



Engineering
& Design

HAWES CROSSING VILLAGE 5 PRELIMINARY DRAINAGE REPORT

MESA, AZ

Prepared For:

Lennar
1665 W. Alameda Drive #130
Tempe, AZ 85282
Contact: Heather Chadwick
Phone: (602) 316-7402

LENNAR®

May 2025
Project No. 1833.09

Prepared By:

Colliers Engineering & Design
4742 N. 24th Street, Suite 270
Phoenix, AZ 85016
Phone: (602) 490-0535
Contact: Nguyen Lam, PE



**PRELIMINARY DRAINAGE REPORT
HAWES CROSSING VILLAGE 5**



Table of Contents

1.0 INTRODUCTION	3
1.1 Project Location	3
1.2 General Description	3
1.3 Purpose of Report	3
1.4 FEMA Floodplain Designation	3
2.0 PREVIOUS STUDIES	4
3.0 EXISTING DRAINAGE CONDITIONS.....	4
4.0 PROPOSED DRAINAGE CONDITIONS.....	5
4.1 Retention Requirements	5
4.2 Dissipation of Stored Runoff.....	5
4.3 Lot Drainage.....	6
4.4 Street Conveyance.....	6
4.5 Inlet Sizing	6
4.6 Storm Drain Conveyance.....	6
4.7 Erosion Protection.....	7
5.0 ULTIMATE OUTFALL	7
6.0 FINISHED FLOORS.....	7
7.0 SUMMARY & CONCLUSIONS	7
8.0 REFERENCES	8

PRELIMINARY DRAINAGE REPORT HAWES CROSSING VILLAGE 5

APPENDICES

- A. Figures
- B. Retention and Dewatering Calculations

FIGURES

- 1. Vicinity MapAppendix A
- 2. FEMA Flood MapAppendix A
- 3. Preliminary Drainage ExhibitAppendix A



1.0 INTRODUCTION

1.1 Project Location

Hawes Crossing Village 5 (the Project) is a proposed 57-acre residential development located at the northeast corner of Hawes Road and Warner Road in the City of Mesa, Arizona (City). The Project is located within the Hawes Crossing Planned Area Development (PAD) in the southwest portion of Section 16, Township 1 South, Range 7 East of the Gila and Salt River Baseline and Meridian. The site is bounded by Warner Road to the south, the Hawes Road alignment to the west, the Loop 202 freeway to the east, and unincorporated Maricopa County parcels to the north.

Figure 1 in Appendix A provides a vicinity map for the Project.

1.2 General Description

The Project is proposed to consist of 271 single-family lots, 72 townhomes, and an amenity area. The 271 single-family lots are a mix of casitas and alley-loaded lots. There is a 9.0-acre commercial parcel planned at the hard corner of Hawes Road and Warner Road that is not a part of this Project. The site generally slopes to the west and southwest at approximately 0.5 percent. The site was historically used for dairy farming. Project improvements will include offsite half-street frontage improvements to Warner Road and Hawes Road.

1.3 Purpose of Report

The purpose of this Preliminary Drainage Report is to describe the drainage design methodology and provide preliminary 100-year hydrologic and hydraulic calculations for the drainage-related infrastructure for the Project. This report identifies stormwater retention facilities intended to store the 100-year, 2-hour storm event and outlines drainage guidelines and design parameters that will be used as the Project proceeds to final design. This report is being submitted in support of the preplat and preliminary grading and drainage plan. The report has been prepared in conformance with Chapter 8 of the City of Mesa *Engineering and Design Standards* (EDS, 2022) as well as the Flood Control District of Maricopa County (FCDMC) current versions of the *Drainage Policies and Standards Manual* (DPSM) (FCDMC, 2018a), *Drainage Design Manuals for Maricopa County* (DDM) – *Hydrology* (FCDMC, 2018b) and – *Hydraulics* (FCDMC, 2018c).

1.4 FEMA Floodplain Designation

The property is located entirely within the Federal Emergency Management Agency's (FEMA) Zone X (Shaded) as delineated on the FEMA Flood Insurance Rate Map (FIRM) panel numbers 04013C2760L, dated October 16, 2013. The portion of the FIRM

panels corresponding to the Project location is presented on Figure 2 of Appendix A (FEMA Flood Map). Zone X (Shaded) is defined below.

Zone X (Shaded):

The flood insurance rate zone that corresponds to areas outside the 100-year floodplains, areas of 100-year sheet flow flooding where average depths are less than 1 foot, areas of 100-year stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

2.0 PREVIOUS STUDIES

In October 2019, HILGARTWILSON prepared the *Master Drainage Report for Hawes Crossing* (HILGARTWILSON, 2019). The purpose of the report was to provide conceptual hydrologic and hydraulic analyses of the Hawes Crossing property and to identify overall drainage management concepts as individual Villages with the Hawes Crossing PAD were developed and establish design guidelines for future improvements.

3.0 EXISTING DRAINAGE CONDITIONS

In existing conditions, the Project site and surrounding area is generally flat at a slope of 0.5% and drains to the west and southwest via sheet flow. Because the site was historically used for dairy farming, the site has existing dairy infrastructure that will be removed prior to Project development. There are large stock ponds located along the eastern boundary of the site. There is an existing roadside ditch along the north side of Warner Road and an existing culvert under the Hawes Road alignment that allows runoff to continue west away from the site.

Offsite runoff from undeveloped land along the northern boundary of the Project generally drains west and outfalls just north of the northwestern corner of the site at the Hawes Road alignment. Offsite runoff ponds along the east side of Hawes Road until breaking over Hawes Road and continuing southwest away from the Project. Runoff from the developed parcels along the eastern half of the northern boundary are retained within the parcel limits and does not impact the Project. Considering these conditions, offsite runoff does not impact the Project from the north.

Runoff generated east of the Project within the Loop 202 freeway frontage is managed within the ADOT property limits and does not drain into the Project. There is an unincorporated Maricopa County parcel located at the southeastern corner of the

Project between the proposed collector road and Loop 202 that appears to be utilized for vehicle parking and storage. Berming surrounds the northern and western boundaries of this parcel, so runoff from this site ultimately outfalls to the fronting Warner Road right-of-way. It is assumed that this condition will be maintained as part of Project conditions.

4.0 PROPOSED DRAINAGE CONDITIONS

Onsite rainfall runoff from the Project has been designed to be routed via street flow to concentration points throughout the Project where inlets and storm drain will be designed to capture and discharge runoff to onsite surface retention basins. The preliminary drainage areas, flow patterns, and retention areas for the Project are included on Figure 3 of Appendix A.

4.1 Retention Requirements

Retention basins will be designed to retain the tributary runoff generated from the 100-year, 2-hour storm event (2.20 inches). This includes adjacent half-streets of Warner Road and Hawes Road. The retention volumes have been calculated as explained in the following equation:

$$V_R = C * (P/12) * A$$

where:

V_R = Required Retention Volume (ac-ft)

C = Area-Weighted Runoff Coefficient

P = 100-year, 2-hour Precipitation Depth (in) = 2.20 inches

A = Drainage Area (ac)

Runoff coefficients for drainage areas were referenced from Table 6.3 of the DPSM and Table 8.1 of the EDS. For the alley-loaded product, a plot plan was used to calculate the weighted runoff coefficient since the runoff coefficient per Table 6.3 overestimated the impermeable area based on the unit density. The plot plan area calculations and C-coefficient calculations are provided in Appendix B.

Retention basin volumes and locations are shown on Figure 3 (Preliminary Drainage Exhibit) of Appendix A with supporting calculations included in Appendix B.

4.2 Dissipation of Stored Runoff

Stormwater retention basins will be designed such that retained water is discharged within 36 hours of the storm event in accordance with the City of Mesa standards and

FCDMC DDM. Outlet facilities consist of natural infiltration through the basin bottom and drywells. The Project is not located adjacent to a regional storm drain system so drywells will be utilized for dewatering as opposed to bleed-off. In accordance with FCDMC standards, the design disposal rate utilized for drywells is 0.1 cfs. The preliminary number of drywells needed to dewater each basin within 36 hours is based on drywell discharge rate only. Preliminary dewatering calculations have been included in Appendix B.

4.3 Lot Drainage

The home product used for this Project has a garage that will front the street and a front porch on the opposite side of the lot that fronts open space (paseo) where there will be connecting sidewalk. The Project proposed three different home product types – casitas, alley-loaded, and townhomes. The casitas will drain from the rear yard to the fronting street. The alley-loaded and townhomes will generally be graded to drain approximately half of the lot to the fronting street that will be used for vehicle access and half the lot to the open space/street at the front of the home. Runoff in the streets will drain to a series of concentration points where inlets and storm drain will be designed to remove runoff and discharge to the corresponding retention basins.

4.4 Street Conveyance

Street flows will be designed to be directed to concentration points throughout the Project where inlets will be placed to remove flow from the street and discharge to surface retention basins. The Rational Method will be used to calculate the 10-year and 100-year flows for pavement drainage design. The onsite system will be designed to convey the peak 10-year flow between curbs without overtopping and to contain the 100-year flow within the street right-of-way. Where possible, this will be accomplished with the use of 4-inch roll curb. 6-inch vertical curb will be constructed where 4-inch curb cannot meet the above requirements.

4.5 Inlet Sizing

Inlets will be designed in accordance with the City of Mesa guidelines. Inlets will be designed to capture the 10-year storm event without exceeding a depth of 6 inches. The inlets will provide adequate capacity to capture the 100-year storm event without exceeding a depth of 12 inches and allow flows to overtop the curb and surface flow to retention basins when possible.

4.6 Storm Drain Conveyance

An underground storm drain network will be incorporated where the 10-year and 100-year flows cannot be contained using 6-inch vertical curb and/or where runoff is to be

removed from the street and discharged to retention basins. The storm drain pipes will be sized to accept and convey the 10-year peak design discharges at each inlet while maintaining a freeboard of 12 inches.

4.7 Erosion Protection

Erosion protection will be designed at all concentrated points of discharge. Riprap aprons will be designed downstream of all storm drain pipe outlets to protect against scour, provide uniform spreading of flows, and decrease flow velocities.

5.0 ULTIMATE OUTFALL

The ultimate outfalls for the Project will be at Equalized Basin System RB-4 to the Warner Road right-of-way or Equalized Basin System RB-11 & 12 to the Hawes Road right-of-way. This is consistent with historic flow patterns for the site. No adverse impacts are anticipated to downstream drainage facilities as a result of the proposed development.

6.0 FINISHED FLOORS

Finished floor elevations within the Project will be set a minimum of 14 inches above the lowest outfall elevation and a minimum of 12 inches above the high adjacent 100-year water surface elevation in retention basins.

7.0 SUMMARY & CONCLUSIONS

The drainage infrastructure will be designed in compliance with City of Mesa and Maricopa County design criteria and other required drainage laws. No adverse drainage impacts are expected to either downstream existing properties or drainage ways from the site. The study has determined that:

- Streets will be designed to adequately convey the onsite 10-year peak flow between curbs without overtopping and the 100-year peak flow within the right-of-way.
- Lots will be graded to ultimately drain into the street.
- Onsite flows will be conveyed to retention basins near low points in the site via surface flow and when necessary, storm drain pipes.

- Riprap aprons will be placed downstream of all points of concentrated discharge including storm drain, overflow weirs, and emergency spillways to protect against scour.
- Onsite retention basins will provide a storage volume equivalent to the 100-year, 2-hour runoff.
- Retention basins will be drained within 36 hours. The dewatering of the retention volume will be accomplished by a combination of drywells and natural infiltration.

8.0 REFERENCES

Flood Control District of Maricopa County (2018a). *Drainage Policies and Standards for Maricopa County, Arizona*. August 2018. Phoenix, Arizona.

Flood Control District of Maricopa County (2018b). *Drainage Design Manual for Maricopa County, Arizona, - Hydrology*. December 2018. Phoenix, Arizona.

Flood Control District of Maricopa County (2018c). *Drainage Design Manual for Maricopa County, Arizona, - Hydraulics*. December 2018. Phoenix, Arizona.

City of Mesa (2022). *Engineering & Design Standards – Chapter 8 – Stormwater Drainage and Retention*. 2022. Mesa, Arizona.

HILGARTWILSON (2019). *Master Drainage Report for Hawes Crossing*. October 2019. Phoenix, Arizona.

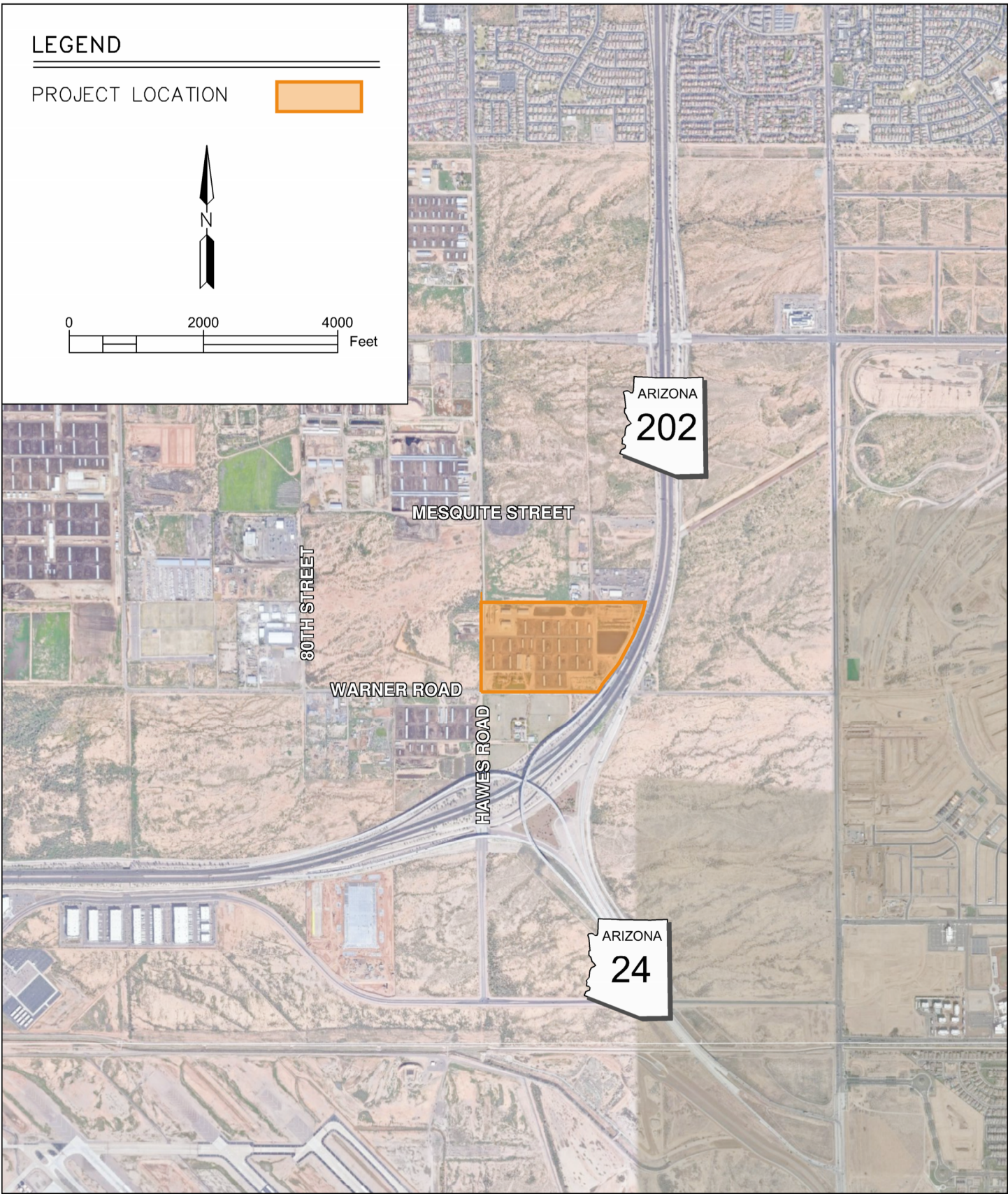
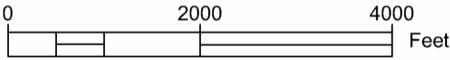
NOAA 14. Hydrometeorological Design Studies Center Precipitation Frequency Data Server. (<http://hdsc.nws.noaa.gov/hdsc/pfds/>)

Appendix A

Figures

LEGEND

PROJECT LOCATION



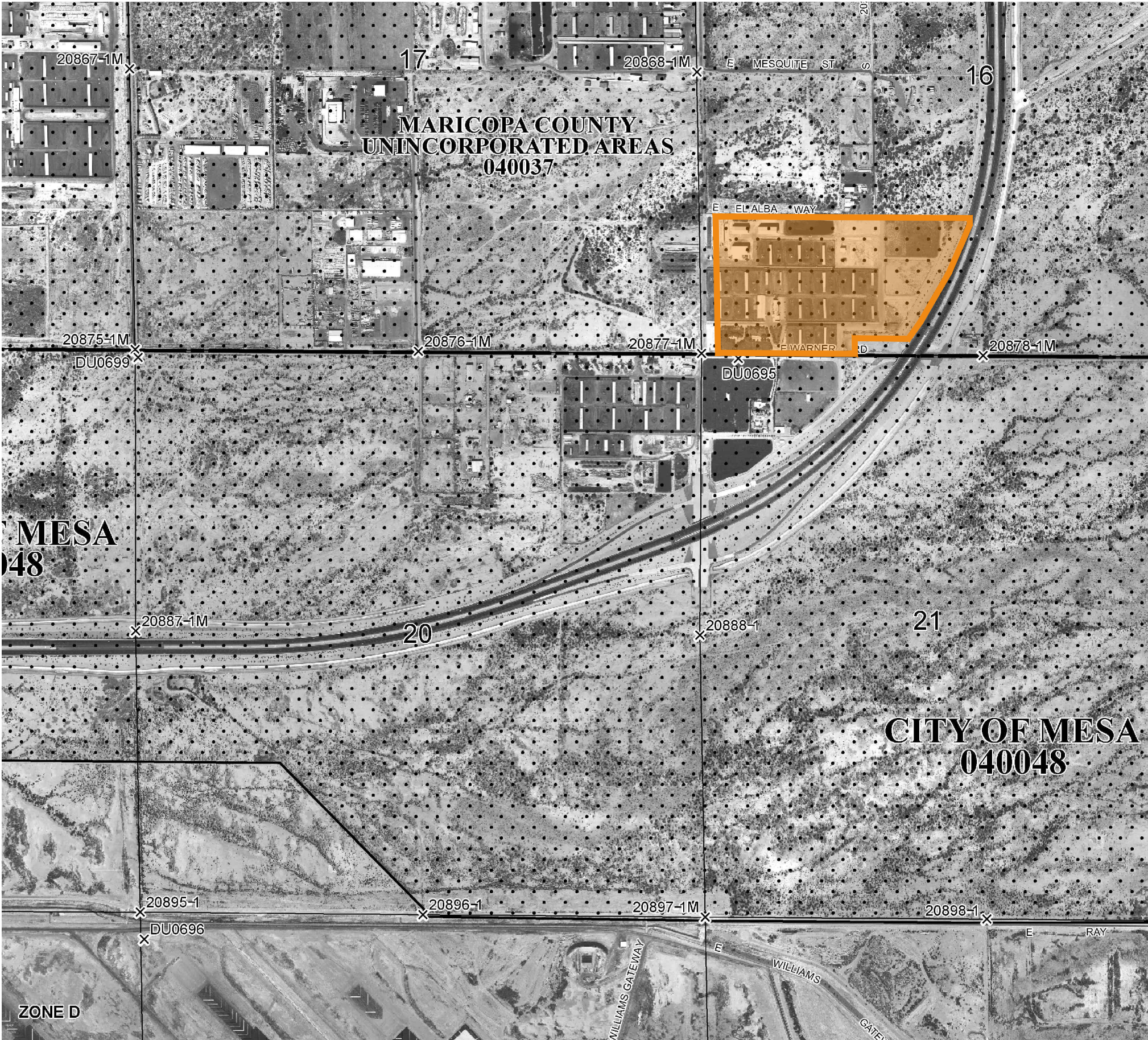
PROJ.NO.:	1833
DATE:	SEPT 2024
SCALE:	1" = 2,000'
DRAWN BY:	DRF
CHECKED BY:	BR

HAWES CROSSING VILLAGE 5
HAWES ROAD AND WARNER ROAD
CITY OF MESA, ARIZONA

FIG 1: VICINITY MAP



HILGARTWILSON
2141 E. HIGHLAND AVE., STE. 250
PHOENIX, AZ 85016
P: 602.490.0535 / F: 602.368.2436



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2760L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA
AND INCORPORATED AREAS


PANEL 2760 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2760	L
GILBERT TOWN OF	040044	2760	L
MESA, CITY OF	040048	2760	L

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


04013C2760L

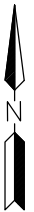
MAP REVISED

OCTOBER 16, 2013


Federal Emergency Management Agency

LEGEND

PROJECT LOCATION 




N



1000 500 0 1000

SCALE FEET



HILGARTWILSON

2141 E. HIGHLAND AVE., STE. 250
PHOENIX, AZ 85016
P: 602.490.0535 / F: 602.368.2436

HAWES CROSSING – VILLAGE 5

NEC OF HAWES ROAD & WARNER ROAD

CITY OF MESA, ARIZONA

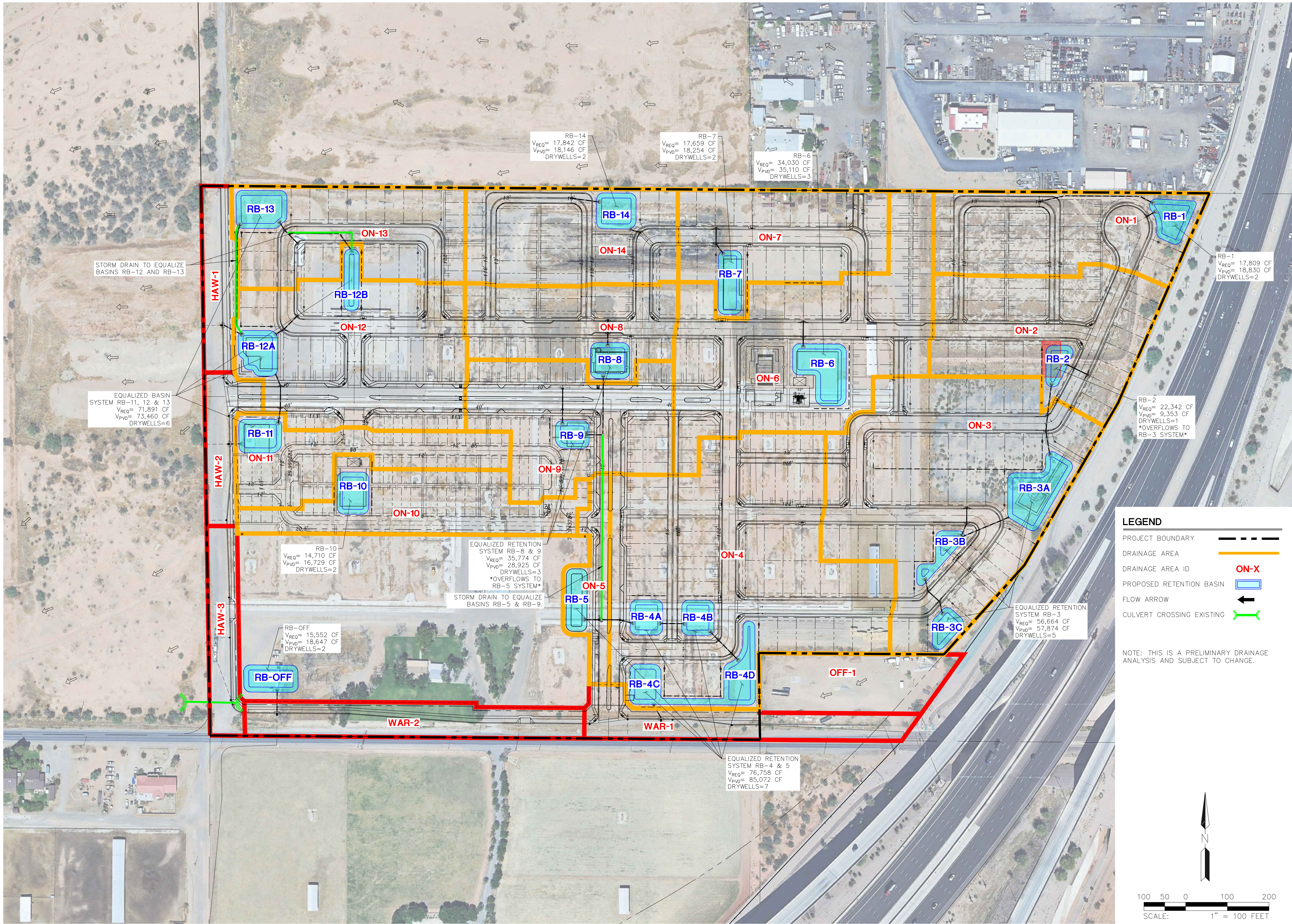
FIG 2: FEMA FLOOD MAP

PROJ. NO.:	1833.09
DATE:	SEP 2024
SCALE:	1" = 1,000'
DRAWN BY:	LG
CHECKED BY:	BR

© 2024, HILGARTWILSON, LLC

U: \\1800\\1833\\1833.09 Lennar\\REPORTS\\DRAINAGE\\Village 5 Preliminary\\Exhibits\\1833.09 FIG 2 – FEMA Flood Map.dwg 9/25/2024 3:04 PM

© 2025, COLLIER ENGINEERING & DESIGN, INC. All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reseed, discribed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.



Colliers
Engineering
& Design

2141 E. HIGHLAND AVE., STE. 250
PHOENIX, AZ 85016
P: 602.490.0535 / F: 602.368.2436
www.colliersengineering.com

Formerly
HILGART WILSON

HAWES CROSSING - VILLAGE 5
HAWES ROAD & WARNER ROAD
CITY OF MESA, ARIZONA

FIG 3: PRELIMINARY DRAINAGE EXHIBIT

Engineering & Design	PROJ NO.: 1833.09	1833.09
	DATE: MAY 2025	
	SCALE: 1" = 100'	
	DRAWN: LG	
	DESIGNED: LG	
	APPROVED: NL	
	DWG. NO.	
	EX	
	SHT. 1 OF 1	

Appendix B

Retention and Dewatering Calculations

DRAINAGE SUBAREA SUMMARY TABLE

Project: 1833 - Hawes Crossing Village 5
 Prepared by: LG
 Date: May, 2025



Drainage Area ID	Concentration Point	Land Use Category ⁽¹⁾						Total Area [ft ²]
		Desert Landscaping/ Undeveloped Desert [ft ²]	Turf [ft ²]	Small Lot Residential - Single Family [ft ²]	Very Small Lot Residential - Townhomes [ft ²]	Alley-Loaded Residential [ft ²]	Pavement & Rooftops [ft ²]	
ON-1	-	24,706	0	7,769	0	54,620	35,232	122,328
ON-2	-	15,352	0	54,594	0	30,291	45,780	146,016
ON-3	-	47,277	0	152,302	0	8,003	84,308	291,890
ON-4	-	51,894	0	85,206	0	84,978	109,047	331,126
ON-5	-	14,300	0	0	0	0	22,338	36,638
ON-6	-	36,832	0	31,058	0	72,980	85,548	226,419
ON-7	-	13,035	0	62,082	0	10,192	30,836	116,147
ON-8	-	12,333	0	3,870	0	41,795	39,840	97,839
ON-9	-	10,427	0	0	23,303	31,806	63,574	129,109
ON-10	-	32,151	0	0	42,636	0	25,352	100,139
ON-11	-	13,900	0	0	40,797	0	29,139	83,836
ON-12	-	25,653	0	27,119	11,584	39,139	86,427	189,922
ON-13	-	15,296	0	62,547	0	11,147	33,243	122,234
ON-14	-	11,869	0	11,678	0	60,972	33,241	117,760
HAW-1	-	10,950	0	0	0	0	23,925	34,875
HAW-2	-	3,201	0	0	0	0	29,200	32,401
HAW-3	-	6,338	0	0	0	0	31,289	37,627
WAR-1	-	13,040	0	0	0	0	46,536	59,576
WAR-2	-	22,623	0	0	0	0	42,762	65,385
OFF-1	-	62,844	0	0	0	0		62,844
TOTAL		444,021	0	498,227	118,320	445,925	897,617	2,404,110

NOTES:

(1) From Table 3.2 of the Maricopa County Drainage Design Manual Volume I, Hydrology (2018), and from Table 8.1 of the City of Mesa Engineering & Design Standards (2022).

WEIGHTED RUNOFF COEFFICIENT CALCULATIONS

Project: 1833 - Hawes Crossing Village 5
Prepared by: LG
Date: May, 2025



Land Use ⁽¹⁾	10-Year C Coefficient	100-Year C Coefficient
Desert Landscaping	0.40	0.50
Undeveloped Desert Rangeland	0.40	0.50
Turf	0.25	0.31
Small Lot Residential - Single Family	0.68	0.84
Very Small Lot Residential - Townhomes	0.75	0.94
Alley-Loaded Residential	0.80	0.82
Pavement & Rooftops	0.95	0.95

(1) From Table 3.2 of the Maricopa County Drainage Design Manual Volume I, Hydrology (2018), and from Table 8.1 of the City of Mesa Engineering & Design Standards (2022).

(2) The weight C coefficient for the Alley-Loaded residential product was calculated based on the alley plot plan. It was assumed that half of the private open space was desert landscaping and half was pavement. The plot plan with a breakdown of the areas is provided in Appendix B

Drainage Area ID(s)	Concentration Point	Subarea Surface Types & Areas							Weighted C Coefficient	
		Desert Landscaping/ Undeveloped Desert	Turf	Small Lot Residential - Single Family	Very Small Lot Residential - Townhomes	Alley-Loaded Residential	Pavement & Rooftops	Total	C _w - 10-Year	C _w - 100-Year
		(ft ²)	(ft ²)	(ft ²)	(ft ²)	(ft ²)	(ft ²)	(ft ²)		
ON-1	-	24,706	0	7,769	0	54,620	35,232	122,328	0.75	0.79
ON-2	-	15,352	0	54,594	0	30,291	45,780	146,016	0.76	0.83
ON-3	-	47,277	0	152,302	0	8,003	84,308	291,890	0.72	0.82
ON-4	-	51,894	0	85,206	0	84,978	109,047	331,126	0.76	0.82
ON-5	-	14,300	0	0	0	0	22,338	36,638	0.74	0.77
ON-6	-	36,832	0	31,058	0	72,980	85,548	226,419	0.78	0.82
ON-7	-	13,035	0	62,082	0	10,192	30,836	116,147	0.73	0.83
ON-8	-	12,333	0	3,870	0	41,795	39,840	97,839	0.81	0.83
ON-9	-	10,427	0	0	23,303	31,806	63,574	129,109	0.83	0.88
ON-10	-	32,151	0	0	42,636	0	25,352	100,139	0.69	0.80
ON-11	-	13,900	0	0	40,797	0	29,139	83,836	0.76	0.87
ON-12	-	25,653	0	27,119	11,584	39,139	86,427	189,922	0.79	0.85
ON-13	-	15,296	0	62,547	0	11,147	33,243	122,234	0.73	0.83
ON-14	-	11,869	0	11,678	0	60,972	33,241	117,760	0.79	0.83
HAW-1	-	10,950	0	0	0	0	23,925	34,875	0.78	0.81
HAW-2	-	3,201	0	0	0	0	29,200	32,401	0.90	0.91
HAW-3	-	6,338	0	0	0	0	31,289	37,627	0.86	0.87
WAR-1	-	13,040	0	0	0	0	46,536	59,576	0.83	0.85
WAR-2	-	22,623	0	0	0	0	42,762	65,385	0.76	0.79
OFF-1	-	62,844	0	0	0	0	0	62,844	0.40	0.50
TOTAL		444,021	0	498,227	118,320	445,925	897,617	2,404,110	0.75	0.82

RETENTION CALCULATIONS TABLE (ULTIMATE CONDITIONS)

Project: 1833 - Hawes Crossing Village 5

Prepared by: LG

Date: May, 2025



100-YEAR, 2-HOUR CALCULATIONS

Retention Volume Required (100-Year, 2-Hour) =

$C_{POST} = C_W$ - Post Developed Condition Runoff "C" Coefficient (See Weighted Runoff Coefficient C_W Calculations Table)

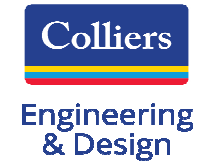
P = 2.20 in - Precipitation depth of 2.20 inches was used according to Section 806.4 of the EDS.

A = Plan-view area of an individual drainage area

Retention Basin ID	Drainage Area (ft ²)	Area (ft ²)	Weighted Runoff Coefficient (100-YR)	Runoff Volume Required for 100-Year, 2-Hour (ft ³)	Retention Volume Required (ft ³)	Overflow From Upstream (ft ³)	TOTAL Retention Volume Required (ft ³)	TOTAL Retention Volume Provided (ft ³)	Overflow Volume (ft ³)	Overflows To (ft ³)
RB-1	ON-1	122,328	0.79	17,809	17,809	-	17,809	18,830	-	
RB-2	ON-2	146,016	0.83	22,342	22,342	-	22,342	9,353	12,989	RB-3A, 3B & 3C
RB-3A, 3B & 3C	ON-3	291,890	0.82	43,675	43,675	12,989	56,664	57,874	-	
RB-4A, 4B, 4C, 4D & 5	ON-4	331,126	0.82	49,646	69,909	6,849	76,758	85,072	-	
	WAR-1	59,576	0.85	9,300						
	ON-5	36,638	0.77	5,201						
	OFF-1	62,844	0.50	5,761						
RB-6	ON-6	226,419	0.82	34,030	34,030	-	34,030	35,110	-	
RB-7	ON-7	116,147	0.83	17,659	17,659	-	17,659	18,254	-	
RB-8, RB-9	ON-8	97,839	0.83	14,949	35,774	-	35,774	28,925	6,849	RB-4A, 4B, 4C, 4D & 5
	ON-9	129,109	0.88	20,826						
RB-10	ON-10	100,139	0.80	14,710	14,710	-	14,710	16,729	-	
RB-11, RB-12A, 12B & RB-13	ON-11	83,836	0.87	13,380	71,891	-	71,891	73,460	-	
	HAW-2	32,401	0.91	5,379						
	ON-12	189,922	0.85	29,461						
	HAW-1	34,875	0.81	5,171						
	ON-13	122,234	0.83	18,500						
RB-14	ON-14	117,760	0.83	17,842	17,842	-	17,842	18,146	-	
RB-OFF	WAR-2	65,385	0.79	9,521	15,552	-	15,552	18,647	-	
	HAW-3	37,627	0.87	6,030						
TOTAL					361,192			380,400		

36-HOUR DEWATERING OF RETENTION BASINS (ULTIMATE CONDITIONS)

Project: 1833 - Hawes Crossing Village 5
 Prepared by: LG
 Date: May, 2025



DEWATERING TYPE	EQUATION	VARIABLES	UNITS
Drywells	Time to Drain ⁽³⁾ $T = V_P / 3600 R_T$	V_P = Volume Provided R_T = TOTAL Drain Rate	Hours

Retention Basin ID	Retention Volume Required [ft ³]	Drywell Disposal Rate ⁽¹⁾ (cfs)	Number of Drywells ⁽²⁾ [ea.]	TOTAL Drain Rate (cfs)	Time to Drain ⁽³⁾ $T = V_P / 3600 R_T$ [hr]
RB-1	17,809	0.10	2	0.2	24.7
RB-2	9,353		1	0.1	26.0
RB-3A, 3B & 3C	56,664		5	0.5	31.5
RB-4A, 4B, 4C, 4D & 5	76,758		7	0.7	30.5
RB-6	34,030		3	0.3	31.5
RB-7	17,659		2	0.2	24.5
RB-8, RB-9	28,925		3	0.3	26.8
RB-10	14,710		2	0.2	20.4
RB-11, RB-12A, 12B & RB-13	71,891		6	0.6	33.3
RB-14	17,842		2	0.2	24.8
RB-OFF	15,552		2	0.2	21.6
TOTAL			35		

NOTE:

- (1) Percolation rate of 0.1 is based on Standard 6.10.13 of the FCDMC Drainage Policies and Standards.
- (2) The required number of drywells can be adjusted based on as-built test data of the basin bottom surface area and one as-built drywell percolation test per retention basin.
- (3) Design of all stormwater storage facilities is such that the stored runoff is completely discharged from the facility within 36 hours after the runoff event has ended.

TYPICAL PLOT PLAN

Private open space -
Assume 50%
pavement, 50%
desert landscaping

LOT INFORMATION

ZONING: RSL 2.5 PAD
TYP. LOT SIZE: 35' x 85' MIN.
TYP. LOT AREA: 2,975 S.F.

BLDG. SETBACKS

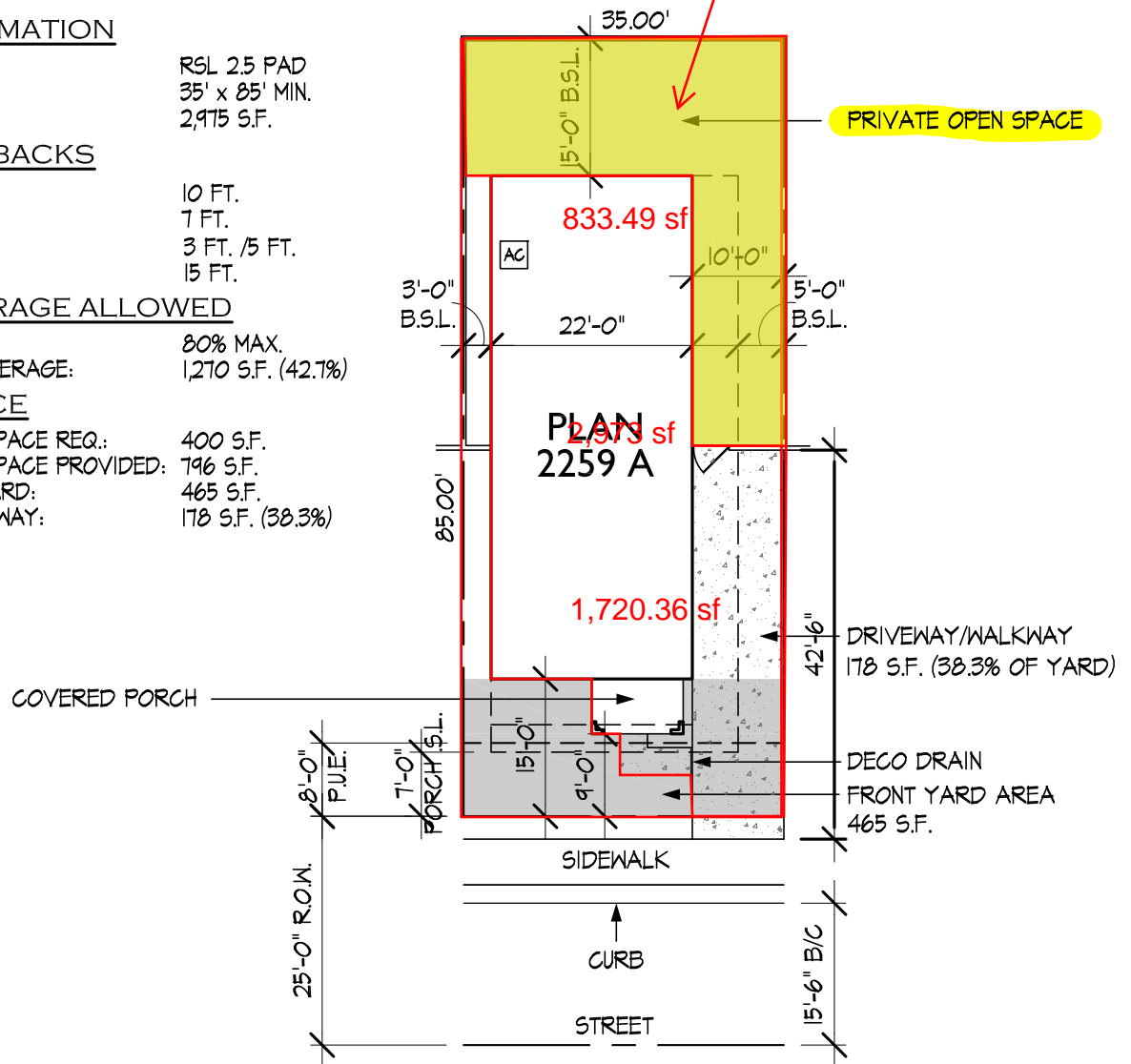
FRONT LIVABLE: 10 FT.
FRONT PORCH: 7 FT.
SIDES: 3 FT. /5 FT.
REAR: 15 FT.

LOT COVERAGE ALLOWED

LOT COVERAGE: 80% MAX.
2259 A LOT COVERAGE: 1,270 S.F. (42.7%)

OPEN SPACE

PRIVATE OPEN SPACE REQ.: 400 S.F.
PRIVATE OPEN SPACE PROVIDED: 796 S.F.
TOTAL FRONT YARD: 465 S.F.
DRIVEWAY/WALKWAY: 178 S.F. (38.3%)



2259 MAX FOOTPRINT - A

LIVABLE - TOTAL: 1,210 S.F.
COVERED PORCH: 60 S.F.
TOTAL FOOTPRINT: 1,270 S.F.

FRONT DRIVEWAY

HAWES CROSSING DREAM HOMES

LENNAR®

1665 W. Alameda Drive, Suite 130, Tempe, AZ 85282

MESA, AZ

SCALE: 1"=20'-0"

DATE: 9.27.24

PLAN 2259 A