



Appendix 2.3-8

Hydrant Flow Testing Results



TOWN OF HEMPSTEAD WATER DEPARTMENT

HYDRANT FLOW TEST RESULTS

Nassau Hub

Test Date: Tuesday, August 22, 2023, at 8:45 A.M.

Personnel: Michael J. Cestare (H2M), Austin Payret (H2M) and Paul Slater (TOH)

I. TEST RESULTS:

<u>Flow Hydrant #1</u>	<u>Flow (gpm)</u>	<u>Static (psi)</u>
Hydrant #3455*	1,100	-

<u>Flow Hydrant #2</u>	<u>Flow (gpm)</u>	<u>Static (psi)</u>
Hydrant #3459*	1,130	-

<u>Test Hydrant</u>	<u>Static (psi)</u>	<u>Residual (psi)</u>
Hydrant #3457*	56	52

* See attached hydrant location map.

II. AVAILABLE FIRE FLOW AT 20 PSI RESIDUAL (NFPA 291):

$$Q_A = \frac{Q_F \times (h_a)^{.54}}{(h_f)^{.54}}$$

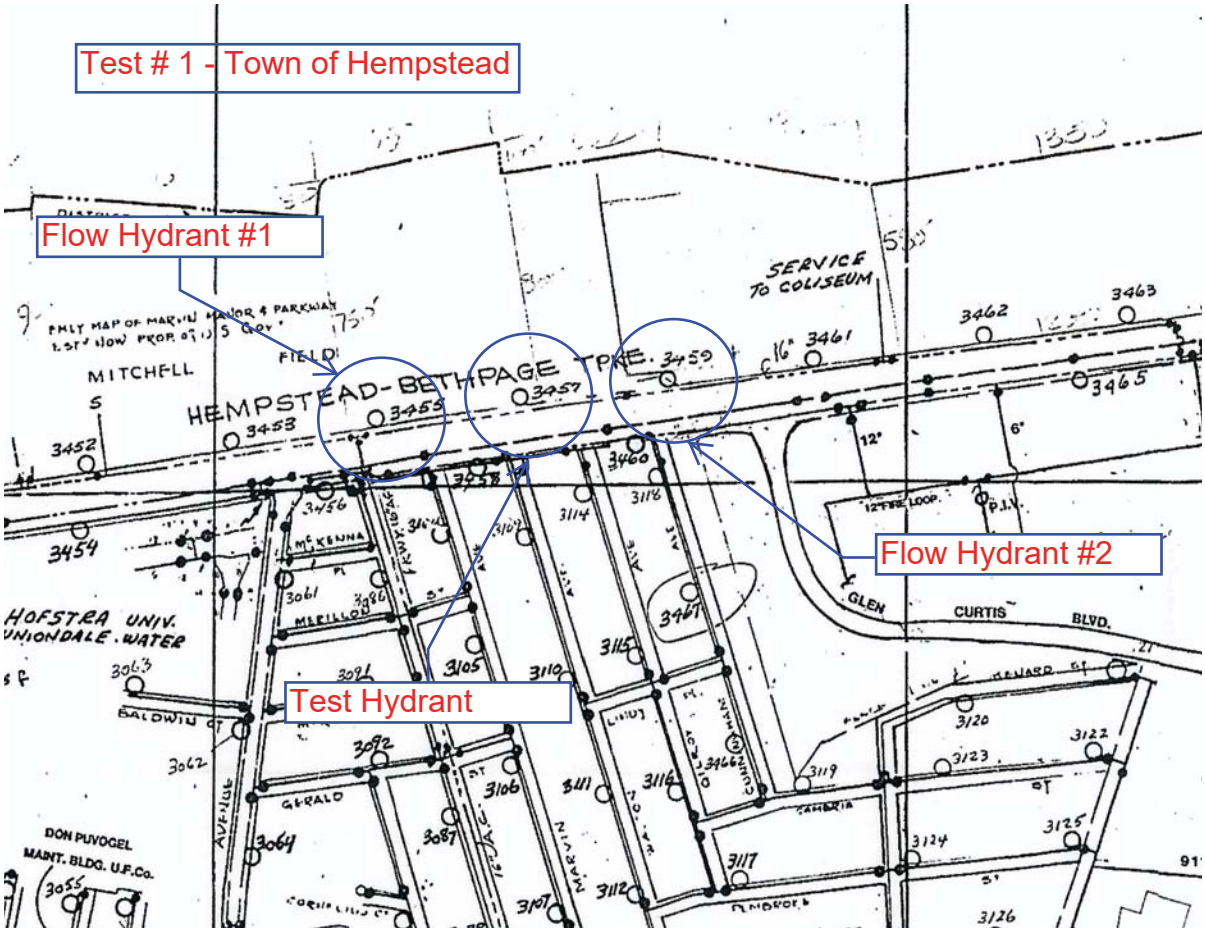
- Q_A - Available fire flow at 20 psi. residual.
- Q_F - Actual full flow measured during test.
- h_a - Pressure drop to 20 psi. residual.
- h_f - Pressure drop measured during test.

$$Q_A = 2,230 \text{ gpm} \times \frac{(56 \text{ psi} - 20 \text{ psi})^{.54}}{(10 \text{ psi})^{.54}} = \mathbf{4,500 \text{ gpm}}$$

Notes:

1. During full flow conditions, a 4 psi drop occurred at the test hydrant. A minimum 10 psi pressure drop is required to calculate the available fire flow at 20 psi system residual according to NFPA 291. Therefore, a 10 psi pressure drop was conservatively assumed in the calculation above.
2. The reported results represent conditions present in the existing distribution system at the referenced location during the time of the test. H2M and the Town of Hempstead Water Department cannot guarantee that these results will be maintained in the future as the results shown may vary based on seasonal demand or operational parameters.
3. As per NFPA 291, the total Q_A shall be rounded to the nearest 100 gpm for discharge flows of greater than 1,000 gpm.

Test # 1 - Town of Hempstead



Flow Hydrant #1

Flow Hydrant #2

Test Hydrant



NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

HYDRANT FLOW TEST RESULTS

Nassau Hub

Test Date: Tuesday, August 22, 2023, at 9:05 A.M.

Personnel: Michael J. Cestare (H2M), Austin Payret (H2M) and Paul Slater (TOH)

I. TEST RESULTS:

<u>Flow Hydrant #1</u>	<u>Flow (gpm)</u>	<u>Static (psi)</u>
Hydrant #37*	1,150	-

<u>Flow Hydrant #2</u>	<u>Flow (gpm)</u>	<u>Static (psi)</u>
Hydrant #34*	1,120	-

<u>Test Hydrant</u>	<u>Static (psi)</u>	<u>Residual (psi)</u>
Hydrant #36*	55	49

* See attached hydrant location map.

II. AVAILABLE FIRE FLOW AT 20 PSI RESIDUAL (NFPA 291):

$$Q_A = \frac{Q_F \times (h_a)^{.54}}{(h_f)^{.54}}$$

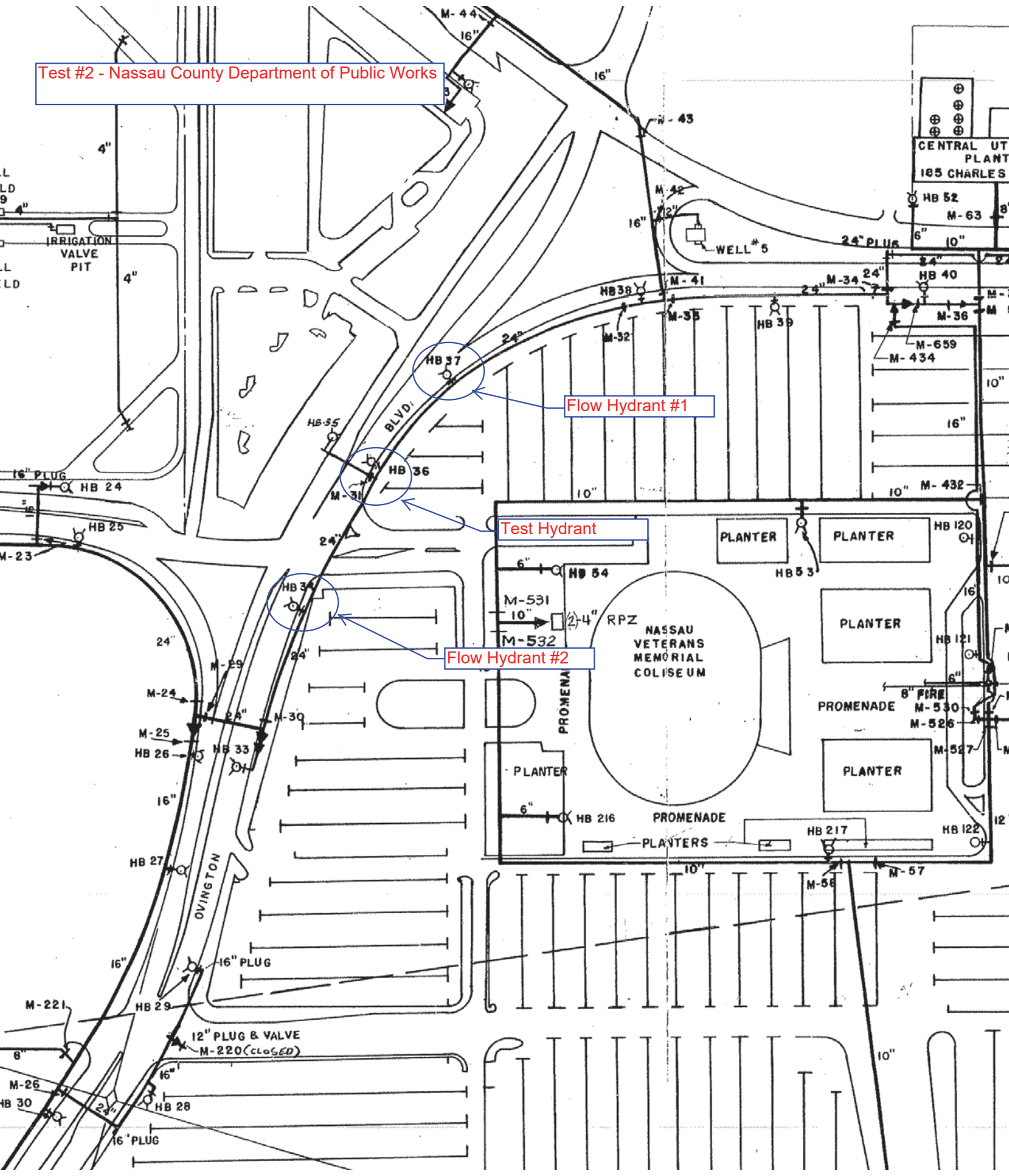
- Q_A - Available fire flow at 20 psi. residual.
- Q_F - Actual full flow measured during test.
- h_a - Pressure drop to 20 psi. residual.
- h_f - Pressure drop measured during test.

$$Q_A = 2,270 \text{ gpm} \times \frac{(55 \text{ psi} - 20 \text{ psi})^{.54}}{(10 \text{ psi})^{.54}} = \underline{\underline{4,500 \text{ gpm}}}$$

Notes:

1. During full flow conditions, a 6 psi drop occurred at the test hydrant. A minimum 10 psi pressure drop is required to calculate the available fire flow at 20 psi system residual according to NFPA 291. Therefore, a 10 psi pressure drop was conservatively assumed in the calculation above.
2. The reported results represent conditions present in the existing distribution system at the referenced location during the time of the test. H2M and Nassau County Department of Public Works cannot guarantee that these results will be maintained in the future as the results shown may vary based on seasonal demand or operational parameters.
3. As per NFPA 291, the total Q_A shall be rounded to the nearest 100 gpm for discharge flows of greater than 1,000 gpm.

Test #2 - Nassau County Department of Public Works



Flow Hydrant #1

Test Hydrant

Flow Hydrant #2