

TREATMENT OF THE ENTIRE RIGHT OF WAY

By

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Improved roads have become a necessity to practically every community. In the past, road construction has been directed chiefly toward improving the travelled way only, which, of course, is of first importance. The increased use of roads, however, has brought about the necessity for greater widths and more intensive maintenance as the safety, comfort and convenience of the motorist involves a more or less complete development of the entire right of way.

Roads are now built over and under railroads to eliminate the danger of grade crossings and lights, warning signals and direction signs are being installed on open crossings. Trees are being planted and unsightly places landscaped. Since proper roadside improvement is directly beneficial to motorists, abutting property owners and communities at large, it should be included in every road program.

Upon the completion of every road, provision is made for the safety, comfort and convenience of the motorist. While the primary object in constructing a road is to accommodate traffic, the ultimate service to the public depends upon the attention given these features.

After the necessary plans are made, trees and shrubs are planted, shoulders and banks seeded and sodded, grass and weeds kept mowed and the entire right-of-way maintained. This work has come to be known as roadside development and the Massachusetts Department of Public Works has taken an active interest in order that the roads and highways of the Commonwealth may be made beautiful and delightful for the enjoyment of the motorist.

During the past few years there have been many miles of divided highways built in Massachusetts. In the design of these as well as all other State highway projects the landscape features are included in the construction plan of the highway and the design of the cross section. No plans or designs for highway construction are released until they have been approved by the engineer in charge of roadside development. The landscape men are used during the construction of the highway to see that the proper grading and rounding of slopes are secured and natural growth preserved. This landscape supervision during the construction has improved the highway a great deal.

After the project has been completed, and the proper foundation has been prepared for the landscape work, the planting is completed.

The U. S. Bureau of Public Roads has made possible great advancement in roadside development in providing the State highway departments with the necessary information to make an intelligent approach to the roadside problem. The use of Federal aid funds for roadside development

has increased our program on this type of work so that now Massachusetts has an organization to execute intelligently in coordination with the engineering and construction divisions of the State Department of Public Works, a completed landscape project.

There is a permanent force of men to take care of planted areas and shade tree work. The use of plant material is given a great deal of consideration in order that it may be properly placed in the landscape design, and the Department is approaching the use of this material by research methods to make certain that funds are not wasted. The cross section of the new highway design now includes many new and modern features such as picnic areas, scenic views and points of historical interest. The right-of-way upon which the highway is being constructed is much wider. The Department has under construction roads on 500 ft. rights-of-way, and on 300 ft. rights-of-way, depending on the type of highway and the traffic flow. In the development of the rights-of-way, features such as sidewalks, picnic areas, turnouts and locations for public utilities, both overhead and underground, are being included in the original design.

Public utility poles are always an undesirable feature. Every effort is made to have the wires placed underground but where that cannot be done, the poles are placed as near the location line as possible. Where sidewalks are constructed, the poles are placed back of the sidewalk and the guard rail, rather than according to the usual city practice of placing the poles in the sidewalk or between the sidewalk and the travelled way.

The use of guard rail is avoided where possible. It is generally conceded that a slope of 4 to 1 does not require guard rail. Formerly it was the custom to steepen the slopes and use guard rail where the depth of the fill exceeded about four feet. Today the cost of modern guard rail per ft. is far above the cost of the old wooden rail and the cost of embankment has steadily decreased, due to improved methods and equipment. The depth of fill at which it is economically advisable to change from a 4 to 1 slope without guard rail to a 2 to 1 slope with guard rail has increased and we have found in some cases that the economic depth for transition from a slope with guard rail to a slope without guard rail is in the vicinity of 10 ft. In addition the saving in maintenance due to the flatter slope and the elimination of guard rail must be considered.

Practical considerations such as restricted right-of-way do not always permit flat slopes at such depths but in any event the attempt should be made to keep guard rail at a minimum.

The use of sidewalks or footpaths along rural highways is a comparatively recent development but one that in my opinion has been too long delayed and is not now being given sufficient consideration.

To quote the Preliminary Discussion of Highway Types prepared by the U. S. Bureau of Public Roads, "There has been a marked increase in the speeds in which vehicles are capable of travelling and do travel but there has been little or no increase in the speed with which the average pedestrian can step aside to avoid traffic".

The hazard is not always in proportion to the number of pedestrians, with a given volume of traffic. Groups of pedestrians or pedestrians frequently encountered cause drivers to become more alert and watchful. The single pedestrian, far from others, is the one that is in the most danger. Granted that sidewalks should be built in the vicinity of villages, churches and schools, how far should we go in building sidewalks in rural areas? We cannot build sidewalks on all our highways; the cost would be too great. Where the line should be drawn is a matter of opinion but we believe that one continuous sidewalk should be built on every main through highway with a large volume of high speed traffic even though the pedestrian movement may be very small. The volume and speed of the traffic should govern rather than the pedestrian volume, unless that is practically non-existent.

We have been severely criticized for building what have been termed "sidewalks in the wilderness" but the results speak for themselves.

In the year 1932 there were 689 pedestrian accidents on State highways. In 1935 with the increase in automobiles and in road mileage, the total had reached 758. And yet, in 1937, these accidents had fallen to 646, 43 accidents less than in 1932. Moreover, the accidents are still decreasing in 1938 when the total (210) for the first 6 months of this year fell below that (276) of a similar period in 1937 by 24 per cent. In the late fall of 1935 through a special bond issue the construction of approximately 500 miles of sidewalks along State highways was begun. Accident records for the year 1935, which was the period prior to the major part of the sidewalk program, and for the year 1937 when most of the work had been completed, clearly show a decrease in pedestrian casualties. Despite an increase during this period of 12 per cent in registrations and 15 per cent in gasoline consumption, the number of pedestrians injured on State highway routes where these sidewalks were constructed decreased from 513 to 389, or over 24 per cent. Likewise on these same highways, the number of pedestrian fatalities decreased from 72 to 60, or about 16 per cent. While these figures include all types of pedestrian collisions, those caused by pedestrians walking along the highway show a general reduction of over 50 per cent, and on many routes where sidewalks have been built, no accidents of this type have been recorded during 1937 where formerly there were many serious casualties annually.

Wide shoulders are not enough. Pedestrians will not walk on shoulders if the surface of the travelled way is better for walking. A sidewalk must have a surface equal to or better for walking than the roadway or it will not be used.