Annual Report of the Chief Engineer
State Highway Department
1939

Dover, Delaware
January 1, 1940

To the Chairman and Members
of the State Highway Department,
Dover, Delaware.

Gentlemen:

I am submitting to you a report of the work accomplished by the State Highway Department during the year 1939, with certain recommendations as provided under the Statute.

In spite of the fact that during the last half of the year the Department was subject to considerable stress owing to the existence of two commissions claiming legal authority, the work of the Department was carried on under an amicable agreement with little interruption, pending a judicial decision.

The year's program was delayed due to the lack of funds until a bond issue of $1,250,000 was authorized on March 17, 1939, and projects totalling $715,309.52 were placed under agreement with the Public Roads Administration late in June. The weather during the summer and fall was unusually favorable, however, and most of the contracts were completed upon the closing of the construction season.

A resume of the work of each division will follow.

DIVISION OF SURVEYS, PLANS, ESTIMATES AND FEDERAL AID

During the year 1939 the Department held 10 lettings for the receipt of bids on 38 separate projects. These projects were divided as follows: Highways, 27; Bridges, 6; State Park, 1; Railroad Crossing Protections, 2; Roadside Beautification, 1; Laboratory Equipment, 1; Surface Treatment, 2; Maintenance Materials, 4; and Fuel and Lubricants, 2.

Of these projects the Public Roads Administration participated in 18. Detailed plans, specifications, estimates and other necessary documents were prepared for the above projects, and submitted to the Administration for approval.

Six hundred and five (605) proposals were prepared for bidding purposes, and two hundred and two (202) bids were received during the year. Each bid received was checked item for item and tabulated.

Weekly payrolls on all active projects were received, checked and tabulated. Copies were forwarded to the Public Roads Administration and the U. S. Employment Service.

Two hundred and fourteen (214) monthly estimates were computed and checked on all active projects for the year.

Sixty-six (66) reimbursement vouchers were prepared and submitted to the Public Roads Administration.

The following is the detailed tabulation showing the work of the Division of Surveys and Plans for the year 1939:

SURVEYS

Miles	
179.4	Base Line
175.9	Topography
111.0	Cross Sections (Prel.)
67.5	Cross Sections (Final)
50	Borrow Pits (Prel.)
50	Borrow Pits (Final)

DRAUGHTING DIVISION

Miles	
176.8	Base Line Plotted
176.4	Topography Plotted
95.8	Profile Plotted
130.7	Index Maps Plotted and Traced
143.3	Plans Traced
106.9	Cross Sections Plotted (Orig.)
67.5	Cross Sections Plotted (Final)
49.4	Grade Laid
106.9	End Areas Planimetered and Computed (Prel.)
67.5	End Areas Planimetered and Computed (Final)
50	Borrow Pits Plotted and Computed

The division revised the annual roadway mileage and type classification data, and prepared the charts and computations for the Traffic Survey.

In addition to the above, there were 48 property drawings and miscellaneous charts prepared for this and other State departments.

DIVISION OF TESTS

The importance of sampling, testing and approving all types of materials entering into modern construction being appreciated more each year, the Department has constructed a modern laboratory for the sole purpose of testing materials for use in Highway construction.

This building was started on October 28th of last year and completed on August 11th, 1939, at a total cost of Fifty Thousand One Hundred and Eighty-three Dollars ($50,183).

On September 22nd the entire personnel and equipment of the Division of Tests was moved and placed in the new Laboratory.

During the past calendar year the Division of Tests sampled, tested and judged all types of highway and building materials entering into the construction of our year's program. No major change in this work was undertaken.

The approving of material was confined to the source of supply as much as possible and, as has been found in the past, rejection of material was to a minimum. In fact only one source of supply had any rejections and they were due to the fact that material had been shipped without the usual notification and inspection being made prior to shipment.

MATERIALS LABORATORY

Three men were in the Materials Laboratory completing regular tests on samples taken by field representatives of the Division. These three men were extremely busy testing and reporting samples and at times it was necessary for them to spend more than "regular hours" in the Laboratory in an effort to complete tests at the earliest possible time.

Five men were in the field at all times sampling, testing, inspecting and returning samples to the Laboratory. Two of these men were at central mix concrete plants and inspected all the concrete used by our Department. Because of their rigid inspection, it was possible to send to the field better concrete in all respects.

One of the five men was working on concrete pipe and creosoted lumber and timber most of the time; however, this same representative supervised the activities of the other field men.

This one representative inspected a total of forty-nine thousand two hundred and seventy-two (49,272) linear feet of concrete pipe, eighty-two thousand four hundred and eighty-six (82,486) linear feet of creosoted piling, seven hundred and seventeen thousand seven hundred and forty (717,740) board feet of creosoted timber and lumber and sixteen hundred and forty-four (1,644) creosoted guard rail posts.

The combined total of these four items represents the largest single year the Division of Tests has had for these items.

The three laboratory and the five field men completed under their direct supervision a total of five thousand eight hundred and sixty-eight (5,868) samples. The tabulation below shows the bulk of the material representing those samples taken:

Coarse Aggregate (Gravel)	63,710	tons
Coarse Aggregate (Stone)	99,390	tons
Fine Aggregate	55,000	tons
Cement	369,400	bbls.
Central Mixed Concrete	20,111.50	cu. yds.
Concrete Pipe (all sizes)	49,272	lin. ft.
Creosote Timber Piling	82,486	lin. ft.
Creosote Timber and Lumber	717,740	bd. ft.
Creosote Guard Rail Posts	1,644	
Asphalt (Surface Treatment)	1,992,296	gals.
Amiesite (Top and Bottom)	5,556.64	tons
Concrete Cores Removed	540	
Concrete Cylinders Broken	1,035	
Slag (Traffic Bound)	16,850	tons
Creosote Oil	127,775	gals.
Oil Samples	42	

A study of the above tabulation shows that three types of construction; namely: Portland cement concrete, creosoted bridge construction and bituminous surface treatment represent the majority of the work during this past year. It is further interesting to note that with the same personnel it was possible to complete four hundred and forty-eight (448) tests more than the previous year. The quantity of material representing these tests shows an average increase of forty-five (45) per cent over that material of the past calendar year. Two items, Amiesite and concrete pipe, did, however, show an average decrease of eighteen (18) per cent.

SOILS LABORATORY

The total amount of work performed by this Laboratory has again shown a substantial increase over all previous years. While the total number of tested samples is approximately the same as last year it has been necessary to

spend more time in the field. A total of eleven hundred and fifty-three (1,153) samples was obtained and tested. These samples necessitated one hundred and seventeen (117) field trips representing one hundred and seventy-one (171) man-days of work. In addition to these, a total of sixty-one (61) field trips representing forty (40) man-days of work were made by the laboratory personnel in a purely supervisory capacity.

The type of soil work required of this laboratory is gradually changing. In previous years the largest single item has been the investigation of new borrow pits. It is only natural that this work should decrease as an increased number of suitable pits are located throughout the State. Although borrow pit work still represents a substantial amount of work, it is found that investigations and field supervision for construction is becoming the major portion of the work.

This year the additional investigation of old borrow pits, as they have been enlarged, have required the testing of one hundred and fifty-eight (158) samples. Twenty new borrow pits were investigated, from which one hundred and fifty-two (152) samples were obtained and tested.

Three stabilized fine-aggregate type roads totalling 12.88 miles of construction were built under contract and required the testing of one hundred and three (103) samples. This type of construction has proved simple, provided suitable materials for the surface course are readily available locally and should give satisfactory service.

The construction of 19 earth roads by the Department's forces necessitated the testing of 213 road samples. In addition to these a large mileage of dirt roads was surfaced with material from suitable local borrow pits. The material used on these roads was regulated by making the required mixtures at the pits during removal as shown necessary by our tests. This is one of the most important functions of the laboratory, for by advising the construction forces as to the best method of removal of material from the various pits it is possible to insure the placing of the best possible

material on the roads. Since by far the greater portion of our roads are surfaced in this manner we are able to regulate the material placed on a large mileage of roads with a minimum of effort.

Fifty-six (56) samples taken from 16 roads prior to surface treatment were tested. Fifty-three (53) check samples from 4 contracts were also tested including subgrade stabilization layers on 2 contracts and gravel surface courses on two contracts. Other samples tested include 34 from one soil survey, 2 from rebuilding a short section of surface-treated road which had failed, 9 samples of stone screenings and quarry waste for use in road surface and subgrade stabilization, 70 earth road research samples, 18 borrow pit admixtures and 7 miscellaneous samples.

In the spring of this year an investigation of the local characteristics of concrete pavement subgrades was started. Data on the behavior of certain soil types and subgrade conditions with respect to pavement service is badly needed. Our knowledge of the characteristics of certain soil types and the experience of other states tells us that some subgrades offer firm support for rigid type pavements while others do not. Our experience with our local subgrades has definitely proven that while the generally accepted subgrade reactions are for the most part correct they do not hold in all cases. There are recorded instances where poor subgrades have apparently offered excellent support since the pavements are in perfect condition. Similarly in some cases it is found that pavements have failed when the subgrades should have offered perfect support. It is the purpose of this investigation to determine, on the basis of the past behavior of pavements of known condition, which subgrade types are satisfactory and which are not under all possible conditions found in this State. As a result we will be better able to so regulate our subgrades that they will offer maximum support for the pavement at all times. While this research will involve a considerable amount of work it will unquestionably pay large dividends in the increased life of our pavements by the elimination of settlement, frost heaving, and cracking.

In pursuing this work samples are obtained from the subgrades at all locations from which pavement cores are obtained. These include not only new pavements but also old ones in both good and bad condition. To date 278 samples from 9 roads have been tested and a stock of approximately 900 samples has been stored for testing as the opportunity presents. In addition, records have been made of the subgrades of a number of recently constructed roads which were obtained when the preliminary soil surveys were made. A previous investigation of frost heaves throughout the State has already yielded some information in this connection.

The results of tests thus far completed have quite definitely established the fact that in most cases the subgrade-pavement condition relationships hold true. It has also been found that the subgrade-pavement condition relationships follow closest when the loads and traffic to which the pavement is subjected are heaviest.

As an illustration of the importance of this investigation, twenty-one (21) locations on the southbound lane of the dual highway between Odessa and Blackbird were recently investigated. Eight (8) locations where the pavement condition was good and thirteen (13) locations where the pavement was in bad condition were tested. Out of the whole twenty-one (21) locations, in only two (2) cases did the pavement condition fail to follow closely the subgrade quality, and in one of these moisture condition alone was such as to cause the pavement failure. Had this knowledge of subgrade soils been available at the time this road was built most of these pavement failures could have been prevented by corrective measures taken to stabilize the subgrade.

CONSTRUCTION

During 1939, the Department held ten (10) road lettings and received bids on thirty-eight (38) separate projects. Contracts were awarded on thirty-four (34) projects and bids rejected on four (4) projects. The projects accepted

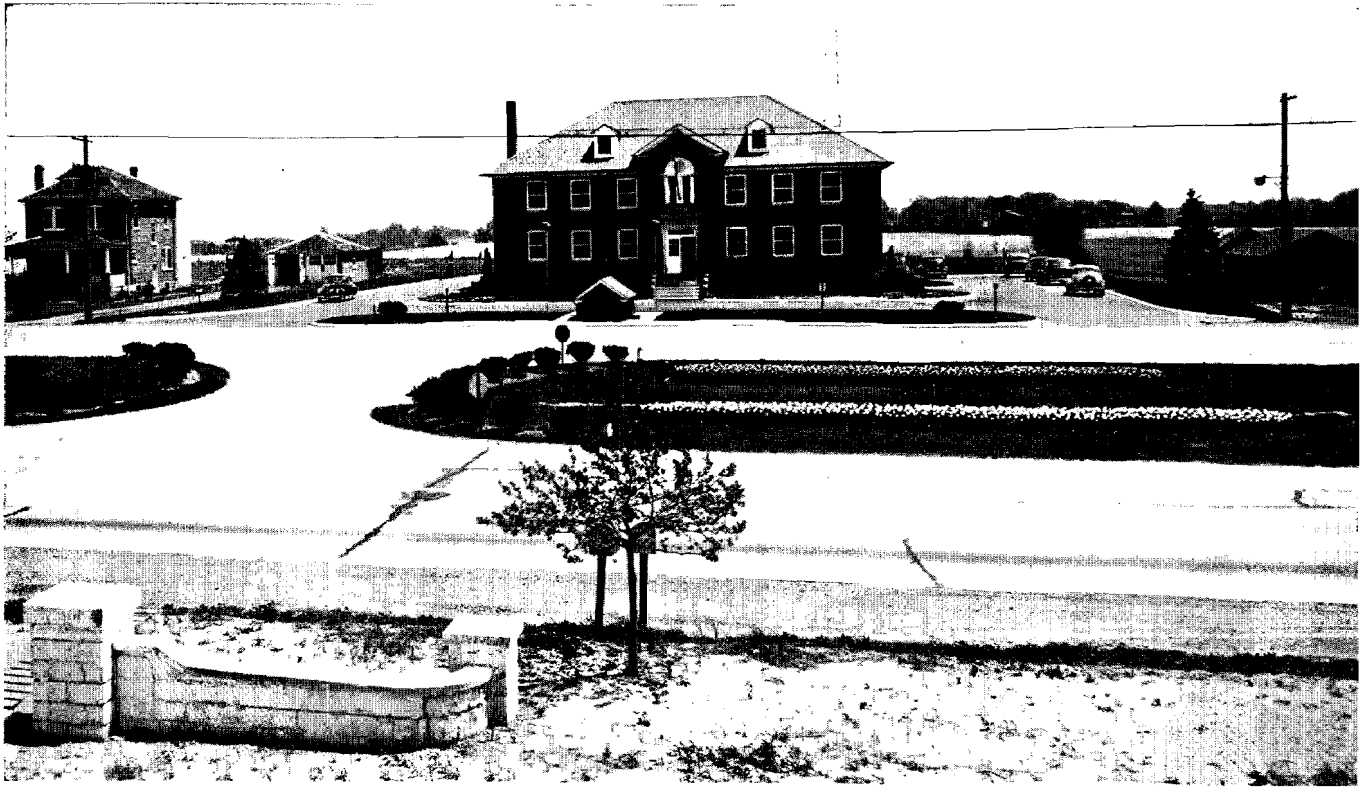
and awarded comprised all phases of roadway work and maintenance and were divided as follows:

1 Dual highway contract
3 Concrete roadway contracts
6 Concrete roadway widening contracts
2 City street construction contracts
2 Stabilized roadway contracts
1 Traffic bound slag contract
1 Gravel roadway contract
1 Roadway planting contract
1 Fort Christina Park alteration contract
2 State building driveway contracts
4 Bridge contracts
1 Bridge fender system contract
1 Laboratory equipment contract
1 Furnishing and applying asphaltic material contract
2 Crushed chip contracts
1 Reinforced concrete pipe contract
1 Motor oil and grease contract
1 Gasoline 1939-1940 contract
1 Bituminous concrete contract
1 Traffic bound stone roadway contract

Proposals were received from 202 bidders on the above contracts—an average of approximately five per contract. The total contract low bids for the above projects awarded amounted to $1,620,398.63 or $395,804.44 less than the low contract bids for the year 1938 which totalled $2,016,194.07 or a reduction of 24%.

In addition to the above contracts, the Department participated in several W. P. A. projects, consisting of clearing and grubbing, grading, widening and drainage of dirt roadways scattered throughout the three Counties. The largest project undertaken by W. P. A. forces was the grading for the additional roadway of the proposed divided highway of the Governor Printz Boulevard from Wilmington to Claymont.

The mileage and types of roadway contracts advertised during the year were as follows:



NEW HEADQUARTERS BUILDING, STATE ROAD, DEL.

1.843 mi. of 22-foot concrete dual highway
3.925 mi. of 22-foot concrete highway
2.035 mi. of 20-foot concrete highway
0.550 mi. of 22-24-foot concrete highway
0.275 mi. of 21-26-foot concrete highway
0.925 mi. of 2-11-foot concrete widening lanes
23.414 mi. of 4-foot concrete widening of highways
6.388 mi. of 10-foot concrete widening of highways
0.657 mi. of 16-foot traffic bound crushed stone roads
7.549 mi. of 16-foot traffic bound slag roads
4.424 mi. of 16-foot stabilized earth roads

In addition to the above, there was carried into the 1939 construction from the previous year:

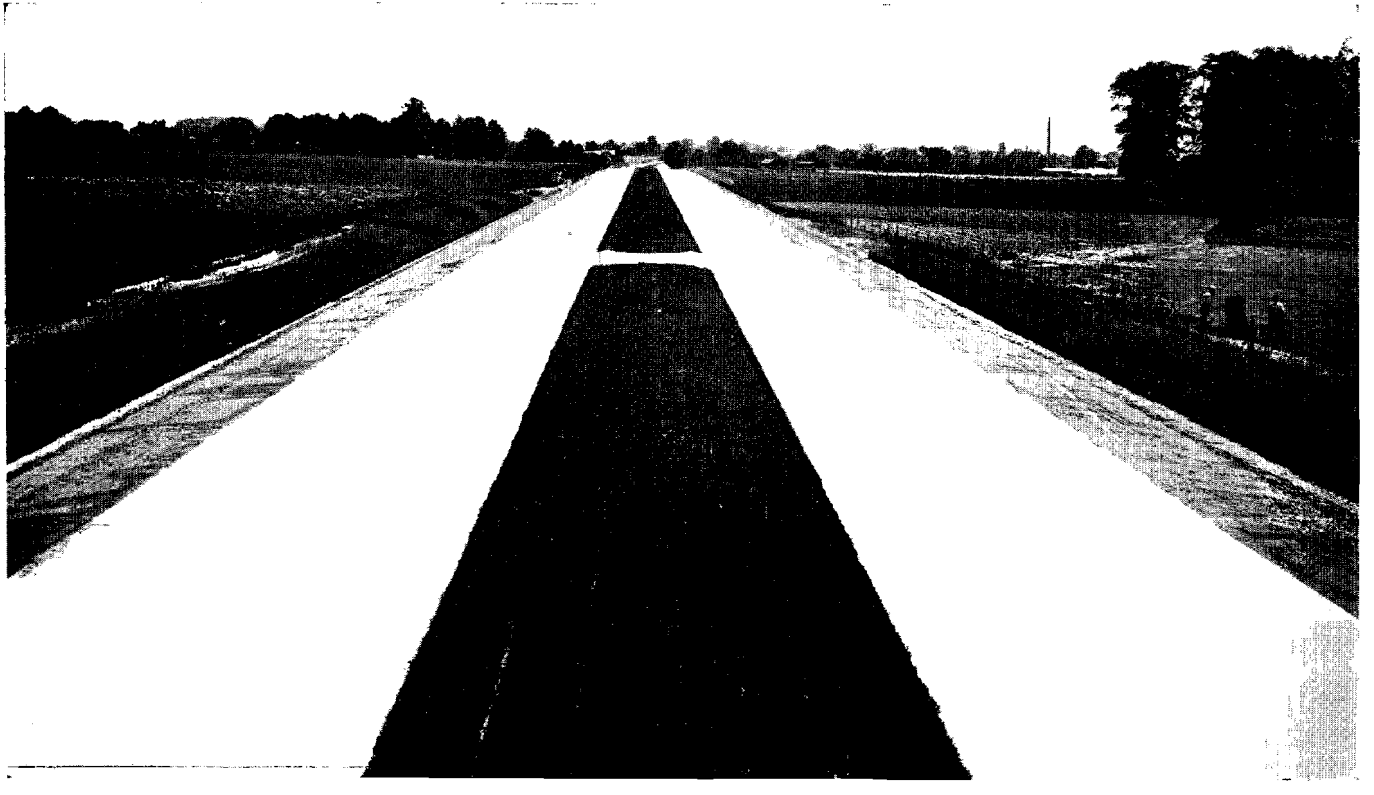
0.12 mi. of 56-foot bituminous concrete on concrete base course
2.831 mi. of 16-foot stabilized material roadway

All work during the year has been completed with the following exceptions which will be carried forward into the 1940 construction season.

Contract 673—Lancaster Pike—3.925 miles of 22-foot concrete pavement
Contract 649A—Cranston Heights Viaduct and 200 feet of 2-24-foot concrete approaches
Contract 643A—Love Creek Bridge and 500 feet of 22-foot concrete approaches
Contract 607—Harrington to Hughes Cross Roads—7.549 miles 16-foot traffic slag

This decrease in construction activity is reflected in the comparison of men employed on the highways during 1938 and 1939. In 1938, the average men employed on the highways, both in State and W. P. A. work, was 665 men with a peak of weekly employment of nearly 1,000 men, maintained during the months of August, September, and October.

In 1939, the average weekly employment was 579 with a peak of weekly employment at approximately 1,030, oc-



CRANSTON HEIGHTS—LIMESTONE ROAD, NEW DUAL HIGHWAY

curring but once and only for one week during the month of August.

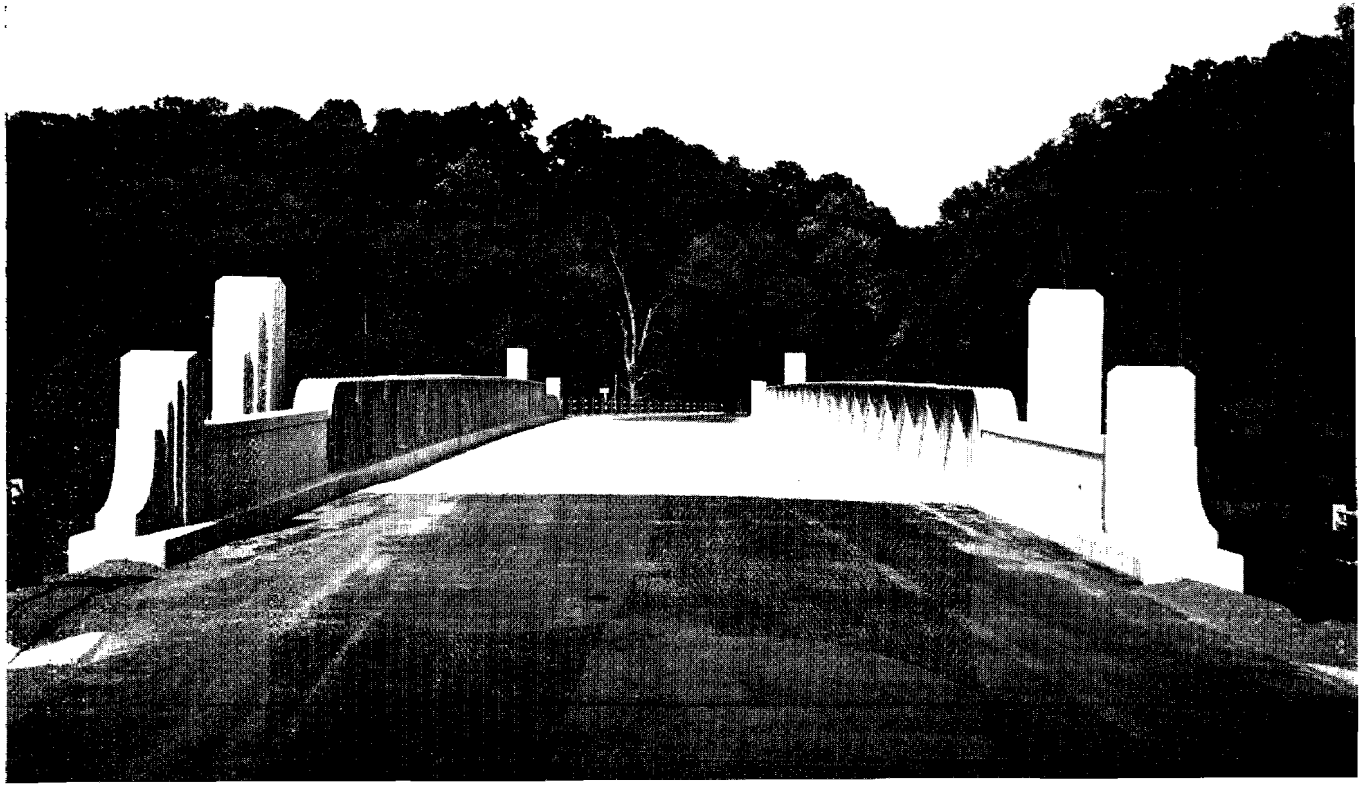
Of major importance in roadway construction in New Castle County was the building of the second section of the Capital Trail between Price's Corner and Limestone Road. This dual highway with 22-foot pavements and a 20-foot parkway, follows a new location and has been completed with the exception of the viaduct at Cranston Heights. Upon its completion during the early summer of next year, motorists will have a divided highway from Elsmere to the Limestone Road over a road with good alignment, and minimum grades bypassing the old congested, narrow, crooked road through Marshallton.

Another improvement was the building of the concrete roadway across Lum's Pond which has carried considerable traffic since the bridge at St. Georges has been out of commission. This roadway relieves the present detour from Summit Bridge to Glasgow to State Road. The cost of this construction was borne by the federal government as a part of the construction of the Chesapeake and Delaware Canal.

The rebuilding of the Lancaster Pike from the duPont Airport at Center road to Gap Road will be an improvement that has long been needed. The new road, although largely following the old alignment, eases the present curves and reduces the grades to those comparable to first class roads and will be a big help to the motorist coming from Pennsylvania to Delaware and points South and East.

Another improvement was the addition of two extra traffic lanes from Rising Sun Lane to Barley Mill Road on the Kennett Pike. This portion of the Pike is congested with traffic during the early morning and evening hours and the building of these two lanes will aid in accelerating traffic with an increase in safety.

The building of a short stretch in the Town of Newport between James Street and Folly Woods Crossing eliminates two unnecessary grade crossings on the main line of the



BRIDGE OVER RED CLAY CREEK—ASHLAND

Pennsylvania Railroad where fatal accidents have occurred in the past.

In Kent County, the widening of the Pearson's Corner-Dover Road has been a long waited improvement. The road between Harrington and Milford has also been widened and will aid motorists especially during summer traffic to the Delaware Bay and ocean shore resorts. Through the Town of Milford, the building of a modern highway along West Front Street eliminates the last rough piece of roadway on the stretch from Harrington to the Rehoboth road, and contributes greatly both to the appearance and the convenience of the travelling public.

Another improvement was the addition of an extra lane of the Little Creek-Leipsic road. This road is frequently used by fishing parties during Spring, Summer and early Fall as a route to resorts on the Delaware Bay. In line with this improvement a cut-off road through the Town of Leipsic will connect with the roadway going north upon completion of the proposed new bridge in Leipsic.

Other improvements in Kent County included the Barratt's Chapel to Plymouth, Church Hill School-Laws School roads. These roads traverse good farm lands and their alignment and grades have been improved and the roadway surface stabilized.

In Sussex County, the major improvement was the widening of the Harmon's School to Midway road which carries very heavy traffic during the summer months. This road parallels the Indian River and carries very heavy traffic of pleasure-bound motorists, bound for Rehoboth and Oak Orchard. The building of Love Creek Bridge and its approaches has eliminated one of the danger spots on this road. The alignment on this section has been eased and the bridge widened.

The widening of the Maryland Line-Millsboro roadway via Mission will benefit motorists and transportation of farm products coming into Delaware by the way of Pittsville, Maryland, who use our roads as an outlet to points North.

TREE SPRAYING ON DUAL HIGHWAY

A major improvement was the completion of the last link of the Ocean Highway between Bethany Beach and Fenwick Island. The motorist can now travel from Rehoboth to Ocean City along the roadway paralleling the Atlantic Ocean and at no point be more than six hundred feet from the Ocean. Upon the completion of the Charles W. Cullen Bridge, this stretch will be a popular one for the pleasure-bound motorist, and will offer a new route between Rehoboth and Ocean City, shortening the distance approximately 12 miles.

The building of Delaware Avenue in Laurel will do much to relieve Central Avenue traffic coming from the East avoiding present traffic congestion at Market and Central Avenue.

Attached is a tabulation giving location, length, type of roadway, bridge, sidewalk, and miscellaneous construction advertised and awarded this year.

BRIDGE DIVISION

The most important bridges under construction during the year were the Charles W. Cullen Bridge at the Indian River Inlet and the Cranston Heights Viaduct, a part of the Wilmington-Newark dual highway; neither of these structures is completed.

The former was described fully in last year's report. It is a swing span drawbridge carrying the Ocean Highway on the newly-constructed Indian River Inlet. This bridge forms an important link in this coastal highway between Rehoboth Beach and Ocean City, Maryland. It should be completed and opened for traffic in the early spring.

The Cranston Heights Viaduct is a divided highway bridge 730 feet in length with two 26-foot roadways and two 4-foot sidewalks. It carries the Capital Trail over the Red Clay Creek and the tracks of the Baltimore and Ohio Railroad, just north of Marshallton. It has 10 steel I-beam and girder spans, with concrete deck and roadway.

OCEAN HIGHWAY, BETHANY BEACH-FENWICK ISLAND

Bids were received on July 19, 1939, the low bidder being J. A. Bader and Company of Wilmington, at $199,755.00, injunction proceedings brought by owners of water rights causing a revision of the plans which materially increased the cost of the project and delayed its completion approximately six months. It will be completed in the early summer.

Another bridge completed during the year was the bridge over the Red Clay Creek at Ashland. This replaced a timber structure destroyed by a flood in 1937 and was partially financed by the Public Works Administration.

Other smaller bridges were completed in connection with road contracts, and plans were prepared for future construction as well.

MAINTENANCE PRIMARY SYSTEM

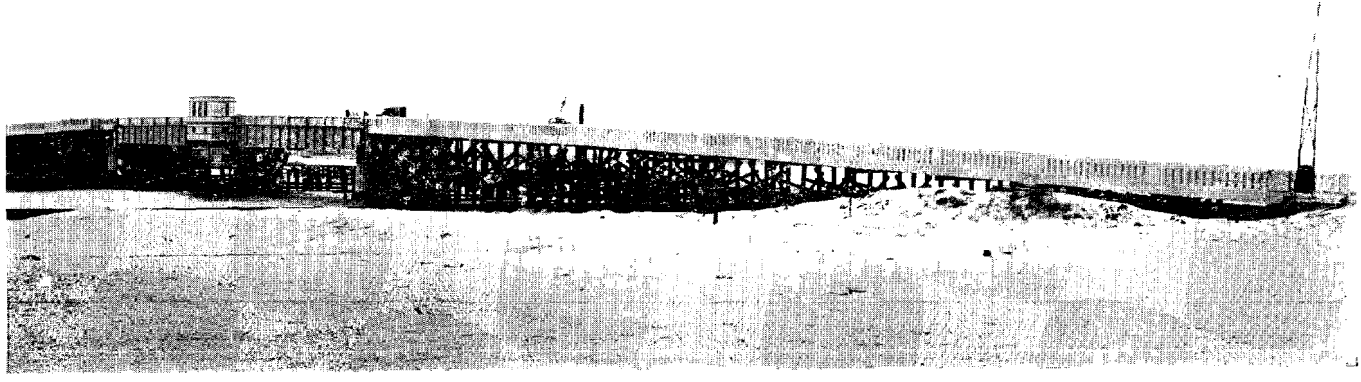
For the first period in several years no severe storms or extremes of weather added to the normal difficulties of maintenance, and there was no frost or snow of consequence.

Particular attention has been given to the improvement of drainage by the clearing of roadside ditches and the cutting down of high shoulders.

The routine maintenance on the primary system of State highways for the year amounted to $558,471.73 for a total of 2,055 miles, or an average of $271.76 per mile, which includes $46,733.78 expended during the year for plant and equipment.

MAINTENANCE SECONDARY SYSTEM

The secondary system contains all the public roads in the State outside the limits of incorporated towns and cities not included in the primary system, and totals 2,682 miles. The total cost of maintenance of the secondary system for the year totalled $462,832.37, which includes $30,613.31 spent for new plant and equipment.



CHARLES W. CULLEN BRIDGE AT INDIAN RIVER INLET

SECONDARY CONSTRUCTION

The policy of progressive improvement of these roads has been continued, and 83.8 miles of slag and gravel road have been surface-treated with bituminous materials, 105.5 miles of earth roads have been graded, drained and surfaced with gravel or stabilized material, requiring 121,000 cubic yards of surfacing material. Thirty-two (32) creosoted timber bridges were constructed replacing obsolete and inadequate structures, while the drainage conditions were further improved by the placing of 12,290 lineal feet of reinforced concrete pipe. This work was done by Department forces at a cost of $237,005.69.

RIGHT OF WAY DIVISION

During the year ending December 31, 1939, the Right of Way Division obtained 329 options, wrote 471 descriptions and secured the execution of 308 deeds and 197 releases. Six (6) properties were also secured by condemnation. Construction work required the moving of 18 houses and other smaller buildings.

The total cost of the work done by this Division for the above period was $173,056.28.

GRADE CROSSING PROTECTION AND ELIMINATION

During 1939 protective lights or gates have been installed at twenty-one (21) railroad grade crossings, at a cost of $68,662.73, while two grade crossings have been eliminated by the construction of a bypass road costing $7,369.28.

No grade elimination structures have been built, but three are programmed for 1940: Heald Street, Wilmington; High Street, Seaford; and Tull's Crossing, Seaford. Crossings at Bridgeville and Wyoming will also be eliminated by bypass roads, the total estimated cost of these five elimination projects being $338,000.00. The extra cost of this work is borne by the Federal government with the exception of the necessary rights of way.

CRANSTON HEIGHTS VIADUCT UNDER CONSTRUCTION

WIDENING AND RESURFACING

More than thirty (30) miles of narrow concrete road was widened in 1939 but there still remain many miles which are inadequate measured by present-day standards. As funds are available, I would recommend that the following be given consideration:

New Castle County:

Marsh Road-Philadelphia Pike to Hanby's Corner
Gap Road-Brandywine Sanitarium to Lancaster Pike
Hare's Corner to Christiana Road
duPont Road-Richardson Park to Lancaster Pike

Kent County:

Pearson's Corner to Everett's Corner, Route 44
Kenton to Maryland Line, Route 300
Kenton to Hartly to Md. Line, Route 11
North Little Creek Road, Route 8
Bowers Beach Road

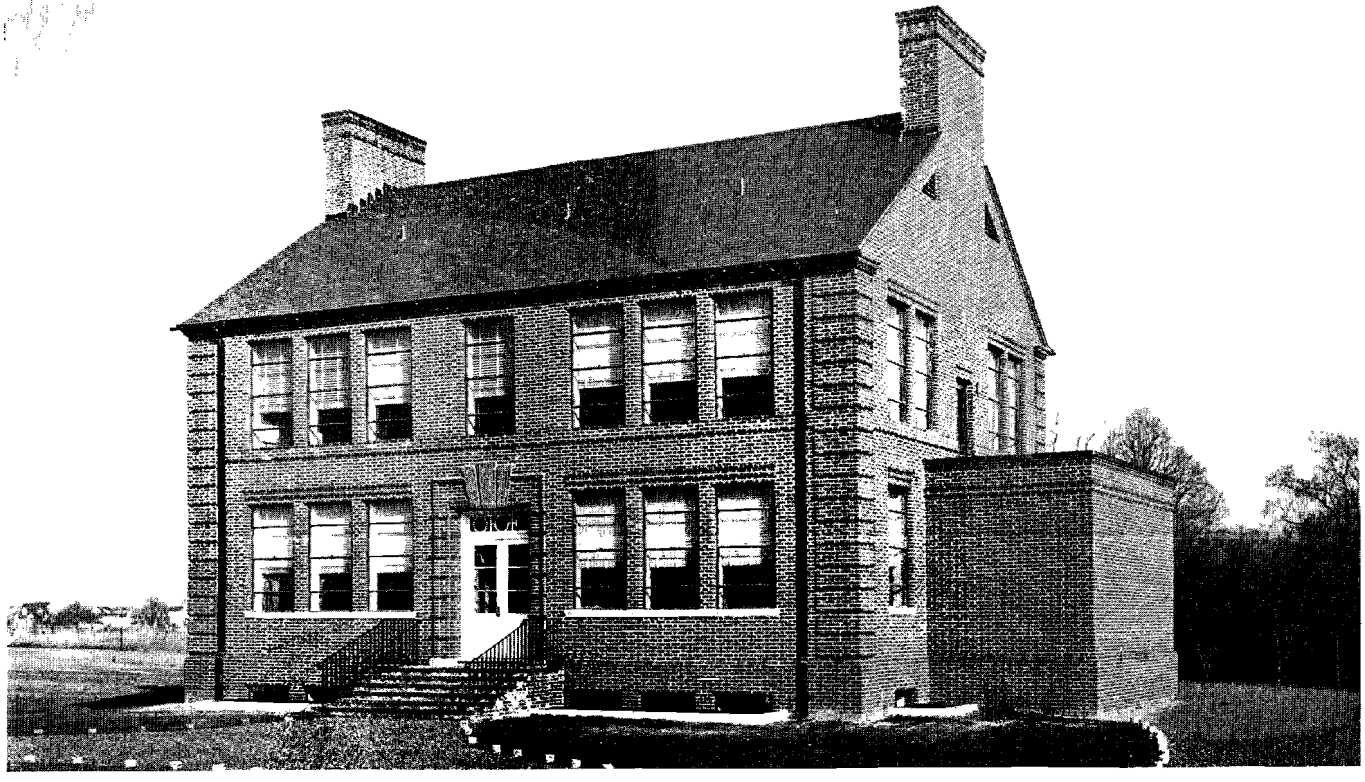
Sussex County:

Selbyville to Millville, Route 17
Greenwood to Milford, Route 36
Seaford to Reliance, Route 20
Williamsville to Fenwicks Island
Blades to Hardscrabble

As mentioned in several recent reports, the work of resurfacing and reconstructing the older pavements is one which will require much of the attention and expenditures of the Department in coming years. I recommend that U. S. 13 between Odessa and Smyrna be placed under contract for resurfacing and reconstruction in 1940, and that Concord Pike, U. S. 202, from Rocky Run to Perry's Tavern be rebuilt in 1941.

ROADSIDE IMPROVEMENT

The improvement of the roadside by the sodding of slopes and banks and the planting and care of trees and shrubs has become a routine matter, and has added much



NEW TESTING LABORATORY, DOVER, DEL.

to the pleasure and interest of motoring over our highways. Little attention has been given, however, to furnishing the public with rest or picnic areas.

There are numerous locations along Delaware highways where, at small cost, tables and seats could be placed which would be highly appreciated by family groups throughout the spring, summer and fall. I recommend that the Department authorize the selection of a limited number of such locations and the installing of such equipment as would be required for a practical demonstration.

DUAL HIGHWAYS

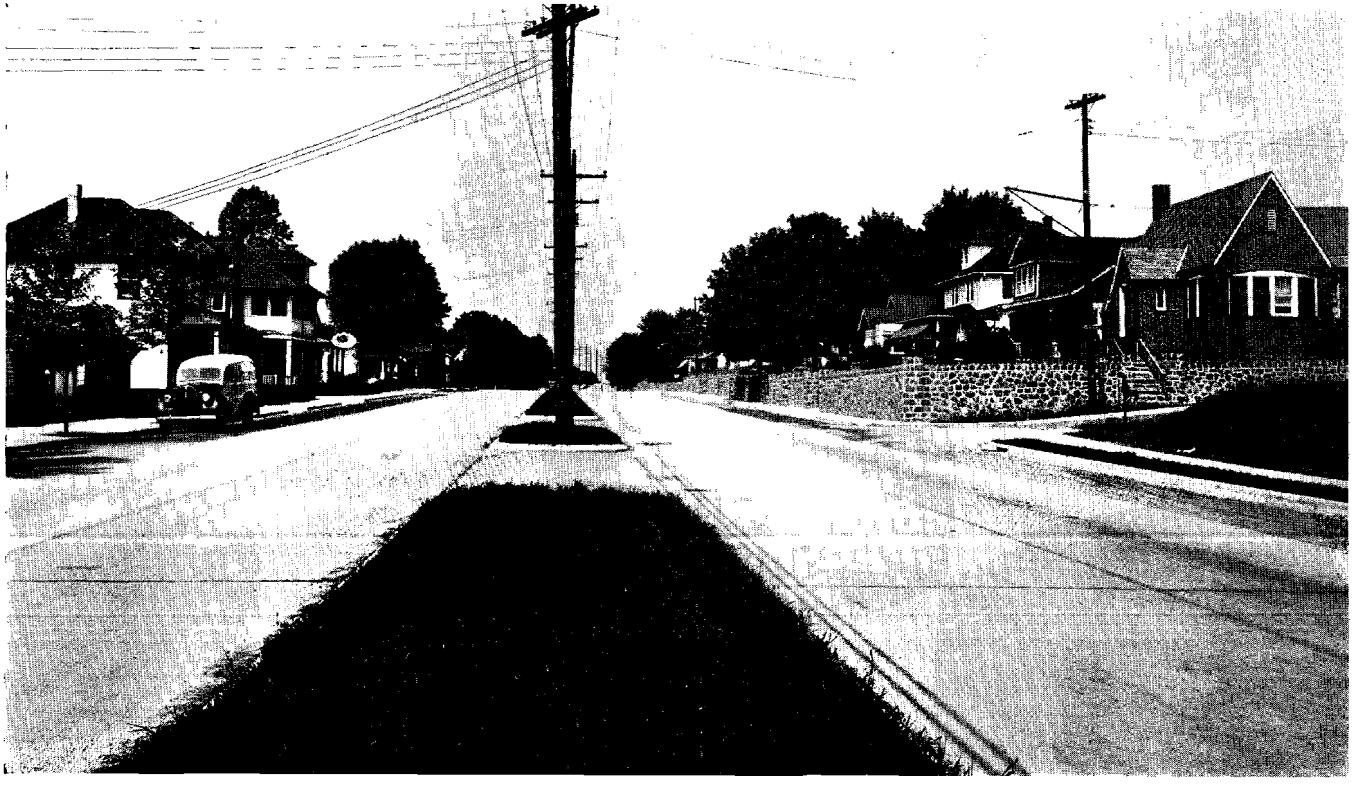
With the completion of another link in the Wilmington-Newark dual highway and the authorization of the construction of another roadway on the Governor Printz Highway the question naturally arises as to further construction of this character in the State. I recommend that before other projects are authorized that careful studies be made to determine whether such developments are warranted and to insure their construction on routes where they are most urgently needed.

FINANCIAL OUTLOOK

It was pointed out in last year's report that the gas tax of four (4) cents produces an annual revenue of approximately $2,000,000 per year, or $500,000 for each cent of tax.

It was also shown that interest and amortization of county highway funds demanded $500,000, or one cent of this gas tax, while the maintenance of the secondary or county road system requires an equal amount, a second cent. Add to this the cost of maintaining the primary or State system, almost $500,000, or a third cent, leaves a cent which is barely enough to cover the cost of the State Police, $260,000, the Motor Vehicle Department, $100,000, the interest and amortization of State Highway bonds, $163,000, and the administration of the Department $62,000.

There is left the Motor Vehicle registration and oper-



NEW DUAL HIGHWAY THROUGH ELSMERE

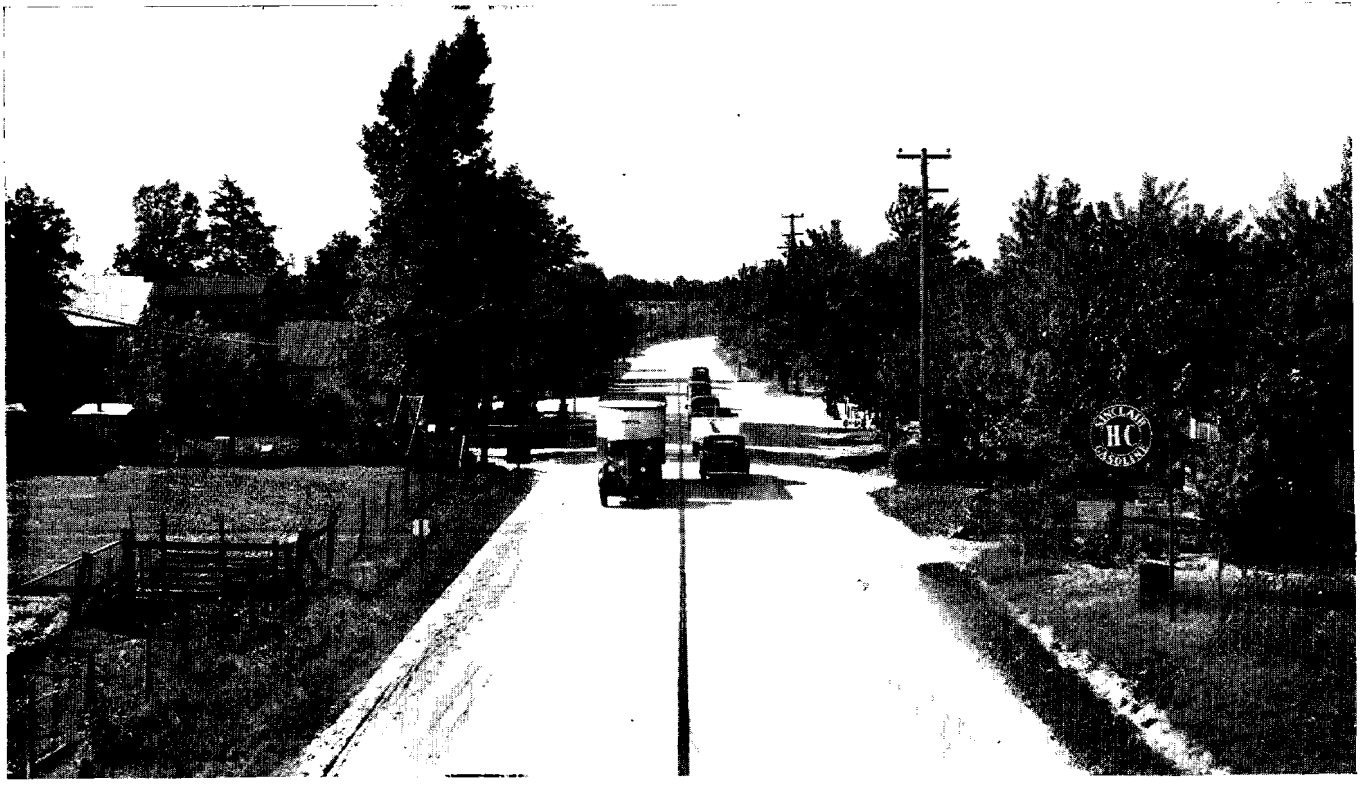
ators' license fees of approximately $1,000,000 for new construction. With the addition of such Federal funds as are available, $731,250 in 1940 and $560,625 in 1941, this would provide a reasonable construction program during these years. Due to borrowing from the Highway fund during recent years it has not been possible to meet Federal Aid without the issuing of bonds and the situation has been made even more insecure by the passage by the last General Asesmbly of an Act requiring all the income of the State to be placed in the General Fund after June 30, 1941, and appropriations made for all purposes therefrom. At the present time there are but two states in the nation where motor vehicle fees are placed in the General Fund, and those two are notorious for the large percentage of highway funds used for other than highway purposes. It is quite evident that the purpose behind this Act is to make easier the use of motor vehicle taxes for general purposes.

This condition indicates the importance of the highway user giving careful consideration to the question of whether he wishes his gas tax and motor vehicle fees used on the highways or for general purposes, and whether he desires the progressive improvement and development of the highway system of Delaware, or prefers to have his highway taxes diverted and the high standards of Delaware highways to decline.

STATE POLICE

The importance and scope of the work of the State Police increases yearly, making it impossible to but briefly mention some of the more important activities; to gain a comprehensive idea of the work performed during the year it is necessary to study the attached reports.

In carrying out their duties during 1939 the force covered 2,032,220 miles on patrol duty; made 12,062 arrests; issued 78,571 reprimands; weighed 69,950 trucks; inspected 35,057 cars for lights and brakes; spent 222,915 hours on duty of which 13,794 were spent on investigation and 23,204 on special duty; recovered 137 stolen cars; addressed 3,120



U. S. 13, WOODSIDE, RECONSTRUCTION

school children on safety; and secured convictions resulting in fines totalling $104,128.76.

Total arrests showed an increase of 25.9 per cent and arrests for reckless driving 24.3 per cent over the previous year. Total fines increased 30.5 per cent. The greatest number of arrests for a single offense was 5,114 for reckless driving; arrests for larceny and burglary totalled 256.

A complete tabulation of arrests and accidents is appended.

There was one resignation from the force and eight (8) men who had qualified for the force during the training school of 1938 were appointed to the uniformed force. Six (6) clerks and weighmasters were also added during the year, increasing the total personnel to 110 men.

Early in the year the Headquarters Building at State Road was completed, and on March 15th the Headquarters was removed from Wilmington to State Road. Later the Bureau of Identification was transferred from Station No. 1 at Penny Hill, and Station No. 2 was abandoned and its personnel moved to the new building also.

The new building in addition houses the radio transmitter for Station WDSP and the teletype receiver formerly located at Station No. 1.

In the basement is a complete 20-yard pistol range with six (6) firing positions and electrically controlled targets; two modern cells with necessary accessories; lockers; storage space and a dark and developing room for the Bureau of Identification.

A new station building was completed at Bridgeville and occupied by the force of Station No. 5 on July 17th. This building, fully equipped, provides adequate quarters for the Bridgeville Station and completes the housing of the force as planned.

New 30-ton truck scales were installed at Station No. 5 and at the Headquarters Building.

NYLON PLANT, SEAFORD-WOODLAND BY-PASS

The pistol team has taken part in twelve (12) police matches during the year. Competing with leading police teams in the United States, it has made a creditable showing.

Since the passage by the last General Assembly of the "State Bureau of Identification" Act, making compulsory the filing of fingerprints, photographs and information relative to criminals and persons apprehended by peace officers of the State other than State Police, the work of the Bureau of Identification, established in 1935, has been greatly expedited. At the end of the year, 11,815 identifications were on file and are being received at a rate of 200 per month. More than half of those fingerprinted during the year had a previous criminal record at the Federal Bureau of Identification in Washington.

Nine thousand two hundred and fifty-six (9,256) radio messages were sent out from the State Road radio station and 7,373 from the Dover station during the year. To completely cover the State it will be necessary to construct a 500-watt station at Georgetown. I wish to recommend that this station be constructed and that a repair shop and garage devoted exclusively to police repair and maintenance work be erected at Dover.

On December 31, 1939, the force was assigned to duty as follows:

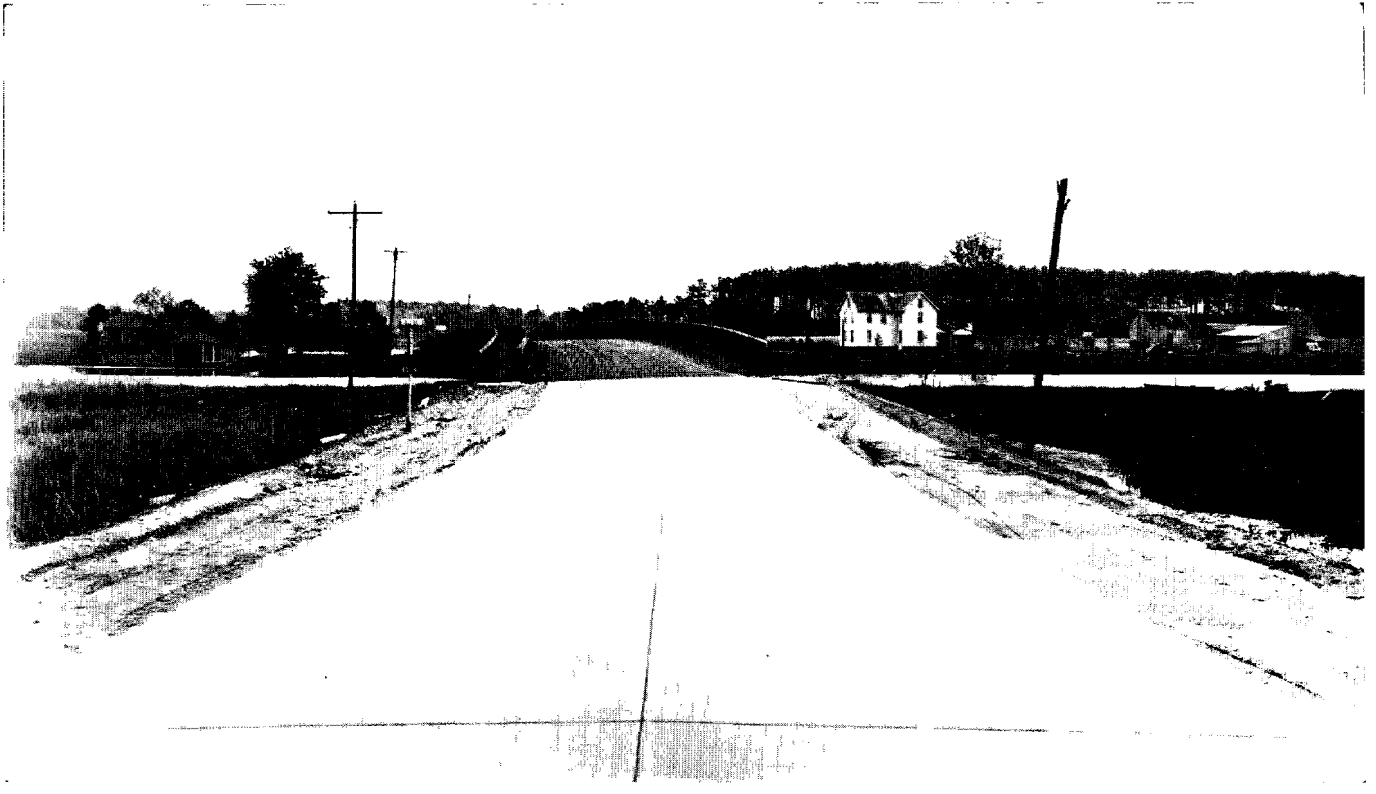
Headquarters: Superintendent, 1 Captain, 2 Lieutenants, 1 Sergeant, 1 Private, 1 Statistician, 2 Clerks, 1 Telephone Operator. Total, 10.

Station No. 1, Penny Hill: 1 Sergeant, 3 Corporals, 15 Privates, 1 Clerk, 1 Janitor. Total, 21.

Station No. 2, State Road: 1 Sergeant, 3 Corporals, 19 Privates, 1 Clerk and 3 Weighmasters. Total, 27.

Station No. 3, Dover: 1 Lieutenant, 1 Sergeant, 3 Corporals, 12 Privates, 1 Clerk. Total, 18.

Station No. 4, Georgetown: 1 Sergeant, 3 Corporals, 10 Privates, 1 Clerk. Total, 15.



NEW BRIDGE AND APPROACHES OVER LOVE CREEK

Station No. 5, Bridgeville: 1 Sergeant, 3 Corporals, 10 Privates, 1 Clerk. Total, 16.

Garage, Dover: 3 Mechanics.

Total, 110, of which 93 are uniformed men.

SAFETY

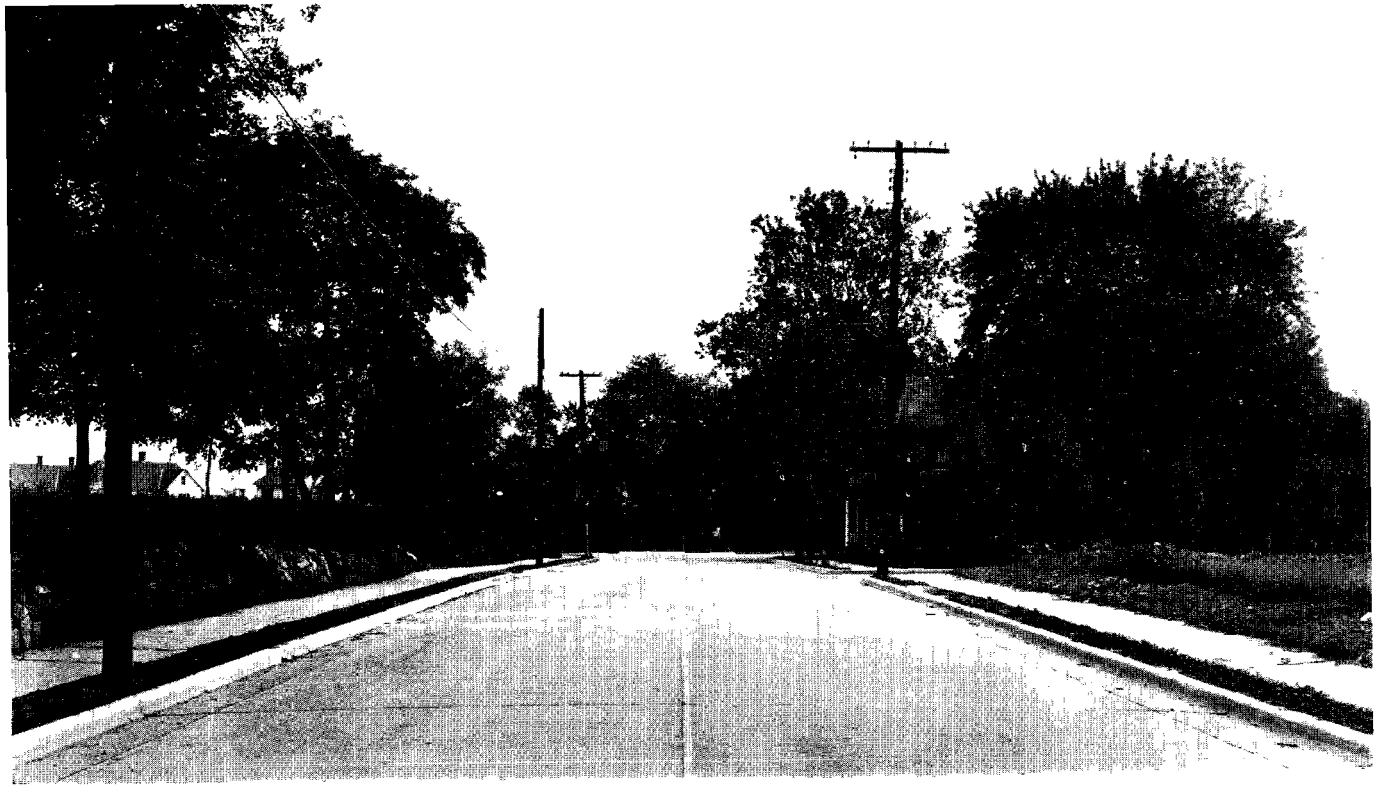
Nine hundred and sixty-nine (969) persons were injured in motor vehicle accidents in Delaware during 1939 outside the City of Wilmington, eighty (80) more than in any previous year, and two hundred and forty (240) more than in 1938. Seventy-one (71) were killed, which exceeded any previous years excepting 1932 and 1937; fifty-four (54) of these victims were riding in motor cars at the time of the accident, which is the greatest number of record. There were no fatal railroad grade crossing accidents.

The only really bright spot in the year's tally is the reduction in pedestrian deaths, the number being fourteen (14), which is the lowest of any year since 1925 and hardly one-half of the average of the four years, 1929-1930-1931-1932. This is an accomplishment worthy of notice.

The number of fatal accidents and the number of injuries between the hours of midnight and 1 A. M. were greater than for any other hour of the day; comment is perhaps unnecessary. Only sixteen (16) of the fifty-three (53) fatal accidents occurred in daylight, a startling result of the driving habits of the motorist or of the difficulties and hazards of night driving.

While it had been hoped that the favorable accident trend of the previous year might be continued, it is apparent that further measures must be inaugurated and a more intensive study and closer cooperation between the State Police, the Motor Vehicle and Engineering Divisions of the Department must be attained if safety progress is to be made.

An engineer of the Department was successful in winning one of the Alfred P. Sloan Fellowships for a year at



NEW PAVEMENT, DELAWARE AVENUE, LAUREL

the Yale University Traffic Research Bureau for training in Traffic Engineering, and an officer of the State Police was also chosen for a similar fellowship at Northwestern University in Police Traffic training.

The return of these men in June will provide the personnel for the establishment of traffic engineering and traffic control divisions of the Department, which will deal exclusively with this problem and should furnish the leadership necessary to make an effective advance towards greater safety on Delaware highways.

ST. GEORGES BRIDGE

The destruction of the highway bridge over the Chesapeake and Delaware Canal by the freighter Waukegan on January 10th and the consequent closing of the duPont Highway, U. S. 13, caused great traffic inconvenience and delay for the remainder of the year and necessitated the detouring of all vehicles on the main artery of the DelMarVa Peninsula to roads not designed to handle such a volume of traffic.

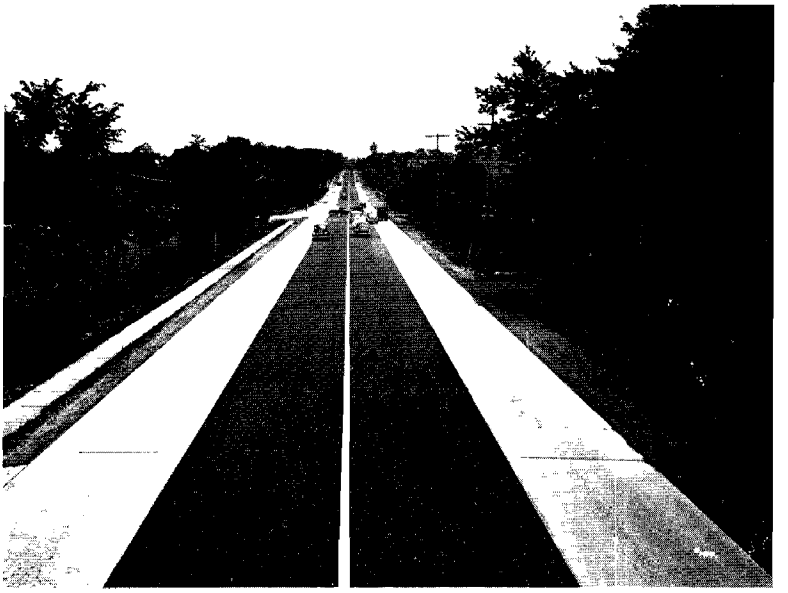
Plans are in preparation by the United States Engineers for a new high-level structure to take the place of the old lift bridge, and construction is expected to start in the spring. No date has been announced for completion.

RECOMMENDATIONS

For your consideration during the coming year, I wish to submit the following recommendations:

1. That surveys and studies be authorized for the development of adequate connections between the Governor Printz Boulevard, the Philadelphia Pike and Ridge Road, U. S. 13, at the Pennsylvania Line near Naaman's, in order to eliminate the congested and dangerous conditions now existing at this point.

2. In order that the dual highway now completed or under construction between Limestone Road and Elsmere



KENNETT PIKE, WIDENING AND RESURFACING

PEARSONS CORNER TO DOVER, RECONSTRUCTION

be made fully available, I recommend that surveys and plans be authorized for a connection of this highway to the Wilmington City Line.

3. The inadequacy of the offices of the Department at Dover and the need for more space is so acute that I again wish to bring to your attention and consideration the construction of a State Highway Building at Dover in accordance with the plans of the Capitol Commission.

4. That the progressive improvement of secondary roads be continued, subject to budget allotment of funds for each county as a part of the annual construction program.

5. That the Department conduct a Statewide traffic and planning survey in conjunction with the Public Roads Administration, modified and adapted to Delaware conditions.

6. That plans be prepared and construction authorized for the Curtis Paper Mill Bridge at Newark in the 1941 program.

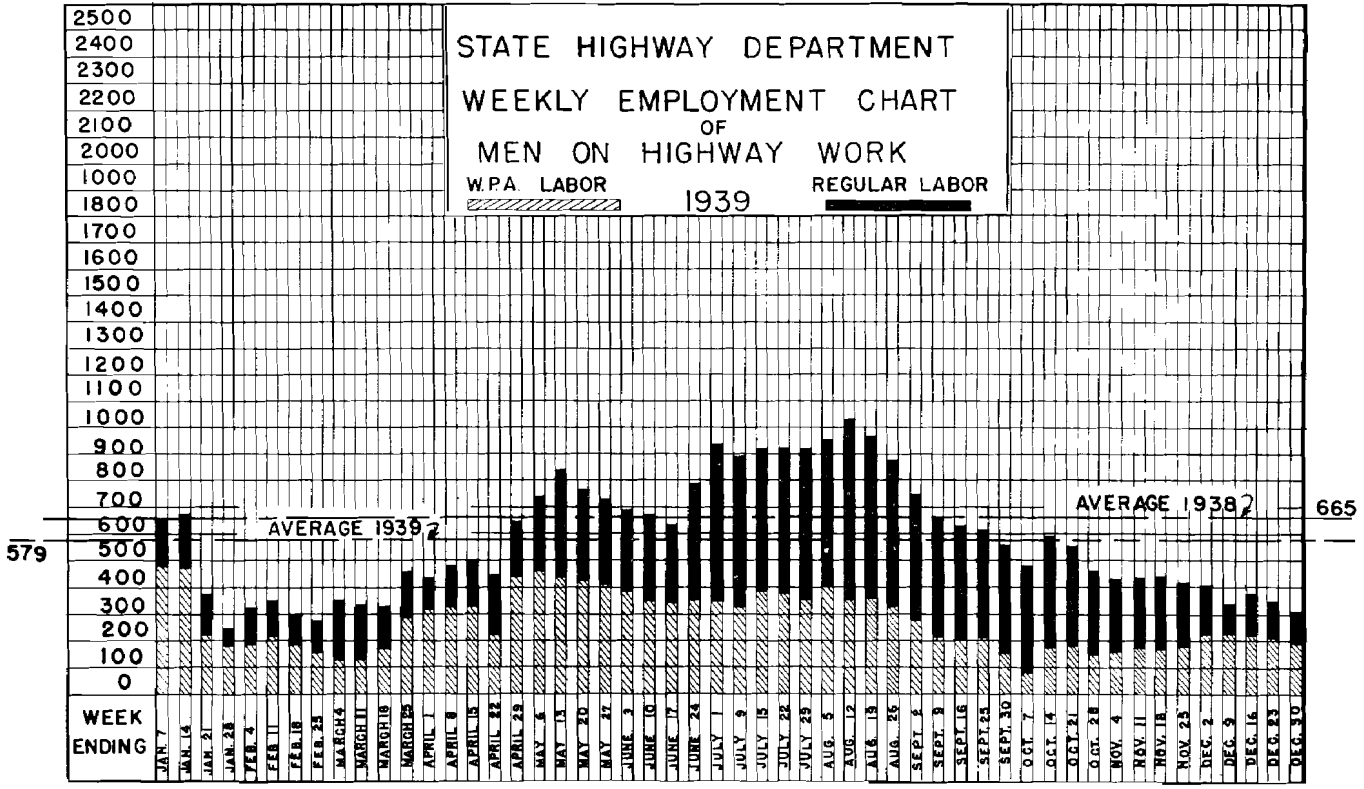
7. I further recommend a study be made as to the possibility of extending the dual highway system south from Dover to the Maryland Line.

FINANCIAL STATEMENT

The Secretary has presented a detailed report of the financial transactions for the fiscal year ending June 30, 1939. There is attached a summarized statement of the Income and Expenditures of the Department for the period beginning January 1, 1939, and ending December 31, 1939.

INCOME

Balance, December 31, 1938	$ 283,416.77
Motor Vehicle Licenses	637,886.32
Titling Fees	52,892.63
Motor Fuel Tax (Net)	2,142,845.23
Dealers and Distributors Licenses	2,683.00
State Police Fines	103,167.30
Auto Inspection Fees	6,347.00
Right of Way Rentals and Permit Fees	8,838.05
Equipment Rentals	1,044.55


STATE HIGHWAY DEPARTMENT
WEEKLY EMPLOYMENT CHART
OF
MEN ON HIGHWAY WORK
W.P.A. LABOR
1939
REGULAR LABOR
2500
2400
2300
2200
2100
2000
1000
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
579
AVERAGE 1939
AVERAGE 1938
665
WEEK ENDING
JAN. 7
JAN. 14
JAN. 21
JAN. 28
FEB. 4
FEB. 11
FEB. 18
FEB. 25
MARCH 4
MARCH 11
MARCH 18
MARCH 25
APRIL 1
APRIL 8
APRIL 15
APRIL 22
APRIL 29
MAY 6
MAY 13
MAY 20
MAY 27
JUNE 3
JUNE 10
JUNE 17
JUNE 24
JULY 1
JULY 8
JULY 15
JULY 22
JULY 29
AUG. 5
AUG. 12
AUG. 19
AUG. 26
SEPT. 2
SEPT. 9
SEPT. 16
SEPT. 23
SEPT. 30
OCT. 7
OCT. 14
OCT. 21
OCT. 28
NOV. 4
NOV. 11
NOV. 18
NOV. 23
DEC. 2
DEC. 9
DEC. 16
DEC. 23
DEC. 30

Property Rentals	1,019.00
Federal Aid	549,271.70
Bond Sales	1,277,299.44
Miscellaneous Sales	2,410.18
Refunds	330.82
Reimbursements	63,187.93
Total Income	$5,132,639.92

EXPENDITURES

Administration	$ 59,850.51
Maintenance of Roads	1,021,304.10
Fixed Charges	706,917.50
State Police	256,852.58
Safety Inspection Campaign	25,401.79
Motor Vehicle Department	91,123.06
Motor Fuel Tax Division	9,467.90
Construction	1,987,891.66
Legislative Enactment	800,000.00
Total Expenditures	$4,958,809.10
Balance, December 31, 1939	$ 173,830.82

There were outstanding on December 31, 1939, construction contracts amounting to $971,659.65, of which the obligations of the State Highway Department totalled $490,829.78.

In closing, I wish to convey to His Excellency, the Governor, and to the Members of the Department, my appreciation of the courtesies and consideration shown me. To my associates, I wish to extend my thanks for their willing and valued assistance.

Respectfully submitted,

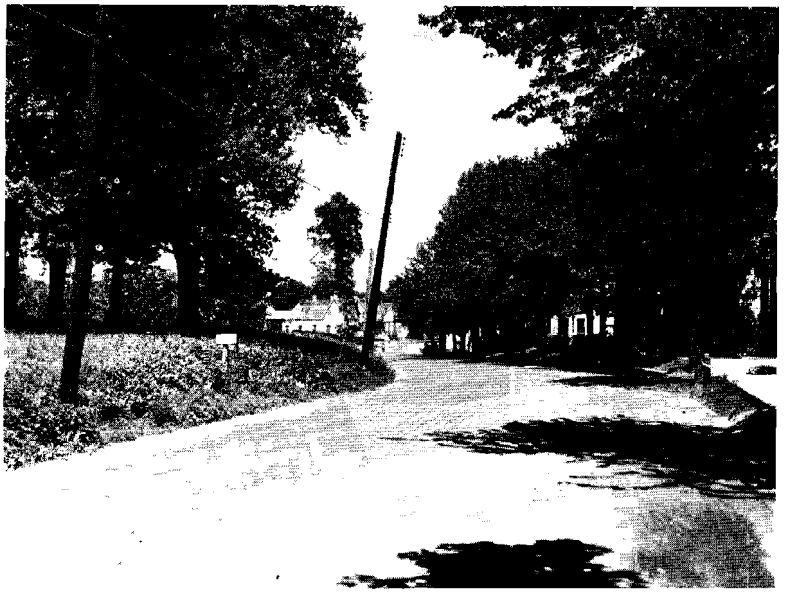
W. W. MACK
Chief Engineer

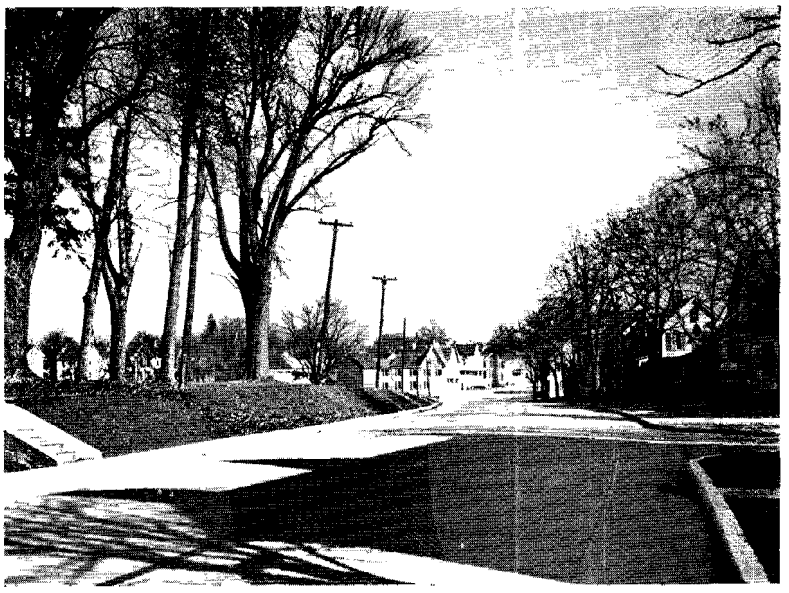
NEW DUAL HIGHWAY AT ELSMERE BEFORE AND AFTER CONSTRUCTION

RECORD OF FINGERPRINTS

Received, classified and filed at State Bureau of Identification, for the twelve month period beginning January 1, 1939 and ending December 31, 1939.

Civilian Fingerprints:—		
Civilian Fingerprint Contributors:—		
Headquarters	122	
Station No. 1	16	
Station No. 4	2	
Station No. 5	1	
Newark Police	4	145
Criminal Photographs	2184	
Wanted Criminal Circulars	140	
Criminal Fingerprints:—		
Criminal Fingerprint Contributors:—		
Headquarters	395	
Station No. 1	178	
Station No. 2	102	
Station No. 3	114	
Station No. 4	2	
Station No. 5	73	
Newark Police	51	
New Castle County Workhouse	2449	
Sussex County Prison	354	
Chester Police	312	
Del. County Prob. Office	510	
Delaware Industrial School	86	
Ferris Industrial School	185	4811
Criminal Fingerprints:—		
White Race	2870	
Black Race	1941	4811
Male	4228	
Female	583	4811
Criminal Fingerprints:—		
No previous criminal record at F. B. I. Wash.	2031	
Previous criminal record at F. B. I. Wash.	2780	4811





WEST FRONT ST., MILFORD, BEFORE AND AFTER CONSTRUCTION

Previous criminal record identification made at Delaware State Bureau of Identification		1603

Total Criminal Fingerprints Previous Years

1935	335
1936	1179
1937	1899
1938	3391
1939	4811

Firearm Registration		
Small Arms	524	
Shotguns	318	
Rifles	239	1081
Stolen Firearms Reported		60

ARRESTS FOR THE YEAR 1939

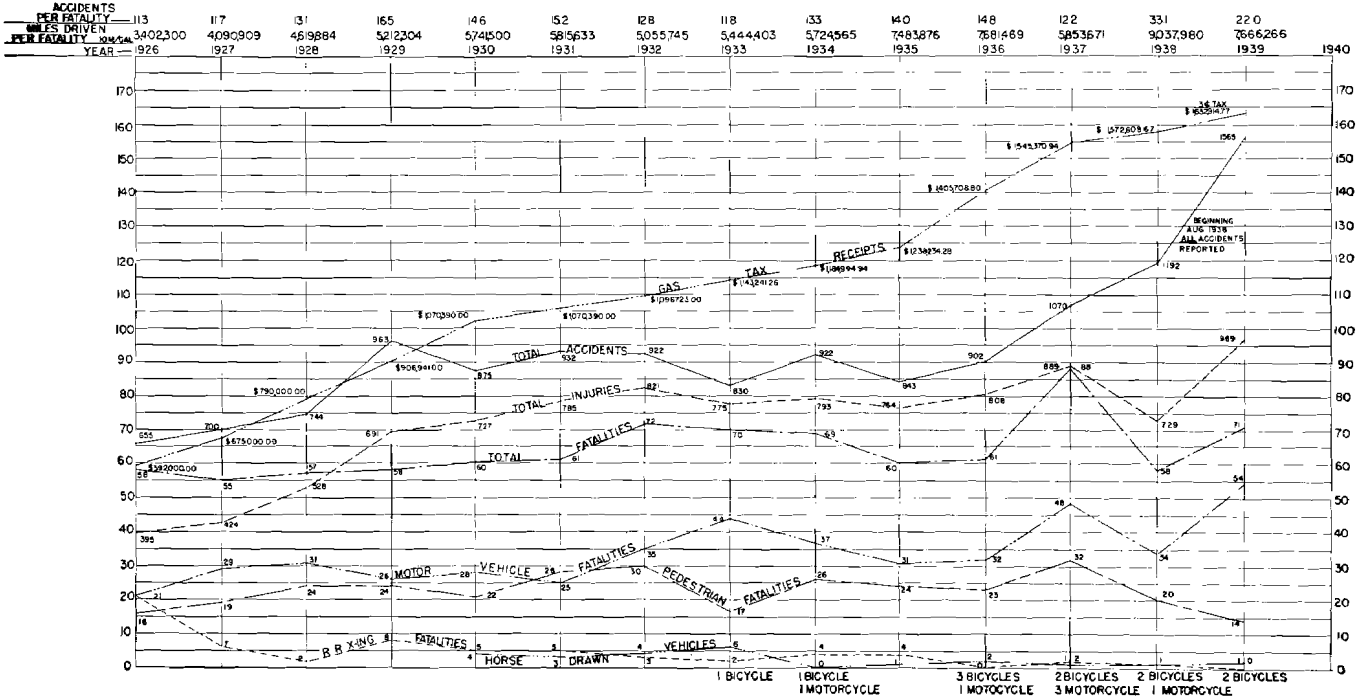
Absconding	1
Accessory	10
Aiding and abetting	4
Allowing body to extend over side	7
Allowing minor to operate	5
Allowing an unlicensed person to operate	153
Altering check	1
Arson	9
Assault	12
Assault and battery	332
Assault felonious	12
Assault to murder	10
Assault to rape	1
Attempted robbery	1
Bastardy	3
Bicycle no lights	3
Breach of peace	13
Breaking and entering	57
Bribery	1
Carrying concealed a deadly weapon	16
Conducting lottery	1
Contempt of court	1
Cruelty to dumb animals	2
Defective brakes	177
Desertion and non-support	13
Disorderly conduct	247

Displaying another's license	50
Disregarded stop sign	492
Disturbing the peace	9
Drunk and disorderly	269
Embezzlement	2
Exceeded registered weight	703
Failed to deliver title	1
Failed to report accident	5
Failed to signal	7
Failed to stop upon request	11
Following fire engine too closely	2
Forgery	13
Fugitive from justice	27
Gambling	10
Held as witness	110
Highway robbery	6
Hitch hiking	19
Wagon no lights	1
Huckstering no license	2
Impersonating an officer	1
Improper lights	134
Improper tags	41
Incorrigible	1
Insane	2
Interfering with an officer	3
Interfering with operator	8
Jail breaking	2
Juvenile delinquent	13
Keeping disorderly house	2
Keeping gambling device	4
Larceny	251
Leaving accident	43
Lending license plates	6
Lending operator's license	29
Lewdness	3
Making threats	31
Malicious mischief	21
Manslaughter	22
Murder	11

No chauffeur's license	96
No flags	1
No flares	156
No horn	13
No mirror	20
No muffler	22
No operator's license	900
No permit for unusual load	26
No photograph on chauffeur's license	2
No windshield wiper	2
Obtaining money under false pretenses	10
Operating during period of revocation	9
Operating unregistered car	354
Operating while asleep	1
Operating while intoxicated	169
Overloaded axle	647
Overloaded semi-trailer	405
Overloaded trailer	3
Overloaded truck	96
Parking no lights	23
Parking on concrete	24
Passed traffic (red) light	88
Passed or issued worthless check	32
Pedestrian no light	6
Pointing fire arm	3
Policy writing	3
Possession stolen goods	7
Receiving bets	1
Receiving stolen goods	1
Reckless driving	5,114
Removing goods after levy had been made	2
Resisting arrest	2
Riding on fender	1
Robbery	5
Sex crimes	12
Selling deadly weapon	1
Taking car without owner's consent	33
Tampering with motor vehicle	23
Throwing rubbish on highway	9
Trespassing	106
Using siren	1

STATE HIGHWAY DEPARTMENT

ACCIDENT CHART



Vagrancy	79
Violated Coal Act	5
Violated Drug Act	1
Violated Dyer Act	19
Violated Immigration Laws	1
Violated Learner's Permit	20
Violated Liquor Laws	38
Violated Mann Act	1
Violated Military Laws	1
Violated Parole	1
Violated School Laws	4
Wife Beating	4
Total number arrests	12,062
Total number reprimands	78,571
Total number trucks weighed	69,950
Total number miles patrolled	2,032,220
Total number cars inspected for lights and brakes	35,057
Total number hours spent on duty	222,915
Total number hours spent on investigation	13,794
Total number hours spent on Special Duty	23,204
Total number stolen cars recovered	137
Total number school children addressed on safety	3,120

ACCIDENTS FOR THE YEAR 1939

Total number accidents	1,565
Total number fatal accidents	53
Total number persons killed	71
Total number personal injury accidents	616
Total number persons injured	969
Total number property damage accidents	896
Total estimated property damage	$267,831.00

Fatalities by Counties

New Castle	39
Kent	8
Sussex	24
Total	71

Type of Accident
In Collision with:

	Total	Fatal	Non-Fatal
Pedestrian	88	14	74
Another Automobile	903	20	284
Animal or horse drawn vehicle	26	1	9
Railroad train	13	....	6
Street car	3	....	1
Motorcycle	10	....	9
Fixed object	273	11	106
Bicycle	18	2	16
Non-collision accident	229	5	109
Miscellaneous	2	....	2
Totals	1565	53	616

Cause:

	Total	Fatal	Non-Fatal
Reckless driving	108	7	46
Drove off roadway	162	5	70
Operator drinking	143	5	65
View obstructed	36	2	15
Skidding	144	3	59
On wrong side of road	146	11	50
Exceeding speed limit	79	3	36
No chains on ice or snow	73	2	24
Violated right of way	89	1	25
Failed to signal	57	....	12
Driver asleep	70	....	30
Disregarded stop sign	66	6	26
Parking on roadway	82	2	37
Following too closely	49	....	13
Cutting in	38	....	15
Pedestrian walking on road (with traffic)	13	3	10
Pedestrian walking on road (against traffic)	7	....	7
Defective brakes	68	2	28
Puncture or blowout	38	....	20
Other defects in equipment	8	....	5
Slowing down or stopping	79	2	30
Glaring headlights	12	1	5
Operator confused	33	1	15
Pedestrian not crossing at intersection	19	2	17
Hit and run	10	3	2
Defective steering mechanism	22	....	9
Operator had physical defects	25	....	14

One or both headlights out	13	....	5
Pedestrian coming from behind parked car	3	....	3
Pedestrian had been drinking	5	....	5
Pedestrian confused by traffic	21	7	14
Pedestrian was intoxicated	7	1	6
Pedestrian's view obstructed	5	....	5
Pedestrian crossing at intersection	21	8	13
Pedestrian at work on car on roadway	2	....	2
Pedestrian had physical defect	6	2	4
Pedestrian was careless	33	3	30
Pedestrian getting on or off other vehicle	3	....	3
Operator was intoxicated	65	7	24
Operator was blinded by headlights	47	5	17
Tail-light out or obscured	13	....	6
Children playing in roadway	18	1	17
Passing on curve or hill	13	....	5
Passing on wrong side	19	....	8
Car ran away no driver	4	....	2
Improper turn	78	1	23
Miscellaneous	10	....	5

Driver's Sex:

	Total	Fatal	Non-Fatal
Male	2246	70	832
Female	237	3	91
Not stated	11	3	2
Totals	2494	76	925

Driver's Age:

	Total	Fatal	Non-Fatal
Under 20 years	264	9	104
20 to 29 years	856	26	336
30 to 49 years	994	22	356
50 to 64 years	288	11	101
65 years and over	60	4	19
Not stated	32	4	9
Totals	2494	76	925

Driver's Experience:

	Total	Fatal	Non-Fatal
Less than 3 months	35	....	13
3 to 6 months	22	1	12
6 to 12 months	13	1	2

1 year or more	2352	57	872
Not stated	72	17	26
Totals	2494	76	925

Driver's Residence:

	Total	Fatal	Non-Fatal
Delaware driver	1746	57	637
Out of State driver	748	19	288
Totals	2494	76	925

Hour of Occurrence:

	Total	Fatal	Non-Fatal
12 to 1 A. M.	107	7	50
1 to 2 A. M.	48	3	25
2 to 3 A. M.	30	2	12
3 to 4 A. M.	24	3	9
4 to 5 A. M.	28	1	12
5 to 6 A. M.	23	....	9
6 to 7 A. M.	37	....	10
7 to 8 A. M.	42	1	13
8 to 9 A. M.	43	....	15
9 to 10 A. M.	52	2	21
10 to 11 A. M.	66	1	25
11 to 12 A. M.	64	....	22
12 to 1 P. M.	52	....	19
1 to 2 P. M.	95	1	35
2 to 3 P. M.	72	3	29
3 to 4 P. M.	84	3	29
4 to 5 P. M.	109	4	40
5 to 6 P. M.	98	5	44
6 to 7 P. M.	88	2	33
7 to 8 P. M.	107	5	43
8 to 9 P. M.	79	4	32
9 to 10 P. M.	60	4	20
10 to 11 P. M.	76	2	33
11 to 12 P. M.	73	....	33
Not stated	8	...	3
Totals	1565	53	616

Light Conditions:

	Total	Fatal	Non-Fatal
Daylight	857	16	321
Dawn	22	1	8
Dusk	49	5	18
Artificial light — good	58	3	28

Artificial light — poor	79	5	34
Darkness	491	23	204
Not stated	9	—	3
Totals	1565	53	616

Day of Occurrence:

	Total	Fatal	Non-Fatal
Sunday	267	9	124
Monday	184	8	64
Tuesday	176	3	62
Wednesday	199	7	73
Thursday	185	3	68
Friday	217	10	85
Saturday	337	13	140
Totals	1565	53	616

Road Location:

	Total	Fatal	Non-Fatal
Between intersections	154	9	69
Rural intersection	336	12	112
Straight road	735	22	292
Driveway	60	—	24
Curve	169	7	80
Street intersection	79	3	29
Railroad crossing	13	—	6
Bridge	16	—	3
Not stated	3	—	1
Totals	1565	53	616

Road Surface:

	Total	Fatal	Non-Fatal
Dry surface	1149	40	459
Wet surface	299	10	114
Snowy surface	49	2	19
Icy surface	56	1	20
Not stated	12	—	4
Totals	1565	53	616

At Railroad:

	Total	Fatal	Non-Fatal
Guarded crossing man on duty	2	—	2
Guarded crossing — Auto. signal	3	—	2
Unguarded crossing	8	—	3
Totals	13		7

Weather Conditions:

	Total	Fatal	Non-Fatal
Clear	1070	35	436
Cloudy	182	5	70
Fog or mist	50	3	19
Rain	203	7	71
Snow	47	2	17
Not stated	13	1	3
Totals	1565	53	616

Type of Road Construction:

	Total	Fatal	Non-Fatal
Dual	221	8	80
Non-dual	1344	45	536
Totals	1565	53	616

Type of Vehicle Involved:

	Total	Fatal	Non-Fatal
Passenger car	1978	59	733
Light delivery	65	1	26
Bus	17	1	9
Motorcycle	11	....	10
Bicycle	18	2	16
Truck	393	12	124
Wagon	11	1	7
All others	8	....	4
Not stated	4	2	1
Totals	2505	78	930

Action of Pedestrian Contributing to Accident:

	Total	Fatal	Non-Fatal
Getting on or off other vehicle	3	....	3
Crossing intersection	21	8	13
In street not at intersection	19	2	17
Children playing in roadway	18	1	17
Coming from behind parked car	3	....	3
Standing in safety zone	2	....	2
At work on car on roadway	2	....	2
Walking on or along the highway	20	3	17
Miscellaneous	1	....	1
Totals	89	14	75

Condition of Pedestrian:

	Total	Fatal	Non-Fatal
Intoxicated	7	1	6
Had been drinking	5		5
Had physical defect	6	2	4
Was confused by traffic	21	7	14
View obstructed	5		5
Careless	33	3	30
Totals	77	13	64

DELAWARE STATE HWY. MILEAGE
1939

TYPE	NEW CASTLE	KENT	SUSSEX	TOTALS
CONCRETE HIGHWAYS				
(DUAL) DIVIDED HIGHWAYS (4-7 LANE)	44.12	10.53		54.65
TWO LANE HIGHWAYS	128.70	217.98	289.45	636.13
NINE FOOT & TEN FOOT LANES	24.90	56.87	49.65	131.42
BRICK & CONCRETE HIGHWAYS				
BRICK & CONCRETE (4 LANES)	6.39			6.39
BRICK	0.40			0.40
MACADAM HIGHWAYS				
BITUMINOUS MACADAM	380.90	21.29	12.99	415.18
COUNTY - 10 FOOT			48.15	48.15
BITUMINOUS CONCRETE				
STONE BASE	6.40		6.27	12.67
CONCRETE BASE	14.69			14.69
ASPHALT				
SAND ASPHALT			28.93	28.93
SLAG, CINDERS, GRAVEL				
SURFACE TREATED	82.20	51.22	165.68	299.10
TRAFFIC BOUND	7.70	115.59	67.29	190.58
DIRT OR GRAVEL				
DIRT	21.00	260.64	904.27	1,185.91
GRAVEL	273.20	330.37	290.20	893.77
TOTALS	990.60	1,064.49	1,862.88	3917.97

TABULATION OF CONTRACTS AWARDED DURING 1939

Cont. No.	Location	Estimated Cost	Date of Award	Contractor	Length in Miles	Type of Roadway
670	Seaford to Woodland Approaches	$ 14,343.50	1/ 5/39	Old Line Constr. Co., Chestertown, Md.	0.455	20′ Conc. Creo. Timber
650	Fender System 7th St. Bridge, Wilmington	5,914.62	1/ 6/39	Del. Bay Shipbuilding Co., Leesburg, N. J.		
296	Plymouth to Barratt's Chapel	17,343.40	1/23/39	E. H. Ellis, Westville, N. J.	5.890	Stab. Earth
503A	Glasgow to Newark Roadside Planting	9,765.65	2/21/39	Wm. H. Doyle, Inc., Berwyn, Pa.	4.411	Planting
459A	Summit Bridge to Lums Pond	29,347.35	2/23/39	George & Lynch, Dover, Del.	1.580	20′ Conc.
550A	Fenwick Island to Bethany Beach	14,850.00	2/24/39	E. H. Ellis, Westville, N. J.	6.020	22′ Gravel
612B	Fort Christina Park Alterations	2,357.00	4/13/39	J. A. Bader & Co., Inc., Wilmington, Del.		Alterations
684	Headquarters Building Drives	8,124.60	4/13/39	Wilson Cont. Co., State Road, Del.		Conc. & Bit. Conc.
672	Silver Lake, Middletown	12,927.70	4/13/39	E. F. Hammond, Georgetown, Del.		Conc. Slab Br.
685	Bridgeville Police Sta. Drives & Scale Pit	6,139.70	4/18/39	Old Line Constr. Co., Chestertown, Md.		Conc. & Bit. Conc.
654	Harrington to Milford	54,770.81	6/ 7/39	Phillips Bros., Salisbury, Md.	7.664	4′ Conc. Wid.
651	Pearson to Dover	56,715.60	6/ 7/39	George & Lynch, Dover, Del.	6.729	4′-6′ Conc. Wid.
643	Harmon Sch. to Midway	64,210.20	6/ 7/39	Walter Roach & Sons, Georgetown, Del.	9.022	4′ Conc. Wid.
607	Harrington to Hughes Cross Roads	49,745.40	6/ 7/39	M. J. McDermott, Georgetown, Del.	7.549	Traf. Bd. Slag
649	Price's Cor. to Limestone Road	181,520.20	6/ 7/39	A. Petrillo Co., Wilmington, Del.	1.843	22′-24′ Conc.
696	Furnishing and Applying Asphaltic Material	88,300.50	6/ 9/39	Asphalt Service Co., Baltimore, Md.		
693	Crushed Chips—New Castle County	22,200.00	6/ 9/39	Warner Co., Wilmington, Del.		
692	Crushed Chips—Kent & Sussex County	60,736.00	6/ 9/39	General Crushed Stone Co., Easton, Pa.		
691	Reinforced Concrete Pipe Requirements (1939-40)	11,370.12	6/ 9/39	Wilson Contr. Co., State Road, Del.		
689	Motor Oil & Grease 1939-40	5,164.75	6/ 9/39	Diamond Ice & Coal Co., Wilmington, Del.		
688	Gasoline 1939-40	77,980.00	6/ 9/39	Diamond Ice & Coal Co., Wilmington, Del.		
687	Bit. Concrete—New Castle County	15,750.00	6/ 9/39	Del. Asphalt Co., Wilmington, Del.		
671	Laboratory Equipment	6,974.33	6/ 9/39	E. H. Sheldon & Co., Muskegon, Mich.		Lab. Equipment
654A	West Front St., Milford	44,231.40	6/15/39	George & Lynch, Dover, Del.	0.550	22′-24′ Cem. Conc.
655	Millsboro to Md. Line via Mission	94,051.50	6/16/39	Old Line Constr. Co., Chestertown, Md.	11.560	4′ Conc. Wid.
643A	Love Creek Bridge and Approaches	24,814.90	6/16/39	Spear Jones Co., Dover, Del.	0.194	Creo. Timb. Br. & Conc. Roadway
460	Church Hill Sch. to Laws School	19,532.10	6/16/39	George & Lynch, Dover, Del.	4.424	Stab. Earth
644	Kennett Pike Wid.	47,873.50	6/21/39	Olivere Paving & Constr. Co., Wilm., Del.	0.925	2-11′ Conc. Wid. Lanes Bit. Conc. Surf.
680	Bridge No. 83—New Castle County	5,508.30	6/22/39	Olivere Paving & Constr. Co., Wilm., Del.		Mas. & Conc. I-Beam Bridge
676	Little Creek to Leipsic	109,636.15	7/15/39	W. W. Truitt, Lincoln City, Del.	6.388	10′ Conc. Wid.
613	Delaware Ave., Laurel	13,468.80	7/15/39	James Julian, Wilmington, Del.	0.275	21′-26′ Conc.
649A	Cranston Heights Viaduct	199,755.00	8/ 4/39	J. A. Bader & Co., Wilmington, Del.		Conc. Substruc. Steel Superstr.
673	Lancaster Pike	237,839.45	8/ 8/39	Wilson Contr. Co., State Road, Del.	3.925	22′ Conc.
595	Walnut St. & Folly Woods	7,126.10	9/11/39	Wilson Contr. Co., State Road, Del.	0.657	16′ Tr. Bd. Stone

NEW CASTLE COUNTY
MILEAGE AND TYPES ADVERTISED AND AWARDED
1939
Roadway Contracts

Cont. No.	Location	Concrete 22 Ft. Divided	22-Foot Concrete	20-Foot Concrete	Bit. Concrete Resurfacing & 2-11-Foot Conc. Lanes	16-Foot Traffic Bd. Crushed Stone
459A	Summit Bridge to Lums Pond			1.580		
649	Price's Cor. to Limestone Road	1.843				
644	Kennett Pike Widening				0.925	
673	Lancaster Pike		3.925			
595	Walnut St. & Folly Woods					0.657
		1.843	3.925	1.580	0.925	0.657

650	Fender System 7th St. Bridge
503A	Glasgow to Newark Roadside Planting
612B	Fort Christina Park Alterations
684	Headquarters Building Drives
672	Silver Lake, Middletown (Bridge)
696	Furnishing and Applying Asphaltic Material
693	Crushed Chips—New Castle County
691	Reinforced Concrete Pipe Requirements
689	Motor Oil and Grease 1939-1940
688	Gasoline 1939-1940
687	Bituminous Concrete—New Castle County (Maintenance)
680	Bridge No. 88—New Castle County
649A	Cranston Heights Viaduct

KENT COUNTY
MILEAGE AND TYPES ADVERTISED AND AWARDED
1939
Roadway Contracts

Cont. No.	Location	22-24-Foot Concrete	10-Foot Concrete Widening	4-Foot Concrete Widening	16-Foot Stabilized Earth	16-Foot Traffic Bd. Slag
296	Plymouth to Barratt's Chapel				5.890	
654	Harrington to Milford			7.664		
651	Pearson's Corner to Dover			6.729		
607	Harrington to Hughes' Cross Roads					7.549
654A	West Front Street, Milford	0.550				
460	Church Hill School to Laws School				4.424	
676	Little Creek to Leipsic		6.388			
		0.550	6.388	14.393	10.314	7.549

692 Crushed Chips
691 Reinforced Concrete Pipe Requirements
689 Motor Oil and Grease 1939-1940
688 Gasoline 1939-1940
671 Laboratory Equipment
696 Furnishing and Applying Asphaltic Material

SUSSEX COUNTY

MILEAGE AND TYPES ADVERTISED AND AWARDED

1939

Roadway Contracts

Cont. No.	Location	21-26-Foot Concrete	20-Foot Concrete	4-Foot Concrete Widening	22-Foot Gravel
670	Seaford to Woodland Road Approaches		0.455		
550A	Fenwick Island to Bethany Beach				6.020
643	Harmon School to Midway			9.022	
613	Delaware Ave., Laurel	0.275			
655	Millsboro to Maryland Line via Mission			11.560	
		0.275	0.455	20.582	6.020

696	Furnishing and Applying Asphaltic Material
692	Crushed Chips
691	Reinforced Concrete Pipe Requirements
689	Motor Oil and Grease 1939-1940
688	Gasoline 1939-1940
685	Bridgeville Police Station Drives and Scale Pit
643A	Love Creek Bridge and Approaches