DRAINAGE REPORT
FOR

Seville Estates
Unit 9

Prepared by:

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Prepared for:
AMC Development Services

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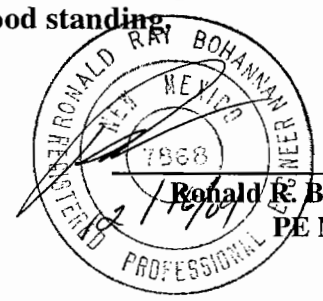
I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.



Ronald R. Bohannan
PE NO. 7868

Job No 24029

TABLE OF CONTENTS

Prelude

This report is being prepared at the request of the current owner, AMC Development Services, who proposes to develop a 24 unit single-family subdivision.

Location

The subject site is located between Irving Boulevard and the Calabacillas Arroyo just east of Kayenta Boulevard and consists of Tract 1-D, Seville. The exact location of the site is shown highlighted on the enclosed Zone Atlas page number A-10. The site will be built in one phase and contains 7.0028 acres more or less.

Existing Drainage Conditions

The site is currently undeveloped and naturally sheet flows from the south to the north. The undeveloped flow of 14.22 cfs drains to the Calabacillas Arroyo located along the north property line.

No offsite flows enter the subdivision. The existing Ventana Ranch Subdivision is located to the south and cuts off any flows from that direction. Kayenta Boulevard runs along the west property line and cuts off the flows from that direction. Houses are located on the east side of the site and drain from south to north sheet flowing into the Calabacillas Arroyo. The Calabacillas Arroyo is located on the north side of the site and collects the flows from this property.

Flood Plain

The site is located on FIRM Map 35001C0103 D as shown on the attached excerpt. The map shows that a portion of the site lies within a 100-year flood plain. However, this portion of the site falls within the AMAFCA Prudent Line Easement and will not be developed. The remainder of the site does not fall within any 100-year flood plan. The proposed lots also fall outside of the AMAFCA Prudent Line.

Proposed Drainage Management Plan

The proposed site is divided into 5 basins with the site draining to the east and to the west. The flows traveling east are captured in a drop inlet and conveyed, via a storm sewer, to an existing 60" RCP manhole. This 60" RCP drains directly to the Calabacillas Arroyo. The flows traveling west flow into Kayenta via a concrete rundown and continue to an existing drop inlet, from this point the runoff is discharged into the Calabacillas Arroyo.

Basin 1 will discharge a total of 5.58 cfs, and will not be developed. The drainage from Basin 1 will continue to flow along historic paths into the Calabacillas Arroyo. Land treatment of 100% B was used to calculate the runoff.

Basin 2 will discharge a total of 2.15 cfs, and will consist of extended back yards for several lots backing up to the Arroyo. The drainage from Basin 2 will continue to flow along historic paths into the Calabacillas Arroyo. Land treatment of 20% B, 20% C, and 60% D was used to calculate the runoff.

Basin 3 will discharge a total of 6.42 cfs, and will consist of the west half of the subdivision (Lots 7-17) and the west half of Pyrenees Court. The drainage from Basin 3 will flow west in Pyrenees Court to lots 13 and 14. The runoff will continue in a rundown between lots 13 and 14 into Kayenta Boulevard, from there the runoff will discharge into the arroyo at the bridge over the arroyo. The land treatment of 20% B, 20% C, and 60% D was used to calculate the runoff.

Basin 4 will discharge a total of 3.78 cfs, and will consist of the northeast half of the subdivision (Lots 18-24). The drainage from Basin 4 will flow east in Pyrenees Court to a proposed drop inlet. The runoff will continue in a storm drain system into an existing 60" tee manhole and

into the Calabacillas Arroyo. The land treatment of 20% B, 20% C, and 60% D was used to calculate the runoff.

Basin 5 will discharge a total of 2.97 cfs, and will consist of the southeast half of the subdivision (Lots 1-6). The drainage from Basin 5 will flow east in Pyrenees Court to a proposed drop inlet. The runoff will continue in a storm drain system into an existing 60" tee manhole and into the Calabacillas Arroyo. The land treatment of 20% B, 20% C, and 60% D was used to calculate the runoff.

Calculations

The weighted E method from the "City of Albuquerque Development Process Manual Volume 11 – Design Criteria, 1997 Revision" was used to calculate the runoff and volume for the site.

Summary

This site will discharge 20.90 cfs into the Calabacillas Arroyo with 6.75 cfs entering the arroyo via an existing storm sewer and 6.42 cfs flowing down Kayenta Boulevard and the remaining 7.73 cfs will continue to flow along historic paths into the Calabacillas Arroyo. The on-site streets will capture the flow from the lots and convey it to drop inlets located throughout the site. All of the streets have capacity for the developed flows. A water quality inlet, required by AMAFCA, will capture the flows before entering the arroyo.

Weighted E Method

Existing Conditions

											100-Year			10-Year		
Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
	305,042	7.00	0%	0	100%	7.00	0%	0.00	0%	0.00	0.670	0.391	14.22	0.220	0.128	5.32

Existing On-Site Basins

											100-Year			10-Year		
Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
1	119,777	2.75	0%	0	100%	2.75	0%	0.00	0%	0.00	0.670	0.154	5.58	0.220	0.050	2.09

Developed On-Site Basins

											100-Year			10-Year		
Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
2	26,015	0.60	0%	0	20%	0.12	20%	0.12	60%	0.36	1.514	0.075	2.15	0.876	0.044	1.30
3	77,610	1.78	0%	0	20%	0.36	20%	0.36	60%	1.07	1.514	0.225	6.42	0.876	0.130	3.89
4	45,676	1.05	0%	0	20%	0.21	20%	0.21	60%	0.63	1.514	0.132	3.78	0.876	0.077	2.29
5	35,964	0.83	0%	0	20%	0.17	20%	0.17	60%	0.50	1.514	0.104	2.97	0.876	0.060	1.80
Total	185,265	3.43		0		0.69		0.69		2.55		0.432	15.32		0.250	9.29

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Excess Precipitation, E (inches)		
Zone 1	100-Year	10 - Year
E_a	0.44	0.08
E_b	0.67	0.22
E_c	0.99	0.44
E_d	1.97	1.24

Peak Discharge (cfs/acre)		
Zone 1	100-Year	10 - Year
Q_a	1.29	0.24
Q_b	2.03	0.76
Q_c	2.87	1.49
Q_d	4.37	2.89