HYDROLOGY H16/D31 2 PLANS

H16/D31

2 PLANS

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

LETTER OF TRANSMITTAL

DATE 10/26/82 F.D. JOB NO. 58322
ATTENTION
REASON

TO MR BRIAN BURNETT
HYDROLOGY SECTION / MDD
CITY OF ALBQ. NM 87103

GENTLEMEN:

WE ARE SENDING YOU ☐ ATTACHED ☐ UNDER SEPARATE COVER VIA _____ THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☒ PRINTS ☐ PLANS ☐ PROJECT ESTIMATE ☐ SPECIFICATIONS
☐ COPY OF LETTER ☐ CHANGE ORDER ☐ _____

COPIES	DATE	NO.	DESCRIPTION
2	COPIES		GRADING & DRAINAGE PLAN FOR BUILDING ADDITION REFRIGERATION SUPPLIERS INC.

RECEIVED
OCT 27 1982
CITY ENGINEER

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

BRIAN, IF IT IS OK WE WOULD LIKE TO DISCHARGE THE WATER FROM THE NORTH WEST ROOF DRAIN DIRECTLY TO THE DITCH. WE HAVE ADDED A SPLASH PAD AT THIS LOCATION

COPY TO CC: BILL POGUE

SIGNED: JOE ALLEN

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

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

H16 - D31A

October 21, 1982

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

RE: DRAINAGE PLAN FOR BUILDING ADDITION - REFIGERATION SUPPLIES, INC.

Dear Joe:

I have reviewed the referenced plan and forward the following comments:

a. How is runoff from the roof drain located on the northwest corner of the addition directed to the rip-rap rundowns?

b. As I discussed with you on the phone, the existing building should be certified prior to release of the building permit for the Phase 1 addition. I am currently checking with Fred Aguirre to see whether this has been carried out.

If you have any questions concerning this matter, please call.

Very truly yours,

Brian

Brian G. Burnett
Civil Engineer/Hydrology

RECEIVED
OCT 25 1982
DENNEY-GROSS & ASSOC., INC.

BGB/tsl

Joe, the existing structure has been certified (6-2-82). Therefore, once item a is taken care of we'll be on our way! Brian B.

DENNEY-GROSS & ASSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0696

October 19, 1982

RECEIVED
OCT 19 1982
ENGINEERING

Mr. Brian Burnett
City Engineering
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Arizona Refrigeration Suppliers
Revisions to Drainage Report
DGA Job No. 583.32

Dear Brian:

Enclosed are two prints of the grading and drainage plan for building additions for Refrigation Suppliers, Inc. The plan has been revised to differenciate between Phase I and Phase II improvements. Our client would like drainage approval of both Phase I and Phase II; however, only Phase I improvements will be constructed at this time.

Phase I improvements include the building addition west of the existing building and the drivepad and asphalt parking east of the proposed Phase II addition.

Please call me if you have any questions on this matter.

Very truly yours,

Joseph M. Allen

JMA/lm

Enclosures

cc: Bill Pogue

DENNEY-GROSS & ASSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0696

October 1, 1982

H16-D31

Mr. Brian Burnett
Hydrology Dept.
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RECEIVED
OCT 04 1982
ENGINEERING

Re: Grading & Drainage Plan for
Building Additions
Refrigeration Suppliers, Inc.
DGA Job No. 583.22

Dear Brian:

Enclosed are three copies of a Grading & Drainage Plan for building additions for the existing Refrigeration Suppliers' building located on Lot 4A, Block "B" Duke City Industrial Area.

As you recall the Drainage Plan for the existing building was approved by the City in November of 1981. A copy of the approved report and approval letter are enclosed.

The building additions and new paving are shown on the new grading plan. Off-site flows, flood plain information and soil types are shown in the approved drainage report.

TREATMENT OF RUNOFF:

All runoff from the proposed improvements will be routed to the existing ditch which eventually drains into the North Diversion Channel.

A. Additional Volume of Runoff Produced per Development:

V = (PRA/12) = (2.2 x (0.9-0.4)(Area of Phase I additions + Area of Phase II additions + Parking lot)/12)
= 0.0917(3180SF+13,600SF)
= 1539 CF = additional runoff that will be added to the channel per development

B. Additional Flow Generated per Development:

Q = CIA = (.9-.4)(5.4)(3180+13600/43,560) = 1.04 cfs

C. Flow to Ditch if Entire Lot 4 were Developed:

Q = 10.67 cfs (from approved report)

D. Capacity of Ditch Running Parallel to Channel:

131 cfs (from approved report)

We are requesting drainage approval for this project so a building permit may be obtained. Please feel free to call us if you need any additional information.

Very truly yours,

Joseph M. Allen

JMA/lm

Enclosures

cc: Refrigeration Suppliers, Inc.
Doyle Seymore, Banes Co.

DENNEY-GROSS & ..SSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0696

December 7, 1981

Please file in H16-031a folder

Mr. Dan Sabo
AMAFCA
P.O. Box 25851
Albq., NM 87125

Re: Refrigeration Suppliers'
Drainage Plan & Report
Tract on Princeton
DGA Job No. 583.12

Dear Mr. Sabo:

Attached is a revised plan for subject project showing additional riprap in the earthen channel as it leaves the parking lot.

Riprap Sizing

Q = 2 cfs
A = Swale Area = 1 SF
V = 2 fps
R = Hydraulic Radius = A/P = 1/7 = .14

$V^2/R^{0.33} = 2^2/.14 = 7.7$ Use VL* Riprap

Use 6" loose riprap 1.5 feet deep

*"Design Guidelines and Criteria for Channels and Hydraulic Structures on Sandy Soil".

Also, we have eliminated the riprap at the rundown because as you mentioned there already is buried riprap in place.

Very truly yours,

Joe Allen

Joseph M. Allen

JMA/lm
Enclosure

cc: BRIAN BURGETT

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

H16 - D31

November 30, 1981

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

RE: REFRIGERATION SUPPLIERS, INC. DRAINAGE REPORT

Dear Joe:

The referenced drainage report is approved based on your submittal of November 25, 1981. Please see that the revised plans (dated 10/28/81) are placed in the construction sets. Mr. Fred Aguirre will sign off for Hydrology when this is done.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

Need info sheet

RICHARD E. LEONARD
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
R. WARD HUNNICUTT, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
VERNON DOAK, DIRECTOR
KLESTON LAWS, DIRECTOR

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT AVE., N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 884-2215

RECEIVED
NOV 10 1981
DENNEY-GROSS & ASSOC., INC.

November 6, 1981

RECEIVED
NOV 19 1981
ENGINEERING

Denney-Gross & Associates, Inc.
2400 Comanche Road, NE
Albuquerque, NM 87107

Attn: J. M. Allen

Subject: Drainage Report Lot 4A, Block B
Duke City Industrial Area

Dear Sir:

The drainage report has been reviewed and we have no objection to the draining of waters into the side ditch. However, we do not find any details for erosion control at the inlet. Please submit a rundown detail for our review.

Sincerely,

Dan Sabo

Dan Sabo
Drainage Engineer

ic

H16-031

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

LETTER OF TRANSMITTAL

DATE	F.D. JOB NO.
ATTENTION	
REASON DRAINAGE RPT. LOT 4A BLOCK B DUKE CITY INDUSTRIAL AREA ZONE ATLAS # H-16	

TO BRIAN BURNETT
CIVIL ENGINEER / HYDROLOGY
CITY OF ALBUQUERQUE,

RECEIVED
NOV 19 1981
ENGINEERING

GENTLEMEN:

WE ARE SENDING YOU ☐ ATTACHED ☐ UNDER SEPARATE COVER VIA _____ THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☐ PRINTS ☐ PLANS ☐ PROJECT ESTIMATE ☐ SPECIFICATIONS

☐ COPY OF LETTER ☐ CHANGE ORDER ☐ _____

COPIES	DATE	NO	DESCRIPTION
1			LETTER FROM AMAFCA
1			REVISED GRADING & DRAINAGE PLAN

THESE ARE TRANSMITTED as checked below.

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☐ AS REQUESTED

☐ FOR REVIEW AND COMMENT ☐ _____

☐ FOR BIDS DUE _____ 19__ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

BRIAN, WE HAVE ADDED A BUILDING DETAIL PER AMAFCA'S REQUEST AND THIS IS SHOWN ON THE REVISED GRADING & DRAINAGE PLAN. THE DRAINAGE RPT. WAS SUBMITTED TO THE CITY LAST WEEK.

COPY TO _____

SIGNED: JOE ALLEN

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

H16-D31

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

RECEIVED

NOV 10 1981

ENGINEERING

LETTER OF TRANSMITTAL

DATE 11/10/81	F.D. JOB NO.
ATTENTION	
REASON	

TO Mr. Brian Burnett
Civil Engineer / Hydrology
City of Albuquerque

Drainage Rpt. Lot 4A Block "B"
Duke City Industrial Area

GENTLEMEN:

WE ARE SENDING YOU ☐ ATTACHED ☐ UNDER SEPARATE COVER VIA _____ THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☐ PRINTS ☐ PLANS ☐ PROJECT ESTIMATE ☐ SPECIFICATIONS

☐ COPY OF LETTER ☐ CHANGE ORDER ☐ _____

COPIES	DATE	NO.	DESCRIPTION
2			Drainage Rpts

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☐ AS REQUESTED

☐ FOR REVIEW AND COMMENT ☐ _____

☐ FOR BIDS DUE _____ 19____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

Letter of approval from AMAFCA shall follow,

Joe

COPY TO _____

SIGNED: Joe

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

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

DRAINAGE REPORT INFORMATION SHEET

PROJECT TITLE DRAINAGE RPT. LOT 4A BLOCK "B" DUKE CITY INDUSTRIAL AREA REFRIGERATION SUPPLIERS INC.

ZONE ATLAS PAGE NO. H-16-Z CITY ADDRESS RICHMOND AVE.

LEGAL ADDRESS RICHMOND AVE.

ENGINEERING FIRM DENNEY-GROSS INC. CONTACT J. ALLEN

ADDRESS 2400 COMANCHE N.E PHONE 884-0696

OWNER REFRIGERATION SUPPLIES INC. CONTACT

ADDRESS PHONE

~~ARCHITECT/SURVEYOR~~ AGENT TERRY JOHNSON c/o BERGER BRIGGS CONTACT

ADDRESS 215 THIRD ST S.W. PHONE 247-0444

DATE SUBMITTED OCT 1981

BY DENNEY-GROSS INC.

CITY OF ALBUQUERQUE
MUNICIPAL DEVFLOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. H16 DATE: 10/26/81

PLANNING DIVISION NO. _____

H16-D31

CONFERENCE RECAP

SUBJECT: Lot 4A - Block B - Duke City Industrial Area

	WHO	REPRESENTING
ATTENDANCE:	Joe Allen	Denney - Gross & Assoc.
	Brian Burnett	City

FINDINGS:
1. Free Discharge to dirt channel west of property
2. Provide rundown to channel from pavement
3. Obtain approval from AMAFCA for rundown and work in easement
4. Evaluate off-site flows -

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Brian G. Burnett
TITLE: CE/Hydrology
DATE: 10/26/81

SIGNED: Joe Allen
TITLE: STAFF ENGINEER
DATE: 10/26/81

DRAINAGE REPORT
LOT 4A BLOCK "B"
DUKE CITY INDUSTRIAL AREA

Prepared for

Refrigeration Supplies, Inc.

OCTOBER 1981

Prepared by

Dennew-Cross & Associates, Inc.
5400 Comanche Road, N.E.
Albuquerque, New Mexico 87109

DRAINAGE REPORT
LOT 4A BLOCK "B"
DUKE CITY INDUSTRIAL AREA

RECEIVED
NOV 10 1981
ENGINEERING

Prepared For

Refrigeration Suppliers, Inc.

OCTOBER 1981

Prepared By

Denney-Gross & Associates, Inc.

2400 Comanche Road, N.E.

Albuquerque, New Mexico 87107

DRAINAGE REPORT

LOT 4A BLOCK "B"

DUKE CITY INDUSTRIAL AREA

Prepared For

Refrigeration Suppliers, Inc.

OCTOBER 1981

Prepared By

Denney-Gross & Associates, Inc.

2400 Comanche Road, N.E.

Albuquerque, New Mexico 87107

DRAINAGE REPORT
LOT 4A BLOCK "B"
DUKE CITY INDUSTRIAL AREA

I. GENERAL:

The location of the project is shown on the Location Map H-16-Z (Exhibit A) and it consists of part of Lot 4, Block "B", Duke City Industrial Area, Bernalillo County, New Mexico. A summary plat is being prepared for Lot 4 to be broken up into two parcels.

The site, in existing conditions, slopes at around 1% to the west and all of the runoff drains into an existing ditch that drains into the North Diversion Channel. The soil type is indicated on Exhibit C. This tract is located on Flood Hazard Map No. 15 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 B). Total project area is 0.46 acres.

II. CRITERIA:

A. Rainfall depth from City of Albuquerque Precipitation Map for 100-year, 6-hour storm (see Exhibit F) = 2.3 inches

B. Composite Runoff Factor:

$R = [(\text{Area of hard surface})(R_1) + (\text{Area of natural soil})(R_2)]/\text{total area}$

$R = [(0.33)(.9)^* + (0.126)(.4)^*]/0.46 = 0.76$

*The American Society of Civil Engineer's "Manual on the Design and Construction of Sanitary and Storm Sewers," lists R values for bituminous streets at 0.70 to 0.95 and roofs at 0.75 to 0.95 and flat landscaping from 0.05 to 0.17.

$*I_{100} = (189/(t+25))$ $t = 10$ min. $I = 5.4$ in/hr

*Intensity Duration Frequency Curves, Master Plan of Drainage, City of Albuquerque, New Mexico.

III. OFF-SITE CONTRIBUTING WATERSHED:

No off-site flows enter the site. Runoff from the north flows to the northwest and does not enter the site. The area to the east is bounded by a standard curb and gutter and the runoff from the area to the south flows to the west to the Diversion Channel. See Exhibit D.

IV. TREATMENT OF RUNOFF:

All runoff from this site will be routed to the existing ditch which eventually drains into the North Diversion Channel by way of a rundown located approximately 360 feet from the northwest corner of the Lot 4B.

A. Volume of Runoff Produced per Development:

$V = (PRA/12) = [(2.2)(0.9-0.4)(0.46)(43,560)]/12$

$V = 1837$ cf = additional runoff that will be added to the channel per development.

B. On-Site Flow (100-year)

$A = 0.46$ $R = 0.76$ $I_{100} = 5.4$ in/hr

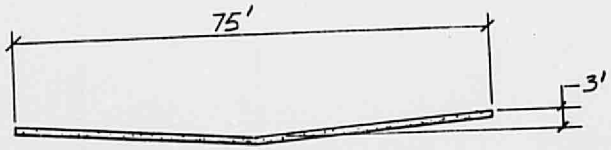
$Q = AIR = (0.49)(5.4)(0.76) = 2.01$ cfs

C. Flow to Ditch if Entire Lot 4 (4A & 4B) were Developed:

$Q = AIR = (2.6)(5.4)(0.76) = 10.67$ cfs

D. Capacity of Ditch running parallel to Channel:

(see drawing on next page)



360' From North-West Corner of Lot 4B

EXISTING RUNDOWN

WP = 21.5 R = (26.6/21.5) = 1.24 A = 26.6 SF

Average Slope = .4% n = .022 (clean excavated earth)

Manning's Equation

$Q = (1.486/.022)(1.24)^{2/3}(.004)^{1/2}(26.6) = 131$ cfs

Capacity of Existing Concrete Rundown (see Exhibit E)

Area = 112.5 SF WP = 75.3 R = 1.5

Slope = 1.0% n = 0.012

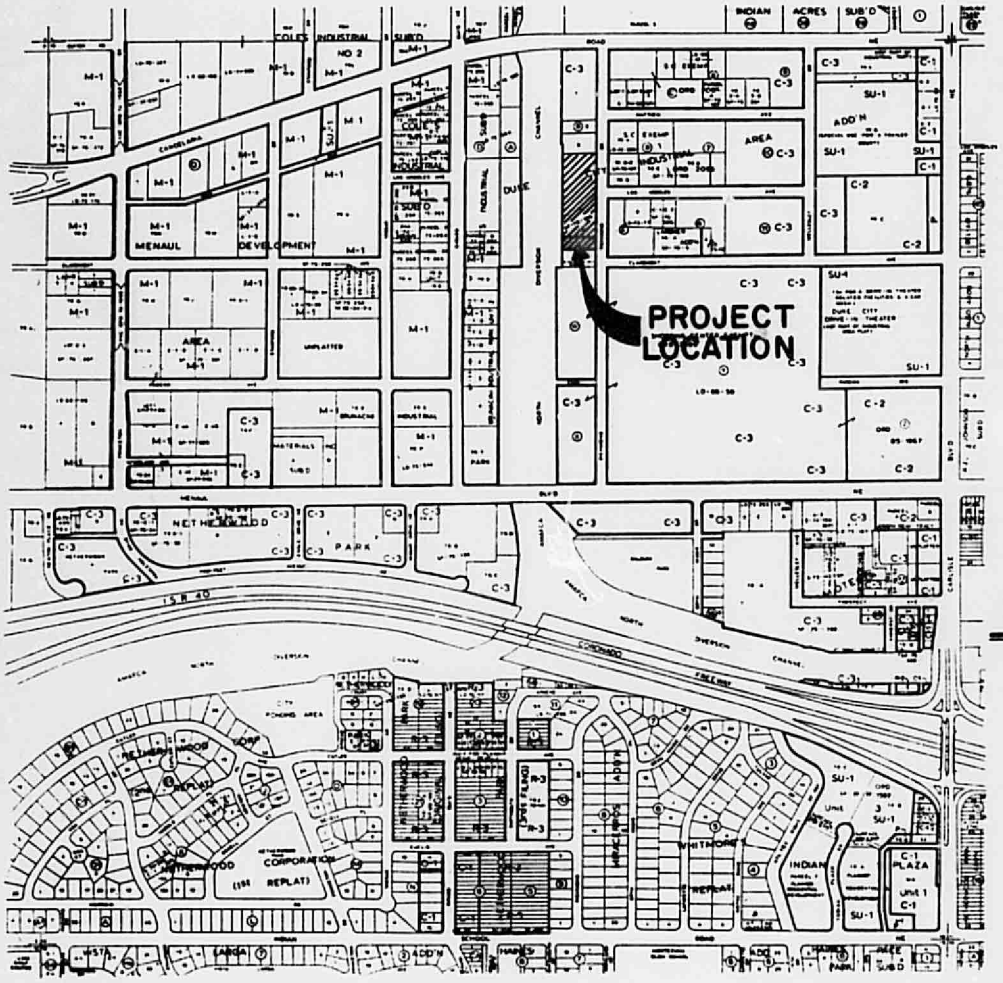
$Q = (1.486/0.012)(1.5)^{2/3}(.01)^{1/2}(112.5) = 1825$ cfs

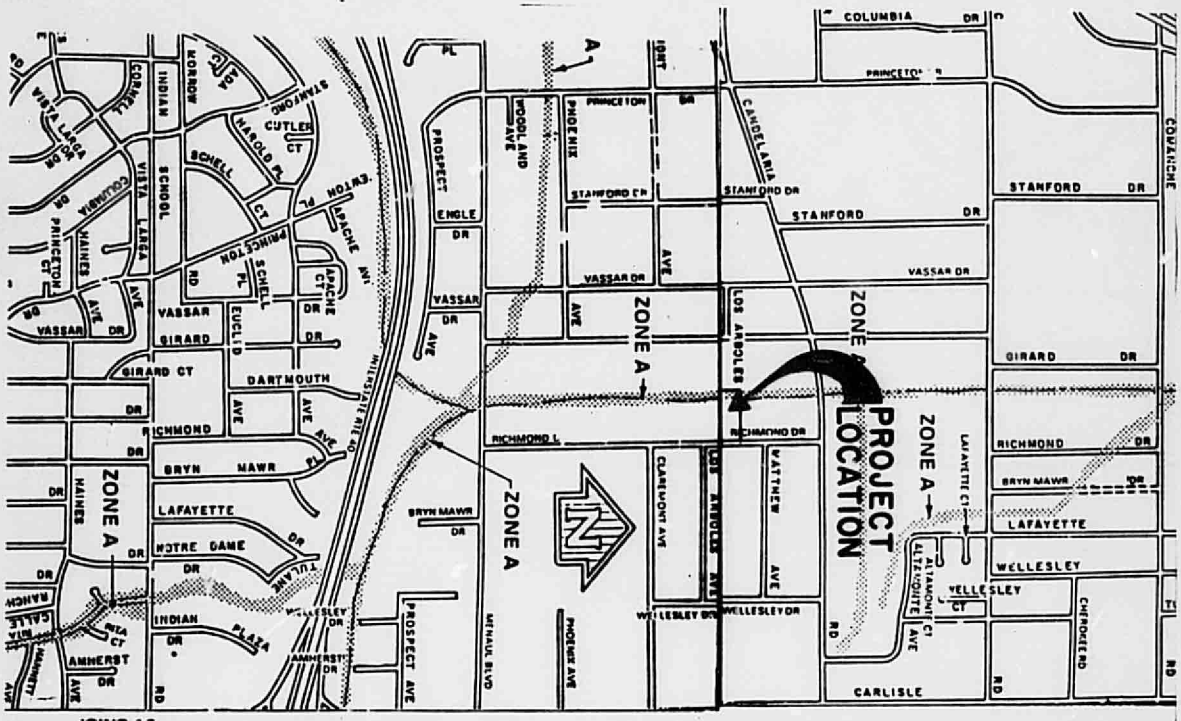
V. ADDITIONAL INFORMATION:

1. Information concerning the 10-year storm is not discussed in this report, the 100-year storm is used.
2. Flow depth and velocity for an average slope of 1%; the velocity is equal to 2 fps (see Exhibit G) and the depth would not exceed .1 foot.
3. Pond calculations are not applicable for this report.
4. Right-of-Way easements are not required.

VI. CONCLUSIONS:

1. No outside runoff enters the site.
2. All rundowns, ditches and channels are adequately sized to handle the additional runoff generated per development.
3. When Lot 4B develops, its runoff can be treated in the same manner as Lot 4A with no adverse affects on the existing ditch or channel or rundowns.


PROJECT LOCATION
EXHIBIT "A"
H-16-Z



APPROXIMATE SCALE

1000 0 1000 2000 3000 FEET

FLOOD HAZARD BOUNDARY MAP

MAP REVISED 2/14/78

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

CITY OF ALBUQUERQUE, NM
(BERNALILLO CO.)

EXHIBIT "B"

WeB—Wink-Embudo complex, 0 to 5 percent slopes. This mapping unit is about 65 percent a Wink fine sandy loam that has 1 to 5 percent slopes and 25 percent Embudo gravelly fine sandy loam, 0 to 5 percent slopes.

The Wink soil is on slight rises and ridges. It has a profile similar to that described as representative of the series, but it is alkaline and has a pale brown fine sandy loam surface layer about 4 inches thick and a strongly alkaline clay loam substratum below a depth of 40 inches. On about 70 percent of the acreage of Wink soil, the content of exchangeable sodium is more than 15 percent. The Embudo soil is in shallow depressions. It has a profile similar to that described as representative of the Embudo series, but the surface layer is yellowish brown gravelly fine sandy loam about 8 inches thick. On both soils, runoff is medium and the hazard of water erosion is moderate.

Included in this unit in mapping are areas of Madurez, Tijeras, and Kokan soils, which make up about 10 percent of the unit.

This mapping unit is used for community development, watershed, and wildlife habitat. Flooding and poor compaction are potential problems where this mapping unit is used for community development. Dryland capability subclass VIIe; native plant community 4.

EXHIBIT "C"

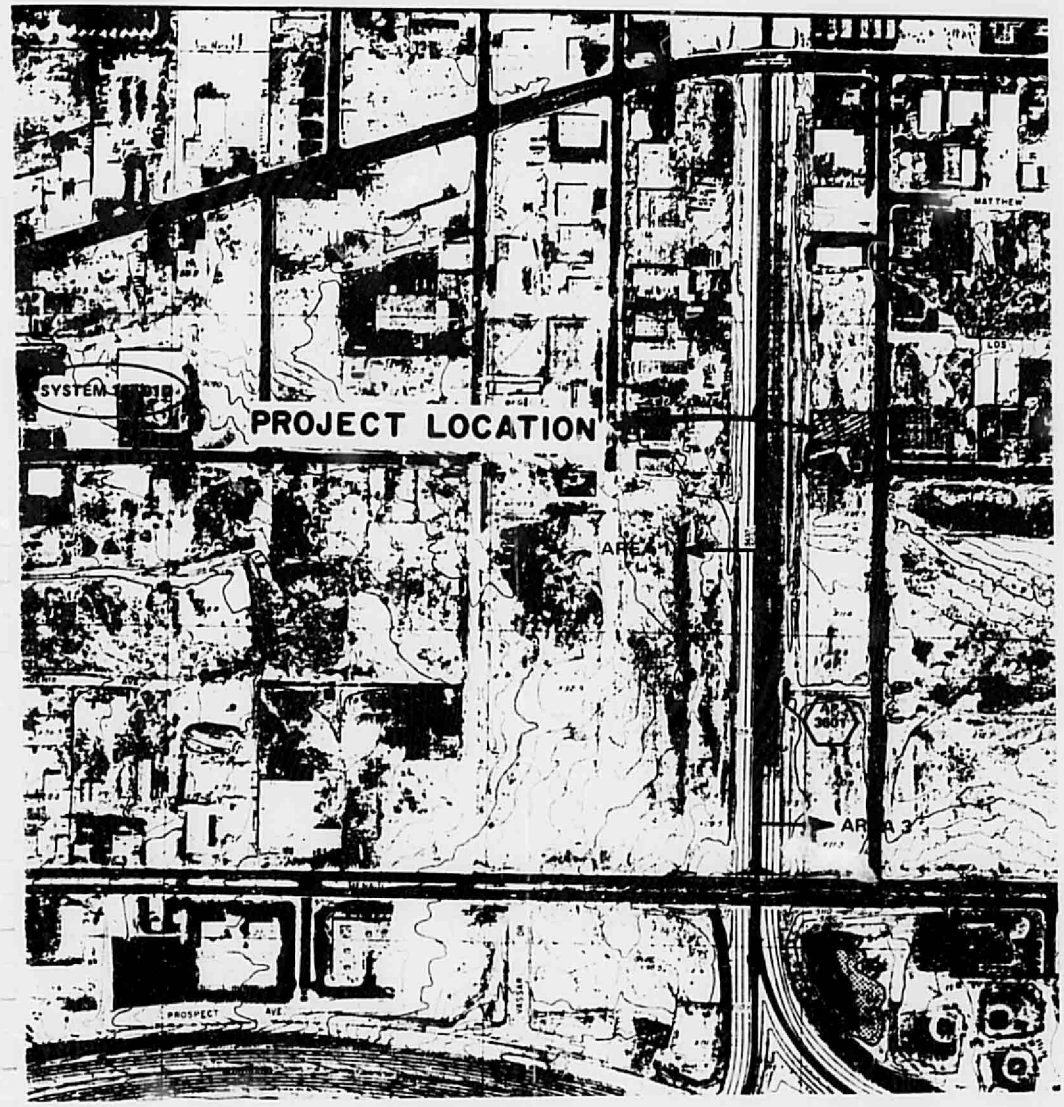


EXHIBIT "D"

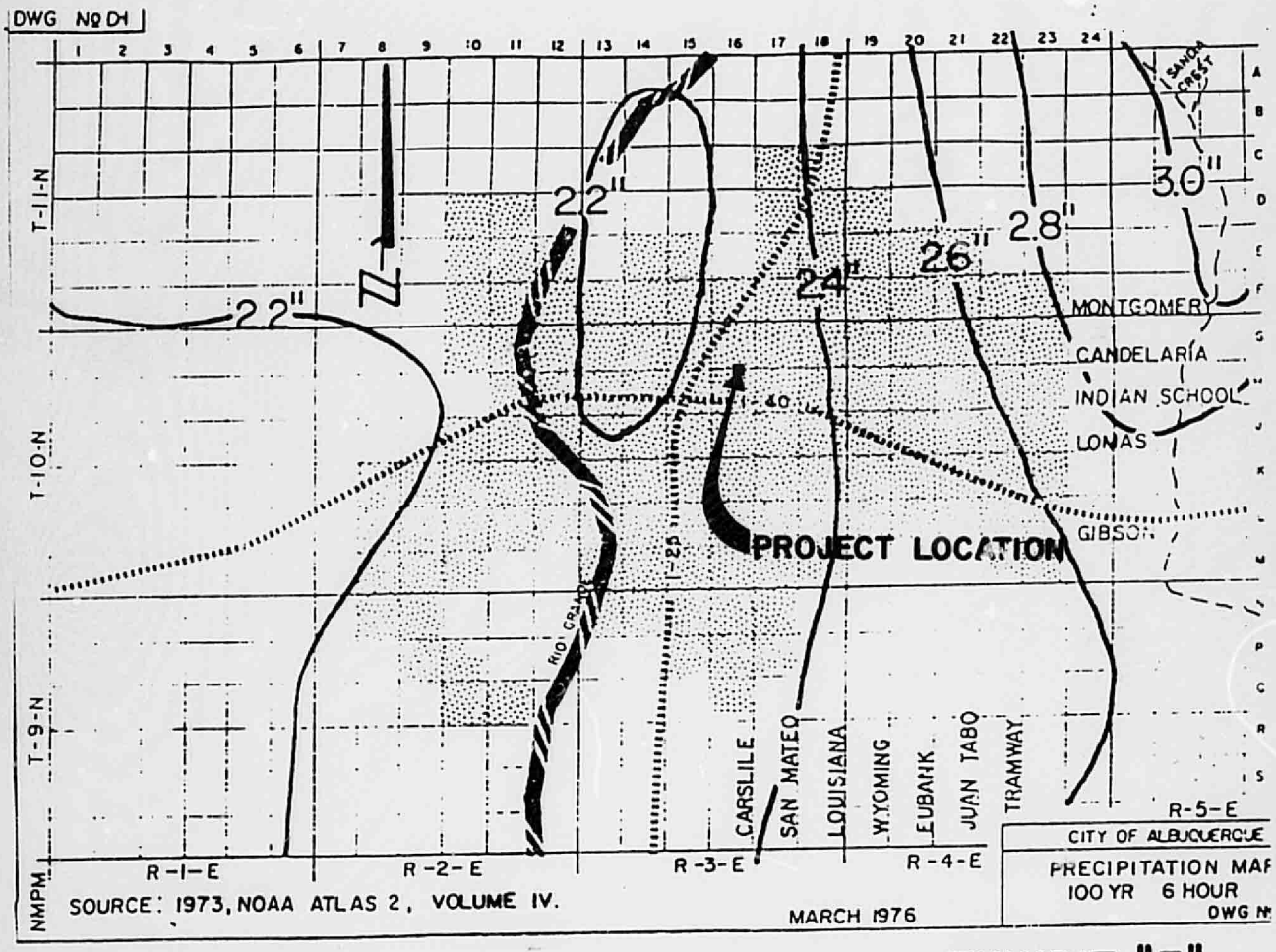

DWG NO DH
T-11-N
T-10-N
T-9-N
NMPM
R-1-E
R-2-E
R-3-E
R-4-E
R-5-E
22"
22"
24"
26"
28"
30"
PROJECT LOCATION
MONTGOMERY
CANDELARIA
INDIAN SCHOOL
LOMAS
GIBSON
RIO GRANDE
SANDIA CREST
CARSLILE
SAN MATEO
LOUISIANA
WYOMING
EUBANK
JUAN TABO
TRAMWAY
CITY OF ALBUQUERQUE
PRECIPITATION MAP
100 YR 6 HOUR
DWG No
SOURCE: 1973, NOAA ATLAS 2, VOLUME IV.
MARCH 1976

EXHIBIT "F"