DRAINAGE REPORT

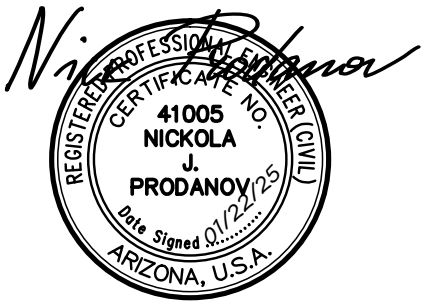
5102 N Wilkinson Road, Paradise Valley, Arizona 85253

LDG PROJECT #2412385

Prepared for:
Alex Meruelo
9550 Firestone Blvd. Ste 105,
Downey, CA 90241

Submitted to:
Town of Paradise Valley
Engineering Department
6401 E Lincoln Dr.
Paradise Valley, Arizona 85253

Prepared by:
Land Development Group, LLC
8808 N Central Ave., Ste 288
Phoenix, Arizona 85020
Contact: Nick Prodanov, PE, PMP
P: 602 889 1984



January 22nd, 2025

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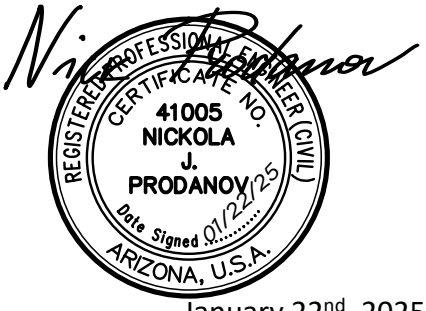


January 22nd, 2025

1. INTRODUCTION

This drainage report and related design have been developed in accordance with the current Maricopa County and Town of Paradise Valley drainage ordinances, standards and policies. It provides engineering analysis and assessment of the current drainage conditions that affect parcel 173-20-007, located at 5102 N Wilkinson Road, Paradise Valley, AZ 85253 and also being Lot 63, Camelback Lands, a subdivision recorded in Book 31 of Maps, Page 26 MCR, being a portion of the SW ¼ of the SW 1/4 of the SW 1/4 of Section 15, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. Refer to Appendix A-1 – Vicinity Map.

The project site is zoned R-43. The property is fully developed residential lot with a main residence in the middle of the property, a guest house at the southwest corner and a sport court along the west building envelope. The lot is approximately 2.256 acres. Access to the property is from Wilkinson Road at the east property line, through an existing concrete driveway. The site is surrounded by large residential lots to the West, North and South. The project will consist of splitting the existing lot into two separate residential lots for two new single-family residences.

A field survey and inspection were conducted in December, 2024 to collect important information regarding the existing topographic characteristics, drainage conditions, and to verify and confirm the extent of the tributary areas, local disturbances to the historic flows, and location and condition of existing storm drainage structures. A topographic map was developed with a one-foot contour interval for the site and adjacent streets. The elevation contours and survey spot elevations are tied to the GDACS monuments and are based on the Town of Paradise Valley vertical datum (NAVD 88).

Aerial and topographic maps were collected from the Maricopa County GIS and USGS web sites to facilitate further and clearly delineate the limits of each drainage tributary area and conveyance corridors for historic and current conditions. Maricopa County, FCDMC and USGS maps, aerial photography and surveyed topographic map for the site were reviewed and used to establish the tributary areas.

The analysis presented herein focuses on evaluating existing and proposed drainage conditions, as well as stormwater runoff resulting from a statistical evaluation of storm events of particular frequency, up to and including 100-year event as required by the Governing Agency. A storm event exceeding the 100-year will probably cause or create the risk of a greater storm impact than is presented and addressed herein.

As a part of the project development process, a plat map subject to the Town of Paradise Valley review and approval is prepared. The owner is proposing to split the property into two lots. The proposed plat map defines the new property divider lines, new tract for public roadway, location and distances of new building setback lines. The zoning for the newly created lots is R-43 as previously zoned.

2. DESCRIPTION OF EXISTING DRAINAGE CONDITIONS AND CHARACTERISTICS

The site is currently fully developed. The overall terrain is sloping southeasterly at an average slope of 3%.

There are no offsite flows impacting the site. Water run off runs in southerly direction along the right-of-way of Wilkinson Road without impacting the subject project.

Hydrologic and hydraulic analysis and modeling were performed in accordance with the procedures presented in the Standards and the Drainage Design Manual of Maricopa County, Volumes 1 & 2. 100-year storm design peak discharge was calculated for the designated contributing tributary area in order to verify the capacity of the existing streets' cross section to convey the flow and verify the water spread.

Precipitation data was derived from NOAA Atlas 14, Volume 1, Version 5. See Drainage Map - Appendix A-2 and Appendix Drainage Calculations A-6. Runoff coefficients are based on the Drainage Design Manual for Maricopa County.

Street cross-section was evaluated for flow hydraulics to determine its capacity and to verify the flow depths from 100-year. The capacity for Wilkinson Road was calculated to be 22.08 cfs. The flows are contained within the street's pubic right of way. See Drainage Map - Appendix A-2 and Appendix Drainage Calculations A-6.

3. FEMA FLOOD ZONE CLASSIFICATION

Site is located in FEMA Flood Zone "X" according to Flood Insurance Rate Map (FIRM) #: 04013C, Panel 1765 of 4425, Suffix L, dated October 16th, 2013, as published by FEMA. The FIRM Panel defines Zone "X" as follows: "*Areas determined to be outside the 0.2% annual chance floodplain"*.

See Appendix A-3 for FEMA Flood Insurance Rate Map exhibit.

4. PROPOSED DRAINAGE PLAN

The future project will consist of the construction of two single family residences in accordance with the Town of Paradise Valley Codes and Regulations.

The finish floor elevation of all structures shall be set at 1.0' min. above the adjacent grade at a 10' distance from the building footprint.
Preliminary grading and drainage plan has been prepared to facilitate the demolition permit. Two separate temporary retention basins were proposed for each site to retained the 100-year 2-hr

storm event. Each lot will have a separate grading and drainage plan done during the building permitting process.

On-site retention shall be provided through surface retention basins and underground storm drain systems. There will be no adverse drainage impact to the adjacent downstream properties by the proposed construction on this property.

Summary printouts of the drainage calculations are enclosed in Appendix A-7.

5. CONCLUSIONS AND RECOMMENDATIONS

The Preliminary Grading and Drainage plan has been designed in conformance with the recommendations and results presented in this report as well as the Town of Paradise Valley, Maricopa County, Arizona State and Federal requirements and standards.

Regular inspections and maintenance of the wall openings, inlets and subsurface drainage systems after every major storm must be performed. Any obstructions of flow need to be promptly cleared out in order to keep the performance of the storm drain system functioning as designed. It is the Owner's responsibility to inspect and properly maintain all drainage structures and wash crossings.

Off-site flows shall be allowed to pass through the site and to exit the property in a manner similar to the existing conditions. Grading around the residence shall provide for positive drainage away from the structures as shown on the Grading and Drainage plan.

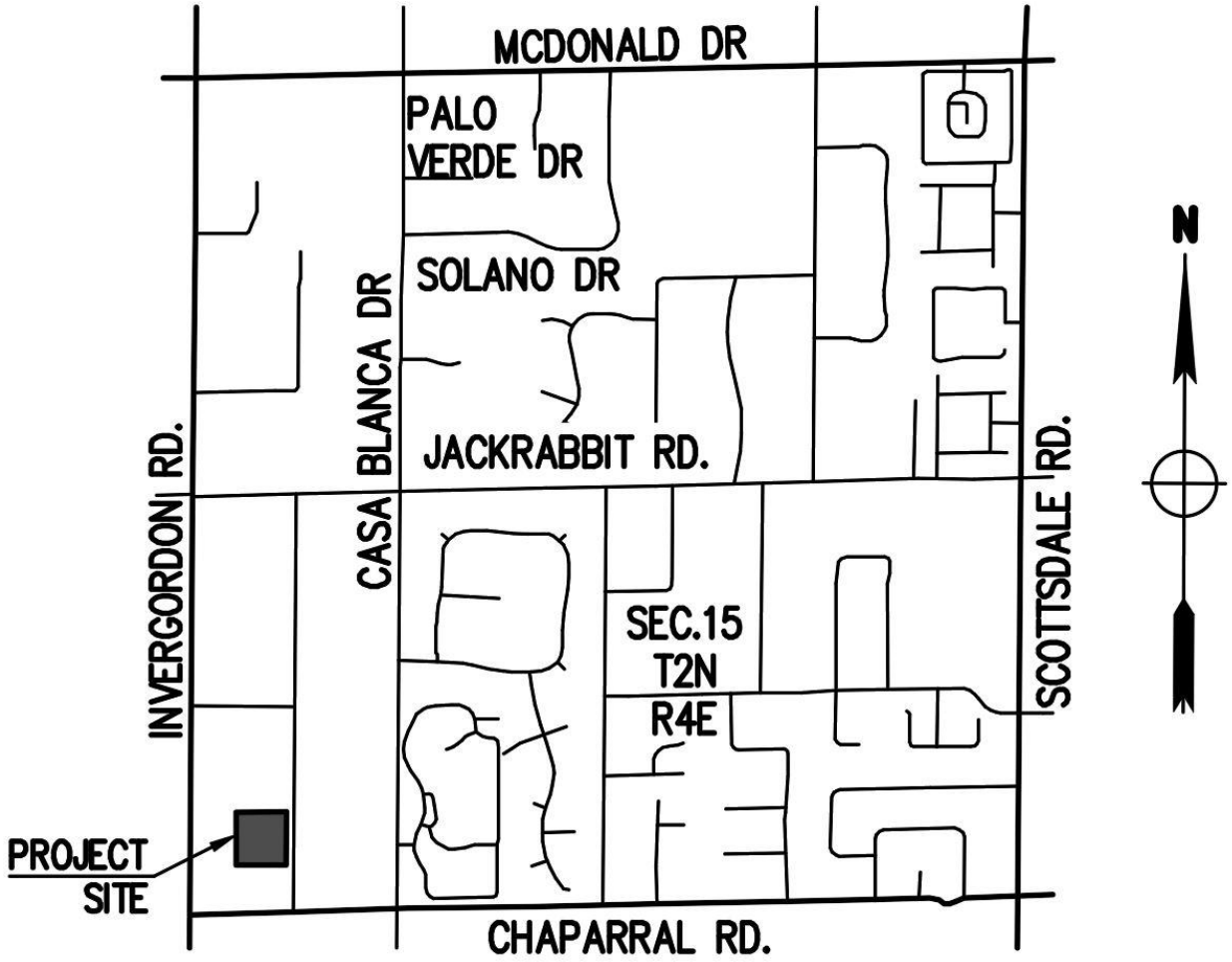
Storm Water Pollution Prevention Plan and AZDEQ Notice of Intent will be required as a part of the building permitting process. All specified BMPs shall be installed on site, inspected and approved by the Town prior to commencing any grading activities.

In conclusion the project has the potential to collect, convey and discharge storm water generated from the 100-year storm event runoff safely and effectively. The proposed improvements do not impact the existing drainage conditions of neighboring lots and will not result in significant changes to the existing drainage patterns or magnitudes.

6. REFERENCES

- Drainage Design Manual for Maricopa County, Arizona – Volume I Hydrology, Flood Control District of Maricopa County
- Drainage Design Manual for Maricopa County, Arizona – Volume II Hydraulics, Flood Control District of Maricopa County
- Drainage Policies and Standards Manual for Maricopa County, Arizona, Flood Control District of Maricopa County
- Hydraulic Design of Energy Dissipaters for Culverts and Channels, HEC 14, FHWA

APPENDIX A-1
Vicinity Map



APPENDIX A-2
Drainage Maps


DRAINAGE MAP
JACKRABBIT RD
WILKINSON RD
DA
3.28AC
PROJECT SITE
CONC. RIBBON
CURB
Q100=22.08CFS
N
Q100=CIA
C - Runoff Coefficient =0.90
I - Rainfall Intensity
A - Drainage Area, ac
Q100=0.90x7.48x3.28=22.08 cfs

GRADING & DRAINAGE PLAN FOR DEMOLITION & LOT SPLIT

"CAMELBACK LANDS 8"

A LOT SPLIT OF LOT 63 - CAMELBACK LANDS, RECORDED IN BOOK 31 OF MAPS, PAGE 26, MCR., LOCATED IN A PORTION OF THE SW 1/4 OF THE SW 1/4 OF THE SW 1/4 OF SECTION 15, T.2N, R.4E OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

LEGEND

- PROPERTY LINE
- EASEMENT LINE
- MONUMENT LINE
- SECTION LINE
- WM — WATER METER
- WATER VALVE
- FIRE HYDRANT
- E.M. — ELECTRIC METER
- A/C UNIT
- TELEPHONE PEDESTAL
- SEWER CLEANOUT
- MAILBOX
- GM — GAS METER
- CTV — CABLE TV RISER
- SEWER MANHOLE
- G — GAS LINE
- T — CATV, PHONE
- S — SEWER LINE
- W — WATER LINE
- E — ELECTRIC LINE
- C — COMMUNICATIONS LINE
- 1360 — EXISTING CONTOUR
- x61.12 — EXIST. SPOT ELEVATION

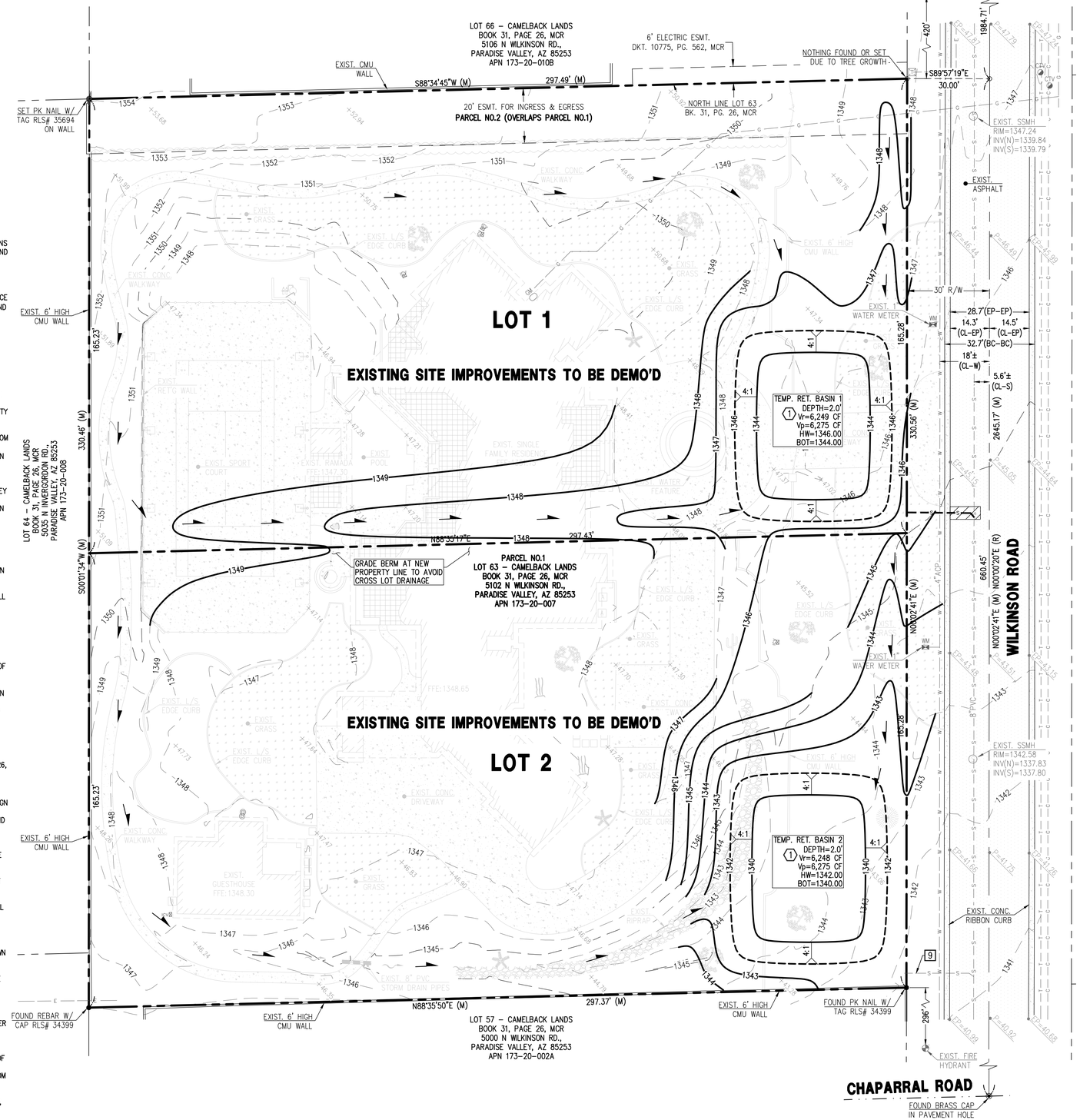
N

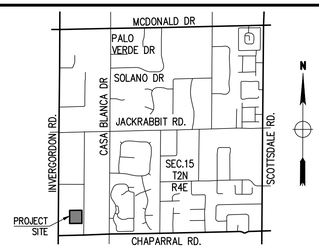
20' 10' 0 20'

SCALE 1" = 20'

TOWN OF PARADISE VALLEY NOTES

1. PRIOR TO THE FIRST INSPECTION OF STRUCTURES WITHIN 3 FEET OF A SETBACK LINE, THE PROPERTY PINS SHALL BE PLACED BY A REGISTERED CIVIL ENGINEER OR LAND SURVEYOR OF THE STATE OF ARIZONA, AND THE PROPERTY LINE(S) IDENTIFIED.
2. WHERE EXCAVATION IS TO OCCUR THE TOP 4" OF EXCAVATED NATIVE SOIL SHALL REMAIN ON THE SITE AND SHALL BE REUSED IN A MANNER THAT TAKES ADVANTAGE OF THE NATURAL SOIL SEED BANK IT CONTAINS.
3. ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE WITH THE MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL MUNICIPALITY UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS.
4. THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THIS PLAN.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
6. ALL EXTERIOR SITE LIGHTING SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR TYPE, LOCATION, HEIGHT, WATTAGE, AND LUMEN BASED UPON THE FIXTURES INSTALLED PURSUANT TO SECTION 1023 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCE FOR NON-HILLSIDE PROPERTIES, SECTION 2208 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCE FOR HILLSIDE PROPERTIES, OR AS SPECIFIED IN THE SPECIAL USE PERMIT FOR SPECIAL USE PERMIT PROPERTIES.
7. A DUST CONTROL PLAN AND PERMIT MEETING THE REQUIREMENTS OF RULE 310 OF THE MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS, AS AMENDED, IS REQUIRED.
8. A SEPARATE RIGHT-OF-WAY PERMIT IS NECESSARY FOR ANY OFF-SITE CONSTRUCTION.
9. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
10. EAVE PROJECTIONS INTO REQUIRED SETBACKS ARE LIMITED TO A MAXIMUM OF 24" PURSUANT TO SECTION 1008 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCES.
11. ALL STRUCTURES AND LANDSCAPING WITHIN THE SIGHT VISIBILITY TRIANGLE SHALL HAVE A 2 FOOT MAXIMUM HEIGHT.
12. ALL NEW AND EXISTING ELECTRICAL SERVICE LINES SHALL BE BURIED PER THE TOWN OF PARADISE VALLEY REQUIREMENTS.
13. IT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE TO ARRANGE FOR THE RELOCATION AND RELOCATION COSTS OF ALL UTILITIES, AND TO SUBMIT A UTILITY RELOCATION SCHEDULE PRIOR TO THE ISSUANCE OF AN ENGINEERING CONSTRUCTION PERMIT.
14. EXISTING AND/OR NEW UTILITY CABINETS AND PEDESTALS SHALL BE LOCATED A MINIMUM OF 4' BEHIND ULTIMATE BACK OF CURB LOCATION.
15. POOL, SPA, BARBECUE AND ANY PROPOSED STRUCTURES OVER 8' ABOVE GRADE REQUIRE SEPARATE PERMIT APPLICATIONS.
16. POOLS SHALL BE CONSTRUCTED BY SEPARATE PERMIT AND SECURED FROM UNWANTED ACCESS PER TOWN CODE, ARTICLE 5-2.
17. ALL FILL MATERIAL UNDER SLABS AND WALKS SHALL BE COMPACTED TO NOT LESS THAN 95%.
18. SETBACK CERTIFICATION IS REQUIRED AND SHALL BE PROVIDED TO TOWN INSPECTOR PRIOR TO STEM WALL INSPECTION.
19. FOR BUILDING PADS THAT HAVE 1' OR MORE OF FILL MATERIAL, SOILS COMPACTION TEST RESULTS ARE REQUIRED AND SHALL BE PROVIDED TO TOWN INSPECTOR PRIOR TO PRE-SLAB INSPECTION.
20. FINISHED FLOOR ELEVATION CERTIFICATION IS REQUIRED AND SHALL BE PROVIDED TO TOWN INSPECTOR PRIOR TO STRAP & SHEAR INSPECTION.
21. MAIL BOXES SHALL COMPLY WITH THE TOWN OF PARADISE VALLEY STANDARDS FOR MAIL BOXES IN THE RIGHT OF-WAY FOR HEIGHT, WIDTH AND BREAK AWAY FEATURES.
22. ALL PATIOS, WALKS, AND DRIVES TO SLOPE AWAY FROM BUILDING AND GARAGES AT A MINIMUM SLOPE OF 1/4" PER FOOT UNLESS SPECIFIED OTHERWISE.
23. TRENCH BEDDING AND SHADING SHALL BE FREE OF ROCKS AND DEBRIS.
24. THE TOWN ONLY APPROVES THE SCOPE OF WORK AND NOT THE ENGINEERING DESIGN. ANY CONSTRUCTION QUANTITIES SHOWN ARE NOT VERIFIED BY THE TOWN.
25. THE APPROVAL OF THE PLANS IS VALID FOR 180 DAYS. IF A PERMIT FOR CONSTRUCTION HAS NOT BEEN ISSUED WITHIN 180 DAYS, THE PERMIT MUST BE RENEWED.
26. A TOWN INSPECTOR WILL INSPECT ALL WORK WITHIN THE TOWN'S RIGHTS-OF-WAY. NOTIFY TOWN INSPECTION SERVICES TO SCHEDULE A PRECONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION.
27. WHENEVER EXCAVATION IS NECESSARY, CALL ARIZONA811 BY DIALING 811 or 602-263-1100, TWO (2) WORKING DAYS BEFORE EXCAVATION BEGINS.
28. EXCAVATIONS SHALL COMPLY WITH REQUIREMENTS OF OSHA EXCAVATION STANDARDS (29 CFR, PART 1926, SUBPART P). UNDER NO CIRCUMSTANCES WILL THE CONTRACTORS BE ALLOWED TO WORK IN A TRENCH LOCATED WITHIN THE TOWN'S RIGHT-OF-WAY WITHOUT PROPER SHORING OR EXCAVATION METHODS.
29. PERMIT HOLDER SHALL POST A 6 SQUARE FOOT (2'X3') IDENTIFICATION SIGN, MADE OF DURABLE MATERIAL, IN THE FRONT YARD OF SUBJECT PROPERTY AND NOT IN THE TOWN'S RIGHT-OF-WAY. THE SIGN MAY NOT EXCEED A MAXIMUM OF 6 FEET IN HEIGHT FROM GRADE TO TOP OF THE SIGN. THE SIGN MUST INCLUDE THE PERMITTEE OR COMPANY NAME, PHONE NUMBER. TYPE OF WORK, ADDRESS OF PROJECT AND TOWN CONTACT NUMBER, 480-348-3556.
30. WHEN DEEMED NECESSARY, A 6-FOOT HIGH CHAIN LINK FENCE MUST BE INSTALLED AROUND THE CONSTRUCTION AREA TO PREVENT ANY POTENTIAL SAFETY HAZARD FOR THE PUBLIC. THE FENCE SHALL BE SETBACK AT LEAST 10 FEET FROM ALL RIGHTS-OF-WAY AND HAVE A 50-FOOT STREET CORNER SITE TRIANGLE WHERE APPLICABLE.
31. CLEAR ACCESS FOR NEIGHBORING PROPERTIES AND EMERGENCY VEHICLES MUST BE MAINTAINED AT ALL TIMES. CONSTRUCTION RELATED VEHICLES MUST BE LEGALLY PARKED ONLY ON ONE SIDE OF THE STREET OR JOB SITE PROPERTY.
32. ALL CONSTRUCTION DEBRIS AND EQUIPMENT MUST BE CONTAINED ON SITE AT ALL TIMES. CONTRACTOR AND PROPERTY OWNER MUST MAINTAIN THE JOB SITE FREE OF LITTER AND UNSIGHTLY MATERIALS AT ALL TIMES. CONSTRUCTION MATERIALS ARE PROHIBITED IN THE TOWN'S RIGHT-OF-WAY.
33. CONSTRUCTION ACTIVITIES ARE PERMITTED BETWEEN THE HOURS OF 7 AM AND 5 PM MONDAY THROUGH CONSTRUCTION ACTIVITIES MAY START ONE (1) HOUR EARLIER DURING THE SUMMER (MAY 1ST THROUGH SEPTEMBER 30TH).
34. THE USE AND OPERATION OF FUEL-FIRED GENERATORS IS PROHIBITED UNLESS DUE TO A HARDSHIP. TOWN APPROVAL SHALL BE REQUIRED.
35. THE CONTRACTOR AND PROPERTY OWNER SHALL BE LIABLE FOR ANY DAMAGE DONE TO ANY PUBLIC PROPERTY AS A RESULT OF ANY CONSTRUCTION OR CONSTRUCTION RELATED ACTIVITIES. NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED UNTIL ALL AFFECTED RIGHTS-OF-WAY ARE CLEANED AND/OR REPAIRED TO THEIR ORIGINAL CONDITION AND UNTIL ANY AND ALL DAMAGES TO AFFECTED PROPERTIES ARE RESTORED TO ORIGINAL CONDITION.
36. A KEYED SWITCH SHALL BE REQUIRED ON ALL NEW AND EXISTING ELECTRIC ENTRY GATES. THE KEYED SWITCH SHALL BE INSTALLED IN A LOCATION THAT IS READILY VISIBLE AND ACCESSIBLE. KNOX BOX ORDER FORMS ARE AVAILABLE AT THE TOWN'S BUILDING SAFETY DEPARTMENT.
37. PROPERTY OWNER, BUILDER, OR GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR CONTROLLING DUST FROM THE SITE AT ALL TIMES. ALL MEANS NECESSARY SHALL BE USED BY THE BUILDER OR GENERAL CONTRACTOR TO CONTROL THE EXISTENCE OF DUST CAUSED BY ANY EARTHWORK, SPRAY APPLICATION OF MATERIALS, OR OTHER DUST-CAUSING PRACTICES REQUIRED BY THE CONSTRUCTION PROCESS.
38. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT THE TOWN FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, HEALTH, SAFETY, OR OTHER DESIGN ISSUES.
39. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTION DITCHES, PIPES PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT PROPOSED AND EXISTING IMPROVEMENTS FROM RUNOFF OR DAMAGE FROM STORM WATER, MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS.





VICINITY MAP

NTS

SITE DATA

APN: 173-20-007
ADDRESS: 5102 N WILKINSON RD. PARADISE VALLEY, AZ 85253
LOT AREA: 98,272 S.F. (2.256 AC.)
QS #: 19-43

OWNER

ALEX MERUELO
9550 FIRESTONE BLVD STE 105
DOWNEY, CA 90241

BASIS OF BEARINGS

THE MONUMENT LINE OF WILKINSON ROAD, THE BEARING OF WHICH IS N00°02'41"E.

BENCHMARK

BRASS CAP IN HANDHOLE AT THE INTERSECTION OF N INVERGORDON RD AND E JACKRABBIT ROAD HAVING AN ELEVATION OF 1375.83 NAVD 88 DATUM, GDACS# 24555-1

LEGAL DESCRIPTION

PARCEL NO. 1
LOT 63, CAMELBACK LANDS, ACCORDING TO BOOK 31 OF MAPS, PAGE 26, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2
AN EASEMENT FOR INGRESS/EGRESS AND ALL OTHER PURPOSES ALONG THE NORTH 20 FEET OF LOT 63, CAMELBACK LANDS, ACCORDING TO BOOK 31 OF MAPS, PAGE 26, RECORDS OF MARICOPA COUNTY, ARIZONA, AS SET FOURTH IN EASEMENT DOCUMENT RECORDED IN DOCUMENT NO. 93-0197773.

UTILITIES

WATER: EPCOR
SANITARY SEWER: TOWN OF PARADISE VALLEY
ELECTRIC: APS
TELEPHONE: CENTURY LINK, COX
NATURAL GAS: SOUTHWEST GAS
CABLE TV: CENTURY LINK, COX

ON-SITE RETENTION FOR THE 100-YEAR, 2-HOUR STORM EVENT

V=DxAxCw/12

D-RAINFALL DEPTH=2.18" | A-TRIBUTARY AREA, SF | Cw-RUNOFF COEFFICIENT

DRNG AREA (LOT)	AREA	RUNOFF COEFFICIENT	VOLUME REQUIRED	BASIN ID	CONTOUR ELEVATION		CONTOUR AREA	DEPTH	VOLUME PROVIDED
	S.F.	Cw	C.F.				S.F.	FT	C.F.
1	49,140	0.70	6,249	1	HW	1346.00	4,025	2.00	6,275
					BOT	1344.00	2,250		
2	49,132	0.70	6,248	2	HW	1342.00	4,025	2.00	6,275
					BOT	1340.00	2,250		

GRADING AND DRAINAGE KEY-NOTES

1. GRATE TEMPORARY RETENTION BASIN AS SHOWN. CONTRACTOR TO SCARIFY BOTTOM OF BASIN 2' DEEP TO MAXIMUM 80% COMPACTION, AND PER GEOTECHNICAL REPORT RECOMMENDATION.

EARTHWORK QUANTITIES

CUT: 1,400 C.Y.
FILL: 20 C.Y.
NET CUT: 1,380 C.Y.
ALL QUANTITIES LISTED ON THESE PLANS ARE ESTIMATES ONLY. NO SHRINK, SWELL, FOOTING EXCAVATIONS, UTILITIES ETC. IS ASSUMED. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF THE QUANTITIES AND BASE THEIR BIDS ON THEIR ESTIMATES.

APPROVAL

THIS SET OF PLANS HAS BEEN REVIEWED FOR COMPLIANCE WITH TOWN OF PARADISE VALLEY REQUIREMENTS PRIOR TO ISSUANCE OF PERMIT. THE TOWN NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. THIS COMPLIANCE APPROVAL SHALL NOT PREVENT THE TOWN ENGINEER FROM REQUIRING CORRECTIONS OF ERRORS OR OMISSIONS IN THE PLANS TO BE FOUND IN VIOLATION OF LAWS OR ORDINANCES.

TOWN ENGINEER
TOWN OF PARADISE VALLEY

DATE

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

DATE: 04/11/25
SCALE: 1"=20'
DESIGNED BY: NP
DRAWN BY: DW
CHECKED BY: JF
JOB: 2412385
VERSION: 1.1
PLOT DATE: 04/11/25

REVISIONS: | DATE:

GRADING & DRAINAGE PLAN FOR DEMOLITION & LOT SPLIT "CAMELBACK LANDS 8"

LOT 63 - CAMELBACK LANDS 5102 N WILKINSON RD., PARADISE VALLEY, AZ 85253

P. 602.889.1984 | F. 602.445.9482
8808 N. CENTRAL AVE., SUITE 288
PHOENIX, AZ. 85020
PHOENIX@LDGENG.COM
Land DEVELOPMENT GROUP

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
41005
NICKOLA J. PRODANOV
Date Signed 04/11/25
ARIZONA U.S.A.

GD-1

1 OF 1

APPENDIX A-3
FEMA FIRM Exhibit

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1765L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

PANEL 1765 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	1765	L
PARADISE VALLEY, TOWN OF	040049	1765	L
PHOENIX, CITY OF	040051	1765	L
SCOTTSDALE, CITY OF	045012	1765	L

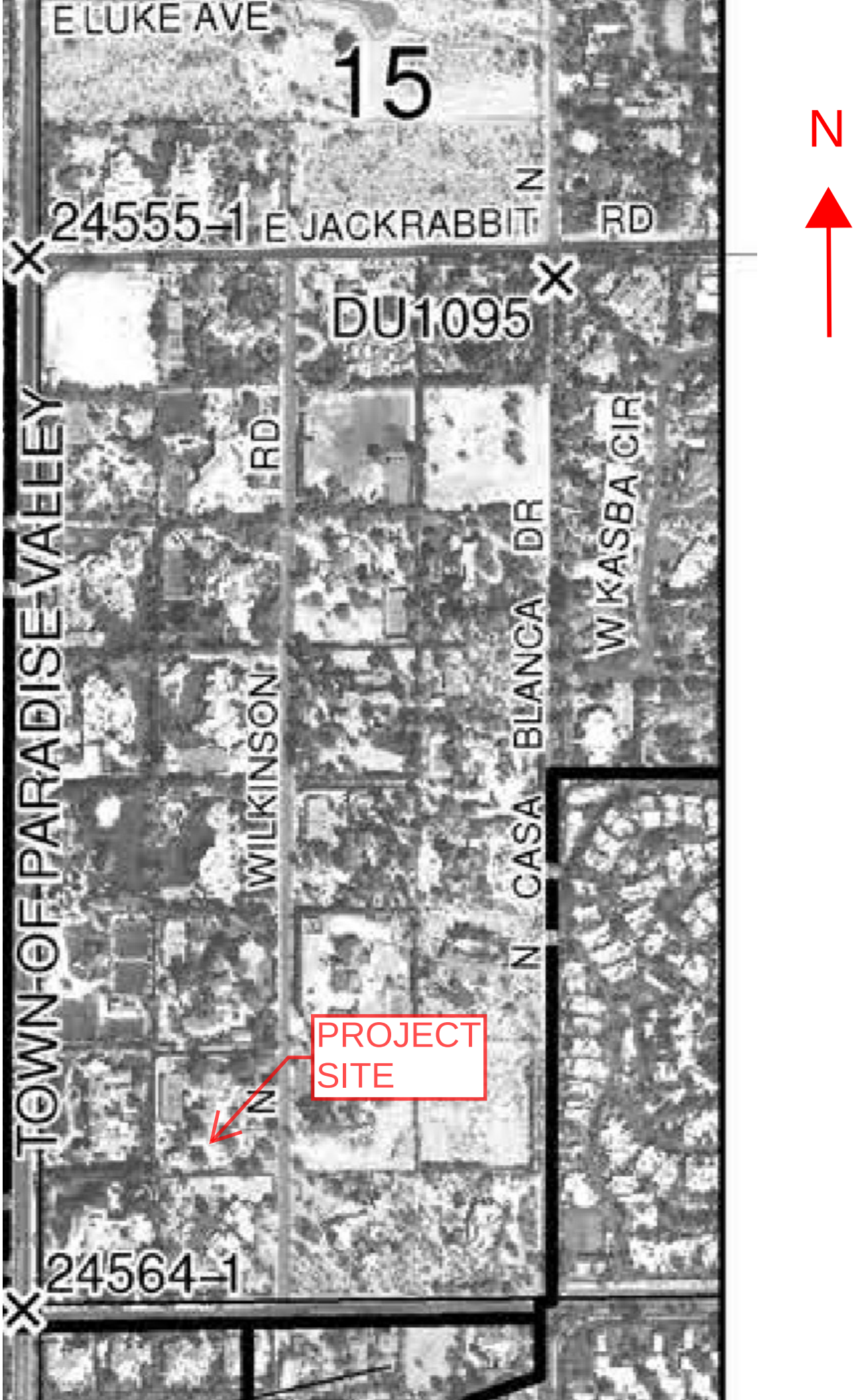
Notice: This map was reissued on July 31, 2015 to make a correction. This version replaces any previous versions. See the Notice-to-User Letter that accompanied this correction for details.

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C1765L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency


E LUKE AVE
15
24555-1
E JACKRABBIT
N
RD
DU1095
TOWN-OF-PARADISE-VALLEY
RD
WILKINSON
N CASA BLANCA DR
W KASBA CIR
PROJECT SITE
N
24564-1
N

APPENDIX A-4
Aerial Map Exhibit


N
WILKINSON RD
PROJECT
SITE

APPENDIX A-5
FCDMC Floodplain Viewer

Floodplain and Elevation Certificate Map

Search for Parcel by APN or Owner Name _Query result

Elevation Certificate

Local

Arterial

Highway

Interstate Highway

State\US\Other Highway

Interchange\Ramp

Parcel

Floodplain (Pending FEMA Approval)

Floodway

100-Year Flood Zone

Floodplain (FEMA Effective)

Floodway

100-Year Flood Zone

Data Source: Maricopa County Flood Control District (FCD) GIS. Data Owner: Maricopa County Flood Control District (FCD). Contact: https://www.maricopa.gov/959/Floodplain-Information .
Exported January 24, 2025 at 01:55 AM Esri, HERE | Data Source: Maricopa County Flood Control District (FCD) GIS. Data Owner: Maricopa County Flood Control District (FCD). Contact: https://www.maricopa.gov/959/Floodplain-Information . |

MARICOPA COUNTY

Flood Control District of Maricopa County
2801 W Durango St
Phoenix, AZ 85009
(602) 506-2419
http://www.fcd.maricopa.gov

Unofficial Document
This document cannot be used for floodplain determinations. Current studies, erosion setbacks and other factors may also affect the floodplain status of the property. The information shown for pending floodplains are the best technical information available at this time to determine the 1% chance flood and are subject to change.

N

1:2,257

1 inch = 74 feet

0 0 0 0 mi

APPENDIX A-7
Drainage Calculations

Hydraulic Analysis Report

Project Data

Project Title: 2412385 5102 N Wilkinson Rd

Designer:

Project Date: Friday, January 24, 2025

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Wilkinson Road

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Station (ft)	Elevation (ft)	Manning's n
0.00	45.70	0.0150
13.75	45.18	0.0150
15.75	45.15	0.0150
30.00	45.05	0.0150
44.50	44.64	0.0150
46.50	44.67	0.0150
60.00	45.10	-----

Longitudinal Slope: 0.0200 ft/ft

Flow 22.0800 cfs

Result Parameters

Depth 0.3639 ft

Area of Flow 4.7885 ft^2

Wetted Perimeter 25.3604 ft

Hydraulic Radius 0.1888 ft

Average Velocity 4.6111 ft/s

Top Width 25.3497 ft

Froude Number: 1.8697

Critical Depth 0.4807 ft

Critical Velocity 2.6083 ft/s

Critical Slope: 0.0055 ft/ft

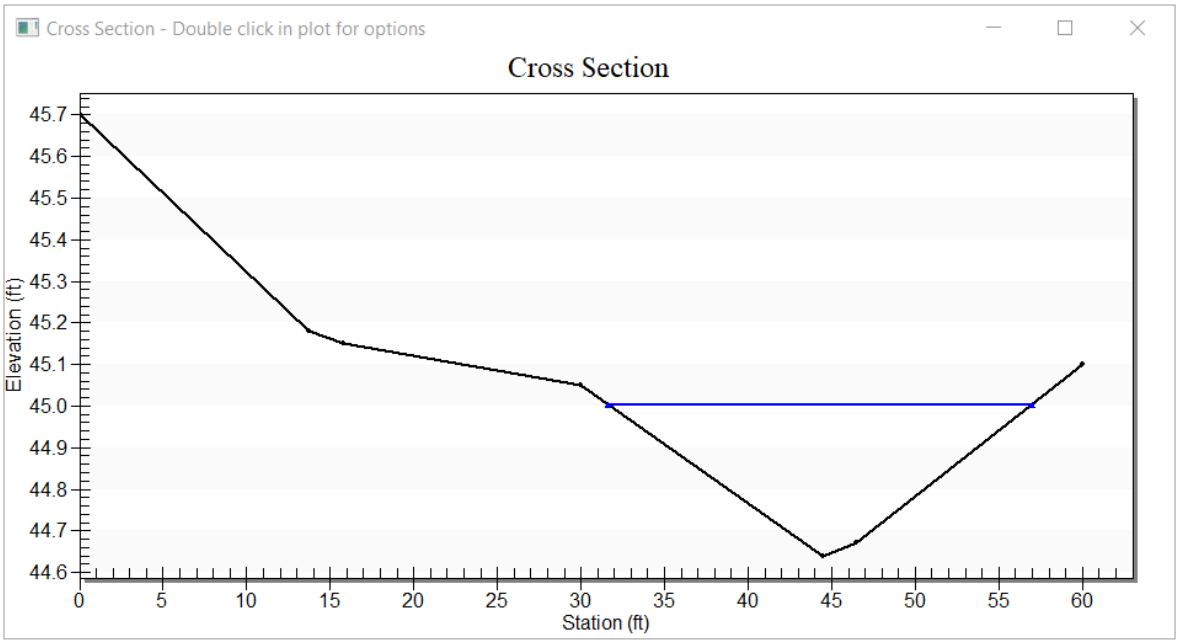
Critical Top Width 40.07 ft

Calculated Max Shear Stress 0.4541 lb/ft^2

Calculated Avg Shear Stress 0.2356 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0150



NOAA Atlas 14, Volume 1, Version 5
Location name: Paradise Valley, Arizona, USA*
Latitude: 33.5106°, Longitude: -111.9417°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.185** (0.155-0.225)	**0.241** (0.203-0.294)	**0.328** (0.274-0.398)	**0.394** (0.328-0.477)	**0.484** (0.396-0.582)	**0.553** (0.446-0.662)	**0.623** (0.494-0.744)	**0.696** (0.542-0.829)	**0.792** (0.600-0.946)	**0.866** (0.643-1.04)
10-min	**0.281** (0.236-0.342)	**0.367** (0.309-0.448)	**0.499** (0.417-0.606)	**0.600** (0.499-0.725)	**0.736** (0.602-0.886)	**0.842** (0.679-1.01)	**0.949** (0.751-1.13)	**1.06** (0.824-1.26)	**1.20** (0.914-1.44)	**1.32** (0.979-1.58)
15-min	**0.348** (0.292-0.424)	**0.455** (0.383-0.555)	**0.618** (0.516-0.751)	**0.744** (0.618-0.899)	**0.913** (0.746-1.10)	**1.04** (0.842-1.25)	**1.18** (0.932-1.40)	**1.31** (1.02-1.56)	**1.49** (1.13-1.78)	**1.63** (1.21-1.95)
30-min	**0.468** (0.393-0.571)	**0.613** (0.516-0.747)	**0.833** (0.696-1.01)	**1.00** (0.832-1.21)	**1.23** (1.00-1.48)	**1.40** (1.13-1.68)	**1.58** (1.25-1.89)	**1.77** (1.38-2.11)	**2.01** (1.53-2.40)	**2.20** (1.63-2.63)
60-min	**0.580** (0.486-0.707)	**0.758** (0.638-0.925)	**1.03** (0.861-1.25)	**1.24** (1.03-1.50)	**1.52** (1.24-1.83)	**1.74** (1.40-2.08)	**1.96** (1.55-2.34)	**2.19** (1.70-2.61)	**2.49** (1.89-2.97)	**2.72** (2.02-3.26)
2-hr	**0.673** (0.573-0.803)	**0.871** (0.742-1.04)	**1.17** (0.989-1.39)	**1.39** (1.17-1.65)	**1.70** (1.41-2.00)	**1.93** (1.58-2.28)	**2.18** (1.76-2.56)	**2.42** (1.92-2.85)	**2.75** (2.13-3.24)	**3.01** (2.28-3.56)
3-hr	**0.734** (0.622-0.884)	**0.941** (0.801-1.14)	**1.24** (1.05-1.49)	**1.47** (1.23-1.76)	**1.80** (1.48-2.14)	**2.06** (1.68-2.44)	**2.33** (1.86-2.76)	**2.62** (2.06-3.10)	**3.01** (2.29-3.56)	**3.33** (2.47-3.95)
6-hr	**0.884** (0.764-1.04)	**1.12** (0.971-1.32)	**1.44** (1.24-1.68)	**1.69** (1.44-1.97)	**2.03** (1.71-2.36)	**2.30** (1.91-2.66)	**2.58** (2.11-2.99)	**2.86** (2.30-3.32)	**3.26** (2.55-3.78)	**3.56** (2.73-4.15)
12-hr	**0.990** (0.865-1.15)	**1.25** (1.09-1.46)	**1.58** (1.38-1.84)	**1.85** (1.59-2.14)	**2.20** (1.88-2.54)	**2.47** (2.09-2.84)	**2.75** (2.29-3.17)	**3.04** (2.49-3.50)	**3.41** (2.73-3.96)	**3.71** (2.91-4.33)
24-hr	**1.19** (1.05-1.35)	**1.51** (1.34-1.72)	**1.95** (1.73-2.22)	**2.31** (2.04-2.62)	**2.80** (2.45-3.17)	**3.18** (2.77-3.60)	**3.59** (3.10-4.06)	**4.01** (3.44-4.53)	**4.59** (3.88-5.19)	**5.04** (4.23-5.72)
2-day	**1.28** (1.14-1.45)	**1.64** (1.46-1.86)	**2.15** (1.91-2.44)	**2.56** (2.26-2.90)	**3.14** (2.76-3.54)	**3.59** (3.14-4.06)	**4.08** (3.54-4.61)	**4.58** (3.94-5.18)	**5.28** (4.50-5.99)	**5.85** (4.93-6.65)
3-day	**1.36** (1.20-1.54)	**1.74** (1.54-1.97)	**2.29** (2.02-2.59)	**2.73** (2.41-3.09)	**3.36** (2.94-3.79)	**3.86** (3.36-4.35)	**4.39** (3.80-4.96)	**4.95** (4.25-5.60)	**5.74** (4.87-6.49)	**6.38** (5.35-7.23)
4-day	**1.43** (1.27-1.63)	**1.84** (1.62-2.08)	**2.42** (2.14-2.74)	**2.90** (2.55-3.28)	**3.58** (3.12-4.04)	**4.12** (3.58-4.65)	**4.70** (4.06-5.30)	**5.32** (4.55-6.01)	**6.20** (5.24-7.00)	**6.91** (5.78-7.82)
7-day	**1.60** (1.41-1.82)	**2.04** (1.81-2.32)	**2.70** (2.38-3.07)	**3.24** (2.84-3.67)	**4.00** (3.49-4.52)	**4.60** (4.00-5.20)	**5.25** (4.53-5.94)	**5.94** (5.08-6.72)	**6.92** (5.84-7.83)	**7.71** (6.43-8.74)
10-day	**1.73** (1.53-1.97)	**2.22** (1.96-2.52)	**2.93** (2.58-3.32)	**3.51** (3.08-3.96)	**4.31** (3.77-4.86)	**4.96** (4.31-5.58)	**5.65** (4.87-6.35)	**6.37** (5.46-7.18)	**7.38** (6.24-8.32)	**8.20** (6.87-9.25)
20-day	**2.13** (1.90-2.40)	**2.75** (2.44-3.09)	**3.63** (3.22-4.08)	**4.30** (3.80-4.82)	**5.20** (4.58-5.83)	**5.89** (5.17-6.60)	**6.60** (5.76-7.41)	**7.32** (6.35-8.22)	**8.28** (7.13-9.33)	**9.03** (7.71-10.2)
30-day	**2.49** (2.20-2.81)	**3.21** (2.84-3.62)	**4.24** (3.74-4.76)	**5.01** (4.42-5.63)	**6.06** (5.32-6.80)	**6.87** (6.00-7.70)	**7.69** (6.69-8.62)	**8.53** (7.39-9.56)	**9.67** (8.30-10.8)	**10.5** (8.99-11.8)
45-day	**2.88** (2.57-3.24)	**3.72** (3.31-4.18)	**4.90** (4.36-5.51)	**5.78** (5.12-6.49)	**6.93** (6.12-7.78)	**7.81** (6.87-8.77)	**8.69** (7.62-9.76)	**9.58** (8.36-10.8)	**10.7** (9.31-12.1)	**11.6** (10.0-13.2)
60-day	**3.19** (2.84-3.57)	**4.12** (3.68-4.61)	**5.43** (4.83-6.07)	**6.37** (5.66-7.13)	**7.61** (6.74-8.51)	**8.53** (7.52-9.54)	**9.45** (8.30-10.6)	**10.3** (9.06-11.6)	**11.5** (10.0-13.0)	**12.4** (10.7-14.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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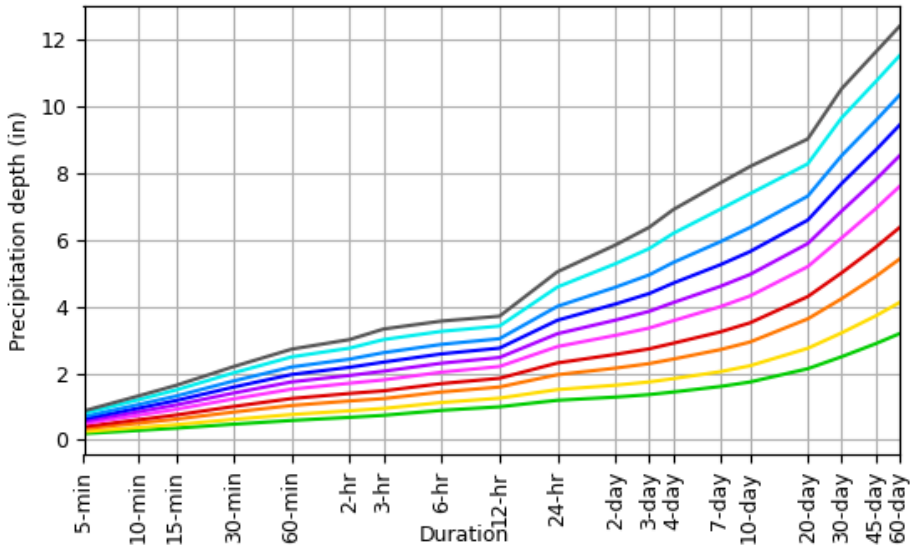
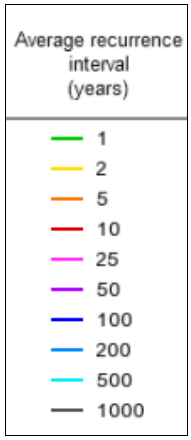
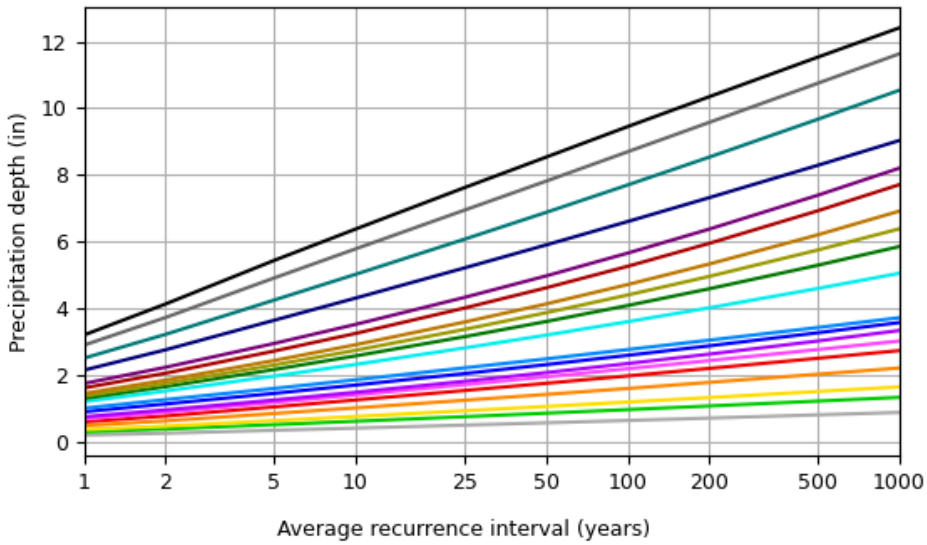
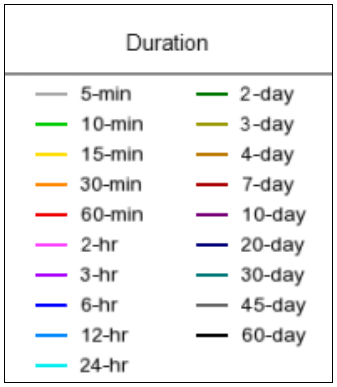
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 33.5106°, Longitude: -111.9417°









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Maps & aerials

Small scale terrain

NOAA Atlas 14, Volume 1, Version 5
Location name: Paradise Valley, Arizona, USA*
Latitude: 33.5106°, Longitude: -111.9417°
Elevation: 1349 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	2.22 (1.86-2.70)	2.89 (2.44-3.53)	3.94 (3.29-4.78)	4.73 (3.94-5.72)	5.81 (4.75-6.98)	6.64 (5.35-7.94)	7.48 (5.93-8.93)	8.35 (6.50-9.95)	9.50 (7.20-11.4)	10.4 (7.72-12.4)
10-min	1.69 (1.42-2.05)	2.20 (1.85-2.69)	2.99 (2.50-3.64)	3.60 (2.99-4.35)	4.42 (3.61-5.32)	5.05 (4.07-6.04)	5.69 (4.51-6.80)	6.35 (4.94-7.57)	7.23 (5.48-8.63)	7.91 (5.87-9.46)
15-min	1.39 (1.17-1.70)	1.82 (1.53-2.22)	2.47 (2.06-3.00)	2.98 (2.47-3.60)	3.65 (2.98-4.39)	4.18 (3.37-5.00)	4.71 (3.73-5.62)	5.25 (4.09-6.26)	5.98 (4.53-7.14)	6.53 (4.86-7.81)
30-min	0.936 (0.786-1.14)	1.23 (1.03-1.49)	1.67 (1.39-2.02)	2.00 (1.66-2.42)	2.46 (2.01-2.96)	2.81 (2.27-3.36)	3.17 (2.51-3.78)	3.54 (2.75-4.21)	4.02 (3.05-4.80)	4.40 (3.27-5.26)
60-min	0.580 (0.486-0.707)	0.758 (0.638-0.925)	1.03 (0.861-1.25)	1.24 (1.03-1.50)	1.52 (1.24-1.83)	1.74 (1.40-2.08)	1.96 (1.55-2.34)	2.19 (1.70-2.61)	2.49 (1.89-2.97)	2.72 (2.02-3.26)
2-hr	0.336 (0.286-0.401)	0.435 (0.371-0.521)	0.583 (0.494-0.694)	0.695 (0.584-0.826)	0.849 (0.704-1.00)	0.966 (0.791-1.14)	1.09 (0.877-1.28)	1.21 (0.958-1.42)	1.38 (1.06-1.62)	1.50 (1.14-1.78)
3-hr	0.244 (0.207-0.294)	0.313 (0.266-0.378)	0.411 (0.348-0.495)	0.489 (0.410-0.586)	0.598 (0.494-0.711)	0.685 (0.558-0.812)	0.776 (0.621-0.920)	0.871 (0.684-1.03)	1.00 (0.763-1.19)	1.11 (0.823-1.31)
6-hr	0.147 (0.127-0.174)	0.186 (0.162-0.220)	0.239 (0.206-0.281)	0.281 (0.241-0.329)	0.339 (0.286-0.394)	0.383 (0.319-0.444)	0.430 (0.352-0.498)	0.478 (0.384-0.555)	0.543 (0.425-0.631)	0.595 (0.455-0.693)
12-hr	0.082 (0.071-0.095)	0.103 (0.090-0.120)	0.131 (0.114-0.152)	0.153 (0.132-0.177)	0.182 (0.155-0.210)	0.205 (0.173-0.236)	0.228 (0.189-0.263)	0.251 (0.206-0.290)	0.283 (0.226-0.328)	0.307 (0.241-0.359)
24-hr	0.049 (0.043-0.056)	0.062 (0.055-0.071)	0.081 (0.072-0.092)	0.096 (0.084-0.109)	0.116 (0.102-0.132)	0.132 (0.115-0.150)	0.149 (0.129-0.169)	0.166 (0.143-0.188)	0.191 (0.161-0.216)	0.210 (0.176-0.238)
2-day	0.026 (0.023-0.030)	0.034 (0.030-0.038)	0.044 (0.039-0.050)	0.053 (0.047-0.060)	0.065 (0.057-0.073)	0.074 (0.065-0.084)	0.084 (0.073-0.095)	0.095 (0.082-0.107)	0.110 (0.093-0.124)	0.121 (0.102-0.138)
3-day	0.018 (0.016-0.021)	0.024 (0.021-0.027)	0.031 (0.028-0.035)	0.037 (0.033-0.042)	0.046 (0.040-0.052)	0.053 (0.046-0.060)	0.060 (0.052-0.068)	0.068 (0.059-0.077)	0.079 (0.067-0.090)	0.088 (0.074-0.100)
4-day	0.014 (0.013-0.016)	0.019 (0.016-0.021)	0.025 (0.022-0.028)	0.030 (0.026-0.034)	0.037 (0.032-0.042)	0.042 (0.037-0.048)	0.049 (0.042-0.055)	0.055 (0.047-0.062)	0.064 (0.054-0.072)	0.071 (0.060-0.081)
7-day	0.009 (0.008-0.010)	0.012 (0.010-0.013)	0.016 (0.014-0.018)	0.019 (0.016-0.021)	0.023 (0.020-0.026)	0.027 (0.023-0.030)	0.031 (0.026-0.035)	0.035 (0.030-0.040)	0.041 (0.034-0.046)	0.045 (0.038-0.052)
10-day	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.012 (0.010-0.013)	0.014 (0.012-0.016)	0.017 (0.015-0.020)	0.020 (0.017-0.023)	0.023 (0.020-0.026)	0.026 (0.022-0.029)	0.030 (0.026-0.034)	0.034 (0.028-0.038)
20-day	0.004 (0.003-0.005)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.010)	0.010 (0.009-0.012)	0.012 (0.010-0.013)	0.013 (0.011-0.015)	0.015 (0.013-0.017)	0.017 (0.014-0.019)	0.018 (0.016-0.021)
30-day	0.003 (0.003-0.003)	0.004 (0.003-0.005)	0.005 (0.005-0.006)	0.006 (0.006-0.007)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.011 (0.010-0.013)	0.013 (0.011-0.015)	0.014 (0.012-0.016)
45-day	0.002 (0.002-0.003)	0.003 (0.003-0.003)	0.004 (0.004-0.005)	0.005 (0.004-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.010 (0.009-0.012)
60-day	0.002 (0.001-0.002)	0.002 (0.002-0.003)	0.003 (0.003-0.004)	0.004 (0.003-0.004)	0.005 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.006-0.008)	0.008 (0.007-0.009)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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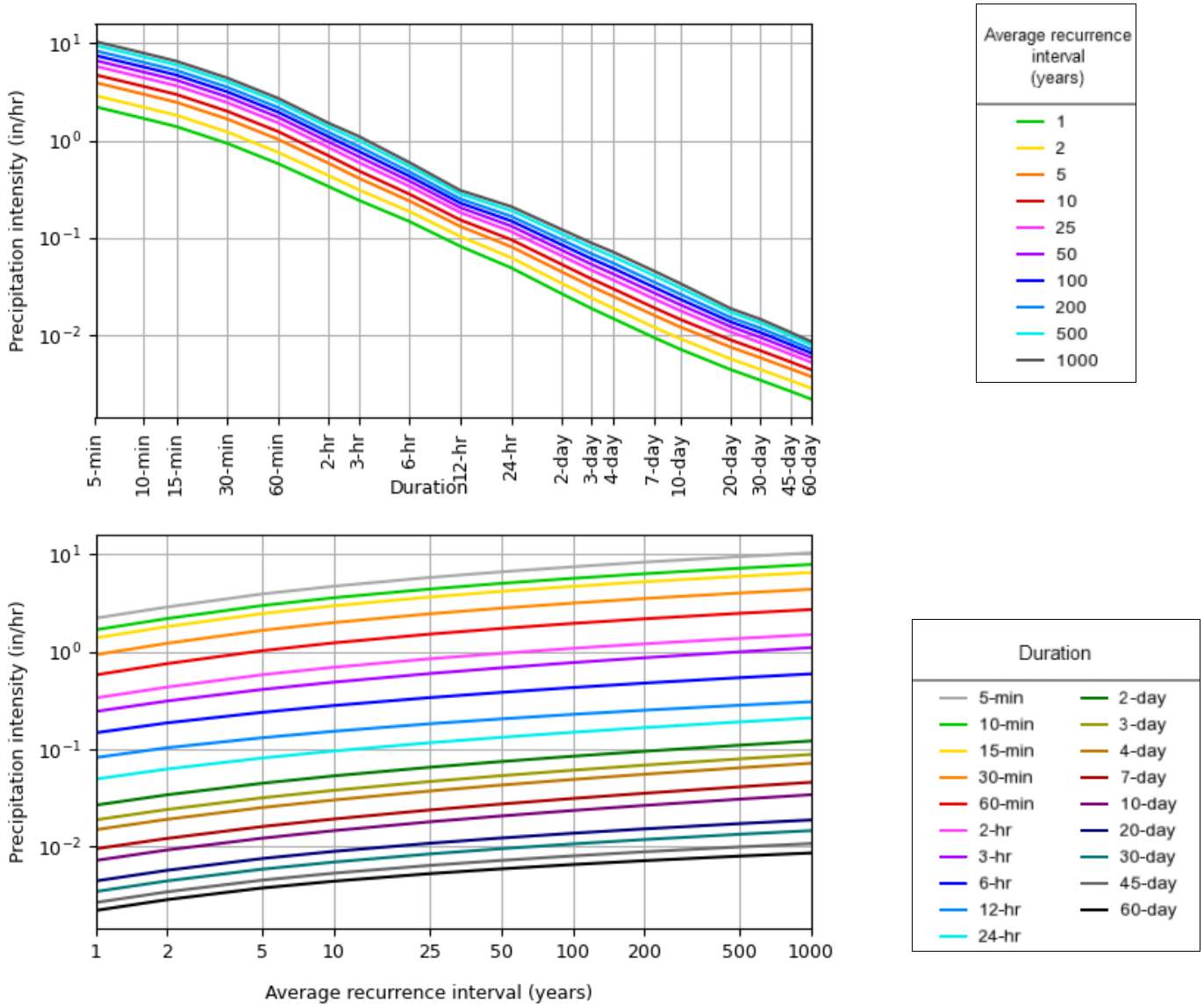
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 33.5106°, Longitude: -111.9417°



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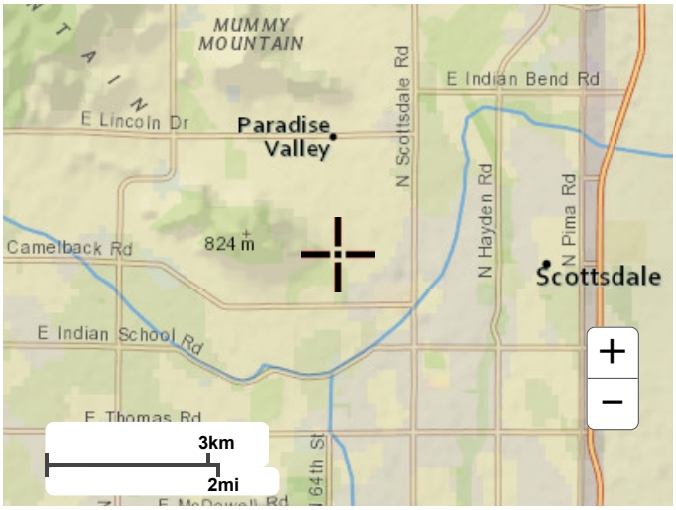
Maps & aerials

Small scale terrain



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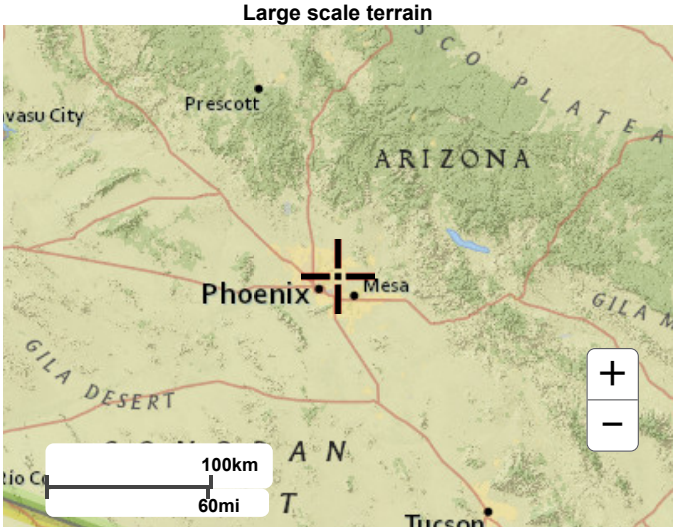
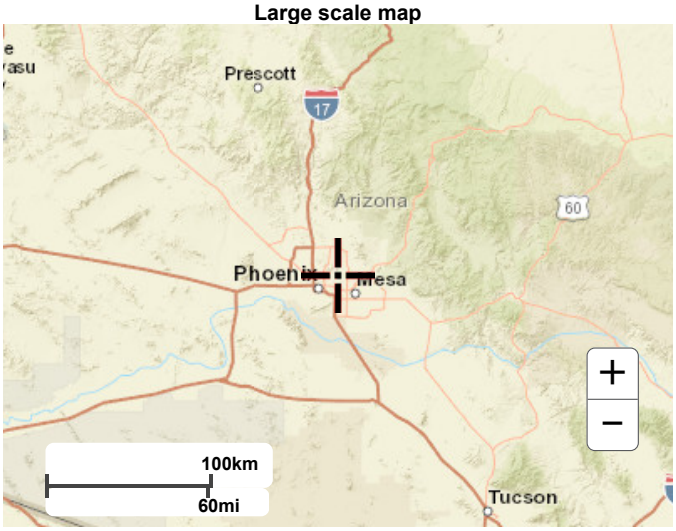


Large scale map



Large scale aerial