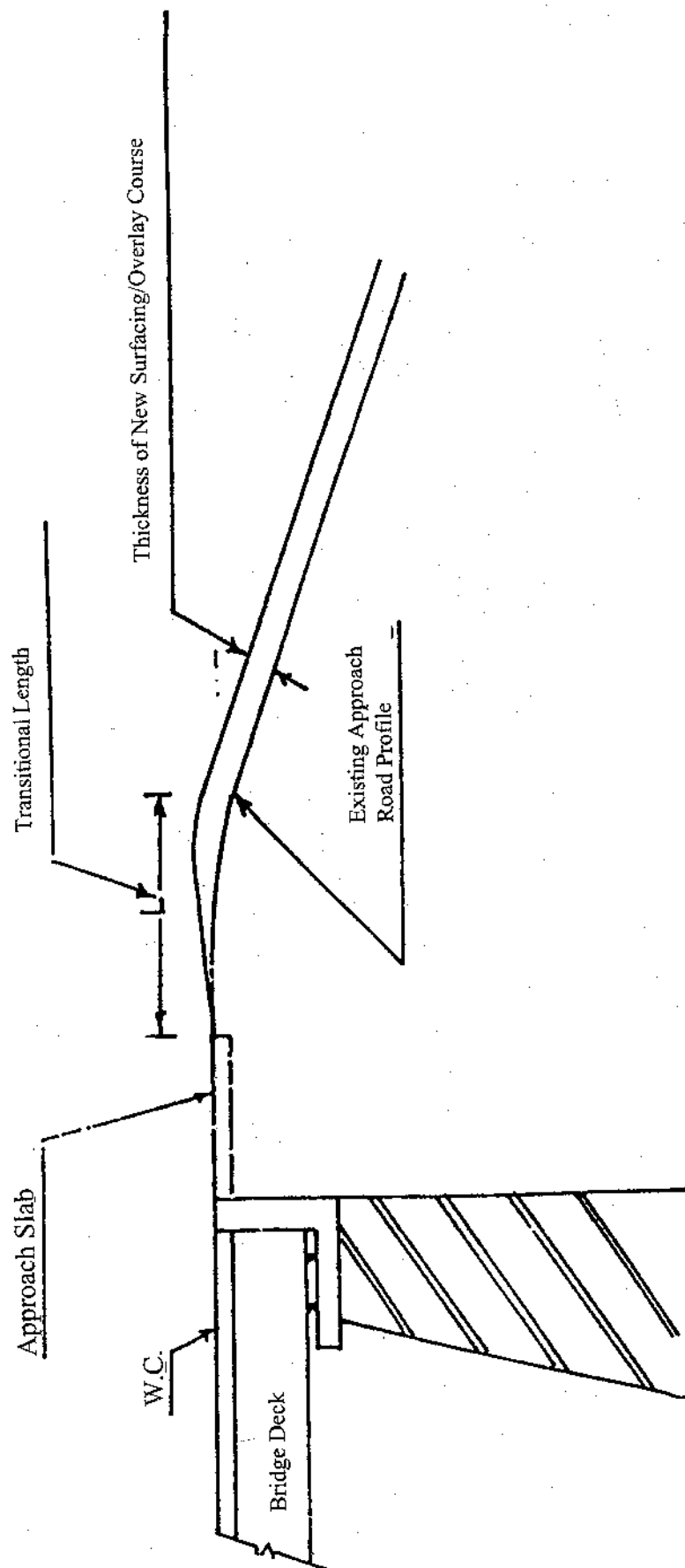
2.5. In case of a new bridge, the pavement thickness in the immediate approaches for about 100 m on either side should be designed twice the normal design period for approach road which at initial stage of construction itself would accommodate requirement of strengthening at least for the first time after new construction during in-service period. This would obviate the necessity for reconstruction of pavement in immediate approaches time and again.

3. It may be appreciated that the requirements outlined above cannot be generalised in respect of required profile of road matching with bridge, design period, thickness, length, etc. All relevant aspects are to be carefully considered at design, estimate and execution stage and should be well planned for case-to-case in consultation with the Ministry.

4. The State Chief Engineers are requested to issue necessary instructions in this regard to the officers concerned with planning and implementation of highway works under intimation to the Ministry.

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(Enclosure to Ministry's Circular No. RW/NH-33044/10/2000 S&R Dated 1.6.2000)



Sketch showing adjustment in approach road profile of a bridge for new thickness of Overlay/Surfacing (Ref. Para 2.3)