The Roasterie – Phase 4D
Scottsdale, AZ

Preliminary Wastewater Report

PRELIMINARY Basis of Design Report

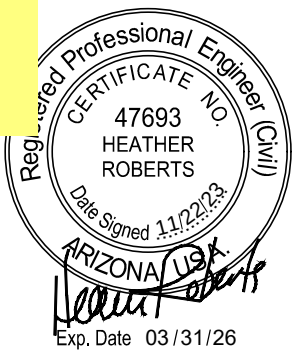
- ☐ ACCEPTED
- ☑ ACCEPTED AS NOTED
- ☐ REVISE AND RESUBMIT

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

Disclaimer: If accepted; the preliminary approval is granted under the condition that a final basis of design report will also be submitted for city review and approval (typically during the DR or PP case). The final report shall incorporate further water or sewer design and analysis requirements as defined in the city design standards and policy manual and address those items noted in the preliminary review comments (both separate and included herein). The final report shall be submitted and approved prior to the plan review submission.
For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY apritchard **DATE** 1/29/2024

Wastewater from the Roasterie may NOT be discharged to the City of Scottsdale wastewater collection system prior to completion and County acceptance of new sewer infrastructure from north of Scottsdale Road and Mayo Blvd to the North Pumpback. This infrastructure is needed to accommodate increased flows from the following development cases/plans.
The Princess Resort will be responsible for repayment (via payback agreements) of proportional design and construction costs for new sewer infrastructure required to convey flows as noted previous. The segments of new wastewater infrastructure that are impacted by this development are as follows:
•From the Scottsdale Rd diversion at Mayo Blvd to the intersection of Mayo Blvd and Miller Rd
•From the intersection of the Mayo Blvd and Miller Rd, south along Miller Rd, across Princess Blvd to Princess Dr,
•South/southeast along Princess Dr to City owned property west of and parallel to Hayden Rd
•South to the TPC golf courses
•East through the TPC golf courses (parallel to the existing sewer) to Pima Rd alignment.
A portion of the overall project costs will be reduced by the allocated funding for two 2021 Wastewater Infrastructure Improvement Plan projects (WW IIP-004 and WW IIP-005). The Princess Resort will be responsible for repayment of proportional costs of the new sewer from Scottsdale Rd and Mayo Blvd to the North Pumpback station under a reimbursement agreement.



Preliminary Wastewater Report
The Roasterie – Phase 4D
Fairmont Scottsdale Princess

NOVEMBER 22, 2023

Prepared By:

Kimley»Horn

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Appendices

Tables

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

1.1.1. General Project Information

The proposed development, located at 7575 E Princess Drive in Scottsdale, Arizona, consists of ± 1 acre of existing resort property. The proposed development is located within the City of Scottsdale (COS), APN# 215-08-695, in a portion of quarter of Section 35, Township 4 North, Range 4 East relative to the Gila and Salt River Base Line and Meridian, Maricopa County Arizona.

More specifically, the site is located south of the resort's Well & Being Spa and North of Building F of the Fairmont Scottsdale Princess (FSP). Refer to *Appendix A* for the project location. The existing property is currently zoned as C-2 and is primarily developed with buildings, sidewalks, and a variety of desert landscaping.

1.1.2. Type of Report

This Preliminary Sewer Report is intended to satisfy City of Scottsdale and Maricopa County requirements for the site improvement wastewater system for the proposed restaurant. This report provides a description of the current sewer infrastructure and systems and a description of the required and proposed sewer design.

1.1.3. Project Description

As part of Phase 4D of the resort's expansion, the FSP is proposing to construct one restaurant/coffee shop with indoor and outdoor dining areas, bounded by existing FSP buildings. The project is anticipated to consist of one 2-story building, outdoor dining, water features, extensive landscaping with integrated hardscape improvements, and utility improvements to support the development. There is no direct access to the site from public ROW or private vehicular drives.

1.1.4. Existing Water System Studies

Refer to *Appendix C* for the Master Sewer Report prepared in November 2023 by Wood Patel (Project No. 215319)

1.1.5. Purpose and Objectives

This report provides a sewer system design for the subject site that is intended to meet the wastewater demands and evaluate system hydraulics based on the standards and guidelines for the City of Scottsdale and Maricopa County.

1.1.6. Wastewater System Design Criteria

The following is a summary of the primary design criteria utilized:

Average Day Wastewater Demand, Restaurant: …… 1.2 gpd/sf

Peak Factor: …….... 6.0

Minimum Mean Full Flow Velocity: ……... 2.5 fps

Minimum Peak Full Flow Velocity: ……..…... 10 fps

Minimum Peak Flow d/D Ratio (12-inch diameter or less sewers): ……... 0.65

Abbreviations: gpd = gallons per day; sf = square feet; ADD = average day demand.

2. EXISTING WASTEWATER INFRASTRUCTURE

2.1 EXISTING DISTRIBUTION SYSTEM

A sanitary sewer manhole exists in the general vicinity to the project to the southwest of the project. The existing manhole service is approximately 15 feet deep. It is anticipated tie in will be to this area. See *Appendix C* for the Sunset Beach Pool Water and Sewer As-built Plan which shows the existing manhole/connection point.

3. PROPOSED WASTEWATER INFRASTRUCTURE

3.1 ONSITE WASTEWATER INFRASTRUCTURE

The restaurant will be served by a proposed 6-inch sanitary sewer connection with a grease interceptor per DSPM 7.1.202, SRC 49.95.

3.3 WASTEWATER DEMAND CALCULATIONS

Based on the current City of Scottsdale design criteria, the projected average-day flow for the proposed restaurant is calculated to be 12,657 gallons per day (gpd) The peak flow is projected to be 75,600 gpd, or 52.5 gpm. Refer to *Table 1: Sewer* Demands for calculations. The proposed sewer slopes, projected flow velocities, and pipe flow capacities with the current flows are summarized in the table and indicate that the wastewater system is adequate for this Site. The water feature demand was not included in the peak flow calculation but was added to the total peak flow demand.

Table 1: Sewer Demands

Land Use	Demand	Building SF	Average Day Demand (gpd)	Peaking Factor	Peak Flow (gpd)	Peak Flow (gpm)
Restaurant	1.2 gpd per SF	10,500 SF	12,600	6	75,600	52.5
Water Feature			57		57	0.5
Total			**12,657**		**75,657**	**53**

4. MAINTENANCE

Ongoing maintenance is required to preserve the system integrity and avoid overload. Failure to provide adequate maintenance can lead to reduced system performance. Maintenance within the property is the responsibility of the owner/developer.

5. SUMMARY AND CONCLUSIONS

Based on our analysis of the proposed restaurant, the following conclusions can be made:

1. The design criteria used to estimate wastewater flows and evaluate system hydraulics are based on the design criteria listed in the *City of Scottsdale Design Standards and Policies Manual, 2018.*

2. The projected average-day flow for the proposed restaurant is calculated to be 12,657 gallons per day (gpd). The peak flow is projected to be 75,600 gpd, or 53 gpm.

6. REFERENCES

Design Standards & Policies Manual, City of Scottsdale, 2018

Wastewater Distribution Report for Fairmont Scottsdale Hotel Expansion by Wood, Patel & Associates, Inc., dated October 29, 2022

Master Wastewater Report by Wood, Patel & Associates, Inc., dated November 22, 2023

Appendix A – Resort Map

Fairmont
SCOTTSDALE PRINCESS

KEY LOCATIONS

★ 1 Lobby
2 Front Desk
3 Bell Desk
4 Concierge/Golf Concierge
5 Car Rental
6 Ironwood Circle
7 Fragrance Garden
8 Fairmont Fitness Center*
9 FedEx Business Center

RESTAURANTS & LOUNGES

10 Bourbon Steak by Michael Mina
11 The Plaza Bar
12 La Hacienda by Richard Sandoval
13 The Social at Princess Pool
14 Sunset Beach Pool Bar
15 Ironwood American Kitchen*
16 Toro Latin Resturant & Rum Bar at TPC *(Complimentary shuttle at front drive)*

POOLS

17 Sonoran Splash Pool & Waterslides
18 Sonoran Landing Pool & Bar *(18 & older)*
19 Princess Pool & Jacuzzis
20 Casita Pool & Jacuzzi
21 Sunset Beach Pool & Splash Pad
22 Well & Being Rooftop Pool *(18 & older)*

RECREATION & RETAIL

23 Provisions Coffee Shop & Retail Market
24 Anna J Women's Boutique
25 Maverick Menswear
26 Trailblazers Recreation Center*
27 Virtual Reality Experience*
28 Sport Court & Playground
29 Well & Being Spa | Sisley-Paris Spa
30 Well & Being Salon

MEETING SPACES

31 Fairmont Gold Meeting Room
32 Princess Plaza
33 Princess Falls*
34 Princess Pool Upper East Deck
35 Princess Pool Upper West Deck
36 Princess Overlook
37 Princess Ballroom & Conference Center
38 Palomino Ballroom & Conference Center
39 North Palomino Plaza
40 East Palomino Plaza
41 Ironwood Meeting Room*
42 Canyon Lawn
43 Hacienda Plaza & Trellis
44 Sunset Lawn
45 Pavilion *(Seasonal)*
46 Copper Canyon Western Town

FAIRMONT GOLD

6101-6114 | 6201-6216
6301-6316 | 6401-6424

B BUILDING

1082-1118 | 2082-2118
3082-3115 | 4082-4098

C BUILDING

1119-1144 | 2119-2144
3119-3141

D BUILDING

1067-1081 | 2067-2081
3061-3081 | 4061-4081

E BUILDING

3038-3060 | 4038-4060

F BUILDING

1014-1037 | 2006-2037
3001-3037 | 4001-4021

G BUILDING

1201-1220 | 2201-2220
3201-3220

SUNSET BEACH

1401-1435 | 2401-2435
3401-3435

CASITAS I

5100-5109
5110-5121
5122-5131
5132-5141

CASITAS II

5200-5209
5210-5221
5222-5231
5232-5241

CASITAS III

5300-5309
5310-5321
5322, 24, 26, 28, 30
5332, 34, 36, 38, 40

CASITAS IV

5400-5409
5410, 12, 14, 16, 18

CASITAS MEETING ROOMS

▲I 5130 Ambassador
▲II 5232 Ambassador
▲III 5308 Chairmans
▲III 5320 Ambassador
▲III 5332 Chairmans
▲IV 5400

* = LOWER LEVEL E = ELEVATORS

View the Resort's Current Events & Offerings
SCAN THIS CODE

Appendix B – Wastewater Demand Calculations

Kimley-Horn and Associates, Inc.

System Description:
The proposed development is located at 7575 E Princess Drive in Scottsdale, Arizona. The development is composed of ± 1 Acre of existing resort property. The proposed development is located within the City of Scottsdale (COS), APN# 215-08-695, in a portion of quarter of Section 35, Township 4 North, Range 4 East relative to the Gila and Salt River Base Line and Meridian, Maricopa County Arizona.

Building Services
Calculations based upon The City of Scottsdale Design Standards & Policies Manual (2018)

Design Peaking Factor (**DPF**)= **6.00** per Figure 7-1.2
Wet Weather Infiltration Percentage of Peak Dry Flow Rate (**WPF**)= 25%

Design Sewage Flow Calculations

Private Sewer Main
Fc= (CF*P)

Land Use	*Use*	*Sewage Demand Rate*		*Demand Criteria*		*Sewage Design Flow [GPD]*
		gpd	*unit*	*Amount*		
Restaurant	Coffee Shop/Restaurant	1.2	SF	10500		12600
	Fountain*					57
Total				**10,500**		**12,657.0**

***Fountain flows not included in peak**

Fc = 12,600 GPD
Fc = 9 GPM

Anticipated Flowrate
Flowrate w/ Dry Peaking Factor (Fd) = (DPF*Fc)
Flowrate w/ Wet Peaking Factor (Fw) = Fd*(1+WPF)

Fd = 53 GPM
Fw = 66 GPM

Capacity Calculation:

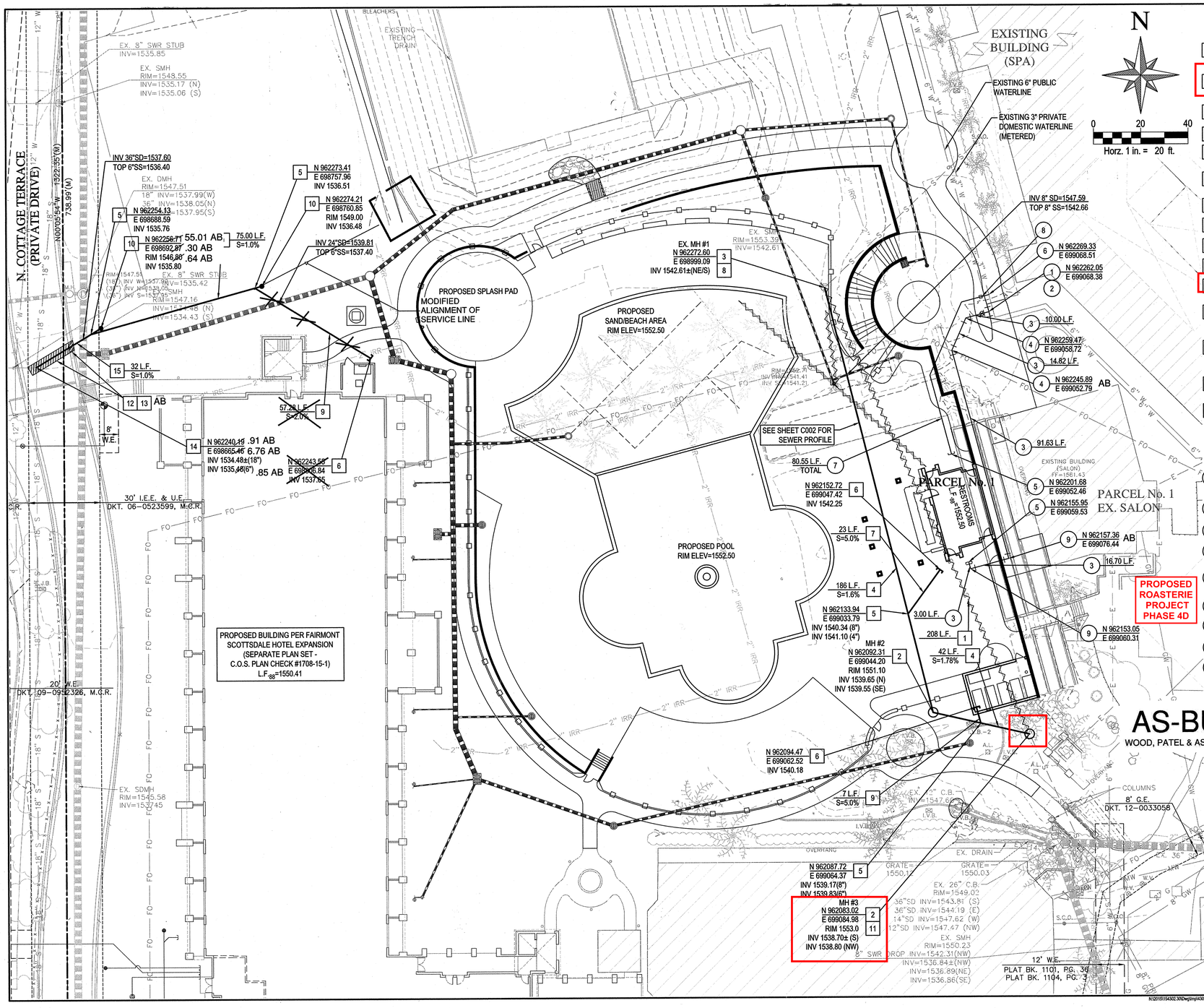
Diameter =	**6**	in	Private Sewer Main
Cross-Section Area =	**0.20**	ft^2	
Min Design Slope =	**0.0077**	ft/ft	
Max Design Slope =	**0.1200**	ft/ft	
Manning's "n" =	**0.013**		
Min Full Flow Velocity =	**2.51**	> 2.5ft/s	
Max Full Flow Velocity =	**9.93**	< 10 ft/s	
Full Flow Capacity =	**222**	gpm > Fw	
Max d/D - Dry Weather Conditions =	**30**	% < 75%	

Meet Criteria?
YES
YES
YES
YES

LAND USE	DEMAND (gpd)	DESIGN PEAKING FACTOR
Commercial/Retail	0.5 per sq. ft.	3
Office	0.4 per sq. ft.	3
Restaurant	1.2 per sq. ft.	6
High Density Condominium (Condo)	140 per unit	4.5
Resort Hotel (includes site amenities)	380 per room.	4.5
School: without cafeteria	30 per student	6
School: with cafeteria	50 per student	6
Cultural	0.1 per sq. ft.	3
Clubhouse for Subdivision Golf Course	100 per patron x 2 patrons per du per day	4.5
Fitness Center/ Spa/ Health club	0.8 per sq. ft.	3.5

FIGURE 7-1.2 AVERAGE DAY SEWER DEMAND IN GALLONS PER DAY & PEAKING FACTORS BY LAND USE

Appendix C – Sunset Beach Pool Water and Sewer As-built Plan



SEWER NOTES

1. EXISTING 8" SANITARY SEWER LINE TO BE ABANDON IN PLACE FOR RELOCATION. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING SEWER LINE PRIOR TO CONSTRUCTION.
2. CONSTRUCT 4' DIA. MANHOLE PER M.A.G. STD. DETAIL 420 & 424 WITH SEWER SHIELD 100 EPOXY LINING BY ENVIRONMENTAL COATINGS OR APPROVED EQUAL.
3. REMOVE EXISTING SEWER PIPE TO SOUTHEAST AND CORE DRILL NEW SEWER STUB. REWORK EXISTING BENCH AND PATCH EXISTING MANHOLE AS REQUIRED.
4. INSTALL 8" PVC SDR35 SANITARY SEWER PIPE.
5. INSTALL WYE PER M.A.G. STD. DETAIL 440-1.
6. SEE PLUMBING PLANS FOR CONTINUATION, SHEET P-200. CONTRACTOR TO COORDINATE EXACT LOCATION & ELEVATION WITH PLUMBING PLANS. NOTIFY OWNERS AGENT OF ANY DISCREPANCIES.
7. INSTALL 4" PVC SDR35 SANITARY SEWER PIPES.
8. ADJUST SEWER MANHOLE TO NEW GRADE PER M.A.G. STD. DETAIL 522.
9. INSTALL 6" PVC SDR35 SANITARY SEWER PIPE.
10. INSTALL SANITARY SEWER CLEANOUT. USE JAY R. SMITH MODEL NO. 4250 OR EQUAL COVER.
11. CONNECT TO EXISTING SANITARY SEWER AS REQUIRED.
12. SAWCUT, REMOVE, AND REPLACE EXISTING ASPHALT, IN-KIND PER M.A.G. STD. DETAILS 200-1 AND 200-2. USE T-TOP REPLACEMENT WHEN REPLACEMENT IS FOR SEWER INSTALLATION.
13. SAWCUT, REMOVE & REPLACE EXISTING SINGLE CURB, CURB & GUTTER FOR PROPOSED SEWER CONSTRUCTION TO THE NEAREST JOINT OF THE LIMITS SHOWN.
14. CORE DRILL & CONNECT TO EXISTING MANHOLE PER M.A.G. STD. DETAIL 420-1. REWORK EXISTING BENCH AS REQUIRED. FIELD VERIFY EXISTING INVERT PRIOR TO CONSTRUCTION. NOTIFY OWNERS AGENT OF ANY DISCREPANCY.
15. INSTALL 6" RESTRAINED JOINT C-900 PVC PIPE.

WATER NOTES

1. CONNECT TO EXISTING 6" WATERLINE. CONTRACTOR TO FIELD VERIFY EXACT LOCATION & INVERT ELEVATION PRIOR TO CONSTRUCTION. NOTIFY OWNERS AGENT OF ANY DISCREPANCY.
2. INSTALL 6"x4" TAPPING SLEEVE AND VALVE PER M.A.G. STD. DETAIL 340.
3. INSTALL 4" D.I.P. PRESSURE CLASS 350 FIRELINE WITH RESTRAINED JOINTS (3' MIN. COVER).
4. INSTALL 45° BEND.
5. SEE PLUMBING PLANS FOR CONTINUATION, SHEET P-201. CONTRACTOR TO COORDINATE LOCATION AND ELEVATION WITH PLUMBING PLANS PRIOR TO CONSTRUCTION. NOTIFY OWNERS AGENT OF ANY DISCREPANCY.
6. CONNECT TO EXISTING 3" PRIVATE WATERLINE AS REQUIRED.
7. INSTALL 1" TYPE 'K' HARD COPPER DOMESTIC WATERLINE PER M.A.G. SPECIFICATIONS 754.
8. INSTALL BALL VALVE IN CONCRETE METER BOX PER M.A.G. STD. DETAIL 320.
9. INSTALL 90° BEND.

NOTES

1) SEWER SYSTEM FOR THIS DEVELOPMENT IS PRIVATE. MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER.
2) ONSITE DOMESTIC WATER AND SEWER SYSTEM CONSTRUCTION TO BE PER 2012 INTERNATIONAL PLUMBING CODE (IPC).
3) C.O.S. PUBLIC WATERLINE EASEMENTS TO BE FREE OF OBSTRUCTIONS AND ACCESSIBLE TO CITY FORCES AT ALL TIMES.
4) RESTRAIN JOINTS SHALL BE INSTALLED ON ALL WATERLINES PER M.A.G. STD. DETAIL 303-1 & 303-2 MEGA-A-LUG OR C.O.S. APPROVED EQUAL.
5) WATERLINES SHALL NOT BE ENCASED AT SEWER CROSSINGS PER THE CITY OF SCOTTSDALE. AT SEWER CROSSINGS, CENTER CONTINUOUS PIPE SECTION (DIP W/ MECHANICAL RESTRAINED JOINTS) TO 6' (MIN) EACH SIDE OF CROSSING.
6) NO METER AND BACKFLOW PREVENTOR PROVIDED FOR LANDSCAPING FROM CITY SERVICES. REFER TO LANDSCAPE PLANS FOR SERVICE FROM EXISTING PRIVATE GREY WATER SYSTEM.
7) CONTRACTOR TO COORDINATE WATER, SEWER, AND GAS UTILITIES WHERE THEY CROSS EACH OTHER PRIOR TO INSTALLATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.

WOOD/PATEL
MISSION: CLIENT SERVICE™
(602) 335-8500
WWW.WOODPATEL.COM
PHOENIX - MESA - TUCSON

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

Fairmont SCOTTSDALE PRINCESS

SUNSET BEACH POOL
WATER & SEWER PLAN

2nd CITY SUBMITTAL
DR CASE # 605-PA-15 PLAN CHECK # 5048-15

REV	DESCRIPTION	DATE

NOT FOR CONSTRUCTION

SCALE (HORIZONTAL) 1"=20'
SCALE (VERTICAL) N/A
DATE 10/08/2015
JOB NUMBER 154302.30
SHEET C005 OF 5

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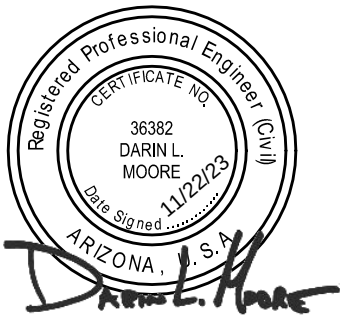
Appendix D – Master Wastewater Report by Wood, Patel & Associates, Inc.

MASTER WASTEWATER REPORT
FOR
FAIRMONT SCOTTSDALE PRINCESS

November 22, 2023
WP# 215319

Prepared by
Robert G. Saunders, EIT



EXPIRES 06-30-25

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EXPIRES 06-30-25

1.0 INTRODUCTION

1.1 General Background

This Master Wastewater Report for the Fairmont Scottsdale Princess addresses the addition of six (6) proposed projects that will improve approximately 15.6 acres across three (3) parcels with a combined total area of 53.4 acres. The three (3) parcels disturbed within the City of Scottsdale are APN#215-08-695, APN#215-08-694, and APN#215-08-693 which are all zoned C-2. Each project will include one (1) or more buildings, hardscape, landscape, and utility improvements.

The design criteria used to estimate wastewater flows and evaluate system hydraulics are based on Wood, Patel & Associates, Inc's (WOODPATEL's) understanding of the requirements listed in the *City of Scottsdale Design Standards and Policies Manual, 2018* (Ref.1).

The following is a summary of the design criteria utilized:

Average Day Wastewater Demand, Commercial/Retail: .....0.5 gpd / sf
Average Day Wastewater Demand, Resort/Hotel: ..... 380 gpd / DU
Average Day Wastewater Demand, Restaurant: .....1.2 gpd / sf
Peak Factor, Commercial/Retail: 3.0
Peak Factor, Resort/Hotel: 4.5
Peak Factor, Restaurant: 6.0
Minimum Mean Full Flow Velocity: .....2.50 fps
Maximum Peak Full Flow Velocity: .....10.0 fps
Maximum Peak Flow d/D Ratio (greater than 12-inch diameter): .....d/D = 0.70
Maximum Peak Flow d/D Ratio (12-inch diameter or less sewers): .....d/D = 0.65
Abbreviations: gpd = gallons per day; sf = square feet; DU = Dwelling Units; fps = feet per second

1.2 Project Location

The Fairmont Scottsdale Princess is a sprawling resort property with multiple guest buildings and amenities including pools, restaurants, conference rooms, and retail. It is located within Section 35, Township 4 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. Refer to Exhibit 1 - *Vicinity Map* for project location. The specific location of the proposed projects onsite are as follows:

The Sunset Villas and Bungalows project includes nine (9) proposed buildings on approximately 3.7 acres of an approximate 34.4-acre parcel (APN#215-08-695). This project is located east of Cottage Terrace, south of Hacienda Way, and west of the existing Spa Building.

The Conference Center/Event Lawn project includes a proposed building with open space for events on approximately 10.95 acres overlapping two (2) parcels with an approximate area of 44.4 acres (APN#215-08-693 and APN#215-08-695). This project is located east of Cottage Terrace, north of Hacienda Way, and west of the existing Palomino Ballroom.

The Parking Garage project includes a multi-level parking structure on approximately 3.9 acres of an approximate 9.0-acre parcel (APN#215-08-694). This project is located east of Princess Drive and south of Princess Boulevard.

The Guest Room Addition project includes a single building with underground parking on approximately 0.9 acres of an approximate 34.4-acre parcel (APN#215-08-695). This project is located east of Cottage Terrace and south of Hacienda Way.

The Italian Restaurant is a proposed restaurant on approximately 0.37 acres of an approximate 9.94-acre parcel (APN#215-08-693). This project is located on the southeast corner of Princess Boulevard and Cottage Terrace.

The Roasterie Restaurant is a proposed restaurant on approximately 0.24 acres of an approximate 34.4-acre parcel (APN#215-08-695). This project is located approximately 512-feet east of Cottage Terrace, 1151-feet south of East Hacienda Way, and south of the existing Spa Building.

2.0 EXISTING WASTEWATER INFRASTRUCTURE

2.1 Existing Utility System Conditions

The wastewater infrastructure in the area includes an existing public 18-inch sewer main within Cottage Terrace which flows south through the TPC Golf Course to Pima Road and south to the City of Scottsdale North Pumpback Station. There is also an existing public 8-inch sewer main within Princess Drive that flows to the City of Scottsdale North Pumpback Station, however it does not contribute to the existing public 18-inch sewer main within Cottage Terrace. An existing private 8-inch sewer line within Hacienda Way connects to the existing public 18-inch sewer main within Cottage Terrace. Another existing private 8-inch sewer line connects to the existing public 18-inch sewer main just prior to leaving the southern property boundary. Refer to Exhibit 2 – *Concept Master Sewer Exhibit*.

Between September 5, 2022, and September 25, 2022, sewer flows within the existing Cottage Terrace public 18-inch sewer main and the private 8-inch sewer line in Hacienda Way were monitored by Western Environmental at Manhole #9 (EX SSMH #9), Manhole #17 (EX SSMH #17), and Manhole #21 (EX SSMH #21). The results provided on November 4, 2022, show the peak flow of EX SSMH #9, EX SSMH #17, and EX SSMH #21 to be 1,411,706, 1,883,823, and 59,456 gpd, respectively. Based on these results, the existing wastewater flow from the private 8-inch sewer line that connects to the existing public 18-inch sewer main at EX SSMH #16 was determined to be 412,661 gpd. Refer to Appendix B– *Wastewater Monitoring Results* and Exhibit 2 – *Concept Master Sewer Exhibit.*

2.2 City of Scottsdale Sewer Collection System Analysis

WOODPATEL reviewed the *REVISED DRAFT April 7, 2023, North Airpark Sewer Study* prepared by Carollo, as provided by the City of Scottsdale. This draft study analyzes existing developed properties, current proposed projects as well as projections for undeveloped parcels in the Greater Airpark Character

Area. The Fairmont Scottsdale Princess property lies within the "TPC - Princess to North Pumpback" sewer basin/contribution area.

The draft study includes "Princess Resort Expansion" flows per "Master Plan: Phase 2 Sunset Beach Villas & Bungalows (38-DR-2022) and four BODs submitted under 5-ZN-2015#2". However, WOODPATEL has not verified the accuracy of the "Princess Resort Expansion" data stated in "Table 1 Buildout Wastewater Flow Projections for Undeveloped and Partially Developed Areas".

The draft study includes recommendations to improve capacities of the public sewer mains receiving flows from the existing resort and proposed projects described within this master report. It is important to note that improvements to the City's existing public sewer collection system are outside the scope of this Fairmont Scottsdale Princess analysis and are not included within the conclusions of WOODPATEL's Master Wastewater Report.

3.0 PROPOSED WASTEWATER INFRASTRUCTURE

Wastewater flows generated by the proposed developments can be found in Appendix A – *Wastewater Demand Calculations.* These flows were calculated utilizing published average day demand values with the associated peaking factor applied, in accordance with the *City of Scottsdale Design Standards and Policy Manual* (Ref. 1).

3.1 Proposed Layout

The existing private 8-inch sewer main in Hacienda Way will require realigning to serve the existing Palomino Ballroom, the existing Western Town, and the proposed Conference Center building. All proposed wastewater services ultimately contribute to the existing public 18-inch sewer main within Cottage Terrace. The six (6) proposed projects will require a total of thirteen (13) sewer service connections. Refer to Exhibit 2 – *Concept Master Sewer Exhibit* for existing and proposed wastewater layouts.

3.1.1 Sunset Villas and Bungalows

The proposed wastewater services for this project includes nine (9) 6-inch sewer service connections that combine into a single point of connection at a proposed manhole on the existing 18-inch sewer main within Cottage Terrace.

3.1.2 Conference Center/Event Lawn

The proposed wastewater service for this project consists of one (1) 6-inch sewer service connection to the reconfigured private 8-inch sewer line in Hacienda Way, which also serves the existing Palomino Ballroom and the existing Western Town, and one (1) 6-inch sewer service connection to the existing public 18-inch sewer main in Cottage Terrace.

3.1.3 Parking Garage

No sewer service is required for this project.

3.1.4 Guest Room Addition

The proposed wastewater service for this project consists of one (1) 8-inch sewer service connection to a proposed manhole on the existing public 18-inch sewer main within Cottage Terrace.

3.1.5 The Italian Restaurant

The proposed wastewater service for this project consists of one (1) 6-inch sewer service connection with a grease trap to the existing public 18-inch sewer main within Cottage Terrace. A proposed fountain will connect to the proposed 6-inch sewer service.

3.1.6 The Roasterie Restaurant

The proposed wastewater service for this project consists of one (1) 6-inch service connection to the existing private 8-inch sewer line which connects to the existing 18-inch sewer main at the southern boundary to the TPC. A grease trap will be connected to the proposed 6-inch service which extends from EX SSMH #1. A proposed fountain will connect to the proposed 6-inch sewer service.

3.2 Modeling and Results

Based on current City of Scottsdale design criteria, the peak flow from the proposed Fairmont Scottsdale Princess projects is projected to be 697,865 gpd. The peak flow entering the existing public 18-inch sewer main within Cottage Terrace from the Italian Restaurant, Conference Center/Event Lawn, Guest Room Addition, Sunset Villas and Bungalows, and the Roasterie Restaurant are 118,857 gpd, 164,771 gpd, 265,050 gpd, 73,530 gpd, and 75,657 gpd, respectively. The proposed sewer slopes, projected flow velocities, and pipe flow capacities are summarized in Appendix A - *Wastewater Demand Calculations*.

Table 1: Wastewater Demands

Project	Commercial (Retail/Mall) (sf)	Restaurant (sf)	Resort Hotel (includes site amenities) (room)	ADD Demand Value	Average Day Demand (gpd)	Peaking Factor	Peak Flow (gpd)
Sunset Villas and Bungalows			43	380	16,340	4.5	73,530
Conference Center/Event Lawn	94,358			0.5	47,179	3.0	141,537
		3,219		1.2	3,863	6.0	23,177
	Fountain*			N/\A	57	N/A	57
Parking Garage	N/A	N/A	N/A	N/\A	N/A	N/A	N/A
Guest Room Addition			155	380	58,900	4.5	265,050
The Italian Restaurant		16,500		1.2	19,800	6.0	118,800
	Fountain*			N/\A	57	N/A	57
The Roasterie Restaurant		10,500		1.2	12,600	6.0	75,600
	Fountain*			N/\A	57	N/A	57
Total					158,853		697,865

* Fountain demand value from Appendix C – *Scottsdale Water Demand Exhibit*

The total peak flow within the wastewater collection system, which includes both the existing flow as discussed in Section 2.1 and the calculated peak flow from the proposed projects, is projected to be 2,581,688 gpd. The highest resulting d/D is 0.67 and the highest resulting capacity percentage is 79.4%. These values are below the City of Scottsdale maximum allowable d/D of 0.70 according to Ref. 1. Refer to Appendix A – *Wastewater Demand Calculations.*

4.0 CONCLUSIONS

The following conclusions can be made based on the above analysis for the six (6) proposed Fairmont Scottsdale Princess projects:

1. Wastewater design criteria utilized for this analysis is based on WOODPATEL's understanding of the published City of Scottsdale Design Standards and Policies Manual, 2018.

2. The total peak flow of the proposed projects plus the existing sewer flows from the monitoring data is projected to result in a total of 2,581,688 gpd with a d/D of 0.67.

3. Five (5) of the six (6) proposed Fairmont Scottsdale Princess projects will contribute to the existing public 18-inch sewer main in Cottage Terrace. The Parking Garage project does not include a sewer service.

4. The capacity of the existing Cottage Terrace public 18-inch wastewater main is sufficient to accept peak flows from the proposed projects.

5.0 REFERENCES

1. *City of Scottsdale Design Standards and Policies Manual, Scottsdale, AZ*, 2018.

2. *The Italian Restaurant – Phase 4C, Scottsdale, AZ*, by Kimley-Horn and Associates, Inc. November 2023.

3. *The Roasterie Restaurant – Phase 4D, Scottsdale, AZ*, by Kimley-Horn and Associates, Inc. November 2023.

4. *City of Scottsdale North Airpark Sewer Study Technical Memorandum Sewer Collection System Analysis, Revised Draft, Scottsdale, AZ,* Scottsdale Water, April 2023.

APPENDIX A – WASTEWATER DEMAND CALCULATIONS

WOOD PATEL

TABLE 1
WASTEWATER DESIGN CRITERIA

Project	Farimont Scottsdale Princess
Location	Scottsdale, AZ
Project Number	215319
Project Engineer	Andrew J. Sanchez, E.I.T.
References	City of Scottsdale Design Standards and Policies Manual (2018)

RESIDENTIAL WASTEWATER DEMANDS

LAND USE	AVERAGE DAILY DEMAND (ADD)		NOTES
	VALUE	UNITS	
Single Family Residential	240	gpd/DU	Note 1
Multi-Family Residential	180	gpd/DU	Note 1

NON-RESIDENTIAL WASTEWATER DEMANDS

LAND USE	AVERAGE DAILY DEMAND (ADD)		NOTES
	VALUE	UNITS	
Commercial (Retail/Mall)	0.5	gpd/sf	Note 1
Commercial (Office)	0.4	gpd/sf	Note 1
Restaurant	1.2	gpd/sf	Note 1
High Density Condominium (Condo)	140.0	gpd/Room	Note 1
Resort Hotel (includes site amenities)	380.0	gpd/Room	Note 1
School: without Cafeteria	30	gpd/Student	Note 1
School: with Cafeteria	50	gpd/Student	Note 1
Cultural	0.1	gpd/sf	Note 1
Clubhouse for Subdivision of Golf Course	100	gpd/Patron	Note 1
Fitness Center/ Spa/ Health club	0.8	gpd/sf	Note 1

HYDRAULIC MODELING CRITERIA

DESCRIPTION	VALUE[1]
PEAK FLOW	
Peak Flow = Peaking Factor (PF) x ADD	
Commercial/Retail	3.0
Fitness Center/Spa/Health Club	3.5
High Density Condominium	4.5
Clubhouse for Subdivision Golf Course	4.5
Resort Hotel	4.5
Restaurant	6.0
HYDRAULICS	
Minimum Service Line Diameter (in)	6
Manning's "n" value	0.013
Maximum d/D ratio at peak flow	0.65

PIPE SIZE	MEAN VELOCITY[1]		DESIGN SLOPE[1]	
(in)	Minimum (ft/sec)	Maximum (ft/sec)	Minimum (%)	Maximum (%)
8	2.5	10.0	0.380	6.980
10	2.5	10.0	0.306	5.121
12	2.5	10.0	0.256	3.919

Notes
1. Per City of Scottsdale Design Standards and Policies Manual (2018)

TABLE 2
EXISTING CONDITIONS WASTEWATER MODEL

Project	Farimont Scottsdale Princess
Location	Scottsdale, AZ
Project Number	215319
Project Engineer	Andrew J. Sanchez, E.I.T.
References	City of Scottsdale Design Standards and Policies Manual (2018)
	Arizona Administrative Code, Title 18, Chapter 9

FROM NODE	TO NODE	SEWER PEAK FLOW (gpd)	TOTAL FLOW (gpd)	PEAKING FACTOR	TOTAL PEAK FLOW (gpd)	TOTAL PEAK FLOW (gpm)
Outfall 1 West						
EX. SSMH #1 *	EX. SSMH #2	1,411,706	1,411,706	1.0	1,411,706	980
EX. SSMH #2	EX. SSMH #3	--	1,411,706	1.0	1,411,706	980
THE ITALIAN	EX. SSMH #3	--	--	1.0	--	--
EX. SSMH #3	EX. SSMH #4	--	1,411,706	1.0	1,411,706	980
SSMH #1*	SSMH #2	59,456	59,456	1.0	59,456	41
SSMH #2	SSMH #3	--	59,456	1.0	59,456	41
SSMH #3	EX. SSMH #21	--	59,456	1.0	59,456	41
EX. SSMH #21	EX. SSMH #20		59,456	1.0	59,456	41
EX. SSMH #20	EX. SSMH #4	--	59,456	1.0	59,456	41
EX. SSMH #4	GUEST ROOM ADDITION	--	1,471,162	1.0	1,471,162	1,022
GUEST ROOM ADDITION	EX. SSMH #5	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #5	SUNSET VILLAS & BUNGALOWS	--	1,471,162	1.0	1,471,162	1,022
SUNSET VILLAS & BUNGALOWS	EX. SSMH #6	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #6	EX. SSMH #7	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #7	EX. SSMH #8	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #8	EX. SSMH #9	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #9	EX. SSMH #10	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #10	EX. SSMH #11	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #11	EX. SSMH #12	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #12	EX. SSMH #13	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #13	EX. SSMH #14	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #14	EX. SSMH #15	--	1,471,162	1.0	1,471,162	1,022
EX. SSMH #15	EX. SSMH #16	--	1,471,162	1.0	1,471,162	1,022
THE ROASTERIE	EX. SSMH #16	--	--	1.0	--	--
EX. SSMH #16	EX. SSMH #17 *	412,661	1,883,823	1.0	1,883,823	1,308
Total Outfall 1		**1,883,823**	**1,883,823**		**1,883,823**	**1,308**

* = Peak Flows gathered from Sewer Monitoring data provided by Western Environmental on 11/04/2022

WOOD PATEL

TABLE 3
PROPOSED PEAK FLOW CONDITIONS

Project Farimont Scottsdale Princess
Location Scottsdale, AZ
Project Number 215319
Project Engineer Andrew J. Sanchez, E.I.T.
References City of Scottsdale Design Standards and Policies Manual (2018)
Arizona Administrative Code, Title 18, Chapter 9

		LAND USE							
FROM NODE	**TO NODE**	**Commercial (Retail/Mall) (sf)**	**Restaurant (sf)**	**Resort Hotel (includes site amenities) (Room)**	**SEWER NODE ADD (gpd)**	**PEAKING FACTOR**	**PEAK FLOW (gpd)**	**TOTAL PEAK FLOW (gpd)**	**TOTAL PEAK FLOW (gpm)**
Outfall 1 West									
EX. SSMH #1 *	EX. SSMH #2	--	--	--	--	--	--	--	--
EX. SSMH #2	EX. SSMH #3	--	--	--	--	--	--	--	--
THE ITALIAN	EX. SSMH #3	--	16,500	--	19,857****	6.0	118,857	118,857	83
EX. SSMH #3	EX. SSMH #4	--	--	--	--	--	--	118,857	83
CONFERENCE CENTER**	EX. SSMH #4	47,179	--	--	23,647****	3.0	70,826	70,826	49
SSMH #1*	SSMH #2	--	--	--	--	--	--	--	--
CONFERENCE CENTER***	SSMH #3	47,179	3,219	--	27,452	3.0 / 6.0	93,945	93,945	65
SSMH #2	SSMH #3	--	--	--	--	--	--	--	--
SSMH #3	EX. SSMH #21	--	--	--	--	--	--	93,945	65
EX. SSMH #21	EX. SSMH #20	--	--	--	--	--	--	93,945	65
EX. SSMH #20	EX. SSMH #4	--	--	--	--	--	--	93,945	65
EX. SSMH #4	GUEST ROOM ADDITION	--	--	--	--	--	--	283,628	197
GUEST ROOM ADDITION	EX. SSMH #5	--	--	155	58,900	4.5	265,050	548,678	381
EX. SSMH #5	SUNSET VILLAS & BUNGALOWS	--	--	--	--	--	--	548,678	381
SUNSET VILLAS & BUNGALOWS	EX. SSMH #6	--	--	43	16,340	4.5	73,530	622,208	432
EX. SSMH #6	EX. SSMH #7	--	--	--	--	--	--	622,208	432
EX. SSMH #7	EX. SSMH #8	--	--	--	--	--	--	622,208	432
EX. SSMH #8	EX. SSMH #9	--	--	--	--	--	--	622,208	432
EX. SSMH #9	EX. SSMH #10	--	--	--	--	--	--	622,208	432
EX. SSMH #10	EX. SSMH #11	--	--	--	--	--	--	622,208	432
EX. SSMH #11	EX. SSMH #12	--	--	--	--	--	--	622,208	432
EX. SSMH #12	EX. SSMH #13	--	--	--	--	--	--	622,208	432
EX. SSMH #13	EX. SSMH #14	--	--	--	--	--	--	622,208	432
EX. SSMH #14	EX. SSMH #15	--	--	--	--	--	--	622,208	432
EX. SSMH #15	EX. SSMH #16	--	--	--	--	--	--	622,208	432
THE ROASTERIE	EX. SSMH #16	--	10,500	--	12,657****	6.0	75,657	75,657	53
EX. SSMH #16	EX. SSMH #17 *	--	--	--	--	--	--	697,865	485
Total Outfall 1		**94,358**	**30,219**	**198**	**158,853**		**697,865**	**697,865**	**485**

** = 50% of Conference Center's comercial retail/mall wastewater demand.

*** = 50% of Conference Center's commercial retail/mall wastewater demand plus "Restaurant " wastewater demads applied for the kitchen.

**** = Additional fountain wastewater demand calculated by Scottsdale Development Water Demand Exhibit.

WOOD PATEL

TABLE 4
FULL-BUILD OUT CONDITIONS
WASTEWATER MODEL

Project	Farimont Scottsdale Princess
Location	Scottsdale,AZ
ProjectNumber	215319
ProjectEngineer	Andrew J. Sanchez, E.I.T.
References	City of Scottsdale Design Standards and Policies Manual (2018)
	Arizona Administrative Code, Title 18, Chapter 9

FROM NODE	TO NODE	PEAKFLOW (gpd)	TOTAL PEAK FLOW (gpd)	TOTAL PEAK FLOW (gpm)
Outfall 1West				
EX. SSMH #1 *	EX. SSMH #2	1,411,706	1,411,706	980
EX. SSMH #2	EX. SSMH #3	-	1,411,706	980
THE ITALIAN	EX. SSMH #3	118,857	118,857	83
EX. SSMH #3	EX. SSMH #4	-	1,530,563	1,063
CONFERENCE CENTER**	EX. SSMH #4	70,826	70,826	49
SSMH #1*	SSMH #2	59,456	59,456	41
CONFERENCE CENTER***	SSMH #3	93,945	93,945	65
SSMH #2	SSMH #3	-	59,456	41
SSMH #3	EX. SSMH #21	-	153,401	107
EX. SSMH #21	EX. SSMH #20	-	153,401	107
EX. SSMH #20	EX. SSMH #4	-	153,401	107
EX. SSMH #4	GUEST ROOM ADDITION	-	1,754,790	1,219
GUEST ROOM ADDITION	EX. SSMH #5	265,050	2,019,840	1,403
EX. SSMH #5	SUNSET VILLAS & BUNGALOWS	-	2,019,840	1,403
SUNSET VILLAS & BUNGALOWS	EX. SSMH #6	73,530	2,093,370	1,454
EX. SSMH #6	EX. SSMH #7	-	2,093,370	1,454
EX. SSMH #7	EX. SSMH #8	-	2,093,370	1,454
EX. SSMH #8	EX. SSMH #9	-	2,093,370	1,454
EX. SSMH #9	EX. SSMH #10	-	2,093,370	1,454
EX. SSMH #10	EX. SSMH #11	-	2,093,370	1,454
EX. SSMH #11	EX. SSMH #12	-	2,093,370	1,454
EX. SSMH #12	EX. SSMH #13	-	2,093,370	1,454
EX. SSMH #13	EX. SSMH #14	-	2,093,370	1,454
EX. SSMH #14	EX. SSMH #15	-	2,093,370	1,454
EX. SSMH #15	EX. SSMH #16	-	2,093,370	1,454
THE ROASTERIE	EX. SSMH #16	75,657	75,657	53
EX. SSMH #16	EX. SSMH #17 *	412,661	2,581,688	1,793
Total Outfall 1		**2,581,688**	**2,581,688**	**1,793**

WOOD PATEL

TABLE 5
PROPOSED WASTEWATER CAPACITY

Project Farimont Scottsdale Princess
Location Scottsdale, AZ
Project Number 215319
Project Engineer Andrew J. Sanchez, E.I.T.
References City of Scottsdale Design Standards and Policies Manual (2018)
ADEQ Bulletin No. 11

						PEAK FLOW RESULTS					
FROM NODE	**TO NODE**	**PIPE SIZE**	**MODELED PIPE SLOPE**	**PIPE CAPACITY (FULL)**		**PEAK FLOW**	**PEAK FLOW**	**d/D**	**MEAN VELOCITY (at d/D=0.70)**	**SURPLUS CAPACITY**	**PERCENT OF CAPACITY**
		(in)	**(ft/ft)**	**(gpd)**	**(gpm)**	**(gpd)**	**(gpm)**		**(ft/sec)**	**(gpd)**	**(%)**
Outfall 1West											
EX. SSMH #1 *	EX. SSMH #2	18	0.0030	3,713,427	2579	1,411,706	980	0.43	3.6	2,301,721	38.0%
EX. SSMH #2	EX. SSMH #3	18	0.0033	3,904,878	2712	1,411,706	980	0.42	3.8	2,493,172	36.2%
THE ITALIAN	EX. SSMH #3	6	0.0040	229,994	160	118,857	83	0.51	2.0	111,137	51.7%
EX. SSMH #3	EX. SSMH #4	18	0.0050	4,813,872	3343	1,530,563	1,063	0.39	4.6	3,283,309	31.8%
CONFERENCE CENTER**	EX. SSMH #4	8	0.0050	553,785	385	59,456	41	0.22	2.7	494,329	10.7%
SSMH #1*	SSMH #2	8	0.0050	553,785	385	59,456	41	0.22	2.7	494,329	10.7%
CONFERENCE CENTER***	SSMH #3	8	0.0050	553,785	385	59,456	41	0.22	2.7	494,329	10.7%
SSMH #2	SSMH #3	8	0.0050	553,785	385	59,456	41	0.22	2.7	494,329	10.7%
SSMH #3	EX. SSMH #21	8	0.0200	1,107,570	769	153,401	107	0.25	5.4	954,169	13.9%
EX. SSMH #21	EX. SSMH #20	8	0.0050	553,785	385	153,401	107	0.36	2.7	400,384	27.7%
EX. SSMH #20	EX. SSMH #4	8	0.0050	553,785	385	153,401	107	0.36	2.7	400,384	27.7%
EX. SSMH #4	GUEST ROOM ADDITION	18	0.0052	4,909,206	3409	1,754,790	1,219	0.41	4.7	3,154,415	35.7%
GUEST ROOM ADDITION	EX. SSMH #5	18	0.0052	4,909,206	3409	2,019,840	1,403	0.45	4.7	2,889,365	41.1%
EX. SSMH #5	SUNSET VILLAS & BUNGALOWS	18	0.0028	3,602,372	2502	2,019,840	1,403	0.54	3.5	1,582,532	56.1%
SUNSET VILLAS & BUNGALOWS	EX. SSMH #6	18	0.0028	3,602,372	2502	2,093,370	1,454	0.55	3.5	1,509,002	58.1%
EX. SSMH #6	EX. SSMH #7	18	0.0039	4,251,497	2952	2,093,370	1,454	0.50	4.1	2,158,126	49.2%
EX. SSMH #7	EX. SSMH #8	18	0.0036	4,111,284	2855	2,093,370	1,454	0.51	4.0	2,017,913	50.9%
EX. SSMH #8	EX. SSMH #9	18	0.0028	3,595,934	2497	2,093,370	1,454	0.55	3.5	1,502,563	58.2%
EX. SSMH #9	EX. SSMH #10	18	0.0039	4,251,497	2952	2,093,370	1,454	0.50	4.1	2,158,126	49.2%
EX. SSMH #10	EX. SSMH #11	18	0.0046	4,594,967	3191	2,093,370	1,454	0.47	4.4	2,501,596	45.6%
EX. SSMH #11	EX. SSMH #12	18	0.0132	7,827,540	5436	2,093,370	1,454	0.35	7.5	5,734,169	26.7%
EX. SSMH #12	EX. SSMH #13	18	0.0132	7,827,540	5436	2,093,370	1,454	0.35	7.5	5,734,169	26.7%
EX. SSMH #13	EX. SSMH #14	18	0.0015	2,636,666	1831	2,093,370	1,454	0.67	2.5	543,296	79.4%
EX. SSMH #14	EX. SSMH #15	18	0.0050	4,813,872	3343	2,093,370	1,454	0.46	4.6	2,720,502	43.5%
EX. SSMH #15	EX. SSMH #16	18	0.0050	4,813,872	3343	2,093,370	1,454	0.46	4.6	2,720,502	43.5%
THE ROASTERIE	EX. SSMH #16	6	0.0050	257,141	179	75,657	53	0.37	2.2	181,484	29.4%
EX. SSMH #16	EX. SSMH #17 *	18	0.0050	4,813,872	3343	2,581,688	1,793	0.52	4.6	2,232,184	53.6%

APPENDIX B – WASTEWATER MONITORING RESULTS

Manhole 2 Monitoring (EX. SSMH #21)*									
Site Name	Princess MH 2	Princess MH 2	Princess MH 2	Princess MH 2	Princess MH 2				
Isco Quantity	Velocity	Min/Max	Velocity	Min/Max	Flow Rate	Min/Max	Flow Rate	Min/Max	Volume
Label	Min Velocity	Min/Max	Max Velocity	Min/Max	Min Flow Rate	Min/Max	Max Flow Rate	Min/Max	Total Flow
Units	ft/s	Date/Time	ft/s	Date/Time	gpm	Date/Time	gpm	Date/Time	gal
Resolution	0.1	N/A	0.1	N/A	0.1	N/A	0.1	N/A	0.1
Significant Digits	0	N/A	0	N/A	0	N/A	0	N/A	0
10/5/2022 0:00	0	11:55:00 AM	1.763	7:20:00 PM	0	10:00:00 AM	15.236	7:40:00 PM	6563.86
10/6/2022 0:00	0.287	10:55:00 AM	1.429	7:40:00 PM	0	1:40:00 AM	41.289**	2:15:00 PM	7518.12
10/7/2022 0:00	0.184	1:05:00 AM	1.568	4:20:00 PM	0	6:55:00 AM	28.928	12:20:00 PM	5290.86
10/8/2022 0:00	0.311	2:00:00 PM	1.32	12:20:00 PM	0	2:30:00 PM	8.624	3:30:00 PM	2121.63
10/9/2022 0:00	0.352	8:55:00 PM	1.341	12:10:00 PM	0	12:10:00 AM	15.628	4:50:00 PM	8924.67
10/10/2022 0:00	0.297	10:10:00 PM	2.919	10:35:00 AM	0	4:50:00 PM	14.403	1:10:00 AM	6554.47
10/11/2022 0:00	0.297	11:05:00 PM	1.629	10:55:00 AM	0	2:25:00 AM	19.617	10:20:00 AM	3470.18
10/12/2022 0:00	0.307	6:00:00 AM	2.009	3:00:00 PM	0	1:10:00 AM	12.141	9:15:00 AM	3162.11
10/13/2022 0:00	0.998	7:30:00 AM	1.643	1:15:00 PM	0.53	5:45:00 AM	26.879	5:25:00 PM	7704.49
10/14/2022 0:00	0.499	7:55:00 AM	1.683	9:05:00 PM	0	10:50:00 AM	23.739	3:50:00 PM	7512.4
10/15/2022 0:00	0.746	7:30:00 PM	1.483	10:20:00 PM	3.918	8:50:00 AM	14.535	3:10:00 PM	9710.86
10/16/2022 0:00	0.772	7:55:00 AM	1.479	8:25:00 AM	4.613	7:55:00 AM	12.476	11:25:00 AM	11192.6
10/17/2022 0:00	0.757	1:10:00 PM	1.672	10:15:00 AM	3.151	5:10:00 PM	33.689	10:15:00 AM	16324.3
10/18/2022 0:00	0.727	6:05:00 PM	1.67	10:35:00 AM	3.472	9:05:00 PM	26.071	9:15:00 AM	13031.1
10/19/2022 0:00	1.044	8:35:00 AM	1.805	10:25:00 AM	1.577	9:25:00 PM	21.647	10:25:00 AM	7809.53
10/20/2022 0:00	0.995	1:40:00 PM	1.614	12:50:00 PM	1.283	2:45:00 AM	20.052	3:55:00 PM	7531.78
10/21/2022 0:00	0.85	2:05:00 AM	2.07	9:25:00 AM	1.152	11:40:00 PM	36.507	9:20:00 AM	8477.32
10/22/2022 0:00	0.738	10:55:00 AM	1.631	9:40:00 AM	1.089	12:10:00 AM	28.109	3:55:00 PM	6053.02
10/23/2022 0:00	0.502	6:25:00 AM	1.513	10:05:00 AM	0.853	6:30:00 AM	17.292	4:15:00 PM	6977.95
10/24/2022 0:00	0.303	5:50:00 AM	2.077	12:30:00 PM	0.924	3:10:00 AM	17.798	7:10:00 PM	6841.61
10/25/2022 0:00	0.674	12:00:00 AM	1.673	7:30:00 AM	2.511	12:00:00 AM	19.164	7:20:00 AM	7992.51

* Data provided by Western Environmental based on continuous, 24-hout flow monitoring from September 5th to September 25th 2022.

** Highest value in "yellow" is the highest Peak Flow usde for analysis.

Manhole 3 Monitoring (EX SSMH #9)*									
Site Name	Princess MH 3	Princess MH 3	Princess MH 3	Princess MH 3	Princess MH 3				
Isco Quantity	Velocity	Min/Max	Velocity	Min/Max	Flow Rate	Min/Max	Flow Rate	Min/Max	Volume
Label	Min Velocity	Min/Max	Max Velocity	Min/Max	Min Flow Rate	Min/Max	Max Flow Rate	Min/Max	Total Flow
Units	ft/s	Date/Time	ft/s	Date/Time	gpm	Date/Time	gpm	Date/Time	gal
Resolution	0.1	N/A	0.1	N/A	0.1	N/A	0.1	N/A	0.1
Significant Digits	0	N/A	0	N/A	0	N/A	0	N/A	0
10/5/2022 0:00	0	10:50:00 AM	3.501	2:25:00 PM	0	10:50:00 AM	643.957	11:15:00 AM	625750
10/6/2022 0:00	2.6	4:15:00 AM	3.54	9:00:00 AM	154.744	4:45:00 AM	712.643	9:00:00 AM	586592
10/7/2022 0:00	2.559	3:05:00 AM	3.471	1:15:00 PM	144.691	2:45:00 AM	688.479	9:00:00 AM	572427
10/8/2022 0:00	2.633	5:45:00 AM	3.537	11:15:00 AM	207.465	5:50:00 AM	625.244	3:35:00 PM	529004
10/9/2022 0:00	2.563	5:25:00 AM	3.545	10:55:00 AM	215.556	3:30:00 AM	580.085	10:55:00 AM	537020
10/10/2022 0:00	2.553	5:20:00 AM	3.509	12:30:00 PM	143.096	2:50:00 AM	542.515	10:15:00 AM	489717
10/11/2022 0:00	2.509	2:40:00 AM	3.513	11:30:00 AM	130.729	2:45:00 AM	510.326	11:30:00 AM	492962
10/12/2022 0:00	2.477	2:15:00 AM	3.567	9:20:00 AM	127.897	1:50:00 AM	545.954	9:20:00 AM	492816
10/13/2022 0:00	2.584	5:25:00 AM	3.551	12:35:00 PM	141.006	5:20:00 AM	578.921	9:30:00 AM	504991
10/14/2022 0:00	0	5:25:00 PM	3.562	10:05:00 AM	0	5:25:00 PM	585.065	9:25:00 AM	508687
10/15/2022 0:00	2.579	5:40:00 AM	3.576	2:20:00 PM	142.176	3:25:00 AM	590.726	2:20:00 PM	484592
10/16/2022 0:00	2.53	6:25:00 AM	3.511	11:05:00 AM	147.154	6:10:00 AM	536.297	10:20:00 AM	489811
10/17/2022 0:00	2.563	2:45:00 AM	3.568	11:20:00 AM	140.317	3:05:00 AM	560.825	8:05:00 AM	495128
10/18/2022 0:00	2.481	2:55:00 AM	3.509	8:40:00 PM	122.806	2:55:00 AM	534.326	8:40:00 PM	505662
10/19/2022 0:00	2.606	3:55:00 AM	3.832	4:25:00 PM	152.948	3:55:00 AM	848.007	3:25:00 PM	569383
10/20/2022 0:00	2.475	2:25:00 AM	3.998	11:55:00 AM	121.66	2:40:00 AM	996.825	11:55:00 AM	550422
10/21/2022 0:00	2.617	5:20:00 AM	3.889	8:25:00 AM	147.06	5:20:00 AM	762.557	8:25:00 AM	534889
10/22/2022 0:00	2.518	3:10:00 AM	3.509	11:05:00 AM	100.78	3:45:00 AM	609.372	10:20:00 AM	479749
10/23/2022 0:00	2.474	6:10:00 AM	3.466	11:20:00 AM	83.865	3:00:00 AM	551.199	11:10:00 AM	489292
10/24/2022 0:00	2.395	2:55:00 AM	4.073	12:40:00 PM	114.418	3:05:00 AM	1021.64**	12:40:00 PM	551453
10/25/2022 0:00	2.371	3:05:00 AM	3.461	7:50:00 AM	110.105	3:05:00 AM	559.69	7:40:00 AM	321564

* Data provided by Western Environmental based on continuous, 24-hour flow monitoring from September 5th to September 25th 2022.

** Highlighted value in "yellow" is the highest Peak Flow used for analysis.

Manhole 4 Monitoring (EX SSMH #17)*									
Site Name	Princess MH 4	Princess MH 4	Princess MH 4	Princess MH 4	Princess MH 4				
Isco Quantity	Velocity	Min/Max	Velocity	Min/Max	Flow Rate	Min/Max	Flow Rate	Min/Max	Volume
Label	Min Velocity	Min/Max	Max Velocity	Min/Max	Min Flow Rate	Min/Max	Max Flow Rate	Min/Max	Total Flow
Units	ft/s	Date/Time	ft/s	Date/Time	gpm	Date/Time	gpm	Date/Time	gal
Resolution	0.1	N/A	0.1	N/A	0.1	N/A	0.1	N/A	0.1
Significant Digits	0	N/A	0	N/A	0	N/A	0	N/A	0
10/5/2022 0:00	0	12:45:00 PM	2.088	4:25:00 PM	0	12:45:00 PM	732.422	4:25:00 PM	636000
10/6/2022 0:00	1.156	4:00:00 AM	2.258	1:40:00 PM	209.11	4:50:00 AM	840.562	1:40:00 PM	704111
10/7/2022 0:00	1.013	3:20:00 AM	2.235	11:30:00 AM	153.037	2:55:00 AM	829.646	12:25:00 PM	691331
10/8/2022 0:00	1.1	2:50:00 AM	2.249	3:00:00 PM	187.092	5:50:00 AM	824.1	3:40:00 PM	717198
10/9/2022 0:00	1.098	5:35:00 AM	2.21	11:05:00 AM	187.876	5:35:00 AM	853.449	11:00:00 AM	694854
10/10/2022 0:00	0.996	3:00:00 AM	2.308	11:50:00 AM	152.83	2:55:00 AM	849.334	12:35:00 PM	695705
10/11/2022 0:00	1.047	3:15:00 AM	2.336	8:20:00 AM	173.194	3:00:00 AM	902.273	8:20:00 AM	723733
10/12/2022 0:00	1.046	5:25:00 AM	2.236	9:25:00 AM	159.373	5:25:00 AM	848.295	9:25:00 AM	725233
10/13/2022 0:00	1.135	1:00:00 AM	2.392	1:25:00 PM	196.958	1:00:00 AM	942.523	1:25:00 PM	745146
10/14/2022 0:00	1.092	2:35:00 AM	2.344	8:15:00 AM	183.525	2:35:00 AM	884.884	9:30:00 AM	748703
10/15/2022 0:00	1.122	3:30:00 AM	2.283	10:55:00 AM	181.249	3:35:00 AM	874.864	2:25:00 PM	695983
10/16/2022 0:00	1.093	2:55:00 AM	2.287	8:55:00 AM	176.552	2:55:00 AM	827.599	8:55:00 AM	763575
10/17/2022 0:00	1.145	3:20:00 AM	2.425	1:20:00 PM	189.143	3:20:00 AM	927.582	1:20:00 PM	721390
10/18/2022 0:00	1.096	3:10:00 AM	2.181	8:40:00 AM	179.693	2:50:00 AM	797.266	8:40:00 AM	733715
10/19/2022 0:00	1.112	3:20:00 AM	2.812	4:30:00 PM	182.108	3:20:00 AM	1199.38	1:40:00 PM	841179
10/20/2022 0:00	1.126	2:40:00 AM	2.815	12:00:00 PM	187.798	2:40:00 AM	1308.21**	12:00:00 PM	829813
10/21/2022 0:00	1.253	2:50:00 AM	2.423	8:30:00 AM	231.287	2:50:00 AM	991.319	8:30:00 AM	805747
10/22/2022 0:00	1.14	5:50:00 AM	2.311	11:10:00 AM	183.419	3:40:00 AM	872.392	11:10:00 AM	732349
10/23/2022 0:00	1.119	3:00:00 AM	2.434	2:00:00 PM	171.289	3:00:00 AM	894.194	1:45:00 PM	719641
10/24/2022 0:00	1.054	3:05:00 AM	2.682	12:45:00 PM	165.506	3:05:00 AM	1255.98	12:45:00 PM	786978
10/25/2022 0:00	0.988	3:15:00 AM	2.311	8:25:00 AM	143.767	3:15:00 AM	854.489	8:25:00 AM	456324

* Data provided by Western Environmental based on continuous, 24-hour flow monitoring from September 5th to September 25th 2022.

** Highlighted value in "yellow" is the highest Peak Flow used for analysis.

APPENDIX C – SCOTTSDALE WATER DEMAND EXHIBIT

INSTRUCTIONS

INPUT DEVELOPMENT NAME, CASE NUMBER, AND QUANTITY VALUES TO DETERMINE TOTAL AVERAGE DAILY WATER USE PER THE 2018 DESIGN STANDARDS AND POLICY MANUAL (DS7PM) CHAPTER 6 USING GALLONS PER DAY (GPD) VALUES FROM FIGURE 6-1.2

TABLE 1: QUANTITY INPUT TABLE FOR THE DEVELOPMENT

FAIRMONT SCOTTSDALE PRINCESS

WATER USE DEVELOPMENT TYPE/CATEGORY	AVERAGE UNIT WATER USE PER DS&PM CH. 6 (GPD/UNIT)	INPUT APPLICABLE QUANTITY FOR DEVELOPMENT IN THIS COLUMN	NUMERICAL UNIT	TOTAL AVERAGE WATER USE (GPD)	NOTES
Category: Residential/ Commerical Residential/ Hotel					
< 2 DU/ac	485.6	-	DU	-	Community pool demands not included here. Refer to separate category.
2 – 2.9 DU/ac	470.4	-	DU	-	
3 – 7.9 DU/ac	248.2	-	DU	-	
8 – 11.9 DU/ac	227.6	-	DU	-	
12 – 22 DU/ac	227.6	-	DU	-	
High Density Condominium (condo)	185.3	-	DU	-	
Resort Hotel	446.3	**198**	ROOM	88,367	Includes site amenities such as 1 "standard" restaurant w/ associated dedicated kitchen, laundry service, landscaping, fountains, and 1 medium capacity pool. Large event venues/kitchens or multiple/large pools and multiple restaurants are not included.
Category: Commerical/ Other					
Restaurant	1.3	**29,719**	FT2	38,635	
Commercial/Retail	0.80	**94,357**	FT2	75,486	
Commerical High Rise	0.60	-	FT2	-	per IBC highrise is at or over 75 feet to highest finished floor
Office	0.60	-	FT2	-	
Institutional	1,340	-	ACRE	-	
Industrial	1,027	-	ACRE	-	
Research and Development	1,284	-	ACRE	-	
Category: Special Use Areas					
Natural Area Open Space	-		ACRE	-	Zero water demand
Developed Open Space - Parks	1,786	-	ACRE	-	
Developed Open Space- Golf Course	4,285	-	ACRE	-	
Category: Evaporation from Swimming Pools/Spas, Cooling, Turf Area Irrigation, Other Outdoor Consumptive Uses					
Extra large pool (60k to 100k gallons)	274	-	EA	-	Annual mean ETo = 74.75 in as collected by AZ Met. Kc = 1.1. Average pool size of 400 sq. ft. loses 20,490 gallons per year, or 51.23 gallons per sq ft, not including backwashing or leaks, per AMWUA calculator.
Large pool (above 30k to 60k gallons)	154	-	EA	-	
Medium pool (15k to 30k gallons)	75	-	EA	-	
Small pool or spa (under 15k gallons)	51	**3**	EA	154	
Total Bermuda Turf Area	0.10	**4,885**	FT2	468	1 sq ft of non-overseeded turf at 60% efficiency with increased Kc is 35 gallons per sq ft per year, per AMWUA calculator.
Total Overseeded Turf Area	0.02	-	FT2	-	1 sq ft of overseeded turf at 60% efficiency with increased Kc is 9 gallons per sq ft per year, per AMWUA calculator.
Evaporative Cooling/ Cooling Towers	-	-	TOTAL COOLING TONNAGE	-	Baed on 1.50 cycles of concentration and average annual daily utilization of 68%. Water use is linear with respect to total cooling capacity tonnage. Based on US Dept of Energy Efficiency and Renewable Energy data.
Category: Filter Backwash Flows & Make-up Water from Pools & Spas (rapid sand filters)					
Extra large pool (60k to 100k gallons)	229	-	EA	-	Based on once per 7 day backwash @ 50,100, and 150gpm, respectively for each size pool category for 8 minute duration. Quantity values used from pool input values above.
Large pool (above 30k to 60k gallons)	171	-	EA	-	
Medium pool (15k to 30k gallons)	114	-	EA	-	
Small pool or spa (under 15k gallons)	57	**3**	EA	171	
A. TOTAL AVERAGE DAILY WATER USE FOR THIS DEVELOPMENT				**203,282**	GPD

NOTES:

GPD=GALLONS PER DAY, DU=DWELLING UNITS, FT2=SQUARE FEET, AC=ACRE, EA=EACH UNIT, ETo=EVAPOTRANSPIRATION, Kc=CROP COEFFICIENT, AZMET=ARIZONA METEOROLOGICAL NETWORK, AMWUA=ARIZONA MUNICIPAL WATER USERS ASSOCIATION

NONE OF THE VALUES OR CALCULATIONS HEREIN ARE INTENDED TO BE USED FOR INFRASTRUCTURE DESIGN, PEAK FLOW DETERMINATION, OR SYSTEM CAPACITY ANALYSIS. FOR THESE PURPOSES REFER TO CH.6 & 7 OF THE CITY'S DESIGN STANDARDS AND POLICY MANUAL FOR THE RESPECTIVE DESIGN VALUES AND PEAKING FACTORS.

TABLE INPUT VALUES LAST UPDATED: 11/29/2023

INSTRUCTIONS

IDENTIFY WATER CONSERVATION MEASURES ABOVE THOSE REQUIRED BY CITY CODE THAT THE DEVELOPMENT(S) PROPOSE TO IMPLEMENT. ENTER AN "X" FOR EACH PROPOSED MEASURE.

TABLE 2: APPROVED SUPPLEMENTAL WATER CONSERVATION MEASURES

FAIRMONT SCOTTSDALE PRINCESS

PROPOSED FOR THIS DEVELOPMENT (ENTER "X")	MEASURE	DESCRIPTION
	1. Submetering	Multi-family and mixed-use developments SUBMETER UNITS for leak detection and for occupants ability to manage their own water use
	2. No outdoor water features	Decorative water features outdoors can be a source of water use that is not functional
	3. Indoor water features submetered	Water features have proven to be a source of leaks. Submetering that is capable of alerts to the building monitoring system greatly reduce water waste
x	4. Limitation on functional turf grass	Functional grass turf are areas used for congregation of large number of people and should be limited to up to 10% of the landscapable area
	5. Limitations on artificial turf	Artificial turf is a large source of heat especially during summer months.
	6. Landscaped Rainwater harvesting	Earthworks, such as berms and basins, are encouraged to promote passive rainwater harvesting for planned plants and trees
	7. Cooling tower controllers with monitoring technology	Arizona high evapotranspiration rates, cooling towers use significantly more water here than in other states. Monitory systems can optimize this water use.
	8. Pools and splashpads submeters with monitoring technology	Pools and splashpad can be a source of leaks. Submetering that is capable of alerts to the building monitoring system greatly reduce water waste. Timers on Splash pads

NOTES:

Greywater systems and large areas of artificial turf are not recommended by water conservation.

This list represents water conservation measures that the conservation office has approved and has shown to provide proven water savings.

TABLE INPUT VALUES LAST UPDATED: 11/29/2023

Water Demand Exhibit Summary

FAIRMONT SCOTTSDALE PRINCESS

1. Total Estimated Water Use per Day on a Sustainable Basis (gallons per day, gpd)

203,282 gpd

2. Net Water (NW) / Consumptive Use (gallons per day, gpd)

41,698 gpd

3. Proposed Water Conservation Measures Above Those Required By City Code

	1. Submetering	NOT PROPOSED
	2. No outdoor water features	NOT PROPOSED
	3. Indoor water features submetered	NOT PROPOSED
X	4. Limitation on functional turf grass	Functional grass turf are areas used for congregation of large number of people and should be limited to up to 10% of the landscapable area
	5. Limitations on artificial turf	NOT PROPOSED
	6. Landscaped Rainwater harvesting	NOT PROPOSED
	7. Cooling tower controllers with monitoring technology	NOT PROPOSED
	8. Pools and splashpads submeters with monitoring technology	NOT PROPOSED

4. Annual Economic Value of the Development on a per Gallon of Use Basis (Applies to Commercial or Mixed Use, To be Completed by City)

1. Major City Revenues $/1,000 gallons
2. Total Annual Output Impact $/1,000 gallons

TABLE INPUT VALUES LAST UPDATED: 11/29/2023

TABLE 4: WATER USE SUMMARY

FAIRMONT SCOTTSDALE PRINCESS

WATER USE SUMMARY FOR THE DEVELOPMENT

USE CATEGORY	AMOUNT	UNITS	% OF TOTAL USE	CALCULATION NOTES
A. TOTAL DAILY AVERAGE WATER USE	**203,282**	**GPD**	**100.0%**	A=B+C, C=D+E, F=B+D
B. OUTDOOR CONSUMPTIVE USE	21,861	GPD	10.8%	
C. TOTAL INDOOR USE	181,421	GPD	89.2%	
D. INDOOR CONSUMPTIVE USE	19,837	GPD	9.8%	
E. WASTEWATER TO SEWER	161,584	GPD	79.5%	
F. TOTAL CONSUMPTIVE USE (NET USE)	41,698	GPD	20.5%	

NOTES:
GPD=GALLONS PER DAY
ALL VALUES ARE FOR AVERAGE WATER USE ANALYSIS ONLY. THIS CALCULATION IS NOT INTENDED TO BE USED FOR INFRASTRUCTURE DESIGN, PEAK FLOW DETERMINATION, OR SYSTEM CAPACITY ANALYSIS. FOR THESE PURPOSES REFER TO CH.6 & 7 OF THE CITY'S DESIGN STANDARDS AND POLICY MANUAL FOR THE RESPECTIVE DESIGN VALUES, PEAKING FACTORS, AND DESIGN REQUIREMENTS.

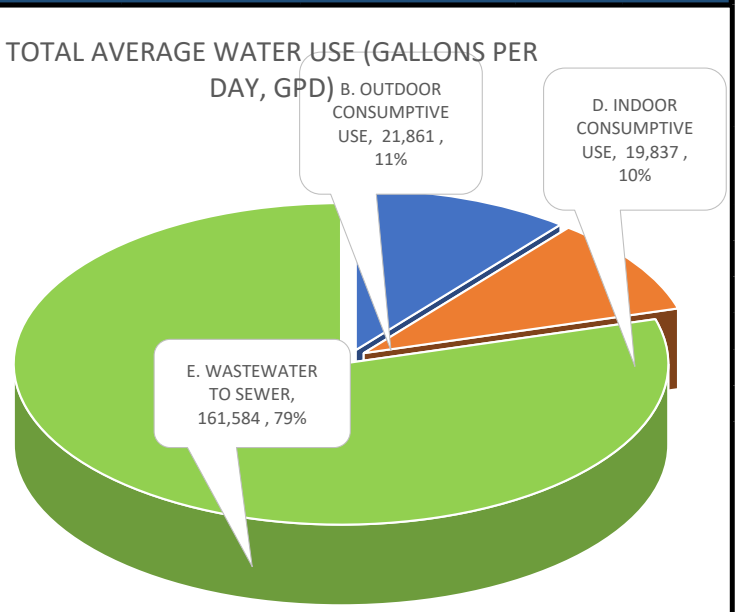


TABLE INPUT VALUES LAST UPDATED: 11/29/2023

TABLE 5: DETAILED WATER USE BREAKDOWN FOR THE DEVELOPMENT

FAIRMONT SCOTTSDALE PRINCESS

TO RIGHT:WATER USE ALLOCATION--->		B. AVERAGE OUTDOOR CONSUMPTIVE WATER USE[1]			C. AVERAGE INDOOR TOTAL WATER USE[1]			D. AVERAGE INDOOR CONSUMPTIVE WATER USE[2]			E. AVERAGE WASTEWATER FLOWS TO SEWER[3]		
BELOW: WATER USE DEVELOPMENT TYPE/CATEGORY	A. TOTAL AVERAGE WATER USE (GPD)	UNIT OUTDOOR CONSUMPTIVE WATER USE (GPD/UNIT)	OUTDOOR CONSUMPTIVE USE (GPD)	OUTDOOR CONSUMPTIVE USE (% OF TOTAL USE)	UNIT TOTAL INDOOR WATER USE (GPD/UNIT)	INDOOR TOTAL USE (GPD)	INDOOR TOTAL USE (% OF TOTAL USE)	UNIT CONSUMPTIVE INDOOR WATER USE (GPD/UNIT)	INDOOR CONSUMPTIVE USE (GPD)	INDOOR CONSUMPTIVE USE (% OF TOTAL USE)	WASTEWATER FLOW (GPD/UNIT)	WASTEWATER FLOW (GPD)	WASTEWATER (% OF TOTAL USE)
Category: Residential/ Commerical Residential/ Hotel													
< 2 DU/ac)	-	276.7	-	0.0%	208.9	-	0.0%	20.9	-	0.0%	188	-	0.0%
2 – 2.9 DU/ac	-	276.7	-	0.0%	193.7	-	0.0%	19.4	-	0.0%	174	-	0.0%
3 – 7.9 DU/ac	-	72.3	-	0.0%	175.9	-	0.0%	17.6	-	0.0%	158	-	0.0%
8 – 11.9 DU/ac	-	72.3	-	0.0%	155.3	-	0.0%	15.5	-	0.0%	140	-	0.0%
12 – 22 DU/ac	-	72.3	-	0.0%	155.3	-	0.0%	15.5	-	0.0%	140	-	0.0%
High Density Condominium (condo)	-	30.0	-	0.0%	155.3	-	0.0%	15.5	-	0.0%	140	-	0.0%
Resort Hotel	88,367	44.6	8,831	4.3%	401.7	79,536.6	39.1%	32.1	6,362.9	3.1%	370	73,174	36.0%
Category: Commerical/ Other													
Restaurant	38,635	0.10	2,972	1.5%	1.20	35,662.8	17.5%	0.12	3,566.3	1.8%	1.08	32,097	15.8%
Commercial/Retail	75,486	0.10	9,436	4.6%	0.70	66,049.9	32.5%	0.11	9,907.5	4.9%	0.60	56,142	27.6%
Commerical High Rise	-	0.10	-	0.0%	0.50	-	0.0%	0.05	-	0.0%	0.45	-	0.0%
Office	-	0.10	-	0.0%	0.50	-	0.0%	0.05	-	0.0%	0.45	-	0.0%
Institutional	-	670	-	0.0%	670.0	-	0.0%	100.50	-	0.0%	569.50	-	0.0%
Industrial	-	154	-	0.0%	873.0	-	0.0%	130.95	-	0.0%	742.05	-	0.0%
Research and Development	-	192	-	0.0%	1,092.0	-	0.0%	163.80	-	0.0%	928.20	-	0.0%
Category: Special Use Areas													
Natural Area Open Space	-	-	-	0.0%							-	-	0.0%
Developed Open Space - Parks	-	1,786	-	0.0%							-	-	0.0%
Developed Open Space- Golf Course	-	4,285	-	0.0%							-	-	0.0%
Category: Evaporation from Swimming Pools/Spas, Cooling, Turf Area Irrigation, Other Outdoor Consumptive Uses													
Extra large pool (60k to 100k gallons)	-	274	-	0.0%							-	-	0.0%
Large pool (above 30k to 60k gallons)	-	154	-	0.0%							-	-	0.0%
Medium pool (15k to 30k gallons)	-	75	-	0.0%							-	-	0.0%
Small pool or spa (under 15k gallons)	154	51	154	0.1%							-	-	0.0%
Total Bermuda Turf Area	468	0.10	468	0.2%							-	-	0.0%
Total Overseeded Turf Area	-	0.02	-	0.0%							-	-	0.0%
Evaporative Cooling/ Cooling Towers	-	-	-	0.0%							-	-	0.0%
Category: Filter Backwash Flows & Make-up Water from Pools & Spas (rapid sand filters)													
Extra large pool (60k to 100k gallons)	-				228.6	-	0.0%				229	-	0.0%
Large pool (above 30k to 60k gallons)	-				171.4	-	0.0%				171	-	0.0%
Medium pool (15k to 30k gallons)	-				114.3	-	0.0%				114	-	0.0%
Small pool or spa (under 15k gallons)	171				57.1	171.4	0.1%				57	171	0.1%
TOTALS	**203,282**		**21,861**	**10.8%**		**181,421**	**89.2%**		**19,837**	**9.8%**		**161,584**	**79.5%**

F. TOTAL CONSUMPTIVE/NET WATER USE FOR THIS DEVELOPMENT (B. + D.) **41,698 GPD** **20.5% OF TOTAL USE**

NOTES:

(1) PER 2018 DS&PM CHAPTER 6, FIGURE 6-1.2

(2) VARIES FROM 8% TO 15%, TYPICALLY 10%

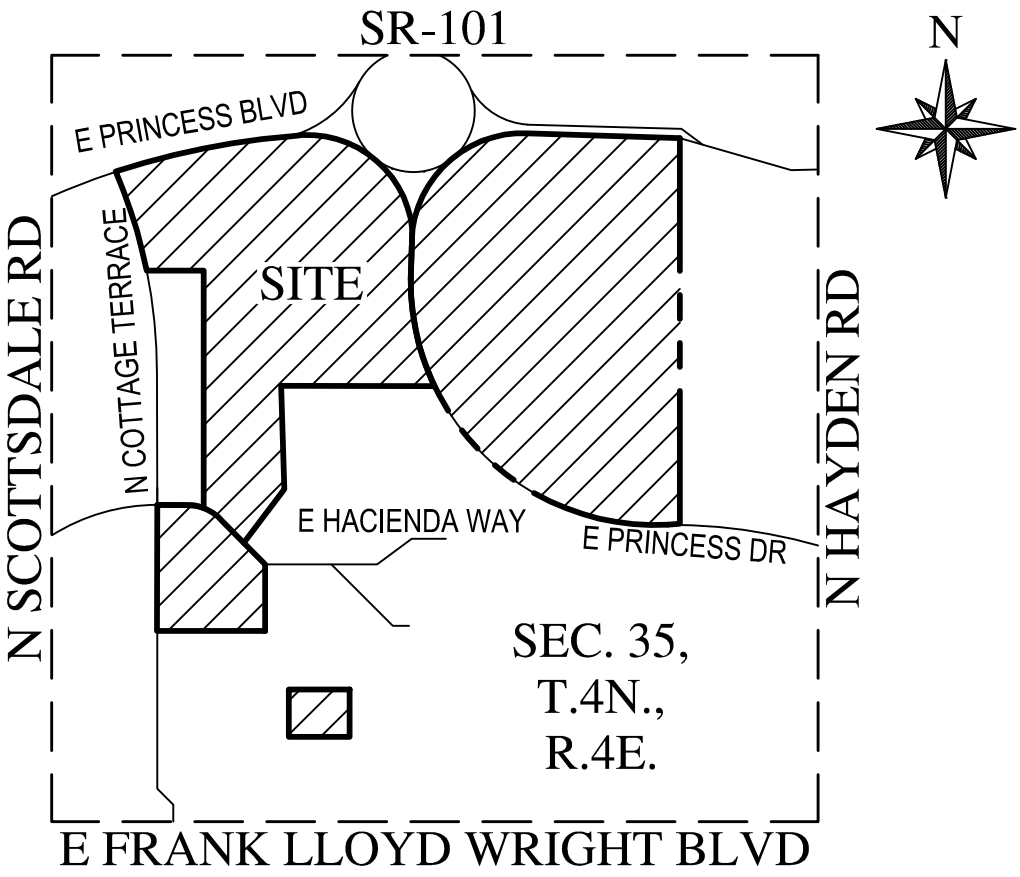
(3) WASTEWATER FLOWS TO SEWER ARE CALCULATED AS C. MINUS D.

GPD=GALLONS PER DAY, DU=DWELLING UNIT, FT2=SQUARE FEET, AC=ACRE, EA=EACH UNIT

NONE OF THE VALUES OR CALCULATIONS HEREIN ARE INTENDED TO BE USED FOR INFRASTRUCTURE DESIGN, PEAK FLOW DETERMINATION, OR SYSTEM CAPACITY ANALYSIS. FOR THESE PURPOSES REFER TO CH.6 & 7 OF THE CITY'S DESIGN STANDARDS AND POLICY MANUAL FOR THE RESPECTIVE DESIGN VALUES AND PEAKING FACTORS.

TABLE INPUT VALUES LAST UPDATED: 11/29/2023

EXHIBIT 1 – VICINITY MAP



VICINITY MAP

N.T.S.

NOT
FOR
CONSTRUCTION
OR RECORDING

WOOD PATEL

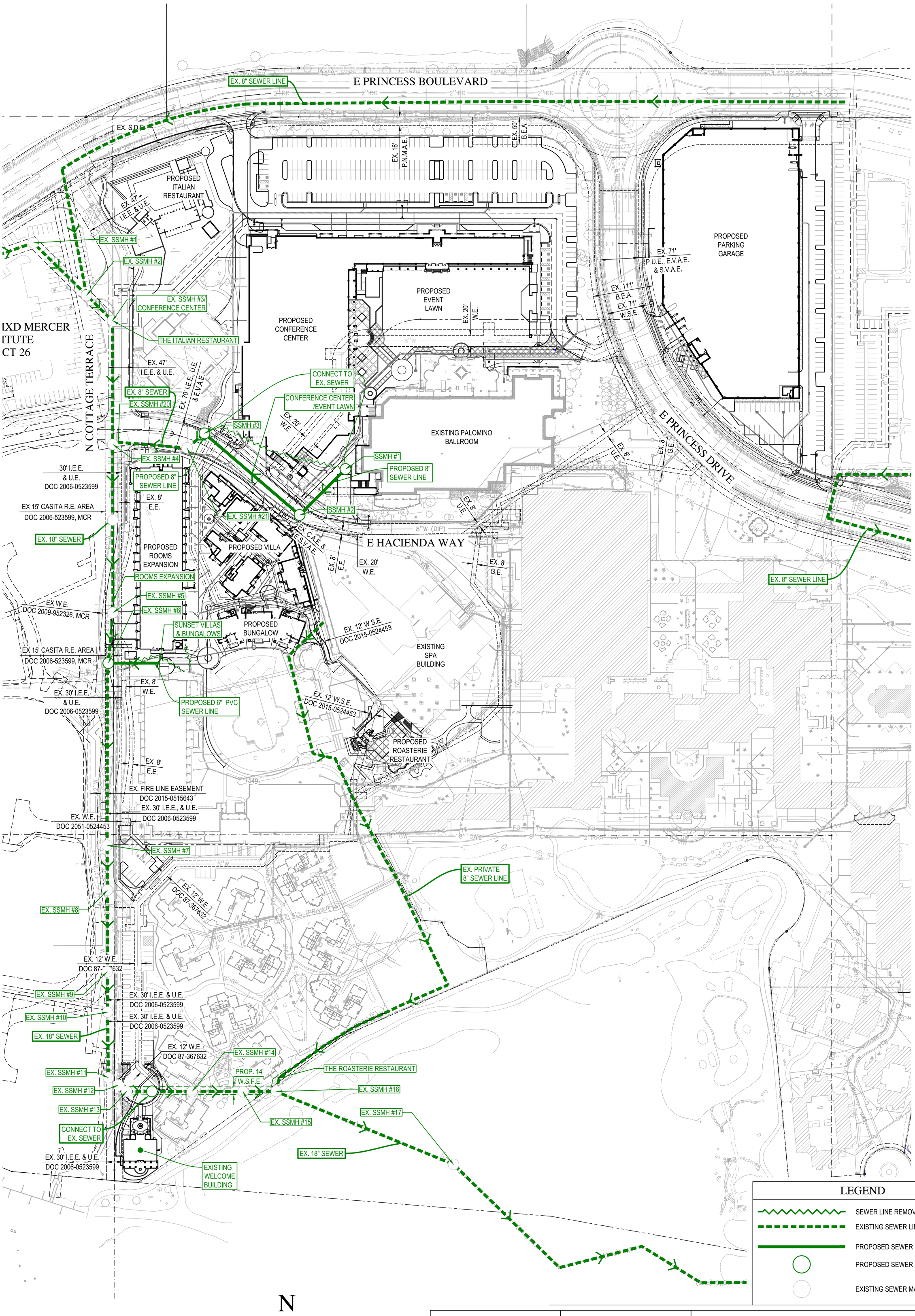
FAIRMONT SCOTTSDALE PRINCESS

VICINITY MAP EXHIBIT

DATE	11/22/2023	SCALE	N.T.S	SHEET	1 OF 1
JOB NO.	215319	DESIGN	AJS	CHECK	RS
		DRAWN	AJS	RFI #	

Z:\2021\215319\Project Support\Reports\Master Reports\Water BOD\Exhibits\5319-EXH1-VM.dwg

EXHIBIT 2 – CONCEPT MASTER SEWER EXHIBIT



WOOD PATEL

FAIRMONT SCOTTSDALE PRINCESS

CONCEPT MASTER SEWER EXHIBIT

DATE	11/22/2023	SCALE	1" = 80'	SHEET	1 OF 1
JOB NO	215319	DESIGN	RS	DRAWN	JRS/AJS

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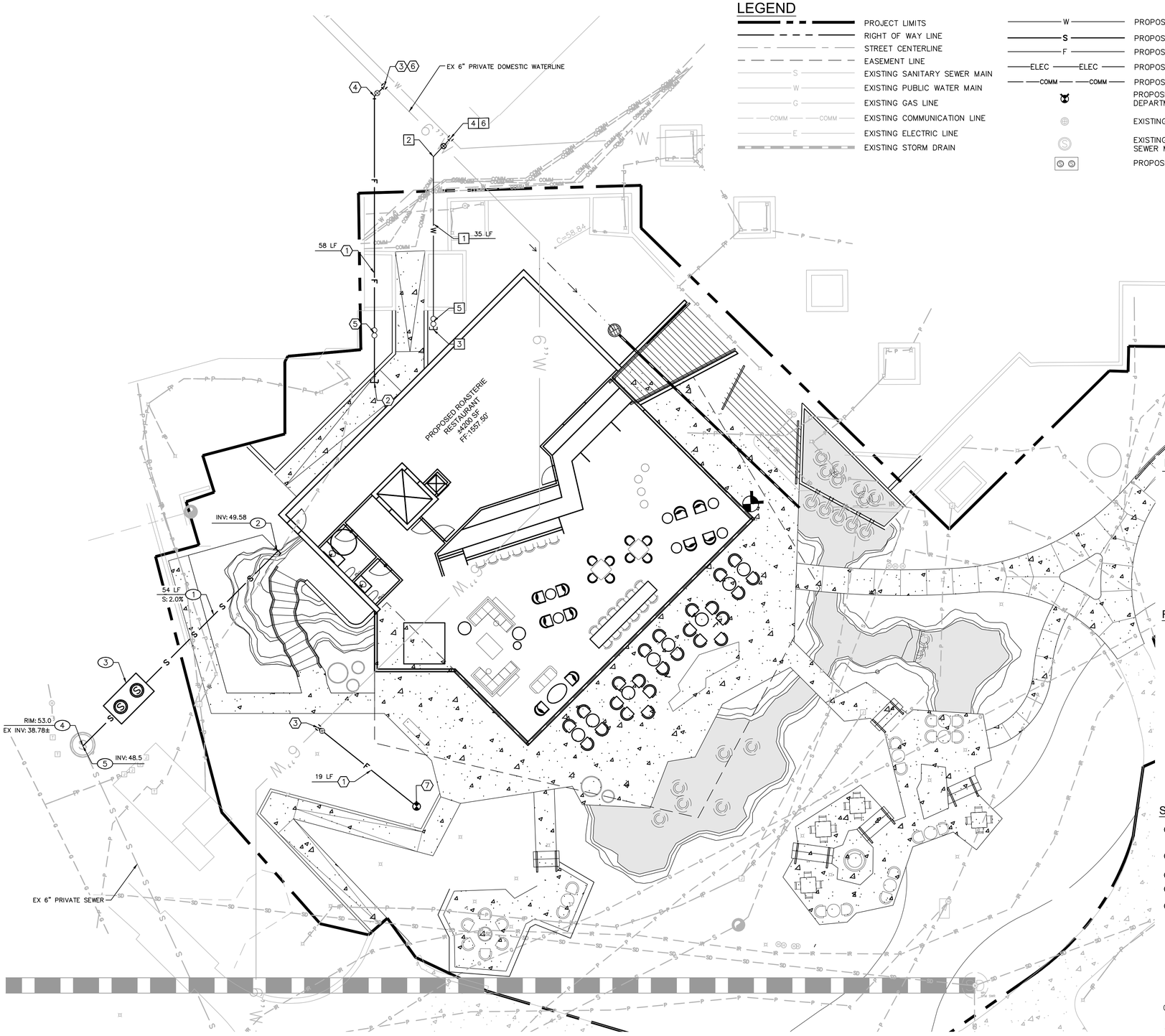
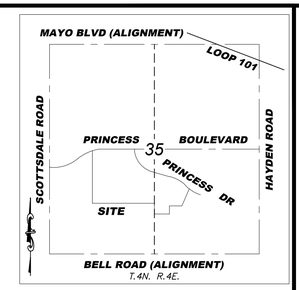
Appendix E – Roasterie Utility Plan

REV	DESCRIPTION	BY	DATE	APPR



LEGEND

- PROJECT LIMITS
- RIGHT OF WAY LINE
- STREET CENTERLINE
- EASEMENT LINE
- EXISTING SANITARY SEWER MAIN
- EXISTING PUBLIC WATER MAIN
- EXISTING GAS LINE
- EXISTING COMMUNICATION LINE
- EXISTING ELECTRIC LINE
- EXISTING STORM DRAIN
- PROPOSED DOMESTIC WATER MAIN
- PROPOSED SEWER MAIN
- PROPOSED FIRE LINE
- PROPOSED ELECTRIC LINE
- PROPOSED COMMUNICATION LINE
- PROPOSED FIRE DEPARTMENT CONNECTION
- EXISTING DRYWELL
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED GREASE TRAP



VICINITY MAP
N.T.S.

DOMESTIC WATER NOTES

1. INSTALL 2" SCH 40 PVC DOMESTIC WATER SERVICE, LENGTH PER PLAN. MINIMUM 3' COVER. BEDDING AND BACKFILL PER COS STD DET 2201.
2. INSTALL 45° BEND WITH RESTRAINED JOINTS PER MAG STD DET 303,
3. BUILDING DOMESTIC WATER CONNECTION, REF MEP PLANS FOR CONTINUATION.
4. INSTALL 6"X2" TAPPING SLEEVE AND VALVE PER MAG STD DET 340.
5. INSTALL 2" DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY WITH BYPASS BACKFLOW PREVENTION ASSEMBLY PER COS STD DET 2352.
6. CONNECT TO EXISTING 6" PRIVATE WATER LINE. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.

FIRELINE NOTES

1. INSTALL 6" CLASS 350 DIP WATER MAIN POLYWRAPPED WITH TRACER WIRE, LENGTH PER PLAN, MINIMUM 3' COVER. BEDDING AND BACKFILL PER COS STD DET 2201.
2. BUILDING FIRELINE CONNECTION. INSTALL FIRELINE RISER AND BACKFLOW PREVENTOR PER COS STD DET 2369 IN FIRE RISER ROOM. REF FIRE SPRINKLER PLANS FOR CONTINUATION.
3. INSTALL 6"X6" TEE AND VALVE. B&C PER MAG STD 391-1 TYPE 'C' AND COS STD DET 2362-2.
4. INSTALL 45° BEND WITH THRUST BLOCKS PER MAG STD DET 380.
5. INSTALL 6" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY PER C.O.S. STD. DTL. 2351.
6. CONNECT TO EXISTING 6" PRIVATE WATER LINE. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
7. INSTALL FIRE HYDRANT PER MAG STD DET 360.

SEWER NOTES

1. INSTALL 6" SDR 35 PVC PRIVATE SEWER MAIN, LENGTH AND SLOPE PER PLAN.
2. CONNECT TO BUILDING SEWER AT TWO-WAY CLEANOUT, INVERT PER PLAN. REF MEP PLANS FOR CONTINUATION.
3. PROPOSED 1500 GALLON GREASE INTERCEPTOR
4. EXISTING MANHOLE. INVERT PER PLAN
5. INSTALL DROP MANHOLE CONNECTION PER MAG STD DET 426, TYPE 'B'. PROPOSED INVERT PER PLAN.

GRAPHIC SCALE IN FEET
0 5 10 20

NORTH

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

Kimley»Horn
1001 W Southern Ave, Suite 131
Mesa, Arizona 85210 (480) 207-2666

THE ROASTERIE-PHASE 4D

PRELIMINARY UTILITY PLAN

FAIRMONT PRINCESS
SCOTTSDALE, AZ 85255

PROJECT No.

SCALE (H): 1"=10'
SCALE (V):
DRAWN BY: SSR
DESIGN BY: SSR
CHECK BY: HDR
DATE: 3/31/23

Registered Professional Engineer (Civil)
CERTIFICATE NO.
47693
HEATHER ROBERTS
Date Signed 11/22/23
ARIZONA U.S.A.
Exp.Date 03/31/26

UT.dwg

D-UT1.01
03 OF 03 SHEETS