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BUREAU OF ENGINEERING, SURVEYS AND ZONING

Thomas Buckley, Chief Engineer and Surveyor

The normal functions performed by this sub-division of the Department of Public Works are numerous and diverse because of the administrative demands that have controlled its organization over a period of eighty-nine (89) years. This Public Works unit, as it stands today, is the result of the consolidation of three separate bureaus into one master bureau, i.e., the Bureau of Surveys, the Bureau of Zoning, and the Bureau of Engineering.

The Surveys Division is under the responsible charge of the Assistant Chief Engineer and Surveyor, and includes the following elements of the Bureau organization: The Board of Surveyors, the nine Survey Districts into which the City is sub-divided, and the City Plan, Land Title and Road Records units.

The primary activities of the Surveys Division are land surveying in all its branches; studies, surveys, plans, lines, grades, estimates and assessments for various classes of municipal improvements; surveys, plans and other data for many municipal departments and bureaus, including legal use; the preparation, establishment, and administration of the official City Plan; city planning, research studies and reports; maintaining for public access and reference official records of City Plan changes, street openings, and property ownerships.

By reason of the number of well trained, experienced, and efficient personnel in the Surveys Division, its assistants are subject to assignments for special services within the Bureau and for inter-departmental duties.

The Zoning Division is under the responsible charge of a Chief of Division, and comprises an efficient single unit, carefully organized to perform the highly specialized duties involved. The primary activity of the Zoning Division is the administration of zoning, as authorized by ordinances of Council August 10, 1935, and amendments thereto, including the supplemental ordinance of October 26, 1936, and Act of Assembly approved May 6, 1929. The work performed includes all of the duties essential to the regulating and restricting of the height, location, size, bulk and use of buildings or land within the city and county of Philadelphia under a complete zoning code.

The Engineering Division is under the responsible charge of the Principal Assistant Engineer, and includes the following elements of the Bureau organization; the design, construction, inspection, operation, testing, and sewer registrar and permits units.

The primary activities of the Engineering Division are the design and construction of bridges, retaining walls, buildings, flood controls, storm and sanitary sewers, and other drainage and sewage structures; participation with railroads in grade crossing eliminations and terminal improvements; plans for major highway improvements; inspection of materials and workmanship; preparation of standards and specifications; physical and chemical testing of materials (a City-wide service); preparing complete plans of drainage system and issuance of permits for sewer connections; investigations of drainage and flooding complaints; control of trade wastes; checking and approval of structural designs for other departments and public utilities, and general engineering investigations and reports on various projects and conditions affecting the interests of the City.

In addition to these three major functions, there is also an auxiliary unit attached to the Bureau, designated as the Coordinating Division, under the responsible charge of an Assistant Engineer and Coordinator. This Division was first organized in the year 1940 to act as a consulting and coordinating staff for the Mayor in setting up, equipping, financing, supervising and completing of projects sponsored by the City in the Works Projects Administration. The termination of the Works Projects program made the Coordinating Division available for the duties of representing the Director of the Department of Public Works and the Chief of the Bureau of Engineering, Surveys and Zoning in various coordinating activities, including the conversion from fuel oil to coal burning units in City buildings, the joint highway program of the City of Philadelphia and the Commonwealth of Pennsylvania, and various dredging operations in the Schuylkill River.

These four divisions of the Bureau of Engineering, Surveys and Zoning are not completely detached from each other, and do not function independently. They are harmoniously coordinated into an united and effective working whole, capable of performing annually an unusual volume of work varying greatly in character and extent. Although the combined manpower is relatively small, and the salaries received are considerably below the standards now in force in private business employments, these factors have not affected the productiveness of the Bureau.

The Surveys, Zoning, Engineering and Coordinating divisions are served by an Accounting unit under the responsible charge of a Chief Clerk. The principal activities of this function include the bookkeeping, accounting, and auditing necessary in connection with the budget and loan appropriations to the Bureau, and for the estimates, requisitions, supplies, leases, contracts, payrolls, pensions, reports and other financial business under the jurisdiction of the Bureau, and the maintenance of the transportation facilities required by the different units, and complete service records of active and inactive personnel.

Considering the Bureau functions as a whole, there are other certain general activities performed that are worthy of record. These include the drafting of ordinances, agreements, deeds of dedication, reports to administrative heads and legislative committees concerning the City Plan, municipal improvements, municipal and State legislation and other subjects; participating in court and Board of View proceedings and in the meetings of the Fairmount Park Commission, the Board of Highway Supervisors, the Zoning Board of Adjustment, the Board of Surveyors, road day hearings on City Plan changes, the Utilities Technical Committee, and other special meetings; furnishing daily to a large number of the general public and to special business interests information concerning property surveys, City Plan and planning data, legal status of streets, property ownerships, zoning regulations, availability of sewer and stormwater drainage facilities, locations of drainage connections, bids and contract data, and other miscellaneous data; acting as a consultant in the laying out of new developments in drainage and highway projections and construction, in traffic controls and other municipal engineering problems.

A detailed account of the work done during the year 1944 by the various functional divisions of the Bureau of Engineering, Surveys and Zoning appears in the following description, which is supplemented at the end of the report by a statistical summarization of the activities of each unit. Included in this tabulation is the report of the Photographic and Blueprint Division of the Department of Public Works. While this unit is assigned to the Director's Office in the budget, it is most intimately associated with and supervised by the Bureau of Engineering, Surveys and Zoning.

## PERSONNEL

Progress in Title Reclassifications. - The new salary ratings proposed as the result of the title changes adopted January 1, 1943, were placed in effect under the 1944 budget appropriations. However, no final action was taken on the reclassification of assistants improperly graded in the Pennsylvania Economy League survey. After a number of conferences, the Bureau's recommendations as to corrections were approved by the Civil Service Commission and reported favorably by that body to the Finance Committee, in time for consideration with 1945 Budget requests. But, owing to uncertainties with respect to balancing the budget, all action on title changes was deferred until 1945. Furthermore, no approval was given to the reclassification of Loan employees, although the inclusion of this group under the new standards was urgently recommended. A compromise was effected for this group toward the end of the year, through the medium of a special appropriation made for post-war construction purposes.

Effects of Manpower Shortage. - War demands during the past year made it impossible to obtain urgently needed young assistants in the lower grades. The future of the Bureau hinges upon the periodic but regular induction of new and young blood into the personnel for training to replace highly efficient, but rapidly aging, employees who cannot much longer continue to carry the load.

The requirements of military service and the need for war production manpower continued to dominate the personnel problems throughout the year. By reason of the great number of war production industries in the Philadelphia region, the local manpower situation became so critical toward the close of 1944 as to threaten the efficiency of municipal technical functions in 1945. At the end of the current year, there were 35 employees in military service and 20 positions vacant with no available manpower to fill them.

An analysis recently made of the Surveys division indicated that of the 127 positions provided by the 1945 budget, 82 are filled by active employees and the remainder comprise 28 military and 17 real vacancies. The majority of the 82 Surveys assistants have long service records, i.e., 13.2 percent are more than 60 years of age, and 24.1 percent are more than 55 years of age. There are 3 employees in the entire number who are under 35 years of age, and only 13 whose age is less than 40 years.

Reorganization of Designing Division for Post-War Planning. - The 1944 budget for the Director's Office, Department of Public Works (Item 9) appropriated the sum of \$692,000 to the City Planning Commission for the preparation of plans, including Personal Services for City-wide capital improvements, including expenses incidental thereto (subject to future legislation). Ordinances of Council approved July 14, 1944 allocated from the said amount \$250,000 to the Bureau of Engineering, Surveys and Zoning (Item 43) for Personal Services, Equipment and Supplies, etc., required for the preparation of plans and specifications for post-war public works improvements. The specific projects for which this expenditure was intended included sewage disposal for the City, the completion of its airports, and the City-State highway and sanitary sewer programs.

In order to take advantage of the funds made available to the Bureau under Item 43 for the preparation of plans for post-war improvements, consideration was given to the expansion of the Designing Division. As a nucleus of the new organization, twelve assistants were transferred from budget positions and nineteen from various loan positions to the newly created Item 43. In addition, the Civil Service Commission was requested to establish eligible lists for fifteen different grades,



from which eleven appointments were made in 1944. Of these new appointments, three were promoted from the Surveys, and one from the Plans and Registry functions. Whereas, funds were made available to the City Planning Commission on January 1, 1944, the transfers of the \$250,000 to the Bureau for the actual preparation of plans was not completed until July, and difficulties encountered in the classification of the personnel to be employed under Item 43 so retarded the consideration of the Civil Service Commission that the first examination was not scheduled until September, and the first of the eligible lists not received until November. In view of these circumstances, the expansion of the new organization for the preparation of plans for post-war improvements did not get under way until the end of the year.

"In Service" Training of Employees. - This year marks the second year of the "In Service" Training Program conducted by the Institute of Local and State Government of the University of Pennsylvania, under the direction of Dr. Stephen B. Sweeney. This program was inaugurated in 1943 through the generosity of Mr. Samuel S. Fels, who made scholarships available for State, City, County, Township and Borough officials. In the first year of this program, the Bureau of Engineering, Surveys and Zoning recommended, and had admitted, five employees - one each from the Survey Districts, Registry Division and Zoning Division, and two from the City Plans Division. These employees were entered in the courses of Administrative Objectives and Administrative Practice. One of the employees of the City Plans Division was drafted into military service in mid-term; the other four employees completed the courses and received certificates.

During the past year, an additional course was made available by the Institute. Three of the four employees who completed the first year's work were admitted to the newly established course in City Planning as representatives of the Bureau; the fourth of such employees had become a member of the staff of the City Planning Commission, and although attending the course, was no longer a representative of this Bureau. In addition thereto, seven employees were recommended and admitted to courses in 1944. Five employees of the Survey Districts were admitted for the course in City Planning and the course in Administrative Practice; one employee each from the Registry Division and the Zoning Division were admitted to the course in Administrative Objectives and the course in Administrative Practice.

"In Service" Training has provided an unusual opportunity for broadening the knowledge and increasing the value to the Bureau of the selected employees. It is to be hoped that the opportunities for "In Service" Training will continue to be extended to this Bureau by the University of Pennsylvania.

#### CITY-STATE HIGHWAY PROGRAM

The war situation prevented the physical undertaking of any new highway projects during 1944. However, the important additions to the system in Southwest Philadelphia were completed, and progress made in the development and planning of others.

Essington Avenue (Island Avenue to the Philadelphia County line at Bow Creek).

The cost of this improvement to the Commonwealth and Public Roads Administration was \$469,127.10. The City's contribution under the agreement was the right-of-way exclusive of the traffic circle at an estimated cost of \$58,000.

Penrose-Moyamensing Avenue (500 feet southwest of Pattison Avenue to 126 feet east of 19th Street). The cost of the improvement was \$326,655.30, paid by the Commonwealth and \$2,369.95 by the City.

Ridge Avenue - was another improvement completed. The work done included resurfacing of this highway from Main Street to 29th Street. As the said work came under the classification of maintenance, there were no difficulties involved with the War Production Board. The improvement was done under contract by the Commonwealth at a total cost of \$102,590.43, of which \$65,000 was paid by the State for the shoulders, and \$37,590.43 by the City for track areas.

Vine Street - The condemnations of the entire right-of-way for the Vine Street project were completed during the current year, including the additional properties taken to improve the intersection of Ridge Avenue, Vine Street and Darien Street. The awards made to date total \$3,093,360. The demolition plans for the project were completed and proposal and specifications prepared, anticipating that this phase of the project would be started in the fall. However, for reasons of administrative policy, all work of demolition was postponed. Several isolated buildings condemned by the Bureau of Building Inspection were demolished and repairs made to others at a total cost of \$3,729.

A survey of the existing sewers within the lines of the proposed Vine Street improvement was made and a number found to be in a dangerous condition. Plans for the rebuilding of these structures were begun and nearly completed by the end of the year. The sewer reconstruction work required between Ninth Street and Broad Street will cost approximately \$75,000.

Some thought was given to the extension of Vine and Race Street improvements to Sixth Street, but the State Department of Highways would not accept these additions to the work as now planned. At the same time, the Art Jury gave preliminary consideration to the project as a whole and criticized certain of its elements. No final action was taken by this body for the reason that the Department of Public Works has not yet made a formal submission of the Vine Street plans to this body.

Low Grade Industrial Highway - Penrose Avenue section -

The completion in 1944 of the Essington and Penrose-Moyamensing Avenue sections of this route focused attention on the remaining unimproved portion of Penrose Avenue, i.e., from Island Avenue to a point west of Twenty-sixth Street. An important component of this next step in the overall project is the Penrose Avenue bridging of the Schuylkill River. Details of design were taken up seriously and several important issues settled. After considerable discussion, the Public Roads Administration finally approved, in principle, the four traffic lane design recommended by both the State Department of Highways and the Department of Public Works. A satisfactory decision was not reached until after an extensive traffic study was made jointly by the State Traffic Engineer, the local Bureau of Traffic, and the Bureau of Engineering, Surveys and Zoning.

While no agreement has been executed for the Penrose Avenue project within the limits now under discussion, it has been the understanding that the Commonwealth would assume all construction costs and the City provide the right-of-way and prepare the plans. Working on this basis, the City on October 28, 1944, retained Modjeski and Masters, Consulting Engineers, to undertake the preliminary surveys, supervise the borings, make an analysis of the factors involved, and report on the type of bridge structure recommended for the crossing of the Schuylkill River on the line of Penrose Avenue. Satisfactory progress was being made by the consultants at the end of the year.

5-1944

#### Delaware Avenue-Aramingo-Harbison Avenue section -

In order to thoroughly analyze the problems involved and determine the merit of these important elements of the Low Grade Industrial Highway, the State Department of Highways assigned a special consulting engineer to work with the Planning division of the Bureau of Engineering, Surveys and Zoning. By this means it was possible to make exhaustive studies, both in the field and in the office, of the many aspects of the improvements as a whole. A considerable amount of ground was covered in 1944, including discussion and analyses of the technical problems involved and interviews of all the large owners of property along the route.

The plan to be recommended to the State Department of Highways by its consultants calls for an elevated four-lane highway to extend from Oregon Avenue and Third Street to Harbison Avenue and Ditman Street, with but two breaks, i.e., one at the Port Richmond branch of the Reading Company, and the other at the Atlantic City bridge line of the Pennsylvania Railroad. It is proposed to bring the elevated highway down to the surface grades at both these railroads in the interests of economy. The limits of these surface sections are Lehigh Avenue to Somerset Street, and Luzerne Street to Duncan Street. The design suggests a number of points for traffic interchange where the viaduct meets important intersecting highways. Elevated sections were also planned for Harbison Avenue from Benner Street to Hale Street, and from Battersby Street to Hellerman Street, with an underpass and clover-leaf at the Roosevelt Boulevard.

#### AIRPORTS

Philadelphia's Municipal Airport, or as now being designated, the Southwest Philadelphia Airport, situated on Island Avenue between Essington Avenue and the Delaware River, closed to air transportation by the United States Government as a war emergency measure December 23, 1943, remained unopened throughout 1944. The City has consistently maintained that the only just compensation for the complete closure of the Southwest Philadelphia Airport, with the diversion of all its business, would be the substitution of "equal facilities" at the Northeast Philadelphia Airport, now under construction. By equal facilities is meant equivalent space accommodations, etc., as are necessary to permit the operation of the Northeast Philadelphia Airport upon the same high standard of service, efficiency and safety as marked the conduct of the Southwest Philadelphia Airport prior to its closing.

A large modern airport must meet high standards of safety and efficiency in order to justify its existence, and the Southwest Philadelphia Airport, up to the time of its closing, had successfully passed all such tests. Adjudged on the basis of freedom from air hazards, and the arrangement and condition of landing facilities, Philadelphia's airport ranked as one of the three best in the United States.

This City had been deprived of its important air terminal through no fault of its own. Moreover, it had no voice in the selection of the site for the Northeast Philadelphia Airport, and was practically compelled to participate in its improvement. Therefore, in all fairness, the Federal Government was requested to give the Northeast Philadelphia Airport at least all of the essential requirements for safe and efficient operations of the Southwest Philadelphia Airport.



The Southwest Philadelphia Airport represents an investment to date of \$12,735,380.80, comprising expenditures by the City amounting to \$5,328,094.15 and W.P.A. projects totaling \$7,407,286.65. Access to the Airport is provided by a modern system of major highways upon which \$1,597,427.47 have been expended to date. Further improvements to the approach highways are contemplated under postwar construction at considerable cost.

On December 16, 1944, the Civil Aeronautics Administration certified that the total allocation to date on the Northeast Philadelphia Airport project was \$2,482,540.38. The said amount included funds from three main sources, i.e., appropriations to the United States District Engineers Office, the C.A.A., and a special appropriation of \$200,000. approved by the President toward the completion of the airport. The improvements undertaken and certified to date against these allocations are as follows,--

- 1 - Clearing of the airfield of trees and houses at specific location and the grading of 330 acres out of a total of 545.345 acres. No provisions made for enclosing airfield.
- 2 - Construction of surface and subsurface drainage that is not entirely complete nor 100 per cent. effective.
- 3 - The construction of three hard surface runways 150 feet wide and 5,000 feet long, with connecting taxi-ways.
- 4 - Partial lighting systems for runways and other exterior and interior purposes. Boundary lines excluded and minimum provision for flood lighting.
- 5 - Unequipped Administration Building and Control Tower of extremely light temporary construction. No facilities for field operations included, radio remote control excluded. An ordinance of Council approved August 24, 1944, authorized the execution of a lease with the C.A.A. of a tract of ground containing 2.609 acres as a site for a radio range station to be installed by the C.A.A.
- 6 - Minimum facilities for handling passengers and baggage including loading apron, passenger concourse, gate enclosures, walkways, paved approaches, parking, etc.
- 7 - Unequipped auxiliary buildings to house ambulance and crash truck and to provide storage and repair facilities for airline companies. Also, a tetrahedron installation.
- 8 - There is but one source for lighting and power requirements. No provision made for an auxiliary source of electrical current in case of emergency.
- 9 - No field maintenance and emergency equipment provided.
- 10 - The sum of \$25,000. was set aside for clearing trees and buildings from flight zones established by the City under ordinance of Council approved August 31, 1944.



11 - No allocations for improvement of highway approaches or water and sanitary facilities.

Contracts for items 1, 2, 3, 4, and 8 were executed by the United States District Engineers Office in May of 1942. After the completion of this work certain imperfections were found in subsurface drainage and in runway paving, and a supplemental contract was begun on August 7, 1944 to remedy these defects. The said contract included additional work under items 1, 2, 3, 4, 6, and 8. The work under item 5 was started September 18, 1944 and under item 6 (excluding loading apron) on November 9, 1944. These contracts were not completed to date and no final figures are available as to the total costs. The installation of the tetrahedron is under contract, and the C.A.A. prepared the plans and will let contracts at the beginning of the year for the two auxiliary buildings that are also mentioned in Item 7.

Requests made by the City to the C.A.A. were refused for improvements under the various items listed, such as,--

- Item 1 - Boundary fence.
- Item 2 - Runway designations.
- Item 4 - Complete exterior lighting.
- Item 5 - Screens for the Administration Building, ventilation and equipment for Control Tower, transmitting and receiving antennae and remote radio control.
- Item 6 - Extension of east approach drive to limit of parking area.

As the reason given for the said refusal was lack of funds, further requests for items essential to the completion of the Airport have been withheld. While the C.A.A. lay stress upon the temporary nature of the improvement they are sponsoring at the Northeast Philadelphia Airport and are limiting the plant they are providing to the barest necessities, for operation, the fact remains that under their agreement the City is required to operate the airfield perpetually.

To date the City of Philadelphia has entered into commitments with respect to the Northeast Philadelphia Airport project approximating \$615,000. These include,--

(a) Acquisition of site comprising 545 acres	\$500,000.
(b) Condemnations consequential to removing obstructions	50,000.
(c) Construction of water and sanitary sewer facilities	60,000.
(d) Installing of P.A.X. telephone system in Administration Building	4,000.
(e) Extension of power lines into Administration Building	1,000.

In addition to the combined allocations to date by the C.A.A. and the City of Philadelphia, which total \$3,097,540.38, the Department of Public Works estimates that a further expenditure of \$225,000. will be required to complete the unfinished work at the Northeast Philadelphia Airport.

## FRANKFORD CREEK

The construction of a substantial and adequate channel to carry the flood waters of Frankford Creek is one of the important projects in the City's program of post-war public works improvements. Frankford Creek has a shore line nine miles long, and the project, which is, therefore, of considerable magnitude, involves a number of engineering and legal difficulties. The first step toward the permanent solution of this flood control problem was taken with the passage of an ordinance of Council approved August 9, 1944, which authorized "a revision of the City plan so as to establish thereon a right-of-way for the channelization of Frankford Creek as a measure for flood control and drainage, including the necessary revisions of the lines and grades of intersecting and adjacent streets, subject to the fulfillment of certain conditions".

By the terms of the said authorization, the Board of Surveyors is restrained from confirming new right-of-way and channel lines for Frankford Creek, until the fulfillment of five conditions, summarized as follows,—

- 1 - A grant by patent releasing to the City such portions of the bed of Frankford Creek within the lines of the right-of-way, as are in the title of the Commonwealth.
- 2 - The dedication to the City of private property situated within the said right-of-way.
- 3 - The release and assignment of all riparian rights in Frankford Creek to the City.
- 4 - The granting to the City of the right to enter upon abutting private property to permit the work of construction and maintenance operations.
- 5 - The submission to Council of a joint progress report by the Departments of Law and Works within six (6) months from the approval of the ordinance.

### Personnel Factor in Problem -

The establishment of lines and grades defining and fixing the right-of-way required for the channelization and maintenance of Frankford Creek is a task of such magnitude that the full six months stipulated were required to definitely locate lines which could be made the basis for negotiations with the property owners. An important factor which affected this task was the manpower situation in the Bureau of Engineering, Surveys and Zoning. The Engineering Bureau has suffered heavily by reason of war demands for military service and the situation is particularly acute in the Surveys division where the personnel has been reduced 25 per cent. from this cause. Furthermore, by reason of difficulties over the reclassification of titles and other delays, due to Civil Service requirements, it was impossible to obtain additional help under the newly created Item 43 for the preparation of post-war plans until December of 1944.

### Physical Elements of the Problem -

For many years Frankford Creek, during heavy storms, has periodically overflowed its banks, thereby causing much consequential damage to abutting property. The reasons for such floodings are found in a combination of basic conditions. These are,— the constant silting of the bed of the Creek by upstream scour and the washing downstream of debris, of all descriptions; the winding course of the Creek and the pronounced irregularities of its banks; and the inadequacy of its present cross-section to carry the large volume of flood water runoff from the watershed.

A related factor is that the territory drained contains an area of 35.5 square miles, of which 13 square miles lie within Montgomery County. Therefore, the effectiveness of the final solution will be dependent in part upon conditions maintained in another County, in which the City of Philadelphia has no jurisdiction. Following the passage of the Frankford Creek City plan revision ordinance, above quoted, the Bureau of Engineering, Surveys and Zoning conducted a survey of the Tacony Creek tributary of Frankford Creek. From this investigation, it was evident that the large quantities of silt deposited at various locations in the Frankford section of the water course was the result of bank erosion and alluvium washed down from the "Tookany Creek" watershed. Even if Frankford Creek is widened and straightened to eliminate damaging floods it will still be subject to silting and expensive maintenance unless the banks of Tacony, or "Tookany" Creek are properly protected.

Another cause of the heavy silting of Frankford Creek is the restriction, or damming of its channel by existing bridges. In order to eliminate these conditions, it will be necessary to reconstruct the following bridges,— Wingo-hocking street, Worrell street, Frankford avenue, Torresdale avenue, Pennsylvania Railroad siding bridge (Allegheny Iron and Metal Company), Pennsylvania Railroad (Frankford Street Railroad Bridge), Orthodox street, Bridge street, and the Pennsylvania Railroad Bridge (Kensington and Tacony Branch at the Delaware River). There is also included the construction of a new bridge on the line of Castor avenue crossing the channel of Frankford Creek, as proposed to be relocated, through Juniata Park.

A survey made by the United States Engineer Office in 1882 strongly recommended that something be done to correct the alignment and the irregularities in the banks of Frankford Creek. The main cause of the floodings at that time were attributed to the existing condition of the stream bed with respect to alignment and cross-section. These irregularities still exist at the present time and, in some instances, have been made worse by the dumping of dirt and other refuse from marginal private property. The whole course of the stream through one property has been changed by filling in on one side, thereby forcing the Creek to create a new channel by washing away the opposite bank.

The hydraulic surveys of the Creek show that its maximum capacity, without flooding to the point of damage, to be approximately as follows,—

Delaware River to Wakeling street	- about 2300 cu.ft. per second
Wakeling street to Church street	- " 1000 " " "
Church street to Pennsylvania Railroad	- " 1700 " " "
Pennsylvania Railroad to Tacony Creek	- " 2000 " " "

Whereas, the flow in Frankford Creek in very dry seasons may fall as low as six cubic feet per second, recorded storm flows indicate that the Creek has been forced to carry volumes varying from 5920 to 7800 cubic feet per second. This wide variation in the extremes of dry weather and storm flows presents a difficult engineering problem in the portion of the Creek above tidal range or northwest of Frankford avenue. The said variation will become much greater when, in the future, watershed conditions are developed so as to create the maximum of impervious or semi-impervious land uses. From studies made of storm intensities and future runoff conditions, it is recommended that the channel of Frankford Creek be so reconstructed as to provide an ultimate capacity of about 10,000 cubic feet per second at Ramona avenue (the head waters of Frankford Creek) and about 11,000 cubic feet per second capacity at Wakeling street.



In order to provide an adequate capacity for such a large increase above normal storm flows in Frankford Creek, it was necessary to give careful consideration to the matter of widths and location over its entire course between Tacony Creek and the Delaware River, or a distance of nearly 4.5 miles, because of the large number of properties and valuable industrial improvements involved. As the result of these studies, a tentative location of the new channel lines was established that would produce the best possible conditions of stream flow, consistent with the limiting factors.

#### Legal Status of Frankford Creek -

At the present time, the City of Philadelphia possesses no legal jurisdiction over the bed of Frankford Creek. Channel lines for this water-course were established and confirmed upon the City plan in widths varying from 80 to 100 feet, under seven revisions during the period 1885 to 1902. Such action was apparently the result of a survey of Frankford Creek, made in 1881 by William Ludlow, Captain of Engineers, who reported - "In the absence of shore lines established in conformity with the proper regulation of the stream, the highwater banks exhibit every form of irregularity. If the improvement of the Creek is to be undertaken these lines should be corrected and fixed without delay".

On July 8, 1941, the General Assembly of the Commonwealth of Pennsylvania repealed the Act of January 16, 1799, which had declared Frankford Creek to be a public highway from "the mouth thereof to Joseph I. Miller's land opposite the rail bridge across the Bristol road, or Main street in Frankford". The said repeal followed an Act of Congress, approved June 11, 1940, which declared Frankford Creek, in the City of Philadelphia, in the State of Pennsylvania, to be a non-navigable stream within the meaning of the Constitution and laws of the United States.

As it now stands, it appears that title to the portion of the bed of Frankford Creek covered by the tidal range is vested in the Commonwealth of Pennsylvania, through the agency of the Department of Internal Affairs, and that title to its bed above the said tidal range, with the exception of a small portion already condemned, is held in the ownership of a number of private persons.

#### Progress Made in Establishing New Right-of-Way and Channel Lines -

At the upstream end of Frankford Creek, from its junction with Tacony Creek to Castor avenue, it passes through Juniata Park Golf Course and makes the distinct "U" bend which required the construction of the two existing bridges on Wyoming avenue many years ago. It is deemed advisable, in the interest of flood control, to change and straighten the course of Frankford Creek between the two said points. This step will also eliminate the necessity for the future reconstruction of the two old concrete bridges on the line of Wyoming avenue, which are rapidly becoming obsolescent. The consent of the Commissioners of Fairmount Park is necessary for the proposed change of course, and this has been obtained. The entire length of the stream thus straightened through the golf course, including 900 feet of new channel necessary to eliminate the "U" bend above mentioned, is approximately 2850 feet, and the width determined upon is to be 90 feet. The length proposed to be abandoned is 2500 feet, located within both City and private property. It will be necessary to obtain releases covering the riparian rights of the owners of the private properties involved.



From Castor avenue to the Pennsylvania Railroad Bridge, a length of approximately 5550 feet, the channel width necessary is 100 feet. The right-of-way required for this channelization is 124 feet, allowing an additional width of 12 feet on each side for the purpose of constructing the necessary walls. From the said railroad bridge to a point near Bridge street, a distance of approximately 10,200 feet, a channel width of 120 feet within a right-of-way 150 feet wide, has been established allowing 15 feet wide margins for construction and maintenance purposes.

The two properties at the mouth of the Creek — Frankford Arsenal of the United States Government on the northerly side, and the Charles Lemig Company on the southerly side — are so extensively improved that the cost of establishing a 120 feet wide channel between them would be prohibitive. It has been tentatively decided, therefore, to reduce the channel width at this location to 110 feet for a distance of approximately 1600 feet at the mouth of the Creek. It may be impossible to provide a 110 feet wide channel through the entire length of these properties without some consequential damage to marginal tract structures.

After the establishment of tentative widths and locations, it was necessary to make actual field surveys along 90 per cent. of the entire length, or 3.8 miles. Additional men had to be assigned to the survey districts involved in order to accomplish this preliminary work. The field survey was for the dual purpose of establishing the channel lines mathematically, and to make such revisions of the tentative lines as were necessary to avoid, so far as possible, the taking of any buildings or structures, or portions thereof, which would make unreasonable demands on the abutting owners, and add to the difficulties of securing the required dedications and agreements.

After the surveys had progressed sufficiently to define the proposed lines, lengthy computations were required in order to determine the effect of the new channel and the right-of-way lines upon each individual marginal property and, at the same time, preliminary plans were prepared showing these property conditions for the public hearings, which are required by law for all City plan revisions. The hearings were scheduled and advertised for the lawfully required thirty days. The customary notice was given by the posting of placards along the entire affected length of Frankford Creek, and by six newspaper advertisements in each of three daily newspapers. The Northeast Philadelphia Chamber of Commerce assisted in the publicity by notifying all of the industries affected.

In order to give the large number of owners an opportunity to be heard, it was decided to hold three public hearings, which were scheduled for January 29, February 1, and February 5, 1945.

#### SEWAGE TREATMENT

The work of preparing plans for the City's three sewage treatment plants intercepting systems, pumping stations, etc., was energized toward the end of the year by the expansion and reclassification of the Designing division made possible by the allocation of funds under Item 43. The situation confronting the Bureau, with respect to this important project, is briefly outlined for perpetuation in the records.

At the present time, Philadelphia is discharging untreated sewage into the Delaware River to a total of 139 million gallons daily from 48 sewer outlets. This discharge carries solids amounting to 167 cu.yds. per day, of which about 120 cu.yds. are organic solids, the reduction of which is a tax upon the oxygen content of the river. In addition to this discharge is the effluent from the Northeast Sewage Treatment Works, averaging 65 million gallons daily. The Schuylkill River tributary is receiving a sewage discharge of 123 million gallons per day from 31 sewer outlets. The solids amount to 148 cu.yds. per day, of which about 105 cu.yds. are organic. Cobbs Creek receives the discharge of an intercepting sewer in the amount of 30 million gallons daily.

Prior to two years past, the sewage discharged to the Delaware River did not overload the river to a point where other communities were affected. The yearly average flow of the Delaware River at Torresdale is 14,000 second feet, with a mid-summer minimum of about 4600 second feet. Even after the New York diversion under the Supreme Court decision of 1931, there would still remain a guaranteed flow of 4,000 second feet at Philadelphia. The condition of the river waters at Central Philadelphia during the September and October period was a p.h. value of 6.9;; a b.o.d. of 40 p.p.m.; and total solids of 280 p.p.m. In mid-summer there were periods of zero oxygen in the section between Race street and League Island, causing odors along the waterfront. The river, however, had retained an oxygen content prior to being the source of water supply of any other community and conditions were not a health menace, although improvement was desirable.

The situation became extremely bad in 1944 as the result of a single industry operating under wartime expansion. The industrial discharge from this plant had a p.h. of 4.1; a b.o.d. of 19,600 p.p.m.; and total solids of 33,520 p.p.m. The total discharge of this industry was two and one-half million gallons daily, which constituted a contributing pollution equivalent to the sewage discharged from 2,445,000 persons. At the same time, the City of Philadelphia was discharging untreated sewage to the Delaware River from a contributing population of 850,000 persons, so that the effect of this industrial discharge was the same as if the city contributing population had been increased to 3,295,000 persons. It is true a screening installation was in use in the industry, but tests proved that the screens removed about 40 tons of solids per day but passed over 300 tons of solids per day to be discharged to the Delaware River to exhaust the oxygen and create nuisance conditions from Allegheny avenue on the north to the City of Chester on the south. The condition described still exists, although to a lesser degree, and work is proceeding under Federal funds on the installation of evaporating equipment to remove the polluting solids.

Up to the present time, there has been expended a total of \$25,100,000. on the treatment project. This covered the acquisition of property for the sites of three sewage treatment works, the construction of 57 miles of collecting conduits, and the Northeast Sewage Treatment Works to a capacity of 60 m.g.d.

To remove the entire sewage discharge from the water courses will require the construction of an additional 52 miles of collecting conduits and four pumping stations, the enlargement of the Northeast Works to a capacity

of 125 m.g.d., the construction of the Southwest Works to a capacity of 140 m.g.d., and the Southeast Works to a capacity of 133 m.g.d.

These facilities are estimated to require the expenditure of \$42,000,000. additional. It is proposed to obtain the capital mentioned through a loan which would be made self-supporting by the imposition of a sewer rental charge levied against properties having a connection to the drainage system. A charge of this kind was authorized by ordinance of Council approved April 20, 1944, to be effective on the first day of January following the borrowing or appropriation of funds for construction work. It is estimated to provide an income of \$6,000,000. in the fifth year after imposition, with a sliding scale to attain that sum. The charges are graduated on the scale of 6/10 of the bill in the first year; 7/10 in the second year; 8/10 in the third; 9/10 in the fourth; and full amount in the fifth and succeeding years.

The legality of the sewer use charges was promptly challenged in a Bill in Equity filed by a taxpayer and supported by eight real estate organizations. The City defense has been joined by the Commonwealth of Pennsylvania and about thirty-five organizations covering a wide range of purposes and civic and public advancement.

The pending court action is halting progress on the financing of any construction program but plans are in progress for the collecting system and treatment works. When construction work is possible, the City program calls for the enlargement of the Northeast Works and completion of the interception of sewage from the Delaware River within tidal influence of the water supply as the first step. This will be followed by the clearing up of the Schuylkill River between the Fairmount Dam and University Bridge. It is proposed to have the three treatment works in partial operation in the third year of the program and total completion in five years to the capacity needed at that time.

The treatment process proposed to be installed employs air to an extent to create a sedimentation floc only, since the diluting water available in the Delaware River is sufficient to absorb a certain amount of pollution. There would be no justification for incurring the expense under a complete system of treatment such as activated sludge.

The present Northeast Works consists of thirty-two Imhoff tanks arranged in four batteries of eight tanks each and having a capacity of sixty million gallons daily, with a three hour retention period in the tanks.

Under the new program the existing Imhoff tanks will be converted to primary sedimentation units with  $1\frac{1}{2}$  hour retention at a capacity of 125 million gallons per day. The primary settling tanks will be followed by aeration tanks with a flow through time of  $2\frac{1}{2}$  hours, using 3/10 cubic feet of air per gallon of sewage. These tanks will be followed by secondary sedimentation tanks with a retention time of two hours. It is proposed to return sludge from the secondary tanks to the influent of the primary sedimentation tanks to collecting tanks and heating prior to being pumped to the digestion units.

Provision will be made for the return of sewage to the aeration tanks should a higher degree of treatment be necessary when the full capacity of 300 million gallons a day will be attained at the Northeast Works.

Digestion will be two-stage and the digested sludge will be lagooned for the present time. It is proposed that the Southwest Works and the Southeast Works will be of similar design and operation, although operation may be on a scale of lower efficiency than the Northeast, but the installation will be capable of operation to the same scale as the Northeast plant, if found necessary.

At all plants, it is proposed to collect gas from the digestion tanks and utilize it for heating of the treatment works and the sludge prior to pumping to the digestors.

Experimental work previously conducted indicates that the proposed treatment process will provide a reduction of solids and a b.o.d. exceeding 75 per cent, which is considered sufficient with the dilution available and physical conditions of the Delaware River.

#### POST-WAR CONSTRUCTION PROGRAM

The ordinance of Council approved December 21, 1942, which authorized the creation of a Commission on City Planning provides in Section 7 that the said Commission on City Planning "shall submit to City Council on or before the fifteenth day of September of each year a program and an estimate of cost of the various projects and improvements which it recommends that the City undertake during the six calendar years next ensuing".

Pursuant with this requirement, the City Planning Commission on September 15, 1944 submitted to the Mayor and to Council its recommended program of improvements for the six year period 1945-50. There were 1108 projects specified at a cost of \$385,203,718. Of this number 604 projects, estimated to cost \$205,592,824. were definitely recommended for construction "because their need was self-evident". Also included in the total were 140 projects for repairs, replacements, etc., estimated to cost \$12,146,182. classified apart from new improvements. The remaining 364 projects were presented for the information of Council without definite recommendations but with the statement that they required further study.

The total number of projects submitted by the Department of Public Works was 848, estimated to cost \$238,720,600., of which 533, to cost \$158,129,269. exclusive of airports, came from the Bureau of Engineering, Surveys and Zoning as follows,--

<u>Project</u>	<u>No. of Projects</u>	<u>Total Estimated Cost</u>
Sewage collection and treatment program . . . . .	23	\$ 39,644,000.
Storm flood relief program . . . . .	10	17,326,000.
City-State highway program . . . . .	22	39,550,000.
Highway bridges . . . . .	15	4,700,000.

15-1944



<u>Project (cont'd)</u>	<u>No. of Projects</u>	<u>Total Estimated Cost</u>
City projects related to railroad terminal improvements . . . . .	5	\$12,317,000.
South Philadelphia railroad improvements; grade crossing eliminations . . . . .	3	2,850,000.
Sewage and drainage projects . . . . .	424	16,032,269.
Improvements to arterial highways . . . . .	31	25,710,000.
Airports . . . . .		10,700,000.
		<u>\$168,879,269.</u>

The projects in the above summary recommended to Council because their need was self-evident included,--

	<u>C.P.C. report 1944</u>
All of the 23 sewage treatment projects, estimated to cost . . . . . \$39,644,000.	(page 62)
Sewer and drainage projects, at a cost of . . . . . 14,032,269.	(pages 64 and 65)
All of the storm flood relief program, estimated to cost . . . . . 17,326,000.	(pages 65 & 66)
All of the City-State highway program, estimated to cost . . . . . 39,550,000.	(page 66)
All of the City projects relating to Railroad terminal improvements, estimated to cost . . . . . 12,317,000.	(page 66)
Northeast Phila. Airport improvements, at an estimated cost of . . . . . 785,000.	(page 67)
NOTE: No explanation is given in the C.P.C. report of the reason for separating Airport improvements from those programmed by the Bureau of Engineering, Surveys and Zoning.	
	<u>\$123,654,269.</u>

The projects proposed by the Bureau, recommended for further study by the City Planning Commission were,--

Sewer and drainage projects to cost . . . . . \$ 2,000,000.	(page 70)
All of the improvements to arterial highways estimated to cost . . . . . 25,710,000.	(page 73)
All highway bridges estimated to cost . . . . . 4,700,000.	(page 71)
South Philadelphia improvements and other grade crossing eliminations . . . . . 2,850,000.	(page 71)
Airport improvements . . . . . 9,965,000.	(page 72)
	<u>\$ 45,225,000.</u>
	<u>\$168,879,269.</u>

## POST-WAR PLANNING

The outstanding problem of 1944, in the field of planning, was the nationwide impulse for the completion of the maximum quantity of plans for necessary post-war public works projects. The aim was to make possible the execution of a volume of such improvements, sufficient to minimize unemployment during the period of reconversion that must follow immediately after the termination of the war. Considerable interest was directed upon local preparedness and anxiety felt over the ability of the City to meet its responsibilities toward post-war employment needs. By reason of the importance of the Bureau of Engineering, Surveys and Zoning as a public works planning function, a special study was made of the problem, primarily to determine the actual situation with respect to the quantitative production of plans for post-war construction. The results of this study are summarized as follows: The analysis began with three accepted basic assumptions. These were that,—

- 1 - For post-war prosperity there must be in the United States an annual national income of 150 billion dollars.
- 2 - The annual expenditure for public works improvements consistent with this income should be at least five billion dollars.
- 3 - The corresponding contribution of expenditures by the private construction industry, 10.2 billion dollars.

Comparison of Private and Public Works Construction  
in Billions of Dollars

	1929	1932	1941	1943	Post-War
Private Construction Industry	8.4	1.8	4.2	1.6	10.2
Public Works Construction Industry	2.1	1.8	6.2	5.5	5.0

Employment in private and public works construction is sometimes considered as divisible into the ratio of one on-site to two persons off-site. Local public works experience does not agree with this ratio, when labor costs are high and consideration given to the costs of engineering, contracts, insurance, bonds, profits, etc. The last mentioned items may represent an expenditure equal to 15 per cent. or more of the cost of materials.

On-site labor may equal 60 per cent. to 40 per cent. and materials 40 per cent to 60 per cent. of construction costs. It is assumed that the ratios of 60 per cent. labor and 40 per cent materials may apply in the post-war period. These figures are equivalent to an average annual salary of \$2,000. or 300 man years (on-site) for each one million dollars of construction costs. On the same basis, and assuming raw materials to cost 10 per cent, and engineering, contracts, insurance, bonds, profits, etc. 15 per cent, (a total of 25 per cent.) of total material costs, there would be 150 man years of off-site employment for processing, etc., in each one million dollars of construction costs. In other words, the ratio of on-site to off-site employment would be two to one under the conditions assumed.

No information is available as to how much construction work the City of Philadelphia could undertake in a single year, assuming there were no limitations as to funds, nor is there any way of determining the City's actual share in an annual five billion dollar public works program. Considered on the basis of population, the City would have to assume 1.5 per cent. of the total, or a program of 75 million dollars. It would be absolutely impossible to place this amount of work under contract in a single year, regardless of the source of funds.

A 75 million dollar public works program, assuming 60 per cent. labor and 40 per cent. materials, would provide employment for 22,500 persons on-site and 11,250 persons off-site.

Following the termination of the war the total actual demobilization is placed at 14½ million, with an increment of two million during the first year. Again assuming the problem on the basis of population proportions, the City of Philadelphia's participation in demobilization would be 217,500 for the total and 30,000 for the first year quota. The figures above mentioned relate to all forms of employment, whereas only three per cent. may be considered as public works employables. Such being the case, on the basis of total demobilization the City would be required to find employment for 4350 persons on-site and 2175 off-site in public works. In terms of a demobilization of two million persons the first year, the corresponding figures are 600 on-site and 300 off-site in public works.

It may be assumed that the City will be fortunate if it can place 30 million dollars (highways ten million, sewage seven million, water six million, other projects seven million) of construction work under contract in the first post-war year. In terms of 60 per cent labor and 40 per cent. materials, the employment thus provided would be nine thousand man years on-site and 4500 man years off-site.

#### Recapitulation

An annual 30 million dollar Program - 2 million Demobilization  
first year - 14-1/2 million total demobilization

	<u>On-site</u>	<u>Off-site</u>
Employment available . . . . .	9000	4500
Minimum employables available . . . . .	600	300
Maximum employables available . . . . .	4350	2175

From the above tabulation, it is evident that if the City's liability to provide employment when demobilization is under way approximates its pro-rata share (population percentages), a 15 million dollar annual program would be sufficient to accommodate the total.

It is of interest to compare these figures with the recommendations of the City Planning Commission for its six-year program of construction. The recommended projects would require a total expenditure of \$205,592,824. on all-departmental basis and \$123,654,269. of projects proposed by the Bureau of

Engineering, Surveys and Zoning. In terms of annual expenditures, the amounts required would be \$34,265,471. all-departmental and \$20,609,045. for the Bureau. At the present rate of progress, it is believed that the Bureau of Engineering, Surveys and Zoning will have plans completed for nearly double this amount of construction work by the beginning of the first post-war year.

The conclusions reached from this study are that,--

- 1 - Public Works can take only a small, but vital, share of potential employment during reconversion.
- 2 - The constantly increasing backlog of maintenance, including municipal housekeeping and reconstruction tasks, can furnish a considerable amount of employment for a helpful period of time.
- 3 - The real local problem is not so much that of preparedness in terms of completed plans, but the ability of the construction industry under post-war conditions to undertake the great volume of work planned.

An illustration of the kind of factor that may determine the volume of post-war construction work that can be performed is found in the laying of sewer brick. Since 1930, the total number of Union sewer bricklayers has decreased from nearly forty to less than twenty, without any apparent effort being made to rebuild this organization. At the present time, there are but sixteen active sewer bricklayers, which number has proven wholly inadequate to meet the requirements of recent sanitary sewer programs. The annual volume of sewer construction possible in post-war years will be determined by this factor rather than the ability of the Bureau to prepare plans and of the City to appropriate the necessary funds.

Another conclusion reached was that it will be exceedingly difficult to maintain a six-year post-war construction program according to schedule. By reason of the urge to give maximum employment during the reconversion period, the volume of projects proposed has been multiplied and scheduled so as to compress work that would require normally from ten to fifteen years for completion into a six-year period. This pyramiding of proposed improvements, intended to serve thickly populated centres, such as exist in Philadelphia, will produce complications in timing with resulting delays and overlapping of annual programs. Another observation is that strict economy must be followed in the planning and construction of individual elements as the number of projects increases.

In summing up the situation with respect to post-war planning at the end of 1944, it seems certain that the Bureau will be ready on call with a large volume of plans for public works construction. The real uncertainties to be faced are the means of financing the large amount of work recommended; the ability of the construction industry to carry on the work; and the effect of post-war labor, equipment and material conditions on the time schedule of the program.



## SURVEYS DIVISION

Board of Surveyors. The Board of Surveyors, which the City Charter requires "shall be attached to, and be a part of, the Department of Public Works", is an integral part of the Bureau of Engineering, Surveys and Zoning. As constituted by the Act of Consolidation of 1854 and subsequent Acts, including the present City Charter, it consists of the Surveyors and Regulators of the various Survey Districts, with the Chief Engineer and Surveyor as President, and the Assistant Chief Engineer and Surveyor as Vice-President.

The Board of Surveyors, under authority of City Council, and with the powers granted and duties imposed on it by various Acts of Assembly, is the body through which control of the official City Plan is exercised.

The Board held twenty-one (21) meetings, at which it reported on twenty-two (22) ordinances. The Board held public hearings on twenty-six (26) City Plan changes and confirmed twenty-five (25) City Plans. Six (6) plans were marked void. Nine (9) street railway plans were approved.

Of the twenty-five (25) City plans confirmed,

5	were	in	connection	with	extension	of	industrial	plants			
3	"	"	"	"	"	"	public	housing			
3	"	"	"	"	"	"	the	City-State	highway	program	
3	"	"	"	"	"	"	private	dwelling	development		
2	"	"	"	"	"	"	main	sewer	construction		
1	was	"	"	"	"	"	development	of	a	school	site
1	"	"	"	"	"	"	development	of	a	commercial	site
7	were	for	miscellaneous	purposes							

Of the five City plans confirmed in connection with the extension of industrial plants, probably the most noteworthy plan was the plan striking and revising certain streets in the 40th Ward, near 77th Street and Island Avenue. This plan embraced an area of about 43 acres. It is proposed to erect on this land a modern industrial building in the post-war era.

Worthy of note among the three City plans confirmed in connection with the City-State highway program was the City plan establishing new lines of Penrose Avenue from 24th Street and Pattison Avenue to 20th Street and Packer Avenue. This is a diagonal intersecting a gridiron system of public and private streets, and is portion of State Highway Route 67023.

## SURVEY DISTRICTS

Cash Receipts. The cash receipts of the Survey Districts were \$56069.36, as compared to \$60758.29 in 1943. The cash receipts as an index of activities represents only that portion of the District work which is performed for private parties. Many thousands of dollars worth of surveying work is performed in connection with City contracts for which no cash charge is made.

Personnel. The personnel problems in the year 1944 became more aggravating; the difficulties of properly manning the Survey Districts became more acute. In addition to the continuing problem of men in military service and the impossibility of obtaining replacements, another situation arose to further deplete the District forces. A number of competent and experienced Surveyors

District employees were attracted by the opportunities presented in the organization of a staff for planning post-war improvements. It is unfortunate that in order to build up one activity of the Bureau, serious handicaps must be imposed on another activity.

General Activities. - The picture presented by the general activities is one of overall decrease in work performed by the Districts. In spite of the general decrease, the number of conveyance surveys made shows an astonishing increase, especially in the matter of surveying valuable central City real estate. Surveying for building purposes decreased. The number of farm surveys was less than half of the previous year's work. Lines and grades furnished for curbs showed a slight increase. Surveying work done in connection with alleys and driveways - which involves plans made, lines and grades furnished, and assessment bills prepared - was less than half of the preceding year. City plans prepared, both large and small, reflected an increase. Fewer plans were made for the Board of View, as the condemnation of property has been reduced almost to the vanishing point. Fewer preliminary plans were made for sewers, although more lines and grades were furnished for sewers under construction. Activities in connection with the improvement of the water supply required the making of many more preliminary plans showing physical conditions.

All surveying activities in regard to grading, paving and repaving of streets showed a considerable decrease. This includes the work of making plans and estimates and furnishing lines and grades. The cost of completed municipal contracts shows a considerable overall shrinkage, the only increase being in the amounts expended for the construction of sewers.

First District. - The work in this District, for private individuals, continued to show a falling off, the cash receipts being about half the amount of the previous year. The volume of municipal construction work in this District, however, exceeded any of the other Districts. The Bureau's programs to eliminate unsanitary drainage conditions in the Burholme, Rhawnhurst and Fox Chase sections, and the work involving the preliminary plans, lines and grades, and preparation of assessment bills for sewer construction, greatly increased over the previous year. An unusual item of work in this District was the preparation of a plan and estimate for grading Holmesburg quarry, which required the measuring of grading involving 36730 yards of cut and 34000 yards of fill.

Second District. The work in this District was routine in character. An area of about 810 acres was monumented by the setting of 43 surveyor's monuments. The area covered three City Plans.

The precise level circuit being established in the lower or southern section of the district was extended from the master benchmark in the abutment of the bridge on the line of Broad Street over the Six-Track Joint Line, to connect with the level circuit of the West Philadelphia District, the connection being made at 74th Street and Penrose Avenue, also with a United States Coast and Geodetic Survey benchmark in the abutment of the present bridge over the Schuylkill River on the line of the old Penrose Ferry Road.

This District was one of the sufferers from manpower troubles; two of the experienced assistants qualified for, and were appointed to, positions in the post-war improvement program.

Third District. - This is the central City district, and is the district which has had to bear the full brunt of the increase of conveyance surveys. The number of conveyance surveys ordered in this district shows a considerable increase over the previous year. The majority of the surveys ordered were extremely difficult surveys of large central City buildings. The difficulties of turning out these surveys within a reasonable time was also added to by the serious illness of the District Surveyor, Mr. William H. H. Ogden, Jr., during the latter part of the year.

Fourth District. - The normal work in this District was augmented to an extent which required the transfer of several additional employees from other survey districts. The cause of the increased activity was the necessity which was forced upon the City of completing the Northeast Philadelphia Airport. Many surveys, plans and estimates were required to be made in the shortest possible time. A new and unusual activity in which this district was called on to participate was made necessary by the approval of an Ordinance August 31, 1944, which required the removal of obstructions in flight zones in connection with the Northeast Philadelphia Airport. This required very extensive surveys to determine the location and height of all buildings, trees and poles within the flight zone lines, and in relation to the angle of rise from the end of each runway. This required the making of 10 plans of the properties thus affected, covering about 60 acres. This District was also required to serve the formal notices on property owners in relation to the removal of obstructions.

It should be recorded here that the District Surveyor, Mr. Edward J. Dauner, who had a long record of service in this Bureau, died on March 20, 1944. Mr. William T. Tyson, Senior Surveyor, was promptly appointed Acting Surveyor, and directed the work of the District until August 1, 1944, when Mr. Louis Schneider was appointed District Surveyor.

Fifth District. - The routine work of this District fell off considerably during the past year, although there was considerable municipal contract work performed in the District. It was one of the five districts in which sewers were constructed, and ranked fourth in the volume of such work.

The approval of an ordinance, on August 9, 1944, which authorized the placing on the City Plan, under certain conditions, of lines and grades for the channelization of Frankford Creek, involved this District in the making of precise surveys for the establishment of such lines and grades. This work, which engaged the activities of most of the District forces, and a large part of the personal time of the District Surveyor, was still under way at the end of the year.

Sixth District. - The routine work in this District, as a whole, shows a decrease; in the category of conveyance surveys, however, the work shows a decided increase. The volume of conveyance survey work done during the past year in this District has been exceeded by only a few previous peak years. This District is also involved in the establishment of lines and grades for the channelization of Frankford Creek, although not to the extent required of the Fifth District and the Eighth District. This District was also able to help out this project by assigning one of its employees to the Eighth District to assist in the making of field surveys of the lines of Frankford Creek.

Seventh District. - This is another District which shows a general decrease except in the matter of conveyance surveys, which increased. A Board of View plan was prepared for the opening of Essington Avenue from the traffic circle at Island Avenue to the County Line in connection with the City-State program for highway improvements. This plan comprised 117 properties which were 144 acres in extent. A contract for concrete gutters and appurtenant drainage work in the 40th Ward was completed. This type of work is peculiar to this District, and, due to the flat grades involved, requires more than usual care in the giving of lines and grades. This contract was for Lyons Avenue from Island Avenue to the summit between 78th and 79th Streets, and in 78th Street from Lyons Avenue to Dicks Avenue.

Eighth District. - The routine work of this District continued to fall off. In the early part of the year, this District assisted the Fourth District in the making of flight zone obstruction surveys. The major portion of the work involved in the Frankford Creek channelization surveys was located in this District. A special assistant was appointed under the post-war program to assist in this work. An assistant was also assigned temporarily from the Sixth District. The direction of this work, however, falls on the District Surveyor personally, who must spend a large portion of his own time in directing the detail work. This work is still in progress.

Ninth District. - This District was outstanding among the other Districts in showing a considerable increase in cash receipts and a general increase in work in all categories. In the field of City Planning, considerable progress was made toward the establishment of Cathedral Road across the upper Wissahickon Valley. A considerable amount of field surveying was done through the rugged Wissahickon Valley terrain. Studies of lines and grades for Cathedral Road were pursued until it was possible to prepare an ordinance. The ordinance was approved by City Council, a public hearing was held by the Board of Surveyors, and the City Plan is now almost ready for confirmation. The establishment of lines and grades for Cathedral Road has now advanced to the point where it is possible to make studies for the bridge design.

#### REGISTRY DIVISION

The annual statistical report submitted herewith can best be analyzed if the important functions performed by the division are separated into groups.

##### GROUP 1 - Activities in the Book Room

Regarding straight transfers of title to real estate, there was an increase in volume of 14% over the previous year. 67,053 transfers in 1944 was the largest for any single year since 1928 when 69,475 transfers were entered.

1928 -	69,475	transfers
1943 -	59,062	"
1944 -	67,053	"

The number of title transfers parcelling smaller tracts, usually to permit new construction, was practically the same in 1944 as in the previous year, there being a decrease of only 56 entries of this character.

1943 -	2,665	originals
1944 -	2,609	"



During the year 1944 there were entered on the registry records eight judgments on Declarations of Takings or Amended Judgments on Declarations of Taking by the National Government.

Location

- |  |           |
|--|-----------|
| 1 - West from 8th Street north of Fishers Avenue                         | (amended) |
| 2 - Martins Mill Road and Oxford Avenue<br>(Naval Aviation Supply Depot) | "         |
| 3 - Both sides Fort Mifflin Road southwest of<br>Penrose Ferry Road      | "         |
| 4 - Vane and Oregon Avenues - 20th & Johnson Streets                     | "         |
| 5 - South side Chestnut Street west of 30th Street                       |           |
| 6 - East side 36th Street north of Sansom Street                         |           |
| 7 - West side 16th Street south of Lombard Street                        |           |
| 8 - North side Palmer Street, Delaware Avenue to Beach Street            |           |

GROUP 2 - Activities in the Plans and Legal Records Room

In this section thirty-four plans showing registered owners and legal status of streets and roads were prepared for various City departments, and deeds of dedication and sketches covering portions of the beds of streets proposed to be dedicated were drawn up.

Advertising data were prepared to legally advertise public hearings on twenty-six (26) City Plan changes. Twenty-five (25) confirmed City plans were indexed and filed and the changes noted on the books, maps and cards. Legal openings affecting fifty-four (54) streets were filed in this division, and books, maps and cards likewise revised.

606 City Plans were loaned out to the various Bureaus and Divisions.

During the year the assistants in this section made forty-three (43) appearances in court as custodians of the City Plan, legal openings and title records.

Sixteen (16) new registry plates to replace worn plates were drawn.

The new counter maps and card records showing legal status of streets and roads are nearly completed. There remains only 50% of the mapwork to be checked before placing the maps in use. This work was started in 1942 with W.P.A. forces and left unfinished when W.P.A. terminated in April 1943.

Regarding the legal opening of streets taking place during 1944, there were prepared deeds of dedication embracing the beds of main streets and drainage rights-of-way serving three housing projects. The projects were the Abbottsford Homes Site, Bartram Gardens, and Oxford Village. The deeds were approved in connection with the City Plan revisions of the three sites, as authorized by Council.

GROUP 3. - Activities of the Board of Surveyors

The Chief Engineering Clerk of the Registry Division is also the Secretary of the Board of Surveyors. This fact, coupled with the fact that all plans acted on by the Board are filed and become a permanent record in

the Registry Division, makes a considerable contribution to the Division activities. An analysis of the character of the City Plans which were confirmed has been included in the report of the Surveys Division.

#### CITY PLANS DIVISION

City-State Highway Program. - The Division continued work on the post-war five-year program in addition to several detail studies of intersectional channelization. Since October, a Department of Highways location engineer has been quartered in the division, making a study and report for the Oregon-Delaware - Aramingo - Harbison Avenue improvement. The Division has collaborated in supplying much information and drafting assistance.

Route Study - Delaware - Aramingo, etc.

Penrose Avenue - Island Avenue to 26th Street  
Roosevelt Boulevard, Broad Street to Oxford Circle  
Adams, Godfrey - Broad Street to Roosevelt Boulevard

Intersectional Study - 34th Street at Grays Ferry Avenue

Hunting Park at East River Drive  
Broad Street and Spring Garden Street  
Broad Street and Olney Avenue

City Plan Revisions. - Studies were completed during the year preliminary to the confirmation of a revised City Plan. This included some trigonometric calculations:

Castor Avenue and Sepviva Street  
Castor Avenue at the Frankford Creek  
Oxford Road area at Napfle Street  
Point Breeze Avenue at 24th Street  
Academy Road at the Northeast Philadelphia Airport  
Bingham Street at Napfle Street

Several sub-division projects were examined for developers and the Survey Districts:

Academy Road and Comly Road  
Bustleton and Byberry Roads  
47th Street and Woodland Avenue

During the year the Bureau was asked to study and recommend legislation for Subdivision Regulation and City Plan legislative codification. Committees composed of the District Surveyors headed by a coordinating committee under the Assistant Chief Engineer and Surveyor were assigned to the task. The division head collaborated as secretary of the Subdivision Committee and Coordinating Committee, and helped in the study and research on the problem of Subdivision Regulations.

Plans - Maps - Information. - The Division furnished plans, maps and various information services to 101 private corporations and individuals; also to 160 City Departments, Bureaus and Divisions, including County offices, City Council, Board of Education, Authorities, Commissions, Courts, etc., also to 40 U.S. Governmental agencies and the various branches of the armed forces;

also, 21 contacts were made with the Department of Highways of Pennsylvania; also 32 public utilities and 42 services to miscellaneous groups such as colleges, churches, architects, etc.

In addition, loans of plans, equipment, technical books and articles, charts, etc., were furnished 134 times during the year.

City Sectional Maps and Other Records. The Division issued sectional maps and other records during the year in large numbers.

Some of the blueprint paper required was furnished by the parties receiving the prints, but all the reproducing labor was done by the Public Works Photographer with his equipment. One hundred ninety (190) orders were issued by the Division to cover this reproduction work.

<u>Issued</u>	<u>No Charge</u>	<u>Fee</u>
Land Use Maps (108 plates) 200' scale	775	270 - \$127.00
Land Use Charts (3 plates)	3	
Ward Maps (137 plates) 200' scale	2	
Street Maps (39 plates) 500' scale	458	16 - 4.00
Street Maps 21 " 1000' "	422	63 - 7.50
Street Maps 21 " 1600' "	245	63 - 4.50
Street Maps 3 " 1600' "	125	11 - 8.25
Street Data Maps (39 plates) 500' scale	419	39 - 12.00
Zoning Maps 39 " 500' "	2	39 - 19.00
Other Records (various scales)	555	16 - 53.15
Photographic Prints 8" x 10"	164	
" " 14" x 17"	105	
Hunter Electro Copies (various sizes)	207	
Civilian Defense Council	18	
<b>Total -</b>	<b>3,500</b>	<b>516 \$235.40</b>

The small percentage of records which were paid for would grow larger if an ordinance establishing fees was enacted.

During the year these maps records required changes and revisions as follows:

From Zoning permits	88
" Use Regulation permits	787
" Demolition permits	108
" Registry records	74
" Miscellaneous records	104
" Street Numbering records	21
" General changes	143
" Confirmation of City Plans	130
" Deeds of Dedication and other openings	39
" Grading and Paving Records	55
<b>Total -</b>	<b>1,550 revisions</b>

Civilian Defense. - The services needed by the Civilian Defense Corps were very small during the year, and the termination of the Corps around the end of the year has brought this activity to an end.

City Planning Commission. - The Division cooperated in furnishing many of its maps and records to the Commission. Sixty-four (64) contacts were made with the Commission personnel in supplying their requirements.

The Division head serves as County representative to the C.P.C. Regional Airport Committee.

Information was furnished to check a Park and Recreational study being made by the Commission.

A State Highway five-year post-war program map was prepared to accompany the Transportation Committee's Report.

Help was given in formulating methods for programming projects on map records.

Statistical Charts and Research. - Councilmanic District Chart and personnel was prepared. Research for correcting the 1854 Consolidation Map. Chart of number of employees of City of Philadelphia in various functions compared to next eleven cities. Research of negro population data and other subjects were carried out during the year.

Reports and Memoranda. - Reports and memoranda were prepared for the Chief and Assistant Chief Engineer, relating to the City-State highway program and other problems.

Lectures and Exhibits. - Material was prepared to aid the Chief Engineer and Surveyor in his lecture and exhibit activities, such as

City Planning conference at the University of Pennsylvania  
Lecture to group of realtors

The Division head prepared and delivered a short talk on Subdivision and Neighborhood Planning for an A.S.C.E and A.P.W.A. joint meeting.

Several of the Bureau personnel are attending a course on City Planning at the Institute of Local and State Government, University of Pennsylvania. The Division head has aided in this course with talks and comments as well as attending as a student.

Personnel. - Personnel for the Division has been very changeable during the year. One man was drafted into the Army, another replacement for him was reassigned to a District shortly afterward. Another man resigned for a promotion to the City Planning Commission. A map draftsman was appointed in October, and three designing draftsmen in December. Only one draftsman was with the Division during the entire year. Only during December was the Division fully staffed.

Other Activities. - Work was carried out in designing entrances and parking, general obstruction plan and other phases in the development of the Northeast Airport.

The 3-plate 1600-ft. scale map of the City was prepared.

A study for Curtis Mall was prepared.

Plans were made for the Hog Island area and Southwest Airport area.

Geographic spread of the negro population was prepared for the Police Bureau on police district maps.



A tour map for a trip by Governor Martin and interested officials and citizens along the riverfront and through the City was prepared. Regional maps and small scale airport plans were prepared at the request of the Chamber of Commerce, for stating their case for consideration of Philadelphia as an airport terminal to the Federal officials at Washington.

Small scale maps of proposed changes in election divisions were prepared for a Councilman.

Other tasks, exceptional to the more regular ones of the Division, were carried out during the year for various other private interests and Bureau divisions.

#### ZONING DIVISION

The activities of the Zoning Division in general show a decrease. For the first time in the history of the Zoning Division, the number of Use Registration Permits issued was in excess of the Zoning Permits. The number of Zoning permits issued declined almost 60%, while the Use Registration permits issued remained almost stationary, declining only 3%. The reason for this state of affairs is apparently that the war effort has brought construction work almost to a halt, while the same war effort continues its prevailing trend towards altering single family dwellings into multiple dwellings in order to house war workers.

The Zoning Division continues to be afflicted with more personnel difficulties than any other Division in the Bureau. The normal complement of the Zoning Division is 10 employees. The loss, in August, of the Assistant Chief of the Zoning Division, who became a member of the staff of the City Planning Commission, has reduced the staff to five employees, only two of whom, including the Chief of the Division, have been with the Division since it was first organized in 1933. As one of the employees is the Zoning Inspector, who must spend much of his time in the field, the Chief of the Division actually has only three employees to assist in the office work. Certain phases of record-keeping, some of which are of real importance, simply cannot be maintained. The small existing staff is forced to expend all its efforts in giving actual service to the public in the matter of issuance of permits, while a backlog of record-keeping piles up. If the record-keeping is much longer neglected, the liability for error in the issuance of permits will be greatly increased, due to a lack of availability of records of action taken in the past.

#### ENGINEERING DIVISION

Design. - The activities of the Design Division during the year included the preparation of plans for sewers, sewage disposal projects, other drainage projects; highway bridges and viaducts; highway bridge and wharf repairs; Northeast Philadelphia Airport; street improvements; the preparation of reports on drainage and flooding; preliminary sewer estimates; maintenance of drainage maps; investigation and approval of applications by utility companies and others for permits for underground structures in the streets, such as conduits, pipes, tunnels, vaults and new railroad siding locations,

for possible interference with existing or proposed drainage structures, and for strength of proposed structures; checking and approval of proposed structures, marquees, canopies, etc., projecting within the street lines; checking routes for heavy hauling for strength and clearance of bridge structures; checking and approval of railroad bridge plans across city streets and inspection of highway bridges over the Reading Railroad.

During the year 1944, the Design Division had 150 assignments, most of which are listed in the statistical portion of this report.

Sewers (private). - The construction of sewers by operative builders at private cost was limited during the greater part of the year to that required for housing considered essential to the war effort. Plans and specifications were prepared by the Design Division for six sewers of this type.

Sewers (public). - The planning and construction of public sewers to relieve sections where lack of drainage resulted in unsanitary conditions, as prosecuted during the year, was authorized under ordinance of City Council of 1937, and subsequent years, including a number of ordinances in 1944. Plans, estimates and specifications have been prepared under these ordinances during the year for 42 new sewers.

Sandy Run Main Sewer Extension. - The extension of this sewer system above Summerdale Avenue was restricted to the construction of sanitary pipe sewers by the War Production Board. The main sewer in Faunce Street from Summerdale Avenue to Tabor Avenue, and a number of branch sewers along this extension were completed during 1944. Bids were taken for the construction of the main sanitary sewer in Tabor Avenue and in Napfle Avenue to Verree Road. Plans were completed for the extension of the main sanitary sewer above Verree Road, in Ferndale Street, Hartel Avenue, Hasbrook Avenue, Oxford Avenue, and Pine Road, and for numerous branch sewers along this extension.

During the year the construction of all sewers was subject to the issuance of contract preference ratings by the War Production Board. The preparation of applications for this purpose required complete material lists and cost estimates for each project, which entailed a large amount of work by the Division; material and cost data was prepared for 27 projects; and 15 such applications were filed during the year and priorities granted on 8. In general, the issuance of a contract preference rating was governed by the relation of the proposed work to the war effort, and projects having no direct relation to the war effort were discouraged.

Burholme Park Sewer System. - The construction of sanitary pipe outlet sewer extending from Cottman Avenue and Orville Avenue through Burholme Park and in Fillmore Street to Napfle Avenue, and the separate system main sewer in Napfle Avenue and Burholme Avenue to Borbeck Street was completed in 1944. The sewage from this area was connected to the Cheltenham Township Intercepting Sewer at Cottman Avenue and the sewage meter installed by the Township. Plans have been prepared during the year for the branches of this system to complete the drainage for the developed portion of the area.

State Highway Improvements. - Construction work on this program has been virtually discontinued for the duration of the war. The improvement of Penrose Avenue from south of Pattison Avenue to Moyamensing Avenue, and Moyamensing Avenue to 19th Street, was completed during the year. This highway is an important link to the Navy Yard. Plans were prepared by the Division for electrical conduits for lighting and traffic control for this project in 1944. State Highway Department plans were completed during the year for Island Avenue, Eastwick Avenue to Buist Avenue, and for Vare Avenue, Passyunk Avenue to 34th Street, and 34th Street to Grays Ferry Avenue, and checked by this Division. For these projects the Division had previously furnished plans for stormwater drainage, and sewers, electrical conduits for lighting and traffic control, etc.

Plans for the improvement of Vine Street from 6th Street to 18th Street, Ridge Avenue from Race Street to Vine Street, Race Street from 6th Street to 8th Street, are being prepared by this Division. An inspection of the existing sewers on this project was made by the Highway Bureau and it was found desirable to reconstruct the sewers reported in bad condition. Plans are now being prepared for the reconstruction of sewers in Vine Street from Broad Street to Darien Street. In most cases these old sewers are shallow, and will be reconstructed at normal depth, where the existing outlet sewers permit.

Drainage Studies. - Investigations and reports were made on various drainage problems including the effect upon the drainage system and surface drainage of proposed revisions to the City Plan, as striking off or placing on of certain streets; the drainage of proposed private developments; Federal installations, etc.; investigation of capacity of outlet sewers for possible additions to planned drainage areas; flooding investigations to determine cause and possible remedy. Altogether 35 such studies were made in 1944.

Preliminary Sewer Estimates. - Numerous estimates were made during the year for the construction and reconstruction of sewers, stormwater drains, etc.

Frankford Creek Improvement. - Since the work of channel restoration on the Frankford Creek between Leiper Street and Ashland Street was completed in 1943, succeeding storms have deposited silt at such points as Frankford and Torresdale Avenues with a gradual restriction of the channel.

A field inspection was made in 1944, along the Frankford and Tacony Creeks in the City and in Cheltenham Township, to determine the source of the silt which deposits at and near Frankford Avenue after every highwater. This evidently results from the erosion of the creek banks. Between Frankford Avenue and Wingohocking Street, the creek channel has been restricted by filling operations principally on the west bank, with evidence of erosion. Above this point erosion of the banks was a natural one, except for such locations as Ramona Avenue, Ashdale Street and Bingham Street, where the high velocity of discharge from the large sewers in these streets had cut the banks away. To remedy this condition will require the construction of full height walls between Frankford Avenue and Wingohocking Street; the protection of all creek banks on sewer curves from Wingohocking Street to Cheltenham by walls along the outside banks; the construction of heavy walls at Ramona Avenue, Ashdale Street and Bingham Street sewer outlets and the construction of storage dams which will slow the velocity enough to deposit the silt.



During 1944, plans have been considerably advanced for the establishment of new channel lines for the widening of the Creek to provide greater capacity for storm flows. At Castor Avenue a bridge is being planned for this major traffic artery, and a revision of the Creek channel to remove the loop crossing Wyoming Avenue has been proposed. This will result in a right angle crossing for Castor Avenue which will reduce the space required for the proposed bridge. It will also eliminate the two Wyoming Avenue bridges which are getting old and will require increasingly heavy maintenance. It will also result in a distinct advantage to the Juniata Golf Course, and enhance the sporting value of that course by introducing two water hazards and increasing the present par of 67 to 72.

Northeast Philadelphia Airport. - The Northeast Airport established by the Civil Aeronautics Authority required work on the part of the City to provide sanitary drainage, water facilities, access road improvements, etc.

Plans were prepared for a small sewage pumping station, collecting sewers and a six-inch cast iron force main extending to Academy Road and in Academy Road to the existing sewer at Frankford Avenue. Use was made of an abandoned six-inch water main in Academy Road which provided for approximately 4,200 feet of the total 9,040 feet of force main required. At approximately 800 feet intervals, valve boxes were provided on the force main in which stop valves and base connections were installed, to permit shutting off of sections of the line and connecting fire hose to blow out the line when necessary. This work is now proceeding under contract.

Sewage Disposal Project. - The necessity of removing pollution from the two rivers has made the Sewage Treatment Project one of No. 1 importance. Under recent authorization of City Council, the designing force of the Division is being expanded as rapidly as possible, and design work on the Sewage Disposal Project is being pushed for early completion.

The City program provides as the first step the early enlargement of the Northeast Sewage Treatment Works and the interception of sewage along the Delaware River within the tidal influence of the water supply intake. In accordance with this program, work has proceeded during the latter half of the year on the design of the enlargement of the Northeast Sewage Treatment Works, the extension of the Upper Delaware Low Level Intercepting Sewer above Ashburner Street and the sewage intercepting chambers along the Somerset Low Level Intercepting Sewer. It is proposed to follow this by the removal of pollution from the Schuylkill River, the Delaware River southward, and Cobbs Creek.

The permit of the Sanitary Water Board requires a system of treatment that will reduce by 75 percent the solids and oxygen demand of the sewage effluent, to accomplish which, the City proposes to install a system of treatment employing air to the extent of producing a sedimentation floc.

Bridge Design. - All bridges designed during the year were for post-war construction. A bridge study of importance was that of Cathedral Road connecting Upper Roxborough with Chestnut Hill. There is no means of crossing the Wissahickon Valley between Walnut Lane and Bell's Mill Road, a distance along Ridge Avenue of 3.6 miles. As the development of Roxborough proceeds, adequate transportation facilities become more and more urgent, and to relieve this condition a



new thoroughfare across the Valley, known as Cathedral Road, has been suggested. The elevations and grades selected for this road are such that the bridge will be 740 feet long, the roadway will be 140 feet above the Wissahickon Creek and the approach grades about 5 percent ascending from the bridge. The roadway will be divided, and will consist of two traffic lanes in each direction, separated by a divisor. Sidewalks about 10 feet wide will be provided on each side. The structure will be built in one of the beauty spots of Philadelphia and will be faced with granite.

Marquees, Canopies, Vaults, Signs, etc. - To protect the citizens who use the City's streets, it is necessary to check for strength all signs, canopies, etc., whose failure might endanger life and limb. Plans for these structures are submitted to the Highway Supervisors for approval and are sent to this Bureau for checking.

Bridge Repairs. - Bridge repairs are made by the Bureau of Highways, but the plans therefor are made by the Design Division of this Bureau. During 1944, fourteen such plans were drawn, including plans for inspection.

A fire destroyed the Ash Wharf at 26th Street and Powelton Avenue, requiring the preparation of drawings for emergency repairs to the building and the bulk-head structure.

Construction - General. - Hydraulic dredging in the Schuylkill River at selected points between Fairmount Dam and north of Strawberry Mansion Bridge. A contract in the sum of \$70,000 was entered into at the end of 1943, and work proceeded this year, being now 75% complete.

Sanitary drainage, sewage pumping station, water pipes and appurtenant work in Academy Road between Frankford Avenue and Northeast Philadelphia Airport, and in Northeast Philadelphia Airport; a contract in the sum of \$60,000 was entered into late this year, and construction work is proceeding.

Nineteen (19) contracts for various sizes of sewers were completed. During the year 1944, contracts were entered into for six (6) public sewers, which, together with contracts carried over from 1943, made an increase of 8.34 miles to the drainage system of the City. This amount represents an increase of 1.92 miles over the previous year.

It was necessary, as it was in 1943, for the City to obtain priority assistance from the War Production Board for all sewer contracts before construction, and this assistance was limited to essential war work needs, defense housing and preservation of public health. In many cases, storm sewers did not receive the approval of the Board, so that the City could only construct sanitary sewers. The mileage of private sewers built was 0.21 miles - less than half of that for 1943, reflecting the inability of home builders to obtain required priorities. This private sewer mileage was from contracts entered into late in 1943. No private sewer contract was made in 1944, a circumstance that has not occurred in over fifty years.

At the end of 1944, there was a total of 1843.05 miles of sewers completed within the limits of the City of Philadelphia.

Sewer Permits. - The Sewer Permit Division experienced a falling off in all of its activities during 1944. The total number of sewer connection inspections was 1901, a decrease of 31% caused by an 89% reduction in the number of new dwellings constructed due to the refusal by the Federal Housing Authority to grant necessary priorities.

The total receipts for the year were \$18,631.29, an increase of 67% over 1943. \$4,116. were collected from lateral fees, a drop of 21%; and \$14,515.29 from service charge bills, an increase of 145%. This large increase was due to the City paying for the construction of sewers included in a contract for paving a State Highway and on its completion collecting the necessary assessment bills.

13,000 reports on sewers were made to the Title Companies, a decrease of 19% from 1943.

Testing Laboratory. - Work during 1944 consisted of chemical and physical testing of materials for construction and maintenance in accordance with their respective specification requirements as submitted by the various City Departments and Bureaus; investigation of materials proposed for use on City contracts, and the various failures of construction materials; formulation and revision of specifications; consulting service; inspections, sampling and sample collection.

Efficiency standard of the highest possible level is maintained on all work; this is greatly aided by the Laboratory's connection with national organizations who standardize in this type of work. The Laboratory has direct contact with the American Society for Testing Materials, holding membership on four of its major and nine of its sub-committees, and thus directly aids the Society in formulating its standards and test methods for materials. The City adopts and uses many of the standards published by this Society.

War conditions have forced many changes in quality of materials used in construction and maintenance, and this condition will remain for the duration; to this end the A.S.T.M. and like societies have formulated and published specifications (called emergency alternates), embodying such changes. The Laboratory is in possession of many of these alternate specifications, and will consult with any branch of the City's service wishing to make use of the same.

Periodic cooperative tests were performed with various laboratories of recognized standing to establish the efficiency rationbetween the same; the importance of this is that many of these finely equipped laboratories are allied with business concerns who sell their products to the City. Many investigations and varied technical services were performed for the various engineering branches of the City.

All brands of portland cement common to the Philadelphia market have been checked during the year for the purpose of classification to the City's list of approved brands. Check tests were performed at the local central mix concrete plants to establish the grade of concrete produced by them for the City.

The City Hall power plant is in serious operating condition. The Laboratory, when asked, has advanced several engineering recommendations which were agreed to and adopted. When the work due to these recommendations is completed, the water conditioning for this plant will be taken under advisement.

The appended tables show the total, variety, distribution and percentage of distribution of the tested specimens.

Coordinating Division. - The Coordinating Division of this Bureau was originally organized in the year 1940, by assigning a Senior Assistant Civil Engineer to the work of coordinating all the activities of the Works Projects Administration in all the Bureaus and Departments of the City of Philadelphia. Since the cessation of the Works Projects Administration, the Engineer assigned to this work has been assigned either as supervising engineer or liaison officer on various other projects, the most important of which were the following:

- (a) The conversion from fuel oil to coal burning units in City buildings.
- (b) The Commonwealth of Pennsylvania and City of Philadelphia joint highway program, Act of Assembly May 7, 1937, as amended July 10, 1941.
- (c) Maintenance dredging in Schuylkill River.
- (d) Contract dredging in Schuylkill River.

(a) The Coordinating Engineer's work on this assignment consisted of obtaining priorities for critical materials used in the conversions and arranging for emergency rations of oil through the various Governmental agencies. Acting for the City of Philadelphia, the Coordinating Engineer settled differences between the City's consulting engineers and the contractors, checked plans and specifications, advertised for bids, inspected the work, and made current estimates and final bills. On February 1, 1944, the contract for the Branch Libraries, Foot Traffic College, Engine and Truck Companies, and the Atwater Kent Museum, was completed. The contract at the House of Correction and the Home for the Indigent was completed June 21, 1944.

(b) The Coordinating Engineer was assigned by the Chief Engineer to represent the Bureau of Engineering, Surveys and Zoning to act with a representative of the Department of Highways, Commonwealth of Pennsylvania, to coordinate the City's share of work done on the joint Commonwealth of Pennsylvania and City of Philadelphia highway improvement program. The following contracts were completed; Passyunk Avenue from 63rd Street to Essington Avenue, and Essington Avenue from Passyunk Avenue to County Line; Moyamensing Avenue from 19th Street to 20th Street, and Penrose Avenue from 20th Street to a point approximately 400 feet southwest of Pattison Avenue; Ridge Avenue from Main Street to 35th Street, and Ridge Avenue from Lehigh Avenue to 29th Street.

(c) The Coordinating Engineer has charge of the maintenance dredging in the Schuylkill River. His duties consist of the supervision of the work, obtaining ~~ph~~necessary labor to man the project, requisitioning materials and getting necessary permits. The City forces were used for maintenance and emergency dredging at the Belmont Pumping Station and Boat House Row. Dredging is possible for about nine months of the year (March 15th to December 15th). This year, 15,600 cu.yds. of materials were dredged at the Belmont Pumping Station, - 14,000 cu.yds. from in front of Boat House Row, - and 1,000 cu.yds. at the harbor; a total of 30,600 cu.yds. Due to the very limited disposal area, materials are handled twice. An average of fourteen (14) men are employed on this work. All equipment is steam-powered, and requires 24-hours a day attention. During the three-months tie-up in the harbor, the equipment, consisting of dredge, boat derrick, tug, and scows, is overhauled and put in operating condition.

(d) The Coordinating Engineer had charge of making the plans, writing the specifications, advertising for bids, supervision of the work, and the making of estimates for the contract dredging in the Schuylkill River at selected locations between Fairmount Dam and Girard Avenue bridge, and between Columbia Bridge and a point one thousand feet north of Strawberry Mansion (trolley) Bridge. This contract is dated December 16, 1943, and notice to proceed with the work was given December 29, 1943. Of the total 72,500 cu.yds. in the contract, 61,000 cu.yds. (84 percent) have been removed. Dredging is completed in rowing lanes No. 3, No. 4 and No. 5, and partially completed in rowing lanes No. 2 and No. 6, between the start and finish lines of the one-mile course.

Accounting and Reporting Division. - Continued curtailment of Public Works programs, except those affecting the war effort, was again reflected in the financial activities of this division.

During the year, five public readings of bids were held, involving ten projects, all of which were certified as contracts and entered on the Bureau records. Fourteen contracts unfinished in 1943 served to hold the functions of the division well above the minimum level. Miscellaneous financial activities increased, and a total of 485 separate warrants were drawn calling for payments of \$1,030,172.71 from both budget and loan funds.

As the year progressed, it seemed to become more apparent that the "lows" of the war period were being established, both from a financial and personnel basis, and an optimistic view will not be entirely out of order in 1945.

Personnel changes decreased during the year; two men returned to the Bureau from military service, and the notification of the death of a faithful employee, Gerald Gerrard, in a battle zone in Italy, necessitated the establishment of a gold star on our Honor Roll.

Receipts for the year, and detailed statement of expenditures, follow:

	<u>Vouchers</u>	<u>Amount</u>
Survey Districts	2,542	\$56,069.36
Registry	98	296.40
Sewer Registrar	335	18,610.25
Zoning	1,852	6,080.00
Lower Merion Townshi@)		100.00
Upper Darby Township ) Sewer Rentals		1,000.00
Witness Fees		<u>150.00</u>
		\$82,305.01





NORTHEAST AIRPORT  
CENTER OF NO. 7 RUNWAY, LOOKING N.W. ALONG NO. 4 TAXIWAY

36-1944



8.17.44

38680.11.

NORTHEAST AIRPORT  
CENTER OF NO. 7 RUNWAY, LOOKING S.E. ALONG NO. 4 TAXIWAY

37-1944



38680-12.

8-17-44

NORTHEAST AIRPORT  
NO. 1 RUNWAY, S.W. OF NO. 7 RUNWAY, LOOKING EAST TOWARD NO. 4 TAXIWAY

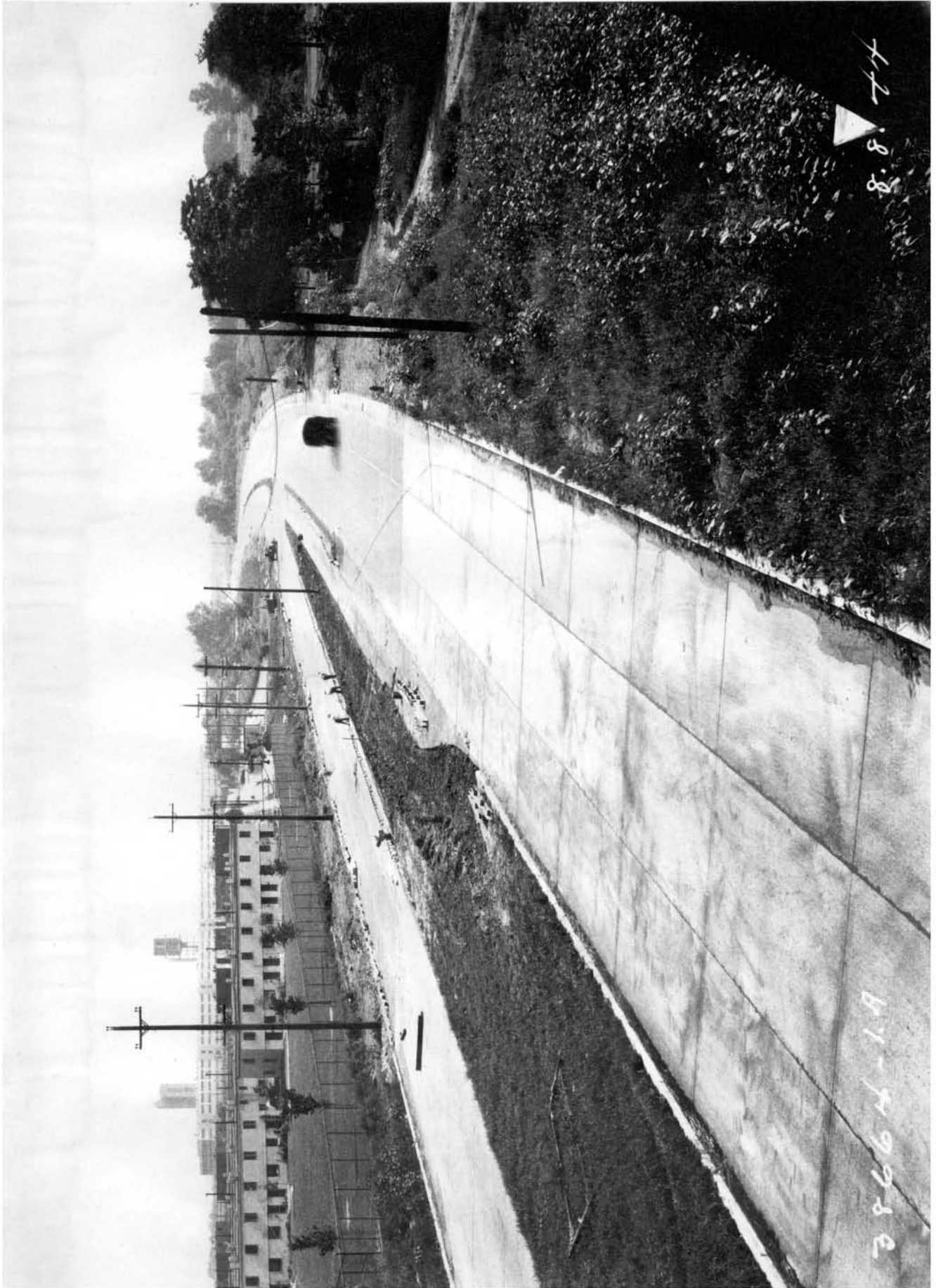




FLIGHT ZONE OBSTRUCTIONS - NORTHEAST AIRPORT  
PROPERTY S.W.S. GRANT AVENUE & S.E.S. BLUE GRASS ROAD  
VIEW FROM ABOUT 300' SOUTH OF GRANT AVENUE

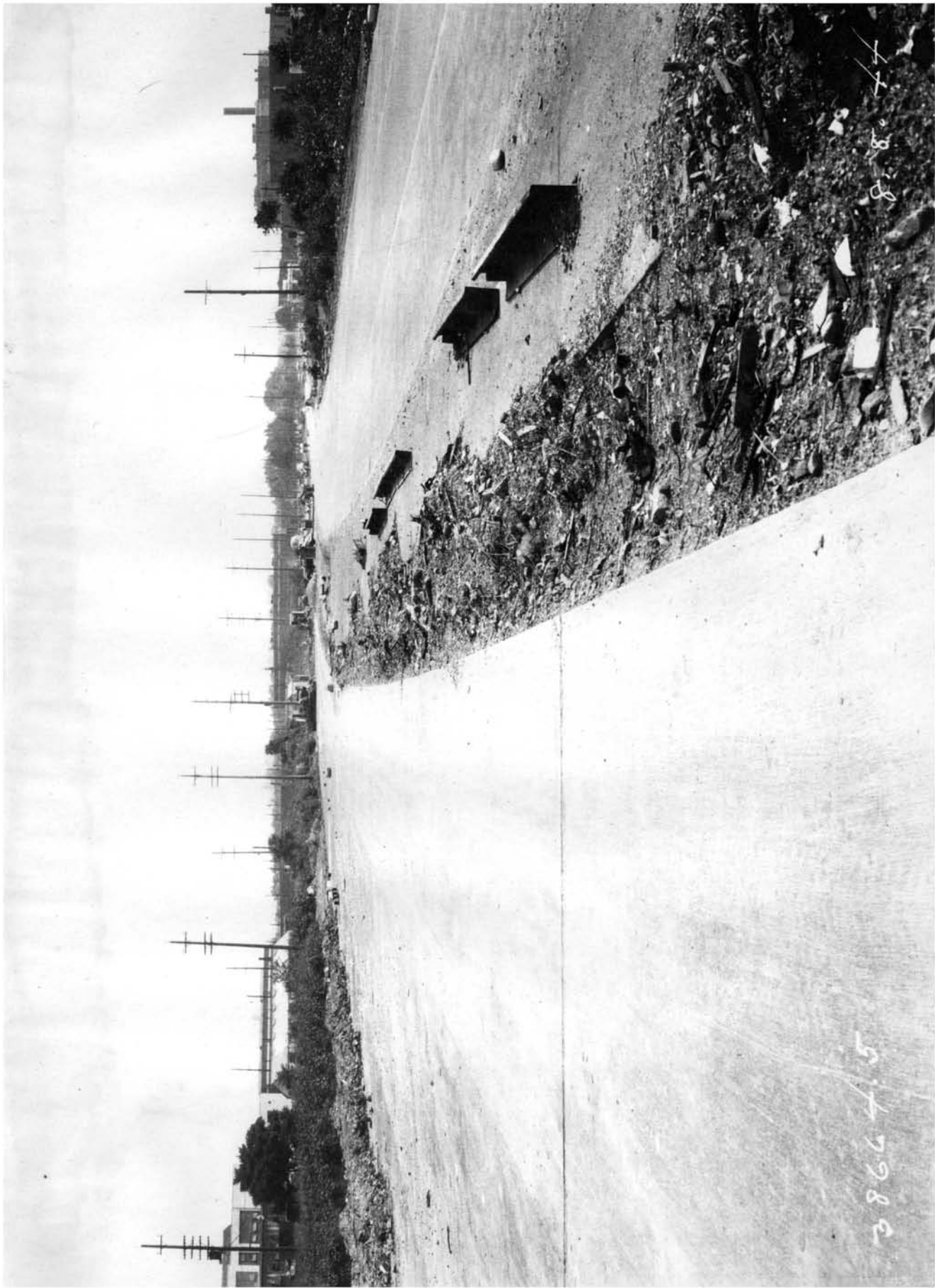
39-1944





CITY-STATE HIGHWAY  
PENROSE AVENUE LOOKING N.E. FROM 26TH STREET

40-1944



CITY-STATE HIGHWAY  
PENROSE AVENUE LOOKING N.E. TOWARD MOYAMENSING AVE. AND 20TH STREET

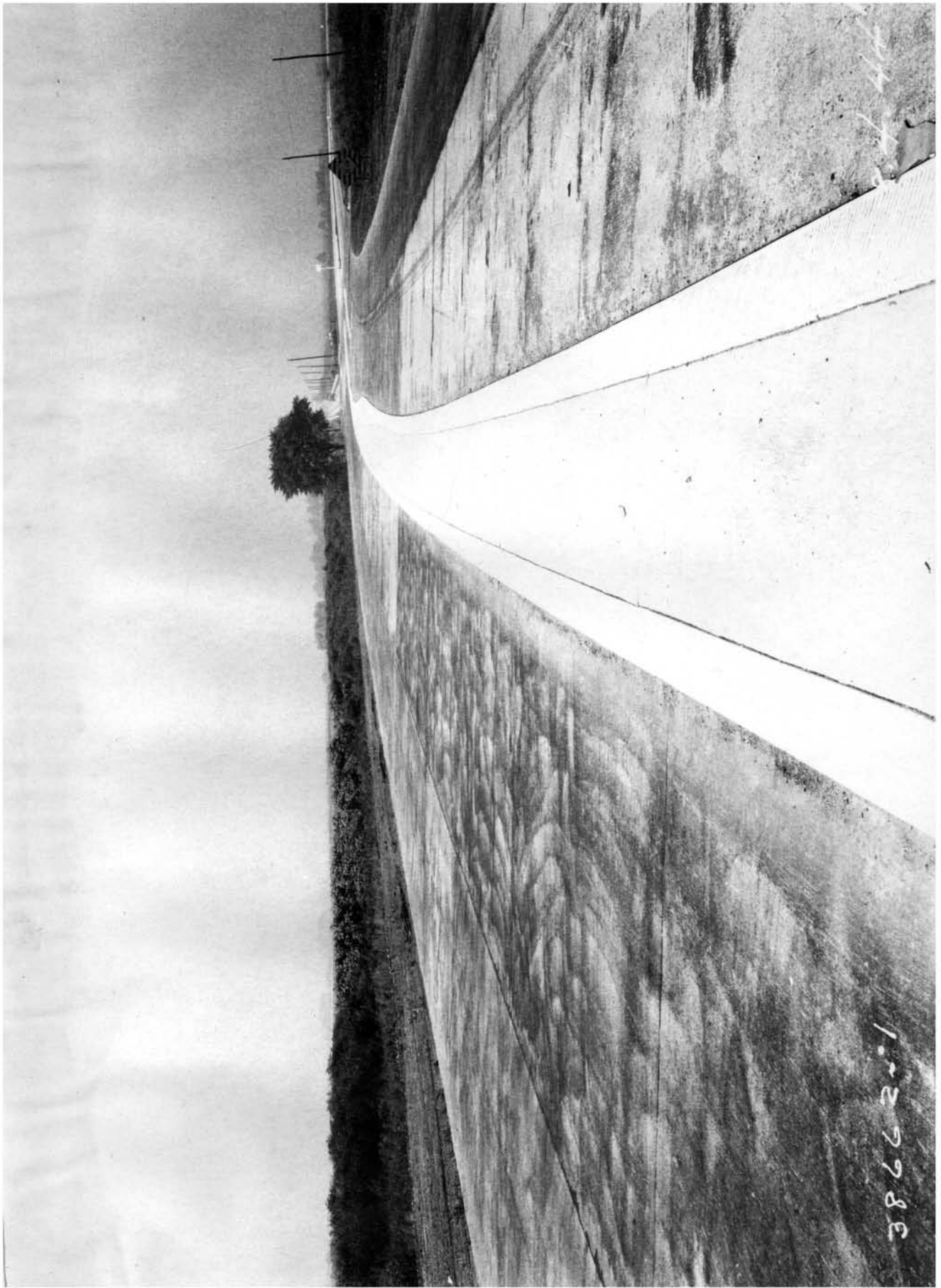
41-1944



CITY-STATE HIGHWAY  
PASSYUNK AVENUE FROM 63D STREET TO ESSINGTON AVENUE

42-1944



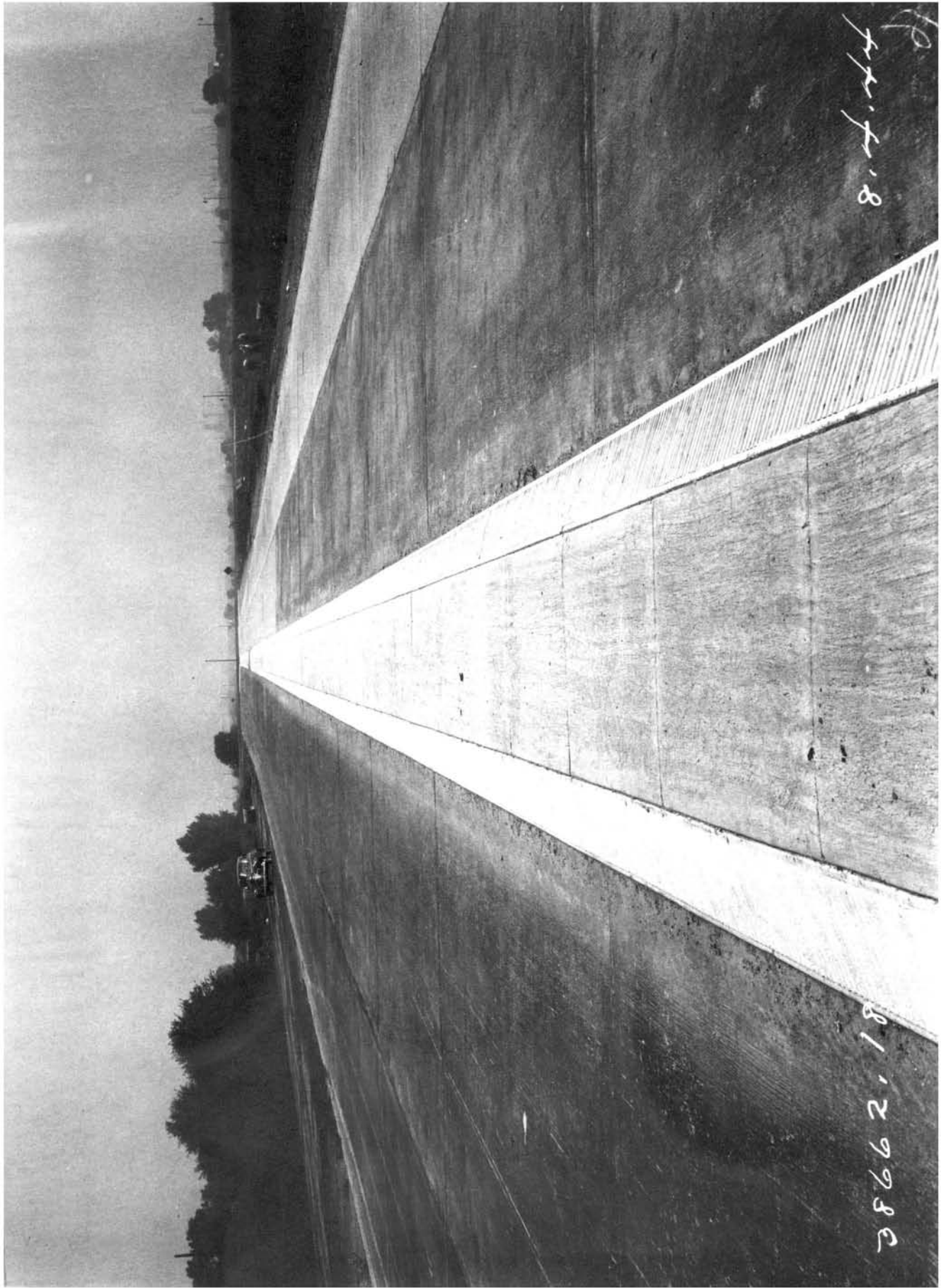


CITY-STATE HIGHWAY  
ESSINGTON AVENUE LOOKING S.W. TOWARD DELAWARE COUNTY

38662-1

43-1944





8.7.44

38662.18

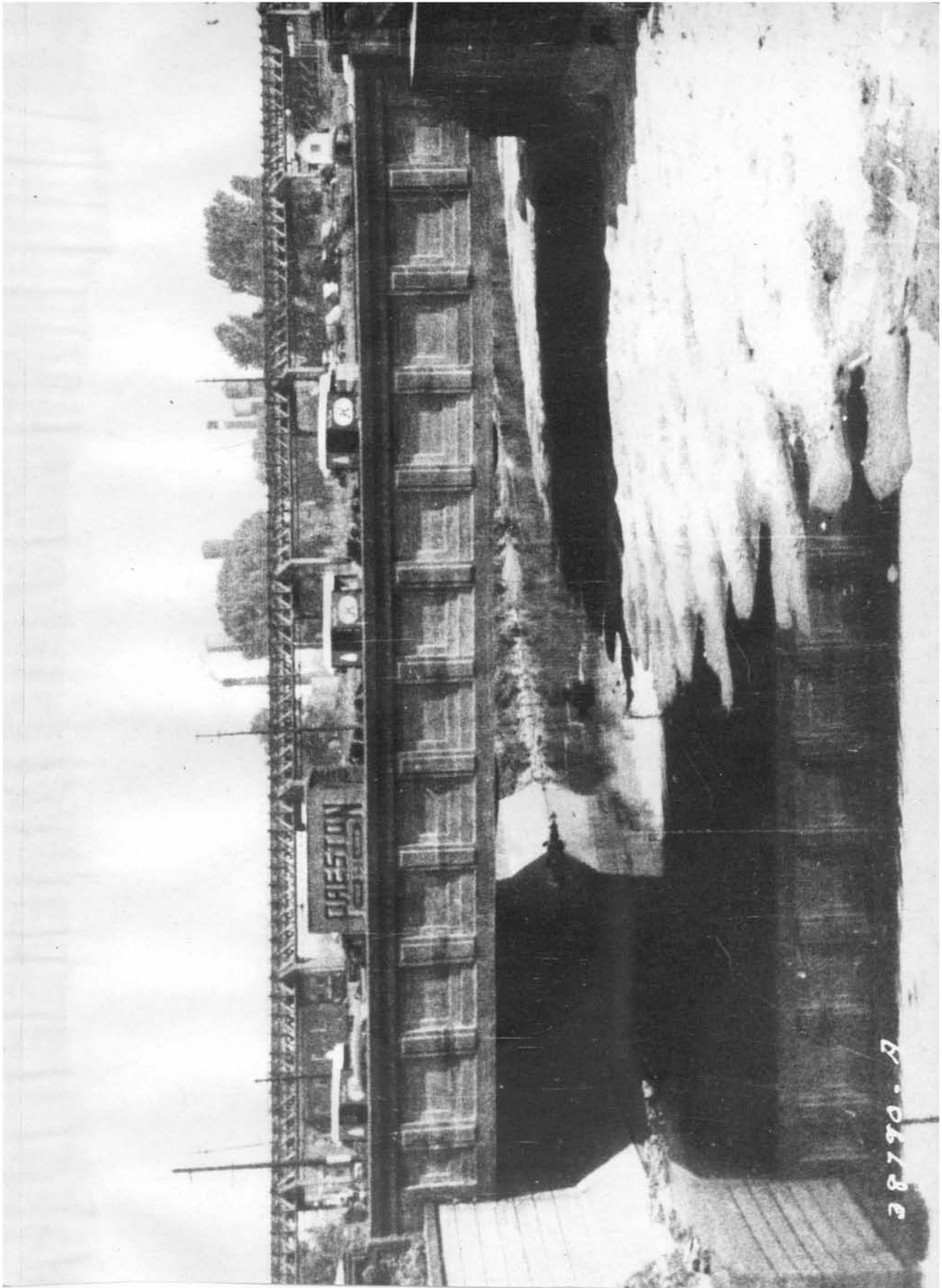
CITY-STATE HIGHWAY  
ESSINGTON AVENUE LOOKING N.E. TOWARD PASSYUNK AVENUE

44-1944



CITY-STATE HIGHWAY  
CIRCLE - ESSINGTON AVE. & ISLAND AVE. - LOOKING N.W. TOWARD ISLAND AVENUE

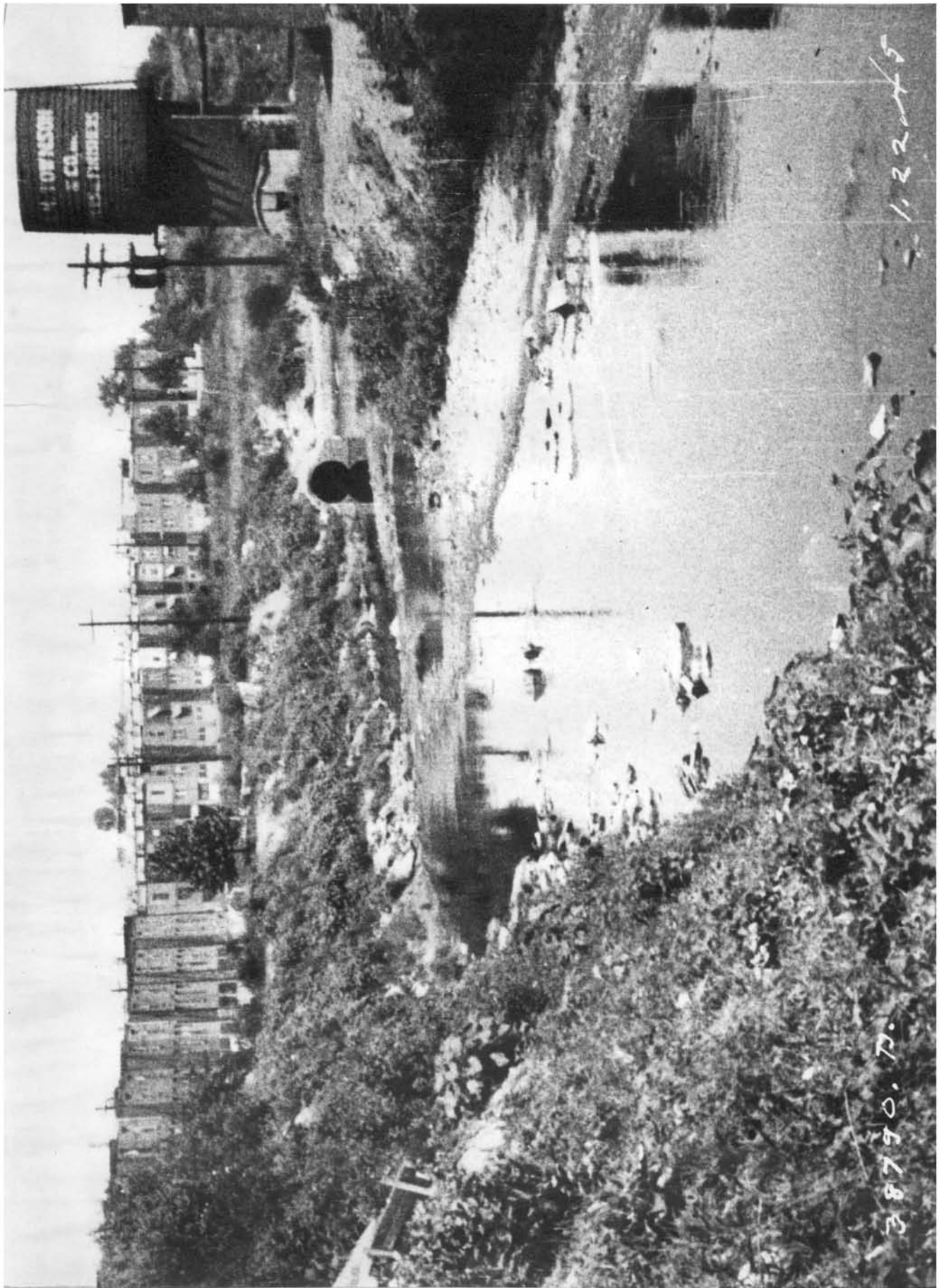
45-1944



FRANKFORD CREEK  
LOOKING NORTH FROM FRANKFORD AVENUE BRIDGE

46-1944





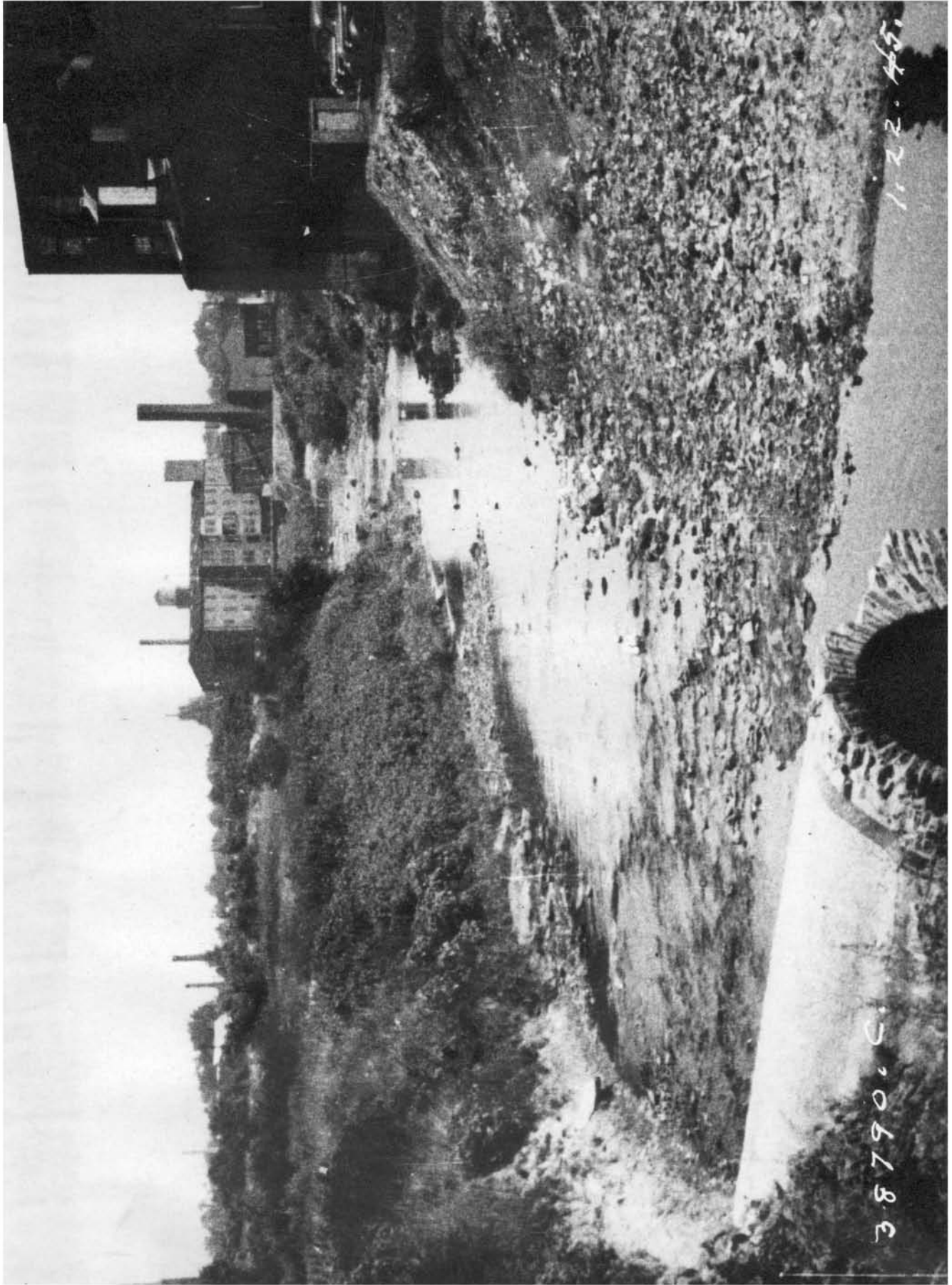
1.22.45

38790. D.

FRANKFORD CREEK  
LOOKING NORTH FROM ABOUT 400 FT. NORTH OF KENSINGTON AVENUE BRIDGE

47-1944





FRANKFORD CREEK  
LOOKING NORTH FROM ABOUT 150' SOUTH OF LEIPER STREET  
SHOWING OUTLET OF 8'0" DIAMETER LEIPER STREET SEWER

48-1944

STATISTICAL SUMMARIZATION

OF

ACTIVITIES

49-1944



<u>Water Pipe</u> - plans prepared for Bureau of Water and Water Companies	96
linear feet of street covered	92,627
linear feet of lines and grades furnished	28,271
fire hydrants for which lines and grades were furnished	8
reports on grade of streets for water pipe to be laid	26
assessment bills prepared	211
<u>Current Estimates</u> - any contract	51
<u>Reports</u> - on street openings, including plans or estimates	11
on street improvements, including plans or estimates	89
made to Chief Engineer--	508
miscellaneous (not otherwise classified)	235
<u>Liens</u> - descriptions prepared for any department or bureau	174
<u>Permits</u> - Bureau of Building Inspection, number investigated	277
<u>Miscellaneous</u> - linear feet lines and grades, repaving, gutter marks, cross	
sections, revision, resurvey, etc.	67,619
Blue Print Copies of property plans previously made	135
Linear Feet Pierhead and Bulkhead line recalculated and	
revised	2,000
Plans - All Inlets	11
Flight Zone Plans - Northeast Airport	600
Cubic yards Excavation measured for hydraulic dredging in	
Schuylkill River	52,007
<u>Grading</u> - plans and preliminary estimates (including country roads)	12
linear feet of street covered	9,040
cubic yards measured, cut and fill	52,097
linear feet of street covered	11,916
linear feet of lines and grades furnished	25,663
<u>Paving</u> - plans prepared for paving (including country roads)	16
linear feet of street covered	9,734
square yards measured and certified	86,760
linear feet of street covered	20,669
" " " lines and grades furnished	71,560
assessment bills prepared	167
<u>Repaving</u> - plans prepared for repaving (including country roads)	10
linear feet of street covered	10,290
square yards measured and certified	50,630
linear feet of street covered	20,898
linear feet of lines and grades furnished	59,735
<u>Amount of Completed Contracts</u> - main and branch sewers	\$721,126.15
private sewers and drains	12,500.00
grading	28,128.97
paving and improvement	202,585.35
repaving and resurfacing	110,742.08
total costs	1,075,082.55
<u>Receipts</u> - District cash receipts	\$56,069.36

51-1944



DETAILS OF WORK PERFORMED BY ZONING DIVISION

	<u>1944</u>	% Annual Decrease	% Annual Increase
Number of requests for information	9,670	5.6	
Number of Applications filed	4,096	3.4	
Number of Zoning Permits issued	1,026	57.7	
Number of Use Registration Permits issued	1,517	3.0	
Number of References to the Board of Adjustment	55		111.4
Number of Applications stamped "Permit not Required"	1,841	.6	
Number of Zoning Permits refused	234		24.0
Number of Use Registration permits refused	893	11.1	
Number of refusals appealed to the Board of Adjustment	960	5.0	
Number of Inspections	766		11.7
Number of Complaints investigated	224		29.5
Number of Vouchers issued	1,908		3.1
Amount of cash receipts	6,132	41.1	
Number of true copies of Applications certified to Board of Adjustment	945	5.4	
Number of Sign Applications (Highway) acted on	23	0	0
Number of descriptions for District Classification Changes	20		122.0
Number of Letters to Fire Marshal for approval or disapproval of use	101		83.6
Number of changes of Zoning Maps made by ordinance of Council	13		62.5
Number of changes of Zoning Maps proposed by resolution of Council	28		86.7
Number of Housing and Sanitation refusals for the last seven-month periods. These alone are comparable	97	46.1	
Number of Housing and Sanitation refusals for the full year	156	0	0

DETAILS OF WORK PERFORMED IN THE REGISTRY DIVISION

Deed abstracts filed for registering . . . . .	53,807
Descriptions contained on abstracts . . . . .	62,634
Transfers plotted . . . . .	67,053
Original lots plotted . . . . .	2,609
Deed abstracts filed from 1865 to 1944 (inclusive) . . . . .	3,301,181
Titles examined for plan book entries . . . . .	5,463
Plan books examined by the public and officials . . . . .	82,050
Certificates of registered owners issued to public . . . . .	91
Certificates of registered owners issued to Law Department . . . . .	725
Registry plates redrawn . . . . .	16
Miscellaneous receipts . . . . .	\$295.40
Miscellaneous plans drawn for City departments . . . . .	34
Plans loaned out . . . . .	606
Subpoenas issued against Registry Division . . . . .	48
Appearance in Court . . . . .	43
Amount of Witness fees collected . . . . .	\$138.00
Certificates of street openings issued to City departments . . . . .	443
Affidavits of street openings filed . . . . .	9
Streets opened by affidavits . . . . .	7
Jury plans ordered . . . . .	1
Jury plans filed . . . . .	3
Streets authorized to be opened by ordinance . . . . .	1
Certifications filed of openings and condemnations . . . . .	1
Street opening agreements filed . . . . .	--
Agreements filed in connection with City plan changes . . . . .	13
Deeds of Dedication filed . . . . .	31
Deeds of Dedication approved and recorded . . . . .	29
Releases of abutting owners filed . . . . .	5

Releases of abutting owners approved and recorded . . . . .	5
Cost of recording deeds and releases, etc. . . . .	\$18.00
Number of meetings, including Road Day hearings . . . . .	21
City plans ordered . . . . .	28
Confirmed City plans filed . . . . .	25
City plans advertised for public hearing . . . . .	26
Ordinances returned to Council, favorable recommendation . . . .	15
Subt. " " " " " " . . . .	6
Ordinances " " " special " . . . .	--
" " " " negative " . . . .	1
General plans for construction Bridge approved . . . . .	--
" " " " Sewer " . . . . .	--
Approved street railway plans filed . . . . .	9

54-1944

DETAILS OF WORK PERFORMED BY THE OFFICIAL PHOTOGRAPHER

	<u>Photography</u>				<u>Blueprinting</u> <u>Blueprinting, etc.</u>				
	8 x 10 negs.	8 x 10 prints	14 x 17 negs.	lantern slides	electro copies square feet negs.	copies tracings	Blue Prints	Van Dykes	square feet Linens
Engineering, Surveys and Zoning	453	796	13		1,472	207	62,437	2,360	
Highway	390	1,052					10,894	58	
Water	130	1,505			330		64,470	2,552	
City Property	8	60			26		305	20	
Traffic Eng.	8	36					7,847	315	
Electrical							4,044	45	
Law	123	123							
Health	22			16			2,236	40	
Art Jury	11	25							
Civil Service					15		430		
City Planning Commission							3,034		
Mechanical Equipment		6			36				
<b>Totals</b>	<b>1,145</b>	<b>3,603</b>	<b>13</b>	<b>16</b>	<b>1,879</b>	<b>207</b>	<b>155,697</b>	<b>5,360</b>	

55-1944



DETAILS OF WORK DONE IN THE TESTING LABORATORY

Total Number of Specimens - 1944

Boiler Feed Water	1,077
"    Compounds	12
"    Packing	52
Brick, Vitrified	25
Cement, Hydraulic	512
Concrete, Aggregate	4
"    Beams	2
"    Block, Building	28
"    Cores	170
"    Cylinders	510
Fuels	3,241
Gasoline	31
Metals, Ferrous and Non-Ferrous	168
Miscellaneous Materials	28
Oil, Lubricating	38
Paint and Paint Materials	85
Road and Road Materials	68
Water, Industrial Waste and Sewage	112
Wood, Beams	93
	<hr/>
Total	6,256

Distribution of Total Specimens

	<u>No. Specimens</u>	<u>%</u>	<u>Number Specimens</u>	<u>%</u>
Department of Public Health			1,062	17.0
Department of Public Safety			123	1.9
Bureau of Building				
Inspection	102	1.6		
Electrical Bureau	21	0.3		
Department of Public Works			3,650	58.4
Bureau of Engineering, Surveys				
and Zoning	740	11.9		
Bureau of Highways	687	11.0		
Bureau of Mechanical Equipment	16	0.2		
Bureau of Water	2,207	35.3		
Department of Supplies & Purchases			1,322	21.5
Water Works Improvement			98	1.6
			<hr/>	
Total			6,256	100.0

56-1944

Specimens for Chemical Test

Boiler feed water		1,077
Boiler compounds		12
Coal		3,232
(anthracite	3,129	
(bituminous	102	
(ash	1	
Gasoline		31
Metals		121
(ferrous	26	
(non-ferrous	95	
Miscellaneous Materials		21
Oils		48
(fuel	9	
(lubricating	39	
Paint and Paint materials		85
(drier	3	
(linseed oil	8	
(Mixed paints	44	
(Pastes	16	
(Pigments, dry	2	
(Turpentine	5	
(Varnish	7	
Road and Road materials (asphalt and tar)		68
Soap and soap materials		2
Water, Industrial Waste and Sewage		112
Wood, block, laminated		42
Total		4,849

Distribution of Chemical Specimens

Department of Public Health		1,062
Bureau of Hospitals	1,062	
Department of Public Safety		63
Electrical Bureau	21	
Bureau of Building		
Inspection	42	
Department of Public Works		2,395
Bureau of Engineering,		
Surveys and Zoning	119	
Bureau of Highways	157	
Bureau of Mech. Equipment	13	
Bureau of Water	2106	

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Distribution of Chemical Specimens (Continued)

Department of Supplies	1,322
Water Works Improvement	<u>7</u>
Total	4,849

Specimens for Physical Tests

Boiler packing		52
Brick		25
Building	15	
Sewer	10	
Concrete		714
Aggregate	4	
Beams	2	
Block, Building	28	
Cores	170	
Cylinders	510	
Metals		47
Ferrous	42	
Non-ferrous	5	
Miscellaneous materials		5
Wood beams		52
	Total	895

Distribution of Physical Specimens

Department of Public Safety		60
Bureau of Building Inspection	60	
Department of Public Works		744
Bureau of Engineering,		
Surveys and Zoning	424	
Bureau of Highways	242	
Bureau of Mech. Equipment	3	
Bureau of Water	75	
Water Works Improvement		91
	Total	895

Hydraulic Cement Specimens

Domestic Hydraulic Cements	512	512
	Total	512

Distribution of Cement Specimens

Department of Public Works		512
Bureau of Engineering,		
Surveys and Zoning	198	
Bureau of Highways	288	
Bureau of Water	26	

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1944



DETAILS OF WORK PERFORMED BY THE DESIGN DIVISION

Preliminary Estimates

Castor Avenue, Glendale Avenue to Rhawn Street (for sanitary sewer only)  
Extension of Orville Avenue system-Fillmore Street, Hartel Avenue, Chandler Street,  
Borbeck Avenue, Burholme Avenue and Loney Street  
Levick and Revere Streets - Pipe for stream flow  
Westmoreland Street, N.W. of Delaware Avenue to S.E. of Richmond Street  
Castor Avenue, Glendale Avenue to Hartel Avenue (for complete drainage)  
Lansing Street and Napfle Avenue, Castor Avenue to Frontenac Street (for complete  
drainage)  
Loretto Avenue, Napfle Avenue to Hartel Avenue (for complete drainage)  
Castor Avenue, Lansing Street to Chandler Street (for complete drainage)  
Hartel Avenue and Chandler Street, Castor Avenue to Frontenac Street (for complete  
drainage)  
Loretto Avenue, Chandler Street to Borbeck Avenue (for complete drainage)  
Kingsessing Avenue, 70th Street to 71st Street; 70th Street, Kingsessing Avenue  
to present sewer south  
Hutchinson Street, Nedro Avenue to Champlost Avenue  
Nedro Avenue, Hutchinson Street to 11th Street  
10th Street, Nedro Avenue North to summit  
Warnock Street, Nedro Avenue North to summit  
Ripley Street, Castor Avenue to Horrocks Street  
Rhawn Street, Bradford Street to Roosevelt Boulevard  
Proposed Oxford Avenue underpass, southwest of Hartel Avenue  
Proposed Development Silverwood Street and Paoli Avenue  
Vine Street, Broad Street to Darien Street, etc. (Reconstruction)

Private Sewers

Williams Avenue, Mt. Pleasant Avenue to Sedgwick Street  
Fayette Street, Greenwood Street to Mt. Pleasant Avenue  
Fayette Street, Greenwood Street to Vernon Road  
Montague Street, Cottman Avenue to Wellington Street  
Wellington Street, Walker Street to Montague Street  
Temple Road, Vernon Road to Phil-ellena Street

Public Sewers

Hartel Avenue, Ferndale Street to Hasbrook Avenue  
Hasbrook Avenue, Hartel Avenue to Oxford Avenue  
Oxford Avenue, Hasbrook Avenue to Pine Road  
Rising Sun Avenue, Longshore Avenue to Unruh Avenue  
Kerper Street, Oxford Avenue to Rising Sun Avenue  
Disston Street, Loretto Avenue to 300 ft. west of Frontenac Street  
Friendship Street, Frontenac Street to Summerdale Avenue  
Levick Street, Battersby Street to Brous Avenue  
Verree Road, summit N.E. of Shelaire Avenue to Napfle Avenue  
Verree Road, Napfle Avenue to Loney Street  
Rockwell Avenue, Hartel Avenue to Rhawn Street  
Daniel Street, Hermit Street to Walnut Lane  
Naomi Street, Wissahickon Avenue to Daniel Street and Daniel Street, Naomi  
Street to Walnut Lane  
Wissahickon Avenue, Hermit Street to Park Lane  
Lippincott Street, 34th Street to Shedwick Street  
Hartel Avenue, Ferndale Street to Verree Road  
Ferndale Street, Hartel Avenue to Borbeck Avenue  
Pine Road, Oxford Avenue to Stanwood Street  
Hasbrook Avenue, Hartel Avenue to Central Avenue  
Hartel Avenue, Hasbrook Avenue to summit S.E. of Barnes Street  
Borbeck Avenue, Hasbrook Avenue to summit N.W. of Barnes Street  
Chandler Street, Hasbrook Avenue to Barnes Street

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1944

Public Sewers (Continued)

Burholme Avenue, Oxford Avenue to Loney Street  
Oxford Avenue, Pine Road to Fillmore Street  
Burholme Avenue, Oxford Avenue to Solly Avenue  
Loretto Avenue, Hartel Avenue to Lansing Street  
Ripley Street, Castor Avenue to Horrocks Street  
Lansing Street, Castor Avenue to Frontenac Street  
\* Loretto Avenue, Chandler Street to Hartel Avenue  
Loretto Avenue, Borbeck Street to Chandler Street  
Chandler Street, Castor Avenue to Frontenac Street  
Chandler Street, Verree Road to Halstead Street  
Hartel Avenue, Castor Avenue to Frontenac Street  
Castor Avenue, Glendale Avenue to Lansing Street  
Castor Avenue, Lansing Street to Chandler Street  
Horrocks Street, Stanwood Street to Bustleton Avenue  
Chandler Street, Barnes Street to Burholme Avenue  
Borbeck Avenue, Fillmore Street to summit E. of Burholme Avenue  
Burholme Avenue, Loney Street to Borbeck Avenue  
Loney Street, Burholme Avenue to Fillmore Street  
Hartel Avenue, Fillmore Street to summit E. of Barnes Street  
Fillmore Street, summit N. of Loney Street to Napfle Avenue

STATE HIGHWAY

Drainage

Island Avenue, Eastwick Avenue to Buist Avenue  
Vare Avenue, Passyunk Avenue to 34th Street, 34th Street, Vare Avenue to  
Grays Ferry Avenue

Electrical Conduits and Outlets

Penrose Avenue, Pattison Avenue to 20th Street, Moyamensing Avenue, 20th Street  
to 19th Street  
Vare Avenue, Passyunk Avenue to 34th Street, 34th Street, Vare Avenue to Grays  
Ferry Avenue  
Island Avenue, Eastwick Avenue to Buist Avenue

Vine Street Improvement

Vine Street, Franklin Street to 11th Street (Demolition Plans Revised)  
Vine Street, 6th Street to 18th Street, Ridge Avenue, Race Street to Vine Street;  
Race Street, 6th Street to 18th Street (Paving Plans)  
Vine Street, Broad Street to Darien Street (Sewer Reconstruction)  
Vine Street, 6th Street to 19th Street (Lighting Study)

City Contract Plan - Estimate and Proposal

20th Street, Packer Avenue and 19th Street at Penrose Avenue - Moyamensing Avenue

Drainage Studies

Wheatsheaf Lane, Almond Street, Adams Avenue, Amber Street  
Sylvester, Oakland and Eastwood Street, Tyson Avenue to Princeton Avenue  
Martha Street, Wishart Street to Allegheny Avenue  
Levick and Revere Streets to Harbison Street, north of Levick Street - Pipe for  
stream flow  
Rand Street, Lycoming Street to Hunting Park Avenue  
Sherman Street, St. George's Road to Cresheim Valley Drive, etc.  
Aramingo Avenue, Wheatsheaf Lane to Adams Avenue  
Waterway required - Castor Avenue bridge at Frankford Creek  
Shelmire Street, State Road to Wissinoming Street  
Relocation - Swanson Street Stormwater Pumping Station at Pattison Avenue  
Hartranft Street, Broad Street, Pattison Avenue and 20th Street

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## Drainage Studies (Continued)

Hartranft Street, Broad Street to 20th Street - stormwater drainage  
Solly Street, Algon Avenue, Rhawn Street, Whitaker Avenue  
Earlham Street, Lena Terrace, S.W. to dead end; Concord Street, Harvey Street  
N.W. to dead end; Potterton Street, Magnolia Street S.W. to dead end;  
Narragansett Street, Baynton Street, S.W. to dead end; Portico Street,  
Seymour Street, S.E. to dead end; Osceola Street, Locust Street, S.E.  
to dead end.  
Sepviva Street, Witte Street, Janney Street and Weikel Street, Castor Avenue to  
proposed Pacific Street  
Hale Street, Frontenac Street to Loretto Avenue  
Naval Hospital Drainage - 20th Street, Pattison Avenue to Geary Street  
Osborne Street, Manayunk Avenue to Righter Street  
Longfield Street, Pitler Street to Grant Avenue  
Ashville Street, Jackson Street to Ditman Street  
Hamilton Street, Broad Street to 15th Street; Buttonwood Street, 15th Street to  
16th Street  
Passmore Street, Summerdale Avenue to Algon Avenue  
Bala Golf Club, 50th Street and Wynnefield Avenue  
76th Street, Lyons Avenue to Lindbergh Boulevard, etc.  
Fairfield Street, Walnut Hill Avenue to Welsh Road  
Proposed Development Silverwood Street and Paoli Avenue  
Stirling Street, Loretto Avenue to Frontenac Street  
50th Street, Parkside Avenue to Viola Street, Viola Street, 50th Street to 48th St.  
Academy Road, Grant Avenue to Morrell Street  
Bingham Street, Faunce Street to Lansing Street  
Orville Avenue and Burholme Avenue, in Burholme Park; Fillmore Street, Shel mire  
Avenue to Napfle Avenue; Hasbrook Avenue, Cottman Avenue to Oxford Avenue;  
Napfle Avenue and Oxford Avenue, Rockwell Avenue to Hasbrook Avenue;  
Rockwell Avenue, Rhawn Street to Griffith Street  
Laurel Street, Delaware Avenue to Penn Street  
Arendall Street, Philadelphia and Newtown Railroad, Poquessing Creek and  
Delaware River  
Front Street, Olney Avenue to Nedro Avenue; Nedro Avenue, Front Street to  
Hammond Avenue  
School Drainage - Eastwood Avenue and Princeton Avenue

## Northeast-Philadelphia Airport

Study and Estimate of Cost of Completion for Commercial Use  
Sewage Pumping Station and Force Main in Academy Road to Frankford Avenue  
CAA Plan - Parking Area drainage approved  
Plan of Facility Area for Access Road and Grading  
Study Plan - Electric conduit, etc.  
Ashton Road Improvement - Details, proposal and specifications  
General Plan

## Sewage Disposal

Cheltenham Township Meter, Cottman and Orville Avenues - approval  
Sewage Meter Data - Passmore Street outlet to Cheltenham Township  
Map - List and number for Sewage Interceptions in City  
Southeast Works outfall - Plan showing area required  
Northeast Sewage Treatment Works - Extension - Design and Plans  
Southwest Sewage Pumping Station - Design and Plans  
Sewer Rental - Maps and Reports  
Lower Delaware Low Level Intercepting Sewer - Checking plans  
Lower Delaware Low Level - Branches Delaware Avenue and Oregon Avenue  
Lower Delaware Sewage Intercepting Chambers

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Miscellaneous

Critical Material Estimates for W.P.B. Priority rating for Proposed Sewers  
in various locations  
Boring Plan - Ferndale Avenue, Verree Road to Hartel Avenue and Hartel Avenue  
to Hasbrook Avenue  
Location for Water Main - Summerdale and Frontenac Streets, Knorr to Magee Streets  
Location for Water Main - Sedgwick Street, Michener Street to Williams Avenue  
Barrett Co. R. R. Siding over Wakeling Street Sewer  
Tunnel - 9th St. south of Clinton St. - Pennsylvania Hospital  
Summerdale Avenue at Faunce Street - Stormwater channel Upper and Sandy Run Main  
Sewer  
Existing Manhole Frames to be filled with concrete - various locations  
Sketch - Inspector's Record - connections to sewer Hartel Street and Burholme Avenue  
Artesian Well - Tasker Street west of 16th Street  
Location for proposed 16" River Water Main - Delaware Avenue, Mifflin St., etc.  
Defense Plant Corp.  
Location for Water Main - Battersby and Brous Streets, Hellerman to Levick Streets  
Location for Water Main - Summerdale Avenue, Frontenac Street, Knorr to Magee Ave.  
Proposed Tunnel across Milnor Street, east of Conly St.  
Design Division - Organization Chart  
Reading Co. - Crossing Gates and conduit, American St. and Lehigh Avenue  
Publicker Alcohol Co. connection to Packer Avenue sewer east of Delaware Avenue  
Frankford Creek - Plans for proposed channel lines  
Frankford Creek - Channel revision study, Castor Avenue to Ramona St.  
Retaining Walls and Steps, Boone Street, Jamestown St., Lower Street, Roxborough Ave.  
Shoring plan for approval - Tunnel, 9th St. north of Pine St.  
Retaining Wall - Southwest of Clarkson Avenue between Marvine and 12th Streets  
Pennsylvania Railroad track extension over Cohocksink Main Sewer in Laurel Street  
Preparation of Civil Service Examinations  
Continental Distilling Corp. River water return line - Snyder Avenue  
Continental Distilling Corp. - Artesian Well  
18th Street and Buttonwood Street - Stemm Main  
Publicker Alcohol Company - Elec. Conduits - Packer Avenue, east of Delaware Avenue  
Standard Retaining Walls along Alleys and Driveways - completed  
Test Borings for proposed Penrose Avenue Bridge over Schuylkill River

Checking Applications for the Public Utilities

Philadelphia Gas Works	221
Bell Telephone Company	84
Philadelphia Electric Co.	51
Philadelphia Steam Co.	3
Keystone Telephone Co.	3
Bureau of Water	131
Miscellaneous	40
Total	553

Mimeographing

Sheets and Records for the Zoning Division,  
for the Survey Districts  
for the Registry Division  
for Civilian Defense Centers

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## Filing

Main and Branch Sewer Plans - Bridge Division Plans - Grade Crossing Plans - Miscellaneous Plans, etc.

## Bridges

Penrose Avenue - 3-Span Continuous Truss Analysis  
Delaware Avenue Express Highway - Studies of Superstructure  
Oxford Avenue under P. N. & N. Y. R.R. - Study of Underpass  
Oxford Avenue over P. N. & N. Y. R. R. - Bridge Study  
Aramingo Avenue over Frankford Creek - Bridge Study  
Torresdale Avenue over Frankford Creek - Bridge Study  
Frankford Avenue over Frankford Creek - Bridge Study  
Worrell Street over Frankford Creek - Bridge Study  
Castor Avenue over Frankford Creek - Bridge Study  
Reading Company - 2-Span Continuous Bridge over Vine Street - Checking Stresses and Structural Design  
Cathedral Road Arch Bridge Study

## Marquees, Private Bridges, etc.

Strawbridge and Clothier - 4th War Loan Marquee  
Land Title & Trust Co. - Temporary Entrance  
American Engineering Co. - Check of Structure supporting tracks and hoists  
South Street, 30th to 32nd Street - University of Pennsylvania - 6" Steam Line Return  
Wheatsheaf Lane and Aramingo Avenue - Shoring and Decking Plan  
Bread Street South of New Street - Conveyor Bridge  
Baltimore and Ohio Railroad Station - New Marquee  
Lit Brothers Marquee - 5th Victory Loan

## Hauling Permits

Heavy truck routing - 628 checked

## Bridge Repairs

Grays Ferry Avenue over Schuylkill River - drawing and estimate for repaving of draw span.  
Passyunk Avenue over Schuylkill River - drawing and estimate for repaving of east and west approaches.  
South Street over Schuylkill River - drawing for renewal of west power cable.  
Penrose Ferry Road over Schuylkill River - drawing for reconstruction of and lifts for draw span.  
10th and Pollock Streets - drawing and estimate for reconstruction of footings.  
Walnut Street over Schuylkill River - drawings and estimate for reconstruction of sidewalks over B. & O. R. R.  
33rd and Jefferson Streets - drawing for renewal of inlets.  
Hunting Park and Germantown Avenues - drawings and estimate for reconstruction of expansion joints.  
Falls Bridge over Schuylkill River - drawing for reconstruction of expansion joints.  
Chestnut Street over Schuylkill River - drawing for inspection diagram.  
City Avenue over Schuylkill River - drawings for inspection diagram.  
Falls Bridge over Schuylkill River - drawings for inspection diagram.  
Girard Avenue over Schuylkill River - drawing for inspection diagram  
Spring Garden Street over Schuylkill River - drawings for inspection diagram

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Wharf Repairs

26th Street and Powelton Avenue - drawings for emergency repairs

26th Street and Powelton Avenue - drawing for electrical lighting and power

26th Street and Powelton Avenue - drawing and estimate for renewal of  
timber bulkhead

Delaware Avenue and Green Street - investigation for use of 10-ton trucks

Inspection

Highway bridges over Reading Railroad - inspected all in conjunction with  
Reading engineers

65-1944

ACCOUNTING AND REPORTING DIVISION

BUDGET ITEMS

	<u>APPROPRIATED</u>	<u>ENCUMBERED</u>	<u>EXPENDED</u>
A-25 Personal Services	\$493,773.31	---	\$404,915.91
35 Transportation and Expenses	600.00	---	596.54
36 Recording of deeds, agreements, and permits, advertising City Plans	500.00	---	463.28
37 Rent - Survey District Offices	6,540.00	---	5,340.00
38 Cleaning Offices	900.00	---	885.00
39 Construction of Sanitary and Storm Sewers	100,983.04	42,869.05	26,359.23
40 Dredging Schuylkill River	110,628.03	23,365.26	74,312.04
41 Material, supplies, including personal services and other expenses incident to the operation of WPA	3,244.89	---	3,062.05
42 Dredging Frankford Creek	1,822.16	---	---
43 Post-war Public Works Improvements	250,000.00	7,000.00	49,833.63
 315 to 323 inclusive - Department of Supplies and Purchases	 <u>7,900.00</u>	 <u>---</u>	 <u>6,397.62</u>
	\$976,891.43	\$73,234.31	\$572,165.30

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1944

ACCOUNTING AND REPORTING DIVISION

LOAN ITEMS

	<u>APPROPRIATED</u>	<u>ENCUMBERED</u>	<u>EXPENDED</u>
210 AL - Henry Avenue over Wissahickon Creek	\$3,901.20	\$3,901.20	--
250 $\frac{1}{2}$ L - Highways, Bridges, Viaducts, Bulk-heads	33,978.30	1,300.00	21,879.86
300 $\frac{1}{2}$ L - Construction of Sanitary and Storm Sewers	55,403.47	--	50,350.80
380 $\frac{1}{2}$ L - Elimination of Grade Crossings at 21st - 22nd - Allegheny and Mt. Airy Avenues	121,642.38	--	50.00
381 $\frac{1}{2}$ L - Construction and Equipment - Philadelphia-Municipal Airport	251.21	--	251.21
441 L - Municipal Improvement on east bank of Schuylkill River and Fairmount Park	185,930.87	--	--
442 $\frac{1}{2}$ L - Construction and Equipment - Philadelphia-Municipal Airport	1,441.50	--	1,289.58
440 $\frac{1}{2}$ L - Highways, Bridges, Viaducts, Bulk-heads	165,804.76	31,640.40	44,702.28
462 L - Sewage Disposal	10,524.66	--	--
462 $\frac{1}{2}$ L - Construction and Equipment, Sewage Disposal System	74,625.32	--	29,210.14
463 CL - Manayunk, Germantown and Chestnut Hill Grade Crossings	142,204.35	--	58.71
464 $\frac{1}{2}$ L - Construction of Sewers in the Sanitary and Stormwater Drainage System	646,887.46	49,592.52	316,612.45
	<u>1,442,395.48</u>	<u>86,434.12</u>	<u>464,405.03</u>

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