FINAL SEWER BASIS OF DESIGN REPORT FOR NATURAL RESULTS SURGERY CENTER & MEDICAL SPA

Scottsdale, Arizona

January 12th, 2023

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.

02/08/2023

BY apritchard **DATE** 2/8/2023

PREPARED FOR
Kohan Architecture
490 Post Street, #1135
San Francisco, California 94102

DEVELOPER
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Scottsdale, Arizona 85255

SITE ADDRESS
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Scottsdale, Arizona 85255

61-DR-2014 #4

PREPARED BY
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CYPRESS # 21.143

53640
JEFFREY P.
HUNT

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INTRODUCTION: PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Natural Results Surgery Center & Medical Spa' and is located at 20001 North Scottsdale Road in Scottsdale, Arizona. The project is also known as Lot 4, or Pad B, of One Scottsdale (herein referred to as the "Master Development"). A Master Water and Wastewater Study Basis of Design Report dated January 3rd, 2020, by Civil & Environmental Consultants, Inc. (herein referred to as the "Master Report"). Additionally, a Water Basis of Design Report for QuickTrip Store No. 0480 was prepared by Kimley Horn and Associates in May 2022, which references and expands on the Master Report. Refer to Appendix A for Water BOD Report for QuickTrip Store No. 0480, which also contains the Master Report.

The proposed project consists of the development of a two-story medical office building to with the required paved parking, utility and drainage improvements, and amenity landscaping.

The utility provider for sewer facilities is the City of Scottsdale.

EXISTING CONDITIONS

Per available utility maps and as-built records, existing sewer mains are located in Scottsdale Road to the west of the project, within the existing Tract B supporting residential development to the east of the Master Development, and another main through the center of the Master Development. A 15" VCP sewer main is tapped from a manhole within Scottsdale Road to the west of the project and supplies sewer service to existing residential development east of the Project via an existing 10" PVC sewer main. Refer to Appendix B for City of Scottsdale Sewer Quarter Section Map.

The Master Development will be constructing new public sewer infrastructure to support the Project via a new 6" sewer service defined as SL#11 within the Master Report. The service ultimately connects to the existing 10" PVC sewer main in the center of the Master Development, continuing out to the 15" VCP sewer main in Scottsdale Road.

PROPOSED CONDITIONS

There is a pad site built by the Master Development that will be developed with a new 2-story medical office and spa building. The building will have a footprint of 17,000 square feet. Conservatively, the total building use will be split evenly between office use and spa use. The new building will connect to the existing 6" service lateral installed by the Master Development with a minimum slope of 1.0%. This is anticipated to provide adequate sizing to supply building. Refer to Appendix C for Preliminary Utility Plan.

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						

REQUIRED COMPU

Only a portion of the public sewer line will be built with Phase 1. During the overall construction an

EXISTING SEWER DEMAND:

Average Day Demand (Commercial/Retail): 0.5 GPD/SF x 15,774 SF = 7,887 GPD

Peak Demand: 3 x 7,887 = 23,661 GPD

PROPOSED SEWER DEMAND:

Average Day Demand [PER CITY OF SCOTTSDALE DSPM 2018 – CH. 7]

(Spa): 0.8 GPD/SF x 10,560 SF = 8,448 GPD

(Office): 0.4 GPD/SF x 6,440 SF = 2,576 GPD

Total: 11,024 GPD / 7.66 GPM

Peak Demand:

(Spa): 8,448 x 3.5 = 29,568 GPD

(Office): 2,576 x 3.0 = 7,728 GPD

Peak Total: 37,296 GPD / 25.9 GPM

The proposed demand is in line with the proposed demand within the Master Report. Thus, it is expected that the new sewer infrastructure will be sufficient to serve the new building, as it will size up the existing 4" service to a 6" service. Minimum design velocity is greater than 2.5 ft/s, refer to Sewer Flow Calculation in Appendix D.

CONCLUSION

CYPRESS respectfully submits this report as the Final Wastewater Design Report for the proposed Natural Results Surgery Center & Medical Spa Development. The proposed wastewater system shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
Wastewater Basis of Design Report
for QuickTrip Store No. 0480

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

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For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY scan DATE 6/28/2022

Wastewater Basis of Design Report

QuikTrip Store No. 0480

NEC of N. Scottsdale Road and E. Legacy Boulevard

Prepared for:

QuikTrip Corporation
4705 South 129th East Ave
Tulsa, OK 74134

Registered Professional Engineer (Civil)
CERTIFICATE NO.
64329
C. GARRETT FRAME
DATE SIGNED 05/02/22
ARIZONA U.S.A.

Prepared by:

Kimley-Horn & Associates, Inc.
7740 North 16th Street, Suite 300
Phoenix, AZ 85020

Kimley»Horn

291443018
May 2022

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1-UP-2022
5/10/2022

QuikTrip Store No. 0480

WASTEWATER BASIS OF DESIGN REPORT

MAY 2022

Prepared By:

Kimley»Horn

1-UP-2022
5/10/2022

Kimley»Horn

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Appendix C – Water and Wastewater Study Basis of Design Report by CEC Consultants, Inc.

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5/10/2022

1.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this wastewater basis of design report for the proposed QuikTrip Convenience Store (#0480) development at the northeast corner of Scottsdale Road and Legacy Boulevard in Scottsdale, Arizona. This report intends to demonstrate that the proposed project conforms to the City of Scottsdale design requirements.

The QuikTrip Development encompasses approximately 2.0 net acres and contains a 5,312 square feet of retail space. The project lies within a portion of the Northwest Quarter of Section 26, Township 4 North, Range 4 East of the Gila and Salt River Base and Meridian in Maricopa County, Arizona. The proposed development is a portion of the One Scottsdale Phase 1 Master Development (herein referred to as the "Master Development"). More specifically, the site is bounded on the west by Scottsdale Road, on the south by Legacy Boulevard, and on the north and east by the remaining portion of the Master Development. See **Appendix A** for the Vicinity Map.

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5/10/2022

2.0 WASTEWATER COLLECTION SYSTEM

2.1 INTENT AND SCOPE

The intent of this section is to evaluate the proposed sewer infrastructure and wastewater design flows for the development. As a result of this analysis, it will be determined if the sewer infrastructure is capable supporting the proposed development in accordance with the City of Scottsdale Design Standards & Policies Manual (**Reference 1**) and the One Scottsdale Phase 1 Master Plan (**Reference 2**).

2.2 SEWER INFRASTRUCTURE

There is an existing 15-inch VCP Sewer main located in Scottsdale Road along the west side of the project and an existing 12-inch PVC sewer main located in Legacy Road along the south side of the project. Additionally, there is an existing 10-inch PVC sewer main in 73rd Street along the east side of the Master Development. Lastly, there is an existing 10-inch sewer main that runs east-west and bisects the Master Development and discharges to the existing sewer main in Scottsdale Road.

The Master Development will be constructing a new 8-inch PVC private sewer main that connects to the existing 10-inch public sewer main that runs east-west through the master development. The proposed 8-inch sewer main will be stubbed at the north property line of the proposed QuikTrip parcel.

The QuikTrip development will connect to the 8-inch PVC sewer main stub and extend the sewer main through the site. The 8-inch sewer main extension will be stubbed at the east property line to serve future developments. A new 6-inch PVC sewer service will connect to the 8-inch PVC sewer main to serve the QuikTrip building.

Refer to **Appendix B** for the Preliminary Utility Plan.

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Note: The Quik Trip only occupies about half of the "Future Office B" parcel, reserving the remaining 280,032 gpd for the remainder of the parcel.

2.3 WASTEWATER DESIGN FLOWS

The following calculations are based on information provided in Section 7-1.403 of **R**

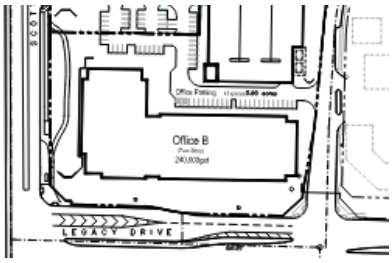
Table 1: Wastewater Design Flow

Commercial

Building	Building Area (SF)	Demand[2] (GPD/SF)	Average Daily Flow[1] (GPD)	Peak Flow[2] (GPD)	Peak Flow[2] (GPM)
QuikTrip Store #0480	5,312	0.5	2,656	7,968	5.53

Notes:

1. For commercial/retail land use, average day sewer demand is 0.5 gpd/sf. (Fig 7-1.2 of Reference 1)
2. Peaking factor for commercial/retail is 3.



Wastewater calculations can be found below. Using the City of Scottsdale factors:

- $Average\ Daily\ Demand\ (ADD) = 0.5\left(\frac{gpd}{sf}\right) * 5{,}312\ sf = \mathbf{2{,}656\ gpd}$
- $Max\ Day\ Demand = ADD * Peak\ Factor = 2{,}656\ gpd * 3.0 = \mathbf{7{,}968\ gpd}$

A wastewater model of the Master Development was performed in the Water and Wastewater Study Basis of Design Report for One Scottsdale Performed by CEC Consultants, Inc. on October 29, 2019. According to the Site Plan located in Appendix A of the One Scottsdale report, the QuikTrip parcel is located in a portion of a future pad anticipated to be a 240,000 sf type V-B office building. According to the Wastewater Demand table on page nine (9) of the One Scottsdale BOD report, the peak day demand for Future Office B is 288,000 gpd. This previously anticipated flow is greater than the proposed anticipated flow of 7,968 gpd for the QuikTrip site. See **Appendix C** for the Master Development Wastewater BOD Report.

3.0 CONCLUSION

This development proposes to connect to the One Scottsdale Master Development sewer main. The projected flow according to the One Scottsdale Master Development report is greater than the proposed flow for the QuikTrip parcel. Therefore, the master development wastewater infrastructure is sufficient to service the site.

4.0 REFERENCES

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

2. One Scottsdale Phase 1 Master Plan. March 2021.

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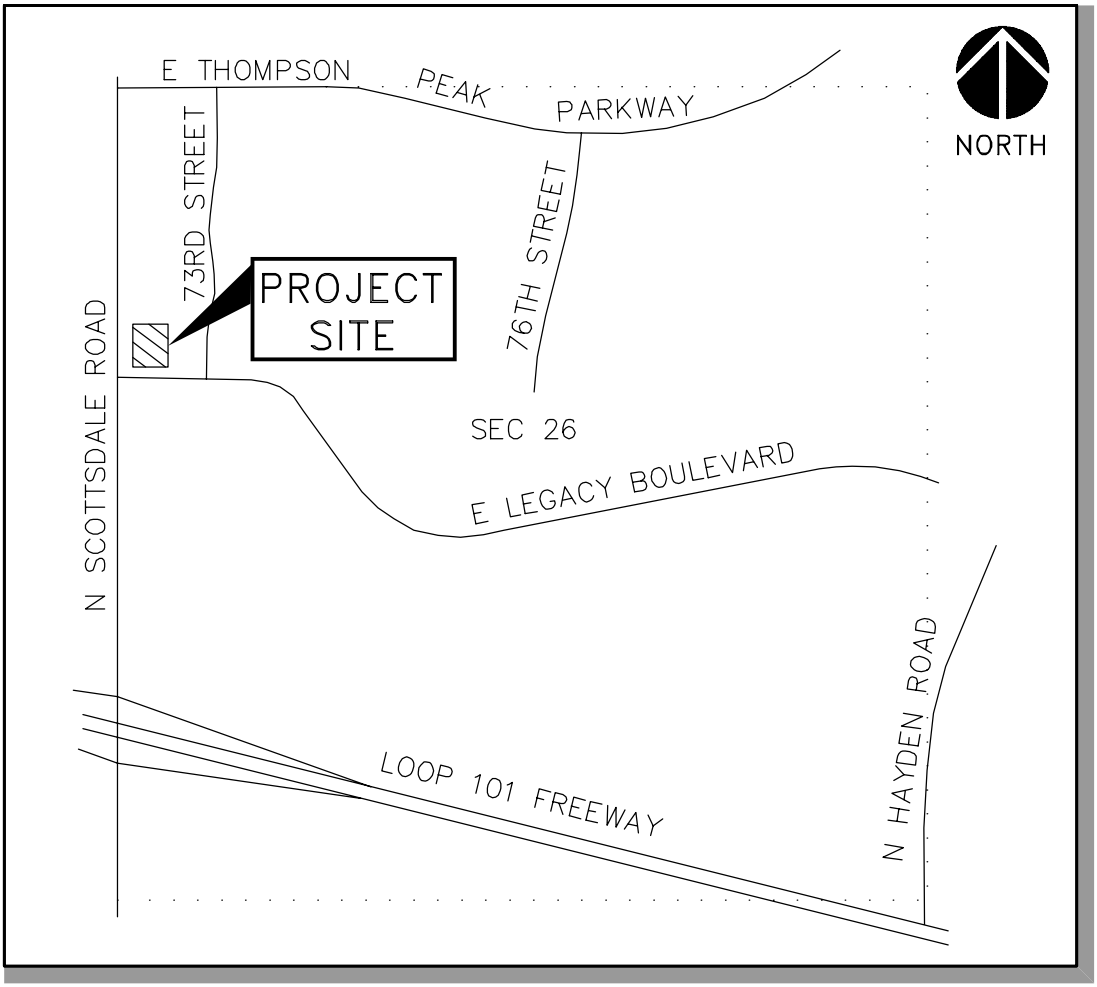
5/10/2022

Appendix A – Vicinity Map



SITE LOCATION MAP

SCOTTSDALE, AZ
N.T.S.

Kimley»Horn

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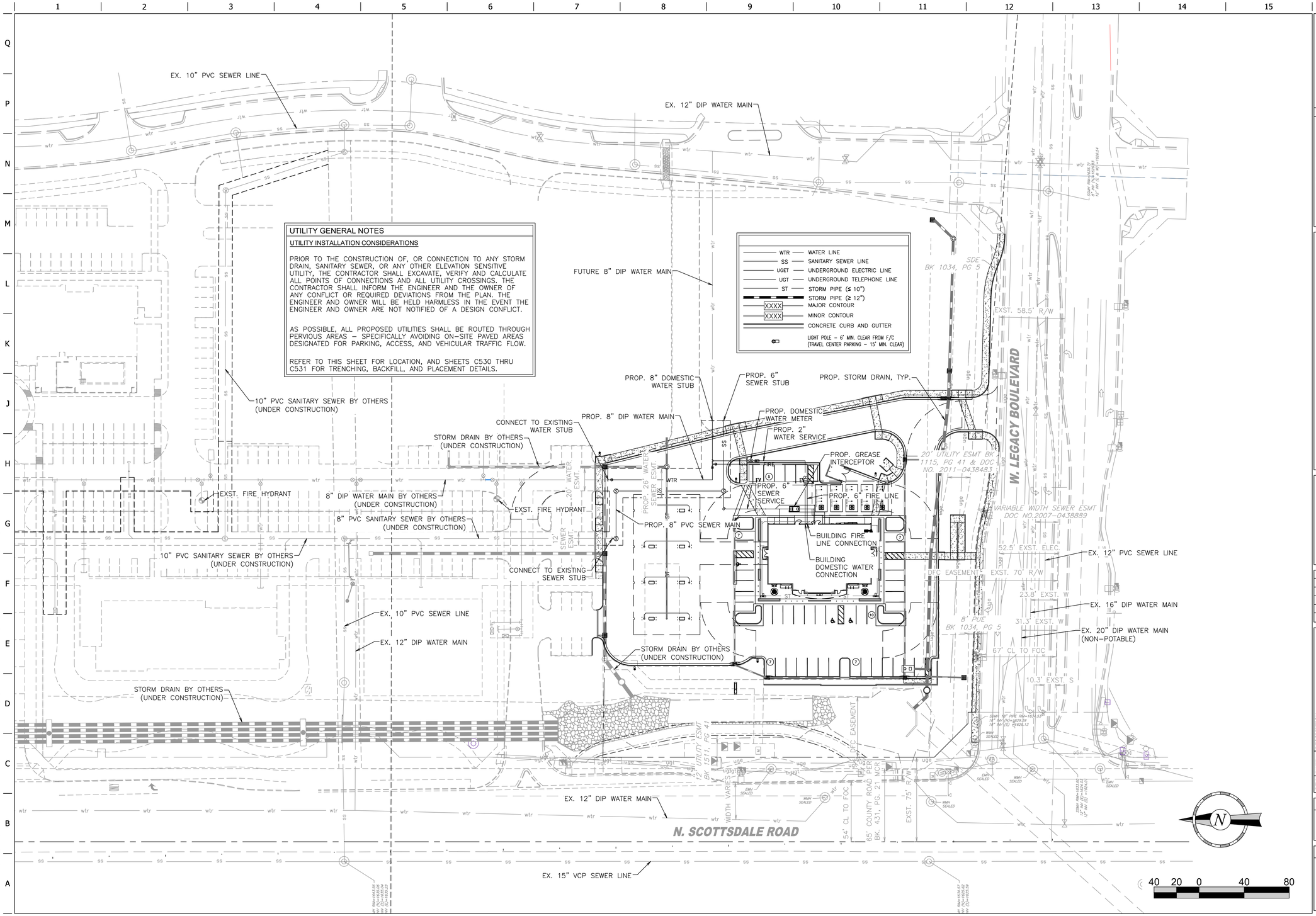
5/10/2022

Appendix B – Preliminary Utility Plan



UTILITY GENERAL NOTES

UTILITY INSTALLATION CONSIDERATIONS

PRIOR TO THE CONSTRUCTION OF, OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, OR ANY OTHER ELEVATION SENSITIVE UTILITY, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTIONS AND ALL UTILITY CROSSINGS. THE CONTRACTOR SHALL INFORM THE ENGINEER AND THE OWNER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. THE ENGINEER AND OWNER WILL BE HELD HARMLESS IN THE EVENT THE ENGINEER AND OWNER ARE NOT NOTIFIED OF A DESIGN CONFLICT.

AS POSSIBLE, ALL PROPOSED UTILITIES SHALL BE ROUTED THROUGH PERVIOUS AREAS – SPECIFICALLY AVOIDING ON-SITE PAVED AREAS DESIGNATED FOR PARKING, ACCESS, AND VEHICULAR TRAFFIC FLOW.

REFER TO THIS SHEET FOR LOCATION, AND SHEETS C530 THRU C531 FOR TRENCHING, BACKFILL, AND PLACEMENT DETAILS.

Registered Professional Engineer (Civil)
CERTIFICATE NO. 64329
C. GARRETT FRAME
Date Signed 10/18/22
ARIZONA, U.S.A.
Expires 06/30/23

PROJECT NO.:291443018

Kimley»Horn
© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
7740 NORTH 16TH STREET, SUITE 300
PHOENIX, ARIZONA 85020 (602) 944-5500

QuikTrip No. 0480

NEC SCOTTSDALE ROAD & LEGACY BOULEVARD
SCOTTSDALE, AZ

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VERSION: 001
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DRAWN BY:
REVIEWED BY:

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 07/06/2022

SHEET TITLE:
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SHEET NUMBER:
UT1

FILE LOCATION:K:\PHX_Civil\291443018 – QT0480 – Scottsdale Rd & Legacy\CADD\05-0480 Utility.dwg TAB NAME:Preliminary Utility USER:Max.Halpert SAVED:10/18/2022 2:25 PM PLOTTED:10/18/2022 6:02 PM

Appendix C – Master Development Water and Wastewater Study Basis of Design Report

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

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

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5/10/2022

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APPENDIX E – WATER MODEL CALCULATIONS & EXHIBIT

1-UP-2022
5/10/2022

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 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.

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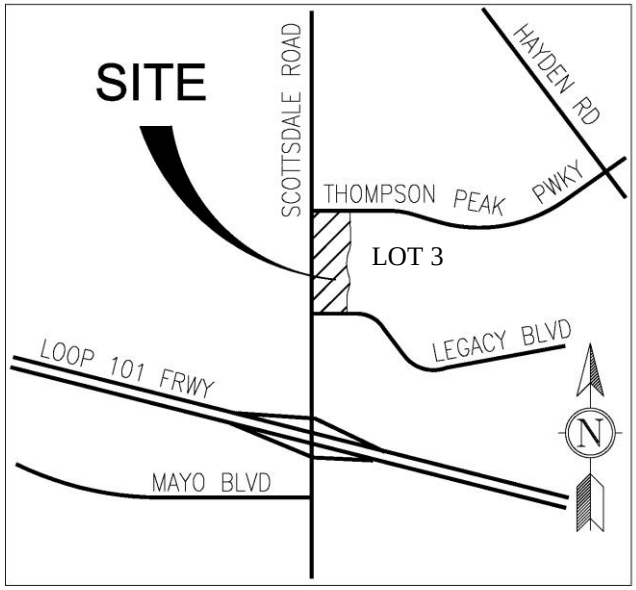
Vicinity Map



VICINITY MAP

N.T.S.

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5/10/2022

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 Utility Plan for proposed sewer line locations, stub location, slopes and inverts. Refer to the Sewer Exhibit located in the Appendix D at the back of this report for proposed sewer line designations in reference to calculations. Hydraulic calculations for each sewer line segment has been provided in Appendix D at the back of this report.

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)
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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

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5/10/2022

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 1.81 cfs at the connection to the existing 15-inch PVC sewer in Scottsdale Road (this project contributing flow of 1.12 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.

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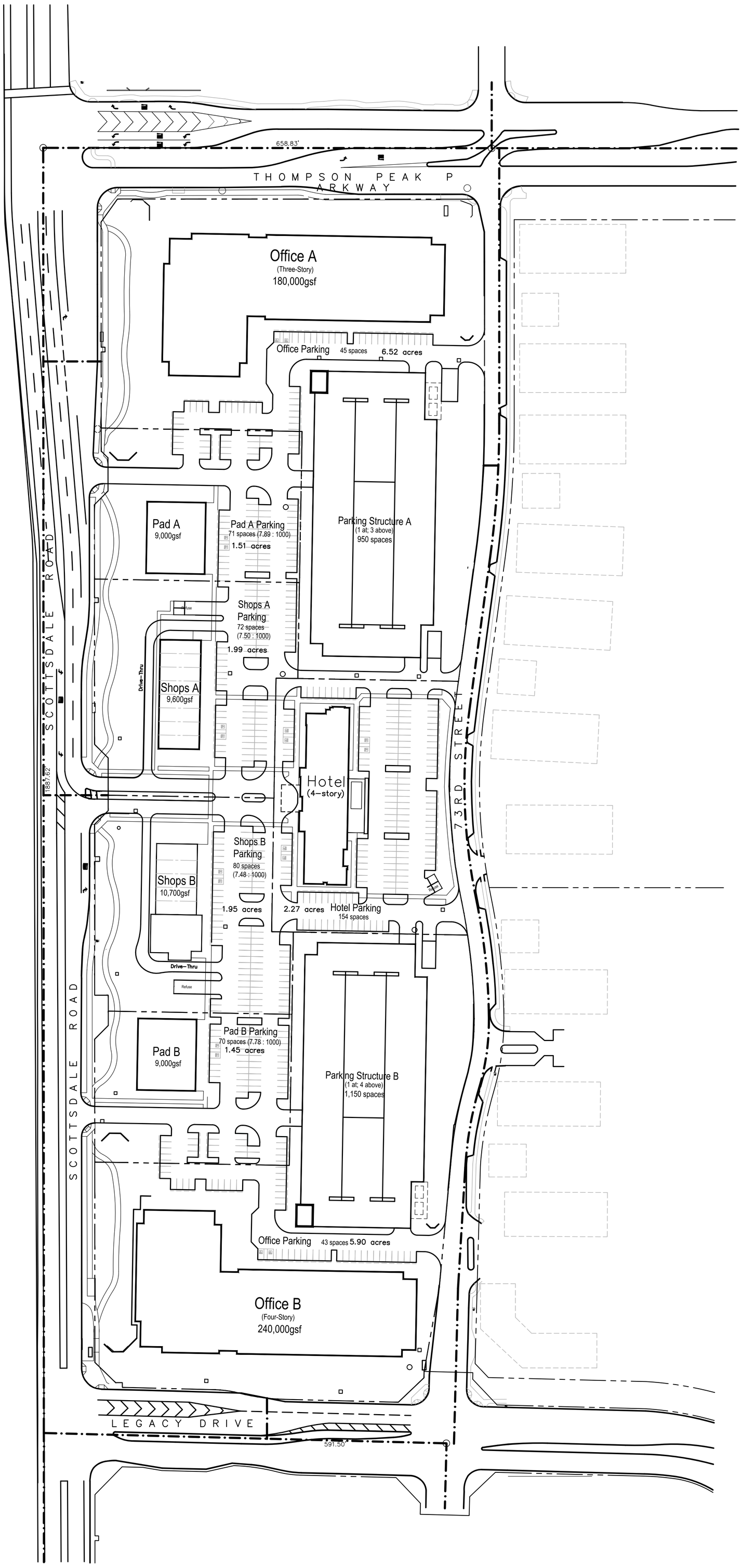
APPENDIX A

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

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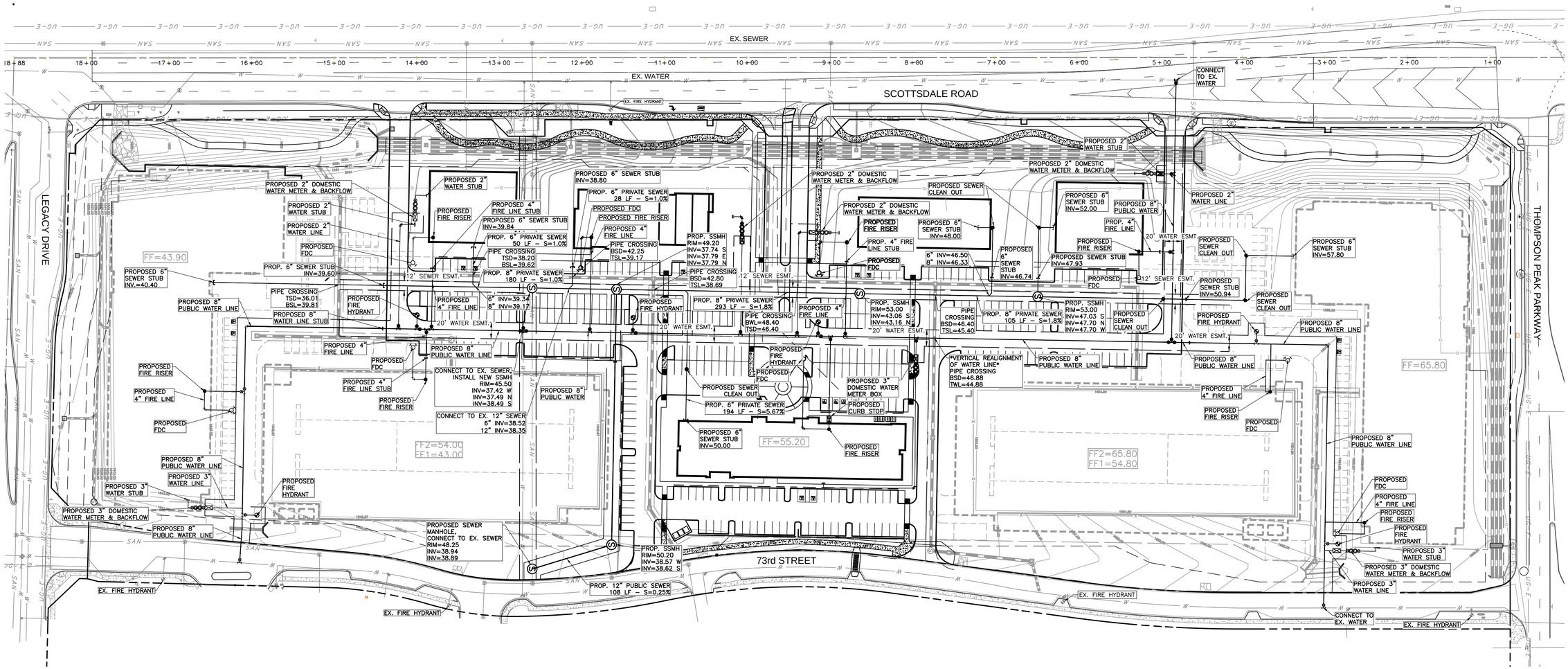
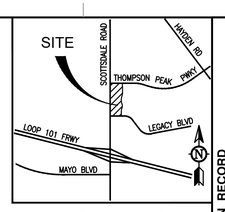
APPENDIX B

Overall Concept Utility Plan





VICINITY MAP
N.T.S.

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 11-5-19
ARIZONA, U.S.A.
Expires 06/30/20

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

DRAWING NO.: CU01

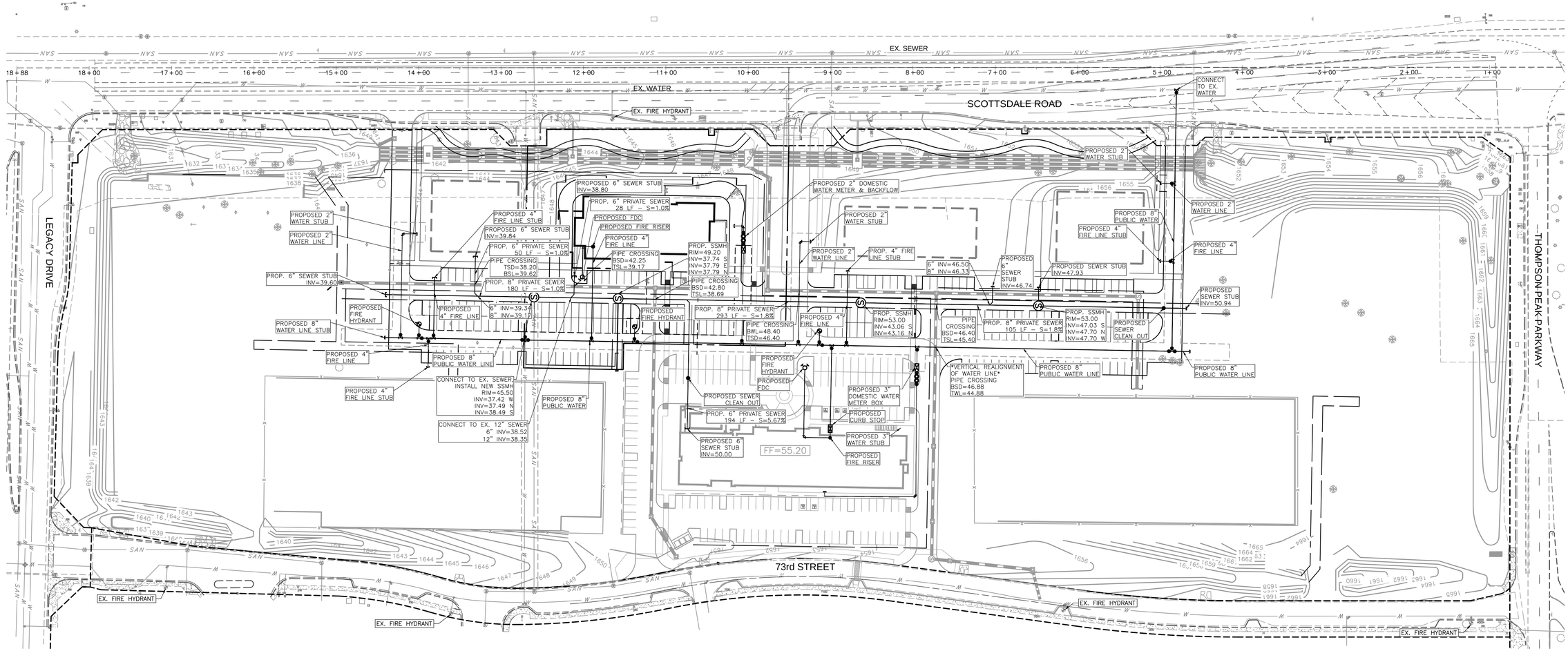
SHEET 1 OF 1

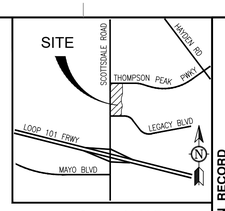
1-UP-2022
5/10/2022

P:\180\180-168\-CADD\Dwg\CV01\Concept Utility\180168-CV01-Concept_Utility.dwg(CU01) LS:(11/5/2019 - bbartlett) - LP: 11/5/2019 9:46 AM

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

NORTH

SCALE IN FEET
0 60 120

PRELIMINARY
NOT FOR CONSTRUCTION
OR RECORDING

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 (CIVIL)
CERTIFICATE NO. 23980
JEFFREY S. ERICKSON
Date Signed 5/10/19
ARIZONA, U.S.A.
Expires 06/30/20

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

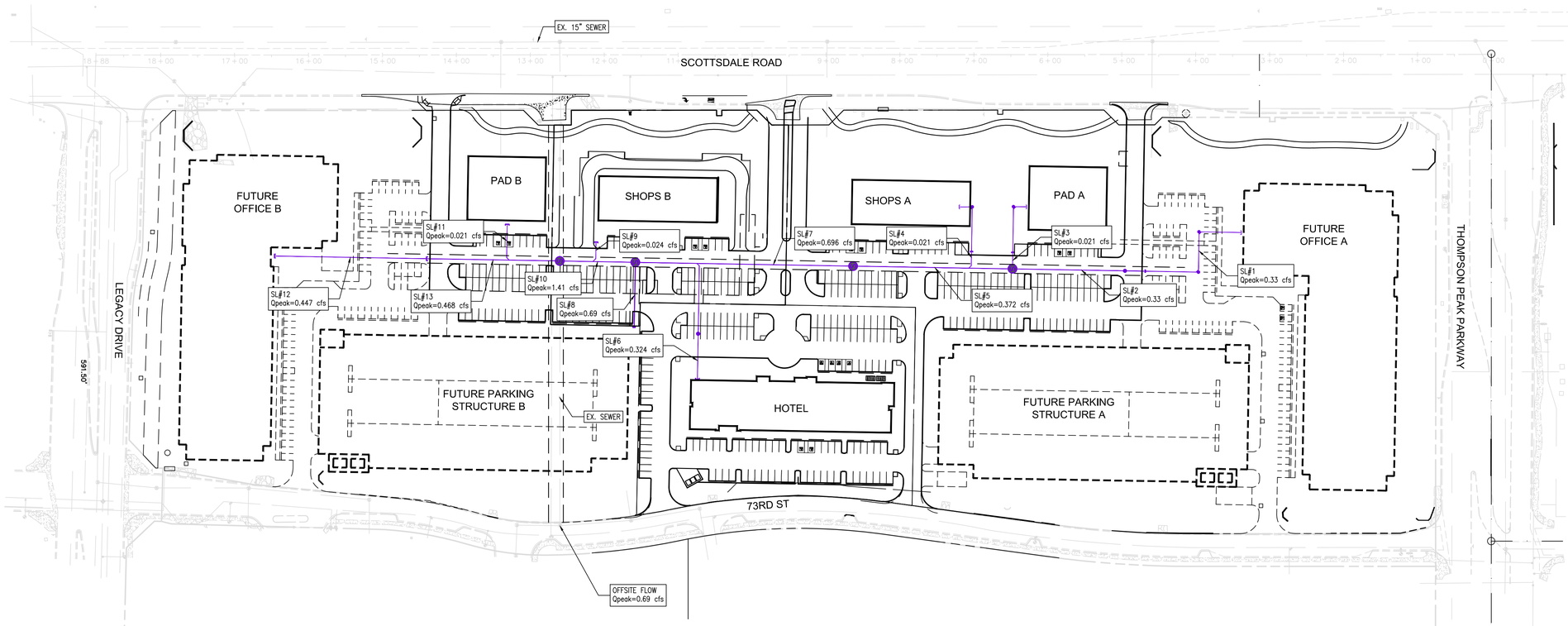
DRAWING NO.: CU01
SHEET 1 OF 1

P:\2018\180-168\-CADD\Dwg\CV02\Concept Utility\180168-CP02-Concept_Utility_Phase 2.dwg\LAYOUT1 LS:(1)6/2019 - bbartlett) - LP: 11/8/2019 9:56 AM
P:\2018\180-168\-CADD\Dwg\CV02\Concept Utility\180168-CP02-Concept_Utility_Phase 2.dwg\LAYOUT1 LS:(1)6/2019 - bbartlett) - LP: 11/8/2019 9:56 AM

1-UP-2022
5/10/2022

APPENDIX D

Sewer Exhibit & Calculations



NORTH

SCALE IN FEET

0 80 160

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 (CIVIL)
CERTIFICATE NO. 23980
JEFFREY S. ERICKSON
Date Signed 05-10-22
ARIZONA, U.S.A.
Expires 06/30/22

REVISION RECORD

NO	DATE	DESCRIPTION

CEC
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

1-UP-2022
5/10/2022

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

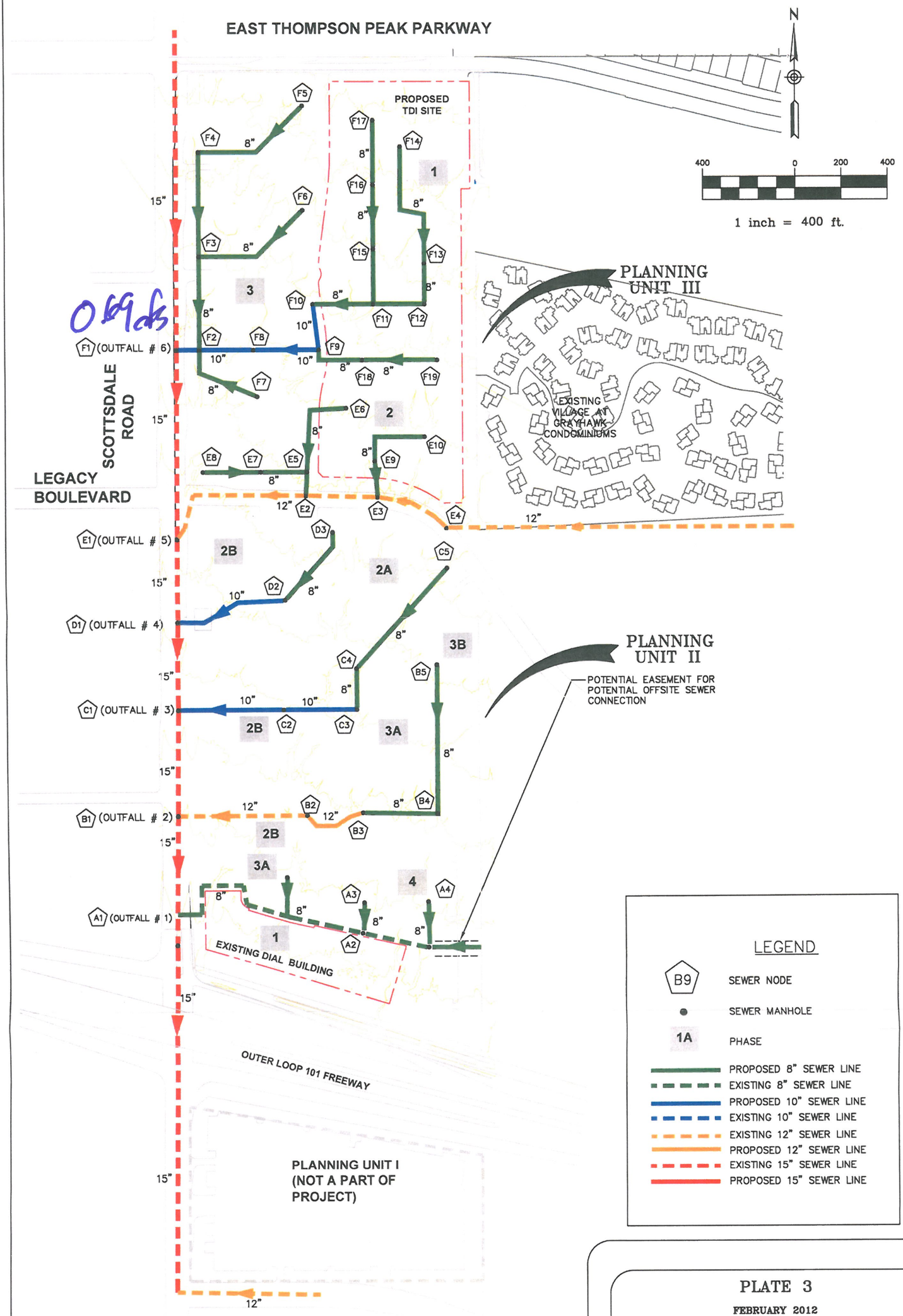
Proj. Number: 021584.04
Proj. Engineer: SAA

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	22,846	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

1-UP-2022
5/10/2022

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING



0.69 cfs

PLATE 3

FEBRUARY 2012

ONE SCOTTSDALE
ON-SITE WASTEWATER
COLLECTION SYSTEM

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

1-UP-2022
5/10/2022

Appendix B
City of Scottsdale Sewer Quarter Section Map

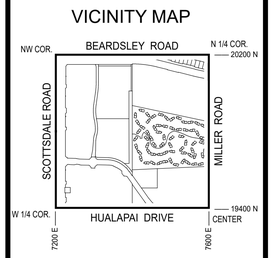
GENERAL NOTES:

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

LEGEND:

- Cleanout
- Lift Station
- Manhole
- Non-GPS Point
- Plug
- Sewer Service Point
- Sewer Tap Point
- Sewer Valve
- Treatment Plant
- Sewer Main - Gravity
- Sewer Main - Force
- Sewer Main - Private

VICINITY MAP



NORTH

SCALE: 1" = 100'

0 50 100 200

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

SEWER

QUARTER SECTION MAP

40-45

NW 1/4 SEC. 26 T4N R4E

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

N O T I C E

THIS DOCUMENT IS PROVIDED FOR GENERAL INFORMATION PURPOSES ONLY. THE CITY OF SCOTTSDALE DOES NOT WARRANT ITS ACCURACY, COMPLETENESS OR SUITABILITY FOR ANY PARTICULAR PURPOSE. IT SHOULD NOT BE RELIED UPON WITHOUT FIELD VERIFICATION.

THE CITY OF SCOTTSDALE

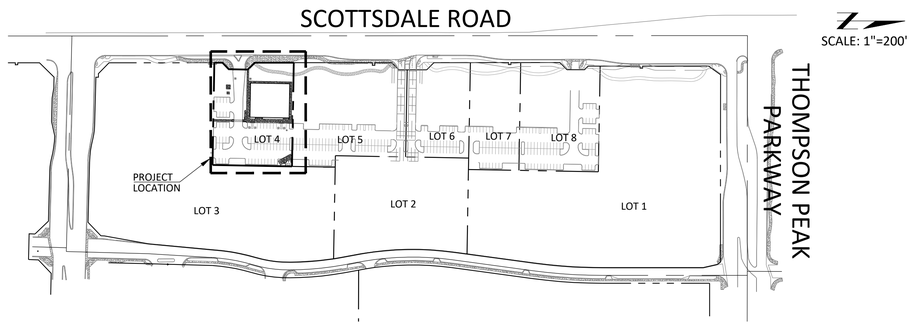
10-JAN-21

Appendix C
Preliminary Utility Plan

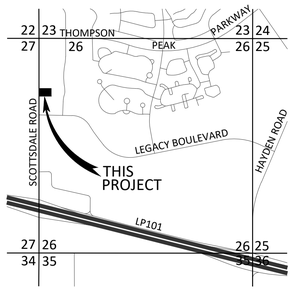
PRELIMINARY IMPROVEMENT PLAN for
NATURAL RESULT SURGERY CENTER & MEDICAL SPA

SEC THOMPSON PEAK PARKWAY AND SCOTTSDALE ROAD PHOENIX, ARIZONA

A PORTION NORTHEAST QUARTER OF SECTION 19, TOWNSHIP 20 NORTH, RANGE 21 WEST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA



PROJECT OVERVIEW



IN THE NW 1/4 OF THE SW 1/4 OF SECTION 26,
T. 4 N., R. 4 E., G.&S.R.M.,
CITY OF SCOTTSDALE, MARICOPA COUNTY, ARIZONA

LOCATION MAP

NORTH

3" = 1 MILE

PROJECT INFORMATION

PROJECT DESCRIPTION:
THE PROJECT CONSISTS OF THE CONSTRUCTION OF A TWO-STORY MEDICAL BUILDING ON AN EXISTING PAD SITE WITHIN THE ONE SCOTTSDALE MASTER DEVELOPMENT.

ADDRESS:
20001 NORTH SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA 85255

APN: 215-05-010 (OVERALL DEVELOPMENT PARCEL)

ZONING: PRC, PCD

PAD B AREA: 63,280 SF (1.45 AC)
DISTURBED AREA: 20,550 SF (0.47 AC)

SURVEY NOTES

1. THE SURVEY FOR THIS PROJECT WAS PERFORMED BY:
   SURVEY INNOVATION GROUP, INC.
   7301 EAST EVANS ROAD
   SCOTTSDALE, ARIZONA 85260
   PH: 623-869-0223
   CONTACT: JASON SEGNERI, R.L.S.
2. THE BASIS OF BEARINGS FOR THIS PROJECT IS THE NORTH LINE OF THE NORTHWEST QUARTER OF SEC 26 AS SHOWN IN BOOK 1115, PAGE 41 MARICOPA COUNTY RECORDS. SAID LINE BEARING S 89°57'38" E.
3. THE BASIS OF ELEVATION FOR THIS PROJECT IS THE MARICOPA COUNTY 4-INCH MC ENG DEPT BRASS CAP IN HAND HOLE AT THE INTERSECTION OF SCOTTSDALE ROAD AND THOMPSON PEAK PARKWAY, CITY OF SCOTTSDALE GPS POINT #8660, AN ELEVATION OF 1662.725' (NAVD 88).

BENCHMARK

THE BENCHMARK USED FOR THIS PLAN IS THE MARICOPA COUNTY 4-INCH MC ENG DEPT BRASS CAP IN HAND HOLE AT THE INTERSECTION OF SCOTTSDALE ROAD AND THOMPSON PEAK PARKWAY, CITY OF SCOTTSDALE GPS POINT #8660, AN ELEVATION OF 1662.725' (NAVD 88).

LEGAL DESCRIPTION

LOT 4 OF THE ONE SCOTTSDALE FINAL PLAT, BEING REPLAT OF LOT 3, OF THE REPLAT PARCEL 1 OF ONE SCOTTSDALE, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED IN BOOK 1115, PAGE 41.

DRAINAGE STATEMENT

-SITE IS IN A SPECIAL FLOOD HAZARD AREA - NO
-OFFSITE FLOWS AFFECT THIS SITE - NO
-PER THE MASTER DRAINAGE REPORT (FINAL DRAINAGE REPORT FOR ONE SCOTTSDALE, CEC, JANUARY 21, 2021), THE ONE SCOTTSDALE DEVELOPMENT IS ONLY REQUIRED TO PROVIDE FIRST FLUSH STORMWATER TREATMENT. THIS TREATMENT IS PROVIDED FOR THE DEVELOPMENT VIA VORTEX STORMWATER QUALITY STRUCTURES BY THE OVERALL ONE SCOTTSDALE DEVELOPMENT AND THIS PROJECT IS NOT REQUIRED TO PROVIDE ANY ADDITIONAL STORMWATER INFRASTRUCTURE.
-EXTREME STORM OUTFALLS THE SITE AT THE SOUTH DRIVEWAY AT THE ELEVATION OF 1641.65.

FLOODPLAIN INFORMATION

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP PANEL NUMBER 04013C1760, DATED NOVEMBER 04, 2015 THE PARCEL IS LOCATED IN THE ZONE X AREA, WHICH IS DEFINED AS AREAS OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD.

LEGEND

PROJECT RIGHT-OF-WAY	NEW SEWER CLEANOUT
EXISTING RIGHT-OF-WAY	NEW WATER METER
PROJECT PROPERTY LINE	NEW BACKFLOW PREVENTER
EXISTING PROPERTY LINE	NEW FIRE CONNECTION
ROADWAY CENTERLINE	SURVEY MONUMENT AS NOTED
EXISTING EASEMENT	SPOT ELEV. (EXIST. GRADE)
2321 EXISTING CONTOUR	SPOT ELEV. (PER SEPARATE PLAN)
2321 NEW CONTOUR	SPOT ELEV. (NEW GRADE)
EXISTING CONCRETE	ROW RIGHT-OF-WAY
NEW ASPHALT	B/C BACK OF CURB
NEW CONCRETE	R RADIUS
NEW WALL	P PAVEMENT (ASPHALT)
EXISTING CURB	C CONCRETE
EXISTING PAINT STRIPE	G GUTTER
NEW CURB	TC TOP OF CURB
NEW PAINT STRIPE	FG FINISHED GRADE
NEW RAILING	GB GRADE BREAK
EXISTING STORM DRAIN PIPE	FFE FINISHED FLOOR ELEVATION
EXISTING SEWER LINE	
EXISTING WATER LINE	
NEW SEWER LINE	
NEW WATER LINE	
NEW FIRE SERVICE	
EXISTING SEWER MANHOLE	
EXISTING SEWER CLEANOUT	
EXISTING SEWER STUB	
EXISTING WATER STUB	
EXISTING WATER VALVE	
EXISTING FIRE HYDRANT	
EXISTING AIR RELEASE VALVE	

OWNER/DEVELOPER

NATURAL RESULTS PLASTIC SURGERY
7930 EAST THOMPSON PEAK PARKWAY, #101
SCOTTSDALE, ARIZONA 85255
PH: 480-418-5300
ATTN: DR. CARLOS MATA

CIVIL ENGINEER

CYPRESS CIVIL DEVELOPMENT
4450 NORTH 12TH STREET, #228
PHOENIX, ARIZONA 85014
PH: 623-282-2498
ATTN: JEFF HUNT, PE

ARCHITECT

KOHAN ARCHITECTURE
490 POST STREET, #1135
SAN FRANCISCO, CALIFORNIA 94102
PH: 415-348-0008
ATTN: MARZI EMAMI GHOREISHI, AIA

UTILITIES

WATER:	CITY OF SCOTTSDALE
SEWER:	CITY OF SCOTTSDALE
ELECTRIC:	APS
GAS:	SOUTHWEST GAS
TELEPHONE:	CENTURYLINK
CABLE:	COX COMMUNICATIONS

SHEET INDEX

1. COVER SHEET
2. GRADING & DRAINAGE PLAN
3. UTILITY PLAN

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

CYPRESS CIVIL
4450 north 12th street
suite 228
phoenix, arizona 85014
p: 623.282.2498
e: jphunt@cypresscivil.com

NO.	DATE	REVISION

PRELIMINARY IMPROVEMENT PLAN for
NATURAL RESULT SURGERY CENTER & MEDICAL SPA
SEC THOMPSON PEAK PKWY AND SCOTTSDALE RD SCOTTSDALE, ARIZONA

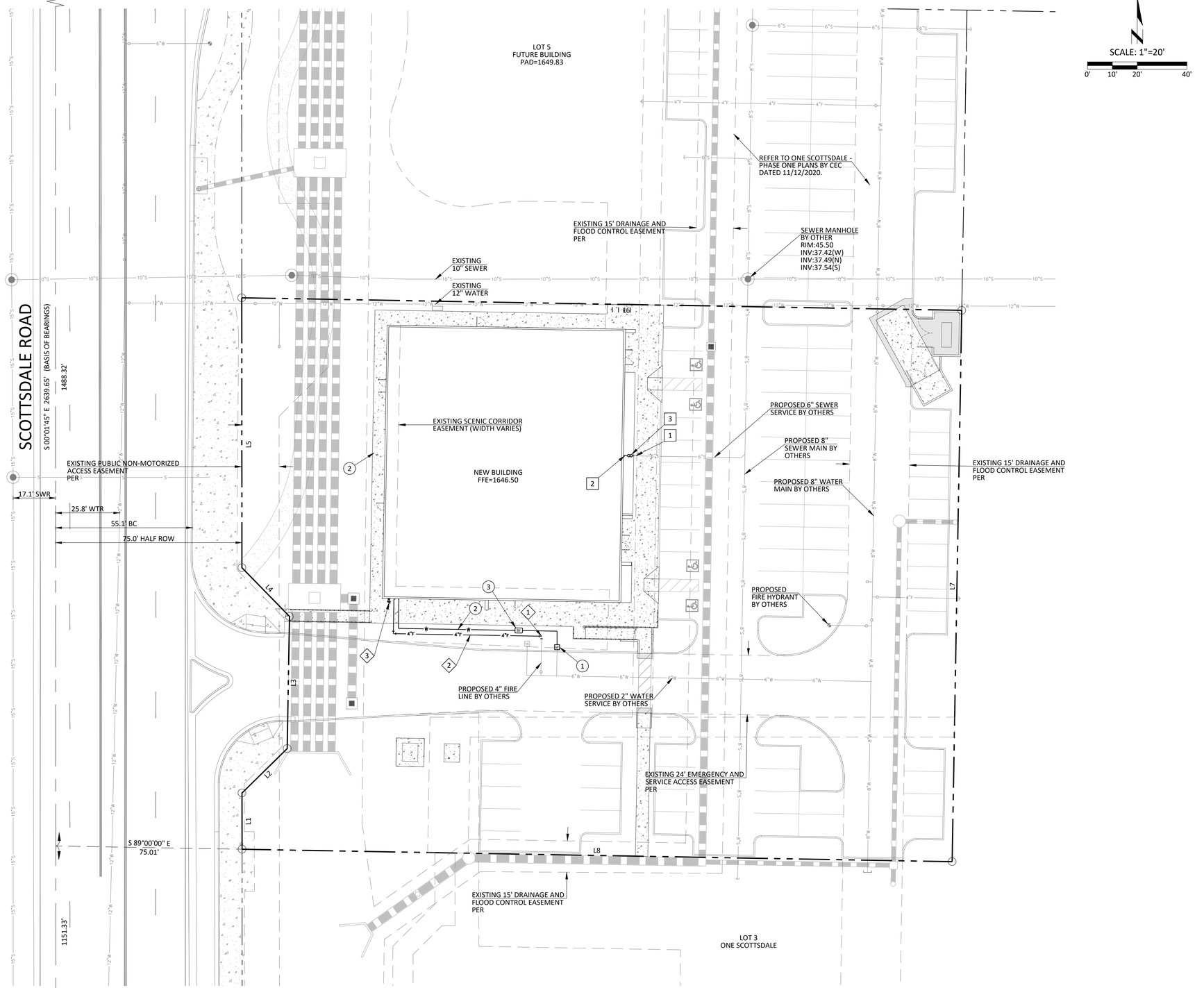
cover

Registered Professional Engineer (Civil)
CERTIFICATE NO. 53640
JEFFREY P. HUNT
09-27-2022
ARIZONA, U.S.A.

DRAWN:	PT
DESIGNED:	DS
CHECKED:	JH
DATE:	09-27-2022
JOB NO:	20.143

SHEET NUMBER

THESE PLANS ARE PRELIMINARY AND ARE NOT FOR CONSTRUCTION OR RECORDING



PRIVATE WATER KEYNOTES

1. PROPOSED 2" SERVICE BY OTHERS. INSTALL NEW 2" METER FOR DOMESTIC WATER SERVICE.
2. NEW 2" DOMESTIC WATER LINE.
3. NEW 2" DOMESTIC BACKFLOW PREVENTER.

PRIVATE FIRE LINE KEYNOTES

1. PROPOSED 4" FIRE STUB BY OTHERS. CONNECT TO FOR FIRE SERVICE.
2. NEW 4" DIP FIRE LINE.
3. NEW BUILDING MOUNTED FDC.

PRIVATE SEWER KEYNOTES

1. PROPOSED 6" SEWER SERVICE STUB BY OTHERS. CONNECT TO FOR SEWER SERVICE.
2. NEW 6" PVC SDR-35 SEWER LINE. 2% MINIMUM SLOPE.
3. NEW TWO-WAY SEWER CLEAN OUT.

LINE TABLE		
LINE	BEARINGS	LENGTH
L1	N 00°01'45" W	22.65'
L2	N 45°28'06" E	25.49'
L3	N 01°00'00" E	53.21'
L4	N 44°18'03" W	27.42'
L5	N 00°01'45" W	108.68'
L6	S 89°02'10" E	289.98'
L7	S 00°56'37" W	222.00'
L8	N 89°02'10" W	286.21'

CYPRESS CIVIL
4450 north 12th street
suite 228
phoenix, arizona 85014
p: 623.282.2498
e: jphunt@cypresscivil.com

NO.	DATE	REVISION

PRELIMINARY IMPROVEMENT PLAN for NATURAL RESULT SURGERY CENTER & MEDICAL SPA

SEC THOMPSON PEAK PKWY AND SCOTTSDALE RD SCOTTSDALE, ARIZONA

onsite utility plan

Registered Professional Engineer (Civil) CERTIFICATE NO. 53640 JEFFREY P. HUNT Date Signed 09-27-2022 ARIZONA, U.S.A.

DRAWN:	PT
DESIGNED:	DS
CHECKED:	JH
DATE:	09-27-2022
JOB NO:	20.143

SHEET NUMBER

3 OF 3

THESE PLANS ARE PRELIMINARY AND ARE NOT FOR CONSTRUCTION OR RECORDING

Appendix D
Sewer Flow Calculation

CYPRESS CIVIL

SITE CONSULTING
SURVEY
SITE ENGINEERING

Sewer Design Report Calculations
ONE SCOTTSDALE MEDICAL SPA

Sewage Flow Per Day (From Table 1, A.A.C. Title 18, Chapter 9)

Total Flow (GPD)	11,024
Upstream Population	
Dry Peaking Factor	
Wet Weather Peaking Factor	1
Dry Peak Flow (GPD)	37,296
Wet Peak Flow (GPD)	37,296

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Where:
Q = flow in cfs
n = Manning's Roughness Coefficient
A = Cross sectional area of flow
R = hydraulic radius
S = pipe slope

SYSTEM MINIMUM SLOPE

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.011

Full Flow*

Depth of flow (in) =	4.50
ϕ (radian) =	4.19
Area (in2) =	22.75
Wetted Perimeter (in) =	12.57
Hydraulic Radius (in) =	1.81
Velocity (ft/sec) =	3.41
d/D ratio =	0.75
Pipe Capacity (GPD)	347,745

Design Flow

Depth of flow (in) =	1.27
ϕ (radian) =	1.91
Area (in2) =	4.35
Wetted Perimeter (in) =	5.73
Hydraulic Radius (in) =	0.76
Velocity (ft/sec) =	1.91
d/D ratio =	0.21

**Full Flow refers to d/D of 0.75 per AAC R18-9-E301.4.01.D.2.e*