

FIRE-HYDRANTS.—Continued.

STREETS.	LOCATIONS.	Service.	Number.
South Main....	Southwest corner of South State.....	H	
	Northwest corner of Pillsbury.....	L	
	East side, opposite Pillsbury.....	L	
	West side, opposite entrance to R. R. shops..	H	
	West side, at Lamprey's.....	L	
Water.....	West side, below Wiggin.....	L	20
	West side, below Bridge.....	L	1
Hall.....	West side, opp. Rolfe and Rumford Asylum.	L	
	West side, near E. W. Robinson's.....	L	
	West side, near W. A. Phillips'.....	L	
	West side, opposite Hammond.....	L	
	West side, opposite Home Avenue.....	L	
	East side, opposite Roy's.....	L	
	East side, near Rumford Field.....	L	
Hammond.....	North side, near Bridge.....	L	7
Railroad.....	East side, opposite Ford & Kimball's.....	L	1
Fiske.....	West side, near North State.....	H	1
Summer.....	Northeast corner of Pitman.....	L	1
Durgin.....	East side, opposite Toof's laundry.....	L	1
North State...	Southwest corner of Penacook.....	H	
	Northwest corner of Walker.....	H	
	Northwest corner of Church.....	L	
	Northeast corner of Franklin.....	L	
	Northwest corner of Tremont.....	L	
	Northeast corner of Washington.....	L	
	West side, opposite Court.....	L	
	Southwest corner of Maple.....	L	
	Southeast corner of Centre.....	L	
	Southeast corner of Park.....	L	
	Southwest corner of School.....	L	
	Southeast corner of Warren.....	L	
	Northwest corner of Warren.....	H	
	Northwest corner of Pleasant.....	L	
South State...	Southeast corner of Pleasant.....	H	14
	East side, opposite Wall.....	L	
	Southeast corner of Fayette.....	L	
	Northwest corner of Thompson.....	L	
	Southwest corner of Monroe.....	L	
	East side, opposite Laurel.....	L	
	Northeast corner of Downing.....	L	
	Northeast corner of West.....	L	
Mills.....	Southwest corner of Harrison.....	L	9
	West side, near Levi Call's.....	L	
Dakin.....	Northwest corner of Allison.....	L	2
	West side, near C. E. Harriman's.....	L	1
Dunklee.....	West side, 150 feet south of West.....	L	

FIRE-HYDRANTS.—*Continued.*

STREETS.	LOCATIONS.	Service.	Number.
Dunklee.....	Northwest corner of Allison.....	L	
	Northwest corner of Pillsbury.....	L	3
Broadway.....	West side, at H. H. Metcalf's.....	L	
	Northwest corner of Allison.....	L	
	Northwest corner of Carter.....	L	
	Northwest corner of Stone.....	L	
	West side, at Rollins Park.....	L	
	West side, opposite McKinley.....	L	
	West side, between McKinley and Rockingham	L	7
Donovan.....	Northeast corner of Wiggin.....	L	1
Green.....	Northwest corner of Prince.....	H	
	East side, opposite Prince.....	L	
	Northwest corner of Warren.....	L	3
South.....	West side, opposite Wall.....	L	
	Northwest corner of Fayette.....	L	
	Northwest corner of Thompson.....	L	
	West side, opposite Monroe.....	L	
	West side, opposite Laurel.....	L	
	West side, below N. H. Memorial Hospital..	L	
	West side, opposite Downing.....	L	
	West side, opposite Allison.....	L	
	West side, opposite Pillsbury.....	L	
	West side, near Paige's.....	L	
	West side, opposite I. W. Bushey's.....	L	
	Northwest corner of Iron Works Road.....	L	
	East side, at Quint's.....	L	
	West side, near Bow line.....	L	14
Bradley.....	Southwest corner of Penacook.....	H	
	Northwest corner of Walker.....	L	
	East side, opposite Highland.....	L	
	Northwest corner of Franklin.....	L	4
Union.....	Northwest corner of Maple.....	L	1
Jackson.....	Northeast corner of Church.....	H	1
Lyndon.....	Southwest corner of Tremont.....	H	
	East side, opposite Abbott.....	H	2
North Spring..	Northeast corner of Maple.....	L	
	Southwest corner of Centre.....	H	
	West side, at High School.....	H	
	East side, opposite High School.....	L	
	Southwest corner of School.....	H	5
South Spring..	Southwest corner of Oak.....	L	
	West side, opposite Thompson.....	L	
	West side, opposite Concord.....	L	
	West side, near Memorial Hospital.....	L	4
Academy.....	East side, at F. E. Hook's.....	H	1

FIRE-HYDRANTS.—Continued.

STREETS.	LOCATIONS.	Service.	Number.
Hanover.....	West side, at No. 10.....	L	1
Rumford.....	West side, south of cemetery gate.....	H	
	West side, opposite Perkins.....	L	
	Northeast corner of Albin.....	L	
	Northeast corner of Franklin.....	L	
	Northwest corner of Beacon.....	H	
	Northeast corner of Abbott.....	L	
	Northeast corner of Cambridge.....	L	
	Northwest corner of Centre.....	H	
	Northeast corner of School.....	L	9
Huntington....	West side, at head of Short.....	H	1
Tahanto.....	Northwest corner of School.....	H	1
Pine.....	Southwest corner of Centre.....	H	
	Southwest corner of Warren.....	H	2
Holt.....	East side, at Nason's.....	H	1
High.....	Northwest corner of Auburn.....	H	
	Northwest corner of Valley.....	H	
	East side, opposite Forest.....	H	
	Southwest corner of Franklin.....	H	4
Valley.....	Northeast corner of Forest.....	H	1
Auburn.....	Northeast corner of Chestnut.....	H	
	Northeast corner of Forest.....	H	
	North side, between Centre and Forest....	H	3
Ridge Road....	West side, opposite Mrs. Jackman's.....	H	1
Westbourne Rd.	North side, north of Mrs. F. P. Hallett's...	H	1
Dartmouth.....	Southwest corner of Clinton.....	L	1
Princeton.....	Southwest corner of Clinton.....	L	
	Northwest corner of Noyes.....	L	2
Fruit.....	Northeast corner of Woodman.....	H	
	West side, near V. A. Dearborn's.....	L	
	East side, opposite W. W. Critchett's.....	L	
	East side, opposite Kilburn's.....	L	4
Minot.....	West side, north of Odd Fellows' Home....	H	
	West side, south of Odd Fellows' Home....	H	
	Northwest corner of Pleasant.....	H	3
Kensington Rd.	Northwest corner of Pleasant.....	H	1
Stevens Ave...	Northeast corner of Pleasant.....	H	1
Penacook.....	South side, near Concord Lumber Co.....	H	
	South side, east of P. B. Co.'s storehouse...	L	
	South side, near P. B. Co.'s.....	H	
	South side, near P. B. Co.'s office.....	H	
	Southeast corner of North Main.....	H	
	Southwest corner of Rumford.....	H	
	North side, opposite T. Hannigan's.....	H	
	Southeast corner of Columbus Avenue.....	H	8
Walker.....	Southwest corner of Martin.....	L	
	South side, 500 feet west from Rumford...	L	2
Albin.....	North side, near D. Weathers'.....	L	1

FIRE-HYDRANTS.—*Continued.*

STREETS.	LOCATIONS.	Service.	Number.
Highland.....	North side, between Bradley and Rumford..	L	2
	Northeast corner of Rumford.....	L	
Church.....	South side, east of Bradley.....	L	3
	North side, opposite Lyndon.....	H	
Franklin.....	Northeast corner of Rumford.....	H	6
	Northwest corner of Jackson.....	H	
	Northeast corner of Lyndon.....	H	
	Southwest corner of Rumford.....	H	
Chestnut.....	South side, opposite W. J. Ahern's.....	H	1
	North side, between High and Auburn.....	H	
Tremont.....	Northeast corner of Auburn.....	H	2
	Northwest corner of High.....	H	
Pearl.....	North side, east of Harrod.....	L	1
	Southwest corner of Jackson.....	H	
Beacon.....	North side, at Kimball Flanders'.....	L	5
	North side, opposite Merrimack School.....	H	
	Northwest corner of Jackson.....	H	
	Southwest corner of Lyndon.....	H	
Rowell.....	North side, opposite White.....	H	1
	South side, opposite Charles.....	H	
Blanchard.....	Northeast corner of White.....	H	1
	Northwest corner of Essex.....	H	
Ferry.....	North side, opposite Ford's foundry.....	H	4
	North side, near N. E. Granite Works.....	H	
	North side, east of C. & M. R. R.....	L	
	Northwest corner of Huntoon Avenue.....	H	
Washington....	North side, opposite Rollins.....	L	6
	Southwest corner of Union.....	L	
	Northeast corner of Lyndon.....	H	
	Northwest corner of Rumford.....	H	
Chapel.....	Northwest corner of North Essex.....	H	1
	North side, opposite Perry Avenue.....	H	
Montgomery...	South side, near Methodist Church.....	L	1
	South side, opposite Minot's.....	L	
Centre.....	Northeast corner of North State.....	H	8
	Southwest corner of Green.....	L	
	Northwest corner of Union.....	H	
	Northwest corner of North Spring.....	L	
Bridge.....	South side, opposite Essex.....	H	3
	Southwest corner of Summit Avenue.....	H	
	South side, on east line of Dewey School lot	H	
	Northeast corner of Ridge Road.....	H	
Park.....	South side, near easterly barn.....	L	1
	North side, opposite Concord Coal Co.'s....	H	
Park.....	North side, opposite Concord Shoe Factory.	H	3
	North side, at St. Paul's Church.....	L	

FIRE-HYDRANTS.—Continued.

STREETS.	LOCATIONS.	Service.	Number.
Capitol.....	North side, at south gate of State House yard	H	2
	Northeast corner of North State.....	H	
Garden.....	Northeast corner of Huntington.....	H	1
School.....	South side, west of Durgin.....	H	
Warren.....	Northwest corner of North State.....	H	11
	Northeast corner of Green.....	H	
	Northwest corner of Green.....	L	
	Northwest corner of North Spring.....	L	
	Northwest corner of Rumford.....	L	
	Northwest corner of Merrimack.....	H	
	Northwest corner of Pine.....	H	
	Northeast corner of Liberty.....	H	
	North side, opposite E. B. Woodworth's....	H	
	Southeast corner of Giles.....	H	
	Southeast corner of Odd Fellows Avenue....	H	
	Southeast corner of Fremont.....	L	
	Northwest corner of North Spring.....	L	
	Northwest corner of Rumford.....	H	
Depot.....	Southwest corner of Merrimack.....	H	9
	Northwest corner of Tahanto.....	H	
Blake.....	Northeast corner of Liberty.....	H	2
	Northeast corner of Giles.....	H	
Orchard.....	Junction of Pleasant, near Fruit.....	H	1
	South side, at north end of train shed.....	H	
Pleasant.....	Northwest corner of Railroad Square.....	L	1
	South side, at H. B. Boutwell's.....	L	
Pleasant.....	South side, opposite Sherburne's.....	H	11
	Southwest corner of Railroad Square.....	H	
	Northwest corner of Railroad Square.....	L	
	South side, at South Congregational Church.	L	
	Southeast corner of South.....	L	
	Northeast corner of Fremont.....	L	
	Southwest corner of Spring.....	H	
	South side, opposite Rumford.....	H	
	South side, opposite Merrimack.....	H	
	South side, opposite Pine.....	H	
	South side, opposite Liberty.....	H	
	North side, near city stable.....	H	
	South side, near Gale.....	H	
	South side, opposite Mrs. Aiken's.....	H	
	South side, near Mrs. Eddy's cottage.....	H	
	South side, at Lavery's.....	H	
	South side, opposite No. 270.....	H	
	North side, near James Lane's.....	H	
	North side, opposite No. 291.....	H	

FIRE-HYDRANTS.—*Continued.*

STREETS.	LOCATIONS.	Service.	Number.
Pleasant.....	North side, near J. McC. Hammond's.....	H	
	South side, opposite Fiske Road.....	H	
	Southwest corner of School Avenue.....	H	
	North side, at chapel.....	H	
	South side, opposite Lower School.....	H	
	South side, near new Upper School.....	H	24
Fiske Road....	East side, at Trask's.....	H	1
Hopkinton Rd..	South side, near new infirmary.....	H	1
Mill Road,			
St. P. School...	East side, near laboratory.....	H	
	North side, at Orphans' Home.....	H	
	South side, at tenement No. 7.....	H	3
Old Hopkinton			
Road.....	Junction of Hopkinton road.....	H	1
Wall.....	Northeast corner of Elm.....	L	1
Marshall.....	North side, opposite Fuller.....	L	1
Freight.....	No. side, at southwest corner pass. station..	H	1
Hill's Avenue..	Southwest corner of Railroad Square.....	L	
	Northeast corner of South Main.....	L	2
Fayette.....	Northwest corner of Elm.....	L	1
Thompson.....	North side, opposite Jefferson.....	L	1
Chandler.....	South side, opposite Railroad.....	L	1
Concord.....	Southwest corner of South State.....	L	
	Northwest corner of Jefferson.....	L	
	Northeast corner of South.....	L	3
Monroe.....	North side, opposite Grove.....	L	
	South side, at Rumford School.....	L	2
Thorndike....	North side, between So. Main and So. State	L	
	Southwest corner of South State.....	L	
	Northeast corner of Grove.....	L	
	North side, opposite Pierce.....	L	
	Northeast corner of South Spring.....	L	5
Laurel.....	Northwest corner of Grove.....	L	
	Northwest corner of Pierce.....	L	2
Perley.....	Southwest corner of South State.....	L	
	Northwest corner of Grove.....	L	
	Northeast corner of Pierce.....	L	
	South side, near old brook.....	L	4
Downing.....	South side, opposite Grove.....	L	
	Southeast corner of Mills.....	L	
	Southwest corner of Redwood Avenue.....	L	3
Clinton.....	North side, opposite Harvard.....	L	
	North side, opposite Avon.....	L	
	Northeast corner of Fruit.....	L	
	North side, near Snell's.....	L	
	North side, at State Fair grounds.....	L	5

FIRE-HYDRANTS.—Continued.

STREETS.	LOCATIONS.	Service.	Number.
West.....	North side, near South Main.....	L	
	North side, near Badger.....	L	
	Northeast corner of Mills.....	L	
	North side, opposite Dakin.....	L	
	Northwest corner of Broadway.....	L	5
Avon.....	Northwest corner of South.....	L	1
Harrison.....	Northwest corner of Morton.....	L	1
Humphrey.....	North side, near Kimball.....	L	1
Allison.....	Northeast corner of Badger.....	L	1
Pillsbury.....	North side, opposite Foster Ward.....	L	
	Northeast corner of Broadway.....	L	
	Northwest corner of Kimball.....	L	3
Carter.....	Northeast corner of Eastman.....	L	1
Stone.....	North side, 300 feet from Bow.....	L	1
Holly.....	North side, west of South Main.....	L	1
McKinley.....	North side, at Dunklee St. proposed exten'n.	L	1
Rockingham.....	Northeast corner of Broadway.....	L	
	North side, at Donovan.....	L	2
Iron Works Rd.	South side, at Brown's.....	L	1
Prospect.....	Northwest corner of Granite Avenue.....	L	
	East side, north of Granite Avenue.....	L	2
Curtice Ave...	North side, near John C. Kenney's.....	L	1
North State...	West side, at Water-Works storehouse.....	L	
	Northeast corner of Foster.....	L	
	East side, at Tahanto School.....	L	
	Northeast corner of Curtice Avenue.....	L	
	East side, near north entrance Blossom Hill Cemetery.....	H	
	West side, near Calvary Cemetery.....	L	
	East side, near W. H. Perry's.....	L	
	East side, near Oliver Racine's.....	H	
	East side, near A. L. Colburn's.....	L	
	East side, near Thomas Fox's house.....	H	
	West side, at south line of prison wall.....	L	
	West side, at north line of prison wall.....	L	
	East side, near Asa L. Gay's.....	L	
	Northwest corner of Palm.....	H	
	West side, near Concord Woodworking Co...	L	
	East side, near C. H. Farnum's.....	L	
	East side, near Cyrus R. Farnum's.....	H	
	East side, near John True's.....	L	
	East side, opposite Dolan.....	L	
	East side, opposite John H. Flood's.....	H	
West side, opposite S. Abbott's.....	L	21	
Palm.....	North side, west of Fairbanks.....	H	1

FIRE-HYDRANTS.—Continued.

STREETS.	LOCATIONS.	Service.	Number.
WEST CONCORD.			
North State...	Southeast corner of K.....	H	
	Northeast corner of Peabody.....	L	
	East side, at George Partridge's.....	H	
	East side, near engine house.....	H	
	East side, opposite Hodgson's.....	H	
	West side, near Crescent Mfg. Co.....	H	
	East side, opposite Simeon Partridge's....	H	
	East side, near Mr. Harrington's.....	H	
	East side, opposite A. Hollis'.....	H	
	East side, near Sewall's Falls Road.....	H	10
Fisher.....	Southwest corner of Engel.....	L	1
View.....	Northeast corner of K.....	L	1
Electric.....	Northeast corner of North State.....	L	
	North side, near power station.....	L	2
Clarke.....	Northeast corner of Fisher.....	L	1
Lake.....	East side, near S. W. Kellom's.....	L	
	West side, near H. C. Holden's.....	H	
	West side, near Wilson's.....	H	
	East side, near H. C. Holden's.....	L	
	South side, near Quaker.....	H	5
Knight.....	South side, opposite railroad station.....	H	1
Hutchins.....	North side, near B. T. Putney's.....	H	
	North side, near C. & C. Railroad.....	H	
	North side, at Turcotte's.....	H	3
Second.....	North side, near A. H. Knight's.....	H	1
Sewall's Falls Road.....	East side, at north line of cemetery.....	H	1
Penacook Rd...	West side, opposite Frost's.....	H	
	West side, opposite Blanchard's.....	H	
	West side, near Warner Road.....	H	3
PENACOOK.			
South Main....	West side, at Harriman's.....	H	
	West side, at Annis's.....	H	
	West side, at Garvin's.....	H	
	West side, south of Willow Hollow.....	H	
	West side, north of Willow Hollow.....	H	
	West side, at south end of Woodlawn Cem'y	H	
	West side, at north end of Woodlawn Cem'y	H	
	West side, opposite Stark.....	H	
	West side, near Hoyt's garage.....	H	
	West side, near Prescott's.....	H	
	Southwest corner of Union.....	H	
	Washington Square, opp. Exchange Block..	H	

FIRE-HYDRANTS.—Continued.

STREETS.	LOCATIONS.	Service.	Number.
South Main....	Northwest corner of Charles.....	H	15
	North side, opposite East Canal.....	H	
West Main....	North side, near iron bridge.....	H	2
	West side, opposite cemetery.....	H	
High.....	West side, at Pine.....	H	4
	Northwest corner of Stark.....	H	
	East side, opposite Summit.....	H	
Washington....	Northwest corner of Maple.....	H	6
	Northwest corner of Spring.....	H	
	South side, near South Main.....	H	
	Southeast corner of Union.....	H	
Fowler.....	South side, opposite John Whitaker's.....	H	2
	South side, opposite Charles.....	H	
	South side, near Contoocook bridge.....	H	
Electric Ave....	North side, at Rolfe's sawmill.....	H	1
	West side, at Charles Holmes'.....	H	
Elliott.....	East side, near Elliott's.....	H	1
Charles.....	South side, junction of Washington.....	H	1
	Northeast corner of Electric Avenue.....	H	
West Canal....	Southwest corner of Warren.....	H	2
	North side, near George W. Corey's.....	H	
East Canal....	Southeast corner of Warren.....	H	1
	North side, near Contoocook Mfg. Co.....	H	
Crescent.....	North side, near Crescent.....	H	2
	West side, north of Canal.....	H	
Walnut.....	West side, north of Canal.....	H	1
Merrimack....	North side, at Bye.....	H	1
	South side, opposite Merrimack Avenue.....	H	
	North side, opposite D. W. Fox's.....	H	
	North side, opposite Cross.....	H	
	South side, opposite Bye.....	H	
	South side, opposite Rolfe's shop.....	H	
	South side, opposite Symonds' factory.....	H	
Summer.....	North side, near road to Island.....	H	8
	Northwest corner of Penacook.....	H	
	North side, opposite High.....	H	
Spring.....	Northeast corner of Centre.....	H	3
	North side, opposite Church.....	H	
Maple.....	Northeast corner of Church.....	H	1
Winter.....	Northeast corner of Pleasant.....	H	1
Centre.....	North side, near Pleasant.....	H	1
	Northwest corner of Spring.....	H	
Cross.....	West side, at Corbett's.....	H	2
	Southwest corner of Summer.....	H	

FIRE HYDRANTS.—*Concluded.*

STREETS.	LOCATIONS.	Service.	Number.
Rolfe.....	North side, near James Corbett's.....	H	
	Northwest corner of Penacook.....	H	2
Penacook.....	West side, opposite A. W. Rolfe's.....	H	
	West side, at E. L. Davis'.....	H	
	East side, at McGirr's.....	H	3
	Whole number public hydrants.....		448
	PRIVATE HYDRANTS.		
	Abbot & Downing Co.....	H	6
	Boston & Maine Railroad, upper yard.....	L	4
	Boston & Maine Railroad, shops.....	H	15
	Boston & Maine Railroad, power house, West Concord	H	1
	Brampton Woolen Co.....	H	3
	Concord Gas Light Co.....	L	1
	Concord Shoe Factory.....	H	1
	Concord Worsted Mills.....	H	2
	Wm. B. Durgin Co.....	H	1
	Ford Foundry Co.....	L	1
	N. E. Box Co.....	H	3
	N. H. Spinning Mill.....	H	6
	N. H. State Hospital.....	H	12
	N. H. State Prison.....	H	4
	N. H. State Prison.....	L	2
	Page Belting Co.....	H	9
	Page Belting Co.....	L	1
	St. Paul's School.....	H	14
	Water-works pumping station.....	H	1
	Whole number private hydrants.....		87

E.**SUMMARY OF STATISTICS.**

FOR THE YEAR ENDING DECEMBER 31, 1915.

In form recommended by the New England Water-Works Association.

CONCORD WATER-WORKS.

CITY OF CONCORD, COUNTY OF MERRIMACK, STATE OF NEW HAMPSHIRE.

GENERAL STATISTICS.

Population by census of 1910—21,497.

Date of construction—1872.

By whom owned—City of Concord.

Source of supply—Penacook Lake.

Mode of supply—Gravity, also pumping to reservoir for high service and fire protection.

PUMPING STATISTICS.

1. Builders of pumping machinery—Henry R. Worthington, Harrison, N. J.
2. Description of fuel used—*a.* Kind—bituminous.
b. Brand of coal—New River.
c. Average price of coal per gross ton delivered, \$4.94.
d. Percentage ash, 10.2%.
3. Coal consumed for year—217.39 tons.

4. (Pounds of wood consumed) $\div 3$ = equivalent amount of coal—35,311 lbs.
5. Total equivalent coal consumed for the year for pumping purposes—233.67 tons.
6. Total pumpage for the year without allowance for slip—269,529,115 gallons.
7. Average static head against which pump works—103.84 feet.
8. Average dynamic head against which pump works—105 feet.
9. Number of gallons pumped per pound of equivalent coal—515.
10. Duty =
$$\frac{269,529,115 \text{ gallons pumped,} \times 8.34 \text{ (lbs.)} \times 100 \times \text{dynamic head, } 105}{\text{Total fuel consumed, } 523,326 \text{ pounds.}} = 45,098,500$$
- Cost of pumping figured on pumping station expenses—\$3,779.09.
11. Per million gallons pumped—\$14.02.
12. Per million gallons raised one foot (dynamic)—\$0.13.

STATISTICS RELATING TO DISTRIBUTION SYSTEM.

MAINS.

1. Kind of pipe—cast iron and cement-lined.
2. Sizes—from two-inch to twenty-four-inch.
3. Extended—1,033 feet during year.
4. Renewed—1,937 feet during year.
5. Discontinued—1,937 feet during year.
6. Total now in use—70.70 miles.
7. Number of leaks per mile for year—
8. Length of pipes two inches and less diameter—3.14 miles.
9. Number of hydrants added during year—public, 6; private, 1.

10. Number of hydrants now in use—public, 448; private, 87.
11. Number of stop gates added during year—11.
12. Number of stop gates now in use—1,039.
13. Number of stop gates smaller than four-inch—
14. Number of blow-off gates—81.
15. Range of pressure on mains at center of city—88 pounds high service and 48 pounds low service.

SERVICES.

16. Kind of pipe—cement-lined.
17. Sizes—three-fourths-inch to ten-inch.
18. Extended—1,897 feet.
19. Discontinued—240 feet.
20. Total now in use—91,236 feet.
21. Number of service taps added during year—28.
22. Number now in use—3,858.
23. Average length of service—23.64 feet.
24. Average cost of service for the year—
25. Number of meters added during year—72.
26. Number now in use—2,459.
27. Percentage of services metered—63.7.
28. Percentage of receipts from metered water—82.33.
29. Number of elevators added—none.
30. Number now in use—10.
31. Number of standpipes for street watering—44.

RULES AND REGULATIONS

OF THE STATE BOARD OF HEALTH AND THE BOARD OF WATER COMMISSIONERS OF THE CITY OF CONCORD FOR THE SANITARY PROTECTION OF THE WATERS OF LONG POND, SOMETIMES CALLED PENACOOK LAKE, AND FORGE POND, USED BY THE CITY OF CONCORD AS SOURCES OF WATER SUPPLY.

Adopted by the State Board of Health, September 14, 1915, and by the Board of Water Commissioners, February 3, 1916.

THE STATE OF NEW HAMPSHIRE.

WHEREAS, A legal petition having been presented to the State Board of Health, asking for the establishment of regulations to protect the purity of the water of Penacook Lake, under the provisions of chapter 57, Laws of 1899, entitled "An Act for the better protection of public water supplies," the following regulations are promulgated:

REGULATIONS OF THE STATE BOARD OF HEALTH FOR THE PROTECTION OF THE PURITY OF THE WATER OF PENACOOK LAKE.

1. No cesspool, privy, or other place for the reception, deposit or storage of human excrement, and no urinal or water-closet not discharging into a sewer, and no pig-pen, stable, or other building or structure in which horses, cattle, swine, or other animals, or fowls are kept, shall be built, continued, or maintained within two hundred feet of high water mark of Penacook Lake, meaning to include that part of the same sometimes called Forge Pond, or within two hundred feet of any bay, cove or inlet thereto, or within two hundred feet of any stream, tributary to said lake, bays, coves, or inlets except upon the approval of the State Board of Health.

No stable or other place as above enumerated, shall be located, constructed, built, continued or maintained within two hundred feet of high water mark of Penacook Lake, or within two hundred feet of any open waters flowing as aforesaid into said lake, unless suitable or adequate provision is made to prevent manure or other polluting matter from flowing or being washed into said lake or such open water.

2. No sink drainage, urine, or water that has been used for washing or cleansing either persons or materials shall be allowed to run into said lake, or into any bay, cove, or inlet thereof, or into any stream tributary thereto, or into any excavation or cesspool in the ground or on the surface of any ground within two hundred feet of high water mark of said lake or of any bay, cove or inlet, or within two hundred feet of any stream tributary thereto, except by consent of and under such regulations and conditions as may be given by the Board of Health of the city of Concord, upon approval of the State Board of Health.

3. No dead animal, or fish, or parts thereof, or food, or any article perishable or decayable, and no excrement, either human or animal, kitchen waste, swill, or garbage, shall be thrown into or deposited in said lake, or left or permitted to remain within two hundred feet of the high water mark thereof, or into any bay, cove, or inlet of said lake, or into any stream tributary thereto, or within two hundred feet of such bay, inlet or stream.

4. No human excrement shall be kept in, or deposited or discharged into any cesspool, privy or other receptacle situated within two hundred feet of high water mark of said lake, or within two hundred feet of any open waters which flow directly or ultimately into said lake, unless such cesspool, privy or other receptacle is so constructed, continued or maintained as to conform to such regulations and conditions as the Board of Health of the city of Concord may prescribe.

5. No sawdust shall be thrown or be allowed to fall into the said lake or into any stream tributary thereto.

6. No person shall bathe or swim in said lake, and no swimming pool, or other contrivance of any nature for public or private bathing whose waters do not discharge into a sewer or cesspool constructed as approved or required by the Board of Health of the city of Concord, shall be built, continued, or maintained within two hundred feet of high water mark of said lake.

7. No matter, waste, or materials described in sections 2, 3, 4, and 5, shall be thrown, or allowed to remain upon the ice of the water of said lake, or upon that of any bay, cove, or inlet thereof, or of any stream tributary thereto.

8. No cattle, horses, or other animals used for teaming, driving, or speeding, shall be driven, guided, or speeded upon the ice of said lake, except by permission of and under regulations established by the Board of Health of the city of Concord.

9. No system of sewers or other works for the collection, conveyance, disposal, or purification of sewage or drainage, or any other putrescible matter whatsoever, shall, except in accordance with plans first approved in writing by the State Board of Health, be constructed or maintained at any place within the drainage area of said lake. No private or separate sewer shall be constructed or maintained having an outlet upon or into the ground within two hundred feet of high water mark of any reservoir, lake, pond, stream, ditch, water-course or other open waters, the water of which flows or drains into said lake, except upon approval of the State Board of Health.

10. No public or private hospital, or other place intended for the reception or treatment of the sick, shall, until the location or construction thereof has been approved in writing by the State Board of Health, be located or constructed at any place within the drainage area of said lake.

11. No sewage, garbage, manure, or putrescent matter, whatsoever, shall be permitted to be in any place or locality from which the seepage, drainage, or washage may endanger the purity of the water of the said lake, or its tributaries.

12. No condition or practice of whatever kind that may endanger the purity of the waters of the said lake, shall be permitted to exist.

13. It shall be the duty of the Board of Health of the city of Concord to enforce these regulations, and any person violating the same is liable to a fine of twenty dollars and costs for each offense as provided by the statutes of New Hampshire.

14. Upon the adoption of the foregoing rules and regulations by the State Board of Health, they shall supercede the rules and regulations for the protection of the waters of Penacook Lake, adopted by said State Board on August 16, 1901.

I hereby certify that the foregoing rules and regulations were adopted at a special meeting of the State Board of Health held at the State House, Concord, this fourteenth day of September, 1915.

IRVING A. WATSON,

Secretary.

ORDINANCES OF THE CITY OF CONCORD.

Chapter 22, Sec. 20. No person shall swim, bathe or go into Penacook Lake, or put therein, or upon ice thereof in the winter season, or upon the shores so near to the water thereof as to cause the defilement or pollution of said waters, any animal or vegetable matter, or any other substance that will defile or pollute said water. It shall be unlawful for any person to cut ice from Penacook Lake or for any person to go upon any ice that may have formed upon said lake, either personally, or with teams, or animals.

Sec. 21. Any person violating any of the provisions of the preceding section shall be fined not exceeding twenty dollars for every violation thereof.

RULES AND REGULATIONS OF THE BOARD OF WATER COMMISSIONERS FOR THE CITY OF CONCORD, NEW HAMPSHIRE.

For the purpose of preventing the pollution and securing the sanitary protection of the waters of Long Pond, sometimes known as Penacook Lake, and Forge Pond, and their tributaries, used by the city of Concord, New Hampshire, as sources of water supply.

The Board of Water Commissioners for the city of Concord, New Hampshire, acting under the authority contained in chapter 76 of the Laws of New Hampshire of 1895, and every other act or law thereto enabling, hereby makes the following rules and regulations for the purpose of preventing the pollution and securing the sanitary protection of the waters of Long Pond, sometimes called Penacook Lake, and Forge Pond, and their tributaries, used by the said city of Concord as sources of water supply, which shall remain in force until further order, and which may be hereafter from time to time amended or added to:

1. Said Board of Water Commissioners hereby adopts in full all the regulations promulgated by the State Board of Health on the 14th day of September, 1915, and all ordinances of the city of Concord heretofore adopted relating to the protection of the purity of the water of Penacook Lake, in the city of Concord.

2. No boat, either for public or private use, nor houseboat or other construction, except such as may be used by the Water Commissioners, its officers, agents or employees, shall be permitted to float, steam, sail or be propelled in any way upon the waters of Forge Pond, and no wharves, landings or moorings for boats, rafts or other watercraft shall be built or permitted upon the shores of said Forge Pond.

3. The placing of houseboats upon the waters of Long Pond, and the floating, steaming, or sailing upon said pond, or any other use or occupation of same on any of said waters, is absolutely prohibited.

4. No person or persons other than a member of said Board of Water Commissioners, its officers, agents or employees, or public officers whose duty may so require, shall, unless permitted by regulation or permit of the Superintendent of Water-Works for said city, enter or go in any boat, skiff, raft or other contrivance, on or upon the water of said Long Pond, and no person or persons shall, unless permitted by a special regulation or by a written permit of the said superintendent, fish from boats in or upon the waters of said Long Pond. The application for a permit to boat or fish upon the waters of said Long Pond shall be in substantially the following terms and shall be signed by the party making said application:

“Concord, N. H.,.....19.....
 To the Superintendent of Water-Works, Concord, N. H.
 Dear Sir: The undersigned, residing at No.....
 Street, in.....hereby requests that permission be granted to him and to the following members of his household, to wit:—.....to boat and fish in and upon the waters of Long Pond, except within one quarter of a mile of the intake of the Concord Water-Works, and to use for said purpose his (row, sail or power)boat therefor.

The undersigned agrees for himself and the said members of his household that he and they will comply with the following conditions:—

- a. No fire-arms or explosives will be used while upon the water of said pond.
- b. No fish, food, animal or vegetable matter, spittle or any other matter tending to pollute the water will be thrown into the water of said Long Pond or left upon its shores.
- c. No cans, bottles or boxes will be thrown into the water of said pond or left upon its shores.
- d. All rules and regulations of the State Board of Health and the Board of Water Commissioners relative to

the waters or to the watershed of said Long Pond will be complied with.

e. The permit granted in compliance with this application will be exhibited to any officer of the law or any agents, officer, member or employee of the State Board of Health or of the Water Commissioners of said city of Concord.

f. No person or persons will be allowed to use on said pond the boat to be licensed under this application unless accompanied by the undersigned or one of the members of his household herein named.

g. The number borne by the permit issued in compliance with this application will be so carried as to be plainly visible on the outside of the boat above described, on each side of the bow above the water line, in figures not less than three inches in height.

h. No boating or fishing will be done in or upon that portion of said pond within one quarter of a mile of the intake of the Concord Water-Works.

i. The undersigned agrees that the authority to boat or fish shall, unless sooner revoked by the Board of Water Commissioners or the State Board of Health, expire inmonths.

(Signed),
.....”

5. No person shall enter upon said Long Pond or said Forge Pond for the purpose of cutting and taking out, or cut or take ice from either of said ponds, without a written permit, signed by the Superintendent of Water-Works, stating the time and place for which such permission is given.

6. No cattle, horses, or other animals, used for teaming, driving, racing or speeding, shall be driven, guided, raced, or speeded upon the ice of said ponds, except by permission of and under regulations established by said Board of Water Commissioners or the Board of Health of the city of Concord.

7. These rules and regulations shall become operative on and after February 3, 1916.

Respectfully submitted,

SOLON A. CARTER,
EDSON J. HILL,
CHARLES R. WALKER,
HARRY H. DUDLEY,
NATHANIEL E. MARTIN,
BURNS P. HODGMAN,
HENRY C. HOLBROOK,
FRANK P. QUIMBY,
NATHANIEL W. HOBBS, *ex-officio*,

Board of Water Commissioners.

INVENTORY

OF THE PROPERTY OF THE WATER DEPARTMENT, INCLUDING
THE PLANT AND WATER RIGHTS, AND ALL THE REAL
ESTATE AND PERSONAL PROPERTY IN THEIR POSSESSION,
JANUARY 1, 1916.

Water rights—land, etc.,	\$1,059,965.83
Water office—furniture, etc.,	1,144.50
Pumping station—furniture, supplies, etc.,	850.00
Shop at pumping station:	
Machinery, tools, meters, etc.,	3,000.00
Service truck, runabout, horse, wagons and and supplies,	1,800.00
Storehouse—hydrants, water gates, special castings, etc.,	2,372.45
Pipe yard—cast-iron pipe,	1,996.20
Shop at Penacook—pipe, etc.,	15.00
Shop at West Concord—pipe, etc.,	40.00
	<hr/>
	\$1,071,183.98

REPORT OF THE BOARD OF PUBLIC WORKS.

REPORT OF THE HIGHWAY DEPARTMENT.

To the Board of Public Works:

GENTLEMEN: I herewith submit the annual report of the work of the highway department for the year 1915.

It would be hard to find a year when this department was not busy with ordinary repair work, to say nothing of the permanent improvements, and the past one has been no exception. Instead of doing as much in the way of new work, I think the time has come when more should be done in repairing and re-surfacing the macadam which has been built in the past few years. A good deal of it needs to be repaired and all of it should have surface treatment. To do this would put all of our macadam in a better condition to withstand the increasing automobile traffic, but if allowed to go another year or two, much of it will be so badly worn that more extensive as well as more expensive work will be necessary. With this in mind, I would strongly recommend an increased appropriation for general maintenance.

During the year 1915 the number of demands for repair work on the streets was probably greater than in any previous year, due no doubt to the increased automobile traffic. The smaller bridges for the same reason had to be strengthened and repaired. Nearly every bridge over the Soucook, Big and Little Turkey rivers, and those over the smaller streams were repaired, and they seem now to be in condition to withstand the traffic. There is, however, one exception, a bridge on the Canterbury road over Hackett

brook, which should be rebuilt soon. A new cement floor was built on the Waternummons bridge, which should last a great many years. The Outlet bridge in Penacook was rebuilt, new stringers and floor being put in and the bridge thoroughly repaired. A new concrete floor should be put in the Loudon bridge next season. Without doubt a number of the steel bridges will have to be painted next year.

From the appropriation for general maintenance all the macadam was given a surface treatment of tarvia. Such work is necessary if we are to keep the macadam in repair. In connection with this I would recommend that the department have a storage tank, so that we might have material for surface treatment at the proper time. It is pretty nearly impossible to regulate the work on account of weather conditions, and often it is not practical to use a whole tank car at once. If we had material on hand, it would be much easier and cheaper to fix up a piece of macadam when it showed that it needed treatment, rather than wait a number of weeks for the material, and then have to wait until the weather was suitable to do the work. The use of the automobile is becoming so general throughout the winter months that the chains are doing considerable damage to the roads. With such condition the streets having bituminous binder should have surface treatment just as early in the spring as the weather permits.

I understand that the Concord Light and Power Company are to extend their line through West Concord village. This will do much damage to a good road, parts of which have been in only two years. I think that the company should be requested to complete their work at an early date, so that this department may not be delayed in re-surfacing the road at the proper time. The digging up of streets that have been macadamized so soon after the work is done is a serious damage to our roads. In all there were 185 permits for opening streets and 62 for obstructing issued last year by this department.

In connection with the general repair work, as well as with the permanent improvements, the crusher plays an important part. Our portable plant has been in use eighteen years, but it has become very expensive to keep in repair, and I think a new outfit should be purchased. This could be set up at the gravel bank recently acquired by the city and the bank would furnish material enough to run the crusher for a number of years. It would be more convenient and practical to run the crusher by electric power.

The department is still in need of more shed room at the city lot. Much of the equipment is not properly protected and it is becoming imperative that something be done.

The runabout purchased for the use of the highway department has been of great assistance in the work. It is much easier to cover the territory and see when and what repairs should be made, but it also makes it plain that larger appropriations are necessary if we are to do all the work for which there is a demand and all that should be done.

Fortunately the number of brown-tail moth nests seems to be decreasing, but the territory infested with the gypsy moth is much larger than a year ago. Gypsy moth nests are found on a considerable number of trees and these are painted with creosote and we are continuing the work of cutting off the brown-tail moth nests. For several years I have recommended that new trees be set out, as so many have died and been removed. The appropriation for trees has not been sufficient to allow any work along this line until last year, when there was a balance on the appropriation. Unless some new pest appears, with the same amount for trees as last year the department might be able to do something toward a systematic planting of trees.

A number of catch basins were put in last summer to care for the surface water, and there are still some places in need of them.

Quite a number of old concrete walks were repaired and a few new ones laid. The new granolithic walks around the state house were completed last fall and are a great improvement. The state put in the walks and the city furnished and set the edgestone.

The amount of garbage to be collected still increases each year, but the use of the truck has proved its efficiency. The body of the truck has been repaired, but aside from that there has been but little repair work necessary and the truck has given very satisfactory service. A light truck could also be used to great advantage in the general work of the highway department. The work is often in some remote part of the city and a truck could be used to convey the men and tools to and from the work. The number of storms and heavy rains last summer caused many emergency calls where a truck would have been of great service.

But one application of oil was used in the sprinkling precinct last season and a large part of that was washed away by the heavy rains. Owing to the heavy rainfall it was not necessary to sprinkle the streets as much as usual and there was a balance left on the appropriation.

For permanent work in 1915, South Main, South State, North Main, North State, South, Penacook, and Bye and Walnut Streets in Penacook were macadamized, a section of Washington Square in Penacook concreted, and a part of Pleasant Street resurfaced. I would recommend that the macadam be continued on South, South Main and South State Streets. The work on Pleasant Street should be continued to connect with the Hopkinton Road. Park Street, from Main to State, has been dug up so much that it is in bad shape, and now that the new walks around the state house have been completed I hope that the street may be macadamized. The paving on the east side of Main Street should be taken up and the street concreted, as that is the only section of block paving left on Main

Street. The section on North Main, from Center to Pitman on the west side of the street railway track, should be macadamized. The paving on parts of Pleasant Street Extension should be relaid, and Bridge, Freight, and Depot Streets are in great need of improvement. North State Street, by the mill in West Concord, should be macadamized and from Penacook Street to Call Street, so called, North State Street should be reconstructed. If the state highway department is not to do anything on the central trunk line this year, it might be wise for the city to wait another year before doing anything on the Hopkinton and Pittsfield roads.

While bringing to your attention all these various streets where permanent improvements are needed, and feeling that in each place there is great need of the work, still I believe that it would be wise to do more this coming year in the way of thoroughly repairing the macadam which has been built in the past instead of doing so much new permanent work. With the traffic conditions as they are at the present time the proper maintenance of those roads which we have built seems very important.

I wish to assure the board of my appreciation of their interest in the work of the highway department.

Respectfully submitted,

ALFRED CLARK,
Superintendent of Streets.

**FINANCIAL REPORT OF THE HIGHWAY DE-
PARTMENT.**

GENERAL MAINTENANCE.

Appropriation, \$38,000.00

EXPENDITURES.

CENTRAL DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$13,394.66
Supplies, general maintenance and re- pair,	7,303.14
Labor pay-rolls, culverts,	81.31
repairing sidewalks,	448.51
building sidewalks,	164.70
signs,	.50
Supplies, signs,	18.05
Labor pay-rolls, watering-troughs and drinking-fountains,	22.70
Supplies, watering-troughs and drink- ing-fountains,	46.81
Labor pay-rolls, cleaning gutters,	3,184.45
repairing and pav- ing gutters,	134.18
bridges,	304.79
Supplies, bridges,	915.87
Labor pay-rolls, fences,	65.36
Supplies, fences,	56.85
Labor pay-rolls, repairing macadam,	104.12
resurfacing macadam,	847.73
Supplies, resurfacing macadam,	1,807.05
Labor pay-rolls, winter expense,	1,935.95
Supplies, winter expense,	97.25
	\$30,933.98

BOARD OF PUBLIC WORKS.

329

PENACOOK DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$1,585.26
Supplies, general maintenance and repair,	153.23
Labor pay-rolls, culverts,	10.56
sidewalks,	202.40
watering-troughs and drinking fountains,	5.32
Supplies, watering-troughs and drinking fountains,	8.40
Labor pay-rolls, cleaning gutters, repairing and paving gutters,	594.37
bridges,	30.98
Supplies, bridges,	234.36
Labor pay-rolls, fences,	209.14
Supplies, fences,	56.70
Labor pay-rolls, repairing macadam, resurfacing macadam,	.15
Supplies, resurfacing macadam,	8.22
Labor pay-rolls, winter expense,	24.50
	6.00
	388.42
	<u> </u> \$3,518.01

WEST CONCORD DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$631.24
Supplies, general maintenance and repair,	19.86
Labor pay-rolls, culverts,	3.75
repairing sidewalks,	77.65
cleaning gutters,	163.50
bridges,	18.00
resurfacing macadam,	72.58
winter expense,	135.81
Supplies, winter expense,	.70
	<u> </u> 1,123.09

EAST CONCORD DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$1,097.26	
Supplies, general maintenance and repair,	191.32	
Labor pay-rolls, culverts,	4.72	
Supplies, culverts,	7.00	
Labor pay-rolls, winter expense,	60.89	
	<hr/>	\$1,361.19

PENACOOK INTERVALE DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$92.16	
Supplies, general maintenance and repair,	3.00	
	<hr/>	95.16

EGYPT DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$102.75	
Supplies, general maintenance and repair,	7.00	
Labor pay-rolls, winter expense,	9.17	
	<hr/>	118.92

HOIT DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$164.08	
Supplies, general maintenance and repair,	6.60	
Labor pay-rolls, winter expense,	10.78	
	<hr/>	181.46

BOARD OF PUBLIC WORKS.

331

VIRGIN DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$134.01	
Supplies, general maintenance and re- pair,	3.00	
	<hr/>	\$137.01

SANBORN DISTRICT.

Labor pay-rolls, general maintenance and re- pair,		78.47
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NUMBER FOUR DISTRICT.

Labor pay-rolls, general maintenance and repair,	\$359.36	
Supplies, general maintenance and re- pair,	8.70	
Labor pay-rolls, winter expense,	11.00	
	<hr/>	379.06

Total expenditures,		\$37,926.35
Transferred to sidewalks and crossings, new,		73.65
		<hr/>
		\$38,000.00

CATCH BASINS.

Appropriation,	\$1,200.00	
Transferred from trees,	66.43	
	<hr/>	\$1,266.43

EXPENDITURES.

CENTRAL DISTRICT.

Labor pay-rolls, cleaning,	\$587.03	
repairing,	143.24	
building,	128.52	
Supplies,	180.75	
	<hr/>	\$1,039.54

CITY OF CONCORD.

PENACOOK DISTRICT.

Labor pay-rolls, cleaning,	\$143.93	
repairing,	23.54	
building,	8.20	
Supplies,	25.50	
	<hr/>	\$200.17

WEST CONCORD DISTRICT.

Labor pay-rolls, cleaning,	\$24.55	
repairing,	2.17	
	<hr/>	26.72
Total expenditures,		<hr/> \$1,266.43

TREES.

Appropriation,	\$4,000.00
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EXPENDITURES.

CENTRAL DISTRICT.

Labor pay-rolls, trimming and re- moving trees,	\$200.92	
Labor pay-rolls, care of gypsy and brown-tail moths,	1,502.06	
Supplies,	224.74	
	<hr/>	\$1,927.72

PENACOOK DISTRICT.

Labor pay-rolls, trimming and remov- ing trees,	\$107.46	
Labor pay-rolls, care of gypsy and brown-tail moths,	345.08	
Supplies,	7.93	
	<hr/>	460.47

BOARD OF PUBLIC WORKS.

333

WEST CONCORD DISTRICT.

Labor pay-rolls, care of gypsy and brown-tail moths,	\$216.97
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EAST CONCORD DISTRICT.

Labor pay-rolls, care of gypsy and brown-tail moths,	244.62
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Total expenditures,	\$2,849.78
Transferred to catch basins,	66.43
sidewalks and crossings, new,	744.14
sidewalks and crossings, repair,	47.87
permanent work, North State Street,	290.78
	<hr/> \$4,000.00

SIDEWALKS AND CROSSINGS, NEW.

Appropriation,	\$750.00
Transferred from general maintenance,	73.65
Transferred from trees,	744.14
	<hr/> \$1,567.79

EXPENDITURES.

CENTRAL DISTRICT.

Labor pay-rolls, setting edgestone, etc.,	\$485.73
Edgestone,	882.64
Concrete,	199.42
	<hr/> \$1,567.79

SIDEWALKS AND CROSSINGS, REPAIR.

Appropriation,	\$2,500.00	
Transferred from trees,	48.87	
	<u> </u>	\$2,548.87

EXPENDITURES.

CENTRAL DISTRICT.

Labor pay-rolls, resetting edgestone,	\$71.91	
Concrete,	2,308.15	
	<u> </u>	\$2,380.06

PENACOOK DISTRICT.

Concrete,		121.06
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WEST CONCORD DISTRICT.

Concrete,		47.75
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Total expenditures,		<u> </u>	\$2,548.87
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PERMANENT WORK.

SOUTH STREET—THORNDIKE STREET, SOUTH.

Appropriation,	\$2,000.00	
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EXPENDITURES.

Labor pay-rolls, macadamizing,	\$1,262.91	
Supplies,	727.23	
	<u> </u>	
Total expenditures,	\$1,990.14	
Transferred to permanent work,		
North State Street,	9.86	
	<u> </u>	\$2,000.00

SOUTH MAIN STREET—PERLEY TO WEST STREET.

Appropriation,	\$1,850.00
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EXPENDITURES.

Labor pay-rolls, macadamizing,	\$1,132.28
Supplies,	645.75
	<hr/>
Total expenditures,	\$1,778.03
Transferred to permanent work, South State Street,	51.91
Transferred to permanent work, North State Street,	20.06
	<hr/>
	\$1,850.00

SOUTH STATE STREET.

Appropriation,	\$1,500.00
Transferred from permanent work, South Main Street,	51.91
	<hr/>
	\$1,551.91

EXPENDITURES.

Labor pay-rolls, macadamizing,	\$867.62
Supplies,	684.29
	<hr/>
	\$1,551.91

PENACOOK STREET.

Appropriation,	\$1,000.00
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EXPENDITURES.

Labor pay-rolls, macadamizing,	\$545.89
Supplies,	450.41
	<hr/>
Total expenditures,	\$996.30
Transferred to permanent work, North State Street,	3.70
	<hr/>
	\$1,000.00

NORTH MAIN STREET—PITMAN TO CENTER STREET.

Appropriation,	\$1,250.00
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EXPENDITURES.

Labor pay-rolls, macadamizing,	\$486.52	
Supplies,	518.21	
		<hr/>
Total expenditures,	\$1,004.73	
Transferred to permanent work,		
North State Street,	245.27	
		<hr/>
		\$1,250.00

NORTH STATE STREET—DOLAN STREET TO RAILROAD
CROSSING.

Appropriation,	\$2,000.00
Transferred from trees,	290.78
Transferred from permanent work:	
North Main Street,	245.27
South Main Street,	20.06
South Street,	9.86
Penacook Street,	3.70
Pleasant Street,	47.53
	<hr/>
	\$2,617.20

EXPENDITURES.

Labor pay-rolls, macadamizing,	\$1,427.08
Supplies,	1,190.12
	<hr/>
	\$2,617.20

PLEASANT STREET.

Appropriation,	\$3,000.00
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EXPENDITURES.

Labor pay-rolls, macadamizing,	\$1,350.12	
Supplies,	1,601.57	
		<hr/>
Total expenditures,	\$2,951.69	
Transferred to permanent work,		
North State Street,	47.53	
Transferred to permanent work,		
Bye and Walnut Streets,	.78	
		<hr/>
		\$3,000.00

BYE AND WALNUT STREETS—PENACOOK.

Appropriation,	\$1,500.00	
Transferred from permanent work:		
Washington Square,	11.51	
Pleasant Street,	.78	
By Joint Resolution, No. 217,	107.93	
		<hr/>
		\$1,620.22

EXPENDITURES.

Labor pay-rolls, macadamizing,	\$1,053.45	
Supplies,	566.77	
		<hr/>
		\$1,620.22

WASHINGTON SQUARE—PENACOOK.

Appropriation,	\$500.00	
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EXPENDITURES.

Labor pay-rolls,	\$27.85	
Concrete,	460.64	
		<hr/>
Total expenditures,	\$488.49	
Transferred to permanent work,		
Bye and Walnut Streets,	11.51	
		<hr/>
		\$500.00

CITY OF CONCORD.

SALARY SUPERINTENDENT.

Appropriation,	\$1,800.00
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EXPENDITURES.

Salary,	\$1,800.00
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GARBAGE.

Appropriation,	\$10,000.00
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EXPENDITURES.

Deficiency from 1914,	\$708.40
Labor pay-rolls, collecting garbage,	3,256.07
collecting paper,	744.42
burning paper,	146.47
leveling ashes,	731.56
patrol carts,	2,324.38
cleaning crossings,	570.59
Supplies,	722.85
	<hr/>
Total expenditures,	\$9,204.74
Balance to 1916,	795.26
	<hr/>
	\$10,000.00

SPRINKLING.

Appropriation,	\$9,500.00
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EXPENDITURES.

Deficiency from 1914,	\$645.58
Labor pay-rolls, repairing carts,	67.85
repairing standpipes,	25.17
sprinkling with water,	5,459.46

BOARD OF PUBLIC WORKS.

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Labor pay-rolls, sprinkling with oil,	\$23.05	
Oil,	1,257.07	
Supplies,	446.22	
		<hr/>
Total expenditures,	\$7,924.40	
Balance to 1916,	1,575.60	
		<hr/> \$9,500.00

PENACOOK SPRINKLING PRECINCT.

Appropriation,	\$475.00
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EXPENDITURES.

Deficiency from 1914,	\$10.45	
Labor pay-rolls, repairing standpipes,	20.57	
sprinkling streets,	347.19	
Supplies,	14.95	
		<hr/>
Total expenditures,	\$393.16	
Balance to 1916,	81.84	
		<hr/> \$475.00

DEPOSITED WITH THE CITY TREASURER AS FOLLOWS:

State aid, highways,	\$709.72
Concrete,	323.33
Trees,	404.24
Labor, etc.,	246.46
Lumber from bridges,	541.15
	<hr/>
	\$2,224.90

WARD ONE.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Borough Road.....	General repairs	\$27.07
Bye	“ “	9.19
Bye and Walnut.....	Macadamizing	1,620.22
Center	General repairs	47.24
Charles	“ “	5.27
	Repairing concrete walks	29.26
Church	General repairs	3.86
Cross	“ “	42.47
East Canal	“ “	16.49
	Repairing concrete walks.....	6.58
Elm	General repairs	41.56
	Repairing concrete walks.....	32.12
Fowler	General repairs	4.45
High	“ “	65.37
Horse Hill Road.....	“ “	187.52
Main	“ “	78.67
	Repairing concrete walks	48.66
Mast Yard Road.....	General repairs	122.90
Merrimack	“ “	199.05
Penacook	“ “	15.83
Pleasant	“ “	16.37
River Hill Road.....	“ “	7.95
River Road	“ “	241.59
Rolfe	“ “	13.41
Runnell's Road.....	“ “	10.23
Spring	“ “	38.11
Stark	“ “97
Summer	“ “	10.15
	Repairing concrete walks	9.13
Sweatt Hill Road.....	General repairs	11.98
Union	“ “	1.39
Walnut	“ “	71.46
Warren	“ “	8.56
Washington	“ “	188.86
Washington Square....	Concreting	488.49
Webster Road.....	General repairs	1.12
West Canal.....	“ “	7.88
West Main	“ “	45.43

WARD TWO.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Appleton	General repairs	\$22.05
Cemetery	“ “	2.50
Curtis Road.....	“ “	26.31
Eastman	“ “	4.54
Flaghole Road	“ “	12.50
Graham Road	“ “	77.12
Hot Hole Pond Road..	“ “	12.64
Intervale Road.....	“ “	33.21

BOARD OF PUBLIC WORKS.

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<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Loudon Road.....	General repairs	\$3.71
Mountain Road.....	“ “	35.90
Pecker	“ “	98.67
Pembroke	“ “	217.78
Penacook Road.....	“ “	172.28
(Penacook Int.).....	“ “	89.90
(Hoit)	“ “	81.63
(Sanborn)	“ “	31.00
Penacook	“ “	352.41
Pond Road.....	“ “	8.00
Portsmouth	“ “	26.78
Potter	“ “	111.91
Sanborn Road.....	“ “	10.00
Schoolhouse Road	“ “	20.22
Sewall's Falls Road....	“ “	2.50
Shaker Road.....	“ “	83.53
(Virgin)	“ “	30.86
Shawmut	“ “	10.00
Snow's Pond Road.....	“ “	1.39
Tyargo Road.....	“ “	10.00
Virgin Road.....	“ “	1.11

WARD THREE.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Beech Hill Road.....	General repairs	\$37.25
Bog Road.....	“ “	71.74
Borough Road.....	“ “	4.84
Broad Cove Road.....	“ “	30.80
Carter Hill Road.....	“ “	77.28
Clark	“ “	14.61
Dolan	“ “	1.83
Electric Avenue	“ “	6.48
Ferrin Road	“ “	14.37
Fisher	“ “	20.07
Hutchins	“ “	67.50
K	“ “	3.66
Knight	“ “	20.66
	Repairing concrete walks	25.66
Lake	General repairs	37.66
Little Road.....	“ “	31.66
Long Pond Road.....	“ “	134.79
North State.....	“ “	146.25
	Repairing concrete walks	18.81
	Macadamizing	2,617.20
Palmi	General repairs91
Parsonage Hill Road..	“ “	1.75
Peabody	“ “	12.42
Pine Hill Road.....	“ “	17.09
Quaker	“ “	6.64
River Road	“ “	82.01
Saltmarsh Road	“ “	69.26

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Sand Bank Road.....	General repairs	\$17.00
Second	“ “	10.06
Sewall's Falls Road....	“ “	50.38
View	“ “	19.93
West Parish Road.....	“ “	76.30

WARD FOUR.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Abbott	General repairs	\$4.60
Academy	“ “	11.23
Auburn	“ “	44.90
Beacon	“ “	33.33
Cambridge	“ “	4.74
Center	“ “	127.38
Chapel	“ “	11.41
Chestnut	“ “	2.94
Church	“ “	33.19
Court	“ “	12.95
	Repairing concrete walks	162.32
Ferry	General repairs	2.27
Piske	“ “	30.17
Franklin	“ “	62.34
	Repairing concrete walks	77.10
Giles	General repairs	19.95
Gordon Court	Repairing concrete walks	9.31
High	General repairs	20.77
Jackson	“ “	28.95
Jackson West Court....	“ “	2.16
Lyndon	“ “	23.37
Maple	“ “	14.88
Montgomery	Repairing concrete walks	6.84
North Essex	General repairs	1.57
North Main.....	“ “	84.67
	Repairing concrete walks	93.43
	Repairing concrete roadway	29.69
	Macadamizing	1,004.73
North Spring	General repairs	45.50
	Repairing concrete walks	142.80
North State.....	General repairs	39.25
	Repairing concrete walks	48.94
	Repairing concrete roadway	30.33
Park Ridge.....	General repairs	3.67
Pearl	“ “	12.14
Penacook	“ “	10.23
Perry Avenue	“ “	13.62
Pitman	“ “	1.38
Ridge Road.....	New concrete walks	24.31
Rollins	Repairing concrete walks	9.80
Rumford	General repairs	33.74
	Repairing concrete walks	24.20
Tremont	General repairs	24.42

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Union	General repairs	\$38.17
	Repairing concrete walks	8.60
Valley	General repairs	15.82
Vernon	“ “	2.81
Walker	“ “	29.83
Washington	“ “	206.22
White	“ “	7.45
Winter	“ “	2.66

WARD FIVE.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Blake	General repairs	\$6.32
Capitol	Repairing concrete roadway	117.47
	Setting edgestone	327.62
Center	General repairs	88.86
	Repairing concrete walks	87.93
Fremont	General repairs	1.54
Giles	“ “	4.61
Green	“ “	36.44
	Repairing concrete roadway	18.92
Hanover	General repairs	4.19
	Repairing concrete walks	2.98
Huntington	General repairs	5.41
Liberty	“ “	27.62
Merrimack	“ “	2.43
North Fruit	“ “	5.15
North Main	Repairing concrete walks	60.90
	Repairing concrete roadway	150.26
	Setting edgestone	224.42
North Spring	General repairs	31.54
	Repairing concrete walks	156.29
North State	General repairs	3.67
	Repairing concrete walks	65.15
	Repairing concrete roadway	54.82
	Setting edgestone	196.42
Odd Fellows' Ave	Repairing concrete walks	25.05
	Repairing concrete roadway	13.65
Orchard	General repairs	9.02
	Repairing concrete walks	56.56
Park	General repairs	32.95
	Repairing concrete roadway	4.05
	Setting edgestone	368.69
Pine	General repairs	36.58
	Repairing concrete walks	108.33
Pleasant	General repairs	216.72
	Repairing concrete walks	214.56
	Repairing concrete roadway	19.85
Rumford	Repairing concrete walks	53.45
School	General repairs	78.49
	Repairing concrete walks	79.94
	Repairing concrete roadway	30.44

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Short	General repairs	\$16.92
	Repairing concrete walks	12.87
Summit Avenue	General repairs	12.95
Tahanto	“ “	31.63
	Repairing concrete walks	88.72
Warren	General repairs	206.73
	Repairing concrete walks	143.62
	Repairing concrete roadway	109.91
West Washington.....	General repairs	16.65
Woodman	“ “	20.82

WARD SIX.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Clinton	General repairs	\$8.10
	Building sidewalks	46.29
Concord	General repairs	25.58
	Repairing concrete walks	3.63
Downing	General repairs	53.40
Elm	“ “	5.47
	Repairing concrete walks	20.16
Fayette	General repairs	26.46
Fuller	“ “	3.12
Laurel	“ “	47.94
	New concrete walks	15.98
Marshall	General repairs	9.08
	New concrete walks	190.42
Monroe	General repairs	20.36
Myrtle	“ “	9.24
Oak	New concrete walks	33.76
Perley	General repairs	30.91
	Repairing concrete walks	114.74
Pierce	General repairs	47.37
Pleasant	“ “	175.89
	Repairing concrete roadway	13.96
South	General repairs	89.16
	Repairing concrete walks	125.81
	Macadamizing	1,990.14
South Main.....	General repairs	141.61
	Repairing concrete walks	178.64
	Repairing concrete roadway	23.70
	Macadamizing	889.02
South Spring.....	General repairs	72.81
	Repairing concrete walks	16.76
South State.....	General repairs	102.16
	Repairing concrete walks	166.75
	Macadamizing	1,551.91
Thompson	General repairs	17.64
Thorndike	“ “	24.01
	New concrete walks	23.69
	Repairing concrete walks	21.63
Wall	General repairs	5.14

WARD SEVEN.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Albin Road.....	General repairs	\$40.62
Allison	“ “	22.86
Badger	“ “	29.01
Birch	“ “	2.21
Birchdale Road.....	“ “	12.64
Bog Road.....	“ “	92.29
Bow	“ “89
Broadway	“ “	204.96
Carter	“ “	2.85
Clinton	“ “	14.98
	Building sidewalks	10.54
Dakin	General repairs	38.95
Downing	“ “	36.89
Dunbarton Road.....	“ “	2.27
Eastman	“ “	2.85
Fiske Road.....	“ “	58.39
Fruit	“ “	58.46
	New concrete walks	74.22
Gale	General repairs	17.51
Hall	“ “	645.99
Home Avenue.....	“ “	25.78
	Building sidewalks	152.94
Hopkinton Road.....	General repairs	360.45
Hopkinton New Road..	“ “	70.55
Hopkinton Old Road..	“ “	31.85
Humphrey	“ “	2.05
Iron Works Road.....	“ “	22.39
Kensington Road.....	“ “	45.22
Kent	“ “	59.20
Kimball	“ “	12.19
Long Pond Road.....	“ “	104.78
Maitland	“ “	11.51
McKinley	“ “	1.60
Minot	“ “	10.52
Noyes	“ “	2.18
Pillsbury	“ “	63.98
Pleasant	“ “	172.97
	Resurfacing	2,951.69
Rockingham	General repairs	8.74
Sawmill Road	“ “	9.87
Silk Farm Road	“ “	22.50
South	“ “	79.57
South Main.....	“ “	268.83
	Repairing concrete walks	27.01
	Macadamizing	889.01
South State.....	General repairs	36.93
Stickney Hill Road.....	“ “	201.59
Stone	“ “	6.77
Tuttle	“ “	5.45
	Building sidewalks	90.14
Water	General repairs	98.34
West	“ “	119.51
Wiggin	“ “	4.92

WARD EIGHT.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Bridge	General repairs	\$622.25
Depot	“ “	22.31
	Repairing concrete walks	70.63
Freight	General repairs	58.38
	Repairing concrete walks	45.45
Garvin's Falls Road.....	General repairs	4.67
Hill's Avenue	“ “	19.90
	Repairing concrete walks	87.54
Loudon Road.....	General repairs	470.23
North Main.....	Repairing concrete walks	31.07
	Repairing concrete roadway	64.54
Pittsfield Road.....	General repairs	29.09
Railroad	“ “	17.82
Robinson	“ “	3.67
Sheep Road.....	“ “	19.20
South Main.....	“ “	99.71
	Repairing concrete roadway	27.79
	Macadamizing	889.01
	Repairing concrete walks	31.93
South Pembroke Road (Plains)	Repairing account detour.....	646.06
So. Pembroke Road.....	General repairs	68.23
Stickney Avenue	“ “	6.80
Sugar Bowl Road.....	“ “	10.50

WARD NINE.

<i>Street.</i>	<i>Work.</i>	<i>Expense.</i>
Albin	General repairs	\$1.66
Auburn	“ “	6.21
Beacon	“ “	2.16
Bradley	“ “	1.27
Charles	“ “	3.99
Church	“ “	2.17
Forest	“ “	2.02
Franklin	“ “	68.71
Gladstone	Grading	369.71
Granite	General repairs	21.33
Highland	“ “	16.58
Jackson	“ “	1.54
Little Pond Road.....	“ “	147.53
Long Pond Road.....	“ “	49.15
Martin	“ “	2.22
North State.....	“ “	213.57
Penacook	“ “	370.38
	Macadamizing	996.30
Perkins	General repairs	2.32
Prospect	“ “	9.56
Rumford	“ “	67.29
Walker	“ “	17.74

REPORT OF THE CITY ENGINEER.

CITY ENGINEER'S OFFICE, CITY HALL,
CONCORD, N. H., December 31, 1915.

To the Board of Public Works:

The fifth annual report to this board, showing work done under the supervision of the engineering department, for this board, is herewith submitted.

BRIDGES.

Five new steel bridges were built during the past season, three across the Merrimack River, the Pembroke, Federal and Sewall's Falls bridges; one over the Contoocook River at Main Street, Penacook, and one across the "Outlet" on Washington Street, Penacook.

PEMBROKE BRIDGE.

The contract for this bridge was awarded to the Berlin Construction Company in December, 1914, but was not signed until January 2, 1915.

Work of removing the old structure was begun on May 12, and in the removal of the old bridge sufficient proof was found to sustain the report presented to your board by the city engineer and your consulting engineer in 1914. The floor stringers were broken and patched in many places, and a large number were found broken at the time of removal. The old trusses were in fairly good condition but not heavy enough to carry a new and adequate floor system had one been installed. No mistake was made in removing this menace to public safety. The city is truly fortunate in not having had an accident of a serious nature occur on this old bridge.

The new structure was completed and opened for traffic August 25, 1915. The unusual rains of the past season delayed the completion of this bridge twenty-eight days. Had we been favored with the usual summer weather the bridge would have been ready for traffic the latter part of July. The floor in this bridge is of re-inforced concrete with a wearing surface one and one-half inches thick of coal-tar concrete, thus making the floor nearly permanent and removing the danger from broken plank and the cost of renewal of a plank floor at frequent intervals.

The cost of this structure and the necessary changes in the masonry and approaches was as follows:

Labor and materials for masonry changes,	\$286.94
Superstructure complete,	23,993.00
Storrs & Storrs, plans, etc.,	1,199.65
Work by highway department,	28.43
	<hr/>
	\$25,508.02

On January 23, 1915, the following bids were opened for the Borough, Federal, Main Street and Sewall's Falls bridges:

NAME OF BIDDER.	AMOUNT OF BID.				
	Borough.	Federal.	Main Street.	Sewall's.	All Four Combined.
Berlin Construction Co.....	\$4,075.00	\$20,625.00	\$15,965.00	\$14,318.00	\$53,985.00
The Boston Bridge Works.....	5,094.00	24,213.00	15,938.00	15,897.00	59,125.00
The Jobson-Gifford Co.....	5,470.00	27,060.00	15,410.00	17,580.00	65,520.00
King Bridge Co.....	5,700.00	26,200.00	17,100.00	16,800.00	65,000.00
Lackawanna Bridge Co.....	5,391.00	26,425.00	14,640.00	17,942.00	61,792.00
McClintic-Marshall Co.....	5,098.00	25,644.00	15,036.00	17,841.00	62,460.00
Penn Bridge Co.....	5,380.00	22,800.00	12,900.00	15,400.00	54,200.00
The Pennsylvania Steel Co ...	5,600.00	27,090.00	13,700.00	18,400.00	63,300.00
Phoenix Bridge Co.....	6,350.00	27,120.00	15,300.00	19,360.00	66,130.00
The United Construction Co..	5,488.00	28,750.00	16,918.00	18,970.00	66,940.00

Contracts, based on the above bids, were awarded as follows:

Borough bridge, to Berlin Construction Company,	\$4,075.00
Federal bridge, to Berlin Construction Company,	20,625.00
Main Street bridge, to Penn Bridge Company,	12,900.00
Sewall's Falls bridge, to Berlin Construction Company,	14,318.00

Later it was deemed advisable to add a sidewalk to the Federal bridge and the contract was awarded to Berlin Construction Company for \$2,635.

BOROUGH BRIDGE.

The contract with the Berlin Construction Company for this bridge was signed February 3, 1915, and the new structure opened for traffic on August 16, 1915. The floor in this bridge is of re-inforced concrete with a wearing surface of one and one-half inches of coal-tar concrete, thus removing the wooden floor troubles from this bridge.

The cost of superstructure and necessary foundation changes were as follows:

Labor and materials for foundation changes,	\$247.46
Superstructure, complete,	4,075.00
Storrs & Storrs, plans, etc.,	203.75
	<hr/>
	\$4,526.21

FEDERAL BRIDGE.

The contract for this bridge was signed by the Berlin Construction Company on February 3, 1915, and the new structure completed and opened for public travel September 30, 1915. Some delay was occasioned here by the high water carrying away one complete span of the false-works and a portion of another span.

The floor in this bridge is of re-inforced concrete with a one and one-half inch wearing surface of coal-tar concrete, thus abolishing the wooden floor on this bridge.

The necessary masonry changes at this bridge were covered in the bid for the bridge, excepting the additional change made necessary by the addition of a sidewalk, for which change the sum of \$25 was paid the erector. The amount expended on this work was as follows:

Daniel Marr & Son Company, masonry change, account of sidewalk,	\$25.00
Superstructure and original masonry changes,	20,625.00
Sidewalk,	2,635.00
Storrs & Storrs, plans, etc.,	1,163.00
Trucking,	2.50
	<hr/>
	\$24,450.50

MAIN STREET BRIDGE.

In rebuilding this bridge it became necessary to build two new piers, and a contract for the same was made with the New Hampshire Cement Construction Company, of Manchester, N. H., after opening the following bids:

Beaver Contracting and Engineering Company, Boston, Mass.,	\$6,500.00
J. Normandeau, Concord, N. H.,	6,850.00
H. P. Cummings Construction Company, Ware, Mass.,	4,465.00
New Hampshire Cement Construction Com- pany, Manchester, N. H.,	4,370.00

Work on the piers was begun May 19, 1915, and completed June 21, 1915, at a cost of \$4,370.

The contract for the bridge was signed by the Penn Bridge Company on February 5, 1915. The new structure was completed and opened for traffic October 27, 1915.