HYDROLOGY G17/D12 1 PLAN

G 17/D 12

1 PLAN

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

December 8, 1982

Mr. August Mosimann, PE
Engineering Associates
180[illegible] Lomas NW
Albuquerque, New Mexico 87104

Re: M. C. Enterprises (Westwind)
(G17-D12)

Dear Mr. Mosimann:

A recent survey by this office determined several discrepancies with the survey used to design the referenced drainage plan. The discrepancies are:

1. A 100 ft. bust between existing contours.

2. A disagreement of 1 ft. with the City's survey.

Consequently, the approval granted to the referenced design. which was based on your survey, is rescinded. Please submit a revised drainage plan to this office correcting the discrepancies outlined above.

If you have any question, feel free to call me at 766-7644.

Sincerely,

Fred J. Aguirre, PE
Civil Engineer/Hydrology

FJA/el

cc: Steve Haley, Westwind, Inc.
6413 Cranbrook NE
Albuquerque, New Mexico 87111

Brian Burnett, City Engineers

Westwind, Inc.
BUILDERS ■ DEVELOPERS

March 2, 1983

To:
Charles W. Voltz
Chief Building Official
Code Administration Division
123 Central NW
Albuquerque, NM 87102

From:
Steve Haley
Westwind Construction Co. Inc.
6413 Cranbrook NE
Albuquerque, NM 87111

Subject:
3900 Carlisle NE
Certificate of Occupancy
Building permit # 13440

I have been in constant contact with Fred Aguire, Hydrology Department, City of Albuquerque, concerning the drainage plan for the above referenced office building.

The initial building plans submitted were approved including the drainage plan. At the time I called for the final drainage inspection and approval, following completion of the building, we discovered there were several errors in the original drainage plan. August Mosimann of Engineering Associates did the engineering work on that plan. Both Fred and I have requested that he correct his plan and submit an as built drainage plan for approval. Although he has agreed before to complete this, at this time he has not submitted a plan that meets with Fred's approval. I do feel that we are close to getting that plan submitted and approved and would like to request a 30-day extension to the temporary Certificate of Occupancy that has been issued for the building.

Should you have any questions concerning this please do not hesitate to contact me at 821-2494. Thank you for your consideration.

Sincerely,

Steve Haley /sm

Steve Haley

SH/sm

6413 CRANBROOK N.E. • ALBUQUERQUE, NEW MEXICO 87111 • 505-821-2494

James Innis
August F. Mosimann

engineering associates, inc.

1840
Lomas Boulevard, NE
Albuquerque, N. M.
87106
(505) 242-7522

Fred J. Aguirre, PE
Civil Engineer/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

March 11, 1983

Re: 3900 Carlisle, NE

Dear Fred,

As a result of our telephone conversation on March 11, 1983, I have again revised the Grading and Drainage Plan for the above referenced project. As you requested, all "As-built" Contours are labelled "As-built" Contours instead of "New Contours", as I had originally designated them. A copy is attached to this letter.

Also, as you requested, I have calculated as built detention basin Volume. That Volume is 463 Cu Ft as is indicated on the attached Calculation Sheet.

Sincerely,

August F. Mosimann

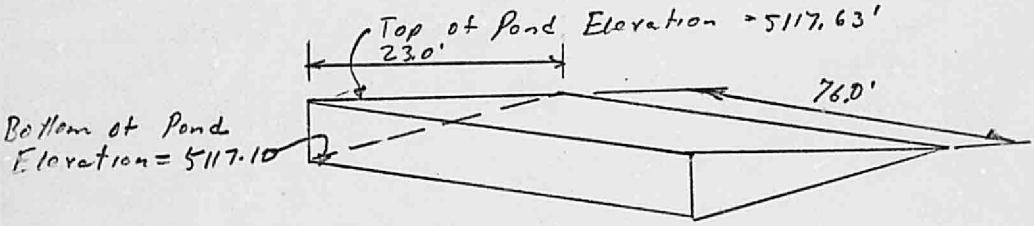
August F. Mosimann for
Engineering Associates, Inc.

3/24/83
Notified Steve Haley that this office will need a revised Drainage Plan to correct the problems deficiencies noted in this letter. ~~Submit~~ as-built plan provided by Angie N. Drainage plan Steve Bohannan to correct the problem

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications

BY_____ DATE_____ SUBJECT Pond Volume SHEET NO. ____ OF ____
CHKD. BY_____ DATE_____ CLIENT 3900 Carlisle JOB NO. _____

engineering associates, inc. • 1801 Lomas Blvd., NW • Albuquerque, NM 87104 • (505) 242-7522



$V = \frac{1}{2} \times 23.0 \times 0.53 \times 76 = 463$ Cu Ft

3900 Carlisle

Pond Volume

Drainage Report for

M. C. Enterprises

3900 Carlisle N E

Rick Schalk, Architect

RECEIVED

APR 20 1982

ENGINEERING

August F. Mosimann
for
Engineering Associates, Inc.
March 15, 1982

Purpose:

In this drainage study we will analyze the runoff from the undeveloped and proposed developed state and make recommendations with regard to flood control. The basis of our recommendations will be that downstream runoff conditions will not be worsened by the development.

Design Criteria:

The following formulas are used throughout this study:

(1) Rational Formula $Q = CIA$

(2) Runoff Volume Formula $V = CPA$

Where:

Q = Runoff Rate (CFS)

I = Intensity (IN/HR)

A = Area (Acres or ft^2)

V = Area (Acres of ft^2)

C = Runoff Coefficient

P = Precipitation

Location:

The project address is 3900 Carlisle N E, Albuquerque, on the east side of Carlisle between Comanche St. and Montgomery St.

Existing Site Study

The existing site is .359 Acres (15635 Sq Ft.) and is undeveloped. Storm runoff leaves the site along the west property line and enters Carlisle Boulevard. From here most of runoff goes south to Comanche Boulevard and then West along Comanche where it is intercepted by the City Storm Drain System and diverted to North Diversion Channel. See Fig 1 The Site Location. The soil type is "fine sandy loam" as listed on the Soil Conservation's Soil Survey for Bernalillo County. See Fig 2

The runoff from the existing site for the one hundred year storm is as follows.

The precipitation amount is 2.3 in (see fig 3)
The runoff coefficient is .4
The length of runoff is 160 ft.
The slope is 1.25 percent
The concentration time is 10 min.
The intensity is 189/(10 + 25) = 5.4 in/hr.
The runoff flow is

$$Q = CIA = .4 \times 5.4 \times .359 = .77 \text{ CFS}$$

$$V = CPA = .4 \times 2.3 \times 15635/12 = 1199 \text{ Cu Ft}$$

Offsite Flows

There are no offsite flows allecting this site. The grading proposal for the alley to the east is currently under review by City Engineering. It is designed with an inverted crown so that it will carry its own runoff. An existing block wall to the east of the alley intercepts the flow from the residences to the east of the alley.

Developed Site Study

The development will consist of a 5112 sq.ft. building, 750 sq. ft of landscaping, and 9773 sq. ft. of paving.

No planning action is currently underway for this area. It is zoned C-1.

The runoff from the developed site for a 100 year storm is as follows:

The runoff coefficient is :

Area Type	Area	C	C x Area
Paved	9773	.9	8796
Roof	5112	.9	4601
Landscaped	750	.4	300
	15635		13697

$$C = \frac{13697}{15635} = .88$$

The precipitation amount is 2.3 in (Fig 3)
The slope is 1.25 percent
The length of runoff is 160 ft.
The concentration time is 10 min (Fig 4)
The intensity is 189/(10 + 25) = 5.4 in/hr (Fig 5)
The runoff flow is

$$Q = CIA = .88 \times 5.4 \times .359 = 1.71 \text{ CFS}$$

The runoff volume is

$$V = CPA = .88 \times 2.3 \times 15635 / 12 = 2637 \text{ Cu Ft}$$

Flood Control

The City of Albuquerque's Master Drainage Report indicates a downstream flooding condition exists in Comanche Street. For this reason a retention basin will be provided which is capable of holding the difference between 100 year developed and undeveloped runoffs. The discharge rate will be equivalent to the five year storm undeveloped runoff rate

The five year undeveloped runoff rate is as follows:

The runoff coefficient is .4

The intensity is 2.4 in/hr

The runoff flow is

$$Q = CIA = .4 \times 2.4 \times .359 = .34 \text{ CFS}$$

The required retention basin volume is :

Developed Volume	2637 Cu Ft
Undeveloped Volume	1199 Cu Ft
	1438 Cu Ft

A 22 ft wide by 76 ft long by one foot deep portion of the parking area at the west side will be graded into a retention basin. The volume provided will be 1672 Cu Ft.

The flow rate restriction will be accomplished by using a 4 inch diam. pipe. The orifice equation indicates that the flow will be restricted to .44 CFS as shown below.

$$Q = \frac{A\sqrt{h}}{.2} = \frac{.0873 \cdot \sqrt{1}}{.2} = .44 \text{ CFS}$$

Releasing the flow at this rate will cause the 1672 Cu Ft basin to completely drain in 63 minutes.

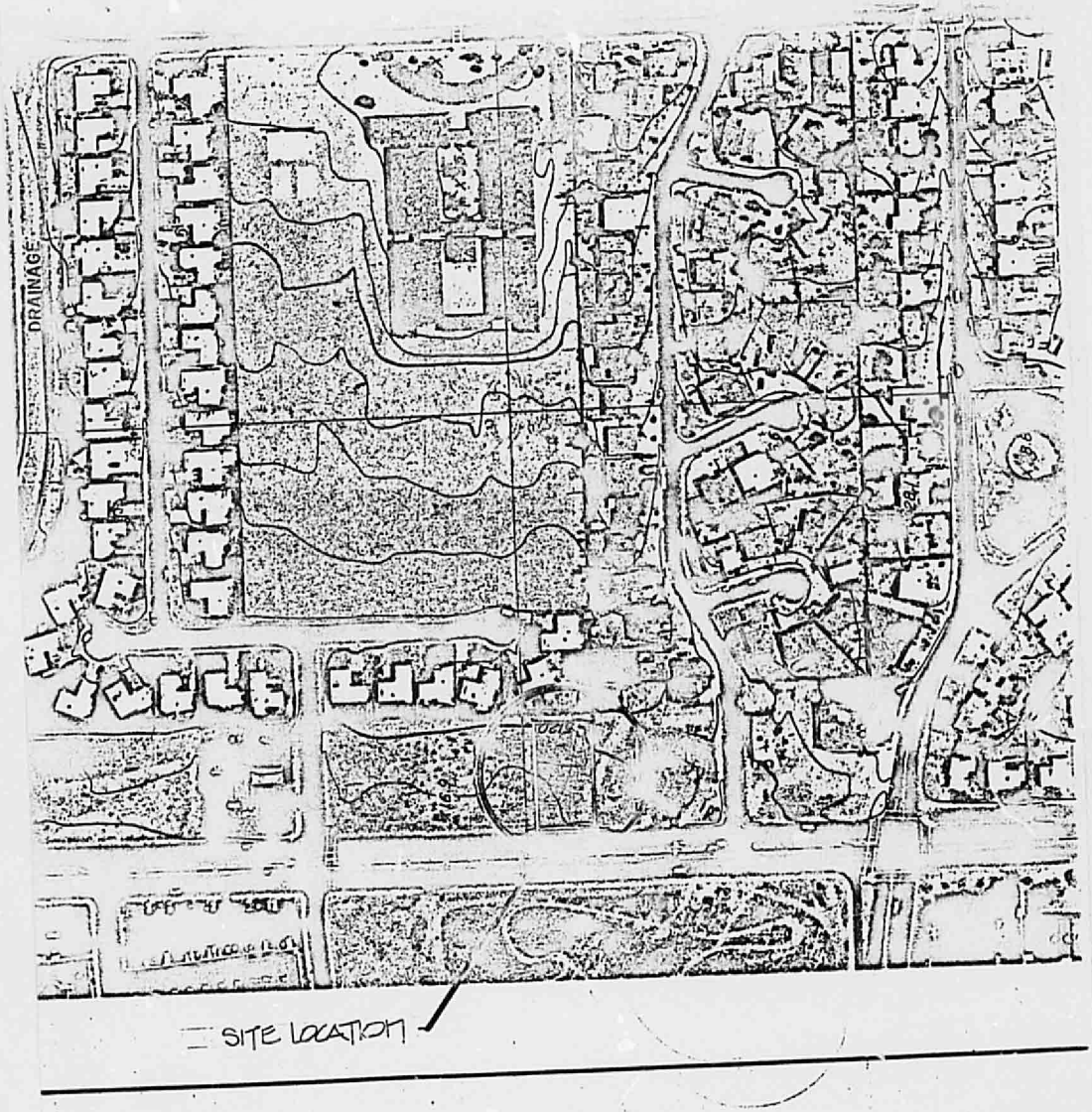
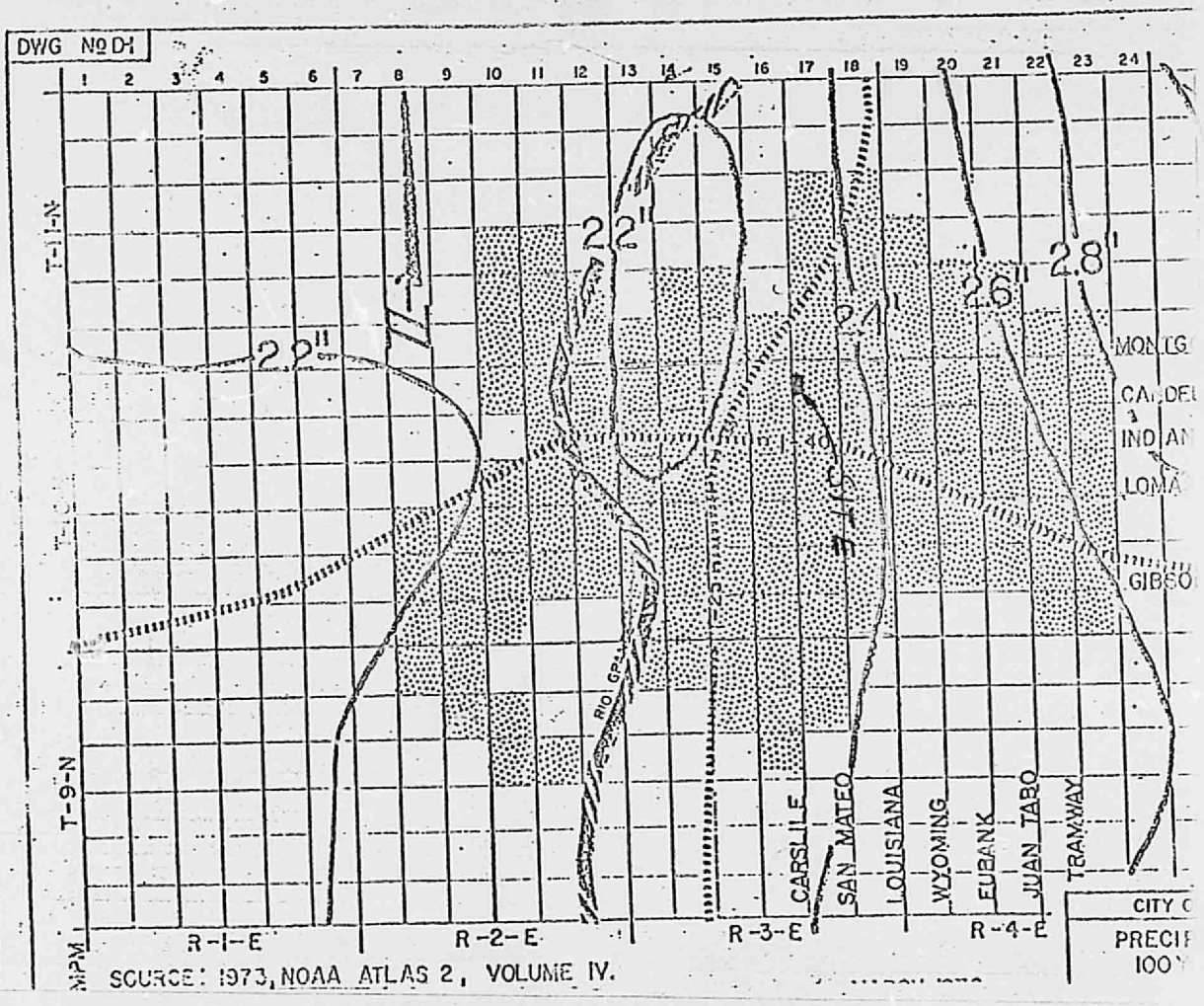


FIG 1.

ELENA
GALLEGOS
GRANT
Academy for Boys
MONTANO RD
WATER
MONTGOMERY BLVD
ALBUQUERQUE
TOWN OF ALBUQUERQUE
McKinley Jr High School
Church
School

FIG. 2



SOURCE: 1973, NOAA ATLAS 2, VOLUME IV.

FIG 3

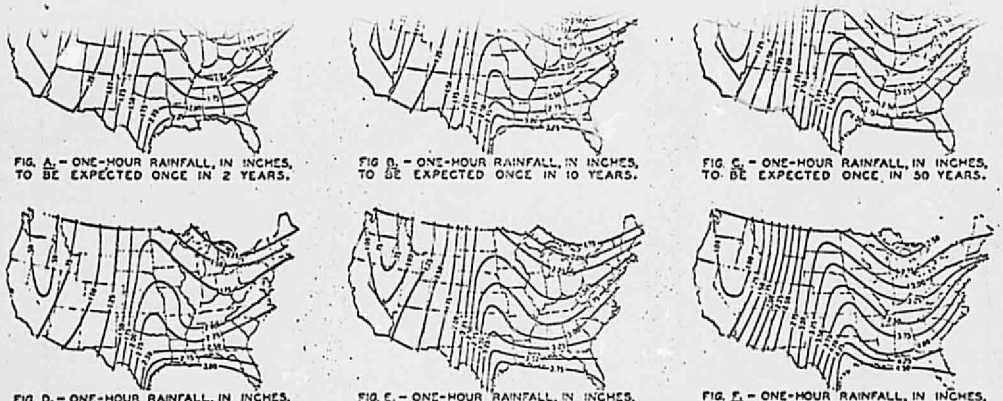


FIG. A. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 2 YEARS.

FIG. B. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 10 YEARS.

FIG. C. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 50 YEARS.

FIG. D. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 5 YEARS.

FIG. E. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 25 YEARS.

FIG. F. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 100 YEARS.

COMPUTATION OF i IN RATIONAL FORMULA.

EXAMPLE: Assume expectancy period = 5 years, See Fig. D, assume locality, find 1 hour intensity = 1.75 in. per hour.

FIG. G-INTENSITY EXPECTATION OF ONE-HOUR RAINFALL.*

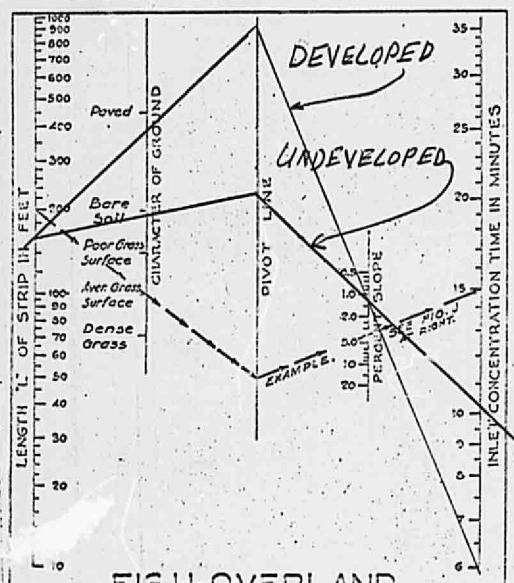


FIG. H-OVERLAND FLOW TIME.

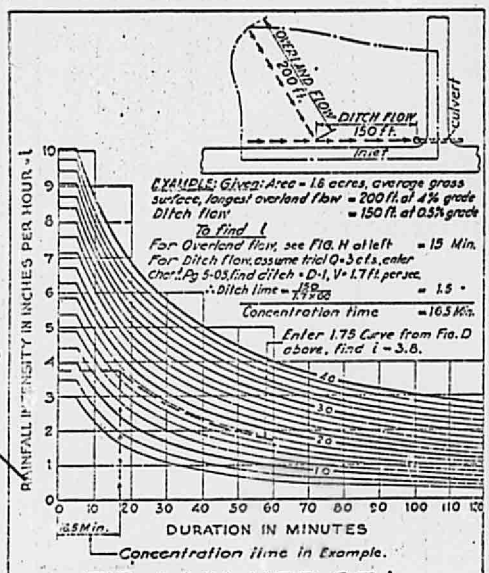
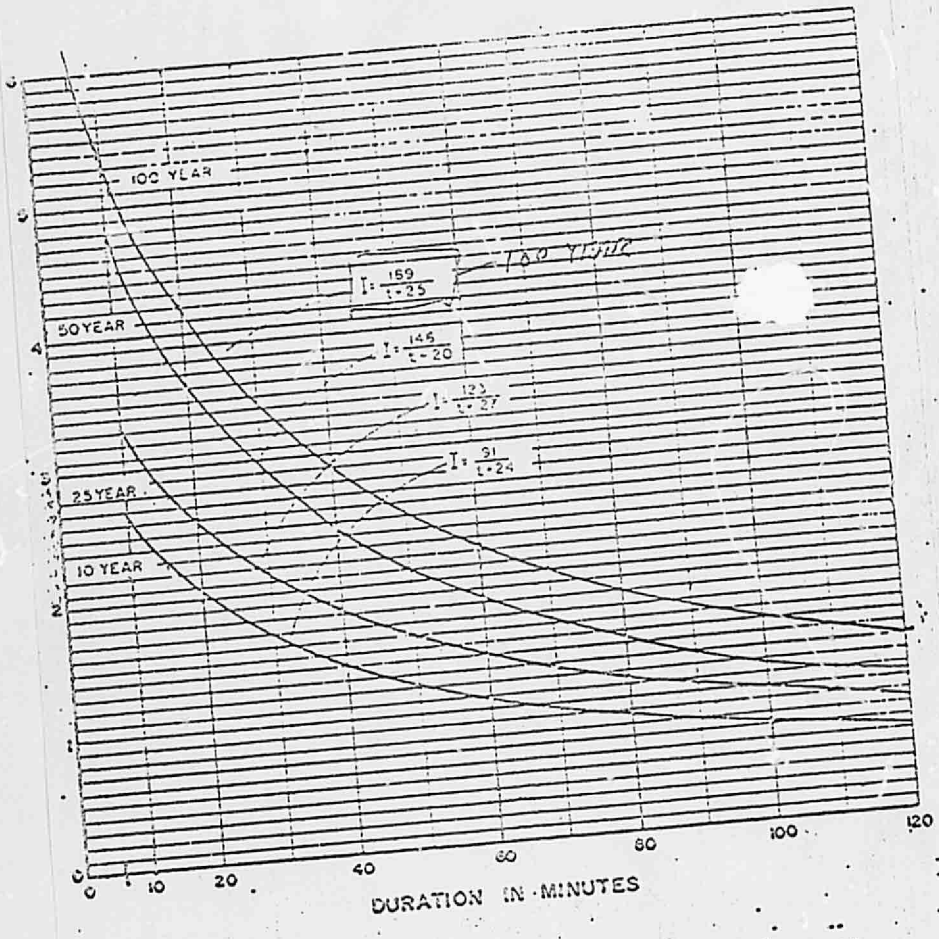


FIG. J-VALUES OF i RAINFALL INTENSITY-DURATION.+

*Reproduced from Miscellaneous Publication No. 204, U.S. Dept. of Agriculture, by David L. Yarnell.
+Adapted from Engineering Manual of the War Department, Part III, Chap. I, Dec. '45.

FIG 4



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

INTENSITY DURATION
FREQUENCY CURVES

(ALBUQUERQUE AREA - 1951)

GORDON HERKENHOFF & ASSOC
CONSULTING ENGINEERS

CHART 1

FIG 5

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

G17-D12

May 13, 1982

Mr. August Mosimann
Engineering Associates, Inc.
1801 Lomas N.W.
Albuquerque, N.M. 87104

RE: MC ENTERPRISES DRAINAGE REPORT

Dear Mr. Mosimann:

The referenced drainage report is approved. Please see that the revised drawings (dated 5/5/82) are placed in the City construction sets.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

James Innis
August F. Mosimann

engineering associates, inc.

1840
Lomas Boulevard, N. E
Albuquerque, N. M.
87106
(505) 242-7522

February 24, 1983

Fred J. Aguirre, PE
Civil Engineer/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Dear Fred,

Enclosed is a copy of the as-built plan for 3900 Carlisle Blvd., NE If there are any additional problems in issuing a Cleared for Occupancy Certificate, please inform me.

Sincerely,

August F. Mosimann

August F. Mosimann for
Engineering Associates, Inc.

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FEB 4 2 1983
RECEIVED

AFM/js

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications

INFORMATION SHEET

PROJECT TITLE 3908 Carlisle Blvd. , NE

TYPE OF SUBMITTAL Certification

ZONE ATLAS PAGE NO. G-17

CITY ADDRESS 3908 Carlisle Blvd., NE

LEGAL DESCRIPTION Lot B, Block A North Carlisle Addition

ENGINEERING FIRM Bohannan - Huston, Inc.

CONTACT Dave Millikan

ADDRESS 4125 Carlisle Blvd. NE

PHONE 881-2000

OWNER M. C. Enterprises

CONTACT

ADDRESS 3908 Carlisle Blvd., NE

PHONE

ARCHITECT R. Schalk —Designer

CONTACT

ADDRESS 400 San Felipe NW

PHONE 242-4591

SURVEYOR Bohannan - Huston, Inc.

CONTACT Dave Millikan

ADDRESS 4125 Carlisle Blvd., NE

PHONE 881-2000

CONTRACTOR Westwind, Inc.

CONTACT Steve Haley

ADDRESS 6413 Cranbrook, NE

PHONE 822-1341

DATE SUBMITTED 4-7-83.

BY David M Y Millikan

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD. N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7871

April 7, 1983

Mr. Andre Houle
City Engineering — Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: As-Built Drainage and Grading Plan for 3908 Carlisle Boulevard, NE

Dear Andre:

Enclosed is a copy of the as-built drainage and grading plan for 3908 Carlisle Boulevard, NE. It is in substantial compliance with the approved drainage plan for this project.

Our client is anxious to obtain a Certificate of Occupancy for this project. Your prompt review and acceptance of this certification of the as-built drainage and grading plan will be appreciated.

If you have any questions, please feel free to call Dave Millikan or me.

Sincerely,

Michial M. Emery, P.E.
Vice President

cc: Mr. Steve Haley

Enclosures

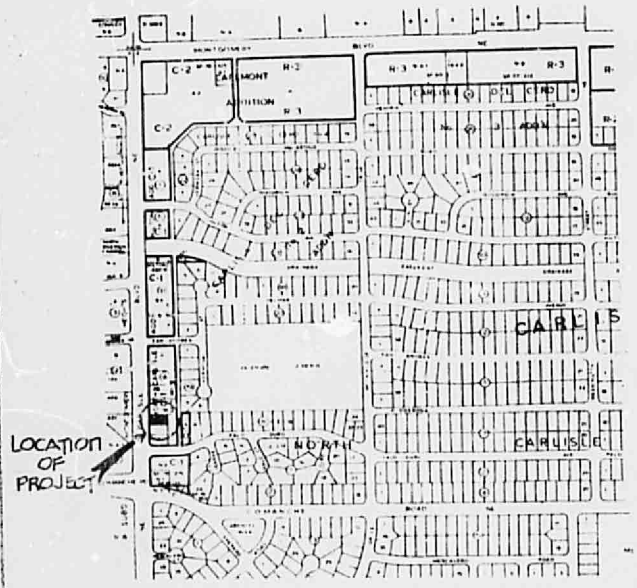
DMYM/dlh
Job No. 3 138 1

PRINCIPALS
JERRY R. BOHANNAN, P. E. & L.S.
LARRY W. HUSTON
DONALD T. CREMANS, P. E.
C.J. (SKIP) MEAD, P. E.
MICHIAL M. EMERY, P. E.

ASSOCIATES
ANDRES ARAGON VIAMONTE, P. E.
JACK EICHORN
ROBERT H. GREENLEE, P. E.
G. LEE TRUSSELL
ISAAC J. PINO, P. E.
RAMON LARA, P. E.
DARRELL L. WADE, P. E.
PATRICK L. STIEHR, P. E.
DAVID M. Y. MILLIKAN, P. E.

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



AUGUST F. MOSIMANN
STATE OF NEW MEXICO
NO. 5148
REGISTERED PROFESSIONAL ENGINEER

7/29/82

M.C. ENTERPRISES
3900 CARLISLE BLVD N.E.
ALBUQUERQUE, N.MEX.

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.

2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for City-Wide Utilities and Cash Paving No. 30 "

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.

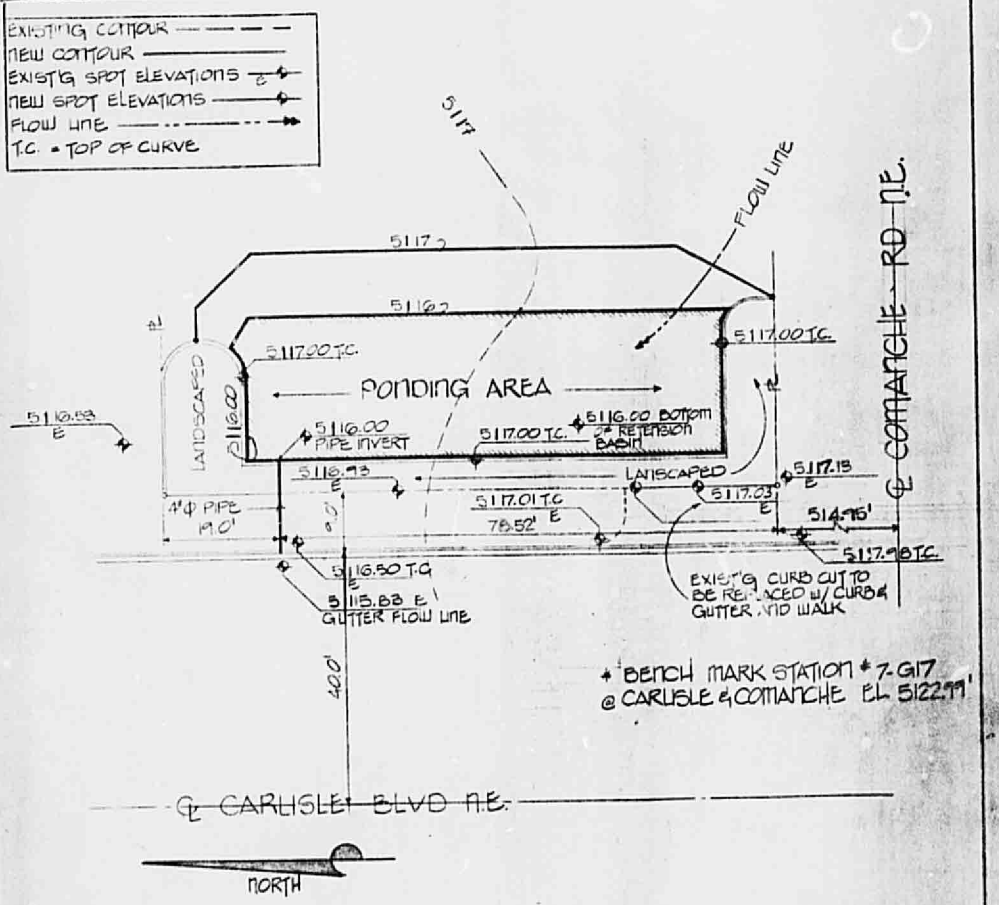
5. Backfill compaction shall be according to ARTERIAL street use.

B-24

APPROVALS	NAME	DATE	TITLE: NORTH CARLISLE ADDITION LOT 3, BLOCK A POND DRAIN PIPE
A.C.E./DESIGN	J R Bechel	6 May 82	
INSPECTOR			PERMIT NO.
A.C.E./FIELD			SHEET 1 OF 2 — MAP NO. -G-17

CITY OF ALBUQUERQUE

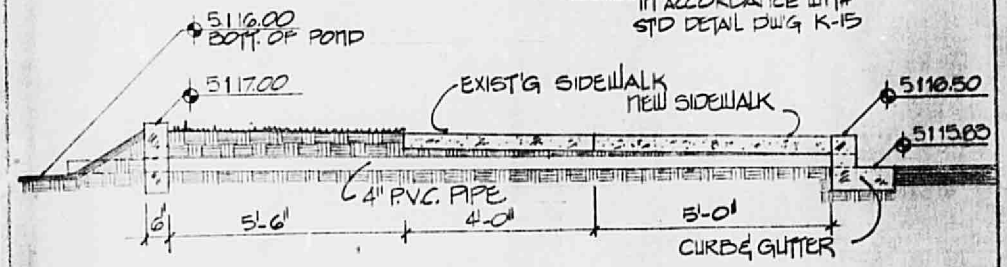
DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN

1" = 20.0'

NOTE: TO BE CONSTRUCTED IN ACCORDANCE WITH STD DETAIL DWG K-15



PROFILE

3/8" = 1'-0"

4/30/82

APPROVALS	NAME	DATE	TITLE: NORTH CARLISLE ADDITION LOT 3, BLOCK A POND DRAIN PIPE	
A.C.E. / DESIGN	G. Kichich	6 May 82		
INSPECTOR			PERMIT NO. SHEET 2 OF 2	MAP NO. G-17
A.C.E. / FIELD				