

should be only of sufficient quality to satisfactorily withstand the bearing pressure imposed at that depth by the loads on the road surface. The best hard metal available is required only at and near the road surface to withstand wear and the high upper pavement pressures.

With design views on these lines the Board has revised its Standard Specifications to ensure improved construction to meet the requirements of heavier loadings. More particular attention is being paid to the consolidation of all earthwork, and compaction of subgrades has been greatly intensified. Cuttings are now in general being undercut, or excavated to an additional depth so that the subgrade can be rebuilt and be more densely compacted. With some soils, where sub-drainage is adequate, bearing-power only may require improvement, and a much lesser depth of excavation to permit compaction will suffice. Again, with solid rock, conglomerate, and similar foundations, a blanket course only may be necessary to minimize unevenness in the finished pavement. Wherever practicable, the best earthwork materials available on a work are being reserved for the construction of the subgrade.

Emphasis has been placed on the fact that, in road design, grading to ensure a balance of cut and fill quantities is, although usually desirable, a completely secondary consideration to the main requirement of grading to ensure a sound road. Unless there is adequate natural sub-drainage of the soil, a road across flat country should be built on a low embankment, so as to safeguard the subgrade against the rise of capillary moisture. This applies particularly over formations of heavy clay and silt, where the subgrade-surface level should be kept at least 3 ft. above winter ground-water level.

With some soils, particularly the heavy clays of certain districts, there are practical difficulties in accomplishing satisfactory densification. If there is no reasonable alternative to using such soils, then the flexible pavement, including the sub-base of sand or other fine-grained, non-cohesive material required over clay subgrades, must be strengthened.

In the direction of road safety, the Board has for some time insisted that all highway curves be transitioned. Previously some latitude was given in this respect, but the Board has published standard curve data providing a logical path for a turning vehicle, and permitting the rational introduction of superelevation. Care is taken to maintain relative consistency of speed value design, wherever possible, being kept to a safe and gradual variation. Carriageway widths have been increased, while formation standards generally have been improved.

DECLARATION OF NEW MAIN HIGHWAYS AND CLASSIFICATION OF EXISTING MAIN HIGHWAYS AS STATE HIGHWAYS

In pursuance of section 11 of the Main Highways Act, 1922, the usual annual review of main highways was made during the year ended 31st March, 1948. Recommendations of District Highways Councils were carefully considered, but owing to the heavy commitments against highways funds arising from the requirements of the existing highways system the Board was unable to recommend any general extension.

Several minor adjustments were made, however, to date from the 1st April, 1948, and these involved an extension of the main-highways system by 84 miles. At the same time, and with a view to assisting some local authorities and in order to round off the existing State-highways system, the Board, with the approval of the Minister of Works, classified 1,330 miles of main highways as State highways.