

THE POINT – SOUTH OVERALL

ROLESVILLE, NORTH CAROLINA

WATER DISTRIBUTION CALCULATIONS

PROJECT NUMBER: AWH-20000
DESIGNED BY: W. T. O'DANIEL, PE

DATE: AUGUST 2, 2021



MCADAMS

2905 MERIDIAN PARKWAY
DURHAM, NORTH CAROLINA 27713
NC Lic. # C-0293

THE POINT – SOUTH OVERALL

WATER DISTRIBUTION SYSTEM CALCULATIONS

GENERAL DESCRIPTION

The proposed development currently known as The Point - South, is situated on approximately 264.27 acres and is located on the South side of NC 401 (Louisburg Road and west of E. Young Street in Rolesville, North Carolina. Proposed development on this site consists of the construction of 319 Townhomes and 485 Single Family Residential homes, along with supporting street, parking, utility, storm drainage improvements, and other supporting infrastructure.

The proposed water system will extend from an existing 12-inch water main E. Young Street. The proposed water system will extend through the proposed development to serve 804 total residential lots. The internal water network will consist of a 12-inch, 8-inch and 6-inch DIP pipe grid. The fire protection system for the proposed development consists of 84 new Fire Hydrants.

CALCULATION METHODOLOGY

- > The proposed water system was analyzed using the Bentley WaterCAD Connect Edition 3. The water system was modeled by entering data of the lengths, diameters, and elevations of the water mains.
- > The water system was simulated by modeling a pump at an existing hydrant located along E. Young Street near Quarry Road directly in front of the site.
- > The fire flow data was based on a hydrant flow test conducted on March 28, 2019 and was provided by Withers Ravenel. The data from this flow test can be reviewed in the appropriate section of this report. This test data was used to model the pump simulation with recorded flows and pressures to form a 3-point pump curve.
- > The system minor head losses for items including bends, gate valves, check valves, and tees are accounted for in the model.

WATER DISTRIBUTION MODEL

The proposed development consists of infrastructure to support the proposed 803 new single family and townhome residential lots for The Point - South. The fire flow requirement at each hydrant per the NC Fire Code – Appendix B is a minimum of 1,500 gpm at 20 psi.

Within the proposed development, there will be 804 residential water connections yielding an estimated peak domestic demand of 446 gpm. The domestic demands were calculated by using the North Carolina Division of Environment and Natural Resources (NCDENR) 15A NCAC 18C 0.0409 Service Connection Regulation. Since the

Service Connection utilizes domestic taps of 400 gpd/residential unit, this value was used for each residential dwelling. The 400 gpd/residential unit represents the average daily flow (ADF) demand for a residential unit. The “Residential Demands” calculations table shows the results of the domestic demands for the connections added to each node in the model. A peaking factor of 2 has been included in these calculations as required by 15A NCAC 18C.

An estimate of 20 gpm was also added for amenities on the site bringing the total domestic demand to 466 gpm.

The minimum fire flow calculated with a minimum pressure of 20 psi residual pressure is as follows: 1,528 gpm at 20 psi residual pressure located at H-84.

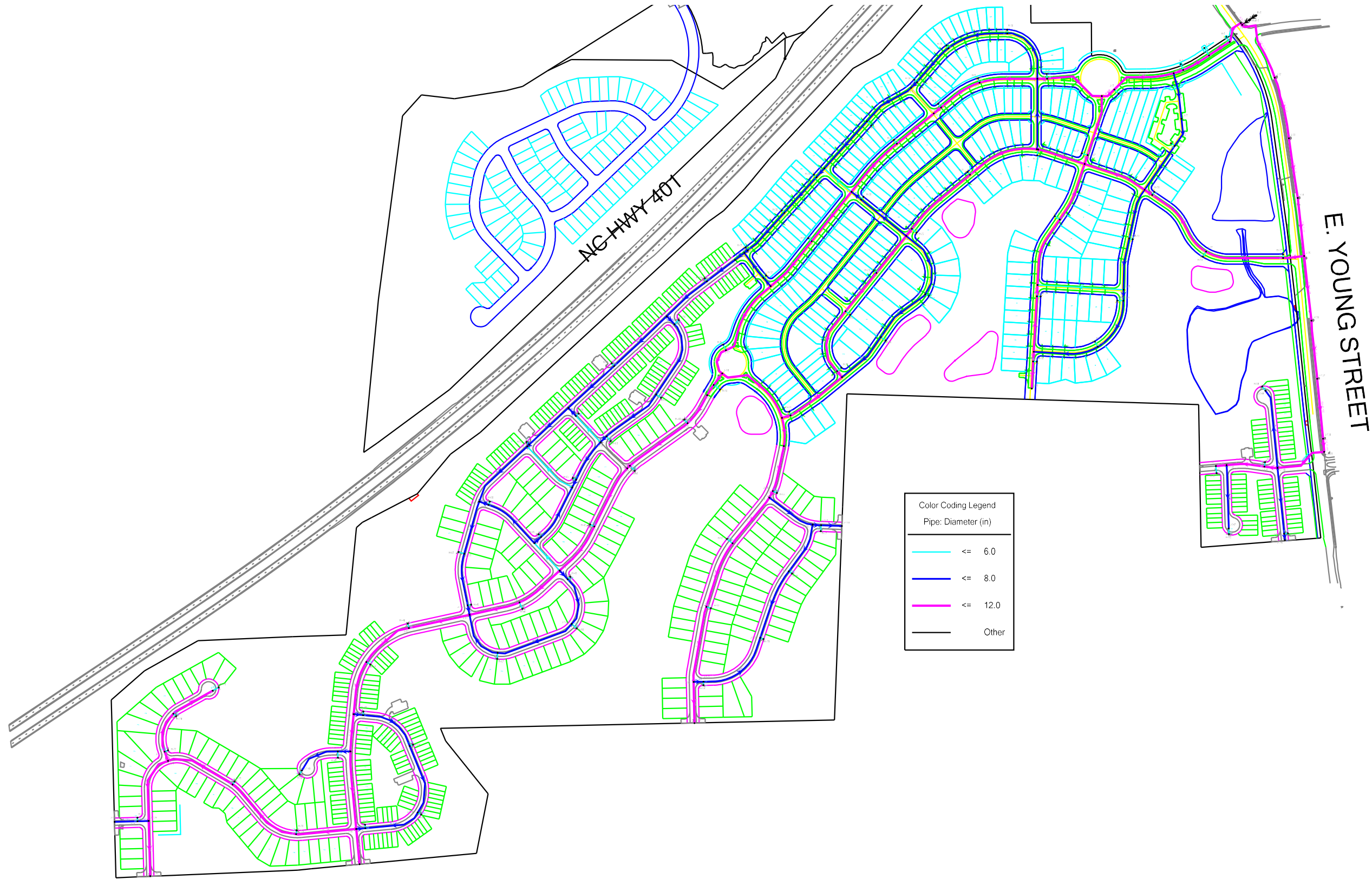
CONCLUSION

The most critical fire flow results occur at Hydrant H-84 with a fire flow of 1,528 gpm at 20 psi., meeting the NC Fire Code – Appendix B minimum fire flow requirement of 1,500 gpm.

The conclusion of this preliminary analysis is that the proposed water distribution system meets the NC Fire Code – Appendix B fire flow and pressure requirements.

WATER DISTRIBUTION MAP

Scenario: Base



FIRE HYDRANT TEST



TEST LOCATION

Address/Location Description Castle Combe Drive
Test hydrant Facility ID WHYD 123003
Flow hydrant Facility ID WHYD 124983

TEST 1

APPLICATION INFORMATION

Name WithersRavenel, Inc.
Address 115 MacKenan Drive Cary, NC 27511
Contact Person Clark Maness Phone (919)535-5213
Email cmaness@withersravenel.com

SYSTEM INFORMATION

Test Date 3/28/19
Nearest Elevated Tank Rolesville Tank
Main Size 6-inch
Tank Hydraulic Grade 540.33
Pump Info Pump 2 Rolesville

Time of Test 10:10
Test Hydrant Elevation 388 ft
Pressure Zone Rolesville
Use 20ft below pressure zone (tank overflow) for design*
Theoretical Pressure 69 psi

RESULTS

Static Pressure 70 psi
Residual Pressure 59 psi
Outlet Diameter 2 1/2 inches

Number of Outlets Flowing 2
Flow Hydrant Discharge Pressure 10,10 psi
Volume of Discharge 1,042 gpm
Water usage during test ~ 3,000 Total Gal

Test Completed by: Nike Abdul
Testing Company: WithersRavenel, Inc.
Witnessed by: _____
Date 3/28/19

SEAL (if applicable)

Notes: Rolesville staff/CORPUD witness not required



- Please attach the following supporting documentation to this form;
- Labeled map of location of test identifying test hydrant and flow hydrant
- Calculation demonstrating how the discharge flow was determined
- Calculation demonstrating the available fire flow at a residual pressure of 20 psi
- Printout of any recorded data supporting the static and residual pressure at the test hydrant.
- Printout of any recorded data supporting the discharge pressure of the flow hydrant.

*To maintain system water quality, storage tanks may be maintained as low as 20' below overflow.

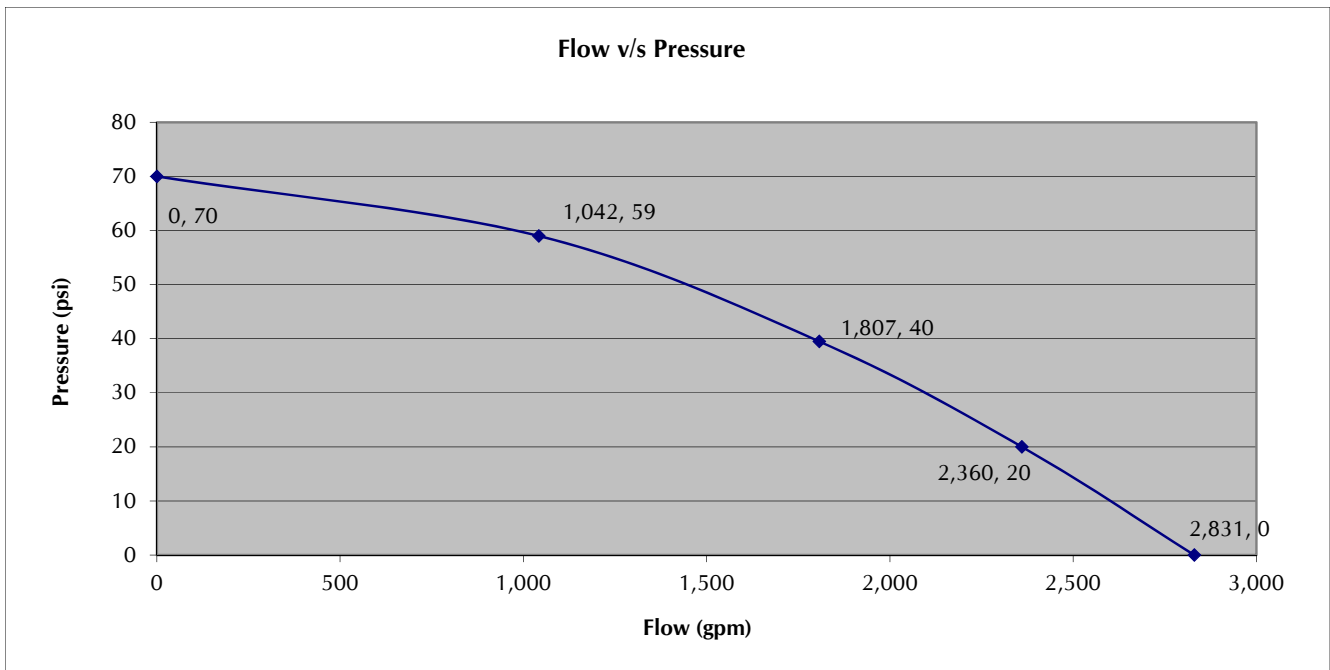
FIRE FLOW TEST DATA

Project Name	Rolesville PUD
WR Project #	02180280.00
Test Date	March 20, 2019
Flow Hydrant Location	Test 1. See attached map.
Pressure Hydrant Location	Test 1. See attached map.

Test Hydrant Static Pressure (psi)	70
Test Hydrant Residual Pressure (psi)	59
Nozzle 1 Pressure (psi)	10
Nozzle 1 Flow (gpm)	521
Nozzle 2 Pressure (psi)	10
Nozzle 2 Flow (gpm)	521
Calculated Flow (gpm)	1,042
Pressure Drop (psi)	11

Flow/Pressure Relationship	Flow (gpm)	Pressure (psi)
	0	70
	1,042	59
	1,807	40
	2,360	20
	2,831	0

Pump Curve	Flow (gpm)	Head (ft)
	0	162
	1,042	136
	1,807	91
	2,360	46
	2,831	0





TEST LOCATION

Address/Location Description Genovesa Drive

TEST 2

Test hydrant Facility ID WHYD 128422

Flow hydrant Facility ID WHYD 173197

APPLICATION INFORMATION

Name WithersRavenel, Inc.

Address 115 MacKenan Drive Cary, NC 27511

Contact Person Clark Maness

Phone (919)535-5213

Email cmaness@withersravenel.com

SYSTEM INFORMATION

Test Date 3/28/19

Time of Test 9:43

Nearest Elevated Tank Rolesville Tank

Test Hydrant Elevation 399 ft

Main Size 8-inch

Pressure Zone Rolesville

Tank Hydraulic Grade 540.34

Use 20ft below pressure zone (tank overflow) for design*

Pump Info Pump 2 Rolesville

Theoretical Pressure 64 psi

RESULTS

Static Pressure 65 psi

Number of Outlets Flowing 2

Residual Pressure 54 psi

Flow Hydrant Discharge Pressure 12, 12 psi

Outlet Diameter 2 1/2 inches

Volume of Discharge 1,142 gpm

Water usage during test ~3,500 Total Gal

Test Completed by: Nike Brodal

SEAL (if applicable)

Testing Company: WithersRavenel, Inc.

Witnessed by:

Date 3/28/19

Notes: Rolesville staff / CORPUD witness not required



- Please attach the following supporting documentation to this form;
- Labeled map of location of test identifying test hydrant and flow hydrant
- Calculation demonstrating how the discharge flow was determined
- Calculation demonstrating the available fire flow at a residual pressure of 20 psi
- Printout of any recorded data supporting the static and residual pressure at the test hydrant.
- Printout of any recorded data supporting the discharge pressure of the flow hydrant.

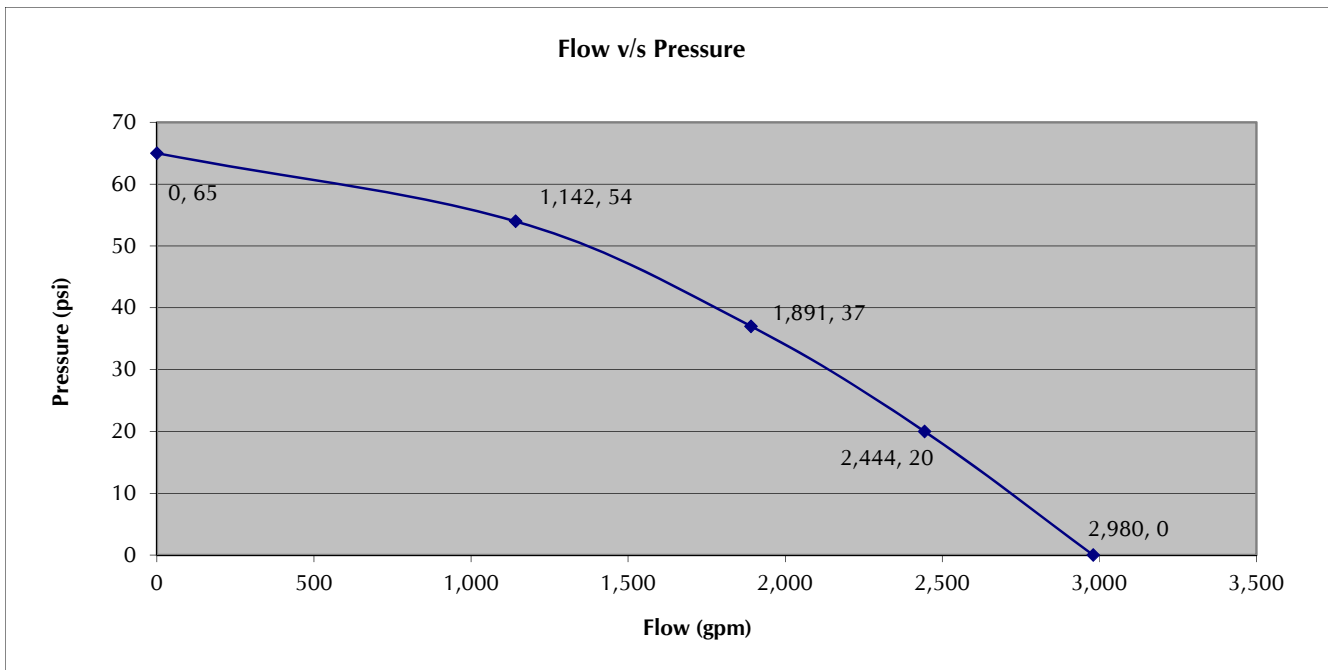
*To maintain system water quality, storage tanks may be maintained as low as 20' below overflow.

FIRE FLOW TEST DATA	
Project Name	Rolesville PUD
WR Project #	02180280.00
Test Date	March 28, 2019
Flow Hydrant Location	Test 2. See attached map.
Pressure Hydrant Location	Test 2. See attached map.

Test Hydrant Static Pressure (psi)	65
Test Hydrant Residual Pressure (psi)	54
Nozzle 1 Pressure (psi)	12
Nozzle 1 Flow (gpm)	571
Nozzle 2 Pressure (psi)	12
Nozzle 2 Flow (gpm)	571
Calculated Flow (gpm)	1,142
Pressure Drop (psi)	11

Flow/Pressure Relationship	Flow (gpm)	Pressure (psi)
	0	65
	1,142	54
	1,891	37
	2,444	20
	2,980	0

Pump Curve	Flow (gpm)	Head (ft)
	0	150
	1,142	125
	1,891	85
	2,444	46
	2,980	0





TEST LOCATION

Address/Location Description E Young St. and Quarry Rd. Intersection

TEST 3

Test hydrant Facility ID WHYD 124463

Flow hydrant Facility ID WHYD 124462

APPLICATION INFORMATION

Name WithersRavenel, Inc.

Address 115 MacKenan Drive Cary, NC 27511

Contact Person Clark Maness Phone (919)535-5213

Email cmaness@withersravenel.com

SYSTEM INFORMATION

Test Date 3/28/19

Time of Test 9:12 AM

Nearest Elevated Tank Rolesville Tank

Test Hydrant Elevation 411 ft

Main Size 12-inch

Pressure Zone Rolesville

Tank Hydraulic Grade 546.33'

Use 20ft below pressure zone (tank overflow) for design*

Pump Info Pump 2, RUMMIN

Theoretical Pressure 59 psi

RESULTS

Static Pressure 60 psi

Number of Outlets Flowing 2

Residual Pressure 46 psi

Flow Hydrant Discharge Pressure 13, 14 psi

Outlet Diameter 2 1/2 inches

Volume of Discharge 1,211 gpm

Water usage during test ~3,000 Total Gal

Test Completed by: Mike Blalock

SEAL (if applicable)

Testing Company: WithersRavenel, Inc.

Witnessed by: _____

Date 3/28/19



Notes: Rolesville / CORPUD staff witness not required.

- Please attach the following supporting documentation to this form;
- Labeled map of location of test identifying test hydrant and flow hydrant
- Calculation demonstrating how the discharge flow was determined
- Calculation demonstrating the available fire flow at a residual pressure of 20 psi
- Printout of any recorded data supporting the static and residual pressure at the test hydrant.
- Printout of any recorded data supporting the discharge pressure of the flow hydrant.

*To maintain system water quality, storage tanks may be maintained as low as 20' below overflow.

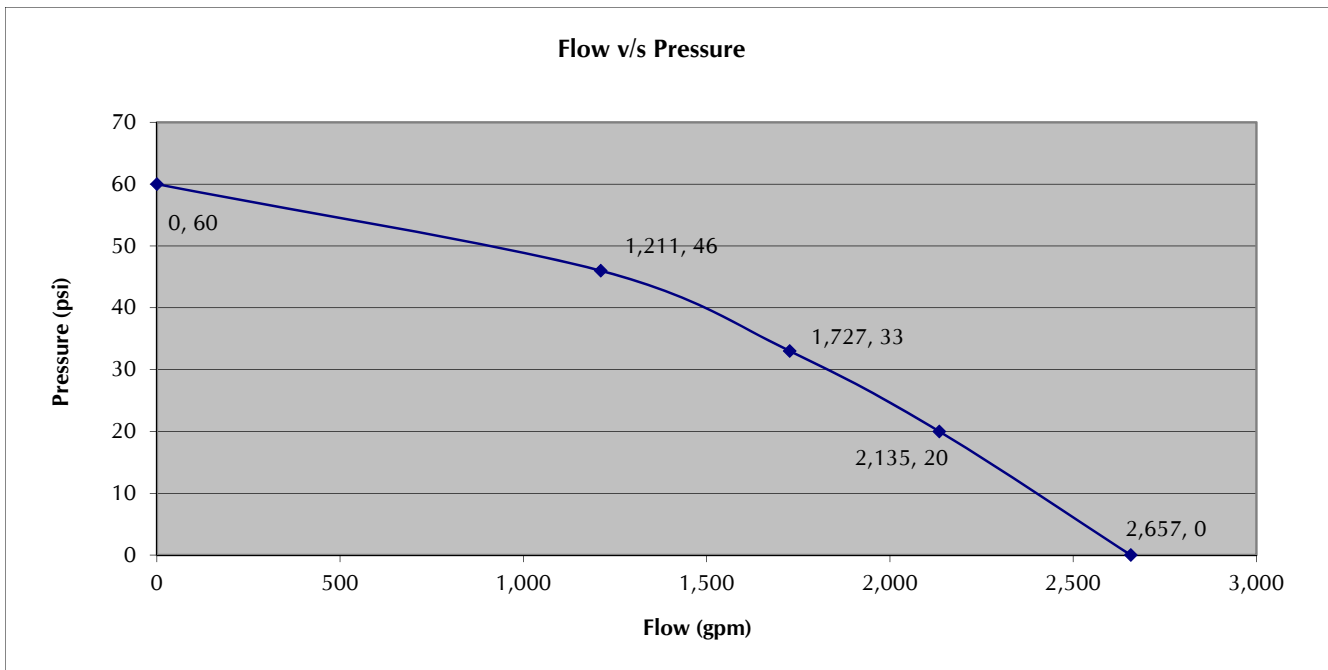
FIRE FLOW TEST DATA

Project Name	Rolesville PUD
WR Project #	02180280.00
Test Date	March 28, 2019
Flow Hydrant Location	Test 3. See attached map.
Pressure Hydrant Location	Test 3. See attached map.

Test Hydrant Static Pressure (psi)	60
Test Hydrant Residual Pressure (psi)	46
Nozzle 1 Pressure (psi)	13
Nozzle 1 Flow (gpm)	594
Nozzle 2 Pressure (psi)	14
Nozzle 2 Flow (gpm)	617
Calculated Flow (gpm)	1,211
Pressure Drop (psi)	14

Flow/Pressure Relationship	Flow (gpm)	Pressure (psi)
	0	60
	1,211	46
	1,727	33
	2,135	20
	2,657	0

Pump Curve	Flow (gpm)	Head (ft)
	0	139
	1,211	106
	1,727	76
	2,135	46
	2,657	0





Information depicted herein is for reference purposes only and is compiled from the best available sources. The City of Raleigh assumes no responsibility for errors arising from the misuse of this map.

City of Raleigh, Public Utilities

Louisburg Rd and Young St



PUMP SIMULATION REPORT

Pump Definition Detailed Report: Hydrant Test #3

Element Details

ID	267	Notes
Label	Hydrant Test #3	

Pump Curve

Flow (gpm)	Head (ft)
0	139.00
1,211	106.00
1,727	76.00
2,135	46.00
2,657	0.00

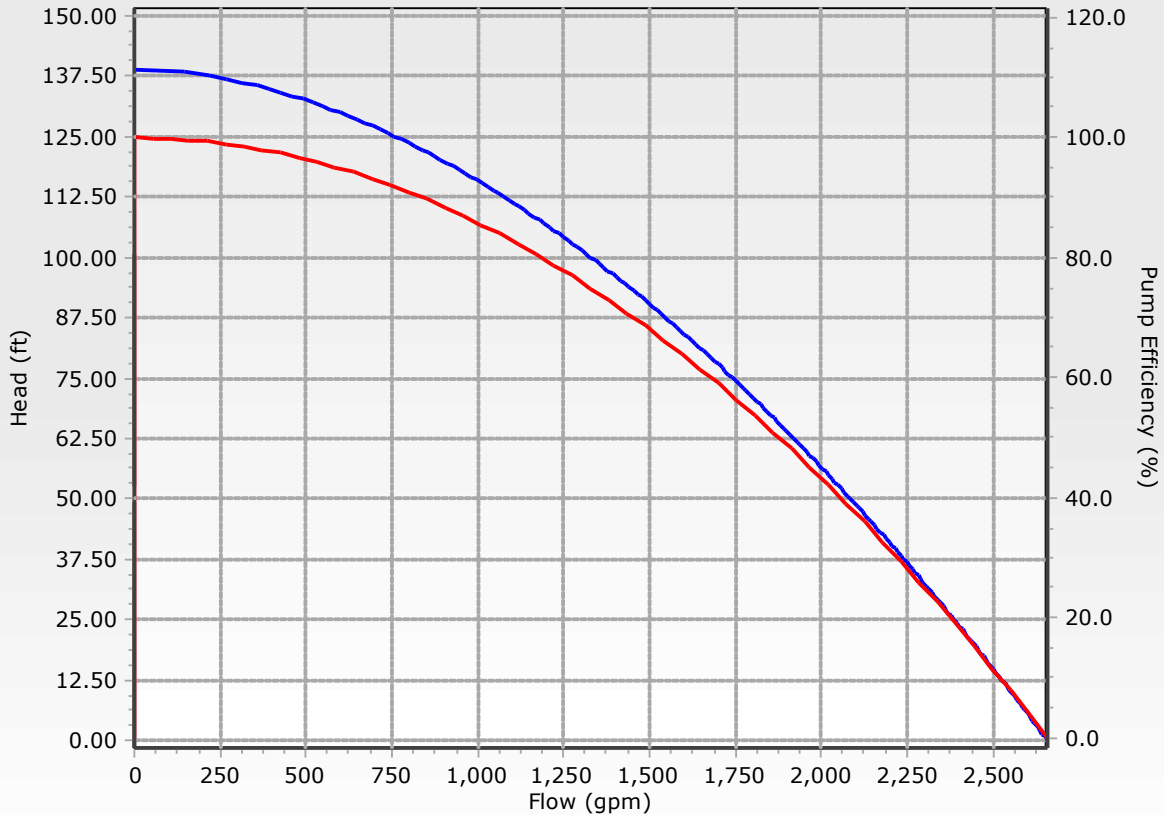
Pump Efficiency Type

Pump Efficiency Type	Best Efficiency Point	Motor Efficiency	100.0 %
BEP Efficiency	100.0 %	Is Variable Speed Drive?	False
BEP Flow	0 gpm		

Transient (Physical)

Inertia (Pump and Motor)	0.000 lb·ft ²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

Graph



JUNCTION REPORT

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	412.00	0	545.27	58
J-2	412.00	0	545.27	58
J-3	409.00	0	545.22	59
J-4	408.50	0	545.18	59
J-5	409.00	0	545.14	59
J-6	408.00	0	545.12	59
J-7	400.50	3	545.05	63
J-8	398.50	0	545.01	63
J-9	398.00	3	545.00	64
J-10	394.80	0	544.98	65
J-11	389.20	0	544.96	67
J-12	388.50	6	544.96	68
J-13	385.00	0	544.94	69
J-14	376.50	7	544.92	73
J-15	369.10	0	544.89	76
J-16	362.10	8	544.88	79
J-17	351.50	0	544.87	84
J-18	352.00	4	544.86	83
J-19	355.00	4	544.87	82
J-20	352.00	0	544.87	83
J-21	404.50	20	545.09	61
J-22	401.10	0	545.09	62
J-23	396.00	2	545.07	64
J-24	391.00	0	545.06	67
J-25	384.00	3	545.05	70
J-26	382.00	0	545.05	71
J-27	371.70	0	545.05	75
J-28	365.50	8	545.04	78
J-29	364.90	0	545.04	78
J-30	362.90	1	545.04	79
J-31	400.50	0	545.06	63
J-32	401.00	0	545.23	62
J-33	399.20	0	545.20	63
J-34	393.00	0	545.17	66
J-35	381.70	0	545.14	71
J-36	381.30	0	545.13	71
J-37	388.80	0	545.10	68
J-38	395.30	0	545.08	65
J-39	393.30	4	545.04	66
J-40	390.90	0	545.01	67
J-41	390.80	4	545.01	67
J-42	383.20	6	544.97	70
J-43	381.00	0	544.93	71
J-44	379.50	7	544.92	72
J-45	370.50	0	544.91	75
J-46	366.50	6	544.91	77
J-47	364.00	0	544.89	78
J-48	364.00	14	544.89	78
J-49	366.00	0	544.90	77

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-50	372.00	0	544.91	75
J-51	376.80	0	544.92	73
J-52	376.10	15	544.90	73
J-53	374.00	0	544.89	74
J-54	372.20	0	544.88	75
J-55	366.00	0	544.86	77
J-56	365.00	14	544.86	78
J-57	362.90	0	544.84	79
J-58	362.50	0	544.87	79
J-59	354.80	0	544.88	82
J-60	352.30	0	544.85	83
J-61	353.00	0	544.85	83
J-62	390.60	0	544.91	67
J-63	391.00	16	544.92	67
J-64	390.10	0	544.93	67
J-65	393.00	0	544.95	66
J-66	402.50	0	544.97	62
J-67	394.50	0	545.04	65
J-68	383.70	0	545.04	70
J-69	370.30	13	545.04	76
J-70	369.00	0	545.04	76
J-71	411.00	0	545.18	58
J-75	352.50	0	544.84	83
J-76	351.00	0	544.81	84
J-77	351.00	3	544.81	84
J-78	354.50	0	544.78	82
J-79	352.00	10	544.76	83
J-80	340.00	0	544.76	89
J-81	328.00	7	544.75	94
J-82	320.00	0	544.74	97
J-83	328.00	0	544.73	94
J-84	340.50	16	544.72	88
J-85	345.50	7	544.71	86
J-86	361.00	13	544.71	79
J-87	368.00	0	544.71	76
J-88	352.00	0	544.87	83
J-89	351.50	0	544.87	84
J-90	348.50	6	544.87	85
J-91	345.00	7	544.87	86
J-92	342.50	6	544.87	88
J-93	345.50	4	544.87	86
J-94	361.40	9	544.81	79
J-95	367.00	9	544.77	77
J-96	364.50	15	544.76	78
J-97	361.00	14	544.76	80
J-98	358.00	0	544.75	81
J-99	357.80	9	544.75	81
J-100	344.20	13	544.75	87
J-101	332.00	4	544.75	92

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-102	328.00	1	544.75	94
J-103	337.00	9	544.75	90
J-104	341.50	3	544.76	88
J-105	351.00	0	544.76	84
J-106	353.00	0	544.76	83
J-107	345.00	0	544.75	86
J-108	366.20	0	544.77	77
J-109	351.50	11	544.76	84
J-110	354.00	0	544.76	83
J-111	355.00	5	544.76	82
J-112	356.50	0	544.76	81
J-113	356.00	0	544.76	82
J-114	353.00	0	544.76	83
J-115	360.00	0	544.76	80
J-116	354.00	2	544.87	83
J-117	355.00	0	544.87	82
J-118	358.00	1	544.87	81
J-119	348.50	5	544.87	85
J-120	341.70	7	544.87	88
J-121	342.00	1	544.87	88
J-122	340.00	0	544.72	89
J-123	333.50	7	544.71	91
J-124	348.00	11	544.71	85
J-125	360.50	9	544.71	80
J-126	365.00	4	544.71	78
J-127	359.00	8	544.71	80
J-128	365.00	7	544.70	78
J-129	369.00	6	544.70	76
J-130	358.00	3	544.70	81
J-131	369.50	0	544.70	76
J-132	373.80	0	544.70	74
J-133	365.80	0	544.70	77
J-134	375.00	0	544.70	73
J-135	385.00	6	544.70	69
J-136	365.00	0	545.14	78
J-137	390.00	0	545.14	67
J-138	389.00	0	545.14	68
J-139	389.00	0	545.14	68
J-140	388.00	0	545.13	68
J-141	357.50	0	545.13	81
J-142	385.00	0	545.13	69
J-143	384.50	0	545.13	69
J-144	389.00	13	545.13	68
J-145	391.00	0	545.13	67
J-146	391.00	12	545.13	67
J-147	383.00	12	545.13	70
J-148	346.00	0	544.71	86
J-149	355.00	2	544.71	82

HYDRANT REPORT

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	Demand (gpm)
H-1	Closed	408.50	545.22	59	0
H-2	Closed	409.00	545.14	59	0
H-3	Closed	401.00	545.06	62	0
H-4	Closed	399.00	545.01	63	0
H-5	Closed	395.30	544.98	65	0
H-6	Closed	389.70	544.96	67	0
H-7	Closed	385.50	544.94	69	0
H-8	Closed	369.60	544.89	76	0
H-9	Closed	352.00	544.87	83	0
H-10	Closed	353.00	544.85	83	0
H-11	Closed	355.00	544.88	82	0
H-12	Closed	401.60	545.09	62	0
H-13	Closed	391.50	545.06	66	0
H-14	Closed	382.50	545.05	70	0
H-15	Closed	372.10	545.05	75	0
H-16	Closed	365.40	545.04	78	0
H-17	Closed	381.80	545.13	71	0
H-18	Closed	389.20	545.10	67	0
H-19	Closed	395.80	545.08	65	0
H-20	Closed	391.20	545.01	67	0
H-21	Closed	383.70	544.97	70	0
H-22	Closed	381.30	544.93	71	0
H-23	Closed	371.00	544.91	75	0
H-24	Closed	367.00	544.91	77	0
H-25	Closed	364.50	544.89	78	0
H-26	Closed	366.50	544.90	77	0
H-27	Closed	372.50	544.91	75	0
H-28	Closed	377.30	544.92	73	0
H-29	Closed	374.50	544.89	74	0
H-30	Closed	372.70	544.88	74	0
H-31	Closed	366.50	544.86	77	0
H-32	Closed	363.00	544.87	79	0
H-33	Closed	391.10	544.91	67	0
H-34	Closed	390.60	544.93	67	0
H-35	Closed	393.50	544.95	66	0
H-36	Closed	402.90	544.97	61	0
H-37	Closed	395.00	545.04	65	0
H-38	Closed	384.20	545.04	70	0
H-39	Closed	369.50	545.04	76	0
H-40	Closed	353.00	544.84	83	0
H-41	Closed	351.50	544.81	84	0
H-42	Closed	355.00	544.78	82	0
H-43	Closed	351.50	544.76	84	0
H-44	Closed	340.50	544.76	88	0
H-45	Closed	328.50	544.75	94	0
H-46	Closed	320.50	544.74	97	0
H-47	Closed	328.50	544.73	94	0
H-48	Closed	340.50	544.72	88	0

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	Demand (gpm)
H-49	Closed	346.50	544.71	86	0
H-50	Closed	361.00	544.71	79	0
H-51	Closed	352.50	544.87	83	0
H-52	Closed	349.00	544.87	85	0
H-53	Closed	345.50	544.87	86	0
H-54	Closed	342.50	544.87	88	0
H-55	Closed	361.90	544.81	79	0
H-56	Closed	366.50	544.77	77	0
H-57	Closed	365.00	544.76	78	0
H-58	Closed	360.50	544.76	80	0
H-59	Closed	358.50	544.75	81	0
H-60	Closed	345.50	544.75	86	0
H-61	Closed	332.40	544.75	92	0
H-62	Closed	352.00	544.76	83	0
H-63	Closed	354.30	544.76	82	0
H-64	Closed	357.00	544.76	81	0
H-65	Closed	353.50	544.76	83	0
H-66	Closed	342.00	544.76	88	0
H-67	Closed	337.50	544.75	90	0
H-68	Closed	334.00	544.71	91	0
H-69	Closed	348.50	544.71	85	0
H-70	Closed	365.50	544.71	78	0
H-71	Closed	359.50	544.71	80	0
H-72	Closed	366.30	544.70	77	0
H-73	Closed	370.00	544.70	76	0
H-74	Closed	375.50	544.70	73	0
H-75	Closed	386.00	544.70	69	0
H-76	Closed	355.50	544.71	82	0
H-77	Closed	355.50	544.87	82	0
H-78	Closed	349.00	544.87	85	0
H-79	Closed	342.00	544.87	88	0
H-80	Closed	358.00	545.13	81	0
H-81	Closed	385.00	545.13	69	0
H-82	Closed	383.50	545.13	70	0
H-83	Closed	391.50	545.13	66	0
H-84	Closed	389.50	545.13	67	0

PIPE REPORT

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
P-1	37	R-1	PMP-1	24.0	Ductile Iron	150.0	0.000	466	0.33	0.000	True	1
P-2	44	PMP-1	J-1	24.0	Ductile Iron	150.0	0.000	466	0.33	0.000	True	1
(EX) P-3	12	J-1	J-2	12.0	Ductile Iron	130.0	0.000	288	0.82	0.000	False	0
P-4	118	J-2	J-3	12.0	Ductile Iron	130.0	1.870	288	0.82	0.000	False	0
P-5	123	J-3	J-4	12.0	Ductile Iron	130.0	0.350	288	0.82	0.000	False	0
P-6	148	J-4	J-5	12.0	Ductile Iron	130.0	0.350	288	0.82	0.000	False	0
P-7	50	J-5	J-6	12.0	Ductile Iron	130.0	0.740	288	0.82	0.000	False	0
P-9	313	J-7	J-8	12.0	Ductile Iron	130.0	1.140	180	0.51	0.000	False	0
P-10	48	J-8	J-9	12.0	Ductile Iron	130.0	0.890	180	0.51	0.000	False	0
P-11	289	J-9	J-10	12.0	Ductile Iron	130.0	0.740	143	0.41	0.000	False	0
P-12	229	J-10	J-11	12.0	Ductile Iron	130.0	0.350	143	0.41	0.000	False	0
P-13	47	J-11	J-12	12.0	Ductile Iron	130.0	0.740	143	0.41	0.000	False	0
P-14	237	J-12	J-13	12.0	Ductile Iron	130.0	0.740	138	0.39	0.000	False	0
P-15	329	J-13	J-14	12.0	Ductile Iron	130.0	0.890	138	0.39	0.000	False	0
P-16	315	J-14	J-15	12.0	Ductile Iron	130.0	1.670	130	0.37	0.000	False	0
P-17	303	J-15	J-16	12.0	Ductile Iron	130.0	0.790	130	0.37	0.000	False	0
P-18	403	J-16	J-17	12.0	Ductile Iron	130.0	0.940	75	0.21	0.000	False	0
P-19	144	J-17	J-18	12.0	Ductile Iron	130.0	1.340	75	0.21	0.000	False	0
P-20	410	J-18	J-19	12.0	Ductile Iron	130.0	1.530	-70	0.20	0.000	False	0
P-21	141	J-19	J-20	12.0	Ductile Iron	130.0	0.740	38	0.11	0.000	False	0
P-22	230	J-6	J-21	8.0	Ductile Iron	130.0	1.670	62	0.40	0.000	False	0
P-23	147	J-21	J-22	8.0	Ductile Iron	130.0	0.550	42	0.27	0.000	False	0
P-24	264	J-22	J-23	8.0	Ductile Iron	130.0	0.740	42	0.27	0.000	False	0
P-25	257	J-23	J-24	8.0	Ductile Iron	130.0	1.140	34	0.22	0.000	False	0
P-26	256	J-24	J-25	8.0	Ductile Iron	130.0	0.400	34	0.22	0.000	False	0
P-27	55	J-25	J-26	8.0	Ductile Iron	130.0	0.740	19	0.12	0.000	False	0
P-28	274	J-26	J-27	8.0	Ductile Iron	130.0	0.350	19	0.12	0.000	False	0
P-29	324	J-27	J-28	8.0	Ductile Iron	130.0	1.670	19	0.12	0.000	False	0
P-30	48	J-28	J-29	12.0	Ductile Iron	130.0	0.740	1	0.00	0.000	False	0
P-31	135	J-29	J-30	12.0	Ductile Iron	130.0	0.000	1	0.00	0.000	False	0
P-8(1)	321	J-6	J-31	12.0	Ductile Iron	130.0	0.940	226	0.64	0.000	False	0
P-8(2)	76	J-31	J-7	12.0	Ductile Iron	130.0	0.940	226	0.64	0.000	False	0

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
(EX) P-32	349	J-1	J-32	12.0	Ductile Iron	130.0	0.000	178	0.50	0.000	False	0
(EX) P-33	310	J-32	J-33	12.0	Ductile Iron	130.0	0.000	178	0.50	0.000	False	0
(EX) P-34	299	J-33	J-34	12.0	Ductile Iron	130.0	0.000	178	0.50	0.000	False	0
(EX) P-35	289	J-34	J-35	12.0	Ductile Iron	130.0	0.000	178	0.50	0.000	False	0
P-36	105	J-35	J-36	12.0	Ductile Iron	130.0	1.330	140	0.40	0.000	False	0
P-37	388	J-36	J-37	12.0	Ductile Iron	130.0	0.350	140	0.40	0.000	False	0
P-38	395	J-37	J-38	12.0	Ductile Iron	130.0	0.350	140	0.40	0.000	False	0
P-39	45	J-38	J-23	12.0	Ductile Iron	130.0	1.140	140	0.40	0.000	False	0
P-40	326	J-23	J-39	12.0	Ductile Iron	130.0	1.530	147	0.42	0.000	False	0
P-41	241	J-39	J-40	12.0	Ductile Iron	130.0	0.890	195	0.55	0.000	False	0
P-42	7	J-40	J-41	12.0	Ductile Iron	130.0	0.740	195	0.55	0.001	False	0
P-43	369	J-41	J-42	12.0	Ductile Iron	130.0	0.740	171	0.48	0.000	False	0
P-44	395	J-42	J-43	12.0	Ductile Iron	130.0	0.350	164	0.47	0.000	False	0
P-45	45	J-43	J-44	12.0	Ductile Iron	130.0	0.890	164	0.47	0.000	False	0
P-46	236	J-44	J-45	12.0	Ductile Iron	130.0	0.740	100	0.28	0.000	False	0
P-47	244	J-45	J-46	12.0	Ductile Iron	130.0	0.350	100	0.28	0.000	False	0
P-48	344	J-46	J-47	12.0	Ductile Iron	130.0	0.450	94	0.27	0.000	False	0
P-49	38	J-47	J-48	12.0	Ductile Iron	130.0	1.670	94	0.27	0.000	False	0
P-50	279	J-48	J-49	8.0	Ductile Iron	130.0	0.790	-33	0.21	0.000	False	0
P-51	311	J-49	J-50	8.0	Ductile Iron	130.0	0.400	-33	0.21	0.000	False	0
P-52	347	J-50	J-44	8.0	Ductile Iron	130.0	0.890	-33	0.21	0.000	False	0
P-53	287	J-44	J-51	8.0	Ductile Iron	130.0	1.140	25	0.16	0.000	False	0
P-54	62	J-51	J-14	8.0	Ductile Iron	130.0	0.740	25	0.16	0.000	False	0
P-55	178	J-14	J-52	6.0	Ductile Iron	130.0	1.530	26	0.29	0.000	False	0
P-56	59	J-52	J-53	8.0	Ductile Iron	130.0	0.740	48	0.31	0.000	False	0
P-57	239	J-53	J-54	8.0	Ductile Iron	130.0	0.350	48	0.31	0.000	False	0
P-58	260	J-54	J-55	8.0	Ductile Iron	130.0	0.400	48	0.31	0.000	False	0
P-59	21	J-55	J-56	8.0	Ductile Iron	130.0	0.740	48	0.31	0.000	False	0
P-60	59	J-56	J-57	8.0	Ductile Iron	130.0	0.740	81	0.52	0.000	False	0
P-61	156	J-56	J-58	8.0	Ductile Iron	130.0	1.670	-48	0.30	0.000	False	0
P-62	55	J-58	J-16	8.0	Ductile Iron	130.0	0.740	-48	0.30	0.000	False	0
P-63	44	J-19	J-59	12.0	Ductile Iron	130.0	1.670	-113	0.32	0.000	False	0

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
P-64	319	J-59	J-48	12.0	Ductile Iron	130.0	0.790	-113	0.32	0.000	False	0
P-65	71	J-18	J-60	12.0	Ductile Iron	130.0	1.670	141	0.40	0.000	False	0
P-66	60	J-60	J-61	12.0	Ductile Iron	130.0	0.350	141	0.40	0.000	False	0
P-67	314	J-52	J-62	8.0	Ductile Iron	130.0	0.740	-37	0.24	0.000	False	0
P-68	278	J-62	J-63	8.0	Ductile Iron	130.0	0.840	-37	0.24	0.000	False	0
P-69	41	J-63	J-64	8.0	Ductile Iron	130.0	0.740	-53	0.34	0.000	False	0
P-70	229	J-64	J-65	8.0	Ductile Iron	130.0	0.350	-53	0.34	0.000	False	0
P-71	309	J-65	J-66	8.0	Ductile Iron	130.0	0.350	-53	0.34	0.000	False	0
P-72	311	J-66	J-9	8.0	Ductile Iron	130.0	0.940	-53	0.34	0.000	False	0
P-73	350	J-9	J-41	8.0	Ductile Iron	130.0	1.530	-20	0.13	0.000	False	0
P-74	304	J-7	J-67	12.0	Ductile Iron	130.0	1.720	43	0.12	0.000	False	0
P-75	46	J-67	J-39	12.0	Ductile Iron	130.0	0.890	43	0.12	0.000	False	0
P-76	304	J-39	J-68	12.0	Ductile Iron	130.0	0.740	-9	0.03	0.000	False	0
P-77	353	J-68	J-69	12.0	Ductile Iron	130.0	0.740	-9	0.03	0.000	False	0
P-78	57	J-69	J-70	12.0	Ductile Iron	130.0	0.740	-10	0.03	0.000	False	0
P-79	275	J-70	J-28	12.0	Ductile Iron	130.0	0.740	-10	0.03	0.000	False	0
P-80	427	J-69	J-25	6.0	Ductile Iron	130.0	2.060	-11	0.13	0.000	False	0
P-81	43	J-4	J-71	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-82	29	J-3	H-1	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-83	31	J-5	H-2	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-84	30	J-31	H-3	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-85	23	J-8	H-4	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-86	23	J-10	H-5	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-87	22	J-11	H-6	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-88	23	J-13	H-7	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-89	23	J-15	H-8	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-90	30	J-17	H-9	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-91	38	J-60	H-10	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-92	19	J-59	H-11	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-93	22	J-22	H-12	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-94	17	J-24	H-13	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-95	29	J-26	H-14	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
P-96	29	J-27	H-15	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-97	18	J-29	H-16	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-98	18	J-36	H-17	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-99	30	J-37	H-18	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-100	17	J-38	H-19	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-101	29	J-40	H-20	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-102	17	J-42	H-21	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-103	29	J-43	H-22	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-104	17	J-45	H-23	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-105	30	J-46	H-24	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-106	27	J-47	H-25	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-107	29	J-49	H-26	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-108	19	J-50	H-27	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-109	18	J-51	H-28	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-110	17	J-53	H-29	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-111	17	J-54	H-30	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-112	17	J-55	H-31	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-113	17	J-58	H-32	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-114	30	J-62	H-33	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-115	17	J-64	H-34	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-116	17	J-65	H-35	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-117	17	J-66	H-36	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-118	29	J-67	H-37	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-119	30	J-68	H-38	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-120	17	J-70	H-39	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-121	171	J-61	J-75	12.0	Ductile Iron	130.0	0.350	141	0.40	0.000	False	0
P-122	356	J-75	J-76	12.0	Ductile Iron	130.0	0.350	141	0.40	0.000	False	0
P-123	19	J-76	J-77	12.0	Ductile Iron	130.0	0.740	141	0.40	0.000	False	0
P-124	333	J-77	J-78	12.0	Ductile Iron	130.0	0.740	138	0.39	0.000	False	0
P-125	281	J-78	J-79	12.0	Ductile Iron	130.0	0.890	138	0.39	0.000	False	0
P-126	255	J-79	J-80	12.0	Ductile Iron	130.0	0.740	85	0.24	0.000	False	0
P-127	256	J-80	J-81	12.0	Ductile Iron	130.0	0.890	85	0.24	0.000	False	0

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
P-128	308	J-81	J-82	12.0	Ductile Iron	130.0	0.740	100	0.28	0.000	False	0
P-129	278	J-82	J-83	12.0	Ductile Iron	130.0	0.400	100	0.28	0.000	False	0
P-130	269	J-83	J-84	12.0	Ductile Iron	130.0	0.740	100	0.28	0.000	False	0
P-131	185	J-84	J-85	12.0	Ductile Iron	130.0	1.130	63	0.18	0.000	False	0
P-132	386	J-85	J-86	12.0	Ductile Iron	130.0	1.280	53	0.15	0.000	False	0
P-133	175	J-86	J-87	12.0	Ductile Iron	130.0	0.390	0	0.00	0.000	False	0
P-134	230	J-20	J-88	12.0	Ductile Iron	130.0	0.350	38	0.11	0.000	False	0
P-135	37	J-88	J-89	12.0	Ductile Iron	130.0	0.740	38	0.11	0.000	False	0
P-136	291	J-89	J-90	12.0	Ductile Iron	130.0	0.740	27	0.08	0.000	False	0
P-137	343	J-90	J-91	12.0	Ductile Iron	130.0	0.350	21	0.06	0.000	False	0
P-138	378	J-91	J-92	12.0	Ductile Iron	130.0	0.790	14	0.04	0.000	False	0
P-139	205	J-92	J-93	12.0	Ductile Iron	130.0	0.390	4	0.01	0.000	False	0
P-140	175	J-57	J-94	8.0	Ductile Iron	130.0	0.350	81	0.52	0.000	False	0
P-141	265	J-94	J-95	8.0	Ductile Iron	130.0	0.790	72	0.46	0.000	False	0
P-142	360	J-95	J-96	8.0	Ductile Iron	130.0	0.740	35	0.22	0.000	False	0
P-143	307	J-96	J-97	8.0	Ductile Iron	130.0	0.740	20	0.13	0.000	False	0
P-144	266	J-97	J-98	8.0	Ductile Iron	130.0	0.740	12	0.08	0.000	False	0
P-145	13	J-98	J-99	8.0	Ductile Iron	130.0	0.740	12	0.08	0.000	False	0
P-146	370	J-99	J-100	8.0	Ductile Iron	130.0	1.180	10	0.06	0.000	False	0
P-147	269	J-100	J-101	8.0	Ductile Iron	130.0	0.740	14	0.09	0.000	False	0
P-148	260	J-101	J-102	8.0	Ductile Iron	130.0	0.350	10	0.06	0.000	False	0
P-149	48	J-102	J-81	8.0	Ductile Iron	130.0	1.140	8	0.05	0.000	False	0
P-150	259	J-81	J-103	8.0	Ductile Iron	130.0	1.290	-13	0.09	0.000	False	0
P-151	404	J-103	J-104	8.0	Ductile Iron	130.0	0.450	-22	0.14	0.000	False	0
P-152	247	J-104	J-105	8.0	Ductile Iron	130.0	0.500	-25	0.16	0.000	False	0
P-153	58	J-105	J-79	8.0	Ductile Iron	130.0	0.740	-25	0.16	0.000	False	0
P-154	185	J-79	J-106	6.0	Ductile Iron	130.0	1.130	17	0.20	0.000	False	0
P-155	301	J-106	J-107	8.0	Ductile Iron	130.0	0.740	17	0.11	0.000	False	0
P-156	48	J-107	J-100	8.0	Ductile Iron	130.0	1.670	17	0.11	0.000	False	0
P-157	55	J-95	J-108	8.0	Ductile Iron	130.0	0.740	29	0.18	0.000	False	0
P-158	396	J-108	J-109	8.0	Ductile Iron	130.0	0.550	29	0.18	0.000	False	0
P-159	326	J-109	J-110	8.0	Ductile Iron	130.0	0.400	18	0.11	0.000	False	0

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
P-160	41	J-110	J-111	8.0	Ductile Iron	130.0	0.740	18	0.11	0.000	False	0
P-161	223	J-111	J-112	8.0	Ductile Iron	130.0	0.740	7	0.04	0.000	False	0
P-162	42	J-112	J-113	8.0	Ductile Iron	130.0	0.740	7	0.04	0.000	False	0
P-163	294	J-113	J-114	8.0	Ductile Iron	130.0	0.740	0	0.00	0.000	False	0
P-164	45	J-114	J-106	8.0	Ductile Iron	130.0	0.740	0	0.00	0.000	False	0
P-165	55	J-97	J-115	8.0	Ductile Iron	130.0	1.670	-6	0.04	0.000	False	0
P-166	256	J-89	J-116	8.0	Ductile Iron	130.0	2.160	11	0.07	0.000	False	0
P-167	42	J-116	J-117	8.0	Ductile Iron	130.0	0.740	1	0.00	0.000	False	0
P-168	103	J-117	J-118	8.0	Ductile Iron	130.0	0.350	1	0.00	0.000	False	0
P-169	265	J-116	J-119	8.0	Ductile Iron	130.0	1.670	9	0.06	0.000	False	0
P-170	362	J-119	J-120	8.0	Ductile Iron	130.0	0.350	4	0.02	0.000	False	0
P-171	393	J-120	J-121	8.0	Ductile Iron	130.0	0.350	-4	0.02	0.000	False	0
P-172	49	J-121	J-92	8.0	Ductile Iron	130.0	1.670	-5	0.03	0.000	False	0
P-173	47	J-84	J-122	8.0	Ductile Iron	130.0	0.740	21	0.14	0.000	False	0
P-174	302	J-122	J-123	8.0	Ductile Iron	130.0	0.550	21	0.14	0.000	False	0
P-175	353	J-123	J-124	8.0	Ductile Iron	130.0	0.450	14	0.09	0.000	False	0
P-176	286	J-124	J-125	8.0	Ductile Iron	130.0	0.450	3	0.02	0.000	False	0
P-177	45	J-125	J-86	8.0	Ductile Iron	130.0	1.140	-6	0.04	0.000	False	0
P-178	300	J-86	J-126	12.0	Ductile Iron	130.0	0.790	34	0.10	0.000	False	0
P-179	414	J-126	J-127	12.0	Ductile Iron	130.0	0.450	30	0.08	0.000	False	0
P-180	355	J-127	J-128	12.0	Ductile Iron	130.0	0.840	21	0.06	0.000	False	0
P-181	347	J-128	J-129	12.0	Ductile Iron	130.0	1.230	9	0.03	0.000	False	0
P-182	274	J-129	J-130	12.0	Ductile Iron	130.0	0.000	3	0.01	0.000	False	0
P-183	56	J-129	J-131	8.0	Ductile Iron	130.0	1.670	0	0.00	0.000	False	0
P-184	114	J-131	J-132	8.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-185	49	J-128	J-133	12.0	Ductile Iron	130.0	0.740	6	0.02	0.000	False	0
P-186	206	J-133	J-134	12.0	Ductile Iron	130.0	0.500	6	0.02	0.000	False	0
P-187	227	J-134	J-135	12.0	Ductile Iron	130.0	0.050	6	0.02	0.000	False	0
(EX) P-188	323	J-35	J-136	12.0	Ductile Iron	130.0	0.000	38	0.11	0.000	False	0
(EX) P-189	290	J-136	J-137	12.0	Ductile Iron	130.0	0.000	38	0.11	0.000	False	0
(EX) P-190	299	J-137	J-138	12.0	Ductile Iron	130.0	0.000	38	0.11	0.000	False	0
(EX) P-191	65	J-138	J-139	12.0	Ductile Iron	130.0	0.000	38	0.11	0.000	False	0

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
P-192	261	J-139	J-140	12.0	Ductile Iron	130.0	2.070	38	0.11	0.000	False	0
P-193	66	J-140	J-141	12.0	Ductile Iron	130.0	0.940	12	0.03	0.000	False	0
P-194	189	J-141	J-142	12.0	Ductile Iron	130.0	0.740	12	0.03	0.000	False	0
P-195	53	J-142	J-143	12.0	Ductile Iron	130.0	0.740	0	0.00	0.000	False	0
P-196	393	J-140	J-144	8.0	Ductile Iron	130.0	1.190	13	0.08	0.000	False	0
P-197	328	J-140	J-145	8.0	Ductile Iron	130.0	1.140	12	0.08	0.000	False	0
P-198	32	J-145	J-146	8.0	Ductile Iron	130.0	0.000	12	0.08	0.000	False	0
P-199	315	J-142	J-147	8.0	Ductile Iron	130.0	1.670	12	0.08	0.000	False	0
P-200	63	J-85	J-148	8.0	Ductile Iron	130.0	0.740	2	0.01	0.000	False	0
P-201	218	J-148	J-149	8.0	Ductile Iron	130.0	0.100	2	0.01	0.000	False	0
P-202	24	J-75	H-40	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-203	35	J-76	H-41	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-204	23	J-78	H-42	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-205	17	J-105	H-43	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-206	35	J-80	H-44	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-207	18	J-102	H-45	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-208	23	J-82	H-46	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-209	23	J-83	H-47	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-210	18	J-122	H-48	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-211	30	J-148	H-49	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-212	17	J-125	H-50	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-213	22	J-88	H-51	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-214	35	J-90	H-52	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-215	23	J-91	H-53	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-216	18	J-121	H-54	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-217	18	J-94	H-55	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-218	30	J-108	H-56	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-219	18	J-96	H-57	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-220	18	J-115	H-58	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-221	18	J-98	H-59	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-222	18	J-107	H-60	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-223	29	J-101	H-61	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Unified)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
P-224	29	J-109	H-62	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-225	31	J-110	H-63	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-226	18	J-112	H-64	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-227	18	J-114	H-65	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-228	33	J-104	H-66	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-229	30	J-103	H-67	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-230	18	J-123	H-68	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-231	20	J-124	H-69	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-232	18	J-126	H-70	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-233	18	J-127	H-71	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-234	18	J-133	H-72	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-235	18	J-131	H-73	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-236	18	J-134	H-74	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-237	34	J-135	H-75	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-238	21	J-149	H-76	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-239	30	J-117	H-77	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-240	19	J-119	H-78	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-241	17	J-120	H-79	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-242	22	J-141	H-80	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-243	35	J-143	H-81	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-244	28	J-147	H-82	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-245	18	J-145	H-83	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-246	26	J-144	H-84	6.0	Ductile Iron	130.0	0.000	0	0.00	0.000	False	0
P-247	178	J-115	J-111	6.0	Ductile Iron	130.0	0.740	-6	0.07	0.000	False	0
P-248	305	J-99	J-113	6.0	Ductile Iron	130.0	2.110	-7	0.08	0.000	False	0

FIRE FLOW ANALYSIS REPORT

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
J-1	True	1,500	1,665	1,500	1,665	20	20	20	20	J-2
J-2	True	1,500	1,664	1,500	1,664	20	20	20	20	J-71
J-3	True	1,500	1,660	1,500	1,660	20	21	20	20	J-71
J-4	True	1,500	1,652	1,500	1,652	20	21	20	20	J-71
J-5	True	1,500	1,654	1,500	1,654	20	20	20	20	J-71
J-6	True	1,500	1,655	1,500	1,655	20	21	20	20	J-71
J-7	True	1,500	1,657	1,503	1,660	20	23	20	20	J-71
J-8	True	1,500	1,658	1,500	1,658	20	24	20	20	J-71
J-9	True	1,500	1,658	1,503	1,661	20	24	20	20	J-71
J-10	True	1,500	1,658	1,500	1,658	20	25	20	20	J-71
J-11	True	1,500	1,658	1,500	1,658	20	27	20	20	J-71
J-12	True	1,500	1,658	1,506	1,663	20	27	20	20	J-71
J-13	True	1,500	1,658	1,500	1,658	20	29	20	20	J-71
J-14	True	1,500	1,658	1,507	1,665	20	32	20	20	J-71
J-15	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
J-16	True	1,500	1,658	1,508	1,666	20	38	20	20	J-71
J-17	True	1,500	1,658	1,500	1,658	20	42	20	20	J-71
J-18	True	1,500	1,658	1,504	1,662	20	42	20	20	J-71
J-19	True	1,500	1,658	1,504	1,662	20	41	20	20	J-71
J-20	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
J-21	True	1,500	1,657	1,520	1,677	20	20	20	20	J-71
J-22	True	1,500	1,657	1,500	1,657	20	22	20	20	J-71
J-23	True	1,500	1,660	1,502	1,661	20	25	20	20	J-71
J-24	True	1,500	1,659	1,500	1,659	20	25	20	20	J-71
J-25	True	1,500	1,659	1,503	1,662	20	28	20	20	J-71
J-26	True	1,500	1,659	1,500	1,659	20	28	20	20	J-71
J-27	True	1,500	1,659	1,500	1,659	20	32	20	20	J-71
J-28	True	1,500	1,659	1,508	1,667	20	37	20	20	J-71
J-29	True	1,500	1,659	1,500	1,659	20	37	20	20	J-71
J-30	True	1,500	1,659	1,501	1,660	20	37	20	20	J-71
J-31	True	1,500	1,657	1,500	1,657	20	23	20	20	J-71

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
J-32	True	1,500	1,665	1,500	1,665	20	24	20	20	J-2
J-33	True	1,500	1,665	1,500	1,665	20	24	20	20	J-2
J-34	True	1,500	1,665	1,500	1,665	20	27	20	20	J-2
J-35	True	1,500	1,665	1,500	1,665	20	32	20	20	J-2
J-36	True	1,500	1,665	1,500	1,665	20	32	20	20	J-71
J-37	True	1,500	1,662	1,500	1,662	20	28	20	20	J-71
J-38	True	1,500	1,660	1,500	1,660	20	26	20	20	J-71
J-39	True	1,500	1,658	1,504	1,662	20	26	20	20	J-71
J-40	True	1,500	1,658	1,500	1,658	20	27	20	20	J-71
J-41	True	1,500	1,658	1,504	1,662	20	27	20	20	J-71
J-42	True	1,500	1,658	1,506	1,664	20	30	20	20	J-71
J-43	True	1,500	1,658	1,500	1,658	20	30	20	20	J-71
J-44	True	1,500	1,658	1,507	1,665	20	31	20	20	J-71
J-45	True	1,500	1,658	1,500	1,658	20	34	20	20	J-71
J-46	True	1,500	1,658	1,506	1,664	20	36	20	20	J-71
J-47	True	1,500	1,658	1,500	1,658	20	37	20	20	J-71
J-48	True	1,500	1,658	1,514	1,672	20	37	20	20	J-71
J-49	True	1,500	1,658	1,500	1,658	20	34	20	20	J-71
J-50	True	1,500	1,658	1,500	1,658	20	31	20	20	J-71
J-51	True	1,500	1,658	1,500	1,658	20	31	20	20	J-71
J-52	True	1,500	1,658	1,515	1,673	20	30	20	20	J-71
J-53	True	1,500	1,658	1,500	1,658	20	31	20	20	J-71
J-54	True	1,500	1,658	1,500	1,658	20	31	20	20	J-71
J-55	True	1,500	1,658	1,500	1,658	20	34	20	20	J-71
J-56	True	1,500	1,658	1,514	1,672	20	35	20	20	J-71
J-57	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
J-58	True	1,500	1,658	1,500	1,658	20	37	20	20	J-71
J-59	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
J-60	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
J-61	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
J-62	True	1,500	1,658	1,500	1,658	20	22	20	20	J-71

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
J-63	True	1,500	1,654	1,516	1,670	20	22	20	20	H-36
J-64	True	1,500	1,650	1,500	1,650	20	22	20	20	H-36
J-65	True	1,500	1,636	1,500	1,636	20	22	20	20	H-36
J-66	True	1,500	1,612	1,500	1,612	20	20	20	20	H-36
J-67	True	1,500	1,658	1,500	1,658	20	26	20	20	J-71
J-68	True	1,500	1,659	1,500	1,659	20	30	20	20	J-71
J-69	True	1,500	1,659	1,513	1,672	20	35	20	20	J-71
J-70	True	1,500	1,659	1,500	1,659	20	36	20	20	J-71
J-71	True	1,500	1,560	1,500	1,560	20	20	20	24	J-2
H-1	True	1,500	1,624	1,500	1,624	20	20	20	21	J-71
H-2	True	1,500	1,600	1,500	1,600	20	20	20	22	J-71
H-3	True	1,500	1,657	1,500	1,657	20	21	20	20	J-71
H-4	True	1,500	1,658	1,500	1,658	20	22	20	20	J-71
H-5	True	1,500	1,658	1,500	1,658	20	23	20	20	J-71
H-6	True	1,500	1,658	1,500	1,658	20	25	20	20	J-71
H-7	True	1,500	1,658	1,500	1,658	20	26	20	20	J-71
H-8	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-9	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71
H-10	True	1,500	1,658	1,500	1,658	20	38	20	20	J-71
H-11	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71
H-12	True	1,500	1,647	1,500	1,647	20	20	20	20	J-71
H-13	True	1,500	1,659	1,500	1,659	20	23	20	20	J-71
H-14	True	1,500	1,659	1,500	1,659	20	26	20	20	J-71
H-15	True	1,500	1,659	1,500	1,659	20	30	20	20	J-71
H-16	True	1,500	1,659	1,500	1,659	20	35	20	20	J-71
H-17	True	1,500	1,665	1,500	1,665	20	30	20	20	J-71
H-18	True	1,500	1,663	1,500	1,663	20	26	20	20	J-71
H-19	True	1,500	1,660	1,500	1,660	20	24	20	20	J-71
H-20	True	1,500	1,658	1,500	1,658	20	25	20	20	J-71
H-21	True	1,500	1,658	1,500	1,658	20	28	20	20	J-71
H-22	True	1,500	1,658	1,500	1,658	20	28	20	20	J-71

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
H-23	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-24	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-25	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
H-26	True	1,500	1,658	1,500	1,658	20	32	20	20	J-71
H-27	True	1,500	1,658	1,500	1,658	20	30	20	20	J-71
H-28	True	1,500	1,658	1,500	1,658	20	30	20	20	J-71
H-29	True	1,500	1,658	1,500	1,658	20	29	20	20	J-71
H-30	True	1,500	1,658	1,500	1,658	20	29	20	20	J-71
H-31	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-32	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
H-33	True	1,500	1,644	1,500	1,644	20	20	20	20	J-71
H-34	True	1,500	1,650	1,500	1,650	20	21	20	20	H-36
H-35	True	1,500	1,636	1,500	1,636	20	20	20	20	H-36
H-36	True	1,500	1,579	1,500	1,579	20	20	20	21	J-66
H-37	True	1,500	1,658	1,500	1,658	20	23	20	20	J-71
H-38	True	1,500	1,659	1,500	1,659	20	27	20	20	J-71
H-39	True	1,500	1,659	1,500	1,659	20	34	20	20	J-71
J-75	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
J-76	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
J-77	True	1,500	1,658	1,503	1,661	20	41	20	20	J-71
J-78	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71
J-79	True	1,500	1,658	1,510	1,668	20	39	20	20	J-71
J-80	True	1,500	1,658	1,500	1,658	20	44	20	20	J-71
J-81	True	1,500	1,658	1,507	1,665	20	49	20	20	J-71
J-82	True	1,500	1,658	1,500	1,658	20	51	20	20	J-71
J-83	True	1,500	1,658	1,500	1,658	20	47	20	20	J-71
J-84	True	1,500	1,658	1,516	1,674	20	41	20	20	J-71
J-85	True	1,500	1,658	1,507	1,665	20	38	20	20	J-71
J-86	True	1,500	1,648	1,513	1,661	20	31	20	20	H-75
J-87	True	1,500	1,648	1,500	1,648	20	27	20	20	H-75
J-88	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
J-89	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
J-90	True	1,500	1,658	1,506	1,664	20	41	20	20	J-71
J-91	True	1,500	1,658	1,507	1,665	20	42	20	20	J-71
J-92	True	1,500	1,658	1,506	1,664	20	43	20	20	J-71
J-93	True	1,500	1,658	1,504	1,662	20	41	20	20	J-71
J-94	True	1,500	1,658	1,509	1,667	20	35	20	20	J-71
J-95	True	1,500	1,658	1,509	1,667	20	31	20	20	J-71
J-96	True	1,500	1,658	1,515	1,673	20	31	20	20	J-71
J-97	True	1,500	1,658	1,514	1,672	20	33	20	20	J-71
J-98	True	1,500	1,658	1,500	1,658	20	34	20	20	J-71
J-99	True	1,500	1,658	1,509	1,667	20	34	20	20	J-71
J-100	True	1,500	1,658	1,513	1,671	20	41	20	20	J-71
J-101	True	1,500	1,658	1,504	1,662	20	46	20	20	J-71
J-102	True	1,500	1,658	1,501	1,659	20	48	20	20	J-71
J-103	True	1,500	1,658	1,509	1,667	20	43	20	20	J-71
J-104	True	1,500	1,658	1,503	1,661	20	41	20	20	J-71
J-105	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71
J-106	True	1,500	1,658	1,500	1,658	20	37	20	20	J-71
J-107	True	1,500	1,658	1,500	1,658	20	40	20	20	J-71
J-108	True	1,500	1,658	1,500	1,658	20	31	20	20	J-71
J-109	True	1,500	1,658	1,511	1,669	20	36	20	20	J-71
J-110	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
J-111	True	1,500	1,658	1,505	1,663	20	35	20	20	J-71
J-112	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
J-113	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
J-114	True	1,500	1,658	1,500	1,658	20	37	20	20	J-71
J-115	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
J-116	True	1,500	1,658	1,502	1,660	20	36	20	20	J-71
J-117	True	1,500	1,658	1,500	1,658	20	34	20	20	J-71
J-118	True	1,500	1,658	1,501	1,658	20	31	20	20	J-71
J-119	True	1,500	1,658	1,505	1,663	20	37	20	20	J-71

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
J-120	True	1,500	1,658	1,507	1,665	20	40	20	20	J-71
J-121	True	1,500	1,658	1,501	1,659	20	42	20	20	J-71
J-122	True	1,500	1,658	1,500	1,658	20	40	20	20	J-71
J-123	True	1,500	1,658	1,507	1,665	20	40	20	20	J-71
J-124	True	1,500	1,658	1,511	1,669	20	34	20	20	J-71
J-125	True	1,500	1,652	1,509	1,662	20	30	20	20	H-75
J-126	True	1,500	1,627	1,504	1,631	20	29	20	20	H-75
J-127	True	1,500	1,602	1,508	1,610	20	32	20	20	H-75
J-128	True	1,500	1,580	1,507	1,586	20	29	20	20	H-75
J-129	True	1,500	1,580	1,506	1,586	20	26	20	20	H-75
J-130	True	1,500	1,580	1,503	1,582	20	30	20	20	H-75
J-131	True	1,500	1,580	1,500	1,580	20	24	20	20	H-75
J-132	True	1,500	1,579	1,500	1,579	20	20	20	20	H-75
J-133	True	1,500	1,575	1,500	1,575	20	29	20	20	H-75
J-134	True	1,500	1,563	1,500	1,563	20	25	20	20	H-75
J-135	True	1,500	1,551	1,506	1,557	20	20	20	20	H-75
J-136	True	1,500	1,665	1,500	1,665	20	38	20	20	J-2
J-137	True	1,500	1,665	1,500	1,665	20	26	20	20	J-2
J-138	True	1,500	1,665	1,500	1,665	20	26	20	20	J-2
J-139	True	1,500	1,665	1,500	1,665	20	25	20	20	J-2
J-140	True	1,500	1,665	1,500	1,665	20	25	20	20	J-2
J-141	True	1,500	1,665	1,500	1,665	20	38	20	20	J-2
J-142	True	1,500	1,664	1,500	1,664	20	25	20	20	J-2
J-143	True	1,500	1,665	1,500	1,665	20	25	20	20	J-2
J-144	True	1,500	1,567	1,513	1,580	20	20	20	20	H-84
J-145	True	1,500	1,574	1,500	1,574	20	20	20	20	H-83
J-146	True	1,500	1,566	1,512	1,579	20	20	20	20	H-83
J-147	True	1,500	1,625	1,512	1,637	20	20	20	20	H-82
J-148	True	1,500	1,658	1,500	1,658	20	36	20	20	J-71
J-149	True	1,500	1,658	1,502	1,660	20	27	20	20	J-71
H-40	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
H-41	True	1,500	1,658	1,500	1,658	20	38	20	20	J-71
H-42	True	1,500	1,658	1,500	1,658	20	37	20	20	J-71
H-43	True	1,500	1,658	1,500	1,658	20	37	20	20	J-71
H-44	True	1,500	1,658	1,500	1,658	20	41	20	20	J-71
H-45	True	1,500	1,658	1,500	1,658	20	47	20	20	J-71
H-46	True	1,500	1,658	1,500	1,658	20	49	20	20	J-71
H-47	True	1,500	1,658	1,500	1,658	20	45	20	20	J-71
H-48	True	1,500	1,658	1,500	1,658	20	38	20	20	J-71
H-49	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-50	True	1,500	1,652	1,500	1,652	20	28	20	20	H-75
H-51	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71
H-52	True	1,500	1,658	1,500	1,658	20	38	20	20	J-71
H-53	True	1,500	1,658	1,500	1,658	20	40	20	20	J-71
H-54	True	1,500	1,658	1,500	1,658	20	40	20	20	J-71
H-55	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-56	True	1,500	1,658	1,500	1,658	20	28	20	20	J-71
H-57	True	1,500	1,658	1,500	1,658	20	29	20	20	J-71
H-58	True	1,500	1,658	1,500	1,658	20	31	20	20	J-71
H-59	True	1,500	1,658	1,500	1,658	20	32	20	20	J-71
H-60	True	1,500	1,658	1,500	1,658	20	38	20	20	J-71
H-61	True	1,500	1,658	1,500	1,658	20	43	20	20	J-71
H-62	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-63	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-64	True	1,500	1,658	1,500	1,658	20	33	20	20	J-71
H-65	True	1,500	1,658	1,500	1,658	20	35	20	20	J-71
H-66	True	1,500	1,658	1,500	1,658	20	38	20	20	J-71
H-67	True	1,500	1,658	1,500	1,658	20	40	20	20	J-71
H-68	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71
H-69	True	1,500	1,658	1,500	1,658	20	32	20	20	J-71
H-70	True	1,500	1,627	1,500	1,627	20	27	20	20	H-75
H-71	True	1,500	1,602	1,500	1,602	20	30	20	20	H-75

Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)
H-72	True	1,500	1,575	1,500	1,575	20	27	20	20	H-75
H-73	True	1,500	1,580	1,500	1,580	20	22	20	20	H-75
H-74	True	1,500	1,563	1,500	1,563	20	23	20	20	H-75
H-75	True	1,500	1,504	1,500	1,504	20	20	20	23	J-135
H-76	True	1,500	1,658	1,500	1,658	20	25	20	20	J-71
H-77	True	1,500	1,658	1,500	1,658	20	32	20	20	J-71
H-78	True	1,500	1,658	1,500	1,658	20	36	20	20	J-71
H-79	True	1,500	1,658	1,500	1,658	20	39	20	20	J-71
H-80	True	1,500	1,665	1,500	1,665	20	36	20	20	J-2
H-81	True	1,500	1,665	1,500	1,665	20	22	20	20	J-2
H-82	True	1,500	1,582	1,500	1,582	20	20	20	22	J-147
H-83	True	1,500	1,546	1,500	1,546	20	20	20	22	J-146
H-84	True	1,500	1,528	1,500	1,528	20	20	20	22	J-144

RESIDENTIAL WATER DEMANDS



RESIDENTIAL WATER DEMAND

Project Name: **The Point - South**
 Project Number: **AWH-20000**

Date: **15-Dec-20**

Total Number of Lots in Subdivision: 803

Average Daily Demand per Lot: 400 GPD (NCAC T15A: 18C .0409)

Peaking Factor: 2 (NCAC T15A: 18C .0409)

ESTIMATED DEMAND AT JUNCTIONS

Junction Number	Number of Connections	Average Daily Demand (GPD)	Peak Daily Demand (GPD)	Peak Demand (GPM)
J-7	5	2,000	4,000	2.8
J-9	6	2,400	4,800	3.3
J-12	10	4,000	8,000	5.6
J-14	12	4,800	9,600	6.7
J-16	14	5,600	11,200	7.8
J-18	7	2,800	5,600	3.9
J-19	8	3,200	6,400	4.4
J-23	3	1,200	2,400	1.7
J-25	6	2,400	4,800	3.3
J-28	14	5,600	11,200	7.8
J-30	2	800	1,600	1.1
J-39	7	2,800	5,600	3.9
J-41	8	3,200	6,400	4.4
J-42	11	4,400	8,800	6.1
J-44	12	4,800	9,600	6.7
J-46	10	4,000	8,000	5.6
J-48	26	10,400	20,800	14.4
J-52	27	10,800	21,600	15.0
J-56	26	10,400	20,800	14.4
J-63	29	11,600	23,200	16.1
J-69	23	9,200	18,400	12.8
J-77	6	2,400	4,800	3.3
J-79	18	7,200	14,400	10.0
J-81	13	5,200	10,400	7.2
J-84	29	11,600	23,200	16.1
J-85	13	5,200	10,400	7.2
J-86	24	9,600	19,200	13.3
J-90	10	4,000	8,000	5.6
J-91	13	5,200	10,400	7.2
J-92	10	4,000	8,000	5.6
J-93	7	2,800	5,600	3.9

End of CD Pkg 1

J-94	16	6,400	12,800	8.9
J-95	16	6,400	12,800	8.9
J-96	27	10,800	21,600	15.0
J-97	25	10,000	20,000	13.9
J-99	17	6,800	13,600	9.4
J-100	23	9,200	18,400	12.8
J-101	8	3,200	6,400	4.4
J-102	2	800	1,600	1.1
J-103	16	6,400	12,800	8.9
J-104	5	2,000	4,000	2.8
J-109	19	7,600	15,200	10.6
J-111	9	3,600	7,200	5.0
J-116	4	1,600	3,200	2.2
J-118	1	400	800	0.6
J-119	9	3,600	7,200	5.0
J-120	13	5,200	10,400	7.2
J-121	2	800	1,600	1.1
J-123	12	4,800	9,600	6.7
J-124	20	8,000	16,000	11.1
J-125	17	6,800	13,600	9.4
J-126	8	3,200	6,400	4.4
J-127	15	6,000	12,000	8.3
J-128	12	4,800	9,600	6.7
J-129	11	4,400	8,800	6.1
J-130	5	2,000	4,000	2.8
J-135	10	4,000	8,000	5.6
J-144	24	9,600	19,200	13.3
J-146	22	8,800	17,600	12.2
J-147	22	8,800	17,600	12.2
J-149	4	1,600	3,200	2.2
		0	0	0.0

TOTAL	803	321,200	642,400	446.1
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