HYDROLOGY G10/D1 ONE PLAN

G 10- D 1

1 PLAN

RICHARD E. LEONARD
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
R. WARD HUNNICUTT, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
VERNON DOAK, DIRECTOR
KLESTON LAWS, DIRECTOR

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT AVE., N.E.
P. O. BOX 25651 - ALBUQUERQUE, N. M. 87125
TELEPHONE 884-2215

February 23, 1981

Isaacson & Arfman
2727 San Pedro Drive, NE, Ste 114-A
Albuquerque, NM 87110

Attn: Fred C. Arfman

Subject: Flamingo Heights, Tract A-1

Dear Sir:

We have reviewed the drainage concept proposed in the drainage study for this tract. The study is in accord with previous reports and agreements and permission is granted to connect to the existing AMAFCA drain.

Sincerely,

Dan Sabo

Dan Sabo
Engineer

ic

RECEIVED
FEB 24 1981
Ans'd.....

AGENDA ITEM 8

ENVIRONMENTAL PLANNING COMMISSION
March 19, 1981
Z-80-70-1

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
PLANNING DIVISION

Z-80-70-1 William Fanning, agent for Phoenix Development Corporation, requests approval of a Site Development Plan to allow construction of townhouses for Tract A-1 Flamingo Heights Addition located on 65th Street N.W., north of St. Joseph's Avenue N.W., currently zoned SU-1 (Special Use for Planned Residential Development) containing approximately 4.3 acres. (G-10)

COMMENTS FROM OTHER DEPARTMENTS, 3-19-81:

Parks and Recreation	"No adverse comment."
Human Services	"No adverse comment."
AMAFCA	"A drainage report has been submitted. Defer to City Engineer's comments."
City Engineer	"A drainage study is required for approval prior to approval of plat."
Police	"No adverse comment; dwelling unit numbers should be clearly visible from thoroughfare."
Environmental Health	"No adverse comment."
City Hydrologist	"No drainage outfall is available to service this property at this time. It is my recommendation to the Planning Division, that the annexation be amended to incorporate the four tracts of land north of this parcel and west of the subdivision known as Sloan Acres. Since the runoff from this parcel has to be conveyed to the existing sumps in the lowermost portion of the Ladera Basin #16, (see Desk report by Boyle Engineers for the Ladera Detention System), I recommend that the City Engineer be requested to establish the grades for 65th Street in such a manner as to be consistent with the development of Katherine-Nicol. (It is also necessary to obtain a commitment from the developer, to the participation in the solution of the drainage problem of said Ladera Basin #16, following the management plan adopted by AMAFCA with its Resolution 80-14.")
Traffic Engineer	"60' minimum right-of-way for 65th Street. 22' minimum roadway required on private street where there is a median. Island in cul-de-sac may be problem for refuse. 65th Street should be paved (curb and gutter, sidewalk and pavement.)"
Transportation	"Dedication of the appropriate portion of a 60' right-of-way for 65th Street should be a condition of approval."
COG	"No adverse comments."
Transit	"No adverse comment."
Fire Department	"Development must comply with Fire Code Ordinance 50-1975. - Provide required fire flow and fire hydrant distribution - Provide sufficient access for fire fighting equipment."
APS	"No adverse comment."
Real Estate Officer	"No adverse comment."
Zoning Enforcement	"A setback of 10' is required to the street corner sideyard area along 65th Street."
Refuse Removal	"Will need 40' radius without planter in street."
Water Resources	WATER In order that adequate water service and/or fire protection can be provided, waterline extensions at the developer's expense will be required. SANITARY SEWER Sanitary sewer service will require the extension of sewer lines at the developer's expense. Due to narrow width of paving and proposed on-street landscaping, ownership and maintenance responsibility of water and sewer lines will remain private. Development must request of Water Resources a study of water and sewer availability."

superseded by Basin #16 Ladera Study Area for AMAFCA 9/80 by Consultants Terra Sol

PLANNING DIVISION COMMENTS TO THE ENVIRONMENTAL PLANNING COMMISSION, 3-19-81:

This is a request for approval of a site development plan that proposes 42 townhouses on a 4.3 acre site (9.6 du/ac) zoned SU-1 (Special Use for 48 Units) as shown on the attached land use sketch.

Reason for Request:

"This request for development plan approval is submitted to permit construction and sale of a 42 unit townhouse subdivision. Housing units are to be sold fee-simple title. Common areas including the private drive and landscaped median islands are to be owned and maintained by a homeowners' association to be incorporated in the State of New Mexico. Common area landscaping shall be installed by the developer.

Only one means of access has been provided to assure privacy and a maximum of security for future residents of this subdivision. This central street, which shall be a private road, shall be dedicated as an easement for all public utilities and governmental agencies.

PLANNING DIVISION COMMENTS (CONTINUED):

Normal R-T zoning front and rear setback of 20' and 15' respectively shall be maintained."

Staff Analysis:

Annexation and establishment of Special Use zoning for Planned Residential Development was granted in June, 1980 (AX-80-15, Z-80-70) with the following discussion and findings:

"Commission Concerns - Pro:

1. The Commission should approve the higher density in order to encourage and support innovative and creative development plans that speak to higher densities.

Commission Concerns - Con:

1. The requested density is too high due to limited access to the area.
2. Unless additional access can be furnished, 10 to 12 du/ac is more appropriate.

FINDINGS:
1. Dedication of 65th Street along the eastern boundary of this property is required in order to provide access for properties to the north.
2. During the process of approving the site development plan, the EPC will entertain a request for higher density provided the developer can indicate that adequate access will be available after the dedication of 65th Street.
3. The requirements for open space under the R-D zone should be followed in the site development plan."

The site plan presented for review still proposes one access point but a reduction of total units from 48 to 42. The single access is therefore appropriate.

Site Plan

The design of this subdivision is special in terms of the staggered building set backs and landscaped medians. In other respects, the approach is common for this area. As the applicant states, "normal" R-T setback (front and rear) are maintained.

Open Space/Landscaping

The application is incomplete in that it lacks open space calculations. Bill Mueller

IT IS REQUESTED THAT THE APPLICANT/AGENT BE PRESENT AT THE HEARING.

Landscaping is adequate with the exception of street trees on both 65th and the interior street. These trees should be spaced on approximately 35-40 feet centers. All landscaping types must be called out on the revised plan.

As noted, the open space requirements of the R-D zone apply to this project. At 6000 square feet per unit the requirement is 252,000 square feet minus that provided on-site. Discussion of how the balance will be provided is appropriate. The revised site plan must identify open space by unit. Bill Mueller - site plan markup

Circulation/Parking

The revised site plan should also identify required parking for the project as per the requirements of Section 40.A.1. of the Comprehensive Zoning Code, paragraphs t. and u. In calculating spaces, Section 40.A.4.e. must also be addressed. Staff is unable to determine parking since information regarding leaseable area of the units has not be submitted.

Guest parking is non-existent. The sidewalk has not been set back or landscaped. Further, the function as an acceptable pedestrian-way has been diminished due to the large number of drive cuts. Adequate right-of-way for 65th and the interior street has been provided.

Other

Perimeter buffer, walls or fences, has not been shown on the plan. If contemplated, the revised plan must specify location, height and type of proposed walls or fences.

FINDINGS:

NO 1. Sidewalks, setback and landscaped with a variety of street trees are required consistent with the sidewalk ordinance along 65th and the interior street and placed on approximately 35-40 feet centers. YES NO

YES 2. The revised site plan should show required parking pursuant to Section 40.A.1., paragraph t. and u., and Section 40.A.4.e. of the Comprehensive Zoning Code, leasable floor area by unit, a landscape legend, open space requirements, (by unit) perimeter treatment, and any signage, if contemplated.

YES 3. Provision of the balance of open space per R-D requirements should be addressed.

YES 4. All comments of other reviewing entities must be addressed.

NO 5. The City Engineer will establish the grades for 65th Street, and the developer shall make a commitment to participate in the drainage solution of Ladera Basin #16 as per AMAFCA Resolution 80-14.

RECOMMENDATION: APPROVAL OF Z-80-70-1 IS RECOMMENDED SUBJECT TO ABOVE FINDINGS.

Mike Hennessy,
Planner

N:06

RICHARD E. LEONARD
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
R. WARD HUNNICUTT, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
VERNON DOAK, DIRECTOR
KLESTON LAWS, DIRECTOR

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT AVE., N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 884-2215

RECEIVED
APR 9 1981
Ans'd.....

April 7, 1981

Isaacson & Arfman
2727 San Pedro, NE, Suite 114-A
Albuquerque, NM 87110

Attn: Fred C. Arfman

Subject: Flamingo Heights, Tract A-1

Dear Sir:

Reference your letter of April 1, 1981. The Flood Control Authority has no objection to the one c.f.s. increase in the flows entering the Ladera Outfall.

Sincerely,

Dan Sabo

Dan Sabo
Engineer

ic

HYDRO FILE

ISAACSON & ARFMAN, P.A.
CONSULTING ENGINEERING ASSOCIATES

2721 SAN PEDRO N.E. SUITE 114A
ALBUQUERQUE, NEW MEXICO 87110
TELEPHONE – 883-2800

April 15, 1981

Mr. Chuck Easterling
Municipal Development Department
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

RECEIVED
APR 15 1981
CITY ENGINEER

Re: Flamingo Heights Tract A-1

Dear Chuck,

As per our conversation of April 14, 1981, concerning the above referenced Project, I am supplying your office with the following:

1. Drainage Report, February, 1981
   a. November 17, 1980, Letter Requesting Drainage Concept Approval
   b. AMAFCA's Reply Approval

2. Revision to Original Drainage Report
   a. Letter to AMAFCA
   b. Community Pond Detail
   c. Amended Exhibit I

3. AMAFCA's Reply Approval to II-a

Please review and incorporate this correspondence into your files. From our conversation, it appears that our thinking on this matter is concurrent, therefore a letter of approval is necessary for our files.

Thank you.

Sincerely,

Fred C. Arfman

Fred C. Arfman, P.E.

FCA/klr

Attachments

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

April 22, 1981

Fred Arfman
Isaacson & Arfman Consulting
Engineering Associates
2727 San Pedro Drive, N.E.
Suite 114-A
Albuquerque, New Mexico 87110

RE: Flamingo Heights Tract A-1

Dear Fred:

Your updated Drainage Report submitted April 15, 1981 is approved as presented and if we can be of any further service, please call.

Sincerely,

Charles M. Easterling
Principal Assistant City Engineer/
Hydrology

CC: R. Leonard

CME:wdh

RECEIVED
APR 27 1981
Ans'd.....

CITY OF ALBUQUERQUE, NEW MEXICO

CITY ENGINEER'S OFFICE

RECEIVED

OCT 20 1981

ENGINEERING

MEMORANDUM- 10-20-81
(DATE)

TO:
- [X] Robert Fosnaugh, Traffic Engineer
- [X] Water Resources Department - 2 Copies
- [X] Chuck Easterling, Assistant City Engineer-Hydrology
- [X] Bill Kearney, Assistant City Engineer-Field
- [X] Bob Kielich, Assistant City Engineer-Design/Design Engineer
- [X] Monte Urban, Chief Surveyor/ Grant Snyder
- [X] George Paul, Street Maintenance Engineer
- [ ]
- [ ]

FROM: Q.R. Kielich, Assistant City Engineer-Design

SUBJECT: San Blas Subdivision - Combination

Attached drawing are for WATER, SANITARY SEWER, STORM SEWER, PAVING, STREET GRADES, DRAINAGE, AND Curbs, for subject proposed project.

Request review and comments on attached drawings. Typed comments will be submitted thru the (MASTER SCHEDULER) Lenora Chavez, BY 11-3-81, ENGINEER Bob Kielich

QRK/tl
Attachments

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

G10-D1

October 28, 1981

Mr. Fred Arfman
Isaacson & Arfman, P.A.
2727 San Pedro Drive N.E.
Suite 114A
Albuquerque, New Mexico 87110

Re: San Blas Subdivision Construction Grading Plan

Dear Fred:

A review of the referenced plan has resulted in the comments listed below. The numbers indicated refer to the Construction Plan (CP) check-lists. Please supply the following information:

A. CP#3 - Please indicate the atlas page no. in the title block under references and include a legal description on the grading plan sheet.

B. CP#4 - Location and description of Albuquerque Control Survey Vertical Datum should be indicated under "Bench Marks".

C. CP#5 - Please indicate a temporary bench mark on site.

D. CP#9 - Proposed contours should be indicated on plan.

E. CP#14 - Swales should be defined by arrows, and additional spot elevations indicating that flows do not cross adjacent yards or go to the backyards. A large note should be put on the grading plan stating that all flows from the roof must flow to the front yard and only rain that falls on the backyards will be ponded there.

F. CP#17 - Location of roof drains should be shown to indicate that all flows go to the front yard.

G. CP#18 - The ponding areas fronting 65th Street should be labeled.

H. CP#19 - Will construction be phased such that an erosion control plan will be needed?

I. CP#23 - Construction of outlet works for the pond on southeast portion of property will need a City Engineer's Special Order No. 19 approved by Bob Kielich.

J. CP#24 - Are there any existing structures within 15' of the site? If not, please state so.

K. CP#28 - Mr. Chuck Easterling agrees that the low flows should be diverted and released at a controlled rate through the proposed pond on the southeast corner of the project. This area will need to be defined with cross-section, pond volume calculations, controlled outlet and emergency spillway. The 100 year water surface elevation and outline should be shown on the grading plan?

Sincerely,

Jim Fink
Civil Engineer/Hydrology

JF/fs

Isaacson &
Arfman, P.A.

Consulting Engineering
Associates

December 2, 1983

RECEIVED
DEC 02 1983
ENGINEERING

Mr. Fred Aguirre, City Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, N.M. 87103

Dear Mr. Aguirre: Sam B/as (G10-D1)

We are submitting this letter to your department as being a summation of the previously approved drainage report for the above referenced project. The report was approved on April 22, 1981 by the City of Albuquerque and by AMAFCA on April 7, 1981.

At the time when this report was being developed, the City Hydrologist asked that AMAFCA also approve this report since the downstream drainage facility which accepts the developed storm waters is the AMAFCA 60" diameter storm drain outfall from the Ladera Detention Facility (golf course). Attached to this letter are both the City's and AMAFCA approval letters.

A recap of the drainage concept is as follows:

1. Limited individual lot ponding along in the westerly most lots.
2. Backyard ponding only for those volumes which fall in the rear yard areas.
3. A community pond along 65th accepts nuisance flows and a portion of the larger storms generated runoff. This pond releases its stored volumes via a 4" outfall pipe at the NW quadrant of 65th St. and St. Joseph's Ave.
4. Storm waters are accepted by AMAFCA's 60" diameter storm water outfall system which drains the Ladera Detention Facility.
5. The existing double drop inlet in St. Joseph's Avenue shall be expanded to a triple drop inlet.

As requested, the above information is a recap of the previously approved submittals. If there is a need for additional information, please advise.

Very truly yours,
ISAACSON & ARFMAN, P.A.

Fred C. Arfman, P.E.
128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828
FCA/naf
Attachments

Easterling & Associates, Inc.

RECEIVED
SEP 19 1986
HYDROLOGY SECTION

5643 Paradise Boulevard, NW
Albuquerque, New Mexico 87114
(505) 898-8021

September 15, 1986

Fred Aguirre, P.E.
City Hydrologist/Design
Hydrology Section
Utility Development Division
Public Works Department
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

RE: SAN BLAS SUBDIVISION (ZONE ATLAS G-10)

Dear Fred:

The purpose of this letter is to confirm our conversation of July 31, 1986 regarding the non-use of the detention/retention pond at St. Joseph's Avenue, NW and 65th Street, NW. As you are aware, the pond was constructed in accordance with the plan, including inlet and outlet, and was promptly overwhelmed by blow sand from an upwind development project. In accordance with our conversation, the inlet on San Blas was eliminated. The area will be landscaped by the developer and maintained by the homeowner's association.

Additionally, Mr. Bill Osophsky asked you the status of the grading of the undeveloped RT subdivision which lies adjacent to and south of the San Blas subdivision. You indicated you were not aware of any current activity on that tract, but if and when something does occur, the drainage from that parcel would not be allowed to drain northward into the San Blas subdivision, and retaining walls along their north boundry would very likely be required. Mr. Osophsky requested something be placed in that parcel's drainage file indicating that policy objective.

If my memory is wrong, or if I have omitted anything, please do not hesitate to contact me.

Sincerely,

Charles M. Easterling, P.E.
President

cc: Mr. William Osophsky w/enclosure

Enclosure

CME/mlc
Job No. 607601

Agreement made between the City of Albuquerque, New Mexico, a municipal corporation, hereinafter referred to as "City", and Phoenix Development Corporation, a New Mexico corporation, hereinafter referred to as "Phoenix".

WHEREAS, Phoenix is the owner of certain described real estate lying situate and being in the City of Albuquerque, County of Bernalillo, State of New Mexico, to-wit:

> That certain tract of land situate within Section 2, Township 10 North, Range 2 East, New Mexico Principal Meridian and situate within the corporate limits of the City of Albuquerque, Bernalillo County, New Mexico and comprising of Tract A-1 of Flamingo Heights Subdivision, as the same was filed in the Office of the County Clerk of Bernalillo County, New Mexico on March 27, 1963 in volume B-4, Folio 132 and lying within the Town of Albuquerque Grant

GID-D1

as depicted on the map attached hereto as Exhibit "A"; and,

WHEREAS, a site development plan for the above described property was approved by the Environmental Planning Commission of the City of Albuquerque on March 19, 1981; and,

WHEREAS, the approved site development plan provides for private streets, rather than public streets; and,

WHEREAS, pursuant to Section 30.2.5 of the City of Albuquerque Subdivision Ordinance, Article XI, Chapter 7, of the Revised Ordinances of Albuquerque, New Mexico, 1974, as amended through January 1, 1979, the proposed plat containing a private street serving more than one lot cannot be approved by the Planning Director until:

(a) The street's surface is paved with a reasonably level, dust-preventing surface, or

(b) A bond satisfactory to the Mayor is posted with the City to insure such paving prior to the use of the road.

The vehicular surface shall be of asphaltic concrete, concrete, or equal, except that it may be gravel if the

Owner commits himself to the satisfactory site development for the lots served by the private street, which plan is approved by the Traffic Engineer and the Planning Director. [illegible] eight dwellings have their primary vehicular access from a gravel-paved private way; and,

WHEREAS, Phoenix does not intend to develop the property, but rather, intends to sell the property to another owner or developer as soon as the plat is approved, which developer will develop the property pursuant to the approved site development plan; and,

WHEREAS, under the circumstances, the City is satisfied that it is impossible for Phoenix to obtain a bond, as required by Section 30.E.5.b of the Subdivision Ordinance; and,

WHEREAS, it is possible for Phoenix to obtain a Letter of Credit in an amount which will provide the City with sufficient security to insure that the streets within the subdivision will be paved; and

WHEREAS, Letters of Credit are customarily issued for a one (1) year period; and

WHEREAS, the City requires security for a period of two (2) years.

NOW, THEREFORE, the parties to this Agreement, in consideration of mutual confidence and stipulations set out herein, agree as follows:

1. Phoenix agrees to post a Letter of Credit, meeting reasonable conditions imposed upon Phoenix by the City, and acceptable to the City, in the amount of Forty Four Thousand Two Hundred Thirty-Nine Dollars and 50/100 ($44,239.50), running to the City, on or before March _____, 1982, which amount represents 150 percent of the current estimated cost of

paving [illegible] on the approved site development plan pursuant to City requirements set forth in Section 30.E of the Subdivision Ordinance and other applicable City requirements, which amount has been approved by the City Traffic Engineering Department. A copy of the estimate on which the Letter of Credit amount is based is attached hereto as Exhibit "B".

2. Phoenix agrees to obtain a one (1) year renewal of the Letter of Credit after the expiration date of the original Letter of Credit, and to give notice of said renewal before February 1, 1983.

3. Phoenix agrees to complete the paving of the streets as provided for in the approved site development plan for the property pursuant to the City requirements as set forth in 30.E of the Subdivision Ordinance and other applicable City requirements as approved by the City by March 1, 1984.

4. In the event that Phoenix sells or otherwise assigns all or part of the above described property before February 1, 1984, if the Letter of Credit is not renewed or before February 1, 1984, if the Letter of Credit is renewed, it is agreed that purchaser or assignee will post security as required by Section 30.E.5.

5. Phoenix agrees to give the City notice of sale in writing or assignment of all or part of the above described property.

6. The City will not release Phoenix from its obligations under this contract until a successor in interest to Phoenix has posted a bond as provided by Section 30.E.5 of the Subdivision Ordinance, and will continue to hold Phoenix responsible for the paving. At such time as acceptable security has been posted by Phoenix's successor in interest, City will terminate the Letter of Credit.

7. If Phoenix has not given the City notice of a renewal of the Letter of Credit before February 1, 1983, the City will have recourse on the original Letter of Credit between

March 1, 1983 and [illegible]

8. If upon renewal of the Letter of Credit, the paving of the streets, pursuant to the site Development Plan and Section 30.B.5 of the Subdivision Ordinance is not completed by March 1, 1984, and, if a bond acceptable to the City has not been posted by Phoenix's successor in interest to all or a part of the property prior to that date, the City will have recourse on the Letter of Credit.

9. The City, at its option, may require a bond in lieu of a Letter of Credit as security hereunder in the event that it reasonably deems itself insecure under a Letter of Credit. The exercise of such option, and the reasons therefor, will be communicated to Phoenix in writing on or before March _____, 1982.

10. If Phoenix or its successors at any time request the City to accept the private streets as dedicated public rights-of-way, and to take over the maintenance of these streets, Pheonix agrees to reconstruct these streets to meet City standards for dedicated public streets.

11. This instrument contains the entire agreement between the parties, and no statement, promises, or inducements made by either party or agent of either party that is not contained in this written Agreement shall be valid or binding; and this contract may not be enlarged, modified, or altered, except in writing, signed by the parties and endorsed hereon.

12. This Agreement shall inure to the benefit of and be binding upon the heirs, executors, administrators, assignees, and successors of the respective parties and shall constitute a covenant running with the land.

Executed this _____ day of March, 1982.

PHOENIX DEVELOPMENT CORPORATION

Its: Pres., V.P.

CITY OF ALBUQUERQUE

Frank A. Kleinhenz
Chief Administrative Officer

ATTEST:

City Clerk

APPROVED:

Legal Department

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 23rd day of March, 1982, by , Phoenix Development Corporation.

Notary Public

My Commission Expires:
9-15-85

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 24th day of March, 1982, by Frank A. Kleinhenz, Chief Administrative Officer, City of Albuquerque.

Notary Public

My Commission Expires:
7-23-83

Filed
March 30, 1982 10:59 A.M.
Misc 919 Page 987-992

Baker-Sparling Contracting

Contractors
Engineers • Builders
Heavy Construction

January 11, [illegible]

Mr. Fred Arfman
Isaacson & Arfman
2727 San Pedro, N.E., Suite [illegible]
Albuquerque, N.M.
87110

Dear Fred,

Re: [illegible]

Item	Unit Price	Estimated Quantity	Amount
Mountable Curb & Gutter	[illegible]	[illegible] L.F.	[illegible]
Median Curb & Gutter	[illegible]	[illegible] L.F.	[illegible]
Subgrade Prep.	[illegible]	[illegible] S.Y.	[illegible]
1 1/2" A.C. base Course	[illegible]	[illegible] S.Y.	[illegible]
Tack Coat	[illegible]	[illegible] S.Y.	[illegible]
1 1/2" A.C. Surface [illegible]	[illegible]	[illegible] S.Y.	[illegible]
Adjust M.H. to Grade	[illegible]	[illegible]	[illegible]
		Total	[illegible]

Exclusions: Tax, [illegible], Permits, Surveying and Use of Permits.

This price is [illegible]

[illegible]

BAKER-SPARLING CONTRACTING

[illegible]

[illegible]

[illegible]

[illegible] Bob [illegible]

[illegible]
T.C. Atlas Miller
City Attorney [illegible]

EXHIBIT "B"

DRAINAGE STUDY

FOR

FLAMINGO HEIGHTS TRACT A-1

FRED C. ARFMAN
NEW MEXICO
7322
REGISTERED

RECEIVED

APR 15 1981

CITY ENGINEER

Prepared by:

Isaacson & Arfman, P.A.

Consulting Engineering Associates
2727 San Pedro Dr. N.E. Suite 114-A
Albuquerque, New Mexico 87110

February 1981

INTRODUCTION

Isaacson & Arfman, P.A. has been contracted by Mr. Robert Pierrot, owner of Flamingo Heights Tract A-1, to provide complete engineering services for their tract of land. As a part of our contract, an investigation of the storm drainage characteristics was undertaken to analyze the site's drainage conditions in both the undeveloped and projected developed states.

Careful attention has been given to how the proposed storm water runoff will act in conjunction with the run off from the surrounding areas. From our study, recommendations are presented that are consistant with the Authorities' requirements for this particular area.

PRE-STUDY INVESTIGATION

Prior to any formal investigation of this tract of land, our firm met with the City Hydrologist, Bruno Conegliano, for comments. He informed us that this study would have to be submitted to AMAFCA for approval, since the storm water runoff would enter into the AMAFCA 60" storm drain located in St. Joseph's Ave. This statement is consistant with the "Basin 16, Ladera Study Area - Alternate Drainage Concepts", September, 1980. This study does not include the 4 acres of this tract, thereby forcing the conclusion that the storm water shall be directed southward toward the Ladera Detention Basin's outfall drain.

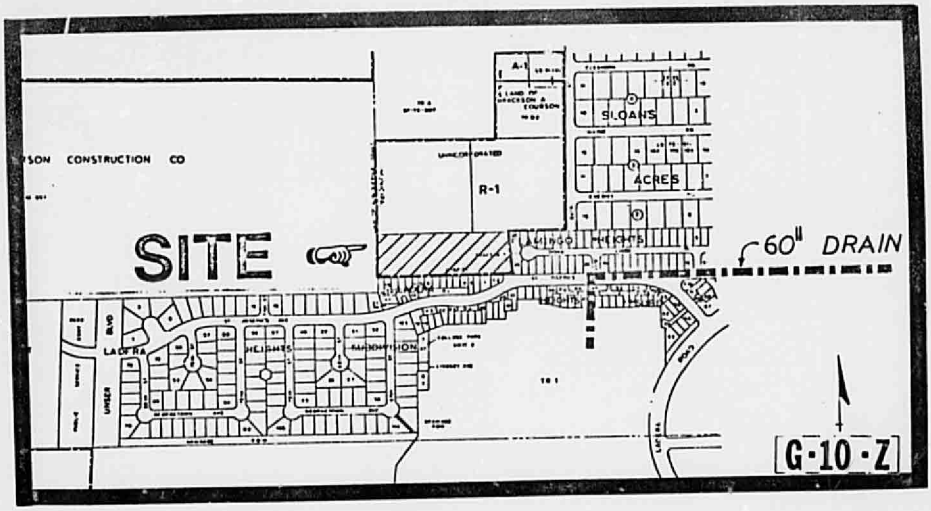
A letter to AMAFCA, dated November 17, 1980, requesting drainage concept approval was answered by the Authorities' letter of December 1, 1980 (See Appendix for copies of correspondence). This report shall endeavor to satisfy the request of Mr. Sabo's letter.

SITE LOCATION AND TOPOGRAPHY

Flamingo Heights Tract A-1 is located on Albuquerque's west mesa. More precisely, this site is bordered on the west by the purposed Katherine-Nichole

Addition, Ladera Heights Townhome to the south, 65th St. to the east and unplatted land borders on the north. The site is approximately 500' west of an existing double drop inlet over the 60" storm outfall of the Ladera Detention Basin.

Ground topograph is typical of the area, very flat land with irregular contour patterns. The overall site consists of 4 acres that is covered with sage brush and native grasses. The soils, surface and subsurface, are composed of a very fine granular (blow) sand.



LOCATION MAP

DESIGN CRITERIA

Engineering Parameters: For calculation of composite coefficients of runoff, the following values of "C" were taken for the indicated land coverages:

(a)	Streets, driveways, roofs	0.90
(b)	Landscaped areas	0.15
(c)	Natural ground	0.25

In addition, all runoff volume calculations have been based on a 100 year-6 hour rainfall of 2.2" as per AMAFCA requirements. Rate of runoff calculations have been based on the frequency-intensity-duration relationship for a 100 year

storm as presented by Gordon-Herkenhoff and Associates in their 1963 Master Plan of Drainage for the City of Albuquerque. This relationship is expressed by the following equation:

$$I = 189/(T_c + 25)$$

Flood Control Regulations: The drainage plan presented in this report has been designed to comply with the Memorandum of Agreement between the City of Albuquerque and the Albuquerque Metropolitan Arroyo Flood Control Authority, dated February 22, 1979. Referring to paragraph 5, of page 2 of the above mentioned memorandum, it states, "The Drainage Regulation permits discharge into a storm drainage facility, provided downstream capacity is adequate."

Based on the above regulation, it is our intent to force all street runoff into the existing 60 inch storm drain. Because of the short "time of concentration" of the developed flows in Flamingo Heights, the added runoff should be into and cleared out of the drainage system long before it has to carry its maximum flows from the detention area.

COMPUTATIONAL PROCEDURES

Hydrological flow rate calculations are based on the rational runoff method. Time of concentrations were calculated using the Overland Time of Travel for undeveloped areas and open channel velocities for street flows. Estimates were maed in percents of areas covered by each coverage type described in the above section for each drainage sub-area.

Volume calculation for sizing individual backyard ponds shall be based on a percentage of area to be ponded for each lot. In determining the net volumes of discharge for the entire site in both natural and developed states were preformed by multiplication of the applicable "C" factor times the 100 year-6 hour rainfall (0.183) times the appropriate area to obtain cubic feet of water.

OFFSITE DRAINAGE

Flamingo Heights Tract A-1 lies on the border of two natural retention areas. To the north is Basin 16 and to the south, of which this tract is part of, is the Ladera Detention Area. Flows have the potential to go either direction, but of greater interest, this site is positioned such that it doesn't nor will it ever have to accept any offsite flows.

ONSITE DRAINAGE

Exhibit I delineated the internal patterns of drainage of the site. Even though it is understood that onsite ponding is not a requirement to meet with AMAFCA regulations, it is still desirable on certain lots to backyard pond in order to have a more workable and realistic grading plan.

Storm water runoff will leave the site at the 65th Street entrance; then southward to St. Joseph's Ave. Flow patterns and discharge values are found on Exhibit I.

Developed Drainage Conditions: Grading for this site shall be done in such a way as to meet the following conditions:

1. Lots shall be graded to provide backyard ponding where indicated (Exhibit I).
2. All pads shall conform to the natural topography as much as possible.
3. Grade western most lots such that they match the purposed elevations of the lots of Katherine-Nicole Subdivision.

RECOMMENDATIONS

1. No individual street is required to handle a large flow rate, but the minimum grade as per City Standards should be 0.5%. For a 32' FF street, 4" curb, 4" crown and no overflow, the maximum capacity is equal to 11 cfs at the top of curbs. See Appendix for street carrying capacity computations.
2. Rear yard ponding will require a minimum of 16% of the area drained

to the pond. This will allow a maximum depth of 0.5'. The limits of the pond waters should be kept a minimum distance of 5' away from any walls and 15' away form any house foundations. These general recommendations are only intended to call the developer's attention to potential settlement problems in the area. A qualified soils engineer should prepare specific guidelines for ponding water around structures.

3. Where flows leave the site at 65th Street; they shall empty into the existing double drop inlet which shall be converted to a triple drop inlet in St. Joseph's Avenue. This area shall contribute 10 cfs of storm water runoff. See Appendix for support calculations for this drop inlet.

CONCLUSION

All runoff from this site shall enter into the AMAFCA 60" storm drain which empties the Ladera Detention Facility. Since this is the case, it was recommended that this study be submitted to the AMAFCA authorities for their approval of the drainage concept as well as to secure AMAFCA's permission to connect to and improve existing AMAFCA facilities.

APPENDIX

Composite "C" Calculations

Runoff Computations

Street Carrying Capacity

Drop Inlets

Rear Yard Ponding

Correspondence

- Letter to AMAFCA
- AMAFCA Reply

COMPOSITE "C" CALCULATIONS

Refer to Area Subject to Runoff:

Step #1: Determine Area subject to runoff = 2.77 ac.

Step #2: Determine Impervious Surface Area

(a) Streets

65th St. (44' FF)	=	10,868	S.F.
Private St.	=	26,732	S.F.
	Total	37,600	S.F.

(b) Driveway and Walks

Length = 20'-25'
Width = 20'
Area = 500 SF
Walks = 100 SF
600 SF x 42 = 25,200 SF

(c) Roofs-Typical = (1600 SF)

Ponded Lots - ½ roof drains to street
Area of Roof x No. of Units
(42) (800 SF) = 33,600 S.F.

(d) Total Hard Surface = 96,400 S.F.
= 2.21 ac.

Step #3: Determine onsurface area which drains to street.

(2.77 ac.) - (2.21) = 0.56 ac.

Step #4: Calculate Composite "C" Value:

$0.90 \left(\frac{2.21}{2.77}\right) = 0.72$

$0.20 \left(\frac{0.56}{2.77}\right) = 0.04$

0.76 - Composite "C"

STREET CAPACITY

Street carrying capacities for 32' FF with standard 4" crown and with no overflow at a 0.5% slope are shown below.

Cross-sectional area = (16') (0.33') (0.5) (2) = 5.28 ft.^{2}

W.P. = 33 ft.

$$Q = \frac{1.486}{n} \times \frac{d^{5/3}}{p^{2/3}} \times S^{\frac{1}{2}}, \text{ where } S = 0.5\%$$

$$= 94.07 \times 1.546 \times 0.07$$

Q = 10.83 cfs. Use <u>11 cfs</u> - o.k.

Velocity = Q/A = 11/5.28 = 2.1 ft./sec.

RUNOFF COMPUTATIONS

Drainage Area: Interior street and front yard area as shown of the drainage plan (Exhibit I).

Area = 2.77 acres

c = 0.76

tc = 15 min

$$I = \frac{189}{15+25} = \frac{189}{40} = 4.73$$

D = 2.2 inches

Q = CIA = (0.76) (4.73) (2.77) = 9.96
use 10 cfs

Vol = CDA = (0.76) (0.183) (120661) = 16,781 cu. ft.

Comments: Flows exit site at the intersection of the development's private street and 65th St. Flow then travel down St. Joseph's Ave. approximately 430' to the drop inlets over the storm outfall drain.

DROP INLETS

Existing Double Drop Inlet

Design Information: Flow line elevation is 5108.26. Inlets are located in a sag (low poing of the street's vertical curve), therefore a ponding depth of 8" is allowable within the limits of the 60' R.O.W.

Total opening = 14.5 sq. ft.

Clear open area = 10.9 sp. ft.

So;

Grate Capacity equals 10.9 $ft.^2$ x 3.8 $cfs/ft.^2$ (capacity per square foot for 8 inch head from accompanying chart) - 10.9 $ft.^2$ x 3.8 $cfs/ft.^2$ = 41.4 cfs

From Table 2-1 (attached) (Reduction Factors to Apply to Inlets) a 50% reduction must be applied against the theoratical capacity.

Design Capacity:

41.4 x 0.50 = 20.7 cfs

Purposed Triple Drop Inlet

Total opening = 21.75 sq. ft.

Clear open area = 16.35 sq. ft.

So;

Grate Capacity equals 16.35 $ft.^2$ x 3.8 $cfs/ft.^2$ (capacity per square foot for 8 inch head from accompanying chart) =

16.35 $ft.^2$ x 3.8 $cfs/ft.^2$ = 62.13 cfs

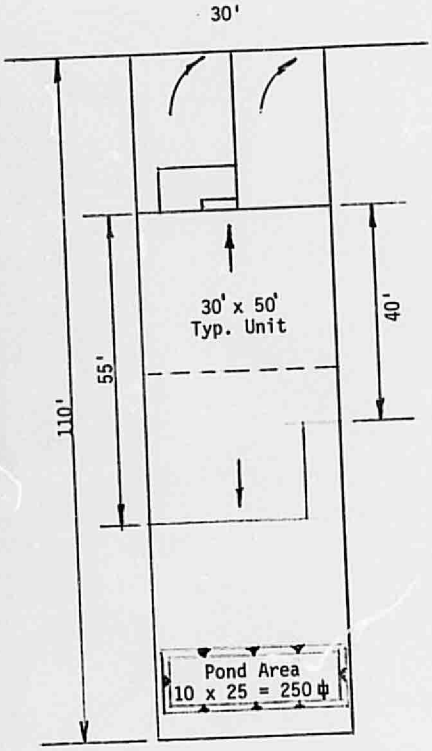
From Table 2-1 (attached) (Reduction Factors to Apply to Inlets) 50% reduction must be applied against the theoratical capacity

Design Capacity:

62.13 x 0.50 = 31.1 cfs.

REAR YARD POND CALCULATIONS

Typical Lot Size = 30 x 110



Area Drainage to Rear Yard
60' x 30' = 1800 S.F.
Roof Area = 30 x 24 = 720

Composite "C"

$0.9 \left(\frac{700}{1800}\right) = 0.35$

$0.2 \left(\frac{900}{1800}\right) = \underline{0.10}$

0.45

Volume of Runoff

D = 2.2" or 0.183'

Vol = CDA
= (0.45) (0.183) (1800)
= 148 cu. ft.

@ 0.5' depth in the ponding Area, the Area required = 296 S.F.

% of Area = $\frac{296}{1800}$ = 16%

November 17, 1980

Mr. Dan Sabo
AMAFCA
2600 Prospect Ave. N.E.
Albuquerque, NM 87106

REFERENCE: Flamingo Heights Tract A-1

Dear Mr. Sabo:

At the suggestion of Mr. Conegliano, I am requesting that the Authority grant us permission that would allow for the storm water flows from the above mentioned tract of land to enter into the outfall drain of the Ladera Detention Basin. It is our understanding that this request is consistant with the areas drainage masterplan and also with the approved adjacent drainage studies.

Attached is a vicinity map showing the proposed site and its proximity with the Authority's facilities.

Please advise us as to the acceptance of our drainage concept so that we may proceed with our formalized report.

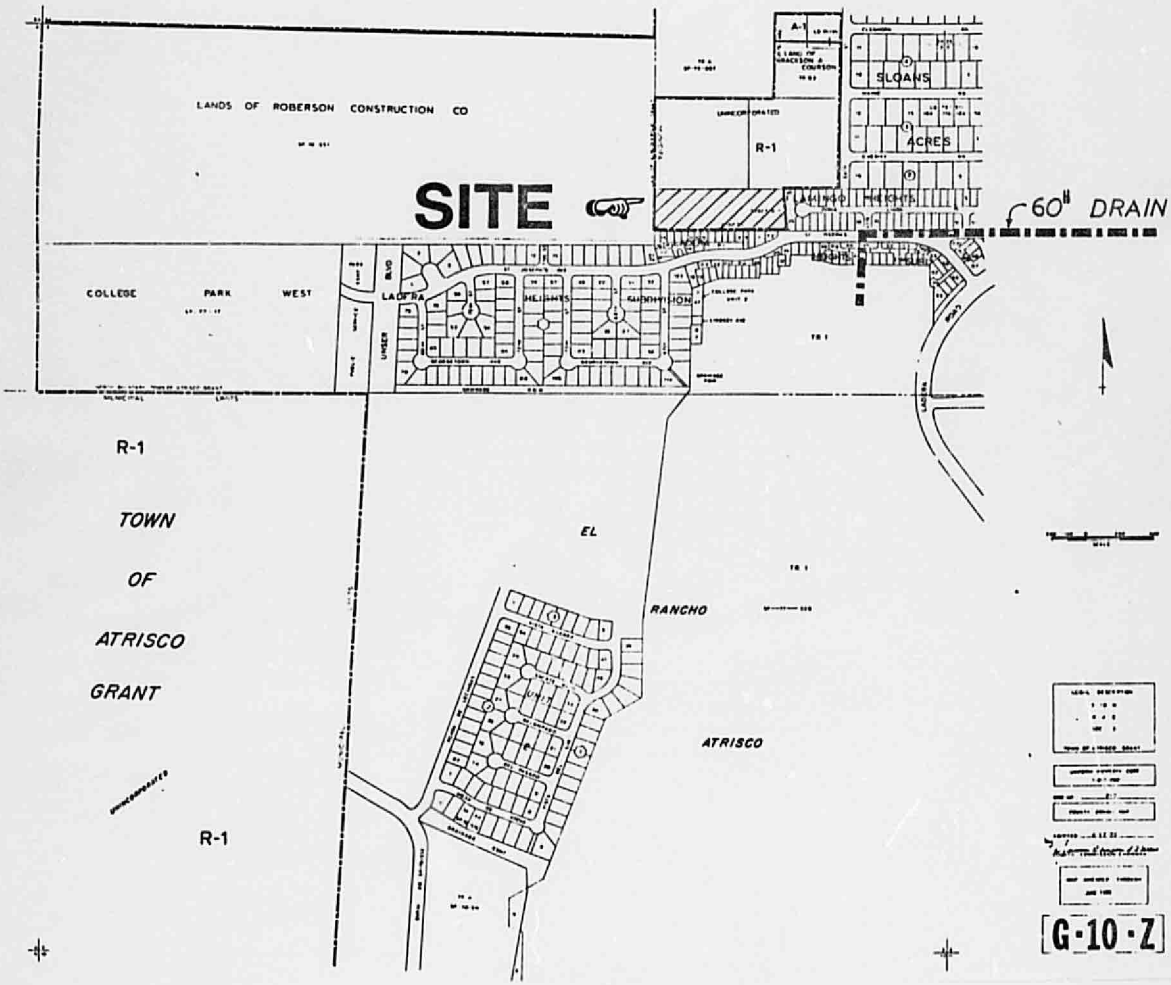
Respectfully,

Fred C. Arfman

Fred C. Arfman, P.E.

FCA:ja

Enclosure


LANDS OF ROBERSON CONSTRUCTION CO
SITE
COLLEGE PARK WEST
LADERA BLVD
LADERA HEIGHTS
SUNNYMOUNT
SLOANS ACRES
R-1
60" DRAIN
R-1
TOWN OF ATRISCO GRANT
EL RANCHO ATRISCO
R-1

G-10-Z

RICHARD E. LEONARD
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
WILLIAM V. HEREFORD, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
VERNON DOAK, DIRECTOR
KLESTON LAWS, DIRECTOR

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority
2600 PROSPECT AVE. N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 884-2215

RECEIVED
DEC 4 1980
Ans'd.....

December 1, 1980

Isaacson & Arfman
2727 San Pedro, NE, Suite 114-A
Albuquerque, NM 87110
Attn: Fred C. Arfman

Subject: Flamingo Heights Tract A-1

Dear Fred:

We have no objection to your request if your statement in paragraph one is documented.

I have made a cursory check and it appears that at least the inlet capacity has been reached by previous drainage reports.

Please let me know if you have any additional information.

Sincerely,

Dan Sabo

Dan Sabo
Engineer

ic

ISAACSON
ARFMAN, P.A.
CONSULTING ENGINEERING ASSOCIATES

2727 SAN PEDRO N.E. SUITE 114A
ALBUQUERQUE, NEW MEXICO 87110
TELEPHONE – 883-2800

April 1, 1981

Mr. Dan Sabo
AMAFCA
2600 Prospect Avenue, N.E.
Albuquerque, New Mexico 87106

Re: Flamingo Heights, Tract A-1

Dear Mr. Sabo,

In view of our recent involvement with HUD/FHA housing projects on Albuquerque's West side, the owner and architect of the above mentioned project feel that a re-evaluation of the on-site drainage is in order. To expand on this, I shall endeavor to outline and state some of the obstacles we must overcome in order to satisfy FHA.

In a development where individually deeded lots are to be sold, the lot must handle on-site or discharge all of the storm waters generated by the rainfall. These flows may exit onto a public right-of-way or drainage easement. If any flows are to be ponded on-site, the limits of such pond must be kept a minimum of 15 feet away from the dwelling units. Now, with respect to the townhouses proposed for this development, a situation will exist where many of the lots will have a rear yard setback of 15 feet. FHA allows for an exception in these cases, that being for the ponding of storm water that falls in the rear yard area only. FHA insists on a plan that has all volumes from the roof areas draining to the streets or rear yard areas where sufficient space is encountered.

Therefore, we are requesting that the Authority grant us a revision as to the limits of the area required to pond (see attachment). This revised area doesn't take in the four Westerly corner lots for there seems to be sufficient space for rear/side yard ponds.

The increase area subject to runoff effectively increases the amount of runoff leaving the site, but by routing the streets Southerly flows through a detention pond at the site's Southeast corner, an

acceptable solution exists. Since major flows are routed through the pond, a longer time of concentration is achieved and a 1 cfs increase of the flow rate can be expected (see attached calculations). A revised discharge rate of 11 cfs from Flamingo Heights, Tract A-1, is combined with the existing 20 cfs, which still satisfies the 31 cfs capacity of the proposed expanded triple drop inlet in St. Joseph's Avenue.

In conclusion, we request that this correspondence be accepted and incorporated into the drainage file/report.

Thank you for your consideration on this matter and if there are any questions, please feel free to call.

Sincerely,

Fred C. Arfman

Fred C. Arfman, P.E.
Vice President

FCA/klr
Attachments

DRAINAGE REVISIONS

Area subject to ponding = 0.99 Ac.

Area subject to runoff (includes 65th St.) = 3.48 Ac.

Determine Impervious Surface Area

(a) Streets

65th St. (40' FF) = 9,800 S.F.
Private St = 26,532 S.F.

S-T = 36,532 S.F.

(b) Driveways & Walks

Length = 20-25'
Width = 14'
Area = 210 S.F.
Walks = 115 S.F.
425 S.F. x 42 = 17,850 S.F.

(c) Roofs - Typical (1600 S.F.)

1600 x 38 = 60,800 S.F.
600 x 4 = 2,400 S.F.

S-T = 63,200 S.F.

(d) Total Hard Surface = 117,582 S.F.
= 2.7 Ac.

Determine unsurfaced area running off

3.48 Ac - 2.7 Ac = 0.78 Ac.

Determine composite "C" Value

$0.90\left(\frac{2.70}{3.48}\right) = 0.698$

$0.20\left(\frac{0.78}{3.48}\right) = 0.045$

.743 USE 0.74

RUNOFF COMPUTATIONS

GIVENS: Area = 3.48 Ac, C = 0.74, t_c = 17.5 min.

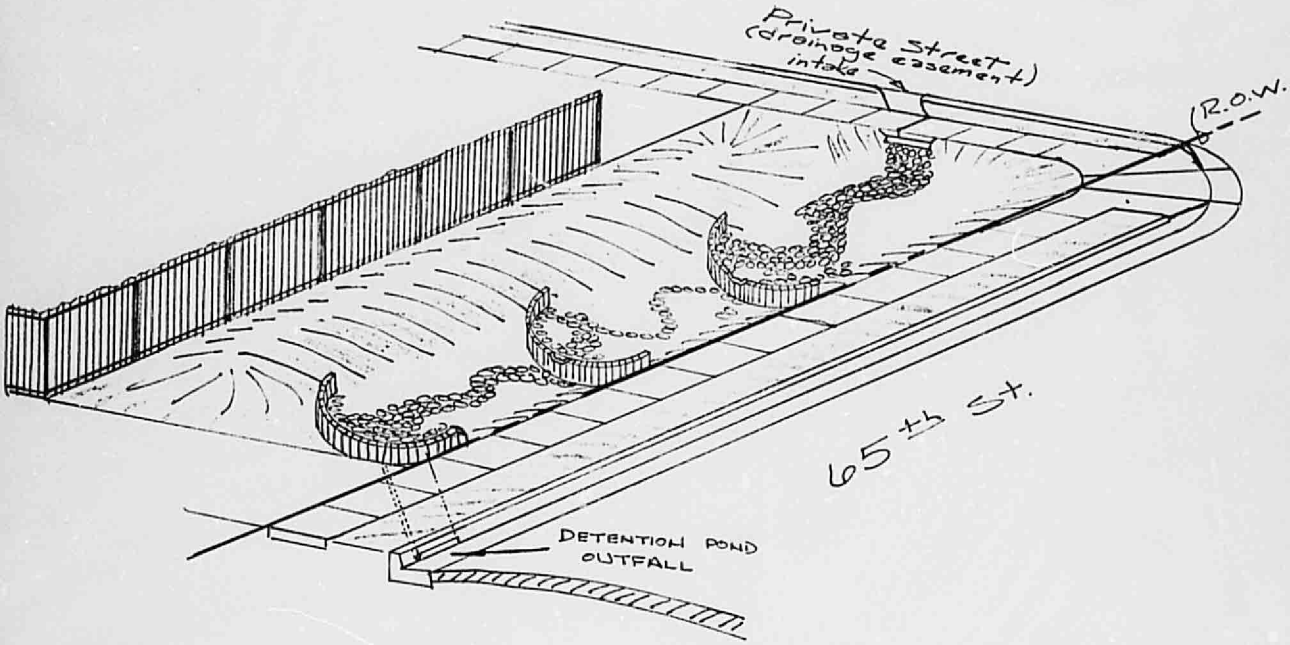
$I = \frac{189}{17.5+2.5} = \frac{189}{42.5} = 4.42$

$Q = CIA = (0.74)(4.42)(3.48)$
$= 11.4$ USE 11 CFS

$V = CDA = (0.74)(0.153)(151589) = 20,523$ CU. FT.

Isaacson & Arfman, P.A.
Consulting Engineering Associates

SUBJECT Flamingo Holds Tr A-1 JOB NO.
BY FCA DATE 4-1-81 SHEET NO. 1 OF


Private Street
(drainage easement)
intake
(R.O.W.
65th St.
DETENTION POND
OUTFALL

RICHARD E. LEONARD
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
R. WARD HUNNICUTT, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
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Albuquerque
Metropolitan
Arroyo
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Control
Authority

2600 PROSPECT AVE., N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 884-2215

RECEIVED
APR 9 1981
Ans'd.....

April 7, 1981

Isaacson & Arfman
2727 San Pedro, NE, Suite 114-A
Albuquerque, NM 87110

Attn: Fred C. Arfman

Subject: Flamingo Heights, Tract A-1

Dear Sir:

Reference your letter of April 1, 1981. The Flood Control Authority has no objection to the one c.f.s. increase in the flows entering the Ladera Outfall.

Sincerely,

Dan Sabo

Dan Sabo
Engineer

ic