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SEVENTH SEMI-ANNUAL C435a
1855
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REPORT

OF THE

Board of Water Commissioners

OF THE

CITY OF CHICAGO

TO THE

Common Council of the City of Chicago.

DECEMBER 31, 1854.

CHICAGO:

DEMOCRATIC PRESS STEAM PRINT, 45 CLARK STREET,
1855.

Withdrawn from Crerar Library

SEVENTH SEMI-ANNUAL REPORT.

*To the Honorable, the Mayor and Common Council
of the City of Chicago :*

The undersigned, in obedience to the requirements of the fourteenth Section of the Act of Incorporation, present the following REPORT to your honorable body, exhibiting a statement of their acts and proceedings for the previous half year ending December 31, 1854, accompanied by statements of the Secretary and Treasurer of the Board; and also the Report of the Superintendent in charge of the work, of which the undersigned have the Supervision. The statements reported herewith will furnish a complete exhibit of the funds and securities in our custody or control; also, the debts due and owing to and from this Corporation, as well as an accurate account of our expenditures.

The undersigned regret that they are not able to report the works in a finished state, but circumstances beyond their control have still retarded the completion of some portions of the works as originally designed, and also the additions which have been deemed necessary.

It is with great satisfaction that we are enabled to state that the 30 inch River Pipe at State Street, referred to in our last report, after some considerable delay, caused by the Contractor being unable to procure workmen, was securely placed in the bed of the river and the water let into it permanently on the 1st of October last.

The supply furnished by this Pipe being very ample, there has been no complaint of short supply of water in the South Division since, excepting when the Engines have been stopped temporarily for repairing.

The Breakwater at the Engine House, though not completed at the close of navigation as was contemplated, and for which the contractors are much in fault, has fully answered our expectations, and has enabled us to keep

up the supply of water, which, without the Protection, would have been seriously jeopardised, if not wholly cut off.

There has been in the past season 5911 feet of water pipes extended, making in all a fraction over $30\frac{1}{2}$ miles pipe laid. Seven new fire Hydrants have been erected. The extension of pipes has been limited by the stock on hand, which of straight pipes is nearly exhausted.

The work at the Lake shore has been attended with great expense and constant difficulties to be overcome. Owing to the great fall of water in the Lake, and the heavy drift of sand which sets in to the shore at the Engine house, great fears were felt that the present Inlet pipe would be rendered useless. In contemplation of a calamity so disastrous to the interests and welfare of the city to a large extent, the undersigned decided to have another Inlet pipe constructed to the well chamber, to be of a larger capacity, and sunk at a depth placing it beyond any contingency of the fall of water in the Lake. This work is now partially finished. The details of the difficulties in this branch of the work will be found more particularly described in the report of the Superintendent.

Another very serious embarrassment to us has been the failure of the Reservoir building, the particulars of which we do not deem it necessary to detail, as they are fully considered in the Superintendents report. The undersigned decided to stay the building this winter with iron rods; and in the spring further expenditures may be found necessary to fully strengthen the building to make it capable of sustaining the weight of the amount of water which will be necessary for the supply of the city. The want of the Reservoir adds very much to the expenses by the increased consumption of coal, wear and tear of the Engines running day and night, and additional labor required.

The undersigned have been frequently petitioned during the past year for the extension of the Water pipes to supply the wants and protect the property of those citizens not now in the water districts, and to which they would have gladly complied if they had had the necessary means to purchase the pipe and pay for the labor. An erroneous opinion seems to prevail with many out of the line of the pipes, that such extensions are due them of right, they having been taxed for account of the works; but the taxes of 1852 and 1853 were levied for account of the interest on the debt. Since the works have commenced operating, none but actual water takers are taxed for the support of the works.

In view of the great necessity for the extension of the works, the Board applied to the Legislature at its present session, for authority to make an additional loan. Should such an authority be granted, the undersigned will proceed to make such extensions from time to time, to such an extent

as from the growth of the city may be necessary and afford the greatest amount of revenue.

The undersigned have also applied to the Legislature for authority to assess all buildings on the line of the pipes which can be supplied with water, regarding it just and equitable that the owners of property on the line of the water pipe should be assessed, their property being protected from fire, and enhanced in value. From the passage of this law, and the extension of the pipes, the revenue must be considerably increased, and the Board will doubtless be enabled to reduce the water assessment to such rates as will secure to all the comfort and convenience of pure and wholesome water, and whose salutary influence on the city has been so frequently demonstrated.

The operation of the rates adopted by us has, on the whole, been satisfactory as to revenue, which has slightly exceeded our calculations as to the probable amount for the fiscal year ending May 1, 1855.

In consequence of the extraordinary repairs and increased expenses of operating, from the want of the Reservoir, there is a deficiency in the revenue of about \$4700, and as the expenditures for interest will probably be increased during the next year, there is reason to suppose that there will be a greater deficiency at the end of the next fiscal year under the present laws regulating the assessments. Should, however, the amendments to the law, which are now before the Legislature be passed, the undersigned think that under the provision subjecting all tenements in the water districts to assessment of regular water rates, the revenue will be more than sufficient to meet the operating expenses and interest on the debt for the ensuing year.

For the details of the work, we would respectfully refer you to the Report of the Superintendent.

To December 31, 1854, the works have cost the sum of \$393,045 32, as follows:

Construction account.....	\$372,352 95
Tool account.....	2,179 81
Bartholemew Hydrants.....	547 03
Stock.....	5,650 67
Pipe Extension.....	4,888 58
Breakwater.....	7,594 00
Office Furniture.....	440 80

From which is to be deducted amounts received for \$393,653 84

Construction account.....	\$204 02
Stock.....	400 00
Tools.....	4 50

Total..... \$393,045 32

The statements of the Receipts and Expenditures, and the condition of the Finances of the Board, to December 31, 1854, will be found in the accompanying Report of the Secretary, to which we would refer you.

All of which is respectfully submitted.

J. H. WOODWORTH,
GEO. W. DOLE,
JOHN C. HAINES,

Board of Water Commissioners of the City of Chicago.

Chicago, January 31, 1855.

STATE OF ILLINOIS, }
COOK COUNTY. } s.s.

I, JASPER A. HOISINGTON, a Justice of the Peace of said County, do hereby certify that the above statement was duly sworn to before me, by the above named Commissioners, this tenth day of February, A. D. 1855.

J. A. HOISINGTON, *Justice of the Peace.*



BOARD OF WATER COMMISSIONERS
OF THE CITY OF CHICAGO,

1854.

In account with GEO. W. DOLE, Treasurer.

Credit,

Month	Day	Description	Debit (\$)	Credit (\$)	Balance (\$)
June	30	By Balance on hand.....			20,153 65
July	6	Received of H. Tucker, Secretary....	848 28		
	12	" " " " " " " " " " " " " " " "	531 06		
	20	" " " " " " " " " " " " " " " "	444 52		
	25	" " " " " " " " " " " " " " " "	210 69		
	29	" " " " " " " " " " " " " " " "	200 50		2,235 05
Aug.	2	" " " " " " " " " " " " " " " "	389 25		
	5	" " " " " " " " " " " " " " " "	270 50		
	9	" " " " " " " " " " " " " " " "	244 60		
	12	" " " " " " " " " " " " " " " "	310		
	17	" " " " " " " " " " " " " " " "	209 80		
	21	" " " " " " " " " " " " " " " "	210 72		
	25	" " " " " " " " " " " " " " " "	208 24		1,843 11
Sept.	1	" " " " " " " " " " " " " " " "	208 48		
	9	" " " " " " " " " " " " " " " "	200		
	13	" " " " " " " " " " " " " " " "	194		
	18	" " " " " " " " " " " " " " " "	262 61		
	21	" " " " " " " " " " " " " " " "	163 79		
	25	" " " " " " " " " " " " " " " "	243 77		
	27	" " " " " " " " " " " " " " " "	80		
	29	" " " " " " " " " " " " " " " "	200 06		1,552 71
Oct.	4	" " " " " " " " " " " " " " " "	267 08		
	11	" " " " " " " " " " " " " " " "	312 20		
	14	" " " " " " " " " " " " " " " "	245 64		
	17	" " " " " " " " " " " " " " " "	273 95		
	24	" " " " " " " " " " " " " " " "	259		
	27	" " " " " " " " " " " " " " " "	324 16		
	31	" " " " " " " " " " " " " " " "	481 51		2,163 54
Nov.	2	" " " " " " " " " " " " " " " "	695 30		
	4	" " " " " " " " " " " " " " " "	405 80		
	7	" " " " " " " " " " " " " " " "	398 20		
	10	" " " " " " " " " " " " " " " "	527 48		
	11	" " " " " " " " " " " " " " " "	333 50		
	13	" " " " " " " " " " " " " " " "	456 41		
	14	" " " " " " " " " " " " " " " "	385		
	15	" " " " " " " " " " " " " " " "	345 50		
	16	" " " " " " " " " " " " " " " "	234		
	17	" " " " " " " " " " " " " " " "	209 50		
	18	" " " " " " " " " " " " " " " "	398 23		
	20	" " " " " " " " " " " " " " " "	220		
	21	" " " " " " " " " " " " " " " "	287 71		
Amount forward.....			\$4,896 63		27,948 06

ACCOUNT CONTINUED.

Table with columns for dates (Nov, Dec), descriptions of transactions, and monetary amounts in dollars and cents. Includes entries for H. Tucker, Secretary, R. K. Swift, and various account adjustments.

Which amount is deposited with the Chicago Marine and Fire Insurance Company.

GEO. W. DOLE, TREASURER.

Chicago, January 31, 1855.

OFFICE OF THE BOARD OF WATER COMMISSIONERS, OF THE CITY OF CHICAGO, January 31, 1855.

To the Board of Water Commissioners of the City of Chicago:

GENTLEMEN:—I herewith submit to you the following statements:

A Statement exhibiting the present condition of the Water Works, as shown by the Books to December 31st, 1854, inclusive.

A Statement showing the Receipts and Expenditures from June 30, 1854, to December 31, 1854, inclusive.

A Statement showing the whole amount of the Receipts and Expenditures from the commencement of the works to December 31, 1854, inclusive.

A Statement showing in detail the whole Expenditures from the commencement of the works to December 31, 1854, inclusive.

The Receipts for Revenue are shown to be as follows:

Table showing Receipts for Revenue: Water Tax (1852 and 1853), Interest and Exchange, Water Rents (Cash received and charged to sundry accounts), and Rents abated.

The Expenditures for Interest and Operating expenses are as follows: Interest on Bonds, Operating Expenses.

Showing a deficiency of Revenue of \$10,772 47, from which properly should be deducted the am't of Rents unpaid on Jan. 1st, 1855, amounting to over 6,000 00, leaving a deficiency of \$4,772 47.

The large amount of expenses have been increased by a considerable amount of extraordinary repairs, and the want of the Reservoir, which increases the expenses of the Engine House very materially.

The inserting of Taps into the pipes, and the introduction of the water into buildings, was commenced on the 15th February, 1854.

The number of Taps inserted to December 31, 1854, is 1095.

The number of Buildings into which the water is introduced is shown by the Register to be as follows:

Table showing number of buildings: South Division (1702), North (528), West (515), Total (2745).

The Assessment Roll to May 1, 1855, is necessarily incomplete, owing to the difficulty of adjusting the Special Rates, and the mistakes and mis-statements made by parties in their applications; and it has been deemed advisable to make up the extension of the Roll generally when payments were made. The Assessment Roll, commencing on 1st May next, will however, be entered up, and will show the amount of income, at that time, for the next fiscal year, and to which large additions may reasonably be expected from new connections.

The Rents on buildings in which the water was introduced prior to May 1st, 1854, were made a special rate to that time, being one quarter of the regular rates, as the supply of water was irregular, and the Engine was running only in the day time. Since the first of May, 1854, full Water Rents have been charged.

In my next report it is my intention to give a detailed statement in regard to the Water Assessments.

There has been no assessment yet levied on buildings which are not supplied with water, but are benefitted by the Fire Hydrants. It was intended to levy this Assessment as soon as the tapping ceased, but in view of the proposed amendment to the law assessing all tenements which can be supplied from the Water Pipes, it has been deferred until the Legislature has taken action on the amendment proposed, as the present tariff of Rates embraces what is termed the Fire Protection; and if all tenements are made liable for assessment of Regular rates, the necessity for the special assessment would be done away with.

No assessment has as yet been levied on buildings in the vicinity of the Public Hydrants which might be deemed benefitted by use of such Hydrants, and it is somewhat doubtful if such an assessment can ever be collected to an amount sufficient to cover the expense of making the assessment, of collecting it, and keeping the Hydrants in repair. There are difficulties in determining who are to be assessed, and how much they are to be deemed benefitted by the use of the Hydrants. The Public Hydrants are a fruitful source of waste of water, and have embarrassed the collection of the Water Rents from parties having the water in their buildings in the vicinity of them. Great difficulty has also been found in keeping them in repair; many of them have been broke down by malicious persons, or abused so as to be rendered useless. Many of them are now frozen up probably for want of drainage. Should the proposed amendment be passed, the necessity for this assessment would also be obviated.

Some of the benefits to be derived from the proposed amendment spoken of, are briefly these:

A large increase of Revenue could be expected from its operation, and

the Rents could be reduced very considerably, thus lightening the burden of the Tax which now falls wholly on actual water takers.

The Croton Aqueduct Department statistics show a large increase of Revenue in the year 1850, when a law similar to the one proposed took effect. The statistics published show that

The Revenue from May 1, 1849, to Dec. 31, 1849, was... \$259,532 97

" " " Jan. 1, 1850, to Dec. 31, 1850, was.... 458,951 87

The law will do away with the numerous frauds already practiced by a large class who pay no rents, but procure their water by stealing, begging, or buying water from those who have the water in their premises. The complaints arising from this evil are very numerous, and it is one which the Board cannot control without the organization of a special police force to be kept constantly on duty. There are a large number of tenants who would gladly pay the assessment if their landlords would introduce the water into their dwellings.

The present rates charged for water being as high as would be policy to fix them, it is obvious that unless a change is made in the law, recourse must be had to direct taxation to meet the deficiency in the Revenue, to pay the interest on the present indebtedness and defray the expenses.

It is impossible to graduate the Water Rates exactly in proportion to the quantity used, but the system adopted thus far has operated well, and no change in which is deemed desirable under the present laws regulating the assessments. All of which is respectfully submitted.

HENRY TUCKER, SECRETARY.

STATEMENT

OF THE AFFAIRS OF THE CHICAGO WATER WORKS, DECEMBER 31, 1854.

	DR.
Geo. W. Dole, Treasurer, balance on his hands,.....\$	375 49
City of Chicago, cost of Court House extension.....	501 06
Office Furniture, total expenditure.....	440 80
Peter Page, advance account final estimate.....	1,517 25
Discount on bonds.....	37,666 79
Interest on bonds.....	7,052 16
United States Marine Hospital, $\frac{1}{2}$ tap inserted for Hospital..	3 00
Bartholomew Hydrants, cost of 29 public Hydrants set....	547 03
Duncan Sherman & Co., coupon ac't, balance in hand to pay	
January interest and back coupons.....	12,210 00
Amount forward.....	\$60,313 58

Amount forward.....	\$60,313 58
Charles Ressig, advance ac't, contract for Iron tank.....	6,450 00
Chicago Hydraulic Co. Purchase, purchase of franchise, etc.,	15,000 00
Construction ac't, total expenditure to Dec. 31, 1854.....	365,920 09
Tools and Fixtures, cost of same on hand.....	2,175 31
Stock, materials etc., on hand.....	5,250 67
Water Pipe Extension, cost of same in 1854.....	4,888 58
Tappan, McBurney & Cheever, Agents, freight paid on rubber pipe.....	37 20
Breakwater at Engine House, expenditures on same.....	7,581 00
Rawson & Bateham, contractors, demurrage on scows paid for their account.....	125 00
Interest on Special loan by City, 10 per cent paid \$1,500 less rec'd from Swift, current ac't, interest \$418 07.....	1,081 93
Charles Cleaver, cut pipe sold him.....	52 10
John Murray, advance ac't coal contract.....	1,300 00
H. P. Moses, paid on his account.....	3 10
City of Chicago, proceeds of 40 special bonds sold by them, less \$1,500 paid Treasurer.....	34,700 00
Discount on Special Bonds issued by City.....	4,750 00
Operating Expenses, total expenses to Dec. 31, 1854.....	18,866 35
	<u>\$528,494 91</u>

	Cr.
Bond account, Water loan Bonds issued.....	\$400,000 00
Quintard Merritt & Co., balance due.....	567 52
Bills payable, Due Chicago Hydraulic Co. May 1, '55, with interest.....	15,000 00
Service Cocks, Excess of receipt over expenditures.....	587 70
Income account, Water Assessments collected.....	26,220 86
Geo. W. Dole, due him ac't service as Commissioner.....	150 00
Mason & McArthur, contractors, balance due them.....	1,506 83
J. H. Woodworth, Due him ac't service as Commissioner...	600 00
J. C. Haines, " " " " " "	750 00
P. O. Donnell, Due him ac't crib work in Lake.....	112 00
Special Loan by City, amount placed to credit of Board with R. K. Swift.....	33,000 00
Special Bond ac't, Special Bonds issued by City.....	50,000 00
	<u>\$528,494 91</u>

STATEMENT OF RECEIPTS AND EXPENDITURES

FROM JUNE 30TH, 1854 TO DECEMBER 31ST, 1854.

R E C E I P T S .

Water Rents.....	\$18,055 13
Service Cocks, for Permits granted.....	\$1,769 60
" " " old metal.....	161 37 1,930 97
Operating Expenses for repairs—Repairing Service.....	27 08
" " " Removing Hydrants.....	22 75
" " " Letting on Water..	4 00 53 83
Construction account, returned freight on Iron....	80 00
City of Chicago, on account.....	1,500 00
" " " " Repairs on River street.....	12 00 1,512 00
Special Loan by City, deposited with R. K. Swift...	3,000 00
Interest on Special Loan, balance interest on current account from R. K. Swift.....	418 07
Tools and Fixtures, wrenches sold.....	4 50
Special Bonds issued by City, proceeds of 10 bonds.....	9,050 00
Interest on Bond account, interest and exchange...	114 29
	<u>\$34,218 79</u>
Add Balance in Treasurer's hands, June 30, 1854,	20,153 65
	<u>\$54,372 44</u>

E X P E N D I T U R E S .

City of Chicago, account work for Court House extension....	\$ 29 69
Construction account.....	21,000 71
Interest on Bonds.....	12,180 00
Bartholomew Hydrants.....	557 03
Tools and Fixtures.....	126 50
Stock account.....	797 18
Operating Expenses.....	11,167 53
Service Cocks.....	925 20
Pipe Extension.....	575 41
Tappan, McBurney & Cheever.....	37 20
Income account.....	11 20
Breakwater.....	5,089 30
Interest on Special Loan.....	1,500 00
	<u>\$53,996 95</u>
Add Balance in Treasurer's hands Dec. 31, 1854.....	375 49
	<u>\$54,372 44</u>

STATEMENT OF RECEIPTS AND EXPENDITURES,

FROM COMMENCEMENT OF THE WORKS TO DECEMBER 31st, 1854.

RECEIPTS.

City of Chicago,.....			\$3,642	
Special Loan by City of Chicago,.....			33,000	
Bonds			365,030	
Interest on Bonds, .	Water Tax for 1852,	10,313 70		
" " "	" " 1853,	16,608 33		
	Interest and Exchange Received,	14,419 02	41,341 05	
Water Rents,.....			26,203 64	
Service Cocks,.....			4,357 57	
Quintard, Merritt & Co., collections for their ac't.			21 56	
Construction Account, Use Dock at Pipe Yard,	10 00			
	Rents from Reservoir Lot,	22 00		
	Returned Freight on Zinc,	42 26		
	" " on Lead,	39 76		
	Repairs on Scow,.....	10 00		
	Returned Freight on Iron,	80 00	204 02	
Chollar, Sage & Dunham, Pipe sold for their ac't.,			80 61	
Stock Account, Steam Pump sold,.....			400 00	
Operating Expenses, Coal Sold,.....	381 17			
	Repairing Services,.....	71 37		
	Removing Fire Hydrants,	22 75		
	Shutting off and letting on Water,....	4 00	479 29	
Tools and Fixtures, Hydrant Wrenches,....			4 50	
City of Chicago,.....			1,500 00	
Interest on Special Loan,.....			418 07	
Special Bonds used by City,.....			9,050 00	
			<u>\$485,732 31</u>	

EXPENDITURES.

City of Chicago,.....	\$4,143 06
Office Furniture,.....	440 80
Interest on Bonds,.....	59,550 00
Bartholomew Hydrants,.....	547 03
Tools and Fixtures,.....	2,179 81
Stock,.....	5,650 67
Water Pipe Extension,.....	4,888 58
Amount forward,.....	\$77,399 95

Amount forward,.....	\$77,399 95
Tappan, McBurney & Cheever,.....	37 20
Income Accounts—Rents abated,.....	11 20
C. Cleaver, Pipes sold him,.....	52 10
Interest on special loan,.....	1,500 00
Breakwater,.....	7,594 00
Quintard, Merritt & Co., for collection,.....	21 56
Chollar, Sage & Dunham, " "	80 61
Construction Account,.....	372,352 95
Operating Expenses,.....	18,784 38
Commission on 1st Loan,.....	3,750 00
Service Cock Account,.....	3,772 87
	<u>\$485,356 82</u>
Add balance in Treasurer's hands Dec. 31, 1854,	375 49
	<u><u>485,732 31</u></u>

STATEMENT IN DETAIL

SHOWING THE EXPENDITURES FROM THE COMMENCEMENT OF THE WORK
TO DECEMBER 31ST, 1854.

CITY OF CHICAGO.

Paid back amount advanced,.....	\$3,630 00
Expenditure on Court House Extension,.....	501 06
Repairs on River street,.....	12 00—4,143 06

OFFICE FURNITURE.

Desks, Tables, etc.,.....	182 44
Stoves,.....	27 36
Notarial Press and Seal,.....	38 50
Letter Press,.....	10 00
Safe,.....	176 50
Clock, 4,50—Tin Ware, 1,50.....	6 00—440 80

INTEREST ON BONDS.

Interest coupons to Jan. 1, 1855, inclusive,.....	59,250 00
Exchange paid on Drafts,.....	300 00—59,550 00
Amount forward,.....	\$64,133 86

Amount forward,.....

\$64,133 86

BARTHOLOMEW HYDRANTS.

30 Hydrants set,.....	\$557 03	
Less 1 charged to City account,....	<u>10 00</u>	547 03

TOOLS AND FIXTURES.

Iron Tongs, 10 53, Tin Pump, etc. 2 50,.....	13 03	
Rope, Chain and Blocks,.....	124 99	
Globe Lamp, etc., 13 50, Oil Cans, etc., 7 63.....	21 13	
Miscellaneous Tools for Pipe laying,.....	48 66	
Stop Cock, Iron Cover,.....	3 00	
Pile Driver, \$60, do. \$110 68.....	170 68	
2 Scrapers, \$14, 3 extra Valves, \$35 70.....	49 70	
18 Hydrant Wrenches, \$42, 9 Stop Cock, do., \$72 83	114 83	
Drill Machine, \$41 15, 3 Wrenches, \$7,.....	48 15	
6 Oak Pails, \$3 75, Gage and Bob, 69c.,.....	4 44	
250 lbs. Bolts and Washer, \$32, 2 Hoisting Gins, \$25,	57 00	
Bellows, Anvil, etc., \$25, Truck \$3, Timber \$5,..	33 00	
Stoves at Eng. House \$42 85, Fire Tools at E. H. 60 24-103 09		
Platform Scales, \$50, Scale Beams, etc. \$14,....	64 00	
3 Grates, 1 92, 4 Ladles \$3, 4 Furnaces \$32,		
5 Kettles, \$4 50,.....	41 42	
Miscellaneous, \$13 50, Tools Eng. H. \$5 25,....	18 75	
2 Copper Pumps, \$20, Carpenter Benches, etc. \$13 50-33 50		
2 Tool Houses, \$60, 5 Wheelbarrows, \$10,.....	70 00	
Boring Auger, \$20, Grindstone, \$3, Bolts, \$4, Pump \$1-28 00		
Wrenches and Screw Drivers,.....	3 50	
Water Indicator. \$80, 2 Hydraulic Presses, \$850,	930 00	
Hydrant Wrenches, \$82 50, Picks, etc., \$5,....	87 50	
Grindstone, \$3 44, Boat Pump, \$3,.....	6 44	
Tools, etc., for Engine House,.....	17 00	
Hydraulic Jack,.....	68 00	
Wheelbarrows, \$19 50, 4 Shovels, \$4,.....	23 50	
	<u>2,183 31</u>	
Less Stop Cover charged City,.....	3 50	2,179 81

STOCK.

Reservoir Roof Iron,.....	686 90	
Tank Rivets,.....	213 18	
309,733 lbs. Pipes, etc.....	<u>7017 01</u>	
		\$7,917 09-\$66,860 70

Amount forward.....

\$7,917 09 66,860 70

3,725 lbs. Zinc,.....	260 26	
13,128 lbs. Lead,.....	796 33	
Steam Pump, etc.....	600 00	
12 Fire Hydrants,.....	295 80	
Nails, \$5 24, Bolts and Washer, \$14.....	19 24	
10 Upper Hydrant Boxes,.....	100 00	
16 " " " unfinished,.....	42 00	
6 Stop Cock Boxes,.....	18 00	
10 Lower Hydrants Boxes,.....	40 00	
1 16 inch Stop Cock,.....	190 00	
2-8 " " " ".....	122 84	
Fence, Shed, and Shop at Yard,.....	70 00	
Packing, \$4, Wheelbarrows, \$10,.....	14 00	
Timber, \$50, 18 Boxes, \$36, Wood Horses, \$6,.	92 00	
Boat, \$60, Scow, \$10,.....	70 00	
Blacksmith Shop and Shed at Engine House,...	35 50	
1100 feet Flooring,.....	25 00	
Horses, Waggons, etc.....	340 00	
Plate and Patterns for Hydrants,.....	54 60	
	<u>11,102 66</u>	

Deduct 155,613 lbs. Pipe used in

extension, etc..... \$3,644 48

" 11,668 lbs. Lead used in

extension, etc..... 701 43

Boiler and Steam Pump sold... 125 00

Sheds etc., at Pipe Yard, sold,.. 60 00

7 Fire Hydrants used in extension, 172 90

Upper and Lower Boxes, do. 99 00

13,170 lbs. Roof Iron used,..... 436 00

29 Kegs Rivets for Tank,..... 213 18

5,451 99 5,650 67

WATER PIPE EXTENSION.

Labor,..... 958 75

Water Pipe,..... 3,277 69

Lead,..... 387 43

Coal,..... 7 20

Tools and Repairing,..... 25 61

Fire Hydrants,..... 147 90

Boxes for same,..... 84 00

4,888 58

Amount forward.....

\$7,399 95

Amount forward.....		77,399 95	
TAPPAN, McBURNEY & CHEEVER.			
Freight paid on Rubber Pipe.....		37 20	
INCOME ACCOUNT.			
Water Rents abated.....		11 20	
CHARLES CLEAVER.			
Pipes sold him.....		52 10	
INTEREST ON SPECIAL LOAN.			
Paid Interest due Dec. 1, 1854.....		1,500 00	
BREAKWATER.			
Rawson & Bateham, Estimate, \$6,615, Advance,			
\$125.....	\$6,740 00		
Illinois Stone and Lime Co. for Stone.....	754 00		
P. O. Donnell, Crib Work, \$212, Less unpaid,			
\$112.....		100 00	7,594 00
QUINTARD, MERRITT & CO.			
Paid them for account collections.....		21 56	
CHOLLAR, SAGE & DUNHAM.			
Paid them for account collections.....		80 61	
CONSTRUCTION ACCOUNT—OFFICE EXPENSES.			
Printing.....	52 25		
Stationery and Account Books..	137 65		
Cleaning Office.....	66 21		
Gas Fixtures.....	9 94		
Signs.....	5 00		
Moving Safe.....	3 50		
Miscellaneous Petty, \$86 07, less			
Guage, 50.....	85 57		
Rent.....	527 09		
Postage.....	22 44		
Fuel.....	65 36		
Gas.....	23 06		
Railing and Coal Boxes.....	21 98	1,020 05	
ENGINEERING ACCOUNT.			
Survey of Buildings.....	75 00		
Draughting and Copying.....	952 00		
Tools, etc.....	27 61		
Amount forward.....	\$1,054 61	\$1,020 05	\$86,696 62

Amount forward.....	\$1,054 61	\$1,020 05	\$86,696 62
Expense making Surveys.....	21 05		
Miscellaneous.....	96 91		
Salaries as follows:			
W. I. McAlpine, C. E. to			
Jan. 1, 1854.....	\$2,910 26		
E. W. Smith, R. E. to			
May 3, 1854.....	5,673 46		
G. G. Lansing, A. E. to			
Oct. 15, 1852.....	326 66		
B. F. Walker, A. E. to			
March 31, 1853.....	457 50		
W. M. Cammon, A. E. to			
Oct. 15, 1853.....	1,249 98		
O. Kochler, Rodman, to			
Oct. 20, 1852.....	160 00		
Clerk Hire.....	583 04	11,360 90	
Stationery.....		259 11	
Printing.....		91 75	
Postages.....		11 84	
Horses, Waggon, and			
Keeping, etc.....	547 70		
Less Horse, etc.,			
Sold.....	\$96 25		
" " "			
charged stock, 150 00—	246 25	301 45	
Carriage Hire,...		16 00	
Cost of Boat, Repairs, etc.	116 55		
Less Boat ch'd Stock,..	60 00	56 55	
Superintendence, Plans,			
Duplicate, Eng.....		50 00	13,320 17
INCIDENTAL EXPENSES.			
Traveling Expenses.....	185 48		
Statistics.....	67 06		
Abstract of Buildings,..	212 00		
Recording Deeds.....	2 40		
Miscellaneous.....	50 65		
Attorney's Fees.....	995 00		
Express charges.....	69 57		
Telegraph Dispatches,..	46 13		
Amount forward.....	\$1,628 29	\$14,340 22	\$86,696 62

Amount forward,.....	1,628 29	\$14,340 22	\$86,696 62
Printing Bonds and Reports,	460 38		
Miscellaneous Printing,...	28 50		
Advertising,.....	99 48	2,216 65	

RESERVOIR LOT SOUTH DIVISION.

Cost of Lot,.....	8,750 00		
Labor filling Lot,.....	214 74		
Sidewalk on Quincy street,	37 06		
County Tax for 1852,....	37 48	9,039 28	

ENGINE HOUSE LOT.

Cost of Lot,.....	3,000 00		
Labor Grading,.....	372 93		
Lumber for Fence,.....	156 47		
Carpenter Work on Fence,	86 31		
Nails for Fence,.....	22 34	3,638 05	

WELL CHAMBER.

Examination for Bottom,.	69 58		
I. N. Ferrell on Estimates,	10,153 40		
Superintendence \$222, Labor \$18 32,	240 32		
Iron Work,.....	\$218 48		
Less Augur ch'd Tool ac't. 20 00	198 48		
Timber, Lumber and Planks,	47 24		
Carpenter Work,.....	162 88		
Expenses pumping out well,	484 85		
Cleaning Well,.....	46 72		
Stone Coping, \$374 66, Cartages, \$2 90,—	377 56	11,781 03	

PIPE LAYING ACCOUNT.

Tools and Fixtures,	\$741 75		
Less Tools, etc. ch'd Tool ac't. 192 38	549 37		
Repairing Tools,.....	131 76		
Labor....	8,221 61		
Miscellaneous,.....	292 00		
Coke and Charcoal,....	310 05		
Packing, \$231 91, less ch'd stock, \$4	227 91		
Pig Lead,.....	12,446 64		
Repairing Stop Cocks,...	102 36		
Horse and Waggon and expenses,	\$316 85		
Amount forward,	\$316 85	\$22,281 70	\$41,015 23 \$86,696 62

Amount forward,	\$316 85	\$22,281 70	\$41,015 23	\$86,696 62
Less Horse, etc. ch'd st'k. 150 00		166 85	22,448 55	

MASON WORK—ENGINE HOUSE.

C. O. Connor, on Estimates,	7,085 26		
Stone Basin,.....	65 00		
Baldwin & Moss, for work, etc.	4,794 18		
Stone \$30 11, Iron, 60,...	30 71		
Mason Work, etc.....	289 42	12,264 57	

IRON ROOF ENGINE HOUSE.

Iron purchased.....	73 86		
Patterns.....	29 57		
John Clark on estimates..	1,193 31		
Do extra work..	200 82		
Iron furnished.....	733 16		
Painting.....	149 90		
Iron Work.....	12 47	2,393 09	

HYDRANT BOXES.

Lumber.....	358 02		
Nails 24 99, drayage 1 12	26 11		
Carpenter work.....	831 61		
Iron work and hardware..	837 78		
Labor 29 25, painting 74 30	104 05		
Deduct—10 upper and 10 lower boxes in stock,	140 00		
16½ dressed and lumber	42 00	182 00	1,975 57

INLET PIPE.

C. Ressig, for Iron End...	203 86		
J. N. Ferrill, on estimates,	1,154 90		
Nails and spikes.....	26 73		
Carpenter work.....	314 46		
Lumber.....	505 32		
Iron work and Hardware	588 54		
Less charged Tool account	1 50	587 04	
Labor.....	2,261 83		
206 feet new pipe.....	257 50		
Wooden Stop Cock.....	70 00		
Piles 80 50, dred'g 533.	613 50		
Towing 297 50, pumping 276 02	573 52		

Amount forward	\$6,568 66	\$80,097 01	\$86,696 62
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Amount forward,	\$6,568 66	\$80,097 01	\$86,696 62
Miscellaneous	103 84		
Teaming 12 50, stone 355,	367 50		
Use of Scow	162 50		
Labor on Trench	391 50		
Deduct—Boxes etc charg-	7,594 00		
ed stock	42 00		
Wheelbarrows, tool ac't	20 00	62 00	7,532 00

CRIB.

J. N. Ferrill, on estimates	1,093 93		
Labor 510 62, dockage 97 50	608 12		
Iron work and Hardware			
346 14, less charged tool			
account 9 75	336 39		
Planks etc., 597 38, less			
lumber charg'd stock 50	547 38		
Dredging and pile driving	718 12		
Tow boats used	373 00		
Carpenters work 404 29			
less scow charged stock 10	394 29		
Ropes etc., 123 50, less ropes			
charge tool ac't 31 10	92 40		
Teaming	56 50		
Stone	292 50		
Use of Scow	162 50	4,675 13	

TRENCHING AND BACKFILLING.

Trenching to Aug. 16, '52	355 47		
J. & H. Fuller on estimate	20,473 09		
Labor 277, spikes etc. 42 63	319 63	21,148 19	

CARTING PIPES.

M. Casey for carting	36 90		
J. & H. Fuller on estimate	1,046 06		
Extra carting	129 57	1,212 53	

STOP COCKS.

H.P. Moses on Estimates .	4,042 51		
F. & J. Townsend for patterns,	50 00		
Patterns	154 25		
Extra work	31 41		
2 Cocks from New York.	104 16		
Amount forward,	\$4,382 33	114,664 86	\$86,696 62

Amount forward,	\$4,382 33	114,664 86	\$86,696 62
Less 1, 24 inch, & 1 16 } inch, charged to other ac't }	680 18	3,702 15	

CARPENTER WORK ENGINE HOUSE.

Poinier & Milwain on Est.	1,563 87		
Carpenter work, labor & nails.	178 47		
Lumber	16 06		
Less flooring for crib 60 72, }	1,758 40		
" " Stock 25 }	85 72	1,672 68	

PIPE YARD.

Labor	4,256 13		
Carpenter work \$71 07,			
Cartage \$4 12	75 19		
Lumber etc., \$284 95, less			
shop fence charged stock \$70	214 95		
Scales \$84 48, less balance			
charged tool ac't \$50..	34 48		
Valve Plates \$19 53, mis-			
cellaneous \$89	108 53		
Iron work \$82 61, Pack-			
ing and Oil \$51 31	133 92		
Tools & repairing \$86 26,			
less tools charged tool			
account \$38	48 26		
Rent	689 50		
Use of Hydraulic Presses.	387 53		
Hardware &c. \$22 29, less			
sundries charged stock \$19 24	3 05		
Drill Machine	41 15		
Deduct drill machine char'd	5992 69		
Tool account	41 15	5,951 54	

WATER PIPES.

Inspection at Troy	271 87		
Cost of 3191-1718 tons from Troy	142,012 94		
" 10-517 " Chicago,	864 22		
Less 8800 lb sold	131 99	143,149 03	
" 306,796 ch'd stock	6873 29	7,005 28	136,143 75
Amount forward		\$262,134 98	\$86,696 62

Amount forward..		\$262,134 98	\$86,696 62
SALARIES.			
A. S. Sherman, Commis- sioner from April 1, '51, to Feb. 1, '54...	2,833 33		
H. G. Loomis, do. do..	3,400 00		
J. B. Turner, do. do..	1,700 00		
H. Tucker, Sec'y May 10, '52, to Feb. 1, '54.	2,072 32	10,005 65	
HYDRANTS.			
Nugents & Owens on estimate,	1,988 24		
F. & J. Townsend, hydrant for patterns.....	18 00		
Setting Hydrants \$360 82			
Bolts \$4 75.....	365 57	2,371 81	
ENGINE HOUSE.			
Lumber \$139 54, less charg'd stock \$35 50..	104 04		
Hardware and Nails.....	21 40		
Carpenter work.....	6 00		
Superintendence \$472 50			
Labor \$745 13.....	1,217 63		
Miscellaneous.....	82 92		
Iron and Iron works \$425 22, less tools charged to tool ac't, \$158 79.....	266 43		
Fire Brick.....	20 63		
Stone for foundation of Boiler	177 63		
Stone Flagging laid.....	520 00		
Zinc Cornice on Tower...	193 32		
Resetting Boiler.....	21 00		
Painting.....	12 57		
Gas Pipes for heating...	83 68	2,727 25	
STEAM ENGINE AND PUMPS.			
Inspection in New York..	28 00		
Cost of Low Pressure Eng.	24,500 00		
Water channel extra....	291 73		
Extra valves cut off, etc..	1,215 64		
Freight & expense on same	96 05		
Smoke Pipe and Screen.	84 25		
Amount forward..	\$26,215 67	277,239 69	\$86,696 62

Amount forward..	\$26,215 67	277,239 69	\$86,696 62
Packing.....	13 88		
Paint and Putty.....	8 31		
Copper work.....	16 40	26,264 26	
STOP COCK BOXES.			
Carpenter work.....	275 34		
Iron work and Nails....	219 69		
Lumber \$37 32, Labor \$14	51 32		
	546 35		
Less 6 boxes ch'd stock \$18 }	21 00	525 35	
" Iron cover do. 3 }			
MASON WORK, RESERVOIR.			
Peter Page, on estimate..	17,570 40		
" advance ac't work	1,517 25		
Stone column for windows	200 00	19,287 65	
RIVER PIPES.			
C. Ressig making Adams and State st. pipe.....	683 34		
Galena R. R. Co., making Kinzie St. Pipe.....	316 24		
Iron furnished Adams and and State sts. pipes....	975 85		
Do. do. Kenzie st....	281 21		
C. Ressig, repairing S. st. pipe,	575 80		
Do. for cost of 30 inch pipe,	3,454 79		
S. S. Durfee, laying same	2,000 00		
Iron work.....	84 64		
Trenching.....	100 25		
Dredging.....	1,474 81		
Blocks rope, etc., \$151 10 less ropes ch'd tool ac't, \$43 10	108 00		
Lumber.....	24 91		
Labor.....	574 70		
Cartages.....	39 85		
Use of Canal Boats.....	235 00		
Stone.....	548 75		
Tools and Hardware.....	20 21		
Sign Posts.....	12 34		
Repairs on 30 inch Pipe.,	116 30		
Packing, Canvass & Paint	15 71		
Amount forward.....	\$11,642 70	323,306 95	\$86,696 62

Amount forward....	\$11,642 70	323,300 95	\$86,696 62
Iron and Brass Castings..	24 25		
Testing	7 50		
292 lbs. lead used in joints	16 79		
Deduct old river pipe used } at Reservoir.....	11,691 24 145 40	11,545 84	

DUPLICATE STEAM ENGINE.

H. P. Moses for Engine..	6,100 00		
Brick work around boiler,	289 11		
Pig Zinc.....	20 24		
Nail Rods.....	11 48		
Iron work.....	281 56		
Miscellaneous.....	12 98		
Repairing, etc.....	116 62		
Iron Castings.....	359 25		
Fitting up check valve...	23 19		
Rubber valves & packing.	17 13		
Copper work.....	85 56		
2 Counter balance valves.	150 00		
New boiler & Smoke pipe.	1,163 05		
Hauling same.....	10 00		
Testing Boiler.....	7 50		
Masonry for same.....	328 51		
Fire Bricks.....	20 28		
Copper works.....	38 59		
Work on Counter balances	3 10	9,038 15	

ZINC, COVERING ROOF ENGINE HOUSE.

Patt rn for Cornice,.....	13 13		
Iron work, etc.,.....	200 55		
Carpenter work.....	424 13		
Lumber	87 74		
Thos. George, on estimate	499 07		
Zinc used.....	1,066 32	2,290 94	

RESERVOIR BUILDING.

Superintendence	313 50		
Labor, etc.....	58 34		
Iron and Iron works.....	717 36		
Nails and Spikes.....	26 71		
Cartage	16 95		
Amount forward,	\$1,132 86	346,181 88	\$86,696 62

Amount forward,.....	1,132 86	346,181 88	\$86,696 62
Painting,.....	8 67		
Patent Roofing,.....	360 00		
Repairing Roof after fire,.	175 00		
16,861 lbs. Pipe used,...	379 37		
1,672 lbs. Lead used,...	108 68		
Old River Pipe used,....	145 40	2,309 98	

CARPENTER WORK RESERVOIR.

Lumber and Plank,.....	1,008 37		
Carpenter Work,.....	131 90		
Doors and Windows,....	471 75		
Carpenter Work on Floors,	215 81		
Lumber for do.	95 17		
Nails and Hardware,....	22 75		
Glazing on account,.....	200 00		
Miscellaneous,.....	8 76		
Carpenter work on Cornice,	938 88		
Lumber for do...	369 76		
Oil and Lead,.....	8 05		
Scroll Sawing,.....	22 75		
Nails,.....	47 00	3,540 95	

RESERVOIR TANK.

Cost of Centre Rings,....	824 83		
Patterns,.....	151 96		
Iron,.....	5,938 42		
Foot Valve,.....	207 95		
Iron Work,.....	93 75		
Carpenter Work on casing,	646 01		
Lumber for casing,.....	93 49		
Packing,.....	12 80		
Scroll Sawing,.....	13 25		
Painting,.....	4 00		
Rivets,.....	213 18		
C. Ressig, advanced him,.	6,450 00	14,649 64	

STANDING COLUMN, ETC.

Cartage,.....	72 00		
Carpenter Work,.....	33 25		
Iron Work,.....	\$926 17	} 893 42	
Less Bolts to Tool ac't...	32 75		
Amount forward,.....	\$998 67	366,682 45	\$86,696 62

Amount forward,.....	\$998 67	366,682 45	\$86,696 62
Labor,.....	875 06		
Painting, Oil and Tallow,	110 34		
Pipes for column,.....	493 01		
Pipes for connection,....	815 15		
Finishing, Bolts and Nuts,	449 10		
Freight on do.....	83 31		
Iron purchased,.....	703 72		
12 inch Flange Cock,....	124 81		
24 inch Flange Cock,....	490 18		
Quicksilver and Packing,.	25 85		
Lumber,.....	5 25		
Water Guage and Fixtures,	59 65		
Use of Block and Tools,..	25 00		
Deduct amount unpaid, } to Quintard, Merritt & Co.. }	5,259 10 234 68	5,024 42	

IRON ROOF RESERVOIR.

2192 lbs. Iron purchased,	93 16		
Drawings,.....	9 00		
Mason & McArthur on estimate,.....	1,631 83		
13,170 lbs. Iron furnished,	418 92		
	2,152 91		
Deduct amount unpaid to } Mason & McArthur, }	1,506 83	646 08	\$72,352 95

OPERATING EXPENSES—INCIDENTALS.

Advertising,.....	112 50		
Printing,.....	23 60		
Map of Chicago,.....	10 00		
Use of Engine No. 3,....	12 00		
Telegraphs \$10 50, Express 75,.....	11 25		
Petty Expenses,.....	9 28		
E. Peck, service to June 30, 1854,.....	315 00		
Do. service in matter of city,	400 00		
Judd & Frink do. do...	300 00	1,193 63	

ENGINE HOUSE.

Oil, Tallow, etc.,.....	307 21		
Amount forward	\$307 21	\$1,193 63	\$459,049 57

Amount forward,	\$307 21	\$1,193 63	\$459,049 57
Furniture, Mattresses, etc.,	68 25		
Cleaning Well,.....	14 00		
Engineers, Firemen, etc...	2,528 82		
Repairing Machinery,....	70 69		
Carpenter Work,.....	98 55		
Tools and Fixtures,.....	211 65		
Ropes and Tackles,.....,	196 09		
Iron and Brass Work,....	182 44		
Grate Bars.....	214 00		
Lumber for Coal Floors, etc.	96 16		
Stationery,.....	25 63		
Quicksilver, Sand, and Emery Paper,	17 51		
Packing and Waste,.....	97 75		
Miscellaneous,.....	32 77		
Rubber Boots.....	22 00		
Painting,.....	84 23		
Repairing Masonry,.....	26 80		
Lead for repairing connections,	162 98		
Coal,.....	4,917 33	9,374 79	

OFFICES.

Gas consumed and Gas Fixtures,	28 84		
Cleaning Offices to Dec. 1, '54,	53 12		
Clerk Hire.			
J. F. Wait, in Jan and Feb. '54,	40 00		
W. R. Larabee, to Dec. 1, '54,	230 73		
J. H. Bross, " "	583 33		
Counter in Office,.....	18 00		
Rent to Nov. 1, '54,.....	237 50		
Printing,.....	133 10		
Stationery,.....	62 61		
Miscellaneous petty items,	18 27		
Coal,.....	12 93	1,418 43	

SALARIES.

Henry Tucker, Sec'y to Dec. 1, '54,	1,345 50		
B. F. Walker, Supt. do.	1,244 65		
H. G. Loomis, Com'r to March 1, '54,	100 00		
A. S. Sherman, " " April 1, '54,	166 67		
J. B. Turner, " " March 31, '54,	89 00		
Amount forward,.	\$2,945 82	\$11,986 85	\$459,049 57

Amount forward,	\$2,945 82	\$11,986 85-459,049 57
J. H. Woodworth from March 1, '54, to Dec. 31, '54,	1,000 00	
Geo. W. Dole, Com'r. from March 31, '54, to Dec. 31, '54,	442 43	
J. C. Haines, do., from April 1, '54 to Dec. 31, '54,	750 00	
Deduct Salaries unpaid, viz.	5,138 25	
Geo. W. Dole, Com'r. \$150 00		
J. H. Woodworth, " 600 00		
J. C. Haines, " 750 00	1,500 00	3,638 25

REPAIRS, ETC.

Labor to Dec, 1, '54,	2,098 01	
Repairing Tools,	16 00	
Rent Pipe Yard to Oct. 1, '54,	258 66	
Labor at Pipe Yard,	64 50	
Expense of Horse and Waggon,	155 81	
Miscellaneous,	29 98	
Packing, etc.	11 23	
Iron Work, Hardware, etc	69 72	
Watchman at Kenzie street Pipe,	31 66	
Covers for Stop Cock, etc.	22 40	2,757 97
Repairing Service,	134 15	
Account Pumping at old works.	600 00	
	\$19,117 22	
Deduct amount due Quintard Merritt & Co.	332 84	18,784 38

DISCOUNT ON BOND ACCOUNT.

Commission paid on first Loan,	3,750 00
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SERVICE COCKS.

Cost of Taps,	2,045 85
Press for Testing,	271 50
Tappers Boxes,	576 43
Expenses Testing,	45 09
Inserting Taps,	834 00
Total,	<u>3,772 87</u>
	<u>\$485,356 82</u>

SUPERINTENDENT'S REPORT.

OFFICE OF THE CHICAGO WATER WORKS, }
January 1st., 1855. }

To the Board of Water Commissioners :

GENTLEMEN—In making my annual Report at this time, I regret exceedingly that I am not able to present the works under your charge in as perfect a condition as I could wish. I had hoped, ere this, to have been able to announce to you the completion of the works, and that they were all in perfect order. But we have had many difficulties to contend with, and some of a very serious nature. The extreme heat and the sickness which prevailed during the summer months, very much retarded the progress of that portion which was let to contractors, and we have not as yet been able to make up for the time thus lost.

When I took charge of the operating department on the first of February last, it had been ascertained, by letting the water into the river pipe at State street, that it was imperfect, having been damaged by a vessel dragging her anchor under it. The pipe had been taken up, repaired and sunk lower, but the connections on either side had not been made. There had also been an eight inch main put down temporarily across the north branch at Kinzie street, connecting with a six inch pipe leading from the main on Wolcott, which enabled us to test the pipes partially, and also to furnish a considerable supply for extinguishing fires and for other purposes.

In testing the pipes, we found a number of places where spaces had been left for fire hydrants in the summer of 1852, on account of not having branches to put in at the time. For some reason the location of the hydrants were changed by the person having charge of the pipe laying department the summer following, but the spaces so left were overlooked,

This caused considerable delay in testing the pipes, the ground being frozen to such a depth that it was very difficult to make excavations. The spaces left as above stated were as follows :

One at the corner of Lake and State streets,	S. D.
“ “ “ “ Lasalle,	“
“ “ “ “ Wells,	“
“ “ “ Wells and Indiana,	N. D.
“ “ “ Lake and Clinton,	W. D.

On the 5th of February the connections were completed with the river pipe at State street. On the 6th, we had the pump-well cleaned and the pipes tested in the north and west divisions of the city. On the 17th, I had tested all the pipes which had been laid in the city, and with a few exceptions, they were found satisfactory.

We had some difficulty with the main pipe connecting with the channel of the large Engine, it being of cast iron and put together with flanges. The vibration from the working of the pumps caused it to crack near the flanges, some of which have been very difficult to repair, it being almost impossible to get at them. They were, however, repaired by encircling them with wrought iron sleeves made in two parts, bolted to the flanges, and caulked with lead. A much safer way would be either to make them of boiler iron, or put them together with bells in the same manner as the street pipes.

Notwithstanding the extreme cold weather which we had last winter and the great depth which the ground was frozen, our fire hydrants were so well protected that we had but very little trouble from that source, and there were only two instances in which our pipes were injured by the frosts. One of which was a three inch branch (being a dead end) at the corner of Sand and Illinois streets, and from which the sand had blown off, leaving it only about eighteen inches deep, which froze and burst. The other a three inch pipe in Franklin street, leading to the alley between Lake and Randolph, which was broken off where it crossed the sewer.

The first permits to take water from the distribution pipes in the north and west divisions, were issued on the 12th of February, 1854, and in the south division on the 21st.

I then directed the Engineer to keep from 20 to 80 feet head in the standing column, from 7 o'clock, A. M. to 4 P. M., of each day (Sundays excepted) and also to hold himself in readiness to pump at all times in case of fires. This arrangement was followed until the 9th of May, and from that time to the present, the head has been kept up constantly both night and day with very few exceptions.

The reservoir not being completed, of course the least stoppage of the

Engine or failure in any way to keep up the head, would be noticed by some one and perhaps be a subject of complaint ; yet as a general thing, I believe we have been able to give very good satisfaction to water takers.

On the 26th of May, unfortunately, another anchor thrown from a vessel passing up the river at State street crossing, struck the river pipe and it was again torn asunder and rendered useless, and the supply of water for the south and west divisions of the city, from that time to the first of October, was forced through a six inch main on Kinzie street from the main on Wolcott to the north branch, and passing the north branch through an eight inch pipe, from thence distributed through the west division and crossing the south branch by a twelve inch main at Adams street, to the south division, thus reversing the direction which the water was designed to flow. We were, however, notwithstanding these adverse circumstances, able to give a very good supply through the west and south divisions.

However much we regret that the main river pipe should be thus a second time rendered useless, I cannot believe that there was any malicious intention on the part of those who did the mischief; believing, as I do, that the most perfect good feeling exists between the citizens and those gallant men who by their energy and skill help very materially to increase the wealth and importance of our favored city ; many of whom are proud to own this as their adopted home, and all are sure of the kindest sympathy in the hour of distress and danger. After the river pipe was found to be ruptured the second time, it was decided to make and sink a thirty inch main at the State street crossing, and bury it with sand from four to five feet, which it is believed no anchor will be likely to injure, and which will be capable of supplying the South division for a great number of years.

The contract for making the above pipe was given to Charles Ressig, of Chicago, and it was made of 5-16 boiler iron and doubled riveted. The cost of the above pipe was about \$3,561 ; the dredging, sinking and covering with sand, by S. S. Durfee, cost \$2,000. Precautions were also taken at the other crossings to prevent their being disturbed. Signs were put up to notify masters of vessels of their location, and the bridge tender at Kinzie street was employed to see that no anchors were dragged at that place. As this pipe was only dropped upon the bottom temporarily, it, was of course very much exposed, and had any accident happened to it the south and west divisions of the city would have been deprived of water until the main at State street should be completed.

Fearing, however, that some accident might occur, an India rubber pipe or hose of twelve inch calibre, and to be made in sections of about fifty feet each and put together with iron flanges, was agreed for with the

Boston Belting Company, which was designed to be put in temporarily at the State street crossing until the thirty inch main could be completed, then to be taken out and preserved for future emergencies. But the Company failing to make the hose according to agreement, and not standing the test required, it was rejected. We were however enabled to get our main completed about the first of October and before any damage was done to the other pipes.

On the 6th of November, there being a very low stage of water in the river, a vessel heavily laden passing the crossing at Kinzie street, raked the bottom so hard that the pipe was found to be damaged at that place. It has since been taken up, repaired, and will be put in permanently in the spring.

INLET PIPE.

Considerable inconvenience has been experienced from the storms drifting the sand into the inlet pipe at the Lake Shore, almost rendering it useless, and forcing itself into the pump-well in such quantities as to very much endanger the machinery. After an examination of the subject by the commissioners, together with the Chief Engineer, W. J. McAlpine, it was decided, as a remedy for this evil, to build a breakwater around the end of the pipe in such a manner as to form a settling pond sufficiently large to prevent further trouble from that source. Accordingly, on the 8th day of June, a contract was made with E. Rawson and W. B. Bateham, to build a breakwater, by driving two rows of piles firmly into the ground, the rows to be six feet apart and fastened together with timbers on the outside, and rods of iron passing through from one side to the other, and the space between filled with stone.

The breakwater was to extend into the Lake about 200 feet on the north line of the Engine House lot, and then turn on a radius of 100 feet to the south line of the lot and thence on said south line to the shore.

Had the contract been fulfilled according to the agreement of the parties we should have been enabled to place the inlet pipe in a position to furnish the requisite quantity of water in the well before winter set in, and also been saved the expense of dredging out a large amount of sand which has accumulated during the delay. Finding that the contractors were not likely to complete the breakwater until the basin would be nearly filled with sand, it was decided to build crib work from the shore on the south line and running east far enough to meet the breakwater. The crib work was commenced on the 18th of December, and 231 feet was put in and filled with stone in ten days, at a cost of eight hundred and seven dollars, eighteen cents.

The water in the lake was about three and one-half feet lower in the

month of April last than it was in the summer of 1851, when the works were commenced, the water having receded so much that a portion of the inlet pipe was above the surface of the water, and fears were entertained that we should not be able to furnish a supply for the city. During the summer months, however, the water was considerably higher, and by sinking about two hundred feet of new pipe in place of the old, which had become nearly filled with sand, we have been able to keep up a supply.

There is rather a serious difficulty about the inlet pipe where it passes through the wall into the pump-well on account of its being placed too high. Should the lake continue to fall, it would very soon fail to furnish a supply, and I doubt whether, under any circumstances in its present position, its being large enough to furnish as much water as the large engine is capable of raising. In order to remedy this difficulty, I think a portion of the east end wall and foundation of the engine house, will have to be taken down and the pipe where it passes through the wall of the pump well lowered at least four or five feet. And I would recommend that a good and substantial culvert of stone be built over the pipe to support the foundation of the building and also to give room for repairing the present, or putting in additional pipes, or other means of conveying water to the well if necessary, without detriment to the building.

Although the present pipe, if placed low enough, might furnish an ample supply for the present water district, yet as the city is increasing so rapidly in wealth and population, the demand for extending the pipes so great, and the fountain from whence the water is taken inexhaustible, the passage from the lake to the pump-well should, in my judgement, be capable of supplying any demand that may be made upon it.

I would therefore recommend that an aqueduct of at least 12 to 15 feet area, be constructed from the lake to the pump-well and sunk four or five feet lower than the present pipe. This could be constructed of stone or brick, laid in cement; or if these were deemed too expensive, it could be made of wood and answer a good purpose. The distance from the lake to the pump-well is about 350 feet, and an aqueduct of stone or brick of the above dimensions, would cost about \$5,000, including the excavations. One of the same dimensions of wood, might be put in for about \$2,000. This amount however is not intended to cover the expense of taking down and rebuilding the east wall, which would have to be done in either case, and would cost about \$2,000. Should the above alterations be made and the settling pond completed according to the design, I think we need apprehend no further difficulty from that quarter.

ENGINE HOUSE.

The Engine House was mostly completed last season. The zinc cover-

ing for the roof was contracted to Thomas George, of this city, and was not entirely completed before cold weather commenced, and the work was of such a nature as to be difficult to execute in severe cold weather. It was therefore left in an unfinished state, and during the high winds which prevailed, some portion of it was blown off. It has since been repaired and the contractor settled with.

The walls of the Engine room have been plastered this season, which very much improves its appearance.

ENGINES.

The low pressure Engine built by Quintard, Merritt & Co., of New York, at a cost of \$24,500, has not been fully tested on account of other portions of the works not being completed, and not having much labor for it to perform, yet there is no doubt, I think, of its being capable of performing as much as the builders promised, and it has also been demonstrated to be very economical in its consumption of fuel. It is now in perfect order.

The high pressure duplicate Engine, built by H. P. Moses, of Chicago, has been run a considerable portion of the time the past season. Owing to the fact of not having any reservoir, this Engine has been found to be most convenient for furnishing the small amount of water consumed; considerable sums, however, have had to be expended for repairs and additions. It was found necessary to supply it with another boiler, to get the quantity of steam required, and some alterations and additions were deemed necessary to enable it to perform, with ease and safety, the duty required of it. Another boiler of the same dimensions of the first has been added this season at a cost of eleven hundred and sixty-three dollars (\$1,163.)

Counter balances, designed to relieve the steam valves of a portion of their friction, have been added, and found to be very useful.

There was also added, at the suggestion of D. C. Cregier, the Engineer in charge, an air vessel to the pump, which has very much improved the running of the engine, and I am happy to state that it is at the present time in first rate order.

The first cost of this Engine was.....\$6,100 00

Cost of repairs and additions..... 2,935 05

Duty of Engines from February 1st, 1854, to January 1st, 1855. Condensing Engine and Pumps:

Whole number of revolutions.....184,779

“ “ “ U. S. Gals. water pumped....102,984,722

Allow for wastage, etc..... 10,298,472

Total amount Pumped..... 92,696,250

As a general thing the Fire Hydrants have been closed while running this engine, and but little water has been wasted except at fires.

Amount of Coal consumed.....183⁸¹/₂₀₀₀ Tons.

Residue of Ashes..... 20⁴⁸⁴/₂₀₀₀ “

The estimated duty of the Duplicate Engine:

Number of Revolutions..... 949,288

“ “ Gallons pumped.....147,671,241

Supposed waste by Fire Hydrants..... 65,631,662

Estimate consumption of Water..... 82,039,579

Of course the above may not be strictly accurate as regards the waste.

Amount of Coal consumed.....321¹⁵⁰/₂₀₀₀ Tons.

Residue of Ashes..... 29¹⁸⁵⁷/₂₀₀₀ “

Total amount of Coal consumed.....504⁴⁸¹/₂₀₀₀ Tons.

“ “ “ Water pumped.....215,745,722 Galls.

Number of Fires reported at Engine House.....33

“ “ False Alarms..... 9

RESERVOIR BUILDING.

The Mason work of the Reservoir Building was mostly completed last season, with the exception of the front entrance and plastering, which have been completed the present year.

The contract for making the Tank was given to Chas. Ressig, and was not completed until about the 15th of October.

The contract for the Iron Roof, by Mason & McArthur, was completed about the same time.

As soon as the connections were made with the main Pipes, we commenced letting the water into the Tank. Fearing there might be some settling from such an enormous pressure upon the walls, I had it filled very slowly, and after being filled within about one foot of the top of the waste pipe, I discovered that the walls began to spread at the spring of the main arch under the Tank, and numerous cracks were visible in the masonry on all sides of the building. The water was immediately let out, and it has not been deemed expedient to attempt to use it again until the walls are materially strengthened. The failure of the walls of the Reservoir to sustain the tank when filled, is a serious inconvenience, as it compels us to keep the pumps running constantly both day and night. After mature deliberation, and a consultation with some of the prominent Engineers, Architects, and practical men, in regard to the best means of strengthening the Building, it was decided to put in two-inch iron rods extending quite through the building, and secured on the out side by heavy cast iron plates or washers, which it is expected will enable us with safety to use the Tank partly full at least. When Spring opens I would recommend that it

be further strengthened by heavy stone abutments, built against the foundation, and also by filling up the large openings, and building piers from the foundation to the centre of the main arch under the tank. The cost of the repairs will probably be about six thousand dollars, and although it will mar somewhat the beauty of the structure, will not make the whole cost much exceed the estimates, notwithstanding the great advance in the price of labor and materials.

The cost of the Reservoir and Tank as it now stands is about \$44,000.

I have a plan for a Reservoir which I will submit to the Board at the proper time, which will cost from seventy to seventy-five thousand dollars, and contain four million gallons, or about eight times the quantity which the present Tank was designed to hold.

Although the present plan of placing Reservoirs in different sections of a city as extensive as this, is on many accounts of great advantage; yet I deem it important, that where the water has to be elevated by artificial means, and of course there is a possibility at least that the machinery might fail, or some break occur which would render it impossible to supply for two or three days, that there should be one Reservoir at least of much larger dimensions than is contemplated on the present plan.

PIPE EXTENSION.

The extension of Pipes for the past season is as follows:

IN THE SOUTH DIVISION.

On Buffalo Street, from Harrison to Polk.....	840 feet 3 inch pipe.
“ Taylor “ “ Buffalo to Edina.....	237 “ 4 “ “
“ Wabash Av. S. “ Harrison.....	243 “ 4 “ “
“ Michigan “ “ Harrison to Hubbard court	1397 “ 3 “ “
“ Jackson Street, “ Edina to State street....	273 “ 4 “ “
“ Buffalo “ “ Jackson to Van Buren....	403 “ 3 “ “
From Clark Street to the Court House.....	181 “ 3 “ “
“ LaSalle “ “ “ “ Block	117 “ 3 “ “

WEST DIVISION

On Jefferson from Fulton to Carroll Street.....

NORTH DIVISION.

On Indiana from Wells to Franklin.....	411 feet 4 inch “
“ Pine “ Huron to Ohio.....	1036 “ 4 “ “
“ Sand “ Illinois to Indiana.....	287 “ 3 “ “
Total.....	5911 feet.

Twelve new Fire Hydrants have been made, seven of them set, and one old one removed this season, making one hundred and twenty-three now located, and five on hand.

The extension of distribution pipes has not been very considerable the

past year, amounting in all to only about one and one-eight miles, and what has been done has been in short pieces, where it was needed most; and but little help has been employed aside from our regular men who attend to repairs, etc.

We have now about 30½ miles of pipes laid, and the wants of the city will require a further extension the coming season of at least ten miles, which will require an expenditure of about eighty thousand (\$80,000) dollars.

Should another Reservoir be built next season, as heretofore proposed, the amount required for construction will not fall much short of one hundred and fifty thousand (\$150,000) dollars.

It is important that the pipes should be extended as fast as required, as every additional mile adds to the relative receipts, besides being a great benefit as regards health and cleanliness.

It is almost universally the case that works of this kind are commenced on too small a scale, and frequently, as in the present instance, there is hardly time to carry out the first plan before extensions and enlargements are loudly called for. But to show how much Chicago has exceeded the expectations of those who have reflected upon the subject, I would refer to the report of Mr. McAlpine, the Chief Engineer of the works, dated Nov., 1851, in which, in his table of revenue and expenses, he sets down the population of Chicago at thirty-six thousand for 1851, and then estimates the probable increase of population for each year up to 1875, at which period he estimates the population of the city will be one hundred and sixty thousand. In 1860 he estimates the population at seventy-five thousand, which is not far from the present number.

Should the increase for the next five years bear any comparison with the past we shall have a population of at least one hundred and fifty thousand in 1860.

It is not likely, therefore, that any plan will be adopted for extending the present works, which will be too ample or more extensive than the wants of the city may require.

The cost of the works will, I think, compare favorably with any other in this country.

It is hardly to be expected that a work of this kind would be carried through in such a manner that there will not appear many things that might be improved upon a second trial.

The cost of the works to the present time, including extensions and additions made the past season, is \$393,045 32, and are capable of supplying one hundred thousand inhabitants.

The water works at Pittsburgh, have cost something over \$700,000, and supply from fifty to sixty thousand inhabitants. The Cincinnati works have cost, up to the present time, as I am informed, something over one

million dollars, and supply from 150 to 160 thousand inhabitants. Detroit water works have cost, including the purchase of the old works, nearly five hundred thousand dollars, and the city contains about forty thousand inhabitants. The Albany works cost \$800,000; population about 70,000. Boston water works have cost over five million dollars, and supply 150,000 inhabitants. New York works cost fourteen million, and supply 500,000 inhabitants. The Buffalo works were built by a company, and cost \$400,000. Population from 60 to 70,000.

Our low pressure engine, all the pipes, and most of the iron for the works, was contracted for at a very favorable time and at much lower rates than they could have been at any subsequent period.

The cost of operating the works the past season is not a fair criterion for the future, as it has cost nearly double the amount that it would, had the works been completed, and much that is charged to operating expenses is justly chargeable to extraordinary repairs. It will also be borne in mind, that a considerable portion of the past season we have had to be to the expense of pumping for the old hydraulic works, which were bought of that company, but now discontinued. Should the Legislature at its present session, so amend the law that every dwelling within the water district can be assessed, whether the water is taken into the building or not, it will save a vast amount of trouble and expense, and be an effectual check upon the frauds now practiced upon the works. It is not probable that more than one half of the houses now in the water district, are chargeable at the present time with water rates.

If all were equally taxed, and the requisite extensions made, the rates could be materially lowered without detriment to the works, and all benefited thereby.

By the report of the Secretary, it will be seen, that the receipts for the water rents to the first of January, amount to \$26,222 86.

Taking into consideration that the works were in an unfinished state, and also the difficulty and delay of getting plumbing done, the high prices of labor, and the sickness which prevailed through the summer, I think we may consider it a good beginning, and a sure guaranty that they will be well sustained.

SCHEDULE A,

Is a list of Tools, Supplies, etc., at the Engine House.

SCHEDULE B,

Is a list of Pipes, Branches, Sleeves, Caps, Pipe Laying Tools, etc. etc., which have been removed from the old Pipe Yard.

SCHEDULE C,

Shows the location, size, and length of the main and distribution pipes, as laid through the city.

SCHEDULE D,

Shows the location of the Fire Hydrants in each Division.

SCHEDULE E,

Is a list of Stop Cocks in each Division with the size, and classified as shown on the maps in the divisions of the water district, by the numbers 1, 2, 3, 4, etc.

There have been twenty-nine Bartholomew public hydrants put up in different parts of the city, designed to accommodate those who were unable to take the water in their dwellings, and also to accommodate those living outside of the water district, through the sickly season. But they have been a source of great trouble and inconvenience, and if continued, will have to be made more permanent, and with drains attached to take off the surplus water. There has also been one of the above hydrants located at the Court House, for the accommodation of the same. I think it would be well, also, to fix drains wherever it is practicable to the Fire Hydrants, and connect with the sewers to take off the waste water, and prevent their freezing, as we have experienced much less trouble from those in the vicinity of good and efficient drains, than in other locations where there was no chance for the water to pass off freely.

All of which is respectfully submitted,

B. F. WALKER,

Superintendent.

SHHEDULE A.

TOOLS, SUPPLIES ETC., AT ENGINE HOUSE.

IN MAIN ROOM.	
3 Hand Oil Cans.	50 Fire Bricks.
1 Dipper.	1 Anvil and Bellows.
2 Screw Wrenches.	From 200 to 300 tons Coal.
1 Tallow Kettle.	1081 lbs. New Rope, 12 Pt. Blocks.
2 Small Screw Wrenches.	1 Small Pile Driver.
2 Chairs. 1 Sofa.	1 Large do. do.
2 Oil Cloths. 3 Mats.	1 Coil 3 inch Rope.
1 Slate and Log Books.	1 do. 3 do. New.
1 Stove and Pipe.	1 do. 4 do. do.
1 Dudgeon Lifting Pump.	1 do. 4 do. Old.
100 Feet Rubber Hose.	1 Short length.
1 Writing Desk and Book case.	5 Double, 3 single Blocks.
1 Lithograph of Morgan Works.	
1 Inkstand.	
1 Old Ladder.	
1 New do.	
1 Piece Matting.	
1 Bonnet to Large Stop Cock.	
Lot of old Zinc from Roof.	
NORTH BOILER ROOM.	
1 Grind Stone.	
1 Vice.	
1 Stop Cock Wrench.	
Set Fire Tools.	
1 Table.	
1½ Bales Cotton waste.	
Part set of Carpenters Tools.	
1 Bed and Mattress.	
SOUTH BOILER ROOM.	
2 Stop Cock Wrenches.	
2 Casks New Zinc.	
1 Cast Bonnet for Main pipe.	
1 Fairbanks Platform Scales.	
1 Set Fire Tools.	
Scrap-Iron and old Grate Bars.	
About 3 tons Iron 1¼—½ 1—½.	
3 Coal Boxes.	
58 New Grate Bars.	
Stem of large Stop Cock.	
ENGINE HOUSE LOT.	
1 Old Fire Front and Britching.	
2 Tanks for Tower.	
1 Old Rock Shaft.	
2 Pieces Wrought Iron Pipe.	

IN STORE ROOM.	
¼ Keg White Lead.	
1 Force Pump Plunger.	
5 Globe Lamps.	
3 Hand do.	
6 lb. Hemp Packing.	
1 40 Gallon Oil Can.	
1-5 do. do. do.	
2 Tin Funnells.	
½ Keg Cut Nails.	
1 Shackel Bar.	
2 Brooms.	
1 Ice Chisel.	
Small quantity of scrap Iron.	
4 Pairs India Rubber Boots.	
2 Key Wrenches.	
1 Hammer.	
4 Socket Wrenches.	
2 Pall Wrenches.	
2 Pairs Smith Tongs.	
1 Lead Ladle.	
Lot Scrap India Rubber.	
Eye Bolts, etc., belonging to Engine.	
3 Lengths 2½ Copper Pipe.	
4 Rubber Valves.	
2 Composition Seats.	
1 do. Guards.	
12 Files and 6 handles.	
4-2 Gallon Tin Cans.	
10 lb. Tallow.	
9 Gallon Sperm Oil.	
4 lb. Lard.	
2 Elbows of Stove Pipe.	
5 Side Lamps.	
300 lb. Old Bolts, Nuts and Washer.	

SCHEDULE A.—CONTINUED.

TOOLS, SUPPLIES, ETC., AT ENGINE HOUSE.

8 Chisels and 5 Drills.	1 lb. Flour of Emery.
1 Drilling Crab complete.	10 lb. Ground Glass.
1 Saw, 2 Planes.	2 New Water Cocks.
20 Balls Cotton Wicking.	3 Oil Guage do.
5 Quires Emery Paper.	1 do. do. do.
3 Pails, 1 Water cooler, and 1 Cup.	11 Bars Soap.
1 Composition Hammer.	3 Lengths small Brass Pipe.
Oil Cap for Force Pump.	Extra set of Springs for Piston.
3 Extra Water Guage Glasses.	1 Hoe. 1 Trowell.
2 Long do.	2 New Shovels, 2 old.
3 New Flat Files.	1 Piece old 2 inch Copper Pipe.
3 Round and Square.	1 Wire Sieve.
5 Taps, assorted.	Composition Standards and Bolts.
1 Spirit Lamp.	2 Iron Rt. Bands.

SCHEDULE B.

PIPES, TOOLS, ETC., IN PIPE YARD.

2 Augurs.	3 Axes. 20 Calking Irons.
1 Key Saw.	1 Measuring Rod.
3 Oil Pots.	1 Tar Kettle.
1 do. Can.	2 Tool Houses.
1 Chisel and Guage.	8 Wheel Barrows.
3 Lead Ladles.	5 Broken do.
1 Draft Chain.	3 Hardies.
4 Poles.	10 full Pieces 16 inch Pipe.
2 Stop Cock Pins.	4 " " 10 " "
5 Pails.	4 part " 10 " "
3 Calking Hammers.	10 full " 8 " "
1 Screw Driver.	19 part " 8 " "
2 Hand Boxes for Tools.	4 full " 6 " "
2 Iron Bars.	69 part " 6 " "
7 Stop Cock Wrenches.	75 " " 4 " "
1 Hydrant Cap.	19 full " 3 " "
Lot of Plugs.	97 part " 3 " "
4 Drills.	2 part " 12 " "
3 Coal Chisels.	1 Cast Iron Hydrant Top.
4 Sledge Hammers.	5-6 to 4 Tapers.
2 Brass Pumps.	9-6 by 4 2 Way Branches.
2 Tin do.	21-8 " 10 1 " "
1 Hand Saw.	12-6 " 6 2 " "
2 Water Casks.	12-8 " 6 2 " "
3 Long Shovels.	2-10 " 10 2 " "
5 Short do.	27.4 " 6 1 " "

SCHEDULE B—CONTINUED.
PIPES, TOOLS, ETC., IN PIPE YARD.

1-16 " 16 1 Way Branch	2 8 inch Caps.
30-3 " 4-2 Way Branches.	12 6 " "
1-3 " 4-1 " "	4 8 " "
7-4 " 4-2 " "	66 4 " "
3-12 " 12-1 " "	61 3 " "
14-6 " 8-2 " "	14 10 " "
3 Wooden Hydrant Top Boxes.	100 Wooden Pump Boxes.
3 Stop Cock Boxes.	18 Cedar Posts.
2 Hydrant Bends.	1800 lbs. Cast Iron.
47 16 inch Sleeves.	2 Hydrostatic Presses.
9 8 " "	1 Large Steel Yard.
26 12 " "	1 Iron Vice.
10 6 " "	3 Furnace Kettles.
10 4 " "	3 Hydrant Lower Boxes.
8 3 " "	1 16 inch Stop Cock.
14 10 " "	

SCHEDULE C.

LIST OF PIPES LAID.

Divis'n of City.	Names of Streets.	Between what Streets.	Size Pipe	Feet.
N.	Ohio,.....	Wells & Pine,.....	3 in.	366
"	Kinzie,.....	Market and Pine,.....	"	759
"	North Water,.....	Market and Dearborn,.....	"	2040
S.	South Water,.....	Michigan Avenue and Market,.....	"	2660
"	South Alley,.....	State and Franklin,.....	"	2020
"	South do,.....	State and Market,.....	"	2420
"	Market,.....	Van Buren and Lake,.....	"	3245
"	Sherman,.....	Harrison and Jackson,.....	"	1320
"	Buffalo,.....	Harrison and Van Buren,.....	"	858
"	Edina Place,.....	Taylor and Jackson,.....	"	3036
"	Michigan Avenue,.....	Van Buren and River,.....	"	3183
"	Quincy,.....	State and Clark,.....	"	828
"	River,.....	Michigan Av. and Water,.....	"	718
"	River Alley,.....	Washington and Randolph,.....	"	464
W.	Cook,.....	Water and Jefferson,.....	"	460
"	Canal,.....	Harrison and Kinzie,.....	"	395
"	West Water,.....	Madison and Lake,.....	"	1451
		Total 3 in. Pipe,.....		<u>26,223</u>
North.	Superior,.....	Clark and Dearborn,.....	4 in.	399
"	Ohio,.....	Wells and Pine,.....	"	2321
"	Indiana,.....	Wells and Rush,.....	"	2318
		Amount forward,.....		5,038

SCHEDULE C.—CONTINUED.
LIST OF PIPES LAID.

Divis'n of City.	Names of Streets.	Between what Streets.	Size Pipe.	Feet.
		Amount brought forward		5,038
North.	Indiana,.....	Pine and Sand,.....	4 in.	366
"	Illinois,.....	Wells and Sand,.....	"	366
"	Michigan,.....	Wells and Pine,.....	"	2,684
"	Kinzie street,.....	Market and Pine,.....	"	420
"	Market,.....	North Water and Kinzie,.....	"	155
"	Lasalle,.....	Michigan and Indiana,.....	"	628
"	Clark,.....	Chicago Avenue and River,.....	"	3,162
"	Dearborn,.....	Ontario and Superior,.....	"	836
"	Cass,.....	Kinzie and Michigan,.....	"	295
"	Cass,.....	Ohio and Huron,.....	"	913
N.	Rush,.....	Kinzie and Michigan,.....	"	235
"	Do,.....	Indiana and Ontario,.....	"	621
"	Pine,.....	Kinzie and Ohio,.....	"	1,009
"	Kinzie,.....	Market to North Branch,.....	"	40
"	Eric,.....	Dearborn to Hydrant Branch,.....	"	40
S.	South Water,.....	Michigan Av. and Market,.....	"	906
"	Lake,.....	State and Market,.....	"	3,323
"	Washington,.....	Michigan Av. and Market,.....	"	3,323
"	Monroe,.....	" " " Do,.....	"	3,281
"	Jackson,.....	Edina Place and Wells,.....	"	1,332
"	Van Buren,.....	Michigan Av. and State,.....	"	443
"	Harrison,.....	Wabash Avenue and Wells,.....	"	2,078
"	Taylor,.....	State and Edina Place,.....	"	330
"	Franklin,.....	Madison and South Water,.....	"	1,772
"	Wells,.....	Harrison and Do,.....	"	858
"	Lasalle,.....	Madison and Do,.....	"	1,772
"	Clark,.....	Harrison and Do,.....	"	856
"	Dearborn,.....	Madison and Do,.....	"	2,248
"	State,.....	12th st. and Do,.....	"	3,390
"	Wabash Avenue,.....	Harrison and Do,.....	"	4,504
"	Michigan ".....	Van Buren and River,.....	"	975
W.	Milwaukee ".....	Desplaines and Green,.....	"	1,700
"	Carrol,.....	Canal and Clinton,.....	"	398
"	Fulton,.....	Canal and Jefferson,.....	"	796
"	Randolph,.....	West Water and Peoria,.....	"	3,008
"	Washington,.....	Canal and Desplaines,.....	"	1,194
"	Monroe,.....	Canal and Halstead,.....	"	2,079
"	Adams,.....	Canal and Clinton,.....	"	400
"	Jackson,.....	Canal and Clinton,.....	"	400
"	Harrison,.....	Canal and Clinton,.....	"	438
"	Taylor,.....	Clinton and Jefferson,.....	"	438
"	Water,.....	Kinzie and Cook,.....	"	505
"	Hubbard,.....	Jefferson and Desplaines,.....	"	398
"	Jefferson,.....	Kinzie and Hubbard,.....	"	400
		Amount forward,.....		60,353

SCHEDULE C.—CONTINUED.
LIST OF PIPES LAID.

Divis'n of City.	Names of Streets.	Between what Streets.	Size Pipe.	Feet.
		Amount brought forward, ..		60,353
"	Jefferson.....	Monroe and Lake.....	"	1,917
"	Canal,.....	Harrison and Kinzie.....	"	4,935
"	Clinton,.....	Taylor and Harrison,.....	"	1,744
		Connected with 116 hydrants,		2,800
		Total, 4 in. Pipe,.....		71,749
North.	Illinois,.....	Wells and Sund.....	6 in.	2,684
"	Kinzie,.....	Market and Pine,.....	"	2,853
"	Wells,.....	North Water and Ontario....	"	822
"	Wolcott,.....	Do. Do.....	"	867
South,	Randolph,.....	Michigan Av. and Market...	"	3,323
"	Madison,.....	State and Market.....	"	1,246
"	Adams,.....	Michigan Avenue and Market,	"	1,238
"	Van Buren,.....	" " State....	"	450
"	Do.....	Edina Place and Clark,.....	"	539
"	Wells,.....	Harrison and S. Water.....	"	2,696
"	Clark,.....	Do. Do.....	"	916
"	State,.....	12th Street and Water.....	"	2,659
West.	Kinzie,.....	Canal and Green.....	"	2,320
"	Lake,.....	W West Water & Desplaines,	"	1,592
"	Madison,.....	" " and Halstead.....	"	684
"	Desplaines,.....	Kinzie and Fourth.....	"	1,160
"	Do.....	Monroe and Lake.....	"	1,917
"	Clinton,.....	Jackson and Kinzie.....	"	1,190
		Total 6 in. Pipe.....		29,156
North.	Ontario,.....	Clark and Cass.....	8 in.	380
"	Wells,.....	N. Water and Ontario.....	"	876
"	Wolcott,.....	Do. Do.....	"	913
"	Kinzie,.....	Market and North Branch...	"	108
South.	Madison,.....	State and Market.....	"	1,188
"	Adams,.....	Mich Avenue and Market...	"	450
"	Wells,.....	Harrison and S. Water.....	"	947
"	Clark,.....	Do. Do.....	"	858
"	State,.....	12th street, do.....	"	947
West.	Madison,.....	West Water and Halstead...	"	1,681
"	Clinton,.....	Jackson and Kinzie.....	"	2,791
		Total 8 in. Pipe.....		11,139
North.	Ontario,.....	Clark and Cass.....	10 in	798
"	Kinzie,.....	Market and N. Branch.....	"	100
South.	Adams,.....	Michigan Avenue and Market,	"	1,628
"	Clark,.....	Harrison and S. Water.....	"	1,871
		Total 10 in. Pipe.....		2,404
North.	Wolcott,.....	N. Water and Ontario.....	"	2,040
		Amount forward,.....		6,041

SCHEDULE C.—CONTINUED.
LIST OF PIPES LAID.

Divis'n of City.	Names of Streets.	Between what Streets	Size Pipe.	Feet.
		Amount forward,.....		6,041
South.	Adams.....	State Street to River.....	12 in	4,397
South,	State.....	Adams to River.....	12 in	2,763
West.	Adams.....	Canal and Clinton.....	"	308
		Total 12 in. Main,.....		9,112
North.	Wolcott	Ontario to Chicago Avenue...	16 in	9,112
		Chicago Av..... Wolcott to Engine House....	"	2,437
		Total 16 inch Main.....		1,286
				3,723

RECAPITULATION.

3 inch Pipe,	26,223 Feet.
4 inch Pipe,	71,749 Feet.
6 inch Pipe,	29,156 Feet.
8 inch Pipe,	11,139 Feet.
10 inch Pipe,	4,397 Feet.
12 inch main,	9,112 Feet.
16 inch main,	3,723 Feet.
Extension 1854, 3 inch Pipe,	3,528 Feet.
" " 4 inch Pipe,	2,383 Feet.

161,410 " 30 57-100 miles.

SCHEDULE D.
LOCATION OF FIRE HYDRANTS.

NORTH DIVISION.			
Corner Michigan and Pine.	"	Corner Michigan " Wolcott	"
" Illinois " "	"	" Indiana " "	"
" Ohio " "	"	" Ontario " "	"
" Erie " "	"	" Dearborn " Kinzie.	"
" Indiana " Rush.	"	" " " Illinois.	"
" Ontario " "	"	" " " Ohio.	"
" Michigan " Cass.	"	" " " Erie.	"
" Ontario " "	"	On Clark near Bridge.	
" Huron " "	"	Corner Clark and N. Water.	
" Kinzie " "	"	" " " Michigan.	
" N. Water " Wolcott.	"	" " " Indiana.	
		" " " Ontario.	

SCHEDULE D.—CONTINUED.
LOCATION OF FIRE HYDRANTS.

Corner Clark and Huron.	Corner Jefferson and Carrol.
" LaSalle and Kinzie.	
" " " Michigan.	SOUTH DIVISION.
" " " Illinois.	Corner Michigan Av. & Hubbard Ct
" Wells and N. Water.	" " " Taylor.
" " " Michigan.	" " " Jackson.
" " " Ohio.	" " " Monroe.
" Franklin and Indiana.	" " " Washington.
" Kinzie and Franklin.	" " " Lake.
" N. Water and Market.	" " " River.
WEST DIVISION.	" Wabash Av. and Harrison.
Corner Taylor and Clinton.	" " " VanBuren.
" Polk " "	" " " Adams.
" Harrison " "	" " " Madison.
On Canal between Harrison and Van Buren.	" " " Randolph.
Corner Jackson and Canal.	" " " S. Water.
" Clinton and Adams.	On State between Taylor and Twelfth
" Canal and Monroe.	" " " Polk.
" Jefferson and Monroe.	" " " Polk and Harrison.
On Monroe between Des Plaines Halstead.	Corner Jackson and State
Corner Madison and Halstead.	" Monroe " "
" " " Des Plaines.	" Washington and State.
" " " Clinton.	" Lake " "
" " " W. Water.	" Taylor and Edina Place.
" Washington and Canal.	" Polk " "
" " " Jefferson.	" Harrison " "
" Randolph and Green.	On Buffalo between Polk & Harrison
" " " Holstead.	Corner Buffalo and VanBuren.
" " " Des Plaines.	On Adams between State and Clark.
" " " Clinton.	In Court House Yard.
" " " W. Water.	On Clark between Harrison & VanB.
" Lake and Canal.	Corner Clark and Jackson.
" " and Jefferson.	" " " Monroe.
" Fulton and Clinton.	" " " Washington.
" Canal and Carrol.	" " " Lake.
" Kinzie and Clinton.	" Dearborn and Madison.
" Milwaukee and Des Plaines.	" " " Randolph,
" Kinzie and Halstead.	" " " S. Water.
" Milwaukee Av. and Hubbard	" LaSalle and Madison.
" " " " Owen.	" " " Randolph,
" " " " Fourth.	" " " S. Water.
" Water and Cook.	" Harrison and Sherman.
" Hubbard and Jefferson.	" VanBuren and Sherman.
" Des Plaines and Owens.	On Adams between Clark and Wells.
	Do. Market and do.
	Corner Wells and Harrison.

SCHEDULE D.—CONTINUED.
LOCATION OF FIRE HYDRANTS.

On Wells between Harrison & VanB	" Market and Jackson.
Corner Wells and Jackson.	" Monroe and do.
" " " Monroe.	" Washington and Jackson.
" " " Washington.	RECAPITULATION.
" " " Lake.	South Division..... 56
" Madison and Franklin.	North " 33
" Randolph and do.	West " 34
" S. Water and do.	Total..... 123
" " " Lake.	

SCHEDULE E.

LIST OF STOP COCKS IN EACH DIVISION, BY DISTRICTS.

Div. of city	District	Location of Stop Cocks.	Size of Cock.
Southl.	No. 1	Corner Clark and South Water.....	4 inch
do.	do.	Alley between South Water and Lake, on Clark.	4 do.
do.	do.	Corner of Clark and Lake.....	4 do.
do.	do.	Do. do. Alley between Randolph & Lake	4 do.
do.	do.	Do. do. and Randolph.....	8 do.
do.	do.	Do. do. and Washington.....	4 do.
do.	do.	Do. do. and do.	8 do.
do.	do.	Do. Dearborn and Washington.....	4 do.
do.	do.	Do. State and do.	8 do.
do.	do.	Do. Wabash Av. and do.	4 do.
do.	do.	Do. Dearborn Park and Washington.....	4 do.
do.	do.	Do. Michigan Av. and do.	4 do.
do.	No. 2	Corner of Clark and Madison.....	8 do.
do.	do.	Do. do. do. Monroe.....	4 do.
do.	do.	Do. do. do. Adams.....	12 do.
do.	do.	Do. do. do. do.	12 do.
do.	do.	Do. State do. do.	8 do.
do.	do.	Do. Wabash Av do.	4 do.
do.	do.	Do. Michigan Av. do.	4 do.
do.	No. 3	Corner of Clark & Alley between Adams & Jackson	4 do.
do.	do.	Do. do. and Vanburen.....	8 do.
do.	do.	Do. do. and Harrison.....	4 do.
do.	do.	Do. do. and Jackson.....	4 do.
do.	No. 4	Corner of Washington and LaSalle.....	4 do.
do.	do.	Do. do. do. Wells.....	8 do.
do.	do.	Do. do. do. Franklin.....	4 do.
do.	do.	Do. do. do. Market.....	4 do.

SCHEDULE E.—CONTINUED.

LIST OF STOP COCKS IN EACH DIVISION BY DISTRICTS.

Div. of City.	District	Location of Stop Cocks.	Size of Cock.
South.	No. 5	Corner of Wells and Adams.....	12 inch
do.	do.	Do. do do do	8 do.
do.	do.	Do. Market do	4 do.
do.	do.	Do. State do do	12 do.
do.	No. 6	On Reservoir Lot.....	12 do.
do.	do.	Do. do do	12 do.
do.	do.	Do. do do	12 do.
do.	do.	Do. Main on Adams, front of Reservoir.....	12 do.
do.	do.	Do. do. State, at River.....	12 do.
do.	do.	Do. do. Adams do	12 do.
do.	do.	At the Court House.....	4 do.
do.	do.	On State, connection near the Market.....	8 do.
RECAPITULATION.			
do.	do.	4 inch Cocks.....	20
do.	do.	8 " "	9
do.	do.	12 " "	10—39
North.	No. 7	Corner of Kinzie and Wolcott.....	4 do.
do.	do.	Do. Michigan and Wolcott.....	4 do.
do.	do.	Do. Illinois do do	8 do.
do.	do.	Do. do do do	8 do.
do.	do.	Do. Indiana do do	4 do.
do.	do.	Do. Ohio do do	4 do.
do.	do.	Do. Ontario do do	8 do.
do.	do.	Do. do do do	8 do.
do.	do.	Do. Illinois do Pine.....	4 do.
do.	do.	On Main and Wolcott, near the River.....	12 do.
do.	do.	Corner of Wolcott and Kinzie.....	8 do.
do.	No. 8	Corner of Illinois and Wells.....	8 do.
do.	do.	Do. do do LaSalle.....	4 do.
do.	do.	Do. do do Clark	4 do.
do.	do.	On Kinzie, at the River	8 do.
do.	do.	At Engine House, one flanged.....	24 do.
do.	do.	Do. do do do do	12 do.
do.	do.	Do. do do do do	16 do.
West.	No. 10.	On Kenzie near the River.....	8 inch.
do.	do.	Corner of Kenzie and West Water.....	4 do.
do.	do.	Do. Do. and Jefferson.....	4 do.
do.	do.	Do. Do. and Desplaines.....	8 do.
do.	No. 11.	Corner of Randolph and West Water.....	4 do.
do.	do.	Do. Do. and Canal.....	4 do.
do.	do.	Do. Do. and Clinton	8 do.
do.	do.	Do. Do. and Jefferson.....	4 do.
do.	do.	Do. Do. and Desplaines.....	8 do.

SCHEDULE E.—CONTINUED.

LIST OF STOP COCKS IN EACH DIVISION, BY DISTRICTS.

Div. of City.	District	Location of Stop Cocks.	Size of Cock.
West.	No. 12.	Corner of Adams and Canal.....	4 inch
do.	do.	Do. Do. Canal.....	4 do.
do.	do.	Do. Do. Clinton.....	8 do.
do.	do.	Do. Do. Do.....	8 no.
do.	do.	On Adams at the River.....	12 do.
		No. Size.	
do.		7.....	4 inch Cocks.....
		6.....	8 do. do.....
		1.....	12 do. do.....
		—	
		Total,.....	14

RECAPITULATION.

South.	4 inch 20....	8 inch 9....	12 inch 10.....	39
North.	4 " 7....	8 " 8....	12 " 2.....	16
West.	4 " 7....	8 " 6....	12 " 1.....	14
	1 " 24 inch flanged at Engine House.....			1
	1 " 16 " in Main.....			1
	1 " 16 " on hand.....			1
Total No.....				72