City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

L8 - D3

March 9, 1982

Mr. Tom Mann
Tom Mann & Associates
811 Dallas N.E.
Albuquerque, N.M. 87111

RE: AGEX, INC. REVISED DRAINAGE REPORT

Dear Tom:

In a recent conversation with Dennis Lorenz of your staff, he indicated that the medisn along Central Avenue serves as a water block for any off-site runoff. Since the south side of Central is the only area directing runoff to the site, I have no objection to using a swale across the driveway in lieu of the RCP culverts. Therefore, I am approving the revised plans dated 2/22/82. Please see that the revised plans are placed in the construction set.

If I can be of any further help, please call.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

City of Albuquerque

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

October 30, 1981

AGEX INC.
C/O Ms. Wendy Stewart
211 Coors SW
Albuquerque, New Mexico 87105

RE: 10120 Central SW - Storage Building Addition

Dear Ms. Stewart:

Approval of the referenced construction plans is contingent on items 1 and 2, and with the understanding that the Certificate of Occupancy will be withheld pending compliance with said items.

1.) The submittal of a completed Drainage Covenant to this office for review and processing.

2.) The approval of the proposed construction within the Highway Department's right-of-way.

Also please be advised that any future construction at the referenced address will require the adoption of the City approved street grades for 102 Street SW adjacent to your site on the grading and drainage plans.

If you have any questions regarding these items, please feel free to call me at 766-7644.

Sincerely,

Fred J. Aguirre, P.E.
Civil Engineer/Hydrology

FJA/el

cc: Drainage File
Reading File

Rec'd NOV 17 1978

DRAINAGE STUDY

for

AGEX INCORPORATED

Wolfgang G. Braun, Architect

Engineering Associates, Inc.
August F. Mosimann, P.E.
2819 Claremont Place, N.E.
Albuquerque, New Mexico 87110

DESIGN GUIDELINES

The building site is located at the intersection of 102nd Street and Central Avenue southwest. The excess runoff due to development of the site will be ponded on the site and dispersed into the ground.

The formulas used for the computation of flow and volume are as follows:

Rational Formula $Q = CIA$

and

Volume Formula $V = CPA$

Where Q = Runoff rate (CFS)
I = Intensity (m/hr)
A = Area (Acres or Sq.Ft.)
V = Volume (Cu.Ft.)
C = Runoff Coefficient
P = Precipitation (in)

The precipitation amount for this area is 2.2 inches (See Figure 1).

The runoff coefficients C are .4 for undeveloped areas and landscaped areas and .9 for impervious areas.

OFFSITE FLOWS (Refer to Figure 2)

There is an undeveloped area to the west of the site which contributes an offsite flow. Its area is 14 acres.

The runoff coefficient is .4
The slope is 2%
The length of runoff is 900 ft.
The concentration time is 19 min. (Figure 3)
The intensity is $\frac{189}{19 + 25} = 4.3$ min. (Figure 4)
The flow is
$Q = CIA = .4 \times 4.3 \times 14 = 24$ CFS

This flow is carried by an existing natural arroyo and the developed site will not alter this arroyo.

Another offsite flow which will affect the site is the runoff from Central Avenue into its shoulder ditch. A 24" corrugated metal culvert will be provided at each drive to carry this flow.

EXISTING SITE STUDY (Refer to Figure 2)

The existing site consists of sparce vegetation and covers 4.41 acres. The storm runoff is toward the east onto other undeveloped land.

The runoff coefficient is 0.4.
The land store is 4%.
The length of runoff is 200 ft.
The concentration time is 12 min. (Figure 4)
The intensity is $\frac{189}{12 + 25}$ = 5.11 min.

The flow is
$Q = CIA = .4 \times 5.11 \times 4.41 = 9.24$ CFS

The runoff volume is
$V = CPA = .4 \times 2.2 \times 4.41 \times 43560/12 = 14087$ Cu.Ft.

DEVELOPED SITE STUDY

The developed site will consist of a 6090 S.F. building and 23624 S.F. of paving. The difference in runoff development between developed and undeveloped states is as follows:

Developed Site Runoff Volume
$V = CPA = .9 \times 2.2 \times \frac{23624}{12} = 3898$ Cu.Ft.

Undeveloped Site Runoff Volume is
$V = CPA = .4 \times 2.2 \times \frac{23624}{12} = 1732$ Cu.Ft.

The difference is 2166 Cu.Ft.

This difference will be collected and percolated into the ground.

RECOMMENDATIONS AND CONCLUSIONS

1. Grade the site so that the runoff from the building and paved area will be directed into a 2166 Cu.Ft. ponding area to the southeast of the building.

2. Provide a 24" culvert beneath the entrance drives along Central Avenue.

3. The offsite flow across the property south of the building will not affect the current development. If any future developments are planned for this area they will have to contend with this offsite flow.

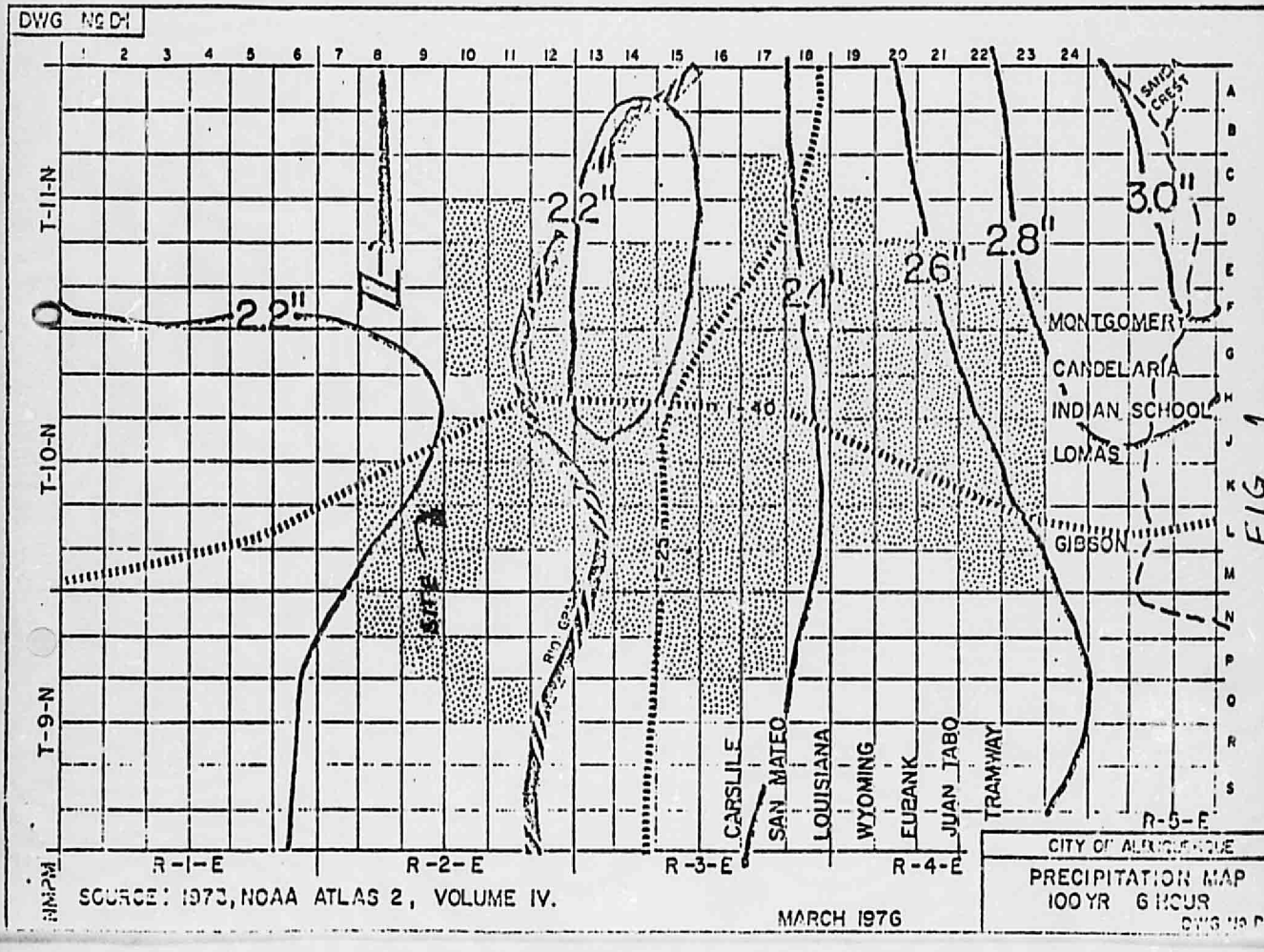

DWG NO D-1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
A B C D E F G H J K L M N P Q R S
T-11-N
T-10-N
T-9-N
2.2"
2.2"
2.6"
2.8"
3.0"
2.1"
SANDIA CREST
MONTGOMERY
CANDELARIA
INDIAN SCHOOL
LOMAS
GIBSON
CARLISLE
SAN MATEO
LOUISIANA
WYOMING
EUBANK
JUAN TABO
TRAMWAY
SITE
R-1-E
R-2-E
R-3-E
R-4-E
R-5-E
SOURCE: 1973, NOAA ATLAS 2, VOLUME IV.
MARCH 1976
CITY OF ALBUQUERQUE
PRECIPITATION MAP
100YR 6HOUR
DWG NO D

FIG 1

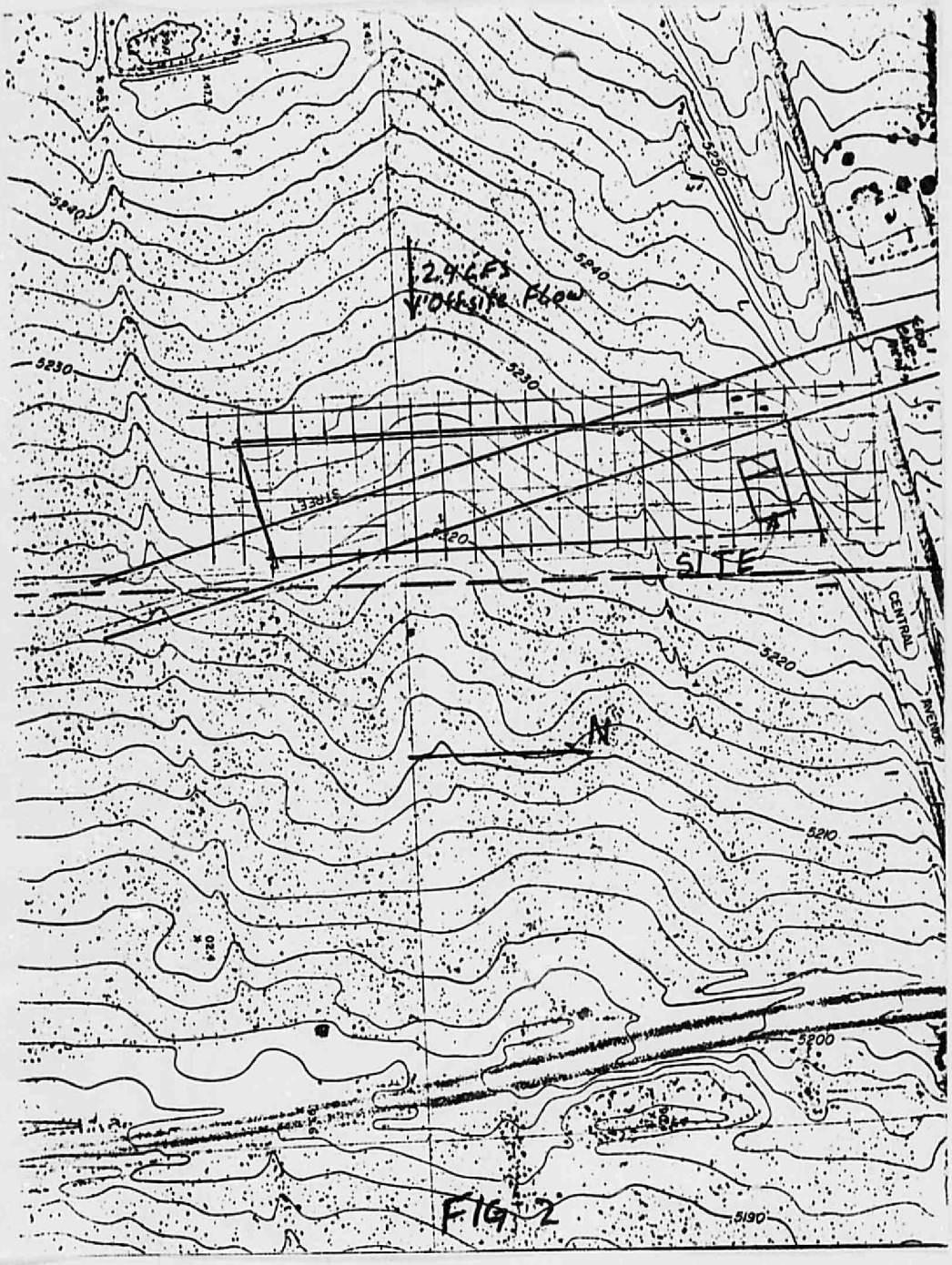

2.9 CFS
OFFSITE FLOW
5240
5230
5220
5210
5200
5190
STREET
SITE
CENTRAL
AVENUE
N

FIG 2

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 FOR ONE-HOUR RAINFALL.

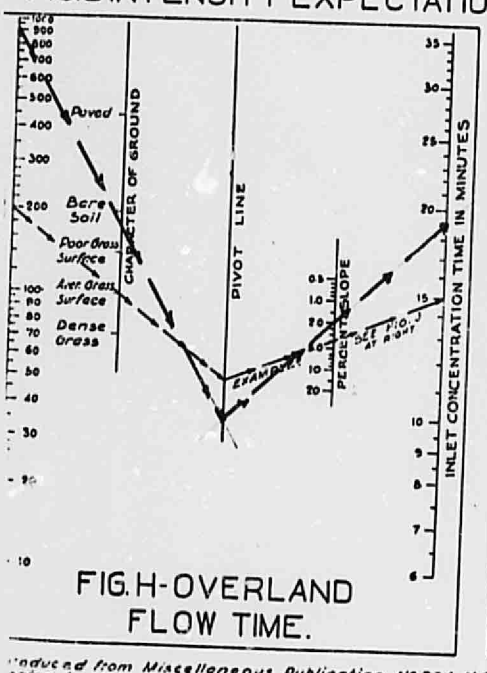


FIG. H - OVERLAND FLOW TIME.

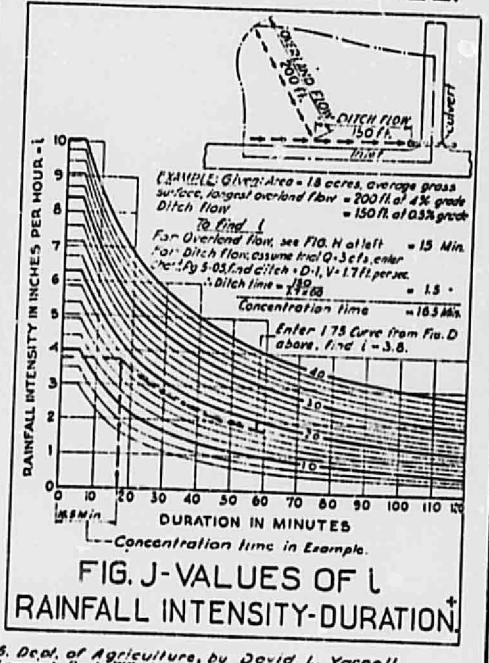
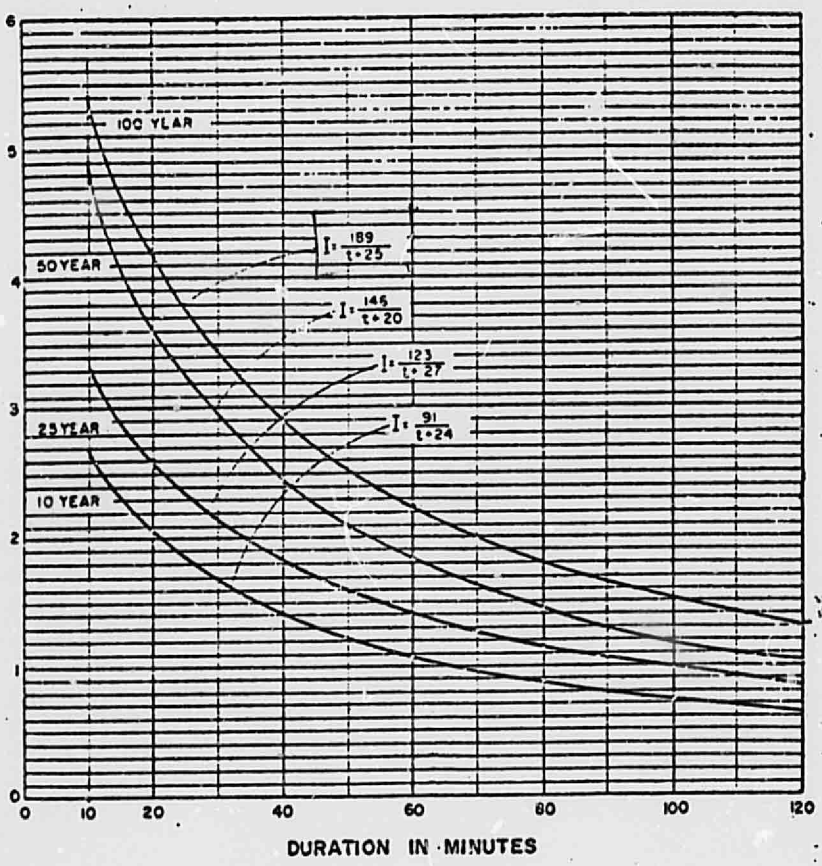


FIG. J - VALUES OF i RAINFALL INTENSITY-DURATION.

Induced from Miscellaneous Publication No. 204, U.S. Dept. of Agriculture, by David L. Yarnell.
Space from Engineering Manual of the War Department, Part XIII, Chap. 1, Dec '45.

FIG. 3



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

FIG. 4

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

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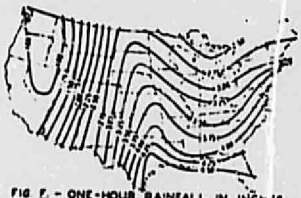

FIG F. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 100 YEARS.

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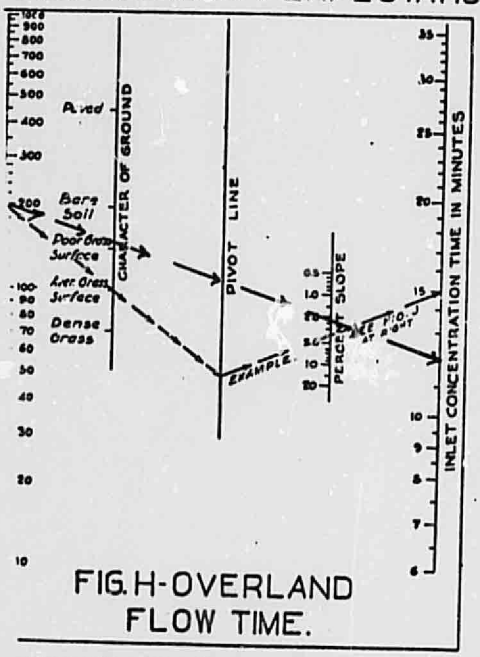

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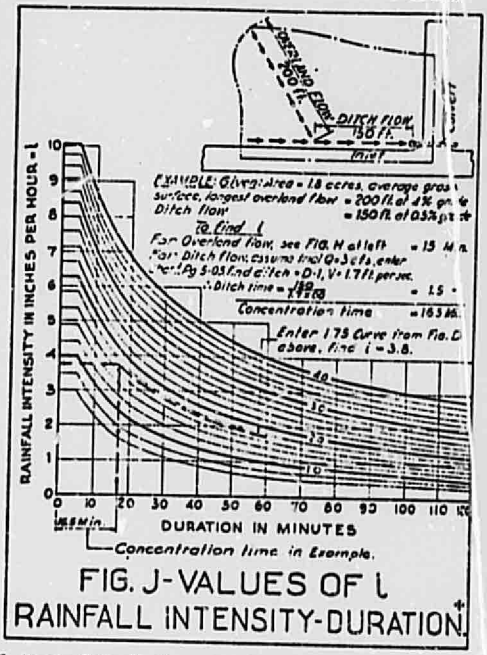

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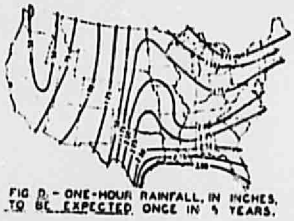
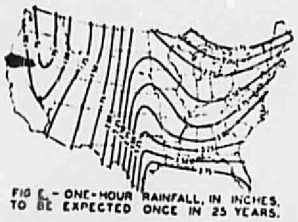


FIG D. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 5 YEARS.



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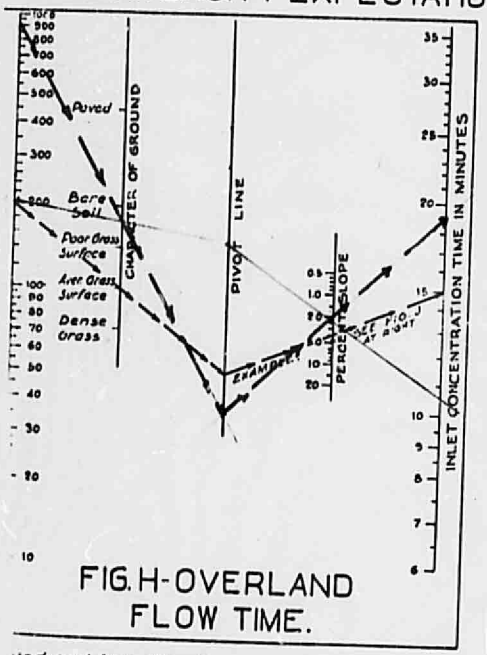

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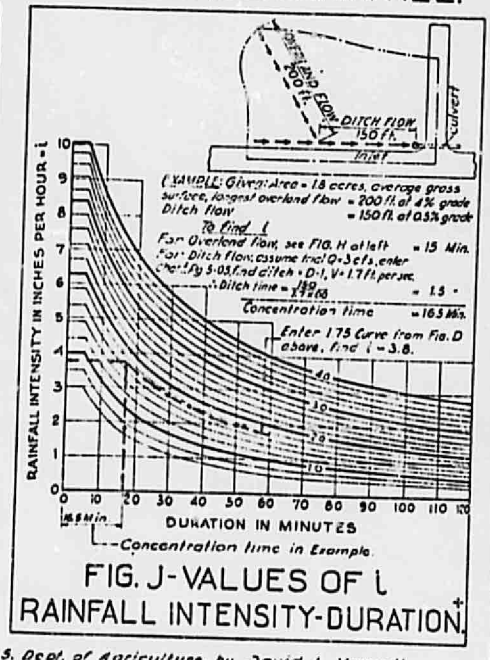

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Advice from Engineering Manual of the War Department, Part XIII Chap 1, Dec 45

FIG. 3

PLEASE RETURN WITH PLANS

10120 CENTRAL S.W. (ATRISCO GRANT LOT 5 BLK 1)

STANDARD REQUIREMENTS FOR DRAINAGE PLANS

PURPOSE: The increasing volume of drainage plans submitted to this office makes it mandatory that such plans be standardized as much as possible in order to expedite reviews. This standardization is as much to the advantage of the developer and engineer as it is to the Hydrology Section which enforces the AMAFCA RES. 72-2. For parcels of land less than 20,000 sq. ft. in surface area no formal drainage report is required; the construction plans need only to include the standard form attached herein and the site drainage plan. Developers for larger parcels of land will have to submit a formal drainage report as specified in the Resolution.

RUNOFF PONDING: In most instances on site ponding is mandatory, with dispersal in the ground of the excess runoff arising from newly created impervious surfaces. The only exception allowed, is for those properties adjacent to a diversion channel which was designed for higher standard than 100 years frequency storm (existing conditions). For detailed computations of the runoff before and after development the assumed runoff coefficient recommended are C = 0.4 for undeveloped, landscaped or similar open areas and C = 0.9 for all other impervious surfaces, including areas in southwestern type landscaping with underlying polyethylene film and gravel covered parking areas where vehicular traffic will compact the soil and render it impervious. Due to the inadequacy of the existing drainage facilities in the valley area and to the limited capabilities of the City for providing relief, ponding requirements in the valley are higher than elsewhere.

COMPUTATION OF VOLUME OF RETENTION:

Valley Area = $1.0 \times \frac{2.2"}{12"} \times \text{Area (ft.)} = 0.18 \times A$

East and West Mesa = $(0.9 - 0.4) \times \frac{2.4"}{12"} \times \text{Area (ft.)} = 0.1 \times A$

In order to facilitate the design of drainage facilities, a checklist that will be followed in the review process is listed below:

CHECK LIST

1 - Flooding potential - adjacent water courses

NO Is property located in the flood plain? L B FNBM 19 FLOOD PLAIN INFORMATION L B

If so, is the finished floor above the 100 yrs. flood level?

YES Is property adjacent to a natural or artificial water course?

If so, what are the specific AMAFCA or City requirements?

NO Are drainage R.O.W or easements shown on, or in the proximity of property? If so, are there drainage problems?

2 - Relation of property to surroundings

YES Per topo map, does property intercept other drainage upstream?

If so, how is runoff conveyed across property?

May there be erosion associated with offsite runoff conveyance?

May erosion or siltation result from proposed construction activities?

NO Does development block drainage from adjacent property?

3 - Site grading

Does site plan show contours before development (extending a minimum of 25 ft. beyond property lines)?

NO Does site plan show proposed grading with adequate swale definition to convey water to ponds?

Is all runoff conveyed to ponding areas before it overflows to public facilities?

NO Does the proposed grading plan indicate that under cutting or back-filling adjacent to property lines may require retention walls?

Is there continuity between proposed new contours and old contours offsite?

Is elevation of property line at least 0.3 ft. above top of curb?

4 - Storm water retention

YES Is ponding volume adequate (supply detailed computation)?

NO Are ponds balanced with areas they drain (can area draining to each pond be easily identified and will actually water flow there)? The plot plan must outline each drainage area. DRAINAGE REPORT CALLS FOR GRADING THAT WILL DRAIN THE RUNOFF FROM THE BUILDING AND PAVED AREA.

Yes Can pond volume be computed and verified?

Are ponds practical, can they be built as shown?

5 - Safety

Do the drainage provisions constitute an attractive nuisance, or safety hazard?

If the pond depth is greater than 18",are safety provisions supplied? (Minimum 3.0 ft. high chain link fence or similar physical barrier of ponding areas are adjacent to public R.O.W.?)

In general, ponds of depth greater than 18" will not be accepted for both safety consideration and for long term effectiveness of the facilities. In those cases where limited space is available for ponding, the use of gravel pits under the parking areas is suggested. It must be pointed out that mainstream and effectiveness of these facilities is necessary and is the responsibility of the owner. Existing or planned City facilities (streets, channels, storm sewers) can accommodate the natural runoff volumes. Greater discharges would cause flooding downstream and need to be limited at the source.

TOWN OF WEST
ATRISCO WESTLANDS OF UNIT A
GRANT
ROW 2
ROW 1
C-2
RA-2
M-1
TOWN OF WEST
ATRISCO WESTLANDS OF UNIT B
GRANT
ROW 3
ROW 4
UNPLATTED
UNPLATTED
UNPLATTED
UNPLATTED
L-8-Z

CITY OF ALBUQUERQUE
Building & Inspection Division
Contr _____ Code _____
Phone: 766-7521 766-7522

Form M-14
P.O. Box 1293 APPLICATION FOR ELECTRICAL PERMIT AND INSPECTION

No 05176 EL

Date 1-13-78

Address 1020 Central SW

Owner Westly Howard

Building Used For Res-Apt-Restaurant-Other — New Bldg ☑ Old Bldg ☐ Add ☐

Total	Description			Each	Fee
	Underground ☐ Overhead ☑				
1	Meter Loops: New ☑ Changed ☐ Moved ☐			2.00	2 00
1	Temporary Meters			5.00	
	Fixtures	Outlet Switches	Recepts	1st 10	.20
				All Over 10	.15
	Ranges ☐ Water Heaters ☐ Dryers ☐			2.00	
2	Recept. Outlets, 30 Amps or Over			2.00	2 00
	Heating Control Circuits			.10	
	Lighting Fixtures			Each .15	
	Sign Connections			2.00	
	(EVAPORATIVE COOLERS) Rough-in			2.00	
	MOTOR OPERATED EQUIPMENT Less Than One H.P.			.50	
	1 H.P. and Over Total H.P. c Unit Per H.P.			.75	
	Maximum Fee Per Unit			5.00	
	OUTDOOR LTD. (Flood, Cluster, Fluorescent, Festoon)			.15	
	Each Socket			4.50	
	Electric Signs Each Location			1.50	
	Dry Type Transformers			5.00	
	Communication and Signal			.50	
	Min. Each Location				
	Space Heating, Each Unit per 1000 W.			5.00	
	Other			10.00	
	Final Inspection Fee			5.00	
	Reinspection Fee				
	Prefinal (Use Separate Permit)				
					3 00
	Administrative Charge, Each Permit			TOTAL FEES	7 00

Double Fee May Be Charged For Work Started Without First Securing Permit.

Rough Insp. By

Final Insp. By 1-23-78

Applicant hereby agrees that all work done under this Application shall comply with the latest City Electrical Code.

CONTRACTOR Custom Elect

0103222

1344-78

ADVISORY NOTE - PRORATION OF SEWER LINE EXTENSION

1 NAME Wendy Stewart
ADDRESS 1020 Central SW

2 DATE 11-7-78

3 DESCRIPTION OF PROPERTY (Show metes and bounds or addition, block, lot)

Atrisco Grant
Lot 5
Block 1

4 POLICY NO.

5 PRORATA OWED $ 8

6 FUND TO BE CREDITED

7 PRORATION REFUND
Name
Address
Amount $

8 TREASURY VALIDATION

9 MC
(Signature and typed name of Spec. Asmnt. Actg. employee)

IN. OCTIONS-Builder or property owner takes or mails payment and Advisory Note to City Treasury Division. After payment is made, Treasury Division distributes four copies of Advisory Note: 1 Builder or property owner 2 Building Inspection Division 3 Special Assessment Accounting 4 Treasury Division

FORM DEC 65

CITY OF ALBUQUERQUE

Form M-9
P.O. Box 1293

STRKADY

CITY OF ALBUQUERQUE
Building & Inspection Division

Contr _____ Code _____
Phone: 766-7519, 766-7520

APPLICATION FOR PLUMBING AND GAS PIPING PERMIT AND INSPECTION

No00243 PG

Date 11-21-77

Address 10120 Central S.W.

Owner Albuq Gen. Address _____ Occupancy Group

Bldg. Used For _____ (Please Print)

FUEL TYPE
NG

☐ New Bldg. ☐ Old Bldg. ☐ Add ☐ Remodel

No.	Plumbing Fixtures			Gas Piping Fees	Each	Fee	
	Water Closets			Mercury Test Only	2.00		
	Tubs			High Pressure Test	3.00		
	Lavatories			Temporary Gas	3.00		
	Showers			First Outlet	2.00		
	Sinks			Additional Outlets	1.00		
	Dishwasher			Total Number of Outlets			
	Auto Wash. Mach.						
	Laundry Trays						
	Urinals			PLUMBING FEE			
	Floor Drains or Sinks			First Plumbing Fixture	2.00		
	Slop Sinks			Additional Fixtures	1.00		
	Drinking Ftns.			Water Service	3.00	3	00
	Water Heater			Water Distribution	3.00		
	Sand Trap			Storm-San. Sewer Tap	5.00	5	00
	Water Treatment Equip.			Bldg. House Sewer	3.00	4	00
				Lawn Sprkler-Vac. Brkr	2.00		
				Sewer repr-repl	3.00		
	Total Number of Fixtures			Roof Drain piping-1st	5.00		
	UTILITY SERVICE LINES	Each	Fee	Addl. R. Drain Pipe	3.00		
	300' Section (or portion) Sewer Collecting Line	3.00		Septic Tank Cesspool	3.00		
	Sewer Connection Outlets	.50		Public Pool	30.00		
	Manholes	5.00		Private Pool	20.00		
	300' Section (or portion) Water Service Lines	3.00		Fire Sprklr	15.00		
	Water Connection Outlets	.50		Fire Hydrant	5.00		
				Plumbing Codes			
				Final Insp.	3.00	4	00
	Sub-Total			Reinspection Fee	10.00		
	Administrative Charge Each Permit					$3	00
	Double Fees May Be Charged For Work Started Without First Securing Permit			Sub-Total			
				TOTAL FEES		17	00

FEB 27 '78

paid by check # 7216 GP

G-W Insp. By	Sewer Tap Insp. By FEB 22 Nov 77	Final Plumbing Insp. By
T-O Insp. By	Water Service House Sewer Insp. By FEB 22 Nov 77	
Mercury Test Insp. By	Correction Notice By	Final Gas Insp. By
T. Gas Insp. By		

0103221

Applicant hereby agrees that all work done under this Application shall comply with the latest City Plumbing Code.

Type of Lic. MM 98 (MM or MS & No) Contractor [illegible]

DIVISION OF ... AND INSPECTION

DATE 12/4/78 BJ

This Permit valid only for items checked and paid for below. 1987

Check 1783 A1

Treasury Division Validation

APPLICATION AND/OR PERMIT FOR:
1 NEW BUILDING 3 ADDITION 5 REPAIR
(2) OTHER 4 ALTERATION 6 REMOVE

BUILDING ADDRESS 10120 Central SW ZIP CODE
LOT NUMBER S BLOCK NUMBER 1 STREET SEQ 12046 DASZ 5702
SUBDIVISION Atrisco Grant

OWNER/PERMITTEE
NAME Wendy Stewart
ADDRESS
CITY AND STATE ZIP CODE
PHONE

ARCHITECT/ENGINEER
NAME Wolfgang Brown
ADDRESS
CITY AND STATE ZIP CODE
PHONE 344-3663

CONTRACTOR
NAME Wendy Stewart
ADDRESS
CITY AND STATE ZIP CODE
STATE LICENSE NO owner PHONE 898-3196

		FEES
(A) 0103223	APPLICATION—PLAN CHECK FEE	1600
B 0103220	BUILDING	
C 0103220	RETAINING WALLS	
D 0103220	WALLS	
E 0103220	FENCES	
F 0103220	DEMOLITION	
G 0103220	SWIMMING POOL	
H 0103220	SIGNS/BILLBOARDS	
(J) 0103220	FOUNDATIONS	3200
K 0103223	UNIFORM BUILDING CODE BOOK	
L 0103223	ALBUQ AMENDMENTS TO UBC 04*	*1600
M 0103223	UNIFORM SIGN CODE	
N 0103223	DWELLING CODE BOOK	
P 0103223	CODE SUPPLEMENT	
Q 0103220	SPECIAL TYPE INSPECTION	*3200
R 0103220	RE-INSPECTION	*4800
S 0103220	EXCAVATION & GRADING	*4800
T 0103221	ELEVATOR	*4800
U 0103223	DUPLICATE B	*000
V 0103220	RENEWAL 1901 #	
W 0103223	PRELIMINARY PLAN CHECK 12-04-78	
X 0103223	CHANGE TO PLANS # 0002	
Y	OTHER - SPECIFY	
Z	CREDIT	

TOTAL FEES 4800

REFERENCE

HGT IN STORIES | TOT SQ FT FLOOR AREA | VALUATION OF WORK $ 6000

APARTMENT BLDG NUMBER OF BLDGS UNITS | TRANSIENT HOTEL OR HOTEL NO OF UNITS

LAND USE CODE 0010 | CITY ZONE M-1 | CODE INDEX SEQ NO 003395 | ZONING MAP U-8

OWNERSHIP 1 PUBLIC 2 PRIVATE | WATER SUPPLY 1 PUBLIC 2 PRIVATE | SEWAGE DISPOSAL 1 PUBLIC 2 PRIVATE

TYPE OF HEATING FUEL 1 GAS 2 ELECT 3 OIL 4 COAL 5 SOLAR 6 OTHER | AIR CONDITIONING 2 REFRIG 3 EVAP

TYPE OF CONSTRUCTION I FR II N III 1-HR IV H.T. V

OCCUPANCY GROUP A B E H I M R
DIVISION 1 2 2.1 3 4 5
FIRE ZONE 1 2 3

DESCRIPTION foundation only

USE OF BUILDING 1 PUBLIC 2 COMMERCIAL 3 MULTI-RESIDENTIAL 4 SINGLE RESIDENTIAL

NOTICE SEPARATE PERMITS ARE REQUIRED FOR ELECTRICAL, PLUMBING, HEATING, VENTILATING OR AIR CONDITIONING. THIS PERMIT BECOMES NULL AND VOID IF WORK OR CONSTRUCTION AUTHORIZED IS NOT COMMENCED WITHIN 120 DAYS OR IF CONSTRUCTION OR WORK IS SUSPENDED OR ABANDONED FOR A PERIOD OF 120 DAYS AT ANY TIME AFTER WORK IS COMMENCED.

"I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all city ordinances and state laws regulating building construction or the phase of work for which this permit is being secured as indicated above. The Plan Check Base Fee (application), however, is not a permit. The issuance of a permit shall not prevent the Building Division from thereafter requiring correction of errors."

SIGNATURE Wendy Stewart BY

NOTICE THIS PERMIT NOT VALID UNTIL FEE IS PAID

N

NOV 17 1978

DRAINAGE STUDY

for

AGEX INCORPORATED

Wolfgang G. Braun, Architect

Engineering Associates, Inc.
August F. Mosimann, P.E.
2819 Claremont Place, N.E.
Albuquerque, New Mexico 87110

DESIGN GUIDELINES

The building site is located at the intersection of 102nd Street and Central Avenue southwest. The excess runoff due to development of the site will be ponded on the site and dispersed into the ground.

The formulas used for the computation of flow and volume are as follows:

Rational Formula $Q = CIA$

and

Volume Formula $V = CPA$

Where Q = Runoff rate (CFS)
I = Intensity (m/hr)
A = Area (Acres or Sq.Ft.)
V = Volume (Cu.Ft.)
C = Runoff Coefficient
P = Precipitation (in)

The precipitation amount for this area is 2.2 inches (See Figure 1).

The runoff coefficients C are .4 for undeveloped areas and landscaped areas and .9 for impervious areas.

OFFSITE FLOWS (Refer to Figure 2)

There is an undeveloped area to the west of the site which contributes an offsite flow. Its area is 14 acres.

The runoff coefficient is .4
The slope is 2%
The length of runoff is 900 ft.
The concentration time is 19 min. (Figure 3)
The intensity is $\frac{189}{19 + 25}$ = 4.3 min. (Figure 4)
The flow is
$Q = CIA = .4 \times 4.3 \times 14 = 24$ CFS

This flow is carried by an existing natural arroyo and the developed site will not alter this arroyo.

Another offsite flow which will affect the site is the runoff from Central Avenue into its shoulder ditch. A 24" corrugated metal culvert will be provided at each drive to carry this flow.

EXISTING SITE STUDY (Refer to Figure 2)

The existing site consists of sparce vegetation and covers 4.41 acres. The storm runoff is toward the east onto other undeveloped land.

The runoff coefficient is 0.4.
The land store is 4%.
The length of runoff is 200 ft.
The concentration time is 12 min. (Figure 4)
The intensity is $\frac{189}{12 + 25}$ = 5.11 in/min.
The flow is

$$Q = CIA = .4 \times 5.11 \times 4.41 = 9.24 \text{ CFS}$$

The runoff volume is

$$V = CPA = .4 \times 2.2 \times 4.41 \times 43560/12 = 14087 \text{ Cu.Ft.}$$

DEVELOPED SITE STUDY

The developed site will consist of a 6090 S.F. building and 23624 S.F. of paving. The difference in runoff development between developed and undeveloped states is as follows:

Developed Site Runoff Volume — does this include

$$V = CPA = .9 \times 2.2 \times \frac{23624}{12} = 3898 \text{ Cu.Ft.}$$

Undeveloped Site Runoff Volume is

$$V = CPA = .4 \times 2.2 \times \frac{23624}{12} = 1732 \text{ Cu.Ft.}$$

The difference is 2166 Cu.Ft.

This difference will be collected and percolated into the ground.

RECOMMENDATIONS AND CONCLUSIONS

1. Grade the site so that the runoff from the building and paved area will be directed into a 2166 Cu.Ft. ponding area to the southeast of the building.

2. Provide a 24" culvert beneath the entrance drives along Central Avenue.

3. The offsite flow across the property south of the building will not affect the current development. If any future developments are planned for this area they will have to contend with this offsite flow.

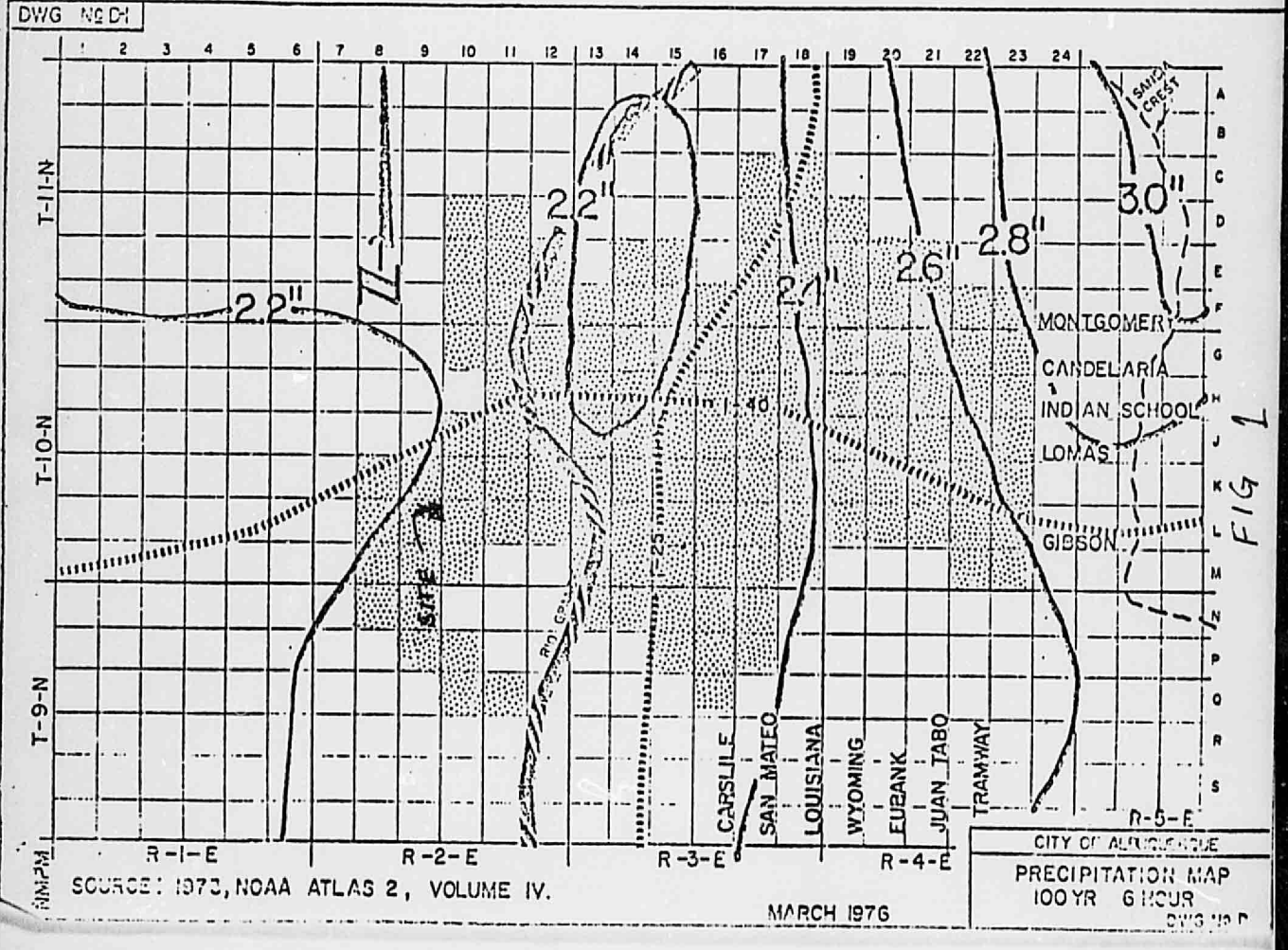
DWG NO. D-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
A B C D E F G H J K L M N P Q R S
T-11-N
T-10-N
T-9-N
2.2"
2.2"
2.1"
2.6"
2.8"
3.0"
SITE
MONTGOMERY
CANDELARIA
INDIAN SCHOOL
LOMAS
GIBSON
I-40
I-25
SANDIA CREST
CARLISLE
SAN MATEO
LOUISIANA
WYOMING
EUBANK
JUAN TABO
TRAMWAY
R-1-E
R-2-E
R-3-E
R-4-E
R-5-E
NMPM
SOURCE: 1973, NOAA ATLAS 2, VOLUME IV.
MARCH 1976
CITY OF ALBUQUERQUE
PRECIPITATION MAP
100 YR 6 HOUR
DWG NO. D-

FIG 1

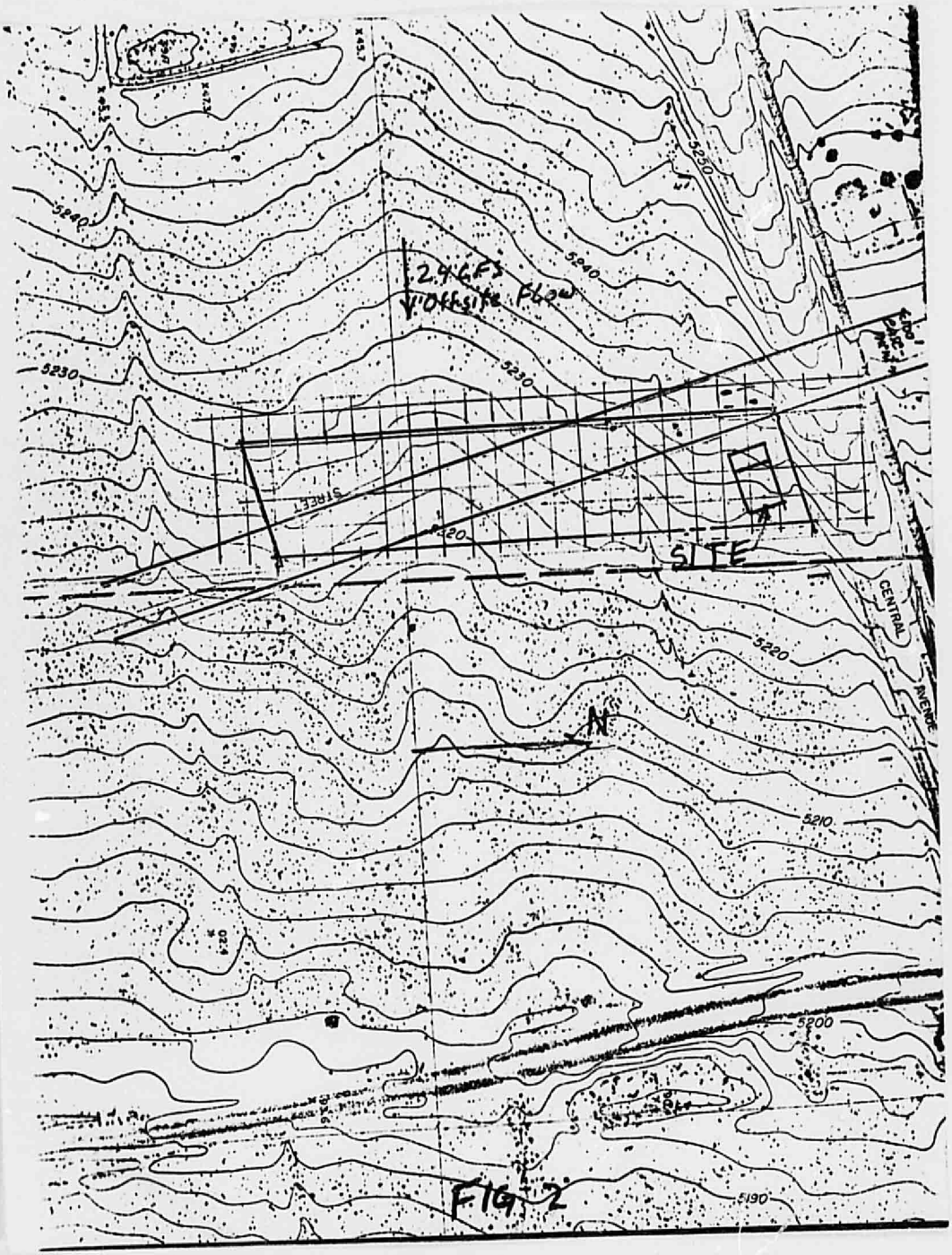
2.4 CFS
V. Offsite Flow
SITE
CENTRAL
AVENUE
5250
5240
5230
5220
5210
5200
5190
N

FIG. 2

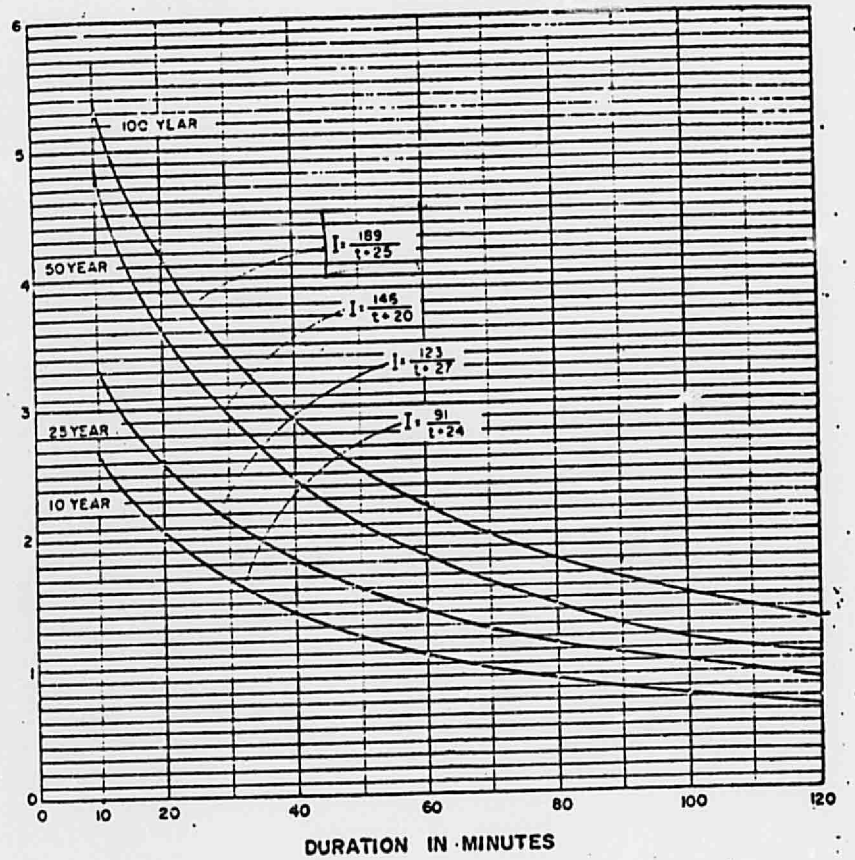

FIG. 4

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

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.

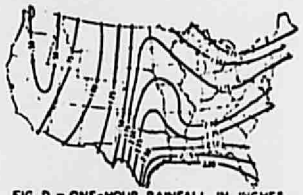

FIG. D. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 5 YEARS.

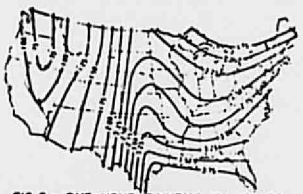

FIG. E. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 25 YEARS.

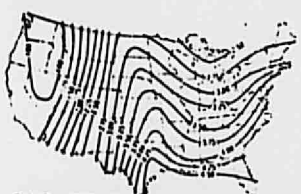

FIG. F. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 100 YEARS.

COMPUTATION OF i IN RATIONAL FORMULA.

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

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

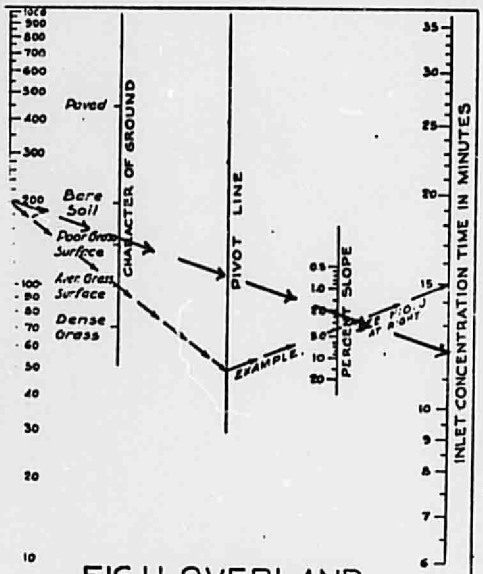

FIG. H-OVERLAND FLOW TIME.

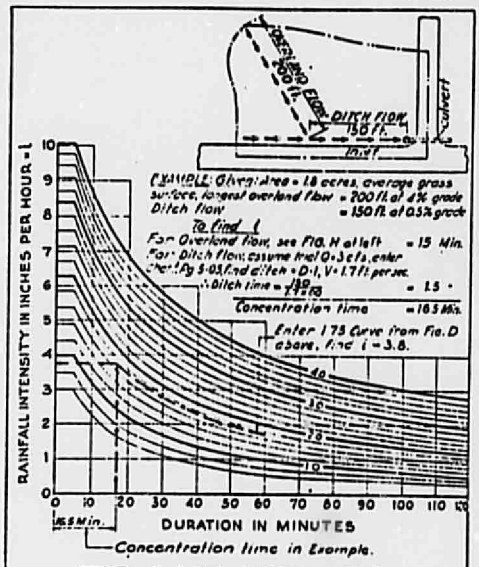

FIG. J-VALUES OF i
RAINFALL INTENSITY-DURATION.+

oduced from Miscellaneous Publication No. 204, U.S. Dept. of Agriculture, by David L. Yarnell.
ted from Engineering Manual of the War Department, Part XIII, Chap 1, Dec. 45

FIG 5