

# Annual Report of Chief Engineer State Highway Department

1924

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December 31, 1924.

Members of the State Highway Department,  
Dover, Delaware.

Sirs :-

In compliance with the statute relating thereto, I have the honor to submit for your consideration the annual report of the State Highway Department for the year 1924. There will be found as a part of this report, a resume of the work accomplished during the year, together with a statement of moneys received and disbursed by the Department from January 1, 1924 to December, 1924, also included are recommendations having to do with subjects closely related to the interests of the Department.

The work achieved by this Department, during the period covered by this report, being of first consideration, it would appear proper that it be listed to receive your attention before touching upon recommendations for the ensuing year.

**SURVEYS** During the year 70 miles of preliminary road  
**AND** surveys, 70 miles of construction surveys and 90  
**PLANS** miles of final surveys, besides miscellaneous  
surveys for right of way purposes, have been carried on by  
the Department in different sections of the State.

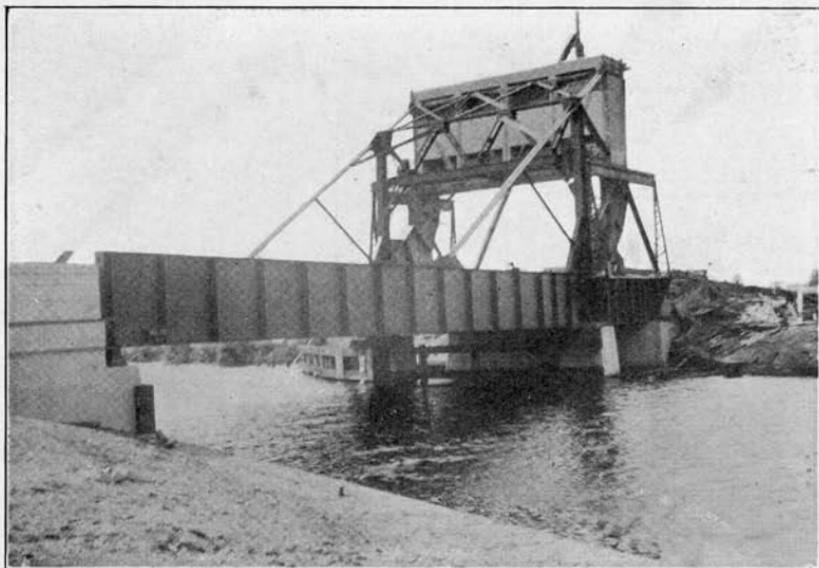
The office, has prepared detail plans and estimates for 70 miles of roadway, besides platting, planimentering and working up final quantities for 90 miles of final cross sections.

The extent of the operations for the year, of the Division of Surveys and Plans is best classified by the detail summary attached.

REPORT OF SURVEYS & PLANS 1924

	FIELD WORK—MILES					OFFICE WORK—MILES					FINAL SECTIONS—MILES		
	Base Line	Detail	Levels	Sections	Staking Out	Line & Detail	Profile	Sections	Grade	Earth Work	Tracings	Field	Office
Drawyers Creek Fill .....	0.250			0.250	0.250		0.250	0.250	0.250	0.250			
Approach at Smyrna .....	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Blackbird-Ginn's Corner .....	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770	1.770			
du Pont Road-Ellendale .....	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010			
West Corner-Lowe's Cross Roads .....	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100			
Georgetown-Bridgeville Road .....	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940			
Mt. Pleasant-Summit Bridge .....	2.276	2.276	2.276	2.276	2.276	2.276	2.276	2.276	2.276	2.276	2.276	2.276	2.276
Bear-Christiana .....	2.180	2.180	2.180	2.180	2.180	2.180	2.180	2.180	2.180	2.180	2.180	2.180	2.180
Basin Corner-New Castle .....	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900
Marsh Road Underpass .....				0.265	0.265			0.265	0.265	0.265	0.265	0.265	0.265
Hickman Road .....	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337
Summit Bridge-Kirkwood .....	1.925	1.925	1.925	1.925	1.925	1.925	1.925	1.925	1.925	1.925	1.925	1.925	1.925
Walker-Deakyneville .....					1.910						1.910	1.910	1.910
Lincoln Highway-Newport-Basin Corner..	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050	4.050			
Mermaid-Valley Road .....	2.220			2.220	2.220	2.220	2.220	2.220	2.220	2.220		1.000	1.000
Middle's Corner-Port Penn .....	4.040	4.040	4.040	4.040	4.040	4.040	4.040	4.040	4.040	4.040			
Thru Frederica (E. & W.) .....	0.507			0.507	0.507			0.507	0.507	0.507	0.507	0.507	0.507
Walnut St., Milford .....	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Clayton-Smyrna .....	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836
Willow Grove-Wyoming .....	5.390	5.390	5.390	5.390	5.390	5.390	5.390	5.390	5.390	5.390	5.390	5.390	5.390
Bowers Beach Road .....	3.480		3.480	3.480	3.480	3.480	3.480	3.480	3.480	3.480	3.480	3.480	3.480
Whiteleysburg-Hollandsville .....	3.800		3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800
Surface Drainage, Frederica .....	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060			
Wescoat's Corner-Rehoboth .....	4.560		4.560	4.560	4.560	4.560	4.560	4.560	4.560	4.560	4.560	4.560	4.560
Bethel-Broad Creek .....			2.430	2.430	2.430		2.430	2.430	2.430	2.430	2.430	2.430	2.430
Pepper-Lowe's Cross Roads .....					3.300						3.300	3.300	3.300
Mission-Gumboro .....	3.240	3.240	3.240	3.240	3.240	3.240	3.240	3.240	3.240	3.240	3.240	3.240	3.240
Milford-Brick Granary .....	3.880	3.880	3.880	3.880	3.880	3.880	3.880	3.880	3.880	3.880	3.880	3.880	3.880
Dagsboro-Vine Creek .....	2.670	2.670	2.670	2.670	2.670	2.670	2.670	2.670	2.670	2.670	2.670	2.670	2.670
Clark's X Roads-Maryland Line .....	4.580		4.580	4.580	4.580	4.580	4.580	4.580	4.580	4.580	4.580	4.580	4.580
Omar-Clarksville .....	3.710	3.710	3.710	3.710	3.710	3.710	3.710	3.710	3.710	3.710	3.710	3.710	3.710
Boyd's Corner-St. Georges .....											3.320	3.580	
Dover-North & South Connections .....												1.580	
Marsh Road .....											3.420	3.420	
Bear-State Road .....												2.750	
Maryland-Glasgow .....												2.170	
Kirkwood-Tybout's Corner .....												4.580	4.580
Hartly-Pearson's Corner .....												3.760	3.760

Kenton-Smyrna .....												5.580	5.580
Harrington-Burrsville .....												9.070	9.070
Kenton-Cheswold .....												4.750	4.750
Leipsic-Smyrna .....												6.260	6.260
Thru Clayton (Town) .....													0.620
Dover-Little Creek (North Road) .....			5.060	5.060			5.060	5.060	5.060	5.060	5.060		0.620
Harbeson-Sunshine School .....												4.430	4.430
Sunshine School-Lewes .....												4.580	4.580
Reliance-Seaford .....													5.450
Harbeson-Milton .....												5.170	5.170
Frankford-Omar .....													3.090
Cannon-Cont. No. 7 .....												1.550	1.550
Dublin Hill-Bridgeville .....												2.240	2.240
Clarks X Rds.-Bridgeville .....												2.060	2.060
Clarksville-Ocean View .....												2.800	2.800
Bright's Corner-Willow Grove .....	7.364	7.364					7.364						
Camden-du Pont Road .....	1.207	1.207	1.207				1.207						
Summit Bridge Approaches .....	0.541	0.541	0.541	0.541	0.541		0.541	0.541	0.541	0.541	0.541		
Wrangle Hill-Clark's Corner .....	1.517	1.517	1.517	1.517			1.517	1.517	1.517			1.517	
Woodside-Contract No. 30 .....	0.307	0.307	0.307	0.307			0.307	0.307				0.307	
Townsend-Dexter's Corner .....	4.536	4.536					4.536	4.536					
Delmar-Contract CS11 .....	3.306	3.306					3.306	3.307					
Delmar-Columbia .....	10.216	10.216					10.216	10.216					
Brick Granary-Zion Church .....	7.211	7.211					7.211	7.211					
Concord-Marvels Corner .....	8.052	8.052					8.052	8.052					
Harmon School-Oak Orchard .....	2.027	2.027					2.027	2.027			2.027		
<b>TOTALS</b> .....	<b>108.015</b>	<b>88.618</b>	<b>69.616</b>	<b>71.851</b>	<b>70.177</b>	<b>106.038</b>	<b>106.428</b>	<b>71.544</b>	<b>70.817</b>	<b>70.027</b>	<b>73.628</b>	<b>90.446</b>	<b>103.936</b>



ROLLING LIFT DRAW BRIDGE AT LAUREL  
(Closed)



ROLLING LIFT DRAW BRIDGE AT LAUREL  
(Open)  
Over Broad Creek

**BRIDGES** The Bridge Division has made detailed surveys  
**AND** and investigations of the sites of all structures  
**CULVERTS** built by the Department and has prepared  
plans and specifications suitable for each individual location.  
17 bridges and 203 culverts were designed for contracts let  
during the year.

Among the more important bridges under construction  
this season have been the bascule draw-bridge over the Nanti-  
coke River at Seaford and the concrete pile bridge over the  
Drawer's Creek north of Odessa. These bridges are both  
nearing completion. They are excellent examples of modern  
design and construction and will be permanent and important  
additions to the State Highway System.

Surveys and preliminary plans have also been made for  
the draw-bridge over the Lewes and Rehoboth Canal at Reho-  
both. The preparation of the Contract drawings is awaiting  
the final approval of the location by the War Department.

The total cost of bridges and culvert structures construct-  
ed during the year is \$230,000.00.

**RIGHT** The importance of securing adequate rights of way  
**OF** is just being recognized by the various State High-  
**WAY** way Departments. All of the large cities of this  
country have learned, at great cost to the taxpayers, the  
result of failing to plan streets of sufficient width, and the  
Highway Departments are beginning to see the wisdom of  
profiting by the cities' experience.

Fortunately this Department adopted this policy from its  
beginning, believing that the time to fix the ultimate width of  
the highway, with provision for future development, is before  
the land becomes valuable and buildings have been con-  
structed upon it. This meant planning the right of way  
widths throughout the State in a comprehensive manner at a  
time when it could be done at a minimum of cost and incon-  
venience to the public.

Following this established practice the Department  
widened and straightened all of the highways under contract  
this year. To accomplish this required the securing of 403  
individual properties by gift, or purchase, and 23 properties  
by condemnation, at a total cost of \$60,045.40. The total of  
the 23 condemnation awards was \$7,506.62.

The average cost per mile for the 69.16 miles placed under contract during the year is \$868.21, as this is within \$26.00 of the average cost in 1923, it may be considered as fairly standard.

The total cost includes not only all damages paid to owners, but all costs and salaries in connection with securing options, the preparation, execution and recording of deeds and releases; the cost of resetting and erecting fences, moving buildings, digging new wells, erecting retaining walls and all other work made necessary by the widening and straightening of the new highways.

Buildings were moved on 16 properties in accordance with agreements made with the owners.

In addition agreements were executed with all towns, wherever State Highways were constructed within their corporate limits, requiring that all future building construction be kept at least thirty feet from the center line of the new highway.

**TESTING** Maintenance of a testing laboratory enables  
**LABORATORY** the Department to make prompt decisions as to acceptability of materials submitted for use in road construction, by ascertaining whether or not specifications are met.

Expenditure for maintenance of laboratory during 1924 was 0.16% of 1% of the cost of construction of roads.

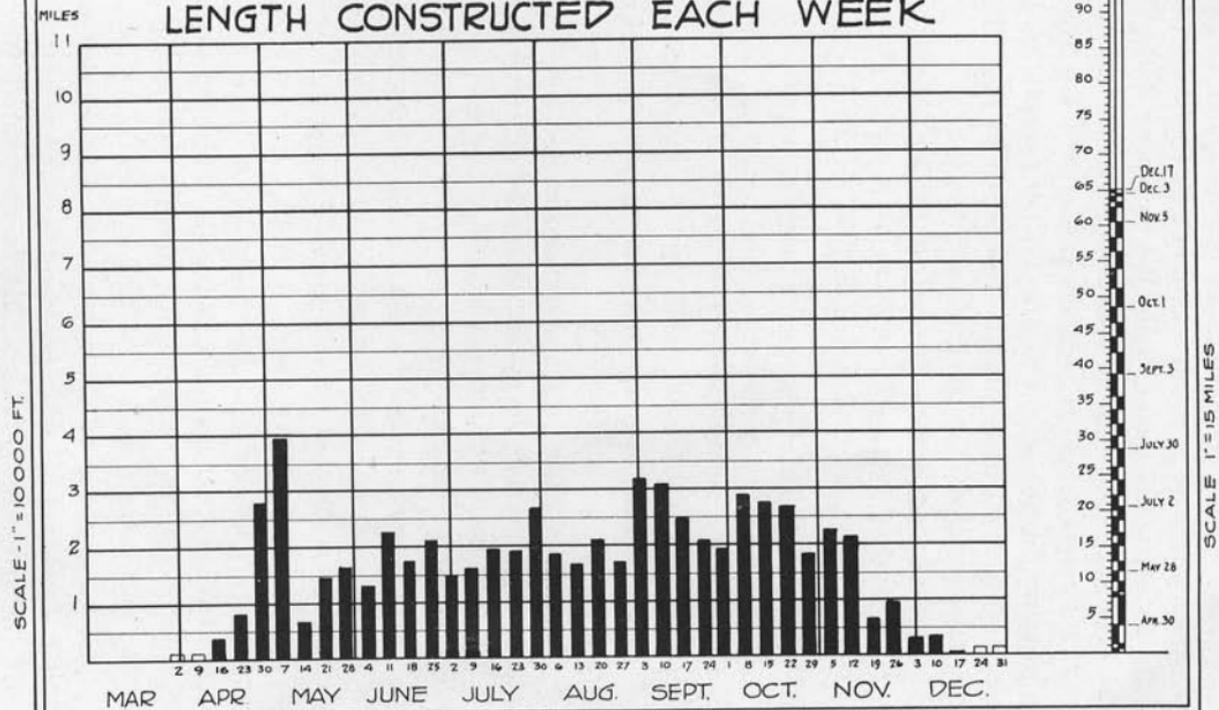
Keeping in close touch with the extensive construction program required the testing in the laboratory of more than 9,000 specimens, a number about equal to that of 1923.

Numerous samples of local sand from new sources were tested, most of which were found unsuitable for our work. Sands largely used came from the Delaware River, from Morrisville and Tullytown, Pa., from near Charlestown, Md., and from local pits near Lewes, Bethany Beach, Portsville, Dover and Mermaid.

Nearly all of the Cement came from the Lehigh Valley region in Pennsylvania, though a source of supply in Maryland was also made use of. Stone of excellent quality was received from Glen Mills, Birdsboro, Howellville and York, Pa., and from two local quarries near Wilmington. Slag and reinforced concrete pipe came from Eastern Pennsylvania.

STATE OF DELAWARE  
 STATE HIGHWAY DEPARTMENT  
**CONCRETE ROADWAY PROGRESS SHEET**  
 WEEK ENDING DEC. 17, 1924

**LENGTH CONSTRUCTED EACH WEEK**



SCALE - 1" = 10,000 FT.

SCALE 1" = 15 MILES

Concrete pipe was tested at intervals at point of manufacture thereby avoiding the necessity of rejecting at destination pipe which might be found to be below our standard.

Other materials tested included steel, water, gravel and concrete. A commercial laboratory sampled and tested cement in carload lots at point of shipment in the same manner as was done in previous years, in order to avoid delay in the use of the cement. The cost of this work was at the same rate as in 1923. Frequent check tests on cement were made in the Dover laboratory, especially when seals on freight cars were found broken or when information was received that the cement had not passed all of the preliminary tests.

The United States Bureau of Public Roads received from our laboratory copies of reports of tests of all materials submitted for use on Federal Aid projects.

**CONSTRUCTION**- Thirty seven contracts were awarded during the year at a total cost of \$2,555,928.87. Of these projects thirty two were for hard surfaced roads, consisting of 69.16 miles of plain cement concrete.

Slag as the coarse aggregate was used in building 20.48 miles.

Including 11.62 miles of work carried over from 1923, the total program for the year consisted of 80.8 miles. At the end of the construction period 65 miles had been completed, and opened to traffic.

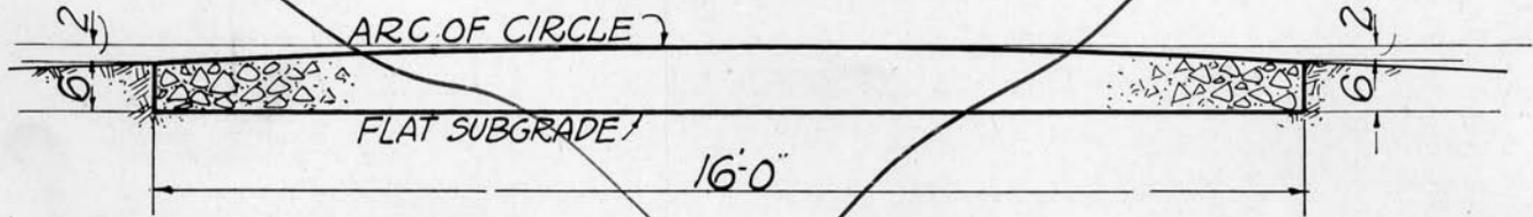
The "heavier edge" section adopted in 1923 for our concrete roads which effected a saving of \$183,000.00 that year, was adhered to this season making possible a corresponding saving in the cost per mile.

On all contracts 15 feet in width or over, the center joint plate, without exception was used. This feature has entirely eliminated longitudinal cracks, besides admirably serving as a center marker.

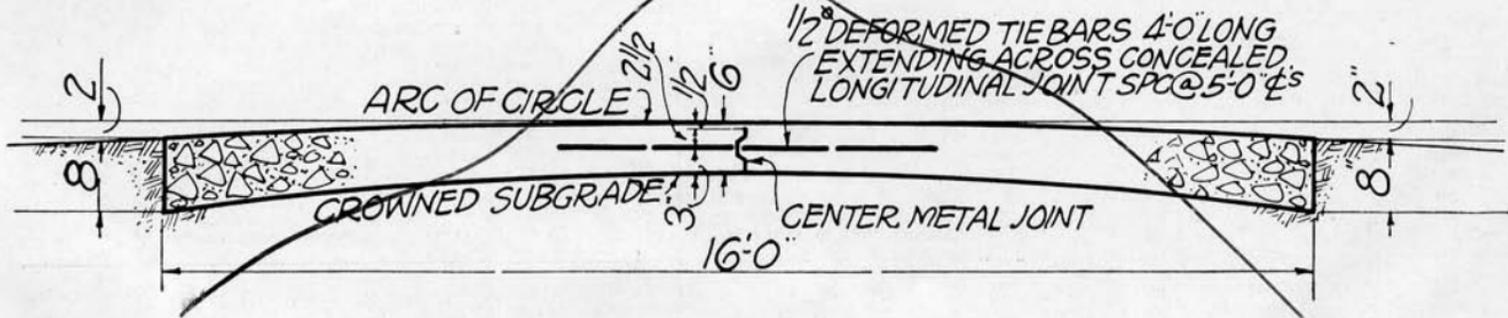
The character of the seasons workmanship, especially the riding qualities of the pavements shows improvement over work of previous years. This is accounted for by the new methods adopted of finishing, where two screeds with a wide board belt were used, and the roller omitted.

Following is a tabulation of contracts, their mileage and costs, awarded in 1924.

**CROSS-SECTION PREVIOUS 1923**  
 1912 CU YDS/MI.



**CROSS-SECTION SINCE 1923**  
 1738 CU YDS/MI



**TABULATION OF CONTRACTS AWARDED IN 1924**

Contract Number	Location	(Miles) Length	Opening Date of	Contractor	Type of Roadway	Contract Total
37-B	Drawyers Creek Bridge .....		3/12/24	G. A. Flink & Co., Harrisburg, Pa. ....		\$36,770.00
42-C	Steel Superstructure, Seaford ....		4/ 9/24	Al S. Fox, Dayton, Ohio .....		29,090.00
26-A	Sidewalk at Farnhurst .....		6/25/24	Hercules Bridge & Constr. Co., Del. City, Del.		1,488,875
RG-1	Road Grader .....		6/25/24	J. Jacob Shannon & Co., Philadelphia, Pa. ....		639.75
RW-3A	Masonry Wall at Shellpot .....		7/30/24	Dominick M. Fontana, Wilmington, Del. ....		3,640.75
M-9	1000 Guard Rail Posts .....		10/15/24	Smyrna Concr. Products Co., Smyrna, Del. ....		2,940.00
37-C	Fill at Drawyers .....	0.250	12/ 1/24	George & Lynch, Dover, Del. ....		1,008.00
25-C	Approach at Smyrna .....	.010	9/ 3/24	Smyrna Cement Products Co., Smyrna, Del. ....		1,935.55
31	Blackbird-Ginns Corner .....	1.770	10/15/24	George & Lynch, Dover, Del. ....	16' Pl. St. Con.	55,127.00
49	Du Pont Road-Ellendale .....	1.010	10/15/24	Highway Engr. & Constr. Co., Selbyville, Del..	16' " " "	32,523.20
50	West-Corner-Lowes X Rds. ....	1.100	" "	Old Line Constr. Co., Chestertown, Md. ....	14' " Slag "	45,284.50
51	Georgetown-Bridgeville Road .....	.94	" "	Highway Engr. & Constr. Co., Selbyville, Del..	16' " St. "	33,135.00
CN-15	Mt. Pleasant-Summit Bridge .....	2.276	3/12/24	Wm. Eisenberg, Camden, N. J. ....	16' Pl. St. Con.	82,962.50
CN-16	Bear-Christiana .....	2.180	3/26/24	D. E. O'Connell & Sons, Ridley Park, Pa. ....	16' " Slag "	82,280.00
CN-17	Basin Corner-New Castle .....	1.900	" "	D. E. O'Connell & Sons, Ridley Park, Pa. ....	16' " " "	69,705.00
CN-7A	Marsh Road Underpass .....	.265	4/ 9/24	Van Auken & Robbins, Thendara, N. Y. ....	16' " St "	27,943.00
CN-18	Hickman Road .....	.337	" "	The Juniata Co., Philadelphia, Pa. ....	16' " " "	17,391.00
CN-19	Summit Bridge-Kirkwood .....	1.925	" "	Wm. Eisenberg, Camden, N. J. ....	16' " " "	75,156.00
CN-14	Walker-Deakyneville .....	1.910	4/30/24	Stewart & Donohue, Wilmington, Del. ....	16' " " "	77,367.00
CN-20	Lincoln Hwy.-Newport-Basin Corne	4.050	6/ 4/24	D. E. O'Connell & Sons, Ridley Park, Pa. ....	16' " " "	159,592.50
CN-21	Mermaid-Valley Road .....	2.220	9/ 3/24	Stewart & Donohue, Wilmington, Del. ....	16' " " "	107,080.70
CN-23	Biddles Corner-Port Penn .....	4.04	10/15/24	E. Riley Mixer Co., Goshen, N. J. ....	16' " " "	158,299.00
CK-17	Thru Frederica (E. & W.) .....	.507	3/12/24	George & Lynch, Dover, Del. ....	16' " " "	18,231.80
CK-20	Walnut St., Milford .....	1.010	" "	Hannaman-Burroughs Co., Salisbury, Md. ....	15' " " "	33,927.00
CK-21	Clayton-Smyrna .....	.836	3/26/24	Sherman & Rhodes, Smyrna, Del. ....	18' " " "	37,568.75
CK-22	Willow Grove-Wyoming .....	5.390	6/ 4/24	Hannaman-Burroughs Co., Salisbury, Md. ....	15' " " "	169,508.00
CK-19	Bowers Beach Road .....	3.480	6/25/24	Highway Engr. & Constr. Co., Selbyville, Del..	16' " " "	136,610.00
CK-23	Whiteleysburg-Hollandsville .....	3.800	" "	Sherman & Rhodes, Smyrna, Del. ....	15' " " "	135,479.00
CK-17A	Surface Drainage, Frederica .....		12/ 1/24	George & Lynch, Dover, Del. ....		605.00
CS-30	Wescoat's Corner-Rehoboth .....	4.560	3/12/24	Roberts Pavg. Co., Clara, Md. ....	16' " " "	166,268.00
CS-31	Bethel-Broad Creek .....	2.430	" "	Field, Barker & Underwood, Philadelphia, Pa. ....	14' " Slag "	70,980.00
CS-25	Pepper-Lowes X Roads .....	3.300	4/30/24	Field, Barker & Underwood, Philadelphia, Pa. ....	14' " " "	108,197.50
CS-33	Mission-Gumboro .....	3.240	6/ 4/24	R. L. Bonham Co., Bridgeton, N. J. ....	14' " " "	128,910.00
CS-32	Milford-Brick Granary .....	3.880	6/25/24	Highway Engr. & Constr. Co., Selbyville, Del..	16' " St. "	131,783.50
CS-34	Dagsboro-Vines Creek .....	2.670	9/ 3/24	Field, Barker & Underwood, Philadelphia, Pa. ....	14' " Slag "	80,971.50
SC-35	Clarks X Roads-Md. Line .....	4.580	9/10/24	Sherman & Rhodes, Felton, Del. ....	15' " St. "	134,439.40
SC-36	Omar-Clarksville .....	3.710	" "	Field, Barker & Underwood, Philadelphia, Pa. ....	14' " Slag "	111,292.50
						<b>\$2,566,724.88</b>

Wilmington & Phila. Traction Co. ....	\$3,341.44
Plant and Equipment, Rental .....	1,827.80
Right of Way, Rental .....	102.80
Maintenance, Labor and Material .....	226.20
Reimbursements (Telephone—Freight, Etc.) .	332.94
Returned Premium Insurance .....	528.85
Compensation Insurance .....	661.26
Use of Officer and returned Salaries .....	114.20

State Highway Department  
Financial Statement To December 1, 1924

**EXPENDITURES**

Administration and Legal .....	\$32,632.22
Preliminary Surveys and Plans .....	2,881.75
Engineering General .....	3,855.39
Engineering Construction .....	6,893.09
Engineering Maintenance .....	3,026.40
Stock Room .....	966.04
Construction .....	141,213.52
Maintenance .....	77,236.02
Plant and Equipment .....	7,536.00
Laboratory .....	559.29
Automobile .....	18,893.26
Traffic Police .....	54,514.88
State Aid—New Castle .....	806,919.38
State Aid—Kent .....	974,235.47
State Aid—Sussex .....	702,663.62
Interest and Sinking Fund .....	340,490.00
Du Pont Road .....	99,069.30

**ADMINISTRATION AND ENGINEERING** A reduction in the size of the year's construction program as compared with that of 1923 made it possible to further reduce the engineering and administration forces. This was accomplished, and at the close of the year the cost of administration is found to be less than 2%, which is below that of former years.

For new work valued at \$2,555,928.87 surveys were made plans and designs prepared and engineering supervision and inspection furnished for 2% of the cost. Likewise engineering supervision for the maintenance of 365 miles of roads was provided for at 3% of the total outlay required for the work.

**FEDERAL AID** Upon the completion in Delaware of the 7% Federal Aid System of highways formerly adopted --an extension to the System was requested and this in turn was duly authorized by the Secretary of Agriculture.

Federal funds received this year, amounting to \$346,000.00 have been applied on 6 contracts, where the roads to be constructed were those included in the system of Government Aid roads as last approved.

The possibility of future Federal Aid for highways in our State is encouraging. At the present time a bill authorizing an appropriation of \$100,000,000 for each of the fiscal years 1926 and 1927 has been approved by the lower house of Congress and is awaiting action by the Senate. Such an appropriation, if authorized, would give to Delaware in the next two years approximately \$1,000,000 for new highways.

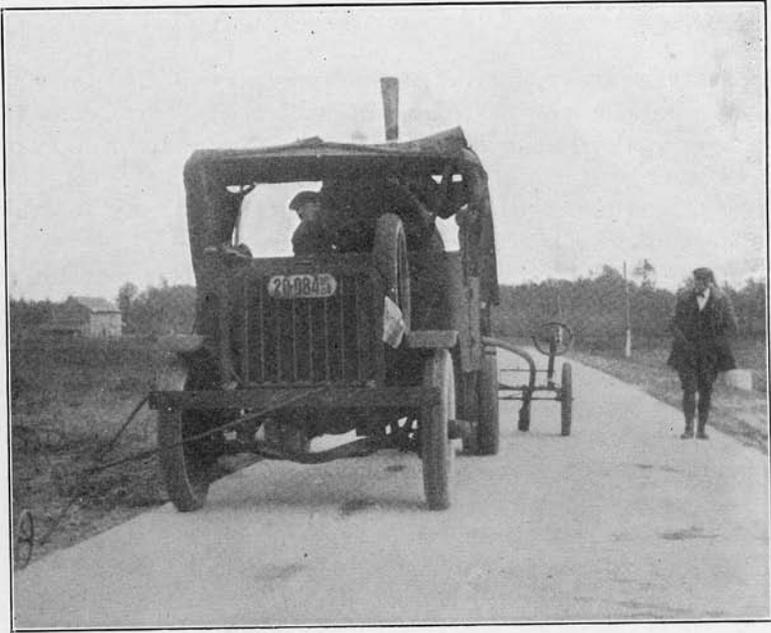
**REPAIR SHOP.** The automobiles, motorcycles, trucks, tractors and miscellaneous equipment owned and operated by the Department are by necessity in such general use, that our repair shop is never idle. The general work is divided among the several mechanics engaged, who devote their full time to certain units, and by so specializing, render most efficient service.

Weekly field inspection of maintenance trucks has made it possible to have this war surplus equipment, now several years old, continue to render economic service.

Similar field service, with excellent results, is being given our police by the mechanics in charge of repairs to motorcycles.

**MAINTENANCE** Including the roads built this year, the system of State highways to be maintained covers 416.42 miles. The work involved in the upkeep of these roads and the supervision required, is of paramount importance, and as such, is receiving daily attention from the engineers and supervisors engaged to carry it on. With the added responsibility each year for the upkeep of more miles, the magnitude of the undertaking promises to surpass in size and importance the planning and execution of the construction work annually authorized.

As now organized the Division of Maintenance consists of one engineer in each County, who is responsible for the



CENTER LINE MARKING MACHINE  
Front View, Showing Guide Wheel



CENTER LINE MARKING MACHINE

Rear View. This machine designed and constructed in the Department's Machine Shop has proved very efficient in marking pavements. The cost has been reduced from approximately \$30.00 per mile by the old-hand methods to \$13.00 per mile by machine.

appearance and upkeep of all State highways in that County. Assisting him are the required number of gangs, each in charge of a foreman who is entrusted with the care of a truck and other tools and equipment needed for the work. To each foreman is assigned 20 or more miles of highway for the upkeep of which he is directly responsible.

As a part of our maintenance work we have practically completed the center marking of a dividing line for traffic. Other work done by the Division in the interest of safety to the public, includes the erection of hundreds of school, cross road, and advance warning signs throughout the State. All such signs are regularly inspected by the maintenance foreman and promptly repaired, repainted or replaced if damaged.

It is gratifying to report that the cost of our maintenance work even though it embraces many requirements, is being done for less than \$300.00 per mile—the amount provided for it.

**TOTAL COST OF STATE HIGHWAY SYSTEM** At this period of the highway program, it appears pertinent that an appraisal be made of the pecuniary value of the 433.22 miles of improved highways comprising the State's system of roads.

A comprehensive summary is possible, by listing all previous State and County bond issues authorized and made, together with the monies received from the Federal Government, likewise the sums from private donations. A list of these follows:

Total State Bond Issues .....	\$7,680,000.00
Total New Castle County State Aid Bond Issues.....	1,200,000.00
Total Kent County State Aid Bond Issues.....	1,600,000.00
Total Sussex County State Bond Issues.....	2,000,000.00
United States Government .....	1,739,530.00
Pierre S. du Pont .....	764,287.92
T. Coleman du Pont .....	3,917,003.72
	<hr/>
	\$18,900,821.64

**TANGIBLE EVIDENCE OF RETURNS FROM INVESTMENT BY STATE IN IMPROVED HIGHWAYS** As a matter of interest, I submit the following statistics since they are so closely allied with the construction of good roads in the State.

The assessed valuation of real estate in Delaware has risen \$26,000,000.00 in four years; \$13,520,000.00 more than

the total of all State and County bond issues authorized for improved roads and expended since 1918 by this Department in the Construction of the State system of highways.

Motor vehicles registered in the State have increased 93% in 4 years. In 1920, 18,300 cars were licensed—in 1924, 35,200 cars received permits to operate. The revenue derived from these registrations has increased during the same period from \$286,334.00 to \$600,960.00.

13,222,992 gallons of gasoline were sold in the State this year prior to December 1st. If correct to assume that three-fourths of this fuel was used when driving on the improved roads, and that the cars on an average will run 10 miles on a gallon of gasoline, there has been a saving of \$1,487,586.60 to those who used the good roads, if \$0.01½ per mile is allowed for the difference in the cost of operating an automobile over a dirt and a concrete road. Tests made by this Department confirmed by the United States Government and the State Highway Departments of Iowa and Ohio establish this as a reasonable saving. It will readily be seen that this amounts to a return of 6% on an investment of \$25,000,000.

The advantages, value and service which the improved roads offer to the farmers, dairymen, fruit growers and business men in general, is well illustrated by the tabulation of the cargos passing through Dover between June 1st and November 15th, 1924, for which the total authentic weight was 42,514 tons composed of the following commodities:

Note: The Bureau of Markets estimates the value of fruits and vegetables of this list to be \$697,755.97.

#### FRUIT

Strawberries . . . . .	100,501 Crts	Bananas . . . . .	2,540 Bnchs
Peaches . . . . .	28,382 Bskts	Pears . . . . .	789 Bskts
Apples . . . . .	27,553 Bus	Plums . . . . .	29 Crts
Cantaloupes . . . . .	39,842 Crts	Honey Dew Melons	10 Bskts
Watermelons . . . . .	9,564 Units	Cherries . . . . .	4 Crts
Grapes . . . . .	15,848 Bskts	Quinces . . . . .	1 Bskt
Blackberries . . . . .	18,369 Crts	Fruit in bulk . . . . .	421,800 Lbs
Huckleberries . . . . .	2,070 Crts		

#### VEGETABLES

Tomatoes . . . . .	60,454 Bskts	Pumpkins . . . . .	4,186 Units
Potatoes, White . . . . .	18,073 Bus	Beans . . . . .	13,103 Bus
Potatoes, Sweet . . . . .	14,721 Bus	Peas . . . . .	1,433 Bus
Cabbage . . . . .	16,430 Hds	Sweet Corn . . . . .	2,754 Bus
Asparagus . . . . .	264 Crts	Onions . . . . .	14 Crts
Celery . . . . .	2 Bskts	Turnips . . . . .	1,193 Bskts
Peppers . . . . .	560 Bskts	Squash . . . . .	933 Bskts
Okra . . . . .	54 Crts	Beets . . . . .	11 Bskts
Cucumbers . . . . .	18,063 Bus	Carrots . . . . .	7 Bskts
Lettuce . . . . .	22 Crts	Cauliflower . . . . .	248 Crts

### LIVE STOCK

Poultry .....	9,734 Coops
Live Stock .....	2,630 Heads
Pigs .....	28 Units

### CANNED GOODS

Canned Tomatoes.	9,693 Cases	Canned Apples ...	1,638 Cases
" Goods (Misc.)	225 Cases	Jelly .....	1,175 Cases
Apple Butter ...	350 Cases	Canned Corn .....	250 Cases
Ketchup .....	265 Cases	Plum Pudding ..	325 Cases
Beans .....	200 Cases		

### FEED AND GRAIN

Feed .....	2,516 Bags	Wheat .....	1,835 Bus
Fertilizer .....	2,265 Bags	Field Corn .....	833 Bus
Oats .....	217 Bags	Meal .....	177 Bags
Hay .....	404 Bales	Bran .....	123 Bags
Straw .....	780 Lbs		

### GROCERIES AND PROVISIONS

Meat .....	523,314 Lbs	Groceries .....	227,203 Lbs
Produce .....	115,633 Lbs	Ice Cream .....	30,372 Gals
Cakes .....	7,786 Boxes	Soft Drinks .....	18,431 Cases
Milk .....	16,981 Gals	Eggs .....	4,658 Crts
Flour .....	1,310 Bags	Bread .....	1,474 Crts
Fish .....	5,265 Bus	Candy .....	11,625 Lbs
Oysters .....	86 Bus	Cider, .....	685 Gals

### NUTS

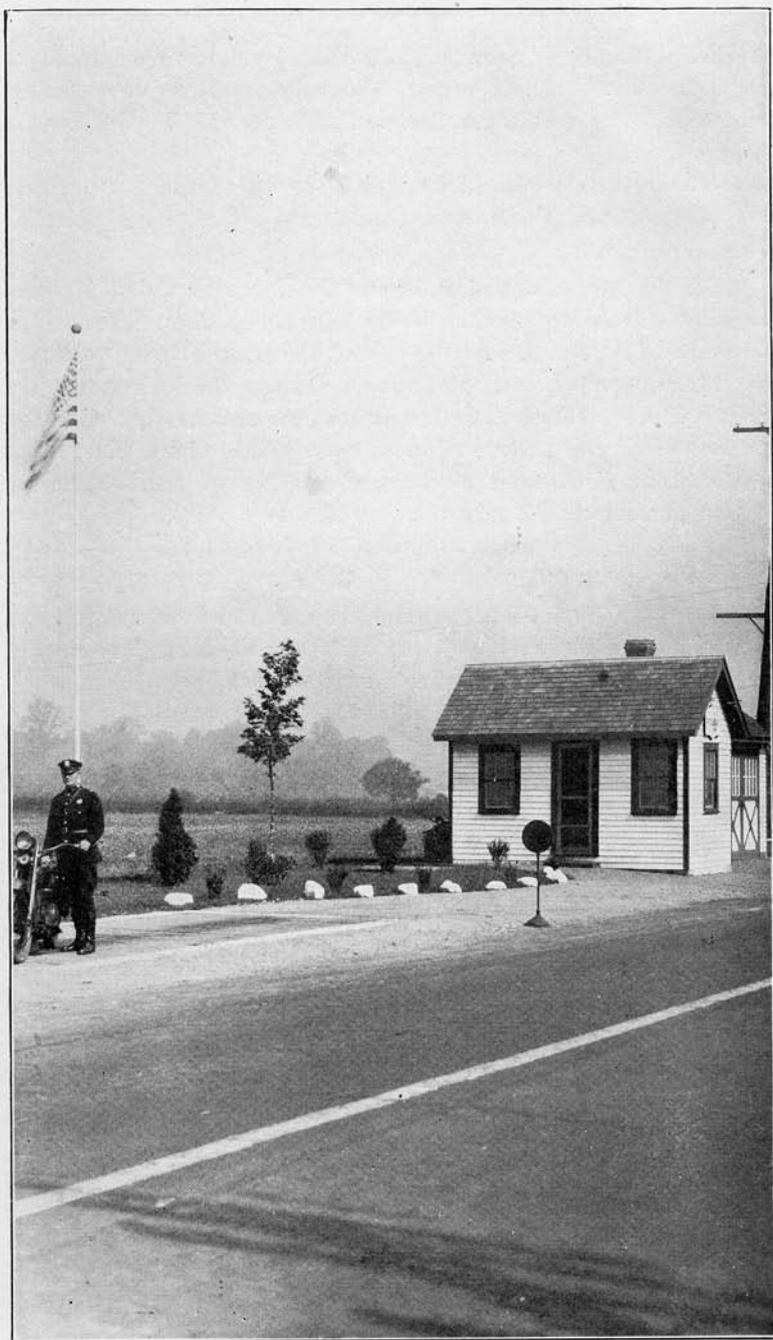
Walnuts .....	34 Bus
Chestnuts .....	8 Bus

### MISCELLANEOUS

Merchandise .....	3,670,125 Lbs	Coal .....	225 Tons
Bldg. Material ...	1,179,317 Lbs	Rags .....	52,775 Lbs
Household Goods ..	837,832 Lbs	Ice .....	226,585 Lbs
Furniture .....	546,754 Lbs	Wool .....	69,502 Bales
Junk .....	360,284 Lbs	Hides .....	75 Units
Machinery .....	301,719 Lbs	Oil .....	540 Bbls
Empty Baskets ..	35,684 Units	Lime .....	290 Bags
Empty Bottles ..	16,753 Units	Cement .....	439 Bags
Basket Tops .....	1,044 Units	Logs .....	576 Units
Empty Barrels ..	1,353 Units	Boilers .....	4 Units
Telephone Poles ..	26 Units	Ice Cream Cabinets	6 Units
Empty Crates ..	11,610 Units	Lightning Rods ..	3,960 Units
Berry Bxs Empty	880 Units	Concrete Blocks ..	975 Units

**STATE HIGHWAY POLICE** The value of the service being rendered by the Police of the Department cannot be overestimated and their accomplishments during the year reflect the greatest credit upon the individual members of the force, who in turn, I am assured, have won the respect of the public through efficiency, courtesy, integrity and their sincere desire to be of assistance to those in distress.

In commenting upon the reputation these men are establishing for themselves, I quote below a paragraph taken from a letter received in July from the Illinois Chamber of Com-



POLICE STATION NO. 1, PENNY HILL  
New Castle County

merce, "We have been advised that you have organized a Highway Patrol which, while it is very small, is nevertheless one of the most efficient State Police Forces in the United States".

The results achieved by this Division of the State Highway Department deserve as complete a report as is permissible.

At the beginning of the year the force included 16 men. In June a training school was opened at the Capitol for which 64 recruits reported. At the end of the term 11 men qualified and were promptly commissioned. During the 12 months just ended 6 men tendered their resignation and at this time the personnel of the force includes, a Superintendent, his Assistant and 21 uniformed officers, consisting of a Lieutenant, 4 Corporals and 16 privates.

Stations with comfortable quarters have been provided; one in each of the lower Counties and two in New Castle County. Each Station has telephone connections, and for the public's convenience it was arranged that these telephones in the different stations carry the same number.

It has been acknowledged that without our police or others equally qualified and capable, the improved highways of the State would cease to attract many who now enjoy their advantages with a feeling of safety.

The work done by the force in curbing reckless driving and apprehending intoxicated drivers, is commendable. However, notwithstanding that 168 violators of the second class were arrested, fined, or imprisoned, and driven from the highways by the revocation of their licenses, the number is not decreasing. More stringent legislation for this infraction of the law is mandatory.

As the agent guarding against the destruction of the improved highways by selfish and unscrupulous individuals operating cargo carrying trucks in excess of the loads for which the roads were designed, the force renders a service, the value of which cannot be even closely estimated. From a financial standpoint to the State, their services, in preventing overloading, is the most valuable rendered. As an illustration of the attention given this important duty our records indicate that during the period of this report 15,519 trucks were intercepted and weighed on scales provided by the Department.

The 99th General Assembly enacted a law providing that fines imposed upon those arrested by the State Highway Police for violation of certain State laws, should through the State Treasurer, revert to this Department. At this time I invite your attention to the assistance this law has given in affording the services of a larger force than would otherwise have been possible. In our budget for 1924, it was decided that \$35,000.00 was all that could be set up for the State Police, if the excess of revenue for highway construction was not to be made less than the amount needed for the immediate construction of important highways. The expenses of the force from January 1st to December 1st were \$54,514.88, or \$19,514.88 more than was first provided, however with the revenue of \$32,168.00 from fines collected between January 1st and December 1st a balance of \$12,653.12 remains in the treasury, notwithstanding that we increased the size of the force 70% since January 1st.

During the year the men on the force patrolled 303,175 miles of highways and were on duty for a total of 57,131 hours.

The following tabulation indicates the wide range of activities. Besides 133 special assignments, policing and handling traffic as well as assuming responsibility for parking arrangements at a county fair, picnics, athletic meets, carnivals, camp meetings and similar affairs, the members served in the following cases.

Reckless driving .....	508
No operator's license .....	140
No mirror on truck .....	108
Overloaded trucks .....	77
Teams without lights .....	24
Leaving accidents and not complying with law..	10
Defective brakes .....	5
Invalid license .....	4
No public permit.....	3
Unlawful possession of car .....	2
Larceny of automobile .....	2
No tractor permit .....	1
Driving horse and wagon, intoxicated.....	1
Selling car without title .....	1
Disorderly conduct .....	33
Drunk and disorderly .....	16

Drunk .....	13
Manufacturing liquor .....	8
Manslaughter .....	8
Violating game laws .....	5
Illegal possession of liquor .....	5
Arrested as a witness .....	4
Inciting to riot .....	3
Breaking and entering .....	3
Passing worthless checks .....	2
Possession of drugs .....	2
Murder .....	2
Resisting arrest .....	1
Cruelty to dumb animals .....	1
Selling drugs .....	1
Pointing gun with intent to kill.....	1
Forging checks .....	1
Libel .....	1
Operating while under the influence of liquor....	168
Improper lights .....	95
Improper tags .....	70
Unregistered cars .....	17
Passing on right .....	6
Operating car after license had been revoked....	5
Parking without lights .....	4
Throwing glass on highway .....	3
No trailer's license .....	2
Coasting on hill .....	1
Causing accident .....	1
Taking car without owner's consent .....	1
Impersonating an officer .....	1
Gambling .....	21
Assault and battery .....	15
Carrying concealed deadly weapons .....	12
Larceny .....	6
Selling liquor .....	5
Breach of peace .....	4
Vagrancy .....	4
Trespassing .....	3
Assault .....	3
Assault with intent to commit murder.....	2
Stealing .....	2

Misdemeanor .....	1
Perjury .....	1
Contempt of court .....	1
Embezzlement .....	1
Non-support .....	1
Assault with intent to ravish.....	1

A statement of expenses for the maintenance of the State Highway Police force from January 1st to December 15th shows a total outlay of \$55,069.23. The following tabulation gives the different items of expense incurred by the force during the 11½ months' service. It will be noticed that the items marked by asterisk have an inventory value which if given, would materially reduce the actual expenses for the year.

Administration .....	\$2,511.00
*New Motors .....	6,728.93
Salaries of uniformed officers .....	26,496.12
Travelling and subsistence expenses of uniformed officers .....	326.78
Motoreycle maintenance .....	4,803.16
*Uniforms and equipment .....	3,173.25
Telephone and Telegraph .....	891.02
Light and heat .....	322.85
Insurance .....	92.15
Training school .....	240.06
*Buildings .....	3,197.89
*Scales .....	1,310.00
*Office equipment .....	126.80
Printing and stationery .....	208.98
Shop expense .....	2,145.00
Operation .....	2,395.85
Sundries .....	99.39

**FUNDS FOR NEW WORK** Entirely as a matter of record, there is printed below a copy of the Department's 1924 certified budget which was presented to you by the Secretary at the time required by statute.

With the excess of revenue as shown—i. e., \$144,066.00 the Department, with legislative sanction, will be in a position to proceed with the construction of roads to cost \$2,058,000.00 without further taxation of any nature.



ONE OF THE PROBLEMS OF THE STATE HIGHWAY DEPARTMENT

# Budget for the Year 1925

## ESTIMATED REVENUES

LICENSE FEES of motor vehicles and operators of same for year 1925 .....	\$605,000.00
TAX ON MOTOR FUELS .....	300,000.00
STATE APPROPRIATION of \$120,000.00 or any part thereof sufficient to bring the total income of the State Highway Department to \$705,000.00 (Chapter 67, Volume 33, 1923 Laws of Delaware)	
	\$905,000.00

## ESTIMATED EXPENDITURES

### FIXED CHARGES

#### Interest and Sinking Fund

Bond Issues of 1918-19-20-21-22-23 .....	\$6,244,000.00	
Interest at 4½% and Sinking Fund Charges at 2½% or 7% on .....	6,244,000.00	\$437,080.00
Bond Issue of 1922 .....	\$400,000.00	
Bond Issue of 1924 .....	1,036,000.00	
Interest at 4% and Sinking Fund Charges at 2½% or 6½% on .....	\$1,436,000.00	93,340.00
Total Bond Issue to 12/31/24 .....	\$7,680,000.00	
Total Interest and Sinking Fund, year 1925 (exclusive of Bonds to be issued in 1925)		\$530,420.00

#### Maintenance of Roads

State Highways .....	192 Miles at \$300.00	\$ 57,600.00
State Aid—New Castle Co. ....	51.17 Miles	
Kent County .....	86.5 Miles	
Sussex County .....	111.9 Miles	
Total State Aid Hwys. ....	249.57 Miles at \$200.00	49,914.00

#### Construction Proposed

State Highways .....	20 Miles at \$300.00	6,000.00
State Aid Highways .....	40 Miles at 200.00	8,000.00
		\$121,514.00
		\$651,934.00

### ORGANIZATION

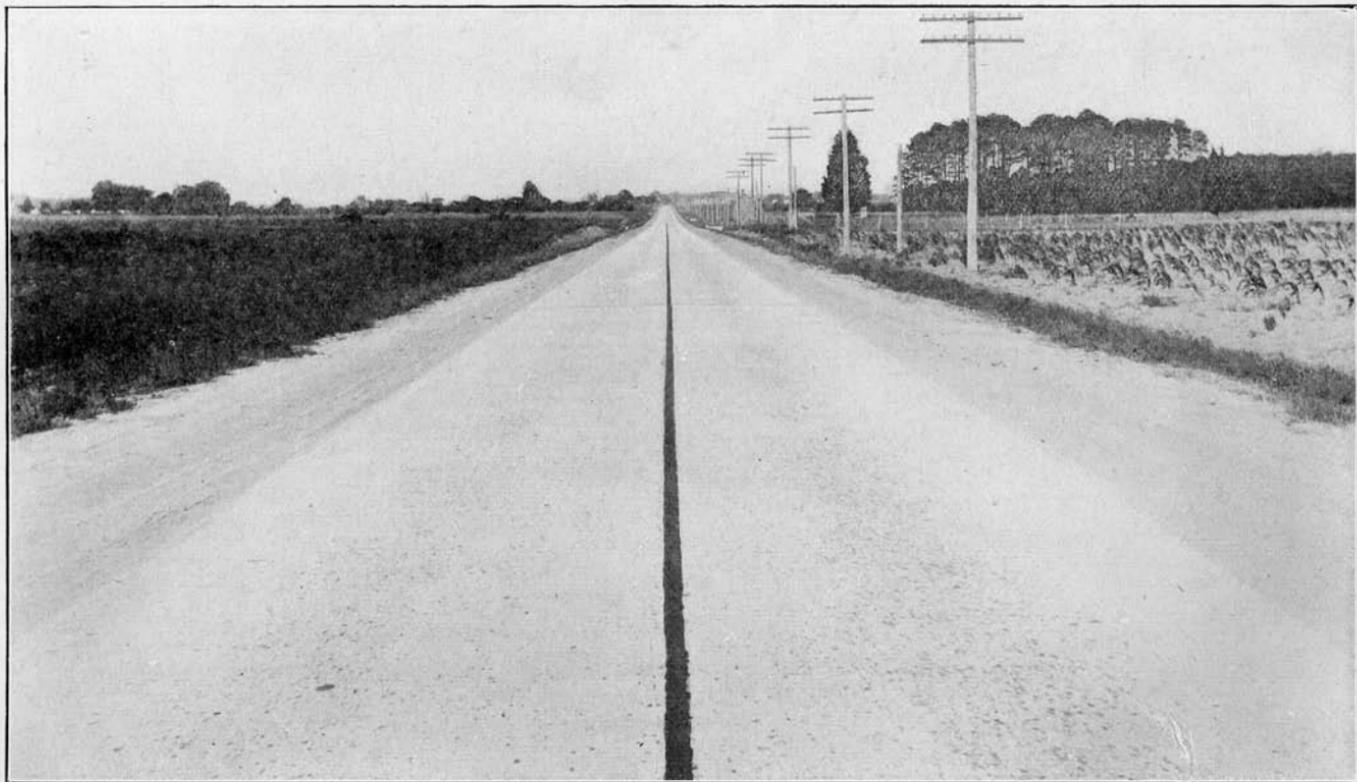
Salaries not chargeable to particular work,

Expenses and Incidentals, Equipment and Supplies .....	\$29,000.00
Legal .....	5,000.00
Traffic Police .....	75,000.00
TOTAL ORGANIZATION .....	\$109,000.00

TOTAL ESTIMATED EXPENDITURES .....	\$760,934.00
EXCESS OF REVENUE FOR YEAR 1925 .....	\$144,066.00

EXCESS OF REVENUE warrants Bond Issue of ..... \$2,058,000.00

**ACCIDENTS, THEIR CAUSES; APPLIED TREATMENT** It is with profound regret that I have to report a total of 356 highway accidents that have occurred in the State, outside the City of Wilmington, between January 1st and December 15th of this year, as a result of which 33 persons lost their lives, 173 were injured, and property damage incurred, estimated at \$49,734.



LEWES-GEORGETOWN ROAD

This view shows the center line marking adopted by the Department for dividing traffic. It has proved very successful and is very popular with motorists, especially in wet and foggy weather.

An interesting tabulation of these accidents follows:

<b>FATALITIES</b>			
Motor vehicles .....	17	Pedestrians .....	6
Railroad crossings .....	9	Suicide .....	1
<b>INJURED</b>			
Motor vehicles (slightly).....	89	Pedestrians (slightly) .....	14
(seriously).....	58	(seriously).....	12
<b>CONDITION OF HIGHWAY</b>			
Wet .....	80	Obstructions .....	3
<b>LOCATION</b>			
Tangents .....	201	Curves .....	40
Intersections .....	100	Railroad crossings .....	15
<b>CAUSES</b>			
Recklessness .....	211	Inattention .....	55
Intoxication .....	34	Loss of control .....	19
Defective brakes .....	13	Glaring headlights .....	11
Defective steering gear .....	6	Inexperienced drivers .....	4
Jay walking .....	1	No tail light .....	1
Defective manhole cover.....	1		
<b>HIGHWAYS</b>			
State .....	288	County .....	36
Towns .....	17	Railroad crossings .....	15
<b>CHILDREN</b>			
Injured .....	4	Fatal .....	2
<b>TIME</b>			
Day .....	196	Night .....	160

A sincere effort, though the results are discouraging, has been made by this Department to reduce accidents and protect the lives and property of all motorists on the State highways. A dividing line for traffic has been laid and is maintained on our roads. With the co-operation of the railroads, grade crossings with State highways have been clearly defined for use day and night. Dangerous curves, intersections and steep grades have been posted with advance warnings, conspicuous at all hours. Cross roads have received special study and their intersections with the improved highways, by appropriate signs, made known to drivers approaching from either of the four directions.

**RECOMMENDATIONS** Listed below are roads recommended **FOR 1925** for future construction. I realize of course, that with funds to be available in 1925, it will be impossible to carry on a program of construction comprising even a large percentage of this mileage, but in view of their importance, I respectfully submit them.

### NEW CASTLE COUNTY

13.4	miles	Lincoln Highway-Wilmington-Marshallton-Newark to Maryland Line (Maintenance)
6.0	"	Double track, Philadelphia pike
3.1	"	Bear-Corbit Station
0.2	"	Lumm's Mill Pond Crossing
0.5	"	Summit Bridge Connection
3.4	"	Hare's Corner-Christiana
4.2	"	Mt. Pleasant-Middletown (widen)
3.8	"	Centerville-Perry Tavern
1.3	"	Milltown-Mermaid
1.0	"	Southwood-Pennsylvania Line
1.1	"	Continuation Marsh Road to Naaman's Road
4.1	"	Faulk Road-Smith Bridge
0.7	"	Ridge Road-Philadelphia Pike
1.1	"	New Castle City Line at Baldton-Delaware St. via 6th Street
1.0	"	Lincoln Highway-Stanton
5.2	"	Christiana-Newark via Ogleton
0.25	"	Re-location Lincoln Highway through Marshallton
1.5	"	Red Lion-Porters
3.4	"	McDonough-Dale's Corner School
4.1	"	Middletown-Ginn's Corner

### KENT COUNTY

5.5	"	Kenton-Maryland Line via Downe's Chapel
4.9	"	Dover-Little Creek via Division Street and Dover Water Plant (North or Upper Road)
3.9	"	Smyrna-Woodland Beach
.25	"	King St., Dover (Division Street to State Street)
7.4	"	Willow Grove-Maryland Line
4.8	"	Tub Mill-Thompsonville
5.0	"	Canterbury-Magnolia
3.3	"	Houston-County Line via Williamsville
2.6	"	Farmington-Andrewsville
7.5	"	Whiteleysburg-Cain Corner via White's Church
3.8	"	Dover-Cowgill's Corner

### SUSSEX COUNTY

17.0	"	Brick Granary-Five Points
2.7	"	Milton-Waples Pond
1.1	"	Approaches to Lewes and Rehoboth Canal
6.0	"	Harbeson-Angola
2.0	"	Harmon School-Oak Orchard
11.2	"	Harmon School-Westcoats Corner-Rehoboth Road, via Angola
.8	"	Lincoln City-Du Pont Road
5.0	"	Concord-Laurel-Georgetown Road
2.7	"	Lowes Cross Roads-Mission
4.2	"	Lowes Cross Roads-Gumboro
9.0	"	Laurel-Maryland Line
3.7	"	Greenwood-Scotts Store
2.4	"	Dublin Hill-Scotts Store
10.2	"	Delmar-Columbia
2.2	"	Cannons-Atlanta
4.2	"	Selbyville-Williamsville
7.0	"	Shawnee School-Owens Station
1.5	"	Assowoman Canal thru Bethany Beach
8.4	"	Milton-Ellendale
1.6	"	Vines Creek to Frankford-Clarksville Highway
3.5	"	Greenwood-Owens Station
2.9	"	Bridgeville-Sunny Side School
.5	"	Thru Blades

**RAILROAD CROSSINGS** I consider it immensely important that the next General Assembly grant authority to the State Highway Department to undertake and complete, as early as possible a survey of all grade crossings in the State, which exist where highways, regardless of their class, cross steam or electric roads. Such a survey to determine crossings that can be altogether abolished by a re-location of the highway and others that may be of such a nature, when re-location cannot be made, that a separation of the crossing is advisable by passage over head or under grade.

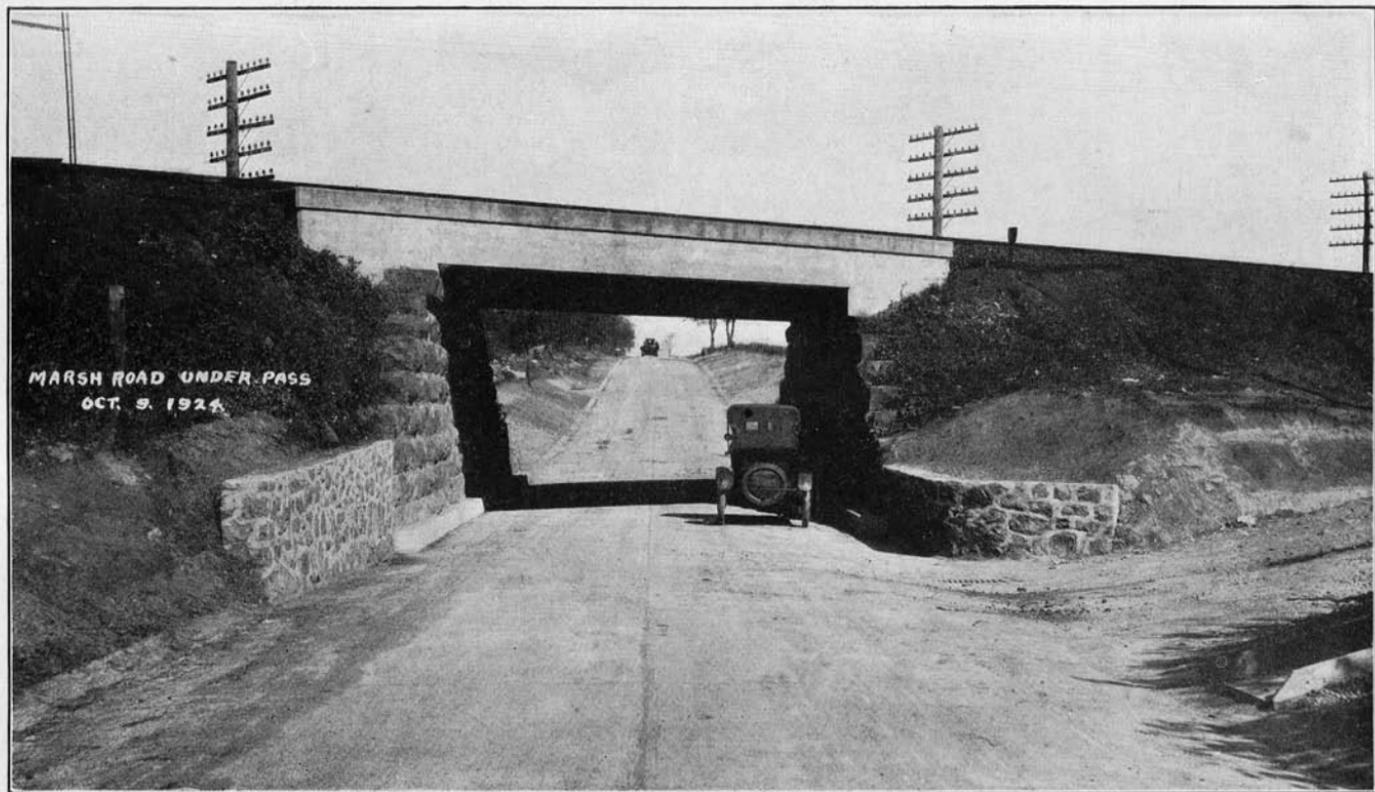
To my personal knowledge there are several instances, not within the limits of towns where 2 roads not over 1000 feet apart cross main line tracks. By a re-location of the highway one crossing should be abolished and the other protected.

The importance of a comprehensive study of these conditions is emphasized by our record of fatal accidents happening at grade crossings during the year. In this period 9 persons lost their lives in 8 collisions, between motor vehicles and trains, and passengers of 7 other vehicles wrecked, narrowly escaped death. The situation demands attention, and where dangerous crossings cannot be separated or eliminated, the best possible warning protection should be provided.

Continuing the subject, I offer the definite recommendation that we be authorized to begin negotiations with the Pennsylvania railroad for the elimination of the Frogtown grade crossing north of Middletown, substituting in its stead an underpass, similar to the divided crossing constructed north of State Road Station. The highway involved is a semi-primary road and the railroad tracks, those of the main line of the Delaware Division. The crossing is an important one and the present type should be eliminated in the interest of safety to the public.

**SIDE WALKS** An attribute of the important work performed by the Department, with the construction of highways in previous years, is the dire need at this time in certain sections of the State, without the limits of incorporated towns, of proper walks or pavements for pedestrians, especially children, who are required to use the improved roads as lanes of travel between their homes and places of business or pleasure.

The unforeseen and unprecedented amount of motor traffic attracted to many of our highways through re-construc-

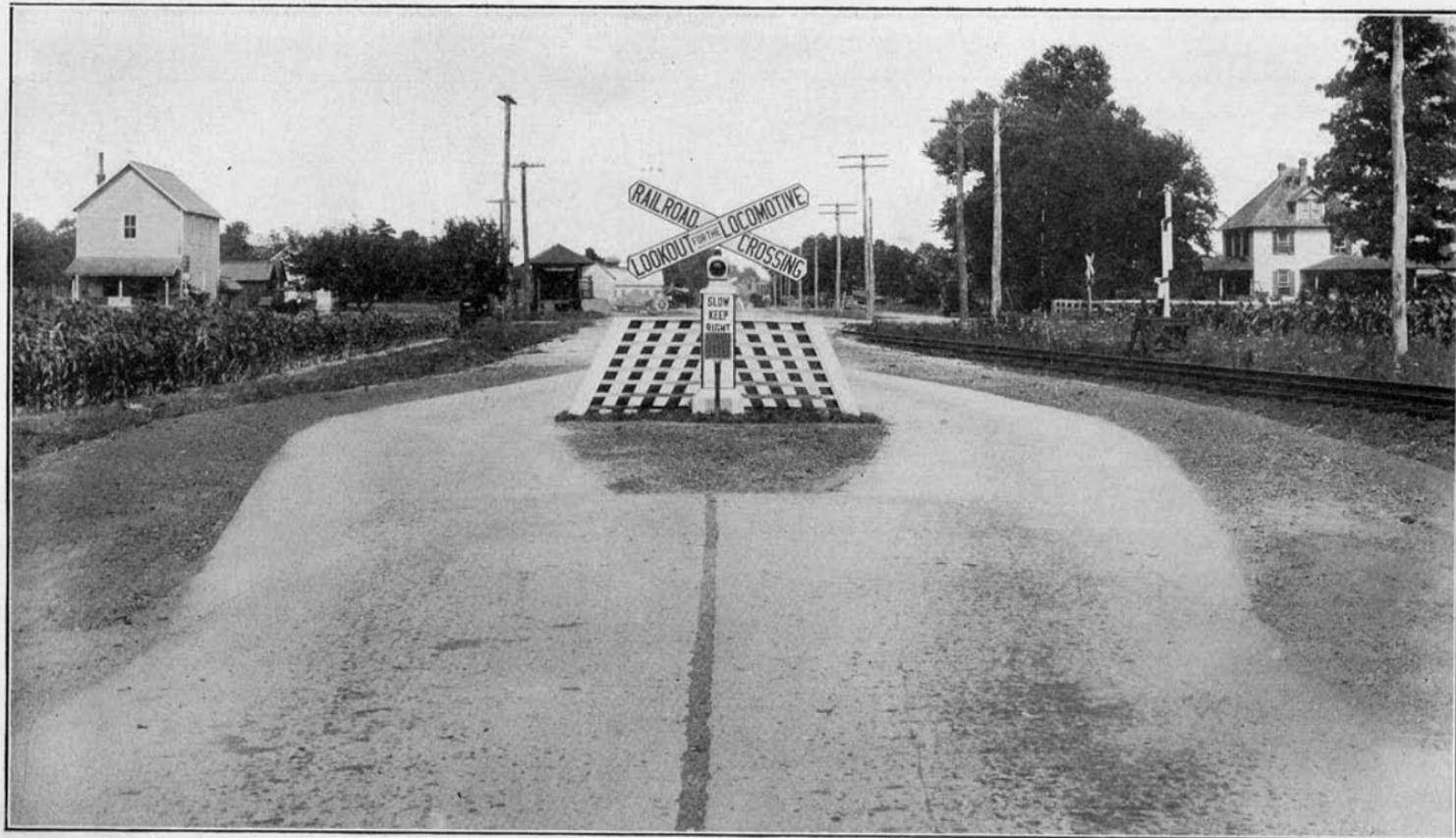


UNDERPASS B. & O. R. R. MARSH ROAD  
New Castle County



STATE ROAD CROSSING  
LOOKING N. UNDER R. R.  
SEPT 11, 1923.

GRADE CROSSING ELIMINATION, STATE ROAD  
du Pont Boulevard and Penna. Railroad



RAILROAD WARNING SIGNAL AT COOL SPRING  
LEWES-GEORGETOWN ROAD. SUSSEX COUNTY.

Type of warning sign adopted by Department for unprotected grade crossings.

tion, would appear to demand prompt and definite action by this Department, for the protection of pedestrians in certain localities, if a toll of lives is not to be exacted.

I earnestly request your worthy consideration of this most important subject, and take the liberty to suggest, should there be a question of propriety as to the Department's undertaking such work, that the matter be presented to the next General Assembly in the hopes of securing their early approval.

*147.*  
**ROADSIDE BILLBOARDS** You will recall that my report for the preceding year carried the suggestion that roadside advertising be taxed and the revenue so derived applied to the maintenance of State highways. I reiterate the recommendation and strongly advocate legislation necessary to accomplish the means.

As an equally important measure, I further suggest that the State Highway Department be empowered to regulate the location of all billboards along State highways. Granted this authority, the possibilities of reducing accidents from collisions at intersecting roads would be largely increased.

It must be conceded that the value of the highway sign is derived from the public thoroughfare and not from private property on which it is located and the first obligation should be to the public who own the highway.

The practice in the State of erecting billboards along our improved highways is increasing with startling rapidity. A recent survey of our primary roads ~~alone~~ gave proof that 157 of such signs line these roads. If an annual tax of \$0.10 per square foot was levied on the signs now erected within 200 feet of the State highways, the revenue derived therefrom would be sufficient to maintain 35 miles of roads for twelve months.

**MARKET STREET BRIDGE** Inspection, by the New Castle County Engineer, of the bridge spanning the Christiana River at the foot of South Market Street, Wilmington, indicates conclusively that this bridge will continue to demand excessive maintenance and that it is inadequate for the every day vehicular and marine traffic required to pass over and through it.

*an revenue? I in two years.*

It must in the near future be abandoned, and since this crossing is considered by many, the most important in the State, and since it serves as the first link in our improved system of highways, extending from Wilmington to Selbyville and from Wilmington to Delmar, I recommend that the present bridge be replaced by the State in 1925 with a modern appropriate and substantial structure. The life of this project when undertaken will extend over a period of months, and for the convenience and benefit of the thousands of individuals who each day must cross the river, I most earnestly advocate the erection of a temporary crossing up or down stream while the work is in progress.

**RECOMMENDATIONS** I advocate the erection of two additional police stations; one in Sussex County on the Highway between Dover and Delmar and one on the Wilmington-Marshallton-Newark highway, if this road is to be maintained by the State. I further recommend that for the stations now maintained and for the others that may be opened, sufficient men be provided to give twenty-four hour service at each. To accomplish this, six stations will require a force of 38 men.

As one familiar with the long hours, the arduous and hazardous nature of the work required of the State Police, also with their allegiance to duty, I recommend, request of approval by the next General Assembly of, an increase after a year's service, to the salaries of the uniformed men of the Force and offer the suggestion that the maximum monthly salary limit be—Captain \$160.00—Lieutenant \$150.00—Corporal \$140.00—Private \$130.00.

As a means of reducing, with the remote possibility of eliminating, accidents on our highways—I offer the suggestion that, with legislative approval, a monthly bonus be paid to the individual uniformed members of any Station where there are no accidents during the month on the roads they patrol.

**THREE LANE TRAFFIC ON PENNY HILL** The continual increase in motor vehicles travelling the Philadelphia Pike and the congested traffic at periods on Penny Hill, presents the problem of how this traffic can be more expeditiously moved. The highway up the hill, which is 3,000 feet long, is laid on a 6% grade. Heavy trucks ascending, move



STATE HIGHWAY POLICE STATION NO. 4  
Near Georgetown

slowly, many not over 5 miles an hour, all other traffic in line is likewise retarded, until an opportunity is offered the operators of "Cutting around". This practice presents at times an element of risk, and in hours of heavy traffic is impossible. To afford relief, I recommend widening this road on the east side sufficiently to allow for 3 lanes of traffic; slow moving north bound traffic to be kept to the extreme right.

**OMIT** In the annual report of the preceding year, I under-  
**BOND** took to reason the advisability of amending the highway Act of 1917 in order that large funds heretofore paid by contractors to Bonding Companies upon the execution of highway contracts, might hereafter remain in the State Treasury. To support my belief, that by exercising exceeding care and caution, many dollars could be saved the State, that now is indirectly paid out in premiums on surety bonds, I present for your consideration these facts and figures.

Within the past 24 months the State Highway Department has supervised the execution of 71 contracts, the total cost of which amounted to \$6,038,022.68.

During this period and for this work, surety companies have received \$90,570.00 in premiums without incurring a dollars loss. This record is the result of thorough and careful investigations made by the Department, of each contractor's financial condition, his previous experience, his former record and the equipment he possesses, before an award is made and he is intrusted with the responsibility of proceeding with the work.

If our record as noted is conducive of confidence in our ability to correctly judge the individuals and companies, who are intrusted with our work, we would most gladly undertake the responsibility of recommending for awards in the future the low bidders who in our judgement, could successfully complete their contracts without the necessity of a surety bond. If in your determination such a procedure has its merits, a modification of Section 12 of the present Highway Act, giving to the Members of the State Highway Department the right to award without surety in those cases where the low bidder was considered to be altogether reliable, would permit, in my opinion, of a substantial saving to the State. I recommend

that this subject be presented to the Members of the next General Assembly for their consideration.

**STATE TO PAY ALL COSTS OF MAINTAINING STATE AID ROADS** In accordance with Section 21, Chapter 70, Volume 30, Laws of Delaware, providing State Aid to Counties for highway development, 245 miles of State Aid Roads have been constructed, for the maintenance of which the above statute requires the Counties shall pay \$100.00 per mile per year.

I advocate an amendment to this law to provide that, beginning January 1, 1926, all State Aid roads now constructed or to be constructed under this Act shall be maintained at the sole expense of the State.

In my opinion the Counties should be relieved of this burden since the use of an improved concrete road cannot be confined only to local traffic, in fact this class of traffic on most of our State Aid roads constitutes but a small percentage of that using them.

**READJUSTMENT OF GAS TAX AND MOTOR VEHICLE FEES** The influx of foreign cars to our State is becoming more apparent each year. Presumably our highways, pleasure resorts, and hunting grounds are attracting great numbers from other States, who are less fortunate than we, with our ability to claim such possessions. There is unquestionably a State wide welcome awaiting such guests, as there should be, but if they reach such numbers and I predict they will, that our citizens on frequent occasions are discommoded, the resentment raised at such times will increase with the realization that the burden of taxation for the building and upkeep of our highways, which at times they fill, is so unequally proportioned between our citizens and our motoring friends from other States.

The reciprocity policy for motor cars needs no explanation to support its justice and worth; if not it is almost, and should be universal. Therefore, to permit our guests to further assist in contributing to the development and upkeep of our highways which all will use, I offer for your consideration the suggestion that the State tax on gasoline be increased January 1, 1926 to 3-cents a gallon and that a corresponding decrease be allowed in fees for registration of Motor Vehicles



LIMESTONE ROAD, MILL CREEK HUNDRED  
New Castle County

in Delaware. Such an adjustment in the rate of taxation for Delaware cars would be no more costly to the owners and would have the added advantage of more equitably distributing the cost of upkeep of our highways among those who use them, and serve also to increase the State's revenue by the added income from the additional one-cent gasoline tax to be paid by out of State cars.

**STATE TO IMPROVE AND MAINTAIN EARTH ROADS** With the advantages now enjoyed from a State system of improved hard surfaced highways, comprising slightly more than 11% of the total milage of roads in the State, the period is at hand when it appears reasonable and proper to propose that the State Highway Department in addition to such roads as yet remain to be converted into high type highways, should undertake the betterment and upkeep of some of the more important earth roads which at this time do not justify the expenditure necessary for hard surfacing. With funds for this work available, a yearly program could be carried on for improving these secondary highways, and at a nominal expense such roads, now out of repair could be made safer and more serviceable by increasing the width, altering the alignment, raising when necessary the grade, correcting the drainage, reconstructing culverts and bridges, recrowning the travelled way and rebuilding the wearing surface where expedient with sand, clay, gravel, cinders or slag, using when most needed periodical applications of light oil as a binder and dust preventative.

Authorized to undertake such a program, I forecast that in a short time a large percentage of the secondary dirt roads would conveniently and safely serve to good advantage the localities through which they pass.

I therefore, offer for your worthy consideration, the recommendation that the present highway act, which now confines us to the building of hard surfaced roads only, be so amended as to allow the State Highway Department to undertake the betterment and maintenance of earth roads.

As an appendage, I request permission to add that under no circumstance should bond issues be considered for the financing of such an undertaking and the work if authorized must be done on the plan of "pay as you go".

Before terminating this report, I desire to convey to His Excellency the Governor, and to each of the Honorable Members herein addressed, the formal expression of my appreciation of your co-operation and courtesy in my administration of this Department and on behalf of all my assistants who have so cheerfully and capably aided me, I bespeak your consideration of the valuable service they have rendered.

Respectfully submitted,

State Highway Department,

C. D. Buck, Chief Engineer.





STATE CAPITOL, DOVER



COOPER'S CORNER, SOUTH OF DOVER

The junction of the two main routes through Kent and Sussex Counties.