HYDROLOGY L22/D6 ONE PLAN

L22/D6

1 PLAN

April 21, 1976

Ashcraft Construction Co., Inc.
811 Dallas N.E.
Albuquerque, New Mexico 87110

RE: DRAINAGE STUDY FOR DORADO VILLAGE
TRACT 1.

Gentlemen:

The concept of the subject project is approved and the plat can be signed. Before building permits are issued, a grading plan implementing the concepts will be required. All drainage improvements in public easements and right-of-ways shall be part of the permits and contracts required with street construction. This will include the drainage in the easement and the alley.

Very truly yours,

Kleston H. Laws
Assistant City Engineer-Hydrology

KHL/fs

cc: John Robert
C.A. Coonce & Assoc., 300 Wyoming Blvd. NE 87123

21 Apr 76

Ashcraft Construction Co, Inc
811 Dallas NE
Albuquerque NM 87110

Re: Drainage Study for Dorado Village
Tract 1.

Gentlemen:

The concept of the subject project is approved and the plat can be signed. Before building permits are issued a grading plan implementing the concepts will be required. All drainage improvements in public easements and right-of-ways shall be part of the permits and contracts required with street construction. This will include the drainage in the easement and the alley.

Very truly yours

KHL

cc John Robert
CA Cooper & Associates
300 Wyoming Blvd NE
87123

120
41 x 90

JOHN B. ROBERT
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
FRED LUTHY, JR., VICE-CHAIRMAN
RICHARD H. CLOUGH, SEC.-TREAS.
WILLIAM V. HEREFORD, DIRECTOR
FRANCES McCOY, DIRECTOR

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2112 GIRARD N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 268-4519

Bob — gk
MS

RECEIVED
OCT 01 1974
CITY ENGINEERS

September 27, 1974

Mr. Michial M. Emery
Chief Design Engineer
Bohannan, Westman, Huston & Associates, Inc.
4125 Carlisle Blvd. N.E.
Albuquerque, New Mexico 87107

Dear Mr. Emery:

The drainage master plan for the Hanosh Shopping Center and Adjacent Lands South has been reviewed by this office and has been approved conceptually.

In my opinion, prior to the vacation of Western Skies Drive, the entire southerly portion of the land covered in the drainage report should be coordinated with the Tramway Boulevard Extension. It is my understanding that Tramway Boulevard will be located in the north slope of the Tijeras Canyon Arroyo. If Tramway Boulevard is fixed in that position, Piru Boulevard should probably be moved to the north so as to provide sufficient room for development of the area south of Piru and north of the Tijeras Canyon rim.

It is further directed that Drainage Alternate #2 be used because the existing heavy demand for storm drainage on the Central Avenue storm sewer.

It is recommended that you provide the City Planning Commission with a copy of the above master drainage plan.

Sincerely yours,

John

John B. Robert
Executive Engineer

cj

cc: Mr. V. Kimmick
Mr. Lee Hanosh
Mr. George Carruthers

INTER-OFFICE MEMORANDUM
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING

- ☐ Administration
- ☐ Capital Implementation
- ☐ Code Administration
- ☐ Engineering
- ☐ Information
- ☐ Planning
- ☐ Renewal & Rehabilitation
- ☐ Other
- ☐ City Engineer
- ☐ Principal Asst. C.E.
- ☐ Asst. City Engineer-Design
- ☐ Asst. City Engineer-Field
- ☒ Asst. City Engineer-Hydrology
- ☐ Chief City Surveyor
- ☐ Administrative Asst.
- ☐ Secretary

ATTENTION: Chuck

For Your:
- ☐ Approval
- ☐ Circulation
- ☐ Comment & Return
- ☐ Files
- ☐ Handling
- ☐ Information
- ☒ Investigation & Report
- ☐ Signature

Response Requested by:

REMARKS: Drainage Problem
Western Skies Apts
301 Western Skies Dr SW

Ms. Jean Lusch
294-3018

Call & make an appointment.

5/5 Date ☐ ☐ PSA City Engineer

Investigated by: Donna J. Martinez Date 5-12-81

Approved Date

T REPORT

Phone
Ext.
Phone 294-3018
Ext.
Date 5-5-81

at the for Northwest corner
struction on north side
explanation

DRAINAGE COMPLAINT REPORT

Location: L-22-2 Project:

Reported by: HELLER, RICHARD Phone

Address: City Hall Ext

Complainant: Mrs JEAN HUSCH Phone 294-3018

Address: 301 WESTERN SKIES DR. Ext

Taken by: F.J.A Date 5-5-81

COMPLAINT: CALL FOR MORE APPOINTMENT

Referred to:

INVESTIGATION — Cause: Drainage easement at the far Northwest corner of Dorado village blocked by construction on north side of development. See attached explanation

Recommendation:

Investigated by: Bernard J. Martinez Date 5-12-81

Plan No. Sheet No.

Drainage Map

Approved Date

Investigation: There is a 20' utility and drainage easement all along the West property line of Dorado Village Tract 1. The easement has been blocked by the construction of the 4-plexes. From my field investigation I have found that Ashcraft Construction Company were the original developeres back in December of 1978. I have contacted Ashcraft construction and they have notified me that the 4-plexes in question were built by Mega-Structure Construction. and are separately owned.

Both I and a foreman from street maintance met out in the field and we found that the 20' easement is being blocked by storage sheds and wood fences. The far southwest 4-plexe is owned by Mrs Betty Hinton of The Marby Company 437 Carlisle N.E. 255-1457 and the two other 4 plexes on the Westside are owned by Ruth Francis 881-4406.

Street maintance won't move in to maintain the drainage easement until the encroachments have been removed.

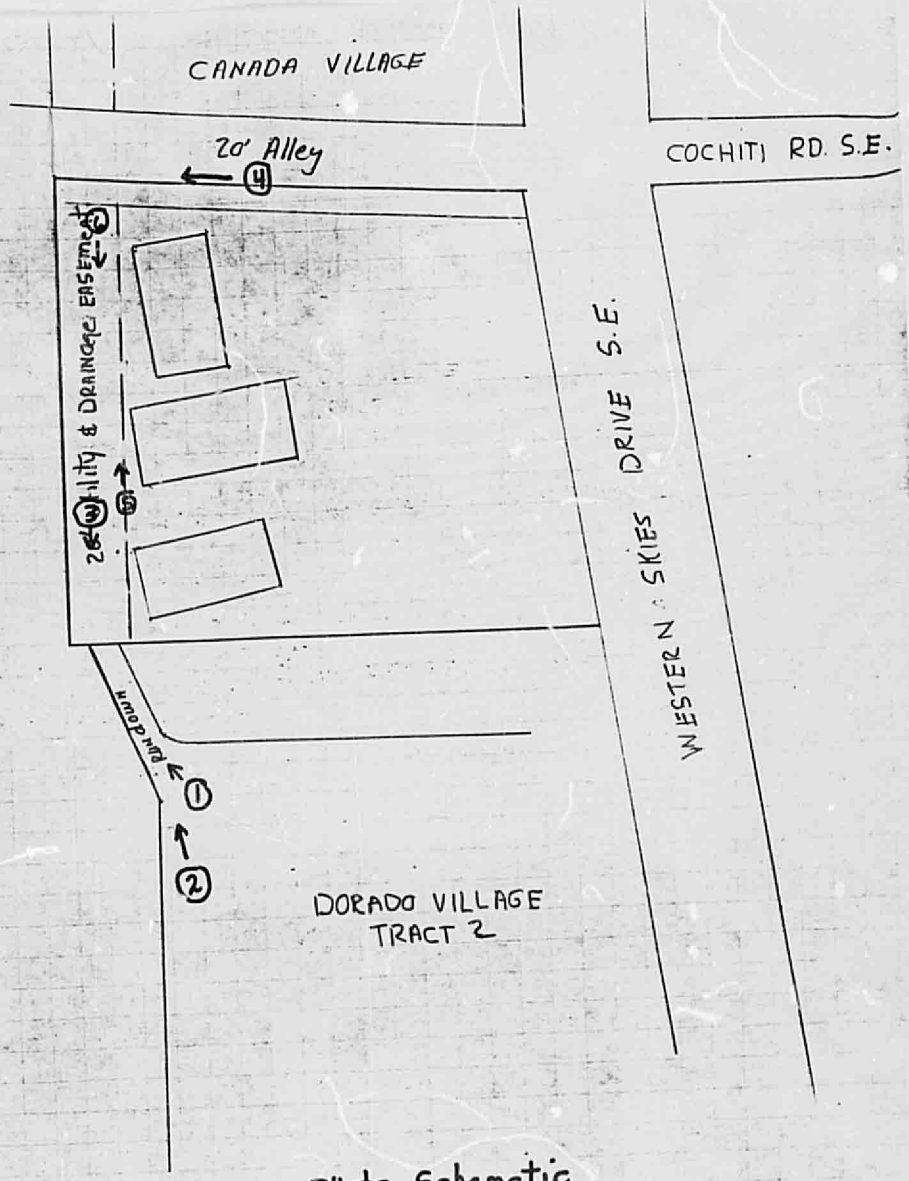
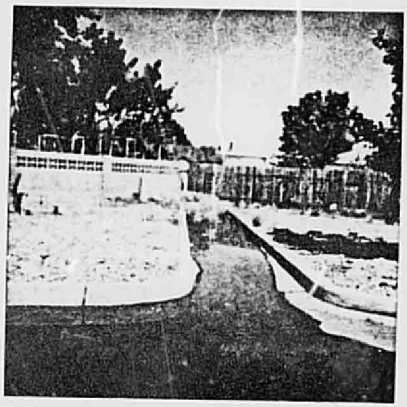


Photo Schematic

THIS MICROIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT

2



1

THIS MICROIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT

5

6

3

4

RECEIVED
APR 1 2 1976
CITY ENGINEERS

DRAINAGE STUDY
FOR
DORADO VILLAGE TRACT 1

April , 1976

Prepared for:

Ashcraft Construction Co., Inc.
811 Dallas, N.E.
Albuquerque, New Mexico 87110

Prepared by:

C.A. Coonce & Associates,
Consulting Engineers
300 Wyoming Blvd., N.E.
Albuquerque, New Mexico 87123

DESCRIPTION OF PROJECT

The tract of land under consideration is Tract 1 of Dorado Village and is on Page L-22-Z of the Albuquerque Zoning maps. The tract is zoned R-2 and is being developed in accordance with the R-2 regulations. This tract contains 2.328 acres.

This subdivision is bounded on the north by an alley, on the south by Tract 2, Dorado Village, on the west by Four Hills Mobile Home Park Addition and on the east by Western Skies Drive.

Offsite Drainage

The natural drainage for this area is to the northwest corner with a portion of it intersecting the block wall on the west and flowing parallel to the wall. There is no practical way to alter this flow pattern.

The western boundary of this property also serves as drainage for Dorado Village Tract 2, which is up hill and on the south side. Provisions are made to allow this historical drainage to continue.

Developed Runoff and Drainage

Due to the capacity limitations of the storm sewer in Central Avenue, the runoff is limited to a 25 year storm and an 0.5 runoff coefficient. This results in a max. Q of 2.92 cfs.

The as-developed condition gives a max. Q of 6.15 cfs. To reduce this Q to the 25 year figure ~~4284~~ 4880 cu. square feet of ~~one~~ 0.75 cu. foot deep ponds are proposed. Assuming an infiltration rate of 0.5 in/hr., the ponds will drain in approximately 24 hours.

DESCRIPTION OF PROJECT

The tract of land under consideration is Tract 1 of Dorado Village and is on Page L-22-Z of the Albuquerque Zoning maps. The tract is zoned R-2 and is being developed in accordance with the R-2 regulations. This tract contains 2.328 acres.

This subdivision is bounded on the north by an alley, on the south by Tract 2, Dorado Village, on the west by Four Hills Mobile Home Park Addition and on the east by Western Skies Drive.

Offsite Drainage

The natural drainage for this area is to the northwest corner with a portion of it intersecting the block wall on the west and flowing parallel to the wall. There is no practical way to alter this flow pattern.

The western boundary of this property also serves as drainage for Dorado Village Tract 2, which is up hill and on the south side. Provisions are made to allow this historical drainage to continue.

Developed Runoff and Drainage

Due to the capacity limitations of the storm sewer in Central Avenue, the runoff is limited to a 25 year storm and an 0.5 runoff coefficient. This results in a max. Q of 2.92 cfs.

The as-developed condition gives a max. Q of 6.15 cfs. To reduce this Q to the 25 year figure ~~4284~~ 4880 cu. square feet of ~~one~~ 0.75 cu. foot deep ponds are proposed. Assuming an infiltration rate of 0.5 in/hr., the ponds will drain in approximately 24 hours.

The drainage through this property from Tract 2 of Dorado Village is 8.8 cfs. and it is proposed to handle it with a v channel 10 feet wide with three to one side slopes along the western edge of the tract. This is the location which currently carries most of the flow through this tract of land.

Other methods of handling the drainage of this subdivision were considered and discarded. They were: detention and controlled release from Hanosh Court, ponding and controlled release or evaporation from the parking lots, ponding and controlled release from the northwest corner and ponding and controlled release from the alley on the north side.

CONCLUSION

The drainage and grading plan as proposed complies with Sections 3A and 3B of Drainage Resolution of 1972-2.

C.A. Coonce
New Mexico P.E. No. 2934

REGISTERED PROFESSIONAL ENGINEER
STATE OF
NO.
2934
NEW MEXICO
CARROLL A. COONCE

ANALYSIS

AREAS

631 Linear Ft. 16' wide drive	10096 ft^2	= 0.232 ac.
9 ea. 18' x 60' parking	9720 ft^2	= 0.223 ac.
9 ea. 110' x 3.5' sidewalk	3466 ft^2	= 0.008 ac.
9 ea. 3200 ft^2 roof	28880 ft^2	= 0.661 ac.
Hanosh Ct.	11170 ft^2	= 0.256 ac.
Total:	63250 ft^2	1.452 ac.

Assume grass for remainder 2.328 - 1.452 = .876

k value

roof	= (.661)(0.85)	= 0.562
streets, parking and sidewalk	= (.791)(.82)	= 0.649
grass	= (.876)(.125)	= 0.110
		1.321

$$k \text{ composite} = \frac{1.321}{2.328} = 0.567$$

Use composite runoff coefficient of 0.60

Using a distance of 500 ft., slope of 1.4% and c=.6, and fig. A1

tc = 22 min

I_{25} = 123/t + 27 = 2.51 inches/hr. Herkenhoff & Assoc. 1963

Runoff allowed by the city is based upon 25 year flood and a runoff coefficient of 0.5. This is the design flood for the storm sewer in Central Avenue which this area drains into.

$Q_{allowable}$ = (0.5)(2.51)(2.328) = 2.92 cfs.

The current 100 year contribution of this piece of land based upon a concentration coefficient of 0.35 and a 100 year intensity of 189/28.5 + 25 = 3.53 in/hr.

Q_{100} = (.35)(3.53)(2.328) = 2.88 cfs. undeveloped

The Q_{max} as developed with a composite coefficient of 0.6 and tc = 19 min. and $I_{100} = \frac{189}{19 + 25} = 4.40$ will be $Q_{100\ max} =$

(0.6)(4.40)(2.328) = 6.15 cfs.

In order to reduce this to a peak flow of 2.92 cfs. the percentage of pond volume to total volume is [(6.15 - 2.92)/6.15]100 = 53.

V_{total} = (6.15 cfs.) 19 min. 60 min/sec = 7011

Ponding Volume = (7011)(.53) = 3716 ft^3 or 413 ft^3 average per unit. Using a holding depth of 1 ft. the lot pond area should average 413 ft^2.

Tract 2 of Dorado Village adjacent to the south drains through this property and will have to be allowed to continue to do so. The diagonal across this property is 955 ft. and the slope is 0.98%. Treating it as two drainage areas with a length of 477.5, a slope of 1.0% and c=0.35, the time of concentration (from A1) would be 29.5 minutes. At this time all depressions should be filled and laminar overland flow developed. The velocity from A2 gives 1 fps, which would add 8 minutes more to the time of concentration.

tc = 29.5 + 8 =37.5 min.

I = 189/37.5 + 25 = 3.02 in/hr

Q_{max} = (0.35)(3.02)(8.3) = 8.77 cfs historical

When developed if held to Q_{max} when c=0.5 and I=25 year flood tc will be 24 + 8 = 32 min, $I = \frac{123}{59} = 2.08$ in/hr

Q_{max} = (.5)(2.08)(8.3) = 8.6, which is approximately the same as the historical 100 year flood.

To handle the volume of water assume a v channel 10 ft. wide with side slopes of 3:1

$n = 0.02$

$z = 10/1.67 = 6;\ z/n = \frac{6}{.02} = 300$

From A3 for Q = 8.8 and slope = 0.013 the depth is .75

This channel would be more than adequate and would allow for deterioration with age and debris. This means that the maintenance would not be critical.

PLANNING DEPARTMENT
CITY OF ALBUQUERQUE

ADMINISTRATIVE REVIEW BOARD
January 15, 1976
S-76-1

S-76-1 Ralph K. Hicks & Assoc., Inc., agent for Ashcraft Construction Co., Inc., requests approval of the proposed plat of Ashcraft Manor Subdivision, located on the west side of Western Skies Drive S.E., between Central & Singing Arrow Avenues, containing approximately 2.5 acres.

PL Map No.: L-22 Material: Report, Plat

COMMENTS FROM OTHER DEPARTMENTS:

City Engineer: "Require drainage report showing compliance with AMAFCA Resolution 1972-2. This area flows into the new Central Avenue storm drain which was designed for the 25 year flood with a rational C value of .5. Peak runoff rates should not exceed that amount. Presently this storm sewer does not have an adequate outfall. Consideration should be given to Section 10, paragraph A.2 before approval of the subdivision. Require grading plan."

Water Engineer: "No objection."
Liquid Waste Engineer: " "
Traffic Engineer: " "
AMAFCA: "Drainage report showing compliance with AMAFCA Resolution 1972-2 required."
COG: "No objection."
Environmental Health: "Top soil permit required prior to earthwork activities."
Dept. of Transportation: "Transit available on Central Avenue."
Fire Dept.: "Will not affect our operation if in compliance with Fire Dept. requirements."
Parks & Recreation: "Our committee has no objections to this requested subdivision plan. However, after reviewing the attached plat, it appears that they are placing an R-1 development in an R-2 zoning area."

APS: "No objection or impact on APS."
Mountain Bell: "No objection."
Public Service Co.: no reply received
Southern Union Gas Co.: " " "
Police Dept.: " " "

PLANNING DEPARTMENT COMMENTS:

The proposed subdivision is located on the west side of Western Skies Drive S.E. and south of East Central Avenue.

The subject property is zoned R-2 and is to be utilized for nine single-family dwellings, which can be built in this zoning category.

The proposed subdivision conforms to minimum lot size standards as outlined in the Comprehensive City Zoning Code.

A drainage plan satisfactory to the City Engineer and AMAFCA is required. If the development of this subdivision requires any unprogrammed capital expenditures by the City, they must be paid for by the developer.

RECOMMENDATION:

The Planning Department recommends approval of S-76-1.

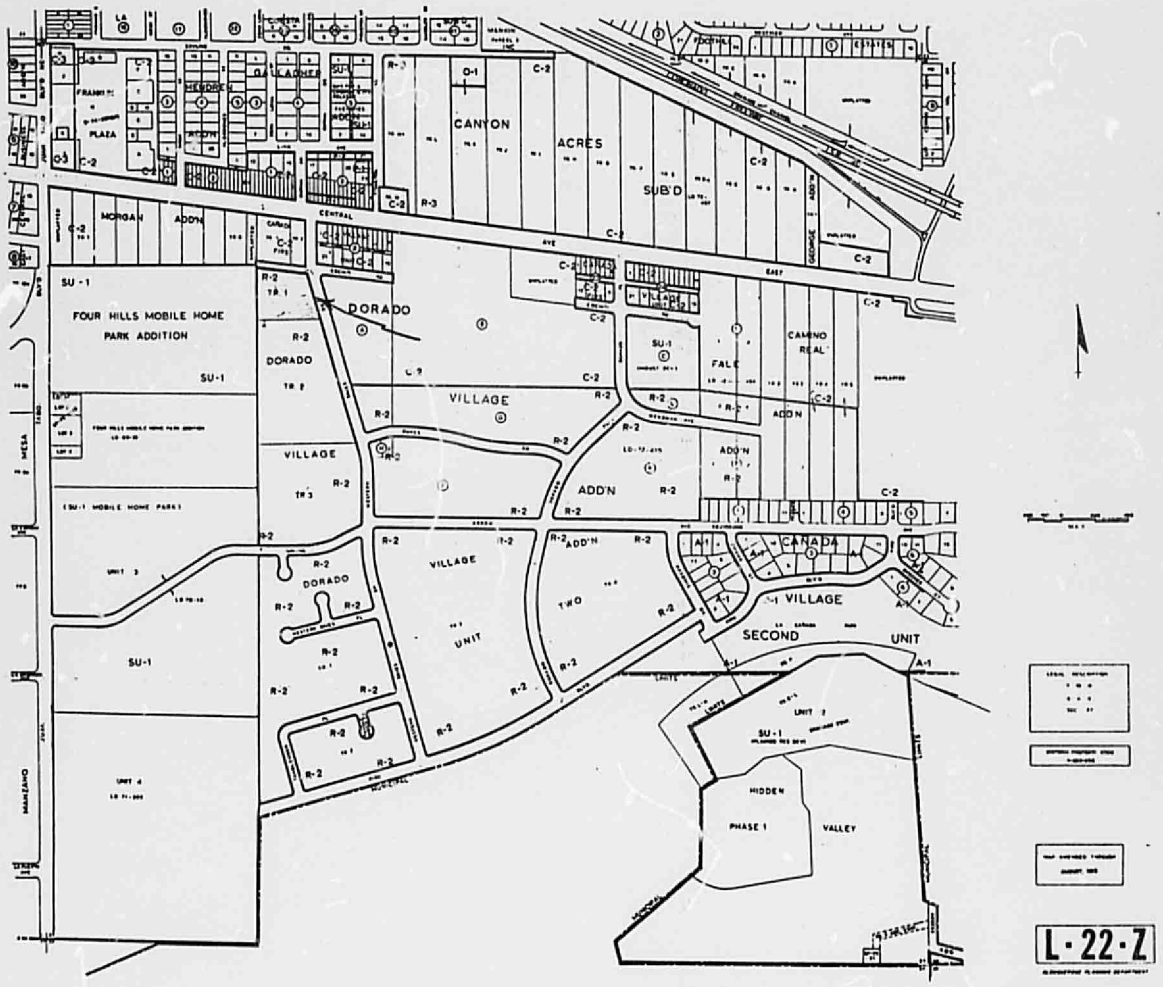
John R. Lucero

John Lucero, Planner

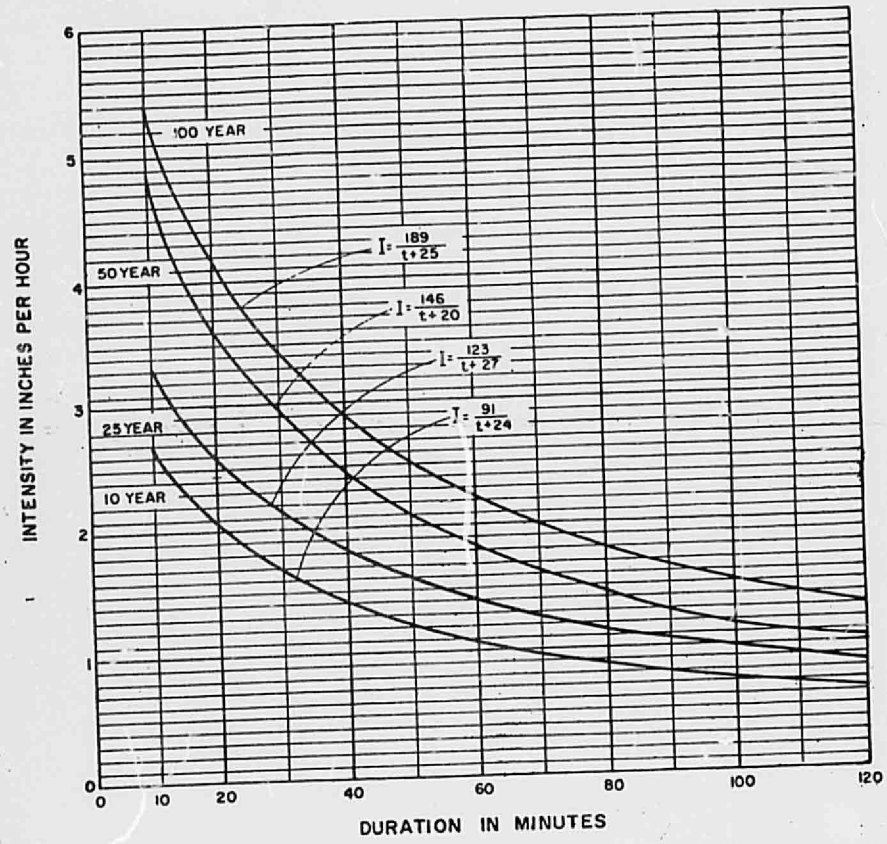
JL:jd

cc: Ashcraft Construction Co., Inc., 811 Dallas N.E.; 87110
Ralph K. Hicks & Assoc., Inc., 4000 San Pedro Dr. N.E.; 87110

A-1


CANYON
ACRES
SUB'D
MORGAN
ADD'N
CENTRAL
AVE
EAST
GEORGE
ADD'N
FRANKLIN
PLAZA
HENDRICK
DRUGS
LAUNDRY
SU-1
FOUR HILLS MOBILE HOME
PARK ADDITION
SU-1
(SU-1 MOBILE HOME PARK)
UNIT 3
SU-1
UNIT 4
MESA
MANZANO
DORADO
VILLAGE
DORADO
VILLAGE
DORADO
VILLAGE
UNIT
ADD'N
ADD'N
TWO
ADD'N
FALE
CAMINO
REAL
ADD'N
CANADA
VILLAGE
SECOND
UNIT
UNIT 2
SU-1
HIDDEN
PHASE I
VALLEY
L-22-Z

A-2



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

INTENSITY DURATION
FREQUENCY CURVES

(ALBUQUERQUE AREA - 1961)

GORDON HERKENHOFF & ASSOC
CONSULTING ENGINEERS
ALBUQUERQUE, NEW MEXICO

CHART
1

A-3

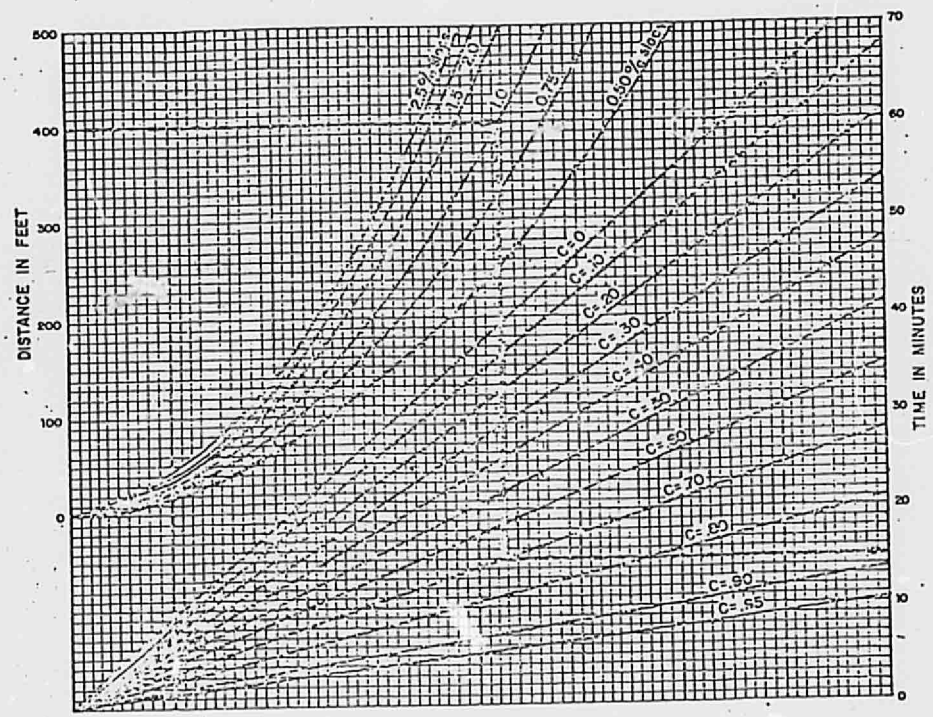


FIGURE 3-1. OVERLAND TIME OF FLOW CURVES (7)

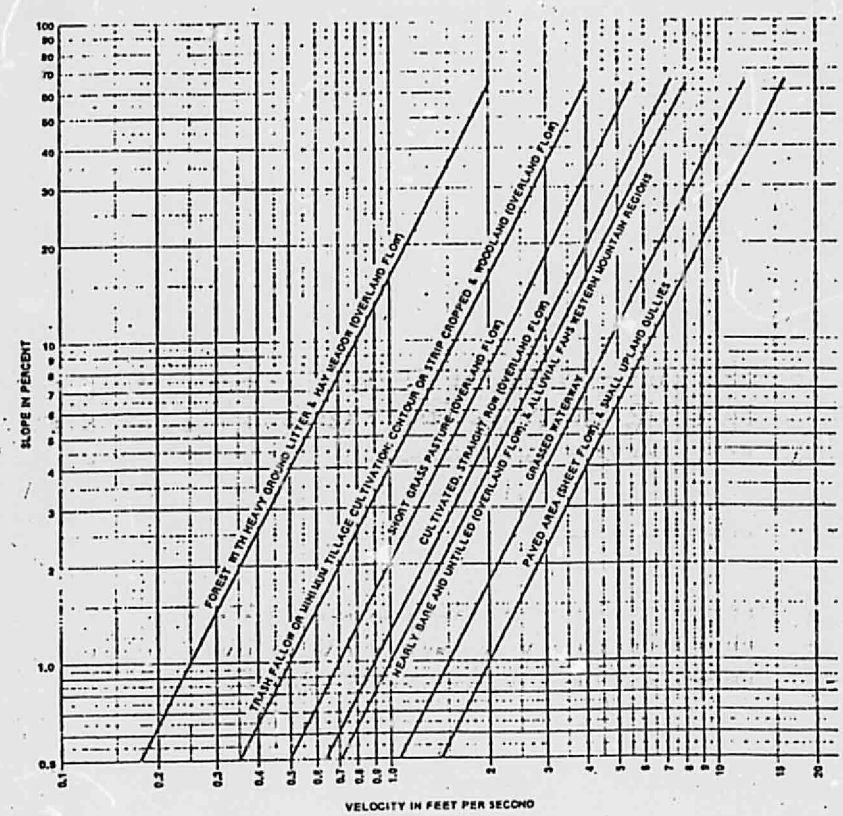
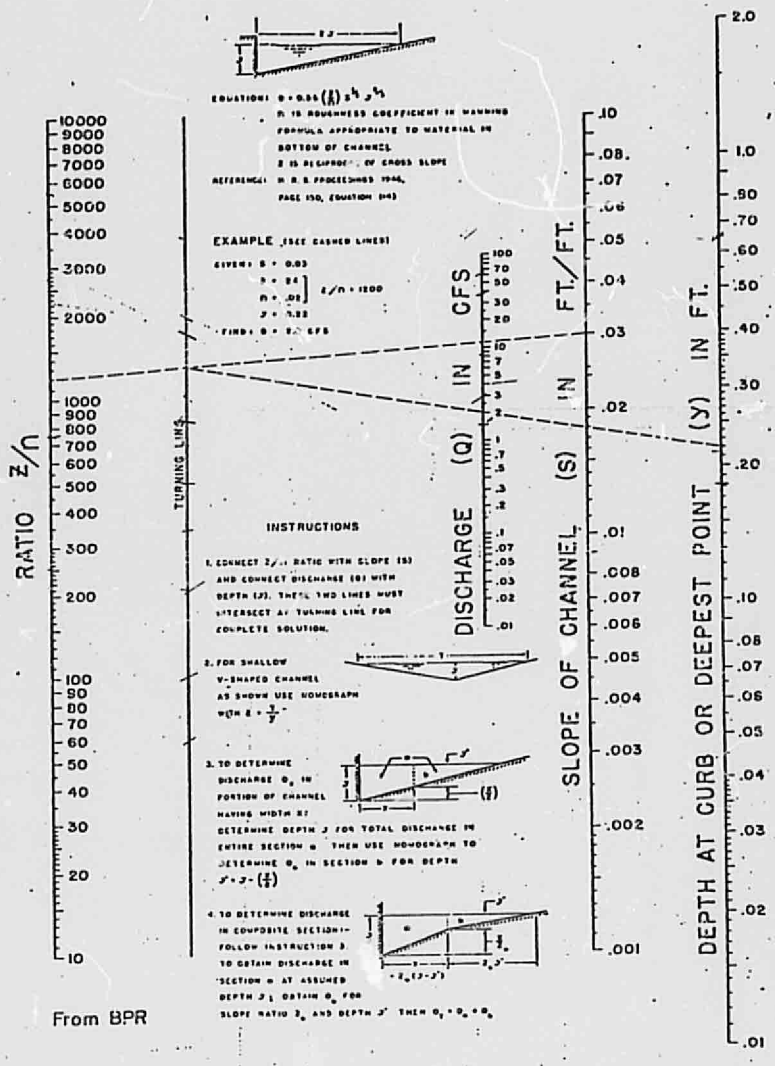


Figure 6 —Velocities for upland method of estimating T_c

DA < 2000 Ac.



From BPR

FIGURE 6-1. NOMOGRAPH FOR FLOW IN TRIANGULAR GUTTERS.