FINAL WATER REPORT

SCOTTSDALE CITY CENTER

7201 East Camelback Road
Scottsdale, AZ 85251

Prepared For:

SMITHGROUP

455 North 3rd Street, Suite 250
Phoenix, Arizona 85004
602.265.2200 www.smithgroup.com

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 Levi Dillon **DATE** 8/19/2025

Address applicable comments below and herein concurrent to or within the improvement plan submittal:

1) **Stipulation**: As shown in the utility plan remove (or abandon if approved) applicable mains and install new sections of 8-inch and 16-inch City standard DIP public water main with related, realignments, appurtenances, and interconnects as shown. Summary: Approximately 200ft of 8-inch DIP on Shoeman Lane. Approximately 50ft of 16-inch DIP along Camelback Rd. Approximately 25ft of 8-inch DIP on Brown Ave. Approximately 100ft of 8-inch DIP along Camelback Rd.
2) Brown Ave: Services cannot be directly connected to a16-inch trans. main. Was also a zoning case comment and a round 2 BOD comment. Install 8-inch public main stub to connect services as shown. DS&PM 6-1.416, K. No service or fire line connections will be made directly to water lines 14 inches or larger in diameter.
3) Hydrant line connection to 20-inch transmission main on Shoeman Lane: This connection is not allowed unless there is no other options and/or there are extraordinary circumstances (none described in report). DS&PM 6-1.416, K. No service or fire line connections will be made directly to water lines 14 inches or larger in diameter.
4) Connection to Scottsdale Rd main: A size on size tapping sleeve is not allowed. Provide a cut in tee with valves on all legs (or at least 2 of the 3 legs). DS&PM 6-1.408 & 6-1.409
5) Special Water Resources review items: confirm 16" transmission main material and submit detailed specifications, details, and any applicable calculations within the plan submittal for Water Resource review and approval. Submit all details with 16" and 20" transmission main tapping sleeve/saddle with the plan submittal for Water Resource review and approval.
6) Review and address applicable comments, questions, and suggestions within the BOD report utility plan.

Prepared by:

SEG

Registered Professional Engineer (Civil)
CERTIFICATE NO.
45621
ALI SAMIH FAKIH
Date Signed 07/23/25
ARIZONA, U.S.A.

Sustainability Engineering Group

5240 N. 16th Street, Suite 105
Phoenix, AZ 85016
480.588.7226 www.azSEG.com

Project Number: 221117

Submittal: July 06, 2023 (DRB)
Revised Submittal: September 15, 2023 (DRB)
Revised Submittal: November 1, 2024 (DRB)
2nd Submittal: November 12, 2024 (DRB)
3rd Submittal: February 21, 2025 (DRB)
4th Submittal: July 23, 2025 (DRB)

Case No.: 9-ZN-2020; 1-II-2020; 19-DR-2023 **Plan Check No.: TBD**

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LIST OF FIGURES:

APPENDICIES:

1. INTRODUCTION

1.1. SUMMARY OF PROPOSED DEVELOPMENT:

City Center is a multi-story development located southeast of the Scottsdale Road/Camelback Road intersection and will replace an existing commercial/office building. This report is a refinement of the *Water Master Plan for Scottsdale Collective*, dated July 23, 2021. Refer to **FIGURE 1** for a Vicinity Map and **FIGURE 2** highlighting major developments along the Camelback corridor.

This report presents a water infrastructure analysis for the redevelopment of the seven commercial parcels comprising City Center. They will be replatted for high density residential and retail uses. The intent of this design report is to evaluate the local water infrastructure providing service to City Center compliant to City, County and State requirements.

1.2. LEGAL DESCRIPTIONS AND AREA:

The following parcels are all located within Section 23, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Scottsdale, Arizona.

- 173-41-016B, 173-41-017A, 173-41-006A, 173-41-005, and 173-41-004.

The parcels total 131,786 square feet or 3.03 acres, more or less.

2. DESIGN DOCUMENTATION

2.1. DESIGN COMPLIANCE:

Preparation of this report has been done in accordance with the City of Scottsdale Design Standards & Policies Manual (DS&PM) 2018[1] and requirements of Maricopa County Environmental Services Department under jurisdiction of the State of Arizona. Design calculations for the proposed water infrastructure are all based on the DS+PM recommendations in Section 6-1.403.

3. EXISTING CONDITIONS

3.1. EXISTING ZONING & LAND USE:

This existing parcels are zoned D/DMU-3 PBD DO, Downtown Multiple Use – Type 3. The four northern parcels are presently developed for commercial office use. The three southern parcels are presently undeveloped and being utilized for parking and construction yards.

3.2. EXISTING TOPOGRAPHY, VEGETATION AND LANDFORM FEATURES:

This area of Scottsdale is relatively flat with minor grades sloping to the Indian Bend Wash approximately one mile to the east. All parcels have been previously developed with buildings and pavement covering most of the properties and minor site landscaping typical of the downtown vicinity.

3.3. EXISTING UTILITIES:

Public water lines abut all sides of the development with a 6" ACP looping through the property from Camelback Road to Brown Avenue.

- Camelback Road: 8" ACP, 12" ACP, 16" DIP and a fire hydrant.
- Brown Avenue: 16" DIP and two fire hydrants.
- Shoeman Lane: 6" ACP, 20" DIP and a fire hydrant.
- Scottsdale Road: 8" CIP and a fire hydrant.

Fire Hydrants and water meters exist around the site's periphery. The water meters to be removed will be inventoried for development fee credit. Refer to **FIGURE 4** for City Quarter Section Map (QS 17-45) and **APPENDIX IV** for the Utility Line Potholes).

3.4. FIRE HYDRANT FLOW TESTING:

Flow testing was performed on July 21, 2025, at 7:30 am. A flow test completed with the Scottsdale Collective Master Plan as performed on April 13, 2020, at 6:55 am is included for reference. Results of the tests, including corresponding supply curves, are shown in **APPENDIX I.** Table 1 summarizes the results of those tests.

Table 1 - SUMMARY OF FIRE HYDRANT FLOW TESTING

Test Date	Test Description	STATIC PRESSURE (psi)	RESIDUAL PRESSURE (psi)	FLOWING GPM	GPM @ 20 PSI	GPM @ 30 PSI
07/21/2025	Raw Data	104	93	2,578	7,727	7,216
07/21/2025	Data with 32 psi Safety Factor	72	61	2,578	5,965	5,315
4/13/2020	Raw Data	100	90	2,468	7,587	7,058
4/13/2020	Data with 28 psi Safety Facor	72	62	2,468	6,013	5,357

4. PROPOSED CONDITIONS

4.1. PROPOSED WATER SYSTEM:

Along Camelback Road: City Center will remove a 6" public water line crossing the site and abandon the easement. The 8" ACP end will be extended south towards the property line and looped east to serve a fire line, fire hydrant, domestic meter and landscape meter. A water easement is provided for the meters. The 8" line will then be looped back north and connect to the 16" water line. An existing fire hydrant located near the Arizona Canal will need to be reconnected to the new 8" line. A section of 16" DIP will need to be lowered to cross under the proposed sewer service.

Along Scottsdale Road: The existing fire hydrant will be relocated approximately 150 feet north and reconnected to the existing 8" CIP. A fire line and domestic service will be tapped off the CIP as well.

Along Brown Avenue: The existing 6" tap will be utilized to relocate the existing hydrant. A fire line, and domestic and landscape service will be tapped off the existing 16" DIP. A water easement is provided for the meters.

not allowed see utility plan.

Along Shoeman Lane: An existing fire hydrant will remain at the southeast corner of the property, but its connection to the existing 6" ACP will be removed and reconnected to the existing 20" DIP. New taps off the 6" ACP will provide domestic and fire service. The fire line will connect to a pump room. The existing 20" DIP will be cross connected to the 6" ACP with an 8" DIP to provide additional supply. The reach of the existing 6" ACP, located south of the site and connects to the existing 8" CIP along N Scottsdale Rd, will be upgraded to 8" DIP to provide additional capacity.

Meter sizes are per plan. All existing service lines to the site not used will be removed to the main per City requirements (see **APPENDIX III** for the Preliminary Utility Plan).

Ok, approximately 200ft. Ensures min 8-inch supply looping around entirety of development.

4.2. MAINTENANCE RESPONSIBILITIES:

All proposed water meters and fire hydrants will be installed in rights-of-ways or easements dedicated to the city. Backflow prevention will be provided on all metered services and along with the fire lines will be privately owned and maintained by the building owners.

5. WATER SYSTEM COMPUTATIONS

5.1. WATER FLOW DEMANDS:

The City design criteria and resulting maximum demands for the average, max day and peak hour flows are shown in Table 2 below.

Table 2: COS Design Criteria - Average Day Demands

Land Use	Unit Demand (gpm)	Unit	Max Day Factor	Peak Hour Factor
High Density Residential	0.27	per dwelling	2	3.5
Commercial/Retail	1.11E-03	per sq. ft.	2	3.5
Restaurant < 5,000 sq.ft.	1.81E-03	per sq. ft.	2	3.5

The following Table 3 shows the proposed water demands.

Table 3: WATER DEMAND CALCULATIONS

Buildinig/Use	Units or Area (sq. ft.)	Unit Demand (gpm)	Avg. Day Demand (gpm)	Max Day Demand (gpm)	Peak Hour Demand (gpm)
High Density Residential	138	0.27	37.3	74.5	130.4
Restaurant 1	8,590	1.81E-03	15.5	31.1	77.7
Restaurant 2	7,431	1.81E-03	13.5	26.9	67.3
Restaurant 5	8,599	1.81E-03	15.6	31.1	77.8
Commercial/Retail 3	4,100	1.11E-03	4.6	9.1	15.9
Commercial/Retail 4	6,650	1.11E-03	7.4	14.8	25.8
		TOTAL DEMANDS:	93.8	187.5	395.0

Fire flow demand: The gross floor area is approximately 375,000 sf and the building is Type IIIB. According to table B105.1 from Appendix B of the International Fire Code, the required fire flow for 375,000 sf. is 8,000 gpm (see **APPENDIX V**). The International Fire Code allows for a 75% fire flow reduction for sprinklered buildings. Based on the sprinklered design for the building, the required fire flow can be reduced to 2,000 gpm. However, per the City of Scottsdale DS&PM, the minimum required fire flow for high-rise structures is 2,500 gpm plus maximum day demand. The residential towers may require building pumps within the structure.

5.2. VARIANCE FROM STATED DESIGN FLOWS:

No variance from the stated design criteria in the DS+PM is requested.

5.3. WATER MODELING:

Bentley WaterCAD® Version 8i is the computer modeling tool that is used in this final design report**.** The general methodology will consist of modeling the network of water distribution pipes and inputting demands to evaluate compliance with the City's pressure, head loss, and water demand requirements during daily demands and fire events. The connection to the water system is modeled as a reservoir and pump. The pump will simulate the pressure drop and the available flow from the existing water system as depicted by the respective fire flow tests. Modeling uses fire flow test data with a safety factor.

5.4. WATER MODEL SUMMARY:

A fire flow/hydrant analysis was completed during the max day scenario to verify the waterline network provides adequate fire prevention demand during max day conditions. Splitting the flow among the nearby hydrants, adjacent to the site provides 2,500 gpm. The minimum system pressure under the fire flow scenario was 55 psi which meets the minimum requirements.

The water model layout and reports are included in **APPENDIX II**. **Table 4** presents a summary of the modeling output.

Table 4: WaterCAD® Analysis Results

Demand Scenario	Water Demand (GPM)	Pressure (PSI)				Max. Velocity	Pipe ID
		Min.	Node	Max.	Node		
Average Day Demand	93.8	68	J-50	74	J-10	0.23	P-56
Maximum Day Demand	187.5	68	J-50	74	J-10	0.71	P-41
Peak Hour Demand	395.0	68	J-50	74	J-10	1.39	P-41
MD+FF - NEC	2687.5	56	J-50	62	J-10	6.58	P-48
MD+FF - SWC	2687.5	55	J-13	62	J-9	6.55	P-10

6. SUMMARY

6.1. SUMMARY OF PROPOSED IMPROVEMENTS:

Table 5 presents the water demands from the accepted Scottsdale Collective Master Plan and indicates a significant reduction in the proposed site demands for the proposed City Center.

Table 5: WATER DEMAND CALCULATIONS - Parcel A (City Center)

	Units or Area (sq. ft.)	Unit Demand (gpm)	Avg. Day Demand (gpm)	Max Day Demand (gpm)	Peak Hour Demand (gpm)
High Density Residential	106	0.27	28.6	57.2	100.2
Resort Hotel	214	0.63	134.8	269.6	471.9
Restaurant	20,554	1.81E-03	37.2	74.4	186.0
Retail	20,554	1.11E-03	22.8	45.6	79.9
		TOTAL DEMANDS:	223.5	446.9	837.9

This design report supports the development of City Center compliant to the requirements stated in Chapter 6 of the COS DS+PM. This final analysis indicates the existing water infrastructure is sufficient to provide domestic service and fire protection. All existing metered services, fire lines and pipes not

provided for reference only

needed for the master planned development will be inventoried and shown to be removed per requirements of the DS+PM on the final improvement plans.

6.2. PROJECT SCHEDULE:

It is anticipated City Center will be developed as a single phase in 2026/2027.

7. REFERENCES

1. COS QS Water Plan number 17-45
2. City of Scottsdale Design Standards & Policies Manual, 2018 (Chapter 6 – Water)

FIGURES

1. Vicinity Map
2. Local Projects
3. Site Plan
4. City Water Q-S Map 17-45

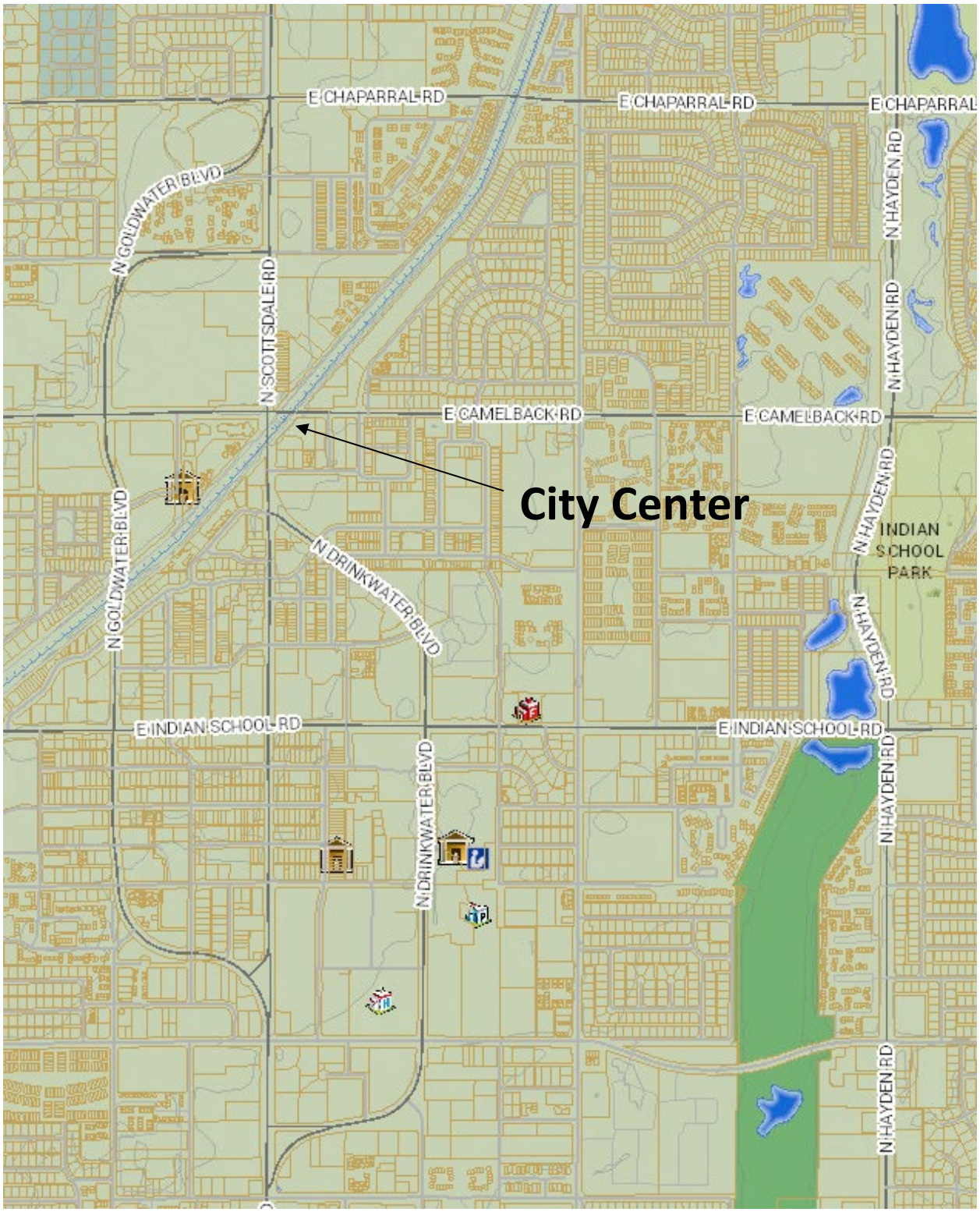


FIGURE 1 – Vicinity Map

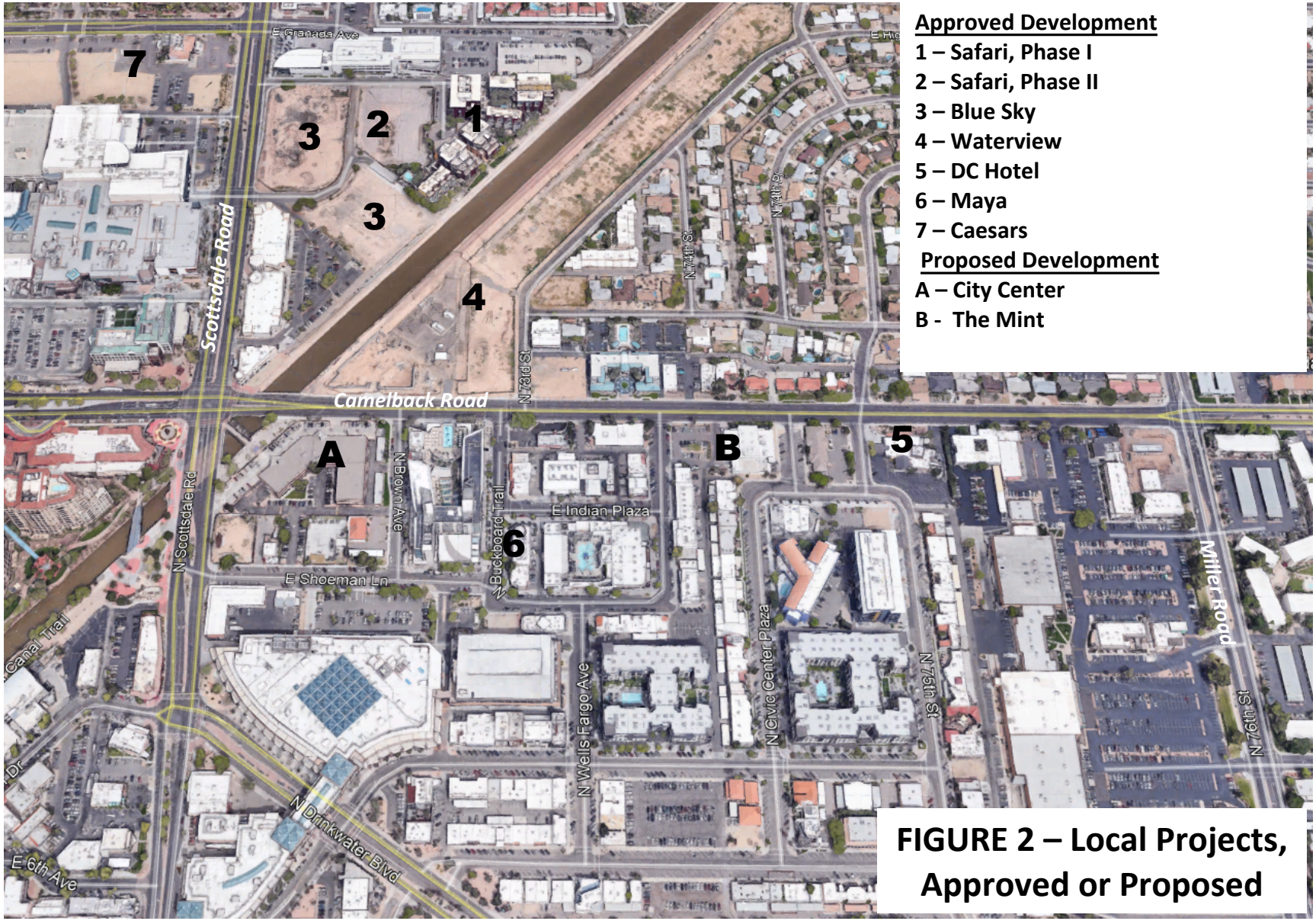
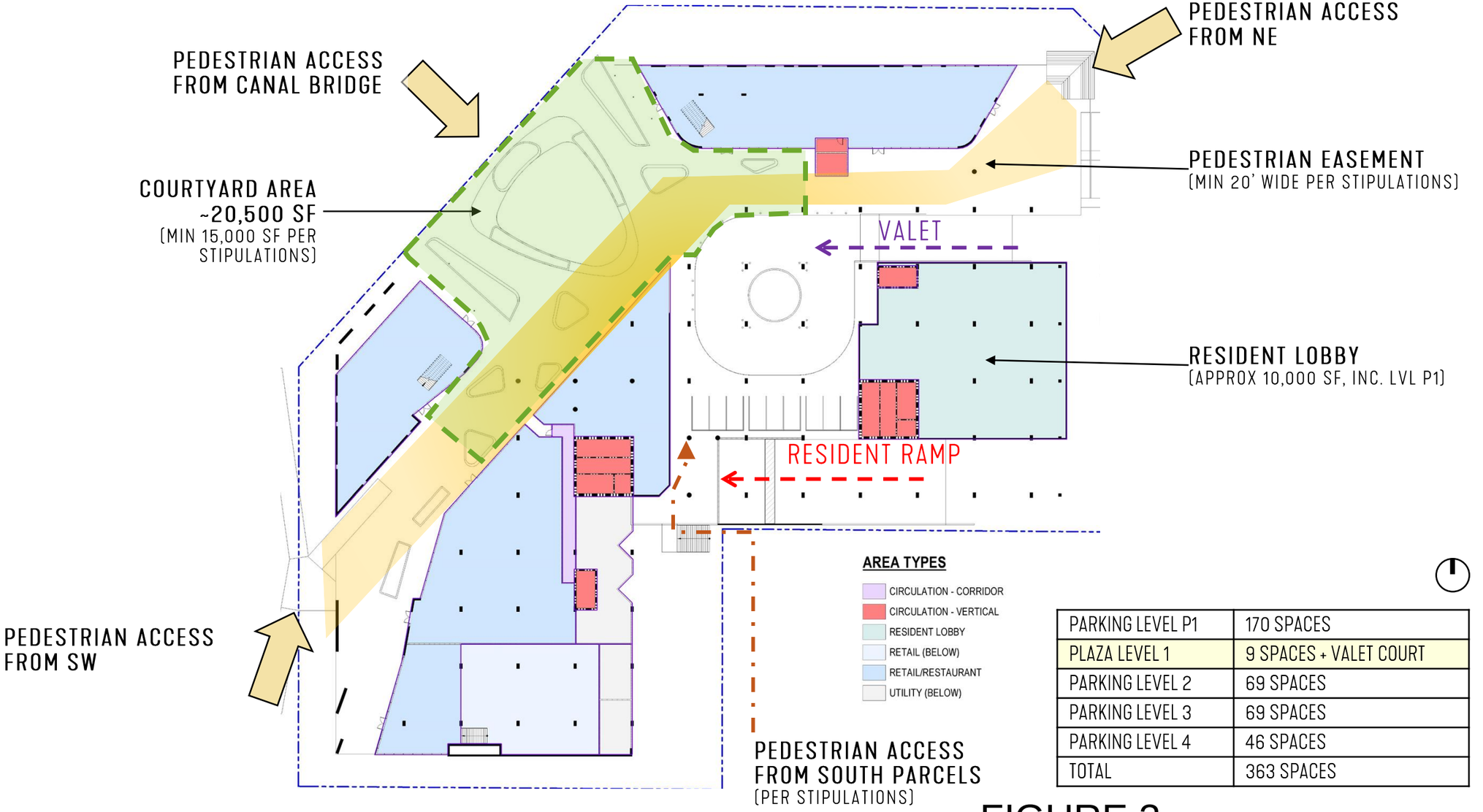


FIGURE 2 – Local Projects, Approved or Proposed

CITY CENTER

PLAZA LEVEL 1 & RETAIL

EL : 0'-0"



PARKING LEVEL P1	170 SPACES
PLAZA LEVEL 1	9 SPACES + VALET COURT
PARKING LEVEL 2	69 SPACES
PARKING LEVEL 3	69 SPACES
PARKING LEVEL 4	46 SPACES
TOTAL	363 SPACES

TOTAL RETAIL AREA: ~37,320 SF

(PREVIOUS DESIGN: 31,698 SF)

FIGURE 3 - SITE PLAN

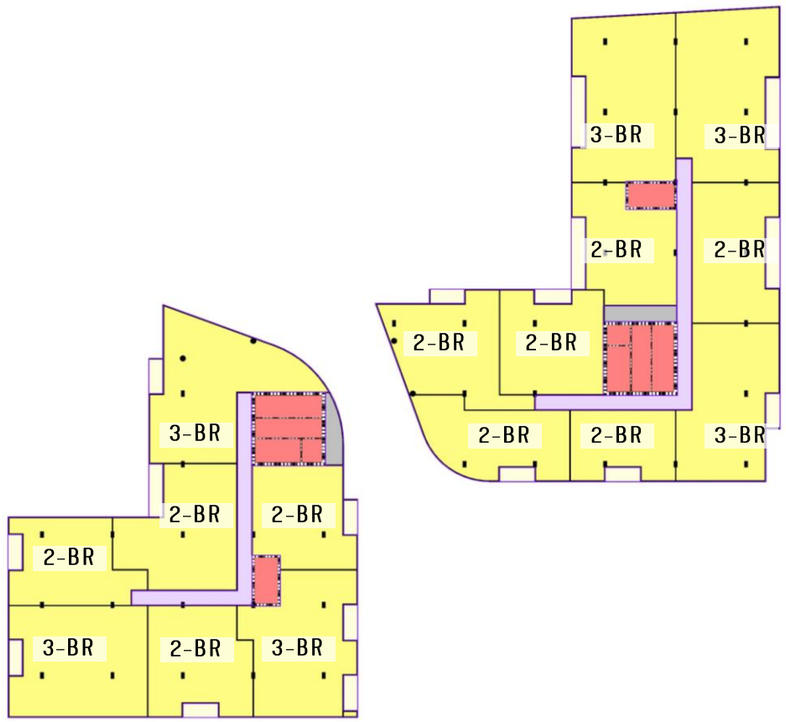
SMITHGROUP

CITY CENTER

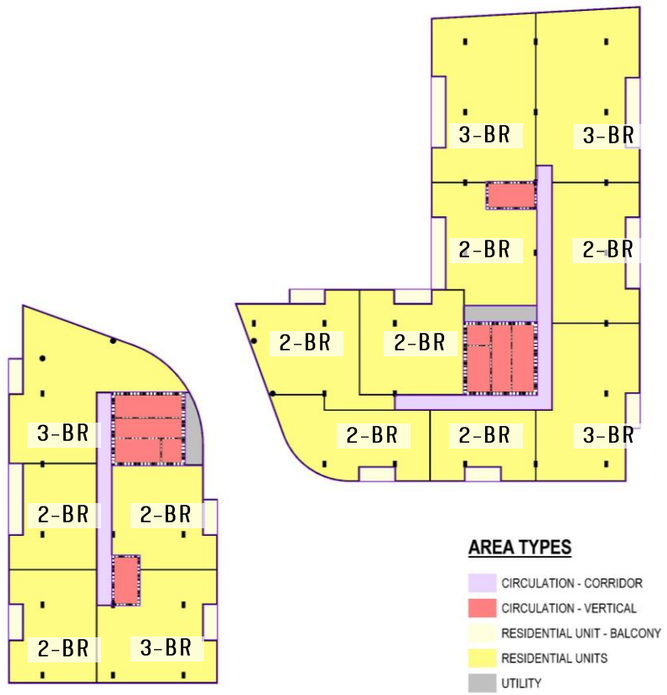
MODIFIED CONDO CONCEPT – 10 FLOORS RESIDENTIAL

FLOOR DIAGRAMS – TALLER CEILINGS

GROSS FLOOR AREA	375,133 SF GROSS
RESIDENTIAL AREA	323,762 SF NET SELLABLE
EFFICIENCY	*86%*



LEVELS 5 THRU 6
(2 LEVELS)



LEVELS 7 THRU 10
(4 LEVELS)

AREA TYPES

- CIRCULATION - CORRIDOR
- CIRCULATION - VERTICAL
- RESIDENTIAL UNIT - BALCONY
- RESIDENTIAL UNITS
- UTILITY

FIGURE 3 -
SITE PLAN

COMPLETE RESIDENTIAL BUILDING (10 LEVELS)	
TOTAL 2-BR UNITS	98 UNITS
TOTAL 3-BR UNITS	51 UNITS
TOTAL UNITS	*149 TOTAL UNITS*

SMITHGROUP

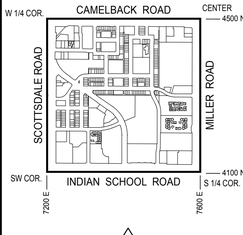
GENERAL NOTES:

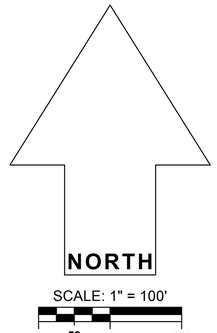
- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

- Air Release Valve (ARV)
- Non-potable Air Release Valve (NPARV)
- Blowoff
- Cap
- Cathodic Protection (CPT)
- Fill Drain (FND)
- Fire Hydrant
- Non-GPS Point
- Pressure Reducing Valve (PRV)
- Pump (WP)
- Reducer
- Sample Station (SS)
- Water Manhole (WMH)
- Non-Potable Manhole (NPMH)
- Well (WELL)
- Valve
- Non-potable Valve (NPV)
- Vault (WVT)
- Water Main
- Non-Potable Main (NP)
- Fire / Private Main
- Non-Scottsdale Main

VICINITY MAP





The map scale of 1" = 100' is based on a full size print of 30" x 36"

WATER

QUARTER SECTION MAP

17-45

SW 1/4 SEC. 23 T2N R4E

FIGURE 4

CITY OF SCOTTSDALE

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

APPENDICIES

I. Fire Hydrant Flow Tests

II. Water Model Reports

III. Utility Plan

IV. Utility Line Modifications

V. International Fire Code

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name:	Scottsdale Collective-City Center
Project Address:	Brown Ave. & Shoeman Lane (NWC), Scottsdale, Arizona, 85251
Client Project No.:	Not Provided
Arizona Flow Testing Project No.:	25633
Flow Test Permit No.:	C79609
Date and time flow test conducted:	July 21, 2025 at 7:30 AM
Data is current and reliable until:	January 21, 2026
Conducted by:	Floyd Vaughan – Arizona Flow Testing, LLC (480-250-8154)
Witnessed by:	Chris Mendez – City of Scottsdale-Inspector (602-9028-9046)

Raw Test Data

Static Pressure: **104.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **93.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **36.0 PSI**

(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Pollard Diffuser
(Measured in inches)

Coefficient of Diffuser: 0.9

Flowing GPM: **2,578 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **7,727 GPM**

Data with 32 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.

Residual Pressure: **61.0 PSI**
(Measured in pounds per square inch)

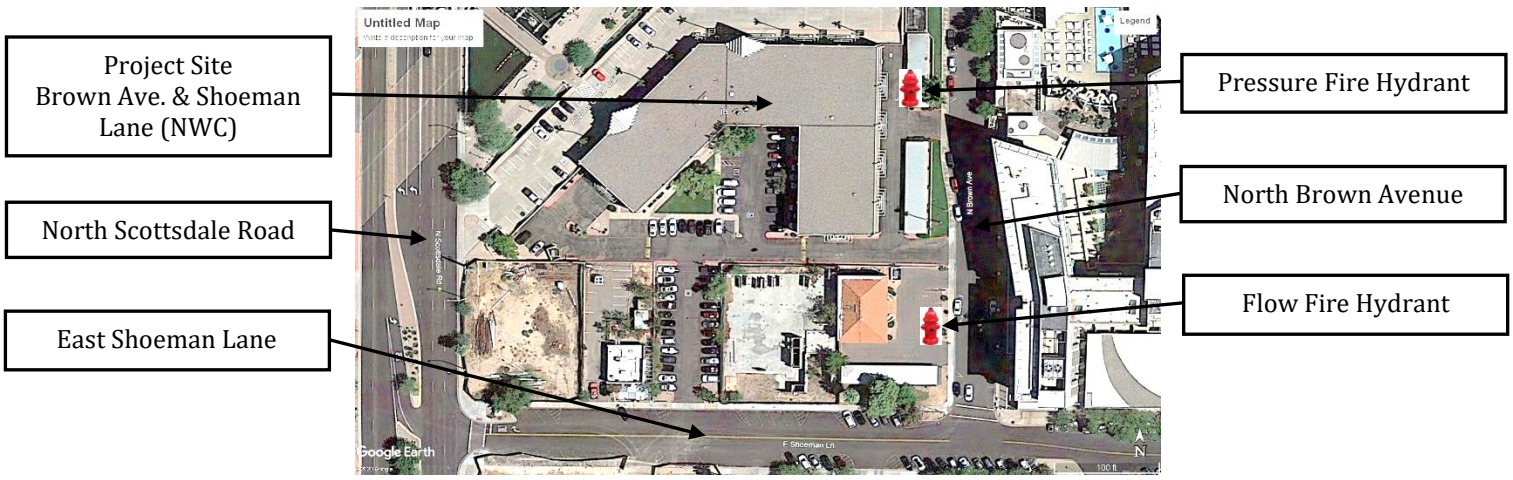
Approx. distance between hydrants: 250 Feet

Main size: Not Provided

Flowing GPM: **2,578 GPM**

GPM @ 20 PSI**:** **5,965 GPM**

Flow Test Location **North**



2025-07-21 FH Flow Test - Raw Data

Logarithmic Graph of Water Supply

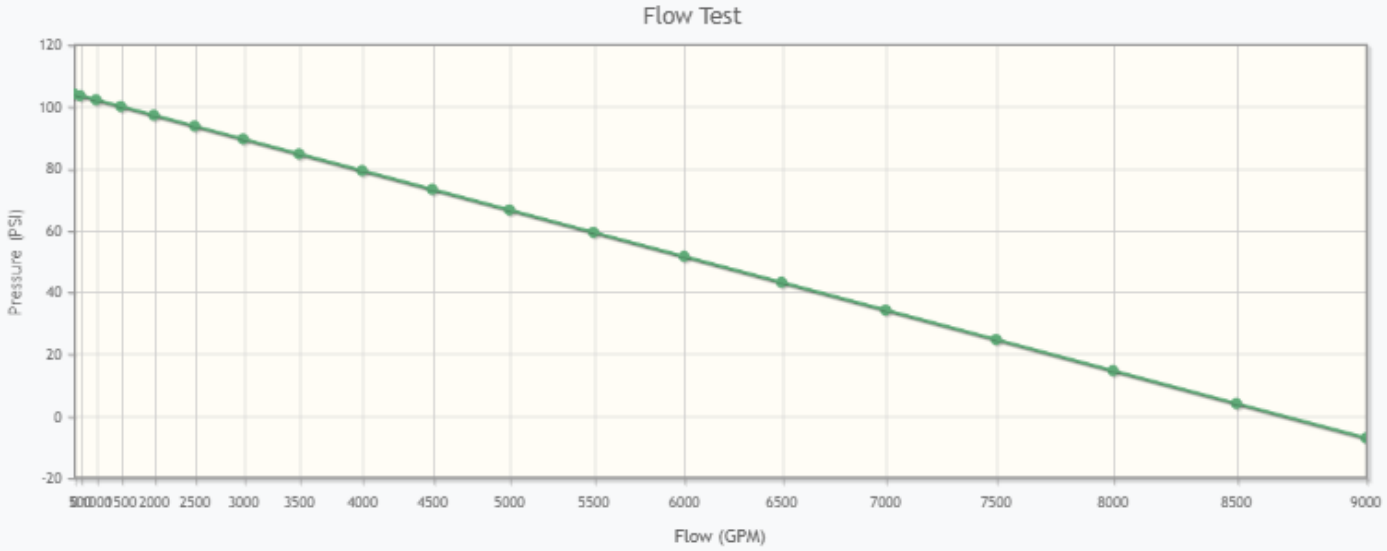
Summary: This app provides a N^1.85 logarithmic graph based on NFPA 291 recommendations. Edit any field and the rest will update automatically.

Graph Points

104	Static Pressure
93	Residual Pressure
2578	Residual Flow

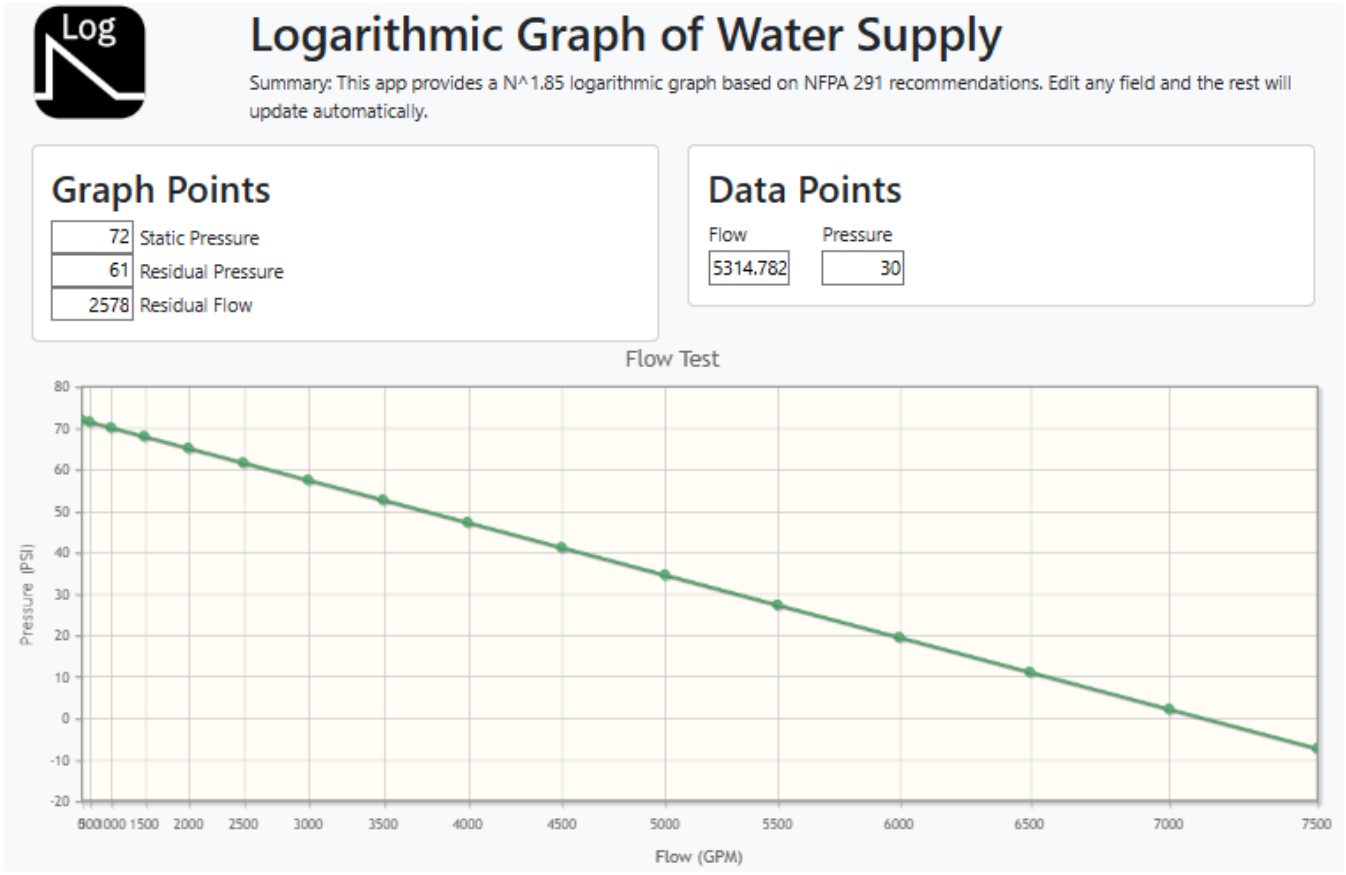
Data Points

Flow	Pressure
7216.323	30



APPENDIX I

2025-07-21 FH Flow Test - Data with 32 psi Safety Factor



APPENDIX I

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name:	Scottsdale Collective-City Center
Project Address:	Brown Ave. & Shoeman Lane (NWC), Scottsdale, Arizona, 85251
Client Project No.:	Not Provided
Arizona Flow Testing Project No.:	20137A
Flow Test Permit No.:	C61868
Date and time flow test conducted:	April 13, 2020 at 6:55 AM
Data is current and reliable until:	October 13, 2020
Conducted by:	Floyd Vaughan – Arizona Flow Testing, LLC (480-250-8154)
Coordinated by:	Ray Padilla –City of Scottsdale-Inspector (602-541-0586)

Raw Test Data

Static Pressure: **100.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **90.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **33.0 PSI**

(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Pollard Diffuser
(Measured in inches)

Coefficient of Diffuser: 0.9

Flowing GPM: **2,468 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **7,587 GPM**

Data with 28 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **62.0 PSI**
(Measured in pounds per square inch)

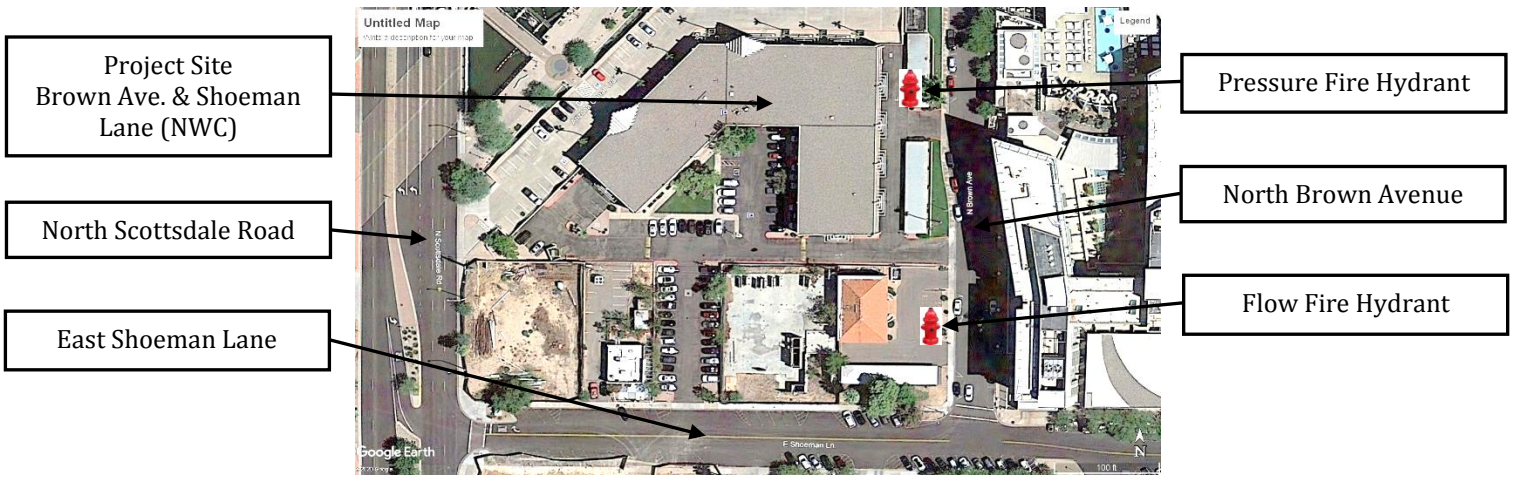
Distance between hydrants: Approx.: 250 feet

Main size: Not Provided

Flowing GPM: **2,468 GPM**

GPM @ 20 PSI**:** **6,013 GPM**

Flow Test Location **North**



2020-04-13 FH Flow Test – Raw Data

ANVIL FIRE PLLC | PACKAGED ENCLOSURES | PUMPS | APPS | BLOG | CONTACT

Logarithmic Graph of Water Supply

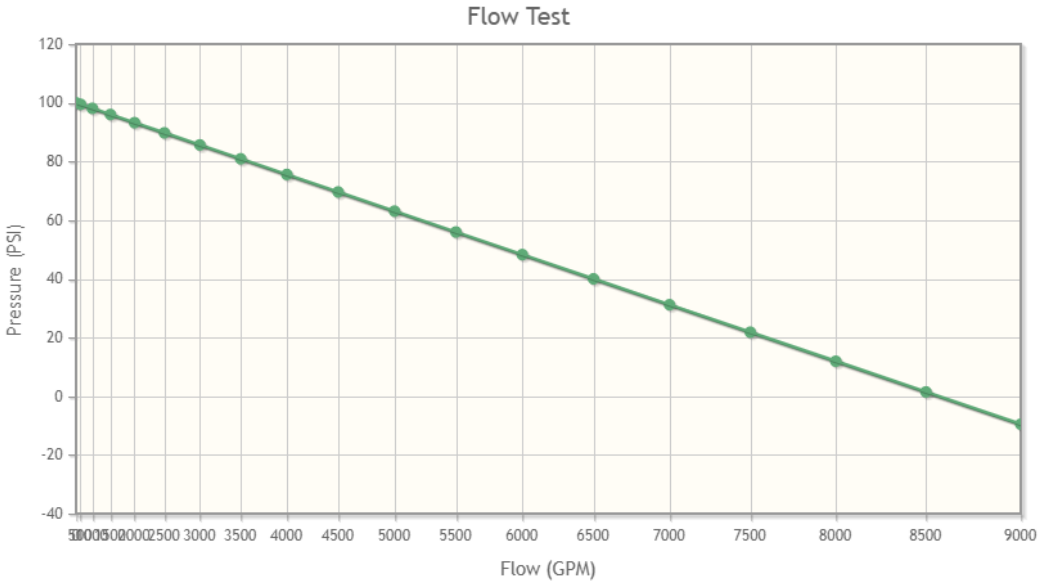
Summary: This app provides a N^1.85 logarithmic graph based on NFPA 291 recommendations. We also offer a blank PDF logarithmic flow test sheet.

Graph Points

100	Static Pressure
90	Residual Pressure
2468	Residual Flow

Data Points

Flow	Pressure
7058.267	30



APPENDIX I

2020-04-13 FH Flow Test – Data with 28 psi Safety Factor

ANVIL FIRE PLLC | PACKAGED ENCLOSURES | PUMPS | APPS | BLOG | CONTACT

Logarithmic Graph of Water Supply

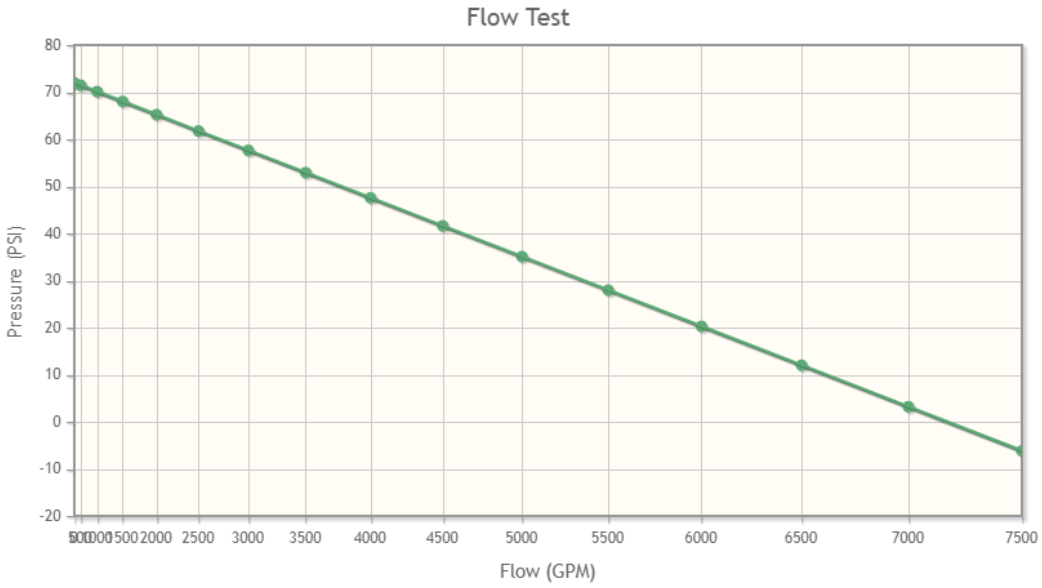
Summary: This app provides a N^1.85 logarithmic graph based on NFPA 291 recommendations. We also offer a blank PDF logarithmic flow test sheet.

Graph Points

72	Static Pressure
62	Residual Pressure
2468	Residual Flow

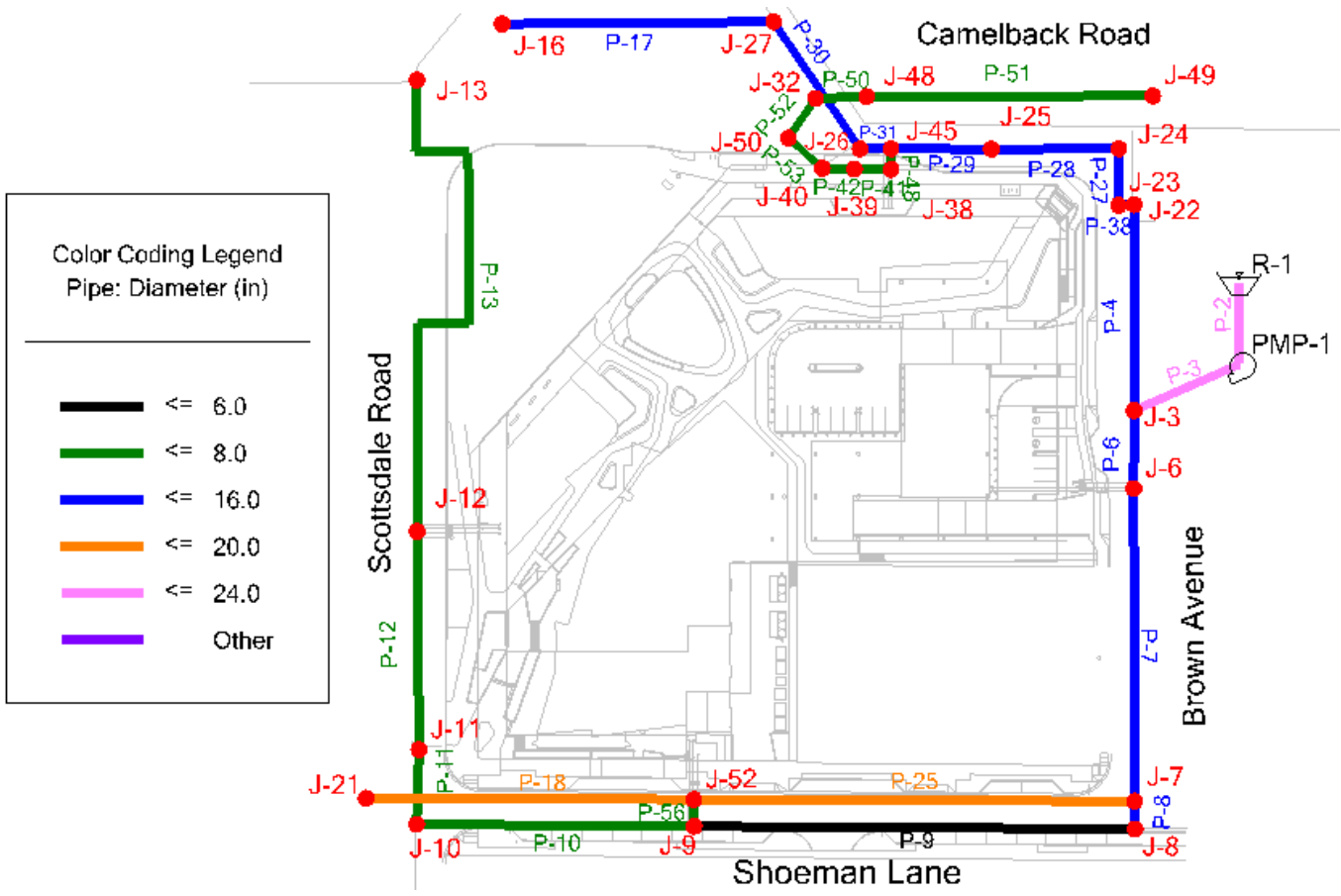
Data Points

Flow	Pressure
5356.730	30



APPENDIX I

2025-07-15 City Center Water Model.wtg



2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Average Day Demand
Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-3	1,270.30	0	1,436.74	72	166.44	72
J-6	1,269.60	37	1,436.74	72	167.14	72
J-7	1,269.00	0	1,436.74	73	167.74	73
J-8	1,269.00	0	1,436.74	73	167.74	73
J-9	1,267.00	28	1,436.74	73	169.74	73
J-10	1,265.40	0	1,436.74	74	171.34	74
J-11	1,266.00	0	1,436.74	74	170.74	74
J-12	1,272.40	14	1,436.74	71	164.34	71
J-13	1,276.00	0	1,436.74	70	160.74	70
J-16	1,275.60	0	1,436.74	70	161.14	70
J-21	1,272.50	0	1,436.74	71	164.24	71
J-22	1,270.11	0	1,436.74	72	166.64	72
J-23	1,270.00	0	1,436.74	72	166.74	72
J-24	1,272.02	0	1,436.74	71	164.72	71
J-25	1,275.70	0	1,436.74	70	161.04	70
J-26	1,278.67	0	1,436.74	68	158.07	68
J-27	1,279.00	0	1,436.74	68	157.74	68
J-32	1,272.70	0	1,436.74	71	164.04	71
J-38	1,278.04	16	1,436.74	69	158.70	69
J-39	1,278.04	0	1,436.74	69	158.70	69
J-40	1,278.50	0	1,436.74	68	158.24	68
J-45	1,276.10	0	1,436.74	70	160.64	70
J-48	1,276.40	0	1,436.74	69	160.34	69
J-49	1,272.10	0	1,436.74	71	164.64	71
J-50	1,279.05	0	1,436.74	68	157.69	68
J-52	1,270.31	0	1,436.74	72	166.43	72

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Average Day Demand

Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Length (Scaled) (ft)	Start Node	Stop Node	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-2	24.0	56	R-1	PMP-1	Ductile Iron	130.0	94	0.07	0.000
P-3	24.0	81	PMP-1	J-3	Ductile Iron	130.0	94	0.07	0.000
P-4	16.0	144	J-3	J-22	Ductile Iron	130.0	16	0.02	0.000
P-6	16.0	55	J-3	J-6	Ductile Iron	130.0	78	0.13	0.000
P-7	16.0	219	J-6	J-7	Ductile Iron	130.0	41	0.07	0.000
P-8	16.0	19	J-7	J-8	Ductile Iron	130.0	4	0.01	0.000
P-9	6.0	309	J-8	J-9	Asbestos Cement	140.0	4	0.05	0.000
P-10	8.0	194	J-9	J-10	Asbestos Cement	140.0	14	0.09	0.000
P-11	8.0	52	J-10	J-11	Cast iron	130.0	14	0.09	0.000
P-12	8.0	153	J-11	J-12	Cast iron	130.0	14	0.09	0.000
P-13	8.0	388	J-12	J-13	Cast iron	130.0	0	0.00	0.000
P-17	16.0	190	J-16	J-27	Ductile Iron	130.0	0	0.00	0.000
P-18	20.0	229	J-52	J-21	Ductile Iron	130.0	0	0.00	0.000
P-25	20.0	309	J-7	J-52	Ductile Iron	130.0	37	0.04	0.000
P-27	16.0	40	J-23	J-24	Ductile Iron	130.0	16	0.02	0.000
P-28	16.0	89	J-24	J-25	Ductile Iron	130.0	16	0.02	0.000
P-29	16.0	70	J-25	J-45	Ductile Iron	130.0	16	0.02	0.000
P-30	16.0	108	J-26	J-27	Ductile Iron	130.0	0	0.00	0.000
P-31	16.0	22	J-45	J-26	Ductile Iron	130.0	0	0.00	0.000
P-38	16.0	11	J-23	J-22	Ductile Iron	130.0	-16	0.02	0.000
P-41	8.0	26	J-38	J-39	Ductile Iron	130.0	0	0.00	0.000
P-42	8.0	23	J-39	J-40	Ductile Iron	130.0	0	0.00	0.000
P-48	8.0	14	J-38	J-45	Ductile Iron	130.0	-16	0.10	0.000
P-50	8.0	36	J-32	J-48	Ductile Iron	130.0	0	0.00	0.000
P-51	8.0	200	J-48	J-49	Ductile Iron	130.0	0	0.00	0.000
P-52	8.0	34	J-32	J-50	Ductile Iron	130.0	0	0.00	0.000
P-53	8.0	32	J-50	J-40	Ductile Iron	130.0	0	0.00	0.000

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Average Day Demand
Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,270.30	On	1,270.50	1,436.74	94	166.24	PMP-1

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Average Day Demand
Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,270.50	94	1,270.50

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Maximum Day Demand
Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-3	1,270.30	15	1,436.59	72	166.29	72
J-6	1,269.60	0	1,436.59	72	166.99	72
J-7	1,269.00	0	1,436.59	73	167.59	73
J-8	1,269.00	0	1,436.59	73	167.59	73
J-9	1,267.00	40	1,436.59	73	169.59	73
J-10	1,265.40	0	1,436.58	74	171.18	74
J-11	1,266.00	0	1,436.58	74	170.58	74
J-12	1,272.40	27	1,436.58	71	164.18	71
J-13	1,276.00	0	1,436.58	69	160.58	69
J-16	1,275.60	0	1,436.59	70	160.99	70
J-21	1,272.50	0	1,436.59	71	164.09	71
J-22	1,270.11	0	1,436.59	72	166.48	72
J-23	1,270.00	0	1,436.59	72	166.59	72
J-24	1,272.02	0	1,436.59	71	164.57	71
J-25	1,275.70	0	1,436.59	70	160.89	70
J-26	1,278.67	0	1,436.59	68	157.92	68
J-27	1,279.00	0	1,436.59	68	157.59	68
J-32	1,272.70	0	1,436.57	71	163.87	71
J-38	1,278.04	0	1,436.58	69	158.54	69
J-39	1,278.04	112	1,436.57	69	158.53	69
J-40	1,278.50	0	1,436.57	68	158.07	68
J-45	1,276.10	0	1,436.59	69	160.49	69
J-48	1,276.40	0	1,436.57	69	160.17	69
J-49	1,272.10	0	1,436.57	71	164.47	71
J-50	1,279.05	0	1,436.57	68	157.52	68
J-52	1,270.31	0	1,436.59	72	166.28	72

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Maximum Day Demand

Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Length (Scaled) (ft)	Start Node	Stop Node	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-2	24.0	56	R-1	PMP-1	Ductile Iron	130.0	194	0.14	0.000
P-3	24.0	81	PMP-1	J-3	Ductile Iron	130.0	194	0.14	0.000
P-4	16.0	144	J-3	J-22	Ductile Iron	130.0	112	0.18	0.000
P-6	16.0	55	J-3	J-6	Ductile Iron	130.0	67	0.11	0.000
P-7	16.0	219	J-6	J-7	Ductile Iron	130.0	67	0.11	0.000
P-8	16.0	19	J-7	J-8	Ductile Iron	130.0	7	0.01	0.000
P-9	6.0	309	J-8	J-9	Asbestos Cement	140.0	7	0.08	0.000
P-10	8.0	194	J-9	J-10	Asbestos Cement	140.0	27	0.17	0.000
P-11	8.0	52	J-10	J-11	Cast iron	130.0	27	0.17	0.000
P-12	8.0	153	J-11	J-12	Cast iron	130.0	27	0.17	0.000
P-13	8.0	388	J-12	J-13	Cast iron	130.0	0	0.00	0.000
P-17	16.0	190	J-16	J-27	Ductile Iron	130.0	0	0.00	0.000
P-18	20.0	229	J-52	J-21	Ductile Iron	130.0	0	0.00	0.000
P-25	20.0	309	J-7	J-52	Ductile Iron	130.0	60	0.06	0.000
P-27	16.0	40	J-23	J-24	Ductile Iron	130.0	112	0.18	0.000
P-28	16.0	89	J-24	J-25	Ductile Iron	130.0	112	0.18	0.000
P-29	16.0	70	J-25	J-45	Ductile Iron	130.0	112	0.18	0.000
P-30	16.0	108	J-26	J-27	Ductile Iron	130.0	0	0.00	0.000
P-31	16.0	22	J-45	J-26	Ductile Iron	130.0	0	0.00	0.000
P-38	16.0	11	J-23	J-22	Ductile Iron	130.0	-112	0.18	0.000
P-41	8.0	26	J-38	J-39	Ductile Iron	130.0	112	0.71	0.000
P-42	8.0	23	J-39	J-40	Ductile Iron	130.0	0	0.00	0.000
P-48	8.0	14	J-38	J-45	Ductile Iron	130.0	-112	0.71	0.000
P-50	8.0	36	J-32	J-48	Ductile Iron	130.0	0	0.00	0.000
P-51	8.0	200	J-48	J-49	Ductile Iron	130.0	0	0.00	0.000
P-52	8.0	34	J-32	J-50	Ductile Iron	130.0	0	0.00	0.000
P-53	8.0	32	J-50	J-40	Ductile Iron	130.0	0	0.00	0.000

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Maximum Day Demand
Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,270.30	On	1,270.50	1,436.59	194	166.09	PMP-1

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Maximum Day Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,270.50	194	1,270.50

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Peak Hour Demand

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-3	1,270.30	26	1,435.97	72	165.67	72
J-6	1,269.60	0	1,435.97	72	166.37	72
J-7	1,269.00	0	1,435.97	72	166.97	72
J-8	1,269.00	0	1,435.97	72	166.97	72
J-9	1,267.00	94	1,435.96	73	168.96	73
J-10	1,265.40	0	1,435.93	74	170.53	74
J-11	1,266.00	0	1,435.93	74	169.93	74
J-12	1,272.40	67	1,435.91	71	163.51	71
J-13	1,276.00	0	1,435.91	69	159.91	69
J-16	1,275.60	0	1,435.96	69	160.36	69
J-21	1,272.50	0	1,435.96	71	163.46	71
J-22	1,270.11	0	1,435.97	72	165.86	72
J-23	1,270.00	0	1,435.97	72	165.97	72
J-24	1,272.02	0	1,435.96	71	163.94	71
J-25	1,275.70	0	1,435.96	69	160.26	69
J-26	1,278.67	0	1,435.96	68	157.29	68
J-27	1,279.00	0	1,435.96	68	156.96	68
J-32	1,272.70	0	1,435.92	71	163.21	71
J-38	1,278.04	0	1,435.94	68	157.90	68
J-39	1,278.04	219	1,435.92	68	157.88	68
J-40	1,278.50	0	1,435.92	68	157.42	68
J-45	1,276.10	0	1,435.96	69	159.86	69
J-48	1,276.40	0	1,435.92	69	159.52	69
J-49	1,272.10	0	1,435.92	71	163.82	71
J-50	1,279.05	0	1,435.92	68	156.87	68
J-52	1,270.31	0	1,435.96	72	165.65	72

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Peak Hour Demand

Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Length (Scaled) (ft)	Start Node	Stop Node	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-2	24.0	56	R-1	PMP-1	Ductile Iron	130.0	405	0.29	0.000
P-3	24.0	81	PMP-1	J-3	Ductile Iron	130.0	405	0.29	0.000
P-4	16.0	144	J-3	J-22	Ductile Iron	130.0	219	0.35	0.000
P-6	16.0	55	J-3	J-6	Ductile Iron	130.0	161	0.26	0.000
P-7	16.0	219	J-6	J-7	Ductile Iron	130.0	161	0.26	0.000
P-8	16.0	19	J-7	J-8	Ductile Iron	130.0	18	0.03	0.000
P-9	6.0	309	J-8	J-9	Asbestos Cement	140.0	18	0.20	0.000
P-10	8.0	194	J-9	J-10	Asbestos Cement	140.0	67	0.43	0.000
P-11	8.0	52	J-10	J-11	Cast iron	130.0	67	0.43	0.000
P-12	8.0	153	J-11	J-12	Cast iron	130.0	67	0.43	0.000
P-13	8.0	388	J-12	J-13	Cast iron	130.0	0	0.00	0.000
P-17	16.0	190	J-16	J-27	Ductile Iron	130.0	0	0.00	0.000
P-18	20.0	229	J-52	J-21	Ductile Iron	130.0	0	0.00	0.000
P-25	20.0	309	J-7	J-52	Ductile Iron	130.0	143	0.15	0.000
P-27	16.0	40	J-23	J-24	Ductile Iron	130.0	219	0.35	0.000
P-28	16.0	89	J-24	J-25	Ductile Iron	130.0	219	0.35	0.000
P-29	16.0	70	J-25	J-45	Ductile Iron	130.0	219	0.35	0.000
P-30	16.0	108	J-26	J-27	Ductile Iron	130.0	0	0.00	0.000
P-31	16.0	22	J-45	J-26	Ductile Iron	130.0	0	0.00	0.000
P-38	16.0	11	J-23	J-22	Ductile Iron	130.0	-219	0.35	0.000
P-41	8.0	26	J-38	J-39	Ductile Iron	130.0	219	1.39	0.001
P-42	8.0	23	J-39	J-40	Ductile Iron	130.0	0	0.00	0.000
P-48	8.0	14	J-38	J-45	Ductile Iron	130.0	-219	1.39	0.001
P-50	8.0	36	J-32	J-48	Ductile Iron	130.0	0	0.00	0.000
P-51	8.0	200	J-48	J-49	Ductile Iron	130.0	0	0.00	0.000
P-52	8.0	34	J-32	J-50	Ductile Iron	130.0	0	0.00	0.000
P-53	8.0	32	J-50	J-40	Ductile Iron	130.0	0	0.00	0.000

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Peak Hour Demand
Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,270.30	On	1,270.50	1,435.97	405	165.47	PMP-1

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Peak Hour Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,270.50	405	1,270.50

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Fire Flow Demand + Max Day Demand - NEC

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-3	1,270.30	1,500	1,409.29	60	138.99	60
J-6	1,269.60	75	1,409.29	60	139.69	60
J-7	1,269.00	0	1,409.29	61	140.29	61
J-8	1,269.00	0	1,409.29	61	140.29	61
J-9	1,267.00	55	1,409.29	62	142.29	62
J-10	1,265.40	0	1,409.28	62	143.88	62
J-11	1,266.00	0	1,409.28	62	143.28	62
J-12	1,272.40	27	1,409.28	59	136.88	59
J-13	1,276.00	0	1,409.28	58	133.28	58
J-16	1,275.60	0	1,409.06	58	133.46	58
J-21	1,272.50	0	1,409.29	59	136.79	59
J-22	1,270.11	0	1,409.20	60	139.09	60
J-23	1,270.00	0	1,409.19	60	139.19	60
J-24	1,272.02	0	1,409.16	59	137.14	59
J-25	1,275.70	0	1,409.10	58	133.40	58
J-26	1,278.67	0	1,409.06	56	130.39	56
J-27	1,279.00	0	1,409.06	56	130.06	56
J-32	1,272.70	0	1,408.31	59	135.61	59
J-38	1,278.04	31	1,408.78	57	130.74	57
J-39	1,278.04	1,000	1,408.31	56	130.27	56
J-40	1,278.50	0	1,408.31	56	129.81	56
J-45	1,276.10	0	1,409.06	58	132.96	58
J-48	1,276.40	0	1,408.31	57	131.91	57
J-49	1,272.10	0	1,408.31	59	136.21	59
J-50	1,279.05	0	1,408.31	56	129.26	56
J-52	1,270.31	0	1,409.29	60	138.98	60

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Fire Flow Demand + Max Day Demand - NEC

Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Length (Scaled) (ft)	Start Node	Stop Node	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-2	24.0	56	R-1	PMP-1	Ductile Iron	130.0	2,688	1.91	0.001
P-3	24.0	81	PMP-1	J-3	Ductile Iron	130.0	2,688	1.91	0.001
P-4	16.0	144	J-3	J-22	Ductile Iron	130.0	1,031	1.65	0.001
P-6	16.0	55	J-3	J-6	Ductile Iron	130.0	156	0.25	0.000
P-7	16.0	219	J-6	J-7	Ductile Iron	130.0	82	0.13	0.000
P-8	16.0	19	J-7	J-8	Ductile Iron	130.0	9	0.01	0.000
P-9	6.0	309	J-8	J-9	Asbestos Cement	140.0	9	0.10	0.000
P-10	8.0	194	J-9	J-10	Asbestos Cement	140.0	27	0.17	0.000
P-11	8.0	52	J-10	J-11	Cast iron	130.0	27	0.17	0.000
P-12	8.0	153	J-11	J-12	Cast iron	130.0	27	0.17	0.000
P-13	8.0	388	J-12	J-13	Cast iron	130.0	0	0.00	0.000
P-17	16.0	190	J-16	J-27	Ductile Iron	130.0	0	0.00	0.000
P-18	20.0	229	J-52	J-21	Ductile Iron	130.0	0	0.00	0.000
P-25	20.0	309	J-7	J-52	Ductile Iron	130.0	73	0.07	0.000
P-27	16.0	40	J-23	J-24	Ductile Iron	130.0	1,031	1.65	0.001
P-28	16.0	89	J-24	J-25	Ductile Iron	130.0	1,031	1.65	0.001
P-29	16.0	70	J-25	J-45	Ductile Iron	130.0	1,031	1.65	0.001
P-30	16.0	108	J-26	J-27	Ductile Iron	130.0	0	0.00	0.000
P-31	16.0	22	J-45	J-26	Ductile Iron	130.0	0	0.00	0.000
P-38	16.0	11	J-23	J-22	Ductile Iron	130.0	-1,031	1.65	0.001
P-41	8.0	26	J-38	J-39	Ductile Iron	130.0	1,000	6.38	0.018
P-42	8.0	23	J-39	J-40	Ductile Iron	130.0	0	0.00	0.000
P-48	8.0	14	J-38	J-45	Ductile Iron	130.0	-1,031	6.58	0.019
P-50	8.0	36	J-32	J-48	Ductile Iron	130.0	0	0.00	0.000
P-51	8.0	200	J-48	J-49	Ductile Iron	130.0	0	0.00	0.000
P-52	8.0	34	J-32	J-50	Ductile Iron	130.0	0	0.00	0.000
P-53	8.0	32	J-50	J-40	Ductile Iron	130.0	0	0.00	0.000

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Fire Flow Demand + Max Day Demand - NEC

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,270.30	On	1,270.47	1,409.34	2,688	138.87	PMP-1

2025-07-15 City Center Water Model.wtg
Active Scenario: Base
Fire Flow Demand + Max Day Demand - NEC
Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,270.50	2,688	1,270.50

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Fire Flow Demand + Max Day Demand - SWC

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-3	1,270.30	0	1,409.29	60	138.99	60
J-6	1,269.60	75	1,409.08	60	139.48	60
J-7	1,269.00	0	1,408.29	60	139.29	60
J-8	1,269.00	0	1,408.29	60	139.29	60
J-9	1,267.00	55	1,407.66	61	140.66	61
J-10	1,265.40	0	1,404.41	60	139.01	60
J-11	1,266.00	1,000	1,403.41	59	137.41	59
J-12	1,272.40	27	1,403.40	57	131.00	57
J-13	1,276.00	0	1,403.40	55	127.40	55
J-16	1,275.60	0	1,409.29	58	133.69	58
J-21	1,272.50	0	1,407.96	59	135.46	59
J-22	1,270.11	0	1,409.29	60	139.18	60
J-23	1,270.00	0	1,409.29	60	139.29	60
J-24	1,272.02	0	1,409.29	59	137.27	59
J-25	1,275.70	0	1,409.29	58	133.59	58
J-26	1,278.67	0	1,409.29	57	130.62	57
J-27	1,279.00	0	1,409.29	56	130.29	56
J-32	1,272.70	0	1,409.29	59	136.59	59
J-38	1,278.04	31	1,409.29	57	131.25	57
J-39	1,278.04	0	1,409.29	57	131.25	57
J-40	1,278.50	0	1,409.29	57	130.79	57
J-45	1,276.10	0	1,409.29	58	133.19	58
J-48	1,276.40	0	1,409.29	57	132.89	57
J-49	1,272.10	0	1,409.29	59	137.19	59
J-50	1,279.05	0	1,409.29	56	130.24	56
J-52	1,270.31	1,500	1,407.96	60	137.65	60

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Fire Flow Demand + Max Day Demand - SWC

Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Length (Scaled) (ft)	Start Node	Stop Node	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-2	24.0	56	R-1	PMP-1	Ductile Iron	130.0	2,688	1.91	0.001
P-3	24.0	81	PMP-1	J-3	Ductile Iron	130.0	2,688	1.91	0.001
P-4	16.0	144	J-3	J-22	Ductile Iron	130.0	31	0.05	0.000
P-6	16.0	55	J-3	J-6	Ductile Iron	130.0	2,656	4.24	0.004
P-7	16.0	219	J-6	J-7	Ductile Iron	130.0	2,582	4.12	0.004
P-8	16.0	19	J-7	J-8	Ductile Iron	130.0	155	0.25	0.000
P-9	6.0	309	J-8	J-9	Asbestos Cement	140.0	155	1.76	0.002
P-10	8.0	194	J-9	J-10	Asbestos Cement	140.0	1,027	6.55	0.017
P-11	8.0	52	J-10	J-11	Cast iron	130.0	1,027	6.55	0.019
P-12	8.0	153	J-11	J-12	Cast iron	130.0	27	0.17	0.000
P-13	8.0	388	J-12	J-13	Cast iron	130.0	0	0.00	0.000
P-17	16.0	190	J-16	J-27	Ductile Iron	130.0	0	0.00	0.000
P-18	20.0	229	J-52	J-21	Ductile Iron	130.0	0	0.00	0.000
P-25	20.0	309	J-7	J-52	Ductile Iron	130.0	2,427	2.48	0.001
P-27	16.0	40	J-23	J-24	Ductile Iron	130.0	31	0.05	0.000
P-28	16.0	89	J-24	J-25	Ductile Iron	130.0	31	0.05	0.000
P-29	16.0	70	J-25	J-45	Ductile Iron	130.0	31	0.05	0.000
P-30	16.0	108	J-26	J-27	Ductile Iron	130.0	0	0.00	0.000
P-31	16.0	22	J-45	J-26	Ductile Iron	130.0	0	0.00	0.000
P-38	16.0	11	J-23	J-22	Ductile Iron	130.0	-31	0.05	0.000
P-41	8.0	26	J-38	J-39	Ductile Iron	130.0	0	0.00	0.000
P-42	8.0	23	J-39	J-40	Ductile Iron	130.0	0	0.00	0.000
P-48	8.0	14	J-38	J-45	Ductile Iron	130.0	-31	0.20	0.000
P-50	8.0	36	J-32	J-48	Ductile Iron	130.0	0	0.00	0.000
P-51	8.0	200	J-48	J-49	Ductile Iron	130.0	0	0.00	0.000
P-52	8.0	34	J-32	J-50	Ductile Iron	130.0	0	0.00	0.000
P-53	8.0	32	J-50	J-40	Ductile Iron	130.0	0	0.00	0.000

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Fire Flow Demand + Max Day Demand - SWC

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,270.30	On	1,270.47	1,409.34	2,688	138.87	PMP-1

2025-07-15 City Center Water Model.wtg

Active Scenario: Base

Fire Flow Demand + Max Day Demand - SWC

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,270.50	2,688	1,270.50

2025-07-15 City Center Water Model.wtg
Active Scenario: ADD
Pump Definition Detailed Report: PMP-1

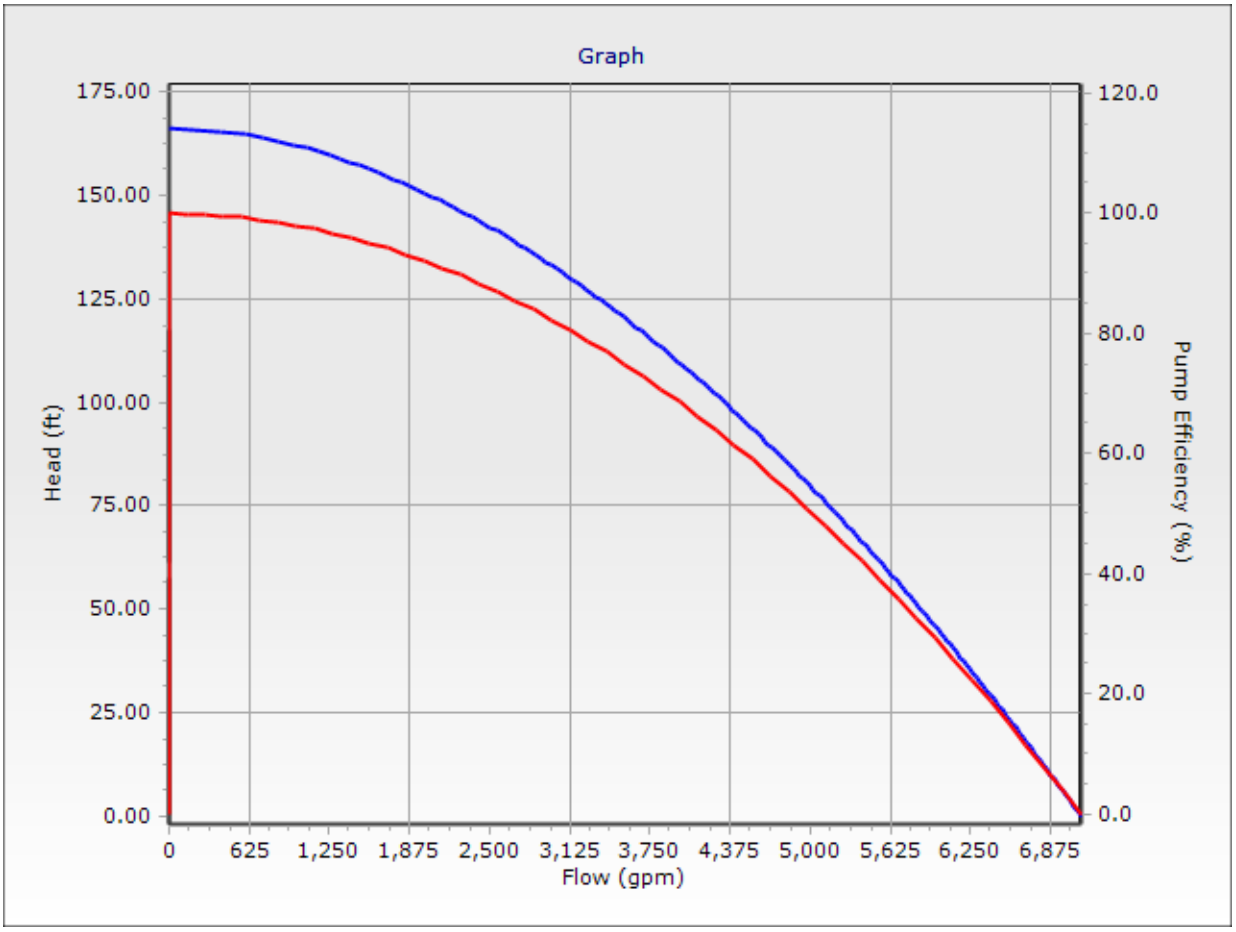
Element Details			
ID	64	Notes	
Label	PMP-1		

Pump Definition Type			
Pump Definition Type	Standard (3 Point)	Design Head	140.90 ft
Shutoff Flow	0 gpm	Maximum Operating Flow	5,965 gpm
Shutoff Head	166.30 ft	Maximum Operating Head	46.20 ft
Design Flow	2,578 gpm		

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

Transient (Physical)			
Inertia (Pump and Motor)	0.000 lb·ft²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

2025-07-15 City Center Water Model.wtg
Active Scenario: ADD
Pump Definition Detailed Report: PMP-1



CIVIL ENGINEER
SUSTAINABILITY ENGINEERING GROUP
5240 N, 16TH STREET, SUITE 105
PHOENIX, ARIZONA 85016
PHONE: 480-237-2507
ATTN.: ALI FAKIH
EMAIL: ALI@AZSEG.COM

CLIENT:
SMITH GROUP
455 N., 3RD STREET, SUITE 250
PHOENIX, AZ 85004
PHONE: 602-824-5323
ATTN.: OZ WAGNER
EMAIL: OZ.WAGNER@SMITHGROUP.COM

PARCEL DESCRIPTION:
HIGH-DENSITY, MULTI-USE DEVELOPMENT INCLUDING RETAIL, RESTAURANTS, AND UNDERGROUND PARKING.

SITE DATA:

APN:	173-41-016B, 173-41-017A, 173-41-006A, 173-41-005 AND 173-41-004.
ZONING:	C-2-DO/C-3-DO
LOT SIZE:	3.03 ACRES (131,786 SF)
FLOOD ZONE:	ZONE X (AREA OF MINIMAL FLOOD HAZARD)

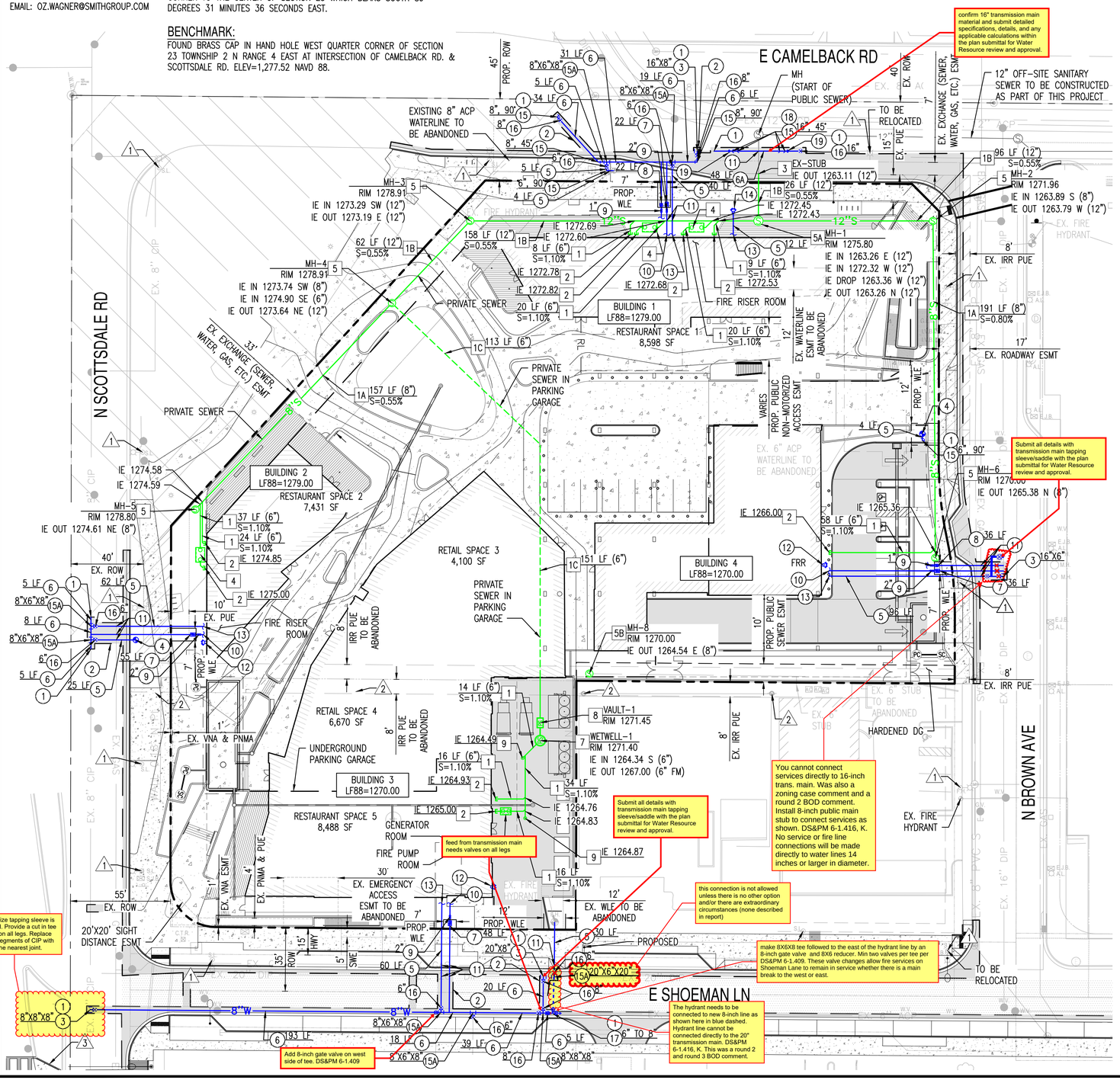
BASIS OF BEARING:
THE MONUMENT LINE OF CAMELBACK RD FROM THE WEST QUARTER CORNER TO THE CENTER OF SECTION 23 WHICH BEARS SOUTH 89 DEGREES 31 MINUTES 36 SECONDS EAST.

BENCHMARK:
FOUND BRASS CAP IN HAND HOLE WEST QUARTER CORNER OF SECTION 23 TOWNSHIP 2 N RANGE 4 EAST AT INTERSECTION OF CAMELBACK RD. & SCOTTSDALE RD. ELEV=1,277.52 NAVD 88.

SCOTTSDALE CITY CENTER

PRELIMINARY UTILITY PLAN

7201 E. CAMELBACK ROAD, SCOTTSDALE, AZ 85251
A PORTION OF THE SOUTHWEST QUARTER OF SECTION 23, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.



NOTES FOR IMPROVEMENT PLANS WHERE THERE IS EXISTING ACP OR PVC PIPE:

ANY WATER LINE PROJECT THAT INVOLVES CONNECTING TO AN EXISTING ACP OR PVC PIPE, REQUIRES SPECIAL ATTENTION. PER DSPM SECTION 6-1.408:

FITTINGS INSTALLED INTO ASBESTOS CEMENT PIPE (ACP) OR PVC PIPE WITHIN 6-FEET OF ANOTHER FITTING OR JOINT WILL REQUIRE THAT SECTION OF PIPE TO BE REMOVED AND REPLACED WITH DUCTILE IRON PIPE (DIP). EXISTING TEES, TAPPING SLEEVES AND RELATED APPURTENANCES THAT ARE NOT UTILIZED BY THE DEVELOPMENT SHALL BE REMOVED BY THE CONTRACTOR. A MINIMUM 3-FOOT SECTION OF PIPE SHALL BE REMOVED, WITH NO LESS THAN 6-FEET REMAINING TO THE NEAREST JOINT. THE REMOVED PIPE SHALL BE REPLACED WITH DIP.

WHEN MORE THAN 3-FEET OF EXISTING ACP OR PVC WATER LINES ARE EXPOSED DURING CONSTRUCTION AND THE BEDDING IS DISTRUBED, THE WATER LINE MUST BE REPLACED WITH DIP (MINIMUM CLASS 350) WITH MECHANICAL JOINTS OR FLANGED JOINTS TO 3-FEET PAST THE SIDES OF THE EXPOSED CROSSING TRENCH. REFER TO MAG STD. DET. 403-3.

NO TAPPING SLEEVE AND VALVE SHALL BE USED ON ACP PIPE. VALVES WILL NEED TO BE CUT INTO ACP PIPE.

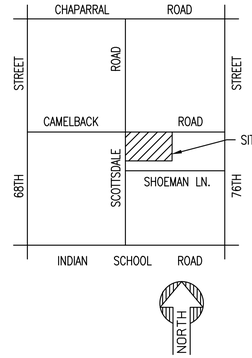
DISPOSAL OF MATERIALS CONTAINING ASBESTOS AND/OR LEAD SHALL BE IN CONFORMANCE WITH ALL REGULATIONS, LAWS AND ORDINANCES.

PRELIMINARY WATER NOTES

1. CONNECTION TO EXISTING WATER LINE.
2. SAWCUT, REMOVE AND REPLACE EXISTING PAVEMENT.
3. PROPOSED TAPPING SLEEVE, VALVE, BOX & COVER.
4. PROPOSED FIRE HYDRANT ASSEMBLY.
5. 6" DUCTILE IRON PIPE. LENGTH PER PLAN.
6. 8" DUCTILE IRON PIPE. LENGTH PER PLAN.
6A. 16" DUCTILE IRON PIPE. LENGTH PER PLAN.
7. 2" COPPER DOMESTIC SERVICE CONNECTION.
8. 1" IRRIGATION SERVICE CONNECTION.
9. BACKFLOW PREVENTION, SIZE TO MATCH WATER METER SIZE.
10. DOMESTIC CONNECTION TO BUILDING.
11. UTILITY CROSSING.
12. PROPOSED FIRE DEPARTMENT CONNECTION.
13. FIRE CONNECTION TO BUILDING. INCLUDING DOUBLE CHECK VALVE IN RISER ROOM
14. PROPOSED REMOTE FIRE DEPARTMENT CONNECTION.
15. PROPOSED FITTING, SIZE & ANGLE PER PLAN.
15A. PROPOSED TEE, SIZE PER PLAN.
16. PROPOSED GATE VALVE WITH VALVE BOX AND COVER.
17. PROPOSED REDUCER.
18. VERTICAL REALIGNMENT.
19. AIR ~~RELEASE~~ VALVE. and vacuum

PRELIMINARY SEWER NOTES (ENTIRE ON-SITE SYSTEM IS PRIVATE)

1. 6" PRIVATE PVC SEWER LINE. LENGTH & SLOPE PER PLAN
1A. 8" PRIVATE PVC SEWER LINE. LENGTH & SLOPE PER PLAN
1B. 12" PRIVATE PVC SEWER LINE. LENGTH & SLOPE PER PLAN
1C. 6" DIP FORCE MAIN. LENGTH PER PLAN
2. SEWER CONNECTION TO BUILDING
3. REMOVE CAP AND CONNECT TO EXISTING STUB.
4. PROPOSED GREASE INTERCEPTOR
4A. PROPOSED GREASE INTERCEPTOR WITH TRAFFIC RATED COVER
5. PROPOSED 4' PRECAST CONCRETE SEWER MANHOLE
5A. PROPOSED 5' PRECAST CONCRETE SEWER MANHOLE
5B. PROPOSED 4' POLYMER SEWER MANHOLE (INCLUDING BASE, RISER, AND CONE)
6. PROPOSED SEWER CAP
7. PROPOSED WETWELL WITH TRAFFIC RATED COVER
8. PROPOSED VALVE VAULT WITH TRAFFIC RATED COVER
9. PROPOSED CLEANOUT WITH TRAFFIC RATED COVER



VICINITY MAP
S12 T2N R4E
NTS

STREET LIGHT & ELECTRICAL NOTES:

1. PRIOR TO ISSUANCE OF PERMITS, STREET LIGHT SHALL BE EVALUATED FOR COMPLIANCE WITH STREET-SCAPE PHASING PLAN AND CITY STANDARDS AND REQUIREMENTS. ANY LIGHTS NOT MEETING THESE STANDARDS OR REQUIREMENTS WILL BE UPGRADED OR REPLACED WITH CONFORMING STREET LIGHTS.
2. EXISTING POWER POLES AND LINES TO BE REMOVED. NEW ELECTRIC SERVICE WILL BE INSTALLED UNDERGROUND.
3. PROPOSED PEDESTRIAN CROSSING WITH HAWK TRAFFIC CONTROLS. SEE GRADING PLAN FOR DETAILS.

PROPOSED UTILITY LEGEND:

- PROPERTY LINE
- EASEMENT LINE
- X"W — WATER LINE
- X"S — SEWER LINE
- FIRE HYDRANT
- FDC
- WM — WATER METER
- GATE VALVE
- T.S.V.B.&C.
- BACK FLOW PREVENTER
- REDUCER
- CAP
- BUILDING CONNECTION
- SEWER MANHOLE
- SEWER CLEAN OUT

EXISTING LEGEND

- EX. S — SEWER LINE
- EX. W — WATER LINE
- IRR — IRRIGATION LINE
- STORM DRAIN LINE
- CB — CATCH BASIN
- S — SEWER MANHOLE
- D — STORM MANHOLE
- WV — WATER VALVE
- WMB — WATER METER BOX
- FIRE HYDRANT
- ECB — ELECTRIC CABINET
- S.L. — STREET LIGHT

NORTH
30'-0"
0' 30' 60' 90'
SCALE: 1" = 30'

PRELIMINARY
NOT FOR
CONSTRUCTION

SUSTAINABILITY ENGINEERING GROUP
SEG
5240 N. 16TH STREET SUITE 105, PHOENIX, ARIZONA 85016
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534

SMITHGROUP

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

PROJECT
SCOTTSDALE CITY CENTER

LOCATION
7201 E. CAMELBACK ROAD, SCOTTSDALE, AZ, 85251.

DRAWN	MM	06/13/2025
DESIGNED	MM	07/30/2025
CHECKED	AK	11/12/2024
FINAL QC	SC	11/11/2024
PROJ. MGR.	AK	07/30/2025

DATE: 07/30/2025
ISSUED FOR: DRB

REVISION NO.:	DATE:
1	
2	
3	
4	

JOB NO.: 221117

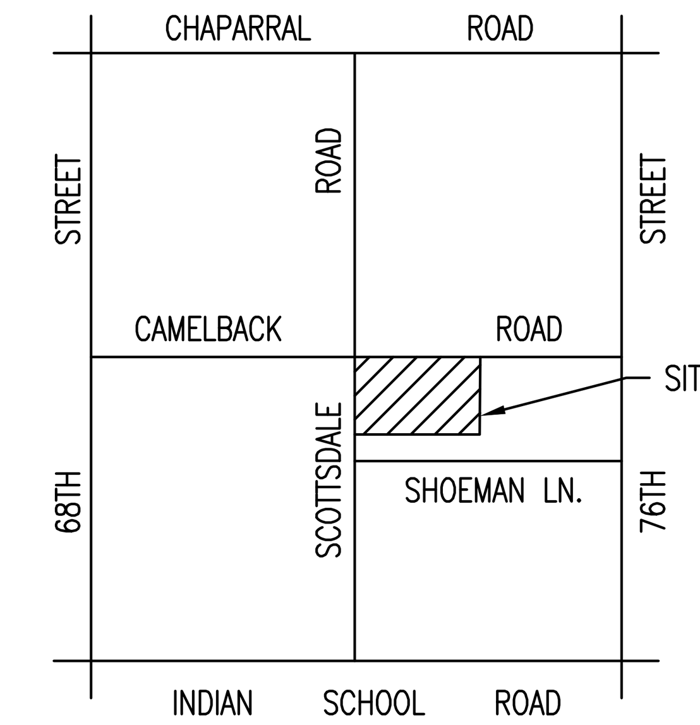
SHEET TITLE:
PRELIMINARY UTILITY PLAN

PAGE NO.: 1 OF 1
SHEET NO.: C4.00

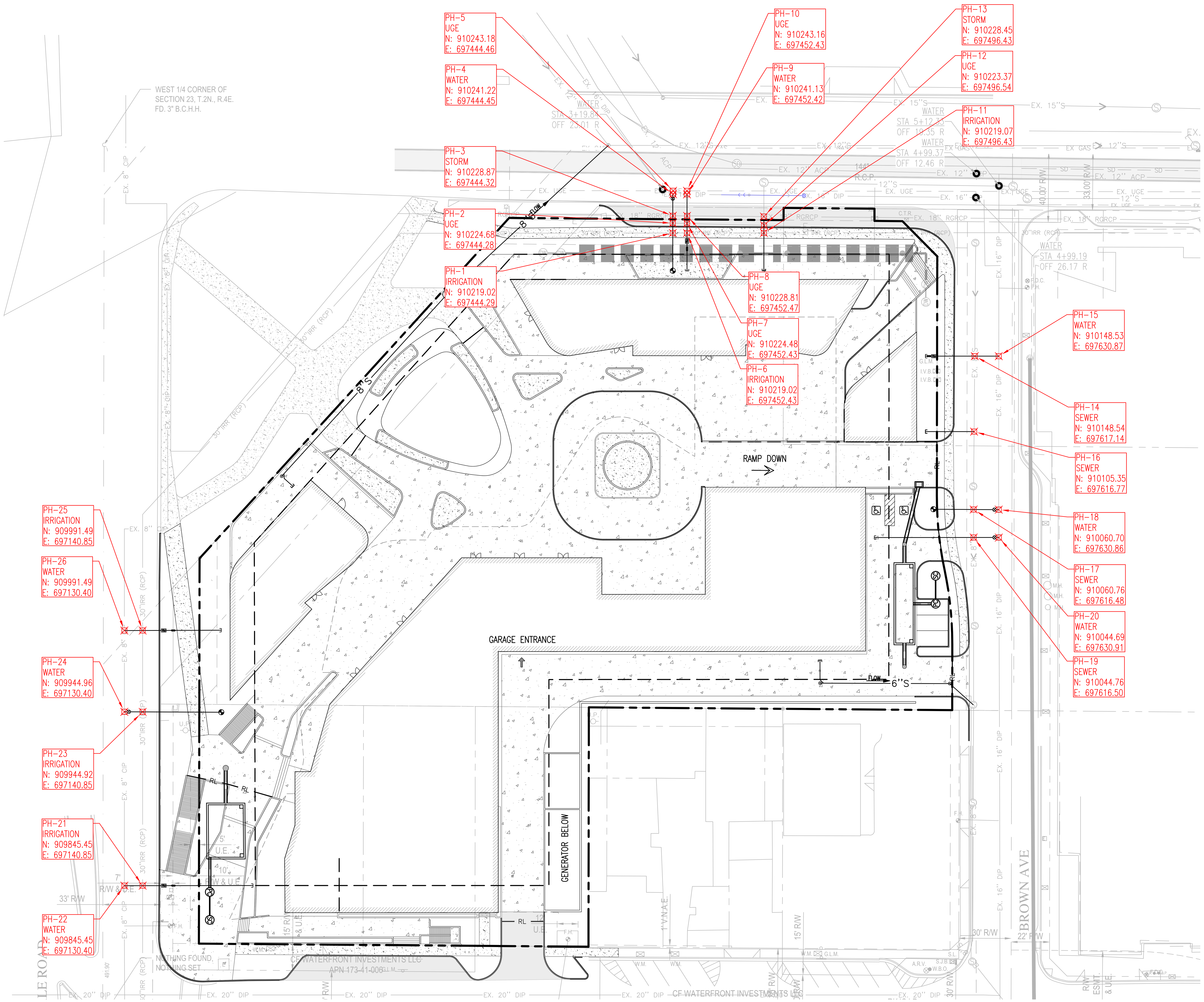
CITY CENTER

POTHOLE EXHIBIT

7201 E. CAMELBACK ROAD, SCOTTSDALE, AZ 85251
A PORTION OF THE SOUTHWEST QUARTER OF SECTION 12, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.



NORTH
VICINITY MAP
S12 T2N R4E
NTS



POTHOLES TABLE

PH-#	DESCRIPTION	TOP ELEVATION	BOTTOM ELEVATION
PH-1			
PH-2			
PH-3			
PH-4			
PH-5			
PH-6			
PH-7			
PH-8			
PH-9			
PH-10			
PH-11			
PH-12			
PH-13			
PH-14			
PH-15			
PH-16			
PH-17			
PH-18			
PH-19			
PH-20			
PH-21			
PH-22			
PH-23			
PH-24			
PH-25			
PH-26			

APPENDIX IV - Utility Line Potholes

PRELIMINARY NOT FOR CONSTRUCTION

SUSTAINABILITY ENGINEERING GROUP
SEG
5240 N. 16TH STREET SUITE 105, PHOENIX, ARIZONA 85016
WWW.AZSEG.COM TEL. 480.588.7226 FAX 480.259.3534
SMITHGROUP

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

PROJECT: CITY CENTER RESIDENTIAL
LOCATION: 7201 E. CAMELBACK ROAD, SCOTTSDALE, AZ, 85251.

DRAWN	MC	09/21/2023
DESIGNED	MC	09/21/2023
CHECKED		
FINAL QC		
PROJ. MGR.	AF	09/21/2023

DATE: 09/21/2023
ISSUED FOR: REVIEW

REVISION NO.:	DATE:

JOB NO.: 221117
SHEET TITLE: POTHOLE EXHIBIT
PAGE NO.: 1 OF 1
SHEET NO.:

APPENDIX B

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance or legislation of the jurisdiction.

User note:

About this appendix: *Appendix B provides a tool for the use of jurisdictions in establishing a policy for determining fire-flow requirements in accordance with Section 507.3. The determination of required fire flow is not an exact science, but having some level of information provides a consistent way of choosing the appropriate fire flow for buildings throughout a jurisdiction. The primary tool used in this appendix is a table that presents fire flow based on construction type and building area based on the correlation of the Insurance Services Office (ISO) method and the construction types used in the* International Building Code®.

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The *fire code official* is authorized to reduce the *fire-flow* requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full *fire-flow* requirements is impractical.

B103.2 Increases. The *fire code official* is authorized to increase the *fire-flow* requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall be not more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the *fire code official* is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code.*

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The *fire-flow calculation area* shall be the total floor area of all floor levels within the *exterior walls*, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings that are separated by *fire walls* without openings, constructed in accordance with the *International Building Code,* are allowed to be considered as separate *fire-flow calculation areas.*

B104.3 Type IA and Type IB construction. The *fire-flow calculation area* of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: *Fire-flow calculation area* for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings, Group R-3 and R-4 buildings and townhouses. The minimum *fire-flow* and flow duration requirements for one- and two-family *dwellings*, Group R-3 and R-4 buildings and *townhouses* shall be as specified in Tables B105.1(1) and B105.1(2).

B105.2 Buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses. The minimum *fire-flow* and flow duration for buildings other than one- and two-family *dwellings*, Group R-3 and R-4 buildings and *townhouses* shall be as specified in Tables B105.2 and B105.1(2).

B105.3 Water supply for buildings equipped with an automatic sprinkler system. For buildings equipped with an *approved automatic sprinkler system*, the water supply shall be capable of providing the greater of:

1. The *automatic sprinkler system* demand, including hose stream allowance.
2. The required *fire flow.*

APPENDIX V

TABLE B105.1(1)
REQUIRED FIRE FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES

FIRE-FLOW CALCULATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
0–3,600	No automatic sprinkler system	1,000	1
3,601 and greater	No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2) at the required fire-flow rate
0–3,600	Section 903.3.1.3 of the *International Fire Code* or Section P2904 of the *International Residential Code*	500	$^1/_2$
3,601 and greater	Section 903.3.1.3 of the *International Fire Code* or Section P2904 of the *International Residential Code*	$^1/_2$ value in Table B105.1(2)	1

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m.

TABLE B105.1(2)
REFERENCE TABLE FOR TABLES B105.1(1) AND B105.2

FIRE-FLOW CALCULATION AREA (square feet)					FIRE FLOW (gallons per minute)[b]	FLOW DURATION (hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	Use 2,500 min
—	High Rise Mixed Use		138,301-Greater	85,101-Greater	8,000	25% = 2,000

All for 2 hr duration

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.
a. Types of construction are based on the *International Building Code*.
b. Measured at 20 psi residual pressure.

TABLE B105.2
REQUIRED FIRE FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the *International Fire Code*	25% of the value in Table B105.1(2)[a]	Duration in Table B105.1(2) at the reduced flow rate
Section 903.3.1.2 of the *International Fire Code*	25% of the value in Table B105.1(2)[b]	Duration in Table B105.1(2) at the reduced flow rate

For SI: 1 gallon per minute = 3.785 L/m.

a. The reduced fire flow shall be not less than 1,000 gallons per minute.

b. The reduced fire flow shall be not less than 1,500 gallons per minute.

SECTION B106
REFERENCED STANDARDS

ICC	IBC—18	International Building Code	B104.2
ICC	IWUIC—18	International Wildland-Urban Interface Code	B103.3
ICC	IRC—18	International Residential Code	Table B105.1(1)
NFPA	1142—17	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3