CAVASSON

LOCATED NEAR THE NORTHWEST CORNER OF THE HAYDEN ROAD AND THE LOOP 101 FRONTAGE ROAD INTERSECTION

Final

~~PRELIMINARY~~ WATER REPORT – GRAYHAWK RESIDENCES AT CAVASSON
BASIS OF DESIGN

June 11, 2021
Revised: August 30, 2021

Project No.: 18114-601

FINAL Basis of Design Report
☑ APPROVED
☐ APPROVED AS NOTED
☐ REVISE AND RESUBMIT

CITY OF SCOTTSDALE
SCOTTSDALE WATER
9379 E San Salvador Dr.
Scottsdale, AZ 85258

Disclaimer: If approved; the approval is granted under the condition that the final construction documents submitted for city review will match the information herein. Any subsequent changes in the water or sewer design that materially impact design criteria or standards will require re-analysis, re-submittal, and approval of a revised basis of design report prior to the plan review submission.; this approval is not a guarantee of construction document acceptance.
For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY scan DATE 10/18/2021

PREPARED FOR:
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Registered Professional Engineer (Civil)
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MICHAEL S. WOLF
Date Signed 08-30-21
ARIZONA U.S.A.
Expires 03-31-2024

HUBBARD ENGINEERING

24-DR-2021_V2
9/29/2021

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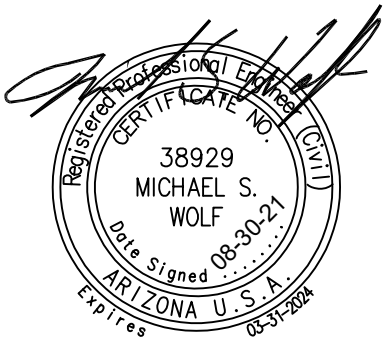


EXHIBITS

1. INTRODUCTION

1.1 Project Scope

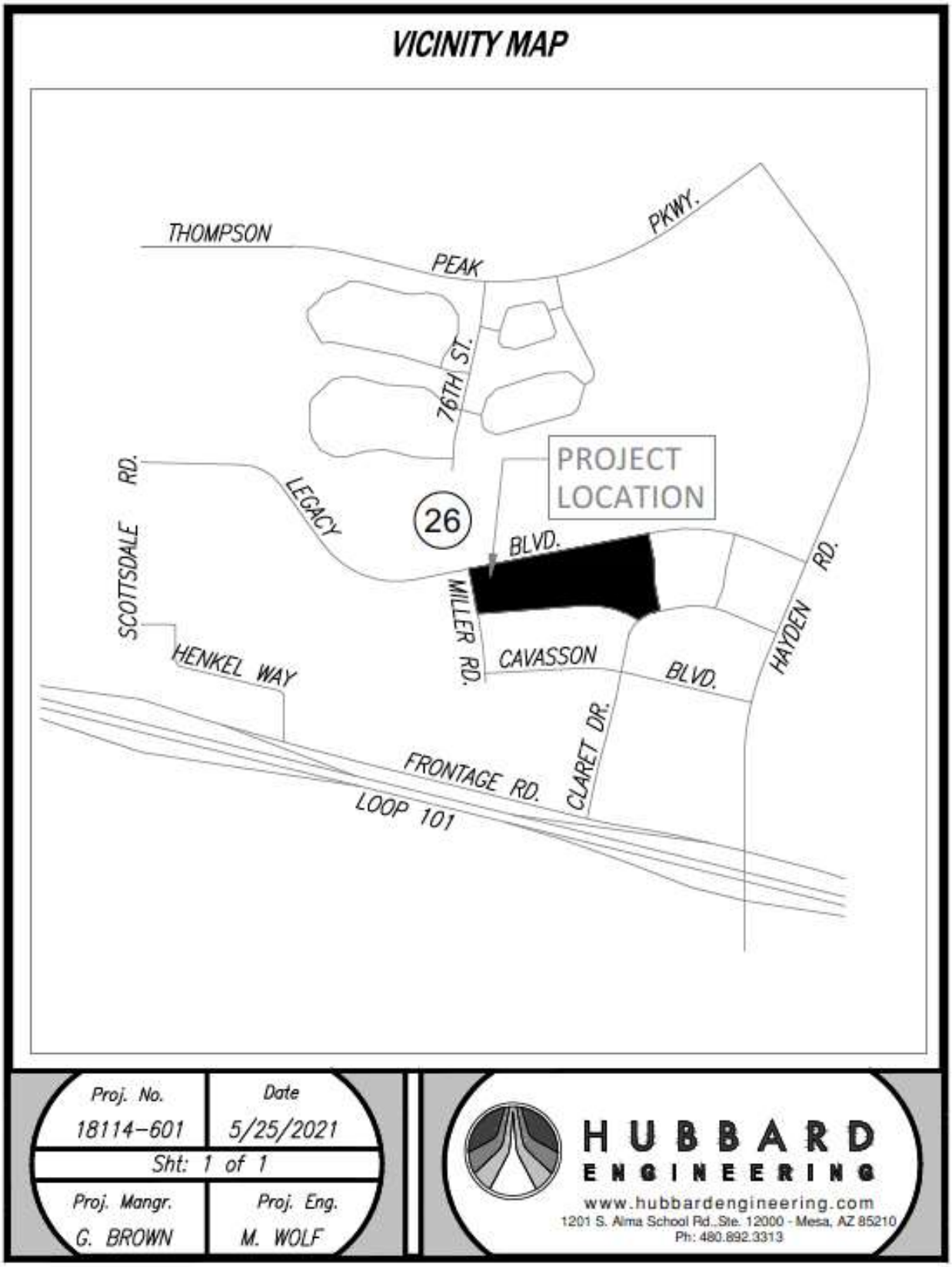
This report presents the results of a *Final Water Study* conducted by Hubbard Engineering at the request of GDI ML Cavasson, LLC ("client"), for the Grayhawk Residences at Cavasson development ("site"). The purpose of this report is to provide an evaluation of the proposed distribution system for the site. This report addresses design flows and basis of design as well as design criteria. The water analysis of this report will adhere to Hubbard Engineering's submitted and approved *Master Water Report*.

1.2 Site Description

The project site is located in the southeast quarter of Section 26, Township 4N, Range 4E of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site is currently undeveloped, and prior to Nationwide Realty Investor's acquisition, was held in trust by the Arizona State Land Department (ASLD) as a portion of the overall Crossroads East development, which encompasses approximately 883 gross acres. The Grayhawk Residences at Cavasson development is located in the Northwest corner of the overall Crossroads East development, near the Legacy Boulevard and Miller Road intersection. The land naturally falls from northeast to southwest.

The project site is bounded by undeveloped desert to the south, Reveille Road to the east, North Miller Road to the west, and Legacy Boulevard to the north. The site location is shown in **Figure 1.1 – Vicinity Map**.

Figure 1.1 – Vicinity Map



1.3 Project Type

The overall Cavasson project is being developed by Nationwide Reality Investors as a master planned, mixed use development with office, retail, hotels, and multifamily residential parcels with public and private roadways that run adjacent and through the development. The Grayhawk Residences at Cavasson will include construction of a new apartment complex with 402 dwelling units over the 18.6 acre site in multiple buildings. Improvements will also include surrounding access drives, parking, and extending existing private utility stubs to service the building.

The analysis for the overall development was conducted in Hubbard's *Master Water Report Phase 3 Update* and will be referenced as it applies to the Grayhawk Residences at Cavasson.

1.4 Regulatory Requirements

The following documents were utilized in the preparation of this report:

- City of Scottsdale, *Design Standards & Policies Manual*.
- Arizona Department of Environmental Quality (ADEQ), *Aquifer Protection Permit (APP) Program.*
- Maricopa Association of Governments (MAG), *Uniform Standard Specifications and Details for Public Works Construction, 2016 Edition.*
- *2018 Edition of the International Fire Code.*
- *2018 Edition of the International Plumbing Code.*
- Hubbard Engineering, *Master Water Report for Cavasson, Phase 3 Update, May 21, 2021.*

2. PROJECT DESCRIPTION

2.1 Tie-In to Existing System

The proposed water system for The Grayhawk Residences at Cavasson will include connections to an existing 12" water line stub off of Miller Road, 12" water line stub off of Reveille Road, and tapping into Legacy Boulevard with a 12" water main line.

See **Exhibit 1** for proposed tie-in locations.

2.2 Service Area

The water service provider for the existing site is the City of Scottsdale. The Cavasson development is being developed by Nationwide Realty Investors as a master planned mixed use development with office, retail, hotels, and multifamily residential parcels with public and private roadways that run adjacent and through the development. The Cavasson development is located within Zone 4 and is discussed in more detail in the previously submitted *Cavasson Master Water Plan*.

The Grayhawk Residences at Cavasson will include construction of multiple new apartment buildings with 402 dwelling units and the largest building having a square footage of approximately 48,000± square feet. Improvements will include surrounding access drives and utilities through the property to provide domestic water, fire and sewer services to the proposed building. The building construction type will be type VB and it will be equipped with an automatic sprinkler system (NFPA13) per the 2015 International Fire Code.

2.3 Right of Way and Easements

The proposed water lines will be within 12 foot public water easements with a 20' access easement over the top.

3. DESIGN FLOWS AND BASIS OF DESIGN

3.1 Average Daily Demands

In accordance with the *City of Scottsdale Design Standards & Policies Manual Chapter 6* Section 6-1.205 (Reference 1), the design unit water demand for 12-22 DU/ac multifamily is 0.33 gallons per minute per dwelling unit.

The total service area tributary to the proposed water main consists of 402 dwelling units.

Thus, the total Average Daily Demand is:

(0.33 gpm/DU) x (402 dwelling units) **= 132.66 gpm**

This demand matches the demand in the Approved *Cavasson Master Water Report Phase 3 Update*.

3.2 Maximum Daily Demand and Peak Hour Flow

In accordance with the *City of Scottsdale Design Standards & Policies Manual Chapter 6* Section 6-1.404 (Reference 1), the maximum day peaking factor and peak hour peaking factor are as follows:

3.2.1 Maximum Day Demand

Max Day Demand = ADD * 2

3.2.2 Peak Hour Demand

Peak Hour Demand = ADD * 3.5

3.3 Water and Fire Demand Calculations

A summary of the water and fire demand calculations can be found in **Table 1** below.

Table 1: Water and Fire Demand Calculation Summary

Land Use	Dwelling Units	ADD (gpm/D.U.)	ADD (gpm)	Max Day Demand (ADD x 2) (gpm)	Peak Hour Demand (ADD x 3.5) (gpm)	Fire Flow Required (gpm)	Max Day Plus Fire Flow (gpm)
Residential	402	0.33	132.66	265.32	464.31	1,500	1,765.32

4. DESIGN CRITERIA

4.1 Minimum Pressure

The water distribution system shall be designed and constructed to maintain the following minimum pressures:

1. Max Day Demand plus Fire Flow – minimum of 30 psi
2. Peak Hour Demand – ≥ 50 psi and ≤ 120 psi, to achieve minimum service pressure of 40 psi.

A water model was run for the proposed system using WaterCAD. The basis of this model was developed using information from a fire hydrant flow test conducted on October 16, 2018, updated October 13, 2020, and a third update conducted on August 27, 2021. The results of these fire flow tests are included in **Appendix E – Fire Flow Test Results**.

4.2 Fire Flows

Fire flow requirements are typically determined by the local fire department. The latest version of the International Fire Code (IFC), adopted by the City of Scottsdale, will serve as guidelines. A minimum Fire Flow of 6,000 gpm for 3 hours is based on a 48,000 sq. ft. multi-family building, per City of Scottsdale Fire Code, with 75% reduction Minimum Fire Flow of 1,500 gpm will be used due to NFPA 13 sprinkler system.

4.3 Minimum Pipe Sizing

The proposed water main line will be 8-inch diameter, the proposed fire line to the building will be 8-inch diameter. The proposed domestic lines will be 3-inch diameter.

4.4 Pipe Material

All new water mains and fire lines will be Ductile Iron Pipe.

5. SUMMARY

- Per the City of Scottsdale Water System Pressure Zone Map, the Cavasson Development is located within Pressure Zone 4.
- The planned future Average Daily Demand for development is 132.66 gpm. This conforms to the Master Study.
- The planned future Maximum Daily Demand for the development is 265.32 gpm. This conforms to the Master Study.
- The planned future Peak Hour Demand for the development is 464.31 gpm. This conforms to the Master Study.
- The required fire flow is 1,500 gpm.
- Based on the results of the water model, the Cavasson development system can maintain a flow of 2,020 gallons per minute at a pressure of 47 psi.
- The results from the proposed water model show there are adequate flows and pressures being provided by the existing and proposed planned infrastructure for the Cavasson development.

6. REFERENCES

1. City of Scottsdale. *Design Standards & Policies Manual.* January 18, 2018.
2. Carollo Engineers. *2008 Scottsdale Integrated Water Resources Master Plan.* March 2008.
3. Coe & Van Loo Consultants, Inc. (CVL) *Arizona State Land Department- Crossroads East Water Master Plan Update,* April 13, 2008.
4. Arizona Department of Environmental Quality (ADEQ). *Engineering Bulletin 11: Minimum Requirements for Design, Submission of Plans and Specifications of Sewage Works.* May 1978.
5. Arizona Department of Environmental Quality (ADEQ). *Aquifer Protection Permit (APP) Program*.
6. Maricopa Association of Governments (MAG). *Uniform Standard Specifications and Details for Public Works Construction.* January 2016.
7. International Code Council. *2015 International Fire Code.*
8. International Code Council. *2015 Edition of the International Plumbing Code*.
9. City of Scottsdale, *Ordinance No. 4346,* June 17, 2018.
10. City of Scottsdale, *Resolution No. 1147,* June 17, 2018.

Appendix A
Average Day Demand
The Grayhawk Residences at Cavasson

Scenario: Avg Day
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure (Calculated Residual) (psi)
686	J-1	1,609.00	Zone - 4	<Collection: 0 items>	0	1,760.78	66	(N/A)
687	J-2	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.80	64	(N/A)
689	J-3	1,623.00	Zone - 4	<Collection: 0 items>	0	1,760.65	60	(N/A)
691	J-4	1,629.00	Zone - 4	<Collection: 0 items>	0	1,760.59	57	(N/A)
693	J-5	1,629.90	Zone - 4	<Collection: 0 items>	0	1,760.58	57	(N/A)
695	J-6	1,631.92	Zone - 4	<Collection: 0 items>	0	1,760.58	56	(N/A)
697	J-7	1,649.25	Zone - 4	<Collection: 0 items>	0	1,760.57	48	(N/A)
701	J-8	1,649.00	Zone - 4	<Collection: 0 items>	0	1,760.56	48	(N/A)
703	J-9	1,649.00	Zone - 4	<Collection: 0 items>	0	1,760.56	48	(N/A)
705	J-10	1,649.00	Zone - 4	<Collection: 0 items>	0	1,760.56	48	(N/A)
707	J-11	1,646.00	Zone - 4	<Collection: 0 items>	0	1,760.56	50	(N/A)
709	J-12	1,643.00	Zone - 4	<Collection: 0 items>	0	1,760.55	51	(N/A)
711	J-13	1,637.84	Zone - 4	<Collection: 0 items>	0	1,760.55	53	(N/A)
713	J-14	1,633.68	Zone - 4	<Collection: 0 items>	0	1,760.55	55	(N/A)
717	J-16	1,630.55	Zone - 4	<Collection: 0 items>	0	1,760.55	56	(N/A)
719	J-17	1,617.54	Zone - 4	<Collection: 0 items>	0	1,760.55	62	(N/A)
721	J-18	1,625.17	Zone - 4	<Collection: 0 items>	0	1,760.56	59	(N/A)
724	J-19	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.78	64	(N/A)
735	D-1A-8	1,616.47	Zone - 4	<Collection: 1 item>	25	1,760.56	62	(N/A)
737	J-20	1,625.50	Zone - 4	<Collection: 0 items>	0	1,760.56	58	(N/A)
741	D-1A-1-B	1,606.70	Zone - 4	<Collection: 1 item>	188	1,760.66	67	(N/A)
745	J-50	1,619.49	Zone - 4	<Collection: 0 items>	0	1,760.56	61	(N/A)
750	D-1A-4-B	1,607.21	Zone - 4	<Collection: 1 item>	69	1,760.62	66	(N/A)
754	FH-A1	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.65	64	(N/A)
757	FH-A4	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.60	64	(N/A)
761	D-1A-4-A	1,613.33	Zone - 4	<Collection: 1 item>	69	1,760.57	64	(N/A)
764	J-21	1,612.50	Zone - 4	<Collection: 0 items>	0	1,760.57	64	(N/A)
768	D-1A-5	1,618.40	Zone - 4	<Collection: 1 item>	81	1,760.56	62	(N/A)
771	J-22	1,618.54	Zone - 4	<Collection: 0 items>	0	1,760.56	61	(N/A)
775	D-1A-2	1,619.21	Zone - 4	<Collection: 1 item>	42	1,760.56	61	(N/A)
778	FH-A2-3	1,625.00	Zone - 4	<Collection: 0 items>	0	1,760.56	59	(N/A)
783	J-24	1,623.83	Zone - 4	<Collection: 0 items>	0	1,760.56	59	(N/A)
787	J-25	1,622.54	Zone - 4	<Collection: 0 items>	0	1,760.56	60	(N/A)
790	J-26	1,617.86	Zone - 4	<Collection: 0 items>	0	1,760.56	62	(N/A)
794	FH-B2	1,617.09	Zone - 4	<Collection: 0 items>	0	1,760.56	62	(N/A)
797	D-1B-2-B	1,617.90	Zone - 4	<Collection: 1 item>	54	1,760.56	62	(N/A)
799	J-27	1,619.36	Zone - 4	<Collection: 0 items>	0	1,760.56	61	(N/A)

803	J-48	1,621.39	Zone - 4	<Collection: 0 items>	0	1,760.56	60	(N/A)
807	FH-C3-2	1,626.64	Zone - 4	<Collection: 0 items>	0	1,760.57	58	(N/A)
818	J-29	1,636.73	Zone - 4	<Collection: 0 items>	0	1,760.57	54	(N/A)
825	J-30	1,649.00	Zone - 4	<Collection: 0 items>	0	1,760.56	48	(N/A)
828	J-31	1,645.84	Zone - 4	<Collection: 0 items>	0	1,760.57	50	(N/A)
839	FH-C8	1,626.14	Zone - 4	<Collection: 0 items>	0	1,760.56	58	(N/A)
848	J-32	1,648.15	Zone - 4	<Collection: 0 items>	0	1,760.56	49	(N/A)
851	J-33	1,647.28	Zone - 4	<Collection: 0 items>	0	1,760.55	49	(N/A)
853	D-1C-5-B	1,643.51	Zone - 4	<Collection: 1 item>	46	1,760.55	51	(N/A)
855	FH-C5	1,646.19	Zone - 4	<Collection: 0 items>	0	1,760.55	49	(N/A)
873	J-36	1,636.30	Zone - 4	<Collection: 0 items>	0	1,760.56	54	(N/A)
877	J-37	1,640.12	Zone - 4	<Collection: 0 items>	0	1,760.55	52	(N/A)
889	D-1C-5-A	1,641.50	Zone - 4	<Collection: 1 item>	46	1,760.55	52	(N/A)
895	FH-C1-D	1,632.44	Zone - 4	<Collection: 0 items>	0	1,760.52	55	(N/A)
903	J-40	1,631.38	Zone - 4	<Collection: 0 items>	0	1,760.55	56	(N/A)
910	D-1C-9	1,627.00	Zone - 4	<Collection: 1 item>	45	1,760.56	58	(N/A)
912	FH-C9	1,626.65	Zone - 4	<Collection: 0 items>	0	1,760.56	58	(N/A)
916	D-1C-2-B	1,622.25	Zone - 4	<Collection: 1 item>	53	1,760.54	60	(N/A)
920	D-1C-1-A	1,630.50	Zone - 4	<Collection: 1 item>	66	1,760.52	56	(N/A)
922	J-600	1,634.90	Zone - 4	<Collection: 0 items>	0	1,760.54	54	(N/A)
924	J-42	1,631.50	Zone - 4	<Collection: 0 items>	0	1,760.54	56	(N/A)
926	J-381	1,624.74	Zone - 4	<Collection: 0 items>	0	1,760.55	59	(N/A)
933	J-44	1,624.90	Zone - 4	<Collection: 0 items>	0	1,760.55	59	(N/A)
937	J-45	1,606.60	Zone - 4	<Collection: 0 items>	0	1,760.61	67	(N/A)
940	D-1B-1-A	1,604.52	Zone - 4	<Collection: 1 item>	169	1,760.61	68	(N/A)
942	D-1B-1-C	1,610.26	Zone - 4	<Collection: 1 item>	169	1,760.56	65	(N/A)
944	FH-B1	1,610.90	Zone - 4	<Collection: 0 items>	0	1,760.56	65	(N/A)
946	D-1B-1-B	1,610.50	Zone - 4	<Collection: 1 item>	169	1,760.57	65	(N/A)
951	D-1B-2-A	1,616.50	Zone - 4	<Collection: 1 item>	54	1,760.56	62	(N/A)
956	J-46	1,614.37	Zone - 4	<Collection: 0 items>	0	1,760.56	63	(N/A)
960	D-1A-3-A	1,612.51	Zone - 4	<Collection: 1 item>	131	1,760.60	64	(N/A)
963	D-1A-3-B	1,607.18	Zone - 4	<Collection: 1 item>	131	1,760.64	66	(N/A)
967	J-47	1,628.00	Zone - 4	<Collection: 0 items>	0	1,760.60	57	(N/A)
970	FH-A7	1,621.59	Zone - 4	<Collection: 0 items>	0	1,760.55	60	(N/A)
972	D-1A-7	1,620.59	Zone - 4	<Collection: 1 item>	149	1,760.55	61	(N/A)
976	D-1A-1-A	1,614.93	Zone - 4	<Collection: 1 item>	188	1,760.55	63	(N/A)
985	FH-A8	1,618.53	Zone - 4	<Collection: 0 items>	0	1,760.56	61	(N/A)
988	FH-C10	1,635.38	Zone - 4	<Collection: 0 items>	0	1,760.56	54	(N/A)
1004	J-49	1,612.04	Zone - 4	<Collection: 0 items>	0	1,760.57	64	(N/A)
1009	FH-A1-3	1,609.45	Zone - 4	<Collection: 0 items>	0	1,760.72	65	(N/A)
1012	FH-A3	1,607.19	Zone - 4	<Collection: 0 items>	0	1,760.63	66	(N/A)
1015	FH-A4-3	1,608.46	Zone - 4	<Collection: 0 items>	0	1,760.60	66	(N/A)
1018	FH-A2-4	1,619.38	Zone - 4	<Collection: 0 items>	0	1,760.56	61	(N/A)
1021	FH-A1-2	1,618.47	Zone - 4	<Collection: 0 items>	0	1,760.59	61	(N/A)
1024	FH-A2-1	1,621.00	Zone - 4	<Collection: 0 items>	0	1,760.56	60	(N/A)
1028	FH-A5	1,596.00	Zone - 4	<Collection: 0 items>	0	1,760.56	71	(N/A)
1030	FH-A4-6	1,613.08	Zone - 4	<Collection: 0 items>	0	1,760.57	64	(N/A)
1034	FH-A4-4	1,608.76	Zone - 4	<Collection: 0 items>	0	1,760.61	66	(N/A)
1037	J-51	1,637.97	Zone - 4	<Collection: 0 items>	0	1,760.55	53	(N/A)

	J-52	1,641.32	Zone - 4	<Collection: 0 items>	0	1,760.55	52	(N/A)
1048	J-53	1,640.08	Zone - 4	<Collection: 0 items>	0	1,760.56	52	(N/A)
1055	J-54	1,635.94	Zone - 4	<Collection: 0 items>	0	1,760.56	54	(N/A)
1059	J-55	1,633.17	Zone - 4	<Collection: 0 items>	0	1,760.56	55	(N/A)
1064	FUTURE CONNECTION ACROSS 101	1,596.00	Zone - 4	<Collection: 1 item>	5	1,760.61	71	(N/A)
1066	J-327	1,642.62	Zone - 4	<Collection: 0 items>	0	1,760.56	51	(N/A)
1070	J-329	1,630.95	Zone - 4	<Collection: 0 items>	0	1,760.55	56	(N/A)
1073	J-330	1,627.87	Zone - 4	<Collection: 0 items>	0	1,760.56	57	(N/A)
1083	J-336	1,639.94	Zone - 4	<Collection: 0 items>	0	1,760.55	52	(N/A)
1086	J-337	1,645.41	Zone - 4	<Collection: 0 items>	0	1,760.56	50	(N/A)
1089	J-338	1,647.37	Zone - 4	<Collection: 0 items>	0	1,760.56	49	(N/A)
1102	FH-C2-B	1,626.84	Zone - 4	<Collection: 0 items>	0	1,760.54	58	(N/A)
1111	J-343	1,596.00	Zone - 4	<Collection: 0 items>	0	1,760.53	71	(N/A)
1118	J-601	1,622.88	Zone - 4	<Collection: 0 items>	0	1,760.54	60	(N/A)
1121	FH-C2-C	1,624.26	Zone - 4	<Collection: 0 items>	0	1,760.54	59	(N/A)
1124	J-346	1,624.60	Zone - 4	<Collection: 0 items>	0	1,760.55	59	(N/A)
1128	D-1C-2-A	1,630.25	Zone - 4	<Collection: 1 item>	53	1,760.55	56	(N/A)
1132	D-1C-1-B	1,610.52	Zone - 4	<Collection: 1 item>	66	1,760.52	65	(N/A)
1135	FH-C2-A	1,623.86	Zone - 4	<Collection: 0 items>	0	1,760.55	59	(N/A)
1139	J-351	1,635.01	Zone - 4	<Collection: 0 items>	0	1,760.55	54	(N/A)
1143	J-352	1,629.23	Zone - 4	<Collection: 0 items>	0	1,760.55	57	(N/A)
1147	J-353	1,633.87	Zone - 4	<Collection: 0 items>	0	1,760.54	55	(N/A)
1150	FH -C1-E	1,596.00	Zone - 4	<Collection: 0 items>	0	1,760.54	71	(N/A)
1152	J-355	1,634.18	Zone - 4	<Collection: 0 items>	0	1,760.54	55	(N/A)
1156	FH-C1-L	1,632.81	Zone - 4	<Collection: 0 items>	0	1,760.54	55	(N/A)
1159	FH-C1-C	1,627.92	Zone - 4	<Collection: 0 items>	0	1,760.54	57	(N/A)
1162	FH-C1-K	1,615.47	Zone - 4	<Collection: 0 items>	0	1,760.53	63	(N/A)
1165	FH-C1-J	1,608.97	Zone - 4	<Collection: 0 items>	0	1,760.52	66	(N/A)
1168	FH-C1-I	1,603.12	Zone - 4	<Collection: 0 items>	0	1,760.53	68	(N/A)
1171	FH-C1-B	1,616.08	Zone - 4	<Collection: 0 items>	0	1,760.54	63	(N/A)
1174	FC-C1-H	1,605.61	Zone - 4	<Collection: 0 items>	0	1,760.53	67	(N/A)
1177	FH-C1-G	1,623.82	Zone - 4	<Collection: 0 items>	0	1,760.52	59	(N/A)
1180	FH-C1-A	1,634.63	Zone - 4	<Collection: 0 items>	0	1,760.54	54	(N/A)
1183	FH-C1-F	1,634.02	Zone - 4	<Collection: 0 items>	0	1,760.54	55	(N/A)

Scenario: Avg Day
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
726	P-11	20	J-19	J-2	16.0	Ductile Iron	130.0	False	0.000	-1,386	2.21	1.141
690	P-1	500	J-2	J-3	16.0	Ductile Iron	130.0	False	0.000	681	1.09	0.306
1010	P-15	379	D-1A-1-B	FH-A1-3	24.0	Ductile Iron	130.0	False	0.000	-1,386	0.98	0.158
1011	P-446	352	FH-A1-3	J-19	24.0	Ductile Iron	130.0	False	0.000	-1,386	0.98	0.159
1022	P-14	236	J-3	FH-A1-2	12.0	Ductile Iron	130.0	False	0.000	290	0.82	0.257
1023	P-444	104	FH-A1-2	D-1A-8	12.0	Ductile Iron	130.0	False	0.000	290	0.82	0.256
965	P-130	231	D-1A-3-B	D-1A-1-B	24.0	Ductile Iron	130.0	False	0.000	-1,019	0.72	0.090
1013	P-129	138	D-1A-4-B	FH-A3	24.0	Ductile Iron	130.0	False	0.000	-888	0.63	0.069
1014	P-131	123	FH-A3	D-1A-3-B	24.0	Ductile Iron	130.0	False	0.000	-888	0.63	0.069
968	P-132	400	J-3	J-47	16.0	Ductile Iron	130.0	False	0.000	390	0.62	0.109
969	P-133	161	J-47	J-4	16.0	Ductile Iron	130.0	False	0.000	390	0.62	0.109
763	P-20	168	D-1A-4-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	-207	0.59	0.136
955	P-123	347	D-1B-1-B	D-1B-1-A	12.0	Ductile Iron	130.0	False	0.000	-197	0.56	0.125
977	P-17	120	D-1A-8	D-1A-1-A	12.0	Ductile Iron	130.0	False	0.000	188	0.53	0.115
756	P-18	119	FH-A1	D-1A-1-B	12.0	Ductile Iron	130.0	False	0.000	-179	0.51	0.104
961	P-127	487	FH-A1	D-1A-3-A	12.0	Ductile Iron	130.0	False	0.000	179	0.51	0.105
1016	P-114	272	J-21	FH-A4-3	12.0	Ductile Iron	130.0	False	0.000	-176	0.50	0.102
1017	P-443	125	FH-A4-3	J-45	12.0	Ductile Iron	130.0	False	0.000	-176	0.50	0.102
939	P-115	235	J-45	D-1A-4-B	24.0	Ductile Iron	130.0	False	0.000	-660	0.47	0.041
1035	P-483	102	D-1A-4-B	FH-A4-4	12.0	Ductile Iron	130.0	False	0.000	159	0.45	0.085
1036	P-484	215	FH-A4-4	FH-A4	12.0	Ductile Iron	130.0	False	0.000	159	0.45	0.084
1172	P-466(1)	49	J-381	FH-C1-B	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.095
1173	P-466(2)	117	FH-C1-B	J-343	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.096
1008	P-13	319	R-11	J-2	48.0	Ductile Iron	130.0	False	0.000	2,066	0.37	0.000
808	P-41	276	J-20	FH-C3-2	16.0	Ductile Iron	130.0	False	0.000	-219	0.35	0.037
809	P-42	330	FH-C3-2	J-4	16.0	Ductile Iron	130.0	False	0.000	-219	0.35	0.037
770	P-22	306	D-1A-5	D-1A-4-A	12.0	Ductile Iron	130.0	False	0.000	-122	0.35	0.052
941	P-116	126	J-45	D-1B-1-A	24.0	Ductile Iron	130.0	False	0.000	484	0.34	0.022
943	P-117	1,126	D-1B-1-A	D-1B-1-C	12.0	Ductile Iron	130.0	False	0.000	114	0.32	0.045
1007	P-439	166	J-21	J-49	12.0	Ductile Iron	130.0	False	0.000	97	0.27	0.033
694	P-2	135	J-4	J-5	16.0	Ductile Iron	130.0	False	0.000	171	0.27	0.023
696	P-3	134	J-5	J-6	16.0	Ductile Iron	130.0	False	0.000	171	0.27	0.024
819	P-46	371	J-6	J-29	16.0	Ductile Iron	130.0	False	0.000	171	0.27	0.024
773	P-24	293	J-22	J-21	12.0	Ductile Iron	130.0	False	0.000	-96	0.27	0.033
932	P-110	204	J-42	J-14	8.0	Ductile Iron	130.0	False	0.000	-39	0.25	0.045
936	P-113	149	J-381	J-44	12.0	Ductile Iron	130.0	False	0.000	-84	0.24	0.026
1160	P-206	117	J-601	FH-C1-C	8.0	Ductile Iron	130.0	False	0.000	-37	0.24	0.041
1161	P-207	82	FH-C1-C	J-42	8.0	Ductile Iron	130.0	False	0.000	-37	0.24	0.042
1163	P-204	111	D-1C-1-B	FH-C1-K	8.0	Ductile Iron	130.0	False	0.000	-37	0.24	0.041
1164	P-205	161	FH-C1-K	J-601	8.0	Ductile Iron	130.0	False	0.000	-37	0.24	0.041
930	P-108	183	D-1C-1-A	FH-C1-D	8.0	Ductile Iron	130.0	False	0.000	-37	0.23	0.040
1184	P-469(1)	289	FH-C1-D	FH-C1-F	8.0	Ductile Iron	130.0	False	0.000	-37	0.23	0.040
1185	P-469(2)	176	FH-C1-F	J-600	8.0	Ductile Iron	130.0	False	0.000	-37	0.23	0.040
1146	P-475	351	D-1C-2-A	J-352	12.0	Ductile Iron	130.0	False	0.000	-80	0.23	0.024
1114	P-468	289	J-600	J-51	8.0	Ductile Iron	130.0	False	0.000	-35	0.22	0.036
986	P-135	137	D-1A-8	FH-A8	12.0	Ductile Iron	130.0	False	0.000	77	0.22	0.022
987	P-107	217	FH-A8	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	77	0.22	0.022
1006	P-200	265	J-49	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	73	0.21	0.020

1025	P-16	83	J-50	FH-A2-1	12.0	Ductile Iron	130.0	False	0.000	-72	0.20	0.020
1026	P-445	246	FH-A2-1	J-20	12.0	Ductile Iron	130.0	False	0.000	-72	0.20	0.019
974	P-136	246	D-1A-7	J-50	12.0	Ductile Iron	130.0	False	0.000	-72	0.20	0.019
1092	P-459	78	J-337	J-338	12.0	Ductile Iron	130.0	False	0.000	-70	0.20	0.019
989	P-57	328	J-29	FH-C10	12.0	Ductile Iron	130.0	False	0.000	69	0.20	0.018
1057	P-489	266	J-54	FH-C10	12.0	Ductile Iron	130.0	False	0.000	-69	0.20	0.017
914	P-98	67	FH-C9	J-20	12.0	Ductile Iron	130.0	False	0.000	-68	0.19	0.018
1175	P-470(1)	206	J-343	FC-C1-H	8.0	Ductile Iron	130.0	False	0.000	30	0.19	0.027
1178	P-208	247	FC-C1-H	FH-C1-G	8.0	Ductile Iron	130.0	False	0.000	30	0.19	0.027
1179	P-209	110	FH-C1-G	D-1C-1-A	8.0	Ductile Iron	130.0	False	0.000	30	0.19	0.027
1167	P-203	35	FH-C1-J	D-1C-1-B	8.0	Ductile Iron	130.0	False	0.000	29	0.19	0.025
1169	P-201	157	J-343	FH-C1-I	8.0	Ductile Iron	130.0	False	0.000	29	0.19	0.026
1170	P-202	131	FH-C1-I	FH-C1-J	8.0	Ductile Iron	130.0	False	0.000	29	0.19	0.027
840	P-55	63	J-18	FH-C8	12.0	Ductile Iron	130.0	False	0.000	60	0.17	0.014
1075	P-85	221	J-330	FH-C8	12.0	Ductile Iron	130.0	False	0.000	-60	0.17	0.014
1145	P-84	116	J-352	J-330	12.0	Ductile Iron	130.0	False	0.000	-60	0.17	0.014
702	P-4	65	J-7	J-8	16.0	Ductile Iron	130.0	False	0.000	103	0.16	0.009
704	P-5	155	J-8	J-9	16.0	Ductile Iron	130.0	False	0.000	103	0.16	0.009
826	P-48	331	J-9	J-30	16.0	Ductile Iron	130.0	False	0.000	103	0.16	0.009
827	P-49	219	J-30	J-10	16.0	Ductile Iron	130.0	False	0.000	103	0.16	0.009
829	P-50	316	J-29	J-31	16.0	Ductile Iron	130.0	False	0.000	103	0.16	0.009
830	P-51	268	J-31	J-7	16.0	Ductile Iron	130.0	False	0.000	103	0.16	0.010
1122	P-100	257	D-1C-2-B	FH-C2-C	12.0	Ductile Iron	130.0	False	0.000	-53	0.15	0.011
1123	P-101	331	FH-C2-C	FH-C2-B	12.0	Ductile Iron	130.0	False	0.000	-53	0.15	0.011
1129	P-471(1)	229	FH-C2-B	D-1C-2-A	12.0	Ductile Iron	130.0	False	0.000	-53	0.15	0.011
915	P-99	64	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-52	0.15	0.011
945	P-118	316	D-1B-1-C	FH-B1	12.0	Ductile Iron	130.0	False	0.000	-52	0.15	0.011
947	P-119	416	FH-B1	D-1B-1-B	12.0	Ductile Iron	130.0	False	0.000	-52	0.15	0.011
904	P-91	225	J-36	J-40	12.0	Ductile Iron	130.0	False	0.000	51	0.15	0.010
1082	P-458	265	J-36	J-54	12.0	Ductile Iron	130.0	False	0.000	-51	0.15	0.011
791	P-33	103	J-22	J-26	12.0	Ductile Iron	130.0	False	0.000	50	0.14	0.010
962	P-128	216	D-1A-3-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	48	0.14	0.010
1019	P-23	350	J-18	FH-A2-4	12.0	Ductile Iron	130.0	False	0.000	-46	0.13	0.009
1020	P-447	51	FH-A2-4	J-22	12.0	Ductile Iron	130.0	False	0.000	-46	0.13	0.007
1088	P-63	250	J-337	D-1C-5-B	12.0	Ductile Iron	130.0	False	0.000	46	0.13	0.008
779	P-27	244	J-18	FH-A2-3	16.0	Ductile Iron	130.0	False	0.000	-79	0.13	0.006
780	P-28	327	FH-A2-3	J-20	16.0	Ductile Iron	130.0	False	0.000	-79	0.13	0.006
800	P-35	536	J-17	J-27	16.0	Ductile Iron	130.0	False	0.000	-76	0.12	0.005
935	P-112	404	J-44	J-17	16.0	Ductile Iron	130.0	False	0.000	-76	0.12	0.005
1027	P-443	109	D-1A-5	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	41	0.12	0.007
710	P-6	281	J-11	J-12	16.0	Ductile Iron	130.0	False	0.000	72	0.12	0.005
849	P-60	295	J-10	J-32	16.0	Ductile Iron	130.0	False	0.000	72	0.12	0.005
850	P-61	197	J-32	J-11	16.0	Ductile Iron	130.0	False	0.000	72	0.12	0.005
1058	P-453	148	J-54	J-53	12.0	Ductile Iron	130.0	False	0.000	40	0.11	0.007
1068	P-449(2)	141	J-327	J-53	12.0	Ductile Iron	130.0	False	0.000	-40	0.11	0.007
1091	P-449	151	J-338	J-327	12.0	Ductile Iron	130.0	False	0.000	-40	0.11	0.006
793	P-34	444	J-25	J-26	12.0	Ductile Iron	130.0	False	0.000	-39	0.11	0.006
805	P-39	153	J-48	J-25	12.0	Ductile Iron	130.0	False	0.000	-39	0.11	0.006
806	P-40	206	D-1B-2-B	J-48	12.0	Ductile Iron	130.0	False	0.000	-39	0.11	0.006
785	P-31	316	J-24	J-18	16.0	Ductile Iron	130.0	False	0.000	-64	0.10	0.003
801	P-36	355	J-27	J-24	16.0	Ductile Iron	130.0	False	0.000	-64	0.10	0.004
1140	P-444(1)	229	J-40	J-351	12.0	Ductile Iron	130.0	False	0.000	32	0.09	0.004
1141	P-444(2)	41	J-351	J-51	12.0	Ductile Iron	130.0	False	0.000	32	0.09	0.006
1090	P-448	253	J-10	J-338	12.0	Ductile Iron	130.0	False	0.000	30	0.09	0.004
953	P-121	279	D-1B-2-A	FH-B2	12.0	Ductile Iron	130.0	False	0.000	30	0.08	0.004
957	P-124	461	FH-B2	J-46	12.0	Ductile Iron	130.0	False	0.000	30	0.08	0.004
958	P-125	639	J-46	D-1B-2-B	12.0	Ductile Iron	130.0	False	0.000	27	0.08	0.003
714	P-7	126	J-13	J-14	16.0	Ductile Iron	130.0	False	0.000	48	0.08	0.002
878	P-75	434	J-12	J-37	16.0	Ductile Iron	130.0	False	0.000	48	0.08	0.002

	P-76	264	J-37	J-13	16.0	Ductile Iron	130.0	False	0.000	48	0.08	0.002
1125	P-106	23	J-381	J-346	12.0	Ductile Iron	130.0	False	0.000	25	0.07	0.000
1131	P-473	879	D-1C-2-A	J-346	12.0	Ductile Iron	130.0	False	0.000	-25	0.07	0.003
1046	P-447	253	J-52	J-12	12.0	Ductile Iron	130.0	False	0.000	-25	0.07	0.003
857	P-64	136	FH-C5	J-33	12.0	Ductile Iron	130.0	False	0.000	-24	0.07	0.003
891	P-83	336	D-1C-5-A	FH-C5	12.0	Ductile Iron	130.0	False	0.000	-24	0.07	0.003
1087	P-62	327	J-33	J-337	12.0	Ductile Iron	130.0	False	0.000	-24	0.07	0.003
1005	P-122	92	D-1B-1-B	J-49	12.0	Ductile Iron	130.0	False	0.000	-24	0.07	0.003
1062	P-454	237	J-54	J-55	12.0	Ductile Iron	130.0	False	0.000	-22	0.06	0.002
1063	P-455	358	D-1C-9	J-55	12.0	Ductile Iron	130.0	False	0.000	22	0.06	0.002
1044	P-487	78	J-52	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	22	0.06	0.002
1071	P-80	136	J-40	J-329	12.0	Ductile Iron	130.0	False	0.000	20	0.06	0.002
1144	P-81	146	J-329	J-352	12.0	Ductile Iron	130.0	False	0.000	20	0.06	0.002
1031	P-21	45	D-1A-4-A	FH-A4-6	12.0	Ductile Iron	130.0	False	0.000	16	0.05	0.000
1032	P-442	105	FH-A4-6	J-21	12.0	Ductile Iron	130.0	False	0.000	16	0.05	0.002
913	P-97	604	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-16	0.04	0.001
802	P-37	86	D-1B-2-B	J-27	12.0	Ductile Iron	130.0	False	0.000	12	0.03	0.001
952	P-120	114	J-26	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	11	0.03	0.001
934	P-111	533	J-16	J-44	16.0	Ductile Iron	130.0	False	0.000	9	0.01	0.000
1001	P-438	777	J-16	J-14	16.0	Ductile Iron	130.0	False	0.000	-9	0.01	0.000
1157	P-86	221	J-353	FH-C1-L	8.0	Ductile Iron	130.0	False	0.000	-2	0.01	0.000
1158	P-87	276	FH-C1-L	J-42	8.0	Ductile Iron	130.0	False	0.000	-2	0.01	0.000
1181	P-102	50	J-600	FH-C1-A	8.0	Ductile Iron	130.0	False	0.000	-2	0.01	0.000
1182	P-103	84	FH-C1-A	J-355	8.0	Ductile Iron	130.0	False	0.000	-2	0.01	0.000
1084	P-446(1)	76	J-51	J-336	12.0	Ductile Iron	130.0	False	0.000	-3	0.01	0.000
1085	P-446(2)	108	J-336	J-52	12.0	Ductile Iron	130.0	False	0.000	-3	0.01	0.000
1154	P-104	66	J-355	J-353	8.0	Ductile Iron	130.0	False	0.000	-1	0.01	0.000
959	P-126	340	D-1B-1-C	J-46	12.0	Ductile Iron	130.0	False	0.000	-3	0.01	0.000
1151	P-476	86	J-353	FH -C1-E	8.0	Ductile Iron	130.0	False	0.000	1	0.00	0.000
1155	P-477	478	FH -C1-E	J-355	8.0	Ductile Iron	130.0	False	0.000	1	0.00	0.000
1065	P-456	992	D-1B-1-A	FUTURE CONNECTION ACROSS 101	24.0	Ductile Iron	130.0	False	0.000	5	0.00	0.000
776	P-26	317	J-50	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
890	P-82	417	D-1C-5-B	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
975	P-137	24	FH-A7	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1029	P-441	121	J-22	FH-A5	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1136	P-89	248	J-346	FH-C2-A	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
725	P-10	181	J-1	J-19	16.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000

Scenario: Avg Day
Current Time Step: 0.000 h
FlexTable: Reservoir Table

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
731	R-11	1,760.80	Zone - 4	2,066	1,760.80

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Appendix B
Max Day Demand
The Grayhawk Residences at Cavasson

Scenario: Max Day
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure (Calculated Residual) (psi)
686	J-1	1,609.00	Zone - 4	<Collection: 0 items>	0	1,760.72	66	(N/A)
687	J-2	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.80	64	(N/A)
689	J-3	1,623.00	Zone - 4	<Collection: 0 items>	0	1,760.25	59	(N/A)
691	J-4	1,629.00	Zone - 4	<Collection: 0 items>	0	1,760.03	57	(N/A)
693	J-5	1,629.90	Zone - 4	<Collection: 0 items>	0	1,760.02	56	(N/A)
695	J-6	1,631.92	Zone - 4	<Collection: 0 items>	0	1,760.00	55	(N/A)
697	J-7	1,649.25	Zone - 4	<Collection: 0 items>	0	1,759.95	48	(N/A)
701	J-8	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.95	48	(N/A)
703	J-9	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.95	48	(N/A)
705	J-10	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.93	48	(N/A)
707	J-11	1,646.00	Zone - 4	<Collection: 0 items>	0	1,759.92	49	(N/A)
709	J-12	1,643.00	Zone - 4	<Collection: 0 items>	0	1,759.91	51	(N/A)
711	J-13	1,637.84	Zone - 4	<Collection: 0 items>	0	1,759.91	53	(N/A)
713	J-14	1,633.68	Zone - 4	<Collection: 0 items>	0	1,759.91	55	(N/A)
717	J-16	1,630.55	Zone - 4	<Collection: 0 items>	0	1,759.91	56	(N/A)
719	J-17	1,617.54	Zone - 4	<Collection: 0 items>	0	1,759.92	62	(N/A)
721	J-18	1,625.17	Zone - 4	<Collection: 0 items>	0	1,759.93	58	(N/A)
724	J-19	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.72	64	(N/A)
735	D-1A-8	1,616.47	Zone - 4	<Collection: 1 item>	51	1,759.93	62	(N/A)
737	J-20	1,625.50	Zone - 4	<Collection: 0 items>	0	1,759.95	58	(N/A)
741	D-1A-1-B	1,606.70	Zone - 4	<Collection: 1 item>	375	1,760.30	66	(N/A)
745	J-50	1,619.49	Zone - 4	<Collection: 0 items>	0	1,759.92	61	(N/A)
750	D-1A-4-B	1,607.21	Zone - 4	<Collection: 1 item>	137	1,760.16	66	(N/A)
754	FH-A1	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.26	64	(N/A)
757	FH-A4	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.07	64	(N/A)
761	D-1A-4-A	1,613.33	Zone - 4	<Collection: 1 item>	137	1,759.98	63	(N/A)
764	J-21	1,612.50	Zone - 4	<Collection: 0 items>	0	1,759.98	64	(N/A)
768	D-1A-5	1,618.40	Zone - 4	<Collection: 1 item>	161	1,759.93	61	(N/A)
771	J-22	1,618.54	Zone - 4	<Collection: 0 items>	0	1,759.95	61	(N/A)
775	D-1A-2	1,619.21	Zone - 4	<Collection: 1 item>	83	1,759.92	61	(N/A)
778	FH-A2-3	1,625.00	Zone - 4	<Collection: 0 items>	0	1,759.94	58	(N/A)
783	J-24	1,623.83	Zone - 4	<Collection: 0 items>	0	1,759.93	59	(N/A)
787	J-25	1,622.54	Zone - 4	<Collection: 0 items>	0	1,759.93	59	(N/A)
790	J-26	1,617.86	Zone - 4	<Collection: 0 items>	0	1,759.94	61	(N/A)
794	FH-B2	1,617.09	Zone - 4	<Collection: 0 items>	0	1,759.94	62	(N/A)
797	D-1B-2-B	1,617.90	Zone - 4	<Collection: 1 item>	108	1,759.93	61	(N/A)
799	J-27	1,619.36	Zone - 4	<Collection: 0 items>	0	1,759.93	61	(N/A)

803	J-48	1,621.39	Zone - 4	<Collection: 0 items>	0	1,759.93	60	(N/A)
807	FH-C3-2	1,626.64	Zone - 4	<Collection: 0 items>	0	1,759.98	58	(N/A)
818	J-29	1,636.73	Zone - 4	<Collection: 0 items>	0	1,759.97	53	(N/A)
825	J-30	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.94	48	(N/A)
828	J-31	1,645.84	Zone - 4	<Collection: 0 items>	0	1,759.96	49	(N/A)
839	FH-C8	1,626.14	Zone - 4	<Collection: 0 items>	0	1,759.93	58	(N/A)
848	J-32	1,648.15	Zone - 4	<Collection: 0 items>	0	1,759.92	48	(N/A)
851	J-33	1,647.28	Zone - 4	<Collection: 0 items>	0	1,759.92	49	(N/A)
853	D-1C-5-B	1,643.51	Zone - 4	<Collection: 1 item>	92	1,759.91	50	(N/A)
855	FH-C5	1,646.19	Zone - 4	<Collection: 0 items>	0	1,759.91	49	(N/A)
873	J-36	1,636.30	Zone - 4	<Collection: 0 items>	0	1,759.92	53	(N/A)
877	J-37	1,640.12	Zone - 4	<Collection: 0 items>	0	1,759.91	52	(N/A)
889	D-1C-5-A	1,641.50	Zone - 4	<Collection: 1 item>	92	1,759.91	51	(N/A)
895	FH-C1-D	1,632.44	Zone - 4	<Collection: 0 items>	0	1,759.81	55	(N/A)
903	J-40	1,631.38	Zone - 4	<Collection: 0 items>	0	1,759.92	56	(N/A)
910	D-1C-9	1,627.00	Zone - 4	<Collection: 1 item>	91	1,759.94	58	(N/A)
912	FH-C9	1,626.65	Zone - 4	<Collection: 0 items>	0	1,759.94	58	(N/A)
916	D-1C-2-B	1,622.25	Zone - 4	<Collection: 1 item>	106	1,759.85	60	(N/A)
920	D-1C-1-A	1,630.50	Zone - 4	<Collection: 1 item>	133	1,759.78	56	(N/A)
922	J-600	1,634.90	Zone - 4	<Collection: 0 items>	0	1,759.87	54	(N/A)
924	J-42	1,631.50	Zone - 4	<Collection: 0 items>	0	1,759.87	56	(N/A)
926	J-381	1,624.74	Zone - 4	<Collection: 0 items>	0	1,759.89	58	(N/A)
933	J-44	1,624.90	Zone - 4	<Collection: 0 items>	0	1,759.91	58	(N/A)
937	J-45	1,606.60	Zone - 4	<Collection: 0 items>	0	1,760.13	66	(N/A)
940	D-1B-1-A	1,604.52	Zone - 4	<Collection: 1 item>	337	1,760.12	67	(N/A)
942	D-1B-1-C	1,610.26	Zone - 4	<Collection: 1 item>	337	1,759.93	65	(N/A)
944	FH-B1	1,610.90	Zone - 4	<Collection: 0 items>	0	1,759.95	64	(N/A)
946	D-1B-1-B	1,610.50	Zone - 4	<Collection: 1 item>	337	1,759.96	65	(N/A)
951	D-1B-2-A	1,616.50	Zone - 4	<Collection: 1 item>	108	1,759.94	62	(N/A)
956	J-46	1,614.37	Zone - 4	<Collection: 0 items>	0	1,759.93	63	(N/A)
960	D-1A-3-A	1,612.51	Zone - 4	<Collection: 1 item>	262	1,760.07	64	(N/A)
963	D-1A-3-B	1,607.18	Zone - 4	<Collection: 1 item>	262	1,760.23	66	(N/A)
967	J-47	1,628.00	Zone - 4	<Collection: 0 items>	0	1,760.09	57	(N/A)
970	FH-A7	1,621.59	Zone - 4	<Collection: 0 items>	0	1,759.91	60	(N/A)
972	D-1A-7	1,620.59	Zone - 4	<Collection: 1 item>	299	1,759.91	60	(N/A)
976	D-1A-1-A	1,614.93	Zone - 4	<Collection: 1 item>	375	1,759.88	63	(N/A)
985	FH-A8	1,618.53	Zone - 4	<Collection: 0 items>	0	1,759.92	61	(N/A)
988	FH-C10	1,635.38	Zone - 4	<Collection: 0 items>	0	1,759.95	54	(N/A)
1004	J-49	1,612.04	Zone - 4	<Collection: 0 items>	0	1,759.96	64	(N/A)
1009	FH-A1-3	1,609.45	Zone - 4	<Collection: 0 items>	0	1,760.52	65	(N/A)
1012	FH-A3	1,607.19	Zone - 4	<Collection: 0 items>	0	1,760.20	66	(N/A)
1015	FH-A4-3	1,608.46	Zone - 4	<Collection: 0 items>	0	1,760.08	66	(N/A)
1018	FH-A2-4	1,619.38	Zone - 4	<Collection: 0 items>	0	1,759.95	61	(N/A)
1021	FH-A1-2	1,618.47	Zone - 4	<Collection: 0 items>	0	1,760.03	61	(N/A)
1024	FH-A2-1	1,621.00	Zone - 4	<Collection: 0 items>	0	1,759.93	60	(N/A)
1028	FH-A5	1,596.00	Zone - 4	<Collection: 0 items>	0	1,759.95	71	(N/A)
1030	FH-A4-6	1,613.08	Zone - 4	<Collection: 0 items>	0	1,759.98	64	(N/A)
1034	FH-A4-4	1,608.76	Zone - 4	<Collection: 0 items>	0	1,760.13	65	(N/A)
1037	J-51	1,637.97	Zone - 4	<Collection: 0 items>	0	1,759.91	53	(N/A)

	J-52	1,641.32	Zone - 4	<Collection: 0 items>	0	1,759.91	51	(N/A)
1048	J-53	1,640.08	Zone - 4	<Collection: 0 items>	0	1,759.93	52	(N/A)
1055	J-54	1,635.94	Zone - 4	<Collection: 0 items>	0	1,759.93	54	(N/A)
1059	J-55	1,633.17	Zone - 4	<Collection: 0 items>	0	1,759.94	55	(N/A)
1064	FUTURE CONNECTION ACROSS 101	1,596.00	Zone - 4	<Collection: 1 item>	5	1,760.12	71	(N/A)
1066	J-327	1,642.62	Zone - 4	<Collection: 0 items>	0	1,759.93	51	(N/A)
1070	J-329	1,630.95	Zone - 4	<Collection: 0 items>	0	1,759.92	56	(N/A)
1073	J-330	1,627.87	Zone - 4	<Collection: 0 items>	0	1,759.92	57	(N/A)
1083	J-336	1,639.94	Zone - 4	<Collection: 0 items>	0	1,759.91	52	(N/A)
1086	J-337	1,645.41	Zone - 4	<Collection: 0 items>	0	1,759.92	50	(N/A)
1089	J-338	1,647.37	Zone - 4	<Collection: 0 items>	0	1,759.92	49	(N/A)
1102	FH-C2-B	1,626.84	Zone - 4	<Collection: 0 items>	0	1,759.88	58	(N/A)
1111	J-343	1,596.00	Zone - 4	<Collection: 0 items>	0	1,759.84	71	(N/A)
1118	J-601	1,622.88	Zone - 4	<Collection: 0 items>	0	1,759.85	59	(N/A)
1121	FH-C2-C	1,624.26	Zone - 4	<Collection: 0 items>	0	1,759.86	59	(N/A)
1124	J-346	1,624.60	Zone - 4	<Collection: 0 items>	0	1,759.89	59	(N/A)
1128	D-1C-2-A	1,630.25	Zone - 4	<Collection: 1 item>	106	1,759.88	56	(N/A)
1132	D-1C-1-B	1,610.52	Zone - 4	<Collection: 1 item>	133	1,759.81	65	(N/A)
1135	FH-C2-A	1,623.86	Zone - 4	<Collection: 0 items>	0	1,759.89	59	(N/A)
1139	J-351	1,635.01	Zone - 4	<Collection: 0 items>	0	1,759.91	54	(N/A)
1143	J-352	1,629.23	Zone - 4	<Collection: 0 items>	0	1,759.91	57	(N/A)
1147	J-353	1,633.87	Zone - 4	<Collection: 0 items>	0	1,759.87	55	(N/A)
1150	FH -C1-E	1,596.00	Zone - 4	<Collection: 0 items>	0	1,759.87	71	(N/A)
1152	J-355	1,634.18	Zone - 4	<Collection: 0 items>	0	1,759.87	54	(N/A)
1156	FH-C1-L	1,632.81	Zone - 4	<Collection: 0 items>	0	1,759.87	55	(N/A)
1159	FH-C1-C	1,627.92	Zone - 4	<Collection: 0 items>	0	1,759.86	57	(N/A)
1162	FH-C1-K	1,615.47	Zone - 4	<Collection: 0 items>	0	1,759.82	62	(N/A)
1165	FH-C1-J	1,608.97	Zone - 4	<Collection: 0 items>	0	1,759.81	65	(N/A)
1168	FH-C1-I	1,603.12	Zone - 4	<Collection: 0 items>	0	1,759.82	68	(N/A)
1171	FH-C1-B	1,616.08	Zone - 4	<Collection: 0 items>	0	1,759.88	62	(N/A)
1174	FC-C1-H	1,605.61	Zone - 4	<Collection: 0 items>	0	1,759.82	67	(N/A)
1177	FH-C1-G	1,623.82	Zone - 4	<Collection: 0 items>	0	1,759.79	59	(N/A)
1180	FH-C1-A	1,634.63	Zone - 4	<Collection: 0 items>	0	1,759.87	54	(N/A)
1183	FH-C1-F	1,634.02	Zone - 4	<Collection: 0 items>	0	1,759.85	54	(N/A)

Scenario: Max Day
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
726	P-11	20	J-19	J-2	16.0	Ductile Iron	130.0	False	0.000	-2,767	4.42	4.116
690	P-1	500	J-2	J-3	16.0	Ductile Iron	130.0	False	0.000	1,360	2.17	1.103
1010	P-15	379	D-1A-1-B	FH-A1-3	24.0	Ductile Iron	130.0	False	0.000	-2,767	1.96	0.570
1011	P-446	352	FH-A1-3	J-19	24.0	Ductile Iron	130.0	False	0.000	-2,767	1.96	0.570
1022	P-14	236	J-3	FH-A1-2	12.0	Ductile Iron	130.0	False	0.000	581	1.65	0.926
1023	P-444	104	FH-A1-2	D-1A-8	12.0	Ductile Iron	130.0	False	0.000	581	1.65	0.926
965	P-130	231	D-1A-3-B	D-1A-1-B	24.0	Ductile Iron	130.0	False	0.000	-2,034	1.44	0.323
1013	P-129	138	D-1A-4-B	FH-A3	24.0	Ductile Iron	130.0	False	0.000	-1,772	1.26	0.250
1014	P-131	123	FH-A3	D-1A-3-B	24.0	Ductile Iron	130.0	False	0.000	-1,772	1.26	0.250
968	P-132	400	J-3	J-47	16.0	Ductile Iron	130.0	False	0.000	779	1.24	0.393
969	P-133	161	J-47	J-4	16.0	Ductile Iron	130.0	False	0.000	779	1.24	0.394
763	P-20	168	D-1A-4-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	-413	1.17	0.494
955	P-123	347	D-1B-1-B	D-1B-1-A	12.0	Ductile Iron	130.0	False	0.000	-394	1.12	0.451
977	P-17	120	D-1A-8	D-1A-1-A	12.0	Ductile Iron	130.0	False	0.000	375	1.06	0.413
756	P-18	119	FH-A1	D-1A-1-B	12.0	Ductile Iron	130.0	False	0.000	-358	1.01	0.377
961	P-127	487	FH-A1	D-1A-3-A	12.0	Ductile Iron	130.0	False	0.000	358	1.01	0.378
1016	P-114	272	J-21	FH-A4-3	12.0	Ductile Iron	130.0	False	0.000	-353	1.00	0.368
1017	P-443	125	FH-A4-3	J-45	12.0	Ductile Iron	130.0	False	0.000	-353	1.00	0.368
939	P-115	235	J-45	D-1A-4-B	24.0	Ductile Iron	130.0	False	0.000	-1,317	0.93	0.144
1035	P-483	102	D-1A-4-B	FH-A4-4	12.0	Ductile Iron	130.0	False	0.000	318	0.90	0.304
1036	P-484	215	FH-A4-4	FH-A4	12.0	Ductile Iron	130.0	False	0.000	318	0.90	0.303
1172	P-466(1)	49	J-381	FH-C1-B	8.0	Ductile Iron	130.0	False	0.000	118	0.75	0.349
1173	P-466(2)	117	FH-C1-B	J-343	8.0	Ductile Iron	130.0	False	0.000	118	0.75	0.348
1008	P-13	319	R-11	J-2	48.0	Ductile Iron	130.0	False	0.000	4,127	0.73	0.000
808	P-41	276	J-20	FH-C3-2	16.0	Ductile Iron	130.0	False	0.000	-437	0.70	0.135
809	P-42	330	FH-C3-2	J-4	16.0	Ductile Iron	130.0	False	0.000	-437	0.70	0.135
770	P-22	306	D-1A-5	D-1A-4-A	12.0	Ductile Iron	130.0	False	0.000	-244	0.69	0.186
941	P-116	126	J-45	D-1B-1-A	24.0	Ductile Iron	130.0	False	0.000	964	0.68	0.081
943	P-117	1,126	D-1B-1-A	D-1B-1-C	12.0	Ductile Iron	130.0	False	0.000	228	0.65	0.164
1007	P-439	166	J-21	J-49	12.0	Ductile Iron	130.0	False	0.000	193	0.55	0.120
694	P-2	135	J-4	J-5	16.0	Ductile Iron	130.0	False	0.000	342	0.55	0.086
696	P-3	134	J-5	J-6	16.0	Ductile Iron	130.0	False	0.000	342	0.55	0.085
819	P-46	371	J-6	J-29	16.0	Ductile Iron	130.0	False	0.000	342	0.55	0.086
773	P-24	293	J-22	J-21	12.0	Ductile Iron	130.0	False	0.000	-192	0.54	0.119
932	P-110	204	J-42	J-14	8.0	Ductile Iron	130.0	False	0.000	-78	0.50	0.162
936	P-113	149	J-381	J-44	12.0	Ductile Iron	130.0	False	0.000	-169	0.48	0.094
1160	P-206	117	J-601	FH-C1-C	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
1161	P-207	82	FH-C1-C	J-42	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
1163	P-204	111	D-1C-1-B	FH-C1-K	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
1164	P-205	161	FH-C1-K	J-601	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
930	P-108	183	D-1C-1-A	FH-C1-D	8.0	Ductile Iron	130.0	False	0.000	-73	0.47	0.144
1184	P-469(1)	289	FH-C1-D	FH-C1-F	8.0	Ductile Iron	130.0	False	0.000	-73	0.47	0.144
1185	P-469(2)	176	FH-C1-F	J-600	8.0	Ductile Iron	130.0	False	0.000	-73	0.47	0.144
1146	P-475	351	D-1C-2-A	J-352	12.0	Ductile Iron	130.0	False	0.000	-160	0.46	0.086
1114	P-468	289	J-600	J-51	8.0	Ductile Iron	130.0	False	0.000	-69	0.44	0.130
986	P-135	137	D-1A-8	FH-A8	12.0	Ductile Iron	130.0	False	0.000	155	0.44	0.080
987	P-107	217	FH-A8	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	155	0.44	0.080
1006	P-200	265	J-49	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	145	0.41	0.071

1025	P-16	83	J-50	FH-A2-1	12.0	Ductile Iron	130.0	False	0.000	-144	0.41	0.070
1026	P-445	246	FH-A2-1	J-20	12.0	Ductile Iron	130.0	False	0.000	-144	0.41	0.070
974	P-136	246	D-1A-7	J-50	12.0	Ductile Iron	130.0	False	0.000	-144	0.41	0.070
1092	P-459	78	J-337	J-338	12.0	Ductile Iron	130.0	False	0.000	-140	0.40	0.067
989	P-57	328	J-29	FH-C10	12.0	Ductile Iron	130.0	False	0.000	138	0.39	0.064
1057	P-489	266	J-54	FH-C10	12.0	Ductile Iron	130.0	False	0.000	-138	0.39	0.064
914	P-98	67	FH-C9	J-20	12.0	Ductile Iron	130.0	False	0.000	-136	0.39	0.063
1175	P-470(1)	206	J-343	FC-C1-H	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.098
1178	P-208	247	FC-C1-H	FH-C1-G	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.098
1179	P-209	110	FH-C1-G	D-1C-1-A	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.098
1167	P-203	35	FH-C1-J	D-1C-1-B	8.0	Ductile Iron	130.0	False	0.000	58	0.37	0.095
1169	P-201	157	J-343	FH-C1-I	8.0	Ductile Iron	130.0	False	0.000	58	0.37	0.096
1170	P-202	131	FH-C1-I	FH-C1-J	8.0	Ductile Iron	130.0	False	0.000	58	0.37	0.095
840	P-55	63	J-18	FH-C8	12.0	Ductile Iron	130.0	False	0.000	121	0.34	0.051
1075	P-85	221	J-330	FH-C8	12.0	Ductile Iron	130.0	False	0.000	-121	0.34	0.051
1145	P-84	116	J-352	J-330	12.0	Ductile Iron	130.0	False	0.000	-121	0.34	0.051
702	P-4	65	J-7	J-8	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.034
704	P-5	155	J-8	J-9	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
826	P-48	331	J-9	J-30	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
827	P-49	219	J-30	J-10	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
829	P-50	316	J-29	J-31	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
830	P-51	268	J-31	J-7	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
1122	P-100	257	D-1C-2-B	FH-C2-C	12.0	Ductile Iron	130.0	False	0.000	-106	0.30	0.039
1123	P-101	331	FH-C2-C	FH-C2-B	12.0	Ductile Iron	130.0	False	0.000	-106	0.30	0.039
1129	P-471(1)	229	FH-C2-B	D-1C-2-A	12.0	Ductile Iron	130.0	False	0.000	-106	0.30	0.040
945	P-118	316	D-1B-1-C	FH-B1	12.0	Ductile Iron	130.0	False	0.000	-104	0.30	0.039
947	P-119	416	FH-B1	D-1B-1-B	12.0	Ductile Iron	130.0	False	0.000	-104	0.30	0.038
915	P-99	64	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-104	0.30	0.038
904	P-91	225	J-36	J-40	12.0	Ductile Iron	130.0	False	0.000	103	0.29	0.037
1082	P-458	265	J-36	J-54	12.0	Ductile Iron	130.0	False	0.000	-103	0.29	0.038
791	P-33	103	J-22	J-26	12.0	Ductile Iron	130.0	False	0.000	100	0.28	0.036
962	P-128	216	D-1A-3-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	95	0.27	0.033
1019	P-23	350	J-18	FH-A2-4	12.0	Ductile Iron	130.0	False	0.000	-92	0.26	0.031
1020	P-447	51	FH-A2-4	J-22	12.0	Ductile Iron	130.0	False	0.000	-92	0.26	0.031
1088	P-63	250	J-337	D-1C-5-B	12.0	Ductile Iron	130.0	False	0.000	91	0.26	0.030
779	P-27	244	J-18	FH-A2-3	16.0	Ductile Iron	130.0	False	0.000	-157	0.25	0.020
780	P-28	327	FH-A2-3	J-20	16.0	Ductile Iron	130.0	False	0.000	-157	0.25	0.020
800	P-35	536	J-17	J-27	16.0	Ductile Iron	130.0	False	0.000	-152	0.24	0.019
935	P-112	404	J-44	J-17	16.0	Ductile Iron	130.0	False	0.000	-152	0.24	0.019
1027	P-443	109	D-1A-5	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	83	0.24	0.025
710	P-6	281	J-11	J-12	16.0	Ductile Iron	130.0	False	0.000	144	0.23	0.017
849	P-60	295	J-10	J-32	16.0	Ductile Iron	130.0	False	0.000	144	0.23	0.017
850	P-61	197	J-32	J-11	16.0	Ductile Iron	130.0	False	0.000	144	0.23	0.017
1058	P-453	148	J-54	J-53	12.0	Ductile Iron	130.0	False	0.000	80	0.23	0.024
1068	P-449(2)	141	J-327	J-53	12.0	Ductile Iron	130.0	False	0.000	-80	0.23	0.023
1091	P-449	151	J-338	J-327	12.0	Ductile Iron	130.0	False	0.000	-80	0.23	0.023
793	P-34	444	J-25	J-26	12.0	Ductile Iron	130.0	False	0.000	-77	0.22	0.022
805	P-39	153	J-48	J-25	12.0	Ductile Iron	130.0	False	0.000	-77	0.22	0.022
806	P-40	206	D-1B-2-B	J-48	12.0	Ductile Iron	130.0	False	0.000	-77	0.22	0.022
785	P-31	316	J-24	J-18	16.0	Ductile Iron	130.0	False	0.000	-128	0.20	0.014
801	P-36	355	J-27	J-24	16.0	Ductile Iron	130.0	False	0.000	-128	0.20	0.014
1140	P-444(1)	229	J-40	J-351	12.0	Ductile Iron	130.0	False	0.000	63	0.18	0.015
1141	P-444(2)	41	J-351	J-51	12.0	Ductile Iron	130.0	False	0.000	63	0.18	0.015
1090	P-448	253	J-10	J-338	12.0	Ductile Iron	130.0	False	0.000	61	0.17	0.015
953	P-121	279	D-1B-2-A	FH-B2	12.0	Ductile Iron	130.0	False	0.000	59	0.17	0.014
957	P-124	461	FH-B2	J-46	12.0	Ductile Iron	130.0	False	0.000	59	0.17	0.014
958	P-125	639	J-46	D-1B-2-B	12.0	Ductile Iron	130.0	False	0.000	55	0.16	0.012
714	P-7	126	J-13	J-14	16.0	Ductile Iron	130.0	False	0.000	95	0.15	0.008
878	P-75	434	J-12	J-37	16.0	Ductile Iron	130.0	False	0.000	95	0.15	0.008

	P-76	264	J-37	J-13	16.0	Ductile Iron	130.0	False	0.000	95	0.15	0.008
1125	P-106	23	J-381	J-346	12.0	Ductile Iron	130.0	False	0.000	51	0.14	0.010
1131	P-473	879	D-1C-2-A	J-346	12.0	Ductile Iron	130.0	False	0.000	-51	0.14	0.010
1046	P-447	253	J-52	J-12	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.010
857	P-64	136	FH-C5	J-33	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.009
891	P-83	336	D-1C-5-A	FH-C5	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.009
1087	P-62	327	J-33	J-337	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.009
1005	P-122	92	D-1B-1-B	J-49	12.0	Ductile Iron	130.0	False	0.000	-48	0.14	0.009
1062	P-454	237	J-54	J-55	12.0	Ductile Iron	130.0	False	0.000	-45	0.13	0.008
1063	P-455	358	D-1C-9	J-55	12.0	Ductile Iron	130.0	False	0.000	45	0.13	0.008
1044	P-487	78	J-52	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	43	0.12	0.006
1071	P-80	136	J-40	J-329	12.0	Ductile Iron	130.0	False	0.000	40	0.11	0.006
1144	P-81	146	J-329	J-352	12.0	Ductile Iron	130.0	False	0.000	40	0.11	0.007
1031	P-21	45	D-1A-4-A	FH-A4-6	12.0	Ductile Iron	130.0	False	0.000	32	0.09	0.003
1032	P-442	105	FH-A4-6	J-21	12.0	Ductile Iron	130.0	False	0.000	32	0.09	0.005
913	P-97	604	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-32	0.09	0.004
802	P-37	86	D-1B-2-B	J-27	12.0	Ductile Iron	130.0	False	0.000	24	0.07	0.001
952	P-120	114	J-26	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	22	0.06	0.002
934	P-111	533	J-16	J-44	16.0	Ductile Iron	130.0	False	0.000	17	0.03	0.000
1001	P-438	777	J-16	J-14	16.0	Ductile Iron	130.0	False	0.000	-17	0.03	0.000
1157	P-86	221	J-353	FH-C1-L	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.001
1158	P-87	276	FH-C1-L	J-42	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.001
1181	P-102	50	J-600	FH-C1-A	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.002
1182	P-103	84	FH-C1-A	J-355	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.000
1084	P-446(1)	76	J-51	J-336	12.0	Ductile Iron	130.0	False	0.000	-6	0.02	0.000
1085	P-446(2)	108	J-336	J-52	12.0	Ductile Iron	130.0	False	0.000	-6	0.02	0.000
1154	P-104	66	J-355	J-353	8.0	Ductile Iron	130.0	False	0.000	-2	0.01	0.000
959	P-126	340	D-1B-1-C	J-46	12.0	Ductile Iron	130.0	False	0.000	-5	0.01	0.000
1151	P-476	86	J-353	FH -C1-E	8.0	Ductile Iron	130.0	False	0.000	2	0.01	0.000
1155	P-477	478	FH -C1-E	J-355	8.0	Ductile Iron	130.0	False	0.000	2	0.01	0.000
1065	P-456	992	D-1B-1-A	FUTURE CONNECTION ACROSS 101	24.0	Ductile Iron	130.0	False	0.000	5	0.00	0.000
776	P-26	317	J-50	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
890	P-82	417	D-1C-5-B	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
975	P-137	24	FH-A7	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1029	P-441	121	J-22	FH-A5	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1136	P-89	248	J-346	FH-C2-A	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
725	P-10	181	J-1	J-19	16.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000

Scenario: Max Day
Current Time Step: 0.000 h
FlexTable: Reservoir Table

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
731	R-11	1,760.80	Zone - 4	4,127	1,760.80

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Appendix C
Peak Hour Demand
The Grayhawk Residences at Cavasson

Scenario: Peak Hour
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure (Calculated Residual) (psi)
686	J-1	1,609.00	Zone - 4	<Collection: 0 items>	0	1,760.57	66	(N/A)
687	J-2	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.80	64	(N/A)
689	J-3	1,623.00	Zone - 4	<Collection: 0 items>	0	1,759.25	59	(N/A)
691	J-4	1,629.00	Zone - 4	<Collection: 0 items>	0	1,758.62	56	(N/A)
693	J-5	1,629.90	Zone - 4	<Collection: 0 items>	0	1,758.59	56	(N/A)
695	J-6	1,631.92	Zone - 4	<Collection: 0 items>	0	1,758.56	55	(N/A)
697	J-7	1,649.25	Zone - 4	<Collection: 0 items>	0	1,758.41	47	(N/A)
701	J-8	1,649.00	Zone - 4	<Collection: 0 items>	0	1,758.41	47	(N/A)
703	J-9	1,649.00	Zone - 4	<Collection: 0 items>	0	1,758.39	47	(N/A)
705	J-10	1,649.00	Zone - 4	<Collection: 0 items>	0	1,758.34	47	(N/A)
707	J-11	1,646.00	Zone - 4	<Collection: 0 items>	0	1,758.32	49	(N/A)
709	J-12	1,643.00	Zone - 4	<Collection: 0 items>	0	1,758.31	50	(N/A)
711	J-13	1,637.84	Zone - 4	<Collection: 0 items>	0	1,758.29	52	(N/A)
713	J-14	1,633.68	Zone - 4	<Collection: 0 items>	0	1,758.29	54	(N/A)
717	J-16	1,630.55	Zone - 4	<Collection: 0 items>	0	1,758.29	55	(N/A)
719	J-17	1,617.54	Zone - 4	<Collection: 0 items>	0	1,758.31	61	(N/A)
721	J-18	1,625.17	Zone - 4	<Collection: 0 items>	0	1,758.36	58	(N/A)
724	J-19	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.57	64	(N/A)
735	D-1A-8	1,616.47	Zone - 4	<Collection: 1 item>	89	1,758.36	61	(N/A)
737	J-20	1,625.50	Zone - 4	<Collection: 0 items>	0	1,758.39	57	(N/A)
741	D-1A-1-B	1,606.70	Zone - 4	<Collection: 1 item>	657	1,759.40	66	(N/A)
745	J-50	1,619.49	Zone - 4	<Collection: 0 items>	0	1,758.33	60	(N/A)
750	D-1A-4-B	1,607.21	Zone - 4	<Collection: 1 item>	240	1,759.00	66	(N/A)
754	FH-A1	1,612.00	Zone - 4	<Collection: 0 items>	0	1,759.27	64	(N/A)
757	FH-A4	1,612.00	Zone - 4	<Collection: 0 items>	0	1,758.73	63	(N/A)
761	D-1A-4-A	1,613.33	Zone - 4	<Collection: 1 item>	240	1,758.50	63	(N/A)
764	J-21	1,612.50	Zone - 4	<Collection: 0 items>	0	1,758.50	63	(N/A)
768	D-1A-5	1,618.40	Zone - 4	<Collection: 1 item>	282	1,758.34	61	(N/A)
771	J-22	1,618.54	Zone - 4	<Collection: 0 items>	0	1,758.40	61	(N/A)
775	D-1A-2	1,619.21	Zone - 4	<Collection: 1 item>	146	1,758.33	60	(N/A)
778	FH-A2-3	1,625.00	Zone - 4	<Collection: 0 items>	0	1,758.38	58	(N/A)
783	J-24	1,623.83	Zone - 4	<Collection: 0 items>	0	1,758.35	58	(N/A)
787	J-25	1,622.54	Zone - 4	<Collection: 0 items>	0	1,758.36	59	(N/A)
790	J-26	1,617.86	Zone - 4	<Collection: 0 items>	0	1,758.39	61	(N/A)
794	FH-B2	1,617.09	Zone - 4	<Collection: 0 items>	0	1,758.38	61	(N/A)
797	D-1B-2-B	1,617.90	Zone - 4	<Collection: 1 item>	189	1,758.34	61	(N/A)
799	J-27	1,619.36	Zone - 4	<Collection: 0 items>	0	1,758.34	60	(N/A)

803	J-48	1,621.39	Zone - 4	<Collection: 0 items>	0	1,758.35	59	(N/A)
807	FH-C3-2	1,626.64	Zone - 4	<Collection: 0 items>	0	1,758.50	57	(N/A)
818	J-29	1,636.73	Zone - 4	<Collection: 0 items>	0	1,758.47	53	(N/A)
825	J-30	1,649.00	Zone - 4	<Collection: 0 items>	0	1,758.36	47	(N/A)
828	J-31	1,645.84	Zone - 4	<Collection: 0 items>	0	1,758.44	49	(N/A)
839	FH-C8	1,626.14	Zone - 4	<Collection: 0 items>	0	1,758.35	57	(N/A)
848	J-32	1,648.15	Zone - 4	<Collection: 0 items>	0	1,758.33	48	(N/A)
851	J-33	1,647.28	Zone - 4	<Collection: 0 items>	0	1,758.31	48	(N/A)
853	D-1C-5-B	1,643.51	Zone - 4	<Collection: 1 item>	161	1,758.30	50	(N/A)
855	FH-C5	1,646.19	Zone - 4	<Collection: 0 items>	0	1,758.31	49	(N/A)
873	J-36	1,636.30	Zone - 4	<Collection: 0 items>	0	1,758.33	53	(N/A)
877	J-37	1,640.12	Zone - 4	<Collection: 0 items>	0	1,758.30	51	(N/A)
889	D-1C-5-A	1,641.50	Zone - 4	<Collection: 1 item>	161	1,758.30	51	(N/A)
895	FH-C1-D	1,632.44	Zone - 4	<Collection: 0 items>	0	1,758.00	54	(N/A)
903	J-40	1,631.38	Zone - 4	<Collection: 0 items>	0	1,758.31	55	(N/A)
910	D-1C-9	1,627.00	Zone - 4	<Collection: 1 item>	159	1,758.38	57	(N/A)
912	FH-C9	1,626.65	Zone - 4	<Collection: 0 items>	0	1,758.38	57	(N/A)
916	D-1C-2-B	1,622.25	Zone - 4	<Collection: 1 item>	185	1,758.13	59	(N/A)
920	D-1C-1-A	1,630.50	Zone - 4	<Collection: 1 item>	232	1,757.93	55	(N/A)
922	J-600	1,634.90	Zone - 4	<Collection: 0 items>	0	1,758.19	53	(N/A)
924	J-42	1,631.50	Zone - 4	<Collection: 0 items>	0	1,758.19	55	(N/A)
926	J-381	1,624.74	Zone - 4	<Collection: 0 items>	0	1,758.25	58	(N/A)
933	J-44	1,624.90	Zone - 4	<Collection: 0 items>	0	1,758.29	58	(N/A)
937	J-45	1,606.60	Zone - 4	<Collection: 0 items>	0	1,758.91	66	(N/A)
940	D-1B-1-A	1,604.52	Zone - 4	<Collection: 1 item>	590	1,758.88	67	(N/A)
942	D-1B-1-C	1,610.26	Zone - 4	<Collection: 1 item>	590	1,758.36	64	(N/A)
944	FH-B1	1,610.90	Zone - 4	<Collection: 0 items>	0	1,758.39	64	(N/A)
946	D-1B-1-B	1,610.50	Zone - 4	<Collection: 1 item>	590	1,758.44	64	(N/A)
951	D-1B-2-A	1,616.50	Zone - 4	<Collection: 1 item>	189	1,758.39	61	(N/A)
956	J-46	1,614.37	Zone - 4	<Collection: 0 items>	0	1,758.36	62	(N/A)
960	D-1A-3-A	1,612.51	Zone - 4	<Collection: 1 item>	459	1,758.75	63	(N/A)
963	D-1A-3-B	1,607.18	Zone - 4	<Collection: 1 item>	459	1,759.19	66	(N/A)
967	J-47	1,628.00	Zone - 4	<Collection: 0 items>	0	1,758.80	57	(N/A)
970	FH-A7	1,621.59	Zone - 4	<Collection: 0 items>	0	1,758.28	59	(N/A)
972	D-1A-7	1,620.59	Zone - 4	<Collection: 1 item>	523	1,758.28	60	(N/A)
976	D-1A-1-A	1,614.93	Zone - 4	<Collection: 1 item>	657	1,758.22	62	(N/A)
985	FH-A8	1,618.53	Zone - 4	<Collection: 0 items>	0	1,758.33	60	(N/A)
988	FH-C10	1,635.38	Zone - 4	<Collection: 0 items>	0	1,758.41	53	(N/A)
1004	J-49	1,612.04	Zone - 4	<Collection: 0 items>	0	1,758.44	63	(N/A)
1009	FH-A1-3	1,609.45	Zone - 4	<Collection: 0 items>	0	1,760.01	65	(N/A)
1012	FH-A3	1,607.19	Zone - 4	<Collection: 0 items>	0	1,759.10	66	(N/A)
1015	FH-A4-3	1,608.46	Zone - 4	<Collection: 0 items>	0	1,758.78	65	(N/A)
1018	FH-A2-4	1,619.38	Zone - 4	<Collection: 0 items>	0	1,758.39	60	(N/A)
1021	FH-A1-2	1,618.47	Zone - 4	<Collection: 0 items>	0	1,758.63	61	(N/A)
1024	FH-A2-1	1,621.00	Zone - 4	<Collection: 0 items>	0	1,758.35	59	(N/A)
1028	FH-A5	1,596.00	Zone - 4	<Collection: 0 items>	0	1,758.40	70	(N/A)
1030	FH-A4-6	1,613.08	Zone - 4	<Collection: 0 items>	0	1,758.50	63	(N/A)
1034	FH-A4-4	1,608.76	Zone - 4	<Collection: 0 items>	0	1,758.92	65	(N/A)
1037	J-51	1,637.97	Zone - 4	<Collection: 0 items>	0	1,758.30	52	(N/A)

	J-52	1,641.32	Zone - 4	<Collection: 0 items>	0	1,758.30	51	(N/A)
1048	J-53	1,640.08	Zone - 4	<Collection: 0 items>	0	1,758.35	51	(N/A)
1055	J-54	1,635.94	Zone - 4	<Collection: 0 items>	0	1,758.36	53	(N/A)
1059	J-55	1,633.17	Zone - 4	<Collection: 0 items>	0	1,758.37	54	(N/A)
1064	FUTURE CONNECTION ACROSS 101	1,596.00	Zone - 4	<Collection: 1 item>	5	1,758.88	70	(N/A)
1066	J-327	1,642.62	Zone - 4	<Collection: 0 items>	0	1,758.34	50	(N/A)
1070	J-329	1,630.95	Zone - 4	<Collection: 0 items>	0	1,758.31	55	(N/A)
1073	J-330	1,627.87	Zone - 4	<Collection: 0 items>	0	1,758.32	56	(N/A)
1083	J-336	1,639.94	Zone - 4	<Collection: 0 items>	0	1,758.30	51	(N/A)
1086	J-337	1,645.41	Zone - 4	<Collection: 0 items>	0	1,758.32	49	(N/A)
1089	J-338	1,647.37	Zone - 4	<Collection: 0 items>	0	1,758.33	48	(N/A)
1102	FH-C2-B	1,626.84	Zone - 4	<Collection: 0 items>	0	1,758.19	57	(N/A)
1111	J-343	1,596.00	Zone - 4	<Collection: 0 items>	0	1,758.08	70	(N/A)
1118	J-601	1,622.88	Zone - 4	<Collection: 0 items>	0	1,758.11	59	(N/A)
1121	FH-C2-C	1,624.26	Zone - 4	<Collection: 0 items>	0	1,758.16	58	(N/A)
1124	J-346	1,624.60	Zone - 4	<Collection: 0 items>	0	1,758.25	58	(N/A)
1128	D-1C-2-A	1,630.25	Zone - 4	<Collection: 1 item>	185	1,758.22	55	(N/A)
1132	D-1C-1-B	1,610.52	Zone - 4	<Collection: 1 item>	232	1,758.00	64	(N/A)
1135	FH-C2-A	1,623.86	Zone - 4	<Collection: 0 items>	0	1,758.25	58	(N/A)
1139	J-351	1,635.01	Zone - 4	<Collection: 0 items>	0	1,758.30	53	(N/A)
1143	J-352	1,629.23	Zone - 4	<Collection: 0 items>	0	1,758.30	56	(N/A)
1147	J-353	1,633.87	Zone - 4	<Collection: 0 items>	0	1,758.19	54	(N/A)
1150	FH -C1-E	1,596.00	Zone - 4	<Collection: 0 items>	0	1,758.19	70	(N/A)
1152	J-355	1,634.18	Zone - 4	<Collection: 0 items>	0	1,758.19	54	(N/A)
1156	FH-C1-L	1,632.81	Zone - 4	<Collection: 0 items>	0	1,758.19	54	(N/A)
1159	FH-C1-C	1,627.92	Zone - 4	<Collection: 0 items>	0	1,758.16	56	(N/A)
1162	FH-C1-K	1,615.47	Zone - 4	<Collection: 0 items>	0	1,758.04	62	(N/A)
1165	FH-C1-J	1,608.97	Zone - 4	<Collection: 0 items>	0	1,758.01	64	(N/A)
1168	FH-C1-I	1,603.12	Zone - 4	<Collection: 0 items>	0	1,758.04	67	(N/A)
1171	FH-C1-B	1,616.08	Zone - 4	<Collection: 0 items>	0	1,758.20	61	(N/A)
1174	FC-C1-H	1,605.61	Zone - 4	<Collection: 0 items>	0	1,758.03	66	(N/A)
1177	FH-C1-G	1,623.82	Zone - 4	<Collection: 0 items>	0	1,757.96	58	(N/A)
1180	FH-C1-A	1,634.63	Zone - 4	<Collection: 0 items>	0	1,758.19	53	(N/A)
1183	FH-C1-F	1,634.02	Zone - 4	<Collection: 0 items>	0	1,758.12	54	(N/A)

Scenario: Peak Hour
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
726	P-11	20	J-19	J-2	16.0	Ductile Iron	130.0	False	0.000	-4,840	7.72	11.575
690	P-1	500	J-2	J-3	16.0	Ductile Iron	130.0	False	0.000	2,379	3.80	3.107
1010	P-15	379	D-1A-1-B	FH-A1-3	24.0	Ductile Iron	130.0	False	0.000	-4,840	3.43	1.606
1011	P-446	352	FH-A1-3	J-19	24.0	Ductile Iron	130.0	False	0.000	-4,840	3.43	1.607
1022	P-14	236	J-3	FH-A1-2	12.0	Ductile Iron	130.0	False	0.000	1,016	2.88	2.609
1023	P-444	104	FH-A1-2	D-1A-8	12.0	Ductile Iron	130.0	False	0.000	1,016	2.88	2.608
965	P-130	231	D-1A-3-B	D-1A-1-B	24.0	Ductile Iron	130.0	False	0.000	-3,557	2.52	0.908
1013	P-129	138	D-1A-4-B	FH-A3	24.0	Ductile Iron	130.0	False	0.000	-3,098	2.20	0.704
1014	P-131	123	FH-A3	D-1A-3-B	24.0	Ductile Iron	130.0	False	0.000	-3,098	2.20	0.703
968	P-132	400	J-3	J-47	16.0	Ductile Iron	130.0	False	0.000	1,363	2.18	1.108
969	P-133	161	J-47	J-4	16.0	Ductile Iron	130.0	False	0.000	1,363	2.18	1.108
763	P-20	168	D-1A-4-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	-723	2.05	1.391
955	P-123	347	D-1B-1-B	D-1B-1-A	12.0	Ductile Iron	130.0	False	0.000	-689	1.96	1.272
977	P-17	120	D-1A-8	D-1A-1-A	12.0	Ductile Iron	130.0	False	0.000	657	1.86	1.164
756	P-18	119	FH-A1	D-1A-1-B	12.0	Ductile Iron	130.0	False	0.000	-626	1.78	1.063
961	P-127	487	FH-A1	D-1A-3-A	12.0	Ductile Iron	130.0	False	0.000	626	1.78	1.064
1016	P-114	272	J-21	FH-A4-3	12.0	Ductile Iron	130.0	False	0.000	-618	1.75	1.038
1017	P-443	125	FH-A4-3	J-45	12.0	Ductile Iron	130.0	False	0.000	-618	1.75	1.037
939	P-115	235	J-45	D-1A-4-B	24.0	Ductile Iron	130.0	False	0.000	-2,301	1.63	0.406
1035	P-483	102	D-1A-4-B	FH-A4-4	12.0	Ductile Iron	130.0	False	0.000	557	1.58	0.856
1036	P-484	215	FH-A4-4	FH-A4	12.0	Ductile Iron	130.0	False	0.000	557	1.58	0.857
1172	P-466(1)	49	J-381	FH-C1-B	8.0	Ductile Iron	130.0	False	0.000	206	1.32	0.980
1173	P-466(2)	117	FH-C1-B	J-343	8.0	Ductile Iron	130.0	False	0.000	206	1.32	0.983
1008	P-13	319	R-11	J-2	48.0	Ductile Iron	130.0	False	0.000	7,219	1.28	0.122
808	P-41	276	J-20	FH-C3-2	16.0	Ductile Iron	130.0	False	0.000	-764	1.22	0.379
809	P-42	330	FH-C3-2	J-4	16.0	Ductile Iron	130.0	False	0.000	-764	1.22	0.379
770	P-22	306	D-1A-5	D-1A-4-A	12.0	Ductile Iron	130.0	False	0.000	-427	1.21	0.524
941	P-116	126	J-45	D-1B-1-A	24.0	Ductile Iron	130.0	False	0.000	1,684	1.19	0.227
943	P-117	1,126	D-1B-1-A	D-1B-1-C	12.0	Ductile Iron	130.0	False	0.000	400	1.13	0.463
1007	P-439	166	J-21	J-49	12.0	Ductile Iron	130.0	False	0.000	338	0.96	0.340
694	P-2	135	J-4	J-5	16.0	Ductile Iron	130.0	False	0.000	599	0.96	0.242
696	P-3	134	J-5	J-6	16.0	Ductile Iron	130.0	False	0.000	599	0.96	0.242
819	P-46	371	J-6	J-29	16.0	Ductile Iron	130.0	False	0.000	599	0.96	0.241
773	P-24	293	J-22	J-21	12.0	Ductile Iron	130.0	False	0.000	-336	0.95	0.336
932	P-110	204	J-42	J-14	8.0	Ductile Iron	130.0	False	0.000	-137	0.87	0.459
936	P-113	149	J-381	J-44	12.0	Ductile Iron	130.0	False	0.000	-295	0.84	0.265
1160	P-206	117	J-601	FH-C1-C	8.0	Ductile Iron	130.0	False	0.000	-130	0.83	0.417
1161	P-207	82	FH-C1-C	J-42	8.0	Ductile Iron	130.0	False	0.000	-130	0.83	0.417
1163	P-204	111	D-1C-1-B	FH-C1-K	8.0	Ductile Iron	130.0	False	0.000	-130	0.83	0.417
1164	P-205	161	FH-C1-K	J-601	8.0	Ductile Iron	130.0	False	0.000	-130	0.83	0.416
930	P-108	183	D-1C-1-A	FH-C1-D	8.0	Ductile Iron	130.0	False	0.000	-128	0.82	0.407
1184	P-469(1)	289	FH-C1-D	FH-C1-F	8.0	Ductile Iron	130.0	False	0.000	-128	0.82	0.406
1185	P-469(2)	176	FH-C1-F	J-600	8.0	Ductile Iron	130.0	False	0.000	-128	0.82	0.406
1146	P-475	351	D-1C-2-A	J-352	12.0	Ductile Iron	130.0	False	0.000	-281	0.80	0.241
1114	P-468	289	J-600	J-51	8.0	Ductile Iron	130.0	False	0.000	-121	0.77	0.367
986	P-135	137	D-1A-8	FH-A8	12.0	Ductile Iron	130.0	False	0.000	270	0.77	0.224
987	P-107	217	FH-A8	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	270	0.77	0.225
1006	P-200	265	J-49	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	254	0.72	0.201

1025	P-16	83	J-50	FH-A2-1	12.0	Ductile Iron	130.0	False	0.000	-253	0.72	0.198
1026	P-445	246	FH-A2-1	J-20	12.0	Ductile Iron	130.0	False	0.000	-253	0.72	0.198
974	P-136	246	D-1A-7	J-50	12.0	Ductile Iron	130.0	False	0.000	-252	0.72	0.198
1092	P-459	78	J-337	J-338	12.0	Ductile Iron	130.0	False	0.000	-246	0.70	0.188
989	P-57	328	J-29	FH-C10	12.0	Ductile Iron	130.0	False	0.000	241	0.68	0.181
1057	P-489	266	J-54	FH-C10	12.0	Ductile Iron	130.0	False	0.000	-241	0.68	0.181
914	P-98	67	FH-C9	J-20	12.0	Ductile Iron	130.0	False	0.000	-238	0.67	0.177
1175	P-470(1)	206	J-343	FC-C1-H	8.0	Ductile Iron	130.0	False	0.000	104	0.66	0.276
1178	P-208	247	FC-C1-H	FH-C1-G	8.0	Ductile Iron	130.0	False	0.000	104	0.66	0.277
1179	P-209	110	FH-C1-G	D-1C-1-A	8.0	Ductile Iron	130.0	False	0.000	104	0.66	0.276
1167	P-203	35	FH-C1-J	D-1C-1-B	8.0	Ductile Iron	130.0	False	0.000	102	0.65	0.268
1169	P-201	157	J-343	FH-C1-I	8.0	Ductile Iron	130.0	False	0.000	102	0.65	0.267
1170	P-202	131	FH-C1-I	FH-C1-J	8.0	Ductile Iron	130.0	False	0.000	102	0.65	0.268
840	P-55	63	J-18	FH-C8	12.0	Ductile Iron	130.0	False	0.000	212	0.60	0.144
1075	P-85	221	J-330	FH-C8	12.0	Ductile Iron	130.0	False	0.000	-212	0.60	0.143
1145	P-84	116	J-352	J-330	12.0	Ductile Iron	130.0	False	0.000	-212	0.60	0.143
702	P-4	65	J-7	J-8	16.0	Ductile Iron	130.0	False	0.000	359	0.57	0.094
704	P-5	155	J-8	J-9	16.0	Ductile Iron	130.0	False	0.000	359	0.57	0.093
826	P-48	331	J-9	J-30	16.0	Ductile Iron	130.0	False	0.000	359	0.57	0.094
827	P-49	219	J-30	J-10	16.0	Ductile Iron	130.0	False	0.000	359	0.57	0.094
829	P-50	316	J-29	J-31	16.0	Ductile Iron	130.0	False	0.000	359	0.57	0.093
830	P-51	268	J-31	J-7	16.0	Ductile Iron	130.0	False	0.000	359	0.57	0.093
1122	P-100	257	D-1C-2-B	FH-C2-C	12.0	Ductile Iron	130.0	False	0.000	-185	0.52	0.111
1123	P-101	331	FH-C2-C	FH-C2-B	12.0	Ductile Iron	130.0	False	0.000	-185	0.52	0.111
1129	P-471(1)	229	FH-C2-B	D-1C-2-A	12.0	Ductile Iron	130.0	False	0.000	-185	0.52	0.111
915	P-99	64	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-183	0.52	0.110
945	P-118	316	D-1B-1-C	FH-B1	12.0	Ductile Iron	130.0	False	0.000	-182	0.52	0.109
947	P-119	416	FH-B1	D-1B-1-B	12.0	Ductile Iron	130.0	False	0.000	-182	0.52	0.108
904	P-91	225	J-36	J-40	12.0	Ductile Iron	130.0	False	0.000	180	0.51	0.106
1082	P-458	265	J-36	J-54	12.0	Ductile Iron	130.0	False	0.000	-180	0.51	0.105
791	P-33	103	J-22	J-26	12.0	Ductile Iron	130.0	False	0.000	174	0.49	0.100
962	P-128	216	D-1A-3-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	167	0.47	0.092
1019	P-23	350	J-18	FH-A2-4	12.0	Ductile Iron	130.0	False	0.000	-162	0.46	0.087
1020	P-447	51	FH-A2-4	J-22	12.0	Ductile Iron	130.0	False	0.000	-162	0.46	0.086
1088	P-63	250	J-337	D-1C-5-B	12.0	Ductile Iron	130.0	False	0.000	160	0.45	0.085
779	P-27	244	J-18	FH-A2-3	16.0	Ductile Iron	130.0	False	0.000	-274	0.44	0.056
780	P-28	327	FH-A2-3	J-20	16.0	Ductile Iron	130.0	False	0.000	-274	0.44	0.057
800	P-35	536	J-17	J-27	16.0	Ductile Iron	130.0	False	0.000	-266	0.42	0.054
935	P-112	404	J-44	J-17	16.0	Ductile Iron	130.0	False	0.000	-266	0.42	0.053
1027	P-443	109	D-1A-5	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	145	0.41	0.071
710	P-6	281	J-11	J-12	16.0	Ductile Iron	130.0	False	0.000	252	0.40	0.049
849	P-60	295	J-10	J-32	16.0	Ductile Iron	130.0	False	0.000	252	0.40	0.048
850	P-61	197	J-32	J-11	16.0	Ductile Iron	130.0	False	0.000	252	0.40	0.049
1058	P-453	148	J-54	J-53	12.0	Ductile Iron	130.0	False	0.000	139	0.40	0.065
1068	P-449(2)	141	J-327	J-53	12.0	Ductile Iron	130.0	False	0.000	-139	0.40	0.066
1091	P-449	151	J-338	J-327	12.0	Ductile Iron	130.0	False	0.000	-139	0.40	0.066
793	P-34	444	J-25	J-26	12.0	Ductile Iron	130.0	False	0.000	-135	0.38	0.062
805	P-39	153	J-48	J-25	12.0	Ductile Iron	130.0	False	0.000	-135	0.38	0.062
806	P-40	206	D-1B-2-B	J-48	12.0	Ductile Iron	130.0	False	0.000	-135	0.38	0.063
785	P-31	316	J-24	J-18	16.0	Ductile Iron	130.0	False	0.000	-224	0.36	0.039
801	P-36	355	J-27	J-24	16.0	Ductile Iron	130.0	False	0.000	-224	0.36	0.039
1140	P-444(1)	229	J-40	J-351	12.0	Ductile Iron	130.0	False	0.000	111	0.31	0.043
1141	P-444(2)	41	J-351	J-51	12.0	Ductile Iron	130.0	False	0.000	111	0.31	0.044
1090	P-448	253	J-10	J-338	12.0	Ductile Iron	130.0	False	0.000	106	0.30	0.040
953	P-121	279	D-1B-2-A	FH-B2	12.0	Ductile Iron	130.0	False	0.000	104	0.30	0.038
957	P-124	461	FH-B2	J-46	12.0	Ductile Iron	130.0	False	0.000	104	0.30	0.038
958	P-125	639	J-46	D-1B-2-B	12.0	Ductile Iron	130.0	False	0.000	96	0.27	0.033
714	P-7	126	J-13	J-14	16.0	Ductile Iron	130.0	False	0.000	166	0.27	0.022
878	P-75	434	J-12	J-37	16.0	Ductile Iron	130.0	False	0.000	166	0.27	0.023

	P-76	264	J-37	J-13	16.0	Ductile Iron	130.0	False	0.000	166	0.27	0.023
1125	P-106	23	J-381	J-346	12.0	Ductile Iron	130.0	False	0.000	89	0.25	0.026
1131	P-473	879	D-1C-2-A	J-346	12.0	Ductile Iron	130.0	False	0.000	-89	0.25	0.029
1046	P-447	253	J-52	J-12	12.0	Ductile Iron	130.0	False	0.000	-86	0.24	0.027
857	P-64	136	FH-C5	J-33	12.0	Ductile Iron	130.0	False	0.000	-85	0.24	0.027
891	P-83	336	D-1C-5-A	FH-C5	12.0	Ductile Iron	130.0	False	0.000	-85	0.24	0.026
1087	P-62	327	J-33	J-337	12.0	Ductile Iron	130.0	False	0.000	-85	0.24	0.026
1005	P-122	92	D-1B-1-B	J-49	12.0	Ductile Iron	130.0	False	0.000	-83	0.24	0.025
1062	P-454	237	J-54	J-55	12.0	Ductile Iron	130.0	False	0.000	-79	0.22	0.023
1063	P-455	358	D-1C-9	J-55	12.0	Ductile Iron	130.0	False	0.000	79	0.22	0.023
1044	P-487	78	J-52	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	76	0.21	0.020
1071	P-80	136	J-40	J-329	12.0	Ductile Iron	130.0	False	0.000	69	0.20	0.018
1144	P-81	146	J-329	J-352	12.0	Ductile Iron	130.0	False	0.000	69	0.20	0.018
1031	P-21	45	D-1A-4-A	FH-A4-6	12.0	Ductile Iron	130.0	False	0.000	56	0.16	0.014
1032	P-442	105	FH-A4-6	J-21	12.0	Ductile Iron	130.0	False	0.000	56	0.16	0.012
913	P-97	604	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-55	0.15	0.012
802	P-37	86	D-1B-2-B	J-27	12.0	Ductile Iron	130.0	False	0.000	42	0.12	0.007
952	P-120	114	J-26	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	39	0.11	0.006
934	P-111	533	J-16	J-44	16.0	Ductile Iron	130.0	False	0.000	30	0.05	0.001
1001	P-438	777	J-16	J-14	16.0	Ductile Iron	130.0	False	0.000	-30	0.05	0.001
1157	P-86	221	J-353	FH-C1-L	8.0	Ductile Iron	130.0	False	0.000	-7	0.04	0.002
1158	P-87	276	FH-C1-L	J-42	8.0	Ductile Iron	130.0	False	0.000	-7	0.04	0.002
1181	P-102	50	J-600	FH-C1-A	8.0	Ductile Iron	130.0	False	0.000	-7	0.04	0.002
1182	P-103	84	FH-C1-A	J-355	8.0	Ductile Iron	130.0	False	0.000	-7	0.04	0.001
1154	P-104	66	J-355	J-353	8.0	Ductile Iron	130.0	False	0.000	-5	0.03	0.002
1084	P-446(1)	76	J-51	J-336	12.0	Ductile Iron	130.0	False	0.000	-10	0.03	0.002
1085	P-446(2)	108	J-336	J-52	12.0	Ductile Iron	130.0	False	0.000	-10	0.03	0.000
959	P-126	340	D-1B-1-C	J-46	12.0	Ductile Iron	130.0	False	0.000	-8	0.02	0.000
1151	P-476	86	J-353	FH -C1-E	8.0	Ductile Iron	130.0	False	0.000	2	0.01	0.000
1155	P-477	478	FH -C1-E	J-355	8.0	Ductile Iron	130.0	False	0.000	2	0.01	0.000
1065	P-456	992	D-1B-1-A	FUTURE CONNECTION ACROSS 101	24.0	Ductile Iron	130.0	False	0.000	5	0.00	0.000
890	P-82	417	D-1C-5-B	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	-1	0.00	0.000
776	P-26	317	J-50	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
975	P-137	24	FH-A7	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1029	P-441	121	J-22	FH-A5	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1136	P-89	248	J-346	FH-C2-A	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
725	P-10	181	J-1	J-19	16.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000

Scenario: Peak Hour
Current Time Step: 0.000 h
FlexTable: Reservoir Table

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
731	R-11	1,760.80	Zone - 4	7,219	1,760.80

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Appendix D
Max Day + Fire Flow
The Grayhawk Residences at Cavasson

Scenario: Fire Flow
Current Time Step: 0.000 h
Fire Flow Node FlexTable: Fire Flow Report

Label	Zone	Fire Flow Iterations	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 (Zone Lower Limit) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)	Is Fire Flow Run Balanced?
FC-C1-H	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	61	30	47	J-7	30	47	J-7	True
FH -C1-E	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	65	30	47	J-7	30	47	J-7	True
FH-A1	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	64	30	48	J-7	30	48	J-7	True
FH-A1-2	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	60	30	47	J-7	30	47	J-7	True
FH-A1-3	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	65	30	48	J-7	30	48	J-7	True
FH-A2-1	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	59	30	47	J-7	30	47	J-7	True
FH-A2-3	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	58	30	47	J-7	30	47	J-7	True
FH-A2-4	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	60	30	47	J-7	30	47	J-7	True
FH-A3	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	66	30	48	J-7	30	48	J-7	True
FH-A4	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	63	30	48	J-7	30	48	J-7	True
FH-A4-3	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	65	30	48	J-7	30	48	J-7	True
FH-A4-4	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	65	30	48	J-7	30	48	J-7	True
FH-A4-6	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	63	30	47	J-7	30	47	J-7	True
FH-A5	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	70	30	47	J-7	30	47	J-7	True
FH-A7	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	59	30	47	J-7	30	47	J-7	True
FH-A8	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	60	30	47	J-7	30	47	J-7	True
FH-B1	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	63	30	47	J-7	30	47	J-7	True
FH-B2	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	61	30	47	J-7	30	47	J-7	True
FH-C1-A	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	50	30	47	J-7	30	47	J-7	True
FH-C1-B	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	60	30	47	J-7	30	47	J-7	True
FH-C1-C	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	53	30	47	J-7	30	47	J-7	True
FH-C1-D	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	48	30	47	J-7	30	47	J-7	True
FH-C1-F	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	49	30	47	J-7	30	47	J-7	True
FH-C1-G	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	52	30	47	J-7	30	47	J-7	True
FH-C1-I	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	63	30	47	J-7	30	47	J-7	True
FH-C1-J	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	60	30	47	J-7	30	47	J-7	True
FH-C1-K	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	57	30	47	J-7	30	47	J-7	True
FH-C1-L	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	50	30	47	J-7	30	47	J-7	True
FH-C2-A	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	57	30	47	J-7	30	47	J-7	True
FH-C2-B	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	55	30	47	J-7	30	47	J-7	True
FH-C2-C	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	55	30	47	J-7	30	47	J-7	True
FH-C3-2	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	57	30	47	J-7	30	47	J-7	True
FH-C5	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	48	30	47	J-7	30	47	J-7	True
FH-C8	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	57	30	47	J-7	30	47	J-7	True
FH-C9	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	57	30	47	J-7	30	47	J-7	True
FH-C10	Zone - 4	2	True	2,000	2,020	2,000	2,020	30	53	30	47	J-7	30	47	J-7	True

Scenario: Fire Flow
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure (Calculated Residual) (psi)
686	J-1	1,609.00	Zone - 4	<Collection: 0 items>	0	1,760.72	66	(N/A)
687	J-2	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.80	64	(N/A)
689	J-3	1,623.00	Zone - 4	<Collection: 0 items>	0	1,760.25	59	(N/A)
691	J-4	1,629.00	Zone - 4	<Collection: 0 items>	0	1,760.03	57	(N/A)
693	J-5	1,629.90	Zone - 4	<Collection: 0 items>	0	1,760.02	56	(N/A)
695	J-6	1,631.92	Zone - 4	<Collection: 0 items>	0	1,760.00	55	(N/A)
697	J-7	1,649.25	Zone - 4	<Collection: 0 items>	0	1,759.95	48	(N/A)
701	J-8	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.95	48	(N/A)
703	J-9	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.95	48	(N/A)
705	J-10	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.93	48	(N/A)
707	J-11	1,646.00	Zone - 4	<Collection: 0 items>	0	1,759.92	49	(N/A)
709	J-12	1,643.00	Zone - 4	<Collection: 0 items>	0	1,759.91	51	(N/A)
711	J-13	1,637.84	Zone - 4	<Collection: 0 items>	0	1,759.91	53	(N/A)
713	J-14	1,633.68	Zone - 4	<Collection: 0 items>	0	1,759.91	55	(N/A)
717	J-16	1,630.55	Zone - 4	<Collection: 0 items>	0	1,759.91	56	(N/A)
719	J-17	1,617.54	Zone - 4	<Collection: 0 items>	0	1,759.92	62	(N/A)
721	J-18	1,625.17	Zone - 4	<Collection: 0 items>	0	1,759.93	58	(N/A)
724	J-19	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.72	64	(N/A)
735	D-1A-8	1,616.47	Zone - 4	<Collection: 1 item>	51	1,759.93	62	(N/A)
737	J-20	1,625.50	Zone - 4	<Collection: 0 items>	0	1,759.95	58	(N/A)
741	D-1A-1-B	1,606.70	Zone - 4	<Collection: 1 item>	375	1,760.30	66	(N/A)
745	J-50	1,619.49	Zone - 4	<Collection: 0 items>	0	1,759.92	61	(N/A)
750	D-1A-4-B	1,607.21	Zone - 4	<Collection: 1 item>	137	1,760.16	66	(N/A)
754	FH-A1	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.26	64	64
757	FH-A4	1,612.00	Zone - 4	<Collection: 0 items>	0	1,760.07	64	63
761	D-1A-4-A	1,613.33	Zone - 4	<Collection: 1 item>	137	1,759.98	63	(N/A)
764	J-21	1,612.50	Zone - 4	<Collection: 0 items>	0	1,759.98	64	(N/A)
768	D-1A-5	1,618.40	Zone - 4	<Collection: 1 item>	161	1,759.93	61	(N/A)
771	J-22	1,618.54	Zone - 4	<Collection: 0 items>	0	1,759.95	61	(N/A)
775	D-1A-2	1,619.21	Zone - 4	<Collection: 1 item>	83	1,759.92	61	(N/A)
778	FH-A2-3	1,625.00	Zone - 4	<Collection: 0 items>	0	1,759.94	58	58
783	J-24	1,623.83	Zone - 4	<Collection: 0 items>	0	1,759.93	59	(N/A)
787	J-25	1,622.54	Zone - 4	<Collection: 0 items>	0	1,759.93	59	(N/A)
790	J-26	1,617.86	Zone - 4	<Collection: 0 items>	0	1,759.94	61	(N/A)
794	FH-B2	1,617.09	Zone - 4	<Collection: 0 items>	0	1,759.94	62	61
797	D-1B-2-B	1,617.90	Zone - 4	<Collection: 1 item>	108	1,759.93	61	(N/A)
799	J-27	1,619.36	Zone - 4	<Collection: 0 items>	0	1,759.93	61	(N/A)

803	J-48	1,621.39	Zone - 4	<Collection: 0 items>	0	1,759.93	60	(N/A)
807	FH-C3-2	1,626.64	Zone - 4	<Collection: 0 items>	0	1,759.98	58	57
818	J-29	1,636.73	Zone - 4	<Collection: 0 items>	0	1,759.97	53	(N/A)
825	J-30	1,649.00	Zone - 4	<Collection: 0 items>	0	1,759.94	48	(N/A)
828	J-31	1,645.84	Zone - 4	<Collection: 0 items>	0	1,759.96	49	(N/A)
839	FH-C8	1,626.14	Zone - 4	<Collection: 0 items>	0	1,759.93	58	57
848	J-32	1,648.15	Zone - 4	<Collection: 0 items>	0	1,759.92	48	(N/A)
851	J-33	1,647.28	Zone - 4	<Collection: 0 items>	0	1,759.92	49	(N/A)
853	D-1C-5-B	1,643.51	Zone - 4	<Collection: 1 item>	92	1,759.91	50	(N/A)
855	FH-C5	1,646.19	Zone - 4	<Collection: 0 items>	0	1,759.91	49	48
873	J-36	1,636.30	Zone - 4	<Collection: 0 items>	0	1,759.92	53	(N/A)
877	J-37	1,640.12	Zone - 4	<Collection: 0 items>	0	1,759.91	52	(N/A)
889	D-1C-5-A	1,641.50	Zone - 4	<Collection: 1 item>	92	1,759.91	51	(N/A)
895	FH-C1-D	1,632.44	Zone - 4	<Collection: 0 items>	0	1,759.81	55	48
903	J-40	1,631.38	Zone - 4	<Collection: 0 items>	0	1,759.92	56	(N/A)
910	D-1C-9	1,627.00	Zone - 4	<Collection: 1 item>	91	1,759.94	58	(N/A)
912	FH-C9	1,626.65	Zone - 4	<Collection: 0 items>	0	1,759.94	58	57
916	D-1C-2-B	1,622.25	Zone - 4	<Collection: 1 item>	106	1,759.85	60	(N/A)
920	D-1C-1-A	1,630.50	Zone - 4	<Collection: 1 item>	133	1,759.78	56	(N/A)
922	J-600	1,634.90	Zone - 4	<Collection: 0 items>	0	1,759.87	54	(N/A)
924	J-42	1,631.50	Zone - 4	<Collection: 0 items>	0	1,759.87	56	(N/A)
926	J-381	1,624.74	Zone - 4	<Collection: 0 items>	0	1,759.89	58	(N/A)
933	J-44	1,624.90	Zone - 4	<Collection: 0 items>	0	1,759.91	58	(N/A)
937	J-45	1,606.60	Zone - 4	<Collection: 0 items>	0	1,760.13	66	(N/A)
940	D-1B-1-A	1,604.52	Zone - 4	<Collection: 1 item>	337	1,760.12	67	(N/A)
942	D-1B-1-C	1,610.26	Zone - 4	<Collection: 1 item>	337	1,759.93	65	(N/A)
944	FH-B1	1,610.90	Zone - 4	<Collection: 0 items>	0	1,759.95	64	63
946	D-1B-1-B	1,610.50	Zone - 4	<Collection: 1 item>	337	1,759.96	65	(N/A)
951	D-1B-2-A	1,616.50	Zone - 4	<Collection: 1 item>	108	1,759.94	62	(N/A)
956	J-46	1,614.37	Zone - 4	<Collection: 0 items>	0	1,759.93	63	(N/A)
960	D-1A-3-A	1,612.51	Zone - 4	<Collection: 1 item>	262	1,760.07	64	(N/A)
963	D-1A-3-B	1,607.18	Zone - 4	<Collection: 1 item>	262	1,760.23	66	(N/A)
967	J-47	1,628.00	Zone - 4	<Collection: 0 items>	0	1,760.09	57	(N/A)
970	FH-A7	1,621.59	Zone - 4	<Collection: 0 items>	0	1,759.91	60	59
972	D-1A-7	1,620.59	Zone - 4	<Collection: 1 item>	299	1,759.91	60	(N/A)
976	D-1A-1-A	1,614.93	Zone - 4	<Collection: 1 item>	375	1,759.88	63	(N/A)
985	FH-A8	1,618.53	Zone - 4	<Collection: 0 items>	0	1,759.92	61	60
988	FH-C10	1,635.38	Zone - 4	<Collection: 0 items>	0	1,759.95	54	53
1004	J-49	1,612.04	Zone - 4	<Collection: 0 items>	0	1,759.96	64	(N/A)
1009	FH-A1-3	1,609.45	Zone - 4	<Collection: 0 items>	0	1,760.52	65	65
1012	FH-A3	1,607.19	Zone - 4	<Collection: 0 items>	0	1,760.20	66	66
1015	FH-A4-3	1,608.46	Zone - 4	<Collection: 0 items>	0	1,760.08	66	65
1018	FH-A2-4	1,619.38	Zone - 4	<Collection: 0 items>	0	1,759.95	61	60
1021	FH-A1-2	1,618.47	Zone - 4	<Collection: 0 items>	0	1,760.03	61	60
1024	FH-A2-1	1,621.00	Zone - 4	<Collection: 0 items>	0	1,759.93	60	59
1028	FH-A5	1,596.00	Zone - 4	<Collection: 0 items>	0	1,759.95	71	70
1030	FH-A4-6	1,613.08	Zone - 4	<Collection: 0 items>	0	1,759.98	64	63
1034	FH-A4-4	1,608.76	Zone - 4	<Collection: 0 items>	0	1,760.13	65	65
1037	J-51	1,637.97	Zone - 4	<Collection: 0 items>	0	1,759.91	53	(N/A)

	J-52	1,641.32	Zone - 4	<Collection: 0 items>	0	1,759.91	51	(N/A)
1048	J-53	1,640.08	Zone - 4	<Collection: 0 items>	0	1,759.93	52	(N/A)
1055	J-54	1,635.94	Zone - 4	<Collection: 0 items>	0	1,759.93	54	(N/A)
1059	J-55	1,633.17	Zone - 4	<Collection: 0 items>	0	1,759.94	55	(N/A)
1064	FUTURE CONNECTION ACROSS 101	1,596.00	Zone - 4	<Collection: 1 item>	5	1,760.12	71	(N/A)
1066	J-327	1,642.62	Zone - 4	<Collection: 0 items>	0	1,759.93	51	(N/A)
1070	J-329	1,630.95	Zone - 4	<Collection: 0 items>	0	1,759.92	56	(N/A)
1073	J-330	1,627.87	Zone - 4	<Collection: 0 items>	0	1,759.92	57	(N/A)
1083	J-336	1,639.94	Zone - 4	<Collection: 0 items>	0	1,759.91	52	(N/A)
1086	J-337	1,645.41	Zone - 4	<Collection: 0 items>	0	1,759.92	50	(N/A)
1089	J-338	1,647.37	Zone - 4	<Collection: 0 items>	0	1,759.92	49	(N/A)
1102	FH-C2-B	1,626.84	Zone - 4	<Collection: 0 items>	0	1,759.88	58	55
1111	J-343	1,596.00	Zone - 4	<Collection: 0 items>	0	1,759.84	71	(N/A)
1118	J-601	1,622.88	Zone - 4	<Collection: 0 items>	0	1,759.85	59	(N/A)
1121	FH-C2-C	1,624.26	Zone - 4	<Collection: 0 items>	0	1,759.86	59	55
1124	J-346	1,624.60	Zone - 4	<Collection: 0 items>	0	1,759.89	59	(N/A)
1128	D-1C-2-A	1,630.25	Zone - 4	<Collection: 1 item>	106	1,759.88	56	(N/A)
1132	D-1C-1-B	1,610.52	Zone - 4	<Collection: 1 item>	133	1,759.81	65	(N/A)
1135	FH-C2-A	1,623.86	Zone - 4	<Collection: 0 items>	0	1,759.89	59	57
1139	J-351	1,635.01	Zone - 4	<Collection: 0 items>	0	1,759.91	54	(N/A)
1143	J-352	1,629.23	Zone - 4	<Collection: 0 items>	0	1,759.91	57	(N/A)
1147	J-353	1,633.87	Zone - 4	<Collection: 0 items>	0	1,759.87	55	(N/A)
1150	FH -C1-E	1,596.00	Zone - 4	<Collection: 0 items>	0	1,759.87	71	65
1152	J-355	1,634.18	Zone - 4	<Collection: 0 items>	0	1,759.87	54	(N/A)
1156	FH-C1-L	1,632.81	Zone - 4	<Collection: 0 items>	0	1,759.87	55	50
1159	FH-C1-C	1,627.92	Zone - 4	<Collection: 0 items>	0	1,759.86	57	53
1162	FH-C1-K	1,615.47	Zone - 4	<Collection: 0 items>	0	1,759.82	62	57
1165	FH-C1-J	1,608.97	Zone - 4	<Collection: 0 items>	0	1,759.81	65	60
1168	FH-C1-I	1,603.12	Zone - 4	<Collection: 0 items>	0	1,759.82	68	63
1171	FH-C1-B	1,616.08	Zone - 4	<Collection: 0 items>	0	1,759.88	62	60
1174	FC-C1-H	1,605.61	Zone - 4	<Collection: 0 items>	0	1,759.82	67	61
1177	FH-C1-G	1,623.82	Zone - 4	<Collection: 0 items>	0	1,759.79	59	52
1180	FH-C1-A	1,634.63	Zone - 4	<Collection: 0 items>	0	1,759.87	54	50
1183	FH-C1-F	1,634.02	Zone - 4	<Collection: 0 items>	0	1,759.85	54	49

Scenario: Fire Flow
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
726	P-11	20	J-19	J-2	16.0	Ductile Iron	130.0	False	0.000	-2,767	4.42	4.116
690	P-1	500	J-2	J-3	16.0	Ductile Iron	130.0	False	0.000	1,360	2.17	1.103
1010	P-15	379	D-1A-1-B	FH-A1-3	24.0	Ductile Iron	130.0	False	0.000	-2,767	1.96	0.570
1011	P-446	352	FH-A1-3	J-19	24.0	Ductile Iron	130.0	False	0.000	-2,767	1.96	0.570
1022	P-14	236	J-3	FH-A1-2	12.0	Ductile Iron	130.0	False	0.000	581	1.65	0.926
1023	P-444	104	FH-A1-2	D-1A-8	12.0	Ductile Iron	130.0	False	0.000	581	1.65	0.926
965	P-130	231	D-1A-3-B	D-1A-1-B	24.0	Ductile Iron	130.0	False	0.000	-2,034	1.44	0.323
1013	P-129	138	D-1A-4-B	FH-A3	24.0	Ductile Iron	130.0	False	0.000	-1,772	1.26	0.250
1014	P-131	123	FH-A3	D-1A-3-B	24.0	Ductile Iron	130.0	False	0.000	-1,772	1.26	0.250
968	P-132	400	J-3	J-47	16.0	Ductile Iron	130.0	False	0.000	779	1.24	0.393
969	P-133	161	J-47	J-4	16.0	Ductile Iron	130.0	False	0.000	779	1.24	0.394
763	P-20	168	D-1A-4-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	-413	1.17	0.494
955	P-123	347	D-1B-1-B	D-1B-1-A	12.0	Ductile Iron	130.0	False	0.000	-394	1.12	0.451
977	P-17	120	D-1A-8	D-1A-1-A	12.0	Ductile Iron	130.0	False	0.000	375	1.06	0.413
756	P-18	119	FH-A1	D-1A-1-B	12.0	Ductile Iron	130.0	False	0.000	-358	1.01	0.377
961	P-127	487	FH-A1	D-1A-3-A	12.0	Ductile Iron	130.0	False	0.000	358	1.01	0.378
1016	P-114	272	J-21	FH-A4-3	12.0	Ductile Iron	130.0	False	0.000	-353	1.00	0.368
1017	P-443	125	FH-A4-3	J-45	12.0	Ductile Iron	130.0	False	0.000	-353	1.00	0.368
939	P-115	235	J-45	D-1A-4-B	24.0	Ductile Iron	130.0	False	0.000	-1,317	0.93	0.144
1035	P-483	102	D-1A-4-B	FH-A4-4	12.0	Ductile Iron	130.0	False	0.000	318	0.90	0.304
1036	P-484	215	FH-A4-4	FH-A4	12.0	Ductile Iron	130.0	False	0.000	318	0.90	0.303
1172	P-466(1)	49	J-381	FH-C1-B	8.0	Ductile Iron	130.0	False	0.000	118	0.75	0.349
1173	P-466(2)	117	FH-C1-B	J-343	8.0	Ductile Iron	130.0	False	0.000	118	0.75	0.348
1008	P-13	319	R-11	J-2	48.0	Ductile Iron	130.0	False	0.000	4,127	0.73	0.000
808	P-41	276	J-20	FH-C3-2	16.0	Ductile Iron	130.0	False	0.000	-437	0.70	0.135
809	P-42	330	FH-C3-2	J-4	16.0	Ductile Iron	130.0	False	0.000	-437	0.70	0.135
770	P-22	306	D-1A-5	D-1A-4-A	12.0	Ductile Iron	130.0	False	0.000	-244	0.69	0.186
941	P-116	126	J-45	D-1B-1-A	24.0	Ductile Iron	130.0	False	0.000	964	0.68	0.081
943	P-117	1,126	D-1B-1-A	D-1B-1-C	12.0	Ductile Iron	130.0	False	0.000	228	0.65	0.164
1007	P-439	166	J-21	J-49	12.0	Ductile Iron	130.0	False	0.000	193	0.55	0.120
694	P-2	135	J-4	J-5	16.0	Ductile Iron	130.0	False	0.000	342	0.55	0.086
696	P-3	134	J-5	J-6	16.0	Ductile Iron	130.0	False	0.000	342	0.55	0.085
819	P-46	371	J-6	J-29	16.0	Ductile Iron	130.0	False	0.000	342	0.55	0.086
773	P-24	293	J-22	J-21	12.0	Ductile Iron	130.0	False	0.000	-192	0.54	0.119
932	P-110	204	J-42	J-14	8.0	Ductile Iron	130.0	False	0.000	-78	0.50	0.162
936	P-113	149	J-381	J-44	12.0	Ductile Iron	130.0	False	0.000	-169	0.48	0.094
1160	P-206	117	J-601	FH-C1-C	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
1161	P-207	82	FH-C1-C	J-42	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
1163	P-204	111	D-1C-1-B	FH-C1-K	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
1164	P-205	161	FH-C1-K	J-601	8.0	Ductile Iron	130.0	False	0.000	-74	0.47	0.148
930	P-108	183	D-1C-1-A	FH-C1-D	8.0	Ductile Iron	130.0	False	0.000	-73	0.47	0.144
1184	P-469(1)	289	FH-C1-D	FH-C1-F	8.0	Ductile Iron	130.0	False	0.000	-73	0.47	0.144
1185	P-469(2)	176	FH-C1-F	J-600	8.0	Ductile Iron	130.0	False	0.000	-73	0.47	0.144
1146	P-475	351	D-1C-2-A	J-352	12.0	Ductile Iron	130.0	False	0.000	-160	0.46	0.086
1114	P-468	289	J-600	J-51	8.0	Ductile Iron	130.0	False	0.000	-69	0.44	0.130
986	P-135	137	D-1A-8	FH-A8	12.0	Ductile Iron	130.0	False	0.000	155	0.44	0.080
987	P-107	217	FH-A8	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	155	0.44	0.080
1006	P-200	265	J-49	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	145	0.41	0.071

1025	P-16	83	J-50	FH-A2-1	12.0	Ductile Iron	130.0	False	0.000	-144	0.41	0.070
1026	P-445	246	FH-A2-1	J-20	12.0	Ductile Iron	130.0	False	0.000	-144	0.41	0.070
974	P-136	246	D-1A-7	J-50	12.0	Ductile Iron	130.0	False	0.000	-144	0.41	0.070
1092	P-459	78	J-337	J-338	12.0	Ductile Iron	130.0	False	0.000	-140	0.40	0.067
989	P-57	328	J-29	FH-C10	12.0	Ductile Iron	130.0	False	0.000	138	0.39	0.064
1057	P-489	266	J-54	FH-C10	12.0	Ductile Iron	130.0	False	0.000	-138	0.39	0.064
914	P-98	67	FH-C9	J-20	12.0	Ductile Iron	130.0	False	0.000	-136	0.39	0.063
1175	P-470(1)	206	J-343	FC-C1-H	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.098
1178	P-208	247	FC-C1-H	FH-C1-G	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.098
1179	P-209	110	FH-C1-G	D-1C-1-A	8.0	Ductile Iron	130.0	False	0.000	59	0.38	0.098
1167	P-203	35	FH-C1-J	D-1C-1-B	8.0	Ductile Iron	130.0	False	0.000	58	0.37	0.095
1169	P-201	157	J-343	FH-C1-I	8.0	Ductile Iron	130.0	False	0.000	58	0.37	0.096
1170	P-202	131	FH-C1-I	FH-C1-J	8.0	Ductile Iron	130.0	False	0.000	58	0.37	0.095
840	P-55	63	J-18	FH-C8	12.0	Ductile Iron	130.0	False	0.000	121	0.34	0.051
1075	P-85	221	J-330	FH-C8	12.0	Ductile Iron	130.0	False	0.000	-121	0.34	0.051
1145	P-84	116	J-352	J-330	12.0	Ductile Iron	130.0	False	0.000	-121	0.34	0.051
702	P-4	65	J-7	J-8	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.034
704	P-5	155	J-8	J-9	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
826	P-48	331	J-9	J-30	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
827	P-49	219	J-30	J-10	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
829	P-50	316	J-29	J-31	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
830	P-51	268	J-31	J-7	16.0	Ductile Iron	130.0	False	0.000	205	0.33	0.033
1122	P-100	257	D-1C-2-B	FH-C2-C	12.0	Ductile Iron	130.0	False	0.000	-106	0.30	0.039
1123	P-101	331	FH-C2-C	FH-C2-B	12.0	Ductile Iron	130.0	False	0.000	-106	0.30	0.039
1129	P-471(1)	229	FH-C2-B	D-1C-2-A	12.0	Ductile Iron	130.0	False	0.000	-106	0.30	0.040
945	P-118	316	D-1B-1-C	FH-B1	12.0	Ductile Iron	130.0	False	0.000	-104	0.30	0.039
947	P-119	416	FH-B1	D-1B-1-B	12.0	Ductile Iron	130.0	False	0.000	-104	0.30	0.038
915	P-99	64	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-104	0.30	0.038
904	P-91	225	J-36	J-40	12.0	Ductile Iron	130.0	False	0.000	103	0.29	0.037
1082	P-458	265	J-36	J-54	12.0	Ductile Iron	130.0	False	0.000	-103	0.29	0.038
791	P-33	103	J-22	J-26	12.0	Ductile Iron	130.0	False	0.000	100	0.28	0.036
962	P-128	216	D-1A-3-A	FH-A4	12.0	Ductile Iron	130.0	False	0.000	95	0.27	0.033
1019	P-23	350	J-18	FH-A2-4	12.0	Ductile Iron	130.0	False	0.000	-92	0.26	0.031
1020	P-447	51	FH-A2-4	J-22	12.0	Ductile Iron	130.0	False	0.000	-92	0.26	0.031
1088	P-63	250	J-337	D-1C-5-B	12.0	Ductile Iron	130.0	False	0.000	91	0.26	0.030
779	P-27	244	J-18	FH-A2-3	16.0	Ductile Iron	130.0	False	0.000	-157	0.25	0.020
780	P-28	327	FH-A2-3	J-20	16.0	Ductile Iron	130.0	False	0.000	-157	0.25	0.020
800	P-35	536	J-17	J-27	16.0	Ductile Iron	130.0	False	0.000	-152	0.24	0.019
935	P-112	404	J-44	J-17	16.0	Ductile Iron	130.0	False	0.000	-152	0.24	0.019
1027	P-443	109	D-1A-5	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	83	0.24	0.025
710	P-6	281	J-11	J-12	16.0	Ductile Iron	130.0	False	0.000	144	0.23	0.017
849	P-60	295	J-10	J-32	16.0	Ductile Iron	130.0	False	0.000	144	0.23	0.017
850	P-61	197	J-32	J-11	16.0	Ductile Iron	130.0	False	0.000	144	0.23	0.017
1058	P-453	148	J-54	J-53	12.0	Ductile Iron	130.0	False	0.000	80	0.23	0.024
1068	P-449(2)	141	J-327	J-53	12.0	Ductile Iron	130.0	False	0.000	-80	0.23	0.023
1091	P-449	151	J-338	J-327	12.0	Ductile Iron	130.0	False	0.000	-80	0.23	0.023
793	P-34	444	J-25	J-26	12.0	Ductile Iron	130.0	False	0.000	-77	0.22	0.022
805	P-39	153	J-48	J-25	12.0	Ductile Iron	130.0	False	0.000	-77	0.22	0.022
806	P-40	206	D-1B-2-B	J-48	12.0	Ductile Iron	130.0	False	0.000	-77	0.22	0.022
785	P-31	316	J-24	J-18	16.0	Ductile Iron	130.0	False	0.000	-128	0.20	0.014
801	P-36	355	J-27	J-24	16.0	Ductile Iron	130.0	False	0.000	-128	0.20	0.014
1140	P-444(1)	229	J-40	J-351	12.0	Ductile Iron	130.0	False	0.000	63	0.18	0.015
1141	P-444(2)	41	J-351	J-51	12.0	Ductile Iron	130.0	False	0.000	63	0.18	0.015
1090	P-448	253	J-10	J-338	12.0	Ductile Iron	130.0	False	0.000	61	0.17	0.015
953	P-121	279	D-1B-2-A	FH-B2	12.0	Ductile Iron	130.0	False	0.000	59	0.17	0.014
957	P-124	461	FH-B2	J-46	12.0	Ductile Iron	130.0	False	0.000	59	0.17	0.014
958	P-125	639	J-46	D-1B-2-B	12.0	Ductile Iron	130.0	False	0.000	55	0.16	0.012
714	P-7	126	J-13	J-14	16.0	Ductile Iron	130.0	False	0.000	95	0.15	0.008
878	P-75	434	J-12	J-37	16.0	Ductile Iron	130.0	False	0.000	95	0.15	0.008

	P-76	264	J-37	J-13	16.0	Ductile Iron	130.0	False	0.000	95	0.15	0.008
1125	P-106	23	J-381	J-346	12.0	Ductile Iron	130.0	False	0.000	51	0.14	0.010
1131	P-473	879	D-1C-2-A	J-346	12.0	Ductile Iron	130.0	False	0.000	-51	0.14	0.010
1046	P-447	253	J-52	J-12	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.010
857	P-64	136	FH-C5	J-33	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.009
891	P-83	336	D-1C-5-A	FH-C5	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.009
1087	P-62	327	J-33	J-337	12.0	Ductile Iron	130.0	False	0.000	-49	0.14	0.009
1005	P-122	92	D-1B-1-B	J-49	12.0	Ductile Iron	130.0	False	0.000	-48	0.14	0.009
1062	P-454	237	J-54	J-55	12.0	Ductile Iron	130.0	False	0.000	-45	0.13	0.008
1063	P-455	358	D-1C-9	J-55	12.0	Ductile Iron	130.0	False	0.000	45	0.13	0.008
1044	P-487	78	J-52	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	43	0.12	0.006
1071	P-80	136	J-40	J-329	12.0	Ductile Iron	130.0	False	0.000	40	0.11	0.006
1144	P-81	146	J-329	J-352	12.0	Ductile Iron	130.0	False	0.000	40	0.11	0.007
1031	P-21	45	D-1A-4-A	FH-A4-6	12.0	Ductile Iron	130.0	False	0.000	32	0.09	0.003
1032	P-442	105	FH-A4-6	J-21	12.0	Ductile Iron	130.0	False	0.000	32	0.09	0.005
913	P-97	604	D-1C-9	FH-C9	12.0	Ductile Iron	130.0	False	0.000	-32	0.09	0.004
802	P-37	86	D-1B-2-B	J-27	12.0	Ductile Iron	130.0	False	0.000	24	0.07	0.001
952	P-120	114	J-26	D-1B-2-A	12.0	Ductile Iron	130.0	False	0.000	22	0.06	0.002
934	P-111	533	J-16	J-44	16.0	Ductile Iron	130.0	False	0.000	17	0.03	0.000
1001	P-438	777	J-16	J-14	16.0	Ductile Iron	130.0	False	0.000	-17	0.03	0.000
1157	P-86	221	J-353	FH-C1-L	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.001
1158	P-87	276	FH-C1-L	J-42	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.001
1181	P-102	50	J-600	FH-C1-A	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.002
1182	P-103	84	FH-C1-A	J-355	8.0	Ductile Iron	130.0	False	0.000	-4	0.03	0.000
1084	P-446(1)	76	J-51	J-336	12.0	Ductile Iron	130.0	False	0.000	-6	0.02	0.000
1085	P-446(2)	108	J-336	J-52	12.0	Ductile Iron	130.0	False	0.000	-6	0.02	0.000
1154	P-104	66	J-355	J-353	8.0	Ductile Iron	130.0	False	0.000	-2	0.01	0.000
959	P-126	340	D-1B-1-C	J-46	12.0	Ductile Iron	130.0	False	0.000	-5	0.01	0.000
1151	P-476	86	J-353	FH -C1-E	8.0	Ductile Iron	130.0	False	0.000	2	0.01	0.000
1155	P-477	478	FH -C1-E	J-355	8.0	Ductile Iron	130.0	False	0.000	2	0.01	0.000
1065	P-456	992	D-1B-1-A	FUTURE CONNECTION ACROSS 101	24.0	Ductile Iron	130.0	False	0.000	5	0.00	0.000
776	P-26	317	J-50	D-1A-2	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
890	P-82	417	D-1C-5-B	D-1C-5-A	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
975	P-137	24	FH-A7	D-1A-7	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1029	P-441	121	J-22	FH-A5	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
1136	P-89	248	J-346	FH-C2-A	12.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000
725	P-10	181	J-1	J-19	16.0	Ductile Iron	130.0	False	0.000	0	0.00	0.000

Scenario: Fire Flow
Current Time Step: 0.000 h
FlexTable: Reservoir Table

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
731	R-11	1,760.80	Zone - 4	4,127	1,760.80

P:\2018\18114\Design-Reports\18114-601\Water\Model\18114-601 Water Model Sub 2.wtg

Appendix E
Fire Flow
The Grayhawk Residences at Cavasson

Flow Test Summary

Project Name:	EJFT 21361-1 - Cavasson
Project Address:	Loop 101 & N Hayden Road, Scottsdale, AZ 85255
Date of Flow Test:	2021-08-27
Time of Flow Test:	6:25 AM
Data Reliable Until:	2022-02-27
Conducted By:	Steven Saethre & Eder Cueva (EJ Flow Tests) 602.999.7637
Witnessed By:	Sonny Schreiner (City of Scottsdale) 602.819.7718
City Forces Contacted:	City of Scottsdale (602.819.7718)
Permit Number:	C66213

Raw Flow Test Data

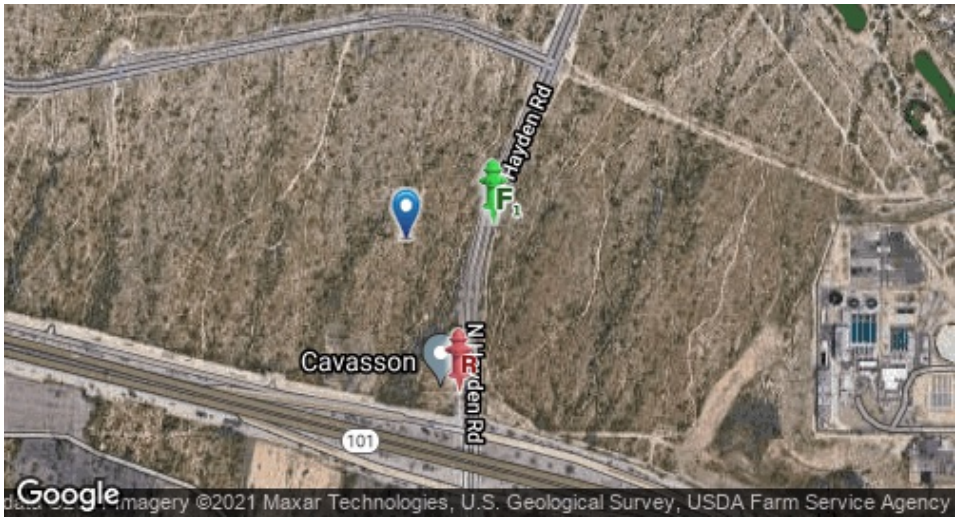
Static Pressure:	62.0 PSI
Residual Pressure:	52.0 PSI
Flowing GPM:	1,743
GPM @ 20 PSI:	3,783

Data with a 10 % Safety Factor

Static Pressure:	55.8 PSI
Residual Pressure:	45.8 PSI
Flowing GPM:	1,743
GPM @ 20 PSI:	3,471

Hydrant F_1

Pitot Pressure (1):	25	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	29	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches



Project Site

Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
1181 ft (measured linearly)

Static-Residual Elevation
1614 ft (above sea level)

Flow Hydrant (F_1) Elevation
1633 ft (above sea level)

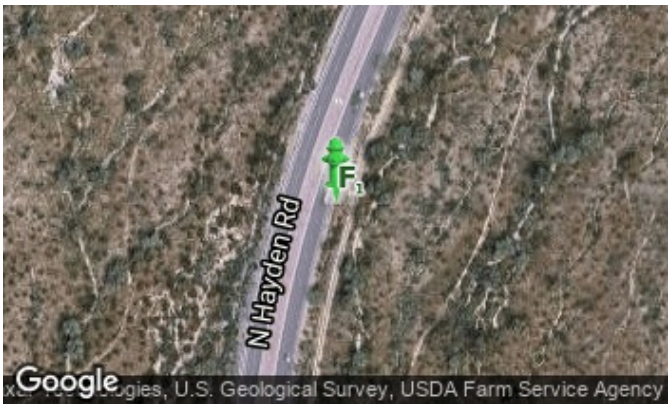
Elevation & distance values are approximate

24-DR-2021_V2
9/29/2021

Flow Test Summary

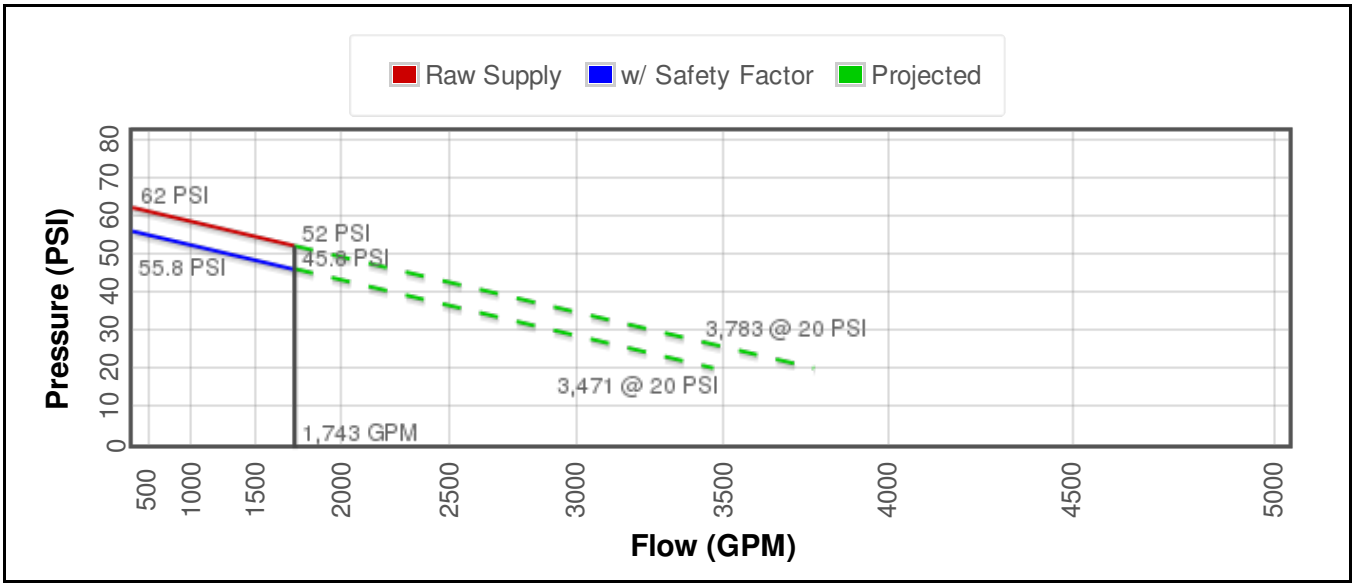
Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)



Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph



Flow Test Summary

Project Name:	EJFT 21361-2 - Cavasson
Project Address:	N Hayden Rd & Legacy Blvd, Scottsdale, AZ 85255
Date of Flow Test:	2021-08-27
Time of Flow Test:	6:55 AM
Data Reliable Until:	2022-02-27
Conducted By:	Steven Saethre & Eder Cueva (EJ Flow Tests) 602.999.7637
Witnessed By:	Sonny Schreiner (City of Scottsdale) 602.819.7718
City Forces Contacted:	City of Scottsdale (602.819.7718)
Permit Number:	C66213

Raw Flow Test Data

Static Pressure:	50.0 PSI
Residual Pressure:	40.0 PSI
Flowing GPM:	1,610
GPM @ 20 PSI:	2,914

Data with a 10 % Safety Factor

Static Pressure:	45.0 PSI
Residual Pressure:	35.0 PSI
Flowing GPM:	1,610
GPM @ 20 PSI:	2,641

Hydrant F_1

Pitot Pressure (1):	23	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	23	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches

Project Site

Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
490 ft (measured linearly)

Static-Residual Elevation
1650 ft (above sea level)

Flow Hydrant (F_1) Elevation
1647 ft (above sea level)

Elevation & distance values are approximate

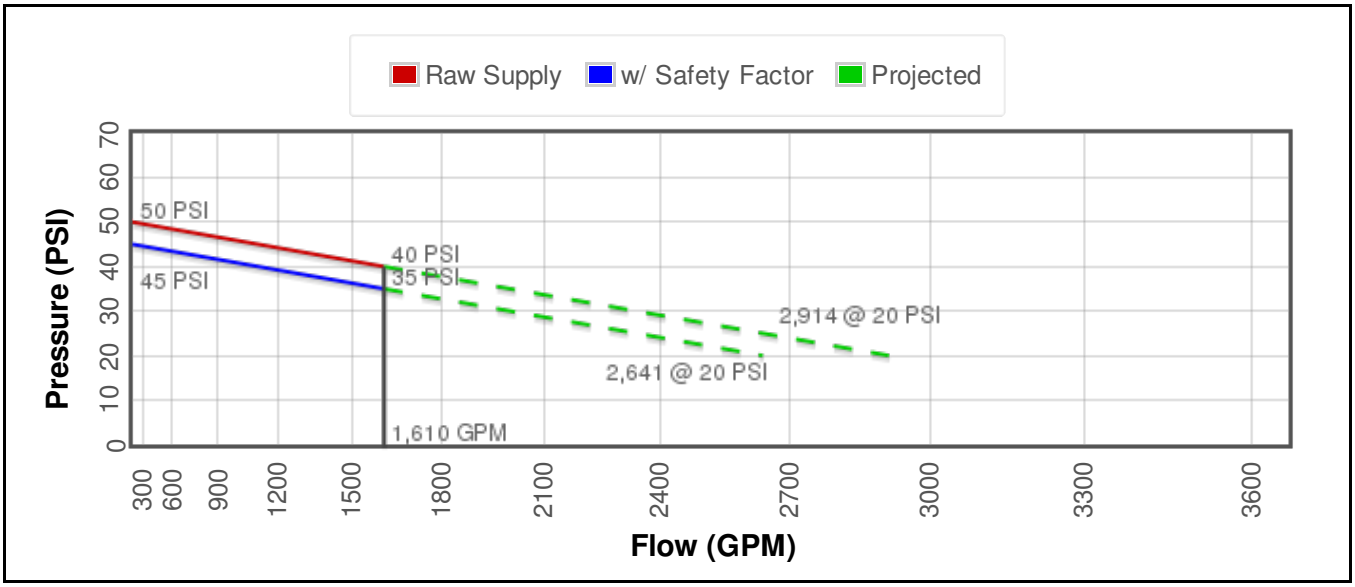
Flow Test Summary

Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)

Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph



Flow Test Summary

Project Name:	EJFT 20256-1
Project Address:	N Hayden Rd & Legacy Blvd, Scottsdale, AZ 85255
Date of Flow Test:	2020-10-13
Time of Flow Test:	6:30 AM
Data Reliable Until:	2021-04-13
Conducted By:	Eder Cueva & Steven Saethre (EJ Flow Tests) 602.999.7637
Witnessed By:	Sonny Schreiner (City of Scottsdale) 602.819.7718
City Forces Contacted:	City of Scottsdale (602.819.7718)
Permit Number:	C63258

Raw Flow Test Data

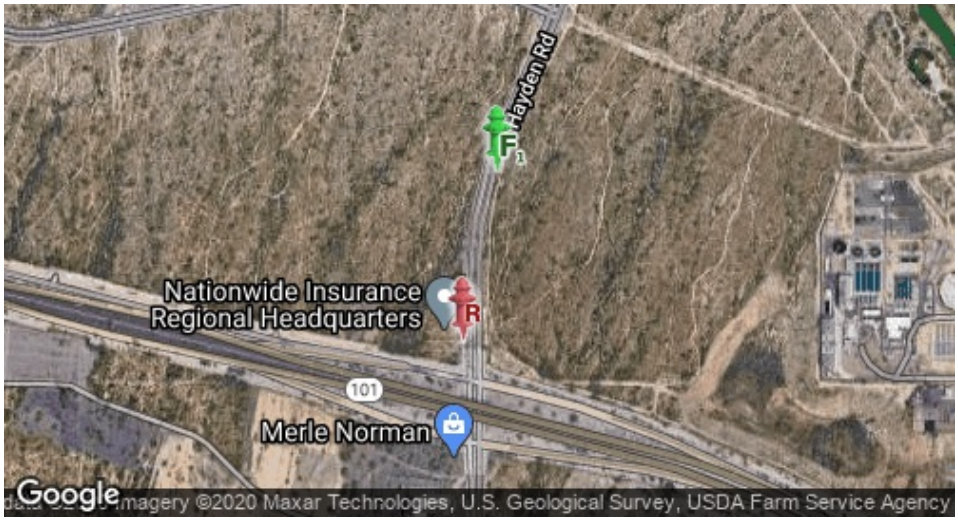
Static Pressure:	62.0 PSI
Residual Pressure:	52.0 PSI
Flowing GPM:	1,744
GPM @ 20 PSI:	3,786

Data with a 10 % Safety Factor

Static Pressure:	55.8 PSI
Residual Pressure:	45.8 PSI
Flowing GPM:	1,744
GPM @ 20 PSI:	3,473

Hydrant F_1

Pitot Pressure (1):	27	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	27	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches



Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
1189 ft (measured linearly)

Static-Residual Elevation
1614 ft (above sea level)

Flow Hydrant (F_1) Elevation
1633 ft (above sea level)

Elevation & distance values are approximate

24-DR-2021_V2
9/29/2021

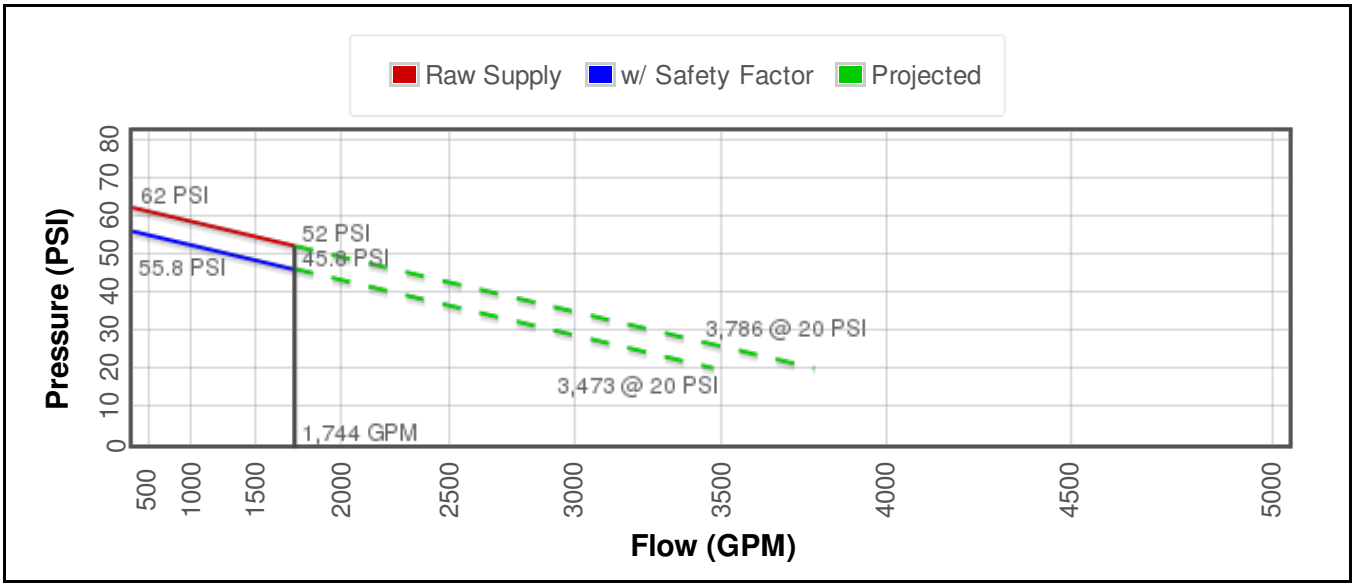
Flow Test Summary

Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)

Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph



Flow Test Summary

Project Name:	EJFT 20256-2
Project Address:	N Hayden Rd & Legacy Blvd, Scottsdale, AZ 85255
Date of Flow Test:	2020-10-13
Time of Flow Test:	6:50 AM
Data Reliable Until:	2021-04-13
Conducted By:	Eder Cueva & Steven Saethre (EJ Flow Tests) 602.999.7637
Witnessed By:	Sonny Schreiner (City of Scottsdale) 602.819.7718
City Forces Contacted:	City of Scottsdale (602.819.7718)
Permit Number:	C63258

Raw Flow Test Data

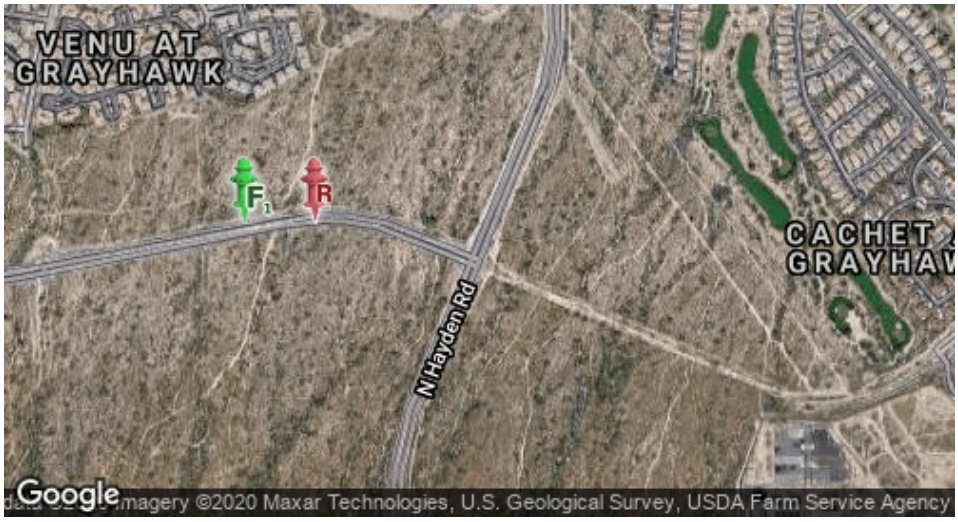
Static Pressure:	46.0 PSI
Residual Pressure:	38.0 PSI
Flowing GPM:	1,520
GPM @ 20 PSI:	2,872

Data with a 10 % Safety Factor

Static Pressure:	41.4 PSI
Residual Pressure:	33.4 PSI
Flowing GPM:	1,520
GPM @ 20 PSI:	2,586

Hydrant F_1

Pitot Pressure (1):	20	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	21	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches



Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
488 ft (measured linearly)

Static-Residual Elevation
1650 ft (above sea level)

Flow Hydrant (F_1) Elevation
1647 ft (above sea level)

Elevation & distance values are approximate

24-DR-2021_V2
9/29/2021

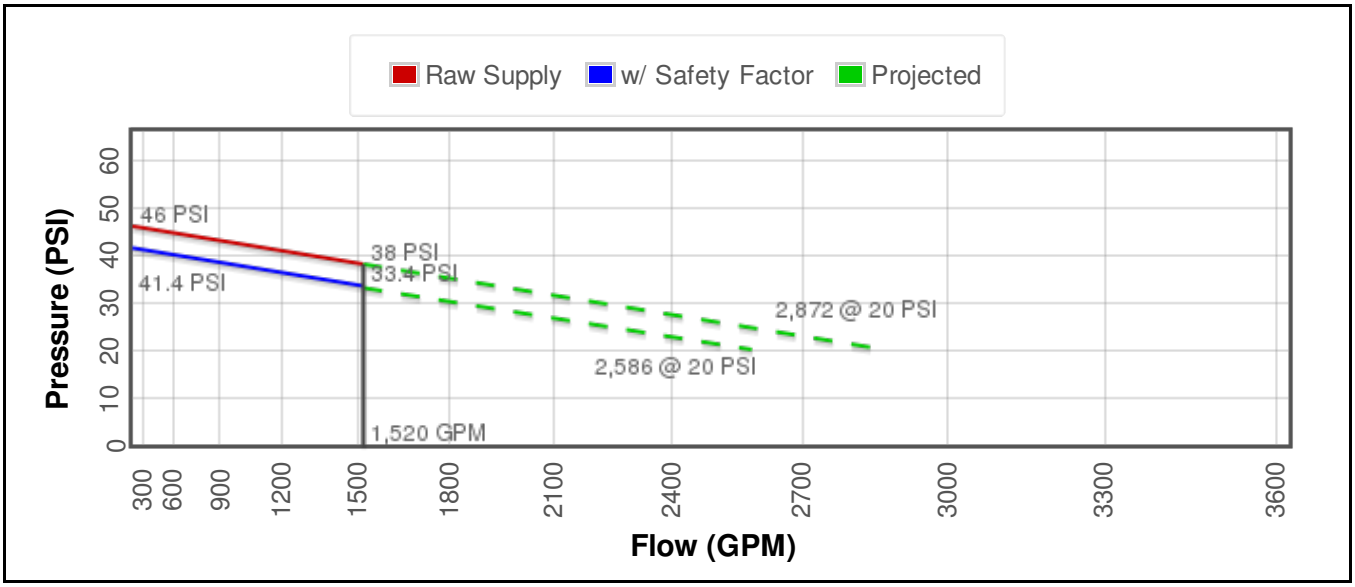
Flow Test Summary

Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)

Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph



Flow Test Summary

Project Name:	EJFT 18250-1
Project Address:	N Hayden Rd & Legacy Blvd, Scottsdale, AZ 85255
Date of Flow Test:	2018-10-16
Time of Flow Test:	7:30 AM
Data Reliable Until:	2019-04-16
Conducted By:	Cesar Reyna & Austin Gourley (EJ Flow Tests) 602.999.7637
Witnessed By:	Jared Berry (City of Scottsdale) 602.541.4942
City Forces Contacted:	City of Scottsdale (602.541.4942)
Permit Number:	C56459

Raw Flow Test Data

Static Pressure:	66.0 PSI
Residual Pressure:	59.0 PSI
Flowing GPM:	1,839
GPM @ 20 PSI:	5,082

Data with a 10 % Safety Factor

Static Pressure:	59.4 PSI
Residual Pressure:	52.4 PSI
Flowing GPM:	1,839
GPM @ 20 PSI:	4,674

Hydrant F_1

Pitot Pressure (1):	30	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	30	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches

Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
1190 ft (measured linearly)

Static-Residual Elevation
1614 ft (above sea level)

Flow Hydrant (F_1) Elevation
1633 ft (above sea level)

Elevation & distance values are approximate

24-DR-2021_V2
9/29/2021

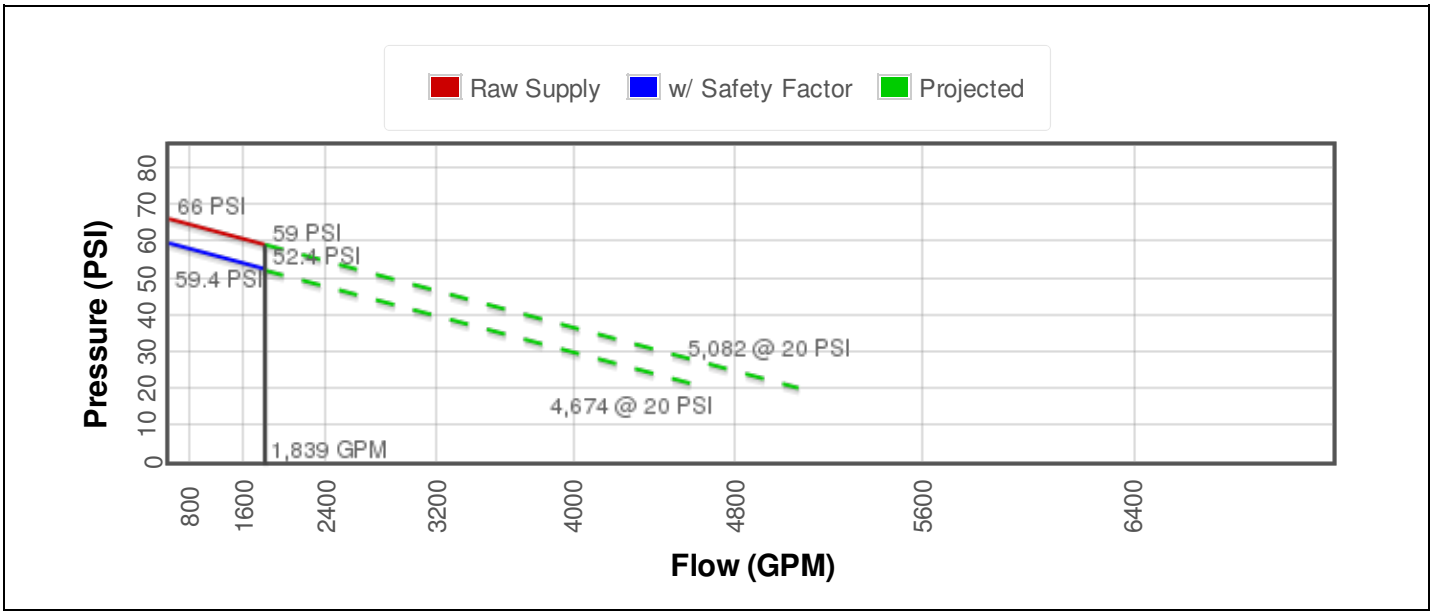
Flow Test Summary

Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)

Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph



Flow Test Summary

Project Name:	EJFT 18250-2
Project Address:	N Hayden Rd & Legacy Blvd, Scottsdale, AZ 85255
Date of Flow Test:	2018-10-16
Time of Flow Test:	7:50 AM
Data Reliable Until:	2019-04-16
Conducted By:	Cesar Reyna & Austin Gourley (EJ Flow Tests) 602.999.7637
Witnessed By:	Jared Berry (City of Scottsdale) 602.541.4942
City Forces Contacted:	City of Scottsdale (602.541.4942)
Permit Number:	C56459

Raw Flow Test Data

Static Pressure:	51.0 PSI
Residual Pressure:	44.0 PSI
Flowing GPM:	1,645
GPM @ 20 PSI:	3,673

Data with a 10 % Safety Factor

Static Pressure:	45.9 PSI
Residual Pressure:	38.9 PSI
Flowing GPM:	1,645
GPM @ 20 PSI:	3,333

Hydrant F_1

Pitot Pressure (1):	24	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	24	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches

Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
489 ft (measured linearly)

Static-Residual Elevation
1650 ft (above sea level)

Flow Hydrant (F_1) Elevation
1647 ft (above sea level)

Elevation & distance values are approximate

24-DR-2021_V2
9/29/2021

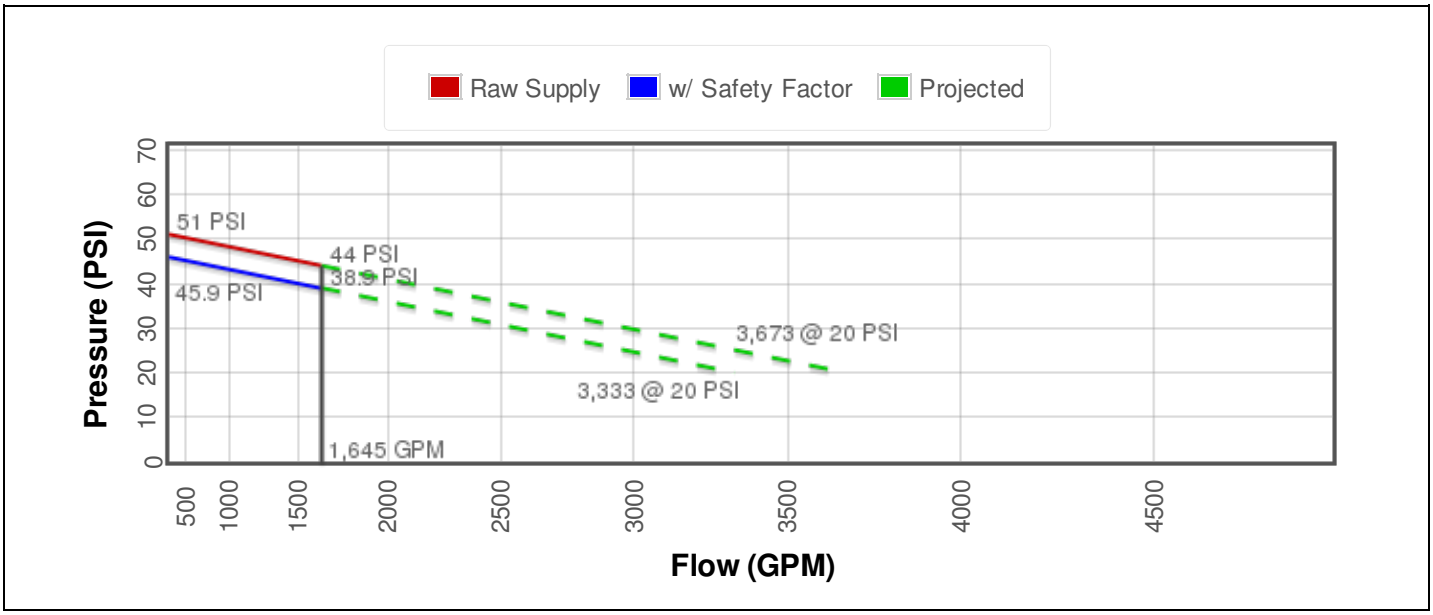
Flow Test Summary

Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)

Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph



Exhibits
The Grayhawk Residences at Cavasson

LOT 4
[ASLD]

LOT 3
[ASLD]

J–16
56 psi

J–14
55 psi

J–13
53 psi

J–37
52 psi

J–12
51 psi

J–11
50 psi

FH–C5

1C-5

D–1C–5–A
46 gpm
52 psi

J–52
52 psi

J–336
52 psi

J–51
53 psi

J–351
54 psi

1C-6

FH–C1–C

FH–C1–K

D–1C–1–B
66 gpm
65 psi

J–601
60 psi

J–42
56 psi

FH–C1–L

J–353
55 psi

FH –C1–E

J–355
55 psi

FH–C1–A

J–600
54 psi

FH–C1–J

1C-1

FH–C1–I

FH–C1–D

D–1C–1–A

FH–C1–G
66 gpm
56 psi

FC–C1–H

FH–C1–F

D–1C–2–A
53 gpm
56 psi

FH–C1–B

J–381
59 psi

J–343
71 psi

J–346
59 psi

J–40
56 psi

J–36
54 psi

J–329
56 psi

J–352
57 psi

J–44
59 psi

1C-2

1C-8

FH–C2–B

J–330
57 psi

FH–C2–A

D–1C–2–B
53 gpm
60 psi

FH–C2–C

FH–C8

1C-9

D–1C–9
45 gpm
58 psi

FH–C9

J–27
61 psi

J–24
59 psi

J–18
59 psi

FH–A2–3

J–17
62 psi

D–1B–2–B
54 gpm
62 psi

J–48
60 psi

J–25
60 psi

J–20
58 psi

1B-2

1A-5

1A-2

J–46
63 psi

D–1B–2–A
62 psi

FH–A2–4

D–1A–2

Color Coding Legend
Pipe: Diameter (in)

<= 8.0
<= 12.0
<= 16.0
<= 24.0
Other

75 0 75 150
scale feet

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1201 S. Alma School Rd.
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Mesa, AZ 85210
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AVERAGE DAY DEMAND
WATER SYSTEM MAP SITE SPECIFIC

Date	Project Eng.
08/28/2021	M. WOLF
Project No.	Project Mgr.
18114–601	M. WOLF

SHT: 01 OF 01
EXHIBIT 1

24-DR-2021_V2
9/29/2021

EXISTING WATER LINE

LOT 4 [ASLD]

LOT 3 [ASLD]

LOT 2 [ASLD]

J-12 51 psi

J-11 50 psi

J-32 49 psi

J-10 48 psi

J-30 48 psi

J-9 48 psi

J-8 48 psi

J-7 48 psi

J-31 50 psi

J-29 54 psi

J-6 56 psi

J-5 57 psi

J-4 57 psi

J-47 57 psi

J-3 60 psi

J-2 64 psi

J-19 64 psi

J-1 66 psi

J-37 52 psi

J-13 53 psi

J-14 55 psi

J-16 56 psi

J-17 62 psi

J-44 59 psi

J-381 59 psi

J-346 59 psi

J-343 71 psi

J-42 56 psi

J-601 60 psi

J-353 55 psi

J-355 55 psi

J-600 54 psi

J-50 52 psi

J-51 53 psi

J-356 54 psi

J-336 52 psi

J-337 51 psi

J-338 49 psi

J-33 49 psi

J-327 51 psi

J-36 54 psi

J-40 56 psi

J-329 56 psi

J-352 57 psi

J-330 57 psi

J-55 55 psi

J-27 61 psi

J-24 59 psi

J-18 58 psi

J-20 58 psi

J-48 60 psi

J-25 60 psi

J-46 63 psi

J-26 62 psi

J-22 61 psi

J-49 64 psi

J-21 63 psi

J-45 67 psi

FH-C5

FH-C1-C

FH-C1-K

FH-C1-L

FH-C1-E

FH-C1-A

FH-C1-J

FH-C1-I

FH-C1-D

FH-C1-F

FC-C1-H

FH-C1-G

FH-C1-B

FH-C10

FH-C2-B

FH-C2-A

FH-C2-C

FH-C8

FH-C9

FH-C3-2

FH-A2-3

FH-A2-4

FH-A5

FH-A2-1

FH-A7

FH-A8

FH-A1-2

FH-A4-6

FH-A4

FH-A4-3

FH-A4-4

FH-A3

FH-A1

FH-A1-3

FH-B2

FH-B1

D-1C-1-B 58 gpm 65 psi

D-1C-1-A 66 gpm 56 psi

D-1C-2-A 33 gpm 56 psi

D-1C-2-B 53 gpm 60 psi

D-1C-5-A 46 gpm 52 psi

D-1C-5-B 46 gpm 51 psi

D-1C-9 45 gpm 58 psi

D-1B-2-B 54 gpm 62 psi

D-1B-2-A 62 psi 54 gpm

D-1B-1-C 169 gpm 65 psi

D-1B-1-B 169 gpm 65 psi

D-1B-1-A 169 gpm 68 psi

D-1A-2 42 gpm 61 psi

D-1A-5 81 gpm 62 psi

D-1A-7 149 gpm 61 psi

D-1A-4-A 84 psi 69 gpm

D-1A-8 25 gpm 62 psi

D-1A-3-A 131 gpm 64 psi

D-1A-3-B 131 gpm 66 psi

D-1A-4-B 69 gpm 66 psi

D-1A-1-A 188 gpm 63 psi

D-1A-1-B 188 gpm 67 psi

(N/A) gpm J-50

(N/A) gpm

1C-1

1C-2

1C-3

1C-4

1C-5

1C-6

1C-8

1C-9

1C-10

1B-1

1B-2

1B-3

1A-1

1A-2

1A-3

1A-4

1A-5

1A-6

1A-7

1A-8

Color Coding Legend
Pipe: Diameter (in)
<= 8.0
<= 12.0
<= 16.0
<= 24.0
Other

FUTURE CONNECTION ACROSS 101 71 psi

SYSTEM RESERVOIR

N

150 0 150 300
scale feet

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1201 S. Alma School Rd.
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Mesa, AZ 85210
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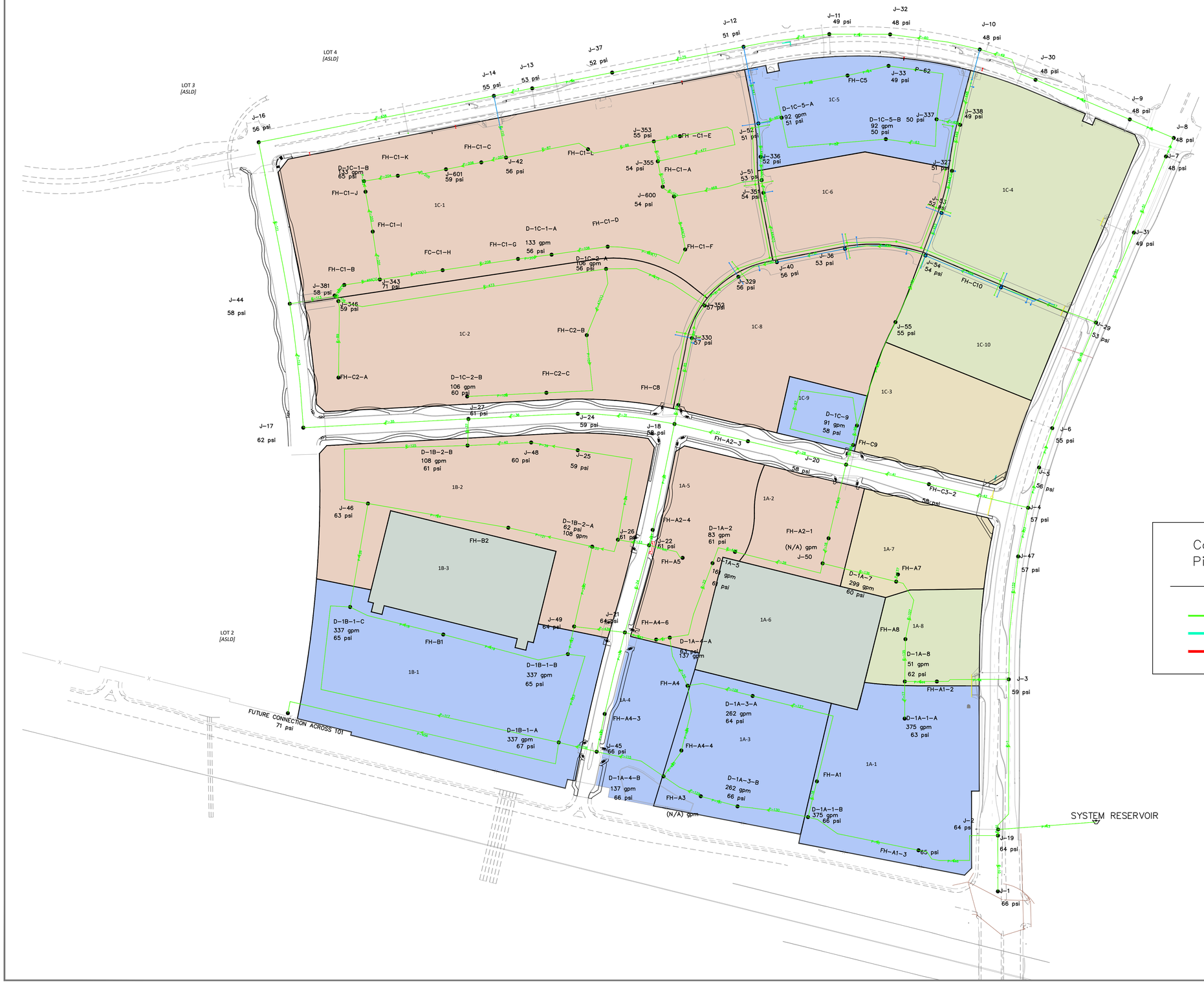
AVERAGE DAY DEMAND WATER SYSTEM MAP

Date 08/28/2021
Project Eng. M. WOLF
Project No. 18114-601
Project Mgr. M. WOLF

SHT: 01 OF 01
EXHIBIT 2



Color Coding Legend
Pipe: Velocity (ft/s)

<= 5.00
<= 10.00
Other

150 0 150 300
scale feet

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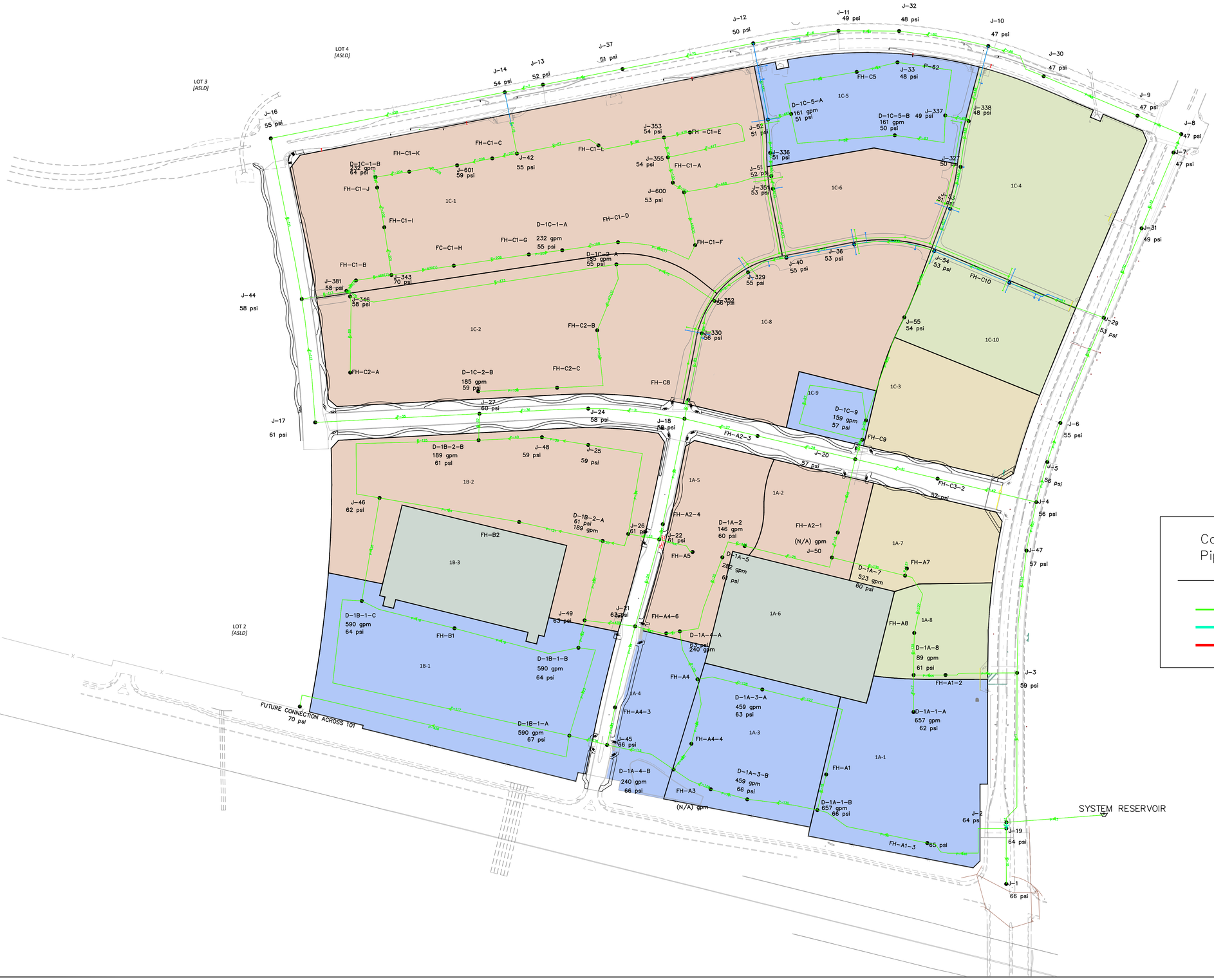
MAX DAY DEMAND
WATER SYSTEM MAP

Date	Project Eng.
08/28/2021	M. WOLF
Project No.	Project Mgr.
18114	G. BROWN

SHT: 01 OF 01
EXHIBIT 3

24-DR-2021_V2
9/29/2021



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Mesa, AZ 85210
PH: 480.892.3313
www.hubbardengineering.com

PEAK HOUR DEMAND
WATER SYSTEM MAP

Date	Project Eng.
08/28/2021	M. WOLF
Project No.	Project Mgr.
18114	G. BROWN

SHT: 01 OF 01

EXHIBIT 4

24-DR-2021_V2
9/29/2021

Color Coding Legend
Pipe: Velocity (ft/s)

<= 5.00
<= 10.00
Other

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Mesa, AZ 85210
PH: 480.892.3313
www.hubbardengineering.com

MAX DAY PLUS FIRE FLOW WATER SYSTEM MAP

Date	Project Eng.
08/28/2021	M. WOLF
Project No.	Project Mgr.
18114	G. BROWN

SHT: 01 OF 01
EXHIBIT 5

24-DR-2021_V2
9/29/2021