COS PLAN CHK# 8396 - 2 2

GRADING & DRAINAGE PLAN

FOR

KIDWAI PROPERTY

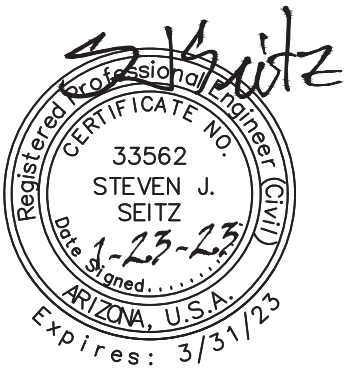
A SINGLE FAMILY RESIDENCE
at 7381 EAST MONTERRA WAY

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 5 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

PREPARED BY:
Clint Scherf, Civil Division Manager

August 22nd, 2022
Updated: November 8th, 2022
Updated: January 23rd, 2023

ENGINEER OF RECORD:
Steven Seitz



(480) 225-4920 SSEAZ2004@GMAIL.COM

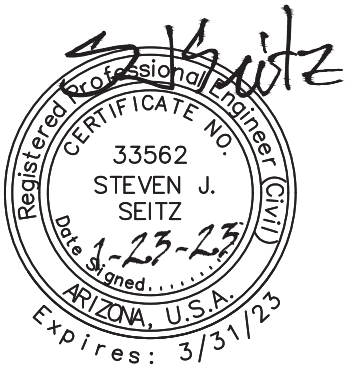
CIVIL ~ STRUCTURAL

S S E

RESIDENTIAL ~ COMMERCIAL

11350 SOUTH VIEWPOINTE WAY
YUMA, ARIZONA 85367

Table of Contents



1.0 Introduction

Project Name: *Lot 2 of Monterra*

Site Address: *7381 East Monterra Way, Scottsdale, Arizona*
Developed parcel of land is located in a northern portion of the City of Scottsdale, and more accurately, north of Jomax Road, and east of Scottsdale Road.

Purpose & Objectives: *The purpose of this report is to documents the hydrological elements associated with proposed development upon the subject property.*

Site improvements will consist of a single-family residence and associated site features.

The site is a rectangle-shaped parcel consisting of approximately 2.8 acres. The proposed site improvements will be constructed within the bounds of the parcel. A copy of the aerial view of the existing conditions of the site is included as Figure 2

This report will provide data and analysis of run-off for a 100 year, 24 hour storm event.

1.2 Site legal Description

A portion of Section 17, Township 4 North, Range 5 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona

Located in Section 35, the site's assessor's parcel number is 212-23-003.

Aerial Map is included, see Figure 2

LOCATION MAP

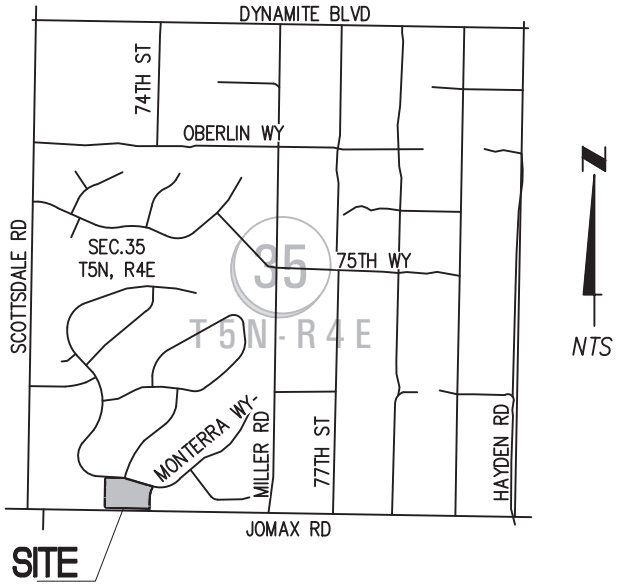


Figure 1: Vicinity Map

2.0 Existing Drainage Conditions & Characteristics

The project site has an existing slope across the lot from Northeast to Southwest. The Extreme Storm Out–fall is located along the south of the parcel bounds of the subject property.

This site is located within FEMA Flood Hazard Zone 'X', but in not within a designated flood plain. A copy of the Flood Control District of Maricopa County Floodplain Viewer is included within this report, (see Figure 3).

This site is located within an Area Drainage Master Study (ADMS), it is located within the Pinnacle Peak West Area – Whisper Rock 100yr 24hr Drainage Master Study (ADMS), as well as the Scottsdale Fans 5 & 6 study.

2.1 Flood Hazard Zone - FIRM Map

The Parcel is located in a Flood Hazard Zone, designated "X" zone according to FEMA Map number 04013C1306M, FIRM Panel 1306 to 4425, suffix "M" Map Revised July 20, 2021.

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 1 foot or with drainage area less than 1 square mile; and areas protected by levees from 1% annual chance flood."

A copy of the FIRM Panel for subject property is shown below.

FLOOD INSURANCE RATE MAP (FIRM)

COMMUNITY NUMBER	PANEL NUMBER (Panel Date)	SUFFIX	DATE OF FIRM (Index Date)	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE USE DEPTH)
04013C	1306 07/20/21	M	7/20/21	X	N/A

ENGINEER'S CERTIFICATION STATEMENT

THE LOWEST FLOOR ELEVATION(S) AND/OR FLOODPROOFING ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A ONE–HUNDERED YEAR STORM, AND ARE IN ACCORDANCE WITH CITY OF SCOTTSDALE REVISED CODE, CHAPTER 37 – FLOODPLAIN & STORMWATER REGULATIONS.

2.2 Off-site Drainage

The existing drainage patterns consist of one well defined wash, running through the east half of said lot. Storm run-off from a contributing watershed area to the north & east, flows along the eastern half of subject property bounds. Within the Plat for 'Moterra' (MCR 378-27), there is a Drainage Easement (DE) recorded that encompasses the eastern and southern portion of said Lot 2 of Moterra. The development proposed within the bounds of Lot 2, is outside of recorded DE, and will not encroach within said drainage easement.

The drainage patterns along the western side of said Lot 2, flows through the west half of said lot. Storm run-off from a contributing watershed area to the north, flows across the frontage roadway onto the subject property.

The 100 year storm event flow (Q100) was derived from analyzing the Drainage Master Study (ADMS) and contributing watershed area. The watershed area upstream of the subject property. As indicated by the analysis contained herein the estimated 100-Year run-off effects the western property bounds on said Lot 2, between the existing neighboring residence and the proposed on-site residence. (see Appendix A)

For the purpose of this report we used 100 year storm event design flow rate of 50.5 – 55.2 cfs and represents the storm run-off flowing through the subject property along the western bounds of the subject property bounds.

It is our professional opinion that the design flows analyses with this report, are an accurate interpretation of a 100 year storm event and is acceptable for the purposes of this report.

2.3 On-site Drainage

The existing drainage patterns running through the east half of said lot was assumed not to affect the on-site development, because Within the Plat for 'Moterra' (MCR 378-27), there is a Drainage Easement (DE) recorded that encompasses the eastern and southern portion of said Lot 2 of Moterra. The development proposed within the bounds of Lot 2, is outside of recorded DE, and will not encroach within said drainage easement.

The drainage patterns along the western side of said Lot 2, flows through the west half of said lot. This existing wash drains in a southerly direction and flows down the western bounds of the subject property. This is a result of run-off from the north of said project site.

In order to model the run-off flows using a HEC-RAS modeling software, a flow of 50.5 – 55.2 cubic feet per second (cfs) was used to represent the 100 year storm event through cross sections of the analyzed wash. The results of calculated flow is included in this report, (see Appendix A).

The 100 year storm discharge was used, as the purpose of this report is to delineate the bounds of the localized storm flows. The results of Hydraulic modeling is included within this report, (see Appendix B).

An Erosion Hazard Setback was calculated to be 7.43' from high water surface elevation.

Per ADWR SSA 5-96, Guideline 1; the Erosion Setback (ESB) for straight reaches is:

$$ESB = 1.0\ (Q100)^{0.5} = 7.43 \quad ==> \text{ use } 20' \text{ min.}$$

The 100 year storm event analyzed shows the high water level is contained within the proposed geometry of said wash, and as part of the on-site development, a Drainage Easement (D.E.) will be dedicated. The proposed D.E. outlining the historical alignment of storm run-off, and maintain historical entrance and exit points associated with the subject property.

2.4 Engineer of Record's Statement

It is in the opinion of the Engineer of Record that the Design Flow determined within this report is a realistic representation of the 100 year storm event specific to the subject site, and therefore accepted for the use of analysis and design.

Map

Figure 2: Aerial Map

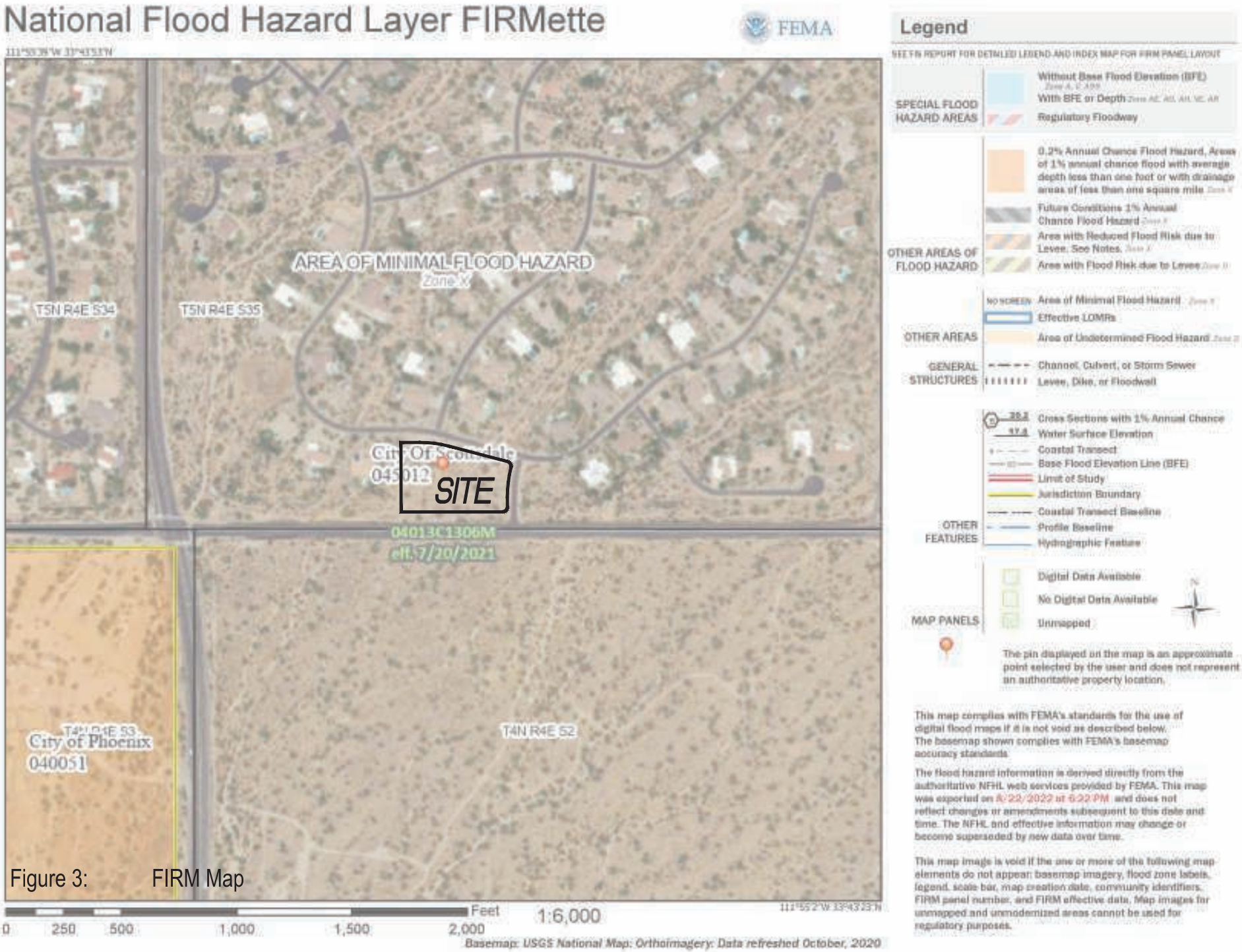


Figure 3: FIRM Map

3.0 Proposed Drainage Plan

3.1 On-site Hydrology / Hydraulics

The purpose of this report is to documents the hydrological elements associated with the subject property for the consideration of future development. The 100 year peak flows (Q100) were derived from analyzing contributing watershed area, and data from the Pinnacle Peak West Area – Whisper Rock 100yr 24hr Drainage Master Study (ADMS). The watershed area upstream of the subject property was determined to contribute storm run–off from the north, crossing the frontage road into the subject property . The 100 year storm event of 50.5 – 55.2 cfs was determined to be an accurate off–site flow contributing to the project site. A HEC–RAS model was constructed to determine the extent and characteristics of the flow and it's affect to the project site.

The existing wash was analyzed using cross–sections along the direction of flow. The HWSEL of these sections were defined from information documented with the previously noted Drainage Master Study (ADMS).

As shown in the grading & drainage plan, proposed site improvements may consist of the construction of a single–family residence and associated site development. There is no proposed development that would alter or impede the historical flow within the existing wash.

Within the grading & drainage plan for said Lot 2, the proposed development will be outside of the High Water Elevation (HWE), and free from inundation. The results of Hydraulic modeling is included within this report, (see Appendix B).

A Drainage Easement is proposed to be dedicated to encompasses the high water elevation, and preserve the conditions and capacity of this existing wash.

3.2 Stormwater Storage Requirements

There are no proposed retention basins per City of Scottsdale DS&PM guidelines.

3.3 Finish Floor Elevation (Proposed Residence)

In the HEC–RAS model, the high–water elevation lines and values are shown. Proposed site improvements consist of the construction of a single–family residence and associated site development. Proposed single–family residence has a proposed finished floor elevation of 2035.20 and is free from inundation from storm run–off through this wash. Said finished floor elevation is higher then 12 inches above the applicable 100 year water surface elevation in the adjacent wash.

WASH SECTION 13+00 ==> HWSEL: 2033.60
+12" (MIN).
RFE: 2034.60 @ GARAGE DOOR
+6" (above HWSEL). ==> 2034.60 = LF_{88}

The results of Hydraulic modeling is included within this report, see Appendix B.

4.0 Data & Analysis Methods

Storm Water calculation methods and assumptions were made based on the City of Scottsdale Engineering Standards. The report was formatted using the City of Scottsdale Design Standards and Policies Manual.

5.0 Conclusions

All run–off, running through the east half of said lot, shall flow through existing drainage easement in the same manner as in pre–development conditions, thereby maintaining historical drainage patterns. There is no proposed development within the within this existing drainage easement, and was assumed not to affect the on–site development.

All run–off, running through the west half of said lot, shall flow in the same manner as in pre–development conditions. A drainage easement is proposed to be recorded, to encompass said storm run–off. The HEC–RAS model of existing conditions, modeled using a conservation design flow of 50–55 cfs, delineates a High Water Elevation for the 100 year storm event. There is no proposed wash modifications that would alter or impede the historical flow within the existing wash. A Drainage Easement will encompass the high water elevation, and is proposed to be dedicated to preserve the conditions and capacity of this existing wash. The high–water elevation should not effect any proposed development, and the proposed single–family residence has a finished floor elevation that is free from inundation from storm run–off through the existing wash.

6.0 References

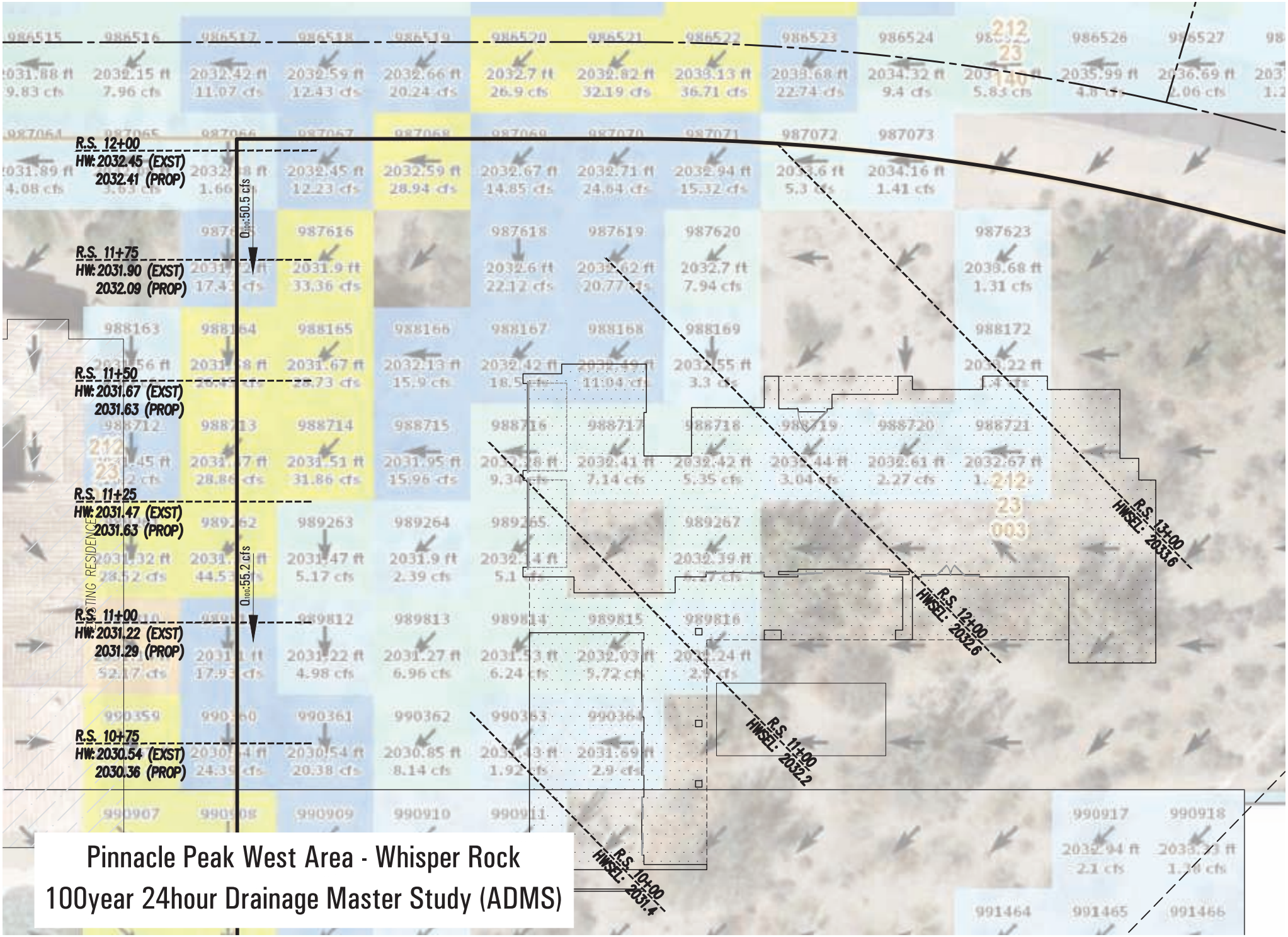
City of Scottsdale Design Standards and Policies Manual
Drainage Design Manual from the Flood Control District of Maricopa County
HEC–RAS River Analysis System from the U.S. Army Corps of Engineers
Uniform Standard Details for Public Works Construction, Maricopa Association of Governments, 2018
NOAA 14, Rainfall Precipitation
FEMA: Federal Emergency Management Agency, Floodplain Mapping
Pinnacle Peak West Area – Whisper Rock 100yr 24hr Drainage Master Study (ADMS)

Appendix A

Hydrology

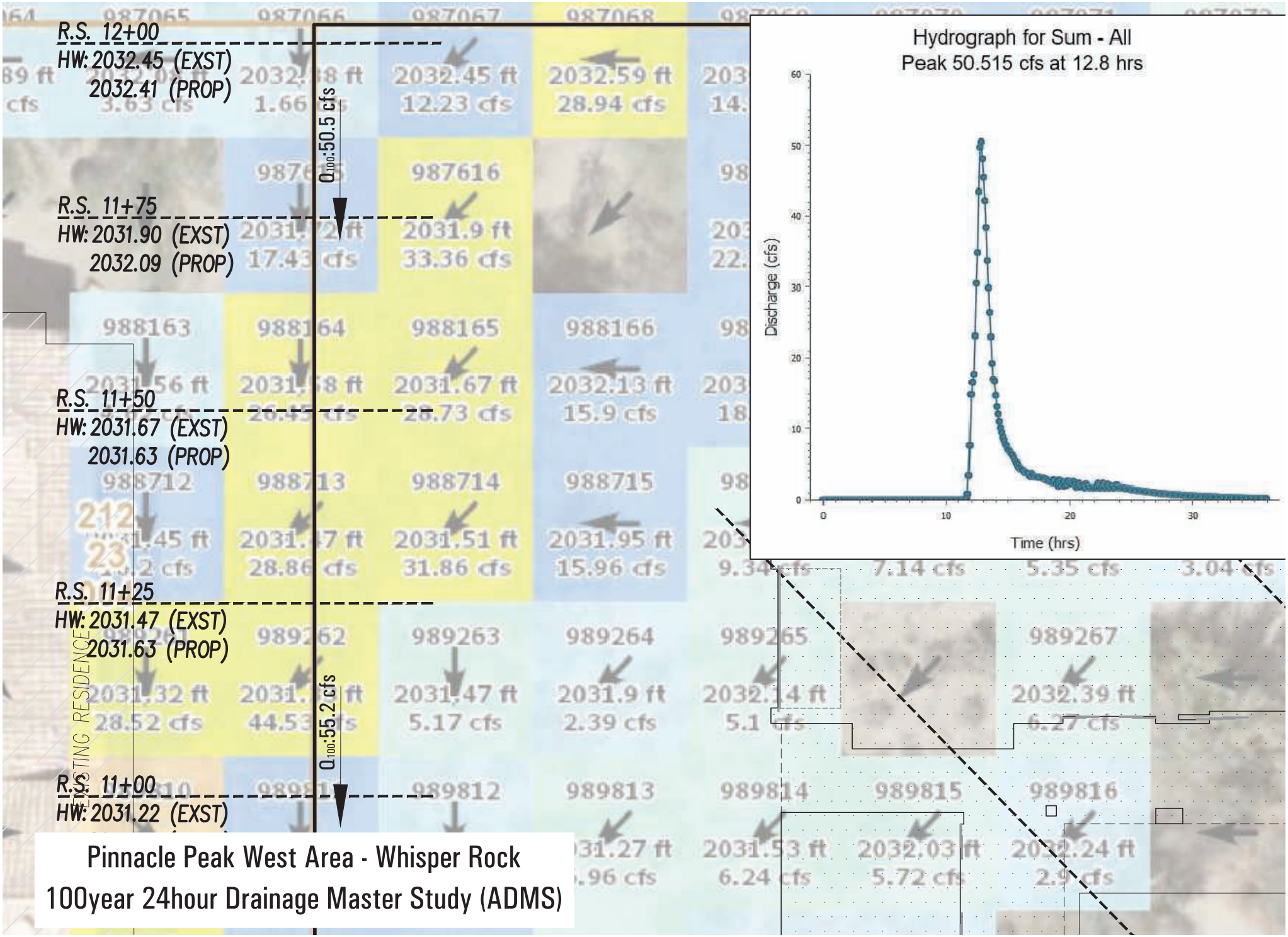
Flood Control District of Maricopa County

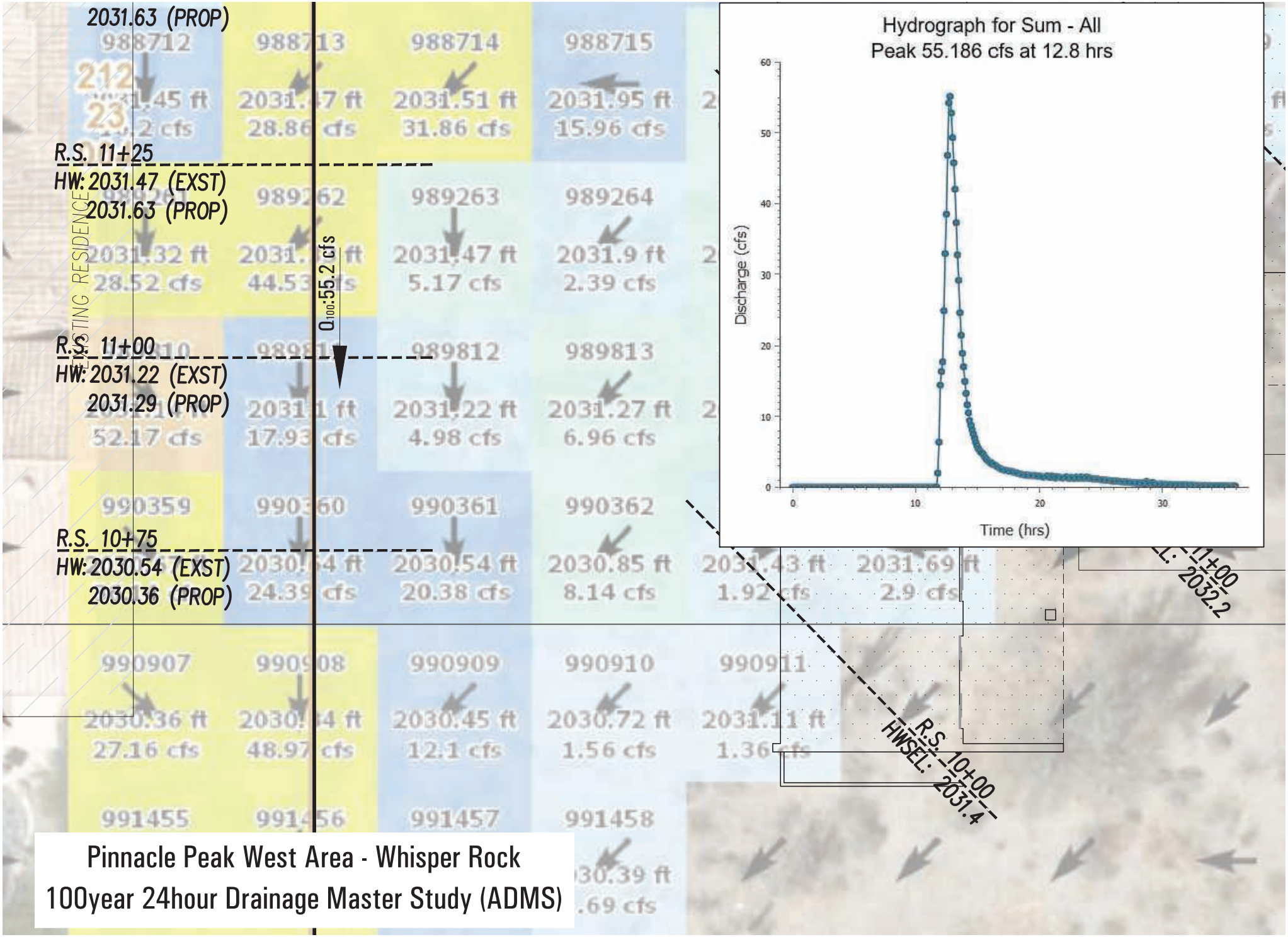
Pinnacle Peak West Area - Whisper Rock
100year 24hour Drainage Master Study (ADMS)



Pinnacle Peak West Area - Whisper Rock

100year 24hour Drainage Master Study (ADMS)


R.S. 12+00
HW: 2032.45 (EXST)
2032.41 (PROP)
Q_{100}:50.5 cfs
R.S. 11+75
HW: 2031.90 (EXST)
2032.09 (PROP)
R.S. 11+50
HW: 2031.67 (EXST)
2031.63 (PROP)
R.S. 11+25
HW: 2031.47 (EXST)
2031.63 (PROP)
Q_{100}:55.2 cfs
R.S. 11+00
HW: 2031.22 (EXST)
Hydrograph for Sum - All
Peak 50.515 cfs at 12.8 hrs
Discharge (cfs)
Time (hrs)
0
10
20
30
40
50
60
EXISTING RESIDENCE
Pinnacle Peak West Area - Whisper Rock
100year 24hour Drainage Master Study (ADMS)

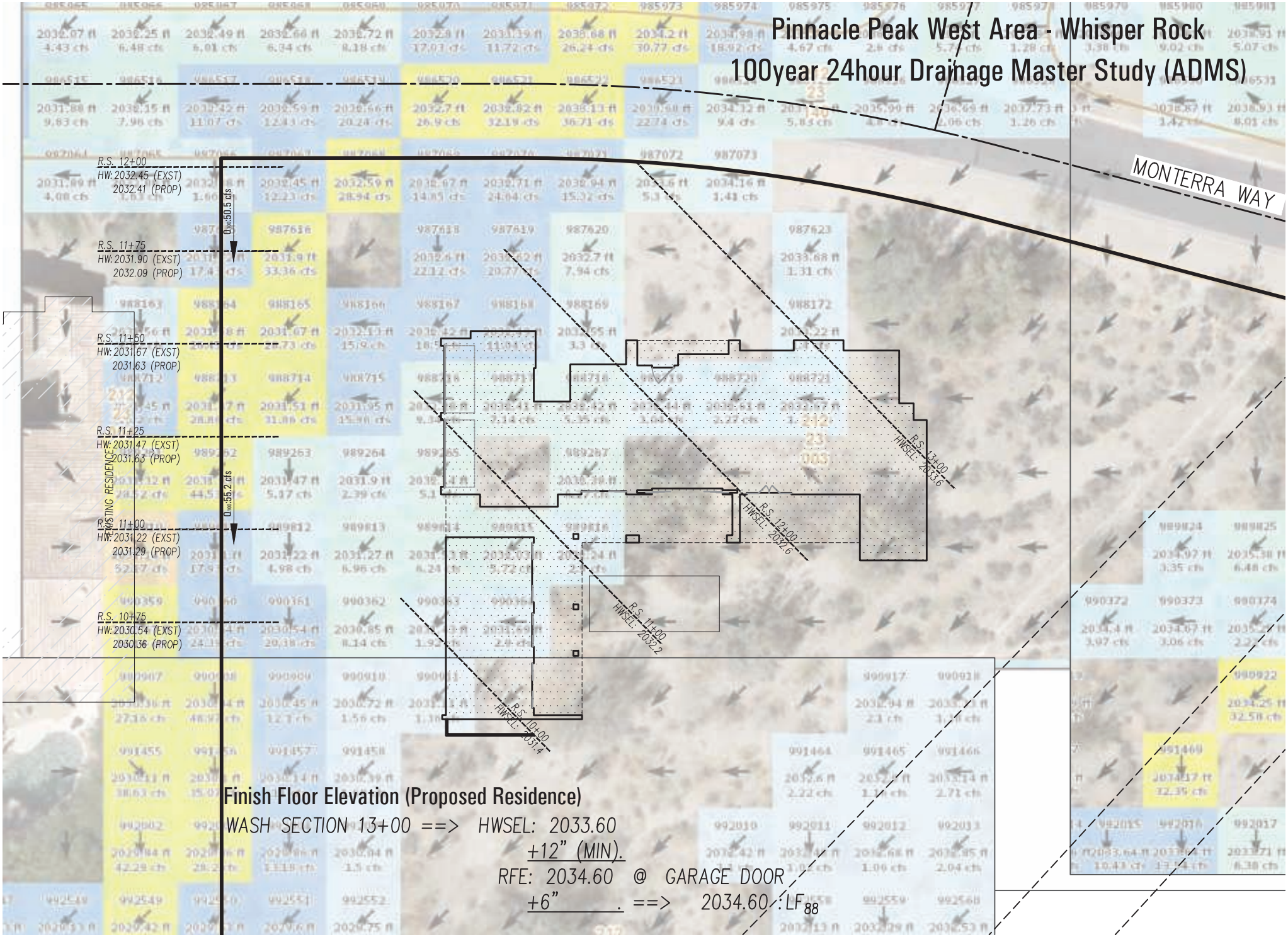


Pinnacle Peak West Area - Whisper Rock

100year 24hour Drainage Master Study (ADMS)

Appendix B

Hydraulics



Finish Floor Elevation (Proposed Residence)

WASH SECTION 13+00 ==> HWSEL: 2033.60

+12" (MIN).

RFE: 2034.60 @ GARAGE DOOR

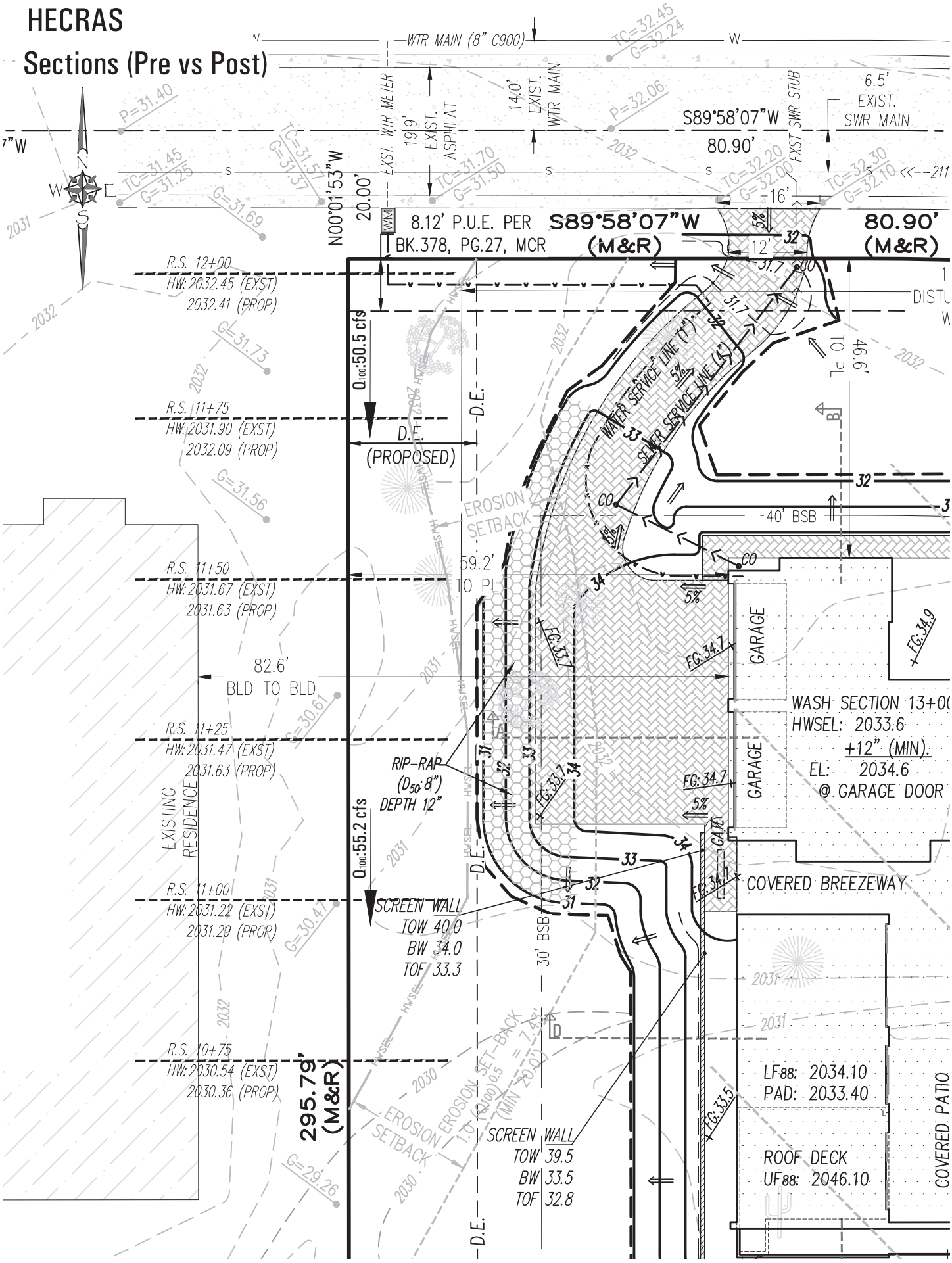
+6" ==> 2034.60 : LF

HEC-RAS
River Analysis System

Pre vs Post Conditions
Results

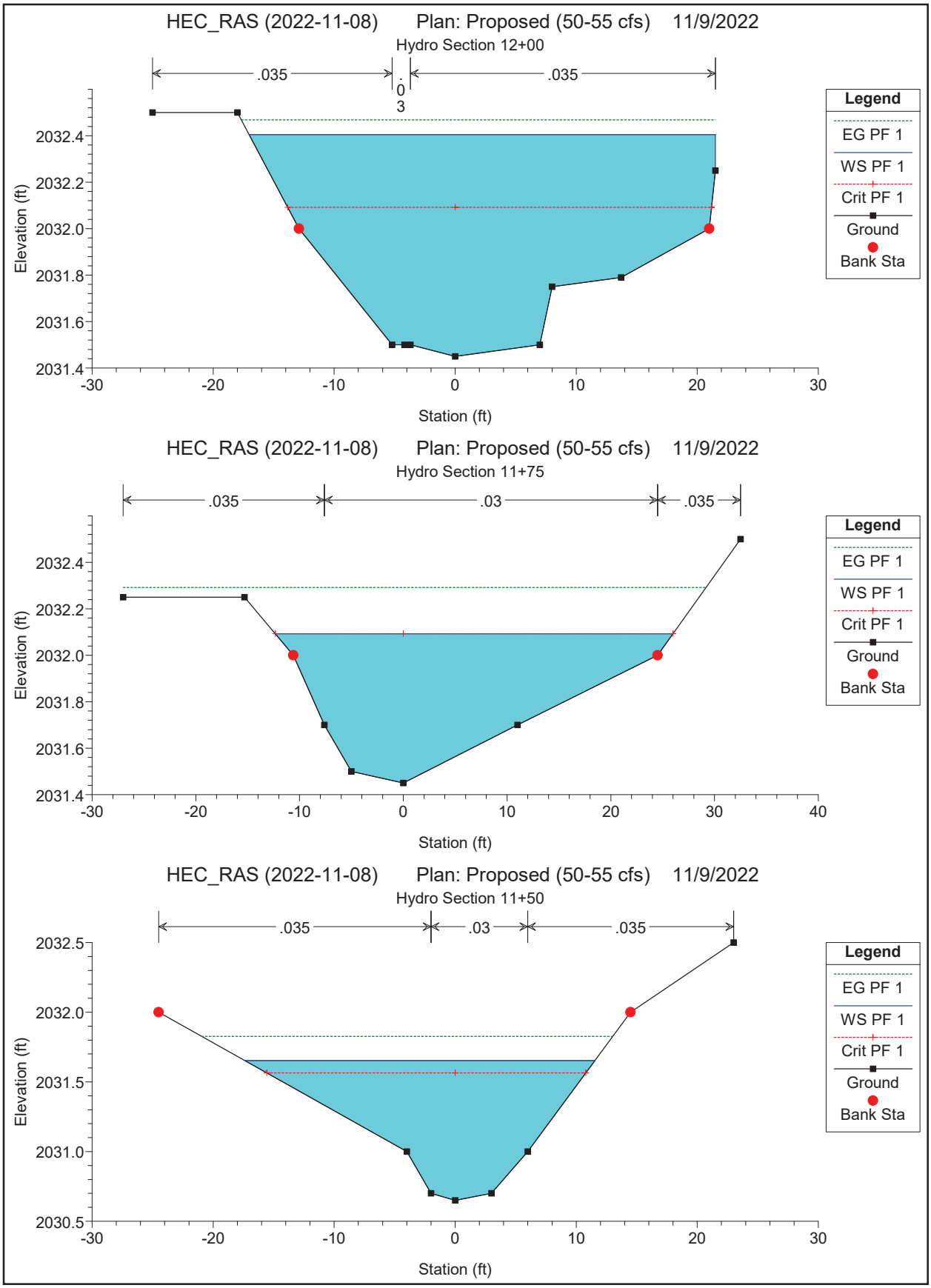
HECRAS

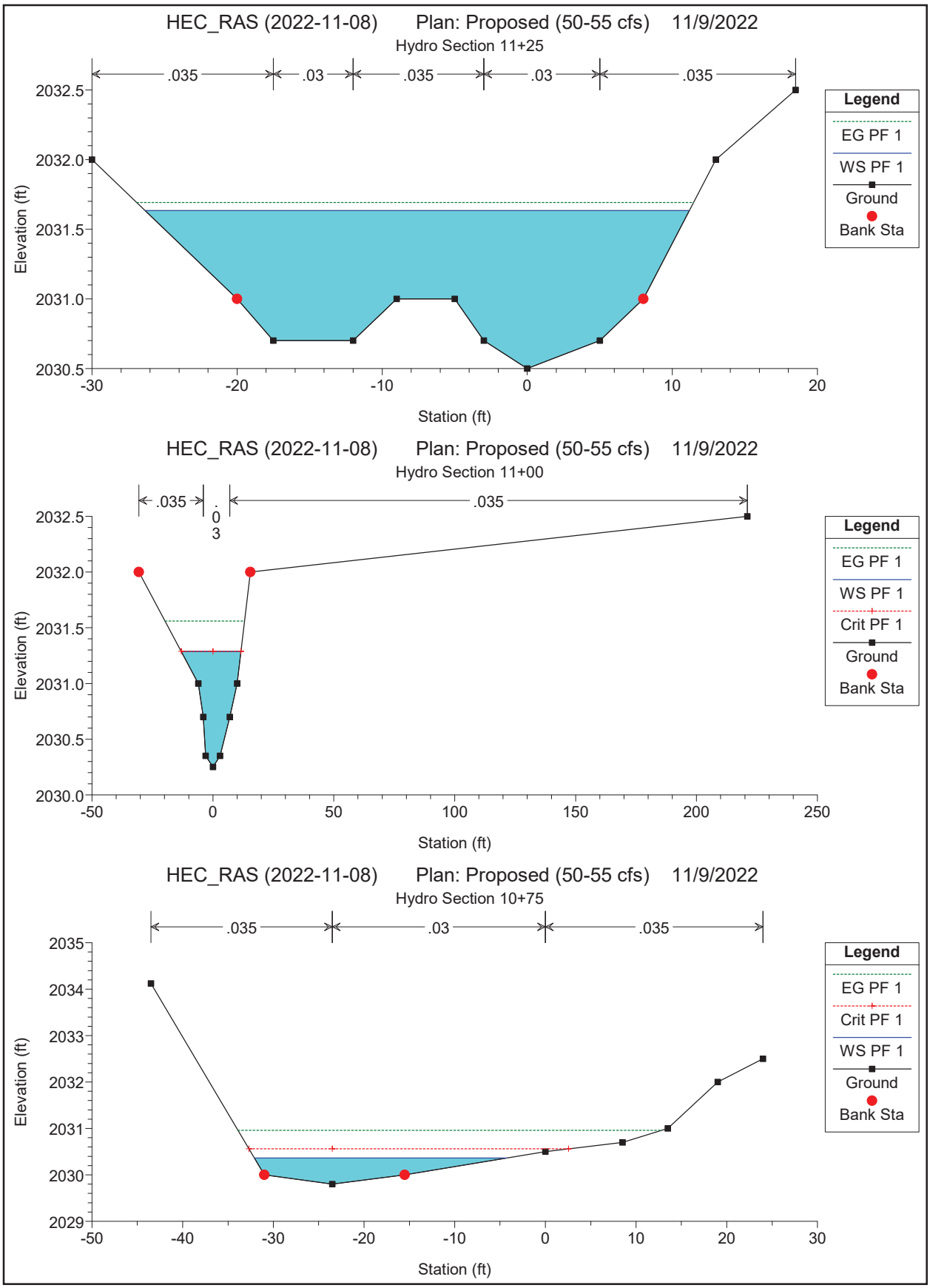
Sections (Pre vs Post)



Existing Conditions vs Proposed Conditions

Site Section	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Prof Delta WS (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
12+00	South	6	Prop (50-55cfs)	50.5	2031.45	2032.41		2032.09	2032.47	0.003425	2.03	25.49	38.54	0.42
			Exst (Flo 2D)			2032.45	(0.04)							
11+75	South	5	Prop (50-55cfs)	50.5	2031.45	2032.09		2032.09	2032.29	0.017546	3.58	14.23	38.34	1
			Exst (Flo 2D)			2031.9	0.19							
11+50	South	4	Prop (50-55cfs)	50.5	2030.65	2031.65		2031.56	2031.83	0.009753	3.34	15.1	28.95	0.82
			Exst (Flo 2D)			2031.67	(0.02)							
11+25	South	3	Prop (50-55cfs)	50.5	2030.5	2031.63			2031.69	0.002125	1.98	27.2	37.51	0.37
			Exst (Flo 2D)			2031.47	0.16							
11+00	South	2	Prop (50-55cfs)	55.2	2030.25	2031.29		2031.29	2031.56	0.012077	4.19	13.17	24.66	1.01
			Exst (Flo 2D)			2031.22	0.07							
10+75	South	1	Prop (50-55cfs)	55.2	2029.8	2030.36		2030.56	2030.96	0.056158	6.54	9.42	27.85	1.69


HEC_RAS (2022-11-08) Plan: Proposed (50-55 cfs) 11/9/2022
Hydro Section 12+00
.035
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
HEC_RAS (2022-11-08) Plan: Proposed (50-55 cfs) 11/9/2022
Hydro Section 11+75
.035
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
HEC_RAS (2022-11-08) Plan: Proposed (50-55 cfs) 11/9/2022
Hydro Section 11+50
.035
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


HEC_RAS (2022-11-08) Plan: Proposed (50-55 cfs) 11/9/2022
Hydro Section 11+25
.035
.03
.035
.03
.035
Elevation (ft)
2032.5
2032.0
2031.5
2031.0
2030.5
-30
-20
-10
0
10
20
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
HEC_RAS (2022-11-08) Plan: Proposed (50-55 cfs) 11/9/2022
Hydro Section 11+00
.035
.03
.035
Elevation (ft)
2032.5
2032.0
2031.5
2031.0
2030.5
2030.0
-50
0
50
100
150
200
250
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
HEC_RAS (2022-11-08) Plan: Proposed (50-55 cfs) 11/9/2022
Hydro Section 10+75
.035
.03
.035
Elevation (ft)
2035
2034
2033
2032
2031
2030
2029
-50
-40
-30
-20
-10
0
10
20
30
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

Erosion Protection

Level I Analysis

SSA 5-96 EROSION PROTECTION LEVEL 1 ANALYSIS

(Refer to Watercourse System Sediment Balance SSA 5-96)

Setback = $1.0(Q_{100})^{0.5}$

Setback = 1.0(55)0.5

Setback = 7.4162 ft.

LEVEL 1 ROCK RIPRAP EROSION PROTECTION

(Refer to State Standard for Watercourse Bank Stabilization SS 7-98 and Exhibit 3)

STEP 1: 100-yr Predicted Discharge, Q_{100}

Q_{100} = 55 cfs

la

STEP 2 Flood Depth, Y

Y = $9.89*A^{0.123}$ ft.

Y = 2.30 ft.

STEP 3 **Rip Rap Size, D_{50}**

$D_{50} = 0.0648 * Q^{0.4}$

$D_{50} = 0.0648 * (55)0.4$

D_{50} = 0.32 ft. ***Use: 8 inch (min)***

Appendix C

Hydrology & Hydraulic Values

NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, USA*
Latitude: 33.7459°, Longitude: -111.8368°
Elevation: 2720.91 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	0.241 (0.201-0.297)	0.314 (0.263-0.387)	0.424 (0.350-0.519)	0.506 (0.416-0.618)	0.616 (0.499-0.748)	0.698 (0.559-0.843)	0.781 (0.616-0.941)	0.865 (0.673-1.04)	0.976 (0.742-1.18)	1.07 (0.792-1.29)
10-min	0.368 (0.306-0.451)	0.479 (0.400-0.589)	0.645 (0.533-0.790)	0.771 (0.633-0.941)	0.937 (0.759-1.14)	1.06 (0.851-1.28)	1.19 (0.937-1.43)	1.32 (1.02-1.59)	1.49 (1.13-1.79)	1.62 (1.21-1.97)
15-min	0.456 (0.379-0.559)	0.593 (0.496-0.730)	0.800 (0.661-0.980)	0.956 (0.784-1.17)	1.16 (0.941-1.41)	1.32 (1.06-1.59)	1.47 (1.16-1.78)	1.63 (1.27-1.97)	1.84 (1.40-2.22)	2.01 (1.49-2.44)
30-min	0.613 (0.510-0.753)	0.799 (0.668-0.983)	1.08 (0.890-1.32)	1.29 (1.06-1.57)	1.56 (1.27-1.90)	1.77 (1.42-2.14)	1.98 (1.56-2.39)	2.20 (1.71-2.65)	2.48 (1.89-2.99)	2.71 (2.01-3.28)
60-min	0.759 (0.632-0.932)	0.989 (0.826-1.22)	1.33 (1.10-1.63)	1.59 (1.31-1.94)	1.94 (1.57-2.35)	2.19 (1.76-2.65)	2.46 (1.94-2.96)	2.72 (2.12-3.28)	3.07 (2.33-3.71)	3.35 (2.49-4.06)
2-hr	0.878 (0.740-1.05)	1.13 (0.957-1.37)	1.50 (1.26-1.81)	1.79 (1.49-2.14)	2.17 (1.79-2.59)	2.46 (2.00-2.93)	2.76 (2.21-3.28)	3.06 (2.42-3.63)	3.47 (2.68-4.12)	3.78 (2.87-4.52)
3-hr	0.943 (0.794-1.15)	1.21 (1.02-1.47)	1.57 (1.32-1.91)	1.86 (1.55-2.25)	2.26 (1.86-2.72)	2.58 (2.09-3.09)	2.91 (2.32-3.49)	3.25 (2.56-3.89)	3.72 (2.85-4.46)	4.10 (3.07-4.92)
6-hr	1.13 (0.976-1.33)	1.43 (1.23-1.68)	1.81 (1.55-2.12)	2.11 (1.80-2.47)	2.53 (2.13-2.95)	2.86 (2.37-3.32)	3.20 (2.62-3.72)	3.55 (2.85-4.12)	4.00 (3.15-4.66)	4.36 (3.36-5.08)
12-hr	1.36 (1.18-1.59)	1.71 (1.49-1.99)	2.15 (1.86-2.49)	2.50 (2.15-2.89)	2.96 (2.52-3.43)	3.33 (2.80-3.84)	3.70 (3.07-4.27)	4.07 (3.34-4.70)	4.56 (3.66-5.29)	4.94 (3.90-5.77)
24-hr	1.64 (1.45-1.89)	2.09 (1.84-2.40)	2.72 (2.39-3.13)	3.24 (2.83-3.72)	3.97 (3.42-4.56)	4.56 (3.88-5.25)	5.19 (4.36-6.01)	5.85 (4.83-6.83)	6.80 (5.47-8.03)	7.57 (5.97-9.04)
2-day	1.88 (1.65-2.17)	2.41 (2.11-2.78)	3.18 (2.77-3.66)	3.81 (3.30-4.37)	4.70 (4.03-5.40)	5.42 (4.59-6.25)	6.19 (5.17-7.18)	7.00 (5.76-8.20)	8.15 (6.55-9.66)	9.09 (7.17-10.9)
3-day	2.02 (1.77-2.32)	2.59 (2.27-2.97)	3.44 (3.01-3.94)	4.15 (3.60-4.74)	5.16 (4.43-5.90)	5.98 (5.08-6.88)	6.87 (5.76-7.96)	7.83 (6.46-9.16)	9.21 (7.42-10.9)	10.3 (8.17-12.4)
4-day	2.15 (1.89-2.47)	2.77 (2.43-3.16)	3.70 (3.24-4.22)	4.48 (3.90-5.10)	5.61 (4.83-6.40)	6.54 (5.58-7.51)	7.56 (6.36-8.74)	8.66 (7.16-10.1)	10.3 (8.28-12.1)	11.6 (9.18-13.9)
7-day	2.49 (2.17-2.86)	3.19 (2.79-3.67)	4.28 (3.73-4.92)	5.19 (4.50-5.97)	6.53 (5.59-7.51)	7.64 (6.47-8.84)	8.86 (7.39-10.3)	10.2 (8.37-12.0)	12.1 (9.73-14.5)	13.8 (10.8-16.7)
10-day	2.73 (2.40-3.12)	3.50 (3.07-4.01)	4.68 (4.09-5.35)	5.66 (4.91-6.46)	7.08 (6.09-8.11)	8.26 (7.02-9.50)	9.55 (8.00-11.1)	10.9 (9.03-12.8)	13.0 (10.4-15.4)	14.7 (11.6-17.7)
20-day	3.48 (3.06-3.98)	4.49 (3.95-5.11)	5.95 (5.21-6.78)	7.11 (6.20-8.10)	8.74 (7.55-9.98)	10.0 (8.58-11.5)	11.4 (9.66-13.2)	12.8 (10.7-15.0)	14.9 (12.2-17.6)	16.5 (13.3-19.8)
30-day	4.14 (3.64-4.72)	5.34 (4.71-6.08)	7.09 (6.22-8.05)	8.45 (7.40-9.59)	10.3 (8.97-11.8)	11.8 (10.2-13.5)	13.4 (11.4-15.3)	15.0 (12.6-17.3)	17.2 (14.3-20.2)	19.0 (15.5-22.5)
45-day	4.96 (4.37-5.64)	6.40 (5.64-7.27)	8.49 (7.46-9.63)	10.1 (8.84-11.5)	12.3 (10.7-14.0)	14.1 (12.1-16.1)	15.9 (13.5-18.3)	17.8 (15.0-20.6)	20.4 (16.9-24.1)	22.5 (18.3-26.8)
60-day	5.59 (4.94-6.35)	7.23 (6.39-8.19)	9.55 (8.41-10.8)	11.3 (9.92-12.8)	13.7 (11.9-15.5)	15.5 (13.4-17.7)	17.4 (14.9-20.0)	19.3 (16.4-22.4)	22.0 (18.3-25.8)	24.1 (19.8-28.6)

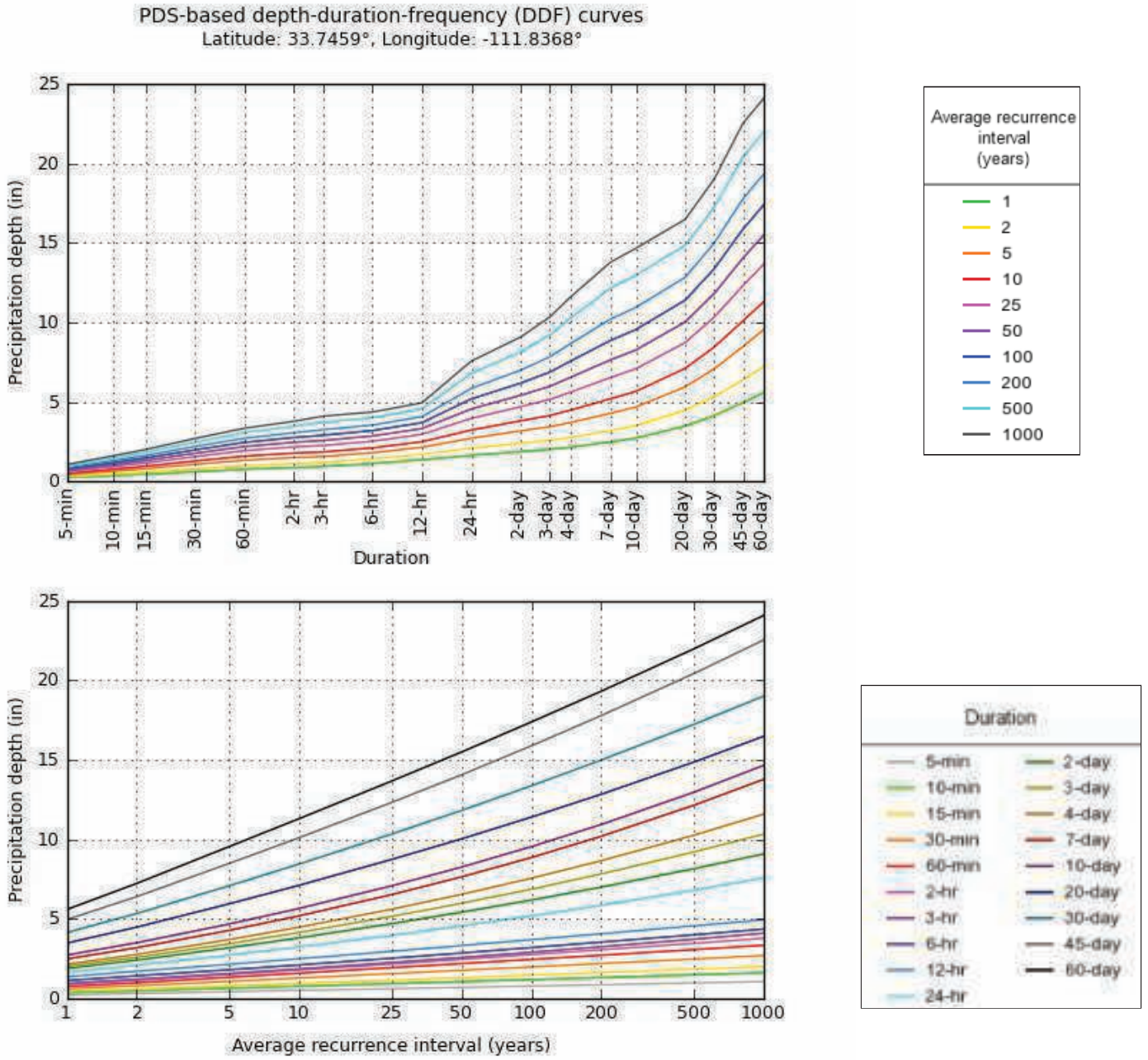
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

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.

Back to Top

PF graphical



NOAA Atlas 14, Volume 1, Version 5

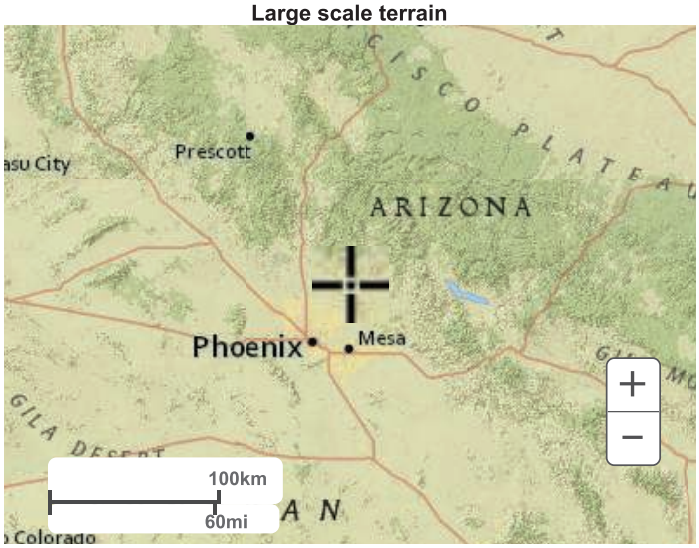
Created (GMT): Wed Oct 9 04:24:28 2019

Back to Top

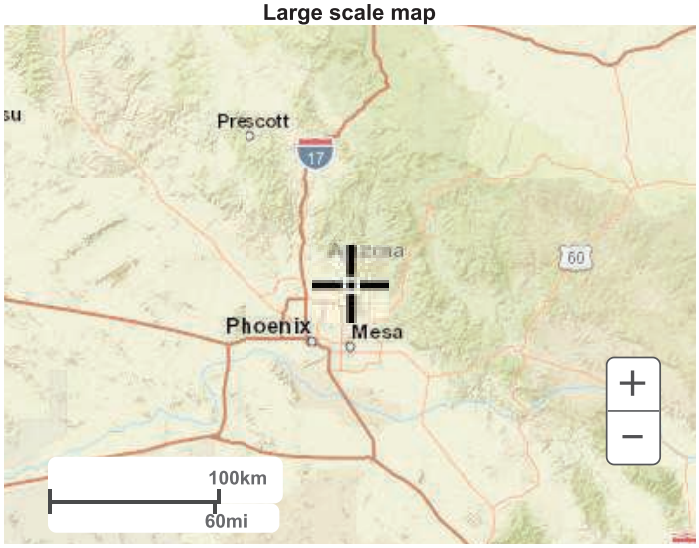
Maps & aerials

Small scale terrain

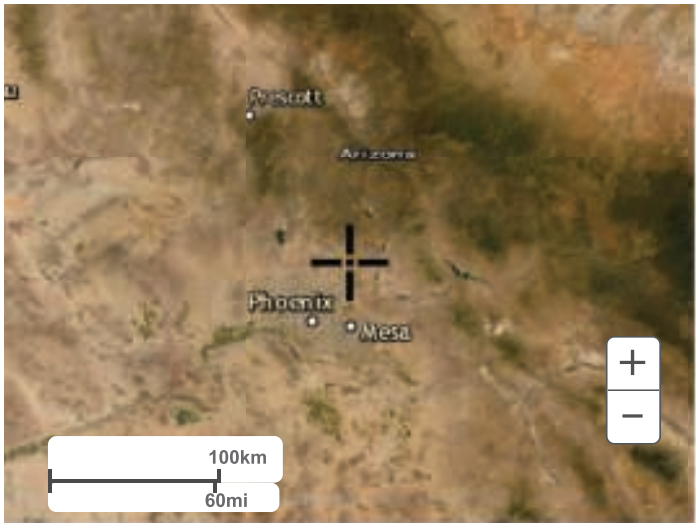
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

3. Runoff Coefficients

Use Figure 4.1-4 or equivalent to obtain the runoff coefficients or "**C**" values. Composite "**C**" values for the appropriate zoning category or weighted average values calculated for the specific site are both acceptable approaches.

RUNOFF COEFFICIENTS - "C" VALUE			
Land Use	Hydrologic Soil Group		
Composite Area-wide Values	B	C	D
Commercial & Industrial Areas	0.90		
Residential Areas-Single Family (average lot size)			
R1-1-1901	0.33	0.50	0.53
R1-130	0.35	0.51	0.59
R1-70	0.37	0.52	0.60
R1-43	0.38	0.55	0.61
R1-35 (35,000 square feet/lot)	0.40	0.56	0.62
R1-18 (18,000 square feet/lot)	0.43	0.58	0.64
R1-10 (10,000 square feet/lot)	0.47	0.62	0.67
R1-7 (7,000 square feet/lot)	0.51	0.64	0.94
Townhouses (R-2, R-4)	0.63	0.74	0.94
Apartments & Condominiums (R-3, R-5)	0.76	0.83	0.94
Specific Surface Type Values			
Paved streets, parking lots (concrete or asphalt), roofs, driveways, etc.	0.95		
Lawns, golf courses, & parks (grassed areas)	0.33	0.56	0.66
Undisturbed natural desert or desert landscaping (no impervious weed barrier)	0.31	0.48	0.56
Desert landscaping (with impervious weed barrier)	0.83	0.83	0.83
Mountain terrain – slopes greater than 10%	0.70	0.70	0.70
Agricultural areas (flood-irrigated fields)	0.20	0.20	0.20

FIGURE 4.1-4 RUNOFF COEFFICIENTS FOR USE WITH RATIONAL METHOD

Table 6.11
Manning's Roughness Coefficients [1]

Channel Material	Roughness Coefficient (n)		
	Minimum	Normal	Maximum
Corrugated metal	0.021	0.025	0.030
Concrete:			
Trowel finish	0.011	0.013	0.015
Float finish	0.013	0.015	0.016
Unfinished	0.014	0.017	0.020
Shotcrete, good section	0.016	0.019	0.023
Shotcrete, wavy section	0.018	0.022	0.025
Asphalt [2]	0.013	0.016	0.020
Soil cement	0.018	0.020	0.025
Constructed channels with earth or sand bottom			
Clean earth; straight	0.018	0.022	0.025
Earth with grass and weeds	0.020	0.025	0.030
Earth with trees and shrubs	0.024	0.032	0.040
Shotcrete	0.018	0.022	0.025
Soil cement	0.022	0.025	0.028
Concrete	0.017	0.020	0.024
Riprap	0.023	0.032	0.036
Natural channels with sand bottom and sides of:			
Trees and shrubs	0.025	0.035	0.045
Rock	0.024	0.032	0.040
Natural channel with rock bottom	0.040	0.060	0.090
Overbank floodplains:			
Desert brush, normal density	0.040	0.060	0.080
Dense vegetation	0.070	0.100	0.160

(1) From: Simons, Li and Associates, 1988. Adapted from Chow (1959) and Aldridge and Garret (1973).

(2) Use maximum value when cars are present.

Appendix 4-1C

WARNING & DISCLAIMER OF LIABILITY

The Drainage and Floodplain Regulations and Ordinances of the City of Scottsdale are intended to "minimize the occurrence of losses, hazards and conditions adversely affecting the public health, safety and general welfare which might result from flooding caused by the surface runoff of rainfall" (Scottsdale Revised Code §37-16).

As defined in S.R.C. §37-17, a flood plain or "*Special flood hazard* area means an area having flood and/or flood related erosion hazards as shown on a FHBM or FIRM as zone A, AO, A1-30, AE, A99, AH, or E, and those areas identified as such by the floodplain administrator, delineated in accordance with subsection 37-18(b) and adopted by the floodplain board." It is possible that a property could be inundated by greater frequency flood events or by a flood greater in magnitude than a 100-year flood. Additionally, much of the Scottsdale area is a dynamic flood area; that is, the floodplains may shift from one location to another, over time, due to natural processes.

WARNING AND DISCLAIMER OF LIABILITY PURSUANT TO S.R.C §37-22
"The degree of flood protection provided by the requirements in this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Floods larger than the base flood can and will occur on rare occasions. Floodwater heights may be increased by man-made or natural causes. This article (Chapter 37, Article II) shall not create liability on the part of the city, any officer or employee thereof, or the federal government for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder."

Compliance with Drainage and Floodplain Regulations and Ordinances does not insure complete protection from flooding. The Floodplain Regulations and Ordinances meet established local and federal standards for floodplain management, but neither this review nor the Regulations and Ordinances take into account such flood related problems as natural erosion, streambed meander or man-made obstructions and diversions, all of which may have an adverse affect in the event of a flood. You are advised to consult your own engineer or other expert regarding these considerations.

I have read and understand the above. If I am an agent for an owner I have made the owner aware of and explained this disclaimer.

_____	_____	_____
Plan Check No.	Owner or Agent	Date

GRADING & DRAINAGE GENERAL NOTES

1. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM THE PLAN MUST BE PRECEEDED BY AN APPROVED PLAN REVISION.
2. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, PIPES, PROTECTIVE BERMS OR OTHER MEASURES DESIGNED TO PROTECT BUILDINGS OR PROPERTY FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO ANY STRUCTURE BEING BUILT.
3. FOUNDATIONS SHALL BEAR ON NATIVE SOIL OR COMPACTED FILL w/ MIN 95% COMPACTION PER ASTM D698.
4. PREPARATION OF GROUND: THE AREA OVER WHICH FILLS ARE TO BE MADE SHALL BE CLEARED OF ALL TRASH, TREES, STUMPS, DEBRIS OR OTHER MATERIAL NOT SUITABLE AS A FOUNDATION FOR FILL.
5. LOCATIONS OF ALL UTILITIES SHOWN ON THIS PLAN ARE BASED ON INFORMATION SUPPLIED TO THE ENGINEER BY A FIELD SURVEY OR AVAILABLE MAPS. NO GUARANTEE ON LOCATIONS OR ACCURACY IS IMPLIED OR GIVEN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT BLUE STAKE (263–1100) AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
6. DISTURBED AREAS SHALL BE REPLANTED WITH DESERT PLANTS OR DROUGHT–RESISTANT PLANTS. EXISTING VEGETATION SHALL BE RELOCATED IF DISTURBED BY CONSTRUCTION.
7. CONTRACTOR/BUILDER SHALL NOTIFY THE ENGINEER OF ANY VARIANCES BETWEEN THESE PLANS AND ON–SITE CONDITIONS.
8. ALL DRAINAGE SWALES SHALL BE MAINTAINED BY OWNER TO BE FREE OF TRASH, SILT, VEGETATION AND DEBRIS.
9. CONTRACTOR SHALL VERIFY PROPERTY LINE LOCATIONS PRIOR TO PROCEEDING WITH WORK.
10. ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND PLUMBING ARE NOT A PART OF THIS SITE PLAN.
11. LOCATIONS OF ANY VEGETATION NOTED ARE APPROXIMATE AND SHOULD NOT BE USED FOR ARCHITECTURAL LANDSCAPE PLANNING.
12. FINISH GRADE SHALL SLOPE 5% FOR A DISTANCE OF 10' TO AN APPROVED WATER DISPOSAL AREA.
13. UTILITIES SHALL NOT BE LOCATED IN NATURAL AREA OPEN EASEMENTS (NAOS).
14. FINISH FLOOR ELEVATION SHALL BE PROVIDED BY THE C.O.S. FOR FEMA WHERE REQUIRED.
15. SWIMMING POOLS, SPAS, FENCES, SITE WALLS, AND RETAINING WALLS REQUIRE SEPARATE PERMITS.
16. ALL MECHANICAL EQUIPMENT (AIR CONDITIONER, POOL EQUIPMENT, ETC.) SHALL BE SCREENED A MINIMUM OF ONE FOOT HIGHER THAN THE HIGHEST PORTION OF THE EQUIPMENT, AND SHALL BE COMPATIBLE WITH THE ADJACENT BUILDING.
17. GUESTHOUSES ON LOTS LESS THAN 35,000 Sq. Ft. SHALL NOT PROVIDE COOKING FACILITIES AND WILL NEVER BE OFFERED FOR RENT. GUESTHOUSES ON LOTS GREATER THAN 35,000 Sq. Ft. MAY PROVIDE COOKING FACILITIES. (AND WILL NEVER BE OFFERED FOR RENT)
18. LAND DESIGNATED AS NAOS SHALL BE PERMANENTLY MAINTAINED AS NATURAL OPEN SPACE THROUGH EASEMENT, DONATION OR DEDICATION TO THE CITY OR OTHER ENTITY. NAOS SHALL BE MAINTAINED BY THE PROPERTY OWNER.
19. ENSURE NO CONSTRUCTION OFF PROPERTY
20. POOLS SHALL NOT BE EMPTIED OR BACKWASHED INTO WASHES, STREETS, NAOS, SCENIC CORRIDORS, ON TO AN ADJACENT LOT, OR TRACT OF LAND.
21. A GUESTHOUSE OR ACCESSORY STRUCTURE SHALL NOT EXCEED A GROSS SIZE GREATER THAN 50% OF THE FOOTPRINT SIZE OF THE PRINCIPAL BUILDING.
22. REFLECTIVE BUILDING MATERIALS ARE PROHIBITED.
23. THE OWNER AND/OR CONTRACTOR INCORPORATED DEVELOPMENT DESIGN AND CONSTRUCTION TECHNIQUES THAT BLEND SCALE, FORM AND VISUAL CHARACTER INTO THE NATURAL LANDFORM AND MINIMIZE EXPOSED SCARS TO THE SATISFACTION OF THE PLANNING AND DEVELOPMENT SERVICES DEPARTMENT.
24. EXTERIOR LIGHTING SHOULD BE LOW SCALE AND DIRECTED DOWNWARD, RECESSED OR SHIELDED SO THAT THE LIGHT SOURCE IS NOT VISIBLE FROM RESIDENTIAL DEVELOPMENTS IN THE AREA OR FROM PUBLIC VIEWPOINT. EXTERIOR FIXTURES SHALL NOT GENERALLY EXCEED A HEIGHT OF 6 FEET MEASURED FROM THE NEAREST ADJACENT GRADE TO THE TOP OF THE FIXTURE (LOWER HEIGHTS MAY BE REQUIRED BY THE INSPECTION OR CODE ENFORCEMENT STAFF.)
25. LAND DESIGNATED AS NAOS SHALL BE PERMANENTLY MAINTAINED AS OPEN SPACE. THE PROPERTY OWNER SHALL MAINTAIN ALL DESIGNATED NAOS.
26. A REGISTERED SURVEYOR SHALL STAKE AND ROPE OR FENCE THE CONSTRUCTION ENVELOPE AND NAOS EASEMENT IN ACCORDANCE WITH THE SITE PLAN. THE CONSTRUCTION ENVELOPE AND NAOS AREA STAKED IS THE MUST BE THE MOST RESTRICTIVE IN ACCORDANCE WITH THE ZONING ORDINANCE.

CITY OF SCOTTSDALE SITE PLAN NOTES (ESL & FO OVERLAY)

55. POOLS REQUIRE SEPARATE APPROVAL AND PERMIT.
56. POOLS SHALL NOT BE EMPTIED OR BACKWASHED INTO WASHES, STREETS, NAOS, SCENIC CORRIDORS, ON TO AN ADJACENT LOT, OR TRACT OF LAND.
57. ALL MECHANICAL EQUIPMENT (AIR CONDITIONER, POOL EQUIP. ETC.) SHALL BE SCREENED A MINIMUM OF 1 FOOT ABOVE THE HIGHEST PORTION OF THE EQUIPMENT FROM ALL SIDES AND SHALL BE COMPATIBLE WITH THE ADJACENT BUILDING. SHOW LOCATION OF EQUIPMENT ON SITE PLAN.
58. A GUESTHOUSE SHALL NEVER BE OFFERED FOR RENT.
59. A GUESTHOUSE SHALL NOT EXCEED A GROSS FOOTPRINT SIZE GREATER THAN 50% OF THE FOOT PRINT SIZE OF THE PRINCIPAL BUILDING.
60. EXTERIOR MATERIALS AND PAINT COLORS SHALL NOT EXCEED A VALUE AND/OR CHROMA OF 6 AS INDICATED IN THE MUNSEL BOOK OF COLOR ON FILE IN THE CITY OF SCOTTSDALE'S PLANNING & DEVELOPMENT DEPARTMENT. THE CITY MAY REQUIRE COLOR SAMPLES TO VERIFY COMPLIANCE.
61. MATERIALS USED FOR EXTERIOR SURFACES OF ALL STRUCTURES SHALL BLEND IN COLOR, HUE, AND TONE WITH THE SURROUNDING NATURAL DESERT SETTING TO AVOID HIGH CONTRAST.
62. SURFACE MATERIALS OF WALLS, RETAINING WALLS OR FENCES SHALL BE SIMILAR TO AND COMPATIBLE WITH THOSE OF THE ADJACENT MAIN BUILDINGS.
63. PLANT MATERIALS NOT INDIGENOUS TO THE ESL AREA SHALL BE LIMITED TO ENCLOSED YARD AREAS AND NON–INDIGENOUS PLANTS THAT HAVE THE POTENTIAL OF EXCEEDING TWENTY (20) FEET IN HEIGHT ARE PROHIBITED. TURF SHALL BE LIMITED TO ENCLOSED AREAS NOT VISIBLE FROM A LOWER ELEVATION.
64. REFLECTIVE BUILDING MATERIALS ARE PROHIBITED.
65. REFLECTIVE BUILDING AND ROOFING MATERIALS (OTHER THAN WINDOWS AND SOLAR PANELS) INCLUDING MATERIALS WITH HIGH GLOSS FINISHES AND BRIGHT, UNTARNISHED COPPER, ALUMINUM, GALVANIZED STEEL OR OTHER METALLIC SURFACES, SHALL BE TEXTURED OR HAVE A MATTE OR NON–REFLECTIVE SURFACE TREATMENT TO REDUCE THE REFLECTIONS OF SUNLIGHT ONTO OTHER PROPERTY.
66. MIRRORED SURFACES OR ANY TREATMENTS THAT CHANGE ORDINARY GLASS INTO A MIRRORED SURFACE ARE PROHIBITED.
67. THE OWNER SHALL INCORPORATE DEVELOPMENT DESIGN AND CONSTRUCTION TECHNIQUES THAT BLEND IN SCALE, FORM AND VISUAL CHARACTER TO MINIMIZE EXPOSED SCARS TO THE SATISFACTION OF THE PLANNING & DEVELOPMENT DEPARTMENT.
68. ANY PROPOSED MODIFICATIONS TO NATURAL WATERCOURSES AND ALL WALLS AND FENCES CROSSING NATURAL WATERCOURSES SHALL BE DESIGNED IN ACCORDANCE WITH THE STANDARDS AND POLICIES SPECIFIED IN CHAPTER 37 (DRAINAGE AND FLOODPLAIN ORDINANCE) OF THE SCOTTSDALE REVISED CODE.
69. LAND DESIGNATED AS NAOS SHALL BE PERMANENTLY MAINTAINED AS OPEN SPACE. THE PROPERTY OWNER SHALL MAINTAIN ALL DESIGNATED NAOS.
70. ALL EXTERIOR LIGHTING BELOW 3 FEET IN HEIGHT SHALL BE FULLY SHIELDED. ALL EXTERIOR LIGHTING ABOVE 3 FEET IN HEIGHT SHALL CONSIST OF HORIZONTAL FULL–CUTOFF FIXTURES AND DIRECTED DOWNWARD, EXCEPT LIGHTS UTILIZED FOR SECURITY PURPOSES.
71. ALL EXTERIOR LIGHTS INCLUDING THOSE MOUNTED TO BUILDINGS/STRUCTURES AND ON POLES SHALL NOT EXCEED A HEIGHT OF SIXTEEN (16) FEET. EXEMPTION: LIGHTS THAT ARE CONNECTED TO A DELAY SWITCH THAT DO NOT STAY ON MORE THAN 15 MINUTES FOR SECURITY PURPOSES SHALL NOT BE REQUIRED TO BE SHIELDED OR CONTAIN HORIZONTAL CUTOFFS.
72. EXTERIOR LIGHTING SHOULD BE LOW SCALE AND DIRECTED DOWNWARD, RECESSED OR SHIELDED SO THAT THE LIGHT SOURCE IS NOT VISIBLE FROM RESIDENTIAL DEVELOPMENTS IN THE AREA OR FROM A PUBLIC VIEWPOINT. EXTERIOR FIXTURES SHALL NOT GENERALLY EXCEED A HEIGHT OF 6 FEET MEASURED FROM THE NEAREST ADJACENT GRADE TO THE TOP OF THE FIXTURE (LOWER HEIGHTS MAY BE REQUIRED BY THE INSPECTION OR CODE ENFORCEMENT STAFF).
73. WHERE ON–SITE WALLS ARE PLACED ADJACENT TO NAOS AREAS AT LEAST 50 PERCENT OF THE WALL SURFACE SHALL BE A VIEW FENCE.
74. TEMPORARY/SECURITY FENCING THAT IS REQUIRED OR IS OPTIONALLY PROVIDED SHALL BE IN ACCORDANCE WITH THE ZONING ORDINANCE AND THE DESIGN STANDARDS AND POLICIES MANUAL.
75. IN ACCORDANCE WITH THE ZONING ORDINANCE, A REGISTERED SURVEYOR SHALL STAKE AND ROPE THE MOST RESTRICTIVE AREA DEFINED BY THE CONSTRUCTION ENVELOPE AND NAOS EASEMENT AS SHOWN ON THE SITE PLAN.
76. NO PAINT COLOR OR SURFACE TREATMENT SHALL BE USED WHICH HAS A LIGHT REFLECTIVE VALUE (LRV) GREATER THAN 35%.

79. SITE WALLS MUST BE SETBACK 15 FEET FROM SIDE AND REAR PROPERTY LINES. THIS APPLIES ONLY TO RESIDENTIAL PARCELS CONTAINING AN AREA OF 35,000 SQ FT OR LARGER.
80. WASHES OF 50 CFS OR GREATER FLOW SHALL BE IDENTIFIED AND WATERCOURSE(S) SHALL BE UNALTERED. IF WATERCOURSE(S) ARE ALTERED, PROVIDE A COPY OF THE WASH MODIFICATION APPROVAL LETTER AND REFERENCE THE CASE NUMBER ON THE SITE PLAN.
81. APPLICATIONS THAT HAVE RECEIVED A HARDSHIP EXEMPTION SHALL PROVIDE THE CASE NUMBER ON THE SITE PLAN.
82. SITE WALLS SHALL NOT BE PROVIDED IN NAOS AREAS OR DISRUPT THE CONTINUITY OF NAOS CORRIDORS.
83. IDENTIFY THE SPECIFIC LOCATION OF THE CONSTRUCTION ENVELOPE ON SITE PLAN. THE CONSTRUCTION ENVELOPE CONSISTS OF AN AREA ENCLOSED BY A LINE EXTENDING 15 FEET OUT FROM ALL DISTURBANCES ON LOT.

SCOTTSDALE FIRE DEPARTMENT GUIDELINES FOR EMERGENCY VEHICLE ACCESS

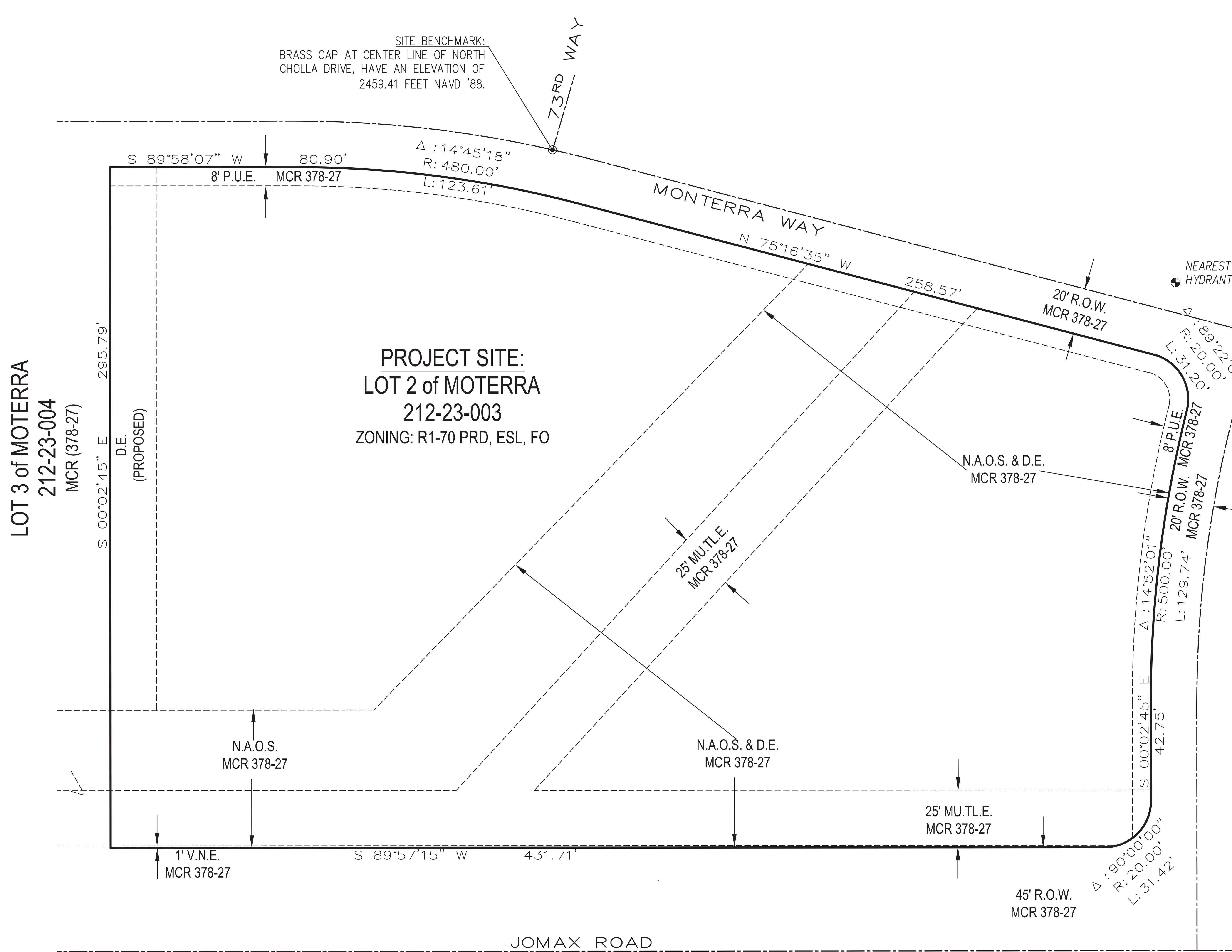
ACCESS GRADES FROM 0 TO 12% FOR ONE SINGLE FAMILY RESIDENCE

Drive Length	Drive Width	Drive Surface	Turn–a–round Required	Hose Lay	Sprinkler Requirements Mod–13d	Attic Pilot Heads & Patio Protection
Less < 200 feet	12'	Hard	No	More than 200 feet	Yes	Yes

GRADING & DRAINAGE PLAN
FOR
KIDWAI PROPERTY

A SINGLE FAMILY RESIDENCE
at 7381 EAST MONTERRA WAY

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 5 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA



Scale in feet
0 30 60 90
SCALE: 1" = 30'

ENGINEER

S S E
11350 SOUTH VIEWPOINTE WAY
YUMA, ARIZONA 85367
PRINCIPLE: STEVE SEITZ
PROJECT MANAGER: CLINT SCHERF
PH. 480–225–4920

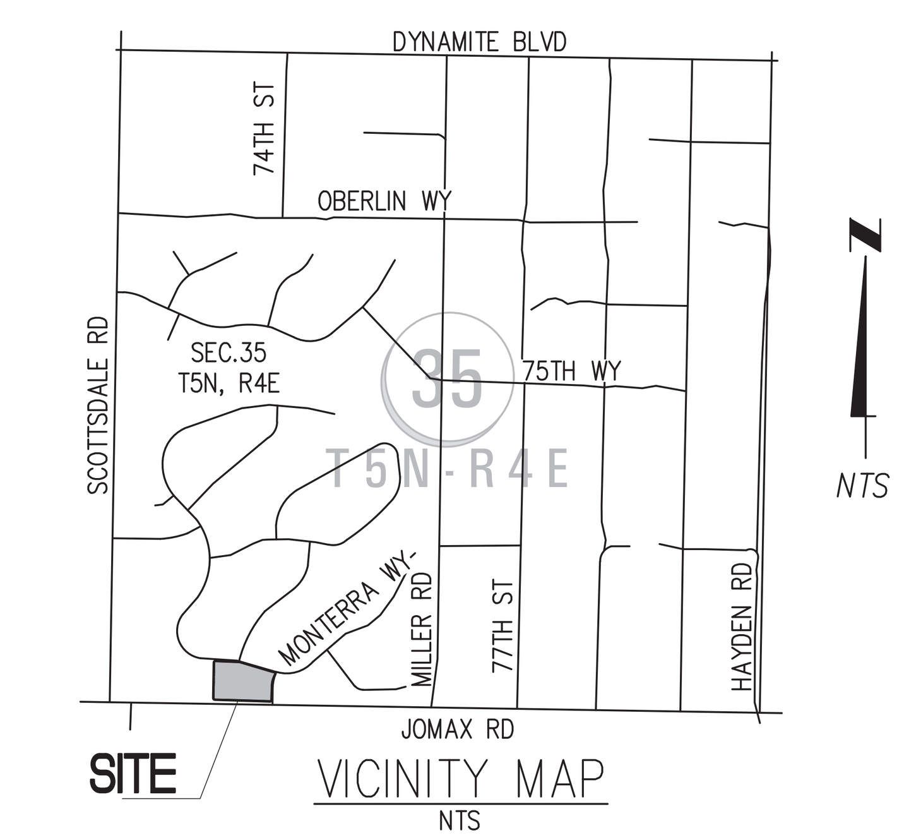
SURVEYOR

LAND DEVELOPMENT GROUP
8808 N CENTRAL AVE, SUITE 288
PHOENIX, AZ 85020
(602) 889–1984
SURVEY DATE: MAY, 2022

ENGINEERING NOTES:

1. TOPOGRAPHIC/BOUNDARY SURVEY WAS DONE BY OTHERS, S.S.E. MAKES NO ASSURANCES TO THE ACCURACY OF CONTOURS, BOUNDARY LOCATIONS, OR EASEMENT LOCATIONS WITHIN SAID SURVEY.
2. THE BUILDING SETBACKS, ENVELOPE AND LOT COVERAGE ARE SHOWN PER THE ZONING DISTRICT. SETBACKS AND OTHER RESTRICTIONS CREATED BY AMENDED STANDARDS OR COVENANTS MAY BE APPLICABLE. FINAL INTERPRETATION IS THE RESPONSIBILITY OF THE OWNER OF SAID PROPERTY AND THE CORRESPONDING GOVERNMENTAL AGENCY OVERSEEING SAID PROPERTY.
3. WATERMAIN AND SEWER LOCATIONS ARE BASED ON INFORMATION PROVIDED BY THE CITY OF SCOTTSDALE AND MONUMENTS FOUND IN THE FIELD MAY NOT BE EXACT. CONTRACTOR TO VERIFY ACTUAL SIZES, LOCATIONS AND TYPES OF ALL UTILITIES PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM BUILDING FOUNDATION FOR A MINIMUM OF 5% SLOPE FOR 10 FEET, NOTIFY ENGINEER OF ANY DISCREPANCIES.
5. ALL COMPACTION, EXCAVATION AND BACK FILL SHALL BE DONE IN ACCORDANCE WITH GEOTECHNICAL REPORT OR AT MINIMUM A 95% COMPACTION RATE IS REQUIRES PER ASTM D698.
6. ALL SURFACE AND UNDERGROUND DRAINAGE SYSTEM, ARE TO BE MAINTAINED BY OWNER, INCLUDING MAINTENANCE
7. AND CLEANING. PERIODIC MAINTENANCE WILL KEEP SYSTEM OPERATING PROPERLY.
7. POOL AND SPA BUILDING PERMIT TO BE OBTAINED BY OTHERS, AND DESIGN SPECS ARE NOT PART OF THIS PLAN. LOCATION OF SAID FACILITIES ON THIS PLAN ARE APPROXIMATIONS, AND ARE NOT FOR CONSTRUCTION.
8. ON–SITE PLANT SALVAGE INFORMATION SHOWN HEREON IS FOR CITY OF SCOTTSDALE PLAN APPROVAL PURPOSES
9. ONLY. S.S.E. ASSUMES NO LIABILITY FOR THE EVALUATION, SALVAGE ABILITY, REMOVAL, AND/OR RELOCATION OF
10. ON–SITE PLANT MATERIALS. CONTACT SALVAGE CONTRACTOR FOR MORE INFORMATION.
11. THE PAD ELEVATIONS OF ALL NEW A/C &/OR ELECTRO–MECHANICAL UNITS WILL BE SET AT OR ABOVE R.F.E.

LOCATION MAP



VICINITY MAP
NTS

BENCHMARK

MCDOT BRASS CAP IN HAND HOLE (0.9' DOWN), LOCATED AT THE INTERSECTION OF SCOTTSDALE ROAD AND JOMAX ROAD. HAVING AN ELEVATION OF 2016.13 FEET NAVD '88. (GDACS# 42503–1)

SITE BENCHMARK: BRASS CAP IN CENTERLINE OF MONTERRA WAY, AT INTERSECTION OF 73RD WAY, HAVING AN ELEVATION OF 2036.29 FEET NAVD '88.

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

SITE DATA

LEGAL DESCRIPTION
LOT 2 OF MOTERRA SUBDIVISION (MCR 378–27), SECTION THIRTY FIVE (35), TOWNSHIP FIVE (5) NORTH, RANGE FOUR (4) EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

AREA: 121,968 SqFt (2.8 Ac)
APN: 212–23–003
MCR: 378–27
ZONING: R1–70 PRD, ESL, FO
Q.S.: 49–45
LANDFORM CLASSIFICATION: LOWER DESERT

BUILDING SETBACKS (BSB):
FRONT/STREET SIDE 40' (NORTH)
SIDE 20' (WEST)
REAR 30' (SOUTH)

NAOS REQUIREMENTS:
REQUIRED: 30,492 SqFt (25% OF 121,968 SqFt)
[2–5% SLOPE = 25% OF LOT (LOWER DESERT AREA)]

PROVIDED: 72,074 SqFt (RECORDED, PER MCR 378–27)
UNDISTURBED: 72,074 SqFt (100%)
DISTURBED / REVEGED: 0 SqFt (0%)

UNDER ROOF: ***REFERENCE BUILDING PLANS FOR DETAILS
LOT COVERAGE: 8,519 SqFt PROPOSED UNDERROOF
(6.9% TOTAL LOT COVERAGE)

WALL QUANTITIES

SCREEN WALL (CMU): 370 LF

NATIVE PLANTS

OWNER RESPONSIBLE FOR PROVIDING APPROVED NATIVE PLANT SURVEY TO CITY IF REQUIRED. NATIVE PLANT INFORMATION WILL NOT APPEAR ON GRADING & DRAINAGE PLAN

*** THERE IS NO PROTECTED NATIVE PLANTS AFFECTED BY PROPOSED CONSTRUCTION

FLOOD INSURANCE RATE MAP (FIRM)

COMMUNITY NUMBER	PANEL NUMBER (Panel Date)	SUFFIX	DATE OF FIRM (Index Date)	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE USE DEPTH)
04013C	1306 / 07/20/21	M	7/20/21	X	N/A

ENGINEER'S CERTIFICATION STATEMENT

THE LOWEST FLOOR ELEVATION(S) AND/OR FLOODPROOFING ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A ONE–HUNDERED YEAR STORM, AND ARE IN ACCORDANCE WITH CITY OF SCOTTSDALE REVISED CODE, CHAPTER 37 – FLOODPLAIN & STORMWATER REGULATIONS.

OWNER

FARHAT KIDWAI
27038 NORTH 73RD STREET
SCOTTSDALE, AZ 85266
C/O: GEORGE KASNOFF
(480) 262–6883
KASNOFF@AOL.COM

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

PROJECT INFO – PLEASE CONTACT PROJECT MANAGER CLINT SCHERF (480) 225-4920

08/22/22	FIRST SUBMITTAL – CITY OF SCOTTSDALE
11/08/22	FIRST SUBMITTAL – CITY OF SCOTTSDALE
1/23/23	FIRST SUBMITTAL – CITY OF SCOTTSDALE

(480) 225-4920 SSEAZ2004@GMAIL.COM
CIVIL ~ STRUCTURAL
SSE
RESIDENTIAL ~ COMMERCIAL
11350 SOUTH VIEWPOINTE WAY
YUMA, ARIZONA 85367

CIVIL ENGINEER

PROJECT MANAGER: CLINT SCHERF (480) 225-4920

Grading & Drainage Plan

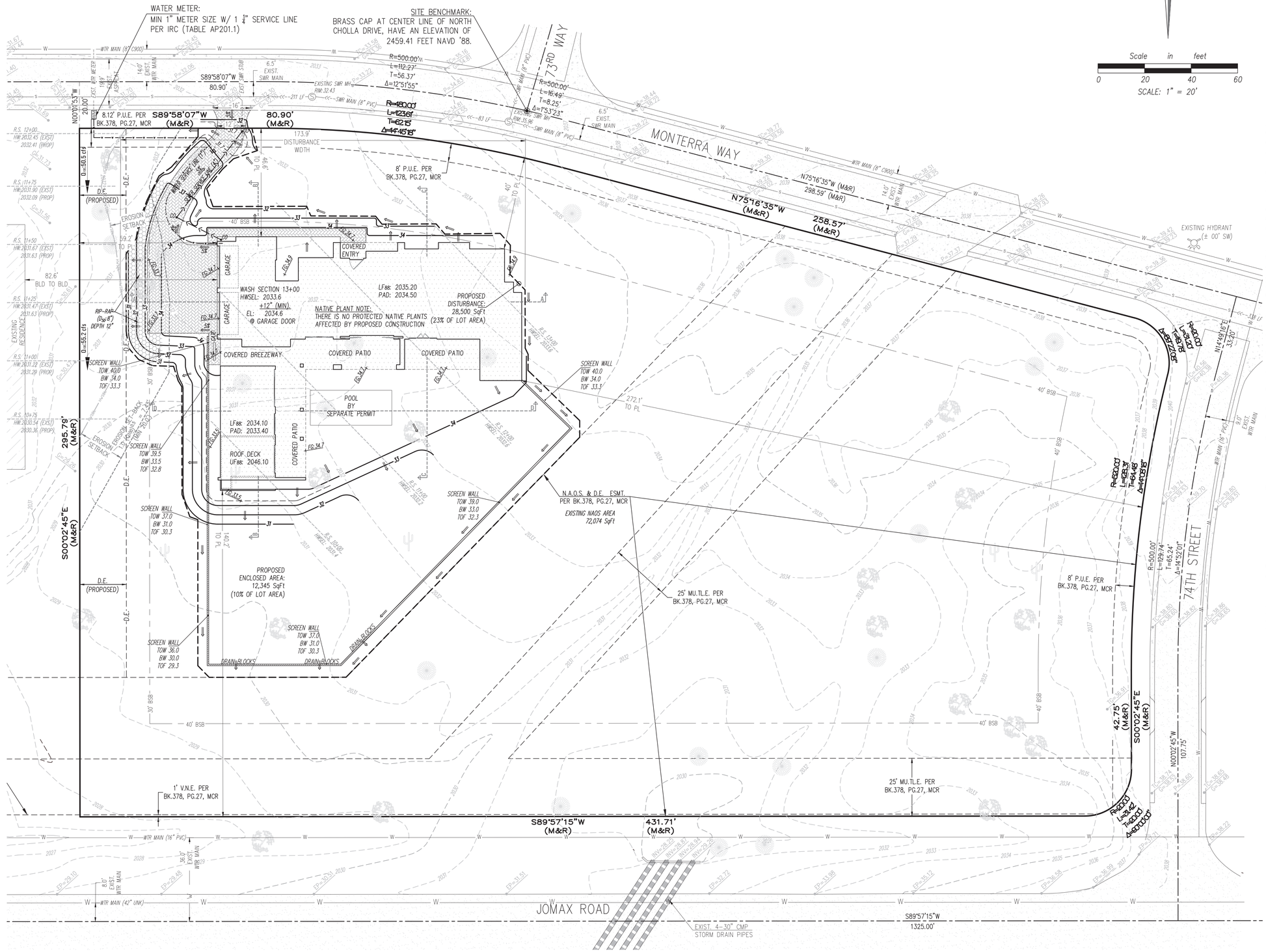
LOT 2 - MONTERRA
7381 EAST MONTERRA WAY
SCOTTSDALE, ARIZONA

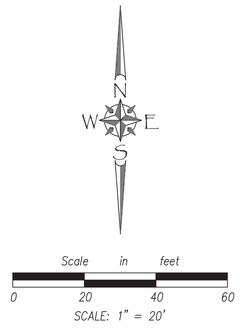
SCALE: AS NOTED
PROJECT No. SSE-967-2022
SHEET: GD 1 of 03

COS PLAN CHK# 8396-22

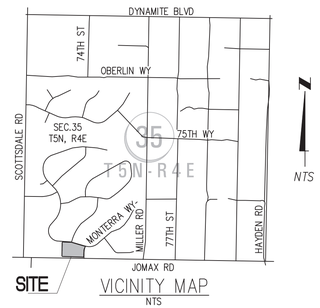
GRADING & DRAINAGE PLAN
FOR
KIDWAI PROPERTY
A SINGLE FAMILY RESIDENCE
at 7381 EAST MONTERRA WAY

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 5 NORTH, RANGE 4
EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA





LOCATION MAP



BENCHMARK

MCDOT BRASS CAP IN HAND HOLE (0.9' DOWN), LOCATED AT THE INTERSECTION OF SCOTTSDALE ROAD AND JOMAX ROAD. HAVING AN ELEVATION OF 2016.13 FEET NAVD '88. (GDACS# 42503-1)

SITE BENCHMARK: BRASS CAP IN CENTERLINE OF MONTERRA WAY, AT INTERSECTION OF 73RD WAY, HAVING AN ELEVATION OF 2036.29 FEET NAVD '88.

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

SITE DATA

LEGAL DESCRIPTION
LOT 2 OF MOTERRA SUBDIVISION (MCR 378-27), SECTION THIRTY FIVE (35), TOWNSHIP FIVE (5) NORTH, RANGE FOUR (4) EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

AREA:	*121,968 SqFt (2.8 Ac)*
APN:	*212-23-003*
MCR:	*378-27*
ZONING:	*R1-70 PRD, ESL, FO*
Q.S.:	*49-45*
LANDFORM CLASSIFICATION:	*LOWER DESERT*

BUILDING SETBACKS (BSB):

FRONT/STREET SIDE	*40' (NORTH)*
SIDE	*20' (WEST)*
REAR	*30' (SOUTH)*

NAOS REQUIREMENTS:
REQUIRED: 30,492 SqFt (25% OF 121,968 SqFt)
[2-5% SLOPE = 25% OF LOT (LOWER DESERT AREA)]
PROVIDED: 72,074 SqFt (RECORDED, PER MCR 378-27)
UNDISTURBED: 72,074 SqFt (100%)
DISTURBED / REVEGED: 0 SqFt (0%)

*UNDER ROOF: ***REFERENCE BUILDING PLANS FOR DETAILS*
LOT COVERAGE: 8,519 SqFt PROPOSED UNDERROOF (6.9% TOTAL LOT COVERAGE)

LEGEND

- *MONUMENT LINE*
- *PROPERTY LINE*
- *OTHERS PROPERTY LINE*
- *EASEMENT*
- *B.S.L. BUILDING SETBACK LINE*
- *SANITARY SEWER LINE*
- *W WATER LINE*
- *HYDRANT*
- *WATER VALVE*
- *WM WATER METER*
- *T TELEPHONE BOX*
- *C CABLE TV BOX*
- *E TRANSFORMER*
- *S SANITARY MANHOLE*
- *FOUND REBAR (AS NOTED)*
- *FOUND BRASS CAP FLUSH*
- *SET REBAR (AS NOTED)*
- *P.U.E. PUBLIC UTILITIES EASEMENT*
- *D.E. DRAINAGE EASEMENT*
- *S.V.E. SIGHT VISIBILITY EASEMENT*
- *R/W RIGHT OF WAY*
- *OCOTILLO*
- *BARREL CACTUS*
- *SAGUARO*
- *PALO VERDE*
- *MESQUITE*
- *RIPRAP/ROCK*

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA 811
Call 811 or click Arizona811.com

08/22/22	FIRST SUBMITTAL - CITY OF SCOTTSDALE
11/08/22	FIRST SUBMITTAL - CITY OF SCOTTSDALE
1/23/23	FIRST SUBMITTAL - CITY OF SCOTTSDALE

PROJECT INFO - PLEASE CONTACT PROJECT MANAGER CLINT SCHERF (480) 225-4920

CIVIL - STRUCTURAL
RESIDENTIAL - COMMERCIAL
11350 SOUTH VIEWPOINTE WAY
YUMA, ARIZONA 85367
(480) 225-4920 SSEAZ0049@GMAIL.COM
CIVIL ENGINEER
PROJECT MANAGER: CLINT SCHERF (480) 225-4920

Grading & Drainage Plan

LOT 2 - MONTERRA
7381 EAST MONTERRA WAY
SCOTTSDALE, ARIZONA

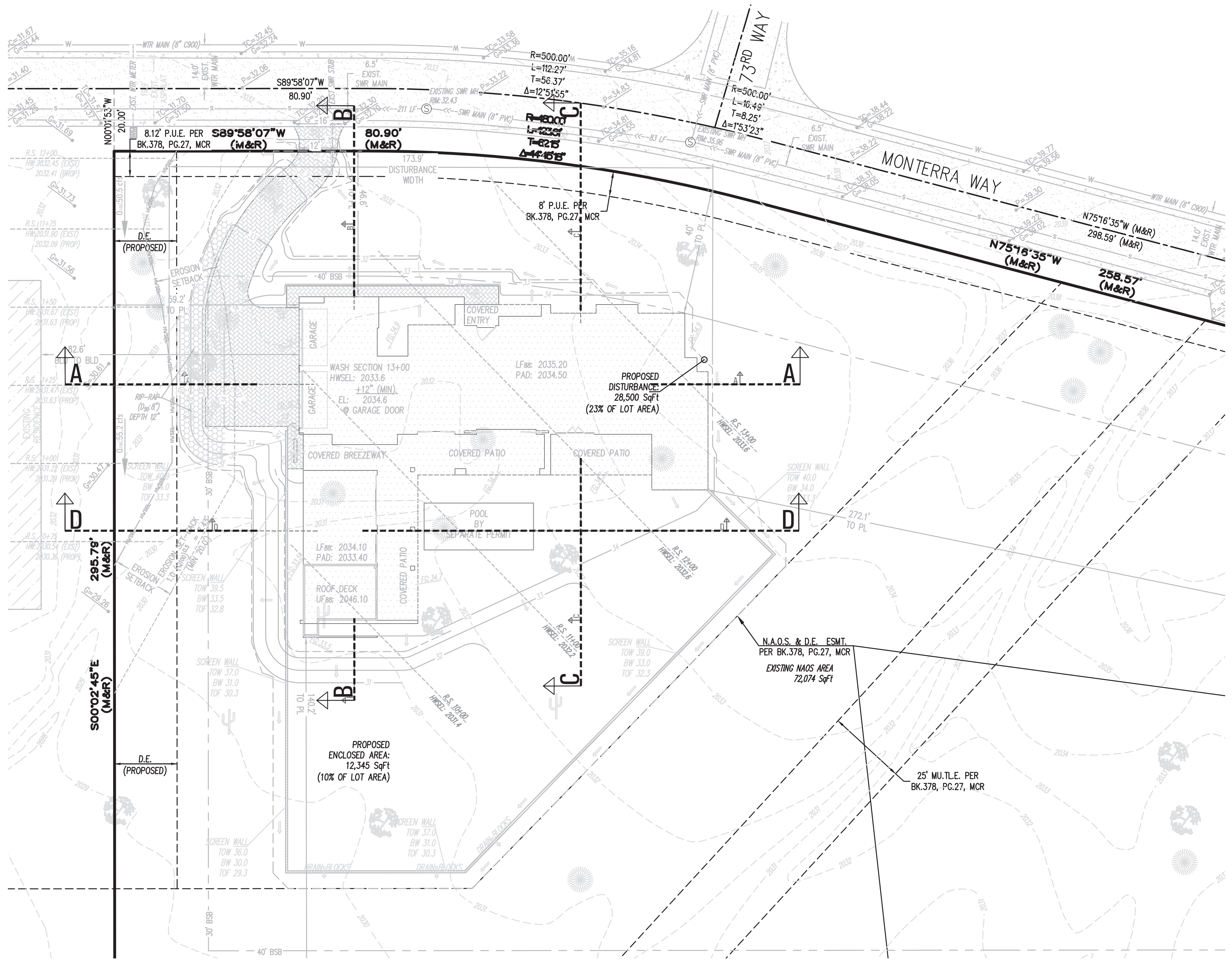
SCALE: AS NOTED
PROJECT No. SSE-967-2022
SHEET: GD 2 of 03

COS PLAN CHK# 8396 - 2 2

GRADING & DRAINAGE PLAN
FOR
KIDWAI PROPERTY

A SINGLE FAMILY RESIDENCE
at 7381 EAST MONTERRA WAY

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 5 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA



WALL DETAIL

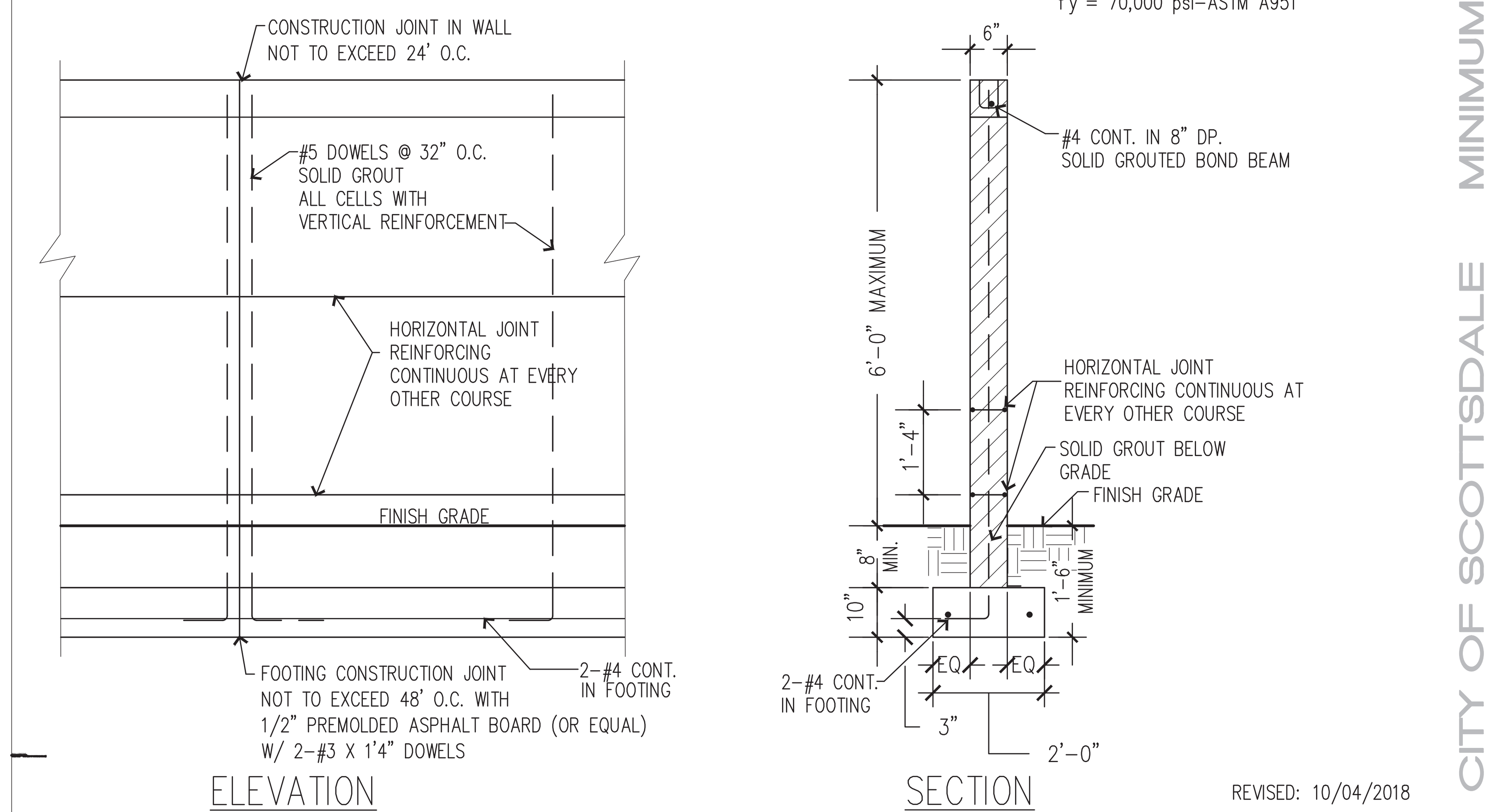
- THIS DETAIL SHALL APPLY TO WALLS 6'-0" OR LESS IN HEIGHT
- SEPARATE APPROVAL BY THE PLANNING DEPARTMENT IS REQUIRED
- SEPARATE APPROVAL BY THE STORMWATER DEPARTMENT IS REQUIRED
- INDICATE DRAIN BLOCKS AT FINISH GRADE, AS REQUIRED, ON FINAL PLANS
- THE CITY OF SCOTTSDALE SHALL NOT ADDRESS ANY VARIATION OF THE DETAIL SHOWN BELOW.
- THE CITY SCOTTSDALE MAKES NO RESERVATIONS AND ASSUMES NO RESPONSIBILITY OR LIABILITY IN PROVIDING THIS STANDARD DETAIL, OWNERS/APPLICANTS AND PROFESSIONALS USING THIS DETAIL SHALL ASSUME FULL RESPONSIBILITY FOR ITS DESIGN
- OWNERS/APPLICANTS ARE ENCOURAGED TO CONSULT WITH A PROFESSIONAL ENGINEER OR ARCHITECT LICENSED BY THE STATE OF ARIZONA REGARDING THE NEEDS FOR THEIR PROJECT, AN ENGINEER OR ARCHITECT LICENSED BY THE STATE OF ARIZONA COULD DETERMINE DIFFERENT DETAILS OR SPECIFICATIONS.
- OWNER/APPLICANT/BUILDER IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS AT THE FOOTING'S BEARING SURFACE AND IS SOLELY RESPONSIBLE FOR THE PERFORMANCE OF FOOTING.

WALL QUANTITIES

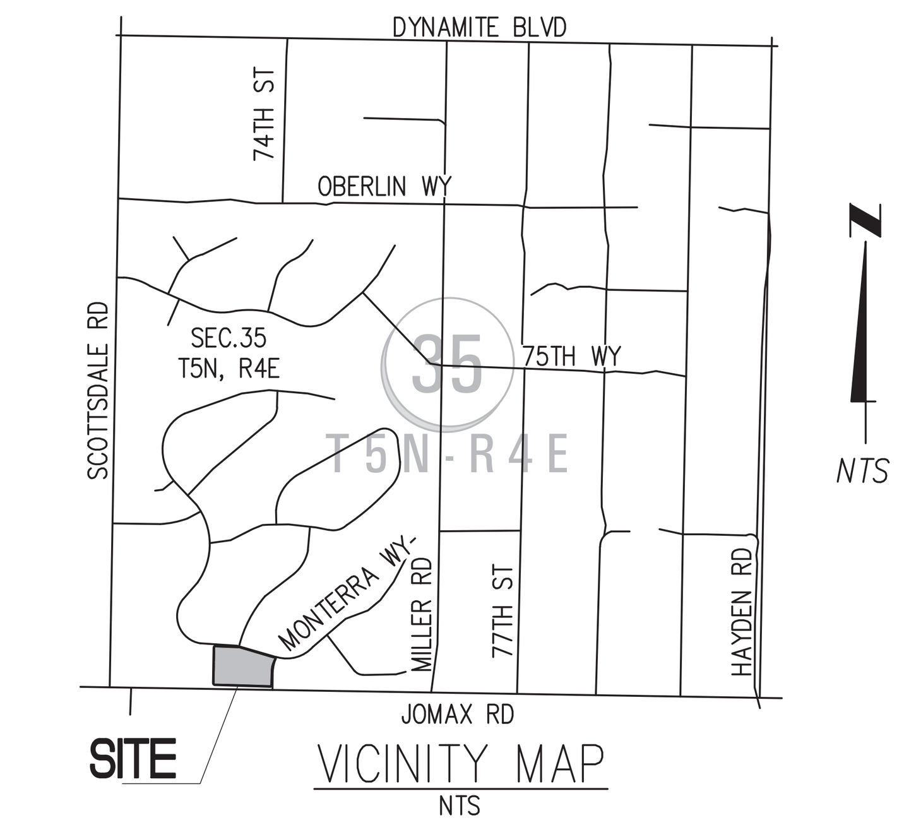
SCREEN WALL (CMU): 370 LF

8" MASONARY WALL
PER 2015 IBC

WIND LOAD: 21 psf(ultimate) per ASCE 7-16
CMU: f'm: 1900 psi-ASTM C90
MORTAR: ASTM TYPE S-ASTM C270
GROUT: f'c = 2000 psi-ASTM C476
REINFORCING: f'y = 60,000 psi-ASTM A615
CONCRETE: f'c = 2500 psi-ASTM A615
JOINT REINFORCING: W1.7 LADDER TYPE, f'y = 70,000 psi-ASTM A951



LOCATION MAP



BENCHMARK

MCDOT BRASS CAP IN HAND HOLE (0.9' DOWN), LOCATED AT THE INTERSECTION OF SCOTTSDALE ROAD AND JOMAX ROAD. HAVING AN ELEVATION OF 2016.13 FEET NAVD '88. (GDACS# 42503-1)

SITE BENCHMARK: BRASS CAP IN CENTERLINE OF MONTERRA WAY, AT INTERSECTION OF 73RD WAY, HAVING AN ELEVATION OF 2036.29 FEET NAVD '88.

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

SITE DATA

LEGAL DESCRIPTION
LOT 2 OF MOTERRA SUBDIVISION (MCR 378-27), SECTION THIRTY FIVE (35), TOWNSHIP FIVE (5) NORTH, RANGE FOUR (4) EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

AREA:	121,968 SqFt (2.8 Ac)
APN:	212-23-003
MCR:	378-27
ZONING:	R1-70 PRD, ESL, FO
Q.S.:	49-45
LANDFORM CLASSIFICATION:	LOWER DESERT

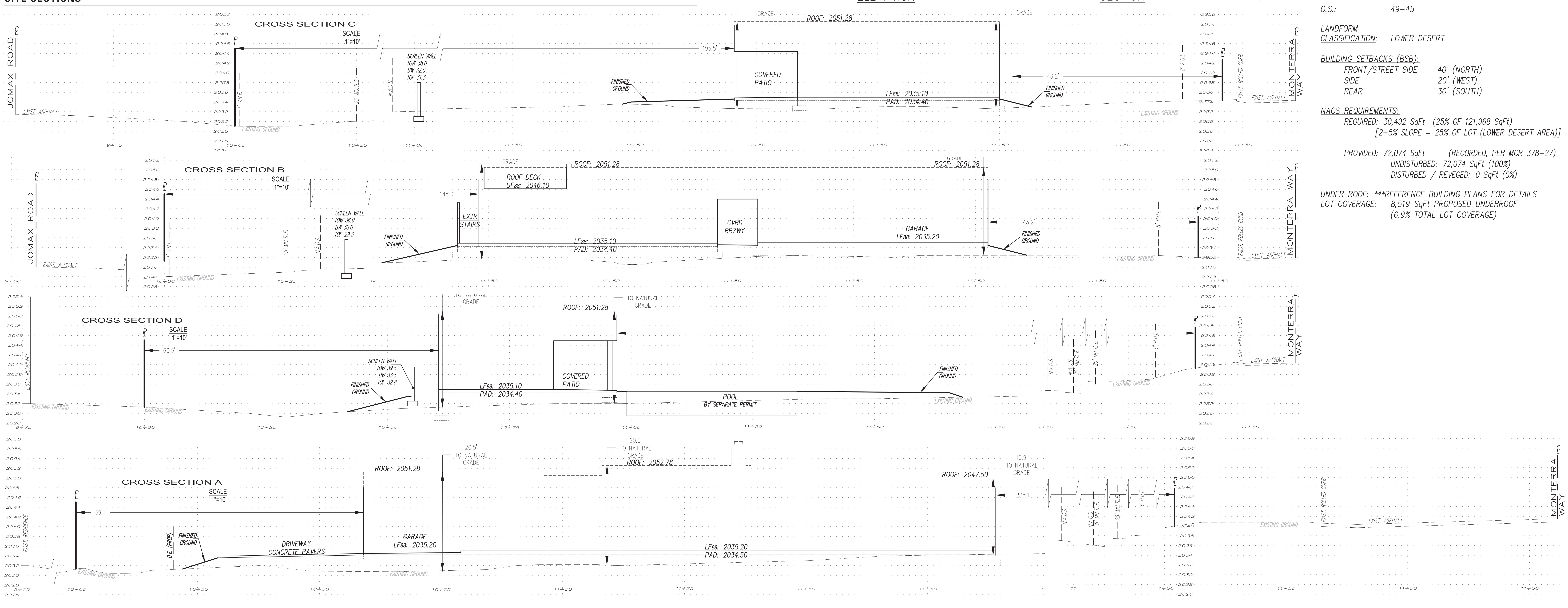
BUILDING SETBACKS (BSB):
FRONT/STREET SIDE 40' (NORTH)
SIDE 20' (WEST)
REAR 30' (SOUTH)

NAOS REQUIREMENTS:
REQUIRED: 30,492 SqFt (25% OF 121,968 SqFt)
[2-5% SLOPE = 25% OF LOT (LOWER DESERT AREA)]

PROVIDED: 72,074 SqFt (RECORDED, PER MCR 378-27)
UNDISTURBED: 72,074 SqFt (100%)
DISTURBED / REVEGED: 0 SqFt (0%)

UNDER ROOF: ***REFERENCE BUILDING PLANS FOR DETAILS
LOT COVERAGE: 8,519 SqFt PROPOSED UNDERROOF (6.9% TOTAL LOT COVERAGE)

SITE SECTIONS



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

08/22/22	FIRST SUBMITTAL - CITY OF SCOTTSDALE	
11/08/22	FIRST SUBMITTAL - CITY OF SCOTTSDALE	
1/23/23	FIRST SUBMITTAL - CITY OF SCOTTSDALE	

PROJECT INFO - PLEASE CONTACT PROJECT MANAGER CLINT SCHERF (480) 225-4920

CIVIL ~ STRUCTURAL
SSE
RESIDENTIAL ~ COMMERCIAL
1150 SOUTH VIEWPOINTE WAY
YUMA, ARIZONA 85367
(480) 225-4920 SSEAZ2004@GMAIL.COM
CIVIL ENGINEER
STEVEN J. SEIZ 33562
Expires: 3/31/25
PROJECT MANAGER: CLINT SCHERF (480) 225-4920

Grading & Drainage Plan

LOT 2 · MONTERRA
7381 EAST MONTERRA WAY
SCOTTSDALE, ARIZONA

SCALE: AS NOTED
PROJECT No. SSE-967-2022
SHEET: GD 3 of 03
COS PLAN CHK# 8396-22