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BUREAU OF ENGINEERING, SURVEYS AND ZONINGThomas 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 ninety (90) 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, 1933, 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. *and 7/2/45*

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. 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. Since the termination of the Works Projects program, the Assistant Engineer has been kept busy as a representative of the Director of the Department and the Chief of the Bureau in various coordinating activities. During the past year, this division has supervised the necessary dredging work which must constantly be done in the Schuylkill River and has also been assigned to coordinating activities in connection with work done on State highways under City-State agreements. *omit*

These 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.

and 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. *omit*

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 1945¹⁹⁴⁷ 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

Manpower Shortage.- The termination of the war, in 1945, had very little effect upon the manpower shortage with which the Bureau of Engineering, Surveys and Zoning is faced. At the end of the year, fourteen assistants had returned from war duty, out of a total of thirty-nine, of which number two lost their lives and twenty-three are still awaiting discharge. Those that have returned from military service were mostly experienced and competent employees, whose services have been helpful in reducing the pressure on the Districts but not in proportion to the great volume of work to be done. Although the use of provisional appointments is considered very undesirable by the Bureau, it was necessary to employ this method repeatedly whenever likely candidates were found, owing to the difficulty of establishing Civil Service eligible lists in advance. At the same time, it was the experience that a number of these provisional appointees finally refused to accept positions with the City for various reasons.

If the City Planning's Commission's first "Recommended Program of Public Improvements for the period 1945-1950" means anything, the Bureau of Engineering, Surveys and Zoning is facing the greatest era of planning, designing and construction in the history of the City, for, of the total of all recommended projects proposed by the Commission estimated to cost \$205,592,824., sixty per cent. of them, costing approximately \$123,639,000. originated in this Bureau as engineering work for which it would be responsible.

The present personnel of the Bureau of Engineering, Surveys and Zoning and, particularly in the plans and registry division and in the Survey function, is wholly inadequate to cope with this great volume of work. Whereas, the 1945 budget provided 148 positions for these two units, the working forces actually totals but 100 by reason of twenty-eight military and nineteen other vacancies and one transfer. This number represents an all-time low for the past thirty years.

The seriousness of the present situation may be seen from the following figures. During the period 1925 to 1931 the staff actually employed in these two functions ranged from 299 to 263 in 1931. Under the sharp budget cuts necessitated by the depression, the working total of 263, as above mentioned, was reduced in 1936 to 125.

It is of vital importance to the success of the postwar program that Council realize that, even after the budget curtailments made during the depression years, the plans and registry and the Survey functions were manned with twenty-five more assistants than at the present crucial period of intense postwar planning. Furthermore, the Commonwealth, by Act of Assembly approved May 3, 1945, made it mandatory upon the City, through its Board of Surveyors, to establish controls for the subdivision of land. By reason of this regulation, the procedures that must be adopted will add a heavy burden of additional work upon the plans and registry division.

Title Reclassifications and other Budget Changes.- Some progress was made in 1945 in correcting titles of assistants that were improperly designated in the classifications adopted January 1, 1943. The positions affected were as follows: The titles of Chief Engineering Clerk, which

applied to the head of the registry division, and his assistant were changed to Chief, Plans and Registry division and Assistant Chief, Plans and Registry division respectively. The objective of these changes was to place the two assistants in responsible charge of the administration of the registry division upon the same level as those having corresponding responsibilities in the administration of the zoning division. At the same time, the title of Senior Engineering Statistician was changed to that of Senior Draftsman, City Plans.

Owing to the desperate need of additional help in the Survey districts' organization, as emphasized in the preceding record, Council finally approved to include a number of new positions in certain junior grades. The said new positions included nine engineering detailers, twelve junior surveyors, twelve engineering field aide-transitman, and twelve junior engineering field aide-rodman, chainman. If the forty-five new positions thus provided can be filled, the maximum working force in the Survey districts will be increased to 172, which number is 100 less than the average total employed during the period 1925--1931.

Expansion of Design division for Postwar Planning.-- The reorganization of the designing division for postwar planning of the Bureau required to undertake the preparation of plans for construction of public improvements, recommended by the City Planning Commission, was carried out with considerable success. During the year the personnel in this unit was increased from forty-six to sixty. The work of this function was largely restricted to the sewage treatment project, several highway bridges, and a large volume of sewer work in various classifications. In view of the large amount of work to be planned, including the preparation of contract drawings and specifications, it was found necessary to retain the services of consulting engineers on airport development and the construction of the Schuylkill River-Penrose avenue bridge.

The approval of the Sewer Rental procedures automatically increased the borrowing capacity of the City and many millions of dollars will become available in the spring of 1946 for bridges, flood control, and the construction and reconstruction of sewers. It is anticipated, therefore, that the work of the designing division will consist mainly of the preparation of construction drawings and specifications for this program, and that it will become increasingly necessary to engage the assistance of private engineering organizations for special projects.

FRANKFORD CREEK

Continued pressure was brought to bear upon the Bureau of Engineering, Surveys and Zoning during 1945 for more rigid progress in the development of the Frankford Creek flood control project, which was described at some length in the preceding Annual Report. However, the work continued to be retarded by the inability to restore the Survey Districts' personnel to effective working strength. The preliminary field surveys were practically completed by the end of the current year and, in addition, about 80 per cent. of the plans, showing the extent of the easements to be requested from the abutting owners. It is anticipated that the preparation of all the property plans and release forms will be completed in the spring of 1946.

At a meeting held in the Mayor's Office at the end of the year, it was stated that the work on the Frankford Creek project must be well under way before the termination of the present administration. The most serious obstacle confronting this objective is the almost certain knowledge that all of the abutting owners are not favorable to the granting of releases without compensation, although this condition is a requirement of the special revision ordinance approved August 9, 1944. The said ordinance authorizes "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".

In order to determine the extent to which the property owners involved will comply with the terms of the ordinance, it is the intention to place the releases and survey plans in their hands immediately following completion. At the same time, they are to be asked to carefully examine these documents preparatory to a general meeting in the Mayor's Office for a hearing on the reactions to the City's proposition.

The final studies and recommendations on design and the preparation of contract drawings and specifications for the construction of the project must be given out to some competent engineering firm or consultants. The improvements contemplated include the building of approximately nine (9) miles of heavy bulkheading, the reconstruction of six (6) existing highway bridges and three (3) railroad bridges, and the construction of one (1) new highway bridge. The volume of detailed engineering work entailed is entirely too great for the Bureau organization to undertake.

The 1946 Spring Loan will include an item of at least one million dollars toward the execution of the Frankford Creek flood control project.

CITY-STATE HIGHWAY PROGRAM

An important Act of Assembly passed during the year relating to State highways, was the new highway code approved in May of 1945. This enactment pertains to roads, streets, highways and bridges; amends, revises, consolidates and changes the laws administered by the Secretary of Highways and by the Department of Highways relating thereto. At the time the new Bill was in the legislature the City made an attempt to have the 1937 and 1941 Highway Acts amended so as to substitute 6.63 miles of new highways for 5.43 miles of existing improved routes. The State officials interviewed would not approve these changes at the time for fear that the introduction in the Legislature of any local measures would adversely affect the new State highway code, which was then in committee.

During the same session, however, the highway Acts of May 7, 1937 and July 10, 1941 were amended so as to incorporate into the City-State highway system the following route: Grant avenue from Frankford avenue to Bustleton avenue. The adoption of the said route became effective January 1, 1946. By reason of the continuance of the war conditions, no City-State highway construction was carried on in 1945. But, at the same time, attention was given to various projects under development for postwar construction.

Vine street Project -

Consideration was given on several occasions during the year to the feasibility of placing under contract the demolitions required to clear the Vine street right-of-way, but no final steps were taken for various reasons. Of these, the most important was the hardship such action would cause for the people that would be compelled to evacuate during the acute housing shortage. The various properties affected are briefly described as follows,—

On Vine street there are a total of 170 rented properties, 10 other properties being vacant on account of their poor condition. Of the 170 properties, 107 are business properties, the 63 remaining properties being under lease to people who are either residents therein, or rent same to other residents. Between Franklin and 11th streets, there are housed 255 residents, including two "flop" houses which house a varying number of men, averaging about 200 individuals. Between 11th and 18th streets there are approximately 400 residents, which 400 includes one day nursery, housing 50 children, and one Men's Shelter, housing an average of 30 "homeless men". Included among the 400 residents west of 11th street might be cited 12 war veterans and their families. (A recent survey of the Philadelphia Housing Association, which survey was made within the last two weeks, states that 95 per cent of office space in the City is presently under lease, while 98 per cent of all available residences is also under lease).

The condemnations of the properties within the right-of-way established for the widened Vine street were accomplished at a total cost that was considerably less than the original estimate. The reason for this circumstance may be found in an analysis of the following figures,—

<u>Location</u>	<u>1942 Ass. Value</u>	<u>Settlements Pd. and Claims Outstanding</u>	<u>Percent of Assessed Valuation</u>
Franklin and 8th streets	\$ 84,800.	153,709	180%
8th to 9th streets	117,700.	205,289	174%
9th to 10th streets	145,200.	186,239	128%
10th to 11th streets	123,235.	147,187	111%
11th to 12th streets *	100,900.	174,700.	173%
12th to 13th streets	238,300.	328,985.	138%
13th to Broad streets	966,000.	1,130,712	117%
Broad to 15th streets	511,300.	402,749	79%
15th to 16th streets	133,800.	183,445	137%
16th to 17th streets	183,000.	162,767	89%
17th to 18th streets	187,800.	196,184	104%
Totals	\$2,792,035.	3,271,966	

(*) Reading Company not included.

Referring to this tabulation, it is noted that the amount of damages paid varied from 79 per cent. to 180 per cent. of the assessed valuations. In all previous experience, the condemnations in the central City, and particularly in the case of the Benjamin Franklin Parkway, where over thirteen hundred (1300) taxables were taken, the ratio between the awards made and the tax appraisals were from 2- $\frac{1}{4}$ to 3 to 1.

During the year 1945 the Vine street project, as proposed by the agreement executed February 9, 1942, was made the subject of a well organized attack to discredit the adopted plan in favor of a section of a depressed super-highway. Unfortunately, the real issues were submerged in a flood of propoganda, cleverly planned and publicized to enlist popular support while concealing the basic factors at stake. The Pennsylvania Department of Highways, the City administration, and the Department of Public Works were placed on the defensive under such unreasonable conditions that, in the end, the plan for a depressed super-highway in Vine street was defeated, but not before considerable harm was done in the cause of city planning in Philadelphia.

One of the important issues raised was over the question of the cost of the original, or surface plan as compared to the depressed highway design. The Bureau of Engineering, Surveys and Zoning, by request, had made a rough estimate of cost based on a very crude and impractical preliminary plan prepared by the City Planning Commission. The resulting figures, including the damages for right-of-way condemnations already paid by the Commonwealth, totaled approximately eighteen million dollars. In submitting this estimate to the Commission it was stated that, in the opinion of the Bureau, the actual cost of a workable plan might very well reach twenty-five million dollars. The Planning Commission's plan was subsequently radically changed and given wide publicity as costing eighteen million dollars. In other words, while the newer plan was far more comprehensive in design than the original one the cost figures were never changed.

After studying the new plan, the Commonwealth's engineers decided that a project such as proposed, if built in accordance with Pennsylvania Department of Highways' standards would cost at least thirty-five million dollars. The announcement of these figures precipitated a controversy between the City Planning Commission's staff and the Pennsylvania Department of Highways, which received an unfortunate amount of publicity.

As the result, John U. Shroyer, Secretary of Highways, at the request of the Philadelphia Chamber of Commerce, appointed a special committee to make an effort to reconcile the widely varying estimates of cost., i.e., eighteen million as compared to thirty-five million dollars. Secretary Shroyer thereupon appointed a committee of three, comprising the Chief of the Pennsylvania Department of Highways, the Executive Director of the Delaware River Bridge Joint Commission, and the Chief of the Bureau of Engineering, Surveys and Zoning to review these estimates. The report of this committee was presented by Secretary Shroyer to an open meeting sponsored by Council's Committee on Public Works and held on November 19, 1945. The estimate prepared by the said committee placed the total cost at \$31,623,900. While these figures were contested by the proponents of the depressed highway design, they were accepted by Council's Committee on Public Works on the endorsement of the Department of Public Works that they were reasonable under the controlling conditions.

On December 24, 1945, Phineas T. Green, Chairman, Committee on Public Works, advised Secretary Shroyer of the Penna. Department of Highways that the said committee had voted to confirm the improvement of Vine street at surface grades in accordance with the objectives of the existing agreement

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between the Commonwealth and the City of Philadelphia. The reasons for this action are described in the following letter from Chairman Green to Mayor Bernard Samuel, dated December 24, 1945.

"Pursuant with your request that the City of Philadelphia reach a prompt decision as to its desires with respect to the proposed Vine street (City-State highway) project, final official action has been taken to that end. Council's Committee on Public Works of which I am Chairman, has voted to confirm the improvement of Vine street at surface grades in accordance with the objectives of the existing agreement between the Commonwealth and the City of Philadelphia, executed February 9, 1942, under the authority of an ordinance of Council approved February 5, 1942.

"This action was not taken until the various persons and groups advocating the substitution of a depressed 'arterial' and the surface 'local' highway design, had been given the opportunity to present their case. The public hearing which you attended was given for this purpose and the testimony received at that time was duly recorded and carefully reviewed.

"While the committee recognizes the merits of the depressed highway in principle, convincing proof has not been received that Vine street is the proper location for this type of improvement; nor that it was the best solution of the complex Delaware River approach traffic problems. At the same time it was evident from the arguments advanced that the influence of three highly important factors were being under-estimated if not completely ignored by the proponents of the depressed design. Their plan proposes relief to north and south traffic movements and provides facilities for summer seashore through travel, but apparently gives no serious thought to the heavy existing east and west local bridge traffic which occurs daily during business hours. It provides as a first step inadequate and hazardous facilities at excessive cost and ignores the great length of time required for the number of steps and the difficulty of financing the prohibitive costs involved in completing the project to a point of maximum efficiency for an undertain volume of through traffic.

"The Committee on Public Works realizes that the surface improvement will not solve all of the various conflicting traffic problems found in the Delaware River bridge approaches, but it does believe that it will materially help at a reasonable cost the basic primary problem, which is directly related to local or central city traffic conditions. Other corrections must undoubtedly be taken in the future before complete efficiency is obtained.

"In requesting your department to proceed with the improvement of Vine street as originally planned, I desire to call your attention to two provisions in the existing agreement that require further study. These are the overpass at Sixth street with ramp connections through Franklin Square and the underpass at Twentieth street and the Parkway as called for in Art. I, par. A and par. D-a respectively of the Agreement.

"These elements of the project are of such nature that they can be reviewed and even postponed without interfering with the completion of the construction drawings now in preparation. It is the opinion

of the Department of Public Works that both of the details should be abandoned for the present in favor of other supplementary improvements now being studied.

"In the meantime we hope that the development of the Vine street project under the conditions of the existing agreement will be resumed without delay and that it will be restored to its rightful place as the number one improvement in the City-State highway program."

Upon the receipt of this decision, Chief Herber requested the Bureau of Engineering, Surveys and Zoning to make a last minute review of the surface plan so as to determine whether or not any further improvements would be recommended. In line with this suggestion, the City Plans division began various studies to determine the possibility of constructing an overpass at Broad street and underpasses at various north and south streets intersecting Vine street.

Other City-State Highway Projects under Agreement -

City-State highway projects under agreement but not placed under contract to date include,--

Island avenue from Eastwick avenue to Buist avenue;

34th-Vare avenue from Grays Ferry avenue to Passyunk avenue;

The widening of three bridges on the Roosevelt boulevard overpassing the North Penn Railroad, Oxford Roach Branch of the Connecting Railway, and Philadelphia-Frankford Branch of the Reading Company; and

The grade separation at Hunting Park avenue and Ridge avenue.

During the current year, steps were taken to complete all details pertaining to these improvements in order that they could be advertised in the spring of 1946. The most serious obstacle to this objective occurs on such projects as Island avenue and 34-Vare avenue, where right-of-way condemnations require the evacuation and demolition of a number of dwellings. No new developments materialized in connection with the Harbison-Aramingo-Delaware avenues project.

New City-State Highway Projects -

In addition to Grant avenue, which was authorized to be taken into the State system on January 1, 1946, two other important projects came under prominent consideration toward the end of the year. These were Pennsylvania boulevard and the Independence Mall.

Pennsylvania boulevard -

After a series of conferences and visitations held at various times in 1945, the Pennsylvania Department of Highways agreed to pay for constructing Pennsylvania boulevard provided the City of Philadelphia would furnish the right-of-way. The Pennsylvania boulevard project was originally planned in connection with the Pennsylvania Railroad Terminal Improvement Agreements of 1925 and 1927 but no action taken because of lack of funds. As proposed under the said agreements, it comprised a widening and extension of Filbert street from the Parkway to the new station building erected on the west bank of the Schuylkill River.

State highways cannot be dead-ended but must extend from and to State highways. Therefore, in order to make it possible to adopt Pennsylvania boulevard into the said system, the Pennsylvania Department of Highways agreed to its prolongation from the Schuylkill River westward to 32nd and Market streets, and thence southwestward over Woodland avenue to Chestnut street, thereby making the Parkway and Chestnut street the terminal State highways for this new route. Negotiations with the Pennsylvania Railroad were begun by the City at the end of the year for a modification of the terms of the 1925 and '27 agreements to reduce, if possible, the City's liabilities for the right-of-way required.

Independence Mall -

For a number of years, a considerable amount of attention has been given to improvement of the environments of Independence Mall. One of the schemes recommended by the first City Planning Commission was the construction of a Mall between Fifth and Sixth streets and extending northward from Chestnut street at least to Market street. During 1945 the idea of the development of an Independence Mall received renewed consideration from various sources. A certain amount of interest in this project was indicated in Washington and plans were begun for the appointment of a Commission to study the matter.

In the meantime, the Governor of Pennsylvania became deeply interested in the same project and publicly announced his willingness to undertake the same as a State project without assistance from the National Government. The plan proposed by the Governor was far more ambitious than the one first conceived. He agreed that it should cover everything within the area bounded by Fifth street on the east, Sixth street on the west, Chestnut street on the south, and Race street on the north. After several conferences in the Mayor's Office, the City agreed to accept Governor Martin's offer, and a study was begun immediately to develop the procedures involved. It was decided that the development and improvement of the Mall should be a joint undertaking by the Pennsylvania Department of Highways and the State Department of Forests and Waters with the City collaborating.

The widening of Fifth street on the west side and Sixth street on the east side is to be an obligation of the Highway Department, and the development of the area situated between the highway improvements that of the Department of Forests and Waters. A preliminary understanding having been reached, it was agreed that the authorizing legislation and other legal matters would be formulated at the beginning of 1946.

Low-Grade Industrial Highway -

The portion of this highly important facility that was most active in 1945 was the section between the traffic circle at the intersection of Island avenue and Essington avenue and 26th street, which also includes the Schuylkill River-Penrose avenue bridge project. As recorded in the 1944 annual report, Modjeski and Masters, Consulting Engineers, were retained to make preliminary surveys, investigations and studies and advise on the type of bridge to be recommended. It was a condition of their contract that the office of Paul Gret should be retained as architectural consultant on the bridge design. Four (4) preliminary reports were submitted by Modjeski and Masters during the year, as follows,—

- 1 - On choice of main bridge type - May 18, 1945
- 2 - Recommended foundations - June 15, 1945
- 3 - Estimate of Quantities and Cost - July 2, 1945
- 4 - Penrose avenue bridge redesign of approach piers - September 14, 1945.

Five (5) main bridge types were studied as being applicable to the site. These were

- 1 - Cantilever
- 2 - Tied arched cantilever
- 3 - Self anchored suspension
- 4 - Tied arch truss
- 5 - Tied arch with stiffening girders.

After a careful analysis of all controlling factors, it was decided that type (1) possessed the most advantageous qualifications and it was recommended and accepted by all parties concerned, i.e., the Commonwealth, the Public Roads Administration, the Department of Public Works, the Art Jury, the Department of Wharves, Docks and Ferries, and the United States Engineer Office. Alternate studies were prepared, based on two different treatments of the approach girder spans as follows:

Penrose Avenue Bridge
Summary of Estimates - Plan A

Cantilever Main Bridge with Approach Girder
Spans on all Concrete Piers

	At 1926 Unit Prices - ENR Const. Cost Index - 100	At 1945 Unit Prices - ENR Const. Cost. Index - 148
Bridge Construction Sta. 31+68.62 to Sta. 120+78.71		
Additional foundation borings (Sh. No. 2)	\$ 5,100.	\$ 7,548.
Diversion of Eagle Creek & Sewer (Sh. No. 2)	49,434.	73,162.
Main bridge superstructure (Sh. No. 3)	713,673.	1,056,236.
Main bridge substructure (Sh. No. 3)	537,700.	795,796.
Approach superstructure (Sh. No. 4-A)	1,464,777.	2,167,870.
Approach substructure (Sh. No. 4-A)	1,076,236.	1,592,829.
End cellular construction and retaining Walls (Sh. No. 2)	<u>348,210.</u>	<u>515,351.</u>
Total bridge construction	\$ 4,195,130.	\$ 6,208,792.
10% contingencies	<u>419,513.</u>	<u>620,879.</u>
Total bridge construction including 10% contingencies	\$ 4,614,643.	\$ 6,829,671.

West approach grading & paving (Sh. No. 5)	281,941.
East " " " (Sh. No. 6)	508,514.
	<hr/>
	\$ 7,620,126.

Preparation of site & miscellaneous items
(Exhibit A)

Summary of Estimates - Plan B

Gantilever Main Bridge with Approach Girder
Spans on Steel Bents and Concrete Piers

	At 1926 Unit Prices - ENR Const. Cost. <u>Index - 100</u>	At 1945 Unit Prices - ENR Const. Cost. <u>Index - 148</u>
Bridge Construction Sta. 31+68.62 to Sta. 120+78.71		
Additional foundation borings (Sh. No. 2)	\$ 5,100.	\$ 7,548.
Diversion of Eagle Creek & Sewer (Sh. No. 2)	49,434.	73,162.
Main bridge superstructure (Sh. No. 3)	713,673.	1,056,236.
Main bridge substructure (Sh. No. 3)	537,700.	795,796.
Approach superstructure (Sh. No. 4-B)	1,488,695.	2,203,269.
Approach substructure (Sh. No. 4-B)	827,477.	1,224,666.
End cellular construction and retaining walls (Sh. No. 2)	<u>348,210.</u>	<u>515,351.</u>
Total bridge construction	\$3,970,289.	\$5,876,028.
10% contingencies	<u>397,029.</u>	<u>587,603.</u>
Total bridge construction, including 10% contingencies	\$4,367,318.	\$6,463,631.
West approach grading & paving (Sh. No. 5)		281,941.
East " " " (Sh. No. 6)		<u>508,514.</u>
Total estimated project cost		\$7,254,086.

Preparation of Site and Miscellaneous Items (
(Exhibit A)

Conferences with the Pennsylvania Department of Highways, preliminary to the drafting of a final agreement, resulted in the understanding that the City of Philadelphia would provide the contract drawings for the Penrose avenue project, including the bridge and its approaches and, in line with this decision, Modjeski and Masters were advised that they would be retained for these engineering services. Their proposal, which was based on four (4) different items of work, was accepted as follows:

Item 1 - Surveys	\$1,200.00	
Item 2 - Supervision of Boring contract	1,500.00	
Item 3 - Preparation of surface plans	18,000.00	
Item 4 - contract plans for bridge and approach	<u>98,000.00</u>	\$118,700.

During the year, a number of meetings were held with the Gulf Oil Corporation to determine conditions and methods of contract procedure on the section of the work affecting their property. Very few difficulties were encountered because of the fine spirit of cooperation contributed by this industry. It was agreed that the foundation work for the bridge and the approaches would be undertaken as a separate contract and the work is being planned accordingly. One complication encountered was the necessity of constructing at least one element of the Penrose avenue twin stormwater sewers (east side) prior to, or coincident with, the foundation work of the bridge and its approaches.

The draft of the agreement required under the City-State highway procedure was completed by the end of the year and submitted to Harrisburg for criticism. Little difficulty is anticipated over the conditions included because all the important matters had been previously cleared and understandings reached.

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In addition to those previously mentioned, interest became active in two other City-State highway projects toward the end of the year. These were the approaches to the Tacony-Palmyra bridge and the improvement of Spring Garden street from Broad street to the Parkway.

Tacony-Palmyra Bridge Approaches -

In 1945, the original plan for routing traffic in Levick street and Robbins street was adopted. Under the said plan, Levick street was made a one-way highway for west-bound traffic from, and Robbins street was made a one-way highway for traffic to the Tacony-Palmyra bridge. These regulations have worked very satisfactorily with the exception that traffic congestion still is a serious problem at the Levick street underpass of the Pennsylvania Railroad.

In order to eliminate this condition, it was agreed to advance the improvement of the approaches of this important interstate bridge by setting up a project that would cover the reconstruction of the Pennsylvania Railroad bridge so as to provide for a two-way underpass of double width, and the improvement of the adjacent approaches at State road and Keystone street. This project was discussed with Chief Herber of the Pennsylvania Department of Highways, who authorized the preparation of the necessary agreement for consideration about the first of the year.

Spring Garden street -

The Bureau of Engineering, Surveys and Zoning, for many years has been endeavoring to improve Spring Garden street so that it could be utilized to the fullest degree as a main arterial highway. Included in

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the developments necessary are two important corrections, i.e.,

- 1 - The changing of the intersection of Spring Garden street and Broad street to minimize the obstructions to traffic created by the offset which now exists between the two sections of Spring Garden street, east and west from Broad street.
- 2 - The widening of the roadway of Spring Garden street from Broad street to the Parkway from its present width of fifty feet to seventy-eight feet, by reducing the width of the sidewalks from thirty-five feet to twenty-one feet.

This project has become very active because of developments now in progress which will practically improve all of the old Baldwin Locomotive Works' site. Included in these is the erection of a broadcasting and television center by WCAU at the southwest corner of Broad and Spring Garden streets, which makes it imperative to take steps for correcting the present physical condition of the intersection previously described. Negotiations are now under way with WCAU, whereby the southwest corner of Broad street and Spring Garden street can be cut back in order to improve alignment conditions.

SEWAGE TREATMENT

Specific Progress -

With the expansion of the design division noted in the 1944 annual report, an effective organization was created whereby an intensive program of planned preparation became possible. A chart showing a record of the progress made during 1945 may be found in the appendix.

Pursuant to the State mandate, the plans for the Northeast Treatment Works were given first attention. Plans and specifications for the primary, aeration, and digestion tanks will be completed shortly after the first of the year and the work placed under contract following the receipt of the permit of the State Sanitary Water Board.

The plant now proposed at Northeast is radically different from the one described in the 1944 report. After careful consideration, it was deemed advisable to build an entirely new plant immediately south of the present one. This procedure will permit the uninterrupted operation of the old works until the new and more modern facilities are completed, after which the present plan will be scrapped to a large extent, owing to its obsolescence.

In order to strengthen the City's position in the sewer rental authorization and litigation, the State Sanitary Water Board, in December, granted preliminary permit for the construction of a two thousand feet section of the Upper Delaware Collector, and the work was advertised December 29, 1945. A second section about five thousand feet in length will be ready for advertisement sometime in February of 1946.

The present terminus of the Upper Delaware Low Level Intercepting sewer is at State road and Ashburner street. It drains southward along the Delaware River to the Northeast Sewage pumping station at the Northeast Sewage Treatment Works. In the engineering report on the Upper Delaware Intercepting sewer, submitted to the Sanitary Water Board under date of April 1, 1927, complete data was furnished on the estimated ultimate development of the drainage area, the resulting sewage runoff, and the hydraulics of flow in the proposed intercepting sewer. The construction of the intercepting sewer was completed from the Northeast Sewage pumping station to State road and Holmesburg avenue in 1929.

A supplementary report on the Upper Delaware Intercepting sewer extension from Holmesburg avenue to Ashburner street was submitted to the Sanitary Water Board on February 3, 1930. In this report, data was furnished on the flow conditions and hydraulics of flow for the revised sewer sections adopted for this portion of the intercepting sewer. The construction of this extension was completed in 1931.

There has been no indication of any radical change in the nature of the development for this area on which the data in the 1927 report was based, and no revision of the expected sewage runoff has therefore been made. It is noted that provision has been made in the capacity of this sewer for the sewage from 5470 acres of the Poquessing Creek watershed lying outside of the City, which is estimated at an ultimate daily maximum flow of 9,800,000 gallons per day.

The original circular 5'3" diameter and 5'6" diameter sewer sections planned for this portion have been revised and the sewer will be constructed with 6'0" x 5'0", and 5'9" x 5'0" rectangular reinforced concrete sections with vitrified plate lining. A value of $N = 0.013$ has been used as before, in the calculations of capacity.

The sewers in the area tributary to this proposed extension will be a separate system, and slants will be provided in the intercepting sewer for the connection of sanitary pipe sewers at all points where such connections may be made. The connection from the proposed Sewage Pumping station will be made at Eden street, and the 6'0" x 5'0" section on the grade of 0.075 per cent. is, therefore, continued north of Convent avenue.

General Progress -

Philadelphia's sewage treatment plans have been certified and publicly accepted as the No. 1 project in the City's noteworthy program of public works improvements. Official progress and procedures, therefore, have both historic and reference value to a degree that justifies a recording in these departmental manuals.

On September 21, 1945, formal application was filed with the State Sanitary Water Board for a permit to construct the Northeast Sewage treatment works. The said application contained the following information,—

Under date of October 10, 1941, the City of Philadelphia forwarded to the Sanitary Water Board a statement of progress made under the program for the collection and treatment of the sewage of the City of Philadelphia and certain abutting townships lying within the natural drainage watershed,

and made formal application for a change in the proposed method of sewage treatment to insure a higher degree of pollution reduction to the rivers receiving the treatment works effluent.

The Sanitary Water Board, on April 1, 1943, granted a permit to the City of Philadelphia for the change in the proposed method of sewage treatment as a design permission only and established a priority status for the increase in capacity of the Northeast Treatment Works. Design has proceeded on the increase of capacity at the Northeast Treatment Works to 125 million gallons daily average in accordance with the requirements fixed in the permit, and the following data is submitted for consideration by the Sanitary Water Board in connection with the application for a construction permit.

At the time of filing the application for the change in the method of treatment, the data submitted contemplated the use of the existing Imhoff Tanks as primary sedimentation units in combination with new aeration tanks and new secondary sedimentation tanks. This combination has been abandoned owing to the rapid deterioration of the existing tanks and this application is based upon the construction of an entirely new plant located on the south side of Wheatshaf lane. The present Imhoff Tanks will be maintained in service until the new plant is ready for operation and they will then be abandoned.

The Northeast Sewage Treatment Works is at present receiving the drainage from an area of 25,346 acres with an estimated population of 447,000 persons contributing a daily average sewage flow of 67,000,000 gallons and a daily maximum of 96,000,000 gallons. This is made up of,—

- 1 - The High Level Area drained by the Facony Creek and Frankford Creek High Level intercepting sewers, an area of 11346 acres with a population of 230,000 persons within the City and 18,000 persons in abutting counties, a total of 298,000 persons contributing a daily average sewage flow of 33,000,000 gallons and a daily maximum of 46,000,000 gallons.
- 2 - The Low Level Area drained by the Upper Delaware, Pennypack Creek, Lower Frankford Creek and Upper Frankford Creek Low Level intercepting sewers. The present drainage area to the extent of interceptor construction is 14,000 acres with a population of 149,000 persons contributing a daily average sewage flow of 34,000,000 gallons and a daily maximum of 49,000,000 gallons.

The provision of increased capacity at the Northeast Works will permit the construction of the intercepting gates along the Somerset Low Level intercepting sewer, adding the sewage flow from an area of 4,092 acres with a population of 218,000 persons. This will provide a daily average flow of 24,000,000 gallons and a daily maximum of 34,000,000 gallons.

The estimated quantity of sewage to be treated by the new works at the beginning of operation is then:

	Acres	Population	Gals. per day Average	Maximum	Storm Maximum
High Level Area	11,346	298,000	33,000,000	46,000,000	66,000,000
Low Level Area	14,000	149,000	34,000,000	49,000,000	55,000,000
Somerset Low Level	4,092	218,000	24,000,000	34,000,000	38,000,000.
Totals	29,438	665,000	91,000,000	129,000,000	159,000,000.

The sixth proviso of the permit of April 1, 1943, creates a priority status for the Northeast Works because of the effluent having a direct effect upon the quality of the water of the Delaware River at the intake of the Torresdale water works, whence a large part of the water supply of Philadelphia is obtained. It has been established that sources of pollution in the community of Torresdale which demand that the priority status include the extension of the Upper Delaware Collecting Sewer, the construction of the Torresdale Sewage Lifting Station and intercepting sewers to properly safeguard the water supply. Design work is proceeding on the various items comprised in this extension of interception to remove the pollution as a detail immediately following the beginning of construction of the Northeast Works.

To provide for this emergency addition and to accommodate the normal extension of the drainage system for a period of ten years without having the variation between present and future flows seriously affect the operation of the treatment works, the capacity of the Northeast Works for this first stage has been planned at 125 million gallons daily average flow.

Under the conditions stated, it is estimated that flow operations will be within the range of 60 million gallons daily minimum, 91 million gallons daily average and 193 million gallons storm maximum. There was made a plan layout of flow through conditions, profiles of head losses and a chart of conduit sizes, velocities, depths of flow, head losses, hydraulic gradients and water surface elevations for the minimum and maximum flow conditions as noted above. Provision will be made for the introduction of air in channels where minimum velocity may result in deposit of solids. It should be noted that all sewage reaching the works has passed through coarse screens and grit removal channels.

Space has been set aside for the construction of future aeration and sedimentation tanks to increase the capacity of these units of the works by 25 per cent., which would equal one-half the total future capacity of the Northeast Works and permit the future one-half capacity to be constructed within the area available on the north side of Wheatshaf lane.

There is presented herewith a scale layout of the proposed 125,000,000 gallons average daily flow unit of the Northeast Sewage Treatment Works was also made, designed in accordance with the requirements of proviso third of the permit of April 1, 1943. The following design data is based upon a contributing population of 870 thousand persons, an

average daily flow of 125 million gallons, or 193.5 cubic feet per second, a maximum daily flow of 200 million gallons, or 309.6 cubic feet per second, suspended solids in influent of 200 parts per million and a reduction of 75 per cent. in the effluent solids and B.O.D. through the use of primary sedimentation, aeration and secondary sedimentation, with digestion of sewage solids and lagooning of sludge pending the working out of the final method of sludge disposal. Tank capacity is based upon, and provision made for, the return of sludge up to 15 per cent. of the volume of flow.

The high level influent entering through the existing conduit in Wheatsheaf lane will be intercepted at the entrance to the works by a new 5'6" x 5'6" conduit, with a branch spur to receive the flow of the future additional conduit from the Frankford grit chamber when the Gummer's Run High Level Interceptor is constructed. This new conduit will divert the flow from the present Imhoff Tanks southward to the new primary sedimentation tanks and will be provided with a new Venturi meter for recording the high level flows.

The low level drainage from the sewage lifting station will be diverted from the Imhoff Tanks by an extension of the gravity flow conduit to a junction with the new high level conduit delivering to the primary sedimentation tanks.

The new 8'6" x 12'0" effluent conduit has been designed to carry the expanded plant capacity of 125 million gallons daily average plus 25 per cent. future and will be connected to the existing 8'6" x 10'0" effluent conduit with provision for diversion to the new additional effluent conduits to be provided when the total future capacity of the Northeast Works is attained.

Primary Sedimentation -

The primary sedimentation tanks will be four in number, each tank being 125 feet wide by 250 feet long and 10 feet water depth. The size is based upon an influent of 125 million gallons daily average, plus a possible 10 million gallon daily sludge return. 135 million gallons daily is 209 cubic feet per second or 752,000 cubic feet per hour. With tank capacity of 1,250,000 cubic feet, the retention time is $752,000/1,250,000$ or 1.655 hours.

Deposited solids will be moved to the effluent end of the tanks by traveling longitudinal scrapers moving at approximately two feet per minute. There will be seven longitudinal scrapers in each tank feeding to two cross collectors delivering to a sump in each tank. From these sumps, the deposits will be pumped continuously to a sludge storage well. The pumping equipment will consist of four centrifugal and two reciprocating pumps with variable speed driver. The return flights of the traveling collectors will operate as scum collectors and the material collected will be removed from the influent end of the tanks to a scum pit and thence delivered to the sludge storage tank. The operation of scum removal will be intermittent.

Aeration Tanks -

From the primary sedimentation tanks, the sewage will flow by gravity to the aeration tanks. These are sixteen in number, divided into four units of four tanks each. Each tank is 21 feet 9 inches wide, 410 feet long and 15 feet water depth, and has a capacity of 126,850 cubic feet, a total for the sixteen tanks of 2,032,000 cubic feet.

The aeration tanks will receive from the primary sedimentation 125 million gallons daily average, plus a possible 10 million gallons daily return sludge, plus a possible 10 million gallons daily conditioning sludge or a total of 145 million gallons daily average. A flow of 145 million gallons daily average is 224.46 cubic feet per second or 807,700 cubic feet per hour. With tank capacity of 2,032,000 cubic feet, the retention time is $807,700/2,032,000$ or 2.52 hours.

The application of air will be through porous tubes at the rate of 0.3 cubic feet of air per gallon of sewage. Tubes will be 4-1/4 inches outside diameter and 2 feet in length, spaced at 12 inches on centers. They will be assembled on an 8-inch diameter pipe in groups of 24 or 25 pipes and each group will have a valve control. Two adjacent tanks will be supplied from each feeder line and the air supply to each line will be measured by Venturi tubes. With this arrangement of tubes, the application of air will be at the rate of 4.565 cubic feet per minute per foot of tank length.

The air application of 0.3 cubic feet per gallon of sewage will require 30,000 cubic feet per minute of free air. This will be furnished by four blowers 30 inches by 28 inches, two driven by single speed, synchronous motors of 450 horse power and 360 revolutions per minute, and two driven by two speedmotors of 360 and 180 revolutions per minute, and two driven by two speedmotors of 360 and 180 revolutions per minute. At 360 revolutions per minute, the capacity of each blower is 10,000 cubic feet per minute, a total of 40,000 cubic feet per minute available or 30,000 with one spare.

Silencers will be provided at both suction and discharge ends and air filters of the electric precipitation type at the air suctions will remove about 90 per cent. of all materials which would tend to cause clogging of the air diffuser tubes.

All air piping will be cast iron, coated inside and outside, and is sized on air velocities of from 40 to 50 feet per second.

Secondary Sedimentation Tanks -

Sewage flow from aeration tanks to secondary sedimentation tanks is by gravity. The secondary tanks are arranged in four groups of four tanks each. The individual tanks are 70 feet wide, 112 feet 10 inches long, and 13 feet water depth. Each tank has a capacity of 103,000 cubic feet, a total for the sixteen tanks of 1,648,000 cubic feet.

The secondary tanks will receive a flow of 125 million gallons daily average plus a possible sludge return of 20 million gallons or 145 million gallons daily average. This flow is equivalent to 224.46 cubic feet per second or 807,700 cubic feet per hour. With tank capacity of 1,648,000 cubic feet, the retention time is $807,700/1,648,000$ or 2.03 hours.

Each tank will be equipped with four scraper collectors delivering in the direction of flow to a cross collector which deposits the solids in a small sump from which it is drawn through a pipe adjustable to regulate the amount of flow to the sludge channel. From this channel, the sludge is pumped to a distribution box adjacent to the influent channels of the aeration tanks. The distribution box is equipped with wires adjustable for dividing the flow in any desired proportion between the aeration tanks and the excess sludge return to the primary sedimentation tanks.

Excess sludge will be drawn only from the primary sedimentation tanks by continuous pumping to two sludge storage tanks and thence through sewage gas fired heating units to digestion tanks. All sludge pumps will be driven through variable speed transmissions and tank scum will be removed through pneumatic ejectors.

With typical Philadelphia sewage of 200 p.p.m. of solids in suspension, a removal of 75 per cent. with a moisture of 98 per cent. would require the pumping of 937,500 gallons per day or 650 gallons per minute with continuous pumping. Digestion will be two-stage and with approximately 76 per cent. volatile solids in the raw sludge, the indicated digestion capacity is as follows,—

Primary Digesters	1,235,000 cubic feet
Secondary Digesters	475,000 cubic feet
Supernatant Liquor	<u>100,000 cubic feet</u>
Total	1,810,000 cubic feet

Although the Northeast Works will go into operation at less than design capacity, digestion capacity will be provided to a total of 2,281,000 cubic feet. This will comprise the installation of eight tanks 110 feet diameter and 30 feet deep, with floating covers equipped for gas collection. Pumps will be installed for continuous circulation and transfer of digesting sludge. Tanks will be arranged in groups of four with three for primary digestion and one for secondary digestion. Digested sludge will be lagooned at present and supernatant liquor will be discharged through an aeration tank to the influent channel of the primary sedimentation tanks. Space will be allocated and operating connections provided for an additional unit of four digestion tanks to be constructed when required, increasing the per capita capacity from 2.6 cubic feet to 4 cubic feet.

As previously stated, the sludge will be heated in passage from the sludge storage tanks to the digestion tanks, by means of heating units operated by sewage gas. Digestion will be carried on at a temperature in the primary digestion tanks of 65 degrees F. during the winter months. The following estimate of heat units required and available have been made for the various stages of operation. It is assumed that gas production should approximate 1 cubic foot per capita per day and that approximately 1 cubic foot of gas should provide 650 B.T.Units. Operating at 125 million gallons daily average during winter months.

Average temperature of sludge	48 degrees
" " " air	33 "
Required to heat sludge to 85 degrees	144,451,000 b.t.u.
Heat losses from 8 tanks	76,800,000 b.t.u.
Total	221,251,000 b.t.u.

Efficiency 75 per cent requires	295,000,000 b.t.u.
650/295,000,000 = 453,000 cubic feet of gas	
Available	870,000 " " " "
Surplus	417,000 " " " "

Operating at 90 million gallons daily average during winter months,

Population 668,691 persons = 668,691 cubic feet of gas available

Average temperature of sludge	48 degrees
" " " air	33 degrees
Required to heat sludge to 35 degrees	104,000,000 b.t.u.
Heat losses from 6 tanks	57,000,000 b.t.u.
Total	161,000,000 b.t.u.

Efficiency 75 per cent. requires	215,136,000 b.t.u.
650/215,136,000 = 330,000 cubic feet of gas	
Available	668,691 " " " "
Surplus	338,691 " " " "

Operating at 125 million gallons daily average yearly temperature

Temperature of sludge	62 degrees
" " " air	54 degrees
Required to heat sludge to 85 degrees	39,307,800 b.t.u.
Heat losses from 8 tanks	62,400,000 b.t.u.
Total	152,207,800 b.t.u.

Efficiency 75 per cent. requires	203,809,000 b.t.u.
650/203,809,000 = 313,000 cubic feet of gas required	
Available	870,000 " " " "
Surplus	557,000 " " " "

Operating at 90 million gallons daily average yearly temperature

Temperature of sludge	62 degrees
" " " air	54 degrees
Required to heat sludge to 85 degrees	64,661,625 b.t.u.
Heat losses from 6 tanks	47,000,000 b.t.u.
Total	111,661,000 b.t.u.

Efficiency 75 per cent. required	148,616,000 b.t.u.
650/148,616,000 = 228,000 cubic feet of gas required	
Available	668,600 " " " "
Surplus	440,600 " " " "

The application above referred to is now being held under advisement by the Board, although a large amount of preliminary details have been cleared with it to date. Two important issues were raised in the consideration of the City's application. The first was the question as to the air requirements under the method of partial aeration proposed, and the second was the establishment of the construction sequences to be given to the various elements of the three major sewage plants to be built. The Bureau's presentation of the reasons for its position in both matters are given at length as follows,--

Case No. 1 -

The first re-design of the Northeast Sewage Treatment Works was based upon a primary sedimentation period of one hour, an aeration period of two hours, and a final sedimentation period of two hours, which agrees with the provisions of the permit issued April 1, 1943.

The present plant design provides for a primary settling period of 1.5 hours, an aeration period of 2.65 hours, and a final settling time of two hours with provision for the return of ten million gallons of sludge to the primary tanks plus ten million gallons of sludge to the aeration tanks.

The increase of time in the primary tanks from 1 hour to 1.5 hours will decrease the load on the aeration tanks and the increase of time in the aeration tanks will increase proportionally the amount of time the sewage is exposed to the action of oxygen in the air.

The letter of October 29, 1941 from Havens and Emerson and referred to in the 1943 permit stated --

The Philadelphia results are of great interest and the experiments may have disclosed a particularly effective method for treatment of sewage which can be duplicated with economy for operation on a plant scale. However, in fairness, as well as to the investigators, we believe it should be noted that the results furnished represented operations for only comparatively short periods, and we understand also that the work was carried out under the handicap of limited funds, which prevented expenditures for accurate special equipment to gauge and record data necessary to estimate the sustained certainty of accomplishments and operating costs over an extended period. If it can be definitely demonstrated that aeration for a period of about two hours with moderate supply of air, followed by sedimentation for one and one-half or two hours, will continuously bring about reductions of 75 per cent in suspended solids, biochemical oxygen demand and bacterial content of the raw sewage as received at Northeast Works, we are of the opinion that such method of treatment would be adequate for present contemplated plant extension of 125 m.g.d. capacity and that detailed estimates might show a savings in cost for construction and operation as compared with other methods now available for producing the same results.

Since the above was written several plants similar to the one Philadelphia proposes have been built and operated as "modified aeration plants". The facts on two of them are,--

	<u>Capacity</u>	<u>Cu. ft. Air per gallon</u>	<u>Detention Time in Primary Tanks</u>
Bowery Bay	40 m.g.d.	.32 to .37	1.05 hours
Jamaica Bay	65 m.g.d.	.40	none
Wards Island	200 m.g.d.	.30 to .41	1.0 hours

The sewage analysis at Bowery Bay compares with that in Philadelphia and the aeration period is 2.5 hours with 1.7 hours in the final tanks. The S. S. removal at Bowery Bay is reported at 85.1 per cent and the b.o.d. removal at 86.2 per cent. The S. S. removed at Wards is reported at 82 to 87 per cent. and the b.o.d. removal at 67 to 70 per cent removal.

These facts demonstrate that adequate treatment can be expected from the proposed plant using somewhat less than .5 cubic feet of air per gallon of sewage.

The present flow at the Northeast Works averages 40,000 gallons per minute and the flow to be expected when the plant is opened is estimated to be 62,500 g.p.m. How long the plant will operate at the expected rate of flow of 62,500 g.p.m. is unknown, but the flow of 40,000 g.p.m. has held for the past seven years without appreciable fluctuation. The flow of 62,500 g.p.m. might be expected to hold steady for sometime as the growth of Philadelphia seems to have halted. In fact, the population of Philadelphia will probably decrease now that the war is over by virtue of the war-workers returning from whence they came.

The air compressor installation as designed will furnish 48,000 cubic feet of free air per minute which, for the initial flow, is at the rate of .77 cubic feet per gallon or better than twice that used at the present plants of similar construction. Should the plant reach redesign capacity of 86,000 gallons per minute the volume of air available would be 0.55 as against 0.35 used elsewhere.

It is the desire to properly design this plant in the light of present knowledge instead of past guesses, and without any waste of the taxpayers' money either in excess equipment or space therefor.

CaseNo. 2 -

Recent events pertaining to the program of the City of Philadelphia for the collection, treatment and disposal of all of its sewage have emphasized the necessity of reviewing certain aspects of this project. Chronologically arranged, the happenings referred to include -

- 1 - April 20, 1944 - The passage of an ordinance of Council "Imposing an annual sewer rental or charges fixing the rates and providing for the collection and administration thereof and providing penalties".
- 2 - March 15, 1945 - Lower Courts declared the validity of the sewer rental ordinance approved April 20, 1944 (C.P. Court No. 6 September Term 1944 - 906).

* 3 - October 19, 1945 - The passage of an ordinance of Council appropriating the sum of seven million dollars toward the acquisition of property and interests in property for and the erection, construction and improvement, extension and equipment of sewage treatment plants, intercepting sewers and devices for the interception of sewage, force mains, pumping stations, and other appurtenant work required for the treatment and disposal of sewage (subject to future legislation).

4 - October 30, 1945 - The Supreme Court of Pennsylvania affirms the decision of the Lower Courts as cited under Item 2. (Supreme Court of Pennsylvania, January Term 1945 - 183 and 198).

5 - December 2, 1945 - An ordinance of Council was approved authorizing "The Director of Public Works to advertise for proposals and award contracts for the construction, improvement, extension and equipment of the Northeast Sewage Treatment Works; including all related and appurtenant structures and work required for the protection of public health through the collection and disposal of sewage; and authorizing the acquisition of property, rights-of-way and easements and the payment of damages; and providing for the conduct of the work and the payment of the costs thereof".

(*) The appropriation of the seven million dollars for the City's sewage treatment projects, mentioned above, will be followed by the floating in the spring of 1946 of a further loan of thirty-one (31) million dollars for the same purpose, which we feel will go a long way toward completing the City-wide project planned.

In view of the facts mentioned, it is now desired that the Sanitary Water Board give consideration towards a modification of the construction program as fixed by the various permits which have been issued from time to time and which establish the sequence of operations to be followed by the City of Philadelphia.

The sequence of operations now in force stands as follows.--

- 1 - Revision of treatment and increase in capacity of Northeast Treatment Works.
- 2 - Complete the interception of sewage discharges from the Delaware River southward from the Northeast Works to Lehigh avenue.
- 3 - Construct west side Schuylkill River interceptor between Fairmount Dam and 43d street.
- 4 - Construct Southwest Sewage Treatment Works.
- 5 - Remove sewage from Cobbs Creek below 75th street.
- 6 - Remove sewage from Schuylkill River below 43d street.
- 7 - Extend Upper Delaware interception to Torresdale.
- 8 - Construct Southeast Sewage Treatment Works.

9 - Remove sewage from Delaware River southward from Lehigh avenue.

The time interval that has elapsed since the fixing of the above sequence of operations has brought changes in basic conditions that indicate a revision of the program which would be desirable, and the following data is submitted for your consideration with this thought in mind.

The paramount necessity controlling the completion of the City's sewage treatment facilities is the protection of its water supply. Therefore, no radical changes are proposed under this phase of the work.

Step No. 1 - The construction of the Northeast Sewage Treatment Works.

Step No. 2 - The completion of the interception of sewage southward to Lehigh avenue cannot be completed until the Northeast Works is constructed and in operation. Upstream from the source of the water supply is the community of Torresdale and it is considered that proper protection demands the extension of sewage interception northward from Ashburner street to Torresdale. Therefore, it is desired that step 2 should comprise the extension of the Upper Delaware Interceptor to Torresdale, the construction of the Milnor street sewage lifting station, and the interception of sewage along with the work southward to Lehigh avenue, making step 2 comprise the interception of sewage from Torresdale southward to Lehigh avenue. This will complete the barrier to sewage discharges within tidal influence of the Delaware River water supply.

Step No. 3 - The removal of sewage discharges from the Schuylkill River between Fairmount Dam and 43d street by the construction of east and west side interceptors, the syphon crossing the river, the west side Schuylkill pumping station and force mains to the Mill Creek sewer. This portion of the river traverses the central city and the shores thereof are subject to public use. The removal of sewage would relieve a nuisance condition affecting a large part of the population of the city, whereas the abutting property southward from 43d street is largely unimproved or occupied by oil processing industries.

Step No. 4 - Conditions in the Delaware River along the central and southern City water fronts have become progressively worse until nuisance now exists, seriously affecting the commerce of the port and civic and government industries abutting thereon. It is also a necessity that sewage discharges be removed from Cobbs Creek, both City and County origin. These water fronts can only be relieved by the placing in service of the remaining sewage treatment works, therefore it is desirable to undertake the construction of the Southwest Sewage Treatment Works and the Southeast Sewage Treatment Works simultaneously, if possible.

Step No. 5 - The completion of the collecting systems through West Philadelphia, including the Main Gravity Collector and the 60th street Cut-Off to relieve conditions in Delaware County, and the Lower Delaware Collector southward from Lehigh avenue to relieve conditions along the shipping and government water fronts.

Step No. 6 - The removal of sewage discharges from the Schuylkill River southward from 43d street.

Step No. 7 - The construction of the Gunners Run High Level Collector and other minor details necessary to complete the sewage treatment project.

The permit of the Sanitary Water Board, issued under date of January 10, 1935, fixed, as a commitment against the borrowing capacity, the removal of the sewage of Philadelphia and Upper Darby Township from Cobbs Creek at 75th street and the construction of sewage treatment structures sufficient in capacity to accommodate the flow. Objection is made to this obligation. The Island avenue Collector which will intercept the discharge of City sewage at 75th street has been completed and, by notice from the authorities of Upper Darby Township, no capacity was provided therein for Township sewage. On this account, the receipt of Upper Darby Township sewage for treatment by the City of Philadelphia must await the construction of the Main Gravity Collector and the 60th street Cut-Off proposed in Step No. 5. As of this date, there is no agreement between the City of Philadelphia and any sub-division of Delaware County for the treatment of sewage although a request for a conference thereon has been received from Upper Darby Township.

The sequence of operations proposed herein is based upon the present day indications of the needs of the locations involved and their comparative importance from the City viewpoint. It is not intended that it be rigidly followed, but that a degree of elasticity be admitted to cover delays to listed items, arising from legal and physical barriers, rights-of-way, acquisition of property, etc., common to such undertakings and which must be solved prior to entering into construction contracts.

There is every indication that ample funds will shortly be provided for undertaking the local sewage treatment program on a city-wide basis and not in piece-meal fashion as anticipated when the first sequence of operations was established. Such being the case, the City should not be bound by such sequence but free to carry on operations simultaneously to the fullest extent possible.

* * * * *

In order to make absolutely certain that the methods of basic design proposed by the Bureau's engineers are in complete accord with the most advanced modern practice, the consulting firm of Greeley and Hansen, of Chicago, Illinois, were retained to check the design data and submit a report on their findings. These consultants have a national reputation in the field of sanitary engineers. Their preliminary report will be completed in time for the 1946 March meeting of the State Sanitary Water Board.

Sewage Treatment Operation -

In anticipation of the City's new sewage treatment program it was agreed by the City Council and the Mayor that the full responsibility for the management and operation of the Northeast Sewage Treatment plant, grit chamber, intercepting chambers, etc. would be returned to the Bureau of Engineering, Surveys and Zoning under the 1946 budget.

AIRPORTS

During the first six months of 1945, there was extreme activity at the Philadelphia Northeast Airport. In this period repeated but unsuccessful efforts were made to obtain some definite word from Washington as to when it would be possible to re-open the Philadelphia Southwest Airport. Great demands were being expressed for the restoration of airline service and an intensive program was established to complete and open the Northeast Airport at the earliest possible date. An ordinance of Council was approved appropriating \$200,000. supplementary to additional available funds so as to cover the most urgent requirements and work was placed under contract as rapidly as the construction drawings and specifications could be prepared. The said work included -

Grading, drainage and paving	-	\$74,768.91
Electrical work	-	16,750.00
Chain link fence	-	24,770.54
Painting Administration Building	-	1,500.00
Electrical work	-	9,000.00
Additional chain link fence	-	3,500.00
Improving Ashton road	-	30,000.00
Miscellaneous	-	21,380.51
Drainage, pumping station, etc. in Academy road	-	55,821.04
		<hr/>
Total		<u>\$237,491.00</u>

The majority of these items were improvements which the Civil Aeronautics Administration had refused to finance. However, coincident with this work, the CAA did let supplementary contracts for correcting the unsatisfactory paving and drainage conditions which were described in the 1944 report, and completed the top soil and seeding of the airfield. As the construction work progressed, continued pressure was brought upon the Department for airline operations and June 26, 1945 was set as the date of the opening celebration, with actual airline schedules to commence on July 1, 1945. These objectives were accomplished and, in addition, the entire week of Monday, June 25th, to Sunday, July 1st, was designated "Aviation Week", and a program of daily events given to mark the occasion.

The Airlines resumed their scheduled flights on July 1, 1945, and wide-spread enthusiasm was aroused in the northeastern section of the city by reason of this new facility. In the meantime, on May 18, 1945, an ordinance of Council was approved which designated the two airports of the city as the Philadelphia Northeast Airport and the Philadelphia Southwest Airport respectively. One week after the Northeast Airport was opened and, notwithstanding repeated statements in Washington that there was no telling when the Southwest Airport could be re-opened, the ban was actually raised on July 7, 1945. This action precipitated a long period of controversy regarding the ultimate future of the city's two airports. The northeastern section of the city put forth a strong effort to have the Northeast field continue in operations, but the Airlines, on their own initiative, decided that they preferred the Southwest location and moved back to that terminal in December of 1945.

On the strength of the opinion of aviation experts that the City would ultimately require two major airports, an ordinance of Council was enacted and approved October 5, 1945, which authorized a Councilmanic loan of five million dollars for airport purposes. The said authorization was followed by an ordinance of Council approved October 19, 1945, which appropriated the said loan as follows,--

Item 510-A Loan - the sum of \$2,500,000. towards the betterment, improvement, development and extension of the Philadelphia Southwest Airport; and

Item 510-B Loan - the sum of \$2,500,000. towards the betterment, improvement, development and extension of the Philadelphia Northeast Airport.

Both of the said appropriations were made subject to future legislation.

Pursuant with this program, an ordinance of Council was approved December 27, 1945, which authorized the construction of restaurant buildings and related facilities at both the Philadelphia Southwest and Northeast Airports. The Department of Architecture, in the meantime, had been requested to prepare the necessary plans and specifications in order that the construction work could be placed under contract early in 1946. This schedule included buildings; electrical, plumbing and heating work; and kitchen equipment. At the same time, work was begun on the drafting of two ordinances of Council to authorize the Director of Public Works to advertise for proposals and award contracts for the improvement, extension and equipment of both airports, including all related and appurtenant structures, facilities, etc.

Owing to the pre-war trends in the size and weight of airplanes used and air transportation and the developments in aviation, brought about by the war, it was evident that the runway systems at both airports would be inadequate to carry the excessive concentrated loads produced by the super-air carriers that would be used after the war. In order to determine the extent to which existing facilities would have to be reconstructed, the Bureau of Engineering, Surveys and Zoning recommended that competent consultant services be retained to make actual physical loading tests. Pursuant with this recommendation, an ordinance of Council was approved December 27, 1945, which authorized the Director to enter into a contract with Elwyn E. Seelye and Company, Consulting Engineers, 101 Park Avenue, New York City, for the taking of borings, the making of soil tests and analyses, and actual physical loading tests equivalent to an airplane loading of 300,000 pounds.

After a considerable amount of planning and negotiations, the City of Philadelphia finally won a place on the international air map. In the fall (November of 1945) it was officially announced that this city, together with Washington, New York and Boston, would be airport terminals for international transoceanic service. Immediately, with this announcement, the Transcontinental and Western, the American, and the Pan-American Airlines expressed their intentions to establish schedules at the Philadelphia Southwest Airport. This foreign service must be operated under the supervision of the United States

Customs, Immigration and Health agencies and, therefore, segregated from domestic transportation activities. In order to provide immediate facilities in the way of a temporary transocean terminal, the Commonwealth agreed to lease the National Guard administration building and hangar to the City of Philadelphia, with permission to make whatever changes were necessary, with the understanding that these buildings would be restored to their original condition when returned. Emergency contracts were let for the installations required in the National Guard administration building, and the Transcontinental and Western inaugurated their first schedule, a flight to England on November 23, 1945.

Serious thought was given toward the end of the year to the development of the city's air terminals which led to the decision to establish a Bureau of Aeronautics as a separate function in the Department of Public Works, and this new Bureau was provided for in the 1946 budget. Further developments were the anticipation of the need of master plans covering both airports, and the necessity of employing expert consulting services to recommend methods of design.

Anticipating the need for complete topographical data and other surveys required for the development and expansion of the Southwest Airport as a national and international air terminal, and realizing that the Bureau's survey forces could not possibly handle this additional work, an ordinance of Council was approved December 27, 1945, which authorized the employment of Damon and Foster, Consulting Engineers, Sharon Hill, Delaware County, Pa., for these services. At the end of the year, plans were under way to have this work started just as soon as weather conditions would permit in 1946.

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-six (26) meetings at which they reported on twenty-eight (28) ordinances. The Board held public hearings on thirty (30) City Plan changes and confirmed twenty-nine (29) City Plans. One plan was voided. Five (5) street railway plans were approved. Two temporary plans and cross sections were approved.

Of the twenty-nine (29) City plans confirmed,

12	were	in	connection	with	private	dwelling	development	
10	"	"	"	"	extension	of	industrial	plants
4	"	"	"	"	sewer	construction		
1	was	"	"	"	public	housing		
2	were	for	miscellaneous	purposes.				

Among the twelve (12) City plans confirmed in connection with private dwelling development was a plan entitled "Plan placing on the City plan various streets located south of Paoli avenue and west of Silverwood street. The preparation of this plan entailed the study of a site of about thirty-five (35) acres of hilly land. Accompanying this plan was a plan of subdivision providing for a total of one hundred and fifty-four (154) lots which plan also received approval.

Another project worthy of note was the public hearing held by the Board of Surveyors on three (3) special "road days" to hear all parties interested in the confirmation of the City plan "To establish lines and grades, defining and fixing the rights-of-way required for the channelization and maintenance of Frankford Creek from Tacony Creek to the Delaware River". This proposed project is noteworthy not only for its magnitude, $1\frac{1}{2}$ miles in length; but also for its intricate legal aspects as well as the engineering problem presented.

SURVEY DISTRICTS

Cash Receipts. The cash receipts of the Survey Districts were \$65054.95, as compared to \$56069.36 in 1944. 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 during the year 1945 continue to hamper the work of the Survey Districts. Toward the end of the year, the men in Military Service began a return to their positions. At the end of the year City Council recognized the fact that in order to cope with the many plans for post-war construction, both public and private, it would be necessary to add new positions to the Survey District budget. New positions were added as outlined in this report under the general heading of Personnel. If all the new positions provided can be filled in 1946, the efficiency of the Survey Districts will be considerably improved.

General Activities. The year 1945 marked the turning point of the volume of work performed by the Survey Districts. The end of the war signaled a marked acceleration in the District work. The gradual decrease in District work which had continued through the year 1944 came to an end. In virtually every category the items of District work showed increases and in many cases very marked increases. The number of lots surveyed increased nearly forty per cent. The number of properties surveyed for conveyance purposes increased more than fifty per cent.

The number of conveyance plans made reflected a forty per cent. increase. Curb regulations increased considerably and there was marked activity in the paving of driveways and alleys. The number of subdivision plans and plans made for architects increased tremendously--most of the increase being noted in the latter part of the year. The number of official City plans prepared showed a slight decrease. Preliminary surveys for sewers and water pipes show considerable increase. The preparation of plans and furnishing of lines and grades for grading and paving fell off slightly, but there was a marked increase in repaving. The cash receipts which are set forth particularly in a preceding paragraph reflect the general increases which are noted above and show a substantial increase instead of the gradual decrease of the past few years.

REGISTRY DIVISION

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

GROUP 1 - Activities in the Book Room

Regarding straight transfers of title to real estate there was an increase in volume of 9 per cent over the previous year. 73,039 transfers in 1945 was the largest for any single year since 1925 when 75,205 transfers were entered.

1925 -	75,205	transfers
1944 -	67,053	"
1945 -	73,039	"

The number of title transfers parcelling smaller tracts, usually indicative of new construction, was practically the same in 1945 as in the previous year, there being an increase of only 109 entries of this character.

344 certifications of registered owners were prepared and furnished to the Department of Law. A great majority of these were in connection with the filing of liens pursuant to demolition of unsafe buildings.

During the year 1945 there were entered on the records five Judgments on Declarations of Takings by the United States Government. Also, two deeds in fee to United States of America.

Location

- 1 - East side of 17th street at Cambria street
- 2 - Area bounded by 19th street, Oregon avenue, 20th street, Johnston street
- 3 - Southeast corner of Delaware avenue and Packer avenue
- 4 - Bed of Government avenue from a point approximately 2800 ft. east of Broad street to a point approximately 6800 ft. east of Broad street.

- 5 - Area bounded by 11th street, Government avenue, Delaware River, Six Track Joint Railroad.
- 6 - Area bounded by Tabor avenue, Cheltenham avenue, Montour street and Godfrey avenue (Deed)
- 7 - Area bounded by Montour street, Godfrey avenue, Whitaker avenue and a property line south of Sanger street (Deed)

GROUP 2 - Activities in the Plans and Legal Records Room

In this section 100 miscellaneous plans were drawn for various City departments. Fifty-two were plans showing registered owners and legal status of streets and roads; the balance were base plans of City plan information for proposed water pipe construction. Eleven deeds of dedication accompanied by sketches were prepared.

Advertising data was prepared to legally advertise public hearings on 30 City plan revisions. Twenty-nine confirmed City plans were indexed and filed and the changes drawn on the books, maps and cards. Legal openings affecting 56 streets were filed in this Division and the books, maps and cards likewise revised.

572 City plans were loaned out to the various Bureaus and divisions.

During the year the assistants in this section made 45 appearances in court as custodians of the City plan, legal status of streets and title records.

Fifteen new registry plates to replace worn and defaced maps were drawn. A compilation plan was made of City plan #266.

A registered owner plan worthy of mention was a plan made in connection with the drafting of the ordinance acquiring and condemning properties and land along the line of Mill Creek Sewer between 46th street and Haverford avenue and 47th street and Fairmount avenue. Notices were prepared for serving on 31 individual owners affecting 52 properties.

GROUP 3 - Board of Surveyors

The head 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. The duties of the Head of the Registry Division will be considerably augmented by the duties which the act of May 3rd, 1945 have imposed upon the Board of Surveyors in connection with Land Subdivision Control. City Council in recognition of this fact reclassified the Head of the Registry Division by changing the title of Chief Engineering Clerk to the title of Chief, Plans and Registry Division and also by changing the title of his assistant to that of Assistant Chief, Plans and Registry Division. The accomplishments of the Board of Surveyors for the year are more particularly set forth under the heading "Surveys Division".

CITY PLANS DIVISION

City-State Highway Program. The Division collaborated with the Pennsylvania Department of Highways and consultants, Modjeski and Masters, in furthering the detailing of City-State Highway routes and intersectional channelization.

The State location engineer making a report on the Delaware Skyway route was assisted in detailing until finishing his report in February.

Two additional routes were legislated into the system during the year. Grant avenue and Cheltenham avenue, upon which basic City plan information was furnished the State.

The introduction of a depressed Vine street by the City Planning Commission caused restudy of the cross-section and intersections of this route.

The routes worked on during the year are as follows:

- Oregon-Delaware-Aramingo-Harbrison avenues;
- Penrose avenue bridge approaches;
- Henry avenue;
- Adams-Godfrey-Stenton avenues;
- Moyamensing avenue;
- Grant avenue;
- Vine street;
- Tacony street;
- Cheltenham avenue.

City Plan Revisions. City plans were prepared in collaboration with the interested Survey District of:

- Castor avenue over Frankford Creek;
- Whitaker avenue from the Boulevard to Godfrey avenue;
- Revision of streets in the Naval Aviation Depot.

Another large project on which the Division is preparing the necessary property plans and calculations is the revision of the Frankford Creek channel from the Delaware River to Castor avenue. Two of the personnel have been continuously employed on this project since August.

Area studies for proposed revisions were wide-spread in the City as follows:

Oxford avenue	-	Foxchase area
Godfrey avenue	-	Crescentville area
Lincoln drive	-	Mount Airy area
Castor avenue	-	Juaniata area
Whitaker avenue	-	Naval Depot area
Poquessing avenue	-	Northeast Airport area
Penrose avenue	-	S.W. Sewage Disposal area northward to Passyunk avenue

Other revisions proposed were initiated or reviewed by the Division-

Spring Garden street
46th and Haverford avenue
Ashton road
72nd and Suffolk avenue
34th street and University Bridge and West River Drive
Cathedral road over Wissahickon Creek
Passyunk avenue and Schuylkill avenue

Compiled base plans were prepared of the central city in connection with restudy of the Pennsylvania Terminal Improvement ordinance.

Several subdivision projects were prepared or reviewed for potential developers and Survey Districts:

Fisher Estate - Front and Cheltenham
Tyson avenue and Roosevelt boulevard
Overbrook Park - two sections
Farrell property - Somerton
Red Lion and Verree Roads
Verree and Bloomfield avenue
Napfle and Burholme avenues
Welsh and Verree roads

The division head collaborated as secretary of the Subdivision Committee on setting up Rules and Regulations for administrating the Philadelphia Land Subdivision ordinance by the Board of Surveyors under the State Act approved May 3, 1945.

Plans - Maps - Information. The Division furnished plans, maps, and various information services 153 times to private corporations and individuals; also, 94 times to City departments, bureaus and divisions, including County offices, Council, Board of Education, Authorities, Commissions, Courts, etc.; also, to 45 United States governmental agencies and the various branches of the armed forces; 25 contacts were made with the Penna Department of Highways; also 40 times to public utilities and 47 services to miscellaneous groups such as Red Cross, United War Charities, colleges, architects and others.

In addition, loans of plans, equipment, technical books and articles, charts, etc. were furnished 128 times during the year.

City Sectional Maps and other Records. The Division issued sectional maps and other records in larger number and greater return in fees than in former years.

All the reproducing labor, with small exception, was done by the Public Works Photographer with his equipment necessitating 234 orders to him covering this work.

34-1945

<u>Issued</u>	<u>No Charge</u>	<u>Fee</u>	
Land Use Maps - 200' scale	723	519	\$235.50
Ward Maps - 200' scale	15		
Street Maps - 500' scale	365	81	20.25
Street Maps - 1000' scale	474	116	17.40
Street Maps - 1600' scale	354	47	4.70
Street Maps - 1600' scale (3 sec.)	72	9	4.50
Street Data Maps - 500' scale	393	127	39.50
Zoning Maps - 500' scale	42	5	2.00
Other Records-various scale	634	7	10.40
Photo prints 8" x 10"	151		
Photo prints 11" x 17"	148		
Hunter Electro copies	77		
Totals	3448	911	\$334.25

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

From Zoning permits	-	263
" Use Registration permits	-	1081
" Demolition permits	-	221
" Registry records	-	66
" Miscellaneous corrections	-	283
" Confirmation of City Plans	-	221
" Dedication & Other Openings	-	79
" Grading and Paving records	-	7
Total		2221

City Planning Commission. Sixty-seven contacts were made with the Commission's staff in supplying them with maps, records and miscellaneous information.

The Division head served as representative for the Chief Engineer on the C.P.C. Regional Airport Committee and the sub-committee to make recommendations for an Origin and Destination traffic survey.

Assistance was given preparing for a tour of the Governor's committee appointed to make recommendations for preserving natural sites for park, recreational, forest conservation and natural drainage areas.

Statistical Charts and Research. Various statistical charts records were revised during the year, such as:

1854 Consolidation Maps
 Survey District Maps
 Street Data Analysis Chart

Something new in divisional research was accomplished in charting the existing status of the 1925 revised 1927, Terminal Improvement Agreement Ordinance.

35-1945

Miscellaneous. Reports and memoranda were prepared for the Chief and Assistant Chief Engineers, relating to the City-State highway program and other problems. The division head prepared and delivered a short talk on the influence of natural features on the City plan before the City Planning Class at the Inst. of Local and State Government of the University of Pennsylvania. The Division personnel assisted in preparing the program and arrangements for the Dedication, Opening and exhibits at the Phila. Northeast Airport.

Personnel of the Division was augmented toward the end of the year by the return of one man serving in the U. S. Army. Assistance was given the Civil Service Commission with personnel to act as monitors at examinations. Assistance was furnished in various detail for holding the Army-Navy football game at the Municipal Stadium. Field observation surveys were made during the year on such projects as the Terminal Improvement, highways, widenings, and others. The Phila. Title Insurance Company was assisted with maps and information for starting their plant.

The Phila. airports required much activity in preparing property plans for expansion and other detail. The proposals of the Boro of Yeadon for regional highway connection with the City were studied. The Zoning Maps were revised to August 13, 1945 for publication purposes. Compilation plans were prepared of the vicinity of the Southwest Sewage Disposal area and 60th street Branch railroad in connection with changes required by the Penrose avenue bridge project.

ZONING DIVISION

The activities of the Zoning Division increased over the previous year. This is the upturn that has been awaited after several years of decreased activities. The number of applications filed during the year increased nearly thirty per cent. The number of zoning permits issued increased ninety-four per cent. Most of this increased activity was reflected in the latter months of the year. During the year two employees returned from Military Service and an employee who was on temporary assignment in another division was returned to the Division. It is anticipated that with the return of manpower to civilian activity the long-standing vacancies in the Division may be filled.

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,

North East and South West Philadelphia Airports, 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 1945, the Design Division had 179 major assignments, most of which are listed elsewhere herein.

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 8 sewers of this type.

Sewers (public). Sewers to relieve sections where lack of drainage results in unsanitary conditions were planned and constructed during the year. During the major part of the year, i.e., prior to September 7th, 1945, the construction of all sewers was subject to the issuance of contract preference ratings by the War Production Board, and the preparation of complete material lists and cost estimates was required for each project. Plans, estimates and specifications have been prepared for 35 sewers for the relief of unsanitary conditions. Plans have also been completed for five (5) sewers for development for operative builders.

Sandy Run Main Sewer Extension. The extension of this system was continued during 1945 and as in 1944 was restricted to the construction of sanitary pipe sewers by the wartime restrictions. The main sewer in Tabor Avenue and in Napfle Avenue to Verree Road was under construction during the year and bids have been taken on branches. Plans were completed for a number of additional branch sewers during the year.

The extension of the main sewer in Castor Avenue was placed under construction from Lansing Street to Chandler Street together with several branches. This main sewer is being constructed as a complete sewer.

Passmore Street System. Plans were completed during the year for this outlet sewer to Cheltenham Township and branches to provide drainage for the entire developed portion of this area. Bids have been taken for the outlet sewer and Cheltenham Township is constructing the sewage meter required to measure the sewage received by the Township.

Reconstruction of old sewers in bad condition was necessary during 1945 in several locations, as Malvern Avenue, 63rd Street to Lancaster Avenue and Dauphin Street from Broad Street westward. Plans were completed for the reconstruction of a section 560 feet in length of the Mill Creek Main Sewer north of Haverford Avenue to 47th Street, where a failure of the old 15 ft. diameter sewer occurred. This sewer underlies private properties and is also of inadequate size. The reconstruction is planned as a 17' x 18' reinforced concrete section to conform to the plans for the flood relief reconstruction of this main sewer from Market Street northward to 55th and Master Streets.

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 50 such studies were made in 1945.

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

State Highway Improvements. Work was continued on the preparation of plans for the improvement of Vine Street, 6th Street to 18th Street by this Division during 1945. Completion of these plans, however, was suspended while the alternate scheme for a depressed highway, proposed by the City Planning Commission, was under consideration. Plans for demolition of buildings were completed.

The improvement of Penrose Avenue between 26th Street and Island Avenue with the Schuylkill River Bridge and approaches was in course of being planned by the consulting engineering firm of Mojeski and Masters, subject to the approval of the City. Studies were made by this Division for the drainage of the approaches and adjoining streets during 1945.

Philadelphia Airports. Plans were prepared for the completion of the Northeast Philadelphia Airport, including paving, grading, drainage, electrical conduits and fencing during the early part of 1945, and the airport was officially opened June 26th.

Plans were prepared during 1945 for the conversion of the Southwest Philadelphia Airport National Guard area to provide facilities for trans-Atlantic travel.

Sewage Disposal. Work on the design and preparation of contract plans for the Sewage Disposal Project has been actively prosecuted during the year. The designing force of the Division has been expanded as qualified men have become available for this important post-war work.

Original plans for the extension of the Northeast Sewage Treatment Works have been revised. After a careful study of cost of construction and operation it was decided to leave the Imhoff Tank Plant in its present state and build an entirely new plant south of Wheatsheaf Lane on ground owned by the City.

Plans for the first part of the plant—primary settling tanks, aeration and final settling tanks—are completed and application for construction of these units has been made to the Pennsylvania State Department of Health. The consulting firm of Greeley and Hansen has been engaged to check the 58 drawings covering the design of the three units, and as soon as this check is completed advertisement for construction can be placed.

Plans for the other parts of the plant—the Sludge Digestion Tanks, the Blower Building and Miscellaneous Items are being completed as quickly as possible.

The first step of this Program is the extension of the Upper Delaware Low Level Intercepting Sewer North of Ashburner Street to the Poquessing Creek, to collect the sewage from the developed portion of the area lying along the Delaware River above Torresdale Avenue. Application was made to the State Department of Health in December for a permit for this extension, and a portion of this intercepting sewer which is a 6' - 0" x 5' - 0" rectangular reinforced concrete section in State Road from Ashburner Street to Pennypack Street will be constructed early in 1946.

Bridge Design. One of the most important improvement which the City must do for the Northeast section of the City is the development of the Frankford and Tacony Creeks. This work will involve the reconstruction of all bridges from Frankford Avenue to Wingohocking Street and in addition the construction of a new bridge on the line of Castor Avenue. Plans were drawn and submitted to the Art Jury for a concrete encased girder bridge at this location. The bridge will have a span of 80 feet and be about 25 feet above the normal water level of the creek. Both abutments and wing walls will be stone-faced with local stone having a wide range of color to suit the beauty of the surroundings. This improvement will extend from Cayuga Street to Wyoming Avenue and will open a new traffic route between Frankford and Juniata. The work will also include a revision of the Frankford Creek alignment. At present the creek forms a big loop at this location crossing and recrossing Wyoming Avenue through two arch bridges. It is the intention to eliminate this loop by cutting a new channel across the base of the loop and through the Juniata Golf Course to a point just above the location of the proposed Castor Avenue bridge. Such a realignment will render useless the two arch bridges on Wyoming Avenue which will be demolished and back-filled.

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 1945, such plans were drawn including plans for inspection.

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.

Construction - General. On July 5, 1945, the 12 feet diameter sewer in Dauphin Street west of Broad Street collapsed so a contract in the sum of \$130,000.00 was entered into to reconstruct it as an 11'0" x 11'0" reinforced concrete sewer with stone block invert. Work is proceeding.

A contract in the sum of \$70,000.00 was entered into in 1943 and work completed this year for Hydraulic Dredging in the Schuylkill River at selected points between Fairmount Dam and north of Strawberry Mansion Bridge. All the funds were expended. An additional contract was entered into this year in the sum of \$23,500.00 and completed. In addition to the above work, Emergency Hydraulic Dredging was done in front of Boathouse Row in the sum of \$8,064.00.

The work of dredging in the Schuylkill River was transferred to the Fairmount Park Commission by ordinance of Council effective at the beginning of the year 1946.

Northeast Philadelphia Airport. This Airport was officially opened to the Public on June 26, 1945. Much necessary work had to be done before that date, and much is yet to be done to increase its general efficiency. Work contracted for follows:

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. This work was started in 1944, and completed this year at a total cost of \$55,821.04.

A contract for Grading, Drainage and Paving was entered into and completed this year at a total cost of \$74,768.91.

A contract in the sum of \$30,000.00 was entered into this year for the improvement of Ashton Road from Grant Avenue to approximately 1,400 feet northeast.

Contracts for Electrical Work and Chain Link Fence were entered into and completed this year \$16,750.00, and \$24,770.54 respectively being expended. Late this year contracts for Additional Electrical Work, Additional Chain Link Fence and Painting the Administration Building were entered into in the sum of \$9,000.00, \$3,500.00 and \$1,500.00 respectively and work is proceeding.

Drainage. During the year 1945, contracts were entered into for nineteen public sewers which together with contracts carried over from 1944 and sewers built at private cost made an increase of 2.53 miles to the drainage system of the City. This amount represents a decrease of 5.81 miles from last year's total.

It was necessary as it was in 1943 and 1944, for the City to obtain priority and assistance from the War Production Board for all sewers before construction, however, this ruling was revoked on September 7, 1945, too late to lessen the sharp decrease in the mileage of sewers constructed this year. Since that date, twenty-three contracts for new sewers have been entered into or are in the course of preparation so that next year the length of sewers constructed in the City should equal if not exceed that of normal pre-war years. The mileage of private sewers completed was 0.31 miles, a 50% increase over 1944.

At the end of 1945, there was a total of 1,843.05 miles of sewers completed within the limits of the City of Philadelphia.

Sewer Permits. The Sewer Permit Division issued 542 permits in 1945, an increase of 42 over 1944, however, but 1,081 connections to sewers were made, a decrease of 43%. This was due to the sharp drop in the length of new sewers constructed and also the absence of building operations of any size.

The total receipts for the year were \$11,757.42, a drop of 37% from 1944. \$3,335.00 were collected from lateral fees, a decrease of 19% and \$8,422.42 from service charge bills, 42% less than last year's total.

1,700 more reports on sewers were made to the Title Companies than last year, the total being 14,750.

Testing Laboratory. Work during 1945 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 various failures; 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 this 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.

The Laboratory is in dire need of modern testing equipment; with the termination of war imposed conditions and the inevitable increase in testing the laboratory will not be able to maintain the standards required by the City. Therefore, it is strongly recommended that this condition be given serious consideration.

Periodic cooperative tests were performed with various laboratories of recognized standing to establish the efficiency ratio between 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 services were performed for the various 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.

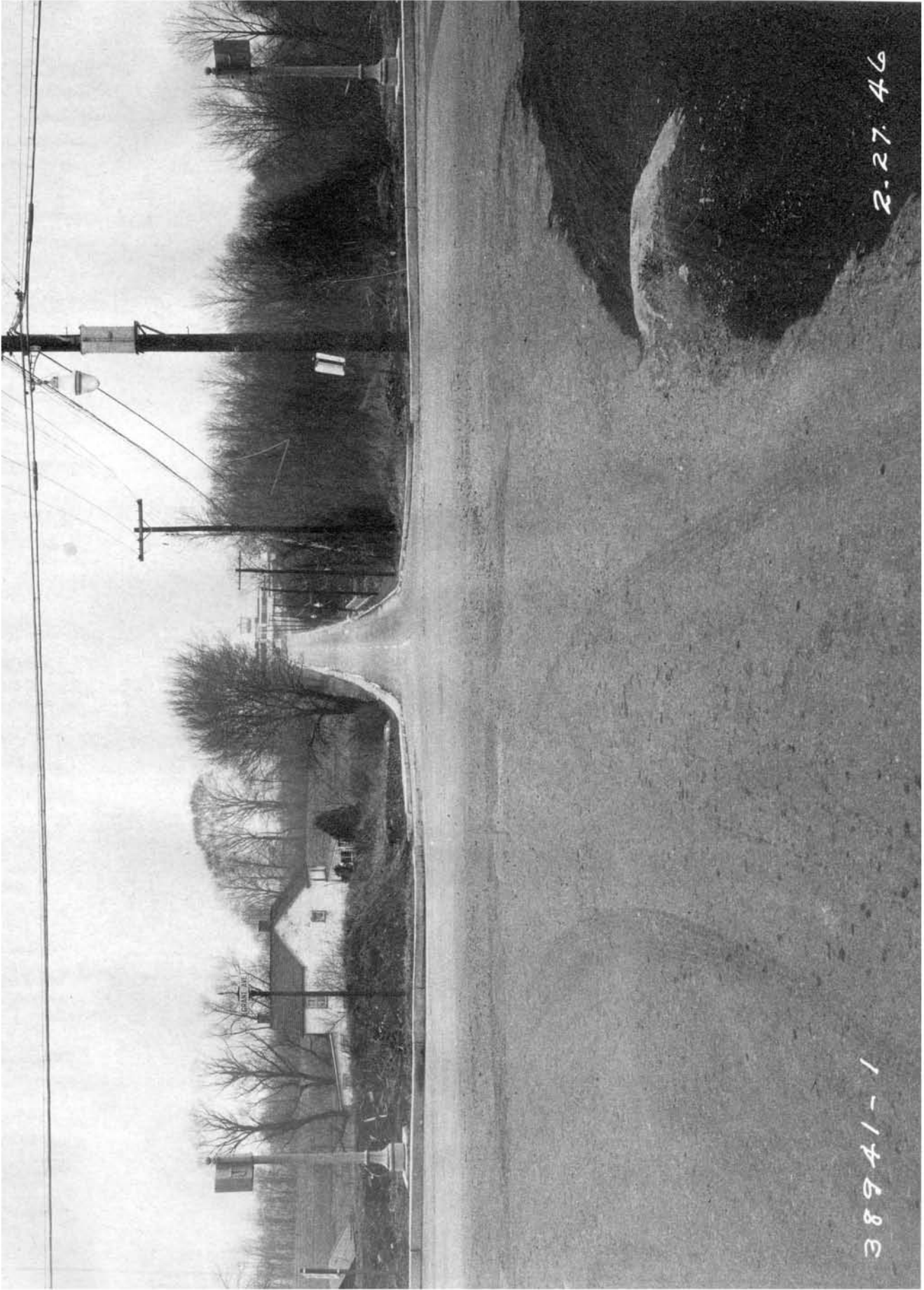
The tables in the appendix show the total, variety, distribution and percentage of distribution of the tested specimens.

Accounting and Reporting Division. During the year, eight public readings of bids were held, involving 37 projects, all of which were certified as contracts and entered on the Bureau records. Nine contracts unfinished in 1944 were carried to completion during the year. 542 separate warrants were drawn calling for payments of \$1,033,063.73 from both budget and loan funds.

Receipts for the year in detail follows.

	<u>Vouchers</u>	<u>Amounts</u>
Survey Districts	3,364	\$65,054.95
Registry	105	410.85
Sewer Registrar	242	11,157.44
Zoning	2,533	10,421.00
Lower Merion Township)		100.00
Upper Darby Township) Sewer Rentals		1,000.00
Witness Fees		<u>138.00</u>
		\$88,282.24

Appropriations and listing of Expenditures with principal projects may be examined on last pages of statistical reports.



38941-1

2-27-46

PHILADELPHIA NORTHEAST AIRPORT
ASHTON RD. AND GRANT AVE. - LOOKING N.E. TOWARD ADMINISTRATION BLDG.

43-1945

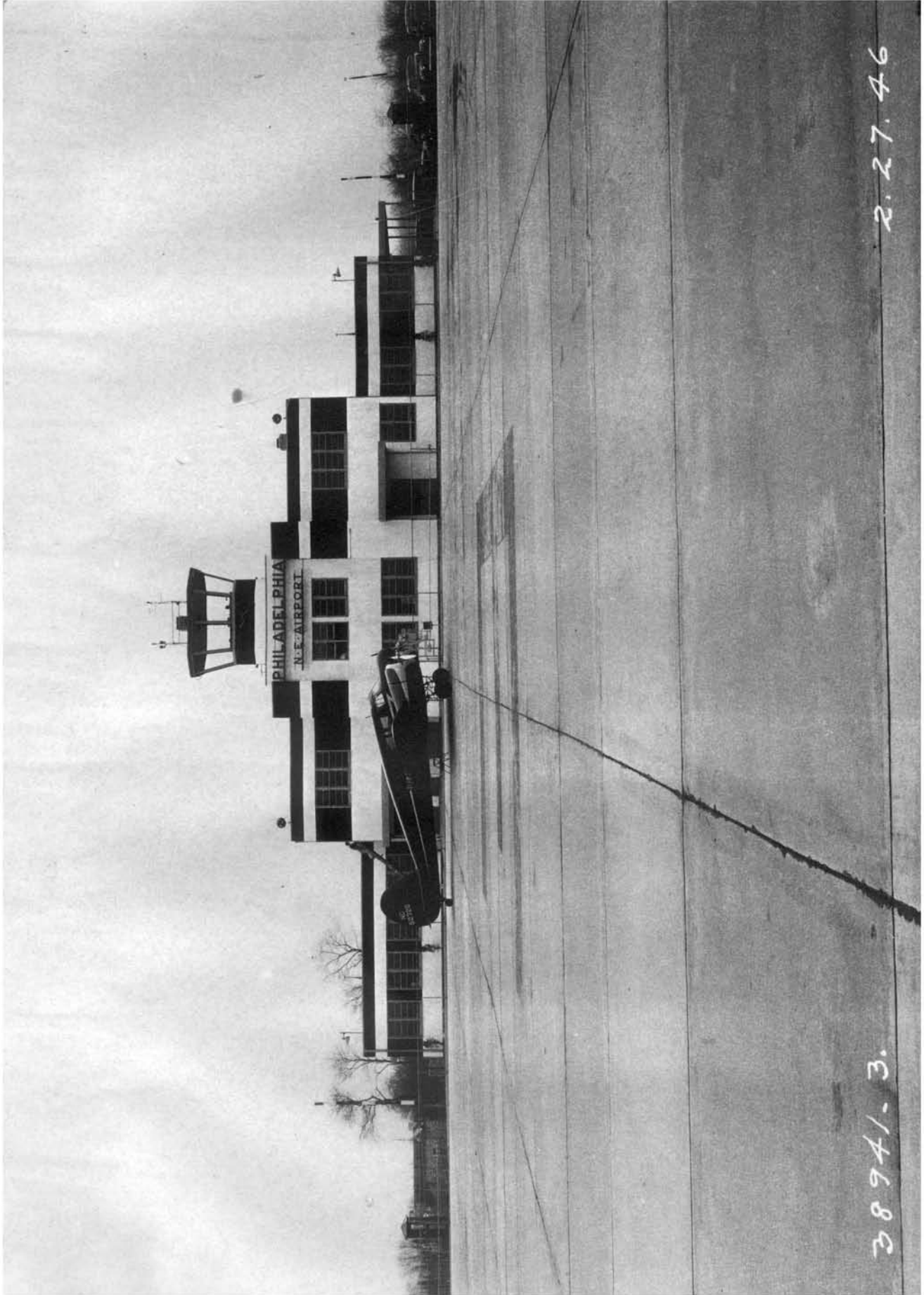


PHILADELPHIA NORTHEAST AIRPORT
SOUTHWEST VIEW OF ADMINISTRATION BLDG. FROM ASHTON ROAD

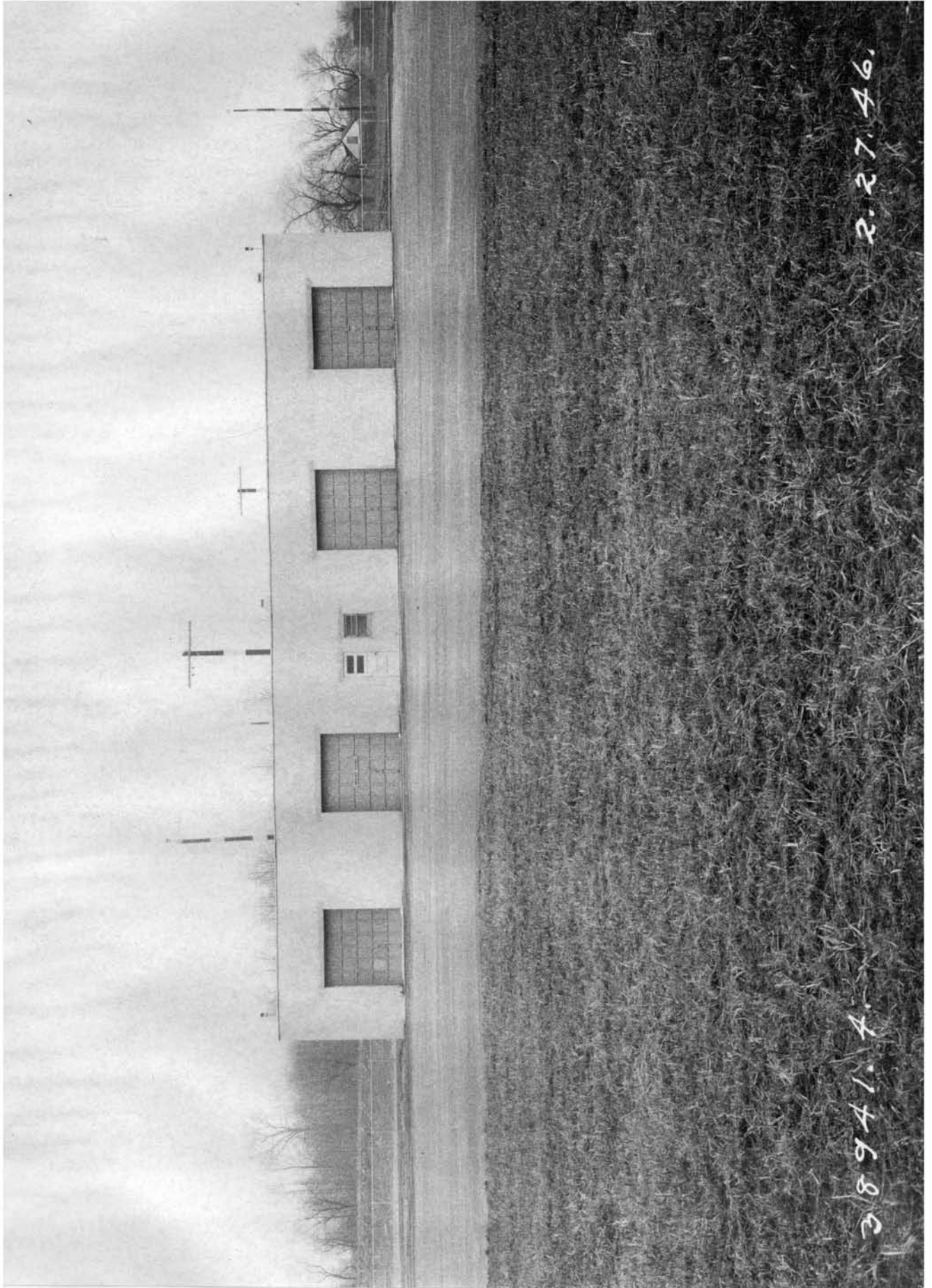
2-27-46

38941-2

44-1945



PHILADELPHIA NORTHEAST AIRPORT
FRONT VIEW OF ADMINISTRATION BLDG. - LOOKING SOUTHWEST



2.27.46.

38941.4.

PHILADELPHIA NORTHEAST AIRPORT

STORAGE BLDG. - AIRPORT SIDE - LOOKING SOUTHWEST

46-1945

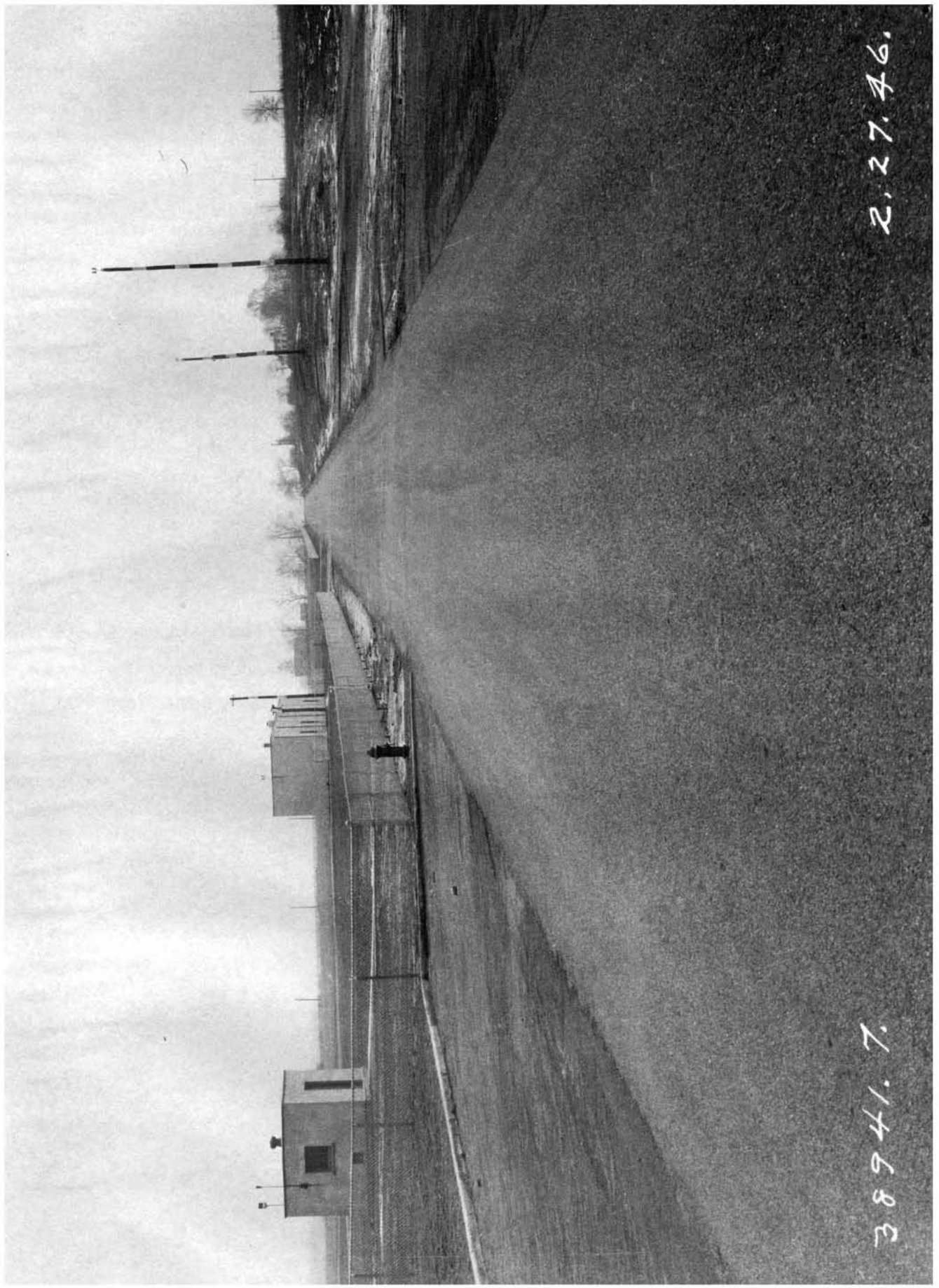


2.27.46.

PHILADELPHIA NORTHEAST AIRPORT
LOOKING N.W. - PUMP HOUSE IN RIGHT FOREGROUND
(ACCESS ROAD IN CENTER)

38941.6.

47-1945



38941.7

2,27.46.

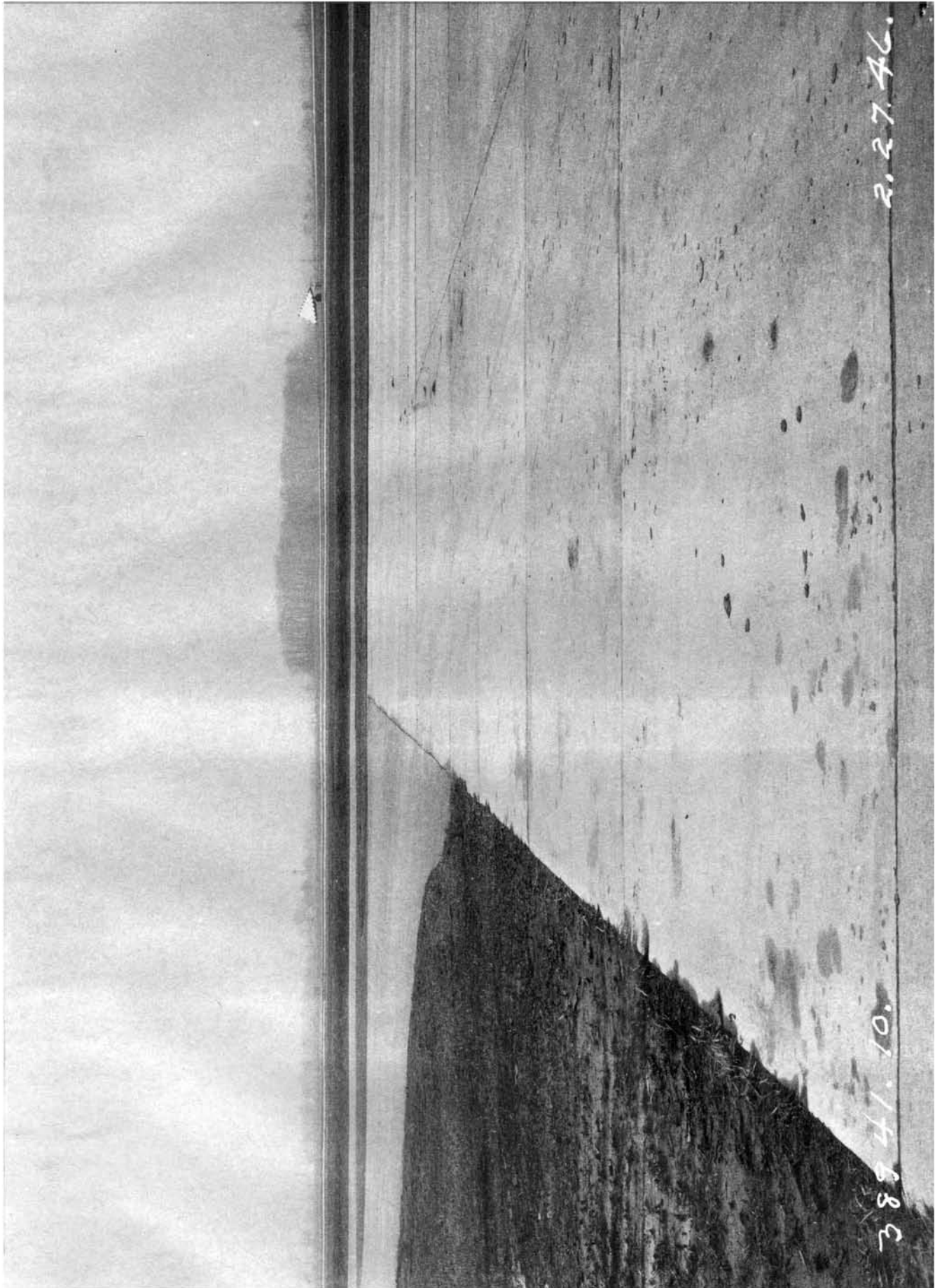
PHILADELPHIA NORTHEAST AIRPORT
LOOKING S.E. ALONG ACCESS ROAD - PUMP HOUSE (LEFT) AND STORAGE BLDG.

48-1945



PHILADELPHIA NORTHEAST AIRPORT
LOOKING S.E. FROM WEST END OF AIRPLANE PARKING AREA
BALLOON SHELTER (CENTER)

49-1945



38941.10.

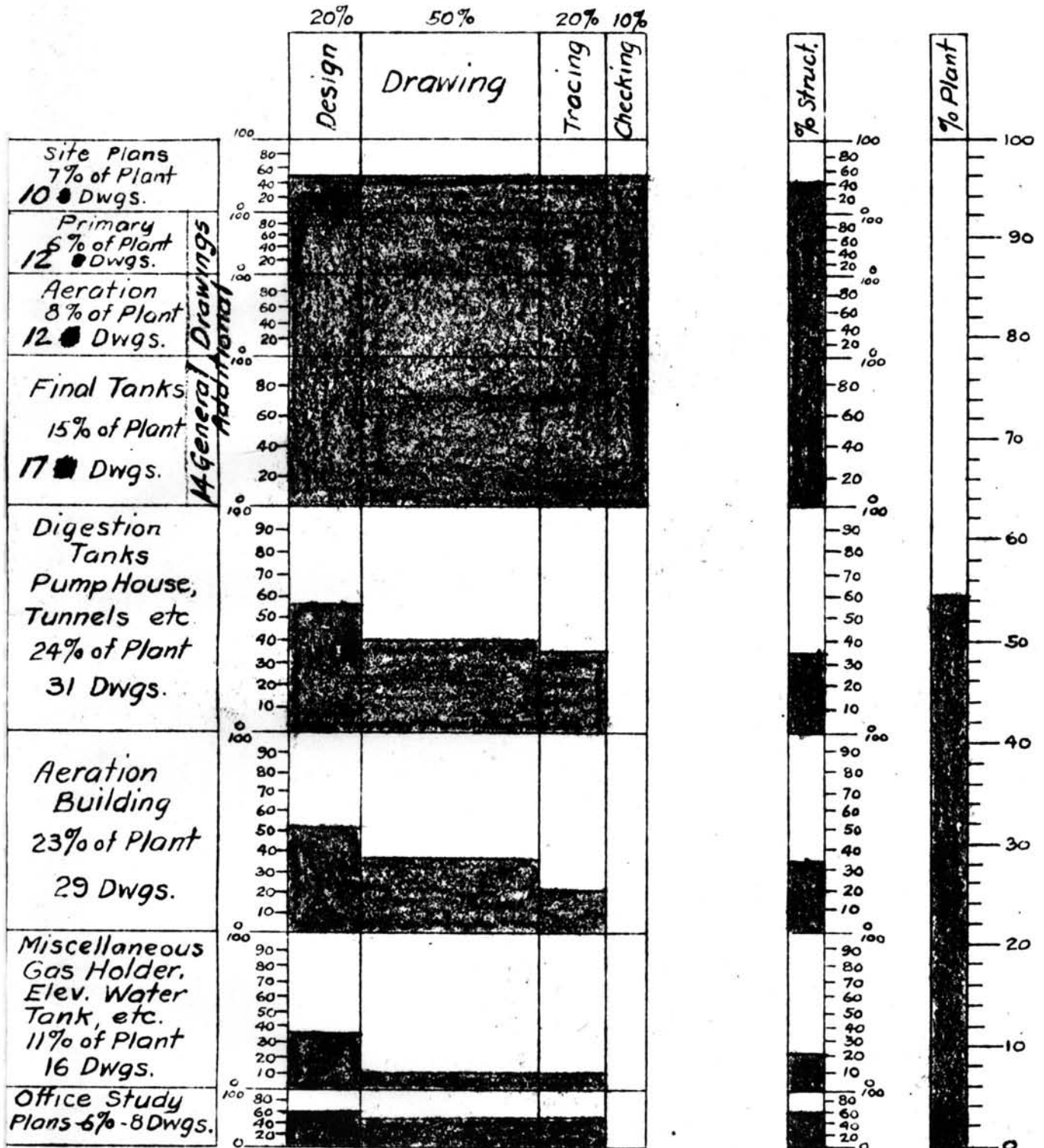
2.27.46.

PHILADELPHIA NORTHEAST AIRPORT
LOOKING N.E. ACROSS AIRPORT FROM S.W. OF AIRPLANE PARKING AREA
TETRAHEDRON (RIGHT) - BEACON - (FAR LEFT CENTER)

50-1945

PROGRESS REPORT

NORTHEAST SEWAGE TREATMENT WORKS



EST. DWGS. REQUIRED - 149

DRAWINGS COMPLETED - 71

TRACINGS COMPLETED - 70

DATE - Dec. 1945

51-1945

STATISTICAL SUMMARIZATION

OF

ACTIVITIES

52-1945

DETAILS OF WORK PERFORMED IN THE SURVEY DISTRICTS

<u>Lots Staked</u> - for building purposes, scattered, four or less	770
for building purposes, operations, over four	18
grades furnished for new buildings, linear feet	7,879
<u>Conveyance</u> - properties surveyed for conveyance, scattered	1,406
" " " " operations	81
plans made for conveyance purposes	926
descriptions of property prepared	38
<u>Farm Surveys</u> - number made	17
acres surveyed or staked	456
<u>Miscellaneous Surveys</u> - made or staked	83
<u>Curb Regulation</u> - orders	2,245
linear feet	112,129
curb corners staked out	366
linear feet of curb measured and certified	18,042
<u>Footways</u> - square yards of paving or repaving measured and certified	4,151
curb and footway assessment bills prepared	600
<u>Alleys and Driveways</u> - plans for paving or repaving	42
linear feet covered	30,235
number for which lines and grades were furnished	21
linear feet furnished	5,857
square yards of paving or repaving measured and certified	2,316
assessment bills prepared	252
<u>Subdivision plans</u> - number made	34
lots shown thereon	276
<u>Architect Plans</u> - number made	88
<u>Wharf Plans</u> - plans and surveys made	6
number for which lines were furnished	4
linear feet	3,251
<u>Miscellaneous Plans</u> - number made	52
<u>City Plans</u> - small City Plans Prepared	21
sectional City Plans prepared or revised (number	3
(acres	754
acres surveyed for new or revised sectional plans	72
topography taken for city or private plans, acres	14
acres covered by stoning or restoring city plans	175
monuments set or reset (city or private)	85
linear feet of levels run to establish grades or benches	30,255
reports on city plan changes	35
" " deeds of dedication, releases and affidavits	26
descriptions prepared for deeds of dedication	46
<u>Law Plans</u> - plans prepared for Board of View	5
properties included	76
area in acres	303
plans prepared for various legal purposes	5
<u>Passenger Railways</u> - plans prepared (number	5
(linear feet of street covered	11,788
linear feet of lines and grades furnished	39,642
<u>Utility Companies</u> - linear feet of lines and grades furnished	9,165
reports on applications for footway locations	151

<u>Drainage</u> - preliminary surveys and plans made for sewers and drains	55
linear feet of street covered	45,169
" " " lines and grades furnished	29,494
cubic yards of trench excavation measured	29,437
" " " masonry measured	370
number of inlets staked out	84
linear feet of lateral pipe and inlet connections measured	15,011
plans of constructed sewers and appurtenances prepared	21
linear feet of street covered	17,790
assessment bills prepared	359
<u>Water pipe</u> - plans prepared for Bureau of Water and Water companies	147
linear feet of street covered	162,024
linear feet of lines and grades furnished	2,521
fire hydrants for which lines and grades were furnished	8
reports on grade of streets for water pipe to be laid	23
assessment bills prepared	76
<u>Current Estimates</u> - any contract	49
<u>Reports</u> - on street openings, including plans or estimates	13
" " improvements, including plans or estimates	143
made to Chief Engineer	505
miscellaneous (not otherwise classified)	141
<u>Liens</u> - descriptions prepared for any department or bureau	133
<u>Zoning</u> - properties posted for Board of Adjustment	2
<u>Miscellaneous</u> - linear feet lines and grades, gutter marks, cross	
sections, location measurements, levels, profiles, etc.	51,660
Blue Print copies of property plans previously made	134
Letters certifying to old surveys	8
Schuylkill River Dredging (cubic yards)	79,900
<u>Grading</u> - plans and preliminary estimates (including country roads)	10
linear feet of street covered	8,282
cubic yards measured, cut and fill	122,455
linear feet of street covered	7,545
linear feet of lines and grades furnished	30,025
<u>Paving</u> - plans prepared for paving (including country roads)	9
linear feet of street covered	5,795
square yards measured and certified	25,567
linear feet of street covered	3,096
linear feet of lines and grades furnished	22,837
assessment bills prepared	91
<u>Repaving</u> - plans prepared for repaving (including country roads)	22
linear feet of street covered	19,265
square yards measured and certified	64,938
linear feet of street covered	33,309
linear feet of lines and grades furnished	83,044
<u>Amount of completed contracts</u> - main and branch sewers	\$258,762.81
private sewers and drains	82,946.58
grading - dredging	136,535.62
paving and improvement	119,296.75
repaving and resurfacing	257,783.68
Total Cost	\$855,325.34
<u>Receipts</u> - District Cash Receipts	\$65,054.95

54-1945

DETAILS OF WORK PERFORMED BY ZONING DIVISION

	<u>1945</u>	% Annual Decrease	% Annual Increase
Number of requests for information	11,490		18.8
Number of Applications filed	5,300		29.4
Number of Zoning Permits issued	1,991		94.0
Number of Use Registration Permits issued	2,236		47.4
Number of References to the Board of Adjustment	94		70.9
Number of Applications stamped "Permit not Required"	2,173		18.0
Number of Zoning Permits refused	554		136.8
Number of Use Registration permits refused	1,270		42.2
Number of refusals appealed to the Board of Adjustment	1,425		48.4
Number of Inspections	249	67.5	
Number of Complaints investigated	129	42.4	
Number of Vouchers issued	2,533		32.8
Amount of cash receipts	10,450		70.4
Number of true copies of Applications certified to Board of Adjustment	1,299		37.5
Number of Sign Applications (Highway) acted on	83		260.9
Number of descriptions for District Classification Changes	18	10.	
Number of Letters to Fire Marshal for approval or disapproval of use	182		80.2
Number of changes of Zoning Maps made by Ordinance of Council	14		7.7
Number of changes of Zoning Maps proposed by Resolution of Council	39		39.3
Number of Housing and Sanitation refusals	245		57.

55-1945

DETAILS OF WORK PERFORMED IN THE REGISTRY DIVISION

Deed abstracts filed for registering.....	55,498
Descriptions contained on abstracts.....	65,441
Transfer plotted.....	73,039
Original lots plotted.....	2,798
Deed abstracts filed from 1865 to 1945 (inclusive).....	3,356,679
Titles examined for plan book entries.....	5,759
Plan books examined by the public and officials.....	94,330
Certificates of registered owners issued to public.....	115
Certificates of registered owners issued to Law Department.....	344
Registry plates redrawn.....	15
Miscellaneous receipts.....	\$410.85
Miscellaneous plans drawn for City departments.....	100
Plans loaned out.....	572
Subpoenas issued against Registry Division.....	54
Appearance in Court.....	45
Amount of Witness fees collected.....	\$153.00
Certificates of street openings issued to City departments.....	621
Affidavits of street openings filed.....	6
Streets opened by affidavits.....	5
Jury plans ordered.....	7
Jury plans filed.....	3
Streets authorized to be opened by ordinance.....	1
Certifications filed of openings and condemnations.....	2
Street opening agreements filed.....	—
Agreements filed in connection with City plan changes.....	19
Deeds of Dedication filed.....	31

56-1945

Deeds of Dedication approved and recorded.....	34
Releases of abutting owners filed.....	2
Releases of abutting owners approved and recorded.....	2
Cost of recording deeds and releases, etc.....	\$19.50
Number of meetings, including Road Day hearings.....	26
City plans ordered.....	27
Confirmed City plans filed.....	29
City plans advertised for public hearing.....	30
Ordinances returned to Council, favorable recommendation.....	20
Subt. " " " " " "	6
Ordinances " " " special "	1
" " " " negative "	1
General plans for construction bridge approved.....	—
" " " " sewer "	—
Approved street railway plans filed.....	5

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.	tracings	Blue Prints	Van Dykes	square feet Linens
Engineering, Surveys and Zoning	514	577			2816	238	72759	3921	
Highway							11533	78	
Water	53	656			317		86803	22158	
City Property	12	101					368		
Traffic Eng.							7264	1482	
Electrical					40		5965	120	
Law	94	96							
Health	1	2					137		
Art Jury	3	6							
City Planning Commission							4262	42	
Com. Museum							300		
Mechanical Equipment		8							
Civil Service							200		
	<hr/>	<hr/>			<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	677	1446			3173	238	189591	6801	

DETAILS OF WORK DONE IN THE TESTING LABORATORY

Total Number of Specimens - 1945

Boiler Waters	1065
" Compounds	5
Cement, Hydraulic	524
Concrete	634
Fuels	1878
Investigation (concrete admixtures)	284
Metals	140
Miscellaneous	28
Oil, Lubricating	29
Paint & Paint Materials	76
Road & Road Materials	85
Soap, Powdered	2
Water, Industrial waste and sewage	<u>33</u>

Total - 4783

Distribution of Total Specimens

	<u>No. Specimens</u>	<u>%</u>	<u>Number Specimens</u>	<u>%</u>
Department of Public Health			1032	21.6
Department of Public Safety			54	1.1
Bureau of Building Inspection	10	0.2		
Electrical Bureau	41	0.9		
Bureau of Fire	3	0.0		
Department of Public Works			2657	55.6
Bureau of Engineering, Surveys and Zoning	946	19.8		
Bureau of Highways	611	12.8		
Bureau of Water	1100	23.0		
Department of Supplies & Purchases			900	18.8
Water Works Improvement			140	2.9
			<hr/>	<hr/>
Total			4783	100.0

58-1945

Specimens for Chemical Test

Boiler feed water		1065
Boiler compounds		5
Coal		1851
(anthracite	1758	
(bituminous	93	
Concrete materials		13
Metals		74
(ferrous	16	
(non-ferrous	58	
Miscellaneous Materials		20
Oils		56
(fuels	27	
(lubricatants	29	
Paint and Paint materials		76
(drier	3	
(Linseed oil	10	
(paints, mixed	33	
(pastes	24	
(Turpentine	5	
(Varnish	1	
Road and Road Materials		85
(Asphalt cement	44	
(" compound	8	
(Filler Dust	16	
(Wearing surface	17	
Soap, Powdered		2
Water, Industrial Waste & Sewage		33
		<hr/>
	Total	3280

Distribution of Chemical Specimens

Department of Public Health		1032
Department of Public Safety		48
Bureau of Building Inspection	4	
Electrical Bureau	41	
Bureau of Fire	3	
Department of Public Works		1291
Bureau of Engineering, Surveys & Zoning	65	
Bureau of Highways	150	
Bureau of Water	1076	
Department of Supplies		896
Water Works Improvement		13
		<hr/>
	Total	3280

57 A-1945

Specimens for Physical Tests

Concrete		621
Aggregate, fine	1	
" , coarse	2	
Block	10	
Cores	162	
Cylinders	446	
Investigation for Concrete		284
Metals		66
Ferrous	66	
Miscellaneous		<u>88</u>
	Total	979

Distribution of Physical Specimens

Department of Public Works		848
Bureau of Engineering,		
Surveys & Zoning	651	
Bureau of Highways	197	
Department of Supplies		4
Water Works Improvement		<u>127</u>
	Total	979

Hydraulic Cement Specimens

Domestic Hydraulic Cements		<u>524</u>
	Total	524

Distribution of Cement Specimens

Department of Public Works		518
Bureau of Engineering,		
Surveys & Zoning	230	
Bureau of Highways	264	
Bureau of Water	24	
Department of Public Safety		6
Bureau of Building		
Inspections	6	
	Total	524

DETAILS OF WORK PERFORMED BY THE DESIGN DIVISION

Preliminary Estimates - Drainage

Shelmire Avenue, Sum. E. of Dungan Rd. to Lawndale Street
Tabor Avenue, Sum. S. of Shelmire Avenue to Shelmire Avenue
Tabor Avenue, Faunce Street to Shelmire Avenue
Vista Street, Whitaker Avenue to Dungan Road
Erdenheim St. at Stenton Avenue thru Morris Arboretum to present outlet of
Wissahickon Low Level intercepting sewer at Germantown Avenue
Norwood Avenue, from proposed sewer above mentioned to Hillcrest Avenue
Lansing Street, Castor Avenue to Frontenac Street
Loretto Avenue, Hartel Avenue to Lansing Street
Whitaker Avenue, Faunce Street to Bleigh Avenue
Bleigh Avenue, Whitaker Avenue to Dungan Road
Tabor Avenue, Faunce Street to Napfle Avenue
Napfle Avenue, Tabor Avenue to Verree Avenue
Verree Avenue, Sum. N.E. of Shelmire Avenue to Loney Street
Rising Sun Avenue, Shelmire Avenue to Chandler Street
Oakmont Street, Verree Avenue to Rising Sun Avenue
Faunce Street, " " " " " "
Afton Street, Verree Avenue to Palmetto Street
Afton Street, Glencoe Avenue to Tabor Avenue
Lansing Street, Verree Avenue to Rising Sun Avenue
Hartel Avenue " " " " " "
Chandler Street " " " " " "
Chandler Street, Verree Avenue to Sum. N.W. of Verree Avenue
Ferndale Avenue, Napfle Avenue to Hartel Avenue
Hartel Avenue, Ferndale Avenue to Hasbrook Avenue
Oxford Avenue, Hasbrook Avenue to Rhawn Street
Cottman Avenue, Castor Avenue to Loretto Avenue
Loretto Avenue, Cottman Avenue to Bleigh Avenue
Elgin Avenue, Cottman Avenue to Bleigh Avenue
Rising Sun Avenue, Garland Street to Godfrey Avenue
Rising Sun Avenue, Howell Street to Comly Street
Rising Sun Avenue, Benner Street to Devereaux Avenue
Kerper Street, Rising Sun Avenue to Bingham Street
Rising Sun Avenue (N.W. sd.) Alcott Street to Vankirk Street
Rising Sun Avenue (S.E. sd.) Rosalie Street to Vankirk Street
Malvern Avenue from 63rd Street to Lancaster Avenue (Reconstruction)
Mill Creek Sewer, Haverford Avenue, 46th to 47th Street (Reconstruction)
Morris Street, 11th to 12th Street (Reconstruction)
Nectarine Street, 9th to 10th Street (Reconstruction)
Coral Street from Fletcher to Susquehanna Avenue (Reconstruction)
Cambridge Street from Lawrence to 4th (Reconstruction)
5th Street, Morris Street to Diamond Street (Reconstruction)
Letterly from Kensington Avenue to Jasper Street (Reconstruction)
9th Street, from Fitzwater to South Street (Reconstruction)
20th Street from Morris Street to 250' South (Reconstruction)
Lombard Street from 9th Street to 10th Street (Reconstruction)
Clearfield Street, 6th Street to 8th Street (Reconstruction)

Preliminary Estimates - Drainage (Continued)

Sentner Street, Hasbrook Avenue to Rising Sun Avenue
Hasbrook Avenue, Vankirk Street to Godfrey Avenue
Newtown Avenue, Sanger Street to Godfrey Avenue
Sanger Street, Rising Sun Avenue to Newtown Avenue
Cheltenham Avenue, Newtown Avenue to Hasbrook Avenue
Vankirk Street, Reach Street to Newtown Avenue & Drainage R of W
Reach Street, Vankirk Street to Sanger Street
Weymouth Street, Vankirk Street to Sanger Street
Burholme Avenue, Oxford Avenue to Solly Avenue
Borbeck Street, Hasbrook Avenue to Summit N.W. of Barnes
Elberon Street, Rhawn Street to Summit N.E. of Stanwood
Ferndale Street, Hartel Avenue to Borbeck Street
Dalton Street, Pine Road to Burholme Avenue
Fuller Street, Pine Road to Burholme Avenue
Hartel Avenue, Ferndale Street to Hasbrook Avenue
Hennig Street, Stanwood Street to Solly Avenue
Hartel Avenue, Hasbrook Avenue to Sum. E. of Barnes Street
Hasbrook Avenue, Hartel Avenue to Oxford Avenue
Jeanes Street, Rhawn Street to Stanwood Street
Loney Street, Oxford Avenue to Burholme Avenue
Oxford Avenue, Pine Road to Fillmore Street
Pine Road, Oxford Avenue to Stanwood Street
Rhawn Street, Ridgeway Street to Elberon Street
Ridgeway Street, Rockwell Avenue to Rhawn Street
Rockwell Avenue, Hartel Avenue to Rhawn Street
Stanwood Street, Pine Road to Burholme Avenue
Rounfort Street, Michener Street to Williams Avenue
Gowen Avenue, Michener Street to Williams Avenue
Wadsworth Avenue, Michener Street to Forrest Avenue
Mt. Airy Avenue, Michener Street to Forrest Avenue
Bingham Street, Faunce Street to Shel mire Avenue
Claridge Street, Faunce Street to Bleigh Avenue
Dungan Road, Bleigh Avenue to Faunce Street
Faunce Street, Summerdale Avenue to Tabor Avenue
Faunce Street, Tabor Avenue, to Bingham Street
Lawndale Street, Faunce Street to Shel mire Avenue
Mountour Street, Faunce Street to Bleigh Avenue
Oakmont Street, Bingham Street to Palmetto Street
Palmetto Street, Oakmont Street to Shel mire

Private Sewers

Temple Road, Vernon Road to Phil-Ellena Street
Unruh Street, Summerdale Avenue to Frontenac Street
Eastwood Street, Magee Avenue to Knorr Street
Algon Avenue, Levick Street to Magee Street
Sylvester Street, Unruh Avenue to Tyson Avenue
Oakland Street, Unruh Avenue to Tyson Avenue
Horrocks Streets, Roosevelt Boulevard to Comly Street
Charles Street, Devereaux Avenue to Harbison Avenue
Torresdale Avenue (N.W. side) Sheffield Street to Hartel Avenue
Granite Street, Cottage Street to 120 Ft. N.W. (Temporary Drain)

Public Sewers

Passmore Street, Summit S.E. Hasbrook Avenue to County Line
Levick Street, Summit S.E. Shelborne Street to Newtown Avenue
Hellerman Street, Hasbrook Avenue to Sum. S.E. of Hasbrook Avenue
Shelborne Street, Passmore Street to Robbins Street
Gilham Street, Summit S.E. Hasbrook Avenue to Newtown Avenue
Hasbrook Avenue, Gilham Street to Summit S.W. Levick Street
Elbridge Street, Hasbrook Avenue to Newtown Avenue-Co. Line
Newtown Avenue, Magee Avenue to Passmore Street
Magee Avenue, Summit S.E. Hasbrook Avenue to Newtown Avenue
Loney Street, Oxford Avenue to Burholme Avenue
Barnes Street, Borbeck Avenue to Loney Street
Hennig Street, Stanwood St. to Solly Avenue
Stanwood Street, Pine Road to Burholme Avenue
Dalton Street, Pine Road to Burholme Avenue
Fuller Street, Pine Road to Burholme Avenue
Loretto Avenue, Lansing Street to Napfle Avenue
Napfle Avenue, Castor Avenue to Frontenac Street
Rector Street, Ridge Avenue to Henry Avenue
Kingsessing Avenue, 70th to 71st and 70th Street, Kingsessing Avenue
to present sewer south
Malvern Avenue, 63rd Street to Lancaster Avenue (Reconstruction)
Oakmont Street, Verree Road to Summit 264' S.E.
Afton Street, Glencee Avenue to Tabor Road
Afton Street, Palmetto Street to Rising Sun Avenue
Oakmont Street, Rising Sun Avenue to Summit 264' S.E. of Verree Rd.
Rising Sun Avenue, Shelbire Avenue to Faunce
Randolph Street, Brown Street to Parrish Street (Reconstruction)
Sanger Street, Rising Sun Avenue to Reach Street
Hasbrook Avenue, Godfrey Avenue to Cheltenham Avenue
66th Avenue, North, Fairhill Street to 6th Street
Barnes Street, Martel Avenue to Borbeck Avenue
Green Lane, Lawton Street to Ridge Avenue
Reach Street, Sanger Street to Summit N.E. of Cheltenham Avenue
Chandler Street, Verree Avenue to Summit N.W.
Rowland Avenue, Sheffield Avenue to Martel Avenue
Gylvester Street, Unruh Street to Knorr Street
66th Street, Girard Avenue to Callowhill Street
Overbrook Avenue, Haverford Avenue to Vine Street
Oakland Street, Unruh Street to Knorr Street
Lawnton Street, Gorgas Lane to Parker Avenue
Stanwood Street, Pine Road to Burholme Avenue
Dauphin Street, Broad Street Westward (Reconstruction)
Hutchinson Street, Hedro Avenue to Champlot Avenue
Castor Avenue, Lansing Street to Chandler Street
Mill Creek Main Sewer, 46th Street and Haverford Avenue to 47th Street

Drainage Studies

47th Street, Paschall Avenue, Grays Ferry Avenue, 48th Street,
Woodland Avenue, and the West Chester and Phila. R.R.
33rd St., Market St. to Larchwood Street outlet - Reconstruction for
Subway Extension
Ealen Street, Moreland Avenue to Willow Grove Avenue
Osborn Street, Manayunk Avenue to Righter Street
Suffolk Avenue, 72nd Street to 75th Street, and 75th Street, Suffolk
Avenue to Lyons Avenue
Hale Street, Frontenac Street to Summerdale Avenue
Hammond Avenue, Front Street to Hedro Avenue; Chew Avenue, Grange Avenue
and Conlyn Street
Balfour Street and Casper Street, Ontario Street to Tioga Street, Etc.
Sanger Street, Tabor Avenue to Montour Street, Etc.
Silverwood Street, Parker Avenue, Umbria Street, Paoli Avenue
Carpenter Street, 15th Street, South
Connaroe Street and Ridge Avenue
Ellen Street, Delaware Avenue to Penn Street
Robbins Street, Algon Avenue to Cranford Avenue
Sylvester Street, Unruh Avenue to Tyson Avenue
Oakland Street, Unruh Avenue to Tyson Avenue
Bott Street, Broad Street to Kerbaugh Street
Ardleigh Street, Evergreen Avenue North to dead end
Orchard Lane, Crestmont Avenue to Poquessing Creek
Overbrook Park, Haverford Avenue and Woodbine Avenue
Roosevelt Boulevard outlet for Bustleton
Bass Street, Dorset Street to Slocum Street
Lindbergh Boulevard, 58th Street to 59th Street
Sprague Street, Haines Street to Walnut Lane
Schiller Street, Allen Street to Bath Street, Cooper Street
Ontario Street to Wensley Street, etc.
Aldine Street, Ditman Street to Torresdale Avenue
Windish Street, Sackett Street to Hawthorne Street
Berkley Street, Wayne Avenue to Green Street-Flooding Investigation
Leithgow Street, Redner Street to dead end, and Redner Street, Fourth Street to
Leithgow Street
Bustleton Avenue, Tyson Avenue to Princeton Avenue
Jackson Street, Vandalia Street to Weccacoe Avenue
Conwell Avenue and Fay Street, Haldeman Avenue to Jamison Avenue, etc.
Green Street, 15th Street to Broad Street
Tabor Avenue, Godfrey Avenue, The Oxford Road Branch of the Connecting Railway,
The Roosevelt Boulevard and Adams Avenue
Stokley Street, Abbotsford Avenue to Queen Lane
Hawthorne Street, Aramingo Avenue to Banner Street
Seville Street, Ridge Avenue to Henry Avenue
Overbrook Park, Haverford Avenue and Malvern Avenue
Shackamaxon Street from Penn Street to Delaware River

Drainage Studies (Continued)

Greenwood Avenue System above intercepting dam on Williams Avenue
Solly Avenue, Frontenac Street to Loretto Avenue
Eadom Street, Haworth Street to Pratt Street
Balfour Street, Tioga Street to Russell Street and Carbon Street,
Tioga Street to Delaware Avenue
Silver Street, Amber Street to Martha Street
Melvale Street, Westmoreland Street to Wensley Street
Overbrook Park, Malvern and Callowhill Streets
Malvern Avenue, 63rd Street to Lancaster Avenue
Extension of Naval Stores Depot to Godfrey Avenue, at Tabor Avenue
Manheim Avenue, N.E. of Wissahickon Avenue, Proposed development
28th Street, Oxford Street to Columbia Street - Flooding Investigation

Vine Street Improvement: State Highway

Vine Street, Franklin Street to 18th - Demolition Plans completed
" " 11th Street to Darien Street - Sewer reconstruction plans
" " 11th Street to 15th Street - Paving Plans
" " 5th Street to 22nd Street - Preliminary estimates of cost for depressed highway proposed by City Planning Commission.

Penrose Avenue Improvement: State Highway

Schuylkill River Bridge and Approaches - Grade and drainage studies and estimates.

North East Philadelphia Airport

Plan for Grading, Paving and Drainage in area N.E. of Access Road.
Plan for Boundary Fence
Plans for leases of Facilities to Airlines
Culvert Plan-Private Road entrance to Ashton Road

South West Philadelphia Airport

Plans for conversion of National Guard Administration Building to Trans-Atlantic Facilities
Plans for apron paving in overseas loading area.

Sewage Disposal

Cheltenham Township sewage meters - Knorr Street and Passmore Street connections from City for approval
Intercepting slot-Woodcrest Avenue and Morris Park
Sewer Rental - Maps and report
Lower Delaware Low Level - Branches Delaware Avenue and Oregon Avenue
Lower Delaware sewage intercepting chambers
Upper Delaware Low Level - extension Ashburner Street to Poquessing Creek
Eden Street Low Level Pumping Station and intercepting sewers
Lower Merion Township - Request for changes in sewage connections to City.
U. S. Navy Yard sewers and pumping connections to City treatment plants.
Wissahickon Low Level Intercepting sewer extension to Stenton Ave., etc.
S.E. Treatment Works site-plan showing proposed area desired by Penna. R.R.
Somerset Intercepting Chambers revision for mechanical and operating improvements
N.E. Sewage Treatment Works extension-design and plans
N.E. Sewage Treatment Works- Report on hydraulics and sewage flow through proposed extension
Upper Delaware Low Level Intercepting sewer extension to Poquessing Creek-
Engineering Report

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Sewage Disposal (Continued)

Southeast Sewage Treatment Works - Preliminary design studies
Southwest Sewage Treatment Works - Preliminary design studies
Critical Material estimates for W.P.B. priority ratings for entire Sewage Disposal Project

Miscellaneous

Frankford Creek Channel Improvement perspective sketches, etc.
Packer Avenue East of Delaware Avenue-Stormwater Drain
Packer Avenue East of Delaware Avenue-Proposed railroad siding
Laurel Street, Delaware Avenue to Penn Street, Protection of existing sewer for street vacation and railroad use.
Packer Avenue East of Delaware Avenue-River water main and return drain for Publicker Alcohol Co.
Hutchinson Street, Nedre Avenue to Champlost Street - Retaining walls, grading, etc.
Philadelphia Electric Ducts, N. Watts Street
Bridge Street & Delaware River - Railroad crossing; Belt Line R.R.
Vandalia Street, South of Tasker Street-Proposed private sewer, Publicker Alcohol Co.
Philmont Avenue, Somerton-Phila. Suburban Water Company pumping main
Railroad siding, American Street, South of Columbia Avenue
Mill Creek reconstruction demolition plans
Wanamaker Stores sidewalk slabs
Railroad siding, Bridge Street & Garden Street (Penrose Avenue
Penrose Avenue, Gulf Oil Corporation, pipe line crossing (W. of Lanier Street
Philadelphia Electric Company, conduit routes, Federal Street, 7th Street to Delaware Avenue, etc.
Pipe Lines, Passyunk Avenue, East of Schuylkill River
Swanson Street North of Snyder Avenue, proposed connection of drain
Railroad siding, Penn Street and Ellen Street etc.
Philadelphia Electric Conduit, Delaware Avenue South of Porter Street to Snyder Ave.
Philadelphia Electric Conduit, Delaware Avenue South of Porter Street to Oregon "
Philadelphia Electric Ducts, 6th Street and Federal Street-via. Federal Street, 5th Street, Tasker Street and Delaware Avenue
Drainage for proposed hydraulic fill, Water Bureau at Queen Lane Filter Plant
Revision of City Inlet Standard
Critical Material Estimates for W.P.B. rating for proposed Sewers in various locations
Lehigh Avenue, 34th Street to 100 Ft. W. (S. Footway surface drainage).

Bridges

Wingchocking Street over Frankford Creek-Design Study					
Worrell Street	"	"	"	"	"
Frankford Avenue	"	"	"	"	"
Torresdale Avenue	"	"	"	"	"
Orthodox Street	"	"	"	"	"
Bridge Street	"	"	"	"	"
Godfrey Avenue over Crescentville Avenue	"	"	"	"	"
Adams Avenue over Tacony Creek	"	"	"	"	"
Aramingo Avenue over Philadelphia & Trenton R.R.-Design Study					
State Road over Pennypack Creek-Design Study					
State Road over Poggessing Creek-Design Study					
Wissahickon Drive & Ridge Avenue, Grade Separation-Design Study					
Cathedral Road over Wissahickon Creek-Design & Drawings					

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Bridge (Continued)

Walnut Lane over Lincoln Drive-Redesign
Castor Avenue over Frankford Creek - Design & Drawings
Delaware Avenue Skyway - Design Studies

Marquees, Private Bridges, Etc.

Footway Elevator, 3720 North Broad Street
Private Bridge across Hunting Park Avenue for Budd Buildings
" " " Packer Avenue for Publicker Alcohol Co.
Tabor Road Bridge over Tacony Creek - P.E. Conduits Added
Metal Canopy-Delaware Avenue, Bainbridge to Kenilworth Street
Vault Reconstruction, Essex Hotel, 13th and Filbert Street
Private Bridge across Ontario Street, west of "C" Street for Philco Buildings
Passenger Shelter at Broad & Hoyt Streets
Vault Reconstruction, Penn Fruit Company - 19th and Market Streets

Maintenance Division - Bridges Checked for Strength

33rd and Thompson Streets
33rd and Jefferson Streets

Miscellaneous Work

Municipal Stadium - drawing for settlement of columns
Northeast Airport - drawing and estimate for pipe culvert
Schuylkill River Draw Bridges - drawing of regulation navigation lights for
Tugs and barges
Shurs Lane and Manayunk Avenue - preliminary studies for proposed stairway
25th Street and Washington Avenue - preliminary design and estimate for alteration
of overhead timber trestle to open 25th Street to traffic

Hauling Permits

Heavy Truck Routing - 179 checked

Bridge Repairs

Chestnut Street over Schuylkill River - drawings and estimates for steel repairs
Grays Ferry Avenue over Schuylkill River - Drawing and estimate for fender repairs
Grays Ferry Avenue over Schuylkill River - drawings for steel repairs to Span "F"
Passyunk Avenue over Schuylkill River - drawing and estimate for steel repairs to
east and west approaches
Penrose Ferry Road over Schuylkill River - drawing and estimate for timber repairs
to east approach
South Street over Schuylkill River - preliminary design and studies of rail supports

Wharf Repairs

Delaware Avenue and Green Street - drawings and estimate for renewal of timber
bulkhead
49th Street and Schuylkill River - drawings and estimate for repairs to wharf

Sewer Repairs

Clearfield Street between Marshall and Sheridan Streets - drawing and estimate
for shoring of break (Contract plan).

Sewer Repairs (Continued)

Clearfield Street between Marshall and Sheridan Streets - drawing for shoring of break (As built plan).

Clearfield Street between 6th and 8th Streets - drawing for inspection diagram

Inspection

Highway bridges over Reading Railroad - inspected all in conjunction with Reading Company Engineers.

Checking Applications for the Public Utilities

Philadelphia Gas Works	271
Bell Telephone Company	120
Philadelphia Electric Company	107
Philadelphia Steam Company	0
Keystone Telephone Company	0
Bureau of Water	99
Miscellaneous	53
Total	650

Mimeographing

Sheets and Records for the Various Divisions

Zoning Division
Survey Districts
Registry Division
Design and Construction Divisions
Main Office

Filing

Main and Branch Sewer Plans-Bridge Division Plans-Miscellaneous Plans etc.

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ACCOUNTING AND REPORTING DIVISION

BUDGET ITEMS

	<u>APPROPRIATED</u>	<u>ENCUMBERED</u>	<u>EXPENDED</u>
A-25 Personal Services	\$ 399,805.02	---	\$ 392,374.60
35 Transportation and Expenses not otherwise provided for	600.00	---	598.65
36 Recording of deeds, agreements, and permits, advertising City Plans	500.00	---	435.50
37 Rent - survey District Offices	6,540.00	---	5,840.00
38 Cleaning Offices	900.00	---	887.50
39 Construction of Sewers in the Sanitary and Stormwater Drainage System	254,623.81	82,416.75	72,218.54
40 Dredging Schuylkill River	96,315.99	2,350.68	92,474.48
41 Dredging Frankford Creek	1,822.16	---	25.00
42 Post-war Public Works Improvements	200,166.37	6,000.00	164,160.81
43 Construction of Reconstruction of a sewer in Malvern Ave.	15,000.00	---	14,957.06
44 Reconstruction of the Mill Creek Sewer	200,000.00	---	---
45 Moving Equipment, furniture, supplies, etc.	500.00	---	412.39
315 to 323 inclusive - Department of Supplies and Purchases	7,900.00	---	7,528.87
	<hr/>	<hr/>	<hr/>
	\$ 1,185,102.34	\$ 90,767.43	\$ 751,913.40

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ACCOUNTING AND REPORTING DIVISION

LOAN ITEMS

	<u>APPROPRIATED</u>	<u>ENCUMBERED</u>	<u>EXPENDED</u>
210 AL - Henry Ave. over Wissahickon Creek	3,901.20	3,901.20	---
250½ L - Construction of Highways, Bridges Viaducts and Bulkheads	12,098.44	---	990.00
300½ L - Construction of Sanitary and Storm Sewers	5,052.67	---	5,052.67
380½ L - Elimination of Grade Crossings at 21st-22nd - Allegheny and Mt. Airy Avenues	121,592.38	---	---
440½ L - Construction of Highways, Bridges, Viaducts and Bulkheads	121,102.48	6,688.00	30,296.75
441 L - Municipal Improvement on east bank of Schuylkill River and Fairmount Park	185,930.87	---	---
442½ L - Construction and Equipment Phila. Municipal Airport	151.92	---	151.92
462 L - Sewage Disposal	10,324.66	---	60.00
462½ L - Construction of Plant and Equipment Sewage Disposal System	25,415.18	---	21,398.03
463 CL - Manayunk, Germantown and Chestnut Hill Grade Crossings	142,145.64	---	951.67
464½ L - Construction of Sewers in the Sanitary and Stormwater Drainage System	350,275.01	55,059.83	176,222.39
510 AL - Improvement- Phila. Southwest Airport	2,500,000.00	---	---
510 BL - Improvement- Phila. Northeast Airport	2,500,000.00	---	---
520 AL - Erection, Improvement and Extension Sewage Disposal System	7,000,000.00	---	18,474.95
520 BL - Improvement, construction and Extension Sewers and Drainage facilities	1,000,000.00	130,000.00	35,080.87
	<u>\$ 13,977,990.45</u>	<u>195,649.03</u>	<u>288,679.25</u>

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