

MICHIGAN
STATE HIGHWAY DEPARTMENT
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State Highway Commissioner

RESEARCH LABORATORY REPORT FOR BIENNIUM

1942 - 1944

By

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During the biennium just concluded consistent progress has been made in carrying out the Department's research program in spite of limited personnel and additional work. Some long range projects have been temporarily suspended which has resulted in an intensified effort directed toward certain research projects nearing completion, short-term projects, and to those studies intimately associated with the post-war highway construction program.

The research program includes special field projects, laboratory problems, cooperative research programs, and special investigations of a routine nature.

Field Projects:

Field research projects established several years ago are now bearing results which will influence to a certain extent the Department's policy for the design and construction of future highways in Michigan. The most important of these field projects is the Michigan Test Road.

The Michigan Test Road: This major research field project has been given full consideration in all of its different phases. Progress reports covering both the Design and Durability sections have been completed and are now being prepared for publication.

Other field projects involving such construction factors as soil stabilization, vibrated air entrained concrete, colored concrete, subgrade bearing values and soil pressures against bridge structures have been in active progress.

Cooperative Projects:

The Department recognizes the advantage of cooperative research between educational institutions interested in highway problems.

Cooperative research projects have been established with Michigan State College and the University of Michigan.

A cooperative research project pertaining to the study of turf growth for highway shoulders was established in 1943 with the Soils Department of Michigan State College.

Another cooperative research project involving the testing of model concrete pavement slabs to verify present concrete pavement stress formulae and to study slab action under various wheel loadings was established in 1944 with the Department of Engineering Research at the University of Michigan.

The Engineering Division at Michigan State College has expressed considerable interest in the research work of the Department. A technical report on concrete ^{scaling} ~~and~~ studies has been prepared for publication as a Bulletin of the Engineering Experiment Station of the College.

Laboratory Problems:

Several long range developmental research projects are in active progress. These investigations are being carried on continuously for the purpose of improving the design, maintenance and construction of highway surfaces and materials of construction, and for the development of new products for highway use. The more important studies included in this program are:

1. Concrete Pavement Design.
2. Membrane Curing of Concrete Pavements.
3. Slow Curing Asphaltic Oils.
4. Joint Sealing Compounds.

Miscellaneous Problems:

In addition to the regular research program which requires the major attention of the organization numerous problems originating within the Department have been investigated. Most of these problems arise from and are associated with, abnormal failures in pavement surfaces and highway appurtenances.