



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 10, 2001

Ron Bohannon, P.E.
Tierra West, LLC
4421 McLeod Rd NE Suite D
Albuquerque, New Mexico 87109

RE: LOT 8 RETAIL PAD @ LA CUEVA TOWN CENTER (C-19/D11D1)
(Wyoming & Paseo Del Norte NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 3/14/2000
ENGINEERS CERTIFICATION DATED 5/9/2001

Dear Mr. Bohannon:

Based upon the information provided in your Engineers Certification submittal dated 5/9/2001, the above referenced site is approved for Permanent Certificate of Occupancy.

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin

Teresa A. Martin

Hydrology Plan Checker

Public Works Department

BA.B

C: Vickie Chavez, COA
approval file
✓ drainage file



City of Albuquerque

March 28, 2000

Ronald R. Bohannon, P.E.
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

RE: Drainage Report and Grading and Drainage Plan for Lot 8 Retail Pad at La Cueva Town Center (C19/D11D1) Submitted for Site Development Plan for Building Permit Approval, Grading Permit and Building Permit Approval, Engineer's Stamp Dated 3/14/00.

Dear Mr. Bohannon:

Based on the information provided, the above referenced plan is approved for Site Development Plan approval by the DRB.

The above referenced plan is also approved for Building Permit release, which allows the grading of this site. Please attach a copy of this approved plan to the set of construction drawings for Building Permit sign-off.

As you are aware, the Engineer's Certification is required prior to the release of the Certificate of Occupancy for this site. The certification must verify that all downstream storm drain improvements are in place.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Ben Spencer, Argus Development Co.
Whitney Reiersen, City Hydrology
File

REVISED
DRAINAGE REPORT

for

**Lot 8 Retail Pad
at La Cueva Town Center
Albuquerque, New Mexico**

Prepared by

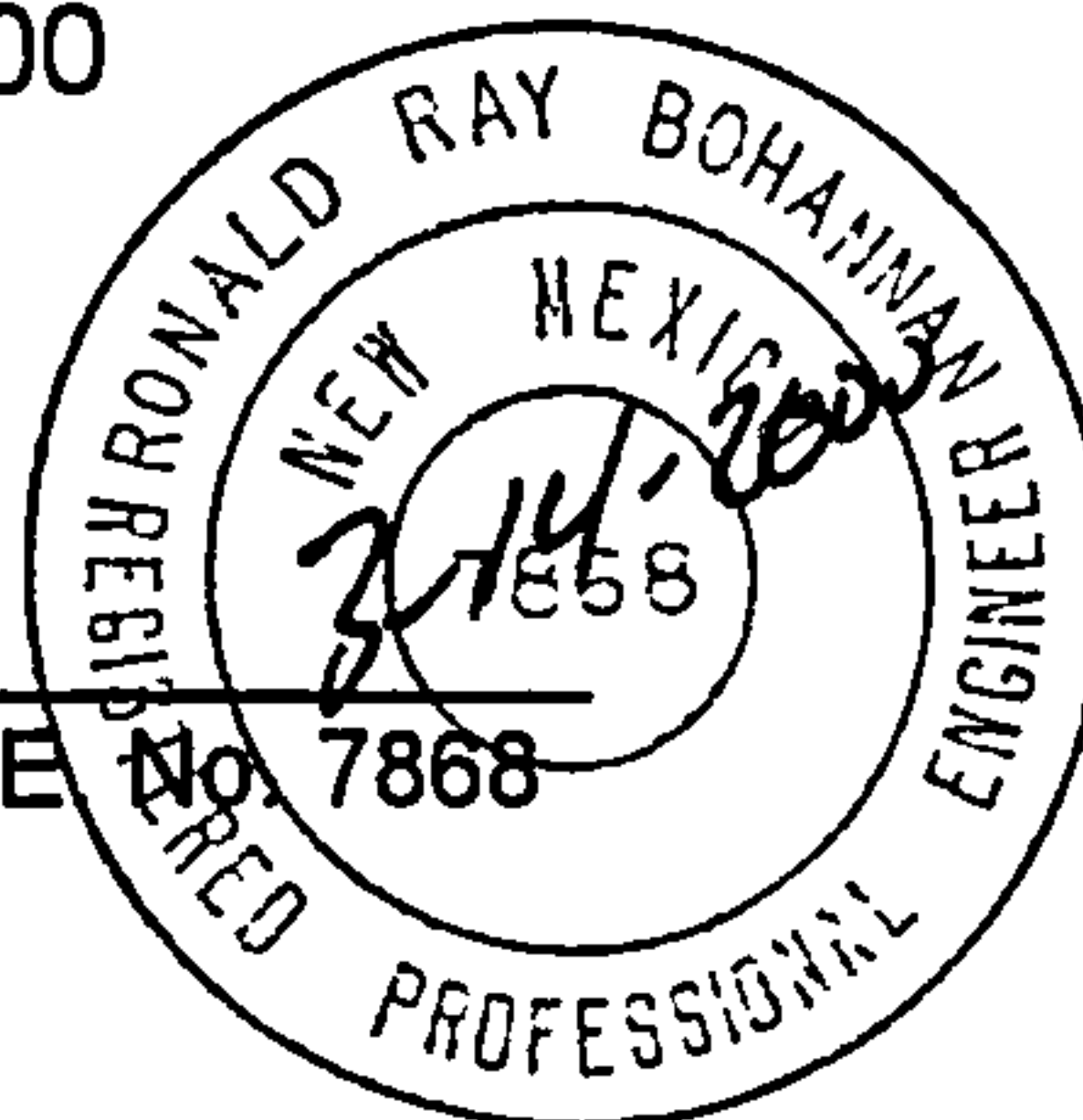
Tierra West, LLC
4421 McLeod Road NE, Suite D
Albuquerque, New Mexico 87109

Prepared for
Mr. Ben Spencer
Argus Development Company
6400 Uptown Blvd. Suite 200-W
Albuquerque NM 87110

MARCH 2000



Ronald R. Bohannon P.E. No. 7868



PURPOSE

The purpose of this report is to prove the development of the subject 1.136 acre property, for the use as a Restaurant, is in accordance with the DPM Chapter 22. This report will demonstrate that the proposed improvements do not adversely effect the surrounding properties nor the upstream or downstream facilities.

INTRODUCTION

The subject of this report, as shown on the Exhibit A vicinity map, is a 1.136 acre parcel of land located on the northeast corner of Wyoming and Paseo del Norte. The site is located on Zone Atlas page C-19. The site currently exists as a rough graded pad site within La Cueva Town Center. The legal description of the property is Lot 8 of La Cueva Town Center. As shown on FIRM map 35001C0141D, the site lies within flood zone AO.

This site was analyzed within the Drainage Report and grading plan for the La Cueva Town Center (C19-D11D) previously submitted by Tierra West, LLC, with the stamp date of 3/29/99. The City of Albuquerque Hydrology Section approved the Drainage Management Plan on 5/11/99. Based upon the approved Drainage Management Plan, this site is located with basin A of the La Cueva Town Center. The approved Master plan indicates this parcel is allowed free discharge if the land treatments are equal or less than 85% D, and 15% B. Since our improvements are consistent with developed condition assumptions within the La Cueva Town Center Drainage Plan the site should be allowed free discharge.

EXISTING CONDITIONS

The site slopes from east to west, with general grades between 3-4%. The site was rough graded with the construction of the La Cueva Town Center. As discussed within the La Cueva Town Center drainage report, minor offsite flows enter the site from the east. These flows sheet flow across the site and are captured by the onsite storm drainage system. All the onsite storm drainage improvements associated with the La Cueva Town Center were recently completed, including the desiltation pond and 18" RCP located at the southwest corner of the shopping center, to which this site drains.

PROPOSED CONDITIONS

The proposed improvements consists of the construction of a retail building, and the associated parking lot. As shown in Exhibit B, The entire site lies within Basin A as described within the La Cueva Town Center drainage plan. As shown in Appendix A the proposed land treatment are consistent with the developed condition assumptions for this site within the La Cueva Town Centers drainage management plan.

As shown in Exhibit C the site contains two onsite drainage basins. Basin A consists of the north portion of the site which drains to a driveway opening located at the northwest corner of the site. This basin has a maximum predicted 100-year discharge rate of 3.10 CFS. Basin B consists of the south portion of the site which drain to a driveway located at the southwest corner of the site. This south driveway will have temporary curb closing this access until the adjacent parcel develops. A curb opening and earthen swale is to be constructed allowing the maximum predicted 100-year discharge rate of 1.92 CFS to pass through. As shown in appendix A both the 2' opening and 6' swale are sized to allow the 100-year peak discharge to leave the site without overtopping the curb. Upon the development of tract 7 both the swale and

asphalt curb will be removed. The site has been graded to match the existing grades accounting for future grades at the north and west boundaries. Both basins will surface drain to the southwest corner of the La Cueva Town center where they are captured by a desiltation pond and 18" RCP and conveyed to the Paseo Del Norte storm drainage system.

In a storm event greater than the predicted 100 year storm, Basin A drainage will function the same as during the 100 year storm event. If the 100 year peak flow is exceeded within basin B, the capacity of the curb opening will be exceeded and the flow will overtop the curb and the water will continue to flow in its designed path.

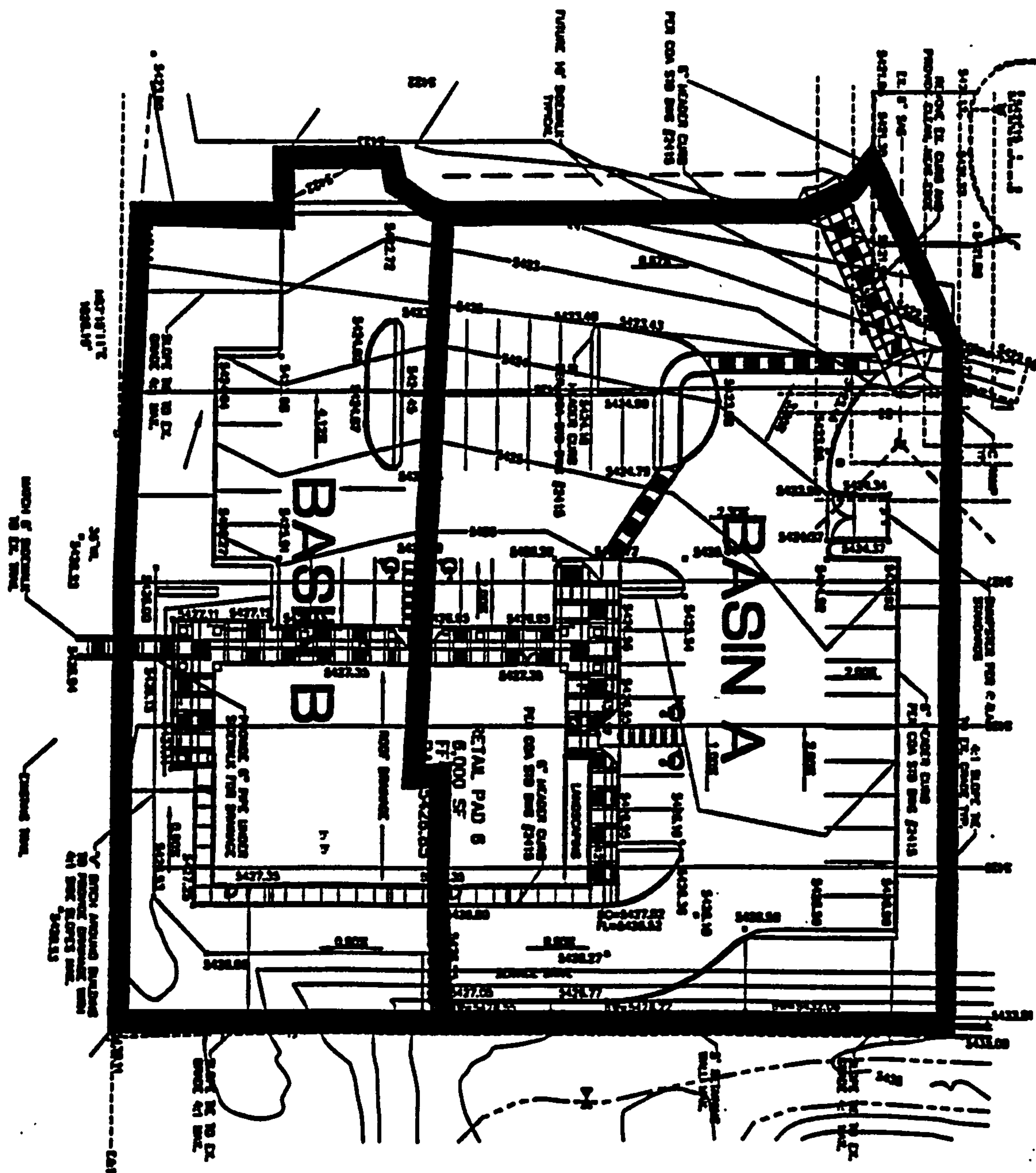


Exhibit C- Onsite Basin Map

LOT 8 RETAIL PAD LA CUEVA TOWN CENTER	BASIN EXHIBIT	JERRA WENTZ, LLC CITY ENGINEER, 1110 S. GATEWAY BLVD., SUITE 200 DALLAS, TEXAS 75242
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SUMMARY AND RECOMMENDATIONS

This site is an existing pad within the La Cueva Town Center, which is an existing commercial shopping center. The City of Albuquerque Hydrology Section approved the Drainage Management plan for the entire center. This La Cueva Town Center Master Drainage Plan assumed fully developed conditions for our site. The proposed improvements are consistent with the land treatment types used for the developed condition for this site within the La Cueva Town Center's drainage plan. The development of this site is consistent with the DPM, Chapter 22, Hydrology section. Since this site encompasses less than 5 acres, a NPDES permit is not required prior to any construction activity. No improvements are to occur within City right of way, therefore an infrastructure list is not required. It is recommended this development be approved for rough grading, and Site Plan for Building Permit.

TIERRA WEST LLC

4421 McLeod Road NE, Suite D, Albuquerque, NM 87109 Phone (505) 883-7592 - Fax (505) 883-7034

RUNOFF CALCULATIONS

Date: February 9, 200 Project: LOT 8-LA CUEVA TOWN CENTER Zone Atlas: C-19

This procedure is in accordance with the City of Albuquerque Development Process Manual, Volume 2, Section 22.2, "Hydrology", peak discharge rate for small watersheds less than forty acres in size.

Precipitation Zone from Figure A-1: 3
Land treatment descriptions are in Table A-4.

RUNOFF RATE COMPUTATION

Use Equation A-10: $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$
 Values of Q_{pi} are from Table A-9, and are in CFS/acre. Area values are in acres.

[illegible]

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RUNOFF CALCULATIONS

* Excerpted from La Jolla Town Center
Drainage Report (19/0110)

Date: Jan. 29, 1999

Project: La Cueva Town Center

Zone Atlas: C-19

This procedure is in accordance with the City of Albuquerque Development Process Manual, Volume 2, Section 22.2, "Hydrology", peak discharge rate for small watersheds less than forty acres in size.

Precipitation Zone from Figure A-1: 3

Land treatment descriptions are in Table A-4.

1. RUNOFF RATE COMPUTATION

Use Equation A-10: $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$

Use Equation A-10: $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 Values of Q_{pi} are from Table A-9, and are in CFS/acre. Area values are in acres.

EXISTING CONDITIONS (CFS)

[illegible]

OFFSITE FLOWS - EXISTING CONDITIONS (CFS)

[illegible]

DEVELOPED RATE OF RUNOFF (CFS)

[illegible]

2. RUNOFF VOLUME COMPUTATION

* Excerpted from La Cueva Town Center
Drainage Report (C19/D110)

Weighted E = "E" = $(E_A A_A + E_B A_B + E_C A_C + E_D A_D) / (A_A + A_B + A_C + A_D)$

$$(A_A + A_B + A_C + A_D) = \sum A_i$$

Use Equation A-6 to compute the volume:

$$V_{360} = "E" \times (A_A + A_B + A_C + A_D) \times 3630 \text{ feet}^3/\text{acre-inch}$$

Values of E_i are from Table A-8, and are in inches. Area values are in acres.

[illegible]

RUNOFF RATE COMPARISON

Use Equation A-10: $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$
Values of Q_{pi} are from Table A-9, and are in CFS/acre. Area values are in acres.

DEVELOPED RATE OF RUNOFF (CFS)									
BASIN	Q_{PA}	A_A	Q_{PB}	A_B	Q_{PC}	A_C	Q_{PD}	A_D	Total CFS
site as proposed in this report	1.87	0.00	2.60	0.29	3.45	0.00	5.02	0.85	5.02
Site as proposed in La Cueva TownCenter master plan*	1.87	0.00	2.60	0.17	3.45	0.00	5.02	0.97	5.31

* based upon treatment percentages used for basin A

Curb opening to pond

Weir Equation:

$$Q = CLH^{3/2}$$

Q = flow (cfs)

C = 2.95

H = Curb Height (ft)

L = width of opening

$$Q_{\max} = 2.95(2)(.5)^{3/2} = 2.09 \text{ cfs}$$

$$Q_{\text{req}} = 1.92 \text{ cfs}$$

Channel Capacity

	Top Width	Bottom Width	Depth	Area	WP	R	Slope	Q Provided	Q Required	Velocity
	(ft)	(ft)	(ft)	(ft^2)	(ft)		(%)	(cfs)	(cfs)	(ft/s)
V-ditch	6	0	1	3.00	6.32	0.474342	3	27.70	1.92	0.64

Manning's Equation:
 $Q = 1.49/n * A * R^{(2/3)} * S^{(1/2)}$
A = Area
R = A/WP
S = Slope
n = 0.017