HYDROLOGY M18/D4 2 PLANS

M18/D4

---

2 Plans

City of Albuquerque

October 20, 1982

Siesta Square
Home Owners Association
6114 Gibson SE
Albuquerque, New Mexico 87108

Dear Sirs:

It has been brought to our attention that the storm runoff along the alley way behind your complex has been diverted onto the Christ United Methodist parking lot, thus causing a large amount of sediment to deposit within the parking lot.

A field inspection revealed that an asphalt water block was constructed when the pavement within the alley was overlayed. After doing some research into what was required, we found that the approved plan calls for a V - shaped swale to divert the water onto Dakota St, SE. The asphalt water block is in non-compliance with the approved plan and must be removed before further damage is done to the parking lot. Enclosed you will find a copy of the area in question. If you have any questions, please feel free to call me at 766-7644.

Sincerely,

Bernie J. Montoya

Bernie J. Montoya
Hydrologic Engineering Tech.

cc: Mr. Dale Hill
6200 Gibson Blvd. SE
Albuquerque, New Mexico 87108

Enclosure

MUNICIPAL DEVELOPMENT DEPARTMENT

Richard S. Heller, P.E., City Engineer
LaMonte J. Urban, P.L.S., Chief City Surveyor

ENGINEERING DIVISION

123 Central Avenue N.W.
Albuquerque, New Mexico 87102
Telephone (505) 766-5040

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
401 San Pedro, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

June 28, 1979

RECEIVED
JUN 29 1979
CITY ENGINEER

Mr. Richard Heller
City Engineer
CITY OF ALBUQUERQUE
PO Box 1293
Albuquerque, New Mexico 87103

HAND-DELIVERED
City Hall

SUBJECT: REVISED DRAINAGE REPORT - SIESTA SQUARE SUBDIVISION

Dear Mr. Heller:

The attached Drainage Report for Siesta Square Subdivision has been revised to incorporate all of the items that you cited in your letter of June 18, 1979.

It is respectfully requested that you approve the Drainage Report at your earliest possible convenience so that our client may secure his building permit.

Very truly yours,

JOHN B. ROBERT, P.E. & L.S.

JBRsm
Enclosure

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
David Rusk

June 18, 1979

Mr. John A. Andrews
Andrews, Asbury & Robert, Inc.
401 San Pedro N.E.
Albuquerque, New Mexico 87108

Re: Drainage Report for Siesta Square Subdivision

Dear Mr. Andrews:

A review of the drainage report has resulted in the following observations:

1. Approval and signature of the plat can be granted if the site grading plan has been submitted and has been approved in accordance with the requirements of the Planning Department.

2. The site grading must be congruent with the grades of the alley to the south, which must be defined and obtained from the City Engineer's Office - Design Section.

3. If diversion of offsite runoff to public facilities is to be performed, this diversion must be performed within the boundaries of the property, unless a Letter of Consent from the adjacent property owner is supplied with the drainage report.

4. A vicinity topographic map must be supplied to verify the offsite drainage areas contributions.

5. The landscape areas are not clearly identified to allow the verification of the computations of the runoff coefficients.

6. The use of a value of 0.5 for the undeveloped coefficient of runoff is inappropriate. Your firm has used the commonly adopted value of 0.4 in another drainage report submitted for another site at the same time. Since in townhouse development in Albuquerque southwestern landscaping is used to minimize maintenance, and since this southwestern landscaping is underlain by polyethylene film, the drainage report must assume this condition in evaluating runoff coefficients.

7. Since Gibson Blvd. is subject to frequent flooding conditions, it must be demonstrated that the finished floor elevations of the proposed building are safe. This information must also be supplied to insure compliance with the requirements of the National Flood Insurance Program.

8. Due to No. 7 above, it is requested that the runoff from drainage Area "C" be routrd to a ponding area before discharge onto public facilities.

9. It is recommended that the ponds be supplied with an outlet through the curb face, to allow drainage of said ponds. The outflow from the ponds must be controlled so that a minimum detention time of 24 hours is provided.

If you wish to discuss these matters further, please do not hesitate to call this office.

Very truly yours,

Richard S. Heller

Richard S. Heller
City Engineer

BC/RSH/fs

cc - Bruno Conegliano
Fred Aguirre
Drainage File

City of Albuquerque
P O BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
David Rusk

June 15, 1979

Mr. John A. Andrews
Andrews, Asbury & Robert, Inc.
401 San Pedro, N.E.
Albuquerque, N.M. 87108

Re: Siesta Square Subdivision Drainage Report

Dear Mr. Andrews:

Due to the large number of drainage reports received in the past three weeks by the City Engineer's Office and to the limited staff resources, it has not been possible to reply within the time specified by the AMAFCA Res. 72-2.

Very truly yours,

Richard S. Heller
City Engineer

BC/RSH/ms

cc-Richard Leonard-AMAFCA
Drainage file
Bruno Conegliano

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
401 San Pedro, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

RECEIVED
JUN 06 1979
CITY ENGINEER

June 5, 1979

Mr. Bruno Conegliano
Assistant City Engineer-Hydrology
CITY OF ALBUQUERQUE
PO Box 1293
Albuquerque, New Mexico 87103

HAND-DELIVERED
City Hall

SUBJECT: DRAINAGE REPORT - SIESTA SQUARE SUBDIVISION

Dear Mr. Conegliano:

Please find enclosed two (2) copies of the Drainage Report for the Siesta Square Subdivision, for your review and approval.

Additionally, for your information, we are enclosing a print of the proposed subdivision plat.

Your earliest review of this report will be appreciated.

Very truly yours,

John A. Andrews

JOHN A. ANDREWS, P.E.

JAAsm
Enclosures
cc: Mr. Word Payne (w/encl.)

Drainage Report
For
SIESTA SQUARE SUBDIVISION
(Revised June 27, 1979)

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers

WORD H. PAYNE COMPANY

ALBUQUERQUE, NEW MEXICO

RECEIVED

JUN 29 1979

CITY ENGINEER

DRAINAGE REPORT
FOR
SIESTA SQUARE SUBDIVISION

JUNE, 1979

(Revised June 27, 1979)

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers

401 San Pedro, NE
Albuquerque, New Mexico 87108

505-265-6631

DRAINAGE REPORT
FOR
SIESTA SQUARE SUBDIVISION

TABLE OF CONTENTS

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I	Introduction	1
II	Existing Conditions	2
III	Developed Conditions	3
	Location Map	MAP NO. 1
IV	Drainage Analysis	4
		Sheets 1 through 6

MAPS

Drainage Analysis Site Plan	MAP NO. 2

(See special pocket at back of report for Map No. 2)

I

INTRODUCTION

The Word H. Payne Company proposes to develop a 0.77-acre tract of land designed as Siesta Square Subdivision. Siesta Square is located within the Southeast quadrant of the City of Albuquerque, New Mexico, and being situate in the Northeast quarter of Section 36, Township 10 North, Range 3 East, N.M.P.M. (see enclosed Location Map No. 1 - Zone Atlas Map M-18).

The type of development proposed for this tract consists of zero lot line, single-family townhouse units.

It is the intent of this report to provide an acceptable method of controlling excess storm water runoff in the event of a 100-year frequency storm.

Guidelines for the analysis are based on the Albuquerque Metropolitan Arroyo Flood Control Authority's Drainage Resolution 1972-2 and the City of Albuquerque Drainage Ordinances.

II

EXISTING CONDITIONS

The subject property is presently undeveloped with a gentle slope from East to West of approximately 1.4 percent. The tract is bounded on the North by Gibson Boulevard, Southeast, an improved street. Dakota Street, Southeast bounds the property on the West, which is also an improved street.

An existing residential subdivision bounds the property on the South which prevents runoff from entering the property in that direction.

To the East of Siesta Square, an existing paved parking area extends the length of the East boundary. This area generates a sheet flow runoff which crosses the East boundary of the subject property. This existing parking area is approximately 150' x 100'.

Revised June 27, 1979

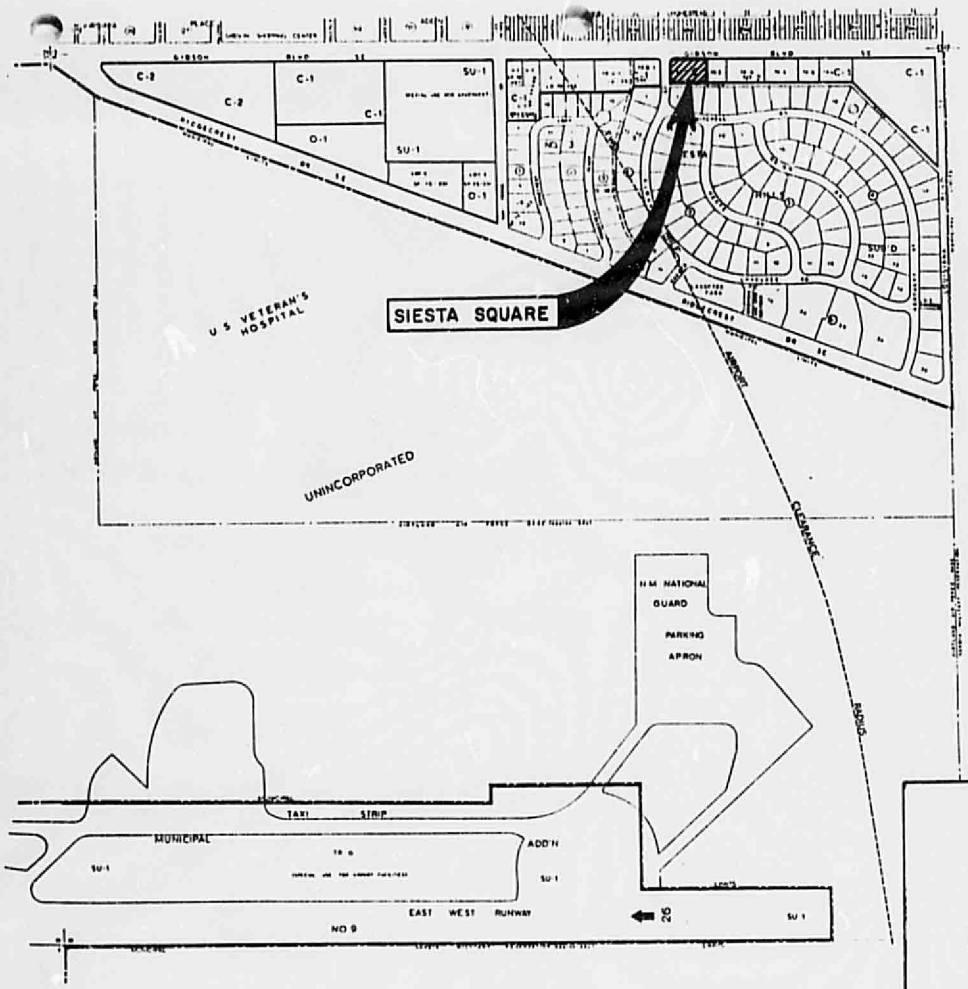
III

DEVELOPED CONDITIONS

In the developed state, it is proposed to control the excess storm runoff due to development by means of onsite ponding. (See Map No. 2 enclosed for Drainage Area designations).

Drainage Area A will be graded to drain to Pond "A", Drainage Area B and Drainage Area C will be graded to drain to Pond "B".

The offsite flows from the existing asphalt-paved parking area to the East of the site will be allowed to enter the subject property and diverted around the proposed buildings as shown on Map No. 2.



SIESTA SQUARE

DRAINAGE ANALYSIS

LOCATION MAP

MAP No. 1

IV

DRAINAGE ANALYSIS

Following is the Drainage Analysis (computations) for Siesta Square, for both the existing conditions and the developed conditions.

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ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Project Siesta Square Sheet 1 of 6
Drainage Analysis Job No. 178
By BSF Chk'd JA Date 6/4/79

Drainage Analysis

Criteria

Design Storm - 100 year frequency

AMAFCA Drainage Resolution 1972-2

City of Albuquerque - Drainage Ordinance

Reference Material

1. Albuquerque Area (1961) Intensity-Duration-Frequency Curves.
2. 100 year - 6 hour precipitation, Rainfall Frequency Map, U.S. Weather Bureau.
3. Time of concentration nomograph, p. 2. Kirpich.

Design Parameters

Peak runoff rate - Rational formula, $Q = CIA$

Runoff Volume = V = Runoff coefficient x Rainfall x Area

Runoff coefficients

Existing Ground Surface = 0.40

Open Areas (developed landscaping) = 0.40

Paved Areas = 0.92

Roof Area (flat roofs) = 0.85

Revised 6/27/77

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CONSULTING ENGINEERS
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Project Siesta Square Sheet 2 of 6
Drainage Analysis Job No. 173
By [illegible] Chk'd JA Date 6/A/77

Existing Conditions

100' x 150' Parking Lot to East - Offsite

A = Area = 0.34
H = Elev. difference = 1.4 ft
L = Length of drainage area = 100 ft
C = runoff coefficient = .92
TC = time of concentration = ∠10 use 10
I = Intensity = 5.4 in/hr.

Q = CIA = .92 × 5.4 × 0.34 = 1.69 cfs

(runoff crosses east boundary of Siesta Square as sheet flow)

Siesta Square Subdivision - Onsite

(Siesta Square Subdivision comprises one drainage basin which flows to the west)

A = 0.77 ac.
H = 2.8 ft
L = 225 ft
C = 0.40
TC = ∠10 mins, use 10 mins
I = 5.4 in/hr

Q = CIA = .40 × 5.4 × .77 = 1.66 cfs

V = .4 × 2.4 × 1/12 × .77 = 0.062 ac.-ft
= 2683 ft³

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401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Project Sierra Square Sheet 3 of 6
Drainage Analysis Job No. 173
By JSF Ck'd JA Date 6/11/79

Developed Conditions

100'x150' Parking Lot to East - Offsite

SAME - SEE SHEET 2

NOTE: It is assumed that the time of concentration for each onsite drainage area in the developed state will be less than 10 mins., therefore a maximum intensity of 5.4 in/hr was used in all calculations.

Drainage Area 'A'

Total Area = 7428 ft² = 0.171 ac

Paved Area = 2840 ft² = 0.065 ac.
Landscaped Area = 2768 ft² = 0.064 ac.
Roof Area = 1820 ft² = 0.042 ac.

$$C_{combined} = \frac{2840 \times .92 + 2768 \times .4 + 1820 \times .85}{7428}$$

$$= 0.709$$

$Q = CIA = 0.66$ cfs

$V = 0.709 \times 2.4'' \times 1/12 \times 7428 = 1053$ ft³

ANDREWS, ASBURY & ROBERT, INC.
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Telephone (505) 265-8631

Project SIESTA SQUARE Sheet 4 of 6
DRAINAGE ANALYSIS Job No. 173
By BF Chk'd JA Date 6/4/79

DRAINAGE AREA 'B'

TOTAL AREA = 13316 FT² = 0.306 AC.

PAVED AREA = 3440 FT² = 0.079 AC.
LANDSCAPED AREA = 6524 FT² = 0.150 AC.
ROOF AREA = 3352 FT² = 0.077 AC.

$$C_{combined} = \frac{3440 \times .92 + 6524 \times .4 + 3352 \times .85}{13316}$$

$$= 0.648$$

$Q = CIA = .648 \times 5.4 \times 0.306 = 1.07 CFS$

$V = 0.648 \times 2.4'' \times 1/12 \times 13316 = 1726 FT^3$

DRAINAGE AREA 'C'

TOTAL AREA = 12871 FT² = 0.295 AC

PAVED AREA = 3463 FT² = 0.079 AC
LANDSCAPED AREA = 2848 FT² = 0.065 AC
ROOF AREA = 6560 FT² = 0.151 AC

$$C_{combined} = \frac{3463 \times .92 + 2848 \times .4 + 6560 \times .85}{12871}$$

$$= 0.769$$

$Q = CIA = .769 \times 5.4 \times .295 = 1.23 CFS$

$V = 0.769 \times 2.4'' \times 1/12 \times 12871 = 1980 FT^3$

Revised 6/27/79

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CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-8631

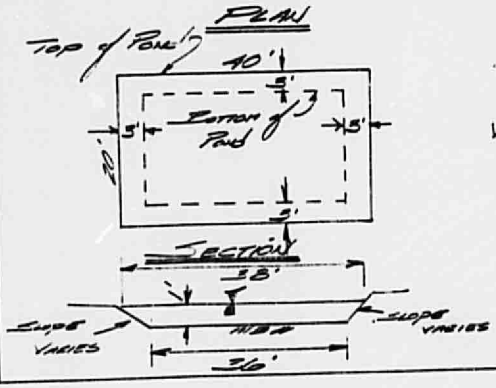
Project: SIESTA SQUARE — Sheet 5 of 6
DRAINAGE ANALYSIS — Job No. 173
By GF — Chk'd JA — Date 6/5/79

SUMMARY - DEVELOPED CONDITIONS

DRAINAGE AREA	Q (CFS)	VOL. (FT^3)
'A'	0.66	1053
'B'	1.07	1726
'C'	1.23	1980
TOTALS	2.96 CFS	4759 FT^3

REQUIRED POND VOLUME = DEVELOPED VOL - EXISTING VOL.
= 4759 - 2683 = 2076 FT^3

PROVIDE PONDING VOLUMES AS FOLLOWS:
POND 'A': (FOR DRAINAGE AREA 'A' - SEE MAP No. 2)



$$VOL = \frac{(28 \times 18 + 36 \times 14)}{2} \times 1$$

$= 594\ FT^3$

Revised 6/27/79

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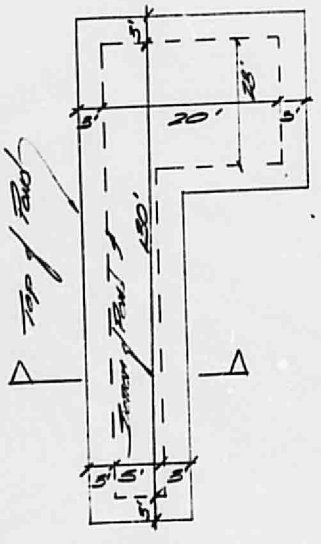
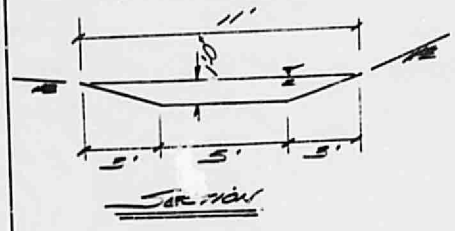
CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Project Sierra Squire Sheet 6 of 6
Drainage Analysis Job No. 175
By RE Chk'd JA Date 6/5/79

Pond 'B' - (For Drainage Area B. See Map No 2)



PLAN



SECTION

Top Area = 2028 ft²

Bottom Area = 1070 ft²

$$\text{Vol} = \frac{2028 + 1070}{2} \times 1$$

$$= 1549 \text{ ft}^3$$

TOTAL pond volume = 594 + 1549

= 2143 > 2076 ok