

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 20, 2000

Ronald R. Bohanan, P.E. TIERRA WEST, LLC 8509 Jefferson NE Albuquerque, New Mexico 87113

Grading and Drainage Certification – Dion's Restaurant (C-19/D11D2) Re:

• (La Cueva Town Center Lot 6A-8100 Wyoming NE Strite G)

Engineer's Stamp dated 3/10/2000

Engineering Certification dated 12/19/2000

Dear Mr. Bohannan:

Based upon the information provided in your submittal dated 12-19-2000, the above referenced site is approved for Certificate of Occupancy.

If I can be of further assistance, you can contact me at 924-3986.

Sincerely,

Bradley J. Bugham

Bradley L. Bingham, PE

Senior Civil Engineer, PWD

Vickie Chavez Teresa Martin



City of Albuquerque

March 27, 2000

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

RE: Drainage Report and Grading and Drainage Plan for Dion's at La Cueva Town Center (C19/D11D2) Submitted for Site Development Plan for Building Permit Approval, Grading Permit and Building Permit Approval, Engineer's Stamp Dated 3/10/00.

Dear Mr. Bohannan:

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. Please attach a copy of this approved plan to the set of construction drawings for Building Permit sign-off. The Building Permit also allows the grading if this site.

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: Alexander Harrison, Dion's

Whitney Reierson, City Hydrology

File

REVISED DRAINAGE REPORT

for

Dions 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. Alexander Harrison Architect 8605 Mountain Road NE Albuquerque NM 87112

MARCH 2000

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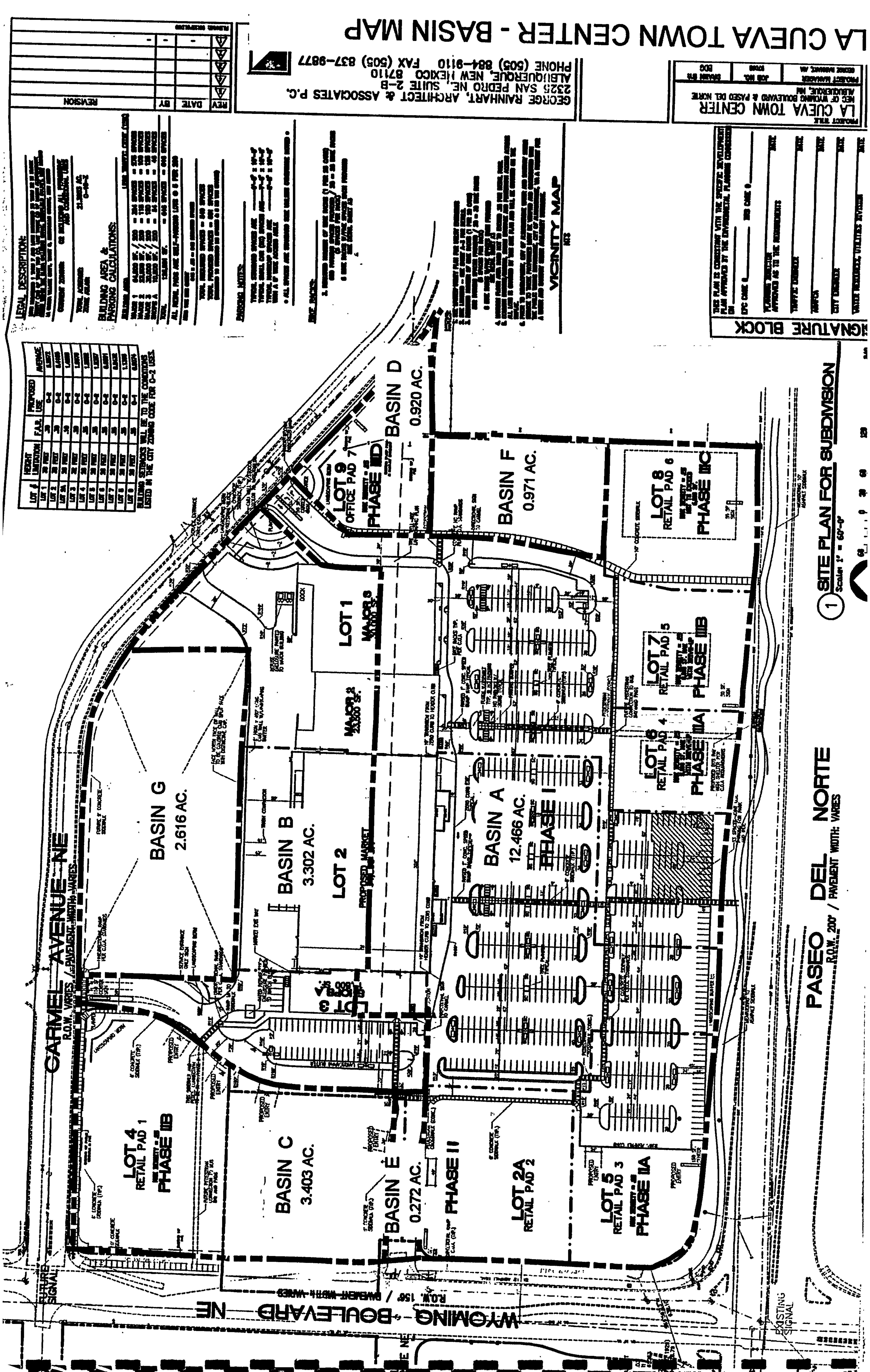
PURPOSE

The purpose of this report is to prove the development of the subject 1.784 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 1.784 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 6-A 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 site from the east. These flows sheet flow across the site and are captured by the onsite storm drain system. The existing drainage facilities have recently been 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 consist of the construction of a Restaurant and the associated parking lot. As shown on Exhibit B, the entire site lies within Basin A as described within the Cueva Town Center drainage plan. The proposed land treatments are consistent with the developed condition assumptions for this site within the La Cueva Town Centers drainage management plan. Appendix A includes the proposed land treatments for this tract and the land treatments proposed as excerpted from the La Cueva Town Centers drainage management plan.

The entire onsite flows, generated from the roof and pavement areas, are conveyed by surface flows from east to northwest. The predicted 100-year peak runoff generated from this site will be 7.92 CFS. Several 4' curb openings were created along the westernmost curbline to allow the developed flow to leave the site at several locations. This approach provides less concentration of flow and more sheet flow within the parking lots to the west. The site was graded to match the existing grades and to account for future grades along the east boundary. A temporary diversion berm is to be constructed on the adjacent lot to the east to direct offsite flows to a desiltation pond located within the future driveway connection between lots 6A and 7A.

In a storm event greater than the predicted 100-year storm, the site drainage will function the same as during the 100 year storm event. If the 100-year peak flow is exceeded and the curb openings are unable to convey the runoff, the runoff will continue north exiting the site through the western driveway. The water will continue to flow in its designed path.

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 and discharge rates 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.

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	0.42	3.45	0.00	5.02	1.36	7.92	
Site as proposed in La Cueva TownCenter master plan*	1.87	0.00	2.60	0.27	3.45	0.00	5.02	1.51	8.28	

^{*} based upon treatment percentages used for basin A

TIERRA WEST LLC

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

RUNOFF CALCULATIONS

Date: February 8, 200 Project: LOT 6A-LA CUEVA TOWN CENTER Zone Atlas: C-19

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

Precipitation Zone from Figure A-1: 2

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.

DEVELOPED RATE OF RUNOFF (CFS)									
BASIN	Q _{PA}	A	Q _{PB}	A _B	Q _{PC}	A _c	Q_{PD}	AD	
entire site	1.87	0.00	2.60	0.42	3.45	0.00	5.02	1.36	7.92
Total									7.92

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RUNOFF CALCULATIONS + Excerpted from La (Jeva Town Centre

RUNOFF CALCULATIONS | Print of Port | (19/10110)

Zone Atlas: C-19 Project: La Cueva Town Center Date: Jan. 29, 1999

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.

BASIN	Q _{PA}	A	Q _{PB}	AB	Q _{PC}	A _c	Q _{PD}	A _D	Qp
asin 1	1.870	6.026	2.600	0.000	3.450	0.000	5.020	0.000	11.269
asin 2	1.870	5.922	2.600	0.000	3.450	0.000	5.020	0.000	11.074
asin 3	1.870	8.415	2.600	0.000	3.450	0.000	5.020	0.000	15.736
Total									38.079
	FLOWS -	EXISTIN	GCONDIT	ONS (CFS					•
3asin 4	1.870	2.616	2.600	0.000	3.450	0.000	5.020	0.000	4.892
3asin 5	1.870	0.971	2.600	0.000	3.450	0.000	5.020	0.000	1.816
Total						•			6.708
							•		
	D DAT		IOEE /CES					•	
11-MI-1	/PULL PC AA L	E OF KUI	HUPP (GF3	3		-			_
			10FF (CFS 2.600	1.870	3.450	0.000	5.020	10.596	58.054
Basin A	1.870	0.000	2.600	1.870	3.450	0.000	5.020	10.596 2.807	
Basin B	1.870	0.000	2.600					_	15.37
Basin B Basin C	1.870 1.870 1.870	0.000	2.600 2.600 2.600	1.870 0.495 0.510	3.450	0.000	5.020	2.807	15.37
Basin B Basin C Basin D	1.870 1.870 1.870	0.000 0.000 0.000	2.600 2.600 2.600	1.870 0.495 0.510 0.138	3.450	0.000	5.020	2.807	15.37 15.84 4.284
Basin B Basin C	1.870 1.870 1.870	0.000	2.600 2.600 2.600	1.870 0.495 0.510	3.450 3.450 3.450	0.000	5.020 5.020 5.020	2.893 2.782	15.37 15.84 4.284 1.266
Basin A Basin C Basin D Basin E	1.870 1.870 1.870 1.870	0.000 0.000 0.000	2.600 2.600 2.600 2.600	1.870 0.495 0.510 0.138 0.041	3.450 3.450 3.450	0.000	5.020 5.020 5.020	2.893 2.782	15.37 15.84 4.284 1.266 94.83
Basin B Basin C Basin D	1.870 1.870 1.870 1.870	0.000 0.000 0.000	2.600 2.600 2.600	1.870 0.495 0.510 0.138	3.450 3.450 3.450	0.000 0.000 0.000	5.020 5.020 5.020	2.893 0.782 0.231	58.054 15.378 15.849 4.284 1.266 94.83 4.524 12.18

RUNOFF VOLUME COMPUTATION * Excerpted from La Cuem Tonnicent.

Drainge Report (019/0110)

Use Equation A-5 to compute weighted excess precipitation:

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:

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

Values of E₁ are from Table A-8, and are in inches. Area values are in acres.

BASIN	E	A	E _B	A _B	E _c	Ac	E _D	AD	$\sum A_1$	"E"	V ₃₈₀
ONSITE EXISTING VOLUME OF RUNOFF (CF)											
Basin 1	0.66	6.026	0.92	0.000	1.29	0.000	2.36	0.000	6.026	0.660	14437.0
Basin 2	0.66	5.922	0.92	0.000	1.29	0.000	2.36	0.000	5.922	0.660	14188.0
Basin 3	0.66	8.415	0.92	0.000	1.29	0.000	2.36	0.000	8.415	0.660	20161.0
Totai											48786.0
OFFSITE BASINS EXISTING VOLUME OF RUNOFF (CF)											
Basin 4	0.66	2.616	0.92	0.000	1.29	0.000	2.36	0.000	2.616	0.660	6267.0
Basin 5	0.66	0.971	0.92	0.000	1.29	0.000	2.36	0.000	0.971	0.660	2326.0
Total											8593.0
DEVELO	DEVELOPED VOLUME OF RUNOFF (CUBIC FEET)										
ONSITE	ONSITE EXISTING VOLUME OF RUNOFF (CF)										•
Basin A	0.66	0.000	0.92	1.870	1.29	0.000	2.36	10.596	12.466	2.144	97019.0
Basin B	0.66	0.000	0.92	0.495	1.29	0.000	2.36	2.807	3.302	2.144	25700.0
Basin C	0.66	0.000	0.92	0.510	1.29	0.000	2.36	2.893	3.403	2.144	26487.0
Basin D	0.66	0.000	0.92	0.138	1.29	0.000	2.36	0.782	0.920	2.144	7160.0
Basin E	0.66	0.000	0.92	0.041	1.29	0.000	2.36	0.231	0.272	2.144	2116.0
Total											158482.0
ONSITE BASINS DEVELOPED VOLUME OF RUNOFF (CF)											
Basin F	0.66	0.000	0.92	0.146	1.29	0.000	2.36	0.825	0.971	2.144	7555.0
Basin G	0.66	0.000	0.92	0.392	1.29	0.000	2.36	2.224	2.616	2.144	20362.0
Total		•									27917.0