



## City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

J20-D6

October 12, 1981

Mr. Joseph Allen  
Denney-Gross & Associates, Inc.  
2400 Comanche Rd. N.E.  
Albuquerque, N.M. 87107

Re: OFFICE BUILDING ON MOON NEAR INDIAN SCHOOL DRAINAGE REPORT

Dear Joe:

The referenced drainage report is hereby approved based on your submittal of September 17, 1981. This office will file a copy of the Reciprocal Drainage Easement with the City Clerk. Please see that copies of the revised plan (dated 9/7/81) are placed in the construction sets. Mr. Fred Aguirre will sign off for the hydrology section when this is done.

I appreciate your cooperation on this project and apologize for the delay in sending this letter. If I can be of further help, please call.

Very truly yours,

*Brian G. Burnett*  
Brian G. Burnett  
Civil Engineer/Hydrology

BGB/fs

### MUNICIPAL DEVELOPMENT DEPARTMENT

Richard S. Heller, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467



DENNEY-GROSS & ASSOCIATES, INC.  
CONSULTING ENGINEERS  
2400 COMANCHE ROAD, N.E.  
ALBUQUERQUE, NEW MEXICO 87107  
(505) 884-0898

September 17, 1981

Mr. Brian G. Burnett  
Civil Engineering/Hydrology  
City of Albuquerque  
P.O. Box 1293  
Albuquerque, NM 87103

RECEIVED

SEP 21

CITY ENGINEER

Re: Office Building on Moon  
near Indian School  
Drainage Report  
DGA Job No. 556.12

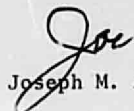
Dear Brian:

Thank you for your quick response on the above mentioned drainage report. All of your comments have been addressed as follows:

1. Two copies of a reciprocal drainage easement are enclosed.
2. See revised plans.
3. See revised plans.

Please call if we can be of any further assistance.

Very truly yours,

  
Joseph M. Allen

JMA/am  
Enclosures

RECIPROCAL DRAINAGE EASEMENT

AGREEMENT effective July 1, 1981, between BRUCE W. PARKER and JANET A. PARKER, his wife, DAVID E. STINCHCOMB and ANN LESLIE STINCHCOMB, his wife, PETER T. BEAUDETTE and PEGGY BEAUDETTE, his wife, (hereinafter "Parties of the First Part"), and BILL C. HENDERSON, a married man, KENNETH ODELL, a married man, JOE R. G. FULCHER, a married man, and PATTI BEARPAW, a single woman (hereinafter "Parties of the Second Part").

WHEREAS, Parties of the First Part are the owners of Lots numbered One (1) and Three (3) of the Replat of Tract "B" in Block "17-A", Dale J. Bellemah's Bellehaven Addition, as the same is shown and designated on the "Summary Plat" showing Lots One (1), Two (2) and Three (3), of the Replat of Tract "B", Block "17-A", Dale J. Bellemah's Bellehaven Addition to the City of Albuquerque, New Mexico, filed in the office of the County Clerk of Bernalillo County, New Mexico, on May 9, 1975; and,

WHEREAS, Parties of the Second Part are the owners of Lot numbered Two (2) of the Replat of Tract "B" in Block "17-A", Dale J. Bellemah's Bellehaven Addition, as the same is shown and designated on the "Summary Plat" showing Lots One (1), Two (2) and Three (3), of the Replat of Tract "B", Block "17-A", Dale J. Bellemah's Bellehaven Addition to the City of Albuquerque, New Mexico, filed in the office of the County Clerk of Bernalillo County, New Mexico, on May 9, 1975; and,

WHEREAS, Parties of the First Part and Parties of the Second Part find that it is to their mutual advantage to arrange for drainage of said Lots Two (2) and Three (3) across Lot One (1) and into the drainage ditch which parallels the south boundary of Lot One (1); and,

WHEREAS, such drainage arrangements will be subject to approval of the City of Albuquerque or other governmental authorities.


NOW, THEREFORE, in consideration of the mutual agreements contained herein, it is agreed as follows:

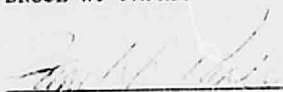
(1) Parties of the First Part, on behalf of themselves and their successors in interest in said Lot One (1), hereby grant to the Parties of the Second Part, and their successors in interest in Lot Two (2), the right to have drainage waters from Lot Two (2) flow across the wester end of Lot One (1) and into the drainage ditch.


(2) Parties of the Second Part, on behalf of themselves and any successors in interest in Lot Two (2), hereby grant Parties of the First Part, and their successors in interest in Lot Three (3), the right to have drainage waters from Lot Three (3) flow across the western end of Lot Two (2) and on across Lot One (1) to the drainage ditch.

(3) Parties of the First Part and Parties of the Second Part agree that plans for such drainage will be submitted to, and will be subject to approval from, the City of Albuquerque or other appropriate governmental authority at the time construction is started on Lot Two (2) or Lot Three (3).

IN WITNESS WHEREOF, all of the parties hereto have executed this Agreement to be effective as of the date first shown above.

  
\_\_\_\_\_  
BRUCE W. PARKER

  
\_\_\_\_\_  
JANET A. PARKER

  
\_\_\_\_\_  
DAVID E. STINCHCOMB

Ann Leslie Stinchcomb  
ANN LESLIE STINCHCOMB

Peter T. Beaudette  
PETER T. BEAUDETTE

Peggy Beaudette  
PEGGY BEAUDETTE

Bill C. Henderson

Bill C. Henderson  
BILL C. HENDERSON

Kenneth Odell

Kenneth Odell  
KENNETH ODELL

Joe R. G. Fulcher

Joe R. G. Fulcher  
JOE R. G. FULCHER

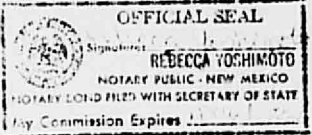
Patti Bearpaw  
PATTI BEARPAW

STATE OF NEW MEXICO )  
COUNTY OF BERNALILLO ) ss.

The foregoing instrument was acknowledged before me  
on July 1, 1982,  
by Kenneth Beaudette.

Rebecca Yoshimoto  
Notary Public

My commission expires:  
May 1, 1982



STATE OF NEW MEXICO       )  
                                  ) ss.  
COUNTY OF BERNALILLO    )

The foregoing instrument was acknowledged before me  
on July 7, 1981,  
by John P. Beaurette.

Notary Public

My commission expires:  
August 8, 1982

STATE OF NEW MEXICO       )  
                                  ) ss.  
COUNTY OF BERNALILLO    )



The foregoing instrument was acknowledged before me  
on July 7, 1981,  
by John P. Beaurette.

Notary Public

My commission expires:  
August 8, 1982

STATE OF NEW MEXICO       )  
                                  ) ss.  
COUNTY OF BERNALILLO    )



The foregoing instrument was acknowledged before me  
on September 9, 1981,  
by PETER T. BEAUDETTE and PEGGY BEAUDETTE, his wife.

Clara Quintana  
Notary Public

My commission expires:

March 3, 1985

STATE OF NEW MEXICO       )  
                                  ) ss.  
COUNTY OF BERNALILLO    )

The foregoing instrument was acknowledged before me  
on September 9, 1981,  
by BRUCE W. PARKER and JANET A. PARKER, his wife.

Clara Quintana  
Notary Public

My commission expires:  
March 3, 1985

STATE OF NEW MEXICO       )  
                                  ) ss.  
COUNTY OF BERNALILLO    )

The foregoing instrument was acknowledged before me  
on September 9, 1981,  
by DAVID E. STINCHCOMB and LESLIE ANN STINCHCOMB, his wife.

Clara Quintana  
Notary Public

My commission expires:  
March 3, 1985

STATE OF NEW MEXICO       )  
                                  ) ss.  
COUNTY OF BERNALILLO    )

The foregoing instrument was acknowledged before me  
on \_\_\_\_\_, 19\_\_\_\_,  
by \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires:  
\_\_\_\_\_

STATE OF NEW MEXICO     )  
                              ) ss.  
COUNTY OF BERNALILLO    )

The foregoing instrument was acknowledged before me

on \_\_\_\_\_, 19\_\_,

by \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires:

\_\_\_\_\_





## City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

J20-D6

August 5, 1981

Mr. Joseph Allen  
Denney-Gross & Associates  
2400 Comanche Rd. N.E.  
Albuquerque, New Mexico 87107

Re: OFFICE BUILDING ON MOON NEAR INDIAN SCHOOL DRAINAGE REPORT

Dear Joe:

This letter is a follow-up to our conversation of August 4, 1981. For approval of the referenced drainage report the following items should be addressed:

1. The proposed drainage scheme is based on the premise that the owner of Lot 1 will allow an easement through his property and the regrading of the existing parking area. This office needs to be supplied with a letter from the Lot 1 owner stating that he is in agreement with the proposed plan;
2. The following items should be placed on the drainage and grading plan:
  - a. Engineer's stamp, signature, and date
  - b. The vicinity map with Zone Atlas Page No. and legal description
  - c. The location and description of the temporary bench mark used for datum control
  - d. The existing curb and CMU wall identified as such
  - e. The elevation at the property line and driveway flowline
  - f. The direction and location of roof drainage
3. Is a sidewalk going to be constructed on the east side of the property?

Be advised that Special Order No. 19 should be submitted for construction of the curb cuts in the City right-of-way. If I can be of further help on this matter, please call.

Very truly yours,

*Brian D. Burnett*  
Brian G. Burnett  
Civil Engineer/Hydrology

BGB/fs  
7957A

MUNICIPAL DEVELOPMENT DEPARTMENT

ENGINEERING DIVISION

Richard S. Heller, P.E., City Engineer

Telephone (505) 766-7467

DENNEY - GROSS & ASSOCIATES, INC.  
2400 COMANCHE ROAD N.E.  
ALBUQUERQUE, N.M. 87107  
TELEPHONE: (505) 884-0696

J20-D6  
LETTER OF TRANSMITTAL

TO Principal Asst. City Engineer  
City of Albuquerque  
P.O. Box 1293  
Albuquerque, NM 87103

DATE	7/21/81	FD JOB NO.	556.12
ATTENTION	Chuck Easterling		
REASON	Drainage Report for		
	Office Building		
<b>RECEIVED</b>			

JUL 21 1981

GENTLEMEN:

WE ARE SENDING YOU

- ☐ SHOP DRAWINGS  
☐ COPY OF LETTER

☒ ATTACHED ☐ UNDER SEPARATE COVER **CITY ENGINEER** THE FOLLOWING ITEMS:  
☐ PRINTS ☐ PLANS ☐ PROJECT ESTIMATE ☐ SPECIFICATIONS  
☐ CHANGE ORDER ☒ Drainage Report

COPIES	DATE	NO.	DESCRIPTION
3	7/81		Drainage Report for an Office Building on Moon near Indian School

THESE ARE TRANSMITTED as checked below.

- ☒ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RETURN \_\_\_\_\_ COPIES FOR DISTRIBUTION  
☐ FOR YOUR USE ☐ APPROVED AS NOTED ☐ RETURN \_\_\_\_\_ SIGNED ORIGINALS  
☐ AS REQUESTED  
☐ FOR REVIEW AND COMMENT ☐ \_\_\_\_\_  
☐ FOR BIDS DUE \_\_\_\_\_ 19\_\_\_\_ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

These are being submitted for your review and approval. Your expeditious handling of this matter would be greatly appreciated.

COPY TO \_\_\_\_\_

JA/1m

SIGNED: *Joseph M. Allen*

Joseph M. Allen

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE

**DRAINAGE REPORT  
FOR AN  
OFFICE BUILDING  
ON  
MOON NEAR INDIAN SCHOOL**

**Prepared For  
Burk & Burk Architects  
Albuquerque, New Mexico**

**JULY 1981  
DGA NO. 556.12**

**Prepared By  
Denney-Gross & Associates, Inc.  
2400 Comanche Road, N.E.  
Albuquerque, New Mexico 87107**

**DRAINAGE REPORT  
FOR AN  
OFFICE BUILDING  
ON  
MOON NEAR INDIAN SCHOOL**

**Prepared For  
Burk & Burk Architects  
Albuquerque, New Mexico**

**JULY 1981  
DGA NO. 556.12**

**Prepared By  
Denney-Gross & Associates, Inc.  
2400 Comanche Road, N.E.  
Albuquerque, New Mexico 87107**

DRAINAGE REPORT  
FOR AN  
OFFICE BUILDING  
ON  
MOON NEAR INDIAN SCHOOL

Prepared For  
Burk & Burk Architects  
Albuquerque, New Mexico

JULY 1981  
DGA NO. 556.12

**RECEIVED**  
JUL 27 1981  
**CITY ENGINEER**

Prepared By  
Denney-Gross & Associates, Inc.  
2400 Comanche Road, N.E.  
Albuquerque, New Mexico 87107

I, Louis W. Gross, hereby certify that the enclosed documents and drawings were prepared under my supervision and are true and correct to the best of my knowledge and belief.

*Louis W. Gross*  
New Mexico Registered Professional  
Engineer and Land Surveyor No. 4100



DRAINAGE REPORT  
FOR AN  
OFFICE BUILDING  
ON  
MOON NEAR INDIAN SCHOOL

I. GENERAL:

The location of this project is shown on the Location Map (Exhibit I) and it consists of all of Lot 2, of the Replat of Tract "B" in Block "17-A", Dale J. Ballaman's Bellhaven Addition. The site, in existing condition, slopes approximately 2% to the south and the runoff drains into the Embudo Arroyo through a parking lot built on Lot 1.

Drainage facilities encompassed in this improvement (see Exhibit V and VI) will be designed to carry runoff from Lot 3 as well as the runoff of Lot 2 (all in a developed condition). The only outside drainage area affecting this project is the runoff from Lot 3.

It is proposed to drain this runoff from this site to the Embudo Arroyo thru Lot 1 (as shown on Exhibit V). The parking lot of Lot 1 will be remodeled and properly swaled to provide the required capacity to transfer the runoff from Lot 3 and Lot 2. A drainage easement from Lot 1 and Lot 2 will be obtained and dedicated. The Embudo Arroyo has the required capacity to handle this additional runoff per development.

This tract is located on Flood Hazard Map No. 17 of the Flood Hazard Boundary Map H-01-37, Department of Housing and Urban Development, Federal Insurance Administration, which shows the tract is not in a designated flood hazard area (see Exhibit IV).

II. OFF-SITE CONTRIBUTING WATERSHED:

The only offsite runoff entering Lot 2 is the runoff generated on Lot 3. Exhibit II shows the direction of flow of runoff in the streets in the area above the proposed development determined by field evaluations. Based on the results of this field evaluation (with hand level) it is our opinion that runoff from Indian School and Moon Street will not enter the area of this proposed development. The off-site watershed is shown on the City of Albuquerque Topo Map (Exhibit III), but is too small to be adequately shown on the S.C.S. Bernalillo County Soil Survey Map.

III. CRITERIA:

Rainfall Depth from City of Albuquerque Precipitation Map for 100-year, 6-hour storm (see Exhibit VII) = 2.5 inches.

Runoff Factor (R) = 0.90 (developed condition)

The average velocity of runoff is equal to 2 fps or 120 feet per minute.

AREA:

Lot 1 = 35,820 SF = .82 Acres

Lot 2 = 39,650 SF = .91 Acres

Lot 3 = 37,950 SF = .87 Acres

IV. CALCULATIONS:

Flow caused by contributing watersheds for the 10 and 100-year storm frequency.



Offsite Drainage Area = Lot 3 = .87 Acres

Time of Concentration:

$$\begin{aligned}t &= (\text{length of longest drainage path/average velocity}) \\&= 225 \text{ ft}/120 = 1.87 \text{ minutes}\end{aligned}$$

10-Year Storm:

$$\begin{aligned}I_{10} &= 91/(t+24)^* \\&= 91/(1.87+24) \\&= 3.52 \text{ in/hr}\end{aligned}$$

$$\begin{aligned}Q_{10} &= \text{AIR} \\&= (.87)(3.52)(.9) \\&= 2.75 \text{ cfs}\end{aligned}$$

100-Year Storm:

$$\begin{aligned}I_{100} &= 189/(t+25)^* = 189/(1.87+25) = 7.03 \text{ in/hr} \\Q_{100} &= \text{AIR} = (.87)(7.03)(.9) = 5.5 \text{ cfs}\end{aligned}$$

Volume of Runoff Generated Per Development:

$$P = 2.5 \text{ inches}$$

$$A = \text{Lot 2 Area} = 39,650 \text{ SF}$$

$$R = .90$$

$$V = (P/12)(A)(R)$$

$$V_{\text{after}} = (2.5/12)(39,650)(.90) = 7,434 \text{ cf}$$

$$V_{\text{before}} = (2.5/12)(39,650)(.40) = 3,304 \text{ cf}$$

$$7,434 - 3,304 = \underline{\underline{4,130 \text{ CF}}}$$

\*Intensity Duration Frequency Curves - Master Plan of  
Drainage, City of Albuquerque, New Mexico - Exhibit VIII.

4,130 CF of additional runoff will be added to the Embudo Arroyo per development.

Parking Lot Swale Design:

Reference Section A-A of Exhibit V

Area Diverted past Section A-A:

Lot 3 + Lot 2 + Part of Lot 1

= .87 Ac. + .91 Ac. + .23 Ac. = 2.01 Acres

t = (length of longest drainage path/120)

= 635/120 = 5.30 Minutes

$I_{100} = 189/(t+25) = 189/30.3 = 6.24 \text{ in/hr}$

$Q_{100} = (2.01)(6.24)(.9) = \underline{11.29 \text{ cfs}}$

Capacity of Proposed Swale: (See Exhibit V)

$A = (20)(.4)(1/2) = 4 \text{ SF}$

WP = 20      R = (4/20) = 0.2      n = .014

Average Slope = 0.7%

Manning Equation:

$Q = (1.486/.014)(0.2)^{2/3}(.007)^{1/2}(4.0) = \underline{12.15 \text{ cfs}}$

Required Capacity:

11.27 cfs at maximum depth of .34 in swale

Capacity Provided = 12.15 cfs

Existing Concrete Rundown:

Runoff from all three lots will be discharged to the Embudo Arroyo by way of an existing concrete rundown.

Total Area = .82 + .91 + .87 = 2.6 Acres

I = 6.23 in/hr      R = .9

$Q = AIR = (2.6)(6.23)(.9) = \underline{14.58 \text{ cfs}}$

Capacity of Concrete Rundown Structure: (See Exhibit V)

$$\text{Area} = 6 \text{ SF} \quad \text{WP} = 15.08 \quad \text{R} = (6/15.08) = .398$$

$$\text{Slope} = (4.77 - 0.31)/22.5 = 0.198$$

$$n = 0.012$$

$$Q = (1.486/0.012)(.398)^{2/3}(.198)^{1/2}(6) = \underline{\underline{179 \text{ cfs}}}$$

$$\text{Required Capacity} = 14.58 \text{ cfs}$$

$$\text{Capacity Provided} = 179 \text{ cfs}$$

V. CONCLUSIONS:

1. The only outside contributing watershed is Lot 3 which lies adjacent to the proposed development.
2. The parking lot of Lot 1 (with some remodeling) will have the capacity to transfer the runoff from Lot 2 to Lot 3 to the Arroyo.
3. The existing concrete rundown structure is properly sized to handle this additional runoff.
4. Drainage easements across Lots 1 and 2 will be obtained and dedicated.
5. All drainage requirements and guidelines of the City of Albuquerque have been met in this report.



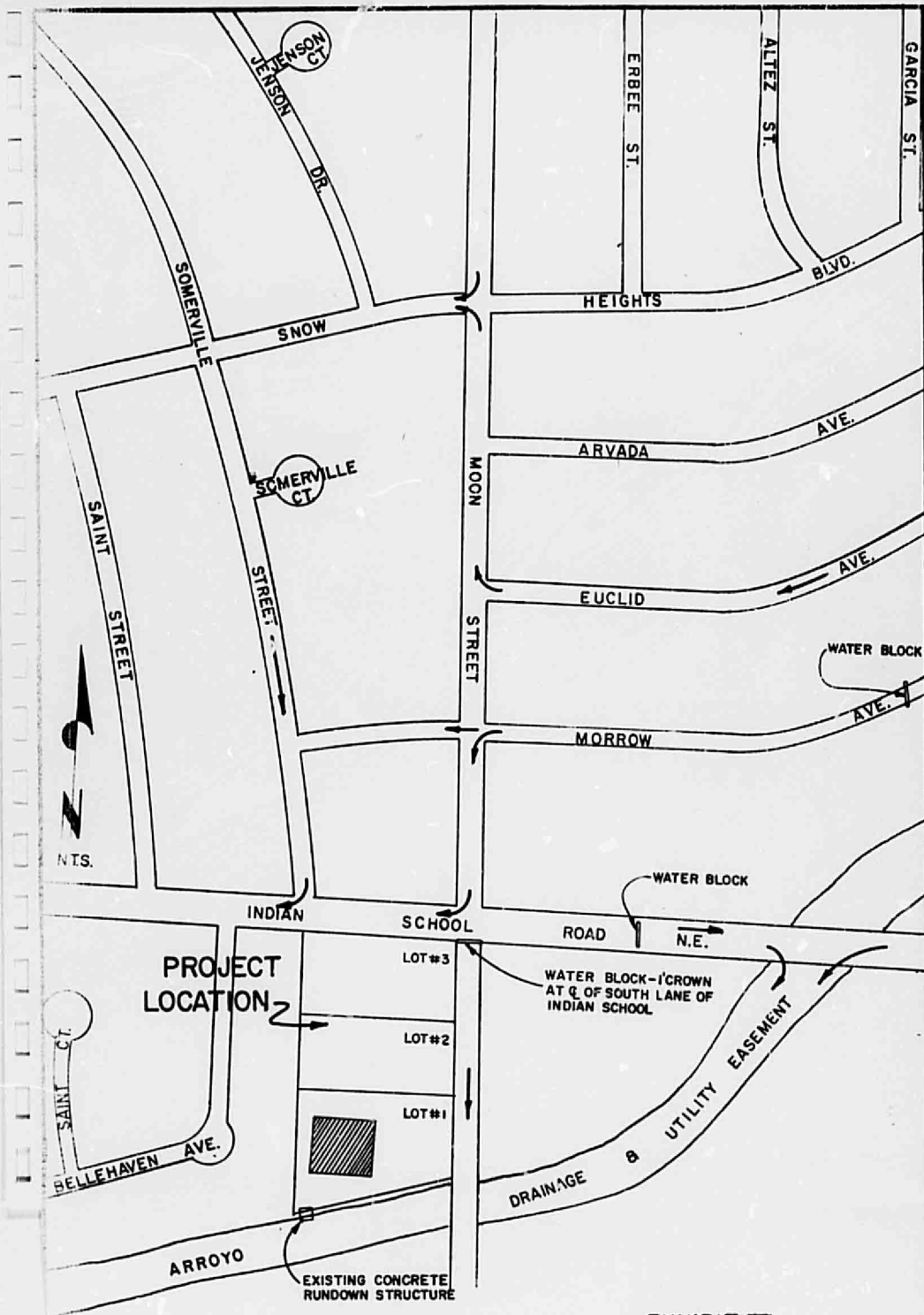


EXHIBIT II

RUNOFF FLOW DIRECTIONS

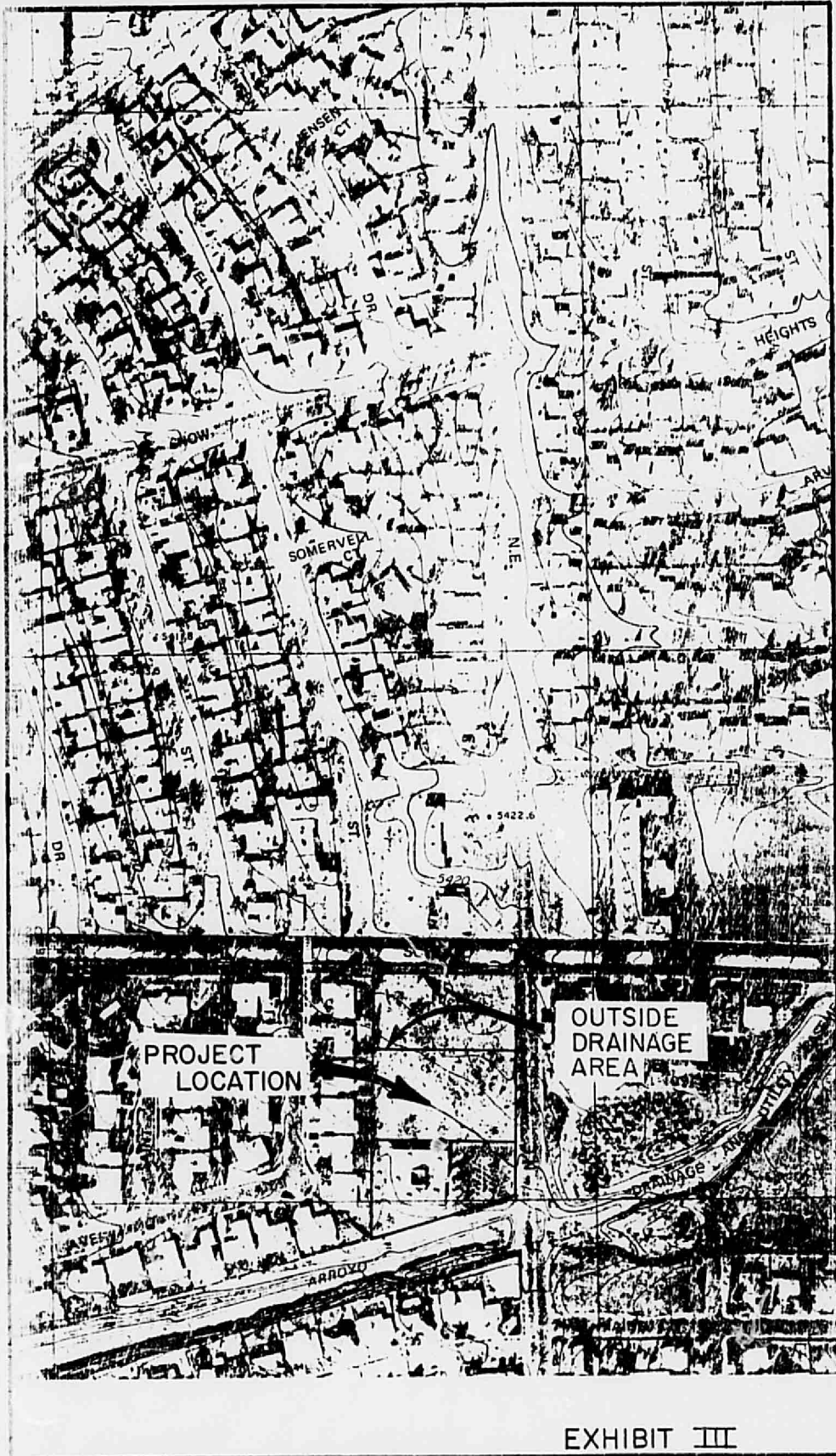
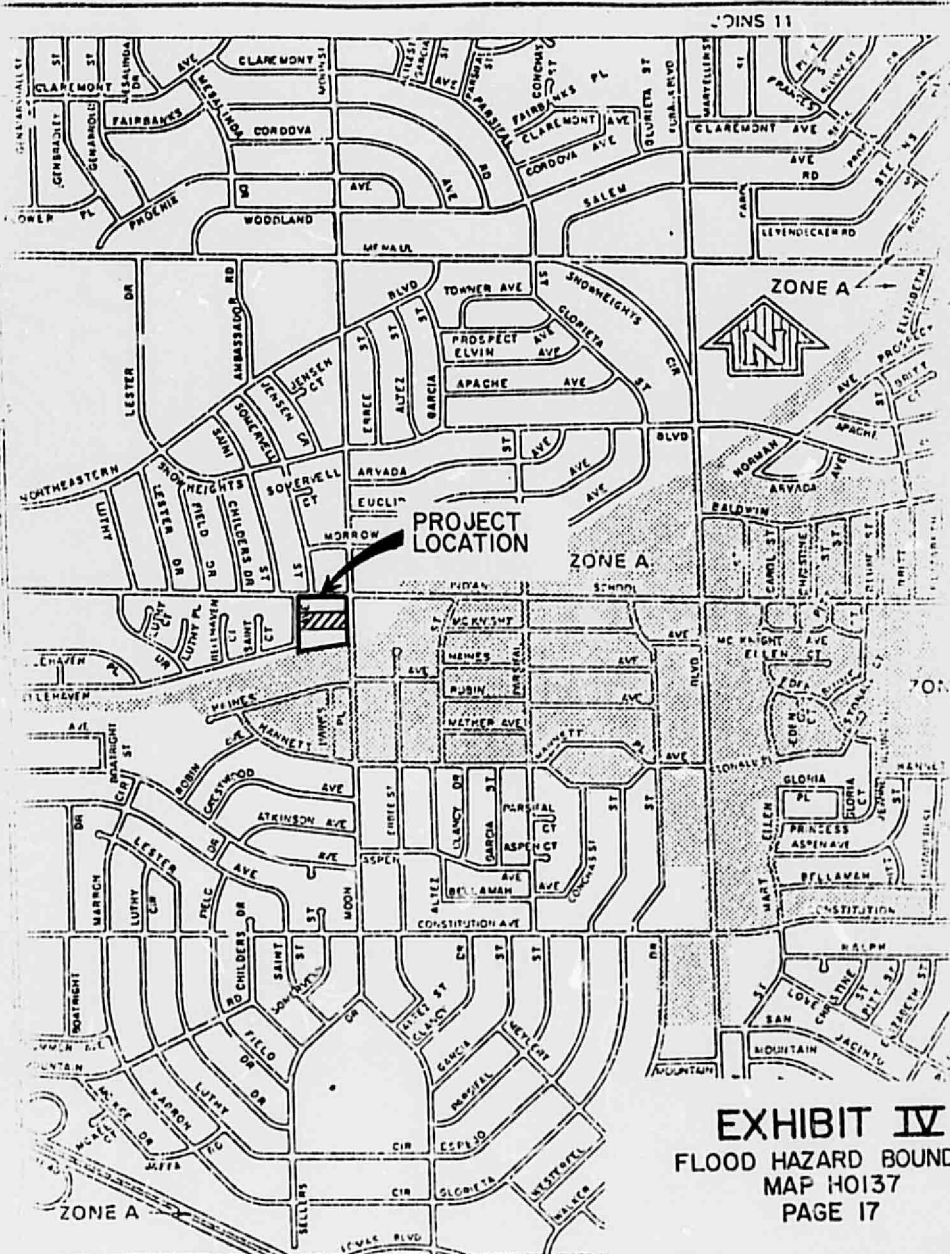
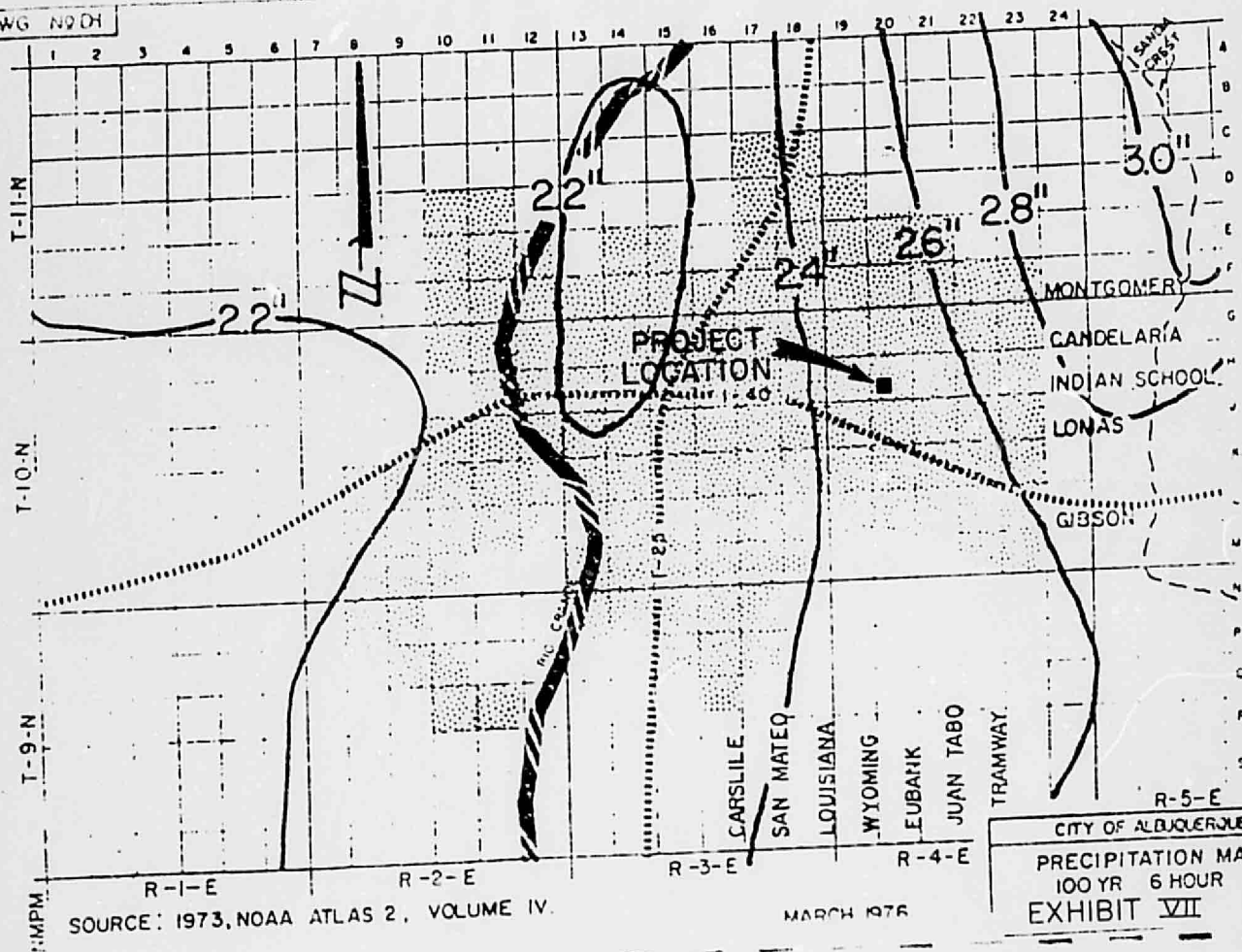


EXHIBIT III

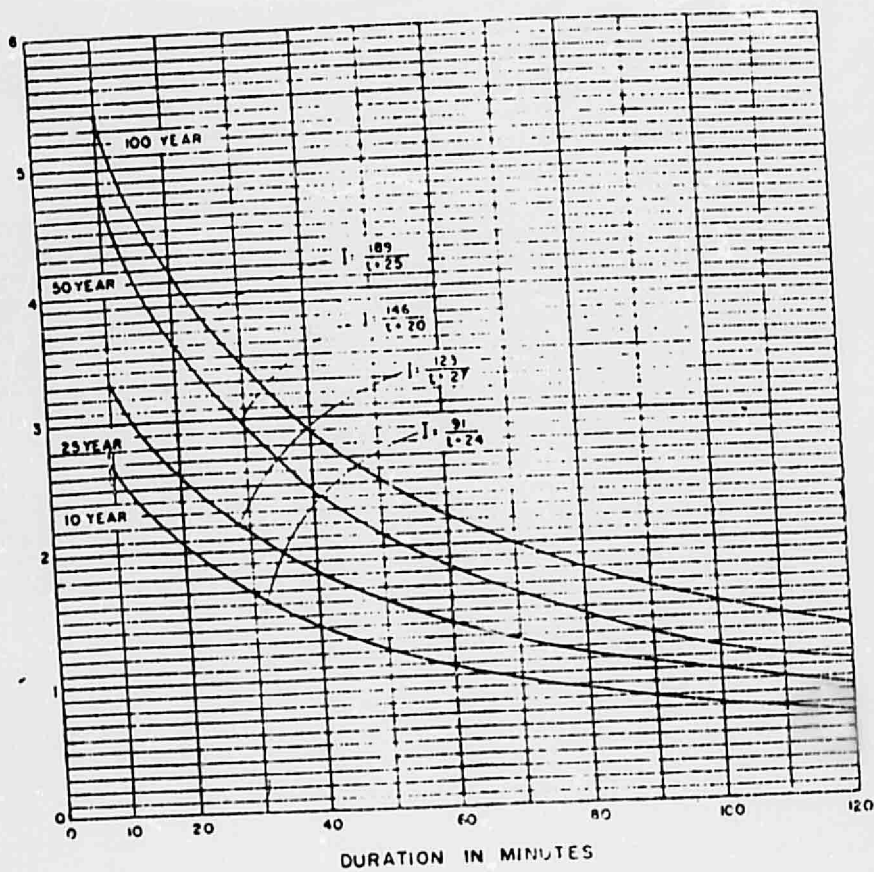




DWG N90H







### EXHIBIT VIII

MASTER PLAN OF DRAINAGE  
CITY OF ALBUQUERQUE - NEW MEXICO  
AND ENVIRONS

INTENSITY DURATION  
FREQUENCY CURVES

(ALBUQUERQUE AREA - 1961)

