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# ANNUAL REPORT

OF THE

## CHIEF ENGINEER & SURVEYOR

OF THE

CITY OF PHILADELPHIA,

FOR THE YEAR 1886.

SPECIAL INDEX		
BUREAU OF SURVEYS,		
BRIDGE DIVISION.		
COMPART. No.	BOOK No.	SHEET No.

PHILADELPHIA:

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1887.

# DEPARTMENT OF SURVEYS.

OFFICERS, 1886.

*Chief Engineer and Surveyor.*

SAMUEL L. SMEDLEY.

*Principal Assistant Engineer,*

J. MILTON TITLOW.

*Assistant Engineer,*

J. KAY LITTLE.

*Recording Clerk,*

EDWARD H. THOMPSON.

*Sewer Register, WILLIAM CALVERT.*

*Sewer Clerk, WM. T. MCPHAIL.*

*Draftsmen.*

George S. Connor, Carl A. Trik, George E. Datesman.

*Stenographer and Type-writer, Joseph R. Scott. Rodman, Hugh Trik.*

*Messenger, Isaac Holland.*

## REGISTRY BUREAU.

*Registrar, JOHN H. DYE.*

*Search Clerk, James W. Simmons. Registry Clerk, Richard B. Davis.*

*Draftsmen,*

Jonathan Eggleton, William H. Wester, George H. Mercer,  
Henry C. Glenn, Francis Lightfoot, Henry C. Hamer,  
S. Crawford Smith.

*Inspectors of Sewer Connections.*

J. Sellers Kite, George F. Uber.

*Inspectors of Sewer Construction.*

Henry M. Smith,	S. R. Franklin,	David J. Davis,
William Wilson,	James Duffy,	Joseph Hunter,
Charles Y. Lauderbach,	George Moore,	Theodore D. Hooper,
Benjamin E. Hooven,	Newton B. Beam,	Michael McGrath,
William Yetter,	C. P. McCally,	George McLean,
Abraham Ruth,	C. R. Van Horn,	John McCormick,
George L. Deitz,	Findley J. Watt,	John G. Moore,
James McGill,	Joel P. Colebaugh,	David S. Rorer,
William May,	Theo. A. Brackney,	Edward Y. Shel mire,
John Abel, Jr.,	Wm. Penn Brown,	Emerick H. Sickels.
	Salathiel Cox,	

ANNUAL REPORT  
OF THE  
CHIEF ENGINEER AND SURVEYOR,  
FOR THE YEAR 1886.

*Philadelphia, January, 1887.*

HON. WILLIAM B. SMITH,  
Mayor of Philadelphia.

DEAR SIR—I herewith submit a statement of the general condition and business of this Department, together with the amount of appropriations, receipts and expenditures for the year ending December 31st, 1886 :

The appropriation under Ordinance of December 30th, 1885, was .....	\$355,918 00
To which was added, from the appropriation of 1885, which did not merge .....	81,795 67
Appropriation of March 16th, 1886.....	17,700 00
Appropriation of April 6th, 1886.....	2,500 00
Appropriation of May 18th, 1886 .....	523,000 06
Making a total of appropriation for and during 1886.....	\$980,913 67
Expended during the year.....	\$391,495 31
Carried to the credit of contracts.....	559,030 39
Balance which merged at the close of the year	30,387 97
	980,913 67

The receipts from all sources amounted to \$22,481.40, an increase over last year of \$7,852.46; received for permits, \$12,409; for certificates and searches in Registry Bureau, \$2,412.75; for sewer bills and balances of accounts, \$7,600.15; copies of plans, appeal fees, etc., \$59.50. Total, \$22,481.40.

*Registry Bureau.*

The work of the Registry Bureau has shown considerable gain. In addition to keeping up the work already plotted, nearly all the Twenty-second Ward, including the rural portions has been plotted. There were 2,924 more lots plotted than in 1885.

Total lots plotted, December 31, 1885.....	204,413
Total lots plotted during 1886.....	9,778
Total to December 31, 1886.....	214,191
Transfers entered December 31, 1885.....	253,588
Transfers entered during 1886.....	21,992
Total to December 31, 1886.....	275,580
Only 17,561 were entered last year; increase, 4,431.	
Total entries for the year 1886.....	31,770
Descriptions received December 31, 1885.....	407,996
Descriptions received during 1886.....	22,965
Total to December 31, 1886.....	430,961

Searches have been made out for 9,651 properties, 1,703 more than last year, for which \$2,428.25 was received, an increase of \$437.75.

*City Plans and Surveys.*

The work done on the City Plot during the last year has been confined exclusively to revisions of old plans, made necessary by a change of local conditions, the construction of lines of steam railroads, and by a more practical and intelligent study of the localities from the topographical surveys that have been made. During the year 1886, the revision of fourteen (14) sectional plans have been filled; from the care that has been exercised in their preparation, the City will save, in the grading of streets, many thousands of dollars, over and above the cost of the plans; and the owners of the real estate will be correspondingly benefited.

The topographical surveys have been extended as far as the limited appropriations would permit; covering, for the

year 1886, 2,624 acres; making a total area covered to date of 28,575 acres.

Under ordinances of Councils plans have been prepared for the revision of the lines and grades of twenty-two (22) individual streets, and for placing on the City Plans thirty-four (34) new intermediate streets in various portions of the City.

### *Bridges.*

The contract for rebuilding the western approach of South street bridge with stone piers on the old foundations, and with iron-plate girder-spans, with granite block roadway and granolithic sidewalks having been cancelled, a new contract was made with H. G. Clement for its completion. The final payments were made during this year, although the work was finished December 12, 1885. Both contracts resulted in a total cost to the City of \$79,820, the original contract price having been \$81,920, the difference of \$2,100 was deducted as damages for delay in completing the contract.

#### *Spencer Street Bridge.*

Spencer street bridge over the Norristown Railroad, near the Falls of Schuylkill, consists of stone abutments of rubble masonry, with two wrought-iron plate-girders, each seventy (70) feet long. The clear span is sixty-six (66) feet. The floor is 3-inch yellow pine, on seven (7) lines of 4" x 6" yellow pine floor joists, with 4" x 4" guard-rails. The contract price is \$2,300; payments this year, \$1,656.

#### *Ontario Street Bridge,*

Over the Norristown Railroad, has a clear span of sixty-six (66) feet six (6) inches. The abutments, including coping and bridge-seats, have been completed, and only one estimate of \$761 was paid at the close of the year.

#### *Fifty-second Street Bridge,*

Over Mill creek, near Wyalusing avenue, is partially done; for work on the abutments \$640 have been paid.

*Abutment, Poplar Street.*

The east abutment of a bridge over Pennsylvania avenue, at Poplar street has been finished. This is substantial range-work of Hummelstown brown-stone, for which the final estimate of \$3,470 was paid on June 7, 1886.

*Market Street Bridge.*

The contract for the iron bridge over the Schuylkill river at Market street, with R. A. Malone & Sons, of Lancaster, Pennsylvania, was executed on the twenty-fourth day of June, 1886; the amount to be paid for the piers, abutments and iron superstructure, complete, is \$271,000. Delays occurred in consequence of the veto of the ordinance approving the contract which became a law on the sixth of September; and on the seventh of September, the contractor was notified to commence work.

At the close of the year the old piers have been taken down to low-water mark, and also portions of the abutments. The latter have been rebuilt to the full height required, and the foundations of the shore piers are completed. The amount paid on account of work done is \$18,297.92. For engineering and inspecting, \$4,090.37.

The bridge consists of three spans across the river, the centre being 214.6 feet, and 97.6 feet on each side. The west shore plate-girder span across the Delaware extension of the Pennsylvania Railroad is 63.74 feet, and the span over the Schuylkill River East Side Railroad is 64.65 feet; a total of 550 feet. The bridge is designed as a deck-bridge, on the cantilever principle, and will have an asphaltum roadway of 52 feet wide and sidewalks  $12\frac{1}{2}$  feet each, to be paved with granolithic stone. The centre of the bridge will be 6.8 feet higher than the centre of the old bridge; the bottom chord of the centre span will be 23 feet above ordinary high-water. The heavy grade of the street on the east side of the river is continued on the shore span. The raising of Market street so as to dispense with the heavy grades west of the river has proved so benefi-

cial to the public, that there is a strong desire for raising it similarly on the east side, in which case one end of the plate-girder shore-span can be raised without detriment to the structure. Provision has been made for the conduits of the Cable Railroad and for water, gas, and electrical pipes.

The Schuylkill River East Side Railroad has been completed along the river, including the tunnel under Twenty-fifth street, from Callowhill street to Pennsylvania avenue, and along Pennsylvania avenue to Taney street, so that a perfect and safe connection between the Reading Railroad and the Philadelphia and Baltimore Railroad has been made, and the entrance to Fairmount Park and communication across the river at this point secured without the smoke, danger and detention of passing trains, the underground railroad being entirely out of view. A similar tunnel has also been built at Gray's ferry road, and the railroad passes under all the river bridges in its course along the wharves, which have been built continuously according to the Port Wardens' lines established by this Department.

The road was opened to travel between Philadelphia and Baltimore on the nineteenth day of September.

#### *Intercepting Sewer.*

Work on the intercepting sewer was continued during the year, and 11,786 feet, or 2.23 miles, comprising Sections No. 9, 10 and 11 were built.

SECTION 9 extends from Station 590 to Station 641, a total length of 5,100 feet; its point of commencement is about 200 feet north of Reading Railroad bridge. It continues along the northeast side of the river drive to a point above Rodman street, where it diverges slightly to the right, passing through the Park meadow between the river and Ridge avenue, crossing Ridge avenue and ending in the middle of the Wissahickon drive.

The brickwork is completed except where Dobson's run crosses the sewer.



The plastering of the invert has progressed very slowly, and a considerable portion yet remains to be done.

The refilling over the sewer is incomplete.

A terra-cotta pipe has been laid at various places along the line to accommodate the adjacent properties. Price per foot, \$8.40. Payments, \$28,032. Work commenced, June 5th, 1886.

SECTION 10 extends from Wissahickon drive, crossing Wissahickon creek through the new dam, and continuing along the Ridge road to the Main street, and along the same to Cedar street, Manayunk, where it turns to the left, crossing Ridge avenue, and connecting with the iron pipe sewer, Section 11, length, 5,019.137.3, including connection at Wissahickon creek. Price per foot, \$13.49. Total price for dam and connections, \$13,400. Payments, \$60,160.

SECTION 11 extends from near Main street to Harding's paper mill. Its point of commencement is in the race, near Main street, from which place it extends diagonally across the Schuylkill canal to the southwest side, thence continuing along the same to Harding's paper mill. Length, 1,667 feet. Size, 42" iron pipe. Price per foot, \$13. Payments, \$23,396.21.

SECTION 6. This section was completed last year, except the plastering of the invert, which was finished in the spring.

The final estimate was paid March 22; a deduction to cover damages for delay was made as follows: Thirty-six days at \$5, \$180.

SECTIONS 7 and 8. The final payment on these sections was made January 8th.

\$4,325.52 was retained from the contractors, in accordance with a resolution of Select and Common Councils dated January 7th, 1886.

SECTION 12 of Manayunk sewer extends along the canal, from Harding's paper mill to Main street bridge. Work was commenced December 23d, and up to the end of the year nothing was done except excavation.

*Storm-water Conduit in connection with Intercepting Sewer.*

The storm-water conduit, diameter  $8\frac{1}{2}$  feet, along the north side of the Reading Railroad, Falls village, from the Schuylkill river north-eastward, has been completed to a point above Ridge avenue, a distance of 1,000 feet, including the outlet at the river and the chamber to connect the Ferry road sewer. Payments to date, \$18,520.

*Ferry Road Sewer,*

From the storm-water sewer at Falls bridge to Ridge avenue, 150 feet of circular sewer,  $3' 3''$  in diameter, and 120 feet of circular sewer, 2 feet in diameter has been built. Payments, \$1,152.

*Mifflin Street Sewer,*

From Schuylkill river northeastward, crossing Ridge avenue, 280 feet of circular sewer, 6 feet and  $5\frac{1}{2}$  feet diameter, has been completed, including outlet; also 185 feet of  $18''$  terra-cotta pipe. Payments, \$3,456.

*Flushing-Chamber and Connections at Wissahickon Creek.*

425 feet of sewer,  $4' 7''$  diameter; arched but not plastered; foundation for flushing-chamber partly excavated; material on ground. Payments, \$4,032.

*Wissahickon Valley Sewer.*

1,200 feet of this sewer has been arched and partly covered. Payments, \$4,000.

SECTION 11 of the intercepting sewer, 1,666 feet long, was constructed during the most severe freezing weather, because it had to be built under the bottom of the canal and along the towing-path of the Schuylkill Navigation Company, while it was closed to navigation between Christmas and the fifteenth day of March. Although attended with great difficulty the work was successfully completed.

Of Section 10, 840 feet on Ridge avenue were built in tunnel, and a very substantial new stone dam was built across the Wissahickon creek, through which the sewer has been carried.

Excepting about 50 feet at Dobson's run, the brick and iron conduits are all laid for this important work, from Fairmount to Levering street, a distance of 31,000 feet, or nearly six miles. A branch for flushing the sewer from Wissahickon creek is nearly completed, and the sewer extension has been contracted for for 3,000 feet along the Wissahickon, to intercept the sewage from the west slope of Germantown.

4,300 feet of sewer are yet required to complete the intercepting sewer from Fairmount to Flat Rock paper mills, 2,300 feet of which are now under contract.

### *Main Sewers.*

Dauphin street, from Twenty-fourth street to Sedgley avenue. This work was continued and completed and final estimate paid on April 20th. Number of feet built in 1885, 100; in 1886, 255; total, 355.

Sixteenth street sewer, from Snyder avenue to near Mifflin street. The final estimate was paid on February 9th, 1886.

Twenty-fourth street, from Dauphin street to York street. This work continued and completed. Final estimate paid April 20th. Number of feet built in 1885, 300; in 1886, 297; total, 597.

Mill creek sewer, on Sansom and Meadow streets. Work continued and completed. Final estimate not yet paid. Number feet built in 1885, 160; in 1886, 231; total, 391.

Annsbury street, across Fifth street. Work completed, and final estimate paid April 20th, 1886.

Sixteenth street sewer, from near Mifflin street to Wharton street. Work was commenced July 21st, and completed November 8th. Concrete invert blocks were used in this sewer. Length, 2,528 feet. Cost, \$13,599.97.

Mill creek sewer, on Forty-seventh street and Brown street. This sewer extends on Forty-seventh street, from the old sewer

north of Aspen to Brown street, and on Brown street to Forty-eighth street, where it connects with the sewer built some years ago to carry Forty-eighth street over Mill creek. This sewer is circular, 15 feet in diameter, except where it curves from Forty-seventh street into Brown street, with a radius of 150 feet. On this curve the size of the sewer is increased to 156 feet high by 16 feet wide. Two ventilators and one well-hole have been built in connection with the sewer.

The old branch sewer on Brown street, east of Forty-seventh street, was extended to Forty-seventh street, and thence eastward to connect with the well-hole in the new sewer; the outlet of this sewer has long been a nuisance, as its contents were discharged into a shallow stream. This has been remedied by the connection above referred to.

The bottom of sewer under Forty-eighth street was raised and shaped to conform to the new sewer. Length of sewer, 470.07 feet. Length of new bottom in old sewer, 124 feet. Price per foot, \$35.74. Price per foot, bottom, \$12. Total cost, \$18,288.30, of which \$1,178.72 was paid in assessment bills.

#### *Branch Sewers.*

92,317.71 feet of egg-shaped sewers of brick, various sizes, and 4,539.67 feet of terra-cotta pipe sewers (a detailed account of which is given elsewhere) were built. A number of sewers were partially completed at the end of the year, having a length of 12,094.54 feet.

#### *Manholes.*

638 manholes were constructed, an average of one manhole for every 150 feet of sewer.

#### *Inlets.*

243 inlets were built in connection with the branch sewers of the following sizes: Two of No. 1, average cost each, \$95; 109 of No. 2, average cost each, \$86.29; 132 of No. 3,

average cost each, \$80.28. One inlet was put in for every 398 feet of sewer built.

### *Inspection.*

The cost of inspection for each lineal foot of branch sewers, including manholes, inlets, and well-holes, was 14 cents.

### *Inlets built in connection with old Sewers.*

Two contracts were awarded for building brick and stone inlets, manholes and well-holes, during the year. The amount to be expended under the first contract was \$7,000; under the second contract, \$2,000.

The sizes, number built and cost (under first contract) was as follows: 5 No. 1, brick and stone, at \$96.25, \$481.25; 29 No. 2, brick and stone, at \$87.45, \$2,536.05; 45 No. 3, brick and stone, at \$81.15, \$3,651.75; 1 well-hole, 29 feet, at \$5, \$145; 2 manholes, at \$25, \$50; 127 feet of terra-cotta pipe, at \$1.09, \$138.43; total, \$7,002.48. In excess of contract, \$2.48.

Under the second contract, as follows: 1 No. 1, brick and stone inlet, at \$106.75, \$106.75; 8 No. 2, brick and stone inlets, at \$97.25, \$778; 10 No. 3, brick and stone inlets, at \$88.50, \$885; 22 feet of terra-cotta pipe, at \$1.15, \$255.30; total, \$2,025.05. In excess of contract, \$25.05.

The sizes and number of iron inlets built were as follows: 12 No. 2, iron inlets, at \$105.50, \$1,266; 1 No. 3, iron inlet, at \$91, \$91; 1 No. 3 Shedakar trap, at \$65, \$65; 76½ feet terra-cotta pipe, at 75 cents, \$57.30; total, \$1,479.37.

The brick and stone inlets were inspected at a cost of \$686.66, or \$7.38 for each inlet, and iron inlets at a cost of \$100, or \$7.10 per inlet.

### *Sewers built at Private Expense.*

59 feet of egg-shaped and circular sewers of brick, and 10,529 feet of terra-cotta pipe sewers were laid at private cost during the year. They were inspected in the same manner

as the public sewers. Slants for house connections were inserted, and manholes built when necessary.

### *Office Work.*

Office work consisted in preparing advertisements, schedules for use of bidders, notifying contractors to begin work, preparing contracts, making estimates, examining sewer assessment bills, signing and stamping them, indexing and arranging the accumulated papers, etc.

194 excess bills (to be collected by the city) are accounted for as follows: 146 served and paid, amounting to \$4,689.36; 33 served and sent to Law Department for lien, \$1,731.67; 14 served and unpaid, \$747.04; 1 not served, \$127.83; total, \$7,295.90.

The amount of money returned to the city where the amount of assessment bills exceeded the cost of the sewers, was as follows: In 194 assessment bills, \$7,295.90; in cash paid by contractors (to balance), \$620.39; total, \$7,916.29.

### *Inspection and Records.*

An inspector is placed on each sewer when the brick work is commenced, and is required to be on the work at all times while it is in progress, and upon completion certify under oath that everything connected with the work has been properly done in accordance with the contract and specifications before the final estimate is delivered to the contractor. Daily reports of the condition and progress of the work and character of excavations is made to me, and the Assistant Engineer, John K. Little, gives constant supervision to the inspectors and outdoor construction.

Slants are put in opposite each lot and a record thereof made. The lines and levels for the sewers are furnished by the District Surveyors, in accordance with the official plans. The Surveyors also make out all the assessment bills and the final plans, which are placed on file in the Department and entered on the drainage maps. 175 of these plans of main and

branch sewers have been received and entered in the sewer reference books. 215 of the Inspectors' diaries and record books of progress have been filed and indexed; all of which are in frequent use. The entry of the location\*of each slant on large plans is greatly needed, but cannot be done with the present force.

The returns of drains and sewers built in the streets at private expense under the inspection of the Department number 46.

The gutter complaints received were 38, of which 11 were satisfactorily drained, 5 were dismissed as not subject to the provisions of the ordinance, and 22 are now pending.

The inspectors of sewer connections have been continuously on duty during the year. The result of their labors is shown by the following statement:

<i>Inspected.</i>	<i>Not Inspected.</i>	<i>Unaccounted for.</i>	
By plumber inspectors, 1,953	South of Lehigh ave., 31	7	
By brickl'r inspectors, 96	North of Lehigh ave., 63	0	
2,049		94	7

An examination of the table shows the want of an additional inspector for the northern part of the city.

In addition to former duties, the making of daily reports to the Board of Health, of all applications for connections with sewers has become necessary; these are of much value to the inspectors of plumbing; they increase the efficiency of the supervision authorized by the Act of Assembly.

In compliance with a resolution of the Board of Health to that effect, the granting of permits to others than registered plumbers has ceased; the names of all those registered being furnished by the Health office.

On the thirtieth day of October, George Sturges, the Recording Clerk, who had held that position since the organization of the Department in May, 1855, died suddenly from paralysis, and Edward H. Thompson was promoted to the po-

sition; William Calvert was appointed his successor as Sewer Register, and William T. McPhail was appointed Sewer Clerk. J. Milton Titlow continues in the position of Principal Assistant Engineer, and John H. Dyé as Registrar. In addition to the regular force of the office, a corps under the charge of George H. Paddock, Assistant Engineer, has been engaged in giving the lines and grades for the intercepting sewer and on stormwater sewer and connections; also for the Wissahichon valley sewer. Besides general superintendence of the work of the work of construction, they have extended the surveys from Harding's mill to Flatrock dam, including the location of the mills, canal, sluiceways, soundings, etc. Assistant Engineer Fred. J. Amweg, with a leveller and a rodman, has been especially employed on the construction of Market street bridge since September 8th.

With the work of the Department well systematized, the employes of the office have taken deep interest in the performance of their duties, and the universal perseverance and industry manifested has resulted in accomplishing an extraordinary amount of work, and the accumulation of large additions to the valuable records of the office, which entitles them to especial commendation.

The usual tables of details relative to work and expenses are herewith submitted.

Very respectfully,

SAMUEL L. SMEDLEY,

*Chief Engineer and Surveyor.*



*Length and Cost of Sewers Built during the year 1886.*

Location.	Size.	Length in feet.	INLETS.		MAK-HOLES.		WELLS'S.			PAYMENTS.		Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final acct.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	In assessment bills.	Indebted warrants.					
Aspen street, from Thirty-sixth to Thirty-seventh streets.	2 ft. 3 in. x 1 ft. 6 in.	410.5	2	1	887 00	2	225 00	1	77	863 58	863 58	0	John McParland.	July 29.	1886	
Berks street, from Fourth to Sixth streets.	3 ft. 0 in. x 2 ft. 0 in.	614.25	2	5	80 00	4	22 00	2	15	1114 48	8479 15	1598 63	George L. Deitz.	Apr. 13.		
Brandywine street, from Ninth to Twentieth streets.	2 ft. 6 in. x 1 ft. 8 in.	446.	.....	.....	.....	3	25 00	1	84	884 60	.....	.....	George Moore.	May 28.		
Bainbridge street, from Seventh to Eighth streets.	2 ft. 6 in. x 1 ft. 8 in.	450.	3	3	81 00	5	25 00	2	09	1072 77	177 23	1250 00	W. Penn Brown.	June 30.		
Bainbridge street, from Tenth street eastward.	2 ft. 6 in. x 1 ft. 8 in.	304.	3	2	81 00	2	25 00	1	90	305 67	511 29	816 96	W. Penn Brown.	June 30.		
Broadnot street, from Cambria street to Kensington avenue.	3 ft. 0 in. x 2 ft. 0 in.	739.75	.....	.....	.....	6	25 00	2	09	1890 58	.....	1800 58	J. P. Colebaugh.	July 30.		
Broad street, from Pine to Lombard streets.	2 ft. 6 in. x 1 ft. 8 in.	340.	.....	.....	.....	3	25 00	1	87	417 76	293 04	710 80	George McLean.	Aug. 19.		
Bambrey street, from Columbia to Montgomery avenues.	2 ft. 3 in. x 1 ft. 6 in.	568.	3	1	81 00	4	25 00	1	99	1301 37	41 68	1301 37	W. Penn Brown.	Oct. 13.		
Benton street, from Market to Molloy streets.	12-inch pipe.	315.	3	2	81 00	3	25 00	2	37	756 50	229 42	985 92	George Moore.	Oct. 19.		
Bouvier street, between Berks and Montgomery streets.	2 ft. 6 in. x 1 ft. 8 in.	259.	.....	.....	.....	2	25 00	2	00	568 00	.....	568 00	S. R. Franklin.	Oct. 22.		
Berks street, from Hancock to Palethorp streets.	3 ft. 6 in. x 2 ft. 4 in.	200.	2	2	87 00	1	25 00	2	37	565 00	118 00	673 00	John G. Moore.	Nov. 5.		
Berks street, from Seventh to Franklin streets.	2 ft. 3 in. x 1 ft. 6 in.	193.	.....	.....	.....	2	25 00	2	23	437 77	42 62	480 39	John G. Moore.	Nov. 10.		
Baker street, from Green lane to Centre street.	3 ft. 0 in. x 2 ft. 6 in.	402.	2	2	87 00	3	25 00	2	90	1170 14	389 66	1559 80	George Moore.	Nov. 22.		
Belton street, from Twenty-second street to Ridge avenue.	2 ft. 3 in. x 1 ft. 6 in.	414.	.....	.....	.....	3	25 00	2	13	776 46	180 36	956 82	John G. Moore.	Dec. 2.		

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN-HOLES.		WELLS.		PAYMENTS.		Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final estimate.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Total cost.	Per foot.	In city warrants.					
Barker street, from Seventeenth to Eighteenth streets.....	2 ft. 3 in. x 1 ft. 6 in.	416.	3	1	\$81 00	3	\$25 00	.....	2	\$1 21	\$116 96	\$9 46	N. B. Beam.....	M. C. Hong.....	1886 May 20.
Broad street, west side, from Spruce to Pine streets.....	2 ft. 3 in. x 1 ft. 6 in.	511.	2	1	87 00	3	25 00	.....	1	83	822 18	1997 18	George McLean.....	Thos. McCann.....	Aug. 30.
Broad street, east side, from 4 ft. 6 in. x 2 ft. 8 in. 45', 1828.00	3 ft. 6 in. x 2 ft. 4 in.	2383.16	2	1	87 00	.....	.....	.....	4	72	.....	.....	C. P. McCally.....	McGlue.....	Sept. 21.
Snyder avenue to Federal street.....	3 ft. 3 in. x 2 ft. 2 in. 15-inch pipe.....	94.	3	0	81 00	21	25 00	.....	1	94	6792 68	11787 49	John Abel, Jr.....	McFague.....	.....
Bailey street, between Oxford street and Columbia avenue.....	3 ft. 0 in. x 2 ft. 0 in.	238.	.....	.....	.....	3	25 00	.....	2	09	.....	572 42	W. P. Brown.....	P. C. & T. McEntee.....	Oct. 2.
Cambridge street, from Thirtieth to Twenty-ninth streets.....	2 ft. 3 in. x 1 ft. 6 in.	448.	.....	.....	.....	3	25 00	.....	2	20	1060 60	1060 50	S. R. Franklis.....	John M. Mack.....	Dec. 24.
Commerce street, from Fourth to Fifth streets.....	2 ft. 3 in. x 1 ft. 6 in.	430.50	.....	.....	.....	3	25 00	.....	2	25	987 52	1043 62	A. M. Ruth.....	John M. Mack.....	May 26.
Coulter street, from Hansock to Cumberland streets.....	3 ft. 0 in. x 2 ft. 0 in.	157.	.....	.....	.....	2	25 00	.....	1	29	252 53	252 53	George McLean.....	{ McKerrigan..... } { McTarrigle..... }	June 12.
Camac street, from Norris to Diamond streets.....	2 ft. 3 in. x 1 ft. 6 in.	533.	3	1	81 00	4	25 00	.....	1	90	1193 70	1193 70	W. P. Brown.....	P. C. & T. McEntee.....	Sept. 17.
Cathbert street, from Nineteenth to Twentieth streets.....	2 ft. 3 in. x 1 ft. 6 in.	477.	3	1	81 00	3	25 00	.....	2	00	1010 00	1010 00	N. B. Beam.....	T. P. Smart.....	Aug. 19.
Cambria street, from Keese to Fairhill streets.....	15-inch pipe.....	151.50	.....	.....	.....	2	25 00	.....	2	15	375 72	375 72	George L. Deltz.....	H. C. Eyrse.....	Sept. 18.
Current street, from Walnut to Locust streets.....	12-inch pipe.....	418.	3	2	81 00	4	25 00	.....	2	37	841 25	411 41	George Moore.....	M. C. Hong.....	Oct. 9.
Cross street, from Eighth to Ninth streets, from Fifteenth to Fifteenth streets.....	3 ft. 0 in. x 2 ft. 0 in.	425.	3	1	81 00	6	25 00	.....	1	90	965 40	965 40	George McLean.....	{ E. H. Sicksels..... } { F. J. Watt..... }	Oct. 18.
Cathedral street, from Fifty-first to Fifty-second streets.....	2 ft. 6 in. x 1 ft. 8 in.	616.	.....	.....	.....	3	25 00	.....	1	90	1245 40	1245 40	John McParland.....	John McParland.....	Nov. 10.

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN-BOLES.		WELLS'S.		PAYMENTS.		Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final estimate.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	In city water.					
Cumberland street, from Broad to Fifteenth street.....	3 ft. 0 in. x 2 ft. 0 in.	524.	4	\$75 00	3	\$23 00	2	18	\$987 50	\$523 82	\$1511 32		Joseph Hunter.....	M. P. Hong.....	1886 Dec. 17.
Cumberland street, from Cedar to Tulp streets.....	3 ft. 0 in. x 2 ft. 0 in.	711.	2	87 00	5	25 00	2	11	1651 93	137 28	1799 21		George L. Deitz.....	W. B. M. Conklin.....	Dec. 14.
Duval street, from present terminus northeast.....	12-inch pipe.....	224.42			2	25 00		1 23	326 03		326 03	23	George Moore.....	R. McCarrigle.....	May 20.
Dauphin street, from Eighth to Tenth streets.....	12-inch pipe.....	45.50	3	81 00	5	25 00		1 57	1665 16	167 11	1832 27		F. J. Watt.....	B. F. Shelmire.....	June 23.
Dauphin street, from east of Second to Bodine streets.....	3 ft. 0 in. x 2 ft. 0 in.	661.33	4	81 00	3	25 00		2 20	1031 69	822 23	1853 92		C. P. McCally.....	D. & P. McNichols.....	June 3.
Dickinson street, from Fifth to Sixth streets.....	3 ft. 0 in. x 2 ft. 0 in.	427.25	3	81 00	3	25 00		2 20	1040 75	55 20	1095 95		W. J. Davis.....	T. P. Smart.....	Sept. 18.
Dover street, from York to Her- man streets.....	2 ft. 3 in. x 1 ft. 6 in.	248.	2	81 00	2	25 00		1 90	358 60	117 00	675 00		W. J. Davis.....	Jno. M. Donnelly.....	Oct. 19.
Eleventh st., from Susquehanna ave. to summit, south.....	2 ft. 3 in. x 1 ft. 6 in.	378.			2	25 00		1 87	756 80		756 80	48	George L. Dietz.....	W. A. Hendel.....	Apr. 28.
Eighth street, from Berks to Montgomery streets.....	2 ft. 3 in. x 1 ft. 6 in.	543.			3	25 00		1 99	1155 57		1155 57	40	S. Cox.....	John Noonan.....	June 12.
Eighth street, from 80 feet north of Green to Wallace streets.....	2 ft. 6 in. x 1 ft. 8 in.	277.			3	25 00		1 55	600 00		600 00	40	George I. Deitz.....	W. A. Hendel.....	June 29.
Edward street, from Hancock to Second streets, thence to Ger- mantown avenue.....	2 ft. 6 in. x 1 ft. 8 in.	555.	2	87 00	3	25 00		2 25	1169 37	328 38	1497 75		Abm. Ruth.....	H. C. Eyre.....	July 2.
Eleventh street, from Diamond to summit, north.....	2 ft. 3 in. x 1 ft. 6 in.	214.			2	25 00		1 97	471 58		471 58	93	George L. Deitz.....	W. A. Hendel.....	Aug. 20.
Eighth street, from Fitzwater to Baker streets.....	2 ft. 3 in. x 1 ft. 6 in.	128.	3	81 00	1	25 00		2 25	325 50	68 50	394 00		W. P. Brown.....	Jno. M. Deannelly.....	Dec. 4.

# Length and Cost of Sewers Built during the year 1886—(Continued).

Location.	Size.	Length in feet.	INLETS.		MAN-HOLES.		WELLS'S.		PAYMENTS.			Inspector.	Contractor.	Date of final est- imate.			
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	Cost per foot.	In assess- ment bill.				In city war- rants.	Total cost.	Excess bills and balances.
Filbert street, from Thirty-third street to a point 20 1/2 feet 10 3/4 inches west.	2 ft. 3 in. x 1 ft. 6 in.	82.	1	\$25 00	1	\$25 00	1	83	\$175 08			\$175 06	\$60 40	W. P. Brown.....	Jno. McParland...	May 18.	
Fairmount avenue, from Nine-teenth to West streets.	3 ft. 0 in. x 2 ft. 0 in.	202.	2	25 00	2	50 00	1	97	447 94			447 94	92 03	John Abel, Jr.....	T. McEntee.....	May 18.	
Fairmount ave., from Twenty-first to Twenty-second streets.	3 ft. 0 in. x 2 ft. 0 in.	485.	4	25 00	4	100 00	1	97	554 75			590 70	45	John Abel, Jr.....	T. McEntee.....	May 23.	
Filbert street, from Thirty-sixth to Centre streets, to Thirty-seventh to Warren streets.	3 ft. 6 in. x 2 ft. 4 in.	750.	2	87 00	4	348 00	2	40	1403 44			663 56	2074 00	H. M. Smith.....	W. H. H. Achuff.....	June 2.	
Fountain street, from Seven-teenth to Eighteenth streets.	2 ft. 6 in. x 1 ft. 8 in.	485.	3	25 00	3	75 00	1	98	926 30			936 30	24 86	T. A. Brackney.....	Thos. McCann.....	June 3.	
Fifth street, from Diamond to Susquehanna streets.	3 ft. 0 in. x 2 ft. 0 in.	576.	3	81 00	4	324 00	2	11	1396 36			1396 36	51	C. R. Van Horn.....	H. Murray.....	June 8.	
Franklin street, from Diamond to Norris streets.	3 ft. 0 in. x 2 ft. 0 in.	544.	3	25 00	3	75 00	2	05	1190 20			1190 20	65	C. R. Van Horn.....	I. Murray.....	June 25.	
Fifteenth street, from Toga to Venango streets.	2 ft. 6 in. x 1 ft. 8 in.	538.	3	25 00	3	75 00	1	87	1081 06			1081 06	94	H. M. Smith.....	T. McEntee.....	July 13.	
Fifth street, from Somerset to Cambria streets.	15-inch pipe.....	324.	3	81 00	5	405 00	1	61	1049 64			1049 64	445 88	J. P. Colebaugh.....	W. H. Yeast.....	Aug. 26.	
Front street, from Christian street to Washington avenue.	3 ft. 6 in. x 2 ft. 4 in.	740.	3	81 00	5	405 00	2	41	1811 74			829 65		George Moore.....	A. H. Coon & Co.....	Sept. 11.	
Frankford avenue, from York to OHS streets.	3 ft. 0 in. x 2 ft. 0 in.	836.	2	87 00	5	435 00	2	11	1833 29			403 67	2286 96	T. A. Brackney.....	F. P. Murray, Jr.....	Sept. 29.	
Fifty-second street, from Lan-caster to Columbia avenues.	15-inch pipe. 3 ft. 0 in. x 2 ft. 0 in. 3 ft. 6 in. x 2 ft. 4 in.	958.50 395.30 978.50	2	87 00	10	870 00	2	40	1837 30			3567 30	5404 60	F. J. Watt.....	Jno. McParland...	Oct. 28.	

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN-HOLES.		WELLS.		PAYMENTS.		Excess bills and balances.	Inspector.	Contractor.	Date of final est-imate.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	Cost per foot.				
Fifth street, from Christian to Carpenter streets.....	3 ft. 6 in. x 2 ft. 4 in.	490.	3	1 \$81 00	3 \$25 00	.....	2 44	\$1282 68	\$118 92	\$1881 60	.....	W. J. Davis.....	James Kane.....	1886 Nov. 1.
Fifteenth street, from Cumber-land to York streets.....	2 ft. 6 in. x 1 ft. 8 in.	535.	3	2 81 00	3 25 00	.....	2 30	1301 90	272 51	1574 50	.....	John Hunter.....	John M. Mack.....	Nov. 12.
Fifteenth street, from Haverford to Oregon streets.....	3 ft. 6 in. x 2 ft. 4 in.	735.5	2	3 87 00	4 25 00	5	5 \$17 50	1630 46	638 27	2268 73	.....	F. J. Watt.....	J. McFarland.....	Nov. 12.
Fifth street, from Lombard to Bainbridge streets.....	3 ft. 0 in. x 2 ft. 0 in.	689.	3	3 81 00	4 25 00	.....	2 39	965 96	1300 00	1965 96	.....	T. A. Brackney.	{ W. A. Hendel... { John Hunter....	Nov. 15.
Fitzwater street, from Seventh to Eighth streets.....	3 ft. 0 in. x 2 ft. 0 in.	445.	.....	.....	3 25 00	.....	2 23	1067 35	.....	1067 35	12 07	John McCormick.	Thos. McCann.....	Nov. 29.
Girard avenue, from Taney to Twenty-seventh streets, and on Twenty-seventh to Mt. Pleasant streets.....	2 ft. 3 in. x 1 ft. 6 in.	758.	2	2 55 00	4 24 00	.....	1 44	1297 52	.....	1297 52	102 07	S. R. Franklin.....	Geo. W. Hansell...	June 29.
Green street, from end of sewer east of Linden street eastward	2 ft. 6 in. x 1 ft. 8 in.	64.	{ 2	1 87 00	1 25 00	.....	2 18	164 52	.....	164 52	28 79	M. McGrath.....	F. P. Murray.....	July 19.
Gratz street, from Norris to Berks streets.....	2 ft. 3 in. x 1 ft. 6 in.	545.	{ 3	1 81 00	3 25 00	.....	1 90	1278 50	.....	1278 50	110 96	C. P. McCally.....	Jno. M. Donnelly.	Aug. 20.
Girard st., north side, between Frankford av. and Oils street.	3 ft. 0 in. x 2 ft. 0 in.	2541.75	2	3 87 00	14 25 00	.....	2 08	2915 08	2856 72	5770 75	.....	P. R. Van Horn...	W. B. M. Conklin.	Oct. 25.
Girard avenue, south side, from Frankford avenue to Eyre st., and from Montgomery avenue to Vienna street.....	3 ft. 0 in. x 2 ft. 0 in.	2065.33	2	6 87 00	12 25 00	.....	2 07	2216 74	2882 56	5099 30	.....	J. P. Colebaugh...	W. H. Yeast.....	Dec. 6.
Girard ave., north side, from Tenth to Second streets.....	3 ft. 0 in. x 2 ft. 0 in.	2929.	.....	.....	2 07	.....	2 07	.....	.....	.....	.....	F. R. Van Horn.	W. B. M. Conklin.	Dec. 20.
Hope street, from Huntingdon street to Lehigh avenue.....	2 ft. 3 in. x 1 ft. 6 in.	675.	.....	.....	21 25 00	.....	1 93	2873 50	5020 13	7893 71	.....	George L. Deitz.	W. B. M. Conklin.	Dec. 20.
.....	3 ft. 0 in. x 2 ft. 0 in.	581.	2	2 87 00	4 25 00	.....	2 37	1317 00	323 97	1640 97	.....	C. P. McCally.....	M. C. Hong.....	June 19.

*Length and Cost of Sewers Built during the year 1885—(Continued).*

Location.	size.	Length in feet.	INLETS.			MAX. HOLES.			WELLS'LS.			PAYMENTS.			Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final est.
			No. built.	Cost each.	No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	Cost per foot.	In assess- ment bills.	In city war- rants.					
Huntingdon street, from Ninth street to Germantown avenue.	3 ft. 0 in. x 2 ft. 0 in.	508.	2	\$87 00	5	\$25 00	.....	1 90	\$1044 27	\$219 98	\$1264 20	.....	C. R. Van Horn	Jno. M. Donnelly	1886 July 7.				
Hamilton st., from Lancaster av to west of Thirty-eighth st.	2 ft. 3 in. x 1 ft. 6 in.	427.	2	87 00	2	25 00	.....	1 69	858 63	.....	.....	.....	Jno. Noonan	Jno. Noonan	July 8.				
Hutchinson street, from Oxford street to Columbia avenue.	2 ft. 6 in. x 1 ft. 8 in.	513.	.....	.....	3	25 00	.....	2 05	1,26 63	.....	.....	.....	E. H. Sickels	A. H. Coon & Co.	Oct. 16.				
Hancock street, from Berks to Kitter streets.	3 ft. 0 in. x 2 ft. 0 in.	468.	2	87 00	3	25 00	.....	2 27	1084 61	276 75	1311 36	.....	Jas. J. Moore	B. F. Shelmire	Oct. 23.				
Howard street, from 88 ft. south of Diamond street to Susquehanna avenue.	3 ft. 0 in. x 2 ft. 0 in.	855.	.....	.....	5	25 00	.....	2 13	1665 35	.....	.....	.....	Geo. L. Deltz	W. A. Hendel	Oct. 23.				
Ingersoll street, from Twenty-fourth to Twenty-fifth streets.	2 ft. 3 in. x 1 ft. 6 in.	645.	.....	.....	3	25 00	.....	2 00	965 00	.....	.....	.....	S. B. Franklin	G. W. Hansell	Sept. 4.				
Judson street, from Brown to Parrish streets.	2 ft. 6 in. x 1 ft. 8 in.	400.	3	81 00	3	25 00	.....	1 89	912 00	.....	.....	.....	H. M. Smith	T. McEntee	June 12.				
Jasper street, from York to Taylor streets.	3 ft. 0 in. x 2 ft. 0 in.	193.25	2	87 00	2	25 00	.....	2 00	375 76	234 74	610 50	.....	C. P. McCall	Jno. M. Donnelly	July 30.				
Jefferson street, from Bouvier to Seventeenth streets.	2 ft. 3 in. x 1 ft. 6 in.	180.	.....	.....	2	25 00	.....	1 72	359 60	.....	.....	.....	Jas. McGill	Jno. Noonan	Oct. 23.				
Johnson street, from Twentieth to Twenty-first streets.	2 ft. 3 in. x 1 ft. 6 in.	526.	2	87 00	4	25 00	.....	1 97	1233 32	.....	.....	.....	Jno. McCormick	Thos. McCann	Dec. 31.				
Kensington street, from Somerset to C <sup>o</sup> streets.	3 ft. 0 in. x 2 ft. 0 in.	757.86	2	87 00	5	16 00	.....	2 17	1884 18	103 02	1987 20	.....	Geo. L. Deltz	Wm. A. Hendel	Nov. 2.				
Lawrence street, from Dauphin street to Susquehanna ave.	3 ft. 0 in. x 2 ft. 0 in.	581.	3	70 00	4	21 00	.....	2 15	1408 15	.....	.....	.....	J. P. Colebaugh	W. H. Yoset	May 5.				
Louist st., from Thirty-second street westward.	12 in. pipe.	231.	.....	.....	2	25 00	.....	1 48	391 88	.....	.....	.....	N. B. Besm	J. McFarland	May 14.				

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN- HOLES.		WELLS'S.		PAYMENTS.			Total cost.	Excess bills add balances.	Inspector.	Contractor.	Date of final cash note.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	In assess- ment bills.	In city war- rents.					
Lawrence street, from 180 feet south of Lehigh avenue to 98 feet north of Huntington st.	3 ft. 0 in. x 2 ft. 0 in.	273.	2	\$25 00	2	\$25 00	2	03	\$348 00	\$256 19	\$604 19		J. P. Colebaugh	Thos. McCann	May 18.	
Lehigh street, from Dauphin street to Susquehanna ave.	3 ft. 0 in. x 2 ft. 0 in.	605.	2	\$87 00	4	25 00	2	22	1448 01	251 89	1700 00		C. P. McCally	H. C. Eyre	May 19.	
Lombard street, from Broad to Fifteenth streets.	2 ft. 3 in. x 1 ft. 6 in.	428.	3	81 00	3	25 00	1	90	867 56	101 64	969 20		T. A. Brackney	Thos. McCann	June 17.	
Lawrence street, from Jefferson to Oxford streets.	3 ft. 0 in. x 2 ft. 0 in.	533.66	3	81 00	3	25 00	2	16	1889 70		1389 70		Jno. McCormick	F. P. Murray, Jr.	July 19.	
Locust street, from Sixteenth to Vaughn streets.	2 ft. 3 in. x 1 ft. 6 in.	225.	2	25 00	2	25 00	2	12	527 00		527 00	26 50	Geo. McLean	Jno. Donnelly	Aug. 20.	
Locust street, from Ninth to Tenth streets.	2 ft. 3 in. x 1 ft. 6 in.	422.	3	81 00	4	25 00	1	86	857 00	270 92	1127 92		Geo. McLean	Thos. McCann	Oct. 9.	
Lehigh avenue, from 235 ft. west of Leany street to Leany street thence southward.	3 ft. 0 in. x 2 ft. 0 in.	573.42	3	25 00	3	25 00	2	08	352 50	915 21	1267 71		Geo. L. Deitz	Jno. M. Noonan	Oct. 31.	
Lehigh avenue, from Jasper to Kaestling streets, and thence to Huntington street.	3 ft. 0 in. x 2 ft. 0 in.	1112.50	2	87 00	6	25 00	2	09	2031 47	597 65	2629 12		{ Geo. L. Deitz W. P. Brown }	Jno. Noonan	Oct. 5.	
Lehigh avenue, from Hutchin- son st. to German town ave.	3 ft. 0 in. x 2 ft. 0 in.	398.	2	87 00	3	25 00	2	85	273 78	785 02	1059 80		C. P. McCally	Jno. Kerrigan	Nov. 14.	
Lancaster avenue, from Fifty- third to Fifty-fourth streets.	3 ft. 0 in. x 2 ft. 0 in.	500.	3	81 00	5	25 00	1	89	999 15	151 85	1151 00		F. J. Watt	Jno. McParland	Dec. 7.	
Mervine street, bet. Thompson and Master streets.	2 ft. 3 in. x 1 ft. 6 in.	378.	3	25 00	3	25 00	1	87	781 86		781 86	200 14	Geo. I. Deitz	W. A. Hendel	June 22.	
Moore street, between Pearl and Emerald streets.	3 ft. 0 in. x 2 ft. 0 in.	219.	2	25 00	2	25 00	2	13	626 17		626 17	1 03	Geo. L. Deitz	W. A. Hendel	July 18.	

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.			MAN-HOLES.			WELLS'S.			PAYMENTS.			Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final est- imate.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	In man- holes.	In city wells.	In man- holes.	In city wells.	In man- holes.					
Marlborough street, from Beach street to Delaware avenue.....	3 ft. 6 in. x 2 ft. 4 in.	293.	2	487 00	1	825 00	2	82				\$1199 26	81199 26		M. McGrath.	H. C. Eyre.....	1886 Aug. 19.		
Montgomery street, from Seventh to Highseventh streets.....	3 ft. 0 in. x 2 ft. 0 in.	450.			3	25 00	3	89				533 48	925 50		S. R. Franklin.	G. W. Hunsell.....	Aug. 26.		
Meredith street, from Twenty-fifth to Twenty-sixth streets.....	3 ft. 6 in. x 1 ft. 8 in.	461.	2	87 00	3	25 00		8 65				974 20	1844 65		S. R. Franklin.	H. C. Eyre.....	Oct. 4.		
Mulberry street, from Fifth to Sixth streets.....	12 in. pipe.....	434.75	3	87 00	4	25 00		2 15				762 72	1115 71		Jas. Duffy.....	M. C. Hong.....	Oct. 9.		
Meadow street, from Mulberry to Paul streets, to Frankford avenue.....	5 ft. 0 in. x 3 ft. 4 in. 3 ft. 6 in. x 2 ft. 4 in.	1014. 536.75	1 2	95 00 85 00	6 8	25 00	6	6 95				3148 54	7857 03	10305 57	J. P. Colebaugh, W. H. Yonst.....		Oct. 22.		
Moore street, from Eleventh to Twelfth streets.....	3 ft. 0 in. x 2 ft. 0 in.	446.89	3	81 00	3	25 00		2 40				1045 79	1309 53		Jas. McCormick.....	Thos. McCann.....	Nov. 23.		
Morris street, from Broad to Sixteenth streets.....	3 ft. 0 in. x 2 ft. 0 in.	965.	3	81 00	7	25 00		1 85				1987 00	2527 25		E. Y. Shelburne.....	{ McNichol ..... Sweeney .....	Nov. 28.		
Mount Pleasant street, from Twenty-seventh to Twenty-eighth streets.....	2 ft. 3 in. x 1 ft. 6 in.	543.			2	25 00		1 90				1180 57	1180 57		S. R. Franklin.....	P. C. & T. McEntee.....	Dec. 31.		
Nassau street, from Twenty-fourth to Twenty-fifth streets.	2 ft. 3 in. x 1 ft. 6 in.	430.			3	25 00		2 00				985 00	156 37		S. Cox.....	Jas. Noonan.....	May 18.		
Nineteenth street, from Seybert to Thompson streets.....	2 ft. 3 in. x 1 ft. 6 in.	236.			2	25 00		1 89				496 04	496 04		Geo. L. Deitz.....	W. A. Hendel.....	May 31.		
Ninth street, from Tasker to Cross streets.....	3 ft. 3 in. x 2 ft. 2 in.	163.50	3	81 00	1	25 00		2 17				336 00	170 70		Geo. McLenn.....	T. B. Foster.....	Aug. 7.		
Oxford street, from Broad to Sixteenth streets.....	2 ft. 6 in. x 1 ft. 8 in.	880.	3	81 00	6	25 00		1 93				1453 75	2010 40		Geo. L. Deitz.....	W. A. Hendel.....	May 31.		
Oxford street, from Darlen to Tenth streets.....	2 ft. 6 in. x 1 ft. 8 in.	572.	3	81 00	5	25 00		2 23				964 92	1643 86		F. J. Watt.....	M. C. Hong.....	July 2.		



*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN- HOLES.			WELLS'LS.			PAYMENTS.		Total cost.	Excess bills and delinquent.	Inspector.	Contractor.	Date of final acct.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	In arrears.	In city warrants.						
Oxford street, from Frankford avenue to East Hope street.	2 ft. 6 in. x 1 ft. 8 in.	399.50	2	2 887 00	2	2 825 00	2	2 08			\$772 06	\$282 92	\$1034 98		Jos. Hunter.....	W. B. M. Conklin.....	1886 July 22.
Oxford street, from Twenty-second street to Ridgeman avenue, and Twenty-fourth to Twenty-fifth streets.	2 ft. 6 in. x 1 ft. 8 in.	638.			4	25 00		1 97			1376 56		1376 56		Geo. L. Deltz.....	W. A. Hendel.....	Aug. 7.
Ontario street, from Twentieth to Twenty-second streets.	2 ft. 6 in. x 1 ft. 8 in.	980.	3	2 81 00	5	25 00		2 51			2977 53	489 90	2727 83		S. R. Franklin.....	H. C. Eyre.....	Nov. 15.
Oxford street, from Seventh to Twentieth streets.	2 ft. 3 in. x 1 ft. 6 in.	472.	3	1 81 00	7	25 00		1 94			2631 66	246 68	2867 54		Jas. McGill.....	Jno. Noonan.....	Dec. 7.
Preston street, from Haverford street to Lancaster avenue.	2 ft. 6 in. x 1 ft. 8 in.	496.20			3	20 00		1 90			1092 78		1092 78		N. B. Beam.....	Jno. Noonan.....	Mar. 29.
Farrish street, from Twentieth to Corinthian avenue.	2 ft. 3 in. x 1 ft. 6 in.	352.			3	24 00		2 00			679 73	96 27	776 00		S. R. Franklin.....	G. W. Hansell.....	June 23.
Falethorpe street, from Cumberland to York streets.	3 ft. 0 in. x 2 ft. 0 in.	569.50	2	2 80 00	4	21 00		2 17			1425 00	54 81	1479 81		J. P. Colebaugh.....	W. H. Yost.....	June 26.
Parkinson street, from Wylie to Vineyard streets.	3 ft. 0 in. x 2 ft. 0 in.	301.			3	25 00		2 00			777 00		777 00		H. M. Smith.....	P. C. & T. McEntee.....	July 28.
Perot street, from Twenty-fifth to Twenty-sixth streets.	2 ft. 6 in. x 1 ft. 8 in.	483.			3	25 00		3 43			1634 20	623 49	1663 09		A. Ruth { F. J. Watt.....	M. C. Hong.....	Aug. 24.
Passunk av., from Twelfth to Moore st., and on Moore bet. Twelfth and Thirteenth st.	3 ft. 3 in. x 2 ft. 2 in. 3 ft. 0 in. x 2 ft. 0 in.	466.33 440.16	3 3	3 81 00 3 81 00	5	25 00		2 08 2 08			1868 24	630 25	2498 49		T. A. Brackney.....	Thos. McCann.....	Aug. 21.
Page street, from Sixteenth to Seventeenth streets.	2 ft. 6 in. x 1 ft. 8 in.	417.			3	25 00		1 87			854 79		854 79		W. P. Brown.....	Jno. M. Donnelly.....	Sept. 4.
Poplar street, from Sixth to Seventh streets.	3 ft. 0 in. x 2 ft. 0 in.	482.			3	25 00		2 29			916 46	147 83	1064 29		T. A. Brackney.....	P. C. & T. McEntee.....	Oct. 13.

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN- HOLES.		WELLS.		PAYMENTS.		Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final set- tling.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	Per foot.					
Pine street, from Fifth to Sixth streets.....	2 ft. 3 in. x 1 ft. 6 in.	437.	.....	.....	3	\$25 00	.....	2	23	\$1048 61	\$1649 51	117 82	T. A. Brackney.....	P. C. & T. McEntee.....	1886 Nov. 11.
Second street, from Arch street to Ledger place.....	2 ft. 6 in. x 1 ft. 6 in.	250.	.....	.....	2	35 00	.....	3	97	594 59	8468 01	.....	J. Abel, Jr.....	M. C. Hong.....	Mar. 20.
Second street, bet. Thompson and Master streets.....	2 ft. 3 in. x 1 ft. 6 in.	300.	.....	.....	3	81 00	.....	2	27	812 00	812 00	22 22	B. E. Heeven.....	W. B. M. Conklin.....	Apr. 28.
Seventh street, from Hunting- don street to Lehigh avenue.....	3 ft. 0 in. x 2 ft. 0 in.	531.	.....	.....	4	21 00	.....	2	04	1167 24	1167 24	71 96	J. P. Colebaugh.....	W. H. Youst.....	May 13.
St. John street, from Canal to Poplar streets.....	18 in. pipe.....	308.	.....	.....	3	25 00	.....	1	87	650 96	650 96	176 77	{ A. Ruth..... Jas. Duffy..... Wm. Yetter..... S. R. Franklin.....	{ M. C. Hong..... G. W. Hansell.....	June 1. June 3.
Seybert street, from Twenty- third to Twenty-fourth streets.....	2 ft. 3 in. x 1 ft. 6 in.	435.	.....	.....	3	24 00	.....	1	76	833 25	833 25	287 87	{ H. M. Smith..... J. P. Colebaugh.....	T. McEntee..... W. H. Youst.....	July 8. Aug. 3.
Seventeenth street, from Tioga to Venango streets.....	2 ft. 3 in. x 1 ft. 6 in.	549.	.....	.....	2	87 00	.....	1	87	1188 63	1188 63	20 84	{ Wm. Yetter..... S. R. Franklin.....	{ M. C. Hong..... G. W. Hansell.....	June 1. June 3.
Somerses street, from 58 feet west of Kensington avenue to Tusculum street.....	3 ft. 0 in. x 2 ft. 0 in. 2 ft. 6 in. x 1 ft. 6 in.	471.83 468.83	.....	.....	2	87 00	.....	2	13	2090 29	2592 84	412 55	{ Wm. Yetter..... J. P. Colebaugh.....	{ T. McEntee..... W. H. Youst.....	July 8. Aug. 3.
Stillman street, from Columbia to Montgomery avenues.....	2 ft. 3 in. x 1 ft. 6 in.	562.	.....	.....	4	25 00	.....	1	87	1150 94	1150 94	.....	Wm. Yetter.....	P. C. & T. McEntee.....	Aug. 25.
Sixth street, from Cambria to Somerset streets.....	3 ft. 0 in. x 2 ft. 0 in.	585.	.....	.....	3	81 00	.....	2	19	1480 90	1480 35	35	W. J. Davis.....	W. H. Youst.....	Aug. 26.
Stiles street, from Carlisle to Fifteenth streets.....	2 ft. 3 in. x 1 ft. 6 in.	332.	.....	.....	3	81 00	.....	1	90	459 67	571 80	112 13	E. H. Siekels.....	P. C. & T. McEntee.....	Sept. 2.
Second street, from German to Monroe streets.....	3 ft. 6 in. x 2 ft. 4 in.	298.	.....	.....	3	81 00	.....	2	23	677 86	857 54	.....	Geo. McLean.....	Thos. McCann.....	Sept. 27.
Seventh street, bet. Arch and Cherry streets.....	2 ft. 3 in. x 1 ft. 6 in.	326.40	.....	.....	3	25 00	.....	2	24	679 15	806 15	127 01	T. A. Brackney.....	T. McEntee.....	Nov. 29.

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN-BOLES.		WELLS'S.		PAYMENTS.		Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final esti- mate.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Total cost.	Per foot.	Cost per foot.					
Second street, west side, from Lombard to South streets.....	2 ft. 3 in. x 1 ft. 0 in.	352.	3	891 00	2	425 00	.....	2 00	.....	8882 62	8835 00	.....	T. A. Brackney.....	P. C. & T. McEntee.	1886 Dec. 4.
Sixteenth street, from Dauphin to York streets.....	3 ft. 0 in. x 2 ft. 0 in.	527.	3	81 00	3	25 00	.....	2 17	.....	1299 59	1299 59	70 41	D. S. Rorer.....	D. Ryan.....	Dec. 11.
Seventh street, from Norris to Diamond streets.....	2 ft. 3 in. x 1 ft. 6 in.	513.	.....	.....	3	25 00	.....	2 15	.....	1177 95	1177 95	88	Wm. May.....	Jno. M. Mack.....	Dec. 17.
Sixteenth street, from Susquehanna av. to Fontaine street.....	3 ft. 0 in. x 2 ft. 0 in.	771.	.....	.....	5	25 00	.....	2 05	.....	1616 50	1616 50	.....	Jos. Hunter.....	Jno. M. Mack.....	Dec. 18.
Thirty-first street, from Mas- ter to Thompson, to Thirty- second streets.....	3 ft. 0 in. x 3 ft. 0 in. 2 ft. 3 in. x 1 ft. 6 in.	408. 361.	.....	.....	8	25 00	31	5 155 00	3 25	.....	2962 17	.....	J. McGILL.....	H. C. Eyre.....	Nov. 16.
Taney street, from Pennsylva- nia avenue to Brown street.....	3 ft. x 2 in.	775.	2	79 00	5	23 00	.....	2 79	.....	1621 66	2366 25	.....	F. J. Watt.....	W. H. H. Achuff.....	Mar. 29.
Twenty-second street, from Spring Garden to Brandywine streets.....	3 ft. x 2 in.	264.	3	80 00	2	24 00	.....	2 47	.....	495 00	780 08	.....	C. R. Van Horn.....	M. C. Hong.....	Apr. 10.
Twenty-ninth street, from Pop- ular to Cambridge streets.....	3 ft. 0 in. x 2 ft. 0 in.	244.	3	81 00	2	25 00	.....	2 98	.....	556 42	926 92	.....	J. Abel, Jr.....	M. C. Hong.....	Apr. 26.
Twentieth street, from Market to Filbert streets.....	2 ft. 3 in. x 1 ft. 6 in.	405.	.....	.....	3	25 00	.....	2 10	.....	458 50	925 50	.....	N. B. Beam.....	Jno. Noonan.....	Apr. 27.
Thirteenth street, from Arch to Filbert streets.....	2 ft. 3 in. x 1 ft. 6 in.	350.	.....	.....	3	25 00	.....	2 20	.....	653 04	845 00	.....	S. Cox.....	D. & P. McNichol	Apr. 28.
Tyson street, from Eighth to Ninth streets, and on Ninth to Cumberland streets.....	3 ft. 0 in. x 2 ft. 0 in.	482.	2	87 00	4	25 00	.....	2 12	.....	1129 48	1205 84	.....	J. P. Colebaugh.....	T. McCann.....	May 1.
Third street, from Brown to Poplar streets.....	2 ft. 6 in. x 1 ft. 8 in.	588.	.....	.....	3	25 00	.....	2 35	.....	1436 80	1456 80	172 70	A. Ruth.....	T. McEntee.....	May 13.

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN-HOLES.		WELLS.			PAYMENTS.		Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final acct.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	In city water-rates.	In assessments and bills.					
Twenty-fifth street, from Perot to Meredith streets, thence to Twenty-fourth street.....	3 ft. 0 in. x 2 ft. 0 in.	547.	2	\$87 00	4	\$25 00	3	7	\$1325 20	\$901 11	\$2227 31		B. E. Hooven.....	W. B. M. Conklin.	May 17.	
Twenty-second street, from Clayton to Brown streets.....	3 ft. 0 in. x 2 ft. 0 in.	600.	3	81 00	4	25 00	2	15	676 11	963 89	1540 00		John Abel, Jr.....	M. C. Hong.....	May 19.	
Third street, from north of Oxford street to Oxford street, thence to Bodlae street.....	3 ft. 0 in. x 2 ft. 0 in.	421.58	3	81 00	3	25 00	2	22	1022 70	68 20	1091 90		C. Y. Lauderbach.	M. C. Hong.....	May 22.	
Twenty-seventh street, from Master to Jefferson streets.....	2 ft. 3 in. x 1 ft. 6 in.	514.	2	87 00	3	23 00	1	34	1072 16		1072 16	\$0 15	S. Cox.....	F. P. Murray.....	May 26.	
Third street, from Lehigh ave. to Somerset street.....	3 ft. 0 in. x 2 ft. 0 in.	120.	3	81 00	6	25 00	2	19	1275 00	6 68	1281 68		J. P. Colebaugh.....	W. H. Yost.....	June 2.	
Twentieth street, from Chestnut to Sanson streets.....	2 ft. 3 in. x 1 ft. 6 in.	262.			2	25 00		1 89	545 18		545 18	44 69	M. McGrath.....	J. B. Foster.....	June 23.	
Tenth street, from Market to Chestnut streets.....	2 ft. 5 in. x 1 ft. 6 in.	520.50			4	25 00		2 15		1219 07	1219 07		Wm. May.....	John Noonan.....	Oct. 11.	
Twenty-sixth street, from Sedgely avenue to York street.....	2 ft. 6 in. x 1 ft. 8 in.	1057.	3	81 00	6	25 00	2	22	2318 45	560 00	2878 45		M. McGrath.....	H. C. Eyre.....	Nov. 13.	
Tucker street, from Broad to Sixteenth streets.....	3 ft. 0 in. x 2 ft. 0 in.	965.	3	81 00	6	25 00	1	50	1855 00	614 50	2469 50		E. Y. Shelmdre.....	{ Sweeney..... } { McNicol..... }	Dec. 20.	
Twenty-sixth st., from Columbus to Montgomery avenues.....	2 ft. 3 in. x 1 ft. 6 in.	488.			3	25 00		1 83	968 04		968 04	219 96	T. A. Brackney.....	M. C. Hong.....	Dec. 31.	
Thirty-seventh street, from Market to Filbert streets.....	3 ft. 0 in. x 2 ft. 0 in.	254.	2	87 00	2	25 80	2	00	540 00	192 09	732 09		W. P. Brown.....	J. McParland.....	July 6.	
Thompson street, from Norris to Ash streets.....	3 ft. 0 in. x 2 ft. 0 in.	434.	2	87 00	4	25 00	2	21	897 82	248 32	1146 14		John Hunter.....	W. B. M. Conklin.	Aug. 20.	
Twenty-seventh street, from Oxford to Jefferson streets.....	2 ft. 3 in. x 1 ft. 6 in.	502.			3	25 00	5	65 00	1033 56		1033 56		S. R. Franklin.....	D. Ryan.....	Sept. 15.	

*Length and Cost of Sewers Built during the year 1886—(Continued).*

Location.	Size.	Length in feet.	INLETS.		MAN-HOLES.		WELLS'S.		PAYMENTS.			Total cost.	Excess bills and balances.	Inspector.	Contractor.	Date of final estimate.
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Total cost.	In city water.	In assessments and bills.					
Thompson street, from W. College av. to Twenty-sixth st.	2 ft. 3 in. x 1 ft. 6 in.	177.			1	5 00		1	84	\$152 73	\$197 95	\$350 68		James McGill	John Noonan	1886 Oct. 11.
Thirteenth street, from Norris to Diamond streets.	2 ft. 3 in. x 1 ft. 6 in.	533.			4	25 00		2	19	1219 30		1219 30		W. P. Brown	P. C. & T. McEntee	Sept. 15.
Twenty-sixth street, from Ellsworth to Wharton streets.	3 ft. 6 in. x 2 ft. 4 in.	978.	3	81 00	5	25 00		2	39	2013 45	1268 97	3272 42		James McGill	H. C. Eyre	Sept. 27.
Tlogs street, from Frankford avenue to Aramingo Canal.	4 ft. 0 in. x 2 ft. 8 in.	492.08						3	82							
	3 ft. 6 in. x 2 ft. 4 in.	616.						2	42							
Twenty-seventh street, from Ellsworth to Wharton streets.	3 ft. 0 in. x 2 ft. 0 in.	568.45	2	87 00	11	25 00		2	13	4217 14	3060 99	6218 13		B. E. Hooven	{ McGhie } { McTague }	Oct. 8.
	2 ft. 6 in. x 1 ft. 8 in.	326.87						2	29							
Twenty-eighth street, from Brown to Poplar streets.	3 ft. 0 in. x 2 ft. 0 in.	982.	3	81 00	7	25 00		2	08	1948 20	917 36	2865 56		James McGill	J. McParland	Sept. 25.
Wood street, from Seventh to Eighth streets.	3 ft. 6 in. x 2 ft. 4 in.	851.	3	81 00	5	25 00	27	5	62	1866 29	1697 38	3563 67		{ F. J. Watt } { S. R. Franklin }	M. C. Hong	Oct. 8.
	2 ft. 8 in. x 1 ft. 6 in.	412.	3	80 00	4	24 00		1	93	303 11	68 05	971 16		John Abel, Jr.	M. C. Hong	Apr. 13.
Walter street, from Seventeenth street, to 80 feet east of Eighth street.	2 ft. 8 in. x 1 ft. 6 in.	335.			3	25 00		1	97	507 00	227 95	734 95		Jos. Hunter	W. B. M. Conklin	July 2.
Wyalusing street, from Lancaster avenue to Forty-fifth street, to Merino avenue.	3 ft. 3 in. x 2 ft. 2 in.	300.						2	11							
	2 ft. 6 in. x 1 ft. 8 in.	360.50							85							
Wallace street, from Thirty-seventh to Thirty-eighth st.	15 in. pipe.	345.	2	87 00	5	25 00		1	47	1801 06	505 01	2106 07		N. B. Bean	J. McParland	July 6.
Wallace street, from Twenty-second street westward.	2 ft. 5 in. x 1 ft. 6 in.	408.	2	87 00	2	25 00		5	66	923 06		923 06		W. P. Brown	John Noonan	July 22.
	2 ft. 6 in. x 1 ft. 8 in.	147.			1	25 00			07	81 35	247 94	329 29		Wm. Yetter	T. McEntee	Aug. 2.

# Length and Cost of Sewers Built during the year 1886--(Continued.)

Location.	Size.	Length in feet.	INLETS.		MAN-HOURS.		WELLER'S.		PAYMENTS.		Total cost.	Inspector.	Contractor.	Date of final estimate.		
			No. built.	Cost each.	No. built.	Cost each.	No. feet.	Per foot.	Cost each.	In excess of contract bills.					In city warrants.	
West College ave., from Girard avenue to Poplar street.....	2 ft. 6 in. x 1 ft. 8 in.	545.	2	1	\$87 00	2	\$25 00	.....	2	53	\$1308 36	\$207 49	\$1515 85	H. E. Hooven.....	W. B. M. Conklin.	Sept. 6.
Wood street, from Marshall to Seventh streets.....	2 ft. 6 in. x 1 ft. 8 in.	217.	.....	.....	.....	2	25 00	.....	2	28	524 43	20 27	544 70	W. P. Brown.....	P. C. & T. McEntee	Oct. 23.
Water street, from Pine to Dock streets.....	2 ft. 3 in. x 1 ft. 6 in.	653.	2	2	87 00	3	25 00	.....	2	95	1648 90	555 95	2204 85	Geo. McLenn.....	T. P. Smart.....	Nov. 22.
Wayne avenue, from School st. to Maplewood avenue.....	3 ft. 0 in. x 2 ft. 0 in.	300.	2	7	87 00	2	25 00	.....	1	95	897 50	.....	897 50	W. J. Davis.....	D. McMahon.....	Dec. 5.
Wiota street, from sewer in Baring street to Spring Garden street.....	2 ft. 3 in. x 1 ft. 6 in.	425.	3	1	81 00	4	25 00	.....	1	90	987 27	51 28	988 50	F. J. Watt.....	J. McParland.....	Dec. 16.

# Main Sewer Statement for 1886.

Location.	Diameter in feet	Length in feet	Price per foot	PAYMENT.		Total cost.	Contractors.
				In city warrants.	In assess- ment bills.		
Dauphin street, from Twenty-fourth street to Sedgley avenue.....	6 1/2	285.	\$19 50	\$4,759 12	\$603 38	\$8,922 50	F. F. Deehan.
Sixteenth street, from Snyder avenue to north of Millin street.....				1,638 53	2,307 21	10,673 60	M. C. Hong.
Twenty-fourth street, from Dauphin to York streets.....	7	297.	16 80	4,946 48	1,051 14	10,929 60	James Sullivan.
Sansom and Meadow streets, from near Forty-sixth street to near Chestnut street.....	20 x 20	230.08	49 99	7,265 51	1,134 49	19,536 09	Michael O'Rourke.
Annabury street, across Fifth street.....	15 1/2 x 24			8,366 00		7,686 00	James Kennedy.
Sixteenth street, from north of Millin to Wharton streets.....	8 1/2 x 5 1/4	672.06	} 5 75 } 6 00 } 5 50 } 5 00 } 3 25	7,038 66	6,241 31	18,589 97	John S. Dutton.
	8 1/2 x 5	450.25					
	3 x 4 1/2	450.81					
	2 1/2 x 4 1/2	450.18					
Forty-seventh and Brown streets, from the sewer north of Aspen street to the sewer at Forty-eighth street.....	15	470.07	} 35 74 } 12 00	17,109 58	1,178 72	18,288 30	Wm. H. H. Achuff.
		124.00					
New bottom in sewer under Forty-eighth street.				\$46,443 86	\$12,516 25		
Total.....		3,902.11					

# Length and Size of Branch Sewers, Egg-shaped, built during 1886.

SIZE.	5 ft. 0 in. x 3 ft. 4 in.	4 ft. 0 in. x 2 ft. 8 in.	3 ft. 6 in. x 2 ft. 4 in.	3 ft. 3 in. x 2 ft. 2 in.	3 ft. 0 in. x 2 ft. 0 in.	2 ft. 6 in. x 1 ft. 8 in.	2 ft. 3 in. x 1 ft. 6 in.
At public cost.....	feet. 1,837.08	feet. 10,788.25	feet. 4,834.49	feet. 43,972.57	feet. 17,011.90	feet. 23,768.91	
At private cost.....		800.00	800.00	3,045.00		854.00	
Total.....	1,837.08	11,588.25	5,634.49	46,997.57	17,011.90	24,610.91	

## Circular Sewers.

SIZE.	6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	2 feet.
At public cost.....				1,668.87	3,391.75	308.00	406.00
At private cost.....	150.00	678.00	476.00	7,580.00	988.00	678.00	280.00
Total.....	150.00	678.00	476.00	9,229.87	4,379.75	986.00	280.00

## Total Length of Sewers Built during 1886.

DESCRIPTION.	FEET.	MILES.
Main sewers.....	18,518.11	3.507
Branch sewers.....	108,931.92	20.885
Branch sewers (private cost).....	46,448.00	8.114
Total.....	143,918.08	27.276

\* Including Intercepting and Storm-water Sewers.



