



This material is part of the collection of the
Philadelphia Water Department
and was downloaded from the website
www.phillyh2o.org

Please contact the PhillyH2O webmaster
for more information about this material.

A N N U A L R E P O R T

of the

BUREAU OF ENGINEERING, SURVEYS AND ZONING

of the

DEPARTMENT OF PUBLIC WORKS

CITY OF PHILADELPHIA

1941

THOMAS BUCKLEY

CHIEF ENGINEER AND SURVEYOR

* * * * *

BUREAU OF ENGINEERING, SURVEYS AND ZONING

Thomas Buckley, Chief Engineer and Surveyor

The normal functions performed by this sub-division of the Department of Public Works are numerous and diverse because of the administrative demands that have controlled its organization over a period of eighty-six (86) 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 an Assistant Engineer-Zoning, 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.

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 Co-Ordinating Division for projects of the Works Progress Administration, under the responsible charge of an Assistant Engineer and Co-Ordinator. The primary purpose of this division is to act as a consulting and co-ordinating staff for the Mayor in setting up, equipping, financing, supervision, and completing all Works Administration projects sponsored by the City. The work performed includes recommendations and advice in formulating worth-while projects, submitting estimates and ordinances to Council for Works Projects programs, preparing material and equipment, requisitions, and special specifications, inspecting supplies, materials, and workmanship, preparing minor designs, and supervising the laying out and conduct of the work.

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 co-ordinated into an united and effective working whole, capable of performing annually an unusual volume of work varying greatly in character and extent. Although the combined man-power is relatively small, and the salaries received are considerably below the standards now in force in private business employments, these factors have not affected the productiveness of the Bureau.

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

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

A detailed account of the work done during the year 1941 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 Blue Print 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.

EMERGENCY DEMANDS

National Defense. - The conditions resulting from the national emergency, which operated prior to and following the actual declaration of War, added a considerable amount of extra work to the normal public works activities. The City of Philadelphia has located therein many of the Country's largest defense industrial plants, as well as important military and naval centers. During the past year, the problems born of the expansion of existing plants, the location in the City of new industries and military centers, the establishment of roads giving access thereto; and the housing problems incident thereto, had a marked effect in accelerating and augmenting the work of the Bureau.

Civilian and Public Works Defense. - The Bureau of Engineering, Surveys and Zoning, by reason of its mapping, planning, and other technical functions, received calls from many sources to supply basic data and material for military, naval and civilian defense purposes. Special studies, surveys, plans and technical advice and assistance were given to various branches of the Federal Government for use in the present national emergency. Little may be said of this class of work by reason of wartime necessities and restrictions. Typical examples that may be given publicity are the work done in connection with emergency housing, the planning and construction of access roads, and strategic highways and supplying factual data pertaining to the City and its environs.

The establishment of an organization, such as now controlled by the office of Civilian Defense, was anticipated by the Department of Public Works during the fall of 1941. As the result, the Bureau of Engineering, Surveys and Zoning, and the Bureaus of Water and Highways and Street Cleaning, were called upon to assist in the formulation of plans for organizing the Public Works division of Civilian Defense control, under the leadership of the Assistant Director of the Department. At the close of 1941, Public Works Defense had assumed the proportions of a major operation, involving all available resources. Present conditions indicate that the Department of Public Works and its organized functions must give increasing attention to Public Works Defense matters on the basis of 24-hour daily service. Therefore, the Bureau divisions must so plan normal work and defense work that its organization will be prepared to meet any contingency, peaceful or otherwise, upon call.

City-State Highway Program. - The Act of Assembly approved May 7, 1937, by which approximately one hundred and fifty-four (154) miles of main city streets were transferred into the State highway system, contained a number of provisions that operated to prevent essential cooperation between the Commonwealth and the City. Progress, therefore, in the reconstruction of the main arterial highway system, established under the 1937 authorization, fell far short of the accomplishments expected. The greatest single handicap under the new highway enactment was the fact that the City must provide, at its sole cost, all of the right-of-way necessary for any improvement. In other words,

before the State would consent to undertake a specific improvement, the City was required to accept the liability for the payment of all damages for opening and change of grade proceedings involved. Since the majority of the most important projects listed required extensive revisions of lines and grades, the City's share of the cost for improvements effected under the 1937 Act was so great that its participation in any extensive program was simply impossible. This situation was remedied by Governor James in 1941, with the passage, on July 10th, of an Act amendatory to the 1937 legislation which modified a number of important provisions relating to the City's responsibility in connection with the State highway improvements. The amendatory Act provides that all City-State highway improvements undertaken be based upon duly executed agreements between the City and the Commonwealth which specifically prescribe their respective liabilities. The Act made possible the allocation by the Governor to the City of State Motor Funds not to exceed an expenditure of \$12,000,000. in any one year for the improvement, including condemnation costs, of the highways which the Act designated as State Highways. During the preparation of the new legislation a number of constructive changes in route allocations were made at the request of the Department of Public Works. Of these, the most important were the substitution of Henry avenue for Ridge avenue; Stenton avenue, Godfrey avenue and Adams avenue for portions of Washington lane, Chew avenue and Mt. Airy avenue; Aramingo avenue and a portion of State road for Richmond street and Bridge street; Vare avenue and a portion of Oregon avenue for Maiden Lane, Snyder avenue, and 24th street; a portion of Passyunk avenue for 63rd street and Buist avenue; Island avenue, Essington avenue and Penrose avenue for Tinicum avenue and Penrose Ferry road; and others.

The late Robert E. Lamberton, as Mayor of the City of Philadelphia, appointed an advisory committee, comprising seventeen (17) City officials and representatives of planning, transportation, and other civic and business agencies, to advise on local-state highway developments. As a result of this committee's activities, a program of twelve (12) major projects, recommended by the Department of Public Works, were approved. These were, -

1. - Vine street approaches to Delaware River Bridge from the Parkway to Sixth street, to include the improvement of the Ridge avenue diagonal from Vine street to Race street for east-bound traffic to the bridge.
2. - Essington avenue from Philadelphia-Delaware County line to Passyunk avenue; Passyunk avenue, Essington avenue to Sixty-third street.
3. - Thirty-fourth street from Grays Ferry avenue to Vare avenue; Vare avenue from 34th street to Oregon avenue; Oregon avenue eastward to Eighteenth street.
4. - Island avenue from Passyunk avenue-Buist avenue to Tinicum Island road.
5. - Roosevelt Boulevard from Oxford Circle to Broad street, to include all bridge widenings.
6. - Penrose avenue from Island avenue to Moyamensing avenue, including a new bridge crossing of the Schuylkill River.
7. - Tacony-Palmyra bridge approaches and Levick street to Roosevelt Boulevard.

8. - Stenton avenue from Bethlehem Pike to Rising Sun avenue.
9. - Aramingo avenue from Delaware avenue to Bustleton avenue.
10. - Henry avenue from Walnut lane to Ridge avenue at Cathedral road, including two bridge crossings at Gorgas lane and Green lane.
11. - Grade separations at the junction of the Wissahickon Drive with Ridge avenue; at Hunting Park avenue with Ridge avenue; and at Cobbs Creek Boulevard with Spruce street.
12. - Projected overpasses for high-speed through traffic on main arterial highways, e.g., Roosevelt boulevard from Broad street to the County Line.

During 1941, agreement ordinances were enacted and agreements executed for projects 2 - 3 - 4, and for the widening of four of the bottleneck bridges on the line of the Roosevelt Boulevard, and the construction of a grade separation at Fifth street and the Roosevelt Boulevard, as called for under project No. 5. An ordinance was, also, introduced authorizing an agreement between the City and the Commonwealth for the construction of an overpass at Oxford Circle. This legislation was defeated by reason of neighborhood antagonism to the project which, also, engendered considerable opposition to the similar project contemplated at Fifth street. A draft of ordinance was introduced in Council in October authorizing the agreement necessary for project No. 1; that is, the Vine street approaches to the Philadelphia-Camden bridge, but action was deferred until January, 1942.

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 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.

Noteworthy plans confirmed were three City Plans in South Philadelphia and three City Plans in Southwest Philadelphia. The plans in South Philadelphia were for the revision of the lines and grades in the area bounded by Grays Ferry Avenue, 34th Street, Vare Avenue, Mifflin Street, 24th Street, Oregon Avenue, 20th Street, Pattison Avenue, Joint Track Line R. R. of the Pennsylvania Companies and the Baltimore Companies, 26th Street, Vare Avenue, McKean Street and the Schuylkill River.

Three major results were accomplished by these confirmations:

1st - The striking and vacating of certain streets adjacent to the site of the Philadelphia Quartermaster Depot (U. S. War Department) removed legal barriers to the expansion and development of said depot.

2nd - The revision of certain lines and grades and providing for drainage

rights-of-way facilitated the development of Passyunk Homes (National Defense Housing Projects Nos. 36011 and 36012).

3rd - The revision of certain lines and grades is the prerequisite step to the future construction of State Highway Route No. 67012 which follows along 34th Street from Grays Ferry Avenue to Vare Avenue, along Vare Avenue from 34th Street to Oregon Avenue and along Oregon Avenue from Vare Avenue to 18th Street. The construction of this important highway route is authorized as part of the comprehensive State-City Highway program and provides for a dual highway with modern treatment of intersections and turning movements.

The extent in area covered by these revisions is approximately 500 acres.

The three Southwest Philadelphia plans are very important in that they also are the prerequisite step to the future construction of State Highway Routes Nos. 67043, 67054 and 67053. The construction of these highways which follow along Passyunk Avenue from 63rd Street to Essington Avenue and along Essington Avenue from Passyunk Avenue to Island Avenue and along Island Avenue from Essington Avenue to Eastwick Avenue will supply the tremendous need for a more direct route to the Philadelphia Municipal Airport while also forming a link to a circuitous heavy traffic highway around the built up sections of the City. These plans also provide for a dual highway with modern planning of intersections and turning movements.

The length of this revision along the proposed route is 2.9 miles.

Survey Districts - Last year's report noted the reduction in the number of Survey Districts from eleven to nine, in the interest of economy and efficiency. One full year's operation of the nine districts has proven the wisdom of such reorganization. Even with the additional work entailed by defense activities and the State Highway program, the districts were able to carry on efficiently. Some idea of the increased load may be obtained from the fact the cash receipts of the districts, for engineering services rendered, increased from \$87,869.81 in 1940, to \$112,342.06 in 1941. The work done for governmental agencies which is not charged for, increased in a ratio probably exceeding that of the cash receipts.

PLANS AND REGISTRY DIVISION

This year marked the reorganization of the Plans and Registry Division into two sub-divisions, divided functionally under an Assistant Engineer-Registry, who has responsible charge of all legal records pertaining to City plans, the opening of streets, and registered owners of property; and an Assistant Engineer-City Plans, who is responsible for the study and research preliminary to the preparation of official City plans. The Assistant Engineer-Registry was also appointed Secretary of the Board of Surveyors.

The result of one full year's operation of this reorganization has been a clear demonstration of its value. The employes affected by the new arrangement have loyally and efficiently cooperated.

The numerous activities of the division can best be analyzed under the

four group headings which follow.

1 - Activities in the Book Room - The summary discloses that in the book room, the number of straight transfers of title to real estate was the largest for any single year since the year 1929.

1929 - 63,651 transfers 1941 - 60,902 transfers.

Likewise, the number of transfers of title parcelling smaller tracts in order to facilitate new dwelling construction had the largest year since 1929.

1929 - 8,133 originals 1941 - 6,008 originals.

In connection with the Federal Government sponsored housing program and expansion program, there were registered during the year 11 decrees of Court, affirming declarations of taking. Set forth in the following table are the general location of tracts of ground condemned and the intended use thereof.

<u>Location</u>	<u>Intended Use</u>
20th Street and Johnston Street	Expansion of Quartermaster Depot
" " " Delaware Ext. Penna.R.R.	" " " "
Bed of Government Avenue, Broad St. westward	" " Phila. Navy Yard
N. S. of " " " " " "	" " " " " "
Wissahickon Avenue and Abbottsford Ave.	Construction of Signal Corps Depot
Henry Avenue and Roberts Avenue	Defense Housing
Oxford Avenue and Benner Avenue	" "
Holme Avenue and Willits Road	" "
56th Street and Lindbergh Blvd.	" "
Penrose Avenue and 24th Street	" "
Cheltenham Avenue and Ivy Hill Road	" "

During 1941, the maintenance of existing records in this room was greatly benefitted through the recopying of twenty-one volumes of written records and the repair work performed on 260 Registry drawings. This was accomplished through W. P. A. Projects Nos. 25031 and 27911 working under this Bureau's sponsorship.

2 - Activities in the Plans and Legal Records Room - In this room, 45 plans of registered owners and legal status of streets were prepared for the various City Departments and 87 sketches made for the Department of Law for their use in a special study of municipal liens.

Forty-one confirmed City plans were indexed and filed and legal openings affecting 93 streets were received and entered. These changes were noted on all official records including the "STREET MAP" which was brought up to date. Changes in physical status of streets occurring in 1941 were also noted on the street map and the statistical chart amended accordingly.

A total of 1,381 city plans were loaned out to the various City Bureaus and divisions. These plans were borrowed mainly by the Bureau of Water for their use in the Rehabilitation of the Water Supply System, the Design Division, Bureau of Engineering, Surveys and Zoning for their use in the extension of the

Sewer System and W. P. A. Project No. 28761, sponsored by this Bureau to draft maps and cards showing legal status of streets. In connection with this project, the searching of legal opening records is being carried on entirely in this room, under the supervision of the three assistants. This project was begun on October 14, 1941, and the results being obtained are satisfactory considering the inexperienced draftsmen who now make up the W. P. A. forces.

During the year, the assistants in this room made 63 appearances in Court as custodians of public records.

3 - Activities of the Board of Surveyors - The Board held twenty-six meetings at which they reported on twenty-nine Ordinances and confirmed forty-one plans. Of the plans confirmed, nine enabled expansion of defense industry sites or defense housing sites. Seven will enable the construction of new highways of the State-City Highway program. Nineteen will enable the development of private building. Nine were plans confirmed for miscellaneous purposes.

At a special meeting held in July, and at two later meetings, the Board met and approved changes in street designations and changes in spelling of fifty-two streets, which were not uniformly designated or spelled. This was desirable because of the proposed installation of many thousands of street name plates throughout the entire City.

4. Contacts With W. P. A. - Besides the collaboration with the W. P. A. projects mentioned above, this office made investigation of 260 parcels of ground held by the City and certified to the Coordinating Engineer's office, the manner in which title was held to said parcels.

123 official certifications of title and status of streets were issued in connection with proposed W. P. A. footway and curb projects.

CITY PLANS DIVISION

City-State Highway Program - The major work of the Division centered around this program. Master highway maps and other plans were prepared from which to initiate the program. The District Surveyor committees which were formed to study and submit proposals were provided with map records. The reports received were mapped and recorded.

The first drafts of the Highway Legislative Act were followed and checked for accuracy of route description. Comprehensive route plans were made and planning studies of individual highways were prepared, including research into property lines and owners, property assessment values, traffic design, numerous property sketches for land taking and all the detailed requirements of the preliminary planning necessary for the revision of the Confirmed City Plan. These studies were based on the six highway grade separations and bridge widening agreements which were authorized and executed during the year.

Ten other studies were partly prepared for future highway routes and other improvements planned between the City and the State Highway Department and some of this work is well advanced. Examples of such studies are Vine Street, Aramingo Avenue, Levick Street and Tacony-Palmyra Bridge Approaches.

City Planning Studies - Twenty-four City Planning Studies were completed during the year, including the necessary research, estimates and plans, examples of which are Church Lane, Elgin Avenue Area, Poor Farm Study, Pine Road, Schuylkill Avenue, and Hartranft Street.

Plans, Maps, Information - The Division furnished plans, maps and various information services for forty-two private businesses, individuals and public utilities, etc.; to twenty-one outside governmental bodies and agencies; and to sixteen inter-city departments, bureaus and divisions.

City Sectional Maps and Other Records - The Division issued sectional street maps and other records during the year in large numbers. The National Emergency was almost wholly responsible for the unusual demand.

Some of the blueprint paper required was furnished by the parties receiving the prints, but practically all the reproducing labor was done by the Public Works Photographer with his equipment.

Issued

Land Use Maps (108 plates)	200'	scale	953
Street Maps	"	"	115
Street Data Maps (39 plates)	500'	"	253
" Maps	"	"	580
" "	20	1000'	751
" "	"	1600'	110
" "	3	"	21
Miscellaneous (Stadium-Highways, etc.)			880
		Totals	3,663

In addition many copies were furnished from plans, letters, deeds, etc., by the Hunter Electro Copyist process.

During the year forty-six City Plan revisions were placed on the sectional records. Also, 2,513 corrections and additions were recorded on the Land Use Maps from zoning, use registration and demolition permits.

Defense - Numerous plans were made and records assembled for use of the Public Works Defense program. Work was done for the Council of Defense particularly maps for Air Raid Wardens and Fire and Police Bureaus' programs. Plans were furnished for the use of those in charge of the Defense Week exercises. This work is all reflected in the list of maps and records issued.

Census - 1940. Population trends were plotted from the census figures on census tract and ward maps, resulting in a possible comparison with the 1930 census figures.

Reports and Memorandums. - Numerous reports and memorandums were prepared

The five items showing a decrease are:

	<u>1941</u>	<u>% decrease</u>
Number of Zoning Permits refused	896	8.4
" " refusals appealed to the Board of Adjustment	1,551	5.4
" " sign applications (highway) acted upon	285	53.0
" " descriptions for District Classification, changes made for the Board of Adjustment.	63	33.0
" " changes of Zoning Maps proposed by resolutions of Council.	111	26.5

The same number of changes made in the Zoning Maps, i.e., fifty-one, in 1941, and in 1940.

This year Council passed forty less resolutions calling for hearings and changes than they did in 1940. The figures were one hundred fifty-one in 1940, and one hundred eleven for 1941, showing a decrease of twenty-six and five-tenths percentum.

The enforcement of the Parking Lot Ordinance approved March 7, 1941, caused a great impetus of business in March and April. Many bureaus and divisions were involved and a meeting was held on March 19th, in the office of Assistant Director of Department of Public Safety, Herbert E. Millen, attended by representatives of the agencies responsible therefor, in order to determine what procedure should be adopted so as to get compliance with the least friction and quickest results for the Parking Lot and Garage Operators.

It was decided to have all applicants file applications with blue prints with the Accident Prevention and Traffic Division for approval. Once these were approved, they were to be submitted to the Zoning Division in all cases. On March 24th, the Accident Prevention and Traffic Division issued complete instructions for the guidance of prospective applicants.

The number of references to the Board of Adjustment greatly increased because it was found that many of the Parking Lots, although already in existence in commercial districts at the time of making application were illegally in existence, inasmuch as they had no certificate from the Board of Adjustment and had begun operation after the advent of Zoning. Indeed, many began on lots made vacant after the issuance of Zoning Permits for the demolition of existing buildings.

Letters to the Fire Marshal increased because of proposals to devote buildings heretofore used for garages, light manufacturing, etc., to heavier and more dangerous defense work. It was thought well in the many unusual cases that cropped up to have the Fire Marshal put his stamp of approval on the project.

ENGINEERING DIVISION

Design. - General activities of the Design function include the preparation of plans, specifications, proposal forms, and estimates for all highway bridges

and viaducts, highway bridge repairs, grade crossing eliminations, sewers, sewage disposal structures and such other engineering projects as may be assigned to the Bureau of Engineering, Surveys and Zoning.

Comprising its routine duties are the preparation of reports on drainage and flooding, maintenance of drainage maps, checking of marquises, canopies, tunnels, vaults, etc., for structural strength, checking routes for heavy hauling, approval of applications by utility companies for street opening permits and the approval of new railroad track locations within street lines.

The Design Division was given 267 major assignments during the year, comprising mostly sewers, drainage studies, bridge design and maintenance studies and strength investigations of plans submitted to the Board of Highway Supervisors for marquises, canopies, vaults, etc.

In 1941, funds were made available by the State of Pennsylvania for the improvement of certain highways under the control of the Department of Highways. Where these improvements included drainage or structural design, the City agreed to prepare, at its own expense, all plans and construction drawings and to do this in contemplation of the use of the Specifications of the Department of Highways. As a consequence, there has been a very close relationship with the State Engineers and every effort made to prepare plans satisfactory to the State, the Art Jury, City Bureaus, and the public.

Sewers (private). - In recent years sewers have been built by operative builders at private cost from plans and specifications prepared by the Design Division. As in 1940, the bulk of these building developments were located in the northern and northeastern portions of the City. They required the preparation of plans, estimates and specifications for 36 sewers of this class; of these, 20 provided for shallow depth sewers. Operative builders within the City limits were forced to compete with County building operators where shallow sanitary sewers, and often no stormwater drains, are required. In order to encourage home building within the City in fair competition with such projects, shallow depth sewers have been permitted since the first of the year, conforming to the following requirements:

The depths of sewers and sewer laterals may be reduced in Residential Districts in special cases. The extent to which the reductions may be made must be determined separately for each particular location. The absolute allowable minimum depths shall be as follows: For sewers, 7 feet from the surface of the street to the outside top of the sewer, and for sewer laterals, 6 feet from the top or grade line of the curb to the outside bottom of the lateral pipe.

The reductions in depth are permissible only when all the following requirements are met:

1. The locations must be new residential streets.
- *2. Abutting frontages must be 100 percent residential, of the single-family type; that is, detached, semi-detached, or row dwellings.
3. The locations must be generally one block in length.

4. The streets must be so situated on the confirmed City Plan that they cannot be extended unless their extensions will drain into another sewer outlet.
5. The locations must be at the high ends of a drainage system.
- *6. Both street frontages must be owned by the same party. (If property is encumbered it will be necessary for the mortgage holder to consent to drainage at less than standard depth.)
- *7. Both street frontages must be developed completely and simultaneously with the sewer and lateral construction.
- *8. Grades must be established by the District Surveyor for any driveways proposed to be constructed in the rear of or adjacent to the properties abutting upon both sides of the street.
- *9. The elevations of the basement floors of the dwellings which will be connected to the proposed sewer must be favorable.

*A certified statement containing the information outlined in Requirements 2, 6, 7, 8, and 9 must be filed in this office before the possibility of constructing sewers and laterals at minimum depths can be determined.

Sewers (public). The ordinance of Council of October 21, 1937, and subsequent supplementary ordinances, notably one of July 24, 1940, covering mostly the Lawndale and Burholme areas, authorized the construction of sewers at various specific locations to relieve sections where lack of drainage required the use of cesspools resulting in unsanitary conditions. Plans, estimates and specifications have been prepared during this year for 90 public sewers under these ordinances. Plans, estimates and specifications were also prepared during the year for the reconstruction of three sewers replacing old sewers in dangerous condition.

Sandy Run Main Sewer Extension. - The extension of the Sandy Run Main Sewer above its present terminus at Glendale and Castor Avenues, is a vital public necessity in order to relieve unsanitary conditions existing in extensively developed areas in Burholme and Rhawnhurst. Under authority of the ordinance of Council of May 20, 1941, plans have been completed for 2,271 lin. feet of main sewer extending to Faunce Street and Elgin Avenue. The stormwater conduit was designed as a reinforced rectangular concrete section, which is the economical section for a sewer of this size in open cut. However, restrictions on the use of steel reinforcement imposed by the Supply Priorities and Allocations Board forced the use of a section without reinforcement. Accordingly, a plain concrete section was designed of a semi-elliptical shape in which the line of pressure in the arch follows closely the center line of the concrete section. The two sizes used in this extension are 11 feet high by 11 feet wide and 12 feet high by 12 feet wide. Both sections have a 24-inch vitrified pipe sanitary sewer on each side.

Sewers and Stormwater Drains (for State Highway improvements). The sewers and stormwater drains to be built by the State Highway Department for the improvement of State highway routes throughout the City were designed and studied, and plans prepared for the use of the State Highway Department by the Design Division for five major highway routes.

Drainage Studies: - Numerous revisions to the City Plan confirmed during the year 1941 to provide for the normal growth of the City, including the striking of

certain streets to provide for the expansion of industries and placing on the City Plan additional streets for residential improvement, required the investigation and report by the Design Division on the effect on the drainage system. Other drainage investigations and reports were made in connection with proposed developments, Federal Housing projects, etc. Altogether 49 such studies were made during 1941.

Preliminary Sewer Estimates. - The Design Division made numerous preliminary cost estimates for the construction and reconstruction of sewers during 1941.

Sanitary Relief. - The sewer program initiated in the fall of 1940 was carried on intensively in 1941. The primary objective continued to be that of providing various suburban communities with modern sewer facilities in place of worn-out cesspool drainage. To this end, the preparation of plans, the advertisement of contracts, and the work of construction were pushed with unabated vigor. As a result, the sewer work made ready for construction by spring had reached such volume that the funds available for this program were inadequate to permit continued progress at the rate established. The City Council, therefore, on March 25, 1941, appropriated an additional one million dollars for sewers and appurtenant work. Of this sum, five hundred thousand dollars was allocated to the extension of the Sandy Run drainage system and the balance apportioned for branch sewers to relieve cesspool conditions, the reconstruction of certain old sewers, and for the construction of a number of outlet sewers for new residential developments. The Sandy Run main sewer extension is urgently needed in order to provide outlets for the drainage from the eastern and northern sections of Burholme, the western margins of Rhawnhurst, and for a large area of Fox Chase, including the business section. By reason of difficulties encountered in obtaining dedications for the right-of-way, the Sandy Run main sewer could not be begun in 1941. This work will be advertised, however, early in 1942. An interesting phase of the planning work, due to wartime emergencies, was the redesign of the sewer cross section in order to eliminate the use of reinforcing steel. The completion of eighty public sewers and thirty private sewers during the current year is considered a creditable accomplishment under the conditions which controlled all construction work.

Sewage Treatment and Disposal Program. - Difficulties encountered by the City in its endeavor to adopt a legal sewer rental ordinance made it impossible to energize the sewage treatment and disposal project during 1941. However, the failure to establish an acceptable means of sewer revenue was not unduly serious because of the wartime emergency regulations which placed a brake on many Public Works projects, by restricting the use of construction materials. The construction requirements for the completion of the forty-two million dollar sewage treatment program are of such magnitude as to make this undertaking impossible during the duration of the War. It is now being considered as a logical project for the "Public Works Reserve"; that is, as a post-war improvement which will help take up the slack which is bound to occur following the cessation of hostilities. During the current year, the consulting sanitary

engineers, Gascoigne & Associates, later succeeded by Havens & Emerson, submitted a report with recommendations on the extension of the Sewage Disposal Project in October, 1940. During the year 1941, a series of conferences were held between members of this firm and Bureau representatives, and supplementary data submitted, resulting in a final agreement in November on methods of treatment. This provides that treatment at the Northeast Works shall consist of one-hour preliminary sedimentation, using the existing Imhoff tanks, aeration up to two hours and final sedimentation of two hours. In October, an engineering report and application covering the method of treatment was made to the State Sanitary Water Board.

The unsuccessful efforts of the City to finance the completion of the Sewage Disposal Project were brought acutely into public notice by the aggravated foul condition of the Schuylkill, and to a lesser degree the Delaware River, during the prolonged drought of the late summer and early fall. Application was made to the United States Defense Public Works Administration for a grant of \$42,676,148. for the sewage treatment works, pumping stations, grit chambers, intercepting sewers and chambers; also the improvement of the Frankford Creek to prevent flooding and permit operation of essential sewage intercepting chambers. Estimates of cost, profiles of intercepting sewers, layout plans for treatment works and copies of contract plans for intercepting sewers, chambers and pumping stations, were prepared by the Design Division to accompany this report.

During 1941, arrangements were made with the Commissioners of Cheltenham Township for the construction of a sewage meter and chamber in Devereaux Avenue and a connecting pipe sewer outlet for the reception of City sewage from an area of approximately 41 acres. This is now under construction and will permit the construction of City sewers to relieve unsanitary conditions in this area.

The proposed route of the Southwest Main Gravity Intercepting Sewer lies along Essington Avenue from Mingo Avenue northward to 70th Street, which is along the line of the proposed new route to the Airport now being constructed by the Pennsylvania Department of Highways. Since the construction of so large a structure in the street would compel the closing of the street to traffic, it was decided that this portion of the sewer should be built prior to the grading.

This sewer will carry to the Southwest Sewage Treatment Works the sewage from the entire West Philadelphia area, that portion of the South and Central City draining to the Schuylkill River and the Manayunk and Roxborough sections. It is a triple section reinforced concrete sewer completely lined with vitrified plate lining to protect the concrete from being attacked by the sewage. The inside height of all sections is 6 feet 9 inches and the widths of the three sections are 4 feet 3 inches, 5 feet 3 inches and 7 feet. It will flow under pressure as an inverted siphon, the flow through the several sections and continuation of sections being regulated by gates at the head of the siphon to give self-cleansing velocities for all quantities.

Kingsessing-49th Street Bridges. - During the year 1941 the Kingsessing and 49th Street bridges over the Octoraro Branch of the Pennsylvania Railroad were completed.

The Kingsessing bridge is of single span 72 feet 9 inches long, and built

of steel girders encased in concrete supported on masonry abutments. The north abutment was built in connection with the grading of Kingsessing Avenue in 1897 for the purpose for which we are now using it. It is constructed of stone masonry and required the resetting of the bridge seat stones and the backwall. The south abutment, however, is a new stone faced concrete wall closely resembling the masonry of the north wall.

The 49th Street bridge, also built of steel girders encased in concrete. It is a three-span structure, the center span being 59 feet 9 inches and the outside spans 30 feet 3 inches. The three spans are riveted together above the piers so that they act as a continuous girder. The old steel columns were removed and the existing stone masonry piers were carried up to provide supports for the girders using stone faced concrete. The stone facing is granite and harmonizes with the existing abutments.

Both the Kingsessing and the 49th Street bridges have solid panel steel railings 6 feet 6 inches high over the tracks. These railings were used in an effort to provide a lightweight protection against contact with the high tension electric system of the railroad. Concrete parapets formerly used for the same purpose weigh up to eight times as much, which adds useless dead load to the structure. The steel was formed into patterns to give the railing an architectural treatment and galvanized to protect it from corrosion.

Margaret-Lefevre Street Bridge. - On September 27, 1941, Acting Mayor Samuel severed the ribbon symbolizing the legal opening of the Margaret-Lefevre Street bridge across Frankford Creek, a project started in 1932 and periodically revived by the activities of the several business and taxpayers' associations of Bridesburg and Frankford. The opening was featured by a parade and was attended by several thousand local residents. Trolleys began operating over the bridge on November 2, 1941.

The bridge has a span of 121 feet with a clearance at the center of 8 feet 11 inches above mean high tide. It is of the curved plate girder type with the girders placed in the sidewalk space just inside the curb lines. The girders have a camber of 3 feet 5 inches at the center and are 9 feet deep at the ends and 7 feet deep at the center. The abutments are of stone faced concrete, the stone facing being Foxcroft stone laid in random range rubble coursing and a wide range of colors.

The expansion and contraction of the bridge is provided for by two rockers, one under each girder, sealed from the atmosphere by Neoprene seals. A movement of $5/8$ of an inch has been noted under a difference of 80 degrees in the temperature of the air.

The total cost of the bridge was \$82,617.96 which includes some drainage work and paving on the approaches.

Roosevelt Boulevard over 5th Street. - In an effort to provide smoother flow for traffic several points of congestion along the Roosevelt Boulevard were

studied resulting in the decision to elevate the center drive at 5th Street and construct a bridge thereover. This involved the regrading of the center drive from the center line of the North Penna. R. R. to a point opposite 4th St. N. The maximum gradient on this improvement is 2.84 feet per 100 feet with the underclearance 15'5" at the center of 5th Street.

Plans for the bridge were completed and approved preliminarily by the Art Jury. They were sent to the Penna. Department of Highways under whose jurisdiction the work is to be done.

Hunting Park Avenue Underpass at Ridge Avenue. - Hunting Park Avenue, or Nicetown Lane, as it was formerly called, approaches Ridge Avenue from the west on a grade of 10 feet per 100 feet, which is a decided handicap to the starting of motor vehicles. A traffic light at this intersection periodically halts traffic, which, due to the time lost in stalling, at times is lined up as far back as the East River Drive, impeding traffic thereon.

This condition has grown gradually worse until it became obvious that the logical solution was to carry the Hunting Park Avenue traffic under Ridge Avenue, which the natural grades of the two streets made an easy engineering problem.

An Ordinance was passed by City Council September 27, 1941, authorizing the construction of this structure by the Penna. Department of Highways. Working in coordination with the engineers of the Department of Highways, the Design Division prepared the plans which contemplate the building of a tunnel under Ridge Avenue about 110 feet long by 29 feet wide with an underclearance of 14 feet. The grade of this tunnel is 1.75 feet per 100 feet, the grade of the west approach is 5 feet per 100 feet and that of the east approach is 4.67 feet per 100 feet. The cross section provides for two 12 foot lanes of traffic separated by a division 2 feet wide and flanked by curbs 18 inches wide.

West of Ridge Avenue provision has been made for two surface roadways, each 9 feet wide, one on either side of the tunnel, which will provide in the future for right turns into and from Hunting Park Avenue. For the present the traffic count does not warrant the construction of these drives which necessarily must be on excessively heavy grades and should be avoided if possible.

The extent of this improvement is from Lehigh Avenue to Indiana Street along Ridge Avenue, and from 33rd Street to a point 700 feet west of Ridge Avenue along Hunting Park Avenue.

In connection with this improvement, the City has obligated itself to provide the necessary right-of-way involving the widening of Ridge Avenue on the east side between Lehigh Avenue and Indiana Street and the widening of Hunting Park Avenue west of Ridge Avenue. This necessitates the relocation of the walls of the Mt. Vernon and Laurel Hill Cemetery Companies, a plan for which has been prepared.

Sedgley Avenue Bridge. - Plans for redecking the bridge on the line of Sedgley Avenue over the North Penna. Railroad were completed but negotiations with the Reading Company failed to result in an agreement on maintenance and the work was not advertised. Before further negotiations were started the acute

shortage of steel forced the establishment of the priority system and since it could not be argued that Sedgley Avenue was of primary importance in national defense the project had to be set aside until steel again is available.

One point of interest in connection with this bridge is the position now taken by the Reading Company that the North Penna. Railroad will not be electrified. The parapets accordingly were reduced in height from 6 feet 6 inches to 4 feet 9 inches, giving the bridge somewhat more graceful proportions.

Construction - General. - During the year 1941, contracts were entered into for fifty-two public sewers, twenty-eight sewers at private cost, and one sewage disposal sewer which together with sewers already under contract made a total increase of 15.07 miles to the drainage system of the City. This is an increase of more than 50% over 1940, and is due to more funds being available for sewer construction.

Over half the mileage of sewers constructed in 1941 was located in the 35th Ward, particularly in the sections known as Lawndale, Burholme and Rhawnhurst. These sections over a long period of years have been compelled to use cesspools for their sanitary drainage, and lately this system maintained at considerable cost to the individual home owners, was fast becoming a menace to public health. The sewers built have gone a long way toward eliminating this condition, and with more funds these communities will enjoy the drainage facilities requisite to healthful living.

At the end of 1941, there was a total of 1,822.25 miles of sewers completed within the limits of the City of Philadelphia.

Main Sewer Construction - Southwest Main Gravity Collecting Sewer in Essington Avenue from Mingo Avenue to Seventieth Street: This is a triple section reinforced concrete sewer with vitrified plate lining and built on concrete piles except where it crosses a 7'6" x 6'0" reinforced concrete culvert which is also part of this contract. The inside dimensions of the three sections are 6'9" x 5'3"; 6'9" x 4'3" and 6'9" x 7'0". The work on this contract at the end of the year was approximately 85% completed. The contract is limited to \$190,000.

Bridge Construction - Bridge on line of Margaret and Lefevre Streets over Frankford Creek: The bridge is composed of structural steel encased in concrete with reinforced concrete roadway paving base and surfaced with sheet asphalt and asphalt plank. The bridge structure is supported on abutments of concrete and stone masonry. The approach on the north side is constructed to confirmed grade from the bridge to Bermuda Street, and is paved under another contract. The approach to the bridge on the south side is paved and the proper adjustments made to the existing paving in Lefevre Street. The work on this contract was completed on November 6, 1941. The total cost of this work was \$82,617.96.

Bridges on the line of 49th Street and on the line of Kingsessing Avenue over the Octoraro Branch of the Pennsylvania Railroad: The construction of these two bridges is contained in the same contract. The bridge on 49th Street is to replace an old bridge that was condemned. It will be structural steel encased in concrete with reinforced concrete roadway paving base surfaced with sheet asphalt paving. This bridge will carry two street railway tracks. The bridge consists of three spans supported at the ends on the existing bridge

abutments revised to meet the requirements, and upon two intermediate piers which carry the span over the double track railway. The piers are concrete with stone masonry facing. The approaches on the north and south sides are to be adjusted to the grade of the new bridge and the existing paving and paved with asphalt on concrete base.

Bridge on Kingsessing Avenue: This bridge is structural steel encased in concrete with reinforced concrete roadway paving base surfaced with a sphalt. The bridge is supported on the easterly side on an existing stone masonry abutment revised to meet the requirements and upon a new abutment of concrete with stone facing, on the westerly side. The approaches to the bridge are to be adjusted to the existing paving in Kingsessing Avenue and in 49th Street. The work on this contract at the end of the year was approximately 95% completed. The contract is limited to \$140,000.

Municipal Airport - Driveways and Appurtenant Work at Fuel Storage Site on the East Side of Island Avenue, approximately 3,400 feet south of Tinicum Island Road: The work under this contract was started in November, 1941, and is approximately 85% completed. The contract is limited to \$15,000.

Sewer Permits - The Sewer Permit Division experienced an increase in all its activities, due partly to the large increase in sewers completed in districts where unsanitary conditions prevailed because of cesspools and partly to the increase in new dwelling construction.

The total number of sewer connection inspections increased 56% over last year. The number of special connections, greater in size than the standard 6" house connections, increased 130% over last year. These connections are necessary for manufacturing plants and large buildings, and the increase reflects the great current gain in the industries of the City.

The total receipts for the year were \$32,245.98, of which \$16,638.98 was collected from service charge bills and \$15,607. from lateral fees. There was a decrease this year in the total receipts of \$7,846.90, due to a large falling off in service charge payments, although the revenue from lateral charges increased 30%.

The receipts of this office are derived from lateral fees and the payment of service charge bills. Service charge bills are collectible wherever abutting property owners have not previously contributed to the cost of the sewer. Such cases arise when the ordinance which authorized the sewer makes no provision for the assessment of the abutting property or defers the charge until the time a connection to the sewer is desired. Most of these sewers are large or main sewers built originally through undeveloped ground to reach a built-up community. This ground is now becoming ripe for development, and the service charge bills must be paid before permits for sewer connections are issued. The decrease this year in service charge payments would tend to show that most of this type of ground has been absorbed although in several cases such ground was bought and developed by the United States Government for Housing, and being exempt the City lost considerable revenue.

Testing Laboratory. - Work during 1941 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 on 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 seven of its sub-committees, and thus directly aids the Society in formulating its standards and test methods for materials. The City adopts and uses many of the standards published by this Society.

At the 1941 American Society for Testing Materials' Annual Meeting the then existing standard specifications for portland cement (C 9-38) and high early strength portland cement (C 74-39) were discontinued and the then tentative specification (C 150-40T) covering five types of portland cement was advanced to and adopted as the new and latest standard for all types portland cement (A.S.T.M. Designation C 150-41). This new specification is a considerable change and embodies several new requirements and test methods for evaluating the properties of the several types. Provided the City adopts this new specification for its various usages it will be necessary to equip the laboratory with the apparatus required for testing the cements in accordance with this specification.

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

Coordinating Division, Works Projects Administration. - City Council, by an Ordinance dated March 7, 1941, set aside in Item 12 in the Department of Supplies and Purchases, the sum of \$750,000. to be used for supplies, materials, equipment, salaries and wages for projects undertaken under the rules of the Work Projects Administration, with a view to giving work to the maximum number of the City's unemployed and the operating of projects which give to the City, in necessary improvements to Public Buildings, Water Supply System and Highway Work, the maximum return for the money invested.

The administration of this fund is taken care of by the Coordinating Engineer's office, a division of the Bureau of Engineering, Surveys and Zoning. The duties of this office consist of the preparation and submission of ordinances to City Council for allocation of City funds to related projects, the preparation and approval of requisitions, including expediting delivery of material. This office also furnishes engineering service as required, including the preparation of proposed projects, plans, specifications, estimates, field supervision, inspection and related work.

During the year, ordinances were prepared and submitted to City Council for an allocation of a total of \$688,000.

The principal projects, grouped under the specific City Department or Bureau, to which City funds were allocated, are as follows:

Department of the Mayor: Two projects covering the necessary additions and improvements to the Commercial Museum; a new roof on the Convention Hall and the bricking-in of openings to provide additional storage space.

Department of Public Safety: In the Electrical Bureau, one project covering the complete rehabilitation of the wiring and electrical systems in the Police and Fire Stations throughout the City.

In the Bureau of Traffic Engineering, one project covering the erection of new traffic signals and the synchronization of present traffic signals throughout the City.

In the Bureau of Engineering, Surveys and Zoning, a total of five projects, three covering the repairs to seats, new toilet facilities, plastering and painting at the Municipal Stadium; the dredging of the Schuylkill River from Fairmount Dam to Strawberry Mansion. This is necessary work for besides providing water courses for the Regattas, it increases the available raw water supply to the Belmont Filters; Schuylkill Avenue West between Spring Garden Street and Arch Street, making the main station of the Pennsylvania Railroad and West Philadelphia more accessible to people living in the northern and northeastern sections of the City. It will also complete another step in the plans to extend the West River Drive. Two "White Collar" projects covering the copying of Registry records and the preparation of Road Use maps.

In the Bureau of City Property, a total of six projects, five covering the complete renovation of the Germantown Town Hall; repairs to City Hall including a new roof; the complete rehabilitation of all the Police and Fire Stations in the City, including the new electrically operated doors; Independence Hall and Square is a general restoration including the strengthening of the framing members and the replacing of rotted timbers, relaying walks in Independence Square and adjacent sidewalks; transforming the old Municipal Court Building, 21st Street above Race Street, into a modern traffic court. One "White Collar" project covering the painting of five Mayors' portraits.

In the Bureau of Highways and Street Cleaning, a total of three projects, two covering City-wide Highways, included in this is the improving of roads, repaving streets, grading, widening and shaping of new streets, constructing traffic islands and loading platforms, putting in necessary inlets and pipe sewers; the erection of 5,000 modern street designation signs. One "White Collar" project covering Surveys and Drawings-Street Cleaning.

In the Bureau of Mechanical Equipment, one project covering the rehabilitation of the yard at 26th and Master Streets.

In the Bureau of Water, a total of seven projects, six covering improvements to buildings, grounds, etc., restoration of filters at Belmont, Queen Lane and Torresdale; the renovation of Queen Lane Pumping Station; a survey of all underground water pipe in South Philadelphia; the renewal of valves and the installation of fire hydrants throughout the City. One "White Collar" project covering the compilation of data on the Philadelphia Water System.

In the Bureau of Health, five projects covering improvements to the Philadelphia General Hospital; the Municipal Hospital for Contagious Diseases; the Municipal laboratory buildings and grounds; the Minor Contagion building; the renovation of the stable at the 20th and Berks Street Health Center.

In the Bureau of Vital Statistics, one "White Collar" project covering the installation of a new index system.

In the Bureau of Charities and Correction, two projects covering the restoration of buildings, plumbing, electrical work and fencing in grounds at the Home for the Indigent and the House of Correction; the building of two modern toilet and shower rooms, the renovation of the sleeping cabins and the relocation of the lighting system at Camp Happy.

In the Bureau of Recreation, one project covering the rehabilitation of forty-six recreation centers.

In the Bureau of Personal Assistance, one "White Collar" "Sewing Project" covering the making of garments, etc., for institutions and Welfare organizations.

In the Department of Wharves, Docks and Ferries, one project covering the improvements to the piers and bulkheads along the Delaware River.

In the Department of City Transit, one project covering the painting and rehabilitation of the Market Street Subway between 24th street and 30th street.

For the Inspectors of County Prisons, one project covering improvements to buildings and grounds at the Holmesburg County Prison. This work consists of new roofs on all buildings, plastering and pointing walls, painting, new plumbing and the installation of a Guard House at the Prison entrance.

For the Receiver of Taxes, one "White Collar" project covering the recording of Real Property owners.

For the Commissioners of Fairmount Park, six projects covering the improvements to Robin Hood Dell and Hunting Park; planting and seeding of Roosevelt Boulevard from Oxford Circle to Pennypack Circle; the erection of a Cricket and Archery House; Gallery construction and interior finish at the Philadelphia Museum of Art and improvements to East River Drive at Ridge Avenue.

The future status of City participation in projects under the Work Projects Administration will depend entirely on the ability of City Council to appropriate funds therefor. The year 1941 closes with but \$62,000. of the \$750,000. appropriation remaining for allocation to projects. If no further funds are provided

it will be necessary to reserve this entire balance for the completion of useful units of the projects which are now being operated.

The Coordinating Engineer has been forced to recognize this fact in considering requests by Departments for proposed new projects. The policy has been necessarily adopted that under the present status of appropriations, no new commitments should be made which would jeopardize the satisfactory termination of present projects.

Accounting and Reporting Division - All the normal functions of the bureau in conjunction with new endeavors of its component units were reflected in the division's activities during 1941.

The routine matters of audit and disbursement of all Budget appropriations for payrolls and supplies, the operations attending the expenditures from remaining loan funds, preparation of proposals, advertising, reading and scheduling of bids, the furnishing of contract informations to the Department of Law, the requisitioning and disbursement of supplies required by the several divisions and Survey District Offices, the servicing and maintenance of the bureau's Automotive Equipment, and compiling and maintenance of personnel records, coupled with the progressive program of the bureau have all tended toward a busy year for the division.

The continuation of the bureau's plan for public improvements resulted in contracts for 70 branch sewers, 2 for Sewage Disposal, 1 for Paving and 3 new bridges appearing on its books with a total during the year of 138 current and final estimates being drawn, involving 1,707 assessment bills and a cash expenditure of \$1,020,113.12. Salaries and wages with miscellaneous expenses of the bureau divisions increased this amount \$410,497.21, making a grand total of expenditures by the bureau of \$1,430,610.33.

The accounts of three new or continued W. P. A. projects sponsored by the bureau as follows were maintained -

Dredge of Schuylkill River	\$39,000.
Improvement of Schuylkill Ave. West	37,000.
Improvement and Extension to Municipal Stadium	13,700.
	<hr/>
	\$89,700.

Two "white-collar" projects to benefit bureau records were also put in operation from the miscellaneous W. P. A. funds provided for the purpose, and set up in our financial program.

The stenographic force of the division was hard pressed at many times during the year due to the great volume of typing required on agreements and ordinances in connection with the proposed improvements to state highways within the city limits, and other special assignments. It was gratifying to learn that the ratings established by this force in a survey by a disinterested commercial firm were much higher than is usually found in their tests in general business offices.

The acquisition of 15 new station wagons, 1 truck and 2 sedans brought about by economies in Budget appropriations and cooperation of the late Mayor Lamberton and City Council was of inestimable value to the bureau and a policy of replacement of other old equipment should be continued when National requirements permit.

Personnel records were constantly "on the move" during a portion of the year due to resignations for defense industry, and leaves of absence for military service, with the resultant promotions and replacements. The Bureau has encountered considerable difficulty in securing additional help in technical positions. The program of City - Commonwealth highway improvements necessitated the addition of several skilled draftsmen to the City Plan Division. A Civil Service examination which was thrown open to all qualified persons produced an eligible list composed entirely of Bureau employees. The appointments from this list, therefore, resulted in the weakening of other units of the Bureau. City Council, at the request of the Department, authorized on May 8, 1941, the appointment of twelve additional chainmen to augment the forces of the Survey Districts. At the end of the year, there were still four vacancies, in spite of the fact that three successive examinations were scheduled by the Civil Service Commission.

In furtherance of the bureau policy of promotion by seniority and ability 9 additional examinations were held by Civil Service for positions ranging from Rodman to Assistant Engineer (the responsible head of a division); 73 new and promotional appointments were made from eligibles certified by the commission from these and former examinations and an additional 16 promotions were made in engineering technical divisions of men who had previously qualified for higher ratings. The end of the year found 9 employees of the bureau in the armed services of the United States Government with many more subject to early induction and replacements difficult to achieve, which will call for a redoubling of effort by the remaining employees to carry on the progressive program now in force. All told, 98 changes were made in the bureau's personnel records during the year including new appointments, promotions, resignations and military service, approximately 39% of the total number employed.

Excessive pressure on the division can be eliminated by the addition of at least one stenographer and clerk, with future additions as the activities of the bureau increase to the point of comparison with the "high years" from 1926 to 1931, when employees numbered many more than our present force, and toward which the present program has a definite trend.

The receipts for the year were as follows:

	Vouchers	Amount
Survey districts	4,859	\$112,342.06
Registry	142	138.05
Sewer Registrar	560	32,235.98
Zoning	4,256	32,483.00
Lower Merion Twp.) Sewer		100.00
Upper Darby Twp.) Rentals		2,000.00
Witness Fees		148.00
	<hr/>	<hr/>
	9,817	\$179,447.09

GENERAL CONCLUSIONS

The gradual weakening of the Bureau's organization and the disruption of its varied services, forecast for 1941 in the "1940 Annual Report" occurred practically as anticipated. While the calls to service for military training by the original draft, and the competition of private industries "high" wages did not affect the personnel to the numerical extent expected, the losses actually sustained, combined with the sharp rise in Bureau activities over 1940, operated to produce the same net results. As emphasized in last year's report, the loss in normal times of assistants possessing specialized municipal engineering training and experience, both in design and construction, are at all times difficult to recoup because of the low salaries paid by the City. It was further pointed out that the high wages paid in private industry during the national emergency would eliminate all possibility of obtaining qualified help from outside. The sole hope of replacements, therefore, was the utilization of well trained assistants of the Surveys division to fill vacancies in other functions and the restoration of personnel manpower but not organization efficiency by the appointment of a sufficient number of new Chainmen.

The position of Chainman being the lowest rank in the technical service, there is usually a large field of candidates competing when Civil Service examinations are held. The prerequisites are based upon minimum requirements, both with respect to age and training. The age limit, which is fixed at eighteen (18) years, seemed favorable considering the draft limitation of twenty (20) years, and the requirement of a high school education afforded a possibility of tapping the reservoir of newly graduated high school students. It was hoped that the nature of the Bureau of Engineering, Surveys and Zoning employment would attract a number of seasonal graduates, and, such being the case, their youth would release them from the draft sufficiently long to give the City the benefit of their services for a year or two. However, the budget salary of Chainman at \$1100. per annum, proved unalluring compared to the wages paid in private industries and in Federal employments. The traditions of the Bureau, with respect to career opportunities, were ignored and all attempts during 1941 to secure help by the method planned met with little success. There appears to be scant hope of any change for the better in 1942, although Council has granted a bonus for all grades receiving salaries of \$2500. per annum or less.

The year 1941 ended with the United States deeply involved in actual warfare. Steps are now under way for an "all out" mobilization of the Nation's manpower for wartime services of all classifications. The situation now developing may ultimately lead to the cessation of all normal current public works planning and construction. Such eventuality

will, obviously, take some of the pressure off the Department by reducing its normal activities to a level within the resources of the manpower left in City service after all demands from other sources are met. At the same time, a complete all-out mobilization may reduce the personnel of the Department of Public Works to the basis of the minimum manpower required for operation and maintenance solely. Therefore, the strict functional lines now separating its bureaus, may have to be eliminated for the duration by merging all remaining resources in personnel into a master Public Works unit.

The development of any such trends must be closely watched by the Bureau of Engineering, Surveys and Zoning, for an important reason. Modern warfare as fought today has introduced a new element into the tactics employed designated as "Civilian Defense". This new factor has been catapulted into the same importance as the military and naval forces, and plans, by reason of the tremendous potentialities as the airship for aerial attack, a new and almost limitless arm of war which aims to strike far behind military and naval lines of defense so as to blast the productivities of the "sinews of war" at their base, destroy civilian property and lives, and bring about the destruction of a nation's morale. Public Works defense, therefore, assumes a prominent place in organized civilian defense because of the importance of Public Works services to daily and, particularly, to wartime existence. A sufficient number of competent Bureau employees must, therefore, be retained to meet the combined exigencies of both routine service and the requirements of the Public Works defense unit now being formed as a part of organized civilian defense. As a matter of fact, competency with respect to ability, training, and experience are just as essential in Public Works defense activities as in the services of the Army or the Navy. Moreover, the responsibilities in either case are on a par. A group of staff engineers of the Bureau has been assigned as divisional heads in the defense organization, and all other of the assistants have been given some particular part to play. Further personnel losses will, therefore, affect both normal and defense services to be performed by the Bureau during the coming year. The real test will occur if the war brings actual hostilities into the Philadelphia region, in which case Public Works defense activities may require twenty-four hours daily service and a personnel which is "three deep" on long stretches. The lack of permanency or stability of the Bureau organization at the close of 1941 makes it impossible to plan in advance for the wartime contingencies that lie ahead. The situation can only be met by keeping in close contact with each problem as it arises with the best facilities available at that particular time.

The year 1941 produced the largest volume of annual work for the Bureau of Engineering, Surveys and Zoning over a period of ten years. All of the standard or normal activities shared in this increase. Special projects, featuring the year's work and calling for extra efforts for the continuance of the large branch sewer program

(public and private); the large number of Federal housing projects undertaken to house both low income and emergency industrial workers; the extensive residential construction by the Philadelphia Home Builders Association; and the City-State highway program now in full swing. Supplementing these were numerous other lesser projects requiring special planning and legislation in order to permit the expansion of wartime industries, including the Philadelphia Navy Yard, the Quartermaster Depot, Cramp Ship Yard, Midvale Steel Company, Heintz Manufacturing Company, the Bendix Corporation, Barrett Company, the General Electric Company, and others. Included in this class of work were the special approaches planned for the present South Broad street and the new 26th street entrances to the Navy Yard.

The past year was further marked by the large number of conferences held on a great variety of matters. Of these, the most important pertained to Councilmanic legislation, the sanitary sewer program, low cost and emergency housing, the City-State highway program, Federal emergency problems in planning and drainage, and civilian defense. Such meetings were so numerous as to definitely interfere with the general administrative work necessary for the efficient conduct of the Bureau. Other administrative handicaps encountered were the unrest due to the draft and the state of National affairs and to the deep rooted dissatisfaction of a large group of employees with the base salary rates provided in the annual budgets. The wage issue was particularly strong in the surveys' function, where some favorable sentiment was in evidence for affiliation with the CIO. Whether or not the bonus provided for 1942 will improve morale will depend upon the heights to which the cost of living and the wages paid in private industry rise. All things considered, 1941 was an intensive year in the history of the Bureau of Engineering, Surveys and Zoning. The work performed over the twelve-month period constitutes a very creditable record when judged in the light of the conditions that controlled.

I L L U S T R A T I O N S

of

C O N S T R U C T I O N W O R K

* * * * *

BRIDGES

SEWERS

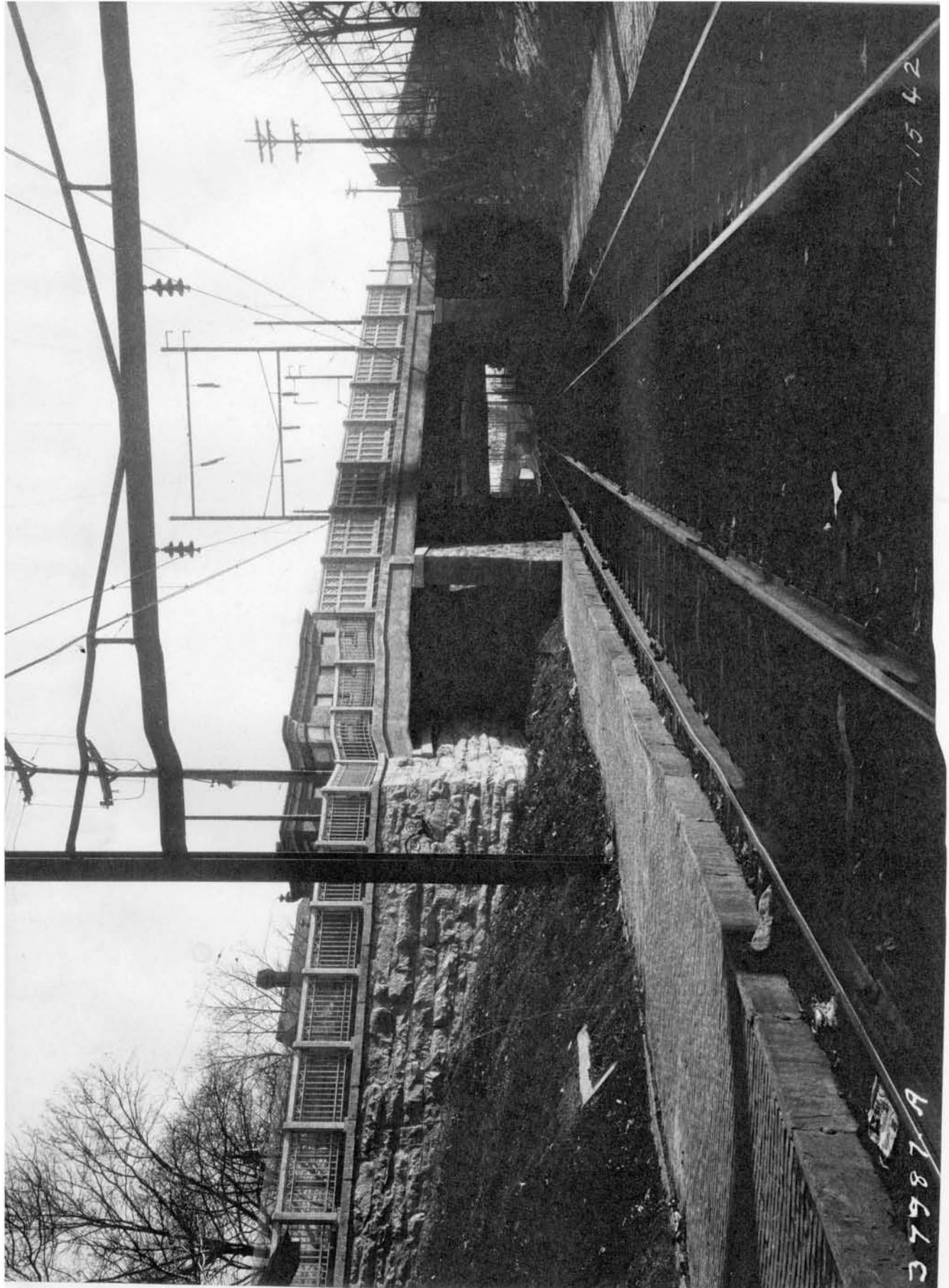
HIGHWAYS



37.672.D.

12.11.40.

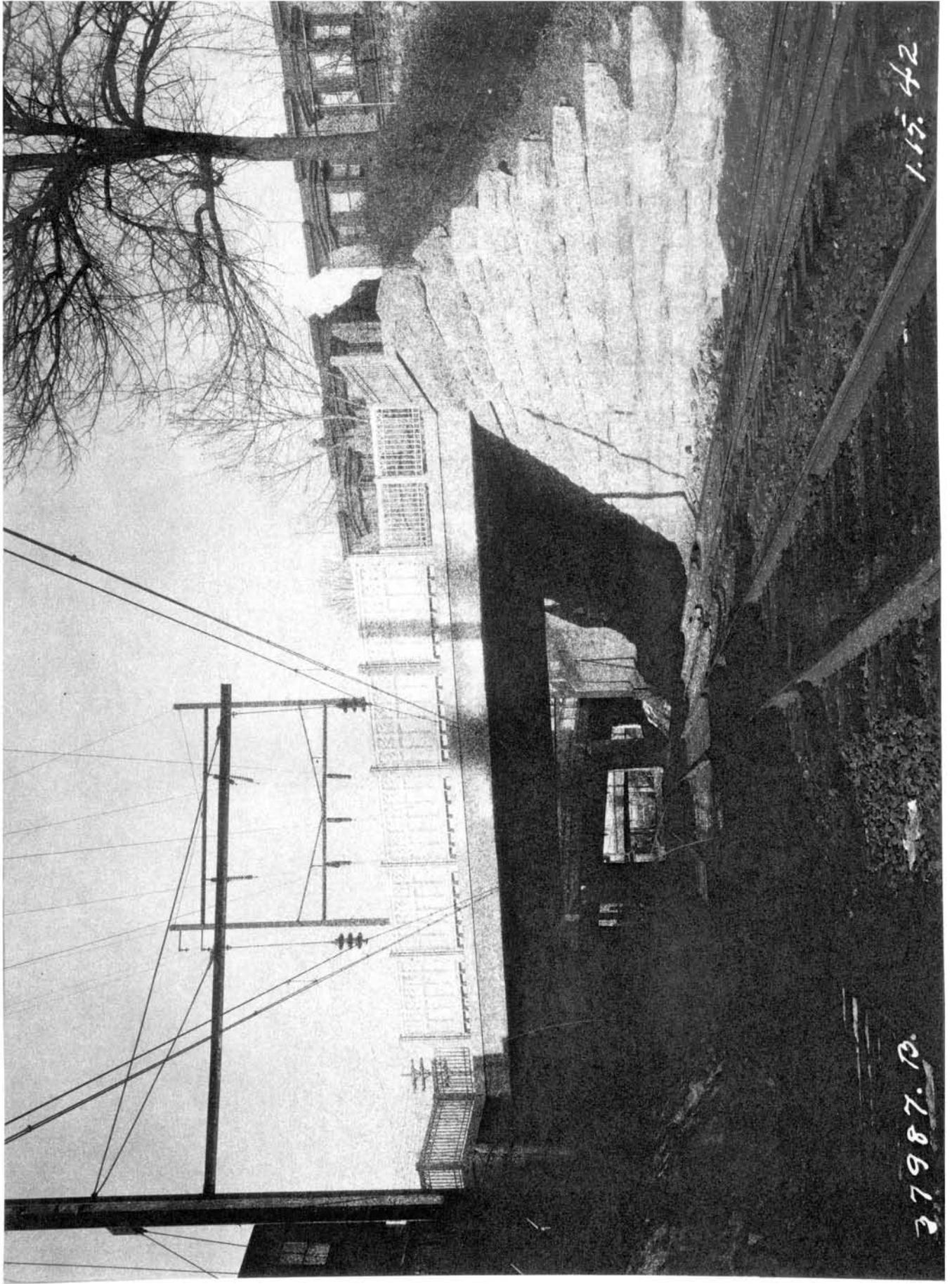
49TH ST. AND KINGESSING AVE. BRIDGES
GENERAL VIEW LOOKING WEST DURING CONSTRUCTION



49TH ST. AND KINGESSING AVE. BRIDGES
WEST SIDE - 49TH ST. BRIDGE

1.15 42

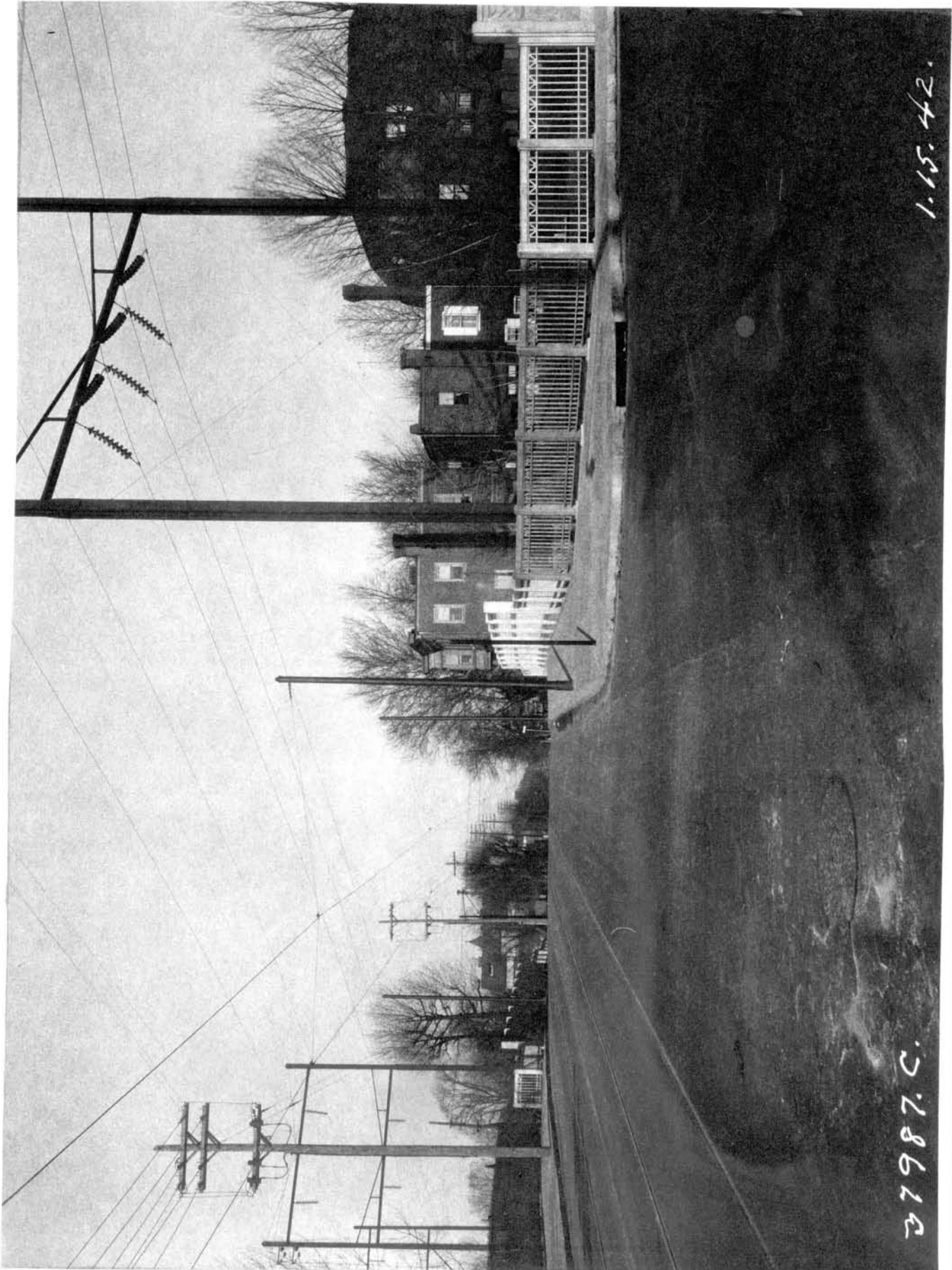
37987A



27987. B.

1.15. 42

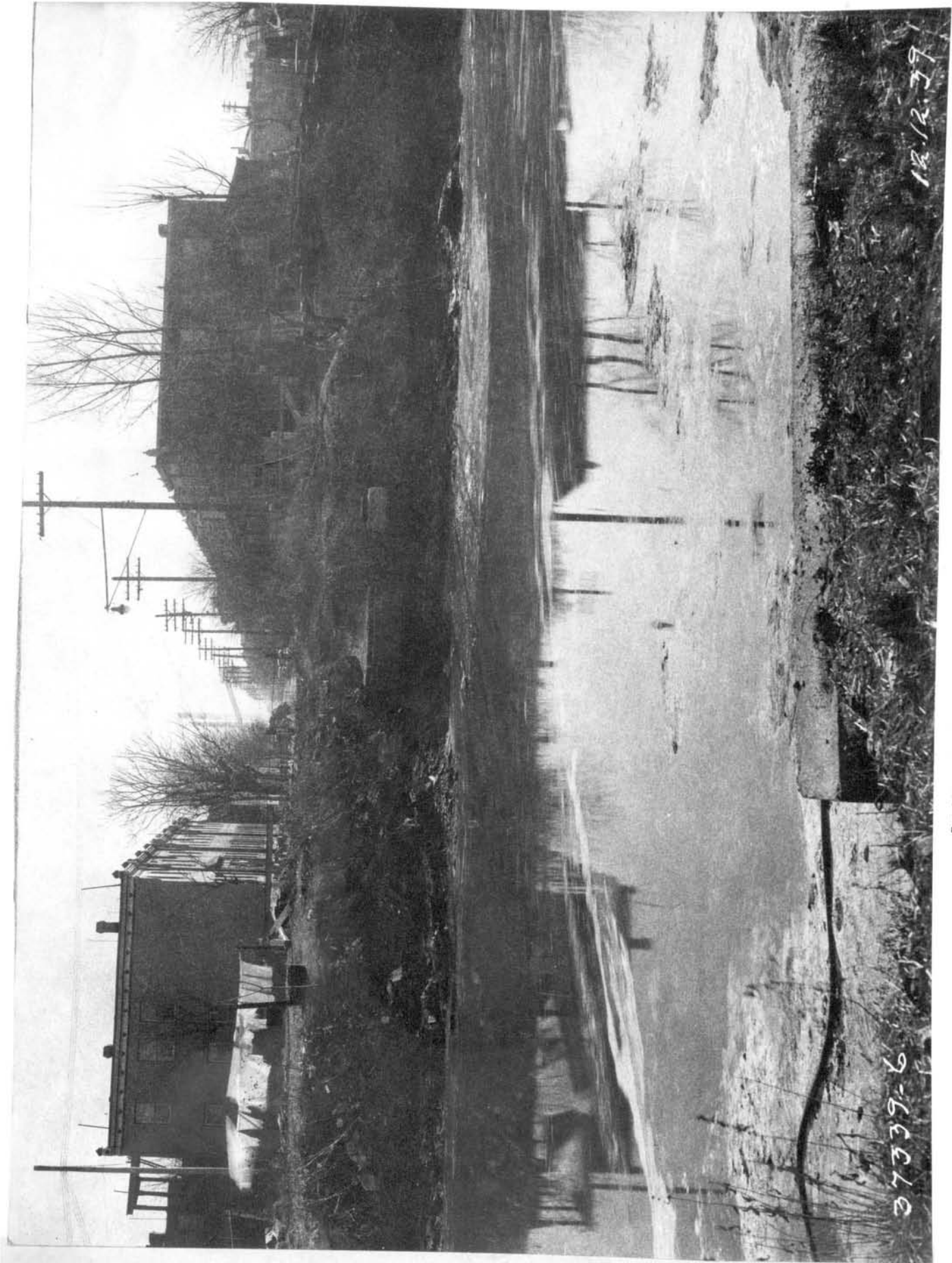
49TH ST. AND KINGESSING AVE. BRIDGES
GENERAL VIEW LOOKING WEST



37987.C.

1.15.42.

49TH ST. AND KINGESSING AVE. BRIDGES
DECK OF 49TH ST. BRIDGE

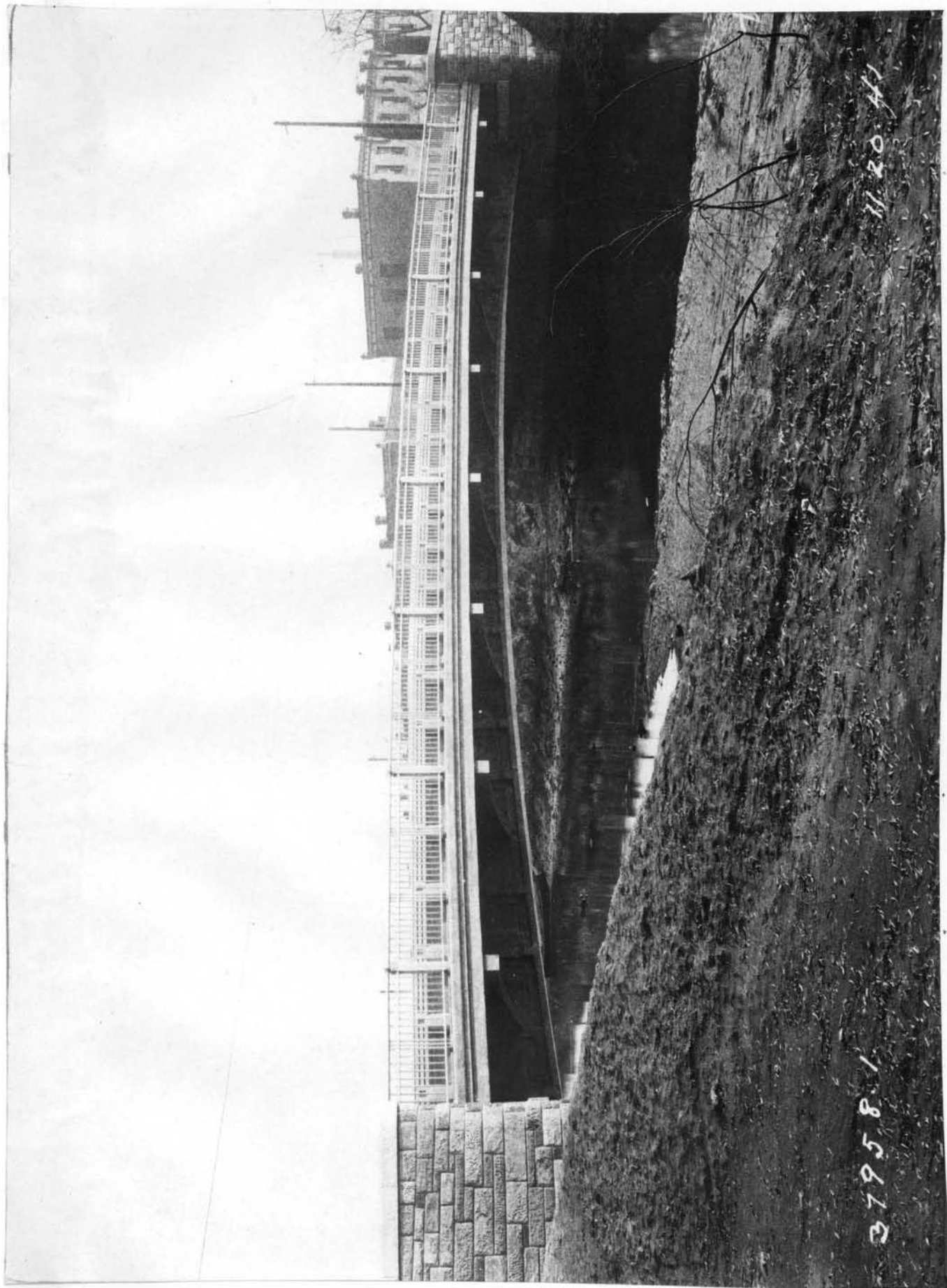


LOOKING EAST OVER FRANKFORD CREEK
ON LINE OF LEFFVRE ST.

37339-6

12.12.29

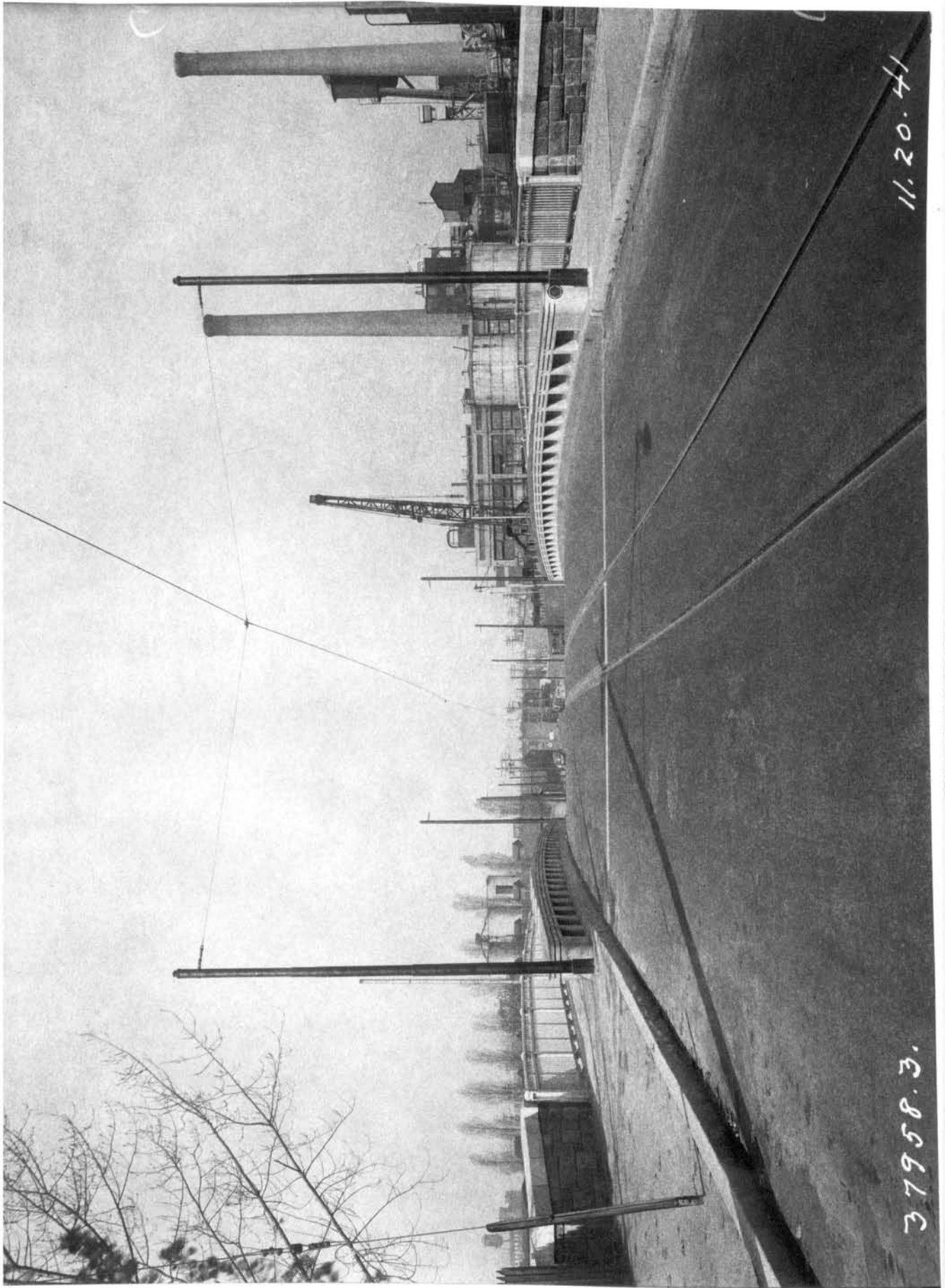
34-1941



37958.1

11 20 41

MARGARET LEFEVRE ST. BRIDGE
PERSPECTIVE VIEW FROM NORTH SIDE OF FRANKFORD CREEK

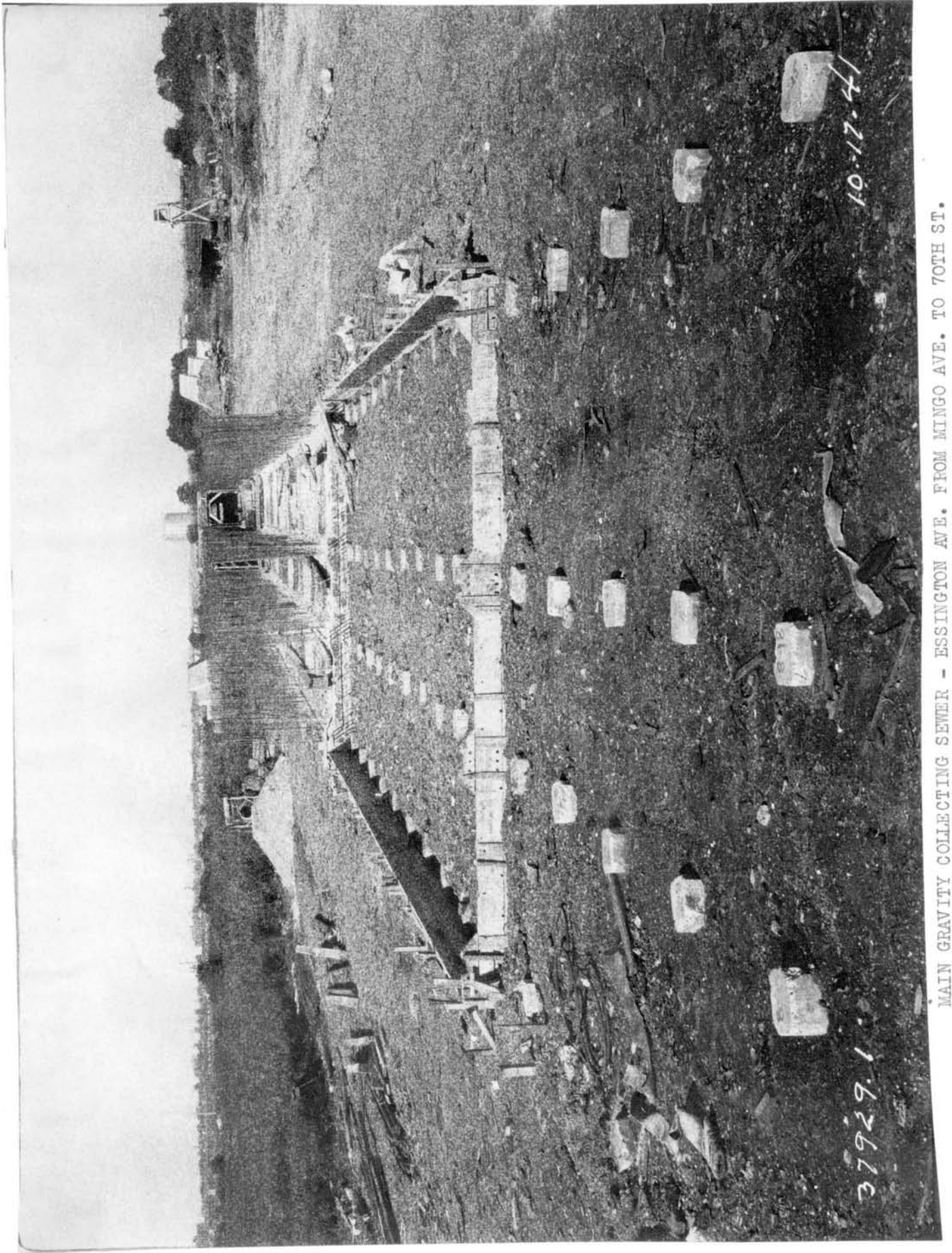


MARGARET LEFEVRE ST. BRIDGE
DECK OF BRIDGE LOOKING WEST

11.20.41

37958.3.

36-1941

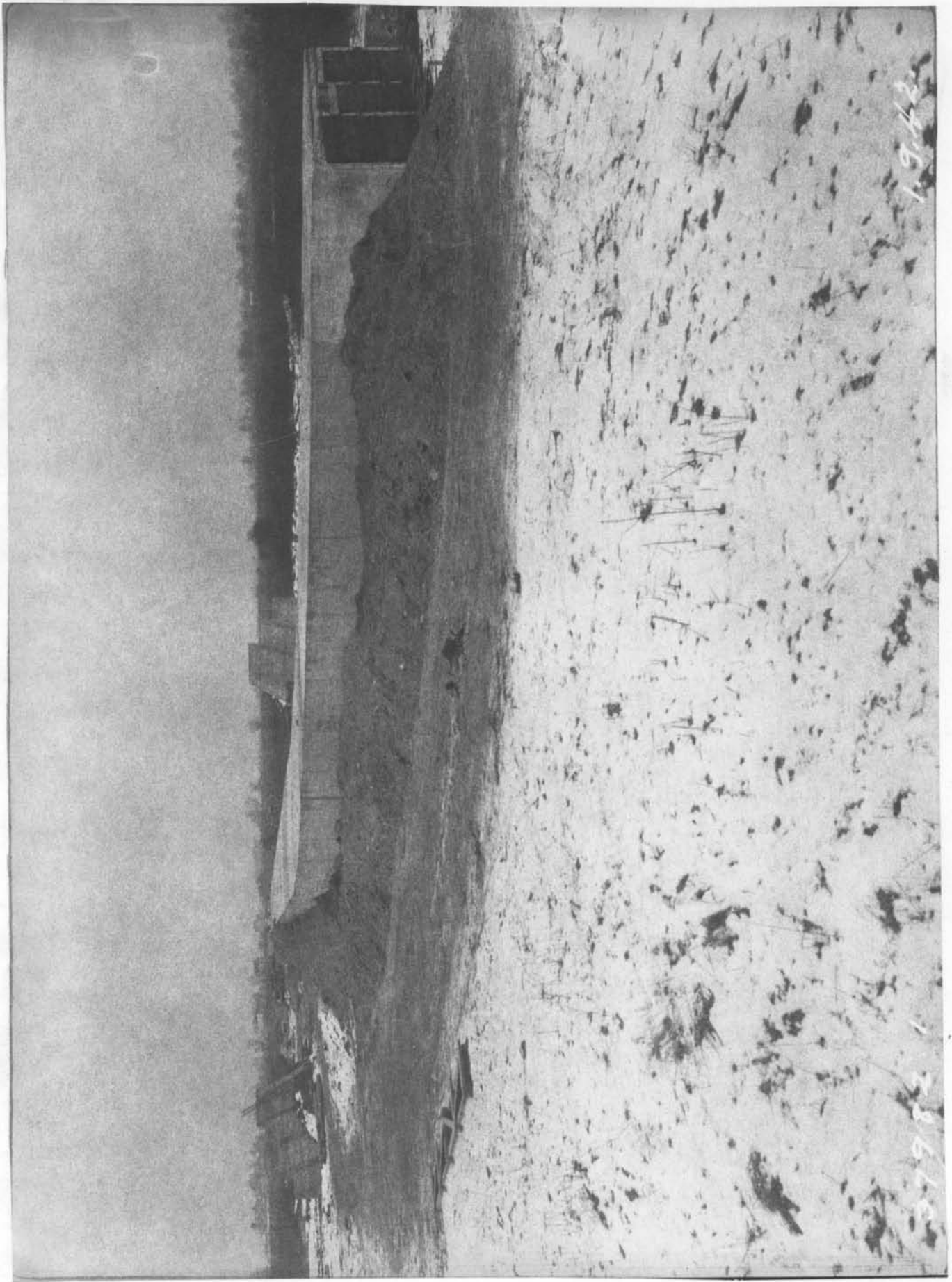


10-17-41

37929.1

MAIN GRAVITY COLLECTING SEWER - ESSINGTON AVE. FROM MINGO AVE. TO 70TH ST.
LOOKING NORTH FROM JONES' LANE

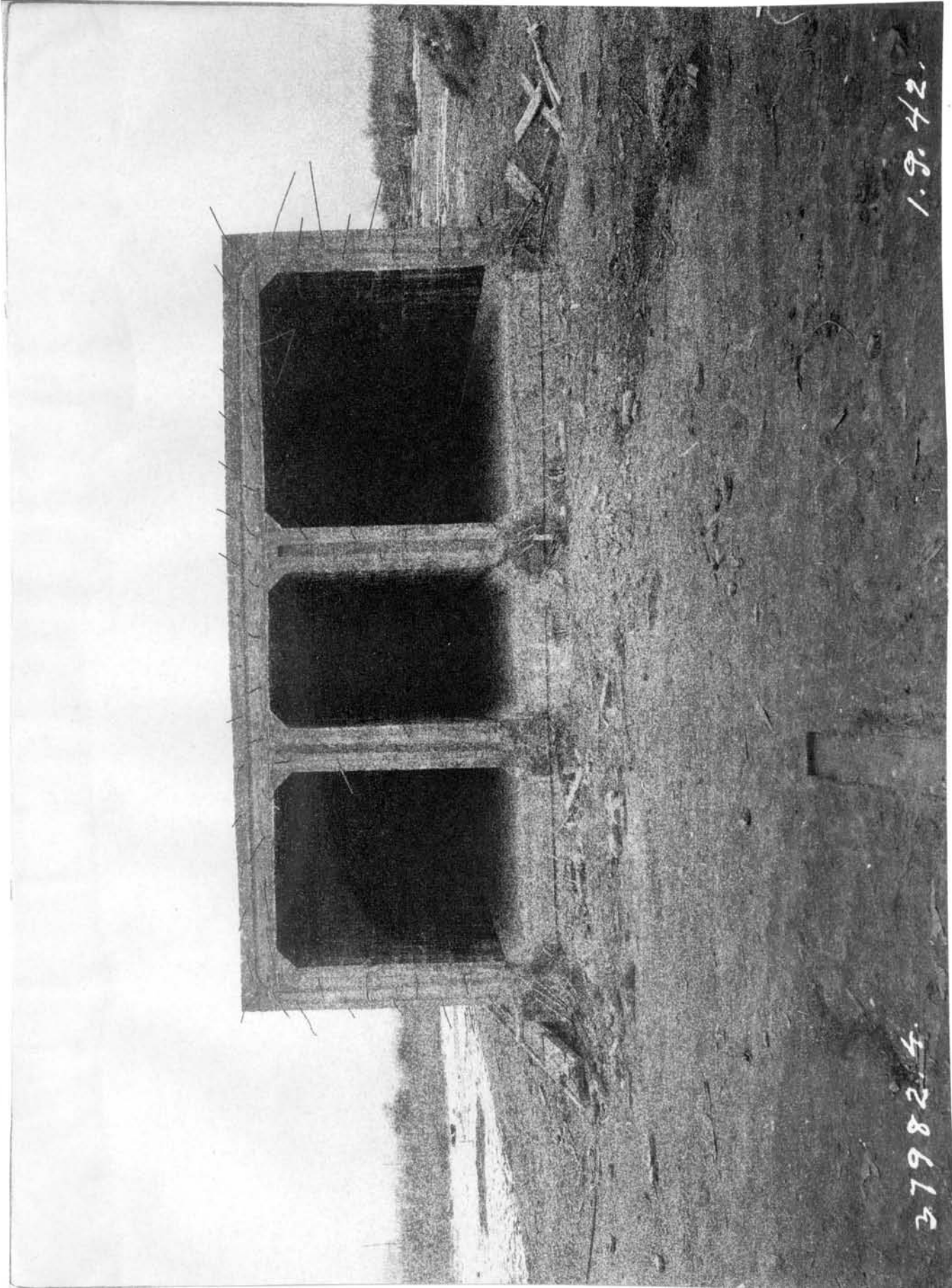
37-1941



1966
38-1941

MAIN GRAVITY COLLECTING SEWER - ESSINGTON AVE. FROM MINGO AVE. TO 70TH ST.
LOOKING TOWARD MINGO AVE. FROM 71ST ST.

38-1941

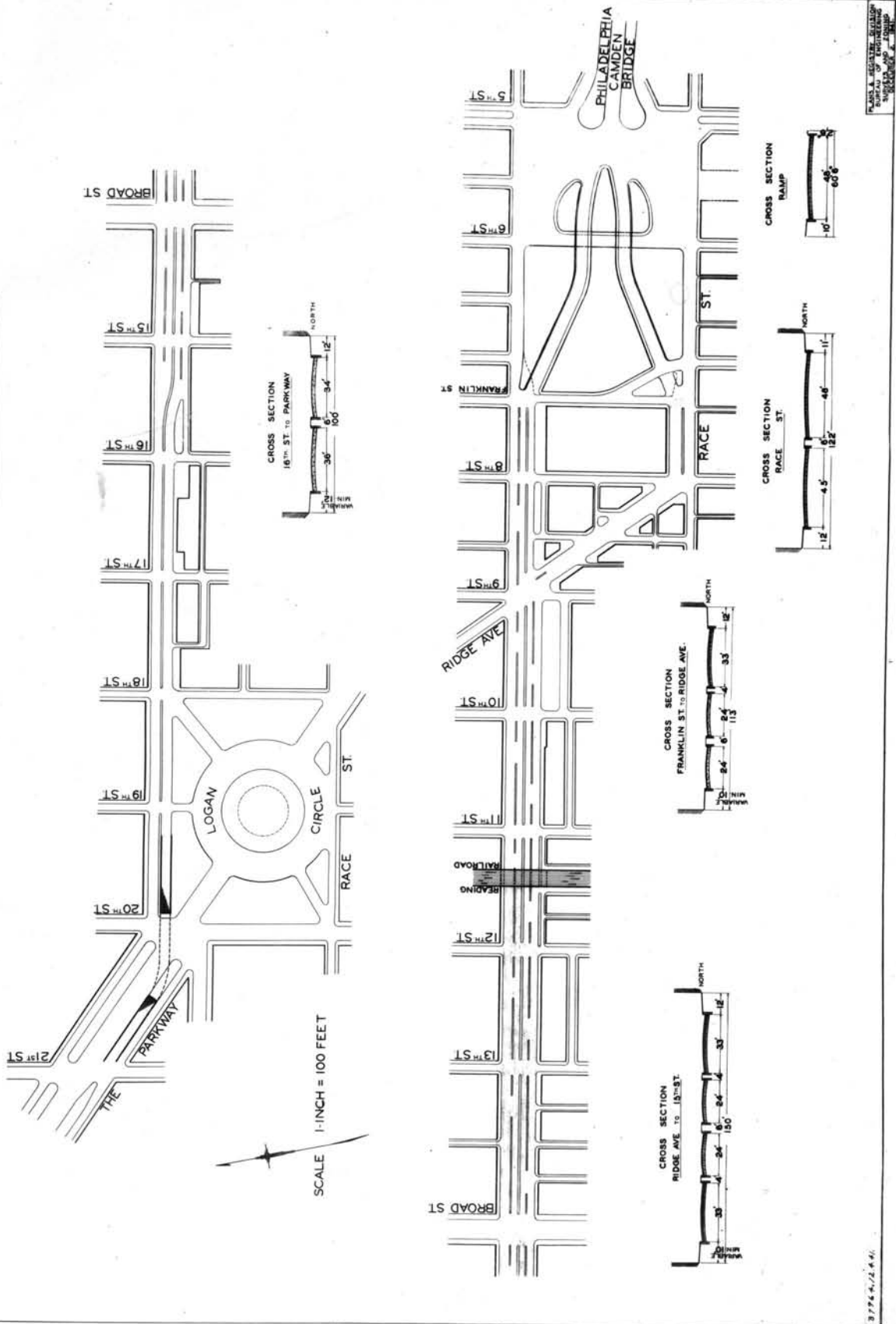


1.9.42.

37982.4

MAIN GRAVITY COLLECTING SEWER - ESSINGTON AVE. FROM MINGO AVE. TO 70TH ST.
MOUTH OF SEWER

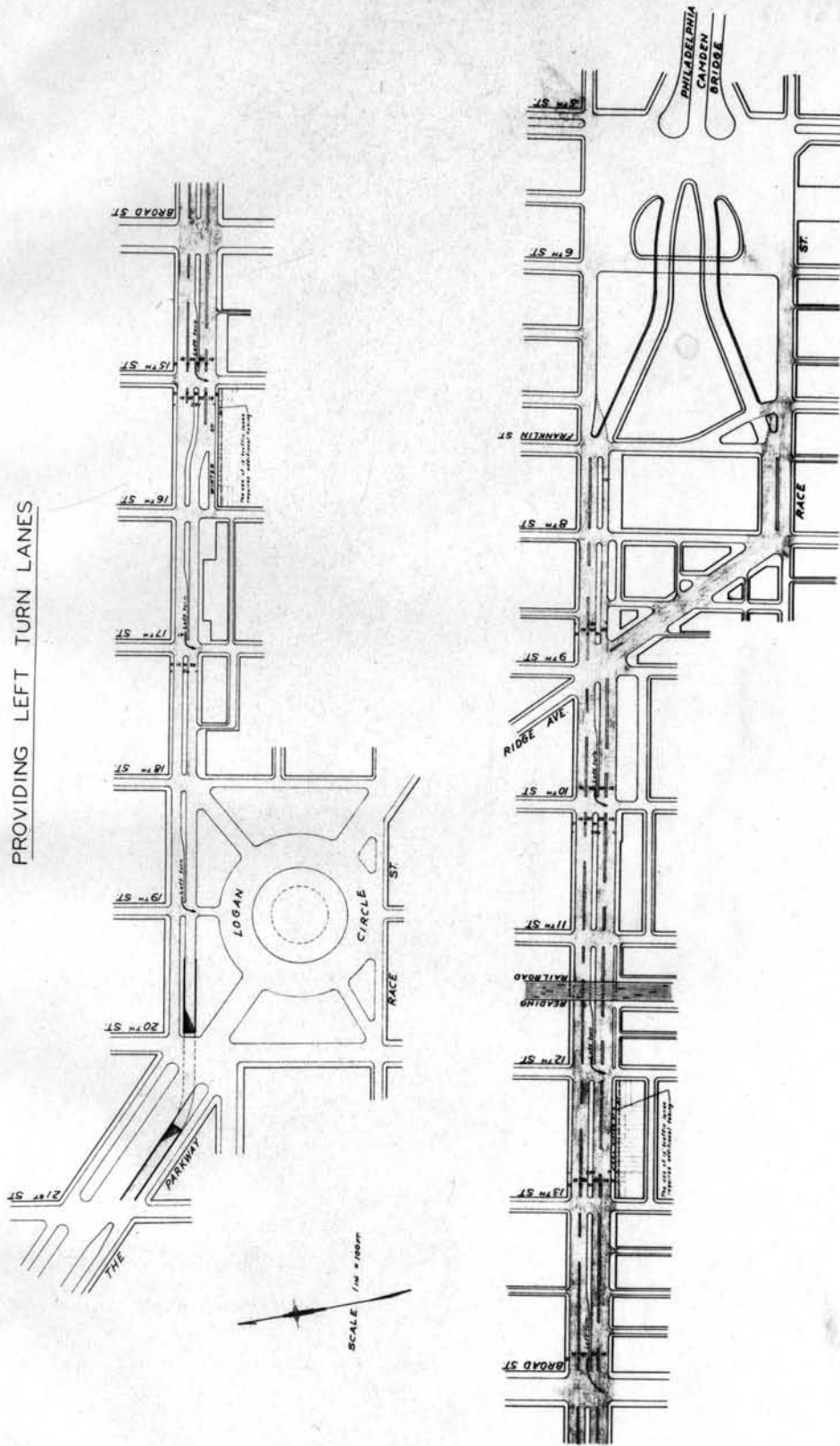
PROPOSED TWO-WAY VINE STREET



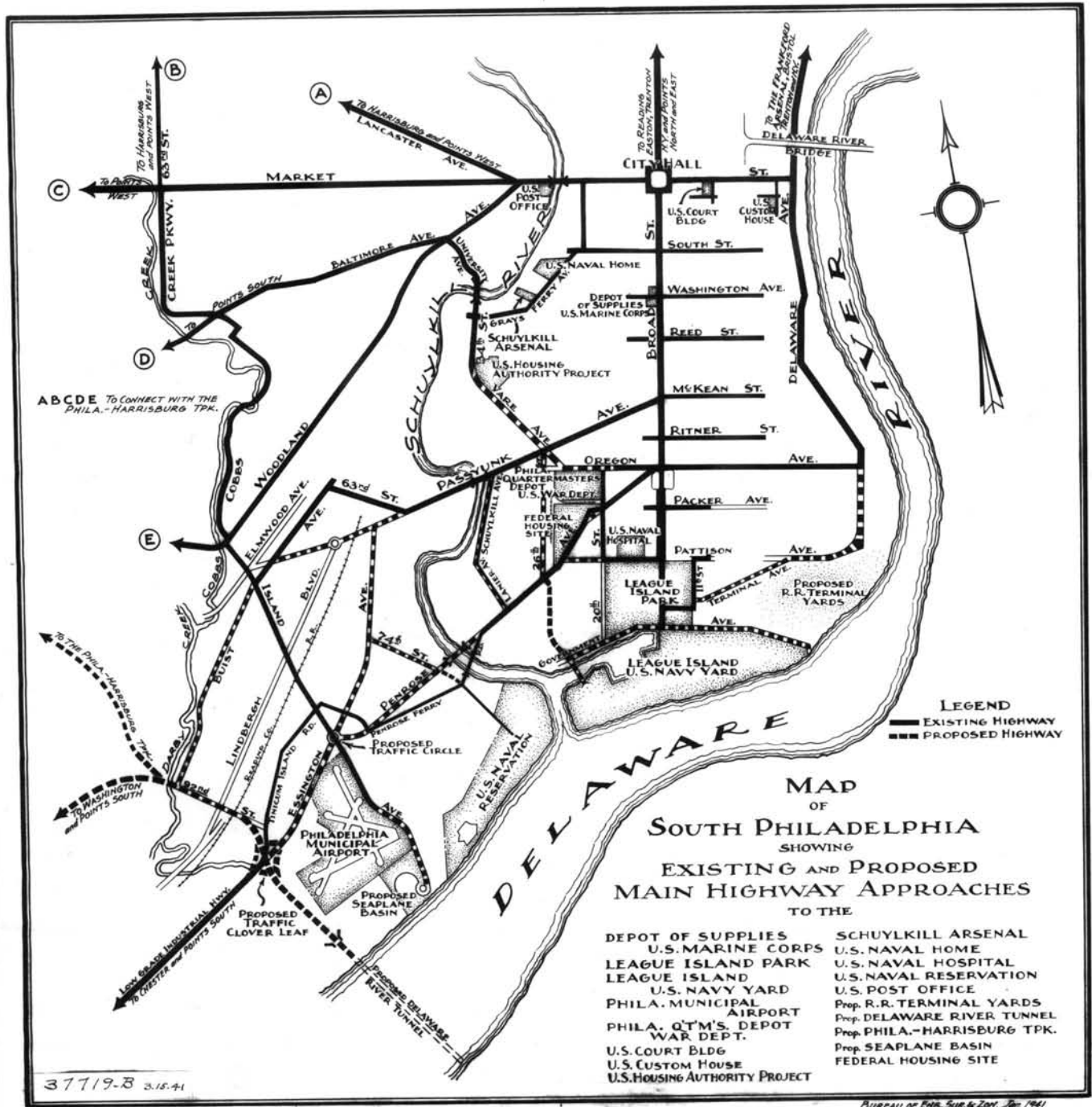
PROPOSED TWO-WAY VINE STREET
FROM DELAWARE RIVER BRIDGE TO THE PARKWAY

PROPOSED TWO-WAY VINE STREET

PROVIDING LEFT TURN LANES

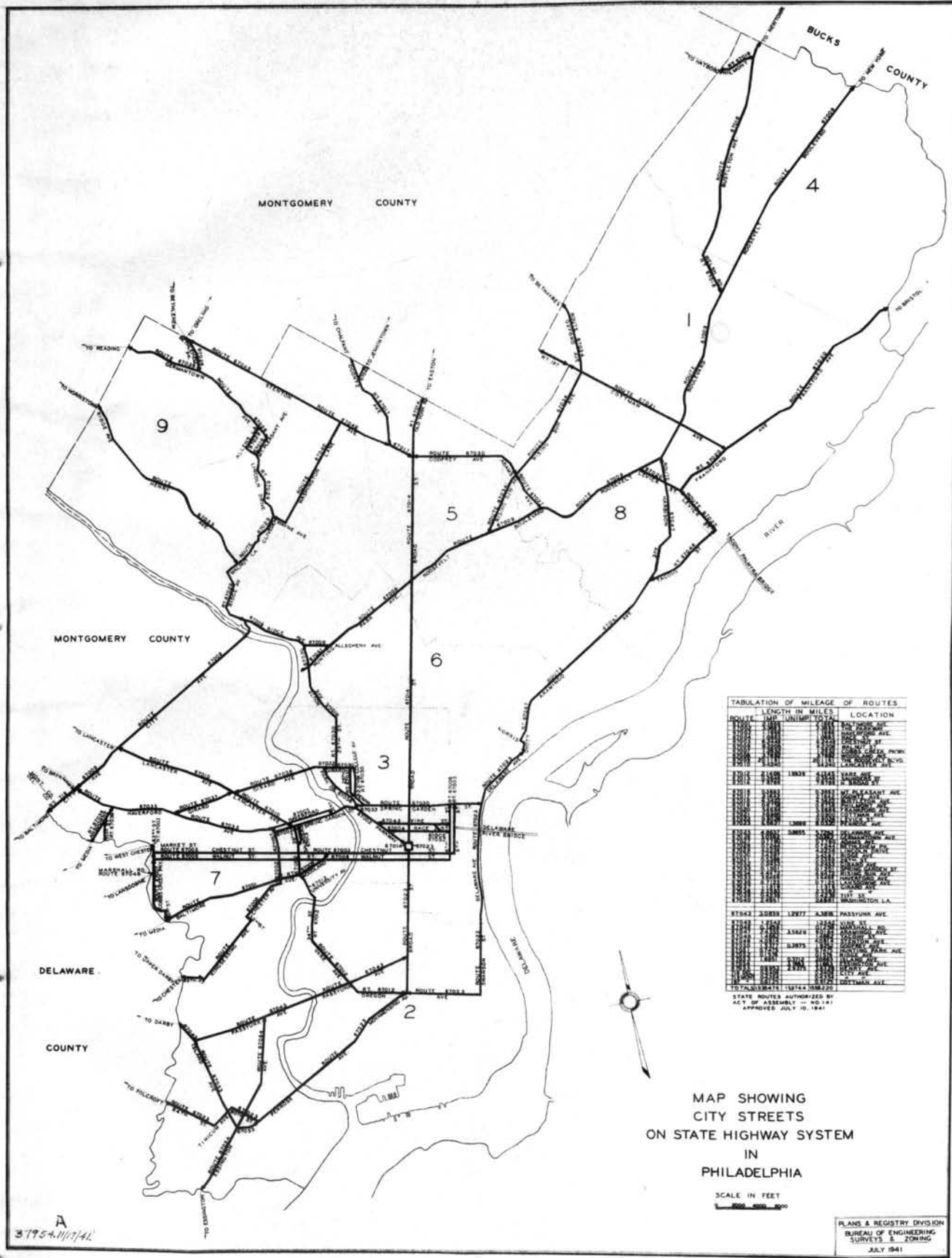


PROPOSED TWO-WAY VINE ST. FROM DELAWARE RIVER BRIDGE TO THE PARKWAY
PROVIDING LEFT TURN LANES



MAP OF SOUTH PHILADELPHIA
 SHOWING EXISTING AND PROPOSED MAIN HIGHWAY APPROACHES

43-1941



TABULATION OF MILEAGE OF ROUTES

ROUTE	LENGTH IN MILES	LOCATION
NO.	UNIM.	TO
1	1.24	TO READING
2	1.24	TO LANCASTER
3	1.24	TO CHESTER
4	1.24	TO WILMINGTON, DE.
5	1.24	TO PHILADELPHIA
6	1.24	TO PHILADELPHIA
7	1.24	TO PHILADELPHIA
8	1.24	TO PHILADELPHIA
9	1.24	TO PHILADELPHIA
TOTAL	10.76	

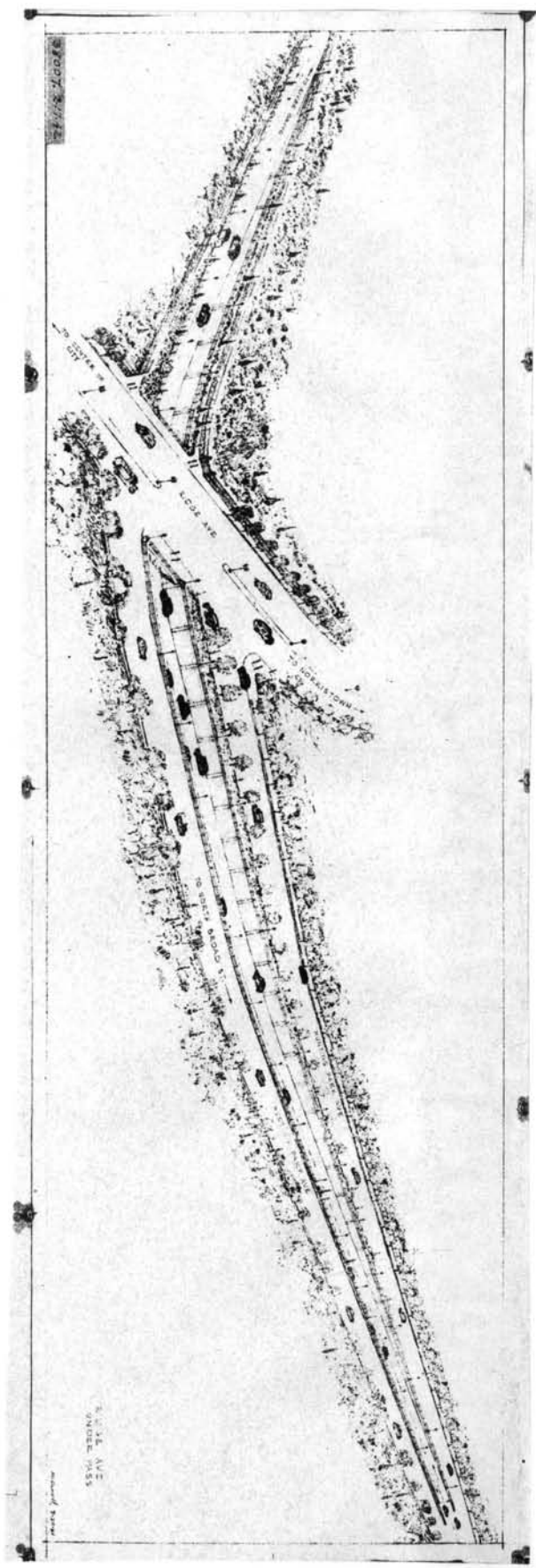
STATE ROUTES AUTHORIZED BY ACT OF ASSEMBLY - NO. 141 APPROVED JULY 10, 1941

MAP SHOWING CITY STREETS IN PHILADELPHIA ON STATE HIGHWAY PROGRAM

44-1941

45-1941

PROPOSED HUNTING PARK AVE. UNDERPASS AT RIDGE AVE.



S T A T I S T I C A L S U M M A R I Z A T I O N

of

A C T I V I T I E S

46-1941

<u>Drainage</u> - preliminary surveys and plans made for sewers and drains	162
linear feet of street covered	133,297
linear feet of lines and grades furnished	105,796
cubic yards of trench excavation measured	123,023
cubic yards of masonry measured	622
number of inlets staked out	520
linear feet of lateral pipe and inlet connections measured	97,269
plans of constructed sewers and appurtenances prepared	114
linear feet of street covered	77,965
assessment bills prepared	1,655
<u>Water Pipe</u> - plans prepared for Bureau of Water and water companies	81
linear feet of street covered	118,060
linear feet of lines and grades furnished	9,223
fire hydrants for which lines and grades were furnished	13
reports on grade of streets for water pipe to be laid	20
<u>Current Estimates</u> - any contract	111
<u>Reports</u> - on street openings, including plans or estimates	6
on street improvements, including plans or estimates	55
made to Chief Engineer	529
miscellaneous (not otherwise classified)	481
<u>Liens</u> - descriptions prepared for any Department or Bureau	187
<u>Zoning</u> - properties posted for Board of Adjustment	
<u>Permits</u> - Bureau of Building Inspection, number investigated	1797
<u>Miscellaneous</u> - number of letters certifying no change in property plans	14
number of blueprints of property plans	149
linear feet of gutter marks, cross section, pierhead and bulkhead, grading, paving, drainage pipe, etc.	131,670
linear feet - calculations - center line for State paving	19,948
National Defense Project - linear feet - cross section	23,700
" " " topographical survey for drainage	
" " " conditions (acres)	230
" " " calculation for revision (acres)	1,100
<u>Grading</u> - plans and preliminary estimates (including country roads)	
(number	15
(linear feet of street covered	11,375
cubic yards measured, cut and fill	37,701
linear feet of street covered	10,222
linear feet of lines and grades furnished	48,999
<u>Paving</u> - plans prepared for paving, including country roads - number	40
linear feet of street covered	22,054
(square yards measured and certified	143,428
(linear feet of street covered	45,235
linear feet of lines and grades furnished	150,836
assessment bills prepared	72
<u>Repaving</u> - plans prepared for repaving - including country roads	
(number	21
(linear feet of street covered	21,021
(square yards measured and certified	46,695
(linear feet of street covered	15,853
linear feet of lines and grades furnished	60,196
<u>Amount of Completed Contracts</u> - main and branch sewers	\$741,453.33
private sewers and drains	197,397.00
paving and improvement	316,340.19
repaving and resurfacing - bridges	101,323.75
	<hr/>
Total Costs	\$1,356,514.27
<u>Receipts</u> - District Cash Receipts	\$112,342.06

DETAILS OF WORK PERFORMED BY ZONING DIVISION

	<u>1940</u>	<u>1941</u>	Decrease %	Increase %
Number of requests for information	18,824	22,640		20.3
Number of applications filed	9,238	10,781		16.7
Number of Zoning Permits issued	6,647	8,675		30.5
Number of Use Registration Permits issued	2,988	3,221		7.8
Number of References to the Board of Adjustment	215	293		36.3
Number of applications stamped "Permit not Required"	3,942	4,864		23.4
Number of Zoning Permits refused	978	896	8.4	
Number of Use Registration Permits refused	1,299	1,357		4.5
Number of refusals appealed to the Board of Adjustment	1,640	1,551	5.4	
Number of inspections	1,068	1,138		6.6
Number of complaints investigated	237	276		16.4
Number of vouchers issued	3,852	4,256		10.5
Amount of cash receipts	\$25,946.	\$32,483.		25.2
Number of true copies of applications certified for B. of A.	1,664	1,743		4.7
Number of sign applications (highway) acted upon	607	285	53.0	
Number of descriptions for District Classification changes made for Board of Adjustment	94	63	33.0	
Number of letters to Fire Marshall for his approval or disapproval of use	318	365		14.8
Number of changes of Zoning Maps made by Ord.of Council	51	51	-	-
Number of changes of Zoning maps proposed by Resolution of Council	151	111	26.5	

DETAILS OF WORK PERFORMED IN THE REGISTRY DIVISION

Descriptions filed	59,141
Transfers plotted	60,902
Original lots plotted	6,008
Descriptions filed from 1865 to 1941 (inclusive)	3,135,413
Titles examined for plan book entries	5,607
Plan books examined by the public and officials.	170,275
Certificates of registered owners issued to public	143
Certificates of registered owners issued to Law Dept.	599
Registry Plates redrawn	0
Miscellaneous receipts	\$148.05
Miscellaneous plans drawn for City departments	45
Plans loaned out	1,381
Subpoenas issued against Registry Division	86
Appearances in Court	63
Amount of Witness Fees collected	\$140.00
Certificates of street openings issued to City departments	126
Affidavits of street openings filed	6
Streets opened by affidavits	3
Jury Plans ordered	4
Jury Plans filed	1
Streets authorized to be opened by Ordinance	7
Street opening agreements filed	4
Deeds of Dedication filed	81
Deeds of Dedication approved and recorded	79
Releases of abutting owners filed	2
Releases of abutting owners approved and recorded	2
Cost of recording deeds and releases	\$43.50

DETAILS OF WORK PERFORMED BY THE OFFICIAL PHOTOGRAPHER

	<u>Photography</u>						<u>Blueprinting</u>	
	8x10 negs.	8x10 prints	14x17 negs.	lantern slides	electro copies square feet paper	copies tracings	square feet Blue prints	Van Dykes
Engineering, Sur- veys & Zoning	844	1,204	6	60	366	440	83,418	3,373
Highway	591	882					21,374	501
Water	21	149			600		67,084	1,005
City Property	29	112					308	
Traffic Engineer	12	52					23,527	396
Electrical							2,440	176
Law	277	298						
Health	23	7		11			1,287	100
Art Jury	4	6						
Commercial Museum							530	40
Totals	1,801	2,710	6	71	966	440	199,968	5,591

DETAILS OF WORK DONE IN THE TESTING LABORATORY

Total Number of Specimens - 1941

Boiler feed water	1,072
Brick	90
Cement, hydraulic	916
Concrete, aggregate	10
beams	4
building block	70
cores	160
cylinders	4,106
Fabrics	2
Fuels	667
Metals, ferrous	63
non-ferrous	62
Miscellaneous materials	25
Oil, lubricating and lubricants	36
Paint and paint materials	621
Road materials	552
Rock, wear test	3
Roofing materials	16
Rope	59
Rubber compound	2
Soap and soap materials	8
Tile	102
Water, Industrial Waste	42
Total	<u>8,688</u>

Distribution of Total Specimens

	<u>No. Specimens</u>	<u>%</u>	<u>No. Specimens</u>	<u>%</u>
Department of Public Health			1,074	12.4
Department of Public Safety			121	1.4
Bureau of Building Insp.	114	1.4		
Electrical Bureau	3	0.0		
Bureau of Fire	2	0.0		
" Gas & Lighting	2	0.0		
Department of Public Works			6,541	75.4
Bureau of City Property	51	0.6		
" Engr., Surveys & Zoning	4,349	50.2		
" Highways	1,697	19.5		
" Water	444	5.1		
Department of Supplies & Purchases			940	10.8
Department of Wharves, Docks and Ferries			<u>12</u>	<u>0.0</u>
Total			8,688	100.0%

Specimens for Chemical Test

Boiler feed waters		1,072
Coal		561
(anthracite	498	
(bituminous	63	
Fabrics		2
Metals		79
(ferrous	19	
(non-ferrous	60	
Miscellaneous materials		25
Oils		142
(fuel	77	
(gasoline & headlight	29	
(lubricating	33	
(grease	3	
Paint and paint materials		621
(driers	9	
(linseed oil	24	
(mineral spirits	6	
(paints, mixed	381	
(paint removers	6	
(pastes in oil	114	
(pigments, dry	3	
(putty	3	
(shellac	18	
(turpentine	12	
(varnish	45	
Road and Road Materials		552
(asphalt compounds	100	
(" cement	168	
(" wearing surface	284	
Roofing materials		16
Rope		36
Rubber Compound (fire hose)		1
Soap and soap materials		8
Water, Industrial Waste		<u>42</u>
Total	-	3,157

Distribution of Chemical Specimens

Department of Public Health		1,074
Department of Public Safety		9
Bureau of Building Inspection	2	
Electrical Bureau	3	
Bureau of Fire	2	
Bureau of Gas & Lighting	2	
Department of Public Works		1,146
Bureau of City Property	51	
" Engr., Surveys & Zoning	44	
" Highways	660	
" Water	391	
Department of Supplies and Purchases		916
Department of Wharves, Docks and Ferries		<u>12</u>
	Total -	3,157

Specimens for Physical Test

Brick		90
(building	39	
(paving	20	
(sewer	31	
Concrete		4,350
(aggregate, coarse	10	
(beams	4	
(building block	70	
(cores	160	
(cylinders	4106	
Metals		46
(ferrous	44	
(non-ferrous	2	
Rock (Wear test)		3
Rope		23
Rubber compound (fire hose)		1
Tile, sewer		<u>102</u>
	Total	4,615

Distribution of Physical Specimens

Department of Public Safety		110
Bureau of Building Inspection	110	
Department of Public Works		4,481
Bureau of Engr., Surveys & Zoning	3,689	
" Highways	741	
" Water	51	
Department of Supplies and Purchases		<u>24</u>
	Total -	4,615

Hydraulic Cement Specimens

Domestic Hydraulic Cements	<u>916</u>	
Total		916

Distribution of Cement Specimens

Department of Public Works		914
Bureau of Engr., Surveys & Zoning	616	
" Highways	296	
" Water	2	
Department of Public Safety		2
Bureau of Building Inspection	2	
Total -		<u>916</u>

Preliminary Sewer Estimates:

South Penn Square, 15th Street to 130 feet east
Wilder Street, 12th Street to Dickinson Street
Greenwich Street, 10th street to 198 feet west
26th Street, Passyunk Avenue to Reserve Basin
Government avenue, Broad street to 26th street
Summerdale avenue, Robbins avenue to Gilham street, etc.
Upsal street, Rodney street to Thouron street
Tabor Road, "D" street to Marwood road
Penrose Ferry Road, Packer Avenue to U.S.Q.M. Depot
Rising Sun Avenue, Roosevelt Boulevard to Cottman avenue
Clarion Street, Montgomery avenue to Columbia avenue
4th Street, Lehigh avenue to Huntingdon street
Erringer Place, Manheim street to Clapier street
Summit street, Bethlehem Pike to Norwood & Perkiomen Turnpike
Clapier Street, Germantown avenue to 425 feet east
Passyunk Avenue, 63rd Street to Schuylkill River; and Penrose Avenue,
Tinicum Road to 1220 ft. west of River bulkhead
Juniper Street, Filbert street to Arch street
Temporary Drain, Germantown Avenue, Chestnut Hill Hospital to Sunset avenue
Frankford Avenue, Wildey street to Girard avenue
Hermitage Avenue, outlet to Wissahickon Creek
19th Street, Oregon avenue to Moyamensing Avenue
Cheltenham Avenue, Roosevelt Boulevard to Oakland street
Main Sewers for Federal Works Reserve - Ashburner Street, Penrose Avenue,
Packer Avenue, Pattison Avenue, Lakeside Avenue, Sandy Run branches.
Sandy Run Main Sewer Extension to Verree Road
Branch Sewers for developed areas in Sandy Run area
Sandy Run Main Sewer and branches for developed areas Verree Road and north;
Burholme Park main outlet and branches; branch sewers in Rhawnhurst.
8th Street, Mifflin Street to McKean street
Oregon Avenue, 20th street to 23rd street
34th Street, Grays Ferry Avenue to Vare Avenue; Vare Avenue, 34th Street to
Oregon Avenue

Private Sewers:

Cottman Street (south side), Castor Avenue to Loretto avenue
Gilbert Street, Cliveden Street to Upsal Street
Tulphocken Street, Mansfield Avenue to Woolston street
Rodney Street, Tulphocken street to Wynsam Street
21st Street, Cottage Lane to Olney Avenue
Michener Street, Mt. Airy Avenue to Wadsworth street
Kindred Street, Robbins street to McKinley street
Souder Street, Robbins street to McKinley street
Greeby Street, Loretto avenue to Summerdale avenue
Cornelius Street, Tulphocken street to Wynsam street
Merrick Street, 225 ft. northwest of Shurs Lane to 449 ft. northwest
Brighton Street, Sackett street to Hawthorne street
Marley Road, "F" street to Montour Street; and Montour street, Marley
Road to Garland Street
Benner Street, Frankford Avenue to Brous Street
Beverly Road, Rodney Street to Woolston street
Ogontz Avenue (east side), 79th Avenue N. to Cheltenham Avenue
Algard Street, Cottman avenue to Wellington street

Private Sewers (continued):

Horrocks street, Longshore Avenue to Tyson Avenue
Rodney street, Wynsam street to Pastorius street
15th Street, Stenton Avenue to Medary avenue
Lansing street, Torresdale Avenue to Edmund street
Front Street, Duncannon street to Wellens
Elbridge Street, Walker street to Erdrick street
Passmore Street, Phil-Ellena street to Greenwood avenue
Ogontz Avenue (east side), 75th Avenue N. to 76th Avenue N.
Belford street, Buist avenue to Elmwood avenue
McKinley Street, Large street to Everett street
St.Vincent Street, Sackett street to Hawthorne street
Ashville street, Torresdale avenue to Edmund street
Souder Street, Knorr street to Longshore street
Princeton Street, Sackett street to Hawthorne street
Wynsam Street, Cornelius street to Rodney street
Pastorius Street, Cornelius street to Rodney street
Cornelius Street, Wynsam street to Beverly Road
Wellington Street, Sackett street to Hawthorne Avenue

Public Sewers:

Washington Lane, Sprague street to Robbins Avenue
Cottman Avenue, Claridge street to Tabor Road
Bells Mill Road, Germantown Avenue to 700 ft. southwest; and Germantown
Avenue, Bells Mill Road to Sunset Avenue
Martins Mill Road, Longshore street to Knox street
Tyson Avenue, Rising Sun Avenue to Oxford Avenue
Rising Sun Avenue, summit north of Longshore avenue to Princeton avenue
Oxford Avenue, Bleigh street to Rockwell avenue; and Verree Road,
Oxford Avenue to summit north of Shel mire Street
Rockwell Avenue, Cottman avenue to Oxford avenue
Bleigh Street, Rockwell avenue to Oxford avenue
Rising Sun Avenue, Longshore street to summit north
Longshore Street, Bingham street to Oakley street
Disston Street, Oxford Avenue to Bingham street
Disston Street, Rising Sun Avenue to Bingham street
Bingham Street, Longshore street to Tyson avenue
Levick Street, Oxford Avenue to Montour street
Lawndale Street, Princeton avenue to St.Vincent street
Bingham Street, St.Vincent street to summit wouth
Bradford Street, Hartel street to Fuller street
Bustleton Avenue, Rhawn street to Stanwood street
Chelwynde Street, 63rd Street to 64th Street
Decatur street, Frankford avenue to Craig street
Robbins Street, Hegerman street to Tulip street; and Tulip street,
Robbins street to summit northeast
Martins Mill Road, Oakley street to Unruh street
Kerper Street, Martins Mill Road to Oakley street
Oakley Street, Unruh street to Knorr street
Unruh Street, Bingham street to Oakley street
Arthur Street, Castor avenue to Frontenac street
Bleigh Street, Large street to Castor avenue
Castor Avenue, Rhawn street to Solly street
Fuller Street, Bustleton avenue to Eastwood street
Fuller Street, Eastwood street to Bradford street
Fuller Street, Castor avenue to Frontenac street

Public Sewers: (continued)

Large Street, Glendale avenue to Bleigh street
Rhawn Street, Bustleton Avenue to summit east of Eastwood street
Rhawn Street, summit east of Eastwood street to Bradford street
Ripley Street, Eastwood street to Bradford street
Shelmire Street, Large street to Castor Avenue
Stanwood Street, Bustleton avenue to Castor avenue
Stanwood Street, Castor avenue to Frontenac street
Vista Street, Large street to Castor avenue
Wellington Street, Hegerman street to Torresdale avenue
Glendale Avenue, Castor avenue to Elgin avenue
Elgin Avenue, Glendale avenue to Faunce street
Houghton Street, Roxborough Street to 195 ft. southeast
Kenilworth Street, 7th street to 8th street
Medary Avenue, 6th street to 8th street
70th Avenue North, Lakeside avenue to Cheltenham avenue
Passmore Street, Oxford street to Montour street
Bingham Street, Hellerman street to Levick street
Tabor Avenue, Levick street to Robbins street
Robbins Street, Tabor avenue to Lawndale street
Lawndale Street, Hellerman street to Levick street
Devon Street, Moreland avenue to 275 ft. southeast
12th Street, Oak Lane to summit north of 68th Avenue N.
Ella Street, Tabor avenue to Clarkson avenue
Argyle Street, Passmore street to Levick street
Bingham Street, Levick street to Robbins street
Fanshawe Street, Tabor avenue to Bingham street
Glenview Street, Bingham street to Rising Sun avenue
Magee Street, Oakley street to summit northwest of Oakley street
Oakley Street, Passmore street to Levick street
Passmore Street, Rising Sun Avenue to Shelborne Street
Schuylkill Avenue, Bainbridge street to Catharine street
66th Avenue N., 11th street to Broad street
Olney Avenue, 6th street to 7th street
Clifford Street, 24th street to 25th street
Griffith Street, Bustleton avenue to Castor avenue
Bingham Street, Gilham Street to Hellerman street
Hellerman Street, Oxford Avenue to point west of Montour street
Hellerman Street, Roosevelt Boulevard to Bustleton avenue
Hellerman Street, Martins Mill Road to Palmetto Street
Levick Street, Oakley street westward to summit
Martins Mill Road, Gilham street to Hellerman street
Montour Street, Hellerman street to Levick street
Bristol Street, "L" Street to "M" Street
Upsal Street, Rodney street to Thouron street
Welsh Road, from present outlet N.W. of Pennypack Creek to Winchester avenue
Oakley Street, Longshore street to Knorr street
Tyson Avenue, Loretto avenue to 300 ft. west of Frontenac street
Knorr Street, Bingham street to Oakley street
7th Street, 65th Avenue N. to 66th Avenue N.
Creston Street, Castor Avenue to Large street
Fanshawe Street, Bingham street to Martins Mill Road
Fanshawe Street, Rising Sun Avenue to summit N.W. of Oakley street
Devereaux Avenue, Oakley street to County Line
Robbins Street, Shelborne street to dead end N.W. of Newtown Avenue and right-of-way
Robbins street to Devereaux avenue
Newtown Avenue, Levick street to Robbins street
Shelborne Street, Robbins Street to Devereaux avenue
Levick Street, Newtown avenue to County Line
Hasbrook Street, Devereaux avenue to summit N.E. of Robbins street

58-1941

Public Sewers - Reconstruction:

Darien Street, Girard avenue to Thompson street
Bainbridge Street, 19th Street to 20th street
Greenwich Street, 10th street to Passyunk avenue

State Highway Improvement Drainage:

Essington Avenue, Island avenue to Passyunk avenue
Vine Street, Broad street to Delaware River Bridge
34th Street, Grays Ferry Avenue to Vare Avenue; Vare Avenue, 34th street to
Oregon Avenue; Oregon Avenue, Vare avenue to 18th street
Island Avenue, Eastwick avenue to Tinicum avenue
Ridge Avenue, Lehigh avenue to Indiana avenue

Drainage Studies:

Gates Street, Henry Avenue, Gorgas Lane, Ridge Avenue - revised street system
Benner Street, Farnsworth Street, Devereaux Street, Battersby Street
Lardner Street, Reach Street to Newtown Street
Morton Street, Woodland street to Armat street
Ripley Street, Verree Road to Rising Sun avenue
Schuylkill Avenue, Penrose avenue to Pennypacker avenue
Welsh Road, Grant Avenue, Krewstown Road, etc.
Stokley Street, Abbottsford Road to Roberts Avenue
Levick Street, Phila. & Newtown R.R. to Delaware River
Marley Road, "F" street to Montour street
15th Street, Stenton Avenue to Medary street
Wellens Street, Front Street to Howard street
Goodnow Street, Clark street to Masland street
Thouron Street, Vernon Road to Upsal street - outlet to Ogontz Avenue
Unruh Street, Bingham street to Rising Sun avenue
U.S.Q.M. Depot - west of 20th Street
Ridge Avenue, Summit Avenue, Henry Avenue, Wise's Mill Road
Ridge Avenue, Northwestern Avenue, Seneca Road
Wise's Mill Road, Shawmont avenue to Henry avenue
Algon Street, Borbeck street to Summerdale avenue
Wakeling Street, Stiles street to Frankford Creek
Rowland Avenue, Ryan avenue, Nesper street
Melvale Street, Allegheny Avenue to Wishard street
Belair Road, Bryn Mawr avenue to Brentwood Road
34th Street, Indiana street to Hunting Park avenue
Oakley Street, Longshore street to Knorr street
Chew Avenue, Hammond avenue to "B" street
Erringer Place, Manheim street to Clapier street
Proposed streets in lieu of Tulpehocken Station entrances
26th Street, Penrose Avenue, Schuylkill River, Packer Avenue, etc.
Connection of R.R. drainage to Fisher avenue west of Marshall street
Broad Street, McKean street to Snyder avenue
Tabor Road, Levick Street to Magee street
Proposed streets - Benner street, Brous avenue to Oxford avenue
Bowman Street, Fox street to Stokley street High Level Cutoff W.W.I.
Shelborne Street, Lardner street to Devereaux avenue
Gilbert street and Rugby street - Vernon Road to Upsal street
Lardner and Stevens streets, Brous avenue to Revere street

Drainage Studies: (continued)

Moro Street, Welsh Road to Stanwood street
Frankford Creek Channel Lines - Bridge street to S.W. of Wakeling street
Evans Street, Welsh Road to Gregg street, etc. - stormwater drain
Oakmont Street, Castor avenue to Large street
Oxford Housing Project
Bartram Housing Project
Henry Avenue Housing Project
Stirling Street, Barnett Street, Castor Avenue to Loretto
Rockland Street, Stenton Avenue to Germantown & Chestnut Hill Branch, Reading Company
Belmont Avenue, Conshohocken avenue to Monument Avenue - W.W.I.
Horrocks Street, Unruh street to Knorr street

Sewage Disposal Project:

Southwest Main Gravity Intercepting Sewer, Essington avenue, Mingo Ave. to 70th street
Sewers and drains plotted on Land Use Maps for Sewer Rental assessment
Paving Plan - Fuel Storage Site - Southwest Sewage Treatment Works
Revised Estimate - Northeast Sewage Treatment Works
Preparation of Profiles, Maps and Contract Plans of Intercepting Sewer System,
Central Schuylkill Pumping Station, Northeast, Southeast and Southwest
Treatment Works; and revision of Estimates of Cost for completion of project
for submission with application to Defense Works Administration of the
Federal Works Administration
Study for Northeast Sewage Treatment Works extension
Data for Agreement with Lower Merion Township for connection of sewage to
City system at City and Overbrook Avenues
Mechanical Improvements
Reversing Valve
Float Unit
Motor Pump Unit

Philadelphia Municipal Airport:

Revised lease plans for Administration Building
Plan for Runway Marking - proposed by C.A.A.
Estimate of Cost - proposed runway marking
Plan for proposed Footway Ramp
Small scale map for Airport Management - stencil
Plans assembled for Exhibit at Airport meeting.

Bridges:

Margaret-Lefevre Street - checking shop drawings of cut stone, P.T. Co. drawings
for track structure
49th Street - check of P.T. Co. drawings for track structure, utilities location, etc.
Kingsessing Avenue - check of structural steel and railing shop drawings
Viaduct, West River Drive - detail plans of structure, and check of shop drawings
Sedgley Avenue over North Penn R.R. - Design, contract drawings and estimate
West River Drive connection to Spring Garden Street Bridge - design, drawings and
estimate
Roosevelt Boulevard over 5th Street - Design, contract drawings and estimate
Hunting Park Avenue under Ridge Avenue - Underpass - Design, contract drawings and
preliminary estimate

Bridges: (continued)

Roosevelt Boulevard at Oxford Circle - Overpass; study and estimate
" " " " Underpass; " " "
Ridge Avenue and Wissahickon Drive - Grade Separation; studies
Falls Bridge Upper Deck - Approach from City avenue; study
Delaware River Bridge Approach - Bridges over 6th street; design and studies
" " " " Race and Vine streets studies
70th street over P. B. & W. R.R. - design and study
Church Lane over Cobbs Creek - study
Pine Road over P.N. & N.Y.R.R. - study and estimate
Hartel Street under P.N. & N.Y.R.R. - study
Napfle " " " " "
Henry Avenue over Green Lane - architectural and structural studies
Henry Avenue over Gorgas Lane " " " "
Laurel Hill Cemetery Bridge over Hunting Park Avenue - architectural study
Levick Street under Phila. & Trenton R.R. - architectural study
26th Street & Penrose Avenue Grade Separation - estimate
Marshall Road over Cobbs Creek - study
Aramingo Avenue over Frankford Creek - design study
Viaduct from Falls Bridge Upper Deck to Midvale Avenue & Stanton Street
Viaduct & Bridges - Powelton avenue from 33rd street to 23rd & Callowhill streets

Marquises, Canopies, Tunnels, Vaults, etc.:

Princess Theatre Marquise - 1018 Market street
Arcadia " " 1529 Chestnut street
Hill " " 8320 Germantown avenue
Upsal " " Germantown avenue & Sharpnack street
Orient " " 6149 Woodland avenue
Harrowgate " " Kensington avenue & Russell street
Avon " " 2217 South street
New Broadway " " Hope & York streets
New Palace " " 334 South street
Model " " 425 South street
Royal " " 1524 South street
Benson " " 6338 Woodland avenue
Lehigh " " 2516 W. Lehigh avenue
Wissahickon " " 5265 Ridge avenue
Star " " 2646 Kensington avenue
Strand " " 1200 W. Girard avenue
Imperial " " 219 S. 60th street
Imperial " " 921 N. 2nd street
Hamilton " " 5926 Lansdowne avenue
Admiral " " 2806 N. 5th street
Vogue " " 1905 W. Columbia avenue

Bellevue-Stratford Hotel, S.W. cor. Broad & Walnut streets
Land Title Building S.W. cor. Broad & Chestnut streets
13 So. 13th street
203 Market street
2115 South street
1007-1011 Market street
16th & Swain streets
6th & Locust streets - N.E. corner
119 S. 19th street
Broadwood Hotel
18th & Jefferson streets
1000 Market Street

7210 Ogontz avenue
2308 N. 8th street

61-1941

Bridge Repairs:

Spring Garden Street Bridge over Schuylkill River - Detail drawings for repairs and strengthening of spans 1 to 14 inclusive
Northwestern avenue over Wissahickon Creek north of Germantown avenue - Detail drawings for renewal of deck
Thirty-third street over Connecting Branch of Pennsylvania Railroad at Jefferson Street - Detail drawings for repairs
Penrose Ferry over Schuylkill River - Detail drawings for repairs to fender
Girard Avenue over Schuylkill River - Detail drawings for repairing wind strut.
Belmont & Girard avenues over Pennsylvania Railroad at 44th street - Detail drawings for guniting steel work
Broad Street over Greenwich Branch of Pennsylvania Railroad south of Pollock street - estimate and bill of lumber
Hunting Park Avenue over Port Richmond branch of Reading Railroad east of Germantown avenue - Estimate and bill of steel for repairs
Diamond Street over Connecting Branch of Pennsylvania Railroad at 26th street - Detail drawing for guniting steel
Coulter Street over Chestnut Hill Branch of Pennsylvania Railroad east of Wissahickon Avenue - Estimate and bill of steel for repairs
Second Street over Luzerne Street - Detail drawing for guniting steel
Pennsylvania Avenue between 18th and 19th streets - Estimate and bill of steel for repairs.
Passyunk Avenue over Schuylkill River - Survey, detail drawing and estimate for repairs to roadway curbs.

Bridge Inspection:

Coulter Street over Chestnut Hill Branch of Pennsylvania Railroad east of Wissahickon Avenue - Inspection and report on condition.
Broad Street over Port Richmond Branch of Reading Railroad north of Luzerne street - Inspection and report on condition.
Highway Bridges over Pennsylvania Railroad Lines - Inspection and report on condition.

Bridges checked for Strength:

Fountain Street over Manayunk Canal south of North Manayunk Station
State Road over Poquessing Creek
Columbia Avenue over Connecting Branch of Pennsylvania Railroad at 31st street - Checked for support of a signal platform, and new high tension wires.
Margie street over Connecting Branch of Pennsylvania Railroad at 19th street - Checked for support of new high tension wires.
Belmont and Girard Avenues over Pennsylvania Railroad at 44th street - checked for supporting new high tension wires.

Bridge Demolition:

Walnut Lane over Lincoln Drive east of Wissahickon Avenue - Specification and estimate.

Surveys and Maps:

Thirty-fourth Street over Main Line of Pennsylvania Railroad north of Fairmount avenue - Lines and levels given to repair gang.
Bridge Patrol District Map for Bureau of Highways
Map of City Bridges on State Roads for Bureau of Highways

Hauling Permits:

289

62-1941

Protection Screens:

Montgomery Avenue over Connecting Branch of Pennsylvania Railroad at 30th street -
Design checked
Twenty-ninth Street over Connecting Branch of Pennsylvania Railroad south of Berks
Street - design checked
Columbia Avenue over Connecting Branch of Pennsylvania Railroad at 34th street -
design checked
Henry Avenue over Wissahickon Creek - Plans and estimates for proposed protection
screens
Walnut Lane over Wissahickon Creek - Plans and estimates for proposed protection
screens

Sidewalk Protection Platforms:

Three platforms checked for the Bureau of Highways

Utility Applications, Filing, etc.:

Philadelphia Gas Works Company	776
Bell Telephone Company	92
Philadelphia Electric Company	136
Philadelphia Electric Company (steam)	5
Keystone Telephone Company	6
Bureau of Engineering	110
Bureau of Water	133
Miscellaneous	<u>116</u>
Total	1374

Mimeographing - sheets and records for Zoning Division
for Survey Districts
for Works Progress Adm. (W.P.A.)
for Bureau (Specifications, Proposals, etc.)
for City Architect
for Highway Bureau - forms, notices, etc.

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

Miscellaneous:

Foundations Midvale Company - pressures on existing sewer
Drainage data, number of watersheds, streams replaced by sewers, etc.
Clearances for proposed Bell Telephone Co. duct, Sackett St., Ryan Ave., etc.
Clearances for proposed P. E. Co. duct - Southwark Station
Municipal Stadium - Cross section of stands
Concrete cribbing for building north side of Government avenue east of Broad street
Map of City with numbers representing bridge locations
Gas main locations, Scott's Lane
Frankford Creek proposed channel lines for location of building at Torresdale Avenue
P.E. Manhole location over Mill Creek sewer 62nd St. south of Woodbine Avenue
Drainage - St. Joseph's School for Boys, 16th & Allegheny Avenue
Dodge Steel Co. building near Upper Delaware Low Level intercepting sewer
Review of list of sewers to be ordered

Miscellaneous:

(continued)

Revision of Frankford Creek channel lines for proposed bridge
Location Socony Vacuum Oil Co. pipe line extension along Reading Co. Chester Branch
Connection for Naval Garage - Schuylkill Ave. & Grays Ferry Ave.
State Highway Map - revision of routes
P.R.R. siding across Dyott Street east of Delaware Avenue
Clearance for Bell Telephone Co. duct - Wadsworth & Thouron, Williams, Mt.Pleasant
to Michener
Review of data for Court - Berez flooding case, 57th & Lebanon Avenue
New type cork joint for concrete pipe - design
Vitrified lined concrete pipe - knockouts for laterals
New stormwater manhole - avoiding separate system turnouts
Standard Specifications for refilling trenches
Standard Specifications for sewers
Preparation of sectional maps and drainage sheets for Air Control Organization
Record Drainage Maps made to replace wornout maps
Record Drainage Maps revised for City Plan changes and sewer construction
Five Accident Maps made for Bureau of Highways
Sewer District Map for Bureau of Highways
Freuhauf Ash Trailer - checked for strength and detail drawing for strengthening
made for Bureau of Highways
Greenwich Street sewer between Passyunk Avenue and 12th street - inspected for
Bureau of Highways after explosion.