

# 5022 15TH AVENUE Fire Sprinkler Reports

for

5022 15TH AVENUE LLC

3908 16TH AVENUE  
BROOKLYN, NY 11219



Prepared By:  
ALEX SHEYMAN

05/14/2018



## General Project Data Report

### General Data

|                      |                      |                       |                                                          |
|----------------------|----------------------|-----------------------|----------------------------------------------------------|
| Project Title:       | 5022 15TH AVENUE     | Project File Name:    | 5022 15TH AVENUE-HYDRAULIC<br>CALCULATIONS 05-08-18..fiw |
| Designed By:         | ALEX SHEYMAN         | Date:                 | 05/14/2018                                               |
| Code Reference:      | NYC BUILDING CODE    | Approving Agency:     | NYC DOB                                                  |
| Client Name:         | 5022 15TH AVENUE LLC | Phone:                |                                                          |
| Address:             | 3908 16TH AVENUE     | City, State Zip Code: | BROOKLYN, NY 11219                                       |
| Company Name:        |                      | Representative:       |                                                          |
| Company Address:     |                      | City And State:       |                                                          |
| Phone:               |                      |                       |                                                          |
| Building Name:       | 5022 15TH AVENUE     | Building Owner:       | SAM KARP                                                 |
| Contact at Building: |                      | Phone at Building:    |                                                          |
| Address Of Building: |                      | City, State Zip Code: |                                                          |

### Project Data

|                                   |              |                                |                    |
|-----------------------------------|--------------|--------------------------------|--------------------|
| Description Of Hazard:            | Light Hazard | Sprinkler System Type:         | Wet                |
| Design Area Of Water Application: | 380 ft²      | Maximum Area Per Sprinkler:    | 95 ft²             |
| Default Sprinkler K-Factor:       | 4.90 K       | Default Pipe Material:         | SCHED 40 WET STEEL |
| Inside Hose Stream Allowance:     | 0.00 gpm     | Outside Hose Stream Allowance: | 0.00 gpm           |
| In Rack Sprinkler Allowance:      | 0.00 gpm     |                                |                    |

#### Sprinkler Specifications

|       |          |                     |       |
|-------|----------|---------------------|-------|
| Make: | RELIABLE | Model:              | RFC49 |
| Size: | 1/2      | Temperature Rating: | 165 F |

### Water Supply Test Data

|                                             |            |                                      |           |
|---------------------------------------------|------------|--------------------------------------|-----------|
| Source Of Information:                      | NYC DEP    | Date Of Test:                        | 09/28/17  |
| Test Hydrant ID:                            |            |                                      |           |
| Hydrant Elevation:                          | 0 ft       | Static Pressure:                     | 45.00 psi |
| Test Flow Rate:                             | 500.00 gpm | Test Residual Pressure:              | 44.00 psi |
| Calculated System Flow Rate:                | 53.95 gpm  | Calculated Inflow Residual Pressure: | 41.15 psi |
| Available Residual Pressure At System Flow: | 44.98 psi  |                                      |           |

### Calculation Project Data

|                                |          |                                |              |
|--------------------------------|----------|--------------------------------|--------------|
| Calculation Mode:              | Demand   |                                |              |
| HMD Minimum Residual Pressure: | 7.00 psi | Minimum Desired Flow Density:  | 0.10 gpm/ft² |
| Number Of Active Nodes:        | 15       |                                |              |
| Number Of Active Pipes:        | 14       | Number Of Inactive Pipes:      | 0            |
| Number Of Active Sprinklers:   | 4        | Number Of Inactive Sprinklers: | 0            |



## Fire Sprinkler Input Data

### Node Input Data

| Node No. | Node Description<br>Branch Description | Area Group<br>Branch Dia.<br>(in) | Sprinkler<br>KFactor (K)<br>Branch Len.<br>(ft) | Pressure<br>Estimate (psi)<br>Branch Stnd<br>Fittings | Node Elev (ft)<br>Branch Non-<br>Stnd Fittings<br>(ft) | Non-Sprinkler<br>Flow (gpm)<br>Branch Sprk<br>KFactor (K) |
|----------|----------------------------------------|-----------------------------------|-------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------|
| 10       | Sprinkler<br>----                      | ----<br>0.000                     | 4.90<br>0.0                                     | 7.00<br>----                                          | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 20       | Sprinkler<br>----                      | ----<br>0.000                     | 4.90<br>0.0                                     | 7.10<br>----                                          | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 30       | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 7.55<br>----                                          | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 40       | Sprinkler<br>----                      | ----<br>0.000                     | 4.90<br>0.0                                     | 8.45<br>----                                          | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 50       | Sprinkler<br>----                      | ----<br>0.000                     | 4.90<br>0.0                                     | 7.81<br>----                                          | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 100      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 8.54<br>----                                          | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 110      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 10.39<br>----                                         | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 120      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 10.90<br>----                                         | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 130      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 11.21<br>----                                         | 45.00<br>0.0                                           | 0.00<br>0.00                                              |
| 140      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 29.29<br>----                                         | 3.80<br>0.0                                            | 0.00<br>0.00                                              |
| 150      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 29.45<br>----                                         | 3.80<br>0.0                                            | 0.00<br>0.00                                              |
| 160      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 32.59<br>----                                         | -3.30<br>0.0                                           | 0.00<br>0.00                                              |
| 170      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 40.60<br>----                                         | -3.30<br>0.0                                           | 0.00<br>0.00                                              |
| 180      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 40.61<br>----                                         | -3.30<br>0.0                                           | 0.00<br>0.00                                              |
| 190      | No Discharge<br>----                   | ----<br>0.000                     | N/A<br>0.0                                      | 41.15<br>----                                         | -4.00<br>0.0                                           | 0.00<br>0.00                                              |



## Fire Sprinkler Input Data

### Pipe Input Data

| Beg. Node | End. Node | Pipe Description   | Nominal Diameter (inch) | Type Group | Fitting Data | Nominal Length (feet) | Fitting Length (feet) | Total Length (feet) | CFactor (gpm/inc h-psi) |
|-----------|-----------|--------------------|-------------------------|------------|--------------|-----------------------|-----------------------|---------------------|-------------------------|
| 190       | 180       | SCHED 40 WET STEEL | 3.000                   | 0          | 2EG          | 40.00                 | 15.00                 | 55.00               | 120                     |
| 180       | 170       | SCHED 40 WET STEEL | 3.000                   | 0          |              | 1.75                  | 0.00                  | 1.75                | 120                     |
| 170       | 160       | Backflo Prev       | 8.000                   | Loss       |              |                       |                       |                     |                         |
| 160       | 150       | SCHED 40 WET STEEL | 3.000                   | 0          | 2E           | 1.75                  | 14.00                 | 15.75               | 120                     |
| 150       | 140       | SCHED 40 WET STEEL | 3.000                   | 0          | 2E           | 22.50                 | 14.00                 | 36.50               | 120                     |
| 140       | 130       | SCHED 40 WET STEEL | 3.000                   | 0          | 2E           | 41.25                 | 14.00                 | 55.25               | 120                     |
| 130       | 120       | SCHED 40 WET STEEL | 2.500                   | 0          | E            | 18.25                 | 6.00                  | 24.25               | 120                     |
| 120       | 110       | SCHED 40 WET STEEL | 2.000                   | 0          |              | 17.00                 | 0.00                  | 17.00               | 120                     |
| 110       | 100       | SCHED 40 WET STEEL | 1.500                   | 0          | T            | 10.25                 | 8.00                  | 18.25               | 120                     |
| 100       | 50        | SCHED 40 WET STEEL | 1.000                   | 0          |              | 11.25                 | 0.00                  | 11.25               | 120                     |
| 100       | 40        | SCHED 40 WET STEEL | 1.250                   | 0          |              | 0.75                  | 0.00                  | 0.75                | 120                     |
| 40        | 30        | SCHED 40 WET STEEL | 1.250                   | 0          | T            | 10.00                 | 6.00                  | 16.00               | 120                     |
| 30        | 20        | SCHED 40 WET STEEL | 1.000                   | 0          |              | 7.75                  | 0.00                  | 7.75                | 120                     |
| 30        | 10        | SCHED 40 WET STEEL | 1.000                   | 0          | E            | 7.50                  | 2.00                  | 9.50                | 120                     |



## Fire Sprinkler Output Data

### Overall Node Groupings Output Data

| Pipe Segment<br>Beg. Node | End. Node | Pipe Type<br>Group | Pipe Flow Rate<br>(gpm) | Sprinkler Flow<br>At Beg. Node<br>(gpm) | Non-Sprinkler Flow<br>Out (+)<br>(gpm) | In (-)<br>(gpm) | Beg. Node<br>Residual<br>Pressure (psi) | Imbalance<br>Flow At Beg.<br>Node (gpm) |
|---------------------------|-----------|--------------------|-------------------------|-----------------------------------------|----------------------------------------|-----------------|-----------------------------------------|-----------------------------------------|
| 10                        | 30        | 0                  | -12.96                  | 12.96                                   | 0.00                                   | 0.00            | 7.00                                    |                                         |
| 20                        | 30        | 0                  | -13.05                  | 13.05                                   | 0.00                                   | 0.00            | 7.10                                    | 0.00002                                 |
| 30                        | 10        | 0                  | 12.96                   | 0.00                                    | 0.00                                   | 0.00            | 7.55                                    | -0.00001                                |
| 30                        | 20        | 0                  | 13.05                   |                                         |                                        |                 |                                         |                                         |
| 30                        | 40        | 0                  | -26.02                  |                                         |                                        |                 |                                         |                                         |
| 40                        | 30        | 0                  | 26.02                   | 14.24                                   | 0.00                                   | 0.00            | 8.45                                    | 0.00002                                 |
| 40                        | 100       | 0                  | -40.26                  |                                         |                                        |                 |                                         |                                         |
| 50                        | 100       | 0                  | -13.70                  | 13.70                                   | 0.00                                   | 0.00            | 7.81                                    | 0.00002                                 |
| 100                       | 40        | 0                  | 40.26                   | 0.00                                    | 0.00                                   | 0.00            | 8.54                                    | -0.00002                                |
| 100                       | 50        | 0                  | 13.70                   |                                         |                                        |                 |                                         |                                         |
| 100                       | 110       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 110                       | 100       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | 0.00            | 10.39                                   | 0.00000                                 |
| 110                       | 120       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 120                       | 110       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | 0.00            | 10.90                                   | 0.00000                                 |
| 120                       | 130       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 130                       | 120       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | 0.00            | 11.21                                   | 0.00000                                 |
| 130                       | 140       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 140                       | 130       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | 0.00            | 29.29                                   | 0.00000                                 |
| 140                       | 150       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 150                       | 140       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | 0.00            | 29.45                                   | 0.00000                                 |
| 150                       | 160       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 160                       | 150       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | 0.00            | 32.59                                   | 0.02525                                 |
| 160                       | 170       | 0                  | -53.93                  |                                         |                                        |                 |                                         |                                         |
| 170                       | 160       | 0                  | 53.93                   | 0.00                                    | 0.00                                   | 0.00            | 40.60                                   | -0.02526                                |
| 170                       | 180       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 180                       | 170       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | 0.00            | 40.61                                   | 0.00001                                 |
| 180                       | 190       | 0                  | -53.95                  |                                         |                                        |                 |                                         |                                         |
| 190                       | 180       | 0                  | 53.95                   | 0.00                                    | 0.00                                   | -53.95          | 41.15                                   |                                         |



## Fire Sprinkler Output Data

### Overall Pipe Output Data

| Beg.<br>End.<br>Node | Nodal<br>KFactor<br>(K) | Elevation<br>(feet) | Spk/Hose<br>Discharge<br>(gpm) | Residual<br>Pressure<br>(psi) | Nom. Dia.<br>Inside Dia.<br>C-Value | q (gpm)<br>Q (gpm)<br>Velocity<br>(fps) | F. L./ft<br>(psi/ft)<br>Fittings<br>Type-Grp | Pipe-Len.<br>Fit-Len.<br>Tot-Len.<br>(ft) | PF-(psi)<br>PE-(psi)<br>PT-(psi) |
|----------------------|-------------------------|---------------------|--------------------------------|-------------------------------|-------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|----------------------------------|
| 30                   | 0.00                    | 45.00               | 0.00                           | 7.55                          | 1.00                                | 12.96                                   | 0.05837                                      | 7.50                                      | 0.555                            |
| 10                   | 4.90                    | 45.00               | 12.96                          | 7.00                          | 1.049                               | 12.96                                   | E                                            | 2.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 4.81                                    | 0                                            | 9.50                                      | 0.555                            |
| 30                   | 0.00                    | 45.00               | 0.00                           | 7.55                          | 1.00                                | 13.05                                   | 0.05912                                      | 7.75                                      | 0.458                            |
| 20                   | 4.90                    | 45.00               | 13.05                          | 7.10                          | 1.049                               | 13.05                                   | ----                                         | 0.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 4.85                                    | 0                                            | 7.75                                      | 0.458                            |
| 40                   | 4.90                    | 45.00               | 14.24                          | 8.45                          | 1.25                                | 0.00                                    | 0.05570                                      | 10.00                                     | 0.891                            |
| 30                   | 0.00                    | 45.00               | 0.00                           | 7.55                          | 1.380                               | 26.02                                   | T                                            | 6.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 5.58                                    | 0                                            | 16.00                                     | 0.891                            |
| 100                  | 0.00                    | 45.00               | 0.00                           | 8.54                          | 1.25                                | 14.24                                   | 0.12492                                      | 0.75                                      | 0.094                            |
| 40                   | 4.90                    | 45.00               | 14.24                          | 8.45                          | 1.380                               | 40.26                                   | ----                                         | 0.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 8.64                                    | 0                                            | 0.75                                      | 0.094                            |
| 100                  | 0.00                    | 45.00               | 0.00                           | 8.54                          | 1.00                                | 13.70                                   | 0.06461                                      | 11.25                                     | 0.727                            |
| 50                   | 4.90                    | 45.00               | 13.70                          | 7.81                          | 1.049                               | 13.70                                   | ----                                         | 0.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 5.08                                    | 0                                            | 11.25                                     | 0.727                            |
| 110                  | 0.00                    | 45.00               | 0.00                           | 10.39                         | 1.50                                | 0.00                                    | 0.10136                                      | 10.25                                     | 1.850                            |
| 100                  | 0.00                    | 45.00               | 0.00                           | 8.54                          | 1.610                               | 53.95                                   | T                                            | 8.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 8.50                                    | 0                                            | 18.25                                     | 1.850                            |
| 120                  | 0.00                    | 45.00               | 0.00                           | 10.90                         | 2.00                                | 0.00                                    | 0.03002                                      | 17.00                                     | 0.510                            |
| 110                  | 0.00                    | 45.00               | 0.00                           | 10.39                         | 2.067                               | 53.95                                   | ----                                         | 0.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 5.16                                    | 0                                            | 17.00                                     | 0.510                            |
| 130                  | 0.00                    | 45.00               | 0.00                           | 11.21                         | 2.50                                | 0.00                                    | 0.01263                                      | 18.25                                     | 0.306                            |
| 120                  | 0.00                    | 45.00               | 0.00                           | 10.90                         | 2.469                               | 53.95                                   | E                                            | 6.00                                      | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 3.62                                    | 0                                            | 24.25                                     | 0.306                            |
| 140                  | 0.00                    | 3.80                | 0.00                           | 29.29                         | 3.00                                | 0.00                                    | 0.00439                                      | 41.25                                     | 0.242                            |
| 130                  | 0.00                    | 45.00               | 0.00                           | 11.21                         | 3.068                               | 53.95                                   | 2E                                           | 14.00                                     | 17.840                           |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 2.34                                    | 0                                            | 55.25                                     | 18.082                           |
| 150                  | 0.00                    | 3.80                | 0.00                           | 29.45                         | 3.00                                | 0.00                                    | 0.00439                                      | 22.50                                     | 0.160                            |
| 140                  | 0.00                    | 3.80                | 0.00                           | 29.29                         | 3.068                               | 53.95                                   | 2E                                           | 14.00                                     | 0.000                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 2.34                                    | 0                                            | 36.50                                     | 0.160                            |
| 160                  | 0.00                    | -3.30               | 0.00                           | 32.59                         | 3.00                                | 0.00                                    | 0.00439                                      | 1.75                                      | 0.069                            |
| 150                  | 0.00                    | 3.80                | 0.00                           | 29.45                         | 3.068                               | 53.95                                   | 2E                                           | 14.00                                     | 3.074                            |
| SCHD 40 WET STEEL    |                         |                     |                                |                               | 120                                 | 2.34                                    | 0                                            | 15.75                                     | 3.143                            |
| 170                  | Backflo<br>Prev         | -3.30               |                                | 40.60                         |                                     | 53.93                                   |                                              |                                           |                                  |
| 160                  | 8.00 psi                | -3.30               |                                | 32.59                         |                                     |                                         |                                              |                                           |                                  |



## Fire Sprinkler Output Data

### Overall Pipe Output Data (cont'd)

| Beg.<br>End.<br>Node | Nodal<br>KFactor<br>(K) | Elevation<br>(feet) | Spk/Hose<br>Discharge<br>(gpm) | Residual<br>Pressure<br>(psi) | Nom. Dia.<br>Inside Dia.<br>C-Value | q (gpm)<br>Q (gpm)<br>Velocity<br>(fps) | F. L./ft<br>(psi/ft)<br>Fittings<br>Type-Grp | Pipe-Len.<br>Fit-Len.<br>Tot-Len.<br>(ft) | PF-(psi)<br>PE-(psi)<br>PT-(psi) |
|----------------------|-------------------------|---------------------|--------------------------------|-------------------------------|-------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|----------------------------------|
| 180                  | 0.00                    | -3.30               | 0.00                           | 40.61                         | 3.00                                | 0.00                                    | 0.00439                                      | 1.75                                      | 0.008                            |
| 170                  | 0.00                    | -3.30               | 0.00                           | 40.60                         | 3.068                               | 53.95                                   | -----                                        | 0.00                                      | 0.000                            |
| SCHED 40 WET STEEL   |                         |                     |                                |                               | 120                                 | 2.34                                    | 0                                            | 1.75                                      | 0.008                            |
| 190                  | 0.00                    | -4.00               | 0.00                           | 41.15                         | 3.00                                | 0.00                                    | 0.00439                                      | 40.00                                     | 0.241                            |
| 180                  | 0.00                    | -3.30               | 0.00                           | 40.61                         | 3.068                               | 53.95                                   | 2EG                                          | 15.00                                     | 0.303                            |
| SCHED 40 WET STEEL   |                         |                     |                                |                               | 120                                 | 2.34                                    | 0                                            | 55.00                                     | 0.544                            |



## Fire Sprinkler Output Data

### Overall Sprinkler Output Data

| Flowing<br>Sprinkler<br>Node No. | Area Group<br>Code | Sprinkler<br>KFactor (K) | Sprinkler<br>Elevation<br>(feet) | Residual<br>Pressure<br>(psi) | Flowing<br>Area (ft²) | Flowing<br>Density<br>(gpm/ft²) | Sprinkler<br>Discharge<br>(gpm) |
|----------------------------------|--------------------|--------------------------|----------------------------------|-------------------------------|-----------------------|---------------------------------|---------------------------------|
| 10                               |                    | 4.90                     | 45.00                            | 7.00                          | 95.00                 | 0.136                           | 12.96                           |
| Sub Totals For Non-Group         |                    |                          |                                  |                               | 95.00                 | 0.136                           | 12.96                           |
| 20                               |                    | 4.90                     | 45.00                            | 7.10                          | 95.00                 | 0.137                           | 13.05                           |
| Sub Totals For Non-Group         |                    |                          |                                  |                               | 95.00                 | 0.137                           | 13.05                           |
| 40                               |                    | 4.90                     | 45.00                            | 8.45                          | 95.00                 | 0.150                           | 14.24                           |
| Sub Totals For Non-Group         |                    |                          |                                  |                               | 95.00                 | 0.150                           | 14.24                           |
| 50                               |                    | 4.90                     | 45.00                            | 7.81                          | 95.00                 | 0.144                           | 13.70                           |
| Sub Totals For Non-Group         |                    |                          |                                  |                               | 95.00                 | 0.144                           | 13.70                           |
| Totals For All Groups            |                    |                          |                                  |                               | 380.00                | 0.142                           | 53.95                           |



## Fire Sprinkler Output Summary

### Hydraulically Most Demanding Sprinkler Node

|                               |           |
|-------------------------------|-----------|
| HMD Sprinkler Node Number:    | 10        |
| HMD Actual Residual Pressure: | 7.00 psi  |
| HMD Actual GPM:               | 12.96 gpm |

### Sprinkler Summary

|                                         |                           |
|-----------------------------------------|---------------------------|
| Sprinkler System Type:                  | Wet                       |
| Specified Area Of Application:          | 380.00 ft <sup>2</sup>    |
| Minimum Desired Density:                | 0.100 gpm/ft <sup>2</sup> |
| Application Average Density:            | 0.142 gpm/ft <sup>2</sup> |
| Application Average Area Per Sprinkler: | 95.00 ft <sup>2</sup>     |
| Sprinkler Flow:                         | 53.95 gpm                 |
| Average Sprinkler Flow:                 | 13.49 gpm                 |

### Flow Velocity And Imbalance Summary

|                                                |             |
|------------------------------------------------|-------------|
| Maximum Flow Velocity ( In Pipe 40 - 100 )     | 8.64 ft/sec |
| Maximum Velocity Pressure ( In Pipe 40 - 100 ) | 0.50 psi    |
| Allowable Maximum Nodal Pressure Imbalance:    | 0.0100 psi  |
| Actual Maximum Nodal Pressure Imbalance:       | 0.0069 psi  |
| Actual Average Nodal Pressure Imbalance:       | 0.0014 psi  |
| Actual Maximum Nodal Flow Imbalance:           | -0.0253 gpm |
| Actual Average Nodal Flow Imbalance:           | 0.0034 gpm  |

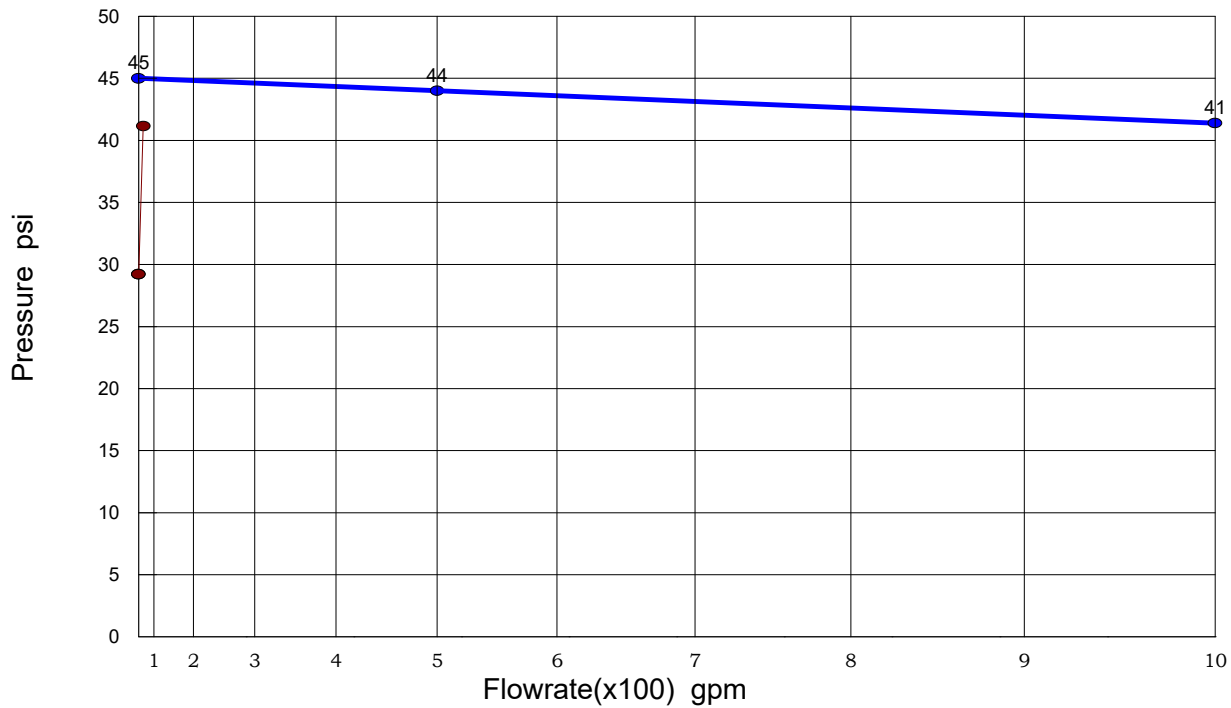
### Overall Network Summary

|                                                           |           |
|-----------------------------------------------------------|-----------|
| Number Of Unique Pipe Sections:                           | 14        |
| Number Of Flowing Sprinklers:                             | 4         |
| Pipe System Water Volume:                                 | 51.80 gal |
| Sprinkler Flow:                                           | 53.95 gpm |
| Non-Sprinkler Flow:                                       | 0.00 gpm  |
| Minimum Required Residual Pressure At System Inflow Node: | 41.15 psi |
| Demand Flow At System Inflow Node:                        | 53.95 gpm |



## Fire Sprinkler Output Data

### Hydraulic Supply/Demand Graph



### Supply Curve Data

Static Pressure: 45 psi  
Test Residual Pressure: 44 psi  
Test Flow Rate: 500 gpm

### Demand Curve Data

Calculated Residual Pressure: 41.15 psi  
Calculated Flow Rate: 53.95 gpm  
Excess Available Residual Pressure At Calculated Flow: 3.83 psi  
Pressure Required For First Sprinkler Downstream From Inflow Node To Flow: 29.22 psi