March 17, 2020

Palmeraie

Water Design Report

Prepared for:

Five Star Development

6720 N. Scottsdale Road, Suite 130
Scottsdale, Arizona 85253
Contact: Richard Frazee
480.603.1378

Prepared by:

CVL Consultants

4550 N 12th Street
Phoenix, Arizona 85014
Contact: Cassandra Alejandro, PE
602.264.6831

Registered Professional Engineer (Civil)
CERTIFICATE NO.
67062
CASSANDRA
ALEJANDRO
Date Signed 3/17/2020
ARIZONA, U.S.A.

Cassandra Alejandro

1.01.0268910

7-ZN-2016#2
8/11/2020

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

1.0 INTRODUCTION 2

1.1 GENERAL DESCRIPTION 2
1.2 PROJECT LOCATION 2
1.3 LAND USE 2
1.4 TOPOGRAPHIC CONDITIONS 7
1.5 EXISTING INFRASTRUCTURE 7

2.0 DESIGN CRITERIA 8

2.1 GENERAL 8
2.2 DEMANDS 8
2.3 PRESSURES 8
2.4 VELOCITY AND HEADLOSS 8
2.5 HAZEN WILLIAMS COEFFICIENT 8
2.6 FIRE FLOW 8

3.0 PROPOSED WATER SYSTEM 9

3.1 WATER DEMAND 9
3.2 BOOSTER PUMPS 10

4.0 WATER SYSTEM MODELING 12

5.0 SUMMARY AND RESULTS 13

TABLES

TABLE 1 – PROPOSED LAND USE 3
TABLE 2 – DEMAND CRITERIA 8
TABLE 3 – WATER DEMAND SUMMARY 9
TABLE 4 – FIRE FLOW REQUIREMENTS 10
TABLE 5 – PUMP HEAD REQUIREMENTS 10
TABLE 6 – RESULTS OF WATERCAD ANALYSIS (NORMAL) 13
TABLE 7 – RESULTS OF WATERCAD ANALYSIS (SUMMER) 13

Registered Professional Engineer (Civil)
CERTIFICATE NO.
67062
CASSANDRA
ALEJANDRO
Date Signed 3/17/2020
ARIZONA, U.S.A.

FIGURES

FIGURE 1 – VICINITY MAP 4
FIGURE 2 – SITE MAP 5
FIGURE 3 – SITE LAYOUT 6
FIGURE 4 – WATER SYSTEM LAYOUT 11

APPENDICES

WATERCAD MODEL ..... APPENDIX A
WATERCAD RESULTS - NORMAL ..... APPENDIX B
WATERCAD RESULTS - SUMMER ..... APPENDIX C
IFC TABLE 105.1(2) ..... APPENDIX D

7-ZN-2016#2
8/11/2020

EXECUTIVE SUMMARY

The proposed Ritz Carlton Resort is a mixed land use development consisting of a resort hotel, single family and multi-family residences, retail and mixed uses. The resort will be constructed on 122.7 acres of undeveloped land on the southwest corner of Indian Bend and Scottsdale Road. Palmeraie is located in the northeast corner of Ritz Carlton and is approximately 28 acres. Approximately 14.8 acres of Palmeraie is located in Scottsdale and 13.2 acres is located in Paradise Valley. Water service to the property is provided by EPCOR Water. New looped 6-inch domestic water and 8-inch fire systems is proposed to serve the development. Connections to the existing EPCOR water system will be made at three locations: 1) the existing 8-inch waterline within Scottsdale Road; 2) the existing 16-inch waterline within Lincoln Drive; and 3) the existing 12-inch waterline within the Cactus Wren Alignment.

Demand calculations for Palmeraie were prepared based on the design requirements of EPCOR Water. Fire flow demands are per the 2012 International Fire Code.

- Average Day Demand: 65,974 gpd (46 gpm)
- Maximum Day Demand: 118,753 gpd (82 gpm)
- Peak Hour Demand: 197,922 gpd (137 gpm)
- Maximum Day + Fire Flow Demands: 1,582 gpm (Commercial)

Modeling of the system was conducted utilizing WaterCAD version 8i software. Pressures in Palmeraie were found to range between 95 and 136 psi for the ADD, MDD and PHD scenarios. Pressures at Maximum Day Demand + Fire Flow for all fire flow scenarios were above 20 psi.

1.0 INTRODUCTION

1.1 General Description

The proposed Ritz Carlton Resort property is located on 122.7 acres of undeveloped land in Paradise Valley and Scottsdale, Arizona. See the Water Master Plan *The Ritz-Carlton Resort,* dated July 17th, 2017 by CVL for more information on The Ritz-Carlton Resort.

Palmeraie is located in the northeast corner of Ritz Carlton Resort and is approximately 28 acres. 14.8 acres of Palmeraie is located in the City of Scottsdale, 13.2 acres is located in Paradise Valley. The property will be developed for mixed uses including residential and commercial. EPCOR will provide water service to the development. See Figure 2 for the location of Palmeraie within The Ritz Carlton.

1.2 Project Location

Palmeraie property is located in the Town of Paradise Valley and the City of Scottsdale, Maricopa County, Arizona in the northeast quarter of Section 10, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian. The property is bounded by Indian Bend Road on the north, Lincoln Drive on the south, Scottsdale Road on the east and 68th Street on the west as shown in Figure 1.

1.3 Land Use

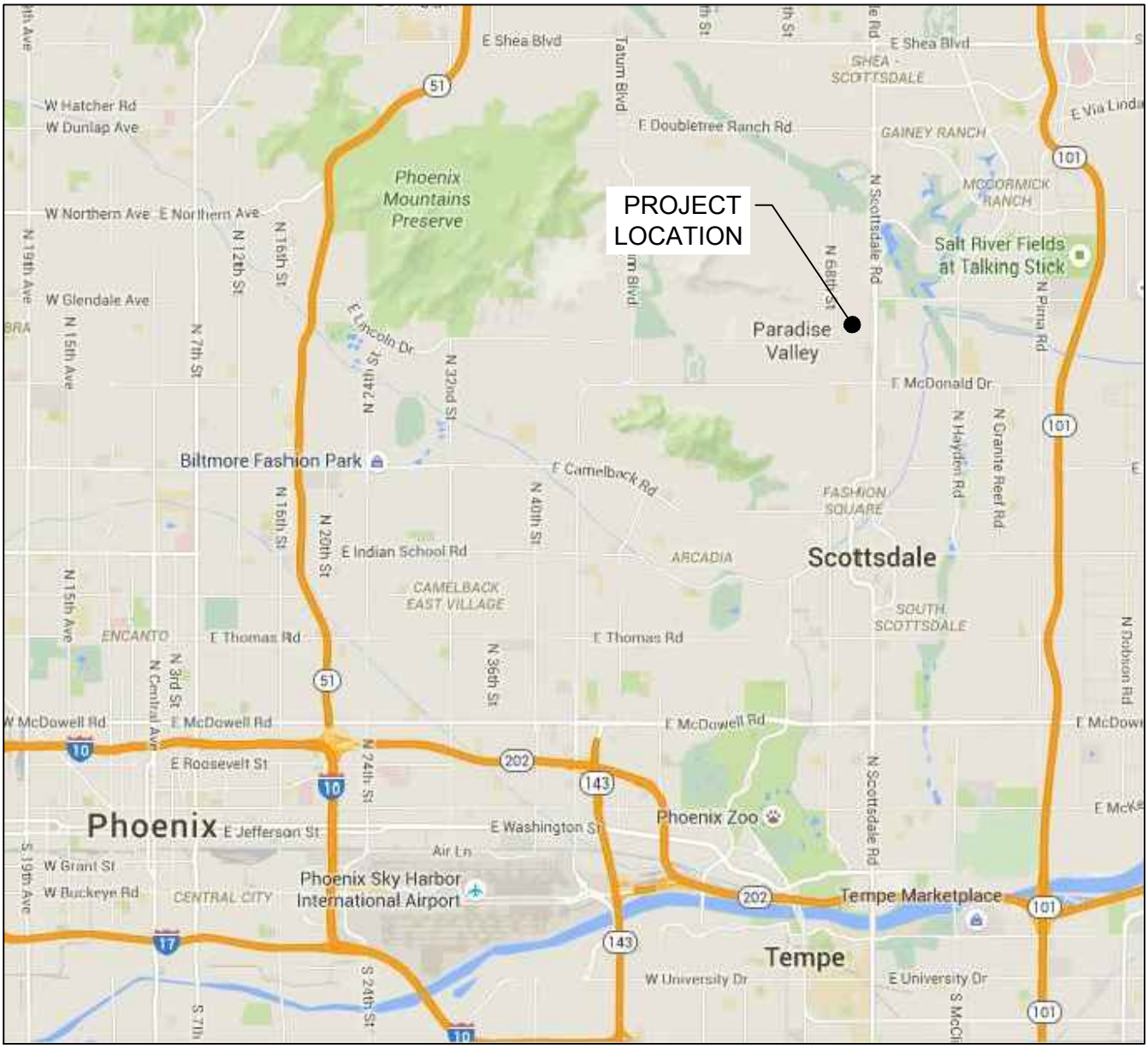
Palmeraie will consist of multi-family residential and mixed-use land uses as shown on Figure 2. A breakdown of the proposed land uses and number of dwelling units (DUs) or rooms are presented in Table 1. Figure 3 shows Palmeraie's layout, including reference numbers for the buildings and lots.

Table 1 – Proposed Land Use

Reference Number	Land Use	Units	No. of Units	Acreage[1]
Town of Paradise Valley				
2	Commercial/Mix-use	AC	--	0.98
3	Commercial/Mix-use	AC	--	2.05
6	Commercial/Mix-use	AC	--	4.38
7	Commercial/Mix-use	AC	--	3.62
Subtotal (Net)				**11.03**
City of Scottsdale				
1	Commercial/Mix-use	AC	--	1.88
4	Commercial/Mix-use	AC	--	3.24
5	Commercial/Mix-use	AC	--	1.95
8	Multi-Family	DU	41	2.32
	Commercial/Mix-use	AC	--	
9	Multi-Family	DU	51	3.29
	Commercial/Mix-use	AC	--	
10	Commercial/Mix-use	AC	--	2.11
Subtotal (Gross)				**14.79**
TOTAL (Gross)				**25.82**

[1]*Acreage based on lot size*

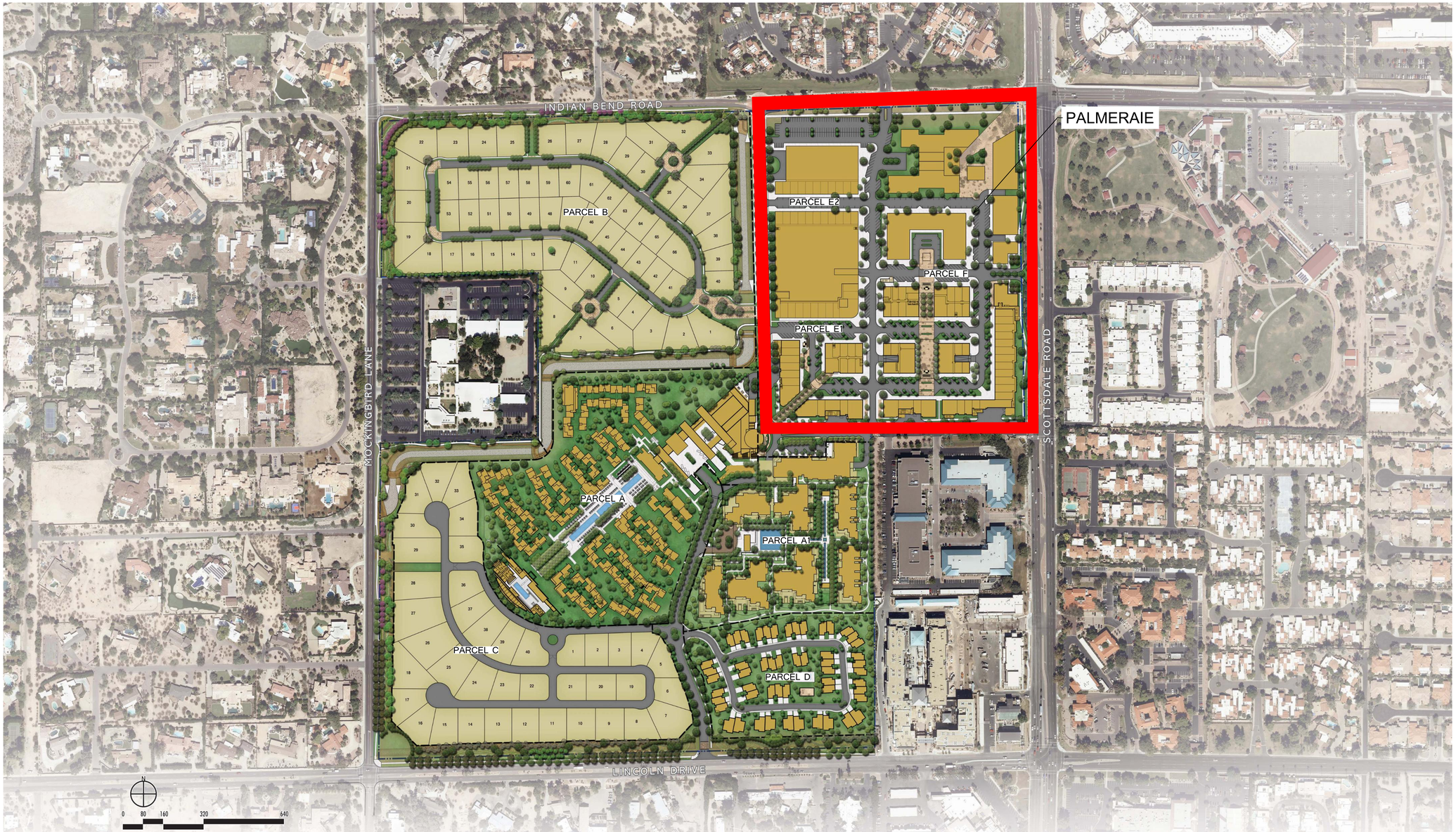
7-ZN-2016#2
8/11/2020



SCALE: NTS	PALMERAIE	CVL CONSULTANTS
FIGURE 1		
4550 North 12th Street Phoenix, Arizona 85014 Phone 602-264-6831 http://www.cvlci.com	VICINITY MAP	1.01.0268910

N:\01\0268901\Enviro\Reports\Figures\Vicinity Map.dwg **JoeG September 26, 2018**

7-ZN-2016#2
8/11/2020



CIVTECH, INC
Traffic Engineering
10605 N Hayden Road | Ste 140
Scottsdale, AZ 85260-5595
480.659.4250
contact: Dawn Carter

CVL CONSULTANTS
Civil, Landscape, Planning, & Survey
4550 N 12th St
Phoenix, AZ 85014
602.264.6831
contact: Ryan Weed

MASON ARCHITECTS
Architecture & Master Planning
2995 Woodside Rd | Ste 400
Woodside, CA 94062
650.851.8810
contact: Peter Mason

NELSEN PARTNERS
Mixed-Use Architecture
15210 N Scottsdale Rd | Ste 300
Scottsdale, AZ 85254
480.949.6800
contact: George A Melara

WITHEY MORRIS, PLC
Land Use & Zoning Attorney
2525 E Arizona Biltmore Cir | Ste A-212
Phoenix, Arizona 85016
602.230.0600
contact: Jason Morris

FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

December 19, 2016

THE RITZ-CARLTON®

MASTER PLAN

Land Use Plan with Aerial

AREA	DESCRIPTION
PARCEL A	RITZ–CARLTON RESORT HOTEL
PARCEL A–1	RITZ–CARLTON RESORT VILLAS
PARCEL B	RESORT RELATED LUXURY HOMES
PARCEL C	RITZ–CARLTON RESORT BRANDED HOMES
PARCEL D	RESORT RELATED ATTACHED RESIDENCES
PARCEL E	RESORT RELATED MIXED USE

N

*** LAND USE MAP IS PRELIMINARY. LOTTING IS SUBJECT TO CHANGE**

CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

PALMERAIE

SITE MAP

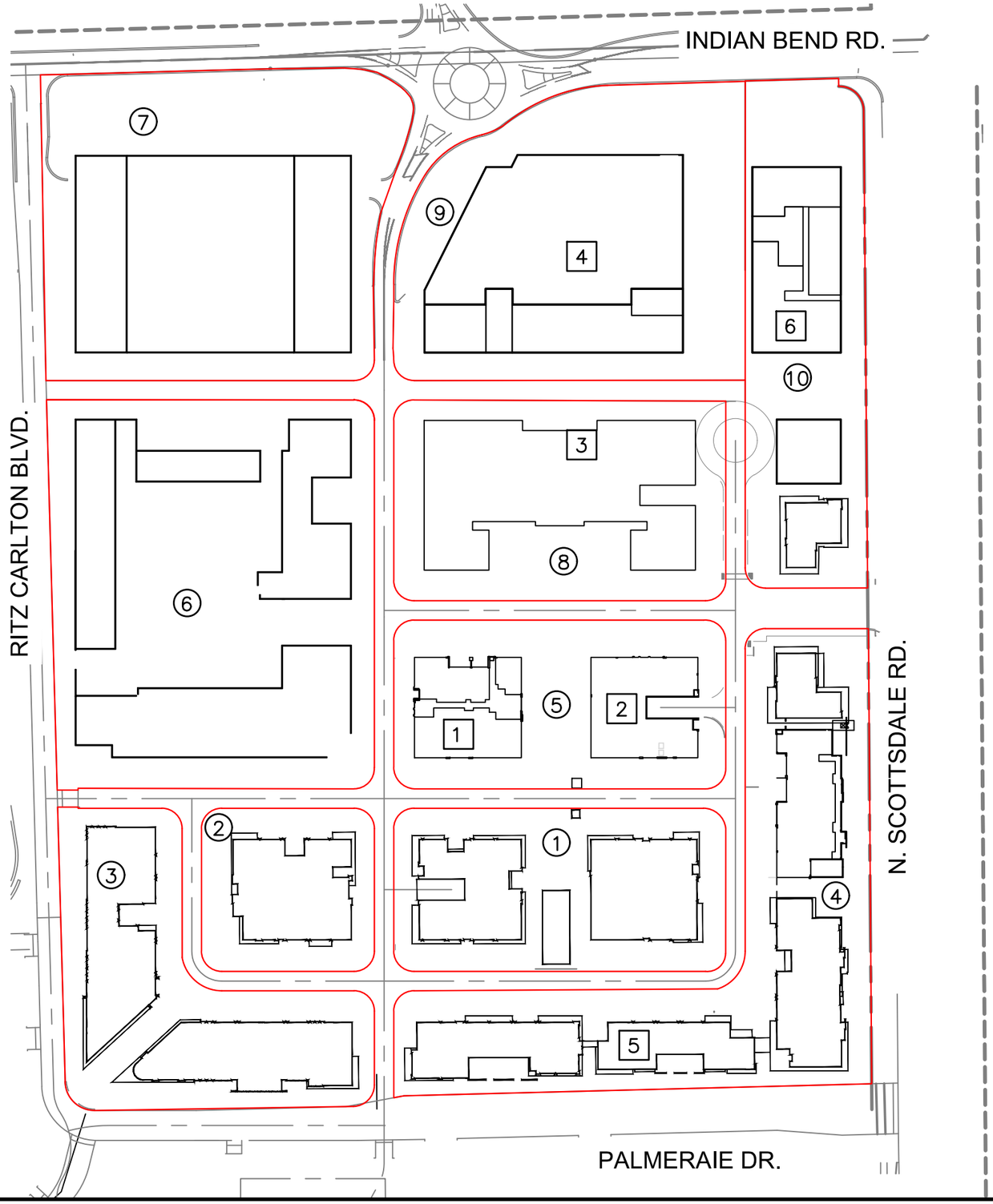
SCALE: NTS

FIGURE 2

4550 North 12th Street
Phoenix, Arizona 85014
Phone 602-264-6831
http://www.cvlci.com

7-ZN-2016#2
8/11/2020

Printed By: JoeG Print Date: September 26, 2018 Filename: N:\01\02689001\Enviro\Reports\Figures\Site Map 06.20.17.dwg



LEGEND

(1)	LOT REFERENCE NUMBER
[1]	BUILDING REFERENCE NUMBER

CVL CONSULTANTS

1.01.0268910

PALMERAIE

SITE LAYOUT

SCALE 1" = 150'

FIGURE 3

4550 North 12th Street
Phoenix, Arizona 85014
Phone 602-264-6831
http://www.cvlci.com

N:\01\0268901\Enviro\Exhibits\Water Layout Palmeraie 01.23.23.dwg JoeG May 16, 2019

7-ZN-2016#2
8/11/2020

1.4 Topographic Conditions

The Ritz Carlton Resort property ranges in elevation from approximately 1,324 feet above mean sea level (MSL) on the southwest corner of the property to approximately 1,301 feet MSL on the northeast corner of the property. Overall, the property generally slopes to the east northeast toward Scottsdale Road. In order to enhance the views of Camelback Mountain and the Phoenix Mountain Preserve, the site will be raised. The highest elevation will be 1,323 feet MSL near the center of the site where the resort lobby, ballrooms and belowground parking will be.

1.5 Existing Infrastructure

Palmeraie is located in the EPCOR service area. No on-site water distribution infrastructure exists within the property boundaries. EPCOR has existing pumping, treatment, and storage facilities throughout the water service area. Palmeraie is adjacent to several existing water distribution mains as presented on Figure 4 (see Section 4.0). Existing EPCOR water distribution lines significant to Palmeraie are described below:

- 8-inch waterline within Scottsdale Road; adjacent to the east boundary of the project area.
- 600 linear feet of 12-inch waterline in Palmeraie Drive extending west from the intersection of Palmeraie Drive and Scottsdale Road; constructed previously as part of the Ritz Carlton Resort project.

2.0 DESIGN CRITERIA

The design criteria are from EPCOR Water's 2015 Developer Guide. The base design criteria for the water main are as follows:

2.1 General

Diameter: 8, and 6-inch Ductile Iron Pipe, Pressure Class 350 (poly wrapped)

Depth: Minimum 4 feet of cover

2.2 Demands

EPCOR's demand criteria are presented in Table 2.

Table 2 – Demand Criteria

Land Use	Unit	Average Day Demand (gal/day/unit)	Max Day Peaking Factor	Peak Hour Peaking Factor
Multi-Family	Dwelling	240	1.8	3.0
Commercial/Mix-use	Acre	1,700	1.8	3.0

2.3 Pressures

The water main has been designed to handle pressures of 300 psi, maximum. Normal operating pressures will range from 70-100 during winter months, and can peak at approximately 135 psi during high demand, summer months. Pressure reducing valves will be required for all services.

2.4 Velocity and Headloss

The velocity will be no greater than 10 feet per second and the headloss will be no more than 10 feet per 1,000 linear feet for pipes less than 16 inches in diameter.

2.5 Hazen Williams Coefficient

The Hazen Williams coefficient of friction utilized in the modeling will be 130.

2.6 Fire Flow

The required fire flow for Palmeraie is 1,500 gpm for commercial land uses. All fire flows recorded in this report are in accordance with the 2015 International Fire Code. Fire flows for multi-story buildings in Palmeraie were chosen from Table B105.1(2) of the International Fire Code which can be seen in Appendix D.

3.0 PROPOSED WATER SYSTEM

The proposed water system includes 8, and 6-Inch water and fire mains. Palmeraie's fire line system includes three points of connection. The domestic water system for Palmeraie includes two points of connection. See Figure 4 for the connection locations.

3.1 Water Demand

Table 3 summarizes the domestic water demand for the land uses of the proposed Site Plan. Table 4 presents the fire flow demand requirements.

Table 3 – Water Demand Summary

Reference Number	Land Use	Unit	No. of Units	Unit Demand (gpd/unit)	Average Day Demand (gpd)	Maximum Day Demand (gpd)	Peak Hour Demand (gpd)
Town of Paradise Valley							
2	Commercial/Mix-use	AC	0.98	1,700	1,666	2,999	4,998
3	Commercial/Mix-use	AC	2.05	1,700	3,485	6,273	10,455
6	Commercial/Mix-use	AC	4.38	1,700	7,446	13,403	22,338
7	Commercial/Mix-use	AC	3.62	1,700	6,154	11,077	18,462
Paradise Valley Subtotal				**--**	**18,751**	**33,752**	**56,253**
City of Scottsdale							
1	Commercial/Mix-use	AC	1.88	1,700	3,196	5,753	9,588
4	Commercial/Mix-use	AC	3.24	1,700	5,508	9,914	16,524
5	Commercial/Mix-use	AC	1.95	1,700	3,315	5,967	9,945
8	Multi-Family Residential	DU	41	240	9,840	17,712	29,520
	Commercial/Mix-use	AC	2.32	1,700	3,944	7,099	11,832
9	Multi-Family Residential	DU	51	240	12,240	22,032	36,720
	Commercial/Mix-use	AC	3.29	1,700	5,593	10,067	16,779
10	Commercial/Mix-use	AC	2.11	1,700	3,587	6,457	10,761
Scottsdale Subtotal				**--**	**47,223**	**85,001**	**141,669**
TOTAL				**--**	**65,974**	**118,753**	**197,922**
TOTAL (GPM)				**--**	**46**	**82**	**137**

Table 4 – Fire Flow Requirements

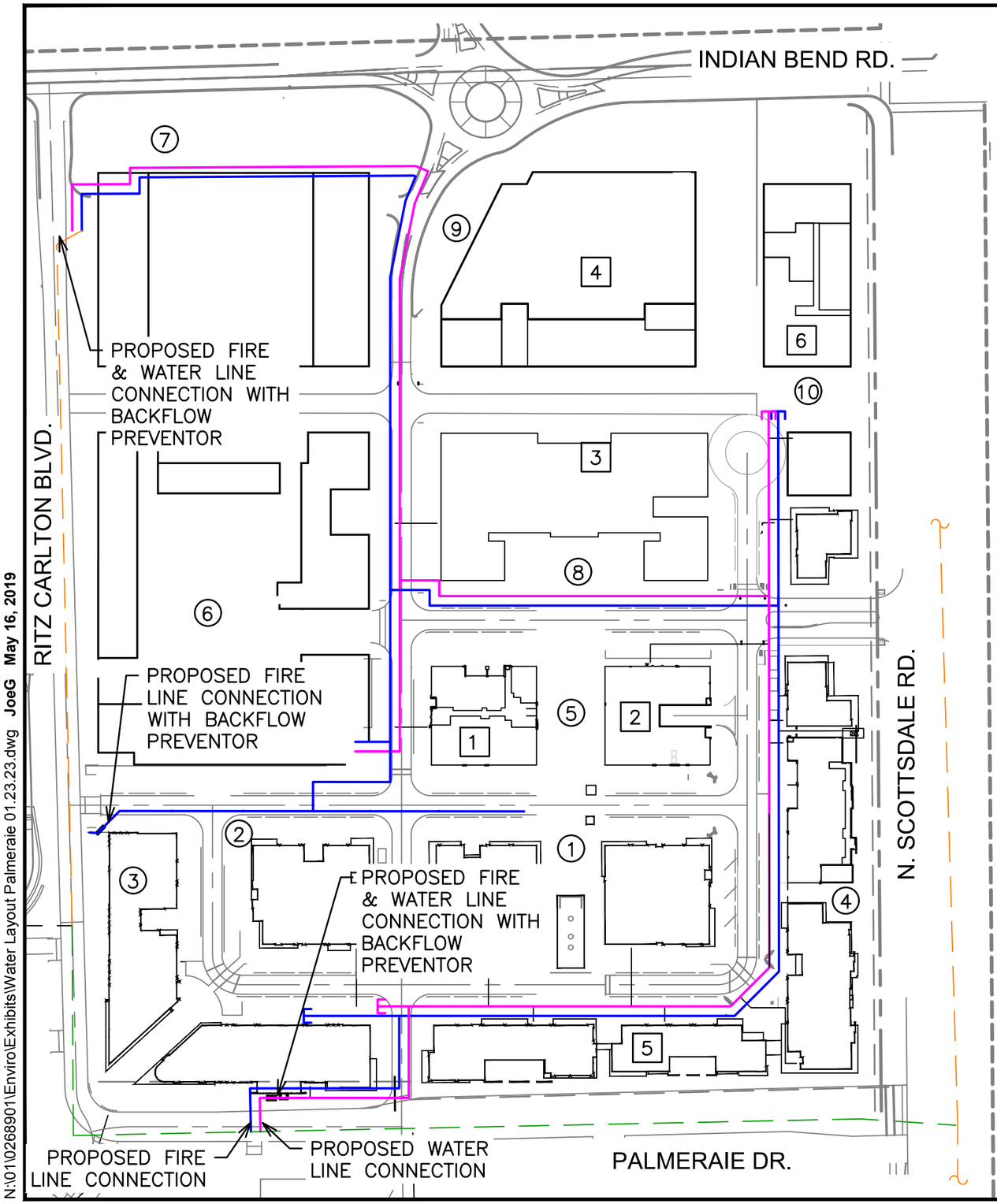
Reference Number	Land Use	Maximum Day Demand (gpm)	Fire Flow Requirement (gpm)	Maximum Day + Fire Flow (gpm)
Town of Paradise Valley				
2	Commercial/Mix-use	2	1,500	1,502
3	Commercial/Mix-use	4	1,500	1,504
6	Commercial/Mix-use	9	1,500	1,509
7	Commercial/Mix-use	8	1,500	1,508
	Paradise Valley Subtotal	**23**	**1,500**	**1,523**
City of Scottsdale				
1	Commercial/Mix-use	4	1,500	1,504
4	Commercial/Mix-use	7	1,500	1,507
5	Commercial/Mix-use	4	1,500	1,504
8	Multi-Family Residential	12	1,500	1,512
	Commercial/Mix-use	5	1,500	1,505
9	Multi-Family Residential	15	1,500	1,515
	Commercial/Mix-use	7	1,500	1,507
10	Commercial/Mix-use	4	1,500	1,504
	Scottsdale Subtotal	**59**	**1,500**	**1,559**
	TOTAL	**82**	**1,500**	**1,582**

3.2 Booster Pumps

Multiple buildings in Palmeraie will require booster pumps to provide adequate water service to the upper floors of the proposed buildings. The average floor height was assumed to be 14 feet. Table 5 shows the require head needed from a booster pump to service each building. All buildings in Palmeraie will have pressure reducing valves. It is assumed the pressure entering each building will be 60 psi. See Figure 3 for the locations of each multi-story building.

Table 5 – Pump Head Requirements (Domestic)

Building	Parcel	Stories	Approximate Height (ft)	Pressure Required (PSI) @BPS
1	5	4	56	21
2	5	4	56	21
3	8	6	84	33
4	9	4	56	21
5	4	2	28	9
6	10	3	42	15



LEGEND

— — —	EXISTING 8" WATERLINE
— — —	EXISTING 12" WATERLINE
———	PROPOSED 8" PRIVATE FIRE LINE
———	PROPOSED 6" PRIVATE WATERLINE
(1)	LOT REFERENCE NUMBER
[1]	BUILDING REFERENCE NUMBER

CVL CONSULTANTS

1.01.0268910

PALMERAIE

WATER SYSTEM LAYOUT

SCALE 1" = 150'

FIGURE 4

4550 North 12th Street
Phoenix, Arizona 85014
Phone 602-264-6831
http://www.cvlci.com

N:\1\01\0268901\Enviro\Exhibits\Water Layout Palmeraie 01.23.23.dwg JoeG May 16, 2019

7-ZN-2016#2
8/11/2020

4.0 WATER SYSTEM MODELING

The network analysis for the distribution system was analyzed using WaterCAD version 8i. A computer model was created and modified, as necessary, to demonstrate that the water system meets the criteria previously established. See Figure 4 for the Water System Layout and Appendix A for the WaterCAD System Layout.

The development was analyzed for average day, maximum day, peak hour, and maximum day plus fire flow demand conditions. Hydraulic grade lines modeled in the system are based on approximate pressures in existing adjacent lines and were provided by EPCOR. A Fire flow test will be completed to confirm these results.

Input parameters of the water distribution system modeling include the following:

- Pipe Diameters (inches)
- Pipe lengths (feet)
- System Demands (as outlined above)
- Fire flows
- Hazen-Williams, C = 130

Output parameters include but are not limited to:

- Velocities (fps)
- Pressure (psig)
- Head loss (feet)
- Flow rates (gpm)

5.0 SUMMARY AND RESULTS

The detailed results of the computer network analysis for Palmeraie are presented in Appendices B and C. The model used for Palmeraie includes the entire water system for the Ritz Carlton development. All pipes and nodes exclusive to Palmeraie are highlighted in the computer network analysis in Appendices B and C. Tables 6 and 7 summarize the model output highlights. A figure of the WateCAD model can be seen in Appendix A.

Table 6 – Results of WaterCAD Analysis (Normal)

Scenario	Demand (gpm)	Pressure (psig)				Maximum Velocity (fps)	Pipe ID
		Minimum	Node	Maximum[1]	Node		
ADD	46	95	J-29	96	J-41	0.28	P-50
MDD	82	95	J-29	96	J-51	0.51	P-50
PHD	137	95	J-29	96	J-99	0.85	P-50
MDD + Commercial FF	1,582	84	J-50	91	J-77	9.58	P-127

[1]*Excludes pressures in existing lines which range from 90 psi to 95 psi.*

Table 7 – Results of WaterCAD Analysis (Summer)

Scenario	Demand (gpm)	Pressure (psig)				Maximum Velocity (fps)	Pipe ID
		Minimum	Node	Maximum[1]	Node		
ADD	46	135	J-29	136	J-99	0.28	P-50
MDD	82	135	J-29	136	J-99	0.51	P-50
PHD	137	135	J-29	135	J-41	0.85	P-50
MDD + Commercial FF	1,582	124	J-50	131	J-77	9.58	P-127

[1]*Excludes pressures in existing lines which range from 129 psi to 135 psi.*

The following summarizes the findings of the Water Design Report:

- The proposed collection system is designed to meet the *EPCOR Water Developer Guide, 2015.*

- The proposed water distribution system is comprised of 8-inch, and 6-inch water mains.

- Pressure Reducing Valves are required for all services.

- Isolation gate valves, fire hydrants, water service connections, backflow prevention devices and fire department connections will be provided per City of Scottsdale and City of Phoenix Fire Department requirements.

- The flow velocities of the proposed lines are less than 3 fps average day demand, maximum day demand and peak hour demand. The velocity at maximum day plus fire flow for all fire flow conditions is below 10 fps for the proposed system.

- The proposed distribution system pressure for average day, maximum day, and peak hour are between 95 and 136 psi. Pressures for maximum day plus fire flow, for all fire flow scenarios, are greater than 20 psi.

- Off-site water will be used to supply this site through connections to the existing 16-inch main in Lincoln Drive, the existing 8-inch main in Scottsdale Road, and the existing 12-inch in the Cactus Wren Alignment.

- 600 linear feet of 12-inch water line in Palmeraie Drive has already been installed. The proposed 6-inch domestic water line will connect to this.

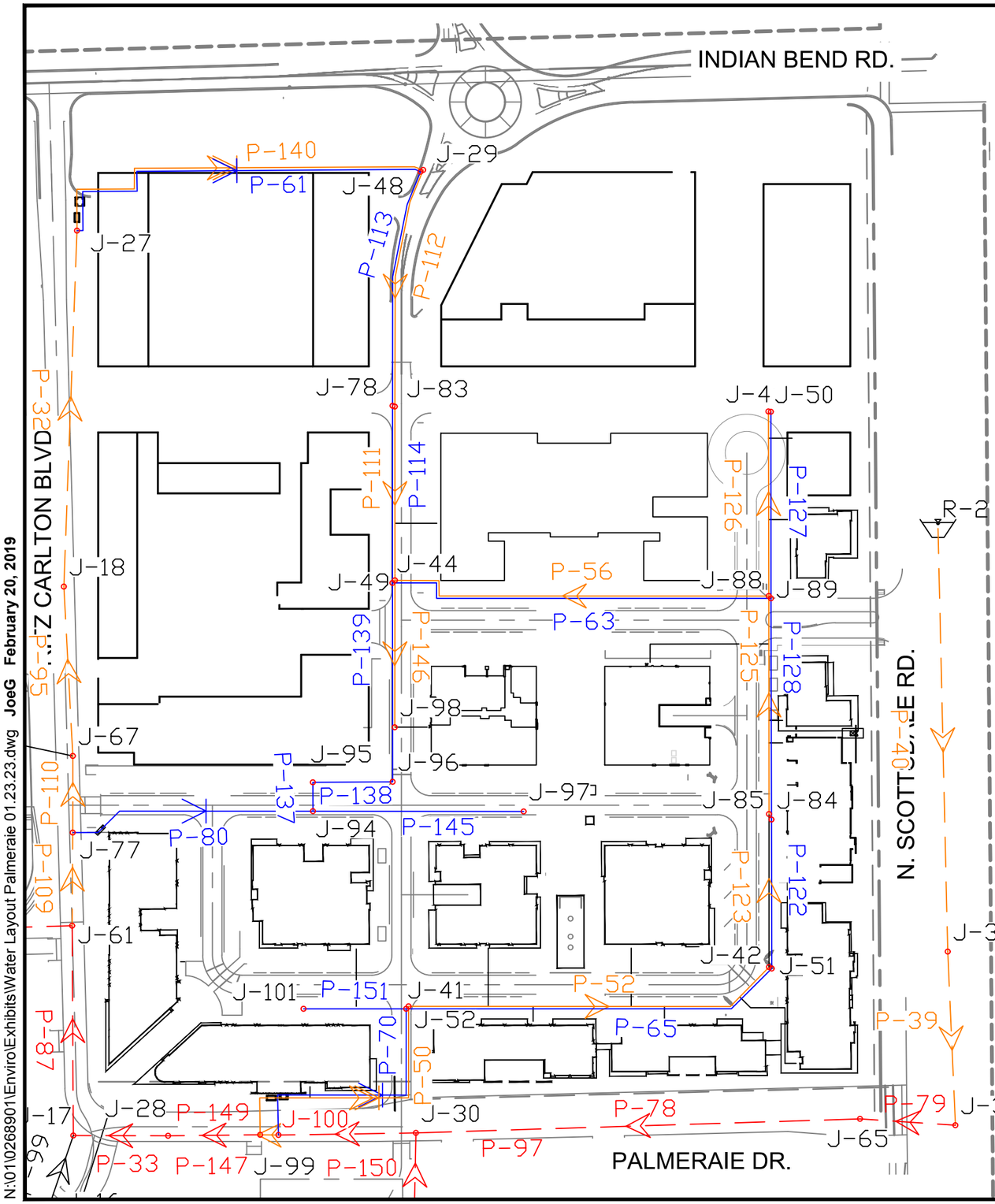
- 1,000 linear feet of 8-inch water line in Ritz Carlton Blvd. has already been installed. The proposed 6-inch domestic water line will connect to this.

- The demands for Palmeraie are estimated as follows:

  - Average Day Demand: 65,974 gpd (46 gpm)
  - Maximum Day Demand: 118,753 gpd (82 gpm)
  - Peak Hour Demand: 197,922 gpd (137 gpm)
  - Maximum Day + Fire Flow Demands: 1,582 gpm (Commercial)

APPENDIX A

WATER CAD MODEL LAYOUT



LEGEND

— — —	EXISTING 8" WATERLINE
— — —	EXISTING 12" WATERLINE
———	PROPOSED 8" PRIVATE WATERLINE
———	PROPOSED 6" PRIVATE WATERLINE
R–2	RESERVOIR ID
J–83	JUNCTION ID
P–114	PIPE ID

CVL CONSULTANTS

1.01.0268910

PALMERAIE

WATER SYSTEM LAYOUT
WATER CAD

SCALE 1" = 150'

FIGURE 5

4550 North 12th Street
Phoenix, Arizona 85014
Phone 602-264-6831
http://www.cvlci.com

N:\01\0268901\Enviro\Exhibits\Water Layout Palmeraie 01.23.23.dwg JoeG February 20, 2019

7-ZN-2016#2
8/11/2020

APPENDIX B

WaterCAD Results - Normal

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Reservoir Table

Active Scenario: Average Day Demand

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,530.00	40	1,530.00
R-2	1,530.00	52	1,530.00
R-3	1,530.00	113	1,530.00

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Junction Table

Active Scenario: Average Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	1,315.00	0	1,529.99	93
J-3	1,315.00	0	1,529.96	93
J-4	1,321.00	20	1,529.93	90
J-6	1,319.00	4	1,529.93	91
J-8	1,315.00	5	1,529.93	93
J-9	1,314.00	5	1,529.95	93
J-10	1,314.00	3	1,529.95	93
J-11	1,314.00	3	1,529.95	93
J-12	1,311.00	3	1,529.95	95
J-13	1,310.00	4	1,529.95	95
J-14	1,311.00	5	1,529.95	95
J-15	1,335.00	23	1,529.93	84
J-16	1,337.00	0	1,529.93	83
J-17	1,310.00	0	1,529.93	95
J-18	1,309.00	0	1,529.91	96
J-19	1,313.00	7	1,529.91	94
J-20	1,318.00	7	1,529.91	92
J-21	1,314.00	11	1,529.91	93
J-22	1,315.00	3	1,529.91	93
J-23	1,318.00	6	1,529.91	92
J-24	1,315.00	8	1,529.91	93
J-25	1,311.00	7	1,529.91	95
J-27	1,309.00	0	1,529.91	96
J-28	1,308.00	0	1,529.93	96
J-29	1,310.00	2	1,529.88	95
J-30	1,309.00	0	1,529.94	96
J-31	1,310.00	0	1,529.94	95
J-33	1,310.00	0	1,529.96	95
J-35	1,321.00	3	1,529.93	90
J-37	1,322.00	0	1,529.94	90
J-38	1,322.00	0	1,529.94	90
J-40	1,322.00	0	1,529.98	90
J-41	1,309.11	5	1,529.90	96
J-42	1,309.00	5	1,529.88	96
J-43	1,310.00	13	1,529.86	95
J-44	1,309.53	0	1,529.86	95
J-48	1,310.00	0	1,529.93	95
J-49	1,309.53	0	1,529.93	95
J-50	1,310.00	0	1,529.93	95
J-51	1,309.00	0	1,529.93	96
J-52	1,309.11	0	1,529.93	96
J-57	1,320.22	0	1,529.93	91
J-58	1,320.00	0	1,529.93	91
J-59	1,319.00	0	1,529.93	91
J-60	1,318.00	0	1,529.93	92
J-61	1,309.35	0	1,529.93	95

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Junction Table

Active Scenario: Average Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-36	1,321.00	0	1,529.94	90
J-64	1,315.00	0	1,529.98	93
J-65	1,309.87	0	1,529.94	95
J-66	1,315.42	0	1,529.95	93
J-67	1,309.17	0	1,529.92	96
J-68	1,309.21	16	1,529.94	95
J-69	1,311.00	0	1,529.91	95
J-71	1,318.07	0	1,529.96	92
J-73	1,318.51	4	1,529.93	91
J-74	1,317.00	3	1,529.93	92
J-75	1,321.00	4	1,529.93	90
J-76	1,319.70	5	1,529.93	91
J-77	1,309.26	0	1,529.92	95
J-78	1,309.75	16	1,529.86	95
J-83	1,309.76	0	1,529.93	95
J-84	1,309.48	0	1,529.93	95
J-85	1,309.49	0	1,529.87	95
J-88	1,309.78	0	1,529.86	95
J-89	1,309.77	0	1,529.93	95
J-94	1,309.53	0	1,529.93	95
J-95	1,309.53	0	1,529.93	95
J-96	1,309.53	0	1,529.93	95
J-97	1,309.53	0	1,529.93	95
J-98	1,309.53	5	1,529.86	95
J-99	1,308.37	0	1,529.93	96
J-100	1,308.45	0	1,529.93	96
J-101	1,309.06	0	1,529.93	96

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Pipe Table

Active Scenario: Average Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	R-3	J-2	16.0	1,325	Ductile Iron	130.0	113	0.18	0.01
P-10	J-3	J-9	8.0	119	Ductile Iron	130.0	45	0.29	0.01
P-11	J-9	J-10	8.0	119	Ductile Iron	130.0	24	0.15	0.00
P-12	J-10	J-11	8.0	215	Ductile Iron	130.0	10	0.06	0.00
P-13	J-11	J-12	8.0	424	Ductile Iron	130.0	8	0.05	0.00
P-14	J-12	J-13	8.0	276	Ductile Iron	130.0	5	0.03	0.00
P-15	J-13	J-10	8.0	498	Ductile Iron	130.0	-11	0.07	0.00
P-16	J-13	J-14	8.0	113	Ductile Iron	130.0	12	0.07	0.00
P-17	J-9	J-14	8.0	502	Ductile Iron	130.0	17	0.11	0.00
P-19	J-15	J-16	8.0	232	Ductile Iron	130.0	18	0.12	0.00
P-22	J-67	J-19	8.0	254	Ductile Iron	130.0	21	0.14	0.00
P-24	J-19	J-22	8.0	386	Ductile Iron	130.0	-4	0.03	0.00
P-25	J-21	J-20	8.0	290	Ductile Iron	130.0	9	0.06	0.00
P-26	J-21	J-22	8.0	505	Ductile Iron	130.0	-20	0.13	0.01
P-27	J-20	J-23	8.0	278	Ductile Iron	130.0	2	0.02	0.00
P-28	J-23	J-24	8.0	586	Ductile Iron	130.0	-3	0.02	0.00
P-29	J-24	J-25	8.0	367	Ductile Iron	130.0	-11	0.07	0.00
P-31	J-25	J-19	8.0	444	Ductile Iron	130.0	-19	0.12	0.01
P-32	J-18	J-27	8.0	447	Ductile Iron	130.0	21	0.13	0.01
P-33	J-17	J-28	12.0	119	Ductile Iron	130.0	-34	0.10	0.00
P-39	J-31	J-33	8.0	218	Ductile Iron	130.0	-52	0.33	0.02
P-40	J-33	R-2	8.0	532	Ductile Iron	130.0	-52	0.33	0.04
P-41	J-4	J-35	12.0	132	Ductile Iron	130.0	-10	0.03	0.00
P-42	J-35	J-6	8.0	353	Ductile Iron	130.0	21	0.14	0.01
P-44	J-36	J-37	12.0	454	Ductile Iron	130.0	-40	0.11	0.00
P-45	J-37	J-38	12.0	296	Ductile Iron	130.0	-40	0.11	0.00
P-47	J-38	J-40	8.0	762	Ductile Iron	130.0	-40	0.25	0.04
P-48	J-40	R-1	8.0	503	Ductile Iron	130.0	-40	0.25	0.02
P-50	J-99	J-41	6.0	348	Ductile Iron	130.0	25	0.28	0.03
P-52	J-41	J-42	6.0	474	Ductile Iron	130.0	20	0.23	0.03
P-56	J-88	J-44	6.0	489	Ductile Iron	130.0	2	0.02	0.00
P-61	J-27	J-48	8.0	507	Ductile Iron	130.0	0	0.00	0.00
P-63	J-49	J-89	8.0	495	Ductile Iron	130.0	0	0.00	0.00
P-65	J-52	J-51	8.0	480	Ductile Iron	130.0	0	0.00	0.00
P-70	J-100	J-52	8.0	320	Ductile Iron	130.0	0	0.00	0.00
P-73	J-2	J-64	12.0	116	Ductile Iron	130.0	113	0.32	0.01
P-74	J-64	J-3	12.0	472	Ductile Iron	130.0	113	0.32	0.02
P-78	J-30	J-65	12.0	558	Ductile Iron	130.0	-52	0.15	0.01
P-79	J-65	J-31	12.0	120	Ductile Iron	130.0	-52	0.15	0.00
P-80	J-77	J-94	8.0	313	Ductile Iron	130.0	0	0.00	0.00
P-83	J-57	J-4	8.0	400	Ductile Iron	130.0	-16	0.10	0.00
P-84	J-57	J-58	8.0	279	Ductile Iron	130.0	16	0.10	0.00
P-85	J-58	J-59	8.0	309	Ductile Iron	130.0	16	0.10	0.00
P-86	J-59	J-60	8.0	512	Ductile Iron	130.0	-11	0.07	0.00
P-87	J-17	J-61	12.0	264	Ductile Iron	130.0	53	0.15	0.00
P-89	J-60	J-61	12.0	363	Ductile Iron	130.0	-11	0.03	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Pipe Table

Active Scenario: Average Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-90	J-59	J-22	8.0	547	Ductile Iron	130.0	27	0.17	0.01
P-43	J-36	J-35	12.0	259	Ductile Iron	130.0	40	0.11	0.00
P-93	J-66	J-4	8.0	820	Ductile Iron	130.0	26	0.17	0.02
P-95	J-67	J-18	8.0	213	Ductile Iron	130.0	21	0.13	0.00
P-96	J-14	J-68	8.0	727	Ductile Iron	130.0	23	0.15	0.01
P-97	J-68	J-30	12.0	106	Ductile Iron	130.0	7	0.02	0.00
P-98	J-25	J-69	8.0	203	Ductile Iron	130.0	0	0.00	0.00
P-99	J-17	J-16	8.0	90	Ductile Iron	130.0	-18	0.12	0.00
P-100	J-3	J-71	12.0	98	Ductile Iron	130.0	67	0.19	0.00
P-101	J-71	J-15	8.0	458	Ductile Iron	130.0	41	0.26	0.02
P-102	J-66	J-71	8.0	238	Ductile Iron	130.0	-26	0.17	0.01
P-103	J-6	J-73	8.0	357	Ductile Iron	130.0	17	0.11	0.00
P-104	J-73	J-8	8.0	518	Ductile Iron	130.0	4	0.03	0.00
P-105	J-73	J-74	8.0	139	Ductile Iron	130.0	8	0.05	0.00
P-106	J-74	J-75	8.0	473	Ductile Iron	130.0	4	0.03	0.00
P-107	J-74	J-8	8.0	389	Ductile Iron	130.0	1	0.01	0.00
P-108	J-35	J-76	8.0	195	Ductile Iron	130.0	5	0.03	0.00
P-109	J-61	J-77	8.0	117	Ductile Iron	130.0	42	0.27	0.01
P-110	J-77	J-67	8.0	96	Ductile Iron	130.0	42	0.27	0.01
P-111	J-44	J-78	6.0	218	Ductile Iron	130.0	-3	0.03	0.00
P-112	J-78	J-29	6.0	302	Ductile Iron	130.0	-19	0.21	0.01
P-113	J-48	J-83	8.0	299	Ductile Iron	130.0	0	0.00	0.00
P-114	J-83	J-49	8.0	222	Ductile Iron	130.0	0	0.00	0.00
P-122	J-84	J-51	8.0	187	Ductile Iron	130.0	0	0.00	0.00
P-123	J-42	J-85	6.0	192	Ductile Iron	130.0	15	0.17	0.01
P-125	J-85	J-88	6.0	274	Ductile Iron	130.0	15	0.17	0.01
P-126	J-88	J-43	6.0	232	Ductile Iron	130.0	13	0.15	0.01
P-127	J-50	J-89	8.0	234	Ductile Iron	130.0	0	0.00	0.00
P-128	J-89	J-84	8.0	278	Ductile Iron	130.0	0	0.00	0.00
P-137	J-94	J-95	8.0	36	Ductile Iron	130.0	0	0.00	0.00
P-138	J-95	J-96	8.0	100	Ductile Iron	130.0	0	0.00	0.00
P-139	J-96	J-49	8.0	250	Ductile Iron	130.0	0	0.00	0.00
P-140	J-27	J-29	6.0	514	Ductile Iron	130.0	21	0.24	0.03
P-145	J-97	J-94	8.0	265	Ductile Iron	130.0	0	0.00	0.00
P-146	J-98	J-44	6.0	185	Ductile Iron	130.0	-5	0.06	0.00
P-147	J-28	J-99	12.0	116	Ductile Iron	130.0	-34	0.10	0.00
P-149	J-99	J-100	12.0	23	Ductile Iron	130.0	-59	0.17	0.00
P-150	J-100	J-30	12.0	173	Ductile Iron	130.0	-59	0.17	0.00
P-151	J-52	J-101	8.0	147	Ductile Iron	130.0	0	0.00	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Reservoir Table

Active Scenario: Max Day Demand

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,530.00	71	1,530.00
R-2	1,530.00	94	1,530.00
R-3	1,530.00	202	1,530.00

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Junction Table

Active Scenario: Max Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	1,315.00	0	1,529.96	93
J-3	1,315.00	0	1,529.88	93
J-4	1,321.00	36	1,529.81	90
J-6	1,319.00	8	1,529.79	91
J-8	1,315.00	9	1,529.78	93
J-9	1,314.00	9	1,529.86	93
J-10	1,314.00	5	1,529.85	93
J-11	1,314.00	4	1,529.85	93
J-12	1,311.00	4	1,529.85	95
J-13	1,310.00	6	1,529.85	95
J-14	1,311.00	9	1,529.85	95
J-15	1,335.00	38	1,529.81	84
J-16	1,337.00	0	1,529.80	83
J-17	1,310.00	0	1,529.80	95
J-18	1,309.00	0	1,529.74	96
J-19	1,313.00	14	1,529.74	94
J-20	1,318.00	12	1,529.71	92
J-21	1,314.00	21	1,529.72	93
J-22	1,315.00	6	1,529.74	93
J-23	1,318.00	13	1,529.71	92
J-24	1,315.00	14	1,529.72	93
J-25	1,311.00	13	1,529.72	95
J-27	1,309.00	0	1,529.72	95
J-28	1,308.00	0	1,529.80	96
J-29	1,310.00	4	1,529.64	95
J-30	1,309.00	0	1,529.81	96
J-31	1,310.00	0	1,529.83	95
J-33	1,310.00	0	1,529.88	95
J-35	1,321.00	5	1,529.81	90
J-37	1,322.00	0	1,529.82	90
J-38	1,322.00	0	1,529.83	90
J-40	1,322.00	0	1,529.93	90
J-41	1,309.11	8	1,529.72	95
J-42	1,309.00	9	1,529.64	95
J-43	1,310.00	24	1,529.58	95
J-44	1,309.53	0	1,529.59	95
J-48	1,310.00	0	1,529.80	95
J-49	1,309.53	0	1,529.80	95
J-50	1,310.00	0	1,529.80	95
J-51	1,309.00	0	1,529.80	96
J-52	1,309.11	0	1,529.80	95
J-57	1,320.22	0	1,529.80	91
J-58	1,320.00	0	1,529.79	91
J-59	1,319.00	0	1,529.78	91
J-60	1,318.00	0	1,529.79	92
J-61	1,309.35	0	1,529.79	95

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Junction Table

Active Scenario: Max Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-36	1,321.00	0	1,529.81	90
J-64	1,315.00	0	1,529.94	93
J-65	1,309.87	0	1,529.83	95
J-66	1,315.42	0	1,529.86	93
J-67	1,309.17	0	1,529.75	95
J-68	1,309.21	28	1,529.81	95
J-69	1,311.00	0	1,529.72	95
J-71	1,318.07	0	1,529.88	92
J-73	1,318.51	8	1,529.78	91
J-74	1,317.00	5	1,529.78	92
J-75	1,321.00	8	1,529.78	90
J-76	1,319.70	9	1,529.81	91
J-77	1,309.26	0	1,529.77	95
J-78	1,309.75	28	1,529.59	95
J-83	1,309.76	0	1,529.80	95
J-84	1,309.48	0	1,529.80	95
J-85	1,309.49	0	1,529.62	95
J-88	1,309.78	0	1,529.59	95
J-89	1,309.77	0	1,529.80	95
J-94	1,309.53	0	1,529.80	95
J-95	1,309.53	0	1,529.80	95
J-96	1,309.53	0	1,529.80	95
J-97	1,309.53	0	1,529.80	95
J-98	1,309.53	9	1,529.59	95
J-99	1,308.37	0	1,529.80	96
J-100	1,308.45	0	1,529.80	96
J-101	1,309.06	0	1,529.80	96

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Pipe Table

Active Scenario: Max Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	R-3	J-2	16.0	1,325	Ductile Iron	130.0	202	0.32	0.04
P-10	J-3	J-9	8.0	119	Ductile Iron	130.0	80	0.51	0.02
P-11	J-9	J-10	8.0	119	Ductile Iron	130.0	41	0.26	0.01
P-12	J-10	J-11	8.0	215	Ductile Iron	130.0	17	0.11	0.00
P-13	J-11	J-12	8.0	424	Ductile Iron	130.0	13	0.09	0.00
P-14	J-12	J-13	8.0	276	Ductile Iron	130.0	10	0.06	0.00
P-15	J-13	J-10	8.0	498	Ductile Iron	130.0	-19	0.12	0.01
P-16	J-13	J-14	8.0	113	Ductile Iron	130.0	23	0.14	0.00
P-17	J-9	J-14	8.0	502	Ductile Iron	130.0	30	0.19	0.01
P-19	J-15	J-16	8.0	232	Ductile Iron	130.0	36	0.23	0.01
P-22	J-67	J-19	8.0	254	Ductile Iron	130.0	42	0.27	0.01
P-24	J-19	J-22	8.0	386	Ductile Iron	130.0	-7	0.05	0.00
P-25	J-21	J-20	8.0	290	Ductile Iron	130.0	17	0.11	0.00
P-26	J-21	J-22	8.0	505	Ductile Iron	130.0	-37	0.24	0.02
P-27	J-20	J-23	8.0	278	Ductile Iron	130.0	5	0.03	0.00
P-28	J-23	J-24	8.0	586	Ductile Iron	130.0	-8	0.05	0.00
P-29	J-24	J-25	8.0	367	Ductile Iron	130.0	-22	0.14	0.01
P-31	J-25	J-19	8.0	444	Ductile Iron	130.0	-35	0.22	0.02
P-32	J-18	J-27	8.0	447	Ductile Iron	130.0	37	0.24	0.02
P-33	J-17	J-28	12.0	119	Ductile Iron	130.0	-64	0.18	0.00
P-39	J-31	J-33	8.0	218	Ductile Iron	130.0	-94	0.60	0.05
P-40	J-33	R-2	8.0	532	Ductile Iron	130.0	-94	0.60	0.12
P-41	J-4	J-35	12.0	132	Ductile Iron	130.0	-19	0.05	0.00
P-42	J-35	J-6	8.0	353	Ductile Iron	130.0	38	0.24	0.02
P-44	J-36	J-37	12.0	454	Ductile Iron	130.0	-71	0.20	0.01
P-45	J-37	J-38	12.0	296	Ductile Iron	130.0	-71	0.20	0.01
P-47	J-38	J-40	8.0	762	Ductile Iron	130.0	-71	0.46	0.10
P-48	J-40	R-1	8.0	503	Ductile Iron	130.0	-71	0.46	0.07
P-50	J-99	J-41	6.0	348	Ductile Iron	130.0	45	0.51	0.08
P-52	J-41	J-42	6.0	474	Ductile Iron	130.0	37	0.42	0.08
P-56	J-88	J-44	6.0	489	Ductile Iron	130.0	3	0.04	0.00
P-61	J-27	J-48	8.0	507	Ductile Iron	130.0	0	0.00	0.00
P-63	J-49	J-89	8.0	495	Ductile Iron	130.0	0	0.00	0.00
P-65	J-52	J-51	8.0	480	Ductile Iron	130.0	0	0.00	0.00
P-70	J-100	J-52	8.0	320	Ductile Iron	130.0	0	0.00	0.00
P-73	J-2	J-64	12.0	116	Ductile Iron	130.0	202	0.57	0.02
P-74	J-64	J-3	12.0	472	Ductile Iron	130.0	202	0.57	0.06
P-78	J-30	J-65	12.0	558	Ductile Iron	130.0	-94	0.27	0.02
P-79	J-65	J-31	12.0	120	Ductile Iron	130.0	-94	0.27	0.00
P-80	J-77	J-94	8.0	313	Ductile Iron	130.0	0	0.00	0.00
P-83	J-57	J-4	8.0	400	Ductile Iron	130.0	-30	0.19	0.01
P-84	J-57	J-58	8.0	279	Ductile Iron	130.0	30	0.19	0.01
P-85	J-58	J-59	8.0	309	Ductile Iron	130.0	30	0.19	0.01
P-86	J-59	J-60	8.0	512	Ductile Iron	130.0	-20	0.13	0.01
P-87	J-17	J-61	12.0	264	Ductile Iron	130.0	100	0.28	0.01
P-89	J-60	J-61	12.0	363	Ductile Iron	130.0	-20	0.06	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Pipe Table

Active Scenario: Max Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-90	J-59	J-22	8.0	547	Ductile Iron	130.0	51	0.32	0.04
P-43	J-36	J-35	12.0	259	Ductile Iron	130.0	71	0.20	0.01
P-93	J-66	J-4	8.0	820	Ductile Iron	130.0	48	0.30	0.05
P-95	J-67	J-18	8.0	213	Ductile Iron	130.0	37	0.24	0.01
P-96	J-14	J-68	8.0	727	Ductile Iron	130.0	43	0.27	0.04
P-97	J-68	J-30	12.0	106	Ductile Iron	130.0	15	0.04	0.00
P-98	J-25	J-69	8.0	203	Ductile Iron	130.0	0	0.00	0.00
P-99	J-17	J-16	8.0	90	Ductile Iron	130.0	-36	0.23	0.00
P-100	J-3	J-71	12.0	98	Ductile Iron	130.0	122	0.34	0.01
P-101	J-71	J-15	8.0	458	Ductile Iron	130.0	74	0.47	0.07
P-102	J-66	J-71	8.0	238	Ductile Iron	130.0	-48	0.30	0.02
P-103	J-6	J-73	8.0	357	Ductile Iron	130.0	30	0.19	0.01
P-104	J-73	J-8	8.0	518	Ductile Iron	130.0	7	0.05	0.00
P-105	J-73	J-74	8.0	139	Ductile Iron	130.0	15	0.09	0.00
P-106	J-74	J-75	8.0	473	Ductile Iron	130.0	8	0.05	0.00
P-107	J-74	J-8	8.0	389	Ductile Iron	130.0	2	0.01	0.00
P-108	J-35	J-76	8.0	195	Ductile Iron	130.0	9	0.06	0.00
P-109	J-61	J-77	8.0	117	Ductile Iron	130.0	79	0.51	0.02
P-110	J-77	J-67	8.0	96	Ductile Iron	130.0	79	0.51	0.02
P-111	J-44	J-78	6.0	218	Ductile Iron	130.0	-5	0.06	0.00
P-112	J-78	J-29	6.0	302	Ductile Iron	130.0	-34	0.38	0.04
P-113	J-48	J-83	8.0	299	Ductile Iron	130.0	0	0.00	0.00
P-114	J-83	J-49	8.0	222	Ductile Iron	130.0	0	0.00	0.00
P-122	J-84	J-51	8.0	187	Ductile Iron	130.0	0	0.00	0.00
P-123	J-42	J-85	6.0	192	Ductile Iron	130.0	28	0.31	0.02
P-125	J-85	J-88	6.0	274	Ductile Iron	130.0	28	0.31	0.03
P-126	J-88	J-43	6.0	232	Ductile Iron	130.0	24	0.28	0.02
P-127	J-50	J-89	8.0	234	Ductile Iron	130.0	0	0.00	0.00
P-128	J-89	J-84	8.0	278	Ductile Iron	130.0	0	0.00	0.00
P-137	J-94	J-95	8.0	36	Ductile Iron	130.0	0	0.00	0.00
P-138	J-95	J-96	8.0	100	Ductile Iron	130.0	0	0.00	0.00
P-139	J-96	J-49	8.0	250	Ductile Iron	130.0	0	0.00	0.00
P-140	J-27	J-29	6.0	514	Ductile Iron	130.0	37	0.42	0.09
P-145	J-97	J-94	8.0	265	Ductile Iron	130.0	0	0.00	0.00
P-146	J-98	J-44	6.0	185	Ductile Iron	130.0	-9	0.10	0.00
P-147	J-28	J-99	12.0	116	Ductile Iron	130.0	-64	0.18	0.00
P-149	J-99	J-100	12.0	23	Ductile Iron	130.0	-109	0.31	0.00
P-150	J-100	J-30	12.0	173	Ductile Iron	130.0	-109	0.31	0.01
P-151	J-52	J-101	8.0	147	Ductile Iron	130.0	0	0.00	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Reservoir Table

Active Scenario: Peak Hour Demand

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,530.00	121	1,530.00
R-2	1,530.00	159	1,530.00
R-3	1,530.00	343	1,530.00

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Junction Table

Active Scenario: Peak Hour Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	1,315.00	0	1,529.89	93
J-3	1,315.00	0	1,529.68	93
J-4	1,321.00	62	1,529.49	90
J-6	1,319.00	13	1,529.45	91
J-8	1,315.00	15	1,529.42	93
J-9	1,314.00	18	1,529.62	93
J-10	1,314.00	11	1,529.61	93
J-11	1,314.00	7	1,529.60	93
J-12	1,311.00	9	1,529.59	95
J-13	1,310.00	12	1,529.59	95
J-14	1,311.00	16	1,529.59	95
J-15	1,335.00	64	1,529.49	84
J-16	1,337.00	0	1,529.47	83
J-17	1,310.00	0	1,529.46	95
J-18	1,309.00	0	1,529.32	95
J-19	1,313.00	22	1,529.32	94
J-20	1,318.00	20	1,529.26	91
J-21	1,314.00	33	1,529.26	93
J-22	1,315.00	11	1,529.32	93
J-23	1,318.00	18	1,529.26	91
J-24	1,315.00	26	1,529.26	93
J-25	1,311.00	23	1,529.27	94
J-27	1,309.00	0	1,529.28	95
J-28	1,308.00	0	1,529.47	96
J-29	1,310.00	6	1,529.05	95
J-30	1,309.00	0	1,529.49	95
J-31	1,310.00	0	1,529.55	95
J-33	1,310.00	0	1,529.68	95
J-35	1,321.00	9	1,529.49	90
J-37	1,322.00	0	1,529.53	90
J-38	1,322.00	0	1,529.54	90
J-40	1,322.00	0	1,529.82	90
J-41	1,309.11	14	1,529.26	95
J-42	1,309.00	15	1,529.06	95
J-43	1,310.00	40	1,528.90	95
J-44	1,309.53	0	1,528.94	95
J-48	1,310.00	0	1,529.47	95
J-49	1,309.53	0	1,529.47	95
J-50	1,310.00	0	1,529.47	95
J-51	1,309.00	0	1,529.47	95
J-52	1,309.11	0	1,529.47	95
J-57	1,320.22	0	1,529.46	91
J-58	1,320.00	0	1,529.44	91
J-59	1,319.00	0	1,529.42	91
J-60	1,318.00	0	1,529.44	91
J-61	1,309.35	0	1,529.44	95

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Junction Table

Active Scenario: Peak Hour Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-36	1,321.00	0	1,529.50	90
J-64	1,315.00	0	1,529.84	93
J-65	1,309.87	0	1,529.54	95
J-66	1,315.42	0	1,529.63	93
J-67	1,309.17	0	1,529.35	95
J-68	1,309.21	48	1,529.49	95
J-69	1,311.00	0	1,529.27	94
J-71	1,318.07	0	1,529.67	92
J-73	1,318.51	13	1,529.43	91
J-74	1,317.00	9	1,529.42	92
J-75	1,321.00	13	1,529.42	90
J-76	1,319.70	15	1,529.49	91
J-77	1,309.26	0	1,529.39	95
J-78	1,309.75	47	1,528.94	95
J-83	1,309.76	0	1,529.47	95
J-84	1,309.48	0	1,529.47	95
J-85	1,309.49	0	1,529.01	95
J-88	1,309.78	0	1,528.94	95
J-89	1,309.77	0	1,529.47	95
J-94	1,309.53	0	1,529.47	95
J-95	1,309.53	0	1,529.47	95
J-96	1,309.53	0	1,529.47	95
J-97	1,309.53	0	1,529.47	95
J-98	1,309.53	15	1,528.94	95
J-99	1,308.37	0	1,529.47	96
J-100	1,308.45	0	1,529.47	96
J-101	1,309.06	0	1,529.47	95

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Pipe Table

Active Scenario: Peak Hour Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	R-3	J-2	16.0	1,325	Ductile Iron	130.0	343	0.55	0.11
P-10	J-3	J-9	8.0	119	Ductile Iron	130.0	140	0.89	0.06
P-11	J-9	J-10	8.0	119	Ductile Iron	130.0	72	0.46	0.02
P-12	J-10	J-11	8.0	215	Ductile Iron	130.0	30	0.19	0.01
P-13	J-11	J-12	8.0	424	Ductile Iron	130.0	23	0.15	0.01
P-14	J-12	J-13	8.0	276	Ductile Iron	130.0	15	0.09	0.00
P-15	J-13	J-10	8.0	498	Ductile Iron	130.0	-32	0.20	0.02
P-16	J-13	J-14	8.0	113	Ductile Iron	130.0	35	0.22	0.00
P-17	J-9	J-14	8.0	502	Ductile Iron	130.0	50	0.32	0.04
P-19	J-15	J-16	8.0	232	Ductile Iron	130.0	59	0.38	0.02
P-22	J-67	J-19	8.0	254	Ductile Iron	130.0	68	0.44	0.03
P-24	J-19	J-22	8.0	386	Ductile Iron	130.0	-12	0.08	0.00
P-25	J-21	J-20	8.0	290	Ductile Iron	130.0	28	0.18	0.01
P-26	J-21	J-22	8.0	505	Ductile Iron	130.0	-61	0.39	0.05
P-27	J-20	J-23	8.0	278	Ductile Iron	130.0	8	0.05	0.00
P-28	J-23	J-24	8.0	586	Ductile Iron	130.0	-9	0.06	0.00
P-29	J-24	J-25	8.0	367	Ductile Iron	130.0	-36	0.23	0.01
P-31	J-25	J-19	8.0	444	Ductile Iron	130.0	-58	0.37	0.04
P-32	J-18	J-27	8.0	447	Ductile Iron	130.0	62	0.40	0.05
P-33	J-17	J-28	12.0	119	Ductile Iron	130.0	-105	0.30	0.00
P-39	J-31	J-33	8.0	218	Ductile Iron	130.0	-159	1.01	0.13
P-40	J-33	R-2	8.0	532	Ductile Iron	130.0	-159	1.01	0.32
P-41	J-4	J-35	12.0	132	Ductile Iron	130.0	-33	0.09	0.00
P-42	J-35	J-6	8.0	353	Ductile Iron	130.0	63	0.40	0.04
P-44	J-36	J-37	12.0	454	Ductile Iron	130.0	-121	0.34	0.02
P-45	J-37	J-38	12.0	296	Ductile Iron	130.0	-121	0.34	0.01
P-47	J-38	J-40	8.0	762	Ductile Iron	130.0	-121	0.77	0.28
P-48	J-40	R-1	8.0	503	Ductile Iron	130.0	-121	0.77	0.18
P-50	J-99	J-41	6.0	348	Ductile Iron	130.0	75	0.85	0.21
P-52	J-41	J-42	6.0	474	Ductile Iron	130.0	61	0.69	0.20
P-56	J-88	J-44	6.0	489	Ductile Iron	130.0	6	0.06	0.00
P-61	J-27	J-48	8.0	507	Ductile Iron	130.0	0	0.00	0.00
P-63	J-49	J-89	8.0	495	Ductile Iron	130.0	0	0.00	0.00
P-65	J-52	J-51	8.0	480	Ductile Iron	130.0	0	0.00	0.00
P-70	J-100	J-52	8.0	320	Ductile Iron	130.0	0	0.00	0.00
P-73	J-2	J-64	12.0	116	Ductile Iron	130.0	343	0.97	0.04
P-74	J-64	J-3	12.0	472	Ductile Iron	130.0	343	0.97	0.17
P-78	J-30	J-65	12.0	558	Ductile Iron	130.0	-159	0.45	0.05
P-79	J-65	J-31	12.0	120	Ductile Iron	130.0	-159	0.45	0.01
P-80	J-77	J-94	8.0	313	Ductile Iron	130.0	0	0.00	0.00
P-83	J-57	J-4	8.0	400	Ductile Iron	130.0	-50	0.32	0.03
P-84	J-57	J-58	8.0	279	Ductile Iron	130.0	50	0.32	0.02
P-85	J-58	J-59	8.0	309	Ductile Iron	130.0	50	0.32	0.02
P-86	J-59	J-60	8.0	512	Ductile Iron	130.0	-33	0.21	0.02
P-87	J-17	J-61	12.0	264	Ductile Iron	130.0	164	0.47	0.02
P-89	J-60	J-61	12.0	363	Ductile Iron	130.0	-33	0.09	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

FlexTable: Pipe Table

Active Scenario: Peak Hour Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-90	J-59	J-22	8.0	547	Ductile Iron	130.0	84	0.53	0.10
P-43	J-36	J-35	12.0	259	Ductile Iron	130.0	121	0.34	0.01
P-93	J-66	J-4	8.0	820	Ductile Iron	130.0	79	0.51	0.14
P-95	J-67	J-18	8.0	213	Ductile Iron	130.0	62	0.40	0.02
P-96	J-14	J-68	8.0	727	Ductile Iron	130.0	70	0.44	0.10
P-97	J-68	J-30	12.0	106	Ductile Iron	130.0	21	0.06	0.00
P-98	J-25	J-69	8.0	203	Ductile Iron	130.0	0	0.00	0.00
P-99	J-17	J-16	8.0	90	Ductile Iron	130.0	-59	0.38	0.01
P-100	J-3	J-71	12.0	98	Ductile Iron	130.0	203	0.58	0.01
P-101	J-71	J-15	8.0	458	Ductile Iron	130.0	124	0.79	0.17
P-102	J-66	J-71	8.0	238	Ductile Iron	130.0	-79	0.51	0.04
P-103	J-6	J-73	8.0	357	Ductile Iron	130.0	50	0.32	0.03
P-104	J-73	J-8	8.0	518	Ductile Iron	130.0	12	0.08	0.00
P-105	J-73	J-74	8.0	139	Ductile Iron	130.0	25	0.16	0.00
P-106	J-74	J-75	8.0	473	Ductile Iron	130.0	13	0.08	0.00
P-107	J-74	J-8	8.0	389	Ductile Iron	130.0	3	0.02	0.00
P-108	J-35	J-76	8.0	195	Ductile Iron	130.0	15	0.10	0.00
P-109	J-61	J-77	8.0	117	Ductile Iron	130.0	131	0.83	0.05
P-110	J-77	J-67	8.0	96	Ductile Iron	130.0	131	0.83	0.04
P-111	J-44	J-78	6.0	218	Ductile Iron	130.0	-9	0.10	0.00
P-112	J-78	J-29	6.0	302	Ductile Iron	130.0	-56	0.64	0.11
P-113	J-48	J-83	8.0	299	Ductile Iron	130.0	0	0.00	0.00
P-114	J-83	J-49	8.0	222	Ductile Iron	130.0	0	0.00	0.00
P-122	J-84	J-51	8.0	187	Ductile Iron	130.0	0	0.00	0.00
P-123	J-42	J-85	6.0	192	Ductile Iron	130.0	46	0.52	0.05
P-125	J-85	J-88	6.0	274	Ductile Iron	130.0	46	0.52	0.07
P-126	J-88	J-43	6.0	232	Ductile Iron	130.0	40	0.46	0.05
P-127	J-50	J-89	8.0	234	Ductile Iron	130.0	0	0.00	0.00
P-128	J-89	J-84	8.0	278	Ductile Iron	130.0	0	0.00	0.00
P-137	J-94	J-95	8.0	36	Ductile Iron	130.0	0	0.00	0.00
P-138	J-95	J-96	8.0	100	Ductile Iron	130.0	0	0.00	0.00
P-139	J-96	J-49	8.0	250	Ductile Iron	130.0	0	0.00	0.00
P-140	J-27	J-29	6.0	514	Ductile Iron	130.0	62	0.71	0.22
P-145	J-97	J-94	8.0	265	Ductile Iron	130.0	0	0.00	0.00
P-146	J-98	J-44	6.0	185	Ductile Iron	130.0	-15	0.17	0.01
P-147	J-28	J-99	12.0	116	Ductile Iron	130.0	-105	0.30	0.00
P-149	J-99	J-100	12.0	23	Ductile Iron	130.0	-180	0.51	0.00
P-150	J-100	J-30	12.0	173	Ductile Iron	130.0	-180	0.51	0.02
P-151	J-52	J-101	8.0	147	Ductile Iron	130.0	0	0.00	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

Fire Flow Node FlexTable: Fire Flow Report

Active Scenario: Max Day Demand + Comm FF

Label	Fire Flow (Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-2	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-3	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-4	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-6	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-8	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-9	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-10	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-11	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-12	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-13	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-14	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-15	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-16	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-17	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-18	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-19	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-20	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-21	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-22	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-23	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-24	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-25	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-27	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-28	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-29	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-30	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-31	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-33	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-35	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-37	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-38	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-40	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-41	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-42	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-43	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-44	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-48	1,500	1,501	20	87	81	J-16	5.61	P-109
J-49	1,500	1,501	20	90	81	J-16	5.30	P-109
J-50	1,500	1,501	20	84	81	J-16	9.58	P-127
J-51	1,500	1,501	20	88	81	J-16	5.45	P-70
J-52	1,500	1,501	20	90	81	J-16	6.88	P-70
J-57	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-58	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19.wtg

Fire Flow Node FlexTable: Fire Flow Report

Active Scenario: Max Day Demand + Comm FF

Label	Fire Flow (Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-59	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-60	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-61	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-36	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-64	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-65	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-66	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-67	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-68	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-69	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-71	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-73	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-74	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-75	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-76	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-77	1,500	1,501	20	91	81	J-16	7.67	P-109
J-78	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-83	1,500	1,501	20	88	81	J-16	6.25	P-114
J-84	1,500	1,501	20	88	81	J-16	4.99	P-70
J-85	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-88	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-89	1,500	1,501	20	88	81	J-16	5.26	P-63
J-94	1,500	1,501	20	90	81	J-16	5.88	P-109
J-95	1,500	1,501	20	90	81	J-16	5.83	P-109
J-96	1,500	1,501	20	90	81	J-16	5.68	P-109
J-97	1,500	1,501	20	85	81	J-16	9.58	P-145
J-98	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-99	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-100	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-101	1,500	1,501	20	88	81	J-16	9.58	P-151

7-ZN-2016#2
8/11/2020

APPENDIX C

WaterCAD Results - Summer

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Reservoir Table

Active Scenario: Average Day Demand

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,622.00	40	1,622.00
R-2	1,622.00	52	1,622.00
R-3	1,622.00	113	1,622.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Junction Table

Active Scenario: Average Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	1,315.00	0	1,621.99	133
J-3	1,315.00	0	1,621.96	133
J-4	1,321.00	20	1,621.93	130
J-6	1,319.00	4	1,621.93	131
J-8	1,315.00	5	1,621.93	133
J-9	1,314.00	5	1,621.95	133
J-10	1,314.00	3	1,621.95	133
J-11	1,314.00	3	1,621.95	133
J-12	1,311.00	3	1,621.95	135
J-13	1,310.00	4	1,621.95	135
J-14	1,311.00	5	1,621.95	135
J-15	1,335.00	23	1,621.93	124
J-16	1,337.00	0	1,621.93	123
J-17	1,310.00	0	1,621.93	135
J-18	1,309.00	0	1,621.91	135
J-19	1,313.00	7	1,621.91	134
J-20	1,318.00	7	1,621.91	131
J-21	1,314.00	11	1,621.91	133
J-22	1,315.00	3	1,621.91	133
J-23	1,318.00	6	1,621.91	131
J-24	1,315.00	8	1,621.91	133
J-25	1,311.00	7	1,621.91	135
J-27	1,309.00	0	1,621.91	135
J-28	1,308.00	0	1,621.93	136
J-29	1,310.00	2	1,621.88	135
J-30	1,309.00	0	1,621.94	135
J-31	1,310.00	0	1,621.94	135
J-33	1,310.00	0	1,621.96	135
J-35	1,321.00	3	1,621.93	130
J-37	1,322.00	0	1,621.94	130
J-38	1,322.00	0	1,621.94	130
J-40	1,322.00	0	1,621.98	130
J-41	1,309.11	5	1,621.90	135
J-42	1,309.00	5	1,621.88	135
J-43	1,310.00	13	1,621.86	135
J-44	1,309.53	0	1,621.86	135
J-48	1,310.00	0	1,621.93	135
J-49	1,309.53	0	1,621.93	135
J-50	1,310.00	0	1,621.93	135
J-51	1,309.00	0	1,621.93	135
J-52	1,309.11	0	1,621.93	135
J-57	1,320.22	0	1,621.93	131
J-58	1,320.00	0	1,621.93	131
J-59	1,319.00	0	1,621.93	131
J-60	1,318.00	0	1,621.93	131
J-61	1,309.35	0	1,621.93	135

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Junction Table

Active Scenario: Average Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-36	1,321.00	0	1,621.94	130
J-64	1,315.00	0	1,621.98	133
J-65	1,309.87	0	1,621.94	135
J-66	1,315.42	0	1,621.95	133
J-67	1,309.17	0	1,621.92	135
J-68	1,309.21	16	1,621.94	135
J-69	1,311.00	0	1,621.91	135
J-71	1,318.07	0	1,621.96	131
J-73	1,318.51	4	1,621.93	131
J-74	1,317.00	3	1,621.93	132
J-75	1,321.00	4	1,621.93	130
J-76	1,319.70	5	1,621.93	131
J-77	1,309.26	0	1,621.92	135
J-78	1,309.75	16	1,621.86	135
J-83	1,309.76	0	1,621.93	135
J-84	1,309.48	0	1,621.93	135
J-85	1,309.49	0	1,621.87	135
J-88	1,309.78	0	1,621.86	135
J-89	1,309.77	0	1,621.93	135
J-94	1,309.53	0	1,621.93	135
J-95	1,309.53	0	1,621.93	135
J-96	1,309.53	0	1,621.93	135
J-97	1,309.53	0	1,621.93	135
J-98	1,309.53	5	1,621.86	135
J-99	1,308.37	0	1,621.93	136
J-100	1,308.45	0	1,621.93	136
J-101	1,309.06	0	1,621.93	135

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Pipe Table

Active Scenario: Average Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	R-3	J-2	16.0	1,325	Ductile Iron	130.0	113	0.18	0.01
P-10	J-3	J-9	8.0	119	Ductile Iron	130.0	45	0.29	0.01
P-11	J-9	J-10	8.0	119	Ductile Iron	130.0	24	0.15	0.00
P-12	J-10	J-11	8.0	215	Ductile Iron	130.0	10	0.06	0.00
P-13	J-11	J-12	8.0	424	Ductile Iron	130.0	8	0.05	0.00
P-14	J-12	J-13	8.0	276	Ductile Iron	130.0	5	0.03	0.00
P-15	J-13	J-10	8.0	498	Ductile Iron	130.0	-11	0.07	0.00
P-16	J-13	J-14	8.0	113	Ductile Iron	130.0	12	0.07	0.00
P-17	J-9	J-14	8.0	502	Ductile Iron	130.0	17	0.11	0.00
P-19	J-15	J-16	8.0	232	Ductile Iron	130.0	18	0.12	0.00
P-22	J-67	J-19	8.0	254	Ductile Iron	130.0	21	0.14	0.00
P-24	J-19	J-22	8.0	386	Ductile Iron	130.0	-4	0.03	0.00
P-25	J-21	J-20	8.0	290	Ductile Iron	130.0	9	0.06	0.00
P-26	J-21	J-22	8.0	505	Ductile Iron	130.0	-20	0.13	0.01
P-27	J-20	J-23	8.0	278	Ductile Iron	130.0	2	0.02	0.00
P-28	J-23	J-24	8.0	586	Ductile Iron	130.0	-3	0.02	0.00
P-29	J-24	J-25	8.0	367	Ductile Iron	130.0	-11	0.07	0.00
P-31	J-25	J-19	8.0	444	Ductile Iron	130.0	-19	0.12	0.01
P-32	J-18	J-27	8.0	447	Ductile Iron	130.0	21	0.13	0.01
P-33	J-17	J-28	12.0	119	Ductile Iron	130.0	-34	0.10	0.00
P-39	J-31	J-33	8.0	218	Ductile Iron	130.0	-52	0.33	0.02
P-40	J-33	R-2	8.0	532	Ductile Iron	130.0	-52	0.33	0.04
P-41	J-4	J-35	12.0	132	Ductile Iron	130.0	-10	0.03	0.00
P-42	J-35	J-6	8.0	353	Ductile Iron	130.0	21	0.14	0.01
P-44	J-36	J-37	12.0	454	Ductile Iron	130.0	-40	0.11	0.00
P-45	J-37	J-38	12.0	296	Ductile Iron	130.0	-40	0.11	0.00
P-47	J-38	J-40	8.0	762	Ductile Iron	130.0	-40	0.25	0.04
P-48	J-40	R-1	8.0	503	Ductile Iron	130.0	-40	0.25	0.02
P-50	J-99	J-41	6.0	348	Ductile Iron	130.0	25	0.28	0.03
P-52	J-41	J-42	6.0	474	Ductile Iron	130.0	20	0.23	0.03
P-56	J-88	J-44	6.0	489	Ductile Iron	130.0	2	0.02	0.00
P-61	J-27	J-48	8.0	507	Ductile Iron	130.0	0	0.00	0.00
P-63	J-49	J-89	8.0	495	Ductile Iron	130.0	0	0.00	0.00
P-65	J-52	J-51	8.0	480	Ductile Iron	130.0	0	0.00	0.00
P-70	J-100	J-52	8.0	320	Ductile Iron	130.0	0	0.00	0.00
P-73	J-2	J-64	12.0	116	Ductile Iron	130.0	113	0.32	0.01
P-74	J-64	J-3	12.0	472	Ductile Iron	130.0	113	0.32	0.02
P-78	J-30	J-65	12.0	558	Ductile Iron	130.0	-52	0.15	0.01
P-79	J-65	J-31	12.0	120	Ductile Iron	130.0	-52	0.15	0.00
P-80	J-77	J-94	8.0	313	Ductile Iron	130.0	0	0.00	0.00
P-83	J-57	J-4	8.0	400	Ductile Iron	130.0	-16	0.10	0.00
P-84	J-57	J-58	8.0	279	Ductile Iron	130.0	16	0.10	0.00
P-85	J-58	J-59	8.0	309	Ductile Iron	130.0	16	0.10	0.00
P-86	J-59	J-60	8.0	512	Ductile Iron	130.0	-11	0.07	0.00
P-87	J-17	J-61	12.0	264	Ductile Iron	130.0	53	0.15	0.00
P-89	J-60	J-61	12.0	363	Ductile Iron	130.0	-11	0.03	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Pipe Table

Active Scenario: Average Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-90	J-59	J-22	8.0	547	Ductile Iron	130.0	27	0.17	0.01
P-43	J-36	J-35	12.0	259	Ductile Iron	130.0	40	0.11	0.00
P-93	J-66	J-4	8.0	820	Ductile Iron	130.0	26	0.17	0.02
P-95	J-67	J-18	8.0	213	Ductile Iron	130.0	21	0.13	0.00
P-96	J-14	J-68	8.0	727	Ductile Iron	130.0	23	0.15	0.01
P-97	J-68	J-30	12.0	106	Ductile Iron	130.0	7	0.02	0.00
P-98	J-25	J-69	8.0	203	Ductile Iron	130.0	0	0.00	0.00
P-99	J-17	J-16	8.0	90	Ductile Iron	130.0	-18	0.12	0.00
P-100	J-3	J-71	12.0	98	Ductile Iron	130.0	67	0.19	0.00
P-101	J-71	J-15	8.0	458	Ductile Iron	130.0	41	0.26	0.02
P-102	J-66	J-71	8.0	238	Ductile Iron	130.0	-26	0.17	0.01
P-103	J-6	J-73	8.0	357	Ductile Iron	130.0	17	0.11	0.00
P-104	J-73	J-8	8.0	518	Ductile Iron	130.0	4	0.03	0.00
P-105	J-73	J-74	8.0	139	Ductile Iron	130.0	8	0.05	0.00
P-106	J-74	J-75	8.0	473	Ductile Iron	130.0	4	0.03	0.00
P-107	J-74	J-8	8.0	389	Ductile Iron	130.0	1	0.01	0.00
P-108	J-35	J-76	8.0	195	Ductile Iron	130.0	5	0.03	0.00
P-109	J-61	J-77	8.0	117	Ductile Iron	130.0	42	0.27	0.01
P-110	J-77	J-67	8.0	96	Ductile Iron	130.0	42	0.27	0.01
P-111	J-44	J-78	6.0	218	Ductile Iron	130.0	-3	0.03	0.00
P-112	J-78	J-29	6.0	302	Ductile Iron	130.0	-19	0.21	0.01
P-113	J-48	J-83	8.0	299	Ductile Iron	130.0	0	0.00	0.00
P-114	J-83	J-49	8.0	222	Ductile Iron	130.0	0	0.00	0.00
P-122	J-84	J-51	8.0	187	Ductile Iron	130.0	0	0.00	0.00
P-123	J-42	J-85	6.0	192	Ductile Iron	130.0	15	0.17	0.01
P-125	J-85	J-88	6.0	274	Ductile Iron	130.0	15	0.17	0.01
P-126	J-88	J-43	6.0	232	Ductile Iron	130.0	13	0.15	0.01
P-127	J-50	J-89	8.0	234	Ductile Iron	130.0	0	0.00	0.00
P-128	J-89	J-84	8.0	278	Ductile Iron	130.0	0	0.00	0.00
P-137	J-94	J-95	8.0	36	Ductile Iron	130.0	0	0.00	0.00
P-138	J-95	J-96	8.0	100	Ductile Iron	130.0	0	0.00	0.00
P-139	J-96	J-49	8.0	250	Ductile Iron	130.0	0	0.00	0.00
P-140	J-27	J-29	6.0	514	Ductile Iron	130.0	21	0.24	0.03
P-145	J-97	J-94	8.0	265	Ductile Iron	130.0	0	0.00	0.00
P-146	J-98	J-44	6.0	185	Ductile Iron	130.0	-5	0.06	0.00
P-147	J-28	J-99	12.0	116	Ductile Iron	130.0	-34	0.10	0.00
P-149	J-99	J-100	12.0	23	Ductile Iron	130.0	-59	0.17	0.00
P-150	J-100	J-30	12.0	173	Ductile Iron	130.0	-59	0.17	0.00
P-151	J-52	J-101	8.0	147	Ductile Iron	130.0	0	0.00	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Reservoir Table

Active Scenario: Max Day Demand

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,622.00	71	1,622.00
R-2	1,622.00	94	1,622.00
R-3	1,622.00	202	1,622.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Junction Table

Active Scenario: Max Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	1,315.00	0	1,621.96	133
J-3	1,315.00	0	1,621.88	133
J-4	1,321.00	36	1,621.81	130
J-6	1,319.00	8	1,621.79	131
J-8	1,315.00	9	1,621.78	133
J-9	1,314.00	9	1,621.86	133
J-10	1,314.00	5	1,621.85	133
J-11	1,314.00	4	1,621.85	133
J-12	1,311.00	4	1,621.85	134
J-13	1,310.00	6	1,621.85	135
J-14	1,311.00	9	1,621.85	134
J-15	1,335.00	38	1,621.81	124
J-16	1,337.00	0	1,621.80	123
J-17	1,310.00	0	1,621.80	135
J-18	1,309.00	0	1,621.74	135
J-19	1,313.00	14	1,621.74	134
J-20	1,318.00	12	1,621.71	131
J-21	1,314.00	21	1,621.72	133
J-22	1,315.00	6	1,621.74	133
J-23	1,318.00	13	1,621.71	131
J-24	1,315.00	14	1,621.72	133
J-25	1,311.00	13	1,621.72	134
J-27	1,309.00	0	1,621.72	135
J-28	1,308.00	0	1,621.80	136
J-29	1,310.00	4	1,621.64	135
J-30	1,309.00	0	1,621.81	135
J-31	1,310.00	0	1,621.83	135
J-33	1,310.00	0	1,621.88	135
J-35	1,321.00	5	1,621.81	130
J-37	1,322.00	0	1,621.82	130
J-38	1,322.00	0	1,621.83	130
J-40	1,322.00	0	1,621.93	130
J-41	1,309.11	8	1,621.72	135
J-42	1,309.00	9	1,621.64	135
J-43	1,310.00	24	1,621.58	135
J-44	1,309.53	0	1,621.59	135
J-48	1,310.00	0	1,621.80	135
J-49	1,309.53	0	1,621.80	135
J-50	1,310.00	0	1,621.80	135
J-51	1,309.00	0	1,621.80	135
J-52	1,309.11	0	1,621.80	135
J-57	1,320.22	0	1,621.80	130
J-58	1,320.00	0	1,621.79	131
J-59	1,319.00	0	1,621.78	131
J-60	1,318.00	0	1,621.79	131
J-61	1,309.35	0	1,621.79	135

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Junction Table

Active Scenario: Max Day Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-36	1,321.00	0	1,621.81	130
J-64	1,315.00	0	1,621.94	133
J-65	1,309.87	0	1,621.83	135
J-66	1,315.42	0	1,621.86	133
J-67	1,309.17	0	1,621.75	135
J-68	1,309.21	28	1,621.81	135
J-69	1,311.00	0	1,621.72	134
J-71	1,318.07	0	1,621.88	131
J-73	1,318.51	8	1,621.78	131
J-74	1,317.00	5	1,621.78	132
J-75	1,321.00	8	1,621.78	130
J-76	1,319.70	9	1,621.81	131
J-77	1,309.26	0	1,621.77	135
J-78	1,309.75	28	1,621.59	135
J-83	1,309.76	0	1,621.80	135
J-84	1,309.48	0	1,621.80	135
J-85	1,309.49	0	1,621.62	135
J-88	1,309.78	0	1,621.59	135
J-89	1,309.77	0	1,621.80	135
J-94	1,309.53	0	1,621.80	135
J-95	1,309.53	0	1,621.80	135
J-96	1,309.53	0	1,621.80	135
J-97	1,309.53	0	1,621.80	135
J-98	1,309.53	9	1,621.59	135
J-99	1,308.37	0	1,621.80	136
J-100	1,308.45	0	1,621.80	136
J-101	1,309.06	0	1,621.80	135

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Pipe Table

Active Scenario: Max Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	R-3	J-2	16.0	1,325	Ductile Iron	130.0	202	0.32	0.04
P-10	J-3	J-9	8.0	119	Ductile Iron	130.0	80	0.51	0.02
P-11	J-9	J-10	8.0	119	Ductile Iron	130.0	41	0.26	0.01
P-12	J-10	J-11	8.0	215	Ductile Iron	130.0	17	0.11	0.00
P-13	J-11	J-12	8.0	424	Ductile Iron	130.0	13	0.09	0.00
P-14	J-12	J-13	8.0	276	Ductile Iron	130.0	10	0.06	0.00
P-15	J-13	J-10	8.0	498	Ductile Iron	130.0	-19	0.12	0.01
P-16	J-13	J-14	8.0	113	Ductile Iron	130.0	23	0.14	0.00
P-17	J-9	J-14	8.0	502	Ductile Iron	130.0	30	0.19	0.01
P-19	J-15	J-16	8.0	232	Ductile Iron	130.0	36	0.23	0.01
P-22	J-67	J-19	8.0	254	Ductile Iron	130.0	42	0.27	0.01
P-24	J-19	J-22	8.0	386	Ductile Iron	130.0	-7	0.05	0.00
P-25	J-21	J-20	8.0	290	Ductile Iron	130.0	17	0.11	0.00
P-26	J-21	J-22	8.0	505	Ductile Iron	130.0	-37	0.24	0.02
P-27	J-20	J-23	8.0	278	Ductile Iron	130.0	5	0.03	0.00
P-28	J-23	J-24	8.0	586	Ductile Iron	130.0	-8	0.05	0.00
P-29	J-24	J-25	8.0	367	Ductile Iron	130.0	-22	0.14	0.01
P-31	J-25	J-19	8.0	444	Ductile Iron	130.0	-35	0.22	0.02
P-32	J-18	J-27	8.0	447	Ductile Iron	130.0	37	0.24	0.02
P-33	J-17	J-28	12.0	119	Ductile Iron	130.0	-64	0.18	0.00
P-39	J-31	J-33	8.0	218	Ductile Iron	130.0	-94	0.60	0.05
P-40	J-33	R-2	8.0	532	Ductile Iron	130.0	-94	0.60	0.12
P-41	J-4	J-35	12.0	132	Ductile Iron	130.0	-19	0.05	0.00
P-42	J-35	J-6	8.0	353	Ductile Iron	130.0	38	0.24	0.02
P-44	J-36	J-37	12.0	454	Ductile Iron	130.0	-71	0.20	0.01
P-45	J-37	J-38	12.0	296	Ductile Iron	130.0	-71	0.20	0.01
P-47	J-38	J-40	8.0	762	Ductile Iron	130.0	-71	0.46	0.10
P-48	J-40	R-1	8.0	503	Ductile Iron	130.0	-71	0.46	0.07
P-50	J-99	J-41	6.0	348	Ductile Iron	130.0	45	0.51	0.08
P-52	J-41	J-42	6.0	474	Ductile Iron	130.0	37	0.42	0.08
P-56	J-88	J-44	6.0	489	Ductile Iron	130.0	3	0.04	0.00
P-61	J-27	J-48	8.0	507	Ductile Iron	130.0	0	0.00	0.00
P-63	J-49	J-89	8.0	495	Ductile Iron	130.0	0	0.00	0.00
P-65	J-52	J-51	8.0	480	Ductile Iron	130.0	0	0.00	0.00
P-70	J-100	J-52	8.0	320	Ductile Iron	130.0	0	0.00	0.00
P-73	J-2	J-64	12.0	116	Ductile Iron	130.0	202	0.57	0.02
P-74	J-64	J-3	12.0	472	Ductile Iron	130.0	202	0.57	0.06
P-78	J-30	J-65	12.0	558	Ductile Iron	130.0	-94	0.27	0.02
P-79	J-65	J-31	12.0	120	Ductile Iron	130.0	-94	0.27	0.00
P-80	J-77	J-94	8.0	313	Ductile Iron	130.0	0	0.00	0.00
P-83	J-57	J-4	8.0	400	Ductile Iron	130.0	-30	0.19	0.01
P-84	J-57	J-58	8.0	279	Ductile Iron	130.0	30	0.19	0.01
P-85	J-58	J-59	8.0	309	Ductile Iron	130.0	30	0.19	0.01
P-86	J-59	J-60	8.0	512	Ductile Iron	130.0	-20	0.13	0.01
P-87	J-17	J-61	12.0	264	Ductile Iron	130.0	100	0.28	0.01
P-89	J-60	J-61	12.0	363	Ductile Iron	130.0	-20	0.06	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Pipe Table

Active Scenario: Max Day Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-90	J-59	J-22	8.0	547	Ductile Iron	130.0	51	0.32	0.04
P-43	J-36	J-35	12.0	259	Ductile Iron	130.0	71	0.20	0.01
P-93	J-66	J-4	8.0	820	Ductile Iron	130.0	48	0.30	0.05
P-95	J-67	J-18	8.0	213	Ductile Iron	130.0	37	0.24	0.01
P-96	J-14	J-68	8.0	727	Ductile Iron	130.0	43	0.27	0.04
P-97	J-68	J-30	12.0	106	Ductile Iron	130.0	15	0.04	0.00
P-98	J-25	J-69	8.0	203	Ductile Iron	130.0	0	0.00	0.00
P-99	J-17	J-16	8.0	90	Ductile Iron	130.0	-36	0.23	0.00
P-100	J-3	J-71	12.0	98	Ductile Iron	130.0	122	0.34	0.01
P-101	J-71	J-15	8.0	458	Ductile Iron	130.0	74	0.47	0.07
P-102	J-66	J-71	8.0	238	Ductile Iron	130.0	-48	0.30	0.02
P-103	J-6	J-73	8.0	357	Ductile Iron	130.0	30	0.19	0.01
P-104	J-73	J-8	8.0	518	Ductile Iron	130.0	7	0.05	0.00
P-105	J-73	J-74	8.0	139	Ductile Iron	130.0	15	0.09	0.00
P-106	J-74	J-75	8.0	473	Ductile Iron	130.0	8	0.05	0.00
P-107	J-74	J-8	8.0	389	Ductile Iron	130.0	2	0.01	0.00
P-108	J-35	J-76	8.0	195	Ductile Iron	130.0	9	0.06	0.00
P-109	J-61	J-77	8.0	117	Ductile Iron	130.0	79	0.51	0.02
P-110	J-77	J-67	8.0	96	Ductile Iron	130.0	79	0.51	0.02
P-111	J-44	J-78	6.0	218	Ductile Iron	130.0	-5	0.06	0.00
P-112	J-78	J-29	6.0	302	Ductile Iron	130.0	-34	0.38	0.04
P-113	J-48	J-83	8.0	299	Ductile Iron	130.0	0	0.00	0.00
P-114	J-83	J-49	8.0	222	Ductile Iron	130.0	0	0.00	0.00
P-122	J-84	J-51	8.0	187	Ductile Iron	130.0	0	0.00	0.00
P-123	J-42	J-85	6.0	192	Ductile Iron	130.0	28	0.31	0.02
P-125	J-85	J-88	6.0	274	Ductile Iron	130.0	28	0.31	0.03
P-126	J-88	J-43	6.0	232	Ductile Iron	130.0	24	0.28	0.02
P-127	J-50	J-89	8.0	234	Ductile Iron	130.0	0	0.00	0.00
P-128	J-89	J-84	8.0	278	Ductile Iron	130.0	0	0.00	0.00
P-137	J-94	J-95	8.0	36	Ductile Iron	130.0	0	0.00	0.00
P-138	J-95	J-96	8.0	100	Ductile Iron	130.0	0	0.00	0.00
P-139	J-96	J-49	8.0	250	Ductile Iron	130.0	0	0.00	0.00
P-140	J-27	J-29	6.0	514	Ductile Iron	130.0	37	0.42	0.09
P-145	J-97	J-94	8.0	265	Ductile Iron	130.0	0	0.00	0.00
P-146	J-98	J-44	6.0	185	Ductile Iron	130.0	-9	0.10	0.00
P-147	J-28	J-99	12.0	116	Ductile Iron	130.0	-64	0.18	0.00
P-149	J-99	J-100	12.0	23	Ductile Iron	130.0	-109	0.31	0.00
P-150	J-100	J-30	12.0	173	Ductile Iron	130.0	-109	0.31	0.01
P-151	J-52	J-101	8.0	147	Ductile Iron	130.0	0	0.00	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Reservoir Table

Active Scenario: Peak Hour Demand

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,622.00	121	1,622.00
R-2	1,622.00	159	1,622.00
R-3	1,622.00	343	1,622.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Junction Table

Active Scenario: Peak Hour Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	1,315.00	0	1,621.89	133
J-3	1,315.00	0	1,621.68	133
J-4	1,321.00	62	1,621.49	130
J-6	1,319.00	13	1,621.45	131
J-8	1,315.00	15	1,621.42	133
J-9	1,314.00	18	1,621.62	133
J-10	1,314.00	11	1,621.61	133
J-11	1,314.00	7	1,621.60	133
J-12	1,311.00	9	1,621.59	134
J-13	1,310.00	12	1,621.59	135
J-14	1,311.00	16	1,621.59	134
J-15	1,335.00	64	1,621.49	124
J-16	1,337.00	0	1,621.47	123
J-17	1,310.00	0	1,621.46	135
J-18	1,309.00	0	1,621.32	135
J-19	1,313.00	22	1,621.32	133
J-20	1,318.00	20	1,621.26	131
J-21	1,314.00	33	1,621.26	133
J-22	1,315.00	11	1,621.32	133
J-23	1,318.00	18	1,621.26	131
J-24	1,315.00	26	1,621.26	133
J-25	1,311.00	23	1,621.27	134
J-27	1,309.00	0	1,621.28	135
J-28	1,308.00	0	1,621.47	136
J-29	1,310.00	6	1,621.05	135
J-30	1,309.00	0	1,621.49	135
J-31	1,310.00	0	1,621.55	135
J-33	1,310.00	0	1,621.68	135
J-35	1,321.00	9	1,621.49	130
J-37	1,322.00	0	1,621.53	130
J-38	1,322.00	0	1,621.54	130
J-40	1,322.00	0	1,621.82	130
J-41	1,309.11	14	1,621.26	135
J-42	1,309.00	15	1,621.06	135
J-43	1,310.00	40	1,620.90	135
J-44	1,309.53	0	1,620.94	135
J-48	1,310.00	0	1,621.47	135
J-49	1,309.53	0	1,621.47	135
J-50	1,310.00	0	1,621.47	135
J-51	1,309.00	0	1,621.47	135
J-52	1,309.11	0	1,621.47	135
J-57	1,320.22	0	1,621.46	130
J-58	1,320.00	0	1,621.44	130
J-59	1,319.00	0	1,621.42	131
J-60	1,318.00	0	1,621.44	131
J-61	1,309.35	0	1,621.44	135

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Junction Table

Active Scenario: Peak Hour Demand

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-36	1,321.00	0	1,621.50	130
J-64	1,315.00	0	1,621.84	133
J-65	1,309.87	0	1,621.54	135
J-66	1,315.42	0	1,621.63	132
J-67	1,309.17	0	1,621.35	135
J-68	1,309.21	48	1,621.49	135
J-69	1,311.00	0	1,621.27	134
J-71	1,318.07	0	1,621.67	131
J-73	1,318.51	13	1,621.43	131
J-74	1,317.00	9	1,621.42	132
J-75	1,321.00	13	1,621.42	130
J-76	1,319.70	15	1,621.49	131
J-77	1,309.26	0	1,621.39	135
J-78	1,309.75	47	1,620.94	135
J-83	1,309.76	0	1,621.47	135
J-84	1,309.48	0	1,621.47	135
J-85	1,309.49	0	1,621.01	135
J-88	1,309.78	0	1,620.94	135
J-89	1,309.77	0	1,621.47	135
J-94	1,309.53	0	1,621.47	135
J-95	1,309.53	0	1,621.47	135
J-96	1,309.53	0	1,621.47	135
J-97	1,309.53	0	1,621.47	135
J-98	1,309.53	15	1,620.94	135
J-99	1,308.37	0	1,621.47	135
J-100	1,308.45	0	1,621.47	135
J-101	1,309.06	0	1,621.47	135

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Pipe Table

Active Scenario: Peak Hour Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	R-3	J-2	16.0	1,325	Ductile Iron	130.0	343	0.55	0.11
P-10	J-3	J-9	8.0	119	Ductile Iron	130.0	140	0.89	0.06
P-11	J-9	J-10	8.0	119	Ductile Iron	130.0	72	0.46	0.02
P-12	J-10	J-11	8.0	215	Ductile Iron	130.0	30	0.19	0.01
P-13	J-11	J-12	8.0	424	Ductile Iron	130.0	23	0.15	0.01
P-14	J-12	J-13	8.0	276	Ductile Iron	130.0	15	0.09	0.00
P-15	J-13	J-10	8.0	498	Ductile Iron	130.0	-32	0.20	0.02
P-16	J-13	J-14	8.0	113	Ductile Iron	130.0	35	0.22	0.00
P-17	J-9	J-14	8.0	502	Ductile Iron	130.0	50	0.32	0.04
P-19	J-15	J-16	8.0	232	Ductile Iron	130.0	59	0.38	0.02
P-22	J-67	J-19	8.0	254	Ductile Iron	130.0	68	0.44	0.03
P-24	J-19	J-22	8.0	386	Ductile Iron	130.0	-12	0.08	0.00
P-25	J-21	J-20	8.0	290	Ductile Iron	130.0	28	0.18	0.01
P-26	J-21	J-22	8.0	505	Ductile Iron	130.0	-61	0.39	0.05
P-27	J-20	J-23	8.0	278	Ductile Iron	130.0	8	0.05	0.00
P-28	J-23	J-24	8.0	586	Ductile Iron	130.0	-9	0.06	0.00
P-29	J-24	J-25	8.0	367	Ductile Iron	130.0	-36	0.23	0.01
P-31	J-25	J-19	8.0	444	Ductile Iron	130.0	-58	0.37	0.04
P-32	J-18	J-27	8.0	447	Ductile Iron	130.0	62	0.40	0.05
P-33	J-17	J-28	12.0	119	Ductile Iron	130.0	-105	0.30	0.00
P-39	J-31	J-33	8.0	218	Ductile Iron	130.0	-159	1.01	0.13
P-40	J-33	R-2	8.0	532	Ductile Iron	130.0	-159	1.01	0.32
P-41	J-4	J-35	12.0	132	Ductile Iron	130.0	-33	0.09	0.00
P-42	J-35	J-6	8.0	353	Ductile Iron	130.0	63	0.40	0.04
P-44	J-36	J-37	12.0	454	Ductile Iron	130.0	-121	0.34	0.02
P-45	J-37	J-38	12.0	296	Ductile Iron	130.0	-121	0.34	0.01
P-47	J-38	J-40	8.0	762	Ductile Iron	130.0	-121	0.77	0.28
P-48	J-40	R-1	8.0	503	Ductile Iron	130.0	-121	0.77	0.18
P-50	J-99	J-41	6.0	348	Ductile Iron	130.0	75	0.85	0.21
P-52	J-41	J-42	6.0	474	Ductile Iron	130.0	61	0.69	0.20
P-56	J-88	J-44	6.0	489	Ductile Iron	130.0	6	0.06	0.00
P-61	J-27	J-48	8.0	507	Ductile Iron	130.0	0	0.00	0.00
P-63	J-49	J-89	8.0	495	Ductile Iron	130.0	0	0.00	0.00
P-65	J-52	J-51	8.0	480	Ductile Iron	130.0	0	0.00	0.00
P-70	J-100	J-52	8.0	320	Ductile Iron	130.0	0	0.00	0.00
P-73	J-2	J-64	12.0	116	Ductile Iron	130.0	343	0.97	0.04
P-74	J-64	J-3	12.0	472	Ductile Iron	130.0	343	0.97	0.17
P-78	J-30	J-65	12.0	558	Ductile Iron	130.0	-159	0.45	0.05
P-79	J-65	J-31	12.0	120	Ductile Iron	130.0	-159	0.45	0.01
P-80	J-77	J-94	8.0	313	Ductile Iron	130.0	0	0.00	0.00
P-83	J-57	J-4	8.0	400	Ductile Iron	130.0	-50	0.32	0.03
P-84	J-57	J-58	8.0	279	Ductile Iron	130.0	50	0.32	0.02
P-85	J-58	J-59	8.0	309	Ductile Iron	130.0	50	0.32	0.02
P-86	J-59	J-60	8.0	512	Ductile Iron	130.0	-33	0.21	0.02
P-87	J-17	J-61	12.0	264	Ductile Iron	130.0	164	0.47	0.02
P-89	J-60	J-61	12.0	363	Ductile Iron	130.0	-33	0.09	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

FlexTable: Pipe Table

Active Scenario: Peak Hour Demand

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-90	J-59	J-22	8.0	547	Ductile Iron	130.0	84	0.53	0.10
P-43	J-36	J-35	12.0	259	Ductile Iron	130.0	121	0.34	0.01
P-93	J-66	J-4	8.0	820	Ductile Iron	130.0	79	0.51	0.14
P-95	J-67	J-18	8.0	213	Ductile Iron	130.0	62	0.40	0.02
P-96	J-14	J-68	8.0	727	Ductile Iron	130.0	70	0.44	0.10
P-97	J-68	J-30	12.0	106	Ductile Iron	130.0	21	0.06	0.00
P-98	J-25	J-69	8.0	203	Ductile Iron	130.0	0	0.00	0.00
P-99	J-17	J-16	8.0	90	Ductile Iron	130.0	-59	0.38	0.01
P-100	J-3	J-71	12.0	98	Ductile Iron	130.0	203	0.58	0.01
P-101	J-71	J-15	8.0	458	Ductile Iron	130.0	124	0.79	0.17
P-102	J-66	J-71	8.0	238	Ductile Iron	130.0	-79	0.51	0.04
P-103	J-6	J-73	8.0	357	Ductile Iron	130.0	50	0.32	0.03
P-104	J-73	J-8	8.0	518	Ductile Iron	130.0	12	0.08	0.00
P-105	J-73	J-74	8.0	139	Ductile Iron	130.0	25	0.16	0.00
P-106	J-74	J-75	8.0	473	Ductile Iron	130.0	13	0.08	0.00
P-107	J-74	J-8	8.0	389	Ductile Iron	130.0	3	0.02	0.00
P-108	J-35	J-76	8.0	195	Ductile Iron	130.0	15	0.10	0.00
P-109	J-61	J-77	8.0	117	Ductile Iron	130.0	131	0.83	0.05
P-110	J-77	J-67	8.0	96	Ductile Iron	130.0	131	0.83	0.04
P-111	J-44	J-78	6.0	218	Ductile Iron	130.0	-9	0.10	0.00
P-112	J-78	J-29	6.0	302	Ductile Iron	130.0	-56	0.64	0.11
P-113	J-48	J-83	8.0	299	Ductile Iron	130.0	0	0.00	0.00
P-114	J-83	J-49	8.0	222	Ductile Iron	130.0	0	0.00	0.00
P-122	J-84	J-51	8.0	187	Ductile Iron	130.0	0	0.00	0.00
P-123	J-42	J-85	6.0	192	Ductile Iron	130.0	46	0.52	0.05
P-125	J-85	J-88	6.0	274	Ductile Iron	130.0	46	0.52	0.07
P-126	J-88	J-43	6.0	232	Ductile Iron	130.0	40	0.46	0.05
P-127	J-50	J-89	8.0	234	Ductile Iron	130.0	0	0.00	0.00
P-128	J-89	J-84	8.0	278	Ductile Iron	130.0	0	0.00	0.00
P-137	J-94	J-95	8.0	36	Ductile Iron	130.0	0	0.00	0.00
P-138	J-95	J-96	8.0	100	Ductile Iron	130.0	0	0.00	0.00
P-139	J-96	J-49	8.0	250	Ductile Iron	130.0	0	0.00	0.00
P-140	J-27	J-29	6.0	514	Ductile Iron	130.0	62	0.71	0.22
P-145	J-97	J-94	8.0	265	Ductile Iron	130.0	0	0.00	0.00
P-146	J-98	J-44	6.0	185	Ductile Iron	130.0	-15	0.17	0.01
P-147	J-28	J-99	12.0	116	Ductile Iron	130.0	-105	0.30	0.00
P-149	J-99	J-100	12.0	23	Ductile Iron	130.0	-180	0.51	0.00
P-150	J-100	J-30	12.0	173	Ductile Iron	130.0	-180	0.51	0.02
P-151	J-52	J-101	8.0	147	Ductile Iron	130.0	0	0.00	0.00

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

Fire Flow Node FlexTable: Fire Flow Report

Active Scenario: Max Day Demand + Comm FF

Label	Fire Flow (Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-2	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-3	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-4	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-6	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-8	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-9	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-10	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-11	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-12	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-13	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-14	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-15	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-16	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-17	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-18	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-19	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-20	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-21	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-22	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-23	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-24	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-25	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-27	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-28	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-29	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-30	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-31	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-33	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-35	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-37	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-38	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-40	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-41	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-42	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-43	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-44	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-48	1,500	1,501	20	127	121	J-16	5.61	P-109
J-49	1,500	1,501	20	130	121	J-16	5.30	P-109
J-50	1,500	1,501	20	124	121	J-16	9.58	P-127
J-51	1,500	1,501	20	128	121	J-16	5.45	P-70
J-52	1,500	1,501	20	130	121	J-16	6.88	P-70
J-57	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-58	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)

7-ZN-2016#2
8/11/2020

Ritz MP WaterCAD 05.15.19 Summer.wtg

Fire Flow Node FlexTable: Fire Flow Report

Active Scenario: Max Day Demand + Comm FF

Label	Fire Flow (Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-59	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-60	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-61	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-36	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-64	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-65	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-66	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-67	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-68	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-69	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-71	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-73	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-74	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-75	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-76	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-77	1,500	1,501	20	131	121	J-16	7.67	P-109
J-78	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-83	1,500	1,501	20	128	121	J-16	6.25	P-114
J-84	1,500	1,501	20	128	121	J-16	4.99	P-70
J-85	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-88	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-89	1,500	1,501	20	128	121	J-16	5.26	P-63
J-94	1,500	1,501	20	130	121	J-16	5.88	P-109
J-95	1,500	1,501	20	130	121	J-16	5.83	P-109
J-96	1,500	1,501	20	129	121	J-16	5.68	P-109
J-97	1,500	1,501	20	125	121	J-16	9.58	P-145
J-98	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-99	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-100	1,500	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-101	1,500	1,501	20	128	121	J-16	9.58	P-151

7-ZN-2016#2
8/11/2020

APPENDIX D

IFC Table 105.1(2)

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	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

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.

INTERNATIONAL CODE COUNCIL®
Copyright © 2014 ICC. ALL RIGHTS RESERVED. Accessed by David Montgomery on Mar 22, 2016 2:32:13 PM pursuant to License Agreement wit
or distribution authorized. ANY UNAUTHORIZED REPRODUCTION OR DISTRIBUTION IS A VIOLATION OF THE FEDERAL COPYRIGHT
AGREEMENT, AND SUBJECT TO CIVIL AND CRIMINAL PENALTIES THEREUNDER.

7-ZN-2016#2
8/11/2020