City of Albuquerque

P.O. BOX 1293   ALBUQUERQUE, NEW MEXICO 87103

MAYOR
David Rusk

April 24, 1979

Mr. Thomas Mann
Goldberg-Mann & Assoc., Inc.
911 Pennsylvania Street N.E.
Albuquerque, New Mexico 87110

Re: B.F.F.R. Group Building Drainage Report

Dear Mr. Mann:

The above-referenced drainage report is approved.

Very truly yours,

Bruno Conegliano
Assist. City Engineer-Hydrology

BC/fs

cc - Dick Heller
     Rich Leonard
     Drainage File

DRAINAGE
REPORT
for the
BFFR
GROUP BUILDING

Goldberg · Mann & Associates

Engineers-Planners

911 Pennsylvania N.E.   Albuquerque, New Mexico 87110

Goldberg · Mann & Associates

Engineers-Planners

911 Pennsylvania St.   Albuquerque, New Mexico 87110   (505) 265-3531

8-102

February 14, 1979

Mr. Jorge de la Torre
6121 Indian School Road N.E.
Albuquerque, New Mexico 87110

Re: BFFR Clinic Drainage Report
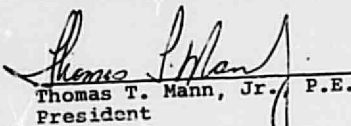
Dear Mr. de la Torre:

We are herewith transmitting two (2) copies of the drainage
report for the BFFR Clinic.

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 truly,

GOLDBERG-MANN & ASSOCIATES, INC.

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

TTM:pe
Enc.

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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 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 proper ies.

LOCATION AND DESCRIPTION

The BFFR Clinic is located within the corporate limits of the City of Albuquerque in the northeast quadrant. The project lies on the south side of Mountain Road and east of Pennsylvania Street. The legal description is Section 18, Township 10 North, Range 4 East.

The parcel is 0.91 acres in size and will be developed as medical offices. The natural topography of the area slopes from east to west at approximately 1.3 percent. The parcel is shown on Figure 1, Location Map.

J·19·Z

APPLICANT

NAME: Jorge de la Torre, Arch.
ADDRESS: 3736 C Eubank NE
          Albuquerque, NM 87111
PHONE: 296-0739
SIGNATURE:

LOCATION OF PARCEL

LOT NO: 18   BLOCK NO:
SUBDIVISION: Ashcraft Center
STREET ADDRESS: Mountain Road NE

CURRENT ZONING: O-1

Intensity (Inches/Hour) vs. Duration in Minutes

$$I = \frac{189}{t + 25}$$

$$I = \frac{148}{t + 20}$$

$$I = \frac{123}{t + 27}$$

$$I = \frac{91}{t + 24}$$

100 YEAR
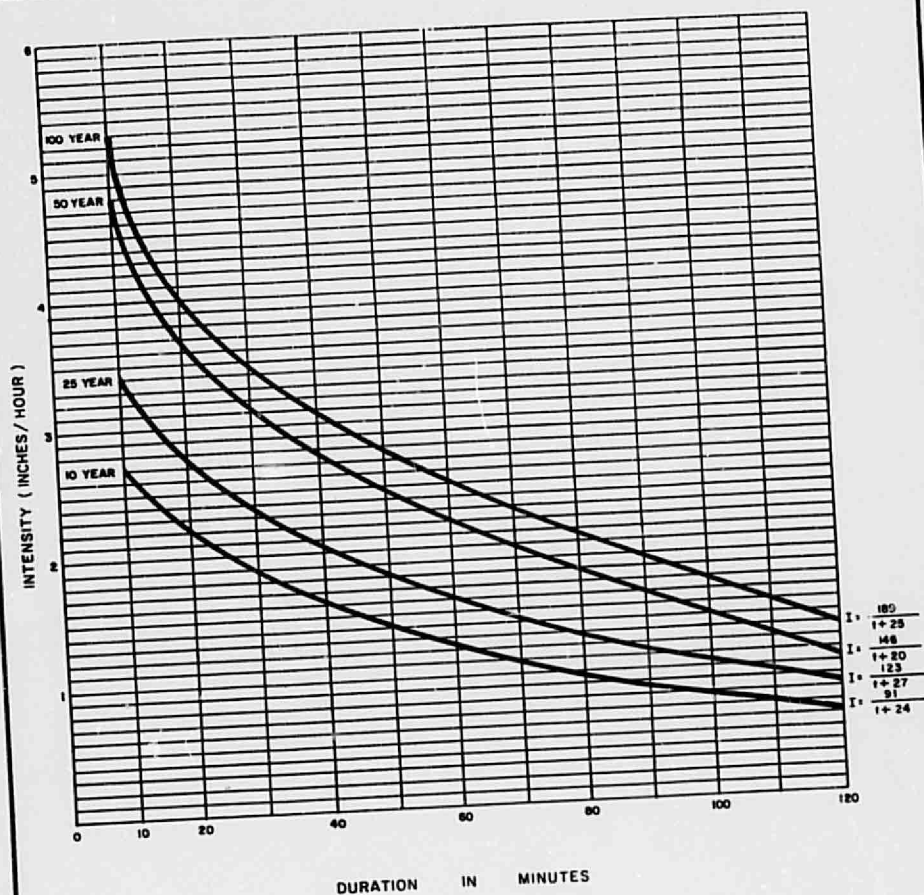50 YEAR
25 YEAR
10 YEAR

DURATION   IN   MINUTES

FIGURE 2

INTENSITY DURATION
FREQUENCY CURVES

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 3, Intensity Duration Frequency Curves, Albuquerque Area 1961. (<u>Note</u>: 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 Flood Hazard M.) is shown in Figure 3. The project (1) does not lie in a flood plain, (2) does not lie adjacent to a natural or artificial water course and (3) has no drainage easements on the property.

The existing contours are shown on Figure 4. The parcel slopes from east to west and is bounded on the north by Mountain Road N.E. The land to the east is developed as apartments for the elderly, the land on the west is developed as a day care center, and the land to the south is undeveloped. Runoff from the east is contained on site or runs into Mountain Road. Runoff does not enter the property from the other three directions, therefore, offsite flows are neglible. Erosion will not result from upland runoff or from the proposed construction activities.

PROPOSED DRAINAGE CONDITIONS

The proposed Grading Plan is shown in Figure 4. Runoff will be conveyed into detention ponds located adjacent to the east and west property lines. A fourth pond, located in the parking area, will receive runoff directly from one roof downspout.

Pond A, adjacent to the east property line, has 1,971 s.f. of percolation area and will retain 1,485 c.f. of runoff. Additional retention of 2,400 c.f. will be provided in the parking lot adjacent to the pond.

Ponds B and C, adjacent to the west property line, have
875 s.f. of percolation area and will retain 1,313 c.f. of
runoff.

Pond D, located in the parking lot, has 180 s.f. of
percolation area and will retain 270 c.f. of runoff.

The Grading Plan shows (1) existing contours at 1'0"
intervals, (2) proposed contours, (3) swales, (4) continuity
between existing and proposed contours, (5) that the eleva-
tion at the property line will be 0.3 feet above the top of
curb, (6) that runoff will be conveyed into ponding areas
before leaving the site and (7) retaining wall where necessary.

The ponds will retain in excess of 50 percent of the
runoff from the additional impervious area that results from
a 100 year frequency storm. The ponds are less than 18 inches
deep and therefore do not require fencing.

CONCLUSIONS

The following conclusions and recommendations are made for the development of the BFFR Clinic:

1. Convey all runoff into Pond A, B, C or D.

2. Drain roofs to nearest pond.

3. Provide ponding in excess of 3,434 cubic feet.

CALCULATIONS

Area of Parcel = 39,814 s.f.

Impervious Area = 34,336 s.f.

Required Pond Volume = 0.1 x 34,336 = 3,434 c.f.

Pond Volume

    A. Percolation Area

        7.7 x 256 = 1971 s.f.

       Volume (landscape) = $\dfrac{7.7 + 3.9}{2}$ x 1.5 x 2/3 = 1,485 c.f.

        Volume (parking) = 96 x 40 (1/4) + 96 x 60 (1/4) = 2,400 c.f.

    B. Percolation Area = 19 x 25 = 475 s.f.

        Volume = 475 x 1.5 = 713 c.f.

    C. Percolation Area = 20 x 20 = 400 s.f.

        Volume = 400 x 1.5 = 600 c.f.

    D. Percolation Area = 9 x 20 = 180 s.f.

        Volume = 180 x 1.5 = 270 c.f.

Total Percolation Area = 3,026 s.f.

Total Pond Volume   = 5,468 c.f.