FINAL SEWER REPORT

for

BLACK ROCK COFFEE
1520 AZ-89A
SEDONA, YAVAPAI COUNTY, AZ

Prepared for

BLACK ROCK DEVELOPMENT COMPANY, LLC
TONY PALLOTA
9170 E BAHIA DR, SUITE 101
SCOTTSDALE, AZ 85260

Submitted by: Atwell, LLC

Project Number: 24004242

Date: July 15, 2025

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INTRODUCTION

Development of a Black Rock Coffee drive-thru restaurant (735 SF) proposing a single service 6" Sanitary Sewer line to a City of Sedona main. The project site is an empty lot bounded by SR89A to the South, Posse Ground Road to the West, the Sedona Animal Clinic to the North, and Jay Bird's to the East. The proposed project consists of a new 735 sf coffee shop with drive-through service and associated paved parking, fire system, and drainage infrastructure.

EXISTING SANITARY

According to an ALTA survey, the existing sanitary sewer infrastructure has an 8-inch sanitary sewer main to the south of the property running along SR89A and an 8-inch sanitary sewer main running to the west of the property along Posse Ground Road.

INTENT AND SCOPE

This report will evaluate the proposed sanitary sewer infrastructure for the development of this site. Estimated sewer demands and proposed sizes shall be accordance with the Arizona Administrative Code (A.A.C.) 18-09 for Wastewater Unit Design Flows.

GENERAL THEORY

The Manning Equation has been utilized in the proposed gravity sewer line capacity. The full calculation for this may be found in Appendix A.

DESIGN DOCUMENTATION

The site lies within the Arizona Water Company service area. The project is governed by and is designed in accordance with the following requirements:

- Arizona Administrative Code Title 18 Chapter 5, "Department of Environmental Quality Environmental Reviews and Certification.
- Arizona Department of Environmental Quality, Engineering Bulletin No. 10, "Guidelines for Construction of Water Systems".
- Arizona Administrative Code Title 19 Chapter 9, "Department of Environmental Quality – Water Pollution Control".

EXISTING SEWER

There is an existing 8" sanitary sewer main to the west of the development along Posse Ground Road. The proposed sewer service for the building will connect to this sewer main.

PROPOSED CONDITIONS

The proposed sewer system consists of connecting to an existing sanitary sewer main to the west of the site and running a 6" sanitary sewer service to the proposed building. Refer to Appendix B for the utility plan.

CONCLUSION

The proposed sanitary sewer service is designed and in compliance with the guidelines of the Arizona Administrative Code (A.A.C.) 18-09 for Wastewater Unit Design Flows. The designed pipe can take a flow of 0.72 cfs, and the design flow is much lower at 0.0003 cfs according to Appendix A.

APPENDIX A – CALCULATIONS

DESIGN FLOW CALCULATIONS

Per A.A.C. 18-09 Unit Design Flows, a restaurant would generate a design flow of 192 gpd or 0.0003 cfs based on the following data:

	Applicable Unit	Sewage Design Flow Per Applicable Unit, Gallons Per Day	Proposed Unit	Proposed Sewage Design Flow, Gallons Per Day
For each employee, add	Employee	20	4	80
With toilet, add	Customer	7	0	0
Kitchen waste – full plated service, add	Meal	6	0	0
Kitchen waste – disposable service, add	Meal	2	56	112
Garbage disposal, add	Meal	1	0	0
Cocktail lounge, add	Customer	2	0	0
			Total	**192**

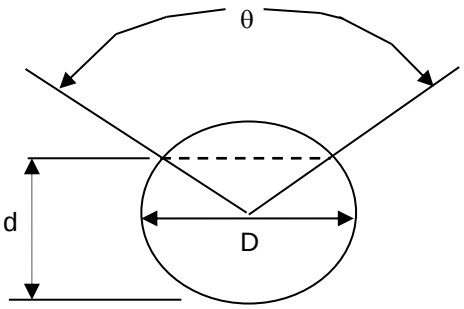
MANNING'S EQUATION FOR PIPE FLOW

Project: 24004242 Location: Sedona, Arizona

By: Ngoc Ngo Date: 7/7/2025 2025

Chk. By: Date: mdo version 12.8.00

Clear Data Entry Cells



INPUT

D=	6	inches
d=	4.5	inches
n=	0.013	mannings coeff
θ=	120.0	degrees
S=	0.02	slope in/in

Mannings Formula

$Q=(1.486/n)AR_h^{2/3}S^{1/2}$

R=A/P

A=cross sectional area

P=wetted perimeter

S=slope of channel

n=Manning's roughness coefficient

$V=(1.49/n)R_h^{2/3}S^{1/2}$

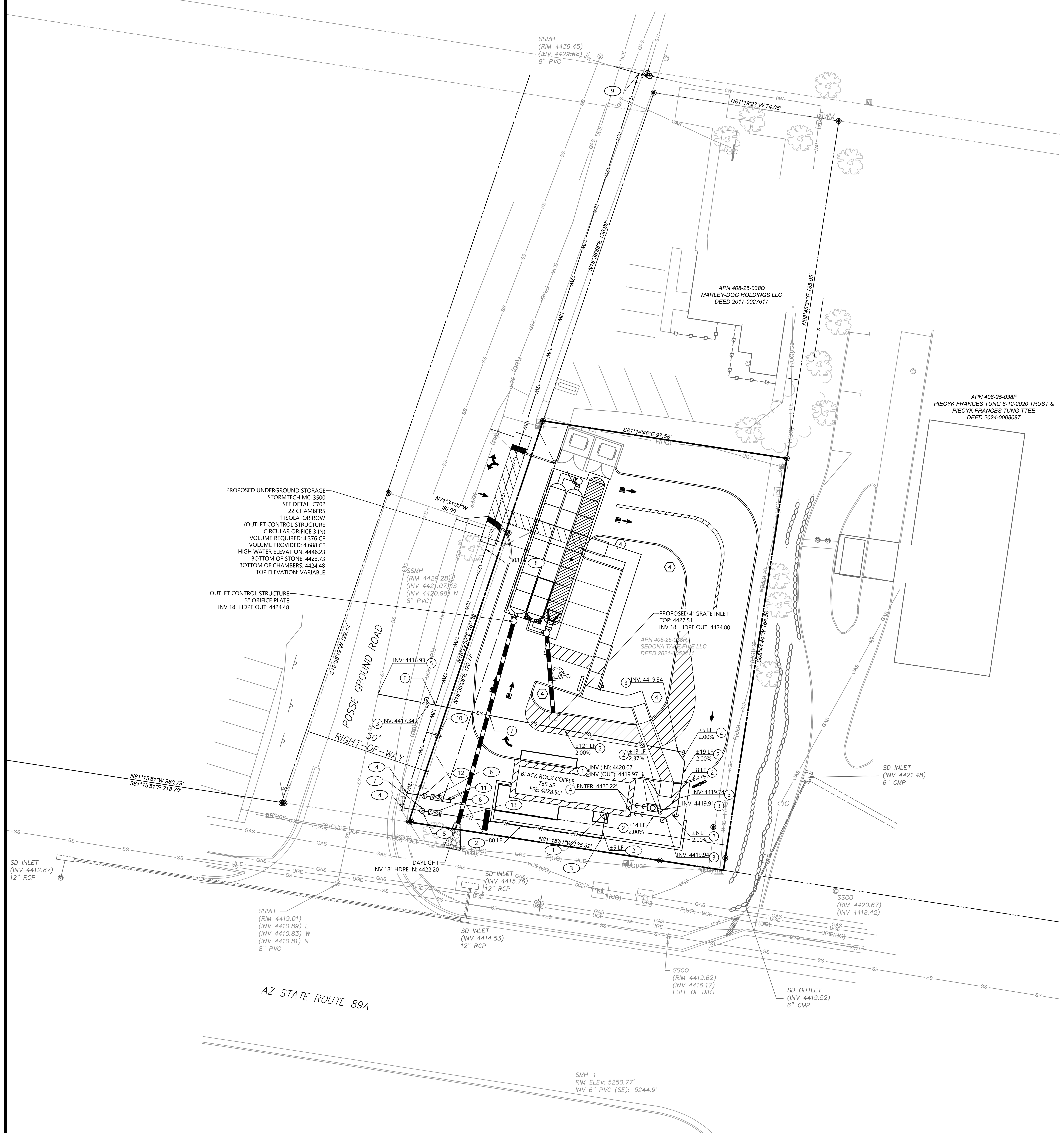
Q=V x A

Solution to Mannings Equation				
Area,ft^2	Wetted Perimeter, ft	Hydraulic Radius, ft	velocity ft/s	flow, cfs
0.16	1.05	0.15	4.58	0.72

Manning's n-values	
PVC	0.01
PE (<9"dia)	0.015
PE (>12"dia)	0.02
PE(9-12"dia)	0.017
CMP	0.025
ADS N12	0.012
HCMP	0.023
Conc	0.013

Created by: Mike O'Shea

APPENDIX B – SITE UTILITY PLAN



UTILITY PLAN NOTES

1. CONTRACTOR TO HAVE ALL FILL MATERIAL IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
2. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
3. THE PUBLIC WORKS DEPARTMENT SHALL BE NOTIFIED A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY AT (928) 777-1176.
4. INSPECTION IS TO BE DONE BY THE TOWN UTILITIES DEPARTMENT.
5. ANY WORK PERFORMED WITHOUT THE KNOWLEDGE OF THE TOWN INSPECTOR OR THE INSPECTOR'S AUTHORIZED REPRESENTATIVE IS SUBJECT TO REMOVAL AND REPLACEMENT OF SAME, TO BE DONE AT THE CONTRACTOR'S EXPENSE.
6. ALL WORK AND MATERIALS, WHICH DO NOT CONFORM TO THE SPECIFICATIONS, ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UNDERGROUND PIPELINES, TELEPHONE, COMMUNICATION AND ELECTRIC CONDUITS AND STRUCTURES IN ADVANCE OF ANY CONSTRUCTION AND WILL OBSERVE ALL POSSIBLE PRECAUTIONS TO AVOID ANY DAMAGE TO SUCH. THE ENGINEER AND/OR CITY WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS, OR THOSE OMITTED FROM IT.
8. THE CONTRACTOR SHALL COMPLY WITH ALL ADEQ REQUIREMENTS.
9. ALL WATER LINES SHALL BE PROVIDED WITH 12 AWG HS-CCS WIRE. TRACE WIRE SHALL BE SUBJECT TO TRACEABILITY TEST. TESTING IS TO BE BY THE CONTRACTOR AND WITNESSED BY THE CITY REPRESENTATIVE AND AT NO EXTRA COST TO THE CITY.
10. WATER AND SEWER SEPARATION SHALL BE PURSUANT TO ARIZONA ADMINISTRATIVE CODE (AAC) R18-5-502.C. AND CITY SPECIFICATIONS.
11. WATER MAINS SHALL BE SUBJECT TO A PRESSURE AND LEAKAGE TEST IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION (AWWA) C600 STANDARD.
12. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH ADEQ ENGINEERING BULLETIN NO. 8 "DISINFECTION OF WATER SYSTEMS".
13. OPERATION OF VALVES TO BE DONE BY CITY PERSONNEL ONLY.
14. ALL PIPELINE MATERIALS SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS UNLESS SUPERSEDED BY CITY SPECIFICATIONS.
15. ALL MATERIALS FOR WATER LINE CONSTRUCTION SHALL MEET AAC R18-4-119.
16. ADEQ REQUIREMENTS WILL APPLY WHEN MORE STRINGENT THAN MAG SPECIFICATIONS; MORE SPECIFICALLY WHERE THEY PERTAIN TO MAXIMUM ALLOWABLE SEWER LINE/PRESSURE SEWER LINE EXFILTRATION-INFILTRATION RATES.
17. SEWER LINE LOW-PRESSURE AIR TESTS SHALL BE DONE ON 100 PERCENT OF ALL SANITARY SEWER LINES.
18. SEWER MANHOLES EXFILTRATION TESTS SHALL BE DONE ON 100 PERCENT OF ALL MANHOLES. VACUUM TESTING INACCORDANCE WITH CITY STANDARDS MAY BE USED IN LIEU OF EXFILTRATION TEST.
19. SEWER LINE DEFLECTION TESTS SHALL BE DONE ON 100 PERCENT OF ALL PIPES.
20. PRIOR TO PROJECT ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE CITY WITH A VIDEO (DVD FORMAT) OF THE ENTIRE SEWER MAIN INSTALLED INCLUDING SERVICE LATERALS. A CITY REPRESENTATIVE SHALL ATTEND THE VIDEO DATA COLLECTION. IF THE CITY IS NOT PRESENT DURING THE VIDEO DATA COLLECTION, THE CITY MAY REQUIRE THAT THE VIDEO DATA BE REDONE, AT THE CONTRACTOR'S EXPENSE, WITH THE CITY REPRESENTATIVE PRESENT. THE VIDEO WILL BE REVIEWED AND DEEMED ACCEPTABLE BY THE CITY PRIOR TO PROJECT ACCEPTANCE.

WATER SERVICE NOTES

CONTACT:
ARIZONA WATER COMPANY
3805 N BLACK CANYON HWY
PHOENIX, AZ 85015
PHONE: (602) 240-6880

(1) SEE ARCHITECTURAL PLANS FOR EXACT LOCATION OF UTILITY ENTRANCE INTO THE BUILDING.
(2) INSTALL 1" DOMESTIC SERVICE WATERLINE TYPE K COPPER
(3) INSTALL 90 DEGREE BEND
(4) CONNECT TO PROPOSED 12" WATER MAIN LINE
(5) INSTALL 6'' X 1'' FLANGED BRASS METER ADAPTER
(6) CONNECT REDUCED PRESSURE ZONE ASSEMBLY (RPZA) AND ASSE 1060 CLASS 1, ELECTRICALLY HEATED BOX PER THE "BACKFLOW ASSEMBLIES PLACED OUTDOORS."
(7) INSTALL 1'' DOMESTIC WATER METER
(8) INSTALL 12'' WATER MAIN (C900)
(9) CONNECT TO EXISTING 6" WATER MAIN LINE
(10) PROPOSED FIRE HYDRANT (INSTALL PER CITY OF SEDONA STANDARDS)
(11) INSTALL 3/4" IRRIGATION WATERLINE TYPE K COPPER AND WATER PLUG
(12) INSTALL 3/4" IRRIGATION WATER METER
(13) PROPOSED 1" DOMESTIC WATERLINE AND PROPOSED 18" HDPE STORM CROSSING. CONTRACTOR TO ENSURE MINIMUM VERTICAL SEPARATION BEFORE CONSTRUCTION COMMENCEMENT.

SANITARY SEWER SERVICE NOTES

CONTACT:
CITY OF SEDONA
102 ROADRUNNER DR #106
SEDONA, AZ 86336
PHONE: (928) 282-1154

(1) PROPOSED GREASE INTERCEPTOR - SEE ARCHITECTURAL PLANS
(2) 6" PVC SANITARY SEWER SERVICE LINE
(3) SANITARY SEWER CLEAN OUT
(4) SEE ARCHITECTURAL PLANS FOR EXACT LOCATION OF UTILITY ENTRANCE INTO THE BUILDING.
(5) CONNECT TO EXISTING SANITARY SEWER LINE
(6) PROPOSED 6" PVC SANITARY SEWER SERVICE LINE AND PROPOSED 12" WATER LINE CROSSING. CONTRACTOR TO ENSURE MINIMUM VERTICAL SEPARATION BEFORE CONSTRUCTION COMMENCEMENT.
(7) PROPOSED 6" PVC SANITARY SEWER SERVICE LINE AND PROPOSED 18" HDPE STORM CROSSING. CONTRACTOR TO ENSURE MINIMUM VERTICAL SEPARATION BEFORE CONSTRUCTION COMMENCEMENT.

ELECTRIC SERVICE NOTES

CONTACT:
ARIZONA PUBLIC SERVICE (APS)
6672 CORSAIR AVENUE
PRESCOTT, AZ 86301
PHONE: (800) 253-9405

(1) SEE ARCHITECTURAL PLANS FOR EXACT LOCATION OF UTILITY ENTRANCE INTO THE BUILDING.
(2) LOCATION OF CONNECTION FOR NEW SERVICE
(3) PROPOSED UNDERGROUND ELECTRIC SERVICE
(4) PROPOSED LIGHT POLE (SEE PHOTOMETRIC PLAN)

UTILITY LEGEND

EXISTING PROPERTY LINE
EXISTING RIGHT-OF-WAY
PROPOSED RIGHT-OF-WAY
PROPOSED SETBACK LINE
UGE — ELECTRIC UNDERGROUND LINE
GAS — GAS LINE
SS — SEWER LINE
UGT — TELEPHONE UNDERGROUND LINE
#W — DOMESTIC WATER LINE #=SIZE
SANITARY SEWER MANHOLE
SANITARY SEWER CLEAN OUT
WATER METER
WATER TEE
GATE VALVE
DDC — DOUBLE DETECTOR CHECK VALVE ASSEMBLY
FIRE HYDRANT
FDC — FIRE DEPARTMENT CONNECTION
GREASE TRAP
ELECTRICAL TRANSFORMER
LIGHTING FIXTURE

811. Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

24 HOUR EMERGENCY CONTACT

ATWELL
866.850.4200 www.atwell-group.com
9001 AIRPORT FREEWAY, SUITE 660
NORTH RICHLAND HILLS, TX 76180
972.638.8860
AZ COA# 16251

S12-T17N-R5E
80 POSSE GROUNDS ROAD
SEDONA
YAVAPAI COUNTY, AZ

BLACK ROCK COFFEE OF SEDONA
BLACK ROCK DEVELOPMENT COMPANY, LLC
CONSTRUCTION DRAWINGS
UTILITY PLAN

DATE 2025-07-09

REVISIONS

SCALE: 1"=20'

DRAWN BY: A. MCDONNELL
CHECKED BY: N. SALAZAR
PROJECT MANAGER: N. SALAZAR
JOB #: 24004242
FILE CODE: ##
SHEET NO. C400

NOT-ISSUED-FOR-CONSTRUCTION CAD FILE: C400 UTILITY PLAN

EXHIBIT 1 - VICINITY MAP

NOT TO SCALE