

BOSTON PUBLIC LIBRARY



3 9999 06660 761 3



WESTON LEWIS.

No. _____



GIVEN BY

Mrs. Carlyle Holt in Memory
Weston Lewis





Digitized by the Internet Archive
in 2010 with funding from
Boston Public Library

ANNUAL REPORT
OF THE
STREET DEPARTMENT
OF THE
CITY OF BOSTON.

1891.



BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1892.

Gift of Mrs. Laila E. Hott
in memory of her grandfather
Wesley Lewis
April 9-1964

~~Wesley Lewis~~

*6358.59

CONTENTS.

REPORT OF SUPERINTENDENT OF STREETS.

	PAGE		PAGE
Area of Pavement in Boston.	53	Expenses of Central Office...	45, 46
Barney Dumping-Scow...	88	Finance	4
Boston and Cambridge Bridges		Future Needs of the Division	
Division	47	(Street-Cleaning).....	130
Brick Sidewalks (ten years),	68	Future Work of the Division	
Brick Tests	60-62	(Sewers)	106-109
Bridge Division	46, 47	General Statement of Appro-	
Bridge Division Specials.....	16	priations	6, 7
Brighton (Sewers).....	103-106	Grade and Number of Em-	
Canal or Craigie's Bridge ...	48	ployees.....	43, 44
Central Office Division.....	3	High Level Intercepting Sew-	
Charlestown (Sewers).....	93	ers	112
City Proper and Back Bay		High Level Relief Sewers....	112
(Sewers)	93-98	Hired Teams (Sanitary).....	90
Civil Service Tables	35-42	Introduction	1
Classification of Expenses...	49	Lengths of Streets.....	52
Complaints	45	Macadamized Streets	56
Conclusion	135	Main Drainage Works.....	112, 115
Condition of Appropriation ..	49	Money Expended 1891 (Street-	
Contracts	19-33	Watering)	75
Contract Work (Summary,		Monthly Exhibit Sheet(Street-	
Street-Watering)	73	Watering) . . .	77
Cost of Street-Cleaning.....	131-133	New Edgestones (ten years)..	67
Culverts	109, 110	Night-Work (Street-Clean-	
Day-Work (Street-Watering),	72	ing)	124
Difficulties encountered		Ordinance for Street-Water-	
(Street-Cleaning)	128-130	ing	81, 82
Distribution of Carts (Street-		Organization.....	136
Watering)	74	Paved Areas by Districts	
Distribution of Pavements .	54-56	(Street-Cleaning).....	122, 123
Districts (Street-Cleaning) ..	121, 122	Paving Division	52
Dorchester (Sewers) ..	100	Paving Division Specials.....	8-14
Draw-Openings	50	Prison-Point Bridge	48
East Boston (Sewers).....	92	Property Schedule (Bridges),	50, 51
Employment of Labor.....	34	Push-Cart Patrol.....	125-128
Engineering Work	115, 116	Recapitulation (Street-Water-	
Estimated Cost of Work in		ing)	76
Boston (Street-Watering).	84	Recapitulation of Expenditures	17

	PAGE		PAGE
Refuse Materials (Sanitary Division).....	91	Street-Cleaning Division.....	119
Removal of Ashes.....	89, 90	Street-Watering.....	69
Removal of Offal.....	85-88	Transportation of Prisoners..	90
Roxbury (Sewers).....	99	Violation of the City Ordinance	134
Sanitary Division	85	Water-Posts	85
Sewer Diagram.....	117, 119	Watering in front of Engine-houses	79
Sewer Division.....	91	Watering in front of Police-Stations	80
Sewer Division Specials.....	15, 16	Watering in front of School-houses	78, 79
South Boston (Sewers).....	98	West Boston Bridge.....	47, 48
Special Features in this Year's Work in Paving.....	62, 65	West Roxbury (Sewers).....	102
Statement of Income.....	17	Work done on Edgestone and Sidewalks, etc. (three years).....	66, 67
Statement of Traffic over Bridges	51		
St. Louis (Street-Watering)..	82-84		
Stony Brook	110, 111		

APPENDIX A.

REPORT OF DEPUTY SUPERINTENDENT OF BRIDGE DIVISION.

	PAGE		PAGE
Appropriations and Expenditures	139, 140	Report of the Deputy Superintendent of Bridge Division,	137
Bridges of which Boston pays a Part of the Cost of Maintenance	163	Special Appropriations.....	159-161
Bridges of which Boston supports the Part within its Limits.....	162	Special Works.....	138
Bridges supported by Railroad Corporations	163	Tide-Water Bridges.....	140, 150
Bridges wholly supported by Boston	161	Appendix A1 (Drawtenders' Reports).....	166, 167
Income	140	Appendix A2 (Widths of Openings)	168, 169
Inland Bridges	152, 156	Appendix A3 (Width of Tide-Water Bridges).....	170
Recapitulation (Tide-Water Bridges)	151	Appendix A4 (Culverts)	171-175
Recapitulation (Inland Bridges)	157	Appendix A4 Supplement (Culverts built in 1891).....	176
Recapitulation	164	Appendix A5 (Traffic, 6.30 A.M. to 8 A.M.)	177
Regular Maintenance Expenses, North and South Yards.....	158, 159	Appendix A6 (Traffic, 12 M. to 1 P.M.).....	177
		Appendix A7 (Traffic, 5.30 P.M. to 7 P.M.)	178
		Appendix A10 (Vessels passing thro ugh drawbridges)..	178

APPENDIX B.

REPORT OF DEPUTY SUPERINTENDENT OF THE
PAVING DIVISION.

	PAGE		PAGE
Detail of Work and Expenses,		Property	298
238-293		Removal of Snow.....	233
Executions of Court	194	Schedule of Maintenance Ex-	
Expenditures	194	penses	196-226
Expenditures under Special		Sprinkling Streets.....	227-233
Appropriations.....	234-237	Streets Discontinued	189
Financial Statement.....	191	Streets Laid Out	186
Grade Damages	195	Streets Relocated	189
Income.....	192	Streets Widened	189
New Brick Sidewalks.....	296	Table of Expenses Classified..	193
New Edgestone	293-296	Tools, Horses, Carts, etc. .	300, 301
Official Duties	181	Yearly Expenditures	179
Permits	184		

APPENDIX C.

REPORT OF DEPUTY SUPERINTENDENT OF
SANITARY DIVISION.

	PAGE		PAGE
Cost of Blacksmithing, Carts,		House-Dirt and Ashes	313
etc.	307	House-Offal	312
Conveyance of Prisoners	309	Material collected, and Dispo-	
Distribution of Hay and Grain,		sition of same.....	306
310-312		Material collected in 10 Years,	309
Dumping-Boats	308	Schedule of City Property...	314
Hired Teams	308	Total Cost for Removal of	
Horse Account	313	House-Dirt, etc.	305

APPENDIX D.

REPORT OF DEPUTY SUPERINTENDENT OF SEWER
DIVISION.

	PAGE		PAGE
Decision of Supreme Court ..	316	Schedule of Tools and Stock.	352
Fall of Rain and Snow.....	351	Sewers and Culverts built	
Financial Statement.....	320-325	(Classified by Districts)..	326-349
General Matter.....	315-319	Sludge removed	354
Property	354	Specials.....	355-368
Pumping-Station Record.....	353	Summary of Sewer Construc-	
Schedule of Sewers built to Date,	350	tion.....	350

APPENDIX E.

REPORT OF DEPUTY SUPERINTENDENT OF STREET-
CLEANING DIVISION.

	PAGE		PAGE
Cleaning Gutters, Crossings, and Sidewalks (Cost by Dis- tricts)	370, 371	Force employed	375
Cleaning Streets (Cost by Dis- tricts)	370	General Recapitulation	373, 374
Complaints	375	Income	375
Cost of maintaining Dumps ..	371	Inventory of Property	376
Cost of Removal of Snow	371	Patrol System	372
Financial Statement	369-374	Recapitulation of Expenses ..	372
		Stable and Yard Expenses ..	372, 373
		Stock Account	373
		Table of Cost per Mile . . .	374, 375

APPENDIX F.

REPORT OF ENGINEERING DEPARTMENT.

	PAGE		PAGE
Bennington-St. Culvert	386	Hill-St. Retaining-Wall	384
Berkeley-St. Bridge over the B. & A. R.R.	382	Irrington-St. Footbridge	384
Chelsea Bridge, North, Fender- Guard	383	Irrington and Yarmouth Sts. Retaining-Walls	384
Chelsea Bridge, North, Steam- Power	383	L-St. Abutment and Bulk- head	385
Contract Work	377	Roxbury Canal and Sea-Wall .	385
Cornwall-St. Bridge over Stony Brook Channel	383	Report of Engineering Depart- ment	377-386
Details by Streets	378-381	Stony Brook Improvement ...	385

APPENDIX G.

FORMER SUPERINTENDENTS AND DOCUMENT
NUMBERS OF ANNUAL REPORTS.

	PAGE		PAGE
Bridge Department before 1891	387	Paving Department before 1891	387, 388
Commissioners of Cambridge Bridges before 1891	391	Sewer Department before 1891	389
Health Department before 1891	390		

LIST OF ILLUSTRATIONS.

	PAGE
Fort Hill Dumping-Wharf.....	84
Dumping-Scow Loaded, going to Sea.....	86
Dumping-Scow Unloading.....	88
Chart of Dumping-Stations.....	90
Dorchester Brook Sewer.....	98
Roslindale Main Sewer — Excavating-Machine.....	102
Oakland-Street Culvert (as rebuilt), Brighton.....	108
Faneuil-Street Sewer Culvert (to be built), Brighton...	108
Stony Brook Gate-House (exterior).....	110
“ “ “ (interior).....	110
Sewer Diagram.....	118
Push-Cart Patrol Service.....	126
Stony Brook Improvement (Roslindale).....	384

STREET DEPARTMENT, CITY HALL,
BOSTON, Feb. 1, 1892.

HON. NATHAN MATTHEWS, JR.,

Mayor of the City of Boston:

SIR: In compliance with the Revised Ordinances, the first annual report of the operations and expenses of the Street Department for the year 1891 is herewith respectfully submitted.

In accordance with a recommendation made by you in your inaugural address, Jan. 5, 1891, in regard to the consolidation of certain of the departments having to do with work directly connected with the streets of the city, an ordinance to amend Chapter 18 of the Revised Ordinances of 1890 was passed by the Board of Aldermen on March 2, 1891. The ordinance provided that "the Street Department shall be under the charge of the Superintendent of Streets, who shall construct all highways and sewers; shall have charge of and keep the highways, the pumping-station, and reservoirs of the improved sewerage system, all sewers under the control of the city, and the catch-basins in the streets connected with the sewers, clean and in good condition and repair; shall remove all ashes accumulated from the burning of materials for heating buildings and for domestic purposes, all house dirt, house offal, and all noxious and refuse substances from the yards and areas, where so placed as to be easily removed; shall have the care of the city teams and city stables, and of all property acquired for carrying out said purposes, and shall keep the same in good condition and repair; shall purchase all fuel and other supplies required for said purposes, and shall within the appropriation for officers and subordinates appoint all necessary deputy superintendents, chiefs of divisions, and other subordinates, said deputies and chiefs to be approved by the Mayor; shall have the care and management of all bridges which are used as highways and are in whole or in part under the charge of the city, and of so much of Harvard bridge and of Prison-point bridge as are under the charge of the Board of Aldermen; shall be the commissioner to act with another commissioner for the city of Cambridge, and shall have and exercise all the powers in relation to West Boston and Craigie's bridges conferred by Chapter 302 of the Acts of the year 1870; shall

make all repairs affecting the strength of bridges, and keep the rails and planks in good order, and all dirt, snow, and ice removed from the sidewalk, and keep all bridges, draws, and wharves thereof clean and in good condition and repair, and shall appoint all draw-tenders; shall place and maintain all street signs and number all buildings; shall issue all permits to open, occupy, or obstruct streets for various purposes; permits to licensed drain-layers to enter particular drains into the public sewers; permits to open, occupy, and use portions of the street for coal-holes and vaults; permits to raise and lower goods and safes; permits to building-movers; permits to open and occupy portions of the street for the purpose of laying wires, railway tracks, pipes or conduits; and permits to place and maintain poles for the support of wires."

In general, the Superintendent of Streets is charged with seeing that all statutes, ordinances, and regulations relating to the care and use of streets, bridges, and sewers are fully observed, and with carrying out all lawful orders of the Board of Aldermen relating to streets, bridges, and sewers. The ordinance relating to the duties of the Superintendent of Streets was still further amended on Dec. 15, 1891, by a clause obliging him to keep the streets properly watered.

The before-mentioned duties were, previous to the passage of this ordinance, performed by the Superintendent of Streets, the Superintendent of Sewers, the Superintendent of Sanitary Police, the Superintendent of Bridges, and the Commissioner of Cambridge Bridges, all of which offices were abolished in the ordinance, and the departments under their control consolidated into the Street Department.

In order to systematize the work of the Street Department, the following divisions have been made:

- Central Office.
- Paving Division.
- Sewer Division.
- Sanitary Division.
- Street-cleaning Division.
- Bridge Division.
- Cambridge Bridges Division.

Each of these divisions, with the exception of the Central Office and the Cambridge Bridges Divisions, is in charge of a deputy superintendent.

CENTRAL OFFICE DIVISION.

The Central Office Division takes charge of all work of a general nature, such as correspondence, purchasing of supplies, attending to complaints, execution of contracts, keeping the records returned from the various divisions, and all financial accounts, monthly returns of force accounts, monthly statements of accumulated expenses for reports to the Mayor, and all legal transactions affecting the department, giving due notice of the same to parties affected thereby; and, in general, acts as headquarters from which the operations of the various divisions can be directed.

To this office the various deputies in charge of the divisions report daily, so that the work in all divisions shall move along harmoniously, and without duplication of labor and expense.

The supplies of the department are all obtained through a purchasing agent, instead of through the head clerks of the different divisions, as was formerly the case before the departments were consolidated.

Uniformity in quality of materials and the lowest market rates are thus obtained.

Blank forms are furnished to the foremen in the different yards, on which are entered by them memoranda of materials needed and the object thereof, and this form is returned to the chief clerk of the division, who enters the same in a warrant book, the stubs of which are numbered consecutively.

This warrant, approved by the deputy superintendent of the division, is then sent direct to the purchasing agent, who issues in return the requisition on the parties with whom he holds contracts for furnishing materials.

The numbers of warrants and requisitions are made to correspond, so that upon the return of the bills, certified as to quantity and quality (delivered by the foreman receiving the same), they are easily identified and vouched for by the purchasing agent before being entered upon the schedule for payment.

This complete system of warrants and requisitions for supplies allows the purchasing agent to have a check on their price and delivery, and also on the purchase of an excessive amount of stock at a given time.

Specifications have been prepared for the purchasing of all large supplies which are bought by contract after public advertisement.

During the year the Corporation Counsel has rendered 77

legal opinions, of which number 37 relate to matters pertaining to the Paving Division, 32 to the Sewer Division, 3 to the Bridge Division, and 5 to miscellaneous matters.

FINANCE.

Books are kept at the Central Office which show the objects and amounts of the various appropriations and balances from month to month. The following detailed statement shows the various appropriations and amount expended for maintenance for four months ending May 1, 1891, and for the nine months ending Jan. 31, 1892.

This division of the financial accounts is made necessary by the change in the financial year.

FINANCIAL STATEMENT

OF THE

STREET DEPARTMENT APPROPRIATION

FROM

JANUARY 1, 1891, TO JANUARY 31, 1892,
INCLUSIVE.

APPROPRIATIONS.	Balance on hand Jan. 1, 1892.	Revenue and Loans.	Total Credits.	Expenditures for the four months ending April 30, 1891.	Balance.
Street Department, now Paving Division	\$45,211 81	¹ \$179,124 27	\$224,336 08	\$224,336 08	
Sewer Department, now Sewer Division	34,748 24	² 40,892 05	75,640 29	75,397 41	\$242 88
Sanitary Police Department, now Sanitary Division	151,562 44	³ 27,212 16	178,774 60	178,774 60	
Bridge Department, now Bridge Division	23,572 99	⁴ 1,201 10	24,774 09	24,774 09	
Cambridge Bridge Department, now Cambridge Bridges Di- vision	⁵ 1,543 48	.....	1,543 48	1,543 48	
Total	\$256,638 96	\$248,429 58	\$505,068 54	\$504,825 66	\$242 88

¹ Transferred from Causeway street				\$3,000 00
Loan				183,000 00
Transferred from Cambridge Bridges				5,494 30
				<u>\$191,494 30</u>
Transferred to Commonwealth avenue				\$44 93
“ “ Sewer Division				8,411 84
“ “ Sanitary “				2,712 16
“ “ Bridge “				1,201 10
				<u>12,370 03</u>
				<u>\$179,124 27</u>
² Loan	\$32,000 00	⁴ Transferred from Street De- partment		\$1,201 10
Revenue	480 21			
Transferred from Street De- partment	8,411 84			
	<u>\$40,892 05</u>	⁵ Original balance		\$7,037 78
		Transferred to Street Depart- ment		5,494 30
⁵ Loan	\$24,500 00			<u>\$1,543 48</u>
Transferred from Street De- partment	2,712 16			
	<u>\$27,212 16</u>			

STREET DEPARTMENT.

7

APPROPRIATIONS.		Balance on hand May 1, 1891.	Appropriation during the Year.	Revenue.	Total Credits.	Expenditures for nine months ending Jan. 31, 1892.	Balances Jan. 31, 1892.
STREET DEPARTMENT:							
Central Office.....			1 \$16,050 00		\$16,050 00	\$16,050 00	
Paving Division.....			2 753,347 65		753,347 65	752,863 94	\$483 71
Sewer Division.....		\$242 88	3 370,195 32	\$2,683 08	373,121 28	370,825 28	2,296 00
Sanitary Division.....			4 330,600 00		330,600 00	330,567 64	32 36
Street-cleaning Division.....			5 230,000 00		230,000 00	215,464 92	14,535 08
Bridge Division.....			6 99,400 00		99,400 00	98,236 54	1,163 46
Cambridge Bridges Division.....			7 10,322 94		10,322 94	10,322 94	
Street Police.....			8 464 41		464 41	464 41	
Total.....		\$242 88	\$1,810,380 32	\$2,683 08	\$1,813,306 28	\$1,794,765 67	\$18,510 61
1 Appropriation for 1891-92.....	\$15,000 00		3 Appropriation for 1891-92.....	\$350,000 00	6 Appropriation for 1891-92.....		\$100,000 00
Transferred from Street Police Division,	1,050 00		Transferred from Dunsable st.....	128 45	Transferred to Sanitary Division.....		600 00
	\$16,050 00		" " Russell st.....	68 87			
			" " Street-cleaning Div'n	20,000 00			\$99,400 00
2 Appropriation for 1891-92.....	\$700,000 00			\$370,195 32	7 Appropriation for 1891-92.....		\$12,000 00
Transferred from Reserved Fund for					Transferred to Paving Division.....		1,677 06
Street Watering.....	50,000 00			\$330,000 00			
Transferred from Cambridge Bridges	1,677 06			600 00			\$10,322 94
Division.....	3,485 59			\$330,600 00			
Transferred from Street Police Division,	\$755,162 65				8 Appropriation for 1891-92.....		\$5,000 00
				\$250,000 00	Transferred to Central Office.....		\$1,050 00
Transferred to Humboldt ave., grade	1,815 00			20,000 00	" " " Paving Div'n.....		4,535 59
damages.....				\$230,000 00			\$464 41
	\$753,347 65						

Paving Division Specials.

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
A st., Broadway to First st.....	\$12,000 00	\$12,000 00	
Albany st.....	21,107 49	21,107 49	
Aldie st.....	1,000 00	1,000 00	
Allendale st... ..	6,000 00	4,729 41	\$1,270 59
Ashfield st.....	1,000 00	1,000 00	
Ashmont st., Dorchester ave. to Washington st..	5,400 00	5,400 00	
Atlantic ave.....	3,492 76	3,492 76	
Austin st... ..	8,700 00	8,700 00	
Atlantic st., Thomas Park to Fourth st.....	1,543 02	1,543 02	
Baker st.....	2,500 00	2,500 00	
Baldwin st., Ward 4.....	3,307 26	.....	3,307 26
Ballard st.....	1,000 00	1,000 00	
Batterymarch st.....	3,200 00	3,200 00	
Beacon st., west from Charles st....	35,350 00	35,350 00	
Beacon st., West Chester Park to Arlington st..	6,000 00	4,825 38	1,174 62
Bedford st., Chauncy to Columbia st.....	4,100 00	4,100 00	
Board alley.....	469 50	469 50	
Boat-landing, Commercial wharf.....	1,000 00	.....	1,000 00
Bolton street, Second to D st.....	1,767 00	.....	1,767 00
Boylston st., Church to Arlington st.....	8,000 00	64 50	7,935 50
Bristol st... ..	2,579 71	49 00	2,530 71
Brookline st., Shawmut ave. to Tremont st.....	531 10	531 10	
Bunker Hill st., Elm to Sackville st.....	4,000 00	4,000 00	
Bushnell st.....	2,917 00	2,917 00	
Buttonwood st.....	3,500 00	2,013 30	1,486 70
Cabot st... ..	16,000 00	16,000 00	
Caldwell st.....	1,568 52	1,568 52	
Cambridge st., Wards 9 and 10.....	23,775 29	23,775 29	
Camden st., Tremont st. to O. C. R.R.....	7,500 00	7,500 00	
Canton st., Shawmut ave. to Tremont st.....	1,000 00	1,000 00	
Centre st., Pynehon to New Heath st.	3,000 00	3,000 00	
Centre st., Ward 23	1,261 14	.....	1,261 14
Chambers st., Charlestown.....	634 35	634 35	
Charles st.	28,224 71	16,578 66	11,646 05
Chestnut ave., Ward 9, paving	650 00	.....	650 00
<i>Carried forward</i>	\$224,078 85	\$190,049 28	\$34,029 57

Paving Division Specials. — *Continued.*

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
<i>Brought forward</i>	\$224,078 85	\$190,049 28	\$34,029 57
Childs st.	2,500 00	.....	2,500 00
Cleveland pl.	1,000 00	1,000 00	
Cliff st.	2,169 72	2,169 72	
Columbus ave.	39,000 00	39,000 00	
Commonwealth ave., West Chester park to Arlington st.	2,000 00	603 90	1,396 10
Concord sq.	72 40	72 40	
Cook st.	700 00	700 00	
Cornell st.	4,300 00	4,300 00	
Cornwall st., laying out and constructing.....	6,405 86	5,405 86	1,000 00
Call st., laying out and constructing.....	3,096 45	3,096 45	
D st., First to Third st.	5,000 00	.....	5,000 00
Dartmouth st., Tremont st. to Columbus ave.	568 10	568 10	
Dearborn st., Eustis to Dudley st.	2,066 91	.....	2,066 91
Dorchester st., Eighth st. to Dorchester ave.	22,000 00	21,613 91	386 09
Dorset st., Dorchester ave. to Boston st.	5,000 00	5,000 00	
Dover st., Harrison ave. to Albany st.	6,715 00	6,715 00	
Dudley st., to Norfolk House	5,000 00	5,000 00	
Dudley st., Washington to Vine st.	33,599 36	33,177 75	721 61
Dudley st., Blue Hill ave. to Shirley st.	7,600 64	.....	7,600 64
Dupont st.	524 00	.....524 00	
Eagle sq.	1,000 00	1,000 00	
East Fifth st., L to N st.	3,244 91	.....	3,244 91
East First st., H to K st.	1,000 00	1,000 00	
E st., Third to Bolton st. and Third st., 160 ft.	3,000 00	3,000 00	
Ellery st., Ward 15	1,780 39	.....	1,780 39
East Concord st., Harrison ave. to Albany st.	4,500 00	4,500 00	
East Newton st., Harrison ave. to Albany st.	3,554 36	3,554 36	
Edgeworth st.	400 00	400 00	
Ellwood st.	1,251 06	1,251 06	
Emerson st., H to I st.	5,000 00	5,000 00	
Emerald st.	1,574 98	1,574 98	
Exeter st.	316 50	316 50	
First st., West	5,200 00	5,200 00	
First st., Ward 14.	4,710 07	.....	4,710 07
<i>Carried forward</i>	\$410,229 56	\$345,793 27	\$64,436 29

Paving Division Specials. — *Continued.*

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
<i>Brought forward</i>	\$410,229 56	\$345,793 27	\$64,436 29
First st., E to F st.....	4,000 00	4,000 00	
First st., D to F st.....	2,289 93	2,289 93	
First st., N. Y. & N. E. R.R. to F st.	25,000 00	25,000 00	
Falcon st.....	5,667 00	3,380 40	2,286 60
Fourth st., G to H st.	1,104 35	1,104 35	
Forbes st.....	2,020 75	2,020 75	
Fulda st.....	830 28	324 75	505 53
Fulton st., Richmond to Lewis st.	7,230 42	7,230 42	
Genesee st.	3,500 00	3,500 00	
Geneva ave.....	13,000 00	6,249 79	6,750 21
Goldsmith st.....	1,000 00	1,000 00	
Granite ave.	10,000 00	10,000 00	
Green st., Charlestown.....	460 46	460 46	
Gustin st.....	1,700 00	1,700 00	
Hampshire st.....	1,000 00	1,000 00	
Harrison ave., Canton to Sharon st.	4,000 00	4,000 00	
Harrison ave., E. Concord to E. Chester park	1,500 00	1,500 00	
Harrison ave., E. Lenox to Northampton st.....	3,000 00	3,000 00	
Harrison ave., Kneeland to Bennett st.	3,900 00	.....	3,900 00
Harvard st., Washington to Albany st.	10,000 00	77 78	9,922 22
Harvest st., Boston st. to Dorchester ave.....	4,000 00	4,000 00	
Haskins st.	2,809 79	2,809 79	
Haviland st.	541 98	... ..	541 98
Heath st., widening, etc.	17,167 00	2,768 33	14,398 67
Henley st.	3,847 52	3,847 52	
High st., Winthrop to Walker st.....	2,125 13	2,125 13	
Hill st.....	4,138 07	4,138 07	
Hobart st.....	2,000 00	2,000 00	
Hollis st.	3,087 02	3,087 02	
Howland st.....	4,000 00	4,000 00	
Hudson st.....	21,000 00	20,113 68	886 32
Humboldt ave., grading.....	16,025 27	16,025 27	
Hunneman st.....	14,000 00	82 80	13,917 20
Horace and Homer sts.	1,169 26	.....	1,169 26
Humboldt ave., grade damages	1,815 00	.....	1,815 00
<i>Carried forward</i>	\$609,158 79	\$488,629 51	\$120,529 28

Paving Division Specials. — *Continued.*

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
<i>Carried forward</i>	\$609,158 79	\$488,629 51	\$120,529 28
Island st.	25 00	25 60	
Jeffries and Marginal sts.....	5,000 00	5,000 00	
K st., Broadway to First st.....	2,000 00	.....	2,000 00
K st., Fourth to Eighth sts.....	678 34	678 34	
Kingston st., Summer to Essex sts.	7,715 00	7,715 00	
Lake st.....	12,000 00	12,000 00	
L st.	30,440 00	21,098 97	9,341 03
Lenox st....	5,474 41	5,474 41	
Lincoln st.....	2,300 00	2,300 00	
Longwood ave., Parker to Huntington ave.	23,000 00	22,592 12	407 88
Lucas st.....	308 22	308 22	
Lynde st.	2,000 00	1,603 79	396 21
Magazine st., E. Chester park to Norfolk ave....	2,500 00	925 80	1,574 20
Magnolia st.....	4,000 00	4,000 00	
Malden st.....	6,000 00	6,000 00	
Matthews st.....	4,560 25	4,560 25	
Maynard st.	2,000 00	2,000 00	
Medford st., Lexington to Chelsea st.	28,200 00	21,505 36	6,694 64
Mercer st., Dorchester to Eighth st.....	2,000 00	1,054 98	945 02
Minot st.	10,000 00	8,440 37	1,559 63
Monument court	497 48	497 48	
Monument st.....	1,866 87	1,866 87	
Moon st.....	3,519 34	3,519 34	
Moreland st., from Fairland st.....	2,000 00	2,000 00	
Mt. Vernon st., Ward 25	2,125 00	2,125 00	
Murdock st.....	2,000 00	1,006 06	993 94
National st.	1,500 00	1,500 00	
Neponset ave.....	12,000 00	12,000 00	
Newman st., Mercer to Dorchester st.	1,198 26	1,198 26	
Ninth st., Old Harbor to N st.....	12,654 37	6,117 66	6,536 71
Oak st.....	1,000 00	1,000 00	
Ocean st.....	10,100 00	10,100 00	
Onelda st....	3,300 00	3,300 00	
Oswego st.....	3,668 67	3,668 67	
Park st.....	2,115 43	2,115 43	
<i>Carried forward</i>	\$818,906 03	\$667,927 49	\$150,978 54

Paving Division Specials. — *Continued.*

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
<i>Brought forward</i>	\$818,906 03	\$667,927 49	\$150,978 54
Parker st.....	35,000 00	35,000 00	
Parker st., Huntington ave. to Westland ave.....	1,000 00	420 00	580 00
Parkman st., Ward 9.....	453 80	453 80	
Paul st.....	844 38	844 38	
Pemberton sq.	1,584 57	1,584 57	
Preble st., Dorchester ave. to Vinton st.....	5,800 00	5,800 00	
Prentiss st.....	4,000 00	4,000 00	
Prospect ave.	500 00	500 00	
Q st.....	399 85	399 85	
Randolph st.....	6,000 00		6,000 00
Resurfacing streets, Wards 17 and 18.....	5,777 31	5,777 31	
Richmond st.	1,400 00	1,400 00	
Rochester st.....	4,360 64	4,360 64	
Rogers st., Dorchester st. to Preble st.	1,000 00	1,000 00	
Rutherford ave., macadamizing	100 00	100 00	
Rutherford ave., paving.....	13,538 23	7,841 50	5,696 73
Rutland square.....	114 10	114 10	
Salem st., Charlestown....	1,000 00	1,000 00	
Savin Hill ave.....	3,500 00	3,500 00	
Scotia, Cambria, and Bothnia sts.	10,000 00	10,000 00	
Second st., K to M st.....	1,422 21	1,422 21	
Second st., E to Dorchester st.	20,000 00	20,000 00	
Second st., Granite st., easterly	15,000 00	15,000 00	
Second st., grading, etc.....	1,034 36	1,034 36	
Seneca st.....	3,241 33	3,241 33	
Seventh st., D to B st.....	9,000 00	9,000 00	
Sheds, Medford-st. Yard ..	2,000 00		2,000 00
Shirley st.	6,750 00	4,042 66	2,707 34
Short st., Charlestown	700 00	700 00	
Short st., West Roxbury.....	3,500 00	96 60	3,403 40
Silver st., A to D st.	1,500 00	1,090 66	409 34
Sixth st., B to C st.....	3,200 00	3,200 00	
Sixth st., H to I st.....	1,621 54	1,621 54	
Soley st.....	810 35	810 35	
Stillman st.	1,500 00		1,500 00
<i>Carried forward</i>	\$989,203 78	\$815,230 13	\$173,973 65

Paving Division Specials. — *Continued.*

OBJECT OF APPROPRIATIONS.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 1, 1892.
<i>Brought forward</i>	\$889,203 78	\$815,230 13	\$173,973 65
Story st.	2,645 08	1,946 78	698 30
Stoughton st., Harrison ave. to Albany st.	3,000 00	3,000 00	
Sun-court st.	1,388 32	1,388 32	
Sycamore and Ridge sts.	3,700 00	3,700 00	
Symmes st.	1,000 00	1,000 00	
Stanhope st.	1,683 50	.....	1,683 50
Smith st.	639 60	639 60	
Terrace pl.	850 00	850 00	
Terrace st.	25,695 54	25,218 34	477 20
Texas st.	2,000 00	2,000 00	
Third st.	2,000 00	2,000 00	
Tremont st., Roxbury crossing to Parker st.	10 50	10 50	
Tremont st., Roxbury crossing to Huntington ave. .	2,304 46	.....	2,304 46
Tremont st., Scollay sq. to Boylston st.	52,000 00	52,000 00	
Troy st.	8,100 00	8,100 00	
Village st.	2,200 00	2,200 00	
Vinton st.	1,000 00	.....	1,000 00
Waltham st.	500 00	500 00	
Ward st.	675 72	675 72	
Wareham st.	13,024 62	13,024 62	
Warren ave.	254 40	254 40	
Warren st., granite blocks.	20,000 00	17,081 75	2,918 25
Warren st. and Blue Hill ave.	5,000 00	.....	5,000 00
Warrenton st.	6,871 64	6,621 08	250 56
Washburn st.	3,043 89	3,043 89	
Washington st., Charlestown.	2,000 00	2,000 00	
Washington st., Hawes ave. to N. Y. & N. E. R.R. .	500 00	500 00	
Washington st., etc., Ward 23.	11,953 19	11,953 19	
Water st., Charlestown	540 70	540 70	
Watson st.	1,498 65	1,498 65	
Waumbeck st.	2,000 00	2,000 00	
Way st.	8,179 80	.....	8,179 80
Well st.	1,800 00	1,800 00	
Wendell st.	2,520 06	2,520 06	
West Chester park	15,647 63	.....	15,647 63
<i>Carried forward</i>	\$1,195,354 02	\$983,918 97	\$211,435 05

Paving Division Specials. — Concluded.

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 1, 1892.
<i>Brought forward</i>	\$1,195,354 02	\$983,918 97	\$211,435 05
West Chester park and square	2,568 02	2,568 02	
West Dedham st.	4,500 00	4,500 00	
West Newton st., Tremont st. to Columbus ave... .	12,000 00	12,000 00	
West Newton st., Tremont st. to Shawmut ave. . .	6,000 00	6,000 00	
West Second st.....	135 49	135 49	
Wharf st.....	1,861 03	1,861 03	
Total	\$1,219,850 54	\$1,008,415 49	\$211,435 05

Sewer Division Specials.

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
Arlington st.....	\$2,107 69	\$1,970 06	\$137 63
Border st.....	1,108 91	1,108 91	
Burnett st.....	715 55	715 55	
Beacon st. and Commonwealth ave.....	18,800 00	10,387 82	8,412 18
Brighton.....	10,400 00	3,673 30	6,726 70
Byron st.....	934 19	934 19	
“ “ outlet.....	1,211 83	1,208 19	3 64
Brookline ave., improved sewerage connection ...	4,665 50	131 55	4,533 95
Cambridge st.....	1,500 00	1,500 00	
Catch-basins, Huntington ave.....	472 95	454 34	18 61
“ “ Wards 19 and 22.....	190 21	190 21	
“ “ Stanhope st.....	227 05	.....	227 05
Charlestown sewers, repairing.....	11,000 00	8,968 71	2,031 29
Cleveland pl.	157 00	157 00	.....
Crawford st., Humboldt ave. to Walnut ave.	5,000 00	2,030 80	2,969 20
Culverts, Ward 24.....	5,000 00	5,000 00	
Commonwealth ave.	1,000 00	1,000 00	
Cottage st., outlet extension.....	160 50	160 50	
D st., outlet.....	10,000 00	3,976 17	6,023 83
Dike, Winthrop Junction.....	2,350 00	.....	2,350 00
Dunstable st.	373 55	373 55	
Dustin st.....	6,000 00	6,000 00	
Dorchester brook, rebuilding.....	20,366 02	20,366 02	
East Boston.....	5,200 00	2,925 70	2,274 30
Eleventh aldermanic district.....	1,046 97	.....	1,046 97
Falcon st.....	1,000 00	1,000 00	
Florence st.....	1,306 60	1,306 60	
Harcourt st.....	432 00	432 00	
Hillside st.....	579 19	579 19	
Harvard and Kilton sts.	12,000 00	12,000 00	
Homer st.....	1,250 00	1,250 00	
Lawrence ave., Quincy and Magnolia sts.....	6,000 00	4,143 12	1,856 88
Milton st.....	865 31	865 31	
New st.....	450 00	15 29	434 71
Oak st.....	3,500 00	3,500 00	
Orient Heights.....	29,650 00	29,585 04	64 96
<i>Carried forward.....</i>	\$167,021 02	\$127,909 12	\$39,111 90

Sewer Division Specials. — *Concluded.*

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
<i>Brought forward</i>	\$167,021 02	\$127,909 12	\$39,111 90
Peter Parley road	395 19	370 92	24 27
Parker Hill st.	1,024 00	1,024 00	
Porter st.	12,000 00	12,000 00	
Rockwell and Armandine sts.	15,000 00	8,800 93	6,199 07
Russell st.	324 13	324 13	
Roxbury	10,220 81	361 38	9,859 43
Roslindale and West Roxbury	55,321 26	47,184 96	8,136 30
Savin Hill district	21,962 26	21,678 70	283 56
South Boston	4,000 00	231 11	3,768 89
Stable and sheds, Brighton	4,500 00		4,500 00
Summer and Orleans sts.....	13,000 00	13,000 00	
Stony-brook improvement.....	23,082 44	22,997 30	85 14
Tyler st.	7,000 00	7,000 00	
Walkhill st.....	1,500 00	1,500 00	
Welles ave.	750 00	750 00	
Washington st., etc., Ward 23.....	2,000 00	2,000 00	
Westville, Freeman, and Charles sts.....	8,000 00	4,003 36	3,996 64
Whitmore st.....	700 00		700 00
Total	\$347,801 11	\$271,135 91	\$76,665 20

Bridge Division Specials.

OBJECT OF APPROPRIATION.	Appropriations.	Expended Jan. 1, 1891, to Jan. 31, 1892.	Balance on hand Jan. 31, 1892.
Berkeley-st. bridge, rebuilding.....	\$18,000 00	\$8,496 18	\$9,503 82
Chelsea bridge, steam apparatus.....	12,000 00	7,768 45	4,231 55
Ferdinand-st. bridge	17,427 87	15,552 90	1,874 97
Irvington-st. bridge	7,000 00	7,000 00	
Milton bridge, repairs.....	2,500 00	2,500 00	
Savin-Hill ave. bridge, widening.....	5,000 00		5,000 00
Total.....	\$61,927 87	\$41,317 53	\$20,610 34

RECAPITULATION OF EXPENDITURES

FOR THE

Thirteen Months ending Jan. 31, 1892.

OBJECT OF APPROPRIATION.	Current Expenses.		Special Appropriations.	Total.
	For the four months ending April 30, 1891.	For the nine months ending Jan. 31, 1892.		
Street Department:				
Central Office.....		\$16,050 00		\$16,050 00
Paving Division	\$224,336 08	752,863 94	\$1,008,415 49	1,985,615 51
Sewer Division.....	75,397 41	370,825 28	271,135 91	717,358 60
Sanitary Division	178,774 60	330,567 64		509,342 24
Street-cleaning Division.....		215,464 92		215,464 92
Bridge Division	24,774 09	98,236 54	41,317 53	164,328 16
Cambridge Bridges Division ..	1,543 48	10,322 94		11,866 42
Street Police		464 41		464 41
Total.....	\$504,825 66	\$1,794,795 67	\$1,320,868 93	\$3,620,490 26

Statement showing the Income of the Department for the Year ending January 31, 1892.

Paving Division	\$33,777 85
Sewer Division	¹ 24,197 53
Sanitary Division	43,148 51
Bridge Division	1,183 40
Street-cleaning Division	941 00
	<hr/>
	\$103,248 29

¹ In addition to the sum of \$24,197.53 (the amount of the bills for sewer assessments and entrance fees deposited with the City Collector) there remains on the books of the Sewer Division the sum of \$57,415.46, assessed for the construction of sewers, but not yet deposited with the City Collector or collected under the new law, which sum will be drawing interest at 5% until paid.

LIST OF CONTRACTS

FROM

APRIL 1, 1891, TO FEBRUARY 1, 1892,

MADE BY THE

STREET DEPARTMENT.

Paving Blocks.

AMOUNT.	Size.	Where Delivered.	Contractor.	Date of Bid.	Price per M.
200,000	Large,	Boston wharves ...	S. & R. J. Lombard	April 7, 1891,	{ \$69.00 N. End. 72.00 S. End.
300,000	"	" " ..	Cape Ann Granite Co.....	May 8, "	
500,000	Small,	Dorchester or So. Boston wharves,	S. & R. J. Lombard,	May 18, "	\$72 95
300,000	Large,	Charlestown.....	H. Gore & Co....	May 18, "	48 00
200,000	"	Boston wharves ...	Cape Ann Granite Co.....	May 18, "	78 00
100,000	"	" " ..	Rockport Granite Co.....	May 26, "	72 95
300,000	"	Boston, Burnham's wharf	Cape Ann Granite Co.....	May 21, "	72 95
				June 27, "	72 95
300,000	"	Boston wharves ...	Rockport Granite Co.....	July 27, "	73 65

Paving Brick.

AMOUNT.	Where Delivered.	Contractor.	Date of Bid.	Price per M.
200,000	Boston streets.....	Oliver S. Foster.....	June 15, 1891,	\$11 50
200,000	Boston streets.....	New England Steam Brick Co.....	July 17, "	12 50

North-River Flagging.

WHERE DELIVERED.	Contractor.	Date of Bid.	Price per Sq. Ft.	
City	J. J. Cuddihy	April 6, 1891 ..	\$0 52½ on wharf.	\$0 57½ on street.

Edgestone.

AMOUNT.	Where Delivered.	Contractor.	Date of Bid.	Price per Lin. Ft.
10,000 lin. ft.	Boston wharves	Perkins & White ..	July 3, 1891 ...	\$0 73

Spruce Lumber.

WHERE DELIVERED.	Contractor.	Date of Bid.	Price per M.	Price for Planing.
Paving District 1, South Boston..	A. M. Stetson & Co. ...	April 7, 1891...	\$15 38	\$1 00
“ 2, East Boston...	John W. Letherbee....	“ “ ...	18 00	1 00
“ 3, Charlestown ..	“ “	“ “ ...	17 75	1 00
“ 4, Brighton	G. Fuller & Son	“ “ ...	17 00	2 25
“ 5, West Roxbury.	Curtis & Pope.....	“ “ ...	17 50	1 75
“ 6, Dorchester....	Otis Eddy.....	“ “ ...	16 90	1 50
“ 7, Roxbury.....	Curtis & Pope.....	“ “ ...	16 40	1 75
“ 8, 9, and 10, City..	A. M. Stetson & Co..	“ “ ...	15 38	1 00

Bank Gravel and Sand.

WHERE DELIVERED.	Contractor.	Date of Bid.	Gravel.		Sand.	
			Loads.			
			Double.	Single.	Double.	Single.
Paving District 1, South Boston..	Frank Hannon,	April 6, 1891.	\$1 58	\$0.79	\$1 75	\$0.87½
“ 2, East Boston ...	No bid .....	“ “	.....	.....	.....	.....
“ 3, Charlestown...	P. O'Riordan..	“ “	1 87	.98	1 87	.98
“ 4, Brighton	Wm. Scollans .	“ “	1 39	.70	1 96	.98
“ 5, West Roxbury.	Thos. Minton..	“ “	1 40	.70	1 35	.67½
“ 6, Dorchester	Owen Nawn...	“ “	1 50	.75	1 80	.90
“ 7, Roxbury	“ ...	“ “	1 40	.70	1 60	.80
“ 8, 9, and 10, City..	“ ...	“ “	1 60	.80	1 70	.85

Beach Gravel.

WHERE DELIVERED.	Contractor.	Date of Bid.	Price per Ton.
City	Perkins & White.....	April 6, 1891 .	\$0.71

Coal.

WHERE DELIVERED.	Contractor.	Date of Bid.	Price per 2,240 Lbs.
Pumping-station, Dorchester.....	H. G. Jordan & Co.	April 6, 1891 ..	\$3 71
“ “ “	J. A. Bradford & Co....	Sept. 25, 1891..	3 73

Engine and Boiler, 6 Inch x 12 Inch.

WHERE DELIVERED.	Contractor.	Date of Bid.	Price.
Chelsea, North Draw	Miller & Shaw .....	.....	\$745 00
“ South “ .....	“ .....	.....	600 00

Wire Rope, Angle, Shieve, etc.

WHERE DELIVERED.	Contractor.	Date of Bid.	Price.
Chelsea, South Draw	Miller & Shaw .....	.....	\$689 00
“ North “ .....	“ .....	.....	1,192 00

Furnishing Stone to City Crushers.

WHERE DELIV'D.	Crusher.	Contractor.	Date of Bid.	Price.
Paving District 5, West Roxbury ..	Washington st...	James Doonan	April 22, 1891..	\$0.80 double load.
Paving District 7, Roxbury	Dimock st.....	H. P. Nawn	“ 22, “ ..	.87 per ton.
Paving District 6, Dorchester.....	Bird st.....	James F. Davern	May 7, “ ..	.90 “
Paving District 6, Dorchester.....	Codman st.....	Wm. L. O'Connell ..	“ 9, “ ..	.68 “

Excavating and Removing Material from Roadway.

LOCALITY.	Contractor.	Date of Bid.	Price.	
			Per cu. yds. Earth.	Per sq. yds. Paving removed.
Lenox st.....	John McCarthy....	May 6, 1891	\$0 59	\$0 37½
Harrison ave.....	" "	" 23, "	69½	23½
West Dedham st.....	" "	June 10, "	95	33½
Wareham st.	J. J. Sullivan	" 20, "	.....	55
Emerson st.	M. Donnellan	" 4, "	63	26
Sixth st., B st. to C st.....	" "	" 23, "	95	19½
Rochester st.....	John McCarthy....	" 23, "	95½	23½
Magazine st.	Wm. T. Davis....	" 30, "	59	
Seventh st.....	M. Donnellan.....	July 7, "	94½	15½
Cambridge st.	S. & R. J. Lombard	" 15, "	.....	49
West Newton st., Shawmut ave. to Tremont st.....	J. J. Sullivan.....	" 18, "	75	29
Wigglesworth and Worthing- ton sts.....	Wm. T. Davis	Aug. 1, "	85	
Parker st.	Edward A. Janse..	" 8, "	72	25
Malden st.....	J. J. Sullivan.....	" 15, "	.....	55
Warren st.	John McCarthy....	Sept. 1, "	59½	23½
Rutherford ave.....	S. & R. J. Lombard	" 14, "	98	19
Prentiss st.	Edward A. Janse..	Oct. 23, "	60	15
West Newton st., Tremont st. to Columbus ave.....	John Casey	Sept. 8, "	65	27

Paving and Regulating.

LOCALITY.	Contractor.	Date of Bid.	Prices.						
			A	B	C	D	E	F	G
Troy street	James Grant & Co.....	May 25, 1891..	.....	\$1 52	.....	.....	\$0 35	\$1 32	\$1 98
Fulton street.....	Bigelow F. Nay	" 25, " ..	.....	1 03	.....	.....	21	63	55
First street.....	Collins & Ham	" 25, " ..	.....	1 18	.....	.....	55	91	1 15
A street.....	Collins & Ham	" 25, " ..	.....	1 05	.....	.....	55	91	1 15
Longwood avenue.....	J. Doherty & Co.....	" 29, " ..	.....	1 22	.....	.....	15	66	27
Austin street.....	John Turner & Co.....	" 29, " ..	.....	1 30	.....	.....	35	1 00	1 50
Bedford and Kingston streets	H. Gore & Co.....	June 18, " ..	\$2 66	.....	.....	.....	30	91	2 34
Dudley street.....	James Grant & Co.....	" 18, " ..	.....	95	.....	.....	28	79	1 42
Hudson street.....	Barber Asphalt Co.....	" 18, " ..	.....	.....	\$3 50	.....	42	90	1 05
Cabot street.....	"	" 18, " ..	.....	.....	3 60	.....	40	85	1 05
Terrace street.....	Albert A. Libby & Co.	July 21, " ..	.....	1 05	.....	.....	32½	75	1 30
E street, Third to Bolton street	New England Paving Co.....	" 7, " ..	.....	.....	2 75	.....	18	45	60
Beacon street	Barber Asphalt Co.....	" 28, " ..	2 00	.....	3 60	.....	.....	.....	1 05
Second and Third streets.....	Collins & Ham	" 21, " ..	.....	1 17	.....	.....	33	91	1 35
Dorchester street	"	Aug. 3, " ..	.....	1 35	.....	.....	24	83	1 35
Second street, Dorchester to E street	J. Doherty & Co.....	" 3, " ..	.....	1 25	.....	.....	23	78	1 00
Tremont street, Scollay square to Temple place	H. Gore & Co.....	" 3, " ..	2 76	1 19	.....	.....	39	90	2 74
Tremont street, Temple place to Boylston street.....	"	" 3, " ..	2 76	1 19	.....	.....	39	90	2 74

Paving and Regulating. — *Concluded.*

LOCALITY.	Contractor.	Date of Bid.	Prices.						
			A	B	C	D	E	F	G
			Paving Tar Joints.	Regular Paving.	Edgestone.	Sidewalks.	Crosswalks.		
Oneida street	H. Gore & Co.....	July 27, 1891..	.....	\$1 22 .....	.....	\$0 15	\$0 43	\$0 55	
Warrenton street	Barber Asphalt Co.	Sept. 2, " ..	.....	.....	\$3 25	\$2 00	.....	.....	1 05
Beacon street, Charles to Arlington street.....	J. Doherty & Co.....	Sept. 25, 1891.	\$1 37	\$0 65	\$0 15	\$0 40			
Charles street, easterly side	Payson & Co.....	" 8, " ..	1 12	.....	15	28		\$1 05	
Charles street, westerly side.....	James Grant & Co.....	" 8, " ..	1 12	.....	15	28		1 05	
Henley street (Cobble to Contractor).....	John Turner & Co.....	Sept. 24, " ..	.....	48	15	43		48	

EXPLANATION OF LETTERS.

- A — Price per square yard of paving with granite blocks on concrete foundation.
 B — Price per square yard of paving with granite blocks on a gravel foundation.
 C — Price per square yard of paving with asphalt on a concrete foundation.
 D — Price per square yard of paving with asphalt on existing pavement.
 E — Price per lineal foot for setting edgestones.
 F — Price per square yard for laying brick sidewalks.
 G — Price per square yard for laying crosswalks.

Repaving Asphalt Streets.

LOCALITY.	Contractor.	Date of Bid.	Prices.		
			A	B	C
Columbus ave.....	Barber Asphalt Co.....	May 28, 1891	\$2 25	\$3 75	\$8 50

EXPLANATION OF LETTERS.

- A — Price per square yard for stripping old surface and relaying with cushion coats, etc.
 B — Price per square yard for stripping old surface and concrete foundation and relaying with cushion coats, etc.
 C — Price per cubic yard for laying Portland cement concrete foundation.

Paving with Brick.

LOCALITY.	Contractor.	Date of Bid.	Prices.			
			A	B	C	E
Seneca st.....	H. Gore & Co.....	June 3, 1891		\$2 75	\$0 15	\$0 55
Oswego st.....	"	July 3, "		2 40	15	55
Genesee st.....	"	Aug. 15, "		2 75	15	55

EXPLANATION OF LETTERS.

- A — Price per square yard for paving with brick on concrete foundation.
 B — Price per square yard for paving with brick on gravel foundation.
 C — Price per lineal foot for setting edgestones.
 D — Price per square yard for laying brick sidewalks.
 E — Price per square yard for laying crosswalks.

Grading.

LOCALITY.	Contractor.	Date of Bid.	Price per cubic yard Excavation.	
			Earth.	Rock.
Geneva ave. at Columbia st.	A. A. Hall.	May 16, 1891	\$0 60	\$1 00
" " extension.	James McGovern.	Aug. 6, 1891	Cutting.	Filling.
			\$0 35	\$0 70

Widening.

LOCALITY.	Contractor.	Date of Bid.	Price per cubic yard Excavation.	
			Earth.	Rock.
Hancock street, Dorchester.	W. T. Davis.	Oct. 13, 1891	\$0 85	\$2 50

Filling.

LOCALITY.	Contractor.	Date of Bid.	Price per double load, 40 cu. ft.
Shirley street, Roxbury.	John J. Nawn.	Nov. 14, 1891 ..	\$0 75

Teaming Crushed Stone from Crushers.

LOCALITY.	Contractor.	Date of Bid.	Prices per ton of 2,000 lbs.		
			1 mile.	2 miles.	3 miles.
Paving District 4, Chestnut Hill ave., Brighton.....	W. T. Davis.....	April 22, 1891.....	\$0 27	\$0 37	
" " 5, Washington st., W. Roxbury...	James Doonan.....	" 22, "	47 1	1 00 ¹	
" " 6, Codman st., Dorchester.....	James D. O'Connell.....	" 22, "	49	69	
" " 6, Bird st., Dorchester	William T. Davern.....	May 7, "	25	35	\$0 50
" " 7, Tremont st., Roxbury	Michael Keely.....	April 22, "	25	35	50
" " 7, Dimock st., Roxbury	H. P. Nawn.....	" 22, "	30	35	

¹ Double load.

Retaining-Walls.

LOCALITY.	Contractor.	Date of Bid.	Price.
Irvington st.	R. D. Shanahan.....	June 15, 1891.....	\$3,397 00
Gold st., South Boston.....	Poole & Flanders.....	July 2, "	150 00
Hill st., Charlestown	Donovan & Brock.....	Oct. 6, "	1,475 00

Iron Foot-bridge.

LOCALITY.	Contractor.	Date of Bid.	Price.
Irvington st.....	R. F. Hawkins.....	June 29, 1891.....	\$1,773 00

Iron Bridge.

LOCALITY.	Contractor.	Date of Bid.	Price.
Berkeley st.....	Boston Bridge Works	Sept. 28, 1891.....	\$4,898 00

Bridge Seats and Parapets.

LOCALITY.	Contractor.	Date of Bid.	Price.
Berkeley st.....	John Cavanagh & Co.....	Oct. 9, 1891.....	\$2,290 00
Subsequent agreement with.....	" "	Dec. 23, "	addl. 300 00

Constructing Sewers.

LOCALITY.	Contractor.	Date of Bid.	Prices, in Dollars and Cents.																																				
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z											
Orient Heights, Sec. 1, Bennington and Walley sts.....	Dennis O'Connell,	1891. June 3.	3	30	2	97	5	00	4	75	5	00	3	50	..	27	00	0	80	0	50	12	00	0	15	..	0	50	0	10	0	10
East Boston, Border st.....	A. Fairbanks	" 3.	..	..	..	0	55	0	52	..	..	..	..	35	00	5	00	..	..	..	..	..	..	..	80	50	12	00	12	..	..	..	..	..	..	..	10
Dorchester, Brent st.....	A. Fairbanks	" 15.	..	..	..	70	70	..	..	..	..	..	..	45	00	5	00	..	..	..	..	..	..	..	80	50	12	00	12	..	..	..	..	..	..	..	10
Dorchester, Adams, Beaumont, and Burgoyne sts. ...	Dennis O'Connell,	" 24.	2	20	..	1	50	..	..	..	..	..	..	..	5	00	5	40	5	75	4	00	..	..	80	50	12	00	20	..	50	10	10	10	10	10	
South Boston, N st.	John W. Bowers,	Sept. 15.	..	..	..	80	..	..	..	..	..	..	..	..	5	00	..	..	..	..	..	..	..	..	80	50	12	00	12	..	..	..	..	..	..	..	10
Orient Heights, Sec. 2, Walley, Leyden, and Gladstone sts. ...	Dennis O'Connell,	July 27.	2	70	..	1	30	1	60	..	..	..	..	..	5	00	5	25	5	30	5	00	..	..	80	50	12	00	20	..	50	10	10	10	10	10	
East Boston, Horace st.....	A. Fairbanks	Aug. 1.	..	..	..	70	70	..	..	..	..	..	..	40	00	5	00	..	..	..	..	..	..	..	80	50	12	00	12	..	..	..	..	..	..	..	10
East Boston, Homer and Byron sts.	A. Fairbanks	Sept. 10.	..	..	..	1	20	..	..	..	..	..	..	47	50	5	00	..	..	..	..	..	..	..	80	50	12	00	12	..	..	..	..	..	..	..	10

EXPLANATION OF LETTERS.

A — Price per lineal foot earth excavation.	J — Price per lineal foot for building wooden box-sewer.	T — Price per cubic yard gravel refilling below grade.
B — Price per lineal foot earth excavation.	K — Price per manhole for building.	U — Price per thousand feet lumber, B.M., sheeting and shoring.
C — Price per lineal foot earth excavation.	L — Price per cubic yard for rock excavation.	V — Price per lineal foot underdrain.
D — Price per lineal foot Akron pipe laid.	M — Price per cubic yard for brick masonry, Am. cement mortar.	W — Price, each, for spruce piles driven.
E — Price per lineal foot Akron pipe laid.	N — Price per cubic yard for brick masonry, Port. cement mortar.	X — Price per cubic yard gravel refill, by special order.
F — Price per lineal foot earth excavation, wooden box-sewer.	O — Price per cubic yard for concrete.	Y — Price, each, for laying pipe connections.
G — Price per lineal foot earth excavation, wooden box-sewer.	P — Price per cubic yard for rubble-stone masonry.	Z — Price per lineal foot for pipe laid as chimneys.
H — Price per lineal foot earth excavation, wooden box-sewer.	Q — Price per cubic yard for dimension stone masonry.	
I — Price per lineal foot for building wooden box-sewer.	R — Price per thousand feet lumber, B.M.	
	S — Price per cubic yard earth excavation below grade.	

Miscellaneous Contracts.

TITLE AND LOCALITY.	Contractor.	Date of Bid.	Prices.	
			Per cubic yard, delivered within a radius of:	
			1 mile, \$1.90	2 miles, \$2.10
Quarrying stone, Heath st., Roxbury.....	Frederick Bleiler.....	July 7, 1891.....		
Leasing ledge-lot, Heath st., Roxbury.....	Frederick Bleiler.....	Nov. 15, ".....	\$0 18 per ton.	
Leasing ledge-lot, Rosseter st., Dorchester.....	Wm. J. Emerson.....	Oct. 10, ".....	10 per ton.	
Arch stone, Roslindale culverts.....	H. P. Nawn.....	Aug. 31, ".....	3 00 per cubic yard.	
Placing dredged material inside L-st. Bulkhead.....	Perkins & White ..	Nov. 3, ".....	20 per cubic yard.	
Teaming stone from Humboldt ave. to Dimock-st. crusher.....	James T. Davern.....	" 3, ".....	60 per cubic yard.	
Teaming paving-blocks from Court st. to Beacon st.....	Owen Nawn.....	May 14, ".....	25 per square yard.	
			Outside of Boston Light.	
			4 miles.	6 miles.
			8 miles.	10 miles.
Towing garbage to sea.....	Boston Tow-Boat Co.....	June 4, ".....	\$23 00	\$31 00
Towing garbage to sea.....	Commercial Tow-Boat Co.....	Oct. 28, ".....	23 00	31 00
Abutment, L st., South Boston.....	Perkins & White.....	" 24, ".....	\$5,925 00.	
Leasing ledge-lot, Tremont st., Roxbury.....	Roxbury Stone Co.....	Apr. 8, ".....	45 per ton.	
Leasing wharf, Charles st. (Burnham's).....	James J. Costello.....	June 1, ".....	200 00 per month.	
Rebuilding sidewalk and fence, West Boston bridge ¹	Josiah Shaw.....	Sept. 26, ".....	10,247 30.	

¹ Half the cost to be paid by the City of Cambridge.

EMPLOYMENT OF LABOR.

With but few exceptions all grades of labor employed in the Street Department come under the regulations of the civil service, and the names of men employed by the department must be certified by the Commissioners before employment can be given. On the organization of the central office, the hiring of labor formerly employed by the several departments was taken charge of by the central office, and the duty of applying to the Civil Service Commission for men was assigned to the correspondence and complaint clerk. Books are kept at the central office by means of which the record of any one of the 2,200 employees of the department can be looked up, and his standing in the civil service and his character for industry be investigated.

The annexed table shows that 142 applications have been made on the Civil Service Commission for 419 men for various kinds of work. Of the 712 names submitted by the Civil Service Commission, 501 men were given employment and assigned to the different divisions. Of this number, 61 were veterans.

The following table shows in detail the applications made to the Civil Service Commission for labor :

TABLE NO. 1.

APPLICATIONS FOR MEN TO THE CIVIL SERVICE COMMISSION.			NAMES SUBMITTED BY THE CIVIL SERVICE COMMISSION.			NUMBER EMPLOYED. <i>Divisions.</i>						
Date.	Num- bet.	Grade.	Date.	Civil Service Draft Nos.	Num- ber.	Paving.	Sewer.	Sani- tary.	Street- Cleaning.	Bridge.	Total.	Veter- ans.
April 9, 1891.....	6	Sub-foremen	May 21, 1891.....	.....	10	.....	.....	.....	6	.....	6	
" 25, "	15	Laborers.....	April 29, "	55	30	18	.....	.....	.....	.....	18	
" 27, "	1	Sub-foreman.....	May 21, " ....	.....	3	.....	.....	1	.....	.....	1	
" 30, "	1	Mason	" 4, "	65	2	.....	1	.....	.....	.....	1	
May 1, "	4	Laborers.....	" 1, "	59 to 62	4	4	.....	.....	.....	.....	4	4
" 2, "	1	Laborer.....	" 2, "	64	1	1	.....	.....	.....	.....	1	1
" 4, "	1	"	" 5, "	67	1	.....	.....	.....	1	.....	1	1
" 4, "	2	Teamsters	" 6, "	69	4	.....	.....	2	1	.....	3	
" 5, "	3	Watchmen.....	" 5, "	68	3	.....	.....	.....	.....	3	3	3
" 5, "	1	Sub-foreman.....	" 5, " ....	.....	1	.....	.....	.....	1	.....	1	1
" 5, "	1	Laborer.....	" 5, "	71	1	1	.....	.....	.....	.....	1	1
" 6, "	5	Sewer-inspectors.....	" 5, " ....	.....	1	.....	1	.....	.....	.....	1	
" 6, "	1	Grainer.....	" 6, "	70	1	.....	.....	.....	.....	1	1	
" 6, "	30	Laborers.....	" 11, "	75	60	11	13	.....	.....	.....	24	1
" 6, "	20	"	" 11, "	74	40	6	14	.....	4	.....	24	2
<i>Carried forward,</i>			.....	.....	102	41	29	3	13	4	90	14

Table No. 1. — Continued.

APPLICATIONS FOR MEN TO THE CIVIL SERVICE COMMISSION.			NAMES SUBMITTED BY THE CIVIL SERVICE COMMISSION.			NUMBER EMPLOYED. <i>Divisions.</i>						
Date.	Num-ber.	Grade.	Date.	Civil Service Draft Nos.	Num-ber.	Paving.	Sewer.	Sani-tary.	Street-Cleaning.	Bridge.	Total.	Veter-ans.
<i>Brought forward,</i>	92				162	41	29	3	13	4	90	1
May 6, 1891.....	4	Bracers	May 8, 1891 ...	73	7	.....	5	.....	.....	.....	5	
" 7, "	6	Masons	" 8, "	76	11	.....	7	.....	.....	.....	7	1
" 7, "	1	Laborer	" 7, "	72	1	1	.....	.....	.....	.....	1	1
" 7, "	1	"	" 7, " ..	79	1	1	.....	.....	.....	.....	1	1
" 7, "	1	"	" 8, "	77	1	.....	1	.....	.....	.....	1	1
" 8, "	2	Sub-foremen	" 9, " .....	.....	2	.....	.....	.....	.....	.....	2	2
" 8, "	1	Weigher	" 9, " ...	.....	1	1	.....	.....	.....	.....	1	1
" 8, "	10	Laborers.....	" 15, "	82	19	1	9	.....	2	.....	12	
" 8, "	1	Steam-driller.....	" 13, "	89	2	1	.....	.....	.....	.....	1	
" 8, "	1	Measurer... ..	" 9, "	80	1	1	.....	.....	.....	.....	1	
" 9, "	5	Teamsters.....	" 13, "	81	10	.....	1	.....	5	.....	6	
" 9, "	25	Laborers.....	" 16, "	83	50	1	31	.....	.....	.....	32	
" 12, "	2	Stone-cutters.....	" 20, "	85	3	2	.....	.....	.....	.....	2	1
" 13, "	12	Laborers.....	" 16, "	91	24	.....	20	.....	.....	.....	20	
" 13, "	6	"	" 16, " ...	90	12	.....	11	.....	.....	.....	11	
" 13, "	5	Bracers	" 19, "	92	10	.....	10	.....	.....	.....	10	

Table No. 1.—Continued.

APPLICATIONS FOR MEN TO THE CIVIL SERVICE COMMISSION.			NAMES SUBMITTED BY THE CIVIL SERVICE COMMISSION.			NUMBER EMPLOYED. Divisions.						
Date.	Num-ber.	Grade.	Date.	Civil Service Draft Nos.	Num-ber.	Paving.	Sewer.	Sani-tary.	Street-Cleaning.	Bridge.	Total.	Veter-ans.
<i>Brought forward,</i>	271				488	51	231	3	34	5	324	35
June 9, 1891.....	2	Masons.....	June 10, 1891....	120	4	.	3				3	
" 9, ".....	3	Bracers.....	" 12, ".....	121	5		4				4	
" 9, ".....	1	Bridge-cleaner.....	" 11, ".....	122	2					1	1	
" 10, ".....	2	Masons.....	" 12, ".....	124	2		2				2	
" 11, ".....	1	Laborer.....	" 12, ".....	123	1		1				1	1
" 11, ".....	2	Laborers.....	" 13, ".....	125	4		2				2	
" 12, ".....	9	".....	" 18, ".....	126	16				9		9	
" 15, ".....	2	".....	" 18, ".....	127	3		3				3	
" 16, ".....	1	Laborer.....	" 18, ".....	130	3		3				3	
" 19, ".....	1	".....	" 18, ".....	131	2		2				2	
" 19, ".....	2	Laborers.....	" 19, ".....	132	2	Failed	to report.					
" 19, ".....	1	Wheelwright.....	" 19, ".....	134	4		4				4	
" 19, ".....	1	Blacksmith.....	" 19, ".....	133	1	1					1	
" 21, ".....	2	Masons.....	July 10, ".....	137	1	1					1	
" 23, ".....	3	Laborers.....	June 24, ".....	138	4		1				1	
" 24, ".....	1	Carpenter.....	" 25, ".....	139	6		2		2		4	

June 29, "	June 25, 1891....	141	2	1	1	1
1 Laborer.....	" 29, "	145	1	1	1	1
2 Bracers.....	July 1, "	144	2	2	2	2
2 Laborers.....	" 2, "	146	2	2	2	2
2 Masons ...	" 2, "	147	1	1	1	1
1 Laborer	" 2, "	148	1	1	1	1
1 Stone-mason	" 6, "	151	50	45	1	1
1 Foreman	" 11, "	155	1	1	1	1
30 Laborers.....	" 10, "	157	1	1	1	1
1 Laborer	" 13, "	162	1	1	1	1
1 "	" 14, "	160	1	1	1	1
1 Asst. draw-tender.....	" 14, "	168	1	1	1	1
1 Sub-foreman	" 16, "	171	2	2	2	2
1 Chief draw-tender	" 16, "	172	2	2	2	2
1 Mason	" 3, "	173	1	1	1	1
1 Mason's tender ...	Aug. 7, "	174	4	2	2	4
1 Weigher	" 8, "	178	2	1	2	1
1 Watchman.....	" 8, "	174	2	2	2	2
2 Laborers.....	" 4, "	174	1	1	1	1
1 Bracer	" 21, "	174	1	1	1	1
1 "			1	1	1	1
1 Foreman.....			1	1	1	1
1 Asst. draw-tender.....			1	1	1	1
360	629	58	317	49	10	437
Carried forward.						43

Carried forward,

Table No. 1. — Continued.

APPLICATIONS FOR MEN TO THE CIVIL SERVICE COMMISSION.			NAMES SUBMITTED BY THE CIVIL SERVICE COMMISSION.			NUMBER EMPLOYED. Divisions.						
Date.	Num- ber.	Grade.	Date.	Civil Service Draft Nos.	Num- ber.	Paving.	Sewer.	Sani- tary.	Street- Cleaning.	Bridge.	Total.	Veter- ans.
<i>Brought forward,</i>	360				629	58	317	3	49	10	437	43
Aug. 7, 1891.....	1	Watchman.....	Sept. 1, 1891.....	191	1	.....	1	.....	.....	.....	1	1
" 20, "	1	Weigher.....	Aug. 24, "	182	1	1	.....	.....	.....	.....	1	.....
" 21, "	1	Laborer.....	" 24, "	183	1	.....	.....	.....	1	.....	1	1
" 21, "	1	Foreman.....	" 24, " .....	.....	1	.....	.....	.....	1	.....	1	.....
" 21, "	1	Blacksmith's assistant....	Sept. 3, "	184	1	1	.....	.....	.....	.....	1	.....
" 21, "	1	Grader.....	Aug. 25, "	186	2	1	.....	.....	.....	.....	1	.....
" 27, "	1	Watchman.....	" 28, "	188	1	.....	1	.....	.....	.....	1	1
" 31, "	1	Laborer.....	Sept. 1, "	190	2	.....	1	.....	.....	.....	1	.....
Sept. 2, "	1	Coal-passer.....	" 18, "	195	1	.....	1	.....	.....	.....	1	.....
" 2, "	1	Grader.....	" 8, "	192	2	1	.....	.....	.....	.....	1	.....
" 2, "	1	Laborer.....	" 8, "	194	1	.....	.....	.....	1	.....	1	1
" 11, "	1	"	" 12, "	197	2	1	.....	.....	.....	.....	1	.....
" 11, "	1	Stableman	" 18, "	193	1	1	.....	.....	.....	.....	1	.....
" 14, "	1	Hostler	" 18, "	200	2	.....	.....	.....	1	.....	1	.....
" 23, "	1	Rammer	" 28, "	205	1	1	.....	.....	.....	.....	1	.....
" 23, "	1	Hostler	" 26, "	203	2	.....	.....	.....	1	.....	1	.....

STREET DEPARTMENT.

[illegible]

Table No. 1. — *Concluded.*

APPLICATION FOR MEN TO THE CIVIL SERVICE COMMISSION.			NAMES SUBMITTED BY THE CIVIL SERVICE COMMISSION.			NUMBER EMPLOYED. <i>Divisions.</i>						
Date.	Num-ber.	Grade.	Date.	Civil Service Draft Nos.	Num-ber.	Paving.	Sewer.	Sani-tary.	Street-Cleaning.	Bridge.	Total.	Veter-ans.
<i>Brought forward,</i>	404				694	67	329	4	72	14	486	56
Nov. 12, 1891.....	1	Bracer	Nov. 17, 1891....	241	1	.....	1	.....	.....	.....	1	1
" 14, "	1	Laborer.....	" 16, "	242	1	.....	.....	.....	1	.....	1	1
" 17, "	1	"	" 24, "	243	1	.....	.....	.....	1	.....	1	1
" 20, "	2	Graders.....	" 25, "	249	4	2	.....	.....	.....	.....	2	
" 19, "	2	Hostlers	" 27, "	245	2	.....	.....	.....	2	.....	2	
" 20, "	1	Hostler	" 24, "	246	1	.....	.....	.....	1	.....	1	
" 20, "	1	Bracer	" 23, "	247	1	.....	1	.....	.....	.....	1	
" 25, "	1	Mason	" 25, "	250	2	.....	1	.....	.....	.....	1	
" 27, "	1	Laborer.....	" 28, "	252	1	.....	.....	.....	1	.....	1	1
" 27, "	1	Aid	" 28, "	251	1	.....	.....	1	.....	.....	1	
" 30, "	1	Bracer... ..	" 30, "	253	1	.....	1	.....	.....	.....	1	
Dec. 8, "	1	Laborer.....	Dec. 9, "	2	1	.....	.....	.....	1	.....	1	1
" 11, "	1	"	" 15, "	3	1	.....	.....	.....	1	.....	1	1
Totals	419				712	69	333	5	80	14	501	61

Grade and Number of Employees in the Street Department.

(Showing the average force employed during the summer.)

TITLE.	Divisions.						Total.
	Central Office.	Paving.	Sewer.	Sanitary.	Street-Cleaning.	Bridge.	
Superintendent.....	1						1
Deputy superintendents		1	1	1	1	1	5
Executive engineer	1						1
Purchasing agent and assistant,	2						2
Clerks	2	5	6	4	1	1	19
Foremen		11	8	4	11	3	37
Sub-foremen		23	13	10	12	4	62
Inspectors.....		6	22				28
Civil engineers			3				3
Draughtsmen.....	1		5				6
Transitmen			3				3
Levelmen			5				5
Rodmen.....			17				17
Aid				1			1
Blacksmiths and assistants		15	1	5			21
Bracers			17				17
Bridge-cleaners						2	2
Boys ..		1	23			2	26
Captain				1			1
Carpenters and assistants.....		21	6			22	49
Coal-passers			4				4
Draw-tenders						20	20
Assistant draw-tenders						32	32
Deck-hand			1				1
Dumpers.....				12	5		17
Engineers and assistants		14	15			11	40
Feeders.....				4			4
Firemen.....			5				5
Gatemen			3				3
Harness-makers.....		2		2			4
<i>Carried forward</i>	7	99	158	44	30	98	436

Grade and Number of Employees, etc.—*Concluded.*

TITLE.	Divisions.						Total.
	Central Office.	Paving.	Sewer.	Sanitary.	Street-Cleaning.	Bridge.	
<i>Brought forward</i>	7	99	158	44	30	98	436
Helpers				190	54		244
Horse-shoers				4			4
Hostlers			2			1	3
Janitors			2				2
Laborers		447	361		157	2	967
Ledgemen			4				4
Machinist			1				1
Masons (stone and brick)			34				34
Masons' tenders			6				6
Measurers		3					3
Messengers	2	5	2	2	2	4	17
Oilers			7				7
Patch pavers and assistants		93					93
Painters				2		10	12
Pilot ..			1				1
Pipe-layers			2				2
Powdermen		3					3
Riggers			2				2
Rope-splicer			1				1
Stablemen		10		9			19
Steam-drillers		12					12
Steward			1				1
Stone-cutters		15	3				18
Store-keeper			1				1
Teamsters		63	16	159	57	2	297
Veterinary surgeon			1				1
Watchmen		8	12	5		4	29
Weighers		4					4
Wharfingers		5	1				6
Wheelwrights		2		2			4
Yardmen		8	2	7	1		18
Totals	9	777	620	424	301	121	2,252

COMPLAINTS.

Complaints received by telephone, or by mail, are put in the hands of a complaint-clerk, who gives to them his personal attention, in the following manner :

A record of each complaint is made in a book kept for such purposes, the system of keeping the same and rectifying complaints, as far as practicable, being as follows :

First, on the receipt of letter or notice, an abstract is made of the same in the complaint book, and a copy on a form adopted for such purposes is sent to either of the divisions for investigation. The district foreman to whom the complaint was referred investigates the cause and recommends the adoption of certain improvements or immediately rectifies the cause. He then makes an endorsement on the back of notice and returns it to the central office. The recommendations or improvements are also recorded in the complaint book, and if of enough importance the complainant is notified of the recommendations and intentions of the department.

The number of such complaints received at this office since May 1, 1891, to January 1, 1892, was 251, of which

145 related to the Paving Division.

25 “ “ Sewer “

45 “ “ Sanitary “

27 “ “ Street-cleaning Division.

9 “ “ Street-watering “

Complaints, to receive proper attention, should be sent to the central office and not to some local foreman.

All complaints should be signed with full name and address, as anonymous communications receive no attention.

EXPENSES OF CENTRAL OFFICE.

For the current expenses of the central office the City Council appropriated the sum of fifteen thousand dollars (\$15,000), to which was added by transfer the sum of one thousand and fifty dollars (\$1,050), making a total of sixteen thousand and fifty dollars (\$16,050) for the nine (9) months ending Jan. 1, 1892. The same was expended as follows :

Salaries	\$13,155	10
Stationery, printing, postage, etc.	1,144	09
Atlases, books, etc.	343	10

Rubber stamps, etc.	\$48 80
Board of horse, shoeing, clothing, etc.	536 00
Telephones	165 48
Travelling expenses, etc.	601 10
Miscellaneous office-supplies, etc.	56 33

\$16,050 00

BRIDGE DIVISION.

Previous to May 1, 1891, the entire force of mechanics employed in the Bridge Division, consisting of carpenters, painters, laborers, etc., were under the charge of one foreman, with headquarters at the Foundry-street yard. The territory covered by this force reached from Winthrop to Charlestown on one side of the Charles river, and from the City Proper to Milton on the other side. Bridge repairs, especially such as are required on the tide-water bridges, require immediate attention, and as all tools, gearing, blocking, and stock were stored at one yard, and as much time was lost by the transfer of the men from one remote district to another when any exigency for their services arose, it was deemed better to divide the territory into two districts.

The Northern District, with headquarters on Charles-river bridge, includes all bridges north and west of the Charles river.

The Southern District, with headquarters at Foundry street, includes all bridges south of the Charles river.

This division of territory equalizes, as nearly as possible, the care of the most important tide-water bridges, and places within easy access all necessary appliances for doing such work as may be required in each district. The headquarters of both of these districts have telephone connections, and, if necessary, the whole repair-force of the division can be concentrated at any point, in case of immediate repairs being required on any important bridge.

The above system of dividing the work into two districts has worked satisfactorily, and has resulted in economy and efficiency.

Previous to May 1, 1891, all draw-tenders reported directly to the Superintendent's office, and on the most trivial matters left their bridges without the services of a draw-tender. In order to allow the draw-tenders to put in their whole time on their bridges, the office of Chief Draw-

tender was created, and an old employee of the department selected for the position. All daily bridge-reports of draw-tenders are now made to the Chief Draw-tender, who also makes provision for all needed supplies, and, in general, under the direction of the Deputy Superintendent, supervises the entire force employed on the drawbridges.

The report of the Deputy Superintendent, Appendix A, gives the detailed report of expenditures, and amount of work done on each bridge, together with much other information of a useful nature.

BOSTON AND CAMBRIDGE BRIDGES DIVISION.

By the provisions of the acts of the Legislature of 1870, the care of the West Boston, Canal, and Prison-point bridges is placed in the hands of two Commissioners, one of whom is appointed by the City of Cambridge, the other by the City of Boston. By the terms of the ordinances, the Superintendent of Streets is Commissioner for the City of Boston.

The following report shows the present condition of the bridges, the work that has been done during the year, and the work proposed to be done during the coming year.

WEST BOSTON BRIDGE.

The repairs of the westerly bulkhead, sidewalk, and adjacent roadway, alluded to as necessary in the last report, have been made.

Substantially the same plan has been adopted as the one used in rebuilding the down-stream side in 1886.

The bridge has been relieved of a large amount of gravel and mud, all decayed timber has been removed, and a new sidewalk of hard-pine timber and kyanized spruce-plank has been built, and upon it a brick sidewalk has been laid.

The old edgestones have been reset. The roadway plank wherever uncovered has been protected by a layer of salt mud, and the entire space between the curbstone and nearest railroad track has been repaved, using the old paving-blocks. A new hard-pine fence has been built for the entire length of bridge repaired. The part of the bridge repaired as above described includes all the up-stream sidewalk between the draw and the Cambridge abutment, and about one hundred feet in length on the same side of the bridge next the Boston abutment.

The repairs have been made by contract by Josiah Shaw, who was the lowest bidder. Total cost, \$5,250.25.

A new boiler for the engine has been provided, and the turning-apparatus put in good order.

The up-stream end of the draw-pier is in bad condition, and will require repairs and strengthening next season. The plank sides of the waterway are in bad condition and require attention. The paving of the roadway and sidewalk from the draw to Boston end will require attention next year, and the bulkheads next the Charles-river embankment should be repaired.

With the exceptions above noted, the bridge is in as good condition as it is practicable to put so old and narrow a structure, and the need of a new, wider, and more commodious bridge becomes more urgent year by year.

CANAL OR CRAIGIE'S BRIDGE.

The foundation to the engine-house on the draw-pier has been put in good condition. The roadway paving laid last year has done good service, and the remaining surface should be repaved. The fender on the up-stream side is in bad condition. The hard bottom prevents the driving of piles in the usual manner, and a different plan must be adopted to protect the bridge from vessels. The sides of the waterway need new planking. The wooden draw shows signs of age, and piling under the Boston end will soon require attention.

The bridge as a whole is in fairly good and safe condition.

PRISON-POINT BRIDGE.

The draw-pier has been replanked, and ordinary repairs made to the roadway and machinery for moving the draw.

IN GENERAL.

The usual statement is appended, of the number of draw-openings and the number of vessels passed through.

The amount of revenue received for dockage, sale of old material, etc., during the year has been \$633.40, one-half of which has been paid over to City of Cambridge; also the sum of \$1,515.27 paid by Park Department for building taken on West Boston bridge for the Charles-river embankment, and a like sum paid to City of Cambridge.

The following is a statement of the payments made by the City of Boston on account of the West Boston, Canal, and Prison-point bridges from January 1, 1891, to January 1, 1892:

Amount expended from appropriation for 1890-91	\$1,543 48
Amount expended from appropriation for 1891-92	10,322 94
Total amount expended	<u>\$11,866 42</u>

CONDITION OF APPROPRIATION.

Amount of appropriation for financial year 1891-92	\$12,000 00
Amount expended to Feb. 1, 1892	10,322 94
Unexpended balance	<u>\$1,677 06</u>

Classification of Expenses.

1891.	General Account.	Canal Bridge.	Prison- point Bridge.	West Bos- ton Bridge.	Total.
Salaries	\$395 00				\$395 00
Printing and stationery	43 28				43 28
Travelling expenses	26 72				26 72
Draw-tenders and assistants		\$1,095 00	\$215 94	\$900 09	2,211 03
Ordinary repairs.....		308 11	211 25	213 76	733 12
Lumber		354 05	221 68	46 50	622 23
Iron-work		61 15	77 60	158 16	296 91
Electric lights		390 00		585 00	975 00
Fuel.....		108 40		86 70	195 10
Sundries.....		53 56	4 15	32 07	89 78
Cleaning bridges.....		98 80	50	92 95	192 25
Tools and hardware		41 96	9 82	3 82	55 60
Paint and painting		11 77		1 57	13 34
Inspection.....		77 50	37 50	200 00	315 00
Watering roadway		200 00		200 00	400 00
Water-rates		14 40	4 95	9 90	29 25
Advertising				22 56	22 56
Rebuild sidewalk and fence.....				5,250 25	5,250 25
Totals.....	\$465 00	\$2,814 70	\$783 39	\$7,803 33	\$11,866 42

Number of Times the Draws in West Boston, Canal, and Prison-Point Bridges have been opened, and the Number of Vessels which have passed during the Year ending Jan. 31, 1892.

DATE.	West Boston.		Canal or Craigie's.		Prison-point.	
	Number of Draw Openings.	Number of Vessels passed through.	Number of Draw Openings.	Number of Vessels passed through.	Number of Draw Openings.	Number of Vessels passed through.
Jan. 1, 1891, to Feb. 1, 1892.						
January	9	14	96	82	21	35
February	26	46	97	121	14	19
March	36	57	147	185	11	14
April	148	222	383	392	18	21
May	222	378	456	482	29	35
June.....	246	383	352	371	61	100
July	229	371	431	561	26	35
August	232	332	427	452	29	42
September	207	334	384	512	21	25
October.....	122	201	297	369	26	34
November	166	279	377	284	27	38
December.....	107	193	298	315	64	237
January, 1892	40	60	131	111	57	238
Totals.....	1,790	2,870	3,876	4,237	404	933

CANAL BRIDGE PROPERTY-SCHEDULE.

* Three street-hoes, * 3 snow-scrapers, 1 coal-scoop, 2 long pokers, 3 corn-brooms, 2 cold-chisels, 1 crowbar, 1 hammer, 1 sledge, * 1 snow-plough, 1 saw, 6 wrenches, 4 oil-cans, 2 ice-chisels, 4 hand-lanterns, * 16 street-lanterns, 2 earth-picks, 1 United States flag, 30 fathoms rope, 1 lamp, 1 iron block, 1 wheelbarrow.

PRISON-POINT BRIDGE PROPERTY-SCHEDULE.

One hundred feet woven hose, 1 iron shovel, 1 pickaxe, * 1 adze, 1 axe, 1 brace with 3 bits, * 2 chisels, 1 hammer, 2 Yale padlocks, 1 snow-shovel, 1 broom, 1 street-hoe.

* In poor condition.

WEST BOSTON BRIDGE PROPERTY—SCHEDULE.

Two wheelbarrows, 1 United States flag, 200 feet rope, 2 snatch-blocks, 1 ladder, 3 lanterns, 2 bushel baskets, 8 oil-cans, 1 long poker, 1 tube-cleaner, 2 brooms, 1 table, 1 monkey-wrench, 1 auger, 1 vice, 1 Stillson wrench, 2 hammers, 1 saw, 1 mallet, 1 ice-saw, 2 pails, 1 adze, 1 top-maul, 1 iron bar, 5 hoes, 3 ice-chisels, 1 axe, 2 files, * 10 iron shovels, * 3 wooden shovels, * 175 feet hose.

Statement of Traffic over Bridges.

1891.	West Boston Bridge. Nov. 14, 6 A.M. to 7 P.M.	Canal Bridge. Nov. 14, 6 A.M. to 7 P.M.	Pinson-point Bridge. Nov. 14, 6 A.M. to 7 P.M.
Teams to Boston.....	1,322	2,940	1,904
Horse and electric cars to Boston.....	647	235	
Foot-passengers to Boston.....	2,657	3,990	2,276
Teams to Cambridge.....	1,297	3,555	
Horse and electric cars to Cambridge.....	626	225	
Foot-passengers to Cambridge.....	1,939	3,550	

Both ways.

* In poor condition.

PAVING DIVISION.

The following tables show the length of accepted streets and the character and areas of pavements Feb. 1, 1892 :

Length in Miles.

	Asphalt.	Block.	Brick.	Cobble.	Telford and Macadam.	Gravel.	Not graded.	Total.
1890 Report.	3.2	64.9	. . . .	6.5	174.6	160.9	. . . .	409.7
1892.								
City Proper, Feb. 1 .	*4.07	39.67	0.36	4.41	31.33	0.75	0.07	80.69
Charlestown	0.03	7.68	. . . .	0.29	14.46	0.03	0.05	22.54
East Boston . . . . .	. . . .	3.50	. . . .	0.48	2.09	20.30	0.18	26.55
South Boston	0.33	10.24	. . . .	0.75	23.33	1.82	5.71	42.18
Roxbury	0.23	6.38	. . . .	0.01	52.24	16.06	0.70	75.62
W. Roxbury . . . . .	. . . .	0.09	. . . .	. . . .	24.67	47.29	0.67	72.72
Dorchester . . . . .	. . . .	1.73	. . . .	. . . .	40.01	36.59	1.47	79.80
Brighton . . . . .	. . . .	. . . .	. . . .	. . . .	16.43	16.61	1.45	34.49
Total	4.66	69.29	0.36	5.94	204.56	139.48	10.30	434.59

* Of this amount 0.48 miles = asphalt blocks.

There have been laid out and accepted by the Street Commissioners during the year 7.87 linear miles, .12 miles have been discontinued, making a total increase of mileage of 7.75 miles. The discrepancy between 434.59 miles and 417.45 miles (obtained by adding the increased mileage to the 1890 report) is owing to a remeasurement having been made this year of the street mileage, and an error of seventeen miles having been discovered in the previous reports.

The rapid increase in this mileage, from year to year, is shown by the following table :

1859.....	111.50 Miles.	1882.....	359.85 Miles.
1871.....	201.32 "	1883.....	367.99 "
1872.....	207.4 "	1884.....	374.10 "
1873.....	209.24 "	1885.....	379.60 "
1874.....	313.90 "	1886.....	383.55 "
1875.....	318.58 "	1887.....	390.30 "
1876.....	327.50 "	1888.....	392.72 "
1877.....	333.2 "	1889.....	397.84 "
1878.....	340.39 "	1890.....	404.6 "
1879.....	345.19 "	1891.....	409.6 "
1880.....	350.54 "	1892.....	434.59 "
1881.....	355.5 "		

The following table shows the area of pavement in the city of Boston, in square yards :

	Asphalt.	Block.	Brick.	Cobble.	Telford and Macadam.	Gravel.	Not Graded.	Totals.
Feb. 1, 1891.	54,070	1,429,620		109,890				
Feb. 1, 1892.								
City Proper,	*65,635	860,853	3,638	52,156	606,675	13,207	1,204	1,603,388
Charlestown.	421	178,060	. . .	2,936	219,471	161	762	401,811
E. Boston		83,286	. . .	9,621	39,536	389,142	3,555	525,140
S. Boston	4,271	218,076	. . .	14,959	405,661	38,173	118,371	799,511
Roxbury	3,559	139,776	. . .	717	932,270	263,319	9,530	1,349,171
W. Roxbury,		2,067	. . . . .		433,826	739,700	10,492	1,186,085
Dorchester,		39,444	. . . . .		718,302	613,177	31,050	1,401,973
Brighton . . . . .			. . . . .		399,365	254,749	26,977	681,091
Total . .	73,906	1,521,562	3,638	80,389	3,755,106	2,311,628	201,941	7,948,170

* Of this amount, 8,501 sq. yds. = asphalt blocks.

Total public streets, 434.59 miles.

NOTE.—The city is subdivided on former boundary lines.

In order to compare the character of the pavements in the city of Boston with the other cities of the country, the following table is presented :

Distribution of Kinds of Pavements. Public and Improved Streets.

	Washington (1890) Per cent.	St. Louis (1890) Per cent.	Chicago (1890) Per cent.	Buffalo (1890) Per cent.	New York (1890) Per cent.	Philadelphia (1890) Per cent.	Boston (1891) Per cent.
Sheet asphalt . .	26.07	0.94	0.76	30.49	3.44	3.23	0.96
Coal-tar	23.06						
Asphalt block . .	5.19	.....	0.62	.....	.....	2.47	0.11
Block stone . .	14.18	29.07	3.45	40.45	67.61	15.69	15.94
Wood	0.18	1.25	61.27				
Cobble	6.94	.....	.....	.....	66.70	49.21	1.37
Vitrified brick . . . . .	.....	.....	.....	0.02	.....	2.60	60.08
Rubble . . . . .	.....	.....	.....	.....	.....	15.16	
*Telford . . . . .	.....	4.34	.....	0.29	.....	.....	10.00
*Macadam	4.83	64.40	33.90	28.75	5.10	11.64	37.07
*Gravel	19.55	.....	.....	.....	23.15	.....	34.47
	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Mileage	165.70	421.97	669.64	347.75	475.16	762.20	434.59

* Not usually separated in the reports of the various cities.

An inspection of the foregoing tables shows that in Boston only 15.9% of the total mileage is paved with granite blocks; 1.07% paved with asphalt; .08% paved with brick; 1.4% paved with cobble; the remainder, 81%, being either macadamized or gravelled.

This percentage of macadam and gravelled streets is larger than most of the other cities in the country, St. Louis, which compares the nearest with Boston, having 64%, while Buffalo has but 30% macadamized, and over 70% of its streets well paved. This large percentage of macadamized streets accounts largely for the expense of maintaining the department, compared with other cities.

The inferior condition of most of the paved streets of Boston is apparent to every one. Several causes have operated to bring this condition about.

In the first place, the quality of the stone blocks with which the pavement was originally laid was poor; these blocks, in most instances, were roughly cut, of irregular dimensions, and laid without proper care, so that, in some cases, even where the original pavement has never been dis-

turbed, it has worn unequally and has settled in such a manner as to present a very uneven surface.

The numerous structures under the pavement, consisting of gas-pipes, water-pipes, telephone conduits, steam-heating pipes, electric-wire conduits, and sewers with their connections, necessitate a constant tearing up of the pavements to make connections and remedy breaks and defects.

There is also the tearing up and replacing of railroad tracks which is continually going on.

This continual disturbance of the pavement and the impossibility of replacing it over an excavation in such a manner as to leave the pavement in its original condition has resulted in the present uneven appearance of many of our streets, making them uncomfortable to travel over and difficult to clean.

It will be impossible to construct and maintain first-class pavements in our commercial and business thoroughfares, as long as private corporations are allowed legislative franchises to not only cover the greater part of the surface with railroads, drip-boxes, manholes, gate-boxes, and covers of all sizes and kinds, but also to undermine the same with a perfect network of contrivances, some seething with steam, some flowing the most volatile, gas-producing and inflammable hydrocarbons, and some conducting the electric current — all being liable to get out of repair and requiring excavations and disturbance of the street-surface to keep them in condition.

The spirit of self-interest and the desire to realize large dividends tend toward the greatest economy on the part of corporations in replacing the disturbed portions of street and pavement; thus leaving to the city a great deal of work to finally adjust and regulate at the expense of the public funds.

The only complete remedy for these evils is to build a large brick subway beneath the sidewalk or roadway capable of containing every wire or pipe needed for all purposes, with only its manholes appearing at the surface.

Until such time as an underground conduit of a size sufficient to contain all gas, water, and other pipes and wires is laid, it will be impossible to prevent the tearing up of the pavements, and dependence must be placed on the power of the department to grant or refuse permits and to have all openings repaved in as good a manner as possible under the circumstances. The amendment to the ordinance made this year, whereby the parties who make openings are obliged to keep the pavements in repair for six months, and, on their failure to do so, to be obliged to pay the cost of the city's doing the work, will tend to lessen these evils. •

The following list shows the companies and corporations in the city which, from the nature of their business, have occasion to disturb the street-surface most frequently :

Albany Street Freight Railroad Company.
Boston Electric Light Company.
Boston & Albany Railroad Company.
Boston & Maine Railroad Company.
Boston, Revere Beach, & Lynn Railroad Company.
Boston Gaslight Company.
Brookline Gaslight Company.
Charlestown Gaslight Company.
Dorchester Gaslight Company.
East Boston Gaslight Company.
Edison Electric Illuminating Company.
Fitchburg Railroad Company.
Jamaica Pond Aqueduct Company.
Jamaica Plain Gaslight Company.
New England Telephone & Telegraph Company.
New York & New England Railroad Company.
Old Colony Railroad Company.
Roxbury Gaslight Company.
South Boston Gaslight Company.
West End Railroad Company.
Western Union Telegraph Company.

Eleven thousand three hundred and twenty permits were granted during the past year to open streets. The excavations made under these permits aggregate 110.7 miles in length, and show the proportions to which this nuisance has grown.

One thousand nine hundred and sixteen openings were made under "emergency permits" for breaks in water and gas pipes requiring immediate attention.

MACADAMIZED STREETS.

Boston has a larger proportion of macadamized streets than any large city in this country.

While streets of this description can be constructed cheaply, the rapid deterioration of the surface requires an immense outlay to keep them in repair.

With constant attention in the way of resurfacing and watering, these streets are convenient for travel, but without this care, holes are soon worn in the surface. Macadamized streets are always muddy in wet weather, and are not suited to stand the travel of our thoroughfares leading to the suburbs. •

All the macadamized streets of the City Proper, except those whose grade is more than 6 per 100, and all the main macadamized avenues which radiate to the suburbs, should be paved with granite blocks or asphalt, as rapidly as the finances of the city will permit.

In determining the character of the pavement to be used on a street, regard must be paid to several considerations, among which are its life, first cost, cost of maintenance, convenience, appearance, and adaptability to the traffic it may be expected to undergo during its life.

The pavement laid this year has been laid in accordance with the best modern practice, and in accordance with what seemed for the best interests of the community.

The business streets in exclusively commercial sections subjected to the heaviest travel have been paved with granite blocks.

Where all water, gas, sewer, telephone, and other pipes are already laid, and where there is reasonable cause to believe that the pavement will not be constantly torn up, the blocks have been laid on a concrete base of hydraulic cement, and the joints filled with pebbles and road-pitch.

A concrete base is especially applicable in loose soil where there is liable to be trouble from sub-soil water.

The streets subjected to heavy travel in which the various pipes have not as yet been laid, have been paved with granite blocks on a gravel base in the ordinary manner; more attention, however, has been paid to rolling and preparing the foundation-bed than was the practice in former years, with the result of securing a more even pavement.

The residence streets, where sufficient appropriation existed, have been paved with sheet asphalt, asphalt blocks, or brick, as seemed most suited to the case in hand.

Brick paving has only obtained on a few cross-streets, with a view of putting it to a thorough test. It can be used to advantage on streets of comparatively light traffic, where a less expensive form is desired than asphalt.

It is believed that the above kinds of pavement include all the varieties necessary to pave our streets in a first-class manner. Wood pavements, which are extensively used in Western cities and in cities abroad, are not adapted to this city. The difficulty of keeping them clean, owing to the tenacity with which filthy matter of all kinds adheres to them, and the exhalations which arise from their absorption of fluids, render them an unsanitary pavement. They are short-lived and require frequent repairs.

The granite-block pavement laid on a face of hydraulic-cement concrete is believed to be the pavement best adapted

to our business streets, especially where all water, gas, telephone, and electric pipes have been laid and connections made. This pavement possesses the advantage of the longest life, is easily cleaned, gives a good foothold for horses, and requires but little expenditure for repairs. Its chief disadvantage is its noise. The average cost of this pavement, including all labor and materials, is \$4.70 per square yard. This pavement has been laid on Tremont street, between Cornhill and Boylston street, and a comparison of the paving between the railroad tracks with the rest of the street shows what can be done with first-class granite blocks properly laid.

A number of streets have been paved with granite blocks laid on the ordinary gravel foundation. This style of paving has obtained on such streets as were not entirely built up with business blocks, and where a subsequent change in the character of the buildings will involve numerous excavations to connect with water, gas, electric, and other pipes. The quality of the stone blocks used has been first-class, however, and when the street has arrived at its ultimate development (provided it does so during the life of the stone blocks), the street can be repaved with the same blocks set on a concrete base.

A large amount of asphalt pavement has been laid this year on different streets, among which may be mentioned: Beacon street from Charles street to Arlington, Cabot street, Columbus avenue, Hudson street, Austin street, Kilby street, Court street, etc. This pavement is particularly suited to residence streets, and such business streets as are free from horse-car tracks and are lined with buildings occupied mostly by offices, where the noise of a granite-block pavement could not be borne. This pavement, when made of genuine asphalt and prepared and laid in the best manner, gives a very satisfactory result. Such of these pavements in Boston as have given out have done so by neglect to promptly repair them, or else by the opening of trenches through the street for the various gas, water, or other pipes. The life of the pavement is not so long as that of a granite-block pavement, but with reasonable care the pavement is good for many years. All the asphalt pavements laid are kept in repair at the expense of the contractors for five years. The asphalt pavement is easily cleaned, and presents a pleasing appearance to the eye. Much has been said and written about the slipperiness of this pavement. If the pavement is kept clean and free from the thin coating of mud which is apt to accumulate, and is sanded in case of sleet falling on the surface, it gives a better foot-

ing than a stone pavement. Statistics prove that more horses fall on a mile of stone pavement than on a mile of asphalt pavement. The cost of the asphalt pavement laid this year has averaged about \$3.50 per square yard.

Several streets have been paved during the year with an asphalt-block pavement. This pavement, while not so durable as the sheet asphalt, has the advantage of being easily replaced in case of excavation being made through its surface for gas or water pipes. It presents a very handsome appearance when well laid, and is well suited for light travel. The city of Baltimore has miles of streets paved with this material, which have been in good repair for eight years.

The use of brick for a street pavement has been attracting the attention of municipal authorities for the last few years.

It is extensively used in several Western and Southern cities, and has lately been tried in some of the large cities, among which are Cleveland, Columbus, Chicago, Philadelphia, Indianapolis, Omaha, Peoria, Baltimore, Washington, Harrisburg, Wheeling, Johnstown, Clinton. The claims made for this pavement are its low cost, combined with its durability and appearance.

There are now four streets paved in this city.

Hamilton place (a private way) was paved in 1888 by the abutters, and is now in good condition. It is subjected to light travel only, so that conclusions cannot be drawn from this street alone concerning the durability of the pavement. Genesee, Seneca, and Oswego streets have been paved with brick this year; the first two streets with a Keramite brick, at a cost of \$2.75 per square yard; the last-named street with a brick manufactured in Rhode Island, at a cost of \$2.40 per square yard.

The following method was observed in paving these streets. The macadam was excavated to the depth of seven inches and the road-bed then rolled with a horse-roller. A two-inch layer of gravel was then spread and rolled and the bricks laid on a thin sand bed. After being rammed in place, the surface was flooded with water and the bricks again rammed to a true surface, after which the joints were grouted with Portland cement mortar, mixed 1 to 1.

These streets have only been paved six months, so that no judgment can be passed upon them.

There are various methods of laying a brick pavement, and it is proposed during the coming year to lay the bricks on a concrete base as well as by other methods, so that a comparison may be obtained. Great care has to be taken in the selection of the brick to be used, and before trying

this style of pavement, the department made a series of tests of different bricks submitted.

The bricks should have toughness, elasticity, homogeneity, and impermeability, and this condition should obtain in each and every layer throughout the kiln.

The common tests that are applied are:

1. Absorption test by volume or by weight.
2. Test for compressive strength.
3. Test for transverse strength.
4. Test for abrasion.

Under the first test, measurements by weight usually show a less power of absorption than by volume, but, as the specific gravity of a brick or paving stone has no bearing on its wearing qualities, the volume test seems more proper.

Likewise, the transverse strength is of far greater value than the compressive strength. The test for abrasion, or the "rattler test," is made by placing the bricks to be tested in a revolving cylinder together with one or two hundred weight of "foundry shot," or nuggets broken off of iron castings. The per cent. of abrasion is obtained from the loss by weight at the end of stated periods of time.

The following table shows the results obtained by the tests made by the department:

**Resistance of Paving Brick, Stone, and Asphalt to
Abrasion and Impact. Mechanical Tests made with a
Foundry "Rattler."**

Reference No.	Loss in per cents of the original weight during			Total loss.	Absorptive power in per cents of the volume of the dry brick.
	1st half hour.	2d half hour.	3d half hour.		
	Granite and Asphalt.				
1 . . .	0.88	0.46	0.37	1.71	0.8
2 . . .	3.63	2.57	2.42	8.62	
	Paving Brick.				
3 . . .	1.43	0.96	0.48	2.87	2.2
4 . . .	2.83	1.15	0.99	4.97	
5 . . .	1.51	0.71	0.55	2.77	1.5
6 . . .	0.84	0.30	0.30	1.44	
7 . . .	0.68	0.49	0.37	1.54	2.0
8 . . .	0.62	0.49	0.37	1.48	
9 . . .	0.62	0.56	0.49	1.67	1.5
10 . . .	2.81	1.76	1.22	5.79	
11 . . .	1.98	1.86	1.68	5.52	6.0
12 . . .	1.03	0.54	0.36	1.93	
13 . . .	0.90	0.41	0.25	1.56	6.0
14 . . .	4.32	3.66	4.24	12.22	
15 . . .	1.60	0.97	0.62	3.19	10.0
16 . . .	2.19	1.83	1.60	5.62	
17 . . .	1.72	1.00	0.55	3.27	14.0
18 . . .	1.66	0.90	0.67	3.23	

	Addenda.	Absorptive power in per cents of the weight of the dry brick.
7 . . .		0.17
8 . . .		0.19

Three samples of the brick, numbered 7, 8, 9, were tested at the Watertown Arsenal, as to their transverse strength, with the following results :

	Modulus of rupture in lbs. per square inch.
A . . .	1925
B . . .	2072
C . . .	1700

The foregoing tests show conclusively that there is a great variation in the toughness of the so-called paving bricks, and that the variation exists in bricks from the same yard.

A range from 1.44% to 12.22% loss by abrasion is certainly very great, and in absorption a range from 1.5% to 23.3% is enough to put the materials into a doubtful class; all of which goes to show that in the selection of brick for pavement great care must be taken to secure a uniformity as to vitrification and composition, if we expect to find "life" in this comparatively new form of pavement.

The special features of the year's work in paving are the increase in asphalt roadway-paving, — both the sheet paving and the asphalt blocks, — the use of brick paving, and the use of a concrete base for the ordinary well-known and thoroughly tried granite blocks.

Asphalt paving is used in large cities in almost all parts of the civilized world, and when used in streets which are suited for it, and not taking the question of cost into account, is undoubtedly the most desirable pavement which has come into common use. The streets upon which it can be used are limited. It is unsuitable for steep grades, for streets subjected to unusually heavy traffic, or for narrow streets with railway tracks. It is costly to put down in the first instance, and costly to maintain, but for city streets used for residences it is unsurpassed, both for the comfort of the occupants of the houses, and also for those who use the streets. From a sanitary point of view it stands at the head of the list of varieties of paving, as it is perfectly smooth and absolutely impervious to moisture.

Its first cost is about ten per cent. greater than that of a first-class granite-block paving on gravel, and the cost of maintenance for a term of years is much greater, but just how much greater the limited experience of this city does not satisfactorily answer.

The addition of a concrete base to the ordinary granite-block paving is no new experiment, but it has been employed to only a limited extent heretofore in Boston. Its advantages are marked, and its use for streets with the

heaviest traffic is to be commended. It consists of a solid foundation-layer or sheet of cement concrete, from six to eight inches in thickness, and covering the entire area to be paved; upon this the blocks are set in the usual manner, on a layer of sand about two inches in thickness. The paving may then be finished in the usual manner, by filling the interstices between the blocks with coarse sand or fine screened gravel, or they may be filled with heated pebbles and melted pitch, as was done on Tremont street. The pitch-joints have no necessary connection with the concrete base, and either one is used without the other.

The advantages of the concrete base are those of a good foundation, which is indispensable for all good work. The concrete foundation is superior to gravel, however well compacted; and it serves the same good purpose in block paving that it does in asphalt paving.

As a preliminary to all paving, the various pipes and structures in the street must be put in order, and more or less trenches or other excavations made. The concrete base practically overcomes uneven settling, by bridging over the trenches and distributing the weight of travel over larger areas. Again, the paving-blocks are set in two inches of sand on a concrete base, and on six inches of gravel in ordinary paving. The settlement in the two inches, due to uneven depths of stone, is much less than in the paving on gravel, giving a smoother surface, and additional settling of each block independently of others is entirely prevented.

The disadvantages of the method are, first, the extra cost. This will not exceed one dollar per square yard for ordinary street-paving; second, difficulty of excavation for repairs, etc., of pipes in the street, and extra cost of replacing the pavement properly. It must be conceded by all that the primary and principal use of streets is for highways, and their use for pipes and structures is secondary and incidental. This is fully recognized in the authority over the streets given to the Superintendent, who controls their opening, — under the proper legal limitations, — for any purpose whatever; moreover, the difficulty of making excavations will obviously lead to the more careful construction of buried structures, and to the invention of methods of using them without removing the paving. As an instance, note that until within a very few years it was necessary to make an excavation in the street every time the city water was turned on or off a customer's premises.

The third objection to the concrete foundation is that it makes a water-tight layer, covering the street, and graded so as to turn all the water that penetrates the layer of paving-

block to the gutters. In streets having areas under the sidewalks, this is liable to make trouble from the water leaking through the wall and showing itself in the area. Care has been taken to make a water-tight joint in such cases.

The filling of the joints of the paving-stones with heated pebbles and pitch has been successful, and has done away with leaving a layer of gravel on the stones to be ground up by teams, and to become a nuisance to the public. The method of filling the joints promptly and effectually with pebbles and pitch avoids the long and dirty process of grinding up gravel by teams, and allows the street to be cleaned at once. Paving has been injured by the removal of gravel before the joints were filled, and also by water-carts sprinkling the layer of gravel. The sprinkling seems to prevent the ground-up gravel from penetrating the joints by caking in the upper part of the joint. All gravel used for covering off paving, as it is termed, should be thoroughly dry when applied, either naturally or artificially.

Better work can be done in the hot, dry weather of summer than in the shorter and cooler days of the fall. This is especially true of all pitch joint-work. It cannot be properly done when the stones are wet, or so cold as to chill the pitch at once to so low a temperature that it loses its waxy consistency. It would probably be an improvement to use more fluid pitch than has been done heretofore.

About two-thirds of the cost of paving is in the granite blocks, and the aggregate cost for the year is very large. In cases where it is practicable, say for Quincy stone delivered on the ground, stone might be bought by the square yard of finished paving, instead of by the tedious and unsatisfactory method of counting. Paving-stones bought by contract vary in size so that the cost to the city for two consecutive areas of paving will frequently vary from six to twelve per cent. This has been shown by actual count of sections laid from day to day.

The asphalt pavement which has been laid has all been done by the Barber Asphalt Paving Company.

The practice of rolling the road-bed before placing gravel on streets to be paved gives satisfactory results.

The printed specifications for paving, while more rigid in many points than the former practice of the Paving Division, on the whole are very satisfactory, and but few changes in the subject-matter will be necessitated.

In commencing the work of street-paving, a force of engineers was organized, consisting of two field-parties and an office assistant — twelve men in all during the busy season.

Plans and profiles of streets to be paved were made, quan-

tities estimated, general specifications previously prepared were filled out for letting the work by public competition. The large amount of work to be done, together with its character, necessitated the letting of the paving of a number of streets by contract.

The city furnished all materials except paving-gravel, which was furnished by the contractor, and the price included in the bid. In most cases material furnished by the city was delivered to the contractor on wharves or at city yards. In some cases, paving-blocks were delivered on or in the vicinity of the work under existing contracts, old material removed was delivered by the contractor at some convenient point where the city had use for it; if of no use to the city, it was given to the contractor.

Seventeen contracts were let, covering 4.35 miles of street, and costing, exclusive of material furnished by the city, \$169,161.02.

Fifty-three thousand four hundred and forty-four square yards block paving on gravel were laid; average cost, \$1.155.

Nine thousand two hundred and ninety-four square yards block paving on concrete base with pitched joints were laid; average cost, \$2.727.

Fifteen thousand one hundred and eighty-nine square yards of asphalt paving were laid; average cost, with concrete base, \$3.635 (when old base was used, \$2.25).

Thirty-one thousand six hundred and forty-six linear feet of edgestone set; cost on average, \$0.329.

Twenty-two thousand four hundred and seventeen square yards of sidewalk relaid; average cost, \$0.836.

Three thousand and seventy-eight square yards flagging cross-walk; average cost, \$1.184.

The number of blocks used cannot be exactly given, as they were taken from stock in most cases. Counts of small areas proved very unsatisfactory; averaging the largest quantities where exact figures are obtainable gives about twenty-five large and about thirty-eight small blocks to the square yard. The cost of blocks, including culling and wharfage, is about five cents for small blocks and seven and one-half cents for a large one, making the cost per yard \$1.90 in each case. The small blocks come from Quincy, and are used on inland work, and are delivered on the work. The large blocks come mostly from Cape Ann, and are delivered on wharves.

The average cost of block paving on gravel, per yard, is \$3.05; this, under somewhat severe specifications, requiring the removal of thirteen inches of old material, grading and rolling the road-bed, and furnishing six inches of new gravel.

Details of the work done are to be found in the appendix.

The past year has been one of the busiest ever known in the history of the Street Department.

The following table shows the amount of work done on paving, edgestones, sidewalks, etc., in 1889, 1890, and 1891 :

	1889.	1890.	1891.
Granite blocks laid and relaid :			
Regular appropriation	55,922 sq. yds.	49,630.8 sq. yds.	43,951 sq. yds.
Special appropriation	43,673 sq. yds.	21,332.8 sq. yds.	153,639 sq. yds.
Edgestone set and reset :			
Regular appropriation	60,275 lin. ft.	42,437 lin. ft.	46,237 lin. ft.
Special appropriation	38,077 lin. ft.	8,567 lin. ft.	147,215 lin. ft.
Brick walks laid and relaid :			
Regular appropriation	19,368 sq. yds.	15,448 sq. yds.	29,239 sq. yds.
Special appropriation	16,512 sq. yds.	6,758 sq. yds.	73,336 sq. yds.
Flagging set and reset :			
Regular appropriation	10,879 ft.	15,640 ft.	21,134 ft.
Special appropriation	2,716 ft.	2,759 ft.	16,940 ft.
Asphalt :			
Regular appropriation	3,806 sq. yds.	1,369 sq. yds.	1,731 sq. yds.
Special appropriation	2,892 sq. yds.	2,317.6 sq. yds.	39,955 sq. yds.
Hill gravel :			
Regular appropriation	\$46,866 01	\$32,205 34	\$53,443 87
Special appropriation	18,197 78	9,727 95	39,707 54
Hill sand :			
Regular appropriation	3,572 83	6,024 85	8,875 1
Special appropriation	3,516 09	475 46	2,528 28
Filling :			
Regular appropriation	8,623 55	2,110 36	2,333 60
Special appropriation	6,176 67	27,926 03	9,231 25
Stone :			
Regular appropriation	29,139 20	21,097 34	72,938 04
Special appropriation	5,157 53	2,747 44	35,926 87
Beach gravel :			
Regular appropriation	7,168 95	5,160 87	9,460 61
Special appropriation	1,208 95	1,133 01	7,134 20
Grade damage, etc.	19,065 21	23,383 11	25,633 65
Watering streets	47,586 58	57,967 34	104,263 62
General repairs	234,585 91	200,079 67	249,845 70

	1889.	1890.	1891.
Expended from Jan. 1, 1889, to Dec. 31, 1889 and 1890, and expended from Jan. 1, 1891, to Jan. 31, 1892:			
Regular appropriation	\$760,388 61	\$806,995 21	\$977,200 02
Special appropriation	291,071 57	254,727 19	1,014,324 26
Pay-rolls Jan. 1, 1889, to Dec. 31, 1889 and 1890; Jan. 1, 1891, to Jan. 31, 1892:			
Regular appropriation	330,599 97	349,789 36	396,282 98
Special appropriation	97,634 30	123,554 96	171,769 05
Balance, Jan. 1, 1889-1890; Feb. 1, 1892:			
Regular appropriation	8,265 11	36,291 97	483 71
Special appropriation	3,118 98	205,105 73	206,622 18

As a matter of interest to the residents in the different sections of the city, the following tables are presented, showing the amount of work done on edgestones and sidewalks in the different districts, one-half the cost of which is assessable on the abutters:

New Edgestone. (Lin. ft. set.)

YEAR.	City Proper.	Roxbury.	South Boston.	East Boston.	Dorchester.	West Roxbury.	Brighton.	Charlestown.	Total.
1881	6,294	8,328	6,304	443	13,112	1,314	263	794	36,852
1882	3,398	10,930	4,190	2,119	8,235	5,454	5,543	1,595	41,464
1883	2,763	7,306	4,660	98	2,467	4,381	1,895	. . . .	23,570
1884	4,691	9,733	6,189	2,450	18,310	4,610	106	696	46,785
1885	5,291	4,644	2,538	1,333	4,976	1,952	303	546	21,583
1886	5,790	8,978	2,463	349	11,051	2,451	737	174	31,993
1887	3,222	10,192	4,269	436	5,229	2,726	2,055	223	28,352
1888	4,359	5,191	4,531	971	5,051	580	867	. . . .	21,550
1889	2,946	13,224	2,139	1,419	6,794	10,404	1,845	573	39,344
1890	2,781	11,475	4,946	981	9,882	3,288	3,042	988	37,383
1891	8,236	22,693	11,724	4,131	18,138	4,617	2,032	2,227	73,798
Total . . .	49,771	112,694	53,953	14,730	103,245	41,777	18,688	7,816	402,674

Brick Sidewalks. (Sq. yds. set.)

YEAR.	City Proper.	Roxbury.	South Boston.	East Boston.	Dorchester.	West Roxbury.	Brighton.	Charlestown.	Total.
1881	5,207	11,491	3,961	893	337	1,096	381	159	23,525
1882	5,905	7,510	4,984	1,658	179	1,834	117	887	23,074
1883	4,892	7,675	4,794	1,095	2,795	3,354	. . . .	177	24,282
1884	4,870	7,279	4,437	1,616	4,902	954	. . . .	739	24,797
1885	4,756	3,896	1,473	722	892	479	46	342	12,606
1886	5,273	5,285	2,112	1,002	2,843	. . . .	58	527	17,100
1887	5,970	7,693	3,768	1,500	1,348	643	. . . .	56	20,978
1888	2,540	6,910	3,164	1,110	614	346	. . . .	75	14,759
1889	4,835	10,489	1,942	1,362	638	124	138	. . . .	19,528
1890	4,913	7,651	1,915	1,947	1,155	274	900	791	19,546
1891	3,881	9,098	3,628	2,176	1,478	967	377	120	21,725
Total . . .	52,542	84,977	36,178	15,081	17,181	10,071	2,017	3,873	221,920

The cost to the city of Boston of laying the edgestones and brick sidewalks, shown in the foregoing table, has been \$581,230.21.

Of this amount the sum of \$269,677.56 has been assessed on the abutters when the edgestone and sidewalk have been laid.

Of this sum of \$269,677.56, the sum of \$10,810.48 was abated by order of the Board of Aldermen, \$218,942.62 has been collected, and \$39,924.46 is still uncollected.

STREET-WATERING.

The most unsatisfactory work which the Street Department had to do during the year was that of street-watering. This arises from the fact that there has never been any system in regard to this work. Until Dec. 13, 1891, the duty of watering was not a part of the work of the Street Department, as the subject was not mentioned in the ordinances. Recognizing, however, the importance of watering streets, both for the preservation of their surface and the preservation of the public health, it has been the practice of every superintendent of the department to devote as much money to this work as possible. As this money was not

especially appropriated by the City Government for this purpose, but was taken out of the regular maintenance appropriation of the department, the sum expended and the amount of work done varied largely from year to year. The following table shows the amount expended in street-watering by the city for the last fifteen years :

1877 . . . \$17,593 62	1885 . . . \$43,854 68
1878 . . . 23,595 02	1886 . . . 44,940 35
1879 . . . 26,747 18	1887 . . . 51,365 73
1880 . . . 33,306 95	1888 . . . 40,586 58
1881 . . . 36,178 24	1889 . . . 47,837 46
1882 . . . 45,797 00	1890 . . . 57,967 34
1883 . . . 53,502 29	1891 . . . 104,263 62
1884 . . . 34,518 47	

As the cost of watering all the streets of the city was largely in excess of the amount which the Street Department was able to devote to the purpose, and of necessity a large number of streets were entirely neglected, the custom arose of the department's expending the money for street-watering on important macadamized thoroughfares and a few other streets which it was deemed of special importance to water, leaving it to private parties who were willing to pay, to obtain from contractors the watering of the streets in front of their residences.

This method has caused a great deal of complaint from residents who were obliged to pay for street-watering, as frequently an adjacent street was watered at the city's expense.

Another source of complaint was the exorbitant rate charged by the contractors where the work was done at the expense of the abutters. As it was impossible to ascertain what proportion of people subscribed for watering on a given street, the contractor set a price which would allow for the expense being borne by such people as were liberally inclined. This price, in some instances, is known to be about seven times the actual cost of watering; yet the contractor claimed that the sum he demanded was made necessary by the fact that a great many people would not subscribe for the work; that frequently those who subscribed failed to pay, and that the total amount collected by him barely returned a fair profit on the capital and plant employed.

The growing discontent concerning this system made itself manifest in the press in the spring of 1891, and several articles were published concerning the exorbitant rates

which people were obliged to pay to street-watering contractors. This agitation resulted in bringing the matter to the attention of the authorities, and led to an examination of the subject.

It is found that in all the large cities outside of Boston, the idea of local benefit as to street-watering largely prevails, and in most cases the abutters are expected to pay the expense thereof in front of their several estates. Several considerations have gradually taken the subject from the category of private enterprise and established it under municipal control.

1st. The importance of keeping the street-surface in good sanitary condition.

2d. The importance of having the amount of water used on the street, under control.

3d. The question of general accommodation to public traffic as far as ease and comfort are concerned.

4th. The impossibility of contractors procuring complete and uniform subscriptions on a given route where the watering is done at the expense of the abutters.

These, together with numerous other considerations, have led to the enactment by the Legislature of a State law whereby any city is authorized to water its streets, and to levy a tax or assessment for the expense thereof against the abutters, in the same manner as for building sewers or laying edgestones and sidewalks; or to do the whole of the work at its own expense, including it in the tax rate.

Chapter 179 of the Acts and Resolves of 1891; which was passed late in the spring, reads as follows:

"SECTION 1. Any city, the population of which exceeds thirty thousand, . . . may annually appropriate money to water all or any of the public streets within its limits, or it may determine that such streets shall be watered in whole or in part at the expense of the abutters thereon. . . .

"SECR. 2. If a city shall determine that the streets within its limits, or certain streets or portions of streets therein, shall be watered in whole or in part at the expense of the abutters, the expense of such watering shall be assessed upon the estates abutting on such street or portion of such street in proportion to the number of linear feet of each estate upon such street or portion thereof so watered."

No advantage was taken of this law last year, for the following reasons:

1st. Under the \$9 tax limit, it was impossible to devote from the amount raised by the tax levy the large sum required to water the streets.

2d. The lateness of the season prevented any plan being

formed whereby the cost of watering should be assessed on the abutters. The delays that would have occurred in forming such a plan would have postponed street-watering for some time, and brought great inconvenience upon the residents of the city.

The City Government recognizing the importance of the subject, appropriated the sum of \$50,000 for the purpose of street-watering; which, taken in connection with the sum of \$54,000 which could be spared from the regular maintenance appropriation of the department, gave a much larger sum than ever was before devoted to this purpose.

This sum, although a large amount for the city to appropriate, was entirely inadequate to do all the street-watering required, and the practice of former years had to be continued, of the city's refusing to water paved streets and those streets which were thickly settled and on which the residents were amply able to pay for the work themselves. The sum of \$104,000 was therefore largely expended in the suburbs and on the main thoroughfares leading to them.

As no systematic method had ever been followed out in doing this work, and no data existed to show on what basis the work had previously been paid for, the labor of looking into the numerous watering contracts, with a view of equalizing the prices, was very great. All prices paid for new work and former prices paid for old work were adjusted on the basis that a water-cart should cover from 27,000 to 30,000 linear feet of single spread per day. In laying out new street-watering routes and adjusting old ones, the length and width of streets to be covered were carefully determined, and the number of spreads necessary to cover from curb to curb were taken into account in regulating the price to be paid.

The following table gives a summary of the work done by teams hired by the day and teams owned by the city, classified by districts, with the number of miles covered in each district :

1891.

Summary of Day Work.

DISTRICTS.	Number of teams hired by the day.	Number of teams owned by the city.	Number miles covered.
1. South Boston	6	.....	20.42
2. East Boston	3	.....	6.74
3. Charlestown	3	.....	5.99
4. Brighton	10	2	21.74
5. West Roxbury	8	2	30.77
6. Dorchester	10	2	34.38
7. Roxbury	7	.....	17.47
8. South yard	3	.....	6.16
9. Back Bay	4	.....	5.57
10. North End	1	.....	2.62
Totals	55	6	151.86

The summary shows that fifty-five carts hired by the day and six carts owned by the city have watered 151.86 miles of streets during the year.

The following table, classified by districts, shows the length in miles, and the square yards of surface, watered by the various street-watering contractors during the year.

The expense of this work was borne entirely by the city in some districts, in others entirely by the abutters, and in the remainder partly by the city and partly by the abutters.

1891.

Summary of Contract Work.

DISTRICT.	Contractor.	Miles.	Square yards.
City Proper	Daniel Clark	4.55	87,268
“	O. Nute & Son.....	19.34	495,910
“	Proctor Bros. & Billings,	12.70	263,641
West End.....	A. J. Tuttle & Co.	4.73	91,272
South End	J. L. & H. K. Potter	10.83	235,254
East Boston	Philip Sowden, Jr.....	8.04	160,811
Charlestown	Wm. H. Quigley... ..	3.00	68,325
“	E. Devine.....	3.20	60,834
“	P. J. Calnan.....	3.32	55,644
Dorchester	William Hannon.....	3.14	60,229
“	Ashmont Improvement Co.	1.54	26,575
Dorchester, South Bos- ton, and Roxbury ...	A. A. Hall	21.47	418,795
Roxbury	M. E. Nawn.....	5.64	101,769
“	Bancroft .....	.80	26,633
“	T. W. Manning	3.36	69,700
“	William Finneran.....	3.70	87,487
“	E. A. Janse	1.48	31,700
West Roxbury	Patrick Ward	3.80	58,383
“	Thomas Minton	3.29	66,699
“	John S. Kelly	2.27	34,762
“	Thomas O'Leary.....	10.87	189,408
Totals .....	.....	131.07	2,691,099

Distribution of Carts.

No.	Districts.	City carts.	Hired carts.	Contractors' carts.	Total.	Miles.
1	South Boston...	.....	6	3	9	24.92
2	East Boston ....	.....	3	5	8	14.78
3	Charlestown....	.....	3	6	9	15.51
4	Brighton	2	10	.....	12	21.74
5	West Roxbury..	2	9	7	18	51.00
6	Dorchester	2	10	5	17	43.33
7	Roxbury .. ...	.....	7	14	21	45.15
8	City Proper ....	.....	7	51	58	66.50
		6	55	91	152	282.93

Money Expended, 1891.

No.	Districts.	City work.	Contractors' work.	Day work.	Labor.	Water for 1891.	Water for 1890.	Repair.	Horse-hire.	Total.
1	South Boston .....	.....	\$1,385 42	\$3,562 00	\$306 02	\$593 56	\$309 28	\$5 75	.....	\$5,568 47
2	East Boston .....	.....	3,379 33	2,115 00	5 06	352 40	201 48	.....	.....	5,700 87
3	Charlestown .....	.....	4,030 01	2,143 50	325 48	357 16	128 08	.....	.....	6,627 07
4	Brighton	\$1,971 00	.....	8,032 50	311 84	1,666 81	1,749 22	164 00	.....	12,228 56
5	West Roxbury	1,728 00	6,594 96	5,724 00	434 36	1,241 63	1,350 06	45 00	.....	15,879 38
6	Dorchester	750 00	5,487 32	5,835 00	674 54	1,097 20	1,659 79	.....	.....	14,406 65
7	Roxbury.....	45 00	7,254 13	4,918 00	1,058 73	826 94	893 69	13 30	.....	14,182 85
8	South yard.....									
9	Back Bay.....	.....	12,821 07	6,388 00	1,729 82	1,064 30	853 00	302 50	378 38	29,672 77
10	North yard									
Total		\$4,494 00	\$40,952 24	\$38,718 00	\$4,845 85	\$7,200 00	\$7,144 60	\$530 55	\$378 38	\$104,263 62

1891.

No.	Districts.	Miles, day work.	Miles, contract work.	Total.
1	South Boston...	20.42	4.5	24.92
2	East Boston....	6.74	8.04	14.78
3	Charlestown....	5.99	9.52	15.51
4	Brighton.....	21.74	.....	21.74
5	West Roxbury..	30.77	20.23	51.00
6	Dorchester.....	34.38	8.95	43.33
7	Roxbury.....	17.47	27.68	45.15
8	South yard.....	6.16	52.15	66.50
9	Back Bay.....	5.57		
10	North yard.....	2.62		
		151.86	131.07	282.93
		or	or	
		2,000,000 sq. yds.	2,692,000 sq. yds.	

Cost of city and day work, exclusive of supervision \$332 00 per mile
 Cost of contract work, exclusive of supervision 312 44 “ “

Entire cost of city and day work per 1,000 sq. yds. = \$23.17 per season, exclusive of water.

Cost to city of contract work, which was paid for also by the abutters, per 1,000 sq. yds. = \$16.38 per season, exclusive of water.

In comparing the cost of the “contract work” with the cost of the day work done by the city, it must be borne in mind that the cost of the contract work as stated is the amount which the city has paid the contractors, and that an unknown amount has been paid several contractors by the abutters on the streets. Of the 91 contract carts, the city pays for only about 48 carts, while the other 43 collect entirely from the abutters.

Monthly Exhibit Sheet. (Average large month.)

DISTRICT.	Number of carts used by contractors.	Amounts of money paid monthly to contractors.	Number of carts hired by the day.	Amount paid carts hired by the day.	Number of carts owned by city.	Cost of carts owned by the city.	Total monthly expenditure.	Number loads of water used.	Cost of water used.	Total cost of watering.
South Boston,	3	\$197 33	6	\$900 00	.	...	\$1,097 33	1,753	\$140 24	\$1,237 57
East Boston .	5	550 00	3	450 00	.	...	1,000 00	793½	63 46	1,063 46
Charlestown .	6	700 00	3	450 00	.	...	1,150 00	867½	69 41	1,219 41
Brighton . . .	.	.	10	1,500 00	2	\$300 00	1,800 00	4,051	324 08	2,124 08
West Roxbury,	7	1,075 89	8	1 200 00	2	300 00	2,575 89	3,088	247 04	2,822 93
Dorchester . .	5	1,082 50	10	1,500 00	2	300 00	2,882 50	3,234	258 76	3,141 26
Roxbury . .	14	1,901 67	7	1,050 00	.	...	2,951 67	2,133	170 69	3,122 36
City Proper .	51	1,786 44	7	1,050 00	.	...	2,836 44	3,247	259 77	3,096 21
Total . . .	91	\$7,293 83	54	\$8,100 00	6	\$900 00	\$16,293 83	19,168	\$1,533 45	\$17,827 28

The summary of the method pursued this year shows the following classes of work :

- 1st. Work done by city carts.
- 2d. Work done by hired carts at city's expense.
- 3d. Work done by contractors' carts, under contract, at city's expense.
- 4th. Work done by contractors' carts with partial compensation from the city.
- 5th. Work done by contractors at the expense of the abutters.

The work in City Proper was almost entirely of the fifth class.

The summary of the results for this year shows that 6 city carts and 55 carts hired by the day were used, and that contracts were held with 22 different parties, who required 91 watering-carts for the routes which they covered. This makes a total number of carts 152, and as some of these carts held from 1,000 to 1,500 gallons, they were equivalent to 165 carts of 600 gallons each.

The number of miles watered by city and day work is 151.86.

The number of miles watered by contract is 131.07.

With this plant the total number of miles watered has been 282.93. The total expenditure for this work has been

\$104,263.62, and the streets have been watered in dry weather from two to four times per day; of this sum, the amount of the water bill for two years has been included, as the bill for 1890 was paid out of the appropriation for 1891.

As the Street Department was at the expense of watering in front of a large number of public buildings, it seemed just that the department having control of them should pay for the watering of the streets in front of this property.

An arrangement was therefore made with the Superintendent of Public Buildings, whereby the streets in front of several school-houses were watered, at the following rates :

Name.	Rate per month.	Name.	Rate per month.
Allston . . .	\$3 35	Gaston . . .	\$10 00
Adams . . .	5 15	George street . .	3 60
Atherton . . .	1 85	George Putnam . .	2 15
Adams street . .	3 00	Green street . . .	1 10
Andrews . . .	1 25	Haverhill street . .	3 85
Austin . . .	1 15	Howard Grammar . .	3 65
Agassiz . . .	4 25	Howe . . .	1 75
Bowdoin . . .	3 10	High and Latin . .	22 00
Bennett . . .	3 75	Hyde . . .	3 75
Benjamin Pope . .	5 50	High (Charles-	
Bunker Hill Gram-		town) . . .	3 45
mar . . .	4 60	Harvard hill . . .	2 20
Bunker Hill Pri-		Hancock . . .	50
mary . . .	1 60	Hillside . . .	4 50
Cyrus Alger . . .	4 10	High (Elm street,	
Chapman . . .	3 10	W. R.) . . .	4 25
Charles Sumner . .	2 90	High (Dorchester	
Canterbury street .	4 40	avenue) . . .	8 15
Common street . .	65	Harris . . .	9 60
Cushman . . .	2 25	Howard avenue . .	1 65
Chestnut avenue . .	1 20	Harvard . . .	2 50
Clinch . . .	6 10	Hugh O'Brien . .	7 90
Capen . . .	4 25	Heath street . . .	3 00
Dudley . . .	7 40	Joshua Bates . . .	3 25
Dorchester-Everett,	1 50	Lawrence . . .	5 00
Dwight Primary . .	1 60	Lyman . . .	6 25
Drake . . .	4 10	Lewis . . .	5 00
Everett . . .	6 10	Lowell . . .	7 10
Eustis . . .	3 20	Lucretia Crocker . .	5 00
Florence . . .	5 15	Minot Grammar	
Francis street . .	1 50	(new) . . .	2 75
Frothingham . . .	4 00	Martin . . .	9 35
Glen road . . .	2 75	Moulton street . .	85

STREET DEPARTMENT.

79

Name.	Rate per month.	Name.	Rate per month.
Mead street . .	\$90	Savin Hill avenue .	\$2 65
Mt. Pleasant ave- nue	75	Thos. N. Hart . .	2 25
Mt. Vernon . .	2 00	Tileston	5 15
Norcross . . .	4 00	Ticknor	3 00
Noble	7 00	Thomas street . .	1 25
Oak square . .	18 35	Vernon street . .	75
Old High (Dor- chester avenue) .	9 75	Wells	3 15
Old Minot . .	1 90	Warren	4 50
Prescott . . .	15	Webster street . .	75
Phillips street .	3 40	Winchell	2 90
Polk street . .	1 20	Washington street (near Glen road) .	1 80
Poplar street .	90	Washington street (near Forest Hills station)	3 50
Quincy street .	2 05	Way street . . .	60
Rice Grammar .	2 35	Washington street (Germantown) . .	1 90
Roxbury street .	4 25	Yeoman street . .	1 15
Shurtleff Grammar .	5 90		
Sherwin	6 55		
Stoughton . . .	3 00		
Smith street . .	3 50	Total	\$362 10

An arrangement was also made with the Fire Department to water in front of the various engine and hook-and-ladder houses, at the following rates :

Engine-Houses.

Number.	Rate per month.
13	\$3 75
16	3 00
18	1 00
19	1 25
20	1 25
28	2 50
29	3 50
30	2 25
33	4 10

Hook and Ladder.

6	3 00
10	2 50
15	4 25
16	3 25
Total	\$35 60

An arrangement was made with the Police Department to water in front of the various police stations, at the following rates :

Police Stations.

Number.									Rate per month.
5	.	.	.	.	.	.	.	.	\$1 00
8	.	.	.	.	.	.	.	.	3 50
9	.	.	.	.	.	.	.	.	4 75
10	.	.	.	.	.	.	.	.	2 75
11	.	.	.	.	.	.	.	.	3 25
12	.	.	.	.	.	.	.	.	1 50
13	.	.	.	.	.	.	.	.	1 75
14	.	.	.	.	.	.	.	.	1 75
15	.	.	.	.	.	.	.	.	3 50
16	.	.	.	.	.	.	.	.	2 00
Walnut-street Police Station, Neponset									75
Centre-street Police Station, West Roxbury									75
Mattapan Police Station, River street									2 00
Washington street, Ward 24									5 00
Total									<hr/> \$34 25

An ordinance relating to the duties of the Superintendent of Streets became a law on December 13, 1891, and reads as follows :

"Be it ordained, etc.:

"Chapter 18 of the Revised Ordinances of the year 1890, as amended by chapter 1 of the ordinances of the year 1891, is hereby amended in the first section by inserting between the words 'repair' and 'shall' in the seventh line the words 'shall keep the streets properly watered.' "

The Superintendent was accordingly requested to include in his annual estimates a sum necessary for this purpose, and the sum of \$250,000 has been reported as meeting the substantial requirements for street-watering for the coming year.

The cost of watering the streets comes strictly under the head of the current expenses of the Street Department, and it is therefore impracticable to borrow money outside of the debt limit for this purpose. Taking into account the great demands for money to be expended on new works of permanent improvement and importance, it is also inadvisable to pay for street-watering by means of a special loan.

The demands of the various city departments always exceed by several million dollars the amount which can be raised under the \$9 tax limit, and there is therefore no hope of obtaining the large additional sum necessary for the expense of street-watering from the money raised in the tax levy.

The question then becomes, How to do away with the present unjust method of paying for street-watering, and at the same time, in view of the financial condition of the city, take the matter entirely under municipal control.

The only solution of this problem is believed to be by a method of local assessment, an ordinance for the authorization of which has been submitted by the department to the City Council, and is now under consideration.

The ordinance as submitted reads as follows :

" AN ORDINANCE TO PROVIDE FOR WATERING THE PUBLIC STREETS OF THE CITY OF BOSTON, MADE UNDER AUTHORITY OF THE LEGISLATURE, CHAPTER 179 OF THE ACTS OF 1891.

" *Be it ordained by the City Council of Boston, as follows :*

" ARTICLE 1. Chapter 18 of the revised ordinances of 1890, as amended March 2, 1891, is hereby still further amended and extended to read as follows :

" SECTION 23. The superintendent of streets is hereby authorized to keep the public streets properly watered, and is directed to do, by contract or otherwise, the work of said watering, in accordance with the following plan : The city is to be divided into such sprinkling districts as the said superintendent shall determine, in each of which shall be specified the streets and parts thereof to be watered, together with the estimated total lengths of streets sprinkled, expressed in miles, and the approximate area between curbs in square yards.

" SECT. 24. To enable the superintendent to carry out the provisions of this ordinance, he is hereby authorized to organize a new division to be known as the Street-Watering Division, and to appoint a deputy superintendent thereof, subject to the approval of the mayor, and to employ the inspectors and extra clerical force necessary to carry out the work of the division.

" SECT. 25. The cost of the foregoing work shall be paid as follows : The cost of administration shall be wholly borne by the city ; all other expenses for watering, actually incurred in a given district, shall be assessed as a special tax in favor of the city by the superintendent of streets on the

adjoining property fronting on the streets, public places, and parts thereof so watered in said district, in the proportion that the approximate frontage of each lot watered in said district (bordering on the street or public place) bears to the total number of linear feet of all property so watered in the district under consideration. Said special tax-bills shall be made out and certified to the auditor by the superintendent of streets, and by the auditor delivered to the collector of the city of Boston on or before the first day of October in each year, or as soon thereafter as practicable; said special tax shall be and become a lien on the property charged therewith from the said first day of October of the year in which they are issued, and may be collected of the owner of the land in the name of and by the city of Boston like any other claim, in any court of competent jurisdiction, with interest at the rate of six per cent. per annum from the first day of November in each year, and seven per cent. per annum from the first day of November in each year, if unpaid on the first day of January of the following year. If not paid by the first day of April, they shall be transmitted to the corporation counsel for collection by suit or otherwise.

"SECT. 26. All money received by the city from the proceeds of the special tax-bills aforesaid shall be placed to the credit of the street department, for the purpose of defraying the expense of street watering.

"ARTICLE 2. Any other ordinance relating to street watering in conflict herewith is hereby repealed."

This system would return to the city treasury a considerable portion of the sum expended.

In support of the ordinance assessing the cost of street-watering on abutters, the following data is submitted:

Street-watering in most of the large cities of this country is paid for entirely by the abutters, and is treated as a private enterprise.

In others, there is a system of local assessment, the work being done by the city. In order to show the practical working of this system, the following city is cited:

St. Louis.

The system of street-watering now in vogue in the city of St. Louis is on the local-assessment plan under municipal control, the water being furnished for this purpose free of expense, and each abutter paying a fixed rate per front foot of estate.

There are within the city limits about 272 miles of macadamized streets and 70 miles of paved streets, distrib-

uted as follows: Of Telford, 18.32 miles; wooden block on concrete base, 5.26 miles; granite block, 41.35 miles; asphalt, 3.95 miles; limestone block and old Nicholson wood block, 1.11 miles.

There are also 80 miles of paved alleys. Total, 422 miles of streets and alleys.

Of this total mileage 364 miles are properly sprinkled for the season, for a period of $8\frac{1}{2}$ months.

The city is divided into 43 sprinkling districts of from 7 to 9 miles each, and the work is let out by contract.

The average length of each district is a little over 8 miles. Average amount paid for each district is \$3,224.

The street-sprinkling superintendent has charge of the work at a salary of \$2,500 per annum, and is assisted by 16 inspectors at a salary of \$1,000 per annum each, with \$20 per month allowance for a horse and buggy.

The total amount of the contracts for

1890	\$138,621.20
The average cost per mile for the season	336.93
The average cost per front foot . . . . .	.0353
The city recovered by assessment	122,546.62

The paved streets are sprinkled four times daily, and the unimproved and macadamized streets three times daily, Sundays included.

The rate of special tax per front foot for sprinkling has been decreasing each year, it having been as high as \$.0589 in 1888, and \$.0482 in 1889, while for 1890 it is only \$.0353. This reduction may be attributed to more careful supervision and systematic laying out of work.

The assessment plan involves a large amount of clerical work, covering a space of about three months, during which time it is found necessary to employ temporary clerks, involving an expenditure of about \$2,500, whose duty it is to perform the computations and to issue about 61,000 assessment bills.

All expense of administration is paid by the city, but the actual amount of each sprinkling contract is assessed on the abutting property in proportion that its linear feet front bears to the total linear feet of assessable frontage of the whole district in which the contract is made. The rates in the different sprinkling districts only varied in 1889 from \$.0371 to \$.0630 per linear foot, averaging \$.0482.

Paved streets are sprinkled twice a day during the months of March, April, and November, and three times a day during the months of May and October, and four times a day during June, July, August, and September.

The unpaved streets are sprinkled twice a day during March, April, May, October, and November, and three times a day during June, July, August, and September.

One sprinkling only is required on Sunday, except the Lindell avenue, the principal driveway to the park.

The street commissioner determines whether rain has obviated the necessity of sprinkling, also whether the contractor has given the requisite number of sprinklings and the proper quantity of water, and he can change and regulate the time, if found necessary.

The work in this city has proved more satisfactory and more economical year by year as the system has been perfected.

Estimated Cost of Work in Boston.

In calculating the cost of street-watering in this city, it is necessary to figure on a watering season of eight months, as it is well known that in previous years the watering has been delayed until long after the time when it was needed.

Of our 434 miles of streets, it is estimated that —

1. $47\frac{1}{2}\%$ are 40 feet wide or less.
2. $47\frac{1}{2}\%$ are more than 40 and less than 66 feet wide.
3. 5% are more than 66 feet wide.

Thus making 206 miles of 1.

206 " " 2.

22 " " 3.

Of the first class it is thought that there are about 66 miles that will not need watering in any event, on account of their isolation, shade, and other considerations, leaving —

1. 140 miles requiring a single spread.
2. 206 " " a double spread.
3. 22 " " three or more spreads.

65 carts will provide for street requiring a single spread.

130 carts will provide for street requiring a double spread.

25 carts will provide for street requiring three spreads.

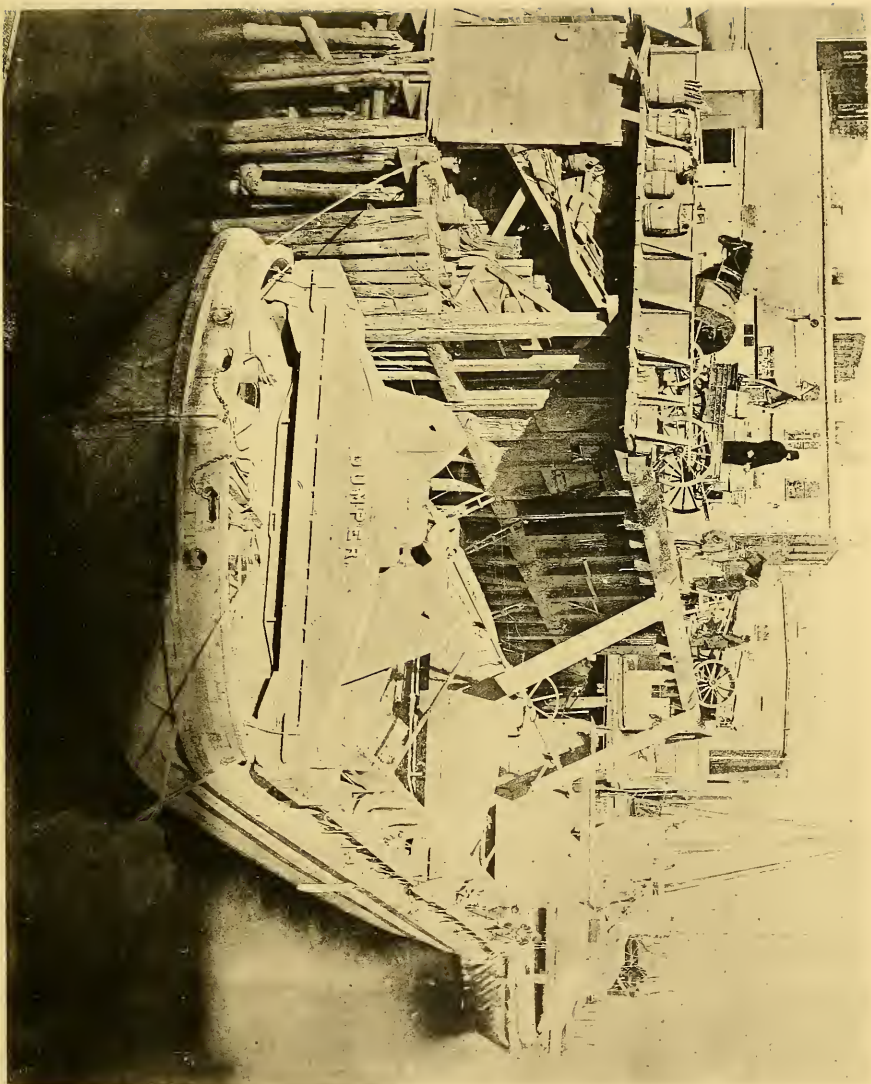
220 carts will provide all that is necessary, which, at

\$1,050 each year, will cost \$231,000, and if we add for supervision and assessment expense . . . \$12,000

Water 7,000

The total cost will be 250,000

This is the least sum with which the work should be undertaken the first year. In subsequent years the expense per mile would undoubtedly be reduced, owing to more perfect organization and the lower prices to be obtained by competition among contractors.



FORT HILL DUMPING WHARF.

Water-posts.

As the amount of work that a water-cart can cover in a day is largely influenced by the distribution of water-posts, the subject was investigated early in the spring and a map made showing the location of all water-posts in existence at that time, and a requisition made on the Water Department to establish new ones at selected points, which was complied with, to the better accomplishment of street-sprinkling.

The whole number in existence May 19, 1891 . . .	228
The number abandoned during 1891 . . .	2
The number changed in location during 1891 . . .	2
The number established during 1891 . . .	45
The whole number now in use . . .	271

A large number of new posts will have to be established during the coming season in order to economically cover the territory desired.

SANITARY DIVISION.

In order to obtain more efficiency in the work of cleaning the streets, the Sanitary Police Department, when the consolidation of the departments took place, was divided into the Street-Cleaning Division and the Sanitary Division. The Sanitary Division attends to the removal of house-offal and the removal of house and store dirt.

REMOVAL OF OFFAL.

The offal of the city is collected by 81 offal-carts (66 of which are owned by the city) and 179 men. Such of the offal as is fresh is taken by the teams to the different yards of the department, and disposed of to farmers, who remove it daily. The offal of Charlestown is taken to the yard at Malden bridge; the offal of East Boston is collected and disposed of by contract; the offal of the City Proper, South Boston, and Dorchester is conveyed to the yard at the South End; the offal of Roxbury and West Roxbury is conveyed to the yard on Highland street; and the offal of Brighton is disposed of by contract. Such of the offal as is decayed is removed to the dump-scow and is towed to sea; the decayed offal thus removed amounts to about three per cent. of the total amount collected.

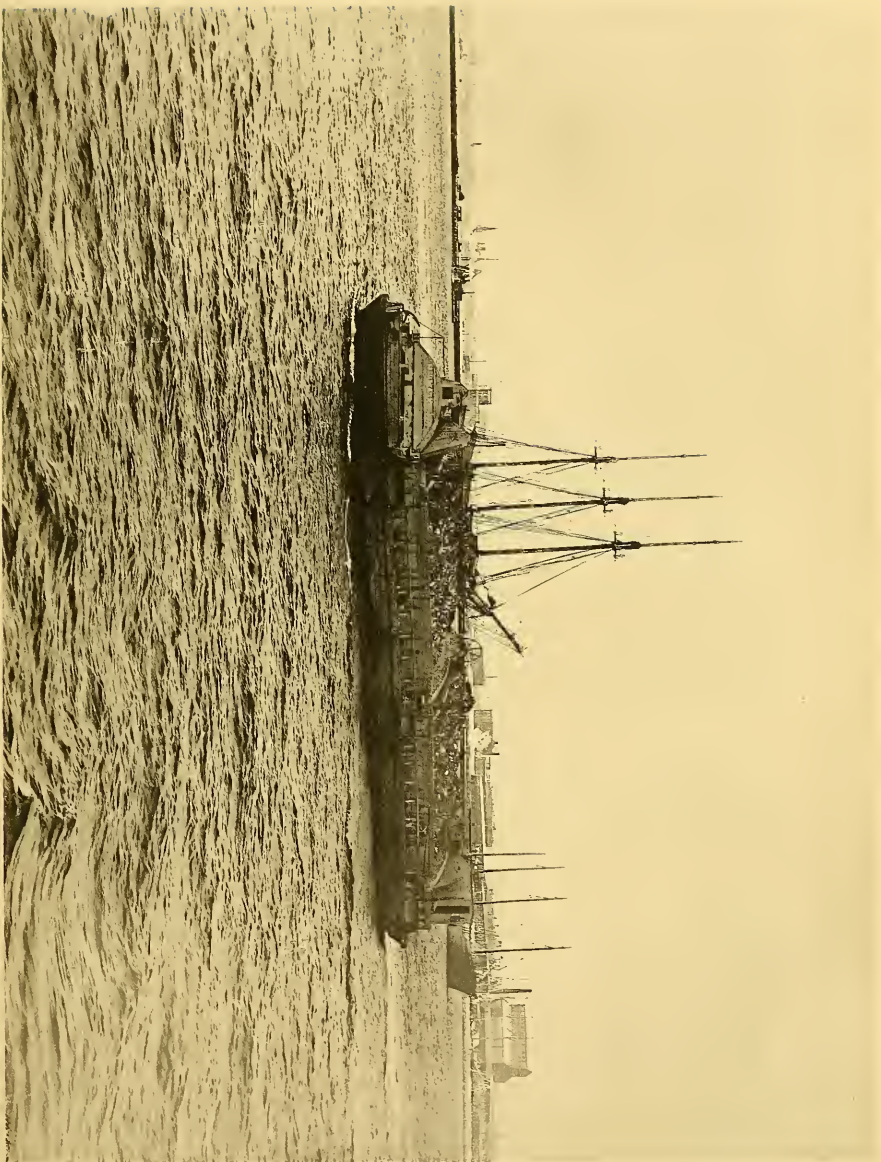
The subject of the disposal of offal has been considerably discussed during the last year. Complaint was made both

of the method of disposal, by towing the decayed offal to sea, and also of the method of selling the fresh offal to farmers. Complaint concerning the method of dumping it at sea came from neighboring towns on the seashore, where it was alleged that it was deposited on the beaches, to the great inconvenience of the residents. On investigation, it was proved that these complaints were well-founded, as the refuse picked up on the beaches in Swampscott and vicinity undoubtedly came from the city of Boston's dumping-scow. The location of the dumping-place was therefore changed; and instead of using a single dump, as had been the custom in former years, a number of dumps were arranged so that advantage might be taken of the wind to keep the refuse from floating ashore. The accompanying chart shows the different dumping-stations and the manner of using them. Since this change has been made, no complaint from any source has been received, as it is possible to choose a station from which the garbage cannot be blown ashore.

The practice of selling offal to farmers has been criticised during the year on the ground that the swine fed on this material became unhealthy, and that the meat produced and sold in this city must have a bad effect on the health of the community. The city now derives the sum of \$30,000 per year from the sale of this offal; and as there seems to be no other cheap method of disposing of it, and as it is not yet satisfactorily demonstrated that this offal when fresh is unfit to be fed to swine, no other method of disposal has been seriously considered.

The cremation of offal, which has been adopted by some cities, has in almost every case proved a failure. Not only is the method very expensive, costing, as it does, from thirty to sixty cents per ton, but a very serious nuisance is created. This nuisance arises from the fact that it is almost impossible to entirely consume the offal, even at the most intense heat; the foul odors given off during the process of combustion also create an intolerable nuisance in the vicinity of the crematory. Should the time come when the country towns around Boston prohibit the bringing in of offal into their limits, and the city's market for it is thus cut off, recourse can be had to one of two methods, either of which would be entirely satisfactory.

First. Towing all offal out to sea and dumping it. The expense of this method of disposal would be about ten cents per ton; and provided that care is taken in selecting proper dumping-stations, so that by no possibility could the offal float ashore, this method would be as satisfactory and economical as any.



DUMPING SCOW, LOADED, GOING TO SEA.

Second. By treating the offal chemically. The city of Providence has adopted a chemical method of treating offal, by which the material, after being collected and removed to the works, is subjected to the action of naphtha. The grease is extracted and sold, and the residue, which comes out of the extractors perfectly dry and odorless, is ground up for a fertilizer. This process is patented, and the inventor offered to erect a plant at the expense of his company in Boston, and treat the offal for the sum of two and one-half cents per head of population, provided he could be assured of a contract for a long term of years. The process, as carried on at Providence, creates no nuisance, and is well adapted to all cities situated where it is impossible to dispose of the garbage at sea.

The abandonment of our present method, and the adoption of either of the above-described methods, means a difference of \$42,000 to the city, as a revenue of \$30,000 per year would be given up, and an increased expenditure of \$12,000 would be necessitated.

Complaints are frequently received concerning the failure of this division promptly to remove ashes or offal. On investigation, it is usually shown that the parties making the complaint are at fault. The regulations of the division require that the ashes and offal must be kept separate, put in suitable receptacles, and so placed as to be convenient of access to the employees of the division. If any of these conditions are violated, the employees have orders to refuse to remove the ashes or offal, until the city regulations are complied with.

The rapid growth of the city has resulted in a greatly increased amount of work done by this division. The following table shows the amount of offal removed for the last ten years :

Year.	Number of loads.									
1882	28,385
1883	27,408
1884	28,520
1885	31,206
1886	33,170
1887	36,724
1888	37,709
1889	40,183
1890	40,525
1891 ¹	46,742

Each load of offal is equivalent to fifty-seven cubic feet.

¹ From Jan. 1, 1891, to Feb. 1 1892.

The steady increase of the amount of work to be done will require certain additions to the plant of the division, some of which are extremely important, and should be done at once. A new wharf (estimated expense \$60,000) must soon be purchased at the North End, where another dumping-station can be located. A new depot for the disposal of offal must be established in Dorchester, in order to do away with the present long haul to the South End depot.

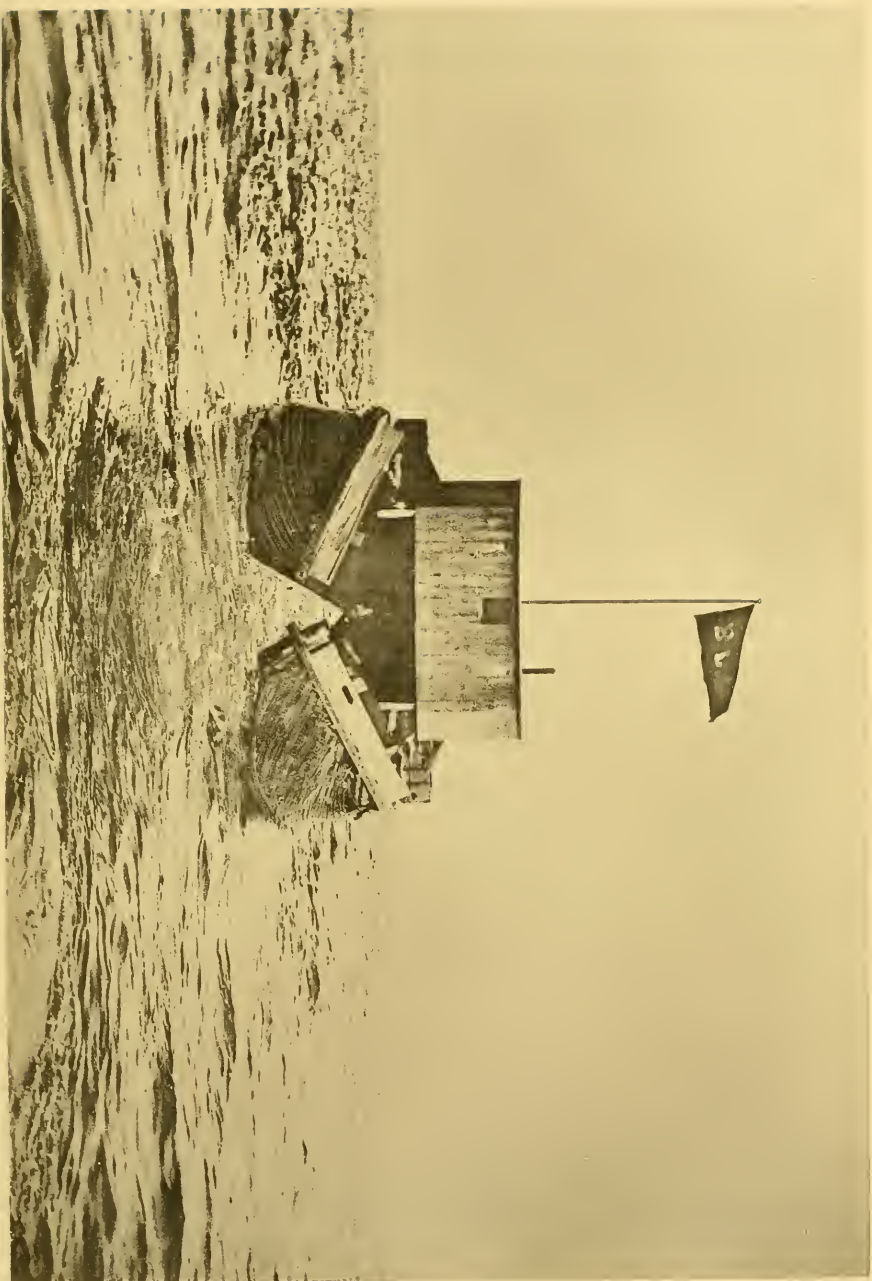
If any further argument were needed for the establishment of a new dumping-wharf at the North End, the report of the Deputy Superintendent, wherein it is shown that the expense of teaming the ashes and house-dirt to the various dumps on waste land in the vicinity of the city is 60 cents per load, whereas the expense of disposing of the material by towing to sea is only 30 cents per load, should be conclusive. Fifteen thousand loads of ashes and house and store dirt now hauled to Cambridge could be disposed of in this way at an annual saving of \$4,500.

BARNEY DUMPING-SCOW.

The offal and refuse now towed to sea is removed in the patent Barney dumping-scows. These scows dump their load in a compact mass, and are the best scows yet devised for the purpose. The load is discharged into the water six feet below the sea level instead of being scattered on the surface, and being thoroughly saturated through absorption, is prepared to sink at once. The city now owns one scow, for which the sum of \$12,000 and a yearly royalty of \$1,500 was paid, and rents another scow at a yearly rental of \$5,475. It would be much more economical to buy the scow we now rent. Two new scows should be purchased, to use in connection with the new dumping-wharf at the North End, the establishment of which was previously recommended.

By obtaining competition this year on the towing of the dumping-scows to sea, a much more favorable rate has been obtained. The former price for towing to the dumping-station was \$29, with an additional allowance of \$6 for night and Sunday work. The rate obtained by the division this year is \$23, with no allowance for night or Sunday work.

In this connection it is recommended that the new tow-boat required for use by the Sewer Division be built at once. This boat, the estimated cost of which is \$20,000, would, in addition to doing the regular work for the Sewer Division, be able to do all towing for the Sanitary Division, and save an annual expenditure of about \$7,500, now paid to the various tow-boat companies.



DUMPING SCOW, UNLOADING.

REMOVAL OF ASHES.

The following table shows the amount of ashes and house and store dirt collected during the last ten years :

Year.	Number of loads.
1882	159,197
1883	169,610
1884	182,642
1885	193,734
1886	209,129
1887	220,186
1888	233,514
1889	227,325
1890	245,730
1891 ¹	313,464

Each load of ashes is equivalent to 43 cubic feet.

Comparative statement of number of loads of ashes collected during 16 weeks in winter and 16 weeks in summer :

1889.	Nov. 29 to Dec. 27, inclusive . . .	19,975
	Dec. 28 to Jan. 24, 1890 . . .	20,685
	Jan. 25 to Feb. 21, 1890, inclusive . .	21,193
	Feb. 22 to March 22, 1890, inclusive . .	21,013

Total number of loads	82,866
---------------------------------	--------

1890.	May 3 to May 30, inclusive . . .	19,741
	May 31 to June 27, inclusive . . .	16,765
	June 28 to July 25, inclusive . . .	15,083
	July 26 to Aug. 22, inclusive . . .	13,650

Total number of loads	65,239
---------------------------------	--------

Summary.

Winter	82,866
Summer	65,239
Difference for winter	17,627

The above table shows that a steady increase of the number of loads of ashes removed has taken place, owing to the growth of the city. The cost of the removal of ashes is constantly increasing, owing to the filling up of convenient

¹ From Jan. 1, 1891, to Feb. 1, 1892.

dumping-grounds, and the extra expense of teaming the ashes to the remote location of those now in use. The proposed new dumping-wharf at the North End, from whence the ashes of that part of the city could be towed to sea, would reduce the cost of disposing of this material very considerably. The nine-hour law passed in 1891 has largely increased the cost of running the Sanitary Division, as each team loses one trip per day from the number of trips made under the ten-hour law. When the number of trips that a team can make is only five or six, it is seen that the percentage of work lost is a large one.

Suggestions have been made that the ashes and garbage be removed during the night. Considering the fact that the receptacles for both ashes and garbage are kept by householders in locations not accessible to the employees of the division at night, and also taking into account the inadvisability of obliging householders to put the receptacles on the sidewalk, it is difficult to arrange a plan whereby removal at night can be adopted.

TRANSPORTATION OF PRISONERS.

As the Sanitary Division was yearly put to a large expense in the transportation of prisoners from the various city lock-ups to the Court-House, and was obliged to maintain prison vans and horses for this purpose, the matter was looked into, as this duty seemed to be somewhat foreign to the collection of ashes and offal. The practice dated back to the time when the only city department that owned teams was the Health Department, and for that reason the transportation of prisoners had been saddled on to it. A communication from the Corporation Counsel, in answer to an inquiry from this department, showed that this expense should be borne by the County of Suffolk, and arrangements have now been made, whereby the expense of this work is borne by the county.

Hired Teams.

The price paid by the Sanitary Police Department in former years to contractors for single teams was \$5.50 per day, which price included an extra man. The department furnished an ash or swill cart, as the case might be, and the contractor furnished two men and a horse to run the cart. As the rate in the other divisions was \$3.00 per day for a teamster, horse, and cart (cart being furnished by the contractor), and as extra labor could be hired for \$2.00 per day, the price of \$5.50 was reduced to \$5.00, to correspond with

COAST CHART No. 100 BOSTON BAY AND APPROACHES

Published by the U.S. Navy, Hydrographic Office, Washington, D.C.
Under the authority of the U.S. Navy, Hydrographic Office, Washington, D.C.
Copyright, 1900, by the U.S. Navy, Hydrographic Office, Washington, D.C.



CITY OF BOSTON.

STREET DEPARTMENT.

Directions for Dumping Garbage at the various dumping stations
ACCORDING TO THE DIRECTION OF THE WIND.

Dump Station.	From N.E.W. to W.S.W.	Wind.	Place to be Piled.
No. 1.	W.S.W. to S.S.W.		SEABOARD
2.	S.S.W. to S.E.		41.00
3.	S.E. to E.N.E.		15.00
4.	E.N.E. to E.N.W.		20.00
4 07 1/2.	E.N.W. to N.E.		21.00
5.	N.E. to N.E.W.		41.00
6.	N.E.W. to N.E.		38.00

The bearings of these dumping stations are approximately
as follows:

- No. Station
1. Boston L. W. S. W. S. 4 miles. Egg Rock, N. W. 1 1/2 N. N. 5 miles.
 2. Boston L. W. S. S. 4 miles. Minot's L. S. by W. 4 W. 5 miles.
 3. Boston L. W. S. N. 8 miles. Minot's L. S. W. S. 5 miles.
 4. Boston L. W. by N. 4 W. 10 miles. Minot's L. S. by W. 4 W. 6 miles.
 5. Boston L. S. W. by W. 4 W. 6 miles. Egg Rock, N. W. 4 W. 4 N. 5 miles.
 6. Boston L. S. W. by W. 4 W. 8 miles. Egg Rock, W. by N. 4 W. 6 miles.
 7. Boston L. S. W. by W. 4 S. 10 miles. Minot's L. S. W. 5 miles. Egg Rock, W. 4 N. 7 miles.

the other divisions. A saving of several thousand dollars has resulted from this operation.

REFUSE MATERIAL.

The value of the refuse collected by the Sanitary Division and deposited at the different dumps is very considerable. In New York, the privilege of "trimming the scows," or sorting over this refuse, is let by contract for the sum of about \$1,600 per week, thus affording the city a considerable revenue. The city of Boston has never derived any revenue from this source. The explanation that has always been made to account for this fact is, that the residents of New York are more wasteful, and that material which is there thrown into ash-barrels is here saved by the householders and sold by them.

The department this year has investigated this matter more closely, with the result of obtaining an offer of \$200 per week for the privilege of sorting over the dumps. This would not only result in an income of \$10,400 per year (which would probably largely increase as soon as the system was established and competition could be obtained), but would also effect a saving of about \$10,000 on the wages of men now employed by the department on the dumps. The only argument to be advanced against the letting of such a contract is that a number of poor people who now make a living by sorting over this refuse, would be deprived of this method of getting a livelihood. This matter has been referred to the City Council for settlement.

The report of the Deputy Superintendent gives tables showing the cost of the removal of ashes, house and store dirt, and offal, together with the amount of work done. Tables showing the cost of horse-shoeing, cost of feeding horses, and other matters of interest, are also annexed.

SEWER DIVISION.

The Sewer Division has charge of the following work :

1. The maintenance and construction of all common sewers and catch-basins.
2. The maintenance of the Main Drainage Works.
3. The maintenance of Stony brook.
4. The maintenance and construction of all street culverts.

5. The preparation of plans, and the engineering and supervision required on the construction and maintenance of all work connected with the division.

6. The granting of permits for all connections to be made with the common sewers, and the custody of bonds filed by drain-layers authorized to make such connections.

7. The levying of assessments on estates benefited by the construction of sewers.

The present condition of the common sewers, together with a brief statement of the work done this year and the work to be done in the near future, in order that the efficiency of the sewers may be improved, is shown in the following statement :

EAST BOSTON.

Most of the old wooden sewers by which this section was formerly sewered have been replaced by good brick sewers, on a gravel foundation, the mud which formed the foundation of the old sewers having been removed to hardpan and replaced with gravel. The remainder of the defective sewers should be rebuilt as rapidly as appropriations will permit. A number of outlets need to be enlarged and extended, and steps to that end have been taken. The portion of the Orient Heights system, for which an appropriation was made last year, has been more than half completed ; the remainder, which should be built the coming season, consists of 850 feet of brick and 2,000 feet of pipe sewer in Saratoga, Ford, Breed, Gladstone, and Leyden streets.

Work done during 1891.

Thirteen thousand one hundred and twenty-two linear feet of sewers were built in East Boston during the past year. The amount is about equally divided between brick and pipe sewers. In Bremen, Orleans, Sumner, and Porter streets, 3,369 linear feet of brick sewer were built to replace defective sewers that had been built on a poor foundation. In order to secure a suitable foundation, it was necessary to excavate a considerable depth of mud, and replace the excavation with gravel ; 3,329 linear feet of brick and pipe sewer were built in Bennington, Walley, Leyden, and Gladstone streets. These sewers form a part of the Orient Heights system, and will be connected with the Metropolitan system when the latter is completed. The other sewers built in this district were mostly small branch sewers, and require no special mention.

CHARLESTOWN.

The Bunker Hill and Vine-street sewer, begun in 1887, has been completed, and a large territory which formerly drained through Polk and Monument streets into Medford street has been diverted down Bunker Hill street so as to relieve the Medford-street sewer. In the vicinity of Arlington avenue and Beacham street, the sewerage is unsatisfactory. Here a separate system of house sewers may be built to connect with the Metropolitan sewer which will be located probably in Alford street. The old sewer can then be connected with surface drains. The sewers in Charlestown, generally, are very defective. A large proportion of the old sewers are the old-fashioned square affairs, with earth bottom, brick sides, laid without mortar, and tops composed of flat stones. They are liable to hold together for years or to break down at any moment; so that it is difficult to say what may or may not be required; but it would be good policy to rebuild them as fast as the money is available. It is next to impossible to clean or flush them, and when they become obstructed, the streets have to be opened to clear them.

Work done during 1891.

Two thousand and seventy linear feet of sewers were built in Charlestown during the past year. They consist mostly of small branch sewers, and require no special mention.

CITY PROPER AND BACK BAY.

Many of the old wooden sewers in the city proper are in very bad condition, and are nearly ready to fall in; notably those in Beverly, Billerica, and Commercial streets. The sewer in Fayette street is badly broken, and should be rebuilt immediately. The district drained by Canal street, and bounded approximately by Causeway, Beverly, Endicott, Hanover, Portland, and Merrimac streets, is in as bad condition, from a sanitary point of view, as can be imagined. Before the intercepting sewers were built there was a continuous low-grade sewer across the city, running through Canal street, Haymarket square, Blackstone, Clinton, Commercial, and Central streets, with a summit near Hanover street, from which the sewage flowed both ways, east and west. The east-side intercepting sewer was low enough to pass under the outlet sewer and intercept the sewage without obstructing it, but the west-side intercepting sewer was so much higher that it dammed up the Canal-street sewer about

three and one-half feet. All that portion of the system west of Hanover street, extending to the boundaries named, has been partly or wholly filled with water and accumulated sewage since 1883. Near the boundaries named, the sewers rise high enough to be partly above the level of the dam formed by the intercepting sewer, but in the centre and at the outlet of the system the sewers are entirely full at all times, so that they cannot be entered, nor can any appliance be used to clean them short of pumping out the entire system. To remedy this trouble, either of two schemes may be followed in dealing with the districts. The first is to rebuild all the sewers at a higher grade, high enough to drain into the intercepting sewer. Each branch sewer would then have to be followed back and rebuilt until a point was reached where the old sewer was higher than the intercepting sewer. It would be of no use to rebuild the main sewer at the higher level, leaving the branch sewers down at the old grade; they would be dammed up just as badly as before. The sewers would all be raised varying amounts, from a few inches to three and one-half feet; therefore most of the house connections would have to be raised also. The whole system would have to be rebuilt at once; if any portion were left, its condition would be just as bad as ever. The surface of the streets would be dug up lengthways by the main sewer, and crossways by the house connections. It would be difficult to estimate the cost of such a job, and the result would be that the whole sewer system would be left several feet higher than it is now, which might prove a poor policy in a business district where cellars are continually being carried deeper. The other scheme is to build a new main sewer across the city from the east-side intercepting sewer, which is about four feet lower than the west-side sewer at opposite points. One advantage of this plan is, that as soon as the proposed new intercepting sewer was built, the branch sewers would immediately drain out into it, and would not have to be rebuilt. Although the branch sewers are built of wood, they have been completely submerged, and are probably sound. They could be rebuilt as the need became apparent, and the money became available. By this latter plan the new sewers would be at about the same grade as the old ones, and the house connections would, therefore, not have to be disturbed.

The total cost of the latter scheme, including rebuilding all the branch sewers, is greater than the former, but the first cost of the latter scheme, inasmuch as it is only necessary to rebuild the main at present, is about \$10,000 less than the former scheme. The line selected for the intercepting sewer

in the latter scheme is longer than is absolutely necessary, but has been selected on account of the bad condition of the sewers in Custom-House square, Central and Commercial streets. These are old wooden sewers, running up and down hill without regular pitch, and holding continually from one to three feet of sewage and mud. The solids of the sewage lodge in the depressions, and remain until a sewer storm moves them along. These sewers should be replaced by smooth, self-cleaning brick sewers. This is all the more necessary for the reason that these sewers receive the sewage of the markets, containing large quantities of animal refuse. A branch could be extended to Dock square, from the main sewer of this scheme, to relieve that locality from floods; 450 feet built in North street, from Blackstone street, would accomplish this. The drainage of the Faneuil Hall markets is, and has always been, in an unsatisfactory and unsanitary condition. The stalls, sinks, refrigerators, etc., drain down into cesspools, where the refuse of meat, fish, and poultry accumulates until the tank is full, when a plug is withdrawn and the whole mass flushed out into the sewers, which are the old wooden ones just described, where it remains decomposing for an indefinite time, until swept away by a heavy rain-storm. The tanks not being large enough for the present requirements of the markets, overflow, filling the space beneath the floor of the basement, and giving notice of the state of things by coming up through the floor. Inasmuch as these basements are much below the level of high tide, they cannot be drained when the sewer system is filled by a rain occurring simultaneously with a high tide. Therefore space must be provided to stow the sewage during a few hours of high tide, until the level of the water in the sewers falls below that of the basement and allows of discharge. An ample storage-chamber, well ventilated and easily accessible, should be built in South Market street, and both markets drained into it by means of a pipe running down the centre of the basement. The present tanks could then be done away with. The storage-chamber should be drained into a self-cleansing sewer in which there is a constant flow, so that the animal refuse may be quickly carried to the Moon Island outlet. If the intercepting sewer across the city be built, as recommended above, it would afford a satisfactory outlet; if not, a pipe sewer should be extended through South Market street to the intercepting sewer in Atlantic avenue. This class of refuse material should not be thrown into such a defective sewer as now exists in Commercial street.

The description of the wooden sewers in the foregoing paragraphs applies to most of the old wooden sewers of the

North End and South Cove districts: they are practically elongated cesspools. A properly constructed sewer carries sewage out of the inhabited portion of a city before decomposition has time to take place. These old sewers fail to do this, but retain the sewage indefinitely. In addition to their defects as carriers of sewage, they have settled and their joints have opened, letting in the water from the tide, which still follows up old stone and pile wharves, which abound all through the filled land of these localities. This water all goes to the intercepting sewers, increasing the burden upon the pumps. The time has come when these sewers should be replaced by tight self-cleansing sewers. In 1888-9 a large sewer was built in Essex and Federal streets and Mt. Washington avenue. The object was to intercept the great amount of sewage and drainage which flowed through Kingston and Beach streets; carry it to tide-water by a new route, so as to isolate the Beach street district from the rest of the sewer system and connect it directly with the intercepting sewer. By this method the district would receive the benefit of the pumps of the Main Drainage Works in the same manner as do the Dover and Dedham street districts. This scheme involved shifting the district regulator from Dover street to a point near Beach street, and building small regulators at the Oswego street and Harvard street connections. The scheme was completed except the building of these three regulators. In order to have the scheme work as designed, these regulators should be built.

Attention has been called in a former report of this department to a sewer in Falmouth and Caledonia streets that is in a dangerous condition. It is a brick sewer built in 1881. Proper precautions were not taken to procure a foundation, and subsequent filling, to raise the grade of the street, caused a settlement of two feet or more in the sewer. Quite a large territory is dependent upon it for drainage, and about 360 feet of it should be rebuilt immediately, before it falls to pieces and causes trouble in the vicinity.

The tract of land just laid out by the Board of Survey bounded by the Back Bay Fens and the B. & A. R.R., also that lying between Charlesgate West and Brookline avenue, the B. & A. R.R. and Charles river, and also the new Commonwealth avenue and vicinity, from the "fork in the roads" to the bridge at Cottage Farm station, are particularly adapted to a separate system of sewerage. The proximity of the Charles River, together with the watercourses through the Fens and the covered channel of Muddy River, afford chances for short, cheap lines of surface drainage, and

the probability that these districts will be covered with the finest buildings in the city, renders it necessary that they should be ensured as far as is possible against the flooding of their cellars. This can be done by a system of house sewers (separate from the surface drains), taking nothing but the house sewage and as much of the roof water as cannot be otherwise disposed of, and large enough to afford storage room for an hour or two. This system should be connected with the Metropolitan sewer, and guarded against the engorgement of that sewer by having regulators at every connection.

The unusual width of these avenues has led to the proposed adoption of the plan of building a sewer on each side of the street instead of one in the middle. Two sewers, while increasing the first cost, will not double it, and will be a saving to the city in preserving a good paved or macadamized surface for a number of years, as well as benefit the abutters by reducing the length of their drain connections.

In the area bounded by St. Mary's street and two branches of the B. & A. R.R. the same system is desirable. A beginning of a sewer system has been built here on the old plan of the sewer in the middle of the street; but it would not cost much to change to the other system, if the change were determined upon now. The Villa street district, so called, bounded by Huntington and Brookline avenues, Francis street and the park, can be served in the same way, with a double system of separate sewers. This plan of double sewers, one on each side of the street, will have to be followed extensively in the future on the new, wide main avenue, if there are to be any restrictions made as to opening the streets.

Work done during 1891.

Six thousand eight hundred and twenty-two linear feet of sewers were built in City Proper and Back Bay during the past year. Sewers were built in portions of Oak, Tyler, and Kingston streets to replace old and defective ones. On account of an insufficient appropriation the rebuilding in Oak street could not be carried beyond Hudson street. That portion of the old sewer between Hudson and Curve streets is in very bad condition, and should be rebuilt the coming season. There has been a long-felt need of improvement in the surface drainage of the lower part of Tremont street. The fact of there being no sewer in that portion of the street opposite the Common, explains why the trouble was not sooner remedied. Prior to laying the new pavement in Tremont street last fall, the necessary catch-basins,

with 625 linear feet of surface drain for outlets, were built. The improvement in the condition of the street during a heavy rain is very marked. Six hundred and fifty-two linear feet of surface drain has been laid in State street, between Atlantic avenue and Commercial street, affording great relief from surface water in this locality.

The sewers built in Commonwealth avenue, Beacon and Rawley streets, the past season, are a part of a separate system for this vicinity. They connect with the sewer in Brookline avenue, which, at the present time, is being connected with the Charles River Valley Metropolitan Sewer.

The other sewers built in these districts require no special mention.

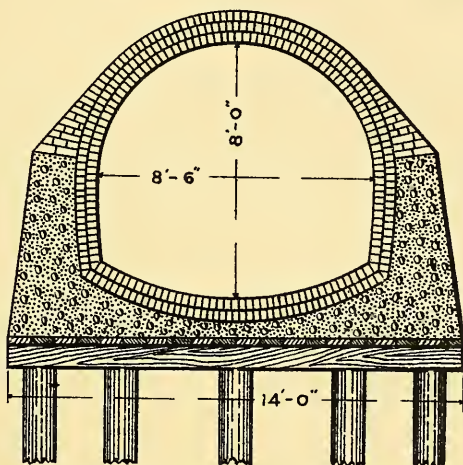
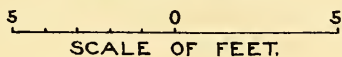
SOUTH BOSTON.

There are many wooden sewers in South Boston, some of which are on the point of caving in. These sewers have rotted rapidly since tide-water was excluded from them by the building of tide-gates, etc., necessitated by their connection with the Main Drainage Works, and should be rebuilt without further delay. The districts about First and D streets which suffered from floods due to insufficient outlets for storm water will be provided for by the large storm overflow now building on the extension of D street. The outlets for the sewer system at B and Seventh streets, and also at D street and Dorchester avenue, on the west side of the peninsula, are in a bad condition, being of insufficient size, and choked up by the filling constantly going on around the South Bay. The D street sewer from Dorchester avenue to Ninth street, though built only a few years ago, is badly settled and should be rebuilt. A comprehensive plan has been prepared for uniting the two outlets named above, into one at B and Seventh streets, through the O. C. R.R. freight yard. This sewer is to be built on the same line as the old one, which is too small and is badly broken and settled. This plan also includes rebuilding the D street sewer, and provides for sewerage the depressed portion of D street under the O. C. R.R., where there has been so much trouble in past years. If this plan were carried out it would put the sewer system of that part of South Boston in very good condition. Much of the complaint from that section is due, not to any defect in the sewer where the trouble manifests itself, but to the sewage being dammed up by insufficient outlets.

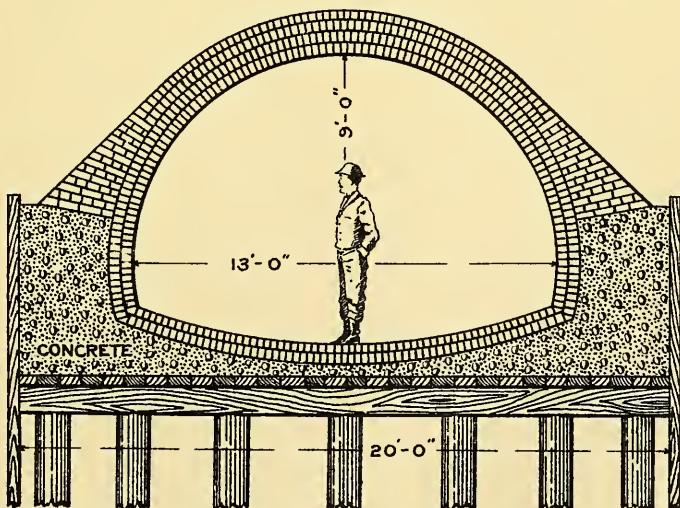
The South Boston system of intercepting sewers is now completed, but is not as yet provided with a suitable overflow. One has been projected on the side of the old Kemp

DORCHESTER BROOK SEWER.

FEBRUARY 1892.



SECTION OF 8'-6" x 8'-0" SEWER.



SECTION OF 13'-0" x 9'-0" SEWER.

street sewer, which is now not in use. This should be rebuilt large enough at the same time to afford an outlet for the storm water from the district bounded by Preble and Mt. Vernon streets, Dorchester avenue and the water-front. This district could then be sewered with a separate system.

Work done during 1891.

Two thousand six hundred and forty-eight linear feet of sewers were built in South Boston during the past year. They consist of small branch sewers, with the exception of the D and Anchor streets overflow, which is an extension of the D and First streets overflow, necessitated by the filling in of the "flats."

ROXBURY.

Most of the sewer building in Roxbury will consist of simple extensions of the old system, where new streets are laid out, and the rebuilding of some defective sewers. The exceptions to the above are in a few localities where peculiar systems are called for. One of these is the section adjacent to the Back Bay, which will be considered under that head. The sewers in Hallock and Ward streets are in very bad condition and should be rebuilt. The Harrison avenue sewer, from Northampton street to Eustis street, is so much settled that it cannot be cleaned; it also should be rebuilt. There are other districts in which, although the sewers are in a fair condition, they are not low enough to afford proper drainage to the cellars. The best plan in these cases, where an intercepting sewer is within reach, is to devote the old system of sewers to surface drainage, and build a new system of separate sewers at a lower grade to drain the cellars, and connect with the interceptor. Such a scheme has been devised for the district between Hammond and Lenox streets, and the money for it has been provided in the last loan. Another district where a similar scheme should be carried out, is that bounded by Camden, Tremont, and Culvert streets and the Providence R.R. Provision has been made in the Loan Order for this object, but the scheme can best be worked up in connection with the extension of Columbus avenue.

Provision has been made in the Loan Order for continuing the work on Dorchester Brook sewer. This will be pushed during the coming year, as the sewerage of the district around Shirley street and Norfolk avenue, for which there is a great demand, depends upon its completion. The area bounded by Gerard, Swett, and Magazine streets and

Norfolk avenue is also in a bad sanitary condition, and would be a favorable location for a separate system of sewerage. If a sum could be obtained sufficient to sewer the whole of the territory at once, some such scheme could be carried out; otherwise the sewers will probably be an extension of the ordinary combined system.

Work done during 1891.

Six thousand eight hundred and sixty-seven linear feet of sewers were built in Roxbury during the past year. They were simple extensions or small branches. Work on the large Dorchester Brook sewer, near East Chester Park, was stopped during the summer on account of the exhaustion of the loan made for that purpose. The sewer was built far enough, however, to intercept the Clapp street sewer, so that even in its present condition it affords more relief to that district than it has ever before received. Work will be started here as early as possible in the spring. There is a large section needing sewers in this vicinity that is dependent on this sewer for an outlet.

DORCHESTER.

Dorchester, like West Roxbury, may be divided into two sections, — the northern half, in which the sewer building consists merely of small extensions of a system already well developed, and the southern half, in which mains are to be extended into new territory or entire new systems are to be built. The division line would run about through Harvard station. The first district in importance requiring sewerage south of this line would be, no doubt, the village of Lower Mills. The drainage of this place should be divided, part going into the Dorchester Lower Mills Intercepting sewer, and part into the Neponset Valley Intercepting sewer. In the first part the system of combined sewers and storm overflows can be followed, but in the second part the conditions are different.

Here there is already quite a system of surface drains built, running into the Neponset, and this system can be easily extended. A separate system of house sewers can be built connecting with the Neponset Valley Intercepting sewer.

There is another district in Dorchester, building up rapidly and demanding drainage. It is in the neighborhood of Dorchester and Forest avenue stations, including such streets as Lauriat, Jones, Ballou, and Chapman avenues, Nelson, Corbett, Evans, Maxwell, Selden, and Capen

streets. The existing sewer in Norfolk street is built at such a high grade that it cannot be extended to reach any more territory. A little more can be done by a new sewer to Talbot avenue, near Bernard street, by way of Lyons street. But a scheme to provide for the whole district will require a new outlet either to Dorchester Bay or the Neponset River, including in either case a tunnel through the ridge which forms the divide line of the Stony Brook basin, within which a large part of this territory lies. Many schemes could be proposed; the problem is intimately connected with that of deepening the Canterbury branch of Stony Brook and draining the meadows west of Dorchester station, and might be solved at the same time (by the proposed Stony Brook tunnel to the Neponset, for instance, recommended in 1886 by the Stony Brook Commission as a remedy for the floods on Stony Brook), but the demand for sewers will probably be so many years in advance of that for the brook improvements, that it will have to be solved separately.

A careful study of the territory will have to be made, and plans of different lines prepared, before the subject can be properly discussed.

Work done during 1891.

Twenty-eight thousand five hundred and seventy-six linear feet of sewers, and four hundred and forty-two linear feet of culverts, have been built in Dorchester during the past year. This represents the largest amount built in any one district, also the greatest variety of work. Special mention of some of these sewers should be made. Work on the system at Savin Hill, which was commenced in 1890 under special loan, has progressed rapidly the past season. The separate system was adopted here, as the location was particularly adapted to it. The house sewage goes to the Dorchester Intercepting sewer, while the storm water empties into Savin Hill Bay. This work was shut down only when the appropriation was exhausted, late in the fall. A new appropriation is now at hand, and the work will be started as soon as the weather is suitable.

The sewer in Westville street is in process of construction the present time. It is one of several sewers that are to be constructed in this and adjacent streets the coming season to afford much-needed relief to that locality, which is building up very rapidly. These sewers will empty into the sewer in Geneva avenue extension. The territory is low and has needed drainage very much for some time. In connection with this sewer a surface drain is being built in

Westville street and Geneva avenue extension to relieve the territory between Westville and Bowdoin streets. The building of Geneva avenue extension at this point has obliterated a brook that took the drainage of quite a large area. The sewer in Kilton street, from Talbot avenue to Harvard street, is about completed. It affords an outlet to a large territory between Kilton and Washington streets. An extension of it has also been built through Harvard and School streets to Washington street. Construction on the Dorchester Lower Mills Trunk sewer was started in the spring, without a special appropriation, and continued until a lack of funds necessitated a shut-down in the fall. An appropriation is now at hand with which to continue construction the coming season.

In Dorchester we have a forcible illustration of the value attached to sewers by the people, even in a suburban district. There were 10,729 linear feet of sewers built by private parties, and released to the city, in this district the past year. It shows that the people of this vicinity require sewers, and if the city cannot build them, owing to lack of appropriation, they take the expense upon themselves.

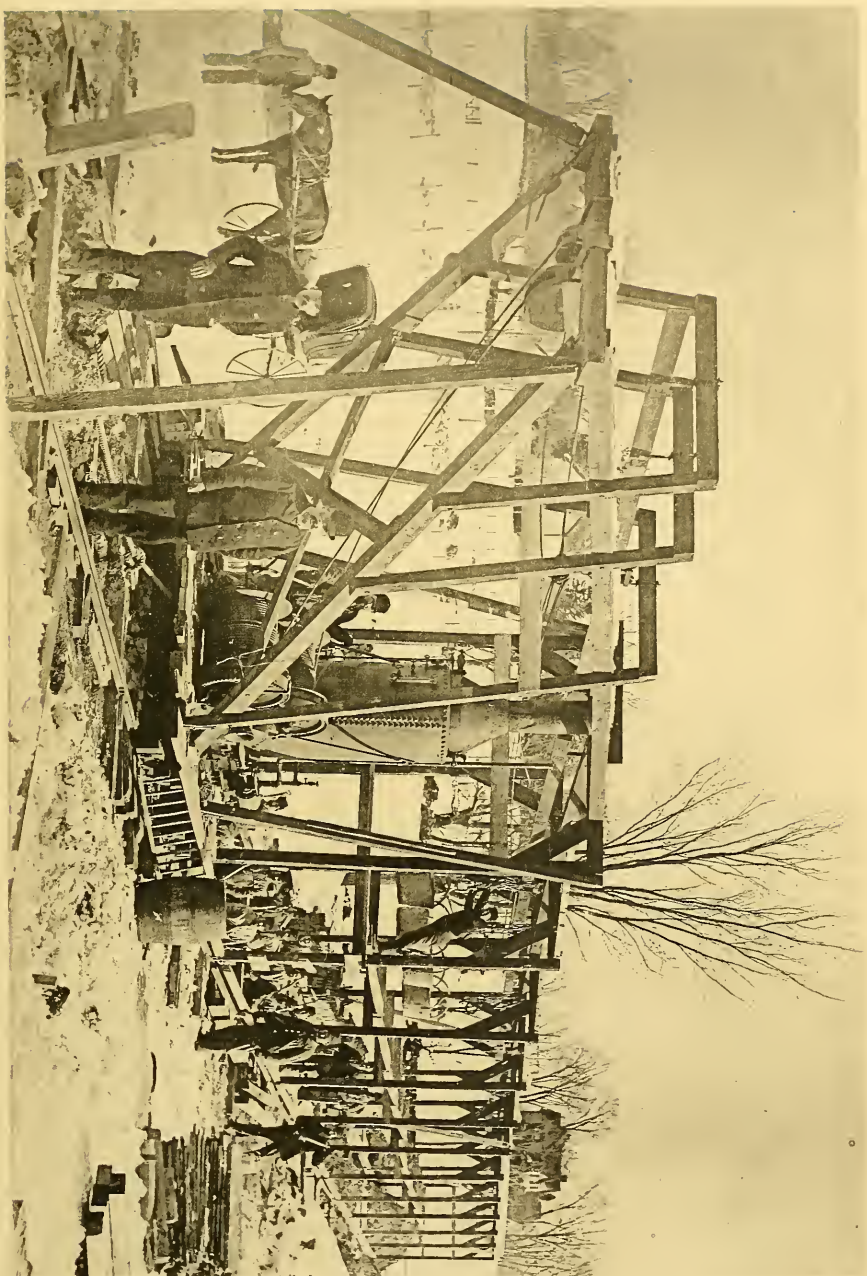
WEST ROXBURY.

This part of the city may be divided into two parts, as far as future sewer building is concerned. In and near Jamaica Plain there will be nothing but ordinary extensions of the existing system. In the remaining part of the district, main sewers are now being built, and the building of the laterals for each street will soon follow. These mains are only large enough to carry the house sewage and a small amount of rain water from the street surfaces when the district shall have become well settled. The extensions will have to be on the same scale, and the means of relief in time of rain, that of overflowing the storm water into the brooks.

Near Forest Hills station, the Anson and Mark streets district will have to be provided with an outlet to Washington street very soon.

In the district near Sycamore, Florence, Brooks, and Ashland streets there are many houses being built which cannot be sewered by extending the existing sewers in those streets. An outlet from the extreme north-westerly point of Florence street to the northerly of the two intersections of South and Washington streets will meet this want for the present.

In regard to the Roslindale main sewer, it would seem to be the best policy to extend it to Highland station before many laterals are built; for although there is a considerable



ROSLINDALE MAIN SEWER—EXCAVATING MACHINE

population, and apparent need for sewers, in the neighborhood of Bellevue and Central avenues, there is not such an urgent demand for them as there is on such streets as Mount Vernon, Bellevue, Corey, Park, and Centre streets and other streets near Highland station. The whole appropriation for this district should therefore be devoted to extending the main sewer.

Work done during 1891.

Eight thousand five hundred and seventy linear feet of sewers, and one hundred and ninety linear feet of culverts, were built in West Roxbury during the past year.

The Roslindale and West Roxbury trunk sewer was the only work of any magnitude in the district. This sewer, as projected, is to extend from Washington street, Roslindale, to Highland station, following as near as practicable, through streets and private land, the course of a tributary of Stony Brook; 4,346 linear feet had been completed the past season, when the appropriation was exhausted and the work stopped. A new appropriation is now available, and the work has been started. It is advisable to reach Highland station with the sewer as soon as practicable, for the reasons above stated.

BRIGHTON.

In this section of the city, which is developing rapidly, and in which there were no sewers prior to 1878, there will be a continually increasing demand for sewers for some time to come.

Immediate steps should be taken to straighten out the question of natural watercourses, and to relieve some of the existing sewers that are overburdened with surface water which ought to have been excluded from the sewers and allowed to flow in the old watercourses. In that portion of the district lying between North Harvard and Franklin streets, the B. & A. R.R., and the river, there will probably be considerable demand for sewer building, now that the Metropolitan sewer is completed. This is a favorable locality for building a separate system of surface drains to run to the river, and to the brook, which is the natural drain of that part of Brighton. Two large tracts of land in this locality have been subdivided during the past year, streets laid out, and sewers built by private parties, under the city's directions, and released to the city when completed. This shows that the locality will probably build up rapidly; and as the land has but a slight elevation above tide-water, the building of sewers must keep up with its growth.

The separate system of sewers in this part of Brighton could be very easily and cheaply carried out, if it were not for the fact that the brook in the vicinity presents one of the worst cases of the abuse of natural watercourses in the city. The brook has been taken into the sewers at Union street, Washington street near Cambridge street, North Beacon street near Arthur street, and at Everett street, thus overcharging the sewers, and causing flooding of cellars. Land-owners have taken prompt advantage of this fact, and have filled in and obliterated the channel of the brook in many places. At the corner of Everett and Braintree streets houses have been built over the old watercourse, and the remnant of the brook is carried in a pipe through the cellars. This connection of the brook into the sewer system should be stopped at once; the sewer restricted to the service for which it was built, and the great flood of surface water returned to the channel of the brook. Unless these brook channels are restored, the city must build a large surface drain in Everett and Braintree streets to connect with the old channel through the railroad yards, which has been preserved. It is hardly necessary to say that this would cost a large sum of money. It is earnestly recommended that the brook be restored at once, and private parties who have filled it in be notified to remove the obstructions, and to define its course by takings, as in a few years it will be practically impossible.

In building sewers in this region draining directly in the Metropolitan sewer, particular care should be paid to making them water-tight. Water-tight sewers should be built everywhere; but it is more important in the lowland, because all this water will always have to be pumped, whereas, in the highlands, after the high-level intercepting sewers are built, it will run to the outfall by gravity.

There is another brook, sometimes called Smelt Brook, requiring attention. It follows approximately the course of Commonwealth avenue. In building this fine avenue, little or no attention seems to have been paid to the question of providing channels for the surface water across the location of the avenue. No culverts were built where it crossed hollows, which has resulted in the formation of marshy ponds. In one place, an existing culvert was stopped up by filling over one end of it. This last piece of negligence blocked off a considerable branch of the brook and resulted in having to turn it into the Redesdale street sewer, rather than disturb the newly surfaced avenue by rebuilding the culvert. The Redesdale street sewer is now gorged with this brook water at every storm. Near Allston street the same thing has been done,

and a large area which formerly drained down into the brook channel in the vicinity of Holmes avenue is now forced to drain along the north-western side of Commonwealth avenue, and goes to aggravate the trouble at Redesdale street. This last culvert should be rebuilt at present, even at the sacrifice of the surface of the avenue. The others might wait until the teaming, sewer building, etc., incident to the completion of the avenue destroys the surface.

West of Foster and Parsons streets there are no sewers in Brighton, with the exception of a short pipe sewer near Faneuil. The existing system of sewers has been extended westward from Parsons street as far as possible, and no more sewers can be built until a new outlet is provided. There are not many houses now in this part of Brighton, but there are quite a number of petitions for sewers several years old, and the subdivision of the land into house-lots is in progress. With an outlet provided to accommodate lateral sewers, this territory undoubtedly would build up rapidly. In this valley flows a large brook. If the city had the right to use this brook for sewer overflows, a system of sewers could be built at a comparatively small expense for this section, as the sewers required to take the house sewage and the first wash of the streets would not be large. If the city does not acquire this right, it will be many years before money enough can be raised to build sewers on the ordinary combined principle.

Work done during 1891.

Eleven thousand six hundred and ninety-seven linear feet of sewers, and two hundred and eight linear feet of culverts, were built in Brighton during the past year.

While there were no sewers of special magnitude built in this district during the season, there is one noticeable fact regarding the amount constructed, namely, the number of linear feet built by private parties under the city's direction is nearly double that built by the city. The cause in this case is the development for building purposes of two tracts of land in Allston.

It is getting to be a custom in some of the suburban districts for parties having land they wish to put on the market, to subdivide it, lay out and construct the streets and build the sewers, under the direction of the proper authorities, before building the houses. It has been demonstrated that this method gives the quickest returns for the money expended, and that land which would otherwise lay idle for years can be readily disposed of.

FUTURE WORK OF THE DIVISION.

The bulk of the work of the department in the future will consist of sewerage the suburban districts, and the most important question for this department to settle is that of the best policy to be pursued, in view of what has already been done, and of what will be required.

Large areas are already partially sewered, upon the combined system, with sewers which are rapidly becoming inadequate to perform the double duty imposed upon them, that of carrying both sewage and surface water; and the problem which confronts the division is twofold, — to devise a remedy for these inadequate sewers, and to settle upon a policy to be pursued in building the extensions into new territory, which must necessarily be connected with the present system. Before proceeding further, it may be well to call attention to the great variations in the amount of surface water which the same district will yield under different conditions of surface. Thus, with a certain rainfall, 100 acres of land, with few roads and scattered houses, might yield a flow of 188 gallons per second; the same land, well developed, cut up into small house-lots occupied by dwellings, and with good macadamized roads, would give twice that flow, — 375 gallons per second. With the streets paved and dwellings replaced by business blocks, the yield would be 450 gallons per second, 240 per cent. of the first. In view of this fact, it is not difficult to see how the present inadequate system came to be built; indeed, it is difficult to see how it could well have been otherwise, considering the manner in which a city grows. All land when first developed into house-lots (where sewers are now usually called for) is in the condition first described, gradually changing into the second condition, and perhaps into the third. The engineer called upon to design the sewers does not feel justified in designing them large enough to meet the requirements of a fully developed district, unless he can be assured, not only that such development will take place, but that it will take place within a reasonable period of time. If such development were certain to take place finally, but not likely to occur within, say, twenty-five years, it would still be better financial policy to build a sewer of small size, fully understanding that, having served its purpose, it would be abandoned, and rebuilt larger at a later date, than to sink the capital required to build the large-size sewer in the first place.

Then the very fact of the existence of a large system of small sewers ensures the extension of the same system on the same scale, for it is folly to build a new sewer larger

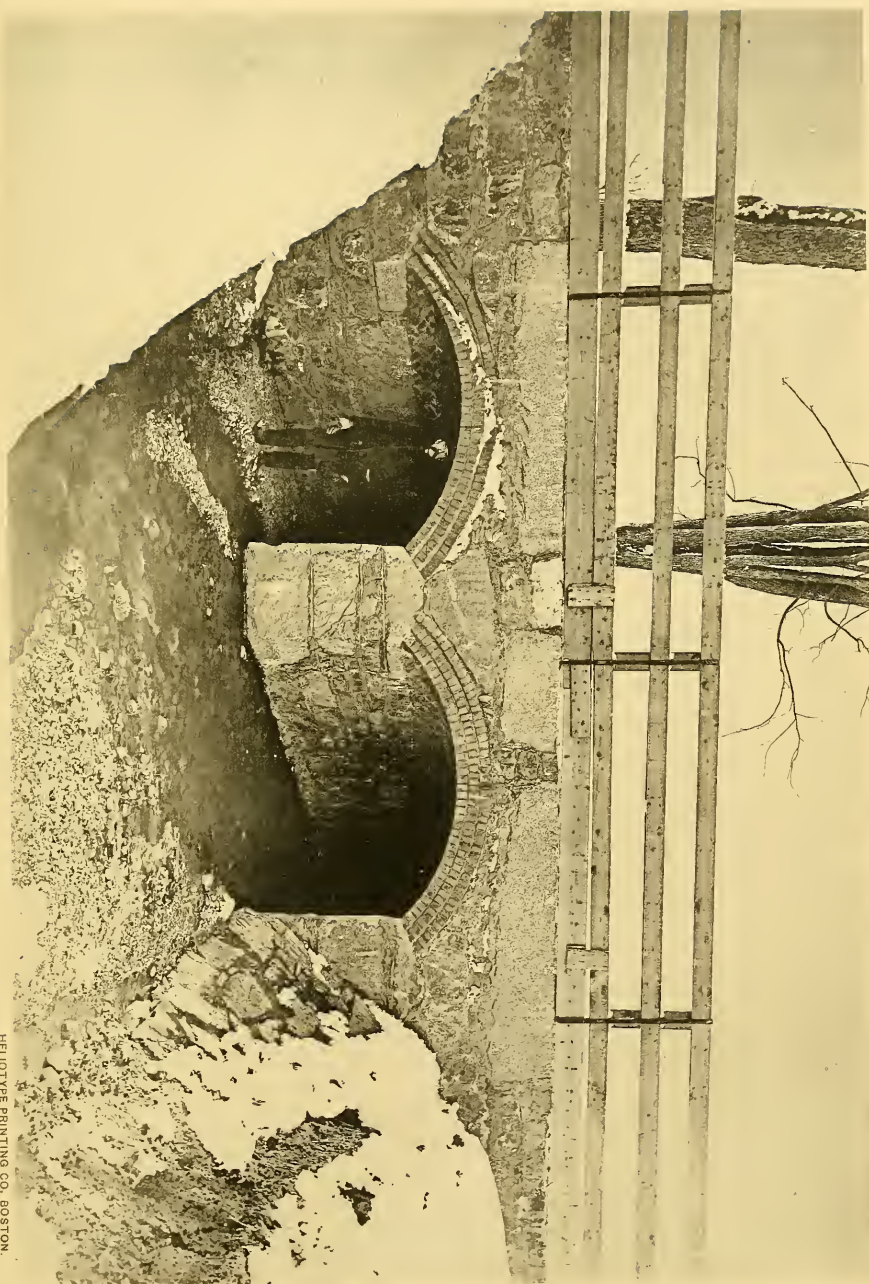
than the one through which it discharges, unless there is a probability of being able to rebuild the outlet sewer in the near future. There is also another cause operating powerfully and often, to bring about the building of sewers known at the time of building to be inadequate, and that is the necessity, under our methods of raising money, of reaching districts imperatively needing sewers with a limited amount of money. Under these circumstances, the public health being threatened, the division does not feel that it has the right to refuse relief, because it does not have money enough to build the proper theoretical size. All these causes conspire to produce the same effect, namely, the building of sewers which subsequently prove inadequate.

It is not necessary to allege incompetence in our predecessors to account for the existing inadequate system; natural causes are sufficient to account for it, and the same causes will continue to operate and to produce the same results.

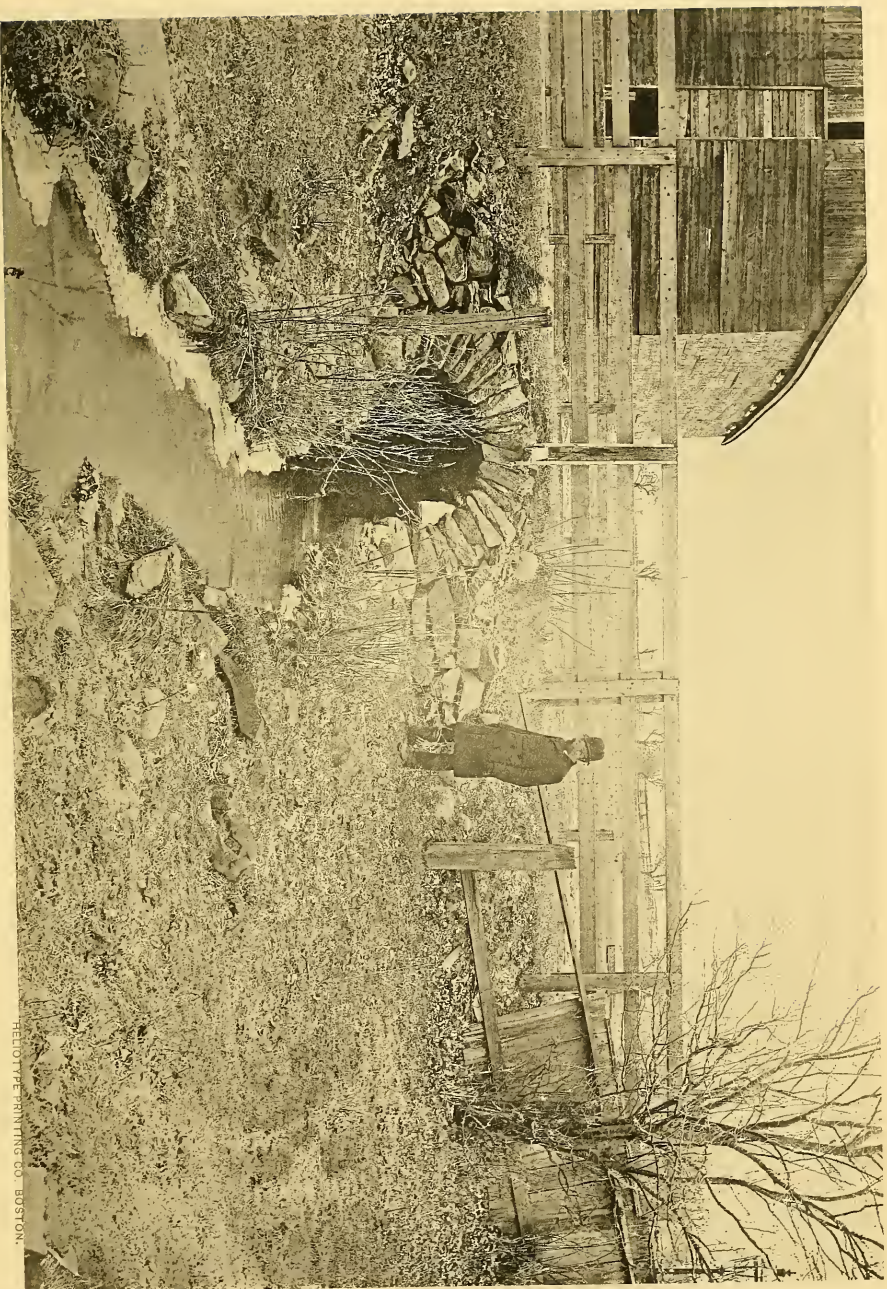
We have then on our hands this large system of suburban sewers, which is now proving insufficient in size to carry all the sewage and surface water now admitted to it, and the first part of our double problem is to provide relief. Any plan for relief should include utilizing the present system to the greatest extent practicable. To rebuild the whole of it is out of the question. There are left only two alternative courses: first, to build a system of large intercepting relief sewers, of sufficient capacity to carry all sewage as well as storm water; second, to utilize the natural watercourses for the conveyance of storm water. The first course, although not out of the question, is excessively costly; the second is not, and, although presenting some difficulties, is entirely practicable, and is the one which is recommended. The project of utilizing the watercourses is, for surface drainage, not only cheaper in first cost, but the burden of the cost is incomparably easier to be borne by the city, from the manner in which it will be imposed. The cost of a relief sewer must be borne all at once. When built, it must be built as large as will ever be required, because its capacity cannot be expanded to meet the constantly increasing requirements of the district. The watercourse or brook channel, on the other hand, does admit of such expansion. The development of the brook into a relief sewer could be made to keep pace with the development of the district, first by a deepening and widening, then a further deepening and walling, next paving, and last the covering in. The conversion of the brook into a storm sewer is then complete, without any large sum of money having been expended years in advance of the needs of the district.

Money for drainage of any kind is always granted unwillingly, never until absolutely necessary; the difficulty of obtaining it increases with the amount asked for; hence it follows that a district needing an expensive relief sewer would suffer long and severely, before the large lump-sum required could be obtained, whereas the comparatively small sums needed at any one time for increasing the efficiency of the brook channel could be much more readily obtained. The application of this method of relief in districts already sewered will present but few difficulties. In many cases an overflow can be constructed direct from the sewer into the brook where the two cross; but in many other cases the sewer crosses under the brook, and in such cases either one of two methods may be adopted. If there is considerable pitch to the brook, a few hundred feet of its length may be lowered; that is, a part of the ultimate deepening may be done at present; or, if that is not feasible, a short length of storm sewer can be constructed from the brook to a point where the common sewer is higher than the brook, and the overflow effected there. The last plan can be followed wherever desired, as the brook is always in the lowest thread of the valley. All catch-basins near natural watercourses or storm sewers should be turned into them, instead of into the common sewers, and it is hardly necessary to say that where brooks have been taken into sewers, they should be restored to their old channels, and that, too, before the territory adjacent becomes any further developed. In regard to the second part of our problem, that which relates to the policy to be pursued in sewerage new territory, the circumstances in each case should be taken into account. In some favorable localities an entirely separate system of house sewers and storm sewers may and should be built. In such cases both sewers should be built at the same time, for the average citizen will not take the pains to understand the distinctions between them, and is exasperated if he cannot have a catch-basin to drain any water which may accumulate on the street, into the sewer as soon as it is built.

But in those places where new sewers must be an extension of the old system, there would be no advantage in a separate system. The most practical system, generally, will be a combined system, consisting largely of 12-in. pipes, uniting into mains large enough to carry the combined sewage and storm water from each little district, to where it crosses the first watercourse where a relief overflow would be established, and the size of the sewer reduced to one just large enough to carry the sewage and a small amount of surface water from the streets, the first and foulest washings.



OAKLAND STREET CULVERT. (AS REBUILT) BRIGHTON.



FANEUL STREET CULVERT (TO BE REBUILT) BRIGHTON

This culvert is on the same water-course as the Oakland Street culvert, and 900 ft. down stream.

The main would then be gradually increased in size as it passed though the next small district, until it reached the next watercourse, when it would be reduced as before, and so on. The first cost of this system, since the brooks would not have to be deepened for some time, would be less than that of the separate system, if in the latter both kinds of sewers were constructed at once, and would be little greater than the cost of the house sewers alone of that system; because the only economy in laying a small pipe rather than a large one is in the extra cost of the pipe itself, the trench costing practically the same, and the latter item in all cases comprises the largest part of the whole cost of the sewer. The system recommended above would be practically an extension of the old system, and requiring and admitting of the same means of relief in the future, by means of the natural watercourses. The old sewers are, in the main, large enough to carry the house sewage and a small rainfall upon the street surfaces, and that is all that it is desirable that they should do, provided the city is *assured* of the right to control and use the natural watercourses. It is this assurance that is lacking now, and which, if obtained, would render it possible to economize largely on future designs. The brooks should be seized at once by the city and the damages, if any, settled. The takings should be defined, and in doing this the wishes of the land-owners should be considered, and such divisions made as will leave the land in good shape for cutting up into house-lots.

The engineer would then know certainly at what points he could economize safely on designs for sewers. The department could then adopt and adhere to the policy as outlined above. It is the best adapted to the existing sewer system; it requires no wholesale destruction and reconstruction of sewers; it is the most convenient for the people; it is the cheapest in first cost, and superior, from a financial point of view, in the manner and times of requiring the investment of capital; it is the natural method of evolving, out of an old and ill-adapted system, the new system well adapted to the present and future requirements.

CULVERTS.

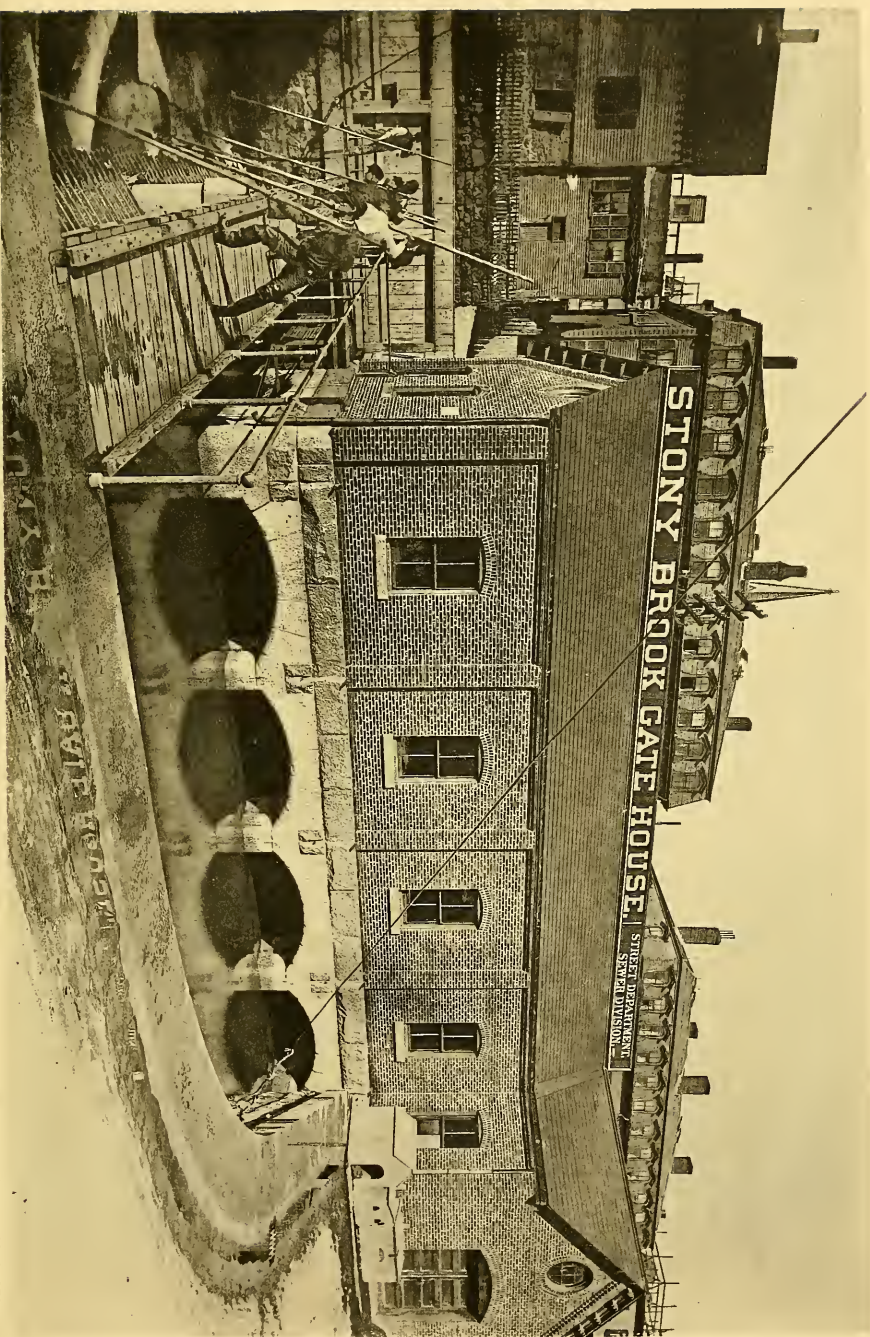
More attention has been paid to the natural watercourses this year than ever before. The constantly increasing floods (due to the development and change in the nature of the surface of the ground) have called the attention of every one to the inadequate size of the old culverts across the streets. These, up to the present time, seem to have been

built as they are in country towns, without the least regard to the size of the territory to be drained through them. In other countries, building a road is considered an engineering enterprise, and one of the problems connected with it is the determination of the location and size of the culverts for draining the valleys which are crossed. But in this city it has been left to the judgment of a street foreman, who, of course, had no means of calculating the proper size. These culverts have been inadequate for years, creating nuisances during every storm. Many of the worst have been rebuilt this year, and many more remain to be rebuilt. The rebuilding of one culvert of the proper size simply shifts the nuisance to the next culvert down stream, and calls for its rebuilding, and the process of enlargement will have to be followed down to tide-water. In all the culverts which have been built this year, ample provision has been made for the largest rainfalls likely to occur, and the culvert has been so designed as to accommodate itself to future deepening of the watercourse. In some cases the culvert under the street joins on to a culvert or some form of covered channel through private land. In these cases, the department has confined itself to rebuilding the culvert between the street lines only, leaving the channel through private land as before. This course clears the city from the legal responsibility of maintaining a nuisance, but does not remedy the liability of damage by floods, as the water is still held back by the small channel through the private land.

In this connection, it would be well to call attention to the lack of supervision in the matter of building private streets, which the city is afterward asked to accept. The location of such streets is now supervised by the city. There should be some engineering supervision over the size of culverts under them. The builder of a private street cannot be expected to know what size of culvert is required; he should not be required to rebuild it at greatly increased expense before the city is willing to accept the street; nor should the city be expected to repair the result of his ignorant action. He should be notified in the beginning what sized culvert will be required, and compelled to build it in a manner satisfactory to the city.

STONY BROOK.

Stony Brook, the largest of the city's watercourses, is now provided with an ample outlet, and gives little trouble. The effect of the development of its water-shed can be seen, however, in the increasing rapidity and height to which it



STONY BROOK GATE HOUSE—CLEARING SCREENS DURING A FLOOD.



Photogravure.

STONY-BROOK GATE HOUSE. INTERIOR DURING FLOOD.

Heliotype Printing Co. Boston.

risers now at every rain, compared to what it did eight years ago, although now its outlet is ample in size, and then it was not. There has been a movement already to have the new channel, recommended by the commission of 1886, extended from the inlet chamber on Pyncheon street to Green street. When this is done, provision must be made for continuing the supply of brook-water to the Boston Belting Company.

There are considerable areas of land near the brook which are too low to be drained by the existing Stony Brook Valley sewer system. Since the brook improvement of 1880-84, this land has been available for building. When the new channel is extended above the inlet chamber, it would be comparatively easy to design its sections, so as to carry upon its haunch a sewer for these districts; it would not be large, being for house sewerage only. From the inlet chamber down to the Roxbury crossing, there is a twenty-foot channel occupied only by the stream, which flows through a six-foot opening; a sewer could be built cheaply here. From the Roxbury crossing to the intercepting sewer in Hampshire street, corner of Linden Park street, there is a channel already built — the overflow channel — which would do with very slight alteration. If the new channel is built without providing this low-grade sewer, it will be difficult to ever properly sewer the low districts along the brook. The Grade Crossing Commission and the Rapid Transit Commission both have under consideration the project of raising the Providence Railroad. If the extension of the large conduit above the inlet chamber be made on the lines of the Commission of 1886, it will be directly alongside the railroad for a distance of 2,000 feet to Old Heath street, then again from near Amory street to a point 400 feet above Boylston street, 2,400 feet more; a total of 4,400 feet. The brook is from ten to fifteen feet below the railroad. The plan is to raise the railroad about fifteen or sixteen feet; the commissioners' plan would lower the brook twelve feet. If the railroad were raised before the brook was lowered, it would require a retaining-wall of 26 to 30 feet high. It would be very difficult and expensive to go down a depth of twelve feet alongside such a wall, carrying a four-track railroad, and build the covered channel recommended. If an open channel instead were built, the retaining-wall on that side would be 38 to 42 feet high. If the railroad is to be raised, the proposed extension of the brook channel must be built first, at least as far as Boylston Station.

HIGH-LEVEL INTERCEPTING SEWERS.

An essential part of the scheme of intercepting sewers for Boston is to carry the sewage from the highlands above grade 40, directly to the outlet by gravity, and thus avoid pumping. To do this, a system of intercepting sewers was projected in Dorchester, Roxbury, and Brighton, to intercept the sewage from all land above grade 40. It is time that this system was begun, now that the State is about to pour into our system the sewage from the Charles River valley.

HIGH-LEVEL RELIEF SEWERS.

There are some districts of the City Proper, consisting partly of high and partly of low land, in which the water from the highland fills up the sewers in the lowland at every rain. A system of relief sewers has been proposed for these districts, to tap the common sewers at a point above the level of the tide, and run the storm water from the highlands directly overboard, without connection with the sewers in the lowland portion of the district. The volume of the whole sewer system in the lowland district would then be available to store the storm water falling on the lowland alone until the ebb tide should allow it to escape, thus to a great extent preventing the flooding of cellars. Incidentally it would afford another means of relieving the pumps of the intercepting sewer system, and should be begun for the same reasons mentioned in the previous paragraph.

MAIN DRAINAGE WORKS.

Special attention is called to this important branch of the Sewer Division.

During the eight years that it has been in operation the general working of this system has been very satisfactory. Many points have been developed that furnish valuable information for the construction of such a plant as this. One of the most important of these is the action of sewage and its gases on metals. It was expected that the sewage would have a decided action on the ironwork, but without definite knowledge of its extent, it was not deemed expedient to substitute other metals at a greatly increased cost. The sequel has proved that on certain parts of the pumps and gates, especially where subjected to friction, the substitution of other metals would have been expedient. The iron valve-seats on the pumps are worn away to such an extent that all of them will have to be renewed; this work is in progress now. The gate-seats in the sewers at Moon

Island are in the same condition, and are being treated in the same way. The method adopted to prevent a recurrence of the trouble, is to face the seats where the wear comes with a hard composition. Before commencing these renewals, tests were made with the metals combined and placed under similar conditions, to see if any galvanic action would result from the combination. None, however, has taken place. The boiler-feed and flue-heaters will have to be renewed, the old ones having burned out.

A certain style of heater is under consideration at present which will be much more efficient and lasting than the original one, at about one-half the cost.

Repeated mention has previously been made of the urgent necessity of keeping storm and soil water out of the sewers as far as practicable. The force of those recommendations is nowhere more apparent than at the pumping-station. The continual addition to the sewer system of new sewers, with catch-basins connected with them, brings a rapidly increasing amount of the storm water to the pumps. To this is added the leakage of soil water into the system, through the old and defective sewers that should have been rebuilt long ago. The result is that the pumps are often taxed to their uttermost capacity, and with water alone, not sewage.

The following figures will give an idea of the amount of this excess of water. The average daily consumption of water in this section drained by the Main Drainage Works, for 1891, was 35,686,900 gallons. The daily average amount pumped at the pumping-station (pump measurement), for 1891, was 62,582,683 gallons, allowing a liberal percentage for "slip" in the pump measurement due to the worn condition of the valve-seats. There still remains an amount in excess of the water consumption, or sewage proper, that shows conclusively the value of the above recommendation.

The building of the Charles River branch of the Metropolitan Sewer system the past season is going to further tax the pumps by the immediate addition of the sewage of Brookline and Brighton. In view of these facts it is evident that immediate steps must be taken to increase the capacity of the pumping plant by the addition of one or more pumps. It will take two years, at least, before this work can be finished, if action is taken immediately. On account of the increase in the amount of sewage, and the necessity of the occasional shutting down of the high-duty pumps for repairs, it has been and will be necessary to run the low-duty pumps much more than heretofore. As it takes more coal to do the same work with the latter pumps, it is recommended that a high-duty attachment be added to these pumps im-

mediately, as by so doing a saving of twenty per cent. in fuel can be made whenever these pumps are in use. This saving would pay the interest on the money invested twice over, even with the amount that these pumps are run at present.

The need of completing certain portions of this system, and the risk attending the delay of such action, has been pointed out to the City Government each successive year since the starting of the works. The need is more urgent at the present time than ever before, and unless the machinery designed for pumping out the Dorchester Bay tunnel, which was purchased in 1884, is placed in position at the east shaft, and the permanent conduit in the embankment between Squantum and Moon Island is pushed to completion, a stoppage of the present system of discharging may be looked for in the near future. The trouble feared in the former case is that the iron guides on the sides of the shaft are in danger of dropping into the tunnel, in which case the sewage would have to discharge into Dorchester Bay at the pumping-station. Should this occur, the delay and expense involved in pumping out the tunnel, with the means at hand, would be very great. The guides are held in position by being bolted to iron beams built into the masonry. The condition of the bolts is not known except at the surface, where it is shown that they are badly eaten away by the action of the sewage. They have been submerged for over eight years, and from the indications at the surface, and the knowledge of the action of the sewage on the iron on other portions of the works, it would indicate that there was danger of their dropping down the shaft at any time, even if some of them have not already. While there is some uncertainty in the above case, there is no uncertainty in the trouble to be expected in case the conduit between Squantum and Moon Island is not completed as quickly as possible. The wooden flume, which at the present time carries the sewage from the tunnel to the reservoir at Moon Island, is in very bad condition, despite the repairs that have been made upon it for the last four years. It was built for a temporary structure to be used until such time as the permanent conduit could be built. It has been in use longer than it was expected would be necessary, and is now in such condition that it is sure to go to pieces if any unusual strain is put upon it either internally or externally. Quite extensive repairs are at present being made upon it, which are only in view of keeping it in position. Many of the piles that support it are so eaten away that they are not five inches in diameter. It is not

only a menace in itself, but its condition is so weak that no proper test can be made of the tunnel, to discover its condition as regards deposits. If the flume should give way, the sewage would have to be discharged continually on the flats off Squantum, or in Dorchester Bay at the pumping-station, and not at Moon Island outlet, on the ebb tide alone.

ENGINEERING WORK.

During the past year the engineering force of the Sewer Division has been busily engaged on the routine work of the division.

This work comprises the preparation of plans for new work on sewers, surface drains, and culverts, the making of record plans of work accomplished during the year, and the engineering supervision of the construction of sewers, drains, and culverts.

In addition to the above work, the force has been engaged in preparing topographical plans of the various sewerage districts, and in carrying out a system of accurate levels through the whole city.

In 1887 the department experienced much difficulty in carrying on its work on account of the lack of an accurate system of levels.

No attempt had ever been made to establish such a system, the elevation of different points having been borrowed from other departments, and long lines of levels run from them. These were necessarily inconsistent one with another, and errors had crept in which could not be located, owing to the absence of any thorough system of checking from one line of levels to another.

Discrepancies of over a foot were found, and the department possessed no reliable system of its own.

The Superintendent of Sewers at that time set about remedying this state of affairs; the engineering force was increased, and a portion of it employed exclusively in levelling, establishing *benches* all over the city, and levelling to the manholes, the elevations of hundreds of which were unknown and could not be indicated on the sectional plans of the office.

An accurate, consistent system of levels was carried all over the City Proper, Charlestown, South Boston, Roxbury, East Boston as far as Eagle square, Brighton to Oak square, Dorchester to Neponset and Dorchester station, and a single line of levels carried through West Roxbury to within one-half mile of the Dedham line.

A total of 374 benches and 2,262 manholes were levelled to.

It was also found that there was much inaccuracy in the plans of the city, which, although very accurate in places, were not *geodetically* correct, not having been based upon any comprehensive survey.

The topographical plans (the very basis of all sewer calculations) were very incomplete.

It was determined to supply both these deficiencies at once. A party was organized, and for the first time the city was triangulated, and upon this triangulation a stadia topographical survey was based.

This triangulation was developed from three different base lines of the United States Survey on the northerly side of the city, and a check obtained by connection with United States stations and State points on the southerly side of the city.

The most difficult part of such an undertaking is to select the points and make the observations for the first system of large triangles, which required sights sometimes ten miles long.

This system of triangles was established and developed into smaller triangles, whose sides varied from 3,000 to 6,000 feet in length, and the latitude and longitude of all observed points, some sixty in number, calculated.

This whole system of triangulation made by the engineers of the Sewer Division has been adopted and further used by the Board of Survey in its work of mapping out the city.

The stadia survey was completed in Brighton, and a fine map, accurate geodetically and topographically, was plotted.

This map has been traced in six sectional sheets during the year past, and blue-printed in a new style, the streets being rendered in white, so that the system of sewers may be drawn upon them, and the constant additions that are being built can be plotted, and the plans thus kept up to date.

These blue-prints are equally available for showing water-pipes, gas-pipes, etc.

The sketched topographical plans of the other parts of the city, which, although not strictly accurate, are valuable as showing the general features of the ground, have also been traced and blue-printed in the same manner, and can be reproduced to any extent desired. They are especially valuable, on account of their age, in preserving a record of the natural watercourses.

There is much work of this same sort remaining to be done. The stadia topographical survey should be carried over the remainder of the city, particularly Dorchester, West Roxbury, and Roxbury.

The bench-levelling should be extended into new districts where sewers will soon be built, and there are about 1,000 manholes now to be levelled to.

Two parties are devoted to this work now, while a third is employed in preparing alternative plans for sewerage the region to the west of Dorchester and Forest avenue stations, where some comprehensive plan must be adopted to provide a new outlet to tide-water.

SEWER DIAGRAM.

A "sewer diagram" is appended which shows the method by which the sizes of sewers are calculated in this city.

The object of this diagram is to enable the person using it to arrive at a tolerably correct idea of the size of sewer required in any particular case as soon as he knows the principal facts concerning it, viz. :

First, the size and character of the district to be drained ; and, second, the fall which is available for the sewer. To accomplish this, two sets of curves are plotted with the same vertical and horizontal scales.

The first set, those springing from the lower left-hand corner and going toward the right upper corner, are designed to give the flow that may be expected from any given area.

The ordinates of these curves are cubic feet per second ; the abscissas written along the top are the number of acres drained.

There are five of these curves corresponding to that number of degrees of steepness of surface, namely :

One for flat districts, the general inclination of which is 5 feet per 7,000, and others for steeper slopes, up to 100 per 1,000.

The curves are plotted according to the interpretation of the Bürkli-Zeigler formula found in Gray's Providence Report of 1884, using the table of coefficients which he gives there, and giving the value 1 to the factor r , the rate in inches of rainfall per hour ; or, in short, the curves give the flow which may be expected from any given area, from a rainfall of one inch per hour, falling at a uniform rate.

For example : 100 acres, the general pitch of the surface of which is 5 feet per 1,000, yield 30 cubic feet per second ; if its slope is 20 per 1,000, 42 cubic feet ; if 100 per 1,000, 62 cubic feet.

The second set of curves, those going from the left downward toward the right, represent the capacities of sewers of varying sizes at various inclinations.

They refer to the same vertical scale of cubic feet per

second ; and the horizontal scale is in terms of the horizontal component of the angle of inclination, or the number of feet horizontally in which the sewer falls one foot vertically, or the ordinary terms in which the pitch of a sewer is described as 1 : 500, 1 : 1,000, etc.

For example : A 4-foot circular sewer, running 3 feet deep, at a pitch of 1 : 150 carries 105 cubic feet per second.

If the sewer is running under a head, the slope of the hydraulic gradient, of course, must be taken, not the actual pitch at which the sewer is built.

The whole operation, then, is as follows : Suppose we have to drain 200 acres lying at a general slope of 20 feet per 1,000, and our outlet sewer can be given a fall of 1 : 500 ; then we find that 200 acres, at a slope of 20 per 1,000, yields 70 cubic feet per second ; and looking on the sewer curves, we find that at 1 : 500, a 4-foot 6-inch circular sewer running 3.25 feet deep carries 74 cubic feet per second. This, then, is the size indicated by the diagram.

The angles in the curves are due to changes in scale, both horizontal and vertical. It is not practicable to plot them on any one scale without making them either illegible at one end, or stretching them out to an unmanageable length at the other end.

If plotted on any one scale, the curves would, of course, be smooth sweeps. It will be noticed that the scale of acres drained at the top, and the scale at the bottom showing the pitch of the sewers, are made to correspond, as, for example, the same vertical line indicates 500 acres on the drainage-area curves, and a fall of 1 : 500 on the curves of capacities of sewers. This is done to avoid mistakes in the use of the diagram. Although the scales at the top and bottom indicate different things, and refer to different sets of curves, it does not make any difference which is used. The note in the corner states that these drainage-area curves are calculated for suburban districts ; if the district is closely built upon and paved, an allowance of 20 per cent. should be added ; if in a rural state, 30 to 50 per cent. should be subtracted.

The diagram is particularly convenient in discussing schemes of sewerage ; the sizes of sewers required by different plans can be compared, and the results of proposed changes or modifications can be seen in a moment without going through tiresome calculations.

Another application is to show about what a sewer carried under some unusual conditions when completely submerged, for instance, and discharging under a very small head.

The sewer curves are plotted from Clark's tables. The quantities agree very closely with the Kutter formula (taking

n as .013) for medium-size sewers; for the smallest sewers they are 10 or 12 per cent. larger, and for the largest sewers they are 10 or 12 per cent. smaller, than Kutter's formula would give. A line is also plotted following the general direction of the set of curves first described, and representing a discharge of one-half cubic foot per second per acre. This line is given for reference, as it represents the allowance which was formerly made for the quantity of water a district might be expected to yield. A few approximate velocity curves are also plotted.

STREET-CLEANING DIVISION.

Several years ago Boston was noted for the appearance of its streets, which were referred to throughout the country as models of cleanliness. A gradual change for the worse in their condition has been taking place, until in the fall of 1890 their condition was such as to call out a protest addressed to the Mayor, setting forth the "outrageous and unwarrantable dirty condition of the principal streets of our great city," and stating that "if our streets were kept clean, as are the principal streets of New York City, — Broadway and Fifth avenue, — the amount of dirt now brought into our stores would be avoided, and property saved from great loss by the damage done our merchandise by dust and dirt, and the general health of our people would be protected."

This protest, signed as it was by a large number of influential citizens, carried great weight, and a public hearing was held. At this hearing the official in charge of the street-cleaning stated that the streets were as clean as it was possible to keep them, and that no change for the better could be made, even if \$1,000,000 was spent in their care. The matter was then dropped until the beginning of the next municipal administration, when, on January 17, 1891, the duty of cleaning the streets was taken from the hands of the Superintendent of Sanitary Police, where it had always rested, and placed in the hands of the Acting Superintendent of Streets. Pending the organization of a separate division of street-cleaning, which could only be elaborated after careful study, steps were at once taken to clean up the city, and the combined forces of the Paving Department and such force as could be spared from the Department of Sanitary Police were set to work. Patrol wagons, to collect the litter which had been allowed to lie in the gutters undisturbed for months,

were sent round; and in general an effort was made to clean up the city. The labors of this force soon produced an effect, as indicated by the change in tone of the press and the comment made by the public on the improved condition of the streets. Meanwhile a study was being made of the reason why the condition of the streets had been so unsatisfactory in the past, and a plan was elaborated for their better care in the future.

The reason why the streets had grown more filthy from year to year was easily discovered. The system of cleaning in vogue, while it answered for twenty years ago, had been entirely outgrown. Notwithstanding the enormous growth of the city, the system had never been changed to keep pace with this growth. The organization of the street-sweeping force was divided up into two large double gangs and one small single gang. One large double gang, with headquarters at the West End stable, attended to the streets in the North End, East Boston, Charlestown, and the Back Bay. The other large double gang covered the streets from State street to Washington park at the Highlands and the streets of South Boston and Dorchester. A small gang, with headquarters at the Highlands, attended to streets in that vicinity.

The double gangs mentioned above worked in two divisions without any well-defined limits of area, and in such a manner that a great deal of time was wasted in going to and from their work. The failure to distinctly separate the work of the divisions resulted in one division travelling over the same ground just covered by another division, in order to reach the territory in which it was to work. The transportation of sweeping-machines and men to remote localities, such as Charlestown, East Boston, or South Boston, in itself wasted a valuable amount of time which should have been expended in actual sweeping-work. The areas laid out for these gangs were entirely too large. Nothing but a printed list of streets to be swept on certain days of the week was in existence as a guide to the foreman in his work. This list had grown obsolete, owing to the impossibility of covering the entire area laid out, and the work was largely done by general orders to work where the dirt was the greatest.

But little attention was paid to Brighton, West Roxbury, or the other remote suburbs. Two or three times a year, when the streets in the main portion of the city were supposed to be in fairly respectable condition, the entire force was transferred to the suburbs, and a spasmodic attempt made to clean the gutters.

In winter, the larger part of the force was transferred to the work of collecting ashes, and the work of cleaning the

streets almost entirely neglected. The dirt which accumulated by this method was frequently an inch deep over the surface of the street. During the time that snow remained on the street, or while the temperature was below freezing, this neglect did not involve much discomfort to pedestrians; but on the occurrence of a thaw, the streets became almost impassable.

Immediately on the consolidation of the departments being effected, a new division was formed, known as the Street-Cleaning Division, whose duty was to devote its attention solely to the cleaning of the streets, independent of the removal of ashes and garbage. Inasmuch as the cleanliness of the streets holds such a close and vital relation to the health and comfort of all citizens, it was thought important enough to demand continuous work of a force assigned for that important purpose throughout the year.

A tabulated list of the streets of the city having been prepared, classified according to districts and according to the style of paving, showing the length, width, and area of each street, enabled the total amount of paving to be swept to be determined. A table was also prepared showing the miles of macadamized roads the gutters of which were to be scraped and cleaned at proper intervals. These paved streets were marked on a city map, and then by successive approximations the division lines of the proposed sweeping-districts were so determined that each foreman of a district would have a stipulated number of square yards of paved area to take care of; this amount was determined by the number of square yards known to be covered by the average work of sweeping-machines.

A study of this map, together with the data concerning the number of square yards to be swept, showed that it was advisable to divide the city into nine sweeping-districts. These districts being much smaller in extent than the sweeping districts into which the city had formerly been divided, enabled a better supervision to be exercised over the cleanliness of the city in general.

The following districts have been established :

No. 1. West End.

This district is bounded by Washington, School, and Beacon streets and Charles River to Charles River bridge.

No. 2. North End.

This district is bounded by Charles River from Charles River bridge to Central wharf, and by Central, Milk, Washington, and Causeway streets.

No. 3. South End.

This district is bounded by Central, Milk, Washington, Kneeland, Lincoln, Harvard, and Utica streets and Fort Point channel to Central wharf.

No. 4. South End.

This district is bounded by Utica, Kneeland, Washington, School, Beacon, and Dartmouth streets, Columbus avenue, Berkeley and Dover streets, and Fort Point channel to Federal street bridge.

No. 5. Boston Neck and Back Bay.

This district is bounded by Dover and Berkeley streets, Columbus avenue, Dartmouth street, Charles River, West Chester park, Falmouth, Gainsborough, Hammond, Ball, Hunneman, Fellows, Northampton, and Albany streets, and Roxbury Canal, South Bay, to Dover street bridge.

NOTE. — Harvard bridge is swept in this district.

*No. 6. South Boston and Dorchester.**No. 7. Roxbury and West Roxbury.**No. 8. Brighton.**No. 9. East Boston and Charlestown.*

In laying out the sweeping-districts, the amount of pavement was carefully measured, and the boundary lines of each district were so fixed that each foreman would have an equal amount of work to superintend.

The first five districts are made up as follows :

District No.	Paving, sq. yds.	Gutter, sq. yds.
1	183,094	34,800
2	194,710	1,800
3	195,330	1,900
4	193,186	16,200
5	227,630	129,140
		Sq. yds.
1. Paving cleaned 3 times per week . .		549,282
Gutter " once " " . .		34,800
Total " " " " . .		584,082

District No.							Sq. yds.
2.	Paving	cleaned 3 times per week	.	.	.	.	584,130
	Gutter	" 2 " " " "	.	.	.	.	3,600
	Total	" " " " "	.	.	.	.	587,730
3.	Paving	" 3 " " " "	.	.	.	.	585,990
	Gutter	" 2 " " " "	.	.	.	.	3,800
	Total	" " " " "	.	.	.	.	589,790
4.	Paving	" 3 " " " "	.	.	.	.	579,558
	Gutter	" once " " " "	.	.	.	.	16,200
	Total	" " " " "	.	.	.	.	595,758
5.	Paving	" 2 " " " "	.	.	.	.	455,260
	Gutter	" once " " " "	.	.	.	.	129,140
	Total	" " " " "	.	.	.	.	584,400

In districts 6, 7, 8, and 9 the amount of work to be done was not computed, as it was not possible to assign men enough to these districts so that they could be cleaned as often as the business section.

The amount of pavement in each of those districts is as follows :

District No.								Sq. yds.
6	.	.	.	.	.	.	.	238,635
7	.	.	.	.	.	.	.	123,680
8	.	.	.	.	.	.	.	125,000 [±]
9	.	.	.	.	.	.	.	269,645

In the above arrangement of work, two sweeping-machines are assigned to each of the first five districts, which allows for 100,000 square yards per day, or 600,000 square yards per week, as a double sweeping-machine can cover, on an average, 50,000 square yards in a day in actual practice.

As will be seen by the above table, the first four districts are covered every two days. In these districts the following streets are covered every day :

Green street, Bowdoin street, Court street, Court square, Tremont street, Hanover street (from Court street to Blackstone street), Adams square, New Washington street, Portland street, Friend street (west of Washington street), Hay-

market square, Haverhill street, Travers street, Causeway street, Union street, Dock square, Washington street (from Cornhill street to Dover street), School street, New Devonshire street, Kilby street, Liberty square, Exchange place, Central street, India street, Doane street, Faneuil Hall square, North and South Market streets, Clinton street, Blackstone street, North street (Union street to Blackstone street), Kneeland street, Bedford street, Chauncy street, Avon place, Summer street, Federal street (from Summer street to Beach street), Bromfield street, Winter street, Temple place, West street).

In South Boston, there are a large number of paved streets. The force assigned to this district cleans the streets on which there is heavy traffic twice a week; it also spends two days per week in Dorchester.

East Boston and Charlestown are taken care of by one gang, whose headquarters are located in Charlestown. Eventually, a separate gang will have to be allotted to each of these districts; but such an arrangement will not interfere, in a general way, with the organization of the rest of the force. A separate gang was not provided in East Boston this year, owing to the lack of stable accommodations.

In Brighton, a small gang is organized under the supervision of the district foreman of the Paving Division. There are no paved streets in this district, and the force is employed in cleaning gutters and crossings, and scraping macadamized streets.

Each sweeping-gang consists of a foreman, two sub-foremen, six helpers, sixteen sweepers, one dumper, one water-cart driver, six teamsters, and two sweeping-machine drivers. Each gang takes care of 200,000 square yards of paved area; and the amount of gutter work that is added to the labor of sweeping is so adjusted that the total amount of work under each foreman is equalized as nearly as possible.

The assignment of work for each day is so made that the area covered each week amounts to about 590,000 square yards.

NIGHT WORK.

Owing to the early hour at which traffic commences in Sweeping District No. 2 (which includes the principal markets), and the consequent hindrance to the working of the sweeping-machines on account of the blockading of the streets with market-wagons, caravans, etc., the experiment was tried of sweeping this district at night. This system was inaugurated on June 10 and continued until November 14. A decided improvement of the appearance of this dis-

trict was immediately noticed ; and it is intended to introduce night-sweeping in District No. 3 during the coming year.

It is impracticable to carry on night-sweeping after cold weather sets in, for the reason that the force must be available in the daytime for the work of keeping crossings and sidewalks clean if a fall of snow occurs. It is practicable, however, to employ this method from April 1 to November 1, and such will be the practice of the division in Districts No. 2 and No. 3 during the coming year.

The maximum force of the division is shown in the following table :

District.	Average No. of Men employed.									
Office	4
1	37
2	39
3	32
4	34
5	35
6	36
7	30
8	10
9	27
Yard and stable	11
Push-cart patrol	37
Total	332

The above-mentioned force use in carrying out the work of the division the following plant :

16 double sweeping-machines.

15 single sweeping-machines.

12 water-carts.

70 street-carts.

72 horses (owned by the department).

The push-cart patrol use :

37 push-carts.

74 barrels.

5 street-carts (steel).

5 horses.

PUSH-CART PATROL.

The fact that the hourly accumulation in a business thoroughfare is due to street traffic, and to the large number of pedestrians throwing away fruit-skins, paper-bags, newspapers, and odds and ends of all kinds, led to the introduction of the *push-cart patrol*.

The push-cart consists of a two-wheeled truck, on which is suspended an oak barrel. The iron framework, including the axle, is made of curved iron to conform to the contour of the barrel, by means of a couple of hooks on each side, which fit into rings on the truck.

Each truck is furnished with two barrels, one of which, when full, is left at a stated point to be emptied by the patrol-cart, which makes a periodical trip through the district.

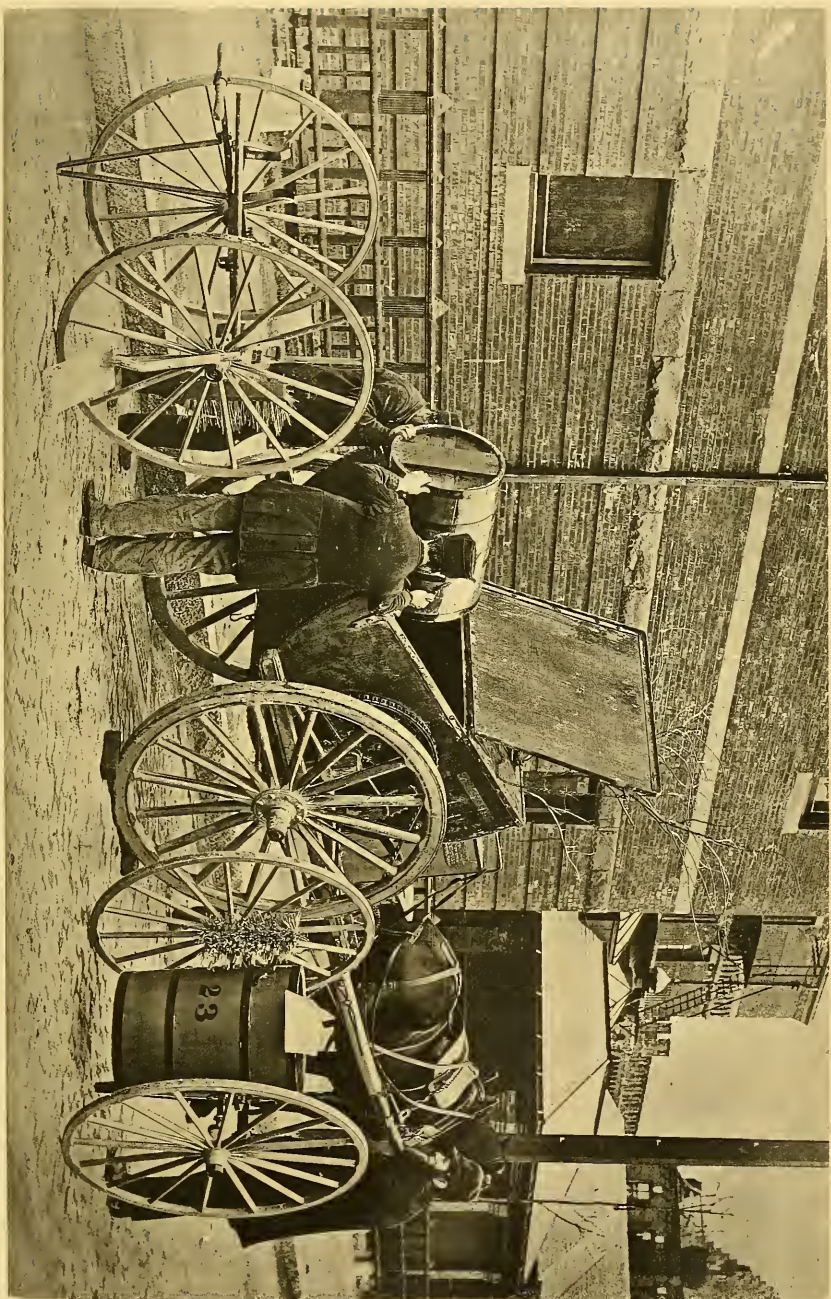
By this arrangement, the sweeper always has a comparatively empty barrel at his disposal, and can therefore continuously gather up the piles of refuse as fast as they appear, instead of sweeping them into piles, as in the old-style method, only to be blown about by the wind, and scattered about by passing teams before the dump-cart arrives. These push-carts are provided with proper supports for broom and shovel, and, if wanted, a sprinkling-pot.

In every case where they have been properly tried, they have proved a valuable acquisition to the service, and have occasioned favorable comment from all who desire a cleanly thoroughfare.

The introduction of the push-cart patrol as a necessary adjunct of the work of the division was made contemporaneously with its adoption in New York City, where it was a matter of experiment. The advisory committee appointed in New York to make a report on street-cleaning recommended that the entire city be swept by hand, and that 1,700 of these carts should be used. This method, however, is very expensive, as it costs two and one-half times as much as machine-sweeping; and it has been introduced into this city merely to supplement the regular work of the sweeping-machines.

The territory covered by this service includes the following streets:

Arch street, Avon place, Beach street (Washington street to South street), Beacon street (Arlington street to Charles street), Bedford street, Blackstone street (Hanover street to Cross street), Boylston street (Washington street to Park square), Bowdoin square, Brattle street, Brattle square, Bromfield street, Bulfinch street (Howard street to Bowdoin square), Causeway street (Merrimac street to Beverly street), Central street, Chardon street, Chauncy street, Columbus avenue (Park square to West Chester park), Congress street (Milk street to State street), Congress square, Cornhill, Court street, Devonshire street, Doane street, Eliot street, Elm street, Essex street (Washington street to South street), Exchange place, Federal street (Summer street to



PUSH CART PATROL SERVICE.

Milk street), Franklin street (Washington street to Federal street), Friend street, Hanover street (Scollay square to Blackstone street), Harrison avenue (Bedford street to Kneeland street), Hawkins street, Hawley street, Haymarket square, Harvard street, Kilby street, Kingston street, Kneeland street, La Grange street, Lincoln street, Mason street, Merrimac street, Milk street (Washington street to Broad street), Otis street, Park square, Portland street, Post-office square, School street, South street, State street (Washington street to Broad street), Sudbury street, Summer street, Temple place, Travers street (Merrimac street to Beverly street), Tremont street (Eliot street to Court street), Tremont row, Union street (Hanover street to Haymarket square), Washington street (Kneeland street to Haymarket square), Water street, West street, Winter street, Winthrop square.

That this service is an important adjunct to the general work in the depot and trading districts cannot be denied. Even if these streets are swept perfectly clean in the early part of the day or during the night, the hourly accumulations are so great that the gutters and crossings soon become littered and an eyesore to pedestrians.

The contents of the barrels collected by the push-cart patrol are removed at regular intervals by an odorless iron dumping-cart. This cart does not leak, is easily dumped, and has proved a valuable adjunct of the work of collecting the contents of the barrels.

The refuse collected by the patrol is taken to the dumping-scow and towed to sea. The refuse has considerable value as manure, but the extra cost of teaming it to the railroad stations, where it could be sold to farmers, prevents the division from disposing of it in this manner.

The following table shows the number of loads of street-sweepings removed each year during the last ten years :

Year.							No. of Cart-loads.
1882	.	.	.	.	.	.	52,381
1883	.	.	.	.	.	.	58,272
1884	.	.	.	.	.	.	62,222
1885	.	.	.	.	.	.	61,455
1886	.	.	.	.	.	.	59,875
1887	.	.	.	.	.	.	68,990
1888	.	.	.	.	.	.	68,010
1889	.	.	.	.	.	.	70,476
1890	.	.	.	.	.	.	70,449
1891	.	.	.	.	.	.	¹ 87,113
1891	.	.	.	.	.	.	² 91,425

¹ Jan. 1, 1890, to Jan. 1, 1891.

² Jan. 1, 1890, to Feb. 1, 1892 (date made necessary by the change in the financial year). Of this amount 4,290 loads were collected by the push-cart patrol.

DIFFICULTIES ENCOUNTERED BY THE DIVISION IN KEEPING
THE STREETS CLEAN.

The following quotations, taken from the report of the Committee on Street-Cleaning, appointed to investigate the subject in New York, apply to the city of Boston, and show that the inhabitants of a city are largely responsible for its condition as regards cleanliness :

If the existing laws and ordinances regulating the conduct of householders and citizens with respect to cleanliness were faithfully observed and duly enforced, the task of the Street-Cleaning Department would be greatly lightened.

The law against throwing litter and rubbish of any kind into the gutters and streets is daily and hourly violated in the best sections of the city, and that by people who have not the excuse of ignorance of the law.

We have seen prominent business-houses on Fifth avenue engaged in unpacking large cases upon the sidewalk, the operation involving the throwing into the streets of paper, straw, and litter of all descriptions.

We have seen well-dressed men, on their way down town, deliberately toss into the public highway the eight-page newspaper which they had just finished reading. We have seen the same class of people disembarass themselves of handfuls of paper and scraps by the same easy process.

We have seen men engaged in repairing the sidewalks, where the material taken up was decayed wood, throw the debris into the public streets, and leave it there in piles.

We have seen in front of a well-known and reputable establishment on Union square the remains of a large awning partially destroyed by fire cast deliberately into the gutter.

It is a matter of daily habit with many storekeepers upon the lines of the great lateral avenues to commence the day by sweeping out all the refuse litter of their stores into the streets.

It is useless to multiply these instances ; every one will recognize the fact of their daily and hourly occurrence. It is a hopeless task to keep the streets of this city clean so long as the people themselves are determined to keep them dirty.

So thoroughly convinced are we of the absolute necessity of the enforcement of these laws and ordinances, if it is really desired to keep the city clean, that, as a most essential part of the remedy we have been called upon to suggest, we urge upon the Mayor, as the chief executive officer of New York, to exercise all the authority he can command to bring all the departments charged with the execution of these laws and ordinances into cordial harmony and coöperation for their vigorous enforcement.

Realizing that the enforcement of such ordinances as were in force in this city would have a marked effect upon the appearance of the streets, the department issued the following circular, and distributed it throughout the retail district of the city :

OFFICE OF SUPERINTENDENT OF STREETS,
CITY HALL, BOSTON, April 4, 1891.

NOTICE TO OCCUPANTS.

Your attention is hereby called to the following section of the Revised Ordinances in relation to throwing or sweeping dirt of any kind into the public streets :

CHAPTER 49.

"SECT. 39. No person shall throw or sweep into, or place, or drop and suffer to remain, in any street, any hoops, boards, or other wood with nails, or nails of any kind which may be dangerous to horses' feet, any earth, dirt, gravel, sand, sweepings, sawdust, soot, ashes, cinders, shavings, hair, manure, oyster, clam, or lobster shells, rubbish or filth of any kind, or any noxious or refuse liquid or solid matter, or substance."

Sweeping store-dirt to the sidewalks, and thence to the gutters, is in violation of the above ordinance. You are therefore notified to provide other measures for the removal of all such sweepings and litter, as the above ordinance will be enforced.

(Signed)

H. H. CARTER,

Superintendent of Streets.

Following the issue of this circular, several parties were arrested and fined from \$10 to \$20.

There is no doubt that storekeepers still take advantage of the distinction between sweeping off the sidewalk and sweeping store-dirt across the sidewalk, as it is often noticed that they manage to get rid of the trouble of taking up a good deal of their refuse and putting it into barrels, by sweeping it into the gutters. The gutters in front of large wholesale and retail stores are frequently defaced with litter due to its being set out for the ashmen in broken boxes and barrels after the street itself has been swept up clean. A little painstaking on the part of store employees would help the matter considerably.

The ordinance will be even more rigidly enforced the coming year.

One of the greatest nuisances is caused by the distribution of handbills, which in most instances are thrown directly into the street without being read. An attempt was made by the department to get an ordinance passed by the government this year, to prevent this distribution; but, owing to the opposition of printers, the ordinance was not passed. Boston is now the only large city in the country which tolerates this nuisance.¹

The constant tearing up of our streets also causes a large amount of dirt to accumulate. In replacing the pavements, it is necessary to cover them with a layer of gravel, which eventually works into the joints. As this gravel is not

¹ Since the date of the publication of this report, the City Council has passed an ordinance prohibiting the distribution of handbills.

permitted to be swept up, it becomes ground to powder, forming a mud which is distributed over the surface of the streets in the vicinity. This nuisance is obviated by laying the pavement with gravel and tar joints, such as were used this year on Tremont street; but the employment of this method where ordinary repairs have been made is impracticable.

The following circular was sent to the different corporations that have frequent occasion to open the streets, in order that this nuisance should be remedied as far as possible :

STREET DEPARTMENT,
CITY HALL, BOSTON, Oct. 2, 1891.

You are hereby notified that in future all new paving done by your company is to be covered off with beach gravel instead of the dirty hill-gravel that you have been accustomed to use. This hill-gravel works into mud immediately, and I find it impossible to keep streets clean where it is used. Yours truly,

(Signed)

H. H. CARTER,

Superintendent of Streets.

In addition to the above-mentioned causes for an unclean appearance of the streets, we have in this city to contend with bad and uneven pavements of long standing that are extremely hard to keep clean.

The duties of the Street-Cleaning Division are not entirely confined to the actual work of keeping the streets clean. In winter, the sidewalks around the Common and all public squares and burying-grounds, and around many of the public buildings, are kept free from snow by the employes of this division. The snow is also removed from Harvard bridge, and the street-crossings kept free from snow and ice, and the gutters are opened up, so that on the occurrence of a thaw the water may find its way to the catch-basins and thence to the sewers.

FUTURE NEEDS OF THE DIVISION.

The growth of the city will soon demand the organization of separate gangs for the care of East Boston, Dorchester, and West Roxbury. In order that time may not be wasted in the transfer of men and machines to the location of their work, it will be necessary to provide suitable stables and offices in each of these districts.

A new dumping-wharf (which can also be used by the Sanitary Division) must be provided at the North End.

All the ashes and street-sweepings now teamed over to Cambridge from the City Proper should be dumped aboard a scow at the North End and towed to sea, as the saving of expense on teaming would be very great.

COST OF STREET-CLEANING.

In the report of the Citizens' Association for 1890, reference is made to the cost of street-cleaning and the removal of ashes and garbage in Boston, and a comparison is made with the cost in other cities, much to the disadvantage of the city of Boston.

The conditions which govern the expense of street-cleaning in different cities vary so much that it is almost impossible to make an intelligent comparison. The mere fact that a city has more miles of streets than the city of Boston, and spends less money on street-cleaning and the removal of ashes and garbage, does not necessarily show that the work is conducted more economically, as the question as to the thoroughness and method of carrying out the work is entirely omitted in such a comparison.

A comparison showing that it costs one city a certain number of dollars per mile to sweep the streets, and a certain number of cents per load to dispose of its street-dirt and ashes and garbage, does not necessarily show that the street-cleaning department in that city is either better organized or more economically managed than that of another city where the cost is shown to be greater. Certain local conditions and customs have a great bearing on the subject.

A city having well-paved streets, with a large number of accessible places suited for dumping refuse (so that the cost of teaming is reduced to a minimum), with no law established by the State Legislature limiting the hours of work to nine per day, and with a rate of wages for day-labor from fifty to seventy-five cents per day less than the rate established by the City Council of Boston, can undoubtedly show that it costs less to clean streets and remove ashes and garbage than it does the city of Boston.

In New York, ashes and garbage are not separated, but are put together in one receptacle, and are put in the space between the stoop and the house line, where they are easily accessible to the employees of the department. This method of obliging householders to put out their ashes and garbage, if adopted in Boston, would alone effect a saving of several thousand dollars per year, which the Sanitary Division expends for extra helpers who go into the houses and yards and carry out the ashes and garbage.

The report of the Citizens' Association cites Philadelphia and New York, and gives figures showing the amount of work done in comparison with the amount of money expended. The following table is taken from the reports of the Bureau of Street-cleaning in Philadelphia, where the work is all done by contract:

Year.	No. Miles cleaned.	No. Loads Street-dirt removed.	No. Loads Ashes removed.	No. Loads Garbage removed.	Total No. Loads removed.	Amount expended.	Com-plaints rec'd of inefficient Service.
1888.....	30,340	306,722	499,479	88,660	894,861	\$460,000	2,501
1889.....	44,870	256,572	413,631	59,593	729,796	425,042	1,381
1890.....	53,600	266,831	458,000	64,934	789,765	432,037	1,592
1891.....	.....	.....	.....	.....	.....	¹ 551,998	.....

¹ Amount recommended. Supervision not included.

If these figures are correct, it cannot be denied that the work of cleaning streets and collecting ashes and garbage in Boston costs much more than the same work in Philadelphia. The work in Philadelphia is done by contract, and the total force employed on the supervision is one chief of bureau, five inspectors, one clerk, and one messenger, at an annual expense of \$9,176. It might be asked how this force is enabled to keep the correct accounts of 900,000 loads of material collected and disposed of at different dumps. An inspection of the table reveals the remarkable fact that the offal of the city, which in 1888 amounted to 88,660 loads, fell off in 1890 to 64,934 loads. As the population increased during this time, and as the amount of offal should be a constant ratio to the population, this is a very remarkable showing, and tends to discredit the figures given in the report. In 1890, although 23,260 more miles of street were swept than in 1888, the amount of sweepings removed fell off 39,891 loads. As the average amount of dirt collected is generally about 6 loads per mile, there should have been a corresponding *increase* of 120,000 loads.

In view of the above facts, the generalizations by the Citizens' Association on the cost per load of dirt removed, which are based on these returns, must be accepted with caution. The sudden increase recommended for 1891, together with the fact that several hundred complaints are received during the year, leads to the conclusion that the work is not entirely satisfactory to the citizens, notwithstanding the extreme economy which is shown by the return.

New York is cited by the Citizens' Association to show the economical way in which street-cleaning is conducted, and also to show the advantages of the contract system. Since the report of the Citizens' Association, a report has been made by a committee appointed to examine the subject of street-cleaning in New York. This committee was appointed

by the Mayor to inquire into the filthy condition of the city, and has recommended the entire abolishment of the contract system, and that the sum of \$1,259,000 appropriated for street-cleaning in 1888 (which was cited in the report of the Citizens' Association) be increased to \$1,797,870 for the year 1892.

The cost of street-cleaning and the removal of ashes and garbage must necessarily vary in each city. A degree of cleanliness which would be entirely satisfactory to the residents of one city would be unsatisfactory to the residents of another. It is believed that the residents of Boston are more particular in this respect than the residents of most of the other large cities in the country, and that a degree of cleanliness is demanded here which is not deemed necessary in other cities.

The detailed report of the Deputy Superintendent of the Street-Cleaning Division gives tables showing the number of miles swept, cost of cleaning per mile, number of loads of street-dirt removed, and cost of same, together with other data relating to the division.

From the personal observations of officials connected with the department and from the comments made by visiting officials from other cities, it may be safely said that during the past year the condition of the streets of Boston as regards cleanliness has not been surpassed by those of any other city in this country.

A comparison of the condition of the streets of this city with those of European cities is frequently made by people who have returned from abroad. The following opinion, quoted from the ex-Commissioner of Street-cleaning of New York, fully explains the reason why European cities are cleaner than the cities in this country :

“ When superior cleanliness is observed in the principal cities of Western and Central Europe as compared with the condition of the streets in this city, it is not due to better methods of work or to the use of better apparatus, but is to be attributed to the existence of better pavement, the rigid enforcement of the municipal and sanitary ordinances relating to street-cleaning, the employment of at least double the amount of labor on the same mileage of streets, and the coöperation of the citizens with the officials in their task of securing and maintaining order and cleanliness.”

To this it might be added that European cities noted for cleanliness spend enormous sums of money on this work ; that men, women, and children are employed, who work twelve hours per day for a fraction of the sum paid laborers in this country who work only nine hours per day.

VIOLATION OF CITY ORDINANCES.

A large amount of correspondence has taken place between this department and the Board of Police during the year concerning the enforcement of the ordinances. In general, the Board has been willing to prosecute parties when specially requested, and when the evidence of the violation of the ordinance was to be furnished by the department, but in some instances have assumed that it was the duty of this department to make the prosecutions.

The department has taken the ground, conformably to an opinion of Mr. J. B. Richardson, formerly corporation counsel, that it is the duty of the police to prosecute violations of the ordinances, and has contented itself with notifying the Board of Police of such violations as were brought to its attention.

The following correspondence shows the attitude of the police authorities in the matter of prosecuting violations of the city ordinances :

Form No. 66.

POLICE DEPARTMENT OF THE CITY OF BOSTON,

Nov. 4, 1891.

To CAPT. CYRUS SMALL, *Superintendent of Police* :

I hereby report that Conrad Zeigler, No. 50 George street, has a steam-pipe entering the catch-basin in front of his dye-house, and the steam frightens horses as they pass.

(Signed)

GEO. A. WALKER,

Commanding Div. No. 9.

Referred to the Superintendent of Streets.

Respectfully forwarded,

(Signed)

CYRUS SMALL,

Superintendent of Police.

OFFICE SUPERINTENDENT OF POLICE, BOSTON, Nov. 5, 1891.

STREET DEPARTMENT, CITY HALL,

BOSTON, Nov. 6, 1891.

BOARD OF POLICE, No. 7 Pemberton square :

GENTLEMEN: I have received your "Form No. 66," addressed to Capt. Cyrus Small, and signed by Geo. A. Walker, commanding Div. No. 9, to the effect that Conrad Zeigler, 50 George street, has a steam-pipe entering the catch-basin in front of his dye-house, and that the steam frightens horses as they pass.

For some reason, this report has been referred to the Superintendent of Streets. As a catch-basin can be held to be part of the sewer, and as the emptying of steam into the sewer violates a city ordinance, it would seem that you have the remedy in your own hands; unless you consider it a part of the duty of the Superintendent of Streets to prosecute people who are violating the city ordinances.

Yours respectfully,

(Signed)

H. H. CARTER,

Superintendent of Streets.

The following letter was addressed to the Board of Police, in the hope that some coöperation could be obtained from the police officers in the task of keeping the streets clean :

STREET DEPARTMENT,

CITY HALL, BOSTON, Aug. 6, 1891.

BOARD OF POLICE, 7 *Pemberton square* :

GENTLEMEN: It is continually brought to my attention that the ordinance in relation to sweeping store-dirt into the streets is being violated. In fact, it is the regular practice of storekeepers to sweep out their dirt into the street at any time of day they see fit; and your policemen witness these violations and pay no attention whatever to them. These storekeepers should be compelled to sweep up their dirt and put it into barrels.

There is no reason, at least in the retail business section of the city, why this ordinance should not be strictly enforced; and I should like to have your officers warn the storekeepers whom they find violating this ordinance that on the repetition of the offence they will be prosecuted.

Yours very truly,

(Signed)

H. H. CARTER,

Superintendent of Streets.

CONCLUSION.

In carrying out the work of the department, the several divisions have worked in entire harmony throughout the year. The advantage is manifest of being able to carry on all work pertaining to the streets in such a manner that the work of the different divisions should be directed by one official, and therefore proceed with a system. There has been no useless duplication of work during the past year, and the work on sewers and paving has been carried along jointly, at a great saving of expense.

Appendices are submitted giving the reports of the different deputy superintendents, and, in accordance with the recommendation of the Citizens' Association, more attention has been given this year to introducing a new system of book-keeping ascertaining the cost of the various classes of work. Owing to the great number of streets on which improvements have been made, it is impossible to state, without taking up a great deal of space, the exact amount of work done on each street, although the expenditures are shown in all cases. When the cost of a sewer has exceeded \$2,000, and when the cost of the paving or construction of a street has exceeded \$3,000, the amount of work done is shown in detail. The several deputies have attended faithfully to their duties, and have endeavored to harmoniously work for the benefit of the whole department.

Respectfully submitted,

HENRY H. CARTER,

Superintendent of Streets.

STREET DEPARTMENT.

ORGANIZATION, 1891.

Central Office Room 47, City Hall.

HENRY H. CARTER, *Superintendent of Streets.*

JOHN W. McDONALD, *Purchasing Agent.*

HENRY B. WOOD, *Secretary and Executive Engineer.*

M. J. MURRAY, *Clerk.*

PAVING DIVISION.

Room 41, City Hall.

CHARLES R. CUTTER, *Deputy Superintendent.*

BENJAMIN B. TREMERE, *Chief Clerk.*

SEWER DIVISION.

Room 44, City Hall.

HENRY W. SANBORN, *Deputy Superintendent (ex officio, Engineer Improved Sewerage).*

FRANK H. RICE, *Chief Clerk.*

Engineer's Office, 12 Beacon Street.

E. S. DORR, *Engineer in Charge.*

SANITARY DIVISION.

12 Beacon Street.

GEO. W. FORRISTALL, *Deputy Superintendent.*

WILLIAM G. DAVIES, *Chief Clerk.*

STREET-CLEANING DIVISION.

14 Beacon Street.

PHILIP A. JACKSON, *Deputy Superintendent.*

THOMAS McLAUGHLIN, *Chief Clerk.*

BRIDGE DIVISION.

14 Beacon Street.

JOHN A. McLAUGHLIN, *Deputy Superintendent.*

FREDERICK H. SPRING, *Chief Clerk.*

CAMBRIDGE AND BOSTON BRIDGES.

HENRY H. CARTER, *Commissioner for Boston (ex officio).*

WILLIAM J. MARVIN, *Commissioner for Cambridge.*

APPENDIX A.

REPORT OF THE DEPUTY SUPERINTENDENT
OF THE BRIDGE DIVISION.

H. H. CARTER, Esq., *Superintendent of Streets:*

DEAR SIR: In compliance with your desires I herewith respectfully submit the following report of the acts and doings of the Bridge Department and Division from January 1, 1891, to January 31, 1892, inclusive.

There was on hand to the credit of the Bridge Department, January 1, 1891, a balance of \$23,572.99 to complete the year ending April 30, 1891. This sum was found to be insufficient to the amount of \$1,201.10.

On May 1, 1891, the sum of \$100,000 was allotted to the Bridge Division, for care, maintenance, etc., of the bridges to February 1, 1892, and of this sum there were expended by this division \$98,236.54.

The report contains a tabulated statement of the expenditures, and a description of the work performed on each bridge, together with tables conveying necessary and useful information, such as bridges supported wholly or in part by the city of Boston, etc.; widths of draw-openings; widths of bridges, roadways, and sidewalks; kind of pavement used; number of draw-openings made for navigation; census of traffic taken on some of the most important bridges; and an inventory of tools, vehicles, and horses on hand.

The total number of bridges in Boston, not including culverts, is one hundred and four; of this number, sixty-nine are supported wholly or in part by Boston, and include twenty-one tide-water bridges provided with draws. These, of all others, require constant care, and cover a territory from one extreme end of the city to the other. Previous to May 1, 1891, all the mechanics, etc., employed in the department were grouped in one body, having their only headquarters at Foundry street, South Boston, where tools, rigging, stock, and everything necessary for the work was kept. After careful consideration, it was decided that the efficiency of the mechanics employed could be increased by dividing the care and work on the most important bridges and estab-

lishing two districts, allotting to each district a certain number of men. On May 1, 1891, the reorganization went into effect, and was as follows: "North district," headquarters, Charles-river bridge, embracing all bridges from Winthrop to Brighton. "South district," headquarters at Foundry street, embracing all bridges from South Boston to Milton. The results obtained have been entirely satisfactory, and much more work has been accomplished than it was possible to do under the old system. Both forces can be concentrated in a very short time wherever their services are demanded.

With the exception of Charles-river, Chelsea-street, and Malden, the general condition of the bridges is good.

The lumber furnished during the year by the several firms having the contracts has been of excellent quality, and I take pleasure in saying that in no single case were we delayed because of a failure to promptly deliver the material ordered. At all times care was taken in ordering lumber to specify such lengths as would admit of the least waste.

The operatives of the tide-water bridges have performed their duties in a faithful and careful manner. All these bridges are furnished with a duplicate set of gearing, so that in case of a break the public will suffer but little delay and inconvenience. All patterns owned by the city, and known to be in the possession of outside concerns, have been reclaimed and placed in the care of the draw-tender of the bridge to which they belonged.

The inland bridges have been kept in a clean and safe condition, were thoroughly swept each week, chords cleaned and scuppers kept open.

SPECIAL WORK.

The report contains also the expenditures up to date on bridges built, or in process of construction, where special appropriations were provided. On all these bridges, since May 1, 1891, the woodwork, where any was called for, — viz., Cornwall street, over Stony brook, Milton; Berkeley street, over Boston & Albany Railroad; and Chelsea steam-apparatus, — has been performed by the men employed in this division, under the supervision of the City Engineer, and by plans furnished by him. This work was formerly done by contract, but I firmly believe the best results can be obtained by allowing those men to build who are to keep it in repair. The difference in the cost, if any, under such conditions, would be trifling, compared with the advantages derived from a thorough knowledge of the work.

We have endeavored to perform all work of this kind to the satisfaction of the City Engineer.

During the past year, Federal-street bridge has been completed, and an electric motor placed there to furnish the power necessary for opening and closing the draws. It has now been in operation for several months, and, so far, has proven satisfactory. The work of substituting steam for horse power at both the Chelsea draws is about complete, and the new method will be operated in a short time.

Very respectfully yours,

JOHN A. McLAUGHLIN,
Deputy Superintendent.

APPROPRIATIONS AND EXPENDITURES FOR THE FOUR MONTHS
ENDING APRIL 30, 1891.

Balance of appropriation, 1890-1, on hand, Jan. 1, 1891	\$23,572 99	
By transfer, April 30, 1891 (to make up deficit)	1,201 10	
Total		\$24,774 09

This amount was expended as follows:

By Bridge Department	\$13,982 52	
“ “ Division	10,791 57	
Total		<u>\$24,774 09</u>

APPROPRIATIONS AND EXPENDITURES FOR THE NINE MONTHS
ENDING JAN. 31, 1892.

Appropriation available, May 1	\$100,000 00	
Transferred to Sanitary Division	600 00	
Total.		\$99,400 00
Expended to Jan. 31, 1892		98,236 54
Balance		<u>\$1,163 46</u>

EXPENDITURES.

Administration.

Office expenses:	
Advertising	\$10 12
Printing	224 00
Carried forward,	<u>\$234 12</u>

<i>Brought forward,</i>	\$234 12	
Stationery and postage	152 94	
Office books	24 50	
Telephone	121 15	
Sundries	43 95	
	<hr/>	\$576 66
Superintendent of Bridges :		
Salary to April 1, 1891	\$625 00	
Board of horse	93 78	
Telephone at house	24 00	
	<hr/>	742 78
Salaries of Deputy Superintendent, clerk, and messenger		4,838 34
Salaries of general foreman and two district foremen, 9 months		3,381 00
Board of Deputy Superintendent's horse		261 00
Paid to widow of John T. Kilty, a former employee, by order of City Council		1,000 00
Paid to Walter Friend & Co., agents for schr. "S. C. Tryon," damages caused by insufficient width of draws on Charles-river bridges, as award of Committee on Claims		338 30
	<hr/>	
Amount expended, Administration		<u>\$11,138 08</u>
Expenditures on tide-water bridges	\$92,892 53	
" " inland "	8,351 75	
" North yard and stable	4,357 90	
" South " " "	6,270 37	
" Administration	11,138 08	
	<hr/>	
Total amount expended for the year, including draw-tenders' and mechanics' rolls for January, 1892		<u><u>\$123,010 63</u></u>

INCOME.

The amount of bills for repairing damage done to bridges by vessels, work done by the department, and sale of old iron, etc., deposited with the City Collector during the year, was	<u>\$1,183 40</u>
--	-------------------

TIDE-WATER BRIDGES.

Broadway bridge (over Fort-Point channel).

Sheathed draw and roadway, general repairs on machinery, new centre put in under draw, boat repaired and painted, and on Lehigh-street span put in new deck and painted ironwork underneath two coats.

Carpenters . . .	\$987 72	
Painters . . .	121 25	
Lumber . . .	1,380 33	
Nails and spikes . . .	30 88	
Ironwork . . .	99 87	
Paint-stock . . .	34 60	
Calking . . .	64 35	
Hardware . . .	3 05	
Boat-stock . . .	12 54	
Cement and sand . . .	12 40	
	<hr/>	\$2,746 99

Regular expenses :

Draw-tenders . . .	\$6,370 17	
Coal . . .	230 40	
Watering . . .	250 00	
Gas . . .	28 35	
Bedding . . .	41 50	
Water . . .	22 50	
Small supplies . . .	78 99	
	<hr/>	7,021 91

\$9,768 90

Cambridge-street bridge (from Brighton to Cambridge).

Rebuilt end of pier, new top laid, hard-pine capping and new iron bands, waterway repaired, extra gears attached to hoisting-machinery of draw.

Carpenters . . .	\$511 01	
Lumber . . .	444 87	
Nails and spikes . . .	7 00	
Ironwork . . .	242 46	
Car-fares . . .	8 90	
Teaming . . .	24 00	
Driving piles . . .	75 00	
	<hr/>	\$1,313 24

Regular expenses :

Draw-tender . . .	\$400 71	
Coal . . .	7 52	
Small supplies . . .	17 80	
	<hr/>	426 03

1,739 27

Charles-river bridge (from Boston to Charlestown) :

Built shed on pier for storage, put new trucks in place twice, repaired machinery, put new water-pipes in stable, and placed the same in box covering, painted boat, general repairs on engine, new smoke-stack, and sheathed draw twice.

Carpenters . . .	\$1,579 58	
Painters . . .	22 50	
Lumber . . .	521 86	

Carried forward, \$2,123 94

\$11,508 17

<i>Brought forward,</i>	\$2,123 94	\$11,508 17
Nails and spikes . . .	7 98	
Ironwork . . .	299 02	
Paint-stock . . .	3 45	
Plumbing . . .	250 00	
Hardware . . .	12 85	
Smoke-stack . . .	14 50	
	<hr/>	\$2,711 74

Regular expenses :

Draw-tenders . . .	\$5,387 50	
Coal . . .	464 40	
Watering . . .	250 00	
Gas . . .	30 55	
Furniture and bedding .	62 35	
Cordage . . .	234 79	
Water . . .	23 50	
Oil . . .	22 02	
Salt . . .	11 00	
Small supplies . . .	42 66	
	<hr/>	6,528 77

 9,240 51

Chelsea bridge [North] (over North channel, Mystic river).

Sheathed draw, repaired waterway, painted top and underside of bridge one coat, house painted inside and out, boat repaired and painted, new sidewalk on draw, new steps from draw to pier, and reset buoy.

Carpenters . . .	\$546 00	
Painters . . .	326 00	
Lumber . . .	189 93	
Nails and spikes . . .	3 75	
Ironwork . . .	69 39	
Paint-stock . . .	86 87	
Boat-stock . . .	4 60	
Setting buoy . . .	56 00	
	<hr/>	\$1,282 54

Regular expenses :

Draw-tenders . . .	\$3,059 76	
Feed . . .	107 36	
Coal . . .	24 15	
Horse-shoeing . . .	19 25	
Gas . . .	34 51	
Woollen carpet . . .	20 93	
Water . . .	4 50	
Veterinary service . . .	5 00	
Repairing harness . . .	7 90	
Small supplies . . .	49 08	
	<hr/>	3,332 44

 4,614 98

Carried forward,

 \$25,363 66

Brought forward,

\$25,363 66

Chelsea bridge [South] (over South channel, Mystic river).

Sheathed draw, new oak headers, reslated draw-tenders' house, painted top of bridge one coat, underside two coats, draw-tenders' house, outside, one coat, inside painted and varnished.

Carpenters . . .	\$478 07	
Painters . . .	492 50	
Lumber . . .	245 74	
Nails and spikes . . .	11 25	
Ironwork . . .	85 64	
Paint-stock . . .	101 79	
Plumbing . . .	5 00	
Slating . . .	41 25	
	<hr/>	\$1,461 24

Regular expenses :

Draw-tenders . . .	\$3,059 76	
Feed . . .	119 97	
Coal . . .	19 20	
Horse-shoeing . . .	37 50	
Gas . . .	38 52	
Bedding . . .	15 00	
Water . . .	11 25	
Repairing harness . . .	17 40	
Small supplies . . .	60 98	
	<hr/>	3,379 58

4,840 82

Chelsea-street bridge (from East Boston to Chelsea).

Replanked draw, repaired sheathing on roadway, and painted top of bridge two coats.

Carpenters . . .	\$114 33	
Painters . . .	59 00	
Lumber . . .	170 12	
Nails and spikes . . .	6 75	
Ironwork . . .	6 85	
Paint-stock . . .	49 90	
Car-fares . . .	10 32	
Teaming . . .	2 00	
	<hr/>	\$419 27

Regular expenses :

Draw-tender . . .	\$327 75	
Small supplies . . .	5 55	
	<hr/>	333 30

752 57

Carried forward,

\$30,957 05

Brought forward,

\$30,957 05

Commercial Point, or Tenean bridge (Dorchester).

Made new flaps for draw, and extensive repairs made on hoisting-gear.

Carpenters	\$46 00	
Lumber	9 02	
Ironwork	249 69	
Car-fares	2 50	
	<hr/>	\$307 21

Regular expenses :

Draw-tender	50 00	
	<hr/>	

357 21

Congress-street bridge (over Fort-Point channel).

Sheathed draw twice, repaired stringers under draw, repaired machinery, painted buildings and bridge, general repairs on engine and boilers, and repaired concrete sidewalk.

Carpenters	\$961 90	
Painters	595 75	
Lumber	575 27	
Nails and spikes . .	9 00	
Ironwork	721 85	
Paint-stock	119 82	
Hardware	11 90	
Teaming	18 00	
Repairing concrete walk .	21 66	
Two new pier signs . .	12 00	
	<hr/>	\$3,047 15

Regular expenses :

Draw-tenders	\$6,042 16	
Coal	307 80	
Watering	125 00	
Furniture and bedding .	27 40	
Water	100 44	
Small supplies	87 19	
	<hr/>	6,689 99

9,737 14

Dover-street bridge (over Fort-Point channel).

Repaired deck, sidewalks, fender-guards, and waterway, sheathed draws twice, put in three new sets of trucks, repaired road-gates, and put in oak sleepers under track rails, built new chimney on house, new plumbing in house and stable.

Carpenters	\$1,409 61	
Painters	10 00	
Lumber	269 90	
Nails and spikes . . .	6 00	
Ironwork	813 38	
	<hr/>	

Carried forward, \$2,508 89

\$41,051 40

<i>Brought forward,</i>	\$2,508 89	\$41,051 40
Paint-stock . . .	3 44	
Plumbing . . .	438 00	
Hardware . . .	10 30	
New chimney . . .	31 00	
	<hr/>	
	\$2,991 63	

Regular expenses :		
Draw-tenders . . .	\$4,917 96	
Feed . . .	229 73	
Coal . . .	22 45	
Horse-shoeing . . .	26 00	
Watering . . .	125 00	
Gas . . .	32 68	
Water . . .	13 50	
Repairing harness . . .	6 35	
Small supplies . . .	103 72	
	<hr/>	
	5,477 39	
	<hr/>	
		8,469 02

Essex-street bridge (from Brighton to Cambridge).

Sheathed roadway, laid new sidewalk, and repaired latches.

Carpenters . . .	\$283 50	
Lumber . . .	246 37	
Nails and spikes . . .	7 00	
Ironwork . . .	12 53	
Car-fares . . .	20 40	
	<hr/>	
	\$569 80	

Regular expenses :		
Draw-tender . . .	\$721 62	
Coal . . .	7 27	
Repairs on stove . . .	6 60	
Small supplies . . .	1 31	
	<hr/>	
	736 80	
	<hr/>	
		1,306 60

Federal-street bridge (over Fort-Point channel).

Adjusted draws and made small repairs.

Carpenters . . .	\$234 37	
Ironwork . . .	6 46	
Hardware . . .	5 98	
New signs for road-gates,	10 50	
Teaming old iron . . .	24 00	
	<hr/>	
	\$281 31	

Regular expenses :		
Draw-tenders . . .	\$5,757 07	
Feed . . .	17 43	
Coal . . .	126 44	
Horse-shoeing . . .	4 00	
Watering . . .	125 00	
	<hr/>	
<i>Carried forward,</i>	\$6,029 94	\$281 31
		<hr/>
		\$50,827 02

<i>Brought forward,</i>	\$6,029 94	\$281 31	\$50,827 02
Gas	9 30		
Furniture and bedding	64 12		
Cordage	21 36		
Water	44 76		
Small supplies	125 10		
	<hr/>	6,294 58	
		<hr/>	6,575 89

Granite bridge (from Dorchester to Milton).

Repaired sheathing and latches on the draw.

Carpenters	\$6 25	
Lumber	4 43	
	<hr/>	\$10 68

Regular expenses :

Draw-tender	\$262 20	
Small supplies	2 77	
	<hr/>	264 97

275 65

Malden bridge (from Charlestown to Everett).

Sheathed draw, put in new oak headers, repaired machinery, adjusted draw, located buoy-stone, and repaired and painted boat.

Carpenters	\$322 36	
Painters	7 50	
Lumber	22 75	
Ironwork	69 75	
Paint-stock	2 00	
Car-fares	12 85	
Finding buoy-stone	25 00	
	<hr/>	\$462 21

Regular expenses :

Draw-tenders	\$2,836 87	
Coal	9 95	
Watering	165 00	
Gas	7 36	
Water	9 00	
Repairs on stove	5 60	
Small supplies	20 53	
	<hr/>	2,554 31

3,016 52

Meridian-street bridge (from East Boston to Chelsea).

Sheathed draw, put in new oak headers, new rack, and new pinion gear, repaired stable and water-way, painted top and underside of bridge, also painted buildings two coats, water-pipes repaired, duplicate parts of machinery placed on bridge, and reset buoy.

Carpenters	\$544 63	
Painters	501 75	

Carried forward, \$1,046 38

\$60,695 08

<i>Brought forward,</i>	\$1,046 38	\$60,695 08
Lumber	159 50	
Nails and spikes	4 50	
Ironwork	230 04	
Paint stock	182 95	
Car-fares	56 04	
Plumbing	295 86	
Resetting buoy	54 65	
	<hr/>	\$2,029 92

Regular expenses :

Draw-tenders	\$2,994 01	
Feed	131 00	
Coal	30 10	
Horse-shoeing	25 75	
Gas	27 00	
Bedding	11 45	
Cordage	3 48	
Water	9 00	
New horse for turning draw	250 00	
New stove	23 90	
Small supplies	55 88	
	<hr/>	3,561 57

5,591 49

Mt. Washington-avenue bridge (over Fort-Point channel).

All woodwork on draw rebuilt, new stringers, deck, guards, oak centre, sidewalks, fences; also deck calked. Added a story on draw-tender's house, containing three rooms, put in new water-closet and new plumbing, repaired sidewalk on bridge, also waterway, painted underside and top of bridge two coats, buildings inside and out two coats, repaired and painted boat.

Carpenters	\$1,997 69	
Painters	480 75	
Lumber	1,459 60	
Nails and spikes	58 77	
Ironwork	368 07	
Paint-stock	98 16	
Plumbing	198 75	
Calking	123 80	
Hardware	23 16	
Plastering	80 00	
New chimney	38 85	
Roofers' bill	56 20	
	<hr/>	\$4,983 80

Regular expenses :

Draw-tenders	\$5,393 49
Coal	38 00

<i>Carried forward,</i>	\$5,431 49	\$4,983 80	\$66,286 57
-------------------------	------------	------------	-------------

<i>Brought forward,</i>	\$5,431 49	\$4,983 80	\$66,286 57
Watering	125 00		
Gas	24 15		
Furniture and bedding . .	70 12		
Water	4 50		
Rent of land two years . .	120 00		
New stove	21 35		
Small supplies	49 18		
	<hr/>	5,845 79	
			10,829 59

Neponset bridge (from Dorchester to Quincy).

Laid new top on easterly pier, repaired waterway and hoisting machinery, and rebuilt new sidewalk.

Carpenters	\$404 91		
Lumber	307 54		
Nails and spikes . . .	18 50		
Ironwork	329 60		
Car-fares	22 36		
Hardware	1 20		
	<hr/>	\$1,084 11	

Regular expenses :

Draw-tender	437 19		
	<hr/>		

1,521 30

North Beacon-street bridge (from Brighton to Watertown).

Sheathed roadway and draw.

Carpenters	\$60 50		
Lumber	153 60		
Nails and spikes . . .	3 20		
	<hr/>	\$217 30	

Regular expenses :

Draw-tender	82 08		
	<hr/>		

299 38

North Harvard-street bridge (from Brighton to Cambridge).

Repaired waterway and built new house on pier for draw-tender.

Carpenters	\$181 00		
Painters	7 50		
Lumber	114 11		
Nails and spikes . . .	1 87		
Ironwork	77 08		
Paint-stock	2 00		
Car-fares	3 00		
	<hr/>	\$386 56	

Regular expenses :

Draw-tender	\$400 71		
Small supplies	1 75		
	<hr/>	402 46	

789 02

Carried forward,

\$79,725 86

Brought forward,

\$79,725 86

Warren bridge (from Boston to Charlestown).

Sheathed draws three times, placed new iron ladder in engine-house, repaired machinery and engines, repaired fender-guards, road-gates, and fence, painted underside and top of bridge, and all buildings two coats, and put in new cables.

Carpenters . . .	\$929 46	
Painters . . .	675 00	
Lumber . . .	340 01	
Nails and spikes . . .	6 75	
Ironwork . . .	260 18	
Paint-stock . . .	18 46	
Plumbing . . .	2 15	
Wire rope . . .	38 77	
	<hr/>	\$2,270 78

Regular expenses :

Draw-tenders . . .	\$5,792 34	
Coal . . .	577 80	
Watering . . .	375 00	
Gas . . .	68 81	
Bedding . . .	7 50	
Water . . .	45 00	
Small supplies . . .	82 21	
	<hr/>	6,948 66

9,219 44

Western-avenue bridge (from Brighton to Cambridge).

Repaired sheathing on roadway and draw.

Carpenters . . .	\$93 46	
Lumber . . .	105 57	
Nails and spikes . . .	4 60	
Ironwork . . .	8 78	
Car-fares . . .	1 40	
	<hr/>	\$213 81

Regular expenses :

Draw-tender . . .	\$400 71	
Coal . . .	4 85	
Small supplies . . .	1 75	
	<hr/>	407 31

621 12

Western-avenue bridge (from Brighton to Watertown).

Put in new deck and sheathed roadway and draw.

Carpenters . . .	\$156 52	
Lumber . . .	193 45	
Nails and spikes . . .	11 80	
Ironwork . . .	4 00	
Car-fares . . .	11 60	
	<hr/>	\$377 37

Carried forward,

\$377 37

\$89,566 42

<i>Brought forward,</i>		\$377 37	\$89,566 42
Regular expenses :			
Draw-tender . . .	\$82 08		
Small supplies . .	1 25		
	<hr/>	83 33	
			460 70

Winthrop bridge (from Breed's Island to Winthrop).

Repaired wheel-guards.

Carpenters . . .	\$35 00		
Ironwork . . .	4 80		
	<hr/>	\$39 80	

Regular expenses :

Draw-tender . . .	\$100 00		
Small supplies . .	2 50		
	<hr/>	102 50	
			142 30

Sundry expenditures on tide-water bridges :

Building sanitary boxes .	\$182 10		
Sundry car-fares . . .	202 86		
Repairing boats . . .	60 00		
City Engineer, horse-hire for	17 50		
City Engineer, use of steam-launch . .	48 00		
	<hr/>	\$510 46	

Regular expenses :

Chief draw-tender (9 months) . . .	\$1,350 00		
Messenger (9 months) .	598 26		
Counting traffic . . .	62 50		
Sundry bridge supplies .	201 89		
	<hr/>	2,212 65	
			2,723 11

Total expended on tide-water bridges . . . \$92,892 53

RECAPITULATION.

Table showing Expenditures on the Tide-water Bridges for the Year ending Feb. 1, 1892.

NAME OF BRIDGE.	Repairs, labor, lumber, ironwork, and painting.	Regular ex- penses, salaries, fuel and supplies.	Total.
Broadway.....	\$2,746 99	\$7,021 91	\$9,768 90
Cambridge-street	1,313 24	426 03	1,739 27
Charles-river.....	2,711 74	6,528 77	9,240 51
Chelsea (North).....	1,282 54	3,332 44	4,614 98
Chelsea (South).....	1,461 24	3,379 58	4,840 82
Chelsea-street.....	419 27	333 30	752 57
Commercial-point	307 21	50 00	357 21
Congress-street.....	3,047 15	6,689 99	9,737 14
Dover-street	2,991 63	5,477 39	8,469 02
Essex-street.....	569 80	736 80	1,306 60
Federal-street.....	281 31	6,294 58	6,575 89
Granite	10 68	264 97	275 65
Malden	462 21	2,554 31	3,016 52
Meridian-street.....	2,029 92	3,561 57	5,591 49
Mt. Washington-avenue.....	4,983 80	5,845 79	10,829 59
Neponset	1,084 11	437 19	1,521 30
North Beacon-street	217 30	82 08	299 38
North Harvard-street	386 56	402 46	789 02
Warren.....	2,270 78	6,948 66	9,219 44
Western-avenue (to Cambridge)..	213 81	407 31	621 12
Western-avenue (to Watertown)..	377 37	83 33	460 70
Winthrop.....	39 80	102 50	142 30
Chief draw-tender, and sundry ex- penditures	510 46	2,212 65	2,723 11
Totals.....	\$29,718 92	\$63,173 61	\$92,892 53

INLAND BRIDGES.

Albany-street bridge (over Boston & Albany Railroad).

Sheathed roadway and painted top of bridge.

Carpenters	.	.	.	.	.	\$128 75
Painters	.	.	.	.	.	320 50
Lumber	.	.	.	.	.	132 28
Nails	.	.	.	.	.	3 00
Paint-stock	.	.	.	.	.	29 70

\$614 23

Ashland-street bridge (over Old Colony Railroad, Providence Division).

Sheathed roadway.

Carpenters	.	.	.	.	.	\$43 12
Lumber	.	.	.	.	.	97 92
Nails	.	.	.	.	.	2 35

143 39

Baker-street bridge (over brook, near Cow Island, West Roxbury).

Repaired sheathing on roadway.

Carpenters	.	.	.	.	.	\$16 00
Lumber	.	.	.	.	.	21 26
Nails	.	.	.	.	.	2 25

39 51

Beacon-street bridge (over Boston & Albany Railroad).

Sheathed roadway.

Carpenters	.	.	.	.	.	\$97 01
Lumber	.	.	.	.	.	159 35
Nails	.	.	.	.	.	3 90
Car-fares	.	.	.	.	.	10 65

270 91

Berkeley-street bridge (over Old Colony Railroad, Providence Division).

Sheathed roadway.

Carpenters	.	.	.	.	.	\$196 50
Lumber	.	.	.	.	.	493 15
Nails	.	.	.	.	.	9 00

698 65

Boylston-street bridge (over Boston & Albany Railroad).

Sheathed westerly roadway in 1890, paid for stock this year.

Carpenters	.	.	.	.	.	\$4 69
Lumber	.	.	.	.	.	136 96
Sand	.	.	.	.	.	1 75

143 40

Carried forward,

\$1,910 09

Brought forward,

\$1,910 09

Broadway bridge (over Boston & Albany Railroad).

Sheathed roadway, and repaired deck where defective.

Carpenters	.	.	.	.	.	\$58 50
Lumber	.	.	.	.	.	75 69
Nails	.	.	.	.	.	2 40

136 59

Canterbury-street bridge (over Stony Brook).

Repaired sheathing where defective :

Carpenters	.	.	.	.	.	\$22 50
Lumber	.	.	.	.	.	39 83
Nails (from stock).						

62 33

Central-avenue bridge (from Dorchester to Milton).

Repaired sheathing, and painted fences on the bridge.

Carpenters	.	.	.	.	.	\$13 75
Painters	.	.	.	.	.	28 75
Lumber	.	.	.	.	.	9 10
Paint	.	.	.	.	.	71 10
Nails (from stock).						
Teaming	.	.	.	.	.	4 00

126 70

Columbus-avenue bridge (over Boston & Albany Railroad).

Sheathed roadway.

Carpenters	.	.	.	.	.	\$46 62
Lumber	.	.	.	.	.	85 64
Nails	.	.	.	.	.	2 15

133 41

Commonwealth-avenue bridge (over outlet to Back Bay).

Sheathed roadway.

Carpenters	.	.	.	.	.	\$82 62
Lumber	.	.	.	.	.	143 43
Nails	.	.	.	.	.	4 60
Car-fares	.	.	.	.	.	7 50

238 15

Cottage-street (foot) bridge (from Jeffries Point to Wood Island).

Painted part of bridge fence.

Painters	.	.	.	.	.	\$264 25
Paint-stock	.	.	.	.	.	44 20
Watchman (permanently employed)	.					798 00

Carried forward,

\$1,106 45

\$2,607 27

<i>Brought forward,</i>	\$1,106 45	\$2,607 27
Coal	5 10	
Stove	7 54	
	<hr/>	1,119 09

Dartmouth-street bridge (over Boston & Albany, and Providence Division of Old Colony Railroad).

Sheathed roadway and painted top of bridge one coat.

Carpenters	\$85 25	
Painters	398 75	
Lumber	176 37	
Nails	6 60	
Paint-stock	79 63	
	<hr/>	746 60

Dorchester-street bridge (over Old Colony Railroad, Central Division).

Roadway sheathed by Old Colony Railroad Company, the City paying for its share, one-fifth 11 93

Ferdinand-street bridge (over Boston & Albany Railroad).

Services of watchman to guard the bridge after it was condemned by the City Engineer, and before the rebuilding of the same was commenced 255 00

Gardner-street bridge (over brook, near Cow Island, West Roxbury).

New structure built.

Carpenters	\$150 88	
Lumber	70 43	
Nails	2 25	
Gravel	9 50	
Car-fares	21 40	
	<hr/>	254 46

Huntington-avenue bridge (over Boston & Albany Railroad).

Repaired sheathing on roadway.

Carpenters	\$59 50	
Lumber	97 10	
Nails	3 15	
	<hr/>	159 75

Hyde Park-avenue bridge (over Stony brook).

Repaired sheathing on roadway.

Carpenters	\$11 50	
Lumber	31 01	
Nails	1 20	
	<hr/>	43 71

Carried forward,

\$5,197 81

Brought forward,

\$5,197 81

Mattapan bridge (from Dorchester to Milton).

Repaired sheathing.

Carpenters	.	.	.	.	.	\$22 25
Lumber	.	.	.	.	.	13 91
Nails (from stock).						

36 16

Shawmut-avenue bridge (over Boston & Albany Railroad).

Sheathed roadway and repaired sidewalk.

Carpenters	.	.	.	.	.	\$76 13
Lumber	.	.	.	.	.	116 52
Nails	.	.	.	.	.	3 50
Cement	.	.	.	.	.	2 75

198 90

Summer-street bridge (near Spring-street station, West Roxbury).

New deck laid, sheathed roadway, built new sidewalk and fence.

Carpenters	.	.	.	.	.	\$8 75
Lumber	.	.	.	.	.	18 41
Nails (from stock).						

27 16

Swett-street bridge (east of New York & New England Railroad).

Sheathed roadway.

Carpenters	.	.	.	.	.	\$188 52
Lumber	.	.	.	.	.	140 95
Nails	.	.	.	.	.	4 60

334 07

Swett-street bridge (west of New York & New England Railroad).

Strengthened the entire structure underneath, according to plans of City Engineer, and sheathed roadway.

Carpenters	.	.	.	.	.	\$550 81
Lumber	.	.	.	.	.	282 35
Nails and spikes	.	.	.	.	.	10 92
Ironwork	.	.	.	.	.	6 60
Car-fares	.	.	.	.	.	4 50
Rubber boots	.	.	.	.	.	16 00
Repairs on portable tool-house	.	.				7 45

878 63

Texas-street bridge (over Stony Brook).

New deck, new stringers where defective, and new sidewalks.

Carpenters	.	.	.	.	.	\$26 50
Lumber	.	.	.	.	.	26 24
Nails	.	.	.	.	.	1 25

53 99

Carried forward,

\$6,726 72

<i>Brought forward,</i>		\$6,726 72
West Chester-park bridge (over Old Colony railroad, Providence Division).		
Sheathed roadway.		
Carpenters	. . . . .	\$38 88
Lumber	. . . . .	76 97
Nails	. . . . .	2 60
		<hr/>
		118 45
West Newton-street bridge (over Old Colony Railroad, Providence Division).		
Sheathed roadway and repaired sidewalks.		
Carpenters	. . . . .	\$34 50
Lumber	. . . . .	75 01
Nails	. . . . .	2 20
		<hr/>
		111 71
Sundry expenditures on inland bridges :		
Labor, removing snow	. . . . .	\$979 75
“ bridge cleaner	. . . . .	388 49
Sand for slippery walks	. . . . .	26 63
		<hr/>
		1,394 87
Total		<hr/>
		\$8,351 75
		<hr/>

RECAPITULATION.

Table showing Expenditures on the Inland Bridges during the Year ending Feb. 1, 1892.

Name of Bridge.	Repairs, labor, lumber, iron- work, and painting.
Albany-street	\$614 23
Ashland-street	143 39
Baker-street	39 51
Beacon-street (over B. & A. R.R.)	270 91
Berkeley-street (over Providence Division, O. C. R.R.)	698 65
Boylston-street (over B. & A. R.R.)	143 40
Broadway (over B. & A. R.R.)	136 59
Canterbury-street	62 33
Central-avenue	126 70
Columbus-avenue	133 41
Commonwealth-avenue (over Outlet)	238 15
Cottage-street	1,119 09
Dartmouth-street	746 60
Dorchester-street	11 93
Ferdinand-street	255 00
Gardner-street	254 46
Huntington-avenue	159 75
Hyde Park-avenue	43 71
Mattapan	36 16
Shawmut-avenue	198 90
Summer-street	27 16
Swett-street (East)	334 07
Swett-street (West)	878 63
Texas-street	53 99
West Chester-park (over Providence Division, O. C. R R.)	118 45
West Newton-street	111 71
Sundry expenditures	1,394 87
Total	<u>\$8,351 75</u>

REGULAR MAINTENANCE EXPENSES AT NORTH AND SOUTH YARDS.

NORTH YARD, DISTRICT NO. 1.

Charles-River Bridge.

Messenger	\$644 28	
Watchman	545 00	
Repairing buildings	283 39	
Painting signs	9 52	
Tools for carpenters	162 28	
Tools for painters	81 32	
Bridge flags	96 00	
Supplies	70 04	
Telephone	116 33	
Stock, lumber, nails, and paint	80 70	
	<hr/>	\$2,088 86

Stable, District No. 1.

Teamster	\$587 50	
Hostler	296 50	
Feed	231 43	
Repairs on buggy	3 95	
“ “ wagons	131 70	
Horse-shoeing	34 75	
Harness and repairs	91 80	
Supplies	142 41	
New buggy	200 00	
Bay horse	325 00	
“ “	200 00	
Veterinary services	21 00	
Horse-clipping	3 00	
	<hr/>	2,269 04

Amount expended North Yard and Stable, \$4,357 90

SOUTH YARD, DISTRICT NO. 2.

Foundry Street.

Messenger	\$644 28	
Yardman	515 75	
Watchman	562 50	
Repairing buildings	97 19	
Making street-horses	64 97	
Painting signs	33 25	
Tools for carpenters	268 45	
Tools for painters	72 49	
Bridge flags	93 80	
	<hr/>	
<i>Carried forward,</i>	\$2,352 68	

<i>Brought forward,</i>	\$2,352 68
Supplies	75 97
Telephone	120 00
Stock, lumber, nails, and paint	136 94
	<hr/>
	\$2,685 59

Stable, District No. 2.

Teamster	\$873 12
Hostler	590 00
Feed	321 50
Repairs on buggy	96 15
“ “ wagons	144 20
Horse-shoeing	119 25
Harness and repairs	187 50
Supplies	62 23
New buggy	275 00
“ wagon	200 00
Brown horse	325 00
Gray horse	250 00
Veterinary services	30 00
Horse-clipping	5 00
Use of horse	85 83
“ “ buggy	20 00
	<hr/>
	3,584 78
Amount expended South Yard and Stable,	<hr/>
	\$6,270 37
	<hr/>

Total amount expended at North and South Yards, \$10,628 27

SPECIAL APPROPRIATIONS.

Berkeley-street bridge (over Boston & Albany Railroad).

Building new iron bridge, parapets and bridge seats.
(work in progress).

Bridge seats and parapets	\$2,084 86
Iron bridge structure	4,898 00
Carpenters	998 34
Painters	224 00
Inspector	170 00
Iron bolts	11 88
Advertising and specifications	106 10
Hand-stamp	3 00
	<hr/>
Expended Jan. 31, 1892	\$8,496 18
Balance	9,503 82
	<hr/>
Appropriation	<u>\$18,000 00</u>

Chelsea bridge, steam apparatus. New engines, boilers, etc., new motive power for the North and South draws of Chelsea bridge.

(Work in progress.)

Carpenters	\$1,855 95
Painters	187 00
Lumber	1,056 53
Nails	19 93
Paint	19 75
Bolts, washers, straps, etc.	170 89
Six iron tanks	60 00
Hose	14 60
One double engine and boiler, North draw	660 00
One double engine and boiler, South draw	745 00
Angle-irons, wire rope, sheave, etc., North draw	589 00
Groove, steel chain, brackets, etc., South draw	1,192 00
Foundation to engine-house, North draw	919 70
Engineers' rolls	270 84
Advertising	4 26
Sand and cement	3 00
<hr/>	
Expended Jan. 31, 1892	\$7,768 45
Balance	4,231 55
<hr/>	
Appropriation	<u>\$12,000 00</u>

Cornwall street, laying out and constructing.
Cornwall-street bridge (over Stony Brook, Ward 23). Building new wooden bridge (completed).

Carpenters	\$657 50
Lumber	554 63
Nails	5 35
Ironwork	312 99
Hardware	6 99
Car-fares	10 70
<hr/>	
Amount expended as per books of this division	<u>\$1,548 16</u>

Irvington-street (foot) bridge (over Providence Division, Old Colony Railroad).

Building new iron foot-bridge, new abutment and painting old one (completed).

Advertising and specifications	\$101 34
Inspector	145 00
Building new retaining-wall	3,472 00
Painting old retaining-wall	50 00
Iron foot-bridge complete	1,773 00
<hr/>	
Amount expended as per books of this division	<u>\$5,541 34</u>

Milton bridge, repairing. Milton bridge (over Neponset river, from Dorchester to Milton).

Making general repairs (completed).

Carpenters	\$631 35
Painters	87 50
Lumber	1,175 52
Nails	3 86
Ironwork	20 50
Paint	4 85
Graving, etc.	75 26
Car-fares	62 50

Amount expended as per books of this division .	<u>\$2,061 34</u>
---	-------------------

I. — BRIDGES WHOLLY SUPPORTED BY BOSTON.

In the list, those marked with an asterisk are over navigable waters, and are each provided with a draw.

Agassiz, in Back-Bay Fens.

Ashland street, Ward 23, over Old Colony Railroad, Providence Division.

Athens street, over N. Y. & N. E. Railroad.

Beacon entrance, Back-Bay Fens, over Boston & Albany Railroad.

Beacon street, over outlet to Back-Bay Fens.

Beacon street, over Boston & Albany Railroad.

Berkeley street, over Boston & Albany Railroad.

Berkeley street, over Old Colony Railroad, Providence Division.

Blakemore street, over Old Colony Railroad, Providence Division, Ward 23.

Bolton street, over N. Y. & N. E. Railroad.

Boylston street, over Boston & Albany Railroad.

Boylston street, over outlet to Back-Bay Fens.

* Broadway, over Fort-Point Channel.

Broadway, over Boston & Albany Railroad.

Brookline avenue, over Boston & Albany Railroad.

Byron street, over Boston, Revere Beach, & Lynn Railroad.

* Charles River, from Boston to Charlestown.

* Chelsea (South), over South Channel, Mystic River.

* Chelsea street, from East Boston to Chelsea.

Columbus avenue, over Boston & Albany Railroad.

* Commercial Point, or Tenean, Ward 24.

Commonwealth avenue, over outlet to Back-Bay Fens.

* Congress street, over Fort-Point Channel.

Cornwall street, over Stony Brook, Ward 23.

Cottage-street foot-bridge, from Jeffries Point to Wood Island.

Dartmouth street, over Boston & Albany, and Providence Division of Old Colony Railroad.

* Dover street, over Fort-Point Channel.

* Federal street, over Fort-Point Channel.

Ferdinand street, over Boston & Albany Railroad.

Franklin-street foot-bridge, over Boston & Albany Railroad.

Gold-street foot-bridge, over N. Y. & N. E. Railroad.

Huntington avenue, over Boston & Albany Railroad.

Irvington-street foot-bridge, over Old Colony Railroad, Providence Division.

Leyden street, over Boston, Revere Beach, & Lynn Railroad.

Linden Park street, over Stony Brook.

* Malden, from Charlestown to Everett.

* Meridian street, from East Boston to Chelsea.

* Mt. Washington avenue, over Fort-Point Channel.

Neptune, over Boston, Revere Beach, & Lynn Railroad.

Public Garden foot-bridge.

Shawmut avenue, over Boston & Albany Railroad.

Swett street, east of N. Y. & N. E. Railroad.

Swett street, west of N. Y. & N. E. Railroad.

* Warren, from Boston to Charlestown.

West Chester park, over Boston, & Albany Railroad.

West Chester park, over Old Colony Railroad, Providence Division.

West Newton street, over Old Colony Railroad, Providence Division.

West Rutland square foot-bridge, over Old Colony Railroad, Providence Division.

Winthrop, from Breed's Island to Winthrop.

II. — BRIDGES OF WHICH BOSTON SUPPORTS THE PART WITHIN ITS LIMITS.

* Cambridge street, from Brighton to Cambridge.

Central avenue, from Ward 24 to Milton.

* Chelsea (North), from Charlestown to Chelsea.

* Essex street, from Brighton to Cambridge.

* Granite, from Dorchester, Ward 24, to Milton.

Longwood avenue, from Ward 22 to Brookline.

Mattapan, from Ward 24 to Milton.

Milton, from Ward 24 to Milton.

* Neponset, from Ward 24 to Quincy.

* North Beacon street, from Brighton to Watertown.

* North Harvard street, from Brighton to Cambridge.

Spring street, from West Roxbury to Dedham.

* Western avenue, from Brighton to Cambridge.

* Western avenue, from Brighton to Watertown.

III. — BRIDGES OF WHICH BOSTON PAYS A PART OF THE COST OF MAINTENANCE.

Albany street, over Boston & Albany Railroad.

Dorchester street, over Old Colony Railroad, Central Division.

* Harvard, from Boston to Cambridge.

* Canal, from Boston to Cambridge.

* Prison Point, from Charlestown to Cambridge.

* West Boston, from Boston to Cambridge.

The last three bridges are in the care of two Commissioners, who make an annual report to the City Council.

Harvard bridge is in the care of three Commissioners.

IV. — BRIDGES SUPPORTED BY RAILROAD CORPORATIONS.

1st. — Boston & Albany Railroad.

Commonwealth avenue, Brighton.

Harrison avenue.

Market street, Brighton.

Tremont street.

Washington street.

2d. — Boston & Maine Railroad, Eastern Division.

Mystic avenue.

Main street.

3d. — Boston & Maine Railroad, Western Division.

Mystic avenue.

Main street.

4th. — Boston, Revere Beach, & Lynn Railroad.

Everett street.

5th. — New York & New England Railroad.

Dorchester avenue.

Harvard street, Ward 24.

Morton “ “

Norfolk “ “

Norfolk “ “

Silver street.
 Washington street, Ward 24.
 West Broadway.
 West Fifth street.
 West Fourth street.
 West Second street.
 West Sixth street.
 West Third street.

6th. — Old Colony Railroad, Central Division.

Adams street.
 Ashmont street and Dorchester avenue.
 Cedar Grove Cemetery.
 Commercial street.
 Savin Hill avenue.

7th. — Old Colony Railroad, Providence Division.

Beach street, Ward 23.
 Bellevue street, Ward 23.
 Canterbury street, Ward 23.
 Centre street, or Hog Bridge, Ward 23.
 Centre and Mt. Vernon streets, Ward 23.
 Dudley avenue, Ward 23.
 Park street, Ward 23.

RECAPITULATION.

I.	Number wholly supported by Boston	49
II.	Number of which Boston supports the part within its limits	14
III.	Number of which Boston pays a part of the cost of maintenance	6
IV.	Number supported by railroad corporations :	
1.	Boston & Albany	5
2.	Boston & Maine, Eastern Div.	2
3.	“ “ Western Div.	2
4.	Boston, Revere Beach, & Lynn	1
5.	New York & New England	13
6.	Old Colony, Central Div.	5
7.	“ “ Providence Div.	7
	Total number	104

The existing regulations for the passage of vessels through drawbridges have been posted on the several bridges, as required by law.

The records of the number of draw-openings, vessels passing through the bridges, time of passage, kind of vessels, number laden with cargo, etc., as kept by the draw-tenders of the several bridges, have been tabulated, and the totals are given in the summary, which will be found in Appendices A1 and A10.

A list of widths of openings for vessels in all bridges provided with draws in the city, measurements being furnished by the City Engineer, will be found in Appendix A2.

Appendix A3 is a table, also made by the City Engineer, showing widths of bridges, kind of roadways, sidewalks, etc.

A list of culverts and small bridges will be found in Appendix A4.

Appendices A5, A6, and A7 contain tabulated statements of traffic.

Appendix A8 is a list of tools, etc., at North Yard.

Appendix A9 contains a list of tools, etc., at South Yard.

APPENDIX A1.

DRAW-TENDERS' REPORTS,

Giving the Number of Vessels passing through the Drawbridges controlled by the City of Boston, from January 1, 1891, to January 31, 1892, inclusive.

NAME OF BRIDGE.	STEAMERS.			SAILING-VESSELS.			TUGS.			ALL OTHERS.			TOTAL NO. VESSELS.			Total No. of Car-goes.	Total No. of Open-ings.
	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.		
Broadway	2	2	4	2,183	1,232	3,415	1,260	191	1,451	373	87	460	3,818	1,512	5,330	1,896	4,199
Cambridge Street ...	2	.....	2	320	5	325	747	28	775	294	20	314	1,363	53	1,416	299	841
Charles River.....	33	11	44	2,272	1,065	3,337	2,598	539	3,137	1,837	437	2,274	6,740	2,052	8,792	2,686	6,261
Chelsea (North)	112	12	124	900	93	993	3,882	317	4,199	2,410	156	2,566	7,304	578	7,882	1,883	4,919
Chelsea (South)	8	.....	8	985	63	1,048	3,158	207	3,365	1,640	65	1,705	5,791	335	6,126	1,137	4,366
Chelsea Street .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32	.....	32	32	.....	32	5	33
Commercial Point .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2	2	.....	2	.....	2
Congress Street	229	89	318	3,819	1,455	5,274	6,071	1,514	7,585	2,146	556	2,702	12,265	3,614	15,879	3,972	7,988

Dover Street	9	4	13	1,653	1,081	2,734	932	339	1,271	297	137	434	2,891	1,561	4,452	1,665	3,631
Essex Street	4	.....	4	388	15	403	997	57	1,054	463	78	541	1,852	146	1,998	280	1,113
Federal Street	2	.....	2	2,167	1,465	3,632	1,403	356	1,759	535	184	719	4,107	2,005	6,112	2,075	5,060
Granite Street .....	.....	.....	.....	92	8	100	206	13	219	36	1	37	334	22	356	66	222
Malden Street	2	.....	2	325	27	352	1,160	111	1,271	427	28	455	1,914	166	2,080	385	1,247
Meridian Street	70	24	94	700	82	782	2,391	289	2,680	1,068	142	1,210	4,229	537	4,766	689	2,751
Mt. Washington Ave.	73	22	95	2,799	1,411	4,210	4,142	937	5,079	1,549	381	1,930	8,563	2,751	11,314	3,165	8,183
Neponset .....	.....	.....	.....	155	12	167	213	24	237	.....	.....	.....	368	36	404	89	291
North Beacon Street.	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1	.....	1	.....	1
North Harvard Street	.....	.....	.....	136	2	138	237	6	243	22	1	23	395	9	404	78	234
Warren Street	30	17	47	1,495	1,716	3,211	1,550	555	2,105	1,384	461	1,845	4,459	2,749	7,208	2,451	5,007
Western Ave. to Cambridge	2	.....	2	234	2	236	573	18	591	257	21	278	1,066	41	1,107	236	642
Western Ave. to Watertown .....	.....	.....	.....	5	.....	5	18	.....	18	14	.....	14	37	.....	37	2	24
Totals	578	181	759	20,628	9,734	30,362	31,539	5,501	37,040	14,786	2,755	17,541	67,531	18,167	85,698	23,037	57,015

West Boston, Prison-Point, Canal (or Craigie's), and Harvard Bridges not included in these tables, being in the care of Commissioners representing the two cities (Boston and Cambridge) connected by these bridges.

APPENDIX A2.

Table showing the Widths of Openings for Vessels in all Bridges provided with Draws in the City of Boston, February, 1892.

NAME OF BRIDGE.	Location.	Number of Openings.	Width.
Boston & Maine R.R., Eastern Division	Boston to Charlestown .	1	35 feet 10 inches.
Boston & Maine R.R., Eastern Division	Over Miller's river . . .	1	35 " 10 "
Boston & Maine R.R. (freight), Southern Division	Boston to East Cambridge	1	35 " 8 "
Boston & Maine R.R. (passenger), Southern Division	" " " "	1	35 " 10 "
Boston & Maine R.R., Western Division	Boston to Charlestown .	1	35 " 5 "
Boston & Maine R.R., Western Division	Over Miller's river . . .	1	35 " 9 "
Broadway	Over Fort-Point channel,	1	43 " 3 "
Cambridge st.	Ward 25 to Cambridge .	1	36 " 3 "
Canal (or Craigie's)	Boston to East Cambridge	1	35 " 10 "
Charles River	Boston to Charlestown .	1	36 " 0 "
Chelsea (south channel)	Charlestown to Chelsea,	1	38 " 10 "
Chelsea (north channel)	" " "	1	44 " 10 "
Chelsea st. (East Boston side) . . .	East Boston to Chelsea .	2	33 " 1 "
" " (Chelsea side)	" " " "	. .	34 " 3 "
Commercial Point (or Tenen) . . .	Ward 24	1	24 " 0 "
Congress st. (Boston side)	Over Fort-Point channel,	2	43 " 3 "
" " (South Boston side)	" " " "	. .	43 " 11 "
Dover st.	" " " "	1	36 " 0 "
Essex st.	Ward 25 to Cambridge .	1	36 " 0 "
Federal st.	Over Fort-Point channel,	1	41 " 10 "
Fitchburg R.R.	Boston to Charlestown .	1	36 " 0 "
" " (for teaming freights)	" " "	1	35 " 11 "

Table showing Width of Openings, etc. — *Concluded.*

NAME OF BRIDGE.	Location.	Number of Openings.	Width.
Grand Junction R.R.	Ward 25 to Cambridge .	1	35 feet 7 inches.
“ “ “	East Boston to Chelsea .	1	34 “ 8 “
Granite	Ward 24 to Milton . . .	1	36 “ 0 “
Harvard (Boston side)	Boston to Cambridge .	2	36 “ 8 “
“ (Cambridge side)	“ “ “	36	“ 8 “
Malden	Charlestown to Everett .	1	43 “ 4 “
Meridian st. (East Boston side) . .	East Boston to Chelsea .	2	59 “ 2 “
“ “ (Chelsea side)	“ “ “ “	59	“ 0 “
Mt. Washington ave. (Boston side)	Over Fort-Point channel	2	42 “ 1 “
“ “ “ (South Boston side)	“ “ “ “	42	“ 4 “
Neponset	Ward 24 to Quincy . .	1	36 “ 0 “
New York & New England R.R. (Boston side)	Over Fort-Point channel	2	40 “ 4 “
New York & New England R.R. (South Boston side)	“ “ “ “	40	“ 2 “
New York & New England R.R. . .	Over South Bay	1	28 “ 4 “
North Beacon st.	Ward 25 to Watertown .	1	30 “ 2 “
North Harvard st.	Ward 25 to Cambridge .	1	36 “ 0 “
Old Colony R.R.	Over Fort Point channel,	1	36 “ 0 “
“ “ “	Ward 24 to Quincy . .	1	36 “ 0 “
Prison Point	Charlestown to Cam- bridge	1	36 “ 0 “
Warren	Boston to Charlestown .	1	36 “ 3 “
West Boston (Boston side)	Boston to Cambridge .	2	35 “ 8 “
“ “ (Cambridge side)	“ “ “ “	36	“ 0 “
Western ave.	Ward 25 to Cambridge .	1	36 “ 0 “
“ “	Ward 25 to Watertown .	1	30 “ 0 “

APPENDIX A3.

Table showing Width of Bridges, Kind of Roadways, Sidewalks, etc., on Tide-water Bridges, Jan. 28, 1892.

NAME OF BRIDGE.	Width of Bridge.	ROADWAY.		SIDEWALKS.		
		Width.	Kind of Roadway.	No.	Width.	Kind of walks.
	<i>Ft. In.</i>	<i>Ft. In.</i>			<i>Ft. In.</i>	
Broadway	60 0	40 0	Plank	2	10 0	Coal-tar concrete.
Cambridge street	40 0	33 2	"	1	6 0	Plank.
Canal	64 0	48 0	Paved	2	8 0	Brick.
Charles River	50 0	34 0	"	2	8 0	"
Chelsea, North	49 0	40 0	"	1	8 0	Coal-tar concrete.
" South	50 0	37 0	"	2	6 6	" "
" Street	30 2	24 0	Plank	1	5 6	Plank
Commercial Point	about 34 0	about 32 0	"	0	. . .	
Congress street	60 0	44 0	Paved	2	8 0	Coal-tar concrete.
Dover street	59 0	43 0	"	2	8 0	{ Part " }
Essex street	31 0	22 8	Plank	1	7 6	{ Part plank. }
Federal street	69 0	49 0	Paved	2	10 0	Asphalt.
Granite	30 2	24 4	Plank	1	5 0	Plank.
Harvard	69 4	51 0	"	2	9 2	Asphalt.
Malden	40 0	32 0	Paved	1	7 0	Coal-tar concrete.
Meridian street	50 0	36 0	"	2	7 0	" " "
Mt. Washington avenue . .	61 0	39 6	"	2	10 9	" " "
Neponset	30 0	23 10	Plank	1	5 5	Plank.
North Beacon street	31 0	25 2	"	1	5 0	"
North Harvard street . . .	28 2	26 7	"	0	. . .	
Prison Point	50 0	36 0	{ " part Paved part }	2	7 0	Coal-tar concrete.
Warren	80 0	60 0	"	2	10 0	" " "
W. avenue to Cambridge .	33 2	26 3	Plank	1	6 0	Plank.
" " " Watertown	26 10	26 10	"	0	. . .	
Winthrop	24 2	19 10	"	1	3 7	Plank.
West Boston	50 0	36 0	Paved	2	7 0	Brick.

APPENDIX A4.

List of Culverts and Small Bridges.

Those marked with (*) are over Stony Brook.

LOCATION.	Span <i>Feet.</i>	Height of Opening. <i>Feet.</i>	Length. <i>Feet.</i>	Side-walls.	Covering.	Depth of cover'g. <i>Feet.</i>
Adams street, south of Park, Dorchester	5.0	4.0	57	Stone	Stone	5.0
* Amory street, near Centre, West Roxbury	each 9.0	each 8.0	35	Double stone arch	Stone	8.0
* Ashland and Canterbury streets, West Roxbury	7.0	4.0	25	Stone arch . . .	Stone	3.0
* Ashland street and Canterbury, West Roxbury	7.6	5.5	75	Stone	Wood.	
Ashland street, near Florence, West Roxbury	3.0	3.0	50	Stone	Stone	6.0
Ashland street, 200 feet from Canterbury, West Roxbury	3.0	3.0	50	Stone	Stone	3.0
Back street, near Morton, Dorchester	5.0	4.0	30	Stone	Stone	2.0
Baker street, at Brook farm, West Roxbury	15.0	5.0	30	Stone	Wood.	
Baker street, opposite Prospect avenue, West Roxbury	2.67	2.67	60	Stone	Stone	1.0
Beech street, near Anawan avenue, West Roxbury	4.0	4.0	50	Stone	Wood.	
Beech street, near Poplar, West Roxbury	1.5	2.5	40	Stone	Stone	5.0
Blue Hill avenue, Dorchester	2.75	1.67	225	Stone	Stone	2.0
Blue Hill avenue, near Morton street, Dorchester	9.0	7.0	60	Stone	Wood.	
* Boylston avenue, West Roxbury	15.0	9.5	30	Stone	Wood.	

List of Culverts and Small Bridges. — Continued.

LOCATION.	Span. <i>Feet.</i>	Height of Opening. <i>Feet.</i>	Length. <i>Feet.</i>	Side-walls.	Covering.	Depth of cover $\frac{1}{2}$. <i>Feet.</i>
*Boylston street, at Boylston Station, West Roxbury	each 7.0	9.9 & 8.0	47	Double brick arch.	Brick.	
Brighton avenue, west of Babcock street, Brighton	3.5	3.0	50	Stone	Stone	1.25
Brighton avenue, west of Essex street, Brighton	3.0	3.0	50	Wood	Wood and earth.	8.0
Canterbury street, near Morton, West Roxbury	2.0	3.0	40	Stone	Stone	4.0
*Canterbury street, near Neponset avenue, West Roxbury	10.0	5.0	42	Stone arch	Stone	3.0
Canterbury street, near Poplar, West Roxbury	2.5	2.5	50	Stone	Stone	8.5
Centre street, near Spring, West Roxbury	4.0	4.0	50	Stone	Stone	3.0
Centre street, near Walter, West Roxbury	2.5	3.0	50	Stone	Stone	5.0
Centre street, at Williams farm, West Roxbury	4.0	4.0	50	Stone arch	Stone	4.0
Centre street, at Williams farm, West Roxbury	1.5	3.0	50	Stone	Stone	5.0
Centre street, corner Willow, West Roxbury	2.5	2.5	60	Stone	Stone	4.5
Church street, west of Weld, West Roxbury	2.67	4.5	65	Stone	Stone	3.0
Corey street, near Highland Station, West Roxbury	2.5	3.0	45	Stone	Stone	2.0
Everett street, near B. & A. R.R., Brighton	3.0	2.0	65	Stone	Stone	2.0
Faneuil street, junction of Brooks, Brighton	3.5	3.5	130	Stone	Stone	2.5
Faneuil, west of Parsons, Brighton	4.0	4.83	50	Stone arch	Stone	4.0

	5.0	5.5	33	Wood	Wood.	
Gardner street, near Cow Island, West Roxbury	each 10.0	7.0 & 8.0	260	Double stone arch.	Stone	4.0
*Green street, at Brookside avenue, West Roxbury	2.67	3.0	58	Stone	Stone	6.0
Harvard avenue, near Washburn street, Brighton	2.75	3.75	55	Stone	Stone	4.0
Harvard avenue, south of Washburn street, Brighton	each 8.0	each 7.0	361 & 93 each. 454	Double stone and brick arch	Brick and stone Wood.	5.0
*Hyde Park avenue and Washington street, West Roxbury	19.5	5.0	50	Stone	Stone	1.0
*Hyde Park avenue, West Roxbury	3.0	2.0	70	Stone	Stone	1.5
LaGrange street, corner of Pleasant, West Roxbury	3.0	1.5	90	Stone	Stone	2.0
LaGrange street, north-west of Weld, West Roxbury	2.0	2.5	50	Stone	Stone	3.0
LaGrange street, opp. Mt. Benedict Cem., West Roxbury	2.0	3.0	50	Stone	Stone	2.0
LaGrange street, south-east of Weld, West Roxbury	4.5	4.92	43.85	Stone (double)	Stone	1.2
Lake street, opp. Chandler's pond, Brighton	5.5	5.92	40.0	Stone (double)	Stone	5.0
Lake street, south of Washington, Brighton	each 6.75	each 9.5	50	Double stone arch.	Stone	2.0
Mill street, Dorchester	4.0	5.0	50	Stone	Stone	4.0
Morton street, near Austin farm, West Roxbury	15.0	10.0	50	Stone arch	Stone	3.0
*Morton street, near Washington, West Roxbury	each 8.0	each 5.0	40	Double stone arch.	Stone	2.0
*Mount Hope street, West Roxbury	5.0	4.0	40	Stone arch	Stone	7.17
Mount Hope street, West Roxbury	2.5	2.5	60	Wood	Earth and wood.	2.0
Neponset avenue, Dorchester	5.0	4.0	40	Stone arch	Stone	2.5
Neponset avenue, 500 feet from Hyde Park avenue, West Roxbury	14.0	6.0	45	Stone arch	Stone	
*Neponset avenue, West Roxbury						

List of Culverts and Small Bridges. — *Concluded.*

LOCATION.	Span. <i>Feet.</i>	Height of Opening. <i>Feet.</i>	Length. <i>Feet.</i>	Side-walls.	Covering.	Depth of cover'g. <i>Feet.</i>
North Harvard street, near Franklin, Brighton	4.0	2.67	40	Stone	Stone	3.0
Oakland street, south of Faneuil, Brighton	6.0	5.5	39.5	Stone (double) .	Stone & brick .	1.6
Park street, west of Dorchester avenue, Dorchester	5.0	3.67	50	Stone	Wood.	
Park street, west of O. C. R.R., Dorchester	8.5	5.0	50	Stone	Wood.	
Parsons street, north of Faneuil, Brighton	4.0	4.0	40	Stone	Stone	15.0
Perkins street, near Jamaica Pond, West Roxbury	5.0	4.0	40	Stone arch . . .	Stone	4.0
Poplar street, 500 feet from Beech, West Roxbury	3.0	1.5	110	Stone	Stone	4.5
Poplar street, Roslindale, West Roxbury	7.0	4.0	40	Stone arch . . .	Stone	2.0
Preston street, Dorchester	9.0	5.08	40	Wood	Wood and earth.	4.3
River street and Blue Hill avenue, Dorchester	2.17	2.75	140	Stone	Stone	4.67
River street, Dorchester	3.25	2.5	50	Stone	Stone	1.25
Saratoga street, East Boston	5.0	6.0	50	Oval brick . . .	Brick	6.0
South street, at Arnold Arboretum, West Roxbury	4.5 & 2.0	3.5 & 1.5	30	Double stone . .	Brick	1.5 & 3.5
Spring street, near Spring-street station, West Roxbury	2.67	2.67	63	Stone	Wood.	
Summer street, near Spring-street station, West Roxbury	4.0	4.5	40	Stone	Wood.	
Tenacan street, near Fulton, Dorchester	6.25	6.25	40	Wood	Earth and wood.	6.5

*Texas street, off Tremont street	14.0	about 8.0	20	Stone	Wood	3.0
Walk Hill street, near Canterbury street, West Roxbury	8.0	4.0	50	Stone arch	Stone	3.0
Walter street, north of Bussey park, West Roxbury	3.0	4.0	60	Stone	Stone	3.0
Washington street, corner Beaumont avenue, Brighton	3.0	3.5	65	Stone	Stone	3.0
*Washington street (Musk-Rat Village), West Roxbury	14.0	6.0	40	Stone arch	Stone	4.5
Washington street, near Poplar street, West Roxbury	14.0	5.0	38	Stone	Wood	3.4
*Washington street, near Williams, West Roxbury	each 7.0	each 7.0	70	Double stone arch	Stone	4.5
Weld street, near LaGrange, West Roxbury	2.0	4.0	30	Stone	Stone	4.0
Western avenue, near North Harvard street, Brighton	4.0	3.0	60	Stone	Stone	4.0
*Williams street, West Roxbury	15.5	8.0	40	Stone	Wood	
Williams street, West Roxbury	5.0	5.0	50	Wood	Wood	

APPENDIX A4. — (*Supplement*).
List of Culverts and Small Bridges built in 1891.

LOCATION.	Span. <i>Feet.</i>	Height of Opening. <i>Feet.</i>	Length. <i>Feet.</i>	Side-walls.	Covering.	Depth of cover g. <i>Feet.</i>
DORCHESTER.						
Blue Hill avenue, near Harvard street	5.0	4.42	85	Stone	Stone	1.5
Harvard street, near Blue Hill avenue	5.0	4.42	45	Stone	Stone	2.0
Bailey street, near Hillside terrace	4.0	3.42	40	Stone	Stone	2.5
Fuller street, " "	4.0	3.42	40	Stone	Stone	1.5
Dorchester avenue, near Van Winkle street	4.0	3.42	60	Stone	Stone	1.5
" " " King street	4.5	4.92	60	Stone	Stone	1.5
Carruth street, near Codman street	51.0	5.0	72	Stone	Stone	1.5
Centre street, near Seaborn street	3.0	3.42	40	Stone	Stone	2.0
West Roxbury.						
Sycamore and Florence streets	4.0	3.92	73	Stone	Stone	2.0
Allandale street, near the spring	3.5	3.92	40	Stone	Stone	2.0
" " " lower brook	1.5	1.5	40	Pipe	Pipe	2.5
Cornell street, near Washington street	4.0	3.42	41	Stone	Stone	2.5
Brighton.						
Hobart street, near Faneuil street	6.0	7.5	44	Stone	Brick	1.5
Dustin street, near North Beacon street	5.0	5.0	40	Stone	Stone	1.2

APPENDIX A5.

Statement of Traffic between the Hours of 6.30 A.M. and 8 A.M.

NAME OF BRIDGE.	Date, 1891.	Teams to Boston.	Foot-passengers to Boston.	Teams to South Boston.	Foot-passengers to South Boston.	Horse-cars (both ways).	Horse-car Passengers (both ways).
Broadway	April 8.	289	1,844	65	137	55 ¹	1,360 ¹
Broadway	April 10.	192	1,390	72	258	18	445
Congress street	April 6.	315	445	141	709	. . . .
Congress street	April 9.	240	505	165	765	. . . .
Dover street	April 7.	149	1,179	112	368	24	538
Dover street	April 10.	158	1,281	105	351	25	628
Federal street	April 7.	392	3,600	82	245	348	2,686
Federal street	April 9.	330	3,450	63	92	126	2,681
Mt. Washington avenue	April 6.	203	564	105	350	. . . .
Mt. Washington avenue	April 8.	220	498	63	276	. . . .

¹ Excess caused by blockade previous to count.

APPENDIX A6.

Statement of Traffic between the Hours of 12 M. and 1 P.M.

NAME OF BRIDGE.	Date, 1891.	Teams to Boston.	Foot-passengers to Boston.	Teams to South Boston.	Foot-passengers to South Boston.	Horse-cars (both ways).	Horse-car Passengers (both ways).
Broadway	April 8.	39	412	59	514	14	351
Broadway	April 10.	72	383	77	451	12	298
Congress street	April 6.	189	333	178	316	. . . .
Congress street	April 9.	174	223	209	251	. . . .
Dover street	April 7.	62	451	62	394	12	202
Dover street	April 10.	59	442	82	472	12	239
Federal street	April 7.	107	750	108	355	63	1,043
Federal street	April 9.	90	750	123	442	70	1,272
Mt. Washington avenue	April 6.	76	148	76	180	. . . .
Mt. Washington avenue	April 8.	52	185	90	203	. . . .

APPENDIX A7.

Statement of Traffic between the Hours of 5.30 P.M. and 7.00 P.M.

NAME OF BRIDGE.	Date, 1891.	Teams to Boston.	Foot-passengers to Boston.	Teams to South Boston.	Foot-passengers to South Boston.	Horse-cars (both ways).	Horse-car passengers (both ways).
Broadway	April 8.	32	499	275	2,583	20	505
Broadway	April 10.	92	427	338	2,504	20	504
Congress street	April 6.	110	1,080	302	442	. .	. . .
Congress street	April 9.	100	630	270	473	. .	. . .
Dover street	April 7.	57	650	122	1,164	37	1,064
Dover street	April 10.	50	569	109	1,298	36	1,031
Federal street	April 7.	57	287	339	3,700	160	3,250
Federal street	April 9.	73	213	294	3,525	154	3,604
Mt. Washington avenue	April 6.	56	363	372	623	. .	. . .
Mt. Washington avenue	April 8.	58	313	235	447	. .	. . .

APPENDIX A10

DRAW-TENDERS' REPORTS

Giving the Number of Vessels passing through the Drawbridges controlled by the City of Boston, during the Years 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, and 1891

APPENDIX B.

REPORT OF DEPUTY SUPERINTENDENT OF
PAVING DIVISION.

H. H. CARTER, *Superintendent of Streets*:

DEAR SIR: In compliance with the order conveyed in your letter of Dec. 14, 1891, requesting a statement of the work of the Paving Division, for the year 1891, the following report is submitted, showing the expenditures of this division from Jan. 1, 1891, to Jan. 31, 1892, the nature of its work under the new organization, the number and variety of permits issued, and the details of expenditures involved in paving, macadamizing, and regulating the various streets.

The following list shows the total yearly expenditures of the Paving Division, according to the report of the Superintendent of Streets, for the last thirty-four years, the expenditures being from January 1 to December 31, inclusive, of each year, except for 1891, that year extending to Jan. 31, 1892, making a period of thirteen months:

1856 . .	\$192,458 48	1875 . .	\$1,062,408 55
1857 . .	201,528 49	1876 . .	980,741 42
1858 . .	187,160 92	1877 . .	1,077,475 81
1859 . .	186,295 77	1878 . .	644,821 76
1860 . .	197,170 63	1879 . .	727,340 05
1861 . .	176,978 76	1880 . .	1,015,063 06
1862 . .	175,981 68	1881 . .	966,366 49
1863 . .	151,130 27	1882 . .	1,088,551 14
1864 . .	156,959 65	1883 . .	934,656 58
1865 . .	173,258 13	1884 . .	1,310,172 16
1866 . .	244,953 55	1885 . .	1,018,693 39
1867 . .	283,641 56	1886 . .	1,170,863 01
1868 . .	407,053 89	1887 . .	1,260,530 03
1869 . .	667,817 90	1888 . .	1,043,475 52
1870 . .	804,384 89	1889 . .	1,051,460 18
1871 . .	923,312 37	1890 . .	1,061,722 40
1872 . .	1,010,508 48	1891 . .	1,991,524 28
1873 . .	931,019 01		
1874 . .	1,683,848 67	Total .	\$27,161,328 93

We see by this schedule that the city expended in 1856, \$192,458.48 on a street mileage of one hundred miles (forty of which were paved, and sixty unpaved), covering that part of our city which is now known as the City Proper, East and South Boston.

The street mileage was increased by the annexation of Roxbury, Jan. 6, 1868; Dorchester, Jan. 3, 1870; Charlestown, Brighton, and West Roxbury, Jan. 5, 1874; and also by converting the private ways into public streets, and laying out new streets, so that by Jan. 1, 1891, the total mileage of streets that was under the care of the Superintendent of Streets was 409.37 miles, with an expenditure of \$1,061,722.40. It can readily be seen by this, that as the government has increased the mileage of streets, it has not increased the amount of money to maintain them in proportion, as the Superintendent of to-day has only about the same average amount of money per mile, with which to maintain the streets, as his predecessor did thirty-five years ago, when our citizens were satisfied with the cobble-stone pavement, at \$1.70 per square yard, against the granite block paving, on a concrete base, with tar joints, at an expense of \$4.75 per square yard.

Labor at that time was worth only \$1.00 per day for ten hours' work, against \$2.00 for nine hours at the present time, and the cost of teams and materials to do the work has increased in the same proportion; also at that time there was no expense for street-watering, which shows at the present time an expenditure of \$104,263 a year.

Also, our streets at that time were not continually being torn up for the purpose of constructing street railways, and for laying sewer, water, and gas pipes, and making the necessary connections; also for laying underground wires.

To what an extent this is done yearly, it may be stated that last year there were over thirteen thousand permits granted, covering more than one hundred and ten miles of trenches; and every year this business of opening our streets increases.

In 1856 the average number of men employed in our division was sixty; at the present time we furnish employment for seven hundred and fifty men.

By the above statement it can be seen that the Superintendent of to-day has not the means financially for the care of our public streets, in proportion to the increase of work that comes under his supervision.

It may also be stated that twenty years ago (1872) the city of Boston appropriated and expended \$1,000,000 for the maintenance of its streets, with a mileage of 207 miles,

and since then has expended on an average \$1,000,000 a year for the same purpose, and at the same time the mileage has increased from 207 in 1872 to 434.59 miles in 1892; so it can be seen that as the city appropriated about the same amount for its maintenance, its mileage has doubled.

As the money for the maintenance of this department is provided for out of the tax levy, it makes it impossible to increase the amount sufficiently for the maintenance of this department, and therefore it would seem advisable that some way be found to build our streets by assessment on the abutting property, so that large and needed improvements can be made yearly.

This would enable our citizens, especially in our outlying wards, to have their streets built and improvements made without having to wait for some indefinite period to enable the government to furnish the money from some loan.

OFFICIAL DUTIES.

The duties of the office are defined in the following letter, which was received on the appointment of the present deputy:

BOSTON, March 23, 1891.

C. R. CUTTER, Esq., *Deputy Superintendent of Paving Division*:

DEAR SIR: The duties of your division are defined in the ordinance to amend Chapter 18 of the Revised Ordinances of 1890, relating to the Street Department, as passed by the Board of Aldermen March 2, 1891, and approved by the Mayor March 9, 1891, and as more particularly specified as follows:

1. To take charge of the construction and maintenance of all highways, as provided in Section 1 of said ordinance.
2. To attend to the placing of street-signs and numbering of buildings, as provided in Section 4 of said ordinance.
3. To notify all departments, and persons authorized to place structures in streets, when your division contemplates the construction or resurfacing of streets, as provided in Section 7 of said ordinance.
4. To issue permits to open, occupy, and obstruct portions of streets to persons having authority in the premises, and to see that such permits are carried out in accordance with the provisions of Sections 8 to 19, inclusive, of said ordinance.
5. To see that all statutes, ordinances, and regulations relating to the care and use of streets are fully observed, and to carry out all lawful orders of the Board of Aldermen relating to streets, as provided in Section 21.
6. To organize your division with a suitable force of clerks and assistants, for the purpose of keeping the necessary books and records.
7. To divide construction work of your division into ten districts, and to employ the necessary force of foremen, sub-foremen, mechanics, laborers, etc., to properly do the work of your division, and to take charge of all property formerly belonging to the Street Department.
8. To take charge of all street-sprinkling that is done by the city.
9. To remove snow and ice from the streets and gutters, and to shovel snow from all plank sidewalks where the city is liable for any damages from accidents thereon.

(Signed)

H. H. CARTER,
Superintendent of Streets.

Section 1. Construction and Maintenance. — The greater part of our work has been done by the department, but owing to the unusually large amount of work called for and the lack of proper plant, some of the more important streets were let out by contract, the supervision of which was assigned to the City Engineer, Mr. William Jackson.

Section 2. — As to the placing of street-signs and numbering of buildings, as provided for in Section 4 of the ordinance, I would state that numerous signs designating the names of different streets have been placed in the various districts of the city, and the work is being continued as fast as possible, in the hope that by another year our streets shall be well defined, for the convenience of visitors from sister cities, as well as our own.

The signs in use are painted wood, and are not as durable as could be desired.

Several different patent signs are being tried, but have not been in use long enough to pass judgment on them.

What is needed is a sign that can be placed at the intersection of streets, that can be read at night as well as in the daytime.

In regard to the numbering of streets, a special clerk takes charge of this work, whose duty it is to attend to all applications for estate numbers, drafting a plan of the street, and numbering each lot consecutively until the proper number is found.

Numbers have been assigned to estates in the different districts as follows :

City proper	.	.	.	40	streets, and parts thereof.		
Roxbury	.	.	.	44	"	"	"
Dorchester	.	.	.	25	"	"	"
Charlestown	.	.	.	9	"	"	"
West Roxbury	.	.	.	20	"	"	"
East Boston	.	.	.	9	"	"	"
South Boston	.	.	.	13	"	"	"
Brighton	.	.	.	17	"	"	"
				<hr/>			
Total	.	.	.	176	"	"	"

Section 3. Notification to Abutters. — When the division contemplates the construction or resurfacing of streets, notice has been sent to all city departments and persons authorized to place structures in the streets, and to all the owners of abutting property that were on record according to the Assessors' plan of the previous May.

This notice stated that the city was about to commence

work thereon, and that no permits would be granted for openings in the street, until one year had elapsed from the time of the completion of the work.

These notifications were sent by mail, and as it involved looking up the addresses of owners of estates of some 250 different streets, it can readily be seen that a large amount of clerical labor was required.

A more satisfactory method, if the ordinance so admitted, would be to place all such notices in public print at a specified time, as it would accomplish the desired results in the end.

This is a matter of courtesy, and not required by law. If the closing of the street were extended to a limit of two years, instead of one, it would be much better for the street.

Where the city has been compelled to grant permits for openings for the repairs of leaks on streets that were closed, the parties doing the work have been obliged to fill the trenches with concrete, to prevent any settling of the street.

Section 4. Issuing Permits. — All persons and corporations applying for permits to open, occupy, and obstruct portions of the street, are required to file satisfactory bonds with the permit clerk, before any permit is issued. Two inspectors are employed to follow up the permits issued, to see that all work is properly done. This number of inspectors is not considered sufficient to properly look after all the work that is going on at any one given time, as it is important to be on the ground while the refill is taking place.

By the present method a man applies for and obtains a permit to make an opening in the street; he shows it to the police, to prove that he has authority to make the opening; he makes the opening, does the work, fills the trench, smooths the top of, and returns his permit to the police, who sends it to the office properly indorsed.

All this work has been done without any supervision or inspection by the city of the way or manner that the trench was filled.

After the permit has been returned to the office, the surface of the opening is inspected, which looks smooth and proper as a general thing. In four or five weeks after the city has accepted the opening, there comes a heavy rain, and the trench settles.

The city then has to look up the parties who made the opening, and to require them to put it into a satisfactory condition, it being sometimes necessary to send the parties back four or five times.

No party ought to be allowed to fill a trench except under supervision.

Permits to open the streets for underground work, between January 1, 1891, and January 31, 1892, have been issued as follows :

Company.	Permits.	Feet.
Barber Asphalt Co.	24	14,876
Boston Electric Light Co.	166	1,576
Boston Gas Light Co.	963	46,233
Boston Water Dept. (E. D.)	3,580	135,378
Boston Water Dept. (Mystic)	133	7,738
Brookline Gas Light Co.	121	10,972
Charlestown Gas Light Co.	57	976
City Engineer Dept.	1	1,280
Dorchester Gas Light Co.	414	15,460
East Boston Gas Light Co.	108	3,394
Edison Electric Ill. Co.	595	27,960
Fire-Alarm Dept.	20	359
Improved Sewerage	1	1,456
Jamaica Plain Gas Co.	243	23,052
Jamaica Pond Aqueduct Co.	22	1,856
National Construction Co.	4	105
N. E. Tel. and Tel. Co.	185	41,437
Postal Tel. Cable Co.	10	1,336
Quincy Market Cold Storage Co. . . .	2	735
Roxbury Gas Light Co.	391	15,137
Sewer Division	302	46,332
South Boston Gas Light Co.	175	15,921
West End St. Ry. Co.	279	88,142
Western Union Telegraph Co.	26	996
Miscellaneous	3,487	87,175
	<hr/>	<hr/>
	11,320	584,365

Or *110.7 miles* of trench opened.

The average length of trench opened on a permit is *51.6 feet*.

There have been in addition to the above, *1,916* openings made on emergency permits, with which the various corporations and departments are furnished. The average lengths of openings on these permits are about *six feet each*. A record of these is kept in this office.

Other permits have been granted as follows :

Moving buildings	94
Coal-holes	16
Occupying portions of the streets, to repair and construct buildings	4,808
	<hr/>
<i>Carried forward,</i>	4,918

<i>Brought forward,</i>	4,918
Erecting awnings	479
Driving cattle	34
Raising and lowering safes, machinery, etc.	827
Distributing sand	24
Special permits for various purposes	125
	<hr/>
	6,407
Total number of permits of all kinds issued	17,727

There have been 10,881 notices sent to the various division foremen to repair in the streets defects reported by the police.

Also 2,020 to various parties to repair defects in coal-holes, Hyatt lights, and work that has been done imperfectly.

There have also been 5,465 notices sent to abutters on various streets, to notify them of contemplated improvements.

There have been 526 bonds filed in this office this year, in accordance with Chap. 18, Rev. Ord., 1891.

Section 5.—Care has been taken to see that all statutes, ordinances, and regulations relating to the care and use of streets are fully observed, and to carry out all lawful orders of the Board of Aldermen relating to streets, as provided for in Section 21 of the ordinances.

Section 6. Office Force.—The force of clerks and assistants for the purpose of keeping the necessary books and records is the same as it was under the previous Superintendent, although the work is more than doubled.

The clerks are faithful and hard working, and a judicious increase of their salaries would be a recognition of their work.

Section 7.—The construction work of the division is divided into ten districts, and necessitates the employment of a force of foremen, sub-foremen, mechanics, laborers, etc., in all about 750 men, to properly do the work and to take care of all the property formerly belonging to the Street Superintendent.

The men in this division have done excellent work during the past year, and the press and the citizens have much to say in praise of many changes inaugurated.

Section 8. Street-watering.—The street-watering has been very costly and unsatisfactory, on account of the way and manner in which it has been done.

The total expense has been \$104,263; \$50,000 of which was appropriated directly for the purpose from the reserved

fund, and the balance of \$54,263 was paid out of the regular maintenance appropriation of the division.

More satisfactory means should be devised for watering the city and dividing the cost thereof, and the whole work systematically mapped out at the very beginning of the year.

Section 9. Removal of Snow and Ice. — The city has been divided up into snow districts, and all the sidewalks that belong to the city to be kept clear have been thoroughly covered, and the snow has been shovelled off and carted away as soon as practicable. It has been the custom to shovel the snow from all plank-walks in order to free them from danger of accidents, and to remove the snow and ice from the streets and gutters only where edgestones are set. The work is so arranged in conjunction with the Street-Cleaning Division, that a large snow-storm can be easily handled in a comparatively short space of time.

STREETS LAID OUT OR EXTENDED IN 1891.

Date.	Street.	Length in ft.
Mar. 3.	Sewall street, Tremont street to Dell avenue	314
Mar. 11.	Mountford street, Beacon street to Ivy street	636
Mar. 26.	Gold street, B street to New England R.R.	150
Mar. 30.	Eldora street, Hillside street to Sunset street	427
Mar. 14.	Smith street, Bumstead lane to Huntington avenue	504
April 22.	Mt. Vernon street to Foster street	713
May 7.	Call street, Keyes street to Hall street,	505
May 18.	Westford street, from Raymond street,	762
May 18.	Burke street, Tremont street to Berlin street	281
June 12.	Harold street, Crawford street to Har-rishoff street	1,031
June 18.	Granger street, Clayton street to Duncan street	521
June 18.	Maxwell street, Milton avenue to Nel-son street	1,610
June 19.	Longmeadow street, Clifton to Batch-elder street	287
June 23.	Reading street, Kemble street to Swett street	1,033
<i>Carried forward,</i>		<hr/> 8,774

Date.	Street.	Length in ft.
<i>Brought forward</i>		8,774
June 23.	Homer street, Moore street to Byron street	600
July 2.	Sunset street, Parker Hill avenue to Hillside street	399
July 2.	Horace street, Moore street to Byron street	600
July 14.	Hano street, Braintree street to private way	486
July 14.	Blaine street, Braintree street to private way	404
July 16.	Mansur street, Day street to Schiller street	374
July 16.	Schiller street, Heath street to Minden street	302
July 17.	Sylvia street, Washington street to Forest Hills street	231
July 24.	Kenneth street, Farrington street to Beech street	302
Aug. 12.	Cornwall street, Brookside avenue to Boylston avenue	317
Aug. 14.	Arlington street, Parsons street, west .	399
Aug. 14.	Bradbury street, Franklin to Mansfield street	371
Aug. 14.	Buttonwood street, Mt. Vernon to Locust street	601
Aug. 17.	Southwood street, Edgewood to Blue Hill avenue	546
Aug. 25.	Harvest street, Dorchester avenue to Boston street	950
Aug. 25.	Falcon street, Meridian to Putnam street	1,483
Aug. 28.	Moreland street, Blue Hill avenue to Dennis street	342
Aug. 28.	Sycamore street, Ashland to Florence street	1,375
Aug. 28.	Peter Parley street, Forest Hills street to Walnut street	1,122
Sept. 11.	Goldsmith street, Centre to Custer street	650
Sept. 10.	German street, Washington to Grove street	1,060
Sept. 21.	No. Margin street, from angle in street to Stillman	83
<i>Carried forward,</i>		<hr/> 21,771

Date.	Street.	Length in ft.
<i>Brought forward,</i>		21,771
Sept. 28.	Boyle street, Cordis to Pleasant street,	132
Oct. 3.	Ballard street, Centre to Custer street,	557
Oct. 3.	Ridge street, Sherwood to Sycamore street	421
Oct. 3.	Topliff street, Bowdoin street to Geneva avenue	1,353
Oct. 7.	Peter Parley street, Forest Hills street to Washington street	159
Oct. 9.	Baldwin street, Main street to Rutherford avenue	247
Oct. 13.	Lucas street, Middlesex street to Shawmut avenue	98
Oct. 13.	Prospect street, Sheldon to Sycamore street	168
Oct. 13.	Gustin street, W. Ninth street to Old Colony R.R.	354
Oct. 16.	Church street, Winter to High street .	320
Nov. 2.	Auckland street, Belfort to Bay street,	1,410
Nov. 2.	Bigelow street, Webster to Brooks street	2,284
Nov. 2.	Dundee street, W. Chester park to Dalton street	723
Nov. 6.	Henshaw street, Market to Cambridge street	979
Nov. 10.	Dacia street, Dalmatia street to Dewey street	235
Nov. 10.	Cherry street to Dalmatia street . .	112
Nov. 13.	Wirt street, Washington to Henshaw street	258
Nov. 13.	Menlo street, Henshaw to Sparhawk street	443
Nov. 13.	Shelton street to Wrenthan street .	353
Nov. 16.	Tuttle street, Savin Hill avenue to Hartland street	1,157
Nov. 27.	Houghton street, Mill to Pope's Hill street	1,415
Nov. 30.	Wenham street, Walk Hill to Weldon street	1,285
Nov. 30.	Beale street, Dorchester avenue to Old Colony R.R.	536
Dec. 1.	Byron street, Saratoga to Pope street,	931
Dec. 1.	Hunneman street, Harrison avenue to Washington street	493
<i>Carried forward,</i>		38,194

STREET DEPARTMENT.

189

Date.	Street.	Length in ft.
<i>Brought forward,</i>		38,194
Dec. 8.	Dalmatia street, Blue Hill avenue to Howard avenue	724
Dec. 16.	Stanhope street, Berkeley street to near Columbus avenue	895
Dec. 16.	Malcolm street, Mt. Vernon to Chestnut street	240
Dec. 22.	Leyland street, Cottage to Burgess street	695
Dec. 23.	Norway street, Huntington avenue to Falmouth street	225
Dec. 31.	Dacia street, Dewey to Brookford street	610
		<hr/> 41,583 <hr/>

or 7.87 miles.

STREETS RELOCATED IN 1891.

Date.	Street.	Sq. feet.
Aug. 17.	Harvard street, between Harvard avenue and Trescott street	4,925
Nov. 13.	Howard avenue, relocated and grade changed	2,801
Nov. 27.	North square, near and at North street,	92
Dec. 10.	Western avenue, opposite Market street,	1,242
		<hr/> 9,060 <hr/>

STREETS DISCONTINUED IN 1891.

Date.	Street.	Sq. feet.
Mar. 18.	High street, between Hartford and Oliver streets	23
July 11.	E. Springfield street, Harrison avenue to Albany street	31,561
Nov. 16.	Bigelow street, W. side, near Webster street	147
Dec. 16.	Walnut avenue, near and north of Cobden street	93
		<hr/> 31,824 <hr/>

STREETS WIDENED IN 1891.

Date.	Street.	Sq. feet.
Mar. 18.	High street, north-west side, between Hartford and Olivia	13
April 29.	Dudley street, Vine to Hampden street,	1,846
<i>Carried forward,</i>		<hr/> 1,859 <hr/>

Date.	Street.	Sq. feet.
<i>Brought forward,</i>		1,859
June 29.	North square, on north-east and south-west side, near North street . . .	110
July 21.	Charlestown street, on west side, between Causeway and Medford . . .	926
Oct. 2.	Whitney street, north-west side, near Smith street	322
Oct. 12.	Blue Hill avenue, west side, near Tilton avenue	676
Dec. 22.	Blue Hill avenue, at Morton street . . .	950
Dec. 31.	Kennard avenue, south-east side, near Allen street	1,446
		<hr/> 6,289 <hr/>

The record of the Street Commissioners for the year 1891 shows the following results :

Streets laid out or extended . . .	41,583 lin. ft.	7.87 miles.
Streets relocated	9,060 sq. ft.	
Streets discontinued	631 lin. ft.	0.12 mile.
Streets widened	6,289 sq. ft.	
Increase in mileage	41,124 lin. ft.	7.75 miles.

Table showing the number of miles in length of streets laid out by the Board of Street Commissioners :

In 1871	5.72 miles.	In 1883	6.11 miles.
1872	2.20 "	1884	5.50 "
1873	4.66 "	1885	3.95 "
1874	4.68 "	1886	6.75 "
1875	8.92 "	1887	5.34 "
1876	5.52 "	1888	5.12 "
1877	7.37 "	1889	6.22 "
1878	4.80 "	1890	5.69 "
1879	5.35 "	1891	7.75 "
1880	4.51 "		
1881	4.80 "		
1882	8.14 "		
		<hr/> Total in 21 yrs. 119.10 "	

FINANCIAL STATEMENT.

Balance on hand Jan. 1, 1891	\$45,211 81
Transferred from Causeway street Jan. 3, 1891	3,000 00
Loan Feb. 2, 1891	183,000 00
	<hr/>
	\$231,211 81

Amount of expenditures charged to Paving Division from Jan. 1, 1891, to April 30, 1891	\$224,336 08
Used by other divisions	6,875 73
	<hr/>
	\$231,211 81

Appropriation for Paving Division, 1891-1892	\$700,000 00
From Reserve Fund for Street-watering, July	50,000 00
Transferred from Cambridge Bridge	1,677 06
Transferred from Police Division,	3,485 59
	<hr/>
	\$755,162 65

Amount of expenditures charged to Paving Division from May 1, 1891, to Jan. 31, 1892	\$752,863 94
Transferred to Humboldt-avenue grade damages	1,815 00
Remaining in treasury Feb. 1, 1892	483 71
	<hr/>
	\$755,162 65

	<hr/>	<hr/>
	\$986,374 46	\$986,374 46
	<hr/>	<hr/>

Total expenditures from regular appropriation	\$977,200 02
Total expenditures from special appropriations	1,014,324 26
	<hr/>
Grand total (regular and special)	<u>\$1,991,524 28</u>

INCOME.

Statement showing the amount of bills deposited with the City Collector from Jan. 1, 1891, to Feb. 1, 1892, on account of the Paving Division :

Edgestone and sidewalk assessments . . .	\$31,037 30
Sale of stone, etc.	985 55
Fort Hill Wharf (rent)	625 00
West End R.R. Co., settlement of accident claim	1,130 00
	<hr/>
	\$33,777 85
	<hr/>

The amount paid into the city treasury during the same period on account of the Paving Division :

Edgestone and sidewalk assessments . . .	\$17,299 01
Sale of stone, etc.	482 15
Fort Hill Wharf (rent)	625 00
West End R.R., settlement of accident claim,	1,130 00
	<hr/>
	\$19,536 16
	<hr/>

Table showing Expenses Paid from the Regular Appropriation, Classified by Districts, from Jan. 1, 1891, to Jan. 31, 1892.

	Maintenance and Construction of Streets.	Sprinkling Streets.	Removal of Snow.	Executions of Court.	Miscellaneous.	Total.
South Boston	\$35,980 81	\$6,162 03	\$9,378 43	.....	.....	\$51,521 27
East Boston	41,210 98	6,053 27	5,446 59	.....	.....	52,710 84
Charlestown	23,312 41	6,984 23	6,121 26	.....	.....	36,417 90
Brighton	53,981 41	13,895 37	4,986 63	.....	.....	72,863 41
West Roxbury	123,428 76	17,118 01	7,093 74	.....	.....	147,640 51
Dorchester	84,184 44	15,503 85	6,261 19	.....	.....	105,949 48
Roxbury	142,344 35	15,009 79	10,035 33	.....	.....	167,389 47
City Proper	171,376 10	23,537 07	53,087 69	.....	.....	248,000 86
Execution Courts .....	.....	.....	.....	\$25,633 65	.....	25,633 65
Miscellaneous .....	.....	.....	.....	.....	\$69,072 63	69,072 63
Total	\$675,819 26 ¹	\$104,263 62	\$102,410 86	\$25,633 65	\$69,072 63	\$977,200 02

¹ Of this amount, \$119,698.77 was expended on new work. For details see following pages.

EXPENDITURES.

Advertising in and subscribing for daily papers,	\$647 78
Dorchester ledge, construction of	2,084 26
Horses, carts, and harnesses (new)	10,993 14
Harrisburg Foundry and Machine Co., steam-roller	4,000 00
Aveling & Porter, steam-roller	4,000 00
Plans for office	1,067 70
Printing and stationery	4,458 34
Repairing stables, sheds, etc.	1,327 94
Sundries	8,445 69
Street signs and numbering	3,112 83
Salary of J. Edwin Jones, as Superintendent of Streets, Jan. 1 to Jan. 17, 1891	188 89
Salary of Michael Meehan, as Deputy Superintendent of Streets, Jan. 1 to Jan. 17, 1891	141 67
Salary of H. H. Carter, as Acting Superintendent of Streets, Jan. 19 to March 8, 1891	566 66
Salary of H. H. Carter, as Acting Superintendent of Streets, March 9 to March 31, 1891	458 33
Salary of C. R. Cutter, as Deputy Superintendent of Streets, March 23, 1891, to Jan. 28, 1892	2,578 55
Salary of office clerks	9,089 27
Telephone, expenses of	992 47
Tools, cost of keeping same in repair, etc.	14,919 11
	<hr/>
	\$69,072 63

EXECUTIONS OF COURT, ETC.

Brown, Mary L., personal injuries	\$1,033 86
Brackett, J. Albert, injuries to horse	200 00
Bean, B. F., damage to house	40 00
Coffey, John J., personal injuries	50 00
Clark, Thos. H., damage to carriage	40 00
Carroll, Patrick, personal injuries	55 50
Cunniff, Ellen, "	100 00
Driscoll, Louisa M., damage to estate	75 00
Deegan, Catherine E., Admx., injury to husband (Committee on Claims)	400 00
Fitzpatrick, John B., personal injuries	200 00
Finn, Ellen T., "	325 12
Gordan, Charles K., "	175 00
Grose, Mercy D., "	200 00

Carried forward,

\$2,894 48

<i>Brought forward,</i>	\$2,894 48
Gates, Mary A., personal injuries	1,325 45
Holmes, John S., "	400 00
Hutchinson, Margaret A. C., personal injuries	2,099 73
Imre, T. J., "	150 00
Kelrey, Chas. E., "	131 60
Luchterhand, Sophie K., "	122 37
Luchterhand, Fred. W., "	100 00
Lynch, William, damage to house	50 00
Lannon, Jane C., grade damages	625 32
McNamara, Bridget, personal injuries	686 68
Madden, Bridget F., <i>et als.</i> , grade damages	675 32
Mooney, J., grade damages	400 00
McCorkle, Sarah J., personal injuries	100 00
McLellan, Albert, "	64 00
Mahern, Esther J., damage to house	28 00
McGonagle, Charles, stone taken from his land	40 00
Peters, Richard and Mary, grade damages	125 32
Ruggles, Daniel, personal injuries	250 00
Robbins, Elliot D., injuries to horse	350 00
Ryan, Mary E., personal injuries	450 00
Sampson, Thomas A., damage to herdic	50 00
Thompson, Emma A., personal injuries	1,650 45
Vaughan, Kate, "	937 49
Warren, J. Frank, "	400 00
Whitcomb, A. F., injuries to horse	150 00
	<hr/>
	\$14,256 21

GRADE DAMAGES, HUMBOLDT AVENUE.

Brown, Agnes	\$471 24
Carpenter, Samuel L. and Lucinda W.	200 00
Draper, Charles E.	2,121 24
D'Arcy, Frank P.	421 24
Folsom, Mary F.	1,521 24
Gerry, Samuel L.	400 00
Hunt, Sylvia W.	471 24
Knowles, J. M.	900 00
Kittredge, C. F.	300 00
Leonard, George	400 00
Maguire, Patrick	900 00
Rand, Carrie B.	571 24
Sawyer, Nellie O.	300 00
Sullivan, Michael	1,200 00
Taggard, John H.	500 00
Vail, Emma L. R.	100 00
Woodbury, Louisa	600 00
	<hr/>
	\$11,377 44

The following schedule shows the expenditures from the maintenance appropriation of this division devoted to the various streets in the several districts :

SOUTH BOSTON.

A street, ¹ Broadway to First street. In excess of special appropriation	\$102 47
Dorchester street, ¹ Eighth street to Dorchester avenue. In excess of special appropriation	68 90
E street, ¹ Third street to Bolton street. In excess of special appropriation	470 47
First street, ¹ N. Y. & N. E. R.R. to F street. In excess of special appropriation . . .	1,291 23
Fourth street, ¹ G street to H street. In excess of special appropriation	28 00
Gustin street. ¹ In excess of special appropriation	597 14
Harvest street. ¹ In excess of special appropriation	630 74
Newman street. ¹ In excess of special appropriation	142 88
Rogers street. ¹ In excess of special appropriation	264 88
Seventh street, ¹ D street towards B street. In excess of special appropriation . . .	244 36
Second street, ¹ E street to Dorchester street. In excess of special appropriation . . .	1,243 99
Sixth street, ¹ O street to Q street ; repaved between O and P streets — paved between P and Q streets :	
Labor	\$228 14
Teaming	75 00
Material	1,246 75
	<hr/>
	1,549 89
Sixth street, ¹ H street to I street. In excess of special appropriation	108 07
Second street, ¹ Granite street to A street. In excess of special appropriation . . .	55 74
Ward street. ¹ In excess of special appropriation	122 00
Washburn street. ¹ In excess of special appropriation	1,044 92
	<hr/>
<i>Amount carried forward,</i>	\$8,165 68

¹ For detail of this work see special appropriations.

<i>Amount brought forward,</i>		\$8,165 68
Maintenance of macadamized roadways :		
Labor	\$2,302 98	
Teaming	787 50	
	<hr/>	3,090 48
Crossings, repairs :		
Labor	\$94 07	
Material	613 44	
	<hr/>	707 51
Crossings, new :		
Labor	\$146 02	
Teaming	24 00	
Material	640 25	
	<hr/>	810 27
Edgestone and sidewalks, repairs :		
Labor	\$3,250 18	
Teaming	2,292 00	
Material	1,281 14	
	<hr/>	6,823 32
Edgestone, sidewalks, and gutters, new :		
Labor	\$1,298 80	
Pavers' bills	492 58	
Material	615 27	
	<hr/>	2,406 65
Fences and plank-walks :		
Labor	\$831 49	
Material	703 17	
	<hr/>	1,534 66
Repairs :		
Labor	\$3,113 76	
Teaming	4,054 50	
Pavers' bills	251 59	
Material	5,810 35	
	<hr/>	13,230 20
Total		<hr/> \$36,768 77
Credit on account of city crusher		787 96
		<hr/>
		<u>\$35,980 81</u>

EAST BOSTON.

Bennington street, Prescott street to Wordsworth street : Regulating and grading :

1,218 ft. edgestone set.

432 sq. yds. gutter paving.

776 sq. yds. brick sidewalks relaid.

3,690 sq. yds. of 3-inch macadam.

3,495 cu. yds. filling (taken from sewer trenches).

Labor	\$1,987 58
Teaming	526 50
Stone and screenings	737 90
Roller	201 00
Edgestone (622 ft., new)	446 20
Pavers' bills	158 49
Sand	32 00

\$4,089 67

Beachmont avenue, Leyden street to Revere :

Filling (taken from sewer trenches) :

Labor	\$868 15
Teaming	757 50

1,625 65

Belmont square : Gravelled — Edgestones set
— Gutter paved — Crossings laid :

Labor	\$155 67
Teaming	72 00
Street-roller	18 00
Material	485 55

731 22

Eagle square, at Chelsea street.¹ In excess of
special appropriation 558 40

Jeffries and Marginal streets. In excess of
special appropriation 516 61

Lamson street, Sumner street to Webster
street : Gravelled — Edgestone set — Brick
walks laid :

Labor	\$186 75
Teaming	66 00
Pavers' bills	106 05
Material	433 20

792 00

Amount carried forward,

\$8,313 55

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>	\$8,313 55
Lewis street: Entire length repaved:	
Labor	\$501 32
Teaming	115 50
Pavers' bills	519 95
Material	516 40
	<hr/>
	1,653 17
Morris street, Marion street to Brooks street:	
Gravelled — Edgestone set — Gutters paved	
— Brick sidewalk paved:	
Labor	\$549 51
Teaming	367 50
Street-roller	51 00
Material	424 65
	<hr/>
	1,392 66
Porter street, Bremen street to Central square:	
Resurfaced:	
Labor	\$390 84
Teaming	108 00
Street-roller	33 00
Material	578 24
	<hr/>
	1,110 08
Putnam street, Chelsea street to Bennington street:	
Resurfaced:	
Labor	\$242 77
Teaming	40 50
Street-roller	9 00
Material	337 03
	<hr/>
	629 30
Sumner street, at Belmont square: Cross-walks laid:	
Labor	\$57 60
Teaming	24 00
Pavers' bills	42 00
Material	569 30
	<hr/>
	692 90
Terrace place: Repaved — Edgestone set — Sidewalks laid:	
Labor	\$571 69
Teaming	96 00
Pavers' bills	166 92
	<hr/>
	834 61
Walley street: Resurfaced:	
Labor	\$325 16
Teaming	217 50
	<hr/>
	542 66
<i>Amount carried forward,</i>	<hr/>
	\$15,168 93

<i>Amount brought forward,</i>				\$15,168 93
Webster street, Cottage street to Jeffries street : Resurfaced :				
Labor	.	.	.	\$597 41
Teaming	.	.	.	151 50
Pavers' bills	.	.	.	134 85
Street-roller	.	.	.	78 00
Material	.	.	.	387 79
				<hr/>
				1,349 55
Webster street, at Belmont square : Cross-walks laid :				
Labor	.	.	.	\$57 60
Teaming	.	.	.	33 00
Pavers' bills	.	.	.	32 25
Material	.	.	.	558 20
				<hr/>
				681 05
Maintenance of macadamized roadways :				
Labor	.	.	.	\$1,634 88
Teaming	.	.	.	462 00
				<hr/>
				2,096 88
Edgestone, sidewalks, and gutters, repairs :				
Labor	.	.	.	\$1,769 58
Teaming	.	.	.	856 50
Pavers' bills	.	.	.	21 63
Material	.	.	.	638 26
				<hr/>
				3,285 97
Edgestone, sidewalks, and gutters, new :				
Labor	.	.	.	\$229 67
Teaming	.	.	.	12 00
Pavers' bills	.	.	.	71 39
Material	.	.	.	1,220 73
				<hr/>
				1,533 79
Fences and plank-walks :				
Labor	.	.	.	\$477 72
Teaming	.	.	.	135 00
Carpenter	.	.	.	378 00
Material	.	.	.	784 73
				<hr/>
				1,775 45
Repairing streets :				
Labor	.	.	.	\$9,917 45
Teaming	.	.	.	2,326 50
Roller	.	.	.	145 00
Pavers' bills	.	.	.	57 35
Material	.	.	.	2,873 06
				<hr/>
				15,319 36
Total				<hr/>
				<u>\$41,210 98</u>

CHARLESTOWN.

Austin street. ¹	In excess of special appropriation	\$140 43
Charles-river avenue :	Repaved roadway :	
Labor	\$279 36	
Teaming	102 00	
Pavers' bills	419 42	
Material	243 63	
	<hr/>	1,044 41
Dupont street. ¹	In excess of special appropriation	121 21
Edgeworth street. ¹	In excess of special appropriation	37 25
Parker street :	Reset edgestones — Relaid gutters and sidewalks :	
Labor	\$368 70	
Teaming	84 00	
Material	114 17	
	<hr/>	566 87
Maintenance of macadamized roadways :		
Labor	\$1,729 97	
Teaming	1,485 00	
	<hr/>	3,214 97
Edgestones, sidewalk, and gutter, repairs :		
Labor	\$2,288 91	
Teaming	997 50	
Material	1,429 18	
	<hr/>	4,715 59
Fences and plank-walks :		
Labor	\$415 49	
Teaming	54 00	
Carpenter	210 47	
Material	167 08	
	<hr/>	847 04
Repairing streets :		
Labor	\$6,230 82	
Teaming	3,618 00	
Pavers' bills	71 02	
Roller	102 00	
Material	2,602 80	
	<hr/>	12,624 64
Total		<hr/> <hr/> \$23,312 41

¹ For detail of this work see special appropriation.

BRIGHTON.

Cambridge street, near Gas-house : Resurfacing :

2,860 sq. yds. 4-in. macadam.

Labor	\$573 29
Teaming	442 18
Pavers' bills	65 06
Edgestone	28 42
Gravel and sand	155 96
Roller	84 00
Stone	771 40

 \$2,120 31

Westford street : Regulating and Gravelling :

244 ft. edgestone.

88 sq. yds. gutter paving.

1,820 sq. yds. gravel roadway.

950 sq. yds. gravel sidewalk.

Labor	\$743 30
Teaming	297 00
Gravel	1,163 43
Pavers' bills	41 56
Edgestones	209 26
Stone	43 70

 2,498 25

Western avenue : Regulating and Resurfacing :

366 ft. edgestone.

123 sq. yds. gutter paving.

5,130 sq. yds. 4-in. macadam.

Labor	\$565 07
Teaming	600 50
Edgestone	104 39
Pavers' bills	30 77
Stone	1,420 10
Gravel	403 76
Roller	145 00

 3,269 59
Aldie street.¹ In excess of special appropriation.

247 05

Commonwealth avenue. Entire length repaired where needed :

Labor	\$86 40
Teaming	348 00
Material	1,250 20

 1,684 60

Amount carried forward,

 \$9,819 80

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>		\$9,819 80
Dunboy street: Grading and Gravelling from Biglow street, 800 feet south:		
Labor	\$840 96	
Teaming	463 50	
Material	547 95	
	<hr/>	1,852 41
Dustin street. ¹ In excess of special appropri- ation		1,069 79
Mansfield street: Grading — Setting Edge- stones — Gutters:		
Labor	\$453 23	
Teaming	192 00	
Pavers' bills	239 83	
Street-roller	63 00	
Material	826 51	
	<hr/>	1,774 57
Mount Vernon street. ¹ In excess of special appropriation		568 10
Hobart street. ¹ In excess of special appropri- ation		2,213 37
Lake street. ¹ In excess of special appropri- ation		3,642 91
Oakland street: Grading:		
Labor	\$189 11	
Teaming	79 50	
Material	535 15	
	<hr/>	803 76
Rockland street. Macadamized; Chestnut Hill avenue, south:		
Labor	\$91 39	
Teaming	60 00	
Steam-roller	96 00	
Material	422 80	
	<hr/>	670 19
Washington street: Repairs entire length:		
Labor	\$103 09	
Teaming	87 00	
Street-roller	66 00	
Material	353 27	
	<hr/>	609 36
Winship street: New crossings, new edge- stones, new sidewalk—Repairs entire length:		
Labor	\$48 00	
	<hr/>	
<i>Amounts carried forward,</i>	\$48 00	\$23,024 26

<i>Amounts brought forward,</i>	\$48 00	\$23,024 26
Teaming	81 86	
Pavers' bills	56 95	
Material	702 43	
	<hr/>	889 24
Maintenance of macadamized roadways :		
Labor	\$2,119 35	
Teaming	634 50	
	<hr/>	2,753 85
Crossings, new :		
Labor	\$209 82	
Teaming	60 00	
Material	2,100 07	
	<hr/>	2,369 89
Edgestone — Sidewalk and gutters, repaired :		
Labor	\$27 75	
Material	847 05	
	<hr/>	874 80
Edgestone — Sidewalks and gutters, new :		
Labor	\$284 33	
Teaming	148 50	
Pavers' bills	180 29	
Material	1,835 33	
	<hr/>	2,448 45
Fences and plank-walks :		
Labor	\$673 04	
Material	1,409 64	
	<hr/>	2,082 68
Repairing streets :		
Labor	\$8,997 50	
Teaming	5,652 00	
Material	5,852 45	
Pavers' bills	134 22	
Roller	84 00	
	<hr/>	20,720 17
Total		<hr/> \$55,163 34
Credit on account of city crusher,		1,181 93
		<hr/>
		<u>\$53,981 41</u>

WEST ROXBURY.

Canterbury street, Blue Hill avenue to Austin street : Resurfacing :

3,300 sq. yds. 6-in. macadam.

Labor	.	.	.	.	\$188 30
Teaming	.	.	.	.	636 00
Gravel	.	.	.	.	165 20
Roller	.	.	.	.	192 00
Stone	.	.	.	.	1,309 10

\$2,490 60

Centre street, Green to Amory : Resurfacing :

5,500 sq. yds. 4-in. macadam.

Labor	.	.	.	.	\$393 88
Teaming	.	.	.	.	667 50
Stone	.	.	.	.	1,507 13
Gravel	.	.	.	.	531 10
Roller	.	.	.	.	237 00

3,336 61

Hyde Park avenue, Mt. Hope to Hyde Park line : Resurfacing :

5,300 lin. ft. plank-walk.

15,500 sq. yds. 8-in. macadam.

Labor	.	.	.	.	\$464 78
Teaming	.	.	.	.	870 00
Gravel	.	.	.	.	1,466 90
Roller	.	.	.	.	320 00
Stone	.	.	.	.	7,690 90
Lumber	.	.	.	.	569 04

11,381 62

Mozart street : Regulating and resurfacing :

2,600 lin. ft. edgestone.

880 sq. yds. block-stone gutter.

257 sq. yds. brick sidewalk.

2,500 sq. yds. 3-in. macadam.

Labor	.	.	.	.	\$804 50
Teaming	.	.	.	.	316 50
Blocks	.	.	.	.	990 22
Gravel	.	.	.	.	746 10
Pavers' bills	.	.	.	.	474 34
Edgestone	.	.	.	.	1,572 68
Stone	.	.	.	.	498 45
Roller	.	.	.	.	175 00

5,577 79

Amount carried forward,

\$22,786 62

<i>Amount brought forward,</i>		\$22,786 62
Mt. Hope street, Hyde park avenue to Canterbury : Resurfacing with gravel :		
5,200 sq. yds. gravel roadway.		
2,700 sq. yds. gravel sidewalk.		
300 sq. yds. gutter relaid.		
Labor	\$397 66	
Teaming	225 00	
Pavers' bills	77 18	
Roller	321 00	
Gravel	1,453 90	
	<hr/>	2,474 74
School street, Washington to Walnut avenue :		
Regulating and macadamizing :		
2,400 sq. yds. Telford macadam.		
Labor	\$380 25	
Teaming	587 00	
Gravel	261 80	
Roller	130 00	
Stone	1,774 60	
	<hr/>	3,133 65
South street, near Centre : Resurfacing :		
6,100 sq. yds. 8-in. macadam.		
Labor	\$139 80	
Teaming	102 00	
Gravel	383 60	
Stone	2,922 20	
Roller	167 00	
	<hr/>	3,714 60
Walkhill street, Paine to Back street : Resurfacing and regulating :		
432 sq. yds. gutter paving.		
2,500 sq. yds. 4-in. macadam.		
Labor	\$505 81	
Teaming	704 50	
Roller	200 00	
Stone	671 20	
Gravel	751 80	
	<hr/>	2,833 31
Washington street, south of Forest Hills : Resurfacing :		
4,500 sq. yds. 6-in. macadam.		
Labor	\$833 31	
Teaming	583 50	
	<hr/>	
<i>Amounts carried forward,</i>	\$1,416 81	\$34,942 92

<i>Amounts brought forward,</i>	\$1,416 81	\$34,942 92
Stone	1,786 00	
Roller	224 00	
	<hr/>	3,426 81
Arnold street, from Weld street to Newton line : Repaired :		
Labor	\$9 00	
Teaming	118 50	
Material	549 50	
	<hr/>	677 00
Baker street. ¹ In excess of special appropriation		366 00
Ballard street. ¹ In excess of special appropriation		136 80
Berry street, from Canterbury street to Calvary Cemetery : Resurfaced :		
Labor	\$416 31	
Teaming	90 00	
Roller	145 00	
Material	854 00	
	<hr/>	1,505 31
Boynton street, South street to Call street :		
Labor	\$34 44	
Material	467 75	
	<hr/>	502 19
Call-street extension. ¹ In excess of special appropriation		599 71
Centre street, near Spring street : Repairs :		
Labor	\$56 25	
Teaming	163 50	
Material	373 10	
	<hr/>	592 85
Danforth street, Boylston street to Paul Gore street : Resurfaced :		
Labor	\$549 85	
Teaming	372 00	
Paver's Bills	206 33	
Material	347 10	
	<hr/>	1,475 28
Forbes street : ¹ In excess of special appropriation		2,095 45
German street : Whole length, construction :		
Labor	\$923 85	
Teaming	505 50	
	<hr/>	1,429 35
<i>Amount carried forward,</i>		<hr/> \$47,749 67

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>	\$47,749 67
Goldsmith street. ¹ In excess of special appropriation	22 88
Hyde Park avenue, near Forest Hills: Resurfaced:	
Labor	\$487 55
Teaming	142 50
Material	504 00
	<hr/>
	1,134 05
La Grange street, Partridge street to Martin street: Resurfaced:	
Labor	\$228 86
Teaming	367 50
Roller	55 00
Material	1,041 60
	<hr/>
	1,692 96
Maynard street. ¹ In excess of special appropriation	444 93
Oak street. ¹ In excess of special appropriation	28 16
Paul Gore street, ¹ Chestnut avenue to Laramie street: Resurfaced — New edgestone, sidewalks, and gutters:	
Labor	\$311 71
Teaming	127 50
Street-roller	146 00
Material	1,191 79
Pavers' bills	92 07
	<hr/>
	1,869 07
Peter Parley road. ¹ In excess of special appropriation	46 10
Poplar street, Canterbury street to Metropolitan avenue: Repairs:	
Labor	\$335 21
Teaming	358 50
Pavers' bills	232 65
Material	218 40
	<hr/>
	1,144 76
Prospect avenue. In excess of special appropriation	33 00
Sylvia street. ¹ In excess of special appropriation	436 25
Symmes street. ¹ In excess of special appropriation	390 50
	<hr/>
<i>Amount carried forward,</i>	\$54,992 33

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>		\$54,992 33
Walter street: Repairs:		
Labor	\$440 83	
Teaming	334 50	
	<hr/>	775 33
Weld street, Baker street to Corey street:		
Labor	\$123 08	
Teaming	63 00	
Material	697 90	
	<hr/>	883 98
Washington, South, and Centre streets. ¹ In excess of special appropriation		9,381 79
Wise street: New edgestones, gutters, and walks:		
Labor	\$52 80	
Teaming	123 00	
Pavers' bills	94 14	
Material	506 16	
	<hr/>	776 10
Maintenance of macadamized roadways:		
Labor	\$6,014 95	
Teaming	3,474 00	
	<hr/>	9,488 95
Crossings, repairs:		
Labor	\$161 89	
Teaming	48 00	
Material	909 92	
	<hr/>	1,119 81
Edgestone — Sidewalks and gutter repairs:		
Teaming	\$96 00	
Pavers' bills	687 27	
Material	881 61	
	<hr/>	1,664 88
Edgestone — Sidewalk and gutters (new):		
Labor	\$347 45	
Teaming	115 50	
Pavers' bills	544 34	
Material	355 86	
	<hr/>	1,363 15
Fences and plank-walks:		
Labor	\$1,390 93	
Carpenter	45 50	
Material	1,590 53	
	<hr/>	3,026 96
<i>Amount carried forward,</i>		\$83,473 28

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>		\$83,473 28
Repairing streets :		
Labor	\$9,444 77	
Teaming	17,161 00	
Pavers' bills	200 72	
Roller	147 00	
Material	14,577 90	
	<hr/>	41,531 39
Total		\$125,004 67
Credit on account of city crushers		1,575 91
		<hr/>
		\$123,428 76

DORCHESTER.

Adams street, Dorchester avenue to Park street: Paving gutters and macadamizing:
360 sq. yds. block-stone gutters.

3,000 sq. yds. 6-in. macadam :

Labor	\$1,099 72
Teaming	181 50
Gravel	159 00
Stone	1,235 00
Roller	49 00

\$2,724 22

Blue Hill avenue, Wales to Harvard street:
333 feet edgestone reset.

112 sq. yds. gutter paving.

6,000 sq. yds. 6-in. macadam. :

Labor	\$863 75
Teaming	568 74
Gravel	430 50
Stone	2,363 40
Roller	196 00

4,422 39

Codman street, Adams to Shawmut Branch R.R. : Regulating and macadamizing :
608 feet edgestone.

203 sq. yds. gutters.

163 sq. yds. brick sidewalk.

2,350 sq. yds. 6-in. macadam.

720 sq. yds. gravel sidewalk.

Labor	\$558 87
Teaming	165 00
Paving-blocks	223 08

Amounts carried forward, \$946 95 \$7,146 61

<i>Amounts brought forward,</i>	\$946 95	\$7,146 61
Edgestone	364 80	
Pavers' bills	125 98	
Gravel	112 50	
Roller	84 00	
Stone	959 00	
	<hr/>	2,593 23
Dracut street : Regulating and macadamizing : 2,332 lin. ft. edgestone. 323 sq. yds. block-stone gutters. 450 sq. yds. round stone gutters. 2,450 sq. yds. 8-in. macadam. 1,600 sq. yds. gravel sidewalk.		
Labor	\$1,983 64	
Teaming	742 67	
Stone	1,225 00	
Blocks	367 96	
Pavers' bills	386 25	
Gravel	388 50	
Roller	112 00	
	<hr/>	5,206 02
Washington street, Norfolk to Columbia : Resurfacing and regulating : 7,000 sq. yds. 3-in. macadam — Edgestones reset — Gutters relaid :		
Labor	\$338 55	
Teaming	504 50	
Roller	154 00	
Stone	1,388 90	
Gravel	331 80	
Pavers' bills	229 37	
	<hr/>	2,947 12
Abbot street, Blue Hill avenue to Harvard street : Resurfaced :		
Labor	\$236 08	
Teaming	174 00	
Roller	81 00	
Material	405 60	
	<hr/>	896 68
Adams street, King street to Beaumont street : Resurfaced :		
Labor	\$247 08	
Teaming	126 00	
	<hr/>	
<i>Amounts carried forward,</i>	\$373 08	\$18,789 66

<i>Amounts brought forward,</i>	\$373 08	\$18,789 66
Roller	134 00	
Material	1,114 60	
	<hr/>	1,621 68
Ashmont street. ¹ In excess of special appropriation		679 00
Blue Hill avenue, Quincy street to Grove Hall: Resurfaced:		
Labor	\$67 50	
Teaming	258 00	
Material	273 60	
	<hr/>	599 10
Boston street, Stoughton street to Eastman street: Resurfaced:		
Material		660 80
Bushnell street. ¹ In excess of special appropriation		1,619 51
Carruth street, Beaumont street to New Minot street: Macadamizing — Resetting edge-stones — New gutters:		
Labor	\$517 27	
Teaming	90 00	
Roller	21 00	
Material	584 90	
	<hr/>	1,213 17
Codman street, Dorchester avenue to Washington street: Macadamizing:		
Labor	\$142 98	
Teaming	127 50	
Roller	98 00	
Material	718 00	
	<hr/>	1,086 48
Gleason street, Harvard street to White street: Macadamized:		
Labor	\$170 28	
Teaming	100 92	
Material	384 56	
Roller	105 00	
	<hr/>	760 76
Granite avenue. ¹ In excess of special appropriation		3,204 21
<i>Amount carried forward,</i>		<hr/> \$30,234 37

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>	\$30,234 37
Hancock street : Widening at Upham's Corner :	
Labor	\$512 28
Teaming	165 00
Excavating	57 50
Pavers' bills	85 90
Roller	42 00
Material	360 50
	<hr/>
	1,223 18
Magnolia street. ¹ In excess of special appro-	
priation	304 08
Neponset avenue. ¹ In excess of special appro-	
priation	5,161 26
Pleasant street, Stoughton street to Victoria	
street : Resurfaced :	
Labor	\$61 80
Teaming	120 00
Material	358 86
	<hr/>
	540 66
Sturbridge street, River street to Sanford	
street : Filling :	
Labor	\$108 37
Material	453 85
	<hr/>
	562 22
Victoria street, from Pleasant street, east,	
towards Dorchester avenue : Repairing	
concrete sidewalk — Resetting edgestone	
and gutters :	
Labor	\$87 29
Teaming	27 00
Pavers' bills	66 64
Material	469 38
	<hr/>
	650 31
Maintenance of macadamized roadways :	
Labor	\$3,218 38
Teaming	1,209 00
	<hr/>
	4,427 38
Edgestone—Sidewalk and gutter, repairs :	
Labor	\$1,044 64
Teaming	675 00
Pavers' bills	45 97
Material	822 49
	<hr/>
	2,588 10
<i>Amount carried forward,</i>	<hr/>
	\$45,691 56

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>		\$45,691 56
Edgestone — Sidewalks and gutters (new) :		
Labor	\$137 50	
Teaming	451 61	
Pavers' bills	669 84	
Material	3,797 26	
	<hr/>	5,056 21
Fences and plank-walks :		
Labor	\$1,667 50	
Teaming	6 00	
Carpenter	42 00	
Material	2,049 10	
	<hr/>	3,764 60
Repairs :		
Labor	\$8,578 81	
Teaming	8,707 50	
Roller	350 13	
Pavers' bills	95 63	
Material	13,978 87	
Excavating	325 00	
	<hr/>	32,035 94
Total		\$86,548 31
Credit on account of city crushers		2,363 87
		<hr/>
		\$84,184 44
		<hr/>

ROXBURY.

Blue Hill avenue, Quincy to Warren : Regulating and resurfacing :

386 ft. edgestone.

127 sq. yds. block-stone gutters.

353 sq. yds. brick sidewalk.

1,900 sq. yds. 6-in. macadam.

Labor	\$568 61	
Teaming	259 84	
Edgestone	325 68	
Pavers' bills	118 01	
Sand	107 20	
Gravel	302 40	
Stone	758 80	
Rollers	90 00	
Blocks	86 71	
	<hr/>	\$2,617 25

Amount carried forward,

\$2,617 25

<i>Amount brought forward,</i>	\$2,617 25
Bower street: Regulating—Grading and macadamizing:	
1,280 ft. edgestone reset.	
467 sq. yds. block-stone gutters.	
264 sq. yds. brick sidewalk.	
1,700 sq. yds. 6-in. macadam.	
Labor	\$461 41
Teaming	166 14
Sand	94 40
Gravel	327 60
Stone	672 70
Brick	19 50
Edgestone	82 56
Pavers' bills	271 57
Roller	98 00
	<hr/>
	2,193 88
Harold street: Regulating and macadamizing:	
662 ft. edgestone.	
208 sq. yds. block-stone gutters.	
217 sq. yds. brick sidewalk.	
1,400 sq. yds. 6-in. macadam.	
Labor	\$179 49
Teaming	161 37
Edgestone	585 70
Pavers' bills	143 87
Gravel	291 20
Roller	140 00
Stone	569 62
Flagging	124 80
	<hr/>
	2,196 05
Kendall street: Regulating and resurfacing:	
2,164 ft. edgestone reset.	
772 sq. yds. gutter repaved.	
1,324 sq. yds. brick sidewalk relaid.	
2,300 sq. yds. 3-in. macadam.	
Labor	\$916 47
Teaming	500 14
Sand	90 10
Gravel	247 09
Rollers	174 50
Stone	1,035 34
Pavers' bills	616 18
Brick	232 06
	<hr/>
	3,811 88
<i>Amount carried forward,</i>	\$10,819 06

<i>Amount brought forward,</i>	\$10,819 06
Roxbury street, Highland to Tremont: Regulating and resurfacing:	
5,900 sq. yds. 3-in. macadam.	
Labor	\$88 77
Teaming	106 00
Gravel	253 40
Stone	1,141 27
Roller	144 00
Block	100 38
Flagging	182 40
	<hr/>
	2,016 22
Calumet street: Grading:	
Labor	\$560 22
Teaming	225 00
	<hr/>
	785 22
Cabot street. ¹ In excess of special appropriation	1,792 94
Cheney street, Blue Hill avenue to Hartwell street: Resurfaced — Edgestone — Gutters — Sidewalks:	
Labor	\$109 77
Teaming	66 36
Pavers' bills	29 26
Roller	35 00
Material	498 58
	<hr/>
	738 97
Cliff street. ¹ In excess of special appropriation	314 61
Centre street. In excess of special appropriation	1,639 77
Dunmore street: Macadamized — New edgestone — Sidewalk and gutters:	
Labor	\$539 09
Teaming	255 00
Pavers' bills	123 28
Roller	46 00
Material	538 66
	<hr/>
	1,502 03
Dudley street, at Norfolk House. In excess of special appropriation	1,258 74
	<hr/>
<i>Amount carried forward,</i>	\$20,867 56

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>	\$20,867 56
East Lenox street, Washington street to Fellows street: Edgestones and sidewalks (new):	
Labor	\$124 41
Teaming	15 00
Pavers' bills	246 43
Material	120 96
	<hr/>
	506 80
Elmore street, Mayfair street to Washington street: Edgestones — Gutters — Sidewalks — Resurfaced:	
Labor	\$405 63
Teaming	165 02
Pavers' bills	136 19
Material	698 80
	<hr/>
	1,405 64
Elmwood street, Roxbury street to King street: Macadamized — Edgestone — Side- walks — Gutters:	
Pavers' bills	\$59 58
Street-roller	54 00
Material	388 08
	<hr/>
	501 66
Guild row: Widened — Repaved — Edgestone reset:	
Labor	\$644 13
Material	818 24
	<hr/>
	1,462 37
Hampshire street. ¹ In excess of special ap- propriation	694 80
Howland street. ¹ In excess of special appro- priation	1,827 78
Humboldt avenue. In excess of special appro- priation	15,999 61
Humboldt avenue, Walnut avenue to Craw- ford street: Resurfaced — Edgestone — Side- walk — Gutter:	
Labor	\$161 34
Teaming	90 00
Pavers' bills	166 10
Material	632 34
	<hr/>
	1,049 78
<i>Amount carried forward,</i>	<hr/>
	\$44,316 00

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>	\$44,316 00
Kensington street: Edgestone — Sidewalk — Gutters:	
Labor	\$145 71
Teaming	72 00
Pavers' bills	91 11
Material	328 98
	<hr/>
	637 80
Laurel street, at Humboldt avenue: Resurfaced — Edgestone — Sidewalks — Gutters:	
Labor	\$183 16
Teaming	91 35
Pavers' bills	73 32
Roller	14 00
Material	375 75
	<hr/>
	737 58
Lenox street. ¹ In excess of special appropriation	3,097 69
Moreland street. ¹ In excess of special appropriation	40 21
Monroe street: Hazelwood street to 500 feet west, Humboldt avenue: Resurfaced — Edgestone:	
Labor	\$670 64
Teaming	312 00
Pavers' bills	41 11
Roller	7 00
Material	92 40
	<hr/>
	1,123 15
Parker street. ¹ In excess of special appropriation	4,483 48
Ruggles street, Washington street to Tremont street: Resurfaced:	
Labor	\$81 48
Teaming	44 74
Roller	120 00
Material	398 00
	<hr/>
	644 22
Shirley street. ¹ In excess of special appropriation	254 86
<i>Amount carried forward,</i>	<hr/>
	\$55,334 99

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>		\$55,334 99
Sterling street, Washington street to Shawmut avenue : Macadamized — Edgestone — Sidewalks :		
Labor	\$70 12	
Teaming	29 88	
Pavers' bills	265 22	
Roller	22 50	
Material	288 91	
	<hr/>	676 63
Townsend street, Walnut avenue to Humboldt avenue : Macadamized — Edgestone — Sidewalks and gutters :		
Labor	\$44 05	
Teaming	31 35	
Pavers' bills	130 52	
Roller	28 00	
Material	414 80	
	<hr/>	648 72
Tremont street, Huntington avenue to Brookline line : Resurfaced :		
Labor	\$122 23	
Teaming	156 00	
Roller	266 00	
Material	720 17	
	<hr/>	1,264 40
Washington street, Cedar street to Circuit street : Repaved :		
Pavers' bills	\$495 11	
Material	217 00	
	<hr/>	712 11
Waumbeck street. ¹ In excess of special appropriation		3,919 21
Walden street : Macadamized — Edgestone — Sidewalk :		
Pavers' bills	\$12 50	
Material	747 87	
	<hr/>	760 37
Westminster street : Resurfaced — New edgestone and gutters — Reset edgestones :		
Labor	\$65 89	
Teaming	15 00	
Pavers' bills	185 42	
	<hr/>	
<i>Amounts carried forward,</i>	\$266 31	\$63,316 43

¹ For detail of this work see special appropriation.

<i>Amounts brought forward,</i>	\$266 31	\$63,316 43
Roller	37 50	
Material	738 00	
	<hr/>	1,041 81
Williams street : Resurfaced from Westminster to Washington — Edgestone and gutters :		
Labor	\$311 66	
Teaming	217 50	
Pavers' bills	33 52	
Roller	90 00	
Material	688 99	
	<hr/>	1,341 67
Maintenance of macadamized roadways :		
Labor	\$4,544 20	
Teaming	2,923 50	
	<hr/>	7,467 70
Crossings (new) :		
Labor	\$52 78	
Teaming	13 50	
Material	743 16	
	<hr/>	809 44
Edgestone, sidewalks, gutters, repaired :		
Labor	\$3,116 29	
Teaming	3,066 00	
Pavers' bills	115 34	
Material	2,559 43	
	<hr/>	8,857 06
Edgestone, sidewalks, gutters (new) :		
Labor	\$1,050 02	
Teaming	1,107 00	
Pavers' bills	4,357 13	
Material	5,550 43	
	<hr/>	12,064 58
Fences and plank-walks :		
Labor	\$1,129 05	
Material	1,471 12	
	<hr/>	2,600 17
Repairs on streets :		
Labor	\$7,453 03	
Teaming	14,857 17	
Pavers' bills	362 65	
Roller	168 00	
Material	24,762 49	
	<hr/>	47,603 34
Total		\$145,102 20
Credit on account of city crushers		2,757 85
		<hr/>
Total		<u>\$142,344 35</u>

CITY PROPER.

Commonwealth avenue, W. Chester park to

Cross-roads: Regulating and resurfacing:

640 ft. edgestone.

236 sq. yds. block-stone gutter.

2,200 sq. yds. Telford macadam:

Labor	.	.	.	.	\$391 84
Teaming	.	.	.	.	273 00
Pavers' bills	.	.	.	.	107 00
Screenings	.	.	.	.	220 50
Gravel	.	.	.	.	44 80
Flagging	.	.	.	.	58 56
Stone	.	.	.	.	1,725 12
Roller	.	.	.	.	214 00
Blocks	.	.	.	.	425 55

 \$3,460 37

Exeter street: Regulating and resurfacing:

640 ft. edgestone.

369 sq. yds. stone gutter.

113 sq. yds. brick sidewalk.

1,800 sq. yds. Telford macadam:

Labor	.	.	.	.	\$218 25
Teaming	.	.	.	.	312 00
Pavers' bills	.	.	.	.	292 64
Gravel	.	.	.	.	254 40
Stone	.	.	.	.	1,490 60
Roller	.	.	.	.	170 00

 2,737 89

Albany street. In excess of special appropriation

165 90

Atlantic avenue, Clinton street to Central wharf: Repaving:

Teaming	.	.	.	.	\$24 00
Pavers' bills	.	.	.	.	534 18

 558 18
Atlantic avenue.¹ In excess of special appropriation

97 36

Batterymarch street.¹ In excess of special appropriation

136 00

Bedford street.¹ In excess of special appropriation

1,139 56

Beacon street.¹ In excess of special appropriation

 4,727 87

 Amount carried forward,

 \$13,023 13
¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>		\$13,023 13
Blagden street: Resurfaced:		
Labor	\$77 37	
Teaming	108 00	
Material	634 60	
	<hr/>	819 97
Camden street. ¹ In excess of special appropriation		1,871 41
Columbia street. ¹ In excess of special appropriation		942 84
Charles-river avenue: Repaving:		
Labor	\$87 08	
Teaming	40 50	
Pavers' bills	132 55	
Material	256 34	
	<hr/>	516 47
Cleveland place. ¹ In excess of special appropriation		86 77
Court street, Washington street to Court square: Asphaltting:		
Labor	\$258 77	
Teaming	84 00	
Asphaltting	1,052 50	
Pavers' bills	93 72	
Removing stone	135 50	
Material	44 21	
	<hr/>	1,668 70
Dalton and Dundee streets: Macadamizing		
—New edgestones—Sidewalk—Gutters:		
Labor	\$303 57	
Teaming	240 00	
Pavers' bills	43 40	
Material	170 30	
	<hr/>	757 27
East Concord street. ¹ In excess of special appropriation		1,339 19
Emerald street. ¹ In excess of special appropriation		126 81
East Newton street. ¹ In excess of special appropriation		224 00
Friend street, Washington to Sudbury st.: Repaving:		
Labor	\$396 76	
	<hr/>	
<i>Amounts carried forward,</i>	\$396 76	\$21,376 56

¹ For detail of this work see special appropriation.

<i>Amounts brought forward,</i>	\$396 76	\$21,376 56
Teaming	96 00	
Material	160 35	
	<hr/>	653 11
Hanover street, Cross to Clark : Repaving portions :		
Labor	\$374 80	
Teaming	366 00	
Material	905 74	
	<hr/>	1,646 54
Hollis street. ¹ In excess of special appropriation		103 57
Hudson street. ¹ In excess of special appropriation		665 34
Huntington avenue, R.R. to Dartmouth street : Resurfaced — New edgestones and sidewalks :		
Labor	\$220 50	
Teaming	118 50	
Pavers' bills	202 17	
Material	591 14	
	<hr/>	1,132 31
Kilby street, State to Milk street : Asphalt- ing, Kingston street. ¹ In excess of special appropriation		1,835 60
		1,548 64
Knapp street : Regulating and repairing :		
Labor	\$272 40	
Teaming	283 50	
Pavers' bills	225 02	
Material	243 54	
	<hr/>	1,024 46
Malden street. ¹ In excess of special appropriation		503 99
Matthews street. ¹ In excess of special appropriation		280 41
Moon street. ¹ In excess of special appropriation		239 03
Newbury street, West Chester park to Charlesgate East : Resurfaced :		
Labor	\$116 16	
Teaming	287 28	
Roller	189 00	
Material	1,348 31	
	<hr/>	1,940 75
<i>Amount carried forward,</i>		<hr/> \$32,950 31

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>	\$32,950 31
Oneida street. ¹ In excess of special appropriation	201 11
Parkman street. ¹ In excess of special appropriation	144 00
Parnell street: New edgestones: — Sidewalks and gutters:	
Labor	\$368 81
Teaming	150 00
Material	334 11
	<hr/>
	852 92
Pemberton square. ¹ In excess of special appropriation	605 20
Pinckney street: Resurfaced:	
Labor	\$253 65
Teaming	283 50
Material	419 82
	<hr/>
	956 97
Richmond street. ¹ In excess of special appropriation	715 73
Rochester street. ¹ In excess of special appropriation	176 60
Scotia, Cambria, and Bothnia streets. In excess of special appropriation	369 66
Seneca street. ¹ In excess of special appropriation	254 60
Somerset street, at new Court House: Macadamized — Edgestones set — Sidewalks laid — Gutters paved — Edgestones and brick furnished by Court House Commissioners:	
Labor	\$175 13
Teaming	338 00
Roller	14 00
Pavers' bills	81 18
Material	339 16
	<hr/>
	947 47
St. Botolph street, at College of Pharmacy. Owner furnished brick:	
Labor	\$231 86
Teaming	51 00
Pavers' bills	277 65
Material	952 53
Roller	30 00
	<hr/>
	1,543 04
<i>Amount carried forward,</i>	<hr/>
	\$39,717 61

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>	\$39,717 61
Staniford street, Causeway street to Green street :	
Labor	\$177 92
Teaming	117 00
Material	251 00
	<hr/>
	545 92
Stoughton street. ¹ In excess of special appropriation	1,274 24
Tremont street. ¹ In excess of special appropriation	1,725 34
Troy street. ¹ In excess of special appropriation	429 37
Warrenton street. ¹ In excess of special appropriation	184 60
Waltham street. ¹ In excess of special appropriation	1,025 97
West Chester park. ¹ In excess of special appropriation	593 60
West Chester park, Huntington avenue to Beacon street: Repaired :	
Labor	\$17 20
Teaming	12 00
Material	1,539 38
	<hr/>
	1,568 58
West Newton street. ¹ In excess of special appropriation	673 30
Well street. ¹ In excess of special appropriation	312 75
Repairing asphalt-paved streets :	
Labor	\$20 37
Teaming	1 50
Material }	1,614 79
Asphalting }	
	<hr/>
	1,636 66
Maintenance of macadamized roadways :	
Labor	\$7,191 19
Teaming	4,836 50
	<hr/>
	12,027 69
Crossing repairs :	
Labor	\$3,076 28
Teaming	388 50
Material	5,853 20
	<hr/>
	9,317 98
<i>Amount carried forward,</i>	<hr/>
	\$71,033 61

¹ For detail of this work see special appropriation.

<i>Amount brought forward,</i>		\$71,033 61
Crossings (new) :		
Labor	\$173 18	
Teaming	82 50	
Material	1,145 61	
	<hr/>	1,401 29
Edgestone, sidewalk, and gutter repaired :		
Labor	\$8,894 39	
Teaming	6,109 50	
Pavers' bills	2,008 50	
Material	8,435 69	
	<hr/>	25,448 08
Edgestone, sidewalks, gutters (new) :		
Labor	\$753 60	
Teaming	405 00	
Pavers' bills	1,355 83	
Material	2,842 66	
	<hr/>	5,357 09
Fences and plank-walks :		
Labor	\$1,796 82	
Teaming	37 50	
Material	2,672 87	
	<hr/>	4,507 19
Repairs on streets :		
Labor	\$25,445 89	
Teaming	12,524 76	
Pavers' bills	2,992 68	
Material	26,730 33	
Roller	87 00	
	<hr/>	66,780 66
Total	\$174,527 92	
Credit on account material	3,151 82	
	<hr/>	\$171,376 10
	<hr/>	

SPRINKLING STREETS.

SOUTH BOSTON.

Labor	\$899 58
Water-carts	3,567 75
Cochituate Water-Works	309 28
Boston street (by contract)	443 74
Dorchester avenue (by contract)	173 34
Dorchester street (by contract)	416 00
Swett street (by contract)	277 34
First street (by contract)	75 00
	<hr/>
	\$6,162 03
	<hr/>

EAST BOSTON.

Labor	\$5 06
Water-carts	2,115 00
Cochituate Water-Works	553 88
Sumner street; Orleans street; Cottage street; Maverick street; Everett street; Saratoga street; Bennington street; Marion street; Paris street; Havre street; London street; Falcon street; White street; Eutaw street; Monmouth street; Brook street; Prescott street; Border street; Marion street; Decatur street; Bremen street; Chelsea street (by contract)	3,379 33
	<hr/>
	\$6,053 27
	<hr/>

CHARLESTOWN.

Labor	\$325 48
Water-carts	2,143 50
Mystic Water-Works	485 24
Rutherford avenue and Alfred street (macadamized portion) — by contract	928 67
Lincoln street; Walker street; High street; Russell street; Middlesex street; Lyndeboro street (by contractor)	197 16
Main street (Walker to Baldwin); Mystic avenue; Dorrance street; Arlington avenue; Cambridge street; Haverhill street; Kingston street; Sever street; Gardiner street (by contract)	801 00
	<hr/>

Amount carried forward,

\$4,881 05

<i>Amount brought forward,</i>	\$4,881 05
Winthrop street; Sullivan street; Russell street; Pearl street; Bartlett street; Jenner street; Rutherford avenue (Devens to Chapman); Rutherford avenue (Devens to Union) — by contract	477 50
Bartlett street; Monument square; Elm street (High to Bunker Hill street); Green street (High to Bunker Hill street); Chestnut street (Monument square to Chelsea street); Cordis street (Warren street to High street); Summer street (Elm street to Pearl street) — by contract	462 50
Main street (Miller street to City square); Rutherford avenue (So. Eden to Chapman street); Chapman street (Main street to Austin street); Washington street (Bow street to Austin street); Union street; Austin street; Cordis street (by contract)	410 50
Essex street; Mill street; Harvard street; Prescott street; Lawrence street; Miller street; Henley street (Harvard square to Main street); Winthrop street (Warren streets to Common street); Lynde street; Harvard square; Devens street; Bow street; Charles River and Warren avenues; Mason street; Benedict street; Soley street; Arrow street; Short street; Washington street; Stacy street; Park street (City square to Warren street) — by contract	752 68
	<hr/>
	<u>\$6,984 23</u>

BRIGHTON.

Labor	\$311 84
Water-carts	10,167 50
Cochituate Water-Works	3,416 03
	<hr/>
	\$13,895 37

WEST ROXBURY.

Labor	\$434 36
Water-carts	7,497 00
Cochituate Water-Works	2,591 69
	<hr/>

Amount carried forward, \$10,523 05

<i>Amount brought forward,</i>	\$10,523 05
Walk Hill street, Hyde Park avenue (Forest Hills to Walk Hill street) — by contract	784 88
Mount Hope street; Berry street; Hyde Park avenue; (Walk Hill street to Hyde Park line) — by contract	1,021 68
Mozart street; Burr street; Clive street; Roys street; Hoffman street; Lamartine street; St. John street; Spring park avenue; Paul Gore street; Sheridan street; Wyman street; Day street; Chestnut avenue; Wise street; Rockview street; Bell street; Oakdale street; Armstrong street; Ashley street; Danforth street; Custer street; Centre street (Pond street to the bridge); Boylston street (Centre street to the R.R.) — by contract	1,549 16
Weld avenue; Cornwall street; Robeson street; Sigourney street; Glen road; Brookside avenue; Woodside avenue; Forest Hills street; Williams street; Eggleston street; Copley street; Green street (R.R. to Forest Hills) — by contract	563 34
Washington street (Green street to Forest Hills depot); Forest Hills depot square (by contract)	29 06
Morton street (Washington street to Forest Hills Cemetery) — by contract	574 07
Boylston avenue; Armory street; School street; Boylston street; Jess street; Porter street (by contract)	531 90
Beethoven street; Atherton street; Walnut avenue; Arcadia street; Seaver street (by contract)	577 87
Prince street; Perkins street; Carolina avenue; Pond street (Centre street to Brookline line); Centre street (May street to Arboretum); Chestnut street, near Perkins street (by contract)	963 00

 \$17,118 01

DORCHESTER.

Labor	\$674 54
Water-carts	7,162 25

Amount carried forward, \$7,836 79

<i>Amount brought forward,</i>	\$7,836 79
Cochituate Water-Works	2,756 99
Bowdoin avenue; Tremlett street; Mather street; Nixon street; Allston street; Melville avenue; Washington street (Bowdoin to Centre); Hooper street; Wheatland avenue; Dorchester avenue (Field's Corner to Mather street) — by contract	1,172 50
Hancock street (Columbia to Eaton square); Eaton square; Bowdoin street; Columbia street (Bridge to Quincy street); Washington street (Grove Hall to Bowdoin street) — by contract	2,249 07
Dorchester avenue (Field's Corner to Mount Vernon street) — by contract	370 50
Pleasant street; Commercial street (Hancock street to Dorchester avenue); Commercial street (R.R. to Mill street); Park street (R.R. to Adams street); Savin Hill avenue (R.R. to Pleasant street); Dudley street (Dorchester avenue to Upham's Corner); Stoughton street; Thornley street; Hancock street (Upham's Corner to Columbia street); Boston street (Upham's Corner to Mount Vernon street); Cottage street; Humphreys street; Sumner street; Adams street (Field's Corner to Meeting-House Hill) — by contract	1,118 00
	<hr/>
	\$15,503 85
	<hr/>

ROXBURY.

Labor	\$1,058 73
Water-carts	5,112 80
Cochituate Water-Works	1,720 63
Tremont street (Parker street to Brookline line); Huntington avenue (West Chester Park to Tremont street); Longwood avenue (Brookline avenue to Parker street) — by contract	1,987 44
Francis street and Brookline avenue (by contract)	1,056 90
Crawford street; Elm Hill avenue; Maple street; Waumbuck street (by contract)	603 80
	<hr/>
<i>Amount carried forward,</i>	\$11,540 30

<i>Amount brought forward,</i>	\$11,540 30
Bellevue street ; Wigglesworth street ; Worth- ington street (by contract)	213 17
Albany street (Northampton street to Eustis street) ; Warren street (Dudley street to Blue Hill avenue) ; Dudley street (Eliot square to Brook avenue) ; Blue Hill avenue (Dudley to Columbia street) — by contract,	2,007 99
Centre street (Cedar street to Highland street) ; Cedar street (Centre street to Washington street) ; Dudley street (Highland street to Warren street) ; Dale street (Walnut avenue to Warren street) ; Hammond street ; Ball street ; Highland street (Cedar to Eliot square) ; Ruggles street (Warwick street to Washington street) ; Roxbury street (Eliot square to Washington street) ; Shawmut ave- nue (Roxbury street to Ball street) ; Sterling street ; Townsend street (Walnut avenue to Warren street) ; Vernon street (Cabot street to Washington street) ; Walnut avenue (Warren street to Seaver street) ; Warwick street ; Williams street ; Circuit street (Walnut avenue to Regent street) ; Rock- land street (Walnut avenue to Warren street) — by contract	1,248 33
	<hr/>
	\$15,009 79
	<hr/>

CITY PROPER.

Labor	\$1,729 82
Water-carts	6,388 00
Cochituate Water-Works	1,917 30
Sundries	661 38
	<hr/>
	\$10,696 50
Swett street (bridge to Albany street) ; East Chester Park	2,209 99
Charles street (Cambridge street to Leverett street) ; Allen street (Charles street to Cam- bridge street) ; Cambridge street (North Russell street to Harbor) ; Poplar street ; Lowell street (Brighton street to Causeway) ; Chambers street (Cambridge street to Green street) ; Derne street (Blossom street to Nashua street) ; Somerset street ; Allston	
<i>Amount carried forward,</i>	<hr/>
	\$12,906 49

<i>Amount brought forward,</i>	\$12,906 49
street; Green street (Charles street to Bowdoin street); Bowdoin street (Allston street to Ashburton place); Bulfinch street (Howard street to Myrtle street); Atlantic avenue (Foster's wharf to Hanover street); Hanover street (Battery street to Eastern avenue); Parmenter street; Hancock street; Temple street; Bowdoin street; Staniford street	2,400 29
Rochester street; Genesee street; Oneida street; Seneca street; Oswego street; Troy street; Waltham street (Washington street to Union park); Malden street (Albany street to Washington street); Broadway extension (bridge to Harrison avenue); East Dedham street (Washington street to Harrison avenue); Union park (Washington street to Harrison avenue); Berkeley street (Chandler street to St. James avenue)—by contract	1,095 84
East Concord street (Harrison avenue to Albany street); West Chester park (Huntington avenue to Beacon street); Dartmouth street (Boylston street to railroad); Harrison avenue (Union Park street to Northampton street); Shawmut avenue (Dedham street to Arnold street); Washington street (Union Park street to Arnold street); Tremont street (Waltham street to Hammond street); Warren avenue (Dartmouth street to Columbus square); West Canton street; Wellington street; West Rutland square (Columbus avenue to railroad); Yarmouth street; Harwich street; Canton street (Albany street to Appleton street); West Brookline street (Tremont street to Albany street); Pembroke street (Tremont street to Shawmut avenue); Newton street (James street to Albany street); Concord street (Shawmut avenue to Harrison avenue); Worcester street (Shawmut avenue to Washington street); Worcester street (Columbus avenue to Tremont street); West Springfield street (Harrison avenue to Wash-	
<i>Amount carried forward,</i>	\$16,402 62

<i>Amount brought forward,</i>	\$16,402 62
ington street) ; West Springfield street (Tremont street to Columbus avenue) ; Northampton street (Albany street to railroad) ; Sawyer street ; Kendall street ; Buckingham street ; Pelham street ; Union park (Harrison avenue to Albany street) ; Columbus avenue (by contract)	6,861 45
Albany street (Dover street to Beach street) ; Tyler street (by contract)	273 00
	<hr/>
	23,537 07
	<hr/>

STREET WATERING.

Recapitulation.

South Boston	\$6,162 03
East Boston	6,053 27
Charlestown	6,984 23
Brighton	13,895 37
West Roxbury	17,118 01
Dorchester	15,503 85
Roxbury	15,009 79
City Proper	23,537 07
	<hr/>
Total	\$104,263 62
	<hr/>

REMOVAL OF SNOW.

South Boston	\$9,378 43
East Boston	5,446 59
Charlestown	6,121 26
Brighton	4,986 63
West Roxbury	7,093 74
Dorchester	6,261 19
Roxbury	10,035 33
City Proper	53,087 69
	<hr/>
	\$102,410 86
	<hr/>

EXPENDITURES UNDER SPECIAL APPROPRIATIONS.

Total amount expended:

A street, Broadway to First street	\$12,102 47
Albany street, Hampden to Eustis street	21,273 39
Aldie street	1,247 05
Allandale street	4,729 41
Ashfield street	1,000 00
Ashmont street	6,079 00
Atlantic avenue	3,590 12
Atlantic street	1,543 02
Austin street	8,840 43
Baker street	2,866 00
Ballard street	1,136 80
Batterymarch street	3,336 00
Beacon street, West from Charles street, and Beacon street, W. Chester park to Arlington street	} 44,903 25
Bedford street, Chauncy to Columbia street, and Kingston street, Sumner to Essex street	
Board alley	469 50
Boylston street, Church to Arlington	64 50
Bristol street	49 00
Brookline street, Shawmut avenue to Tremont street	531 10
Bunker Hill street, Elm to Sackville street	4,000 00
Bushnell street	4,536 51
Buttonwood street	2,013 30
Cabot street	17,792 94
Caldwell street	1,568 52
Call-street extension	3,696 16
Cambridge street	23,775 29
Camden street, Tremont street to R.R.	9,371 41
Canton street, Shawmut avenue to Tremont street,	1,435 65
Centre street, Pyncheon to New Heath street	4,639 77
Chamber street, Charlestown	634 35
Charles street	16,578 66
Cleveland place	1,086 77
Cliff street	2,484 33
Columbus avenue	39,034 20
Commonwealth avenue, West Chester park to Arlington street	603 90
Concord square	72 40
Cook street	700 00
Cornell street	4,300 00
Cornwall street	5,405 86
Dartmouth street, Tremont street to Columbus avenue	1,056 40
Dorchester street, Eighth street to Dorchester avenue	21,682 89
Dorset street	5,000 00
Dover street, Harrison avenue to Albany street	6,715 00
Dudley street, Washington street to Norfolk House	6,258 74
Dudley street, Washington to Hampden street	33,177 75
Dupont street	645 21
Eagle square	1,000 00

Amount carried forward,\$347,530 25

<i>Amount brought forward,</i>	\$347,530 25
East First street, H to K street	1,000 00
E street, Third to Bolton street, and } Third street, from E street, westerly }	3,470 47
East Concord street	5,839 14
East Newton street	3,554 36
Edgeworth street	437 25
Ellwood street	1,251 06
Emerson street	5,000 00
Emerald street	1,701 79
Exeter street	316 50
Falcon street	3,380 40
¹ Ferdinand-street bridge	5,908 77
First street, N.Y. & N.E. R.R. to F street	37,781 16
Forbes street	3,976 33
Fourth street, G to H street	1,132 35
Fulda street	324 75
Fulton street, Richmond to Lewis street	7,230 42
Genesee street	3,865 66
Geneva avenue	6,249 79
Goldsmith street	1,022 88
Granite avenue	13,204 21
Green street, Charlestown	460 46
Gustin street	2,297 14
Hampshire street	1,694 80
Harrison avenue, Canton to Sharon street	4,000 00
Harrison avenue, E. Concord street to E. Chester park	1,500 00
Harrison avenue, East Lenox to Northampton street	3,000 00
Harvard street, Washington to Albany street	77 78
Harvest street	4,830 74
Haskins street	2,809 79
Heath street	2,768 33
Henley street	3,847 52
High street	2,125 13
Hill street	4,138 07
Hobart street	4,213 37
Hollis street	3,190 59
Howland street	5,827 78
Hudson street	20,779 02
Humboldt avenue (grading)	32,024 88
Hunneman street	82 80
Island street	25 60
Jeffries and Marginal streets	5,516 61
K street, Fourth to Eighth street	678 34
Lake street	15,642 91
L street	21,098 97
Lenox street	8,572 10
Lincoln street, Charlestown	2,300 00
Longwood avenue, Parker street to Huntington avenue	22,592 12
Lucas street	308 22
Lynde street	1,603 79
Magazine street	925 80
Magnolia street	4,222 74
<i>Amount carried forward,</i>	\$637,332 94

¹The amount of \$5,908.77 was paid out of the appropriation for Ferdinand-street bridge, for work done on approaches to said bridge.

<i>Amount brought forward,</i>	\$637,332 94
Malden street and Wareham street	19,528 61
Matthews street and Leather square	4,911 85
Maynard street	2,444 93
Medford street	21,505 36
Mercer street	1,054 98
Minot street	8,440 37
Monument court	497 48
Monument street	1,866 87
Moon street	3,758 37
Moreland street	2,040 21
Mount Vernon street	2,693 10
Murdock street	1,006 06
National street	1,500 00
Neponset avenue	17,161 26
Newman street	1,341 14
Ninth street	6,117 66
Oak street	1,000 00
Ocean street	10,100 00
Oneida street	3,501 11
Oswego street	3,668 67
Park street	2,115 43
Parker street	39,483 48
Parker street, Huntington avenue to Westland avenue	420 00
Parkman street	597 80
Paul street	844 38
Pemberton square	2,189 77
Preble street	5,800 00
Prentiss street	4,000 00
Prospect avenue	533 00
Q street	399 85
Resurfacing streets, Wards 17 and 18	5,777 31
Richmond street	2,115 73
Rochester street	4,537 24
Rogers street	1,264 88
Rutherford avenue (macadamizing)	100 00
Rutherford avenue (paving)	7,841 50
Rutland square	114 10
Salem street	1,000 00
Savin Hill avenue	3,826 68
Scotia, Cambria, and Bothnia streets	10,369 66
Second street (grading, etc.)	1,034 36
Second street, K to M	1,422 21
Second street, E to Dorchester street	21,243 99
Second street, easterly from Granite, and } Third street, A to Second }	17,055 74
Seneca street	3,495 93
Seventh street, D to B	9,244 36
Shirley street	4,042 66
Short street, Charlestown	700 00
Short street, West Roxbury	96 60
Silver street, A to D	1,090 66
Sixth street, B to C	3,200 00
Sixth street, H to I	1,729 61
Smith-street extension	639 60
Soley street	810 35
Story street	1,946 78

Amount carried forward,

\$912,554 63

<i>Amount brought forward,</i>	\$912,554 63
Stoughton street	4,274 24
Sun-Court street	1,388 32
Sycamore and Ridge streets	3,700 00
Symmes street	1,390 50
Terrace place, East Boston	1,684 61
Terrace street	25,218 34
Texas street	2,000 00
Tremont street, from Roxbury Crossing	10 50
Tremont street, Scollay square to Boylston	53,725 34
Troy street	8,529 37
Village street	2,200 00
Waltham street	1,525 97
Ward street	797 72
Warren avenue	254 40
Warren street	17,081 75
Warrenton street	6,805 68
Washburn street	4,088 81
Washington street, Charlestown	2,000 00
Washington street, Dorchester	500 00
Washington, South and Centre streets	21,334 98
Water street, Charlestown	540 70
Watson street	1,448 65
Waumbeck street	5,919 21
Well street	2,112 75
Wendell street	2,520 06
West Chester park and square	3,161 62
West Dedham street	4,500 00
West Newton street, Tremont street to Columbus avenue	12,000 00
West Newton street, Tremont street to Shawmut avenue	6,673 30
West Second street	135 49
Wharf street	1,861 03
Total	\$1,111,987 97
Less amount paid out of Appropriation for Paving	97,663 71
Total	<u>\$1,014,324 26</u>

*DETAILED SCHEDULE OF EXPENDITURES MADE UNDER
SPECIAL APPROPRIATIONS, TOGETHER WITH STATE-
MENTS OF THE AMOUNT OF WORK DONE THE COST
OF WHICH EXCEEDED \$3,000.*

A street, Broadway to First street, repaving.

Labor, including engineering and inspection	\$689 67	
Teaming	153 75	
64,806 granite paving-blocks	4,743 20	
Wharfage on paving-blocks	240 80	
111½ feet of edgestone	62 35	
29,450 paving-brick	338 67	
823 lin. feet of flagging	883 05	
Sundries	231 00	
	<hr/>	\$7,342 49

Amount paid to Collins & Ham, for paving, as
per contract:

2,542 sq. yds. block paving laid, at \$1.05	\$2,669 10	
1,362 lin. feet edgestone set, at 55 cts.	749 10	
1,124 sq. yds. brick paving laid, at 91 cts.	1,022 84	
175 sq. yds. cross-walks laid, at \$1.15	201 25	
6 days' labor stone-cutting, at \$4.60	27 60	
	<hr/>	4,669 89

Amount paid for the construction 2 new catch-basins and 2 new manholes by the Sewer Division	366 59	
---	--------	--

\$12,378 97

Amount charged to L street, filling	\$251 50	
Amount retained from Collins & Ham	25 00	
	<hr/>	276 50

\$12,102 47

Amount of special appropriation	12,000 00	
---	-----------	--

Amount paid out of Paving Division appropriation	\$102 47	
--	----------	--

Albany street, Hampden to Eustis street, paving.

Labor	\$3,881 70	
Teaming	2,938 50	
145,979 granite paving-blocks	10,569 64	
176 ft. of edgestone, 5 corners	117 31	
1,444.73 ft. flagging	1,516 97	
Hill gravel	1,534 40	
Beach gravel	383 40	
11,200 paving-brick	134 40	
Sand	31 50	
	<hr/>	\$21,107 82

Amount paid for building 1 new catch-basin by the Sewer Division	165 57	
---	--------	--

\$21,273 39

Amount of special appropriation	21,107 49	
---	-----------	--

Amount paid out of Paving Division appropriation	\$165 90	
--	----------	--

2,604 ft. of edgestone reset.
5,320 sq. yds. block paving laid.
1,117 sq. yds. brick paving laid.
150 cu. yds. earth-cutting.

Aldie street, gravelled.

Labor	\$201 70	
Teaming	190 50	
Gravel	854 85	
	<hr/>	\$1,247 05
Amount of special appropriation		1,000 00

Amount paid out of Paving Division appropriation		<hr/> \$247 05
--	--	----------------

Allandale street, grading.

Labor	\$2,129 80	
Teaming	1,851 00	
	<hr/>	\$3,980 80

Amount paid for work done by Sewer Division: Building culvert (80 ft. stone pipe culvert) and 159 ft. 18-in. pipe,		748 61
---	--	--------

\$4,729 41
Ashfield street, grading.

Labor	\$691 00	
Teaming	309 00	
	<hr/>	\$1,000 00

Ashmont street, Dorchester avenue to Washington street, regulating and macadamizing.

Labor	\$2,376 22	
Teaming	216 00	
Edgestone, 1,810 ft. and 5 corners	1,338 80	
Gravel	543 75	
Stone	890 14	
2,471 granite paving-blocks	177 54	
1,810 ft. edgestone set, 8 cts.	\$144 80	
727 sq. yds. block paving laid, 25 cts.	181 75	
	<hr/>	326 55
Roller		210 00

\$6,079 00

Amount of special appropriation		5,400 00
---	--	----------

Amount paid from Paving Division appropriation		<hr/> \$679 00
--	--	----------------

2,500 sq. yds. 6-in. macadam.

1,300 sq. yds. gravel sidewalk.

Atlantic avenue, paving.

Labor	\$685 14	
Teaming	759 00	
323 ft. of flagging	372 45	
Beach gravel	716 11	
400.4 lin. ft. edgestone set, at 8 cts.	\$32 03	
3,797.6 sq. yds. block paving laid, at 25 cts.	949 40	
245.8 sq. yds. brick paving laid, at 18 cts.	44 24	
	<hr/>	1,025 67
1,000 paving-brick		12 50
Beach sand		18 00
Crossing-blocks		1 25

\$3,590 12

Amount of special appropriation		3,492 76
---	--	----------

Amount paid out of Paving Division appropriation		<hr/> \$97 36
--	--	---------------

Atlantic street, regulating and macadamizing.

814 sq. yds. 3-in. macadam.

Labor	\$557 32
Teaming	100 50
Stone	162 80
Roller	70 00
Gravel	204 62
Sand	64 75
7,000 paving-brick	84 00
676 lin. ft. edgestone set, at 8 cts.	\$54 08
16.3 sq. yds. block paving laid, at 25 cts.	4 08
308.4 sq. yds. round paving laid, at 25 cts.	77 10
558.1 sq. yds. brick paving laid, at 18 cts.	100 46
	<hr/>
	235 72

\$1,479 71

Amount paid for work done by Sewer Division: Building
1 new manhole

63 31

\$1,543 02

Amount of special appropriation

1,543 02**Austin street, paving.**

Labor, including engineering and inspection	\$605 91
Teaming	39 00
221½ feet of edgestone and 2 corners	179 77
115½ feet of flagging	96 81
11,000 paving-brick	126 50
36,175 granite paving-blocks	2,740 89
400 sq. yds. asphalt, including bed	2,026 05
Sundries	73 60

Amount paid for paving, as per contract with John
Turner & Co.:

1,318 sq. yds. block paving, at \$1.30	\$1,713 40
1,115 lin. ft. edgestone set, at 35 cents	390 25
700 sq. yds. block paving, at \$1	700 00
76 sq. yds. cross-walks laid, at \$1.50	114 00
7½ days' labor stone-cutting, at \$4.60	34 25
	<hr/>

2,951 90

\$8,840 43

Amount of special appropriation

8,700 00

Amount paid out of Paving Division appropriation

\$140 43**Baker street, widening and grading.**

Labor	\$892 20
Teaming	1,203 00
Gravel	725 20
Sundries	45 60
	<hr/>

\$2,866 00

Amount of special appropriation

2,500 00

Amount paid out of Paving Division appropriation

\$366 00

Ballard street, grading.

Labor	\$405 60	
Teaming	252 00	
Gravel	456 40	
Crushed stone	22 80	
	<hr/>	\$1,136 80
Amount of special appropriation		1,000 00
		<hr/>
Amount paid out of Paving Division appropriation		\$136 80
		<hr/>

Batterymarch street, paving.

Labor, including engineering and inspection	\$506 91	
Teaming	466 50	
Gravel	228 80	
114.6 feet of flagging	131 79	
Sundries	32 04	
24,232 granite paving-blocks	1,672 00	
281 lin. feet edgestone set, at 8 cents	\$22 48	
1,003 sq. yds. block paving laid, at 25 cents	250 75	
137.4 sq. yds. brick paving laid, at 18 cents	24 73	
	<hr/>	297 96
		<hr/>
Amount of special appropriation		\$3,336 00
		<hr/>
Amount paid out of Paving Division appropriation		\$136 00
		<hr/>

Beacon street, west from Charles street, and between W. Chester park and Arlington street, asphaltting and macadamizing.

9,000 yds. Telford macadam.	
Labor, including engineering and inspection	\$12,044 61
Teaming	2,973 00
Hill gravel	225 60
Sand	210 80
Beach gravel	107 21
Crushed stone	7,187 24
1073½ feet of edgestone	601 11
29,247 paving-brick	442 29
10,501 granite paving-blocks	909 62
Rolling	336 53
Sundries	476 78

Amount paid for paving, as per contract with Barber Asphalt Paving Co.:

115½ sq. yds. gutters paved on a concrete foundation, at \$2.00	\$231 00	
3,633 sq. yds. paving with Trinidad asphalt on concrete foundation, at \$3.60	13,078 80	
237½ sq. yds. cross-walks laid, at \$1.05	249 38	
	<hr/>	13,559 18
Amount paid for paving to J. Doherty & Co.:		
468 lin. feet edgestones set, at 8 cts.	\$37 44	
2,023 sq. yds. block paving laid, at 25 cts.	50 58	
5,59.5 sq. yds. brick paving laid, at 18 cts.	100 71	
137½ lin. feet edgestone set, at 15 cts.	20 60	
1,045 sq. yds. block paving laid, at 40 cts.	418 00	
38,007 lin. feet edgestone set, at 18 cts.	684 13	
	<hr/>	

Amounts carried forward,

\$1,311 46 \$39,073 97

<i>Amounts brought forward,</i>	\$1,311 46	\$39,073 97
1,655.8 sq. yds. block paving laid, at 35 cts.	579 54	
5,280.3 sq. yds. brick paving laid, at 28 cts.	1,478 48	
306 sq. yds. patch paving, at 35 cts.	107 10	
596 $\frac{3}{4}$ sq. yds. block paving laid (tar joints), at \$1.37	817 55	
104 $\frac{1}{2}$ sq. yds. block paving laid (grave joint), at 65 cts.	67 92	
	<hr/>	4,362 05
Amount paid for paving to E. McLaughlin:		
120.3 lin. feet edgestone set, at 8 cts.	\$9 62	
51.2 sq. yds. round paving laid, at 25 cts.	12 80	
105.5 sq. yds. brick paving laid, at 18 cts.	18 99	
	<hr/>	41 41
Amount paid for paving to H. Gore & Co.:		
663.5 lin. feet edgestone set, at 15 cts.	\$99 53	
295 sq. yds. brick paving laid, at 43 cts.	126 85	
Teaming	96 00	
Sand	32 00	
Gravel	36 00	
15 days' labor stone-cutting	67 50	
Sundries	37 25	
	<hr/>	495 13
		<hr/>
		\$43,972 56
Amount paid for work done by Sewer Division: Repairing 7 catch-basins and 2 manholes		930 69
		<hr/>
		\$44,903 25
Amount paid out of Paving Division appropriation		4,727 87
		<hr/>
		\$40,175 38
Amount of special appropriation		41,350 00
		<hr/>
Balance unexpended		\$1,174 62
		<hr/>
Bedford street, Chauncy to Columbia street, and Kingston street, Summer street to Essex street, paving.		
Labor, including inspection and engineering	\$1,011 92	
63,322 granite paving-blocks	4,742 39	
Wharfage on paving-blocks	214 19	
9,056 paving-brick	114 21	
674.7 ft. flagging	804 64	
333.7 ft. of edgestone	187 36	
Sundries	65 94	
Amount paid for paving, as per contract with H. Gore & Co.:		
2,186 $\frac{3}{4}$ sq. yds. block paving laid, at \$2.66	\$5,816 53	
629 lin. ft. edgestone set, at 30 cts.	188 70	
462 $\frac{1}{2}$ sq. yds. brick paving laid, at 91 cts.	420 88	
134 $\frac{1}{2}$ sq. yds. cross-walks laid, at \$2.34	314 73	
Extra work, as ordered	231 21	
	<hr/>	6,972 05
		<hr/>
		\$14,112 70
Amount paid for work done by Sewer Division: Building 3 new catch-basins		390 50
		<hr/>
<i>Amount carried forward,</i>		\$14,503 20

<i>Amount brought forward,</i>	\$14,503 20
Amount of special appropriation for Bedford street	4,100 00
	<hr/>
Amount of special appropriation for Kingston street	\$10,403 20
	7,715 00
	<hr/>
Amount paid out of Paving Division appropriation	\$2,688 20
	<hr/>

Board alley, paving.

Labor	\$135 95
Teaming	42 00
Beach gravel	17 04
Amount paid for paving by H. Gore & Co. :	
20.7 sq. yds. brick paving laid, at 18 cts.	\$3 73
2.3 lin. ft. edgestone set, at 8 cts.	18
98.4 sq. yds. brick paving on edge, grouted with cement, at \$2.75	270 60
	<hr/>
	274 51
	<hr/>
	\$469 50
	<hr/>

Boylston street, Church street to Arlington street, paving.

Labor	\$64 50
	<hr/>

Bristol street.

Labor	\$49 00
	<hr/>

Brookline street, Washington to Tremont, resurfacing.

Labor	\$153 60
Teaming	195 00
Stone	107 50
Roller	75 00
	<hr/>
	\$531 10
	<hr/>

Bunker Hill street, Elm street to Sackville street, paving.

Labor	\$826 94
Teaming	268 50
Hill gravel	87 89
Beach gravel	64 61
35,513 granite paving-blocks	2,717 31
2,500 paving-brick	28 75
Sundries	6 00
	<hr/>
	\$4,000 00
	<hr/>

193.3 ft. of edgestone reset.

1,271 sq. yds. block paving.

130.3 sq. yds. brick paving.

Bushnell street, regulating and macadamizing.

1,550 sq. yds. 6-in. macadam.

900 sq. yds. gravel sidewalk.

Labor	\$601 88
Teaming	153 00
Gravel	332 25
Sand	32 40
	<hr/>

Amount carried forward,

\$1,119 53

<i>Amount brought forward,</i>	\$1,119 53
Stone	626 89
23,643 granite paving-blocks	656 08
Edgestone — 1,494 ft. and carting	1,202 94
6 large and 2 small corners	41 10
Roller	63 00
1,839 lin. ft. edgestone set, at 8 cts	\$147 12
642 sq. yds. block paving laid, at 25 cts.	160 50
191 sq. yds. brick paving laid, at 18 cts.	34 38
	<hr/>
	342 00
Amount paid for work done by Sewer Division: Building	
4 new catch-basins and repairing 4 manholes	484 97
	<hr/>
	\$4,536 51
Amount of special appropriation	2,917 00
	<hr/>
Amount paid out of Paving Division appropriation	\$1,619 51
	<hr/>
Buttonwood street, Mt. Vernon street to Locust street, grading.	
Labor	\$268 50
Filling 1,992 cu. yds., at 65 cts.	1,294 80
Grade damages	450 00
	<hr/>
	\$2,013 30
	<hr/>
Cabot street, paving.	
Labor, including engineering and inspection	\$472 01
Teaming	18 00
178.3 ft. of edgestone and 5 corners	139 43
529.8 ft. of flagging	573 19
50,000 paving-brick	580 00
Sundries	31 70
Amount paid to H. Gore & Co. for paving:	
74 lin. ft. of edgestone set, at 8 cts.	\$5 92
23 cu. yds. block paving laid, at 25 cts.	5 75
37.6 cu. yds. block paving laid, at \$1.05	39 48
	<hr/>
	51 15
Amount paid for asphaltting, as per contract with	
Barber Asphalt Co.:	
3,567 sq. yds. asphalt paving, at \$3.60	\$12,841 20
2,385 lin. ft. edgestone set, at 40 cts.	954 00
1,724 sq. yds. brick paving, at 85 cts.	1,465 40
227 yds. cross-walks laid, at \$1.05	238 35
36 days' labor stone-cutting	176 94
	<hr/>
	15,675 89
	<hr/>
	\$17,541 37
Amount paid for work done by Sewer Division: Building	
1 new catch-basin and repairing 10 catch-basins	251 57
	<hr/>
	\$17,792 94
Amount of special appropriation	16,000 00
	<hr/>
Amount paid out of Paving Division appropriation	\$1,792 94
	<hr/>
Caldwell street, macadamizing.	
Labor	\$196 60
Teaming	232 50
	<hr/>
<i>Amount carried forward,</i>	\$429 10

<i>Amount brought forward,</i>	\$429 10
Crushed stone	424 09
Gravel	223 65
618.6 feet of edgestone and two corners	440 22
643.25 lin. feet edgestone set, at 8 cts.	51 46
	<hr/>
	\$1,568 52

Cambridge street, Wards 9 and 19, paving and regulating.

935 sq. yds. 6-in. macadam.	
Labor	\$3,443 27
Teaming	2,379 00
Beach gravel	1,039 50
Beach sand	70 20
Hill sand	57 00
845½ feet of edgestone	481 67
45,140 paving-brick	551 90
240 feet flagging	263 20
115,730 granite paving-blocks	8,514 51
Wharfage on paving-blocks	300 00
2,744 sq. yds. paving removed	1,344 56
Sundries	80 36
<i>Amount paid to H. Gore & Co. for paving:</i>	
2,900.8 lin. feet of edgestone set, at 8 cts.	\$232 06
4,216.5 sq. yds. block paving laid (tar joints), at 97 cts.	4,083 22
2,299 sq. yds. brick paving laid, at 18 cts.	413 82
	<hr/>
	4,729 10

\$23,254 27

Amount paid for work done by Sewer Division: 22 catch- basins repaired	521 02
	<hr/>
	\$23,775 29

Call-street extension, grading.

1,250 sq. yds. 6-in. macadam.	
Labor	\$1,468 99
Filling	675 25
Crushed stone	503 21
	<hr/>
	\$2,647 45

Amount paid for work done by Sewer Division: Building 56,948 feet 15 and 18 in. sewer	1,048 71
--	----------

\$3,696 16

Balance from Street Commissioners	3,096 45
---	----------

Amount paid out of Paving Division appropriation	\$599 71
--	----------

Camden street, Tremont street to O.C. R.R., macadamizing.

3,000 sq. yds. Telford macadam.:	
Labor	\$2,167 53
Teaming	1,063 50
Crushed stone	2,717 22
Hill gravel	896 00
Beach gravel	51 83

Amount carried forward, \$6,896 08

<i>Amount brought forward,</i>	\$6,896 08
111.8 feet of flagging	117 39
1,335 feet of edgestone (new)	934 50
16 corners	60 00
Steam-roller	300 00
Sundries	22 50
Amount paid to J. Doherty & Co. for paving:	.
1,568 lin. feet of edgestone set, at 8 cts.	\$125 44
701 sq. yds. block paving laid, at 25 cts.	175 25
83.4 sq. yds. brick paving laid, at 18 cts.	15 01
848.8 lin. feet of edgestone set, at 18 cts.	152 78
605.1 sq. yds. block paving laid, at 35 cts.	211 79
	<hr/> 680 27
	<hr/> \$9,010 74
Amount paid for work done by Sewer Division: Building	
2 new catch-basins	360 67
	<hr/> \$9,371 41
Amount of special appropriation	7,500 00
Amount paid out of Paving Division appropriation	<u>\$1,871 41</u>
Canton street, Shawmut avenue to Tremont street, macadamizing.	
1,090 sq. yds. 6-in. macadam.	
Labor	\$875 00
Stone	435 65
Steam-roller	125 00
	<hr/> \$1,435 65
Amount of special appropriation	1,000 00
Amount paid out of Paving Division appropriation	<u>\$435 65</u>
Centre street, Pyncheon to New Heath street, macadamizing.	
2,040 sq. yds. 6-in. macadam.	
Labor	\$359 54
Teaming	217 50
Gravel	730 80
Sand	136 00
Crushed stone	809 19
2,000 granite paving-blocks	94 00
27,950 paving-brick	335 40
1,190 feet of edgestone	868 70
5 corners	28 75
117.8 feet of flagging	123 69
Amount paid for paving to A. A. Libby & Co.:	
1,187.8 lin. feet of edgestone set, at 20 cts.	\$237 56
917.5 sq. yds. of block paving laid, at 50 cts.	458 75
660.6 sq. yds. of brick paving laid, at 35 cts.	231 39
	<hr/> 927 70
	<hr/> \$4,631 27
Amount paid for work done by Sewer Division: Repairing	
2 manholes	8 50
	<hr/> \$4,639 77
Amount of special appropriation	3000 00
Amount paid out of Paving Division appropriation	<u>\$1,639 77</u>

Chambers street, Charlestown, resurfacing.

700 sq. yds. 3-in. macadam.

Labor	\$182 03
Teaming	120 00
Gravel	40 00
Sand	13 09
Crushed stone	130 96
4,500 paving-brick	51 75

Amount paid for paving to P. Brennan & Co.:

390.1 lin. feet of edgestone set, at 8 cts.	\$31 21	
143.4 sq. yds. block paving laid, at 25 cts.	35 85	
163.7 sq. yds. brick paving laid, at 18 cts.	29 46	
		96 52
		<u>\$634 35</u>

Charles street, paving.

Labor	\$2,611 52
Teaming	2,455 50
Beach gravel	651 84
Beach sand	91 20
Hill sand	137 75
71 feet of edgestone	39 76
125 feet of flagging	143 75
35,000 paving-brick	420 00
Wharfage	200 00
Sundries	24 58

Amount paid for paving to Payson & Co.:

1,354 lin. feet of edgestone set, at 15 cts.	\$203 10	
1,946 sq. yds. brick paving laid, at 28 cts.	544 88	
3,640 sq. yds. block paving laid (tar joints), at \$1.12	4,076 80	
83 sq. yds. block paving laid, at 25 cts.	21 25	
Labor, trimming stone	62 00	4,908 03

Amount paid for paving to James Grant & Co.:

3,080 sq. yds. block paving laid (tar joints), at \$1.12	\$3,449 60	
1,370 lin. feet edgestone set, at 15 cts.	205 50	
2,472 sq. yds. brick paving laid, at 28 cts.	692 16	
59.6 lin. feet edgestone set, at 8 cts.	4 77	
678 sq. yds. block paving laid, at 25 cts.	169 50	
33 sq. yds. brick paving laid, at 18 cts.	5 94	
Labor, trimming stone	69 00	4,596 47

\$16,280 40

Amount paid for work done by Sewer Division: Building
2 new catch-basins and repairing 1 catch-basin

298 26

\$16,578 66

Cleveland place, asphaltting.

Labor	\$110 25
Teaming	54 00

Amount paid for paving to H. Gore & Co.:

11.7 lin. feet of edgestone set, at 18 cts.	\$2 11
4.6 sq. yds. block paving laid, at 35 cts.	1 61
344.8 sq. yds. asphalt brick paving laid, at \$2.25	775 80
	<hr/>
	779 52

\$943 77

Amount paid for work done by Sewer Division: Building
28.12 ft. 12-in. pipe sewer

143 00

\$1,086 77

Amount of special appropriation

1,000 00

Amount paid out of Paving Division appropriation

86 77

Cliff street, resurfacing.

1,500 sq. yds. 6-in. macadam.:

Labor	\$938 00
Teaming	229 50
Roller	140 00
Gravel	277 20
Sand	38 40
Crushed stone	574 26
215 feet edgestone	150 50

Amount paid for paving to A. A. Libby & Co.

231.8 lin. feet of edgestone set, at 8 cts.	\$46 36
114.9 sq. yds. block paving laid, at 50 cts.	57 45
93.3 sq. yds. brick paving laid, at 35 cts.	32 66
	<hr/>
	136 47

\$2,484 33

Amount of special appropriation

2,169 72

Amount paid out of Paving Division appropriation

\$314 61

Columbus avenue, resurfacing.

Labor	\$3,088 63
Teaming	592 50
Gravel	71 00
50,121 granite paving-blocks	3,697 46
28.5 feet of flagging	34 20
Sundries	91 05

Amount paid for asphaltting, as per contract with Barber

Asphalt Paving Co.:

10,468 sq. yds. surface relaid, at \$2.25	\$23,553 00
1,088½ sq. yds. concrete surface relaid, at \$3.75,	4,081 25
475.7 cu. yds. concrete base relaid, at \$8.50	4,038 71
	<hr/>
	\$31,672 96

Deduct 30 loads old asphalt, at \$2.00

60 00

31,612 96

\$39,187 80

Amount paid for work done by Sewer Division: Repairing
8 catch-basins

33 17

Amount carried forward,

\$39,220 97

<i>Amount brought forward,</i>	\$39,220 97
Amount of special appropriation	39,000 00
	<hr/>
Amount paid out of appropriation for resurfacing streets .	\$220 97
	186 77
	<hr/>
Amount paid out of Paving Division appropriation .	<u>\$34 20</u>

Commonwealth avenue, West Chester park to Arlington street, resurfacing.

500 sq. yds. 6-in. macadam.

Labor	\$156 00
Teaming	140 80
Roller	106 00
Stone	201 10
	<hr/>
	<u>\$603 90</u>

Concord square, resurfacing.

Labor	\$52 90
Teaming	19 50
	<hr/>
	<u>\$72 40</u>

Cook street, macadamizing, 600 sq. yds. 3-in. macadam.

Labor	\$276 55
Teaming	192 00
Roller	42 00
Gravel	54 96
Crushed stone	134 49
	<hr/>
	<u>\$700 00</u>

Cornell street, grading and gravelling.

Labor	\$2,046 18
Teaming	876 00
Gravel	783 30
Sundries	87 71
	<hr/>
	\$3,793 19

Amount paid for work done by Sewer Division: Building 41 feet stone culvert	506 81
	<hr/>
	<u>\$4,300 00</u>

Cornwall street, grading and gravelling and erecting bridge across Stony Brook.

Labor	\$232 10
Teaming	147 00
Gravel	250 60
Filling	628 00
Grade damages	2,600 00
	<hr/>
	\$3,857 70
Amount paid for work done by Bridge Division . . .	1,548 16
	<hr/>
	<u>\$5,405 86</u>

Dartmouth street, Tremont street to Columbus avenue, macadamizing.

1,000 sq. yds. 6-in. macadam.

Labor	\$383 60
Teaming	184 50
Stone	488 30

 \$1,056 40

Amount of special appropriation 568 10

 Amount paid out of Paving Division appropriation . . . \$488 30
Dorchester street, Eighth street to Dorchester avenue, paving.

Labor, including inspection and engineering . . .	\$1,461 94
145.8 ft. edgestone and 4 corners	102 62
492 ft. flagging	522 75
6,000 paving-bricks	547 50
118,394 granite paving-blocks	8,619 71
Wharfage on paving-blocks	481 65
Sundries	75 26

Amount paid for paving, as per contract with Collins & Ham:

4,752 sq. yds. block paving laid, at \$1.35 . . .	\$6,415 20
3,157 lin. feet edgestone set, at 24 cts.	757 68
2,639 sq. yds. brick paving laid, at 83 cts. . . .	2,190 37
207 sq. yds. cross-walks laid, at \$1.35 . . .	279 45
Extra work, as ordered	294 63

 9,937 33

 \$21,748 76

 Amount paid for work done by Sewer Division: Building
 5 new catch-basins

837 50

 \$22,586 26

Amount paid out of Paving Division appropriation

\$68 98

Amount charged to Washburn street, filling . . . 374 25

Amount charged to Preble street, filling . . . 32 25

 475 48

 \$22,110 78

Amount of special appropriation 22,000 00

 \$110 78

 Amount retained from Collins & Ham, \$496.87; of this
 amount \$110.78 will be paid from Paving Division.
Dorset street, Dorchester avenue to Boston, regulating and macadamizing.

2,100 sq. yds. 6-in. macadam.

Labor	\$1,769 35
Teaming	420 00
Stone	820 80
Roller	112 00
Gravel	112 67
Sand	30 63
Edgestone, 1,618 feet	1,127 07
Sundries	37 00

Amount carried forward,

 \$4,429 52

<i>Amount brought forward,</i>		\$4,429 52
1,620 ft. edgestone set, at 19 cts.	\$315 90	
559 sq. yds. gutters paved, at 32 cts.	181 68	
405 sq. yds. brick paving laid, at 18 cts.	72 90	
	<hr/>	570 48

	\$5,000 00	
Amount for special appropriation	<hr/>	5,000 00

Dover street, Harrison avenue to Albany street, regulating and paving.

1,017 lin. ft. edgestone reset.		
1,816 sq. yds. block stone paving.		
828 sq. yds. brick sidewalk relaid.		
Labor	\$2,003 01	
Teaming	538 50	
56,175 granite paving-blocks	3,972 09	
Gravel	125 59	
Sundries	50 05	
Work done by Sewer Division : Repairing 2 catch-basins	25 76	
	<hr/>	6,715 00

Amount of special appropriation	<hr/>	6,715 00
---------------------------------	-------	----------

Dudley street, Washington street to Norfolk House, regulating and macadamizing.

2,700 sq. yds. 6-in. macadam.		
Labor	\$1,105 50	
Teaming	867 00	
Crushed stone	1,175 26	
Gravel	981 40	
Sand	72 00	
Paving-brick, 18,000	212 00	
Edgestone, 302 ft.	180 78	
Sundries	31 50	

Amount paid for work done by Sewer Division : Repairing 9 manholes	45 41	
--	-------	--

Amount paid to Payson & Co., for paving:		
2,140.2 lin. ft. edgestones set, at 18 cts.	\$385 24	
1,185.6 sq. yds. block paving laid, at 35 cts.	414 96	
1,512.9 sq. yds. brick paving laid, at 28 cts.	423 61	
25.7 sq. yds. concrete paving laid, at 75 cts.	19 27	
58 sq. yds. brick paving laid, at 46 cts.	26 68	
781.7 lin. ft. edgestone set, at 8 cts.	62 54	
620 sq. yds. block paving laid, at 25 cts.	155 00	
439.7 sq. yds. brick paving laid, at 18 cts.	79 14	
59.6 sq. yds. brick paving laid, at 36 cts.	21 45	
	<hr/>	1,587 89

	\$6,258 74	
Amount of special appropriation	<hr/>	5,000 00

Amount paid out of Paving Department appropriation	<hr/>	\$1,258 74
--	-------	------------

Dudley street, Washington to Vine street, etc., paving.

Labor, including inspection and engineering	\$2,059 94
1,815.8 ft. of flagging	1,921 70
266,019 granite paving-blocks	13,662 06
329.2 ft. of edgestone and 2 corners	191 84
65,533 paving-bricks	776 00
Sand	5 00
Gravel	15 00
Sundries	121 10

Amount paid for paving, as per contract with James Grant & Co.:

9,106 sq. yds. block paving laid, at 95 cts.	\$8,650 70
5,600 lin. ft. of edgestone set, at 28 cts.	1,568 00
4,124 sq. yds. brick paving, at 79 cts.	3,257 96
542 sq. yds. cross-walks laid, at \$1.42	769 64
Extra work, as ordered	635 98
	<hr/> 14,882 28

\$33,634 98

Amount paid for work done by Sewer Division: Repairing 10 catch-basins and building 1 new catch-basin	264 38
--	--------

\$33,899 36

Amount of special appropriation	<u>33,899 36</u>
---	------------------

\$721.61 of this amount retained from Grant & Co.

Dupont street, edgestone.

230 sq. yds. 6-in. macadam.	
Labor	\$113 00
Teaming	142 50
Gravel	54 23
Stone	102 60
232 $\frac{8}{12}$ ft. of edgestone and 4 corners	177 27

Amount paid to P. Brennan & Co. for paving:

266 ft. of edgestone set, at 8 cts.	\$21 28
137.3 sq. yds. block paving laid, at 25 cts.	34 33
	<hr/> 55 61

\$645 21

Amount of special appropriation	524 00
---	--------

Amount paid out of Paving Division appropriation	<u>\$121 21</u>
--	-----------------

Eagle square, cross-walks, etc.

Labor	\$284 55
Teaming	99 00
Gravel	199 75
Sand	12 00
4,062 granite paving-blocks	93 43
253 5 ft. of flagging	291 43

Amount paid to Roger Devlin for paving:

110.2 sq. yds. brick paving laid, at 18 cts.	19 84
	<hr/> \$1,000 00

E street, Third to Bolton street, etc., asphaltting.

Labor, including engineering and inspection	\$238 60
Teaming	18 00
Sundries	10 00

Amount paid for asphaltting, as per contract with New England Paving Co.:

1,020.4 sq. yds. asphalt laid, at \$2.75	\$2,806 10
456.4 sq. yds. brick paving laid, at 45 cts.	205 38
172.5 sq. yds. cross-walks laid, at 60 cts.	103 50
630.1 lin. ft. of edgestone set, at 18 cts.	113 42
Extra work, as ordered	74 46
	<hr/>
	3,302 86

\$3,569 46

Amount paid for work done by Sewer Division: Building 1 new catch-basin and repairing 1 manhole	182 43
--	--------

\$3,751 89

Amount charged for filling to L street	\$120 00
Amount retained from New England Paving Co.	161 42
	<hr/>
	281 42

\$3,470 47

Amount of special appropriation	3,000 00
---	----------

Amount paid out of Paving Division appropriation	\$470 47
--	----------

East. First street, H to K, edgestones and gutters.

600 ft. edgestone	\$360 00
200 sq. yds. gutter paving, at 25 cts.	50 00
600 ft. edgestone setting, at 8 cts.	48 00
Labor	240 00
Teaming	170 00
Gravel	132 00

\$1,000 00

Amount of special appropriation	1,000 00
---	----------

East Concord street, Harrison avenue to Albany, regulating and macadamizing.

1,890 sq. yds. 6-in. macadam.	
Labor	\$1,383 64
Teaming	1,047 75
Stone	742 95
Roller	140 00
Flagging	147 00
Gravel	444 37
Sand	178 20
Edgestone, 644 ft.	360 78

Amount paid for work done by Sewer Division: Repairing 2 catch-basins and 2 manholes	55 31
---	-------

Amount paid for paving to Daniel Sullivan:

2,097.1 lin. ft. edgestones set, at 8 cts.	\$167 76
3,208.1 sq. yds. block paving laid, at 25 cts.	802 02
1,266.2 sq. yds. brick paving laid, at 18 cts.	227 91
1,415 sq. yds. digging, at 10 cts.	141 50
	<hr/>
	1,339 14

Amount carried forward,

\$5,839 14

<i>Amount brought forward,</i>	\$5,839 14
Amount of special appropriation	4,500 00
	<hr/>
Amount paid out of Paving Division appropriation	<u>\$1,339 14</u>

East Newton street, Harrison avenue to Albany, regulating and macadamizing.

2,200 sq. yds. 6-in. macadam.

Labor	\$1,306 91
Teaming	144 00
Gravel	216 10
Stone	898 70
Roller	140 00
Edgestone, 691 ft.	386 96
Sundries	164 50
Amount paid for work done by Sewer Division: Repairing 2 manholes	9 79

Amount paid to Roger Devlin for paving:	
1,068.7 lin. ft. edgestones set, at 8 cts.	\$85 50
451.6 sq. yds. block paving laid, at 25 cts.	112 89
494.5 sq. yds. brick paving laid, at 18 cts.	89 01
	<hr/>
	287 40
	<hr/>
	\$3,554 36
Amount of special appropriation	<u>3,554 36</u>

Edgeworth street, repaving.

Labor	\$137 35
Teaming	141 00
Gravel	70 00
Crushed stone	88 90
	<hr/>
	\$437 25
Amount of special appropriation	<u>400 00</u>

Amount paid out of Paving Division appropriation	<u>\$37 25</u>
--	----------------

Ellwood street, regulating and macadamizing.

186 sq. yds., 6-in. macadam.

Labor	\$607 67
Teaming	173 98
Roller	50 00
Stone	74 40
Gravel	76 67
Edgestone, 375 ft.	262 34
Sundries	6 00
	<hr/>
	<u>\$1,251 06</u>

Emerald street, paving.

Labor	\$374 60
Teaming	181 50
Gravel	91 69
Sand	11 70
Sundries	135 36
	<hr/>

<i>Amount carried forward,</i>	\$794 85
--------------------------------	----------

STREET DEPARTMENT.

255

<i>Amount brought forward,</i>		\$794 85
Amount paid to J. Doherty & Co. for paving:		
405.6 lin. ft. edgestones set, at 8 cts.	\$32 45	
374.6 sq. yds. brick paving laid, at 28 cts.	104 89	
100 lin. ft. edgestones set, at 18 cts.	18 00	
760 sq. yds. block paving laid (tar joints), at 97 cts.	737 20	
144 sq. yds. digging, at 10 cts.	14 40	
		<hr/> 906 94

\$1,701 79Amount of special appropriation

1,574 98Amount paid out of Paving Division appropriation . . .

\$126 81**Emerson street, H to I, paving.**

Labor	\$429 60
Teaming	782 34
32,720 granite paving-blocks	2,386 92
Wharfage on paving-blocks	45 00
5,800 paving-bricks	66 70
Gravel	331 80
Sand	31 50
Sundries	3 72
Amount paid for excavating to M. Donnellan	412 70
Amount paid to H. Gore & Co. for paving:	
791.3 lin. ft. edgestones set, at 8 cts.	\$63 30
1,176.5 sq. yds. block paving laid, at 25 cts.	294 12
497.3 sq. yds. brick paving laid, at 18 cts.	89 51
	<hr/> 446 93

\$4,937 21Amount paid for work done by Sewer Division: Building
1 new manhole

62 79

\$5,000 00**Exeter street, repairing.**

Teaming	\$140 00
Labor	176 50
	<hr/> \$316 50

Falcon street, grading and gravelling.

Labor	\$1,693 90
Teaming	727 50
Gravel	959 00
	<hr/> \$3,380 40

First street, N. Y. & N. E. R.R. to F street, paving.

Labor, including engineering and inspection	\$1,553 74
Teaming	106 50
1,599 $\frac{5}{12}$ ft. edgestone and 22 corners	1,076 58
1,465.4 ft. flagging	1,538 67
50,247 paving-bricks	615 63
235,047 granite paving-blocks	17,085 42

Amount carried forward, \$21,976 54

<i>Amount brought forward,</i>	\$21,976 54
Wharfage on paving-blocks	621 88
Sundries	77 07
Amount paid for paving as per contract with Collins & Ham:	
9,400 sq. yds. block paving laid, at \$1.18	\$11,092 00
4,434 lin. ft. edgestone set, at 55 cts.	2,438 70
1,897 sq. yds. brick paving laid, at 91 cts.	1,726 27
337 sq. yds. cross-walks laid, at \$1.15	387 55
Extra work, as ordered	491 72
	<hr/> 16,136 24
	<hr/> \$38,811 73
Amount paid for work done by Sewer Division: Building 6 new catch-basins	652 49
	<hr/> \$39,464 22
Amount charged to L street, filling	876 25
	<hr/> \$38,587 97
Amount of special appropriation	36,489 93
	<hr/> \$2,098 04
Amount retained from Collins & Ham to be paid out of the appropriation for First street,	\$806 81
Amount paid out of Paving Division appropriation	1,291 23
	<hr/> <u>\$2,098 04</u>

Forbes street, grading and macadamizing.

3,500 sq. yds. 4-in. macadam.	
2,000 sq. yds. gravel sidewalk.	
Labor	\$595 37
Teaming	694 50
Stone	794 20
Gravel	1,607 55
Roller	140 00
Sundries	144 71
	<hr/> \$3,976 33
Paid from special appropriation	2,020 75
	<hr/> \$1,955 58

Fourth street, G street to H street, resurfacing.

Labor	\$440 70
Teaming	432 00
Gravel	75 05
Rolling	78 00
Sundries	1 80
	<hr/> \$1,027 55
Work done by Sewer Division: Building 1 new manhole	104 80
	<hr/> \$1,132 35
Amount of special appropriation	1,104 35
	<hr/> \$28 00

Fulda street, repairs.

Teaming	\$9 60
Labor	7 69

 \$16 69

Amount paid for work done by Sewer Division: Building 2 new catch-basins	308 06
---	--------

 \$324 75

Fulton street, Richmond street to Lewis street, paving.

Labor, including engineering and inspection	\$400 09
47,677 granite paving-blocks	3,483 88
15,500 paving-brick	178 25
28 $\frac{9}{12}$ ft. of edgestone	16 10
45 $\frac{9}{12}$ ft. of flagging	48 20
Sundries	29 89

 Amount paid for paving, as per contract with B. F. Nay
& Co.:

1,829 sq. yds. block paving laid, at \$1.03	\$1,883 87
955 lin. ft. edgestone set, at 21 cts.	200 55
621 sq. yds. brick paving laid, at 63 cts.	391 23
14 $\frac{1}{2}$ sq. yds. cross-walks laid, at 55 cts.	7 98
Extra work, as ordered	346 15

 2,829 78

 \$6,986 19

Amount paid for work done by Sewer Division: Building 2 new catch-basins	244 23
---	--------

 \$7,230 42

Genesee street, paving.

Labor, including inspection and engineering	\$356 40
Teaming	3 00
7,000 paving-brick	87 50
36 ft. of edgestone	20 84
350 granite paving-blocks	25 55

 Amount paid for paving, as per contract with H. Gore &
Co.:

1,091 sq. yds. brick paving laid, at \$2.75	\$3,000 25
1,005 lin. ft. edgestone set, at 15 cts.	150 75
479 sq. yds. brick paving laid, at 43 cts.	205 97
28 sq. yds. cross-walks laid, at 55 cts.	15 40

 \$3,372 37

 \$3,865 66

Amount of special appropriation	3,500 00
---	----------

Amount paid out of Paving Division appropriation	\$365 66
--	----------

Geneva avenue, grading.

Labor	\$923 55
Rubble and filling	1,160 10
Gravel	420 00
Sundries	5 00

Amount carried forward,

 \$2,508 65

<i>Amount brought forward,</i>	\$2,508 65
Amount paid to A. A. Hall, for excavating:	
680 cu. yds. earth excavated, at 60 cts. . . .	\$408 00
92 cu. yds. rock excavated, at \$1.00	92 00
	<hr/> 500 00
Amount paid to Wm. T. Davis, for excavating:	
334 cu. yds. earth cutting, at 40 cts. . . .	\$133 60
189 cu. yds. borrowed filling at 85 cts. . . .	160 65
12 cu. yds. bowlders blasted, at \$2.50	30 00
	<hr/> 324 25
	<hr/> \$3,332 90
Amount paid for work done by Sewer Division: Building	
517.5 ft. 4 ft. 6 in.×3 ft. 6 in. circular sewer	2,916 89
	<hr/> <u>\$6,249 79</u>

Goldsmith street, grading and gravelling.

Labor	\$335 80
Teaming	150 00
Gravel	494 20
Sundries	42 88
	<hr/> \$1,022 88
Amount of special appropriation	1,000 00
	<hr/>
Amount paid out of Paving Division appropriation	<u>\$22 88</u>

Granite avenue, macadamizing.

6,500 sq. yds. 15-in. Telford macadam.	
1,800 sq. yds. gravel sidewalk.	
Labor	\$3,602 39
Teaming	1,443 00
Roller	287 00
Stone	6,600 49
Gravel	452 25
93 sq. yds. block paving, at 25 cts.	23 25
	<hr/> \$12,408 38
Amount paid for work done by Sewer Division: Building	
6 new catch-basins and 44 feet 12-in. pipe sewer	795 83
	<hr/> \$13,204 21
Amount of special appropriation	10,000 00
	<hr/>
Amount paid out of Paving Division appropriation	<u>\$3,204 21</u>

Green street, Charlestown, macadamizing.

400 sq. yds. 6-in. macadam.	
Labor	\$103 05
Teaming	100 50
Gravel	52 50
Roller	24 00
Crushed stone	180 41
	<hr/> \$460 46

Gustin street, sewer and macadamizing.

280 sq. yds. Telford macadam.

Labor	\$394 22
Teaming	336 00
Gravel	29 20
Filling	86 65
Stone	240 68
640 feet edgestone and 13 corners	458 74
950 granite paving-blocks	69 35

Amount paid for paving to H. Gore & Co.:

646.5 lin. ft. edgestone set, at 8 cts.	\$51 72
218.7 sq. yds. block paving laid, at 25 cts.	54 68
	<hr/>
	106 40

\$1,721 24

Amount paid for work done by Sewer Division: Building

347.13 ft. 12-in. pipe sewer	575 90
--	--------

\$2,297 14

Amount of special appropriation

1,700 00

Amount paid out of Paving Division appropriation

\$597 14

Hampshire street, regulating.

Labor	\$208 67
Teaming	414 00
Sand	354 20
Crushed stone	22 88
Gravel	49 60
38 feet of edgestone and 6 corners	49 10

Amount paid for paving to Jas. Doherty & Co.:

1,451 6 lin. ft. of edgestone set, at 18 cts.	\$261 29
683.3 sq. yds. block paving laid, at 35 cts.	239 16
342.5 sq. yds. brick paving laid, at 28 cts.	95 90
	<hr/>
	596 35

\$1,694 80

Amount of special appropriation

1,000 00

Amount paid out of Paving Division appropriation

\$694 80

Harrison avenue, Canton street to Sharon street.

Labor	\$2,232 65
Teaming	121 50
Gravel	312 00
Sand	39 10
512.6 feet of flagging	546 75

Amount paid for paving to H. Gore & Co.:

910.1 lin. ft. of edgestone set, at 8 cts.	\$72 81
1,750.9 sq. yds. block paving, at 25 cts.	437 72
910.4 sq. yds. brick paving, at 18 cts.	163 87
	<hr/>
	674 40

\$3,926 40

Amount paid for work done by Sewer Division: Repairing

8 catch-basins	73 60
--------------------------	-------

\$4,000 00

Harrison avenue, E. Concord to E. Chester park.

Labor	\$1,019 53
Teaming	97 50
Beach gravel	29 82
Hill gravel	40 00
Sand	18 70
81.5 ft. flagging	85 57
596.8 sq. yds. of block paving	208 88

\$1,500 00

Harrison avenue, E. Lenox street to Northampton street.

Labor	\$1,464 11
Teaming	265 50
Gravel	305 60
Sand	10 20
33 ft. circular edgestone	42 90
81.5 ft. flagging	85 58

Amount paid to J. McCarthy for excavating:	
469 sq. yds. old paving carted away, at 23½ cts.,	\$110 22
317 cu. yds. earth and gravel excavated, at 69½ cts.	220 32
	<hr/> 330 54

Amount paid for paving to Payson & Co.:	
944.3 lin. ft. edgestone set, at 8 cts.	\$75 54
1,367.9 sq. yds. block paving laid, at 25 cts.	341 97
249.9 sq. yds. brick paving laid, at 18 cts.	44 98
	<hr/> 462 49

\$2,966 92

Amount paid for work done by Sewer Division: Repairing	
2 manholes	33 08

\$3,000 00

Harvard street, Washington to Albany street, sewer and paving.

Paving	<u>\$77 78</u>
------------------	----------------

Harvest street, Boston street to Dorchester avenue, regulating and macadamizing.

200 sq. yds. 6-in. macadam, 900 sq. yds. gravel sidewalk.	
Labor	\$971 75
Teaming	537 00
Sand	7 20
Stone	742 26
1,915 feet edgestone and 18 corners	1,457 98
7,365 granite paving-blocks	204 38
Sundries	88 48

Amount paid for paving to J. Grant & Co.:	
2,122 feet of edgestone set, at 15 cts.	\$318 30
679 sq. yds. block paving laid, at 40 cts.	271 60
	<hr/> 589 90

\$1,598 95

Amount paid for work done by Sewer Division: Building	
2 new catch-basins	231 79

Amount carried forward, \$1,830 74

<i>Amount brought forward,</i>	\$4,830 74
Amount of special appropriation	4,000 00
	<hr/>
Amount paid out of Paving Division appropriation . . .	<u>\$830 74</u>

Haskins street, edgestones and macadamizing.

900 sq. yds. 4-in. macadam, 700 sq. yds. gravel sidewalk.	
Labor	\$689 74
Teaming	231 00
Gravel	190 40
Crushed stone	257 57
1,211 feet edgestone and 4 corners	802 15

Amount paid for paving to Payson & Co.:

1,189.3 lin. feet edgestone set, at 27 cts.	\$321 11
416.9 sq. yds. block paving laid, at 65 cts.	270 98
2.3 sq. yds. brick paving laid, at 28 cts.	64
	<hr/>
	592 75

\$2,763 59Amount paid for work done by Sewer Division: Repairing
2 catch-basins and 4 manholes

46 20

\$2,809 79**Heath street, widening, etc.**

Labor	\$1,065 80
Teaming	379 50
Gravel	710 60
Sand	158 40
3,700 paving-brick	44 40
16 corners	60 00
Sundries	26 32

Amount paid for paving to J. Doherty & Co.:

592.5 sq. yds. brick paving, at 18 cts.	\$106 65
412 3 sq. yds. block paving, at 25 cts.	103 08
1,419.8 lin. feet edgestone set, at 8 cts.	113 58
	<hr/>
	323 31

\$2,768 33**Henley street, paving.**

Labor	\$184 00
Teaming	39 00
Gravel	287 98
29,650 granite paving-blocks	2,312 70
7,500 paving-brick	86 25
56 $\frac{2}{3}$ feet edgestone	39 32

Amount paid for paving to J. Turner & Co.:

668 lin. feet of edgestone set, at 15 cts.	\$100 20
1,351.7 sq. yds. block paving laid, at 48 cts.	648 82
347.1 sq. yds. brick paving laid, at 43 cts.	149 25
	<hr/>
	898 27

\$3,847 52

High street, Winthrop street to Walker street, resurfacing.

1,900 sq. yds. 6-in. macadam.

Labor	\$558 90
Teaming	435 00
Gravel	350 00
Stone	781 23
	<hr/>
	\$2,125 13

Hill street, construction.

Labor	\$800 40
Teaming	111 00
Hill gravel	30 00
Beach gravel	56 80
Stone	306 17
489.1 feet edgestone and 2 corners	349 57
Sundries	6 50

Amount paid to Donovan & Brock, as per contract:

Building retaining-wall	\$1,475 00
Extra work, as ordered	22 44
	<hr/>
	1,497 44

Amount paid for paving to P. Brennan & Co.:

489.4 lin. ft. edgestone set, at 8 cts.	\$39 15
178.8 sq. yds. block paving, at 25 cts.	44 70
	<hr/>
	83 85

\$3,241 73

Amount paid for work done by Sewer Division: 239 ft.

12-in. pipe sewer built	896 34
-----------------------------------	--------

\$4,138 07

Hobart street, grading and gravelling roadway and sidewalks, building culvert and fencing.

950 feet fence.

4,120 sq. yds. gravel roadway.

2,060 sq. yds. gravel sidewalk.

Labor	\$1,180 94
Teaming	415 50
Gravel	2,047 48
Edgestone, 25½ feet	15 30
Constructing culvert	475 81
Sundries	78 34

\$4,213 37

Paid by special appropriation 2,000 00

Paid out of Paving Division appropriation \$2,213 37

Hollis street, asphaltting and repaving.

Labor	\$1,611 88
Teaming	67 50
85 feet flagging	97 75
1,419 granite paving-blocks	103 57
Gravel	29 11
Sundries	14 00
477.7 sq. yds. asphalt	955 40

Amount carried forward,

\$2,879 21

<i>Amount brought forward,</i>		\$2,879 21
Amount paid for paving to Payson & Co.:		
270 lin. ft. of edgestone set, at 8 cts.	\$21 60	
268.2 sq. yds. block paving laid (tar joints), at 97 cts.	260 15	
164.6 sq. yds. brick paving laid, at 18 cts.	29 63	
		<hr/> 311 38
		\$3,190 59
Amount of special appropriation		<hr/> 3,087 02
Amount paid out of Paving Division appropriation		<hr/> <u>\$103 57</u>

Howland street, resurfacing and regulating.

4,000 sq. yds. 6-in. macadam.		
Labor		\$1,176 40
Teaming		417 00
Gravel		596 40
Sand		257 60
Stone		1,736 47
4,000 paving-brick		50 00
159 feet flagging		166 95
62 feet circular edgestone		81 38
Sundries		18 00
Amount paid for paving to A. A. Libby & Co.:		
971 lin. feet edgestone set, at 15 cts.	\$145 65	
537 sq. yds. block paving laid, at 35 cts.	187 95	
942 sq. yds. brick paving laid, at 28 cts.	263 76	
438 lin. feet edgestone set, at 20 cts.	87 60	
143 sq. yds. block paving, at 50 cts.	71 50	
3,043 sq. yds. brick paving, at 35 cts.	106 51	
		<hr/> 862 97
		\$5,363 17
Amount paid for work done by the Sewer Division: Building 3 new catch-basins		<hr/> 464 61
		\$5,827 78
Amount of special appropriation		<hr/> 4,000 00
Amount paid out of Paving Division appropriation		<hr/> <u>\$1,827 78</u>

Hudson street, asphaltting and regulating.

Labor, including inspection and engineering		\$1,029 00
Teaming		60 00
Raising sidewalk		150 00
Mason-work		406 00
Gravel		26 98
620.7 ft. edgestone and 2 corners		454 57
3,859 granite paving-blocks		281 70
47,600 paving-brick		571 20
Sundries		31 47
Amount paid for asphaltting, as per contract with Barber Asphalt Paving Co.:		
3,961 sq. yds. asphalt laid, at \$3.50	\$13,863 50	
3,300.5 lin. feet edgestone set, at 42 cts.	1,386 21	
2,533 sq. yds. brick paving laid, at 90 cts.	2,279 70	
		<hr/> <hr/>
<i>Amounts carried forward,</i>	\$17,529 41	\$3,010 92

<i>Amounts brought forward.</i>	\$17,529 41	\$3,010 92
187.6 sq. yds. cross-walks laid, at \$1.05	196 98	
Extra work, as ordered	629 12	
	<hr/>	18,355 51
		<hr/>
Amount paid for work done by Sewer Division: Repairing 13 catch-basins and 7 manholes		\$21,366 43
		<hr/>
		298 91
		<hr/>
Amount of special appropriation		\$21,665 34
		<hr/>
Amount paid out of Paving Division appropriation		21,000 00
		<hr/>
		\$665 34
		<hr/>
\$886.32 retained from Barber Asphalt Paving Co. under the terms of the contract.		

Humboldt avenue, grading, regulating, and macadamizing.

15,000 sq. yds. 15-in. Telford macadam.

Labor	\$7,338 00
Teaming	2,760 00
Gravel	2,737 00
Sand	57 60
Crushed stone	15,790 18
Steam-roller	84 00
1,630 feet of edgestone and 4 corners	1,690 45
3,300 paving-brick (face)	56 10
Sundries	412 00
Amount paid for paving to A. A. Libby & Co. :	
1,034.8 lin. feet edgestone set, at 8 cts.	\$82 78
365.2 sq. yds. block paving laid, at 25 cts.	91 38
1,807.5 lin. feet edgestone set, at 20 cts.	361 50
742 sq. yds. block paving laid, at 50 cts.	371 00
211 sq. yds. brick paving laid, at 35 cts.	73 89
59.5 feet fence curbing, at \$2.00	119 00
	<hr/>
	1,099 55
	<hr/>

	\$32,024 88
Amount of special appropriation	16,025 27
	<hr/>
Amount paid out of Paving Division appropriation	\$15,999 61
	<hr/>

Hunneman street, grading and constructing.

Labor	<u>\$82 80</u>
-----------------	----------------

Island street.

Labor	<u>\$25 60</u>
-----------------	----------------

Jeffries and Marginal streets, regulating and macadamizing.

2,200 sq. yds. 6-in. macadam.

Labor	\$1,260 30
Teaming	613 50
Gravel	1,056 14
Sand	16 00
Crushed stone	899 36
1,580 ft. edgestone and 18 corners	1,181 60
	<hr/>

<i>Amount carried forward,</i>	\$5,026 90
--------------------------------	------------

<i>Amount brought forward,</i>	\$5,026 90
Amount paid for paving to Roger Devlin :	
1,956.4 lin. ft. of edgestone set, at 8 cts.	\$156 51
1,090.7 sq. yds. block paving laid, at 25 cts.	272 67
134.1 sq. yds. brick paving laid, at 18 cts.	24 13
	<hr/> 453 31
	\$5,480 21
Amount paid for work done by Sewer Division : Repairing	
2 catch-basins and 1 manhole	36 40
	<hr/> \$5,516 61
Amount of special appropriation	5,000 00
	<hr/>
Amount paid out of Paving Division appropriation	\$516 61
	<hr/>
K street, Fourth street to Eighth street, resurfacing.	
Labor	\$465 00
Teaming	177 00
Gravel	36 34
	<hr/>
	\$678 34
	<hr/>
Kingston street, Summer street to Essex street, paving (see Bedford and Kingston streets).	
Lake street, grading and macadamizing, building culvert, fences, plank-walks and cross-walks and retaining-wall.	
1,300 lin. ft. plank-walk.	
1,400 ft. fence.	
450 ft. board fence.	
130 perches retaining-wall.	
5,600 sq. yds. Telford macadam road.	
1,500 sq. yds. gravel sidewalk.	
Labor	\$4,349 18
Teaming	1,936 82
Gravel	1,644 40
Stone	4,423 86
Flagging, 402 ft., at 80 cts.	322 00
Sundries	261 11
Constructing culverts by Sewer Division; 4 new catch-basins and 83.85 ft. stone culvert (double)	2,705 54
	<hr/>
	\$15,642 91
Paid by special appropriation	12,000 00
	<hr/>
Amount paid out of Paving Division appropriation	\$3,642 91
	<hr/>
L street, grading, constructing, and filling bulkhead.	
Labor	\$2,204 89
Teaming	130 00
Stone ballast	5,296 15
Filling	3,307 20
Sundries	144 03
Amount paid for building bulkhead, as per contract with F. G. Whitcomb	7,210 00
Amount paid for abutment for bridge	2,806 70
	<hr/>
	\$21,098 97
	<hr/>

Lenox street, paving and regulating.

Labor	\$892 72
Teaming	628 50
Gravel	1,249 60
Sand	42 50
462.4 ft. flagging	554 88
7,600 paving-brick	94 99
37,087 granite paving-blocks	2,781 52
Amount paid to J. McCarthy & Co., for excavating:	
1,878 sq. yds. stone paving carted, at 37 cts.	\$704 25
660 cu. yds. earth excavated, at 59 cts.	389 40
	<hr/> 1,093 65
771 lin. ft. edgestone set, at 8 cts.	\$61 68
4,348.6 sq. yds. block paving laid, at 25 cts.	1,087 15
471.7 sq. yds. brick paving laid, at 18 cts.	84 91
	<hr/> 1,233 74
	<hr/> \$8,572 10
Amount of special appropriation	5,474 41
Amount paid out of Paving Division appropriation	<u>\$3,097 69</u>

Lincoln street, Charlestown, regulating and macadamizing.

900 sq. yds. 6-in. macadam.	
Labor	\$827 25
Teaming	390 60
Sand	69 19
Gravel	211 31
Crushed stone	360 76
1,000 paving-brick	120 00
Amount paid for paving to J. Turner & Co.:	
1,127.7 lin. ft. edgestone set, at 8 cts.	\$90 22
394.4 sq. yds. block paving laid, at 25 cts.	98 60
737.1 sq. yds. brick paving laid, at 18 cts.	132 67
	<hr/> 321 49
	<hr/> \$2,300 00

Longwood avenue, Parker street to Huntington avenue, paving.

Labor, including inspection and engineering	\$3,149 34
Teaming	294 00
200,777 granite paving-blocks	9,637 29
62,755 paving-brick	730 14
39.1 feet edgestone	28 95
819.2 feet flagging	871 24
Sundries	117 33
Amount paid for paving, as per contract with J. Doherty & Co.:	
5,313 sq. yds. block paving laid, at \$1.22	\$6,481 86
2,796 lin. feet edgestone set, at 15 cts.	419 40
1,774 sq. yds. brick paving laid, at 66 cts.	1,170 84
206 sq. yds. cross-walks laid, at 27 cts.	55 62
Extra work, as ordered	29 90
	<hr/> 8,157 62

Amount carried forward,\$22,985 91

<i>Amount brought forward,</i>	\$22,985 91
Amount paid for work done by Sewer Division : Repairing 1 catch-basin	14 09

	<u>\$23,000 00</u>
Amount of special appropriation	<u>\$23,000 00</u>

\$407 88 of this amount retained from J. Doherty & Co.

Lucas street, paving with asphalt blocks.

Teaming	\$72 00
76.2 sq. yds. asphalt block paving laid, at \$3.10	236 22
	<u>\$308 22</u>

Lynde street, macadamizing.

Labor	\$653 20
Teaming	240 00
Gravel	127 50
Crushed stone	583 09
	<u>\$1,603 79</u>

Magazine street, grading.

Labor	\$117 30
Stone screenings	808 50
	<u>\$925 80</u>

Magnolia street, regulating.

Labor	\$642 46
Teaming	742 50
Gravel	732 20
Crushed stone	81 34
Sand	41 60
1,565.7 feet edgestone	1,103 47

Amount paid for paving to A. A. Libby & Co. :	
721 7 lin. feet edgestone set, at 20 cts.	\$144 34
289 4 sq. yds. block paving laid, at 50 cts.	144 70
426.8 sq. yds. brick paving laid, at 35 cts.	149 38
	<u>438 42</u>

Amount paid for paving to J. Doherty & Co. :	
1,585 lin. feet edgestone set, at 15 cts.	\$237 75
580 sq. yds. block paving laid, at 35 cts.	203 00
	<u>440 75</u>

	<u>\$4,222 74</u>
Amount of special appropriation	4,000 00

Amount paid out of Paving Division appropriation	<u>\$222 74</u>
--	-----------------

Malden street, and junction of Wareham street, and Wareham street, Harrison avenue to Albany street, paving and regulating.

Labor	\$4,254 98
Teaming	1,551 00

<i>Amount carried forward,</i>	<u>\$5,805 98</u>
--------------------------------	-------------------

<i>Amount brought forward,</i>	\$5,805 98
Gravel	1,368 58
95,680 granite paving-blocks	7,083 63
43.8 feet edgestone	24 74
142 feet flagging	150 03
Sundries	16 87
<i>Amount paid for excavating to J. J. Sullivan:</i>	
4,469 sq. yds. round stone removed, at 55 cts.	\$2,457 95
300 sq. yds. round stone removed, at 35 cts.	105 00
	<hr/> 2,562 95
<i>Amount paid for paving to J. Turner & Co.:</i>	
2,617 lin. feet edgestone set, at 8 cts.	\$209 36
4,517.1 sq. yds. block paving laid, at 25 cts.	1,129 27
740.5 sq. yds. block paving laid (tar joints), at 97 cts.	718 29
732.3 sq. yds. brick paving laid, at 18 cts.	131 81
	<hr/> 2,188 73
	<hr/> \$19,201 51
<i>Amount paid for work done by Sewer Division: Building</i> 2 new catch-basins and repairing 2 others	327 10
	<hr/> \$19,528 61
<i>Amount of appropriation for Malden street</i>	\$6,000 00
<i>Amount of appropriation for Wareham street</i>	13,024 62
	<hr/> 19,024 62
<i>Amount paid out of Paving Division appropriation</i>	<u>\$503 99</u>
Matthews street, including Leather square, paving.	
Labor	\$1,271 90
Teaming	279 00
41,072 granite paving-blocks	3,009 35
Gravel	316 18
8 feet edgestone	4 80
2,450 paving-brick	30 62
	<hr/> \$4,911 85
<i>Amount of special appropriation</i>	4,560 25
<i>Amount paid out of Paving Division appropriation</i>	<u>\$351 60</u>
Maynard street, grading.	
Labor	\$832 90
Teaming	1,059 00
Gravel	407 40
36.6 feet edgestone	47 65
Sundries	9 11
	<hr/> \$2,356 06
<i>Amount paid for work done by Sewer Division: Building</i> 65 feet 15-in. pipe culvert	88 87
	<hr/> \$2,444 93
<i>Amount of special appropriation</i>	2,000 00
<i>Amount paid out of Paving Division appropriation</i>	<u>\$444 93</u>

Medford street, Lexington street to Chelsea street, paving and regulating.

Labor	\$3,050 05
Teaming	1,162 50
Hill gravel	519 86
Beach gravel	941 46
145,582 granite paving-blocks	11,355 40
150 feet flagging	172 50
31,500 paving-brick	376 25
87 $\frac{3}{2}$ feet edgestone	65 88
Sundries	127 26

Amount paid for paving to P. Brennan & Co.:

2,013.5 lin. feet edgestone set, at 8 cts.	\$161 08
3,910.6 sq. yds. block paving laid, at 25 cts.	975 15
1,429 sq. yds. brick paving laid, at 18 cts.	257 22
	<hr/>
	1,393 45

Amount paid for paving to J. Turner & Co.:

2,260.2 lin. feet edgestone set, at 8 cts.	\$212 82
5,043.2 sq. yds. block paving laid, at 25 cts.	1,260 80
2,405.2 sq. yds. brick paving laid, at 18 cts.	432 94
	<hr/>
	1,906 56

\$21,071 17

Amount paid for work done by Sewer Division: Building

2 new catch-basins and repairing 6 others	434 19
---	--------

\$21,505 36

Mercer street, Dorchester street to Eighth street, resurfacing and regulating.

Labor	\$434 70
Teaming	348 00
Gravel	78 21
800 paving-brick	9 60
61 feet flagging	64 05
Sundries	10 17

\$944 73

Amount paid for work done by Sewer Division: Building

1 new catch-basin	110 25
-----------------------------	--------

\$1,054 98

Minot street, grading, edgestones, and gutters.

Labor	\$2,102 80
Teaming	391 50
4,084.3 feet edgestone, and carting	2,995 36
Gravel	740 25
Sundries	1 25
54,774 granite paving-blocks	1,259 80

Amount paid for paving to C. J. Coates:

3,829 lin. feet edgestone set, at 8 cts.	\$306 32
1,277 sq. yds. block paving laid, at 25 cts.	319 25
	<hr/>
	625 57

\$8,116 53

Amount paid for work done by Sewer Division: Building

3 new catch-basins and repairing 1 manhole	323 84
--	--------

\$8,440 37

Monument court, regulating and macadamizing.

350 sq. yds. 6-in. macadam.

Labor	\$161 62
Teaming	87 00
Crushed stone	140 02
Gravel	30 61
Roller	42 00
Sand	7 48
2,500 paving-brick	28 75

\$497 48**Monument street, regulating and macadamizing.**

Labor	\$308 30
Teaming	195 50
Crushed stone	803 72
Roller	70 00
Gravel	232 50

\$1,605 02

Amount paid for work done by Sewer Division: Building
2 new catch-basins and repairing 1 manhole

261 85

\$1,866 87**Moon street, paving.**

Labor	\$666 27
Teaming	114 00
Gravel	239 03
34.3 ft. edgestone	19 18
41,780 granite paving-blocks	1,963 64
1,000 paving-brick	11 50
331 sq. yds. Barber asphalt, at \$2.25	744 75

\$3,758 37

Amount of special appropriation

3,519 34

Amount paid out of Paving Division appropriation

\$239 03**Moreland street, Fairland street to Blue Hill avenue, resurfacing.**

1,800 sq. yds. 3-in. macadam.

Labor	\$345 50
Teaming	363 00
Gravel	278 60
Crushed stone	363 72
180.4 ft. flagging	189 39

\$2,040 21

Amount of special appropriation

2,000 00

Amount paid out of Paving Division appropriation

\$40 21**Mount Vernon street, Ward 25, grading and regulating.**

1,200 sq. yds. 6-in. macadam.

806 sq. yds. gravel sidewalk.

Labor	\$1,371 60
Teaming	250 50
Gravel	436 46

Amount carried forward,\$2,058 56

STREET DEPARTMENT.

271

<i>Amount brought forward,</i>	\$2,058 56
Sand	1 96
Stone	632 58

	<u>\$2,693 10</u>
Amount of special appropriation	2,125 00

Amount paid out of Paving Division appropriation	<u>\$568 10</u>
--	-----------------

Murdock street, grading and gravelling.

Labor	\$221 50
Teaming	45 00
Gravel	412 83
Sand	49 00
Sundries	29 23

\$757 56

Amount paid for work done by Sewer Division: Building 2 new catch-basins	248 50
---	--------

\$1,006 06**National street, macadamizing, gutters, etc.**

750 sq. yds. 3-in. macadam.

Labor	\$470 26
Teaming	168 00
Stone	152 80
Gravel	106 40
Sand	66 51
Roller	60 00
10,000 paving-brick	115 00
Sundries	1 74

Amount paid for paving to H. Gore & Co.:

1,120.6 lin. feet edgestone set, at 8 cts.	\$89 65
466.4 sq. yds. block paving laid, at 25 cts.	116 61
507.7 sq. yds. brick paving laid, at 18 cts.	91 39

297 65\$1,438 36

Amount paid for work done by Sewer Division: Building 1 new manhole	61 64
--	-------

\$1,500 00**Neponset avenue, Tileston place to Minot street, regulating and macadamizing.**

9,600 sq. yds. 8-in. macadam.

4,500 sq. yds. gravel sidewalk.

Labor	\$1,773 57
Teaming	1,075 50
Gravel	1,614 00
Crushed stone	4,790 03
2,955 ft. edgestone	2,349 03
412 ft. flagging	432 60
3,130 paving-brick	71 99
Building retaining-wall	659 75
Sundries	75 93

Amount carried forward,\$16,442 40

<i>Amount brought forward,</i>	\$16,442 40
Amount paid for paving to C. J. Coates:	
3,257 lin. ft. edgestone set, at 8 cts.	\$260 56
1,801 sq. yds. block paving laid, at 25 cts.	458 30
	<hr/>
	\$718 86

	\$17,161 26
Amount of special appropriation	12,000 00

Amount paid out of Paving Division appropriation	<hr/> \$5,161 26
--	------------------

Newman street, Mercer street to Dorchester street, resurfacing.

1,700 sq. yds. 3-in. macadam.	
Labor	\$634 00
Roller	70 00
Teaming	232 50
Hill gravel	36 34
Beach gravel	21 30
Crushed stone	340 00
Sundries	7 00
	<hr/>
	\$1,341 14

Amount of special appropriation	1,198 26
---------------------------------	----------

Amount paid out of Paving Division appropriation	<hr/> \$142 88
--	----------------

Ninth street, Old Harbor street to N street, regulating and grading.

Labor	\$2,140 25
Teaming	1,449 00
Hill gravel	439 24
Beach gravel	40 47
Sand	49 00
1,608 ft. edgestone and 17 corners	979 42
4,000 paving-brick	48 00

Amount paid for paving to H. Gore & Co.:	
94.5 lin. ft. edgestone set, at 18 cts.	\$17 01
40.6 sq. yds. block paving laid, at 35 cts.	14 21
68.8 sq. yds. brick paving laid, at 28 cts.	19 26
	<hr/>
	50 48

Amount paid for paving to P. W. Hernan:	
2,600.3 lin. ft. edgestone set, at 8 cts.	\$208 02
1,095.1 sq. yds. block paving laid, at 25 cts.	273 77
473.7 sq. yds. brick paving laid, at 18 cts.	85 27
	<hr/>
	567 06

	\$5,762 92
--	------------

Amount paid for work done by Sewer Division: Building 3 new catch-basins and repairing 1 catch-basin and 1 man- hole	354 74
--	--------

	<hr/> \$6,117 66
--	------------------

Oak street, grading and gravelling.

Labor	\$315 50
Teaming	240 00
Gravel	363 84
Sundries	80 66
	<hr/>

	<hr/> \$1,000 00
--	------------------

Ocean street, regulating and macadamizing.

3,000 sq. yds. Telford macadam.	
1,800 sq. yds. gravel sidewalk.	
Labor	\$2,069 59
Teaming	282 00
Gravel	391 50
Stone	2,680 00
Roller	210 00
34,864 granite paving-blocks	967 47
Edgestone, 2,448 ft.	1,438 12
Sundries	31 25
Amount paid for work done by Sewer Division: Building 2 new catch-basins	218 26
Amount paid for paving to C. J. Coates:	
988 sq. yds. block paving laid, at 72 cts.	\$654 49
2,704 ft. edgestone set, at 33 cts.	892 32
530 cu. yds. earth excavated, at 50 cts.	265 00
	<hr/>
	1,811 81
	<hr/>
	<u>\$10,100 00</u>

Oneida street, paving and regulating.

Labor	\$1,035 04
Teaming	207 00
Gravel	235 91
113.1 lin. feet edgestone	67 86
21,070 paving-brick	263 37
300 paving-blocks	12 90
Amount paid for paving to H. Gore & Co.:	
1,020 lin. feet edgestone set, at 15 cts.	\$153 00
1,070 sq. yds. block-paving laid (tar joints), at \$1.22	1,305 40
29 sq. yds. block paving laid, at 55 cts.	15 95
476 sq. yds. brick paving laid, at 43 cts.	204 68
	<hr/>
	1,679 03
	<hr/>
	\$3,501 11
Amount of special appropriation	3,300 00
	<hr/>
Amount paid out of Paving Division appropriation	\$201 11
	<hr/>

Oswego street, paving and regulating with brick.

Labor	\$1,117 53
Teaming	6 00
172 feet edgestone	96 32
Sundries	26 16
Amount paid for paving to H. Gore & Co.:	
1,021.8 lin. feet edgestone set, at 15 cts.	\$153 27
22.1 sq. yds. cross-walks laid, at 55 cts.	12 16
1,025.7 sq. yds. brick paving laid on edge, at \$2.40	2,461 68
518.8 sq. yds. brick paving laid, at 43 cts.	223 08
	<hr/>
	2,850 19
	<hr/>
	\$4,096 20
Amount of special appropriation	3,668 67
	<hr/>
Amount retained from H. Gore & Co. under the terms of the contract	\$427 53
	<hr/>

Park street, macadamizing.

950 sq. yds. 6-in. macadam.

Labor	\$1,371 74
Teaming	96 00
Roller	112 00
Stone	443 12
Sundries	11 35

Amount paid for paving to Wm. McEleney :

89.8 lin. feet edgestone set, at 8 cts.	\$7 18
233.7 sq. yds. block paving laid, at 25 cts.	58 43
86.7 sq. yds. brick paving laid, at 18 cts.	15 61
	<hr/>
	81 22
	<hr/>
	<u>\$2,115 43</u>

Parker street, paving, edgestones, and macadamizing.

4,200 sq. yds. 12-in. macadam.

Labor	\$3,718 70
Teaming	2,619 00
Gravel	4,386 20
Roller	210 00
Sand	176 00
Stone	3,405 82
186,453 granite paving-blocks	13,999 73
2,000 paving-brick	24 00
863.4 feet flagging	928 63
3,442 feet edgestone and 24 corners	2,284 19
Sundries	66 51

Amount paid for excavating to Wm. T. Davis :

780 cu. yds. earth excavated, at 85 cts.	663 00
--	--------

Amount paid for excavating to E. A. Janse :

2,060 cu. yds. earth excavated, at 72 cts.	\$1,483 20
458 sq. yds. paving removed, at 25 cts.	114 50
	<hr/>
	1,597 70

Amount paid for paving to A. A. Libby & Co. :

4,046 lin. feet edgestone set, at 8 cts.	\$323 68
654 lin. feet edgestone set, at 18 cts.	117 72
208.5 lin. feet edgestone set, at 20 cts.	41 70
6,634.5 sq. yds. block paving laid, at 25 cts.	1,658 63
395.7 sq. yds. block paving laid, at 35 cts.	138 50
64.9 sq. yds. block paving laid, at 50 cts.	32 45
122.6 sq. yds. brick paving laid, at 18 cts.	22 07
609 sq. yds. brick paving laid, at 28 cts.	159 72
226 sq. yds. brick paving laid, at 35 cts.	79 10
20 sq. yds. brick paving laid, at 50 cts.	10 00
	<hr/>
	2,583 57
	<hr/>
	\$36,663 05

Amount paid for work done by Sewer Division : Building
18 new catch-basins and 170 feet retaining-wall

2,820 43

Amount of special appropriation \$39,483 48

35,000 00

Amount paid out of Paving Division appropriation \$4,483 48**Parker street, Huntington avenue to Westland avenue.**Building iron fence \$420 00

Parkman street, Ward 9, paving.

Labor	\$210 03
Teaming	144 00
Stone	243 77
	<hr/>
	\$597 80
Amount of special appropriation	453 80
	<hr/>
Amount paid out of Paving Division appropriation	\$144 00
	<hr/>

Paul street, paving.

Labor	\$119 27
Teaming	6 00
Amount paid for paving to E. McLaughlin:	
249.3 lin. ft. edgestone set, at 15 cts.	37 40
Amount paid for paving to H. Gore & Co.:	
249.3 lin. ft. edgestone set, at 18 cts.	\$44 87
216.6 sq. yds. brick paving, laid on edge, at \$2.75	595 65
95.8 sq. yds. brick paving laid	41 19
	<hr/>
	681 71
	<hr/>
	\$844 38
	<hr/>

Pemberton square, macadamizing and regulating.

850 sq. yds. 12-in. macadam.	
Labor	\$696 22
Gravel	28 40
353 granite paving-blocks	255 70
Stone	680 00
100 ft. flagging	120 00
Rolling	229 50
Sundries	12 00
Amount paid for paving to Wm. McEleney:	
218 lin. ft. edgestone set, at 8 cts.	\$17 44
561 sq. yds. block paving laid, at 25 cts.	140 25
57 sq. yds. brick paving laid, at 18 cts.	10 26
	<hr/>
	167 95
	<hr/>
	\$2,189 77
Amount of special appropriation	1,584 57
	<hr/>
Amount paid out of Paving Division appropriation	\$605 20
	<hr/>

Preble street, Dorchester avenue to Vinton street, macadamizing, sewers, etc.

Labor	\$699 53
Teaming	372 00
Hill gravel	230 68
Stone	600 00
Beach gravel	9 94
Roller	72 00
Sand	14 00
Filling	32 25
1,183 ft. edgestone and 13 corners	859 41
	<hr/>
Amount carried forward,	\$2,889 81

<i>Amount brought forward,</i>	\$2,889 81
Amount paid for paving to Roger Devlin :	
1,244 lin. ft. edgestone set, at 18 cts.	\$223 92
97.7 lin. ft. edgestone set, at 8 cts.	7 82
407.9 sq. yds. block paving laid, at 35 cts.	142 76
65.3 sq. yds. block paving laid, at 25 cts.	16 32
197.4 sq. yds. brick paving laid, at 28 cts.	55 27
53.8 sq. yds. brick paving laid, at 18 cts.	9 68
	<hr/> 455 77
	<hr/> \$3,345 58
Amount paid for work done by Sewer Division: Building 5 new catch-basins and 840.36 ft. 10-in. sewer-pipe	2,454 42
Amount of special appropriation	<hr/> \$5,800 00
Prentiss street, paving.	
Labor	\$323 84
Teaming	366 00
Gravel	445 20
62 feet flagging	65 10
30,702 granite paving-blocks	2,252 74
Amount paid for excavating to E. A. Janse :	
312 sq. yds. gutters removed, at 15 cts.	\$46 80
279 cu. yds. material excavated, at 60 cts.	167 40
	<hr/> 214 20
Amount paid for paving to J. Doherty & Co. :	
713 lin. feet edgestone set, at 8 cts.	\$57 04
1,020 sq. yds. block paving laid, at 25 cts.	255 00
116 sq. yds. brick paving laid, at 18 cts.	20 88
	<hr/> 332 92
	<hr/> \$4,000 00
Prospect avenue, grading and gravelling.	
Labor	\$283 20
Teaming	72 00
Gravel	177 80
	<hr/> \$533 00
Amount of special appropriation	500 00
Amount paid out of Paving Division appropriation	<hr/> \$33 00
Q street, flagging crossing.	
Labor	\$191 89
Gravel	18 96
180 feet flagging	189 00
	<hr/> \$399 85
Resurfacing streets, Wards 17 and 18.	
Labor	\$751 19
Teaming	304 50
Crushed stone	317 21
Amount paid for paving done on W. Newton street, to Metro- politan Construction Company	4,217 64
Amount paid for asphaltting on Columbus avenue, to Barber Asphalt Paving Company	186 77
	<hr/> \$5,777 31

Richmond street, paving.

Labor	\$437 76
Teaming	498 00
Gravel	85 41
Sand	45 00
79 feet flagging	94 80
8,550 granite paving-blocks	619 52

Amount paid for paving to J. Grant & Co.:

400 lin. feet edgestone set, at 8 cts.	\$32 00
1,038 sq. yds. block paving laid, at 25 cts.	259 50
243 sq. yds. brick paving laid, at 18 cts.	43 74
	<hr/>
	335 24

\$2,115 73

Amount of special appropriation	1,400 00
---	----------

Amount paid out of Paving Division appropriation	<u>\$715 73</u>
--	-----------------

Rochester street, paving.

Labor	\$526 30
22½ ft. edgestone	12 64
38 ft. flagging	39 90
Sundries	13 75

Amount paid for paving to J. McCarthy:

436 sq. yds. block paving excavated, at 23½ cts.,	\$102 46
303 cu. yds. earth excavated, at 95½ cts.	289 37
3 days' teaming	18 00
	<hr/>
	409 83

Amount paid for paving to Metropolitan Construction Co.:

996.1 lin. feet edgestone set, at 15 cts.	\$149 42
20.2 sq. yds. cross-walks laid, at 55 cts.	11 11
462.9 sq. yds. brick paving laid, at 43 cts.	199 05
1,095.4 sq. yds. asphalt block paving laid, at \$2.85	3,121 89
Extra work done, as ordered	50 60
	<hr/>
	3,532 07

\$4,534 49

Amount paid for work done by Sewer Division: Repairing 2 catch-basins	2 75
--	------

\$4,537 24

Amount of special appropriation	4,360 64
---	----------

Amount paid out of Paving Division appropriation	<u>\$176 60</u>
--	-----------------

Rogers street, Dorchester street to Preble street, asphaltting.

Gravel	\$14 22
900 paving brick	10 80
Sundries	8 67

Amount paid for paving to Payson & Co.:

650 lin. ft. edgestone set, at 15 cts.	\$97 50
112.2 sq. yds. block paving laid, at 35 cts.	39 26
175.8 sq. yds. brick paving laid, at 28 cts.	49 22
	<hr/>
	185 98

\$219 67

Amount carried forward,

<i>Amount brought forward,</i>	\$219 67
Amount paid for asphalt to Barber Asphalt Paving Co.:	
464.3 sq. yds. asphalt laid, at \$2.25	\$1,044 68
2.1 sq. yds. block paving laid, at 25 cts.	53
	<hr/> 1,045 21
	\$1,264 88
Amount of special appropriation	1,000 00
	<hr/>
Amount paid out of Paving Division appropriation	<u>\$264 88</u>
Rutherford avenue, macadamizing.	
Labor	\$100 00
	<hr/>
Rutherford avenue, paving.	
Labor	\$906 20
Teaming	294 00
Gravel	600 27
110.5 feet edgestone	77 35
57,423 granite paving-blocks	4,478 99
Amount paid for excavating to S. & R. J. Lombard:	
121 sq. yds. gutters removed, at 19 cts.	\$22 99
350 cu. yds. earth excavated, at 98 cts.	343 00
	<hr/> 365 99
Amount paid for paving to P. Brennan & Co.:	
461.1 lin. ft. edgestone set, at 8 cts.	\$36 89
1,243.2 sq. yds. block paving laid, at 25 cts.	310 80
	<hr/> 347 69
Amount paid for paving to J. Turner & Co.:	
295 lin. ft. edgestone set, at 8 cts.	\$23 60
627.3 sq. yds. block paving laid, at 25 cts.	156 83
	<hr/> 180 43
	<hr/> \$7,250 92
Amount paid for work done by Sewer Division: Building	
3 new catch-basins and repairing 1 catch-basin	590 58
	<hr/> <u>\$7,841 50</u>

Rutland square, repairs.

Labor	\$73 60
Teaming	40 50
	<hr/>
	<u>\$114 10</u>

Salem street, Charlestown, regulating and macadamizing.

730 sq. yds. 6-in. macadam.	
Labor	\$388 34
Teaming	184 50
Gravel	51 12
Roller	60 00
Crushed stone	298 79
1,500 paving-brick	17 25
	<hr/>
Amount of special appropriation	<u>\$1,000 00</u>

Savin Hill avenue, paving.

Labor	\$593 47
Teaming	289 50
Gravel	526 50
Sand	25 20
38,155 granite paving-blocks	1,980 34
2,500 paving-brick	30 00
Sundries	3 20

Amount paid for paving to C. J. Coates:

697 lin. ft. edgestone set, at 8 cts.	\$55 76
1,041 sq. yds. block paving laid, at 25 cts.	260 25
347 sq. yds. brick paving laid, at 18 cts.	62 46
	<hr/>
	378 47

	\$3,826 68
Amount of special appropriation	3,500 00

Amount paid out of Paving Division appropriation	<u>\$326 68</u>
--	-----------------

Scotia, Cambria, and Bothnia streets, macadamizing.

3,000 sq. yds. 12-in. macadam.

Labor	\$3,903 88
Teaming	874 50
Gravel	254 40
Sand	146 20
Stone	2,400 00
Roller	210 00
1,271 ft. edgestone	740 72
16,500 paving-brick	272 25
Sundries	31 23

Amount paid for paving to J. Doherty & Co.:

1,967.4 lin. ft. edgestone set, at 8 cts.	\$157 40
508 lin. ft. edgestone set, at 18 cts.	91 44
1,069.5 sq. yds. block paving laid, at 25 cts.	267 39
175.6 sq. yds. block paving laid, at 35 cts.	61 46
717.3 sq. yds. brick paving laid, at 18 cts.	129 12
684 sq. yds. brick paving laid, at 28 cts.	191 52
	<hr/>
	898 33

	\$9,731 51
Amount paid for work done by Sewer Division: Building 3 new catch-basins, repairing 2 manholes, and building 85 ft. 12-in. sewer	638 15

	\$10,369 66
Amount of special appropriation	10,000 00

Amount paid out of Paving Division appropriation	<u>\$369 66</u>
--	-----------------

Second street, grading, etc.

1,000 sq. yds. 6-in. macadam.

Labor	\$399 65
Teaming	130 50
Gravel	33 21
Roller	60 00
Crushed stone	411 00

	<u>\$1,034 36</u>
--	-------------------

Second street, K to M, macadamizing.

1,000 sq. yds. 3-in. macadam.

Labor	\$310 90
Teaming	124 50
Roller	60 00
Gravel	187 73
Crushed stone	234 25
411½ ft. edgestone	287 94

Amount paid for paving to H. Gore & Co. :

498.3 lin. ft. edgestone set, at 8 cts.	\$39 86
168.3 sq. yds. block paving laid, at 25 cts.	42 08
	<hr/>
	81 94

\$1,287 26

Amount paid for work done by Sewer Division: Building

1 new catch-basin	134 95
-----------------------------	--------

\$1,422 21

Second street, E street to Dorchester street, repaving.

Labor	\$952 20
784.8 ft. flagging	824 04
62,039 paving-brick	775 49
125,025 granite paving-blocks	9,083 78
Wharfage on paving-blocks	317 24
Sundries	66 91

Amount paid for paving as per contract with J. Doherty & Co. :

5,022 sq. yds. block paving laid, at \$1.25	\$6,277 50
2,651 lin. ft. edgestone set, at 23 cts.	609 73
2,128 sq. yds. brick paving laid, at 78 cts.	1,659 84
172 sq. yds. cross-walks laid, at \$1.00	172 00
Extra work, as ordered	350 20
	<hr/>
	9,069 27

\$21,088 93

Amount charged to L street for filling 249 50

\$20,839 43

Amount paid for work done by Sewer Division: Building

2 new catch-basins	404 56
------------------------------	--------

\$21,243 99

Amount of special appropriation 20,000 00

Amount paid out of Paving Division appropriation \$1,243 99**Second street, easterly from Granite street, repaving, and Third street, A street to Second street, repaving.**

Labor	\$867 53
78,791 granite paving-blocks	7,654 59
Wharfage on paving-blocks	390 00
38,104 paving-brick	476 31
516 feet flagging	541 88
134 feet edgestone and 12 corners	127 74
Sundries	40 60

Amount carried forward, \$10,098 65

<i>Amount brought forward,</i>	\$10,098 65
Amount paid for paving, as per contract with Collins & Ham :	
3,899 sq. yds. block paving laid, at \$1.17 . . .	\$4,561 83
1,906 lin. feet edgestone set, at 33 cts. . . .	628 98
1,518 sq. yds. brick paving laid, at 91 cts. . .	1,381 38
122 sq. yds. cross-walks laid, at \$1.35 . . .	164 70
Extra work, as ordered	245 20
	<hr/> 6,982 09
Amount retained from Collins & Ham	\$17,080 74
	<hr/> 25 00
Amount of special appropriation for Second street . .	\$17,055 74
	<hr/> 15,000 00
Amount of special appropriation for Third street . .	\$2,055 74
	<hr/> 2,000 00
Amount paid out of Paving Division appropriation . .	<u>\$55 74</u>

Seneca street, paving (brick).

Labor	\$514 79
Teaming	37 50
21 feet of edgestone	11 81
29.4 feet flagging	30 87
9,800 paving-brick	122 50
Sundries	57 95

Amount paid for paving, as per contract with H. Gore & Co. :

816.4 sq. yds. keramite paving laid, at \$2.75 . . .	\$2,245 10
1,008.5 lin. feet edgestone set, at 15 cts. . . .	151 28
19.2 sq. yds. block paving laid, at 55 cts. . . .	10 56
14.6 sq. yds. round paving laid, at 55 cts. . .	8 03
459 9 sq. yds. brick paving laid, at 43 cts. . .	197 75
Extra work, as ordered	29 32
	<hr/> 2,642 04
	<hr/> \$3,417 46

Amount paid for work done by Sewer Division : Repairing
2 catch-basins and building 1 manhole

	78 47
	<hr/>
Amount of special appropriation	\$3,495 93
	<hr/> 3,241 33
Amount paid out of Paving Division appropriation . .	<u>\$254 60</u>

Seventh street, D street towards B street, paving.

Labor	\$921 45
Teaming	858 00
Hill gravel	184 03
Beach gravel	838 51
Sand	119 01
50,563 granite paving-blocks	3,663 97
Wharfage on paving-blocks	119 50
9,000 paving-brick	109 00

Amount carried forward, \$6,813 47

<i>Amount brought forward,</i>	\$6,813 47
Amount paid for excavating to M. Donnellan:	
967.3 sq. yds. block paving removed, at 15½ cts.	\$149 94
841 cu. yds. earth removed, at 94½ cts.	794 75
	<hr/> 944 69
Amount paid for paving to H. Gore & Co.:	
1,724.2 lin. feet edgestone set, at 8 cts.	\$137 94
2,541.8 sq. yds. block paving laid, at 25 cts.	635 45
439.4 sq. yds. block paving laid (tar joints), at 97 cts.	426 22
1,592.2 sq. yds. brick paving laid, at 18 cts.	286 59
	<hr/> 1,486 20
	<hr/> \$9,244 36
Amount of special appropriation	9,000 00
Amount paid out of Paving Division appropriation	<hr/> \$244 36
Shirley street, grading.	
Labor	\$113 78
Crushed stone	601 50
Filling	1,127 00
Sundries	41 98
Amount paid for excavating to W. T. Davis:	
2,615 cu. yds., and labor excavating earth and delivering on Shirley street	1,810 95
	<hr/> \$3,695 21
Amount paid for work done by Sewer Division: Building 40 ft. stone culvert	347 45
	<hr/> \$4,042 66
Short street, Charlestown.	
400 sq. yds. 6-in. macadam.:	
Labor	\$270 86
Teaming	159 00
Crushed stone	162 14
Roller	48 00
Gravel	60 00
	<hr/> \$700 00
Short street, West Roxbury, grading.	
Labor	\$96 60
Silver street, A to D street, macadamizing.	
Labor	\$331 20
Teaming	279 00
Gravel	109 34
4,300 paving-brick	51 60
Sundries	8 07
Amount paid for paving, to D. Sullivan:	
1,352.6 lin. ft. edgestone set, at 8 cts.	\$108 21
442 7 sq yds. block paving laid, at 25 cts.	110 67
514.3 sq. yds. brick paving laid, at 18 cts.	92 57
	<hr/> 311 45
	<hr/> \$1,090 66

Sixth street, B and C street, paving.

Labor	\$442 46
Teaming	337 50
Gravel	341 51
Sand	50 75
45 ft edgestone	28 70
4,500 paving-brick	51 75
18,000 granite paving-blocks	1,313 10
Wharfage on paving-blocks	35 00

Amount paid for excavating to M. Donnellan:

233.4 cu. yds. stone removed, at 19½ cts.	\$45 51	
241.6 cu. yds. earth excavating, at 95 cts.	229 52	
		275 03

Amount paid for paving to H. Gore & Co.:

547.7 lin. ft. edgestones set, at 8 cts.	\$43 82	
815 sq. yds. block paving laid, at 25 cts.	203 75	
425.7 sq. yds. brick paving laid, at 18 cts.	76 63	
		324 20
		<u>\$3,200 00</u>

Sixth street, H to I street, macadamizing.

1,000 sq. yds. 6-in. macadam.	
Labor	\$643 04
Teaming	358 50
Roller	70 00
Gravel	146 10
167 ft. edgestone and 2 corners	102 47
Crushed stone	400 00
Sundries	9 50

	\$1,729 61
Amount of special appropriation	1,621 54

Amount paid out of Paving Division appropriation	<u>\$108 07</u>
--	-----------------

Smith street, extension and grading.

Labor	\$357 60
Teaming	282 00
	<u>\$639 60</u>

Soley street, macadamizing.

800 sq. yds. 3-in. macadam.	
Labor	\$237 20
Teaming	195 00
Hill gravel	82 50
Roller	48 00
Beach gravel	52 54
Crushed stone	164 61
30½ ft. flagging	30 50
	<u>\$810 35</u>

Story street, grading.

791.5 squares earth excavated, as per contract with M. Donnellan, at \$2.45	\$1,939 18
Teaming	7 60
	<u>\$1,946 78</u>

Stoughton street, Harrison avenue to Albany street.

2,000 sq. yds. 8-in. macadam.:

Labor	\$962 94
Teaming	216 00
Gravel	173 76
Roller	84 00
Sand	8 10
Crushed stone	1,007 00
405 granite paving-blocks	29 58
812.8 ft. edgestone and 2 corners	470 14

Amount paid for paving to Daniel Sullivan:

1,344.6 lin. ft. edgestones set, at 8 cts.	\$107 56
637.7 sq. yds. block paving laid, at 25 cts.	159 42
244.3 sq. yds. brick paving laid, at 18 cts.	43 97
	<hr/>
	310 95

\$3,262 47

Amount paid for work done by Sewer Division: Building

290 ft. 15-in. pipe sewer	1,011 77
-------------------------------------	----------

\$4,274 24Amount of special appropriation

3,000 00Amount paid out of Paving Division appropriation

\$1,274 24

Sun-Court street, asphalt.

Labor	\$266 90
Teaming	63 00
Gravel	28 40
2,000 paving-brick	23 00
225.3 sq. yds. Barber asphalt pavement laid, at \$2.25	506 92

Amount paid for paving to P. Brennan:

809 lin. ft. edgestones set, at 8 cts.	\$64 72
1,462.7 sq. yds. block paving laid, at 25 cts.	365 67
387.3 sq. yds. brick paving laid, at 18 cts.	69 71
	<hr/>
	\$500 10

\$1,388 32

Sycamore and Ridge streets, grading and constructing culverts.

Labor	\$942 82
Teaming	516 00
Gravel	312 90
Filling	213 55

\$1,985 27

Amount paid for work done by Sewer Division: Building

73 ft. stone culvert	1,714 73
--------------------------------	----------

\$3,700 00Amount of special appropriation

3,700 00

Symmes street, grading and gravelling.

Labor	\$664 00
Teaming	376 50
Gravel	350 00

Amount carried forward,

\$1,390 50

STREET DEPARTMENT.

285

<i>Amount brought forward,</i>	\$1,390 50
Amount of special appropriation	1,000 00
Amount paid out of Paving Division appropriation . . .	<u>\$390 50</u>

Terrace place, East Boston, regulating.

Labor	\$1,085 44
Teaming	128 00
Gravel	203 43

Amount paid for paving to Roger Devlin.

529.9 lin. ft. edgestone set, at 8 cts.	\$42 39
357.9 sq. yds. block paving laid, at 25 cts.	89 47
194.8 sq. yds. brick paving laid, at 18 cts.	35 06
	<u>166 92</u>

Amount paid for work done by Sewer Division: Building	\$1,583 79
45.2 ft. 12-in. pipe sewer	100 82

Amount of special appropriation	<u>\$1,684 61</u>
	850 00

Amount paid out of Paving Division appropriation . . .	<u>\$834 61</u>
--	-----------------

Terrace street, paving.

Labor	\$1,660 11
Teaming	30 00
227,007 granite paving-blocks	10,896 33
53,376 paving-brick	651 38
238 ft. flagging	249 90
2,501 ft. edgestone and 17 corners	1,706 91
Sundries	92 98

Amount paid for paving, as per contract with A. A. Libby & Co.:

5,995 sq. yds. block paving laid, at \$1.05	\$6,294 75
3,778 lin. ft. edgestone set, at 32½ cts.	1,227 85
1,720 sq. yds. brick paving laid, at 75 cts.	1,290 00
113 sq. yds. cross-walks laid, at \$1.30	146 90
844 sq. yds. block paving (tar joints)	607 68
Extra work as ordered	584 48
	<u>10,151 66</u>
	<u>\$25,439 27</u>

Amount paid for work done by Sewer Division: Building	
1 new catch-basin	256 27

Amount retained from A. A. Libby & Co.	<u>\$25,695 54</u>
	477 20

Amount of special appropriation	<u>\$25,218 34</u>
---	--------------------

Texas street, regulating and constructing sewers.

Labor	\$142 60
Teaming	81 00
Sand	22 40
Gravel	112 00
314½ ft. edgestone and 7 corners	250 28
3,934 granite paving-blocks	282 68

<i>Amount carried forward,</i>	<u>\$890 96</u>
--------------------------------	-----------------

<i>Amount brought forward,</i>	\$890 96
Amount paid for paving to Jas. Doherty & Co.:	
346 lin. ft. edgestone set, at 8 cts.	\$27 68
130.5 sq. yds. block paving laid, at 25 cts.	32 63
87.5 sq. yds. brick paving laid, at 18 cts.	15 75
	<hr/>
	76 06
	<hr/>
	\$967 02

Amount paid for work done by Sewer Division: Building	
201.8 ft. 10-in. pipe sewer, including rebuilding of	
Stony-brook culvert.	\$1,032 98
	<hr/>
	\$2,000 00
Amount of special appropriation	<hr/>
	2,000 00
	<hr/>

Tremont street, Roxbury crossing to Parker street.

Labor	\$10 50
	<hr/>

Third street, A to Second street. (See Second and Third streets.)**Tremont street, Scollay square to Boylston street, paving.**

Labor, including engineering and superintendence	\$3,350 13
Teaming	824 85
Gravel	8 76
55,100 paving-brick	661 20
3,108.5 ft. flagging	3,313 01
1,079 ft. edgestone and 4 corners	703 29
210,925 granite paving-blocks	15,490 80
Wharfage on paving-blocks	800 00
Sundries	148 12

Amount paid for paving, as per contract with H. Gore & Co.:

6,992 sq. yds. block paving on concrete, at	
\$2.76	\$19,297 92
1,616 sq. yds. block paving on gravel, at \$1.19	1,923 04
2,117 lin. ft. edgestone set, at 39 cts.	825 63
2,037 sq. yds. brick paving laid, at 90 cts.	1,833 30
670 sq. yds. cross-walks laid, at \$2.74	1,835 80
Extra work, as ordered	946 11
	<hr/>
	26,661 80
	<hr/>

Amount retained from H. Gore & Co.	\$51,961 96
	150 00
	<hr/>

Amount paid for work done by Sewer Division: Building	
7 new catch-basins and repairing 1 catch-basin	1,913 38
	<hr/>

	\$53,725 34
Amount of special appropriation	<hr/>
	52,000 00
	<hr/>

Amount paid out of appropriation for Paving Division	\$1,725 34
	<hr/>

Troy street, paving and regulating.

Labor	\$365 79
202.5 ft. flagging	212 63
143.8 ft. edgestone	80 45
	<hr/>

<i>Amount carried forward,</i>	\$658 87
--------------------------------	----------

<i>Amount brought forward,</i>	\$658 87
17,200 paving-brick	210 40
43,064 granite paving-blocks	3,141 51
Sundries	72 29

Amount paid for paving as per contract with Jas. Grant & Co.:

1,952 sq. yds. block paving laid, at \$1.52 . . .	\$2,967 04
1,009 lin. ft. edgestone set, at 35 cts.	353 15
627.5 sq. yds. brick paving laid, at \$1.32 . . .	828 30
72.5 sq. yds. cross-walks laid, at \$1.98 . . .	143 55
Extra work as ordered	87 40
	<hr/>
	4,379 44

\$8,462 51

Amount paid for work done by Sewer Division: Repairing
8 catch-basins and 2 manholes

66 86

\$8,529 37

Amount of special appropriation

8,100 00

Amount paid out of Paving Division appropriation . . .

\$429 37

Village street, paving.

Labor	\$665 12
Teaming	222 00
Gravel	193 01

Amount paid for paving to D. Sullivan:

642 lin. ft. edgestone set, at 18 cts.	\$115 56
320 sq. yds. brick paving laid, at 28 cts.	89 60
943 sq. yds. block paving laid (tar joints), at 97 cts.	914 71
	<hr/>
	1,119 87

\$2,200 00

Amount of special appropriation

2,200 00

Waltham street, Shawmut avenue to Tremont street.

1,300 sq. yds. 4-in. macadam.

Labor	\$243 60
Teaming	259 50
Roller	60 00
Gravel	125 56
Sand	18 00
Stone	361 00
255 granite paving-blocks	18 62
5,100 paving-brick	63 75

Amount paid for paving to D. Sullivan:

1,121 lin. ft. edgestone set, at 8 cts.	\$89 68
551.5 sq. yds. block paving laid, at 25 cts.	138 12
823 sq. yds. brick paving laid, at 18 cts.	148 14
	<hr/>
	375 94

\$1,525 97

Amount of special appropriation

500 00

Amount paid out of Paving Division appropriation . . .

\$1,025 97

Ward street, Dorchester avenue to Preble street, resurfacing.

700 sq. yds. 3-in. macadam.

Labor	\$249 20
Teaming	217 50
Roller	30 00
Gravel	64 12
Stone	132 02
160.8 ft. edgestone	93 23
950 paving-brick	11 65

\$797 72

Amount of special appropriation 675 72

Amount paid out of Paving Division appropriation . . . \$122 00**Warren avenue, repairs.**

Labor	\$179 40
Teaming	75 00
	<hr/>
	\$254 40

Warren street, paving.1,500 sq. yds. block-stone paving done by the city; balance
laid, as per contract, with A. A. Libby & Co.

Labor	\$2,444 95
Teaming	1,066 50
Gravel	1,864 80
Sand	99 20
4,000 paving-brick	50 00
134,948 granite paving-blocks	9,696 60
319 ft. edgestone and 2 corners	230 80
Sundries	33 71

Amount paid for excavating to J. McCarthy:

1,076 sq. yds. paving carted away, at 23½ cts.	\$252 86
801 cu. yds. material excavated, at 59½ cts.	476 60
7 cu. yds. stone carted away, at \$1.00	7 00
	<hr/>
	736 46

Amount paid for paving to A. A. Libby:

595.4 lin. ft. edgestone set, at 20 cts.	\$119 08
462.3 sq. yds. block paving laid, at 75 cts.	346 73
199.7 sq. yds. block paving laid, at 50 cts.	100 10
465.1 sq. yds. brick paving laid, at 35 cts.	162 80
	<hr/>
	728 71
	<hr/>
	\$16,951 73

Amount paid for work done by Sewer Division: Building

1 new catch-basin	130 02
	<hr/>
	\$17,081 75

Warrenton street, asphaltting from Washington street.

Labor	\$712 43
Teaming	96 00
Gravel	4 38
11,525 paving-brick	156 56
115.1 ft. edgestone and 4 corners	78 54

Amount carried forward,\$1,047 91

<i>Amount brought forward,</i>	\$1,047 91
Amount paid for paving to J. Turner & Co.:	
1,613 lin. ft. edgestone set, at 15 cts.	\$241 95
432.2 sq. yds. block paving laid, at 60 cts.	259 32
830.2 sq. yds. brick paving laid, at 40 cts.	332 07
	<hr/>
	833 34
Amount paid for asphaltting to Barber Asphalt Paving Co.:	
969.6 sq. yds. asphalt laid, at \$3.25	\$3,151 20
916 sq. yds. asphalt laid, at \$2	1,832 00
65.5 sq. yds. asphalt laid, at \$2.50	163 75
26.7 sq. yds. cross-walks laid, at \$1.05	28 04
	<hr/>
	5,174 99
	<hr/>
	\$7,056 24
Amount of special appropriation	6,871 64
	<hr/>
Amount paid out of Paving Division appropriation	\$184 60
	<hr/>
\$250.56 retained from Barber Asphalt Paving Co.	

Washburn street, Dorchester avenue to Boston street, regulating and macadamizing.

1,000 sq. yds. 12-in. macadam.	
Labor	\$1,017 12
Teaming	369 00
Stone	805 60
Filling	442 25
Gravel	204 26
Sand	6 00
Rolling	49 00
1,055 ft. edgestone	770 15
Sundries	15 90
Amount paid for paving to D. Sullivan:	
1,055 lin. ft. edgestone set, at 8 cts.	\$84 40
407.9 sq. yds. block paving laid	101 97
	<hr/>
	186 37
22.6 sq. yds. brick paving laid, at 28 cts.	6 33
	<hr/>
	\$3,871 98
Amount paid for work done by Sewer Division: Building 2 new catch-basins	216 83
	<hr/>
	\$4,088 81
Amount of special appropriations	3,043 89
	<hr/>
Amount paid out of Paving Division appropriation	\$1,044 92
	<hr/>

Washington street, Charlestown, regulating and macadamizing.

2,000 sq. yds. 6-in. macadam.	
Labor	\$399 79
Teaming	345 00
Roller	120 00
Gravel	297 34
Stone	823 87
Sundries	14 00
	<hr/>
	\$2,000 00
Amount of special appropriation	2,000 00
	<hr/>

Washington street, Dorchester, Hawes avenue to N. Y. & N. E. R.R., regulating.

Labor	\$128 80
12,729 granite gutter paving-blocks	292 77
Sundries	78 43

\$500 00Amount of special appropriation

500 00**Washington street, South and Centre Streets, Ward 23.**

14,000 sq. yds. 12-in. macadam.

Labor	\$6,183 28
Teaming	1,897 50
Roller	200 00
Gravel	1,392 10
Stone	11,037 00
Rolling	448 00
Sundries	177 10

\$21,334 98Amount of special appropriation

11,953 19Amount paid out of Paving Division appropriation

\$9,381 79**Water street, Charlestown, repaving.**

Labor	\$370 30
Teaming	108 00
Gravel	36 92
531 granite paving-blocks	25 48

Amount of special appropriation

\$540 70**Watson street, regulating and macadamizing.**

925 sq. yds. 6-in. macadam.

Labor	\$495 50
Teaming	30 00
Roller	49 00
Crushed stone	361 50
Gravel	76 68
444 feet edgestone and 2 corners	322 30

Amount paid for paving to J. Doherty & Co.:

872 lin. feet edgestone set, at 8 cts.	\$69 76
266.9 sq. yds. block paving laid, at 25 cts.	66 73
151 sq. yds. brick paving laid, at 18 cts.	27 18
	<hr/> 163 67

Amount of special appropriation

\$1,498 65**Waumbek street, resurfacing.**

2,800 sq. yds. 12-in. macadam.

Labor	\$542 25
Teaming	650 90
Gravel	609 00
Roller	140 00
Sand	208 00
Crushed stone	2,172 40

Amount carried forward,

\$4,322 55

STREET DEPARTMENT.

291

<i>Amount brought forward,</i>	\$1,322 55
1,216 feet edgestone and 4 corners	748 47
5,000 paving-brick	61 50
56 feet flagging	58 80
Sundries	13 50

<i>Amount paid for paving to A. A. Libby:</i>	
93.8 lin. feet edgestone set, at 20 cts.	\$18 76
31.2 sq. yds. block paving laid, at 50 cts.	15 60
	<hr/>
	34 36

<i>Amount paid for paving to Payson & Co.:</i>	
2,582.2 lin. feet edgestone set, at 8 cts.	\$206 57
1,014.1 sq. yds. block paving laid, at 25 cts.	253 52
1,221.9 sq. yds. brick paving laid, at 18 cts.	219 94
	<hr/>
	680 03

	<hr/>
	\$5,919 21
Amount of special appropriation	2,000 00
	<hr/>

Amount paid out of Paving Division appropriation	<u>\$3,919 21</u>
--	-------------------

Well street, paving.

Labor	\$523 42
Teaming	387 00
Gravel	108 00
Sand	18 00
185 feet edgestone	111 00
98 feet flagging	117 60
7,500 granite paving-blocks	538 88
4,800 paving-brick	58 00
Sundries	29 40

<i>Amount paid for paving to J. Doherty & Co.:</i>	
534.7 lin. feet edgestone set, at 8 cts.	\$42 78
571.3 sq. yds. block paving laid, at 25 cts.	142 83
199.1 sq. yds. brick paving laid, at 18 cts.	35 84
	<hr/>
	221 45

	<hr/>
	\$2,112 75
Amount of special appropriation	1,800 00
	<hr/>

Amount paid out of Paving Division appropriation	<u>\$312 75</u>
--	-----------------

Wendell street, paving.

Labor	\$786 67
Teaming	643 50
Gravel	56 80
100 feet edgestone	56 00
7,900 granite paving-blocks	576 31
2,500 paving-brick	28 75

<i>Amount paid for paving to Jas. Grant & Co.:</i>	
352 lin. ft. edgestone set, at 8 cts.	\$28 16
683 sq. yds. block paving laid, at 25 cts.	170 75
162 sq. yds. brick paving laid, at 18 cts.	29 16
	<hr/>
	228 07

	<hr/>
	\$2,376 10
Amount paid for work done by Sewer Division: Building	
1 new catch-basin	143 96
	<hr/>

	<hr/>
	\$2,520 06
Amount of special appropriation	<u>2,520 06</u>

West Chester park and square, Columbus avenue to bridge.

2,350 sq. yds. 6-in. macadam.

Labor	\$1,181 60
Teaming	858 00
Stone	976 89
Roller	70 00
Sundries	75 13

\$3,161 62

Amount of special appropriation 2,568 02

Amount paid out of Paving Division appropriation . . . \$593 60

West Dedham street, Shawmut avenue to Washington street, paving (tar joints).

Labor	\$565 27
Teaming	117 00
Gravel	260 80
Sand	74 80
27,977 granite paving-blocks	2,040 92
160.6 feet edgestone	89 88

Amount paid for excavating to J. McCarthy:

301 cu. yds. earth excavated and carted away,
at 95 cts. \$285 95284 sq. yds. round stone gutters removed, at 33
cts. 95 14

381 09

Amount paid for paving to A. A. Libby & Co.:

564.8 lin. feet edgestone set, at 8 cts. \$45 18

1,124.5 sq. yds. block paving laid, at 75 cts. 843 31

454.2 sq. yds. brick paving laid, at 18 cts. 81 75

970 24

\$4,500 00Amount of special appropriation 4,500 00

West Newton street, Tremont street to Columbus avenue, asphalt blocks.

Labor	\$677 38
Teaming	178 50

Amount paid for excavating to John Casey:

831 sq. yds. paving carted away, at 27 cts. \$224 37

785 cu. yds. material removed, at 65 cts. 510 25

734 62Amount paid for paving, as per contract with Metropolitan
Construction Co.:

3,118 sq. yds. Hastings asphalt block, at \$3.10 \$9,665 80

1,521 lin. feet edgestone set, at 15 cts. 228 15

7 sq. yds. block paving laid, at 55 cts. 3 85

1,190 sq. yds. brick paving laid, at 43 cts. 511 70

10,409 50

\$12,000 00Amount of special appropriation 12,000 00

West Newton street, Tremont street to Shawmut avenue, asphalt blocks.

Labor	\$634 20
Teaming	75 00
Gravel	5 68
Stone	212 79

Amount paid for excavating to J. J. Sullivan :

763 sq. yds. round stone gutters removed, at 29 cts.	\$221 27
709 cu. yds. macadam removed, at 75 cts.	531 75
	<hr/> 753 02

Amount paid for paving, as per contract with Metropolitan Construction Co. :

1,442.6 lin. feet edgestone set, at 15 cts.	\$216 39
41.9 sq. yds. cross-walks laid, at 55 cts.	23 04
1,119.7 sq. yds. brick paving laid, at 43 cts.	481 47
2,738.5 sq. yds. asphalt paving laid, at \$3.10	8,489 35
	<hr/> 9,210 25

\$10,890 94Amount paid out of resurfacing streets appropriation

4,217 64Amount of special appropriation

\$6,673 30
6,000 00Amount paid out of Paving Division appropriation

\$673 30**West Second street, repairs.**

Labor	<u>\$135 49</u>
-----------------	-----------------

Wharf street, paving.

Labor	\$495 63
Teaming	250 50
Gravel	21 30
100 feet edgestone	56 00
4,000 paving-brick	46 00
11,910 granite paving-blocks	803 18

Amount paid for paving to D. N. Payson :

425 lin. feet edgestone set, at 8 cts.	\$34 00
478 sq. yds. block paving laid, at 25 cts.	119 50
194 sq. yds. brick paving laid, at 18 cts.	34 92
	<hr/> 188 42

Amount of special appropriation

\$1,861 03
1,861 03*NEW EDGESTONE.*

The following tables show the amount of new edgestone set during the past year :

CITY PROPER.

(Districts 8, 9, 10, including a portion of Roxbury.)

	Lin. ft.
Bay State road	102
Belvidere street	440
Beacon street	111
Boylston street	167
Cambria street	612
Camden street	1,403
Commonwealth avenue	151

	Lin. ft.
Dalton and Dundee streets	153
East Concord street	657
East Newton street	832
Exeter street	426
Garrison street	177
Huntington avenue	485
Harcourt street	169
Scotia street	538
Stoughton street	1,049
Watson street	430
West Chester park	139
Sundry streets in small quantities	195

 8,236

ROXBURY.

(District No. 7, including a portion of Dorchester.)

Albany street	291
Bird street	182
Blue Hill avenue	688
Crawford street	302
Centre street	878
Cheney street	356
Dunreath street	126
Dunmore street	392
Ellis and Fulda streets	240
Elmore street	472
Gaston street	173
Hampshire street	224
Harold street	1,058
Highland street	169
Haskins street	1,380
Humboldt avenue	2,100
Holborn street	188
Homestead street	247
Howland street	426
Kensington street	389
Kingsbury street	199
Longwood avenue	192
Magazine street	113
Magnolia street	1,487
Monroe street	362
Parker street	2,476
Rand street	179
Ruthven street	183
Shirley street	511
Sterling street	149
Terrace street	1,713
Texas street	350
Townsend street	655
Tremont street	160
Wigglesworth street	225
Westminster avenue	104
Walden street	1,210
Wanmbeck street	1,009
Wabeno street	118
Wayland street	303
Sundry streets in small quantities	714

 22,693

SOUTH BOSTON.

(District No. 1, including a portion of Dorchester.)

	Lib. ft.
Boston street	260
Dorset street	1,614
East First street	2,109
East Second street	315
East Third street	205
East Sixth street	243
East Ninth street	1,797
Gustin street	536
Harvest street	1,806
Monks street	171
Preble street	1,290
Washburn street	1,027
Sundry streets in small quantities	351
	<hr/>
	11,724
	<hr/>

EAST BOSTON.

(District No. 2.)

Bennington street	1,216
Jeffries street	1,297
Lamson street	169
Marginal street	535
Morris street	565
Paris street	100
Sundry streets	249
	<hr/>

4,131

CHARLESTOWN.

(District No. 3.)

Caldwell street	1,161
Dupont street	236
Ellwood street	351
Hill street	479
	<hr/>

2,227

BRIGHTON.

(District No. 4.)

Ashford street	211
Franklin street	234
Mansfield street	1,272
Pratt street	315
	<hr/>

2,032

WEST ROXBURY.

(District No. 5.)

Childs street	145
Centre street	304
Danforth street	857
Grove street	123
Harris avenue	105
Mozart street	2,129
Paul Gore street	468
Roys and Wise streets	486
	<hr/>

4,617

DORCHESTER.

(District No. 6.)

	Lin. ft.
Ashmont street	1,682
Bushnell street	1,514
Blue Hill avenue	333
Belfort street	118
Codman and Carruth streets	480
Dracut street	1,255
Hancock street and Cushing avenue	313
Mill street	114
Mount Everett street	311
Minot street	4,065
Neponset avenue	2,891
Ocean street	2,649
Roslin and Harley streets	298
Stanley street	152
Victoria street	362
Washington street	1,187
Sundry streets in small quantities	414
	<hr/>
	18,138

RECAPITULATION.

City Proper	8,236
Roxbury	22,693
South Boston	11,724
East Boston	4,131
Charlestown	2,227
West Roxbury	4,617
Brighton	2,032
Dorchester	18,138
	<hr/>
	73,798

NEW BRICK SIDEWALKS.

The following tables show the number of square yards of new brick sidewalks laid during the past year:

CITY PROPER.

(Districts Nos. 8, 9, and 10, including a portion of Roxbury.)

	Sq. yds.
Bay State road	130
Beacon street	331
Belvidere, Scotia, and Bothnia streets	428
Boylston street	187
Dalton and Dundee streets	109
East Concord and East Newton streets	841
Harcourt street	133
Huntington avenue	973
St. Botolph street	193
Troy street	157
West Chester park	285
Sundry streets in small quantities	114
	<hr/>
	3,881

ROXBURY.

(District No. 7, including a portion of Dorchester.)

	Sq. yds.
Bower street and Walnut avenue	362
Blue Hill avenue	574
Centre and Highland streets	435
Crawford street	312
Cottage street	179
Dudley street	226
Edgewood street	185
Elmore street	354
Gaston street	145
Holborn street	127
Humboldt avenue, Homestead and Harold streets	1,031
Hampshire street	144
Howard avenue and Hartford street	192
Huntington avenue	125
Kingsbury street	143
Kensington street	219
Mill street	176
Munroe street	121
Magnolia and Wayland streets	350
Rand street	280
Rockland avenue	260
Ruthven street	109
Shirley street	258
Texas street	572
Townsend street	123
Tremont street	308
Vernon street	167
Warren street	158
Waumbeck street	351
Walden and Minden streets	572
Sundry streets in small quantities	540

 9,098

SOUTH BOSTON.

(District No. 1, including a portion of Dorchester.)

Boston street	365
Congress street	125
Dorset street	404
Dorchester avenue	332
East Second street	467
East Third street	354
East Fourth street	171
Harvest street	191
M street	100
Ninth street	200
Preble street	130
West Second street	118
Sundry streets in small quantities	671

 3,628

EAST BOSTON.

(District No. 2.)

Bennington street	518
Cottage street	189
Jeffries street	125

	Sq. yds.
Lamson street	152
Morris street	190
Marion street	258
Moore street	164
Paris street	150
Putnam street	167
West Eagle street	108
Sundry streets in small quantities	155
	<u>2,176</u>

CHARLESTOWN.

(District No. 3.)

Sundry streets in small quantities	120
--	-----

BRIGHTON.

(District No. 4.)

Western avenue	186
Sundry streets	191
	<u>377</u>

WEST ROXBURY.

(District No. 5.)

Burroughs street	525
Centre street	176
Sundry streets in small quantities	266
	<u>967</u>

DORCHESTER.

(District No. 6.)

Codman and Carruth streets	318
Cushing avenue and Hancock street	404
Dorchester avenue and Thornley street	148
Stanley street	250
Washington street	258
Sundry streets in small quantities	100
	<u>1,478</u>

RECAPITULATION.

City Proper	3,881
Roxbury	9,098
South Boston	3,628
East Boston	2,176
Charlestown	120
Brighton	377
West Roxbury	967
Dorchester	1,478
	<u>21,725</u>

PROPERTY IN CHARGE OF THE DEPUTY SUPERINTENDENT OF PAVING DIVISION.

Buildings and wharf on Albany street, opposite Sharon street. The building is of brick and wood and covers some 8,000 square feet of land, and is divided into a shed for breaking stone for macadamizing,

blacksmith's and carpenter's shops, tool-room, and stable. The total contents of the lot, including wharf and building, are 63,180 square feet.

Fort Hill Wharf, containing 21,054 square feet, placed in charge of the Paving Department May 18, 1874, to be used for the landing and storage of paving-blocks and gravel until such time as said wharf shall be wanted for the extension of Oliver street. A part of this wharf is occupied by a tenant-at-will, at \$500 per annum, part by Sanitary Division.

Lot on Chelsea, Marion, and Paris streets East Boston, containing 45,550 square feet. Part of this lot used by the Sewer Division.

Ledge lot on Washington street, corner Dimock street, Roxbury, containing 134,671 square feet. Upon this lot are buildings containing a steam-engine and stone-crusher.

Highland-street Stable lot. Upon this lot is a large brick stable erected in 1873, and occupied by the Sanitary and Paving Divisions; also a brick building used as a blacksmith's shop, and a shed for the storage of tools, etc.

Ledge lot, on Codman street, Dorchester, containing 299,000 square feet, was purchased in 1870. Upon this lot is a shed containing a steam-engine and stone-crusher, also a stable and tool-house.

On the Almshouse lot, Hancock street, Dorchester, there are two stables, also a shed and tool-house.

Ledge lot, on Magnolia street and Bird place, Dorchester, containing 81,068 square feet. This lot was purchased by the town of Dorchester in 1867. Upon this lot are a blacksmith's shop and large shed.

Downer-avenue lot, Dorchester, containing 35,300 square feet.

West Roxbury.—On Child street, a lot of land containing 14,457 square feet, upon which are a stable and shed, blacksmith's shop and tool-house.

Gravel lots.—On the corner of Forest Hills avenue and Norfolk street, a lot containing 47,798 square feet, purchased by the town of Dorchester, in town of Milton, on Brush Hill road, containing 64,523 square feet, hired by the town of Dorchester for nine hundred and ninety-nine years. Morton street, Ward 23, containing about one-third of an acre, purchased by town of West Roxbury in 1890, used for storage purposes. Tenen street, purchased for \$21,360 in 1874.

Ledge and gravel lot, rear of Union street, containing about 37,000 square feet, purchased by the town of Brighton. This lot is at present leased.

Gravel and stones on lot on Market street, Ward 25, purchased by town of Brighton.

On Rockland street, Ward 25, adjacent to engine-house, a brick building, containing a shed and tool-house.

Ledge lot, on Chestnut-hill avenue, Brighton, containing about 13 acres, upon which is an office, engine-house, stable, and crusher plant.

On Medford street, Charlestown, a wharf lot, foot of Elm street, containing 8,000 feet, upon which are sheds, office, stable, etc.

Property belonging to the Paving Division, consisting of 90 horses, 65 carts, 16 water-carts, 13 wagons, 6 steam-rollers, 8 stone-crushers, and 6 engines.

In South Boston, corner of H and Ninth streets, a lot of land containing about 12,000 square feet, upon which have been erected a stable, carriage-house, shed, tool-house, and office. Rent of same, including use of wharf and flats opposite, \$650 per annum, with taxes.

On Hereford street, a yard with shed, tool-house, and office.

Wharf, known as Atkins' Wharf, 521 Commercial street, purchased in 1887 for \$24,000, containing 22,553 square feet, having on it an office and stable.

Tools, Horses, Carts, etc.

DISTRICT.	1	2	3	4	5	6	7	8	9	10	Total.
Axes	2	3		7	7	4	3	7	2	2	37
Blocks and ropes, sets	1	1	1	1	1	2	2	2		2	13
Buggies	1	1		2	3	1	1	2			11
Blankets, horse	6	2	12	23	28	23	11	11	3	10	129
Crowbars	55	15	35	15	26	20	43	60	22	75	366
Clawbars					5	1	1	1		1	9
Cesspool rods		2	2		6		8	13	4		35
Crushers				1	1	2	4				8
Carts, single	3		6	5	5	12	8	10	2	4	55
“ double				4	3	3					10
“ water	3	1	1	3	2	2	2		1	1	16
Chains, draft	1				11	10		16			37
“ blasting				4	6	4	20				34
Chisels, ice	2		6					12	23	6	49
Derricks						1	1	2			6
Drills	11	7		150	133	233	430			12	976
Drill, steam				2	2	3	9				16
Drag-wheel, pair	1	1	1	1	1	2	1	1			9
Drags, stone					2			1			3
Engines				1	1	2	2				6
Grindstones				2	1	1	1	1	1		7
Goosenecks		1						1	1	2	5
Hammers, crack	50	36	35	20	76	25	50	20	43	100	455
“ fade and hand	14			4	8	18	16	8	3		71
“ striking		3		6	13	9	6			3	46
“ sledge	11	9	2	20	12	46	46	3	20	15	184
Handles, hammer	18	72	75	20	84	195	90	25	300	50	929
“ pickaxe	100	50	25	50	75	75	45	125	50	50	645
Hand-rollers, iron	1			1	2	1	1	1			7
“ stone								2	1		3
Hand-carts	1	1				1		1	1	1	6
Hydraut-chucks	2	1	1		2	7	1	1		1	16
Hose, feet of	216	50	50		50	250		80	100	110	896
Harnesses, chain	3	3	3	1	11	12	7	8	3	4	56
“ cart	3		5	9	7	13	8			4	57
“ wagon and buggy	3	1	2	2	4	4	2	2	3	1	24
Hoes, street and grub	39	58	21	30	30		33	82	25	12	330
Horses	6		7	16	14	18	11	11	2	5	90
Jiggers				1	1	1	3	2		1	9
Jack-crews		1		1	1	1	1	1			6
Lanterns	70	24	39	50	44	105	120	90	50	60	632
Ladders	2	2					11	3	2	2	24
Pickaxes, gravel	225	131	140	250	109	97	201	220	98	180	1,658
“ ice	95	94	90	50	119	100	130	111	100	210	1,099
Pinch-bars				1	5	3	2	13		1	25
Pungs				1	2	1	1	1	1		7
Ploughs, gutters	6	3	5	4	13	11	6	14	6	6	74
“ snow	2	1		9	20	12	4		1	2	61
Picks, grub	4		2	20	15	5	8	7	1		62
Pails, water	6	2	3	6	12	17	6	12	3	6	73
Rakes, iron	6	5	4	15	11	5	9	5	6	4	70
“ wooden					10						10
Rammers, iron	3	4	4	1		3	2	13	3	8	41
“ wooden	4	2	3	2	2	2	2	11	4	12	44
Robes, sleigh, and buggy	2	1	1	1	2	3	1	1	1	1	14
Street-rollers, stone	1	1	1		1			1			5
“ iron	3	2	3	4	4	5	3	3	3	1	31
Steam road-rollers	1				1	2	2				6
Steam-pumps			1								1
Snow-levelers	1		1	1	1	2	1	2	1	1	11
Scythes				6	6	8	3		2		25
Sickles				6	8	8	5		1		28
Shovels, gravel	75	50	70	94	59	126	216	114	50	36	890
“ snow	8	56	85	60	100	125	190	150	86	110	970
“ long-handled	5			10	25	5	8	5	2		60
Street-sweeping machines								1	2		3
Screens, gravel	4	2	1	4	4	8	4	10	2	1	40
Sleighs	1		1	1	1	1	1	1	1	1	9
Sleds						4					4
Street horses, wood	15	5	15	12	21	10	22	32	26	30	188
Spades	3	2			4		2				11
Spoons, drilling	15			6	8	11					40
Saws, cross-cut	1	1	1	1	2	3	1	1	2	1	14
“ hand-cut	4	1		2	3	4			6		20

Tools, Horses, Carts, etc.—*Concluded.*

DISTRICT.	1	2	3	4	5	6	7	8	9	10	Total.
Tools for stone-cutters, sets	2	1	2	..	1	1	1	5	11	4	28
“ carpenters, sets	1	..	1	..	1	..	2	2	1	1	9
“ pavers, sets	3	2	2	..	1	1	5	8	2	6	30
“ blacksmiths, sets . . . . .	..	..	..	2	1	1	3	2	..	1	10
Tamping-bars	6	2	3	3	2	2	..	7	3	6	34
Trucks . . . . .	..	..	1	..	..	..	1	3	1	2	8
Tool-chests	4	4	3	5	11	5	10	11	3	4	60
Wheelbarrows	20	11	10	8	2	8	12	27	8	12	118
Wedges	5	4	..	40	17	..	26	..	..	..	92
Wrenches, hydrant	2	5	..	2	2	2	..	2	..	..	15
Wagon-jacks	1	..	1	1	2	2	1	1	1	..	10
Wagons	1	1	2	1	2	1	2	1	1	1	13

Respectfully submitted,

C. R. CUTTER,
Deputy Superintendent.

APPENDIX C.

ANNUAL REPORT OF THE DEPUTY SUPERINTENDENT OF THE SANITARY DIVISION.

STREET DEPARTMENT, SANITARY DIVISION,
BOSTON, Feb. 1, 1892.

H. H. CARTER, ESQ., *Superintendent of Streets*:

SIR: I herewith submit my Report of Acts and Expenditures of the Sanitary Division from Jan. 1, 1891, to Feb. 1, 1892:

ITEMS OF EXPENDITURES.	Expended from Jan. 1, 1891, to May 1, 1891.	Expended from May 1, 1891, to Feb. 1, 1892.
For labor in sweeping streets and crossings, and removal of snow from public walks, yards, and squares	\$28,163 18	
For labor in collection and removal of house-dirt and ashes	53,610 72	\$102,433 62
For labor in collection of house-offal	30,198 37	76,027 22
For labor of mechanics, foremen, watchmen, feeder, and prison-carriage drivers	9,315 55	21,301 27
For labor of men employed in the stables and yards		8,870 06
Official pay-roll salary of deputy superintendent and clerks in office	1,906 00	6,792 70
Grain used at city stables	8,920 56	17,952 21
Hay and straw at city stables	2,989 19	8,971 18
For collection of ashes in East Boston	2,563 40	7,635 86
For the purchase of new horses		5,785 00
For stock and tools purchased for blacksmith shop	783 41	2,682 57
For stock and tools purchased for wheelwright's shop	943 65	1,334 06
For stock and tools in harness shop	427 88	1,166 72
For stock and tools in paint shop	131 37	414 31
Extra team-work in collecting ashes	16,043 99	45,505 50
Repairs on stables and sheds	259 06	546 44
Fuel, gas, and electric lights	564 17	1,305 06
Medical attendance on horses, medicine	118 97	364 44
Shoeing horses (outside shops)	176 73	393 57
Printing, stationery, and advertising	240 22	355 84
Broom stock for sweeping streets	70 35	
Contracts for the collection and removal of house-offal in East Boston and Brighton	1,750 00	5,250 00
Water-rates	1,025 23	102 20
Offal stock, consisting of buckets, etc.	155 50	162 42
Ash stock, consisting of cart-covers, baskets, etc.	95 26	565 91
Street stock, consisting of shovels, hoes, etc.	606 51	
<i>Amounts carried forward</i>	\$161,059 27	\$315,918 16

ITEMS OF EXPENDITURES.		Expended from Jan. 1, 1891, to May 1, 1891.	Expended from May 1, 1891, to Feb. 1, 1892.
<i>Amounts brought forward</i>		\$161,059 27	\$315,918 16
Stable stock, consisting of curry-combs, brushes, sponge, soap, blankets, manure-forks, etc.....		118 12	664 38
Dumping-boat, rental, royalty, towage, rent of wharf, repairs, labor, etc.....		5,092 73	16,405 71
Amount expended on account of Street-Cleaning Division		11,549 99	
Incidental expenses as follows :			
Telephone rental and repairs ..	\$140 50	\$424 10	
Stabling horses, East Boston, Dorchester, and West Rox- bury	148 24	277 47	
Claims for personal injuries, damages to fences and car- riages	655 20	17 87	
Travelling expenses	3 05	22 45	
Boston directories		22 00	
Newspapers for office use	7 50	6 00	
Repairing safe in office		7 50	
Watering front, No. 12 Beacon street		5 00	
	<u>\$954 49</u>	<u>\$782 39</u>	
		954 49	782 39
		<u>\$178,774 60</u>	<u>\$333,770 64</u>

INCOME.

Amount paid into the city treasury and credited the Sanitary Division for material sold during the year 1891 :

Sale of ashes	\$3,171 91
“ “ manure	759 00
“ “ offal	33,009 43
“ “ old material	303 81
“ “ street dirt	140 40
Removal of ashes	4,852 24
Conveying prisoners	3,186 00
Use of driveway, Snow's Wharf	62 50
	<u>\$45,485 29</u>

**Amount Expended for the Collection of House-dirt, House-offal,
and Cleaning Streets. Labor and Contracts.**

DISTRICTS.	LABOR. Expended for Sweeping the Streets from Jan. 1, 1891, to May 1, 1891.	LABOR. Expended for Collection of Ashes from Jan. 1, 1891, to May 1, 1891.	LABOR. Expended for Removal of House-offal from Jan. 1, 1891, to May 1, 1891.
City Proper.....	\$26,066 81	\$34,834 69	\$16,175 50
South Boston	597 60	1,994 08	2,338 00
East Boston	360 40	2,623 37 ¹	1,375 00 ²
Charlestown	428 56	3,432 70	2,298 00
Roxbury	701 31	8,262 41	4,997 87
West Roxbury .....	.....	1,844 10	1,200 00
Dorchester .....	.....	2,144 11	3,189 00
Brighton	8 50	1,038 66	375 00 ³
Totals	\$28,163 18	\$56,174 12	\$31,948 37

¹ East Boston contract included.² East Boston contract.³ Brighton contract.

DISTRICTS.	From May 1, 1891, to Feb. 1, 1892.	From May 1, 1891, to Feb. 1, 1892.	From May 1, 1891, to Feb. 1, 1892.
City Proper.....	\$63,009 41	\$39,585 23
South Boston	4,156 06	5,878 80
East Boston.....	7,635 86 ¹	4,125 00 ¹
Charlestown	7,852 16	5,445 29
Roxbury.....	15,656 76	11,763 05
West Roxbury.....	4,132 44	3,782 80
Dorchester	5,575 35	9,572 05
Brighton.....	2,051 44	1,125 00 ¹
Totals	\$110,069 48	\$81,277 22

¹ Contract work.

Total Cost for Removal of House-dirt, House-offal, and Street-cleaning.

ACCOUNTS.	Jan. 1, '91, to May 1, '91.		May 1, '91, to Feb. 1, '92.	
<i>Street-cleaning Account.</i>				
Expended for labor per pay-rolls.....	\$28,163 18		\$102,433 62	
“ “ stock per ledger acct.....	19,072 90	\$47,236 08	98,535 00	
			7,635 86	\$208,604 48
<i>House-dirt Account.</i>				
Expended for labor per pay-rolls.....	\$53,610 72			
“ “ stock per ledger acct.....	31,204 54			
“ “ East Boston contract.....	2,563 40	87,378 66		
<i>House-offal Account.</i>				
Expended for labor per pay-rolls.....	\$30,198 37		\$76,027 22	
“ “ stock per ledger account.....	8,699 25		35,768 67	
“ “ contracts, East Boston and Brighton..	1,750 00	40,647 62	5,250 00	117,045 89
Salaries.....	\$1,906 00		\$6,792 70	
Incidentals — claims for damages.....	954 49		782 39	
Prison wagons.....	651 75	3,512 24	545 18	8,120 27
		\$178,774 60		\$333,770 64

Material Collected by Districts.

FROM JAN. 1, 1891, TO MAY 1, 1891.

	South Teams.	West Teams.	Roxbury Teams.	Chs'n Teams.	E. Bost. Teams.	Brigh'n Teams.	Total Loads.
Ashes	45,388	26,388	20,455	5,936	4,157	1,722	104,046
Street-dirt	5,886	4,678	.....	.....	.....	.....	10,564
House-offal . . .	10,301	.....	2,925	995	960	123	15,304
	61,575	31,066	23,380	6,931	5,117	1,845	129,914

FROM MAY 1, 1891, TO JAN. 28, 1892.

Ashes	84,958	57,139	42,399	12,704	9,176	3,042	209,418
House-offal	23,974	.....	7,346	1,201	2,160	277	34,958
	108,932	57,139	49,745	13,905	9,176	3,042	241,939
From Jan. 1, 1891, to Feb. 1, 1892..	.....	.....	.....	.....	3,120	400	3,520

Disposition of Material Collected.

WHERE DUMPED.	FROM JAN. 1, 1891, TO MAY 1, 1891.			FROM MAY 1, 1891, TO JAN. 28, 1892.			
	Loads Ashes.	Loads Offal.	Total Loads.	Loads Ashes.	Loads Rot.	Loads Offal.	Total Loads.
At sea by scows	16,918	275	17,193	50,449	1,383	1,371	53,203
Bulkheads	11,116	.....	11,116	19,805	.....	.....	19,805
Vacant lots	46,260	.....	46,260	78,115	..	.....	78,115
N. Y. & N. E. R.R..	2,732	.....	2,732	1,106	.....	.....	1,106
Swett street.....	13,917	.....	13,917	27,908	.....	.....	27,908
Mill Pond (Chs'n)...	2,918	2	2,920	8,128	.....	481	8,609
Ward street (Rox.) .	8,994	.....	8,994	17,846	.....	.....	17,846
Dorchester Dist....	1,191	.....	1,191	6,061	.....	.....	6,061
	104,046	277	104,323	209,418	1,383	1,852	212,653

Cost for Carting Material to Dumps.

	FROM JAN. 1, 1891, TO MAY 1, 1891.			FROM MAY 1, 1891, TO JAN. 28, 1892.		
	Loads.	Cost per Load.	Total Cost.	Loads.	Cost per Load.	Total Cost.
Sent to sea ...	17,193	\$0 29	\$5,092 73	53,203	\$ 030	\$16,405 91
To all other dumps	87,130	60	53,610 72	159,450	64	102,433 62
	104,323	.....	\$58,703 45	212,653	.....	\$118,839 53

Cost of Blacksmithing and Horse-shoeing.**HORSE-SHOEING.****Outside Shops.**

Jan. 1, 1891, to May 1, 1891, stock and labor .	\$1,453 90	\$176 73
May 1, 1891, to Feb. 1, 1892, " " " .	3,717 74	393 57
Total amount expended thirteen months .	<u>\$5,171 64</u>	<u>\$570 30</u>

BLACKSMITHS.

Jan. 1, 1891, to May 1, 1891, stock and labor .	\$2,732 51
May 1, 1891, to Feb. 1, 1892, " " " .	4,890 33
Total amount expended, thirteen months .	<u>\$7,622 84</u>

Number of shoes put on, Sanitary Division, Jan. 1 to May 1 .	4,533
" " " " " May 1 to Feb. 1 .	6,501
" " " Street-Cleaning Division, May 1 to Feb. 1 .	2,511
Total number of shoes, thirteen months .	<u>13,545</u>

Cost per shoe, about thirty-eight cents.

Number of Carts.

Offal-wagons owned by Sanitary Division .	79
Ash-carts " " " .	162
" employed by hired horses .	44
Contracts, carts owned by P. Morrison, East Boston .	5
Offal-wagons in use by Thomas Mulligan, East Boston .	5
" " " Allen Clark, Brighton .	2
Total .	<u>253</u>

Cost of Carts.

Year.		
1884.	Ash-carts .	\$148 00
1886.	" .	142 00
1888.	" .	¹ 107 00
1891.	" .	133 00

¹ Light carts, for Roxbury.

Hired Teams.

FROM JAN. 1, 1891, TO MAY 1, 1891.

	South Yard.	West Yard.	Roxbury Yard.	Charles- town Yard.	Total.
Day's work	2,799	584	667	.....	4,050
No. loads collected by teams	22,989	3,894	3,397	641	30,921
Amount expended.....	.....	.....	.....	.....	<u>\$16,043 99</u>

FROM MAY 1, 1891, TO JAN. 1, 1892.

Day's work.....	5,352	1,135½	1,672½		
No. loads.....	33,730	7,882½	11,174	2,882	55,668
Amount expended.....	.....	.....	.....	.....	<u>\$45,505 50</u>

Dumping-boats.

	Jan. 1, 1891, to May 1, 1891.	May 1, 1891, to Jan. 1, 1892.	Total Amount.
Amount expended for royalty .....	.....	\$1,500 00	\$1,500 00
“ “ rental	\$1,665 00	3,540 00	5,205 00
“ “ towing.....	1,922 50	4,379 50	6,302 00
“ “ wharfage....	531 25	1,500 00	2,031 25
“ “ repairs.....	598 98	1,819 59	2,418 57
“ “ labor	375 00	3,068 60	3,443 60
“ “ dredging.....	.....	240 00	240 00
“ “ insurance ...	.....	150 00	150 00
“ “ incidentals ..	.....	208 22	208 22
	<u>\$5,092 73</u>	<u>\$16,405 91</u>	<u>\$21,498 64</u>
Number of trips to sea.....	65	153	218

**Account of the Number of Loads of Material Collected from 1882 to
Feb. 1, 1892.**

Year.	Ashes.	Offal.	Street-sweepings.	Cesspool Matter.	Total Loads.
1882	159,197	28,385	52,381	10,051	250,014
1883	169,610	27,408	58,272	8,801	264,091
1884	182,642	28,520	62,222	12,578	285,962
1885	193,734	31,206	61,455	13,151	299,546
1886	209,129	33,170	59,875	11,392	313,566
1887	220,186	36,724	68,990	14,333	340,233
1888	233,514	37,709	68,019	5,644 ¹	344,886
1889	227,325	40,183	70,476	.....	337,984
1890	245,730	40,525	70,449	.....	356,704
1891	313,464 ²	46,742	10,564 ³	.....	370,164
	2,154,531	350,572	582,703	75,950	3,163,150

¹ July 1, 1888, the Sewer Department commenced cleaning cesspools.

² Ashes from Jan. 1, 1891, to May 1, 1891 104,046
 Ashes from May 1, 1891, to Feb. 1, 1892 209,418
 ————— 313,464

³ Street-cleaning transferred May 1, 1891, to Street-Cleaning Division.

During the past year there have been conveyed from the several police-stations to the city prison, under the court house, 8,514 prisoners, for which the Board of Police have paid 25 cents per head.

There have been conveyed during the past year, without charge, county prisoners as follows:

From court house to jail	2,055
“ jail to court house	894
“ court house to house of correction	420
“ “ to steamer “J. P. Bradlee”	5,652
“ East Boston to “ “	8
“ “ to jail	5
“ jail to East Boston	5
“ East Boston to house of correction	3
“ court house to Boston & Albany R.R.	80
“ South Boston to boat	617
“ “ to jail	198
“ jail to South Boston	58
“ South Boston to house of correction	17
Total	10,012

Since Nov. 1, 1891, the work of conveying prisoners from the several station-houses to court house has been done by the Board of Police. One horse and one van have been sold to said Board. Two horses and two vans have been transferred to the County of Suffolk for conveying county prisoners.

Distribution of Hay and Grain.

Account of Hay, Straw, and Grain fed out and used for Horses of the Street Dept., Sanitary Div., from Jan. 1, 1891.

SOUTH YARD. — FROM JAN. 1, 1891, TO MAY 1, 1891.

Sanitary Horses, 14,760.

	Bales.	Bushels.	Lbs.	Amount.	Cost per Horse per Day.	Lbs. per Horse per Day.
Hay	720	.....	136,653	\$1,048 22	.07 ¹⁵⁰² ₁₄₇₆₀	.09 ³⁸¹³ ₁₄₇₆₀
Meal .....	.....	1,610	80,700	1,142 50	.07 ¹⁰⁹²⁰ ₁₄₇₆₀	.05 ⁶⁹⁰⁰ ₁₄₇₆₀
Oats .....	.....	4,142 ¹ ₂	132,560	2,368 75	.16 ⁷¹⁵	.08 ¹⁴⁴⁸⁰
Shorts .....	.....	.....	12,600	158 88	.01 ¹¹²⁸	.00 ¹²⁶⁰
Corn .....	.....	668	37,408	504 48	.03 ⁶¹⁶⁸	.02 ⁷⁸⁸⁸
Carrots .....	.....	.....	2,500	20 00	.00 ²⁵⁰⁰	.00 ²⁵⁰⁰
Straw	112	.....	29,106	276 56	.01 ¹²⁸⁹⁶	.01 ¹⁴³⁴⁶
			431,527	\$5,519 39	.37 ⁵⁸¹⁰ ₁₄₇₆₀	.29 ⁵⁴⁸⁷ ₁₄₇₆₀

FROM MAY 1, 1891, TO JAN. 1, 1892.

Sanitary Horses, 18,228; Street-cleaning Horses, 6,543.

Hay	1,205	.....	293,113	\$2,458 66	.09 ²²⁴³² ₁₈₂₂₈	.11 ²⁰⁰¹⁶ ₁₈₂₂₈
Meal .....	.....	1,524	76,463	1,125 16	.04 ¹³²⁰⁸ ₁₈₂₂₈	.03 ¹⁰⁸²⁷ ₁₈₂₂₈
Oats .....	.....	10,240	327,680	5,261 38	.21 ⁴⁷⁷¹	.13 ⁴⁰²⁰
Shorts .....	.....	.....	18,000	205 50	.00 ²⁰⁵⁵⁰	.00 ¹⁸⁰⁰⁰
Straw	277	.....	70,655	646 99	.02 ¹⁵⁰⁴⁵	.02 ²¹⁰⁰¹
Corn .....	.....	1,452	86,912	1,201 62	.04 ²⁰⁸⁸⁴	.03 ¹¹⁴³¹
Carrots .....	.....	.....	6,215	40 93	.00 ⁴⁰⁹³	.00 ⁶²¹⁵
Eng. Veg. Food .	1 bbl.	.....	200	15 00	.00 ¹⁵⁰⁰ ₂₈₂₇	.00 ²⁰⁰
			879,238	\$10,955 24	.44 ³¹³⁶ ₂₄₈₂₇	.34 ¹¹⁴³¹ ₂₄₈₂₇

WEST YARD. — FROM JAN. 1, 1891, TO MAY 1, 1891.

120 Days, 9,912 Horses.

Hay	1,011	.....	187,677	\$1,283 04	.12 ²³⁶⁰ ₉₉₁₂	.18 ²⁶¹ ₉₉₁₂
Meal .....	.....	992	49,600	684 20	.06 ⁸⁹⁴⁸ ₉₉₁₂	.05 ⁴⁰ ₉₉₁₂
Oats .....	.....	3 098	99,136	1,787 53	.18 ³³⁷	.10 ¹⁶
Shorts .....	.....	.....	12,800	160 90	.01 ⁸¹⁷⁸	.01 ²⁸⁸⁸
Straw	105	.....	27,030	244 59	.02 ⁴⁶³⁵	.02 ⁷²⁰⁶
Corn .....	.....	30	1,680	25 80	.00 ²⁵⁸⁰	.00 ¹⁶⁸⁰ ₉₉₁₂
Carrots .....	.....	.....	.....	.....	.....	.....
Peat moss	23	.....	1,800	11 25	.00 ¹¹²⁵ ₉₉₁₂	.00 ¹⁸⁰⁰ ₉₉₁₂
			379,723	\$4,197 31	.42 ³⁴²⁷ ₉₉₁₂	.38 ³⁰⁶⁷ ₉₉₁₂

FROM MAY 1, 1891, TO JAN. 1, 1892.

Sanitary Horses, 12,221; Street-cleaning Horses, 7,077.

	Bales.	Bushels.	Lbs.	Amount.	Cost per Horse per Day.	Lbs. per Horse per Day.
Hay	1,356	.....	242,712	\$2,169 73	.11 ⁴⁶⁹⁵ ₁₉₂₉₈	.12 ¹¹¹³⁶ ₁₉₂₉₈
Meal .....	.....	520	26,241	465 14	.02 ⁷⁹¹⁸ ₁₉₂₉₈	.01 ⁶⁴³³ ₁₉₂₉₈
Oats .....	.....	7,375	235,900	3,816 33	.19 ¹⁴⁹⁷¹ ₁₉₂₉₈	.12 ⁴³²⁴ ₁₉₂₉₈
Shorts .....	.....	.....	11,950	141 06	.00 ¹⁴¹⁰⁶ ₁₉₂₉₈	.00 ¹⁴¹⁰⁶ ₁₉₂₉₈
Straw	242	.....	58,409	541 76	.02 ¹⁵⁵⁸⁰ ₁₉₂₉₈	.02 ¹⁵⁵⁸⁰ ₁₉₂₉₈
Corn .....	.....	286	15,976	228 30	.01 ³⁵³² ₁₉₂₉₈	.01 ³⁵³² ₁₉₂₉₈
Carrots .....	.....	.....	6,085	40 07	.00 ⁴⁰⁰⁷ ₁₉₂₉₈	.00 ⁴⁰⁰⁷ ₁₉₂₉₈
Eng. Veg. Food....	6 bbls.	.....	1,200	90 00	.00 ⁹⁰⁰⁰ ₁₉₂₉₈	.00 ¹²⁰⁰ ₁₉₂₉₈
			598,473	\$7,492 39	.38 ¹⁵⁹¹⁸ ₁₉₂₉₈	.30 ³⁵⁵⁷ ₁₉₂₉₈

HIGHLAND YARD.—FROM JAN. 1, 1891, TO MAY 1, 1891.

Sanitary Horses, 5,928.

Hay	337	.....	87,766	\$685 20	.11 ³³¹² ₅₉₂₈	.14 ⁴⁷⁷⁴ ₅₉₂₈
Meal .....	.....	296	14,800	204 88	.03 ²⁷⁰⁴ ₅₉₂₈	.02 ²⁹⁴⁴ ₅₉₂₈
Oats .....	.....	2,430	77,768	1,448 73	.24 ²⁶⁰¹ ₅₉₂₈	.13 ⁷⁰⁴ ₅₉₂₈
Shorts .....	.....	.....	4,900	58 75	.00 ⁵⁸⁷⁵ ₅₉₂₈	.00 ⁴⁹⁰⁰ ₅₉₂₈
Straw	35	.....	8,070	73 64	.01 ¹⁴³⁶ ₅₉₂₈	.01 ²¹⁴² ₅₉₂₈
Corn .....	.....	180	10,080	134 00	.02 ¹⁵⁴⁴ ₅₉₂₈	.01 ⁴¹⁵² ₅₉₂₈
			203,384	\$2,605 20	.43 ⁵¹¹⁶ ₅₉₂₈	.34 ¹⁷³² ₅₉₂₈

FROM MAY 1, 1891, TO JAN. 1, 1892.

Sanitary Horses, 10,769; Street-cleaning Horses, 980.

Hay	867	.....	172,433	\$1,441 98	.12 ³²¹⁰ ₁₁₇₄₉	.14 ⁷⁹⁴⁷ ₁₁₇₄₉
Meal .....	.....	420	21,044	311 50	.02 ⁷⁶⁵² ₁₁₇₄₉	.01 ⁹²⁹² ₁₁₇₄₉
Oats .....	.....	3,984	127,488	1,974 96	.16 ⁹⁵¹² ₁₁₇₄₉	.10 ⁹⁹⁹⁸ ₁₁₇₄₉
Shorts .....	.....	.....	9,700	114 26	.00 ¹¹⁴²⁶ ₁₁₇₄₉	.00 ⁹⁷⁰⁰ ₁₁₇₄₉
Straw	78	.....	21,070	189 38	.01 ⁷¹⁸⁹ ₁₁₇₄₉	.01 ⁹³²¹ ₁₁₇₄₉
Corn .....	.....	355	19,880	366 30	.03 ¹³⁸³ ₁₁₇₄₉	.01 ⁸¹³¹ ₁₁₇₄₉
Carrots .....	.....	.....	5,720	37 64	.00 ³⁷⁶⁴ ₁₁₇₄₉	.00 ⁵⁷²⁰ ₁₁₇₄₉
			377,335	\$4,436 00	.37 ⁸⁶⁸⁹ ₁₁₇₄₉	.32 ¹³⁶⁷ ₁₁₇₄₉

CHARLESTOWN YARD.—FROM JAN. 1, 1891, TO MAY 1, 1891.

Horses, 2,135.

Hay	149	.....	30,136	\$201 30	.09 ¹⁰⁰⁵ ₂₁₃₅	.14 ²⁴⁶ ₂₁₃₅
Meal .....	.....	210	10,500	147 93	.06 ²⁰⁰³ ₂₁₃₅	.04 ¹⁹⁶⁰ ₂₁₃₅
Oats .....	.....	720	24,040	401 80	.18 ¹⁷⁵⁰ ₂₁₃₅	.11 ⁵⁵⁵ ₂₁₃₅
Shorts .....	.....	.....	2,910	35 25	.01 ¹³⁹⁰ ₂₁₃₅	.01 ⁷⁵⁵ ₂₁₃₅
Straw	19	.....	4,939	44 44	.02 ¹⁷⁴ ₂₁₃₅	.02 ⁸⁶⁹ ₂₁₃₅
			72,525	\$830 72	.38 ²⁰⁵² ₂₁₃₅	.35 ²⁰⁷⁰ ₂₁₃₅

FROM MAY 1, 1891, TO JAN. 1, 1892.

Sanitary Horses, 3,702; Street-cleaning Horses, 1,057; Total, 4,762.

	Bales.	Bushels.	Lbs.	Amount.	Cost per Horse per Day.	Lbs. per Horse per Day.
Hay	390		78,148	\$642 42	.13 ²³³⁶ ₄₇₆₂	.16 ¹⁹⁵⁶ ₄₇₆₂
Meal		220	11,000	158 30	.03 ¹³²⁴ ₄₇₆₂	.02 ¹⁴⁷⁶ ₄₇₆₂
Oats		1,906	60,992	984 81	.20 ³²⁴¹ ₄₇₆₂	.12 ³⁸⁴⁸ ₄₇₆₂
Shorts			4,028	45 58	.04 ⁴⁵⁵⁸ ₄₇₆₂	.00 ⁴⁰²⁸ ₄₇₆₂
Straw	49		10,761	96 74	.02 ¹³⁶⁰ ₄₇₆₂	.02 ¹²³⁷ ₄₇₆₂
Corn		85	4,760	64 89	.01 ¹⁷²⁷ ₄₇₆₂	.00 ⁴⁷⁶⁰ ₄₇₆₂
Carrots			1,820	11 38	.00 ¹¹³⁸ ₄₇₆₂	.00 ¹⁸²⁰ ₄₇₆₂
			171,509	\$2,004 12	.42 ⁴⁰⁸ ₄₇₆₂	.36 ⁷⁷ ₄₇₆₂

BRIGHTON YARD.—FROM JAN. 1, 1891, TO MAY 1, 1891.

Horses, 240.

Hay	17		3,427	\$27 42	.11 ¹¹⁰ ₂₄₀	.14 ⁶⁷ ₂₄₀
Oats		117	3,744	68 60	.28 ¹⁴⁶ ₂₄₀	.15 ¹⁴⁶ ₂₄₀
Straw	3		787	7 24	.03 ⁴ ₂₄₀	.03 ⁶⁷ ₂₄₀
			7,958	\$103 26	.43 ¹⁶ ₂₄₀	.33 ³⁴ ₂₄₀

FROM MAY 1, 1891, TO FEB. 1, 1892.

Hay	} Included in the account of the South Yard.
Oats	
Straw	

HOUSE-OFFAL.

There are employed in removing house-offal 150 men and 79 wagons. The offal is removed from dwelling-houses three times a week during the summer months, and twice a week during the winter; from hotels, markets, and restaurants it is removed daily. There are 62 routes. The men are required to enter the yards, collect the offal, and empty the same into wagons; then to drive to one of the depots owned by the city. There are three offal depots, located as follows: one on Albany street, one on Highland street, Roxbury, and one at the Almshouse, Charlestown. The offal is sold to farmers of adjoining towns, who purchase a ticket of the offal clerk for the quantity they want; the ticket is then taken to the clerk in charge of the dump, and he measures out the quantity the ticket calls for; the ticket is punched and returned at night to the clerk it was purchased of, who makes out his daily account from the tickets sold.

HOUSE-DIRT AND ASHES.

There are employed in the collection and removal of house-dirt and ashes 195 men and 162 carts, with two men to each team. This material is removed from hotels, tenement-houses, and stores daily; from dwelling-houses once a week. There are 82 regular routes. The ordinance requires that house-dirt and ashes shall be kept in an easy place for removal. The men are required to enter the yards and remove the vessels of ashes, place them upon the sidewalks; the teams follow and are loaded; the empty vessels are returned to their original position in the yard. There are employed 8 sub-foremen and 12 dumpers.

The ashes are sold and used for filling purposes.

FOREMEN, MECHANICS, WATCHMEN, ETC.

There are 4 district foremen; 15 mechanics who are employed in painting and manufacturing and repairing carts, wagons, sleds, and harnesses, and shoeing horses; 5 watchmen and 4 feeders.

Horse Account.

1891.			1891.		
		<i>Dr.</i>			<i>Cr.</i>
Jan. 1.	On hand	274	Feb.	Killed	1
Apr. 3.	Purchased	2	Mar. 12.	Died	1
Apr. 7.	"	4	Mar. 25.	"	1
Nov. 27.	"	2	Mar. 25.	Killed	4
Dec. 3.	"	2	Mar. 31.	"	1
Dec. 10.	"	2	May 1.	Transferred to Street-	
Dec. 14.	"	2		Cleaning Division	67
Dec. 21.	"	2	May 11.	Exch'd W. K. Porter	6
			May 16.	Killed	2
			July 15.	"	1
			Aug. 19.	Died	1
			Aug. 28.	"	1
			Dec. 23.	Exch'd W. K. Porter	5
			1892.		
			Jan. 1.	On hand	199
Total		290	Total		290

SCHEDULE OF CITY PROPERTY AT THE SOUTH, WEST, ROXBURY, AND CHARLESTOWN STABLES.

199 Horses.		
196 Harnesses, double and single.		
196 Woollen blankets.		
32 Carpet blankets.		
6 Buffalo robes.		
Stock and tools in harness shop.....	\$270 00	worth.
Tools in blacksmith shop	400 00	"
Blacksmith stock, iron and steel	3,000 00	"
Tools in wheelwright shop	115 00	"
Stock in wheelwright shop.....	5,175 00	"
Stock and tools in paint shop	261 75	"
Hay, straw, corn, oats, etc.	2,033 00	"
162 Carts for collecting ashes.		
79 One-horse wagons for collecting house-offal.		
4 One-horse cesspool wagons.		
5 Express wagons.		
8 Old open wagons.		
6 Top buggies.		
2 Two-seated wagons (new).		
3 Vehicles for conveying prisoners.		
1 Hay-rigging.		
5 Market wagons.		
215 Sleds for conveying ashes and offal.		
8 Sleighs.		
4 Pungs.		
122 Snow-drags.		
1 Demerritt cart.		
1 Dumping-barge.		
219 Cart-covers.		

Respectfully submitted,

GEORGE W. FORRISTALL,
Deputy Superintendent.

APPENDIX D.

REPORT OF DEPUTY SUPERINTENDENT OF
SEWER DIVISION.

MR. H. H. CARTER, *Superintendent of Streets of the City of Boston* :

SIR: The following report of the expenses, income, and business of the Street Department, Sewer Division, from Jan. 1, 1891, to Feb. 1, 1892, together with a few suggestions on subjects which should receive attention, is respectfully submitted:

A large amount of work was done, in sewer construction, in this division the past year; but it comprises but a small part of the present needs of the city in this direction. These needs can only be satisfied by liberal appropriations, which would unquestionably be sanctioned by the citizens generally, if they could be made thoroughly conversant with the subject. No subject is of greater importance to a large and densely populated city than that of sewerage. The old and imperfect sewers, mostly in the older and more thickly settled districts, are in many cases nothing more than elongated cesspools, and are such a menace to the health of the public that they should be rebuilt without delay. In the rapidly growing districts there is a great demand for new sewers, which should be heeded, as it is shown repeatedly that the failure to build sewers petitioned for has greatly delayed the development of these localities, and consequently prevented the great increase in valuation which would have resulted. The policy advocated by this department, to be pursued in sewerage the suburban districts, differs from that of our predecessors in respect to the right and policy of using the natural watercourses for purpose of sewer overflows instead of for surface drainage only as a part of a separate system. The reason for the present policy is as follows: By the method now advocated the brooks would escape the worst of the street-washings, which would be carried off by the sewers before they would begin to overflow, but would receive a slight contamination from sewage; slight, because the volume of sewage is ex-

tremely small compared to the volume of storm-water. The brooks are bound to carry dirty water in either case, as soon as the district is built up; there does not seem to be much choice, certainly not enough to warrant the expense and inconvenience of a double system of sewers.

Though a choice of evils, the evil in either case is small, for this reason, that, whether it be foul street-wash or dilute sewage which the brook receives, it is received at the beginning of the storm and followed by a flood of clear water which will sweep it away.

Whatever may be the result of such method, I firmly believe that it is the only thing for the city to adopt, and so far as the city may be liable for damage, it seems to me that the case of *Merrifield v. Worcester*, 110 Mass. Reports, page 216, shows that the city would not necessarily be so liable. In that case, the plaintiff sued for an alleged violation of his rights as riparian proprietor, upon a small natural stream running through the city of Worcester, near its centre. The injury complained of was that of polluting its waters so as to render it unfit for mechanical and other purposes, to which the plaintiff had been accustomed to apply it. He alleged generally that "the defendant in 1861, and on divers days and times after that time, had cast, and caused to be cast, carried, and deposited into said brook above the plaintiff's works, great quantities of filth, dirt, gravel, refuse and material matters discharged from sewers, privies, water-closets, stables, sinks, and streets, and divers other noxious materials and ingredients."

The Court in this case say :

"The case, then, presents the question upon what grounds and to what extent a city is responsible in damages for such effects produced by its system of drainage, or by the manner in which its drains are used and managed. The right, of which the plaintiff alleges a violation, is not that of acquired property in possession. It is not an absolute right, but a natural one, qualified and limited, like all natural rights, by the existence of like rights in others. It is incident merely to his ownership of land through which the stream has its course. As such owner, he has the right to enjoy the continued flow of the stream, to use its force, and to make limited and temporary appropriation of its waters. These rights are held in common with all others having land bordering upon the same stream; but his enjoyment must necessarily be according to his opportunity, prior to those below him, subsequent to those above. It follows that all such rights are liable to be modified and abridged in the enjoyment, by the exercise by others of their own rights; and,

so far as they are thus abridged, the loss is *damnum absque injuria*. The only limit that can be set to this abridgment through the exercise by others of their natural rights, is in the standard or measure of reasonable use.

"So the natural right of the plaintiff to have the water descend to him in its pure state, fit to be used for the various purposes to which he may have occasion to apply to it, must yield to the equal right in those who happen to be above him. Their use of the stream for mill purposes, for irrigation, watering cattle, and the manifold purposes for which they may lawfully use it, will tend to render the water more or less impure. Cultivating and fertilizing the lands bordering on the stream, and in which are its sources, their occupation by farm-houses and other erections, will unavoidably cause impurities to be carried into the stream. As the lands are subdivided and their occupation and use become multifarious, these causes will be rendered more operative, and their effects more perceptible. The water may thus be rendered unfit for many uses for which it had been before suitable; but so far as that condition results only from reasonable use of the stream in accordance with the common right, the lower riparian proprietor has no remedy.

"When the population becomes dense, and towns or villages gather along its banks, the stream naturally and necessarily suffers still greater deterioration. Roads and streets crossing it, or running by its side, with their gutters and sluices discharging into it their surface-water collected from large spaces, and carrying with it in suspension the loose and light material that is thus swept off, are abundant sources of impurity, against which the law affords no redress by action."

The foregoing is the language of the Supreme Court of this State. I claim that such use of the brooks as is now recommended could be shown to be only "reasonable use" within the meaning of the Court, and that altogether too much weight has been given to the fact that a small quantity of sewage would be unavoidably carried into the brooks by the first overflow. It is not necessary to be able to assert that there is absolutely no sewage in the overflow from the sewer; it will be sufficient to show that the brooks are not unreasonably defiled, more than they would be by the naturally dirty water from a settled district; that there is no *permanent* sewage contamination. Certainly this technical point about a mere trifle of sewage ought not to be held to be of sufficient importance to force the city into building a complete separate system.

Parties continue to violate the ordinance which prohibits the exhausting of steam into the sewers. To secure compliance with the ordinance it is necessary first to identify the offenders, usually the most difficult part of the undertaking. In many cases the steam has been traced to its source, notice served upon the parties offending, and the nuisance abated; many more cases will follow.

Another vexed question is that of proper disposal of roof-water.

Section 101 of Chapter 374 of the Acts of 1885 requires that "all water shall be conducted from a building or from land to the street, gutter, or sewer, in such a manner as not to flow upon the sidewalk." It is impracticable to convey this water to the street or gutter without its flowing over the sidewalk on account of its freezing in winter and filling up its channel with ice, whether that channel is open or covered. When the law is enforced, the usual and only practicable expedient, where there is a sewer, is to connect the leaders with the house-drain. Unless a trap is interposed between this point of connection and the sewer, this method is objectionable, for the reason that the leaders will conduct the gases from the sewer to the upper windows of the houses. It is also objectionable in those low districts where separate systems of sewers have to be built large enough to store the sewage during periods when the height of tide prevents discharge, as the volume of roof-water is about twelve times that of the sewage proper. Whenever there is a catch-basin near by, the leaders can be connected with it, and this is a very satisfactory arrangement. But catch-basins are several hundred feet apart, and can serve but few houses in this way. These considerations naturally lead to the suggestion that a pipe might be laid under the gutter to connect the catch-basin and furnish a continuous channel into which the leaders from the roofs could discharge, and if this pipe were laid deep enough to prevent freezing no further trouble would ensue. In districts where the sewers are built on the combined principle, taking storm-water from the streets as well as sewage, these pipes could be small; in those districts where a separate system of sewers is built to take house sewage only, these pipes could be larger, and could be developed into the system of surface-drains, which is the necessary complement of a separate system. The only objection to this proposition is on account of the cost; but the city cannot wholly escape expense in dealing with this roof-water problem, — it is sued every year for large sums for personal injuries from icy sidewalks.

Sewer assessments, covering the period from Jan. 1, 1891,

to Feb. 1, 1892, to the amount of \$59,104.06, have been made and determined by the Deputy Superintendent of the Sewer Division, in accordance with the Acts and Resolves of the Legislature.

Bills for sewer assessments amounting to \$21,025.53 have been sent to the City Collector for collection.

Entrance fees to the amount of \$3,072.00 have been collected (from estates upon which no assessment was ever levied) in accordance with the ordinances of the city of Boston. Twenty-four hundred and eighty-six permits have been granted to drain-layers to connect house-drains with the sewers, or to repair old drains; and the work done under these permits has been duly inspected.

Following are tables showing the financial exhibit of the division, the detailed record of sewers built, the rainfall as gauged at the Albany-street yard, schedule of property, report of pumping done during the year, etc.

Financial Statement.

APPROPRIATIONS.	Balances on hand Jan. 1, 1891.	Appropriations and Revenue added during the 4 months ending Apr. 30, 1891.	Amounts at the disposal of the Sewer Dept. during the 4 months ending Apr. 30, 1891.	Expenditures during the 4 months ending Apr. 30, 1891.	Balances on hand Apr. 30, 1891.	Appropriations and Revenue added during the 9 months ending Jan. 31, 1892.	Amounts at the disposal of the Sewer Div'n during the 9 months ending Jan. 31, 1892.	Expenditures during the 9 months ending Jan. 31, 1892.	Balances on hand Jan. 31, 1892.
*Sewer Department, now Street Department, Sewer Division	\$54,748 24	1 220,892 05	\$75,640 29	\$75,397 41	\$242 88	2 \$372,878 40	\$373,121 28	\$370,825 28	\$2,296 00
Arlington street	3 2,107 69	2,107 69	1,970 06	137 63
Border street	4 1,108 91	1,108 91	1,108 91	
Burnett street	5 715 55	715 55	715 55	
Cambridge street	1,500 00	1,500 00	1,500 00	
Catch-basins, etc., Huntington avenue	6 472 95	472 95	454 34	18 61
Catch-basins, Stanhope street	227 05	227 05	. . . . .	227 05
Catch-basins, Wards 19 and 22	190 21	190 21	190 21	
Charlestown Sewers, repairing	11,000 00	11,000 00	8,968 71	2,031 29
Cleveland place	157 00	157 00	157 00	
Crawford street, Humboldt avenue to Walnut avenue	5,000 00	5,000 00	2,030 80	2,969 20
Culverts, Ward 24	5,000 00	5,000 00	5,000 00	
Dike, Winthrop Junction	2,350 00	2,350 00	. . . . .	2,350 00
Dunstable street	7 373 55	373 55	373 55	
Dustin street	6,000 00	6,000 00	6,000 00	

Florence street . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	\$ 1,206 60	1,206 60	1,306 60	1,306 60
Harvard and Kilton streets . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	12,000 00	12,000 00	12,000 00	12,000 00
Improved Sewers, Brookline avenue connection . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	4,665 50	4,665 50	4,665 50	4,533 95
Oak street, Washington street to Albany street . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	3,500 00	3,500 00	3,500 00	3,500 00
Porter street, East Boston . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	12,000 00	12,000 00	12,000 00	12,000 00
Rebuilding Dorchester-brook Sewers	360 02	20,000 00	20,366 02	15,075 13	5,290 89	5,290 89	5,290 89	5,290 89
Rockwell and Armandine streets . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	15,000 00	15,000 00	15,000 00	8,800 93
Russell street, Oak street to Mead street . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	9 224 13	324 13	324 13	324 13
Sewers, Beacon street and Commonwealth avenue . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	15,800 00	15,800 00	15,800 00	10,387 82
Sewers between Roslindale and West Roxbury	45,321 26	. . . . .	45,321 26	13,906 24	31,325 02	31,325 02	41,325 02	33,188 72
Sewers, Brighton . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	10,400 00	10,400 00	10,400 00	3,673 30
Sewer, Byron street, East Boston . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	10 934 10	934 10	934 10	934 10
<i>Carried forward</i>	\$100,435 52	\$40,892 05	\$141,327 57	\$104,468 78	\$36,858 79	\$498,011 73	\$534,870 52	\$490,832 54
								\$44,037 98

* In addition to the Maintenance of Common Sewers, and the current expenses of the Division, this appropriation provides for Maintenance, Improved Sewerage; Maintenance, Stony Brook, and Building and Repairing Culverts.

¹ Loan	\$32,000 00
Finished by Street Department in April	8,411 84
Revenue	480 21
	<u>\$40,892 05</u>
	20,000 00
	<u>\$20,892 05</u>

Less transferred

- ⁶ Original Appropriation, \$700, of which \$227.05 was transferred.
⁷ Original Appropriation, \$500, of which \$126.45 was transferred.
⁸ Original Appropriation, \$1,500, of which \$193.40 was transferred.
⁹ Original Appropriation, \$333, of which \$68.87 was transferred.
¹⁰ Original Appropriation, \$1,000, of which \$65.81 was transferred.

	\$350,000 00
	20,185 32
	<u>2,683 08</u>
	\$372,878 40

Financial Statement. — Concluded.

APPROPRIATIONS,	Balances on hand Jan. 1, 1891.	Appropriations and Revenue added during the 4 months ending Apr. 30, 1891.	Amounts at the disposal of the Sewer Dept. during the 4 months ending Apr. 30, 1891.	Expenditures during the 4 months ending Apr. 30, 1891.	Balances on hand Apr. 30, 1891.	Appropriations and Revenue added during the 9 months ending Jan. 31, 1892.	Amounts at the disposal of the Sewer Div'n during the 9 months ending Jan. 31, 1892.	Expenditures during the 9 months ending Jan. 31, 1892.	Balances on hand Jan. 31, 1892.
<i>Brought forward</i>	\$100,435 52	\$40,892 05	\$141,327 57	\$104,408 78	\$30,858 79	\$493,011 73	\$534,870 52	\$490,832 54	\$44,037 98
Sewer outlet, Byron street, East Boston	11,211 83	1,211 83	1,208 19	3 64
Sewer, Commonwealth avenue	1,000 00	1,000 00	1,000 00	
Sewers, East Boston	5,200 00	5,200 00	2,925 70	2,274 30
Sewers, Eleventh Aldermanic District	1,046 97	1,046 97	. . . . .	1,046 97
Sewer, Fulton street	1,000 00	1,000 00	1,000 00	
Sewer, Harcourt Street	432 00	432 00	432 00	
Sewer, Hillside street	579 19	579 19	579 19	
Sewer, Homer street	1,250 00	1,250 00	1,250 00	
Sewer, Lawrence avenue, Quincy and Magnolia streets	6,000 00	6,000 00	4,143 12	1,856 88
Sewer, Milton street, East Boston	12,865 31	865 31	865 31	
Sewer, New street	450 00	450 00	15 29	434 71
Sewer outlets, D street	10,000 00	10,000 00	3,978 17	6,022 83
Sewer outlet extension, Cottage street	13,160 50	160 50	160 50	
Sewers, Orient Heights	14,29,050 00	29,650 00	29,585 04	64 96
Sewer, Parker Hill street	1,024 00	1,024 00	1,024 00	

STREET DEPARTMENT.

323

Sewer, Peter Parley road					395 19	370 92	24 27
Sewers, Roxbury					10,220 81	361 38	9,859 43
Sewer, Welles avenue					750 00	750 00	
Sewers, Savin Hill District	21,362 26	21,362 26	9,138 19	12,224 07	600 00	12,824 07	283 56
Sewers, South Boston					4,000 00	231 11	3,768 89
Sewers, Ward 23, Washington street, etc.					2,000 00	2,000 00	
Sewers, Westville, Freeman, and Charles streets					8,000 00	4,003 36	3,996 64
Stables and Sheds, Brighton	4,500 00	4,500 00		4,500 00	4,500 00		4,500 00
Sumner and Orleans streets					13,000 00	13,000 00	
Tyler street					7,000 00	7,000 00	
Walk Hill street					1,500 00	1,500 00	
Whitmore street					700 00		700 00
Stony Brook, Improvement of	30,852 87 to be pro- vided for.	3,082 44	3,082 44		20,000 00	19,914 86	85 14
Total	\$95,444 91	\$74,827 36	\$116,089 41	\$53,582 86	\$623,047 53	\$600,639 19	\$78,961 20

¹¹ Original Appropriation, \$1,839.50, of which \$627.67 was transferred.¹² Original Appropriation, \$1,250, of which \$384.69 was transferred.¹³ Original Appropriation, \$3,000, of which \$2,839.50 was transferred.¹⁴ Original Appropriation, \$50,000, of which \$20,350 was transferred.¹⁵ Loan

Furnished by Street Department in April, 1891

\$33,000 00

935 31

\$33,935 31

IMPROVED SEWERAGE MAINTENANCE.

Office expenses	\$1,067 96
Pumping-station, inside	43,058 86
“ outside	16,583 50
Engines and boilers	6,813 82
Main and intercepting sewers	10,575 59
Moon Island	10,611 61
Tow-boat	4,719 00
	<hr/>
	\$93,430 34
	<hr/>

STONY-BROOK IMPROVEMENT.

Damages and claims	\$3,082 44
Roslindale channels	20,347 30
	<hr/>
	\$23,429 74
	<hr/>

MISCELLANEOUS.

Office expenses, including salaries of deputy superintendent, clerks, and draughtsmen, stationery, drawing materials, etc.	\$19,588 69
Engineering expenses, including salaries of engineers, instruments, etc.	21,282 11
Current expenses of eight yards and lockers	22,110 72
Current expenses of seven stables, including cost of horses, vehicles, harnesses, etc.	27,656 16
Repairing sewers	7,268 53
Cleaning and flushing sewers	16,884 42
Cleaning catch-basins	39,593 28
Repairing streets	463 16
Building and repairing culverts and surface drains	19,733 07
Examining and locating	6,826 05
Dredging	1,080 00
Maintenance Stony brook	13,071 65
Work for departments and others	7,064 51
House connections	4,986 74
Water-rates	8,724 83
Drainage privileges	900 00
Damages and claims	5,757 80
Holidays	18,846 73
Travelling and incidental expenses	3,031 95
	<hr/>

Amount carried forward,

\$244,870 40

<i>Amount brought forward,</i>	\$244,870 40
Balances on old contracts	163 31
Repairs of department buildings, stables, and yards	2,527 22
Hardware, blacksmithing, and tools	12,001 77
Rubber goods	1,380 70
Engines and boilers	826 36
Stock and supplies not included elsewhere	4,444 49
	<hr/>
	\$266,214 25
	<hr/>

RECAPITULATION.

Sewers.

City Proper	\$17,035 97
Charlestown	9,946 22
Brighton	13,873 32
East Boston	78,188 41
South Boston	5,465 00
Dorchester	68,197 36
Roxbury	67,245 91
West Roxbury	50,472 38
	<hr/>
	\$310,424 57

Catch-Basins.

City Proper	\$5,010 79
Charlestown	1,181 85
Brighton	1,239 86
East Boston	4,508 68
South Boston	1,794 35
Dorchester	2,358 05
Roxbury	6,113 03
West Roxbury	1,653 09
	<hr/>
	23,859 70
Improved Sewerage Maintenance	93,430 34
Stony-brook Improvement	23,429 74
Miscellaneous	266,214 25
	<hr/>
	\$717,358 60
	<hr/>

City Proper.

Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for 13 Mos. ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Cleveland pl.....	Margaret and Snowhill sts.	63.00	12-in., pipe.	\$320 88	*Paid by Paving Division . \$143 00 Paid by Sewer Division . 177 88 The old area walls of all the buildings on the place had to be taken down and rebuilt, as they interfered with the sewer.
Harcourt st.....	St. Botolph and O.C. R.R.	268.90	15-in., pipe.	469 40	
Margaret st.....	Prince st. and Cleveland pl.	95.00	12-in., pipe.	287 32	New sewer rebuilt three feet lower than old one, and all house-connections lowered and rebuilt.
McLean st.....	Blossom st. and McLean ct.	387.45	15-in., pipe. }	1,623 22	Old sewer taken out and all house-connections lowered and rebuilt.
McLean st.....	McLean ct. and Chambers st.	136.00	12-in., pipe. }		
Oak st.....	Hudson st. and Tyler st....	151.20	2-ft. X 3-ft., brick. }	12,055 79	Old wooden sewer removed, together with old cob-dock walls, new sewers rebuilt at lower grade, with heavy concrete foundation, and all house-connections lowered and rebuilt.
Oak st.....	Tyler st. and Harrison ave.	173.66	2 ft. X 3-ft., brick. }		
Tyler st.....	Harvard st. and Oak st....	544.12	2-ft. X 3-ft., brick. }		
Stoughton st.....	Albany st. and Harrison ave.	546.97	15-in., pipe.	1,896 06	*Paid by Paving Division . \$1,011 77
St. Botolph st.....	Garrison st. and Harcourt st.	256.40	2-ft. X 3-ft., brick.	1,538 07	Paid by Sewer Division . 884 29

Scotia st.	End of old sewer and Both- nia st.	85.90	12-in., pipe.	243 04	* Paid by Paving Division.
		<u>2,708.60</u>		\$18,433 78	
*Sewers built on account of Paving Division	.	.	.	1,397 81	
Forty-two new catch-basins and connections built and 344 repaired	.	\$10,974 74		\$17,035 97	
Less amount furnished by Paving Division	.	5,963 95		5,010 79	
				<u>\$22,046 76</u>	

City Proper.*Surface Drains built between Jan. 1, 1891, and Feb. 1, 1892, by the City.*

LOCALITY.		Length in feet.	Dimensions and material.
Built in.	Between.		
Huntington ave. .	Garrison st. and W. Newton st. . .	179.00	12-in., pipe.
State st.	Atlantic ave. and Commercial st. .	652.62	18-in., pipe.
Tremont st.	Mason st. and West st.	289.00	12-in., pipe.
		88.90	10-in., pipe.
Tremont st.	West st. and Temple pl.	247.95	10-in., pipe.
	Total	1,457.47	

The cost of this work is included in the expenditure on account of building catch-basins, etc.

Work Done for and Paid by Paving Division, City.

STREET.	CATCH-BASINS.		MANHOLES.		SEWERS.	
	Built.	Repaired.	Built.	Repaired.	Length in Feet.	Size.
Cleveland place...					28.12	12-in. pipe
Bedford street	3					
Wendell street....	1					
Stoughton street..					290.	15-in. pipe
Wareham street...	2	2				
Dover street.....		2				
Columbus avenue.		8				
East Concord street		2		2		
East Newton street				2		
Harrison avenue ..		8		2		
Rochester street... ..		2				
Scotia street.....	3			2	85.90	12-in. pipe
Cambridge street..		22				
Beacon street.....		7		2		
Tremont street....	7	1				
Camden street....	2					
Charles street.....	2	1				
Hudson street.....		13		7		
Seneca street.....		2	1			
Longwood avenue.		1				
Troy street		8		2		
Fulton street.....	2					

Work done for Paving Division, City.**SUMMARY.**

22 catch-basins built.
 79 “ repaired.
 1 manhole built.
 19 manholes repaired.
 409.02 feet of sewers built.

Charlestown.
Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for 13 Mos. ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Bunker Hill street...	Green and Concord streets..	67.75	20-in. X 26-in., brick	\$429 70	Old sewer removed and new one built at lower grade.
Common and Adams streets.....	Putnam and Chestnut sts..	327.40	15-in., pipe.	1,247 22	Old sewer removed, and new one built five feet lower, and all old house-connections rebuilt.
Dunstable street.....	Existing sewer and Main st.	101.20	12-in., pipe.	232 27	* Paid by Paving Division.
Hill street.....	Cook and Sackville sts.	239.00	12-in., pipe.	886 05	
Lynde street and } outlet.....	B. & M. R. R. and Austin st.	{ 93.00 512.08	{ 18-in., pipe. 12-in., pipe. }	1,753 42	{ Old sewer removed from trench, and house-connections connected with new sewer. Two manholes built on this sewer.
Russell street.....	Oak and Mead sts.	185.60	12-in., pipe.	554 20	
Summer street.....	School and Elm sts.	65.00	8-in., pipe.	212 33	Old wooden scow sewer removed from trench, and new sewer built, and all house-connections made; tide-work.
Vine street.	Chelsea and Moulton sts. . .	447.75	3 ft. 3 in. X 3 ft. 5 in., brick.	5,443 18	
Walker street.....	Existing sewer and Wall st.	31 60	10-in., pipe.	73 90	
* Sewers built on account of Paving Division		2,070.38		\$10,832 27	
				886 05	
Nine new catch-basins and connections built and 22 repaired, \$2,462 55				\$9,946 22	
Less amount furnished by Paving Division				1,181 85	
Total				\$11,128 07	

Work done for and Paid by Paving Division, Charlestown.

STREET.	CATCB-BASINS.		MANHOLES.		SEWERS.	
	Built.	Repaired.	Built.	Repaired.	Length in Feet.	Size.
Medford street....	2	6				
Monument street..	2	.....	.....	1		
Hill street . ....	.....	.....	.....	.....	239	12-in. pipe
Rutherford avenue	3	1				

SUMMARY.

7 catch-basins built.

7 " repaired.

1 manhole "

239 feet of sewers built.

East Boston.

Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for thirteen months ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Bennington and } Walley streets .. } Bennington street ..	300 ft. S. W. of Saratoga st. 700 ft. E. of Ashley ave. 200 ft. and 400 ft. E. of sluiceway and at Sara- toga street	{ 357.20 1,580.63 }	4 ft. 6 in. X 4 ft. 9 in., brick. 4 ft. X 4 ft. 3 in., brick.	{ \$18,566 15 }	{ Built by contract, Orient Heights, Sec. 1.
		{ 12.00 241.00 }	24-in., pipe. 4 ft. 6 in. X 4 ft. 9 in., brick.	{ 6,047 71 }	{ Brick siphon and tide-gate chamber built at this place.
Border street.	Condor and White streets..	{ 204.17 522.68 }	15-in., pipe. 12-in., pipe.	{ 1,056 16 }	Built by contract.
Bremen street.....	Porter and Marion streets..	687.02	3 ft. 8 in. X 5 ft. 4 in., brick.	7,953 39	{ Old wooden scow sewer re- moved and new brick sewer built; all old house-connec- tions made good.
Coleridge and Byron streets.....	Rice and Cowper streets...	{ 673.40 132.30 }	12-in., pipe. 10-in. X 10-in., wood.	{ 1,496 13 }	
Falcon street.....	Brooks and Putnam streets.	739.10	12-in., pipe.	1,662 32	Built by contract.
Homer and Byron sts.	Moore and Horace streets..	855.12	12-in., pipe.	1,784 06	
		{ 149.00 478.25 }	12-in., pipe. 10 in., pipe.	{ 862 94 }	Built by contract.
Horace street.....	Moore and Byron streets ..	310.00	15-in., pipe.	616 55	
Maverick street.....	Short and Jeffries streets ..	{ 4.00 }	12-in , pipe.		
Orleans and Sumner streets.....	Maverick and Cottage sts..	{ 713.90 484.00 }	2 ft. 2 in. X 3 ft. 3 in., brick. 4 ft. X 4 ft. 3 in., brick.	{ 13,611 64 }	{ Old wood and brick sewer re- moved and new brick sewer built on heavy concrete foundation. Three to seven feet in depth of peat removed and refilled with gravel, and all old house-connections made good.
Carried forward.	.....	.....	.....	\$58,657 05	

East Boston. — Concluded.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for thirteen months ending Jan. 31, 1892.	REMARKS.
Built in.	Between.				
<i>Brought forward</i> ..	.....	.....	.....	\$53,657 05	{ Old wooden sewer removed and new brick sewer built on heavy concrete foundation, and from two to eight feet of gravel refilling. All house-connections rebuilt. *Paid by Paving Div'n, \$100 82 " " Sewer " 116 44 Built by contract, Orient Heights, Sec. 2. Some rock.
Porter street	Bremen and Bennington sts.	{ 560.17 756.35 168 00	{ 3 ft. 8 in. X 5 ft. 4 in., brick. 2 ft. 10 in. X 4 ft. 3 in., brick 2 ft. X 3 ft., brick.	{ 13,859 05	
Terrace place	Off Webster st.....	98.50	12-in., pipe.	217 26	
Walley, Leyden, and Gladstone streets ..	Walley st. and W. end of streets	{ 558.17 498.40 2,244.65	{ 2 ft. X 3 ft., brick. 15-in., pipe. 12-in., pipe.	{ 10,555-87	
	Total....	13,028.01		\$78,289 23	
* Sewer built on account of Paving Division		.	.	100 82	
Eight new catch-basins and connections built and 47 repaired		.	.	\$4,525 80	
Less amount furnished by Paving Division		.	.	17 12	
Total		.	.	4,508 68	
		.	.	\$82,697 09	

Sewers Built by Private Parties.

Private way.....	Off Elbow street, Ward 2..	93.90	10-in., pipe.
------------------	----------------------------	-------	---------------

Work done for and Paid by Paving Division, East Boston.

STREET.	CATCH-BASIN.		MANHOLES.		SEWERS.	
	Built.	Repaired.	Built.	Repaired.	Length in Feet.	Size.
Jeffries street	2	.....	1	.....	.....
Terrace place	42.5	12-in.

SUMMARY.

2 catch-basins repaired.

1 manhole “

42.5 feet of sewers built.

Brighton.

Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for 13 months ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Arlington st.	Parsons and Market sts.	235.50	15-in., pipe.	\$2,206 92	Very deep cut, and large amount of water.
Arlington street.	Parsons st. and west end of st.	426.60	12-in., pipe.		
Cambridge street.	Saunders st. and 550 feet westerly.	476.65	12-in., pipe.	1,875 85	Rock, and deep cut.
Cambridge street . . .	Union sq. to Gordon.	272 95	15-in., pipe.	1,521 96	Rock.
		263.25	12-in., pipe.		
Dustin street	N. Beacon and Cambridge sts.	429.60	24-in. X 36-in., brick.	18 55	Built in 1890.
		359.80	20-in. X 26-in., brick.	6,153 33	Rock, and large amount of water.
		641.60	18-in., pipe.		
Faneuil street.	Existing sewer and 60 feet westerly	55.60	15-in., pipe.	81 84	
Lincoln street.	Existing sewer and Everett st.	172.60	12-in., pipe.	238 18	46 feet of this was old sewer, which was taken up and relaid.
N. Beacon and Saunders streets	95 feet west of Saunders st. and Guilford st.	367.35	18-in., pipe.	1,143 57	Old sewer rebuilt.
		269.54	15-in., pipe.		
Rockland street.	Chestnut-hill ave. and Mt. Vernon st.	12.00	12-in., pipe.		
		179.00	12-in., pipe.	633 12	Rock.
Fifteen new catch-basins and connections built, and six repaired		4,162.04		\$13,873 32	
Less amount furnished by Paving Division				651 01	
Total				1,239 86	
				\$15,113 18	

Brighton.

Surface Drains built between Jan. 1, 1891, and Feb. 1, 1892, by the City.

LOCATION.		Length in feet.	Dimensions and Material.		
Built in	Between				
Foster and Mt. Vernon streets.....	Old culvert on Foster st., near Mt. Vernon st., and Eastburn st.....	43.0 188.0 }	15-in., pipe. 12-in., pipe.		
		231.0			

Brighton.*Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by Private Parties.*

LOCALITY.		Length in feet.	Dimensions and Material.	REMARKS.
Built in	Between			
*Almy street.....	Seattle and Windom sts.....	184.00	15-in., pipe.	** Indicates sewer built by S. Hano at his own expense, the city furnishing engineers and inspectors.
** Andrews road.....	Coolidge and Holland roads.	546.55	15-in., pipe.	
** Coolidge road.....	Mansfield and N. Harvard streets.....	354.80	15-in., pipe.	
		398.75	12-in., pipe.	
Everett square	Existing sewer and 50 feet westerly	210.40	10-in., pipe.	* Indicates sewers built by D. H. McKay at his own expense, the city furnishing engineers and inspectors.
** Haskell road.....	Coolidge and Holland roads	42.00	10-in., pipe.	
** Holland road	Royal road and N. Harvard street.....	594.40	12-in., pipe.	
		323.72	12-in., pipe.	
Homes street.....	Raymond st. and Western avenue.....	539.82	10-in., pipe.	
* Home avenue.....	N. Harvard and Windom sts.	320.00	10-in., pipe.	
** Homer road.....	Holland and Coolidge roads	581.15	15-in., pipe.	
Murdock street.....	Hill and Whitney streets....	416.20	12-in., pipe.	
** Royal road.....	Coolidge road and Cambridge street.....	465.50	10-in., pipe.	
* Seattle street	Home ave. and Cambridge street.....	224.95	12-in., pipe.	
* Windom street.....	Home ave. and Cambridge street..	766.60	10-in., pipe.	
		4 705.53	15-in., pipe.	
		629.95	12-in., pipe.	
		7,304.32		

Brighton.

Culverts built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or by Day Labor

LOCALITY.		Length in Feet.	Dimensions and Material.
Built in	Between		
Dustin street . . .	Near N. Beacon street .	40.56	5 ft. × 5 ft., stone.
Hobart street . . .	Near Faneuil street . .	41.25	6 ft. wide × 7 ft. 6 in. high, stone with brick arch.
Lake street	Near Washington street.	40.00	5 ft. wide × 5 ft. 11 in. high, stone, double culvert.
Lake street	Near Chandler's pond .	43.85	4 ft. 6 in. wide × 4 ft. 11 in. high, stone, double culvert.
Oakland street . .	Near Faneuil street . .	39.50	6 ft. wide × 5 ft. 6 in. of brick arch, double culvert.
Total		208.16	

The cost of this work is included in the amount expended for building culverts, etc.

Work done for and Paid by Paving Division, Brighton.

Street.	CATCH-BASINS.		Culverts.
	Built.	Repaired.	
Lake street	4	.....	40 ft. 5 ft. × 5 ft. 11 in., stone.
Murdock street	2	.....	43.85 ft. 4 ft. 6 in. × 4 ft. 11 in., stone.

SUMMARY.

6 catch-basins built.

83.85 feet of culverts built.

South Boston.

Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for 13 Mos. ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Colton street.....	W. First and W. Second street.....	196.30	12-in., pipe.	\$346 31	
D and Anchor streets, Gustin street.....	W. First and E streets W. Ninth street and O.C. R.R.....	600.00	5 ft. X 4 ft., wood.	3,976 17	Built by contract.
Monks street.....	E. Sixth and E. Seventh streets.....	347.13	12-in., pipe.	574 78	* Paid by Paving Division.
N street	E. Second and E. Third streets	205.00	12-in., pipe.	336 38	
O street	E. First and E. Second streets	208.30	12-in., pipe.	339 20	Built by contract.
Preble, Liberty, and Preble streets	Hyde st., Vinton st., and 55 ft. west of Rogers st....	249.30	12-in., pipe.	461 21	
		842.36	10-in., pipe.	1,924 93	* { Paid by Paving Division, \$1,919.20. Paid by Sewer Division, \$5.73.
Total.....		2,648.39		\$7,958 98	
* Sewers built on account of Paving Division.....				2,493 98	
36 new catch-basins and connections built and 16 repaired.....				\$5,465 00	
Less amount furnished by Paving Division.....				1,794 35	
Total				\$7,259 35	

Work done for and Paid by Paving Division, South Boston.

STREET.	CATCH-BASINS.		MANHOLES.		SEWERS.	
	Built.	Repaired.	Built.	Repaired.	Length in feet.	Size.
Preble street.....	5	840.36	10-in. pipe.
First street.....	6	.....	.....	.....
A street	2	.....	2	.....	
Atlantic street.....	.....	.....	1	.....	
Mercer street	1	.....	.....	.....
Fourth street.....	.....	.....	1	.....	
Emerson street....	.....	.....	1	.....	
National street ...	.....	.....	1	.....	
E street	1	.....	1	.....	
Second street	3	.....	.....	.....
Dorchester street.	5	347.13	12-in. pipe.
Ninth street.....	3	1	.....	4	
Washburn street..	2	.....	.....	.....
Gustin street.....	.....	.....	.....	.....

SUMMARY.

28 catch-basins built.

1 catch-basin repaired.

7 manholes built.

4 “ repaired.

1,187.49 feet of sewers built.

Harvard and Kilton sts	Talbot av. and Washing't'n st.	{ 995.00 900.00 478.00 173.53	{ 2 ft. X 3 ft., brick. 18-in., pipe. 15-in., pipe. 12-in., pipe.	{ 12,050 63 1,124 82	Very wet job; some rock. Rock.
Howard avenue. Lawrence ave. and Magnolia street ...	Quincy st., and 250 ft. up from Magnolia st.	{ 408.00 44.00	{ 12-in., pipe. 12-in., pipe.	{ 4,439 32 346 75 108 36	Rock. Built in 1890. * Paid by Paving Division.
Mt. Everett street.... Milton street..... Pope's Hill st. and Neponset ave.	Dorchester Intercepting Sewer and Tileston pl....	941.27	12-in., pipe.	2,502 78	
Rockwell and Ar- mandine sts., pri- vate land, Ash- mont st.	Bailey and Ashmont sts.... Ocean and Washington sts.	{ 300.00 850.00	{ 2 ft. 4 in. X 3 ft. 6 in., brick. 2 ft. X 3 ft., brick.	{ 8,104 23 369 00	Rock. Measurement included in sewers built by private parties.
School street.....	Washington and Harley sts.	{ 457.76 211.00 248.00 158.00 700.00	{ 12-in. pipe. 4-ft., 6-in., circular. 3 ft., circular. 3-ft. 6-in., circular. 12-in., pipe.	{ 753 38 4,528 22	* { Paid by Paving Division, \$2,666.00. " " Sewer " 1,862.22.
Wells avenue. Geneva ave. and Westville street ... Westville street	Bowdoin and Ditson sts. ... Draper st. and Geneva ave.	{ 15,854.74		{ \$71,222 61 3,025 25	
Total		15,854.74		\$68,197 36	
* Sewers built on account of Paving Division.....				\$2,358 05	
34 new catch-basins and connections built and 16 repaired.....				\$70,555 41	
Less amount furnished by Paving Division.....					
Total					

Dorchester.*Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by Private Parties.*

LOCALITY.		Length in feet.	Dimensions and Material.	Remarks.
Built in	Between			
Algonquin and } Bradlee sts. . . }	School and Washington } sis. }	244.85 1,451.42	15-in., pipe. 12-in., pipe.	Rock.
Bourneside ave. . . }	Park st. and Melville ave. }	469.00 232.22	15-in., pipe. 12-in., pipe.	
Colonial ave. . . . }	Talbot and New England } aves. }	750.51 220.17	15-in., pipe. 12-in., pipe.	Rock.
Hall st. }	Dorchester ave. and Ad- ams st. }	833.97	12-in., pipe.	Rock.
Intervale park . . . }	Bourneside and Melville aves. }	738.88	12-in., pipe.	
Julian ave. }	Dorchester-brook sewer and Howard ave. . . . }	275.65	10-in., pipe.	
Morse st. }	Washington st. and Mt. Bowdoin ave. }	200.45 275.00	12-in., pipe. 12-in., pipe.	
Moultrie st. }	Scaborn st. and Church pl.			
Newport st. and } Harbor View st. }	Existing sewer and exist- ing sewer }	76.00	12-in., pipe.	
Nightingale st. . . }	Talbot ave. and Bernard } st. }	520.20 574.45	12 in., pipe. 15-in., pipe.	Rock.
Northern ave. . . . }	Whitfield and Washing- ton sts. }	224.00 444.78	12-in., pipe. 10-in., pipe.	
Private land and } Baker pl. . . . }	Dorchester-brook sewer at N.Y. & N.E. R.R. } and Bird st. }	108.15 5.50	15-in., pipe. 12-in., pipe.	
Private street, estate of Ford }	Bird st. and end of street.	155.00	12-in., pipe.	Rock.
Rill st. }	Present sewer and Ware st.	54.00	12-in., pipe.	Rock.
Saco st. }	Dorchester intercepting sewer and Neponset ave.	188.30	12-in., pipe.	
School st. }	Harvard and Washing- ton sts. }	513.75 463.60	15-in., pipe. 12-in., pipe.	
Seaborn st. } . . . Kenwood st. }	Centre and Kenwood sts. } Allston and Washington sts. }	954.27 18.00	12-in., pipe. 8-in., pipe.	Rock.
Shenandoah st. . . }	Carruth st. and Shawmut Branch R.R. }	362.50	10-in., pipe.	
Southern ave. . . . }	Talbot ave. and Washing- ton st. }	371.95	12-in., pipe.	Rock.
Total		10,729.57		

Dorchester.

Surface Drains and Culverts built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in Feet.	Dimensions and Material.
Built in	Between		
Bailey st., near Hill- side terrace		40.00	4 ft. × 3 ft. 5 in., stone.
Bay st., private land Springdale st. and Bath ave.	Midland st. and Savin Hill ave.	128.00	30-in., circular iron pipe.
Blue Hill ave. and Norfolk st.		614.33	30-in., circular, brick.
Blue Hill ave., near Harvard st.		25.00	10-in., pipe.
Carruth st., near Cod- man st.		85.00	5 ft. × 4 ft. 5 in., stone.
Centre st., near Sea- born st.		72.00	5 ft. × 5 ft., stone.
Dorchester ave., near Van Winkle st.		40.00	3 ft. × 3 ft. 5 in., stone.
Dorchester ave., near King st.		60.00	4 ft. × 3 ft. 5 in., stone.
Fuller st., near Hill- side terrace		60.00	4 ft. 6 in. × 4 ft. 11 in., stone.
Geneva ave. and Westville st.	Bowdoin and Ditson sts. . .	40.00	40 ft. of 4 ft. × 3 ft. 5 in., stone.
Harvard st., near Blue Hill ave.		{ 325.00	24-in., pipe.
Private land		{ 530.00	18-in., pipe.
		45.00	5 ft. × 4 ft. 5 in., stone.
	Crusher yard and Rossetter st.	162.80	12-in., pipe.
		195.00	18-in., pipe.
Private land.	River st. and Neponset ave.	12.00	20-in., iron pipe.
		2,434.13	

The cost of this work is included in the amount expended for building culverts, etc.

Work done for and Paid by Paving Division, Dorchester.

STREET.	CATCH-BASINS.		MANHOLES.		SURFACE DRAINS AND CULVERTS.	
	Basin.	Repaired.	Built.	Repaired.	Length in feet.	Size.
Ocean street.....	2				44.00	12 in., pipe.
Granite avenue ..	6					
Minot street.....	3			1		
Bushnell street...	4			4		
Boston and Har- vest streets....	2				517.5	{ 4 ft. 6 in. 3 ft. 6 in. 3 ft. Circular.
Geneva avenue...						

SUMMARY.

17 catch-basins built.

5 manholes repaired.

561.5 feet of sewers, surface drains, etc., built.

Roxbury.

Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for thirteen months ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Bainbridge street	Walnut ave. and Mayfair st.,	113.60	12-in., pipe.	\$1,321 78	Rock.
Beacon street	Brookline ave. and Raleigh street.....	561.12	2 ft. X 3 ft., brick.		Gravel refill; old sea-wall removed which lay in line of trench.
Raleigh street	Beacon st. and Bay State road.....	36.33	12-in., pipe.	9,201 52	
Blue Hill avenue	Dewey st. and Dalmatia st.,	193.30	15-in., pipe.		
Brookline avenue	Under B. & A. R. R. bridge,	168.28	12-in., pipe.	501 27	Rock.
Brookline avenue	Across Muddy river.....	84.60	24-in., iron pipe.	992 97	Five tracks crossed; very wet job.
Calumet street	Sachem st. and Hillside st.,	25.00	24-in., pipe.	131 55	
Commonwealth ave....	Beacon st. and Kenmore st.,	472.62	2 ft. X 3 ft., brick.	5,667 27	Rock.
Commonwealth ave....	Kenmore st. and Brookline avenue.....	226.29	2 ft. 6 in. X 3 ft., brick.		
Commonwealth ave....	Kenmore st. and Charlesgate West.....	48.31	2 ft. X 3 ft., brick.		
Commonwealth ave....	Walnut ave. and Holland st.,	519.45	2 ft. 6 in. X 3 ft., brick.	9,850 22	Trench cut through four old sea-walls.
Crawford street.....	Crawford and Harold sts. ..	72.03	18-in., pipe.		
Holland street.....	Holland st. and top of hill,	544.74	2 ft. 6 in. X 3 ft., brick.		
Crawford street	Chester park and Norfolk avenue.....	229.00	1 ft. 8 in. X 2 ft. 6 in., brick.	7,149 21	Rock excavation and pile foundation.
Dorchester brook	Muddy river and Bellevue street.....	341.07	1 ft. 8 in. X 2 ft. 6 in., brick.	2,317 39	Rock.
Francis street	Parker Hill ave. and Wait street	530.00	12-in. pipe.		{ Bills brought over from previous year.
Hillside street.....		78.0	13 ft. X 9 ft., brick.	25,094 04	Paid for by Park Commissioners.
		103.00	18-in., pipe.	.....
		300.45	12-in., pipe.	678 41	Contract.

Humboldt avenue....	Laurel st. and Munroe st....	390.15	10-in., pipe.		Rock.
Humboldt avenue....	Laurel st. and Walnut ave.	479.92	12-in., pipe.		
Humboldt avenue....	Brookledge st. and Seaver street.....				
Parker Hill avenue..	Tremont st. and Hillside st.,	78.30	12-in., pipe.		Contract.
Renfrew street	Harrison ave. and Winslow street.....	346.67	15-in., pipe.		
		36.00	10-in. X 10-in., wood.		
Reading street.....	Maiden lane and Farnham street.....	172.30	10-in., pipe.		
Texas street.....	Tremont st. and Elmwood street	201.80	10-in., pipe.		
		6,352.33			
* Sewer built on account of Paving Division				\$68,266 86	
				1,020 94	
				\$67,245 91	
Fifty-three new catch-basins and connections built and 99 repaired				\$10,742 84	
Less amount furnished by Paving Division				4,629 81	
Total.....				6,113 03	
				\$73,358 94	

Roxbury.*Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by Private Parties.*

LOCALITY.		Length in feet.	Dimensions and Material.
Built in	Between		
Avon place . . .	Extension of old sewer	70.00	12-in., pipe.
Caledonia st. . .	Parker st. and W. Chester park .	245.05	15-in., pipe.
Dimock st. . . .	Amory st. and Brunswick ave. .	277.45	12-in., pipe.
Galena st.	Gaston st. and Holborn st. . . .	{ 699 20	15-in., pipe.
		{ 33.20	12-in., pipe.
Gayland ave. . .	Judson st. and W. Cottage st. .	100.00	10-in., pipe.
Howland st. . . .	Extension	195.20	12-in., pipe.
Julian ave.	Dor. Brook sewer and Rand sq.,	293.00	12-in., pipe.
Judson st.	Julian ave. and Gayland ave. . .	210.35	12-in., pipe.
Mt. Pleasant ave.	End of old sewer and Vine st. .	50 00	12-in., pipe.
Private st.	Blue Hill ave. and Gaston st. . .	413.00	12-in., pipe.
		2,586.45	

Work Done for and Paid by Paving Division, Roxbury.

STREET.	CATCH-BASINS.		Retaining Wall.	Manholes Repaired.	SEWERS.	
	Built.	Repaired.			Length in Feet.	Size.
Dudley st.	1	10	.....	9		
Cabot st.	1	10				
Haskins st. . . . .	.....	2	.....	4		
Fulda st.	2					
Terrace st.	1					
Warren st.	1					
Shirley st.	2					
Howland st.	3					
Albany st.	1					
Centre st. . . . .	.....	.....	.....	2		
Texas st. . . . .	.....	.....	.....	.....	201.80	10-in., pipe
Parker st.	18	.....	170 ft.			

SUMMARY.

30 catch-basins built.
 22 " repaired.
 170 feet retaining-wall.
 15 manholes repaired.
 201.80 feet of sewers built.

West Roxbury.

Sewers built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for 13 Mos. ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Burnett st.	Washington st. and existing sewer	530.63	12-in., pipe.	\$569 16	
Call st.	Keyes and Hall sts.	306.95	18-in., pipe.	1,033 37	* Paid by Paving Division.
Florence st.	511 feet north of Ashland st.	262.53	15-in., pipe.	1,178 95	Rock.
Peter Farley road . . .	Washington and Forest Hills sts.	510.94	12-in., pipe.	414 67	Hard pan; bowlders and water.
Roslindale and West Roxbury Trunk Sewer, Washington, Cohasset, Albano, Amherst, Houston, and Fresno sts., private land and Belgrade ave. }	Kittredge st. and Anawan ave.	1,988.80	2 ft. 4 in. X 3 ft. 6 in., brick		
		750.25	2 ft. 2 in. X 3 ft. 3 in., brick.	43,545 06	Rock; very wet job.
		1,607.65	2 ft. X 3 ft., brick.		
Sewer Yard, private land, B. & P.R.R., and Lamartine st.	Stony Brook Valley Sewer and Paul Gore st. and beyond	241.35 239 85 20.00	18-in., pipe. 12-in., pipe. 12-in., steel pipe }	1,166 06	{ Stony Brook channel, crossed with iron pipe.

West Roxbury. — *Concluded.*

LOCALITY.		Length in feet.	Dimensions and Material.	Expenditures for 13 Mos. ending Jan. 31, 1892.	REMARKS.
Built in	Between				
Walk Hill st.....	Hyde Park ave. and Wachuset st.....	518.95	12-in., pipe.	\$1,428 29	Rock. Rock.
Wenham st.....	Walk Hill and Weldon sts.	625.80	12-in., pipe.	2,170 19	
Total		7,784.09		\$51,505 75	
*Sewer built on account of Paving Division.....				1,033 37	
Twenty-four new catch-basins and connections built and 11 repaired.....				\$50,472 38	
				1,653 09	
Total				\$52,125 47	

West Roxbury.

Surface Drains and Culverts built between Jan. 1, 1891, and Feb. 1, 1892, by the City, either by Contract or Day Labor.

LOCALITY.		Length in feet.	Dimensions and Material.
Built in	Between		
Allandale street near the Spring	40 00	3 ft. 6 in. × 3 ft. 11 in., stone.
Allandale st., lower brook	194.00	18-in., pipe.
Dale street	40.00	3 ft. 6 in. × 3 ft., stone.
Maynard street	65.00	15-in., pipe.
Cornell street, near Washington	41.00	4 ft. × 3 ft. 5 in., stone.
Linnet street	40.00	4 ft. × 3 ft. 6 in., stone.
South street	Hall st., southwesterly	436.00	15-in., pipe.
Spring street	350.00	12 in., pipe.
Sycamore and Florence streets	73.00	4 ft. × 3 ft. 11 in., stone.
		1,279.00	

The cost of this work is included in the amount expended for building culverts, etc.

Work done for and Paid by Paving Division, West Roxbury.

STREET.	Culverts.	SEWER.	
		Length in Feet.	Size.
Cornell street	41 ft. 3 ft. 6 in. × 3 ft. 11 in., stone.		
Sycamore & Ridge streets	73 ft., 4 ft. × 3 ft. 11 in., stone.		
Allandale street..	199 ft., 18 in., pipe.		
Shirley street	40 ft., 3 ft. 6 in. × 3 ft. 11 in., stone.		
Maynard street	40 ft., 2 ft. 6 in. × 2 ft. 6 in., stone.		
	65 ft., 15 in., pipe.		
Call street . . . . .	. . . . .	306.95	18-in., pipe.
		262.53	15-in., pipe.

SUMMARY.

299 feet of culverts built.

569.48 feet of sewers built.

**Summary of Sewer Construction for the Thirteen Months
ending Jan. 31, 1892.**

DISTRICT.	Built by the City by Con- tract or Day Labor. Feet.	Built by Private Parties. Feet.	Total Length Built during the 13 Months ending Jan. 31, 1892. Feet.
City	4,166.07	.....	4,166.07
Charlestown	2,070.38	.....	2,070.38
East Boston	13,028.01	93.90	13,121.91
Brighton	4,393.04	7,304.32	11,697.36
South Boston	2,648.39	.....	2,648.39
Dorchester	17,956.87	10,729.57	28,686.44
Roxbury	6,352.33	2,586.45	8,938.78
West Roxbury	8,635.09	.....	8,635.09
Total	59,250.18	20,714.24	79,964.42

9,698 catch-basins cleansed.

1,078.16 feet of culverts built.

710 feet of culverts repaired.

There are now 330 miles of sewers in charge of the Sewer Division.

The amount expended by this division during the thirteen months ending Jan. 31, 1892, including the amount spent under special appropriations, was \$717,358.60.

The items of expenditure are shown in the financial statement.

Schedule of Sewers built to Date in the City of Boston.

Wards.	Feet.	Wards.	Feet.	Wards.	Feet.	
		<i>Bro't for'd,</i>		<i>Bro't for'd,</i>		
1.....	74,481	10....	352,935	18....	753,366	
2.....	40,937	11....	38,382	19....	59,573	
3.....	30,510	12....	74,399	20....	45,850	
4.....	40,523	13....	41,817	21....	97,606	
5.....	38,850	14....	51,353	22....	124,409	
6.....	45,254	15....	75,097	23....	86,152	
7.....	46,329	16....	46,329	24....	137,777	
8.....	36,779	17....	31,626	25....	244,748	
9.....	18,532		41,428		87,932	
	27,119					
	352,935		753,366		1,637,413	or 310.1 miles.

Intercepting sewers 21.5 miles.

Total 331.6 "

Fall of Rain and Snow in Inches at South Yard, Albany Street, in thirteen months, ending Jan. 31, 1892.

Day.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.
1 . . .	. .	.26	. .	. .	. .	. .	. .	. .	.81	. .	. .	. .	. .
2 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1.67
3 . . .	1.44	.72	.48	1.54	.16	.43	. .	.11	. .	. .	. .	. .	. .
4 . . .	. .	. .	. .	. .	. .	. .	.84	. .	. .	. .	. .	.39	. .
5 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.35	. .	. .	. .
6 . . .	. .	.24	. .	. .	. .	. .	. .	. .	. .	. .	. .	.43	1.29
7 . . .	. .	. .	. .	. .	. .	. .	. .	.58	2.08	. .	. .	. .	. .
8 . . .	. .	.56	. .	. .	. .	. .	.66	. .	. .	. .	. .	. .	. .
9 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2.27	. .	. .	. .
10 . . .	.96	.80	.56	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
11 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.01	. .	. .	. .
12 . . .	. .	. .	. .	.30	. .	. .	. .	.27	. .	. .	. .	. .	. .
13 . . .	. .	. .	.81	. .	.08	. .	. .	. .	. .	. .	. .	. .	. .
14 . . .	.17	. .	.02	. .	. .	. .	. .	. .	.07	2.29	. .	. .	. .
15 . . .	. .	. .	. .	.55	. .	. .	.04	.43	. .	. .	. .	. .	1.77
16 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.47	. .
17 . . .	. .	.23	. .	. .	1.23	. .	. .	. .	. .	. .	.61	. .	. .
18 . . .	. .	.34	. .	.18	. .	. .	. .	. .	. .	. .	. .	. .	. .
19 . . .	1.36	. .	. .	. .	. .	.97	.26	. .	. .	. .	. .	. .	1.56
20 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.90	. .	. .	.29
21 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
22 . . .	1.12	.68	2.16	. .	. .	1.72	. .	.51	. .	. .	. .	. .	. .
23 . . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.64	.24	.28	. .
24 . . .	. .	. .	. .	. .	. .	. .	.59	.11	. .	. .	. .	. .	. .
25 . . .	.80	1.25	. .	.08	. .	. .	. .	. .	. .	. .	. .	.60	. .
26 . . .	. .	. .	. .	. .	.02	.09	. .	. .	. .	.03	. .	.23	. .
27 . . .	.22	. .	. .	. .	. .	. .	. .	. .	. .	.18	1.29	. .	. .
28 . . .	. .	.16	. .	. .	. .	. .	. .	1.14	. .	. .	. .	. .	. .
29 . . .	. .	. .	. .	. .	.52	. .	.49	. .	.03	. .	. .	. .	. .
30 . . .	.36	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1.38	. .
31 . . .	.20	. .	. .	. .	. .	. .	.82	.36	. .	. .	. .	. .	. .
Totals.	6.63	5.24	4.03	2.65	2.01	3.21	3.20	3.51	2.99	6.67	2.14	3.78	6.58

Total for thirteen months 52.64 inches.

SCHEDULE OF TOOLS, ETC., OWNED BY SEWER DIVISION.

9 boats, 3 boring-tools, 3 boring-machines, 8 buggies, 1 brick-furnace, 1 cement testing-machine, 13 cleaning-wagons, 129 catch-buckets, 1 Cornish engine, 7 Concord wagons, 21 cesspool wagons, 1,585 ft. cleaning-rods, 1 caravan, 1 drill-pump, 25 derricks, 1 diagram-machine, 2 democrat wagons, 1 elevator engine, 1 electric engine, 12 express wagons, 6 engineer's levels, 5 engineer's transits, 1 furnace, 1 flather planer, 2 flushing wagons, 3,550 feet fire-hose, 7 farmer's kettles, 11 flushing-machines, 18 fire-hose nozzles, 17 hydrant goosenecks, 20 hydrant-chucks, 9 hand-carts, 2,800 feet hand-hose, 12 hand-hose nozzles, 3 horse scrapers, 1 iron planer and set tools, 2 lathes, complete, 1 marine glass, 18 measuring-rods, 1 Paine engine, 9 regulator floats, 622 feet suction-hose, 2 sewer-boats, 4 sewer-trucks, 4 self-reading rods, 1 sludge-machine engine, 1 steam-drill, 2 pontoon and 2 jumbo scrapers, 8 sleighs, 1 steam-launch, 32 shanties, 1 two-wheel truck, 11 tip-carts, 1 tow-boat, 5 Knowles pumps, No. 11; 1 Knowles pump, 14-in.; 1 Blake pump, No. 9; 1 Blake pump, 10-in., suspension; 5 Andrews pumps, 6-in.; 1 Andrews pump, 4-in.; 1 rotary pump, 6-in., submerged; 1 Granger pump, 2½-in.; 1 Granger pump, 3-in.; 1 Granger pump, 4-in.; 1 Granger pump, 6-in.; 1 Weber pump, 6-in.; 1 Douglass pump, 14-in.; 22 Edson pumps, 3-in.; 3 siphon pumps, 4-in.; 2 siphon pumps, 3-in.; 2 tin hand-pumps, 1 common pump, 3 Hoadley engines on wheels, 1 Hoadley engine on platform, 2 hoisting-engines, and other miscellaneous tools necessary to do the work of the division.

CATCH-BASIN, MANHOLE, AND PIPE STOCK.

37 stone frames, 147 catch-basin covers, iron; 111 catch-basin grates, 82 catch-basin traps, 152 catch-basin hooks, 57 catch-basin heads, 99 catch-basin gutters, 1 gutter mouth, 3 stone curbs, 170 catch-basin covers, wooden; 5,000 feet oak stock for wooden covers, 116 manhole frames, 411 manhole covers, 550 manhole steps, 14 lamp-hole frames, 16 lamp-hole covers, 14 lamp-hole grates, 12 sump-chains, 11 bridle-chains, 3 inlet pipes, 80 inlet-pipe connections, 6 inlet-pipe nozzles, 14 feet of 24-inch pipe, including branches, curves, bends, etc.; 24 feet of 20-inch pipe, including branches, curves, bends, etc.; 666.5 feet of 18-inch pipe, including branches, curves, bends, etc.; 4,781.5 feet of 15-inch pipe, including branches, curves, bends, etc.; 7,190 feet of 12-inch pipe, including branches, curves, bends, etc.; 3,645 feet of 10-inch pipe, including branches, curves, bends, etc.; 2 feet of 9-inch pipe, including branches, curves, bends, etc.; 1,820 feet of 8-inch pipe, including branches, curves, bends, etc.; 2,669 feet of 6-inch pipe, including branches, curves, bends, etc.; 12 feet of 5-inch pipe, including branches, curves, bends, etc.; 271 feet of 4-inch pipe, including branches, curves, bends, etc.; 11 feet of 2-inch pipe, including branches, curves, bends, etc.

Sewer Division, Pumping-Station.
Report of Pumping done during the Thirteen Months ending January 31, 1892.

	ENGINE 1.		ENGINE 2.		ENGINE 3.		ENGINE 4.		Total gallons pumped.	Daily average number gallons pumped.	Daily average pounds coal used.	Per cent ashes and clinkers.	Gallons pumped per lb. coal used.	Daily average lift in feet.	Daily average duty in ft.-lbs. per 100 lbs. coal used.	Rainfall.
	Pumping time.	Gallons pumped.	Pumping time.	Gallons pumped.	Pumping time.	Gallons pumped.	Pumping time.	Gallons pumped.								
1891.	H. M.		H. M.		H. M.		H. M.									
January . .	143 50	195,048,691	118 45	166,232,080	726 35	915,143,580	740 00	952,782,120	2,229,207,071	71,909,905	23,169	8.7	3,244	35.32	95,881,954	5.68
February . .	216 15	292,529,684	211 40	299,666,028	670 24	967,037,220	667 15	953,230,500	2,512,403,432	89,730,837	27,493	7.8	3,264	35.34	96,520,420	4.00
March . . .	161 10	220,967,864	108 10	154,781,948	740 55	997,400,160	742 30	987,424,128	2,360,574,100	76,147,551	23,197	8.3	3,283	35.45	99,566,907	4.22
April	52 50	70,531,833	26 20	35,242,926	703 10	881,413,560	689 10	857,363,472	1,844,551,791	61,485,060	18,090	9.3	3,399	35.17	100,040,757	2.25
May	39 45	53,445,070	23 07	32,727,074	740 45	908,366,250	663 09	797,456,520	1,792,494,924	57,822,417	16,839	9.8	3,434	34.77	99,921,329	1.61
June	114 05	60,476,314	43 55	63,039,459	702 53	876,193,740	658 13	788,793,480	1,788,562,993	59,616,766	17,594	9.5	3,388	34.92	99,026,545	3.50
July	57 50	77,400,171	37 25	52,836,799	653 25	753,276,708	712 50	824,164,740	1,707,678,418	55,086,400	16,825	9.1	3,274	35.39	96,971,352	3.25
August	63 56	87,056,306	33 43	43,316,152	538 45	707,173,092	629 13	756,823,140	1,599,268,090	51,592,638	16,889	9.2	3,055	35.39	90,476,770	4.18
September . .	52 40	72,974,113	17 35	25,942,819	515 05	601,900,236	711 12	903,333,420	1,604,150,588	53,471,086	17,248	9.1	3,100	35.35	91,716,637	2.26
October	81 37	110,558,159	59 15	37,453,316	595 25	760,142,844	734 05	968,116,716	1,926,276,035	62,137,937	19,877	11.3	3,126	33.30	92,353,093	5.65
November . . .	42 10	56,349,794	23 50	34,759,461	498 50	651,069,756	679 40	888,714,540	1,630,893,551	54,363,118	16,932	13.8	3,207	35.10	94,292,862	2.23
December . . .	65 45	85,822,686	44 20	60,725,870	639 20	828,562,248	620 12	805,356,468	1,756,467,272	57,627,976	18,705	12.8	3,081	34.95	90,114,858	2.93
1892.																
January . . .	352 00	476,784,523	215 10	335,522,480	429 20	594,519,732	712 05	1,003,621,644	2,410,448,379	77,756,319	29,149	9.9	2,668	34.62	77,288,185	3.40
Totals	1,443 53	1,859,945,208	903 16	1,403,252,012	8,204 52	10,442,699,136	8,939 34	11,487,180,888	25,193,077,244	63,749,891	20,079	9.9	3,194	35.16	94,160,866	45.16

The following is a record of sludge received in and removed from deposit-sewers for 13 months ending Jan. 31, 1892 :

	Received.	Removed.
January, 1891 . . .	331 cubic yards.	388 cubic yards.
February, " . . .	245 "	237 "
March, " . . .	888 "	237 "
April, " . . .	206 "	318 "
May, " . . .	661 "	628 "
June, " . . .	650 "	629 "
July, " . . .	212 "	545 "
August, " . . .	833 "	624 "
September, " . . .	59 "	550 "
October, " . . .	457 "	476 "
November, " . . .	584 "	476 "
December, " . . .	382 "	397 "
January, 1892 . . .	342 "	558 "
	<hr/> 5,850	<hr/> 6,063

PROPERTY IN CHARGE OF THE SEWER DIVISION.

Sewer yard, with buildings, at 678 Albany street.

Sewer yard, with building, on North Grove st.

Sewer yard, on Gibson street, Dorchester, with buildings. This is Gibson School-fund land. The buildings were erected by the Sewer Department.

Sewer yard, with shed, on Boylston street, Jamaica Plain.

Small lot of land on Stony brook, corner of Centre street, Ward 21.

Gate-house on Stony brook, Pynchon street, built in 1889.

Lot of land on Chestnut-Hill avenue, transferred from the Street Department and not yet in use by the Sewer Department.

Sewer yard, with buildings, on Rutherford avenue, Charlestown.

Sewer yard, with buildings, cor. Paris and Marion streets.

Sewer yard, with buildings, on East Chester park, near Albany street.

A small shed on Cypress street, Ward 9, on land hired by the city.

Summary of Sewer Construction for Five Years.

	1887.	1888.	1889.	1890.	1891.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Built by City by Contract or Day Labor	63,062.79	34,633.81	30,003.03	24,200.25	59,250.18
Built by Private Parties	8,932.23	44,368.47	13,191.45	17,218.10	20,714.24
Total number of feet built . . .	71,995.02	49,002.28	43,194.48	41,418.35	79,964.42

Oak and Tyler Streets.

Labor	\$6,348 92
144 double loads gravel	281 50
26 tons coal	120 90
Teaming	1,975 50
Boring	147 88
4 manhole frames and covers	47 00
Trench-machine	331 67
96,400 brick	964 00
Engine-hire	162 50
189 double loads screenings	378 00
68½ double loads sand }	140 60
3 tons sand }	
500½ barrels cement	575 39
17,503 feet lumber	264 26
767 feet pipe	153 88
Branches, bends, etc.	42 17
Sundry supplies and repairs	121 62
	<u>\$12,055 79</u>

Size and Length of Sewer.

868.98 ft., 2 ft. × 3 ft., brick.

Special appropriation	\$10,500 00
Furnished from current expenses, Sewer Division	1,555 79
	<u>\$12,055 79</u>

Vine Street.

Labor	\$4,399 31
120 barrels cement	141 60
49,500 brick	383 62

Amount carried forward,\$4,924 53

<i>Amount brought forward,</i>	\$4,924 53
Teaming	275 50
3,347 feet lumber	43 12
31½ double loads gravel	58 95
21¾ double loads sand	40 50
1 manhole frame and cover	11 75
208 feet pipe	53 03
Branches and bends	21 92
Fuel and sundries	13 88
	<hr/>
	\$5,443 18

Size and Length of Sewer.

447.75 ft., 3 ft. 3 in. × 3 ft. 5 in., brick.
Special appropriation.

Sewer Outlet, D and Anchor Streets.

Built by Contract.

1,950 cu. yds. earth excavation and refilling, at 90 cents	\$1,755 00
350 lin. ft., 4 ft. × 5 ft., wooden box sewer, at \$7.78	2,723 00
	<hr/>
	\$4,478 00
Less amount retained	800 00
	<hr/>
	\$3,678 00
Inspecting	240 00
Miscellaneous	58 17
	<hr/>
	\$3,976 17

Special appropriation.

Orient-Heights Sewer. Section 1.

Built by Contract.

357.20 lin. ft. earth excavation and refilling, at \$3.30	\$1,178 76
1,580.63 lin. ft. earth excavation and refilling, at \$2.97	4,694 47
1.82 cu. yds. rock excavation, at \$5	9 10
630 cu. yds. brick masonry, American cement, at \$4.75	2,992 50
586.06 cu. yds. concrete in place, at \$3.50	2,051 21
	<hr/>
<i>Amount carried forward,</i>	\$10,926 04

<i>Amount brought forward,</i>	\$10,926 04
343.42 cu. yds. earth excavation below grade, at 80 cents	274 74
343.42 cu. yds. gravel refilling, at 50 cents .	171 71
2.956 M ft. B.M. spruce lumber left in place, at \$12	35 47
1,319 lin. ft. 8-in. under-drain laid, at 15 cents,	197 85
154 house-connections, at 10 cents . . .	15 40

\$11,621 21

Less amount retained 800 00

\$10,821 21

406,025 brick	4,060 50
1,499 bbls. cement	1,873 70
1,200 ft. pipe	243 00
8 manhole frames, covers, etc.	165 84
Bends, slants, etc.	40 69
Inspecting, etc.	1,115 00
Miscellaneous	246 16

\$18,566 10

Size and Length of Sewer.

357.21 ft., 4 ft. 6 in. × 4 ft. 9 in., brick.

1,580.63 ft., 4 ft. × 4 ft. 3 in., brick.

Special appropriation.

Orient-Heights Sewer. Section 2.

Built by Contract.

558.17 lin. ft. earth excavation and refilling, at \$2.50	\$1,395 42
498.40 lin. ft. 15-in. pipe laid, at \$1.30 . .	647 92
2,244.65 lin. ft. 12-in. pipe laid, at \$1.60 .	3,591 44
99.71 cu. yds. rock excavation, at \$5.00 .	498 55
191.21 cu. yds. brick masonry, American cement, at \$5.25	1,003 85
48 lin. ft. 8-in. under-drain, at 20 cents .	9 60
43 house-connections, at 10 cents	4 30
260 lin. ft. pipe laid as chimneys, at 10 cents,	26 00

\$7,177 08

Less 5% retained 358 85

Amount carried forward, \$6,818 23

Sumner and Orleans Streets.

Labor	\$5,520 86
203,100 brick	2,031 00
939 barrels cement	1,108 02
172.5 tons sand	301 87
1,188 double loads gravel	2,376 00
1,364 feet pipe	225 92
Branches, bends, etc.	26 88
12,874 feet lumber	232 78
33 tons coal	138 93
5 iron manhole frames and covers	58 75
18 iron manhole steps	9 90
Trench machine and engine-hire	600 00
Teaming	919 50
Miscellaneous	61 23

\$13,611 64

*Size and Length of Sewer.*484 ft., 4 ft. \times 4 ft. 3 in., brick.713.90 ft., 2 ft. 2 in. \times 3 ft. 3 in., brick.

Special appropriation	\$13,000 00
Furnished from current expenses, Sewer Division	611 64

\$13,611 64

Bremen Street.

Labor	\$2,794 99
117,250 brick	1,172 50
622 barrels cement	733 96
85 tons sand	148 75
1,759 loads gravel	1,759 00
3 manhole frames and covers	35 25
Teaming	623 25
11,313 feet lumber	210 32
702 feet pipe	95 99
Branches, bends, etc.	11 61
21 tons coal	98 22
Carson machine	164 50
Engine-hire	92 00
Miscellaneous	13 05

\$7,953 39

*Size and Length of Sewer.*687.02 ft., 3 ft. 8 in. \times 5 ft. 4 in., brick.

Paid from current expenses, Sewer Division.

Porter Street.

Labor	\$5,171 19
210,425 brick	2,104 25
1,067 bbls. cement	1,259 06
2,591 loads gravel	2,591 00
186 $\frac{1}{4}$ tons sand	325 94
Teaming	915 00
9,459 ft. lumber	172 86
1,524 ft. pipe	285 76
Branches, slants, etc.	17 71
Coal	196 97
Trench machine	296 00
Engine and pump	420 00
Manhole rings, etc.	29 00
Miscellaneous	74 31
	<hr/>
	\$13,859 05

*Size and Length of Sewer.*560.17 feet, 3 ft. 8 in. \times 5 ft. 4 in., brick.756.35 feet, 2 ft. 10 in. \times 4 ft. 3 in., brick.168.00 feet, 2 ft. \times 3 ft., brick.

Special appropriation	\$12,000 00
Furnished from current expenses Sewer Division	1,859 05
	<hr/>
	\$13,859 05

Rockwell and Armandine Streets.

Labor	\$5,488 09
122,350 brick	1,284 66
1,009 ft. pipe	135 02
Branches, bends, etc.	26 68
Carpentry	13 75
250 bbls. cement	304 00
54 $\frac{1}{2}$ double loads sand	98 10
2 double loads screenings	3 00
Powder	72 69
Blacksmithing	206 90
8,652 ft. lumber	193 09
14 double loads gravel	21 00
3 manhole frames and covers	35 25
Teaming	222 00
	<hr/>
	\$8,104 23

*Size and Length of Sewer.*300 ft., 2 ft. 4 in. \times 3 ft. 6 in., brick.850 ft., 2 ft. \times 3 ft., brick.

Special appropriation.

Magnolia Street.

Labor	\$3,714 16
Teaming	218 25
2 $\frac{2}{3}$ tons sand	4 51
3,520 brick	36 96
11 bbls. cement	13 46
150 lbs. powder	54 00
2,033 ft. spruce	34 36
2 manhole frames and covers	23 50
18 manhole steps	9 90
681 feet pipe	225 80
Branches, bends, etc.	46 84
Blacksmithing	57 58
	<hr/>
	\$4,439 32

Size and Length of Sewer.

408 ft., 12 in., pipe.

Special appropriation.

Adams, Codman, and Hutchinson Streets.

Labor	\$4,771 36
198,980 brick	2,089 28
388 bbls. cement	457 84
49 double loads sand	93 20
795 feet drain-pipe	160 21
Branches, bends, etc.	12 49
412 feet lumber	6 96
Coal	95 69
3 manhole frames and covers	35 25
Trench machine and engine-hire	489 05
Teaming	349 50
Miscellaneous	45
	<hr/>
	\$8,561 28

*Size and Length of Sewer.*987 feet, 2 ft. 6 in. \times 3 ft., brick.

Paid from current expenses, Sewer Division.

Bay Street, Private Land, etc.

Labor	\$8,913 03
361,650 brick	3,794 82
832 bbls. cement	983 86
43 double loads sand	83 60
536 " " gravel	971 75
5,791 feet drain-pipe	2,395 04
Branches, bends, etc.	448 18
31,750 feet lumber	559 56
35 manhole frames and covers	411 25
Coal	14 92
Teaming	407 12
Piling	533 00
Miscellaneous	361 52
	<hr/>
	\$19,877 65

*Size and Length of Sewer.*721.88 ft., 2 ft. 4 in. \times 3 ft. 6 in., brick.452.72 ft., 1 ft. 8 in. \times 2 ft. 6 in., brick.

2,699.30 ft., 15 in., pipe.

1,495.15 ft., 12 in., pipe.

Special appropriation.

Harvard and Kilton Streets.

Labor	\$6,806 26
Coal	97 65
13,480 feet lumber	257 00
Carson trench machine and engine-hire	705 94
Carpentry	57 50
Powder, etc.	70 12
9 manhole rings and covers	105 75
Blacksmithing	262 15
147,300 brick	1,546 66
2,416 pipe	1,007 47
Branches, bends, etc.	208 22
55 double loads and 23 tons sand	122 00
287 bbls. cement	345 16
10 double loads gravel	15 00
Supplies, repairs, etc.	3 75
Teaming	289 50
Inspector	150 50
	<hr/>
	\$12,050 63

*Size and Length of Sewer.*995 ft., 2 ft. \times 3 ft., brick.

900 ft., 18 in., pipe.

478 ft., 15 in., pipe.

Special appropriation	.	.	.	.	\$12,000 00
Furnished from current expenses, Sewer	.	.	.	.
Division	.	.	.	.	50 63
					<hr/>
					\$12,050 63
					<hr/>

Sewer in Adams, Beaumont, and Burgoyne Streets.*Built by Contract.*

231.03 linear feet 18-inch pipe sewer, at \$1.50	.	.	.	.	.	\$346 55
798.83 linear feet excavating and refilling above grade of 2 ft. \times 3 ft., brick sewer, at \$2.20	.	.	.	.	.	1,757 43
211.41 cubic yards brick masonry, at \$5.40	.	.	.	.	.	1,141 61
35 feet 6-inch slants, at 10 cents	.	.	.	.	.	3 50
724 linear feet 6-inch under-drain, at 20 cents,	.	.	.	.	.	144 80
6.39 cubic yards rock excavation, at \$5.00	.	.	.	.	.	31 95
						<hr/>
						\$3,425 84
Less 5% retained	.	.	.	.	.	171 29
						<hr/>
						\$3,254 55
Inspecting	.	.	.	.	.	410 00
121,100 brick	.	.	.	.	.	1,271 55
320 barrels cement	.	.	.	.	.	380 33
911 feet pipe	.	.	.	.	.	257 20
Branches, etc.	.	.	.	.	.	30 71
Manhole rings and covers	.	.	.	.	.	58 75
Miscellaneous	.	.	.	.	.	60 69
						<hr/>
						\$5,723 78
						<hr/>

*Size and Length of Sewer.*798.16 feet, 2 feet \times 3 feet, brick.

Paid from current expenses, Sewer Division.

Westville Street.

Labor	.	.	.	.	.	.	\$2,975 77
Teaming	.	.	.	.	.	.	172 50
							<hr/>
Amount carried forward,							\$3,148 27

<i>Amount brought forward,</i>	\$3,148 27
1,354 feet pipe	321 20
Branches, bends, etc.	77 36
4,406 feet lumber	74 46
22 double loads sand	39 60
Blacksmithing	65 00
56,500 brick	593 25
131 barrels cement	154 58
4 manhole rings and covers	47 00
2 pieces C. B. curving	7 50
	<hr/>
	<u>\$4,528 22</u>

Size and Length of Sewer.

700 feet of 12-inch pipe.	
211 " " 4 feet 6 inch, circular.	
158 " " 3 " 6 " "	
248 " " 3 " "	
Special appropriation	\$4,003 36
Furnished from current expenses, Sewer Division	524 86
	<hr/>
	<u>\$4,528 22</u>

Commonwealth Avenue.

Labor	\$7,349 19
52,050 brick	535 05
208 barrels cement	242 22
46½ double loads sand	93 00
36 " " gravel	63 00
28 " " screenings	55 50
12,621 feet lumber	206 22
5 manhole frames and covers	58 75
690 feet pipe	75 60
Branches, etc.	10 06
Teaming	729 00
Trench machine	96 80
Engine-hire	65 00
Salt hay	75 00
Fuel	63 90
Miscellaneous supplies	131 93
	<hr/>
	<u>\$9,850 22</u>

Size and Length of Sewer.

1,290.48 feet, 2 feet × 3 feet, brick.
48.31 " 2 " × 3 " "
72.03 " 18 " pipe.
Special appropriation.

Calumet Street.*Built by Contract.*

145.47 cubic yards brick masonry, at \$13.00	.	\$1,891	11
174.31 " " concrete, " 4.65	.	810	54
1,440.50 " " rock excavated, " 4.00	.	5,762	00
155.1 linear feet 12-in. pipe laid, " .50	.	77	55

 \$8,541 20

Previous payments	3,687	60
-----------------------------	---	-------	----

 \$4,853 60

Inspecting . . . . .	.	758	50
Branches, bends, etc. . . . .	.	17	37
Coal . . . . .	.	2	55
Manhole frames and covers . . . . .	.	35	25

 \$5,667 27

Size and Length of Sewer.

472.62 feet, 2 ft. × 3 ft., brick.

Paid from current expenses, Sewer Division.

Bacon and Raleigh Streets.

Labor . . . . .	.	\$4,751	82
26,433 feet of lumber . . . . .	.	430	85
Teaming . . . . .	.	1,148	50
Coal . . . . .	.	65	10
Boring . . . . .	.	90	50
439½ bbls. cement . . . . .	.	524	30
84 double loads sand . . . . .	.	154	80
787 feet pipe . . . . .	.	189	36
Branches, bends, etc. . . . .	.	40	49
Engine-hire . . . . .	.	132	50
Trench machine . . . . .	.	207	36
88,000 brick . . . . .	.	886	80
144 double loads screenings . . . . .	.	243	75
101 " " gravel . . . . .	.	169	65
5 manhole frames and covers . . . . .	.	58	75
Iron pipe . . . . .	.	40	54
Supplies, blacksmithing, etc. . . . .	.	66	45

 \$9,201 52

Size and Length of Sewer.

562.12 feet, 2 ft. × 3 ft., brick.

193.30 " 15 in., pipe.

36.33 " 12 in., "

Paid from current expenses, Sewer Division.

Crawford and Holland Streets.

Labor	\$5,257 18
46,400 brick	467 50
231 bbls. cement	273 00
42 double loads sand	74 80
42.5 " " gravel	60 00
74 feet drain-pipe	20 84
Branches, bends, etc.	11 91
21,750 feet lumber	358 99
Manhole frames and covers	51 72
" steps	22 00
Teaming	308 25
Piling	205 80
Miscellaneous	37 22

\$7,149 21
Size and Length of Sewer.

570.07 feet, 1 ft. 8 in. × 2 ft. 6 in., brick.

Paid from current expenses, Sewer Division.

Rebuilding Dorchester-Brook Sewer.

Labor	\$11,079 36
Coal	351 15
Derrick, engine, etc., hire of	917 11
Miscellaneous supplies, repairing tools, etc.,	485 83
Iron pipe, bolts, etc.	964 49
1,521 barrels cement	1,920 02
84 feet drain-pipe	18 93
342,225 brick	3,422 25
67,988 feet lumber	1,203 36
332 double loads screenings	498 00
458½ " " sand	806 20
412½ " " gravel	603 75
Teaming	802 00
Furnishing and driving piles	1,572 78
7 manhole steps	3 85
Carpentry	7 50
175 perches stone	437 46

\$25,094 04

Special appropriation	\$20,366 02
Furnished from current expenses, Sewer Division	4,728 02
	<hr/>
	<u>\$25,094 04</u>

Dustin Street.

Labor	\$4,156 65
84,675 brick	846 75
240 barrels cement	296 50
17 loads sand	16 66
1,213 feet pipe	517 91
Branches, slants, etc.	130 50
2,000 feet lumber	34 00
Teaming	27 00
Manhole frames, etc.	94 00
Miscellaneous	33 36
	<hr/>
	<u>\$6,153 33</u>

Size and Length of Sewer.

429.60 ft., 24 in. × 36 in., brick.

359.80 ft., 20 in. × 26 in., brick.

641.66 ft., 18-in. pipe.

Special appropriation	\$6,000 00
Furnished from current expenses, Sewer Division	153 33
	<hr/>
	<u>\$6,153 33</u>

Washington and Colhasset Streets, etc.

Labor	\$25,834 46
711,150 brick	8,243 80
2,129 barrels cement	2,596 37
502.5 double loads sand	773 40
545 " " gravel	702 80
3,377 feet drain-pipe	456 20
Branches, bends, etc.	70 49
44,912 feet lumber	793 04
20 manhole frames and covers	239 50
Coal	101 57
Teaming	622 40
Miscellaneous	3,111 03
	<hr/>
	<u>\$43,545 06</u>

Size and Length of Sewer.

1,988.80 ft., 2 ft. 4 in. \times 3 ft. 6 in., brick.

750.25 ft., 2 ft. 2 in. \times 3 ft. 3 in., brick.

1,607.65 ft., 2 ft. \times 3 ft., brick.

Special appropriation.

Respectfully submitted,

H. W. SANBORN,
Deputy Superintendent.

APPENDIX E.

ANNUAL REPORT OF THE DEPUTY SUPERINTENDENT OF THE STREET-CLEANING DIVISION OF THE STREET DEPARTMENT.

BOSTON, Feb. 1, 1892.

H. H. CARTER, Esq., *Superintendent of Streets*:

DEAR SIR: In reply to your circular of Dec. 14, 1891, in regard to the annual report, I beg leave to offer the following statement of the expenditures, income, and business of this division, together with a schedule of the appreciable property on hand, for the nine months ending Jan. 31, 1892.

When I assumed charge of the Street-Cleaning Division, I found the work being prosecuted under the direction of G. W. Forristall, of the Sanitary Division, and it was mutually understood that he was to continue keeping the record of the work done, and an account of the manner in which the money was expended, until the close of the fiscal year ending April 30, 1891.

My report, consequently, which is herein submitted, covers the period of nine (9) months ending Jan. 31, 1892.

FINANCIAL STATEMENT.

Amount of appropriation	.	.	.	.	\$250,000 00
Total expenditures	.	.	.	.	\$215,464 92
Transferred to Sewer Division,				20,000 00	
				<u> </u>	235,464 92
Unexpended	.	.	.	.	\$14,535 08

STREET POLICE DIVISION.

Amount of appropriation	.	.	.	.	\$5,000 00
Total expenditures	.	.	.	\$464 41	
Transferred to Central Office,				1,050 00	
Transferred to Paving Division,				3,485 59	
				<u> </u>	<u>\$5,000 00</u>

OBJECTS OF EXPENDITURE.

Superintendence.

Salary of Deputy Superintendent	\$2,333 34
Office pay-rolls, including pay of clerks, draughtsman, and messengers	3,516 62
Advertising, etc.	51 00
Board of horse	230 81
Use of carriages	21 00
Maps, plans, etc.	258 35
Printing	398 07
Stationery	462 05
Telephone service, etc.	79 73
Total cost of superintendence	<u>\$7,350 97</u>

CLEANING STREETS,

*Including the Cost of Sweeping, Loading, and Removal of
Street-dirt.*

District 1. West End	\$15,101 67
District 2. North End	17,412 22
District 3. South End	16,502 09
District 4. South End	15,943 24
District 5. Back Bay	15,205 72
District 6. South Boston and Dorchester	17,239 87
District 7. Roxbury and West Roxbury	11,995 63
District 8. Brighton	*
District 9. Charlestown and East Boston	12,008 52
Total cost of cleaning streets	<u>\$121,408 96</u>

CLEANING GUTTERS, CROSSINGS, AND SIDEWALKS,

*Including Cost of Scraping, Loading, and Removal of Street-
dirt.*

District 1. West End	\$2,015 56
District 2. North End	102 88
District 3. South End	126 17
Amount carried forward,	<u>\$2,244 61</u>

* In Brighton, there was no sweeping except of crossings, and the street-cleaning was confined wholly to scraping macadamized roads and gutters. The expense is given under Gutter Work.

<i>Amount brought forward,</i>		\$2,244 61
District 4.	South End	782 23
District 5.	Back Bay	2,048 19
District 6.	South Boston and Dorchester .	2,008 12
District 7.	Roxbury and West Roxbury .	1,713 61
District 8.	Brighton	3,738 25
District 9.	Charlestown and East Boston .	1,944 75
Total cost of cleaning gutters, etc. .		<u>\$14,479 76</u>

COST OF MAINTAINING DUMPS.

District 1.	West End	\$445 03
District 2.	North End	388 15
District 3.	South End ¹	5 20
District 4.	South End ²	95 17
District 5.	Back Bay	378 36
District 6.	South Boston and Dorchester .	405 12
District 7.	Roxbury and West Roxbury .	. .
District 8.	Brighton . . . . .	. .
District 9.	Charlestown and East Boston .	331 00
Total cost of dumps		<u>\$2,048 03</u>

COST OF REMOVAL OF SNOW,

Including Labor and Carting.

District 1.	West End	\$976 96
District 2.	North End	854 68
District 3.	South End	741 39
District 4.	South End	880 10
District 5.	Back Bay	995 30
District 6.	South Boston and Dorchester .	930 82
District 7.	Roxbury and West Roxbury .	890 85
District 8.	Brighton	246 00
District 9.	East Boston and Charlestown .	645 98
Total cost of removing snow . . .		<u>\$7,162 08</u>

¹ District 3 used Districts 1 and 2 dumps regularly.² District 4 used Districts 1, 2, and 5 dumps regularly.

PATROL SYSTEM.

Push-carts, including labor, teaming, etc.	\$14,582 29
Paper patrol, labor and teaming	3,696 50
Snow	679 89
Superintendence	943 41
Total	<u>\$19,902 09</u>

RECAPITULATION OF EXPENSES, EXCLUSIVE OF SUPERINTENDENCE, STABLE AND YARD EXPENSES, STOCK ACCOUNT, AND MISCELLANEOUS.

District.	Cost of Cleaning Streets.	Cost of Cleaning Gutters, Crossings, and Sidewalks.	Cost of Dumps.	Cost of Removing Snow.	Cost of Patrol System.	Total.
No. 1 . .	\$15,101 67	\$2,015 56	\$445 03	\$976 96	.....	\$18,539 22
No. 2 . .	17,412 22	102 88	388 15	854 68	.....	18,757 93
No. 3 . .	16,502 09	126 17	5 20 ¹	741 39	.....	17,374 85
No. 4 . .	15,943 24	782 23	95 17 ²	880 13	.....	17,700 74
No. 5 . .	15,205 72	2,048 19	378 36	995 30	.....	18,627 57
No. 6 . .	17,259 87	2,008 12	405 12	930 82	.....	20,583 93
No. 7 . .	11,995 63	1,713 61	.....	890 85	.....	14,600 09
No. 8 . .	.....	3,738 25	.....	246 00	.....	3,984 25
No. 9 . .	12,008 52	1,944 75	331 00	645 98	.....	14,930 25
Patrol System . . . .	.....	.....	.....	.....	\$19,902 09	\$19,902 09
Total . .	\$121,408 96	\$14,479 76	\$2,048 03	\$7,162 08	\$19,902 09	\$165,000 92

¹ District 3 used the Districts 1 and 2 dumps regularly.

² District 4 used Districts 1, 2, and 5 dumps regularly.

STABLE AND YARD EXPENSES,

Including the Cost of the South End, West End, Roxbury, and Charlestown Stables, as follows:

Superintendence	\$1,357 59
Labor, including cost of feeders, hostlers, broom-makers, blacksmiths, carpenters, watchmen, etc.	3,964 93

Amount carried forward, \$5,322 52

<i>Amount brought forward,</i>	\$5,322 52
Cart and carriage repairs	1,918 71
Carts, use of	120 00
Coal	14 55
Harness repairs	214 06
Horse-shoeing	1,675 53
Repairs on lockers	292 46
Repairs on sweeping-machines	940 77
Ferry-passes, car-tickets	219 18
Tool repairs	16 41
Veterinary services and medicines	156 11
Total stable and yard expenses	<u>\$10,890 30</u>

STOCK ACCOUNT.

Broom-stock purchased	\$5,870 16
Carts, carriages, etc., purchased	6,323 50
Harnesses, horse furnishings, purchased	3,376 78
Horses purchased	3,200 00
Push-carts purchased	1,117 50
Sleigh purchased	95 00
Sweeping-machines purchased	1,125 00
Tools	781 58
Total	<u>\$21,889 52</u>

MISCELLANEOUS.

Holidays	\$9,543 00
Sand	76 50
Sundries	963 71
Total	<u>\$10,583 21</u>

GENERAL RECAPITULATION OF EXPENSES.

For Nine Months ending Jan. 31, 1892.

Superintendence	\$7,350 97
Cleaning of streets	121,408 96
Cleaning gutters, crossings, and sidewalks	14,479 76
Maintaining dumps	2,048 03
Removal of snow and ice	7,162 08
<i>Amount carried forward,</i>	<u>\$152,449 80</u>

<i>Amount brought forward,</i>	\$152,449 80
Cost of patrol system	19,902 09
Stable and yard expenses	10,890 30
Stock account	21,889 52
Miscellaneous	10,583 21
Total	<u>\$215,714 92</u>

Table showing the Cost per Mile of Cleaning the Streets in each District, exclusive of Supervision and other Expenses.

District.	No. of Miles Cleaned.	Cost of Cleaning.	Cost of Dump.	Total Cost.	Cost per Mile.
No. 1	1,136.34	\$15,101 67	\$396 07	\$15,497 74	\$13 63+
No. 2	1,541.20	17,412 22	345 45	17,757 67	11 52+
No. 3	1,218.41	16,502 09	4 63	16,506 72	13 54+
No. 4	1,281.51	15,943 24	84 70	16,027 94	12 50+
No. 5	539.86	15,205 72	336 74	15,542 46	28 78+
No. 6	679.25	17,239 87	360 56	17,600 43	25 91+
No. 7	307.15	11,995 63	. . . . .	11,995 63	39 05+
No. 8 . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
No. 9	569.52	12,008 52	294 59	12,303 11	21 60+
Total	7,273.24	\$121,408 96	\$1,822 74	\$123,231 70	. . . . .

Average cost per mile of cleaning streets in eight (8) districts, exclusive of supervision, etc., \$16.94.

Districts 5, 6, 7, and 9 are made up partly of paved streets and partly of macadamized streets, and as the cost of scraping a macadamized street and gutter is largely in excess of cleaning a paved street, the rates per mile in these districts exceed those of Districts 1, 2, 3, and 4, which are within the paved area.

* One hundred twenty dollars of this amount offset by sale of three horses, in exchange. One hundred thirty dollars of this amount offset by sweepings dumped at L street, making the net expenses of this division, as shown in financial statement, \$215,464.92.

Table showing the Cost per Mile of Cleaning the Streets in each District, including Supervision, Labor, Yard, and Stable Expenses.

District.	No. Miles Cleaned.	74% of Total Cost of Supervision.	Cost of Cleaning.	84% of Yard and Stable Expense.	Total Expense.	Total per Mile.
No. 1 ..	1,136.34	\$684 11	\$15,497 74	\$1,150 44	\$17,332 29	\$15 25
No. 2 ..	1,541.20	783 87	17,757 67	1,318 21	19,859 75	12 88
No. 3 ..	1,218.41	728 65	16,506 72	1,225 34	18,460 71	15 15
No. 4 ..	1,281.51	707 50	16,027 94	1,189 80	17,925 24	13 98
No. 5*..	539.86	686 08	15,542 46	1,153 76	17,382 30	32 19
No. 6*..	679.25	776 92	17,600 43	1,306 53	19,683 88	28 97
No. 7*..	307.15	529 51	11,995 63	890 47	13,415 61	43 67
No. 8 ..	.....	.....	.....	.....	.....	.....
No. 9*..	569.52	543 08	12,363 11	913 30	13,759 49	24 15
Total...	7,273.24	\$5,439 72	\$123,231 70	\$9,147 85	\$137,819 27	

*Includes the cost of cleaning the macadamized streets in these districts.

Average cost per mile of cleaning the streets in eight (8) districts, including supervision, etc., \$18.94.

INCOME.

Bills deposited with the City Collector from May 5, 1891, to Jan. 30, 1892, on which payment is expected	\$941 00
Amount credited to this division by City Collector up to date, on account of above bills	<u>497 00</u>

COMPLAINTS.

Made by police	1
Made by Paving Division	1
In form of a petition	1
By telephone	2
Anonymous	4
Individuals, personally and by letter	26
Through Central Office	36
Total number of complaints	<u>71</u>

FORCE EMPLOYED.

Deputy Superintendent	1
Chief Clerk	1
Messengers	2
Employees	328
Entire force	<u>332</u>

INVENTORY OF PROPERTY IN CHARGE OF THIS DIVISION.

74 barrels for push-carts.	3 horses, driving.
76 blankets, stable.	7 hydrants.
34 blankets, street.	1 machine. boring.
191 brushes, horse.	15 machine brooms.
2 buggies, Concord.	1 machine for cutting bass.
1 buggy, Goddard.	2 market wagons.
37 carts, push.	74 oil horse-covers.
9 carts, iron.	8 scrapers, asphalt.
5 carts, McDonald, Patent steel.	589 shovels, scoops, etc.
12 carts, water.	1 sleigh.
61 carts, wooden.	12 squeegees.
67 harnesses, cart.	1 steam-box and boiler.
5 harnesses, driving.	72 surcingles.
9 harnesses, double.	16 sweeping-machines, double.
1 harness, express.	15 sweeping-machines, single.
70 horses, cart.	

In addition to the above, there is an amount of stock whose quantity is constantly varying, such as broom-stock, rattan, bass, machine-oil, cart-oil, soap, medicine, flax, broom-cord, pitch, broom-handles, coal, etc.

Respectfully submitted,

PHILIP A. JACKSON,

Deputy Superintendent.

APPENDIX F.

CITY OF BOSTON, ENGINEERING DEPARTMENT,
50 CITY HALL, Feb. 1, 1892.

MR. H. H. CARTER, *Superintendent of Streets*:

SIR: I herewith submit the following report of the work done under my direction for your department.

Plans and profiles of streets to be paved were made, quantities estimated, and specifications prepared.

The work done is shown in the accompanying tables; the city furnished all material except paving-gravel, and generally the materials were delivered to the contractor from wharves or from city yards. In some cases the paving-blocks were delivered by the city on or in the vicinity of the work. Such of the old materials as the city could use were delivered by the contractor.

It will thus be seen that the prices contained in the tables have no comparative value, since the conditions differed on each street, some being paved, others macadamized or gravelled; also the length of haul for new supplies and for disposing of old material, and the relative quantity of each, was far from uniform.

Under seventeen contracts, 4.35 miles of street were paved at a cost, exclusive of material furnished by the city, of \$169,161.02.

The following is a brief summary of the items:

52,744 sq. yds. block paving on gravel furnished were laid at an average cost of \$1.155 per sq. yd.

9,294 sq. yds. block paving on a cement concrete base, with pitched joints, were laid at an average cost of \$2.727 per sq. yd.

15,189 sq. yds. of asphalt paving were laid; average cost, with cement concrete base, \$3.635 per sq. yd.; when the old base was used, the cost was \$2.025 per sq. yd.

31,509 linear feet of edgestones were set at an average cost of \$0.329 per linear ft.

21,372 sq. yds. sidewalk were relaid at an average cost of \$0.836 per sq. yd.

3,079 sq. yds. of flagging cross-walks were laid at an average cost of \$1.184 per sq. yd.

The specifications of one contract provided that the city

should furnish the gravel and remove the old materials. The quantities of work done under that contract have been included in the totals of work done in the above statements, but they have not been used in determining the average costs. Counts of paving-blocks used in small areas actually laid are found to be variable. The average of the largest areas where exact number of blocks used is obtainable is about 25 large and about 38 small blocks to the square yard. The cost of blocks, including culling and wharfage, is about five cents per small block, and seven and one-half cents per large block, making the cost for blocks per yard \$1.90 in each case. The small blocks came from Quincy, Mass., and were used for suburban streets; they were delivered on the work. The large blocks came mostly from Cape Ann, and were delivered on wharves.

The average cost of block paving on a gravel foundation was $\$1.15 \times \$1.90 = \$3.05$ per sq. yd.

The work was done under somewhat severe specifications, requiring the removal of 13 inches of old material, the grading and rolling the road-bed, and the furnishing of 6 inches of new gravel. The cost of supervision and inspection is not included in the above. Details of the work done are as follows:

A Street, South Boston, from Broadway to First street, was paved with granite blocks on a gravel foundation, by Collins & Ham. The old surface was of cobble paving. The old cobbles were hauled to the crusher at Broadway bridge, the surplus earth to L-street extension; the new paving-blocks were hauled from the New York & New England R.R. wharf, and the edgestones and flagging from the Albany-street paving yard.

First Street, from New York & New England R.R. to F street, was paved with granite blocks on a gravel foundation, by Collins & Ham. The old surface was generally of gravel, with concrete patches, and one block from E street to F street was paved with cobbles. The old cobbles were hauled to the Broadway-bridge crusher, the surplus earth to the L-street dump. The new granite blocks were hauled from the New York & New England R.R. wharf and from the Bay State wharf, the edgestones and the flagging from the South End yard; the edgestones were delivered to the contractor on the street.

Troy street, from Harrison avenue to Albany street, was paved with granite blocks on a gravel foundation, by James Grant & Co. The old surface was of macadam, and was very hard. The cobble-stones in the gutter were hauled to the Broadway-bridge crusher, the earth and macadam to

East Chester park, between Swett street and New York & New England R.R.; the new granite blocks, and all other new materials furnished by the city, were delivered from the Albany-street yard.

Longwood avenue, from Huntington avenue to Parker street, was paved with granite blocks on a gravel foundation, by James Doherty & Co. The old surface was of macadam; the surplus earth was hauled to Parker street, near Huntington avenue; the cobble-stones from the gutters to the Tremont-street crusher; the Quincy paving-blocks were delivered on the street, and all other materials furnished by the city were hauled from the Albany-street yard.

Austin street, Charlestown, from Main street to Rutherford avenue, was paved with granite blocks on a gravel foundation, by John Turner & Co. The old surface was of macadam. The surplus material was the property of the contractor, and the cobble gutter-stones were purchased by him from the city; the granite paving-blocks and the cross-walks were delivered to the contractor on the street, and the other materials came from the Charlestown paving yard, on Medford street.

A short section of the street in front of a church was paved with asphalt by the Barber Asphalt Paving Company.

Fulton street, from Richmond street to Lewis street, was paved with granite blocks on a gravel foundation, by B. F. Nay & Co. The old surface was paved with cobble-stones, which were hauled to the Broadway-bridge crusher; the surplus earth was disposed of by the contractor; the granite paving-blocks and all paving materials were delivered from the North End paving yard, on Commercial street.

Columbus avenue, from the railroad bridge to West Chester park, was nearly all resurfaced by the Barber Asphalt Paving Company. The concrete base where defective was patched, and if not found at proper grade was brought to grade, the new concrete furnished being paid for by the cubic yard. A portion of the street was patched by the company at its own expense, under a five-year guarantee given in 1887; a small portion of the old surface was patched. A plan has been prepared and filed with the contract showing the areas under guarantee, and the time of expiration of the same. The old material was wasted and used for filling on Parker street. The new work is to be kept in order by the company for five years under the contract.

Bedford street, from Chauncy to Columbia street, and *Kingston street*, from Summer to Bedford street, were

paved with granite blocks, with pitched joints on a Rosendale cement base, by H. Gore & Co.

The surface was paved, and a portion of the old blocks were used in the new work; the culls were hauled to Scotia street on the Back Bay; the surplus earth was hauled to Parker street; the new granite blocks were hauled from Wales wharf; and the other new material from the Albany-street yard.

Dudley street, from Washington street to Blue Hill avenue, was repaved by James Grant & Co. The old surface was partly of macadam and partly paved with granite block paving. The old blocks of suitable quality were used in repaving, and the culls were delivered to the Bird-street yard; the surplus filling was delivered on Marshfield and Shirley streets; the new Quincy granite blocks and the sidewalk bricks were delivered to the contractor on the street, and the other new material was hauled from the Albany-street yard.

Terrace street, from Tremont to New Heath street, was paved by A. A. Libby & Co. The old surface was of macadam, and the old material was used for surfacing several streets within a radius of one mile from Terrace street. The new Quincy blocks, the edgestones, and the sidewalk bricks were delivered on the street. The new flagging was hauled from the Albany-street yard. The joints of the paving opposite the school-house, next Tremont street, were pitched at an extra expense of seventy-three cents per square yard.

Second street, from B street to Granite street, and *Third street*, from A street to Second street, South Boston, were paved with granite blocks on a gravel foundation, by Collins & Ham. The old surface was cobble-stone paving, the old stones were hauled to the Broadway crusher, and the surplus excavation was hauled to the L-street extension. The new granite blocks were hauled from the New York & New England wharf, the sidewalk bricks were delivered on the street, and the flagging was hauled from the Albany-street yard.

Tremont street, from Scollay square to Boylston street, was paved with granite blocks on a Rosendale cement concrete base, by H. Gore & Co. The work was let in two sections, with Temple place as the point of division. The old granite blocks were delivered by the contractor on sundry streets, within one and a half miles' haul, and the surplus earth was the property of the contractor. The new granite blocks were hauled from Burnham's wharf, the paving-bricks were delivered on the street, and the flagging

in part was delivered from the Albany-street yard, and in part delivered on the street. The joints of the new paving were filled with hot screened pebbles and hot paving-pitch.

Second street, from Dorchester to E street, South Boston, was paved with granite blocks on a gravel foundation, by J. Doherty & Co. The old surface was of cobble paving. The old cobbles were delivered on Ninth street, opposite H street; the surplus excavation was delivered on the L-street extension. The new granite blocks were hauled from the Bay State wharf, the paving-bricks were delivered on the street, and the flagging hauled from the Albany-street yard.

Dorchester street, from Dorchester avenue to Ninth street, South Boston, was paved with granite blocks on a gravel foundation, by Collins & Ham. The old surface was partly paved with granite blocks and partly macadamized. The old granite blocks in good condition were used in the new work, and the culls and surplus earth were delivered by the contractor on sundry streets within half a mile, mostly on Washburn street; the old cobble gutter-stones were hauled to the Broadway crusher; the new paving-blocks were hauled from the Thompson & Baker coal wharf on Ninth street; the paving-bricks were delivered on the street, and the flagging was hauled from the Albany-street yard. The paving in front of the school-house was laid with pitched joints.

Beacon street, from Arlington street to Charles street, was paved from the street-railroad track to the northerly edge-stone with asphalt on a Portland cement concrete base, by the Barber Asphalt Paving Company. The gutters and toothing strip next the railroad track were paved with granite blocks, partly delivered from Burnham's wharf and partly delivered on the street; the surplus excavation was hauled to Scotia street. The remainder of the street between the same points was repaved with the old granite blocks, by J. Doherty & Co. This portion was the narrow strip under the trees, adjoining the Public Garden. The joints in the paving were filled with hot pebbles and pitch.

Tables showing the length of accepted streets in Boston, the area of roadway in each, and the area of each kind of paving or roadway construction, have been prepared for the use of the Street Department, and will be found on pp. 52, 53, and 54 of this report. These tables are an entirely new computation from the best obtainable original sources. The measurements have been principally made from careful surveys of the Surveying Department, and when information could not be obtained from original surveys, the streets have been measured. They have also been examined to determine the character of the paving, and as it is impossible to determine

at this season of the year whether a street is macadamized or simply gravelled, the tables have been checked by the district foreman and by the Deputy Superintendent of Streets. In giving lengths and areas, care has been taken to include intersections of streets but once, and the detail tables show the streets from which the intersections have been deducted. The general rule has been to include intersections as part of the principal street.

The engineering force has done considerable work of a miscellaneous character, and numerous estimates for new work have also been made.

A summary of the detailed tables, showing total lengths and areas of paving, is appended.

BERKELEY-STREET BRIDGE, OVER THE B. & A. R.R.

A contract was made with John Cavanagh & Co., dated October 9, 1891, for taking down the parapets and bridge seats of Berkeley-street bridge and rebuilding the same with granite masonry laid solid in cement mortar, of the dimensions required to receive the new bridge. This work is now complete, with the exception of one parapet stone which cannot be placed until the truss used for a temporary support of the telephone wires is removed.

The contract price for the work is \$2,290.

An agreement was made with the Boston Bridge Works, October 7, 1891, for removing the old bridge, for the sum of \$350. The work called for under this agreement has been completed, with the exception of the sidewalk truss carrying the telephone wires, which was moved sufficiently to allow the new bridge to be placed. As soon as the wires are in place on the bridge, this truss will be removed.

The new superstructure is a through plate girder bridge, consisting of six lines of plate girders, dividing the street into two roadways; two sidewalks and a centre walk is also used for two lines of water-pipes. The bridge is seventy-one feet long and seventy-eight feet six inches wide between centres of sidewalk girders. The four roadway girders have curved upper flanges five feet six inches deep at centres, and four feet six inches deep at ends. The two sidewalk girders are four feet six inches deep, with straight upper flanges, and are to have hand-rails on top. The floor-beams for the roadway are built beams, and for the walks are 9-inch steel I beams. The roadway and sidewalk stringers are of hard-pine, the roadway flooring-plank is of spruce, the under course being four inches thick and the upper course two inches thick. The sidewalk is planked with 2-inch hard-pine.

The contractor for the ironwork was the Boston Bridge Works, and the contract price was \$4,898.

The wooden flooring and the painting of the bridge have been done by the Bridge Division.

CHELSEA BRIDGE, NORTH, STEAM-POWER.

Machinery for moving both the north and south draws of Chelsea bridge by steam-power has been erected and is now ready for use. On the pier of the south draw, there is an engine-house 15×20 feet, in which is placed a double 6×12 inch engine and boiler. An endless chain passes around the turntable drum of the draw, and the power is transmitted from the engine by bevel gearing, a horizontal shaft, and sprocket wheel.

At the north draw an addition 26 × 32 feet has been made to the draw-pier on which the engine-house is placed. This draw is to be moved by means of wire ropes attached to the draw and to a 36-inch drum in the engine-house. A reversing-engine with two 6 × 12 inch cylinders will furnish the power.

At each draw a winch-head has been placed for working vessels through the draw by steam-power.

The machinery has been furnished and set up by Miller & Shaw, and the engine-houses and other woodwork was done by the Bridge Division.

CHELSEA BRIDGE, NORTH, FENDER-GUARD.

Plans and specifications for building a fender-guard 173 feet long at the north draw of Chelsea bridge have been made.

CORNWALL-STREET BRIDGE, OVER STONY-BROOK CHANNEL.

A plan and bill of material for a new bridge on Cornwall street were furnished, and the structure has been built by the Bridge Division.

The bridge has a single span, 32 feet long over all, and a total width of 40 feet, divided into a roadway of 26 feet and two sidewalks of 7 feet each. The span consists of 12 lines of trussed beams, each made of two 6 × 12 inch hard-pine sticks, trussed by a 1 $\frac{7}{8}$ -inch diameter rod. The roadway planking is of spruce, the under course being 4 inches thick and the upper, or sheathing course, being 2 inches thick. The sidewalk is planked with 3-inch planed hard-pine.

The end supports of the bridge are timber bulkheads, each having nine 10 inch \times 10 inch hard-pine posts, with a 6 inch \times 10 inch hard-pine sill, sunk about 9 feet into the ground, and capped with a 12 inch \times 12 inch hard-pine stick.

HILL-STREET RETAINING-WALL.

A contract was made with Donovan & Brock, Boston, dated October 6, 1891, for building a retaining-wall at the easterly end of Hill street, on the line of Sackville street.

The wall is of granite, laid solid in cement mortar, and rests on a concrete foundation. The wall is capped with a granite coping, and has on top a close board fence 5 feet high.

Total amount paid contractor, \$1,485.

IRVINGTON-STREET AND YARMOUTH-STREET RETAINING-WALLS.

These walls are located one on each side of the Providence Division of the Old Colony Railroad, at the ends of Irvington and Yarmouth streets, the streets being in line with each other.

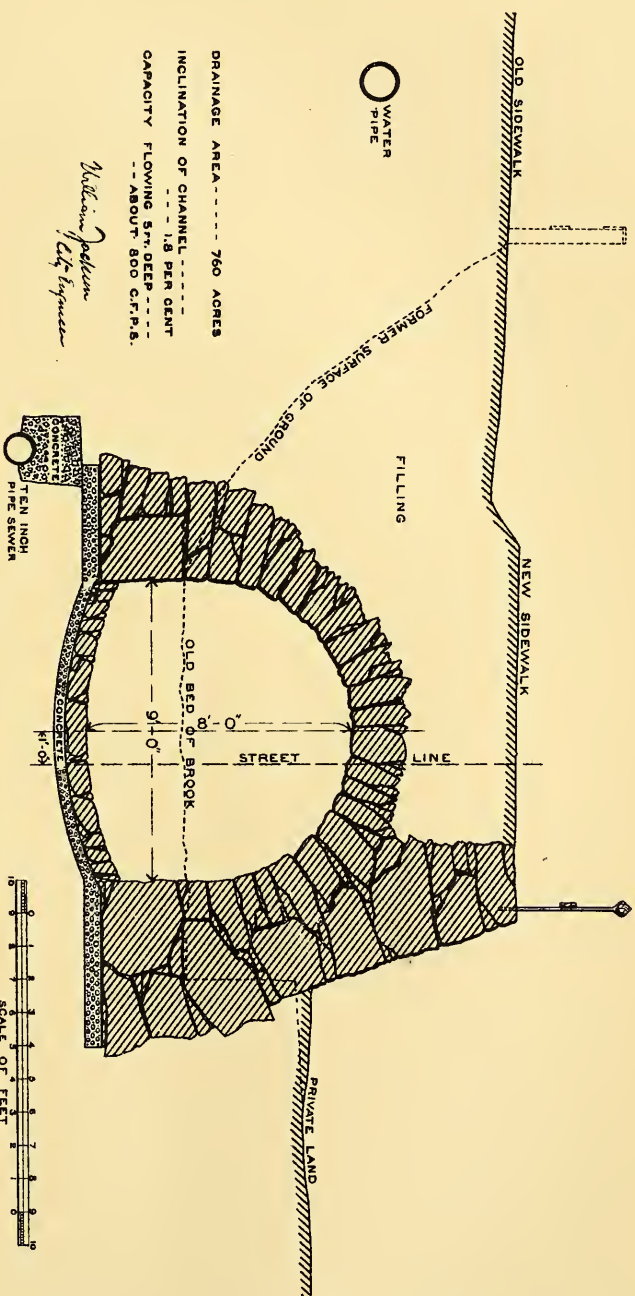
A contract was made with R. D. Shanahan, dated June 15, 1891, for building a retaining-wall at the end of Irvington street, and for adding buttresses to the retaining-wall at the end of Yarmouth street.

The wall is of granite laid solid in cement mortar, and rests upon a pile foundation with concrete cap. Granite buttresses were built at the back of the wall to afford a sufficient foundation for the piers of an iron foot-bridge. At the back of the wall on Yarmouth street, similar buttresses were built of concrete, with granite coping-stones.

The total cost of the work, including the repointing of the wall on Yarmouth street, was \$3,537.

IRVINGTON-STREET FOOT-BRIDGE, OVER PROVIDENCE DIVISION, OLD COLONY RAILROAD.

An iron foot-bridge has been built over the tracks of the Providence Division of the Old Colony Railroad, on the line of Irvington and Yarmouth streets. The bridge is a through bridge of the riveted bowstring type, resting upon wrought-iron piers. The tops of the piers are on a level with the floor of the bridge, and are reached by stairways from the sidewalks of each street. The stairways are of wrought iron with hard-pine treads. The bridge was built by the R. F. Hawkins Iron Works, of Springfield, Mass., under contract dated Sept. 16, 1891, at a total cost of \$1,773.



DRAINAGE AREA ----- 760 ACRES
 INCLINATION OF CHANNEL -----
 -- 1.8 PER CENT
 CAPACITY FLOWING 5 FT. DEEP -----
 -- ABOUT 800 C.F.P.S.

William J. Sullivan
City Engineer

STONY BROOK IMPROVEMENT CROSS SECTION OF NEW CHANNEL AND RETAINING WALL WASHINGTON STREET : ROSLINDALE

L-STREET ABUTMENT.

The contract for building the south abutment of L-street bridge was let to Perkins & White, of Boston, under date of Oct. 28, 1891, for \$5,925, and calls for the completion of the work on or before June 15, 1892. At this date the piles have been driven and capped for the foundation, and the larger portion of the ballast and riprap placed.

L-STREET BULKHEAD, SOUTH BOSTON.

Plans and specifications were made in 1890 for extending L-street bulkhead northerly from the bulkhead built in 1889; the length of bulkhead to be built being 727 feet, enclosing 328½ feet of street extension.

The contract for building the bulkhead was awarded to F. G. Whitcomb for \$7,200; the work was begun April 23 and completed July 27, 1891, at a total cost of \$7,210.

ROXBURY-CANAL SEA-WALL.

Plans and specifications were made for building a sea-wall on Roxbury canal and adjacent dock at the Paving wharf of the Street Department.

No work has yet been done on the wall.

STONY-BROOK IMPROVEMENT.

Roslindale Branches.

This improvement contemplates a channel sufficiently large to carry the rainfall from a tributary water-shed of about 1,000 acres, and will, when this improvement is completed, prevent the flooding in this vicinity during heavy rains; but until the channel has been farther extended up-stream about 300 feet, there will still be danger of occasional floods.

The work done during the past season embraced both the main branch of Stony brook at Roslindale and also a small brook flowing into it. The larger channel extends from a point on the old brook channel about 160 feet below Poplar street, through private land, and in Poplar and Washington streets, a distance of 665 feet. It is partly open and partly covered. The open portion below Poplar street is 12 feet wide, with side-walls of rubble masonry nowhere less than 6.8 feet high. It is laid on a grade of 1 foot in 100; the covered channel varies in size from 11 feet 6 inches wide \times 6 feet 6 inches high to 9 feet wide \times 8 feet 6 inches high. Both side-walls and the arch are of rubble masonry; the

inclinations are 1 foot in 100 feet and 1 foot in 56 feet; 22 feet of open channel, 9 feet wide, was built at the up-stream end; the bottom is paved throughout with stone or brick, and a concrete foundation extends under both walls and under the paved bottom. The smaller brook channel extends from Birch street through private lands, across Cohasset street, and again through private lands to its junction with the larger channel on the north-west side of Washington street; a total distance of 507 feet. This channel is a stone culvert 4 feet 6 inches high and 5 feet wide; it is laid on an inclination of 1 foot in 125 feet; the side-walls are of rubble with granite covering-stones; the paving is of stone; a concrete foundation extends under the side-walls and under the paved bottom.

Bids for the construction of the work were received July 20, and the contract was awarded to H. P. Nawn, the lowest bidder.

In connection with the brook channels, and during their construction, 340 feet of pipe sewer was built, with the necessary branches, manholes, etc. This sewer was necessary in order to afford drainage to houses on the westerly side of Washington street, which were cut off from the common sewer in that street by the low grade of the new channel; this work was done to much better advantage during the construction of the brook channel than would have been possible after the completion of the work. The sewer is of 10-inch Akron pipe, surrounded by concrete; it is located for a distance of 185 feet immediately outside of the walls of the brook channel, and for the remaining 155 feet, until it enters the common sewer on Washington street, is laid under the new channel, immediately beneath the concrete foundation.

BENNINGTON-STREET CULVERT.

Plans and estimates were made for a wooden culvert across Bennington street, between Saratoga street and Wadsworth street.

Respectfully submitted,

WILLIAM JACKSON,
City Engineer.

APPENDIX G.

FORMER SUPERINTENDENTS AND DOCUMENT
NUMBERS OF ANNUAL REPORTS.**Bridge Department before 1891.***Previous to 1886 under Charge of City Engineer.*

NAME.	Year.
Bartholomew M. Young	1886 to 1889
James H. Nugent	1889 to 1891

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual Report.....	1886	1887	29
“ “	1887	1888	26
“ “	1888	1889	29
“ “	1889	1890	22
“ “	1890	1891	*

* Published in Annual Report, Executive Department, Vol. 1.

Paving Department before 1891.

NAME.	Year.
Enoch Patterson, Supt. Streets and Drains	1827 to 1831
Zephaniah Sampson, “ “ “ “	1831 to 1846
Thomas Hunting, Superintendent	1846 to 1853
Alfred T. Turner, “	1853 to 1864
Charles Harris, “	1864 to 1883
Nehemiah T. Merritt, “	1883
James J. Flynn, “	1883
Charles Harris, “	1884
Michael Meehan, “	1884 to 1886
John W. McDonald, “	1886 to 1889
J. Edwin Jones, “	1889 to 1891

Paving Department before 1891.

NAME OF DOCUMENT.		For Year.	Pub. Year.	No. of Doc.
Quarterly Report	.....		1851	6
“ “	.....		1851	29
Annual Report	.....	1851	1852	2
“ “	.....	1852	1853	6
“ “	.....	1853	1854	6
“ “	.....	1854	1855	5
“ “	.....	1855	1856	3
“ “	.....	1856	1857	3
“ “	.....	1857	1858	3
“ “	.....	1858	1859	5
“ “	.....	1859	1860	6
“ “	.....	1860	1861	5
“ “	.....	1861	1862	4
“ “	.....	1862	1863	3
“ “	.....	1863	1864	3
“ “	.....	1864	1865	70
“ “	.....	1865	1866	3
“ “	.....	1866	1867	6
“ “	.....	1867	1868	9
“ “	.....	1868	1869	14
“ “	.....	1869	1870	13
“ “	.....	1870	1871	12
“ “	.....	1871	1872	16
“ “	.....	1872	1873	21
“ “	.....	1873	1874	25
“ “	.....	1874	1875	27
“ “	.....	1875	1876	30
“ “	.....	1876	1877	38
“ “	.....	1877	1878	29
“ “	.....	1878	1879	24
“ “	.....	1879	1880	24
“ “	.....	1880	1881	48
“ “	.....	1881	1882	51
“ “	.....	1882	1883	47
“ “	.....	1883	1884	46
“ “	.....	1884	1885	97
“ “	.....	1885	1886	30
“ “	.....	1886	1887	16
“ “	.....	1887	1888	23
“ “	.....	1888	1889	30
“ “	.....	1889	1890	19
“ “	.....	1890	1891	*

* Published in Annual Report, Executive Department, Vol. 1.

Sewer Department before 1891.

NAME.	Year.
Enoch Patterson, Superintendent.....	1827 to 1831
Zephaniah Sampson, ".....	1831 to 1837
Charles B. Wells, ".....	1837 to 1856
Simeon B. Smith, ".....	1856 to 1863
William H. Bradley, ".....	1863 to 1883
Horace H. Moses, ".....	1883 to 1885
Thomas J. Young, ".....	1885 to 1887
Seth Perkins, ".....	1887 to 1889
Charles Morton, ".....	1889 to 1891

Sewer Department before 1891.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual Report	1859	1860	11
" "	1860	1861	12
" "	1861	1862	12
" "	1862	1863	13
" "	1863	1864	11
" "	1864	1865	5
" "	1865	1866	6
" "	1866	1867	8
" "	1867	1868	13
" "	1868	1869	11
" "	1869	1870	3
" "	1870	1871	11
" "	1871	1872	10
" "	1872	1873	13
" "	1873	1874	12
" "	1874	1875	17
" "	1875	1876	11
" "	1876	1877	13
" "	1877	1878	15
" "	1878	1879	11
" "	1879	1880	16
" "	1880	1881	19
" "	1881	1882	18
" "	1882	1883	16
" "	1883	1884	} 43
" "	1884	1885	
" "	1885	1886	
" "	1886	1887	58
" "	1887	1888	69
" "	1888	1889	81
" "	1889	1890	129
" "	1890	1891	14
			*

* Published in Annual Report, Executive Department, Vol. 1.

Health Department before 1891.*Sanitary.*

NAME.	Year.
Ezra Forristall, Superintendent.....	1853 to 1854
Joseph W. Coburn, ".....	1854 to 1855
Ezra Forristall, ".....	1855 to 1869
George W. Forristall, ".....	1869 to 1890

Health Department before 1891.*Sanitary.*

NAME OF DOCUMENT.	Year.	Pub. Year.	No. of Doc.
Annual Report.....	1853	1854	7
" ".....	1854	1855	6
" ".....	1855	1856	4
" ".....	1856	1857	4
" ".....	1857	1858	4
" ".....	1858	1859	4
" ".....	1859	1860	5
" ".....	1860	1861	6
" ".....	1861	1862	5
" ".....	1862	1863	5
" ".....	1863	1864	4
" ".....	1864	1865	4
" ".....	1865	1866	8
" ".....	1866	1867	7
" ".....	1867	1868	8
" ".....	1868	1869	12
" ".....	1869	1870	4
" ".....	1870	1871	10
" ".....	1871	1872	17
" ".....	1872	1873	40
Annual report from 1873 to 1884 inclusive; the Superintendent's report was embodied in the report of the Board of Health.....	1885	1886	45
Annual Report.....	1886	1887	22
" ".....	1887	1888	16
" ".....	1888	1889	23
" ".....	1889	1890	21
" ".....	1890	1891	*

* Published in Vol. 1, Executive Report, 1891.

Commissioners of Cambridge Bridges before 1891.
(West Boston, Canal, and Prison-Point.)

NAME.	Year.
Frederic W. Lincoln, Commissioner for Boston.....	{ May 22, 1871, to March, 1891.
Ezra Parmenter, Commissioner for Cambridge... ..	{ June 14, 1871, to Jan. 31, 1883.
William J. Marvin, Commissioner for Cambridge....	{ March 28, 1883, to present time.

Commissioners of Cambridge Bridges before 1891.
(West Boston, Canal, and Prison-Point.)

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual Report.....	1871	1872	19
“ “	1872	1873	12
“ “	1873	1874	16
“ “	1874	1875	23
“ “	1875	1876	20
“ “	1876	1877	12
“ “	1877	1878	10
“ “	1878	1879	8
“ “	1879	1880	12
“ “	1880	1881	8
“ “	1881	1882	15
“ “	1882	1883	15
“ “	1883	1884	19
“ “	1884	1885	8
“ “	1885	1886	12
“ “	1886	1887	19
“ “	1887	1888	25
“ “	1888	1889	22
“ “	1889	1890	20
“ “	1890	1891	*

* Published in Vol. 1, Executive Report, 1891.

