CITY OF SCOTTSDALE

Abbreviated Water and Sewer Needs

Water and Wastewater Study Basis of Design Report

For

One Scottsdale – Phase 1

Southeast Corner of Scottsdale Road and Thompson Peak Parkway
Scottsdale, Arizona

Prepared for

DMB
7600 E Doubletree Ranch Road, Suite 300
Scottsdale, AZ 85258

FINAL Basis of Design Report
☑ ACCEPTED
❑ ACCEPTED AS NOTED
❑ REVISE AND RESUBMIT

Reviewed by carollo
On behalf of the Scottsdale Water Resources Planning and Engineering Department

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 and 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 and clarifications contact the Water Resources Planning and Engineering Department at 480-321-5685

REVIEWER: Brian Bernard
EMAIL: Bbernard@carollo.com
DATE 01/17/2020

January 3, 2020

CEC PN # 180-168
61-DR-2015#2

Civil & Environmental Consultants, Inc.

Phoenix | 11811 N. Tatum Boulevard, Suite 3057 | Phoenix, AZ 85028 | p: 602-760-2324 f: 602-760-2330 | www.cecinc.com

SCOTTSDALE ONE

CASE FILE 61-DR-2015#2_V3 - PRELIMINARY WATER AND WASTEWATER BOD REPORT

CAROLLO ENGINEER'S CASE FILE REVIEW COMMENTS - 01/17/2020

Ordinance Issues:

1. Note to the Submitter/Developer, as per section 6-1.000 of the DSPM, Developers may be required to install, at their expense, all on-site and off-site improvements, if required.

Policy and Design Related Issues:

2. The project "Introduction" in the BOD report should make reference to the future restaurant planned/indicated under "Shops B".
3. The reviewer cannot verify/confirm the finished floor elevation heights based on the information provided, per DSPM 6-1.202.

Technical Corrections to be Resolved:

4. State the assumptions made in estimating the Fire Sprinkler flow at 500 gpm.
5. Clarify with specific labeling what the values mean or equate to for the "Overall - Max Day Demand + Fire Flow Model Results" category. See the redline notes in the BOD report markup.
6. For the Proposed Wastewater Demand Calculations table please review and correct the peaking factors to convert from Average Day Demand to Peak Day Demand. State that "Shops B" is a future restaurant.
7. The existing flow in the 15" diameter sewer in Scottsdale Rd is 2.63 cfs per City of Scottsdale flow monitoring completed in April 2019. The Scottsdale One development adds 1.5 cfs to that sewer line for a total flow of 4.13 cfs. The resultant d/D is 0.63 which is under the maximum allowable of 0.70 d/D. Please confirm with the City of Scottsdale Water Resources Department that no additional available capacity has been subscribed to a different project between April 2019 and the date of the review of this report.

Table of Contents

1.0 INTRODUCTION

The One Scottsdale project is a proposed 21.73 net acre commercial/retail project located southeast of the intersection of the Scottsdale Road and Thompson Peak Parkway in Scottsdale, Arizona. The site is further described as a portion of the NW1/4 of Section 26, Township 4 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. Refer to the Vicinity Map on the following page.

The BOD indicates a future restaurant, please note this in subsequent phasing submittals

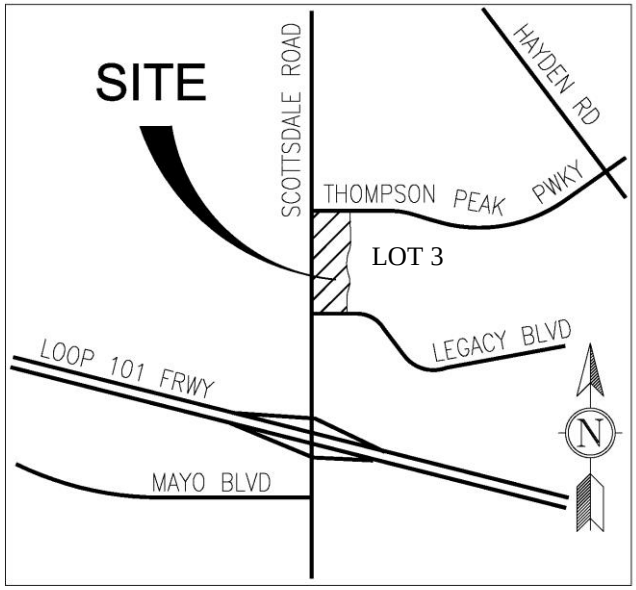
The site will consist of a hotel, Class A office buildings, underground and above ground parking structures, and retail pads. Phase 1 of the project will incorporate the hotel site with parking lot and drives. Refer to the Site Plan located in Appendix A at the back of this report. This report specifically addresses Phase 1 of the project. Future phases will have their own water and wastewater basis of design reports as the DR submittals come in for those particular phases.

This Basis of Design report will document existing and proposed water and wastewater utility conditions for the 21.73-acre commercial parcel for the overall build-out condition and also the Phase 1 condition. Refer to the Concept Utility Plans located in Appendix B & C at the back of this report.

This site is located east of Scottsdale Road south of Thompson Peak Parkway, west of 73rd Drive, and north of Legacy Boulevard. Water and sewer utilities exist within the adjacent street and parcels, and are further described in the following section.

The purpose of this report is to satisfy the City of Scottsdale Design Review Board requirement regarding the basis of water and wastewater design for the proposed One Scottsdale project and to document water and sewer calculations for review and approval by the Maricopa County Environmental Services Department.

Vicinity Map



VICINITY MAP
N.T.S.

2.0 WATER STUDY – BASIS OF DESIGN

Existing Improvements

Existing public water lines are located on all sides of the proposed development. An existing 12-inch D.I.P. public water line is located on the north side of Thompson Peak Parkway within the public right of way. An existing 12-inch D.I.P. public water line is located in Scottsdale Road. An existing 16" D.I.P. public water line is located in Legacy Boulevard. An existing 12" D.I.P. public water line is located in 73rd Drive in a public utility easement. An existing 12" D.I.P. public water line extends between Scottsdale Road and 73rd Drive at the south 1/3 of the site. This line is located within a public utility easement. There is an existing PRV located at the NWC of the intersection of Scottsdale Road and Legacy Boulevard (#130) and at the NWC of the intersection of Legacy Boulevard and 73rd (#364).

Refer to the Concept Utility Plans in Appendix B & C at the back of this report for exact locations.

Proposed Improvements and Demand – Overall (21.73 acres)

The water needs for the project will be served by connecting an 8-inch D.I.P. public water line loop to the existing 12-inch D.I.P. public water line stub in Scottsdale Road and will loop back to two separate 8-inch connections in Scottsdale Road and one connection to the existing public water line in 73rd Drive. This will provide an overall water line loop for the entire development and eliminate the need for the existing 12-inch D.I.P. public water line that runs between Scottsdale Road and 73rd Drive. Once final construction is complete of the proposed 8" D.I.P. public water line loop, the existing 12" D.I.P. line will be removed.

The proposed 8-inch D.I.P. public waterline for this project will be constructed within a 20-foot wide public waterline easement. Refer to the Concept Utility Plan for proposed water line loop locations, fire hydrant locations, proposed 6-inch D.I.P. and 8-inch D.I.P. fireline stubs, 2" and 3" domestic services, and one 2" landscape service within the project. Where public water and sewer lines run parallel to each other they will be within a 20-foot easement with 9-feet of horizontal separation.

Shops A assumed as Retail per Unit Demand - no description given

Calculations for estimated average day, max day, and peak demands for the development are as follows:

DOMESTIC WATER DEMAND CALCULATIONS BUILDING/ PARCEL	SQUARE FOOTAGE	UNIT DEMAND (PER SQUARE FOOT)	TOTAL AVG. DAY DEMAND (GPM)	TOTAL MAX DAY DEMAND (GPM)	TOTAL PEAK DAY DEMAND (GPM)
FUTURE OFFICE A	180,000	0.000834	150.12	300.24	525.42
FUTURE PAD A	9,000	0.001110	9.99	19.98	34.97
SHOPS A	9,600	0.001110	10.66	21.31	37.30
HOTEL	123 ROOMS	0.63 PER ROOM	77.49	154.98	271.22
SHOPS B	10,700	0.001810	19.37	38.73	67.78
FUTURE PAD B	9,000	0.001110	9.99	19.98	34.97
FUTURE OFFICE B	240,000	0.000834	200.16	400.32	700.56
TOTAL	***458,300***		***477.77***	***955.55***	***1,672.21***
DEMANDS ARE BASED ON PROPOSED BUILDING SQUARE FOOTAGE, USE, AND CITY OF SCOTTSDALE DESIGN STANDARDS & POLICIES MANUAL FIGURE 6.1-2					

Shops B appears to be a restaurant - please note as such in subsequent phased submittals

Proposed Improvements – Phase 1

The water needs for Phase 1 of the project will be served by connecting an 8-inch D.I.P. public water line loop to the existing 12-inch D.I.P. public water line in Scottsdale Road at the main drive entrance and will loop back to the existing 12-inch D.I.P. public water line Scottsdale Road at the future northern drive entrance. This will provide an overall water line loop for the entire development. An isolation gate valve will be added just north of the middle public water line connection on the existing public water line located in Scottsdale Road in order to provide second sourcing in accordance with COS DS&PM Sec. 6-1.416 and 7-1.409.

The proposed 8-inch D.I.P. public waterline, for this project, will be constructed within a 20-foot wide public waterline easement. Refer to the Concept Utility Plans located in Appendix B & C at the back of this report for proposed water line loop locations, fire hydrant locations, proposed fireline stubs, a 3" domestic service, and one 1.5" landscape service within the project. Where public water and sewer lines run parallel to each other they will be within a 20-foot easement with 9 feet of horizontal separation.

The existing 12" D.I.P. public line that runs through the site between Scottsdale Road and 73rd Drive will remain in place until the overall development is constructed.

3.0 FIRE FLOW STUDY – BASIS OF DESIGN

A worst-case fire flow requirement for this project assumes the largest building for calculation purposes (Future Office B). Below is a summary table documenting fire flows required for each building.

FIRE FLOW DEMAND BUILDING	SQUARE FOOTAGE	CONSTR. TYPE	GPM REQUIRED	SPRINKLER REDUCTION	GPM ADJUSTED
FUTURE OFFICE A	180,000	V-B	8000	75%	**2000**
FUTURE PAD A	9,000	V-B	2500	75%	**1500***
SHOPS A	9,600	V-B	2500	75%	**1500***
HOTEL	123 ROOMS	V-B	8000	75%	**2000**
SHOPS B	10,700	V-B	2500	75%	**1500***
FUTURE PAD B	9,000	V-B	2500	75%	**1500***
FUTURE OFFICE B	240,000	V-B	8000	75%	**2000**
SQUARE FOOTAGES ARE BASED ON GROSS BUILDING AREA GPM REQUIRED TAKEN FROM TABLE B105.1 OF THE INTERNATIONAL FIRE CODE					

Largest Building by Area

Fire Flow Requirements = Max Day Demand + Sprinkler Flow + 2000 Gal/Min (Commercial – Assume Sprinkler Flow = 500 GPM)

= 400.32 + 500 +2000 = 2900.32 GPM

A flow and pressure test was performed on October 9, 2019 by EJ Flow Testing Services. A copy of this flow test is provided in Appendix E at the back of this report. The flow test performed by EJ Flow Testing Services resulted in a static pressure of 72 psi, a Residual pressure of 52 psi with an available flow of 6,062 gpm at 20 psi. The flows test incorporated a safety factor of 27 psi based on the City of Scottsdale maximum static pressure requirements. The full build-out will have a total of (4) points of connection to the public water supply. Phase 1 will have a total of (2) points of connection to the public water supply. This in conjunction with a looped system will provide adequate fire flow requirements for the proposed development.

A water model was created to simulate the proposed Overall water system and also the Phase 1 water system. The model was analyzed for (3) different scenarios: Average Day Demand, Peak Hour

Demand, and Maximum Day Demand + Fire Flow. The model was created using Bentley WaterCAD V8 XM. The assumptions made for the model were friction factors based on pipe material, and minor loss coefficients based on fittings and valves. Water model calculations and node exhibit is located in Appendix E at the back of this report. Below is a detailed list of assumptions for the water model.

Friction Factors:

Ductile Iron Pipe: Manning Coefficient of 0.012

Minor Losses K Values:

90 degree smooth bend D=2	0.22
45 degree bend mitered	0.20
Tee – Line Flow	0.35
Tee – Branch Flow	1.28

Overall - Average Day Demand Model Results

The total average day water demand of 477.77 gallons per minute was placed on J-3, J-8, J-18, J-20, J-32, J-200 and J-47 within the water model.

The water model was successful for the average day water demand for the full build out condition based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during average day conditions. The minimum pressure calculated was 52 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 71 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 0.79 fps.

Overall - Peak Hour Demand Model Results

The total peak hour water demand of 1,672.21 gallons per minute was placed on J-3, J-8, J-18, J-20, J-32, J-200 and J-47 within the water model.

30 psi minimum at the FH or Tee, with 15 psi maintained at highest finished floor

The water model was successful for the peak hour water demand for the f based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during peak hour conditions. The minimum pressure

calculated was 31 psi.

2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 69 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 2.87 fps.

Is this the Fire Sprinkler flow - or has the total Fire Flow been split between two fire hydrants?

2,000 gpm?

Overall - Max Day Demand + Fire Flow Model Results

The total max day water demand of 955.55 gallons per minute was placed on J-3, J-8, J-18, J-20, J-32, J-200 and J-47 and fire flow demand of 1,500 gallons per minute was placed on H-4, and a fire flow demand of 500 gallons per minute was placed on H-3. The total modeled flow for this scenario is 2,955.55 gallons per minute. The largest building, Future Office B, was used in this simulation assuming the worst case fire flow requirement of 2,000 gpm based on IFC criteria with a 75% reduction and a highest finished floor at 36 feet above grade

Is this the 500 gpm placed on FH H-3 ?

The water model was successful for max day demand + fire flow for the full build out condition based on the following factors:

30 psi minimum at the FH or Tee, with 15 psi maintained at highest finished floor

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during maximum day + fire flow conditions. The minimum pressure calculated was 31 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 67 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 8.43 fps.

Phase 1 - Average Day Demand Model Results

The total average day water demand of 77.49 gallons per minute was placed on J-8 within the water model.

Hotel?

The water model was successful for the average day water demand for the Phase 1 condition based on the following factors:

1. Minimum water pressures are not less than 30 psi during average day conditions. The minimum pressure calculated was 50 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 72 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 0.25 fps.

Phase 1 - Peak Hour Demand Model Results

The total peak hour water demand of 271.22 gallons per minute was placed on J-8 within the water

model.

The water model was successful for the peak hour water demand for the Phase 1 condition based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during peak hour conditions. The minimum pressure calculated was 40 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 71 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 0.87 fps.

Phase 1 - Max Day Demand + Fire Flow Model Results

The total max day water demand of 154.98 gallons per minute was placed on J-8 and a fire flow demand of 1,500 gallons per minute was placed on H-1, and a fire flow demand of 500 gallons per minute was placed on H-2. The total modeled flow for this scenario is 2,154.98 gallons per minute. The hotel was used in this simulation assuming the worst case fire flow requirement of 2,000 gpm based on IFC criteria with a 75% reduction and a highest finished floor at 48 feet above grade.

The water model was successful for max day demand + fire flow for the Phase 1 condition based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during maximum day + fire flow conditions. The minimum pressure calculated was 33 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 62 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 7.64 fps.

4.0 WASTEWATER STUDY – BASIS OF DESIGN

Existing Improvements

An existing 15-inch VCP sewer line and manholes are located in Scottsdale Road just west of the proposed development, a 12-inch VCP sewer line and manholes in Thompson Peak Parkway just north of the proposed development, an 8-inch and 10-inch PVC sewer line in 73rd Avenue just east of the

development, and a 12" PVC sewer line in Legacy Boulevard just south of the development. Also, there is an existing 10" PVC sewer line that through the proposed development between Scottsdale Road and 73rd Drive.

Proposed Improvements and Demands – Overall (21.73 acres)

The sewer needs for the One Scottsdale project will be served by extending a 15-inch and a 12-inch PVC public sewer line through the site from Scottsdale Road, connecting to the existing 10-inch PVC sewer line in 73rd Drive. The proposed 15-inch PVC public sewer line will connect to an existing manhole in Scottsdale Road. Once fully constructed, the existing 10-inch PVC sewer line will be removed. The proposed 15-inch and 12-inch PVC sewer lines will run at a slope of 0.0024 ft/ft due to site constraints at the connection points. Onsite 8-inch and 6-inch PVC private plumbing lines will then service each of the proposed buildings as they are developed and per Uniform Plumbing Code slopes. Private plumbing slopes onsite are run at approximately between 1.0% and 5.0% slope to service the most remote buildings on the site. Refer to the Concept Util
line locations, stub location, slopes and inverts. Refer to the Sewer Exh
at the back of this report for proposed sewer line designations in referen
calculations for each sewer line segment has been provided in Appendix D at the back of this report.

Please check your peaking factors used to convert from Total Average Day to Total Peak Day - Table should read 571.6 gpm and 1.5 cfs for Peak Day

Calculations for estimated average day and peak demands for the development are as follows:

PROPOSED WASTEWATER DEMAND CALCULATIONS						
BUILDING/ PARCEL	SQUARE FOOTAGE	UNIT DEMAND (PER SQUARE FOOT)	TOTAL AVG. DAY DEMAND (GPD)	TOTAL PEAK DAY DEMAND (GPD)	TOTAL PEAK DAY DEMAND (GPM)	TOTAL PEAK DAY DEMAND (CFS)
FUTURE OFFICE A	180,000	0.40	72,000	216,000	150	0.33
FUTURE PAD A	9,000	0.50	4,500	13,500	9	0.02
SHOPS A	9,600	0.50	4,800	14,400	10	0.02
HOTEL	123 ROOMS	380 PER ROOM	46,740	140,220	97	0.22
SHOPS B	10,700	1.20	12,840	38,520	27	0.06
FUTURE PAD B	9,000	0.50	4,500	13,500	9	0.02
FUTURE OFFICE B	240,000	0.40	96,000	288,000	200	0.45
TOTAL	***458,300.00***		***241,380***	***724,140***	***503***	***1.12***
DEMANDS ARE BASED ON PROPOSED BUILDING SQUARE FOOTAGE, USE, AND CITY OF SCOTTSDALE DESIGN STANDARDS & POLICIES MANUAL FIGURE 7.1-2						

Only a portion of the public sewer line will be built with Phase 1. During the overall construction an additional connection to 73rd Avenue will be constructed and the existing 10-inch PVC sewer will be abandoned. During the future phased construction, specifically Pad D, an additional private sewer

building connection will be constructed from the existing sewer in Legacy Boulevard. These two connections will be single building feeds and will be 6-inch PVC lines with a slope of 0.01 ft/ft.

Based on the One Scottsdale (Stacked 40s) Master On-Site Wastewater Plan, dated February 10, 2012, by Wood, Patel & Associates an upstream sewer flow of 0.69 cfs enters the proposed system at the connection point in 73rd Avenue. A copy of the excerpts from the Stacked 40s Master On-Site Wastewater Plan has been provided in Appendix D at the back of this report. This flow was incorporated into this design. The existing One Scottsdale master plan outfall defined as "F1" had an estimated offsite wastewater flow of 207,479 gallons per day. The TDI development increased the estimated offsite wastewater flow to 446,145 gallons per day. The TDI development accompanied by this project estimates a total wastewater flow of 1[illegible] cfs at the connection to the existing 15-inch PVC sewer in Scottsdale Road (this project contributing flow of 1[illegible] cfs + TDI offsite flow of 0.69 cfs).

5.0 CONCLUSIONS

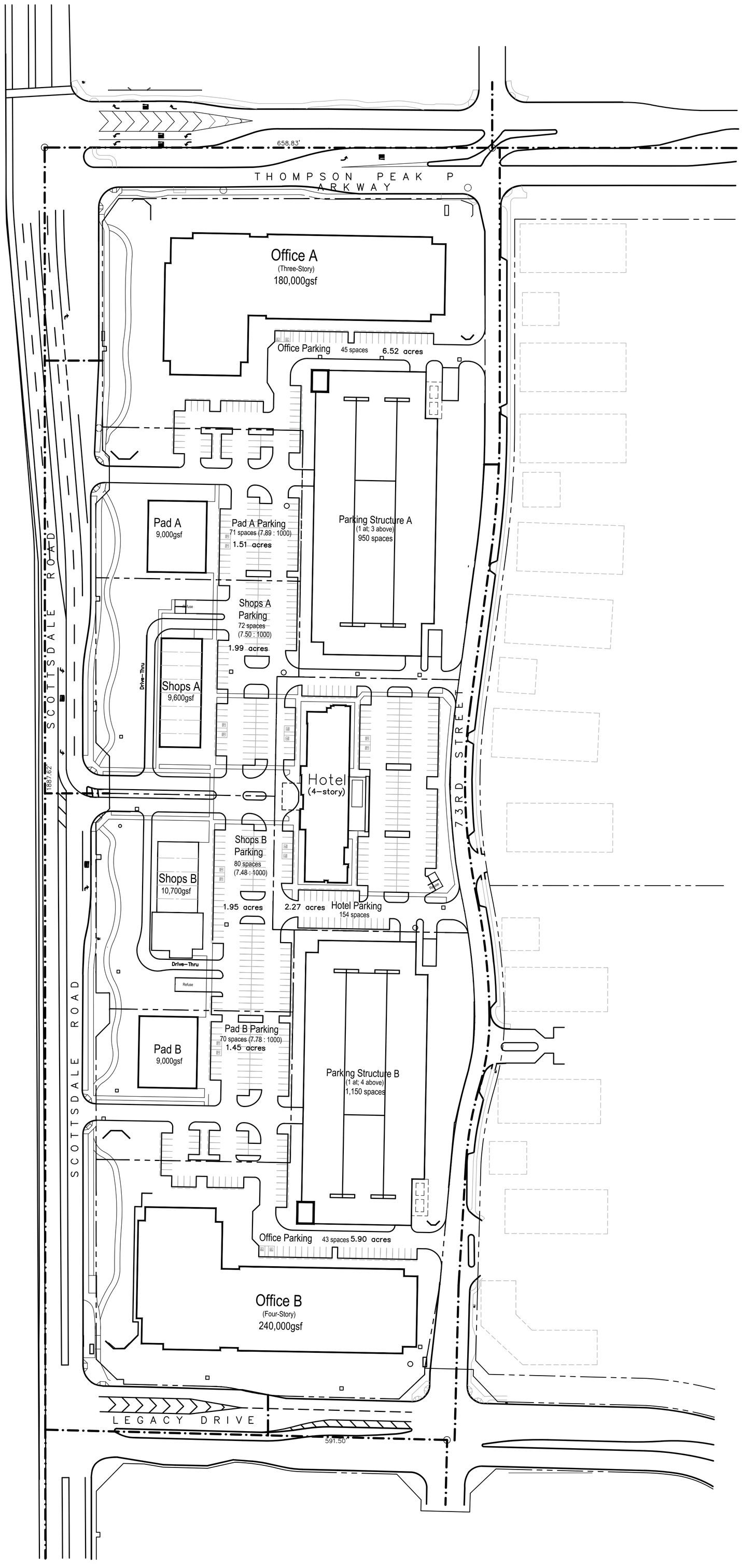
The One Scottsdale project will provide service to the approximate 21.73-arce development (7 total buildings) by constructing a public looped 8" waterline system and one public 12" sewer line extended into the site to service proposed and future buildings. The water line will provide adequate protection for domestic, landscape and fire flow requirements.

The 15-inch and 12-inch PVC public sewer line slopes are proposed at 0.24% from the existing 15-inch downstream sewer and the existing 10-inch upstream sewer. A 15-inch PVC public sewer downstream connection will be made to an existing manhole located in Scottsdale Road.

The existing flow was measured in the 15" sewer on Scottsdale Rd in March 2019 at 2.63 cfs . Scottsdale One adds 1.5 cfs to the existing flow for a total flow of 4.13 cfs. The 4.13 cfs flow gives a 0.63 d/D in the existing 15" Scottsdale Rd sewer - 0.70 is the acceptable d/D

APPENDIX A

Site Plan



Master Site Plan

Total Office Area:	420,000gsf (401,000rsf)
Total Retail Area:	38,300gsf
Total Area:	538,300gsf
Hotel:	66,000gsf (123 keys)

0' 80' 160' 240' 320' NORTH

14164

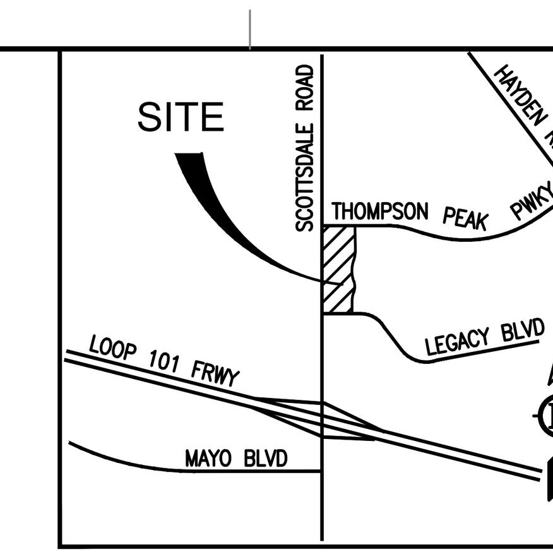
5-30-19

ONE SCOTTSDALE- Scottsdale, Arizona

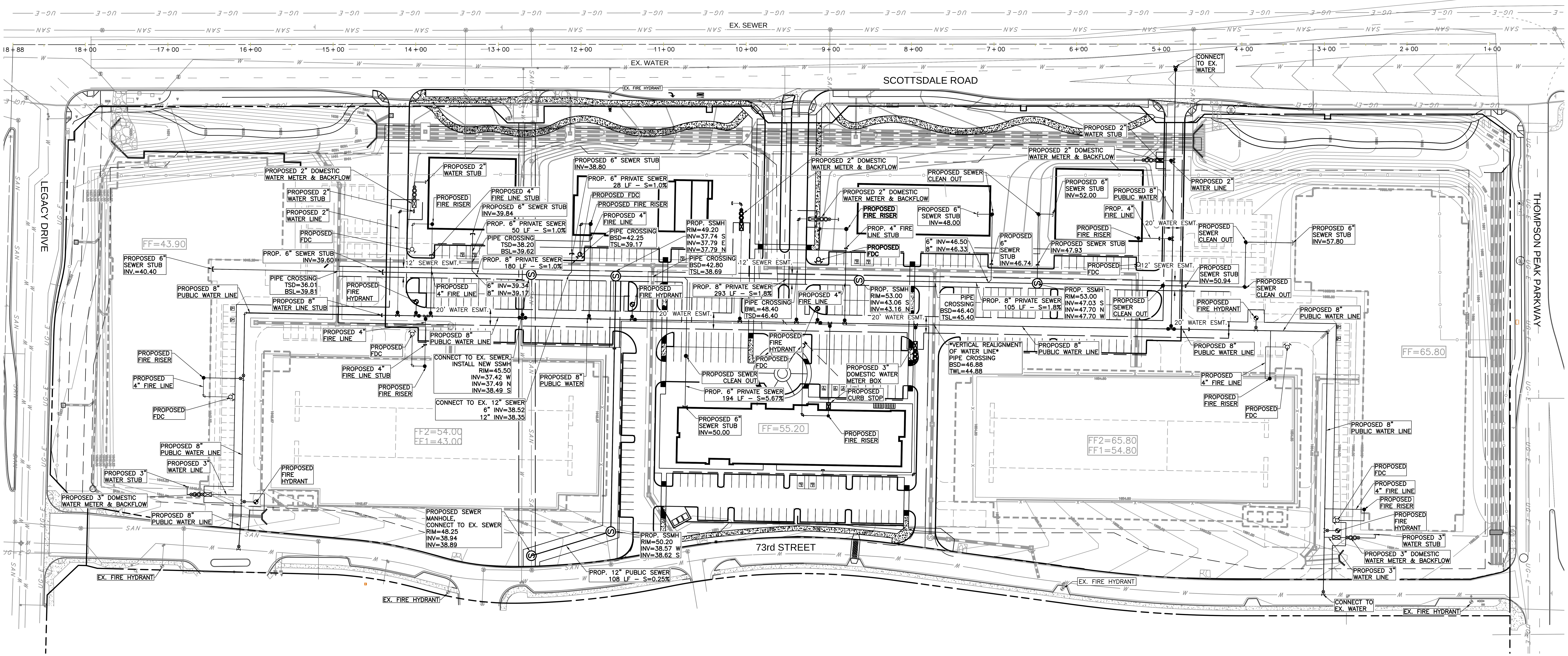
DAVIS

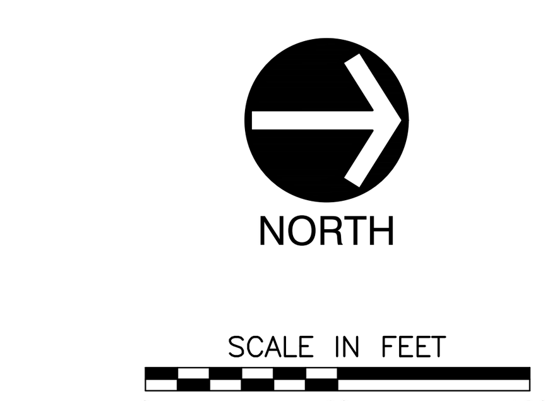
APPENDIX B

Overall Concept Utility Plan



VICINITY MAP
N.T.S.


EX. SEWER
EX. WATER
SCOTTSDALE ROAD
LEGACY DRIVE
THOMPSON PEAK PARKWAY
73rd STREET
EX. FIRE HYDRANT
CONNECT TO EX. WATER
FF=43.90
FF2=54.00
FF1=43.00
FF=55.20
FF2=65.80
FF1=54.80
FF=65.80
12' SEWER ESMT.
20' WATER ESMT.
PROPOSED 2" DOMESTIC WATER METER & BACKFLOW
PROPOSED 2" WATER STUB
PROPOSED 2" WATER LINE
PROPOSED FDC
PROPOSED FIRE RISER
PROPOSED FIRE HYDRANT
PROPOSED 4" FIRE LINE
PROPOSED 4" FIRE LINE STUB
PROPOSED 8" PUBLIC WATER LINE
PROPOSED 8" WATER LINE STUB
PROPOSED 6" SEWER STUB INV.=40.40
PROP. 6" SEWER STUB INV=39.60
PIPE CROSSING TSD=36.01 BSL=39.81
PROPOSED 6" SEWER STUB INV=39.84
PROP. 6" PRIVATE SEWER 50 LF - S=1.0%
PIPE CROSSING TSD=38.20 BSL=39.62
PROP. 8" PRIVATE SEWER 180 LF - S=1.0%
6" INV=39.34
8" INV=39.17
CONNECT TO EX. SEWER, INSTALL NEW SSMH RIM=45.50 INV=37.42 W INV=37.49 N INV=38.49 S
CONNECT TO EX. 12" SEWER 6" INV=38.52 12" INV=38.35
PROPOSED 6" SEWER STUB INV=38.80
PROP. 6" PRIVATE SEWER 28 LF - S=1.0%
PIPE CROSSING BSD=42.25 TSL=39.17
PROP. SSMH RIM=49.20 INV=37.74 S INV=37.79 E INV=37.79 N
PIPE CROSSING BSD=42.80 TSL=38.69
PROP. 8" PRIVATE SEWER 293 LF - S=1.8%
PIPE CROSSING BWL=48.40 TSD=46.40
PROPOSED SEWER CLEAN OUT
PROP. 6" PRIVATE SEWER 194 LF - S=5.67%
PROPOSED 6" SEWER STUB INV=50.00
PROPOSED 3" DOMESTIC WATER METER BOX
PROPOSED CURB STOP
PROPOSED SEWER MANHOLE, CONNECT TO EX. SEWER RIM=48.25 INV=38.94 INV=38.89
PROP. SSMH RIM=50.20 INV=38.57 W INV=38.62 S
PROP. 12" PUBLIC SEWER 108 LF - S=0.25%
PROPOSED 6" SEWER STUB INV=48.00
6" INV=46.50
8" INV=46.33
PROP. SSMH RIM=53.00 INV=43.06 S INV=43.16 N
PIPE CROSSING BSD=46.40 TSL=45.40
VERTICAL REALIGNMENT OF WATER LINE PIPE CROSSING BSD=46.88 TWL=44.88
PROPOSED 6" SEWER STUB INV=46.74
PROPOSED SEWER STUB INV=47.93
PROP. 8" PRIVATE SEWER 105 LF - S=1.8%
PROP. SSMH RIM=53.00 INV=47.03 S INV=47.70 N INV=47.70 W
PROPOSED 6" SEWER STUB INV=52.00
PROPOSED 8" PUBLIC WATER
PROPOSED 6" SEWER STUB INV=57.80
PROPOSED SEWER STUB INV=50.94
PROPOSED 3" WATER STUB
PROPOSED 3" WATER LINE
PROPOSED 3" DOMESTIC WATER METER & BACKFLOW



Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 23980
JEFFREY S. ERICKSON
ARIZONA, U.S.A.
Expires 09/30/20

REVISION RECORD

NO.	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 · 877.231.2324 · Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

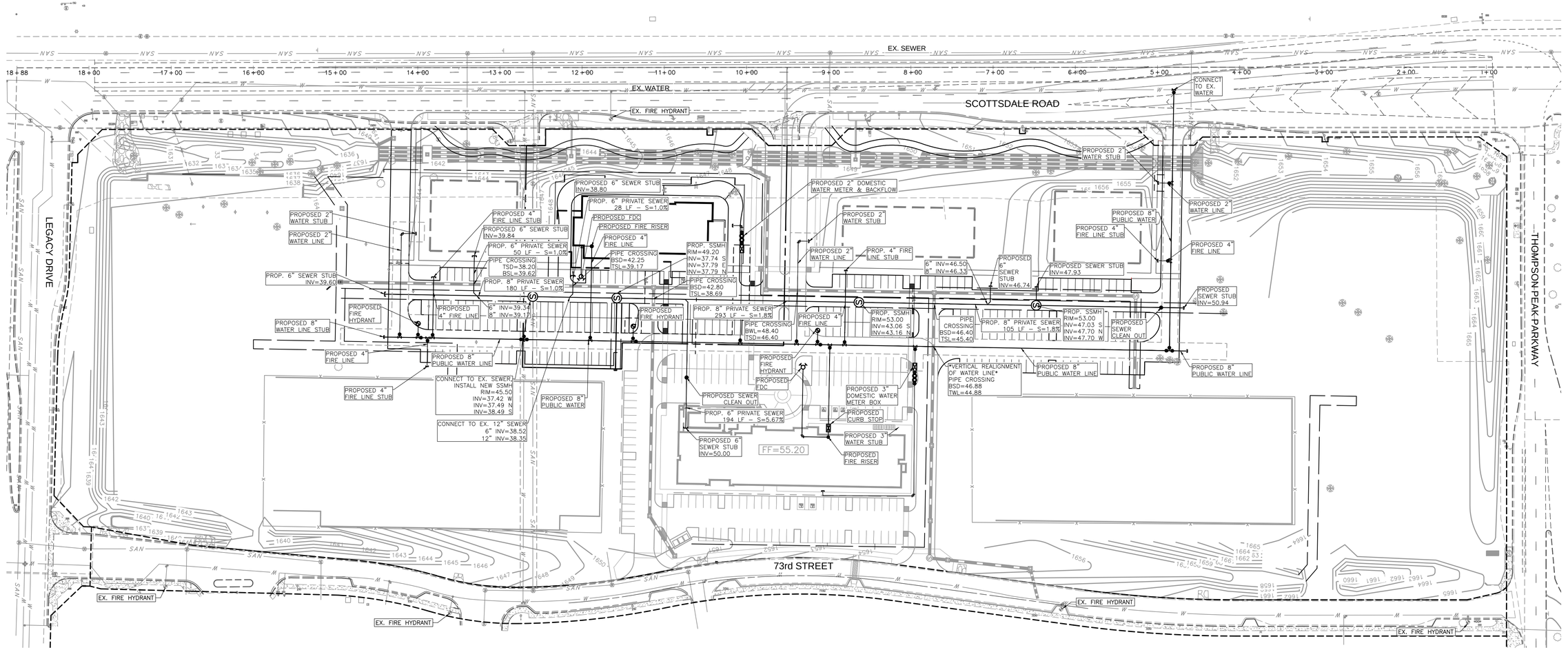
OVERALL CONCEPT UTILITY

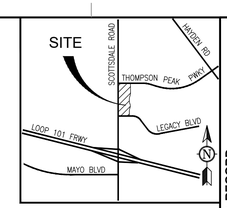
DATE:	11/5/19	DRAWN BY:	BB
DWG SCALE:	1"=60'	CHECKED BY:	KE
PROJECT NO:	180-168	APPROVED BY:	JSE

DRAWING NO.: CU01
SHEET 1 OF 1

APPENDIX C

Phase 1 Concept Utility Plan





VICINITY MAP
N.T.S.

FLOOD ZONE

ALL BUILDINGS WILL BE STRUCTURALLY INDEPENDENT AND WILL BE FLOODPROOFED TO 2 FEET ABOVE THE HIGHEST ADJACENT NATURAL GRADE WITHIN THE REGULATORY FLOODPLAIN – ZONE AO, DEPTH=1 FOOT.

OWNER

DMB
7600 E DOUBLETREE RANCH RD, SUITE 300
SCOTTSDALE, AZ 85258
CONTACT: MIKE BURKE

ARCHITECT

DAVIS
74 E. RIO SALADO PARKWAY, STE. 200
TEMPE, AZ 85281
PH: 480-638-1100
CONTACT: MIKE DAVIS

ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
118111 N. TATUM BLVD., SUITE 3057
PHOENIX, ARIZONA 85028
PH: 602-760-2324
FX: 602-760-2330
CONTACT: KALEY BUETHE, PE

PROPOSED LEGEND

- DRAINAGE AREA BOUNDARY
- PAVEMENT ELEVATION — P=58.00
- ONSITE DRAINAGE ARROW
- OFFSITE DRAINAGE ARROW
- CURB OPENING
- DRAINAGE AREA LABEL — DA2
- GRADE BREAK — G.B.
- DRYWELL
- RETENTION BASIN

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

NORTH

SCALE IN FEET
0 60 120

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
23980
JEFFREY S. ERICKSON
Date Signed 11/08/19
ARIZONA, U.S.A.
Expires 09/30/20

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 - 877.231.2324 - Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

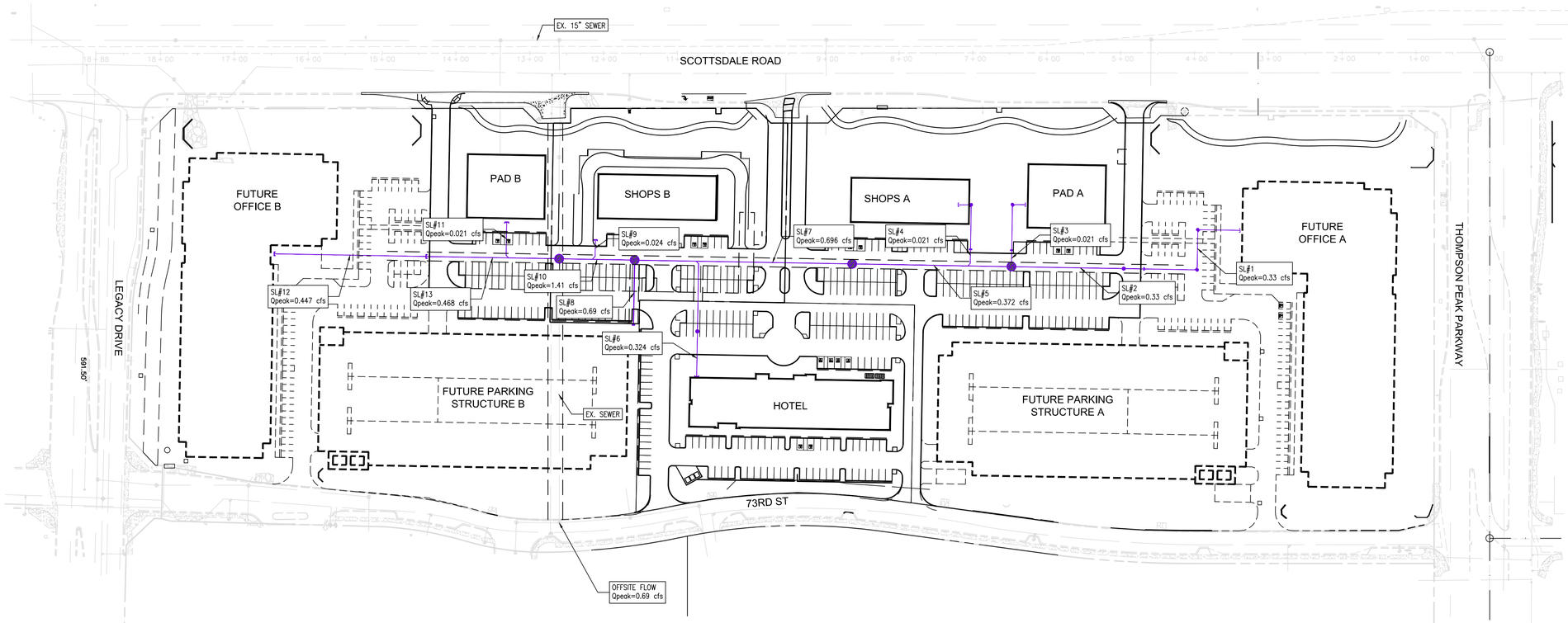
CONCEPT UTILITY
PHASE 1

DATE:	NOVEMBER 2019
DWG SCALE:	1"=60'
PROJECT NO:	180-168
DRAWN BY:	BB
CHECKED BY:	KE
APPROVED BY:	JSE

DRAWING NO.:
CU01
SHEET 1 OF 1

APPENDIX D

Sewer Exhibit & Calculations



NORTH

SCALE IN FEET

0 80 160

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

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
23980
JEFFREY S. ERICKSON
Date Signed
CIVIL
ARIZONA, U.S.A.
12/31/20

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 - 877.231.2324 - Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE - PHASE 1
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

SEWER EXHIBIT

DATE:	January 3, 2020
DRAWN BY:	BB
CHECKED BY:	KE
DWG SCALE:	
PROJECT NO:	180-168
APPROVED BY:	JSE

DRAWING NO.:

EX-1

SHEET 1 OF 1

Pipe ID	Q (cfs)	Peaking Factor	Q Peak (cfs)	Dia. (in)	Slope (ft/ft)	n	Depth (ft)	d/D	Vel. (fps)	Fr. #	Dcrit(ft)	Capacity	Max Q
SL#1	0.11	3	0.33	6	0.038	0.013	0.107	0.214	3.568	2.294	0.164	1.17	0.33
SL#2	0.11		0.33	8	0.018	0.013	0.117	0.1755	2.648	1.635	0.151	1.76	0.33
SL#3	0.007	3	0.021	6	0.01	0.013	0.039	0.078	0.981	1.061	0.04	0.6	0.021
SL#4	0.007	3	0.021	6	0.01	0.013	0.039	0.078	0.981	1.061	0.04	0.6	0.021
SL#5	0.124		0.372	8	0.018	0.013	0.125	0.1875	2.743	1.642	0.16	1.76	0.372
SL#6	0.072	4.5	0.324	6	0.0567	0.013	0.079	0.158	3.626	2.737	0.132	1.43	0.324
SL#7	0.196		0.696	8	0.018	0.013	0.156	0.234	3.137	1.665	0.203	1.76	0.696
SL#8	0.23	3	0.69	12	0.0025	0.013	0.243	0.243	1.562	0.664	0.197	1.91	0.69
SL#9	0.008	3	0.024	6	0.01	0.013	0.042	0.084	1.022	1.07	0.043	0.6	0.024
SL#10	0.434		1.41	12	0.0074	0.013	0.254	0.254	2.76	1.145	0.272	3.29	1.41
SL#11	0.007	3	0.021	6	0.01	0.013	0.039	0.078	0.981	1.061	0.04	0.6	0.021
SL#12	0.149	3	0.447	8	0.0038	0.013	0.202	0.303	1.665	0.769	0.176	0.81	0.447
SL#13	0.156	3	0.468	8	0.0038	0.013	0.207	0.3105	1.687	0.769	0.181	0.81	0.468

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Monday, October 14, 2019

Project Units: U.S. Customary Units

Notes:

Channel Analysis: SL#1

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0380 ft/ft

Manning's n: 0.0130

Flow: 0.1100 cfs

Result Parameters

Depth: 0.1071 ft

Area of Flow: 0.0308 ft^2

Wetted Perimeter: 0.4811 ft

Hydraulic Radius: 0.0641 ft

Average Velocity: 3.5683 ft/s

Top Width: 0.4102 ft

Froude Number: 2.2939

Critical Depth: 0.1641 ft

Critical Velocity: 1.9619 ft/s

Critical Slope: 0.0071 ft/ft

Critical Top Width: 0.47 ft

Calculated Max Shear Stress: 0.2539 lb/ft^2

Calculated Avg Shear Stress: 0.1519 lb/ft^2

Channel Analysis: SL#2

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0180 ft/ft

Manning's n: 0.0130

Flow: 0.1100 cfs

Result Parameters

Depth: 0.1174 ft

Area of Flow: 0.0415 ft^2

Wetted Perimeter: 0.5788 ft

Hydraulic Radius: 0.0718 ft

Average Velocity: 2.6484 ft/s

Top Width: 0.5095 ft

Froude Number: 1.6346

Critical Depth: 0.1510 ft

Critical Velocity: 1.8486 ft/s

Critical Slope: 0.0065 ft/ft

Critical Top Width: 0.56 ft

Calculated Max Shear Stress: 0.1319 lb/ft^2

Calculated Avg Shear Stress: 0.0806 lb/ft^2

Channel Analysis: SL#3

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0070 cfs

Result Parameters

Depth: 0.0392 ft

Area of Flow: 0.0071 ft^2

Wetted Perimeter: 0.2837 ft

Hydraulic Radius: 0.0251 ft

Average Velocity: 0.9813 ft/s

Top Width: 0.2687 ft

Froude Number: 1.0613

Critical Depth: 0.0403 ft

Critical Velocity: 0.9393 ft/s

Critical Slope: 0.0088 ft/ft

Critical Top Width: 0.27 ft

Calculated Max Shear Stress: 0.0244 lb/ft^2

Calculated Avg Shear Stress: 0.0157 lb/ft^2

Channel Analysis: SL#4

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0074 cfs

Result Parameters

Depth: 0.0403 ft

Area of Flow: 0.0074 ft^2

Wetted Perimeter: 0.2877 ft

Hydraulic Radius: 0.0258 ft

Average Velocity: 0.9988 ft/s

Top Width: 0.2721 ft

Froude Number: 1.0652

Critical Depth: 0.0416 ft

Critical Velocity: 0.9529 ft/s

Critical Slope: 0.0087 ft/ft

Critical Top Width: 0.28 ft

Calculated Max Shear Stress: 0.0251 lb/ft^2

Calculated Avg Shear Stress: 0.0161 lb/ft^2

Channel Analysis: SL#5

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0180 ft/ft

Manning's n: 0.0130

Flow: 0.1240 cfs

Result Parameters

Depth: 0.1245 ft

Area of Flow: 0.0452 ft^2

Wetted Perimeter: 0.5973 ft

Hydraulic Radius: 0.0757 ft

Average Velocity: 2.7434 ft/s

Top Width: 0.5213 ft

Froude Number: 1.6419

Critical Depth: 0.1605 ft

Critical Velocity: 1.9114 ft/s

Critical Slope: 0.0065 ft/ft

Critical Top Width: 0.57 ft

Calculated Max Shear Stress: 0.1399 lb/ft^2

Calculated Avg Shear Stress: 0.0850 lb/ft^2

Channel Analysis: SL#6

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0567 ft/ft

Manning's n: 0.0130

Flow: 0.0720 cfs

Result Parameters

Depth: 0.0788 ft

Area of Flow: 0.0199 ft^2

Wetted Perimeter: 0.4084 ft

Hydraulic Radius: 0.0486 ft

Average Velocity: 3.6258 ft/s

Top Width: 0.3645 ft

Froude Number: 2.7374

Critical Depth: 0.1318 ft

Critical Velocity: 1.7403 ft/s

Critical Slope: 0.0071 ft/ft

Critical Top Width: 0.44 ft

Calculated Max Shear Stress: 0.2790 lb/ft^2

Calculated Avg Shear Stress: 0.1720 lb/ft^2

Channel Analysis: SL#7

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0180 ft/ft

Manning's n: 0.0130

Flow: 0.1960 cfs

Result Parameters

Depth: 0.1563 ft

Area of Flow: 0.0625 ft^2

Wetted Perimeter: 0.6754 ft

Hydraulic Radius: 0.0925 ft

Average Velocity: 3.1371 ft/s

Top Width: 0.5667 ft

Froude Number: 1.6650

Critical Depth: 0.2032 ft

Critical Velocity: 2.1709 ft/s

Critical Slope: 0.0064 ft/ft

Critical Top Width: 0.62 ft

Calculated Max Shear Stress: 0.1755 lb/ft^2

Calculated Avg Shear Stress: 0.1039 lb/ft^2

Channel Analysis: SL#8

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 1.0000 ft

Longitudinal Slope: 0.0025 ft/ft

Manning's n: 0.0130

Flow: 0.2300 cfs

Result Parameters

Depth: 0.2427 ft

Area of Flow: 0.1472 ft^2

Wetted Perimeter: 1.0302 ft

Hydraulic Radius: 0.1429 ft

Average Velocity: 1.5622 ft/s

Top Width: 0.8574 ft

Froude Number: 0.6644

Critical Depth: 0.1968 ft

Critical Velocity: 2.1052 ft/s

Critical Slope: 0.0058 ft/ft

Critical Top Width: 0.80 ft

Calculated Max Shear Stress: 0.0379 lb/ft^2

Calculated Avg Shear Stress: 0.0223 lb/ft^2

Channel Analysis: SL#9

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0080 cfs

Result Parameters

Depth: 0.0417 ft

Area of Flow: 0.0078 ft^2

Wetted Perimeter: 0.2930 ft

Hydraulic Radius: 0.0267 ft

Average Velocity: 1.0218 ft/s

Top Width: 0.2765 ft

Froude Number: 1.0702

Critical Depth: 0.0432 ft

Critical Velocity: 0.9722 ft/s

Critical Slope: 0.0087 ft/ft

Critical Top Width: 0.28 ft

Calculated Max Shear Stress: 0.0260 lb/ft^2

Calculated Avg Shear Stress: 0.0167 lb/ft^2

Channel Analysis: SL#10

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 1.0000 ft

Longitudinal Slope: 0.0074 ft/ft

Manning's n: 0.0130

Flow: 0.4340 cfs

Result Parameters

Depth: 0.2542 ft

Area of Flow: 0.1572 ft^2

Wetted Perimeter: 1.0569 ft

Hydraulic Radius: 0.1487 ft

Average Velocity: 2.7605 ft/s

Top Width: 0.8709 ft

Froude Number: 1.1449

Critical Depth: 0.2725 ft

Critical Velocity: 2.5046 ft/s

Critical Slope: 0.0056 ft/ft

Critical Top Width: 0.89 ft

Calculated Max Shear Stress: 0.1174 lb/ft^2

Calculated Avg Shear Stress: 0.0687 lb/ft^2

Channel Analysis: SL#11

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0070 cfs

Result Parameters

Depth: 0.0392 ft

Area of Flow: 0.0071 ft^2

Wetted Perimeter: 0.2837 ft

Hydraulic Radius: 0.0251 ft

Average Velocity: 0.9813 ft/s

Top Width: 0.2687 ft

Froude Number: 1.0613

Critical Depth: 0.0403 ft

Critical Velocity: 0.9393 ft/s

Critical Slope: 0.0088 ft/ft

Critical Top Width: 0.27 ft

Calculated Max Shear Stress: 0.0244 lb/ft^2

Calculated Avg Shear Stress: 0.0157 lb/ft^2

Channel Analysis: SL#12

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0038 ft/ft

Manning's n: 0.0130

Flow: 0.1490 cfs

Result Parameters

Depth: 0.2018 ft

Area of Flow: 0.0895 ft^2

Wetted Perimeter: 0.7785 ft

Hydraulic Radius: 0.1149 ft

Average Velocity: 1.6654 ft/s

Top Width: 0.6148 ft

Froude Number: 0.7693

Critical Depth: 0.1763 ft

Critical Velocity: 2.0109 ft/s

Critical Slope: 0.0064 ft/ft

Critical Top Width: 0.59 ft

Calculated Max Shear Stress: 0.0479 lb/ft^2

Calculated Avg Shear Stress: 0.0272 lb/ft^2

Channel Analysis: SL#13

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0038 ft/ft

Manning's n: 0.0130

Flow: 0.1560 cfs

Result Parameters

Depth: 0.2067 ft

Area of Flow: 0.0925 ft^2

Wetted Perimeter: 0.7891 ft

Hydraulic Radius: 0.1172 ft

Average Velocity: 1.6871 ft/s

Top Width: 0.6189 ft

Froude Number: 0.7692

Critical Depth: 0.1806 ft

Critical Velocity: 2.0361 ft/s

Critical Slope: 0.0064 ft/ft

Critical Top Width: 0.59 ft

Calculated Max Shear Stress: 0.0490 lb/ft^2

Calculated Avg Shear Stress: 0.0278 lb/ft^2

Project: Master On-Site Wastewater Plan for One Scottsdale (Stacked 40s)
Location: Scottsdale, Arizona
Date: February 10, 2012

Proj. Number: 021584.04
Proj. Engineer: SAA

UPSTREAM NODE	DOWNSTREAM NODE	MAX DAY FLOW (GPD)	PIPE DIA. (IN.)	PIPE SLOPE (FT / FT)	d/D RATIO	FULL FLOW VELOCITY (FPS)	PIPE CAPACITY (GPD)	SURPLUS CAPACITY (GPD)	PERCENT OF CAPACITY
A4	A2	59,239	8	0.00550	21.6%	2.6	580,390	521,152	10.2%
A3	A2	2,500	8	0.00550	4.8%	2.6	580,390	577,890	0.4%
A2	**A1 (OUTFALL # 1)**	**177,599**	**8**	**0.00550**	**38.0%**	**2.6**	**580,390**	**402,792**	**30.6%**
B5	B4	70,447	8	0.00550	23.6%	2.6	580,390	509,943	12.1%
B4	B3	167,199	8	0.00550	36.8%	2.6	580,390	413,192	28.8%
B3	B2	696,129	12	0.00300	53.0%	2.5	1,263,964	567,835	55.1%
B2	**B1 (OUTFALL #2)**	**846,895**	**12**	**0.00300**	**59.9%**	**2.5**	**1,263,964**	**417,069**	**67.0%**
C5	C4	98,037	8	0.00550	27.8%	2.6	580,390	482,353	16.9%
C4	C3	124,451	8	0.00550	31.5%	2.6	580,390	455,939	21.4%
C3	C2	275,553	10	0.00430	37.3%	2.6	930,533	654,980	29.6%
C2	**C1 (OUTFALL #3)**	**402,421**	**10**	**0.00430**	**46.0%**	**2.6**	**930,533**	**528,112**	**43.2%**
D3	D2	135,780	8	0.00550	32.9%	2.6	580,390	444,610	23.4%
D2	**D1 (OUTFALL #4)**	**566,463**	**10**	**0.00430**	**56.4%**	**2.6**	**930,533**	**364,071**	**60.9%**
E4	E3	881,109	12	0.00310	60.8%	2.5	1,284,858	403,748	68.6%
E10	E9	50,109	8	0.00550	19.9%	2.6	580,390	530,281	8.6%
E9	E3	144,219	8	0.00550	34.0%	2.6	580,390	436,172	24.8%
E3	E2	1,025,837	12	0.00360	64.1%	2.7	1,384,603	358,766	74.1%
E6	E5	62,109	8	0.00550	22.1%	2.6	580,390	518,281	10.7%
E8	E7	60,509	8	0.00550	21.8%	2.6	580,390	519,881	10.4%
E7	E5	74,585	8	0.00550	24.2%	2.6	580,390	505,806	12.9%
E5	E2	138,659	8	0.00550	33.3%	2.6	580,390	441,731	23.9%
E2	**E1 (OUTFALL #5)**	**1,165,005**	**12**	**0.00310**	**74.6%**	**2.5**	**1,284,858**	**119,852**	**90.7%**
F14	F13	43,189	8	0.00550	18.5%	2.6	580,390	537,201	7.4%
F13	F12	103,699	8	0.00550	28.7%	2.6	580,390	476,692	17.9%
F12	F11	120,208	8	0.00550	30.9%	2.6	580,390	460,182	20.7%
F17	F16	54,109	8	0.00550	20.7%	2.6	580,390	526,281	9.3%
F16	F15	108,219	8	0.00550	29.3%	2.6	580,390	472,172	18.6%
F15	F11	162,328	8	0.00550	36.2%	2.6	580,390	418,062	28.0%
F11	F10	299,045	8	0.00550	50.9%	2.6	580,390	281,345	51.5%
F10	F9	315,554	10	0.00430	40.1%	2.6	930,533	614,979	33.9%
F19	F18	43,709	8	0.00550	18.6%	2.6	580,390	536,681	7.5%
F18	F9	85,819	8	0.00550	26.0%	2.6	580,390	494,572	14.8%
F9	F8	401,882	10	0.00430	46.0%	2.6	930,533	528,652	43.2%
F8	F2	409,174	10	0.00430	46.4%	2.6	930,533	521,359	44.0%
F5	F4	45,182	8	0.00550	18.9%	2.6	580,390	535,208	7.8%
F4	F3	45,691	8	0.00550	19.0%	2.6	580,390	534,699	7.9%
F6	F3	45,182	8	0.00550	18.9%	2.6	580,390	535,208	7.8%
F3	F2	91,383	8	0.00550	26.8%	2.6	580,390	489,007	15.7%
F7	F2	22,816	8	0.00550	13.6%	2.6	580,390	557,544	3.9%
F2	**F1 (OUTFALL #6)**	**446,145**	**10**	**0.00430**	**48.8%**	**2.6**	**930,533**	**484,389**	**47.9%**

→ 0.69 cfs

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

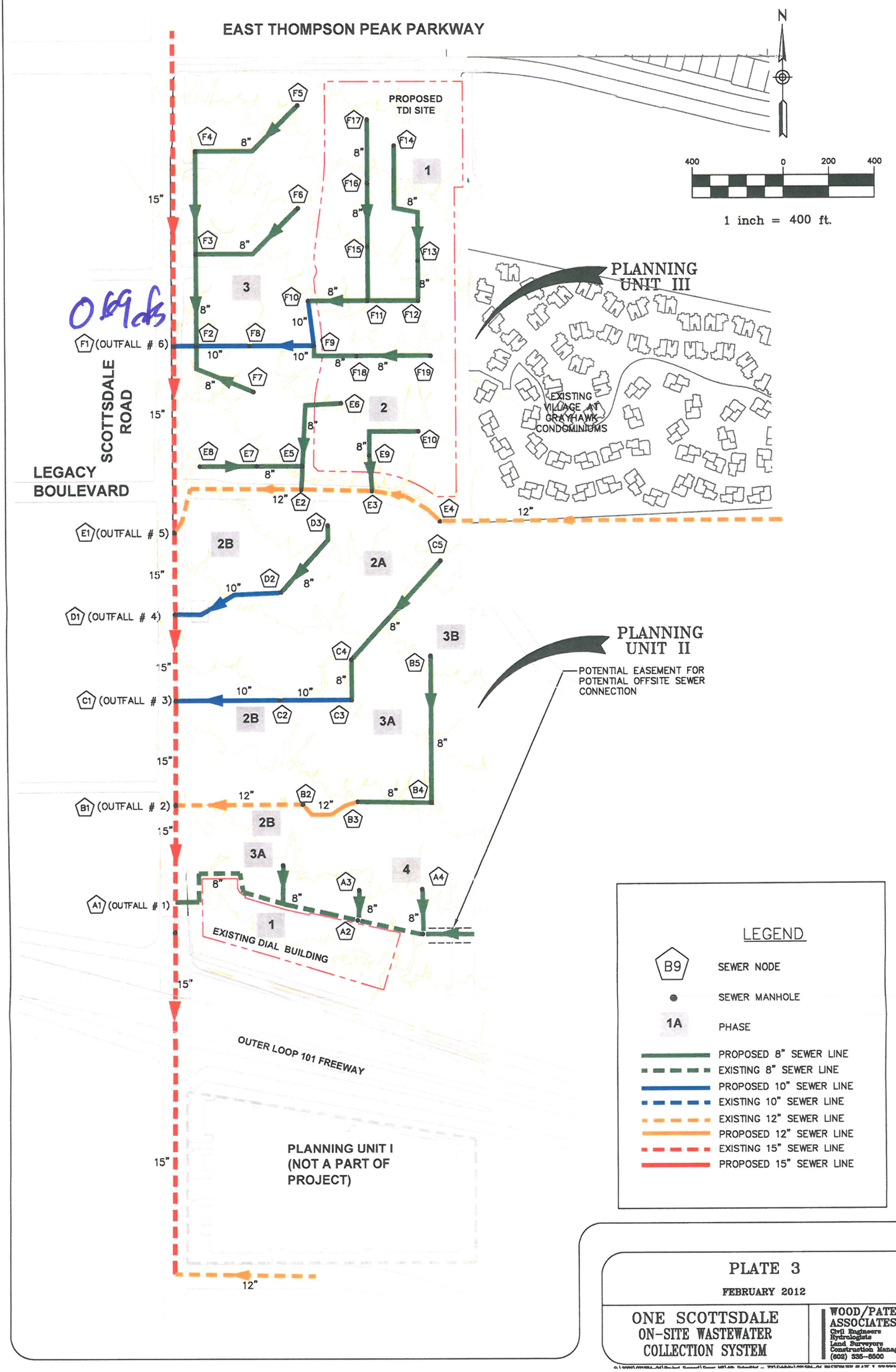


PLATE 3

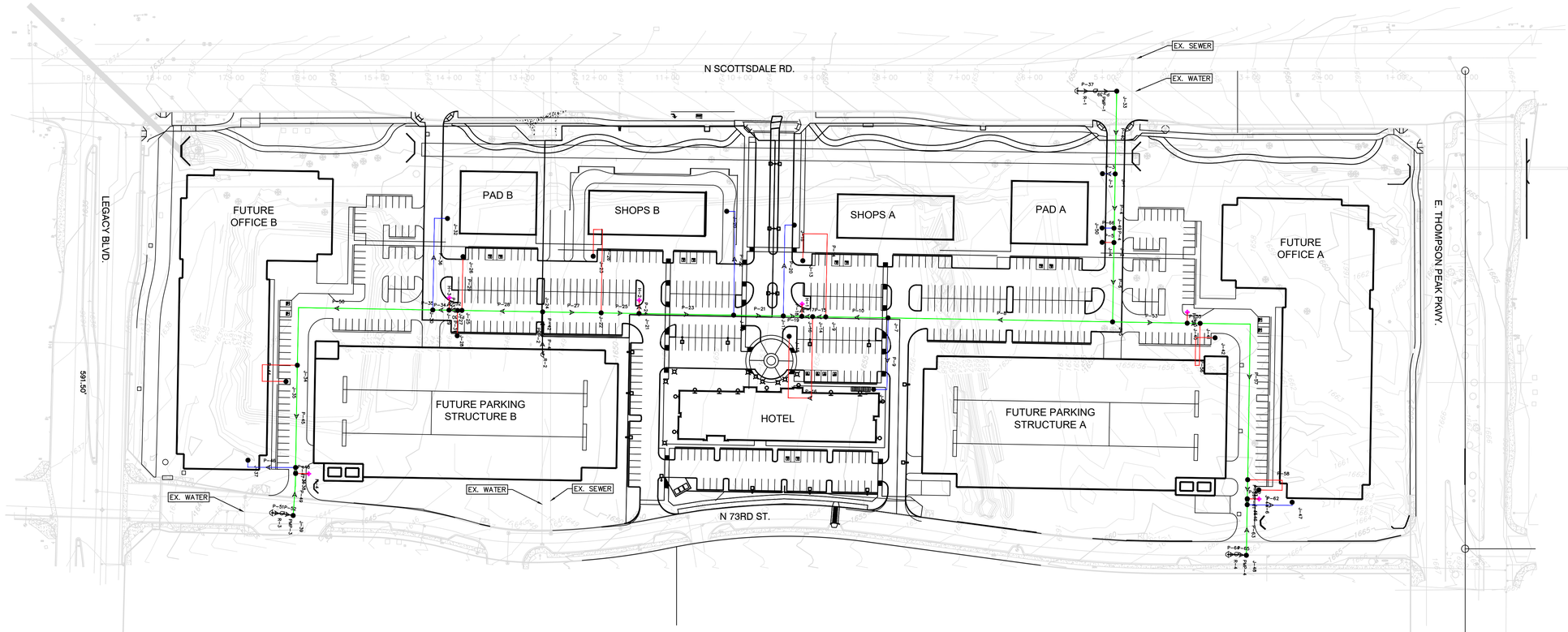
FEBRUARY 2012

ONE SCOTTSDALE
ON-SITE WASTEWATER
COLLECTION SYSTEM

WOOD/PATEL
ASSOCIATES
Civil Engineers
Hydrologists
Land Surveyors
Construction Managers
(602) 335-8500

APPENDIX E

Water Model Calculations & Exhibit



NORTH

SCALE IN FEET

0 80 160

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
23980
JEFFREY S. ERICKSON
Date Signed 12/23/19
ARIZONA, U.S.A.
Expires 09/30/20

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 - 877.231.2324 - Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE - PHASE 1
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

WATER EXHIBIT-OVERALL

DATE:	December 23, 2019
DRAWN BY:	BB
CHECKED BY:	KE
DWG SCALE:	
PROJECT NO.:	180-168
APPROVED BY:	JSE

DRAWING NO.:

EX-1

SHEET 1 OF 1

Overall
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.87	71
H-2	Open	1,000.00	0	1,164.87	71
H-3	Open	1,000.00	0	1,164.85	71
H-4	Open	1,000.00	0	1,164.79	71
H-5	Open	1,000.00	0	1,164.91	71
H-6	Open	1,000.00	0	1,164.90	71

Overall
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.97	71
J-2	1,000.00	0	1,164.94	71
J-3	1,000.00	10	1,164.92	71
J-4	1,000.00	0	1,164.94	71
J-5	1,000.00	0	1,164.91	71
J-7	1,000.00	0	1,164.87	71
J-8	1,000.00	77	1,162.64	70
J-9	1,000.00	0	1,164.87	71
J-13	1,000.00	0	1,164.87	71
J-14	1,000.00	0	1,164.87	71
J-15	1,000.00	0	1,164.87	71
J-16	1,000.00	0	1,164.87	71
J-17	1,000.00	0	1,164.87	71
J-18	1,000.00	11	1,164.39	71
J-19	1,000.00	0	1,164.87	71
J-20	1,000.00	19	1,163.24	71
J-21	1,000.00	0	1,164.87	71
J-22	1,000.00	0	1,164.87	71
J-23	1,000.00	0	1,164.87	71
J-24	1,000.00	0	1,164.88	71
J-25	1,000.00	0	1,164.86	71
J-26	1,000.00	0	1,164.86	71
J-27	1,000.00	0	1,164.85	71
J-28	1,000.00	0	1,164.85	71
J-29	1,000.00	0	1,164.85	71
J-30	1,000.00	0	1,164.85	71
J-32	1,000.00	10	1,164.40	71
J-33	1,000.00	0	1,165.01	71
J-34	1,000.00	0	1,164.81	71
J-35	1,000.00	0	1,164.81	71
J-36	1,000.00	0	1,164.78	71
J-37	1,036.00	200	1,156.45	52
J-38	1,000.00	0	1,164.79	71
J-39	1,000.00	0	1,164.81	71
J-40	1,000.00	0	1,164.91	71
J-41	1,000.00	0	1,164.91	71
J-42	1,000.00	0	1,164.91	71
J-43	1,000.00	0	1,164.90	71
J-44	1,000.00	0	1,164.90	71
J-45	1,000.00	0	1,164.90	71
J-46	1,000.00	0	1,164.90	71
J-47	1,000.00	150	1,160.61	69
J-48	1,000.00	0	1,164.92	71
J-49	1,000.00	0	1,164.95	71
J-50	1,000.00	0	1,164.95	71

Overall
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	10	1.02
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	105	0.67
309	J-5	J-7	8.0	Ductile Iron	130.0	73	0.47
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-4	0.03
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-4	0.03
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-4	0.03
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-4	0.03
138	J-17	J-18	2.0	Ductile Iron	130.0	11	1.09
68	J-17	J-19	8.0	Ductile Iron	130.0	-15	0.09
155	J-19	J-20	2.0	Ductile Iron	130.0	19	1.98
130	J-19	J-21	8.0	Ductile Iron	130.0	-34	0.22
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-34	0.22
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-34	0.22
111	J-24	J-25	8.0	Ductile Iron	130.0	86	0.55
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	86	0.55
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	86	0.55
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	86	0.55
144	J-30	J-32	2.0	Ductile Iron	130.0	10	1.02
26	R-1	PMP-1	120.0	Ductile Iron	130.0	115	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	115	0.33
114	J-33	J-1	8.0	Ductile Iron	130.0	115	0.73
29	R-2	PMP-2	120.0	Ductile Iron	130.0	121	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	121	0.34
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	76	0.49
76	J-36	J-37	3.0	Ductile Iron	130.0	200	9.08
8	J-36	J-38	8.0	Ductile Iron	130.0	-124	0.79
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-124	0.79
264	J-34	J-30	8.0	Ductile Iron	130.0	-76	0.49
15	R-3	PMP-3	120.0	Ductile Iron	130.0	124	0.00
15	PMP-3	J-39	12.0	Ductile Iron	130.0	124	0.35
103	J-5	J-40	8.0	Ductile Iron	130.0	32	0.20
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	32	0.20
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	32	0.20
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	32	0.20
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	32	0.20
66	J-46	J-47	3.0	Ductile Iron	130.0	150	6.81
70	J-46	J-48	8.0	Ductile Iron	130.0	-119	0.76
13	R-4	PMP-4	120.0	Ductile Iron	130.0	119	0.00
14	PMP-4	J-48	12.0	Ductile Iron	130.0	119	0.34
76	J-1	J-49	8.0	Ductile Iron	130.0	105	0.67
19	J-49	J-2	8.0	Ductile Iron	130.0	105	0.67
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,165.01	115	164.01
PMP-2	1,001.00	On	1,001.00	1,164.88	121	163.88
PMP-3	1,001.00	On	1,001.00	1,164.81	124	163.81
PMP-4	1,001.00	On	1,001.00	1,164.92	119	163.92

Overall
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	115	1,001.00
R-2	1,001.00	121	1,001.00
R-3	1,001.00	124	1,001.00
R-4	1,001.00	119	1,001.00

Overall
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	10	1.02
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	105	0.67
309	J-5	J-7	8.0	Ductile Iron	130.0	73	0.47
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-4	0.03
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-4	0.03
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-4	0.03
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-4	0.03
138	J-17	J-18	2.0	Ductile Iron	130.0	11	1.09
68	J-17	J-19	8.0	Ductile Iron	130.0	-15	0.09
155	J-19	J-20	2.0	Ductile Iron	130.0	19	1.98
130	J-19	J-21	8.0	Ductile Iron	130.0	-34	0.22
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-34	0.22
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-34	0.22
111	J-24	J-25	8.0	Ductile Iron	130.0	86	0.55
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	86	0.55
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	86	0.55
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	86	0.55
144	J-30	J-32	2.0	Ductile Iron	130.0	10	1.02
26	R-1	PMP-1	120.0	Ductile Iron	130.0	115	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	115	0.33
114	J-33	J-1	8.0	Ductile Iron	130.0	115	0.73
29	R-2	PMP-2	120.0	Ductile Iron	130.0	121	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	121	0.34
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	76	0.49
76	J-36	J-37	3.0	Ductile Iron	130.0	200	9.08
8	J-36	J-38	8.0	Ductile Iron	130.0	-124	0.79
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-124	0.79
264	J-34	J-30	8.0	Ductile Iron	130.0	-76	0.49
15	R-3	PMP-3	120.0	Ductile Iron	130.0	124	0.00
15	PMP-3	J-39	12.0	Ductile Iron	130.0	124	0.35
103	J-5	J-40	8.0	Ductile Iron	130.0	32	0.20
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	32	0.20
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	32	0.20
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	32	0.20
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	32	0.20
66	J-46	J-47	3.0	Ductile Iron	130.0	150	6.81
70	J-46	J-48	8.0	Ductile Iron	130.0	-119	0.76
13	R-4	PMP-4	120.0	Ductile Iron	130.0	119	0.00
14	PMP-4	J-48	12.0	Ductile Iron	130.0	119	0.34
76	J-1	J-49	8.0	Ductile Iron	130.0	105	0.67
19	J-49	J-2	8.0	Ductile Iron	130.0	105	0.67
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.97	71
J-2	1,000.00	0	1,164.94	71
J-3	1,000.00	10	1,164.92	71
J-4	1,000.00	0	1,164.94	71
J-5	1,000.00	0	1,164.91	71
J-7	1,000.00	0	1,164.87	71
J-8	1,000.00	77	1,162.64	70
J-9	1,000.00	0	1,164.87	71
J-13	1,000.00	0	1,164.87	71
J-14	1,000.00	0	1,164.87	71
J-15	1,000.00	0	1,164.87	71
J-16	1,000.00	0	1,164.87	71
J-17	1,000.00	0	1,164.87	71
J-18	1,000.00	11	1,164.39	71
J-19	1,000.00	0	1,164.87	71
J-20	1,000.00	19	1,163.24	71
J-21	1,000.00	0	1,164.87	71
J-22	1,000.00	0	1,164.87	71
J-23	1,000.00	0	1,164.87	71
J-24	1,000.00	0	1,164.88	71
J-25	1,000.00	0	1,164.86	71
J-26	1,000.00	0	1,164.86	71
J-27	1,000.00	0	1,164.85	71
J-28	1,000.00	0	1,164.85	71
J-29	1,000.00	0	1,164.85	71
J-30	1,000.00	0	1,164.85	71
J-32	1,000.00	10	1,164.40	71
J-33	1,000.00	0	1,165.01	71
J-34	1,000.00	0	1,164.81	71
J-35	1,000.00	0	1,164.81	71
J-36	1,000.00	0	1,164.78	71
J-37	1,036.00	200	1,156.45	52
J-38	1,000.00	0	1,164.79	71
J-39	1,000.00	0	1,164.81	71
J-40	1,000.00	0	1,164.91	71
J-41	1,000.00	0	1,164.91	71
J-42	1,000.00	0	1,164.91	71
J-43	1,000.00	0	1,164.90	71
J-44	1,000.00	0	1,164.90	71
J-45	1,000.00	0	1,164.90	71
J-46	1,000.00	0	1,164.90	71
J-47	1,000.00	150	1,160.61	69
J-48	1,000.00	0	1,164.92	71
J-49	1,000.00	0	1,164.95	71
J-50	1,000.00	0	1,164.95	71

Overall
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.87	71
H-2	Open	1,000.00	0	1,164.87	71
H-3	Open	1,000.00	0	1,164.85	71
H-4	Open	1,000.00	0	1,164.79	71
H-5	Open	1,000.00	0	1,164.91	71
H-6	Open	1,000.00	0	1,164.90	71

Overall
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	115	1,001.00
R-2	1,001.00	121	1,001.00
R-3	1,001.00	124	1,001.00
R-4	1,001.00	119	1,001.00

Overall
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,165.01	115	164.01
PMP-2	1,001.00	On	1,001.00	1,164.88	121	163.88
PMP-3	1,001.00	On	1,001.00	1,164.81	124	163.81
PMP-4	1,001.00	On	1,001.00	1,164.92	119	163.92

Overall
Max Day + FF

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,154.83	67
J-2	1,000.00	0	1,154.33	67
J-3	1,000.00	0	1,154.83	67
J-4	1,000.00	0	1,154.33	67
J-5	1,000.00	0	1,153.79	67
J-7	1,000.00	0	1,150.63	65
J-8	1,000.00	155	1,142.58	62
J-9	1,000.00	0	1,150.06	65
J-13	1,000.00	0	1,150.06	65
J-14	1,000.00	0	1,149.94	65
J-15	1,000.00	0	1,149.94	65
J-16	1,000.00	0	1,149.84	65
J-17	1,000.00	0	1,149.68	65
J-18	1,000.00	21	1,147.94	64
J-19	1,000.00	0	1,149.26	65
J-20	1,000.00	39	1,143.39	62
J-21	1,000.00	0	1,148.56	64
J-22	1,000.00	0	1,148.28	64
J-23	1,000.00	0	1,148.28	64
J-24	1,000.00	0	1,147.84	64
J-25	1,000.00	0	1,144.44	62
J-26	1,000.00	0	1,144.44	62
J-27	1,000.00	0	1,144.26	62
J-28	1,000.00	0	1,144.26	62
J-29	1,000.00	0	1,143.90	62
J-30	1,000.00	0	1,143.61	62
J-32	1,000.00	20	1,142.00	61
J-33	1,000.00	0	1,155.43	67
J-34	1,000.00	0	1,140.41	61
J-35	1,000.00	0	1,140.41	61
J-36	1,000.00	0	1,138.71	60
J-37	1,036.00	400	1,108.63	31
J-38	1,000.00	0	1,138.68	60
J-39	1,000.00	0	1,139.94	61
J-40	1,000.00	0	1,153.93	67
J-41	1,000.00	0	1,153.95	67
J-42	1,000.00	0	1,153.95	67
J-43	1,000.00	0	1,154.31	67
J-44	1,000.00	0	1,154.31	67
J-45	1,000.00	0	1,154.35	67
J-46	1,000.00	0	1,154.36	67
J-47	1,000.00	300	1,138.87	60
J-48	1,000.00	0	1,154.76	67
J-49	1,000.00	0	1,154.42	67
J-50	1,000.00	20	1,154.24	67

Overall
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	493	3.14
309	J-5	J-7	8.0	Ductile Iron	130.0	732	4.67
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	577	3.68
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	577	3.68
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	577	3.68
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	577	3.68
138	J-17	J-18	2.0	Ductile Iron	130.0	21	2.18
68	J-17	J-19	8.0	Ductile Iron	130.0	555	3.54
155	J-19	J-20	2.0	Ductile Iron	130.0	39	3.96
130	J-19	J-21	8.0	Ductile Iron	130.0	516	3.30
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	516	3.30
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	516	3.30
111	J-24	J-25	8.0	Ductile Iron	130.0	1,321	8.43
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	1,321	8.43
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	1,321	8.43
17	J-29	H-3	6.0	Ductile Iron	130.0	500	5.67
22	J-29	J-30	8.0	Ductile Iron	130.0	821	5.24
144	J-30	J-32	2.0	Ductile Iron	130.0	20	2.04
26	R-1	PMP-1	120.0	Ductile Iron	130.0	513	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	513	1.45
114	J-33	J-1	8.0	Ductile Iron	130.0	513	3.27
29	R-2	PMP-2	120.0	Ductile Iron	130.0	804	0.02
30	PMP-2	J-24	12.0	Ductile Iron	130.0	804	2.28
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	801	5.11
76	J-36	J-37	3.0	Ductile Iron	130.0	400	18.17
8	J-36	J-38	8.0	Ductile Iron	130.0	401	2.56
18	J-38	H-4	6.0	Ductile Iron	130.0	1,500	17.02
58	J-38	J-39	8.0	Ductile Iron	130.0	-1,099	7.02
264	J-34	J-30	8.0	Ductile Iron	130.0	-801	5.11
15	R-3	PMP-3	120.0	Ductile Iron	130.0	1,099	0.03
15	PMP-3	J-39	12.0	Ductile Iron	130.0	1,099	3.12
103	J-5	J-40	8.0	Ductile Iron	130.0	-239	1.53
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	-239	1.53
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	-239	1.53
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	-239	1.53
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	-239	1.53
66	J-46	J-47	3.0	Ductile Iron	130.0	300	13.63
70	J-46	J-48	8.0	Ductile Iron	130.0	-539	3.44
13	R-4	PMP-4	120.0	Ductile Iron	130.0	539	0.02
14	PMP-4	J-48	12.0	Ductile Iron	130.0	539	1.53
76	J-1	J-49	8.0	Ductile Iron	130.0	513	3.27
19	J-49	J-2	8.0	Ductile Iron	130.0	493	3.14
17	J-49	J-50	2.0	Ductile Iron	130.0	20	2.04

Overall
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,149.84	65
H-2	Open	1,000.00	0	1,148.56	64
H-3	Open	1,000.00	500	1,143.55	62
H-4	Open	1,000.00	1,500	1,135.85	59
H-5	Open	1,000.00	0	1,153.93	67
H-6	Open	1,000.00	0	1,154.35	67

Overall
Max Day + FF

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	513	1,001.00
R-2	1,001.00	804	1,001.00
R-3	1,001.00	1,099	1,001.00
R-4	1,001.00	539	1,001.00

Overall
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,155.45	513	154.45
PMP-2	1,001.00	On	1,001.00	1,147.89	804	146.89
PMP-3	1,001.00	On	1,001.00	1,139.99	1,099	138.99
PMP-4	1,001.00	On	1,001.00	1,154.78	539	153.78

Overall
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,149.84	65
H-2	Open	1,000.00	0	1,148.56	64
H-3	Open	1,000.00	500	1,143.55	62
H-4	Open	1,000.00	1,500	1,135.85	59
H-5	Open	1,000.00	0	1,153.93	67
H-6	Open	1,000.00	0	1,154.35	67

Overall
Max Day + FF

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,154.83	67
J-2	1,000.00	0	1,154.33	67
J-3	1,000.00	0	1,154.83	67
J-4	1,000.00	0	1,154.33	67
J-5	1,000.00	0	1,153.79	67
J-7	1,000.00	0	1,150.63	65
J-8	1,000.00	155	1,142.58	62
J-9	1,000.00	0	1,150.06	65
J-13	1,000.00	0	1,150.06	65
J-14	1,000.00	0	1,149.94	65
J-15	1,000.00	0	1,149.94	65
J-16	1,000.00	0	1,149.84	65
J-17	1,000.00	0	1,149.68	65
J-18	1,000.00	21	1,147.94	64
J-19	1,000.00	0	1,149.26	65
J-20	1,000.00	39	1,143.39	62
J-21	1,000.00	0	1,148.56	64
J-22	1,000.00	0	1,148.28	64
J-23	1,000.00	0	1,148.28	64
J-24	1,000.00	0	1,147.84	64
J-25	1,000.00	0	1,144.44	62
J-26	1,000.00	0	1,144.44	62
J-27	1,000.00	0	1,144.26	62
J-28	1,000.00	0	1,144.26	62
J-29	1,000.00	0	1,143.90	62
J-30	1,000.00	0	1,143.61	62
J-32	1,000.00	20	1,142.00	61
J-33	1,000.00	0	1,155.43	67
J-34	1,000.00	0	1,140.41	61
J-35	1,000.00	0	1,140.41	61
J-36	1,000.00	0	1,138.71	60
J-37	1,036.00	400	1,108.63	31
J-38	1,000.00	0	1,138.68	60
J-39	1,000.00	0	1,139.94	61
J-40	1,000.00	0	1,153.93	67
J-41	1,000.00	0	1,153.95	67
J-42	1,000.00	0	1,153.95	67
J-43	1,000.00	0	1,154.31	67
J-44	1,000.00	0	1,154.31	67
J-45	1,000.00	0	1,154.35	67
J-46	1,000.00	0	1,154.36	67
J-47	1,000.00	300	1,138.87	60
J-48	1,000.00	0	1,154.76	67
J-49	1,000.00	0	1,154.42	67
J-50	1,000.00	20	1,154.24	67

Overall
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	493	3.14
309	J-5	J-7	8.0	Ductile Iron	130.0	732	4.67
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	577	3.68
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	577	3.68
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	577	3.68
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	577	3.68
138	J-17	J-18	2.0	Ductile Iron	130.0	21	2.18
68	J-17	J-19	8.0	Ductile Iron	130.0	555	3.54
155	J-19	J-20	2.0	Ductile Iron	130.0	39	3.96
130	J-19	J-21	8.0	Ductile Iron	130.0	516	3.30
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	516	3.30
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	516	3.30
111	J-24	J-25	8.0	Ductile Iron	130.0	1,321	8.43
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	1,321	8.43
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	1,321	8.43
17	J-29	H-3	6.0	Ductile Iron	130.0	500	5.67
22	J-29	J-30	8.0	Ductile Iron	130.0	821	5.24
144	J-30	J-32	2.0	Ductile Iron	130.0	20	2.04
26	R-1	PMP-1	120.0	Ductile Iron	130.0	513	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	513	1.45
114	J-33	J-1	8.0	Ductile Iron	130.0	513	3.27
29	R-2	PMP-2	120.0	Ductile Iron	130.0	804	0.02
30	PMP-2	J-24	12.0	Ductile Iron	130.0	804	2.28
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	801	5.11
76	J-36	J-37	3.0	Ductile Iron	130.0	400	18.17
8	J-36	J-38	8.0	Ductile Iron	130.0	401	2.56
18	J-38	H-4	6.0	Ductile Iron	130.0	1,500	17.02
58	J-38	J-39	8.0	Ductile Iron	130.0	-1,099	7.02
264	J-34	J-30	8.0	Ductile Iron	130.0	-801	5.11
15	R-3	PMP-3	120.0	Ductile Iron	130.0	1,099	0.03
15	PMP-3	J-39	12.0	Ductile Iron	130.0	1,099	3.12
103	J-5	J-40	8.0	Ductile Iron	130.0	-239	1.53
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	-239	1.53
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	-239	1.53
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	-239	1.53
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	-239	1.53
66	J-46	J-47	3.0	Ductile Iron	130.0	300	13.63
70	J-46	J-48	8.0	Ductile Iron	130.0	-539	3.44
13	R-4	PMP-4	120.0	Ductile Iron	130.0	539	0.02
14	PMP-4	J-48	12.0	Ductile Iron	130.0	539	1.53
76	J-1	J-49	8.0	Ductile Iron	130.0	513	3.27
19	J-49	J-2	8.0	Ductile Iron	130.0	493	3.14
17	J-49	J-50	2.0	Ductile Iron	130.0	20	2.04

Overall
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,155.45	513	154.45
PMP-2	1,001.00	On	1,001.00	1,147.89	804	146.89
PMP-3	1,001.00	On	1,001.00	1,139.99	1,099	138.99
PMP-4	1,001.00	On	1,001.00	1,154.78	539	153.78

Overall
Max Day + FF

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	513	1,001.00
R-2	1,001.00	804	1,001.00
R-3	1,001.00	1,099	1,001.00
R-4	1,001.00	539	1,001.00

Overall
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	35	3.57
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	347	2.22
309	J-5	J-7	8.0	Ductile Iron	130.0	235	1.50
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-36	0.23
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-36	0.23
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-36	0.23
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-36	0.23
138	J-17	J-18	2.0	Ductile Iron	130.0	37	3.81
68	J-17	J-19	8.0	Ductile Iron	130.0	-74	0.47
155	J-19	J-20	2.0	Ductile Iron	130.0	68	6.92
130	J-19	J-21	8.0	Ductile Iron	130.0	-141	0.90
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-141	0.90
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-141	0.90
111	J-24	J-25	8.0	Ductile Iron	130.0	286	1.82
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	286	1.82
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	286	1.82
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	286	1.82
144	J-30	J-32	2.0	Ductile Iron	130.0	35	3.57
26	R-1	PMP-1	120.0	Ductile Iron	130.0	382	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	382	1.08
114	J-33	J-1	8.0	Ductile Iron	130.0	382	2.44
29	R-2	PMP-2	120.0	Ductile Iron	130.0	427	0.01
30	PMP-2	J-24	12.0	Ductile Iron	130.0	427	1.21
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	251	1.60
76	J-36	J-37	3.0	Ductile Iron	130.0	701	31.80
8	J-36	J-38	8.0	Ductile Iron	130.0	-450	2.87
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-450	2.87
264	J-34	J-30	8.0	Ductile Iron	130.0	-251	1.60
15	R-3	PMP-3	120.0	Ductile Iron	130.0	450	0.01
15	PMP-3	J-39	12.0	Ductile Iron	130.0	450	1.28
103	J-5	J-40	8.0	Ductile Iron	130.0	112	0.72
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	112	0.72
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	112	0.72
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	112	0.72
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	112	0.72
66	J-46	J-47	3.0	Ductile Iron	130.0	525	23.85
70	J-46	J-48	8.0	Ductile Iron	130.0	-413	2.64
13	R-4	PMP-4	120.0	Ductile Iron	130.0	413	0.01
14	PMP-4	J-48	12.0	Ductile Iron	130.0	413	1.17
76	J-1	J-49	8.0	Ductile Iron	130.0	347	2.22
19	J-49	J-2	8.0	Ductile Iron	130.0	347	2.22
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,158.35	69
J-2	1,000.00	0	1,158.11	68
J-3	1,000.00	35	1,157.80	68
J-4	1,000.00	0	1,158.11	68
J-5	1,000.00	0	1,157.83	68
J-7	1,000.00	0	1,157.44	68
J-8	1,000.00	271	1,134.74	58
J-9	1,000.00	0	1,157.44	68
J-13	1,000.00	0	1,157.44	68
J-14	1,000.00	0	1,157.44	68
J-15	1,000.00	0	1,157.44	68
J-16	1,000.00	0	1,157.44	68
J-17	1,000.00	0	1,157.45	68
J-18	1,000.00	37	1,152.54	66
J-19	1,000.00	0	1,157.46	68
J-20	1,000.00	68	1,140.91	61
J-21	1,000.00	0	1,157.52	68
J-22	1,000.00	0	1,157.54	68
J-23	1,000.00	0	1,157.54	68
J-24	1,000.00	0	1,157.58	68
J-25	1,000.00	0	1,157.38	68
J-26	1,000.00	0	1,157.38	68
J-27	1,000.00	0	1,157.37	68
J-28	1,000.00	0	1,157.37	68
J-29	1,000.00	0	1,157.35	68
J-30	1,000.00	0	1,157.31	68
J-32	1,000.00	35	1,152.78	66
J-33	1,000.00	0	1,158.70	69
J-34	1,000.00	0	1,156.94	68
J-35	1,000.00	0	1,156.94	68
J-36	1,000.00	0	1,156.74	68
J-37	1,000.00	701	1,071.94	31
J-38	1,000.00	0	1,156.78	68
J-39	1,000.00	0	1,157.02	68
J-40	1,000.00	0	1,157.79	68
J-41	1,000.00	0	1,157.79	68
J-42	1,000.00	0	1,157.79	68
J-43	1,000.00	0	1,157.70	68
J-44	1,000.00	0	1,157.70	68
J-45	1,000.00	0	1,157.69	68
J-46	1,000.00	0	1,157.69	68
J-47	1,000.00	525	1,114.03	49
J-48	1,000.00	0	1,157.93	68
J-49	1,000.00	0	1,158.16	68
J-50	1,000.00	0	1,158.16	68

Overall
Peak Hour Demand

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,157.44	68
H-2	Open	1,000.00	0	1,157.52	68
H-3	Open	1,000.00	0	1,157.35	68
H-4	Open	1,000.00	0	1,156.78	68
H-5	Open	1,000.00	0	1,157.79	68
H-6	Open	1,000.00	0	1,157.69	68

Overall
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	382	1,001.00
R-2	1,001.00	427	1,001.00
R-3	1,001.00	450	1,001.00
R-4	1,001.00	413	1,001.00

Overall
Peak Hour Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,158.71	382	157.71
PMP-2	1,001.00	On	1,001.00	1,157.60	427	156.60
PMP-3	1,001.00	On	1,001.00	1,157.03	450	156.03
PMP-4	1,001.00	On	1,001.00	1,157.94	413	156.94

Overall
Peak Hour Demand

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,157.44	68
H-2	Open	1,000.00	0	1,157.52	68
H-3	Open	1,000.00	0	1,157.35	68
H-4	Open	1,000.00	0	1,156.78	68
H-5	Open	1,000.00	0	1,157.79	68
H-6	Open	1,000.00	0	1,157.69	68

Overall
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,158.35	69
J-2	1,000.00	0	1,158.11	68
J-3	1,000.00	35	1,157.80	68
J-4	1,000.00	0	1,158.11	68
J-5	1,000.00	0	1,157.83	68
J-7	1,000.00	0	1,157.44	68
J-8	1,000.00	271	1,134.74	58
J-9	1,000.00	0	1,157.44	68
J-13	1,000.00	0	1,157.44	68
J-14	1,000.00	0	1,157.44	68
J-15	1,000.00	0	1,157.44	68
J-16	1,000.00	0	1,157.44	68
J-17	1,000.00	0	1,157.45	68
J-18	1,000.00	37	1,152.54	66
J-19	1,000.00	0	1,157.46	68
J-20	1,000.00	68	1,140.91	61
J-21	1,000.00	0	1,157.52	68
J-22	1,000.00	0	1,157.54	68
J-23	1,000.00	0	1,157.54	68
J-24	1,000.00	0	1,157.58	68
J-25	1,000.00	0	1,157.38	68
J-26	1,000.00	0	1,157.38	68
J-27	1,000.00	0	1,157.37	68
J-28	1,000.00	0	1,157.37	68
J-29	1,000.00	0	1,157.35	68
J-30	1,000.00	0	1,157.31	68
J-32	1,000.00	35	1,152.78	66
J-33	1,000.00	0	1,158.70	69
J-34	1,000.00	0	1,156.94	68
J-35	1,000.00	0	1,156.94	68
J-36	1,000.00	0	1,156.74	68
J-37	1,000.00	701	1,071.94	31
J-38	1,000.00	0	1,156.78	68
J-39	1,000.00	0	1,157.02	68
J-40	1,000.00	0	1,157.79	68
J-41	1,000.00	0	1,157.79	68
J-42	1,000.00	0	1,157.79	68
J-43	1,000.00	0	1,157.70	68
J-44	1,000.00	0	1,157.70	68
J-45	1,000.00	0	1,157.69	68
J-46	1,000.00	0	1,157.69	68
J-47	1,000.00	525	1,114.03	49
J-48	1,000.00	0	1,157.93	68
J-49	1,000.00	0	1,158.16	68
J-50	1,000.00	0	1,158.16	68

Overall
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	35	3.57
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	347	2.22
309	J-5	J-7	8.0	Ductile Iron	130.0	235	1.50
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-36	0.23
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-36	0.23
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-36	0.23
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-36	0.23
138	J-17	J-18	2.0	Ductile Iron	130.0	37	3.81
68	J-17	J-19	8.0	Ductile Iron	130.0	-74	0.47
155	J-19	J-20	2.0	Ductile Iron	130.0	68	6.92
130	J-19	J-21	8.0	Ductile Iron	130.0	-141	0.90
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-141	0.90
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-141	0.90
111	J-24	J-25	8.0	Ductile Iron	130.0	286	1.82
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	286	1.82
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	286	1.82
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	286	1.82
144	J-30	J-32	2.0	Ductile Iron	130.0	35	3.57
26	R-1	PMP-1	120.0	Ductile Iron	130.0	382	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	382	1.08
114	J-33	J-1	8.0	Ductile Iron	130.0	382	2.44
29	R-2	PMP-2	120.0	Ductile Iron	130.0	427	0.01
30	PMP-2	J-24	12.0	Ductile Iron	130.0	427	1.21
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	251	1.60
76	J-36	J-37	3.0	Ductile Iron	130.0	701	31.80
8	J-36	J-38	8.0	Ductile Iron	130.0	-450	2.87
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-450	2.87
264	J-34	J-30	8.0	Ductile Iron	130.0	-251	1.60
15	R-3	PMP-3	120.0	Ductile Iron	130.0	450	0.01
15	PMP-3	J-39	12.0	Ductile Iron	130.0	450	1.28
103	J-5	J-40	8.0	Ductile Iron	130.0	112	0.72
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	112	0.72
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	112	0.72
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	112	0.72
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	112	0.72
66	J-46	J-47	3.0	Ductile Iron	130.0	525	23.85
70	J-46	J-48	8.0	Ductile Iron	130.0	-413	2.64
13	R-4	PMP-4	120.0	Ductile Iron	130.0	413	0.01
14	PMP-4	J-48	12.0	Ductile Iron	130.0	413	1.17
76	J-1	J-49	8.0	Ductile Iron	130.0	347	2.22
19	J-49	J-2	8.0	Ductile Iron	130.0	347	2.22
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Peak Hour Demand

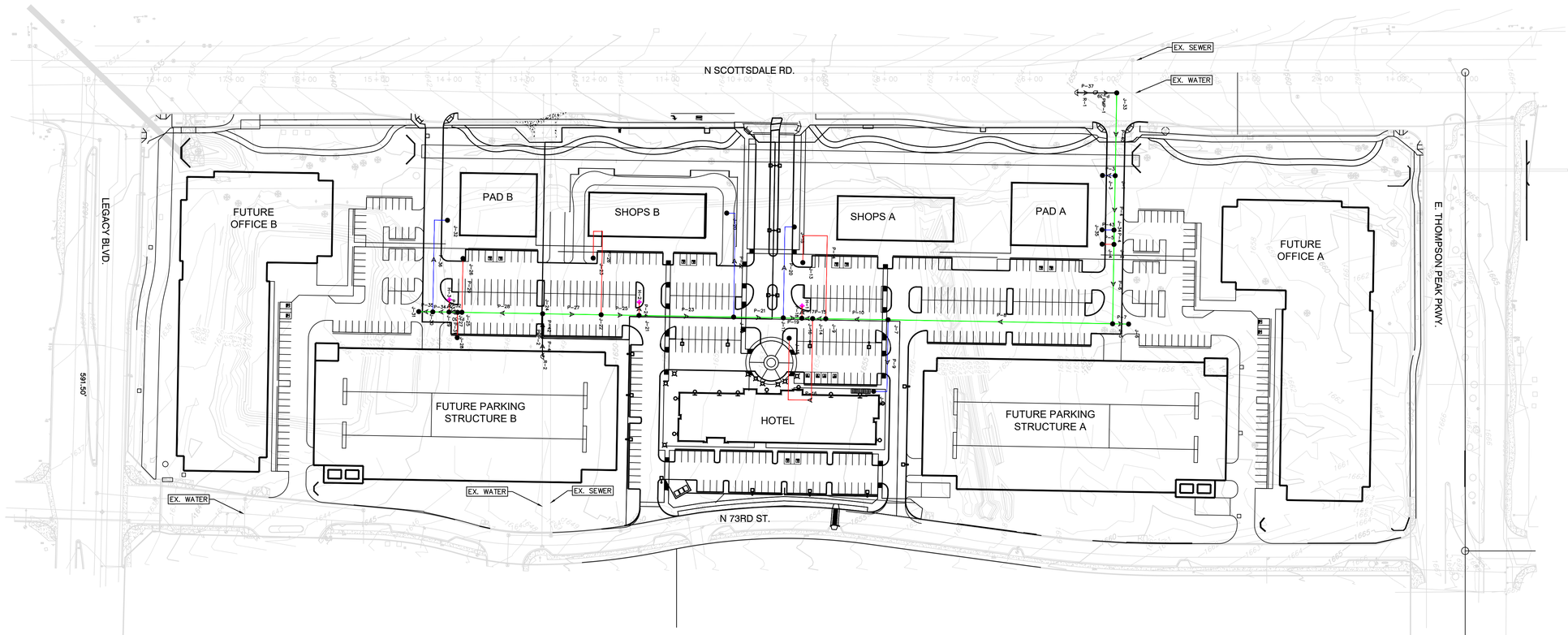
FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,158.71	382	157.71
PMP-2	1,001.00	On	1,001.00	1,157.60	427	156.60
PMP-3	1,001.00	On	1,001.00	1,157.03	450	156.03
PMP-4	1,001.00	On	1,001.00	1,157.94	413	156.94

Overall
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	382	1,001.00
R-2	1,001.00	427	1,001.00
R-3	1,001.00	450	1,001.00
R-4	1,001.00	413	1,001.00



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SCOTTSDALE, AZ

WATER EXHIBIT-PHASE 1

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DRAWN BY:	BB
CHECKED BY:	KE
DWG SCALE:	
PROJECT NO.:	180-168
APPROVED BY:	JSE

DRAWING NO.:
EX-1
SHEET 1 OF 1

Phase 1
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,166.60	72
H-2	Open	1,000.00	0	1,166.61	72
H-3	Open	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,166.61	72
J-2	1,000.00	0	1,166.61	72
J-3	1,000.00	0	1,166.61	72
J-4	1,000.00	0	1,166.61	72
J-5	1,000.00	0	1,166.60	72
J-6	1,000.00	0	1,166.60	72
J-7	1,000.00	0	1,166.59	72
J-8	1,048.00	77	1,164.36	50
J-9	1,000.00	0	1,166.59	72
J-13	1,000.00	0	1,166.59	72
J-14	1,000.00	0	1,166.59	72
J-15	1,000.00	0	1,166.59	72
J-16	1,000.00	0	1,166.60	72
J-17	1,000.00	0	1,166.60	72
J-18	1,000.00	0	1,166.60	72
J-19	1,000.00	0	1,166.60	72
J-20	1,000.00	0	1,166.60	72
J-21	1,000.00	0	1,166.61	72
J-22	1,000.00	0	1,166.61	72
J-23	1,000.00	0	1,166.61	72
J-24	1,000.00	0	1,166.61	72
J-25	1,000.00	0	1,166.61	72
J-26	1,000.00	0	1,166.61	72
J-27	1,000.00	0	1,166.61	72
J-28	1,000.00	0	1,166.61	72
J-29	1,000.00	0	1,166.61	72
J-30	1,000.00	0	1,166.61	72
J-31	1,000.00	0	1,166.61	72
J-32	1,000.00	0	1,166.61	72
J-33	1,000.00	0	1,166.62	72
J-34	1,000.00	0	1,166.61	72
J-35	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	39	0.25
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	39	0.25
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-39	0.25
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-39	0.25
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-39	0.25
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-39	0.25
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-39	0.25
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-39	0.25
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-39	0.25
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-39	0.25
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	39	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	39	0.11
114	J-33	J-1	8.0	Ductile Iron	130.0	39	0.25
29	R-2	PMP-2	120.0	Ductile Iron	130.0	39	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	39	0.11
76	J-1	J-34	8.0	Ductile Iron	130.0	39	0.25
19	J-34	J-2	8.0	Ductile Iron	130.0	39	0.25
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,166.62	39	165.62
PMP-2	1,001.00	On	1,001.00	1,166.61	39	165.61

Phase 1
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	39	1,001.00
R-2	1,001.00	39	1,001.00

Phase 1
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	39	0.25
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	39	0.25
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-39	0.25
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-39	0.25
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-39	0.25
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-39	0.25
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-39	0.25
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-39	0.25
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-39	0.25
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-39	0.25
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	39	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	39	0.11
114	J-33	J-1	8.0	Ductile Iron	130.0	39	0.25
29	R-2	PMP-2	120.0	Ductile Iron	130.0	39	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	39	0.11
76	J-1	J-34	8.0	Ductile Iron	130.0	39	0.25
19	J-34	J-2	8.0	Ductile Iron	130.0	39	0.25
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,166.61	72
J-2	1,000.00	0	1,166.61	72
J-3	1,000.00	0	1,166.61	72
J-4	1,000.00	0	1,166.61	72
J-5	1,000.00	0	1,166.60	72
J-6	1,000.00	0	1,166.60	72
J-7	1,000.00	0	1,166.59	72
J-8	1,048.00	77	1,164.36	50
J-9	1,000.00	0	1,166.59	72
J-13	1,000.00	0	1,166.59	72
J-14	1,000.00	0	1,166.59	72
J-15	1,000.00	0	1,166.59	72
J-16	1,000.00	0	1,166.60	72
J-17	1,000.00	0	1,166.60	72
J-18	1,000.00	0	1,166.60	72
J-19	1,000.00	0	1,166.60	72
J-20	1,000.00	0	1,166.60	72
J-21	1,000.00	0	1,166.61	72
J-22	1,000.00	0	1,166.61	72
J-23	1,000.00	0	1,166.61	72
J-24	1,000.00	0	1,166.61	72
J-25	1,000.00	0	1,166.61	72
J-26	1,000.00	0	1,166.61	72
J-27	1,000.00	0	1,166.61	72
J-28	1,000.00	0	1,166.61	72
J-29	1,000.00	0	1,166.61	72
J-30	1,000.00	0	1,166.61	72
J-31	1,000.00	0	1,166.61	72
J-32	1,000.00	0	1,166.61	72
J-33	1,000.00	0	1,166.62	72
J-34	1,000.00	0	1,166.61	72
J-35	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,166.60	72
H-2	Open	1,000.00	0	1,166.61	72
H-3	Open	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	39	1,001.00
R-2	1,001.00	39	1,001.00

Phase 1
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,166.62	39	165.62
PMP-2	1,001.00	On	1,001.00	1,166.61	39	165.61

Phase 1
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	958	6.11
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	958	6.11
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	803	5.12
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	803	5.12
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	803	5.12
17	J-16	H-1	6.0	Ductile Iron	130.0	1,500	17.02
26	J-16	J-17	8.0	Ductile Iron	130.0	-697	4.45
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-697	4.45
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-697	4.45
18	J-21	H-2	6.0	Ductile Iron	130.0	500	5.67
52	J-21	J-22	8.0	Ductile Iron	130.0	-1,197	7.64
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-1,197	7.64
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	958	0.03
29	PMP-1	J-33	12.0	Ductile Iron	130.0	958	2.72
114	J-33	J-1	8.0	Ductile Iron	130.0	958	6.11
29	R-2	PMP-2	120.0	Ductile Iron	130.0	1,197	0.03
30	PMP-2	J-24	12.0	Ductile Iron	130.0	1,197	3.40
76	J-1	J-34	8.0	Ductile Iron	130.0	958	6.11
19	J-34	J-2	8.0	Ductile Iron	130.0	958	6.11
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Max Day + FF FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,141.82	61
J-2	1,000.00	0	1,140.23	61
J-3	1,000.00	0	1,141.82	61
J-4	1,000.00	0	1,140.23	61
J-5	1,000.00	0	1,138.38	60
J-6	1,000.00	0	1,138.38	60
J-7	1,000.00	0	1,133.17	58
J-8	1,048.00	155	1,125.11	33
J-9	1,000.00	0	1,132.12	57
J-13	1,000.00	0	1,132.12	57
J-14	1,000.00	0	1,131.90	57
J-15	1,000.00	0	1,131.90	57
J-16	1,000.00	0	1,131.72	57
J-17	1,000.00	0	1,131.96	57
J-18	1,000.00	0	1,131.96	57
J-19	1,000.00	0	1,132.60	57
J-20	1,000.00	0	1,132.60	57
J-21	1,000.00	0	1,133.82	58
J-22	1,000.00	0	1,135.15	58
J-23	1,000.00	0	1,135.15	58
J-24	1,000.00	0	1,137.21	59
J-25	1,000.00	0	1,137.21	59
J-26	1,000.00	0	1,137.21	59
J-27	1,000.00	0	1,137.21	59
J-28	1,000.00	0	1,137.21	59
J-29	1,000.00	0	1,137.21	59
J-30	1,000.00	0	1,137.21	59
J-31	1,000.00	0	1,137.21	59
J-32	1,000.00	0	1,137.21	59
J-33	1,000.00	0	1,143.74	62
J-34	1,000.00	0	1,140.54	61
J-35	1,000.00	0	1,140.54	61

Phase 1
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	1,500	1,129.05	56
H-2	Open	1,000.00	500	1,133.44	58
H-3	Open	1,000.00	0	1,137.21	59

Phase 1
Max Day + FF FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	958	1,001.00
R-2	1,001.00	1,197	1,001.00

Phase 1
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,143.81	958	142.81
PMP-2	1,001.00	On	1,001.00	1,137.32	1,197	136.32

Phase 1
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	1,500	1,129.05	56
H-2	Open	1,000.00	500	1,133.44	58
H-3	Open	1,000.00	0	1,137.21	59

Phase 1
Max Day + FF FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,141.82	61
J-2	1,000.00	0	1,140.23	61
J-3	1,000.00	0	1,141.82	61
J-4	1,000.00	0	1,140.23	61
J-5	1,000.00	0	1,138.38	60
J-6	1,000.00	0	1,138.38	60
J-7	1,000.00	0	1,133.17	58
J-8	1,048.00	155	1,125.11	33
J-9	1,000.00	0	1,132.12	57
J-13	1,000.00	0	1,132.12	57
J-14	1,000.00	0	1,131.90	57
J-15	1,000.00	0	1,131.90	57
J-16	1,000.00	0	1,131.72	57
J-17	1,000.00	0	1,131.96	57
J-18	1,000.00	0	1,131.96	57
J-19	1,000.00	0	1,132.60	57
J-20	1,000.00	0	1,132.60	57
J-21	1,000.00	0	1,133.82	58
J-22	1,000.00	0	1,135.15	58
J-23	1,000.00	0	1,135.15	58
J-24	1,000.00	0	1,137.21	59
J-25	1,000.00	0	1,137.21	59
J-26	1,000.00	0	1,137.21	59
J-27	1,000.00	0	1,137.21	59
J-28	1,000.00	0	1,137.21	59
J-29	1,000.00	0	1,137.21	59
J-30	1,000.00	0	1,137.21	59
J-31	1,000.00	0	1,137.21	59
J-32	1,000.00	0	1,137.21	59
J-33	1,000.00	0	1,143.74	62
J-34	1,000.00	0	1,140.54	61
J-35	1,000.00	0	1,140.54	61

Phase 1
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	958	6.11
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	958	6.11
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	803	5.12
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	803	5.12
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	803	5.12
17	J-16	H-1	6.0	Ductile Iron	130.0	1,500	17.02
26	J-16	J-17	8.0	Ductile Iron	130.0	-697	4.45
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-697	4.45
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-697	4.45
18	J-21	H-2	6.0	Ductile Iron	130.0	500	5.67
52	J-21	J-22	8.0	Ductile Iron	130.0	-1,197	7.64
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-1,197	7.64
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	958	0.03
29	PMP-1	J-33	12.0	Ductile Iron	130.0	958	2.72
114	J-33	J-1	8.0	Ductile Iron	130.0	958	6.11
29	R-2	PMP-2	120.0	Ductile Iron	130.0	1,197	0.03
30	PMP-2	J-24	12.0	Ductile Iron	130.0	1,197	3.40
76	J-1	J-34	8.0	Ductile Iron	130.0	958	6.11
19	J-34	J-2	8.0	Ductile Iron	130.0	958	6.11
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,143.81	958	142.81
PMP-2	1,001.00	On	1,001.00	1,137.32	1,197	136.32

Phase 1
Max Day + FF FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	958	1,001.00
R-2	1,001.00	1,197	1,001.00

Phase 1
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	134	0.86
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	134	0.86
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-137	0.87
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-137	0.87
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-137	0.87
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-137	0.87
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-137	0.87
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-137	0.87
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-137	0.87
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-137	0.87
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	134	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	134	0.38
114	J-33	J-1	8.0	Ductile Iron	130.0	134	0.86
29	R-2	PMP-2	120.0	Ductile Iron	130.0	137	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	137	0.39
76	J-1	J-34	8.0	Ductile Iron	130.0	134	0.86
19	J-34	J-2	8.0	Ductile Iron	130.0	134	0.86
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.52	71
J-2	1,000.00	0	1,164.48	71
J-3	1,000.00	0	1,164.52	71
J-4	1,000.00	0	1,164.48	71
J-5	1,000.00	0	1,164.43	71
J-6	1,000.00	0	1,164.43	71
J-7	1,000.00	0	1,164.30	71
J-8	1,048.00	271	1,141.60	40
J-9	1,000.00	0	1,164.34	71
J-13	1,000.00	0	1,164.34	71
J-14	1,000.00	0	1,164.34	71
J-15	1,000.00	0	1,164.34	71
J-16	1,000.00	0	1,164.35	71
J-17	1,000.00	0	1,164.36	71
J-18	1,000.00	0	1,164.36	71
J-19	1,000.00	0	1,164.39	71
J-20	1,000.00	0	1,164.39	71
J-21	1,000.00	0	1,164.45	71
J-22	1,000.00	0	1,164.48	71
J-23	1,000.00	0	1,164.48	71
J-24	1,000.00	0	1,164.51	71
J-25	1,000.00	0	1,164.51	71
J-26	1,000.00	0	1,164.51	71
J-27	1,000.00	0	1,164.51	71
J-28	1,000.00	0	1,164.51	71
J-29	1,000.00	0	1,164.51	71
J-30	1,000.00	0	1,164.51	71
J-31	1,000.00	0	1,164.51	71
J-32	1,000.00	0	1,164.51	71
J-33	1,000.00	0	1,164.57	71
J-34	1,000.00	0	1,164.49	71
J-35	1,000.00	0	1,164.49	71

Phase 1
Peak Hour Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.35	71
H-2	Open	1,000.00	0	1,164.45	71
H-3	Open	1,000.00	0	1,164.51	71

Phase 1
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	134	1,001.00
R-2	1,001.00	137	1,001.00

Phase 1
Peak Hour Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,164.58	134	163.58
PMP-2	1,001.00	On	1,001.00	1,164.52	137	163.52

Phase 1
Peak Hour Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.35	71
H-2	Open	1,000.00	0	1,164.45	71
H-3	Open	1,000.00	0	1,164.51	71

Phase 1
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.52	71
J-2	1,000.00	0	1,164.48	71
J-3	1,000.00	0	1,164.52	71
J-4	1,000.00	0	1,164.48	71
J-5	1,000.00	0	1,164.43	71
J-6	1,000.00	0	1,164.43	71
J-7	1,000.00	0	1,164.30	71
J-8	1,048.00	271	1,141.60	40
J-9	1,000.00	0	1,164.34	71
J-13	1,000.00	0	1,164.34	71
J-14	1,000.00	0	1,164.34	71
J-15	1,000.00	0	1,164.34	71
J-16	1,000.00	0	1,164.35	71
J-17	1,000.00	0	1,164.36	71
J-18	1,000.00	0	1,164.36	71
J-19	1,000.00	0	1,164.39	71
J-20	1,000.00	0	1,164.39	71
J-21	1,000.00	0	1,164.45	71
J-22	1,000.00	0	1,164.48	71
J-23	1,000.00	0	1,164.48	71
J-24	1,000.00	0	1,164.51	71
J-25	1,000.00	0	1,164.51	71
J-26	1,000.00	0	1,164.51	71
J-27	1,000.00	0	1,164.51	71
J-28	1,000.00	0	1,164.51	71
J-29	1,000.00	0	1,164.51	71
J-30	1,000.00	0	1,164.51	71
J-31	1,000.00	0	1,164.51	71
J-32	1,000.00	0	1,164.51	71
J-33	1,000.00	0	1,164.57	71
J-34	1,000.00	0	1,164.49	71
J-35	1,000.00	0	1,164.49	71

Phase 1
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	134	0.86
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	134	0.86
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-137	0.87
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-137	0.87
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-137	0.87
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-137	0.87
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-137	0.87
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-137	0.87
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-137	0.87
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-137	0.87
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	134	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	134	0.38
114	J-33	J-1	8.0	Ductile Iron	130.0	134	0.86
29	R-2	PMP-2	120.0	Ductile Iron	130.0	137	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	137	0.39
76	J-1	J-34	8.0	Ductile Iron	130.0	134	0.86
19	J-34	J-2	8.0	Ductile Iron	130.0	134	0.86
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Peak Hour Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,164.58	134	163.58
PMP-2	1,001.00	On	1,001.00	1,164.52	137	163.52

Phase 1
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	134	1,001.00
R-2	1,001.00	137	1,001.00

Flow Test Summary

Project Name:	EJFT 19237
Project Address:	20201 N Scottsdale Rd, Scottsdale, AZ 85255
Date of Flow Test:	2019-10-09
Time of Flow Test:	7:00 AM
Data Reliable Until:	2020-04-09
Conducted By:	Cesar Reyna & Austin Gourley (EJ Flow Tests) 602.999.7637
Witnessed By:	Sonny Schreiner (City of Scottsdale) 602.819.7718
City Forces Contacted:	City of Scottsdale (602.819.7718)
Permit Number:	C59886

Note Scottsdale requires a max static pressure of 72 psi for safety factor.

Raw Flow Test Data

Static Pressure:	99.0 PSI
Residual Pressure:	79.0 PSI
Flowing GPM:	3,619
GPM @ 20 PSI:	7,598

Data with a 27 PSI Safety Factor

Static Pressure:	72.0 PSI
Residual Pressure:	52.0 PSI
Flowing GPM:	3,619
GPM @ 20 PSI:	6,062

Hydrant F_1

Pitot Pressure (1):	50	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	50	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches

Hydrant F_2

Pitot Pressure (1):	55	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches

Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
1265 ft (measured linearly)

Static-Residual Elevation
1665 ft (above sea level)

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

Elevation & distance values are approximate

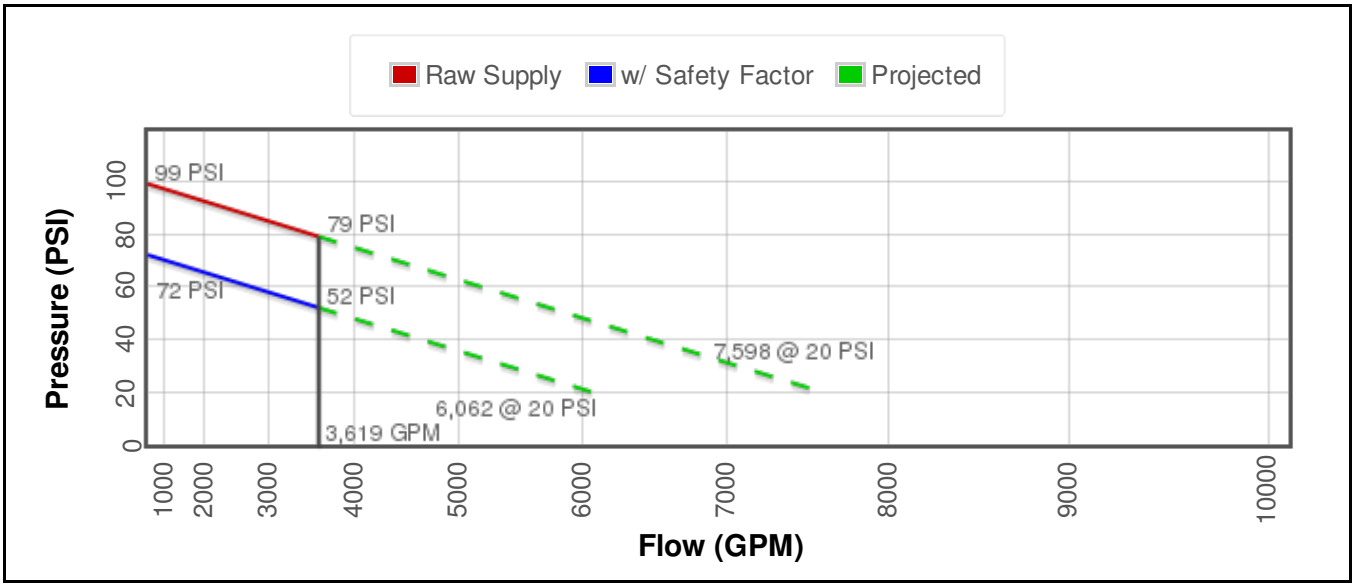
Flow Test Summary

Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)

Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph



Water and Wastewater Study Basis of Design Report

For

One Scottsdale – Phase 1

Southeast Corner of Scottsdale Road and Thompson Peak Parkway
Scottsdale, Arizona

Prepared for

DMB
7600 E Doubletree Ranch Road, Suite 300
Scottsdale, AZ 85258

FINAL Basis of Design Report

☐ APPROVED
☑ APPROVED AS NOTED
☐ REVISE AND RESUBMIT

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

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

BY scan DATE 2/12/2020

FINAL Basis of Design Report
☑ ACCEPTED
❑ ACCEPTED AS NOTED
❑ REVISE AND RESUBMIT

Reviewed by carollo
On behalf of the Scottsdale Water Resources Planning and Engineering Department

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 and 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 and clarifications contact the Water Resources Planning and Engineering Department at 480-321-5685

REVIEWER: Brian Bernard
EMAIL: Bbernard@carollo.com
DATE 01/17/2020

CEC PN # 180-168
61-DR-2015#2

Civil & Environmental Consultants, Inc.

Phoenix | 11811 N. Tatum Boulevard, Suite 3057 | Phoenix, AZ 85028 | p: 602-760-2324 f: 602-760-2330 | www.cecinc.com

SCOTTSDALE ONE

CASE FILE 61-DR-2015#2_V3 - PRELIMINARY WATER AND WASTEWATER BOD REPORT

CAROLLO ENGINEER'S CASE FILE REVIEW COMMENTS - 01/17/2020

Ordinance Issues:

1. Note to the Submitter/Developer, as per section 6-1.000 of the DSPM, Developers may be required to install, at their expense, all on-site and off-site improvements, if required.

Policy and Design Related Issues:

2. The project "Introduction" in the BOD report should make reference to the future restaurant planned/indicated under "Shops B".
3. The reviewer cannot verify/confirm the finished floor elevation heights based on the information provided, per DSPM 6-1.202.

Technical Corrections to be Resolved:

4. State the assumptions made in estimating the Fire Sprinkler flow at 500 gpm.
5. Clarify with specific labeling what the values mean or equate to for the "Overall - Max Day Demand + Fire Flow Model Results" category. See the redline notes in the BOD report markup.
6. For the Proposed Wastewater Demand Calculations table please review and correct the peaking factors to convert from Average Day Demand to Peak Day Demand. State that "Shops B" is a future restaurant.
7. The existing flow in the 15" diameter sewer in Scottsdale Rd is 2.63 cfs per City of Scottsdale flow monitoring completed in April 2019. The Scottsdale One development adds 1.5 cfs to that sewer line for a total flow of 4.13 cfs. The resultant d/D is 0.63 which is under the maximum allowable of 0.70 d/D. Please confirm with the City of Scottsdale Water Resources Department that no additional available capacity has been subscribed to a different project between April 2019 and the date of the review of this report.

Table of Contents

1.0 INTRODUCTION

The One Scottsdale project is a proposed 21.73 net acre commercial/retail project located southeast of the intersection of the Scottsdale Road and Thompson Peak Parkway in Scottsdale, Arizona. The site is further described as a portion of the NW1/4 of Section 26, Township 4 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. Refer to the Vicinity Map on the following page.

The BOD indicates a future restaurant, please note this in subsequent phasing submittals

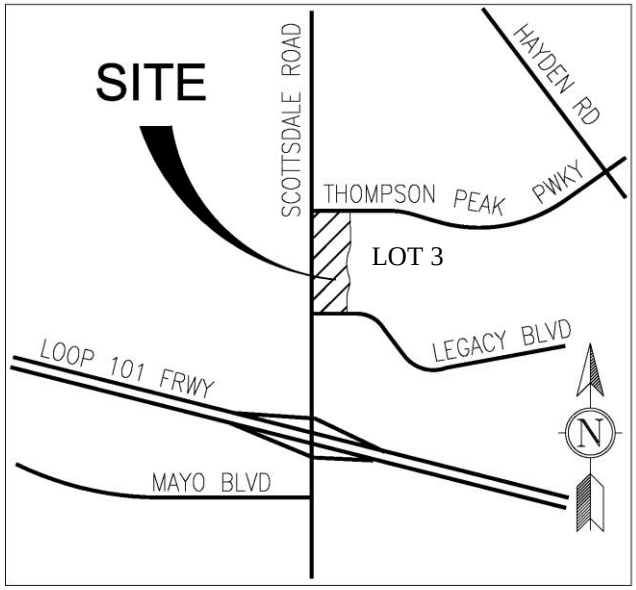
The site will consist of a hotel, Class A office buildings, underground and above ground parking structures, and retail pads. Phase 1 of the project will incorporate the hotel site with parking lot and drives. Refer to the Site Plan located in Appendix A at the back of this report. This report specifically addresses Phase 1 of the project. Future phases will have their own water and wastewater basis of design reports as the DR submittals come in for those particular phases.

This Basis of Design report will document existing and proposed water and wastewater utility conditions for the 21.73-acre commercial parcel for the overall build-out condition and also the Phase 1 condition. Refer to the Concept Utility Plans located in Appendix B & C at the back of this report.

This site is located east of Scottsdale Road south of Thompson Peak Parkway, west of 73rd Drive, and north of Legacy Boulevard. Water and sewer utilities exist within the adjacent street and parcels, and are further described in the following section.

The purpose of this report is to satisfy the City of Scottsdale Design Review Board requirement regarding the basis of water and wastewater design for the proposed One Scottsdale project and to document water and sewer calculations for review and approval by the Maricopa County Environmental Services Department.

Vicinity Map



VICINITY MAP
N.T.S.

2.0 WATER STUDY – BASIS OF DESIGN

Existing Improvements

Existing public water lines are located on all sides of the proposed development. An existing 12-inch D.I.P. public water line is located on the north side of Thompson Peak Parkway within the public right of way. An existing 12-inch D.I.P. public water line is located in Scottsdale Road. An existing 16" D.I.P. public water line is located in Legacy Boulevard. An existing 12" D.I.P. public water line is located in 73rd Drive in a public utility easement. An existing 12" D.I.P. public water line extends between Scottsdale Road and 73rd Drive at the south 1/3 of the site. This line is located within a public utility easement. There is an existing PRV located at the NWC of the intersection of Scottsdale Road and Legacy Boulevard (#130) and at the NWC of the intersection of Legacy Boulevard and 73rd (#364).

Refer to the Concept Utility Plans in Appendix B & C at the back of this report for exact locations.

Proposed Improvements and Demand – Overall (21.73 acres)

The water needs for the project will be served by connecting an 8-inch D.I.P. public water line loop to the existing 12-inch D.I.P. public water line stub in Scottsdale Road and will loop back to two separate 8-inch connections in Scottsdale Road and one connection to the existing public water line in 73rd Drive. This will provide an overall water line loop for the entire development and eliminate the need for the existing 12-inch D.I.P. public water line that runs between Scottsdale Road and 73rd Drive. Once final construction is complete of the proposed 8" D.I.P. public water line loop, the existing 12" D.I.P. line will be removed.

The proposed 8-inch D.I.P. public waterline for this project will be constructed within a 20-foot wide public waterline easement. Refer to the Concept Utility Plan for proposed water line loop locations, fire hydrant locations, proposed 6-inch D.I.P. and 8-inch D.I.P. fireline stubs, 2" and 3" domestic services, and one 2" landscape service within the project. Where public water and sewer lines run parallel to each other they will be within a 20-foot easement with 9-feet of horizontal separation.

Shops A assumed as Retail per Unit Demand - no description given

Calculations for estimated average day, max day, and peak demands for the development are as follows:

DOMESTIC WATER DEMAND CALCULATIONS BUILDING/ PARCEL	SQUARE FOOTAGE	UNIT DEMAND (PER SQUARE FOOT)	TOTAL AVG. DAY DEMAND (GPM)	TOTAL MAX DAY DEMAND (GPM)	TOTAL PEAK DAY DEMAND (GPM)
FUTURE OFFICE A	180,000	0.000834	150.12	300.24	525.42
FUTURE PAD A	9,000	0.001110	9.99	19.98	34.97
SHOPS A	9,600	0.001110	10.66	21.31	37.30
HOTEL	123 ROOMS	0.63 PER ROOM	77.49	154.98	271.22
SHOPS B	10,700	0.001810	19.37	38.73	67.78
FUTURE PAD B	9,000	0.001110	9.99	19.98	34.97
FUTURE OFFICE B	240,000	0.000834	200.16	400.32	700.56
TOTAL	***458,300***		***477.77***	***955.55***	***1,672.21***
DEMANDS ARE BASED ON PROPOSED BUILDING SQUARE FOOTAGE, USE, AND CITY OF SCOTTSDALE DESIGN STANDARDS & POLICIES MANUAL FIGURE 6.1-2					

Shops B appears to be a restaurant - please note as such in subsequent phased submittals

Proposed Improvements – Phase 1

The water needs for Phase 1 of the project will be served by connecting an 8-inch D.I.P. public water line loop to the existing 12-inch D.I.P. public water line in Scottsdale Road at the main drive entrance and will loop back to the existing 12-inch D.I.P. public water line Scottsdale Road at the future northern drive entrance. This will provide an overall water line loop for the entire development. An isolation gate valve will be added just north of the middle public water line connection on the existing public water line located in Scottsdale Road in order to provide second sourcing in accordance with COS DS&PM Sec. 6-1.416 and 7-1.409.

The proposed 8-inch D.I.P. public waterline, for this project, will be constructed within a 20-foot wide public waterline easement. Refer to the Concept Utility Plans located in Appendix B & C at the back of this report for proposed water line loop locations, fire hydrant locations, proposed fireline stubs, a 3" domestic service, and one 1.5" landscape service within the project. Where public water and sewer lines run parallel to each other they will be within a 20-foot easement with 9 feet of horizontal separation.

The existing 12" D.I.P. public line that runs through the site between Scottsdale Road and 73rd Drive will remain in place until the overall development is constructed.

3.0 FIRE FLOW STUDY – BASIS OF DESIGN

A worst-case fire flow requirement for this project assumes the largest building for calculation purposes (Future Office B). Below is a summary table documenting fire flows required for each building.

FIRE FLOW DEMAND BUILDING	SQUARE FOOTAGE	CONSTR. TYPE	GPM REQUIRED	SPRINKLER REDUCTION	GPM ADJUSTED
FUTURE OFFICE A	180,000	V-B	8000	75%	**2000**
FUTURE PAD A	9,000	V-B	2500	75%	**1500***
SHOPS A	9,600	V-B	2500	75%	**1500***
HOTEL	123 ROOMS	V-B	8000	75%	**2000**
SHOPS B	10,700	V-B	2500	75%	**1500***
FUTURE PAD B	9,000	V-B	2500	75%	**1500***
FUTURE OFFICE B	240,000	V-B	8000	75%	**2000**
SQUARE FOOTAGES ARE BASED ON GROSS BUILDING AREA GPM REQUIRED TAKEN FROM TABLE B105.1 OF THE INTERNATIONAL FIRE CODE					

Largest Building by Area

Fire Flow Requirements = Max Day Demand + Sprinkler Flow + 2000 Gal/Min (Commercial – Assume Sprinkler Flow = 500 GPM)

= 400.32 + 500 +2000 = 2900.32 GPM

A flow and pressure test was performed on October 9, 2019 by EJ Flow Testing Services. A copy of this flow test is provided in Appendix E at the back of this report. The flow test performed by EJ Flow Testing Services resulted in a static pressure of 72 psi, a Residual pressure of 52 psi with an available flow of 6,062 gpm at 20 psi. The flows test incorporated a safety factor of 27 psi based on the City of Scottsdale maximum static pressure requirements. The full build-out will have a total of (4) points of connection to the public water supply. Phase 1 will have a total of (2) points of connection to the public water supply. This in conjunction with a looped system will provide adequate fire flow requirements for the proposed development.

A water model was created to simulate the proposed Overall water system and also the Phase 1 water system. The model was analyzed for (3) different scenarios: Average Day Demand, Peak Hour

Demand, and Maximum Day Demand + Fire Flow. The model was created using Bentley WaterCAD V8 XM. The assumptions made for the model were friction factors based on pipe material, and minor loss coefficients based on fittings and valves. Water model calculations and node exhibit is located in Appendix E at the back of this report. Below is a detailed list of assumptions for the water model.

Friction Factors:

Ductile Iron Pipe: Manning Coefficient of 0.012

Minor Losses K Values:

90 degree smooth bend D=2	0.22
45 degree bend mitered	0.20
Tee – Line Flow	0.35
Tee – Branch Flow	1.28

Overall - Average Day Demand Model Results

The total average day water demand of 477.77 gallons per minute was placed on J-3, J-8, J-18, J-20, J-32, J-200 and J-47 within the water model.

The water model was successful for the average day water demand for the full build out condition based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during average day conditions. The minimum pressure calculated was 52 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 71 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 0.79 fps.

Overall - Peak Hour Demand Model Results

The total peak hour water demand of 1,672.21 gallons per minute was placed on J-3, J-8, J-18, J-20, J-32, J-200 and J-47 within the water model.

30 psi minimum at the FH or Tee, with 15 psi maintained at highest finished floor

The water model was successful for the peak hour water demand for the f based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during peak hour conditions. The minimum pressure

calculated was 31 psi.

2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 69 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 2.87 fps.

Is this the Fire Sprinkler flow - or has the total Fire Flow been split between two fire hydrants?

2,000 gpm?

Overall - Max Day Demand + Fire Flow Model Results

The total max day water demand of 955.55 gallons per minute was placed on J-3, J-8, J-18, J-20, J-32, J-200 and J-47 and fire flow demand of 1,500 gallons per minute was placed on H-4, and a fire flow demand of 500 gallons per minute was placed on H-3. The total modeled flow for this scenario is 2,955.55 gallons per minute. The largest building, Future Office B, was used in this simulation assuming the worst case fire flow requirement of 2,000 gpm based on IFC criteria with a 75% reduction and a highest finished floor at 36 feet above grade

Is this the 500 gpm placed on FH H-3 ?

The water model was successful for max day demand + fire flow for the full build out condition based on the following factors:

30 psi minimum at the FH or Tee, with 15 psi maintained at highest finished floor

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during maximum day + fire flow conditions. The minimum pressure calculated was 31 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 67 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 8.43 fps.

Phase 1 - Average Day Demand Model Results

The total average day water demand of 77.49 gallons per minute was placed on J-8 within the water model.

Hotel?

The water model was successful for the average day water demand for the Phase 1 condition based on the following factors:

1. Minimum water pressures are not less than 30 psi during average day conditions. The minimum pressure calculated was 50 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 72 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 0.25 fps.

Phase 1 - Peak Hour Demand Model Results

The total peak hour water demand of 271.22 gallons per minute was placed on J-8 within the water

model.

The water model was successful for the peak hour water demand for the Phase 1 condition based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during peak hour conditions. The minimum pressure calculated was 40 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 71 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 0.87 fps.

Phase 1 - Max Day Demand + Fire Flow Model Results

The total max day water demand of 154.98 gallons per minute was placed on J-8 and a fire flow demand of 1,500 gallons per minute was placed on H-1, and a fire flow demand of 500 gallons per minute was placed on H-2. The total modeled flow for this scenario is 2,154.98 gallons per minute. The hotel was used in this simulation assuming the worst case fire flow requirement of 2,000 gpm based on IFC criteria with a 75% reduction and a highest finished floor at 48 feet above grade.

The water model was successful for max day demand + fire flow for the Phase 1 condition based on the following factors:

1. Minimum water pressures are not less than 30 psi at the highest finished floor elevation during maximum day + fire flow conditions. The minimum pressure calculated was 33 psi.
2. Maximum water pressures are not in excess of 80 psi. The maximum pressure calculated was 62 psi.
3. The maximum velocity in the 8" onsite public water main was calculated to be 7.64 fps.

4.0 WASTEWATER STUDY – BASIS OF DESIGN

Existing Improvements

An existing 15-inch VCP sewer line and manholes are located in Scottsdale Road just west of the proposed development, a 12-inch VCP sewer line and manholes in Thompson Peak Parkway just north of the proposed development, an 8-inch and 10-inch PVC sewer line in 73rd Avenue just east of the

development, and a 12" PVC sewer line in Legacy Boulevard just south of the development. Also, there is an existing 10" PVC sewer line that through the proposed development between Scottsdale Road and 73rd Drive.

Proposed Improvements and Demands – Overall (21.73 acres)

The sewer needs for the One Scottsdale project will be served by extending a 15-inch and a 12-inch PVC public sewer line through the site from Scottsdale Road, connecting to the existing 10-inch PVC sewer line in 73rd Drive. The proposed 15-inch PVC public sewer line will connect to an existing manhole in Scottsdale Road. Once fully constructed, the existing 10-inch PVC sewer line will be removed. The proposed 15-inch and 12-inch PVC sewer lines will run at a slope of 0.0024 ft/ft due to site constraints at the connection points. Onsite 8-inch and 6-inch PVC private plumbing lines will then service each of the proposed buildings as they are developed and per Uniform Plumbing Code slopes. Private plumbing slopes onsite are run at approximately between 1.0% and 5.0% slope to service the most remote buildings on the site. Refer to the Concept Util
line locations, stub location, slopes and inverts. Refer to the Sewer Exh
at the back of this report for proposed sewer line designations in referen
calculations for each sewer line segment has been provided in Appendix D at the back of this report.

Please check your peaking factors used to convert from Total Average Day to Total Peak Day - Table should read 571.6 gpm and 1.5 cfs for Peak Day

Calculations for estimated average day and peak demands for the development are as follows:

PROPOSED WASTEWATER DEMAND CALCULATIONS						
BUILDING/ PARCEL	SQUARE FOOTAGE	UNIT DEMAND (PER SQUARE FOOT)	TOTAL AVG. DAY DEMAND (GPD)	TOTAL PEAK DAY DEMAND (GPD)	TOTAL PEAK DAY DEMAND (GPM)	TOTAL PEAK DAY DEMAND (CFS)
FUTURE OFFICE A	180,000	0.40	72,000	216,000	150	0.33
FUTURE PAD A	9,000	0.50	4,500	13,500	9	0.02
SHOPS A	9,600	0.50	4,800	14,400	10	0.02
HOTEL	123 ROOMS	380 PER ROOM	46,740	140,220	97	0.22
SHOPS B	10,700	1.20	12,840	38,520	27	0.06
FUTURE PAD B	9,000	0.50	4,500	13,500	9	0.02
FUTURE OFFICE B	240,000	0.40	96,000	288,000	200	0.45
TOTAL	***458,300.00***		***241,380***	***724,140***	***503***	***1.12***
DEMANDS ARE BASED ON PROPOSED BUILDING SQUARE FOOTAGE, USE, AND CITY OF SCOTTSDALE DESIGN STANDARDS & POLICIES MANUAL FIGURE 7.1-2						

Only a portion of the public sewer line will be built with Phase 1. During the overall construction an additional connection to 73rd Avenue will be constructed and the existing 10-inch PVC sewer will be abandoned. During the future phased construction, specifically Pad D, an additional private sewer

building connection will be constructed from the existing sewer in Legacy Boulevard. These two connections will be single building feeds and will be 6-inch PVC lines with a slope of 0.01 ft/ft.

Based on the One Scottsdale (Stacked 40s) Master On-Site Wastewater Plan, dated February 10, 2012, by Wood, Patel & Associates an upstream sewer flow of 0.69 cfs enters the proposed system at the connection point in 73rd Avenue. A copy of the excerpts from the Stacked 40s Master On-Site Wastewater Plan has been provided in Appendix D at the back of this report. This flow was incorporated into this design. The existing One Scottsdale master plan outfall defined as "F1" had an estimated offsite wastewater flow of 207,479 gallons per day. The TDI development increased the estimated offsite wastewater flow to 446,145 gallons per day. The TDI development accompanied by this project estimates a total wastewater flow of 1[illegible] cfs at the connection to the existing 15-inch PVC sewer in Scottsdale Road (this project contributing flow of 1[illegible] cfs + TDI offsite flow of 0.69 cfs).

5.0 CONCLUSIONS

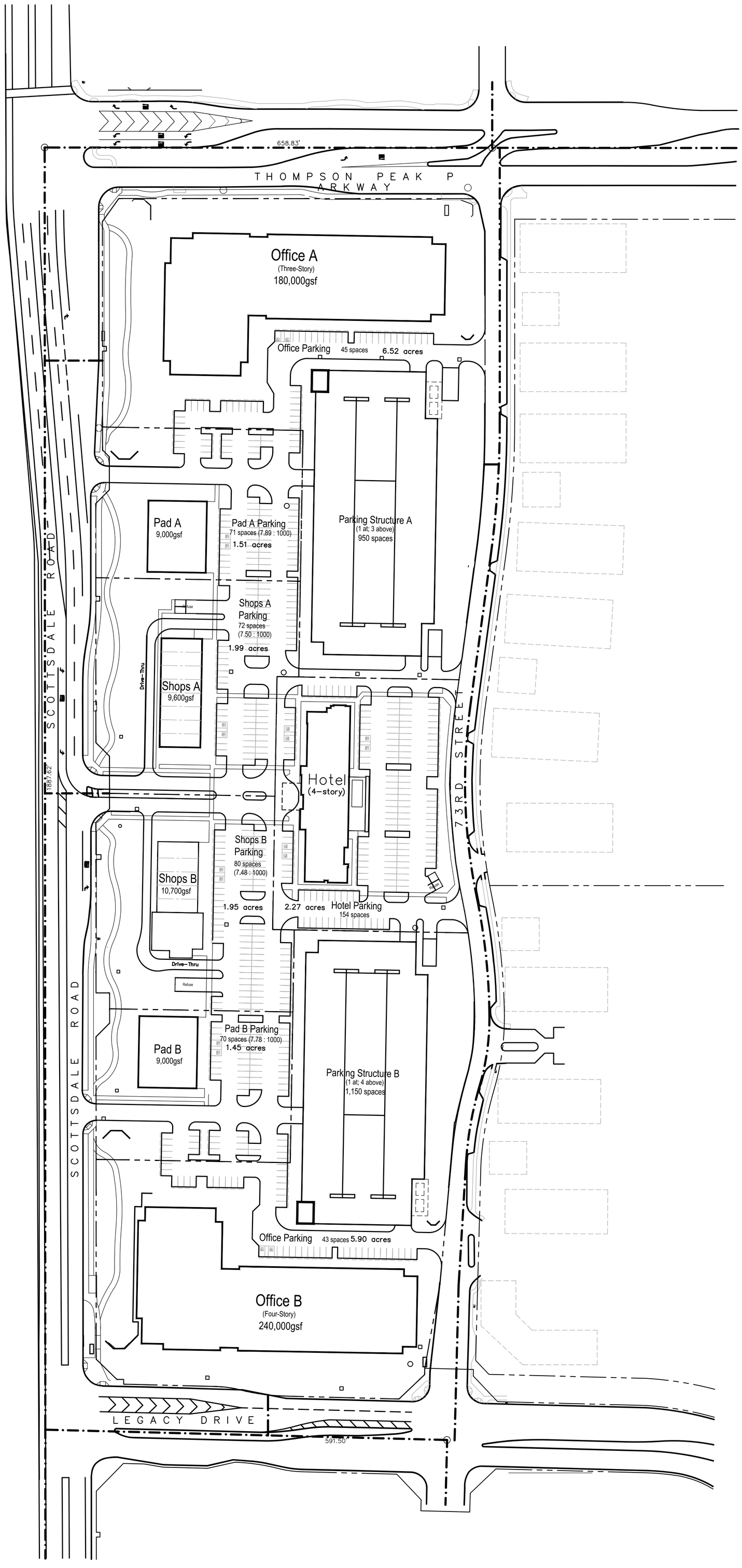
The One Scottsdale project will provide service to the approximate 21.73-arce development (7 total buildings) by constructing a public looped 8" waterline system and one public 12" sewer line extended into the site to service proposed and future buildings. The water line will provide adequate protection for domestic, landscape and fire flow requirements.

The 15-inch and 12-inch PVC public sewer line slopes are proposed at 0.24% from the existing 15-inch downstream sewer and the existing 10-inch upstream sewer. A 15-inch PVC public sewer downstream connection will be made to an existing manhole located in Scottsdale Road.

The existing flow was measured in the 15" sewer on Scottsdale Rd in March 2019 at 2.63 cfs . Scottsdale One adds 1.5 cfs to the existing flow for a total flow of 4.13 cfs. The 4.13 cfs flow gives a 0.63 d/D in the existing 15" Scottsdale Rd sewer - 0.70 is the acceptable d/D

APPENDIX A

Site Plan



Master Site Plan

Total Office Area:	420,000gsf (401,000rsf)
Total Retail Area:	38,300gsf
Total Area:	538,300gsf
Hotel:	66,000gsf (123 keys)

0' 80' 160' 240' 320' NORTH

14164

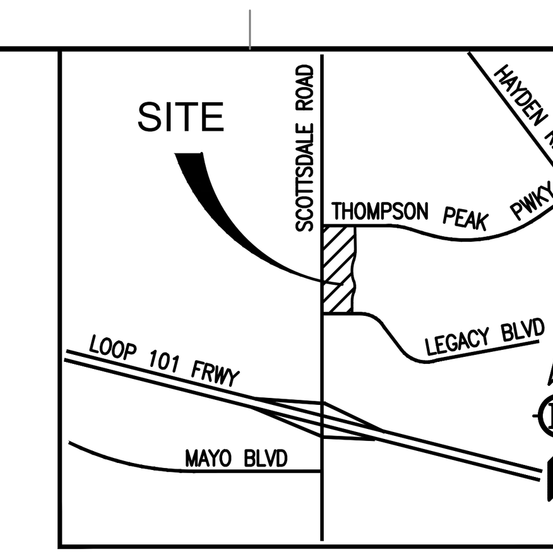
5-30-19

ONE SCOTTSDALE- Scottsdale, Arizona

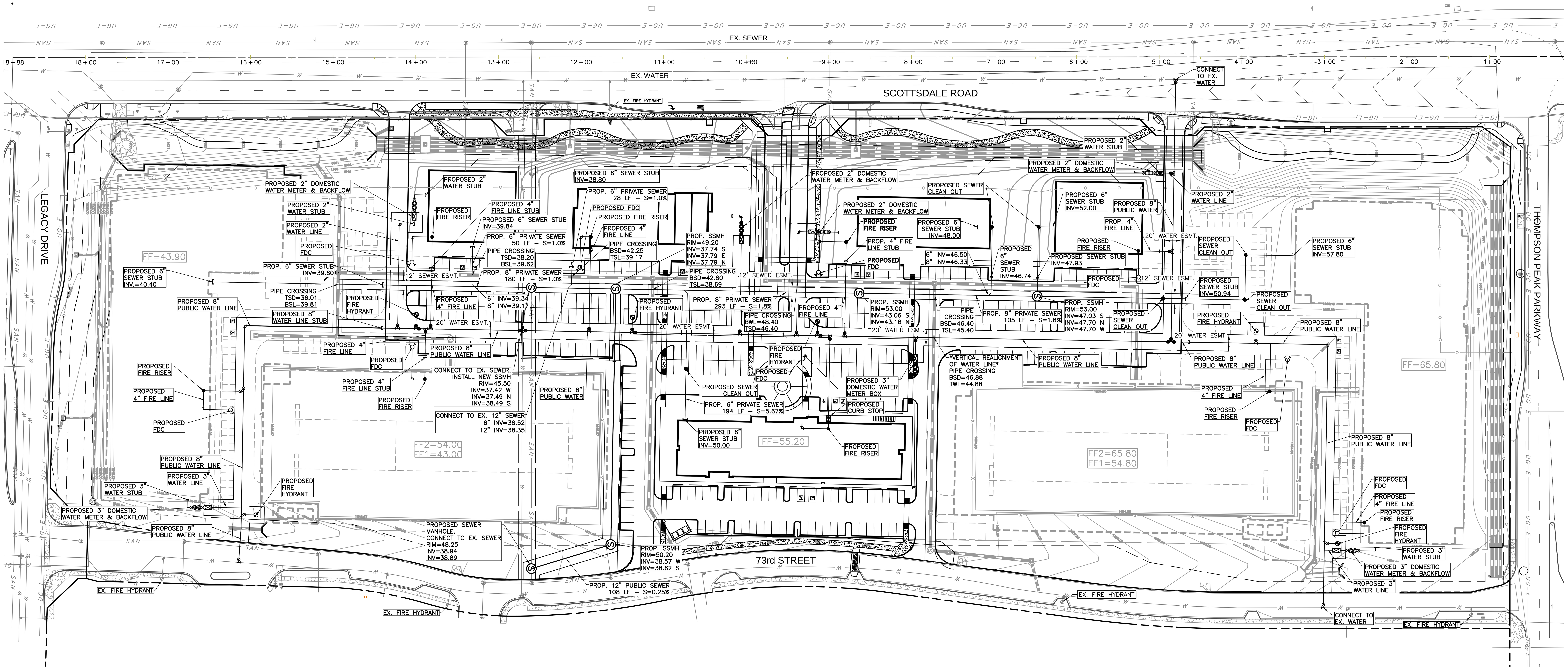
DAVIS

APPENDIX B

Overall Concept Utility Plan



VICINITY MAP
N.T.S.



EX. SEWER
EX. WATER
SCOTTSDALE ROAD
LEGACY DRIVE
THOMPSON PEAK PARKWAY
73rd STREET
EX. FIRE HYDRANT
CONNECT TO EX. WATER
PROPOSED 2" DOMESTIC WATER METER & BACKFLOW
PROPOSED 2" WATER STUB
PROPOSED 2" WATER LINE
PROPOSED FDC
PROPOSED FIRE RISER
PROPOSED 4" FIRE LINE
PROPOSED 4" FIRE LINE STUB
PROPOSED 6" SEWER STUB
PROPOSED 8" PUBLIC WATER LINE
PROPOSED 8" WATER LINE STUB
PROPOSED FIRE HYDRANT
PROPOSED SEWER CLEAN OUT
PROPOSED 3" WATER STUB
PROPOSED 3" WATER LINE
PROPOSED 3" DOMESTIC WATER METER & BACKFLOW
PROPOSED 3" DOMESTIC WATER METER BOX
PROPOSED CURB STOP
12' SEWER ESMT.
20' WATER ESMT.
FF=43.90
FF2=54.00
FF1=43.00
FF=55.20
FF2=65.80
FF1=54.80
FF=65.80
PROP. 12" PUBLIC SEWER 108 LF - S=0.25%
PROP. 8" PRIVATE SEWER 293 LF - S=1.8%
PROP. 8" PRIVATE SEWER 105 LF - S=1.8%
PROP. 8" PRIVATE SEWER 180 LF - S=1.0%
PROP. 6" PRIVATE SEWER 194 LF - S=5.67%
PROP. 6" PRIVATE SEWER 50 LF - S=1.0%
PROP. 6" PRIVATE SEWER 28 LF - S=1.0%
CONNECT TO EX. SEWER, INSTALL NEW SSMH RIM=45.50 INV=37.42 W INV=37.49 N INV=38.49 S
CONNECT TO EX. 12" SEWER 6" INV=38.52 12" INV=38.35
PROPOSED SEWER MANHOLE, CONNECT TO EX. SEWER RIM=48.25 INV=38.94 INV=38.89
PROP. SSMH RIM=50.20 INV=38.57 W INV=38.62 S
PROP. SSMH RIM=49.20 INV=37.74 S INV=37.79 E INV=37.79 N
PROP. SSMH RIM=53.00 INV=43.06 S INV=43.16 N
PROP. SSMH RIM=53.00 INV=47.03 S INV=47.70 N INV=47.70 W
VERTICAL REALIGNMENT OF WATER LINE PIPE CROSSING BSD=46.88 TWL=44.88
NORTH
SCALE IN FEET
0 60 120

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 23980
JEFFREY S. ERICKSON
ARIZONA, U.S.A.

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 · 877.231.2324 · Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

OVERALL CONCEPT UTILITY

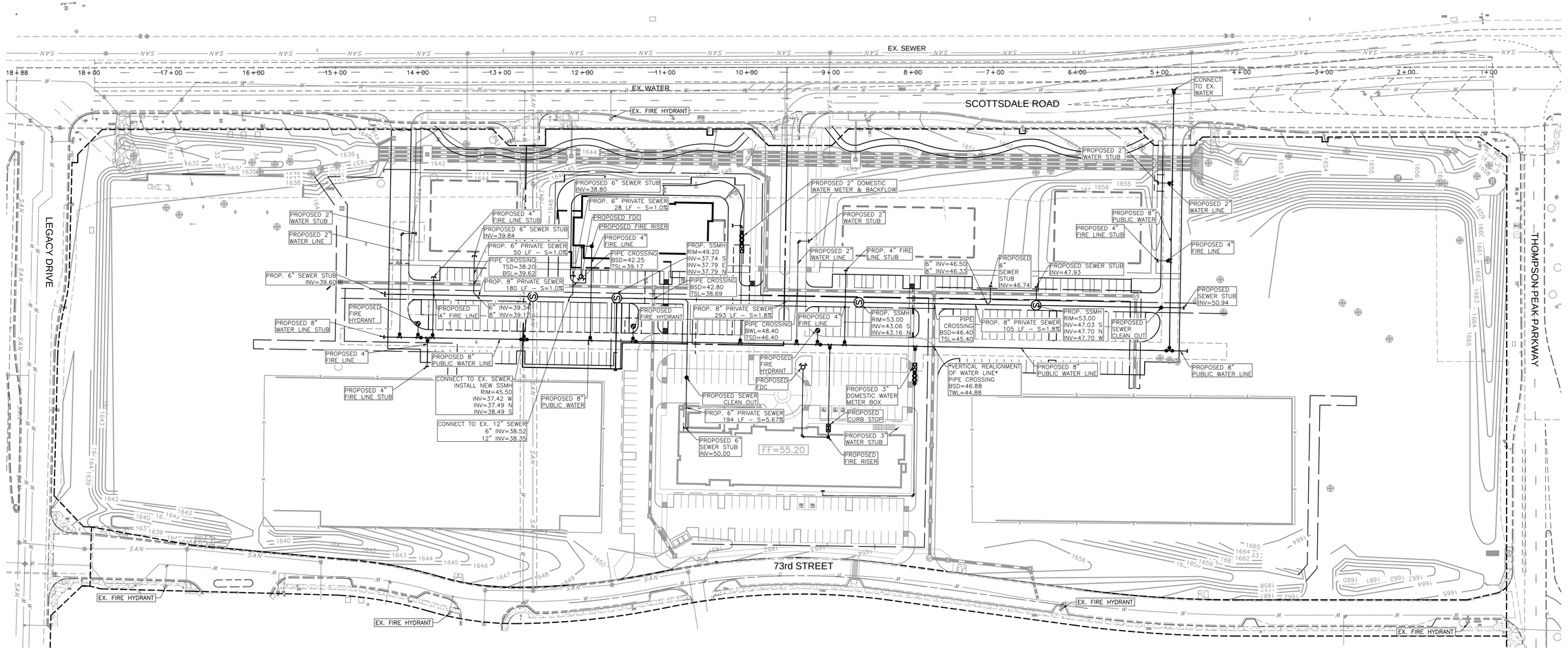
DATE:	11/5/19	DRAWN BY:	BB
DWG SCALE:	1"=60'	CHECKED BY:	KE
PROJECT NO:	180-168	APPROVED BY:	JSE

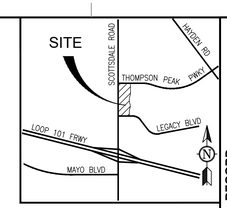
DRAWING NO.: CU01

SHEET 1 OF 1

APPENDIX C

Phase 1 Concept Utility Plan





VICINITY MAP
N.T.S.

FLOOD ZONE

ALL BUILDINGS WILL BE STRUCTURALLY INDEPENDENT AND WILL BE FLOODPROOFED TO 2 FEET ABOVE THE HIGHEST ADJACENT NATURAL GRADE WITHIN THE REGULATORY FLOODPLAIN – ZONE AO, DEPTH=1 FOOT.

OWNER

DMB
7600 E DOUBLETREE RANCH RD, SUITE 300
SCOTTSDALE, AZ 85258
CONTACT: MIKE BURKE

ARCHITECT

DAVIS
74 E. RIO SALADO PARKWAY, STE. 200
TEMPE, AZ 85281
PH: 480-638-1100
CONTACT: MIKE DAVIS

ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
118111 N. TATUM BLVD., SUITE 3057
PHOENIX, ARIZONA 85028
PH: 602-760-2324
FX: 602-760-2330
CONTACT: KALEY BUETHE, PE

PROPOSED LEGEND

- DRAINAGE AREA BOUNDARY
- PAVEMENT ELEVATION — P=58.00
- ONSITE DRAINAGE ARROW
- OFFSITE DRAINAGE ARROW
- CURB OPENING
- DRAINAGE AREA LABEL — DA2
- GRADE BREAK — G.B.
- DRYWELL
- RETENTION BASIN

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

NORTH

SCALE IN FEET
0 60 120

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
23980
JEFFREY S. ERICKSON
Date Signed 11/08/19
ARIZONA, U.S.A.
Expires 09/30/20

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 - 877.231.2324 - Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

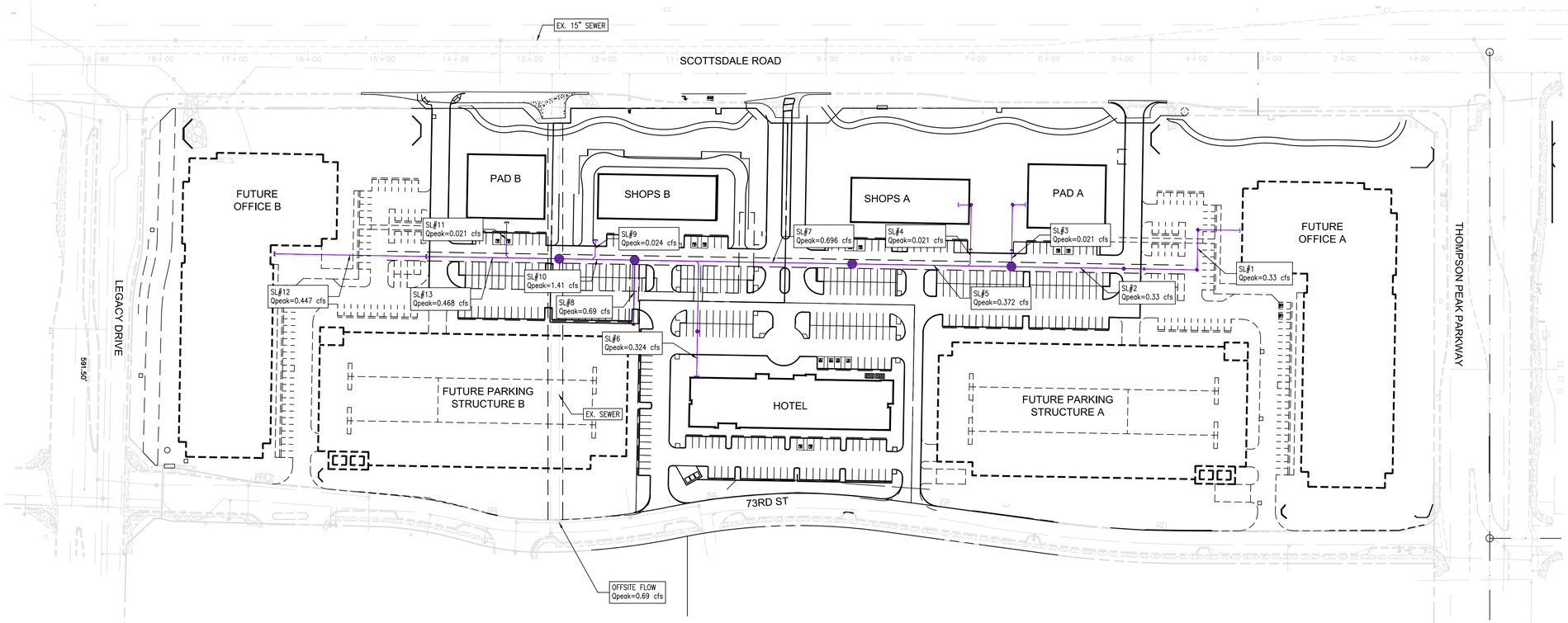
CONCEPT UTILITY
PHASE 1

DATE:	NOVEMBER 2019
DWG SCALE:	1"=60'
PROJECT NO:	180-168
DRAWN BY:	BB
CHECKED BY:	KE
APPROVED BY:	JSE

DRAWING NO.:
CU01
SHEET 1 OF 1

APPENDIX D

Sewer Exhibit & Calculations



NORTH

SCALE IN FEET

0 80 160

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

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
23980
JEFFREY S. ERICKSON
Date Signed
CIVIL
ARIZONA, U.S.A.
12/31/20

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 - 877.231.2324 - Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE - PHASE 1
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

SEWER EXHIBIT

DATE:	January 3, 2020
DRAWN BY:	BB
CHECKED BY:	KE
DWG SCALE:	
PROJECT NO:	180-168
APPROVED BY:	JSE

DRAWING NO.:

EX-1

SHEET 1 OF 1

Pipe ID	Q (cfs)	Peaking Factor	Q Peak (cfs)	Dia. (in)	Slope (ft/ft)	n	Depth (ft)	d/D	Vel. (fps)	Fr. #	Dcrit(ft)	Capacity	Max Q
SL#1	0.11	3	0.33	6	0.038	0.013	0.107	0.214	3.568	2.294	0.164	1.17	0.33
SL#2	0.11		0.33	8	0.018	0.013	0.117	0.1755	2.648	1.635	0.151	1.76	0.33
SL#3	0.007	3	0.021	6	0.01	0.013	0.039	0.078	0.981	1.061	0.04	0.6	0.021
SL#4	0.007	3	0.021	6	0.01	0.013	0.039	0.078	0.981	1.061	0.04	0.6	0.021
SL#5	0.124		0.372	8	0.018	0.013	0.125	0.1875	2.743	1.642	0.16	1.76	0.372
SL#6	0.072	4.5	0.324	6	0.0567	0.013	0.079	0.158	3.626	2.737	0.132	1.43	0.324
SL#7	0.196		0.696	8	0.018	0.013	0.156	0.234	3.137	1.665	0.203	1.76	0.696
SL#8	0.23	3	0.69	12	0.0025	0.013	0.243	0.243	1.562	0.664	0.197	1.91	0.69
SL#9	0.008	3	0.024	6	0.01	0.013	0.042	0.084	1.022	1.07	0.043	0.6	0.024
SL#10	0.434		1.41	12	0.0074	0.013	0.254	0.254	2.76	1.145	0.272	3.29	1.41
SL#11	0.007	3	0.021	6	0.01	0.013	0.039	0.078	0.981	1.061	0.04	0.6	0.021
SL#12	0.149	3	0.447	8	0.0038	0.013	0.202	0.303	1.665	0.769	0.176	0.81	0.447
SL#13	0.156	3	0.468	8	0.0038	0.013	0.207	0.3105	1.687	0.769	0.181	0.81	0.468

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Monday, October 14, 2019

Project Units: U.S. Customary Units

Notes:

Channel Analysis: SL#1

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0380 ft/ft

Manning's n: 0.0130

Flow: 0.1100 cfs

Result Parameters

Depth: 0.1071 ft

Area of Flow: 0.0308 ft^2

Wetted Perimeter: 0.4811 ft

Hydraulic Radius: 0.0641 ft

Average Velocity: 3.5683 ft/s

Top Width: 0.4102 ft

Froude Number: 2.2939

Critical Depth: 0.1641 ft

Critical Velocity: 1.9619 ft/s

Critical Slope: 0.0071 ft/ft

Critical Top Width: 0.47 ft

Calculated Max Shear Stress: 0.2539 lb/ft^2

Calculated Avg Shear Stress: 0.1519 lb/ft^2

Channel Analysis: SL#2

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0180 ft/ft

Manning's n: 0.0130

Flow: 0.1100 cfs

Result Parameters

Depth: 0.1174 ft

Area of Flow: 0.0415 ft^2

Wetted Perimeter: 0.5788 ft

Hydraulic Radius: 0.0718 ft

Average Velocity: 2.6484 ft/s

Top Width: 0.5095 ft

Froude Number: 1.6346

Critical Depth: 0.1510 ft

Critical Velocity: 1.8486 ft/s

Critical Slope: 0.0065 ft/ft

Critical Top Width: 0.56 ft

Calculated Max Shear Stress: 0.1319 lb/ft^2

Calculated Avg Shear Stress: 0.0806 lb/ft^2

Channel Analysis: SL#3

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0070 cfs

Result Parameters

Depth: 0.0392 ft

Area of Flow: 0.0071 ft^2

Wetted Perimeter: 0.2837 ft

Hydraulic Radius: 0.0251 ft

Average Velocity: 0.9813 ft/s

Top Width: 0.2687 ft

Froude Number: 1.0613

Critical Depth: 0.0403 ft

Critical Velocity: 0.9393 ft/s

Critical Slope: 0.0088 ft/ft

Critical Top Width: 0.27 ft

Calculated Max Shear Stress: 0.0244 lb/ft^2

Calculated Avg Shear Stress: 0.0157 lb/ft^2

Channel Analysis: SL#4

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0074 cfs

Result Parameters

Depth: 0.0403 ft

Area of Flow: 0.0074 ft^2

Wetted Perimeter: 0.2877 ft

Hydraulic Radius: 0.0258 ft

Average Velocity: 0.9988 ft/s

Top Width: 0.2721 ft

Froude Number: 1.0652

Critical Depth: 0.0416 ft

Critical Velocity: 0.9529 ft/s

Critical Slope: 0.0087 ft/ft

Critical Top Width: 0.28 ft

Calculated Max Shear Stress: 0.0251 lb/ft^2

Calculated Avg Shear Stress: 0.0161 lb/ft^2

Channel Analysis: SL#5

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0180 ft/ft

Manning's n: 0.0130

Flow: 0.1240 cfs

Result Parameters

Depth: 0.1245 ft

Area of Flow: 0.0452 ft^2

Wetted Perimeter: 0.5973 ft

Hydraulic Radius: 0.0757 ft

Average Velocity: 2.7434 ft/s

Top Width: 0.5213 ft

Froude Number: 1.6419

Critical Depth: 0.1605 ft

Critical Velocity: 1.9114 ft/s

Critical Slope: 0.0065 ft/ft

Critical Top Width: 0.57 ft

Calculated Max Shear Stress: 0.1399 lb/ft^2

Calculated Avg Shear Stress: 0.0850 lb/ft^2

Channel Analysis: SL#6

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0567 ft/ft

Manning's n: 0.0130

Flow: 0.0720 cfs

Result Parameters

Depth: 0.0788 ft

Area of Flow: 0.0199 ft^2

Wetted Perimeter: 0.4084 ft

Hydraulic Radius: 0.0486 ft

Average Velocity: 3.6258 ft/s

Top Width: 0.3645 ft

Froude Number: 2.7374

Critical Depth: 0.1318 ft

Critical Velocity: 1.7403 ft/s

Critical Slope: 0.0071 ft/ft

Critical Top Width: 0.44 ft

Calculated Max Shear Stress: 0.2790 lb/ft^2

Calculated Avg Shear Stress: 0.1720 lb/ft^2

Channel Analysis: SL#7

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0180 ft/ft

Manning's n: 0.0130

Flow: 0.1960 cfs

Result Parameters

Depth: 0.1563 ft

Area of Flow: 0.0625 ft^2

Wetted Perimeter: 0.6754 ft

Hydraulic Radius: 0.0925 ft

Average Velocity: 3.1371 ft/s

Top Width: 0.5667 ft

Froude Number: 1.6650

Critical Depth: 0.2032 ft

Critical Velocity: 2.1709 ft/s

Critical Slope: 0.0064 ft/ft

Critical Top Width: 0.62 ft

Calculated Max Shear Stress: 0.1755 lb/ft^2

Calculated Avg Shear Stress: 0.1039 lb/ft^2

Channel Analysis: SL#8

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 1.0000 ft

Longitudinal Slope: 0.0025 ft/ft

Manning's n: 0.0130

Flow: 0.2300 cfs

Result Parameters

Depth: 0.2427 ft

Area of Flow: 0.1472 ft^2

Wetted Perimeter: 1.0302 ft

Hydraulic Radius: 0.1429 ft

Average Velocity: 1.5622 ft/s

Top Width: 0.8574 ft

Froude Number: 0.6644

Critical Depth: 0.1968 ft

Critical Velocity: 2.1052 ft/s

Critical Slope: 0.0058 ft/ft

Critical Top Width: 0.80 ft

Calculated Max Shear Stress: 0.0379 lb/ft^2

Calculated Avg Shear Stress: 0.0223 lb/ft^2

Channel Analysis: SL#9

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0080 cfs

Result Parameters

Depth: 0.0417 ft

Area of Flow: 0.0078 ft^2

Wetted Perimeter: 0.2930 ft

Hydraulic Radius: 0.0267 ft

Average Velocity: 1.0218 ft/s

Top Width: 0.2765 ft

Froude Number: 1.0702

Critical Depth: 0.0432 ft

Critical Velocity: 0.9722 ft/s

Critical Slope: 0.0087 ft/ft

Critical Top Width: 0.28 ft

Calculated Max Shear Stress: 0.0260 lb/ft^2

Calculated Avg Shear Stress: 0.0167 lb/ft^2

Channel Analysis: SL#10

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 1.0000 ft

Longitudinal Slope: 0.0074 ft/ft

Manning's n: 0.0130

Flow: 0.4340 cfs

Result Parameters

Depth: 0.2542 ft

Area of Flow: 0.1572 ft^2

Wetted Perimeter: 1.0569 ft

Hydraulic Radius: 0.1487 ft

Average Velocity: 2.7605 ft/s

Top Width: 0.8709 ft

Froude Number: 1.1449

Critical Depth: 0.2725 ft

Critical Velocity: 2.5046 ft/s

Critical Slope: 0.0056 ft/ft

Critical Top Width: 0.89 ft

Calculated Max Shear Stress: 0.1174 lb/ft^2

Calculated Avg Shear Stress: 0.0687 lb/ft^2

Channel Analysis: SL#11

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.5000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.0070 cfs

Result Parameters

Depth: 0.0392 ft

Area of Flow: 0.0071 ft^2

Wetted Perimeter: 0.2837 ft

Hydraulic Radius: 0.0251 ft

Average Velocity: 0.9813 ft/s

Top Width: 0.2687 ft

Froude Number: 1.0613

Critical Depth: 0.0403 ft

Critical Velocity: 0.9393 ft/s

Critical Slope: 0.0088 ft/ft

Critical Top Width: 0.27 ft

Calculated Max Shear Stress: 0.0244 lb/ft^2

Calculated Avg Shear Stress: 0.0157 lb/ft^2

Channel Analysis: SL#12

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0038 ft/ft

Manning's n: 0.0130

Flow: 0.1490 cfs

Result Parameters

Depth: 0.2018 ft

Area of Flow: 0.0895 ft^2

Wetted Perimeter: 0.7785 ft

Hydraulic Radius: 0.1149 ft

Average Velocity: 1.6654 ft/s

Top Width: 0.6148 ft

Froude Number: 0.7693

Critical Depth: 0.1763 ft

Critical Velocity: 2.0109 ft/s

Critical Slope: 0.0064 ft/ft

Critical Top Width: 0.59 ft

Calculated Max Shear Stress: 0.0479 lb/ft^2

Calculated Avg Shear Stress: 0.0272 lb/ft^2

Channel Analysis: SL#13

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 0.6700 ft

Longitudinal Slope: 0.0038 ft/ft

Manning's n: 0.0130

Flow: 0.1560 cfs

Result Parameters

Depth: 0.2067 ft

Area of Flow: 0.0925 ft^2

Wetted Perimeter: 0.7891 ft

Hydraulic Radius: 0.1172 ft

Average Velocity: 1.6871 ft/s

Top Width: 0.6189 ft

Froude Number: 0.7692

Critical Depth: 0.1806 ft

Critical Velocity: 2.0361 ft/s

Critical Slope: 0.0064 ft/ft

Critical Top Width: 0.59 ft

Calculated Max Shear Stress: 0.0490 lb/ft^2

Calculated Avg Shear Stress: 0.0278 lb/ft^2

Project: Master On-Site Wastewater Plan for One Scottsdale (Stacked 40s)
Location: Scottsdale, Arizona
Date: February 10, 2012

Proj. Number: 021584.04
Proj. Engineer: SAA

UPSTREAM NODE	DOWNSTREAM NODE	MAX DAY FLOW (GPD)	PIPE DIA. (IN.)	PIPE SLOPE (FT / FT)	d/D RATIO	FULL FLOW VELOCITY (FPS)	PIPE CAPACITY (GPD)	SURPLUS CAPACITY (GPD)	PERCENT OF CAPACITY
A4	A2	59,239	8	0.00550	21.6%	2.6	580,390	521,152	10.2%
A3	A2	2,500	8	0.00550	4.8%	2.6	580,390	577,890	0.4%
A2	**A1 (OUTFALL # 1)**	**177,599**	**8**	**0.00550**	**38.0%**	**2.6**	**580,390**	**402,792**	**30.6%**
B5	B4	70,447	8	0.00550	23.6%	2.6	580,390	509,943	12.1%
B4	B3	167,199	8	0.00550	36.8%	2.6	580,390	413,192	28.8%
B3	B2	696,129	12	0.00300	53.0%	2.5	1,263,964	567,835	55.1%
B2	**B1 (OUTFALL #2)**	**846,895**	**12**	**0.00300**	**59.9%**	**2.5**	**1,263,964**	**417,069**	**67.0%**
C5	C4	98,037	8	0.00550	27.8%	2.6	580,390	482,353	16.9%
C4	C3	124,451	8	0.00550	31.5%	2.6	580,390	455,939	21.4%
C3	C2	275,553	10	0.00430	37.3%	2.6	930,533	654,980	29.6%
C2	**C1 (OUTFALL #3)**	**402,421**	**10**	**0.00430**	**46.0%**	**2.6**	**930,533**	**528,112**	**43.2%**
D3	D2	135,780	8	0.00550	32.9%	2.6	580,390	444,610	23.4%
D2	**D1 (OUTFALL #4)**	**566,463**	**10**	**0.00430**	**56.4%**	**2.6**	**930,533**	**364,071**	**60.9%**
E4	E3	881,109	12	0.00310	60.8%	2.5	1,284,858	403,748	68.6%
E10	E9	50,109	8	0.00550	19.9%	2.6	580,390	530,281	8.6%
E9	E3	144,219	8	0.00550	34.0%	2.6	580,390	436,172	24.8%
E3	E2	1,025,837	12	0.00360	64.1%	2.7	1,384,603	358,766	74.1%
E6	E5	62,109	8	0.00550	22.1%	2.6	580,390	518,281	10.7%
E8	E7	60,509	8	0.00550	21.8%	2.6	580,390	519,881	10.4%
E7	E5	74,585	8	0.00550	24.2%	2.6	580,390	505,806	12.9%
E5	E2	138,659	8	0.00550	33.3%	2.6	580,390	441,731	23.9%
E2	**E1 (OUTFALL #5)**	**1,165,005**	**12**	**0.00310**	**74.6%**	**2.5**	**1,284,858**	**119,852**	**90.7%**
F14	F13	43,189	8	0.00550	18.5%	2.6	580,390	537,201	7.4%
F13	F12	103,699	8	0.00550	28.7%	2.6	580,390	476,692	17.9%
F12	F11	120,208	8	0.00550	30.9%	2.6	580,390	460,182	20.7%
F17	F16	54,109	8	0.00550	20.7%	2.6	580,390	526,281	9.3%
F16	F15	108,219	8	0.00550	29.3%	2.6	580,390	472,172	18.6%
F15	F11	162,328	8	0.00550	36.2%	2.6	580,390	418,062	28.0%
F11	F10	299,045	8	0.00550	50.9%	2.6	580,390	281,345	51.5%
F10	F9	315,554	10	0.00430	40.1%	2.6	930,533	614,979	33.9%
F19	F18	43,709	8	0.00550	18.6%	2.6	580,390	536,681	7.5%
F18	F9	85,819	8	0.00550	26.0%	2.6	580,390	494,572	14.8%
F9	F8	401,882	10	0.00430	46.0%	2.6	930,533	528,652	43.2%
F8	F2	409,174	10	0.00430	46.4%	2.6	930,533	521,359	44.0%
F5	F4	45,182	8	0.00550	18.9%	2.6	580,390	535,208	7.8%
F4	F3	45,691	8	0.00550	19.0%	2.6	580,390	534,699	7.9%
F6	F3	45,182	8	0.00550	18.9%	2.6	580,390	535,208	7.8%
F3	F2	91,383	8	0.00550	26.8%	2.6	580,390	489,007	15.7%
F7	F2	22,816	8	0.00550	13.6%	2.6	580,390	557,544	3.9%
F2	**F1 (OUTFALL #6)**	**446,145**	**10**	**0.00430**	**48.8%**	**2.6**	**930,533**	**484,389**	**47.9%**

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PRELIMINARY
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CONSTRUCTION
OR RECORDING

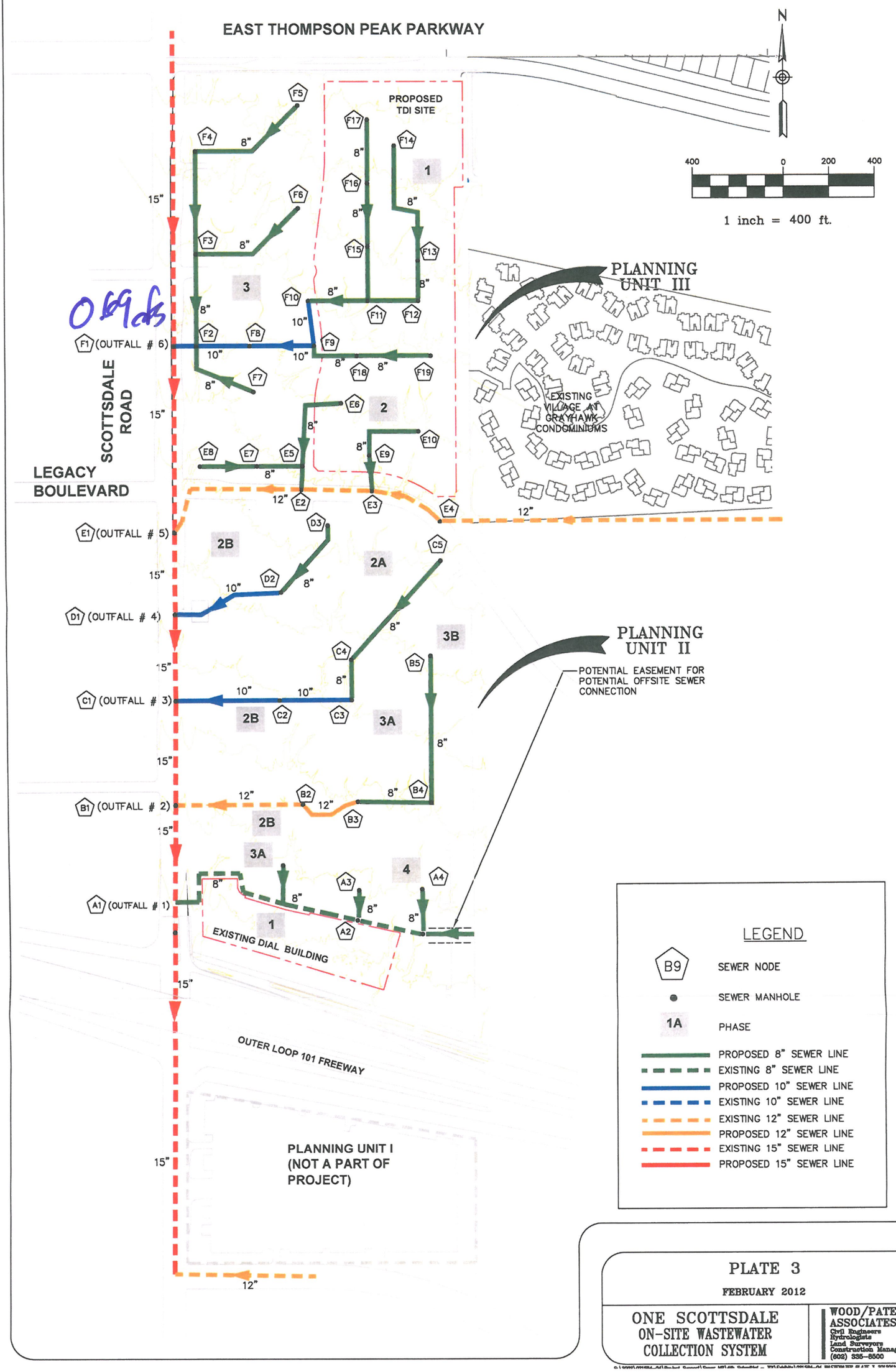


PLATE 3

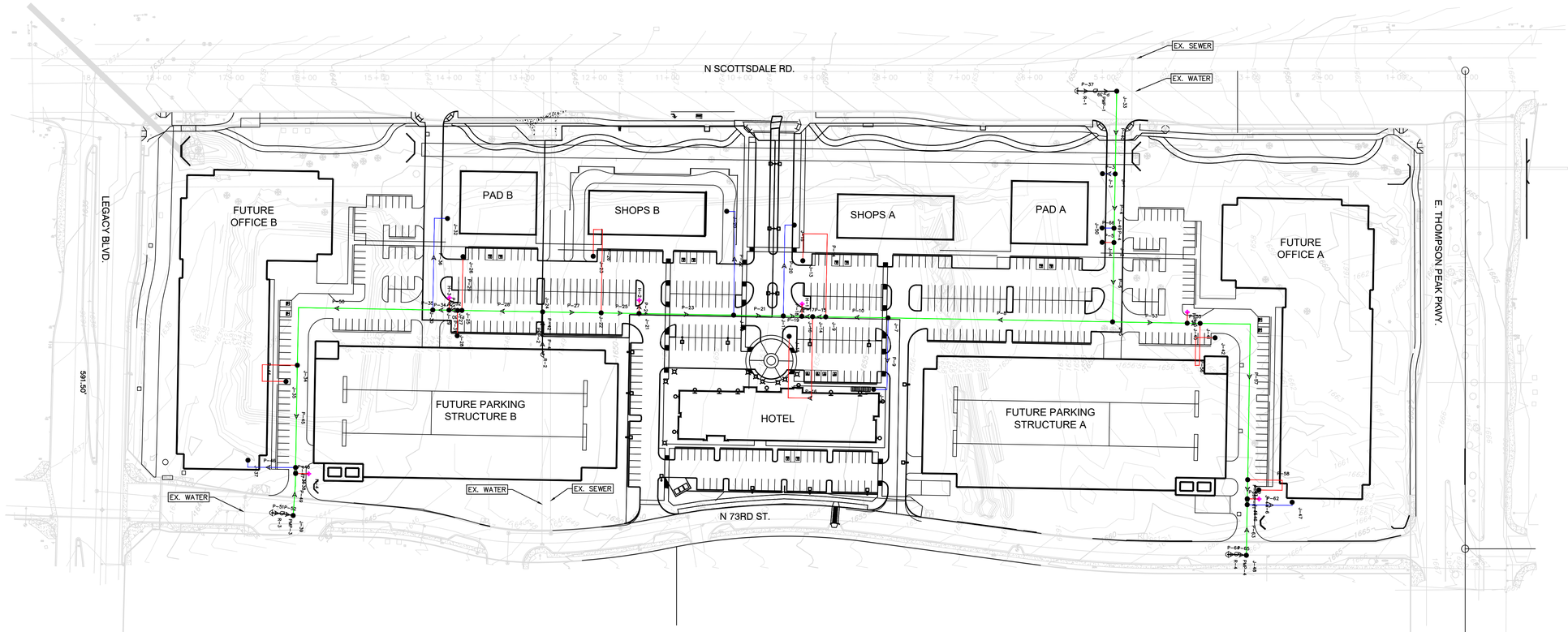
FEBRUARY 2012

ONE SCOTTSDALE
ON-SITE WASTEWATER
COLLECTION SYSTEM

WOOD/PATEL
ASSOCIATES
Civil Engineers
Hydrologists
Land Surveyors
Construction Managers
(602) 335-8500

APPENDIX E

Water Model Calculations & Exhibit



NORTH

SCALE IN FEET

0 80 160

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
23980
JEFFREY S. ERICKSON
Date Signed 12/23/19
ARIZONA, U.S.A.
Expires 09/30/20

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
11811 N. Tatum Blvd., Suite 3057 - Phoenix, AZ 85028
Ph: 602.760.2324 - 877.231.2324 - Fax: 602.760.2330
www.cecinc.com

ONE SCOTTSDALE - PHASE 1
CIVIL IMPROVEMENT PLANS
SCOTTSDALE, AZ

WATER EXHIBIT-OVERALL

DATE:	December 23, 2019
DRAWN BY:	BB
CHECKED BY:	KE
DWG SCALE:	
PROJECT NO.:	180-168
APPROVED BY:	JSE

DRAWING NO.:

EX-1

SHEET 1 OF 1

Overall
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.87	71
H-2	Open	1,000.00	0	1,164.87	71
H-3	Open	1,000.00	0	1,164.85	71
H-4	Open	1,000.00	0	1,164.79	71
H-5	Open	1,000.00	0	1,164.91	71
H-6	Open	1,000.00	0	1,164.90	71

Overall
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.97	71
J-2	1,000.00	0	1,164.94	71
J-3	1,000.00	10	1,164.92	71
J-4	1,000.00	0	1,164.94	71
J-5	1,000.00	0	1,164.91	71
J-7	1,000.00	0	1,164.87	71
J-8	1,000.00	77	1,162.64	70
J-9	1,000.00	0	1,164.87	71
J-13	1,000.00	0	1,164.87	71
J-14	1,000.00	0	1,164.87	71
J-15	1,000.00	0	1,164.87	71
J-16	1,000.00	0	1,164.87	71
J-17	1,000.00	0	1,164.87	71
J-18	1,000.00	11	1,164.39	71
J-19	1,000.00	0	1,164.87	71
J-20	1,000.00	19	1,163.24	71
J-21	1,000.00	0	1,164.87	71
J-22	1,000.00	0	1,164.87	71
J-23	1,000.00	0	1,164.87	71
J-24	1,000.00	0	1,164.88	71
J-25	1,000.00	0	1,164.86	71
J-26	1,000.00	0	1,164.86	71
J-27	1,000.00	0	1,164.85	71
J-28	1,000.00	0	1,164.85	71
J-29	1,000.00	0	1,164.85	71
J-30	1,000.00	0	1,164.85	71
J-32	1,000.00	10	1,164.40	71
J-33	1,000.00	0	1,165.01	71
J-34	1,000.00	0	1,164.81	71
J-35	1,000.00	0	1,164.81	71
J-36	1,000.00	0	1,164.78	71
J-37	1,036.00	200	1,156.45	52
J-38	1,000.00	0	1,164.79	71
J-39	1,000.00	0	1,164.81	71
J-40	1,000.00	0	1,164.91	71
J-41	1,000.00	0	1,164.91	71
J-42	1,000.00	0	1,164.91	71
J-43	1,000.00	0	1,164.90	71
J-44	1,000.00	0	1,164.90	71
J-45	1,000.00	0	1,164.90	71
J-46	1,000.00	0	1,164.90	71
J-47	1,000.00	150	1,160.61	69
J-48	1,000.00	0	1,164.92	71
J-49	1,000.00	0	1,164.95	71
J-50	1,000.00	0	1,164.95	71

Overall
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	10	1.02
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	105	0.67
309	J-5	J-7	8.0	Ductile Iron	130.0	73	0.47
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-4	0.03
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-4	0.03
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-4	0.03
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-4	0.03
138	J-17	J-18	2.0	Ductile Iron	130.0	11	1.09
68	J-17	J-19	8.0	Ductile Iron	130.0	-15	0.09
155	J-19	J-20	2.0	Ductile Iron	130.0	19	1.98
130	J-19	J-21	8.0	Ductile Iron	130.0	-34	0.22
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-34	0.22
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-34	0.22
111	J-24	J-25	8.0	Ductile Iron	130.0	86	0.55
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	86	0.55
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	86	0.55
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	86	0.55
144	J-30	J-32	2.0	Ductile Iron	130.0	10	1.02
26	R-1	PMP-1	120.0	Ductile Iron	130.0	115	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	115	0.33
114	J-33	J-1	8.0	Ductile Iron	130.0	115	0.73
29	R-2	PMP-2	120.0	Ductile Iron	130.0	121	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	121	0.34
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	76	0.49
76	J-36	J-37	3.0	Ductile Iron	130.0	200	9.08
8	J-36	J-38	8.0	Ductile Iron	130.0	-124	0.79
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-124	0.79
264	J-34	J-30	8.0	Ductile Iron	130.0	-76	0.49
15	R-3	PMP-3	120.0	Ductile Iron	130.0	124	0.00
15	PMP-3	J-39	12.0	Ductile Iron	130.0	124	0.35
103	J-5	J-40	8.0	Ductile Iron	130.0	32	0.20
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	32	0.20
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	32	0.20
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	32	0.20
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	32	0.20
66	J-46	J-47	3.0	Ductile Iron	130.0	150	6.81
70	J-46	J-48	8.0	Ductile Iron	130.0	-119	0.76
13	R-4	PMP-4	120.0	Ductile Iron	130.0	119	0.00
14	PMP-4	J-48	12.0	Ductile Iron	130.0	119	0.34
76	J-1	J-49	8.0	Ductile Iron	130.0	105	0.67
19	J-49	J-2	8.0	Ductile Iron	130.0	105	0.67
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,165.01	115	164.01
PMP-2	1,001.00	On	1,001.00	1,164.88	121	163.88
PMP-3	1,001.00	On	1,001.00	1,164.81	124	163.81
PMP-4	1,001.00	On	1,001.00	1,164.92	119	163.92

Overall
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	115	1,001.00
R-2	1,001.00	121	1,001.00
R-3	1,001.00	124	1,001.00
R-4	1,001.00	119	1,001.00

Overall
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	10	1.02
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	105	0.67
309	J-5	J-7	8.0	Ductile Iron	130.0	73	0.47
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-4	0.03
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-4	0.03
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-4	0.03
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-4	0.03
138	J-17	J-18	2.0	Ductile Iron	130.0	11	1.09
68	J-17	J-19	8.0	Ductile Iron	130.0	-15	0.09
155	J-19	J-20	2.0	Ductile Iron	130.0	19	1.98
130	J-19	J-21	8.0	Ductile Iron	130.0	-34	0.22
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-34	0.22
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-34	0.22
111	J-24	J-25	8.0	Ductile Iron	130.0	86	0.55
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	86	0.55
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	86	0.55
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	86	0.55
144	J-30	J-32	2.0	Ductile Iron	130.0	10	1.02
26	R-1	PMP-1	120.0	Ductile Iron	130.0	115	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	115	0.33
114	J-33	J-1	8.0	Ductile Iron	130.0	115	0.73
29	R-2	PMP-2	120.0	Ductile Iron	130.0	121	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	121	0.34
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	76	0.49
76	J-36	J-37	3.0	Ductile Iron	130.0	200	9.08
8	J-36	J-38	8.0	Ductile Iron	130.0	-124	0.79
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-124	0.79
264	J-34	J-30	8.0	Ductile Iron	130.0	-76	0.49
15	R-3	PMP-3	120.0	Ductile Iron	130.0	124	0.00
15	PMP-3	J-39	12.0	Ductile Iron	130.0	124	0.35
103	J-5	J-40	8.0	Ductile Iron	130.0	32	0.20
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	32	0.20
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	32	0.20
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	32	0.20
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	32	0.20
66	J-46	J-47	3.0	Ductile Iron	130.0	150	6.81
70	J-46	J-48	8.0	Ductile Iron	130.0	-119	0.76
13	R-4	PMP-4	120.0	Ductile Iron	130.0	119	0.00
14	PMP-4	J-48	12.0	Ductile Iron	130.0	119	0.34
76	J-1	J-49	8.0	Ductile Iron	130.0	105	0.67
19	J-49	J-2	8.0	Ductile Iron	130.0	105	0.67
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.97	71
J-2	1,000.00	0	1,164.94	71
J-3	1,000.00	10	1,164.92	71
J-4	1,000.00	0	1,164.94	71
J-5	1,000.00	0	1,164.91	71
J-7	1,000.00	0	1,164.87	71
J-8	1,000.00	77	1,162.64	70
J-9	1,000.00	0	1,164.87	71
J-13	1,000.00	0	1,164.87	71
J-14	1,000.00	0	1,164.87	71
J-15	1,000.00	0	1,164.87	71
J-16	1,000.00	0	1,164.87	71
J-17	1,000.00	0	1,164.87	71
J-18	1,000.00	11	1,164.39	71
J-19	1,000.00	0	1,164.87	71
J-20	1,000.00	19	1,163.24	71
J-21	1,000.00	0	1,164.87	71
J-22	1,000.00	0	1,164.87	71
J-23	1,000.00	0	1,164.87	71
J-24	1,000.00	0	1,164.88	71
J-25	1,000.00	0	1,164.86	71
J-26	1,000.00	0	1,164.86	71
J-27	1,000.00	0	1,164.85	71
J-28	1,000.00	0	1,164.85	71
J-29	1,000.00	0	1,164.85	71
J-30	1,000.00	0	1,164.85	71
J-32	1,000.00	10	1,164.40	71
J-33	1,000.00	0	1,165.01	71
J-34	1,000.00	0	1,164.81	71
J-35	1,000.00	0	1,164.81	71
J-36	1,000.00	0	1,164.78	71
J-37	1,036.00	200	1,156.45	52
J-38	1,000.00	0	1,164.79	71
J-39	1,000.00	0	1,164.81	71
J-40	1,000.00	0	1,164.91	71
J-41	1,000.00	0	1,164.91	71
J-42	1,000.00	0	1,164.91	71
J-43	1,000.00	0	1,164.90	71
J-44	1,000.00	0	1,164.90	71
J-45	1,000.00	0	1,164.90	71
J-46	1,000.00	0	1,164.90	71
J-47	1,000.00	150	1,160.61	69
J-48	1,000.00	0	1,164.92	71
J-49	1,000.00	0	1,164.95	71
J-50	1,000.00	0	1,164.95	71

Overall
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.87	71
H-2	Open	1,000.00	0	1,164.87	71
H-3	Open	1,000.00	0	1,164.85	71
H-4	Open	1,000.00	0	1,164.79	71
H-5	Open	1,000.00	0	1,164.91	71
H-6	Open	1,000.00	0	1,164.90	71

Overall
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	115	1,001.00
R-2	1,001.00	121	1,001.00
R-3	1,001.00	124	1,001.00
R-4	1,001.00	119	1,001.00

Overall
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,165.01	115	164.01
PMP-2	1,001.00	On	1,001.00	1,164.88	121	163.88
PMP-3	1,001.00	On	1,001.00	1,164.81	124	163.81
PMP-4	1,001.00	On	1,001.00	1,164.92	119	163.92

Overall
Max Day + FF

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,154.83	67
J-2	1,000.00	0	1,154.33	67
J-3	1,000.00	0	1,154.83	67
J-4	1,000.00	0	1,154.33	67
J-5	1,000.00	0	1,153.79	67
J-7	1,000.00	0	1,150.63	65
J-8	1,000.00	155	1,142.58	62
J-9	1,000.00	0	1,150.06	65
J-13	1,000.00	0	1,150.06	65
J-14	1,000.00	0	1,149.94	65
J-15	1,000.00	0	1,149.94	65
J-16	1,000.00	0	1,149.84	65
J-17	1,000.00	0	1,149.68	65
J-18	1,000.00	21	1,147.94	64
J-19	1,000.00	0	1,149.26	65
J-20	1,000.00	39	1,143.39	62
J-21	1,000.00	0	1,148.56	64
J-22	1,000.00	0	1,148.28	64
J-23	1,000.00	0	1,148.28	64
J-24	1,000.00	0	1,147.84	64
J-25	1,000.00	0	1,144.44	62
J-26	1,000.00	0	1,144.44	62
J-27	1,000.00	0	1,144.26	62
J-28	1,000.00	0	1,144.26	62
J-29	1,000.00	0	1,143.90	62
J-30	1,000.00	0	1,143.61	62
J-32	1,000.00	20	1,142.00	61
J-33	1,000.00	0	1,155.43	67
J-34	1,000.00	0	1,140.41	61
J-35	1,000.00	0	1,140.41	61
J-36	1,000.00	0	1,138.71	60
J-37	1,036.00	400	1,108.63	31
J-38	1,000.00	0	1,138.68	60
J-39	1,000.00	0	1,139.94	61
J-40	1,000.00	0	1,153.93	67
J-41	1,000.00	0	1,153.95	67
J-42	1,000.00	0	1,153.95	67
J-43	1,000.00	0	1,154.31	67
J-44	1,000.00	0	1,154.31	67
J-45	1,000.00	0	1,154.35	67
J-46	1,000.00	0	1,154.36	67
J-47	1,000.00	300	1,138.87	60
J-48	1,000.00	0	1,154.76	67
J-49	1,000.00	0	1,154.42	67
J-50	1,000.00	20	1,154.24	67

Overall
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	493	3.14
309	J-5	J-7	8.0	Ductile Iron	130.0	732	4.67
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	577	3.68
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	577	3.68
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	577	3.68
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	577	3.68
138	J-17	J-18	2.0	Ductile Iron	130.0	21	2.18
68	J-17	J-19	8.0	Ductile Iron	130.0	555	3.54
155	J-19	J-20	2.0	Ductile Iron	130.0	39	3.96
130	J-19	J-21	8.0	Ductile Iron	130.0	516	3.30
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	516	3.30
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	516	3.30
111	J-24	J-25	8.0	Ductile Iron	130.0	1,321	8.43
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	1,321	8.43
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	1,321	8.43
17	J-29	H-3	6.0	Ductile Iron	130.0	500	5.67
22	J-29	J-30	8.0	Ductile Iron	130.0	821	5.24
144	J-30	J-32	2.0	Ductile Iron	130.0	20	2.04
26	R-1	PMP-1	120.0	Ductile Iron	130.0	513	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	513	1.45
114	J-33	J-1	8.0	Ductile Iron	130.0	513	3.27
29	R-2	PMP-2	120.0	Ductile Iron	130.0	804	0.02
30	PMP-2	J-24	12.0	Ductile Iron	130.0	804	2.28
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	801	5.11
76	J-36	J-37	3.0	Ductile Iron	130.0	400	18.17
8	J-36	J-38	8.0	Ductile Iron	130.0	401	2.56
18	J-38	H-4	6.0	Ductile Iron	130.0	1,500	17.02
58	J-38	J-39	8.0	Ductile Iron	130.0	-1,099	7.02
264	J-34	J-30	8.0	Ductile Iron	130.0	-801	5.11
15	R-3	PMP-3	120.0	Ductile Iron	130.0	1,099	0.03
15	PMP-3	J-39	12.0	Ductile Iron	130.0	1,099	3.12
103	J-5	J-40	8.0	Ductile Iron	130.0	-239	1.53
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	-239	1.53
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	-239	1.53
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	-239	1.53
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	-239	1.53
66	J-46	J-47	3.0	Ductile Iron	130.0	300	13.63
70	J-46	J-48	8.0	Ductile Iron	130.0	-539	3.44
13	R-4	PMP-4	120.0	Ductile Iron	130.0	539	0.02
14	PMP-4	J-48	12.0	Ductile Iron	130.0	539	1.53
76	J-1	J-49	8.0	Ductile Iron	130.0	513	3.27
19	J-49	J-2	8.0	Ductile Iron	130.0	493	3.14
17	J-49	J-50	2.0	Ductile Iron	130.0	20	2.04

Overall
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,149.84	65
H-2	Open	1,000.00	0	1,148.56	64
H-3	Open	1,000.00	500	1,143.55	62
H-4	Open	1,000.00	1,500	1,135.85	59
H-5	Open	1,000.00	0	1,153.93	67
H-6	Open	1,000.00	0	1,154.35	67

Overall
Max Day + FF

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	513	1,001.00
R-2	1,001.00	804	1,001.00
R-3	1,001.00	1,099	1,001.00
R-4	1,001.00	539	1,001.00

Overall
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,155.45	513	154.45
PMP-2	1,001.00	On	1,001.00	1,147.89	804	146.89
PMP-3	1,001.00	On	1,001.00	1,139.99	1,099	138.99
PMP-4	1,001.00	On	1,001.00	1,154.78	539	153.78

Overall
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,149.84	65
H-2	Open	1,000.00	0	1,148.56	64
H-3	Open	1,000.00	500	1,143.55	62
H-4	Open	1,000.00	1,500	1,135.85	59
H-5	Open	1,000.00	0	1,153.93	67
H-6	Open	1,000.00	0	1,154.35	67

Overall
Max Day + FF

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,154.83	67
J-2	1,000.00	0	1,154.33	67
J-3	1,000.00	0	1,154.83	67
J-4	1,000.00	0	1,154.33	67
J-5	1,000.00	0	1,153.79	67
J-7	1,000.00	0	1,150.63	65
J-8	1,000.00	155	1,142.58	62
J-9	1,000.00	0	1,150.06	65
J-13	1,000.00	0	1,150.06	65
J-14	1,000.00	0	1,149.94	65
J-15	1,000.00	0	1,149.94	65
J-16	1,000.00	0	1,149.84	65
J-17	1,000.00	0	1,149.68	65
J-18	1,000.00	21	1,147.94	64
J-19	1,000.00	0	1,149.26	65
J-20	1,000.00	39	1,143.39	62
J-21	1,000.00	0	1,148.56	64
J-22	1,000.00	0	1,148.28	64
J-23	1,000.00	0	1,148.28	64
J-24	1,000.00	0	1,147.84	64
J-25	1,000.00	0	1,144.44	62
J-26	1,000.00	0	1,144.44	62
J-27	1,000.00	0	1,144.26	62
J-28	1,000.00	0	1,144.26	62
J-29	1,000.00	0	1,143.90	62
J-30	1,000.00	0	1,143.61	62
J-32	1,000.00	20	1,142.00	61
J-33	1,000.00	0	1,155.43	67
J-34	1,000.00	0	1,140.41	61
J-35	1,000.00	0	1,140.41	61
J-36	1,000.00	0	1,138.71	60
J-37	1,036.00	400	1,108.63	31
J-38	1,000.00	0	1,138.68	60
J-39	1,000.00	0	1,139.94	61
J-40	1,000.00	0	1,153.93	67
J-41	1,000.00	0	1,153.95	67
J-42	1,000.00	0	1,153.95	67
J-43	1,000.00	0	1,154.31	67
J-44	1,000.00	0	1,154.31	67
J-45	1,000.00	0	1,154.35	67
J-46	1,000.00	0	1,154.36	67
J-47	1,000.00	300	1,138.87	60
J-48	1,000.00	0	1,154.76	67
J-49	1,000.00	0	1,154.42	67
J-50	1,000.00	20	1,154.24	67

Overall
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	493	3.14
309	J-5	J-7	8.0	Ductile Iron	130.0	732	4.67
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	577	3.68
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	577	3.68
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	577	3.68
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	577	3.68
138	J-17	J-18	2.0	Ductile Iron	130.0	21	2.18
68	J-17	J-19	8.0	Ductile Iron	130.0	555	3.54
155	J-19	J-20	2.0	Ductile Iron	130.0	39	3.96
130	J-19	J-21	8.0	Ductile Iron	130.0	516	3.30
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	516	3.30
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	516	3.30
111	J-24	J-25	8.0	Ductile Iron	130.0	1,321	8.43
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	1,321	8.43
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	1,321	8.43
17	J-29	H-3	6.0	Ductile Iron	130.0	500	5.67
22	J-29	J-30	8.0	Ductile Iron	130.0	821	5.24
144	J-30	J-32	2.0	Ductile Iron	130.0	20	2.04
26	R-1	PMP-1	120.0	Ductile Iron	130.0	513	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	513	1.45
114	J-33	J-1	8.0	Ductile Iron	130.0	513	3.27
29	R-2	PMP-2	120.0	Ductile Iron	130.0	804	0.02
30	PMP-2	J-24	12.0	Ductile Iron	130.0	804	2.28
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	801	5.11
76	J-36	J-37	3.0	Ductile Iron	130.0	400	18.17
8	J-36	J-38	8.0	Ductile Iron	130.0	401	2.56
18	J-38	H-4	6.0	Ductile Iron	130.0	1,500	17.02
58	J-38	J-39	8.0	Ductile Iron	130.0	-1,099	7.02
264	J-34	J-30	8.0	Ductile Iron	130.0	-801	5.11
15	R-3	PMP-3	120.0	Ductile Iron	130.0	1,099	0.03
15	PMP-3	J-39	12.0	Ductile Iron	130.0	1,099	3.12
103	J-5	J-40	8.0	Ductile Iron	130.0	-239	1.53
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	-239	1.53
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	-239	1.53
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	-239	1.53
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	-239	1.53
66	J-46	J-47	3.0	Ductile Iron	130.0	300	13.63
70	J-46	J-48	8.0	Ductile Iron	130.0	-539	3.44
13	R-4	PMP-4	120.0	Ductile Iron	130.0	539	0.02
14	PMP-4	J-48	12.0	Ductile Iron	130.0	539	1.53
76	J-1	J-49	8.0	Ductile Iron	130.0	513	3.27
19	J-49	J-2	8.0	Ductile Iron	130.0	493	3.14
17	J-49	J-50	2.0	Ductile Iron	130.0	20	2.04

Overall
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,155.45	513	154.45
PMP-2	1,001.00	On	1,001.00	1,147.89	804	146.89
PMP-3	1,001.00	On	1,001.00	1,139.99	1,099	138.99
PMP-4	1,001.00	On	1,001.00	1,154.78	539	153.78

Overall
Max Day + FF

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	513	1,001.00
R-2	1,001.00	804	1,001.00
R-3	1,001.00	1,099	1,001.00
R-4	1,001.00	539	1,001.00

Overall
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	35	3.57
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	347	2.22
309	J-5	J-7	8.0	Ductile Iron	130.0	235	1.50
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-36	0.23
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-36	0.23
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-36	0.23
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-36	0.23
138	J-17	J-18	2.0	Ductile Iron	130.0	37	3.81
68	J-17	J-19	8.0	Ductile Iron	130.0	-74	0.47
155	J-19	J-20	2.0	Ductile Iron	130.0	68	6.92
130	J-19	J-21	8.0	Ductile Iron	130.0	-141	0.90
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-141	0.90
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-141	0.90
111	J-24	J-25	8.0	Ductile Iron	130.0	286	1.82
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	286	1.82
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	286	1.82
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	286	1.82
144	J-30	J-32	2.0	Ductile Iron	130.0	35	3.57
26	R-1	PMP-1	120.0	Ductile Iron	130.0	382	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	382	1.08
114	J-33	J-1	8.0	Ductile Iron	130.0	382	2.44
29	R-2	PMP-2	120.0	Ductile Iron	130.0	427	0.01
30	PMP-2	J-24	12.0	Ductile Iron	130.0	427	1.21
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	251	1.60
76	J-36	J-37	3.0	Ductile Iron	130.0	701	31.80
8	J-36	J-38	8.0	Ductile Iron	130.0	-450	2.87
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-450	2.87
264	J-34	J-30	8.0	Ductile Iron	130.0	-251	1.60
15	R-3	PMP-3	120.0	Ductile Iron	130.0	450	0.01
15	PMP-3	J-39	12.0	Ductile Iron	130.0	450	1.28
103	J-5	J-40	8.0	Ductile Iron	130.0	112	0.72
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	112	0.72
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	112	0.72
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	112	0.72
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	112	0.72
66	J-46	J-47	3.0	Ductile Iron	130.0	525	23.85
70	J-46	J-48	8.0	Ductile Iron	130.0	-413	2.64
13	R-4	PMP-4	120.0	Ductile Iron	130.0	413	0.01
14	PMP-4	J-48	12.0	Ductile Iron	130.0	413	1.17
76	J-1	J-49	8.0	Ductile Iron	130.0	347	2.22
19	J-49	J-2	8.0	Ductile Iron	130.0	347	2.22
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,158.35	69
J-2	1,000.00	0	1,158.11	68
J-3	1,000.00	35	1,157.80	68
J-4	1,000.00	0	1,158.11	68
J-5	1,000.00	0	1,157.83	68
J-7	1,000.00	0	1,157.44	68
J-8	1,000.00	271	1,134.74	58
J-9	1,000.00	0	1,157.44	68
J-13	1,000.00	0	1,157.44	68
J-14	1,000.00	0	1,157.44	68
J-15	1,000.00	0	1,157.44	68
J-16	1,000.00	0	1,157.44	68
J-17	1,000.00	0	1,157.45	68
J-18	1,000.00	37	1,152.54	66
J-19	1,000.00	0	1,157.46	68
J-20	1,000.00	68	1,140.91	61
J-21	1,000.00	0	1,157.52	68
J-22	1,000.00	0	1,157.54	68
J-23	1,000.00	0	1,157.54	68
J-24	1,000.00	0	1,157.58	68
J-25	1,000.00	0	1,157.38	68
J-26	1,000.00	0	1,157.38	68
J-27	1,000.00	0	1,157.37	68
J-28	1,000.00	0	1,157.37	68
J-29	1,000.00	0	1,157.35	68
J-30	1,000.00	0	1,157.31	68
J-32	1,000.00	35	1,152.78	66
J-33	1,000.00	0	1,158.70	69
J-34	1,000.00	0	1,156.94	68
J-35	1,000.00	0	1,156.94	68
J-36	1,000.00	0	1,156.74	68
J-37	1,000.00	701	1,071.94	31
J-38	1,000.00	0	1,156.78	68
J-39	1,000.00	0	1,157.02	68
J-40	1,000.00	0	1,157.79	68
J-41	1,000.00	0	1,157.79	68
J-42	1,000.00	0	1,157.79	68
J-43	1,000.00	0	1,157.70	68
J-44	1,000.00	0	1,157.70	68
J-45	1,000.00	0	1,157.69	68
J-46	1,000.00	0	1,157.69	68
J-47	1,000.00	525	1,114.03	49
J-48	1,000.00	0	1,157.93	68
J-49	1,000.00	0	1,158.16	68
J-50	1,000.00	0	1,158.16	68

Overall
Peak Hour Demand

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,157.44	68
H-2	Open	1,000.00	0	1,157.52	68
H-3	Open	1,000.00	0	1,157.35	68
H-4	Open	1,000.00	0	1,156.78	68
H-5	Open	1,000.00	0	1,157.79	68
H-6	Open	1,000.00	0	1,157.69	68

Overall
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	382	1,001.00
R-2	1,001.00	427	1,001.00
R-3	1,001.00	450	1,001.00
R-4	1,001.00	413	1,001.00

Overall
Peak Hour Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,158.71	382	157.71
PMP-2	1,001.00	On	1,001.00	1,157.60	427	156.60
PMP-3	1,001.00	On	1,001.00	1,157.03	450	156.03
PMP-4	1,001.00	On	1,001.00	1,157.94	413	156.94

Overall
Peak Hour Demand

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,157.44	68
H-2	Open	1,000.00	0	1,157.52	68
H-3	Open	1,000.00	0	1,157.35	68
H-4	Open	1,000.00	0	1,156.78	68
H-5	Open	1,000.00	0	1,157.79	68
H-6	Open	1,000.00	0	1,157.69	68

Overall
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,158.35	69
J-2	1,000.00	0	1,158.11	68
J-3	1,000.00	35	1,157.80	68
J-4	1,000.00	0	1,158.11	68
J-5	1,000.00	0	1,157.83	68
J-7	1,000.00	0	1,157.44	68
J-8	1,000.00	271	1,134.74	58
J-9	1,000.00	0	1,157.44	68
J-13	1,000.00	0	1,157.44	68
J-14	1,000.00	0	1,157.44	68
J-15	1,000.00	0	1,157.44	68
J-16	1,000.00	0	1,157.44	68
J-17	1,000.00	0	1,157.45	68
J-18	1,000.00	37	1,152.54	66
J-19	1,000.00	0	1,157.46	68
J-20	1,000.00	68	1,140.91	61
J-21	1,000.00	0	1,157.52	68
J-22	1,000.00	0	1,157.54	68
J-23	1,000.00	0	1,157.54	68
J-24	1,000.00	0	1,157.58	68
J-25	1,000.00	0	1,157.38	68
J-26	1,000.00	0	1,157.38	68
J-27	1,000.00	0	1,157.37	68
J-28	1,000.00	0	1,157.37	68
J-29	1,000.00	0	1,157.35	68
J-30	1,000.00	0	1,157.31	68
J-32	1,000.00	35	1,152.78	66
J-33	1,000.00	0	1,158.70	69
J-34	1,000.00	0	1,156.94	68
J-35	1,000.00	0	1,156.94	68
J-36	1,000.00	0	1,156.74	68
J-37	1,000.00	701	1,071.94	31
J-38	1,000.00	0	1,156.78	68
J-39	1,000.00	0	1,157.02	68
J-40	1,000.00	0	1,157.79	68
J-41	1,000.00	0	1,157.79	68
J-42	1,000.00	0	1,157.79	68
J-43	1,000.00	0	1,157.70	68
J-44	1,000.00	0	1,157.70	68
J-45	1,000.00	0	1,157.69	68
J-46	1,000.00	0	1,157.69	68
J-47	1,000.00	525	1,114.03	49
J-48	1,000.00	0	1,157.93	68
J-49	1,000.00	0	1,158.16	68
J-50	1,000.00	0	1,158.16	68

Overall
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	35	3.57
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	347	2.22
309	J-5	J-7	8.0	Ductile Iron	130.0	235	1.50
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-36	0.23
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-36	0.23
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-36	0.23
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-36	0.23
138	J-17	J-18	2.0	Ductile Iron	130.0	37	3.81
68	J-17	J-19	8.0	Ductile Iron	130.0	-74	0.47
155	J-19	J-20	2.0	Ductile Iron	130.0	68	6.92
130	J-19	J-21	8.0	Ductile Iron	130.0	-141	0.90
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-141	0.90
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-141	0.90
111	J-24	J-25	8.0	Ductile Iron	130.0	286	1.82
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	286	1.82
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	286	1.82
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	286	1.82
144	J-30	J-32	2.0	Ductile Iron	130.0	35	3.57
26	R-1	PMP-1	120.0	Ductile Iron	130.0	382	0.01
29	PMP-1	J-33	12.0	Ductile Iron	130.0	382	1.08
114	J-33	J-1	8.0	Ductile Iron	130.0	382	2.44
29	R-2	PMP-2	120.0	Ductile Iron	130.0	427	0.01
30	PMP-2	J-24	12.0	Ductile Iron	130.0	427	1.21
104	J-34	J-35	4.0	Ductile Iron	130.0	0	0.00
141	J-34	J-36	8.0	Ductile Iron	130.0	251	1.60
76	J-36	J-37	3.0	Ductile Iron	130.0	701	31.80
8	J-36	J-38	8.0	Ductile Iron	130.0	-450	2.87
18	J-38	H-4	6.0	Ductile Iron	130.0	0	0.00
58	J-38	J-39	8.0	Ductile Iron	130.0	-450	2.87
264	J-34	J-30	8.0	Ductile Iron	130.0	-251	1.60
15	R-3	PMP-3	120.0	Ductile Iron	130.0	450	0.01
15	PMP-3	J-39	12.0	Ductile Iron	130.0	450	1.28
103	J-5	J-40	8.0	Ductile Iron	130.0	112	0.72
15	J-40	H-5	6.0	Ductile Iron	130.0	0	0.00
18	J-40	J-41	8.0	Ductile Iron	130.0	112	0.72
129	J-41	J-42	4.0	Ductile Iron	130.0	0	0.00
284	J-41	J-43	8.0	Ductile Iron	130.0	112	0.72
94	J-43	J-44	4.0	Ductile Iron	130.0	0	0.00

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
26	J-43	J-45	8.0	Ductile Iron	130.0	112	0.72
16	J-45	H-6	6.0	Ductile Iron	130.0	0	0.00
8	J-45	J-46	8.0	Ductile Iron	130.0	112	0.72
66	J-46	J-47	3.0	Ductile Iron	130.0	525	23.85
70	J-46	J-48	8.0	Ductile Iron	130.0	-413	2.64
13	R-4	PMP-4	120.0	Ductile Iron	130.0	413	0.01
14	PMP-4	J-48	12.0	Ductile Iron	130.0	413	1.17
76	J-1	J-49	8.0	Ductile Iron	130.0	347	2.22
19	J-49	J-2	8.0	Ductile Iron	130.0	347	2.22
17	J-49	J-50	2.0	Ductile Iron	130.0	0	0.00

Overall
Peak Hour Demand

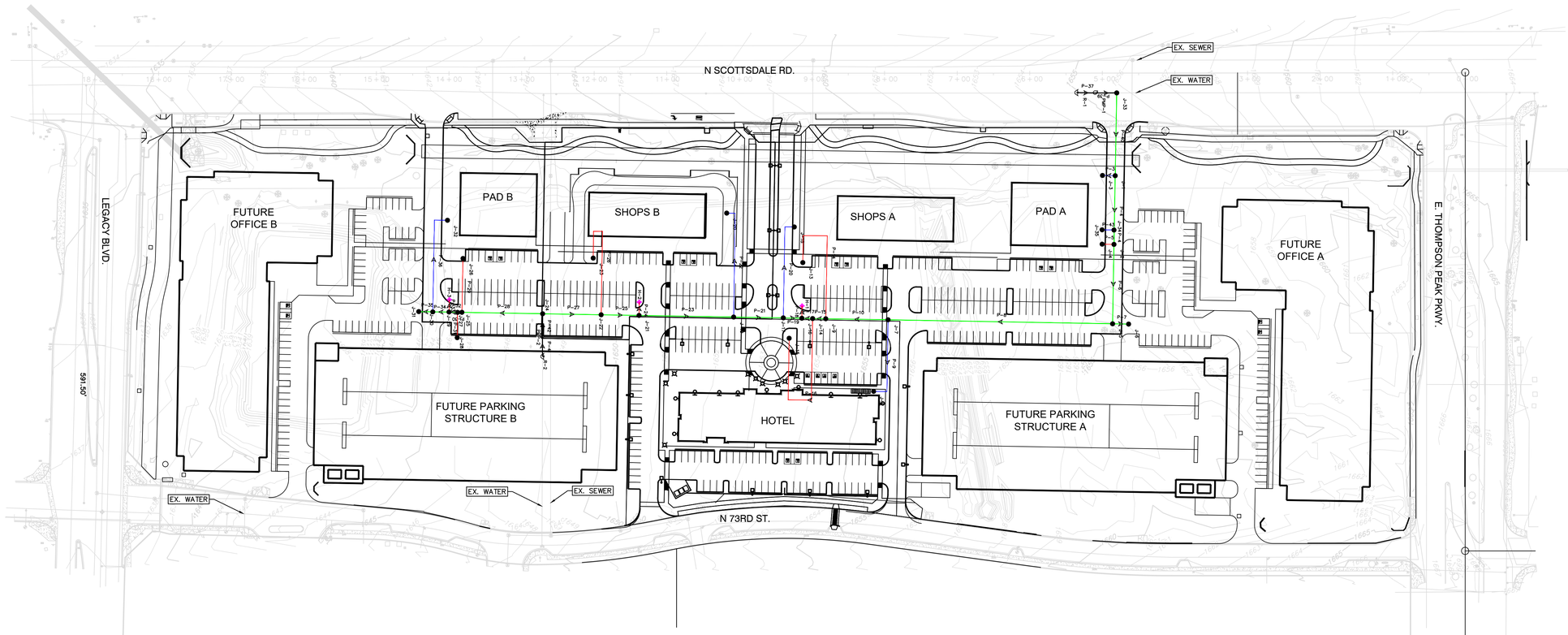
FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,158.71	382	157.71
PMP-2	1,001.00	On	1,001.00	1,157.60	427	156.60
PMP-3	1,001.00	On	1,001.00	1,157.03	450	156.03
PMP-4	1,001.00	On	1,001.00	1,157.94	413	156.94

Overall
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	382	1,001.00
R-2	1,001.00	427	1,001.00
R-3	1,001.00	450	1,001.00
R-4	1,001.00	413	1,001.00



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SCOTTSDALE, AZ

WATER EXHIBIT-PHASE 1

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DRAWN BY:	BB
CHECKED BY:	KE
DWG SCALE:	
PROJECT NO.:	180-168
APPROVED BY:	JSE

DRAWING NO.:
EX-1
SHEET 1 OF 1

Phase 1
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,166.60	72
H-2	Open	1,000.00	0	1,166.61	72
H-3	Open	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,166.61	72
J-2	1,000.00	0	1,166.61	72
J-3	1,000.00	0	1,166.61	72
J-4	1,000.00	0	1,166.61	72
J-5	1,000.00	0	1,166.60	72
J-6	1,000.00	0	1,166.60	72
J-7	1,000.00	0	1,166.59	72
J-8	1,048.00	77	1,164.36	50
J-9	1,000.00	0	1,166.59	72
J-13	1,000.00	0	1,166.59	72
J-14	1,000.00	0	1,166.59	72
J-15	1,000.00	0	1,166.59	72
J-16	1,000.00	0	1,166.60	72
J-17	1,000.00	0	1,166.60	72
J-18	1,000.00	0	1,166.60	72
J-19	1,000.00	0	1,166.60	72
J-20	1,000.00	0	1,166.60	72
J-21	1,000.00	0	1,166.61	72
J-22	1,000.00	0	1,166.61	72
J-23	1,000.00	0	1,166.61	72
J-24	1,000.00	0	1,166.61	72
J-25	1,000.00	0	1,166.61	72
J-26	1,000.00	0	1,166.61	72
J-27	1,000.00	0	1,166.61	72
J-28	1,000.00	0	1,166.61	72
J-29	1,000.00	0	1,166.61	72
J-30	1,000.00	0	1,166.61	72
J-31	1,000.00	0	1,166.61	72
J-32	1,000.00	0	1,166.61	72
J-33	1,000.00	0	1,166.62	72
J-34	1,000.00	0	1,166.61	72
J-35	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	39	0.25
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	39	0.25
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-39	0.25
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-39	0.25
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-39	0.25
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-39	0.25
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-39	0.25
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-39	0.25
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-39	0.25
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-39	0.25
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	39	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	39	0.11
114	J-33	J-1	8.0	Ductile Iron	130.0	39	0.25
29	R-2	PMP-2	120.0	Ductile Iron	130.0	39	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	39	0.11
76	J-1	J-34	8.0	Ductile Iron	130.0	39	0.25
19	J-34	J-2	8.0	Ductile Iron	130.0	39	0.25
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,166.62	39	165.62
PMP-2	1,001.00	On	1,001.00	1,166.61	39	165.61

Phase 1
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	39	1,001.00
R-2	1,001.00	39	1,001.00

Phase 1
Average Day Demand FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	39	0.25
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	39	0.25
117	J-7	J-8	3.0	Ductile Iron	130.0	77	3.52
86	J-7	J-9	8.0	Ductile Iron	130.0	-39	0.25
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-39	0.25
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-39	0.25
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-39	0.25
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-39	0.25
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-39	0.25
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-39	0.25
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-39	0.25
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	39	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	39	0.11
114	J-33	J-1	8.0	Ductile Iron	130.0	39	0.25
29	R-2	PMP-2	120.0	Ductile Iron	130.0	39	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	39	0.11
76	J-1	J-34	8.0	Ductile Iron	130.0	39	0.25
19	J-34	J-2	8.0	Ductile Iron	130.0	39	0.25
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Average Day Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,166.61	72
J-2	1,000.00	0	1,166.61	72
J-3	1,000.00	0	1,166.61	72
J-4	1,000.00	0	1,166.61	72
J-5	1,000.00	0	1,166.60	72
J-6	1,000.00	0	1,166.60	72
J-7	1,000.00	0	1,166.59	72
J-8	1,048.00	77	1,164.36	50
J-9	1,000.00	0	1,166.59	72
J-13	1,000.00	0	1,166.59	72
J-14	1,000.00	0	1,166.59	72
J-15	1,000.00	0	1,166.59	72
J-16	1,000.00	0	1,166.60	72
J-17	1,000.00	0	1,166.60	72
J-18	1,000.00	0	1,166.60	72
J-19	1,000.00	0	1,166.60	72
J-20	1,000.00	0	1,166.60	72
J-21	1,000.00	0	1,166.61	72
J-22	1,000.00	0	1,166.61	72
J-23	1,000.00	0	1,166.61	72
J-24	1,000.00	0	1,166.61	72
J-25	1,000.00	0	1,166.61	72
J-26	1,000.00	0	1,166.61	72
J-27	1,000.00	0	1,166.61	72
J-28	1,000.00	0	1,166.61	72
J-29	1,000.00	0	1,166.61	72
J-30	1,000.00	0	1,166.61	72
J-31	1,000.00	0	1,166.61	72
J-32	1,000.00	0	1,166.61	72
J-33	1,000.00	0	1,166.62	72
J-34	1,000.00	0	1,166.61	72
J-35	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,166.60	72
H-2	Open	1,000.00	0	1,166.61	72
H-3	Open	1,000.00	0	1,166.61	72

Phase 1
Average Day Demand FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	39	1,001.00
R-2	1,001.00	39	1,001.00

Phase 1
Average Day Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,166.62	39	165.62
PMP-2	1,001.00	On	1,001.00	1,166.61	39	165.61

Phase 1
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	958	6.11
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	958	6.11
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	803	5.12
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	803	5.12
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	803	5.12
17	J-16	H-1	6.0	Ductile Iron	130.0	1,500	17.02
26	J-16	J-17	8.0	Ductile Iron	130.0	-697	4.45
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-697	4.45
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-697	4.45
18	J-21	H-2	6.0	Ductile Iron	130.0	500	5.67
52	J-21	J-22	8.0	Ductile Iron	130.0	-1,197	7.64
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-1,197	7.64
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	958	0.03
29	PMP-1	J-33	12.0	Ductile Iron	130.0	958	2.72
114	J-33	J-1	8.0	Ductile Iron	130.0	958	6.11
29	R-2	PMP-2	120.0	Ductile Iron	130.0	1,197	0.03
30	PMP-2	J-24	12.0	Ductile Iron	130.0	1,197	3.40
76	J-1	J-34	8.0	Ductile Iron	130.0	958	6.11
19	J-34	J-2	8.0	Ductile Iron	130.0	958	6.11
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Max Day + FF FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,141.82	61
J-2	1,000.00	0	1,140.23	61
J-3	1,000.00	0	1,141.82	61
J-4	1,000.00	0	1,140.23	61
J-5	1,000.00	0	1,138.38	60
J-6	1,000.00	0	1,138.38	60
J-7	1,000.00	0	1,133.17	58
J-8	1,048.00	155	1,125.11	33
J-9	1,000.00	0	1,132.12	57
J-13	1,000.00	0	1,132.12	57
J-14	1,000.00	0	1,131.90	57
J-15	1,000.00	0	1,131.90	57
J-16	1,000.00	0	1,131.72	57
J-17	1,000.00	0	1,131.96	57
J-18	1,000.00	0	1,131.96	57
J-19	1,000.00	0	1,132.60	57
J-20	1,000.00	0	1,132.60	57
J-21	1,000.00	0	1,133.82	58
J-22	1,000.00	0	1,135.15	58
J-23	1,000.00	0	1,135.15	58
J-24	1,000.00	0	1,137.21	59
J-25	1,000.00	0	1,137.21	59
J-26	1,000.00	0	1,137.21	59
J-27	1,000.00	0	1,137.21	59
J-28	1,000.00	0	1,137.21	59
J-29	1,000.00	0	1,137.21	59
J-30	1,000.00	0	1,137.21	59
J-31	1,000.00	0	1,137.21	59
J-32	1,000.00	0	1,137.21	59
J-33	1,000.00	0	1,143.74	62
J-34	1,000.00	0	1,140.54	61
J-35	1,000.00	0	1,140.54	61

Phase 1
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	1,500	1,129.05	56
H-2	Open	1,000.00	500	1,133.44	58
H-3	Open	1,000.00	0	1,137.21	59

Phase 1
Max Day + FF FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	958	1,001.00
R-2	1,001.00	1,197	1,001.00

Phase 1
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,143.81	958	142.81
PMP-2	1,001.00	On	1,001.00	1,137.32	1,197	136.32

Phase 1
Max Day + FF

FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	1,500	1,129.05	56
H-2	Open	1,000.00	500	1,133.44	58
H-3	Open	1,000.00	0	1,137.21	59

Phase 1
Max Day + FF FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,141.82	61
J-2	1,000.00	0	1,140.23	61
J-3	1,000.00	0	1,141.82	61
J-4	1,000.00	0	1,140.23	61
J-5	1,000.00	0	1,138.38	60
J-6	1,000.00	0	1,138.38	60
J-7	1,000.00	0	1,133.17	58
J-8	1,048.00	155	1,125.11	33
J-9	1,000.00	0	1,132.12	57
J-13	1,000.00	0	1,132.12	57
J-14	1,000.00	0	1,131.90	57
J-15	1,000.00	0	1,131.90	57
J-16	1,000.00	0	1,131.72	57
J-17	1,000.00	0	1,131.96	57
J-18	1,000.00	0	1,131.96	57
J-19	1,000.00	0	1,132.60	57
J-20	1,000.00	0	1,132.60	57
J-21	1,000.00	0	1,133.82	58
J-22	1,000.00	0	1,135.15	58
J-23	1,000.00	0	1,135.15	58
J-24	1,000.00	0	1,137.21	59
J-25	1,000.00	0	1,137.21	59
J-26	1,000.00	0	1,137.21	59
J-27	1,000.00	0	1,137.21	59
J-28	1,000.00	0	1,137.21	59
J-29	1,000.00	0	1,137.21	59
J-30	1,000.00	0	1,137.21	59
J-31	1,000.00	0	1,137.21	59
J-32	1,000.00	0	1,137.21	59
J-33	1,000.00	0	1,143.74	62
J-34	1,000.00	0	1,140.54	61
J-35	1,000.00	0	1,140.54	61

Phase 1
Max Day + FF

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	958	6.11
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	958	6.11
117	J-7	J-8	3.0	Ductile Iron	130.0	155	7.03
86	J-7	J-9	8.0	Ductile Iron	130.0	803	5.12
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	803	5.12
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	803	5.12
17	J-16	H-1	6.0	Ductile Iron	130.0	1,500	17.02
26	J-16	J-17	8.0	Ductile Iron	130.0	-697	4.45
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-697	4.45
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-697	4.45
18	J-21	H-2	6.0	Ductile Iron	130.0	500	5.67
52	J-21	J-22	8.0	Ductile Iron	130.0	-1,197	7.64
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-1,197	7.64
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	958	0.03
29	PMP-1	J-33	12.0	Ductile Iron	130.0	958	2.72
114	J-33	J-1	8.0	Ductile Iron	130.0	958	6.11
29	R-2	PMP-2	120.0	Ductile Iron	130.0	1,197	0.03
30	PMP-2	J-24	12.0	Ductile Iron	130.0	1,197	3.40
76	J-1	J-34	8.0	Ductile Iron	130.0	958	6.11
19	J-34	J-2	8.0	Ductile Iron	130.0	958	6.11
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Max Day + FF

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,143.81	958	142.81
PMP-2	1,001.00	On	1,001.00	1,137.32	1,197	136.32

Phase 1
Max Day + FF FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	958	1,001.00
R-2	1,001.00	1,197	1,001.00

Phase 1
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	134	0.86
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	134	0.86
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-137	0.87
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-137	0.87
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-137	0.87
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-137	0.87
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-137	0.87
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-137	0.87
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-137	0.87
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-137	0.87
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	134	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	134	0.38
114	J-33	J-1	8.0	Ductile Iron	130.0	134	0.86
29	R-2	PMP-2	120.0	Ductile Iron	130.0	137	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	137	0.39
76	J-1	J-34	8.0	Ductile Iron	130.0	134	0.86
19	J-34	J-2	8.0	Ductile Iron	130.0	134	0.86
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.52	71
J-2	1,000.00	0	1,164.48	71
J-3	1,000.00	0	1,164.52	71
J-4	1,000.00	0	1,164.48	71
J-5	1,000.00	0	1,164.43	71
J-6	1,000.00	0	1,164.43	71
J-7	1,000.00	0	1,164.30	71
J-8	1,048.00	271	1,141.60	40
J-9	1,000.00	0	1,164.34	71
J-13	1,000.00	0	1,164.34	71
J-14	1,000.00	0	1,164.34	71
J-15	1,000.00	0	1,164.34	71
J-16	1,000.00	0	1,164.35	71
J-17	1,000.00	0	1,164.36	71
J-18	1,000.00	0	1,164.36	71
J-19	1,000.00	0	1,164.39	71
J-20	1,000.00	0	1,164.39	71
J-21	1,000.00	0	1,164.45	71
J-22	1,000.00	0	1,164.48	71
J-23	1,000.00	0	1,164.48	71
J-24	1,000.00	0	1,164.51	71
J-25	1,000.00	0	1,164.51	71
J-26	1,000.00	0	1,164.51	71
J-27	1,000.00	0	1,164.51	71
J-28	1,000.00	0	1,164.51	71
J-29	1,000.00	0	1,164.51	71
J-30	1,000.00	0	1,164.51	71
J-31	1,000.00	0	1,164.51	71
J-32	1,000.00	0	1,164.51	71
J-33	1,000.00	0	1,164.57	71
J-34	1,000.00	0	1,164.49	71
J-35	1,000.00	0	1,164.49	71

Phase 1
Peak Hour Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.35	71
H-2	Open	1,000.00	0	1,164.45	71
H-3	Open	1,000.00	0	1,164.51	71

Phase 1
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	134	1,001.00
R-2	1,001.00	137	1,001.00

Phase 1
Peak Hour Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,164.58	134	163.58
PMP-2	1,001.00	On	1,001.00	1,164.52	137	163.52

Phase 1
Peak Hour Demand FlexTable: Hydrant Table

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	1,000.00	0	1,164.35	71
H-2	Open	1,000.00	0	1,164.45	71
H-3	Open	1,000.00	0	1,164.51	71

Phase 1
Peak Hour Demand FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,000.00	0	1,164.52	71
J-2	1,000.00	0	1,164.48	71
J-3	1,000.00	0	1,164.52	71
J-4	1,000.00	0	1,164.48	71
J-5	1,000.00	0	1,164.43	71
J-6	1,000.00	0	1,164.43	71
J-7	1,000.00	0	1,164.30	71
J-8	1,048.00	271	1,141.60	40
J-9	1,000.00	0	1,164.34	71
J-13	1,000.00	0	1,164.34	71
J-14	1,000.00	0	1,164.34	71
J-15	1,000.00	0	1,164.34	71
J-16	1,000.00	0	1,164.35	71
J-17	1,000.00	0	1,164.36	71
J-18	1,000.00	0	1,164.36	71
J-19	1,000.00	0	1,164.39	71
J-20	1,000.00	0	1,164.39	71
J-21	1,000.00	0	1,164.45	71
J-22	1,000.00	0	1,164.48	71
J-23	1,000.00	0	1,164.48	71
J-24	1,000.00	0	1,164.51	71
J-25	1,000.00	0	1,164.51	71
J-26	1,000.00	0	1,164.51	71
J-27	1,000.00	0	1,164.51	71
J-28	1,000.00	0	1,164.51	71
J-29	1,000.00	0	1,164.51	71
J-30	1,000.00	0	1,164.51	71
J-31	1,000.00	0	1,164.51	71
J-32	1,000.00	0	1,164.51	71
J-33	1,000.00	0	1,164.57	71
J-34	1,000.00	0	1,164.49	71
J-35	1,000.00	0	1,164.49	71

Phase 1
Peak Hour Demand

FlexTable: Pipe Table

Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
17	J-1	J-3	2.0	Ductile Iron	130.0	0	0.00
16	J-2	J-4	4.0	Ductile Iron	130.0	0	0.00
109	J-2	J-5	8.0	Ductile Iron	130.0	134	0.86
22	J-5	J-6	8.0	Ductile Iron	130.0	0	0.00
309	J-5	J-7	8.0	Ductile Iron	130.0	134	0.86
117	J-7	J-8	3.0	Ductile Iron	130.0	271	12.31
86	J-7	J-9	8.0	Ductile Iron	130.0	-137	0.87
185	J-9	J-13	6.0	Ductile Iron	130.0	0	0.00
18	J-9	J-14	8.0	Ductile Iron	130.0	-137	0.87
229	J-14	J-15	4.0	Ductile Iron	130.0	0	0.00
15	J-14	J-16	8.0	Ductile Iron	130.0	-137	0.87
17	J-16	H-1	6.0	Ductile Iron	130.0	0	0.00
26	J-16	J-17	8.0	Ductile Iron	130.0	-137	0.87
138	J-17	J-18	2.0	Ductile Iron	130.0	0	0.00
68	J-17	J-19	8.0	Ductile Iron	130.0	-137	0.87
155	J-19	J-20	2.0	Ductile Iron	130.0	0	0.00
130	J-19	J-21	8.0	Ductile Iron	130.0	-137	0.87
18	J-21	H-2	6.0	Ductile Iron	130.0	0	0.00
52	J-21	J-22	8.0	Ductile Iron	130.0	-137	0.87
164	J-22	J-23	4.0	Ductile Iron	130.0	0	0.00
81	J-22	J-24	8.0	Ductile Iron	130.0	-137	0.87
111	J-24	J-25	8.0	Ductile Iron	130.0	0	0.00
74	J-25	J-26	4.0	Ductile Iron	130.0	0	0.00
6	J-25	J-27	8.0	Ductile Iron	130.0	0	0.00
35	J-27	J-28	4.0	Ductile Iron	130.0	0	0.00
12	J-27	J-29	8.0	Ductile Iron	130.0	0	0.00
17	J-29	H-3	6.0	Ductile Iron	130.0	0	0.00
22	J-29	J-30	8.0	Ductile Iron	130.0	0	0.00
19	J-30	J-31	8.0	Ductile Iron	130.0	0	0.00
144	J-30	J-32	2.0	Ductile Iron	130.0	0	0.00
26	R-1	PMP-1	120.0	Ductile Iron	130.0	134	0.00
29	PMP-1	J-33	12.0	Ductile Iron	130.0	134	0.38
114	J-33	J-1	8.0	Ductile Iron	130.0	134	0.86
29	R-2	PMP-2	120.0	Ductile Iron	130.0	137	0.00
30	PMP-2	J-24	12.0	Ductile Iron	130.0	137	0.39
76	J-1	J-34	8.0	Ductile Iron	130.0	134	0.86
19	J-34	J-2	8.0	Ductile Iron	130.0	134	0.86
17	J-34	J-35	2.0	Ductile Iron	130.0	0	0.00

Phase 1
Peak Hour Demand

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-1	1,001.00	On	1,001.00	1,164.58	134	163.58
PMP-2	1,001.00	On	1,001.00	1,164.52	137	163.52

Phase 1
Peak Hour Demand

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,001.00	134	1,001.00
R-2	1,001.00	137	1,001.00

Flow Test Summary

Project Name:	EJFT 19237
Project Address:	20201 N Scottsdale Rd, Scottsdale, AZ 85255
Date of Flow Test:	2019-10-09
Time of Flow Test:	7:00 AM
Data Reliable Until:	2020-04-09
Conducted By:	Cesar Reyna & Austin Gourley (EJ Flow Tests) 602.999.7637
Witnessed By:	Sonny Schreiner (City of Scottsdale) 602.819.7718
City Forces Contacted:	City of Scottsdale (602.819.7718)
Permit Number:	C59886

Note Scottsdale requires a max static pressure of 72 psi for safety factor.

Raw Flow Test Data

Static Pressure:	99.0 PSI
Residual Pressure:	79.0 PSI
Flowing GPM:	3,619
GPM @ 20 PSI:	7,598

Data with a 27 PSI Safety Factor

Static Pressure:	72.0 PSI
Residual Pressure:	52.0 PSI
Flowing GPM:	3,619
GPM @ 20 PSI:	6,062

Hydrant F_1

Pitot Pressure (1):	50	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches
Pitot Pressure (2):	50	PSI
Coefficient of Discharge (2):	0.9	
Hydrant Orifice Diameter (2):	2.5	inches

Hydrant F_2

Pitot Pressure (1):	55	PSI
Coefficient of Discharge (1):	0.9	
Hydrant Orifice Diameter (1):	2.5	inches

Static-Residual Hydrant

Flow Hydrant

Distance Between F_1 and R
1265 ft (measured linearly)

Static-Residual Elevation
1665 ft (above sea level)

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

Elevation & distance values are approximate

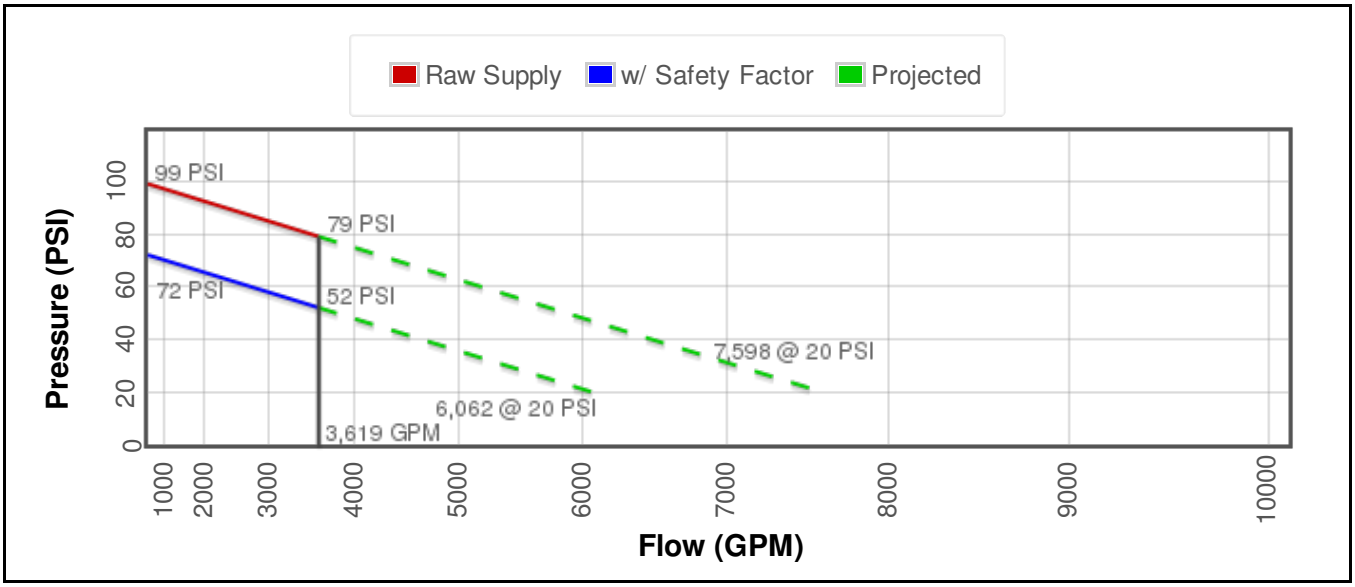
Flow Test Summary

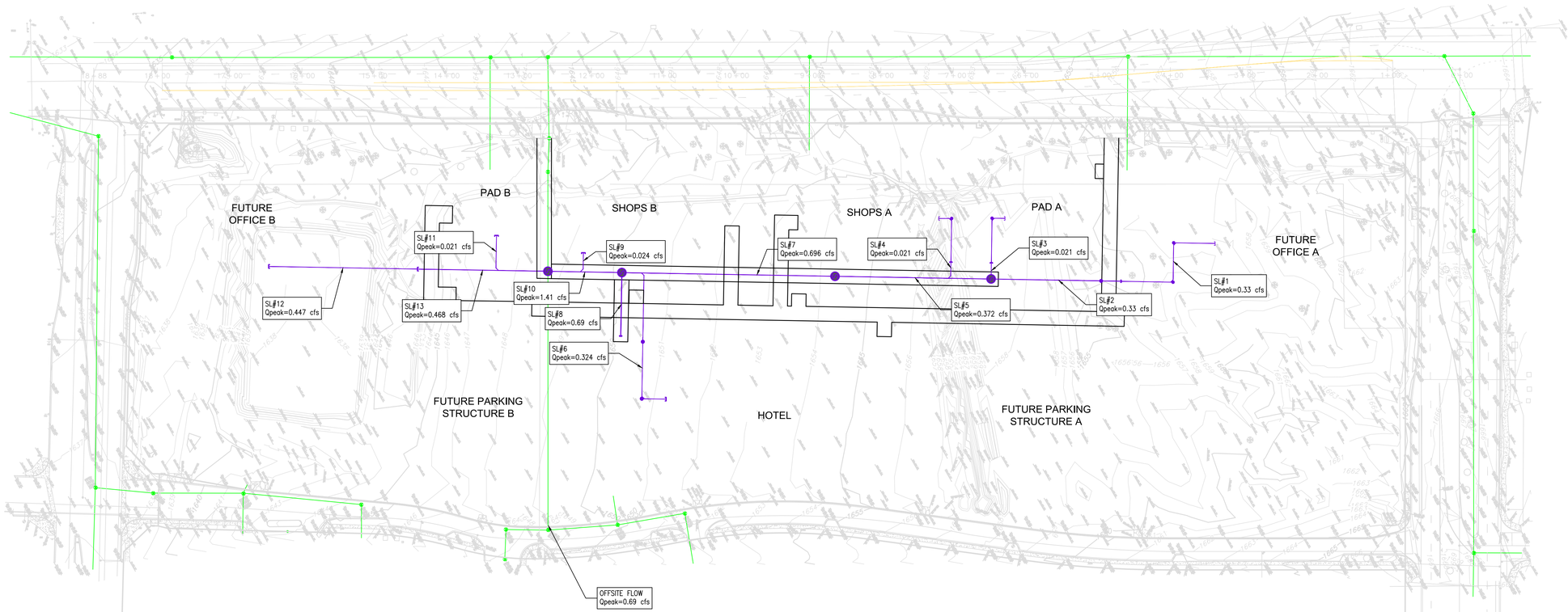
Static-Residual Hydrant

Flow Hydrant (only hydrant F1 shown for clarity)

Approximate Project Site

Water Supply Curve $N^{1.85}$ Graph





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CHECKED BY:	KE
DATE:	10/15/19
DWG SCALE:	
PROJECT NO.:	160-168
APPROVED BY:	JSE

DRAWING NO.:
EX-1
SHEET 1 OF 1

61-DR-2015#2
11/25/2019