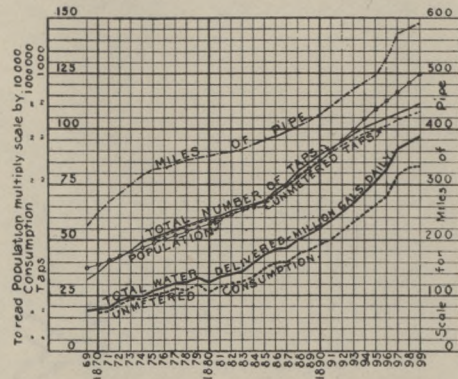


# PLATE IV

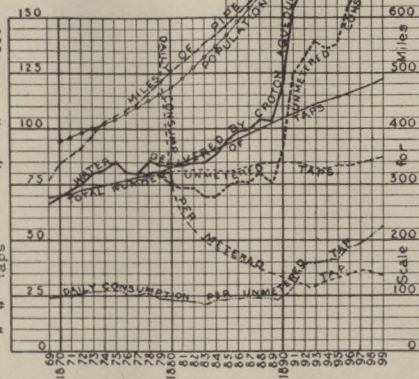
## BROOKLYN.

J. JAMES R. CROES C.E.  
 NEW YORK,  
 APRIL 1900.



## MANHATTAN AND THE BRONX.

To read Population multiply scale by 10,000  
 To read Consumption multiply scale by 100,000

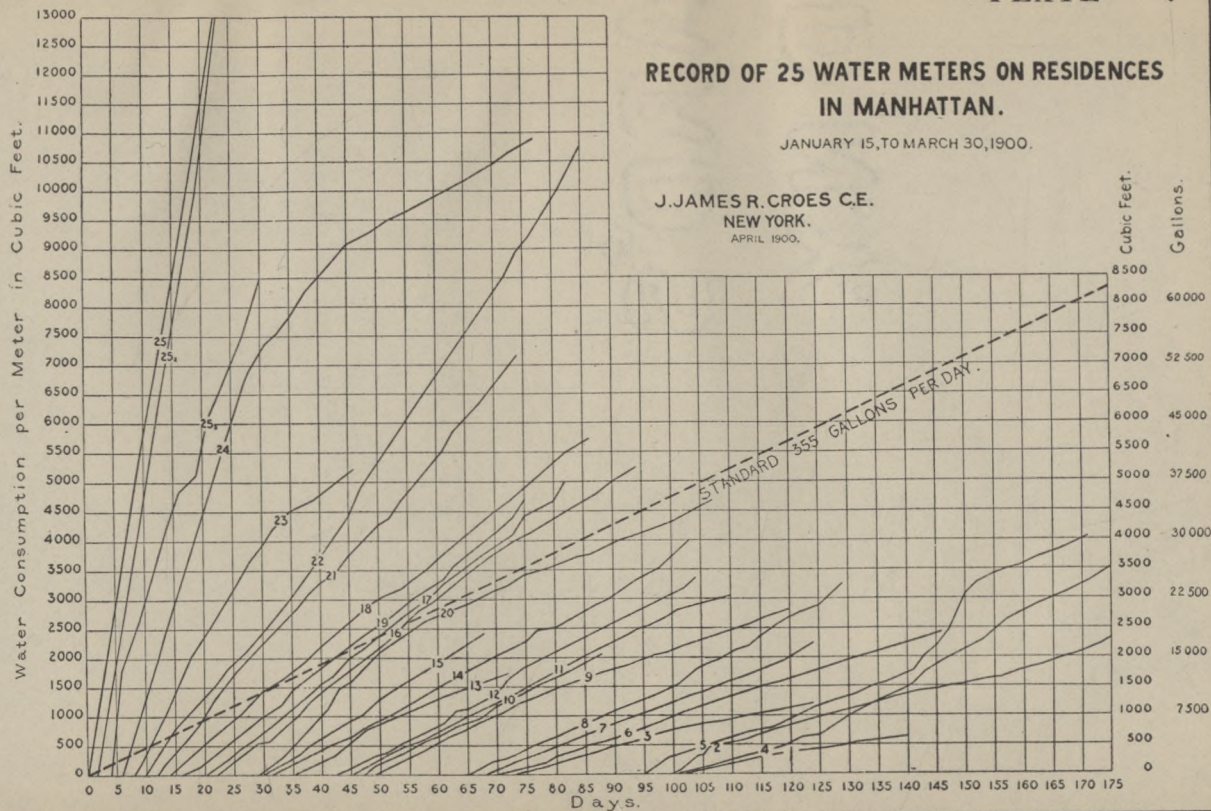


To read daily Consumption per Tap Multiply scale by 10

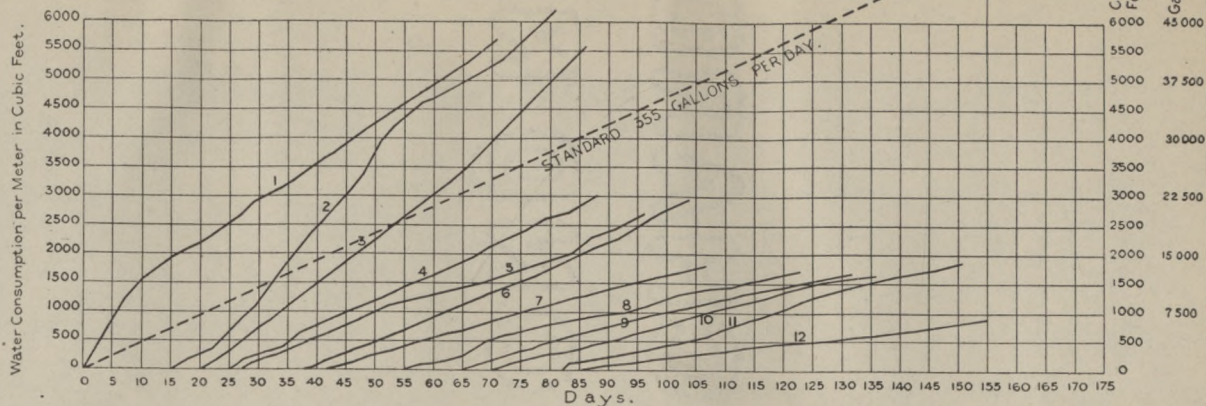
# RECORD OF 25 WATER METERS ON RESIDENCES IN MANHATTAN.

JANUARY 15, TO MARCH 30, 1900.

J. JAMES R. CROES C.E.  
NEW YORK.  
APRIL 1900.



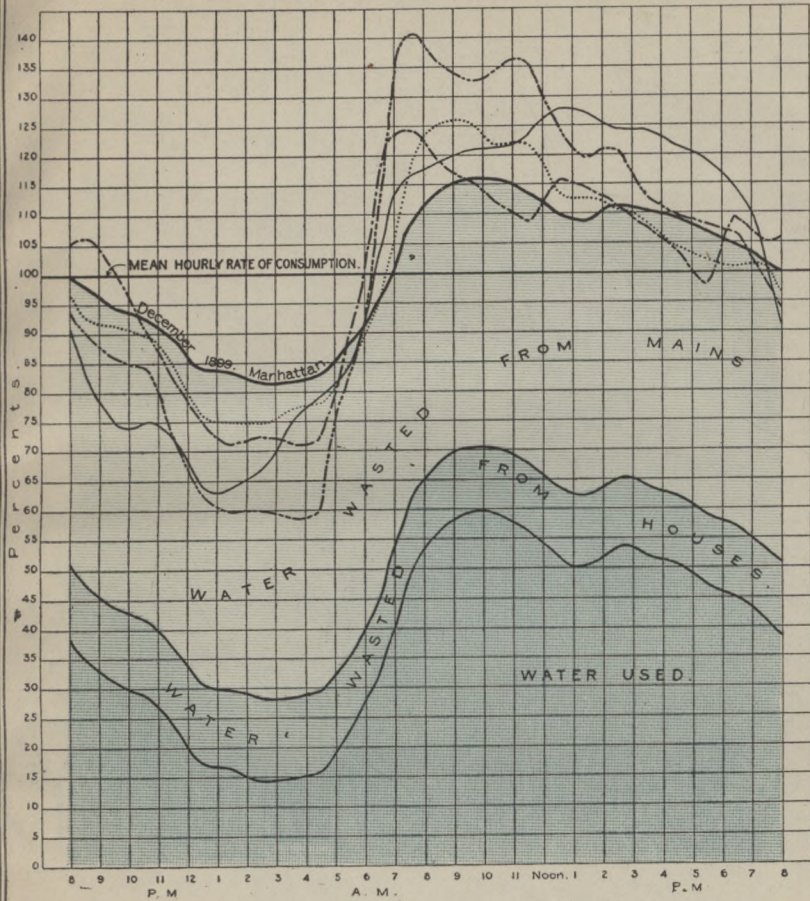




# RECORD OF 12 WATER METERS ON RESIDENCES IN BROOKLYN.

JANUARY 15, TO MARCH 30, 1900.

J. JAMES R. CROES C.E.  
NEW YORK.  
APRIL, 1900.



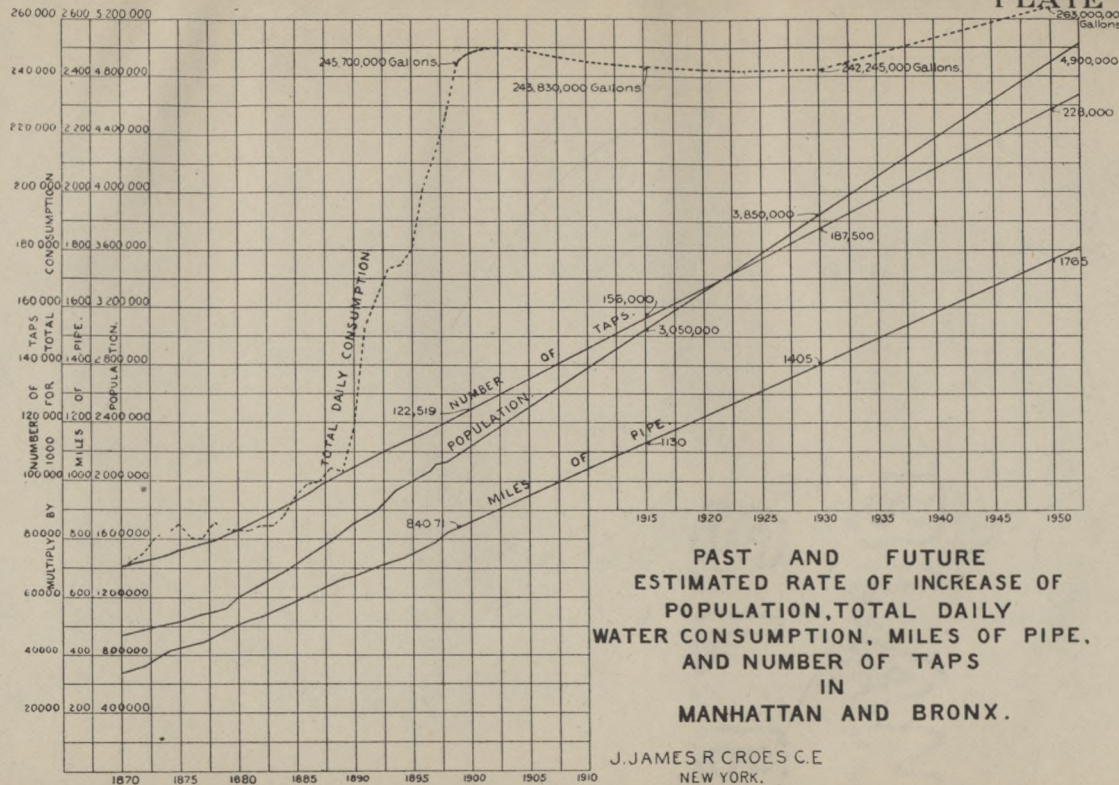
# HOURLY RATE OF CONSUMPTION OF WATER.

J. JAMES R. CROES C.E.  
NEW YORK.  
APRIL 1900

HOURLY RATE OF CONSUMPTION OF WATER.  
In Manhattan ——— Dec. 1899.  
Fall River ——— Feb. 1900.  
Boston ——— Before checking house waste June 1899.  
Boston ——— After checking house waste Sept. 1899.  
Brooklyn ..... April, 1900.



# PLATE VIII.



PAST AND FUTURE  
ESTIMATED RATE OF INCREASE OF  
POPULATION, TOTAL DAILY  
WATER CONSUMPTION, MILES OF PIPE,  
AND NUMBER OF TAPS  
IN  
MANHATTAN AND BRONX.

J. JAMES R. CROES C.E.  
NEW YORK.  
APRIL 1900.



# MINETTA BROOK DRAINAGE AREA ABOVE 6<sup>TH</sup> AVE. SEWER GAUGE

From a report made to Gen. John Newton,  
Commissioner, Dept. of Public Works in 1889,  
by Rudolph Hering, M. Am. Soc. C.E. Consulting  
Engineer.

Population 37692 or 170 persons per acre

|                |                       |
|----------------|-----------------------|
| Areas: Roofs,  | 96.6 acres, or 43.5%  |
| Pavements,     | 103.3 " " 46.3%       |
| Grass & Earth, | 91.8 " " 10.0%        |
|                | 221.7 acres or 100.0% |





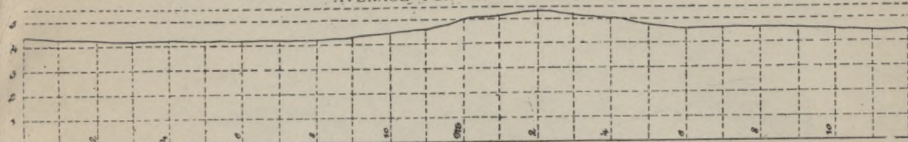
# Average hourly discharge of dry weather sewage and ground water from Minnetta Brook Drainage Area above Sixth Avenue Sewer Gauge, at Amity Street, New York.

From a report made to Gen. John Newton, Commissioner, Dept. of Public Works, in 1889,  
by Rudolph Hering, M. Am. Soc. C. E., Consulting Engineer.

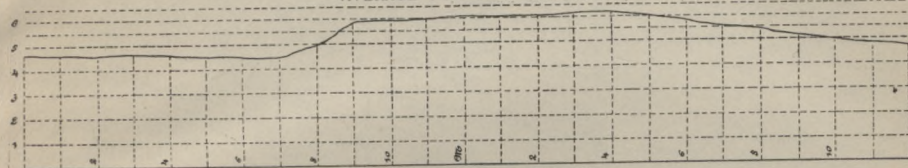
January, February, March, 1888.

DIAGRAM II.

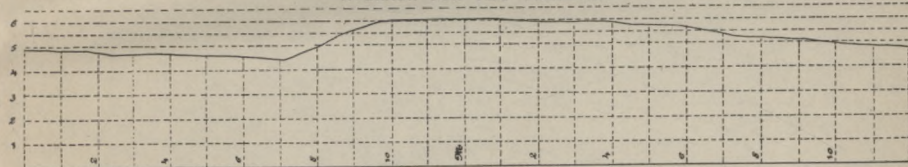
AVERAGE FOR THREE SUNDAYS.



AVERAGE FOR TWO MONDAYS.



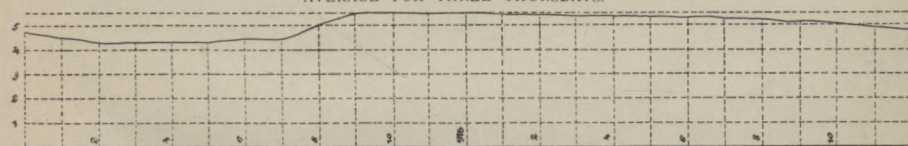
AVERAGE FOR TWO TUESDAYS.



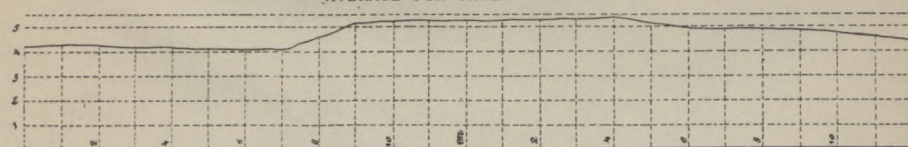
AVERAGE FOR THREE WEDNESDAYS.



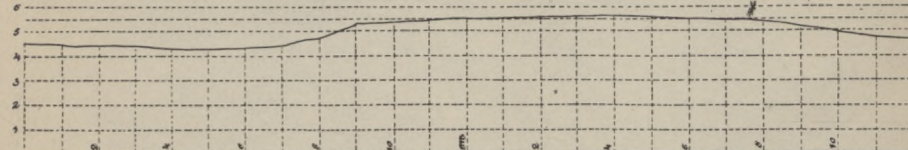
AVERAGE FOR THREE THURSDAYS.



AVERAGE FOR THREE FRIDAYS.



AVERAGE FOR THREE SATURDAYS.



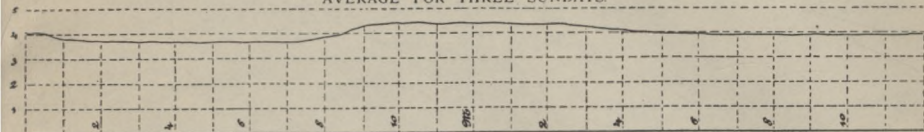
# Average hourly discharge of dry weather sewage and ground water from Minetta Brook Drainage Area above Sixth Avenue Sewer Gauge, at Amity Street, New York.

*From a report made to Gen. John Newton, Commissioner, Dept. of Public Works, in 1889,  
by Rudolph Hering, M. Am. Soc. C. E., Consulting Engineer.*

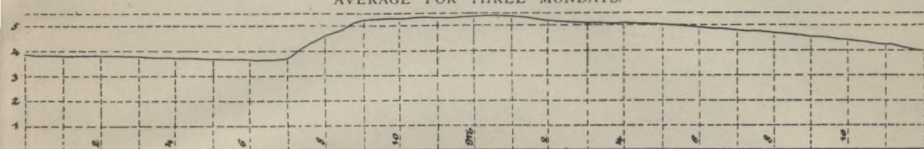
**April, May, June, 1888.**

DIAGRAM III.

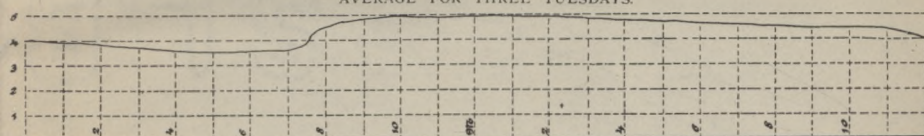
AVERAGE FOR THREE SUNDAYS.



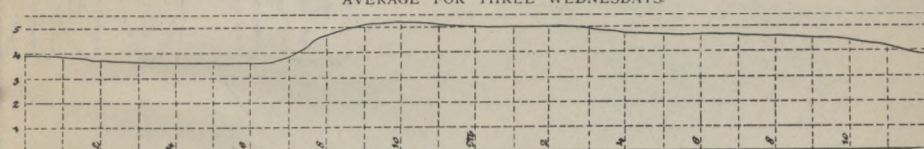
AVERAGE FOR THREE MONDAYS.



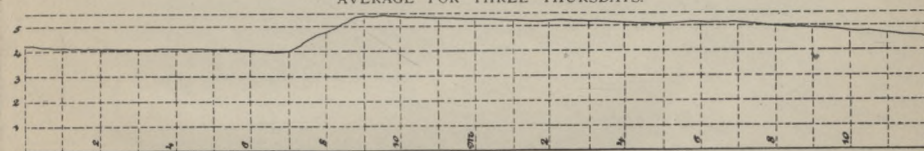
AVERAGE FOR THREE TUESDAYS.



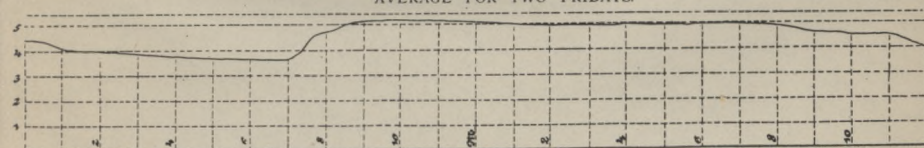
AVERAGE FOR THREE WEDNESDAYS.



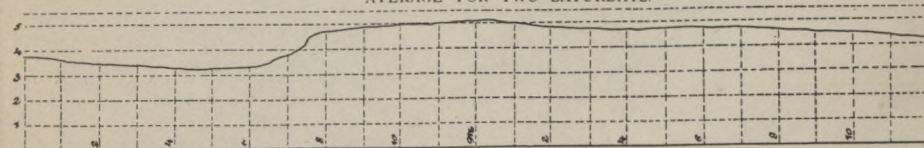
AVERAGE FOR THREE THURSDAYS.



AVERAGE FOR TWO FRIDAYS.



AVERAGE FOR TWO SATURDAYS.





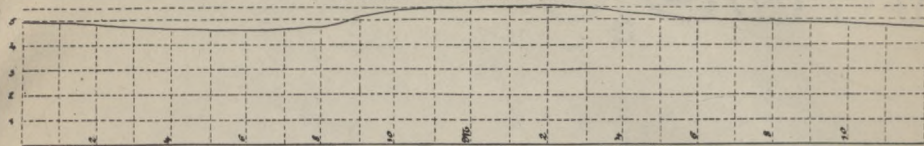
Average hourly discharge of dry weather sewage and ground water from Minetta Brook Drainage Area above Sixth Avenue Sewer Gauge, at Amity Street, New York.

From a report made to Gen. John Newton, Commissioner, Dept. of Public Works, in 1889,  
by Rudolph Hering, M. Am. Soc. C. E., Consulting Engineer.

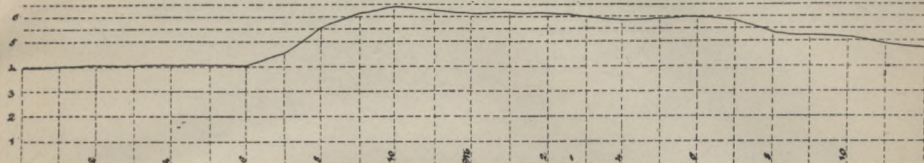
July, August, September, 1888.

DIAGRAM IV.

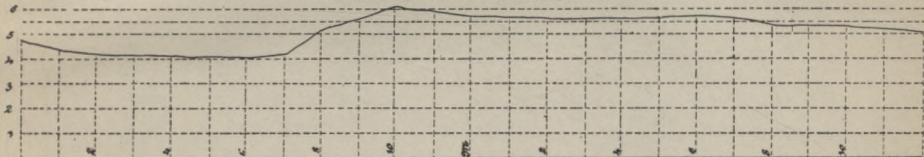
AVERAGE FOR THREE SUNDAYS



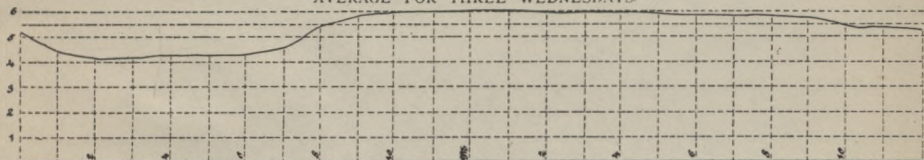
AVERAGE FOR TWO MONDAYS



AVERAGE FOR TWO TUESDAYS



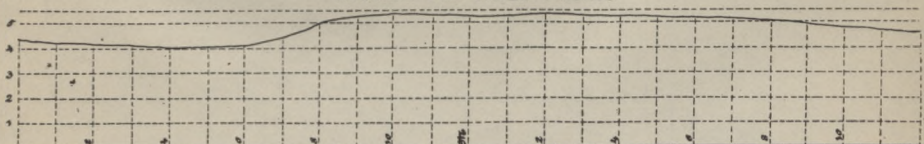
AVERAGE FOR THREE WEDNESDAYS



AVERAGE FOR ONE THURSDAY



AVERAGE FOR THREE FRIDAYS



AVERAGE FOR THREE SATURDAYS



# Average hourly discharge of dry weather sewage and ground water from Minetta Brook Drainage Area above Sixth Avenue, Sewer Gauge, at Amity Street, New York.

*From a report made to Gen. John Newton, Commissioner, Dept. of Public Works, in 1889,  
by Rudolph Hering, M. Am. Soc. C. E., Consulting Engineer.*

October, November, December, 1888.

DIAGRAM V.

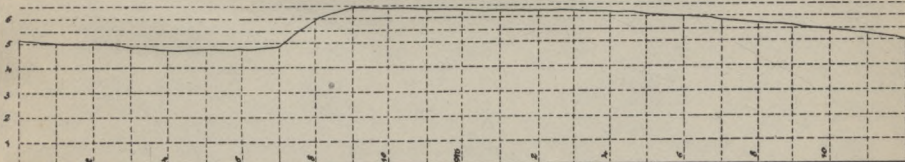
AVERAGE FOR EIGHT SUNDAYS.



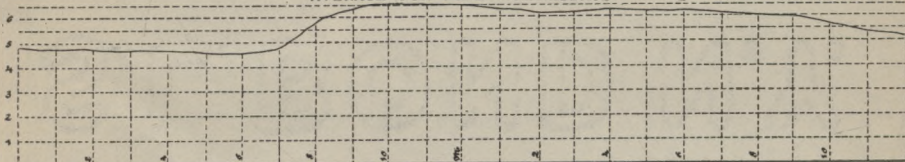
AVERAGE FOR SEVEN MONDAYS.



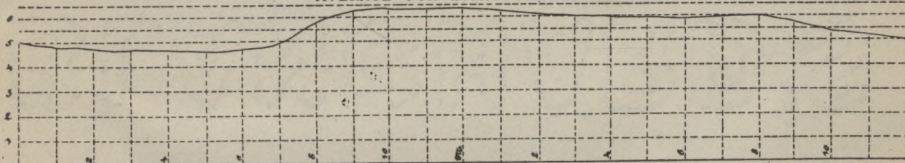
AVERAGE FOR SIX TUESDAYS.



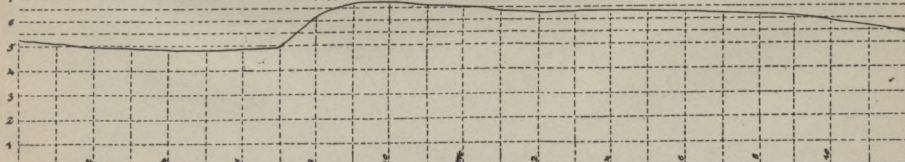
AVERAGE FOR NINE WEDNESDAYS.



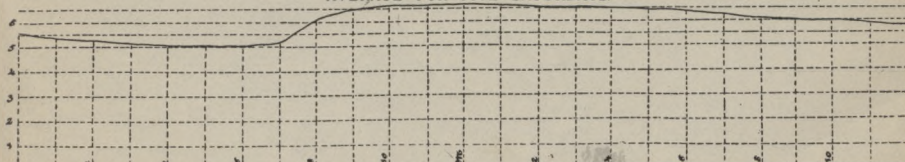
AVERAGE FOR EIGHT THURSDAYS.



AVERAGE FOR SEVEN FRIDAYS.



AVERAGE FOR FIVE SATURDAYS.





# Average hourly discharge of dry weather sewage and ground water from Minetta Brook Drainage Area above Sixth Avenue Sewer Gauge, at Amity Street, New York.

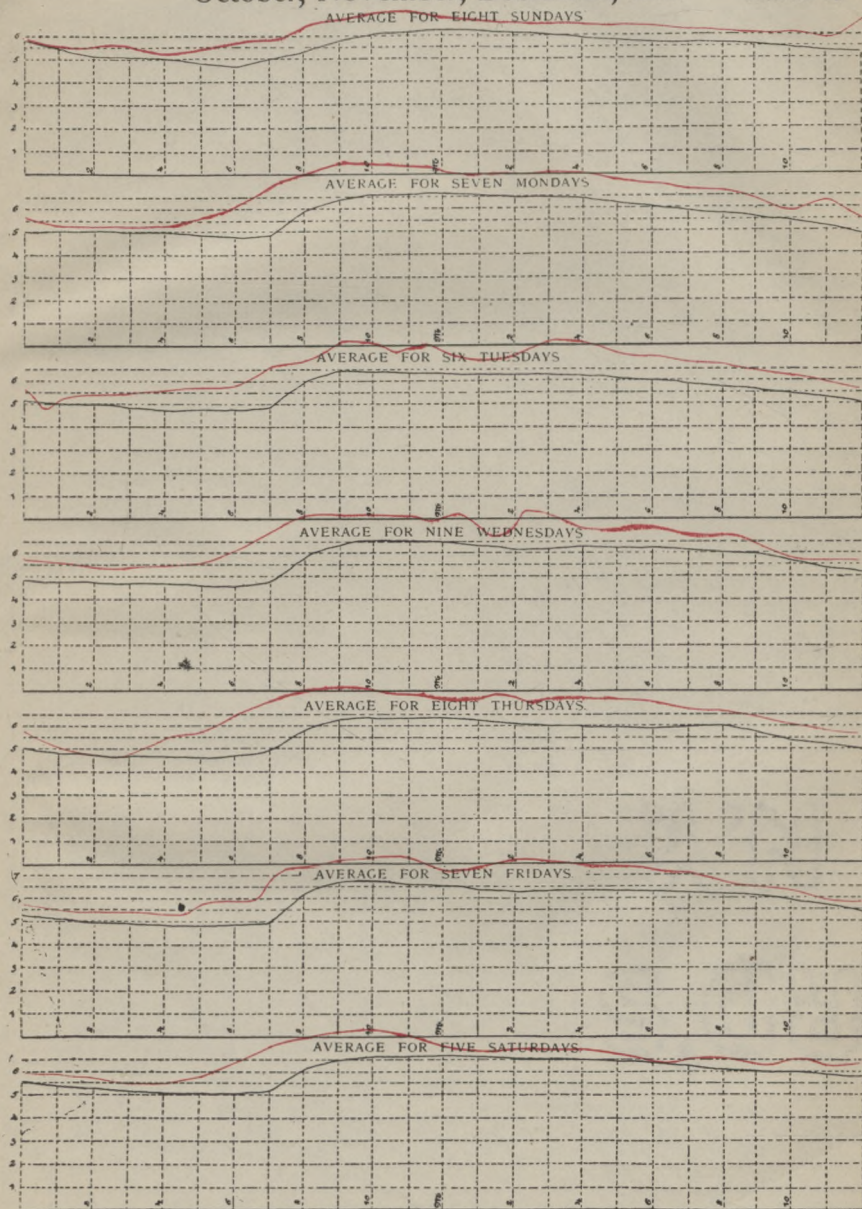
The red lines show the gaugings, made by Mr John R. Freeman, C. E., at the reservoir in Central Park, of the actual consumption of water in lower Manhattan from December 8 to December 14, inclusive, 1899, after reduction to the population residing on the Minetta Brook District.

From a report made to Gen. John Newton, Commissioner, Dept. of Public Works, in 1889,  
by Rudolph Hering, M. Am. Soc. C. E., Consulting Engineer.

October, November, December, 1888.

DIAGRAM VI

CUBIC FEET PER SECOND

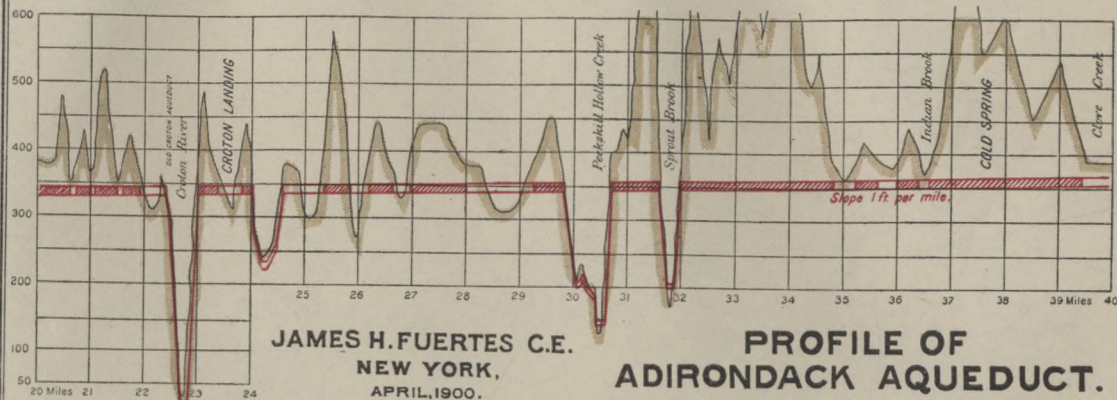
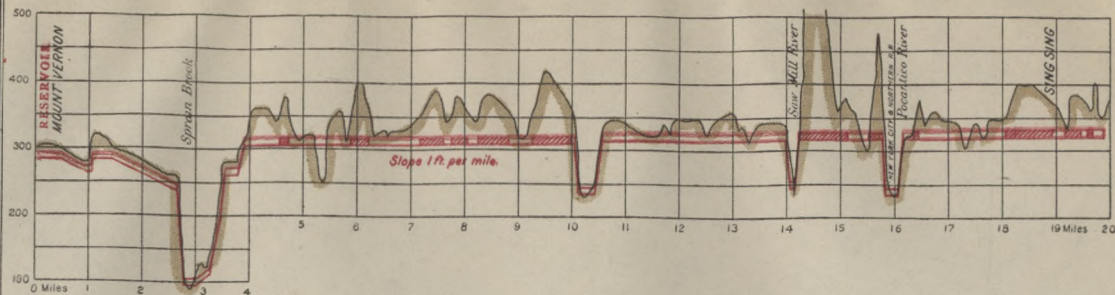


# **DIAGRAM** **SHOWING WASTE OF WATER IN** **MANHATTAN AND THE BRONX**

| GALLONS.         |                     | CROTON SUPPLY                               |                    |
|------------------|---------------------|---|--------------------|
| TOTAL<br>PER DAY | PER HEAD<br>PER DAY |   |                    |
| 97,350,000       | 50                  | DOMESTIC<br>AND TRADE<br>USES<br>97,350,000 | NECESSARY USE      |
| 9,735,000        | 5                   | PUBLIC USES 9,735,000                       | INCURABLE<br>WASTE |
| 107,000,000      | 55                  |   |                    |
| 120,714,000      | 62                  | PREVENTABLE<br>WASTE<br>120,714,000         | PREVENTABLE WASTE  |
| 227,799,000      | 117                 | TOTAL DAILY CONSUMPTION                     |                    |

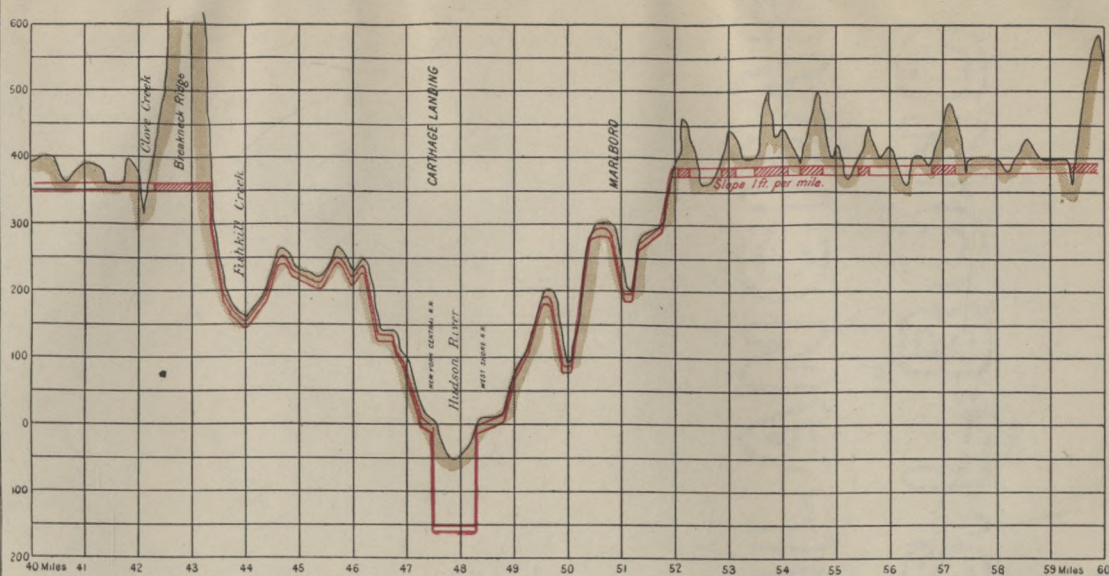
**ACCOMPANYING REPORT**  
**OF FOSTER CROWELL, C.E.**  
**M.A.M. SOC. C.E. M. INST. C.E.**





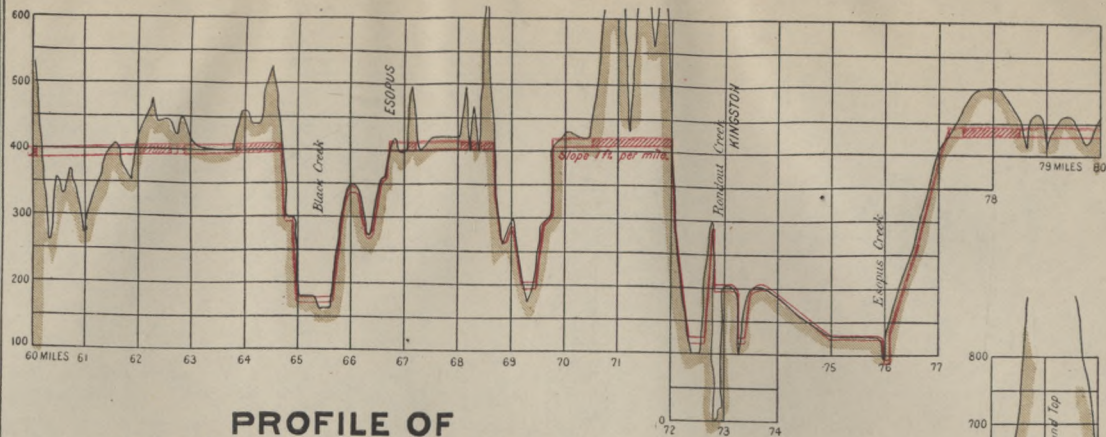
JAMES H. FUERTES C.E.  
NEW YORK,  
APRIL, 1900.

PROFILE OF  
ADIRONDACK AQUEDUCT.

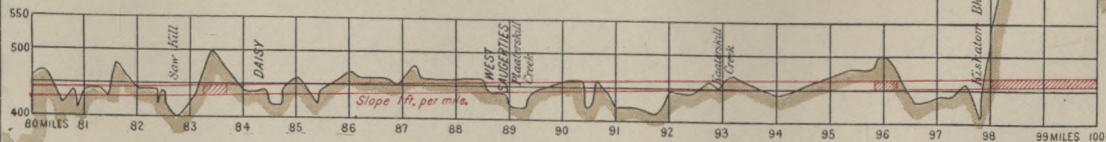


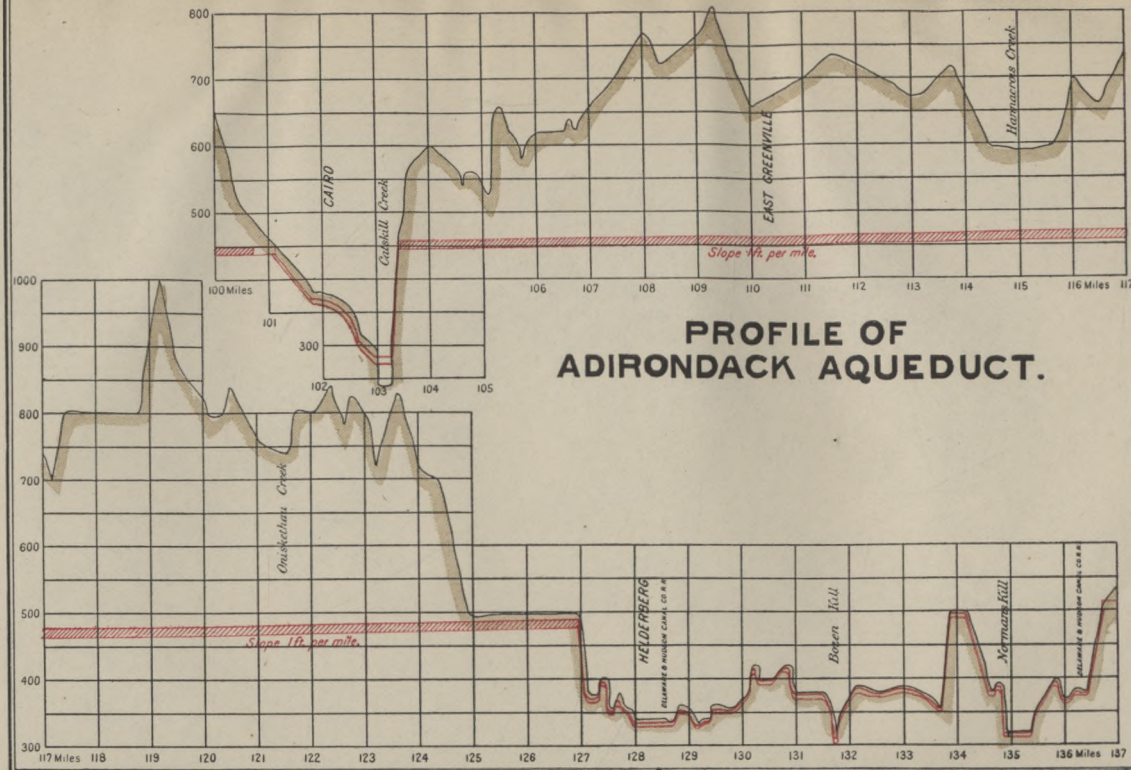
**PROFILE OF  
ADIRONDACK AQUEDUCT.**



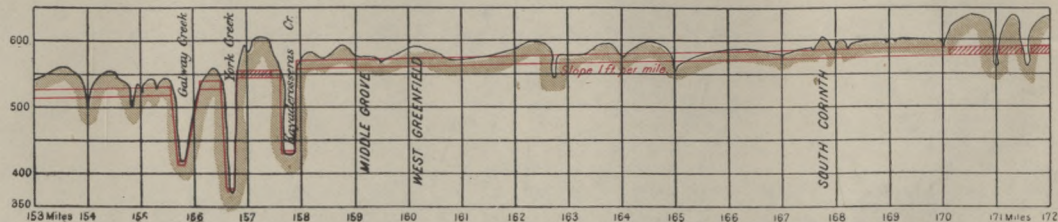
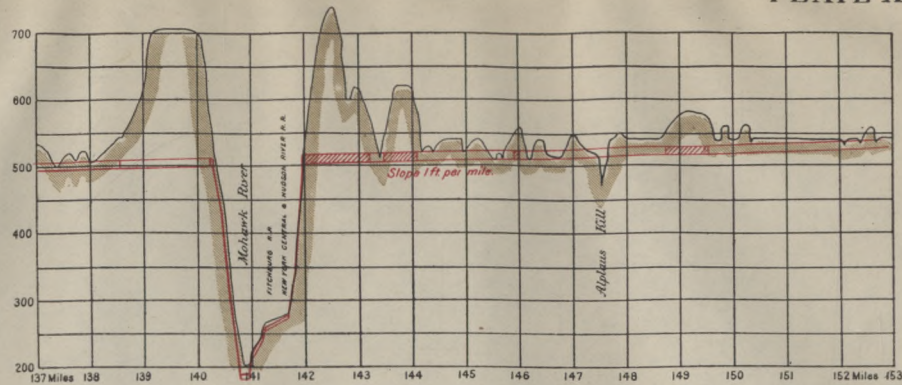


# PROFILE OF ADIRONDACK AQUEDUCT.

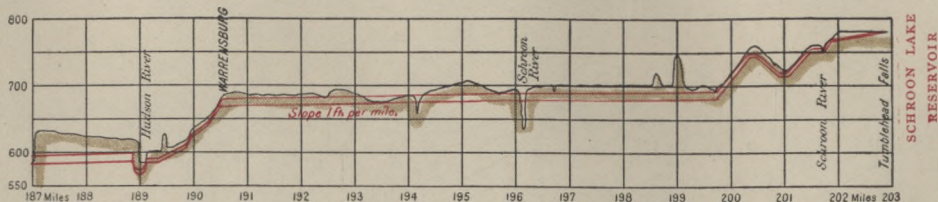
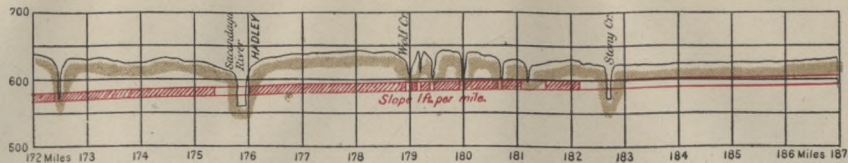








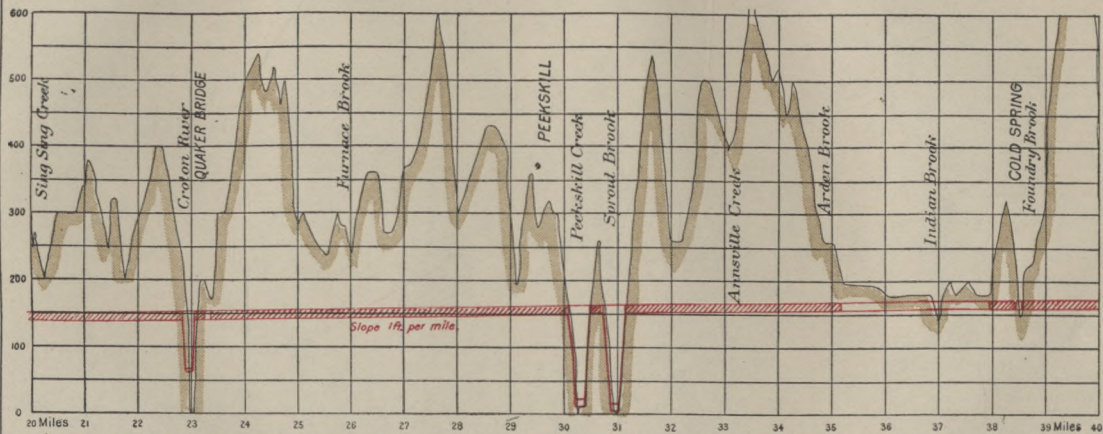
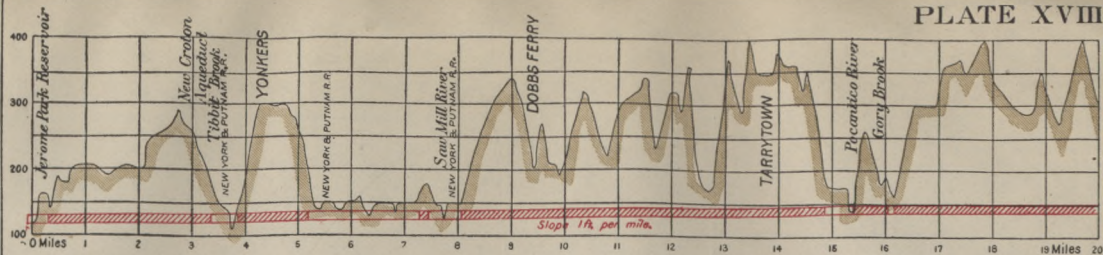
**PROFILE OF  
ADIRONDACK AQUEDUCT.**



**PROFILE OF  
ADIRONDACK AQUEDUCT.**

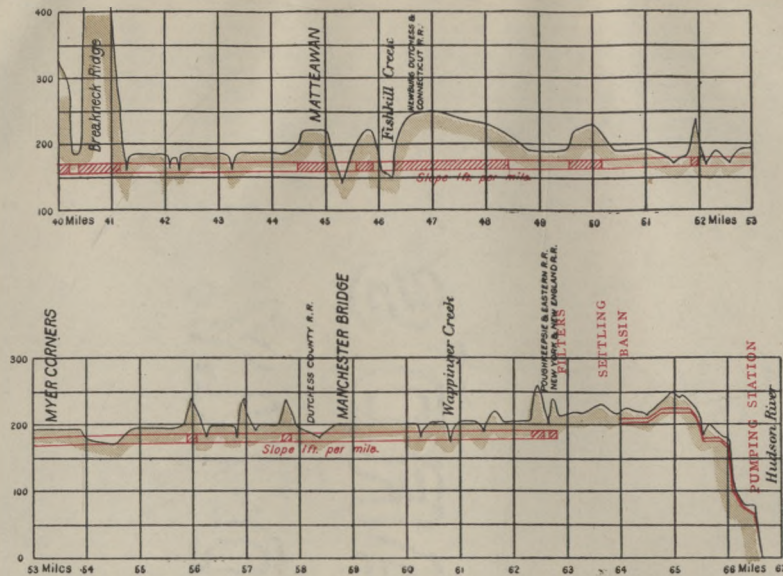
SCHROON LAKE  
RESERVOIR





JAMES H. FUERTES C.E.  
NEW YORK,  
APRIL, 1900.

PROFILE OF  
POUGHKEEPSIE LOW LEVEL AQUEDUCT.

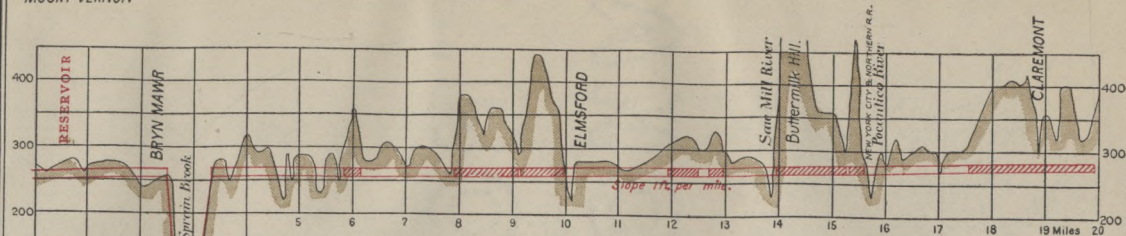


PROFILE OF  
POUGHKEEPSIE LOW LEVEL AQUEDUCT.

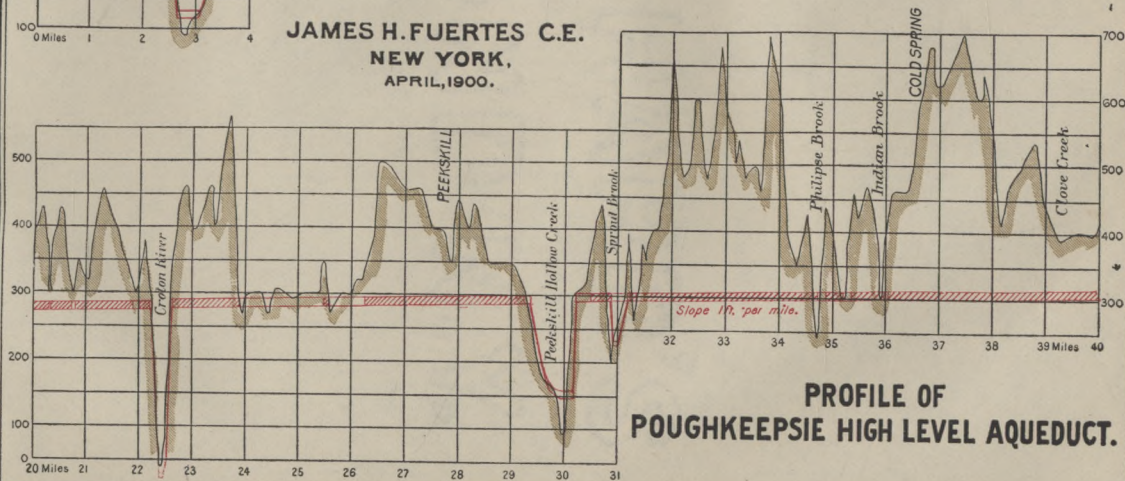


MOUNT VERNON

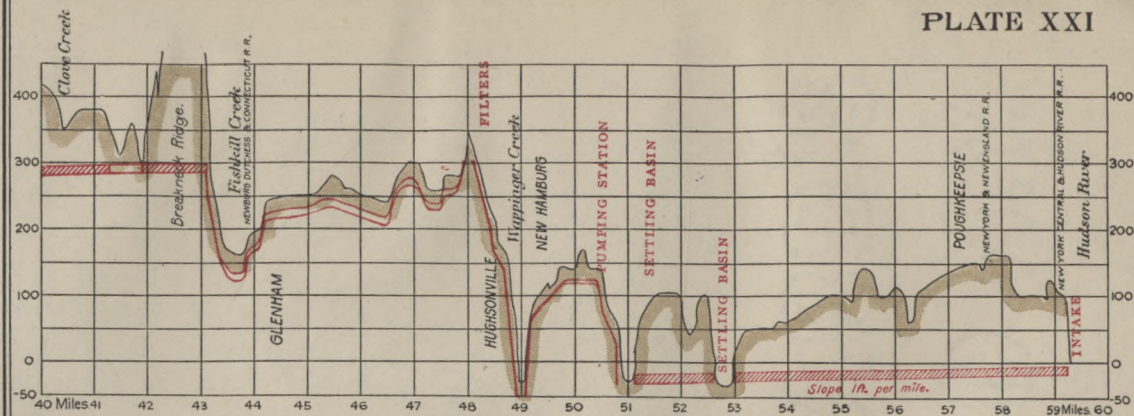
PLATE XX



JAMES H. FUERTES C.E.  
NEW YORK,  
APRIL, 1900.

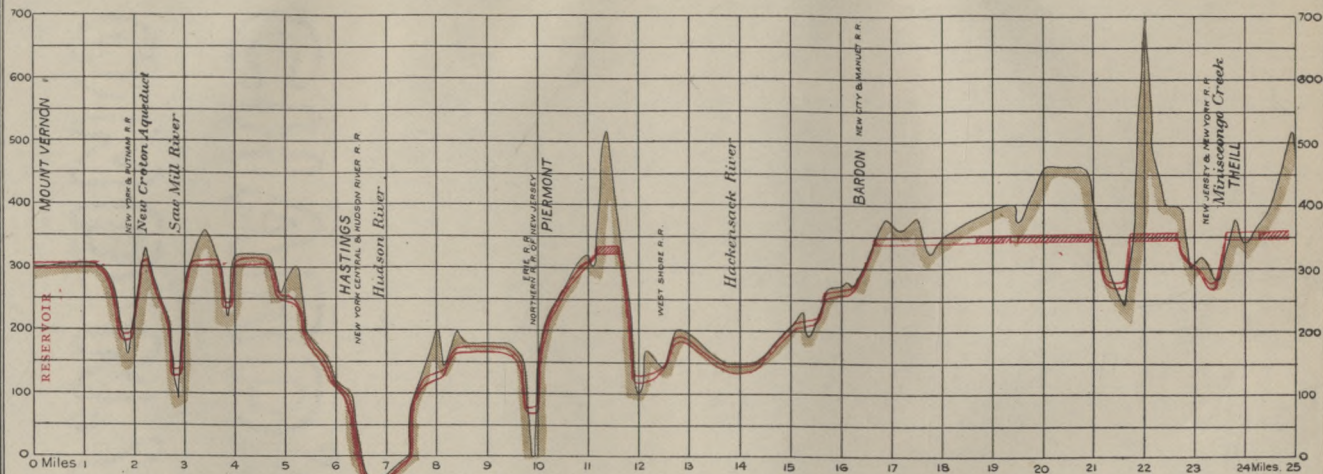


PROFILE OF  
POUGHKEEPSIE HIGH LEVEL AQUEDUCT.



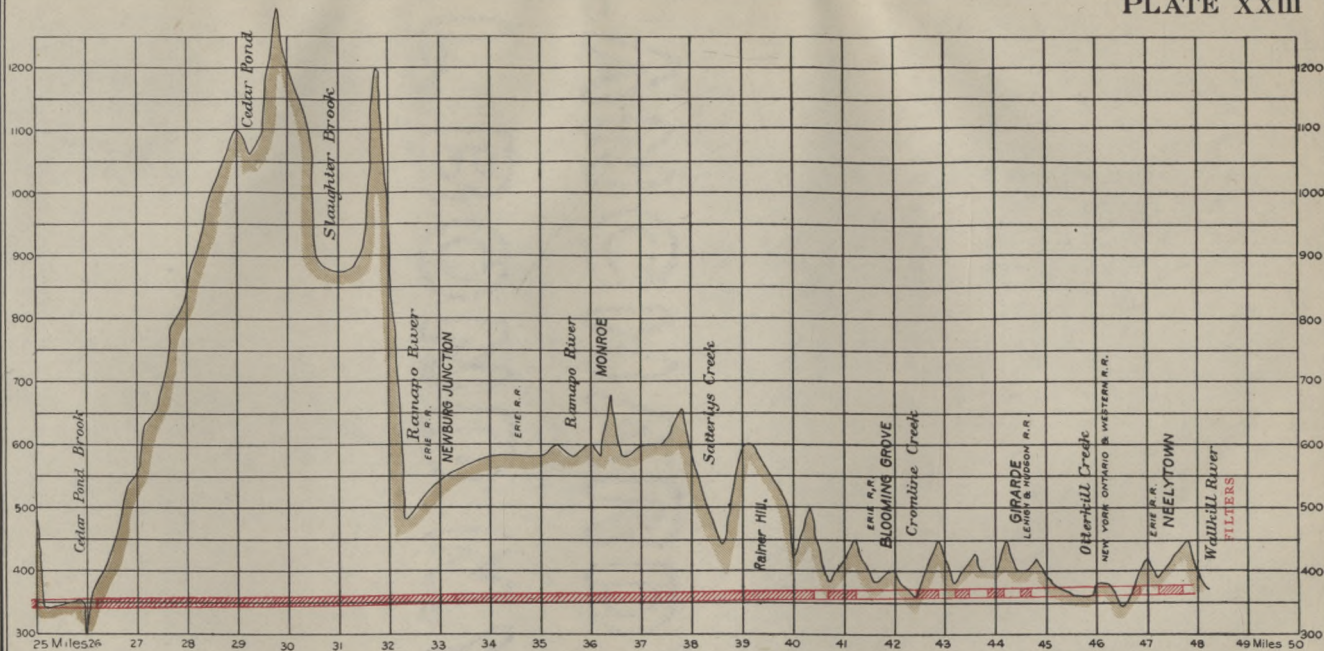
PROFILE OF  
POUGHKEEPSIE HIGH LEVEL AQUEDUCT.





JAMES H. FUERTES C.E.  
NEW YORK,  
APRIL, 1900.

PROFILE OF  
WALLKILL AQUEDUCT



PROFILE OF  
WALLKILL AQUEDUCT.





LEGEND

- 14 INCH PIPE
- 12 " " "
- 4 WAY BRANCH
- 3 " " "
- GATE (OPEN)
- " (CLOSED)
- HYDRANT (WITH AIR ESCAPE)
- BLOW-OFF
- 14" CHECK VALVE
- ELECTRIC SIGNAL STA.
- RELIEF VALVE

DIAGRAM MAP  
OF  
PROPOSED SEA WATER FIRE PIPE SYSTEM  
SECTION A

FROM CHAMBERS ST. TO CANAL ST.,  
HUDSON ST. TO BROADWAY

PREPARED TO ACCOMPANY REPORT TO  
THE MERCHANTS' ASSOCIATION  
OF NEW YORK

UPON  
AN AUXILIARY SEA WATER SUPPLY

BY  
FOSTER CROWELL, C.E.

NEW YORK

FEBRUARY 1900.

SCALE

