

**DRAINAGE REPORT
PROPERTY ASSEMBLAGE OF LOT 11
CAREFREE RANCH HOMESTEADS**

A Portion of the
NW 1/4, SEC. 18, T6N, R5E
Of the Gila & Salt River Base and Meridian,
City of Scottsdale
Maricopa County, Arizona

ASSESSOR PARCEL NUMBERS:
LOT 11A - 219-47-054C
LOT 11B 219-47-054B
LOT 11C – 219-47-054A

Graham Job Number: 25-029

Prepared by:
GRAHAM SURVEYING & ENGINEERING, INC.
Post Office Box 1240
Carefree, Arizona 85377
Office (480) 488-4393
brziha@grahamsande.com



June 4, 2025

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1.0 Introduction

1.1 SCOPE

This project will split lot 11 of Carefree Ranch Homesteads into 3 lots. The split was partially approved in 1997 but not finalized. This submittal will complete the partial approval. Provided herein are offsite and onsite hydrologic and hydraulic analyses/designs.

This report does not include ground water hydrology or hydrogeology. Any issues that arise must be addressed by an engineering firm or an engineer whose specialty covers ground water issues. Graham Surveying & Engineering, Inc. will be held harmless for any damages as a result of ground water issues.

1.2 SITE DESCRIPTION

The project is east of the intersection of Longhorn Dr. and Limousin Dr., approximately 3 miles north of the intersection of Cave Creek Rd. and Pima Rd. (Figure 1). The lot is within a portion of the northwest one-quarter of Section 18, Township 6 North, Range 5 East of the Gila & Salt River Base and Meridian, City of Scottsdale, Maricopa County, Arizona. This lot has a gross area of 36.01 acres.

A ridge falls to the south along the east boundary of the project with grades steeply falling to the west across most of the project. Existing grades in the north 1/6 of the project fall steeply to the southeast to a valley at the existing road. Moderately sparse vegetation exists typical of the Sonoran Desert (Figure 2).

2.0 Existing Drainage Conditions

One large wash (W1) bisects the northeast property boundary flowing southwest. The wash turns south to follow the west property boundary and meander on and off the parcel. Close to a dozen smaller fingers flow into W1 from the west and east.

3.0 Flood Zone Information

The site is located within Zone D of FEMA FIRM Panel 882 of 4425, Community No. 045012 on Map Number 04013C0882 L, revised October 16, 2013. Areas within Zone D are classified by FEMA as “Flood risks undetermined.”

4.0 Hydrology

The Desert Mountain Area Drainage Master Study (DM ADMS) was completed by the Flood Control District of Maricopa County (FCDMC) and reviewed to estimate 100-year flowrates that exceed 50 cfs for this project. The DM ADMS was performed using Flo-2D software and access to this data is provided on the Flood Control website. The study area was divided into cells and each cell reports the 100-year flowrate in the dominant flow direction (Figure 3A). Sections were drawn at crucial locations through each wash (Figures 3B, 3C & 3D). Flowrates were determined by using the hydrograph by line feature in the FLO 2D GIS maps online or by a pre-defined cross section of the study (Appendix A). No flow splits exist upstream of the site, therefore flowrates were not multiplied by a factor of 1.3. A summary of flow data is found in Table 1 below.

Table 1. Flow Summary

Wash Label	100-year flow (cfs)
W1 ENTRY	122
W1	174
W1 EXIT	280

(see Appendix A)

Graham Surveying & Engineering, Inc. acknowledges the referenced FLO 2D model to be the best and most accurate storm water data available. This firm understands and accepts the referenced FLO2D model results.

5.0 Drainage Management Plan

This project proposes no physical improvements. Each individual lot will be required to produce a Grading & Drainage Plan at the time of development. This project will include a drainage easement dedication to encompass the 100-year flood limits of the wash W1. The flood limits shown are taken from the DM ADMS FLO 2D cells (see Figure 4).

6.0 Conclusion

- This drainage report and accompanying Grading and Drainage plan was made to comply with City of Scottsdale and Maricopa County Standards and Policies.
- A drainage easement will be dedicated to encompass any 100 year flow that exceeds 50 cfs.

7.0 References

Design Standards & Policies Manual, City of Scottsdale, January 2018

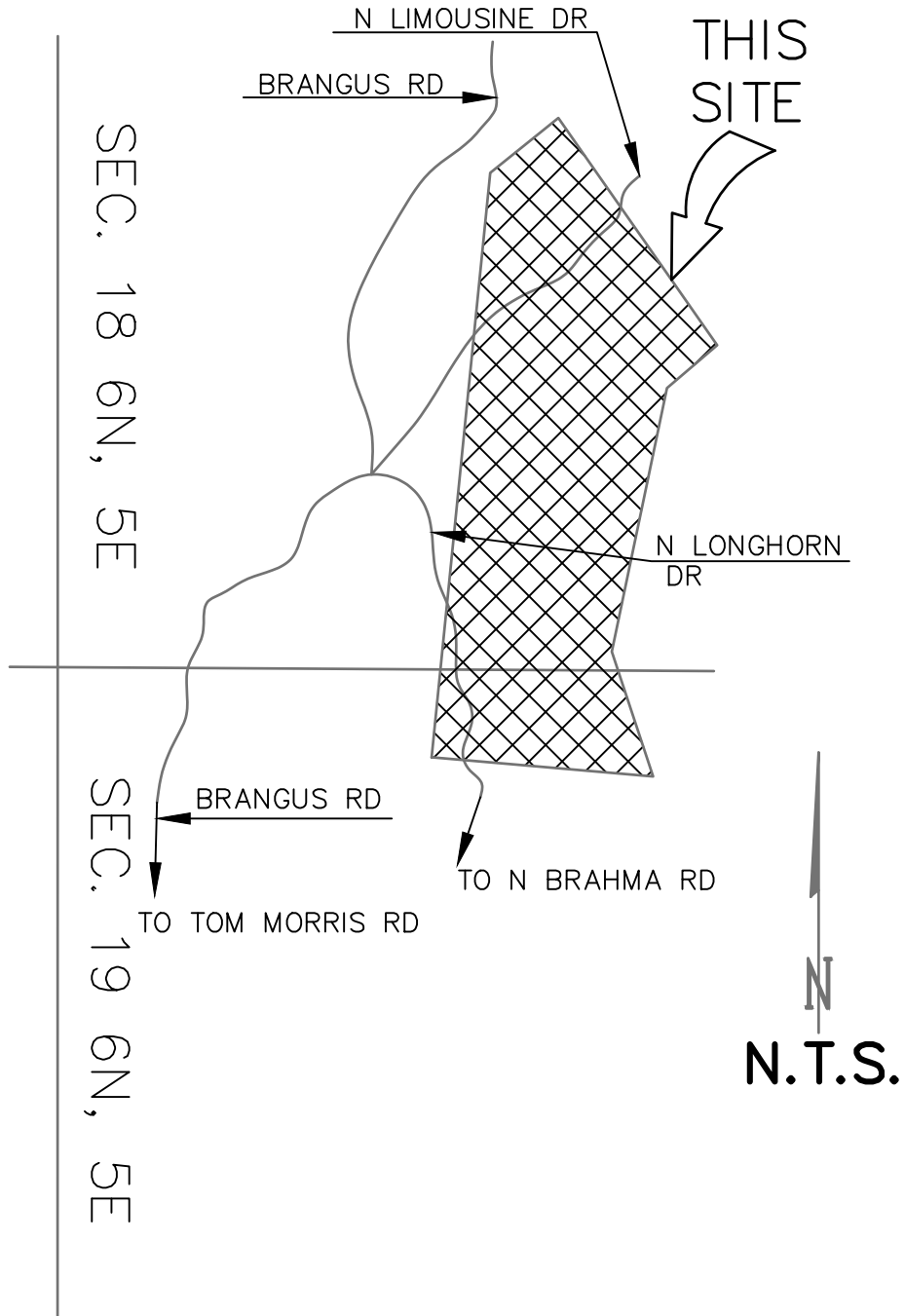
Drainage Design Manual for Maricopa County, Arizona, Volume I Hydrology

Drainage Design Manual for Maricopa County, Arizona, Volume II Hydraulics

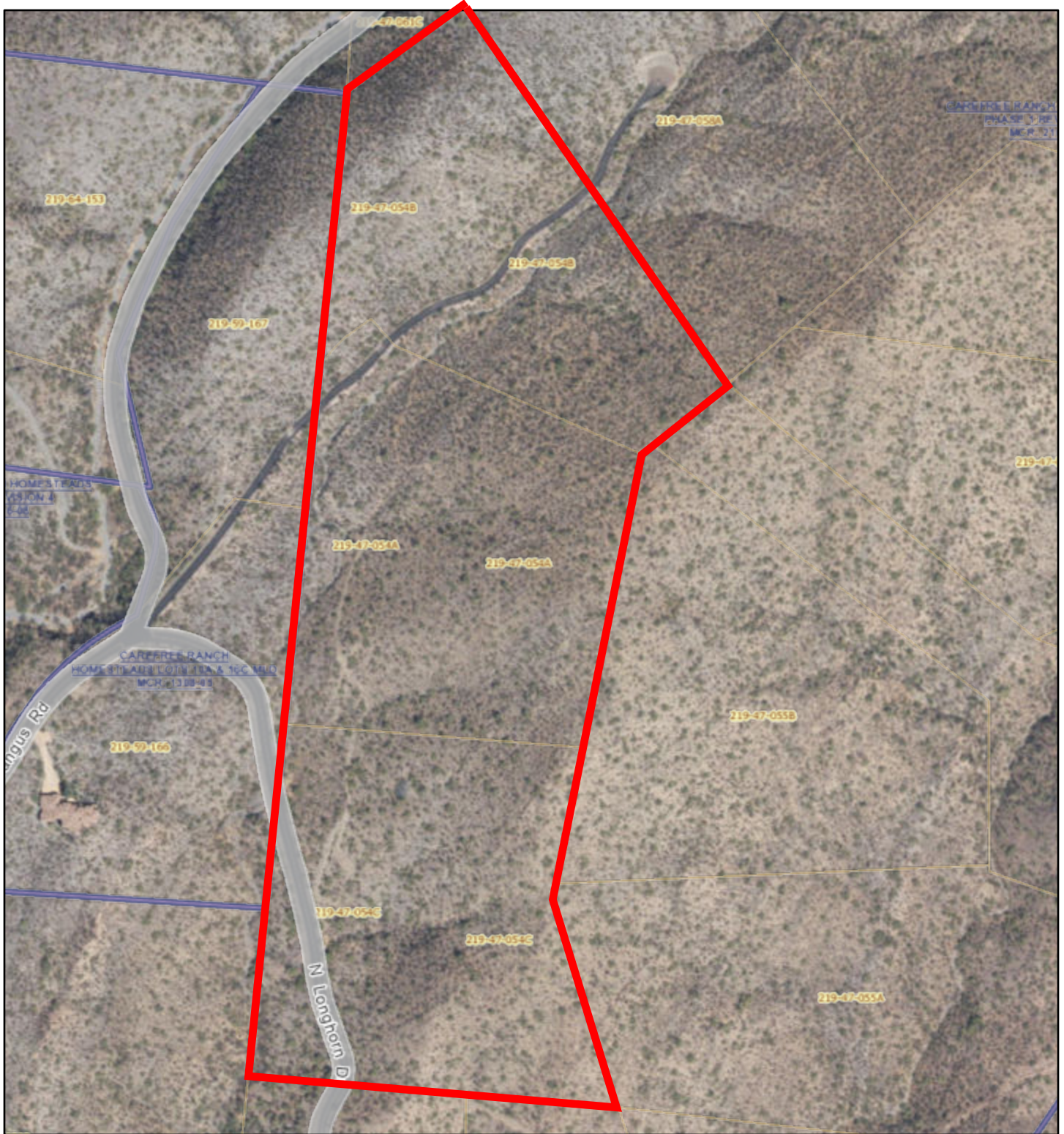
FIGURES

FIGURE 1 VICINITY MAP

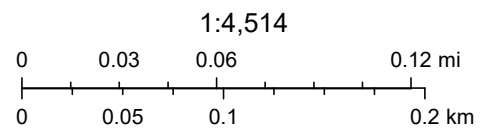
MINOR LAND DIVISION PLAT
PROPERTY ASSEMBLAGE OF LOT 11 CAREFREE RANCH HOMESTEADS



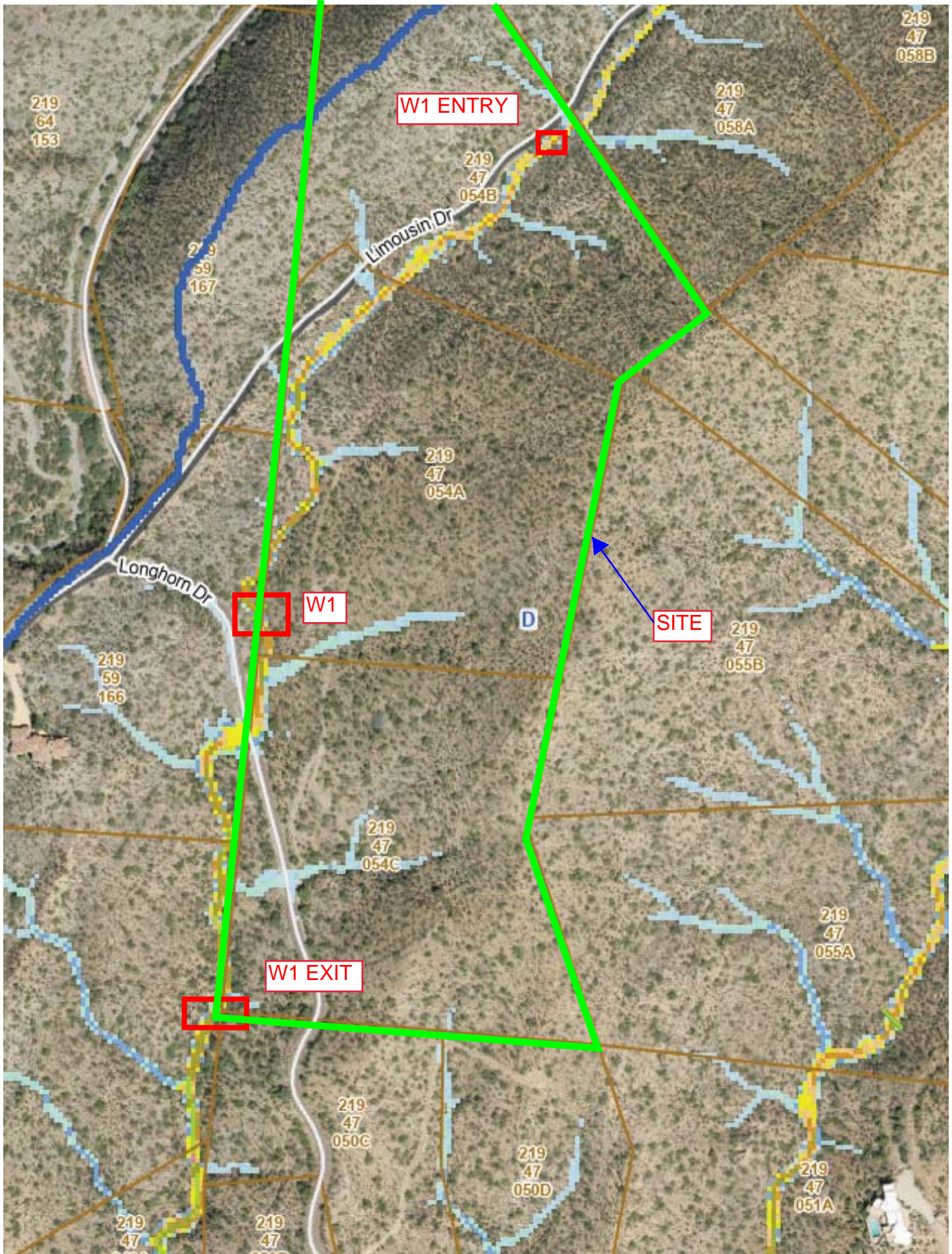
GRAHAM SURVEYING & ENGINEERING INC.
Civil Engineers & Land Surveyors
P.O. BOX 1240, Carefree, Arizona 85377
(480) 488-4393
JOB # 25-029

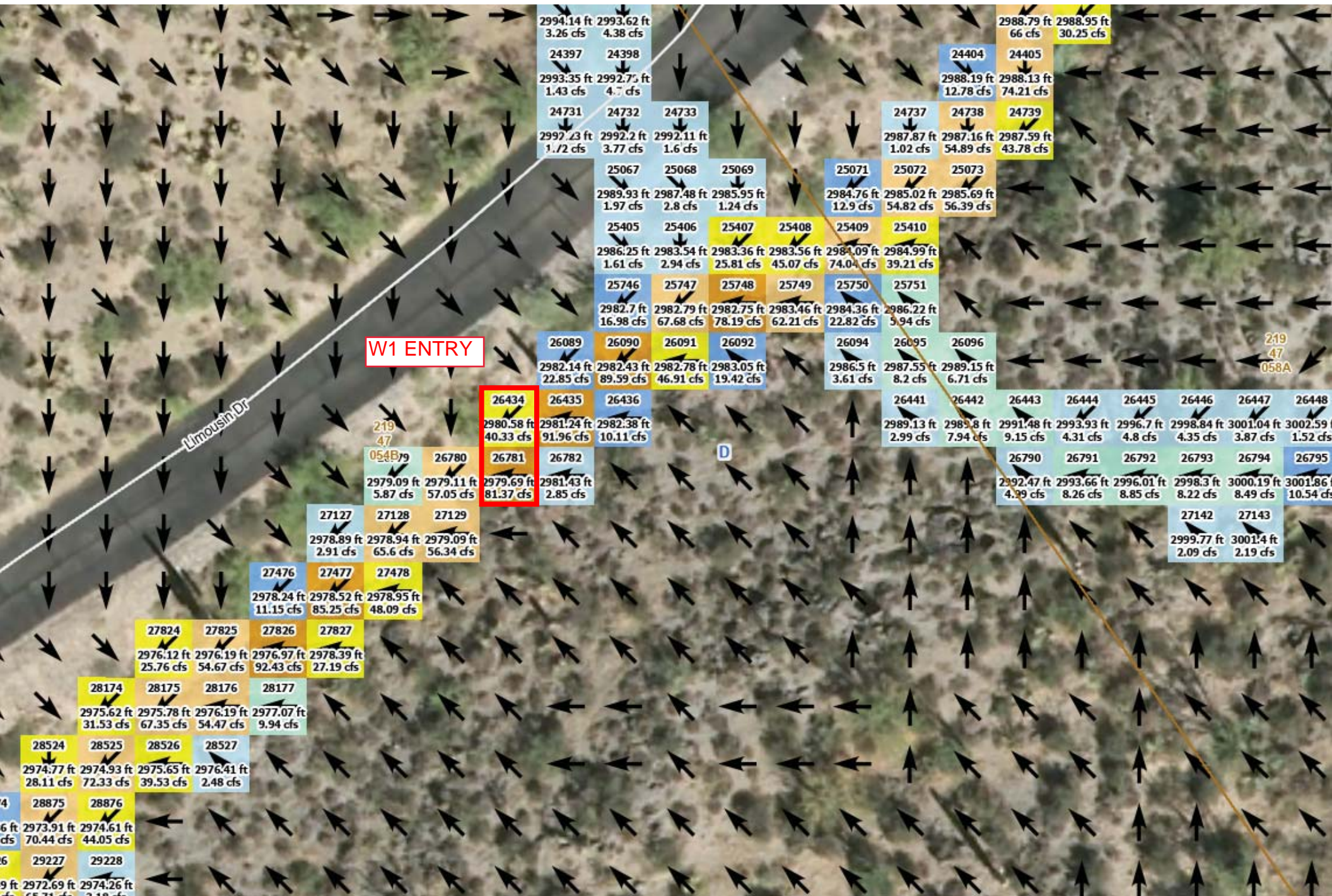


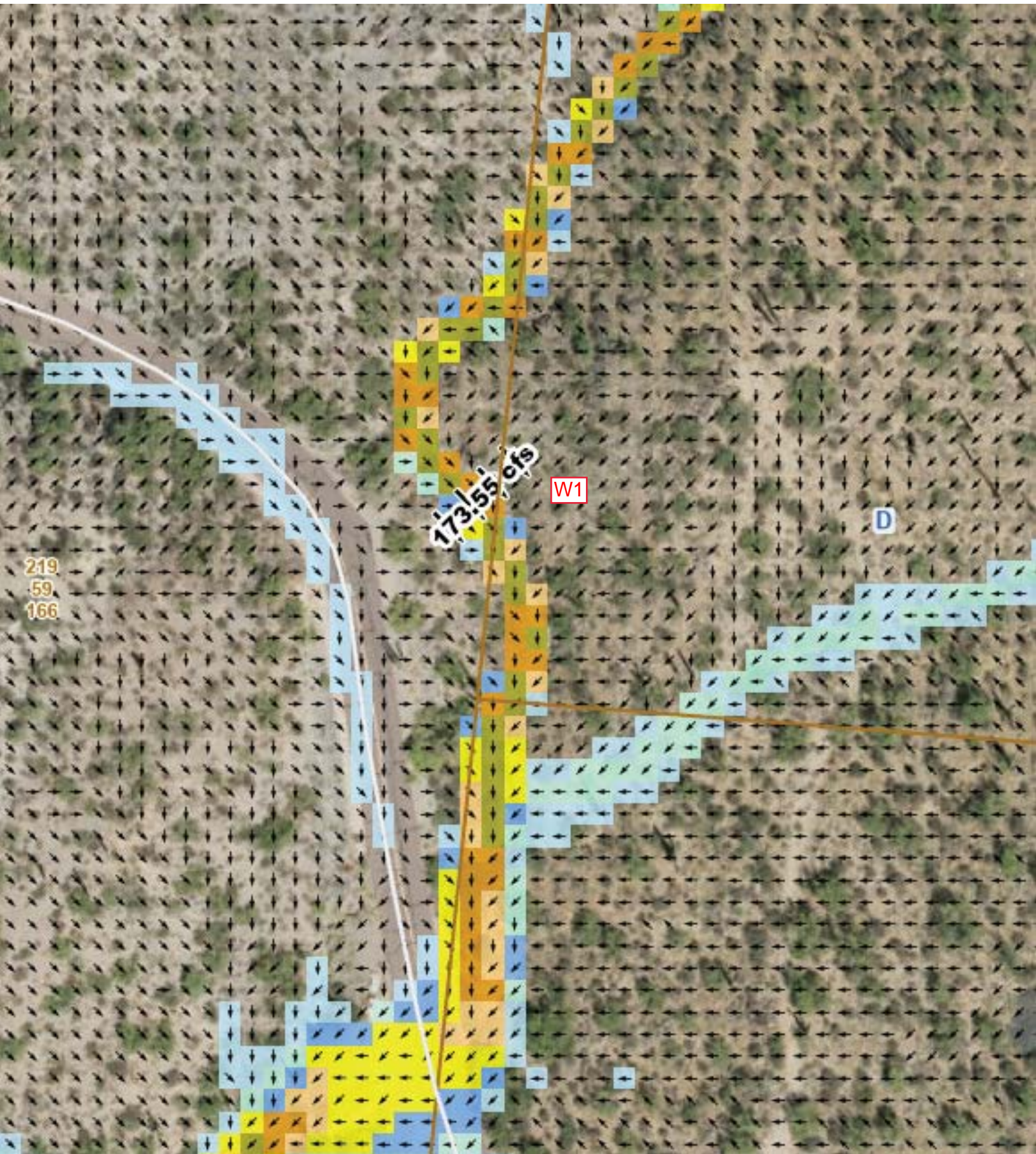
June 4, 2025



Maricopa County GIO, Maricopa County Assessor's Office







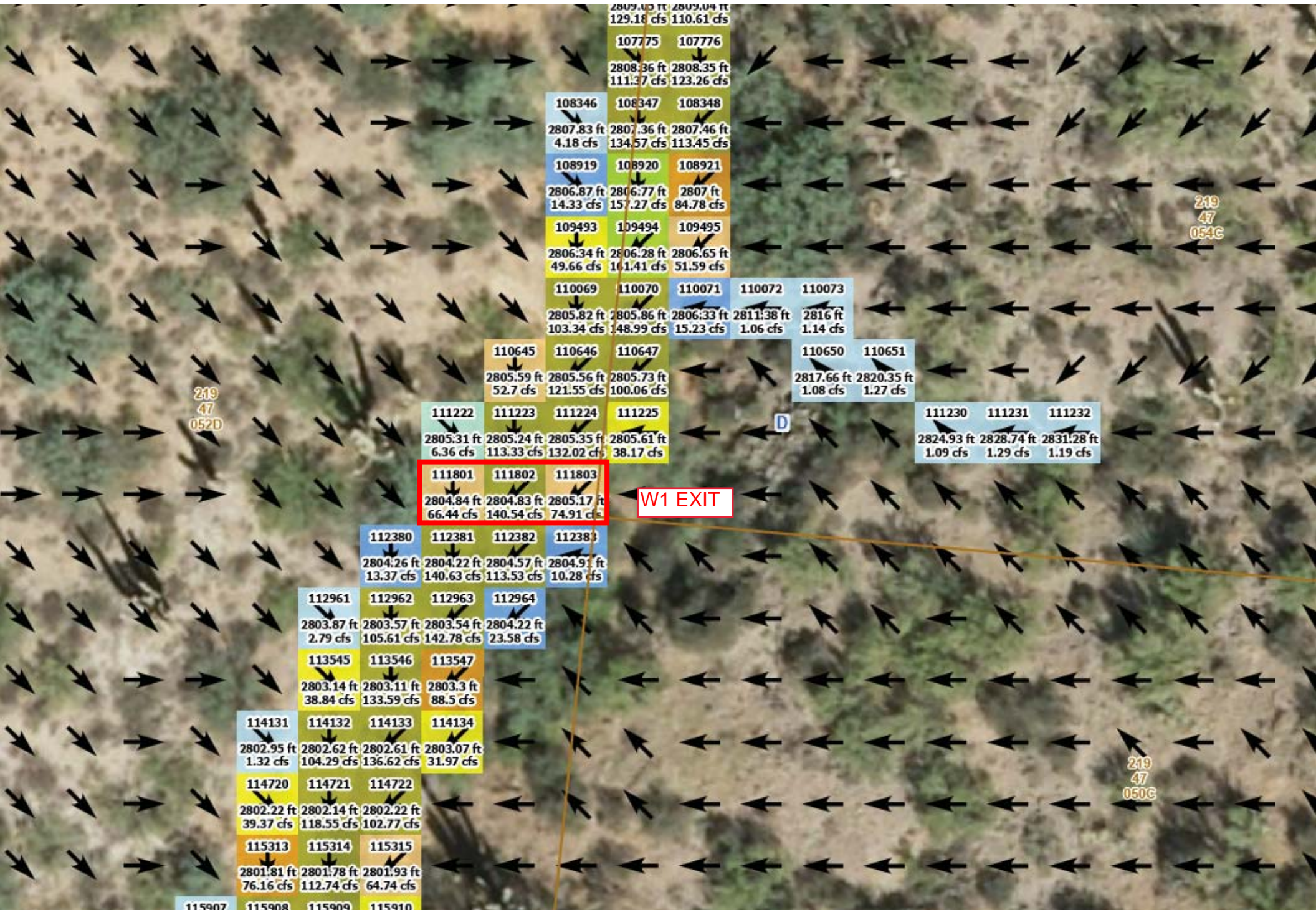
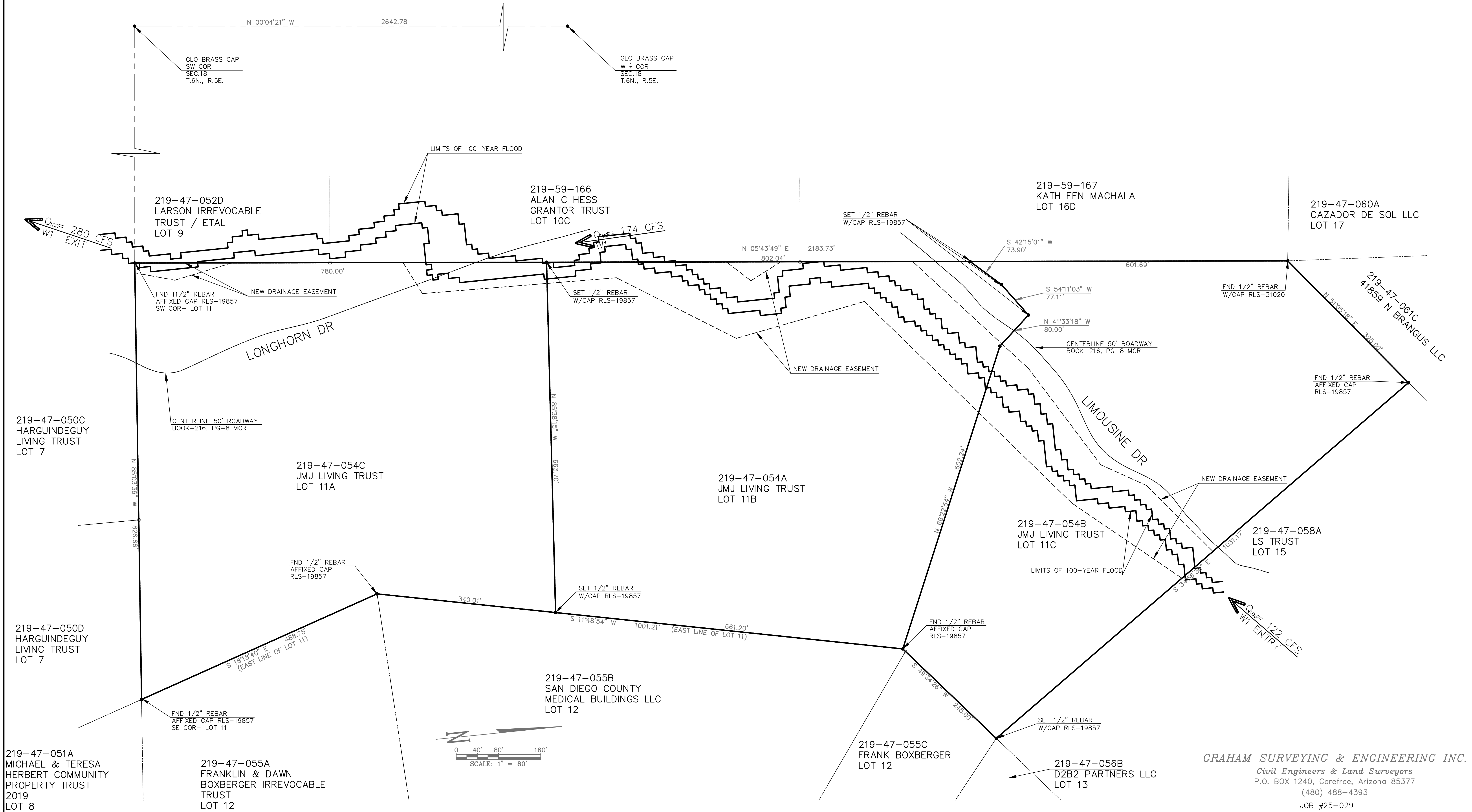


FIGURE 4

LOT 11 CAREFREE RANCH HOMESTEADS

RECORDED IN BOOK 249 OF MAPS, PAGE 36 MCR
SITUATED IN SW 1/4 OF SECTION 18, TOWNSHIP 6 NORTH, RANGE 5 EAST,
OF THE GILA AND SALT RIVER BASE AND MERIDIAN, SCOTTSDALE, MARICOPA COUNTY, ARIZONA.

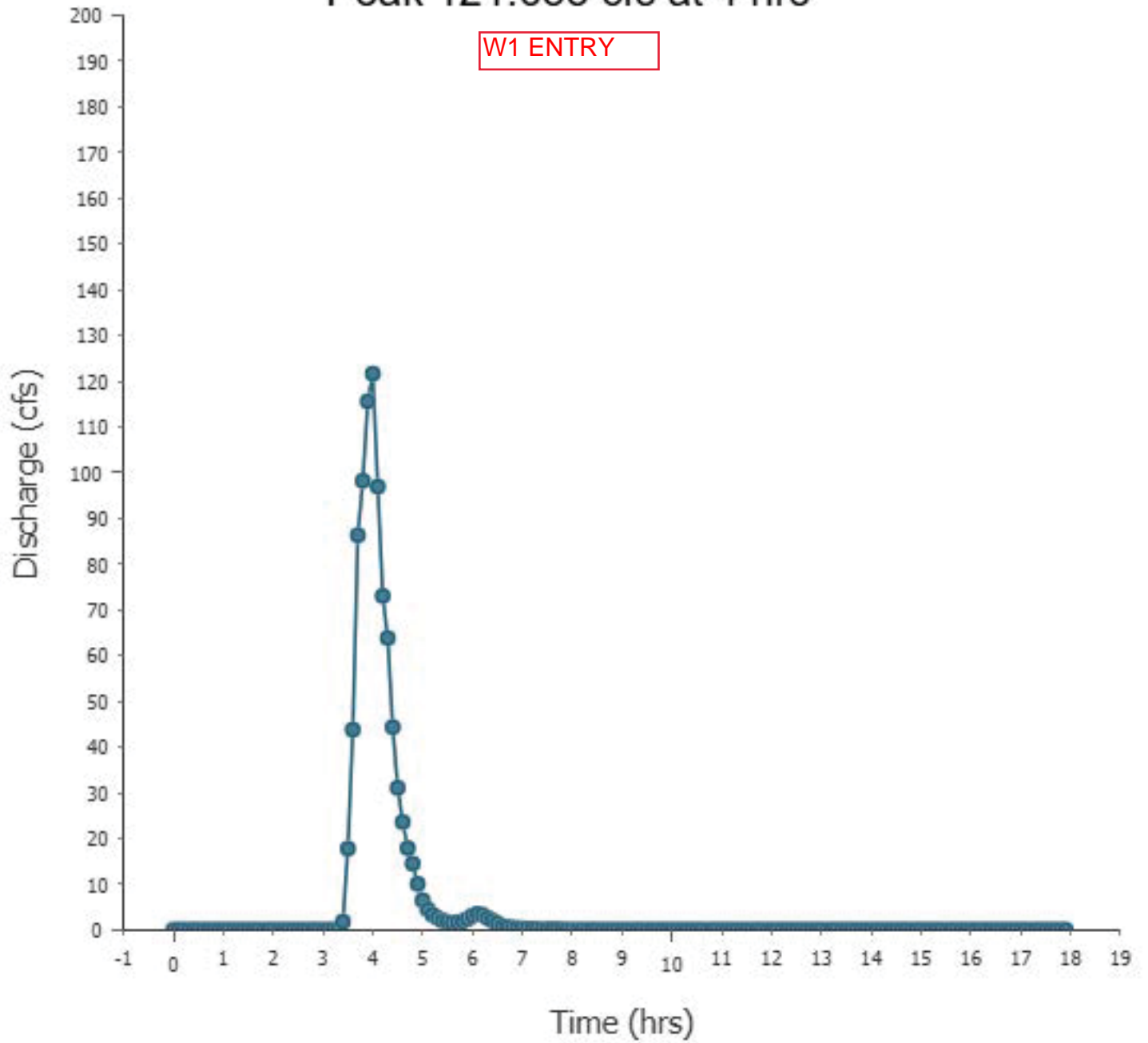


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APPENDIX A

Hydrograph for Sum - All Peak 121.633 cfs at 4 hrs

W1 ENTRY



Hydrograph for Sum - All Peak 279.954 cfs at 4 hrs

