

No.RW/NH-33048/2/87-S&R**Dated, the 12th Feb., 1993**

To

State Governments/UTs dealing with National Highway works; Chief Engineers of States/UTs PWD (dealing with NHs and other Centrally sponsored schemes); Director General(Works), Central Public Works Department; Director General Border Roads; Chairman, National Highway Authority

Subject: Type Designs for Intersections on National Highways

It is well known that road intersections, if not properly designed, act as potential accident spots. Their poor layouts also affect smooth traffic flow and cause delays to vehicles. As such, scientific design of intersections can go a long way towards improved safety and better flow conditions on the National Highway system. Practising engineers have been handicapped upto now to adopt suitable intersection designs for want of proper guidelines and standard designs. Recognising this requirement, this Ministry had developed a compendium of type designs covering different types of crossing situations and a number of copies of this publication are enclosed for your use as explained further in para 5.

2. The designs presented include at grade intersections for 4-lane/2-Lane/Single Lane National Highway with intersection roads of varying width which could be a National Highway, State Highway, Major District Road or other District Road/Village Road. Usual T/Y intersections, 4 armed intersections, rotaries and intersection layouts at starting and end points of bypasses have been covered. Details of traffic signs, road markings, islands and drainage for intersections are also given. In addition, some typical designs of grade-separated intersections, i.e., diamond, trumpet, At-grade Rotary and at-grade controlled intersection with NH flying over have been developed for general guidance. The type of designs are based on the recently finalised IRC "Guidelines for the Design of At-Grade intersections in Rural and Urban Areas" which is expected to be printed soon. Main parameters which form the basis of design are explained in the general guidelines preceding the type drawings.

3. The type designs can be adopted with minor modifications at most of the intersections on National Highways. With appropriate modifications, the intersection designs will also prove useful for the State Roads. Complicated intersections would, however, need to be individually designed, although the type designs can act as useful guide even in those cases. As such, complex cases of design may continue to be referred to the Ministry together with traffic data site details, as stipulated in this Ministry's letter No.PL-30(49)/79 dated 28.7.84, for evolving appropriate designs.

4. Careful attention also needs to be given to proper layout and setting out of the intersections at site in accordance with the type designs. For this purpose guidance may be obtained from the IRC:38-1988 "Guidelines for Design of Horizontal Curves for Highways and Design Tables" for facilitating correct layouts at site and also "IRC Guidelines of Design of At-grade Intersections" (under print). In order to institute a system of Quality assurance it is requested that AE/AEE in-charge of the work should get the intersection laid down at site himself and this should be cross-checked by EE concerned. For every case a certificate about correct setting out should be countersigned by both AE/EE.

5. Several copies of the compendium of Type Designs are enclosed for adoption in respect of intersection improvement in future. All the State Governments/UTs PWDs and other concerned road organisations are requested to bring the above guidelines and the type designs to the notice of field/design engineers as SE/EE level for implementation. In case more copies of the compendium are required, the same may be obtained from Indian Roads Congress on payment of Rs.300/- per copy.*

* Type design not printed in this addendum as the same can be purchased from IRC on payment of Rs.300/-.