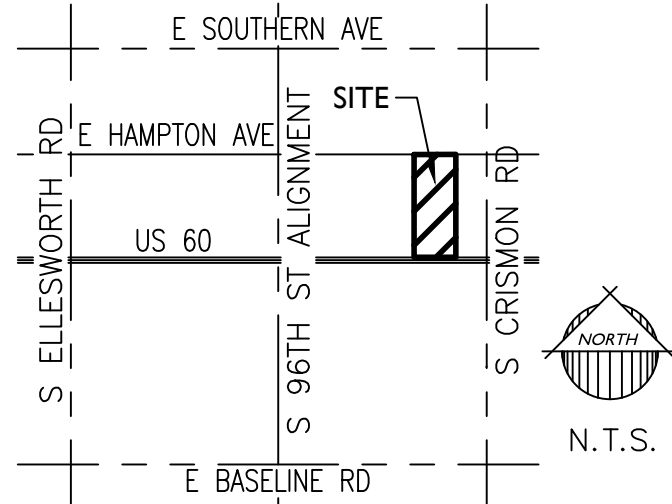


PRELIMINARY GRADING & DRAINAGE PLAN FOR THE LINCOLN

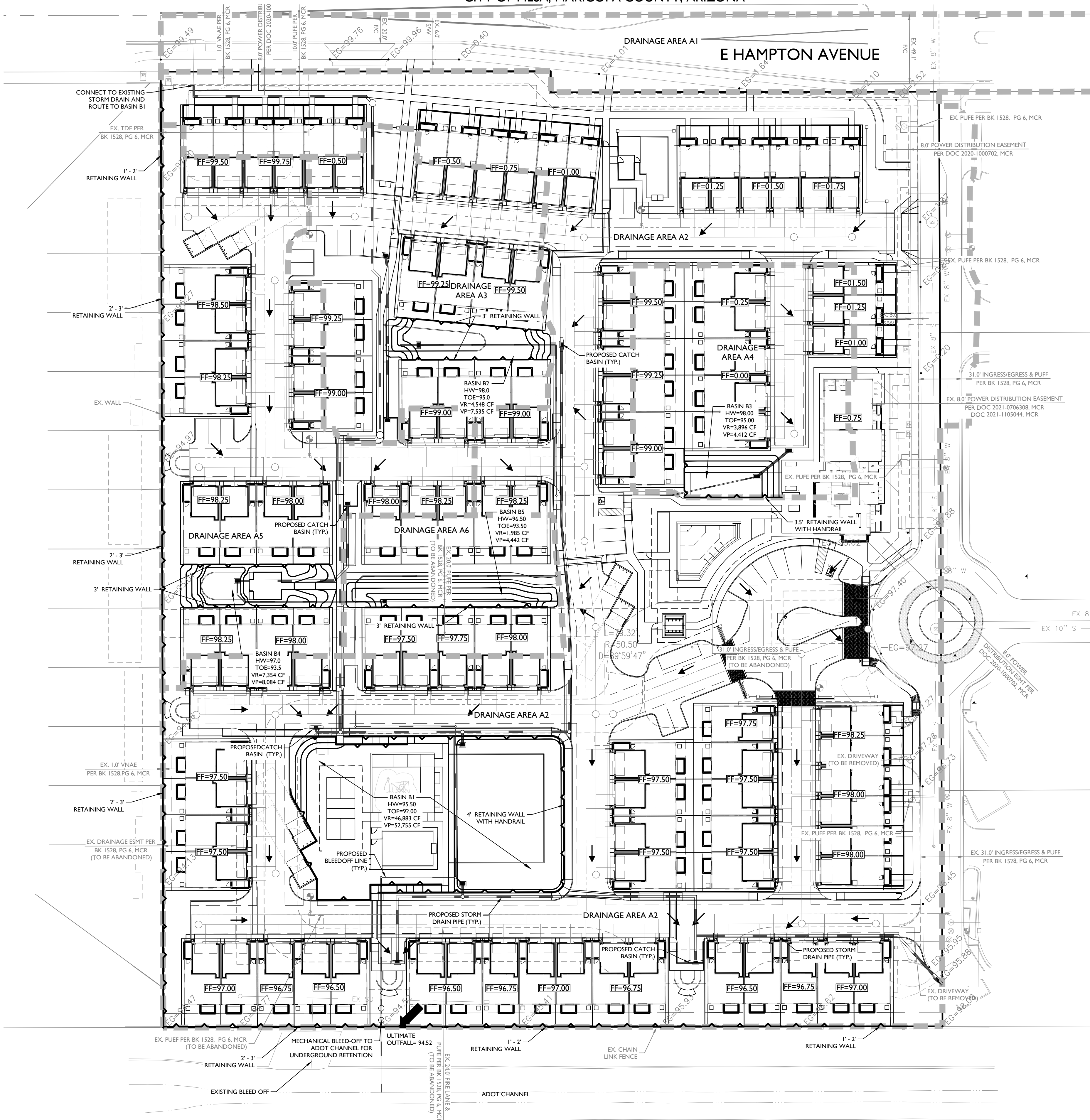
A PORTION OF SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 34,
TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA AND SALT RIVER MERIDIAN
CITY OF MESA, MARICOPA COUNTY, ARIZONA



SEC. 34
T.1 N., R.7 E.
VICINITY MAP

LEGEND

- SEWER LINE
- SEWER MANHOLE
- WATER LINE
- FIRE HYDRANT
- WATER VALVE
- FF= FINISHED FLOOR
- SLOPE DIRECTION
- STORM DRAIN PIPE
- TRENCH DRAIN PIPE
- CATCH BASIN
- DRYWELL
- GUTTER



CIVIL ENGINEER

EPS GROUP, INC.
1130 N. ALMA SCHOOL ROAD, STE. 120 MESA,
ARIZONA 85201
PHONE: (623) 234-8556
CONTACT: TAYLOR BILLS, P.E.
EMAIL: taylor.bills@epsgroupinc.com

DEVELOPER

PORTER KYLE
8502 E. PRINCESS DRIVE, STE. 180
SCOTTSDALE, ARIZONA 85255
PHONE: (480) 542-1221
CONTACT: MIKE STEPHAN
EMAIL: MSTEPHAN@PORTERKYLE.COM

BASIS OF BEARING

THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 34, TOWNSHIP 1 NORTH, RANGE 7 EAST, SAID LINE BEING BETWEEN A MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN A HANDHOLE MARKING THE NORTH QUARTER CORNER OF SAID SECTION 34 AND A MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN A HANDHOLE MARKING THE NORTHEAST CORNER OF SAID SECTION 34.

THE BASIS OF BEARING BEING NORTH 89 DEGREES 56 MINUTES 18 SECONDS EAST.

BENCHMARKS

CITY OF MESA AT INTERSECTION OF CRISMON ROAD AND THE US 60. BRASS TAG TOP OF CYRB IN MEDIAN APPROXIMATELY 440 FEET SOUTH OF T.1N, R.7E EAST 1/4 CORNER.
ELEVATION = 1497.36 2020/2021 COM SMARTNET NAVD 88

CITY OF MESA AT INTERSECTION OF ELLSWORTH ROAD AND SOUTHERN ROAD. BRASS TAG TOP OF CURB SOUTHEAST CORNER.
ELEVATION = 1479.84 2020/2021 COM SMARTNET NAVD 88

CITY OF MESA AT INTERSECTION OF ELLSWORTH ROAD AND BASELINE ROAD. BRASS TAG TOP OF CURB NORTHEAST CORNER.
ELEVATION = 1445.41 2020/2021 COM SMARTNET NAVD 88

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MARICOPA, STATE OF ARIZONA, AND IS DESCRIBED AS FOLLOWS:

LOTS 5 AND 6, OF SWC, CRISMON ROAD & HAMPTON AVENUE, ACCORDING TO THE PLAT RECORDED IN BOOK 1528 OF MAPS, PAGE 6, AND AFFIDAVIT OF CORRECTION RECORDED IN DOCUMENT NO. 20200880067, RECORDS OF MARICOPA COUNTY, ARIZONA.

APN: 220-82-006 AND 220-82-007

LEGAL DESCRIPTION PER FIRST AMERICAN TITLE INSURANCE COMPANY, AND ITS AGENT, LANDMARK TITLE ASSURANCE AGENCY OF ARIZONA LLC (CB) COMMITMENT FOR TITLE INSURANCE WITH FILE NO. 06208165-026-NM2, HAVING AN EFFECTIVE DATE OF JULY 22, 2024.

RETENTION CALCULATIONS

VOLUME REQUIRED FOR 100-YR 2-HR STORM EVENT:
 $V_{REQ} = C * P / 12 * A$
WHERE:
V_{REQ} = RUNOFF VOLUME (CF)
C = WEIGHTED RUNOFF COEFFICIENT
P = 100-YR, 2-HR RAINFALL DEPTH (IN) = 2.20-IN
A = DRAINAGE AREA IN SF

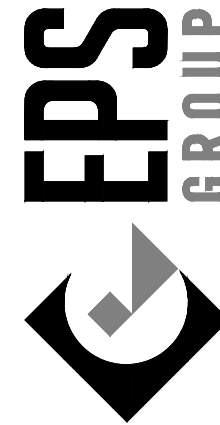
RETENTION SUMMARY TABLE				
RETENTION	DRAINAGE AREA (SF)	WEIGHTED RUNOFF COEFFICIENT "C"	VOLUME REQUIRED (CF)	VOLUME PROVIDED (CF)
B1	296,109	0.86	46,883	52,755
B2	31,007	0.80	4,548	7,535
B3	25,600	0.83	3,896	4,412
B4	48,322	0.83	7,354	8,084
B5	15,242	0.71	1,985	4,442
TOTAL			64,666	77,228

FLOOD ZONE INFORMATION

THIS SITE IS LOCATED WITHIN "ZONE X" AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 04013C231SL. ZONE X IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD HAZARD. AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE.

40 0 40 80
scale feet

1130 N Alma School Road
Suite 120
Mesa, AZ 85201
T:480.503.2350 | F:480.503.2358
www.epsgroupinc.com

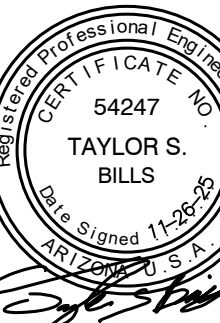


THE LINCOLN
MESA, ARIZONA
Preliminary Grading & Drainage Plan

Revisions:



Designer: EPS
Drawn by: EPS



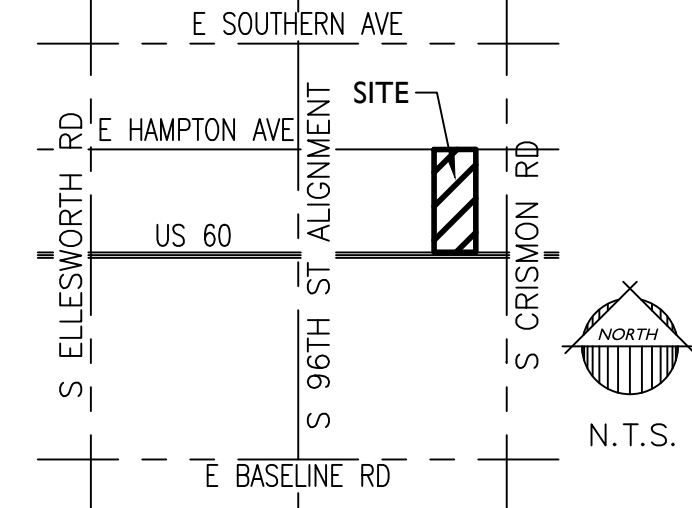
Job No.
24-0510

PG01

Sheet No.
1
of 1

PRELIMINARY UTILITY PLAN FOR THE LINCOLN

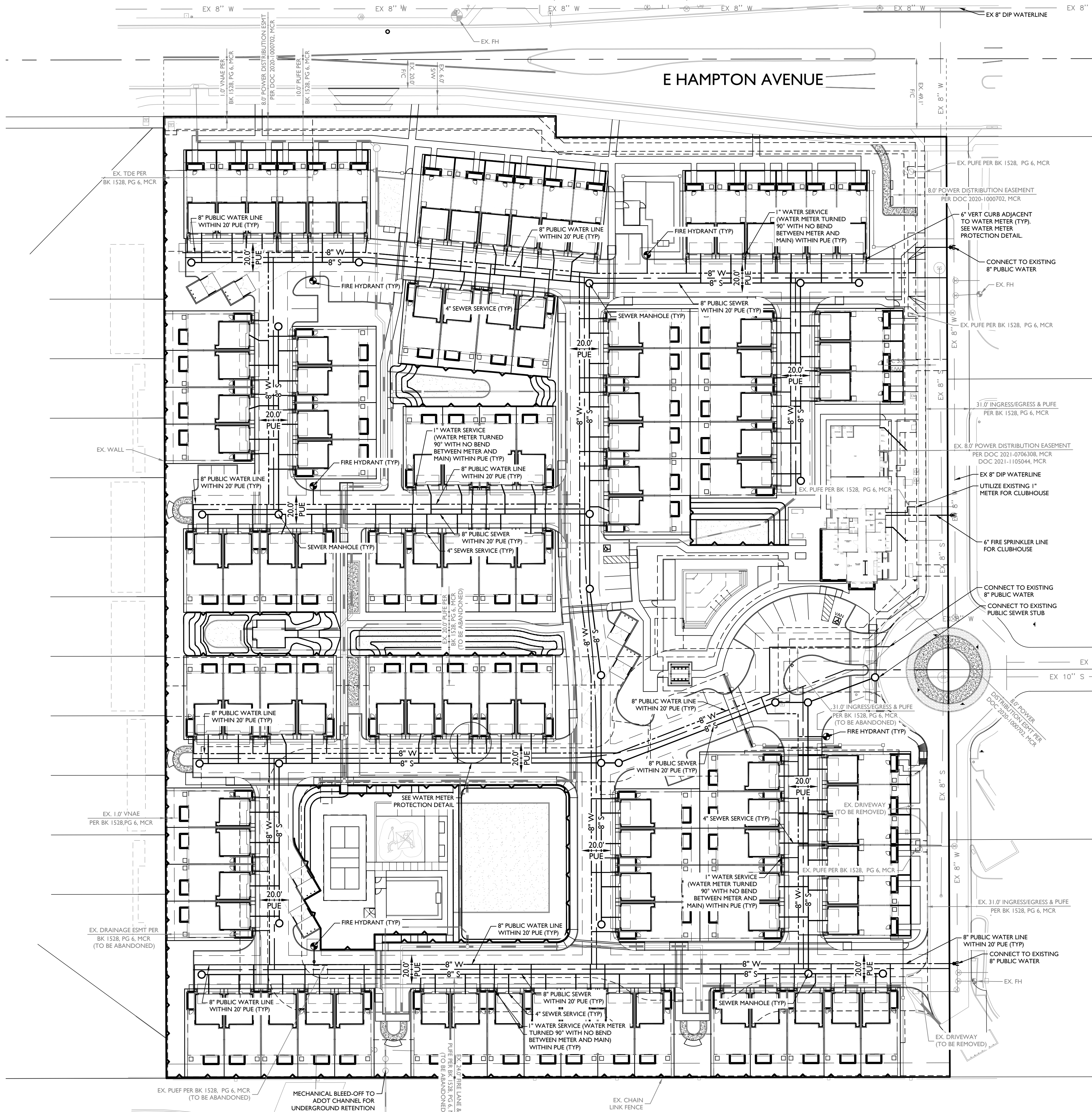
A PORTION OF SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 34,
TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA AND SALT RIVER MERIDIAN
CITY OF MESA, MARICOPA COUNTY, ARIZONA



SEC. 34
T.1 N., R.7 E.
VICINITY MAP

LEGEND

- SEWER LINE
- SEWER MANHOLE
- WATER LINE
- FIRE HYDRANT
- WATER VALVE
- FF= FINISHED FLOOR
- SLOPE DIRECTION
- STORM DRAIN PIPE
- TRENCH DRAIN PIPE
- CATCH BASIN
- DRYWELL
- GUTTER



CIVIL ENGINEER

EPS GROUP, INC.
1130 N. ALMA SCHOOL ROAD, STE. 120
MESA, ARIZONA 85201
PHONE: (623) 234-8556
CONTACT: TAYLOR BILLS, P.E.
EMAIL: taylor.bills@epsgroupinc.com

DEVELOPER

PORTER KYLE
8502 E. PRINCESS DRIVE, STE. 180
SCOTTSDALE, ARIZONA 85255
PHONE: (480) 542-1221
CONTACT: MIKE STEPHAN
EMAIL: MSTEPHAN@PORTERKYLE.COM

BASIS OF BEARING

THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 34, TOWNSHIP 1 NORTH, RANGE 7 EAST, SAID LINE BEING BETWEEN A MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN A HANDHOLE MARKING THE NORTH QUARTER CORNER OF SAID SECTION 34 AND A MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN A HANDHOLE MARKING THE NORTHEAST CORNER OF SAID SECTION 34.

THE BASIS OF BEARING BEING NORTH 89 DEGREES 56 MINUTES 18 SECONDS EAST.

BENCHMARKS

CITY OF MESA AT INTERSECTION OF CRISMON ROAD AND THE US 60. BRASS TAG TOP OF CYRB IN MEDIAN APPROXIMATELY 440 FEET SOUTH OF T.1N, R.7E EAST 1/4 CORNER.
ELEVATION = 1497.36 2020/2021 COM SMARTNET NAVD 88

CITY OF MESA AT INTERSECTION OF ELLSWORTH ROAD AND SOUTHERN ROAD. BRASS TAG TOP OF CURB SOUTHEAST CORNER.
ELEVATION = 1479.84 2020/2021 COM SMARTNET NAVD 88

CITY OF MESA AT INTERSECTION OF ELLSWORTH ROAD AND BASELINE ROAD. BRASS TAG TOP OF CURB NORTHEAST CORNER.
ELEVATION = 1445.41 2020/2021 COM SMARTNET NAVD 88

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MARICOPA, STATE OF ARIZONA, AND IS DESCRIBED AS FOLLOWS:

LOTS 5 AND 6, OF SWC CRISMON ROAD & HAMPTON AVENUE. ACCORDING TO THE PLAT RECORDED IN BOOK 1528 OF MAPS, PAGE 6, AND AFFIDAVIT OF CORRECTION RECORDED IN DOCUMENT NO. 20200880067, RECORDS OF MARICOPA COUNTY, ARIZONA.

APN: 220-82-006 AND 220-82-007

LEGAL DESCRIPTION PER FIRST AMERICAN TITLE INSURANCE COMPANY, AND ITS AGENT, LANDMARK TITLE ASSURANCE AGENCY OF ARIZONA LLC (CB) COMMITMENT FOR TITLE INSURANCE WITH FILE NO. 06208165-026-NM2, HAVING AN EFFECTIVE DATE OF JULY 22, 2024.

NOTE:
EXISTING PUBLIC WATERLINES IN CONFLICT WITH PROPOSED IMPROVEMENTS WITHIN THE SITE TO BE REMOVED AND EASEMENTS ABANDONED.

40 0 40 80
scale feet

WATER METER
PROTECTION DETAIL
1"=10'

1130 N Alma School Road
Suite 120
Mesa, AZ 85201
T:480.503.2250 | F:480.503.2258
www.epsgroupinc.com

EPS GROUP

Project:

Revisions:

Call at least two full working days before you begin excavation.

ARIZONA 811

800.488.8111 or 1-800-811-1111 (Toll Free)
In Maricopa County: (602)263-1100

Designer: EPS
Drawn by: EPS

DESIGNED BY TAYLOR S. BILLS
54247
TAYLOR S. BILLS
DESIGNED 11-26-24

Job No.
24-0510
UT01
Sheet No.
1
of 1



Preliminary Drainage Report

For

The Lincoln
Mesa, Arizona

Owner/Developer

Porter-Kyle

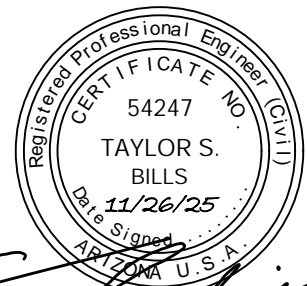
8502 E. Princess Drive, Suite 180

Scottsdale, AZ 85255

Phone: 480.542.1221

Contact: Mike Stephan

Email: mstephan@porterkyle.com



A handwritten signature in black ink, appearing to read 'Taylor S. Bills', written over the bottom of the seal.

Project No. 24-0510

Date: November 2025

1130 N. Alma School Road, Suite 120

Mesa, AZ 85201

o: 480.503.2250

f: 480.503.2258

Table of Contents

1.0	Introduction	2
1.1	Project Description	2
2.0	Project Background	2
2.1	National Flood Insurance Program	2
3.0	Existing Onsite Conditions.....	3
4.0	Offsite Retention	3
5.0	Onsite Retention	4
6.0	Retention Percolation.....	4
7.0	Methodology and Criteria.....	4
7.1	Rational Method	4
7.2	Time of Concentration.....	5
7.3	Manning’s Equation.....	5
7.4	Catch Basin Design	6
7.5	Storm Drains.....	6
7.6	Onsite Retention Requirements.....	7
7.6.1	Required Retention Volume	7
7.7	Ultimate Outfall and Finished Floor.....	7
8.0	Conclusions	7
9.0	References	8

List of Appendices

Appendix A

Figures

Appendix B

Retention Calculations

1.0 Introduction

The Lincoln (the Project) is a proposed 370,785 square feet townhome (8.51 ac) site with 102 units located approximately 370 feet west of the E Hampton Ave and S Crismon Rd intersection. The Project can be further located in the Northeast quarter of Section 34, Township 1 North, Range 7 East of the Gila and Salt River Meridian, Maricopa County, Arizona, Assessor Parcel Numbers (APN) 220-82-007 and 220-82-006. See **Figure 1**.

The Project is an infill development bound by Hampton Ave to the north, an existing commercial development to the east, an ADOT drainage channel to the south, and an existing single-family subdivision to the west.

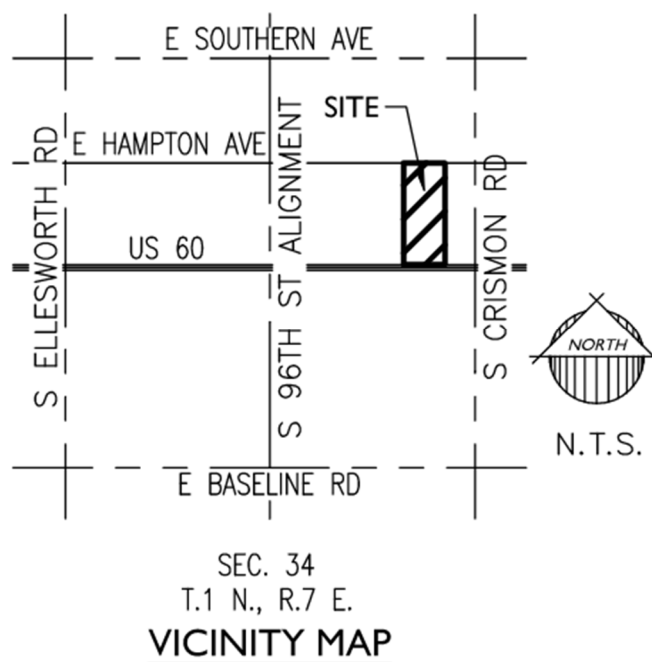


Figure 1 - Vicinity Map

1.1 Project Description

The Project consists of 102 attached garage townhome style units and a clubhouse, landscape, on-site parking, and associated amenities.

2.0 Project Background

2.1 National Flood Insurance Program

This site is located within FEMA Flood Zone X as shown on FEMA Flood Insurance Rate Map 04013C2315L dated October 16, 2013. See **Figure 2**.

Flood Zone X is defined as:

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than one (1) foot or with drainage areas less than one (1) square mile; and areas protected by levees from 1% annual chance flood.

National Flood Hazard Layer FIRMette

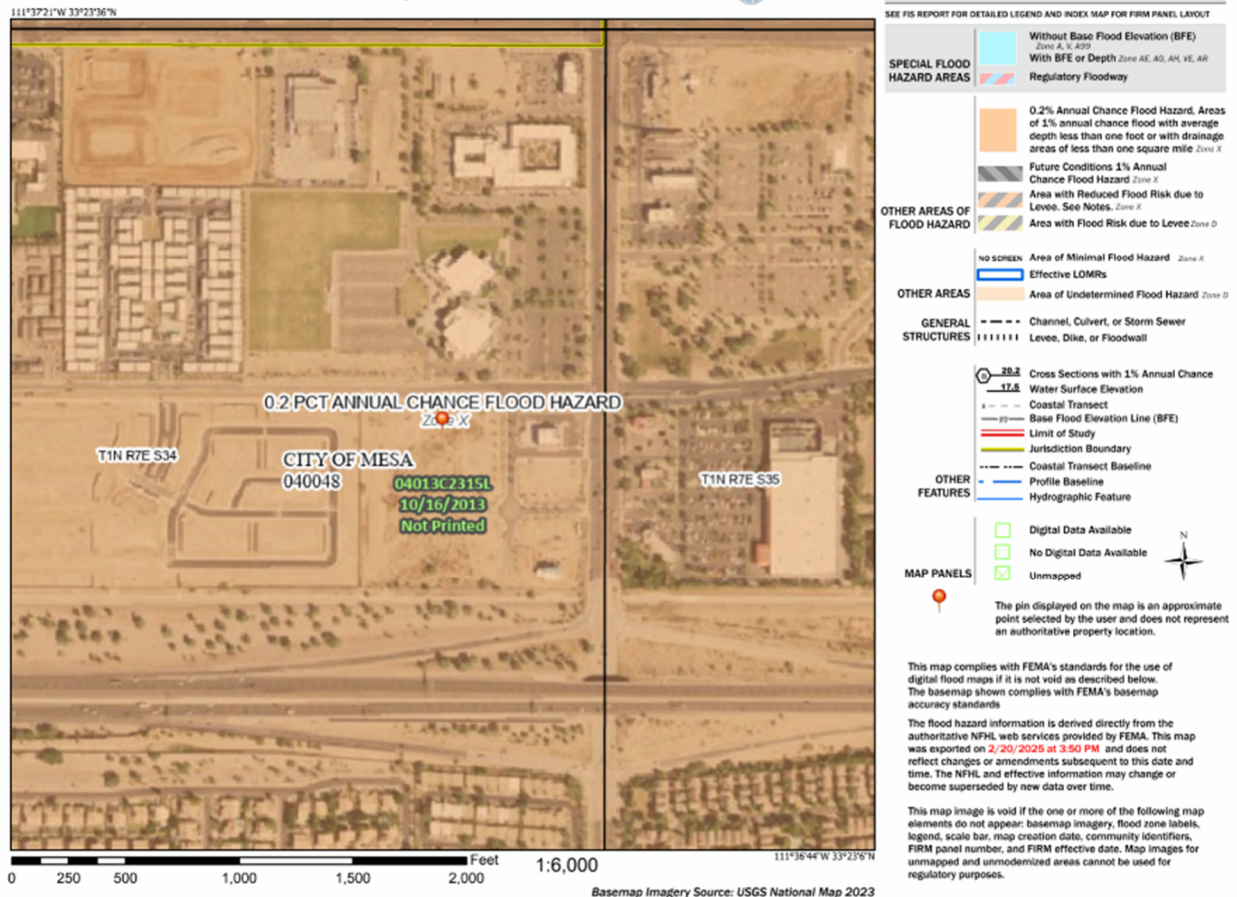


Figure 2 - FIRMette

3.0 Existing Onsite Conditions

The natural grade for this area slopes from northeast to southwest at approximately 1.0 percent. The site is currently undeveloped land with a temporary retention basin along the frontage on E Hampton Ave and the southeast corner of the site.

4.0 Offsite Retention

Offsite drainage generated within the half-street of E Hampton Ave will be collected by an existing catch basin at the northwest corner of the site and routed to onsite retention basins meeting the capacity requirements of the design storm event per City of Mesa design guidelines.

5.0 Onsite Retention

Onsite drainage will be captured and retained onsite up to the 100-year 2-hour storm event according to all City of Mesa standards and guidelines. Finished grades have been designed for runoff to drain away from buildings, to catch basins, and then to above ground retention basins. Three (3) of the retention basins (Basins B2, B3, & B5) are 3' maximum depth with 4:1 side slopes or retaining walls along the perimeter. The two retention basins (Basin B1 & B4) with amenities in them are 3.5' deep with the amenities located 1.5' above basin bottom. These basins have 4:1 side slopes or retaining walls along the perimeter. Finished floor elevations are designed to be a minimum of 14 inches above the ultimate site outfall or 12 inches above the lowest adjacent gutter elevation, whichever is higher.

See **Appendix A** for an illustration of the basin names and area designations, and **Appendix B** for retention calculations.

6.0 Retention Percolation

Storm water disposal will be by bleed-off to the existing bleed-off pipe at the southern boundary of the site which outfalls to the ADOT channel. All storm water is to be disposed of within 24 to 36 hours.

7.0 Methodology and Criteria

The following section provides an overview of the rational method and time of concentration used during final design.

7.1 Rational Method

The Rational Method will be used to calculate storm drain peak flows at critical locations in the development. As outlined in the Maricopa County Drainage Manual Volume 2, the Rational Method was applied. The storm drain peak flows were calculated as follows:

$$Q_p = CIA_d$$

where:

C = Composite runoff coefficient (Calculations shown in **Appendix B**)

I = Intensity corresponding to T_c

A_d = Area in acres

7.2 Time of Concentration

Inlet time estimated, system time established based on summation of travel time in system and initial time of concentration based upon the following equation:

$$T_c = 11.4L^{0.5}K_b^{0.52}S^{-0.31}i^{-0.38}$$

where:

T_c = Time of concentration (hrs): minimum of 5 minutes

L = Length of the longest flow path (miles)

K_b = Watershed resistance coefficient – (See Maricopa County Drainage Manual, Hydrology)

S = Watercourse slope (ft/mi)

i = Rainfall intensity (in/hr)

7.3 Manning's Equation

The street capacities will be calculated using Manning's equation:

$$Q = \frac{1.486AR^{2/3}S^{0.5}}{n}$$

where:

S = Street longitudinal slope (ft/ft)

A = Flow Area (sq. ft)

R = Hydraulic Radius (ft)

n = Manning's roughness coefficient = (0.015)

7.4 Catch Basin Design

The inlet capacity of an in-sump curb opening is determined by using the following formula:

$$Q_i = C_w(L + 1.8W)d^{1.5}$$

where:

C_w = Weir coefficient (2.3)

L = Length of Curb Opening (ft)

W = Width of grate or depressed gutter (ft)

d = Curb depth at curb opening (ft)

The inlet capacity of an in-sump grated inlet is determined by using the following equation:

$$Q_i = C_w P d^{1.5}$$

where:

C_w = Weir coefficient (3.0)

P = Perimeter of grate, disregarding bars and sides against curb (ft)

d = Curb depth at curb opening (ft)

7.5 Storm Drains

The following equations was used to analyze storm drain hydraulics:

$$HGL_{End} = HGL_{Begin} + L_f + L_m$$

where:

L_m = Minor Losses

$L_f = S_f \times \text{Pipe length}$

$$S_f = \text{Friction Slope} = K \frac{V^2 I}{2gR^{1.33}}$$

where:

K = Loss coefficient (0.00492)

V = Velocity assuming flowing full

g = Gravity constant ($32.2 \frac{ft}{s^2}$)

R = Hydraulic radius (ft)

7.6 Onsite Retention Requirements

The following section outlines the design requirements governing the design of onsite retention basins as outlined in the City of Mesa Engineering & Design Standards Section 806.

7.6.1 Required Retention Volume

$$V_{required} = \frac{CDA}{12}$$

where:

C = Runoff Coefficient

D = Depth of Precipitation (2.20 inches per City of Mesa Design Standards)

A = Area (acres)

7.7 Ultimate Outfall and Finished Floor

The Project has an ultimate outfall located near the southwest corner of the site at an elevation of 1494.52. Building finished floors have been designed to be a minimum of 14 inches above the ultimate outfall or 12 inches above the lowest adjacent gutter elevation, whichever is higher.

8.0 Conclusions

This report concluded that:

- The Project has been designed in accordance with the Flood Control District of Maricopa County standards and City of Mesa Engineering Department Engineering & Design Standards 2023.
- The Project does not create adverse impacts on any downstream property.
- The Ultimate Outfall is near the southwest corner of the site, at an elevation of 1494.52.
- Retention basins distributed throughout the site will provide the retention needed for the Project.
- The half-street of E Hampton Ave will be collected by an existing inlet and routed to onsite retention basin.

9.0 References

City of Mesa. (2023). Engineering & Design Standards Manual. Mesa, Arizona, United States.

Flood Control District of Maricopa County. (2018). 2018 Drainage Design Manual for Maricopa County, AZ Volume 1: Hydrology. Maricopa County, Arizona, USA.

Flood Control District of Maricopa County. (2018). 2018 Drainage Design Manual for Maricopa County, AZ Volume 2: Hydraulics. Maricopa County, AZ, USA.

Appendix A

Figures

National Flood Hazard Layer FIRMette

111°37'21"W 33°23'36"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

Without Base Flood Elevation (BFE)
Zone A, V, AE, AH, VE, AR
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
Zone X

Future Conditions 1% Annual Chance Flood Hazard
Zone X

Area with Reduced Flood Risk due to Levee. See Notes.
Zone X

Area with Flood Risk due to Levee
Zone D

NO SCREEN
Area of Minimal Flood Hazard
Zone X

Effective LOMRs
Area of Undetermined Flood Hazard
Zone D

Channel, Culvert, or Storm Sewer
Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation
20.2
17.5

Coastal Transect
Base Flood Elevation Line (BFE)

Limit of Study
Jurisdiction Boundary

Coastal Transect Baseline
Profile Baseline

Hydrographic Feature

Digital Data Available
No Digital Data Available
Unmapped

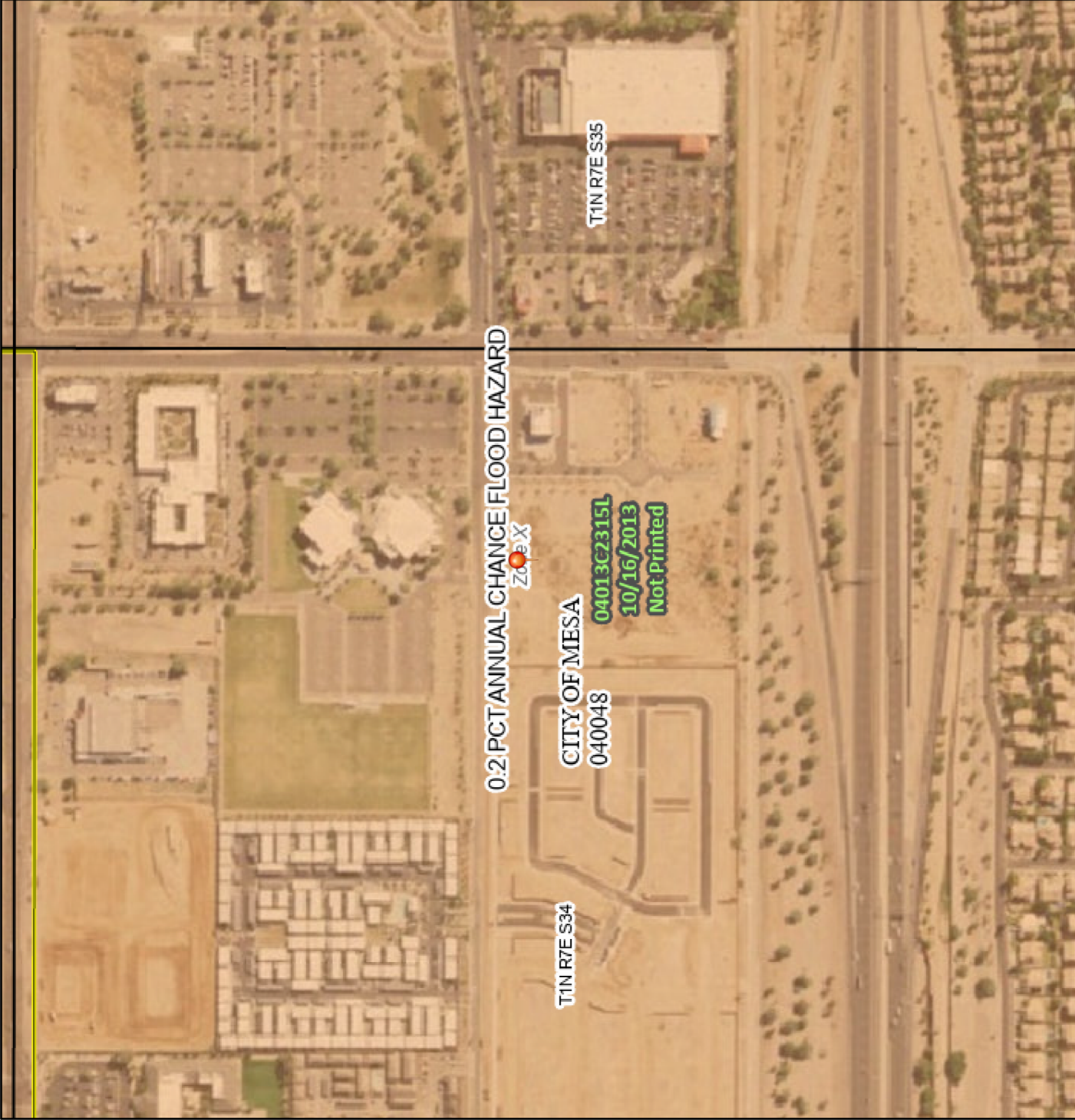
MAP PANELS

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/20/2025 at 3:50 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



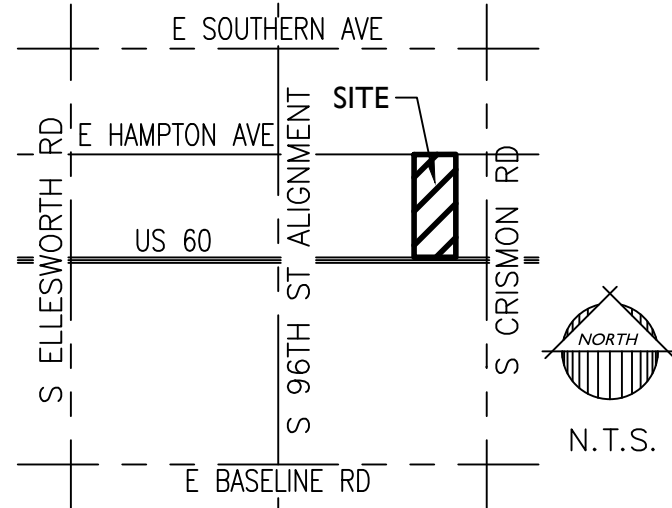
111°36'44"W 33°23'6"N

0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap Imagery Source: USGS National Map 2023

PRELIMINARY GRADING & DRAINAGE PLAN FOR THE LINCOLN

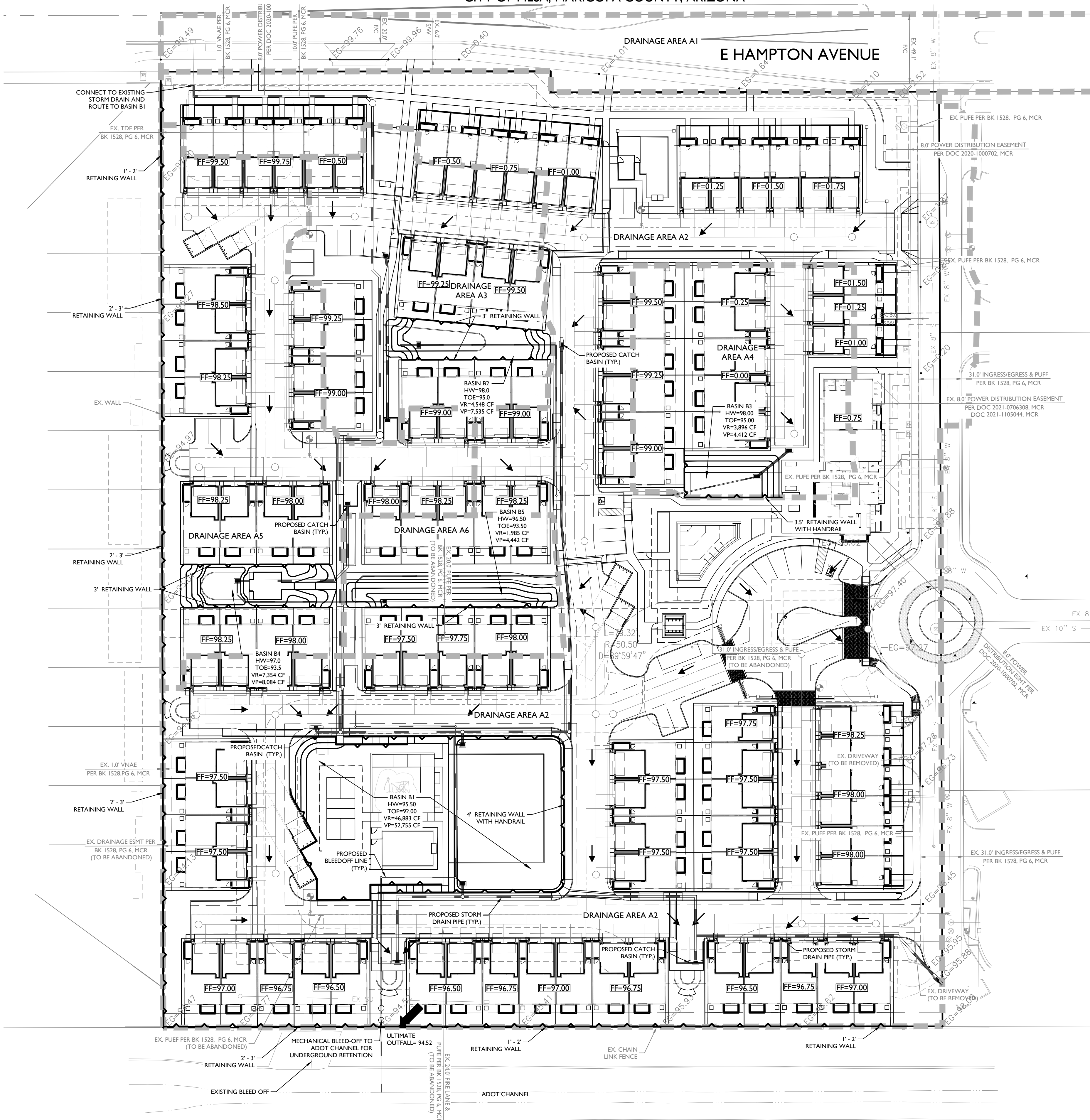
A PORTION OF SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 34,
TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA AND SALT RIVER MERIDIAN
CITY OF MESA, MARICOPA COUNTY, ARIZONA



SEC. 34
T.1 N., R.7 E.
VICINITY MAP

LEGEND

- SEWER LINE
- SEWER MANHOLE
- WATER LINE
- FIRE HYDRANT
- WATER VALVE
- FF= FINISHED FLOOR
- SLOPE DIRECTION
- STORM DRAIN PIPE
- TRENCH DRAIN PIPE
- CATCH BASIN
- DRYWELL
- GUTTER



CIVIL ENGINEER

EPS GROUP, INC.
1130 N. ALMA SCHOOL ROAD, STE. 120 MESA,
ARIZONA 85201
PHONE: (623) 234-8556
CONTACT: TAYLOR BILLS, P.E.
EMAIL: taylor.bills@epsgroupinc.com

DEVELOPER

PORTER KYLE
8502 E. PRINCESS DRIVE, STE. 180
SCOTTSDALE, ARIZONA 85255
PHONE: (480) 542-1221
CONTACT: MIKE STEPHAN
EMAIL: MSTEPHAN@PORTERKYLE.COM

BASIS OF BEARING

THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 34, TOWNSHIP 1 NORTH, RANGE 7 EAST, SAID LINE BEING BETWEEN A MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN A HANDHOLE MARKING THE NORTH QUARTER CORNER OF SAID SECTION 34 AND A MARICOPA COUNTY HIGHWAY DEPARTMENT BRASS CAP IN A HANDHOLE MARKING THE NORTHEAST CORNER OF SAID SECTION 34.

THE BASIS OF BEARING BEING NORTH 89 DEGREES 56 MINUTES 18 SECONDS EAST.

BENCHMARKS

CITY OF MESA AT INTERSECTION OF CRISMON ROAD AND THE US 60. BRASS TAG TOP OF CYRB IN MEDIAN APPROXIMATELY 440 FEET SOUTH OF T.1N, R.7E EAST 1/4 CORNER.
ELEVATION = 1497.36 2020/2021 COM SMARTNET NAVD 88

CITY OF MESA AT INTERSECTION OF ELLSWORTH ROAD AND SOUTHERN ROAD. BRASS TAG TOP OF CURB SOUTHEAST CORNER.
ELEVATION = 1479.84 2020/2021 COM SMARTNET NAVD 88

CITY OF MESA AT INTERSECTION OF ELLSWORTH ROAD AND BASELINE ROAD. BRASS TAG TOP OF CURB NORTHEAST CORNER.
ELEVATION = 1445.41 2020/2021 COM SMARTNET NAVD 88

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MARICOPA, STATE OF ARIZONA, AND IS DESCRIBED AS FOLLOWS:

LOTS 5 AND 6, OF SWC, CRISMON ROAD & HAMPTON AVENUE, ACCORDING TO THE PLAT RECORDED IN BOOK 1528 OF MAPS, PAGE 6, AND AFFIDAVIT OF CORRECTION RECORDED IN DOCUMENT NO. 20200880067, RECORDS OF MARICOPA COUNTY, ARIZONA.

APN: 220-82-006 AND 220-82-007

LEGAL DESCRIPTION PER FIRST AMERICAN TITLE INSURANCE COMPANY, AND ITS AGENT, LANDMARK TITLE ASSURANCE AGENCY OF ARIZONA LLC (CB) COMMITMENT FOR TITLE INSURANCE WITH FILE NO. 06208165-026-NM2, HAVING AN EFFECTIVE DATE OF JULY 22, 2024.

RETENTION CALCULATIONS

VOLUME REQUIRED FOR 100-YR 2-HR STORM EVENT:
 $V_{REQ} = C * P / 12 * A$
WHERE:
V_{REQ} = RUNOFF VOLUME (CF)
C = WEIGHTED RUNOFF COEFFICIENT
P = 100-YR, 2-HR RAINFALL DEPTH (IN) = 2.20-IN
A = DRAINAGE AREA IN SF

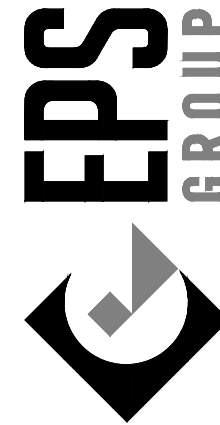
RETENTION SUMMARY TABLE				
RETENTION	DRAINAGE AREA (SF)	WEIGHTED RUNOFF COEFFICIENT "C"	VOLUME REQUIRED (CF)	VOLUME PROVIDED (CF)
B1	296,109	0.86	46,883	52,755
B2	31,007	0.80	4,548	7,535
B3	25,600	0.83	3,896	4,412
B4	48,322	0.83	7,354	8,084
B5	15,242	0.71	1,985	4,442
TOTAL			64,666	77,228

FLOOD ZONE INFORMATION

THIS SITE IS LOCATED WITHIN "ZONE X" AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 04013C231SL. ZONE X IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD HAZARD. AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE.

40 0 40 80
scale feet

1130 N Alma School Road
Suite 120
Mesa, AZ 85201
T:480.503.2350 | F:480.503.2358
www.epsgroupinc.com

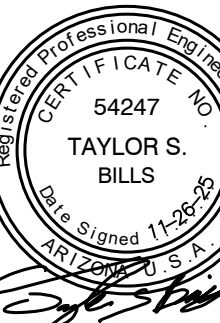


THE LINCOLN
MESA, ARIZONA
Preliminary Grading & Drainage Plan

Revisions:



Designer: EPS
Drawn by: EPS



Job No.
24-0510
PG01
Sheet No.
1 of 1

Appendix B

Retention Calculations

Weighted Runoff Coefficient by Area

Project: The Lincoln
Prepared By: Antonio Andrade

Date: 11/26/2025

Sub Basin Area: A1 (Offsites)

Area Description	C	Area
Roofs and Concrete	0.95	40,251
Desert Landscaping	0.50	0
Total Area		40,251
Weighted C	0.95	

Sub Basin Area: A2

Area Description	C	Area
Roofs and Concrete	0.95	199,001
Desert Landscaping	0.50	56,857
Total Area		255,858
Weighted C	0.85	

Sub Basin Area: A3

Area Description	C	Area
Roofs and Concrete	0.95	20,485
Desert Landscaping	0.50	10,522
Total Area		31,007
Weighted C	0.80	

Sub Basin Area: A4

Area Description	C	Area
Roofs and Concrete	0.95	18,615
Desert Landscaping	0.50	6,985
Total Area		25,600
Weighted C	0.83	

Sub Basin Area: A5

Area Description	C	Area
Roofs and Concrete	0.95	34,957
Desert Landscaping	0.50	13,365
Total Area		48,322
Weighted C	0.83	

Sub Basin Area: A6

Area Description	C	Area
Roofs and Concrete	0.95	7,216
Desert Landscaping	0.50	8,026
Total Area		15,242
Weighted C	0.71	

Retention Calculations

Project: The Lincoln
Storm Event: 100-yr, 2-hr
Prepared by: Antonio Andrade

11/26/25

$$V = C * A * P / 12$$

Where:

V = Runoff Volume

C = Runoff Coefficient

A = Drainage Area

P = 2.20 in

Surface Retention Basin Volume Provided

Basin ID	Elevation	Area (ft ²)	Incremental Volume (ft ³)	Volume Provided, V _p (ft ³)
B1	92	7,855		
	92.5	8,587	4,111	
	93.5	9,150	8,869	
	93.5	19,434	-	
	94.5	19,877	19,656	
	95.5	20,361	20,119	52,755
B2	95	2,127		
	96	2,376	2,252	
	97	2,635	2,506	
	98	2,917	2,777	7,535
B3	95	983		
	96	1,290	1,137	
	97	1,629	1,460	
	98	1,999	1,815	4,412
B4	93.5	751		
	94	1,329	520	
	95	2,048	1,689	
	95	2,510	-	
	96	2,953	2,732	
	97	3,332	3,143	8,084
B5	93.5	578		
	94.5	1,092	836	
	95.5	1,784	1,439	
	96.5	2,549	2,167	4,442
Total Surface Retention				77,228

Retention Calculations

Project: The Lincoln
Storm Event: 100-yr, 2-hr
Prepared by: Antonio Andrade

11/26/25

Volume Required and Summary

Basin ID	Sub-Basin ID	Sub Basin Area Description	Area	C	Volume Required, V_R (ft ³)	Volume Provided, V_p (ft ³)
----------	--------------	----------------------------	------	---	---	---

B1	A1 (Offsite) A2	Offsite	40,251	0.95	7,011	
		Onsite	255,858	0.85	39,872	
		Total	296,109	0.86	46,883	

B2	A3	Onsite	31,007	0.80	4,548	
		Total	31,007		4,548	

B3	A4	Onsite	25,600	0.83	3,896	
		Total	25,600		3,896	

B4	A5	A5	48,322	0.83	7,354	
		Total	48,322		7,354	

B5	A6	Onsite	15,242	0.71	1,985	
		Total	15,242		1,985	



Preliminary Sewer Report

For

The Lincoln
Mesa, Arizona

Owner/Developer

Porter-Kyle

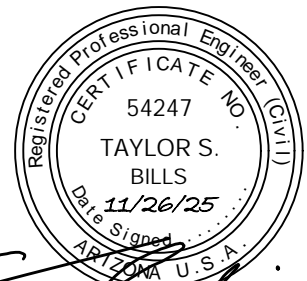
8502 E. Princess Drive, Suite 180

Scottsdale, AZ 85255

Phone: 480.542.1221

Contact: Mike Stephan

Email: mstephan@porterkyle.com



Project No. 24-0510

Date: November 2025

1130 N. Alma School Road, Suite 120

Mesa, AZ 85201

o: 480.503.2250

f: 480.503.2258

Table of Contents

- 1.0 Introduction 1
 - 1.1 Project Description1
- 2.0 Existing Conditions..... 1
- 3.0 Sewer Design2
 - 3.1 Calculations2
- 4.0 Conclusions 3
- 5.0 References3

List of Appendices

- Appendix A
 - Preliminary Utility Plan
- Appendix B
 - Sewer Demand Calculations

1.0 Introduction

The Lincoln (the Project) is a proposed 370,785 square feet townhome (8.51 ac) site with 102 units located approximately 370 feet west of the E Hampton Ave and S Crismon Rd intersection. The Project can be further located in the Northeast quarter of Section 34, Township 1 North, Range 7 East of the Gila and Salt River Meridian, Maricopa County, Arizona, Assessor Parcel Numbers (APN) 220-82-007 and 220-82-006. See **Figure 1**.

The Project is an infill development bound by Hampton Ave to the north, an existing commercial development to the east, an ADOT drainage channel to the south, and an existing single-family subdivision to the west.

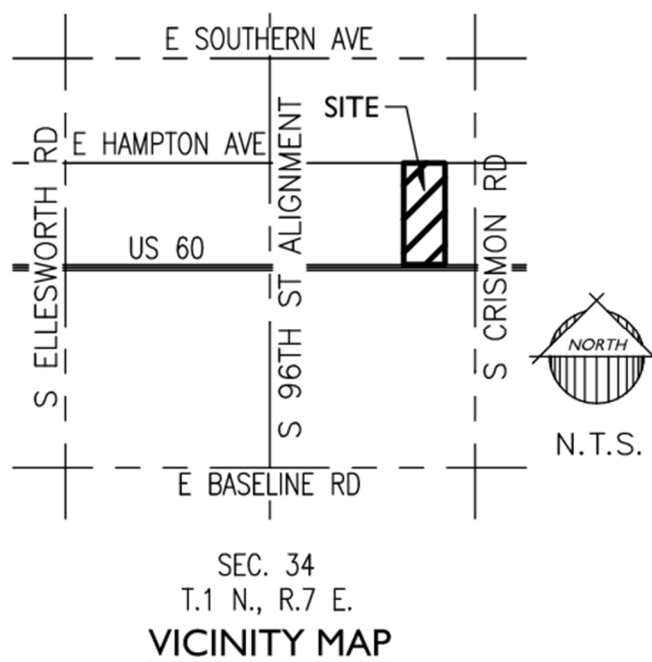


Figure 1 - Vicinity Map

1.1 Project Description

The Project consists of 102 attached garage townhome style units and a clubhouse, landscape, on-site parking, and associated amenities.

2.0 Existing Conditions

There is an existing 10-inch public PVC sewer that is extended to the project site from the shared east-west access drive with the existing development to the east and existing 8-inch public sewer within the existing north-south access drive on the east side of the project site that is owned and maintained by the City of Mesa.

3.0 Sewer Design

The calculations of sewer flow and pipe sizing in this report are based on system design criteria in the City of Mesa Engineering & Design Standards dated 2023, as well as Title 18, Chapter 9 of the Arizona Administrative Code, and regionally accepted design standards.

On-site wastewater flow for the Project will be conveyed via 4-inch services to each of the units. We will connect to the existing 10-inch stub into the site and route a new public 8-inch main through out the site to collect wastewater from the development and outfall to the existing 10-inch public main within shared east-west access to the east of the project site.

All on-site lines were sized taking into consideration prospective flows for the project, minimum pipe sizes, and slopes. See **Appendix A** for the sewer design layout.

The average daily sewer demand used was estimated as outlined in the City of Mesa Engineering & Design Standards. A peaking factor of 3.0 was applied to all flows less than 1.0 MGD per Table 4.3. Refer to **Appendix B** for demand calculations.

The design criteria for this project follow:

- Average use per Table 4.1 and 4.2 (City of Mesa, 2023)
- Peaking Factor = 3.0 per Table 4.3 (City of Mesa, 2023)

3.1 Calculations

Sewer demand for the Project is based on the following criteria:

$$\text{Average Daily Flow} = \text{Average Unit Daily Flow} * \# \text{ of Units}$$

$$\text{Peak Hour Discharge} = \text{Average Daily Flow} * \text{Peaking Factor}$$

Capacity (Q) is calculated by the following equation:

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

Where:

$$n = 0.013$$

A= Cross Sectional Area R = Hydraulic Radius

S = Slope

See **Appendix B** for the Average Daily and Peak Hour sewer demand calculations.

4.0 Conclusions

- City of Mesa Engineering & Design Standards, dated 2023, as well as Title 18, Chapter 9 of the Arizona Administrative Code and regionally accepted design standards have been met.
- All on-site sewer lines are gravity-fed and are designed to have a full flow velocity of 2.5 ft/s minimum and 9 ft/s maximum.
- The development proposes to route a new public main throughout the site that will outfall to the existing 10-inch PVC sewer main within shared east-west access to the east of the project site.
- Total peak demand for the project is 54,669 gallons per day (0.085 cfs).

5.0 References

City of Mesa. (2023, October). Engineering & Design Standards. Mesa, AZ, USA.

International Code Council. (2017, August 31). International Building Code 2018.

State of Arizona. (2022). Arizona Administrative Code. Arizona, USA.

Appendix A

Preliminary Utility Plan

Appendix B

Sewer Demand Calculations

The Lincoln
 24-0510
 Municipality Mesa, AZ
 Location SWC of Hampton Ave and Crismon Rd

Wastewater Demand per Building

Building ID	Land Use	# of Units		Unit Demand gpd/unit	Avg Daily Flow - AD		Peak Flow (ADx3)	
		sf	unit		gpd	gpm	gpd	gpm
Townhomes	Residential	102	ea	160.0	16,320	11.33	48,960	34.00
Clubhouse	Commercial/Retail	3,806	sf	0.5	1,903	1.32	5,709	3.96
Total					18,223	12.65	54,669	37.96

Summary

Wastewater Demands

Peak Flow 37.96 gpm
 0.08 cfs

Note: Wastewater Demand is per COM EDS Section 411, Table 4.2, peaking factors per Table 4.3

proposed Sewer 8" @ 0.33%

8" Capacity at d/D of 0.67 = 0.55 cfs = 352,643 gpd = 244.89 gpm

Existing Sewer 10" @ 0.25%

10" Capacity at d/D of 0.67 = 0.86 cfs = 556,513 gpd = 386.47 gpm