



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

April 4, 1986

August F. Mosimann
Engineering Associates, Inc.
532 Adams, NE
Albuquerque, New Mexico 87102

RE: DRAINAGE PLAN FOR ADDITION TO AMERICAN BEST WESTERN MOTEL
(L-22/D22) RECEIVED MARCH 26, 1986

Dear Mr. Mosimann:

The referenced plan dated March 26, 1986, is approved for Building Permit.

Please attach a copy of this approved plan, along with the appropriately approved "Drainage Facilities Within City Right-of-Way" document to both sets of construction plans prior to sign-off by Hydrology.

If you have any questions regarding this project, call me at 766-7644.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

MUNICIPAL DEVELOPMENT DEPARTMENT

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER

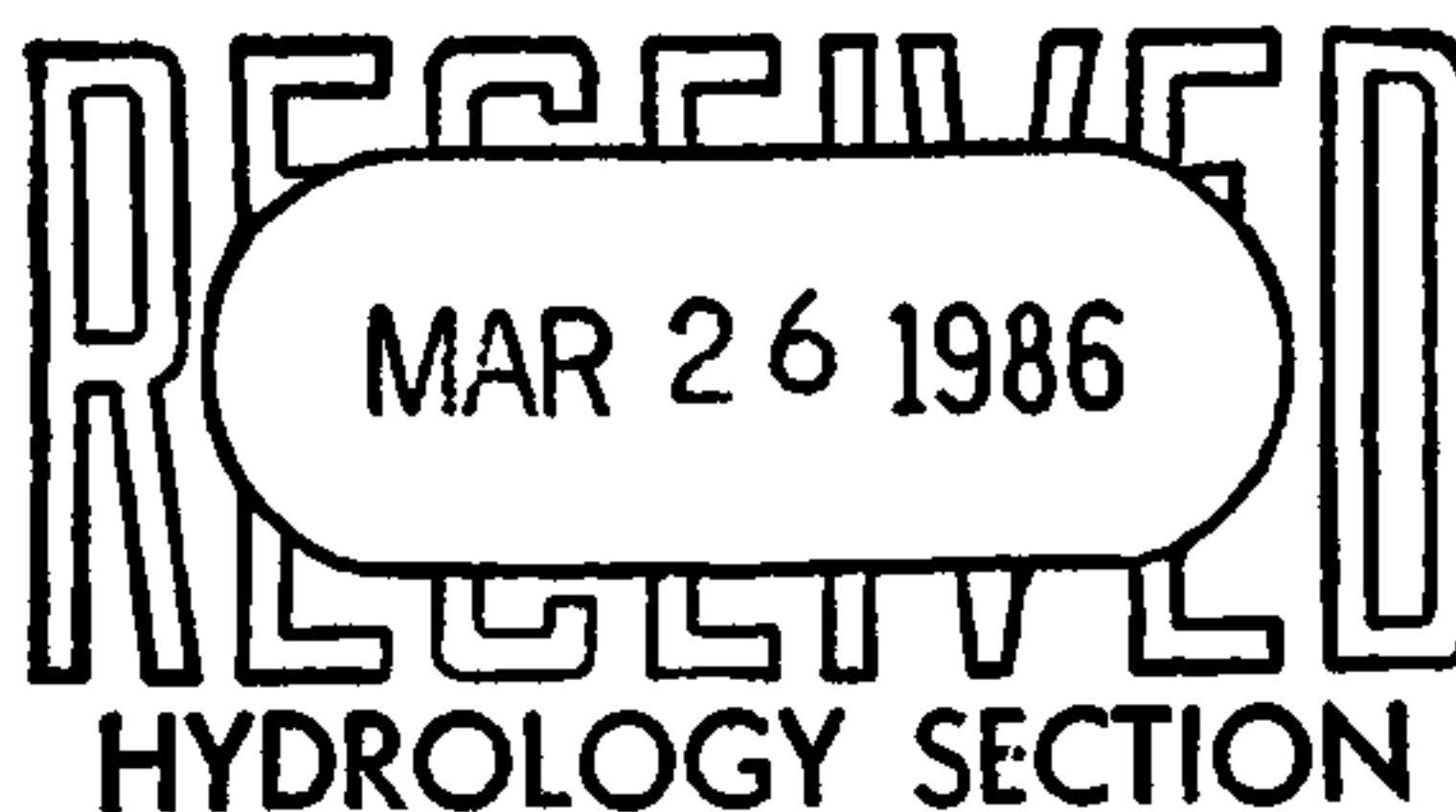


August F. Mosimann

engineering associates, inc.

March 26, 1986

Mr. Carlos Montoya, PE
City/County Flood Plain Admin.
123 Central NW
Albuquerque, NM, 87102



532 Adams St., NE
Albuquerque, NM
87108
(505) 265-6545

REF: REVISED DRAINAGE PLAN FOR ADDITION TO AMERICAN BEST WESTERN MOTEL
DRAINAGE FILE L22/D22

Dear Carlos:

Your letter of March 20 (copy enclosed) expressed several concerns regarding the grading and drainage plan for the American Best Western Motel Addition. Primarily these were matters of clarification and I have amended the plans accordingly.

The issue that was not a matter of clarification involved the new prescribed method of computing the "C" factors used in the "Rational Method" to determine peak rates of runoff. This Emergency Rule was signed into effect 1/14/86 and published in the daily newspapers 2/19/86. Apparently some consultants were notified of the change in procedure but we were not.

As demonstrated in the original submittal there is only a small change in the amount and rate of runoff caused by this addition. Thus, per our telephone conversation of 3/25/86, I am enclosing a table and calculations showing that the "C" values (and thus the runoff rate) used in the original submittal correspond well to those obtained by the newly prescribed method. For the site as a whole, the new "C"'s are about 2 % lower than the old. The only instance where the new value was higher was for undeveloped (offsite) / flow, 0.40 compared to 0.34. [As you are probably aware, Carlos, compared to values reported in the literature for undeveloped conditions on soils with good infiltration (SCS Hydrologic Group B) on mild slopes, 0.40 is a very high value.]

I hope the enclosures satisfy your concerns in regard to this project. I will of course use the new method in the future. If you have any further questions, please feel free to call.

Sincerely,

Tucker Green
for
Engineering Associates, Inc

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications
Inspection Services

IMAGE INFORMATION SHEET

* * * R E S U B M I T T A L * * *
(A D D E N D U M)

PROJECT TITLE: Americal Best Western Addition ZONE ATLAS/DRNG FILE: L22-D22

LEGAL DESCRIPTION: Tract F, Canyon Acres Subdivision

CITY ADDRESS: 12999 Central Ave. NE

ENGINEERING FIRM: Engineering Associates

ADDRESS: 532 Adams NE 87102

OWNER: Harald Mueller

ADDRESS: 12999 Central NE

ARCHITECT: Neil Gaskin & Associates

ADDRESS: 144 Washington SE

SURVEYOR: _____

ADDRESS: _____

CONTRACTOR: _____

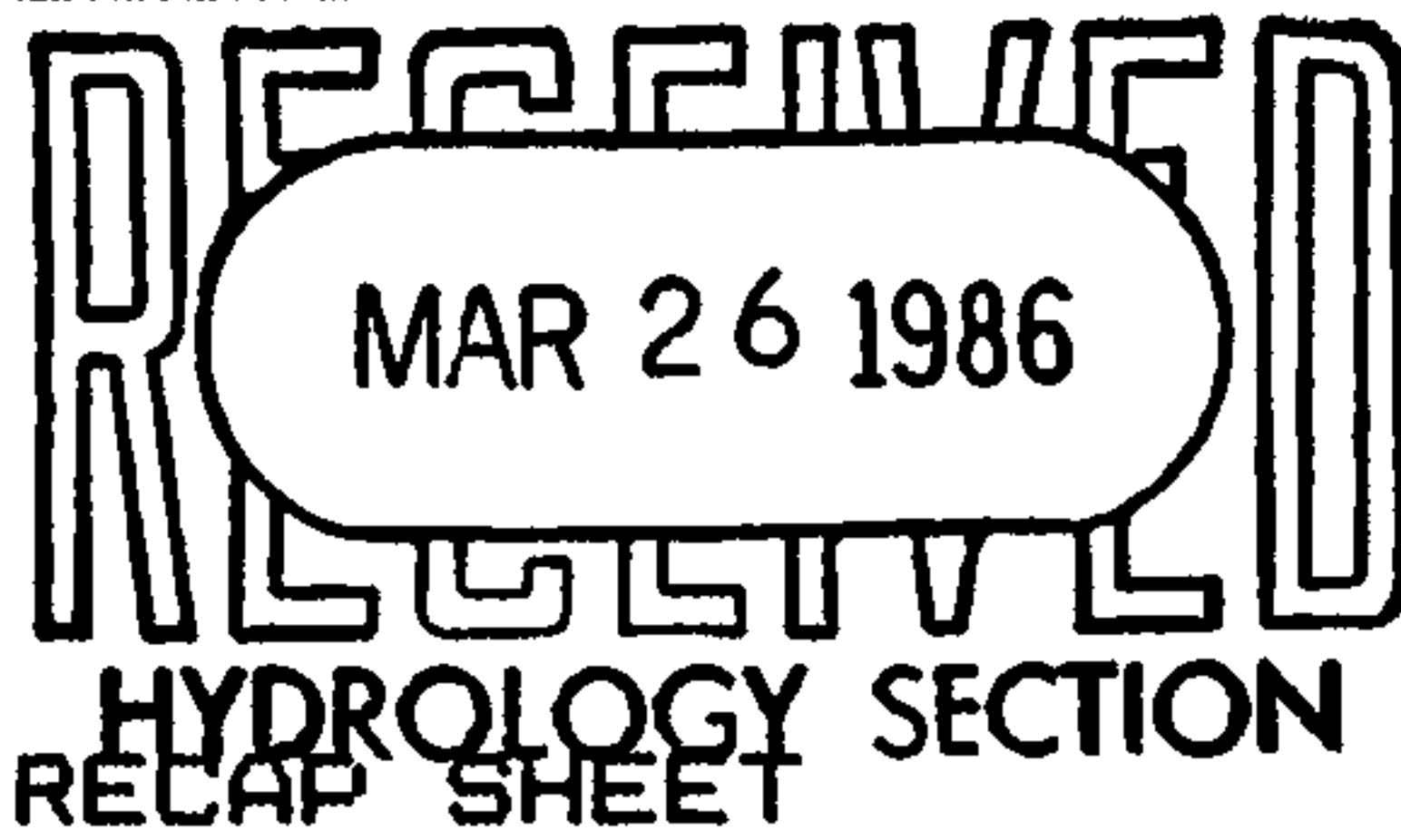
ADDRESS: _____

PREDESIGN MEETING:

☒ YES

☐ NO

☐ COPY OF CONFERENCE RECAP SHEET
PROVIDED



CONTACT: Tucker Green

PHONE: 865-6545

CONTACT: Harald Mueller

PHONE: 298-7426

CONTACT: Neil Gaskin

PHONE: 266-9831

CONTACT: _____

PHONE: _____

CONTACT: _____

PHONE: _____

DRB NO.

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☒ DRAINAGE PLAN

☐ CONCEPTUAL GRADING & DRAINAGE PLAN

☒ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT

☐ PRELIMINARY PLAT

☐ SITE DEVELOPMENT PLAN

☐ FINAL PLAT APPROVAL

☒ BUILDING PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY

☐ ROUGH GRADING PERMIT

☐ GRADING/PAVING PERMIT

☐ OTHER (SPECIFY)

DATE SUBMITTED: 3/26/86

BY: August F. Mosimann

FOR: Engineering Associates, Inc.



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

March 20, 1986

August F. Mosiman
Engineering Associates, Inc.
532 Adams NE
Albuquerque, New Mexico 87102

RE: DRAINAGE PLAN FOR ADDITION TO AMERICAN BEST WESTERN MOTEL
(L22/D22) RECEIVED MARCH 14, 1986

Dear Mr. Mosimann:

Based on the information provided on your March 14, 1986 submittal, listed you will find certain concerns that will need to be addressed before final approval is granted:

1. New information sheet with resubmittal designation.
2. Please use new criteria found in the notice of Emergency Rule signed into effect by the Mayor on 1/14/86 to compute the "C" values.
3. Notation on Section 4/C1 "Top 1'-0" may remain", please clarify.
4. Please clarify on legend which is existing asphalt and proposed.
5. Note identifying that if land sale takes place, replat will be required to create new lot lines.
6. Description of T.B.M. (rebar, pipe, curb notch, etc?).

If I can be of further assistance, please feel free to contact me at 766-7644.

Sincerely,

Carlos A. Montoya, P.E.
City/County Flood Plain Admin.

CAM:BJM:ark

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Dwayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 14, 1983

Richard Hall, PE.
Hall Engineering Co.
2625 Pennsylvania Ave. NE.
Albuquerque, New Mexico 87110

REF: 12999 Central Ave. NE. Revised Drainage Plan (L22-D22)

Dear Richard:

The revised drainage plan for the referenced site is approved. Please see that copies of the approved plan are attached to the building set when requesting a building permit.

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

Sincerely yours,

Fred Aquirre, PE.
Civil Engineer

FA/sl

MUNICIPAL DEVELOPMENT DEPARTMENT

Richard S. Heller, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER

GENERAL INFORMATION SHEET

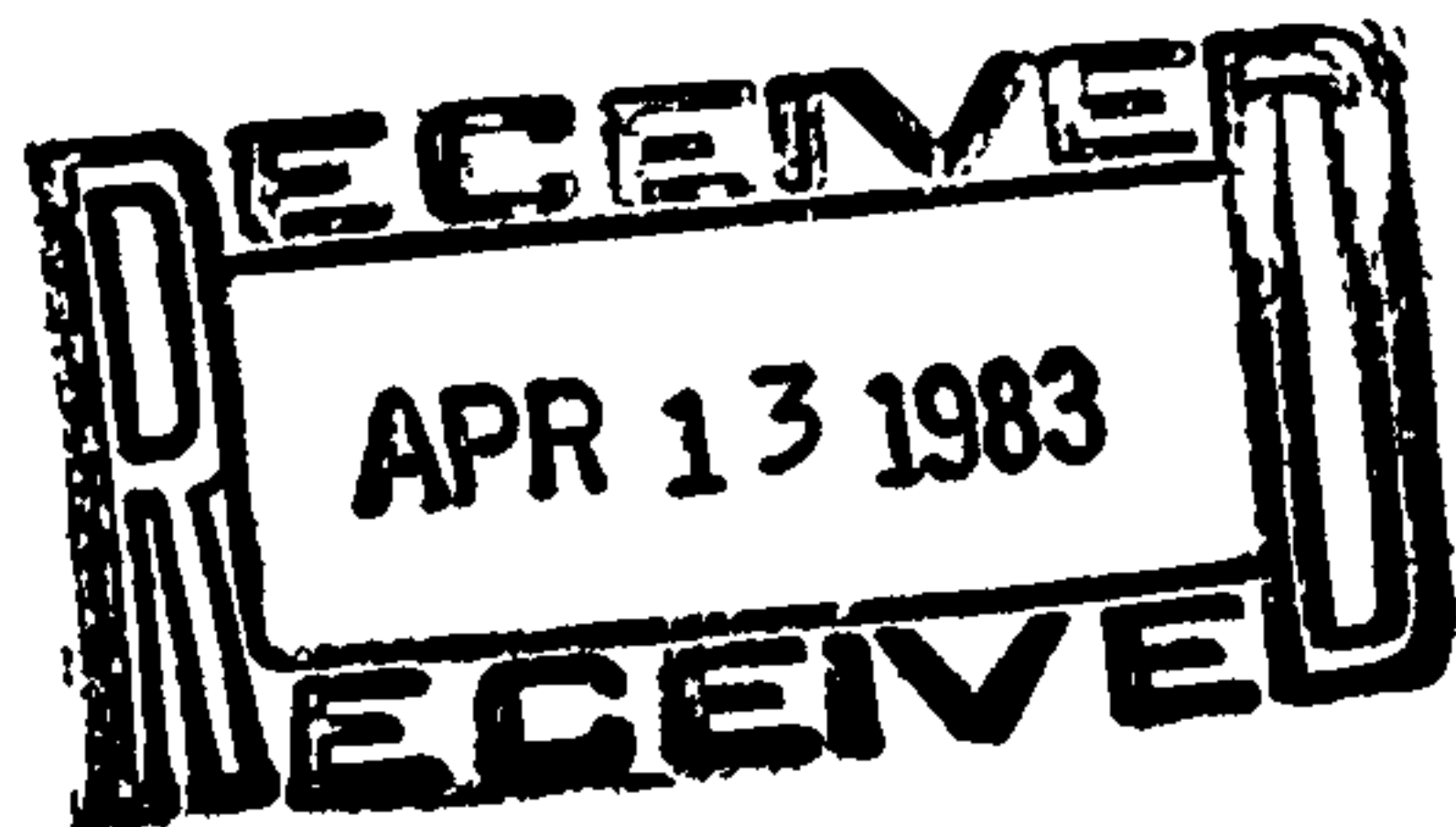
Owner: American Motor Inn 12999 Central Ave. N.E. Phone 298-7426
Contact Harold Mueller

Architect: The Architectural Group 144 Washington St. S.E. Phone 266-9831
Contact Neal Gaskin

Engineer and Land Surveyor: Hall Engineering Co. 2625 Pennsylvania Ave. N.E.
Contact Richard V. Hall Phone 884-6200

Contractor: Investors Developement 10425 Sierra Bonita N.E. Phone 299-4936
Contact Bill Connors

NOTE: THIS TRACT DOES NOT SHOW TO BE IN A H.U.D. FLOOD PLAIN ZONE



L 2 2 - D 2 2



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

L22 - D23

November 5, 1981

August F. Mosiman
Engineering Associates, Inc.
1801 Lomas Blvd. N.W.
Albuquerque, N.M. 87104

RE: AMERICAN MOTOR INN ADDITION DRAINAGE REPORT

Dear August:

The referenced drainage report is approved based on your submittal dated September 17, 1981 and received by our office October 26, 1981. The approved drawing will be given to Fred Aguirre at the One Stop Center.

Sincerely,


Jim Fink
Civil Engineer/Hydrology

JF/tsl

MUNICIPAL DEVELOPMENT DEPARTMENT

Drainage Report

for

AMERICAN MOTOR INN ADDITION

12999 Central Ave. N. E.

Builder Services

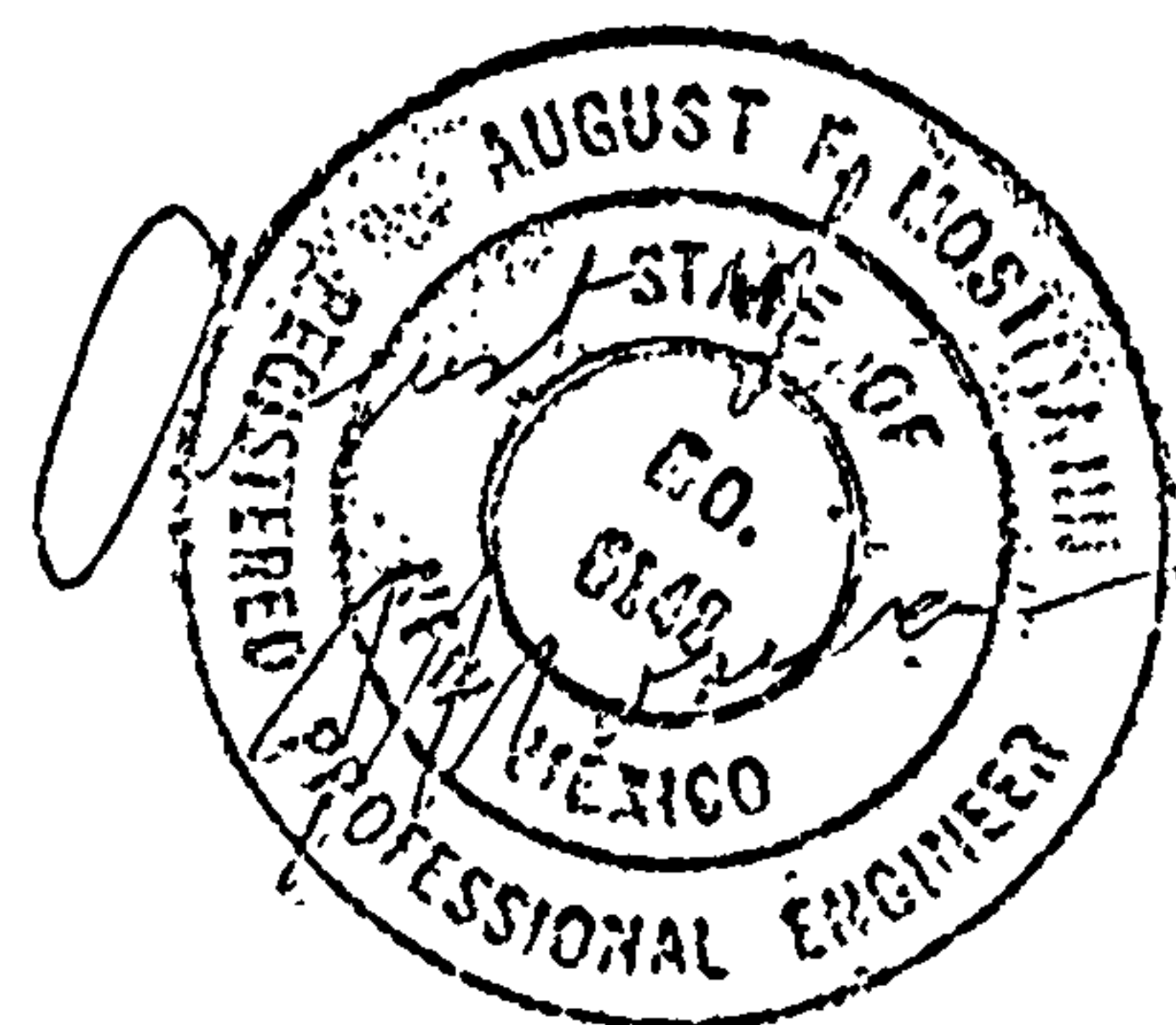
&

Aries Construction

RECEIVED

OCT 26 1981

ENGINEERING



August F. Mosimann
for
Engineering Associates, Inc.

September 17, 1981

PROJECT DESCRIPTION

The project is located at 12999 Central Ave., Northeast. The legal description is "Tract F, Canyon Acres Subdivision." The site area is 4.64 acres and consists of two motel buildings, a swimming pool, and a paved parking lot on the Southern 1.53 acres, and a paved mobile home park on the Northern 3.11 acres. The project will consist of a new 3738 Sq. Ft. motel unit building and parking lot on the Southern .36 acres of the mobile home park. (see figure 4)

PURPOSE

The objective of this report is to analyze runoffs from the existing and proposed developed states of the site and make recommendations with regard to flood control. Since the existing flow conditions will not be altered our recommendations will be directed at ensuring that the new building will not be adversely affected by flood runoff.

EXISTING SITE STUDY and OFFSITE FLOW

Of the storm runoff which flows across the site only a small portion is generated on site. The largest portion is generated in an offsite area which extends from the new buildings to the Northeast. The total area (onsite and offsite) is 150,000 Sq. Ft. (3.44 acres) more or less of which 97,500 Sq. Ft. is impervious due to roofs and paving and 52,500 Sq. Ft. is undeveloped land. (see figure 4 for outline of runoff areas.)

The following formulas are used to analyze the runoff.

Rational Formula

$$Q = CIA$$

and

Runoff Volume Formula

$$V = CPA$$

Where

$$Q = \text{Runoff Rate (CFS)}$$

$$I = \text{Intensity (IN/HR)}$$

$$A = \text{Area (Acres or Ft}^2\text{)}$$

$$V = \text{Volume (Cu. Ft.)}$$

$$C = \text{Runoff Coefficient}$$

$$P = \text{Precipitation}$$

The precipitation amount for this area is 2.6 in. for 100 year 6-hour storm. (see figure 1)

The runoff coefficient is

<u>Area Type</u>	<u>Area</u>	<u>C</u>	<u>C x Area</u>
Impervious (Roof or Paved)	97500	.9	87750
Undeveloped	52500	.4	21000
A =	150000		108750

$$C = \frac{108750}{150000} = .73$$

The land slope is 3 percent

The length of runoff is 750 ft.

The concentration time is 10 min. (see figure 2)

The intensity is $189 / (10 + 25) = 5.40$ in. / hr. (figure 3)

The runoff flow is

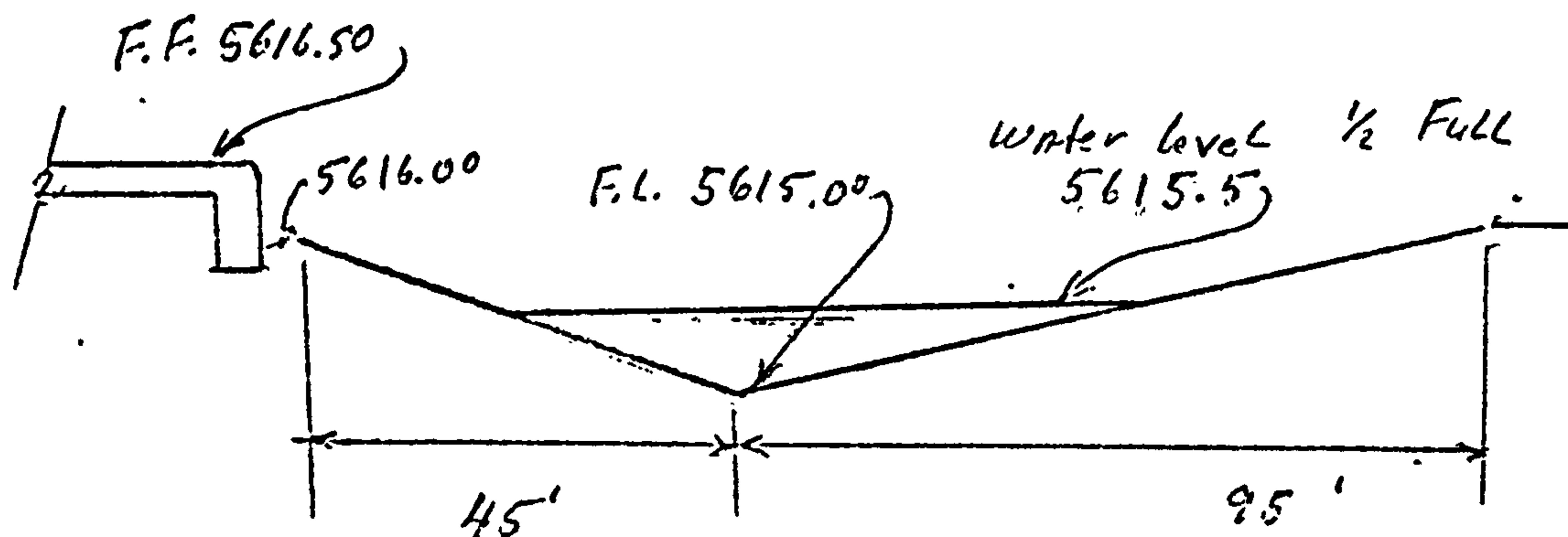
$$Q = CIA = .73 \times 5.40 \times \frac{150000}{43560} = 13.57 \text{ CFS}$$

The runoff volume is

$$V = \frac{CIA}{\text{time}} = .73 \times \frac{2.6}{12} \times 150000 = 23725 \text{ Cu. Ft.}$$

DEVELOPED SITE STUDY

The development will not alter any of the existing flow patterns. One impervious area will simply be replaced by another. The only matter that needs to be addressed is the possibility of flooding of the new building. If the new finished ground floor is built at elevation 5616.50 ft. the resulting grading will create a swale with the section shown below.



If the swale were flowing half full it would be one foot lower than finished floor and would be capable of carrying a flow rate of 362.49 CFS in accordance with the Manning Equation.

Manning Equation:

$$Q = \frac{1.49}{n} R_h^{2/3} S^{1/2} A$$

$n = .013$ Lined Channel

$A = 70 \times 0.5 / 2 = 17.5$ Sq. Ft.

$P = 70$ ft.

$R_h = A / P = 17.5 / 70 = .25$ ft.

$S = 0.04$

$$Q = \frac{1.49}{.013} (.25)^{2/3} (.04)^{1/2} (17.5) = 362.49 \text{ CFS}$$

The actual flow rate through the swale is 13.57 CFS which is much less than the capacity.

RECOMMENDATION & CONCLUSION

Locate the finished floor at Elevation 5616.50 and no flooding of the building will occur.

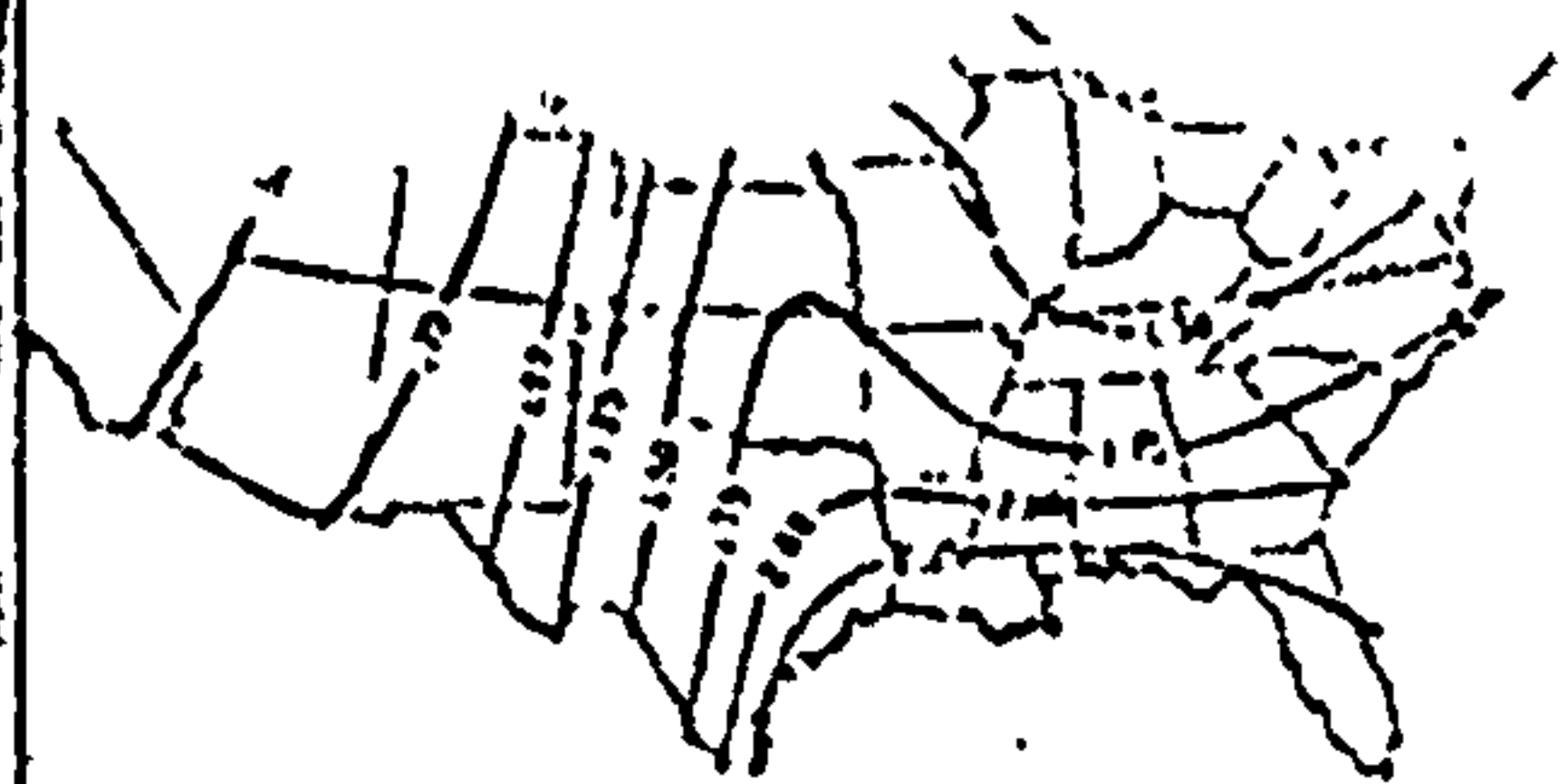


FIG. A. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 2 YEARS.



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.

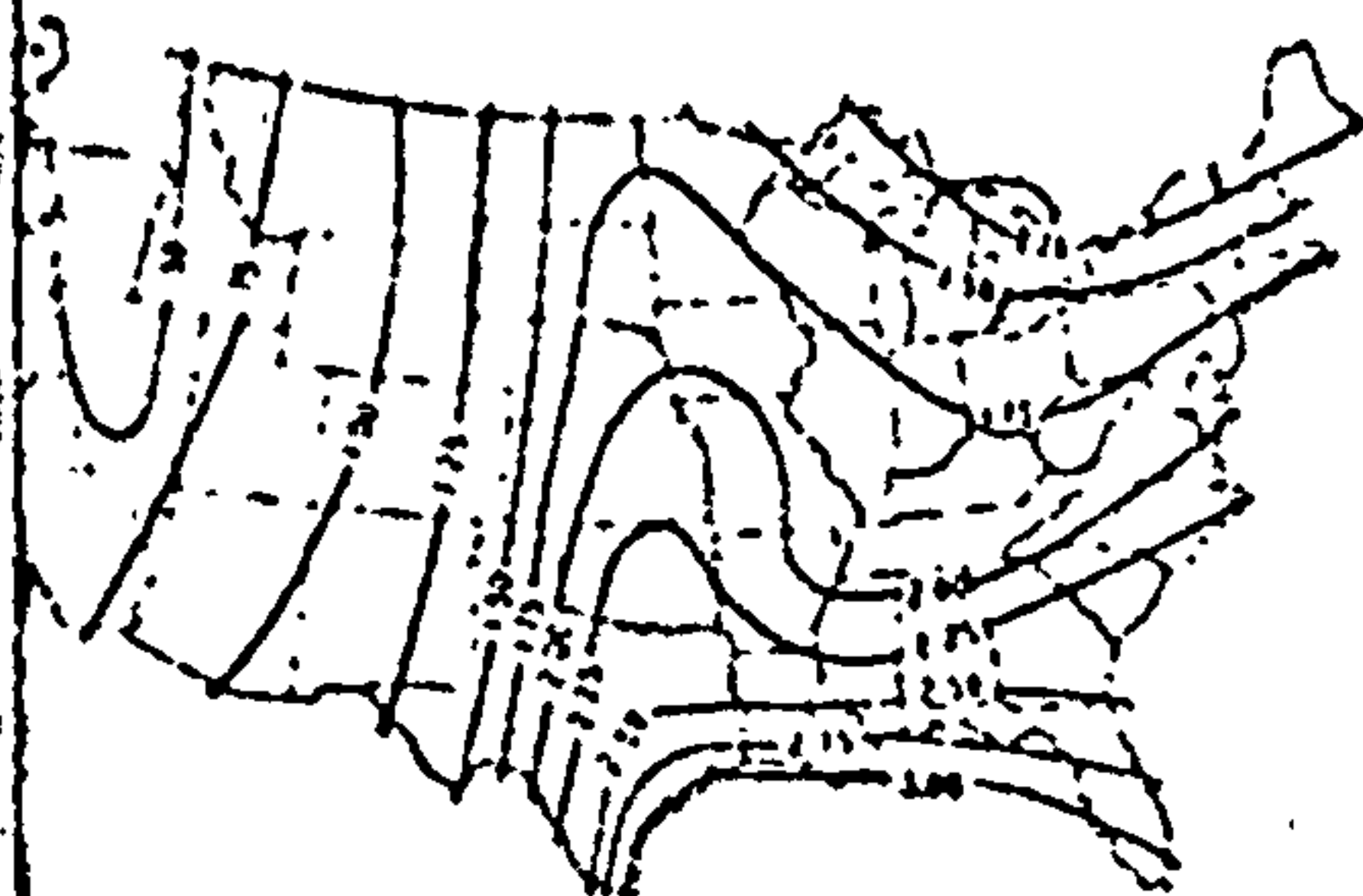


FIG. D. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 5 YEARS.

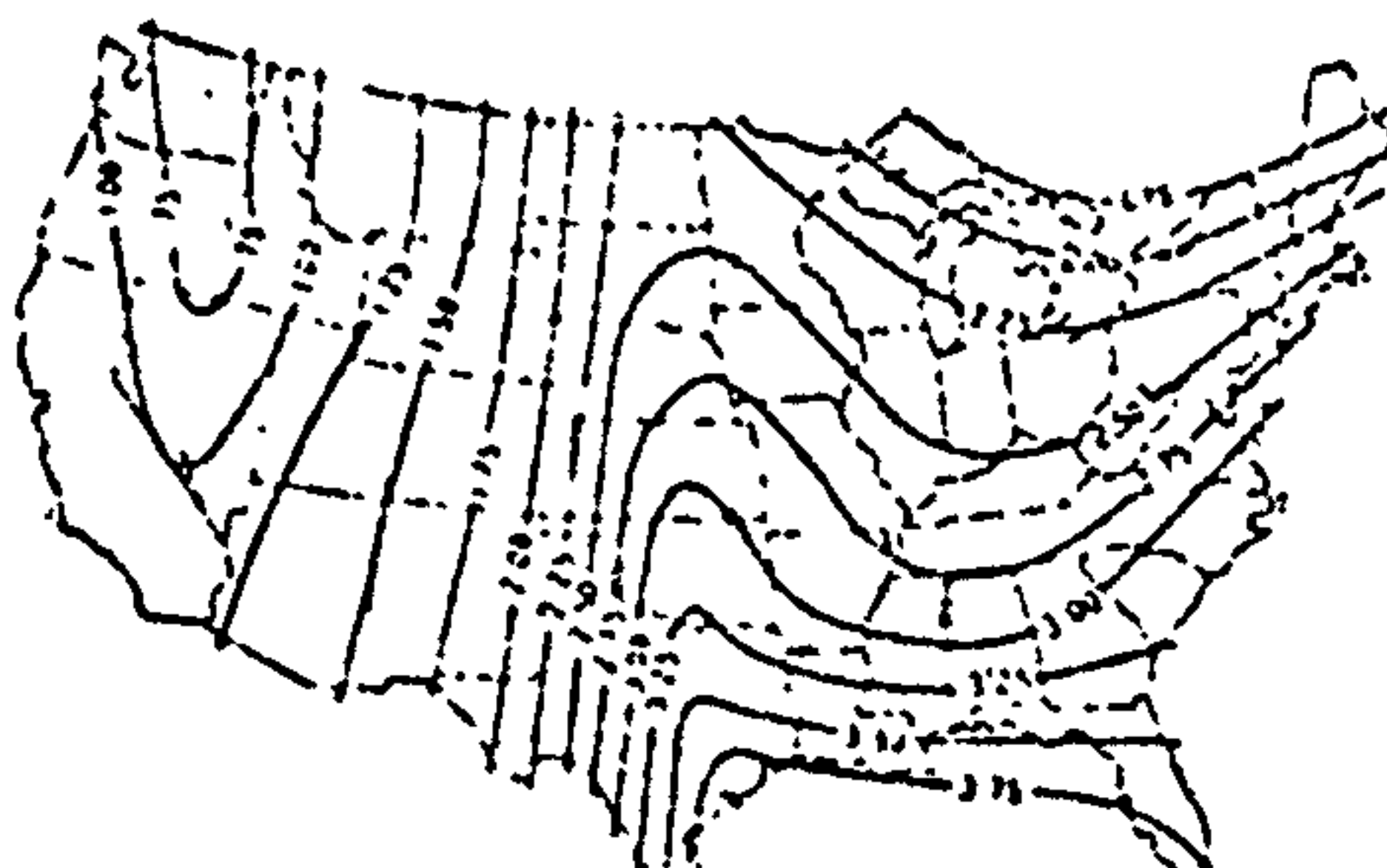


FIG. E. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 25 YEARS.

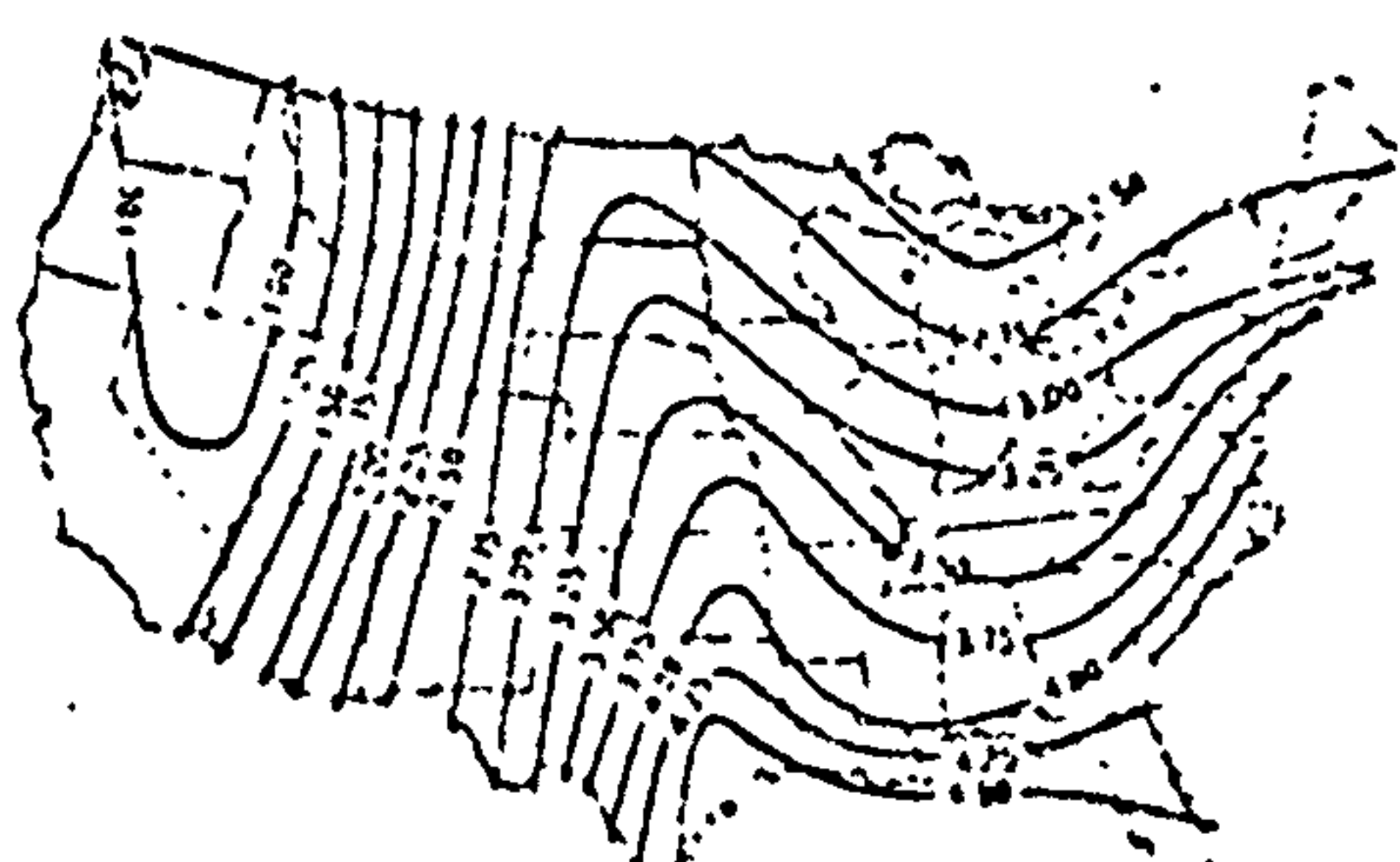


FIG. F. - ONE-HOUR RAINFALL, IN INCHES, TO BE EXPECTED ONCE IN 100 YEARS.

COMPUTATION OF i IN RATIONAL FORMULA.

EXAMPLE: Assume expectancy period = 5 years, See Fig. D, assume locality, find 1 hour intensity = 1.15 in. per hour.

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

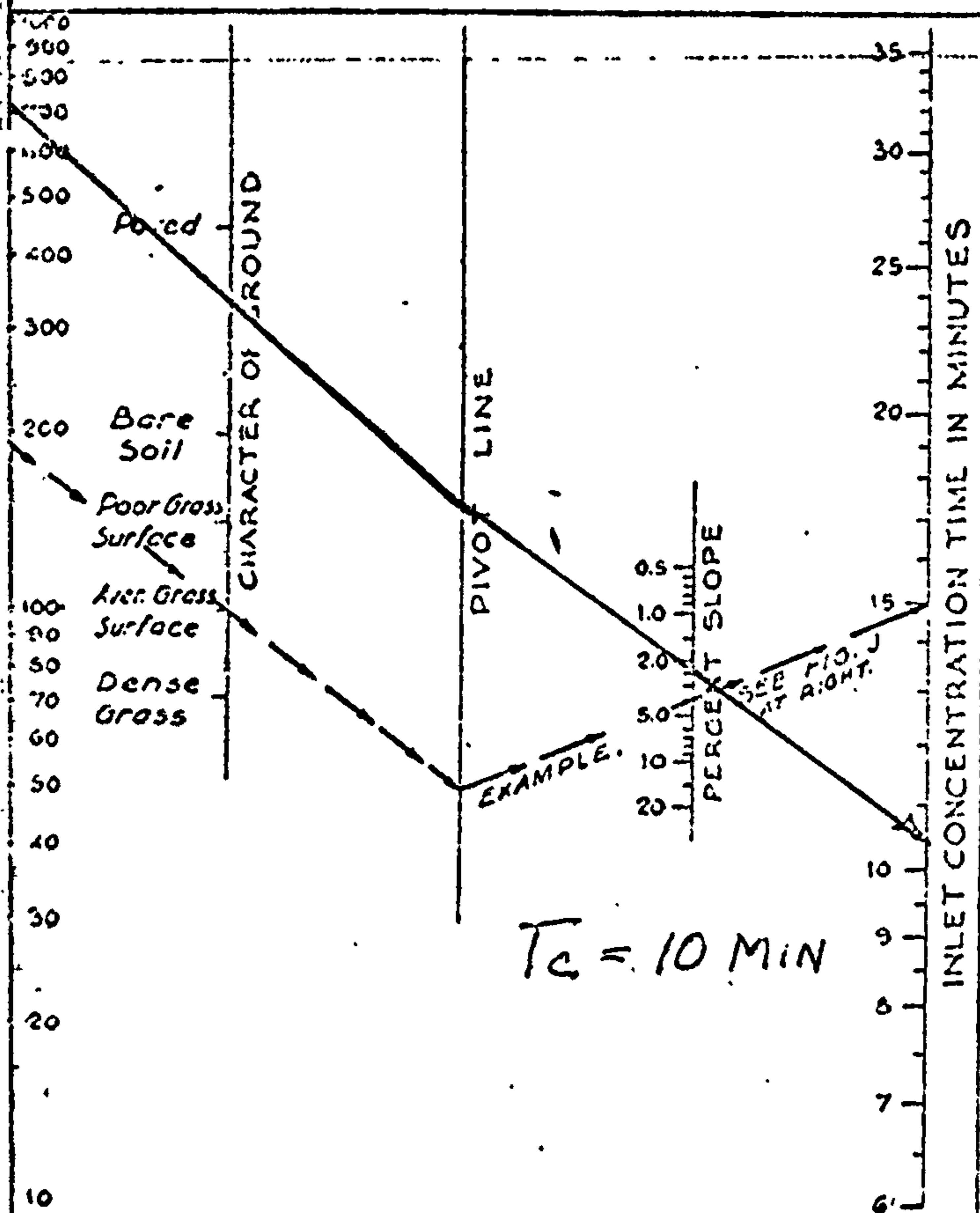


FIG. H-OVERLAND FLOW TIME.

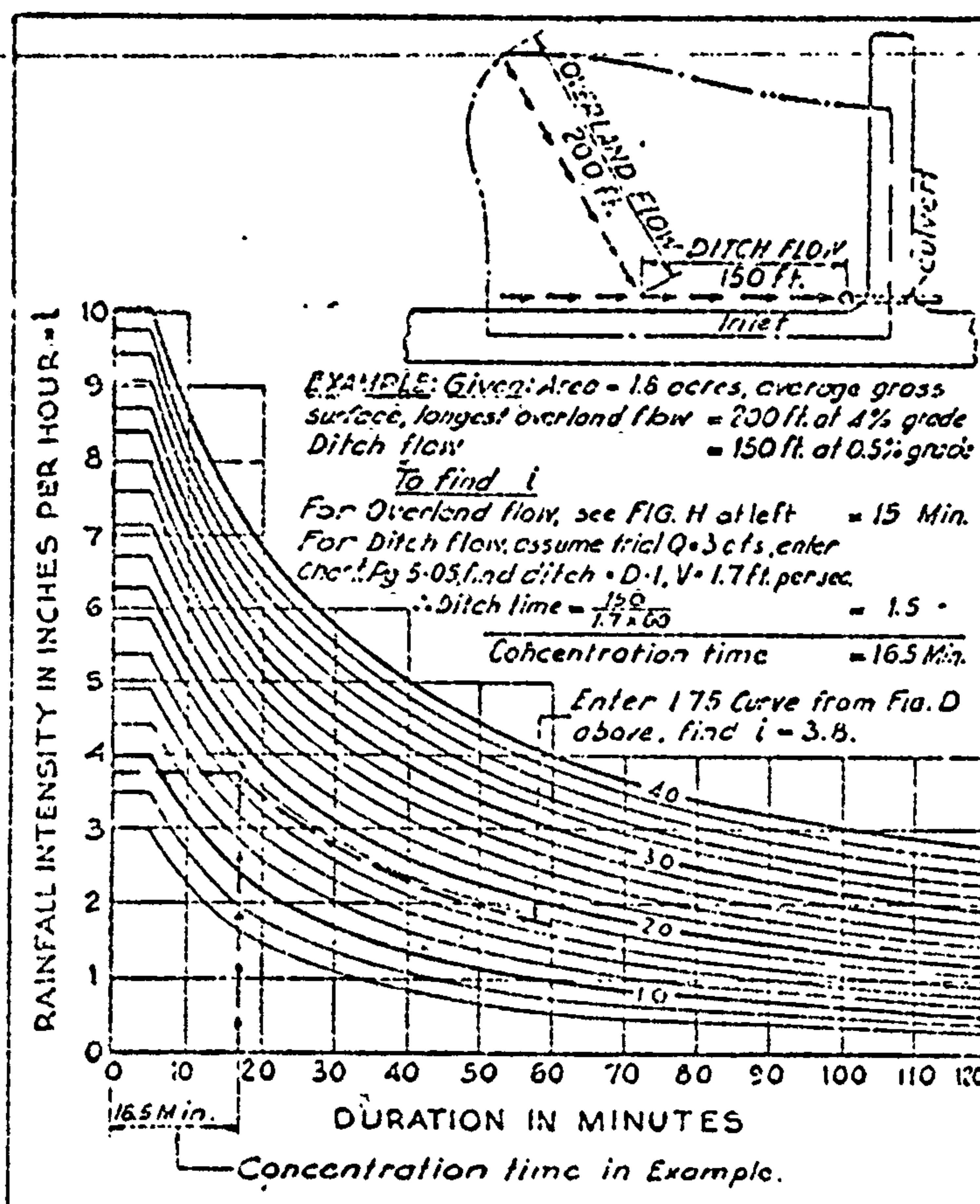


FIG. J-VALUES OF i RAINFALL INTENSITY-DURATION.

Produced from Miscellaneous Publication No. 204, U.S. Dept. of Agriculture, by David L. Yarnell. Reproduced from Engineering Manual of the War Department, Part III, Chap. I, Dec. 15.

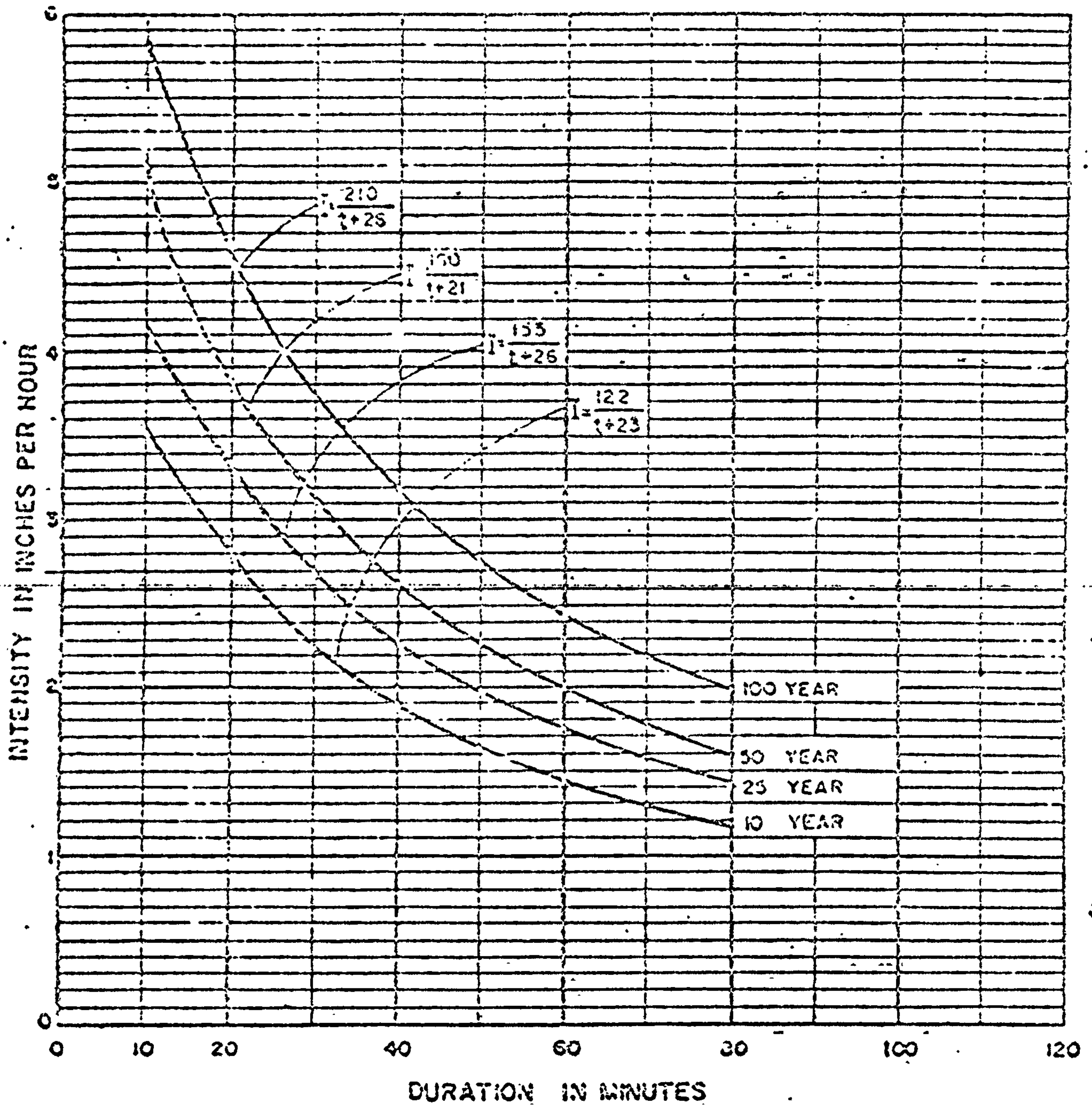
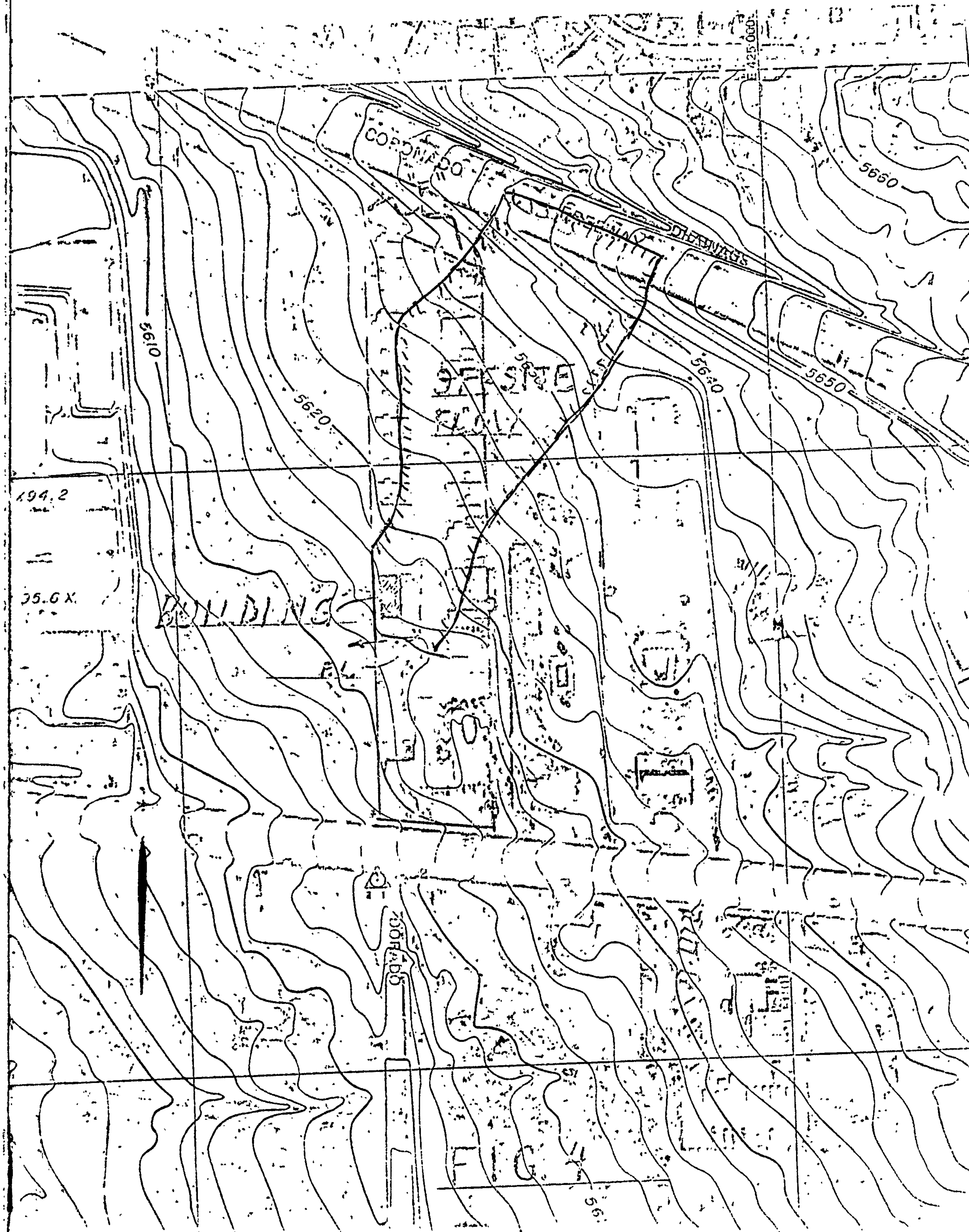


FIG 3

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

INTENSITY DURATION
FREQUENCY CURVES
SOUTHWESTERN U.S. - 1935
(STANDARD YARNELL)

GORDON HERRMANN & ASSOC. CHART
CONSULTING ENGINEERS
ALBUQUERQUE, NEW MEXICO



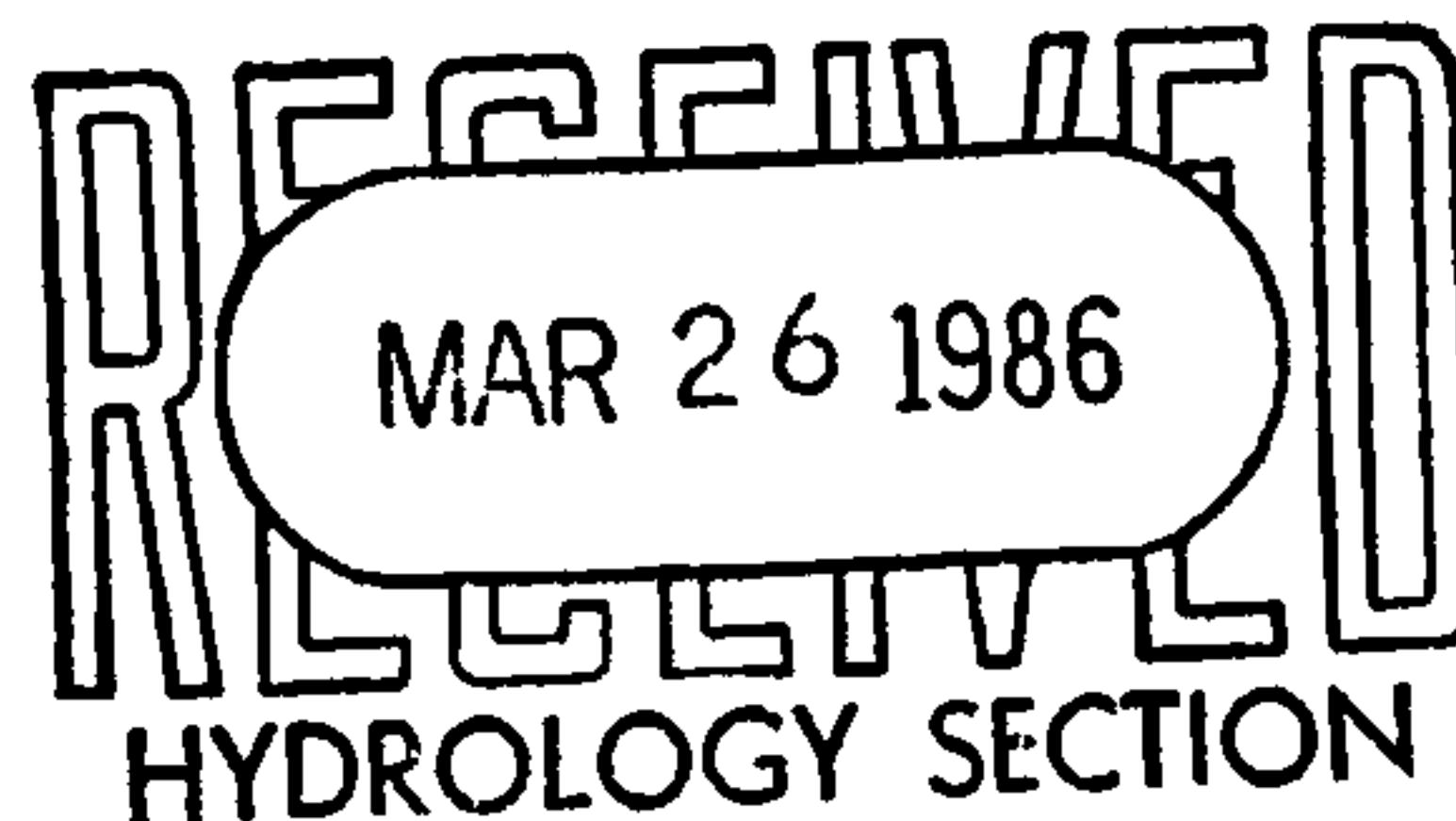
engineering associates, inc. • 532 Adams Street, NE • Albuquerque, NM 87106 • (505) 265-6545

COMPARISON OF 'C' FACTORS

AREA	NEW C	OLD C	% CHANGE
OFFSITE	0.40	0.34	+ 17.6
FULL SITE	0.84	0.86	- 2.3
1	0.83	0.86	- 3.5
2	0.92	1.0	- 8.0
3	.94	1.0	- 6.0
4	.94	1.0	- 6.0
5	.94	1.0	- 6.0
6	.62	0.63	- 1.6
7	.75	.86	- 12.8

IN TERMS OF MAXIMUM FLOW RATE, OPENING, THE APPROXIMATE DIFFERENCE IS

$$\begin{aligned}
 &+0.176 (2.96) - .023 (19.83) = +.521 - .456 \\
 &\quad \text{OFFSITE} \quad \quad \quad = + 0.065 \text{ CFS}
 \end{aligned}$$



engineering associates, inc. • 532 Adams Street, NE • Albuquerque, NM 87106 • (505) 265-6545

RUNOFF "C" FACTORS REUSED PER NEW STANDARDS

AREA	SURFACE TYPE	APPROX SQ FT	C	CX SQ FT
(1)	LANDSCAPE	7360	.25	1840
	ROOFS (TRAILERS & SHEDS)	11700	.90	10602
	PAVING	<u>29943</u>	.95	<u>28446</u>
		49083		40878

$$C_{REV} = 40.878 / 49083$$

$$= 0.83$$

$$C_{OLD} = 0.86$$

(2)	ROOFS	7030	.90	6327
	PAVING	<u>3235</u>	.95	<u>3073.25</u>
		10265		9400.25

$$C_{REV} = 9400.25 / 10265$$

$$= .92$$

$$C_{OLD} = 1.0$$

$$(3) \quad C_{REV} = (2850 \times .9 + 7789 \times .95) / 10639$$

$$= 0.94$$

$$C_{OLD} = 1.00$$

$$(4) \quad C_{REV} = (3150 \times .9 + 19106 \times .95) / 22356$$

$$= 0.94 \quad C_{OLD} = 1.0$$

$$(5) \quad C_{REV} = (.9 \times 11420 + .95 \times 27419) / 38939$$

$$= 0.94$$

$$C_{OLD} = 1.0$$

$$(6) \quad C_{REV} = (0.9 \times 5400 + 12250 \times .25 + .95 \times 9878) / 26528$$

$$= 0.62$$

$$C_{OLD} = 0.63$$

$$(7) \quad C_{REV} = (0.9 \times 10798 + .95 \times 9448 + .25 \times 6749) / 26995$$

$$= 0.75$$

$$C_{OLD} = 0.86$$

C COMPOSITE WHOLE SITE, REVIS

$$= (.83 \times 49083 + .92 \times 10265 + .94 \times 10639 + .94 \times 22356$$

$$+ .94 \times 38939 + .62 \times 26528 + .75 \times 26995) / 184701$$

$$= 0.84$$

$$C_{COMPOSITE, OLD} = 0.86$$

$$OFFSITE: \quad C_{OLD} = 0.34$$

$$C_{REV} = 0.40$$

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Americal Best Western Addition ZONE ATLAS / DRNG FILE: L-22 / D22

LEGAL DESCRIPTION: Tract F, Canyon Acres Subdivision

CITY ADDRESS: 12999 Central Ave. NE

ENGINEERING FIRM: Engineering Associates

ADDRESS: 532 Adams NE 87102

OWNER: Harald Mueller

ADDRESS: 12999 Central NE

ARCHITECT: Neil Gaskin & Associates

ADDRESS: 144 Washington SE

SURVEYOR: _____

ADDRESS: _____

CONTRACTOR: _____

ADDRESS: _____

CONTACT: Tucker Green

PHONE: 865-6545

CONTACT: Harald Mueller

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CONTACT: Neil Gaskin

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CONTACT: _____

PHONE: _____

CONTACT: _____

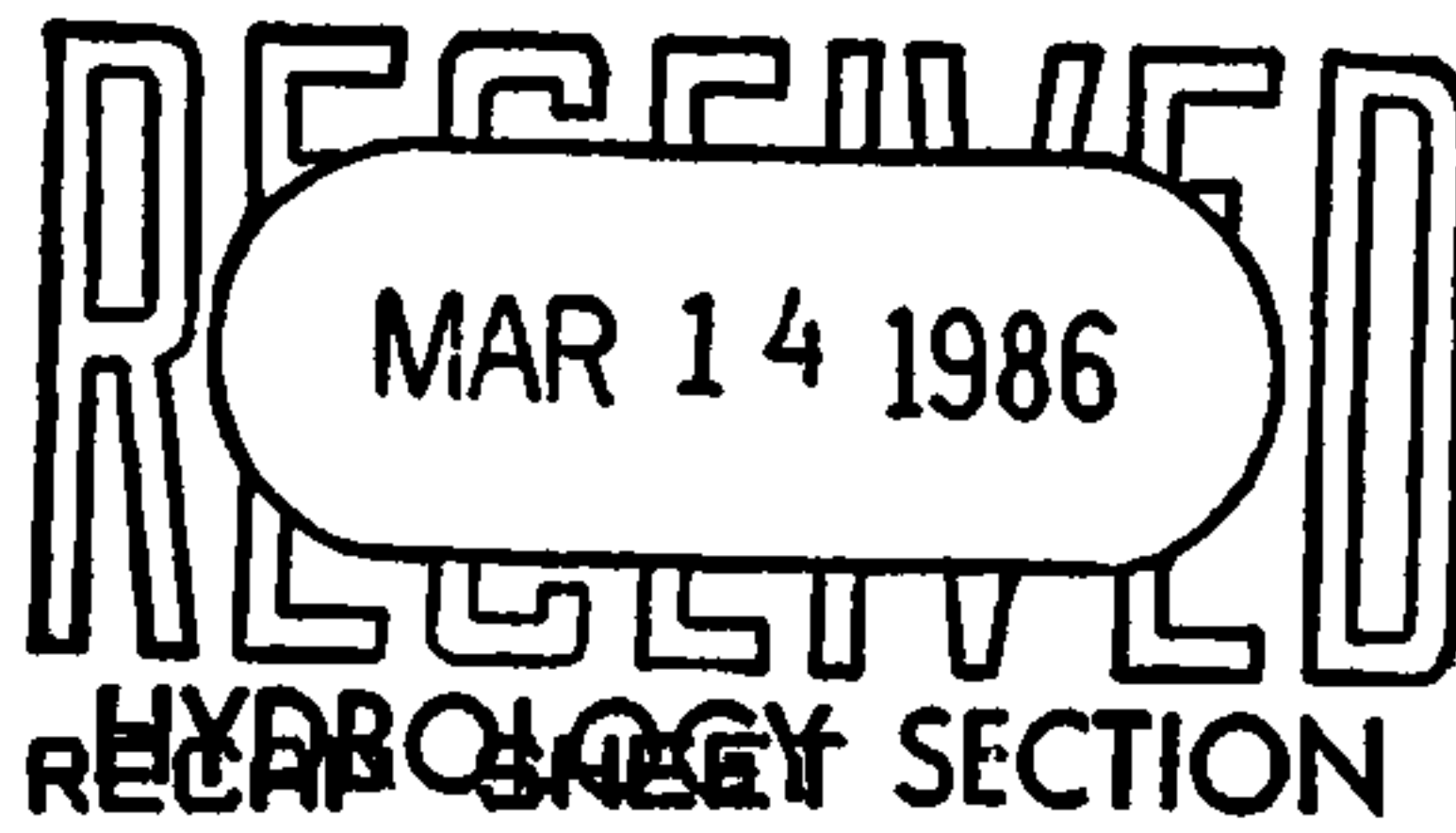
PHONE: _____

PREDESIGN MEETING:

☒ YES

☐ NO

☒ COPY OF CONFERENCE RECORD SHEET PROVIDED



DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☒ DRAINAGE PLAN

☐ CONCEPTUAL GRADING & DRAINAGE PLAN

☒ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION /

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT

☐ PRELIMINARY PLAT

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☒ BUILDING PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY

☐ ROUGH GRADING PERMIT

☐ GRADING/PAVING PERMIT

☐ OTHER (SPECIFY)

DATE SUBMITTED: 3/14/86

BY: August F. Mosimann

FOR: Engineering Associates, Inc.

GRADING AND DRAINAGE REPORT

FOR

AMERICAN BEST WESTERN MOTOR INN ADDITION

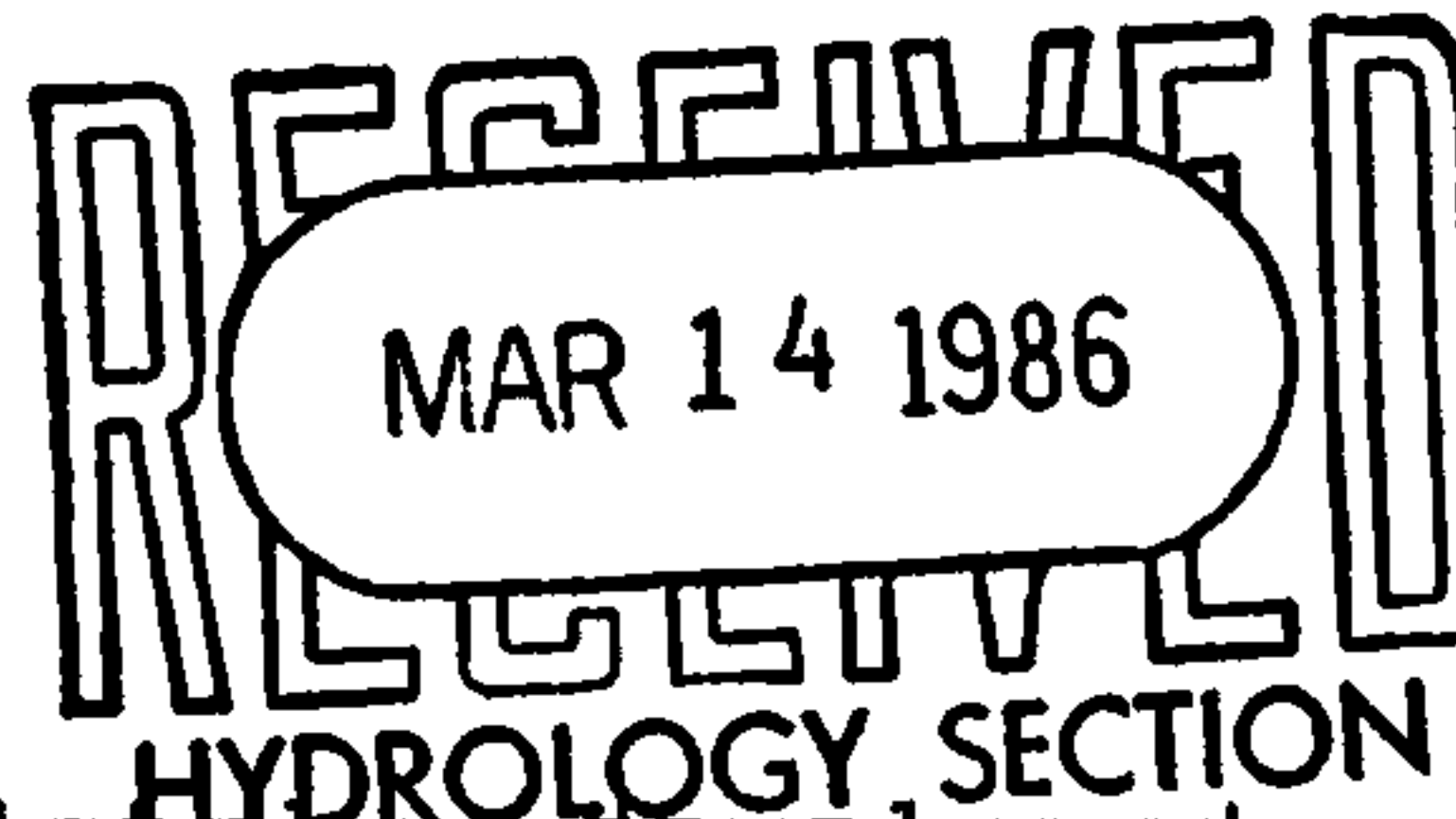
12999 CENTRAL AVE NE

ALBUQUERQUE, NM

CITY MAP L-22

LEGAL DESCRIPTION: TRACT F, CANYON ACRES SUBDIVISION

FLOOD HAZARD: THE SITE IS NOT IN 100-YEAR FLOOD HAZARD ZONE PER MAP
PANEL 350002 0037



INTRODUCTION

Currently the site is almost completely developed, with motel buildings on the front portion and mobile homes on the rear. All of these have finished floor height a minimum of 1 foot above finished grade. The owner proposes to replace the front few mobile homes with a new motel building lying across the lot. In the near future the owner may decide to separate and sell the portion containing the mobile homes but for the present we are submitting this as a drainage plan for a single lot. Thus the comments from the predesign conference regarding easements and replatting may not apply.

Note that at the date of this report Tracts G-1 and H-1 adjacent on the west are being graded under Grading and Drainage Plan L22-D41. We are accepting as offsite grades the grades given by that plan, since the actual grades there change day by day.

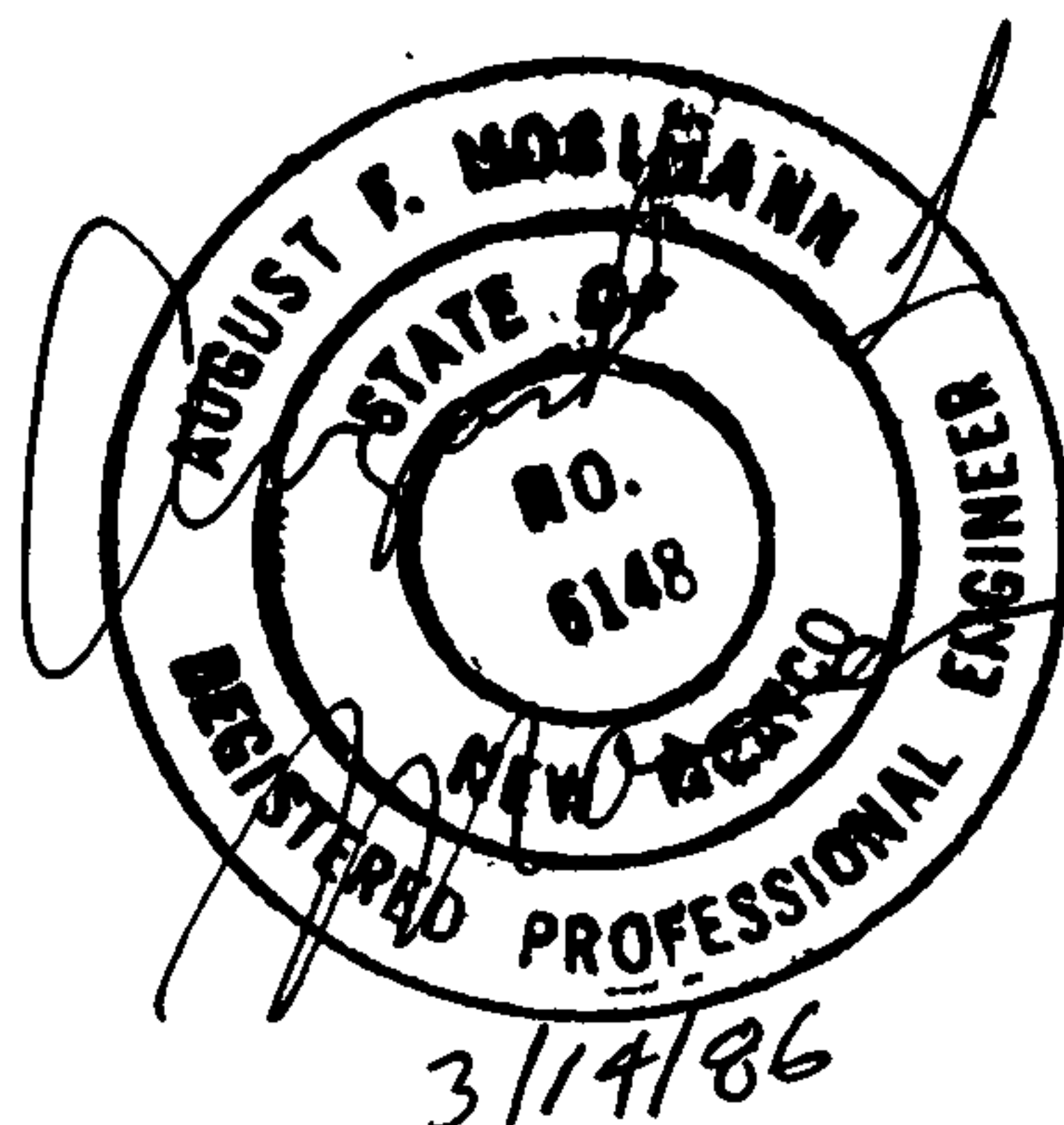
HYDROLOGIC SITE DESCRIPTION.

The 4.24-acre slopes northeast to southwest approximately 1000 feet at 1.9%. Most of the site is impervious, being covered with paving or buildings, but the underlying soils are type TgB with a small fraction of ETc; both of these are hydrologic class B. (SCS Soil Map of Bernalillo Co. Map 32). /From the Development Process Manual, for this site:

P (100-yr, 6-hr) = 2.49 in (P1 22.2 D-1)

T_c = 7.32 minutes: use 10 minutes minimum (Kirpich eqn.)

I (100-yr) = 5.26 in/hr (DPM P1 22.2 D-2)



RUNOFF CALCULATIONS

Calculations use the "Rational Method" as outlined in DPM:

$$Q_{\text{peak}} = C \times I \times A \text{ (acres)} \quad \text{cubic feet per second}$$

$$\text{Volume} = C \times P / (12 \text{ in/ft}) \times A \text{ (sq ft)} \quad \text{cubic feet}$$

C is a runoff coefficient based on the soil type and the percent of impervious area and taken from Pl 22.2 C-1. Per Pl 22.2 D-1 the 10-year rates and volumes are 65.7% of the 100-year values.

OFFSITE FLOW

The offsite flow area is as identified on a map in the appendix. It is limited on the south by the start of an existing CMU wall, as shown on the plans. It enters the site on the northeast and flows down the existing paved swale.

$$A = 66253 \text{ sf} = 1.521 \text{ ac}$$

$$\% \text{ Impervious} = 7 \text{ (bikeway)}$$

$$C = 0.37$$

$$Q_{p,100} = CIA = 0.37 \times 5.26 \times 1.521 = 2.96 \text{ cfs}$$

$$V, 100 = CPA/12 = 0.37 \times 2.49 \times 66253 / 12 = 5087 \text{ cu ft}$$

ONSITE EXISTING

Onsite flow amount and peak rate under existing conditions are virtually the same as under proposed conditions, since only a small portion of the site will be hydrologically affected by development. See CHANGES.

ONSITE PROPOSED

Calculations for the site as a whole are presented here. In the appendix calculations are given for the lot as divided into subareas; these serve primarily to identify the required capacities of swales.

$$A = 184701 \text{ sf} = 4.240 \text{ ac}$$

$$\% \text{ Impervious} = 90 \text{ (estimated)}$$

$$C = 0.86$$

$$Q_{p,100} = 19.18 \text{ cfs}$$

$$V, 100 = 32960 \text{ cu ft}$$

CHANGES FROM EXISTING CONDITIONS

As a result of development a small area will change from 90% impervious to 100% impervious.

$$A = 197 \times 110 = 21670 \text{ sf} = .4975 \text{ ac}$$

$$\Delta C = 1 - 0.86 = 0.14$$

$$\Delta Q = .14 \times 5.26 \times .4975 = + 0.37 \text{ cfs}$$

$$\Delta V = .14 \times 2.49 \times 21670 / 12 = 630 \text{ cu ft}$$

RUNOFF ROUTING

All runoff from the site will discharge into the street without retention. In this area Central Ave. has a pavement width of 86 feet and a slope about 3%; the 0.37 cfs increase in peak flow generated by this project will have virtually no effect on the flow in Central Ave.

In the following discussion it may be helpful to refer to the subareas identified in the appendix. In the rear portion of the lot, flow from the eastern mobile homes and from offsite will continue to flow in the inverted-crown driveway section. This will enter a new asphalt channel at the rear of the proposed building. Most of the runoff from the western mobile homes will continue to flow offsite to the west, as it has done under two previously approved drainage plans for this site; a small portion will be accepted by the channel behind the new building. It is clear that this area must be included in the 3.11 acres (50% impervious, 9.56 cfs) of offsite flow accepted by Tract G-1 under Drainage Plan L22-D41. Eventually this flow will also be discharged to the street.

An asphalt channel will be constructed along the west property line to reroute flow from the rear portion of the site and to accept flow from the new building and the existing west motel building. South of the west motel building this flow will be augmented by runoff from other portions of the site and will flow along the west property line to the street, where there is an existing drop inlet almost immediately downstream. An existing asphalt curb forms the side of a swale with adequate capacity to contain runoff onsite. Runoff from the southeastern portion of the site leaves the site without flowing in the swale.

All of the onsite swales have adequate capacity to accept runoff from the portion of the site now flowing to Tract H-1, should that ever become desirable or necessary.

As discussed in the previously-referenced drainage plan L22-D41, Plate L-22 of the Albuquerque Master Drainage Study does identify some areas of street flooding downstream from the site. It is understood that much of this flooding has been relieved by the Fairgrounds Relief System Improvements further west on Central Ave. It is also understood that intersection flooding at Juan Tabo and Central (approx 1/2 mile west) is caused by runoff from high-density mobile-home development along Juan Tabo south of Central; once these flows enter Central they are accepted and conveyed to the west, and there is no flooding identified west of the intersection.

EROSION CONTROL

Notes on the plan direct the contractor to control erosion by wetting exposed earth and by constructing temporary berms as necessary.

END OF REPORT

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: L-22 DATE: 10/11/85 @ 2:00 p.m.
PLANNING DIVISION NOS: EPC: _____ DRB: _____
SUBJECT: Addition to American Motor Inn
STREET ADDRESS (IF KNOWN): 12999 Central Avenue, NE
SUBDIVISION NAME: Canyon Acres Sub'd.; Tract F

APPROVAL REQUESTED:

<input type="checkbox"/> PRELIMINARY PLAT	<input checked="" type="checkbox"/> FINAL PLAT
<input type="checkbox"/> SITE DEVELOPMENT PLAN	<input checked="" type="checkbox"/> BUILDING PERMIT
<input type="checkbox"/> OTHER	<input type="checkbox"/> ROUGH GRADING

WHO	REPRESENTING
ATTENDANCE: <u>Augie Mossimann</u>	<u>Engineering Associates</u>
<u>Billy Goolsby</u>	<u>City / Design Hydrology</u>

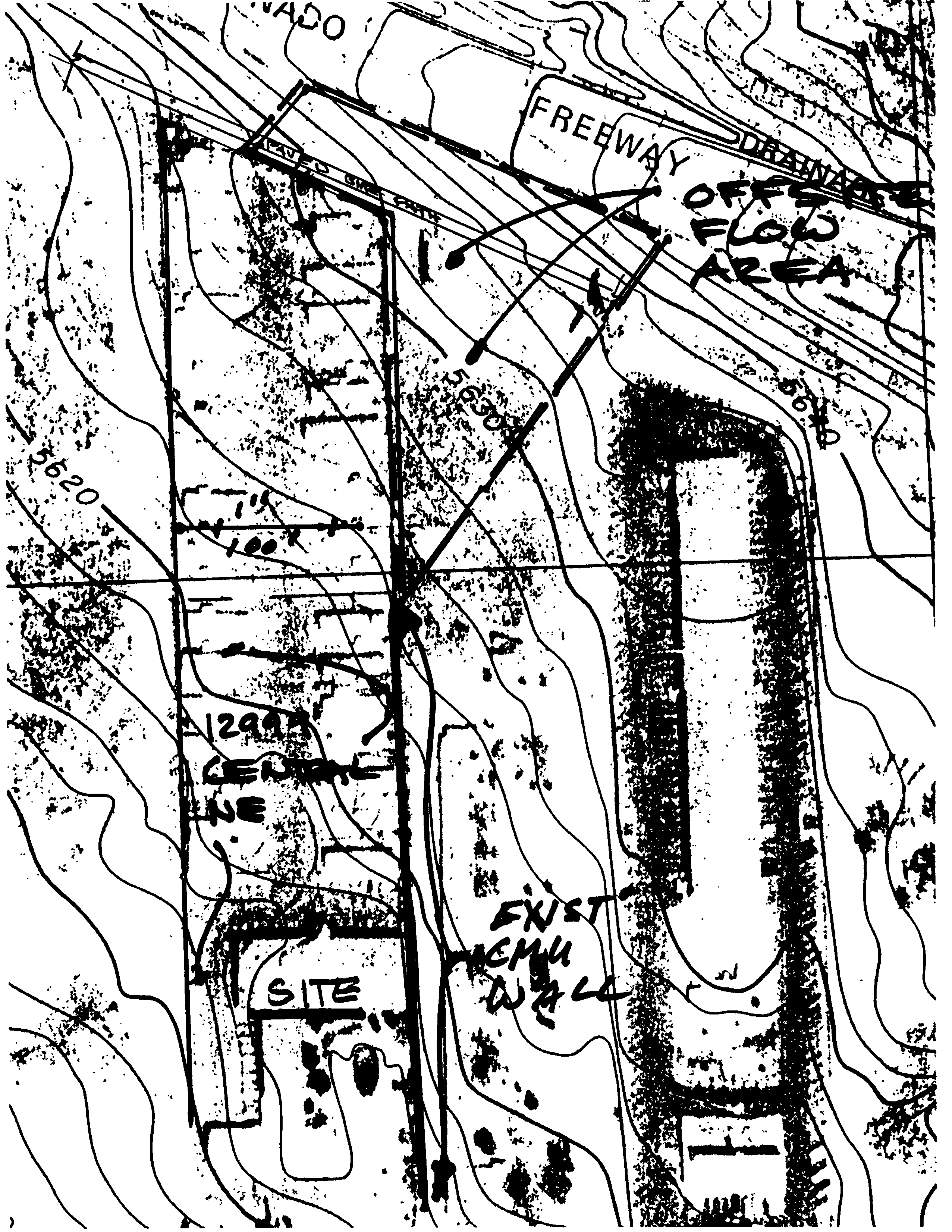
FINDINGS:

- ① Replat required to create new lots in accordance with proposed land sale. Appropriate easements will be required for access and drainage unless platting creates one tract for mobile home park.
- ② For diversion of off-site flow an agreement from adjacent property owner will be required. This agreement will run with the property.
- ③ On-site development plan shall show proposed addition and treatment of drainage runoff. Runoff to be contained & handled on-site.
- ④ An approved erosion control plan for the period of construction is required.

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: <u>Billy Goolsby</u>	SIGNED: <u>Augie Mossimann</u>
TITLE: <u>CE / Design Hydrology</u>	TITLE: <u>Engineer</u>
DATE: <u>10/11/85</u>	DATE: <u>10/11/85</u>

****NOTE** PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL**

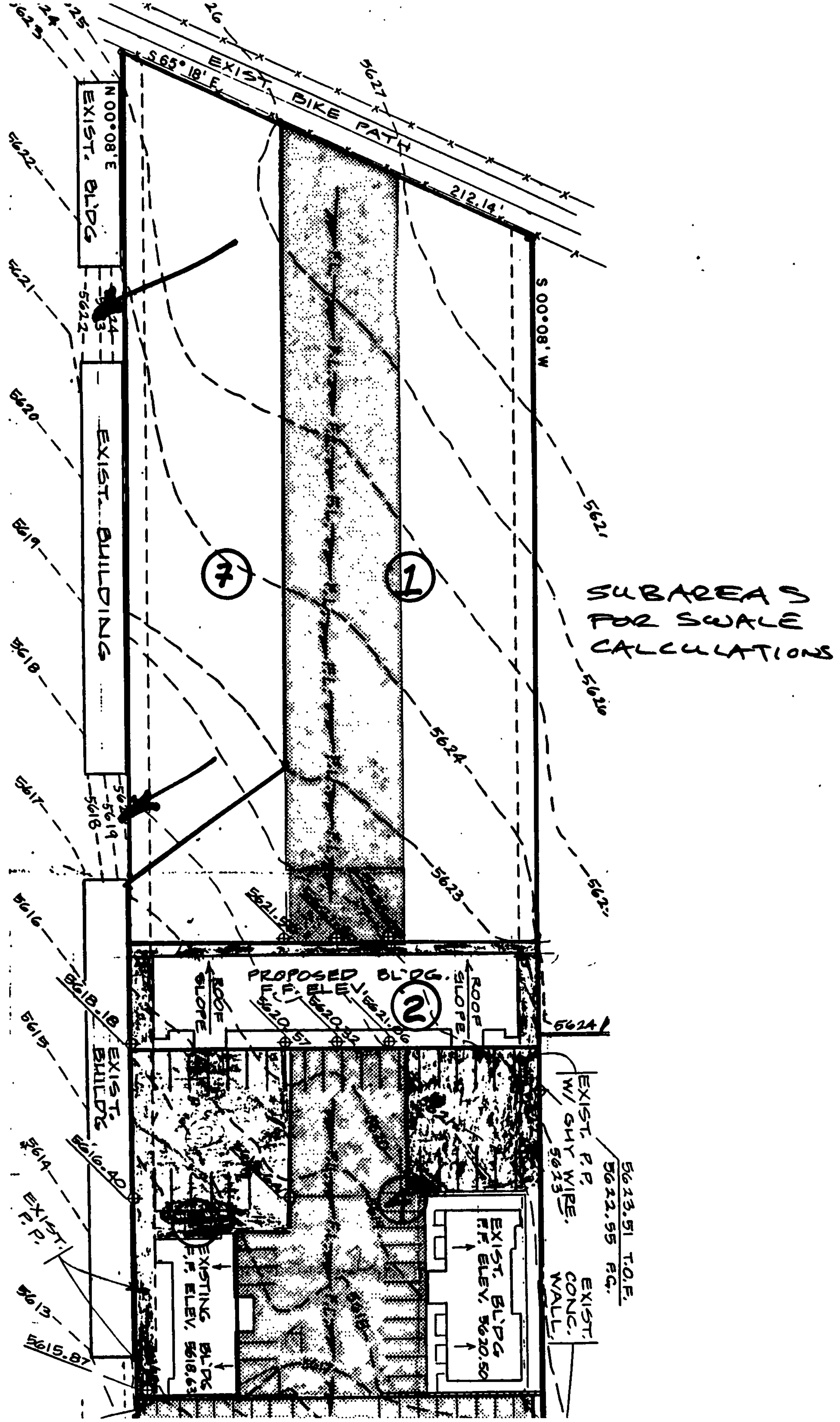


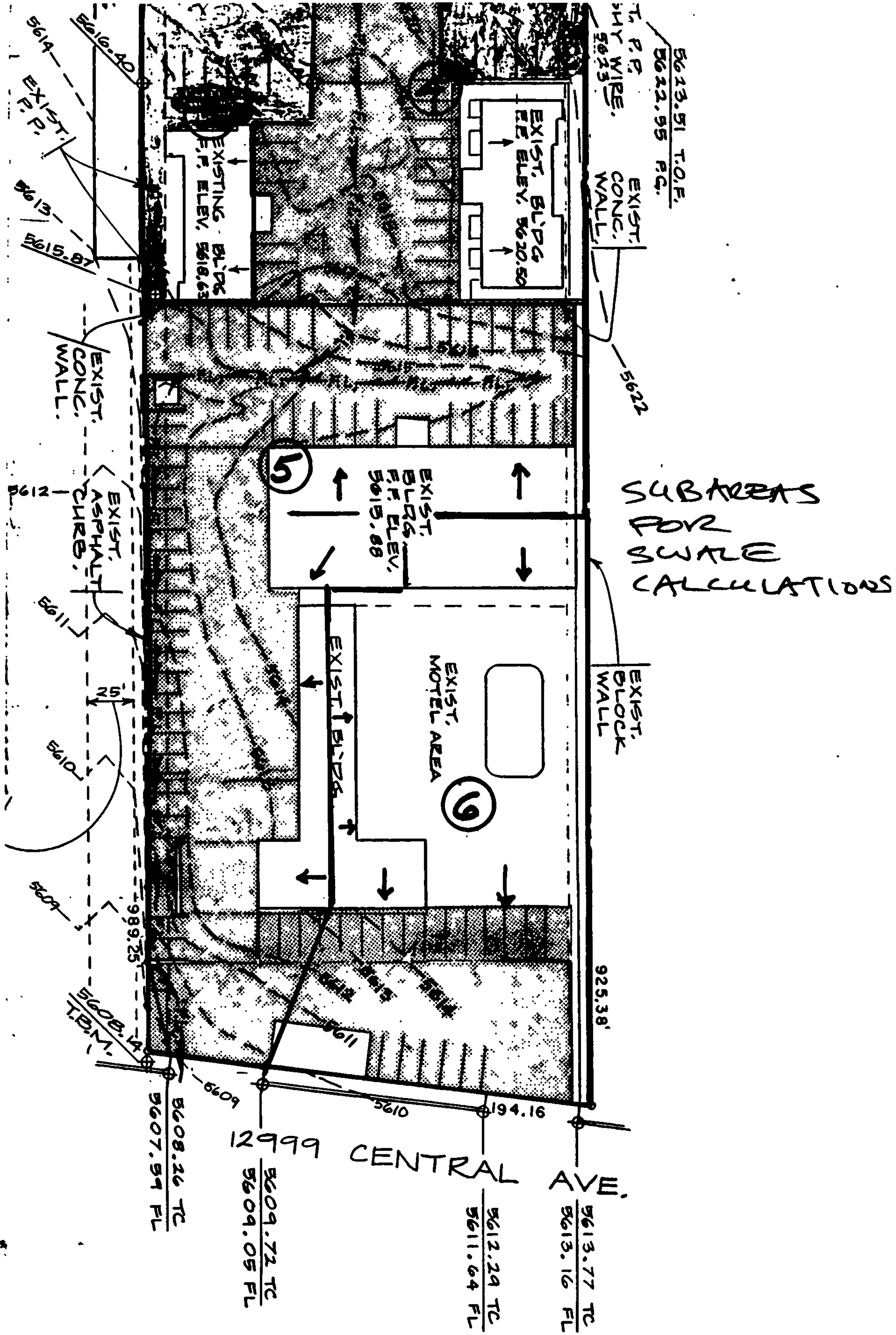
FREEWAY DRAINAGE
OFF-SITE
FLOW
AREA

1299
CENTRAL
NE

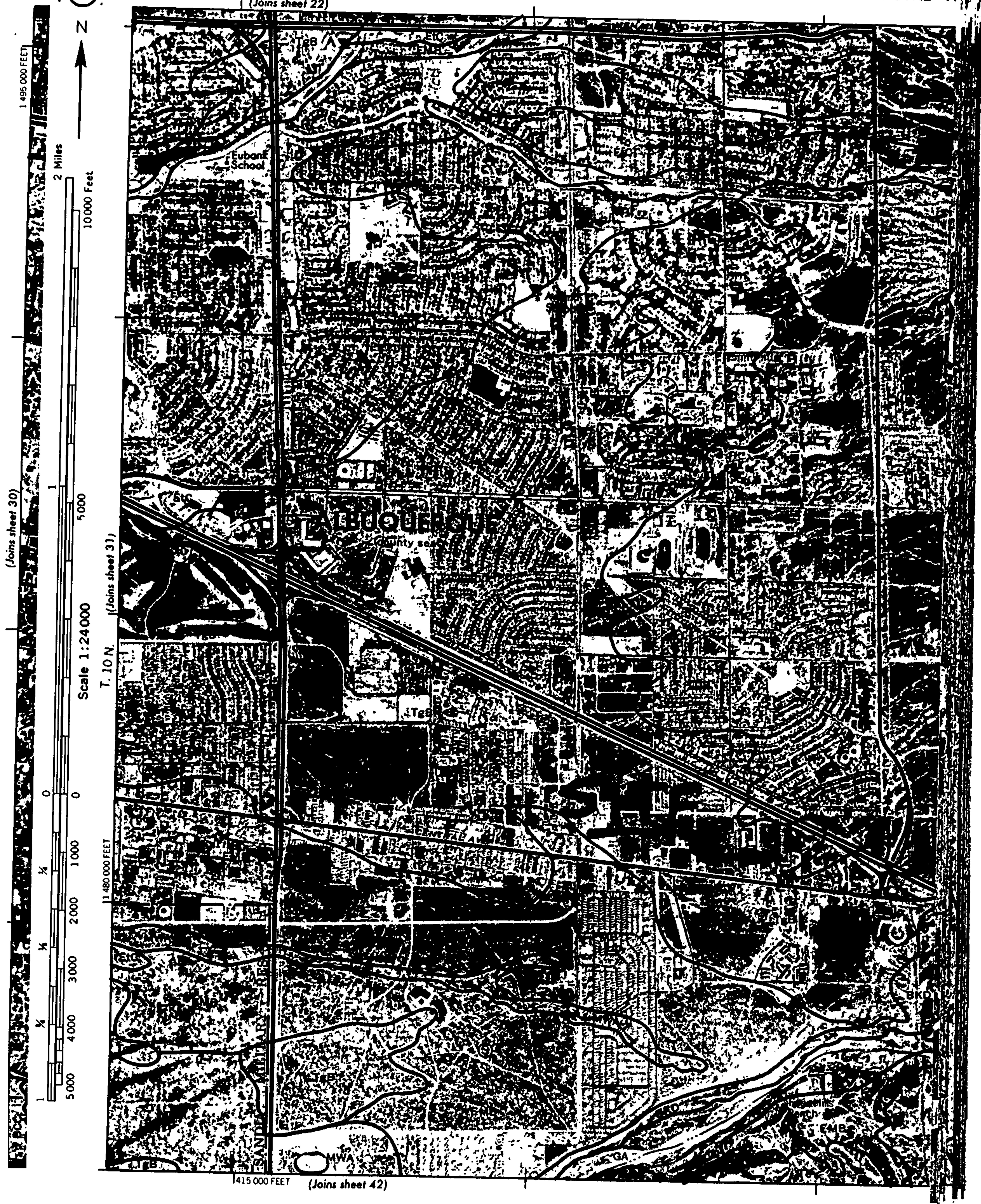
SITE

EXIST
WALL





(Joins sheet 22)



BY _____ DATE _____

SUBJECT AMERICAN MOTEL

SHEET NO _____ OF _____

CHKD. BY _____ DATE _____

CLIENT DRAINAGE

JOB NO. _____

engineering associates, inc. • 532 Adams Street, NE • Albuquerque, NM 87106 • (505) 265-6545

OFFSITE

T_{6B} GROUP B ≠ E_T GROUP B SCS MAP 32

$$P = 2.49" (6 \text{ hr}) \quad L_h = 400 \quad S = 10/400 = 2.5\%$$

$$T_c = 3.25 \text{ use } 10 \text{ minimum} \Rightarrow I = 5.26 \text{ in/hr}$$

$$A = 66253 \text{ ft}^2 = 1.521 \text{ Ac}$$

$$790 \text{ imperv} \Rightarrow C = 0.37$$

$$Q_{100} = CIA = .37 \times 5.26 \times 1.521 = 2.96 \text{ CFS}$$

$$V_{100} = C \times \frac{P}{12} \times SF = .37 \times \frac{2.49}{12} \times 66253 = 5087 \text{ cu ft}$$

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"RATIONAL" FORMULAS
 P = 100 YR 6IN RAINFALL (INCHES)

METHOD PER CITY OF ALBUQUERQUE DPM

Full SITE: A = 134701 ft² = 4.240 ac L₁ = 1000' S = 1.9% P = 2.49"
 T_c = 7.32, use 10 minimum → I = 5.26
 90% IMPERV C = 0.86 Q = .86 x 4.24 x 5.26 = 19.13 cfs
 V = .86 x 2.49 / 12 x 134701 = 32960 cu ft

POST DEVELOPMENT

SUB	sq ft	acres	% IMP	C	CFS	cu ft
1	49083	1.1268	90	.86	5.10	8759
2	10265	.2356	100	1	1.24	2130
3	10639	.2442	100	1	1.28	2206
4	22356	.5132	100	1	2.70	4639
5	38839	.8916	100	1	4.69	7022
6	26528	.6090	~60	.63	2.02	3468
7	26995	.6197	~90	.86	2.80	4817
					19.83	33041

CHANGES FROM PRE-DEVELOPMENT

: THE ADDITION CHANGES A SHARE AREA FROM 90% IMPERV 100'S (C=0.86)
 TO 100% IMPERV (C=1.0)

AREA ~ 197 x 110 = 21670 ft² = .4975 ac
 ΔC = 1 - 0.86 = 0.14
 ΔQ = .14 x .4975 x 5.26 = 3.0371 cfs
 ΔV = .14 x 2.49 / 12 x 21670 = 630 cu ft

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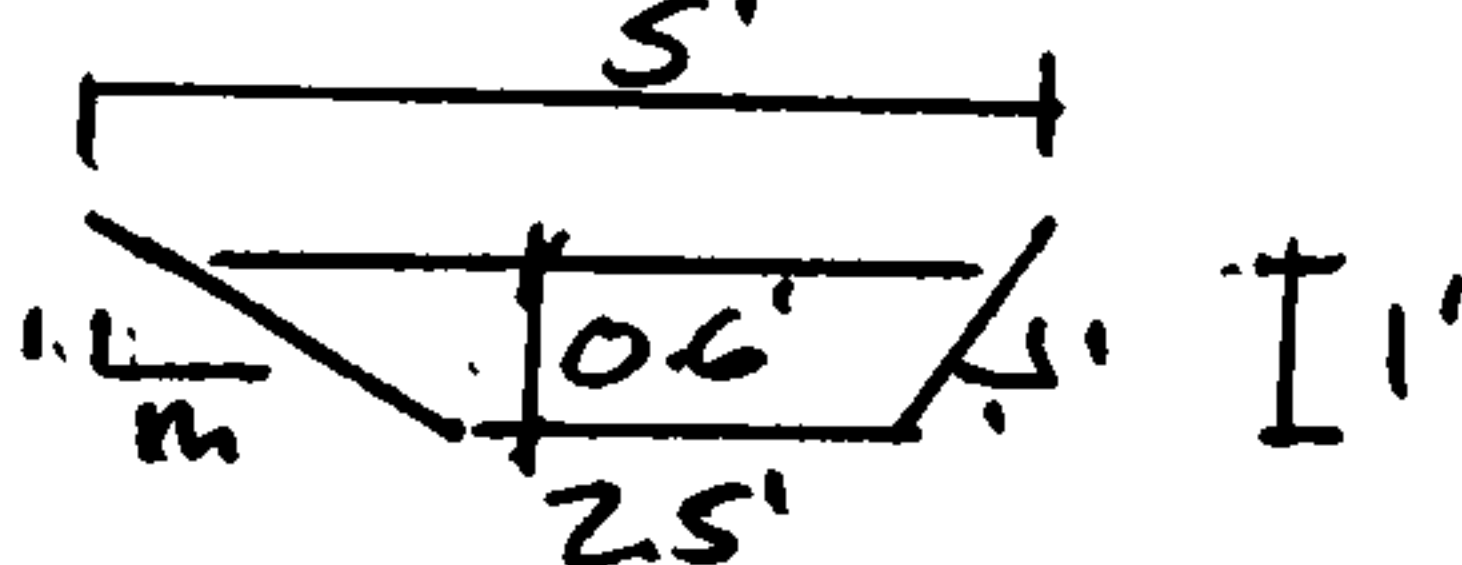
SWALE CAPACITIES

ASPHALT $N = 0.017$

(1) BEHIND NEW HOTEL UNIT

REQUIRED: OFFSITE $A_1 + A_2 = 2.96 + 5.10 + 1.24 = 9.3$

PROVIDED:



m varies, min = 1 max = 2 ±

$S = 0.02$

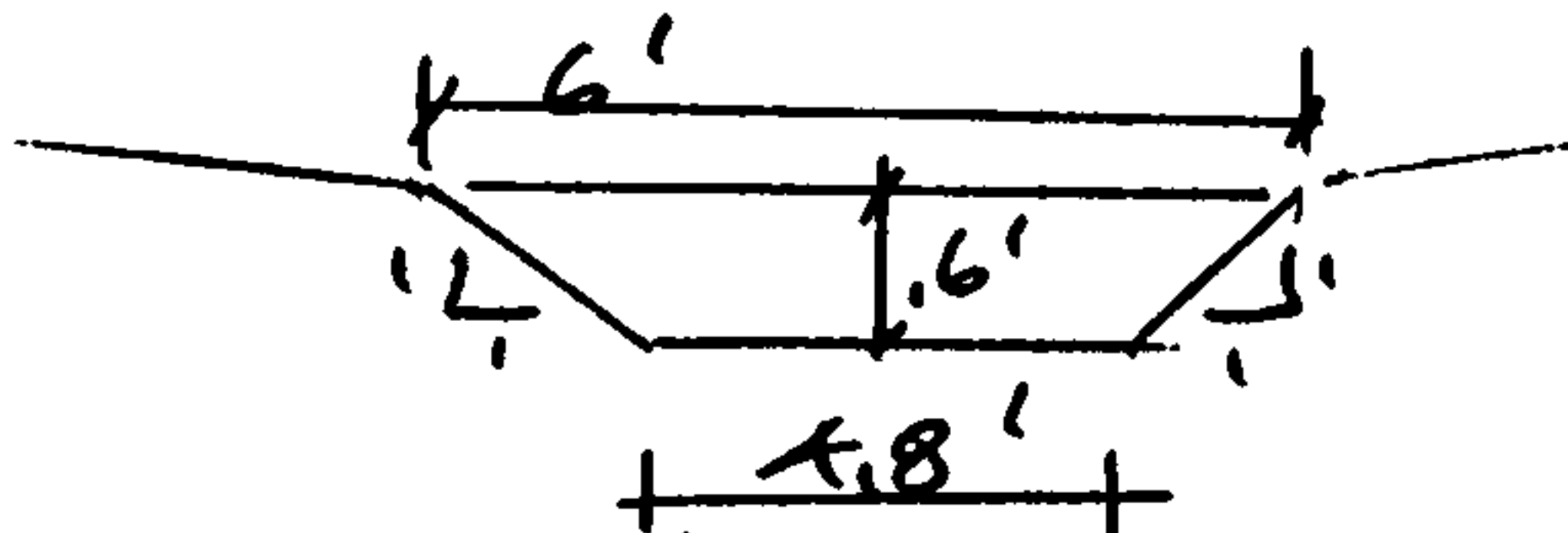
$Q_{CAP} = 13.41 > 9.3$ OK

(2) @ W R

WORST CASE = FLATTEST SLOPE = BEHIND EXIST HOTEL UNIT ON WEST SIDE

REQUIRED: $9.3 + A_3 = 9.3 + 1.28 = 10.58$

PROVIDED



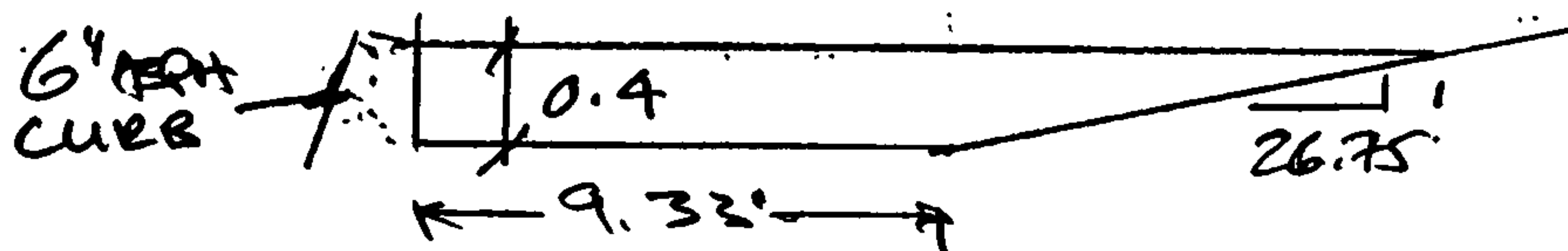
$S = 0.01$

$Q_{CAP} = 17.86 > 10.58$ OK

(3) FLAT SLOPE AREA NEAR DRIVE THROUGH CANOPY @ MOTEL OFFICE NEAR FRONT OF SITE

REQUIRED: $10.58 + A_4 + A_5 = 10.58 + 2.70 + 4.69 = 17.97$ CFS

PROVIDED: (CONSERV APPROX OF CROSS SECTION)



$N = 0.017$

$S \geq 0.01$

$Q = 22.4 > 17.97$ OK

NOTES: ALL SWALES HAVE A MIN OF 4 CFS EXCESS CAPACITY.
 280 CFS FROM A7 NOW & HISTORICALLY FLOWS OFFSITE (SEE DRAINAGE PLAN L22 D41 FOR LOTS G & H).
 SWALES AS DESIGNED HAVE ADEQUATE CAPACITY
 SHOULD IT EVER BE NECESSARY OR DESIREABLE TO ACCEPT THAT FLOW

PDG.



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

March 20, 1986

August F. Mosiman
Engineering Associates, Inc.
532 Adams NE
Albuquerque, New Mexico 87102

RE: DRAINAGE PLAN FOR ADDITION TO AMERICAN BEST WESTERN MOTEL
(L22/D22) RECEIVED MARCH 14, 1986

Dear Mr. Mosimann:

Based on the information provided on your March 14, 1986 submittal, listed you will find certain concerns that will need to be addressed before final approval is granted:

1. New information sheet with resubmittal designation.
2. Please use new criteria found in the notice of Emergency Rule signed into effect by the Mayor on 1/14/86 to compute the "C" values.
3. Notation on Section 4/C1 "Top 1'-0" may remain", please clarify.
4. Please clarify on legend which is existing asphalt and proposed.
5. Note identifying that if land sale takes place, replat will be required to create new lot lines.
6. Description of T.B.M. (rebar, pipe, curb notch, etc?).

If I can be of further assistance, please feel free to contact me at 766-7644.

Sincerely,

Carlos A. Montoya, P.E.
City/County Flood Plain Admin.

CAM:BJM:mrk

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Dwayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER