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TWELFTH ANNUAL REPORT OF
THE MASSACHUSETTS HIGHWAY
COMMISSION. JANUARY, 1905**

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OF THE

MASSACHUSETTS

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JANUARY, 1905.



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Commonwealth of Massachusetts.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled.

The undersigned commissioners, appointed under the provisions of chapter 476 of the Acts of 1893, entitled "An Act to provide for the appointment of a Highway Commission to improve the public roads, and to define its powers and duties," and under the provisions of chapter 474 of the Acts of 1900, entitled "An Act relative to the Massachusetts Highway Commission," herewith submit their twelfth annual report.

W. E. McCLINTOCK.
HAROLD PARKER.
JOHN H. MANNING.

BOSTON, MASS., Dec. 29, 1904.



ANNUAL REPORT
OF THE
MASSACHUSETTS HIGHWAY COMMISSION.

In accordance with the provisions of chapter 280 of the Acts of 1903, the commission has had the sum of \$450,000 for new work during the year.

Considerable sums allotted for expenditure during the year 1903 were actually disbursed during the year 1904, unavoidable delays having prevented the completion of several contracts.

Additional lay-outs were made during 1904, amounting to 321,203 feet (60.83 miles), bringing the grand total up to 2,987,748 feet (565.86 miles). The number of miles of road finished during the year was approximately 66, making a total of about 548 miles of completed State highway at the end of the year 1904. On most of the remaining 18 miles laid out but not completed the work is in various stages of progress, although in a few instances no work will be done under the contracts before the coming spring.

Since the passage of the "small town act," in 1900, 75 miles of road in the "small towns" have been improved.

MEETINGS OF THE COMMISSION.

The commission has held 88 meetings at its office in Boston during the past year, besides many others at different points in the State. The regular county hearings provided for in the statutes have generally been well attended.

CONTRACTS.

All work done by the commission must be done by contract, either with the town or city authorities, or, after due advertisement, with private contractors.

During the year 78 contracts for State highways were entered into, of which 28 were with town or city authorities and 50 with private individuals or corporations.

PETITIONS.

The total number of petitions for the location and construction of State highways up to the date of this report is 673. During the year 1904, 27 new petitions were received. These petitions cover altogether 1,710.86 miles of road, and they are from 283 towns and 27 cities. The petitions received during the past year cover 47.6 miles of road not previously petitioned for.

STREET RAILWAYS.

There are at the present time street railways operating on State roads in 113 different cities and towns. In 6 of these municipalities there are two different companies. The length of street railway track in the State on Sept. 30, 1904, according to the Massachusetts Railroad Commissioners, was 2,689.53 miles.

COUNTY ASSESSMENTS.

In accordance with the provisions of the statutes, the several counties in which State roads are built are required to repay to the State one-quarter of the amount expended during the year. The time of this repayment may, if desired, extend over six years from the date of the assessment; but in several instances, including some of those in which the amount of the assessment is greatest, the counties have preferred to pay the entire sum due at the end of each year. The amount assessed upon the counties during the year 1904 was \$132,818.25.

CONSTRUCTION.

No material change has been made during the past year in the method of building roads. The question of foundation for roads over clayey and other non-porous soils is receiving the careful consideration of the commission. The telfording foundation and centre V-shaped drains are being closely watched with reference to their behavior when the frost is coming out of the ground in the spring. On no State road

has there been a failure of well-laid telfording foundations; neither has there been a failure of any V-shaped drains since the building of the first one by the commission, three years ago. They are apparently as effective as the telfording foundation and side drains combined, and cost much less to build.

Most of the gravel roads are wearing satisfactorily, and the cost of repairs is small.

The Swampscott road, built of gravel in 1897, cannot be maintained economically with a gravel surface. The gravel is expensive, it is much affected by frost, and has poor wearing properties. This road will be surfaced with broken stone during the coming year.

CULVERTS AND BRIDGES.

Most of the culverts and short bridges built during the past year have been of reinforced concrete.

The following bridges of reinforced concrete have been built during the past year:—

Auburn,	Two beam bridges, spans of 24 and 16 feet.
Douglas,	A beam bridge over the Mumford River, of 22 feet span.
Fitchburg,	A beam bridge over Falula Brook, of 27 feet span.
Granville,	An arch bridge over Dickinson Brook, of 31 feet span, designed and specifications prepared by the commission, but built and paid for by the town of Granville.
Natick,	An arch of 10 feet span, extended and wing wall built.
Reading-North Reading,	A beam bridge over the Ipswich River at the Reading-North Reading boundary line, of 28 feet span.
Seekonk,	A beam bridge, of 12 feet span.
Shrewsbury,	A beam bridge, of 13 feet span.
Westminster,	A beam bridge, of 12 feet span.
Weymouth,	A beam bridge, of 14 feet span.

All culverts of 2 feet span or over have been built of reinforced concrete.