HYDROLOGY G18/D3 1 PLAN

G18/D3

1 Plan

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DRAINAGE REPORT

FOR THE

ENVIRONMENTAL GROUP OFFICE COMPLEX

Goldberg · Mann & Associates
Engineers-Planners
911 Pennsylvania N.E. Albuquerque, New Mexico 87110

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Engineers·Planners
511 Pennsylvania St. Albuquerque, New Mexico 87110 (505) 255-3521

September 14, 1978 8-32

Mr. Jack Sample
3939 San Pedro N.E.
Albuquerque, New Mexico 87110

Re: Environmental Group Drainage Report

Dear Mr. Sample:

We are herewith transmitting two (2) copies of the drainage report for the Environmental Group Office Buildings.

This report is in accordance with the requirements of the City of Albuquerque, Resolution 1972-2, and the Albuquerque Metropolitan Arroyo Flood Control Authority.

We have enjoyed working with you on this project and look forward to future opportunities to assist you.

Yours sincerely,

Thomas T. Mann, Jr., P.E.
President

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Purpose and Scope

The purpose of this drainage plan is to establish the criteria for controlling surface runoff from a particular development in a manner that is acceptable to the City of Albuquerque and to the Albuquerque Metropolitan Arroyo Flood Control Authority.

This plan will determine the runoff resulting from a 100-year frequency storm falling on the site of the Environmental Group Office Building under existing and developed conditions.

The scope of this plan is to ensure that the proposed project will be protected from storm runoff and that the construction of this project will not increase the flooding potential of the adjacent properties.

Location and Description

The Environmental Group Office Building is located within the corporate limits of the City of Albuquerque in the northeast quadrant. The project is bounded by Hendrix Road on the north and Woodford Drive on the west. The legal description is Section 1, Township 10 North, Range 3 East.

The parcel is 1.12 acres in size and will be developed as an office building. The natural topography of the area slopes from east to west at approximately 2.0 percent. The parcel is shown on Figure 1, Location Map.

DESIGN CRITERIA

In analyzing the storm runoff, the Rational Formula, $Q = CIA$, is used.

Where:

Q = Runoff quantity in cubic feet/second.

A = Contributing area in acres.

I = Intensity in inches/hour for a duration equal in minutes and obtained from Figure 2, Intensity Duration Frequency Curves, Albuquerque Area 1961. (Note: Where a Time of Concentration [Tc] is less than ten minutes, the intensity value derived from a Tc of ten minutes is employed.)

C = Runoff Coefficient (No Units). This coefficient represents the integrated effects of infiltration, detention storage, evaporation, retention, flow routing, and interception which all affect the time distribution and peak rate of runoff.

Existing Drainage Conditions

The existing contours are shown on Figure 3, Drainage Plan. The parcel slopes from east to west and is bounded by Hendrix Road on the north and Woodford Drive on the west. The parcel is above both streets. The land to the east is an existing parking lot. Runoff from the parking lot flows northward into Hendrix Road. Existing block walls along the south property line prevent runoff from entering the site from that direction. Therefore, off-site flows are negligible.

Proposed Drainage Conditions

The proposed Grading and Drainage Plan is shown in Figure 3. Runoff will be conveyed into detention ponds and located adjacent to the west and south property lines. The ponds will provide for the retention of 50 percent of the rainfall from a 100 year frequency storm.

The pond adjacent to the south property line will receive runoff from the adjacent building and the easterly parking area. The two ponds adjacent to the west property line will receive runoff from the adjacent building and the center parking area. Minor amounts of runoff from the northeast building will be retained in the sunken courtyard. Drains will be installed in all stairwells below grade.

Calculations

Area of Parcel = 48,846 s.f.
Required Pond Volume 0.1 x 48,846 = 4,885 c.f.

Area Contributing to South Pond 20,000 s.f.

Pond Volume = $\frac{4.7 + (3.4)\ 2 + (2.4)\ 2}{2}$ 400 = 3,260 c.f.

Area Contributing to West Pond 19,000 c.f.

Pond Volumes =		
	14 x 62	14 x 51
	8 x 56	8 x 45
	2 x 50	2 x 39
	932 c.f.	756 c.f.

Total Pond Volume

	932
	756
	3,260
	4,948 c.f.

Conclusions

1. Drain roofs toward the nearest pond.
2. Convey runoff from parking areas into ponds.
3. Provide ponding in excess of 4,885 cubic feet.

FIGURE 1.
LOCATION MAP

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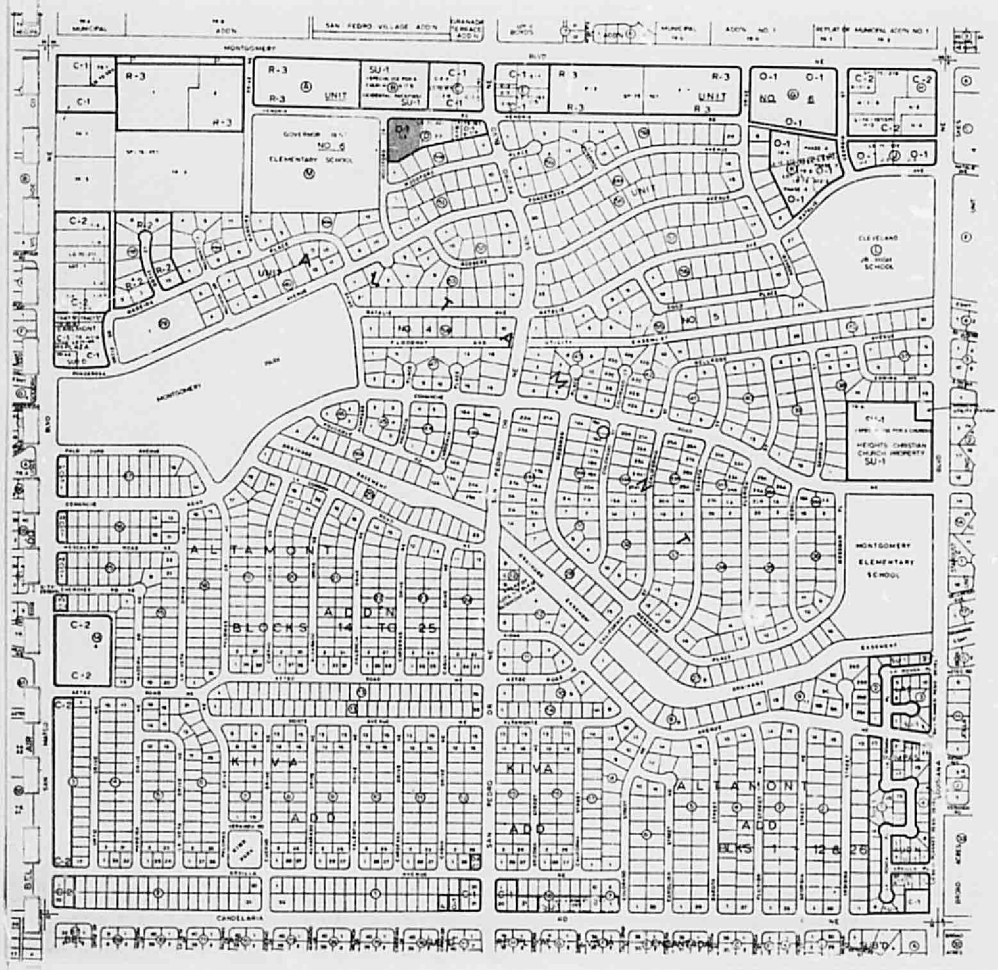

APPLICANT

NAME: Jack Sample
ADDRESS: 3939 San Pedro N.E.
Albuquerque, New Mexico
PHONE: 883-7445
SIGNATURE:_____

LOCATION OF PARCEL

LOT NO: D-3 BLOCK NO: 506
SUBDIVISION: Altamont
STREET ADDRESS: Hendrix Road N.E.
Woodford Drive N.E.

CURRENT ZONING: O-1

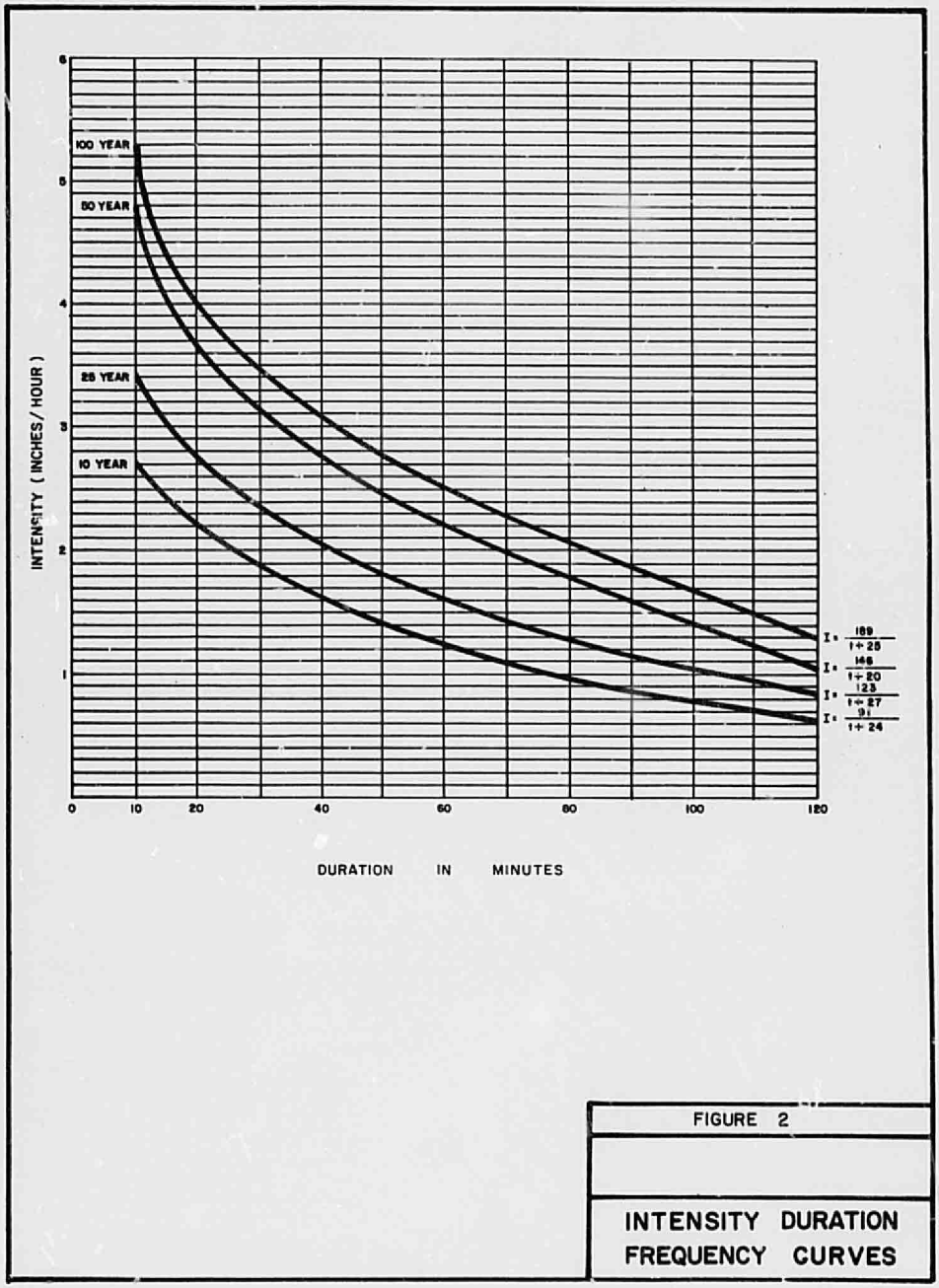

FIGURE 2

INTENSITY DURATION FREQUENCY CURVES

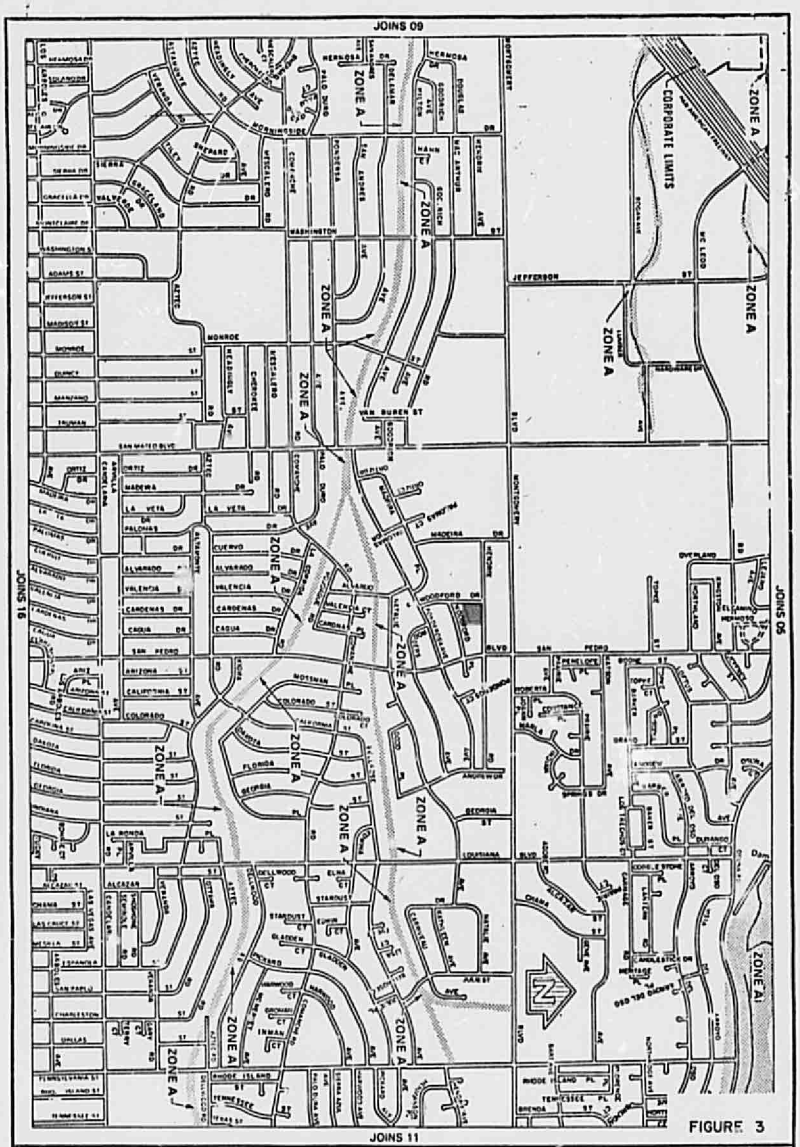

FIGURE 3

10	DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Federal Insurance Administration CITY OF ALBUQUERQUE, NM (BERNALILLO CO.)	APPROXIMATE SCALE 1000 0 1000 2000 3000 FEET FLOOD HAZARD BOUNDARY MAP	MAP REVISED 2/14/78