



Hidden Haven Estates

***49-lot Single-Family
Residential Project
Analysis Completed February 18, 2026***

Public Water & Sewer Impact Analysis

Prepared by Ardurra., for The City of Flagstaff Water Services

Mayor

Becky Daggett

Council

*Austin Aslan
Khara House
Lori Matthews*

*Jim McCarthy
Miranda Sweet
Deborah Harris*

City Manager

Greg Clifton

Water Services Director

Lee Williams

City Engineer

Paul A. Mood, P.E.

Public Works Director

Scott Overton



Alicia Stoffers

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I. INTRODUCTION

The Hidden Haven Estates Project (Hidden Haven) is located at the south end of East Sioux Drive in Flagstaff, AZ on Coconino County Parcels: 105-05-002B (1 ac), 105-05-002C (8.12 ac), 105-05-002D (1.23 ac), and 105-05-001A (2.66 ac). This site is currently developed as the Arizona Mountain Inn Cabins. The project is located in Section 33, Township 21 North, Range 7 East (See Figure 1 – Vicinity Map).

According to the WSIA request letter, dated 1/5/2026, the Property Owner is proposing a 49-lot single family residential subdivision. These parcels will be required to be rezoned from rural residential (RR) to single family residential (R1). The WSIA Exhibit, dated 1/5/2026, (Exhibit 1) by CD&E was provided to the City and has been used as the basis for this preliminary analysis.

The criteria used herein to estimate the project's utility impacts are from the Arizona Administrative Code (AAC) Title 18 Chapter 9, effective December 2023 and the City of Flagstaff Engineering Design Standards, Chapter 13-09, effective October 2017. This Water and Sewer Impact Analysis (WSIA) is considered valid for two years from its completion date, which is February 18, 2026.

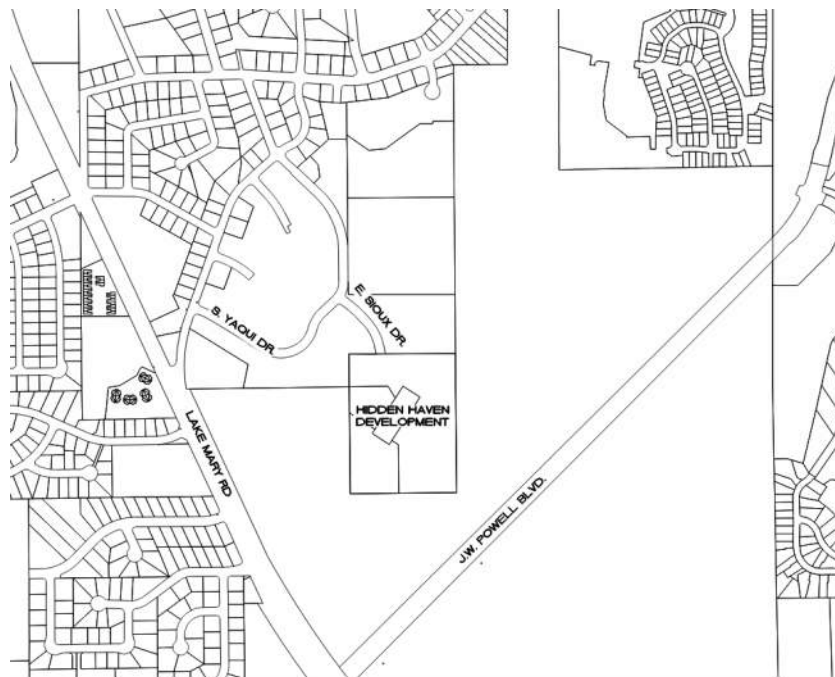


Figure 1 – Vicinity Map

II. ANALYSIS SUMMARY

On-site modifications:

Water: The project site is at the south end of East Sioux Drive and adjacent to South Yaqui Drive. The existing 6-inch water infrastructure onsite will not support this development, so all systems will have to be designed and built. A new 8-inch PVC dead-end water main is proposed to extend from the existing 8-inch asbestos cement (AC) waterline within the right-of-way of East Sioux Drive at the north end of Parcel 105-05-002C to provide service to the site and any required onsite hydrants. Additionally, a new 8-inch PVC water main is proposed within East Sioux Drive to provide dual water mains to meet the redundancy requirements in the Flagstaff Fire Code.

Per the Flagstaff International Fire Code amendments (5-02-001-0005), the following code applies and will be required by the onsite waterline extensions.

Amend Section 507.2, Type of water supply, by adding:

Water supply for a major system component as described by the American Water Works Association must provide a continuous and uninterrupted supply of fire protection water through redundancy. Fire mains in excess of 1,000 feet in length or which have more than 3 hydrants affixed shall be looped to a second source of water. All fire mains hereafter constructed shall be a minimum of 8-inch diameter but in all cases shall be of sufficient size to adequately supply the required fire flow.

Sewer: The project site is at the south end of East Sioux Drive and adjacent to South Yaqui Drive. There is no sewer infrastructure onsite to support this development, so all systems will have to be designed and built. A new 8-inch PVC sewer main is proposed to extend from the existing 8-inch vitrified clay (VC) sewer within the right-of-way of East Sioux Drive at the north end of Parcel 105-05-002C to provide service to the site.

Off-site modifications:

Water: The existing adjacent water system can provide adequate water supply and maintain system pressures **there will be no offsite modifications required by the developer.**

Sewer: The existing adjacent sewer system is adequate for the additional loading placed on the system by the proposed development and **there will be no offsite modifications required by the developer.**

In order to provide adequate downstream capacity, offsite sewer improvements will be necessary on the Rio de Flag trunk line near the Wildcat Treatment Plant. Per COF Engineering Standards section 13-05-002-0002 C.2., these may not be required of the developer on the sewer trunk line. The City will fund the design of this upgrade and will fund, for prioritized completion, the actual construction of the upsized sewer trunk line. These offsite improvements must be completed prior to connecting to the existing system.

III. WATER SYSTEM ANALYSIS

A. EXISTING WATER SYSTEM

There is an existing 8-inch asbestos cement (AC) waterline within the right-of-way of East Sioux Drive at the north end of Parcel 105-05-002C. There is also an existing 6-inch waterline within the subject property. These water mains fall within the City of Flagstaff Pressure Zone B.

B. PROPOSED WATERLINE EXTENSIONS

The WSIA Exhibit (Exhibit 1) provided by CD&E included a utility layout. A new 8-inch PVC dead-end water main is proposed to extend from the existing 8-inch asbestos cement (AC) waterline within the right-of-way of East Sioux Drive at the north end of Parcel 105-05-002C to provide service to the site and any required onsite hydrants. Additionally, a parallel new 8-inch PVC water main is proposed within East Sioux Drive to provide dual water mains to meet the redundancy requirements in the Flagstaff Fire Code.

The watermain is shown within Public Right of Way. If any appurtenances extend beyond the ROW, a public utility easement shall be dedicated per Flagstaff standards.

C. WATER SYSTEM DEMANDS

The following quantifies the anticipated water demands for the project. The following Demand Criteria is from the City of Flagstaff Code 13-09-003-0004.2

Water System Demand

Single-Family Residential

Population Density SFR	3.5 Person/unit
Dwelling Units	49 units
Population	172 residents
Average Single-Family flow	120 gpcd
Peak Single-Family Flow	300 gpcd
Average Daily Flow	20,580 gpd or 14.29 gpm
Peak Daily Flow	51,450 gpd or 35.73 gpm
Minimum Required Fire Flow = 1,000 gpm	

D. WATER SYSTEM ANALYSIS RESULTS

Bentley WaterGEMS software was used for simulations of peak daily and fire flow. The surrounding water system for this project is shown on the GIS Water Map, Exhibit 2. The analysis area for the surrounding water system is shown on Exhibits 4 and 5. This area includes Zone B within the vicinity of Lake Mary Road between Interstate 40 and JW Powell Blvd.

Results of the water demand computer analysis are in Appendix A and the Junction Map is Exhibit 4. The peak daily flows in the project vicinity range in pressures from 45.7 psi (J-9869, 20" DIP waterline within the ROW of J.W. Powell Boulevard) to 105.2 psi (J-7813, 12" PVC waterline within the ROW of South Lone Tree Road). Results are included in Appendix A. The nodes are consistent given the elevations of the junction nodes within the analyzed boundary.

The new peak daily demand load (35.73 gpm) for the project is added at junction J-13583, which is an existing node at the connection point for the project. The peak daily flow condition yields a pressure on the project site of 84.2 psi (junction J-13583). This project meets the minimum pressure requirements stated in the City of Flagstaff Engineering Standards and does not negatively impact the Flagstaff water system.

A pressure-reducing valve is required by the City of Flagstaff (COF) Engineering Design Standards (EDS) if the pressure is above 80 psi. If high pressures occur on-site the developer will be required to install pressure-reducing valves after the meter.

Based on the computer simulation of fire flow, residual pressures in the project vicinity are projected to remain above 20 psi (COF EDS 13-09) or higher during fire flow scenarios of 1,500 for commercial properties, and 1,000 gpm for the surrounding single family residential areas. Results are included in Appendix B with hydrant locations on Exhibit 5.

It is the developer's responsibility to design, acquire adequate ROW for, and construct all on-site and connecting water infrastructure per all applicable City, State, and Federal rules and regulations.

IV. SEWER SYSTEM ANALYSIS

A. EXISTING SEWER SYSTEM

The project site is at the south end of East Sioux Drive and adjacent to South Yaqui Drive. There is an existing 8-inch vitrified clay (VC) sewer within the Right-Of-Way of East Sioux Drive at the north end of Parcel 105-05-002C. The sewer line information is based on the City of Flagstaff GIS (Geographic Information System) data shown on Exhibit 3.

B. PROPOSED SEWER SYSTEM EXTENSIONS

The WSIA Exhibit (Exhibit 1) provided by CD&E included a utility layout. It is anticipated that sewer service will be provided by a new 8-inch PVC sewer main connecting to the existing sewer manhole MH 6-996 on the existing 8-inch VC sewer main within the right-of-way of East Sioux Drive at the north end of Parcel 105-05-002C.

The sewer is shown within Public Right of Way. If any appurtenances extend beyond the ROW, a public utility easement shall be dedicated per Flagstaff standards.

The proposed on-site sewer system was not analyzed as a part of this report and shall be addressed by the A/E as part of their design for their project. The A/E's engineering analysis and design shall be consistent with the requirements called out in the City of Flagstaff Engineering Standards.

C. SEWER SYSTEM FLOWRATES

The following criteria were utilized in determining the anticipated wastewater generation for this project. The following Demand Criteria is from the City of Flagstaff Code 13-09-002-0002.

The peaking factor is determined based on existing upstream population and calculated per Figure 13-09-002-01 in the Flagstaff Design Standards. The Population sewer flow rate from the development is 172. A peaking factor of 3.6 is used in this analysis.

Sewer System Design Flows

Single Family Residential

Population Density SFR	3.5 Person/unit
Dwelling Units	49 units
Population	172 residents
Average Flow	75 gpcd
Peak Factor	3.6
Average Daily Flow	12,863 gpd
Peak Daily Flow	46,305 gpd

D. SEWER SYSTEM ANALYSIS RESULTS

In the SewerGEMS model prepared for this evaluation, the sewer design flows were applied to manhole 6-996 on the existing 8-inch in East Sioux Drive. The upstream onsite system is not included in this analysis. These total design flows from the Hidden Haven project will yield an average day flow increase of 46,305 gallons per day (0.046305 MGD approximately). The downstream limit of the sewer system analysis is R-034 where the lateral line ties into the Rio De Flag Trunk line.

The capacity of this portion of the existing collection system downstream of this project is adequate to convey the proposed peak dry weather flow rates and maintain the City's required d/D pipe capacity ratio (expressed as a percentage) at less than 70%. The highest D/d in the dry weather analysis area is 42.6% in the 8-inch sewer in South Yaqui Drive between East Sioux Drive and Oakwood Village Apartments. See Appendix C and Exhibit 6 for results.

The capacity of this portion of the existing collection system downstream of this project is adequate to convey the proposed peak wet weather flow rates and maintain the d/D pipe capacity ratio (expressed as a percentage) at less than 100% (flowing full) as required by AAC R18-9-E301. The wet weather flow rates are modeled per the 2015 Flagstaff Master Plan. The simulated Inflow and Infiltration (I&I) is based on a 10 year-24hr storm. The highest D/d in the wet weather analysis is 55.2% in the 30" sewer in the Rio de Flag from manhole 6-236 to manhole R-034. See Appendix D and Exhibit 7 for results.

E. FLAGSTAFF DOWNSTREAM SEWER CAPACITY

Downstream of the study area, there exists a limiting condition relative to pipe size and capacity. The Flagstaff trunk line in the Rio De Flag is at capacity. The additional wastewater flow of (46,305 gpd peak flow) created by the Hidden Haven project cannot be accommodated within the current wastewater collection system. As currently projected, this project will put certain segments of pipes in the wastewater collection system over the maximum capacity of the peak dry weather flow identified in the City's Engineering Standards (70% d/D) and over the maximum capacity for the wet weather peak flows identified by ADEQ (pipe flowing full).

Resolving this issue is an urgent priority for the City of Flagstaff. The City of Flagstaff is actively working to fund and construct the necessary improvements to the sewer trunk line to create additional capacity. While the funding and timeline for construction of the City's improvements is still undetermined, the City is committed to completing the improvements prior to the Hidden Haven project coming online. As such, the Hidden Haven project's connection to the sewer system is contingent on the successful completion of the trunk line improvement and, therefore the City's sewer trunk line improvements must be completed before Hidden Haven receives any certificate of occupancy on the project.

Another limiting condition is relative to the wastewater treatment plant capacity. According to the City of Flagstaff's Biosolids Master Plan developed by Carollo in 2019, the City's wastewater treatment capacity for both treatment plants combined is 6.3 MGD average daily flow based on current conditions and configurations. Average daily flows for both plants measured 5.404 MGD for the calendar year 2021. The remaining treatment capacity of both plants combined has been previously committed. The City is creating additional wastewater treatment capacity currently scheduled for completion by the end of 2025. The additional wastewater demand created by the Hidden Haven project can be accommodated within the current wastewater treatment capacity projections. Therefore, the two-year reservation of capacity through the WSIA is not contingent upon the successful construction of improvements by 2025.

V. CONCLUSIONS & REQUIREMENTS

Sewer and water service to all adjacent homes and businesses must be maintained during construction and tapping for this project.

The findings of this analysis indicate that the completion of the project will comply with public water and sewer infrastructure requirements as outlined in the current City of Flagstaff Engineering Standards as long as all on-site infrastructure is designed and constructed per the Engineering Standards and as stipulated herein. All new service connections to the City water and sewer infrastructure are required to pay capacity fees for the new connection to the public water and sewer system. Deviations from the intent shown on the developer's provided preliminary drawings, and/or further development beyond what was shown on the preliminary drawings will require additional review and must gain full IDS (Inter-Division Staff) Approval. It should be noted that the City of Flagstaff Engineering Standards (Chapter 13 of the City of Flagstaff Code) is the only document used for this analysis.

This WSIA does not guarantee conformance to any other codes, standards, or specifications similar to, but not limited to, IBC, IFC, IRC, etc.

The location(s) of any required fire hydrants related to this project is (are) left to the discretion of the City of Flagstaff Fire Department per City of Flagstaff Engineering Standards and current Fire Codes. Approval by the City Engineer shall also be obtained.

Water and Sewer computer analyses were done with Bentley Systems WaterGEMS and SewerGEMS software. The existing City of Flagstaff master water and sewer models were modified to incorporate the estimated infrastructure and flows that will be required by this development.

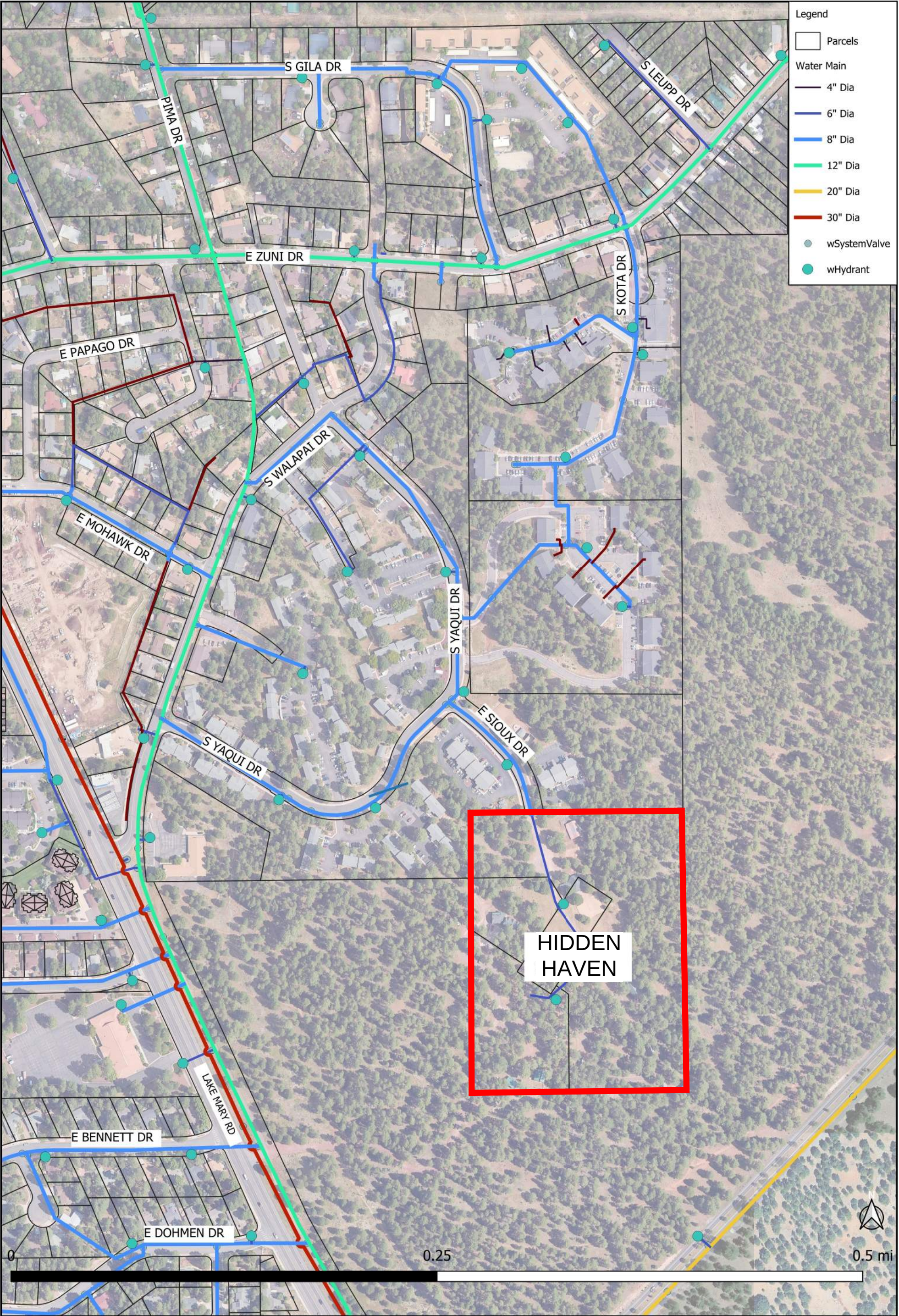
All existing utility information is based on the City of Flagstaff GIS data and other information contained within the WaterGEMS & SewerGEMS master models or provided by the City of Flagstaff engineering staff. The developer's A/E should confirm the City water system supply and wastewater collection system pipe sizes, materials, and locations as part of their design for connection to the COF water and sewer systems.

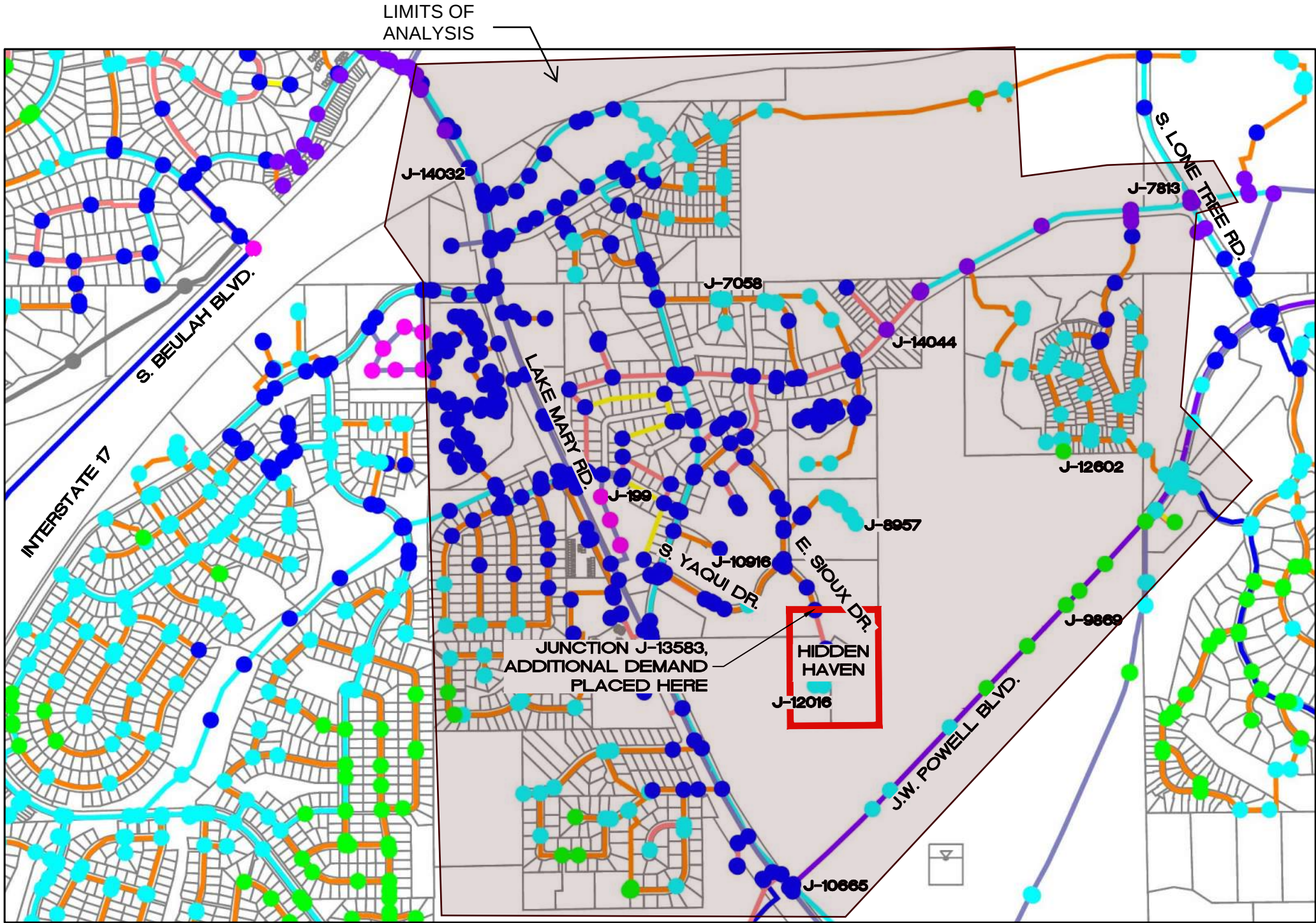
Changes to the development plan can impact the results of this Water and Sewer Impact Analysis. Those changes include modification of the development size, area of commercial space, number or type of residential units, population, etc. If such changes are made, then the developer must apply for an updated analysis and provide the proposed changes to the City of Flagstaff for review and consideration.

This WSIA is considered valid for two years from its completion date, 2/18/2026, which is the date of the engineer's seal on the cover sheet and table of contents of this WSIA. All water and sewer utility lines and treatment plant capacity reservations as a result of this study will expire at that time. This WSIA will function as place holder for the developer. The capacity assurances discussed within this report will be provided by the City for 2 years at which time the developer will need to have applied for a building permit or will be removed from the list of assured capacity. If this project is removed from the capacity assurance list, the developer will need to re-apply for capacity assurance by getting a new WSIA.



Exhibit Maps

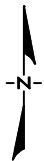




Junction: Pressure (psi)	
●	<= 20.0
●	<= 40.0
●	<= 60.0
●	<= 80.0
●	<= 100.0
●	<= 120.0
●	Other

Pipe: Diameter (in)	
—	<= 5.0
—	<= 6.0
—	<= 8.0
—	<= 10.0
—	<= 12.0
—	<= 16.0
—	<= 18.0
—	<= 24.0

NOTE: THIS MAP IDENTIFIES ALL JUNCTIONS WITHIN ZONE B. ONLY ZONE B IS ANALYZED.



NOT TO SCALE



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EXHIBIT

4

DRAWN BY: KMF

DATE: 2/10/2026

SCALE: NTS

JOB NO: 224168

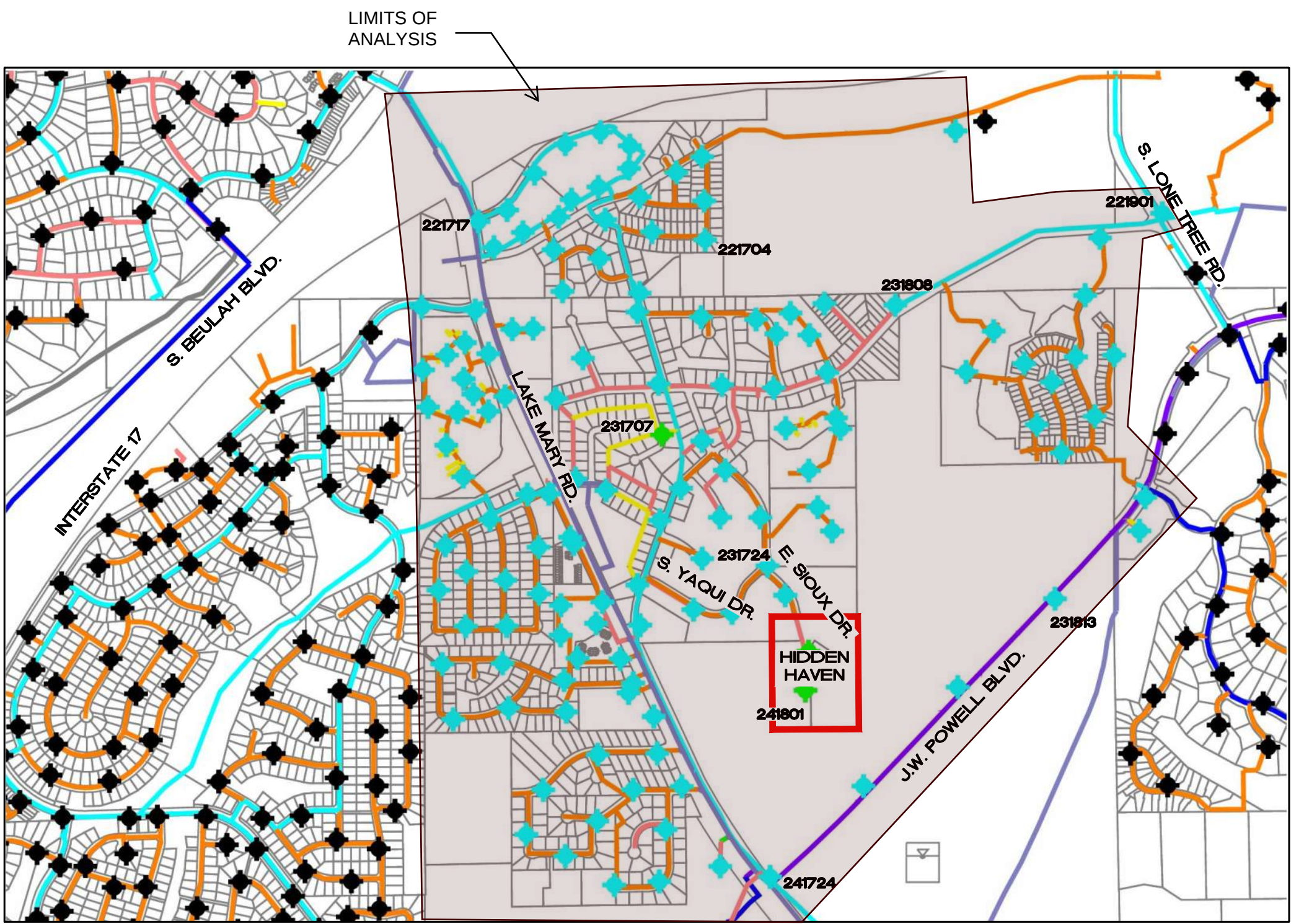
HIDDEN HAVEN

STATIC PRESSURES - PEAK FLOW

WSIA ON CALL

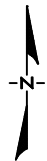
FLAGSTAFF

DATE: Feb 10, 2026 FILE: Y:\FLG\FLG-FS04\Project Docs\224000 up\224168 Cof WSIA On Call\03-Prod\03-DWGS\Hidden Haven Report Exhibits.dwg



Hydrant: Fire Flow (Available) (gpm)		Pipe: Diameter (in)	
	<= 500.00		<= 5.0
	<= 1,000.00		<= 6.0
	<= 1,500.00		<= 8.0
	<= 3,500.00		<= 10.0
	Other		<= 12.0
			<= 16.0
			<= 18.0
			<= 24.0

NOTE: THIS MAP IDENTIFIES ALL HYDRANTS WITHIN ZONE B. ONLY ZONE B IS ANALYZED.



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EXHIBIT

5

DRAWN BY: KMF

DATE: 2/10/2026

SCALE: NTS

JOB NO: 224168

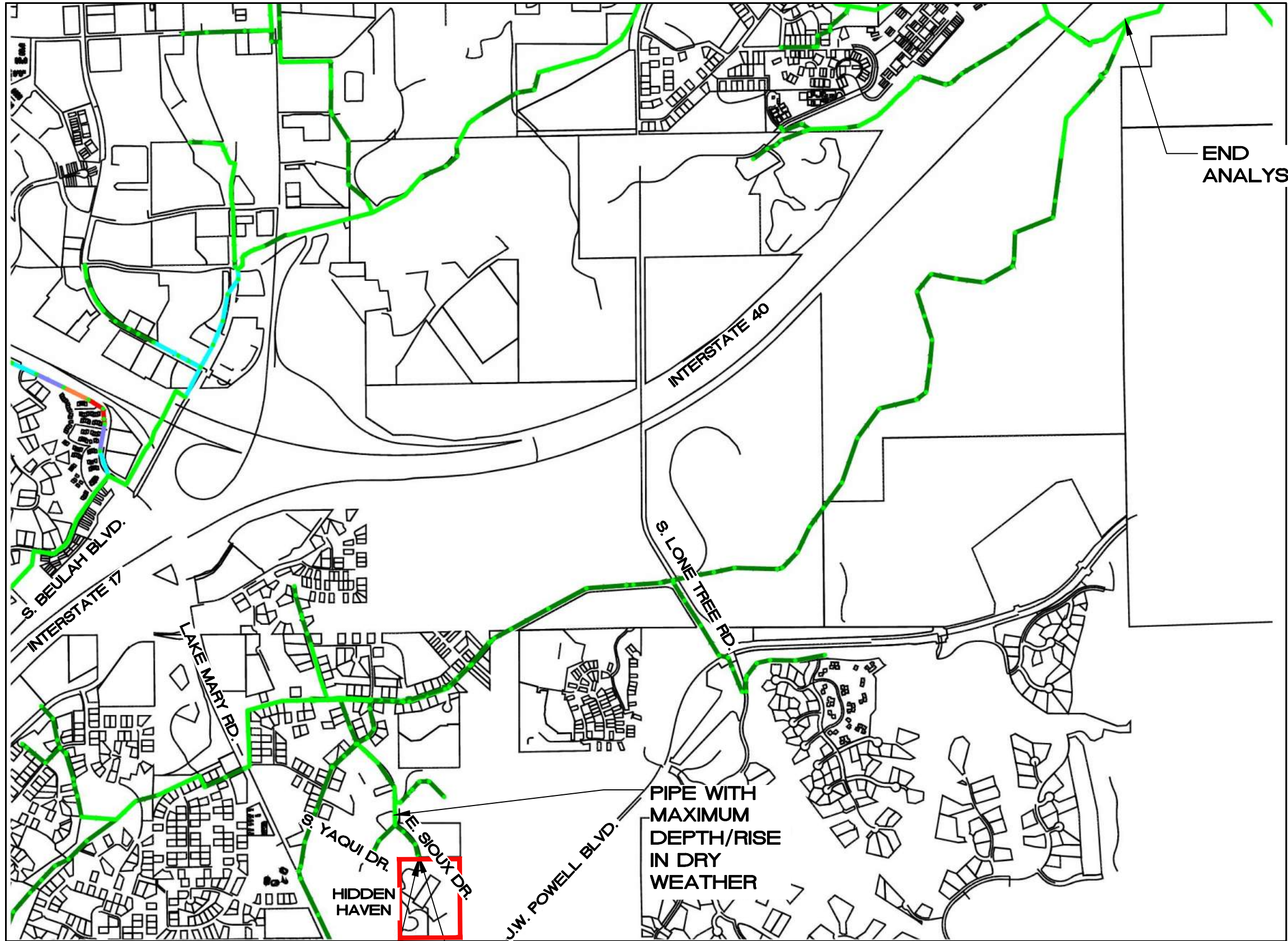
HIDDEN HAVEN

AVAILABLE FIRE FLOW

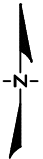
WSIA ON CALL

FLAGSTAFF

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Color Coding Legend	
Conduit: Depth (Maximum) / Rise (%)	
—	<= 30.0
—	<= 50.0
—	<= 70.0
—	<= 75.0
—	<= 80.0
—	<= 90.0
—	<= 99.9
—	Other



NOT TO SCALE



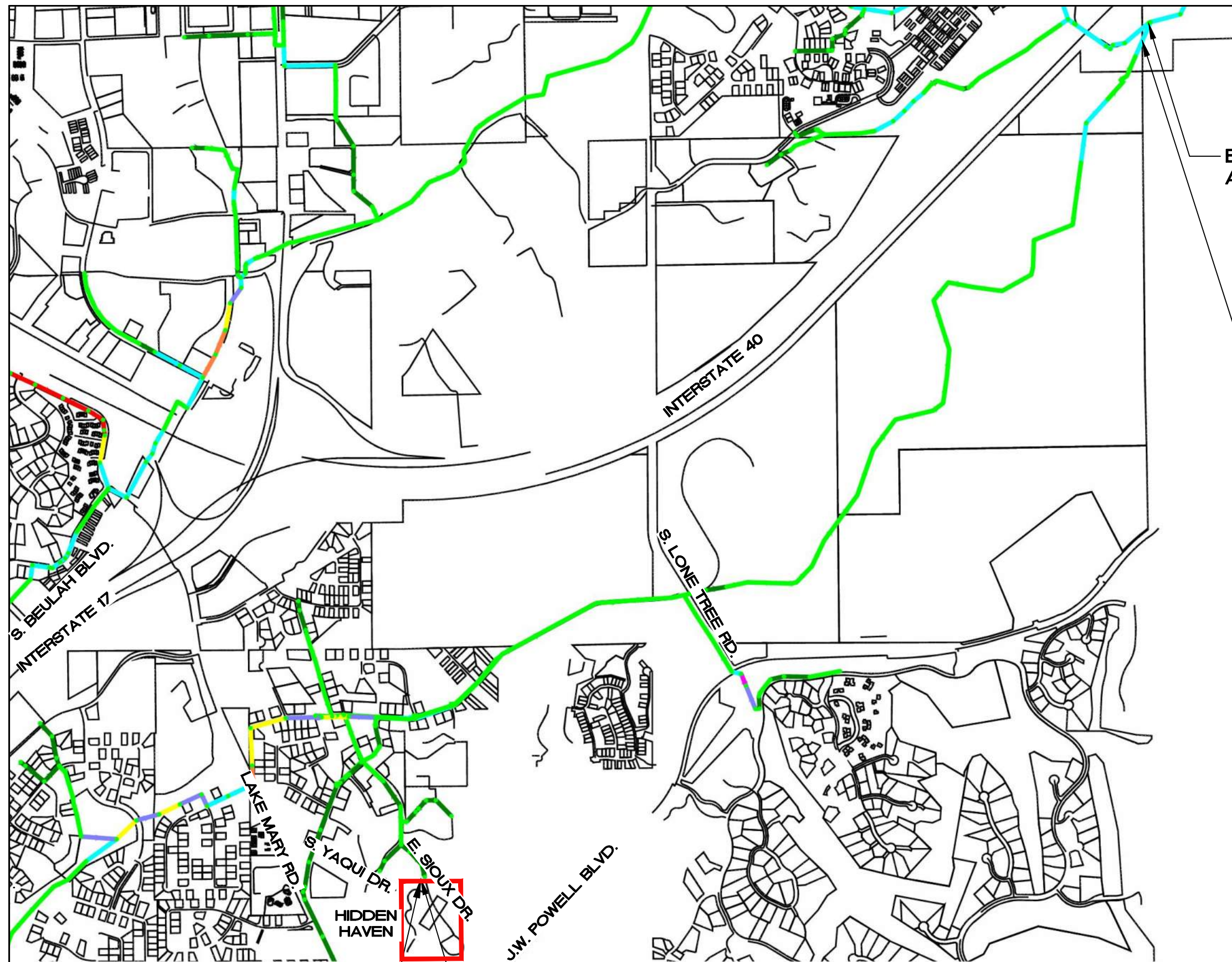
HIDDEN HAVEN
SEWER CAPACITY
DRY WEATHER

FLAGSTAFF

WSIA ON CALL

DRAWN BY:	KMF
DATE:	2/10/2026
SCALE:	NTS
JOB NO:	224168

6





Appendix A

PROPOSED CONDITIONS
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
H2S & Tru	6,902.00	55.56	95.7
J-32	6,992.96	0.00	56.5
J-33	6,992.83	0.20	56.5
J-62	6,913.93	0.00	90.6
J-69	6,915.46	0.00	89.9
J-69	6,915.46	0.00	89.9
J-70	6,915.71	0.00	89.8
J-70	6,915.71	0.00	89.8
J-72	6,988.00	27.08	58.4
J-74	6,950.00	0.00	74.9
J-77	6,976.89	0.00	63.3
J-78	6,971.00	0.00	65.8
J-85	6,905.53	0.69	94.2
J-86	6,905.48	0.00	94.2
J-89	6,930.43	0.00	83.5
J-90	6,930.29	0.00	83.6
J-145	6,915.14	0.00	90.0
J-196	6,913.30	0.00	90.9
J-197	6,913.30	0.00	90.9
J-198	6,913.30	0.00	90.9
J-199	6,913.30	0.00	90.9
J-200	6,913.68	0.00	90.8
J-201	6,913.81	0.00	90.7
J-202	6,913.74	0.00	90.7
J-203	6,913.73	0.00	90.7
J-263	6,906.97	0.00	93.6
J-265	6,882.32	0.00	104.2
J-266	6,882.31	4.89	104.2
J-361	6,906.69	0.34	93.7
J-464	6,907.94	0.00	93.1
J-465	6,907.85	0.00	93.2
J-582	6,903.63	0.00	95.0
J-583	6,903.70	1.61	95.0
J-620	6,958.07	0.00	71.5
J-621	6,958.12	0.00	71.4
J-772	6,906.48	0.00	93.8
J-773	6,906.72	0.00	93.7
J-781	6,915.44	3.59	90.0
J-841	6,915.77	0.00	89.7
J-845	6,910.15	0.00	92.3
J-867	6,908.51	0.00	92.9
J-868	6,909.39	0.00	92.5
J-895	6,918.44	0.00	88.6
J-896	6,919.16	0.00	88.3
J-901	6,923.12	0.00	86.7
J-902	6,923.30	0.00	86.6
J-919	6,909.06	0.00	92.6
J-920	6,909.47	0.00	92.5
J-983	6,909.25	0.00	92.6

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-984	6,908.77	0.97	92.8
J-1038	6,898.00	0.09	97.5
J-1039	6,898.00	0.00	97.5
J-1088	6,915.22	0.00	90.0
J-1089	6,915.64	0.15	89.8
J-1220	6,910.18	0.00	92.3
J-1221	6,910.91	0.00	91.9
J-1224	6,943.93	0.00	77.6
J-1225	6,943.74	0.00	77.7
J-1330	6,962.83	0.00	69.4
J-1331	6,962.96	0.00	69.3
J-1559	6,912.49	0.00	91.2
J-1560	6,912.79	0.00	91.1
J-1720	6,936.42	0.00	80.9
J-1721	6,936.65	0.00	80.8
J-1860	6,933.29	0.00	82.2
J-1861	6,933.98	0.00	81.9
J-1881	6,914.77	0.00	90.2
J-1882	6,914.51	0.00	90.3
J-2039	6,929.50	0.00	83.9
J-2040	6,929.85	0.00	83.8
J-2064	6,914.97	0.00	90.2
J-2091	6,907.04	1.20	93.6
J-2437	6,919.48	0.00	88.2
J-2438	6,919.43	0.00	88.2
J-2563	6,928.69	0.00	84.2
J-2564	6,928.82	0.00	84.1
J-2636	6,936.43	0.00	80.9
J-2712	6,911.58	0.00	91.7
J-2713	6,911.58	0.00	91.6
J-2876	6,932.90	0.00	82.4
J-2877	6,933.23	0.00	82.2
J-2912	6,894.00	0.04	99.2
J-2913	6,894.00	0.00	99.2
J-2914	6,895.14	0.82	98.7
J-2915	6,895.12	0.00	98.7
J-2948	6,983.66	0.00	60.3
J-3130	6,912.94	0.00	91.1
J-3227	6,942.24	0.00	78.3
J-3228	6,942.30	0.00	78.3
J-3234	6,914.00	0.00	90.6
J-3235	6,914.00	0.00	90.6
J-3427	6,912.00	0.00	91.5
J-3446	6,898.00	0.30	97.5
J-3634	6,941.39	0.00	78.7
J-3714	6,960.00	0.00	70.6
J-3715	6,960.00	0.00	70.6
J-3739	6,913.36	2.98	90.9
J-3740	6,913.19	0.00	90.9

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-3748	6,950.69	0.00	74.7
J-3755	6,973.23	0.66	64.9
J-3913	6,896.13	0.32	98.3
J-3914	6,896.28	0.00	98.2
J-3963	6,956.32	0.28	72.3
J-3964	6,957.59	0.29	71.8
J-4063	6,943.11	0.00	77.9
J-4089	6,900.21	0.16	96.5
J-4090	6,899.91	0.00	96.6
J-4145	6,923.20	0.00	86.6
J-4146	6,922.88	0.11	86.7
J-4198	6,896.00	0.00	98.3
J-4199	6,896.00	0.40	98.3
J-4240	6,930.00	0.00	83.8
J-4241	6,931.59	0.00	83.1
J-4406	6,941.86	0.00	78.5
J-4407	6,941.23	0.00	78.8
J-4468	6,907.95	0.00	93.2
J-4469	6,908.37	0.00	93.0
J-4470	6,906.00	0.00	94.0
J-4471	6,906.00	0.00	94.0
J-4509	6,898.00	0.57	97.5
J-4581	6,894.00	0.00	99.2
J-4582	6,894.00	0.45	99.2
J-4642	6,952.33	0.00	73.9
J-4643	6,951.82	0.00	74.2
J-4663	6,981.20	0.00	61.4
J-4664	6,980.49	0.00	61.7
J-4696	6,906.00	0.00	94.0
J-4728	6,906.86	0.00	93.6
J-4752	6,913.63	0.00	90.7
J-4753	6,913.80	0.00	90.7
J-4756	6,960.64	0.00	70.3
J-4757	6,960.93	0.00	70.2
J-5057	6,894.00	0.47	99.2
J-5068	6,907.47	0.00	93.3
J-5123	6,978.95	0.00	62.4
J-5124	6,978.89	0.00	62.4
J-5239	6,894.00	0.49	99.2
J-5240	6,894.00	0.00	99.2
J-5407	6,917.12	1.33	89.3
J-5408	6,917.73	0.00	89.0
J-5453	6,901.23	0.27	96.1
J-5454	6,901.35	1.44	96.0
J-5489	6,909.95	1.61	92.3
J-5507	6,898.00	0.12	97.5
J-5508	6,898.00	0.31	97.5
J-5525	6,914.38	0.00	90.4
J-5572	6,994.08	0.41	56.0

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-5582	6,906.00	0.00	94.0
J-5654	6,959.79	0.00	70.7
J-5655	6,959.85	0.00	70.6
J-5671	6,918.44	0.00	88.7
J-5672	6,919.09	0.00	88.4
J-5705	6,914.00	0.00	90.6
J-5706	6,951.57	0.00	74.2
J-5707	6,952.00	0.00	74.0
J-5825	6,967.65	0.00	67.3
J-5826	6,967.44	0.00	67.4
J-5857	6,918.99	0.00	88.4
J-5872	6,958.10	0.00	71.5
J-5893	6,955.04	0.00	72.8
J-5894	6,955.05	0.00	72.8
J-6020	6,993.40	0.14	56.2
J-6037	6,906.00	0.00	94.0
J-6059	6,953.09	0.00	73.6
J-6093	6,921.85	1.69	87.2
J-6094	6,922.57	1.60	86.9
J-6201	6,983.79	0.51	60.3
J-6202	6,983.56	0.00	60.4
J-6235	6,908.23	1.52	93.0
J-6236	6,908.58	0.08	92.9
J-6259	6,929.07	0.96	84.1
J-6303	6,880.00	0.00	105.2
J-6304	6,879.96	0.00	105.2
J-6378	6,935.34	0.13	81.3
J-6379	6,936.21	2.32	81.0
J-6404	6,983.22	0.73	60.6
J-6436	6,913.02	0.00	91.0
J-6437	6,913.11	0.00	91.0
J-6439	6,909.79	0.00	92.4
J-6454	6,950.40	0.00	74.8
J-6465	6,913.57	0.00	90.8
J-6466	6,913.45	0.00	90.9
J-6521	6,912.94	0.22	91.0
J-6522	6,913.28	0.00	90.8
J-6528	6,912.08	0.00	91.5
J-6529	6,912.35	3.25	91.4
J-6546	6,983.92	0.98	60.3
J-6605	6,916.10	7.18	89.7
J-6616	6,892.25	0.00	99.9
J-6638	6,937.62	0.86	80.3
J-6673	6,917.68	0.00	89.0
J-6861	6,931.04	0.00	83.2
J-6944	6,891.85	0.25	100.0
J-6945	6,891.41	0.00	100.2
J-7052	6,936.61	0.16	80.7
J-7053	6,937.20	1.66	80.4

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-7058	6,949.56	1.25	75.1
J-7138	6,908.34	0.00	93.1
J-7139	6,906.00	0.00	94.1
J-7157	6,944.65	0.62	77.4
J-7166	6,973.72	1.42	64.8
J-7204	6,911.59	1.28	91.5
J-7242	6,884.03	0.00	103.4
J-7389	6,912.92	0.37	91.0
J-7414	6,964.97	1.30	68.6
J-7434	7,005.10	2.69	51.2
J-7462	6,951.50	0.00	74.2
J-7496	6,922.00	1.47	87.1
J-7523	6,994.76	0.63	55.7
J-7546	6,968.60	0.00	66.9
J-7548	6,927.29	3.49	84.9
J-7602	6,925.74	0.72	85.5
J-7612	6,939.43	0.38	79.6
J-7697	6,914.00	0.82	90.6
J-7698	6,914.02	0.18	90.6
J-7740	6,949.64	0.03	75.1
J-7745	6,960.00	0.76	70.6
J-7756	6,941.99	0.00	78.4
J-7758	6,955.99	0.00	72.3
J-7813	6,880.00	0.00	105.2
J-7816	6,904.86	0.00	94.5
J-7823	6,968.12	0.15	67.1
J-7829	6,899.80	0.89	96.7
J-7861	6,921.30	0.59	87.4
J-7873	6,912.94	0.34	91.1
J-7897	6,929.82	0.87	83.8
J-7899	6,943.15	4.84	77.9
J-7910	6,885.37	0.00	102.8
J-7948	6,904.04	0.33	94.9
J-7950	6,895.64	0.31	98.5
J-7953	6,943.12	1.50	78.0
J-7977	6,927.77	0.00	84.5
J-8043	6,916.13	0.00	89.6
J-8044	6,896.79	0.39	98.0
J-8105	6,943.40	0.00	77.8
J-8116	6,967.03	0.39	67.5
J-8120	6,903.50	0.25	95.1
J-8121	6,951.98	0.88	74.2
J-8123	6,964.83	0.00	68.5
J-8160	6,908.44	0.00	92.9
J-8178	6,907.69	0.00	93.3
J-8179	6,954.70	0.96	73.0
J-8183	6,925.73	0.00	85.5
J-8193	6,922.86	1.43	86.8
J-8215	6,916.00	1.87	89.7

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-8240	6,922.39	0.00	87.0
J-8241	6,965.32	0.11	68.3
J-8247	6,941.48	1.43	78.6
J-8336	6,934.89	0.00	81.5
J-8350	6,910.79	0.00	91.9
J-8355	6,919.99	7.05	88.0
J-8357	6,969.44	0.50	66.5
J-8361	6,936.35	0.00	80.8
J-8378	6,898.98	0.87	97.0
J-8379	6,899.17	0.52	97.0
J-8401	6,959.67	0.00	70.8
J-8460	6,971.46	0.33	65.8
J-8469	6,918.34	0.00	88.7
J-8496	6,899.22	0.00	96.9
J-8497	6,899.89	0.00	96.6
J-8518	6,917.26	0.00	89.2
J-8559	6,915.23	0.00	90.1
J-8560	6,915.63	4.89	89.9
J-8600	6,911.47	0.22	91.7
J-8623	6,927.65	0.00	84.6
J-8642	6,971.37	1.10	65.8
J-8657	6,925.52	6.40	85.6
J-8672	6,915.44	0.00	90.0
J-8673	6,940.82	8.75	78.9
J-8703	6,920.66	0.00	87.7
J-8704	6,919.96	0.00	88.0
J-8742	6,921.02	0.69	87.6
J-8797	6,914.00	0.00	90.6
J-8800	6,924.82	0.00	85.8
J-8809	6,950.30	0.00	74.8
J-8844	6,916.39	1.01	89.5
J-8845	6,914.62	0.00	90.3
J-8856	6,929.18	0.00	84.0
J-8893	6,969.82	0.00	66.4
J-8899	6,925.15	0.33	85.8
J-8906	6,912.84	6.06	91.0
J-8907	6,912.82	2.06	91.0
J-8933	6,930.02	2.34	83.7
J-8938	6,899.61	0.00	96.8
J-8957	6,963.86	0.00	69.0
J-8993	6,954.99	0.50	72.8
J-9012	6,915.51	0.00	90.0
J-9042	6,919.24	0.54	88.4
J-9064	6,926.60	0.00	85.1
J-9080	6,916.71	0.00	89.4
J-9081	6,917.11	0.00	89.3
J-9085	6,919.14	0.00	88.3
J-9097	6,906.98	0.45	93.6
J-9263	7,015.28	0.00	46.7

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-9275	6,917.09	0.00	89.2
J-9286	6,912.89	2.37	91.0
J-9300	6,907.10	1.26	93.5
J-9305	6,913.17	0.79	91.0
J-9321	6,930.03	0.00	83.7
J-9322	6,921.17	0.00	87.5
J-9325	6,916.00	0.02	89.7
J-9333	6,942.64	1.68	78.2
J-9345	6,925.32	1.17	85.7
J-9353	6,909.16	26.06	92.6
J-9362	6,944.31	0.37	77.5
J-9372	6,946.11	1.95	76.7
J-9383	6,967.05	0.75	67.5
J-9394	6,923.57	0.00	86.5
J-9458	6,920.85	1.45	87.7
J-9527	6,937.84	0.73	80.3
J-9532	6,918.48	0.24	88.7
J-9592	6,928.92	0.00	84.1
J-9611	6,964.19	2.46	68.8
J-9646	6,914.00	0.00	90.6
J-9673	6,936.36	0.00	80.9
J-9729	6,956.28	0.72	72.3
J-9813	6,899.18	0.10	97.0
J-9814	6,930.23	0.00	83.5
J-9821	6,918.91	0.00	88.5
J-9840	6,914.00	0.00	90.6
J-9847	6,918.97	0.00	88.5
J-9869	7,017.75	0.00	45.7
J-9872	6,915.42	0.00	90.0
J-9873	6,914.99	0.00	90.2
J-9940	6,904.00	0.52	94.9
J-9942	6,954.57	0.88	73.1
J-9963	6,915.93	0.00	89.8
J-9976	6,914.46	0.00	90.4
J-9992	6,913.87	0.00	90.6
J-9998	6,924.99	1.49	85.9
J-10014	6,903.27	0.00	95.2
J-10015	6,902.19	0.00	95.7
J-10047	6,955.05	1.39	72.8
J-10082	6,901.55	1.14	95.9
J-10145	6,926.06	5.83	85.3
J-10146	6,936.08	2.42	81.0
J-10157	6,930.68	0.00	83.3
J-10158	6,929.00	0.00	84.0
J-10163	6,918.00	0.00	88.9
J-10183	6,965.70	0.96	68.2
J-10187	6,916.41	0.12	89.5
J-10221	6,951.33	0.09	74.4
J-10249	6,914.89	0.00	90.2

Minimum Pressure
in Project Vicinity

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-10250	6,912.93	0.00	91.1
J-10295	6,909.00	0.00	92.7
J-10350	6,927.55	0.00	84.7
J-10351	6,928.14	3.81	84.5
J-10352	6,914.93	0.00	90.1
J-10381	6,906.00	0.00	94.0
J-10386	6,909.87	0.00	92.3
J-10451	6,935.57	0.00	81.3
J-10452	6,935.36	0.00	81.4
J-10477	6,969.13	1.32	66.7
J-10489	6,912.35	0.00	91.2
J-10496	6,918.25	0.00	88.8
J-10497	6,918.73	0.00	88.6
J-10500	6,929.30	0.00	84.0
J-10501	6,930.60	0.00	83.4
J-10531	6,917.22	0.49	89.2
J-10569	6,922.77	0.29	86.8
J-10636	6,909.09	1.06	92.7
J-10654	6,910.08	0.00	92.3
J-10665	6,934.89	0.00	81.6
J-10727	6,913.27	0.00	90.9
J-10797	6,906.94	0.09	93.6
J-10814	6,915.93	0.00	89.8
J-10838	6,969.37	0.84	66.7
J-10909	6,900.01	0.00	96.6
J-10910	6,898.73	0.00	97.2
J-10916	6,916.82	0.00	89.3
J-10938	6,912.00	0.00	91.5
J-10947	6,917.27	0.00	89.1
J-10950	6,924.79	0.00	85.9
J-10959	6,901.39	0.41	96.0
J-10970	6,913.85	0.00	90.7
J-10978	6,918.00	0.00	88.9
J-10994	6,941.81	1.09	78.6
J-11083	6,921.55	0.52	87.2
J-11121	6,975.94	0.63	63.8
J-11123	6,915.44	1.81	90.0
J-11144	6,899.31	0.00	96.9
J-11185	6,905.97	0.00	94.0
J-11199	6,985.58	0.00	59.6
J-11258	6,927.05	0.00	85.0
J-11259	6,928.31	0.00	84.4
J-11315	6,915.42	0.00	90.0
J-11368	6,921.42	0.00	87.4
J-11369	6,920.50	0.00	87.8
J-11406	6,909.22	0.00	92.6
J-11475	6,963.45	0.00	69.2
J-11504	6,934.97	10.96	81.4
J-11509	6,915.20	3.46	90.1

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-11526	6,926.97	2.04	85.0
J-11540	6,896.00	0.48	98.3
J-11554	6,904.92	0.00	94.4
J-11566	6,965.82	0.00	68.1
J-11646	6,949.87	0.00	74.9
J-11708	6,944.97	0.00	77.1
J-11709	6,948.61	0.00	75.5
J-11774	6,932.41	0.43	82.6
J-11791	6,907.94	0.00	93.2
J-11802	6,951.85	0.52	74.1
J-11803	6,915.34	0.00	90.0
J-11816	6,965.84	0.00	68.0
J-11842	6,944.73	1.77	77.3
J-11895	6,908.51	0.00	92.9
J-11914	6,936.36	0.00	80.9
J-11915	6,938.41	0.17	80.0
J-11927	6,963.74	0.93	69.0
J-11930	6,932.01	12.25	82.8
J-11991	6,960.05	0.56	70.6
J-11998	6,952.86	1.18	73.7
J-11999	6,953.34	0.73	73.5
J-12009	6,881.20	0.00	104.6
J-12010	6,889.23	0.00	101.2
J-12016	6,971.57	1.94	65.6
J-12019	6,987.01	0.59	59.0
J-12040	6,966.07	0.00	68.0
J-12042	6,974.76	1.20	64.3
J-12110	6,969.40	0.58	66.5
J-12111	6,968.34	0.00	67.0
J-12129	6,894.60	0.00	99.0
J-12130	6,900.44	0.00	96.4
J-12233	6,915.07	16.39	90.1
J-12296	6,926.87	0.08	84.9
J-12335	6,966.37	88.84	67.8
J-12367	6,916.17	0.00	89.7
J-12383	6,946.79	0.00	76.3
J-12417	6,953.20	0.56	73.6
J-12440	6,914.77	0.04	90.2
J-12450	6,936.68	6.45	80.7
J-12493	6,965.83	0.00	68.1
J-12496	6,914.91	0.00	90.2
J-12497	6,922.51	0.00	86.9
J-12514	6,965.93	0.00	68.0
J-12517	6,965.31	0.38	68.3
J-12572	6,930.00	0.00	83.8
J-12602	6,988.00	0.00	58.5
J-12603	6,906.70	0.00	93.7
J-12614	6,931.24	0.14	83.1
J-12644	6,928.48	0.00	84.4

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-12657	6,914.00	0.00	90.6
J-12685	6,909.47	0.16	92.6
J-12751	6,914.26	5.23	90.4
J-12753	6,955.63	0.38	72.5
J-12797	6,914.68	0.00	90.3
J-12805	6,958.71	1.20	71.2
J-12811	6,914.00	0.00	90.6
J-12812	6,914.78	0.00	90.3
J-12846	6,987.34	0.00	58.8
J-12869	6,903.65	0.48	95.0
J-12882	6,916.99	0.00	89.3
J-12887	6,926.93	0.45	85.0
J-12909	6,913.60	0.00	90.8
J-12932	6,953.44	0.22	73.5
J-12965	6,938.38	0.00	80.0
J-13021	6,976.56	0.00	63.4
J-13049	6,996.60	0.54	54.9
J-13057	6,926.49	0.00	85.2
J-13069	6,922.27	1.31	87.0
J-13101	6,920.03	0.00	88.0
J-13102	6,955.78	0.30	72.5
J-13125	6,930.95	0.60	83.2
J-13159	6,942.59	0.25	78.1
J-13167	6,905.34	0.34	94.3
J-13233	6,915.39	0.82	90.0
J-13234	6,919.27	0.29	88.3
J-13298	6,898.63	0.00	97.2
J-13341	6,926.58	1.20	85.2
J-13366	6,969.69	1.59	66.5
J-13367	6,975.12	0.53	64.1
J-13373	6,904.00	1.44	94.9
J-13380	6,907.29	1.12	93.5
J-13511	6,987.46	0.05	58.7
J-13533	6,945.31	0.00	77.0
J-13561	6,911.46	0.00	91.7
J-13566	6,945.55	0.25	76.9
J-13578	6,905.68	1.36	94.2
J-13581	6,922.52	0.00	86.9
J-13583	6,928.63	38.38	84.2
J-13587	6,973.13	0.38	64.9
J-13664	6,960.04	0.00	70.7
J-13681	6,916.81	0.48	89.4
J-13685	6,907.14	0.00	93.6
J-13729	6,903.67	1.49	95.0
J-13766	6,920.55	0.00	87.8
J-13767	6,903.05	1.30	95.3
J-13790	6,992.83	1.34	56.5
J-13833	6,960.78	0.20	70.2
J-13850	6,946.85	0.00	76.4

Loading Added
for Hidden Haven

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)
J-13921	6,902.62	1.11	95.5
J-13955	7,005.91	0.00	50.8
J-14031	6,890.31	0.00	100.8
J-14032	6,893.05	0.00	99.7
J-14044	6,892.00	1.42	100.0
J-14057	6,923.71	1.96	86.4
J-14060	6,916.57	0.36	89.5
J-14065	6,932.00	0.00	82.9
J-14076	6,889.43	0.00	101.1
J-14083	6,973.32	0.00	64.9
J-14095	7,004.89	0.00	51.2
J-14177	6,886.07	23.44	102.5
J-14215	6,918.00	0.00	88.9



Appendix B

PROPOSED CONDITION
Additional loading due to Hidden Haven added

FlexTable: Hydrant Table

Label	Elevation (ft)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual) (psi)	Zone
221721	6,934.67	2,300.28	61.5	B
231721	6,904.96	2,295.16	38.3	B
221901	6,879.34	2,319.74	92.2	B
231710	6,919.52	2,290.21	75.2	B
241711	6,973.04	2,302.87	32.9	B
231746	6,917.70	2,294.59	67.8	B
221722	6,943.27	2,293.47	45.3	B
241720	6,984.40	2,302.10	20.5	B
221702	6,942.83	2,295.72	57.2	B
231745	6,925.35	2,286.97	64.2	B
231711	6,913.03	2,292.68	64.3	B
231729	6,901.79	2,302.58	77.4	B
231751	6,917.40	2,293.19	65.2	B
231803	6,955.16	2,300.15	41.7	B
231808	6,892.00	2,309.23	78.4	B
231715	6,908.15	2,302.75	74.5	B
221723	6,918.78	2,300.82	67.1	B
231707	6,908.98	1,495.35	20.0	B
241804	6,963.54	2,302.71	50.7	B
231817	6,970.15	2,313.58	44.0	B
231744	6,914.97	2,284.37	67.7	B
231712	6,915.55	2,294.64	55.5	B
231742	6,922.17	2,293.73	57.5	B
231726	6,935.67	2,294.36	46.5	B
231754	6,923.76	2,288.88	56.8	B
231708	6,927.36	2,302.60	56.7	B
221709	6,913.29	2,293.98	74.6	B
231719	6,906.00	2,295.58	70.6	B
231749	6,924.78	2,286.18	62.6	B
231722	6,910.17	1,673.03	20.0	B
231736	6,921.72	2,284.99	62.8	B
231902	6,986.60	2,309.10	23.1	B
241721	6,983.77	2,296.70	22.5	B
221707	6,960.22	2,306.01	47.4	B
231704	6,900.21	2,293.75	59.3	B
231755	6,931.54	2,285.73	55.8	B
221717	6,901.20	2,291.70	80.5	B
221713	6,929.45	2,291.24	65.7	B
231813	7,014.29	2,307.47	33.7	B
241713	6,973.58	2,302.73	26.5	B
241706	6,922.37	2,302.33	65.2	B
231703	6,924.12	2,294.47	65.3	B
231701	6,943.00	2,302.71	46.0	B
231706	6,901.13	2,294.12	65.6	B
231805	6,895.62	2,297.23	66.4	B
221715	6,905.63	2,292.57	77.9	B
231824	6,913.60	2,071.22	21.3	B
231815	6,936.01	2,309.14	56.8	B

Minimum Available
Fire Flow in
Project Vicinity



FlexTable: Hydrant Table

Label	Elevation (ft)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual) (psi)	Zone
231804	6,938.54	2,298.54	44.6	B
231727	6,912.90	1,788.83	20.0	B
231753	6,915.27	2,293.45	60.5	B
221805	6,885.80	2,313.83	85.5	B
221711	6,942.62	2,293.43	62.4	B
231730	6,949.58	2,304.95	49.1	B
231705	6,913.01	2,301.22	54.6	B
241703	6,919.89	2,295.44	53.6	B
231823	6,962.62	2,313.63	43.3	B
221720	6,933.87	2,296.04	65.9	B
221704	6,964.04	2,300.03	44.3	B
241718	6,936.11	2,293.76	56.6	B
241717	6,920.45	2,297.34	61.0	B
241805	6,985.00	2,310.75	42.0	B
231747	6,912.00	2,294.30	71.9	B
231702	6,930.68	2,294.51	53.6	B
231806	6,894.00	2,298.71	65.7	B
231820	6,966.65	2,310.70	42.8	B
231716	6,919.58	2,301.72	61.5	B
231816	6,967.83	2,248.80	20.0	B
231720	6,914.00	2,287.86	77.5	B
231718	6,916.00	2,296.15	52.4	B
221719	6,913.93	2,297.39	74.7	B
231743	6,932.11	2,297.50	50.1	B
231713	6,925.49	2,302.02	60.3	B
231737	6,946.62	2,293.96	49.1	B
231818	6,984.74	2,309.25	37.0	B
231809	6,960.13	2,097.95	20.0	B
241704	6,917.24	2,293.93	66.4	B
231733	6,912.00	2,287.44	75.4	B
231717	6,916.00	2,291.40	56.8	B
231812	6,912.11	2,186.09	29.6	B
221712	6,943.99	2,291.79	61.2	B
241722	6,972.59	2,295.30	33.7	B
231739	6,956.45	2,286.91	49.1	B
221710	6,923.27	2,297.61	71.1	B
241724	6,934.16	2,301.66	64.1	B
231732	6,914.00	2,292.24	56.4	B
241709	6,924.50	2,295.79	63.7	B
231901	6,969.96	2,311.04	53.4	B
231735	6,919.82	2,284.26	72.0	B
231731	6,911.36	2,294.47	71.3	B
231748	6,916.00	2,291.29	70.2	B
241715	6,943.87	2,294.71	51.3	B
241723	6,954.17	2,301.28	42.6	B
231810	6,963.18	1,860.15	20.0	B
221706	6,955.55	2,298.36	47.9	B
231801	6,913.74	1,657.88	20.0	B

FlexTable: Hydrant Table

Label	Elevation (ft)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual) (psi)	Zone
221708	6,912.57	2,300.71	71.6	B
221714	6,909.26	2,293.03	74.8	B
241714	6,955.17	2,294.25	37.5	B
221716	6,909.17	2,296.80	76.9	B
231819	6,968.15	2,241.13	20.0	B
231814	6,910.32	2,311.11	68.8	B
231811	6,942.40	1,824.78	20.0	B
231821	6,951.47	2,309.84	51.8	B
241707	6,964.91	2,302.81	33.0	B
241801	6,967.11	1,040.22	21.0	B
241708	6,944.97	2,299.25	46.2	B
241710	6,940.35	2,294.64	53.4	B
241702	6,922.59	2,295.75	64.6	B
241705	6,916.00	2,295.62	69.7	B
231741	6,942.86	2,286.31	56.2	B
231750	6,928.28	2,285.76	59.2	B
231802	6,949.26	2,307.24	42.7	B
241716	6,995.97	2,279.37	20.0	B
231709	6,913.18	2,294.51	79.0	B
231738	6,930.40	2,285.39	59.5	B
231728	6,896.86	2,300.29	61.8	B
231825	6,906.18	2,243.48	31.3	B
231740	6,926.88	2,285.42	64.0	B
231714	6,952.13	2,302.39	46.7	B
231752	6,912.03	2,286.10	57.3	B
231822	6,952.00	2,308.89	47.4	B
231723	6,903.99	2,295.24	75.3	B
231725	6,899.79	2,295.79	61.7	B
241719	6,955.12	2,301.82	37.5	B
221705	6,938.35	2,300.01	60.8	B
241802	6,936.21	1,369.61	33.7	B
231724	6,916.50	2,298.56	55.4	B
231734	6,913.61	2,290.59	77.2	B
221703	6,925.83	2,293.34	70.0	B
221718	6,910.00	2,291.76	72.9	B
231807	6,924.43	2,293.65	37.9	B
241701	6,936.21	2,301.27	28.2	B
221701	6,964.80	2,299.36	46.6	B
241712	7,006.01	2,036.41	20.0	B
H-13	6,984.00	2,305.76	33.5	B

Available Fire
Flow at Project
Connection Point



Appendix C

Flagstaff ADWF

DRY PEAK SEWER FLOW ANALYSIS

Current Time: 0.50 hours

Start Node	Stop Node	Diameter (in)	Length (User Defined) (ft)	Length (Scaled) (ft)	Manning's n	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Flow (Maximum) (gpd)	Depth (Maximum) / Rise (%)	Capacity (Full Flow) (gpd)
6-996	6-997	8.0	137.2	137.2	0.013	6,910.98	6,910.44	0.00394	54,979	23.7	490,025
6-997	6-998	8.0	186.4	186.4	0.013	6,910.44	6,909.44	0.00537	74,718	23.5	572,091
6-998	6-060	8.0	115.2	115.2	0.013	6,909.44	6,908.55	0.00773	74,712	22.3	686,442
6-060	6-143	8.0	245.0	245.0	0.013	6,908.55	6,906.65	0.00776	74,675	42.6	687,792
6-143	6-059	8.0	160.8	160.8	0.013	6,906.65	6,906.58	0.00044	123,494	41.7	162,962
6-059	6-058	8.0	325.6	325.6	0.013	6,906.58	6,896.86	0.02985	123,485	25.8	1,349,347
6-058	6-057	8.0	299.4	299.4	0.013	6,896.86	6,895.16	0.00568	124,035	33.2	588,456
6-057	6-056	10.0	192.9	192.9	0.013	6,895.16	6,894.54	0.00321	131,944	26.7	802,877
6-056	6-039	10.0	347.6	347.6	0.013	6,894.54	6,892.98	0.00449	133,210	29.8	948,566
6-039	6-038	10.0	350.4	350.4	0.013	6,892.98	6,891.29	0.00482	248,859	34.2	983,350
6-038	6-037	10.0	232.0	232.0	0.013	6,891.29	6,890.09	0.00517	248,825	33.0	1,018,321
6-037	6-036	10.0	193.3	193.3	0.013	6,890.09	6,888.87	0.00631	248,803	37.7	1,124,956
6-036	6-033	10.0	408.4	408.4	0.013	6,888.87	6,887.78	0.00267	248,754	37.8	731,505
6-033	6-031	10.0	378.6	378.6	0.013	6,887.78	6,885.44	0.00618	248,668	33.7	1,113,173
6-031	6-028	10.0	327.5	327.5	0.013	6,885.44	6,883.44	0.00611	248,601	26.0	1,106,548
6-028	6-217	10.0	33.3	33.3	0.011	6,883.44	6,881.49	0.05850	248,597	32.7	4,047,561
6-217	6-216	21.0	41.6	41.6	0.011	6,881.49	6,881.22	0.00648	1,078,030	24.7	9,744,650
6-216	6-215	21.0	206.5	206.5	0.011	6,881.22	6,880.49	0.00354	1,078,436	26.6	7,196,382
6-215	6-214	21.0	461.3	461.3	0.011	6,880.49	6,879.00	0.00323	1,078,425	25.6	6,878,349
6-214	6-213	21.0	468.0	468.0	0.011	6,879.00	6,876.76	0.00479	1,078,363	24.8	8,372,765
6-213	6-212	21.0	434.1	434.1	0.011	6,876.76	6,874.69	0.00477	1,104,327	22.4	8,356,861
6-212	6-706	21.0	77.5	77.5	0.011	6,874.69	6,873.77	0.01188	1,104,316	24.0	13,189,031
6-706	6-211	21.0	291.4	291.4	0.011	6,873.77	6,872.93	0.00288	1,127,449	26.4	6,498,015
6-211	6-901	21.0	141.1	141.1	0.011	6,872.93	6,872.22	0.00503	1,127,439	26.2	8,585,842
6-901	6-210	21.0	226.1	226.1	0.011	6,872.22	6,871.09	0.00500	1,385,182	24.0	8,554,865
6-210	6-266	24.0	225.1	225.1	0.011	6,871.09	6,867.94	0.01400	1,385,178	17.7	20,441,835
6-266	6-265	24.0	228.2	228.2	0.011	6,867.94	6,864.89	0.01337	1,385,173	19.2	19,975,865
6-265	6-264	24.0	463.6	463.6	0.013	6,864.89	6,859.99	0.01057	1,385,154	21.0	15,030,238
6-264	6-263	24.0	57.7	57.7	0.013	6,859.99	6,859.49	0.00866	1,385,136	19.8	13,608,064
6-263	6-262	24.0	236.8	236.8	0.011	6,859.49	6,856.49	0.01267	1,385,133	19.9	19,446,570
6-262	6-261	24.0	304.7	304.7	0.011	6,856.49	6,854.69	0.00591	1,385,118	23.5	13,279,547
6-261	6-260	24.0	253.4	253.4	0.013	6,854.69	6,853.46	0.00485	1,403,607	24.2	10,186,928
6-260	6-259	24.0	338.8	338.8	0.011	6,853.46	6,851.79	0.00493	1,403,602	22.1	12,131,290
6-259	6-258	24.0	512.4	512.4	0.011	6,851.79	6,847.49	0.00839	1,504,434	20.4	15,828,541
6-258	6-257	24.0	398.2	398.2	0.011	6,847.49	6,842.09	0.01356	1,702,638	19.7	20,122,370
6-257	6-256	24.0	412.3	412.3	0.011	6,842.09	6,836.49	0.01358	1,702,622	20.5	20,137,955
6-256	6-255	24.0	132.5	132.5	0.013	6,836.49	6,834.49	0.01509	1,702,617	19.4	17,960,354
6-255	6-254	24.0	289.6	289.6	0.011	6,834.49	6,828.19	0.02175	1,702,614	22.3	25,485,343
6-254	6-253	24.0	282.0	282.0	0.013	6,828.19	6,826.59	0.00567	1,713,980	25.3	11,012,342
6-253	6-252	24.0	272.0	272.0	0.011	6,826.59	6,824.76	0.00673	1,713,968	23.5	14,172,024
6-252	6-251	24.0	277.3	277.3	0.011	6,824.76	6,822.91	0.00667	1,713,956	24.4	14,112,614
6-251	6-250	24.0	244.4	244.4	0.013	6,822.91	6,821.19	0.00704	1,713,953	25.2	12,266,209
6-250	6-249	24.0	272.4	272.4	0.011	6,821.19	6,819.79	0.00514	1,713,940	25.3	12,387,244
6-249	6-248	24.0	304.1	304.1	0.011	6,819.79	6,818.19	0.00526	1,713,937	23.3	12,532,853
6-248	6-247	24.0	358.1	358.1	0.011	6,818.19	6,814.49	0.01033	1,713,924	22.7	17,562,674
6-247	6-246	24.0	84.4	84.4	0.011	6,814.49	6,813.99	0.00592	1,713,914	23.3	13,297,543
6-246	6-245	24.0	283.6	283.6	0.011	6,813.99	6,811.69	0.00811	1,713,908	22.8	15,560,882
6-245	6-244	24.0	443.9	443.9	0.011	6,811.69	6,808.39	0.00743	1,713,900	22.4	14,897,428
6-244	6-243	24.0	178.0	182.4	0.011	6,808.39	6,806.29	0.01180	1,923,475	21.9	18,769,110
6-243	6-242	24.0	483.8	483.8	0.011	6,806.29	6,801.09	0.01075	1,923,464	27.2	17,912,861
6-242	6-241	24.0	422.5	422.5	0.011	6,801.09	6,799.99	0.00260	1,978,954	34.5	8,816,840
6-241	6-240	24.0	341.7	341.7	0.013	6,799.99	6,799.18	0.00237	2,023,543	36.0	7,118,777
6-240	6-239	24.0	241.4	241.4	0.013	6,799.18	6,798.59	0.00244	2,023,528	28.4	7,228,035

HIDDEN HAVEN
ADDITIONAL LOADING
ADDED AT MH 6-996

MAXIMUM D/d OBSERVED
IN MODEL

Flagstaff ADWF

Current Time: 0.50 hours

Start Node	Stop Node	Diameter (in)	Length (User Defined) (ft)	Length (Scaled) (ft)	Manning's n	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Flow (Maximum) (gpd)	Depth (Maximum) / Rise (%)	Capacity (Full Flow) (gpd)
6-239	6-238	24.0	34.0	34.0	0.013	6,798.59	6,797.94	0.01912	2,023,536	21.4	20,218,091
6-238	6-237	24.0	79.0	79.0	0.013	6,797.94	6,796.44	0.01898	2,023,534	27.0	20,140,798
6-237	6-236	24.0	226.8	226.8	0.013	6,796.44	6,795.63	0.00357	2,023,531	29.7	8,736,948
6-236	R-034	24.0	398.5	398.5	0.013	6,795.63	6,792.54	0.00775	2,023,514	33.8	12,874,609



Appendix D

Flagstaff ADWF

WET PEAK SEWER FLOW ANALYSIS

Current Time: 0.08 hours

Start Node	Stop Node	Diameter (in)	Length (User Defined) (ft)	Length (Scaled) (ft)	Manning's n	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Flow (Maximum) (gpd)	Depth (Maximum) / Rise (%)	Capacity (Full Flow) (gpd)
6-996	6-997	8.0	137.2	137.2	0.013	6,910.98	6,910.44	0.00394	54,978	23.7	490,025
6-997	6-998	8.0	186.4	186.4	0.013	6,910.44	6,909.44	0.00537	74,716	23.5	572,091
6-998	6-060	8.0	115.2	115.2	0.013	6,909.44	6,908.55	0.00773	74,710	22.4	686,442
6-060	6-143	8.0	245.0	245.0	0.013	6,908.55	6,906.65	0.00776	80,399	43.7	687,792
6-143	6-059	8.0	160.8	160.8	0.013	6,906.65	6,906.58	0.00044	130,463	42.8	162,962
6-059	6-058	8.0	325.6	325.6	0.013	6,906.58	6,896.86	0.02985	133,532	27.2	1,349,347
6-058	6-057	8.0	299.4	299.4	0.013	6,896.86	6,895.16	0.00568	140,037	38.4	588,456
6-057	6-056	10.0	192.9	192.9	0.013	6,895.16	6,894.54	0.00321	200,141	33.1	802,877
6-056	6-039	10.0	347.6	347.6	0.013	6,894.54	6,892.98	0.00449	203,671	39.2	948,566
6-039	6-038	10.0	350.4	350.4	0.013	6,892.98	6,891.29	0.00482	438,190	46.7	983,350
6-038	6-037	10.0	232.0	232.0	0.013	6,891.29	6,890.09	0.00517	443,791	45.2	1,018,321
6-037	6-036	10.0	193.3	193.3	0.013	6,890.09	6,888.87	0.00631	447,481	53.0	1,124,956
6-036	6-033	10.0	408.4	408.4	0.013	6,888.87	6,887.78	0.00267	460,637	54.4	731,505
6-033	6-031	10.0	378.6	378.6	0.013	6,887.78	6,885.44	0.00618	491,608	49.1	1,113,173
6-031	6-028	10.0	327.5	327.5	0.013	6,885.44	6,883.44	0.00611	502,153	37.7	1,106,548
6-028	6-217	10.0	33.3	33.3	0.011	6,883.44	6,881.49	0.05850	506,929	52.3	4,047,561
6-217	6-216	21.0	41.6	41.6	0.011	6,881.49	6,881.22	0.00648	2,746,515	40.9	9,744,650
6-216	6-215	21.0	206.5	206.5	0.011	6,881.22	6,880.49	0.00354	2,747,285	43.6	7,196,382
6-215	6-214	21.0	461.3	461.3	0.011	6,880.49	6,879.00	0.00323	2,748,998	41.8	6,878,349
6-214	6-213	21.0	468.0	468.0	0.011	6,879.00	6,876.76	0.00479	2,751,166	40.1	8,372,765
6-213	6-212	21.0	434.1	434.1	0.011	6,876.76	6,874.69	0.00477	2,780,732	36.1	8,356,861
6-212	6-706	21.0	77.5	77.5	0.011	6,874.69	6,873.77	0.01188	2,785,105	38.8	13,189,031
6-706	6-211	21.0	291.4	291.4	0.011	6,873.77	6,872.93	0.00288	2,859,570	43.3	6,498,015
6-211	6-901	21.0	141.1	141.1	0.011	6,872.93	6,872.22	0.00503	2,862,696	43.4	8,585,842
6-901	6-210	21.0	226.1	226.1	0.011	6,872.22	6,871.09	0.00500	3,770,047	40.0	8,554,865
6-210	6-266	24.0	225.1	225.1	0.011	6,871.09	6,867.94	0.01400	3,772,104	29.3	20,441,835
6-266	6-265	24.0	228.2	228.2	0.011	6,867.94	6,864.89	0.01337	3,773,974	31.8	19,975,865
6-265	6-264	24.0	463.6	463.6	0.013	6,864.89	6,859.99	0.01057	3,774,846	35.1	15,030,238
6-264	6-263	24.0	57.7	57.7	0.013	6,859.99	6,859.49	0.00866	3,778,208	32.9	13,608,064
6-263	6-262	24.0	236.8	236.8	0.011	6,859.49	6,856.49	0.01267	3,778,527	33.2	19,446,570
6-262	6-261	24.0	304.7	304.7	0.011	6,856.49	6,854.69	0.00591	3,779,868	39.4	13,279,547
6-261	6-260	24.0	253.4	253.4	0.013	6,854.69	6,853.46	0.00485	3,794,400	40.5	10,186,928
6-260	6-259	24.0	338.8	338.8	0.011	6,853.46	6,851.79	0.00493	3,796,614	36.5	12,131,290
6-259	6-258	24.0	512.4	512.4	0.011	6,851.79	6,847.49	0.00839	3,900,061	32.5	15,828,541
6-258	6-257	24.0	398.2	398.2	0.011	6,847.49	6,842.09	0.01356	4,102,540	30.6	20,122,370
6-257	6-256	24.0	412.3	412.3	0.011	6,842.09	6,836.49	0.01358	4,104,811	31.9	20,137,955
6-256	6-255	24.0	132.5	132.5	0.013	6,836.49	6,834.49	0.01509	4,107,944	30.1	17,960,354
6-255	6-254	24.0	289.6	289.6	0.011	6,834.49	6,828.19	0.02175	4,108,827	34.9	25,485,343
6-254	6-253	24.0	282.0	282.0	0.013	6,828.19	6,826.59	0.00567	4,122,165	39.8	11,012,342
6-253	6-252	24.0	272.0	272.0	0.011	6,826.59	6,824.76	0.00673	4,123,847	37.0	14,172,024
6-252	6-251	24.0	277.3	277.3	0.011	6,824.76	6,822.91	0.00667	4,125,449	38.5	14,112,614
6-251	6-250	24.0	244.4	244.4	0.013	6,822.91	6,821.19	0.00704	4,127,537	39.9	12,266,209
6-250	6-249	24.0	272.4	272.4	0.011	6,821.19	6,819.79	0.00514	4,129,043	39.9	12,387,244
6-249	6-248	24.0	304.1	304.1	0.011	6,819.79	6,818.19	0.00526	4,131,265	36.5	12,532,853
6-248	6-247	24.0	358.1	358.1	0.011	6,818.19	6,814.49	0.01033	4,132,887	35.6	17,562,674
6-247	6-246	24.0	84.4	84.4	0.011	6,814.49	6,813.99	0.00592	4,134,869	36.7	13,297,543
6-246	6-245	24.0	283.6	283.6	0.011	6,813.99	6,811.69	0.00811	4,135,187	35.8	15,560,882
6-245	6-244	24.0	443.9	443.9	0.011	6,811.69	6,808.39	0.00743	4,136,972	34.6	14,897,428
6-244	6-243	24.0	178.0	182.4	0.011	6,808.39	6,806.29	0.01180	4,349,093	33.1	18,769,110
6-243	6-242	24.0	483.8	483.8	0.011	6,806.29	6,801.09	0.01075	4,349,715	41.8	17,912,861
6-242	6-241	24.0	422.5	422.5	0.011	6,801.09	6,799.99	0.00260	4,405,196	53.8	8,816,840
6-241	6-240	24.0	341.7	341.7	0.013	6,799.99	6,799.18	0.00237	4,450,481	55.1	7,118,777
6-240	6-239	24.0	241.4	241.4	0.013	6,799.18	6,798.59	0.00244	4,452,097	42.2	7,228,035

HIDDEN HAVEN
ADDITIONAL LOADING
ADDED AT MH 6-996

Flagstaff ADWF

Current Time: 0.08 hours

Start Node	Stop Node	Diameter (in)	Length (User Defined) (ft)	Length (Scaled) (ft)	Manning's n	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Flow (Maximum) (gpd)	Depth (Maximum) / Rise (%)	Capacity (Full Flow) (gpd)
6-239	6-238	24.0	34.0	34.0	0.013	6,798.59	6,797.94	0.01912	4,453,979	31.9	20,218,091
6-238	6-237	24.0	79.0	79.0	0.013	6,797.94	6,796.44	0.01898	4,454,039	40.7	20,140,798
6-237	6-236	24.0	226.8	226.8	0.013	6,796.44	6,795.63	0.00357	4,454,393	45.0	8,736,948
6-236	R-034	24.0	398.5	398.5	0.013	6,795.63	6,792.54	0.00775	4,454,872	55.2	12,874,609

MAXIMUM D/d OBSERVED
IN MODEL