



Aurora Water

Planning & Engineering
26791 E Quincy Ave
Aurora, CO 80018
303.739.7370



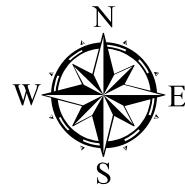
City of Aurora

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| SITE: 17200 E Mexico | | HYDRANT: 12L-23 | | | |
|----------------------------------|-------------------------------|------------------------------|-------------------------------|--------------------------------|---|
| SCENARIO: 2024 Summer Day | | DATE: 10/15/2024 | | | |
| <i>Hydraulic Zone</i> | <i>Fire-Flow Demand (gpm)</i> | <i>Static Pressure (psi)</i> | <i>Fire-Flow Demand (mgd)</i> | <i>Residual Pressure (psi)</i> | <i>Available Flow at Hydrant @ 20 psi (gpm)</i> |
| 4 | 2500 | 90.9 | 3.60 | 55.2 | 3,678.0 |

The City of Aurora performs fireflow simulations on the City's Water Distribution Model, using InfoWater software by Innovyze, Inc. The model developed from pipes and node elevations from the City's GIS system, design drawings for pumps and tanks, and diurnal demand patterns from SCADA and historical use records. Comparing the model's performance with SCADA data validates the model. Fireflow simulations are performed under a maximum day demand scenario. These pressures may differ slightly than actual pressures measured in the field.

Warranty: The City of Aurora, Colorado makes no warranties or guarantees, express or implied, as to the completeness, accuracy, or correctness of this data, nor shall the city incur any liability from any incorrect, incomplete or misleading information contained therein. The City makes no warranties, either express or implied, of the value, design, condition, title, merchantability, or fitness for a particular purpose. The City shall not be liable for any direct, indirect, incidental, consequential, punitive, or special damages, whether foreseeable or unforeseeable, arising out of the authorized or unauthorized use of this data or the inability to use this data or out of any breach of warranty whatsoever.



LEGEND:

Fire Hydrants

Proposed Fire Hydrants

Water Valves

UNIT TYPE

ARV

Butterfly

BFV

CK

FLAPGATE

GV

PRV

Plug

ZV

Proposed Water Valves

Water Fittings

UNIT TYPE

Building

Cup

Circle

Enclose End

Hydrant Tee

Main Tee

Meter Tee

Other

Plug

Reducer

Service Tee

Wet Tap

Proposed Water Fittings

Water Test Stations

Water Storage

Water Wells

CCV Denver, EDCV

OWNER, WATER TYPE

Aurora, Potable

Private, Potable

Water Mains

CCV Denver, EDCV

OWNER, WATER TYPE

Aurora, Potable

Private, Potable

Proposed Water Mains

Proposed Water Mains

Abandoned Point

call other values

POINT TYPE

Filling

Hydrant

Manhole

Meter

Value

Abandoned Mains

Pressure Zones

Water Facilities Security Area

Address Point

Exemsted Line

Parcels

Street Name Decoded Line

CITY LIMITS

FUTURE UTILITIES CORRIDOR

THIS IS THE PROPOSED LOCATION FOR A 66" WATER LINE WITH FOUR ALTERNATE ROUTES. IF YOU HAVE ANY QUESTIONS REGARDING ANY CONSTRUCTION WITHIN THIS CORRIDOR PLEASE CONTACT THE CITY OF AURORA, CAPITAL PROJECTS DIVISION (720)-859-4300

*** RESTRICTED AREA ***

AURORA WATER SECURITY AREA

THIS INFORMATION HAS BEEN BLOCKED FOR SECURITY PURPOSES. CONTACT AURORA WATER, ENGINEERING DIVISION FOR DETAILS AT (303)-739-7376

NOTES:

THE CITY OF AURORA, WATER DEPARTMENT ASSUMES NO RESPONSIBILITY OR LIABILITY OF ANY KIND TO ANY USER OF THIS MAP.

LOCATIONS ON THIS MAP ARE APPROXIMATE AND ARE INTENDED TO SERVE AS AN AID IN GRAPHIC REPRESENTATION ONLY.

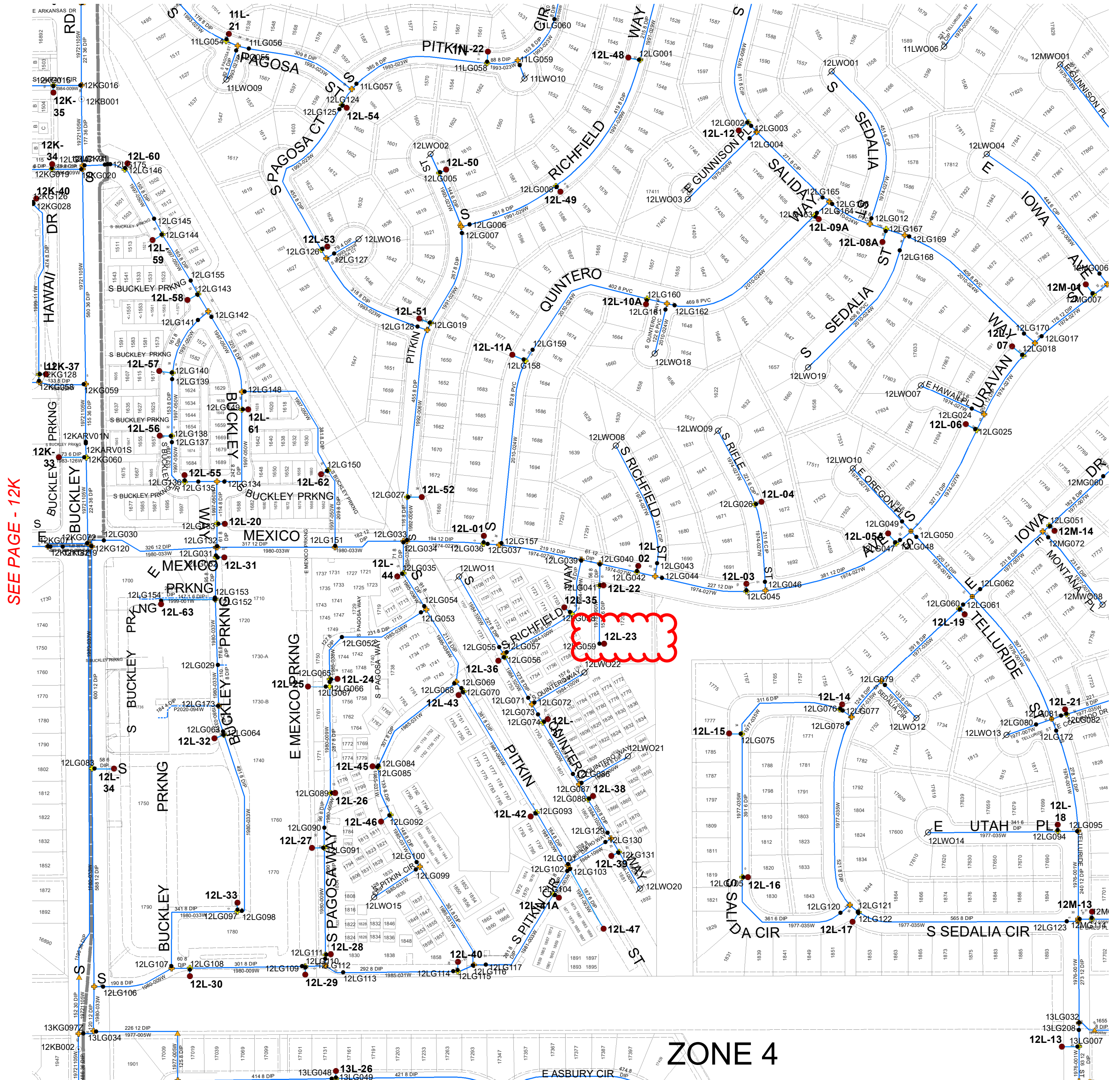
BEFORE EXCAVATION CALL THE CITY OF AURORA WATER OPERATIONS AT (303)-326-8645 TO SCHEDULE FIELD LOCATIONS OF WATER, STORM AND SANITARY LINES.

PLEASE REPORT ANY ERRORS OR OMISSIONS ON THIS MAP TO THE CITY OF AURORA, AURORA WATER, ENGINEERING DIVISION, GIS SECTION.

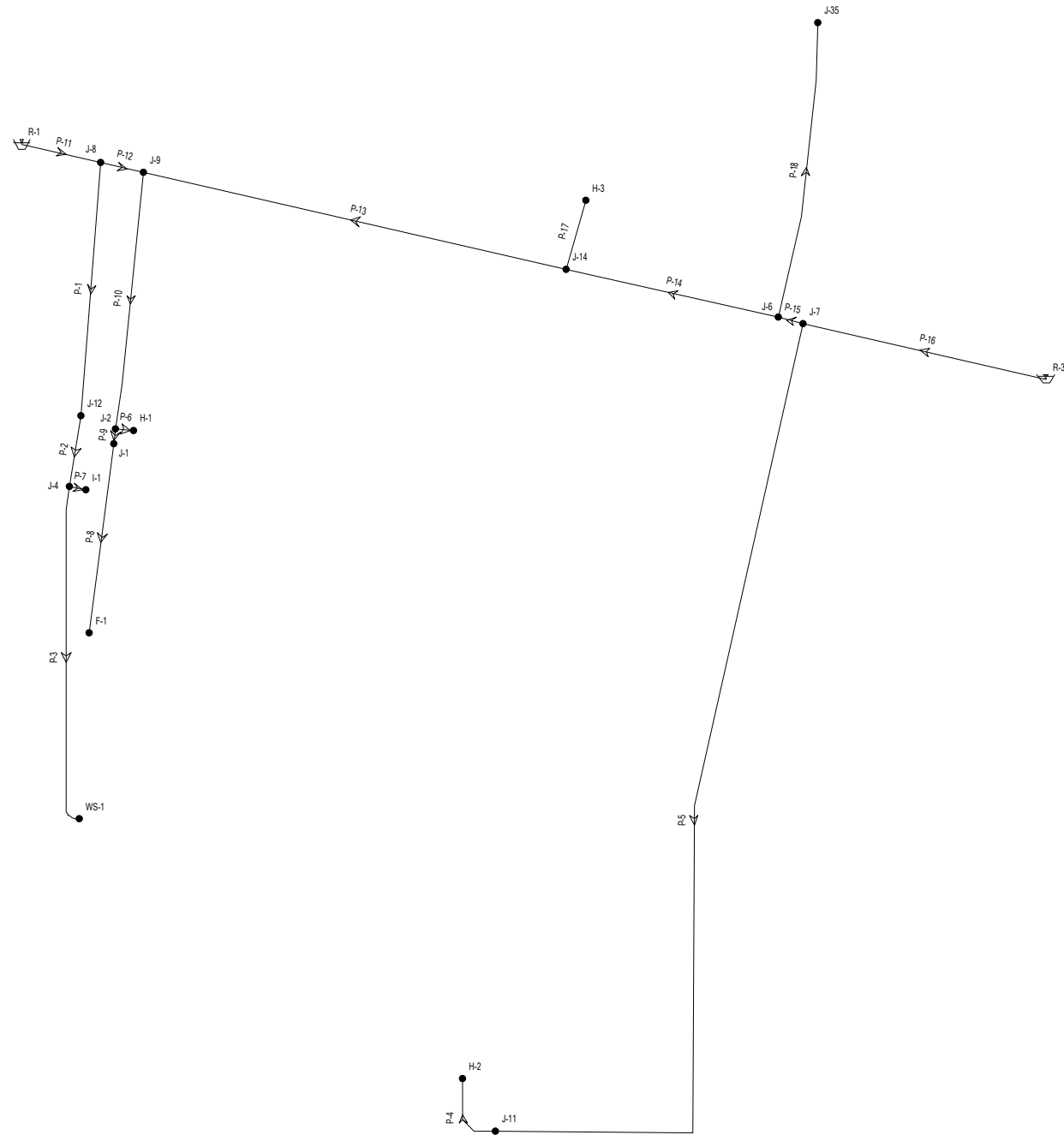
PLOT DATE:

October 6, 2024

SEE PAGE - 11L



Scenario: Fire Flow



Scenario: Fire Flow

Fire Flow Analysis

Pipe Report

| Label | Length (ft) | Diameter (in) | Material | Hazen- Williams C | Check Valve? | Minor Loss Coefficient | Control Status | Discharge (gpm) | Upstream Structure Hydraulic Grade (ft) | Downstream Structure Hydraulic Grade (ft) | Pressure Pipe Headloss (ft) | Headloss Gradient (ft/1000ft) | Velocity (ft/s) |
|-------|----------------|------------------|-------------|-------------------------|-----------------|------------------------------|-------------------|--------------------|---|---|--------------------------------------|-------------------------------------|--------------------|
| P-1 | 58.50 | 2.0 | Copper | 135.0 | false | 0.00 | Open | -3.00 | 5,849.38 | 5,849.40 | 0.02 | 0.31 | 0.31 |
| P-2 | 16.40 | 2.0 | Copper | 135.0 | false | 0.00 | Open | 3.00 | 5,849.38 | 5,849.38 | 0.01 | 0.33 | 0.31 |
| P-3 | 78.20 | 2.0 | Copper | 135.0 | false | 0.05 | Open | 1.00 | 5,849.38 | 5,849.37 | 0.00 | 0.04 | 0.10 |
| P-4 | 18.10 | 6.0 | Ductile Iro | 130.0 | false | 0.39 | Open | -1,500.00 | 5,835.14 | 5,839.74 | 4.60 | 254.10 | 17.02 |
| P-5 | 233.50 | 8.0 | Ductile Iro | 130.0 | false | 0.39 | Open | -1,500.00 | 5,839.74 | 5,849.33 | 9.59 | 41.08 | 9.57 |
| P-6 | 4.30 | 6.0 | Ductile Iro | 130.0 | false | 0.39 | Open | -1,500.00 | 5,836.34 | 5,838.77 | 2.43 | 565.04 | 17.02 |
| P-7 | 3.80 | 1.0 | Copper | 135.0 | false | 0.00 | Open | -2.00 | 5,849.36 | 5,849.38 | 0.02 | 4.24 | 0.82 |
| P-8 | 43.60 | 6.0 | Ductile Iro | 130.0 | false | 0.00 | Open | -1,500.00 | 5,831.78 | 5,838.63 | 6.85 | 157.16 | 17.02 |
| P-9 | 3.60 | 8.0 | Ductile Iro | 130.0 | false | 0.00 | Open | -1,500.00 | 5,838.63 | 5,838.77 | 0.14 | 38.66 | 9.57 |
| P-10 | 59.10 | 8.0 | Ductile Iro | 130.0 | false | 0.39 | Open | -3,000.00 | 5,838.77 | 5,849.25 | 10.48 | 177.29 | 19.15 |
| P-11 | 18.70 | 12.0 | Ductile Iro | 130.0 | false | 0.39 | Open | 2,586.63 | 5,850.00 | 5,849.40 | 0.60 | 32.17 | 7.34 |
| P-12 | 10.00 | 12.0 | Ductile Iro | 130.0 | false | 0.00 | Open | 2,583.63 | 5,849.40 | 5,849.25 | 0.15 | 14.70 | 7.33 |
| P-13 | 99.50 | 12.0 | Ductile Iro | 130.0 | false | 0.00 | Open | -416.37 | 5,849.25 | 5,849.30 | 0.05 | 0.50 | 1.18 |
| P-14 | 49.80 | 12.0 | Ductile Iro | 130.0 | false | 0.00 | Open | -416.38 | 5,849.30 | 5,849.33 | 0.02 | 0.50 | 1.18 |
| P-15 | 6.00 | 12.0 | Ductile Iro | 130.0 | false | 0.00 | Open | -431.38 | 5,849.33 | 5,849.33 | 0.00 | 0.57 | 1.22 |
| P-16 | 57.00 | 12.0 | Ductile Iro | 130.0 | false | 0.39 | Open | -1,931.38 | 5,849.33 | 5,850.00 | 0.67 | 11.76 | 5.48 |
| P-17 | 16.50 | 6.0 | Ductile Iro | 130.0 | false | 0.39 | Open | -0.00 | 5,849.30 | 5,849.30 | 0.00 | 0.00 | 0.00 |
| P-18 | 68.60 | 6.0 | Ductile Iro | 130.0 | false | 0.39 | Open | 15.00 | 5,849.33 | 5,849.32 | 0.00 | 0.04 | 0.17 |

Scenario: Fire Flow

Fire Flow Analysis

Fire Flow Report

| Label | Zone | Fire Flow Iterations | Fire Flow Balanced? | Satisfies Fire Flow Constraints? | Needed Fire Flow (gpm) | Available Fire Flow (gpm) | Total Flow Needed (gpm) | Total Flow Available (gpm) | Residual Pressure (psi) | Calculated Residual Pressure (psi) | Minimum Zone Pressure (psi) | Calculated Minimum Zone Pressure (psi) | Minimum Zone Junction | Minimum System Pressure (psi) | Calculated Minimum System Pressure (psi) | Minimum System Junction |
|-------|------|----------------------|---------------------|----------------------------------|------------------------|---------------------------|-------------------------|----------------------------|-------------------------|------------------------------------|-----------------------------|--|-----------------------|-------------------------------|--|-------------------------|
| H-3 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-4 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| H-2 | Zone | 2 | true | true | 1,500.00 | 3,678.00 | 1,500.00 | 3,678.00 | 20.00 | 62.39 | 20.00 | 73.43 | J-11 | 20.00 | 73.43 | J-11 |
| J-12 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| I-1 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| F-1 | Zone | 2 | true | true | 1,500.00 | 3,678.00 | 1,500.00 | 3,678.00 | 20.00 | 66.90 | 20.00 | 81.88 | H-1 | 20.00 | 81.88 | H-1 |
| J-2 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-8 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-11 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| H-1 | Zone | 2 | true | true | 1,500.00 | 3,678.00 | 1,500.00 | 3,678.00 | 20.00 | 76.83 | 20.00 | 79.80 | F-1 | 20.00 | 79.80 | F-1 |
| J-6 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-1 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-14 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| WS-1 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-7 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-9 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |
| J-35 | Zone | N/A | false | false | 1,500.00 | N/A | N/A | N/A | 20.00 | N/A | 20.00 | N/A | N/A | 20.00 | N/A | N/A |