

Annual Report of Chief Engineer
State Highway Department
1928

Dover, Del.
December 31, 1928

To the Members
State Highway Department
Dover, Del.
Sirs:—

I herein submit a report of the work accomplished by the State Highway Department during the year of 1928, with a list of roads for which petitions have been presented asking for the construction as State highways.

There are also appended certain recommendations for the year 1929.

PRELIMINARY SURVEYS AND PLANS Surveys during the year were carried on by a survey party in each county. Seventy-five miles of preliminary and location surveys, fifty-one miles of cross-sections have been completed, and fifty miles were staked out for construction. Forty-four miles of final surveys, including thirty-six borrow pits have been made, in addition to minor surveys for rights of way and other purposes.

Our office engineers prepared complete plans, profiles and estimates of quantities for sixty miles of highways in addition to platting and completing the final cross-sections for forty-four miles of completed construction.

TESTING LABORATORY All materials used on State Highway work during the year were purchased under our standard specifications. The testing department made a sufficient number of tests to determine the quality of all

materials used. Samples of cement, sand, crushed stone, crushed slag, reinforced concrete pipe, terra cotta pipe, reinforcing steel, hydrated lime, water, coal tar and asphalt were tested.

So far as it was practical to do so, all shipments of materials were tested and accepted at the point of shipment, and any delay or rejection on the arrival of the material was avoided. This plan was possible for shipments of cement, reinforced concrete pipe, hydrated lime, terra cotta pipe, coal tar and asphalt. On all other materials, the general quality was determined by preliminary tests made on samples taken from the source of supply. The quality of subsequent shipments was then checked by samples taken on arrival at the work.

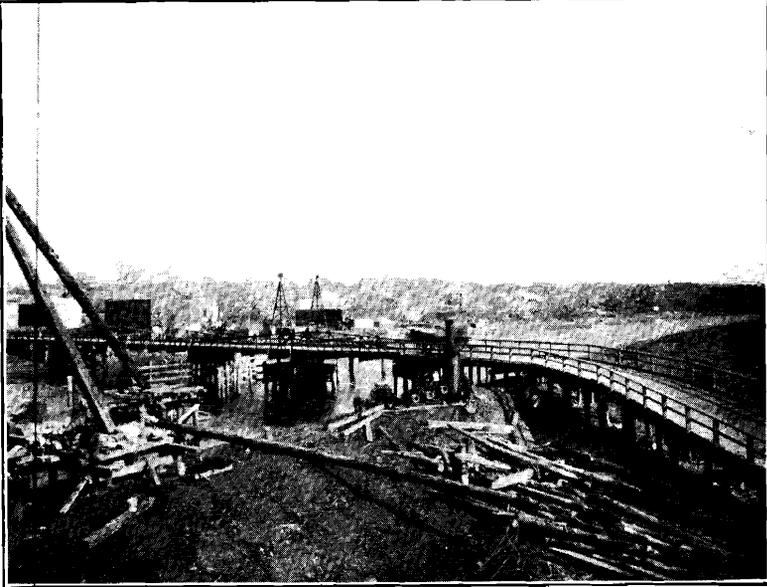
In locating sand for use in sand asphalt construction in Sussex County, samples were taken from all available sand pits, and the quality, as well as available quantity, was determined. Daily check tests were then made on the material as it was used from the accepted pits.

During the year slab specimens were made on each concrete roadway contract and tested to determine the transverse strength. By this method the results obtained by the use of various materials and various combinations of materials could be determined and information, valuable in future work, was obtained. This test was also found useful as a guide in opening new roadways to traffic.

Through a close contact maintained between the testing department and the inspectors and resident engineers, it was possible to operate the laboratory this year with one man less than in the preceding year.

BRIDGES The Bridge Division has had an active year;
AND three important movable bridges have been under
CULVERTS consideration.

The Bascule bridge over the Lewes and Rehoboth canal at Lewes up to the present year had been under the control of Sussex County. It was a hand-operated rolling lift type and owing to the failure of its foundations, it became necessary to reconstruct them.



Temporary Bridge, Christiana River at Newport, to Accommodate Traffic During Construction



Emergency Bridge Constructed at Garrison's Mill, near Dover, After Breaking of Dam, August, 1928

Plans were therefore made and contract let to construct entirely new piers and foundations, to provide for the operation of the movable span by electricity and to make other needed improvements. This work should be completed by April 1929 at a cost of approximately \$50,000.00.

The existing drawbridge over the Christiana River at Newport is inadequate for present conditions; accordingly plans were made and contracts have been let for the substructure and the temporary span.

This bridge will consist of three spans of about 62 feet each for approaches, and 50-foot clear span for the bascule. There is a 30-foot roadway and two 5-foot sidewalks. A concrete railing and sidewalks on the structural steel approaches will be supported by cantilever beams attached to the girders. The clear distance face to face of abutments is 210 feet. A temporary bridge will be located about 60 feet down stream from the present bridge to carry traffic during construction.

The contract for the substructure has been let for \$64,000.00. The probable cost of the steel superstructure, which is now advertised will be around \$60,000.00, making the entire bridge cost about \$125,000.00. The public should be riding over the new bridge before October, 1929.

Plans have also been made and bids have been advertised for the construction of a bascule draw span over the Mispillion River near Milford. This bridge and its connecting highways will form a cutoff enabling the Rehoboth Beach traffic a means of avoiding the narrow and congested business streets of the town of Milford.

There will be a clear span of 46 feet with a distance of 56½ feet between piers in the stream. This bridge will be a rolling bascule type with overhead counterweight, a 24-foot roadway and having in addition a 5-foot sidewalk on the west side. The cost of the complete bridge will be below \$75,000.00.

In addition to the more important projects named, plans were prepared for the construction of 16 small bridges and 117 culverts, which were constructed at a cost of \$65,000.00.

RIGHT OF WAY During the past year the right of way department has secured title for rights of way on 140 of the 178 properties on the 1928 contracts, having a



9-foot Concrete Road, Dublin Hill-Scott's Store, Sussex County. Note Team Using Earth Shoulder

mileage of 35.84 miles. This is exclusive of the Philadelphia Pike. In addition, the department has acquired title, by deed or condemnation, to 227 properties on contracts awarded previous to 1928, or a total of 367 titles acquired. An itemized account of the monies expended to obtain this right of way is as follows:

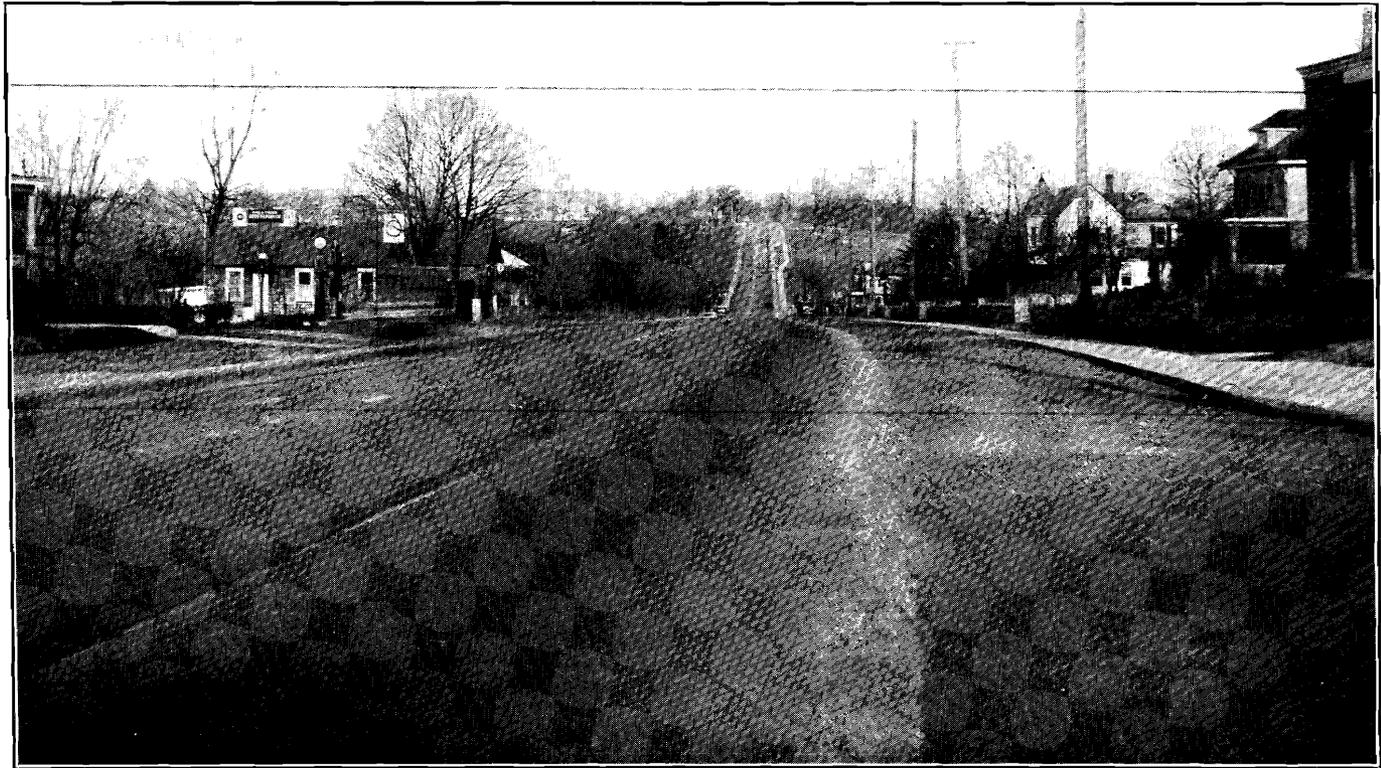
Salaries and Expenses	\$3,985.53
Legal	6,163.70
Right of Way	3,030.81
Fencing	10,650.40
20 Houses Moved	7,708.83
25 Condemnations	5,987.84
Crop Damages	615.00
Miscellaneous	446.25
	\$38,588.36

In addition, the department has written 268 descriptions, obtained 260 options for rights of way, and secured 246 releases from liens of mortgages and judgments.

The obtaining of rights of way for the widening of the Philadelphia Pike is one of the largest undertakings in the history of the department. During the year 1928, title was acquired on 40 properties at a total cost of \$27,423.04, distributed as follows:

Salaries and Expenses	\$1,190.19
Legal	742.97
Moving houses, gas tanks, sign boards, trees and shrubbery	15,596.92
Fencing and Walls	8,777.44
Right of Way	742.43
Miscellaneous	373.09
	\$27,423.04

The costs as given include all expenses made necessary by the re-alignment and widening of State highways, including salaries, title searches, preparing and recording deeds and releases, condemnation costs and awards, house moving and alterations, fencing, and crop and property damages.



Philadelphia Pike, U. S. Route 13, Four-lane Pavement with Sidewalk—Completed 1928

CONSTRUCTION This year the Department's construction program was limited to 9 lettings, comprising 16 road and 3 major bridge projects for a total contract amount of \$1,357,951.68, of which the road awards amounted to \$1,237,988.18.

The mileage of road contracts to be hard-surfaced amounted to 47.07 miles. All of this, with the exception of 1.42 miles of widening of the last portion of the Philadelphia Pike, was entirely new construction. Carried forward from last year's work into the 1928 working season were 18.04 miles of paving.

Weather conditions interrupted the progress of road work during the spring and summer, but the final months of the year were ideal for construction and about 30% of the year's total of paving was laid during October and November. To date the 47.07 miles awarded have been completed, as well as the 18.08 miles carried forward from last year, or a total of 65.11 miles completed for the year 1928, and but one mile carried forward into next year's program.

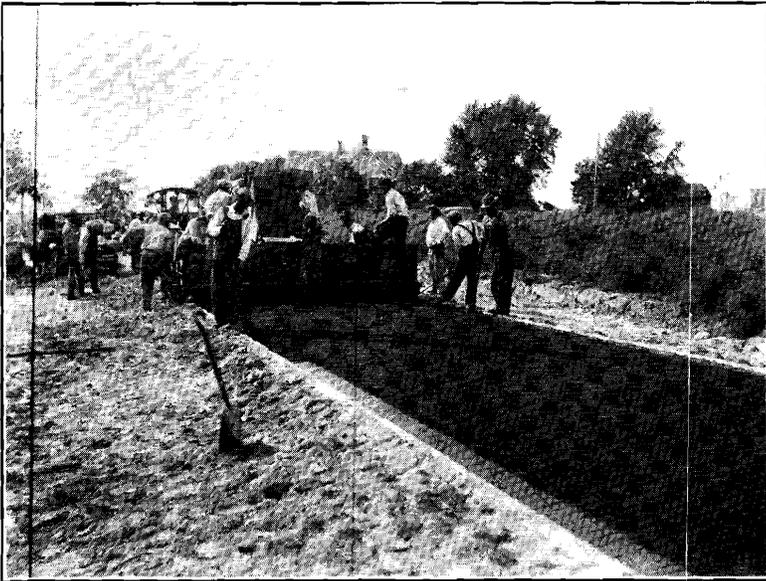
This total added to the State's system now comprises 688 miles or about 18% of the entire State's system of rural highways.

In addition to the standard widths and types of roads, the Department continued to build 9-foot concrete roads upon secondary highways. These have been found satisfactory for feeder roads to the main system and are so built and designed that they can be widened when traffic increases.

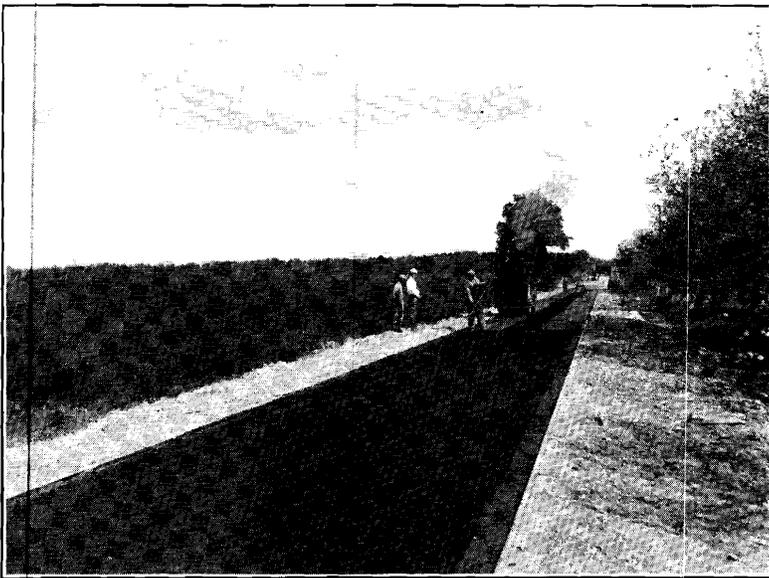
Another type of secondary road to be built this year was a 4-mile stretch of sand asphalt 12 feet wide and 4 inches in depth in the vicinity of Bridgeville. Apparently this type is adaptable in regions where sand is available and can be built at a cost not exceeding \$14,000.00 per mile.

This year has seen the completed widening of the Philadelphia Pike with the addition of a sidewalk on one side for the safety of pedestrians.

Attached is a summary of contracts advertised and awarded during the year, their location and type.



Mechanical Spreader—Sand Asphalt Construction, Sussex County



12-foot Sand Asphalt Road—Bridgeville-Double Bridges, During Construction

ESTI- During the year 115 estimates totalling \$1,916,-
MATES 386.65, on 44 different contracts, have passed the
office for payment including 23 final estimates, upon which
all contract items were computed and checked.

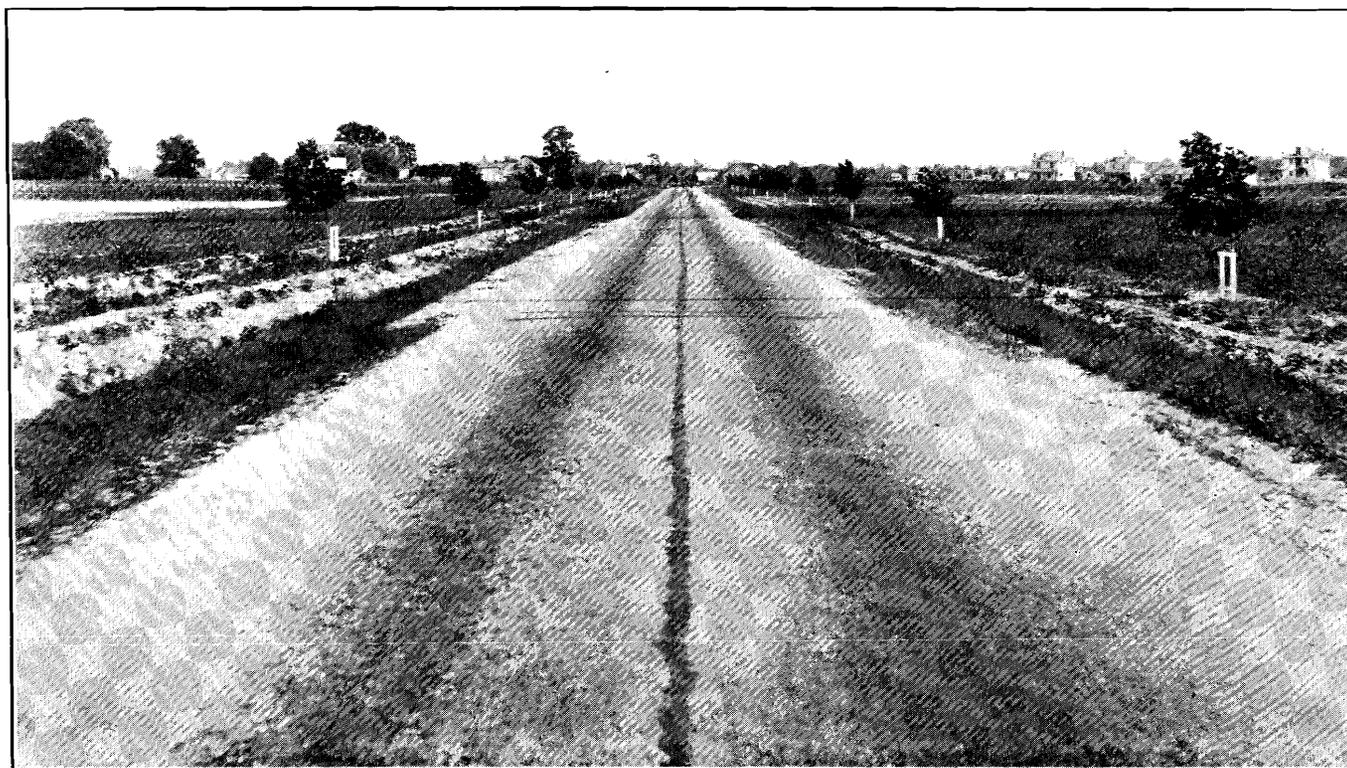


Philadelphia Pike, U. S. Route 13, Paved in 1919 with 18-foot Brick Pavement—Widened to 40 feet in 1928

TABULATION OF CONTRACTS AWARDED IN 1928.

Contract No.	Location	Length Miles	Contractor	Type of Roadway	Contract Total
59	Hazletville-Wyoming	5.02	Field, Barker & Underwood, Phila., Pa....	15' Concrete	\$122,105.00
90	Bay Road	3.77	D. E. O'Connell & Sons, Ridley Park, Pa....	16' Concrete	94,862.00
91	Lewes Bridge		Al S. Fox, Dayton, Ohio		49,326.00
96	Shawnee-Greenwood	8.02	Highway Engr. & Const. Co., Selbyville, Del...	14' Sand Asphalt	160,251.00
100	Ocean View Bridge		George Shockley, Georgetown, Del.		4,796.50
101	Phila. Pike (Claymont-Penn. Line).....	1.42	George & Lynch, Dover, Del.	21' Concrete Wdg.	99,295.00
				54'6" Concrete	52,735.00
102	Pennsylvania Avenue, Wilmington.....	.35	George & Lynch, Dover, Del.		65,823.00
103	Newport Bridge (substructure)		Carl R. Camp, Inc., Phila., Pa.	34'6" Concrete	
105	Wilmington Causeway (City Lts.— A St.56	D. E. O'Connell & Sons, Ridley Park, Pa....	20' Amiesite	76,175.00
108	Surface Treatment	38.7	Ed. Pendleton, Baltimore, Md	Maintenance	31,860.88
109	Police Sta. No. 2 Driveway.....	2.21	Samuel K. Lloyd, Wilmington, Del.	9' Concrete	1,840.00
110	Milford Cross Rds.—Thompson Sta..	2.73	George & Lynch, Dover, Del.	16' Concrete	63,642.50
111	Christiana-Hare's Corner	2.61	Wm. Eisenberg, Camden, N. J.	9' Concrete	95,865.20
112	Frederica-Laws School		George & Lynch, Dover, Del.	12' Slag	56,754.00
65A	Kitt's Hammock Road Extension..	1.10	Field, Barker & Underwood, Phila., Pa....		7,010.00
CS61	Harmon School-Angola-Indian Mis- sion	6.72	George & Lynch, Dover, Del.	14' Sand Asphalt	140,865.00
CS62	Gumboro Hwy-Elliott's School	4.08	Old Line Const. Co., Chestertown, Md.		78,629.50
CS63	Brideville-Double Bridges (Grading)	4.15	Highway Engr. & Const. Co., Selbyville, Del...	14' Concrete	25,762.50
CS63A	Brideville-Double Bridges (Surfing)		Highway Engr. & Const. Co., Selbyville, Del...	12' Sand Asphalt	41,020.00
CS64	Argo-Slaughter Beach	3.66	Walton Roach, Georgetown, Del.	14' Concrete and Amiesite....	89,333.60

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Tree-planting—Du Pont Boulevard near Millsboro, Showing Oriental Planes Two Years after Planting

WIDENING The widening of the Philadelphia
MAIN HIGHWAYS Pike and the Du Pont Boulevard between Wilmington and State Road, making them 4-lane highways, has greatly facilitated the movement of traffic on these roads, especially during periods of heaviest travel.

This improvement has been widely and favorably commented upon and the Department has plans completed and will receive bids on January 8th for the construction of a "dual" highway from State Road to St. Georges. The "dual" highway will be a two-lane concrete road, paralleling the present Du Pont Boulevard between these points at a distance of 50 feet. One-way traffic will be maintained on these two thoroughfares and it is hoped that greater safety will be secured, through the elimination of head-light glare and the possibility of head-on collisions.

The completion of this project will afford an opportunity of testing the relative advantages of the two methods of handling heavy traffic.

FARNHURST BRIDGE AND The bridge over the Penn-
NEWPORT GRADE sylvania Railroad at Farn-
ELIMINATION hurst which is now under construction by agreement with the railroad company will be completed by early summer and will make available the full advantages of the widening already completed.

The elimination of the grade crossing of the Pennsylvania Railroad at James Street, Newport, is also under agreement and it is hoped can be constructed during the coming year.

MAIN- The work of keeping in service for the pub-
TENANCE lic a system of highways throughout the year is no small task, and requires the necessity of maintaining an organization which is capable of handling a diversity of work. This work includes the necessary repairs to the various types of road pavements, the care of shoulders, ditches and culverts, the mowing and brambling of rights of way, the clearing of snow, the collection of refuse and the painting of center lines, the repair and maintenance of traffic signals and warning signs and the planting and trimming of trees.

Following the policy adopted some years ago, the Depart-



Du Pont Boulevard near Georgetown, Showing Natural Planting

ment this year planted some 3500 trees along the highways. Oriental Planes, Red Oaks, American Elms, and Flowering Dogwoods were the principal varieties selected; good results were secured with the exception of the dogwoods, many of which died.

Existing trees along the Philadelphia Pike were trimmed during the year by experienced tree surgeons.

Exceptionally heavy rainfall throughout the year and a particularly severe storm in August, amounting to 11.4 inches caused considerable damage to highways and bridges, notably near Marydel and at Garrison's Mill, north of Dover, where the bursting of two dams caused the undermining of the roadway and the failure of the highway bridge.

Unusually heavy snows in January and December have placed extraordinary demands on our snow removal equipment, especially in Kent and Sussex Counties, where the fall was heaviest. New equipment has been purchased during the year including 6 four-wheel drive trucks, but additional heavy duty, high-speed trucks will be required to keep the roads open under these exceptional conditions.

In spite of the unfavorable weather conditions, throughout the year, the usual high standards of maintenance have been attained.

The maintenance forces during the year erected standard markers on U. S. Routes 40, 13 and 113.

All stone and slag macadam roads in the State system were surface treated during the year, under an oiling contract which shows itself in a substantial increase in the cost of maintenance this year. The cost of surface treatment was approximately \$900.00 per mile.

BUDGET A copy of the certified budget which was **FOR 1929** adopted by the Department at the meeting of November 27, 1928, showing an estimated excess of revenue of \$183,000.00 for the year 1929 will be found on page 38, as a part of the Report of the Secretary.

HIGHWAY POLICE The State Highway Police have been unusually active during the year and with a slightly reduced force the number of arrests has been increased nearly 25% and the number of reprimands 300% over 1927. The total of fines collected from convictions secured during the first 11 months of the present year amounted to \$51,271.28, compared to \$41,927.33 in 1927.

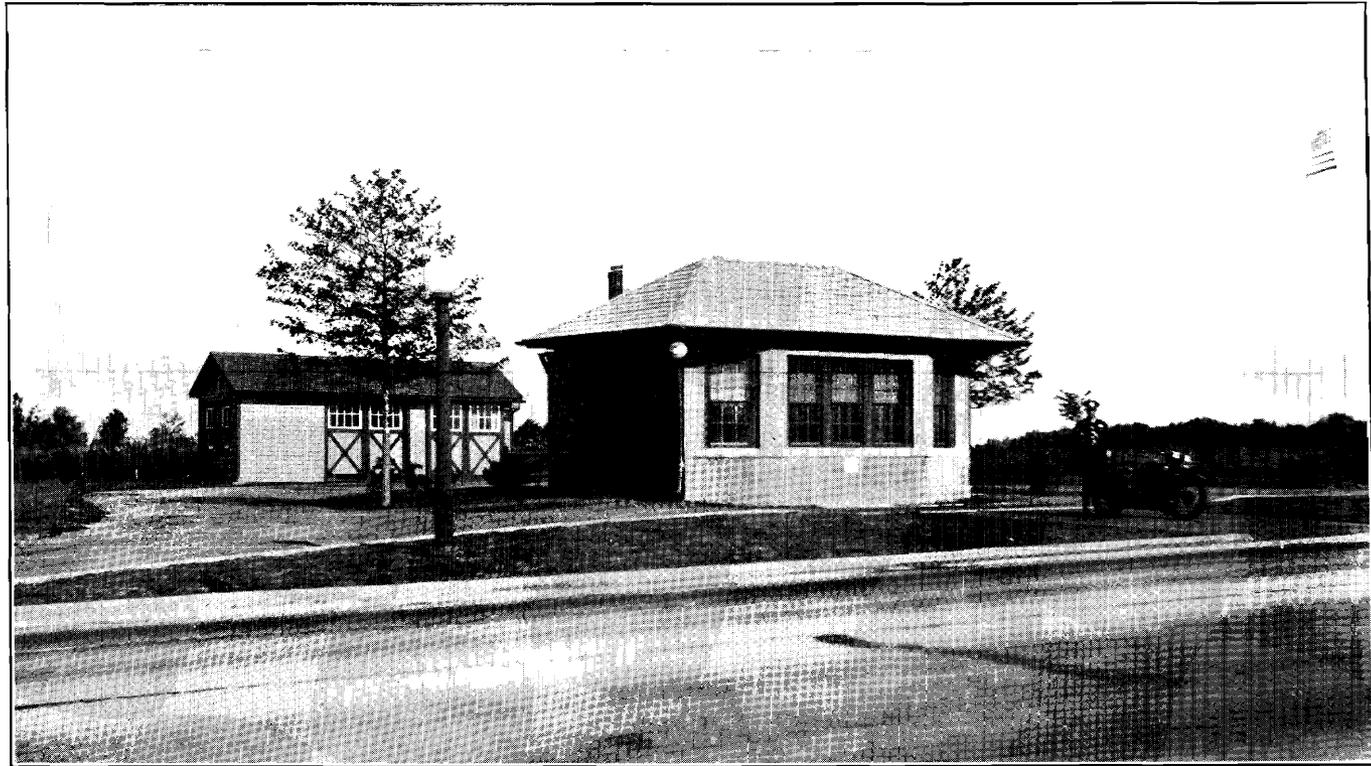
During the 11 months ending December 1st last, the force patrolled 489,116 miles of highways, made 3112 arrests, issued 15,712 reprimands, weighed 19,707 trucks, inspected 5,487 cars for faulty lights and brakes, and recovered 46 stolen cars.

The variety of service rendered the public by the force may be judged by the tabulation of arrests made from January 1st to December 1st which is as follows:

Abduction	1
Accessory to fact	1
Aiding and abetting	2
Arson	3
Assault	1
Assault and Battery	62
Assault felonious	13
Assault to kill	4
Assault to ravish	1
Bastardy	1
Bigamy	1
Breach of Peace	1
Breaking and entering	6
Carrying concealed deadly weapon	17
Conspiracy	2
Defacing and destroying property	1
Defective brakes	22
Deserting army	1
Desertion	2
Disorderly conduct	19
Disturbing religious worship	9
Drunk and disorderly	100
Embezzlement	2
Failing to stop before entering main highway	121
Forgery	4

Fugitive from justice	1
Held as witness	29
Highway robbery	2
Horse-drawn vehicle no lights	15
Inciting to riot	1
Improper lights	75
Improper tags	231
Insane	3
Keeping gambling house	1
Larceny	106
Leaving accident	19
Livestock running at large	3
Making threats	1
Manslaughter	24
Manufacturing liquor	2
Murder	7
No horn	1
No mirror	143
No operator's license	398
No photo on paid drivers' license	1
No public permit	5
Non-support	5
No title for car	4
No weight on side of truck	5
Not stopping at railroad crossing	4
Obstructing highway	2
Obtaining money under false pretenses	1
Operating after revocation	15
Operating under age	1
Operating under influence of intoxicating liquor	253
Overloaded trucks	65

A total of 744 highway accidents outside the City of Wilmington, were investigated and recorded by the officers of the force between January 1st and December 31st, 1928, in which 57 people were killed, 528 injured and a property loss of \$124,715.00 was sustained. It may be well to call attention to the fact that in spite of increased vigilance on the part of the offi-



State Highway Police, Station No. 2, State Road, U. S. Route Nos. 13 and 40

cers of the force a greater number of accidents with two more fatalities occurred than during the previous year.

During the year 1926, there were 21 fatalities in the State, due to railroad grade crossing accidents. In 1927, these were reduced to 5 and this year but 2 deaths were so recorded. Whether the shocking accidents at grade crossings in 1926, together with the safety organizations so stirred the motorists that they became "crossing conscious" and this brought about this remarkable decrease, it is impossible to determine. Should a similar course prove necessary with respect to other highway mishaps, it is to be hoped that the peak has been reached and that the public will exercise the more rigid self restraint which will be necessary if there is to be any considerable reduction in the number of these casualties with their train of loss, suffering and death.

The whole-hearted support of the public in enforcing and upholding the motor vehicle laws of the State is imperative if progress is to be made in the direction of greater safety.

Complete analysis of all highway accidents is appended.

CLASSIFICATIONS

Fatalities	{	Motor Vehicles	31
		Pedestrians	24
		Railroad Crossing	2
Injured	{	Slight	397
		Serious	67
		Slight	53
		Pedestrians Serious	11
Condition of Highway	{	Dry	498
		Wet	247
Location	{	Straight Road	472
		Intersection	205
		Railroad Crossing	13
		Street Car Crossing	4
		Curve	50

CAUSES

Recklessness	150
Inattention	88
Failing to stop at cross roads	61
Jay walking	50
Skidding	48
Operating while intoxicated	46
Failing to signal	33
Glaring headlights	28
Cutting in	27
Loss of control	25
Driving while asleep	19
Driving on wrong side of road	19
Driving too close	19
Obstructed view	13
Passing without proper clearance	12
Ran off roadway	12
Tire (blow out)	11
Livestock loose on highway	10
No tail light (auto)	10
Horse-drawn vehicle no lights	8
No lights (auto)	8
Bad brakes	6
Rear wheel locked	5
Breaking of steering gear	5
Inexperienced operator	5
Parking on concrete	5
Pedestrian (intoxicated)	4
Obstruction on road	3
Wheel breaking	3
Axle breaking	2
Bicycle no lights	2
Passenger grabbed steering wheel	1
Breaking of radius rod	1
Passing on right	1
Operator confused	1
Not stated	3

Day of occurrence	Number of Accidents		
	Total	Fatal	Non-Fatal
Sunday	162	11	151
Monday	81	9	72
Tuesday	87	5	82
Wednesday	81	4	77
Thursday	101	6	95
Friday	103	7	96
Saturday	129	12	117
	744	54	690

Weather Conditions			
Rain	131	4	127
Fog	25	1	24
Clear	497	41	456
Snow	9	2	7
Cloudy	82	6	76
	744	54	690

Type of Accident			
Collision with auto	452	14	438
Non-collision accident	74	6	68
Collision with fixed object	78	7	71
Collision with pedestrian	81	24	57
Collision with horse-drawn vehicle	28	1	27
Collision with train	13	2	11
Collision with street car	5	0	5
Collision with bicycle	5	0	5
Collision with motorcycle	8	0	8
Collision with animals	10	0	10
	744	54	690

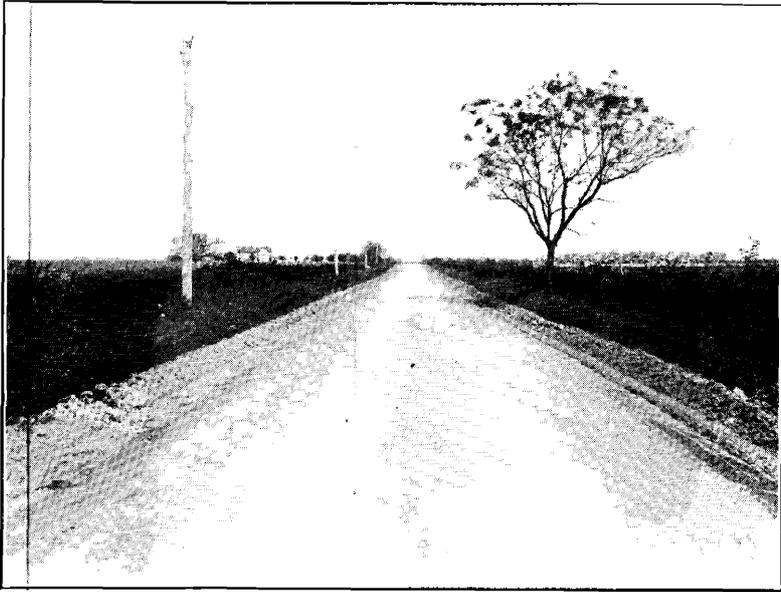
Type of vehicle involved in accident			
Passenger cars	937	44	893
Commercial cars	223	8	215
Omnibus	10	0	10
Motorecycle	10	1	9

Type of Vehicles	Number of Accidents		
	Total	Fatal	Non-Fatal
Wagons	30	1	29
Bicycles	4	0	4
	<u>1214</u>	<u>54</u>	<u>1160</u>
Highways			
State	590	40	550
County	72	9	63
Towns	65	4	61
Railroad crossings	13	1	12
Street car crossings	4	0	4
	<u>744</u>	<u>54</u>	<u>690</u>
Light conditions			
Daylight	378	28	350
Darkness	366	26	340
	<u>744</u>	<u>54</u>	<u>690</u>
Driver's age			
Under 18 years	29	2	27
18 to 24 years	282	15	277
25 to 54 years	776	27	749
55 and over	71	4	67
Not stated	36	6	30
	<u>1194</u>	<u>54</u>	<u>1140</u>
Driver's Experience			
Less than 3 months	22	2	20
6 to 12 months	16	1	15
1 to 2 years	95	2	93
2 years or more	990	36	954
Not stated	71	13	58
	<u>1194</u>	<u>54</u>	<u>1140</u>
Hour of Occurrence			
12 to 1 A. M.	41	2	39
1 to 6 A. M.	57	6	51
6 to 7 A. M.	13	3	10

Hours of occurrence	Number of Accidents		
	Total	Fatal	Non-Fatal
7 to 8 A. M.	19	1	18
8 to 9 A. M.	26	1	25
9 to 10 A. M.	21	1	20
10 to 11 A. M.	31	3	28
11 to 12 M.	24	0	24
12 to 1 P. M.	28	3	25
1 to 2 P. M.	26	2	24
2 to 3 P. M.	36	1	35
3 to 4 P. M.	43	5	38
4 to 5 P. M.	55	6	49
5 to 6 P. M.	50	0	50
6 to 7 P. M.	58	3	55
7 to 8 P. M.	49	4	45
8 to 9 P. M.	66	5	61
9 to 10 P. M.	38	2	36
10 to 11 P. M.	37	5	32
11 to 12 P. M.	26	1	25
	744	54	690
Driver's Sex			
Female	73	5	68
Male	1121	49	1072
	1194	54	1140

LOW COST ROADS With 18% of the roads of the State in the state system and paved with modern hard surfaces, the greatest problem now before the Department is to secure a low cost road, which has sufficient merit to warrant its extended use. Such a road must be developed if the remaining 82% of the highways of the state are to be made serviceable throughout the year, and the isolated farm owners given an equal opportunity with those along the state system.

The Department is continuing its experiments along this line and should continue to do so until a satisfactory solution is reached.



Experimental Earth Road, New Castle County



Slag Macadam Road—Big Ash-Warren School, Kent County. Surface Treated

While some progress has been made none of the results thus far are conclusive enough to warrant definite recommendations.

RECOMMENDED I recommend that the roads chosen
ROADS for improvement during the coming year be selected from the following list, petitions for the construction of which, have been received by the Department.

NEW CASTLE COUNTY

Dexter's Corner-Delaney.
Taylor's Bridge-Collin's Beach.
Stanton-Ogletown.
Relocation Lincoln Highway through Marshallton $\frac{1}{4}$ mile.
Newport and Gap Turnpike-Brandywine Sanatorium-Lancaster Pike.
Old Baltimore Pike (Cooch's Bridge-Maryland Line).
New London-Newark.
Delaware City-Port Penn.
Walker's School-David's Corner.
Middletown-Warwick Road (through Levels to Maryland Line).
Adam's Dam-Thompson's Bridge.
Industrial Highway (Wilmington).
Clayton-Delaney.

KENT COUNTY

Hazletville-Maryland line. Also continuing "Y" from Hazletville to Bethesda Church via Pratt's School.
Dover-Hazletville.
Blackiston's-Millington.
Kenton-Blackiston's.
Brenford-Seven Hickories.
Thompsonville-South Bowers.
Woodside-Willow Grove Petersburg Road.
Barker's Landing-Magnolia.
Houston-Kent-Sussex Line.
Viola-Petersburg.
Moore's Corner (Cheswold-Kenton Road) Dover-Pearson Road.
Todd's Church-Prospect Church (Harrington).
King's Highway, Dover.
Wendall's Corner—Woodland Beach.
Andrewville-Farmington or Greenwood.
Andrewville-Vernon.
Masten's Corner-Felton Hollandsville Highway.
Law's School-Harrington.

SUSSEX COUNTY

Laurel via Hearn's Cross Roads, Independent School, Ellis Mill, Gunboro, near Gumboro, to intersect Gumboro-Pittsville Road.
Delmar-Ward's School.
Flower's Station-Maryland Line.
Old Gum-Brown's Church.
Bethel to Laurel-Sharptown Road.
Bowden Garage-Green's Mill.
Sunnyside School-Bridgeville.

Delmar-Columbia.
 Seaford-Atlanta.
 Hardscrabble—Millsboro.
 Vine's Creek-Y. W. C. A. Camp-Sandy Landing.
 Dagsboro-Millsboro-Laurel Road near Mission.
 Millsboro-Sandy Forks to Concord Road where it intersects Laurel-
 Georgetown Road.
 Frankford-Shaftox.
 Ellendale-Milton. ✓
 Double Bridges-Robbins. ✓
 Du Pont Boulevard-Milford-Selbyville (Widen).
 Road east of Milford to connect Rehoboth Highway and Du Pont
 Boulevard. ✓
 Lowes Cross Rcaads through Gumboro to Selbyville. ✓
 Roxana Millville Highway-Bayard.
 Bacon to Pittsville-Gumboro Road.
 Owens-Ellendale.
 Lincoln City-Milford-Rehoboth Road.
 Marshy Hope Road—State Highway, North of Greenwood.
 Extension Cedar Neck Highway—Milford.
 Lone Gum-Seaford-Bridgeville State Highway via Old Furnace Mill
 & Middleford.
 McCallister Corner-Atlanta.
 Williamsville-Bayview-Fenwick Island.
 Roxana-Sound Church Road.
 Millsboro-Gravel Hill Old King's Highway Road.
 Concord-Laurel Georgetown Road via Spicer's Mill.
 Du Pont Bouevard to Shortly.
 Collins' Mill-Middleford.

With the expiration of my term of office as Chief Engi-
 neer of the Department on December 31st, I especially want
 to call to the attention of your Board, the willing and efficient
 service that has been rendered the Department by all of my
 present associates and to commend for your consideration, the
 meritorious service they have given through the years I have
 been privileged to direct your work.

It is with sincere regret that I end my official connection
 with the Highway Department, but I do so with the knowledge
 that its business is in competent hands and that our present
 policies will continue until supplanted by better ones.

Respectfully submitted,

C. D. BUCK,
 Chief Engineer.



Concrete Highway at Angola, Sussex County