PUBLIC DOCUMENTS OF MAINE

1909

BEING THE

ANNUAL REPORTS

OF THE VARIOUS

DEPARTMENTS AND INSTITUTIONS

For the Year 1908.

VOLUME II.

AUGUSTA
KENNEBEC JOURNAL PRINT
1909

J. G. Ridley, Road Commissioner of Sanford, by this arrangement shows that a rock crusher without elevator and bins may be economically operated

FOURTH ANNUAL REPORT

OF THE

COMMISSIONER OF HIGHWAYS

FOR THE

STATE OF MAINE

FOR THE YEAR

1908

WATERVILLE
SENTINEL PUBLISHING COMPANY
1909

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STATE OF MAINE.

OFFICE OF COMMISSIONER OF HIGHWAYS,
AUGUSTA, January 1, 1909.

To His Excellency, William T. Cobb, Governor, and the Honorable Council:

I have the honor to present the fourth annual report of the Commissioner of Highways.

Very respectfully,
PAUL D. SARGENT,
Commissioner.

ORGANIZATION OF STATE HIGHWAY DEPARTMENT.

PAUL D. SARGENT, Machias.....Commissioner
W. B. GETCHELL, Augusta.....Asst. Commissioner
IRVIN W. BARBOUR, Portland.....Clerk
ANNIE P. BIBBER, Lisbon Falls.....Stenographer
LILLIAN W. CHUTE, Augusta.....Stenographer

REPORT.

The seventy-third legislature created the state highway department, passed a new state highway law and directed that the department should supervise the expenditure of all moneys appropriated by the State and expended jointly with funds appropriated by the several municipalities of the State for the permanent improvement of main thoroughfares, or state roads. This report is intended to show what has been accomplished under the law and the method of handling the work.

If we are to judge by results it would seem that the law has met with a fairly cordial reception at the hands of the people throughout the State. Four hundred and sixty-six applications for state aid have been received as follows:

Cities	19
Towns	398
Organized Plantations	36
County Commissioners for Unincorporated Townships	13
	466

Of the above number, 12 towns have applied to the department for permission to allow their joint fund to lay over until 1909 and be expended at that time. Permission has been granted.

In these 12 towns a total joint fund of $1,929.75 is available in 1909.

Upon satisfactory expenditure of this amount, state aid amounting to $1,136.25, already apportioned will be approved and paid.

In three towns work has not been completed; in five towns work done would not pass inspection; to these eight towns state aid amounting to $2,479.12 was apportioned and will be paid on proper evidence of satisfactory work having been completed.

In 446 places the joint funds have been expended in completing as many pieces of highway improvement. Collectively the results are as follows:

No. of Towns.	Nature of Improvement.	Square yards.	Length in feet.	Cost.	Aid.
2	Block paving	4,186	1,461	$9,453 78	$1,762 87
36	Macadam	124,613	50,004	75,432 11	22,958 20
2	Tar macadam	3,625	846	2,797 30	1,153 12
308	Gravel	.....	287,006	141,718 21	65,120 80
82	Earth and drainage systems	.....	87,207	29,761 77	14,815 88
10	Earth and gravel	.....	10,863	5,419 94	2,239 61
6	Abutment and culvert work	.....	.....	2,028 75	937 50
446	Total	.....	*437,387	$266,611 86	$108,987 98

*Reports show 6,759 feet additional not classified as to surfacing material.

It is thus seen that a total expenditure of $266,611.86 has been made under the impetus of the law. Of this amount the State has furnished $108,987.98; under the terms of the law in order to draw this aid the towns were obliged to expend $224,894.16; as a matter of fact 299 towns expended in excess of their joint funds $47,099.70 in order to satisfactorily finish up the work they had undertaken. At the same time it should be noted that 93 towns did not expend the full amount of their joint funds and in consequence a total of $5,382.00, state aid, stands to the credit of the towns. Each town which did not get its full state aid will be entitled to draw the balance any time in 1909 when a certificate is presented to the department showing that the amount has been expended in extending the 1908 section of state road according to specifications issued by the department. Or the amount due the town may be used in connection with the 1909 appropriation made by the town, if any. The latter course, would, in the opinion of the department, be the better.

STATEMENT OF STATE APPROPRIATION.

State appropriation, 1-3 mill on valuation of State	$131,577 66
Apportionments made to the 466 places applying for aid	117,984 65
Paid 22 inspectors, $2.50 per day and expenses	2,485 29
Balance to 1909 state road fund	11,107 72
	$131,577 66

METHOD OF SUPERVISING STATE ROAD WORK.

INSTRUCTIONS TO TOWNS.

Realizing that a large number of municipal officers were not entirely familiar with the law the Department prepared and issued, under date of February 1, 1908, to each board of municipal officers a letter like the following:

AUGUSTA, ME., February 1, 1908.

Chairman, Municipal Officers, Maine:

DEAR SIR:—Under separate cover we are forwarding pamphlet copy of the new state road law which became effective January first. I desire to call your attention particularly to the last paragraph of section 5, which reads:

"It shall be the duty of the selectmen of each town to insert in the warrant for each annual town meeting an article calling upon the voters to vote 'yes' or 'no' on the adoption of the provisions of this Act relating to the appropriation of money necessary to entitle the town to state aid for highways, for the year in which such meeting is to be held."

I am advised by competent counsel that the following articles should be inserted in the warrant for your town meeting in order to bring the matter of state aid properly before the meeting:

"Article . To see if the town will vote 'yes' or 'no' upon the adoption of the provisions of chapter 112 of the Public Laws of Maine, for the year 1907 relating to the appropriation of money necessary to entitle the town to state aid for highways for the year 1908."

"Article . To see if the town will raise, appropriate and set apart, for the permanent improvement of the main highways within the town, such sum of money as is contemplated and directed by section 5 of chapter 112 of the Public Laws of Maine for the year 1907, being the sum of $."

It may not appear to you at first glance just why there should be both articles. The reason is this: The action on the first article will decide whether or not the town will accept the provisions of the state road law and have state aid, that is, if the town votes "yes" they have voted to have state aid and it is then necessary to act on the second article relating to raising the specific amount of money necessary to entitle the town to state aid. If the town votes "no" on the first article there is then no need of taking action on the other article.

You will note by referring to section 4 that the section directs each town to set aside a certain amount from its regular appropriation for

the permanent improvement of its main highways. We understand that this section of the law is mandatory and in consequence will work automatically, that is, without any action by the towns. The amount for your town to set aside under this section will be $. If state aid is desired and the town takes favorable action on the above articles the two amounts, $, (section 4) and $, (section 5), will then be the town's contribution to the state road fund. To this the State will add $, according to section 6, making a total fund of $, for expenditure upon the state road.

The town's action on this matter should be reported to this office on or before April fifteenth.

Yours very truly,

PAUL D. SARGENT, *Commissioner.*

Note: To simplify appropriations we have assumed that towns would prefer to set aside under section 4 only the whole number of dollars represented by their thousands of valuation and have accordingly dropped off the odd cents in figuring this amount. State assessors' valuation used.

APPLICATIONS.

About March first blank "Applications for State Aid" were forwarded to each town clerk with a request that they be filled out and returned to the department immediately after the annual meeting. The application was in form as follows:

APPLICATION FOR STATE AID AND REPORT TO STATE HIGHWAY DEPARTMENT.

(Filed under Sec. 5, Chap. 112, P. L. 1907.)

.....
(Place and date.)

To Paul D. Sargent,
State Commissioner of Highways,
Augusta, Maine.

The town of.....at its annual meeting held..... having raised, appropriated and set apart the sum of $..... being the amount necessary to entitle it to state aid, hereby applies for said aid for the year.....

.....
(Town Clerk.)

For your convenience in correspondence, issuing reports and circulars, we would advise that the following officers were elected at said meeting.

1st Selectman .....
Name. P. O. Address

2nd. " .....

3rd " .....

Road Commissioner.....
The following appropriations were made:
Roads .....
Bridges .....
Side Walks .....
.....
(Town Clerk.)

This application must be filed on or before April 15.

Applications were not all filed by April fifteenth but we felt that it was good judgment for the department to be lenient with the towns, especially during the first year of the law. Consequently, applications received a week or ten days after the time limit had expired were treated as though filed legally.

Under the law cities are allowed until June fifteenth for filing applications. Some, however, were filed in May.

APPORTIONMENTS.

On receipt of applications, apportionments of state aid were made up as directed by section six of the law. About April eighteenth a notice of apportionment was mailed to the municipal officers of each town which had applied for aid. The notice was in following form:

APPORTIONMENT.

Augusta, Maine.....

Municipal Officers,
Gentlemen:

The application of your town for state aid signed by your town clerk is at hand and we beg to notify you that the sum of
has been apportioned from the state highway fund as the State's share of the joint fund for your town.

We enclose herewith blank form of proposal which you will please fill out and forward to this office on or before May fifteenth.

PAUL D. SARGENT,
State Highway Commissioner.

Apportionments were made and similar notices forwarded to each city on receipt of its application.

A total of $117,984.65 was apportioned.

It has been noted that aid approved for payment this year amounted to only $108,987.28. This is due in part to the fact that apportionments amounting to $1,136.25 have been carried over, on request of municipal officers, for expenditure in 1909.

The remainder of the apparent discrepancy is accounted for as follows:

Ninety-three towns finished the section of work they had undertaken at a cost less than the joint fund. The state auditor instructs the department in such cases to figure the amount of aid due the town as the difference between the cost of the work and the amount which the law requires the town to set aside and appropriate. These balances are carried to the credit of the town and may be drawn as previously explained on page 6.

PROPOSALS.

With the apportionments there were forwarded proposal blanks in the following form:

Towns applying for State aid fill out this blank and forward to State Commissioner of Highways on or before May 15.

PROPOSAL SETTING FORTH THE LOCATION ON THE STATE ROAD AND NATURE OF THE PERMANENT IMPROVEMENT DESIRED TO BE MADE.

To Paul D. Sargent,
State Commissioner of Highways,
Augusta, Maine.

The town of.....proposes to make permanent improvements upon the following section of STATE ROAD in the year.....
.....

LOCATION: State road begins at.....town line and extends to.....town line.

The section upon which it is desired to make permanent improvements begins about.....miles from.....town line and extends in a general.....
(North, South, East or West)
direction, a distance of about.....feet.

A general description of the section to be improved is as follows: (Describe fully and carefully giving character of soil, and objectionable features of road which it is desired to overcome.)

.....
.....
.....

We propose the following permanent improvements upon said section of road. (Give each kind of work to be done, amount and kind of material to be used and general method to be followed. Improvements in general will consist of underdrainage, surface drainage, culvert or

bridge work, grading, surfacing, fencing, cleaning and clearing right of way.)

.....

.....

.....

When will work begin?

When will work be completed?

Municipal Officers of

.....

Dated.....19 .

APPROVAL OF PROPOSAL.

Proposals were taken up in the order of dates on which work would begin. Each was carefully considered. If the work proposed seemed to be proper to improve existing conditions it was approved and specifications were furnished for carrying out the work, together with plans for any special constructions and cross sections showing style of road to be built. If work proposed did not seem to be proper the case was investigated either by personal inspection or by correspondence and the proper scheme of improvement decided upon; then approval, specifications and plans were issued. The following form of approval was used:

NOTIFICATION
FROM STATE COMMISSIONER OF HIGHWAYS OF APPROVAL OF, OR AMENDMENT TO PROPOSAL.

Augusta, Maine.....

To the Municipal Officers:

Your proposal setting forth the location and nature of the permanent improvements desired to be made on the section of state road described in said proposal has been received and carefully examined and meets with the approval of the State Highway Department.

(Description of work to be done comes here.)

Notify this office at least one week before work is started on what date you propose to begin.

PAUL D. SARGENT,
State Highway Commissioner.

The notification was accompanied by the following specification, except where the work was done by contract.

Specifications for contract work will be found elsewhere in this report.

STATE HIGHWAY DEPARTMENT
MAINE.
General Specifications for
State Road Work.

1. CLEARING AND CLEANING RIGHT OF WAY.

All stumps, roots, bushes, rubbish and trees within the limits of the right of way shall be thoroughly grubbed out, piled up and burned, for the entire length of the proposed new construction; except where new embankments more than one foot high are to be built. Then stumps may be left in the ground after they have been cut close to the surface. The right of way on new work, and on all state roads, should always present a neat and clean appearance.

2. WIDTH OF ROAD.

In general, state roads shall be finished not less than twenty-one feet wide, exclusive of ditches, any less width being by special instructions from the highway commissioner.

3. GRADING.

The road shall be smoothed up with a road machine, or otherwise, so as to present a true and even grade. The roadway shall be so shaped as to present a crown on the finished surface as follows:

Where gravel or crushed rock is used for surfacing, a slope from the center each way of one inch to the foot.

Where earth is used for surfacing, a slope from the center each way of one and one-half inches to the foot.

Sides of cuts and embankments shall be finished at a slope of at least one and one-half to one. That is, for each foot of depth of cut or embankment there must be one foot and a half of horizontal width on each side, besides the width of the finished road.

If practical, the road shall have no grade in excess of six per cent.

After the road has been graded it shall be rolled with a roller or otherwise compacted, until it is hard, smooth and true, and at the proper crown. Any depressions or soft places which may develop shall be filled with suitable material and again rolled.

4. ROLLING.

All rolling both of sub-grade and surface shall begin at the side and rolling lengthwise of the road be carried towards the center in order to preserve the crown of the road.

5. DRAINAGE.

Complete drainage, proper grading, easy grades and a smooth hard surface are the fundamental principles to be kept in mind on state road construction.

a. Underdrainage, in most instances, shall be accomplished by building stone "V" drains in accordance with the plan and specification

accompanying. These drains shall be built at such places as the natural earth does not afford a substantial foundation for surfacing material. All drains shall be provided with suitable outlets.

b. Surface Drainage, shall be secured by side ditches. These ditches shall have true grades and sufficient incline (not less than four inches per 100 feet) to furnish a free and uniform flow of water to the nearest natural outlets, which outlets must be so improved, where necessary, as to carry the water quickly away from the highway.

c. Cobble Gutters. Where it is impossible to turn drainage away from the road frequently and it is necessary to carry a considerable volume of water long distances in the gutters of the road, they should be paved with cobble or rough paving. The stones shall be hard and sound and set with their longest dimensions in a vertical plane. The stones must be six inches to nine inches in diameter. The largest stones shall be selected and set along the edge of the gutter. The cobbles shall be laid in a bed of suitable sand or gravel at least six inches deep and of sufficient height to allow for thorough ramming, after which the surface shall be covered with sufficient sand and all joints broomed full. On very steep grades cobbles should be laid in a thin bed of Portland cement mortar.

d. If a road is on a side hill it is advisable to make a surface ditch 6 or 8 feet back from the edge of the cut on the side towards the hill, to prevent the surface water from washing over the slope of the cut and overflowing the side ditches of the road.

e. Culverts shall be built of stone masonry, concrete masonry, cast or corrugated iron; care being taken to secure a good foundation, and sufficient waterway. Plans will be furnished by the department for special work.

6. SURFACING MATERIAL.

a. Gravel Surfacing. On the sub-grade prepared as above described sufficient gravel shall be spread to surface the road in a proper manner. The gravel shall be suitable for road purposes. It shall be spread to a width of at least 12 feet and be 8 inches deep at the center and 6 inches deep at the sides after being thoroughly rolled or otherwise compacted.

b. Crushed Stone Surfacing. On the sub-grade prepared as above described, broken stone, which has been run through a stone crusher and screened, shall be spread for the width of at least 12 feet.

The broken stone shall be spread from a dumping board, and shall be laid in two courses or layers and each course shall be rolled or otherwise compacted.

The depth of broken stone, after rolling, shall be 5 inches at the center and 3 inches at the sides. The stones in this course may vary in size from a minimum of 1 1-4 inches to a maximum of 2 1-2 inches in their longest dimensions.

The stones of the top course may vary in size from a minimum of 1-2 inch to a maximum of 1 1-4 inches in their longest dimensions. The depth of broken stone in this course, after rolling, shall be three inches.

When this course is thoroughly compacted, a layer of screenings or that portion of the product which passes through the half-inch mesh of the crusher screen, shall be laid to a depth of about one inch, and, after being thoroughly flushed with water, the road shall be rolled again until it is sufficiently compact.

7. SANDY ROADS.

Where state roads are to be built on a sandy soil, special directions and instructions will be furnished by this department. Generally speaking no underdrainage will be needed in this kind of soil.

8. FENCING.

A guard rail of the form and dimensions shown on the plan shall be built where, in the opinion of the road commissioner, such a safeguard is necessary to protect travelers on the highway.

9. FINISHING UP.

On the completion of the work hereinbefore described all rubbish, refuse materials and debris shall be removed from the roadsides and the whole work shall be left clean and presentable.

All work done and materials furnished shall be to the satisfaction of the state commissioner of highways.

10. LABOR.

In the construction of state roads preference in employment shall be given local labor.

INSPECTION.

It was the intention to have each job inspected at its beginning, to see that the work proposed was suited to the location and that the man in charge understood the specifications and just how to carry them out. In about half the towns this was done but in the remaining towns the work was started and in some places was under way before the first inspection was made. As the idea of supervision during construction was entirely new, the state commissioner desired to satisfy himself that there was a real demand for such supervision and inspection before putting inspectors into the field. We have on file requests from municipal officers of over one hundred towns asking for a visit from the commissioner personally or by an inspector representing the department, and the frequency of these requests assured us that this provision of the law was wise and should be put into operation.

Elsewhere will be found a list of inspectors employed, the towns in which they looked after the work, the total time made, and their allowances for expenses.

Our instructions to inspectors were in part as follows:

"The men who are appointed as inspectors on state road construction have very responsible positions. They are the eyes of the department and must see that all work is carried out in a thorough and substantial manner and in accordance with the plans and specifications issued by the state highway department.

"Inspectors will receive their orders from the state commissioner of highways.

"Inspectors, upon taking up their work, will immediately notify the state highway department of their post-office, telephone and telegraph address.

"Inspectors must make a complete and accurate daily report on forms furnished them of the progress of the work.

"Inspection of each job should be made as soon after notice of the commencement of the work as possible. At this time the location should be thoroughly examined with the men in charge of the work and special attention given to see whether the work proposed and approved seems to be exactly proper or whether some change should be made. If changes can profitably be made they should be immediately reported to the department on the blank report.

"When the work has been in progress ten days or two weeks or when it is about half done, another inspection should be made. A final inspection will be made on completion of the work and the inspector will be required to certify that the work has been done in accordance with the proposal, approval of the same and general specifications issued by the department.

"Inspectors will be paid a per diem and expenses while away from home. Bills will be made out monthly on forms prepared and approved by the state auditor. For keeping daily expense, inspectors should provide themselves with a plain blank book.

"Expenses may cover transportation by rail, boat or team, hotel bills and telephone, telegraph or postage.

"It is the intention of the department to have each inspector cover a considerable number of jobs, all that he can do economically, and in doing this we shall rely upon the judgment of the inspector to cover his work as thoroughly as possible with this in mind."

Each time an inspector visited a job a report was made to the office upon the form given below. Nearly every job was visited from two to four or six times. In a few instances one inspection only was made and that after completion of the work. This was generally true in Aroostook county where a large part

of the work was done in June before any inspectors were appointed.

The inspection, from our point of view, is the sole guarantee to the State that results are being accomplished by the expenditure of state road funds. It is impossible for any commission of one or more members, with an office force only, to personally inspect the large amount of field work resulting from the expenditure of the state road fund. This can be accomplished only through some such method as has been employed the present season. We attempted to secure, and for the most part did secure, thoroughly practical road builders as inspectors. On many of the jobs inspectors have stopped from half a day to a day, giving instructions by acting either as foreman or laborer and actually doing the work in hand, thus showing those engaged the proper method to be followed.

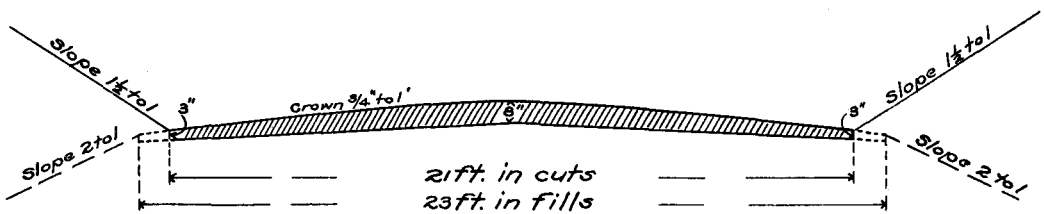
In some cases inspectors have completely reorganized crews and as a result from fifty to one hundred per cent more work has been accomplished with given funds. In one case teams were found drawing just a half a load of gravel and making eight trips per day from pit to road. The inspector called the crew together at noon, went over the matter with them and suggested full loads and two more trips for each team each day. From that time until the job was finished this rule obtained and as a result from one-fourth to one-half more road than was laid out was built. This case is probably representative of at least one-fourth of the road building in this State. It certainly shows the need of competent supervision and demonstrates the fact that such supervision will always save more than its cost.

Where reports indicated that the specifications were not being followed or where the inspector made suggestions for bettering the work these points were immediatly taken up by the department with the municipal officers.

Whenever the inspector was in doubt as to proper construction or had any difficulty in getting work done properly the commissioner attended to the case personally. As a result of this co-operation between the state and the towns we feel that the work this year has been more intelligently and thoroughly done than ever before. As shown elsewhere expenditures in excess of the joint funds, amounting to $47,099.70, were made in completing work so it would be up to specifications and pass inspec-

ROAD SECTION

A



Specification:-

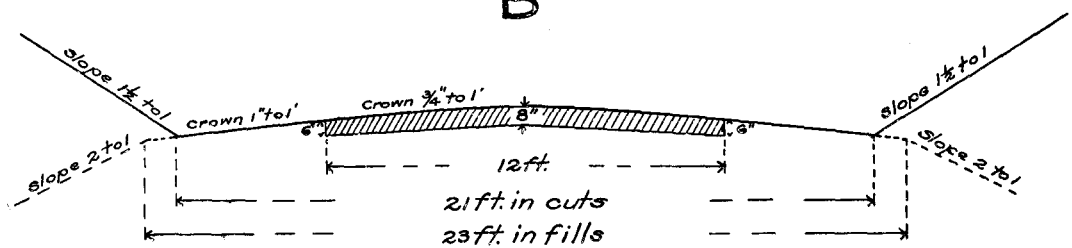
Thickness of courses <u>after</u> <u>rolling</u> is completed.

For macadam surface placed in two courses, bottom course 5 inches at center gradually diminishing in thickness to the sides, top course 3 inches, Screenings or binder as called for.

For gravel surface placed in two courses, same as for macadam.

ROAD SECTION

B



Specifications:-

Thickness of courses after rolling is completed.

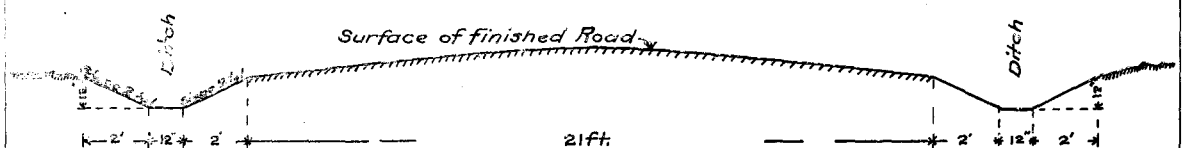
For macadam surface placed in two courses, bottom course 5 inches at center, 4 inches at sides, top course 3 inches at center, 2 inches at sides, screenings or binder as called for.

For macadam surface placed in three courses, bottom course 5 inches at center, 3 inches at sides, middle course 2 inches, top course 1 inch, screenings or binder as called for.

For gravel surface placed in two courses, bottom course 5 inches at center, 3 inches at sides, top course 3 inches, binder as called for.

ROAD SECTION

D



Note:-

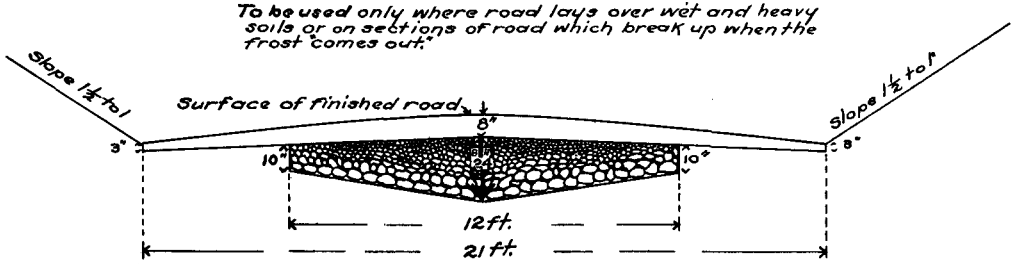
Where side ditches are needed the above cross-section may be taken as a standard, but should be varied to meet local conditions

In wet, soggy soil, or where the drainage area of the ditches is large, the ditches should be made larger.

In sandy soil or on steep grades little ditching is necessary.

"V" Drain Foundation

To be used only where road lays over wet and heavy soils or on sections of road which break up when the frost comes out.



Specification:-

Excavate center of road to the depth, width and form shown above.
Stones not exceeding eight inches in diameter shall be placed in the bottom of the trench, over these shall be placed stones gradually diminishing in size until at the top small pebbles and gravel shall be used
The surface of this foundation shall be finished with a crown and thoroughly compacted
Side outlets shall be provided about every 200 feet.

tion. This we consider largely a result of inspection during construction.

STATE OF MAINE.
HIGHWAY DEPARTMENT.
INSPECTOR'S REPORT.
State Road Work 190 .

Town of.....County of.....
Date of inspection.....
Does work conform to that outlined in notification of approval and to general specifications?
If not, wherein does it differ?
Have you any suggestions to make for improving this work? If so, please outline them.
How far is work advanced? Give brief description of work done to date, noting length and width of road, and approximate amount of each kind of work done.
Date work began.
Average daily force.

.....
Inspector.

COMPLETION OF WORK.

After completing work to the satisfaction of the department the municipal officers were required to file a claim for aid as follows:

CERTIFICATE OF COMPLETION OF STATE ROAD.

.....190 .
(Place and date.)

STATE HIGHWAY DEPARTMENT,
Augusta, Maine.

The municipal officers of the town of.....hereby certify: That at the annual meeting held on.....1908, the town voted to adopt the provisions of Chapter 112, P. L. 1907, known as the State Highway Law, and made a special appropriation of..... dollars ($.....), under section 5 of said law in order to entitle it to state aid.

That there has been set aside from the regular Highway Appropriation for the permanent improvement of the state road an amount equal to or greater than that necessary to be set aside under section 4 of said law, to wit: the sum of.....dollars ($.....)

That said town has completed the section of state road as set forth in its proposal filed with the state highway department for the year 1908 and that the work done conforms to that outlined in said proposal and the notification of approval and general specifications issued by the state highway department:

That the total expense, detail of which is shown herewith, has been .....dollars ($.....), and we respectfully ask to have said work inspected and if accepted the state aid due said town paid.

..... Municipal
..... Officers
..... of
.....
.....ss

Personally appeared the within named....., one of the municipal officers of the town of....., and made oath that the statements in the foregoing certificates by them signed are true.

Before me,

.....
Justice of the Peace.

INSPECTOR'S CERTIFICATE.

I hereby certify that I have examined the state road work performed in the town of.....and find it to be in accordance with proposal and that it conforms substantially to general specifications issued by the state highway department. I have also examined within certificate of cost and believe it to be correct.

.....
Inspector.

COMMISSIONER'S APPROVAL.

Town of .....
Necessary to set aside under section 4, $.....
Necessary to appropriate under section 5, $.....
Town's share of joint fund,
State aid apportioned, section 6, $.....
Total joint fund
Approved for $.....state aid.

.....
State Commissioner of Highways.

With the certificate of completion was filed a certificate of cost as follows:

CERTIFICATE OF COST OF STATE ROAD.

.....190 .
(Place and date.)

PAUL D. SARGENT,
State Commissioner of Highways,
Augusta, Maine.

Dear Sir:—The following is a detailed statement of work on state road and cost of same.

Town of.....County of.....State of Maine.
Total length.....feet. Width of finished road.....

Length of "V" drain or stone base Width of "V" drain or stone base Depth of "V" drain or stone base	Cost	
Length of gravel or earth surface Width of gravel or earth surface Depth of gravel or earth surface	Cost	
Length of crushed stone surface Width of crushed stone surface Depth of crushed stone surface	Cost	
Grading earth cu. yards.....	Cost	
Grading rock cu. yards.....	Cost	
Culvert, kind.....Size.....Length.....	Cost	
Culvert, kind.....Size.....Length.....	Cost	
Culvert, kind.....Size.....Length.....	Cost	
Cobble gutter or stone drain. Length.....Width.....	Cost	
Cleaning length on each side.....Width.....	Cost	
Road Machine work. Length.....Width.....	Cost	
Other work.....		
.....	Cost	
	Total cost	

SUMMARY OF TOTAL EXPENSE OF WORK.

Labor.

Class	Total No. days.	Rate	Amount.
Foreman			
Labor			
Double teams			
Single teams			

Material Purchased.

Kind	Quantity	Cost	Amount

Remarks.

Date of beginning work. Date of ending.

..... Municipal
..... Officers
..... of
.....
.....Inspector.

Each of these certificates was approved by the inspector and forwarded to the department. On the certificate of completion the department endorsed its approval of the amount of aid due the town. These certificates were passed to the state auditor who certified them for payment to the governor and council.

The certificates of cost are lodged in the highway department and are the final record in connection with each piece of work. From these certificates the tabular statement showing amount, kind and cost of state road in each town has been worked up.

TABULAR STATEMENT OF

NOTE:—*In column showing material with which road is tar macadum, † indicates block paving, ‡ indicates earth*

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Abbot	Pis.	800	21	–	800	–	–	–	–
Acton	Yor.	430	21	–	430	–	–	–	–
Addison	Was.	2450	23	–	2450	Stone.	12 x 12	24	$31.25
Albany	Oxf.	530	21	530	530	Stone.	24 x 24	44	40.00
Albion	Ken.	2079	26	–	2079	Metal.	18	24	48.30
Alexander	Was.	737	24	–	737	–	–	–	–
Alfred	Yor.	382	21	300	382	–	–	–	–
Alna	Lin.	950	21	300	950	–	–	–	–
Alton	Pen.	240	21	–	*e*240	–	–	–	–
Amherst	Han.	1166	23	–	842	Stone.	14 x 16	30	11.90
						Stone.	13 x 13	23	8.50
Amity	Aro.	275	21	275	275	–	–	–	–
Andover	Oxf.	891	21	–	891	–	–	–	–
Anson	Som.	600	21	300	600	Stone.	30 x 36	28	235.00
						Stone.	36 x 54	28	
Appleton	Kno.	970	24	610	810	Stone.	24 x 48	27	12.00
						Stone.	18 x 24	21	8.00
Arrowsic	Sag.	288	19	144	288	–	–	–	–
Ashland	Aro.	1485	28	–	1485	–	–	–	–
Athens	Som.	800	25	800	800	Tile.	8	25	8.56
Atkinson	Pis.	591	21	591	*e*591	Metal.	16	40	38.32
Auburn	And.	290	40	–	†290	–	–	–	–
Augusta	Ken.	1800	21to25	235	*m*1800	Metal.	20	90	121.50
						Stone.	24 x 24	30	15.00
Aurora	Han.	475	22	400	400	Stone.	18 x 18	22	–
Avon	Fra.	2640	21	–	2640	Metal.	10	24	16.80
						Metal.	10	28	21.00
						Metal.	12	30	24.00
Baileyville	Was.	1627	21	–	1627	Stone.	24 x 36	27	138.63
Baldwin	Cum.	1800	21	–	*e*1800	Stone.	20 x 20	25	8.50
						Stone.	24 x 24	25	4.50
Bancroft	Aro.	260	21	–	*e*260	Stone.	48 x 48	20	12.20
Bangor	Pen.	2485	30	–	2485	Metal.	18	98	–
Baring	Was.	1033	24	–	1033	–	–	–	–
Bath	Sag.	1200	28	–	*m*1200	–	–	–	–
Belfast	Wal.	1030	23to47	–	*m*1030	–	–	–	–
Belgrade	Ken.	682	21	–	682	Metal.	12	22	24.40
Belmont	Wal.	1303	21	775	*e*528	Stone.	21 x 24	42	20.00
Benedicta	Aro.	285	30	285	*e*285	Stone.	36	24	46.00
Benton	Ken.	450	27	150	300	Concrete	48 x 60	27	340.28
Berwick	Yor.	802	21	276	*m*802	–	–	–	–
Bethel	Oxf.	742	25	742	742	Stone.	24 x 24	25	20.00
Biddeford	Yor.	1800	24to30	–	*m*1800	–	–	–	–

e Earth. † Granite block paving. *m* Macadam.

STATE ROAD WORK IN 1908.

*surfaced m indicates macadum, e indicates earth, * indicates and gravel, figures with no index show gravel surface.*

Cost of state road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
$382.50	$322.50	$193.50	–	$60.00	$ 48
300.37	300.37	166.87	–	–	70
405.25	360.00	216.00	–	45.25	17
296.13	292.50	175.50	–	3.63	56
425.25	425.25	236.25	–	–	20
130.50	130.50	87.00	–	–	18
371.25	371.25	206.25	–	–	97
307.50	307.50	184.50	–	–	32
171.02	171.00	114.00	–	02	71
180.00	180.00	120.00	–	–	15
292.80	225.00	135.00	–	67.80	1.06
333.50	293.62	163.12	–	39.88	37
744.80	744.00	372.00	–	80	1.24
308.00	311.25	183.50	$3.25	–	32
155.81	144.00	96.00	–	11.81	50
569.39	536.62	298.12	–	32.77	38
227.06	344.25	74.06	117.19	–	28
300.07	288.75	173.25	–	11.32	51
2217.10	2123.62	910.12	–	93.48	7.65
2711.35	2191.87	939.37	–	519.48	1.51
105.00	103.50	69.00	–	1.50	22
312.20	311.25	186.75	–	95	12
390.17	288.75	173.25	–	101.42	24
405.74	401.62	223.12	–	4.12	23
147.20	126.00	84.00	–	21.20	57
3074.85	4168.50	692.85	1093.65	–	1.24
188.39	195.00	110.39	6.61	–	18
2475.53	2139.37	916.87	–	336.16	2.06
1520.06	1827.00	476.06	306.94	–	1.48
524.83	523.12	290.62	–	1.71	77
188.44	191.25	111.94	2.81	–	14
148.95	148.50	99.00	–	45	52
634.29	560.25	311.25	–	74.04	1.41
995.94	990.00	495.00	–	5.94	1.24
851.07	948.00	377.07	96.93	–	1.15
4067.68	2341.50	1003.50	–	1726.18	2.26

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Bigelow Pl.	Som.	1155	20	–	*e*1155	–	–	–	–
Bingham	Som.	1072	20	–	1072	–	–	–	–
Blaine	Aro.	743	22	–	743	Metal.	12	50	20.00
Blanchard	Pis.	263	24	163	263	–	–	–	–
Blue Hill	Han.	2000	22	–	2000	Stone.	42 x 48	22	30.88
						Tile.	10	80	40.00
Boothbay	Lin.	962	21	962	*e*962	Stone.	24 x 24	22	20.00
Boothbay Harbor	Lin.	1240	30	30	*e*1240	–	–	–	–
Bowdoin	Sag.	1440	22	–	1440	Metal.	18	22	32.80
Bowdoinham	Sag.	450	21	443	450	–	–	–	–
Bradford	Pen.	1712	21	400	*e*1712	–	–	–	–
Bradley	Pen.	800	21	–	800	Concrete	16	22	46.00
Bremen	Lin.	363	21	–	363	–	–	–	–
Brewer	Pen.	1300	47	–	*m*1300	–	–	–	–
Bridgewater	Aro.	520	21	260	260	–	–	–	–
Bridgton	Cum.	3515	33	1388	2127	Stone.	24 x 24	288	288.00
Brighton Pl.	Som.	165	18	–	165	–	–	–	–
Bristol	Lin.	1350	24	1300	*e*1350	Metal.	24	25	82.65
Brooklin	Han.	1498	21	238	1033	Stone.	12 x 16	21	12.00
Brooks	Wal.	625	21	235	625	–	–	–	–
Brooksville	Han.	1400	21	–	1400	–	–	–	–
Brookton	Was.	230	23	230	230	Metal.	18	28	47.95
Brownfield	Oxf.	1298	21	–	1298	–	–	–	–
Brownville	Pis.	525	21	355	525	Stone.	18 x 20	26	50.00
Brunswick	Cum.	1100	21	–	*m*1100	Metal.	14	30	–
Buckfield	Oxf.	900	21	–	900	Stone.	18 x 24	61	18.00
Bucksport	Han.	2714	21	–	2714	Metal.	10	130	98.20
Burlington	Pen.	495	–	550	495	Metal.	12	26	23.26
Burnham	Wal.	372	21	372	*e*372	Stone.	18 x 24	22	26.98
Buxton	Yor.	1285	25	785	1285	Stone.	24 x 24	26	17.00
Byron	Oxf.	875	21	–	875	Metal.	16	22	22.00
Calais	Was.	2100	21	150	*m*2100	Concrete	24 x 24	46	118.61
						Metal.	16	46	96.83
						Metal.	14	26	54.73
Cambridge	Som.	341	24	341	341	–	–	–	–
Camden	Kno.	1400	28	1400	1400	Metal.	12	36	28.80
						"	10	48	33.60
						Tile.	8 TO 12	832	196.95
Canaan	Som.	346	22	–	346	–	–	–	–
Canton	Oxf.	1182	22	900	1182	Stone.	36 x 36	22	10.00
Cape Elizabeth	Cum.	733	26	733	733	Stone.	24 x 36	30	58.00
Caribou	Aro.	670	38	–	*m*650	Stone.	48	40	25.00
Carmel	Pen.	980	24	980	980	Stone.	36 x 48	90	–
						Stone.	24 x 36	30	–
Carroll	Pen.	990	33	270	990	Stone.	60 x 60	25	100.00
Carthage	Fra.	2196	19	–	2196	Stone	48 x 84	20	69.48
Cary Pl.	Aro.	831	15	800	831	Stone.	24	10	5.00
Casco	Cum.	3875	21	–	3875	–	–	–	–

e Earth. † Granite block paving. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
192.00	162.00	108.00	–	30.00	17
380.25	320.62	178.12	–	59.63	35
283.28	258.75	155.25	–	24.53	38
180.00	180.00	120.00	–	–	68
587.10	594.00	290.10	6.90	–	29
602.66	600.00	300.00	–	2.66	63
1283.69	933.00	466.50	–	350.69	1.04
344.89	344.25	191.25	–	64	24
598.26	546.00	273.00	–	52.26	1.33
419.95	293.62	163.12	–	126.33	25
350.61	341.25	204.75	–	9.36	44
255.08	255.00	153.00	–	08	70
2198.44	1309.87	561.37	–	888.57	1.69
492.16	418.50	232.50	–	73.66	95
932.00	942.37	393.50	10.37	–	26
162.50	157.50	105.00	–	5.00	98
899.33	876.00	438.00	–	23.33	67
216.00	251.25	115.50	35.25	–	14
320.63	303.75	168.75	–	16.88	51
315.59	310.50	172.50	–	5.09	23
183.62	139.50	93.00	–	44.12	79
451.00	351.00	195.00	–	100.00	35
436.85	528.00	172.85	91.15	–	83
1666.38	1659.00	711.00	–	7.38	1.51
415.87	472.50	205.87	56.63	–	46
983.34	945.00	472.50	–	38.34	36
265.86	277.50	154.86	11.64	–	54
196.32	288.75	80.82	92.43	–	53
774.00	774.00	387.00	–	–	60
201.10	216.00	129.10	14.90	–	23
1744.88	1724.62	739.12	–	20.26	83
240.00	240.00	144.00	–	–	70
1795.07	1567.12	671.62	–	227.95	1.28
352.00	337.50	187.50	–	14.50	1.02
367.87	367.87	204.37	–	–	31
1260.39	882.00	441.00	–	378.39	1.72
1646.14	1210.12	518.62	–	436.02	2.46
529.30	330.75	183.75	–	198.55	54
380.00	221.25	132.75	–	158.75	38
435.01	292.50	175.50	–	142.51	20
290.00	81.00	54.00	–	209.00	35
318.10	317.25	176.25	–	85	08

TABULAR STATEMENT OF STATE

Town or City.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	Culverts.			
						Kind.	Size—inches.	Length—feet.	Cost.
Castine	Han.	400	21	400	400	–	–	–	–
Castle Hill	Aro.	2640	21	150	e2490	Wood.	12 x 36	21	5.00
						Wood.	12 x 24	21	5.00
Caswell Pl	Aro.	125	21	120	120	Stone.	48 x 60	21	29.00
Centerville	Was.	575	24	–	675	–	–	–	–
Chapman Pl	Aro.	242	24	242	242	Stone.	12	22	$12.00
						Stone.	10	22	10.00
						Tile.	6	22	5.00
Charleston	Pen.	621	21	600	e621	Stone.	36 x 48	22	15.00
Charlotte	Was.	503	21	–	503	C'nc'te	14 x 16	22	69.00
						C'nc'te	14 x 14	22	
Chelsea	Ken.	600	22to24	150	600	Metal.	30	24	55.20
Cherryfield	Was.	600	21	–	600	Stone.	36 x 39	23	300.00
Chester	Pen.	1000	22	–	e1000	Metal.	8	20	
						Metal.	12	20	30.00
Chesterville	Fra.	325	21	200	325	Stone.	24 x 24	26	50.00
China	Ken.	2425	21	2395	e2425	Metal.	10	48	33.60
						Stone.	24	30	30.00
Clifton	Pen.	260	22	260	260	Stone.	60	24	15.00
Clinton	Ken.	1300	24	800	1300	Stone.	30	24	50.00
						Metal.	12	28	25.00
Columbia	Was.	1830	21	–	1830	–	–	–	–
Columbia Falls	Was.	1850	21	–	1850	Metal.	10	78	56.95
Concord	Som.	1122	21	–	1122	–	–	–	–
Connor Pl	Aro.	714	–	–	714	–	–	–	–
Cooper	Was.	472	21	–	472	–	–	–	–
Coplin Pl	Fra.	744	21	–	744	–	–	–	–
Corinna	Pen.	825	21	825	842	Stone.	–	20	–
Corinth	Pen.	1452	30	1100	1452	Stone.	12 x 24	26	12.00
						Stone.	12 x 24	30	27.16
Cornish	Yor.	800	21	460	800	Stone.	24 x 24	48	25.00
Cornville	Som.	683	21	683	e683	Stone.	30 x 36	20	45.00
Crawford	Was.	175	21	150	175	–	–	–	–
Crystal	Aro.	541	28	400	541	Metal.	18	18	36.95
Cumberland	Cum.	1350	24	–	1350	Metal.	24	30	99.43
Cushing	Kno.	1050	21	30	1050	Tile.	6	24	240.00
Damariscotta	Lin.	560	30	460	560	Metal.	12	76	28.60
Danforth	Was.	1485	24	–	1485	–	–	–	–
Dayton	Yor.	500	33	–	500	–	–	–	–
Dedham	Han.	560	23	535	‡562	Stone.	18 x 20	69	36.00
Deer Isle	Han.	200	26	–	e200	–	–	–	–
Denmark	Oxf.	400	–	–	e400	–	–	–	–
Dennistown Pl	Som.	3800	19	–	3800	–	–	–	–
Dennysville	Was.	2842	24	–	2842	Metal.	10	24	43.05
Detroit	Som.	300	25	300	e325	Metal.	12	20	–
Dexter	Pen.	495	28	–	495	Metal.	30	28	89.62
Dixfield	Oxf.	650	35	–	650	–	–	–	–

e. Earth ‡ Earth and Gravel. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of state road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
546.76	549.00	272.26	2.24	–	1.37
222.00	202.50	121.50	–	19.50	08
122.00	121.50	81.00	–	50	98
102.76	117.00	63.76	14.24	–	18
249.13	166.50	111.00	–	82.63	1.03
341.00	340.87	189.37	–	13	55
180.25	180.00	120.00	–	25	36
338.36	288.75	173.25	–	49.61	56
508.36	516.37	278.86	8.01	–	85
168.00	162.00	108.00	–	6.00	17
261.45	283.50	135.45	22.05	–	80
540.00	540.00	270.00	–	–	22
135.00	135.00	90.00	–	–	52
475.00	582.00	184.00	107.00	–	37
195.00	195.00	117.00	–	–	11
256.72	255.00	153.00	–	1.72	14
227.03	184.50	123.00	–	42.53	20
133.00	144.00	85.00	11.00	–	19
154.50	117.00	78.00	–	37.50	33
234.25	247.50	135.25	13.25	–	31
503.68	506.25	278.68	2.57	–	61
607.46	492.75	273.75	–	114.71	42
642.88	411.75	228.75	–	231.13	80
388.90	357.75	198.75	–	31.15	56
82.50	81.00	54.00	–	1.50	47
218.69	221.25	130.19	2.56	–	40
993.13	999.00	493.63	5.87	–	73
240.00	240.00	144.00	–	–	23
562.70	540.00	300.00	–	22.70	1.00
313.22	300.00	180.00	–	13.22	21
278.25	270.00	162.00	–	8.25	56
198.00	187.50	112.50	–	10.50	35
400.05	452.25	199.05	52.20	–	2.00
645.37	374.62	208.12	–	270.75	1.61
201.00	206.25	118.50	5.25	–	05
277.80	277.50	166.50	–	30	10
301.75	292.50	175.50	–	9.25	1.00
599.18	842.62	117.68	243.44	–	1.21
458.13	442.12	245.62	–	16.01	70

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Dixmont	Pen.	827	22	812	827	Stone.	36 x 36	24	49.00
Dover	Pis.	263	45	–	263	–	–	–	–
Dresden	Lin.	1650	21	165	1023	–	–	–	–
Drew Pl.	Pen.	550	30	550	550	–	–	–	–
Durham	And.	990	22	–	990	Metal.	12	22	20.00
Eagle Lake Pl.	Aro.	1320	21	–	1320	Stone.	14 x 24	44	20.00
Eastbrook	Han.	320	20	–	320	Stone.	18 x 18	20	10.00
East Livermore	And.	697	40	–	*m*697	–	–	–	–
East Machias	Was.	–	–	–	–	*b*	–	–	–
East Millinocket	Pen.	725	22	–	725	–	–	–	–
Easton	Aro.	2194	30	346	*e*2194	Wood.	48	52	–
Eastport	Was.	1900	21	–	1900	Wood.	24 x 24	9	10.00
Eddington	Pen.	990	33	858	*m*858	Stone.	24 x 24	35	35.00
Eden	Han.	1200	24	–	*m*1200	–	–	–	–
Edgecomb	Lin.	400	21	300	400	Metal.	10	22	16.37
Edinburg	Pen.	1300	25	–	*e*1300	Metal.	10	44	42.90
Eliot	Yor.	1130	21	750	1130	Concrete	12	25	18.55
Ellsworth	Han.	–	–	–	–	–	–	–	–
Embden	Som.	270	21	–	*e*270	Concrete	48x 48	24	140.00
Enfield	Pen.	225	21	213	225	Stone.	24	25	75.00
Etna	Pen.	600	26	600	600	Stone.	24 x 30	24	20.00
Eustis	Fra.	1940	–	–	1940	Metal.	6	23	21.50
Exeter	Pen.	561	25	264	*e*561	Stone.	72 x 78	20	100.00
Fairfield	Som.	1725	21	892	1725	Metal.	48	27	196.00
						Metal.	16	30	37.50
Falmouth	Cum.	1281	28	1021	1281	Stone.	12 x 14	28	30.65
Farmingdale	Ken.	504	21	–	*m*504	Tile.	10	82	40.01
Farmington	Fra.	1000	21	–	*m*1000	Metal.	12	30	32.36
Fayette	Ken.	1000	21	–	1000	Stone.	36 x 36	24	21.50
Forest City	Was.	–	–	–	–	–	–	–	–
Fort Fairfield	Aro.	1500	30	–	*m*1500	Tile.	15	–	16.49
Fort Kent	Aro.	2882	26	2882	550	C'nc'te	14	140	–
						C'nc'te	30	26	–
						Metal.	15	33	43.50
Foxcroft	Pis.	828	34	–	*m*828	Metal.	15	35	46.00
						Metal.	15	70	83.15
Frankfort	Wal.	650	25	–	650	Stone.	–	12	10.00
						Stone.	–	10	10.00
Franklin	Han.	410	21	410	410	–	–	–	–
Freedom	Wal.	470	21	60	410	Metal.	12	22	19.81
Freeman	Fra.	–	–	–	–	–	–	–	–
Freeport	Cum.	4150	21	284	4150	Stone.	30 x 36	25	23.20
						Stone.	30 x 30	39	30.80
						Stone.	24 x 30	24	15.60
Frenchville	Aro.	–	–	–	–	–	–	–	–
Friendship	Kno.	454	22	320	454	Stone.	24	26	23.00
						Metal.	8	24	18.79

b Bridge work. *e* Earth. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
285.75	307.50	162.75	21.75	–	35
656.25	656.25	281.25	–	–	2.50
470.42	388.12	215.62	–	82.30	29
266.80	225.00	135.00	–	41.80	48
408.50	408.37	226.87	–	13	41
262.50	262.50	157.50	–	–	20
113.10	117.00	74.10	3.90	–	35
1,393.30	861.00	369.00	–	532.30	2.00
465.75	465.75	258.75	–	–	–
262.87	262.50	157.50	–	37	36
455.62	455.62	253.12	–	–	21
1,634.00	1,086.75	465.75	–	547.25	86
664.75	315.00	189.00	–	349.75	67
1,861.25	1,861.12	797.62	–	13	1.55
348.75	348.75	209.25	–	–	88
100.90	49.50	33.00	–	51.40	78
552.48	552.00	276.00	–	48	49
–	1,320.37	‡	1,320.37	–	–
315.80	297.00	165.00	–	18.80	1.17
305.01	303.75	182.25	–	1.26	1.35
145.10	243.75	47.60	98.65	–	24
578.28	258.75	155.25	–	319.53	30
337.09	340.87	185.59	3.78	–	60
1,227.95	1,086.75	465.75	–	141.20	71
857.45	855.75	366.75	–	1.70	67
971.56	546.00	273.00	–	425.56	1.94
1,207.99	1,241.62	498.49	33.63	–	1.21
377.32	281.25	168.75	–	96.07	38
–	z27.00	–	27.00	–	–
1,465.98	1,320.37	565.87	–	145.61	98
365.65	526.50	131.65	160.85	–	13
1,598.29	810.00	405.00	–	788.29	1.93
408.51	334.12	185.62	–	74.39	63
388.89	388.12	215.62	–	77	95
301.55	307.50	178.55	5.95	–	64
–	z187.50	–	187.50	–	–
932.70	916.12	392.62	–	16.58	22
–	236.25	†	236.25	–	–
360.97	288.75	173.25	–	72.22	79

z Laid over to 1909. ‡ Work unfinished, no aid. † Work unsatisfactory.

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Fryeburg	Oxf.	2775	21	–	2775	Stone.	–	–	10.00
Gardiner	Ken.	1660	21	–	*m*1660	Stone.	30 x 30	42	174.10
Garland	Pen.	858	28	858	*e*858	Stone.	36 x 36	84	50.00
Georgetown	Sag.	306	21	–	306	–	–	–	–
Gilead	Oxf.	500	21	–	300	Metal.	12	32	28.10
Glenburn	Pen.	391	21	276	276	–	–	–	–
Gorham	Cum.	875	21	875	875	–	–	–	–
Gouldsboro	Han.	510	21	400	510	Stone.	12 x 14	21	40.00
Grafton	Oxf.	550	21	550	550	–	–	–	–
Grand Falls Pl	Pen.	198	21	196	198	–	–	–	–
Grand Isle	Aro.	1170	22	1040	1170	Metal.	14	25	–
Gray	Cum.	900	21	–	900	Metal.	24	24	46.16
Greenbush	Pen.	680	18	–	680	–	–	–	–
Greene	And.	–	21	–	‡2000	–	–	–	–
Greenfield	Pen.	297	21	60	198	–	–	–	–
Greenville	Pis.	600	21	–	600	–	–	–	–
Greenwood	Oxf.	400	21	–	400	Metal.	10	22	16.00
Guilford	Pis.	1736	24	1032	1736	Metal.	18	48	68.00
Hallowell	Ken.	1010	20	–	*m*1010	–	–	–	–
Hamlin Pl	Aro.	600	–	400	*e*600	–	–	–	–
Hampden	Pen.	4620	24	3960	4620	Stone.	18 x 30	168	81.06
Hancock	Han.	700	22	561	700	Stone.	15 x 24	44	40.00
Hanover	Oxf.	400	20	–	*e*400	Stone.	36 x 48	25	78.00
Harmony	Som.	640	20	320	640	Stone.	48 x 48	6	–
Harpswell	Cum.	950	21	350	950	Metal.	10	48	36.80
Harrington	Was.	445	22	445	445	Stone.	12 x 14	24	29.20
Harrison	Cum.	1115	21	550	1115	Stone.	20 x 42	50	50.00
						Stone.	36 x 18	28	20.00
						Stone.	24 x 42	52	55.00
Hartford	Oxf.	1000	22	280	‡1000	Stone.	18 x 36	32	25.00
Hartland	Som.	982	22	982	982	Stone.	14 x 36	22	–
						Stone.	10 x 24	–	–
						Stone.	10 x 24	–	–
Haynesville	Aro.	77	22	22	*e*77	Stone.	48 x 72	22	–
Hebron	Oxf.	300	21	–	*e*300	Metal.	12	24	20.04
Hermon	Pen.	360	–	360	360	Tile.	8	20	5.00
						Metal.	10	16	11.52
Hersey	Aro.	578	22	–	578	Tile.	8	44	–
						Stone.	12 x 12	22	–
Highland Pl	Som.	216	21	–	216	–	–	–	–
Hiram	Oxf.	950	24	–	950	Metal.	10	62	44.67
Hodgdon	Aro.	660	22	660	660	Metal.	12	24	10.00
						Stone.	18 x 18	24	15.00
Holden	Pen.	821	25	829	821	Stone.	36 x 48	25	36.75
Hollis	Yor.	815	21	600	815	–	–	–	–
Hope	Kno.	900	21	–	*e*900	Stone.	18 x 18	28	25.00
Houlton	Aro.	2000	21	–	*m*1500	Tile.	8	580	210.60
Howland	Pen.	1176	26	–	*e*99	Concrete	22 x 23	22	70.88
Hudson	Pen.	418	28	415	418	Metal.	12	20	16.00

e Earth. ‡ Earth and gravel. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
811.42	795.00	397.50	–	16.42	29
1,978.10	1,601.25	686.25	–	376.85	1.19
334.86	334.12	185.62	–	74	39
356.71	297.00	165.00	–	59.71	1.16
236.35	236.25	141.75	–	10	47
240.00	240.00	144.00	–	–	61
1,098.59	994.87	426.37	–	103.72	1.26
423.24	371.25	206.25	–	51.99	83
706.43	220.50	147.00	–	485.93	1.28
151.00	148.50	99.00	–	2.50	76
210.00	228.75	118.50	18.75	–	18
519.87	552.00	243.87	32.13	–	58
198.76	184.50	123.00	–	14.26	29
316.12	344.25	163.12	28.13	–	16
99.75	94.50	63.00	–	5.25	34
755.24	546.75	303.75	–	208.49	1.26
406.95	341.25	204.75	–	65.70	1.02
759.88	678.00	339.00	–	81.88	44
977.84	976.50	418.50	–	1.34	97
198.00	198.00	132.00	–	–	33
1,126.06	762.00	381.00	–	364.06	24
347.62	347.62	193.12	–	–	50
180.00	180.00	120.00	–	–	45
180.14	288.75	64.64	108.61	–	28
893.42	825.00	412.50	–	68.42	94
309.45	292.50	175.50	–	16.95	69
533.25	489 37	271.87	–	43.88	48
324.05	324.00	180.00	–	05	32
556.50	540.00	300.00	–	16.50	57
193.00	157.50	105.00	–	35.50	2.51
268.30	281.25	155.80	12.95	–	90
376.00	428.62	207.62	52.62	–	1.04
480.00	144.00	96.00	–	336.00	83
101.32	157.50	48.82	56.18	–	47
420.29	421.87	232.79	1.58	–	44
383.37	340.87	189.37	–	42.50	58
295.00	292.50	175.50	–	2.50	36
534.33	479.25	266.25	–	55.08	65
251.00	251.25	150.50	25	–	28
2,033.50	1,338.75	573.75	–	694.75	1.02
312.51	307.12	170.62	–	5.39	27
342.05	206.25	123.75	–	135.80	82

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Industry	Fra.	1300	21	175	1300	Stone.	20 x 24	24	25.00
						Stone.	16 x 24	24	16.00
						Stone.	20 x 24	24	25.00
Island Falls	Aro.	650	25	650	650	–	–	–	–
Isleboro	Wal.	673	21to28	673	673	–	–	–	–
Jackman Pl	Som.	–	–	100	3640	–	–	–	–
Jackson	Wal.	500	20	500	500	Stone.	18 x 24	21	12.00
						Stone.	18 x 30	21	14.00
Jay	Fra.	1000	21	–	*m*1000	Stone.	24 x 24	23	80.00
Jefferson	Lin.	1160	21	480	1160	–	–	–	–
Jonesport	Was.	835	22	–	835	Metal.	12	48	46.10
						Stone.	12 x 12	48	46.84
Kenduskeag	Pen.	1006	27	1006	1006	Stone.	30 x 36	25	–
Kennebunk	Yor.	426	27	70	*426	–	–	–	–
Kennebunkport	Yor.	1000	21	600	1000	Metal.	12	24	19.70
Kingfield	Fra.	–	–	–	–	*b* Stone.	24 x 24	120	–
						Stone.	36 x 48	24	422.82
Kingman	Pen.	170	19to28	153	170	–	–	–	–
Kittery	Yor.	1000	21	375	625	Stone.	36 x 48	25	100.00
Knox	Wal.	4620	23	–	*e*4620	Stone.	18to48	200	90.00
Lagrange	Pen.	746	21	506	746	–	–	–	–
Lakeville Pl	Pen.	750	23	400	350	Stone.	18 x 24	24	15.00
Lamoine	Han.	1871	22	429	1342	Metal.	10	24	18.45
Lebanon	Yor.	840	23	840	840	Stone.	24	22	35.00
						Stone.	24	30	40.00
Lee	Pen.	2079	24	–	2079	–	–	–	–
Leeds	And.	1200	22	–	1200	–	–	–	–
Levant	Pen.	1080	21	820	1080	–	–	–	–
Liberty	Wal.	1254	22	1254	*e*1254	Stone.	24 x 24	22	13.00
Limerick	Yor.	550	25	550	550	Stone.	18 x 24	30	20.00
Limestone	Aro.	2250	24	1000	2250	Metal.	24	22	–
Limington	Yor.	285	21	285	285	Metal.	12	26	20.00
Lincoln	Pen.	1330	28	928	1330	–	–	–	–
Lincoln Pl	Oxf.	1360	21	1360	1360	Metal.	12	26	20.00
						Metal.	12	26	20.00
						Metal.	24	28	55.00
Lincolnville	Wal.	125	22	–	*e*125	–	–	–	–
Linneus	Aro.	800	26	300	800	–	–	–	–
Lisbon	And.	1800	24	610	1800	Metal.	8	30	25.00
Litchfield	Ken.	1732	22	1732	*e*1732	–	–	–	–
Littleton	Aro.	766	23	500	766	–	–	–	–
Livermore	And.	360	21	–	*m*360	Metal.	10	28	19.60
Lovell	Oxf.	1350	21	–	1350	Stone.	24 x 30	25	22.00
Lowell	Pen.	200	22	–	200	Stone.	12 x 18	22	10.00
Lubec	Was.	2100	22	1540	2100	–	–	–	–
Ludlow	Aro.	337	23	337	337	Metal.	12	24	10.75
Machias	Was.	2118	21	–	2118	Metal.	8	–	
						Metal.	16	–	76.20
						Metal.	20	–	

b Bridge work. *e* Earth. *m* Macadam. * Tar Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
246.63	206.25	123.75	–	40.38	19
322.86	381.37	153.36	58.51	–	50
1,146.25	912.00	456.00	–	234.25	1.70
288.05	288.75	172.55	70	–	08
258.00	266.25	151.50	8.25		52
1,140.18	1,139.25	488.25	–	93	1.14
479.25	479.25	*266.25	–	–	41
546.75	546.75	303.75	–	–	65
386.49	326.25	195.75	–	60.24	38
1,597.30	1,491.00	639.00	–	106.30	3.75
974.50	979.12	415.00	4.62	–	97
422.82	418.50	232.00	–	4.32	–
309.99	296.25	177.75	–	13.74	1.82
926.80	858.00	429.00	–	68.80	93
359.21	356.25	213.75	–	2.96	08
324.46	277.50	166.50	–	46.96	43
256.30	258.75	152.80	2.45	–	34
398.70	345.00	207.00	–	53.70	21
936.30	445.50	247.50	–	490.80	1.11
246.25	240.00	144.00	–	6.25	12
374.62	374.62	208.12	–	–	31
312.36	303.75	182.25	–	8.61	29
267.87	255 00	153.00	–	12.87	21
509.62	509.62	283.12	–	–	93
475.60	475.87	264.10	27	–	21
371.25	371.25	206.25	–	–	1.30
600.78	594.00	297.00	–	6.78	45
540.00	262.50	157.50	–	277.50	40
355.17	344.25	191.25	–	10.92	2.84
304.00	293.62	163.12	–	10.38	38
1,703.62	1,517.25	650.25	–	186.37	95
556.64	401.62	223.12	–	155.02	32
447.50	408.37	226.87	–	39.13	58
598.15	509.62	283.12	–	88.53	1.66
455.67	442.12	245.62	–	13.55	34
161.00	162.00	107.00	1.00	–	81
885.00	885.00	442.50	–	–	42
273.60	206.25	123.75	–	67.35	81
852.58	846.00	423.00	–	6.58	40

*Approved and held pending settlement of Right of Way.

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Machiasport	Was.	730	22	–	730	Metal.	12	22	42.90
						Metal.	16	22	
Macwahoc Pl	Aro.	1200	21	–	*e*1200	–	–	–	–
Madawaska	Aro.	–	–	–	–	–	–	–	–
Madison	Som.	420	54	420	*420	–	–	–	–
Madrid	Fra.	676	18	–	676	Stone.	18 x 24	23	25.00
						Stone.	18 x 24	25	25.00
Magalloway Pl	Oxf.	750	21	–	750	Stone.	30 x 30	23	120.00
Manchester	Ken.	700	21	650	700	Stone.	24 x 30	25	13.00
Mapleton	Aro.	–	–	–	–	–	–	–	–
Mariaville	Han.	270	21	270	270	–	–	–	–
Marion	Was.	–	–	–	–	–	–	–	–
Marshfield	Was.	700	21	64	700	Metal.	10	69	48.00
Mars Hill	Aro.	600	21	400	600	–	–	–	–
Masardis	Aro.	520	21	–	520	Metal.	18	21	51.87
Mattamiscontis Twp	Pen.	100	21	100	100	–	–	–	–
Mattawamkeag	Pen.	1700	21	–	*e*1700	Metal.	30	42	35.00
Maxfield	Pen.	1825	24	–	*e*660	–	–	–	–
Mechanic Falls	And.	1300	23	1200	1300	Metal.	16	60	62.35
Meddybemps	Was.	650	22	–	650	Metal.	12	22	20.00
Medford	Pis.	315	21	133	*e*315	Stone.	32 x 36	23	43.00
Medway	Pen.	872	24	–	*e*872	Metal.	12	24	26.40
Mercer	Som.	610	23	610	610	Stone.	18 x 30	21	25.00
Merrill Pl	Aro.	450	23	200	450	Metal.	48	–	105.00
Mexico	Oxf.	550	45	–	550	Stone.	30 x 30	67	192.00
Milbridge	Was.	1445	24	600	1445	Stone.	15 x 15	21	21.72
Milford	Pen.	660	33	–	660	–	–	–	–
Milo	Pis.	680	23	630	*e*680	Stone.	24 x 24	23	40.00
Milton Pl	Oxf.	248	21	–	248	–	–	–	–
Minot	And.	850	21	–	850	Stone.	48 x 60	35	90.00
						Stone.	24 x 30	24	15.25
						Stone.	18 x 18	24	15.00
Monmouth	Ken.	925	23	925	*m*925	Metal.	14	30	26.07
Monroe	Wal.	1155	21	495	*e*1067	Stone.	20 x 20	22	5.00
Monson	Pis.	2200	21	–	*e*2200	Stone.	20 x 20	25	
						Stone.	21 x 21	66	145.74
						Stone.	21 x 24	44	
Monticello	Aro.	600	21	200	600	Metal.	10	22	15.00
Montville	Wal.	2062	22	2075	*e*2075	Stone.	18 x 20	24	6.00
						Stone.	20 x 22	20	8.00
Moose River Pl	Som.	2032	15	–	2032	–	–	–	–
Moro Pl	Aro.	1224	23	–	*e*1224	Stone.	8	24	12.00
Morrill	Wal.	715	22	460	*e*215	Stone.	18 x 24	21	5.00
Moscow	Som.	–	–	–	–	*b* Stone.	7x21	25	173.25
Mt. Chase	Pen.	306	22	150	306	Metal.	72	22	12.00
Mt. Desert	Han.	–	–	–	–	–	–	–	–
Mt. Vernon	Ken.	536	21	536	536	Stone.	18 x 24	43	39.00
Naples	Cum.	1650	23	–	1650	Stone.	20 x 24	24	10.00
Newburg	Pen.	3036	27	3036	3036	Stone.	20 x 24	46	33.00

e Earth. *m* Macadam. * Tar Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
304.30	341.25	167.80	36.95	–	42
121.50	112.50	75.00	–	9.00	10
–	z363.75	–	363.75	–	–
c1,200.00	1,199.62	514.12	–	38	2.86
292.51	198.00	132.00	–	94.51	43
375.10	371.25	222.75	–	3.85	50
480.72	324.00	180.00	–	156.72	69
–	303.75	†	303.75	–	–
126.00	112.50	75.00	–	13.50	46
–	z81.00	–	81.00	–	–
191.59	135.00	90.00	–	56.59	27
572.25	425.25	236.25	–	147.00	95
253.95	251.25	150.75	–	2.70	49
41.50	27.00	18.00	–	14.50	41
262.50	262.50	157.50	–	–	15
68.08	67.50	45.00	–	58	04
993.85	861.00	430.50	–	132.85	76
163.55	63.00	42.00	–	100.55	25
266.38	207.00	138.00	–	59.38	85
152.80	135.00	90.00	–	17.80	18
470.45	315.00	189.00	–	155.45	77
530.00	193.50	129.00	–	336.50	1.18
753.51	591.00	295.50	–	162.51	1.37
486.12	496.12	265.62	10.00	–	34
517.00	519.75	286.00	2.75	–	78
990.00	990.00	495.00	–	–	1.45
144.00	144.00	96.00	–	–	58
481.31	388.12	215.62	–	93.19	57
651.00	651.00	325.50	–	–	70
323.12	320.62	178.12	–	2.50	28
310.46	286.87	159.37	–	23.59	14
477.00	432.00	240.00	–	45.00	79
341.00	340.87	189.37	–	13	17
273.75	273.75	164.25	–	–	13
218.00	121.50	81.00	–	96.50	18
236.44	228.75	137.25	–	7.69	33
238.75	236.25	141.75	–	2.50	–
182.13	153.00	102.00	–	29.13	60
–	1,228.50	‡	1,228.50	–	–
419.73	374.62	208.12	–	45.11	78
317.90	307.12	170.62	–	10.78	19
571.62	297.00	165.00	–	274.62	19

c Cost reported to town by contractor $1,518.46. † Work not satisfactory, no aid.
z Laid over to 1909. ‡ Work unfinished.

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Newcastle	Lin.	150	–	–	e150	Metal.	30	38	105.00
Newfield	Yor.	450	22	312	372	Stone.	24 x 24	22	16.00
New Gloucester	Cum.	1675	21	1275	1675	–	–	–	–
New Limerick	Aro.	480	24	–	480	–	–	–	–
Newport	Pen.	1733	31	1733	1733	–	–	–	–
New Portland	Som.	600	24	–	600	Stone.	66 x 78	28	309.00
Newry	Oxf.	650	21	500	650	Metal.	24	21	33.00
						Metal.	12	21	16.80
New Sharon	Fra.	1425	24	330	1425	–	–	–	–
New Sweden	Aro.	3293	23	–	3293	Wood.	24	161	45.00
New Vineyard	Fra.	375	23	375	375	–	–	–	–
Nobleboro	Lin.	656	21	–	656	–	–	–	–
Norridgewock	Som.	742	21	742	‡742	–	–	–	–
No. Berwick	Yor.	577	30	30	m577	–	–	–	–
Northfield	Was.	–	–	–	–	–	–	–	–
North Haven	Kno.	400	28	400	e400	–	–	–	–
Northport	Wal.	800	21	300	e800	Stone.	24 x 24	30	15.00
North Yarmouth	Cum.	1225	21	900	1225	Stone.	24 x 24	48	52.00
Norway	Oxf.	820	22	820	820	–	–	–	–
No. 7, So. Div	Han.	1270	–	–	1270	–	–	–	–
No. 8, Pl	Han.	116	24	22	116	–	–	–	–
No. 9, So. Div	Han.	–	–	–	–	–	–	–	–
No. 10, So. Div	Han.	–	–	–	–	–	–	–	–
No. 21, Pl	Han.	230	20	230	230	Stone.	24 x 24	20	10.00
No. 22, Mid. Div	Han.	300	20	–	300	–	–	–	–
No. 28, Mid. Div	Han.	400	21	–	400	–	–	–	–
No. 33, Pl	Han.	500	21	500	500	–	–	–	–
Oakfield	Aro.	2675	24	–	e2675	Concrete	30 x 32	30	66.00
Oakland	Ken.	1238	21	1238	e1238	–	–	–	–
Old Orchard	Yor.	492	21	250	492	–	–	–	–
Oldtown	Pen.	805	21	500	m805	Metal.	16	80	–
Orient	Aro.	590	24	–	590	–	–	–	–
Orland	Han.	1443	21	392	1443	–	–	–	–
Orneville	Pis.	–	–	–	–	b	–	–	–
Orono	Pen.	795	21	795	795	Metal.	16	45	50.00
Orrington	Pen.	1149	28	375	1149	–	–	–	–
Otis	Han.	240	22	240	e250	Metal.	14	18	16.50
Otisfield	Cum.	600	21	–	600	–	–	–	–
Oxford	Oxf.	2025	21	–	2025	Stone.	20 x 20	33	8.00
						Stone.	18 x 18	28	12.00
Palermo	Wal.	500	36	444	500	Stone.	18 x 30	41	34.73
Palmyra	Som.	1690	24to40	1408	1690	Stone.	36 x 36	30	–
Paris	Oxf.	1336	26	–	1336	–	–	–	–
Parkman	Pis.	618	21	–	e450	Metal.	24	26	41.60
Parsonsfield	Yor.	675	21	75	‡675	Stone.	42 x 48	23	–
Passadumkeag	Pen.	115	27	115	115	–	–	–	–
Patten	Pen.	1300	24	470	m1300	Metal.	22	24	38.50

b Bridge work. *e* Earth. ‡Earth and gravel. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
732.18	681.00	*340.50	–	51.18	4.88
280.87	277.50	166.50	–	3.37	62
831.77	832.12	356.27	.35	–	50
349.20	303.75	182.25	–	45.45	73
721.66	708.00	354.00	–	13.66	42
372.59	303.75	168.75	–	68.84	62
260.00	247.50	148.50	–	12.50	40
432.00	438.75	237.00	6.75	–	30
342.25	337.50	202.50	–	4.75	10
330.32	337.50	195.32	7.18	–	88
373.98	300.00	180.00	–	73.98	57
602.66	582.00	291.00	–	20.66	81
1,021.10	744.00	372.00	–	277.10	1.77
–	z94.50	–	94.50	–	–
288.69	90.25	159.69	1.56	–	72
394.22	371.25	206.25	–	22.97	49
355.08	367.87	191.58	12.79	–	29
861.00	861.00	369.00	–	–	1.05
75.23	76.50	49.73	1.27	–	06
66.05	54.00	36.00	–	12.05	57
–	z13.50	–	13.50	–	–
–	z85.50	–	85.50	–	–
86.75	85.50	57.00	–	1.25	38
67.50	67.50	45.00	–	–	23
115.00	117.00	76.00	2.00	–	29
121.35	121.50	80.85	.15	–	24
258.37	195.00	117.00	–	63.37	10
755.03	990.00	260.03	234.97	–	61
789.89	711.37	304.87	–	78.52	1.61
1,482.00	1,351.87	579.37	–	130.13	1.84
306.49	157.50	105.00	–	148.99	52
346.91	307.12	170.62	–	39.79	24
361.43	202.50	121.50	–	158.93	–
600.00	711.37	193.50	111.37	–	75
468.45	465.75	258.75	–	2.70	41
149.92	81.00	54.00	–	68.92	62
298.87	303.75	177.37	4.88	–	49
581.56	540.00	300.00	–	41.56	29
255.24	262.50	150.24	7.26	–	51
570.58	388.12	215.62	–	182.46	34
1,233.87	931.87	399.37	–	302.00	92
431.69	288.75	173.25	–	142.94	70
560.00	502.87	279.37	–	57.13	83
240.50	211.50	141.00	–	29.00	2.09
681.00	597.00	298.50	–	84.00	52

*Approved and held pending settlement of Right of Way. zLaid over to 1909.

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Pembroke	Was.	1340	21	219	1340	Stone.	24 x 24	23	38.50
Perham	Aro.	1000	21	1000	1000	–	–	–	–
Perry	Was.	1400	21	–	1400	Stone.	48 x 48	24	123.94
Peru	Oxf.	405	21	–	405	Stone.	24 x 24	21	72.64
Phillips	Fra.	2850	21	–	*e*2850	Metal.	12	22	58.30
						Metal.	10	44	
Phippsburg	Sag.	200	21	–	*e*100	Stone.	60 x 60	24	100.00
Pittsfield	Som.	2732	31	1732	1000	Stone.	16 x 22	28	28.00
						Stone.	16 x 24	23	23.00
						Stone.	16 x 18	23	23.00
Pittston	Ken.	925	21	925	925	Stone.	24 x 24	23	25.00
							16 x 30	37	43.00
Pleasant Ridge Pl.	Som.	–	–	–	–	*b* Stone.	16 x 24	34	45.00
							24 x 36	18	27.00
Plymouth	Pen.	1402	22	–	825	Stone.	12 x 12	72	60.00
Poland	And.	1150	24	1110	*e*1150	Stone.	18 x 18	66	90.00
						Stone.	24 x 24	44	90.00
Portage Lake Pl.	Aro.	–	–	–	–	–	–	–	–
Porter	Oxf.	600	24	100	600	–	–	–	–
Portland	Cum.	2879	32to44	844	*m*2814	–	–	–	–
Pownal	Cum.	1000	21	–	400	Stone.	15 x 18	26	25.00
						Stone.	18 x 22	28	50.00
Prentiss	Pen.	660	21	297	297	–	–	–	–
Presque Isle	Aro.	1115	50	–	1115	Tile.	12	120	54.00
						Tile.	24	60	126.00
Princeton	Was.	650	24	650	650	–	–	–	–
Prospect	Wal.	1200	21	–	1200	Metal.	12	96	90.80
Randolph	Ken.	219	26	–	219	Metal.	12	29	23.42
						Stone.	36 x 48	26	197.86
Rangeley	Fra.	425	38	425	‡425	Stone.	8 x 15	50	–
Raymond	Cum.	425	21	–	425	–	–	–	–
Readfield	Ken.	610	22	610	*e*610	Metal.	16	34	34.00
						Metal.	12	36	32.40
						Metal.	10	62	43.40
Reed Pl	Aro.	250	24	250	250	Stone.	18	48	6.00
Richmond	Sag.	775	44	700	775	Metal.	12	86	77.23
Ripley	Som.	561	21	396	*e*165	Stone.	20 x 24	63	–
Robbinston	Was.	–	–	–	–	–	–	–	–
Rockland	Kno.	1250	23	1250	1250	C'nc'te	60 x 72	20	212.85
						C'nc'te	24 x 36	25	129.63
						C'nc'te	36 x 48	25	155.94
Rockport	Kno.	701	30	615	701	Metal.	20	32	46.35
Rome	Ken.	750	24	250	*e*750	Metal.	12	24	19.00
Roque Bluffs	Was.	–	–	–	–	–	–	–	–
Roxbury	Oxf.	–	–	–	–	–	–	–	–
Rumford	Oxf.	11100	21	–	*m* 11100	–	–	–	–
Saco	Yor.	866	35	–	*m*866	–	–	–	–
St. Albans	Som.	850	28	850	850	Stone.	18 x 24	60	60.00
St. Francis Pl.	Aro.	–	–	–	–	–	–	–	–

b Bridge work. *e* Earth. ‡ Earth and gravel. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
381.37	381.37	211.87	–	–	28
286.00	296.25	167.50	10.25	–	29
366.94	341.25	204.75	–	25.69	26
283.67	283.50	157.50	–	17	70
625.87	609.00	304.50	–	16.87	22
478.14	469.12	260.62	–	9.02	24
1,025.00	992.25	425.25	–	32.75	38
505.33	523.12	272.83	17.79	–	55
135.00	135.00	90.00	–	–	–
398.12	333.75	200.25	–	64.37	28
956.97	897.00	448.50	–	59.97	83
–	z247.50	–	247.50	–	–
292.50	292.50	175.50	–	–	49
11,101.96	11,985.75	4,252.96	883.79	–	3.85
297.00	297.00	165.00	–	–	30
220.00	220.50	146.50	50	–	33
1,526.95	1,299.37	556.87	–	227.58	1.37
297.78	290.25	161.25	–	7.53	46
328.35	322.50	193.50	–	5.85	27
425.43	334.12	185.62	–	91.31	1.94
659.22	663.00	327.72	3.78	–	1.55
396.67	307.50	184.50	–	89.17	93
728.66	560.25	311.25	–	168.41	1.19
244.25	243.75	146.25	–	0.50	98
1,066.91	996.00	498.00	–	70.91	1.38
266.25	266.25	159.75	–	–	47
–	†277.50	–	277.50	–	–
2,382.17	1,656.37	709.87	–	725.80	1.91
1,029.25	905.62	388.12	–	123.63	1.47
297.85	195.00	117.00	–	102.85	40
–	z67.50	–	67.50	–	–
–	s206.25	–	206.25	–	–
10,917.35	1,417.50	607.50	–	9,499.85	98
1,898.45	1,764.00	756.00	–	134.45	2.19
462.00	455.62	253.12	–	6.38	54
–	†207.00	–	207.00	–	–

†Work not satisfactory, no aid. z Laid over to 1909. s Work not done on state road.

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS. Kind.	Size—inches.	Length—feet.	Cost.
St. George	Kno.	927	20	–	927	–	–	–	–
Salem	Fra.	–	–	–	–	*b*	–	–	–
Sanford	Yor.	2400	22	–	*m*1600	Metal.	12	30	24.60
						Metal.	12	52	43.80
Sangerville	Pis.	800	21	150	*e*487	Metal.	14	39	37.00
Scarboro	Cum.	4275	21	–	‡4275	–	–	–	–
Searsmont	Wal.	1155	22	1155	*e*1155	Stone.	24 x 24	46	35.00
Searsport	Wal.	3610	35	1010	3610	Stone.	15	50	12.50
Sebago	Cum.	200	21	200	200	Stone.	60 x 72	54	142.00
Sebec	Pis.	600	23	135	600	Metal.	15	64	75.00
Seboeis Pl	Pen.	2838	–	–	*e*2838	–	–	–	–
Sedgwick	Han.	1044	23	582	1044	Metal.	30	21	91.03
Shapleigh	Yor.	848	22	–	848	Metal.	24	30	68.00
						Metal.	12	30	
Sherman	Aro.	668	32	668	*m*668	–	–	–	–
Shirley	Pis.	1000	21	1000	*e*1000	Stone.	12 x 21	26	10.50
Sidney	Ken.	540	21	526	540	Stone.	24 x 24	31	51.55
Silver Ridge Pl	Aro.	170	21	170	170	Stone.	18 x 24	20	5.00
Skowhegan	Som.	1900	25	750	*m*1250	Concrete	36 x 42	36	228.00
Smithfield	Som.	651	35	651	660	–	–	–	–
Smyrna	Aro.	3795	24	350	350	Tile.	8	24	13.60
						Stone.	18 x 24	24	30.00
						Stone.	18 x 18	24	25.00
Solon	Som.	1980	23	1005	1980	Tile.	8	20	4.80
						Metal.	24	20	33.88
Somerville	Lin.	310	21	–	*e*310	Stone.	66 x 72	36	148.65
Sorrento	Han.	750	21	150	750	Stone.	14 x 18	23	35.00
						Metal.	10	44	32.80
So. Berwick	Yor.	700	–	–	*m*700	–	–	–	–
Southport	Lin.	2000	21	–	*e*2000	Tile.	6	200	40.56
South Portland	Cum.	640	20	–	*m*640	–	–	–	–
South Thomaston	Kno.	380	22	380	380	Metal.	14	24	23.40
Southwest Harbor	Han.	457	23	400	457	Stone.	26 x 28	25	53.00
Springfield	Pen.	264	22	264	264	Stone.	18 x 36	21	50.00
Stacyville Pl	Pen.	482	24	482	*e*482	–	–	–	–
Standish	Cum.	1040	21	335	353	Stone.	24 x 24	32	57.00
Starks	Som.	425	23	225	200	Metal.	16	26	23.23
Stetson	Pen.	734	24	734	734	–	–	–	–
Steuben	Was.	695	21	–	695	Stone.	17 x 22	21	50.00
Stockton Springs	Wal.	530	20	530	‡530	Stone.	24 x 24	22	–
						Stone.	32 x 48	28	
						Metal.	10	120	
Stoneham	Oxf.	385	22	250	385	–	–	–	–
Stonington	Han.	354	24	325	‡354	Stone.	42 x 48	31	50.00
Stowe	Oxf.	1500	23	250	*e*250	Stone.	18 x 18	46	24.00
						Stone.	18 x 18	23	12.00
Strong	Fra.	400	30	–	400	–	–	–	–
Sullivan	Han.	614	26	–	614	Stone.	24 x 24	25	–

e Earth. ‡ Earth and gravel. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
936.85	448.87	249.37	–	487.98	1.01
405.00	139.50	93.00	–	265.50	–
2,635.64	1,480.50	634.50	–	1,155.14	1.10
577.08	537.00	268.50	–	40.08	72
1,618.90	740.25	317.25	–	878.65	38
367.87	367.87	204.37	–	–	32
697.50	696.00	348.00	–	1.50	1.93
333.43	322.50	193.50	–	10.93	1.67
350.00	326.25	195.75	–	23.75	58
207.00	207.00	138.00	–	–	07
477.19	273.75	164.25	–	203.44	46
1,205.97	300.00	180.00	–	905.97	1.42
292.32	285.00	171.00	–	7.32	44
250.63	193.50	129.00	–	57.13	25
474.27	465.75	258.75	–	8.52	88
80.00	81.00	53.00	1.00	–	47
2,027.85	1,630.12	698.62	–	397.73	1.07
285.00	285.00	171.00	–	–	44
243.60	228.75	137.25	–	14.85	06
466.68	428.62	238.12	–	38.06	24
198.20	130.50	87.00	–	67.70	64
306.46	307.12	169.96	66	–	41
1,287.50	824.25	253.25	–	463.25	1.84
428.53	428.62	238.03	09	–	21
1,356.30	1,333.50	571.50	–	22.80	2.12
426.03	421.87	234.37	–	4.16	1.12
456.28	455.62	253.12	–	66	99
220.00	217.50	130.50	–	2.50	83
235.62	195.00	117.00	–	40.62	49
866.38	738.00	369.00	–	128.38	83
289.13	288.75	173.25	–	38	68
265.95	266.25	159.45	30	–	36
375.17	333.75	200.25	–	41.42	54
490.28	536.62	251.78	46.34	–	93
222.65	202.50	121.50	–	20.15	58
453.38	435.37	241.87	–	18.01	1.28
255.90	255.00	153.00	–	90	18
316.68	317.25	175.68	57	–	79
415.06	378.00	210.00	–	37.06	68

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS.			
						Kind.	Size—inches.	Length—feet.	Cost.
Sumner	Oxf.	459	22	158	459	Stone.	24 x 30	32	40.00
						Stone.	30 x 30	23	28.00
Surry	Han.	2660	14	–	2600	–	–	–	–
Swan's Island	Han.	825	18	–	825	–	–	–	–
Swanville	Wal.	900	21	600	900	–	–	–	–
Sweden	Oxf.	2500	25	140	*e*2500	Stone.	24 x 24	66	26.62
Temple	Fra.	600	21	600	600	Stone.	10	23	–
Thomaston	Kno.	722	24	722	722	Stone.	20 x 20	32	32.00
						Stone.	42 x 54	53	
Thorndike	Wal.	1437	24	577	*e*1437	Stone.	24 x 18	36	17.00
						Stone.	15 x 15	24	8.00
Topsfield	Was.	640	31	418	640	–	–	–	–
Topsham	Sag.	1500	24	–	*m*1500	Stone.	24 x 42	28	54.00
Tremont	Han.	462	20	462	462	Metal.	12	20	19.75
Trenton	Han.	390	22	380	*e*390	Metal.	12	20	16.53
						Metal.	10	20	14.40
Troy	Wal.	372	20	–	372	Stone.	20 x 32	20	18.00
						Metal.	16	48	48.00
Turner	And.	1713	23	–	1713	Metal.	16	32	32.00
						Metal.	16	28	28.00
Union	Kno.	480	21	480	*e*480	–	–	–	–
Unity	Wal.	940	28	940	*e*940	Stone.	18	25	10.50
Unity Pl.	Ken.	–	–	–	–	–	–	–	–
Upton	Oxf.	320	22	287	320	Stone.	24	26	23.00
Van Buren	Aro.	–	–	–	–	–	–	–	–
Vanceboro	Was.	3475	21	–	*e*3475	Stone.	17 x 17	22	89.00
						Stone.	18 x 24	22	
							20 x 20	22	
Vassalboro	Ken.	1645	21	–	1645	Metal.	10	26	18.20
Verona	Han.	200	23	200	*e*200	Metal.	12	22	–
Vienna	Ken.	1254	21	–	*e*1254	Stone.	20	75	110.00
Vinalhaven	Kno.	437	22	–	437	Stone.	36	23	–
Wade Pl.	Aro.	275	15	260	275	–	–	–	–
Waldo	Wal.	932	22	932	932	Stone.	30 x 42	26	10.00
Waldoboro	Lin.	600	25	–	*m*600	Stone.	30 x 30	136	–
Wales	And.	240	21	240	*e*240	Stone.	24 x 30	22	15.00
Wallagrass Pl.	Aro.	–	–	–	–	–	–	–	–
Waltham	Han.	375	23	–	375	–	–	–	–
Warren	Kno.	1000	30	900	1000	Metal.	14	30	43.05
Washburn	Aro.	1040	24	610	1040	Stone.	48	22	16.20
Washington	Kno.	750	24	–	*e*750	–	–	–	–
Waterboro	Yor.	522	22	522	522	–	–	–	–
Waterford	Oxf.	841	25	500	841	Stone.	24 x 42	25	60.00
Waterville	Ken.	760	46	–	*m*760	–	–	–	–
Wayne	Ken.	744	21	–	420	Stone.	18 x 24	26	32.00
Webster	And.	1270	21	525	1276	Stone.	30 x 36	26	45.00
W bster Pl.	Pen.	750	22	–	750	Stone.	15 x 18	20	–

e Earth. *m* Macadam.

ROAD WORK IN 1908—*Continued.*

Cost of state road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
321.60	313.87	174.37	–	7.73	70
361.90	356.25	213.75	–	5.65	14
279.21	247.50	148.50	–	31.71	34
281.25	281.25	168.75	–	–	31
306.97	311.25	182.47	4.28	–	12
494.13	258.75	155.25	–	235.38	82
1,069.57	829.50	355.50	–	240.07	1.48
268.99	266.25	159.75	–	2.74	18
273.25	211.50	141.00	–	61.75	43
795.62	784.87	336.37	–	10.75	53
283.50	283.50	157.50	–	–	61
251.25	251.25	150.75	–	–	64
304.70	303.75	168.75	–	95	82
903.55	891.00	445.50	–	12.55	53
270.75	507.00	17.25	236.25	–	56
444.45	374.62	208.12	–	69.83	47
–	z31.50	–	31.50	–	–
224.00	221.25	132.75	–	2.75	70
–	z582.00	–	582.00	–	–
346.00	300.00	180.00	–	46.00	10
814.37	682.50	292.50	–	131.87	50
153.00	153.00	102.00	–	–	77
236.77	236.25	141.75	–	52	19
802.09	699.00	349.50	–	103.09	1.84
149.00	180.00	89.00	31.00	–	54
281.60	270.00	162.00	–	11.60	30
801.55	719.25	308.25	–	82.30	1.34
259.30	262.50	154.30	3.20	–	1.08
–	z148.50	–	148.50	–	–
178.20	175.25	117.00	–	2.70	48
792.92	837.00	374.42	44.08	–	79
322.20	317.25	176.25	–	4.95	31
426.83	303.75	168.75	–	123.08	57
615.40	408.37	226.87	–	207.03	1.18
345.63	344.25	191.25	–	1.38	41
3,565.18	1,829.62	784.12	–	1,735.56	4.69
292.50	292.50	175.50	–	–	39
543.00	543.00	271.50	–	–	43
117.00	117.00	78.00	–	–	16

zLaid over to 1909.

TABULAR STATEMENT OF STATE

TOWN OR CITY.	County.	Total length—feet.	Finished width—feet.	"V" drain or stone base—linear feet.	Macadam, gravel or earth surface—feet.	CULVERTS. Kind.	Size—inches.	Length—feet.	Cost.
Weld	Fra.	1350	21	–	1350	–	–	–	–
Wellington	Pis.	735	21	–	e225	Stone.	18 x 24	24	12.00
Wells	Yor.	1188	16	960	1188	Tile.	12	6	2.50
West Bath	Sag.	775	21	–	775	–	–	–	–
Westbrook	Cum.	1171	21.5	–	*1171	–	–	–	–
Westfield Pl	Aro.	450	25	450	450	–	–	–	–
West Gardiner	Ken.	231	22	214	231	–	–	–	–
Weston	Aro.	907	21	–	908	–	–	–	–
Westport	Lin.	155	21	155	155	Metal.	15	22	23.66
Whitefield	Lin.	1584	21	288	1584	Tile.	12	22	7.70
Whiting	Was.	1650	22	–	1650	Metal.	10	48	40.10
Whitneyville	Was.	1000	21	–	1000	–	–	–	–
Williamsburg	Pis.	425	21	–	‡300	Metal.	14	22	17.80
Willimantic	Pis.	700	21	–	e422	Stone.	15 x 24	24	10.00
						Stone.	12 x 12	45	20.00
Wilton	Fra.	610	–	610	610	Stone.	20 x 28	30	–
Windham	Cum.	2194	21	215	2194	Stone.	18 x 24	22	68.06
						Stone.	24 x 24	44	
Windsor	Ken.	480	21	150	480	Stone.	24 x 24	45	100.00
Winn	Pen.	2772	30	–	e2772	Metal.	12	44	49.70
Winslow	Ken.	–	–	–	–	–	–	–	–
Winter Harbor	Han.	542	21	542	542	Metal.	30	31	67.55
Winterport	Wal.	4950	25	–	e4950	Stone.	24 x 24	22	40.00
Winthrop	Ken.	925	21	925	e925	–	–	–	–
Wiscasset	Lin.	920	21	352	920	–	–	–	–
Woodland	Aro.	913	21	913	913	Stone.	60	22	22.00
Woodstock	Oxf.	1240	21	1153	1240	Stone.	18 x 20	22	13.50
						Metal.	8	22	13.20
Woolwich	Sag.	855	21	–	855	–	–	–	–
Yarmouth	Cum.	1000	22	1000	1000	Tile.	16	24	25.00
York	Yor.	1700	21	–	1700	–	–	–	–

* Granite Block Paving. e Earth. ‡ Earth and gravel.

ROAD WORK IN 1908—*Concluded.*

Cost of State road.	Joint fund for State road.	Amount of State aid approved.	Unexpended balance.	Expended in excess of joint fund.	Cost per linear foot.
302.10	303.75	180.60	1.65	–	22
265.62	232.50	139.50	–	33.12	36
977.40	948.00	474.00	–	29.40	82
311.79	303.75	182.25	–	8.04	40
7,236.68	1,989.75	852.75	–	5,246.93	6.18
282.75	281.25	168.75	–	1.50	63
344.24	344.25	191.24	01	–	1.49
265.50	144.00	96.00	–	121.50	29
160.45	202.50	92.95	42.05	–	1.04
430.18	465.75	223.18	35.57	–	27
380.70	187.50	112.50	–	193.20	23
129.00	121.50	81.00	–	7.50	13
197.33	112.50	75.00	–	84.83	46
180.00	180.00	120.00	–	–	26
936.80	948.00	462.80	11.20	–	1.54
841.51	719.25	308.25	–	122.26	39
272.28	280.12	147.78	7.84	–	57
307.50	307.50	184.50	–	–	11
–	1,512.00	‡	1,512.00	–	–
560.25	560.25	311.25	–	–	1.03
563.98	564.00	281.98	02	–	11
847.00	847.87	362.50	0.87	–	92
544.40	540.00	300.00	–	4.40	59
291.78	296.25	173.28	4.47	–	32
301.78	303.75	166.78	1.97	–	24
624.87	381.37	211.87	–	243.50	73
573.47	973.87	16.97	400.40	–	57
1,670.22	1,638.00	702.00	–	32.22	98
$266,611.86	–	$108,987.28	$5,382.00	$47,099.70	–

‡Work not finished, no aid.

CONTRACTS.

The law provides that state road work must be done by contract where the joint fund is one thousand dollars or more. The work in thirty-eight cities and towns comes in this class. In one city no appropriation was made and in three towns extra amounts were appropriated to put them in the contract class. Consequently forty contracts have been let the present year.

Mr. W. B. Getchell, assistant commissioner, has had as his special work the general supervision of these contracts.

In making surveys and for local supervision of contract work, we have employed local engineers as far as possible.

The method of advertising and letting contracts has been as provided in section eight of the law. These cities and towns have also observed all regulations and requirements specified in the preceding pages.

This method of doing work has been very satisfactory to the department. It has assured the building of a specified amount of road of a fixed standard for a certain price.

Where the work has been let to municipalities the following clause has been inserted in the contract:

"The Municipality to build from station to station and in event the cost of building this length of road is less than the amount of the joint fund, the balance shall be expended in constructing a continuation of the work in a direction along the state road until the entire joint fund is expended."

In this way the full amount of the joint fund is put into the construction.

It seems to be generally conceded that performing work by contract results in a little closer and more careful supervision and management than is generally the case where work is performed on the day labor basis.

Following will be found a short summary of each of these jobs together with such cost data as we have been able to obtain.

NOTE RELATIVE TO THE FOLLOWING TABLES.

The figures showing the total cost of the different kinds of work are taken from the returns of the municipal officers. The figures showing the unit costs are computed to the nearest whole cent. In several municipalities extra appropriations were made for state road work over and above the amounts necessary to be provided in order to obtain state aid, so that the state road fund for these municipalities, as given, is in excess of that provided for under sections 4-5-6 of the state road law.

AUBURN.

ANDROSCOGGIN COUNTY.

CONTRACT NO. 41 FOR GRADING, DRAINING AND PAVING WITH GRANITE BLOCKS.

AWARDED CITY OF AUBURN.

FRANK F. GOSS, *Street Commissioner.*

. . . . . .

The designated State Road commences at the Turner line on the river road thence via Turner Street to Court Street, to Minot Avenue to Washington Street to Danville Junction.

The section selected upon which to make permanent improvements is located on Turner Street near Troy and Summer Streets where the street is subjected to a large amount of heavy traffic. It was decided to continue the block paving already laid along the southern portion of this street.

The quantities, amount of work and cost are given below.

Length of road improved	290 ft.
Width of finished roadway	43 ft.
Size of paving blocks, 9″ to 14″ long, $3\frac{1}{2}$″ to $4\frac{1}{2}$″ wide, 7″ to 8″ deep.	
Foundation	6 inches of compacted gravel.

Cost—1,353 sq. yds. granite block paving @ $1.10		$1,488 30
Grading, preparing sub-grade, gravel foundation, laying blocks, etc.		728 80
		$2,217 10

Set aside and appropriated by City under sections 4-5	$1,213 50
State aid apportioned under section 6	910 12
Joint Fund	$2,123 62
Additional amount furnished by city	93 48
Total cost	$2,217 10
State aid approved	910 12

Work done between October 6 and October 23, 1908.

AUGUSTA.

KENNEBEC COUNTY.

CONTRACT NO. 25 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF AUGUSTA.

JOS. A. MCLEAN, *Street Commissioner.*

. . . . . .

The designated state road extends from the Hallowell city line via State street, past the State House and the county buildings and thence via Mount Vernon avenue to the Sidney line. This road would form a part of a trunk line of highway passing through Augusta to the Belgrade lakes, to Norridgewock, to Madison, up the Kennebec river to the Forks and by the old Canada road and through Jackman to the Quebec line.

The section selected upon which to make permanent improvements is located in the rural district about 1½ miles from the Court House. The principal improvements made were the widening and straightening of the road, reducing the grades from 8% to 4%, providing suitable surface and underdrainage and covering the road with crushed stone. A clay hill near the western end of the section improved had given serious trouble each spring for a long series of years.

The quantities, amount of work and cost are given below.

(Standard section A.)

Length of road improved	1,800 ft.
Width of finished road	21 to 25 ft.
Width of crushed stone surface	21 ft.
Depth of crushed stone surface	6 to 8 in.

Cost—Stone base 235′ x 6′ x 2′	$105 00
Macadam 4,200 sq. yds. @ 33 1-3c.	1,398 59
Grading 1,800′ @ 43 7-10c. (2,838 cu. yds.)	786 40
Stone masonry culvert 2′ x 2′ (rebuilt)	15 00
3 corrugated metal culverts 20″ in dia. 90′ long	121 50
Fencing, 172 ft. iron, 480 ft. wooden	155 06
Cleaning and clearing	93 00
Engineering expense	25 80
Advertising	11 00
Total cost	$2,711 35
Set aside and appropriated by city under sections 4-5	$1,252 50
State aid apportioned under section 6	939 37
Joint Fund	$2,191 87
Additional amount furnished by city	519 48
Total cost	$2,711 35
State aid approved	939 37

Work done between September 4 and October 29, 1908.

BANGOR.

PENOBSCOT COUNTY.

CONTRACT NO. 38 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED CITY OF BANGOR.

CHARLES A. WOODBURY, *Street Commissioner.*

. . . . . .

The designated State Road begins at the Veazie town line on the river road, thence by the way of State and Main Streets to the Hampden town line.

The section selected upon which to make permanent improvements is located on State Street, beginning near the entrance to the Eastern Maine Insane Hospital and extending easterly past the Hogan Road to near the Daniel Webster place. Three hundred cubic yards of ledge were excavated near the beginning of the work thus widening the road and furnishing excellent material to fill in a low wet section near the Hogan Road.

The principal improvements made were the widening of the road, reducing the grade, draining and surfacing with gravel.

The quantities, amount of work and cost are given below.

Length of road improved	2,485 ft.
Width of finished road	21 to 32 ft.
Width of gravel surface	20 to 24 ft
Depth of gravel surface	6 to 8 in

Cost—Road machine work	$16 00
Steam road roller 6½ days	65 00
Steam drill outfit 20 days	200 00
18″ metal culvert 98′ long	112 70
Gravel. Bought 584 cu. yds. @ 15c.	87 60
Freight. Paid electric car freight on same	100 00
Gravel. Bought 1,946 cu. yds. @ 8c.	155 68
Labor bills	2,337 87
Total cost	$3,074 85
Set aside and appropriated by City under sections 4-5	$2,382 00
State aid apportioned under section 6	1,786 50
Joint Fund	$4,168 50
Total cost	3,074 85
Balance available for expenditure in 1909	$1,093 65
State aid approved	692 85

Work done between September 25 and November 25, 1908.

Foxcroft. 1908 section. Macadam, local stone. Built by town. A. A. Adams, Road Commissioner

North Yarmouth. 1908 section. Earth surface with "V" drain. Built by town
Chas. H. Mitchell, Commissioner

Oakland. 1908 section. Earth surface with "V" drain. Built by town
B. J. Libby, Commissioner

Perry. 1908 section. Gravel road. Built by town. H. F. Hibbard, Commissioner

Sorrento. 1908 section before improvement

Sorrento. 1908 section after improvement. At this point ledge summit was removed and road widened. Built by town. C. W. Sargent, Commissioner

BATH.

SAGADAHOC COUNTY.

CONTRACT NO. 29 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF BATH.

OSCAR F. WILLIAMS, *Supt. of Streets.*

.....

The designated State Road running through this city begins at the Phippsburg town line on the Winnegance Bridge, so called, thence by the way of High street to Center street, thence by the way of Center street to Lincoln street, thence by the way of Lincoln street to the Brunswick road, so called, thence by the said Brunswick road to the Brunswick town line which is also the Cumberland county line.

The section selected upon which to make permanent improvements is located on Lincoln and Center streets, near the County Court House. The principal improvements made were reducing the grades from 8% to 5%, providing suitable drainage and surfacing with crushed rock. A considerable amount of ledge was excavated near the beginning of this work in making the reduction in grades.

The quantities, amount of work and cost are given below.

Length of road improved	1,200 ft.
Width of finished road	28 ft.
Width of crushed stone surface	18 ft.
Depth of crushed stone surface	6 in.

Cost—Crushed rock, 776¾ tons @ $1.45	$1,126 29
5 catch basins with frames and grates	105 98
Dynamite and fuse	36 22
Labor bills	1,170 75
Survey and plan of work	27 54
Advertising	8 75
Total cost	$2,475 53
Set aside and appropriated by city under sections 4-5	$1,222 50

State aid apportioned under section 6.....	916 87
Joint Fund	$2,139 37
Additional amount furnished by city.....	336 16
Total cost	$2,475 53
State aid approved	916 87

Work done between October 16 and December 1, 1908.

BELFAST.

WALDO COUNTY.

CONTRACT NO. 30 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF BELFAST.

H. S. CUNNINGHAM, *Street Commissioner.*

.....

The designated state road extends from the Northport town line at Little River bridge by the way of Northport Avenue, High street and Bridge street and to the Searsport town line by the way of the shore road.

The section selected upon which to make permanent improvements is located on High street, beginning at Main street and extending southerly towards the Northport town line. The northerly 380 feet is along a business section and was graded and macadamized the full width between the paved gutters which were laid next to the curbing. The southerly 650 feet is along a residential section and was graded the full width with the central 21 feet macadamized. Crushed field stones were used for the surfacing.

The quantities, amount of work and cost are given below.

Length of road improved.....	1,030 ft.
Width of crushed stone surface.....	380 ft. 47 ft. wide
	650 ft. 23 ft. wide
Depth of crushed stone surface.....	8 in. for 370 ft.
	3 in. to 8 in. for 650 ft.

Cost—1,025 tons field stone @ 50c	$512 50
Catch basins, tile pipe, etc	87 00
Fuel, water and oil for engine, etc	55 19
Labor bills	865 37
Total cost	$1,520 06
Set aside and appropriated by city under sections 4-5	$1,044 00
State aid apportioned	783 00
Joint Fund	$1,827 00
Additional appropriation by city	306 00
Total available fund	$2,133 00
Total cost	1,520 06
Balance available for expenditure in 1909	$612 94
State aid approved	476 06

Work done between September 15 and November 13, 1908.

BIDDEFORD.

YORK COUNTY.

CONTRACT NO. 34 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF BIDDEFORD.

W. T. ALLEN, *Foreman.*

. . . . . .

The designated state road begins at the line dividing the town of Kennebunkport and the city of Biddeford and on the Post road, so called, thence easterly over said Post road through said Biddeford by the way of Elm street to the middle of the bridge across the Saco river, being the dividing line between the city of Biddeford and the city of Saco. This road forms a portion of the trunk line of highway between Portland and Boston.

The section selected upon which to make permanent improvements is located on Elm street and begins about 600 feet north of Taylor street and extends southerly towards Biddeford "Five Points." Although the soil was of a gravelly nature it was not substantial enough to withstand the traffic to which it was subjected, becoming loose and extremely dusty in dry weather and very muddy in wet weather. The crushed stone surfacing was placed in three courses, a binder being used with each course. Three hundred and thirty-five loads of gravel were purchased for use in the foundation of this road.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved ..... 1,800 ft.
Width of finished road ..... 24 to 30 ft.
Width of crushed stone surface ..... 24 to 30 ft.
Depth of crushed stone surface ..... 6 in.
Gravel foundation 3" deep.

Cost—Grading 1,800' @ 93½c. (1,750 cu. yds.)....	$1,682 42
Crushed stone surfacing (4,506 sq. yds. @ 46c.	2,072 51
Miscellaneous expenses	252 00
Survey and plans	50 00
Advertising	10 75
Total cost	$4,067 68

Materials were purchased for the above work and are included in the total cost as follows:

Gravel 335 loads @ 12½c.
Stone 393 3-10 tons @$1.30 1-3 a ton.

Set aside and appropriated by city under sections 4-5	$1,338 00
State aid apportioned under section 6.....	1,003 50
Joint Fund	$2,341 50
Additional amount furnished by city.....	1,726 18
Total cost	$4,067 68
State aid approved	1,003 50

Work done between September 28 and November 17, 1908.

BREWER.

PENOBSCOT COUNTY.

CONTRACT NO. 40 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF BREWER.

W. F. PARKER, *Street Commissioner.*

.....

The designated state road begins at the Holden town line, thence by the way of the Holden road easterly of Whiting Hill to the junction of Wilson and State streets, thence westerly along said State street to Main street, thence southerly on said Main street to Orrington town line.

The section selected upon which to make permanent improvements is located on Main street, beginning at Parker street and extending southerly to near Brimmer street. This street is subjected to a large amount of traffic and on account of defective drainage and a flat surface was very muddy or dusty during a large portion of the season. The principal improvements made were in the drainage and surfacing.

The quantities, amount of work and cost are given below.

Length of road improved	1,300 ft.
Width of finished road	42 to 52 ft.
Width of crushed stone surface	42 to 52 ft.
Depth of crushed stone surface	6 to 10 in.

Cost—Grading 1,300' @ 27c. (2,500 cu. yds.)	$352 00
Crushed stone surfacing (6,510 sq. yds, @ 24 8-10c)	1,614 84
Brick paved gutter 60 sq. yds.	94 00
3 new catch basins and repairing 5 old ones	137 60
Total cost	$2,198 44
Set aside and appropriated by city under sections 4-5	$748 50
State aid apportioned under section 6	561 37
Joint Fund	$1,309 87
Additional amount furnished by city	888 57
Total cost	$2,198 44

State aid approved 561 37

Work done between September 26 and November 18, 1908.

BRUNSWICK.

CUMBERLAND COUNTY.

CONTRACT NO. 2 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED H. B. COBB, *Contractor*, BRUNSWICK, MAINE.

.....

The designated state road begins at the Freeport town line adjacent to the Portland and Brunswick Street Railway, thence over the county road and Pleasant street to Main street, thence over Main street to the Topsham line.

The section selected upon which to make permanent improvements is located on the county road and begins about 3 miles from the Freeport town line at the northerly end of the 1907 state road work and extends towards Brunswick village. This section of road is sandy and sandy clay and being on low land was a particularly bad piece of road. The principal improvements made were in raising the general level of the road, providing drainage and surfacing with crushed stone.

The quantities, amount of work and cost are given below.

(Standard Section C.)

Length of road improved	1,100 ft.
Width of finished road	21 ft.
Width of crushed stone surface	15 ft.
Depth of crushed stone surface	6 to 8 in.

Cost—1,100′ of road complete @ $1.46 2-3	$1,613 26
Advertising and engineering	53 12
Total cost	1,666 38
Set aside and appropriated by town under sections 4-5	$948 00
State aid apportioned under section 6	711 00
Joint Fund	$1,659 00

Additional amount furnished by town	7 38
Total cost	$1,666 38
State aid approved	711 00

Work done between September 10 and November 24, 1908.

CALAIS.

WASHINGTON COUNTY.

CONTRACT NO. 33 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF CALAIS.

ANSLEY P. GARDINER, *Street Commissioner.*

. . . . . .

The designated state road begins at the Robbinston town line, thence northerly and westerly by way of Main street and North street in Calais and Main street and Baring street in Milltown to the Baring town line.

The section selected upon which to make permanent improvements is located on North street, beginning at Knight's corner and extending northerly to the junction of South street.

The principal improvements made were in providing surface and sub-drainage, widening and straightening the road, excavating ledge for side ditches, and surfacing with crushed stone. The section improved is on the main traveled thoroughfare between Calais and Milltown.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	2,100 ft.
Width of finished road	21 ft.
Width of crushed stone surface	21 ft.
Depth of crushed stone surface	3 to 8 in.

Cost—Grading (2,100' @ 5 4-10c. per foot)	$113 00
"V" drain 150 feet	79 00
Crushed stone surfacing (4,910 sq. yds. @ 26 6-10c.)	1,305 28

Reinforced concrete culvert 2′ x 2′ x 46′....	118 61
16″ metal culvert 46 feet long.....	96 83
14″ metal culvert 26 feet long.....	54 73
One catch basin	19 60
Total cost	$1,787 05
Less amount received from electric railway..	42 17
.	$1,744 88
Set aside and appropriated by city under sections 4-5	$985 50
State aid apportioned under section 6.....	739 12
Joint Fund	$1,724 62
Additional amount furnished by city.....	20 26
Total cost	$1,744 88
State aid approved	739 12

Work done between September 9 and October 10, 1908.

1,336 tons of crushed rock were used for surfacing this road. Cost, 57c. per ton. Steam roller was used 28 days at a cost of $5.50 per day. These costs are included above.

CAMDEN.

KNOX COUNTY.

CONTRACT NO. 36 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

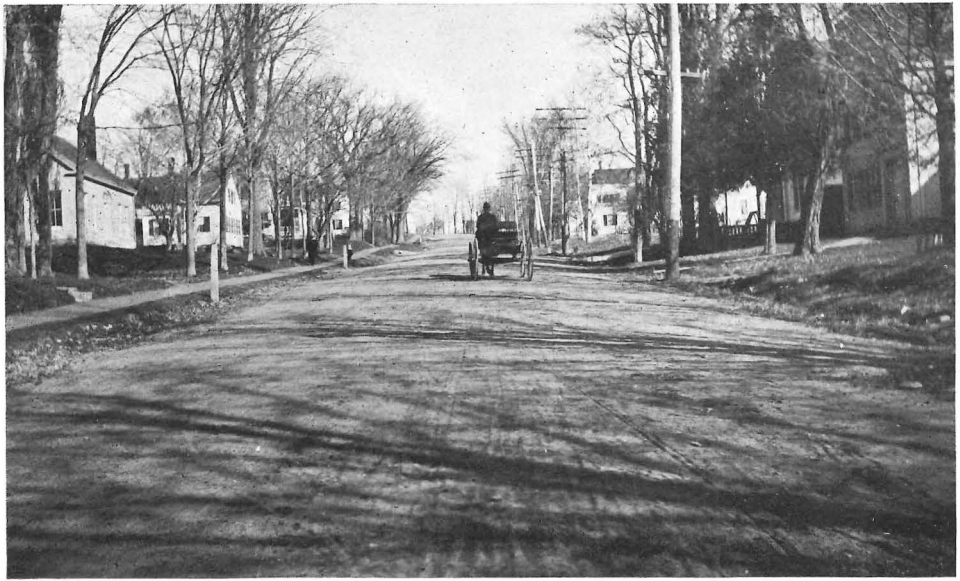
AWARDED TOWN OF CAMDEN.

FRED B. ANNIS, *Street Commissioner.*

.....

The designated state road begins at the Rockport town line, thence in a northerly direction down Union street to School street, thence down School street to Elm street, thence down Elm to and through Main street to High street, thence along High street and the Belfast road to the Lincolnville line.

The section selected upon which to make permanent improvements is located on High street beginning near Sea street and extending in a northeasterly direction towards Belfast. This



Camden. 1908 section of State road. Finished as per road section "A". Bottom course, run of crusher; top course, selected gravel. Contract let to town. Fred B. Annis, Commissioner

section of road is on a grade of from 4 to 8 per cent and extends along the side of Camden hill.

The principal improvements made were the construction of an under-drain on the upper side of the road to cut off the ground water, a cobble gutter to prevent washouts, and surfacing with gravel.

The quantities, amount of work and cost are given below.

Length of road improved.....1,400 ft.
Width of finished road.....25 to 30 ft.
Width of gravel surface.....25 to 30 ft.
Depth of gravel surface.....3 to 5 in.
Depth of crushed stone.....2″ at sides, 3″ at center
Depth of stone base or foundation.....5 to 10 in.

Cost—Grading, trenching and laying side drains and culverts		$376 62
Side drain 834 feet long		
788 feet 8″ tile pipe	$173 55	
46 feet 12″ tile pipe	23 40	
		196 95
12″ metal culvert 36 feet long		28 80
10″ metal culvert 48 feet long		33 60
Cobble gutter 166 2-3 sq. yds.		139 00
Stone base or foundation average 1,400′ x 26′ x 7½″		413 10
Crushed stone covering average 1,300′ x 25′ x 2½″		210 00
Gravel surfacing about 1,400′ x 28′ x 4″		340 00
Engineering and inspection		57 00
Total cost		$1,795 07
Set aside and appropriated by town under sections 4-5		$895 50
State aid apportioned under section 6		671 62
Joint Fund		$1,567 12
Additional amount furnished by town		227 95
Total cost		$1,795 07
State aid approved		671 62

Work done between September 24 and October 28, 1908.

CARIBOU.

AROOSTOOK COUNTY.

CONTRACT NO. 7 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TOWN OF CARIBOU.

FREMONT SMALL,
A. D. ESTEY,
LOUIS VIOLETTE,
Selectmen.

. . . . . .

The designated state road begins at the north line of said Caribou on the Van Buren road, so called, thence southerly on said road and Sweden street to Main street in Caribou village, thence along said Main street to Presque Isle road, so called, thence along said Presque Isle road to the farm of Albion Estes (said farm being known as the George F. Sampson place), thence southerly along the back Presque Isle road, so called, to the south line of the town of Caribou and the Presque Isle town line.

The section selected upon which to make permanent improvements is located on Sweden street, beginning at Main street and extending westerly towards New Sweden.

This, being one of the principal business streets of the town, is subjected to a large amount of heavy traffic and although the street had been surfaced with quite a depth of gravel it would break up in the spring and fall, at which times the mud would often be six inches deep. The proposed new grade of the street necessitated the raising of several business blocks, the abbuttors however were practically unanimous in approving the change of grade.

The town made a special appropriation, outside of the state road fund, for sidewalks and curbing which were constructed at the same time the street was built. Cobble gutters were laid on each side of the street next to the curb lines. The full width between the gutters was macadamized, making the total width of the street improvement from 42½ to 47½ feet.

The quantities, amount of work and cost are given below.

Length of road improved	670 ft.
Width of road improved	42½ to 47½ ft.
Width of crushed stone surface, about	38 ft.
Depth of crushed stone surface	8 in.

Cost—Grading 670′ @ 40 3-10c. (900 cu. yds.)	$270 00
Underdrain 40′ long 4′ wide	25 00
Crushed stone surfacing (3,000 sq. yds. @ 40 9-10c.)	1,226 14
Cobble gutter 355 sq. yds.	125 00
Total cost	$1,646 14

The above cost included the purchase of 291 67-100 cords of stone @ $2.00 per cord.

Set aside and appropriated under sections 4-5	$691 50
State aid apportioned under section 6	518 62
Joint Fund	$1,210 12
Additional amount furnished by town	436 02
Total cost	$1,646 14
State aid approved	518 62

Work done between June 24 and September 4, 1908.

EAST LIVERMORE.

ANDROSCOGGIN COUNTY.

CONTRACT NO. 31 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED NICOLA GENTILE AND LAWRENCE LAVORGNA OF RUMFORD, MAINE.

. . . . . .

The designated state road begins at the Jay town line on Main street, thence by the way of Main street, Depot street and the new road to Shay corners, thence easterly to the Fayette town line.

The section selected upon which to make permanent improvements is located on the business portion of Depot street, begin-

ning at Main street and extending easterly to the Maine Central Railroad tracks near Livermore Falls Depot.

The natural soil is sandy. The stone used for surfacing came from the North Jay granite quarries.

The quantities, amount of work and cost are given below.

Length of road improved	697 ft.
Width of finished road	average 40 ft.
Width of crushed stone surface	average 40 ft.
Depth of crushed stone surface	6 inches

Cost—697 feet of road complete including the grading, draining and macadamizing	$1,393 30
Set aside and appropriated by town under sections 4-5	492 00
State aid apportioned under section 6	369 00
Joint Fund	$861 00
Additional amount furnished by town	532 30
Total cost	$1,393 30
State aid approved	369 00

Work done between October 21 and November 17, 1908.

EASTPORT.

WASHINGTON. COUNTY.

CONTRACT NO. 24 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED CITY OF EASTPORT.

THEODORE H. BUCKMAN, *Street Commissioner.*

. . . . . .

The designated state road begins near the Perry town line at the easterly end of the toll bridge, thence southerly by the county road and Washington street to Water street.

The section selected upon which to make permanent improvements is located on Washington street and the county road beginning at the Washington County Railway crossing on Washington street, thence along Washington street to the county

road, thence northerly along the county road about 1700 feet. This work is a continuation of the 1907 state road work. The principal improvements made were the placing of a rock foundation along the low land, reducing the grades and surfacing with gravel.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	1,900 ft.
Width of finished road	21 to 25 ft.
Width of gravel surface	21 ft.
Depth of gravel surface	10 in.

Cost—Grading (1,900' @ 21 7-10c.)	$413 20
Foundation and other works (465 cu. yds. rock)	393 80
Extending culvert	10 00
Gravel surfacing (4,540 sq. yds. @ 18c.)	817 00
Set aside and appropriated by city under sections 4-5	$621 00
State aid apportioned under section 6	465 75
Joint Fund	$1,086 75
Additional amount furnished by city	547 25
Total cost	$1,634 00
State aid approved	465 75

Work done between September 15 and October 28, 1908.

EDEN.

HANCOCK COUNTY.

CONTRACT NO. 8 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED FRANK L. BREWER, *Contractor,* BAR HARBOR, MAINE.

. . . . . .

The designated state road begins at the town line between the town of Mt. Desert and the town of Eden at Otter creek thence northerly through the Gorge, so called, to and through Bar Harbor by Mt. Desert and Eden streets, thence through Hull's cove

and Saulsbury's cove to the Old Home cove bridge at the town line between the town of Eden and the town of Trenton.

The section selected upon which to make permanent improvements is located on lower Main street, beginning near Sherman avenue and extending southerly to near the Otter creek road. This section was graded, drained and macadamized.

The quantities, amount of work and cost are given below.

Length of road improved	1,200 ft.
Width of finished road	24 ft.
Width of crushed stone surface	24 ft.
Depth of crushed stone surface	6 to 8 in.
Cost—Grading 1,200' @ 15c	$180 00
Crushed stone surfacing 3,200 sq. yds. @ 49c.	1,568 00
Extra work	11 00
Engineering and inspection	97 50
Advertising	4 75
Total cost	$1,861 25
Set aside and appropriated by city under sections 4-5	1,063 50
State aid apportioned under section 6	797 62
Joint Fund	$1,861 12
Additional amount furnished by town	13
Total cost	$1,861 25
State aid approved	797 62

Work done between October 12 and November 1, 1908.

ELLSWORTH.

HANCOCK COUNTY.

CONTRACT NO. 6 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF ELLSWORTH.

CLIFTON WOODWARD, *Street Commissioner.*

. . . . . .

The designated state road begins at the line between the town of Trenton and the City of Ellsworth, on the Bar Harbor road,

thence along said road and along High street and Oak street, and through the village of Ellsworth Falls to the line between the city of Ellsworth and the town of Dedham. The work proposed by the city was the draining and macadamizing of 2,000 feet of this road.

The section selected upon which to make permanent improvements is located on the Bar Harbor road (High street), beginning at Beal's avenue and extending southerly towards Card's brook.

Estimate of quantities and amount of work to be done.

(Standard Section A.)

2,000 lineal feet of road graded and prepared to receive surfacing material.
4,670 square yards of macadam road complete,
One 16" metal culvert 30' long,
One 20" metal culvert 30' long,
One stone masonry culvert 3' x 3' x 30',
200 lineal feet of underdrain.

The following work has been done this season:

850 lineal feet of road graded,
One 16" metal culvert placed,
One 20" metal culvert placed,
One stone masonry culvert 3' x 3' x 30' built.

Set aside and appropriated by city under sections 4-5	$754 50
State aid apportioned under section 6	565 87
Joint Fund	$1,320 37
Contracted to city of Ellsworth for sum of	1,250 00

Contract not completed.

FAIRFIELD.

SOMERSET COUNTY.

CONTRACT NO. 21 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED DOMINICK SUSI AND HARRY D. HALEY OF PITTSFIELD, MAINE.

. . . . . .

The designated state road begins on College avenue at the line

between the City of Waterville and the Town of Fairfield, thence running north through Fairfield village to the Methodist church, thence westerly by Western avenue, so called, to Fairfield Center, thence northerly by the Middle road, so called, to Fairfield town line to meet the Skowhegan state road.

The section selected upon which to make permanent improvements is located on Western avenue about a mile from the Fairfield post office. The principal improvements made were reducing the grades from 12% to 8%, straightening and widening of the road, placing a metal culvert with concrete wing walls at Cilley brook and surfacing with gravel.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	1,725 ft.
Width of finished road	21 ft.
Width of gravel surfacing	21 ft.
Depth of gravel surfacing	3 to 8 in.

Contract prices

Per lineal foot of road graded	$0 04
Per square yard of graded road complete	0 08
Per lineal foot for "V" drain complete	0 55
Per lineal foot for 48" metal culvert	7 50
Per lineal foot for 16" metal culvert	1 25
Per cubic yard for concrete masonry	8 50
Per lineal foot for wooden fencing	0 12

Cost—Amount of contract (Susi & Haley)	$1,155 00
Advertising, engineering expense, etc.	72 95
Total cost	$1,227 95
Set aside and appropriated by town under sections 4-5	621 00
State aid apportioned under section 6	465 75
Joint Fund	$1,086 75
Additional amount furnished by town	141 20
Total cost	$1,227 95
State aid approved	465 75

Work done between August 10 and September 10, 1908.

FARMINGTON.

FRANKLIN COUNTY.

CONTRACT NO. 25 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TOWN OF FARMINGTON.

H. W. GILMAN, *Foreman.*

.....

The designated state road begins at the New Vineyard town line, thence southerly through Fairbanks village and Farmington village via Main street, South street and High street extending by the Fair Grounds to Farmington Falls village, thence to the New Sharon town line.

The section selected upon which to make permanent improvements is located to the north of Farmington village, beginning near the M. H. Fowler house and extending northerly towards the Estes Novelty Works. The natural soil is sandy.

The principal improvements made were the widening of the road, reducing the grades and surfacing with crushed stone.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	1,000 ft.
Width of finished road	21 ft.
Width of crushed stone surface	16 ft.
Depth of crushed stone surface	6 to 8 in.

Cost—Grading 1,000' @ 13 55-100c.	$135 52
12" metal culvert 30' long	32 36
Crushed stone surfacing 1,800 sq. yds. @ 57c.	1,023 71
Miscellaneous expenses	10 90
Advertising	5 50
Total cost	$1,207 99

Materials were purchased as follows:

503¾ tons of crushed stone @ 80c.	$402 60
3 car loads of screenings @ $5.00	15 00

Freight paid on above	228 70
Labor bills for placing, rolling, etc.	377 41
	$1,023 71
Set aside and appropriated by town under sections 4-5	709 50
State aid apportioned under section 6	532 12
Joint Fund	$1,241 62
Total cost	1,207 99
Balance available for expenditure in 1909	$33 63
State aid approved	498 49

Work done between August 10 and September 23, 1908.

FORT FAIRFIELD.

AROOSTOOK COUNTY.

CONTRACT NO. 11 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TOWN OF FORT FAIRFIELD.

A. L. HAINES, *Road Commissioner.*

. . . . . .

The designated state road begins in the center of the Houlton road at the south line of Fort Fairfield, thence northerly along said road through Maple Grove to the Presque Isle road at a point known as McIntosh's corner; thence easterly on said Presque Isle road to a point in Fort Fairfield village known as Doran's corner; thence northerly across the iron bridge over the Aroostook river to the North River road, so called; thence easterly along said river road to Fisher's corner; thence northerly along the Limestone road, so called, to the East Limestone road; thence along said East Limestone road to the north line of Fort Fairfield.

The section selected upon which to make permanent improvements is located on the Presque Isle road and Main street, beginning near Brown street and extending northerly and easterly to near Doran's corner, so called, in Fort Fairfield village.

The natural soil was of a character to be either muddy or dusty. The drainage was improved and the street surfaced with crushed stone.

The quantities, amount of work and cost are given below.

Length of road improved.....1,500 ft.
Width of finished road.....30 ft.
Width of crushed stone surface.....20 to 30 ft.
Depth of crushed stone surface .....6 to 8 in.

Cost—For stone	$302 20	
For teams	423 20	
For labor and foreman	615 84	
For culvert pipe and cement	41 49	
For sprinkler, etc.	12 00	
For engineering, inspection, etc. ..	64 25	
For advertising	7 00	
For the work complete $1,465 98		
Total cost (3,500 sq. yds. macadam road)		$1,465 98
Set aside and appropriated by town under sections 4-5		$754 50
State aid apportioned under section 6.....		565 87
Joint Fund		$1,320 37
Additional amount furnished by town		145 61
Total cost		$1,465 98
State aid approved		565 87

Work done between July 30 and September 8, 1908.

GARDINER.

KENNEBEC COUNTY.

CONTRACT NO. 9 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF GARDINER.

ALBERT E. CLARY, *Street Commissioner.*

.....

The designated state road begins on Cobbossee avenue at the

West Gardiner town line, thence by said avenue, Central street, Water street and the river road to the Richmond town line.

The section selected upon which to make permanent improvements is located on Water street and extends from Winter street westerly. The street was graded, drained and surfaced with crushed stone.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	1,660 ft.
Width of finished road	21 ft.
Width of crushed stone surface	21 ft.
Depth of crushed stone surface	6 to 10 in.

Cost—Grading 1,660′ @ 16 2-10c.	$269 75
Stone masonry culvert 2½′ x 2½′ x 42′	174 10
Crushed stone surfacing 3,835 sq. yds. @ 40c.	1,534 25
Total cost	$1,978 10

A steam roller was hired 12 days @ $10.00 per day plus $18.00 freight or a total cost of $138.00, which is included above.

Set aside and appropriated by city under sections 4-5	$915 00
State aid apportioned under section 6	686 25
Joint Fund	$1,601 25
Additional amount furnished by city	376 85
Total cost	$1,978 10
State aid approved	686 25

Work done between October 19 and November 21, 1908.

HOULTON.

AROOSTOOK COUNTY.

CONTRACT NO. 5 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TOWN OF HOULTON.

GEORGE W. SMALL, *Road Commissioner.*

. . . . . .

The designated state road begins on the south line of said town in the center of the Calais road, so called, at the Hodgdon town line, thence northerly along said road (the northerly part of which is also called Court street) as now traveled to Market square, so called, thence westerly through said Market square to Union square, so called, thence westerly and northwesterly through said Union square and across the iron bridge over the mill pond to Putman street, also called North street and the North road, as now traveled to the north line of said town of Houlton.

The section selected upon which to make permanent improvements is located on Court street and begins near the Watson house and extends southerly towards Calais. The street was thoroughly drained, the grades were reduced and the surface covered with crushed stone.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	2,000 ft.
Width of finished road	30 ft.
Width of crushed stone surface	21 ft.
Depth of crushed stone surface	6 to 10 in.
Depth of gravel foundation	4 to 6 in.

Cost—2,000′ road graded @ 4 6-10c.	$92 00
Gravel foundation about 2,000′ x 30′ x 5″.	136 00
Crushed stone surfacing 3,545 sq. yds, @ 45c.	1,594 90
Side drain 580′ 8″ pipe	210 60
Total cost	$2,033 50
Set aside and appropriated by town under sections 4-5	765 00
State aid apportioned under section 6	573 75
Joint Fund	$1,338 75
Additional amount furnished by town	694 75
Total cost	$2,033 50
State aid approved	573 75

Work done between July 22 and August 26, 1908.

JAY.

FRANKLIN COUNTY.

CONTRACT NO. 27 FOR GRADING, DRAINING AND SURFACING WITH CRUSHED STONE.

AWARDED TOWN OF JAY.

ARTHUR WILKINS,
C. G. BARTLETT,
A. J. MERRIMAN,
Selectmen.

.....

The designated state road begins at the town line between Jay and East Livermore at Chisholm's Mills, so called, and thence running over Jay hill and through the village of North Jay to the town line of Wilton.

The section selected upon which to make permanent improvements is located north of Jay hill, beginning at the south end of the 1907 work and extending southerly about 1,000 feet. The soil is clay and very muddy in the spring and fall. The drainage was improved and the road surfaced with crushed stone from the North Jay quarry.

The quantities, amount of work and cost are given below.

(Standard Section C.)

Length of road improved	1,000 ft.
Width of finished road	22 ft.
Width of crushed stone surfacing	16 ft.
Depth of crushed stone surfacing	6 to 8 in.

Cost—Grading (1,000' @ 7¼c.)	$71 25
Granite culvert 2' x 2' x 23'	80 00
Crushed stone surfacing 1,792 yds. @ 54c.	967 83
Miscellaneous expenses	6 10
Engineering and inspection	15 00
	$1,140 18
Set aside and appropriated by town under sections 4-5	651 00
State aid apportioned under section 6	488 25
Joint Fund	$1,139 25

Additional amount furnished by town 93

Total cost $1,140 18
State aid approved 488 25
Work done between September 3 and October 12, 1908.

KENNEBUNK.

YORK COUNTY.

CONTRACT NO. 1 FOR GRADING, DRAINING AND SURFACING WITH TAR MACADAM.

AWARDED TOWN OF KENNEBUNK FOR GRADING AND DRAINING.

AWARDED H. F. HOWARD, ROCHESTER, N. H., FOR SURFACING WITH TAR MACADAM.

.....

The designated state road begins at the town line separating the towns of Kennebunk and Wells on the Post road, thence easterly through Kennebunk over said Post road to the division line separating said Kennebunk and the city of Biddeford.

The section selected upon which to make permanent improvements is located on Main street in the businsss center of the town between Storer and Bourne streets. The track of the Atlantic Shore Line Railway is located in the center of this street. A special foundation and drain were necessary near Bourne street on account of the soft springy nature of the soil.

The quantities, amount of work and cost are given below.

Length of road improved.....426 ft
Width of finished road (not including the railway location) ..... 27 ft.
Total thickness of surfacing to be at least $8\frac{1}{2}$".
Foundation course to consist of cobble stones from 3" to 5" in diameter and tarred gravel to a thickness of at least 5".
Second course to consist of stones from one quarter inch to one inch in diameter and tar mixture to a thickness of not less than 2".
Top course to consist of stones about $\frac{1}{4}$" in diameter and paving cement to a thickness of at least $1\frac{1}{2}$".

The cost of the tar macadam surfacing includes a five year guarantee.

Cost—"V" drain 70′ x 14′ x 2′ with 6″ land tile in bottom	$75 00
3 catch basins	45 00
277′ of 10″ pipe and 60′ of 8″ pipe and laying	152 50
Cobble gutter 356 sq. yds.	120 00
Tar macadam surfacing 1,325 1-3 sq. yds. @ 90c.	1,192 80
Engineering and plan	12 00
Total cost	$1,597 30
Set aside and appropriated by town under sections 4-5	852 00
State aid apportioned under section 6	639 00
Joint Fund	$1,491 00
Additional amount furnished by town	106 30
Total cost	$1,597 30
State aid approved	639 00

Work done between June 6 and June 27, 1908.

LISBON.

ANDROSCOGGIN COUNTY.

CONTRACT NO. 22 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED TOWN OF LISBON.

A. W. POTTER,
A. O. WHITE,
GEORGE N. PRATT,
Selectmen.

.....

The designated state road is the county road leading from Lisbon Falls to West Bowdoin.

The section selected upon which to make permanent improvements begins at the Deering brook and extends northerly towards West Bowdoin.

The principal improvements made were the construction of 610 feet of "V" drain foundation, reducing the grades from over 8% to 6% and surfacing with gravel.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	1,800 ft.
Width of finished road	24 ft.
Width of gravel surface	24 ft.
Depth of gravel surface	3 to 8 in.

Cost—"V" drain 610′ x 12′ x 2½′	$332 15
70′ of 10″ pipe outlet to "V" drain	42 00
Grading 1,800′ @ 20c	360 00
8″ metal culvert 30′ long	25 00
Gravel surfacing 4,750 sq. yds. @ 17c	807 60
Miscellaneous expenses	136 87
Total cost	$1,703 62
Set aside and appropriated by town under sections 4-5	$867 00
State aid apportioned under section 6	650 25
Joint Fund	$1,517 25
Additional amount furnished by town	186 37
Total cost	$1,703 62
State aid approved	650 25

Work done between August 24 and September 8, 1908.

MADISON.

SOMERSET COUNTY.

CONTRACT NO. 10 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL AND TAR MIXTURE.

AWARDED TOWN OF MADISON.

G. D. PERKINS,
E. E. REED,
W. E. FRENCH,
Selectmen.

. . . . . .

The designated state road begins at the Norridgewock Falls bridge in Madison village, thence easterly to Wharff's corner, thence to Morse's corner by the way of Hilton's corner, so called, thence northerly to the corner near Levi Martin's, thence easterly by Atkinson's corner to the J. D. Rowell corner, so called, thence northerly through East Madison village to the southerly line of Solon.

The section selected upon which to make permanent improvements is located on Main street in Madison village extending from the Somerset Railway track to Maple street. This portion of Main street has a grade of about 8% and is in the business section of the village. The soil is clay. Although the hill had been covered with gravel many times, the steep grade and defective drainage made it practically impossible to maintain a satisfactory surface. It was first proposed to grade, drain and macadamize the street, but the excessive cost of the crushed stone together with the difficulty in obtaining a steam road roller made this form of construction prohibitive. After careful consideration it was decided to grade and drain the street, place a stone and gravel foundation and surface with two courses of tarred gravel.

The quantities, amount of work and contract price are given below.

Length of road improved about . . . . . 420 ft.
Width of finished road . . . . . 54 ft.
Width of surfacing . . . . . 54 ft.
Depth of gravel and tar surfacing . . . . . 6 in.
Gravel foundation not less than 4″ in depth

Cost—The complete work was sublet by the selectmen to W. W. and H. A. Johnson of Madison, Me., for the sum of $1,200 00

78 barrels of tar and 30 barrels of pitch were used in this surfacing.

The area surfaced was about 2,300 sq. yds.

Set aside and appropriated by town under sections 4-5	$685 50
State aid apportioned under section 6.....	514 12
Joint Fund	$1,199 62
Additional amount furnished by town	38
Contract price	$1,200 00

Work done between September 28 and October 19, 1908.

MOUNT DESERT.

HANCOCK COUNTY.

CONTRACT NO. 37 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED C. D. JOY OF NORTHEAST HARBOR, MAINE.

.....

The designated state road begins at the town line of Eden on the new road at Otter creek, thence following the county highway through Seal Harbor, Asticon and Sound to the town line of Eden.

The section selected upon which to make permanent improvements is located between Seal Harbor and Asticon near the summer residence of Pres. C. W. Eliot of Harvard University. It was proposed to straighten and widen the road, reduce the grades from 14% to 8%, (by cutting the tops of two hills and filling the hollow between), constructing a new culvert and surfacing with gravel. The hills are ledge and the hollow is a swamp.

The quantities, amount of work and contract price are given below.

Length of road to be improved.....600 ft.
Width of finished road.....21 ft.
Width of gravel surface.....21 ft.
Depth of gravel surface.....4 in.
Depth of broken stone foundation.....3 in.
Estimated quantities of work

600 lineal feet of road graded and prepared to receive surfacing material.
1,400 square yards of gravel road complete,
40 lineal feet of 24 inch metal culvert,
400 lineal feet of wooden fencing.

Cost—The complete work was contracted to C. D. Joy under date of September 17, 1908, for the sum of	$1,096 00
Set aside and appropriated by town under sections 4-5	702 00
State aid apportioned under section 6	526 50
Joint Fund	$1,228 50

This work has not been completed.

OLDTOWN.

PENOBSCOT COUNTY.

CONTRACT NO. 32 FOR GRADING, DRAINING AND SURFACING WITH CRUSHED STONE.

AWARDED CHARLES W. STEPHENS, OLDTOWN, MAINE.

.....

The designated state road begins at the Alton town line on the direct road from West Oldtown to the city of Oldtown, thence by said road and through the city over Main street and through West Great Works by the new county road, so called, to the town line of Orono.

The section selected upon which to make permanent improvements is located on Main street, beginning at Chester street and extending southerly to Carroll street. The principal improvements were in reducing the grades, providing suitable drainage

and surfacing with crushed stone. An electric railroad track is located along the easterly side of this street.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved.....805 ft.
Width of finished road.....21 ft.
Width of crushed stone surface.....21 ft.
Depth of crushed stone surface.....3 to 8 in.
Estimated quantities of work

805′ of road graded and prepared to receive surfacing material.
2,000 sq. yds. of macadam road complete.
80′ of 16″ metal culvert.
2 catch basins.

Cost—The complete work was contracted to Charles W. Stephens of Oldtown, Maine, for the sum of	$1,415 00
Engineering, inspection and advertising.....	67 00
Total cost	$1,482 00
Set aside and appropriated by city under sections 4-5	772 50
State aid apportioned under section 6	579 37
Joint Fund	$1,351 87
Additional amount furnished by city.....	130 13
Total cost	$1,482 00
State aid approved	579 37

Work done between September 10 and October 31, 1908.

PORTLAND.

CUMBERLAND COUNTY.

CONTRACT NO. 35 FOR GRADING, DRAINING, MACADAMIZING AND PAVING.

AWARDED THE DEPARTMENT OF PUBLIC WORKS OF THE CITY OF PORTLAND.

BION BRADBURY, JR., *Commissioner.*

.....

The designated state road begins at the intersection of Danforth street and West Commercial street; thence easterly through Danforth street to Vaughan street; thence northerly through Vaughan street to Cumberland avenue; thence easterly through Cumberland avenue to Washington avenue; thence through Washington avenue across Tukey's Bridge through Lunt's Corner and Allen's Corner to Auburn street; thence northerly by Auburn street to the division line between the City of Portland and the Town of Falmouth.

The section selected upon which to make permanent improvements is located on Danforth and Vaughan streets, beginning at the northerly end of the improved approach to Vaughan's bridge at West Commercial street, thence northerly and easterly on Danforth street to Vaughan street, thence northerly on Vaughan street to Bowdoin street. This section is a portion of the old road leading from Scarboro to Portland, is the direct route from Portland to Boston and is subject to heavy travel. The street is 66 feet wide and has an average grade of about 6%. On its northerly side is a bank of clay varying in height from 6 to 20 feet. There are numerous springs in this bank from which the water runs into the road and for lack of proper underdrains gets beneath its surface, making a wet sub-soil upon which the road material lies. The above conditions kept the road in a very muddy condition in the spring and fall while the surface water washed away the road covering about as soon as it was put on.

The following improvements were made:

An underdrain was laid along the northerly side of Danforth street at the foot of the clay bank to cut off the ground water; granite block paved gutters were laid along both sides of this street to prevent the surface water from washing; 8 catch basins with outlets into the street drain were provided to dispose of

Portland. 1908 section before improvement

Portland. 1908 section. Finished macadam road, trap rock surface. Contract let to city. Bion Bradbury, Jr., Commissioner of Public Works

the surface water; the street was graded; a gravel foundation placed wherever the subsoil was of clay and a macadam roadway, from 32 to 44 feet in width, was constructed the entire length from West Commercial street to Bowdoin street except at the bridge over the B. & M. R. R. For the preservation of the road surface and the prevention of dust, tarvia was used on a portion of this roadway between Vaughan street and the B. & M. R. R. bridge. On the portion south of the R. R. bridge and on Vaughan street, tar, from a local gas works, was used for the same purpose. The application of the tarvia was made under the direction of an expert from the Barrett Manufacturing Company of Boston, Mass.

The quantities, amount of work and cost are given below.

Length of road improved	2,880 ft.
Width of finished road	32 to 44 ft.
Width of crushed stone surface	32 to 44 ft.
Depth of crushed stone surface (trap rock)	4 to 6 in.
Depth of gravel foundation	6 in.

Cost—844′ of side drain 4′ deep with 8″ vitrified pipe in bottom	$445 93
928 sq. yds. gravel foundation 6″ in depth	139 21
8,657 sq. yds. crushed stone surface	6,286 91
Grading 2,880′ @ 70 2-10c. (1,681 cu. yds.)	2,021 46
Granite block paved gutters 1,601 sq. yds.	1,791 62
Catch basins, etc.	717 41
Engineering and inspection	185 00
Total cost	$11,587 54

2,361 tons of crushed trap rock costing $1.28 per ton were used in the construction of this road.

Set aside and appropriated under sections 4-5	$6,849 00
State aid apportioned under section 6	5,136 75
Joint Fund	$11,985 75
Total cost per terms of contract	11,101 96
Balance available for expenditure in 1909	$883 79
State aid approved	4,252 96

Work done between September 14 and November 13, 1908.

PRESQUE ISLE.

AROOSTOOK COUNTY.

CONTRACT NO. 14 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED TOWN OF PRESQUE ISLE.

C. H. RICHARDSON,
J. E. BISHOP,
N. P. COOK,
Selectmen.

.....

The designated state road begins at the south line of Presque Isle, at the Westfield town line, on the old state road, thence northerly through Presque Isle village to the north line of Presque Isle and the Caribou town line.

Also road leading from Presque Isle village westerly to the Mapleton line, same being known as the "Mapleton road" leading to Mapleton village.

The section selected upon which to make permanent improvements is located on the business portion of Main street in Presque Isle village, beginning at the square (Fort street) and extending northerly to near the B. & A. R. R. crossing.

The street was graded, drained and surfaced with gravel, the gravel being taken from the bed of the Aroostook river. A steam road roller was used in the construction work and as a result of its use, together with the quality of the gravel, an exceptionally good piece of road was built.

The street was surfaced with gravel the full width between the cobble gutters which were laid next to the curb line. The distance between curb lines being about 50 feet.

The quantities, amount of work and cost are given below.

Length of road improved.....1,115 ft.
Width of finished road.....50 ft.
Width of gravel surface.....about 40 ft.
Depth of gravel surface.....6 in.

Cost—Grading (1,115 ft. @ 23 9-10c.)	$266 35
24" concrete and tile culvert 60 ft. long	126 00
120 feet of 12 inch drain tile	54 00
2 catch basins complete	90 00
Cobble gutters 350 sq. yds.	172 00
Gravel surfacing 6,200 sq. yds. @ 13 2-10c.	818 60
Total cost	$1,526 95
Set aside and appropriated by town under sections 4-5	742 50
State aid apportioned under section 6	556 87
Joint Fund	$1,299 37
Additional amount furnished by town	227 58
Total cost	$1,526 95
State aid approved	556 87

Work done between July 13 and August 22, 1908.

RICHMOND.

SAGADAHOC COUNTY.

CONTRACT NO. 28 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED TOWN OF RICHMOND.

MORRILL MCKENNEY,
WM. H. THURLOW,
FRANK G. DOW,
Selectmen.

. . . . . .

The designated state road begins at Kennebec river, at the town landing, thence running westerly directly through said town by the way of Richmond corners to the Litchfield town line, being the way commonly known as the county road.

The section selected upon which to make permanent improvements begins on Main street at the west side of the M. C. R. R. tracks and extends westerly to near School street.

The principal improvements made were the placing of a stone foundation about 700′ long and 20′ wide, the grading and draining of the street and surfacing with gravel.

The quantities, amount of work and cost are given below.

Length of road improved	775 ft.
Width of finished road	44 ft.
Width of gravel surface	36 ft.
Depth of gravel surface	6 to 8 in.

Cost—Stone base 700′ x 20′ (467 tons of stone)	$286 25
Grading (775′ @ 13 1-10c.)	101 67
132′ of 12″ tile pipe in place	65 34
1 catch basin	44 91
3 metal culverts 86′ long 12″ in dia.	77 23
Gravel surfacing (3,072 sq. yds. @ 16c.)	491 51
Total cost	$1,066 91
Set aside and appropriated by town under sections 4-5	498 00
State aid apportioned under section 6	498 00
Joint Fund	$996 00
Additional amount furnished by town	70 91
Total cost	$1,066 91
State aid approved	498 00

Work done between September 23 and October 31, 1908.

ROCKLAND.

KNOX COUNTY.

CONTRACT NO. 39 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED CITY OF ROCKLAND.

T. E. MCNAMARA, *Street Commissioner.*

. . . . . .

The designated state road begins at the South Thomaston line on Main street, thence continuing in a general northerly direc-

Rockland. 1908 section before improvement

Rockland. 1908 section. Telford base. Workmen sledging stone chips to bind base. Contract let to city. T. E. McNamara, Commissioner

Rockland. 1908 section. Finished road. Eight inches of selected gravel placed in two courses over Telford base. Contract let to city. T. E. McNamara, Commissioner

tion along said Main street to the pavements to a point nearly opposite the Gen. Berry Hose Co. house, said distance being about three-quarters of a mile, thence from said point opposite Gen. Berry Hose Co. house along Main street in Rockland toward what is called the Rankin block situate on said Main street, thence leaving said Main street and following North Main street in a northerly direction to Maverick street, thence westerly by Maverick street to George Hart's store to the old county road, thence southwesterly by said county road about one hundred feet to Blackington's corner formed by the intersection of Lake avenue with said old county road, thence in a general westerly direction by said Lake avenue (formerly called Pond road) for about one-half mile, thence in a northerly direction still by said Lake avenue to the Rockport town line.

The section selected upon which to make permanent improvements is located at the foot of Lake Chickawaukie and has been a notoriously bad piece of road for many years. The natural soil is clay. The road was low and flat with practically no drainage. The improvements made were as follows:

The general level of the road was raised about two feet, a telford foundation 16 feet wide was laid for a length of about 1,250 feet, three concrete culverts were built, drainage ditches were excavated and the road surfaced with gravel.

The quantities, amount of work and cost are given below.

(Standard Section C.)

Length of road improved	1,250 ft.
Width of finished road	23 ft.
Width of gravel surface	20 ft.
Depth of gravel surface	6 to 8 in.
Depth of telford base	12 in.

Cost—Grading (1,250′ @ 26 7-10c.)	$334 80
Telford base 1,250′ x 16′ x 12″	722 46
Concrete culvert 6′ x 5′ x 20′	212 85
Concrete culvert 2′ x 3′ x 25′	129 63
Concrete culvert 3′ x 4′ x 25′	155 94
Gravel surfacing 2,778 sq. yds. @ 24c	666 80
Off-take ditches and drains	27 00

Engineering, inspection, etc.	93 34
Fencing, rolling, etc.	39 35
Total cost	$2,382 17
Set aside and appropriated by city under sections 4-5	946 50
State aid apportioned under section 6	709 87
Joint Fund	$1,656 37
Additional amount furnished by city	725 80
Total cost	$2,382 17
State aid approved	709 87

Work done between October 5 and November 14, 1908.

RUMFORD.

OXFORD COUNTY.

CONTRACT NO. 18 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TO JAMES MCGREGOR OF RUMFORD FALLS, MAINE.

. . . . . .

The designated state road begins at the easterly line of the town of Rumford at the Swift river bridge, thence by the way of Lincoln avenue, Hancock street, Rumford avenue, Franklin and Bridge streets, Prospect avenue and Crescent street and on the old road on the northerly side of the Androscoggin river to Hanover town line.

At the annual town meeting the selectmen were directed to complete the state road from Rumford Falls to Rumford Center and the town treasurer was authorized to borrow a sufficient sum of money to pay for the same. Upon the request of the selectmen that portion of the road proposed to be macadamized this year (1908) was included in the state road contract. This section was 11,100 feet in length. The necessary surveys and plans were made by Henry Nelson and Henry C. French, the local engineers. The following bids were received for the com-

plete work in strict comformity with the contract, plans, specifications and profiles:

Small, Ingalls and Lavorgna.....$11,148 00
Town of Rumford..... 11,000 00
James McGregor..... 10,430 27

The principal improvements made were the widening and straightening of the road, reducing the grades, providing suitable surface and underdrainage and covering the road with crushed stone.

This section of road is located along the valley of the Androscoggin river with numerous small brook crossings and quite a length of side hill construction necessitating special attention to the drainage. About 3,000 feet of underdrain was built along the upper side of the road to cut off the ground water. Town farm hill required special underdrainage to afford a foundation for the crushed stone surfacing.

The quantities, amount of work and cost are given below.

(Standard Section C.)

Length of road improved .....11,100 ft.
Width of finished road .....21 ft.
Width of crushed stone surface .....15 ft.
Depth of crushed stone surface .....6 to 8 in.

Cost—Following is given the estimated quantities and amount of work together with price bid for doing same:

11,100' of road graded and prepared to receive surfacing material @ $0.18 22-100
18,600 sq. yds. of macadam road complete @ $0.27
36 lineal feet of 15" metal culvert @ $1.75
350 lineal feet of 12" metal culvert @ $1.01 25-100
72 lineal feet of 8" metal culvert @ $0.56 7-10
12 cu. yds. concrete masonry for culvert ends @ $12.00
500 lineal feet of wooden fencing @ $0.20 63-100
3,000 lineal feet of underdrain @ $0.20 5-10

Contract price (McGregor contract)	$10,430 27
Engineering and plans	195 80
Advertising	16 65
Inspection	175 00
Miscellaneous expenses	99 63
Total cost	$10,917 35

Set aside and appropriated by town under sections 4-5	810 00
State aid apportioned under section 6	607 50
Joint Fund	$1,417 50
Additional amount furnished by town	9,499 85
Total cost	$10,917 35
State aid approved	607 50

Work done between July 26 and October 31, 1908.

SACO.

YORK COUNTY.

CONTRACT NO. 17 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED CITY OF SACO.

HARRY A. WEYMOUTH, *Mayor.*
R. W. LIBBY, *Engineer.*

. . . . . .

The designated state road begins on the new county road, so called, at a point on the iron bridge over the Saco river, being the boundary line between the cities of Saco and Biddeford; thence southeasterly over said new county road and Bradley street to Spring street; thence over Spring street southwesterly to Lincoln street; thence southeasterly on Lincoln street to Elm street; thence southeasterly on Elm street to Main street; thence southeasterly over Main street and Portland road to Scarboro town line.

The section selected upon which to make permanent improvements is located on Main street, beginning at King street and extending northeasterly towards Portland. An electric railroad track is located along the center of this street. Granite block paving is laid between the rails and about 18 inches outside of each rail. The improvements made were the grading and draining of the street and surfacing with crushed rock.

Saco. 1908 section. Macadam, local stone. Contracted to city

The quantities, amount of work and cost are given below.

Length of road improved.....866 ft.
Width of finished road.....42 ft.
Width of crushed stone surface.....35 ft.
Depth of crushed stone surface.....4 to 6 in.

Cost—Grading 547 cu. yds. @ 65c.....	$355 55	
366 sq. yds. lawn area @ 5c.	18 30	
or approximately 866' @ 43 2-10c.	———	$373 85
Crushed stone surfacing (3,370 sq. yds. @ 45c.)		1,515 60
Extra crushed rock 15 tons @ 60c.		9 00
Total cost		$1,898 45
Set aside and appropriated by city under sections 4-5		1,008 00
State aid apportioned under section 6.....		756 00
Joint Fund		$1,764 00
Additional amount furnished by city		134 45
Total cost		$1,898 45
State aid approved		756 00

Work done between August 3 and September 10, 1908.

SANFORD.

YORK COUNTY.

CONTRACT NO. 3 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TOWN OF SANFORD.

J. G. RIDLEY, *Road Commissioner.*

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The designated state road begins at the town line separating the towns of Shapleigh and Sanford and connecting with the Shapleigh state road, thence southerly over the road called Main street in Springvale village and the village of Sanford and

South Sanford, over Lion's Hill to the dividing line between the towns of Sanford and Kennebunk.

The section selected upon which to make permanent improvements begins about two-thirds of a mile from the Shapleigh town line and extends in a general southeasterly direction about 1,600 feet. About one-half of this section was built along the new location laid out by the county commissioners in 1907 to straighten the road, and was therefore new construction, requiring extensive excavations in earth and rock. The principal improvements made were the widening, straightening, grading and draining of the road and surfacing with crushed stone.

The quantities, amount of work and cost are given below.

Length of road improved	2,400 ft.
Width of finished road	22 ft.
Length of crushed stone surface	1,600 ft.
Width of crushed stone surface	16 ft.
Depth of crushed stone surface	6 to 8 in.

Cost—Grading earth 818 cu. yds.	$409 00	
Rock 1,242 cu. yds.	621 00	
or approximately 1,600′ @ 64 4-10c.		$1,030 00
12″ metal culvert 26′ long		21 90
12″ metal culvert 26′ long		21 90
12″ metal culvert 30′ long		24 60
Grading 800′ @ $1.12 8-100		896 64
Crushed stone surfacing 2,847 sq. yds. @ 22 5-10c.		640 60
Total cost		$2,635 64
Set aside and appropriated by town under sections 4-5		846 00
State aid apportioned under section 6		634 50
Joint Fund		$1,480 50
Additional amount furnished by town		155 14
Donated by Hon. E. M. Goodale of Sanford		1,000 00
Total cost		$2,635 64
State aid approved		634 50

Work done between July 15 and October 28, 1908.

Skowhegan. Part of 1908 work. 3 x 4-ft. concrete culvert. Road surfaced with macadam, local stone. Contract let to town. Geo. H. Webb, Commissioner

SKOWHEGAN.

SOMERSET COUNTY.

CONTRACT NO. 20 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TOWN OF SKOWHEGAN.

GEORGE H. WEBB, *Road Commissioner.*

.....

The designated state road begins at the easterly line of said town where it adjoins the Canaan town line and on the road leading from Canaan village to Skowhegan; thence westerly on the regular stage road to Skowhegan village; thence through Water street, Island avenue and Main street in said village to a point near the residence of C. A. Marston where the middle road, so called, intersects said Main street; thence by said middle road to the northerly line of Fairfield.

The section selected upon which to make permanent improvements is located on the southerly side of the river, beginning about four miles from the Fairfield town line and extending in a generally northerly direction towards Skowhegan about 1,900 feet. The northerly portion of this section is low and flat with a black heavy soil. The southerly portion is on a clay hill with numerous springs along the side of the road and one within the limits of the travelled way. A foundation of stone and gravel from one to three and one-half feet in thickness was placed along the northerly portion. Side drains and off-take ditches were excavated. The clay hill was thoroughly underdrained. A 3′ x 4′ concrete culvert 36′ in length was built near the foot of the hill. One thousand two hundred and fifty feet in length of the road was surfaced with crushed stone.

The quantities, amount of work and cost are given below.

(Standard Section C.)

Length of road improved	1,900 ft.
Length of crushed stone surface	1,250 ft.
Width of finished road	25 ft.
Width of crushed stone surface	15 ft.
Depth of crushed stone surface	6 to 8 in.

Cost—Grading 1,900′ @ 10 53-100c. (350 cu. yds.)	$200 00
Stone base 750′ x 3½′	333 72
Gravel foundation (450 cu. yds.)	100 00
Reinforced concrete culvert 3′ x 4′ x 36′	228 00
Crushed stone surfacing 2,100 sq. yds. @ 39½c.	830 13
900′ of surface ditch	150 00
Off-take ditch	100 00
Engineering and inspection	33 00
Four farm crossings	53 00
Total cost	$2,027 85
Set aside and appropriated by town under sections 4-5	931 50
State aid apportioned	698 62
Joint Fund	$1,630 12
Additional amount furnished by town	397 73
Total cost	$2,027 85
State aid approved	698 62

Work done between September 1 and October 17, 1908.

SOUTH BERWICK.

YORK COUNTY.

CONTRACT NO. 6 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED EDWARD A. WARREN OF SOUTH BERWICK, MAINE.

. . . . . .

The designated state road begins at the line separating the town of South Berwick from the State of New Hampshire at the Salmon Falls river; thence running easterly and southerly through the village of South Berwick over Main street, and thence to the dividing line between South Berwick and Elliot at Shores brook, so called.

The section selected upon which to make permanent improvements is located on Main street in the village of South Berwick,

beginning near the Post Office and extending to near the Congregational church. This section was graded, drained and macadamized.

The quantities, amount of work and cost are given below.

Length of road improved	700 ft.
Width of finished road	21 to 29 ft.
Width of crushed stone surface	21 to 29 ft.
Depth of crushed stone surface	6 in.
Depth of gravel foundation	3 in.

Cost—700′ of road complete including 1,900 sq. yds. of trap rock surfacing with gravel foundation, 50 sq. yds. of cobble paved gutter, one catch basin and 6′ of 12″ pipe	$1,237	00
Advertising	10	25
Engineering and inspection	40	25
Total cost	1,287	50
Set aside and appropriated by town under sections 4-5	471	00
State aid apportioned under section 6	353	25
Joint Fund	$824	25
Additional amount furnished by town	463	25
Total cost	$1,287	50
State aid approved	353	25

Work done between September 15 and October 25, 1908.

SOUTH PORTLAND.

CUMBERLAND COUNTY.

CONTRACT NO. 23 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED HARRY U. FULLER OF PORTLAND, MAINE.

. . . . . .

The designated state road begins at the Portland bridge, so called, thence over Ocean street to the Cape Elizabeth line.

The section selected upon which to make permanent improvements is located on the hill south of Parrott street. The grade is from about three to six per cent. The improvements included a surfacing of crushed stone between the electric railroad track on the easterly side of the street and the cobble gutter which was laid on the westerly side of the street.

The quantities, amount of work and cost are given below.

Length of road improved	640 ft.
Width of finished road	20 ft.
Width of crushed stone surface	20 ft.
Depth of crushed stone surface	8 in.

Cost—Grading 640′ @ 25c.	$160 00
Cobble gutter 225 sq. yds. @ 44c.	99 00
Crushed stone surface 1,300 sq. yds. @ 80c..	1,040 00
Advertising, etc.	39 55
Engineering services	17 75
Total cost	$1,356 30
Set aside and appropriated by city under sections 4-5	$762 00
State aid apportioned	571 50
Joint Fund	$1,333 50
Additional amount furnished by city	22 80
Total cost	$1,356 30
State aid approved	571 50

Work done between September 14 and October 15, 1908.

WATERVILLE.

KENNEBEC COUNTY.

CONTRACT NO. 16 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED THE CITY OF WATERVILLE.

JERRY M. CRATTY, *Street Commissioner.*

. . . . . .

The designated state road begins at the Fairfield town line, thence via College avenue, Elm street, Western avenue, Cool

street and Oakland street to the First Rangeway, thence by the Rangeway to the Oakland road, so called, thence by the Oakland road to the Oakland town line.

The section selected upon which to make permanent improvements is located on College avenue beginning at Getchell street and extending to the M. C. R. R. crossing near the Waterville depot. Although this section of street is in the residential portion of the city, it is subjected to a large and constant travel. The large and numerous shade trees on each side of the street made it desirable to provide an impervious street surfacing with sufficient crown to quickly dispose of the water.

The street was graded and surfaced with crushed stone on a gravel foundation. Tarvia was applied for a binder and dust preventative.

The quantities, amount of work and cost are given below.

Length of road improved	760 ft.
Width of finished road	46 ft.
Width of crushed stone surface	46 ft.
Depth of crushed stone surface	6 to 8 in.

Cost—Grading 760′ @ 54c. (1,284 cu. yds.)	$410 13
Crushed stone surfacing, 3,852 sq. yds. @ 76 7-10c. (including the application of the tarvia)	2,954 03
22 barrels of tarvia	201 02
Total cost	$3,565 18
Set aside and appropriated by city under sections 4-5	$1,045 50
State aid apportioned	784 12
Joint Fund	$1,829 62
Additional amount furnished by city	1,735 56
Total cost	$3,565 18
State aid approved	784 12

Work done in August and September.

WESTBROOK.

CUMBERLAND COUNTY.

CONTRACT NO. 12 FOR GRADING, DRAINING AND PAVING WITH GRANITE BLOCKS.

AWARDED CITY OF WESTBROOK FOR PREPARING SUB-GRADE, BUILDING CATCH BASINS WITH CONNECTIONS AND CONSTRUCTING SUB-DRAINS.

AWARDED THE MURPHY CONTRACTING CO., PORTLAND, MAINE, FOR THE REMAINDER OF WORK COMPLETE.

The designated state road begins at the Gorham town line on the new Portland road, so called, thence on the county road through Westbrook and Cumberland Mills to the Portland city line.

The section selected upon which to make permanent improvements is located on the business portion of Main street, beginning at the easterly end of the paving near the car barn and extending easterly to Church street, a distance of 1,171 feet. The subsoil is clay. The form of improvement approved was the grading and draining of the street and paving with granite blocks on a gravel foundation, the gravel foundation to have a thickness of not less than six inches after being thoroughly compacted. The paving blocks to be not less than nine (9) nor more than fourteen (14) inches long, averaging not less than 11½ inches; not less than three and one-half (3½) nor more than four and one-half (4½) inches wide; not less than seven (7) nor more than eight (8) inches deep. The joints to be filled with screened pebbles and paving cement.

The following bids were received for making the proposed improvements.

For the work complete	
Murphy Contracting Co.	$6,187 20
Marshall & Payson	7,493 20
For each 1,000 paving blocks F. O. B. cars	
Murphy Contracting Co.	56 00
Hallowell Granite Works	57 00
C. T. Ames	58 00
Marshall & Payson	62 00

For preparing sub-grade
Marshall & Payson per sq. yd..... 0 20
Murphy Contracting Co. per sq. yd..... 0 23
City of Westbrook (lump sum)..... 792 50
For the paving and regulating complete except preparing sub-grade and furnishing paving blocks, per sq. yd.
Murphy Contracting Co..... $1 01
D. F. Griffin & Bro..... 1 40
Marshall & Payson..... 1 46
For each foot of sub-drain complete
Marshall & Payson..... 0 20
Murphy Contracting Co..... 0 40
For each catch basin complete with 10" connection
Marshall & Payson..... 55 00
Murphy Contracting Co..... 65 00
The quantities, amount of work and cost are given below.
Length of road improved.....1,171 ft.
Width of finished roadway, about.....20 ft.

Cost—Murphy contract .....2,620 sq. yds
Extra paving ..... 213 sq. yds.

Total paving .....2,833 sq. yds.		$5,961 40
Extra gravel, about		70 00
Grading		986 52
Engineering and inspection		218 76
Total cost		7,236 68
Set aside and appropriated by city under sections 4-5		$1,137 00
State aid apportioned under section 6.....		852 75
Joint Fund		$1,989 75
Additional amount furnished by city.....		5,246 93
Total cost		$7,236 68
State aid approved		852 75

Work done between August 17 and November 13, 1908.

WINSLOW.

KENNEBEC COUNTY.

CONTRACT NO. 26 FOR GRADING, DRAINING AND MACADAMIZING.

AWARDED TOWN OF WINSLOW.

E. E. SMITH, *Road Commissioner.*

.....

The designated state road begins at the China town line near Mud pond, thence northerly along said road by Hayden's mill to Hayden's four corners, thence northerly to and over Eaton bridge, so called, to Ticonic or Waterville bridge at Waterville.

The section selected upon which to make permanent improvement begins at the northerly end of the Sebasticook (Eaton) bridge and extends towards Waterville about 1,000 feet. An electric railroad track is located along the westerly side of this road. The improvements desired and approved were grading, draining and macadamizing.

Estimate of quantities and amount of work to be done

1,000 lineal feet of road graded and prepared to receive surfacing material

3,600 square yards of macadam road complete

2 catch basins complete

50 feet of 8" tile pipe

About 500 lineal feet of this road has been built

Contract price	$1,512 00
Set aside and appropriated by town under sections 4-5	864 00
State aid apportioned under section 6.....	648 00
Joint Fund	$1,512 00

YORK.

YORK COUNTY.

CONTRACT NO. 15 FOR GRADING, DRAINING AND SURFACING WITH GRAVEL.

AWARDED CHARLES BRAGDON AND WILLIS M. GRANT OF YORK, MAINE.

.....

The designated state road begins at the Kittery town line near the house occupied by Wallace Main, and at the terminus of the Kittery state road, thence easterly over the Post road to and through York corner; thence to and through York village, Long Beach and Bald Head to the Wells town line and connecting with Wells state road.

The section selected upon which to make permanent improvement begins about one mile from the Kittery town line and extends in a general northeasterly direction a distance of about 1,700 feet. The objectionable features were defective drainage, clay soil and uneven grades. The principal improvements made consisted of grading, draining, widening and straightening the road and surfacing with gavel.

The quantities, amount of work and cost are given below.

(Standard Section A.)

Length of road improved	1,700 ft.
Width of finished road	21 ft.
Width of gravel surface	21 ft.
Depth of gravel surface	3 to 8 in.

Cost—For the work complete including
1,700′ of road graded
4,000 sq. yds. of gravel surfacing
12″ metal culvert 30′ long $1,625 00
Advertising 9 00
Engineering and inspection 36 22

Total cost $1,670 22

Set aside and appropriated by town under sections 4-5	936 00
State aid apportioned under section 6	702 00
Joint Fund	$1,638 00
Additional amount furnished by town	32 22
Total cost	$1,670 22
State aid approved	702 00

Work done between September 1 and October 28, 1908.

TABLE OF COMPARATIVE COSTS.

State Road Contracts.

	Length of road improved.	Width of finished road.	Grading per linear foot.	Macadam per square yard.	Gravel per square yard.	Block paving per square yard.	Tar Macadam per square yard.	Stone base per square yard.	Cobble paving per square yard.	Wooden fencing per linear foot.	Additional amount furnished by municipality.	Balance for use in 1909.
Auburn (*a*)	290	43	–	–	–	$1.57	–	–	–	–	$93.48	–
Augusta	1,800	21–25	$0.44	$0.33	–	–	–	$.66	–	$.15	519.48	–
Bangor (*b*)	2,485	21–32	–	–	$.39	–	–	–	–	–	–	$1,093.65
Bath	1,200	28	–	55	–	–	–	–	–	–	336.16	–
Belfast (*c*)	1,030	23–47	–	42	–	–	–	–	–	–	–	(*f*)306.00
												306.94
Biddeford	1,800	24–30	93	46	–	–	–	–	–	–	1,726.18	–
Brewer	1,300	42–52	27	25	–	–	–	–	–	–	888.57	–
Brunswick (*c*)	1,100	21	–	89	–	–	–	–	–	–	7.38	–
Calais	2,100	21	05	27	–	–	–	56	–	–	20.26	–
Camden	1,400	25–30	–	–	13	–	–	10	83	–	227.95	–
Caribou	670	42–47	40	41	–	–	–	–	–	–	436.02	–
E. Livermore (*c*)	697	40	–	44	–	–	–	–	–	–	532.30	–
Eastport	1,900	21–25	22	–	18	–	–	–	–	–	547.25	–
Eden	1,200	24	15	49	–	–	–	–	–	–	13	–
Ellsworth	–	–	–	–	–	–	–	–	–	–	–	–
Fairfield	1,725	21	04	–	08	–	–	40	–	12	141.20	–
Farmington	1,000	21	14	57	–	–	–	–	–	–	–	33.63
Ft. Fairfield (*c*)	1,500	30	–	42	–	–	–	–	–	–	145.61	–
Gardiner	1,660	21	16	40	–	–	–	–	–	–	376.85	–
Houlton	2,000	21–30	05	45	–	–	–	–	–	–	694.75	–
Jay	1,000	22	07	54	–	–	–	–	–	–	93	–
Kennebunk	426	27	–	–	–	–	90	–	–	–	106.30	–
Lisbon	1,800	24	20	–	17	–	–	41	–	–	186.37	–
Madison	420	54	–	–	–	–	52	–	–	–	(*g*)318.84	–
Mt. Desert	–	–	–	–	–	–	–	–	–	–	–	–
Oldtown (*c*)	805	21	–	77	–	–	–	–	–	–	130.13	–
Portland (*d*)	2,880	32–44	70	73	–	1.12	–	–	–	–	–	883.79
Presque Isle	1,115	50	24	–	13	–	–	–	50	–	227.58	–
Richmond	775	44	13	–	16	–	–	18	–	–	70.91	–
Rockland	1,250	23	27	–	24	–	–	33	–	–	725.80	–
Rumford	11100	21	18	27	–	–	–	–	–	21	9,499.85	–
Saco	866	42	43	45	–	–	–	–	–	–	134.45	–
Sanford	2,400	22	64	23	–	–	–	–	–	–	1,155 14	–
Skowhegan	1,900	25	11	39	–	–	–	20	–	–	397.73	–
S. Berwick (*d*)	700	21–29	–	67	–	–	–	–	–	–	463.25	–
S. Portland	640	20	25	80	–	–	–	–	44	–	22.80	–
Waterville	760	46	54	77	–	–	–	–	–	–	1,735.56	–
Westbrook (*e*)	1,170	20–22	–	–	–	2.10	–	–	–	–	5,246.93	–
Winslow	500	20–30	–	–	–	–	–	–	–	–	–	–
York (*b*)	1,700	21	–	40	–	–	–	–	–	–	32.22	–
Average			$.29	$.50	$.21	$1.60	$.71	$.36	$.59	$.16	$27,148.36	$2,624.01

(*a*) Includes grading, draining and paving. (*b*) Includes grading, draining and surfacing with gravel. (*c*) Includes grading, draining and macadamizing. (*d*) Trap rock. (*e*) The joints between the blocks were filled with pebbles and paving cement. (*f*) Special appropriation. (*g*) Joint fund $1,199.62, contractor reports cost $1,518.46, difference $318.84.

PERMANENT IMPROVEMENT

OF

PUBLIC HIGHWAYS

IN THE

STATE OF MAINE

DESCRIPTION OF THE ROAD TO BE IMPROVED.

LOCATED IN THE.....

BEGINNING AT .....

EXTENDING TO .....

LENGTH .....

NATURE OF IMPROVEMENT .....

INFORMATION FOR BIDDERS.

Persons desiring to make a proposal will find attached hereto detailed specifications, proposal blank, form of contract and bond.

Each bidder must accompany his bid with a certified check, payable to the treasurer of the city, town, plantation or county as the case may be, for ten per cent of the amount of his bid, as a guarantee that if the work is awarded to him he will enter into a contract for the same.

All bids so submitted shall be immediately and publicly read at the time for opening the same as stated in the advertisement, and referred to the state commissioner of highways for his approval.

The selectmen or other local officers having jurisdiction and the state commissioner of highways shall have the right to reject any or all bids, if in their opinion good cause exists therefor, but otherwise they shall award the contract to the lowest responsible bidder.

The successful bidder shall give satisfactory evidence of his ability to perform the contract, and shall within fifteen days from the awarding of the contract also furnish bonds in the penal sum of at least the amount of the contract with two or more sureties, owners of real estate in the county, or a surety or trust company, authorized to transact business within the State, to be approved by both the board receiving the bids

and by the state commissioner of highways, conditioned for the faithful performance of said work in strict conformity with the contract, plans and specifications for the same.

The contract, plans and specifications shall be executed in triplicate, one going to the contractor, one to the local board of officers having jurisdiction, and one to the state commissioner of highways.

Whenever the Mayor and City Council or such other board as has jurisdiction over highways in a city, or the selectmen of any town, or the assessors of any organized plantation, or the county commissioners for unincorporated townships, shall desire in behalf of such city, town, plantation or unincorporated township to bid upon work located within said city, town, plantation or unincorporated township, they shall submit their bids to the state commissioner of highways at least one day prior to the time specified for the opening of the other bids as stated in the advertisement for bids, and all bids submitted in behalf of towns shall be subject to the requirements made and provided for in this section, except that no certified check or bond shall be required of any town or city making bids or accepting contract for construction.

No bids in behalf of towns shall be opened by the state commissioner of highways until after the other bids for the same work shall have been publicly opened and read by the board receiving them, as required by this section, and forwarded to the state commissioner of highways. If the state commissioner of highways shall find from the bids so submitted that the bid in behalf of the town is the lowest, the state commissioner of highways shall thereupon award the contract to such town, whereupon the board of local officers having jurisdiction over highways in such town shall forthwith execute a contract in behalf of such town with the state commissioner of highways in behalf of the state, to fulfill all the requirements and terms of the specifications and plans for said work, under which their bid was submitted. The state commissioner of highways, on all work executed by contract, shall make such inspection from time to time as he may deem necessary and all material furnished and labor performed shall be to his satisfaction.

The specifications and plans are to be considered as and shall form a part of the contract.

The time to which proposals will be received will be found in the published advertisement asking for proposals.

Detailed plans of the work may be seen for examination at the office of the state commissioner of highways, and at such other place as may be designated in the advertisement.

SPECIFICATIONS.

Work to be Performed.

Section 1.—Under these specifications the contractor will be required to grade the roadway to the established grade lines; to do all clearing and grubbing, all excavation and embankment, all leveling, ditching, grading and surfacing, all necessary paving, masonry and stone work; to

build all waterways, drains, ditches, driveways and culverts; to build all iron and timber work; to clear away all rubbish which may obstruct the roadway, ditches or waterways; to protect all fences and to replace or repair them if they are destroyed by him or by his employees and to lay a gravel or macadam surface of the dimensions shown on the plans.

In short he will be required to furnish all materials, implements, machinery and labor necessary and proper for building and completing in a manner satisfactory to the state highway commissioner that portion of the state road included in these specifications, leaving the roadway complete in every manner ready for immediate use.

Plans and Drawings.

Section 2.—The plans, profiles and cross-sections show general location, grades, details and dimensions.

Any variation of location, grade, size and dimension from that shown on the plans, profile or cross-sections, as may be required by the exigencies of construction will in all cases be determined by the state commissioner of highways and the contractor shall not, on any pretense, save that of the written order of the contracting parties and the state commissioner of highways deviate from the intent of the plans or specifications.

Grading.

Section 3.—Under this head will be included all excavations and embankments required for the formation of the highway, cutting all ditches or drains about or contiguous to the road, removing all fences, walls, buildings, trees, poles or other incumbrances, the excavation and embankment necessary for reconstructing cross or branch roads or entrances to dwellings in cases where they are destroyed or interfered with in the formation of the roadway, and all other excavations and embankments connected with or incidental to the construction of said road. Material of proper quality, excavated from the line of the road or from borrow pits, to be furnished by the contractor and approved by the inspector for that purpose, shall be used for forming the roadbed, for building embankments and generally for making all filling and grading that may be found necessary.

The grading shall conform to the plans, profiles, cross-sections and grade stakes and material shall be deposited as directed by the inspector in fills or spoil banks.

All boulders and ledge shall be excavated to a depth of at least six inches below finished sub-grade. All stumps and roots shall be excavated to a depth of at least one foot below finished sub-grade. The depressions thus caused shall be filled with suitable material and thoroughly rammed or otherwise compacted.

The contractor shall construct all drains and approaches for branch roads and driveways to the satisfaction of the inspector and shall include ditches that are without pockets and irregularities.

Unstable sand, soft clay, dust or mud, spongy material or vegetable matter found in the roadbed below the sub-grade shall be removed to such depth as may be required by the inspector and replaced by material of a quality to make a firm and stable foundation conforming to the required grades.

Embankments shall be constructed in successive horizontal layers not exceeding twelve inches in thickness. Each layer shall extend across the entire fill and shall be thoroughly rolled or compacted.

All surfaces and slopes in excavation, whether old or new, in the borrow pits or on the embankments, whether old or new, shall be left with neat and even surfaces, according to lines, grades and directions to be given by the engineer. In general the slopes for embankments will be two horizontal to one vertical and for excavations will be one and one-half horizontal to one vertical.

PREPARING SUB-GRADE.

Section 4.—After the surface of the sub-grade has been properly shaped, and before any broken stone or other surfacing material is put on, it shall be thoroughly rolled and compacted. This rolling shall be done with a steam road-roller or other roller. The roller used throughout the whole work must be of a kind approved by the state commissioner of highways.

All hollows and depressions which develop during the rolling shall be filled with suitable material and the sub-grade shall again be rolled. This process of filling and rolling shall be repeated until no depressions develop. The shoulders also shall be rolled in the same manner.

In places where the material of the sub-grade or of the shoulders is unstable and will not consolidate under the action of the roller, and is so great in extent that its removal is impractical, it shall be formed to the desired shape and treated in such a manner as may be necessary to consolidate and compact it and to give the best results in providing a stable foundation for the entire roadway.

MACADAM SURFACE, BROKEN STONE, QUALITY, SIZE.

Section 5.—Stone for macadam shall consist of approved local stone, trap rock or a combination of local stone and trap rock of the various sizes called for, broken into shapes as nearly cubical as possible with approved stone crushing machinery, and shall be free from soft or disintegrated rock, dirt or other objectionable substances. The stone for the different courses must be well screened to produce the sizes herein specified. The local stone and screenings must be of hard and compact texture and of uniform grade. Trap rock shall be of the best quality and the screenings shall not contain more than 35% of dust, and must be free from foreign substances.

The broken stone shall be spread in courses or layers. These courses shall be in every part, after rolling, at least of the thickness and of the form required by the plans, specifications and sections. No allowance

will be made on account of any material which may be driven into the roadbed by rolling, but the finished surface shall be brought to the required grade.

The bottom course shall consist of stone varying in size from a minimum of one and one-quarter inches to a maximum of two and one-half inches in their longest dimensions.

The middle course. When the road is built in three courses, the middle course shall consist of stone varying in size from a mimimum of one inch to a maximum of one and one-half inches in their longest dimensions.

The top course. When the road is built in three courses the top course shall consist of stone varying in size from a minimum of one-half inch to a maximum of one inch in their longest dimensions.

When the road is built in two courses the top course shall consist of stone varying in size from a minimum of one-half inch to a maximum of one and one-quarter inches in their longest dimensions.

The screenings or binder for the top course shall consist of fragments of the kind and quality of stone specified that will pass through a one-half inch circular ring.

The binder course in all cases is to be sufficient only to cover the coarser stone after it has been rolled.

Spreading, Rolling and Watering.

Section 6.—All broken stone shall be spread from carts by hand or from a dumping board, or from self-spreading carts.

Each course shall be rolled separately and evened up with material of the same size and quality as has been used in that particular course, and to the satisfaction of the inspector. The rolling must begin at the sides and work toward the center, unless otherwise directed. Should any difficulty be experienced, while rolling, in having the stone readily compact, sprinkling with water or lightly spreading with sand, screenings or other material, as the inspector may direct, shall be employed.

After the top course has been rolled and completed as above described broken stone screenings or binder shall be spread and rolled dry until they have nearly all disappeared.

The road shall then be saturated with water, using for the purpose a sprinkler with wide tires on its wheels and the rolling continued immediately after the sprinkling.

More screenings shall be added if necessary and the sprinkling and rolling continued until a grout has been formed of the screenings, stone-dust and water that shall fill all the voids and shall form a wave before the wheels of the roller.

The road shall be puddled and rolled as many times as necessary to secure satisfactory results.

Gravel Surface.

Section 7.—The gravel shall be spread in layers or courses. Each layer shall be in every part, after rolling, at least of the thickness and

of the form required by the plans, specifications and sections. No allowance will be made on account of any material which may be driven into the roadbed by rolling, but the finished surface shall be brought to the required grade.

After the road has been graded and the sub-grade prepared and accepted the bottom layer of gravel shall be spread and thoroughly rolled. The gravel for this layer shall consist of good clean bank gravel, not less than seventy-five per cent of which shall be pebbles that will be retained on a screen of one-eighth inch mesh, and will pass through a screen of two and one-half inch mesh, and not more than twenty-five per cent shall be binding material.

Any hollows that may develop during the process of rolling shall be filled with the same kind of gravel and the rolling continued until the surface is uniformly smooth and hard.

The gravel for the second layer shall consist of good clean bank gravel, about seventy-five per cent of which shall be pebbles that will be retained on a screen of one-eighth inch mesh and will pass through a screen of one and one-half inch mesh, and not more than twenty-five per cent shall be binding material.

This layer of gravel shall be spread with shovels, either from the wagon or from a dumping board, to such uniform thickness as to be not less than three inches deep after the rolling is completed. This layer of gravel shall be thoroughly sprinkled and rolled and the wetting and rolling continued until satisfactory results are obtained. Any hollows that may develop during the process of rolling shall be filled with the same kind of gravel specified for this layer and the road re-rolled until the surface is uniformly smooth and hard and everywhere conforms to the proposed grade and cross-section of the road.

The gravel used, its treatment and manner of use shall be subject to the approval of the Commissioner.

Rolling shall at all times begin at the sides and, rolling lengthwise of the road, proceed towards the center. In the final rolling the whole surface of the roadway including the shoulders shall be rolled from ditch to ditch and the whole road left in such condition that it will not show the mark of hoof or wheel while driving over it.

Culverts: Iron Pipes for Culverts.

Section 8.—Where cast iron pipe is specified for culverts it shall be of good quality, free from defects impairing its strength, uniform in thickness, full strength and coated with coal tar pitch.

Joints of cast iron pipe shall be made by inserting a gasket of oakum and then filling the hub with mortar formed of one part cement and one part clean gravel.

Where corrugated metal culverts are specified the workmanship and materials shall be of the best quality and approved by the Commissioner. Cast iron to be used for culverts, covers for drop inlets and elsewhere, shall be of full standard pattern for shapes or forms used according to

drawings or detail specifications. All cast iron shall be of good gray iron, free from blows, sand holes or other defects and shall have a tensile strength of not less than 17,000 pounds per square inch of section.

Masonry Culverts.—Where concrete masonry, cement stone masonry or dry stone masonry is specified for culverts, it shall be built of the dimensions shown on the drawings and in accordance with the detail specifications. Stone culvert bottoms and entrances shall be laid where shown on the plans. The stones shall be sound, hard, durable cobble or quarry stone, not less than eight inches deep, six inches wide and ten inches long. The stone shall be bedded in six inches of gravel and thoroughly rammed to a firm bearing and uniform surface after which the joints and interstices shall be filled with Portland cement mortar.

All iron culverts shall be laid in a bed of gravel or sand and covered with the same quality of material, such bed and covering to be not less than six inches in thickness around the pipe, and to be free from stones exceeding one inch in diameter. The backfilling at and around all culverts shall be thoroughly tamped and the driveways and road crossings left in good condition.

Underdrains.

Section 9.—Underdrains shall be laid where indicated on the plans or directed, and shall be built in accordance with said plans. All drains must be carried to a suitable outlet.

In the building of the "V" drains, stones not exceeding eight inches in diameter shall be placed in the bottom of the trench. Over these shall be placed stones gradually diminishing in size until at the top small pebbles and gravel shall be used. The surface of this foundation shall be finished with a crown and thoroughly rolled. Where vitrified pipe is specified for drains it shall be double strength, salt glazed vitrified stoneware sewer pipe, free from all defects impairing its strength. The contract price shall include the furnishing, delivering, hauling, laying and cementing of joints; also the operations of excavating the trench, shoring, sheeting or otherwise supporting the sides, grading and preparing the bottom, backfilling and compacting to the original surface, and the removal of all surplus material.

Surface Drainage.

Section 10.—The side ditches shall have true grades and sufficient incline to furnish a free and uniform flow of water to the nearest natural outlets, which outlets must be so improved where necessary, as to carry the water quickly away from the highway.

Cobble gutters shall be constructed where indicated on the plans. The stones used shall be hard, sound stone set with the longest dimensions vertically. The stones must be six inches to nine inches in diameter. The largest stones shall be selected and set along the edge of the gutter. The cobbles shall be laid in a bed of suitable sand or gravel at least six inches deep and of sufficient height to allow for thorough ramming, after which the surface shall be covered with sufficient sand and all joints

broomed full; in addition an inch of sand shall be spread over all finished work. Cobbles shall be laid in a thin bed of Portland cement mortar on steep grades where so shown on the plans.

Granite block paving shall be laid where indicated on the plans. In general the stone shall be not less than ten inches nor more than fourteen inches long, not less than three and one-half nor more than four and one-half inches wide, and not less than seven nor more than eight inches deep. The blocks shall consist of sound durable granite. Stones in adjoining courses shall break joints not less than three inches.

Foundation for paving shall be formed of gravel which shall not be less than six inches in thickness. The completed paving shall be thoroughly rammed so as to bring each stone to a firm bearing on the gravel and all to a uniform surface. The joints shall be filled with fine gravel sand, or with cement mortar if so specified in the plans.

Intersecting Roadways.

Section 11.—The contractor shall grade a safe, proper and workmanlike connection with all intersecting public and private roads or driveways, according to the direction of the inspector.

All such intersecting roadways along the line of the state road under improvement shall be graveled or macadamized with the second course and finished in the same manner as prescribed for the main road. This surfacing shall be carried to a distance of not less than six feet beyond the gutter line of the road, as indicated by the engineer's stakes, but in no case shall the surfacing be carried beyond the side line of the road as indicated by the fences.

Fencing.

Section 12.—Fence shall be constructed on lines given by the engineer, in accordance with the plans and these specifications.

Posts will be of oak, cedar or other acceptable wood, and six inches square, or seven inches in diameter at the smaller end, if round, after the bark is removed, and seven feet long. They will be matched for guard rails, as shown on plans. Posts will be set three and one-half feet into the ground and the earth firmly tamped around them. They will be placed eight feet apart center to center.

Guard rails will be of well seasoned pine, spruce or other acceptable wood, and firmly secured to the posts, as shown on the plans, in a workmanlike manner.

At culverts square iron posts, one and one-quarter inches square, shall be used set into the coping stone at least four inches and leaded. The side rail shall be bolted to the iron posts with two bolts set in holes drilled through each post.

Where iron pipe fencing is called for, the posts, railings and fittings shall be of wrought iron. The posts of two inch pipe and the railings of two inch and one and one-half inch pipe. Posts to be set eight feet on centers, in stone or concrete footings as shown on detail plans.

All exposed parts of fencing when dry shall be painted with two coats of approved paint of some well known brand.

Cement Stone Masonry.

Section 13.—This masonry shall be built of sound quarry stone, free from structural defects, roughly squared on joints, beds and faces. No pinners will be allowed in the face or under the bearing joints of the stone. All stone shall be laid to lines and grades as given by the engineer.

Courses. The stones are to be laid in regular horizontal courses of not less than twelve inches rise, forming good substantial masonry. Selected stone shall be used at all angles or ends of walls.

Stretchers. Stretchers may vary in length from two and one-half to three and one-half times the rise. The width of all stretchers shall not be less than the rise.

Headers. Headers shall form at least one-fourth of front and rear of wall evenly distributed throughout the wall. The length of headers shall be not less than the thickness of the wall where the wall is four feet or less in thickness. Where the wall is more than four feet in thickness the length of the headers shall be not less than three feet and not more than two-thirds the thickness of the wall. The width of headers shall be not less than the rise. The foundation courses must be all headers.

Joints. The horizontal and vertical joints shall not be over one and one-half inches.

Bonds. All stones shall break joints twelve inches or more and shall be so laid as to thoroughly bond the work. Joints broken over headers will not be allowed.

Cutting. No cutting will be required except what is necessary to get the above joints and to bring the stone to a good bearing.

Backing. The backing and heart of the wall must be of squared stone of the same rise as the face, and must be laid to bond both back and front.

Coping. Side and end walls of culverts and retaining walls shall be capped with stone roughly squared extending across the entire width of the wall, unless otherwise ordered by the engineer. On the steps of wing walls the coping shall extend under the step next above it at least twelve inches.

Cement Mortar. All the stone work must be laid solid in cement mortar made of Portland cement and good sharp sand mixed, one to three, fresh for the work in hand. Retempering will not be allowed. The cement and sand used must be of a quality satisfactory to the inspector.

Pointing. On all exposed faces the joints shall be raked out to a depth of two inches and neatly pointed with Portland cement mortar mixed in the proportion of one to one. Before and during pointing the joints shall be kept properly wet.

Dry Stone Masonry.

Section 14.—This class of masonry shall be constructed at such places as may be indicated on the plans and called for by the Commissioner.

Materials and workmanship shall be the same as specified for cement stone masonry excepting it shall be laid dry.

Concrete Masonry.

Section 15.—The concrete shall be composed of broken stone or screened gravel, and sand,—all of which shall be clean, hard, durable, sharp and free from clay, dirt and other objectionable material,—Portland cement and fresh clean water.

To each part of Portland cement there shall be by volume two (2) parts of sand and five (5) parts of broken stone or screened gravel, and such a proportion of water as the engineer may from time to time determine.

The broken stones or gravel stones shall be of the following sizes:—

For all work less than six (6) inches in thickness the stones may vary in their longest dimensions from one-quarter (1-4) of an inch to three-quarters (3-4) of an inch; between six (6) inches and twelve (12) inches, from one-quarter (1-4) of an inch to one and one-quarter (1 1-4) inches; more than twelve (12) inches in thickness, from one-quarter (1-4) inch to two and one-half (2 1-2) inches.

The cement and sand shall first be thoroughly mixed dry, in the proportions specified, in proper boxes. Clean water shall then be added and the materials thoroughly mixed. The broken stone, previously drenched with water, shall then be deposited in this mixture and the ingredients thoroughly mingled and turned over until each stone is covered with mortar. The batch shall then be carefully deposited without delay and thoroughly rammed in layers not more than six (6) inches in depth until the water flushes to the surface and all the voids are filled.

The concrete shall not be allowed to fall from any considerable height.

The concrete next to the centers or forms shall be spaded so that sufficient mortar will exude from the mass to form a smooth surface.

Should voids be discovered when the forms are taken down, the defective work is to be removed and the space refilled with one to one cement mortar and smoothed over with a neat Portland cement grout, laid on with a brush, until a smooth surface is secured.

Centers and forms, satisfactory to the engineer, shall be provided by the contractor. They shall be made of planed lumber and shall fit the curves and shapes of the work. The sheathing shall be laid tight and shall be made clean before using.

The centers shall be true to the lines, satisfactorily supported and firmly secured, and remain in place as long as the engineer may direct, and shall be replaced by new ones when they lose their proper dimensions or shape.

In connecting concrete already set with new concrete, the surface shall be cleaned and roughened and mopped with a mortar composed of one part Portland cement and one part sand.

When work is done under such conditions that the mortar is liable to freeze, the contractor shall provide the necessary means for and shall thoroughly heat all materials, and also the water and shall thoroughly protect the masonry from damage by rain and frost during and after laying.

During warm and dry weather, and whenever the inspector may direct, all newly built concrete shall be kept well shaded from the sun and well sprinkled with water until set.

In laying concrete under water the concrete shall not fall from any considerable height, but be deposited in the allotted place in a compact mass. The concrete must not be rammed, but levelled with a rake or other suitable tool immediately after being deposited. No concrete shall be laid in running water.

Expanded metal or twisted rods shall be imbedded in the concrete by the contractor as directed by the inspector without extra compensation.

No backfilling or loading whatever shall be placed on or against the concrete masonry until ordered by the engineer.

The cement shall be first-class hydraulic cement of an approved brand. It may be subjected to standard tests (U. S. Government) before or after delivery. Any cement failing to pass these tests shall be rejected and the contractor shall promptly remove it.

The price to be paid for concrete masonry shall include the excavating, the backfilling and all necessary centers and forms, and all work on the same, and no allowance shall be made for coffer-dams, pumping or bailing, or for any materials or labor necessary on account of water.

Catch Basins.

Section 16.—Catch basins shall be built of brick masonry or Portland cement concrete as shown on plan and in accordance with directions.

All bricks used shall be well formed and hard burned.

The joints shall be thoroughly flushed full of mortar, consisting of one part of Portland cement and two parts of coarse, clean, sharp sand free from loam and pebbles.

No joint on the face shall be greater than one-quarter inch.

After the bricks are laid the joints shall be neatly pointed on the inside.

As the walls are laid up they shall be well plastered with mortar on the outside.

The contractor is to furnish and set in place a cast iron frame and cover of a pattern approved by the Commissioner.

Such outlet and inlet pipes shall be inserted in the masonry as directed.

Ends of Culverts and Drains.

Section 17.—All exposed ends of drain and culvert pipes shall be protected by such masonry as the plans indicate.

TIMBER AND PLANKING.

Section 18.—All timber and plank shall be sound and free from sap, shakes, bad knots, or decay and shall be acceptable to the inspector. Timber and planking of the kind called for in the plans shall be used as directed.

GENERAL CONDITIONS.

Section 19.—Sub-Letting Contract. The contractor agrees to give his personal attention to this contract and not to sub-let the same, or any portion without the written consent of the contracting parties.

Competent Workmen. None but experienced and orderly mechanics and workmen shall be employed and they shall be supervised by competent foremen or superintendents at all times.

Liability of Contractor. The contractor shall assume and be responsible for all accidents that may occur, also be liable for all damages to life or property by reason of carelessness, incompetent help or neglect in the prosecution of this work from the commencement of the contract until its final completion and acceptance by the state commissioner of highways.

Guarding and Lighting. The contractor shall maintain sufficient guards by day and night to prevent accidents from travel.

Definitions. Wherever the word "city," "town or organized plantation" or "unincorporated township" is used in this contract and specification and the phrase or clause in which it is used could as well apply to all four classes of political sub-divisions or to any other one class it shall be understood to so apply.

Wherever the word "contractor" is used, it is understood to mean the person or persons who have entered into this contract as party or parties of the second part.

Wherever the word "inspector" is used it is understood to mean the employee of the State employed to perform such duties as are herein described as the duties of the inspector.

Whenever the word "engineer" is used it is understood to mean the state commissioner of highways or his authorized representative. Wherever the word "Commissioner" or "state commissioner of highways" is used it is understood to mean the state commissioner of highways as referred to in chapter 112, Laws of Maine, 1907.

Commencement of work and rate of progress. The contractor shall commence the work herein contracted to be done within fifteen days from the date of awarding the contract. The rate of progress of the work shall be such as, in the opinion of the Commissioner, is necessary for completion within the time specified in the contract.

Inspection—and duties of inspector. The state commissioner of highways may appoint an inspector if he deems it necessary to supervise the construction of roads built by contract under the provisions of the state road law. The inspector shall require all provisions of the contract and specifications to be strictly adhered to by the contractors and

immediately after the completion of each contract and before final payment is made the inspector shall make oath that all work has been completed according to contract, plans and specifications. He will perform such other duties as the Commissioner may indicate.

All material and workmanship shall be subject at all times to inspection and acceptance or rejection by the state commissioner of highways. The inspector has no right to change the plans or specifications without a written order from the commissioner of highways and any departure on the part of the contractor from the original plans and specifications is at the risk of the contractor.

Abandonment or Default by Contractor. Should the contractor at any time fail or refuse to comply with these specifications the state commissioner of highways, after giving four days written notice to the contractor may purchase necessary materials and employ proper workmen and perform the work; the cost of such materials and labor being deducted from the contract price, as the Commissioner may decide.

Provision for Drainage. If it is necessary in the prosecution of the work to interrupt or obstruct the natural drainage of the surface, or the flow of artificial drains, the contractor shall provide for the same, during the progress of the work, in such a way that no damage shall result to either public or private interests. He shall be held liable for all damages which may result from any neglect to provide for either natural or artificial drainage, which he may have interrupted.

Provisions for Travel. The contractor must preserve the roadway on which he is working from needless obstruction, and where necessary he must construct safe and commodious crossings, to be maintained in good order. He shall afford all proper and reasonable means for the accommodation of the public and leave the roadway complete in every manner ready for immediate use.

Changes in Plans. The right is reserved to make such changes in the plans and specifications as may from time to time appear necessary or desirable, and such changes shall in no wise invalidate this contract. Should such changes be productive of increased cost to the contractor a fair and equitable sum therefor shall be added to the contract price, and in like manner deductions shall be made.

State not Liable for Damages. The State shall not be liable to any person or corporation for damages arising from the construction, rebuilding, improvement or maintenance of any highway under this contract.

Acceptance. Before a road will be finally accepted the surface must be firm, hard, smooth, regular and well bound. The shoulders must be well formed and the ditches clear. The spoil banks, borrow pits and all slopes along the roadsides must be left in regular form. All waste materials must be removed and the whole put in a neat and workmanlike condition. Where the macadam or gravel joins paved gutters special care must be exercised in making the joints.

Estimates and Payments. Work performed by individuals or corporations, not towns, under contract shall be paid for as follows: At or

near the end of each calendar month during the progress of the work the state commissioner of highways shall certify to the municipal officers of each town in which such contract work is being performed, the amount and value of the work done on such contract during the month, together with a statement of eighty-five per cent of the value of such work, which shall be the amount due the contractor and payable to him by the town treasurer not later than the fifteenth of the month succeeding the month in which the work was done; provided, however, that thirty days after the state commissioner of highways shall certify to the municipal officers that all work in connection with any such contract has been completed, inspected and accepted, the full unpaid balance of said contract as shown in said certificate shall be payable to the contractor by the town and not before. Payment of the State's share of the joint fund for any town shall be made as follows. When the municipal officers of said town shall certify under oath to the state commissioner of highways, that said town has paid out on account of the state road construction the full amount of its share of the joint fund, the state commissioner of highways shall notify the governor and council of that fact and they shall draw a warrant upon the state treasurer in favor of the town for one-half the State's share of said joint fund, for said town. And upon the completion of work in said town the state commissioner of highways shall notify the governor and council of the amount due said town and they shall draw a warrant upon the state treasurer in favor of the town for said amount. Provided, however, that the State's payment may in the discretion of the state commissioner of highways be made in one sum after completion of the work.

Instructions to Foremen. Whenever the contractor is not present on any part of the work where it may be desired to give directions, orders will be given by the inspector and shall be received and obeyed by the superintendent or foreman who may have charge of the particular work in reference to which the orders are given.

Stopping Work on Account of Weather. The state commissioner of highways may stop any portion of the work, if, in his judgment, the weather is such as to prevent the same being done properly. No allowance of any kind will be made for such stoppage, except an extension of time for the completion of the work as herein provided.

Material for Maintenance. If called for by the plans, in addition to the crushed stone for the top course, twenty-eight cubic yards of stone of a size that will pass through a one and one-quarter inch circular ring but will not pass through a one-half inch circular ring, shall be furnished by the contractor for each mile of road. These materials shall be stored at the roadside at intervals of one thousand feet or more, in neatly formed piles, or if directed by the Commissioner the whole supply shall be piled in the same manner at one place.

Guaranty. The contractor shall guarantee that all the materials used and all the work done under this contract shall fully comply with the

requirements of the specifications, the plans hereinbefore referred to and the instructions of the engineer. Any defects in the complete work, or any part of it, or any failure of the work to fully perform or endure the service for which it was intended, which, in the opinion of the engineer, are attributable to the use of materials, skill or workmanship not in compliance with the said specifications, plans and instructions, that may appear in the work, or any part of it, within a period of one year after the date of the certificate of completion and acceptance, shall be regarded as prima facie and conclusive evidence that the contractor has failed to comply with the said specifications, plans and instructions and the contractor shall, at his own expense, at such time and in such manner as the engineer may direct, repair or take up and reconstruct any such defective work in full compliance with the original specifications, plans and instructions, and as surety for the performance of this guarantee the contractor's bond required by the contract shall remain in full force until the expiration of the period of one year above stipulated in this section.

Local Labor. The contractor, in the construction of this work, shall give preference in employment to local labor.

ESTIMATE OF QUANTITIES.

The estimates below are only approximate, although the result of calculations, and the contractor must be responsible for his own data on which to base his bid.

.....lineal feet of road graded and prepared to receive surfacing material.
.....square yards of gravel road complete.
.....square yards of macadam road complete.
.....lineal feet of.....inch cast iron pipe in place.
.....lineal feet of.....inch cast iron pipe in place.
.....lineal feet of.....inch cast iron pipe in place.
.....lineal feet of.....inch vitrified tile pipe in place.
.....lineal feet of.....inch vitrified tile pipe in place.
.....lineal feet of.....inch vitrified tile pipe in place.
.....lineal feet of.....inch metal culvert in place.
.....lineal feet of.....inch metal culvert in place.
.....lineal feet of.....inch metal culvert in place.
.....cubic yards of cement stone masonry.
.....cubic yards of concrete masonry.
.....cubic yards of dry stone masonry.
.....square yards cobble paved gutters.
.....square yards block paved gutters.
.....lineal feet of iron pipe fencing.
.....lineal feet of wooden fencing.
.....lineal feet of underdrain.
.....catch basins complete with iron cover.

.....feet B. M. spruce plank or timber in place.
.....feet B. M. hemlock plank or timber in place.
.....feet B. M. oak plank or timber in place.
.....feet B. M. hard pine plank or timber in place.
.....pounds steel beams, channels or structural steel in place.

.....

.....

.....

.....

.....

.....

For the purpose of making monthly estimates the undersigned hereby submits the following prices on which it is strictly understood final estimate will not be made.

Proposals will only be received under these specifications for the road complete.

No bids will be received in which the following items are not filled out.

(1) Price per lineal foot of road graded and prepared to receive _____ surfacing material.....

(2) Price per square yard of gravel road complete..... _____

(3) Price per square yard of macadam road complete..... _____

(4) Price per lineal foot of stone "V" drain complete..... _____

(5) Price per lineal foot of.....inch cast iron pipe in _____ place.....

(6) Price per lineal foot of.....inch cast iron pipe in _____ place.....

(7) Price per lineal foot of.....inch cast iron pipe in _____ place.....

(8) Price per lineal foot of.....inch vitrified tile pipe in _____ place.....

(9) Price per lineal foot of.....inch vitrified tile pipe in place.....

(10) Price per lineal foot of.....inch vitrified tile pipe in place.....

(11) Price per lineal foot of.....inch metal culvert in place.....

(12) Price per lineal foot of.....inch metal culvert in place.....

(13) Price per lineal foot of.....inch metal culvert in place.....

(14) Price per cubic yard of cement stone masonry.....

(15) Price per cubic yard of concrete masonry.....

(16) Price per cubic yard of dry stone masonry.....

(17) Price per square yard cobble paved gutters.....

(18) Price per square yard block paved gutters.....

(19) Price per lineal foot of iron pipe fencing.....

(20) Price per lineal foot of wooden fencing.....

(21) Price per lineal foot of underdrain.....

(22) Price per catch basin complete with iron cover.....

(23) Price per foot of B. M. spruce plank or timber in place.....

(24) Price per foot B. M. hemlock plank or timber in place.....

(25) Price per foot B. M. oak plank or timber in place.....

(26) Price per foot B. M. hard pine plank or timber in place.....

(27) Price per pound of steel beams, channels or structural steel in place.....

(28) .....

(29) .....

(30) .....

(31) .....

(32) .....

(Signed).....

Contractor.

The contractor is expected to satisfy himself as to the nature, character and quantity of the labor and material required by a personal examination of the work contemplated.

PROPOSAL.

FOR MAKING PERMANENT IMPROVEMENTS TO A SECTION OF PUBLIC HIGHWAY OR STATE ROAD LOCATED IN THE.....
BEGINNING AT .....AND
EXTENDING TO.....
DATE OF PROPOSAL.....
TO .....
.....

The undersigned hereby propose to furnish all materials and construct the above named section of public highway or state road at the following gross price:

For the complete work in strict conformity with the contract, plans, specifications and profiles the sum of.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Signed).....

CONTRACT
FOR MAKING PERMANENT IMPROVEMENTS TO A SECTION OF PUBLIC HIGHWAY.

STATE ROAD CONTRACT NO.....

This agreement made and entered into this.....

day of.....19.....between .....

.....

in the State of Maine of the first part, and.....

.....

of the second part.

Witnesseth That for and in consideration of the payments herein mentioned, the party of the second part hereby agrees to furnish all teams, tools, machinery, material and labor necessary to complete the work contemplated by this argreement on or before..... .....19.....in strict accordance with the General Conditions and Specifications hereto attached, which, together with the plans of the work on file in the office of the state highway commissioner, at Augusta, Maine, are hereby attached to and form a part of this contract.

It is hereby mutually agreed that the amount to be paid by the party of the first part, to the party of the second part, and accepted by the party of the second part as full compensation for all work done and materials furnished according to this contract and specifications, shall be the sum of.....

.....

.....

dollars.

Payments to be made at such times and under such conditions as are set forth in the General Conditions and Specifications hereinbefore mentioned and attached.

In Witness Whereof, the parties to these presents, have hereunto set their hands and seals the year and date first above written.

.....

.....

.....

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.....

.....

BOND.

Know all men by these presents

That .....

.....

.....as principal

and .....

.....as surety.....

are held and firmly bound unto the.....

.....in the State of Maine

in the sum of.....dollars

to be paid to the said.....

or.....successors and assigns, for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally firmly by these presents.

The condition of this obligation is such that if the said principal,....

.....

shall well and truly keep and perform all the terms and conditions of the foregoing contract for making permanent improvements to a section of public highway in the .....

.....

on.....part to be kept and performed, and shall indemnify and save harmless said.....

.....

against all loss, costs, claims and suits for damage to person or property from carelessness or want of due care, or any act or ommission on the part of said principal.....

.....

during the performance of said contract, then this obligation shall be void and of no effect; otherwise, it shall remain in full force and virtue.

Signed and sealed this.....day of .....19.....

Witnesses:

.....

.....

.....

.....

.....

.....

.....

MEETINGS.

During the year the following meetings have been held: In April and May the regular series of county road meetings.

On July thirty-first a meeting was held at the Portland Board of Trade rooms, arranged through the courtesy of that organization and its secretary, Mr. Maurice C. Rich, attended by the municipal officers and business men representing nearly every town through which the trunk line from Portsmouth, New Hampshire, to Portland, Maine, passes.

In December a series of meetings was arranged through the co-operation of the Office of Public Roads, United States Department of Agriculture, which was addressed by D. Ward King of Missouri, on the method of taking care of earth roads with the split log drag.

In March the commissioner gave a talk before those in attendance at the Farmers' week exercises at University of Maine, Orono.

In November the commissioner attended the conference of New England governors in Boston, and early in December attended a second meeting in the same city at which the state highway commissioners of the New England states discussed the papers on highway construction, interstate trunk lines of highway and automobile regulation presented at the conference and made recommendations to the governors relative to uniform legislation along these lines. The papers in full are given elsewhere in this report and we commend a careful reading of them to anyone seeking information on the matters discussed.

County Road Meetings.

The county road meetings held in 1908 were certainly the most successful meetings of the kind so far held. The attendance was about double that of any prior year and there was

shown a greater degree of interest than ever before in all matters pertaining to road building. We believe the influence of these meetings is beginning to show in the better construction of state roads which has been so generally noticeable the present season. In our opinion these meetings should be continued.

Meeting at Portland, July Thirty-first.

This meeting was arranged through the courtesy of the Portland Board of Trade and its secretary, Mr. Maurice C. Rich, as a direct outcome of information coming to the department through the press of the State in relation to the dangerous condition of the trunk line of highway leading from Kittery to Portland, Maine. The complaints were made principally by automobilists, both resident and non-resident. The reports stated that a considerable number of tourists coming into the State for the purpose of passing a vacation turned back on account of the bad condition of this thoroughfare and by spreading the information abroad kept back others who were intending to make similar trips. The report also stated that those who completed the trip into the city of Portland did so to the great detriment of their machines and oftentimes suffered serious injury which necessitated expensive repairs. As a large percentage of the tourist travel through New England at the present time is by means of the automobile we considered that the business interests of the State demanded that this matter should be investigated and, if possible, immediate steps taken to remedy the conditions.

The newspaper stories were substantiated by several gentlemen present who had traversed the route both by automobile and team. As a means of immediate relief the following general suggestions were made to the meeting:

That the municipal officers of each town, through which the thoroughfare runs, should arrange to have so much of the thoroughfare as lies within the limits of their respective towns patrolled by men and teams at stated intervals, for example: Once a week or once a fortnight or once a month—the oftener the better—for the purpose of removing loose rocks, filling with suitable material any ruts or small depressions that may have occurred since the last patrol and doing such other

small maintenance work on each of these trips as would appear to be necessary. The idea being that a small regular expenditure for doing the little things which need most to be done at the exact time when they are needed, if followed up, will most certainly result in a marked improvement over the whole road. Many times a considerable section of road, like one or two miles, is good with the exception of two or three very short and very bad places and the impression exists after riding over the road that the whole road is bad. A large force should not be necessary to carry out this idea. A team and two or three men should cover one to two miles a day in doing this kind of work. The main idea is doing the thing on some systematic plan so that the little faults will be corrected before they get to be large ones, when they will be much more expensive to handle.

It is thought that this suggestion will not apply to the long stretch of sand road described as lying in the town of Wells. It appears to the commissioner that clay or gravel or some other hardening material should be put upon the surface of this road.

We do not know whether these suggestions were followed or not but are inclined to think that they probably were not.

Touching on the amount of automobile traffic over this thoroughfare the following is interesting:

On October sixteenth the State commissioner inspected the state road work in the town of Kittery; the chairman of the board of selectmen was in charge of the work. In reply to a question as to the number of automobiles passing over this road we were informed that as many as two hundred a day had been seen.

December Meetings.

From the fact that a large percentage of the public highways of Maine have been reported by municipal officers as being "dirt roads" or "unimproved roads" it has always appeared to this office that the improvement of these roads should be kept in mind along with our efforts for the improvement of the main thoroughfares. To this end a considerable portion of the time at each of our county road meetings has been devoted to a discussion of the best methods of maintaining dirt roads.

The implement known as the King split log drag has figured prominently in all of these discussions and the commissioner has constantly urged its use upon this class of highways. This year the department was able to secure, through the Office of Public Roads, United States Department of Agriculture, Washington, D. C., the services of D. Ward King, the discoverer and advocate of the split log drag, to deliver a series of lectures. Altogether seven lectures were given; three before meetings of county commissioners and municipal officers; one before the State Grange in session at Waterville; two before boards of trade, and the final meeting in Portland at the Board of Trade Rooms before a joint audience of business men, county commissioners and municipal officers from Cumberland and York counties.

The meetings were highly successful and a large degree of interest was aroused in this method of caring for the dirt road. We feel that good must certainly result from this series of meetings. As a direct result of the meetings about one hundred seventy-five pledges were secured from people who promised to make and use a drag next year. Anyone desirous of obtaining first-hand information on this matter may do so by asking the Office of Public Roads, Washington, D. C., for a copy of Farmers' Bulletin No. 321, describing the construction and use of the split log drag.

MEETING OF STATE HIGHWAY COMMISSIONERS OF NEW ENGLAND.

BOSTON, December 8, 1908.

In response to a call by Mr. Harold Parker, chairman of the Massachusetts Highway Commission, to the chiefs of the highway departments of the several New England states, to consider the papers relating to highways and motor vehicles which were presented at the conference of the New England governors held in Boston on the twenty-third and twenty-fourth days of November, in the year 1908, the following officials assembled at the office of the Massachusetts Highway Commission, 15 Ashburton place, Boston, at 2.30 o'clock P. M., Mr. Charles W. Gates, representing the State of Vermont; Mr. Arthur W. Dean, representing the State of New Hampshire; Mr. Paul D. Sargent, representing the State of Maine; and Messrs. Harold Parker, John H. Manning and William D. Sohier, representing the State of Massachusetts.

On a motion of Mr. Dean, duly seconded, Mr. Harold Parker was elected chairman of the meeting, and on a motion of Mr. Sohier, duly seconded, Mr. Sargent was elected secretary.

On a motion of Mr. Gates, duly seconded, it was unanimously

Resolved, That if good roads are to be built and maintained at any reasonable cost, it is essential that expenditures for such work be made only after proper study and upon plans and specifications made by experienced experts. Under the present system, or lack of system, of local control and supervision, a great amount of money is wasted. As a preliminary step in the right direction we recommend that all the main highways and thoroughfares outside of the thickly settled portions of the cities and towns be put as soon as possible under the supervision of a central control or authority and its engineers; that all money spent thereon be expended under the direction and supervision of such central authority; and that all money

needed therefor be provided by the states, counties, cities or towns in whole or in part by each, as may be deemed expedient. The question of maintenance is at least as important as that of original construction. It is of no use to build roads at great expense and then allow them to go to pieces for lack of necessary repairs. We recommend that, whenever any money provided by the State has been spent on any highway, thereafter such highway shall be repaired and maintained under the direction and supervision of the central authority and its engineers; that provisions be made by law to provide yearly the necessary money, this being done by dividing the expense between the State, county, city or town in such way as seems best, either in the proportion which each paid for the original construction, or otherwise; and that a part of the money be also provided from the fees and fines collected under the laws of the state relating to the registration and operation of motor vehicles and the licensing of the operators thereof.

On a motion of Mr. Sohier, duly seconded, it was unanimously

Resolved, That it is the opinion of this meeting that more than fifty per cent of the damage done to the main thoroughfares is occasioned by automobiles; that they do greater damage than other vehicles, proportionately, on account of their speed, their weight and their tires, and also because of the great distances covered by them; and we recommend that a graded registration fee, based upon horse power, be imposed upon automobiles, the fund to be used for the construction and maintenance of the main thoroughfares.

On a motion of Mr. Manning, duly seconded, it was unanimously

Resolved, That the improvements of the main thoroughfares of each state should be planned to connect with the main thoroughfares of every other state, and to provide good highways on the principal lines of interstate travel.

On a motion of Mr. Dean, duly seconded, it was unanimously

Resolved, That all directions and regulations relative to the operation of motor vehicles and to the speed of such vehicles in particular ways and places should be posted conspicuously on all roads or ways affected thereby, whether such directions and

regulations are in the nature of warnings of dangerous places or to call attention to the laws, and that all signs or devices used for that purpose should be uniform in design, with characters of sufficient size to be easily seen from an approaching motor vehicle, the distinctive features of such signs or devices to be at least four inches in height.

On a motion of Mr. Sargent, duly seconded, it was unanimously

Resolved, That the present guide-board laws of the several states should be strictly enforced, and city and town officers, whose duty it is to erect and maintain such guide boards, should be compelled to comply with the laws.

On a motion of Mr. Sargent, duly seconded, it was unanimously

Resolved, That there should be in each state, a uniform law relating to the widths of tires on all vehicles, and that until such uniform law be adopted such laws as are now on the statute books of the several states be more strictly enforced than they are at the present time, since the drawing of heavy loads on narrow tires is a prolific source of damage to the roads of New England.

On a motion of Mr. Sohier, duly seconded, it was unanimously

Resolved, That copies of all resolutions adopted at this meeting be forwarded to the highway commissioners of the State of Rhode Island and to the highway commissioner of the State of Connecticut, who are not represented at this meeting, for their examination and action thereon; and that after the wishes of said officials are made known the several resolves be presented to His Excellency, Curtis Guild, Jr., Governor of Massachusetts, for transmission by him to the Governors of the several New England states.

At 9.45 P. M. the meeting adjourned.

PAUL D. SARGENT,
Secretary.

CHANGES OF LOCATION OF STATE ROAD ON PETITION.

Under the provision of section 2 for changing location of state road on petition of a majority of the legal voters of any town, fifteen petitions have been received and acted upon and two, which were received late in the season when the time of the commissioner was fully occupied with the supervision of state road construction, will be taken up early in the spring.

The principal features of each petition acted upon and the decision of the board upon the same are shown herewith.

The form of petition is as follows:

PETITION FOR CHANGE OF LOCATION OF STATE ROAD.

.....
(Place and date.)

PAUL D. SARGENT,
State Commissioner of Highways,
Augusta, Maine.

The undersigned being a majority of the legal voters of the town of.....hereby state that in their judgment the state road as now designated by the county commissioners is not the main traveled thoroughfare in said town and that public convenience would be better served by the designation of the following named road as state road, to wit: the road beginning

(Here insert description of road petitioned for.)

And under the provisions of section 2, chapter 112, P. L. 1907, we therefore request that you will order a public hearing upon this petition at some convenient place where all parties interested may be heard.

(Names of Petitioners.)

I hereby certify that the total number of voters registered in the town of..... is.....

ATTEST:

.....
Town Clerk.

Findings were made in triplicate, one copy going to the municipal officers of the town, one copy to the county commissioners, who made the original designation and one copy being filed with the state highway department. The form of finding is as follows:

FINDING UPON THE PETITION FOR A CHANGE OF LOCATION OF STATE ROAD IN THE TOWN OF ..... COUNTY OF ....., STATE OF MAINE.

.....

WHEREAS A certain road was designated as the state road in said town of .....by the county commissioners of said county of ....., said road being previously designated as follows:

(Here insert description of designated state road.)

WHEREAS A majority of the legal voters in said town of..... presented a petition to the state commissioner of highways stating that, in the judgment of the petitioners, said road designated by the county commissioners, as aforesaid, is not the main travelled thoroughfare in said town of ..... and that public convenience would be better served by the designation of some other road as the state road.

WHEREAS Said petitioners described such other road as follows:

(Here insert description of road petitioned for.)

WHEREAS Upon said petition the said state commissioner of highways gave notice in the following language, to wit:

Upon the above petition a public hearing will be held at ....., on....., 1908, at ..... at which time and place all parties interested will be heard.

WHEREAS The said state commissioner of highways, ..., chairman of selectmen of said town of ..... and ....., a county commissioner from the county of ....., being a county adjoining said county of ..... constituting a board to hear said petition in accordance with the provisions of the P. L. of 1907, at the place and time designated in said notice, met to hear said petitions and the parties interested and to designate the state road.

After a full hearing of the parties interested and the witnesses upon the one side and the other we, the said Board constituted as aforesaid, do hereby decide, determine and (here insert finding of board) decree as follows:

IN WITNESS WHEREOF We hereunto set our hands this..... day of ....., 1908.

.....
State Commissioner of Highways.

.....
Chairman, Selectmen.

.....
County Commissioner.

PETITIONS HEARD.

Alton, Penobscot County. Original designation: "Road leading from Hudson to Oldtown by way of Whidden's Mill."

Road petitioned for: "Road beginning at the Oldtown line and running north to Lagrange line."

Petition, signed by 43 voters out of a total of 80, received at department, June 16, 1908.

Hearing ordered for July 1, 1908, at Alton station. Held as ordered.

Decision rendered Sept. 22, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

James A. Ham, Chairman selectmen.

Elmer E. Brown, County Commissioner, Piscataquis County.

Brewer, Penobscot county. Orginal designation: "Road beginning at the toll bridge across Penobscot river, thence easterly by the way of State street, through Brewer, by road easterly of Whiting hill to the Holden town line."

Road petitioned for: "Road beginning on the present state road at Holden town line, thence westerly along the present state road to the junction of Wilson and State streets, thence westerly along said State street to Main street, thence southerly on said Main street to Orrington town line."

Petition signed by the mayor and ten other municipal officers, also a supplementary petition signed by six ex-mayors of Brewer, received at department June 29, 1908.

Hearing ordered for July 21, 1908, at the aldermen's room, City hall, at 2 P. M. Held as ordered.

Decision rendered July 29, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

Charles H. Small, Mayor.

Lewis E. Jackman, County Commissioner, Aroostook County.

Brighton plantation, Somerset county. Original designation: "Road leading from the north line of Athens by the direct road to Brighton village, thence northerly to Mayfield line."

Road petitioned for: "The road beginning at Brighton village leading easterly to Wellington line, instead of road leading north from Brighton village to Mayfield plantation."

Petition signed by 64 voters of a total of 105, received at department May 12, 1908.

Hearing ordered for June 5, 1908, at 1 P. M. at Farrin's hall, Brighton plantation. Held as ordered.

Decision rendered June 17, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

H. L. Wyman, Chairman municipal officers.

Edward P. Blanchard, County Commissioner, Piscataquis County.

Caribou, Aroostook county. Original designation: "Road beginning at the north line of said Caribou on the Van Buren road, so called, thence southerly on said road to Main street in Caribou village, thence along said Main street to the Presque Isle road to farm of Albion Estes (said farm being known as the George F. Sampson place), thence southerly along the back Presque Isle road, so called, to the south line of the town of Caribou."

Road petitioned for: "Beginning at the Woodland town line near the farm of Henry Armstrong and thence southerly and easterly through Caribou village to Main street, thence southerly to Water street, thence easterly along Water street and the Fort Fairfield road to the Fort Fairfield town line."

Petition signed by 496 voters out of a total of 949, received at department May 18, 1908.

Hearing ordered for June 12 at 10 A. M. at selectmen's office. Held as ordered.

Decision rendered June 17, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

Fremont Small, Chairman selectmen.

W. R. Clark, County Commissioner, Penobscot County.

Columbia Falls, Washington county. Original designation: "Road beginning at the west line of said Columbia Falls, thence

easterly through Columbia Falls village, to the Jonesboro line, on the lower road."

Road petitioned for: "Road beginning at the line between Addison and Columbia Falls on the Merritt road, so called, and extending by the schoolhouse in Central district to the line of township Nineteen by the direct road."

Petition signed by 93 voters out of a total of 179, received at department May 23, 1908. Hearing ordered for June 15, 1908, at 10.30 A. M. at town hall. Held as ordered. Adjourned to July 16 at 2 P. M., 1908, at same place.

Decision rendered July 29, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

E. A. White, Chairman selectmen.

John P. Eldridge, County Commissioner, Hancock County.

Enfield, Penobscot county. Original designation: "Road running from Lincoln town line via river road southerly to Passadumkeag town line."

Road petitioned for: "Road beginning at the Lowell town line running through the village of Enfield to the 'Hammett' road and then along said road to the 'Military' or West Enfield road, and along that road to the eastern terminus of the Penobscot river bridge that connects the towns of Enfield and Howland."

Petition signed by 121 voters out of a total of 202 received at department July 28, 1908. Hearing ordered for August 8, 1908, at 11 A. M. at grain store of A. R. Hopkins Company in Enfield village. Held as ordered.

Decision rendered August 8, 1908, ordering that the road petitioned for be designated as state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

Robert Brady, Chairman selectmen.

Elmer E. Brown, County Commissioner, Piscataquis County.

Farmingdale, Kennebec county. Original designation: "Road known as the 'Litchfield road' beginning at the Hallowell line and ending at the West Gardiner town line."

Road petitioned for: "Beginning at the north line of the city of Gardiner, being the south line of Farmingdale, and extending northerly through said town of Farmingdale to the south line of the city of Hallowell, being the street or road in said town known as Main street and the one which would be in continuation of the state road through Hallowell."

Petition signed by 129 voters out of a total of 237, received at department June 13, 1908. Hearing ordered for June 26, at 2 P. M. at town house, Farmingdale. Held as ordered.

Decision rendered July 6, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

A. C. Stilphen, Chairman selectmen.

Wilbur F. Cate, County Commissioner, Lincoln County.

Lewiston, Androscoggin county. Original designation: "Road leading from Davis' corner to Sabattus."

Road petitioned for: "Beginning at the Webster town line on Sabattus street and running to Davis' corner, thence continuing on Sabattus street to Main street and thence along Main street to the Androscoggin river and the city of Auburn."

Petition signed by the mayor and four other municipal officers, the number of aldermen being seven, received at department August 8, 1908. Hearing ordered for August 22, 1908, at 10.30 A. M. at the office of the mayor, city building, Lewiston. Held as ordered.

Decision rendered August 25, 1908, ordering that the road petitioned for be designated as state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

Frank A. Morey, Mayor.

Frank S. Adams, County Commissioner, Sagadahoc County.

Mechanic Falls, Androscoggin county. Original designation: "Road leading from Mechanic Falls to Oxford town line, on road leading to Norway."

Road petitioned for: "Road beginning at the Oxford town line, on the road from Norway to Mechanic Falls, said road to Pleasant street, Pleasant street to Main street, Main street to its intersection with Pine, then the road leading to Poland, to the Poland town line."

Petition signed by 244 voters out of a total of 479, received at department June 18, 1908. Hearing ordered for August 4, 1908, at 1 P. M. at office of selectmen. Held as ordered.

Decision rendered August 11, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Highway Commissioner.

Frank A. Millett, Chairman selectmen.

C. R. Hall, County Commissioner, Franklin County.

Newburg, Penobscot county. Original designation: "Beginning at the Hampden town line on the Newburg north road, thence westerly by said road via North Newburg, and Arnold post offices through the town of Newburg to the Dixmont town line."

Road petitioned for: "Beginning at the Hampden town line in the middle county road, it being the road leading from Bangor to Augusta."

Petition signed by 128 voters out of a total of 235, received at department May 14, 1908. Hearing ordered for June 4, 1908, at 1.30 P. M. at the town house, Newburg. Held as ordered.

Decision rendered June 17, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Highway Commissioner.

C. H. Whitcomb, Chairman municipal officers.

Henry Crowell, County Commissioner, Somerset County.

Plymouth, Penobscot county. Original designation: "Road leading from East Newport to Dixmont (north post office) by the way of Plymouth village."

Road petitioned for: "Road commencing at intersection of roads south of Long bridge (so called) in said town, thence easterly on road by dwelling of Thomas Nutter and dwelling house of F. M. Loud to town line of Dixmont."

Petition signed by 98 voters out of a total of 174, received at department May 11, 1908. Hearing ordered June 3, 1908, at 1 P. M. at school house in Precinct No. 1. Held as ordered.

Decision rendered June 3, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,
Paul D. Sargent, State Commissioner of Highways.
M. J. Dow, Chairman municipal officers.
Henry Crowell, County Commissioner, Somerset County.

Portland, Cumberland county. Original designation: "Beginning at Falmouth town line on Presumpscot street, thence over Presumpscot street to Washington avenue, thence over Washington avenue to Cumberland avenue, thence over Cumberland avenue to Vaughan street, thence over Vaughan street to Danforth street, thence over Danforth street to South Portland town line."

Road petitioned for: "Beginning at the intersection of Danforth street and West Commercial street, thence easterly through Danforth to Vaughan street, thence northerly through Vaughan street to Cumberland avenue, thence easterly through Cumberland avenue to Washington avenue, thence through Washington avenue across Tukeys' bridge through Lunt's corner and Allen's corner to Auburn street, thence northerly by Auburn street to the division line between the city of Portland and the town of Falmouth."

Petition signed by the mayor and seven aldermen, the whole number of aldermen being nine, received at department June 2, 1908. Hearing ordered June 20, 1908, at 10 A. M. at city council room in Board of Trade building, 34 Exchange street, Portland. Held as ordered.

Decision rendered June 29, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,
Paul D. Sargent, State Highway Commissioner.
Bion Bradbury, Jr., City engineer.
A. B. Nealey, County Commissioner, Androscoggin County.

Rockland, Knox county. Original designation: "Road beginning at the South Thomaston line on Main street, thence continuing in a general northerly direction along said Main street to the pavements to a point nearly opposite the General Berry Hose Company house, said road being about three-quarters of a mile in length."

Road petitioned for: "Beginning at the South Thomaston line and running in a general northerly direction along Main

street to the pavement to a point nearly opposite General Berry Hose Company house, said distance being about three-quarters of a mile, thence from said point opposite General Berry Hose Company house along Main street in Rockland, toward what is called the Rankin block, situate on said Main street, thence leaving said Main street and following North Main street in a northerly direction to Maverick street, thence westerly by Maverick street to George Hart's store to the old county road, thence southwesterly by said county road about 100 feet to Blackington's corner, formed by the intersection of Lake avenue with said old county road, thence in a general westerly direction by said Lake avenue (formerly called Pond road) for about one-half mile, thence in a northerly direction still by said Lake avenue to the Rockport town line."

Petition signed by the mayor and 4 aldermen, out of a total of 7, received at department July 31, 1908. Hearing ordered for August 6, 1908, at 2 P. M. at the office of the county commissioners, Court house, Rockland. Held as ordered.

Decision rendered August 6, 1908, ordering that the road petitioned for be designated as the state road.

Sitting at hearing,

Paul D. Sargent, State Commissioner of Highways.

Rodney I. Thompson, Mayor.

Chester D. Hall, County Commissioner, Lincoln County.

Wayne, Kennebec county. Original designation: "Road beginning at Winthrop town line near the residence of J. S. Hammond, running through Main street in Wayne village and ending at Leeds line on road leading to North Leeds."

Road petitioned for: "Road beginning at the Winthrop town line leading through the village of North Wayne, in said town of Wayne to the road called Fayette street in said village, and thence through said village of North Wayne and the town of Fayette to the village called Fayette Mills."

Petition signed by 104 voters out of a total of 187, received at department May 13, 1908. Hearing ordered for June 1, 1908, at 1 P. M. at selectmen's office, Wayne village. Held as ordered.

Decision rendered June 22, 1908, ordering that the road as originally designated by the county commissioners be designated as the state road.

Sitting at hearing,
Paul D. Sargent, State Commissioner of Highways.
I. D. Hodsdon, Chairman selectmen.
George Parcher, County Commissioner, Androscoggin County.

Windham, Cumberland county. Original designation: "Road beginning at Westbrook line, thence over the Bridgton and Portland stage road to Raymond line."

Road petitioned for: "Road beginning at Charles Anthoine's and extending to Foster Bros. and Company store;" said road being described in another petition as follows: "Road beginning at Charles Anthoine's and extending to Foster Bros. and Company store and past the White school house;" said road being described in another petition as follows: "At or near the residence of Charles Anthoine and running in a northwesterly direction by the White school house (so called) to North Windham, the most direct route;" said road being described in another petition as follows: "Near the residence of Charles H. Anthoine and ending near the store of Foster Bros. and Company, connecting with the state road, as named by the county commissioners in 1902."

Petition signed by 349 voters out of a total of 638 received at department May 18, 1908. Hearing ordered for June 2, 1908, at 1 P. M. at town house, Windham. Held as ordered.

Decision rendered June 17, 1908, ordering that the road as petitioned for be designated as the state road.

Sitting at hearing.
Paul D. Sargent, State Commissioner of Highways.
George A. Newell, Chairman municipal officers.
Dean A. Ballard, County Commissioner, Oxford County.

RECOMMENDATIONS.

We believe the state road law is fundamentally correct. Like every other new law it was more or less experimental and its weak points could only be brought out by actual trial. No real serious defects have been found.

Generally speaking it has been satisfactory. No trouble has been experienced with any town which has really desired to make real improvement upon its state road. A few misunderstandings have arisen between municipal officers and the department, but they have been cleared up by correspondence or by personal conference.

Some complaints have been made that the law was too complicated. A number of suggestions have been received to the effect that the law should be so amended that towns of low valuation might have a larger joint fund in order that more progress could be made in the improvement of their state road. Suggestions have also been heard that the state highway department should be given more authority over state road work.

We suggest the following changes or amendments to the law:

Combine sections 4 and 5 so that one amount only will have to be furnished by the town in order to secure state aid and that by way of a special appropriation made at the annual meeting.

Increase amount per thousand of valuation to be appropriated by towns of low valuation and possibly give these towns a chance to appropriate more than the fixed amount if they so desire.

Consider advisability of discontinuing the payment of aid to unincorporated townships.

Larger appropriation by the State. This may be accomplished by increasing the mill tax or by appropriating an amount from the general income of the State to be added to the fund now provided by one-third of a mill on the state valuation.

Amend section 13 so that the balance of state fund after apportionments have been made may be distributed by the state commissioner of highways subject to the approval of the governor and council.

Allow cities and towns to enter into contract with the State for improvement of state road immediately on completion of plans and specifications if terms mutually satisfactory can be agreed upon.

Provide for state aid for maintenance of state roads already constructed and for supervision of same by state highway department.

NEW ENGLAND CONFERENCE.

The following papers were given at the First New England Conference held in Boston November 23 and 24, 1908. We print the papers in full and recommend a careful reading of them by everyone interested in improved highways.

THE CONSTRUCTION OF HIGHWAYS.

By HAROLD PARKER, C. E.

The subject which has been assigned to me is one which I believe to be of the greatest economic importance, and, although a subject the details of which cannot be entertaining except to road-builders themselves, yet, to you who are endeavoring to bring about conditions in the administration of public interests which shall affect the whole of New England it must appear that the question of highways and their construction is vital.

I assume that, in discussing the question of road construction, I shall be at liberty to take into account the general question of the development and economics of the improved road in its relation to modern life and necessities.

It is wholly unnecessary to point out that means of transportation may mean the success or failure of any community. It has been said by many men, in treating of this subject, that the measure of the civilization of any country is determined by the condition of its means of transportation. As an evidence of civilization I do not agree wholly with this conclusion; but as an evidence of prosperity and development, the condition of the roads of any community is certainly of the greatest significance.

ECONOMICS.

In considering the economic features of highways, I shall only bring to your attention the fact that from the earliest times the growth of the highway has in some degree, kept pace with

the development of the country. It has not always been a uniform growth, and, as needs for improved lines of communication have developed, such lines have made at times more advanced steps toward perfection than at others. This may be shown briefly by the fact that in the United States, where vast areas of territory were taken up by pioneers, the roads connecting settlements one with another were neglected because the more immediate necessities appeared to absorb all the attention of the people. It was found, in the progress of time, that the means of communication must be improved, or that the settlers would be left behind in the race; and so a century ago we find the United States government taking up the problem of building great thoroughfares for improved lines of communication between the east and the west, the remains of which are now plainly to be traced through Maryland, West Virginia and Ohio, connecting the Mississippi river with the Atlantic ocean.

It was soon found that the building of these great thoroughfares by the central government was not feasible; their continuation was abandoned, and the roads reverted to the states in which they were located.

Various attempts at different times, more or less abortive, were made by the state governments and by the communities to evolve systems of highways, none of which were ever rounded out into a whole. We have found the toll-road system tried and abandoned. Then the canal and river navigation was developed in order to bring the producing districts into communication with the markets, but no active steps were taken toward securing successful means of transportation until the introduction of the steam engine.

Since that time the United States have devoted their energies, so far as intercommunication is concerned, to the building up and development of the railroad systems, until today more than half of all the railroads in the world are within the limits of the United States, and their carrying capacity and the rapidity at which they operate are among the most extraordinary accomplishments of our day. Col. F. V. Greene truly said a decade or more ago: "The United States have the longest and best roads in the world. But they are in the form of railroads. And the construction of these railroads has absorbed so much energy and capital that there has not until now been time to

construct good common roads, nor has the necessity for them been evident."

After the practical completion of the railroad systems of the United States the intelligence of the people directed their energies toward perfecting a system of highway communication between the farmers, the manufacturers and the railroads. The question of building roads amply strong and with sufficiently smooth surfaces to permit the traffic to pass over them with the greatest economy is now presented to the people of the United States and to us in New England for solution. In other words, how shall the money raised by taxation be spent in order to secure an equivalent in product, so far as the highways are concerned?

In Europe, during the period that has elapsed between the days of the Roman conquests and the present time, the history of roads has been varied and more or less erratic, for when the Romans took possession by conquest of far distant provinces, it was one of their first endeavors to connect them all with the capital by means of thoroughly well built highways. The remnants of these Roman roads are plainly visible to this day, and in some instances are still in use, although it is possible that no American would care to ride over them. It was found in all parts of Europe, since the days of the Romans, where one country waged war upon another, that improved ways must be furnished by the government over which armies and their impedimenta could be quickly transported. This was done with more or less thoroughness up to the time when Napoleon made his famous roads over the Alps, and since that time France has kept the lead in its construction and maintenance of systems of highways throughout its territory.

England, up to within a hundred years, was so deplorably deficient in good roads that travelers were practically cut off from prosecuting their journeys during the bad season.

I have already mentioned the relative growth and development of highways and railroads. I may add that their relation to each other develops some interesting facts.

Before the days of railroads the only means of communication was by road or by water. Then the road was in the nature of a great thoroughfare which gave access from the outlying

districts to the great cities or markets. Waterways were used as supplementary to the roads in transporting these products to the ocean for transference into ships or to the great centers for consumption, and also by travelers when in the pursuit of business or pleasure. In other words, one was supplementary to the other, and, in proportion to the excellence of its means of communication, a community thrived or failed.

The building of railroads took away wholly the significance of roads for long distance travel. When railroad communication was established throughout the country, the purpose of the highway, aside from its purely local uses, was to bring the products of the field or the mill to the nearest point on the railroad. No matter how poor the road was, because of the short hauls and by the use of additional horses, at a seemingly small cost, the roads could be traversed. So they were neglected and allowed to deteriorate, and their relative value to the community was lost sight of.

Now it is plain that of all of these different factors in modern life each fills its important place, and the evolution of modern civilization has gradually brought them to their true relation to each other. The feeling that better methods shall be used in building and maintaining roads has become universal throughout the whole of this country, because the people themselves, having adjusted the relative values of different conditions of transportation, have determined that the highway, as the first step in the movement of all things, shall not only be as perfect in its construction as its importance merits, but that the money of the people shall be expended wisely and intelligently.

The Office of Public Roads of the United States Department of Agriculture in a recent bulletin states that there are approximately 2,151,570 miles of public roads in the United States; that of these seven per cent only are improved, leaving ninety-three per cent of them in bad condition. The investigation of that office shows further that the average cost of moving a ton of heavy material is about 25 cents; that on stone roads in good condition the cost of moving a ton is 8 cents; on ordinary stone roads, 12 cents; on earth roads, rutted and in the condition of the ordinary country road, in the bad season, 29 cents; on wet, sandy roads, 33 cents; and on dry, sandy roads, 64 cents. The

same office asserts that a reduction per ton of from 25 to 12 cents would mean an annual saving in the United States of over $250,000,000.

It is needless to say that such a consummation can never be reached in this country, but it is well to consider how serious a matter the transportation problem is and what savings in cost can be made by even slight improvements in the roads, and to remember that in the end the consumer always has to pay the tax.

The Office of Public Roads has also collected some statistical information concerning the relation of roads to the development of the people. They classify, for purposes of illustration, the states of Arkansas, Missouri, Mississippi and North Carolina, as having "bad roads," and the states of Massachusetts, Connecticut, New Jersey and Rhode Island, as having "good roads," and the following table is interesting.

	Total Population.	Total number Illiterates.	Per cent of Illiterates.	Per cent Roads Improved.
Arkansas, Missouri, Mississippi, North Carolina,	7,863,309	374,788	4.76	1.51
Massachusetts, Connecticut, New Jersey, Rhode Island,	6,025,991	20,577	0.34	30.55

The foregoing table shows, to a very marked degree, that in those communities where illiteracy is prevalent the roads are in very poor condition and that the percentage of improved roads is vastly greater where the population is of a higher grade. This is not, in itself, wholly conclusive, because in the parts of the country referred to, where the people are ignorant, it is generally due to local and physical conditions, and the need for "good roads" there is naturally very much less than in other parts of the country.

Massachusetts was one of the first states in the Union to awaken to the need for better roads and in the year 1894 the beginning of a great system of State highways was inaugurated here. Under legislative appropriations varying in amount from year to year, some $7,000,000 has been expended in this work, and the State has now nearly 800 miles of smooth, hard roads with easy gradients to show for its expenditure. In addition to the State highways so built, the Commonwealth has spent about $350,000 for improving some 160 miles of road in small towns, many of which are distant from the main lines of travel and which, because of their location, were not likely to be soon constructed as State highways.

The money for this work has been raised by the issuance of State bonds, and ultimately the counties in which the roads are located will pay back to the Commonwealth 25 per cent of the money so expended.

Each of the states of New England has upon its statute books some legislation providing for the improvement of its roads under the direction of the State itself, and in each state substantial progress has been made in that direction, although naturally the methods employed in the different states vary to suit the different conditions there existing.

Most of the New England states provide for the maintenance of the State roads after they are built, but Massachusetts perhaps has the most comprehensive method for taking care of this extremely important feature of highway work. Here the State, by contract or by day labor, looks after all necessary repairs and primarily pays all of the maintenance costs. The municipalities are assessed each year up to, but not exceeding $50.00 per mile per year, and the amount of these assessments gets back each year into the State treasury. Up to the year 1907 the cost per mile per year for maintenance of the Massachusetts State highways was not far from $100, and the money, for the most part, was raised by direct taxation and not by the issuance of bonds.

SOME ESSENTIAL FEATURES OF ROAD CONSTRUCTION.

It is hardly my place in this paper to describe technically the construction of a road under any conditions, for such is more the part of a teacher than of one treating of a question which

should be, perhaps, more general in its consideration, and I propose simply to give you the road-maker's view of what are the methods of procedure under given conditions.

I can think of no better way of introducing the subject than to describe the developments in road construction which have been made by the Highway Commission of Massachusetts. The State of Massachusetts, as already stated, was one of the first to consider seriously the question of building its roads under the authority and care of trained men. In 1893, the legislature, feeling the need of a change from previous methods, outlined a plan by which a commission of three suitable men was appointed to take charge of and build certain lines of road throughout the State, the lines selected to be based upon the needs of the communities and the physical conditions. This commission has now been in existence for about fifteen years, and it has built in that time nearly eight hundred miles of thoroughly well devised stone or gravel roads. It has taken charge of the improvement and rebuilding of several hundred miles of town highways, but which still remain town ways.

Under this law the commission has authority to build any road which is petitioned for by the selectmen of towns or by the mayor and aldermen of cities. No appeal can be made from its determination as to what roads shall be constructed, nor can there be any interference with the methods employed by it.

It may therefore be assumed that after these years of experience and study the commission has devised a complete system of roads throughout the entire State, and has, from its knowledge of the adjoining states, fixed upon points where connections between them should be made. It may also be assumed that in this time, having had all conditions of soil and topography forced upon them, the commission has reached a fairly reliable method of construction under all conditions.

The State of Massachusetts is divided into five divisions, each in charge of a division engineer. His duty is to supervise the construction and maintenance of every State Highway, including the bridges and culverts on the State highways within his division and is held responsible for the carrying out of contracts and the well-being of his division.

Upon the Commission's determining that any road should be taken as a State highway, a party of surveyors is sent into the field to make a careful survey of the road itself. The notes of this survey are worked up in the main office of the Commission, and accurate plans, profiles and cross-sections are plotted from them. Upon the plan and profile thus made the engineer in charge of the office draws a tentative location and grade for the State highway. The plan, profile and cross-sections are then sent to the division engineer, who is required to make a report upon the proposed location and grade of the road, and to give the location and size of culverts, all the necessary drains, the character of the soil on which the road is to be built, his recommendations as to the material at hand, and whether any part or the whole is to have a foundation either of stone or gravel, what the cross-section of the macadam is to be, and what kind of stone is to be used, whether local or trap. Upon the plans thus made, and the report of the engineer, a carefully made estimate of quantities and costs is prepared for the use of the Commission, and upon this report and plan contracts and specifications are prepared and submitted to bidders. Ordinarily, the lowest bidder is accepted to do the work, although the Commission does not hesitate to reject the bid of any contractor who is known to be incompetent or otherwise unfit. Under the contract and specifications the road is built, and every detail is watched by an inspector, under the division engineer. Neither the division engineer nor any other person, except the Commission itself, can make any modification in a contract or specification after the contract is awarded. The same care is taken whether a town or city takes the contract or whether the work is done by a private contractor. They are all required to come up to the same standard of excellence; and, if any failure of a road occurs, it must be due presumably to faulty design rather than to execution.

It is firmly the belief of this Commission that in the construction of a road the traffic conditions should be given first consideration. In other words, where it might be necessary to build the strongest kind of a trap rock macadam road in the neighborhood of populous towns and manufacturing communities, it would be wholly unnecessary and unwise to use the same

method of construction in the gravelly hills of the interior of the State or in reconstructing the sandy roads of Cape Cod.

Distributed through all of New England suitable stone for macadam road purposes exists,—the use to which any particular material is to be put must determine whether it is fit or otherwise. It is manifestly improper to use a soft limestone or sandstone, or even granite, where constant or heavy traffic prevails. The hard, close-grained trap that is found in Massachusetts, principally along the Connecticut river and the Atlantic coast, is the only material that withstands the wear and tear of our most heavily used State roads, and this must be bound by some tenacious material on the surface to prevent its disintegration on curves or exposed places under the swift moving automobile. For the ordinary country thoroughfare, the softer stones that are found in the fields or local quarries are sufficient, and in places preferable to the harder stone, for under light traffic the softer stone is less liable to ravel and the dust caused by attrition in a measure protects the road itself.

The Commission in its design has determined that the question of foundation is subject wholly to the local conditions,—that is to say, in a clay soil, or in a soil that is composed of alluvium or sandy loam, a stone foundation is usually necessary, and that where the underneath soil is of gravel or coarse sand, no foundation whatever is necessary. It very often happens that a coarse gravel may well take the place of the stone in foundations.

It has been found that the ordinary country road should have a hardened surface fifteen feet wide, of either gravel or macadam, with a shoulder of three feet on each side, conforming to the cross-section of the hardened way, thus making a traversible road twenty-one feet wide. This marks the location of the gutters on either side, and the embankment, either in cut or fill beyond this, should not be at a steeper slope than one and one-half horizontal to one vertical.

It has been found by long experience that where it is possible to avoid it, a gradient of over six and one-half per cent should not be permitted on a stone road. I can see no objection to a six and one-half per cent gradient where the cost of reducing it seems unwarrantable. It is unnecessary to say that a maximum of five per cent is better, but in many parts of the country

the cost would be too great. It has been determined that on an ordinary macadam road in the country the crown should be from one-half to three-quarters of an inch to the foot, for a greater camber than this carries the water off too fast and compels vehicles to travel in the center of the roadway, thus wearing out the center more rapidly than any other part and tending to rut it. A less crown will not permit a proper surface drainage, under ordinary circumstances.

Whether a road is to be built of gravel or of stone, the provisions for the drainage of its sub-grade and the removal of surface water should be precisely the same. Where good gravel can be obtained at reasonable cost and where the nature of the traffic is such that more durable or expensive material is unnecessary, it may be better to build a road of gravel than of broken stone.

Ordinarily the cost of a gravel road is much less than that of a macadam road, and is more agreeable to ride over.

It has been found that the most economical method of building culverts in Massachusettts is by using reinforced concrete; or, where small pipe culverts are necessary, reinforced concrete ends are built. The reason for this is that with the reinforced concrete very much thinner walls can be built, and the cost for transportation and for materials is very much reduced. It has been found that for bridges reinforced concrete beams can be used economically and safely up to a span of from thirty to forty feet, and that over that length the span arch construction should be adopted. A bridge built of concrete, when properly constructed, with a concrete floor, offers the vast advantage of giving a permanent structure which requires no repair.

It has been the practice of this Commission to use much care in the roadside work, both in removing unsightly earth, stone, and other obstructions and objectionable trees or brush, and in thinning out and cutting the native growth, so as to produce a roadside growth which is not only ornamental but advantageous. It is recognized that a certain amount of shade on any road is beneficial to the road and also agreeable to the senses. For this reason, the Commission has established a nursery for the growth and propagation of many kinds of trees which are later transplanted to the roadsides. It has been found that all young trees

taken from their home are much benefited by transplanting into congenial surroundings before they are finally placed. For this reason the nursery of which I have spoken has been equipped with all things needed to supply the best conditions of soil, water and care.

The roadsides, I believe, should be a matter for thought and attention by those in authority. This particular feature in foreign roads, so often spoken of by travellers, is manifestly important, or it would not be commented upon so generally and approved so unanimously.

It is my belief that, notwithstanding the destructive effect of high speed motor vehicles, the macadam road, as now built, will be continued with modifications which different road-builders adopt under different conditions, such as the use of only stones of the largest size usually used in macadam work, commonly called No. 1 stone, with a sand binder, filling the voids completely during the process of rolling, where traffic is heavy; and the use of bituminous materials in the upper stratum of the roadway surfacing to act as a binder to hold the stone in place.

THE EFFECT OF HIGH SPEED AUTOMOBILES ON THE HIGHWAYS.

Since the advent of automobiles, and particularly, those capable of being operated at high speeds, it has become evident that $100 a mile a year is wholly inadequate for the maintenance of macadam roads even if they be only of the width of the Massachusetts State highways, and that in order to keep such stone roads in perfectly good condition at least three hundred dollars a mile a year should be provided.

In Europe, where the cost of labor is not over one-half what it is here, and where the length of a working day is greater, it is estimated that on an average $300.00 a mile is necessary to keep the roads in the excellent condition in which they now are; although a great deal of the work which is done there, in cutting grass, cleaning gutters and in that sort of elaborate care which is used on all the governmental roads abroad, would be an unwarrantable expense here.

Figures in the possession of the Massachusetts Highway Commission show that about 53 per cent of the destruction of

state highways is due to automobiles. In seven counties near London, England, the percentage of increased cost of maintenance, due to automobiles, has been recently reported to be from 22 to 77 per cent, and this condition is probably more or less the same throughout England.

It may be, and indeed, it seems now almost certain, that a material will be found, if it has not already been found, which when placed upon the surface or embodied in the top course of a macadam road will offer a surfacing which will not be destroyed by the abrading action of automobile wheels. It may be proper to say here, that this Commission has experimented for several years in the use of tar, pitch, asphalt and oil in surfacing and even in building roads, but it is not yet prepared to say what material, if any of those already experimented with, will become the material for general use.

That the automobile has introduced a wholly new condition is undoubtedly true. It is also undoubtedly true that it has not caused a revolution of the theory of the macadam road, except only so far as the wearing surface is concerned.

UNIFORMITY IN DESIGN AND CONTROL.

I was forcibly impressed in traversing recently both France and England to observe that they not only had state roads, as we call them, covering great numbers of miles, but that they had hundreds of miles of nearly equally good road built under the control of the counties, which show not only excellence in location and construction but a most admirable system of maintenance. A large part of the deserved reputation for its good roads that France has today is due to the fact that for more than a century its roads have been under uniform and intelligent authority.

It should be understood also that in the country districts of both England and France a soft limestone is used for building roads. This stone is easily obtained and easily broken up and placed directly upon the surface of the soil; and, although steam rollers are used, ordinary traffic will soon wear this comparatively soft stone down to a smooth surface. It presents a uniformly white or nearly white smooth surface, which is most agreeable to ride over, and the lime in the stone, when more or

less powdered up, forms a cement which, where traffic is light, will well stand the wear and tear. I mention this because, to the ordinary layman, it seems that he travels for long distances in both these countries over perfectly smooth, white roads, with beautiful roadsides, and lines of magnificent trees on both sides, and he thinks how much better they do it there than in our country.

To the trained road-builder it is very evident that this result is attained by the proper use of the materials at hand, carried on from year to year, and that the roads have not required in their construction the more scientific methods that we are obliged to use here. I venture to say that a road built as any of these roads that I refer to, here in Massachusetts, would not withstand the heavy frosts and rains, with the vastly greater loads, for a single year.

But it is in their maintenance that the roads in England and France excel ours. There, it is not permitted that any uninstructed person shall have anything to do with them. The men in charge are trained from their youth up, and the result of such system is apparent, and it is a most impressive example to us in this country, where the abominable practice exists of having in charge of our roads—I mean the country roads throughout New England—men who have no more knowledge of the subject than the ordinary farmer or mechanic might be supposed to have.

There is no profession or trade that requires more experience and more intelligence than the building and care of highways, or where an incompetent or negligent person may more easily and more effectively waste money.

I have been often amazed that the people of New England, who have the reputation of being intelligent and of spending their money judiciously, should permit a system to exist which practically wastes the largest part of the money spent in building and maintaining their highways.

It is safe to say that in the country districts of Massachusetts alone a half million dollars a year is spent in the care of their roads, by the towns themselves. It is safe to say that at least one-half of this amount is worse than wasted. How much wiser it would be if this same amount of money were expended

intelligently, for, in the majority of towns in this State, fairly good road material can be obtained, where now it is neglected, and where used put on improperly.

A better system would make not only passable but good roads, even without greater expenditure of money, and what is true in Massachusetts is true to a greater or less extent in all of the other New England states.

CONCLUSION.

It can no longer be said that the necessity for better roads is not recognized or that their economic value is not appreciated. This is felt and understood especially in New England, and although it does not appear that in the different New England states uniform laws can be enacted, yet, uniform methods of construction and maintenance, in accord with the best practice under given conditions, may well be employed.

I have dwelt at some length upon the necessity for a centralized control, organized by law in each state, and directed by trained and skilled men, intelligent and experienced, wholly independent of political influence and continued in office during good behaviour. In this way a force of trained and competent men would be developed and maintained, which would be of the utmost value to the whole of New England, and this, it appears to me, is the most important suggestion which I can offer at this conference.

TRUNK LINES OF HIGHWAYS FOR NEW ENGLAND.

By JAMES H. MACDONALD, State Highway Commissioner, Connecticut.

Now that the two great national events of our country have taken place,—the election of our President and the annual foot-ball game between Yale and Harvard,—I think we may very well settle down and commence to talk about the every-day things of life. It has always been a marked epoch in the history of our country when New England has sat down in counsel together. And I know of no better way to accomplish that which makes for progress than just such a meeting as we have here today.

Brother Parker has covered the entire subject of road building very completely. I think I have never heard the subject discussed so intelligently, and yet so completely covered in so short a period of time, as did Brother Parker in his very able paper today.

This meeting has a suggestiveness to me. The sun rises in the east and sets in the west. The beginning of the day is with us here in New England, and its close is away over at the Pacific. It seems to me there is a leading in this great meeting today, and that it means very much more than is apparent at first thought. The most important question, in my judgment, before the people of this country is education. That has been taken care of. No better system of education than is to be found here in New England exists anywhere under God's sun. The next great question, in my opinion, is highway improvement. It is a natural sequence. Highway improvement always follows education. Here in New England this is a very momentous question. We cannot give it too careful thought.

The 2,151,000 miles of road in this country have had too little done with them,—only 108,000 miles of gravel roads, 38,000 miles of macadam and 6,000 miles of road constructed of other material. In this great country, of over 80,000,000 people, it is

not a proud record. Too long have we neglected to take up this great question. I am happy to say, and proud of the fact, however, that New England stands in the forefront of this great movement. East of the Mississippi River, 153,000 miles of the entire system of improved highways of the country are to be found (and the majority of the improved highways of the country lie in this section), yet only 7 per cent of the roads of the United States have been improved. Here in New England we have in the six states 88,000 miles of roads, and these 88,000 miles of road have been placed, practically, for direction and education of the people in the hands of only twelve men. The number of miles improved on this system is only 17 per cent. A great question is to be solved. The most important question to be considered, in my judgment, is to try to bring about uniform laws, in so far as a comparison of methods employed is concerned. Hence the value of that splendid paper read here today by Commissioner Parker. If that address and the outline so intelligently presented of what is proper to do in highway construction is taken away and disseminated throughout New England, it will work wonders.

The question arises with the different conditions by which each state is surrounded, if it is possible to adopt uniform laws, at least just at present, in regard to either the details necessary to bring about the solution of this question, or the conduct of the work in its wider latitude. Much has been done, not only here in New England, but also throughout the country, to take up this proposition of bringing the people nearer together.

It has taken seventy-eight years to grow our great railroad systems throughout the country, from 23 miles in 1830 to 228,000 miles at the present day. That may seem a vast mileage, but when we come to analyze those figures we find there are only 6½ miles of railroad to every 100 square miles of area. It does not begin to take care of the interests of this great people; nor do 2,151,000 miles of road, over which has come that which has helped to grow this great country to the position it now occupies take care of our interests.

The telephone, which has grown to be such a necessity and is such a dispatcher of business and such a comfort to have, brings us nearer together. The rural free delivery system that we have, growing in twelve years from 83 to 43,000 routes, with a

small appropriation, eleven years ago, increased to $32,000,000 brings us nearer together. And yet all these valuable assistants to intercommunication are only leadings along the lines of that which makes for progress in bringing our people together.

Here in New England we have a population of over 6,000,000 people; but let us analyze the figures, or apportion them by states, and what do we find? In Rhode Island, the population is 407 to the square mile; in Massachusetts, 348 to the square mile; in Connecticut, 187 to the square mile; in New Hampshire, 45 to the square mile; in Vermont, 35 to the square mile; and in Maine 23 to the square mile. This does not suggest that we are liable to rub elbows or jostle one another.

Great lines of communication should be made between our people. Every capital in this country should be connected up by a splendid highway, thus making a union of interests. I know of no man who, from a thorough knowledge of the subject, can discuss this great question in its minute details intelligently. Indeed, it was only this year, when I had an opportunity to use an automobile in my work in the State of Connecticut, that I myself became familiarly acquainted with the fourteen trunk lines which I have been planning for years to run through my state.

In order that I might put myself in close touch with this proposition, I communicated with the commissioners of Massachusetts and the other New England states, immediately after Your Excellency had so kindly invited me to be present, and asked them to send me details of the trunk lines they are operating upon. From the replies received I outlined a trunk line system on a map and had it blue-printed, together with some other information gained for the use of this conference. I found that the thought and purpose of the commissioners who have this great work of highway reform placed in their hands had been intelligently directed, and a plan carefully thought out to comprehend a splendid system of connected trunk lines throughout New England.

Here in Massachusetts every important business center has been taken care of. Careful attention has been paid not only to that which makes for the comfort and convenience of the people of Massachusetts, but a system has also been intelligently

planned to meet the co-operation of the other commissioners in charge of the work in states surrounding Massachusetts.

To give you a little idea of what it means to plan a trunk line system intelligently, allow me to give you an illustration of my own state. I have a plan of trunk lines, numbering from one to fourteen. The principal trunk line commences at Portchester, N. Y., and follows the shore line all the way through Connecticut to Westerly, R. I. My longest trunk line is 120 miles. I use that as the basis of operations, following up all of the principal water courses in the state, then crossing the state with several other trunk lines. Now, there are fourteen of these trunk lines so planned that they aggregate only 1,032 miles in actual length (the total in the state is 15,000 miles), and yet they drain a population of 851,000 out of a total of over 900,000 inhabitants. This system of trunk lines passes through or takes care of the interests of 132 out of a total of 168 towns. In my judgment, a well-planned-out system of trunk lines should not only comprehend the entrance into other states, but should have as its first thought that which will take care of the business interests of each state,—and that should be very carefully thought out. First, the business of a state over its roads; second, the pleasure seeker's interests.

The introduction of the automobile on the highway has caused the commissioners of the several states many sleepless nights and anxious moments, as we have seen it wend its persistent and annihilating way over the roads; and we have wondered, yea, we have groaned in the spirit many times, and said, "How long, O Lord how long!" But in watching the havoc that has been wrought on our trunk lines I have reached the conclusion,—automobiles are not to be held responsible for all the wear on our roads. It is hardly fair to expect any road built by mortal man to stand up to the traffic it is called upon to bear, and last forever. It is no reflection on any commissioner in this country that the miles of intertown roads, that have been built of as fine construction as it is possible for man to devise, should disintegrate and go to pieces with travel; nor should the commissioners be criticised because they so do, by reason of the fact that many of these roads have not been receiving any care at all from the towns in which they have been constructed. There are

many miles of road that never receive a drop of moisture—that which is so necessary for the continuance of a splendidly built macadam road—except what God has sent. I venture to say we are building as fine a construction of roads in this country as can be found in the world; and the system of repairs we have in this country today, as organized by the commissioners, is as good as any that has been inaugurated by any people having charge of roads.

We have vied with one another in ridicule of the hoe-handle brigade, with the cider jug accompaniment, system of repairs; but what would we think in America if we were to see men who were taking care of our highways sitting down with a few stones between their feet, cracking them with a hammer? What would we say here in America with such a system? And yet that is the common practice employed across the water.

A friend of mine brought over from France five or six samples of the stone they were using on their roads. There is not a commissioner in the United States who would put any of those stones on any system he was planning for,—not one, and every commissioner in charge of macadam work in New England is discarding similar stone in his work as unfit for our climate or the travel of the country. As has been said so very well by Governor Guild, we shall have to have a system of splendidly built main highways, permanent in their construction. Just such meetings as this, where we sit down together and discuss the matter, is what will bring this about. It will not be done in a moment, and it will not be enough to come to this meeting and sit here and listen to the discussion of this question, unless, as a result of these deliberations, we go back to our several homes and do all that within us lies to bring about the solution of this great question.

Every state in New England has a local pride in itself. We ought to have such pride, and one of the things we congratulate ourselves on is that we are singularly God's chosen people in our several states. We have our own way of doing business, and we do not take kindly to interference. This is as it should be. I do not think much of a man who is not proud of his state, and it is this pride that will solve this problem, and give us a connected system of trunk lines.

I spoke in Montpelier, the other night, to the legislative committee of the Senate and the House. There was an effort being made by the Commissioner Gates to increase his appropriation (the maximum amount paid to any town being $300) to $500, and to increase the annual appropriation from $50,000 to $75,000,—an increase of $25,000. Why, Brother Parker will tell you it will cost about that to build 3 miles of macadam construction on a road of ordinary conditions.

Each state must be a law unto itself; but the outcome of a definite plan, such as we have in our thought today, of doing something, whether it is little or much, upon some particular trunk line system, will help develop that plan; and the way to get a splendid system of trunk lines through New England is to go out, as Brother Bachelder has done in his state, and preach highway reform in season and out of season, and get the people to see the importance of organizing under some definite plan and putting away for all time the caption of "Republican" or "Democratic" on the ticket, and substitute therefor the words, "A business administration in the construction of our highways."

I think I have never met a man, woman or child in my state who was not a firm believer in good roads, and who desires to have a betterment of the highway conditions. But the obstacle that has confronted my people, and confronts many of the states in New England, is, how to get the money to make these improvements. My state has taken this matter up, and we have gone into these little towns having a small grand list, appreciating the fact of their financial poverty, and are now paying, on the part of the state, seven-eighths of the cost of construction of all highways that are taken into the possession of the State as "State aid roads." I firmly believe, as I look over the situation here in New England today, that, if we are to have a system of trunk lines through New England, and one that we can see and use to-day, and not put off into the far dim and distant future, it is for the State, in its pride and its desire to increase in population and wealth, to pay out of its treasury the money necessary to build these trunk lines throughout the length and breadth of New England, and then we shall have them; otherwise, the day will be deferred an indeterminate length of time, in my judgment.

God has wonderfully blessed New England in her men, in her history, in nature's best handiwork, and made of it the garden spot of the country, where we have that to offer which is not presented by any other part of the country; a great people, noted for their refinement, noted for educational advantages, noted for commercial privileges; situated on the seaboard, where the waters that wash the shores of New England ebb and flow and touch the shores of every country on the civilized globe; a great commercial center, with great mountains lifting their mighty heads to God, and where God's magic finger has painted on the hillsides, the valleys and plains of dear old New England pictures more beautiful than any that emanate from the brush of the master artist, for in the one instance it fades from the canvas and is lost to memory while in the other it endures throughout all time.

AUTOMOBILES AND THEIR REGULATION.

By Hon. Nahum J. Bachelder, Ex-Governor of New Hampshire.

It is peculiarly appropriate that this conference of New England Governors, called to consider matters of legislation affecting all these states, should discuss the kindred questions of the construction and maintenance of state highways, and the regulation of automobiles. The territory within the six states includes what may be properly termed "the recreation ground of America," as it is the section of the country that will more and more become the summer residence of hundreds of thousands of the people of our great cities. I need hardly refer to the manifold attractions which combine to make these states in their several ways the most desirable summer resort on the continent. From the hill farms and water-side villages at the western end of Long Island Sound, to the mountains of New Hampshire and the isle-dotted coast of Maine, there is hardly a square mile of country side which does not invite the dwellers in the hot and noisy cities to come and make their summer homes in this region of cool, pure mountain air or ocean breezes.

With the increasing growth of population in our cities the number of those seeking country homes is steadily growing, and it is therefore important that, if we wish to have these people come to our states, we should make conditions as pleasant and attractive as possible. It must be remembered that there are many other sections of the country eagerly bidding for the summer resident, who will naturally choose the place that offers the greatest attractions. While our natural advantages are unequalled, there are other considerations which affect the choice of a recreation ground, and among the most important of these is the nature and condition of the highways, and their use for pleasure travel by motor vehicles. The introduction and general use of the automobile has been the means of inducing a great many persons to visit sections of the country formerly unknown to them, and the desirability of a given location is now often judged by the opportunities afforded for automo-

bile riding. I am pleased to know that the question of improved roads, making communication easy throughout all parts of this region, has been assigned to such competent authority as the Highway Commissioner for Connecticut, and I am sure that it will be agreed by this conference that whatever else is done to promote the mutual interests of these states, there must be established a system of interstate highways which will render the most remote districts accessible to tourists.

In this connection I wish to refer briefly to the educational movement now being carried on by the farmers of the country, through their principal organization—the National Grange, on behalf of the general policy of road improvement by the various township, county, and state authorities, and for the enactment by Congress of legislation making appropriations for the construction and maintenance of improved roads. The farmers believe that this is a purpose to which a part of the national revenues, derived from taxes paid largely by them, should properly be devoted; and they insist that the highways of the country are entitled to as much consideration as our waterways. They realize that the financial condition of many of the states will not permit of their making the large appropriations necessary to meet the urgent demand for better roads, and therefore are endeavoring to secure recognition of the principle that Congress should by legislation provide a part of the funds needed for road improvement.

This is a matter of special interest in connection with the proposals for a complete system of trunk lines of highways for these states, since the enactment of the Currier bill, introduced in Congress at the request of the National Grange, would provide a fund of $6,000,000, to be used for road improvement, thus lessening the burden on the respective states, and enabling them to construct a greater mileage of improved roads.

Closely allied to the question of good roads is that of the regulations governing the use of the highways by automobiles. The new problems created by the operation of high-powered motor vehicles on the public roads have been for some time under consideration by the farmers, who as the principal users of our roads are directly concerned with the preservation of the public's right to the safe use of the highways. The extent to

which this right was disregarded by reckless drivers of automobiles, forced the farmers in self-defense to seek legislation fixing the rate of speed of these vehicles. The laws enacted for this purpose were originally intended to prevent injury to occupants of horse-drawn carriages and pedestrians using the highways; and, in addition to prescribing speed limits provided a method of identification of the owners of the automobiles, and for the licensing of their chauffeurs or drivers. In some states the automobile has been regarded as a fit subject for special taxes, but in general the license fee has simply been intended to meet the expenses of registration, and of ascertaining the qualifications of drivers.

The experience of the past six or seven years has shown that the different laws on this subject in the various states have resulted in a great many complications tending to discourage even the orderly use of the automobile. In some states the natural resentment against the dangerous rate of speed at which automobiles were being operated has resulted in the enactment of unreasonable laws, which defeated their purpose by imposing regulations so stringent that they could not be enforced.

It is evident that, from the point of view from which I address you,—that concerted action should be taken by these states to increase their attractiveness to the summer resident,—uniformity in our laws regulating and taxing automobiles is highly desirable. While the permanent welfare of our people requires that the use of our roads shall be regarded not only as a farmer's question but first and chiefly as a question of their commercial use, their use for pleasure or travelling being secondary to the transportation of the farmer's products to market. It must be recognized that the automobile is a permanent feature of modern life, and that the owners of these vehicles have the right to the use of the highways, subject to such restrictions as will ensure the rights of all others. There would therefore seem to be no good reason why an agreement should not be arrived at upon the legislation that experience has shown to be practicable and desirable, to the end that the citizen of one state may be able to travel through other states without vexatious restrictions differing from those of his own state, and without the payment of special taxes, not imposed on non-residents using other methods of travelling.

In considering the nature of the legislation on this subject which should be adopted by these states, it must be remembered that laws limiting the rate of speed at which automobiles may be operated have two purposes. The first is, of course, the prevention of accidents through driving at high speed. A second reason is the preservation of our roads against the injury due to the rapid passage over them of these pneumatic-tired vehicles. It seems to be clearly established that the deterioration of the macadam road under automobile traffic is almost entirely due to the excessive speed at which many of these vehicles are operated. If this is true, the limitation of speed to a reasonable rate is necessary in the interest of the maintenance of our roads, as well as of the general public. Experiments have been made by the United States Office of Public Roads to ascertain the relative injury caused by automobiles travelling at high and moderate speeds, and it should be possible by prescribing a maximum rate of speed, to prevent much of the injury now complained of. It may be advisable to exact a higher license fee from owners of high-power machines than from owners of low-power machines.

In reference to the limitation of the speed of automobiles for the protection of others using the roads, I am of the opinion that the principle which should govern is that any speed is unlawful when it is attended with danger to persons travelling on, or crossing, the highways. This is, I believe, the standard provided by the laws of Connecticut, and if intelligently enforced it should effectively prevent the reckless and dangerous driving of automobiles, which has done so much to create a prejudice against them throughout the country districts. I appreciate the fact that what is an entirely safe rate of speed in some sections or on some roads, may be a decidedly unsafe rate under other conditions, and that it is impossible to fix by statute the exact speed which will afford the necessary protection against accidents.

It is in regard to the regulations relating to the registration and identification of automobiles, and their equipment with lights, brakes, horns, etc., that there would seem to be the greatest need for uniformity. The present diversity of laws on these points makes it possible for an automobile owner who is duly registered in his own state, and has complied with all the require-

ments of its laws, to be an unconscious lawbreaker in an adjoining state because of a misunderstanding as to the nature of the regulations covering certain minor details. This matter should be taken up promptly by the Legislatures of these states so that an agreement can be reached as to a simple code of regulations, providing for the public safety, but interfering as little as possible with the orderly and reasonable use of the automobile.

Uniformity is also highly desirable in regard to the taxation and licensing of automobiles. As these vehicles are personal property, and presumably taxed by the district in which their owners reside, a tax imposed by the state is double taxation, and therefore opposed to our principles of government. A reasonable license fee can properly be charged, but there would seem to be no justification for imposing special taxes on this particular kind of property.

In this connection I may refer to the proposition for Federal registration of automobiles used in interstate travel, which has been advocated at several sessions of Congress. It is not proposed that Congress should interfere with the powers of the various states to prescribe regulations governing the safe operation of motor vehicles, but merely to provide for a system under which an automobile registered in the state of its owner's residence and also by the Federal Government, shall have the right to travel over the roads of all other states without the payment of any additional tax. It is urged by the advocates of this legislation that its enactment will not only do away with the present system, under which the citizen of one state is subject to vexatious restrictions and taxes by the various states through which he may wish to travel, but will tend to further the adoption of uniform and reasonable legislation by all the states of the Union.

In conclusion, I would submit that there is urgent need for a concerted movement by the various automobile clubs and associations to bring their influence to bear on the owners of these vehicles, with a view to securing a faithful compliance with the spirit of the laws regulating their use on the public highways. There is no question but that public sentiment is the most effective factor in checking dangerous driving, and if automobilists will join in a campaign against reckless speeding, they will make it much easier to secure the enactment of fair and liberal legislation on this subject.

Sanford. 1907 section. Grade reduction. Work done by town. J. G. Ridley, Commissioner

Sanford. 1907 section. Rolling first course of macadam. Work done by town. J. G. Ridley, Commissioner

STATE ROAD WORK FOR 1907.

Compiled from County Commissioners' returns to the Governor and Council.

ANDROSCOGGIN COUNTY.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		DURHAM.			
432	22	Grading, 10 yards filling. Subdrainage, 342 feet long, 2 feet to 4 feet deep. Culvert, stone, 12 inches x 15 inches x 24 feet. Surfacing 432 feet x 15 feet. Shoulders 3½ feet wide		$201.90	$0.45
		EAST LIVERMORE.			
900	22	Surfacing crushed stone, 8 inches deep.			
		Crushed stone	$463.26		
		Other material	38.40		
		Labor	401.56		
				903.22	1.01
		GREENE.			
2,140	22	Grading 474½ yards.			
		Earth excavation	$249.37		
		Culverts, stone, 18 inches x 24 inches x 19 feet.	57.91		
		24 inches x 24 inches x 19 feet.	68.48		
		Steel, 10 inches x 19 feet	26.25		
		Surfacing done with gravel obtained by lowering grade of road. Width 12 feet. Earth shoulders 5 feet wide		406.51	19
		LEWISTON.			
425	32	Grading with stone, length 425 feet, width 10 feet, depth 8 inches to 3 feet	$240.00		
		Surfacing 12 feet wide, 6 inches deep. Earth shoulders, 7 feet wide	160.00		
				400.00	95
		LISBON.			
1,200	32	Cleaning and clearing	$400.00		
		Culvert, stone. Surfacing, gravel 1200 feet long 30 feet wide	648.87	1,048.87	88
		MINOT.			
910	21	Clearing, excavating and road machine work	$158.29		
		Surfacing, 238 feet long, 23 feet wide, 24 inches deep, using 312 cubic yards gravel and other material	139.50	297.79	32
		POLAND.			
2,005	28	Culvert 24 inches x 30 inches x 32 feet	$56.50		
		Surfacing, clay and gravel	563.10		
		Earth shoulders, 22 feet wide		619.60	31
		WALES.			
600	21	Clearing whole width. Excavating ditches	$150.00		
		Filled at base of hill and surfaced with gravel	260.63		
				410.63	69
Total 8,612 feet. 1.63 miles.		Total cost		$4,288.52	$0.50
		Cost per mile at same rate, $2,629.44.			

AROOSTOOK COUNTY.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		AMITY.			
260	21	Cleaning and clearing	$7.00		
		Widening narrow road through swamp by building out sides with rocks and covering entire width with small rocks	146.81		
		Culvert, stone and cement, 18 inches x 16 inches x 22 feet	20.00		
		Surfacing with gravel 12 feet wide, 8 inches deep, shoulders covered with clay	160.00	$333.81	$1.28
		ASHLAND.			
7,920	30	Cleaning ditches and removing stone	$59.50		
		Grading	131.63		
		Culverts, three, stone	54.37		
		Surfacing	104.50		
		Work consisted of widening, ditching and turnpiking		350.00	05
		BLAINE.			
350	30	Surfacing with gravel 12 inches deep at center		450.00	1.28
		BRIDGEWATER.			
1,200	20	Excavation of roadway, 12 feet wide	$32.75		
		Filling with stone, 30 inches deep in center and 12 inches on sides	130.25		
		Culvert 3 feet wide, 20 feet long, with cedar floor	18.76		
		Surfacing with gravel, 20 inches in center and 10 inches at sides, 23 feet wide	432.13	613.89	52
		CARIBOU.			
1,155	30	Surfacing with crushed stone 1,155 feet x 30 feet x 10 inches. Work done on Water street. Stone screened into three sizes, wet and rolled with steam roller		1,000.00	87
		CARY PLANTATION.			
495	16	Cleaning and clearing	$40.00		
		Grading 150 cubic yards, stone filling	75.00		
		Culvert, stone	5.00		
		Surfacing with gravel, 495 feet x 16 feet x 8 inches	110.00	230.00	46
		CASTLE HILL.			
1,947	22	Grading 809 feet x 12 feet filled with stone. Surfacing, gravel, 12 inches deep. 690 feet of this road was in cut; the excavated material being used in making fills and covering stone base		264.75	14
		***CONNOR PLANTATION.**			
1,375	26	Cleaning, clearing and plowing	$58.05		
		Grading and ditching with road machine	202.31		
		Plank driveways	47.51		
		Surfacing 1375 feet x 15 feet x 6 inches with gravel	142.13	450.00	33
		CRYSTAL.			
5,775	21	Culverts, two, of cedar	$11.00		
		Surfacing with crushed stone, 2,475 feet x 12 feet, x 7 inches; 825 feet x 12 feet x 6 inches	406.58		
		Surfacing with gravel, 2,475 feet x 12 feet x 6 inches	182.42	600.00	10

* No state aid on account of special legislative aid.

AROOSTOOK COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		DYER BROOK.			
4,488	27	Turnpiking, widening and ditching	$217.00		
		Culverts, one, cedar	25.00		
		Bridge 8 feet wide covered with 3-inch spruce plank	40.00		
		Stone fill, 112 feet x 25 feet, from 12 inches to 40 inches deep, covered with gravel	130.00	$412.00	$0.09
		†EAGLE LAKE.			
5,300	21	Cleaning and clearing	$80.00		
		Two stone culverts	18.00		
		Grading, excavating and filling	232.00		
		Surfacing 5,300 feet x 12 feet, 6 to 8 inches	250.00		
		Guardrail 270 feet	20.00	600.00	11
		EASTON.			
2,805	22	Widening and ditching. Four culverts, stone, with plank floor. Bridge 11 foot span, east approach 50 feet, west approach 40 feet. Roadway 18 feet, material, stone and gravel		600.00	22
		FORT FAIRFIELD.			
1,600	30	Surfacing with crushed stone 1,600 feet x 15 feet x 8 inches. Corduroy removed, road-bed graded and surfaced with crushed rock		700.00	44
		†HAMLIN PLANTATION.			
158 Bridge work.	17	Hammond Brook Bridge repaired, filled with rock, surfaced with gravel; north end 50 feet x 17 feet x 3 feet to 10 feet deep. South end 108 feet x 17 feet x 2 feet to 9 feet deep	$212.18		
		Guardrails 200 feet	54.63	$266.81	
		HAYNESVILLE.			
Bridge work		Cleaning and clearing	$21.00		
		Stone filling, 10 inches deep in center, 4 feet deep at ends with 6 foot x 6 foot culvert, walls carried down below frost	318.94		
		Guard rails, iron posts set in stone with 3-inch x 3-inch top rail and 6-inch board, 220 feet long	21.00		
		Surfacing with gravel 108 feet x 18 feet x 12 inches	26.00	386.94	
		†HERSEY.			
Bridge work.		Cleaning and clearing	$10.00		
		New bridge, two stone abutments laid in cement	200.00		
		New planking	11.51		
		Stone and gravel for approaches, 262 feet x 22 feet x 2 feet deep	200.00		
		Guard rails	25.00	446.51	
		HODGDON.			
920	23	Cleaning and clearing	$13.50		
		"V" drain 920 feet x 13 feet, 24 inches deep at center, 12 inches deep at sides	200.00		
		Culvert, stone, 23 feet	13.50		
		Culvert, pipe, 8 inches x 26 feet	12.18		
		Surfacing, gravel, 925 feet x 14 feet, x 8 inches	362.25	601.43	66

† Not received in time to obtain state aid.

AROOSTOOK COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		HOULTON.			
480	24	Cleaning and clearing, moving 260 loads of earth at 40 cents	$104.00		
		Stone blind drain, 158 loads at 50 cents	79.00		
		Culvert, tile, 18 inches x 30 feet	38.00		
		Culvert, tile, 12 inches x 30 feet	16.80		
		Culvert, tile, 12 inches x 28 feet	14.00		
		Surfacing, 200 loads crushed rock at $1.75	350.00		
		28 loads rock dust at $1.75	49.00		
				$650.80	$ 2.35
		ISLAND FALLS.			
1,034	36	Cleaning and clearing	$100.00		
		Surfacing 1,034 feet x 12 inches to 18 inches deep x 12 feet wide	500.00		
				600.00	59
		LIMESTONE.			
2,607	24	1,155 feet filled with field stone and re-covered. Two culverts, cedar, covered with plank. Turnpiked and surfaced with gravel 14 feet wide, 12 inches deep		406.85	16
		LINNEUS.			
510	26	Stone base 510 feet x 20 feet x 18 inches	$160.33		
		Surfacing 510 feet x 20 feet x 10 inches	253.99		
		Earth shoulders, 4 feet wide		414.32	82
		LITTLETON.			
610	23	Culvert, cement stone	$65.07		
		Stone base 610 feet x 18 feet x 12 inches, covered with 2 inches of clay and surfaced with 8 inches of gravel	533.93		
		Guard rails, 60 feet	1.00		
				600.00	99
		MAPLETON.			
275	20	Bridge approaches built of rocks, grades cut down each side of stream; rock fill at east end of bridge 3 feet deep; west end 8¾ feet, surfaced with gravel and guard rail placed		587.69	
Bridge work					
		MARS HILL.			
3,652	22	1,100 loads of gravel	$50.00		
		Surfacing, 3,652 feet	690.00		
				740.00	20
		MASARDIS.			
200	25	Reducing grade of "Rome Hill" 40 feet x 24 feet x 24 inches	$54.00		
		Filling approach to St. Croix bridge, 160 feet x 26 feet x 24 inches. Surfaced with gravel 12 inches deep	146.00		
				200.00	1.00
		MERRILL PLANTATION.			
1,000	22	Grading 25 cubic yards	$37.50		
		Stone fill	102.50		
		Culverts, stone, 6 at $10.00	60.00		
		Surfacing with gravel	200.00		
				400.00	40
		MONTICELLO.			
520	20	Excavating center of road, filling with 12 inches of field stone and surfacing with 18 inches of gravel		366.12	70
		†MORO PLANTATION.			
1,188	22	Cleaning and clearing	$91.50		
		Grading	62.00		
		Surfacing	47.50		
				201.00	17

†Not received in time to obtain state aid.

AROOSTOOK COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		NEW LIMERICK.			
460	21	"V" drain 192 feet x 12 feet x 24 inches deep at center and 10 inches on sides	$105.00		
		Culvert, stone, 18 inches x 24 inches x 21 feet	26.78		
		Surfacing 460 feet x 12 feet x 16 inches deep at center, 6 inches on sides	91 28		
		Earth shoulders, 4½ feet. 192 feet "V" drained. 132 feet ledge covered with clay and surfaced with gravel. 136 feet turnpiked and surfaced with gravel		$223.06	$0.49
		NEW SWEDEN.			
3,851	26	Widening, blasting, turnpiking and ditching		439.05	12
		OAKFIELD.			
2,970	22	Cleaning and clearing. Underdrainage of stone and grading complete	$357.00		
		Culverts, tile, 12 inches	46.00		
		Stone, with stone cover	12.00		
		Road widened from 12 feet to 22 feet. Stone base, 200 feet in length, 18 inches to 24 inches deep. Surfacing with gravel		415.00	14
		ORIENT.			
286	21	Grade raised with stone. Two stone culverts, 24 inches x 30 inches x 21 feet	$50.00		
		Surfacing with gravel	226.75		
				276.75	97
		†PERHAM.			
1,815	28	Three concrete culverts	$20.00		
		Stone base, 1,155 feet; gravel surface, 320 feet: two grades reduced	582.00		
				602.00	33
		REED PLANTATION.			
330	33	Cleaning and clearing	$10.00		
		Excavating center of road 12 feet wide, filling with rock, covering and surfacing	186.70		
		Culvert, stone	5.00		
				201.70	62
		SHERMAN.			
2,735	28	Surfaced with crushed rock in three grades, 2,735 feet x 12 inches. Widened from 20 feet to 28 feet		600.00	22
		†VAN BUREN.			
388	40	Old bridge, 85 feet long x 17 feet wide removed and a			
Bridge work		culvert 66 feet x 4 feet x 5 feet built of cedar, sawed, squared and spiked. Approaches built by scraping from hill on each end and surfaced with gravel. Earth fill 10 feet deep over culvert		696.29	
		WASHBURN.			
578	24	Center of road excavated, filled with field stone, surfaced with gravel		300.00	52
		WESTFIELD.			
660	22	Swamp road covered with field stone 18 inches deep, surfaced with gravel 12 inches deep. Culvert, stone		488.95	75
		WESTON.			
250	22	16,500 feet stone fill, surfacing with clay and gravel, 250 feet x 22 feet x 12 inches	$540.00		
		Guard rails, 450 feet	10.00		
				550.00	2.20
		†WOODLAND.			
3,977	22	Rock base on wet section and gravel surface whole distance		458.15	12
Total, 65,691 feet.		Total cost		$17,035.92	$0.26
12.44 miles.		Cost per mile at same rate, $1,367.52.			

† Not received in time to obtain state aid.

CUMBERLAND COUNTY.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		BRIDGTON.			
5,150	30	Cleaning and clearing	$258.00		
		Grading	88.50		
		Stone filling	32.00		
		Earth filling	50.00		
		Stone culverts 29½ feet long	91.00		
		Surfacing	86.20		
				$605.70	$0.12
		BRUNSWICK.			
600	21	Earth excavation 50 cubic yards	$25.00		
		Earth filling 550 cubic yards	275.00		
		Ledge excavation 10 cubic yards	20.00		
		Surfacing, crushed stone 500 feet x 15 feet x 6 inches	280.00		
		Earth shoulders 3 feet wide		600.00	1.00
		CAPE ELIZABETH.			
840	26	Stone base 840 feet x 18 feet x 6 inches to 12 inches deep. Gravel 840 feet x 21 feet x 5 inches deep	$820.00	820.00	98
		CASCO.			
800	22	Culvert, stone	$12.00		
		Surfacing 500 cubic yards, gravel	188.00	200.00	25
		CUMBERLAND.			
770	22	Clearing bushes and ledge	$19.13		
		Earth filling 525 cubic yards	247.09		
		Lengthened stone culvert 6 feet x 24 inches x 24 inches	3.00		
		Surfacing gravel 770 feet x 22 feet x 6 inches	127.50		
		34 feet railing	3.28		
				400.00	52
		FALMOUTH.			
385	24	Stone drains from center to side ditches	$22.00		
		Grading 230 cubic yards. Earth excavation	31.25		
		3 cubic yards rock excavation	21.00		
		230 cubic yards stone	193.04		
		Culvert, tile, 8 inches x 18 feet	2.00		
		Culvert, plank, 8 inches x 16 feet	4.50		
		Surfacing 80 cubic yards clay	45.28		
		Surfacing 74 cubic yards gravel	80.93		
				400.00	1.04
		FREEPORT.			
2,400	22	Excavating ledge and trench 957 feet x 6 feet x 24 inches and back filling with stone	$366.48		
		Reduced grade and used material for filling	132.02		
		Surfacing, ditches, shoulder and side drain	108.50		
				607.00	25
		GORHAM.			
985	22	Clearing	$1.50		
		Road machine work	8.50		
		Stone base 525 feet x 10 feet x 12 inches	256.49		
		Earth filling 1,005 cubic yards; stone filling 195 cubic yards. Surfaced with the excavated material	256.49		
		Earth shoulders 5 feet wide; guard rail 150 feet	4.00		
				526.98	54
		GRAY.			
1,056	24	Stone culvert 18 inches x 24 inches x 24 feet. Surfacing, gravel 1,056 feet x 20 feet x 8 inches to 15 inches deep in center and 6 to 10 inches on sides	$256.15		25

CUMBERLAND COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		HARPSWELL.			
550	21	Stone drain 180 feet long, 18 inches deep in center, 6 inches deep on sides	108.00		
		"V" drain 370 feet long x 18 inches deep, 6 inches deep on sides	232.00		
		Earth excavation 150 cubic yards	75.00		
		Culvert, cast iron, 14 inches x 24 feet	25.00		
		Surfacing with ledge stone 550 feet x 15 feet x 6 inches with sandy loam binder. Shoulders 3 feet wide	110.00		
				$550.00	$1.00
		HARRISON.			
2,100	28	Cleaning and clearing	$42.00		
		Turnpiking 1,600 feet	20.00		
		"V" drain 500 feet x 16 feet x 24 inches, covered with earth and surfaced with gravel	160.00		
		Two stone culverts, 3 feet x 2 feet x 30 feet and 18 inches x 30 inches x 28 feet	30.00		
		Surfacing 1,600 feet x 16 feet x 8 inches	153.50		
				405.50	20
		NAPLES.			
1,800	22	Tile pipe culverts, 10 inches x 24 feet at 37 cents per foot	$8.88		
		6 inches x 22 feet at 27 cents per foot	5.94		
		8 inches x 14 feet at 30 cents per foot	4.20		
		Carting pipe	3.00		
		Surfacing 991 cubic yards gravel and clay, spread 8 inches deep	184.78		
				206.80	12
		NEW GLOUCESTER.			
940	24	Two tile drains. 3-inch drain laid 4 feet deep. Each 198 feet long	$7.93		
		Retaining wall 2 feet high, 3 feet wide x 198 feet	55.50		
		Grading 567 cubic yards, earth excavation and filling with stone	316.77		
		Stone culvert, 18 inches x 5 feet x 28 feet	39.40		
		Surfacing 940 feet x 12 feet x 10 inches deep in center and 6 in. deep on sides with gravel	69.15		
		Guard rails 200 feet	10.25		
				499.00	53
		OTISFIELD.			
693	20	Cleaning and clearing	$60.00		
		Surfacing 660 feet of gravel	229.03		
		Retaining wall	50.00		
		Guard rails 450 feet	58.00		
				397.03	58
		SCARBOROUGH.			
1,860	23	Grading 127 cubic yards earth filling. Gravel surfacing 1,860 feet x 12 feet x 7 inches	50.25		
		Labor	249.50		
				299.75	17
		SOUTH PORTLAND.			
550	24	Surfacing 550 feet x 24 feet x 24 inches, containing 338 cubic yards ledge chips, 263 cubic yards crushed stone, 113 cubic yards fine stone and gravel	$701.50	701.50	1.28
		STANDISH.			
783	22	Stone drain under center of road 8 inches deep. Grading stone 8 inches deep. Clay 8 inches deep	$325.00		
		Sand 4 inches deep 14 feet wide, 783 feet long	186.33		
		Earth shoulders 11 feet wide		506.33	65
		WESTBROOK.			
1,270	20	Surfacing 1,270 feet x 14 feet x 5 inches with crushed stone	$1,089.00	1,089.00	87

CUMBERLAND COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		WINDHAM.			
2,800	22	Earth excavation 200 cubic yards	$75.00		
		Earth filling 465 cubic yards, stone 150 cubic yards	5.66		
		Surfacing 2,800 feet long, gravel	603.00		
				$683.66	$0.25
		YARMOUTH.			
900	20	Earth excavation 125 cubic yards	$25.00		
		Stone filling 210 cubic yards	180.00		
		Surfacing 900 feet x12 feet x3 inches to 4 inches deep with gravel	45.00		
		Earth shoulders 7½ wide		250.00	28
Total, 27,232 feet. 5.15 miles.		Cost per mile at same rate, $1,884.96.		$9,748.25	$0.36

FRANKLIN COUNTY.

		CARTHAGE.			
2,820	18	Clearing	$8.75		
		Grading	62.00		
		Stone culverts: 24 inches x 48 inches x 17 feet, 20 inches x 30 inches x 16 feet, 36 inches x 30 inches x 17 feet	76.77		
		Gravel surfacing 1,880 feet long, 6 inches to 24 inches deep	350.69		
		Earth shoulders 4 feet to 6 feet wide		$498.21	$0.18
		† COPLIN PLANTATION.			
1,320	–	Cleaning, clearing and removing ledge 200 feet in length	$13.00		
		Grading to receive surfacing material	52.50		
		Culvert, stone	22.50		
		Surfacing, 300 loads of gravel	112.00		
				200.00	16
		EUSTIS.			
1,006	–	Clearing and removing boulder	$46.07		
		107 cubic yards filling	19.80		
		Surfacing, river gravel 1,006 feet x 12 feet x 12 inches deep in center and 6 inches deep on sides	114.94		
				180.81	18
		FARMINGTON.			
600	23	Crushed stone	$366.60		
		Labor	260.37		
		Freight on stone	224.36		
				851.33	1.42
		JAY.			
725	21	Crushed stone and labor		611.33	81
		KINGFIELD.			
Bridge work		Cement abutment 19 feet high, running back to bank 26 feet;			
		Cement	$213.20		
		Labor	121.10		
		Lumber	22.10		
		Nails	96		
				357.36	
		MADRID.			
1,487	20	Cleaning and clearing	$120.00		
		Four stone culverts 18 feet to 20 feet long	140.00		
		Surfacing 1,481 feet, gravel	312.79		
				572.79	49

† Not received in time for state aid.

FRANKLIN COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		NEW SHARON.			
630	22	Stone base, 630 feet x 6 feet x 30 inches		$472.47	$0.75
		NEW VINEYARD.			
200	26	Moving stumps and logs	$10.00		
		Cutting bushes and straightening road	40.00		
		Culvert, stone, laid in cement, 3 feet to 3½ feet deep and 5 feet wide, covered with split stone	125.00		
		Stone base 30 inches deep covered with gravel 14 feet wide, 18 inches deep	157.80		
		Guard rail 20 feet	1.50		
				334.30	1.67
		PHILLIPS.			
3,081	21	Clearing and cleaning	$75.00		
		Blind drain, 135 feet x 3 feet wide	84.00		
		Grading 170 cubic yards	23.00		
		Two stone culverts: 2 feet x 2 feet x 22 feet, 2 feet x 3 feet x 22 feet	133.00		
		Iron pipe, three, each 12 inches x 24 feet	105.00		
		Surfacing, gravel, 3,081 ft. x 12 ft. x 12 inches	440.89		
				860.89	28
		† RANGELEY.			
Bridge work		Abutments	$805.19		
		Filling approaches	234.55		
				1,039.74	
		SALEM.			
Bridge work		Split stone abutments, four		398.30	
		TEMPLE.			
462	20	Road excavated, filled with stone, covered with clay-marl and surfaced with gravel		208.85	46
		WELD.			
3,960	22	Grading and filling	$390.66	390.66	10
		WILTON.			
880	21	Culvert, iron	$24.93		
		Surfacing, crushed stone 880 feet x 21 feet, 8 inches to 12 inches deep; stone	366.31		
		Freight	70.09		
		Labor	157.48		
				618.81	70
Total, 17,171 feet. 3.25 miles.		Cost per mile at same rate, $1,784.64.		$5,800.45	$0.34

HANCOCK COUNTY.

		AMHERST.			
709	21	Stone box drain 412 feet x 3 feet x 2½ feet	$114.05		
		Covering rocks and grading shoulders	7.90		
		Culverts, stone, 10 inches x 12 inches x 30 feet	12.00		
		10 inches x 14 inches x 27 feet	18.50		
		Stone base 297 feet x 10 feet x 24 inches	83.02		
		Covering rock and grading shoulders	8.25		
		Surfacing gravel, 709 feet x 12 feet x 8 inches	55.10		
		Earth shoulders 9 feet wide		$305.52	$0.44
		†AURORA.			
495	24	Cleaning and clearing	$5.00		
		Grading 250 feet	25.72		
		Culvert 30 feet long, stone	24.75		
		Surfacing 495 feet x 16 feet x 12 inches	83.95		
		Earth shoulders 4 feet wide		139.42	28

† Not received in time for state aid.

HANCOCK COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		BLUEHILL.			
2,820	21	Cleaning and clearing	$150.00		
		Rock excavation in road and gutters	143.76		
		Lengthening bridge 4 feet, stone	10.00		
		Culverts, tile, three, 10 inches x 25 feet, each	25.50		
		Surfacing 519 loads gravel, spreading, etc.	269.36		
		Guard rails 26 feet on each side	3.15		
				$601.77	$0.22
		BROOKLIN.			
612	30	Cleaning and clearing	$40.00		
		"V" drain 10 feet wide, 20 inches deep at center, 10 inches deep at sides, filled with field stone	239.00		
		Surfacing, earth excavated	20.00		
		Earth shoulders 8 feet wide		299.00	49
		BROOKSVILLE.			
1,000	21	Cleaning and clearing	$100.00		
		Subdrainage, 325 feet, 4 inch tile	89.74		
		Stone base 675 feet x 8 feet x 18 inches	240.00		
		Culverts, stone, two 21 feet	50.00		
		Surfacing, gravel, 1,000 feet x 16 feet to 18 feet wide x 8 inches deep	130.00		
		Guard rail 60 feet	5.00		
				614.74	61
		*** BUCKSPORT.**			
909	22	Stone drains 498 feet x 4 feet deep x 3 feet wide; 104 feet tile and rock turnout 4 feet deep; 231 feet stone road; 76 feet gravel road	$410.96		
		Three culverts	30.04		
		Gravel surfacing 12 feet x 10 inches	173.73		
				614.73	68
		DEDHAM.			
300	21	Clearing	$2.00		
		"V" drain 300 feet x 18 inches deep in centre	43.00		
		Culvert, stone, 20 inches x 25 inches x 21 feet	18.00		
		Earth covering 300 feet x 21 feet x 10 inches; gravel covering 300 feet x 18 feet x 10 inches	56.31		
				119.31	40
		DEER ISLE.			
825	21	Clearing and cleaning	$50.00		
		Stone filling	400.00		
		Culverts, split stone, 26 feet	60.00		
		24 feet	40.00		
		21 feet	25.00		
		21 feet	25.00		
		Surfacing with loam and gravel	75.00		
		Earth shoulders 5 feet wide		675.00	82
		EDEN.			
525	25	Subdrainage 323 feet of 10-inch vitrified pipe at 25 cents	$80.75		
		Laying pipe	16.15		
		Earth excavation 140 cubic yards	84.00		
		Stone base 525 feet x 25 feet x 12 inches	589.50		
		Rolling and sprinkling	45.00		
		Surfacing 2 inches of fine crushed stone	240.00		
		Earth shoulders 4 feet wide		1,055.40	2.02
		ELLSWORTH.			
1,959	21	Excavating 140 cubic yards of earth and filling with stone	$210.00		
		Ledge cut 20 cubic yards and grading hill and raising grade with earth and stone	200.00		
		Culverts, split stone, 2 feet x 3 feet x 24 feet; 2 feet x 2 feet x 28 feet	100.00		
		Crushed stone surfacing 1,200 feet x 12 feet x 7 inches	500.00		
				1,010.00	53

* No state aid on account of special legislative aid.

HANCOCK COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		FRANKLIN.			
610	21	Cleaning and removing boulders	$125.00		
		Blind drain, 50 feet x 4 feet	50.00		
		450 cubic yards earth excavation and filling	160.59		
		105 cubic yards stone excavation and filling	130.00		
		Stone culverts, 2 feet x 4 feet x 37 feet	60.00		
		18 inches x 2 feet x 21 feet	22.00		
		Gravel, 610 feet x 16 feet x 12 inches	150.00		
		Earth shoulders, 2½ feet wide		$697.00	$1.15
		GOULDSBORO.			
490	18	Stone base 490 feet x 10 feet x 20 inches	$329.47		
		Grading	326.67		
		Culverts, stone, two	70.00		
		Guard rails	2.80		
				399.47	82
		HANCOCK.			
2,201	22	"V" drain 1,419 feet x 8 feet x 18 inches	$264.60		
		Earth excavation 381 cubic yards	52.20		
		Earth filling	42.20		
		Rock excavation 92 cubic yards	119.00		
		Stone culverts: 12 inches x 16 inches x 19 feet	10.00		
		12 inches x 16 inches x 19 feet	10.00		
		30 inches x 24 inches x 22 feet	20.00		
		New covering 30 inches x 36 inches x 22 feet	7.00		
		Surfacing with gravel 2,211 feet x 8 feet x 4 inches	75.00		
				600.00	28
		LAMOINE.			
1,832	22	Tile drain 150 feet 4 inches	$15.40		
		Excavation 4,000 cubic yards and filling the same	389.73		
		Sewer pipe, 6 inches diameter	13.00		
		Gravel and clay surfacing 1,832 feet x 19 feet x 8 inches	155.00		
		Guard rails	10.00		
		Hill cut 7 feet and low section of road filled, sandy soil surfaced with gravel and clay and ditches cobbled on steep grades		583.00	32
		MOUNT DESERT.			
611	25	Stone filling 100 feet x 4 feet high, excavated ledge 60 feet long. Top of hill lowered 2 feet. Stone base, surfaced with clay and gravel; guard rails 214 feet		906.38	1.49
		ORLAND.			
1,213	23	Excavation for stone drain 4 feet deep, 2½ feet wide. Covered stone drain 10 inches wide and 8 inches deep, trench filled with stone to within 6 inches of the surface, surface of road graded and surfaced with gravel		359.98	30
		OTIS.			
957	18	Clearing right of way	$1.50		
		Ledge excavation for ditch	39.50		
		Stone drain 957 x 8 feet x 2 feet with center drain	172.96		
		Excavation for drain	105.00		
		Grading and covering drain	53.10		
		Culvert, split stone, 18 inches x 3 feet x 21 feet	57.40		
		Gravel surface 987 feet x 8 feet x 4 inches	55.50		
				484.96	51
		SEDGWICK.			
830	33	Excavation 11 feet x 24 inches, filled with field stone 16 inches deep, covered with brush and with dirt using road machine	$277.28		
		Culvert, 10 inches x 12 inches x 24 feet	10.00		
		Surfaced with clam shells 830 feet x 9 feet x 8 inches	57.00		
		Stone for drainage hauled ¼ to ⅓ of a mile, clam shells hauled one mile		344.28	41

HANCOCK COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		SOUTHWEST HARBOR.			
802	23	Cleaning and clearing	$10.00		
		Tile drain 450 feet x 4 inches	60.00		
		Blind stone drain	30.00		
		Excavation 898 cubic yards	152.00		
		Filling 1,204 cubic yards	200.00		
		Stone culvert 18 feet x 18 inches x 24 feet, laid in cement	40.88		
		Surfaced with fine gravel from 6 inches to 19 inches deep, 802 feet x 14 feet	106.46		
				$599.34	$0.75
		STONINGTON.			
485	21	Stone base, surfacing 18 inches of crushed stone. Earth shoulders 4½ feet wide		300.00	62
		SULLIVAN.			
792	25	Cleaning and clearing	$68.89		
		Blind drain ¾ feet deep 4½ feet wide	48.40		
		320 cubic yards stone, 150 cubic yards earth	173.45		
		Stone culvert 18 inches x 18 inches x 36 feet	30.00		
		Gravel surface	95.00		
		Earth shoulders 2 feet wide, guard rails 125 feet	10.00	425.74	
		Gravel for other state roads	85.00		
				510.74	64
		SURRY.			
3,150	12	Grading 250 cubic yards on top of hill	$186.45		
		Gravel surface 3,150 feet x 12 feet x 6 inches	65.10		
				241.55	08
		SWANS ISLAND.			
380	24	"V" drain 216 feet x 8 feet x 22 inches, covered with 9 inches of gravel. Stone culvert 22 inches x 24 inches, gravel surface 225 feet x 22 feet x 9 inches		255.00	67
		TREMONT.			
379	21	"V" drain 248 feet x 11 feet x 26 inches deep in center and 10 inches deep on sides	$173.21		
		Center drain 132 feet x 3 feet x 4 feet deep	10.20		
		Culvert 3 feet x 5 feet x 21 feet with ends and retaining walls laid up 10 feet high and 20 feet long	200.07		
		Surfacing 250 feet x 10 feet x 6 inches with clam shells and gravel	12.62		
		"V" drain covered with cedar bark and 12 inches of clay		396.10	1.05
		TRENTON.			
231	–	Earth excavation, stone filling and covering 8 feet x 18 inches	$115.00		
		Stone culvert 30 inches x 30 inches x 21 feet	50.00		
		Gravel surface 231 feet x 8 feet x 6 inches	35.00		
				200.00	86
		WALTHAM.			
588	23	Stone box drain 156 feet	$70.00		
		Stone base and box drain 432 feet x 16 feet x 15 inches	135.00		
		Guard rails, 23 feet		205.00	35
		WINTER HARBOR.			
750	21	Stone base 750 feet x 12 feet x 18 inches	$180.00		
		Rock excavation	100.00		
		Stone culvert 15 inches x 20 inches x 22 feet	.20.00		
		Clay and gravel surface	247.05		
				547.05	73
Total, 26,455 feet.				$13,490.48	$0.51
5.01 miles.		Cost per mile at same rate, $2,687.52.			

KENNEBEC COUNTY.

Length in feet.	Width in feet.	Description.	Cost.	Cost per foot.
		ALBION.		
2,508	21	Gravel surface	$400.00	$0.16
		AUGUSTA.		
700	22	Draining, grading, macadamizing	705.00	1.01
		BELGRADE.		
627	12	Excavation and stone base, surfacing with gravel	412.85	66
		† CHINA.		
1,122	–	Stone underdrainage 8 feet to 10 feet wide. 3 stone culverts	299.58	27
		CLINTON.		
1,155	28	Stone underdrainage 7 feet wide, 18 inches to 24 inches deep. Split stone culvert	455.00	40
		FARMINGDALE.		
500	21	Turnpiking, one culvert, surfacing with gravel 12 feet wide, 8 inches deep	200.00	40
		FAYETTE.		
1,100	21	Clearing part of length. "V" drain 16 feet wide. Split stone culverts, 2 feet x 2 feet x 21 feet, 3 feet x 3 feet x 21 feet. Gravel surface 1,100 feet x 21 feet x 12 inches, shoulders gravelled 2½ feet wide	410.00	37
		HALLOWELL.		
700	21	Crushed rock	300.00	43
		LITCHFIELD.		
1,670	20	Cleaning and clearing. Stone base 2 feet deep covered with 12 inches of loam. Surfaced with gravel 14 feet x 12 inches	649.62	39
		MANCHESTER.		
814	20	Cleaning and clearing. Stone base 12 feet x 30 inches deep, covered with cedar bark and surfaced with earth excavated	593.11	73
		MONMOUTH.		
266	–	Stone base 8½ feet wide, 3 feet deep, gravel 12 inches deep	262.80	99
		MOUNT VERNON.		
1,881	–	Cleaning and clearing right of way, 1,072 feet turnpiked and grade lowered; 809 foot stone base. Two culverts. Surfacing	613.81	33
		OAKLAND.		
643	30	Gravel macadam surface	800.00	1.24
		PITTSTON.		
1,760	–	Gravel surface	500.00	28
		* RANDOLPH.		
400	–	Gravelled heavy	405.00	1.02
		READFIELD.		
660	–	Rebuilding culverts, surfacing with gravel	437.00	66
		VASSALBORO.		
2,508	22	Shaping road, laying crossways $50.00 12 inch, 10 inch and 8 inch tile 35.00 Surfacing 1,000 loads gravel 550.00	$635.00	$0.25

† Not received in time to obtain state aid.
* No state aid on account of special legislative aid.

KENNEBEC COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		VIENNA.			
2,640	–	Turnpiked and surfaced with sandy marl		$200.00	$0.08
		WEST GARDINER.			
425	33	Ledge excavation	$86.46		
		Stone filling	308.43		
		Grading 8 inches deep	154.26		
		Earth filling	300.00		
				849.15	2.00
		WINDSOR.			
833	21	Cleaning and clearing	$24.70		
		Subdrainage 3 feet deep 5 feet wide	185.75		
		Two tile culverts 24 inches x 23 feet	96.50		
		Guard rails 96 feet	3.50		
		Gravel	124.65		
				435.10	52
		WINSLOW.			
600	–	Cut down hill and made fill at foot of hill		605.96	1.01
		WINTHROP.			
1,144	21	Blind drain	$75.00		
		Stone base 569 feet x 8 feet x 24 inches deep, 337½ cubic yards. 575 feet graveled in addition to the above. Grading 337 cubic yards. Stone filling	625.00		
		Surfacing 1,144 feet with gravel 6 inches to 8 inches deep		700.00	61
Total, 24,656 feet. 4.67 miles.		Cost per mile at same rate, $2,328.48.		$10,868.98	$0.44

KNOX COUNTY.

		APPLETON.			
2,480	21	Removing bushes	$16.00		
		Earth excavation 1,096 cubic yards	200.00		
		Stone filling 1,250 cubic yards	260.00		
		Grading with machine	60.00		
		Three stone culverts, each 20 feet long	24.00		
		Earth shoulders 5½ feet, surfacing 1,080 feet x 6 inches	40.00		
				$600.00	$0.24
		CAMDEN.			
1,200	29	Earth excavation 200 cubic yards at 75 cents	$150.00		
		Subdrainage 40 feet of 24-inch iron pipe	90.00		
		Culvert, 24 inches x 34 feet, iron pipe	90.00		
		Surfacing ledge chips and gravel, 200 feet x 24 feet x 28 feet wide x 8 inches to 15 inches deep	515.48		
				845.48	70
		† CUSHING.			
1,200	27	Cleaning and clearing	$25.00		
		Stone base 100 feet x 7 feet x 6 inches	30.00		
		Two culverts 8 inches x 10 inches, 24 feet to 26 feet long	13.00		
		Surfacing, stone and gravel 1,200 feet x 21 feet x 10 inches deep	232.00		
				300.00	25
		FRIENDSHIP.			
725	26	Cleaning and clearing	$17.61		
		"V" drain 530 feet x 12 feet x 20 inches to 24 inches deep	168.00		
		Gravel surfacing 725 feet x 14 feet x 8 inches to 12 inches deep	253.83		
				439.44	60

† Not received in time to obtain state aid.

KNOX COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		HOPE.			
712	13	Cleaning, clearing and excavating for fill	$128.00		
		Stone base 13 feet and 3 feet respectively	190.00		
		Surfaced with excavated material 18 inches deep	42.00		
		Earth shoulders 4 feet wide		$360.00	$0.50
		† **NORTH HAVEN.**			
475	25	Clearing and removing ledge from ditches	$10.00		
		Earth excavation 440 feet x12 feet x18 inches filled with stone	275.00		
		Earth excavation 253 cubic yards	68.36		
		One stone culvert 2 feet x 22 feet	15.00		
		Surfacing 475 feet x 23 feet x 18 inches	200.00		
		Earth shoulders 6½ feet wide		568.36	1.19
		ROCKPORT.			
1,025	33	Cleaning and clearing	$10.00		
		Stone culvert 21 inches x 28 inches x 40 feet	50.00		
		Surfacing crushed stone 18 inches x 30 feet, gravel on top of stone 6 inches x 12 feet, length 1,025 feet	911.50		
		Guard rail 55 feet	18.00		
		Grade improved by making cut and fill		989.50	97
		SOUTH THOMASTON.			
600	21	Drain in center of road 600 feet; stone base 21 feet wide	$463.55		
		Gravel surface 600 feet x 21 feet x 6 inches to 8 inches deep	136.45		
		Road raised 2½ feet and made 6 inches above electric railroad in center. Rock graded and surfaced with lime rock chips on top		600.00	1.00
		THOMASTON.			
600	22	Excavated 9 feet wide 2 feet deep	$90.00		
		Blind stone drain 600 feet x8 inches x10 inches	26.00		
		Stone culvert 18 inches x 24 inches x 24 feet	20.00		
		Stone base 600 feet x 3 feet x 22 inches	284.00		
		Earth excavation 400 cubic yards. Stone filling 866 cubic yards	262.50		
		Surfacing 600 feet x 16 feet x 4 inches deep	51.00		
				733.50	1.22
		VINALHAVEN.			
480	21	Surfacing 480 feet x 21 feet x 12 inches	$44.90		
		Teams	295.87		
		Tools	3.20		
		Labor	254.04		
				598.01	1.24
		WARREN.			
600	28	Excavating drain and team work on rock	$200.00		
		One 10-inch iron culvert, one 14-inch iron culvert	68.60		
		Labor	223.62		
		Cost of gravel	106.40		
				598.62	1.00
		WASHINGTON.			
4,166	22	Clearing bushes and removing large stone	$25.00		
		"V" drain 4,166 feet x 8 feet x 2 feet deep at center and 12 inches at sides, stone graded in sizes	350.00		
		Five stone culverts 2 feet x 2 feet x 23 feet	55.00		
		Earth excavation 1,851 cubic yards. Earth filling 2,468 cubic yards	174.82		
		Drain covered with meadow hay; surfaced with earth		604.82	15
Total, 14,263 feet. 2.70 miles.		Cost per mile at same rate, $2,676.96.		$7,237.73	$0.51

† Not received in time for state aid.

LINCOLN COUNTY.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		ALNA.			
1,478	21 to 28	Cleaning and clearing	$13.30		
		Blind drain	100.00		
		Grading 1,460 cubic yards, gravel 500 cubic yards and stone	38.00		
		Gravel surface 1,478 feet x 12 feet to 16 feet x 8 inches to 10 inches deep	234.68		
				$415.45	$0.28
		BOOTHBAY.			
969	23	Excavation 969 feet x 5 feet wide x 3 feet deep, filled with stone, covered with earth. Three stone culverts 2 feet x 2 feet, one stone culvert 3 feet x 3 feet, one smaller culvert. Road widened 6 feet		400.00	41
		BOOTHBAY HARBOR.			
530	33			804.82	1.51
		BREMEN.			
800	20	Cleaning and clearing	$9.00		
		One blind drain 8 feet x 3 feet x 4 feet	3.00		
		"V" drain 650 feet x 9 feet x 2 feet			
		Earth excavation 460 cubic yards	100.00		
		Stone filling 583 cubic yards	175.55		
		One stone culvert 21 feet	15.00		
		Earth surfacing 12 inches deep	40.00		
		Gravel surfacing 4 inches deep	48.00		
		Earth shoulders 3 feet wide. Guard rails 166 feet	9.45		
				400.00	50
		BRISTOL.			
900	21	Cleaning and clearing	$125.00		
		"V" drain 900 feet x 6 feet x 2 feet. Grading 1,800 yards	250.00		
		Stone base	170.00		
		Two stone culverts, 2 feet x 2 feet x 24 feet, $37.50 each	75.00		
		Surfacing 950 feet, 12 inches deep at center, at 7 cents per load	42.00		
		Hauling gravel, etc	300.00		
				962.00	1.07
		DAMARISCOTTA.			
620	30	"V" drain 452 feet x 11 feet x 30 inches, 3 feet deep in center and 12 inches to 15 inches deep on shoulders	$248.00		
		Stone drain with stone foundation 15 inches x 24 inches x 34 feet	50.00		
		Surfacing 620 feet x 30 feet x 6 inches to 12 inches deep	137.00		
				435.00	70
		DRESDEN.			
736	25	Removing old culvert and bushes	$12.75		
		"V" drainage, 717 feet x 10 feet x 24 inches deep in center and 10 inches deep on sides, 398 cubic yards of stone	150.00		
		Earth excavation 314 cubic yards	42.00		
		One stone culvert 3 feet x 3 feet x 21 feet	101.75		
		Gravel surfacing 726 feet x 15 feet x 10 inches, 318 cubic yards	147.94		
		Guard rails, 80 feet	3.15		
				457.59	63
		EDGECOMB.			
520	21	Subdrainage 3 feet x 4 feet, stone drain. Earth excavation 231 cubic yards and filling	$165.60		
		Culvert 18 inches x 30 inches x 21 feet	10.00		
		Surfacing gravel 12 feet wide and 3 inches deep	25.00		
				200.60	39
		JEFFERSON.			
1,899	21	Three stone culverts	$73.00		
		Grading	258.95		
		Surfacing	320.00		
		Guard rails 247 feet	12.50		
				664.45	35

LINCOLN COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		NEWCASTLE.			
1,041	35	Earth excavation 270½ cubic yards. Stone fill 490 cubic yards. Stone culverts, 18 inches x 18 inches x 36 feet	$50.00		
		24 inches x 24 inches x 41 feet	100.00		
		20 inches x 20 inches x 66 feet	75.00		
		Gravel surface 511 feet x 35 feet x 8 inches and 530 feet x 35 feet x 12 inches		$897.24	$0.86
		NOBLEBORO.			
800	20	Cleaning and clearing	$30.00		
		Earth filling	109.50		
		Stone culvert 2 feet x 12 inches x 28 feet	15.00		
		Gravel surfacing 800 feet x 20 feet x 14 inches	246.95		
				401.45	51
		SOUTHPORT.			
2,000	21	Cleaning and clearing	$7.20		
		Tile pipe 200 feet, 8-inch to 10-inch	66.42		
		Blind drain 500 feet	66.80		
		Rock excavation 31 cubic yards	93.94		
		Three stone culverts	12.60		
		Earth surfacing 1,000 feet x 21 feet x 3 inches	46.97		
		Guard rails 250 feet	6.00		
				299.93	15
		WALDOBORO.			
480	21	Blind drain 9 feet x 4 feet x 20 inches. Earth excavation 266⅔ cubic yards. Two-thirds of excavation filled with stone and one-third with earth. Two stone culverts built five years ago, each 2 feet x 3 feet x 24 feet. Gravel surfacing 480 feet x 10 feet x 5 inches	$75.00	399.12	83
		WHITEFIELD.			
1,623	21	Cleaning and clearing	$12.00		
		Grading 34 cubic yards of earth	24.00		
		Grading 500 cubic yards stone	250.00		
		Ledge excavation	25.00		
		Surfacing 1,623, feet x 15 feet	203.91		
		Guard rails 440 feet	19.22		
				534.13	33
		WISCASSET.			
2,250	18 to 23	"V" drain 1,120 feet	$200.00		
		Earth excavation 50 cubic yards. Earth fill 50 cubic yards	30.00		
		Four culverts	15.00		
		Surfacing 2,250 x 15 feet x 4 inches to 8 inches deep	370.00		
				615.00	28
Total, 16,646 feet. 3.15 miles.		Cost per mile at same rate, $2,497.44.		$7,886.78	$0.47

OXFORD COUNTY.

		ALBANY.			
248	20	Stone filling 620 cubic yards 20 feet wide, 12 inches deep. Earth filling 18 feet wide 18 inches deep. Stone wall 2½ feet high 248 feet long on each side of road. One stone culvert. Gravel filling 18 feet wide 8 inches deep		$210.00	$0.84
		BETHEL.			
1,600	20	Earth excavation 2,200 cubic yards. Stone filling 500 cubic yards. Earth filling 1,186 cubic yards. Two split stone culverts, gravel 593 cubic yards		619.67	38

OXFORD COUNTY—Continued.

Length in feet.	Width in feet.	Description.	Cost.	Cost per foot.
		BROWNFIELD.		
1,120	27	Gravel surfacing 1,120 feet x 20 feet x 16 inches deep..	$519.15	$0.46
		BUCKFIELD.		
800	35	Earth filling 800 feet x 20 feet x 18 inches deep. Gravel surfacing 800 feet x 20 feet x 8 inches. Natural soil sandy.....	350.00	44
		DIXFIELD.		
540	32	One culvert, one catch basin built of stone and cement. Gravel filling 15 inches deep in center.....	400.00	74
		FRYEBURG.		
845	22	Two split stone culverts, each 25 feet long. Earth filling 400 cubic yards, 450 feet x 20 feet x 12 inches. Gravel surfacing 845 feet x 22 feet x 12 inches. Gravel hauled ½ mile.....	410.00	49
		GREENWOOD.		
450	22	Rock excavation 1,166 cubic yards. Stone filling 400 feet x 6 feet x 9 feet deep. Earth filling 450 feet x 22 feet x 18 inches. Three stone culverts. Gravel surface 450 feet x 22 feet x 6 inches.....	430.90	95
		LOVELL.		
1,518	21	Earth excavation 500 cubic yards. Earth filling 1,518 feet x 9 feet wide, 12 inches deep. Two stone culverts. Gravel surfacing 1,518 feet x 12 feet x 18 inches deep	628.00	41
		MEXICO.		
400	40	Grading 300 feet x 3 feet wide x 42 inches deep. One tile culvert. Gravel 400 feet x 3 feet deep.....	616.22	1.54
		NEWRY.		
725	18	425 cubic yards filling. Three stone culverts 19 feet long 3 feet wide. Surfacing 325 feet x 18 feet x 18 inches	238.00	33
		NORWAY.		
1,290	28	Grading 480 cubic yards. Underdrainage 1,540 feet of stone, also one stone culvert. Surfacing 1,037 cubic yards.....	400.00	31
		OXFORD.		
1,050	22	Grading 100 cubic yards. Stone filling 85 cubic yards. Bank wall 537 square feet. Gravel filling 15 feet wide 18 inches deep.....	400.00	38
		PARIS.		
1,733	31	Earth excavation 1,140 cubic yards. Four stone culverts. Surfacing 1,733 feet x 21 feet x 12 inches..	900.00	52
		ROXBURY.		
350	22	Earth excavation 60 cubic yards..... $40.00 Earth filling 75 cubic yards..... 30.00 Stone filling 80 cubic yards..... 34.00 Two stone culverts, 22 feet x 15 inches x 18 inches each..... 40.00 Surfacing 350 feet x 21 feet x 10 inches deep in center..... 70.15	214.15	61
		RUMFORD.		
6,000	28	Earth 1,500 cubic yards. Stone filling 5,000 feet long, 16 feet wide, 6 inches deep. Earth filling 300 feet x 28 feet x 18 inches deep. Two split stone culverts..	5,267.79	88

OXFORD COUNTY—Concluded.

Length in feet.	Width in feet.	Description.	Cost.	Cost per foot.
		STOW.		
726	22	Earth excavation 12 feet wide, 12 inches deep, stone filling 12 feet wide, 12 inches deep. Two split stone culverts, one of which is 6 feet wide x 3 feet high. Gravel surface 18 feet wide, 12 inches deep.....	$316.00	$.043
		† STONEHAM.		
825	24	Stone filling from 12 inches to 18 inches deep, 12 feet wide, 165 feet long. Earth filling 12 inches deep, 16 feet wide. Two split stone culverts. Gravel surfacing 825 feet x 20 feet wide, 8 inches deep.....	319.50	39
		SUMNER.		
1,500	20	Earth and rock excavation, 200 feet x 20 feet x 18 inches. Stone filling 430 feet x 20 feet x 18 inches. Three stone culverts. Gravel surface 430 feet x 20 feet x 18 inches.....	600.00	40
		UPTON.		
480	22	Earth and rock excavation 177 cubic yards. Stone filling 106 feet x 4 feet x 24 inches. Earth filling 106 feet x 20 feet x 18 inches. One stone culvert. Gravel surfacing 480 feet x 22 feet x 12 inches	453.00	94
		WATERFORD.		
1,403	21	Earth excavation 15 cubic yards. Gravel surfacing, 21 feet wide, 12 inches deep, 1,000 feet long.....	400.00	28
		WOODSTOCK.		
1,452	20	Excavation 440 cubic yards. Stone filling 8 feet wide 18 inches deep. Earth filling 20 feet wide, 9 inches deep. Four stone culverts with bottom paved. Gravel surface 9 feet wide x 6 inches deep.....	547.78	38
Total, 25,055 feet. 4.74 miles.		Cost per mile at same rate, $2,999.04.	$14,240.16	$0.57

PENOBSCOT COUNTY.

		BRADFORD.		
1,155	28	Excavating for "V" drain.....	$97.81	
		"V" drain 1,155 feet x 6 feet x 15 inches...	122.73	
		Stone culvert 2 feet x 3 feet x 25 feet.....	28.00	
		Surfacing 1,155 feet x 12 feet x 15 inches, Gravel.....	20.00	
		Hauling, leveling, etc.....	292.20	
				$560.74 $0.49
		BRADLEY.		
500	21	Iron pipe culvert 13 inches x 21 feet.....	$15.00	
		Earth excavation 50 cubic yards, rock excavation 50 cubic yards.....	168.08	
		Gravel surfacing 500 feet x 14 feet x 6 inches to 10 inches deep.....	116.00	
				299.08 60
		BREWER.		
650	36	"V" drain 14 feet wide, 2 feet deep in center, 10 inches deep on sides. Gravel surface 650 feet x 8 inches deep in center.....		322.77 50
		† BURLINGTON.		
338	21	Cleaning and clearing.....	$6.00	
		Stone filling 13 feet wide 2½ feet deep.....	75.00	
		Gravel surfacing 13 feet wide 12 inches deep	119.00	
				200.00 59

† Not received in time to obtain state aid.

PENOBSCOT COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		CARMEL.			
2,968	32	Road excavated, stone filled, covered, shaped and graveled		$717.14	$0.24
		CARROLL.			
860	25	"V" drain 565 feet x 10 feet x 2½ to 3 feet deep	$200.00		
		Grading 2,955 feet x 20 feet x 12 inches deep	100.00		
		Gravel surfacing 860 feet x 16 feet x 6 inches to 8 inches deep	108.00		
				408.00	47
		CHARLESTON.			
592	21	Cleaning and clearing	$25.00		
		Subdrainage	50.00		
		Culverts	10.00		
		Grading	100.00		
		Surfacing	110.00		
		Earth shoulders	21.00		
				295.00	50
		CHESTER.			
1,936	24	Cleaning and clearing	$33.00		
		Tile pipe	84.22		
		Grading 1,466 feet	100.00		
		Gravel surfacing 1,466 feet x 12 feet x 8 inches to 12 inches deep	101.15		
				318.37	16
		CLIFTON.			
462	28	Stone culvert	$23.60		
		Grading	128.25		
		Surfacing	95.27		
				247.12	53
		CORINNA.			
1,567	24	Excavation 10 feet to 16 feet wide, 2 feet deep; filled with stone 16 inches to 20 inches deep, covered with earth 12 inches deep. Surfacing 1,567 feet x 12 feet x 12 inches		603.00	38
		CORINTH.			
1,084	27	"V" drain 9 feet wide, 2½ feet deep. Two stone culverts 18 inches x 30 inches. Earth excavation 840 cubic yards. Earth covering shaped and graveled, 12 feet wide x 6 inches deep		469.23	43
		DEXTER.			
1,056	26	"V" drain, 1,000 feet x 12 feet x 2 feet	$75.00		
		Three stone culverts 12 inches x 24 inches	40.00		
		Stone filling 12 feet x 20 inches	200.00		
		Earth covering 12 feet x 10 inches	25.00		
		Gravel surface 20 feet x 8 inches	259.60		
				599.60	57
		DIXMONT.			
525	24	Cleaning and clearing	$10.00		
		"V" drain 825 feet x 10 feet x 2 feet	60.00		
		Stone base 825 feet x 10 feet x 2 feet	40.00		
		611 cubic yards earth excavation	60.00		
		Gravel surface 824 feet x 10 feet x 2 feet and 8 inches deep in center	73.00		
				243.00	46
		EDDINGTON.			
1,048	32	Cleaning and clearing	$30.00		
		"V" drain 1,048 feet long	92.00		
		Iron culvert, stone and cement ends	38.85		
		Filling "V" drain	142.32		
		Covering drain and shaping road	68.00		
		Surfacing of crushed stone	190.21		
				559.38	53

PENOBSCOT COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		† EDINBURG.			
1,324	25	Cleaning and clearing	$5.53		
		"V" drain, 110 feet long, 20 inches deep at center, 14 inches deep at shoulders	9.00		
		Stone culvert 14 inches x 20 inches x 20 feet	30.28		
		Earth grading 205 cubic yards	45.86		
		Surfacing coal ashes 1,324 feet x 10 feet x 5 inches	9.50		
				$100.17	$0.08
		ETNA.			
847	33	Cleaning and clearing	$29.01		
		"V" drain. Split stone culvert 24 inches x 36 inches x 45 feet	89.50		
		Earth excavation 470 yards	118.10		
		Stone filling 470 yards	135.00		
		Gravel 37 yards	55.00		
				426.61	50
		EXETER.			
900	30	Cleaning and clearing	$50.00		
		"V" drain 675 feet x 10 feet	150.00		
		Stone culvert 2 feet x 2½ feet x 25 feet	30.00		
		Excavating and stone filling	150.00		
		Gravel surface 900 feet x 10 feet x 6 inches	103.70		
				483.70	54
		GARLAND.			
363	24	Bridge 24 feet x 6 feet. Earth excavation for stone base. Stone filling 128 cubic yards. Gravel surface 363 feet x 24 feet x 12 inches deep. Guard rails 726 feet		600.05	1.65
		GREENBUSH.			
1,140	23	Cleaning and clearing	$46.75		
		Grading 453 cubic yards earth	253.25		
		Surfacing 1,140 feet x 16 feet x 12 inches deep in center 14 inches deep on shoulder. Earth shoulder 3½ feet wide		300.00	26
		GREENFIELD.			
720	21	Cleaning and clearing	$60.00		
		Bridge 3½ feet deep, stone abutments 18 feet wide, 20 feet cover	60.00		
		Grading 300 cubic yards	99.00		
		Gravel surfacing 627 feet x 12 feet	29.36		
				248.36	34
		HAMPDEN.			
9,174	33	Rock excavation	$87.50		
		"V" drain 10 feet wide 2 feet deep.			
		Four stone culverts	40.00		
		Earth excavation 2,832 cubic yards	102.00		
		Road was made under 6,796 cubic yards	201.00		
		Stone filling	461.00		
		Gravel surface 9,174 feet x 10 feet x 4 inches or more	215.00		
		Earth shoulders 11½ feet on each side		1,106.50	12
		HERMON.			
435	22	Two split stone culverts 2½ feet x 2 feet x 22 feet	$40.00		
		Stone filling 435 feet x 22 feet. Gravel surface 21 feet wide	329.41		
				369.41	85
		HOLDEN.			
705	22	Cleaning and clearing	$13.25		
		One stone culvert 2½ feet x 2 feet x 22 feet	12.00		
		Stone base 705 feet x 21 feet x 18 inches deep in center and 10 inches deep at shoulders	153.15		
		Gravel surface 705 feet x 18 inches deep in center and 10 inches deep at shoulders	175.00		
				353.40	50

† Not received in time for state aid.

PENOBSCOT COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		* HOWLAND.			
2,087	27	Cleaning and clearing	$200.00		
		Two wood culverts, 24 inches x 18 inches x 22 feet	15.00		
		Stone filling 553 cubic yards	182.00		
		Surfacing 772 feet x 12 feet x 8 inches	200.78		
				$597.78	$0.29
		KENDUSKEAG.			
595	21	Cleaning and clearing	$3.00		
		Stone culvert 25 feet long	25.60		
		Excavating 352 cubic yards	52.23		
		Stone filling 2 feet deep x 10 feet wide	185.96		
		Gravel surface 595 feet x 18 feet x 6 inches to 8 inches deep	66.10		
				332.89	56
		LAGRANGE.			
931	30	Cleaning and clearing	$13.00		
		"V" drain 12 feet x 30 inches deep in center and 10 inches deep at shoulders	249.90		
		Two stone culverts, each 37 feet	50.00		
		Earth excavation	42.00		
		Gravel surfacing	100.00		
		Smoothing and shaping	37.70		
				492.40	53
		LEE.			
2,310	24	Rock subdrainage 500 cubic yards	$200.00		
		Two stone culverts	200.00		
		Earth filling 252 cubic yards	100.00		
		Surfacing 1,310 feet of gravel 8 inches deep	100.00		
				600.00	26
		LEVANT.			
1,560	32	"V" drain 10 feet x 18 inches	$175.00		
		Stone culvert 30 inches x 26 feet	25.00		
		Excavation and stone filling	346.86		
		Gravel surface 10 feet x 4 inches to 5 inches deep, 20 feet wide	50.00		
				596.86	38
		LOWELL.			
1,485	26	Cleaning and clearing	$108.79		
		"V" drain 12 feet wide, 18 inches deep at center, 6 inches at shoulders	340.00		
		Two iron pipe culverts 4 feet in diameter, 21 feet long	30.00		
		Gravel loam 117½ feet x 12 feet	140.00		
				618.79	42
		MATTAWAMKEAG.			
3,250	21	Cleaning and clearing	$20.00		
		One split stone culvert 2 feet x 23 feet	35.50		
		One iron beech culvert 10 inches	25.87		
		Gravel surface 3,250 feet x 12 feet x 8 inches	534.63		
				616.00	19
		MAXFIELD.			
4,224	25	Six split stone culverts	$230.60		
		Freight on cement	1.41		
		Surfacing 4,224 feet x 21 feet x 12 inches	160.78		
		Guard rails, 20 feet	9.00		
				401.79	09
		NEWBURG.			
2,079	21	"V" drain. Two culverts 2 feet x 3 feet x 24 feet	$50.00		
		Stone filling and surfacing with gravel	365.52		
				415.52	20
		NEWPORT.			
1,353	32	"V" drain 12 feet to 14 feet wide, 3 feet deep in center	$218.00		
		Excavation 2,104 cubic yards. Stone filling 1,403 cubic yards	328.16		
		Surfacing and graveling	109.00		
				655.16	49

* No state aid on account of special legislative aid.

PENOBSCOT COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		OLDTOWN.			
300	42	Grading 1,300 cubic yards. Surfaced with crushed rock, 300 feet x 42 feet x 10 inches		$600.00	$2.00
		ORONO.			
825	20	Cleaning and clearing	$5.50		
		12 inch drain, 75 feet	37.50		
		Lumber	40.00		
		Grading	90.00		
		Gravel and rock 427 cubic yards	427.00		
				600.00	73
		ORRINGTON.			
675	28	Stone drain 8 feet wide, 2 feet deep	$298.00		
		Culvert 4 feet x 2¾ feet x 36 feet, laid in cement	160.00		
		Earth filling 400 cubic yards. Stone filling 400 cubic yards. Gravel surfacing 675 feet x 8 feet x 8 inches	148.00		
				606.00	90
		PASSADUMKEAG.			
252	24	Wall on each side 30 inches high, filled with gravel 252 feet x 24 feet		359.49	1.43
		PATTEN.			
1,404	24	Cleaning and clearing	$46.75		
		Stone culvert 30 inches x 4 feet x 24 feet	30.00		
		Rock fill 325 cubic yards	130.00		
		Earth fill 200 cubic yards	60.50		
		Gravel fill 120 cubic yards	30.00		
		Crushed stone surface 1,010 feet x 12 feet x 15 inches	256.00		
		Crushed stone 344 feet with 50 cubic yards gravel mixed	52.00		
				605.25	43
		PLYMOUTH.			
396	25	Excavation and stone filling	$198.00		
		Gravel surface 1,850 x 13 feet x 12 inches deep in center and 8 inches at shoulders	161.95		
				359.95	91
		PRENTISS.			
1,320	25	Rock fill 1,320 feet x 12 feet x 3 feet	$190.00		
		Two stone culverts	80.00		
		Gravel surface 1,320 feet x 12 feet x 8 inches	63.50		
				$333.50	25
		SPRINGFIELD.			
660	24	Rock fill 660 feet x 12 feet x 30 inches	210.00		
		One split stone culvert 2 feet x 23 feet	60.00		
		Gravel surface 660 feet x 14 feet x 12 inches to 16 inches deep	130.00		
				400.00	61
		STETSON.			
634	28	Cleaning and clearing	$10.00		
		"V" drain 18 inches to 24 inches deep	80.00		
		One stone culvert 2 feet x 24 feet	15.00		
		Earth excavation 320 cubic yards	114.83		
		Gravel surface 634 feet x 16 feet x 6 inches	50.00		
				269.83	43
		WINN.			
1,600	24	Cleaning and clearing	$160.00		
		Three stone culverts each 3 feet x 22 feet	75.00		
		Stone filling 82½ feet x 20 feet x 12 inches	40.00		
		Gravel surface 82½ feet x 8 inches	41.50		
				316.50	20
Total, 58,289 feet. 11.04 miles.		Cost per mile at same rate, $1,774.08.		$19,608.34	$0.34

PISCATAQUIS COUNTY.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		ATKINSON.			
1,200	24	Cleaning and clearing	$25.00		
		"V" drain 960 feet	275.00		
		One stone culvert 18 inches x 18 inches x 23 feet	25.00		
		One culvert repaired, 6 feet x 4 feet x 23 feet	25.00		
		Earth fill 240 feet	75.00		
		Guard rails 48 feet	5.00		
				$430.00	$0.36
		† **BROWNVILLE.**			
300	–	Cleaning and clearing 3,000 feet	$60.00		
		"V" drain 150 feet, 3 feet wide on bottom, 6 feet wide on top, 18 inches deep. Covered with gravel 12 inches deep and 12 feet wide	75.00		
		Tile culvert 15 inches x 21 feet	20.00		
		Gravel surface 300 feet x 12 feet x 12 inches	50.00		
				205.00	68
		DOVER.			
750	30	Removing rocks and bushes	$20.00		
		Stone drain 750 feet long	310.00		
		Two stone culverts	50.00		
		Gravel surface 750 feet x 10 inches, placed with machine	20.00		
				400.00	53
		FOXCROFT.			
326	52	Earth excavation	$142.00		
		326½ feet of 10 inch tile	95.06		
		Two catch basins	14.00		
		Crushed stone surface 574 yards; 326½ feet x 12 inches	748.45		
				999.71	3.06
		GREENVILLE.			
895	30	Surfacing 895 feet x 30 feet x 18 inches	$662.41		
				662.41	74
		GUILFORD.			
2,648	24	Cleaning and clearing	$11.38		
		"V" drain 455 feet x 7 feet x 2½ feet deep	94.00		
		Blind stone drain 490 feet x 3 feet x 3 feet	32.75		
		Three stone culverts 20 inches x 20 inches x 28 feet	31.00		
		Bridge 6 feet x 4½ feet x 28 feet	48.00		
		Ledge excavation 75 cubic yards	50.00		
		Rock fill 500 cubic yards	43.56		
		Earth fill 500 cubic yards	90.81		
		Guard rails 100 feet	7.00		
		Gravel surface 500 feet x 16 feet x 8 inches	194.00		
				602.50	23
		MILO.			
1,386	22	"V" drain 500 feet. Two cement stone culverts 2 feet x 22 feet. One plank culvert 22 feet. Two plank driveways 15 feet. Excavation 412 feet x 12 inches to 4 feet deep. Fill 12 inches to 3 feet deep, 495 feet		650.73	48
		MONSON.			
2,168	24	Cleaning and clearing	$183.10		
		"V" drain 100 feet	88.58		
		Eight stone culverts 20 inches x 20 inches x 24 feet	132.00		
		Ledge excavation	16.93		
		Road machine work	121.28		
				541.89	25
		PARKMAN.			
3,960	24	Cleaning and clearing	$75.00		
		Two tile culverts 20 inches	82.00		
		One tile culvert	15.00		
		Three culverts, 8 inches	40.00		
		Grading 400 feet x 30 feet x 3 feet	153.35		
		Road machine work	98.00		
				463.35	11

† Not received in time for state aid.

PISCATAQUIS COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		SANGERVILLE.			
2,452	25	Cleaning and clearing	$5.00		
		Blind stone drain 9 feet x 3 feet	100.00		
		One stone culvert 24 inches x 24 inches x 24 feet	20.00		
		Three tile culverts 12 inches x 24 feet	44.00		
		Tile for side drains	18.50		
		Earth excavation	126.11		
		Ledge excavation	40.50		
				$354.11	$0.14
		SEBEC.			
3,465	26	Cleaning and clearing	$95.00		
		Plank side outlet	50.00		
		One iron culvert, 12 inches	51.84		
		Labor on iron culvert	15.00		
		Earth fill	85.00		
		Ledge excavation	25.10		
		Surfacing with road machine	50.00		
				371.94	11
		SHIRLEY.			
–	–	413 feet of rock excavation for ditch on one side. Work unfinished		289.17	
		WELLINGTON.			
390	24	"V" drain 22 feet long	$6.00		
		One culvert 18 inches x 18 inches x 72 feet	28.85		
		One culvert 18 inches x 18 inches x 24 feet	7.00		
(Bridge work)		Steel bridge	250.00		
		Abutments	275.00		
		Cement for abutments	17.47		
		Side wall 68 yards; rock at 48 cents	32.64		
		Earth excavation 298 yards; earth fill 204 yards	86.15		
		Guard rails	7.00		
				710.11	
		WILLIAMSBURG.			
2,640	21	Cleaning and clearing	$12.00		
		Surfacing with road machine	149.81		
				161.81	06
Total, 22,190 feet. 4.20 miles.		Cost per mile at same rate, $1,388.64.		$5,843.45	$0.26

SAGADAHOC COUNTY.

		ARROWSIC.			
421	18½	Subdrainage of pine lumber	$60.00		
		Earth excavation and filling	117.10		
		Surfacing 421 feet x 12 feet x 9 inches deep	168.00		
		Guard rails 878 feet	61.00		
				$406.10	$0.96
		BATH.			
580	20	236 double loads crushed stone		770.75	1.34
		BOWDOIN.			
2,150	20	Cutting down hill, part rock	$64.13		
		Two stone culverts 12 inches x 14 inches x 24 feet	36.03		
		Grading 163 cubic yards, stone and earth	195.00		
		Gravel surface 12 inches deep 14 feet wide	301.00		
		Guard rails 681 feet at 2 cents	13.62		
		Placing guard rails	11.75		
				621.53	29

SAGADAHOC COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		GEORGETOWN.			
666	16	Grading 113 feet x 16 feet wide, including ledge excavation and gravel filling	$103.94		
		Surfacing 553 feet x 16 feet, gravel filling 8 inches deep	296.06		
				$400.00	$0.60
		PHIPPSBURG.			
500	21	Blasting rock	$110.00		
		Side wall	30.00		
		Cement stone culvert	50.00		
		Grading 550 yards, earth and gravel	356.38		
		Broken stone 50 cubic yards	50.00		
		Surfacing 500 feet, 8 inches gravel, 6 inches earth with broken stone base			
		Guard rails 100 feet	7.06		
				603.44	1.21
		RICHMOND.			
1,105	28	Cleaning and clearing	$16.02		
		Stone culverts 18 inches x 24 inches x 26 feet	13.50		
		Stone culvert 16 inches x 18 inches x 23½ feet	15.00		
		Stone base 985 feet x 15 feet x 15 inches deep at center, 8 inches deep at shoulders	220.76		
		Earth excavation 350 cubic yards	48.54		
		Gravel and clay surfacing, 1,105 feet x 17 feet x 8 inches	258.39		
		Earth shoulders 5½ feet		572.21	52
		TOPSHAM.			
1,940	22	Cleaning and clearing	$6.00		
		Stone culvert 15 inches x 18 inches x 23 feet	25.00		
		Earth excavation	50.00		
		Surfacing 1,940 feet x 13 feet x 12 inches of rock and gravel in center, 6 inches deep at shoulders	567.17		
				648.17	33
		WOOLWICH.			
1,146	21	Grading	$113.86		
		Surfacing 1,146 feet x 13 feet x 9 inches deep in center, 6 inches deep at sides	483.35		
				597.21	52
Total, 8,508 feet. 1.61 miles.		Cost per mile at same rate, $2,861.76.		$4,619.41	$0.54

SOMERSET COUNTY.

		ANSON.			
1,400	–	1,207 cubic yards of rock at 75 cents	$915.25		
		Hemlock logs 7,500 feet at $10 per M	75.00		
		275 dowels at 10 cents	27.50		
		Labor	224.81		
		Guard rails 1,500 feet	81.00		
				$1,323.56	$0.94
		ATHENS.			
825	24	Cleaning and clearing	$10.75		
		Blind stone drain	65.00		
		Two pipe culverts	50.00		
		Gravel surface 412 feet x 22 feet x 8 inches	125.00		
				250.75	30
		BRIGHTON PLANTATION.			
438	16	Cleaning and clearing	$15.00		
		Stone culvert 2 feet x 16 feet	25.00		
		Earth and rock filling 146 cubic yards	160.00		
				200.00	45

SOMERSET COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		CAMBRIDGE.			
577	24	Cleaning and clearing	$7.50		
		Stone culvert 24 inches x 24 inches x 24 feet	36.00		
		Stone base 577 feet x 24 feet x 18 inches to 3 feet deep	319.79		
		Gravel surface 577 feet x 24 feet x 8 inches	181.64		
				$544.93	$0.94
		CANAAN.			
432	22	Cleaning and clearing. Stone side walls 4 feet x 4 feet x 446 feet on one side and 363 feet on other side, filled between with earth 22 feet x 12 inches deep		252.00	58
		CORNVILLE.			
594	22½	Earth excavation 3½ feet deep, 7 feet wide on top and 3½ feet wide on the bottom	$298.50		
		Stone culvert 2½ feet x 3 feet x 20 feet	34.00		
		Drain to culvert	6.00		
		Rock excavation for ditch	26.22		
				364.72	61
		† DETROIT.			
850	21	Raising bridge and lowering hill. Culvert 24 feet wide, bridge about 12 feet. Earth and rock filling 125 feet x 23 feet x 2 feet to 4 feet deep. Guard rails, 272 feet		433.00	51
		EMBDEN.			
300	21	Cleaning and clearing	$11.37		
		"V" drain 102 feet x 8 feet x 4 feet deep, filled with stone	108.95		
		Hauling gravel	93.16		
				213.48	71
		FAIRFIELD.			
2,303	25	Gravel surface 8 inches to 12 inches deep		579.95	25
		HARMONY.			
321	22	Stone culvert 20 inches x 24 inches x 24 feet; stone culvert 20 inches x 24 inches x 27 feet	$60.00		
		Stone filling 653 cubic yards; earth filling 261 cubic yards	340.00		
				400.00	1.25
		HARTLAND.			
693	23	Removing bushes and logs	$11.00		
		"V" drain 600 feet x 12 feet x 2½ feet deep	326.10		
		Three stone culverts, one constructed in 1907, 10 inches x 20 inches x 27 feet	37.00		
		Grade raised 18 inches. Loam surface 400 feet x 12 feet x 6 inches	30.02		
				404.12	58
		MADISON.			
3,185	40	Grading, 3,185 feet long, covered with clay 16 feet x 12 inches deep at center and 6 inches deep at sides, covered with sand		589.24	19
		MERCER.			
1,188	19	Cleaning and clearing	$20.00		
		One split stone culvert 21 feet	40.00		
		Stone base 610 feet x 19 feet x 14 inches deep	338.51		
		Gravel surface 610 feet x 19 feet x 10 inches deep	200.00		
		Guard rails 60 feet	1.50		
				600.01	50
		NEW PORTLAND.			
700	24	"V" drain 150 feet x 12 feet x 3 feet deep at center	$157.40		
		Catch basin and 100 feet 10-inch tile, connected with "V" drain by 6-inch tile	75.00		
		Stone culvert 4 feet x 4 feet x 28 feet, covered with 5 feet of earth. Stone culvert lengthened 11 feet	305.15		
		Grading two small bunches	41.50		
				579.05	83

† Not received in time for state aid.

SOMERSET COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		NORRIDGEWOCK.			
600	24	Cleaning and clearing. Stone base 400 cubic yards; 600 feet x 12 feet x 18 inches. Stone culvert 28 inches x 24 inches x 20 feet, containing 9½ cubic yards of stone at $2.75....	$26.12		
		Excavation 137 cubic yards. Gravel surface 600 feet x 14 feet x 8 inches, 244½ cubic yards, 40 cubic yards of which cost 10 cents per cubic yard.....		$467.90	$0.80
		PALMYRA.			
590	26	Blind stone drain 360 feet x 12 feet x 3 feet..	$190.91		
		Excavation 360 feet, grade raised 4 feet for 230 feet. Surfaced with material taken from hill.....	208.00		
		Guard rails 460 feet.....	10.00	408.91	69
		PITTSFIELD.			
1,600	24	"V" drain 14 feet wide at top, 3 feet wide at bottom, 30 inches deep, filled with stone and gravel.....	$653.97		
		Split stone culvert 12 inches x 16 inches x 22 feet.....	25.00		
		Split stone culvert 12 inches x 18 inches x 31 feet.....	30.00		
		Covered with cedar shavings, surfaced for 800 feet with gravel 6 inches deep and 800 feet surfaced with excavated material.....		709.97	44
		RIPLEY.			
324	21	Two culverts 3 feet x 3½ feet x 21 feet. One culvert 18 inches x 2 feet x 21 feet.....	$150.00		
		Stone filling 204 feet x 21 feet x 2½ feet....	150.00		
		Hill graded 120 feet long, material used for fill 21 feet x 6 inches to 10 inches deep....	83.00	383.00	1.18
		SKOWHEGAN.			
130	22	Concrete steel culvert 15½ feet x 22 feet.....	$794.12		
Bridge work		Gravel filling 170 cubic yards.....	127.50	921.62	
		SMITHFIELD.			
671	28	Stone underdrainage 8 feet x 20 inches to 24 inches deep, covered with 20 inches of gravel	$416.84		
		Stone culvert 2½ feet x 3 feet x 20 feet.....	20.00	436.84	65
		SOLON.			
1,455	21	Culvert 24 inches diameter 22 feet long; culvert 24 inches diameter 18 feet long; material for culverts.....	46.80		
		Road excavation filled with stone, covered with gravel and clay loam. Rock filling 2 feet to 5 feet deep.....		432.30	29
		SAINT ALBANS.			
640	24	Earth excavation 3 feet to 4 feet deep.....	$125.20		
		Stone filling and covering.....	233.16		
		Surfaced with 6 inches of gravel.....	15.00	373.36	58
		STARKS.			
Bridge work		Abutment 15 feet x 22½ feet x 5½ feet wide; upper wing 22 feet long, average height 9 feet. Average width 12 inches. Lower wing 11 feet long 13 feet high 16 inches wide.....		422.87	
Total, 19,686 feet. 3.73 miles.		Cost per mile at same rate, $2,667.46.		$9,947.09	$0.51

WALDO COUNTY.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		BELFAST.			
754	43	"V" drain 114 feet. Gravel surfacing 114 feet long x 3 inches deep. Crushed stone surfacing 637 feet rolled		$853.25	$1.13
		BELMONT.			
1,650	24	Subdrainage 720 feet x 7 feet x 2 feet deep. Culvert 20 inches x 24 inches x 22 feet; culvert 24 inches x 24 inches x 23 feet		204.00	12
		BROOKS.			
1,529	–	Cleaning and clearing	$16.00		
		Blind stone drain 3 feet x 4 feet x 514 feet	128.00		
		Two culverts of field stone	44.00		
		Earth filling 447 cubic yards	160.00		
		Rock filling 788 cubic yards	180.00		
		Gravel surface 4 inches to 6 inches deep	75.66		
				603.66	40
		BURNHAM.			
1,800	21	Cleaning and clearing	$60.00		
		Stone filling 250 cubic yards	175.00		
		Gravel 150 cubic yards	50.00		
		Grading 1,250 feet	25.00		
		Excavating and filling 300 feet	83.00		
		Guard rails 320 feet	19.00		
				412.00	23
		FRANKFORT.			
2,247	21	Granite culvert 3 feet x 3 feet x 28 feet, 35 tons	$100.00		
		Granite used on tile culvert, 18 feet	9.90		
		Excavating 200 cubic yards at 40 cents	80.00		
		Broken stone filling 400 cubic yards at 35 cents	140.00		
		Gravel surface 400 yards	270.00		
				599.90	27
		FREEDOM.			
1,073	23	Cleaning and clearing	$15.00		
		Earth filling 1,150 cubic yards	360.03		
		Stone filling 800 cubic yards	242.56		
		Swamp road, outside walls of stone, center filled with earth 2 feet		617.59	57
		ISLESBORO.			
1,450	21	Underdrainage 1,450 feet x 4 feet x 3½ feet deep. Grading 752 cubic yards	$516.26		
		Gravel surfacing 1,450 feet x 15 feet x 3 inches deep	98.50		
				614.76	42
		JACKSON.			
300	21	Stone filling to widen road	$64.25		
		Covering stone and grading	77.25		
		Ledge excavation	22.91		
		One stone culvert		164.41	55
		KNOX.			
495	19	Cleaning and clearing	$30.00		
		Surfacing 495 feet long by 6 inches deep	89.54		
				119.54	24
		LIBERTY.			
2,034	22	Cleaning and clearing	$38.70		
		"V" drain 1,802 feet x 8 feet x 2 feet	310.10		
		Rock and earth fill 232 feet x 22 feet x 2 feet	186.70		
		Seven stone culverts 22 feet long	115.00		
		Guard rails 232 feet	20.00		
				670.40	33
		LINCOLNVILLE.			
60	22	Retaining wall 60 feet x 15 feet x 6 feet thick,			
Bridge work		containing 450 tons of granite	$380.21	380.21	

WALDO COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		MONTVILLE.			
1,254	21	Cleaning and clearing	$30.00		
		Blind drain 578 feet x 4 feet x 3 feet	120.00		
		One stone culvert 2½ feet x 2½ feet; one stone culvert 2 feet x 2 feet; two stone culverts 1½ feet x 2 feet, each 21 feet long	35.00		
		Grading 330 feet. Stone and earth filling, 539 cubic yards, 346 feet	215.00		
				$400.00	$0.32
		MORRILL.			
2,037	21	Cleaning and clearing	$62.00		
		Culvert 4 feet x 2½ feet x 20 feet, culvert 12 inches x 18 inches x 20 feet	18.00		
		Earth and stone filling	220.00		
				300.00	15
		NORTHPORT.			
1,749	21	Cleaning and clearing	$25.00		
		Five stone culverts 12 inches x 24 inches x 25 feet	50.00		
		Ledge excavation	150.00		
		Earth and gravel surface 825 feet x 15 feet x 6 inches to 15 inches deep	82.78		
				307.78	16
		PALERMO.			
1,567	20	Cleaning and clearing	$150.00		
		"V" drain 330 feet x 9 feet wide	125.00		
		Stone culvert 3 feet x 3½ feet x 22 feet	35.85		
		Stone filling 1,238 feet x 20 feet	285.94		
		Guard rails 974 feet	18.00		
		Road paved two feet		614.79	39
		SEARSMONT.			
2,300	21	Cleaning and clearing	$50.00		
Bridge work		"V" drain 740 feet x 10 feet x 3 feet	270.00		
		Culvert 5 feet x 3 feet x 21 feet	50.00		
		Turnpiking 1,560 feet	18.00		
		Steel beams for bridge 35 feet long	300.00		
				688.00	
		SEARSPORT.			
941	33	Double timber drain 4 feet wide, covered with 3 feet of field rock	$351.85		
		Gravel surface 941 feet x 12 feet x 6 inches	56.15		
				408.00	43
		THORNDIKE.			
1,690	24	Stone culvert 22 inches x 16 inches x 30 feet	$12.00		
		Stone culvert 16 inches x 12 inches x 24 feet	8.00		
		Stone culvert 12 inches x 12 inches x 24 feet	6.00		
		Stone culvert 15 inches x 12 inches x 26 feet	8.00		
		Earth excavation 302 cubic yards and 302 cubic yards stone filling	190.25		
				224.25	13
		TROY.			
500	18	Stone culvert with cedar floor 3 feet x 19 feet	$20.00		
		Stone fill 18 inches to 24 inches deep, surfaced with earth	390.00		
				410.00	82
		UNITY.			
900	21	Cleaning and clearing	$20.00		
		Blind stone drain. Culvert 2½ feet x 2 feet x 22 feet	10.00		
		Culvert 3 feet x 2 feet x 24 feet	15.00		
		Ledge excavation 52 cubic yards	77.00		
		Stone filling	84.25		
		Earth surfacing 900 feet x 15 inches	100.00		
				306.25	34
		WINTERPORT.			
6,000	30	Cleaning and clearing	$125.72		
		One stone culvert	10.00		
		Gravel surfacing 6,000 feet x 8 inches deep, or 771 cubic yards	597.83		
				733.55	12
Total, 32,270 feet.				$9,252.13	$0.29
6.11 miles.		Cost per mile at same rate, $1,510.08.			

WASHINGTON COUNTY.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		ADDISON.			
3,514	23	Cleaning and clearing	$20.00		
		Four 6-inch iron pipe culverts 25 feet long with stone foundations	85.00		
		Gravel surfacing 3,514 feet x 12 feet x 10 inches	520.00		
		Clay base for gravel, 300 loads		$625.00	$0.18
		ALEXANDER.			
300	21	Cleaning and clearing	$27.00		
		Split stone culvert laid in Portland cement, 28 inches x 30 inches x 21 feet	68.15		
		Hard pan filling	134.25		
		Gravel surface	65.00		
		Work included ditching for long distance. Filling in some places 5 feet deep		294.40	98
		BAILEYVILLE.			
1,500	27	Cleaning and clearing	$42.75		
		Earth excavation 509 cubic yards at 20 cents	101.80		
		Rock excavation 509 cubic yards at 35 cents	178.15		
		Length of subdrainage 1,100 feet. Culvert 2 feet x 3 feet x 28 feet, stone tide wall and coarse concrete	70.00		
		Grading	100.00		
		Gravel surface 450 cubic yards at 75 cents	337.50		
				830.20	55
		BARING.			
885	25	Cleaning and clearing	$3.00		
		Tile pipe 10 inches, 25 feet long	11.56		
		Metal culvert 3 feet	6.00		
		Grading	21.00		
		Gravel for surfacing	14.40		
		Labor	81.68		
				137.64	16
		BROOKTON.			
250	20 to 25	Grading 150 yards; field stone filling at 90 cents	$135.00		
		Earth filling 75 cubic yards	75.00		
		Gravel surfacing 150 feet x 25 feet x 6 inches; gravel surfacing 120 feet x 15 feet x 6 inches	100.00		
Bridge work		Guard rails 145 feet	94.25		
		Stone base for guard rail 170 feet	68.00		
		Setting rails	45.00		
				517.25	
		CALAIS.			
810	48	Crushed stone surfacing 810 feet x 48 feet x 4 inches to 8 inches deep		700.00	86
		CHARLOTTE.			
1,447	21	Concrete culvert 10 inches x 12 inches x 21 feet; concrete culvert 15 inches x 18 inches x 21 feet	$51.00		
		Turnpiking 12 feet wide	65.00		
		Gravel surfacing 1,447 feet x 12 feet	195.73		
				311.73	22
		CHERRYFIELD.			
860	20	Removing old culvert	$35.49		
		Culvert 3 feet x 4 feet x 23 feet, containing 30 cubic yards split stone and 10 tons of rough stone for backing	282.35		
		Grading	24.00		
		Gravel 175 cubic yards	150.00		
				491.84	57
		COLUMBIA.			
4,000	23	Cleaning and clearing	$25.00		
		Subdrainage, 4 pipes 4 inches x 25 feet	30.00		
		Two blind stone drains 8 inches x 22 feet	10.00		
		One stone culvert 14 inches x 30 inches x 22 feet	39.25		
		Earth grading	75.00		
		Stone grading	25.00		
		Gravel surfacing 10 feet wide, 4 inches deep	195.75		
				400.00	10

WASHINGTON COUNTY—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		COOPER.			
330	21	Cleaning and clearing	$25.00		
		Earth filling, 100 cubic yards; ledge excavation 10 cubic yards	20.00		
		Gravel	55.00		
				$100.00	$0.30
		DANFORTH.			
3,260	24	Four split stone culverts, 18 inches x 24 inches, total length 95 feet	$215.75		
		Grading with road machine	175.77		
		Gravel	220.00		
				611.52	19
		EASTPORT.			
1,450	32	Blue clay 10 inches deep	$27.40		
		Beach gravel, 247 loads	24.70		
		Labor	534.10		
				586.20	40
		HARRINGTON.			
544	22	"V" drain 544 feet x 12 feet x 2½ feet	$163.74		
		One split stone culvert	50.00		
		Excavating 450 cubic yards	146.00		
		Gravel surfacing	79.54		
				439.28	81
		JONESPORT.			
700	21	Split stone culvert 12 inches x 12 inches x 21 feet	$16.00		
		Excavating ledge for ditch	24.42		
		Clay 8 inches to 12 inches deep, covered with gravel 8 inches deep at center and 4 inches at sides	275.70		
				316.12	45
		LUBEC.			
1,073	22	Graded 31 feet wide from ditch to ditch. Culvert pipe 10 feet. Two split stone culverts 10 feet each. Excavation $2.178 per rod	$141.58		
		Grading and graveling $2.82 per rod	183.42		
		Rock cost $4.23 per rod	275.00		
				600.00	56
		MACHIAS.			
1,700	22	Cleaning and clearing	$63.50		
		Shortening grade on hill	66.59		
		Gravel	166.40		
				296.49	17
		MEDDYBEMPS.			
825	22	Metal culvert 21 feet	$24.80		
		Grading	79.49		
				104.29	13
		MILBRIDGE.			
830	24	Tile pipe 6 inches x 40 feet	$7.00		
		Earth excavation 461 cubic yards; stone excavation 96 cubic yards; both used in filling	120.00		
		Gravel surface 830 feet x 10 feet x 9 inches deep	256.00		
		Labor	54.05		
				437.05	52
		PEMBROKE.			
1,000	22	Stone culvert 18 inches x 24 inches x 23 feet, laid in cement	$40.00		
		Grading	113.96		
		Ledge excavation	35.00		
		Gravel	11.04		
				200.00	20
		PERRY.			
1,500	20	Cleaning and clearing	$25.00		
		Two cement stone culverts	60.00		
		Grading	50.00		
		Gravel, 150 loads	67.00		
				202.00	13

WASHINGTON COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		PRINCETON.			
1,452	24	Excavation 509 cubic yards	$101.80		
		Rock filling 509 cubic yards	178.15		
		Earth filling 193 cubic yards	145.05		
		Gravel 100 cubic yards	75.00		
				$500.00	$0.34
		ROBBINSTON.			
2,640	20	Cleaning and clearing	$91.00		
		Two split stone culverts 18 inches x 22 feet	46.00		
		Beach gravel surfacing 2,640 feet x 20 feet x 3 inches deep	48.00		
		Guard rails 50 feet	15.00		
				200.00	08
		STEUBEN.			
437	21	Cleaning and clearing	$10.00		
		Blind stone drain, 2 feet x 7 feet x 50 feet; blind stone drain, 3 feet x 7 feet x 180 feet	100.00		
		Split stone culvert 2 feet x 2½ x 21 feet	80.00		
		Grading	90.00		
		Gravel 140 cubic yards, 437 feet x 21 feet	100.00		
		Guard rails 59 feet	5.00		
				385.00	88
		TOPSFIELD.			
561	30	Split stone culvert laid in Portland cement with paving 11 feet x 5 feet x 51 feet	$200.00		
		Rock filling and gravel	200.00		
				400.00	71
		VANCEBORO.			
2,750	21	Cleaning and clearing	$3.00		
		Split stone culvert 18 inches x 24 inches x 18 feet. Two culverts 2 feet x 3 feet x 17 feet. Three culverts 18 inches x 18 inches x 17 feet	60.50		
		Grading	110.50		
		Surfacing	75.00		
				249.01	09
		WHITING.			
1,625	20	Cleaning and clearing	$5.00		
		Culverts	35.92		
		Earth filling	21.75		
		Gravel surface 1,625 feet x 13 feet x 8 inches	223.49		
				286.16	17
Total, 35,993 feet. 6.81 miles.		Cost per mile at same rate, $1,420.32.		$9,703.93	$0.27

YORK COUNTY.

		BERWICK.			
400	31	Stone base 400 feet x 12 feet x 12 inches to 14 inches deep. Earth excavation 144 cubic yards at 35 cents	$50.40		
		Stone filling 192 cubic yards at 50 cents	96.00		
		Crushed stone surface 400 feet x 13 feet x 8 inches deep at center, 6 inches at sides. Crushed stone on cars	228.12		
		Hauling, rolling, etc	93.71		
				$468.23	$1.17
		CORNISH.			
700	44	Gravel, 1,150 loads. Rock, 650 loads. Surfacing, 700 feet x 27 feet x 18 inches to 20 inches in center and 8 inches at sides		450.00	64

York County—Continued.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		DAYTON.			
1,207	32	Cleaning and clearing	$60.00		
		One stone culvert 16 inches x 28 feet; one tile culvert 18 inches	30.00		
		Grading 500 cubic yards of stone; 250 cubic yards of earth and ledge excavation	210.00		
		Surfacing 1,200 feet x 14 feet x 11 inches	315.00		
		Guard rails 135 feet	10.00		
				$625.00	$0.52
		ELIOT.			
600	26	Blind stone drain	$30.00		
		Culvert 2 feet x 35 feet	12.00		
		Grading	25.00		
		Surfacing 26 feet wide, 12 inches deep		372.00	32
		HOLLIS.			
714	21	Cleaning and clearing	$10.00		
		"V" drain 646 feet x 12 feet x 15 inches deep at center, 6 inches deep at sides	125.00		
		One stone culvert with paved bottom 18 inches x 18 inches x 26 feet	40.00		
		Filling 80 cubic yards handled and balance graded with road machine	107.58		
		Gravel surface 714 feet x 13 feet x 12 inches to 18 inches deep at center and 6 inches to 10 inches deep at sides	165.00		
				447.58	63
		KENNEBUNK.			
300	30	Asphalt macadam surface 300 feet, 900 cubic yards, at 90 cents	$810.00		
		Excavation 168 yards at 60 cents	100.80		
		Cobble gutters 166⅔ yards at 34 cents	56.66		
				967.46	3.22
		KITTERY.			
1,350	24	Two 8-inch concrete culverts, 26 feet long	$13.28		
		Filling 550 feet at $1.25	115.00		
		Ledge	40.00		
		Stone surfacing 1,350 feet x 12 inches deep; gravel surfacing 550 feet x 12 inches deep in center, 6 inches deep at sides	700.00		
				875.00	
		LEBANON.			
688	29	Cleaning and clearing	$50.00		
		Subdrainage	15.00		
		Grading 4,434 cubic yards	346.55		
		Surfacing	75.00		
		Supplies	21.45		
		Sandy road excavated 3 feet deep in center, filled with stone, covered with gravel and clay and surfaced with 6 inches to 8 inches of gravel and rolled with 15 ton roller		508.00	74
		NEWFIELD.			
800	22	Cleaning and clearing	$50.00		
		Earth and stone filling 500 cubic yards	351.00		
		Surfaced with gravel		401.00	50
		NORTH BERWICK.			
375	26	Stone base and labor	$331.28		
		Surfacing, poor unbroken stone 26 feet wide, over coarse stone of the depth of 12 inches	313.88		
				645.16	1.72
		OLD ORCHARD.			
400	50	Cement abutments and steel bridge	1,500.00		
Bridge work.					
		SACO.			
1,403	38 to 40	Width does not include car tracks. Excavation 853 cubic yards	$426.50		
		Crushed stone surfacing 433 feet x 48 feet and 970 feet x 38 feet	2,182.10		
				2,608.60	1.86

YORK COUNTY—Concluded.

Length in feet.	Width in feet.	Description.		Cost.	Cost per foot.
		SANFORD.			
2,300	22	Cleaning and clearing	$100.00		
		Iron pipe culvert 12 inches x 36 feet; iron pipe culvert 14 inches x 27 inches. Earth excavation 2,050 cubic yards	500.00		
		Stone filling 1,991 cubic yards	600.00		
		Crushed stone 1,725 feet x 8 inches deep	651.00		
		Gravel 1,725 feet x 3 inches deep on top of crushed stone	216.00		
		Macadamized 575 feet x 9 inches deep	258.00		
				$2,325.00	$1.01
		SHAPLEIGH.			
1,300	21	Cleaning and clearing	$75.00		
		Ledge excavation, estimated cost	150.00		
		Earth filling	675.00		
		Stone filling 544 feet x 12 inches to 24 inches deep	400.00		
				1,300.00	1.00
		SOUTH BERWICK.			
509	18	Excavation 200 cubic yards	$150.00		
		Crushed stone surfacing	629.92		
				779.92	1.53
		WELLS.			
600	21	Stone base 600 feet x 12 feet x 18 inches	$300.00		
		Grading	100.00		
		Gravel surfacing 600 feet x 21 feet x 10 inches	200.00		
				600.00	1.00
		YORK.			
1,045	21	One 12-inch tile culvert 24 feet long	$9.60		
		Two 8-inch tile culverts 30 feet long	12.00		
		Stone filling 170 cubic yards	276.00		
		Gravel surface 1,045 feet x 21 feet x 7 inches deep	482.31		
				779.81	75
Total, 14,291 feet. 2.70 miles.		Cost per mile at same rate, $5,227.20.		$14,152.76	$0.99

RECAPITULATION BY COUNTIES.

NOTE: Bridge and culvert work of four towns in Aroostook County three in Franklin County, two each in Piscataquis, Somerset and Waldo Counties, and one each in Washington and York Counties not included.

COUNTIES.	No. of towns.	Length in feet.	Length in miles.	Cost.	Average cost per foot.	Cost per mile at same rate.
Androscoggin	8	8,612	1.63	$4,288.52	$0.50	$2,629.44
Aroostook	36	65,691	12.44	17,035.92	.26	1,367.52
Cumberland	20	27,232	5.15	9,748.25	.36	1,884.96
Franklin	12	17,171	3.25	5,800.45	.34	1,784.64
Hancock	27	26,455	5.01	13,490.48	.51	2,687.52
Kennebec	22	24,656	4.67	10,868.98	.44	2,328.48
Knox	12	14,263	2.70	7,237.73	.51	2,676.96
Lincoln	15	16,646	3.15	7,886.78	.47	2,497.44
Oxford	21	25,055	4.74	14,240.16	.57	2,999.04
Penobscot	43	58,289	11.04	19,608.34	.34	1,774.08
Piscataquis	12	22,190	4.20	5,843.45	.26	1,388.64
Sagadahoc	8	8,508	1.61	4,619.41	.54	2,861.76
Somerset	21	19,686	3.73	9,947.09	.51	2,667.46
Waldo	19	32,270	6.11	9,252.13	.29	1,510.08
Washington	25	35,993	6.81	9,703.93	.27	1,420.32
York	16	14,291	2.70	14,152.76	.99	5,227.20
Total	317	417,008	78.94	$163,724.38	$0.39	$2,074.03
Bridge and culvert work	15			9,092.58		
Grand total	332			$172,816.96		

NAMES OF INSPECTORS OF STATE ROAD WORK, AND LIST OF TOWNS AND CITIES IN WHICH EACH INSPECTOR APPROVED THE WORK.

CONTRACT WORK.

Town or City.	Inspector.
Auburn	R. I. Swift.
Augusta	W. F. Abbott.
Bangor	P. H. Coombs.
Bath	Stephen Litchfield.
Belfast	A. D. Hayes.
Biddeford	W. T. Allen.
Brewer	R. E. Mullaney.
Brunswick	Stephen Litchfield.
Calais	C. F. Pray.
Camden	F. I. Marshall.
Caribou	Parker Hardison.
East Livermore	I. T. Monroe.
Eastport	C. F. Pray.
Eden	Millard Hamor.
Ellsworth	I. B. Hagan.
Fairfield	Harry E. Greene.
Farmington	H. W. Gilman.
Fort Fairfield	P. L. Hardison.
Gardiner	Frederick Danforth.
Houlton	P. N. Burleigh.
Jay	I. T. Monroe.
Kennebunk	A. J. Wiggin.
Lisbon	Stephen Litchfield.
Madison	G. D. Perkins.
Mt. Desert	George A. Savage.
Oldtown	A. J. Keith.
Portland	B. Bradbury, Jr.
Presque Isle	P. L. Hardison.
Rockland	Edwin R. Keene.
Rumford	H. C. French.
Saco	R. W. Libby.
Sanford	J. G. Ridley.
Skowhegan	E. E. Greenwood.
South Berwick	Edward Lynch.
South Portland	H. M. Arey.
Waterville	J. H. Burleigh.
Westbrook	H. W. Grant.
Winslow	E. E. Smith.
York	A. W. Gowen

NAMES OF INSPECTORS OF STATE ROAD WORK—Continued.

WORK PERFORMED BY TOWNS.

HERMAN H. ADAMS, BELGRADE.

Albion	Litchfield	Sidney
Belgrade	Monmouth	Smithfield
Benton	Mt. Vernon	Turner
Chelsea	Oakland	Vassalboro
China	Palermo	Vienna
Clinton	Pittston	Wayne
Fayette	Randolph	West Gardiner
Greene	Readfield	Windsor
Leeds	Rome	Winthrop

I. W. BARBOUR, AUGUSTA.

Farmingdale	Manchester	Richmond

DEAN A. BALLARD, FRYEBURG.

Grafton	Newry	Upton

OLIVER BOWLEY, SWAN'S ISLAND.

Swan's Island

GEORGE S. P. BRANNEN, DANFORTH.

Addison	Danforth	Perry
Alexander	Dennysville	Princeton
Baileyville	Franklin	Robbinston
Baring	Gouldsboro	Roque Bluffs
Brookton	Hancock	Steuben
Centerville	Harrington	Topsfield
Charlotte	Jonesport	Trenton
Cherryfield	Lamoine	Vanceboro
Columbia Falls	Lubec	Waite
Columbia	Meddybemps	Whiting
Cooper	Milbridge	Winter Harbor
Crawford	Pembroke	

E. C. BUZZELL, FRYEBURG.

Bridgton	Hiram	Stoneham
Brownfield	Lovell	Stow
Denmark	Naples	Sweden
Fryeburg	Norway	Waterford
Harrison	Porter	

F. V. BUZZELL, LINCOLN.

Bradley	Howland	Mattawamkeag
Burlington	Grand Falls	Maxfield
Carroll	Greenbush	Medway
Chester	Greenfield	Milford
Clifton	Kingman	Passadumkeag
Drew Plantation	Lakeville Plantation	Prentiss
East Millinocket	Lee	Seboeis Plantation
Eddington	Lincoln	Springfield
Edinburg	Lowell	Webster Plantation
Enfield	Mattamiscontis Township	Winn

WORK PERFORMED BY TOWNS—Continued.

C. A. CARLETON, Rockport

Appleton	North Haven	Union
Cushing	Saint George	Vinalhaven
Friendship	South Thomaston	Warren
Hope	Thomaston	Washington

W. R. CLARK, Bangor.

Carmel	Hampden	Newburg
Corinth	Hermon	Orono
Dixmont	Hudson	Plymouth
Etna	Kenduskeag	Stetson
Glenburn	Levant	

ADELBERT DELANC, Canton Point.

Andover	Hartford	Milton Plantation
Byron	Lincoln Plantation	Peru
Canton	Magalloway Plantation	Roxbury
Dixfield	Mexico	Sumner
Hanover		

C. E. DUNN, Houlton.

Amity	Haynesville	Mars Hill
Bancroft	Hodgdon	Monticello
Blaine	Linneus	New Limerick
Bridgewater	Littleton	Orient
Cary	Ludlow	Weston

J. P. ELDRIDGE, Ellsworth.

Amherst	Pl. No. 7, Hancock Co.	Pl. No 22, Hancock Co
Aurora	Pl. No. 8, Hancock Co.	Pl. No. 28, Hancock Co.
Eastbrook	Pl. No. 9, Hancock Co.	Pl. No. 33, Hancock Co.
Mariaville	Pl. No. 10, Hancock Co.	Waltham

W. B. GETCHELL, Augusta.

Hallowell

H. W. GILMAN, West Farmington.

Avon	Kingfield	Salem
Carthage	Livermore	Strong
Chesterville	New Portland	Temple
Freeman	New Sharon	Weld
Industry	New Vineyard	Wilton

S. C. GREENLAW, Presque Isle.

Castle Hill	Limestone	Wade Plantation
Caswell	Mapleton	Washburn
Chapman Plantation	New Sweden	Westfield
Easton	Perham	Woodland
Hamlin Plantation	Van Buren	

J. E. GROSS, Orland.

Brooklin	Dedham	Otis
Brooksville	Deer Isle	Sedgwick
Blue Hill	Holden	Stonington
Bucksport	Orland	Surry
Castine	Orrington	Verona

CHAS R. HALL, Wilton.

Coplin Plantation	Madrid	Rangeley
Eustis	Phillips	

WORK PERFORMED BY TOWNS—Continued.

W. H. HAWKES, DEERING.

Albany
Baldwin
Bethel
Buckfield
Cape Elizabeth
Casco
Cornish
Cumberland
Falmouth
Freeport
Gilead
Gorham
Gray
Greenwood
Hebron
Mechanic Falls
Minot
New Gloucester
North Yarmouth
Old Orchard
Otisfield
Oxford
Paris
Poland
Pownal
Raymond
Scarboro
Sebago
Standish
Windham
Woodstock
Yarmouth

L. E. JACKMAN, SHERMAN MILLS.

Ashland
Benedicta
Connor Plantation
Crystal
Eagle Lake Plantation
Fort Kent
Frenchville
Grand Isle
Hersey
Island Falls
Macwahoc Plantation
Masardis
Merrill Plantation
Moro Plantation
Mt. Chase
Oakfield
Patten
Portage Lake Plantation
Reed Plantation
St. Francis Plantation
Sherman
Silver Ridge Plantation
Smyrna
Stacyville Plantation
Wallagrass Plantation

P. D. SARGENT, AUGUSTA.

East Machias
Islesboro
Machias
Machiasport
Marshfield
Sorrento
Southwest Harbor
Sullivan
Tremont
Whitneyville

C. W. SHOREY, BELFAST.

Belmont
Brooks
Frankfort
Freedom
Jackson
Knox
Liberty
Lincolnville
Morrill
Monroe
Montville
Northport
Prospect
Searsmont
Searsport
Stockton Springs
Swanville
Thorndike
Troy
Unity
Waldo
Winterport

J. J. SPINNEY, BATH.

Alna
Arrowsic
Boothbay
Boothbay Harbor
Bowdoinham
Bowdoin
Bremen
Bristol
Damariscotta
Dresden
Durham
Edgecomb
Georgetown
Harpswell
Jefferson
Newcastle
Nobleboro
Phippsburg
Somerville
Southport
Topsham
Waldoboro
Wales
Webster
West Bath
Westport
Whitefield
Wiscasset
Woolwich

G. T. TIBBETTS, FAIRFIELD.

Anson
Athens
Bigelow Plantation
Bingham
Brighton Plantation
Burnham
Cambridge
Canaan
Concord
Corinna
Cornville
Detroit
Dexter
Embden
Exeter
Garland
Harmony
Hartland
Highland Plantation
Mercer
Moscow
Newport
Norridgewock
Palmyra
Pittsfield
Pleasant Ridge
Ripley
St. Albans
Solon
Starks

WORK PERFORMED BY TOWNS—Concluded.

H. S. TOWNE, EAST DOVER.

Abbott	Foxcroft	Parkman
Alton	Greenville	Sangerville
Atkinson	Guilford	Sebec
Blanchard	Lagrange	Shirley
Bradford	Medford	Wellington
Brownville	Milo	Willimantic
Charleston	Monson	Williamsburg
Dover	Orneville	

A. J. WIGGIN, KENNEBUNK.

Acton	Kennebunkport	North Berwick
Alfred	Kittery	Parsonsfield
Berwick	Lebanon	Shapleigh
Buxton	Limerick	So. Berwick
Dayton	Limington	Waterboro
Eliot	Lyman	Wells
Hollis	Newfield	York
Kennebunk		

L. C. WILLIAMS, ATHENS.

Dennistown Plantation	Jackman Plantation	Moose River Plantation

TIME AND EXPENSES OF INSPECTORS.

NAME.	Time in days.	Beginning.	Ending.	Expenses.	Salary.	Amount.
H. H. Adams	48	Aug. 6	Nov. 30	$114.32	$120.00	$234 32
D. A. Ballard	3	Sept. 21	Sept. 23	1.50	7.50	9.00
G. S. P. Brannen	50½	Aug. 18	Nov. 2	165.37	126.25	291.62
E. C. Buzzell	17	Aug. 15	Oct. 31	47.20	42.50	89.70
F. V. Buzzell	19	Sept. 1	Dec. 15	54.34	47.50	101.84
C. A. Carleton	7	Oct. 4	Nov. 30	20.85	17.50	38.35
W. R. Clark	8	Oct. 1	Oct. 31	19.85	20.00	39.85
A. Delano	14	Sept. 24	Oct. 27	29.80	35.00	64.80
C. E. Dunn	9	Aug. 31	Sept. 18	18.84	22.50	41.34
J. P. Eldridge	4	October	Dec. 31	13.79	10.00	23.79
H. W. Gilman	30	Aug. 29	Nov. 21	71.62	75.00	146.62
S. C. Greenlaw	8	Aug. 15	Nov. 30	20.20	20.00	40.20
J. E. Gross	13	Aug. 25	Oct. 15	26.95	32.50	59.45
C. R. Hall	3	Sept. 19	Oct. 28	10.47	7.50	17.97
W. H. Hawkes	56½	Aug. 14	Dec. 1	126.89	141.25	268.14
L. E. Jackman	10	Aug. 25	Oct. 16	35.17	25.00	60.17
C. W. Shorey	28	Aug. 15	Nov. 15	45.60	70.00	115.60
J. J. Spinney	54	Aug. 20	Dec. 1	97.78	135.00	232.78
G. T. Tibbetts	25	Aug. 25	Nov. 1	92.47	62.50	154.97
H. S. Towne	36½	Aug. 14	Dec. 7	95.14	91.25	186.39
A. J. Wiggin	57	Aug. 12	Nov. 30	114.94	142.50	257.44
L. C. Williams	2	Sept. 21	Sept. 28	5.95	5.00	10.95
Totals	502½			$1,229.04	$1,256.25	$2,485.29

EXPENDITURES OF OFFICE, 1908.

Dr.

To appropriation for 1908	$8,000 00	$8,000 00

Cr.

By salary of commissioner	2,500 00	
salary of assistant	* 1,170 83	
salary of clerk	1,300 00	
expended for stenographer and additional assistance	984 92	
expended for telephone, telegraph and miscellaneous	188 49	
expended for office supplies	18 75	
expended for railroad fares	471 69	
expended for livery and boat fares	246 25	
expended for hotel bills	417 25	7,298 18
unexpended balance		701 82
		$8,000 00

* Nine months and eleven days.

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