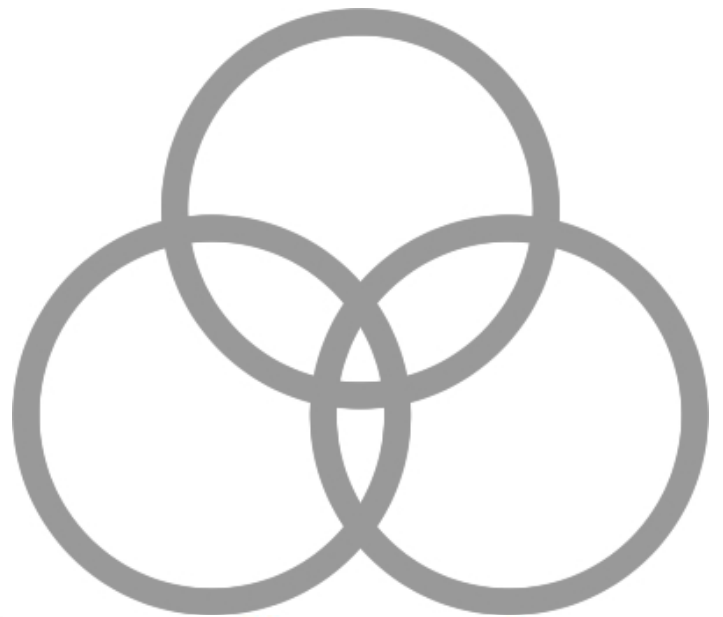
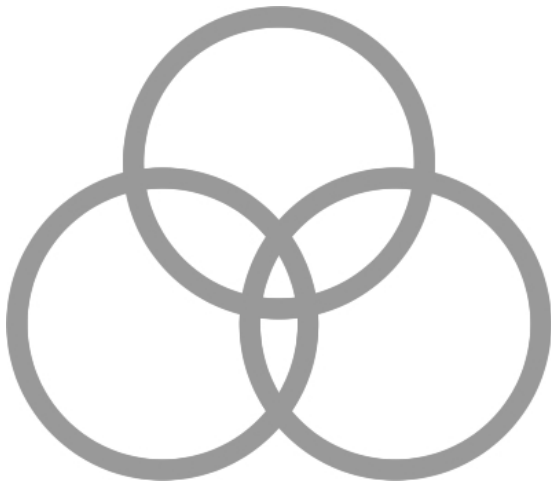
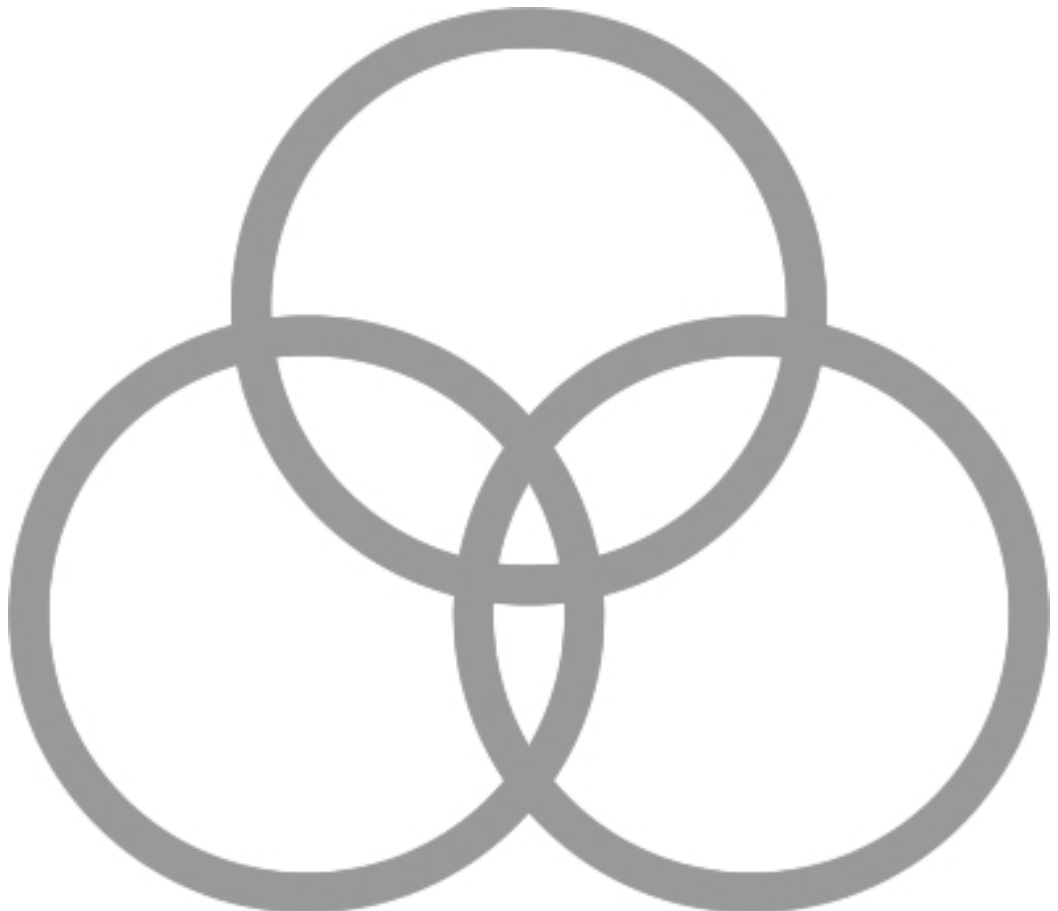




One Scottsdale
Sewer Design Report
3 engineering Job #: 5246
September 6, 2022
COS# 555-PA-2022



ONE SCOTTSDALE

SEWER DESIGN REPORT

Prepared for:

*Augusta Development
34522 N. Scottsdale Road, Suite 120-638
Scottsdale, Arizona 85266
Contact: Bo Nickoloff
Phone: (651) 324-9492*



Expires 12/31/2024

Matthew J. Mancini, P.E.

September 6, 2022

Submittal to:

City of Scottsdale
7447 E. Indian School Road, Suite 105
Scottsdale, Arizona 85251

Prepared by:

3 engineering, L.L.C.
6370 E. Thomas Road, Suite 200
Scottsdale, AZ 85251
Contact: Matthew J. Mancini, P.E.

Job Number 5246

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Exhibits

Sewer Design Exhibit.....	SE1
---------------------------	-----

1. Introduction

The purpose of this sewer report is to present the existing and proposed sewer plan for the project, One Scottsdale (Site). It is our opinion the proposed sewer concept is in accordance with the City of Scottsdale's Design Standards & Policies Manual (Ref. 1).

The Site, is located in Section 26, Township 4 North, Range 4 East of the Gila and Salt River Meridian, Maricopa County, Arizona within the City of Scottsdale, Arizona. The Site is located North of Henkel Way, and East of Scottsdale Road, Scottsdale, Arizona 85255 (Portion of APN 215-05-004A & 215-05-006). The Site is bound on the south by Henkel Way and Henkel Building, the east by a vacant parcel, on the north by a vacant parcel, and on the west by a vacant parcel. See Appendix A for a Vicinity Map.

The Site is zoned PRC. The Site currently exists as a vacant un-developed parcel. The intent of this project is to construct an approximate 187,000 SF Senior Living Center, including new site utility, drainage, and circulatory infrastructure. The Site does contain a swimming pool, which will be included as part of the sewer demand.

2. Design Documentation

Manning's Equation was used to model and analyze the proposed sewer system for compliance with the City of Scottsdale design requirements. Demands were calculated using the City of Scottsdale Design Standards Manual for Water and Wastewater Systems. It is our opinion that this report is in accordance with the City of Scottsdale's Design Standards & Policies Manual.

3. Existing Conditions

The Site currently exists as a vacant un-developed parcel. See Appendix A for a vicinity map. The existing topography slopes from north to south at approximately 3.0% percent.

The Site is bound on the south by Henkel Way and Henkel Building and on the east, west, and north by vacant parcels. There is an existing 8" sewer line in Henkel Way, and a 12" sewer line that will be installed prior to the development of the site that being completed by the Master Developer (See Appendix C). These sewer lines will service the project. See Exhibit SE1 Sewer Plans for sewer line layouts.

4. Proposed Conditions

The project consists of a Senior Living Center, including a pool, new site utility, drainage, and circulatory infrastructure. The on-site sewer system will be private. The on-site sewer system will tie into the public system with 6-inch service taps into a manhole along the north, and an existing service along the south. Onsite sewer consists 6" private sewer lines that are designed at a minimum 1.0% slope. Half of the Site's sewer demand is planned to drain south, with the other half draining north. See Exhibit SE1 for the proposed sewer design.

5. Computations

The following demand criteria were used in determining the system demands for the proposed site.

1. 120 Rooms
2. 180 gal/day per room (Multifamily)
3. Pool drain rate = 50gpm = 72,000 gal/day
4. Design Flow = Peak Flow = $Q_{Peak} = Q_{avg} \times 3.0$

TABLE 1: ON-SITE SEWER DEMANDS	
Number of Rooms	120
Average Daily Demand	21,600 gpd
Design Flow Rate (peaking factor – use 3.0)	64,800
Pool Drain Rate	72,000 gpd
Total Rate	136,800 gpd

Average daily demand: $120 \text{ rooms} \times 180 \text{ gpd/room} = 21,600 \text{ gpd}$
 $= 21,600 \text{ gpd} / 1440 \text{ mpd} = 15 \text{ gpm}$

Peak Factor = 3.0

Design flow rate = $3.0 \times 21,600 \text{ gpd} = 64,800 \text{ gpd}$
 $= 64,800 \text{ gpd} / 1440 \text{ mpd} = 45 \text{ gpm}$

Pool Drain Rate = $50 \text{ gpm} = 72,000 \text{ gpd}$

Total Peak Sewer Demand = $136,800 \text{ gpd} = 95 \text{ gpm}$

Manning's Equation was used to model and analyze the proposed 6" sewer system for compliance with the City of Scottsdale design requirements. Refer to Appendix B for loading of the sewer line and Exhibit SE1 for the sewer design.

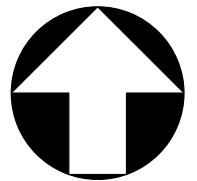
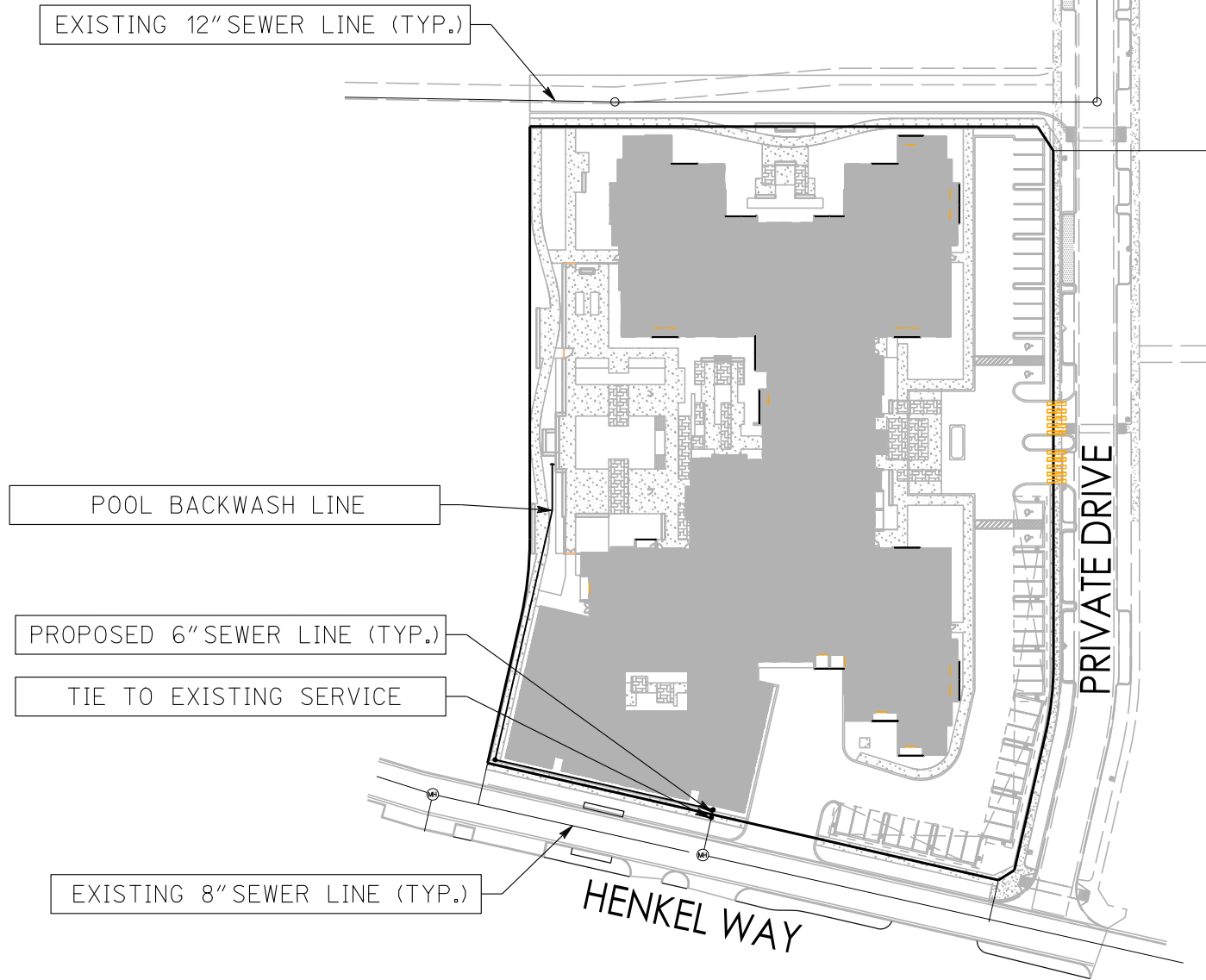
6. Summary

The Peak Flow for the proposed site is 136,800 gpd or 95 gpm. Based on the results from the sewer system analysis the onsite 6" system provides adequate capacity at 251.8 gpm, or 362,592 gpd.

EXHIBIT 1

Sewer Design Exhibit

C:\My Security\Projects\5000\5246_One Scottsdale\Reports\Sewer Report\5246_exb_SE01.dgn



SCALE: 1"=100'

SE1

ONE SCOTTSDALE
SCOTTSDALE AZ

SEWER EXHIBIT - SE1

3eengineering

planning civil engineering surveying

3 ENGINEERING, LLC
6370 E. THOMAS ROAD SUITE 200 SCOTTSDALE, ARIZONA 85251
PHONE: (602) 334-4387 - FAX: (602) 490-3230
WWW.3ENGINEERING.COM

DATE:

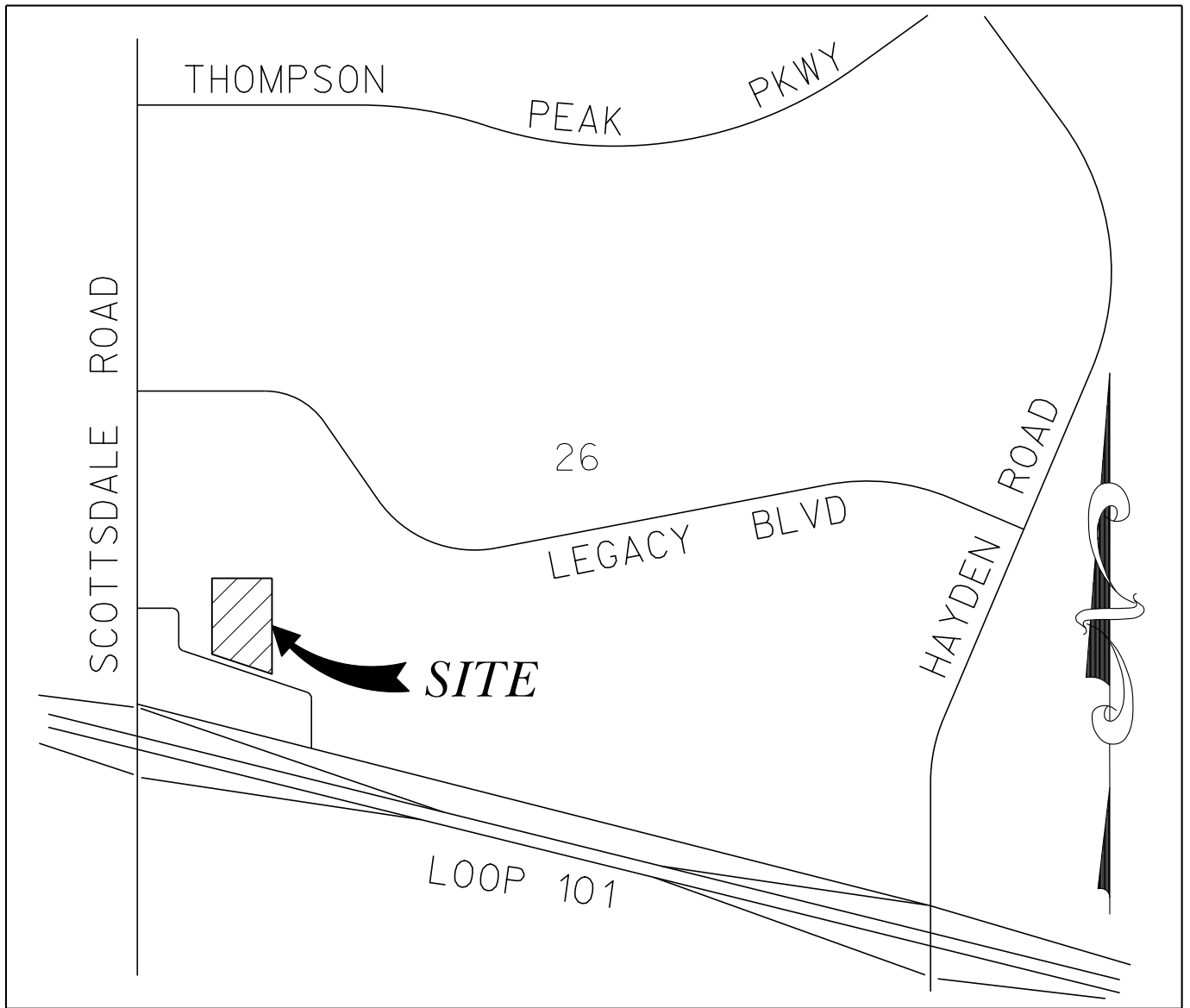
9/6/22

PROJECT
NO.

5246

APPENDIX A

Vicinity Map



VICINITY MAP

N.T.S.

APPENDIX B

Manning's Calculations

Manning Pipe Flow Calculator

Manning Formula Uniform Pipe Flow at Given Slope and Depth

One Scottsdale	
Sewer Capacity - 6"	
Set units: m mm ft in	
Pipe diameter, d_0	6 in ↓
Manning roughness, n ?	0.013
Pressure slope S_0	.01 rise/run ↓
Percent of (or ratio to) full depth (100% or 1 if flowing full)	100 % ↓
Results	
Flow, Q	251.8086 gpm ↓
Velocity, v	2.8575 ft/sec ↓
Velocity head, h_v	0.1269 ft ↓
Flow area	0.1964 ft^2 ↓
Wetted perimeter	18.8496 in ↓
Hydraulic radius	0.1250 ft ↓
Top width, T	0.0000 in ↓
Froude number, F	0.00
Shear stress (tractive force), τ	0.3122 psf ↓

APPENDIX C

*Excerpts from Sewer Plans by Wood
Patel*

ONE SCOTTSDALE
PRIVATE DRIVE PLAN
SCOTTSDALE, ARIZONA
A PORTION OF SECTION 26, TOWNSHIP 4 NORTH, RANGE 4 EAST
OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

CITY OF SCOTTSDALE GENERAL NOTES

GENERAL NOTES FOR PUBLIC WORKS CONSTRUCTION

- ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MAG UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE CITY'S SUPPLEMENTAL STANDARD DETAILS WILL GOVERN.
- THE CITY ONLY APPROVES THE SCOPE, NOT THE DETAIL, OF ENGINEERING DESIGNS; THEREFORE, IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
- THE APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF A RIGHT-OF-WAY PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN THIS TIME FRAME, THE PLANS MUST BE RESUBMITTED TO THE CITY FOR REAPPROVAL.
- A CITY INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE. NOTIFY INSPECTION SERVICES 72 HOURS BEFORE BEGINNING WORK.
- WHENEVER EXCAVATION IS NECESSARY, CALL THE BLUE STAKE CENTER, 811, TWO WORKING DAYS BEFORE EXCAVATION BEGINS.
- PERMISSION TO WORK IN THE RIGHT-OF-WAY (PWR) PERMITS ARE REQUIRED FOR ALL WORKS WITHIN THE RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. COPIES OF ALL PERMITS MUST BE RETAINED ON-SITE AND BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE SUSPENSION OF ALL WORK UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.

FIRE NOTE:

- ALL PRIVATE STREETS AND DRIVES SHALL CONFORM TO THE FIRE DEPARTMENT GUIDELINES FOR EMERGENCY VEHICLE ACCESS.

SEWER NOTE:

- THE ONSITE SEWER SYSTEM CONSTRUCTED BY THIS PLAN SET IS A PRIVATE SYSTEM AND WILL NOT BE MAINTAINED BY THE CITY OF SCOTTSDALE.
- MAINTENANCE OF THE ONSITE SEWER SYSTEM IS THE RESPONSIBILITY OF THE OWNER.

WATER NOTE:

- THE WATER SYSTEM SHOWN HEREIN HAS BEEN DESIGNED TO ADEQUATELY SUPPLY WATER IN SUFFICIENT QUANTITY AND PRESSURE TO MEET LOCAL FIRE REQUIREMENTS.

ENGINEER'S NOTES

PLEASE REFER TO SHEET C2 FOR ENGINEER'S NOTES.

EARTHWORK QUANTITIES (ESTIMATED)

RAW CUT:	4,288 CY
RAW FILL:	10,323 CY

QUANTITIES ARE ESTIMATED IN PLACE. NO PRECOMPACTION, SHRINK OR SWELL IS ASSUMED.

QUANTITIES

PLEASE REFER TO SHEET C2 FOR ESTIMATED QUANTITIES FOR WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS.

LEGEND

PLEASE REFER TO SHEET C2 FOR LEGEND AND LIST OF ABBREVIATIONS.

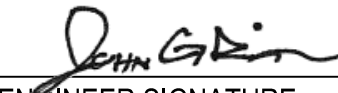
UTILITY NOTES

- THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES FOR APPROVAL WITHIN THEIR AREA OF INTEREST. THE SIZE AND LOCATIONS, AS SHOWN, OF THE GAS, TELEPHONE AND POWER LINES, AND CONNECTIONS AGREE WITH THE FURNISHED INFORMATION CONTAINED IN THE UTILITY COMPANY'S RECORDS. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED IN THE SPECIAL PROVISIONS AND/OR AS OTHERWISE NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.
- THE CITY WILL NOT PARTICIPATE IN THE COST OF CONSTRUCTION OR UTILITY RELOCATION.

NO CONFLICT SIGNATURE BLOCK					
UTILITY	UTILITY COMPANY	NAME OF COMPANY REPRESENTATIVE	TELEPHONE NUMBER	DATE CONTACTED	DATE SIGNED
ELECTRIC	ARIZONA PUBLIC SERVICE	HAILEY PARKS	602-493-4401	02/23/2022	03/16/2022
TELEPHONE	CENTURYLINK	JEANETTE DEBOARD	480-221-7810	02/23/2022	04/08/2022
NATURAL GAS	SOUTHWEST GAS	-	-	02/23/2022	-
CABLE TV	COX COMMUNICATIONS	JACOB HORSMAN	-	02/23/2022	03/24/2022
OTHER	MCI	RICHARD YOUNG	602-615-8995	02/23/2022	03/24/2022
ENGINEER'S CERTIFICATION					
I, <u>John Ritchie</u> , AS THE ENGINEER OF RECORD FOR THIS DEVELOPMENT, HEREBY CERTIFY THAT ALL UTILITY COMPANIES LISTED ABOVE HAVE BEEN PROVIDED FINAL IMPROVEMENT PLANS FOR REVIEW, AND THAT ALL CONFLICTS IDENTIFIED BY THE UTILITIES HAVE BEEN RESOLVED. IN ADDITION, "NO CONFLICT" FORMS HAVE BEEN OBTAINED FROM EACH UTILITY COMPANY AND ARE INCLUDED IN THIS SUBMITTAL.					
				06/02/2022	
SIGNATURE				DATE	

ENGINEER'S CERTIFICATION

"THE ENGINEER OF RECORD ON THESE PLANS HAS RECEIVED A COPY OF THE APPROVED STIPULATIONS FOR THIS PROJECT AND HAS DESIGNED THESE PLANS IN CONFORMANCE WITH THE APPROVED STIPULATIONS."


ENGINEER SIGNATURE
06/02/2022
DATE

FEMA FIRM NOTE (ZONE X)

ACCORDING TO FEMA FLOOD INSURANCE RATE MAPPING, THE SUBJECT PROPERTY IS LOCATED IN "OTHER FLOOD AREAS" "ZONE X" (ZONE X SHADED). ZONE X SHADED IS DESCRIBED AS: "AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD."

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

MAP NUMBER	COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
04013C	045012	1320	L	10/16/2013		N/A

PARCEL DESCRIPTION

PARCEL ONE:
PARCEL 2 AND 4, OF ONE SCOTTSDALE, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED IN BOOK 971 OF MAPS, PAGE 6.

(NOTE: THE ABOVE DESCRIPTION INCLUDES LEGACY BOULEVARD DEDICATED IN MAP OF DEDICATION FILED JULY 13, 2009 IN BOOK 1034 PAGE 5, M.C.R.)

PARCEL TWO:
A NON-EXCLUSIVE EASEMENT FOR REASONABLE VEHICULAR AND PEDESTRIAN ACCESS, INGRESS AND EGRESS AS MORE PARTICULARLY DESCRIBED IN THAT CERTAIN "RECIPROCAL ACCESS EASEMENT AGREEMENT" RECORDED NOVEMBER 9, 2006 AS 2006-1482868 OF OFFICIAL RECORDS.

SOILS REPORT NOTE

A SOILS GEOTECHNICAL REPORT HAS BEEN PREPARED FOR THIS PROJECT TITLED ONE SCOTTSDALE MULTI-FAMILY. PROJECT NO. 210496SA BY SPEEDIE AND ASSOCIATES, INC. DATED JUNE 16, 2021

SHEET INDEX

OS1	COVER SHEET
OS2	NOTES & QUANTITIES
OS3	INDEX MAP
OS4	DEMOLITION PLAN
OS5-OS9	PAVING PLAN
OS10	STRIPING PLAN
OS11-OS15	STORM DRAIN PLAN
OS16-OS21	WATER PLAN
OS22-OS26	SEWER PLAN
OS27-OS30	SWPPP

BENCHMARK

THE VERTICAL DATUM FOR THIS SURVEY IS BASED ON A MARICOPA COUNTY-HIGHWAY DEPARTMENT BRASS CAP IN HANDHOLE, SCOTTSDALE GPS POINT 2272, LOCATED AT THE INTERSECTION OF SCOTTSDALE ROAD AND THOMPSON PEAK PARKWAY, HAVING AN ELEVATION OF 1622.878, CITY OF SCOTTSDALE NAVD 88 DATUM.

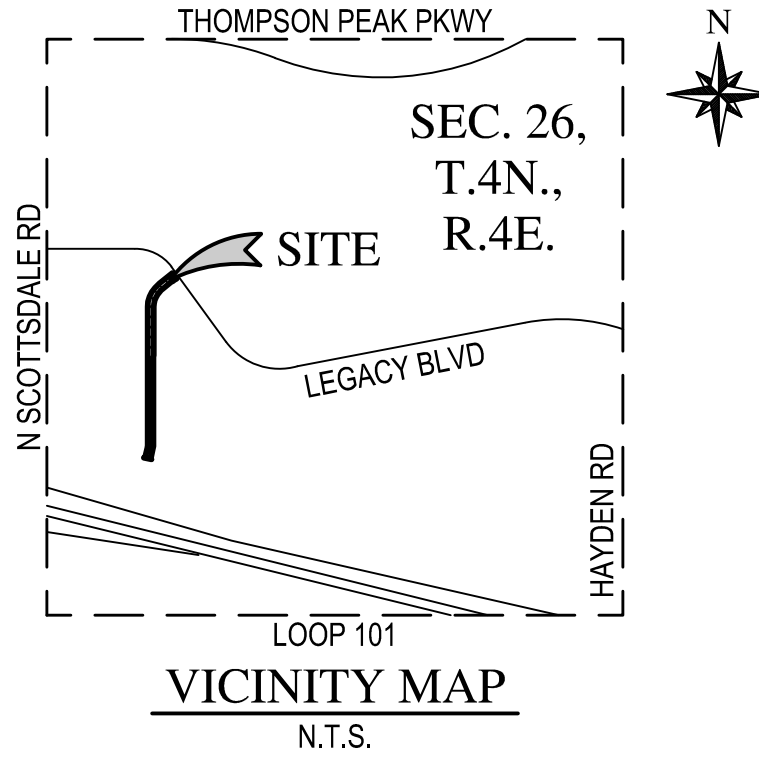
BENCHMARK CERTIFICATION STATEMENT
I HEREBY CERTIFY THAT ALL ELEVATIONS REPRESENTED ON THIS PLAN ARE BASED ON NAVD 1988 AND MEET THE FEMA BENCHMARK MAINTENANCE (BMM) CRITERIA.

RELATED PROJECTS

PROJECT NAME	CITY PROJECT #	WP PROJECT #
ONE SCOTTSDALE STREETLIGHTS RESIDENTIAL	238-22	215234

PUBLIC UTILITIES

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



OWNER / DEVELOPER

ONE SCOTTSDALE INVESTORS, LLC
6263 NORTH SCOTTSDALE ROAD, SUITE 330
SCOTTSDALE, ARIZONA 85250
PHONE: (480)-367-7000
CONTACT: MICHAEL BURKE

ENGINEER

WOOD, PATEL & ASSOCIATES, INC.
2051 WEST NORTHERN AVENUE, SUITE 100
PHOENIX, ARIZONA 85021
CONTACT:
PHONE: (602) 335-8500
FAX: (602) 335-8580

PROJECT SITE DATA

ASSESSOR PARCEL NUMBER(S):
215-05-004A
PROJECT SITE ADDRESS:
7395 E. LEGACY BOULEVARD
SCOTTSDALE, ARIZONA 85255
PROJECT SITE AREA(S):
NET AREA = 2.14 AC
DISTURBED AREA = 3.5± AC
ZONING:
PRC

CITY OF SCOTTSDALE CIVIL APPROVAL			
REVIEW & RECOMMENDED APPROVAL BY:			
PAVING		SIGNS & MARKINGS	
GRADING & DRAINAGE		PLANNING	
WATER & SEWER		FIRE	
RETAINING WALLS		SIGNALS & STREET	
ENGINEERING DEPARTMENT MANAGER		DATE	



Wood, Patel & Associates, Inc.
Civil Engineering
Water Resources
Land Survey
Construction Management
602.335.8500
www.woodpatel.com



ONE SCOTTSDALE

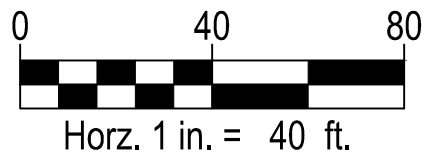
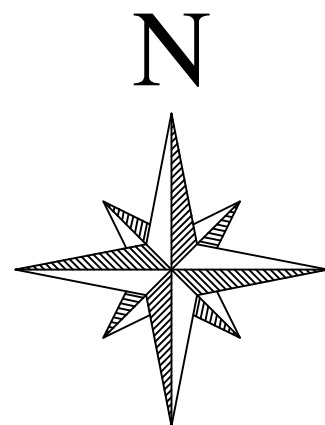
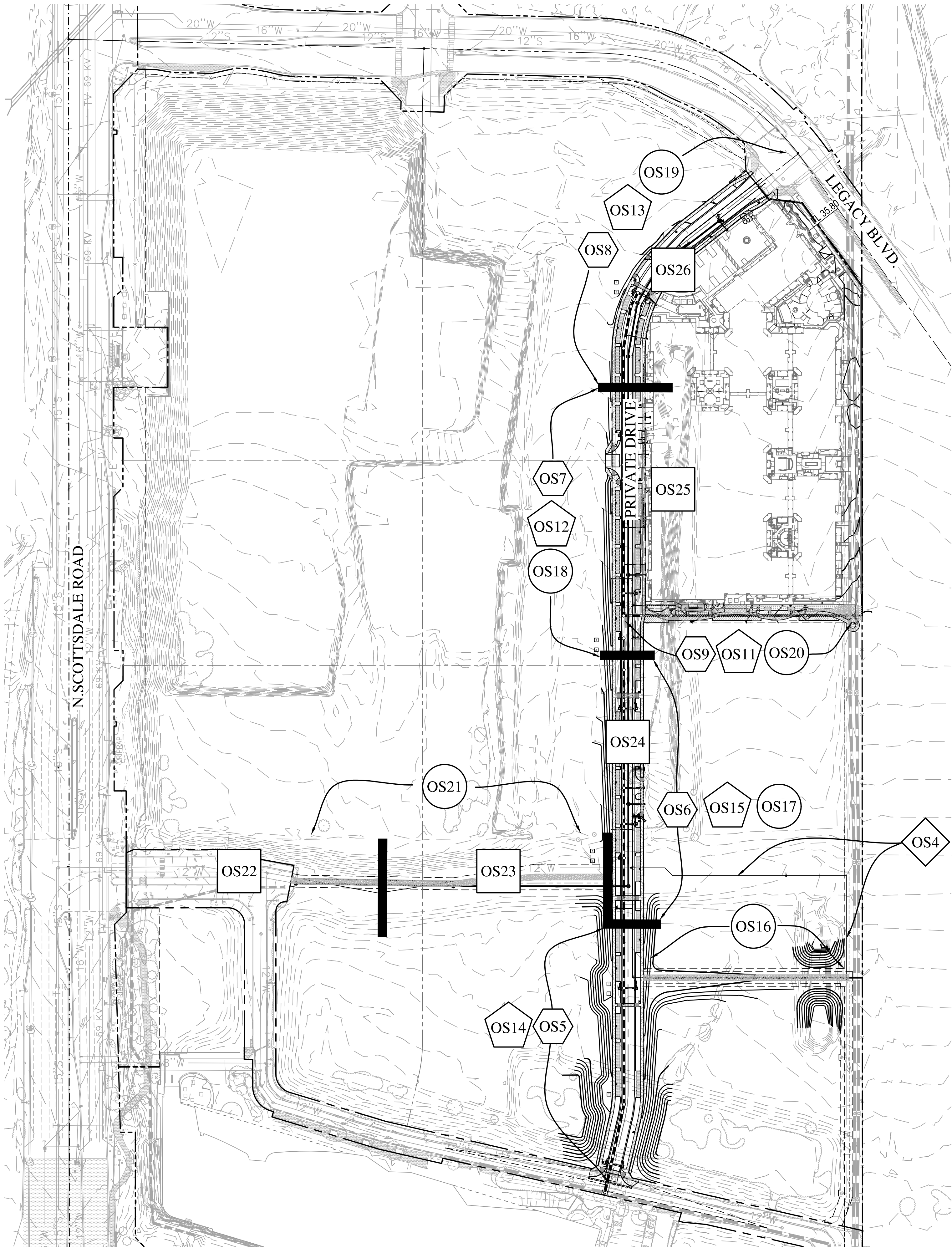
PRIVATE DRIVE PLAN
SCOTTSDALE, ARIZONA
COVER SHEET

REV	DESCRIPTION	DATE



SCALE (HORIZ.) N/A
SCALE (VERT.) N/A
DATE 06/02/22
JOB NUMBER 215234
SHEET OS1 OF 30

Z:\2022\1215234Dwg\Imp\Office Improvements\5234-003-NX-CIS.dwg



INDEX MAP LEGEND

-  DEMOLITION
-  PAVING
-  STORM DRAIN
-  WATER
-  SEWER



Wood, Patel & Associates, Inc.
Civil Engineering
Water Resources
Land Survey
Construction Management
602.335.8500
www.woodpatel.com



ONE SCOTTSDALE
PRIVATE DRIVE PLAN
SCOTTSDALE, ARIZONA
INDEX MAP

REV	DESCRIPTION	DATE



EXPIRES 6-30-24

SCALE (HORIZ.)	1" = 40'
SCALE (VERT.)	N/A
DATE	06/02/22
JOB NUMBER	215234
SHEET	OS3 OF 30

CHECKED BY: JGR DESIGNED BY: ZR DRAFTED BY: JRS



Accepted For:
City of Scottsdale
Water Resources Department
9379 E. San Salvador
Scottsdale, Arizona

By: Doug Mann
Date: 3.3.2016

20-ZN-2002#3
2/12/2016

WOOD/PATEL
MISSION: CLIENT SERVICE™

**ONE SCOTTSDALE
(Stacked 40s)**

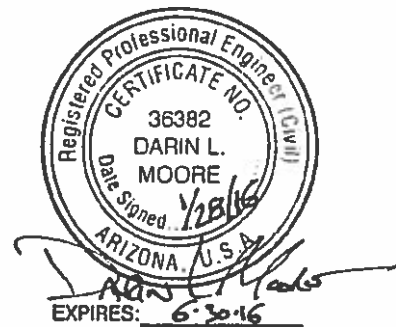
MASTER ON-SITE WASTEWATER PLAN

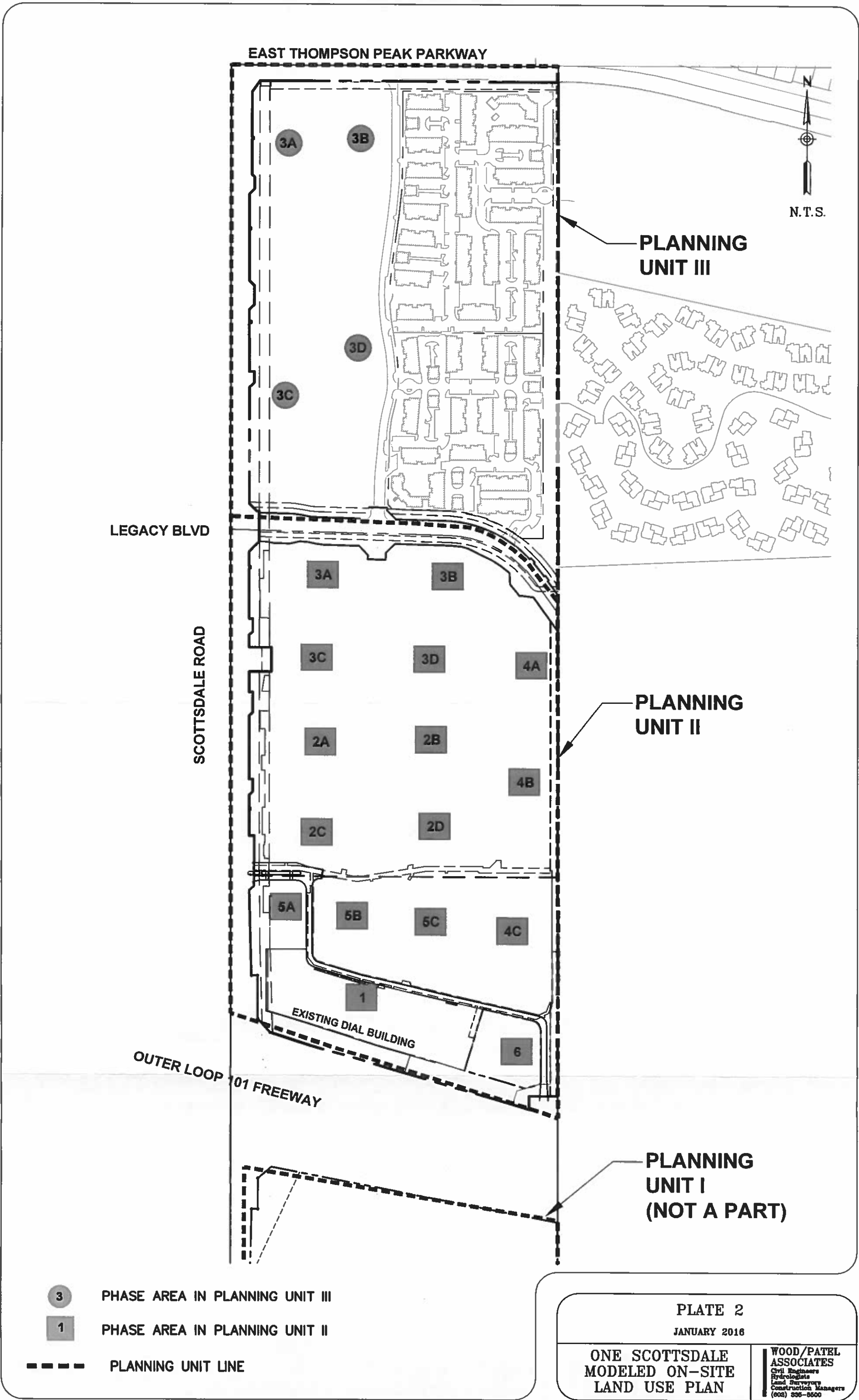
Revised January 28, 2016
Revised February 10, 2012
Revised April 16, 2009
August 25, 2005
WP# 154391

Submitted to: **City of Scottsdale**
7447 East Indian School Road
Suite 205
Scottsdale, Arizona 85251

Prepared for: **One Scottsdale Holdings, LLC**
7600 East Doubletree Ranch Road
Suite 300
Scottsdale, Arizona 85258
Phone: (480) 367-7000
Fax: (480) 367-9788
Contact: Mr. Michael Burke

Prepared by: **Wood, Patel & Associates, Inc.**
2051 West Northern Avenue
Suite 100
Phoenix, Arizona 85021
Phone: (602) 335-8500
Fax: (602) 335-8580
Contact: Mr. Darin L. Moore, P.E.





PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

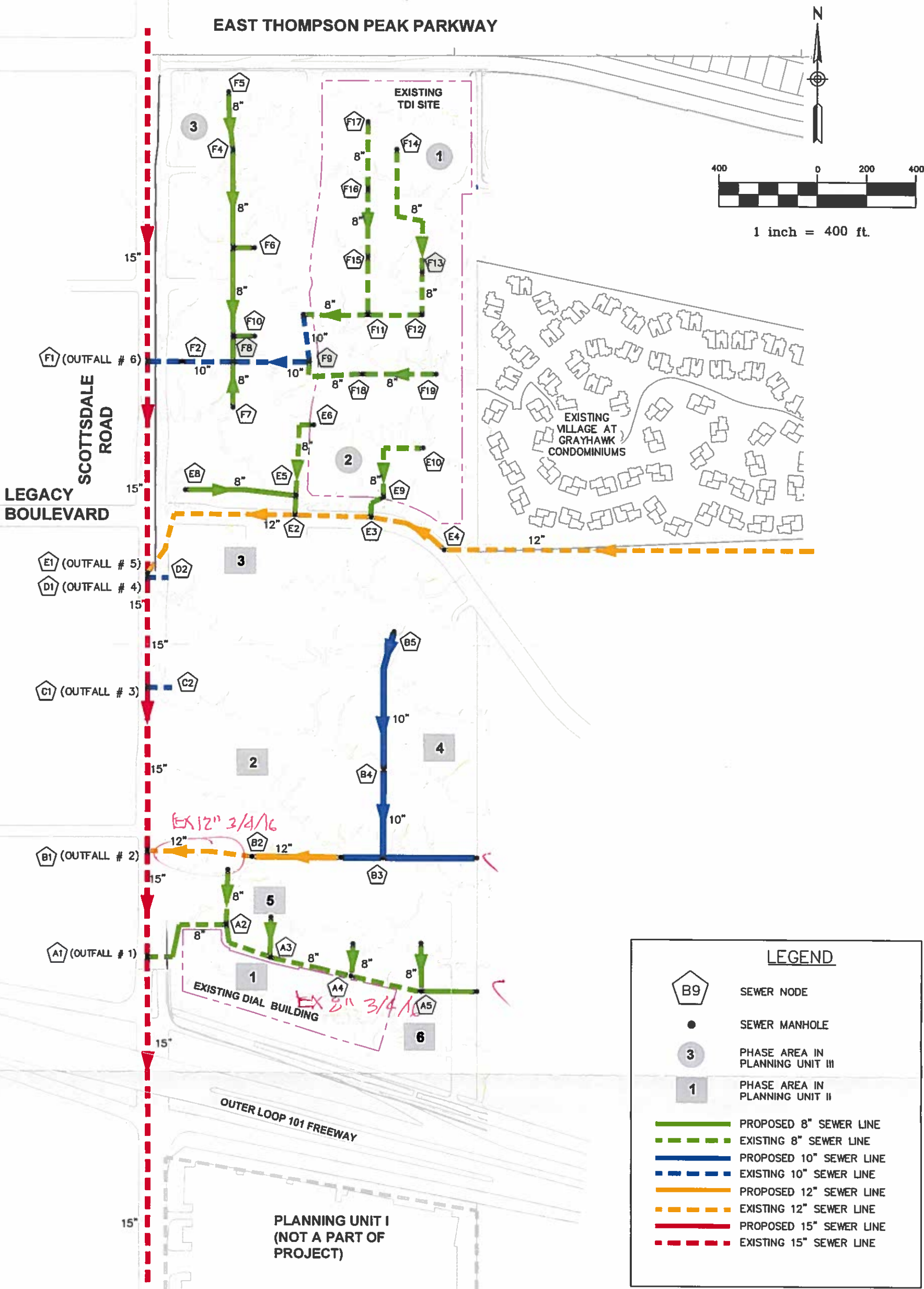


PLATE 3
JANUARY 2016

ONE SCOTTSDALE
ON-SITE WASTEWATER
COLLECTION SYSTEM

WOOD/PATEL
ASSOCIATES
Civil Engineers
Hydrologists
Land Surveyors
Construction Managers
(802) 836-8600