

Preliminary Drainage Report

For

Cadri

16-DR-2018

4151 N. Craftsman Ct.

Scottsdale, Arizona

July 11, 2018

Prepared for

4161 CRAFTSMAN LLC
1830 E ELLIOT RD
STE 104
TEMPE AZ 85284-1799



16-DR-2018
7/24/2018

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1.0 INTRODUCTION/LOCATION

The proposed project consists of a multi-story mixed use building. The bottom floor will be commercial/retail use along with a parking garage. The upper floors will be residential condominiums. The existing conditions include 2 buildings with associated site improvements sitting on 2 lots. The lots would be combined into one with the proposed project.

The 0.24-acre site is located at the northeast corner of 3rd Street and Craftsman Ct. at 4151 N. Craftsman Ct. The site is bordered to the north by existing commercial development, to the west by Craftsman Ct., to the south by 3rd Street, and to the east by a public alleyway.

The site lies within the Southwest Quarter of Section 22, Township 2 North, Range 4 East of Gila and Salt River Base and Meridian. See the Appendix for a vicinity map.

2.0 FLOOD PLAIN CLASSIFICATION

This site is located within a shaded Zone "X" designation as identified on Flood Insurance Rate Map (FIRM MAP) #04013C2235 L, dated October 16, 2013, this property is located in flood zone "X" (hatched). This area is defined as, "Areas of the 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood." Refer to Appendix C for a copy of the FIRM map for this area.

3.0 PURPOSE

The purpose of this Drainage Report is to document onsite retention and drainage requirements, offsite drainage, and anticipated improvements required for the development of this project. The proposed development will be designed to meet City of Scottsdale drainage requirements set forth in the Design Standards & Policies Manual. Retention is not required for this site. Onsite drainage will be directed and released into the rights of way of the adjacent streets at the similar locations as it is released today. The post-construction runoff from this site will not be greater than the pre-construction run-off. The existing site is currently mostly impervious surface with minimal landscape as will be the proposed development.

4.0 EXISTING CONDITIONS/DRAINAGE

The existing building has a finished floor elevation of 1266.1, which is 1.33' above the low adjacent curb located at the southeast corner of the site. The site outfall occurs at the southeast corner of the property at an elevation of 1244.77. Currently the site is made up of two lots and will be re-platted as a single lot. There is currently 1 building with a common wall on the property line and associated paved parking. Approximately 1/3 of the site (half of the existing roof) drains onto Craftsman Ct. and the remaining 2/3 of the

site (remaining roof and parking lot) drains onto 3rd Ave. via a flowline in the center of the existing paved parking lot. There is no retention provided on this site.

5.0 OFFSITE DRAINAGE

This site falls within the Indian Bend Wash ADMP completed by the flood control district. This site does not fall within the drainage improvement area or localized drainage improvement areas. Per the study this site has flows within Craftsman Ct. with depths ranging from 0.11'-0.50'. There are flows in 3rd Ave. ranging from 0.51'-1.00'. These flows are for the 100-year, 6-hour storm event.

The finished floor elevation is set at 1.3' above the adjacent low top of curb which is 1.8' above the adjacent low flowline. The floors are safe from the street flow. The final drainage report will detail the street flow.

6.0 PROPOSED DRAINAGE IMPROVEMENTS

As previously discussed the majority of the site as it exists is impervious surfaces that directly releases into the rights of way of Craftsman Ct and 3rd Ave. There is no retention proposed or existing for the site. The runoff will be collected and directed via roof drains to outlet at similar locations to where it outlets currently. The runoff released will not increase with the proposed improvements. Pre and Post-Developed drainage flow calculations are shown below to show no increase in runoff. Two C-values are used in this scenario as the proposed improvements included are impervious and desert landscape areas. The C values used are: 0.95 for roofed structures and impervious land features such as hardscape and a c-value of 0.45 was use for landscaped desert areas. A weighted C-value was calculated to determine the total storm water runoff.

Calculations:

Pre vs Post Development:

Pre Developed:

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

$$WEIGHTED "C" =$$

$$9266(0.95)+1304(0.45)/10570= 0.89$$

$$A=10570 \text{ SF}$$

$$P=2.2 \text{ (IN/HR)}$$

$$VOLr = 1725 \text{ CF}$$

Post Developed:

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

$$WEIGHTED "C" =$$

$$9819(0.95)+ 751(0.45)/10570 = 0.91$$

$$A=10570 \text{ SF}$$

$$P=2.2 \text{ (IN/HR)}$$

$$VOLr = 1764 \text{ CF}$$

Retention Required = 1725-1764 = 89 CF

Difference is Negligible.

Full hydrology calculations will be completed at the time of construction document submittals. A revised drainage report will be submitted to the City of Scottsdale at that time.

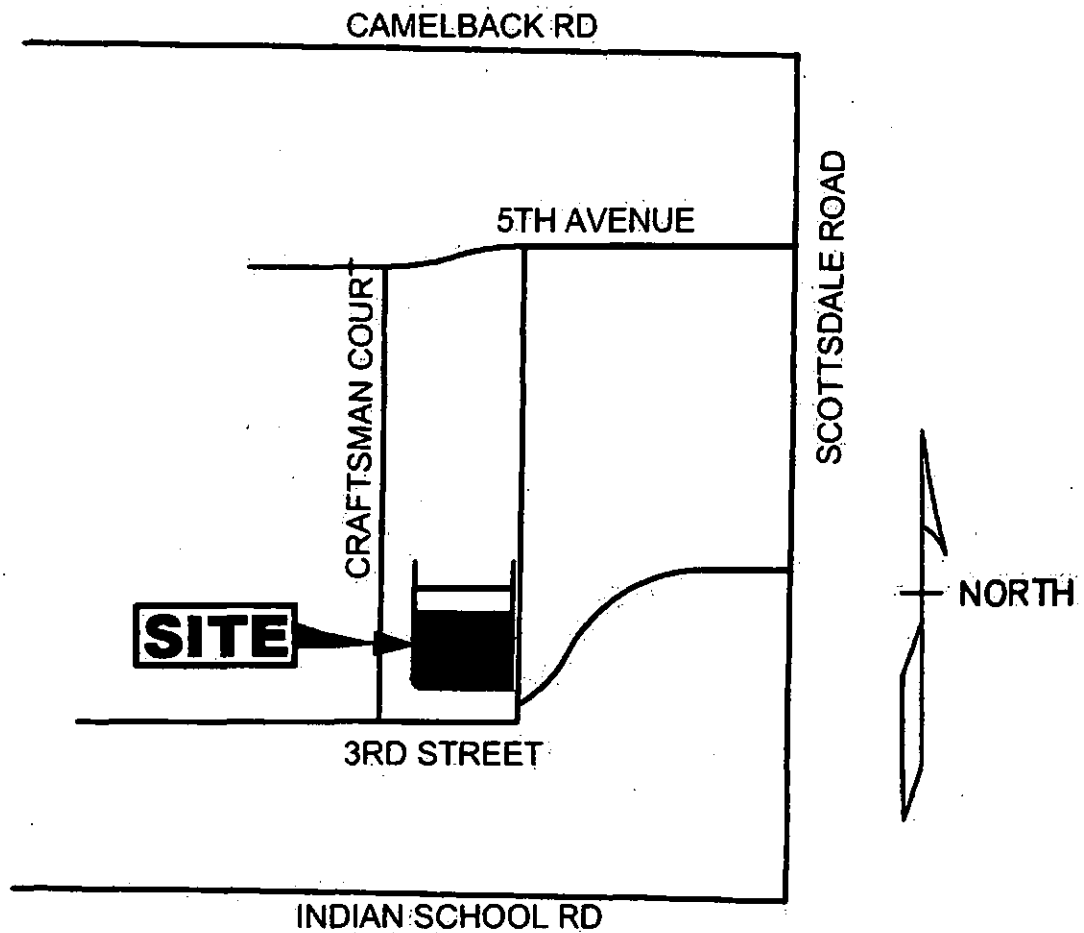
SWPPP

Given that the disturbed area will be less than 1 acre there will not be a Storm Water Pollution Prevention Plan with the accompanying NOI completed for the project.

7.0 CONCLUSION

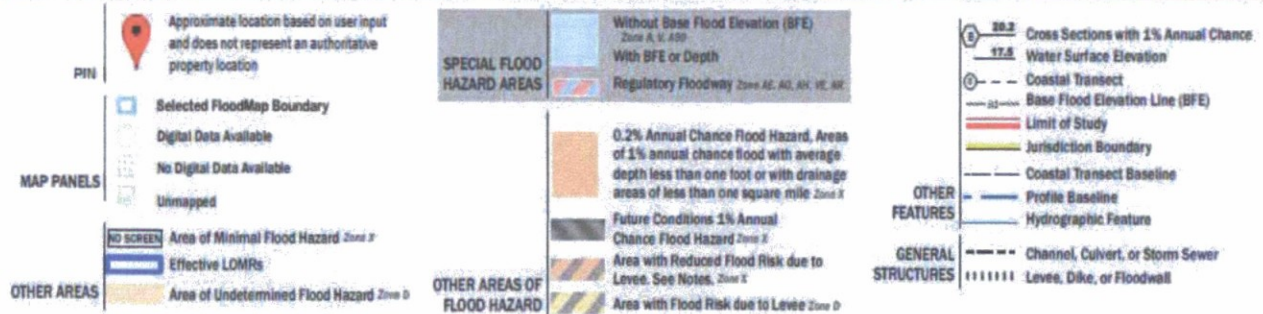
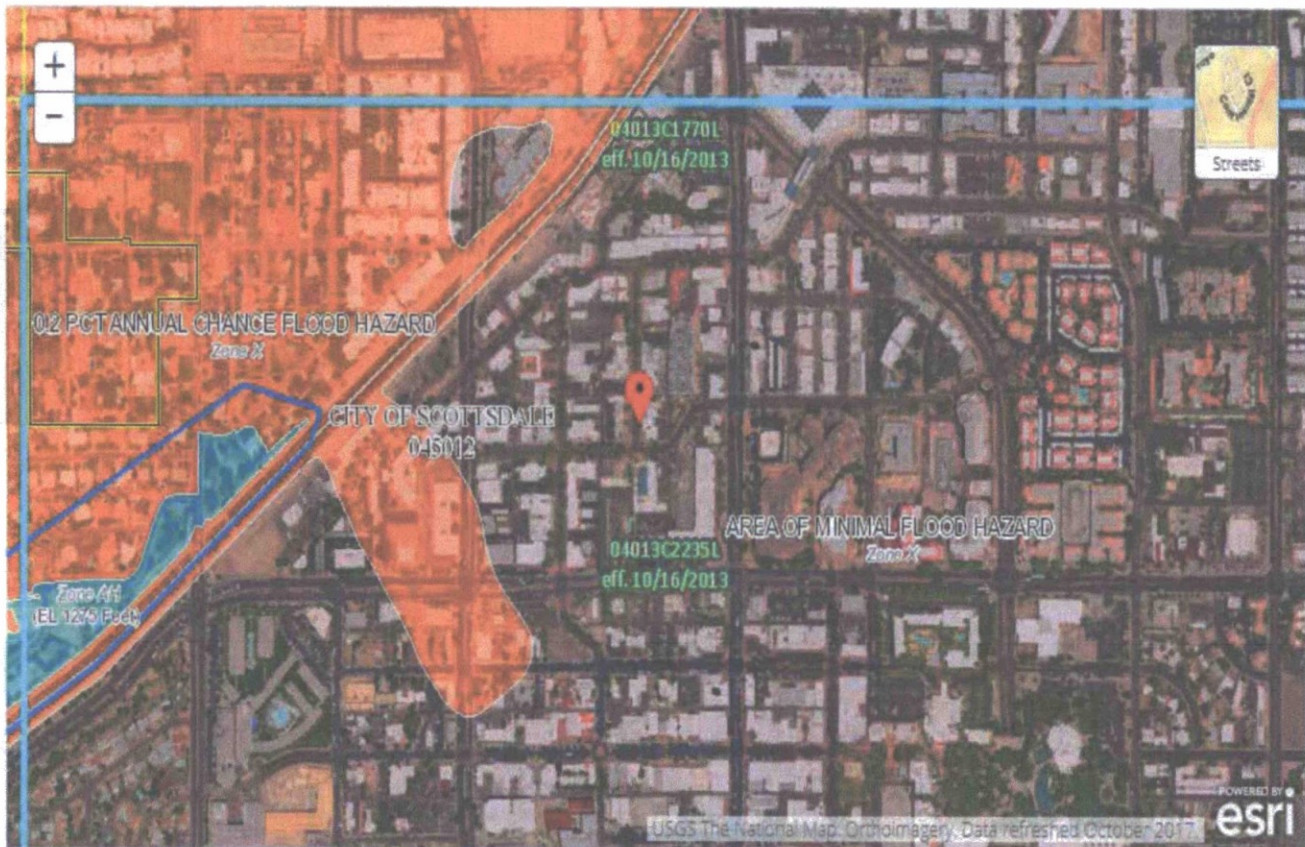
The proposed Cidre project will adhere to City of Scottsdale drainage criteria. Offsite flows do not affect this site and a pre vs. post storm water run-off methodology will be used to show the fully developed site will not increase the pre construction run-off amounts. Existing and proposed finished floors will be protected against the 100-year storm event with the site low outfall being a minimum of 1-foot below all finish floors. The onsite runoff will exit the site in similar locations as it does in the current development.

Appendix A VICINITY MAP



VICINITY MAP
NOT TO SCALE

Appendix B FEMA MAP

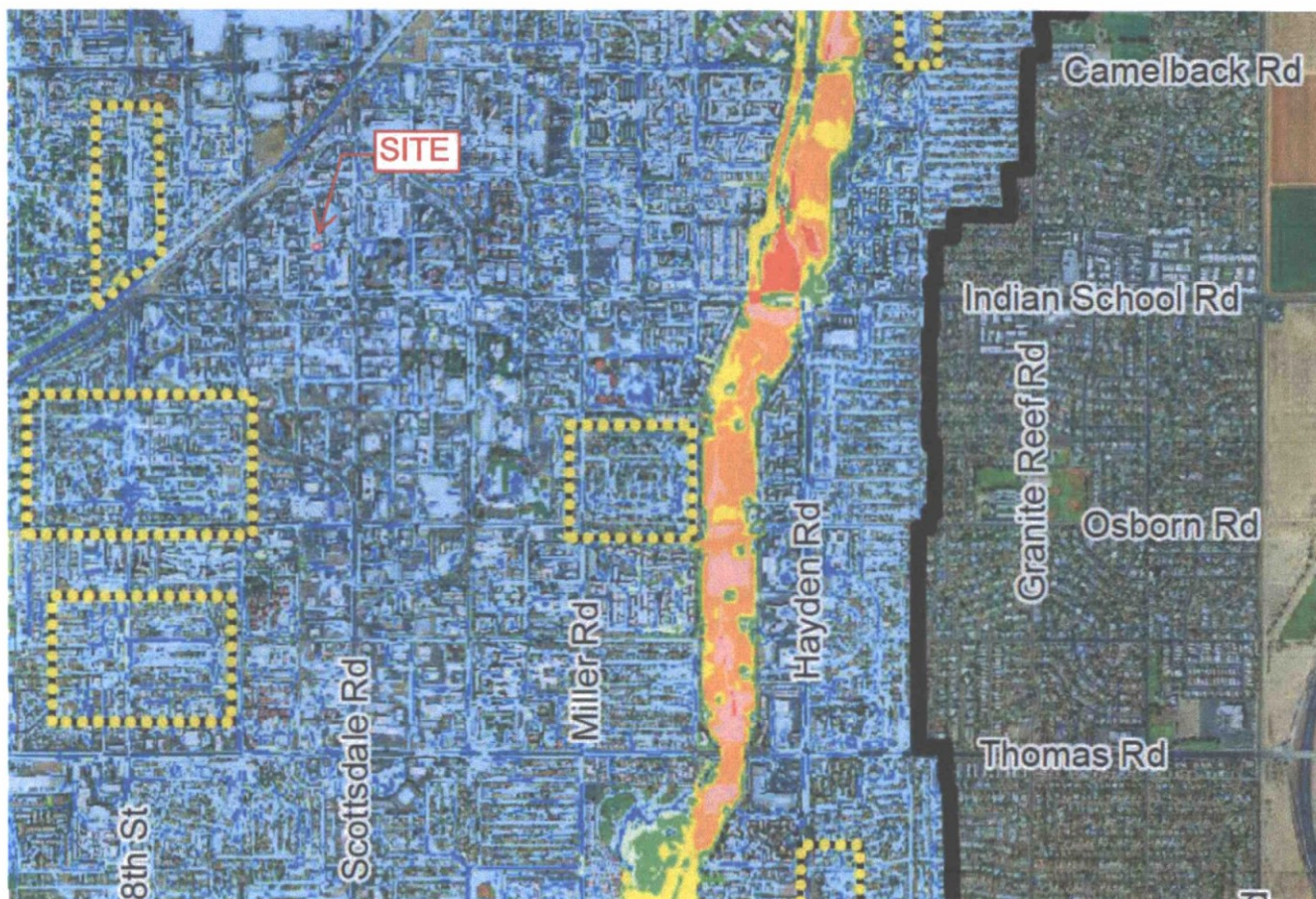


Appendix C AERIAL MAP



Appendix D

WATERSHED AREA DELINEATION EXHIBIT & OFFSITE CALCULATIONS



Legend

	Drainage Improvement Areas		Study Area Boundary	Maximum Flow Depth (100-year, 6-hour Storm Event)			
1 - Invergordon Road			Localized Drainage Improvement Areas		< 0.10 ft		1.01 ft - 2.00 ft
2 - Cheney Drive					0.11 ft - 0.50 ft		2.01 ft - 4.00 ft
3 - Paradise Valley Wash					0.51 ft - 1.00 ft		6.01 ft - 8.00 ft
4 - Chaparral Road					4.01 ft - 6.00 ft		8.01 ft - 10.00 ft
5 - Tempe/South Scottsdale					> 10.00 ft		



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 & aeries](#)

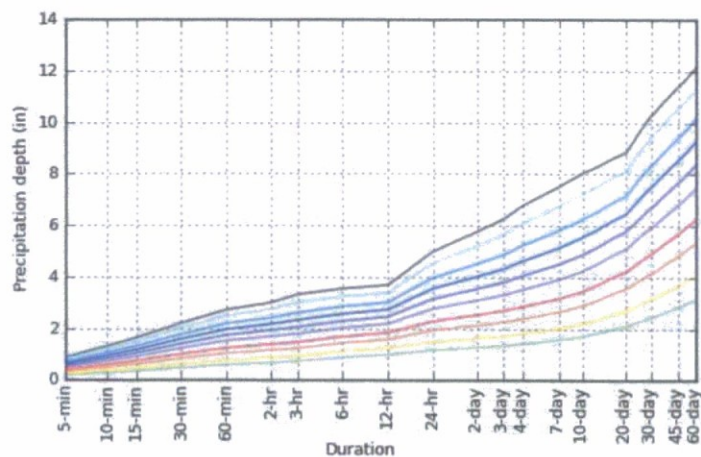
PF tabular

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	0.184 (0.154-0.224)	0.240 (0.202-0.293)	0.327 (0.273-0.397)	0.393 (0.326-0.475)	0.482 (0.394-0.580)	0.552 (0.445-0.660)	0.622 (0.492-0.742)	0.694 (0.540-0.827)	0.790 (0.598-0.943)	0.864 (0.641-1.03)
10-min	0.280 (0.234-0.341)	0.366 (0.308-0.446)	0.497 (0.415-0.604)	0.598 (0.496-0.722)	0.734 (0.599-0.883)	0.839 (0.677-1.00)	0.947 (0.749-1.13)	1.06 (0.821-1.26)	1.20 (0.911-1.44)	1.32 (0.976-1.57)
15-min	0.347 (0.290-0.423)	0.453 (0.382-0.553)	0.616 (0.515-0.748)	0.741 (0.615-0.895)	0.910 (0.743-1.09)	1.04 (0.839-1.25)	1.17 (0.928-1.40)	1.31 (1.02-1.56)	1.49 (1.13-1.78)	1.63 (1.21-1.95)
30-min	0.467 (0.391-0.569)	0.610 (0.514-0.744)	0.829 (0.693-1.01)	0.998 (0.828-1.21)	1.23 (1.00-1.47)	1.40 (1.13-1.68)	1.58 (1.25-1.89)	1.76 (1.37-2.10)	2.01 (1.52-2.40)	2.19 (1.63-2.63)
60-min	0.578 (0.484-0.704)	0.755 (0.636-0.921)	1.03 (0.858-1.25)	1.24 (1.02-1.49)	1.52 (1.24-1.82)	1.73 (1.40-2.08)	1.96 (1.55-2.33)	2.18 (1.70-2.60)	2.49 (1.88-2.97)	2.72 (2.02-3.25)
2-hr	0.670 (0.571-0.800)	0.867 (0.739-1.04)	1.16 (0.984-1.38)	1.38 (1.16-1.65)	1.69 (1.40-2.00)	1.92 (1.58-2.27)	2.17 (1.75-2.55)	2.41 (1.91-2.84)	2.74 (2.12-3.23)	3.00 (2.27-3.55)
3-hr	0.730 (0.618-0.880)	0.937 (0.797-1.13)	1.23 (1.04-1.48)	1.46 (1.23-1.75)	1.79 (1.48-2.13)	2.05 (1.67-2.43)	2.32 (1.86-2.75)	2.60 (2.05-3.08)	2.99 (2.29-3.55)	3.31 (2.46-3.93)
6-hr	0.879 (0.760-1.03)	1.11 (0.967-1.31)	1.43 (1.23-1.68)	1.68 (1.44-1.96)	2.02 (1.71-2.34)	2.29 (1.90-2.65)	2.57 (2.10-2.97)	2.85 (2.29-3.30)	3.24 (2.54-3.76)	3.55 (2.71-4.13)
12-hr	0.982 (0.859-1.14)	1.24 (1.08-1.44)	1.57 (1.37-1.82)	1.83 (1.58-2.12)	2.18 (1.87-2.52)	2.45 (2.07-2.82)	2.73 (2.27-3.14)	3.01 (2.47-3.47)	3.39 (2.71-3.92)	3.68 (2.90-4.29)
24-hr	1.17 (1.04-1.32)	1.49 (1.32-1.69)	1.93 (1.71-2.18)	2.28 (2.02-2.57)	2.76 (2.43-3.11)	3.14 (2.74-3.53)	3.54 (3.07-3.98)	3.95 (3.40-4.45)	4.52 (3.85-5.09)	4.97 (4.19-5.61)
2-day	1.26 (1.13-1.43)	1.62 (1.44-1.83)	2.12 (1.89-2.40)	2.53 (2.24-2.85)	3.09 (2.73-3.48)	3.54 (3.10-3.99)	4.02 (3.50-4.53)	4.51 (3.90-5.09)	5.20 (4.44-5.88)	5.76 (4.87-6.53)
3-day	1.34 (1.19-1.51)	1.71 (1.52-1.94)	2.25 (2.00-2.54)	2.69 (2.38-3.03)	3.30 (2.90-3.72)	3.80 (3.32-4.27)	4.32 (3.75-4.86)	4.87 (4.19-5.48)	5.64 (4.80-6.36)	6.27 (5.28-7.08)
4-day	1.41 (1.25-1.60)	1.81 (1.60-2.04)	2.38 (2.11-2.69)	2.85 (2.52-3.21)	3.51 (3.08-3.95)	4.05 (3.53-4.55)	4.62 (4.00-5.19)	5.22 (4.48-5.88)	6.08 (5.15-6.84)	6.78 (5.68-7.64)
7-day	1.57 (1.39-1.78)	2.01 (1.78-2.27)	2.65 (2.35-2.99)	3.17 (2.80-3.58)	3.91 (3.43-4.40)	4.50 (3.93-5.06)	5.13 (4.44-5.78)	5.80 (4.98-6.54)	6.75 (5.72-7.61)	7.51 (6.30-8.49)
10-day	1.70 (1.51-1.93)	2.18 (1.94-2.46)	2.88 (2.55-3.24)	3.44 (3.04-3.87)	4.23 (3.71-4.74)	4.86 (4.24-5.44)	5.53 (4.80-6.20)	6.24 (5.37-7.00)	7.22 (6.14-8.11)	8.02 (6.75-9.02)
20-day	2.10 (1.87-2.35)	2.70 (2.40-3.02)	3.56 (3.17-3.99)	4.21 (3.74-4.71)	5.09 (4.50-5.69)	5.77 (5.08-6.45)	6.46 (5.66-7.23)	7.16 (6.24-8.02)	8.10 (7.00-9.10)	8.83 (7.57-9.92)
30-day	2.45 (2.17-2.75)	3.15 (2.80-3.53)	4.15 (3.69-4.65)	4.91 (4.35-5.49)	5.93 (5.23-6.63)	6.72 (5.90-7.50)	7.53 (6.58-8.40)	8.35 (7.26-9.31)	9.45 (8.15-10.6)	10.3 (8.82-11.5)
45-day	2.83 (2.53-3.17)	3.65 (3.26-4.09)	4.81 (4.29-5.38)	5.67 (5.04-6.34)	6.80 (6.03-7.60)	7.65 (6.76-8.55)	8.51 (7.49-9.52)	9.37 (8.21-10.5)	10.5 (9.14-11.8)	11.4 (9.82-12.8)
60-day	3.13 (2.81-3.50)	4.05 (3.62-4.51)	5.32 (4.76-5.94)	6.25 (5.58-6.97)	7.46 (6.64-8.31)	8.35 (7.41-9.31)	9.25 (8.17-10.3)	10.1 (8.91-11.3)	11.3 (9.87-12.6)	12.1 (10.6-13.6)

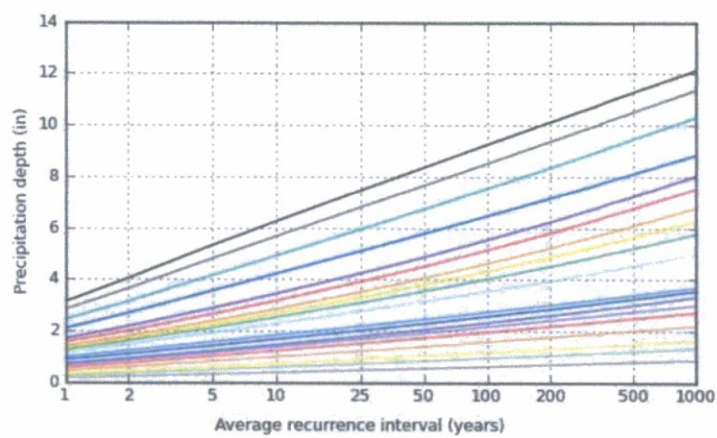
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average 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



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

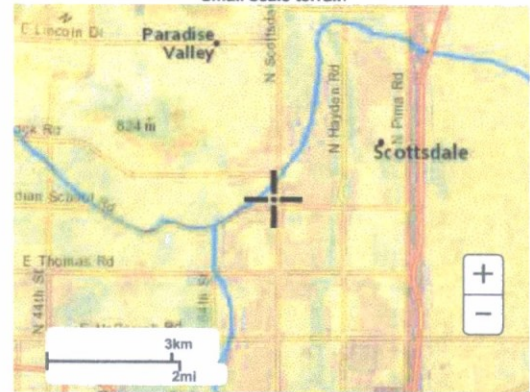
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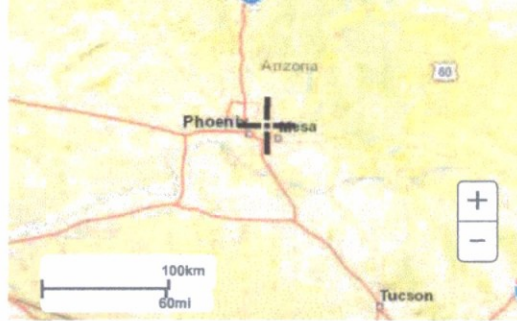
Maps & aerals

Small scale terrain



Large scale terrain





Large scale aerial



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[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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Appendix E
CONCEPT GRADING AND DRAINAGE PLAN

C = N 00°57'00" E AS RECORDED IN
2. PAGE 23 M.C.R.

CAP IN HAND HOLE AT THE INTERSECTION
OTTSDALE RD. AND INDIAN SCHOOL RD.

ION= 1260.365 (NAVD88)

PROJECT DESCRIPTION

EXISTING BUILDINGS AND SITE
IMPROVEMENTS AND CONSTRUCT PROPOSED
STORY MIXED USE DEVELOPMENT WITH
RELATED SITE IMPROVEMENTS.

1-021A
1-022

ING

INSTRUCTION TYPE

AL DESCRIPTION

L. NO. 1:
22 AND 23, CRAFTSMANS COURT,
DING TO THE PLAT OF RECORD IN THE
OF MARICOPA COUNTY, ARIZONA,
DED IN BOOK 62 OF MAPS, PAGE 23
HEREAFTER AFFIDAVIT OF CORRECTION
DED AS DOCUMENT NO.
1193965, OF OFFICIAL RECORDS.

L NO 2-
PORTION OF THE ALLEY LYING
IMATELY EAST AND ADJACENT TO LOTS
D 23, CRAFTSMANS COURT,
DING TO THE PLAT OF RECORD IN THE
OF MARICOPA COUNTY, ARIZONA,
DED IN BOOK 62 OF MAPS, PAGE 23,
ANDONED BY THE CITY OF
SDALE RESOLUTION NO. 896,
DED JUNE 17, 1971 AS DOCKET 8764,
868. OF OFFICIAL RECORDS.

OWNER

4161 CRAFTSMAN LLC
1830 E ELLIOT RD
STE 104
TEMPE AZ 85284-1799

A PORTION OF SOUTHEAST QUARTER OF SECTION 22,
TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND
SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA.

