

## Freeways

After eleven years of construction activity on the State of Delaware's portion of the Interstate Highway System the opening of I-95 in its entirety from the Pennsylvania State line to the State of Maryland border became a reality in November 1968.

Since the Department's initial Interstate Route construction at the Farnhurst Interchange in October 1957, a total of sixty-seven contracts, including the demolition of structures, with bid values approaching 76.5 million dollars have been completed or are nearing completion.

During the fiscal year 1968-69 the department continued to exert a major effort toward the completion of Interstate I-95 with various construction activities in evidence throughout the entire length of the route. I-495 construction was limited to the Relocation of Governor Printz Boulevard, Holly Oak Creek Relocation and minor demolition contracts. A total of nineteen Interstate contracts with a composite bid value of 29.4 million dollars were active and for the most part in the final stages of construction at the close of the year.



*The Concord Pike Interchange of Interstate Route 95 is an excellent example of the complexities of modern highway design.*

# Construction

The Delaware State Highway Department, including Delaware Turnpike, processed for payment 463 progressive and final estimates totaling \$18,240,873.84 which was paid to private contractors for highway construction.

The State constructed 24 miles of secondary roads, 20 miles of dirt roads, 9 miles of primary and 1.8 miles of Interstate was added to

the system. Excluding the Turnpike, 63 contracts were completed and accepted totaling 56.5 miles of roads:

|                      |                             |
|----------------------|-----------------------------|
| New Castle Division: | 31 contracts-10.6492 miles  |
| Kent Division:       | 13 contracts-15.3907 miles  |
| Sussex Division:     | 14 contracts -28.6230 miles |
| Freeways Division:   | 5 contracts-1.8520 miles    |
| Turnpike Division:   | not included                |

| <u>CONTRACT DESCRIPTION</u>      | <u>CONTRACTOR</u>     | <u>BID PRICE</u> |
|----------------------------------|-----------------------|------------------|
| Bethel Bridge                    | George & Lynch        | 487,633.02       |
| 4th Street to Brandywine         | Kiewit-Johnson        | 5,977,800.00     |
| Felton to Frederica              | George & Lynch        | 669,280.55       |
| Rt.113,Dagsboro to Rd.432        | James Julian          | 1,860,022.40     |
| Casho Mill Road                  | R.C. Peoples          | 159,875.00       |
| Walker Road                      | George & Lynch        | 225,003.10       |
| Administration Center, Dover     | J.R. Dashiell & Son   | 2,835,000.00     |
| Bridge 69A on Road 69            | W.B. Mitten & Sons    | 138,742.75       |
| Rd.15, Rt.896 to Boyds Corner    | Delaware Roads        | 171,688.00       |
| Rt.896, Rt.71 to Glasgow         | Warren Brothers       | 99,003.28        |
| Rt.13&896, Intersect. Improvts.  | Greggo & Ferrara      | 71,443.20        |
| Milton School Sidewalks          | W.B. Mitten & Sons    | 20,731.75        |
| Old Mill Lane                    | Eastern States        | 28,141.50        |
| Dirt Roads                       | M.L. Joseph Const.Co. | 267,816.42       |
| Landscaping, Rt. 113             | Greenbrier Farms      | 21,148.95        |
| Dirt Roads                       | M.L. Joseph Const.Co. | 193,020.05       |
| Smyrna Rest Area                 | Clute Brothers        | 137,115.00       |
| Townsend Streets                 | Warren Brothers       | 76,010.60        |
| "E" Street Extended,Dover        | Warren Brothers       | 73,392.00        |
| Hot Mix Patching 1967-68         | Materials Transit     | 459,900.00       |
| Concrete Patching 1967-68        | Fontana Brothers      | 49,065.00        |
| Resurfacing 1967-68              | Edgell Const. Co.     | 116,250.00       |
| Hot Mix Patching 1967-68         | Interstate Amiesite   | 104,885.00       |
| Bridge 324 on Road 397           | Mt. Cuba Const. Co.   | 25,366.80        |
| Duncan Road Drainage             | R.A. Boyer            | 53,302.87        |
| Bridge 277 on Road 363           | Eastern States        | 50,711.10        |
| McGinnis Pond Dam & Bridge       | George & Lynch        | 103,093.63       |
| Middleboro Rd. Sidewalks         | First State Entprs.   | 34,115.75        |
| Little Mill Creek                | T.M. Durkin           | 58,420.00        |
| Road 384                         | R.C. Peoples          | 72,946.00        |
| Carr Rd. Culvert Replacement     | Eastern States        | 19,391.50        |
| Intersect. Improvts.,Adm. Center | Warren Brothers       | 55,742.49        |
| Vehicle Storage Sheds            | Lowe's of Dover       | 53,515.38        |
| Holly Oak Creek Relocation       | Burger Const. Corp.   | 367,749.95       |
| Bridge 426 on Road 36            | John Julian Const.Co. | 48,834.30        |
| Bridge 428 on Road 36            | W.B. Mitten & Sons    | 19,190.00        |
| Bridge 254 on Road 350           | East Construction Co. | 16,758.00        |
| Bridge 569 on Road 419           | Interstate Amiesite   | 40,360.00        |
| Stein Highway Shoulders          | Interstate Amiesite   | 25,644.50        |
| Woodland Beach Causeway          | Whitmyer Brothers     | 59,940.00        |
| I-95 Guardrail Installation      | Henkels & McCoy       | 79,481.55        |
| Bridge 448 on Road 456           | W.B. Mitten & Sons    | 29,527.50        |
| Airplane Spraying 1968           | Joseph R. Hudson      | 113,200.00       |
| Bridge 449 on Road 456           | Teal Construction     | 19,479.00        |

Bridge 133A on Road 133  
 Boring - Rt. 141  
 Marsh Ditching, Smyrna Area  
 Bridge 451 on Road 455  
 Improvts. Brandywine Hundred  
 Improvts. Christiana Hundred  
 Improvts. Mill Creek, Pencader,  
 White Clay Creek Hundreds  
 Improvts. New Castle Hundred  
 Demolition - Claymont Area  
 Laurel Elementary School Sidewalks  
 Dirt Roads  
 Resurfacing 1968-69  
 Concrete Patching 1968-69  
 11th Street Bridge Deck Repairs  
 Painting & Repairs-Augustine  
 Cut-off Bridge  
 Demolition-Brandywine Hundred  
 Lovering Ave., Wilmington  
 Harrington to Whiteleysburg  
 Removal of Old Groins-Rehoboth

|                         |            |
|-------------------------|------------|
| W.B. Mitten & Sons      | 45,454.35  |
| Sprague & Henwood       | 5,344.50   |
| Clayton Const. Co.      | 19,412.50  |
| George & Lynch          | 74,344.30  |
| Materials Transit       | 120,770.00 |
| Francis Kelly           | 84,930.00  |
| Materials Transit       | 66,045.00  |
|                         |            |
| Greggo & Ferrara        | 111,410.00 |
| Wright Const. Co.       | 3,700.00   |
| W.B. Mitten & Sons      | 5,402.50   |
| W.B. Mitten & Sons      | 33,167.00  |
| Edgell Construction Co. | 117,275.00 |
| W.B. Mitten & Sons      | 20,900.00  |
| First State Enterprises | 108,817.50 |
| Marinis Brothers        | 41,880.80  |
|                         |            |
| Kershaw Excavating Co.  | 3,100.00   |
| J.T. Ward & Son         | 25,881.71  |
| George & Lynch          | 204,011.85 |
| Brandywine Const. Co.   | 19,800.00  |

\$16,701,384.90



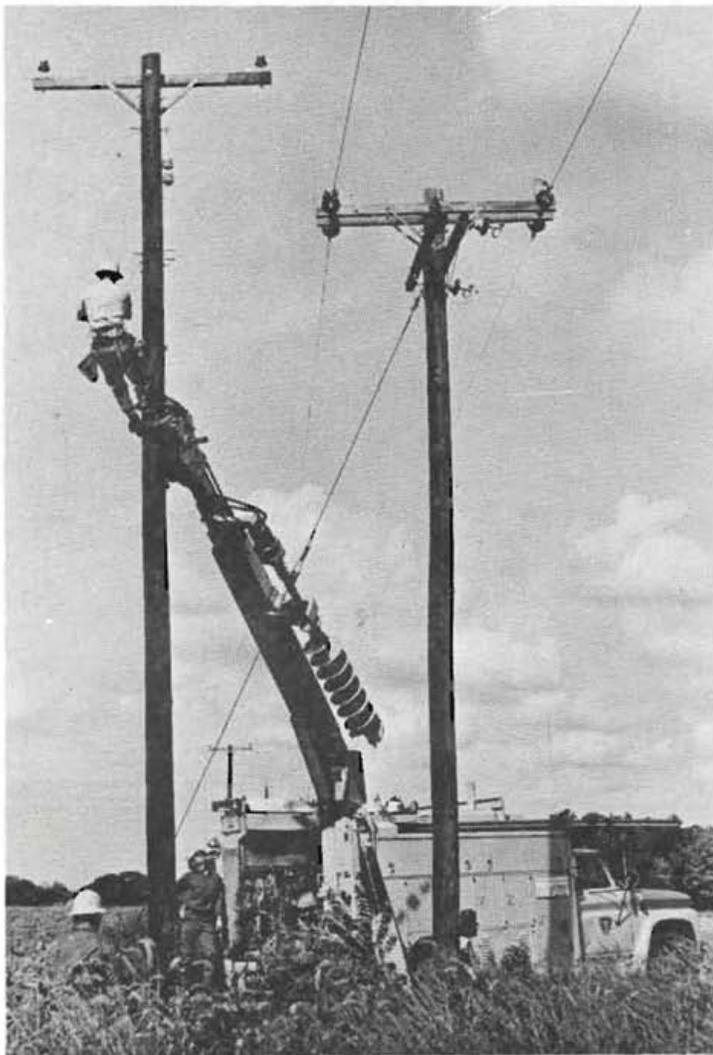
*The State's contractors must execute the Department's specifications precisely*

## Utilities

Utility relocations and adjustments on road projects requires the careful advance planning and coordination not only with various utility organizations but on an inter-departmental basis as well.

Throughout the life of a project, the department reviews and approves all changes, prepares cost figures, processes preliminary and final estimates and arranges for payment.

Department personnel prepared a complete revision of the Utility Manual to incorporate all of the federal and state regulations and policies.



*Many public utilities look to highway right of way for the location of their poles, lines, and pipes.*

To stress the significance of the responsibilities, 482 miles of utility facilities were adjusted or relocated. Safety installations were installed or upgraded at 11 railroad grade crossings and negotiations were completed for the upgrading of 21 grade crossings. During the year \$619,015.00 were paid to Utility Companies for adjustments and relocations to their facilities on Federal-Aid Projects.

The magnitude of utility adjustments affecting highway construction projects was exemplified during the past year when reconstruction of the road from Stanton to Newport was taking place.

The project - an urban road 1.9 miles in length and financed in part by Federal Funds, was awarded at a bid price of \$1,626,000.00. It was estimated that 300 working days would be needed to complete the project.

Utility work alone, required at least 9 months of continuous adjustments. Work had to be performed in close proximity to the road construction activities and also with the various utility facilities involved. Very close coordination was demanded of both the Utility Companies and State's Contractor in order that the road project could be built.

Aerial electric and telephone lines and poles were relocated, set back or rebuilt almost the length of the road. Gas mains, water mains & sanitary sewers, along with their respective individual house services & also a major telephone & telegraph conduit bank were lowered, re-routed or adjusted in some way to allow the road contractor to construct the road.

Utility work was completed at a cost of approximately \$865,000.00 which was 53% of the bid price of the road construction project.

## Right-Of-Way

New requirements of the Federal Government for relocation advisory assistance and payments has added another facet to the already tedious process of right-of-way acquisition. Provision of the required relocation services will add considerably to the costs of right-of-way. Delay in processing of contracts can also be expected with the fulfillment of the Federal Relocation requirements.

Legislation which will enable full participation in the relocation program is presently before the general assembly, action on which cannot be expected until the legislature reconvenes in January. The spiraling costs of land has caused right-of-way costs to sore not only in Delaware but nationwide. As a result, national interest is being displayed in a program which would place emphasis on the need to acquire needed lands at the planning stage; the thought being that once highway development intentions are revealed that buyer interest is stimulated to the extent that acquisition costs become financially burdensome. Plans are being studied and in some states, implemented, establishing revolving funds for advanced acquisition of right-of-way. This, it is held, would prove to be in the public interest by affecting savings.

Another plan being considered on a nationwide scale is one devised for partial recovery of right-of-way costs by acquiring entire tracts where economically justified to which the State would retain ownership until completion and operation of the project following which the State would place the residual tract for sale and realize the benefits which it had created. Such plans are not merely a passing fancy, but are a studied means of affecting economies and must be seriously considered and if found beneficial be placed in operation in Delaware.

During this fiscal year approximately 90% of all property acquired was by means of friendly negotiations. Public interest and cooperation remains good and has been reflected in the attached statistical report. This report was made possible through the wholehearted cooperation of a dedicated staff.

## Maintenance & Equipment

The State's highway maintenance program amounts to one quarter of the Department's total annual expenditure. This represents a \$9 million effort toward maintenance out of a total Department expenditure of \$36 million.

The state-wide maintenance effort represents a complement of approximately 700 employees and 200 vehicles strategically located in 12 maintenance areas working under the supervision of New Castle, Kent and Sussex Division Engineers. New Castle has four maintenance areas with three in Kent and five in Sussex, all working on the maintenance of roadways, shoulders and medians. These efforts are generally directed toward patching, repaving, improving drainage, cleaning litter, weed and grass control, traffic control devices and coping with the annual snow fall.

Delaware is located in a medial area which exposes the state to both extremes of summer heat and winter cold creating many special problems for highway maintenance activities. The winters bring snow, ice and freezing temperatures which require the entire maintenance work force to be pressed into service for extended periods of time. During severe conditions it is even necessary to supplement the regular work force with temporary personnel hired for the specific storm. Last year, Delaware had 19 inches of snow fall in New Castle County, 29 inches in Kent County, and 32 inches in Sussex County.

As the winter months pass and spring approaches, maintenance activities take on an entirely different nature. The first responsibility is to inventory winter damage to the state's highway network and schedule repairs. A selection of roads in each area is completed and maintenance forces prepare to restore these roads to a safe and well-maintained condition. In some cases, it is imperative to resurface portions of roads to keep them in service. Preparation of roads to be surfaced by contractors is done by maintenance personnel and equipment.

A pleasant seasonal change takes place during the spring months, however, the work load increases as tourists take to the roads. A continu-

al mowing program is necessary at this time of the year to preserve a neat appearance of the parkways and roadsides to the traveling public. All roads must be mowed at least twice per season.

Trash and litter clean-up is also a major problem during the warmer weather. The picnic areas have garbage disposal cans that must be cleaned up as well as the roads themselves. Maintenance personnel are assigned to this problem which seems to increase each year.

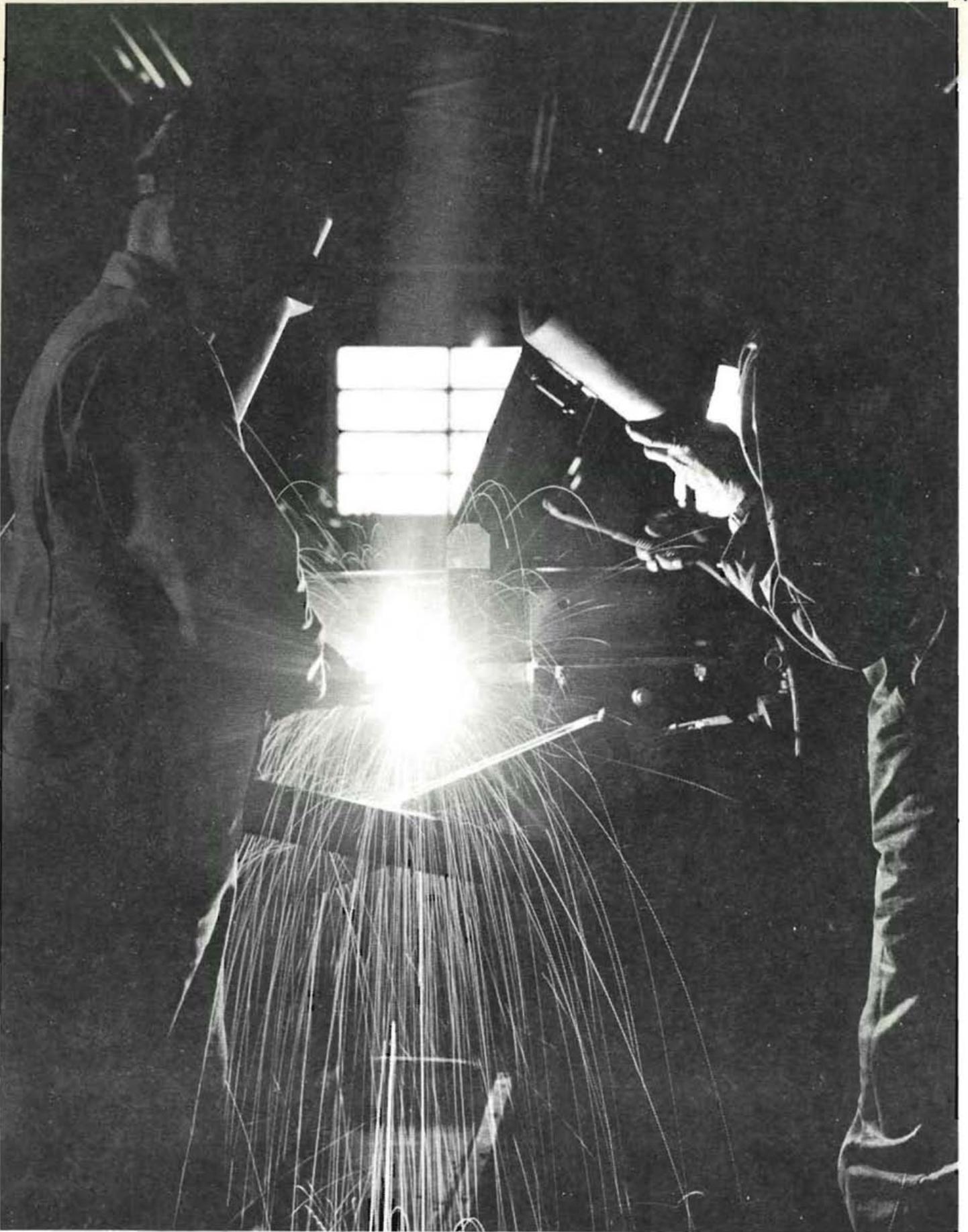
In addition to the recurring duties of the maintenance crews, a full-fledged effort was made in the direction of specific safety improvements along Delaware highways such as: 1) headwalls were removed from many narrow roadways with pipe used to extend the shoulder areas for greater safety; 2) trees were removed from within medians to be replaced with shrubs and plants to control headlight glare and create crash barriers which won't stop vehicles as violently as a large tree; 3) a program of small bridge replacements was undertaken to improve drainage facilities, reduce maintenance costs on old, narrow timber

structures in addition to increasing the safety margin for motorists; 4) sight distance surveys were conducted on all roads and intersections to determine what corrections have to be made to maintain safety standards. All corrections are made by maintenance personnel such as spraying for weed control, trees are removed or pruned, hedgerows are cut back or removed, and signs are erected or replaced to advise motorists of conditions.

Many different types of programs are introduced in maintenance work, but no program can be a success without proper advance planning and scheduling. Programs that are scheduled in maintenance work must have capable and experienced leadership. All maintenance supervisors last year attended various courses in leadership and management training. Results of this in-service training is paying dividends in that the supervisor becomes a more responsible decision making, self-reliant person. This type of supervisor relieves management of many minor decisions to make and act upon so that he can devote more of his valuable time to more important problems.



*Snow removal is a major activity of the Department's maintenance forces during the winter months*



*The Department maintains its own heavy equipment in strategically located shops which are equipped and staffed for optimum efficiency in keeping the machines operational*