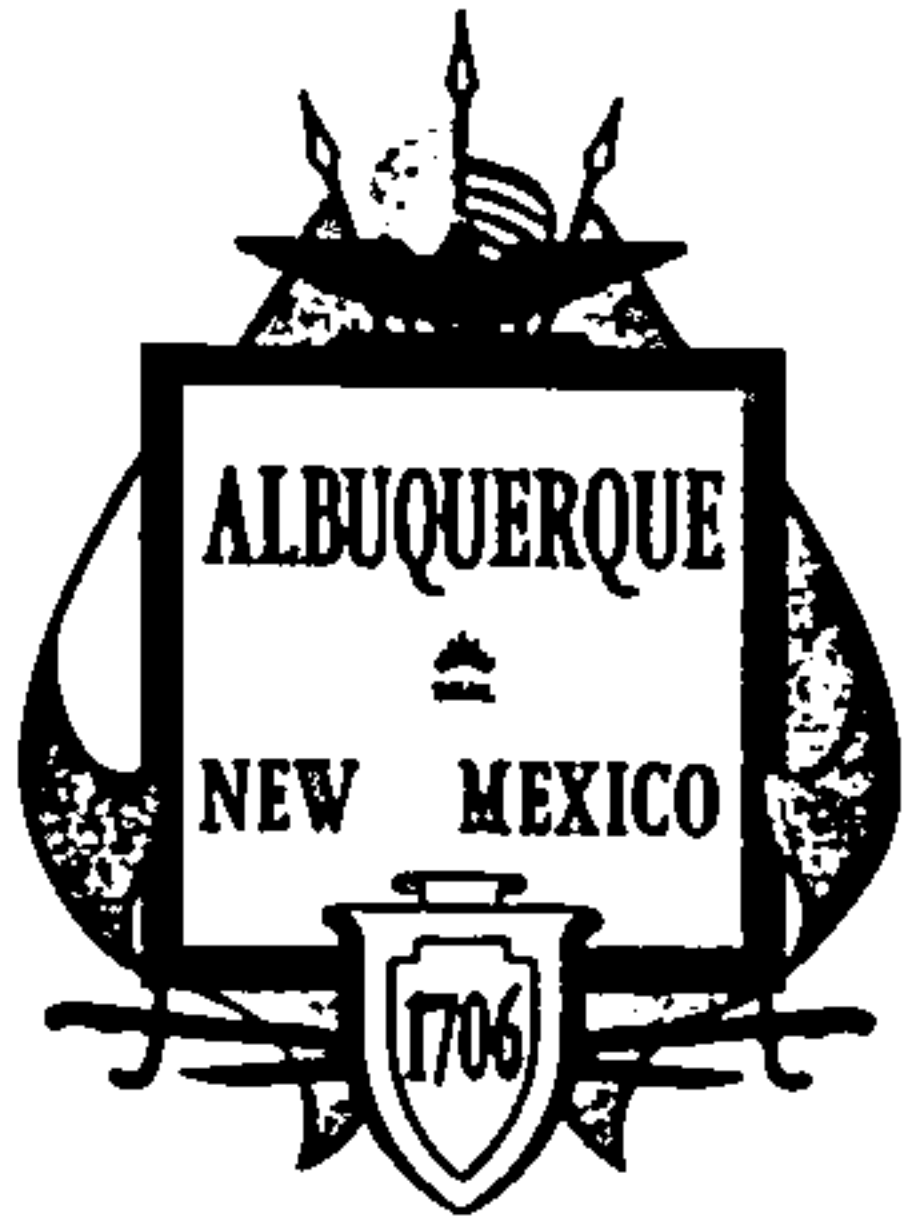




City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

***Planning Department
Transportation Development Services Section***

August 27, 2003

Bret G. Wahlen, P.E.
2010 North Redwood Road
P.O. Box 16747
Salt Lake City, Utah 84116

Re: Certification Submittal for Final Building Certificate of Occupancy for
Smith's #427 Fuel, [L-23 / D15]
200 Tramway NE
Engineer's Stamp Dated 08/27/03

Dear Mr. Wahlen:

The TCL / Letter of Certification submitted on August 27, 2003 is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to the Building and Safety Section.

Sincerely,

Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

D15

PROJECT TITLE: Smith's # 427 FuelDRB #: 1001565EPC#: 01EPC-01544ZONE MAP/DRG. FILE #: L-23-2, ~~1002~~

WORK ORDER#:

LEGAL DESCRIPTION: Tract J-1 of Rpt of Four Hills Village Shopping Center and Apt. ComplexCITY ADDRESS: 200 Trammis SEENGINEERING FIRM: Great Basin EngineeringADDRESS: 2010 N. Redwood Rd.CITY, STATE: SLC, UT 84116CONTACT: Robert SchmidtPHONE: (801) 521-8529

ZIP CODE:

OWNER: Smith's Food + DrugADDRESS: 1550 S. Redwood Rd.CITY, STATE: SLC, UTCONTACT: Roger GoughPHONE: (801) 974-1529ZIP CODE: 84104ARCHITECT: Galloway Romero

ADDRESS:

CITY, STATE: ?

CONTACT:

PHONE:

ZIP CODE:

SURVEYOR: -

ADDRESS:

CITY, STATE:

CONTACT:

PHONE:

ZIP CODE:

CONTRACTOR: Lto Construction

ADDRESS:

CITY, STATE:

CONTACT:

PHONE:

ZIP CODE:

CHECK TYPE OF SUBMITTAL:

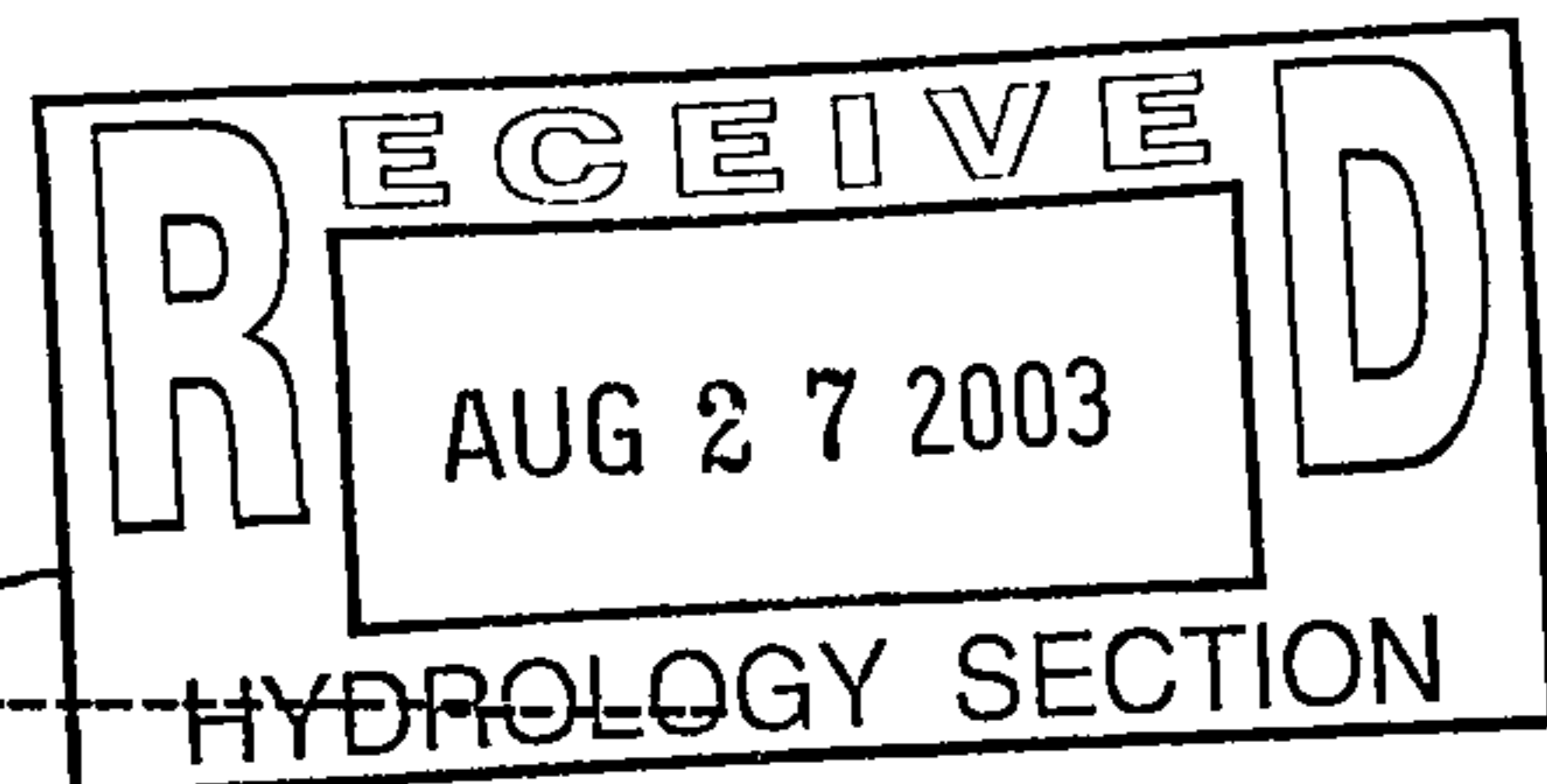
- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1" SUBMITTAL, *REQUIRES TCL or equal*
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
☐ CLOMR/LOMR
☒ TRAFFIC CIRCULATION LAYOUT (TCL)
☒ ENGINEERS CERTIFICATION (TCL)
☒ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY (PERM.)
☐ CERTIFICATE OF OCCUPANCY (TEMP.)
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
☐ NO
☐ COPY PROVIDED

DATE SUBMITTED: 8-27-03BY: W. H. S. / H.

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. Conceptual Grading and Drainage Plan: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. Drainage Plans: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. Drainage Report: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

Carlos Monoya
 Nilo Salgado

To	Robert Schmidt	From	Nilo Salgado
Co./Dept.		Co.	City of Allog.
Phone #	(801) 521-8527	Phone #	(505) 924 3630
Fax #	(801) 521-9551	Fax #	

GREAT BASIN ENGINEERING - South

2010 North Redwood Road • P.O. Box 16747 • Salt Lake City, Utah 84116
(801) 521-8529 • (801) 394-7288 • Fax (801) 521-9551



CONSULTING ENGINEERS
AND LAND SURVEYORS

August 26, 2003

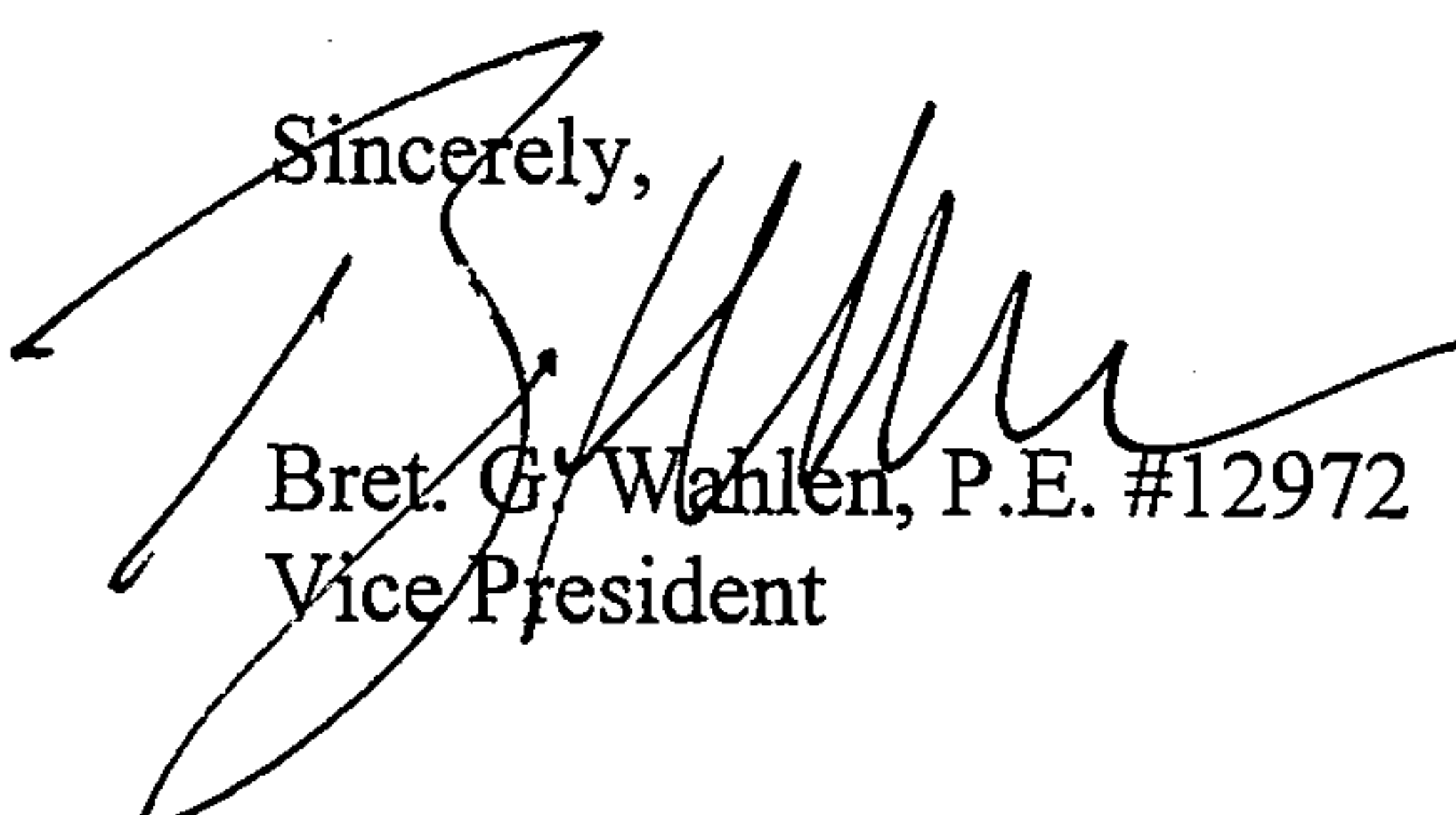
Nilo Salgado
City of Albuquerque
Public Works Department
Dev. & Bldg Services Center
600 2nd Street NW
Albuquerque, NM 87102

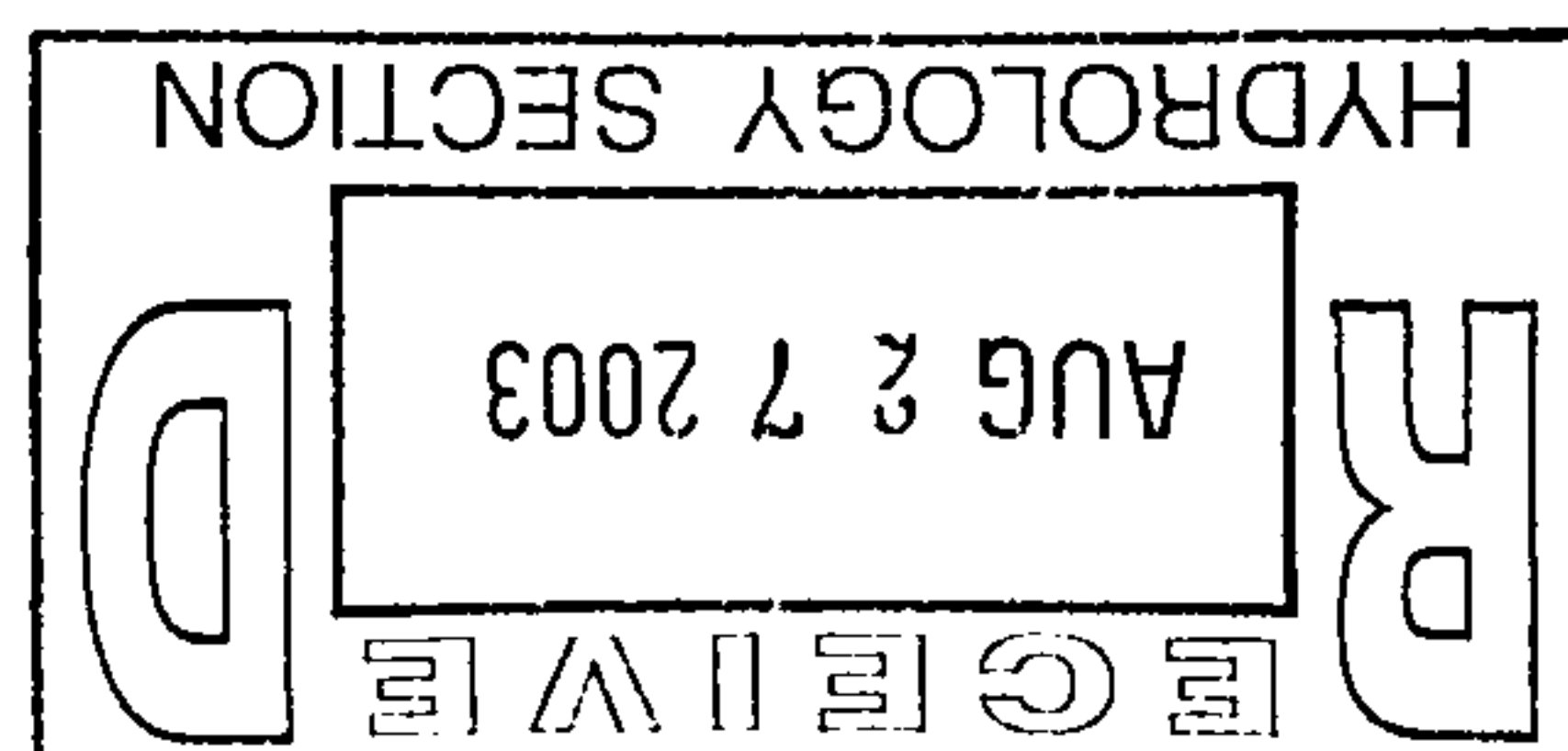
Re: Smith's #427 Fuel Traffic Compliance Letter
DRB Project # 1001565

Dear Nilo,

I Bret G. Wahlen, New Mexico P.E. #12972, hereby certify that this project has been built in substantial compliance with the DRB approved site plan, which is attached. This certification is submitted in support of a certificate of occupancy.

Sincerely,


Bret G. Wahlen, P.E. #12972
Vice President





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 26, 2002

Bret Wahlen, PE
Great Basin Engineering
2010 N. Redwood Rd., P.O. Box 16747
Salt Lake City, Utah 84116

**RE: Smith's #427 Fuel Center Drainage Report (L23-D15)
Engineer's Stamp Dated October 29, 2002**

Dear Mr. Wahlen:

Based on the information contained in your submittal dated October 31, 2002, the above referenced plan is approved for Site Plan for Building Permit action by the DRB and for Building Permit. Please include copy in construction sets. Prior to Certificate of Occupancy approval, an Engineer's Certification per the Development Process Manual will be required.

If you have any questions, please call me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Sr. Engineer, Planning Dept.
Development and Building Services

C: File

DRAINAGE INFORMATION SHEET
(REV. 11/01/2001)

L-23/D15

PROJECT TITLE: Smith's #427 Fuel Center ZONE MAP/DRG. FILE # L-23-2, L-22-2
DRB #: _____ EPC#: 100/565/01ERC-01544 WORK ORDER#: _____

LEGAL DESCRIPTION: J-1, Replat of Four Hills Village Shopping Center
CITY ADDRESS: 200 Tramway Blvd SE

ENGINEERING FIRM: Great Basin Engineering
ADDRESS: 2010 N. Redwood Rd
CITY, STATE: Salt Lake City, UT 84116

CONTACT: Robert Schmidt
PHONE: (801) 521-8529
ZIP CODE: 84116

OWNER: Smith's Food + Drug
ADDRESS: 1550 S. Redwood Rd.
CITY, STATE: Salt Lake City, UT 84104

CONTACT: Roger Gough
PHONE: (801) 974-1529
ZIP CODE: 84116

ARCHITECT: Galloway Romero
ADDRESS: 5350 DTC Parkway
CITY, STATE: Englewood, CO 80111

CONTACT: Dave Jones
PHONE: (303) 770-8884
ZIP CODE: 80111

SURVEYOR: Great Basin Engineering
ADDRESS: See Above
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CONTRACTOR: To Be Determined
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ ENGINEERS CERTIFICATION (TCL)
☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☒ S. DEV. PLAN FOR SUB'D. APPROVAL
☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
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☐ CERTIFICATE OF OCCUPANCY (PERM.)
☐ CERTIFICATE OF OCCUPANCY (TEMP.)
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
☐ NO
☐ COPY PROVIDED

RECEIVED
OCT 31 2002
HYDROLOGY SECTION

DATE SUBMITTED: 10/31/02

BY: Robert Schmidt

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

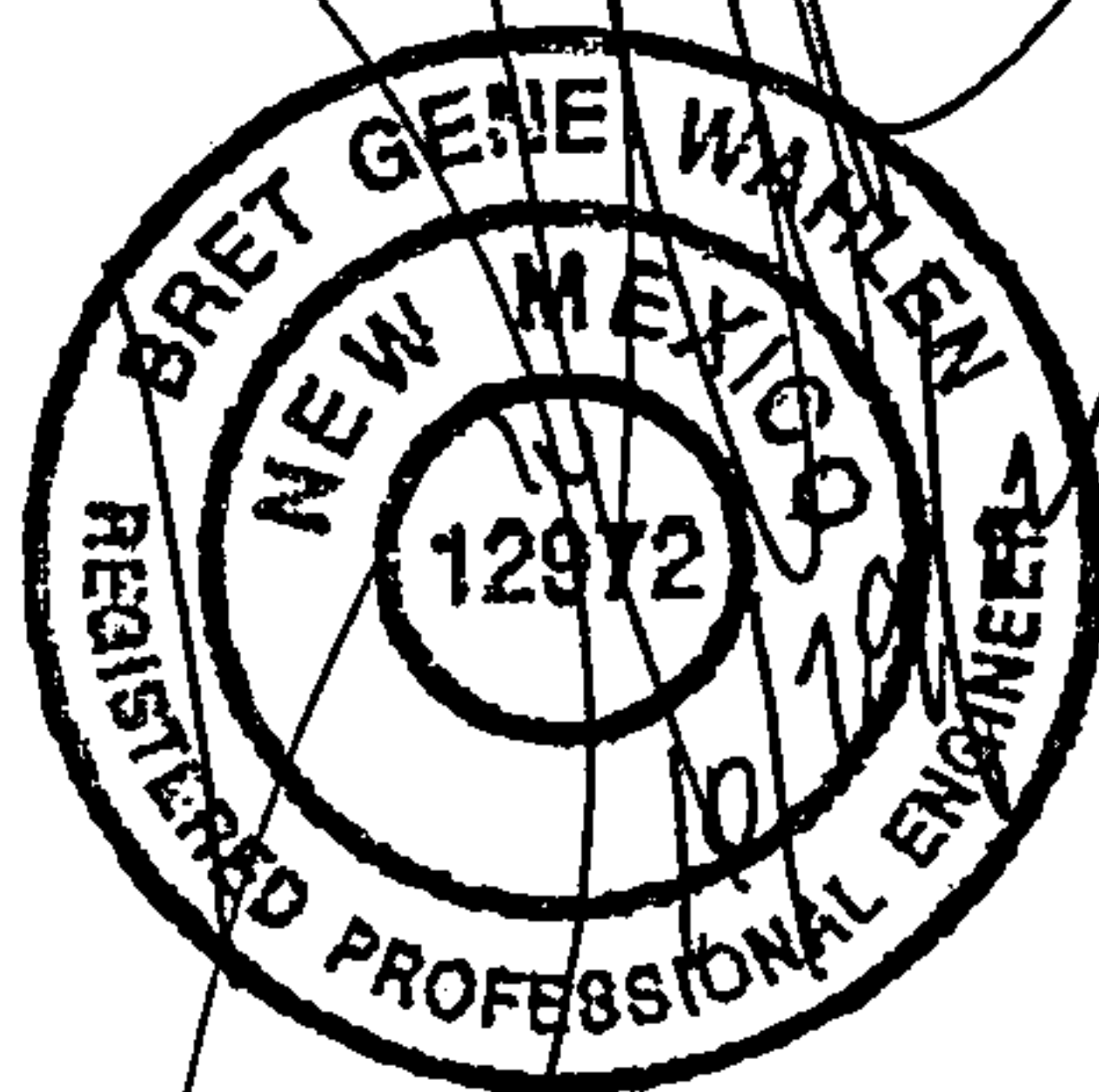
1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5)
3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or

R **EC** **EIVE** **D**
OCT 31 2002
HYDROLOGY SECTION

Drainage Report
Smith's #427 Fuel Center

Tramway & Central
Albuquerque, New Mexico

October 29, 2002



Prepared For:
Smith's Food & Drug
1550 South Redwood Road
Salt Lake City, UT 84104



CONSULTING ENGINEERS &
LAND SURVEYORS

GREAT BASIN ENGINEERING - South

2010 North Redwood Road • P.O. Box 16747 • Salt Lake City, Utah 84116
(801) 521-8529 • (801) 394-7288 • Fax (801) 521-9551 • E-mail gbes@xmission.com

GREAT BASIN ENGINEERING - South

2010 North Redwood Road • P.O. Box 16747 • Salt Lake City, Utah 84116
(801) 521-8529 • (801) 394-7288 • Fax (801) 521-9551



CONSULTING ENGINEERS
AND LAND SURVEYORS

October 30, 2002

Carlos Montoya P.E.
City of Albuquerque
Public Works Department
600 2nd Street NW
Albuquerque, NM 87102

Re: Smith's #427 Fuel Center, Tramway and Central

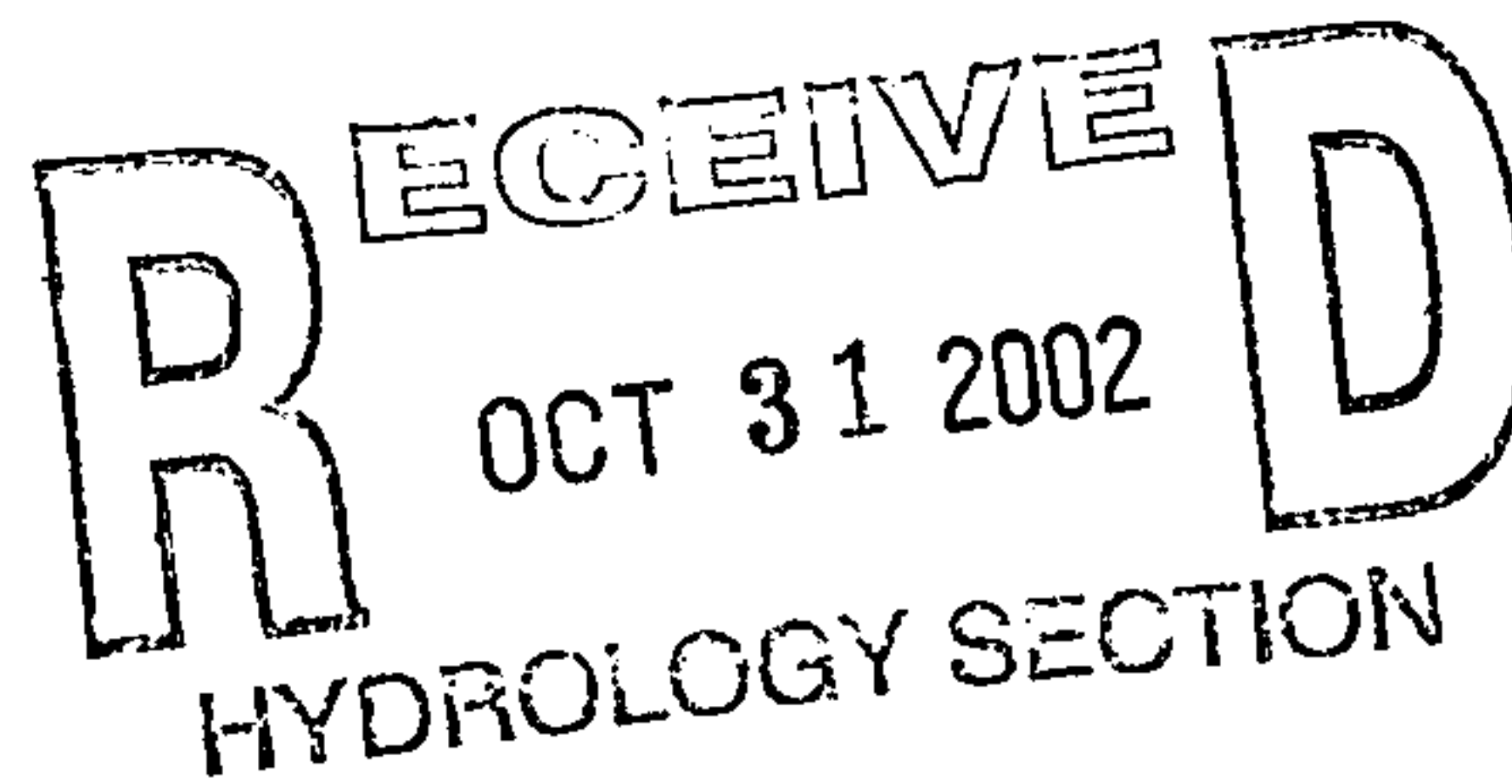
Dear Carlos,

Please find attached the drainage study for the proposed Smith's Fuel Center at their site on Tramway and Central. Should you have any questions or need further information, please let me know.

Your help on this project is greatly appreciated.

Sincerely,

Robert Schmidt
Project Manager





CONSULTING ENGINEERS
AND LAND SURVEYORS

GREAT BASIN ENGINEERING – South

LETTER OF TRANSMITTAL

2010 North Redwood Road • P.O. Box 16747 • Salt Lake City, Utah 84116
(801) 521-8529 • (801) 394-7288 • Fax (801) 521-9551

To: City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Date: 10/30/02	Job No.: Smc427F
Attention: Carlos Montoya	
Re: Smith's #427 Fuel Center Drainage	

WE ARE SENDING YOU ☒ Attached ☐ Reproducible originals

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Disk ☐ Specifications

☐ Addendum ☐ Change order ☐ _____

COPIES	DATE	DESCRIPTION
1	10/29/02	Drainage Report for the Smith's #427 Fuel Center

THESE ARE TRANSMITTED as checked below:

- ☒ For approval ☐ Approved as submitted ☐ Please sign and return
☐ For your use ☐ Approved as noted
☐ As requested ☐ Returned for corrections
☐ For review and comment ☐ Other _____

REMARKS

Shipping Instructions:

- ☒ Fed Ex (Standard) (Priority overnight) ☐ U.S. Mail ☐ Hand Delivery
Phone #: (505) 924-3982
☐ Priority Mail ☐ Other _____

Copy to: _____

From: ROBERT SCHMIDT

Dear Mr. Walker.

Base

info

10-31-02

the above plan is approved for SDPBP action by DRB
and also approved for BP. Plan incl. copy in construction
sets.

Table of Contents

Introduction		1
Purpose		1
Existing Conditions		1
Proposed Conditions		1
Conclusions		1
Vicinity Map		2
Figure 1 – Site Plan		3

Map Pocket

- Overall Existing On-Site Grading Plan
- Detailed Gas Station Grading Plan
- Detailed Gas Station Utility Plan

Appendix A

- Approved Drainage Report for Smith's Store #427, Central Avenue and Tramway Boulevard, Albuquerque, New Mexico, October 23, 1991.

I. Introduction

Smith's Food and Drug has been approved by the EPC to construct a Fuel Center in the northeast corner of the parking lot of their existing store on Tramway and Central (See Vicinity Map). The Fuel Center consists of a 120' x 24' overhead canopy, 4 multiple product dispensers, and an 8' x 14' kiosk for a the pay attendant. The location of the site is shown on Figure 1.

II. Purpose

The purpose of this report is to verify that the existing drainage patterns will remain the same and satisfy the City requirement for drainage study.

III. Existing Conditions

Currently the fuel pad consists of paved parking areas. There are three landscape planters that will be removed and relocated to the rear of the canopy.

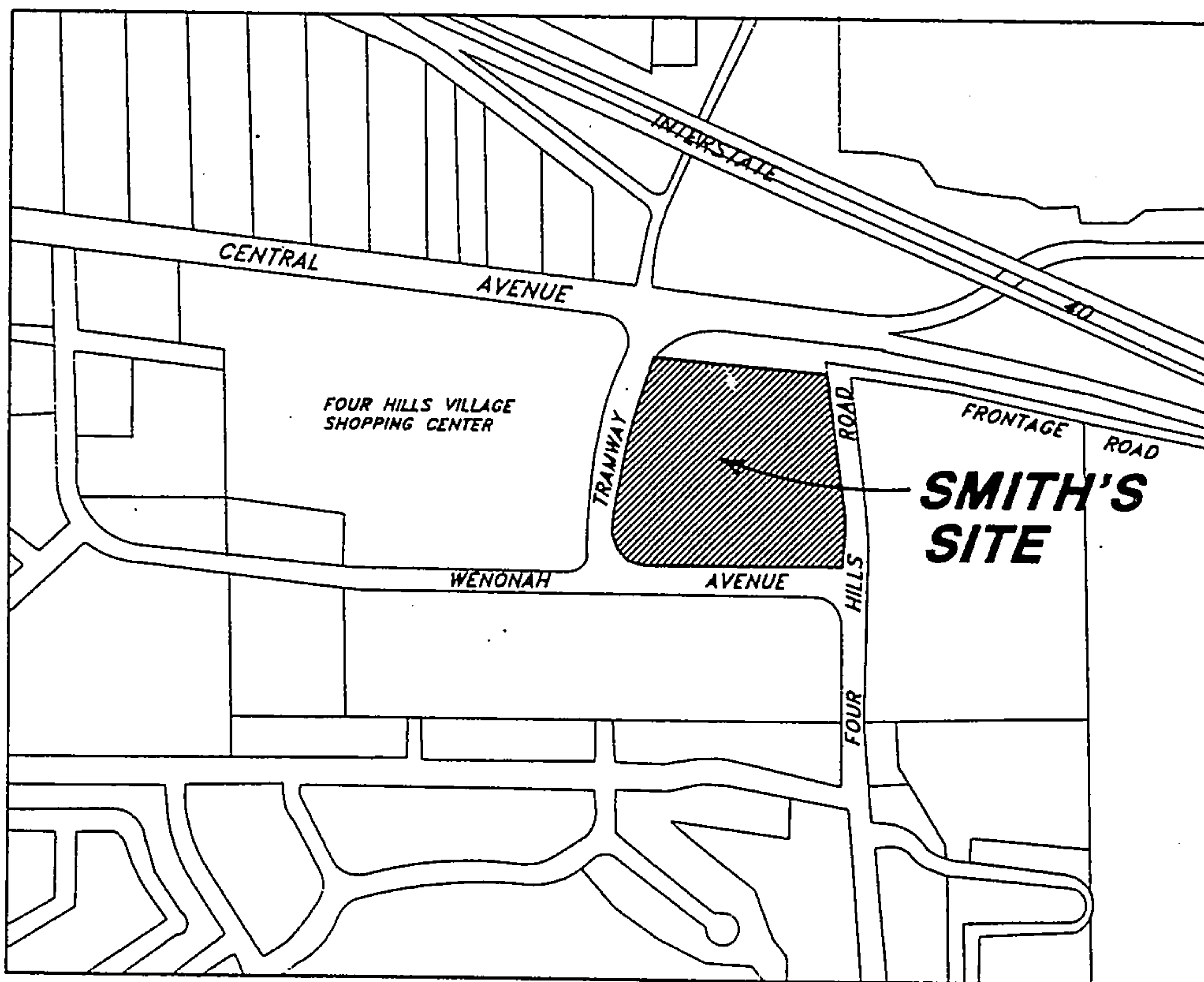
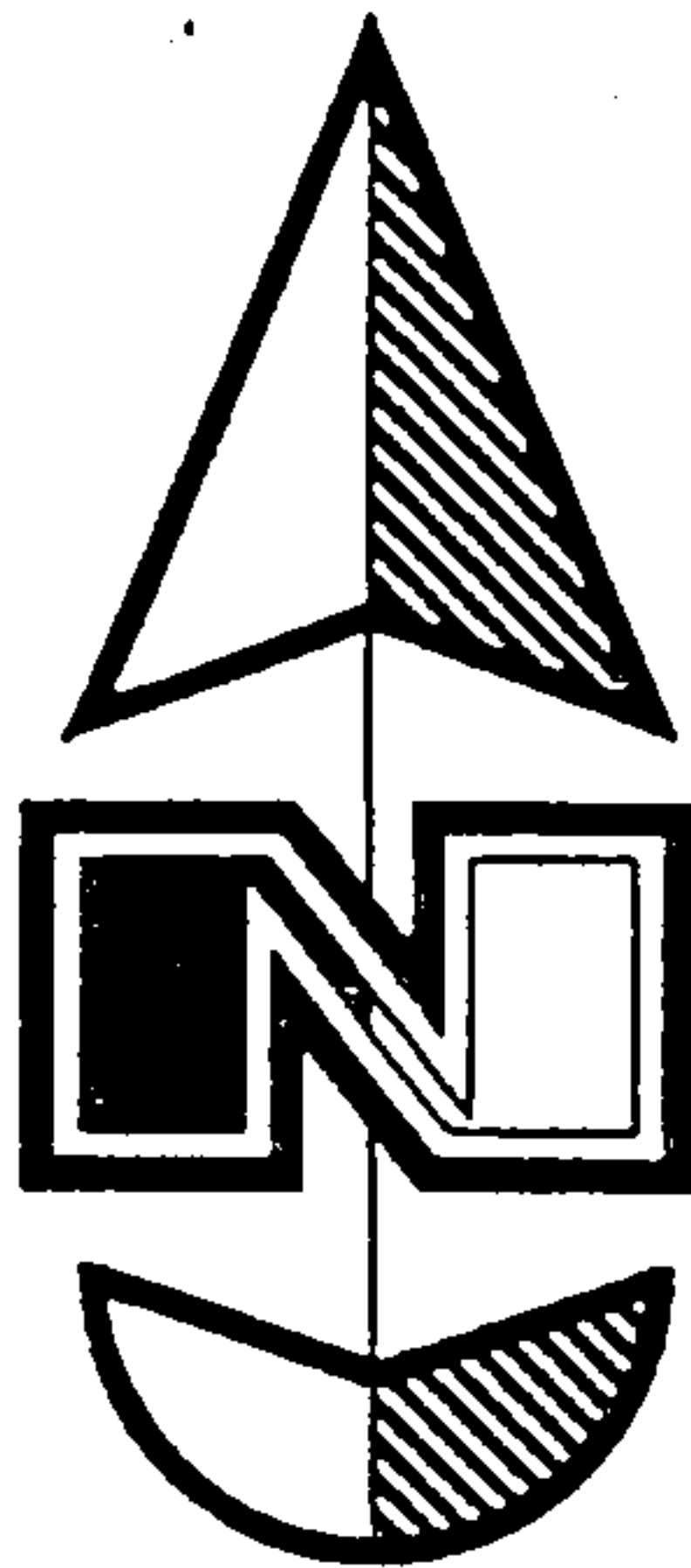
The approved drainage study for the site was completed in 1991 and is attached herein. That study indicated that the development of the store was going to contribute a peak flow of 31.88 cfs to the Tramway East Drainage Channel and a combined 0.62 cfs to the City Right of Way at the two driveway locations on Tramway and Wenonah. The approved drainage study also indicates that the piping and catch basins have been designed to collect and convey the 100-year storm with virtually no surface ponding. There is no on-site detention. There are no off-site flows that negatively impact this site.

IV. Proposed Conditions

The fuel pad and construction will match the existing asphalt grades, essentially removing asphalt and replacing it with concrete. The flow patterns, peak flows, and volumes remain identical. There will be a trench drain installed at the gas station to capture runoff from the pad and route the flows through a grease trap. A topographic map of the site and utility plan indicating storm drain locations has been included.

V. Conclusions

This project conforms to Albuquerque City Standards. There is no change in the existing flows as mentioned in Section IV.



Vicinity Map

Zone Atlas Map No. L-23

Appendix A

DRAINAGE REPORT
FOR
SMITH'S STORE NO. 427
CENTRAL AVENUE AND TRAMWAY BOULEVARD
ALBUQUERQUE, NEW MEXICO

October 23, 1991

Prepared By:

Great Basin Engineering, Inc.

for

Smith's Food and Drug Center's, Inc.



TABLE OF CONTENTS

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Pipe Sizing and Inlet Grate Capacity's	
Appendix 'C'	
Drainage Maps	
DPM Plates	

DRAINAGE REPORT FOR SMITH'S STORE NO. 427
ALBUQUERQUE, NEW MEXICO

INTRODUCTION

Smith's Food and Drug Center's Inc., is developing a Super-Market in Albuquerque, New Mexico. The Store is located on the East side of Tramway Boulevard bounded by Central Avenue on the North and Wenonah Avenue on the South, the Tramway East Drainage Channel runs from North to South along the Property's East boundary.

The Property was previously the Site of a Hotel, which has been razed. However, many of the on site improvements such as curb, gutter, concrete sidewalks and asphalt paving still remain. These existing improvements will be demolished and removed from the site. The site contains 8.33 Acres and the proposed construction will consist of a 77,877 square-foot Grocery Store with 440 parking stalls and approximately 63,765 square-feet of landscaping.

General

Currently, about 52% of the existing site drains to the Southwest Corner of the Site and the City's Storm Drainage System collects the runoff and conveys it to a storm drain flowing South within Tramway Boulevard. Approximately 41% of the existing site drains directly into the Tramway East Drainage Channel.

The Proposed Design will require a considerable amount of excavation and soil removal (average excavation of about 5 feet required over the entire site). This design will provide several inlets in each of Drainage Areas 'A', 'B', and 'C' accounting for 97.5% of the peak runoff generated from the site, which will be directed into the Tramway East Drainage Channel. Area 'D' consists entirely of Landscaping and sheet flows directly into the Tramway East Drainage Channel. Area 'E' consists primarily of Landscaping with only a small amount of hard surfacing (the driveway onto Wenonah Avenue), which sheet flows into the curb and gutter within Wenonah Avenue. Similarly, Area 'F' contains a small portion of the driveway onto Tramway Boulevard with the remainder of the area in landscaping, which sheet flows into the Tramway Boulevard Right-of-Way.

The relative elevations of the finished development will still be significantly higher than the adjacent properties, with the exception of the area to the North (Central Avenue), which only allows a small area (Area 'G' - 0.55 Acres) to drain onto the project site. Area 'G' has been accounted for in the overall drainage study.

The Proposed Design will significantly reduce the amount of runoff directed to the storm drainage system within Tramway Boulevard, while increasing the flow in the Tramway East Drainage Channel.

The flows from the site are unrestricted and the designed drainage system has the capacity to convey the peak flows from a 100 year, six-hour duration storm through the drainage system, with no on-site detention.

DESIGN INFORMATION

In accordance with the Development Process Manual (DPM) for the City of Albuquerque, the "Rational Method" was used to calculate the peak flows for each Drainage Area for a 100 year return period with a 6-hour storm duration. The site was evaluated in its existing condition (see Sheets 1, 2 and 3 of Calculations) and for the proposed development (see Sheets 4, 5 and 6 of Calculations). Coefficients of Runoff were established from Plate 22.2 C-1 at the DPM for silty, slightly gravelly sand (SCS Soils Group A). Time of Concentrations were determined from Plat 22.2 B.1 of the DPM. The Rainfall Intensities were determined from Plat 22.2 D-1 and Plate 22-2 D-2 of DPM.

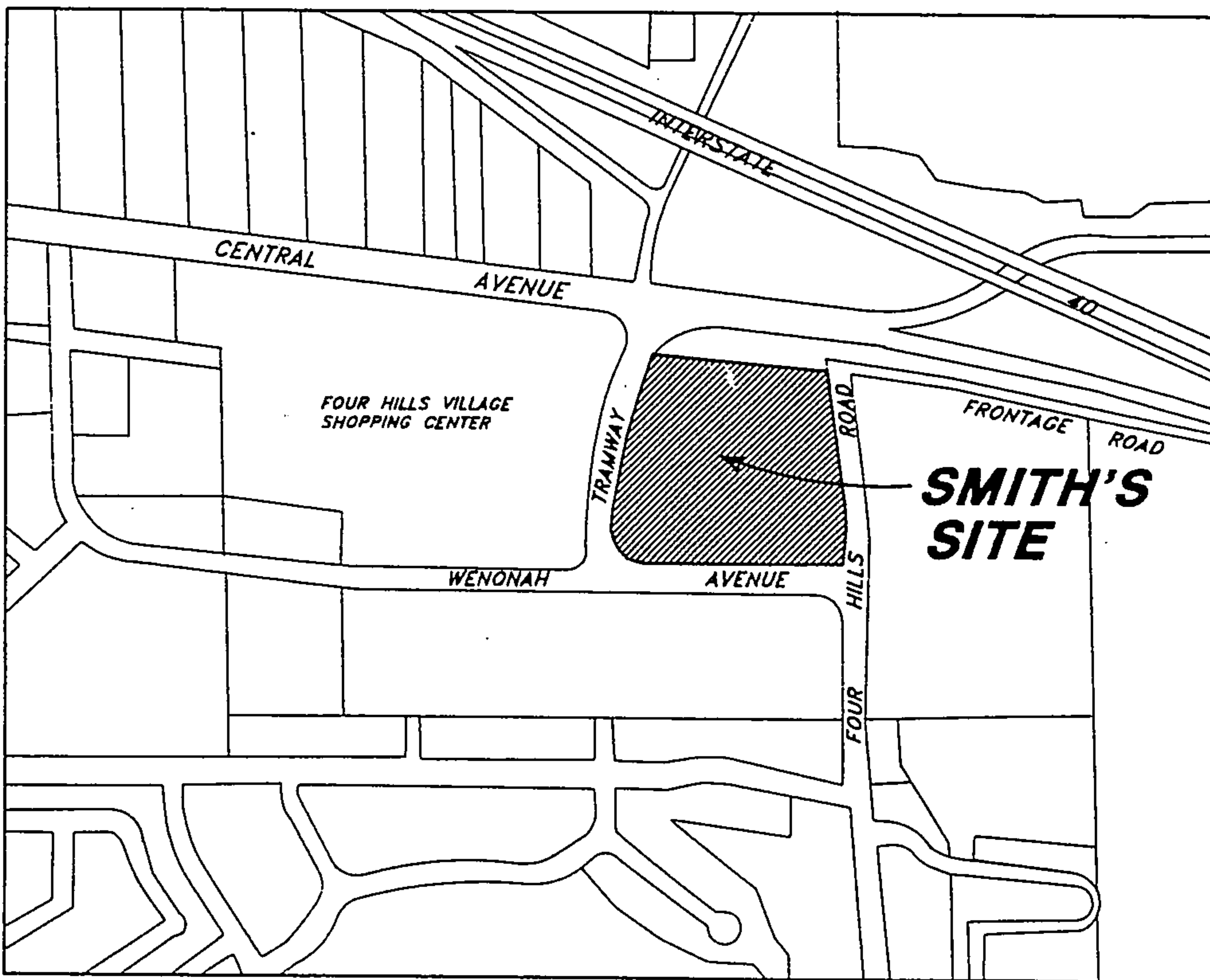
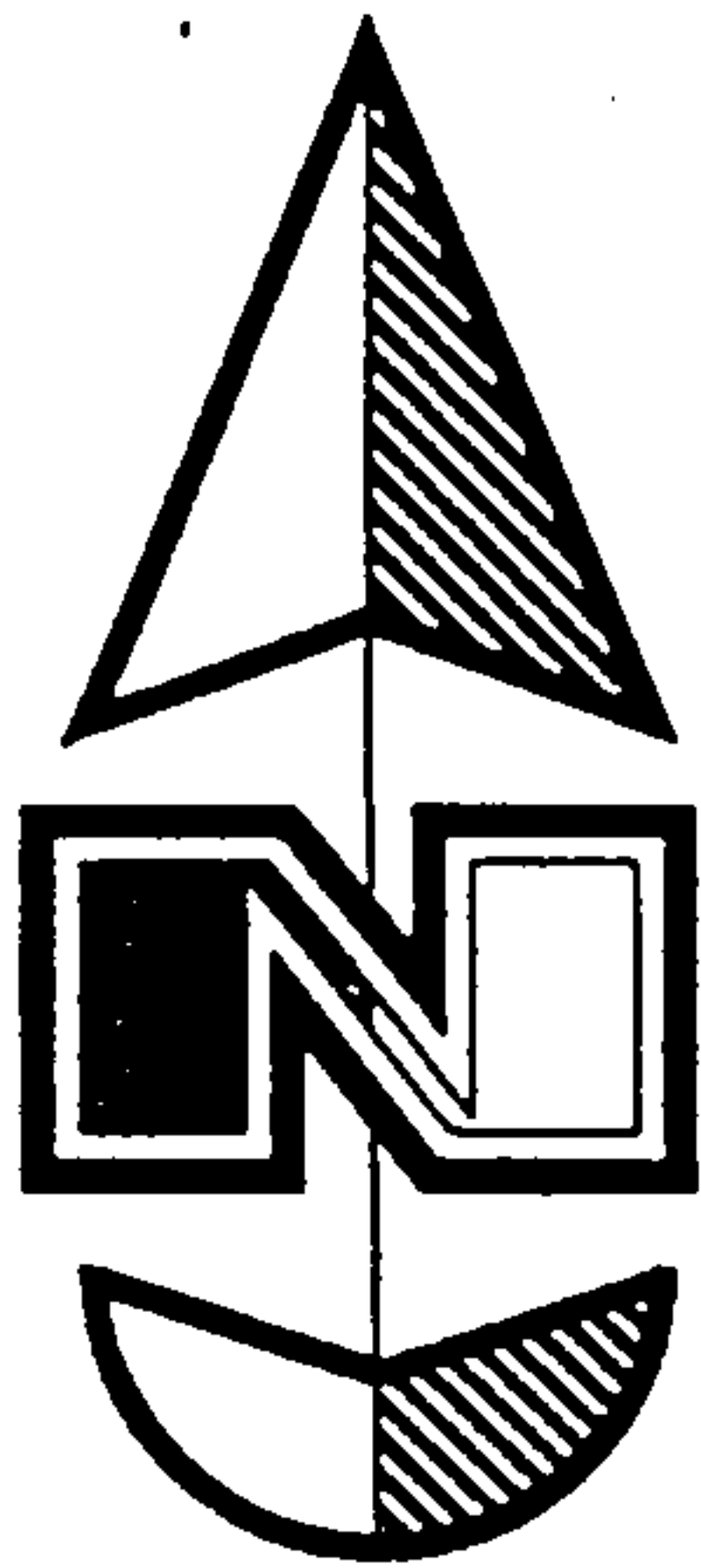
The finished development will generate a higher peak flow than the site left in it's existing condition (32.70 cfs vs 15.58 cfs). However, as mentioned earlier, 97.5% of the post-development peak flow (31.88 cfs) will be collected and piped directly to the Tramway East Drainage Channel, which significantly reduces the flow onto Tramway Boulevard.

Piping has been sized using "Mannings Equation" for a full flowing pipe with no head (see Sheet 7 of Calculations). Each on site catch basin was evaluated for it's grate capacity using Plat 22.3 D-5 of the DPM (see Sheet 8 of Calculations).

SUMMARY

The Storm Drainage System has been designed to collect virtually all the Storm Water runoff generated by the construction of the Smith's Store during a 100 year, 6-hour storm and convey the runoff to the Tramway East Drainage Channel. The Design does increase the over peak runoff from the site, but significantly reduces the direct runoff onto the City's Right-Of-Ways (11.26 cfs to 0.62 cfs). All piping has been designed to carry the 100-year peak flows without head on the system. The catch basins and grates have been designed to collect the surface runoff with virtually no surface ponding.

All Calculations were prepared based on Guidelines from the City of Albuquerque's Development Process Manual - Volume 2 (Design Criteria).



Vicinity Map

Zone Atlas Map No. L-23

APPENDIX 'A'

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 1 OF 1

CALCULATED BY MEB DATE 23 Sept. 1991

CHECKED BY _____ DATE _____

SCALE _____

STORM WATER STUDY

Site:

SMITH'S STORE #427
Central & Tramway
Albuquerque, New Mexico

EXISTING CONDITIONS - 23 Sept 1991

Drainage Areas - See Attached Drawing "Topographical Survey"

Area #1 - 4.03 ac.	}	8.33 ac.
Area #2 - 3.27 ac.		
Area #3 - 0.38 ac.		
Area #4 - 0.57 ac.		
Area #5 - 0.08 ac.		
Area #6 - 0.55 ac.		- offsite draining onto Smith's site

Coefficient of Runoff (Plate 22.2 (-1))

Soils are silty, slightly gravelly sands
(SCS Soils Group A)

Area #1	(73% impervious)	C = 0.60
Area #2	(7% impervious)	C = 0.20
Area #3	(44% impervious)	C = 0.39
Area #4	(4% impervious)	C = 0.18
Area #5	(5% impervious)	C = 0.19
Area #6	(0% impervious)	C = 0.16

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 2 OF

CALCULATED BY MFB DATE 23 Sep 1991

CHECKED BY DATE

SCALE

Time of Concentration

Plate 22.2 B-1

Area #1 - 50'± over bare ground @ $S = 8.8\% \pm$ $V = 3.0 \text{ fps}$ $t_c = 0.3 \text{ min.}$
 120'± over paving @ $S = 2.3\% \pm$ $V = 2.1 \text{ fps}$ $t_c = 0.95 \text{ min.}$
 645'± over bare ground @ $S = 1.5\% \pm$ $V = 0.72 \text{ fps}$ $t_c = 14.95 \text{ min.}$
 $t_c = 16.2 \text{ min.}$

Area #2 - 60'± over bare ground @ $S = 6.7\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.4 \text{ min.}$
 68'± over paving @ $S = 2.0\% \pm$ $V = 1.92 \text{ fps}$ $t_c = 0.6 \text{ min.}$
 370'± over bare ground @ $S = 4.2\% \pm$ $V = 1.15 \text{ fps}$ $t_c = 5.4 \text{ min.}$
 $t_c = 6.4 \text{ min.}$

Area #3 - 190'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 1.2 \text{ min.}$

Area #4 - 50'± over bare ground @ $S = 30\% \pm$ $V = 6.0 \text{ fps}$ $t_c = 0.1 \text{ min.}$

Area #5 - 15'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.1 \text{ min.}$

Area #6 - 210'± over bare ground @ $S = 3.8\% \pm$ $V = 1.12 \text{ fps}$ $t_c = 3.1 \text{ min.}$

Assume Minimum t_c of 10 minutes for small Drainage Areas

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22.2 D-2
for 100 year, 6-hour rainfall

@ $t_c = 10.0 \text{ min}$ $i = 5.38 \text{ in/hr}$
 @ $t_c = 16.2 \text{ min}$ $i = 4.20 \text{ in/hr}$
 @ $t_c = 30.0 \text{ min}$ $i = 3.05 \text{ in/hr}$
 @ $t_c = 60.0 \text{ min}$ $i = 2.06 \text{ in/hr}$
 @ $t_c = 120.0 \text{ min}$ $i = 1.48 \text{ in/hr}$
 @ $t_c = 180.0 \text{ min}$ $i = 1.20 \text{ in/hr}$
 @ $t_c = 240.0 \text{ min}$ $i = 1.04 \text{ in/hr}$

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #427 - Albuquerque
SHEET NO. 3 OF
CALCULATED BY MEB DATE 23 Sep 1991
CHECKED BY DATE
SCALE

Peak Flows - Use "Rational Method" $Q = CiA$

Area #1 - $Q = CiA = (0.60)(4.2)(4.03) = 10.16 \text{ cfs}$
Area #2 - $Q = CiA = (0.20)(5.38)(3.27) = 3.52 \text{ cfs}$
Area #3 - $Q = CiA = (0.39)(5.38)(0.38) = 0.80 \text{ cfs}$
Area #4 - $Q = CiA = (0.18)(5.38)(0.57) = 0.55 \text{ cfs}$
Area #5 - $Q = CiA = (0.19)(5.38)(0.08) = 0.08 \text{ cfs}$
Area #6 - $Q = CiA = (0.16)(5.38)(0.55) = 0.47 \text{ cfs}$

Comments:

- Areas #1, #5 & #6 drain to an existing Storm Water Collection System at the intersection of Tramway Blvd and Menorah Ave.
- Areas #2, #3 & #4 drain into the Tramway East Drainage Channel
- Area #1, #4, #5 & #6 drain into the City's Right-of-Ways and are collected as mentioned above.
Peak Runoff during a 100 year - 6 hour storm entering R.O.W. is 11.26 cfs.

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #227 - Albuquerque

SHEET NO. 4 OF

CALCULATED BY MEB DATE 23 Sept 1991

CHECKED BY DATE

SCALE

STORM WATER STUDY (cont)

PROPOSED CONDITIONS

Drainage Areas - see Attached Drawing "Conceptual Plan - Grading & Drainage"

Area A - 2.75 ac	}	8.33 ac.
Area B - 4.53 ac		
Area C - 0.23 ac		
Area D - 0.23 ac		
Area E - 0.44 ac		
Area F - 0.10 ac.		
Area G - 0.55 ac		- offsite

Coefficient of Runoff (Plate 22.2 C-1)

Soils are silty, slightly gravelly sands
(SCS Soils Group A)

Area A	(95% impervious)	C = 0.85
Area B	(90% impervious)	C = 0.74
Area C	(67% impervious)	C = 0.53
Area D	(0% impervious)	C = 0.16
Area E	(13% impervious)	C = 0.22
Area F	(5% impervious)	C = 0.19
Area G	(0% impervious)	C = 0.16

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 5 OF

CALCULATED BY MEB DATE 23 Sept. 1991

CHECKED BY DATE

SCALE

Time of Concentration

(Plate 22.2 B-1)

Area A - 610 ft[±] over paving @ $S = 2.9\%$ $V = 2.59 \text{ fps}$ $t_c = 3.9 \text{ min.}$

Area B - 25' $\pm$ over grass @ $S = 3.0\% \pm$ $V = 3.8 \text{ fps}$ $t_c = 0.1 \text{ min.}$
715' $\pm$ over paving @ $S = 2.3\% \pm$ $V = 2.05 \text{ fps}$ $t_c = 5.8 \text{ min.}$
 $t_c = 5.9 \text{ min.}$

Area C - 50' $\pm$ over grass/bareground @ $S = 8.2\% \pm$ $V = 2.0 \text{ fps}$ $t_c = 0.4 \text{ min.}$
250' $\pm$ over paving @ $S = 3.0\% \pm$ $V = 2.38 \text{ fps}$ $t_c = 1.8 \text{ min.}$
 $t_c = 2.2 \text{ min.}$

Area D - 60' $\pm$ over grass @ $S = 3.3\%$ $V = 1.08 \text{ fps}$ $t_c = 0.9 \text{ min.}$

Area E - 60' $\pm$ over grass @ $S = 8.3\% \pm$ $V = 2.0 \text{ fps}$ $t_c = 0.5 \text{ min.}$

Area F - 15' $\pm$ over grass @ $S = 6.3\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.1 \text{ min.}$

Area G - 210' $\pm$ over grass @ $S = 3.3\% \pm$ $V = 1.12 \text{ fps}$ $t_c = 3.1 \text{ min.}$

Assume Minimum t_c of 10 minutes for small drainage basins

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22.2 D-2
for 100 year, 6-hour rainfall

@ $t_c = 10.0 \text{ min}$

$i = 5.38 \text{ in/hr.}$

@ $t_c = 15.0 \text{ min.}$

$i = 4.38 \text{ in/hr.}$

@ $t_c = 30.0 \text{ min}$

$i = 3.05 \text{ in/hr.}$

@ $t_c = 60.0 \text{ min}$

$i = 2.06 \text{ in/hr.}$

@ $t_c = 120.0 \text{ min}$

$i = 1.48 \text{ in/hr.}$

@ $t_c = 180.0 \text{ min}$

$i = 1.20 \text{ in/hr.}$

@ $t_c = 240.0 \text{ min}$

$i = 1.04 \text{ in/hr.}$

GREAT BASIN ENGINEERING, INC

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OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 6

OF

CALCULATED BY MFB

DATE 24 Sept. 1991

CHECKED BY

DATE

SCALE

Peak Flows - Use "Rational Method" $Q = CiA$

Area A	-	$Q = CiA = (0.85)(5.38)(2.75) =$	12.58 cfs
Area B	-	$Q = CiA = (0.74)(5.38)(4.53) =$	18.03 cfs
Area C	-	$Q = CiA = (0.53)(5.38)(0.28) =$	0.80 cfs
Area D	-	$Q = CiA = (0.16)(5.38)(0.23) =$	0.20 cfs
Area E	-	$Q = CiA = (0.22)(5.38)(0.44) =$	0.52 cfs
Area F	-	$Q = CiA = (0.19)(5.38)(0.10) =$	0.10 cfs
Area G	-	$Q = CiA = (0.16)(5.38)(0.55) =$	0.47 cfs

Comments:

- Areas E & F drain into the City's Right-of-Ways and area collected by existing storm drainage collection in Tramway Blvd and Wenonah Ave.

Peak Runoff during 100 year - 6 hour storm entering R.O.W. is 0.62 cfs - considerably less than the 11.26 cfs that currently enters the R.O.W.

- Areas A, B, C & G are collected by storm drainage pipe and discharged into the Tramway East Drainage Channel

- Peak Runoff during 100 year - 6 hour storm is 31.88 cfs

- Area D sheet flows directly into the Tramway East Drainage Channel (only 0.20 cfs)

APPENDIX 'B'

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue

P.O. Box 9307

OGDEN, UT 84409

(801) 394-4515

JOB SMITH'S STORE No. 427 - Albuquerque

SHEET NO. 1 OF

CALCULATED BY MRB DATE 17 Oct. 1991

CHECKED BY DATE

SCALE

HYDRAULIC ANALYSIS

Pipe Sizing

Use Manning's Equation for a Full Flowing Pipe
(No Head):

$$Q = \frac{1.486}{n} A R^{2/3} S^{1/2}$$

$n = 0.013$ for Conc &
PVC Pipe.

Pipes have been designed to be at or below
their full flowing capacity with No Head.

Pipe Segment	Pipe Size	Pipe Slope	Pipe Capacity	Required Capacity	Comments
A-B	12" RCP	3.0%	6.17 cfs	0.60 cfs	okay
B-C	12" RCP	1.25%	3.98 cfs	0.80 cfs	okay
C-D	18" RCP	1.0%	10.51 cfs	10.25 cfs	okay
D-E	24" RCP	0.75%	19.59 cfs	18.30 cfs	okay
E-F	12" RCP	2.2%	5.28 cfs	0.50 cfs	okay
G-H	8" PVC	2.13%	1.76 cfs	0.10 cfs	okay
H-I	8" PVC	2.66%	1.97 cfs	0.10 cfs	okay
I-J	24" RCP	0.75%	19.59 cfs	19.40 cfs	okay
J-K	24" RCP	1.0%	22.62 cfs	22.66 cfs	okay
L-M	12" RCP	0.5%	2.52 cfs	2.33 cfs	okay
M-N	15" RCP	2.56%	10.34 cfs	9.22 cfs	okay
N-O	30" RCP	0.61%	32.03 cfs	31.83 cfs	okay

ALL PIPES HAVE THE CAPACITY TO CARRY THE
DESIGN 100-YEAR STORM RUNOFF OF THEIR
RESPECTIVE DRAINAGE AREA WITH NO HEAD ON THE PIPES.

HYDRAULIC GRADE LINE IS BELOW SOFFIT OF EACH PIPE

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #10. 427-Albuquerque

SHEET NO. 8 OF

CALCULATED BY MEB DATE 17 Oct 1991

CHECKED BY DATE

SCALE

Inlet Grate Capacities

All grates to Catch Basins have Been designed to accomodate a 100-year 5 6-hour storm.

<u>Inlet Box</u>	<u>Design Flow</u>	<u>Grate Capacity</u>	<u>Comments</u>
A	0.6 cfs	3.4 cfs	(1) [A] S = 2.8%
B	0.2 cfs	3.5 cfs	(1) [A] S = 3.0%
C	9.45 cfs	9.75 cfs	(2) S = 2.0%
D	8.05 cfs	9.75 cfs	(2) S = 2.0%
E	0.5 cfs	4.0 cfs	(1) [A] S = 4.0%
F	0.5 cfs	4.0 cfs	(1) [A] S = 4.0%
I	3.0 cfs	4.0 cfs	(1) [B] S = 1.0%
L	Negligible	3.8 cfs	(1) [A] S = 3.6%
M	0.8 cfs	3.8 cfs	(1) [A] S = 3.6%
K	Negligible	2.4 cfs	(1) [A] S = 1.1%

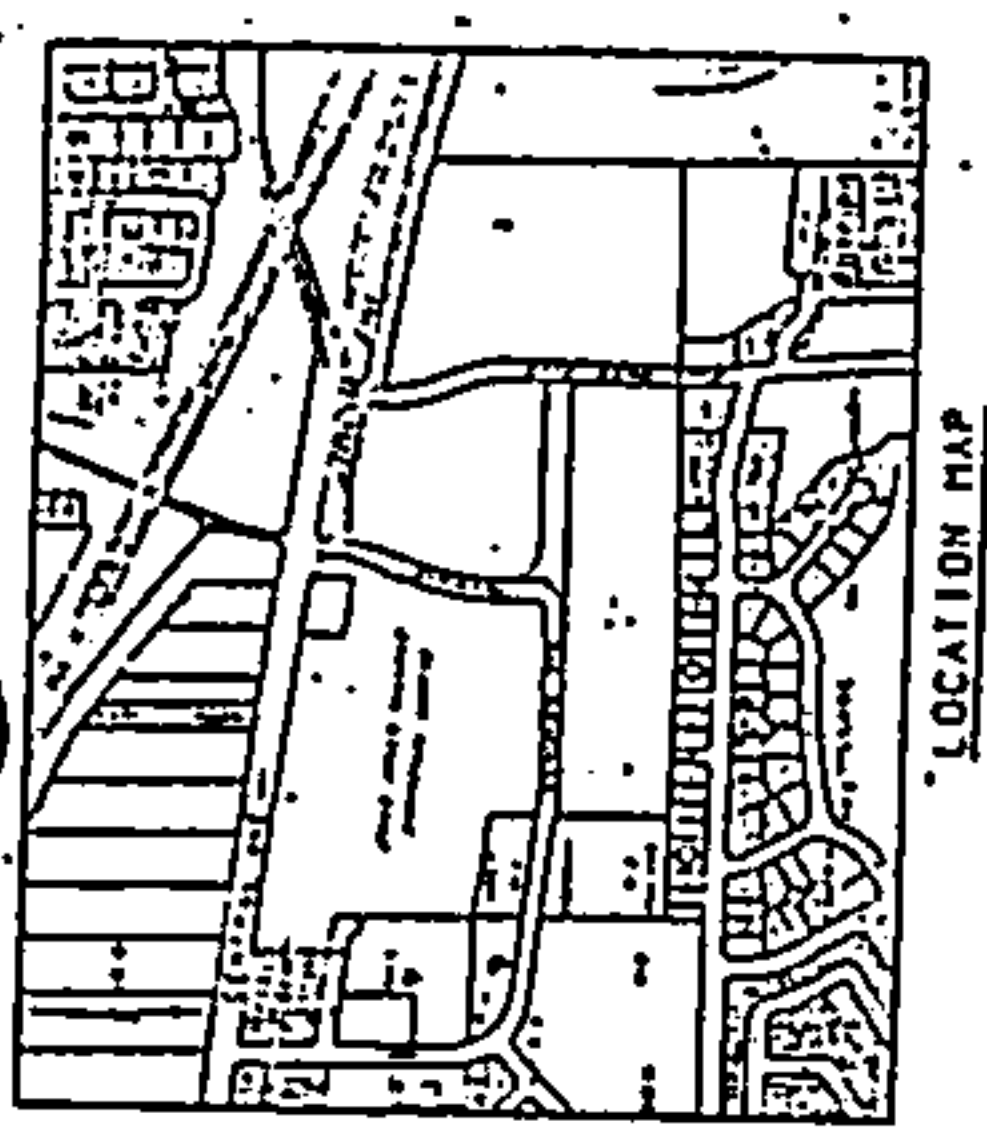
(1) Grate size and type similar to Albuquerque Type 'A' Catch Basin with Type 2 grating. Use Plate 22.3 D-5 of DPM Vol. 2.

[A] Assume Depth of Flow of 0.3 feet and Slope of gutter as shown in Comments:

[B] Assume Depth of Flow of 0.4 feet (which is still below Top of Curb $\approx$ 0.5 feet)

(2) Grate size for Inlets C & D are 36" x 46" approximately 50% larger than a standard Type 2 grate. Use Plate 22.3 D-5 for Type 2 grates with capacities adjusted proportionately for larger grate and assume a flow depth of 0.45 feet

APPENDIX 'C'



Four Hills Road

CHANNEL

DRAINAGE

TRAMWAY

Wenonah Avenue

AREA #6
0.55 ac.

AREA #1
4.03 ac.

AREA #3
0.38 ac.

AREA #2
3.27 ac.

AREA #4
0.57 ac.

AREA #5
0.08 ac.

BOULEVARD

TRAMWAY

Drainage Area Map "EXISTING"



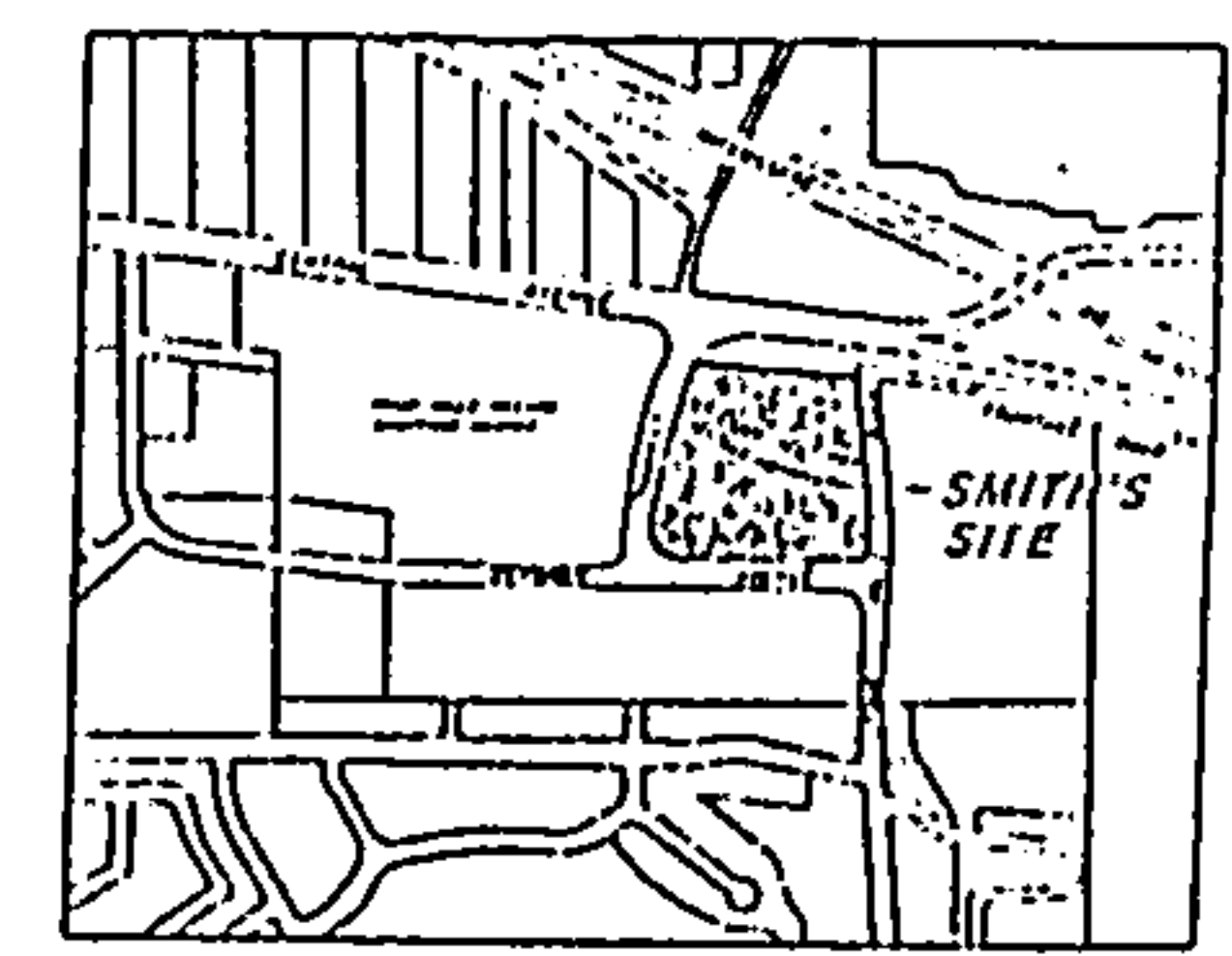
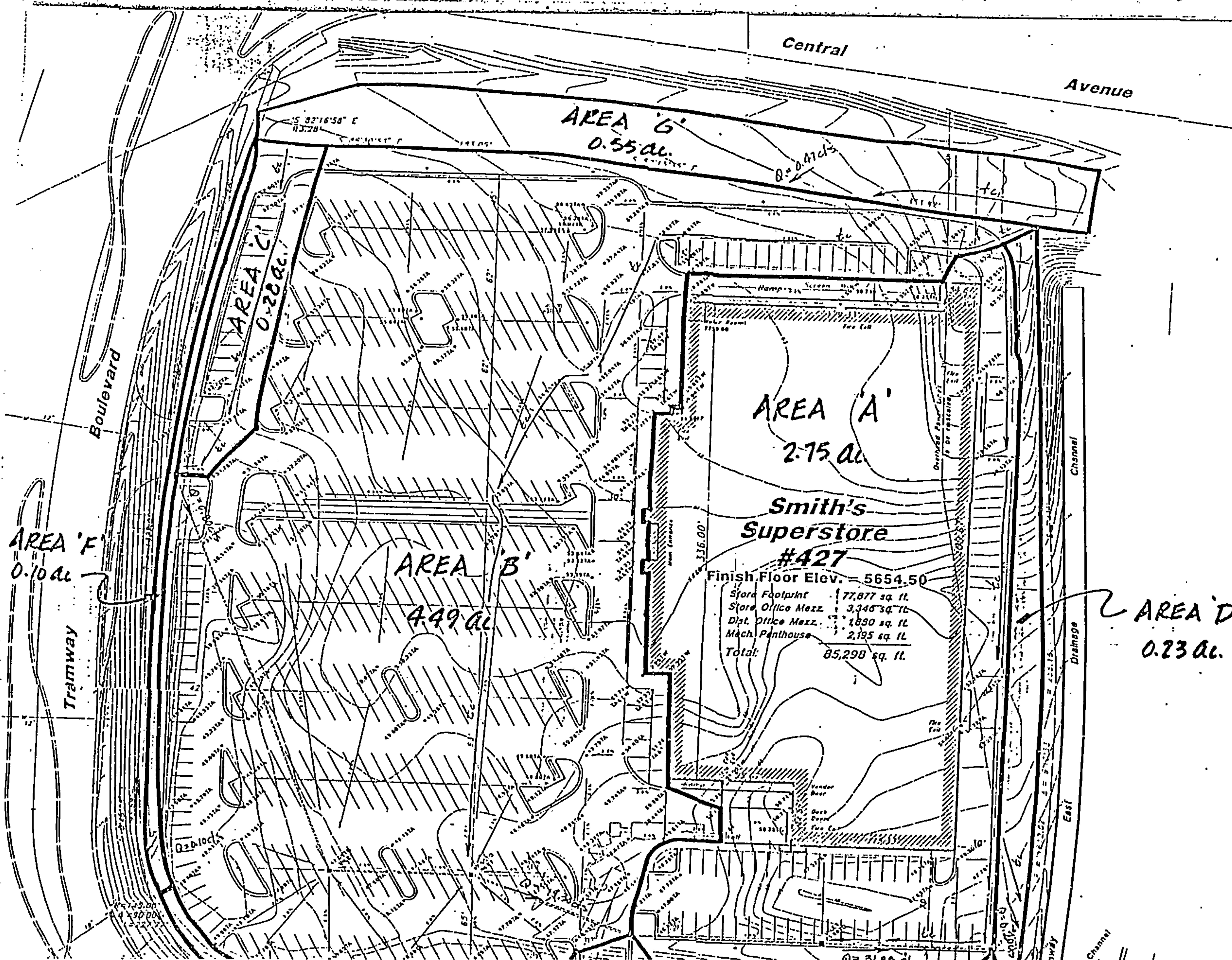
#421

Topographical Survey

Smith's Food & Drug Centers, Inc.
City of ALBUQUERQUE,
BERNALILLO CO. NEW MEXICO

GREAT BASIN ENGINEERING, INC.
SOUTH & EAST LAKE CITY, UTAH

DATE: 11/1/77
BY: [Signature]
CHECKED: [Signature]
APPROVED: [Signature]



Vicinity Map

Tract J-1 of Replat of Four Hills Village Shopping Center and Apartment Complex, City of Albuquerque, Bernalillo County, New Mexico

Legend

Existing Contour	---
Exist. grade	---
Finish grade	---
Finish Contour	---
Top of Curb	---
Top of Asphalt	---
Top of Walk	---
Storm Drain Line	---
Catch Basin	---
Top of Grate	---
Finish Floor	---

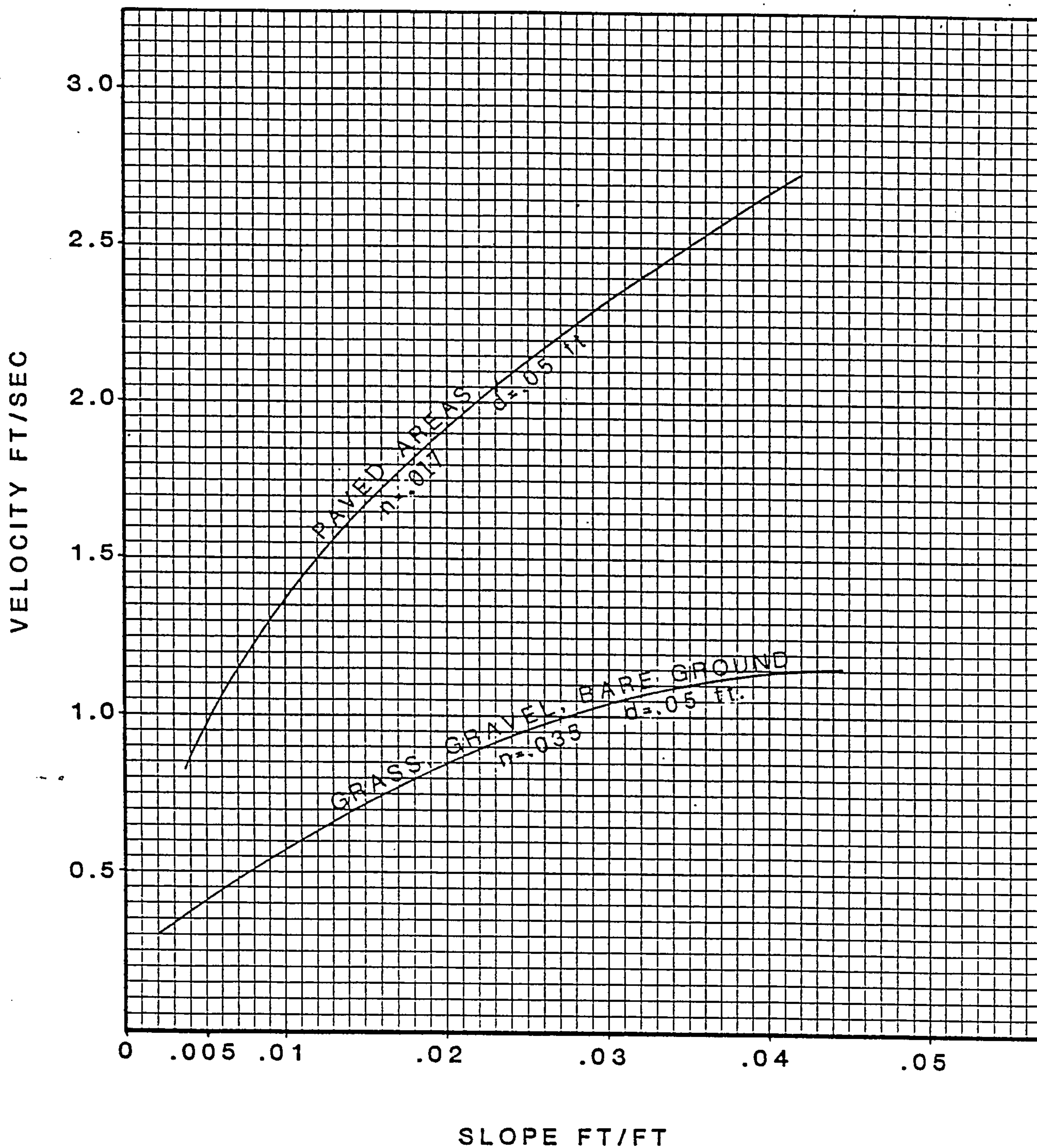
Benchmark:
ACS Brass Tablet, Station 7-L22, Located in the West Center Median at the Intersection of Central Avenue & Tramway Boulevard.
Elevation 5659.06'

Note:
No Storm Water Detention provided on Site as directed by City of Albuquerque, Public Works Dept., Hydrology Section.

This Site is in a Non Flood Hazard Area, FEMA Rate Map No. 330002 0037 C, effective October 14, 1983.

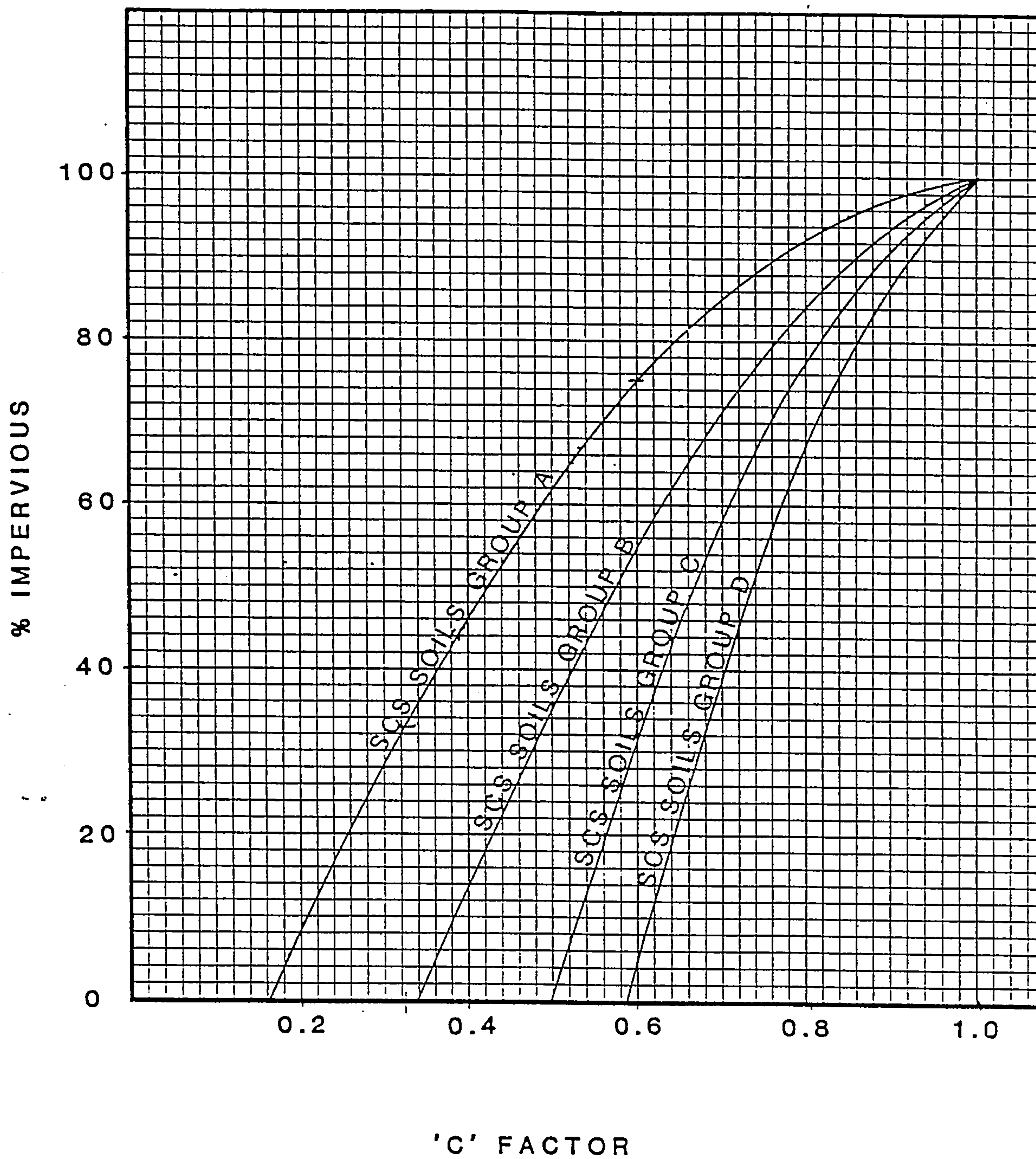
Total Site Area = 8.335 Ac.

OVERLAND FLOW SEGMENTS

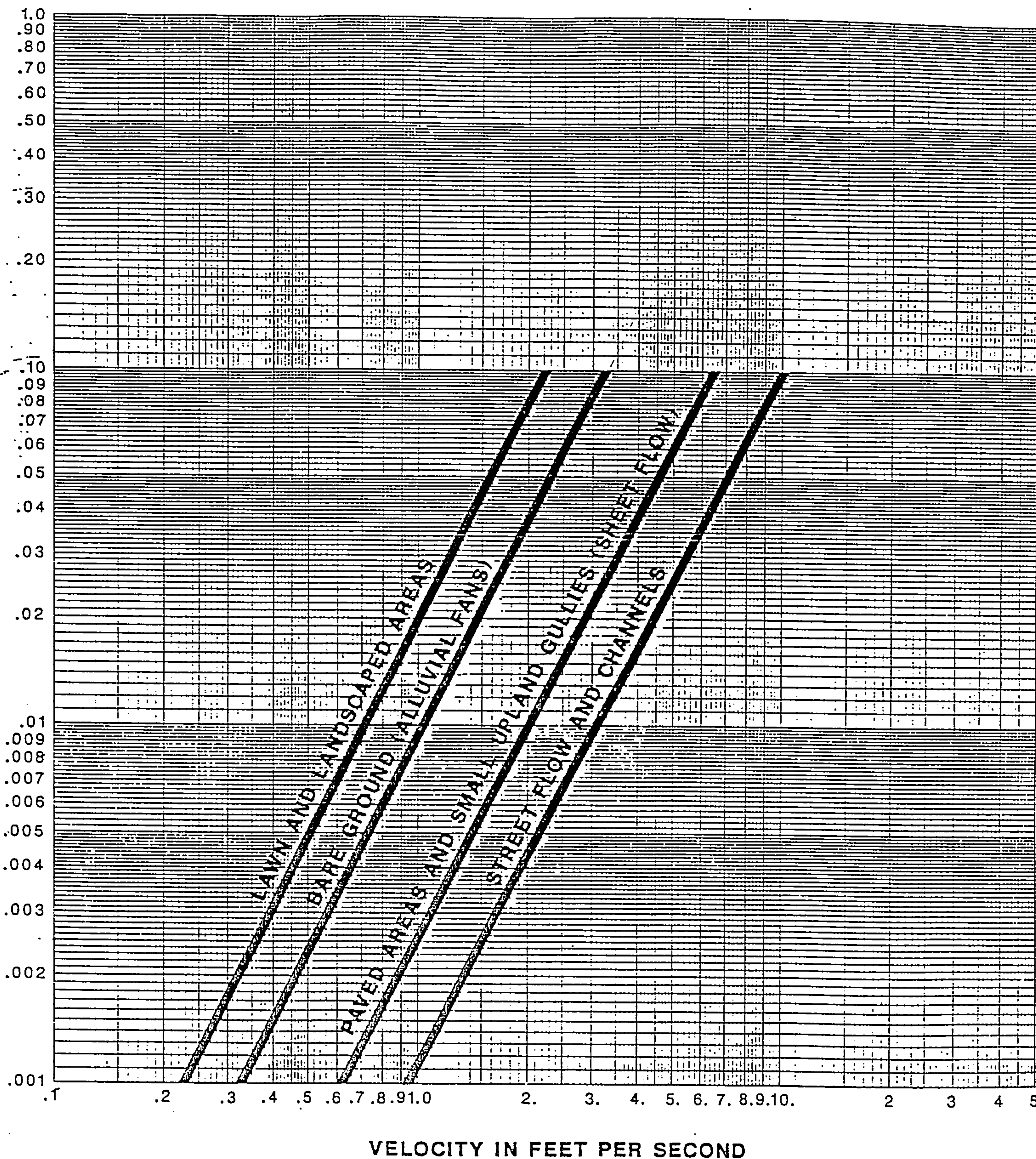
VELOCITY DETERMINATIONS FOR T_c CALCULATIONS

DRAINAGE CRITERIA

DETERMINATION OF RATIONAL FORMULA 'C' FACTOR



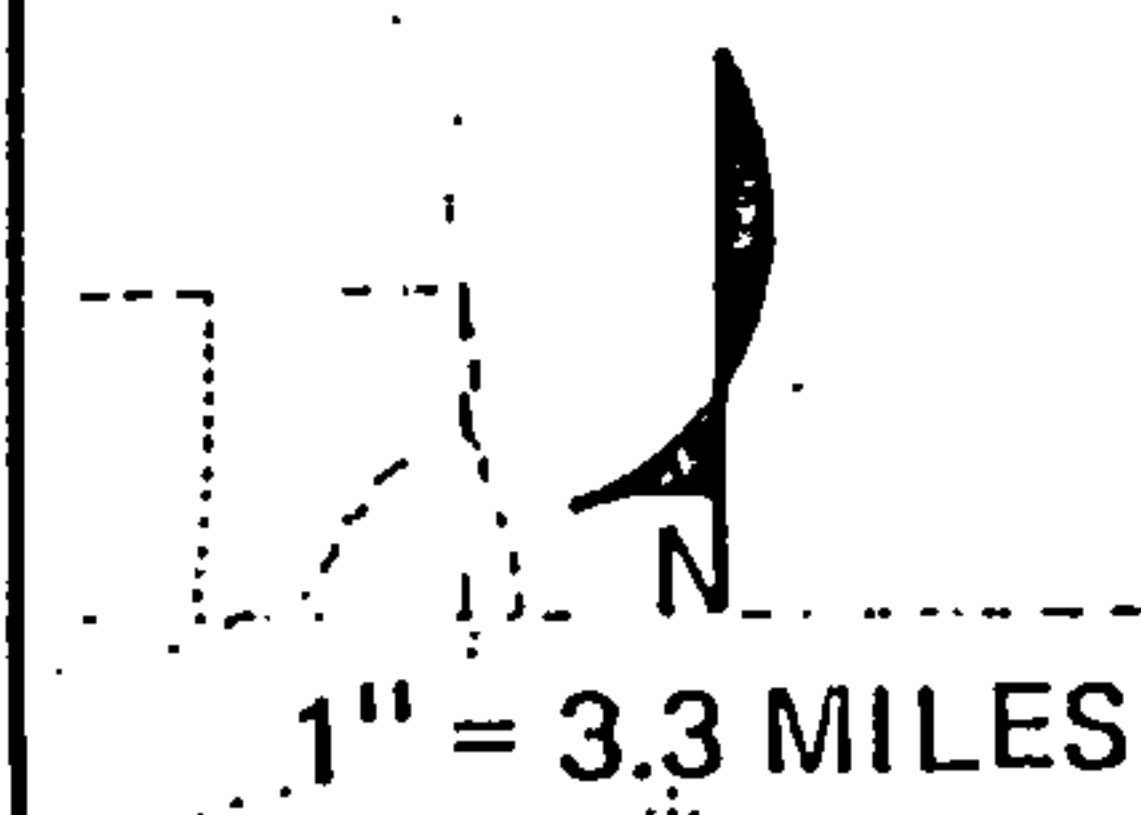
SLOPE IN FEET PER FOOT



VELOCITIES FOR UPLAND METHOD OF
ESTIMATING T_c

6-HOUR RAINFALL VOLUME 100 YEAR FREQUENCY

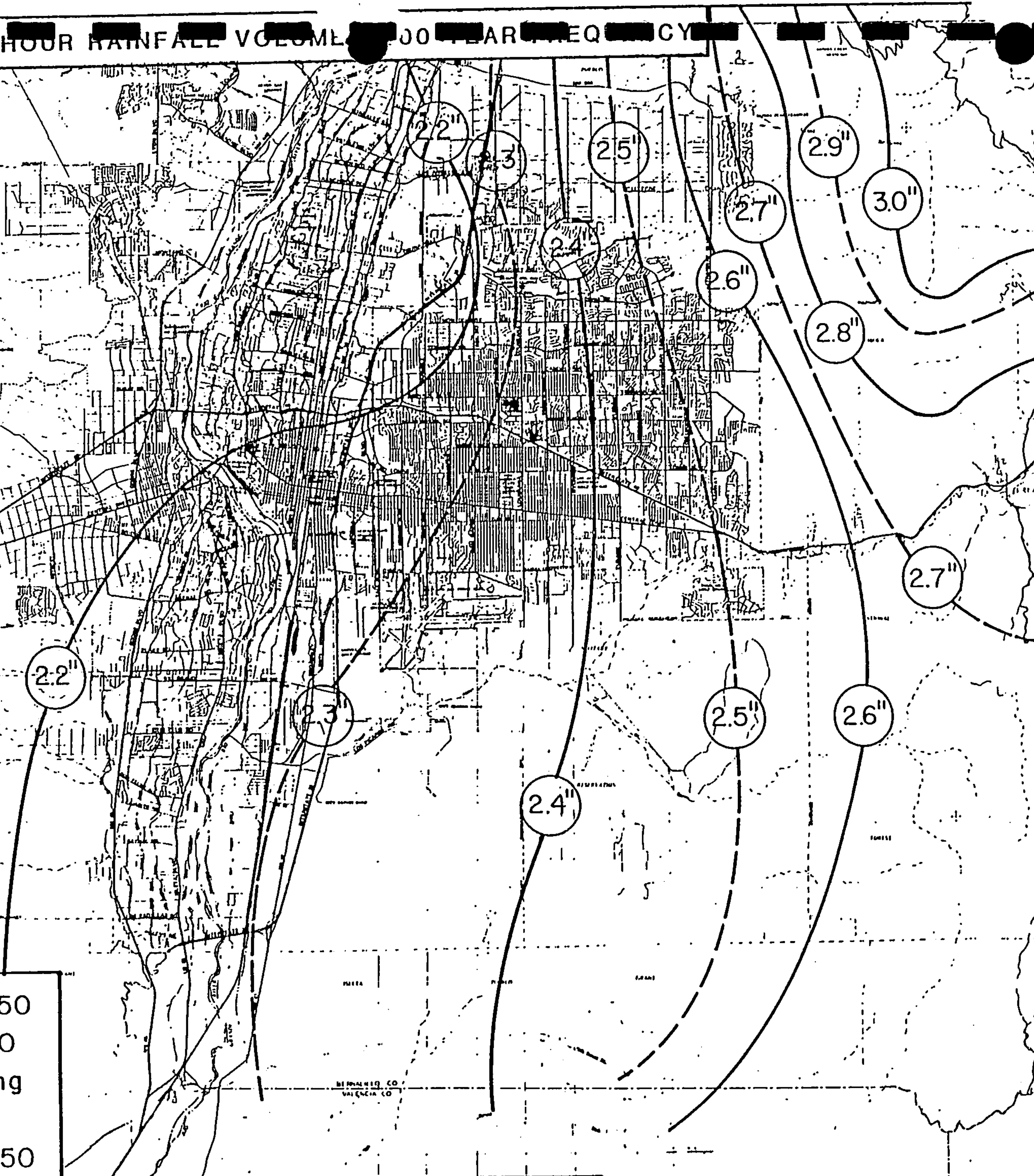
Use 2.2 for all locations west of 2.2 line



Note: to obtain 2,5,10, and 50 year values, multiply the 100 year amount by the following factors:

Year	2	5	10	50
Factor	.445	.541	.657	.920

Source: 1973 NOAA Atlas 2, Volume IV



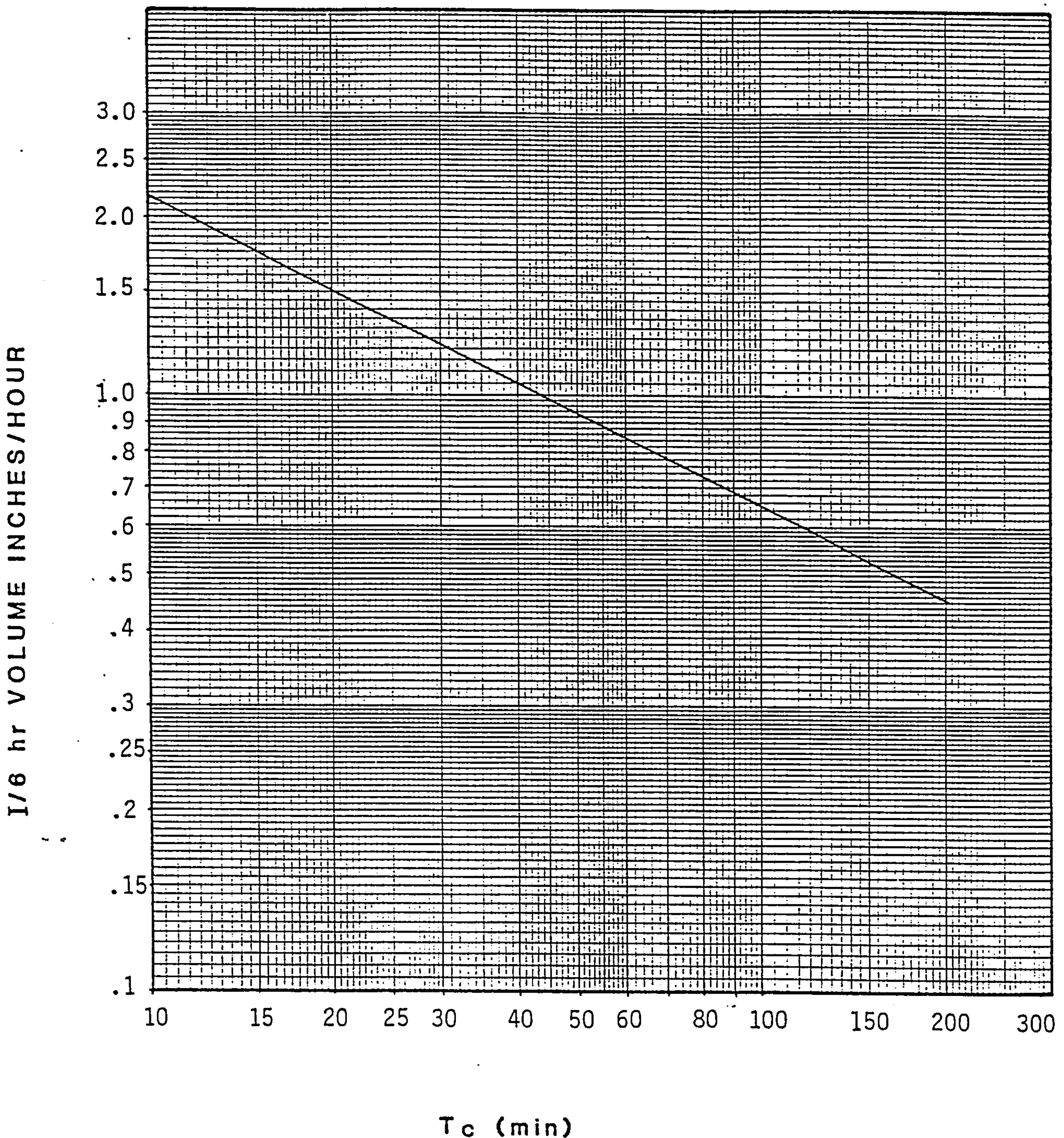
13

PLATE 22.2 D-1

22.2

DIMENSIONLESS RAINFALL INTENSITIES

$$I = (6\text{-hr. rain}) 6.84 t_c^{-0.51}$$



note: To get actual intensities, multiply rainfall volume from plate D-1 by value from curve. Use reduction factors on Plate D-1 for other than 100-yr.

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB _____

SHEET NO. _____

OF _____

CALCULATED BY _____

DATE

18 Jan 1990

CHECKED BY _____

DATE _____

SCALE _____

PIPE FLOWS

Mannings Equation

$$n = 0.013$$

SIZE	AREA (ft ²)	PERIMETER (ft)	HYDRAULIC RADIUS	Flow Rate
2"	0.0218	0.5236	0.0416	0.299 S ^{1/2}
4"	0.0873	1.0472	0.0834	1.905 S ^{1/2}
6"	0.1964	1.5708	0.1250	5.612 S ^{1/2}
8"	0.3491	2.0944	0.1667	12.086 S ^{1/2}
10"	0.5454	2.6180	0.2083	21.909 S ^{1/2}
12"	0.7854	3.1416	0.2500	35.628 S ^{1/2}
15"	1.2272	3.9270	0.3125	64.599 S ^{1/2}
18"	1.7672	4.7124	0.3750	105.05 S ^{1/2}
21"	2.4053	5.4978	0.4375	158.45 S ^{1/2}
24"	3.1416	6.2832	0.5000	226.22 S ^{1/2}
27"	3.9761	7.0686	0.5625	309.70 S ^{1/2}
30"	4.9087	7.8540	0.6250	410.16 S ^{1/2}
36"	7.0686	9.4248	0.7500	666.98 S ^{1/2}
42"	9.6211	10.9956	0.8750	1006.09 S ^{1/2}
48"	12.566	12.566	1.0000	1436.39 S ^{1/2}
54"	15.904	14.137	1.1250	1966.44 S ^{1/2}
60"	19.635	15.708	1.250	2604.43 S ^{1/2}
66"	23.158	17.279	1.375	3357.99 S ^{1/2}
72"	28.27	18.856	1.500	4234.44 S ^{1/2}

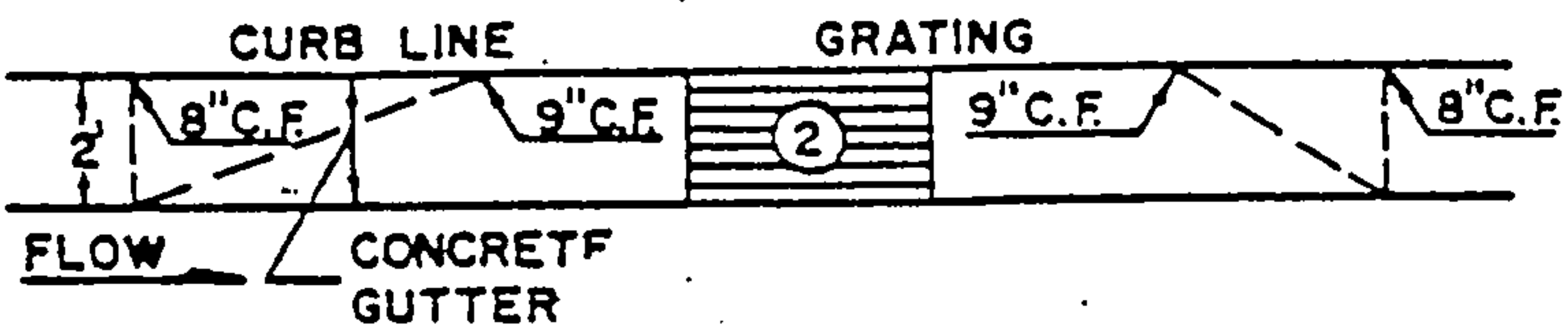
$$Q = \frac{1.486 A R^{2/3} S^{1/2}}{n}$$

$$R = A/P$$

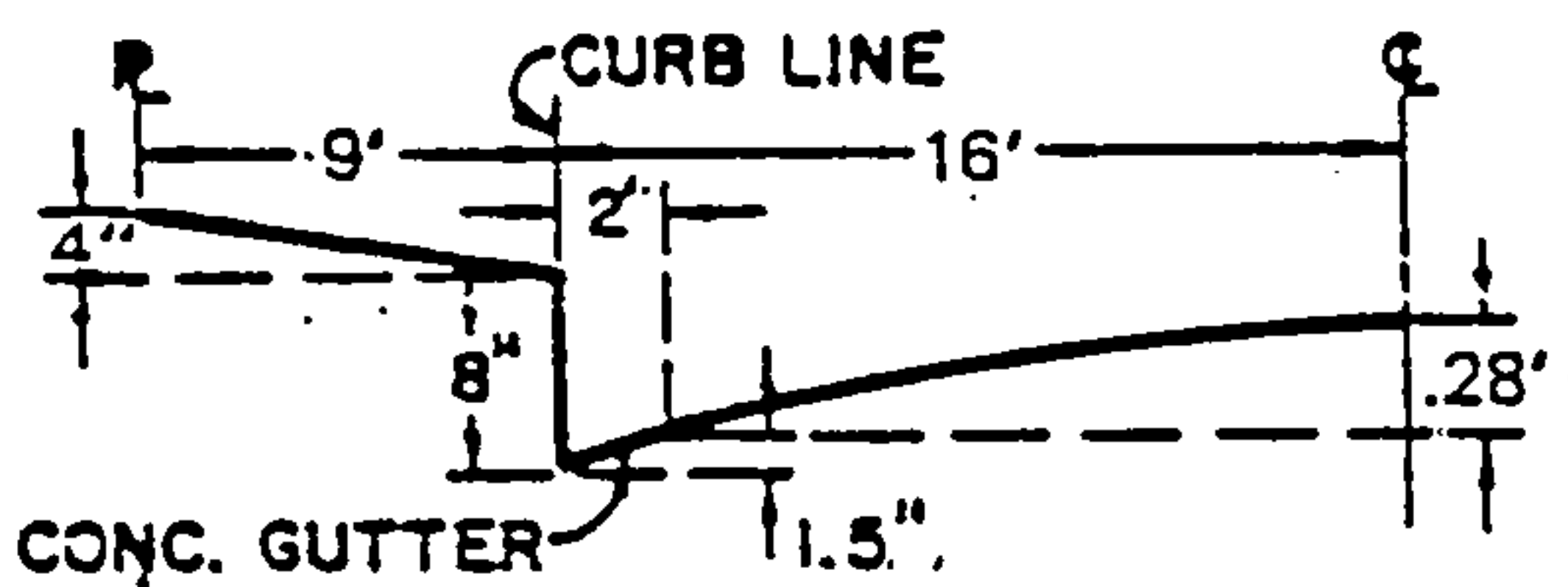
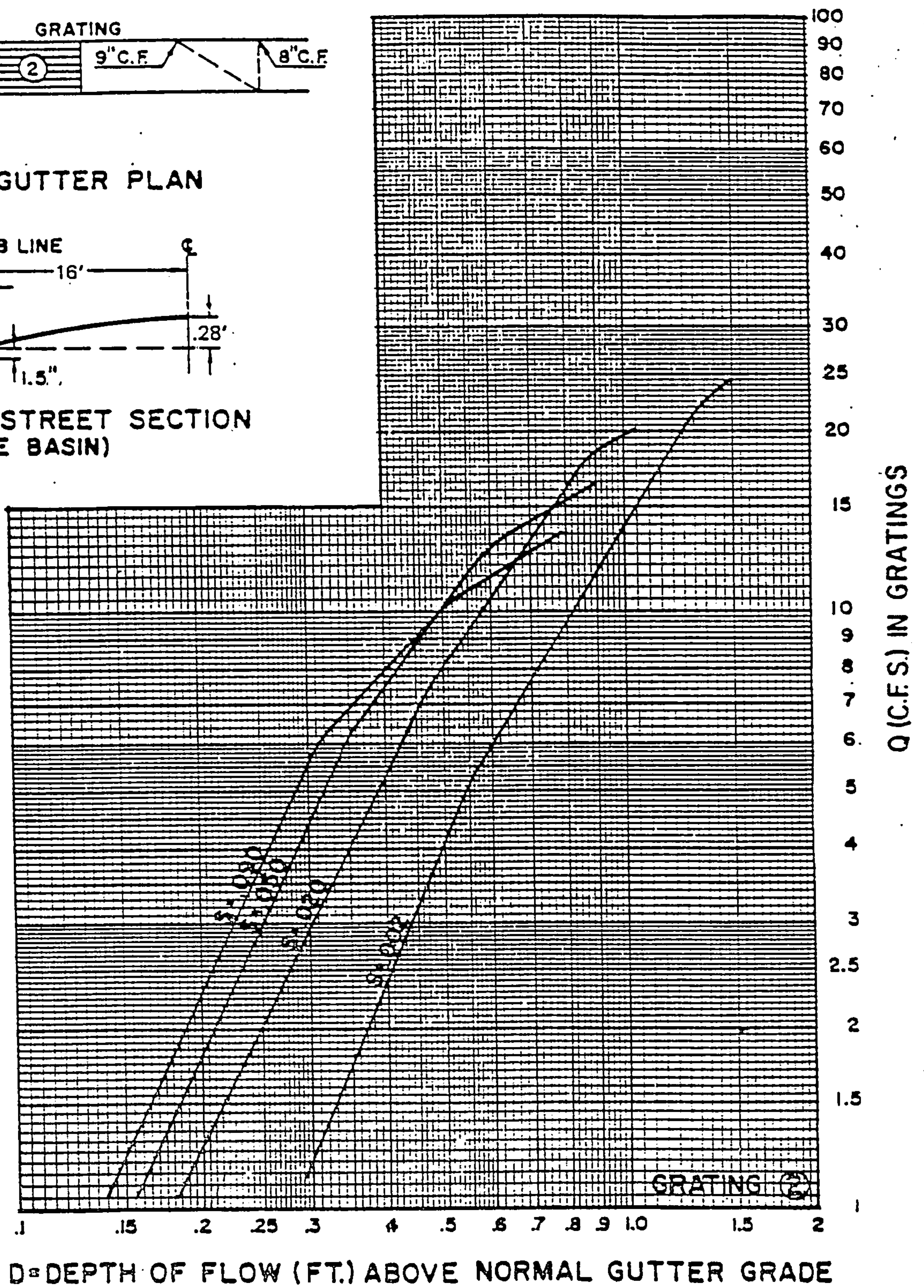
$$A = \pi r^2$$

$$P = 2\pi r$$

GRATING CAPACITIES FOR TYPE "A", "C" and "D"



GRATING & GUTTER PLAN

TYPICAL HALF STREET SECTION
(ABOVE BASIN)



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 7, 1992

Mark Babbitt
Great Basin Engineering
Post Office Box 9307
Ogden, Utah 84405

RE: ENGINEER'S CERTIFICATION FOR SMITH'S #427
(L-23/D15) CERTIFICATION STATEMENT DATED JULY 13, 1992

Dear Mr. Babbitt:

Based on the information provided on your submittal of July 13, 1992,
Engineer's Certification for the referenced site is acceptable.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya
Bernie J. Montoya, C.E.
Engineering Assistant

xc: Alan Martinez

BJM/bjf
(WP+2881)

PUBLIC WORKS DEPARTMENT

#427

PROJECT TITLE: SMITH'S FOOD & DRUG CENTERS INC. ZONE ATLAS/DRNG. FILE #: L-23/D15
DRB #: 91-0312 EPC #: E-84-124-1 WORK ORDER #: 4361.90
LEGAL DESCRIPTION: TRACT J-1, REPLAT OF FOUR HILLS VILLAGE SHOPPING CENTER AND
CITY ADDRESS: 200 TRAMWAY BLVD. SE. APARTMENT COMPLEX

ENGINEERING FIRM: GREAT BASIN ENGINEERING INC. CONTACT: MARK E. BABBITT

ADDRESS: P.O. Box 9307, OGDEN UT. 84409 PHONE: 801-394-4515

OWNER: SMITH'S FOOD & DRUG CENTERS INC. CONTACT: TOM GILMORE

ADDRESS: 500 SOUTH 99TH AVENUE
TOLLESON, AZ 85353 PHONE: 602-936-2156

ARCHITECT: BERNARD DEUTSCH ASSOCIATES CONTACT: BOB BRASE

ADDRESS: 2929 NORTH 44TH ST. SUITE 420
PHOENIX, AZ. 85018 PHONE: 602-840-2929

SURVEYOR: WESTERN LAND SURVEYING CONTACT: WALT

ADDRESS: 208 3RD ST. S.W.
ALBUQUERQUE, N.M. 87102 PHONE: _____

CONTRACTOR: W.M. GRACE CONST. CO. CONTACT: TERRY GRIFFITH

ADDRESS: 1515 NORTH 16TH ST.
PHOENIX, AZ. 85020 PHONE: 602-955-5288

TYPE OF SUBMITTAL:

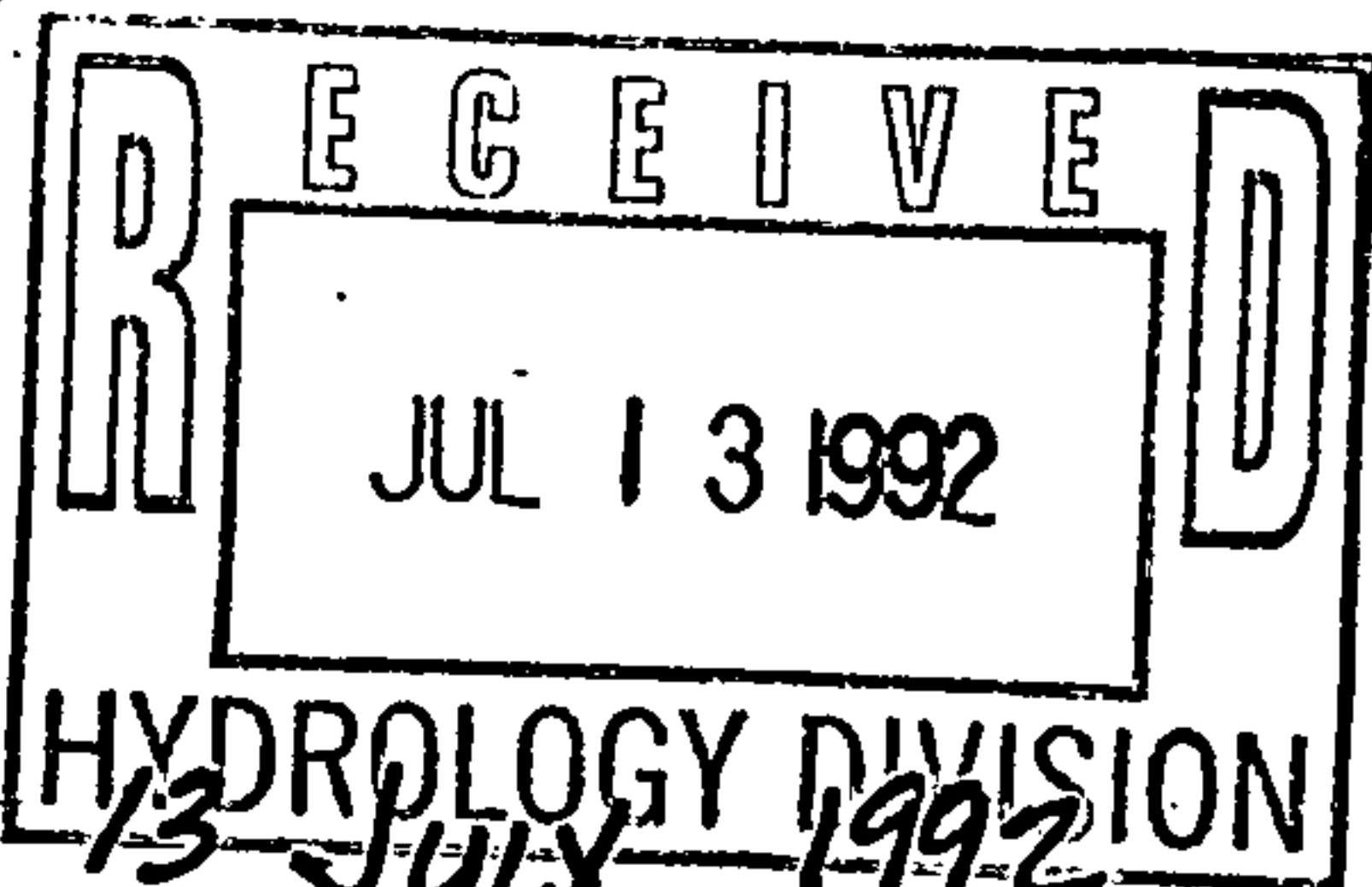
- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)



DATE SUBMITTED:

BY:

Mark E. Babbitt
MARK E. BABBITT P.E.

Great Basin Engineering
out of Utah

Contact: Conrad ~~Kumler~~ Kumler superInt.

Do not W.M. Grace Const. Inc.
release C.O.
until Glen 298-3738
is agreeable
7/23/92



GREAT BASIN ENGINEERING

P.O. Box 9307
Ogden, Utah 84409

Ogden (801) 394-4515 Salt Lake City (801) 521-8529
Fax (801) 392-7544

LETTER OF TRANSMITTAL

RECEIVED
JUL 13 1992

DATE JUL 13 1992	JOB NO.
ATTENTION BERNIE MONTAYA	
RE:	
SMITH'S STORE # 427	
(L-23 / DIS)	

TO CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP
P.O. BOX 1293
ALBUQUERQUE N.M. 87103

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

- ☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
2		1	AS-BUILT GRADING PLAN w/ ENGINEERS CERTIFICATION
1		1	APPROVAL LETTER
1		1	DRAINAGE INFORMATION SHEET

THESE ARE TRANSMITTED as checked below:

- ☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

BERNIE

PLEASE REVIEW THIS AS-BUILT DRAINAGE
PLAN AND THE ACCOMPANYING INFORMATION AT YOUR
EARLIEST OPPORTUNITY. SMITH'S PLANS ARE TO OPEN
THE STORE ON JULY 15TH, WITH YOUR ASSISTANCE.
PLEASE CALL ME IF YOU HAVE ANY QUESTIONS.

GARY HARTIG

TOM GILMORE

Thanks

COPY TO FRED URBANEK

SIGNED: Mark E. Bahlert P.E.



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 14, 1992

Mark Babbitt
Great Basin Engineering
Post Office Box 9307
Ogden, Utah 84405

RE: REVISED DRAINAGE PLAN FOR SMITH'S #427
(L-23/D15) ENGINEER'S STAMP DATED NOVEMBER 4, 1991

Dear Mr. Babbitt:

Based on the information provided on your submittal of January 13, 1992, the above referenced plan is approved for Building Permit and Work Order. Please be advised that you will need to obtain a top soil disturbance permit from the Environmental Health Department prior to any grading.

Please attach a copy of this plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer's Certification per the D.P.M. Checklist (copy attached) will be required.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.
Engineering Assistant

xc: Alan Martinez
Larry Caudill

BJM/bsj
(WP+2881)

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: SMITH'S #427 ZONE ATLAS/DRNG. FILE #: L23/D15
DRB #: _____ EPC #: _____ WORK ORDER #: _____
LEGAL DESCRIPTION: _____
CITY ADDRESS: _____
ENGINEERING FIRM: GREAT BASIN ENGINEERING CONTACT: KIRK RANDALL
ADDRESS: P.O. BOX 9307 PHONE: 801-394-4515
OGDEN, UTAH 84409
OWNER: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
ARCHITECT: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

☐ YES
☒ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
OTHER _____ (SPECIFY)

RECEIVED
JAN 13 1992

DATE SUBMITTED:

JAN 13, 1992

BY:

Kirk Randall



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 13, 1991

Mark Babbitt
Great Basin Engineering
Post Office Box 9307
Ogden, Utah 84405

RE: REVISED DRAINAGE PLAN FOR SMITH'S #427
(L-23/D15) ENGINEER'S STAMP DATED OCTOBER 31, 1991

Dear Mr. Babbitt:

Based on the information provided on your submittal of November 4, 1991, the above referenced plan is approved for Building Permit and Work Order. Please be advised that you will need to obtain a top soil disturbance permit from the Environmental Health Department prior to any grading.

Please attach a copy of this plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer's Certification per the D.P.M. Checklist (copy attached) will be required.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya
Bernie J. Montoya, C.E.
Engineering Assistant

xc: Alan Martinez
Larry Caudill

BJM/bsj
(WP+2881)

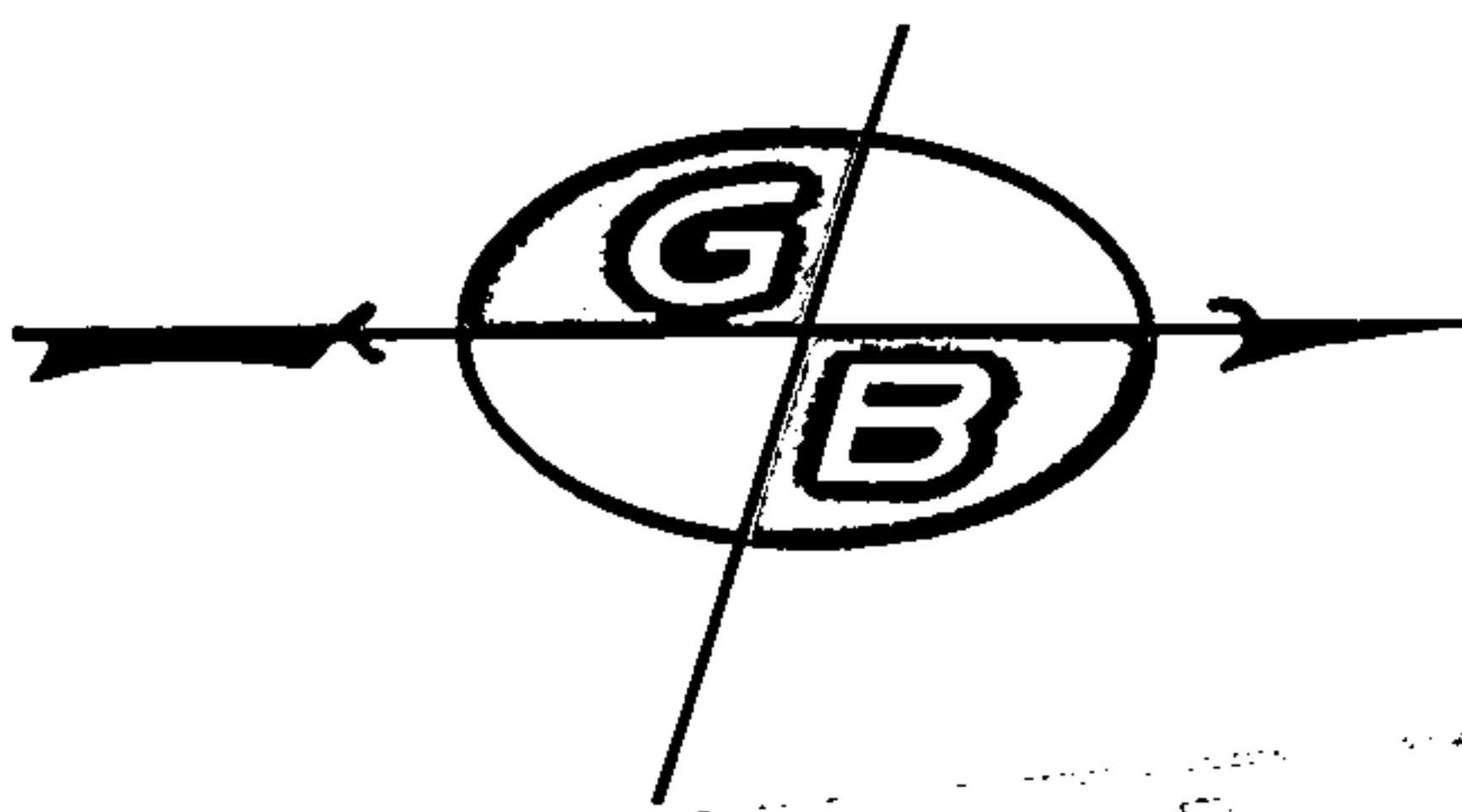
PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

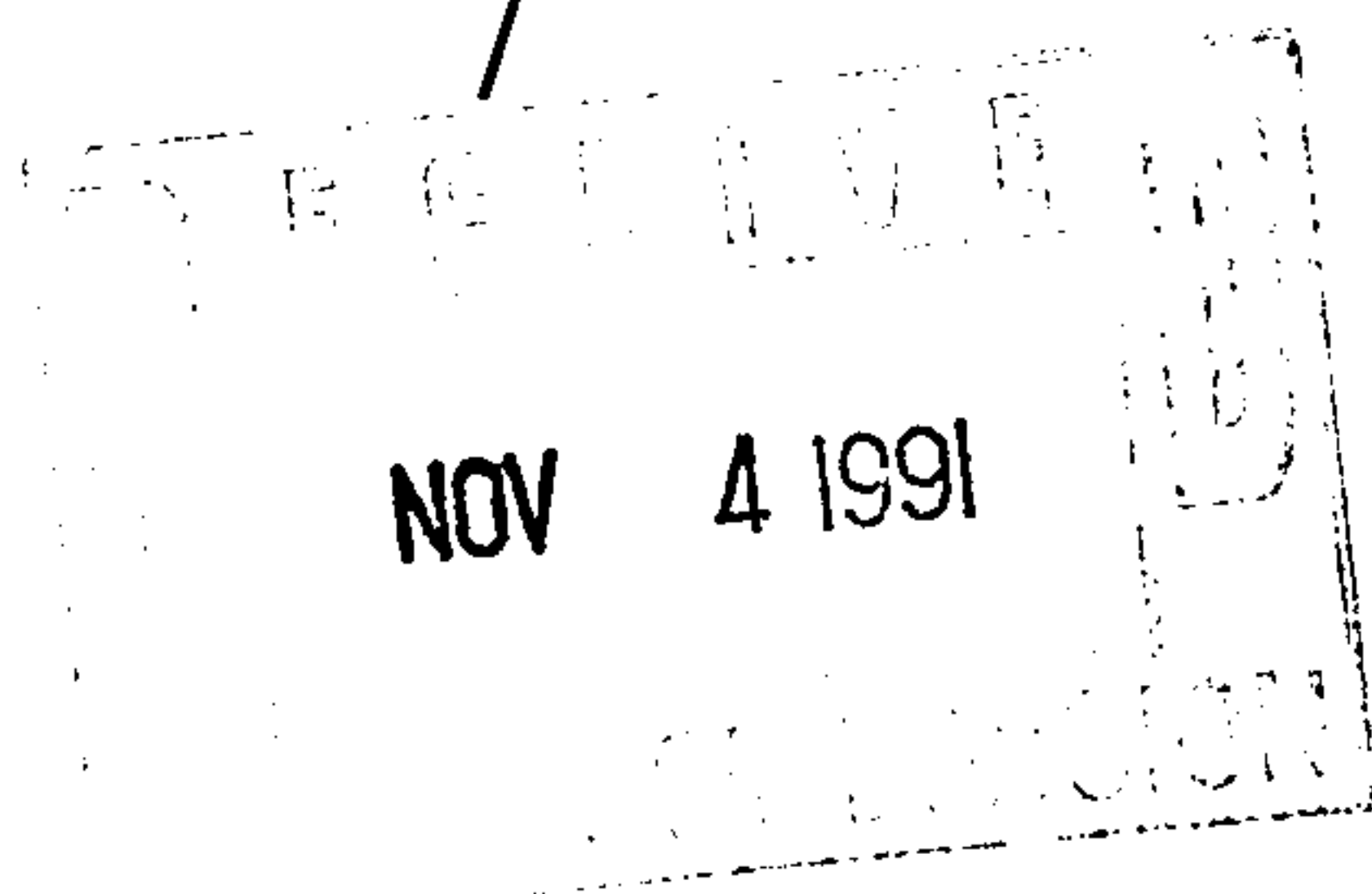
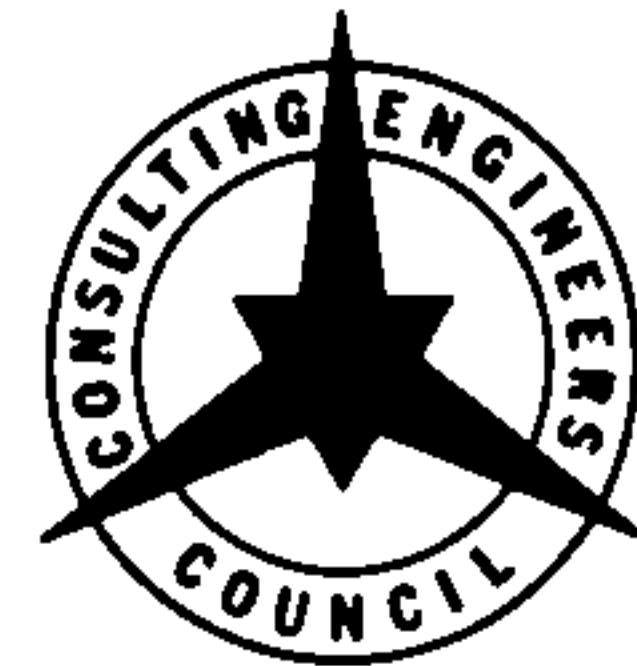


GREAT BASIN ENGINEERING, INC.

Consulting Engineers and Land Surveyors

3544 Lincoln Ave., Suite 11
P.O. Box 9307
Ogden, Utah 84409

Ogden (801) 394-4515
Salt Lake (801) 521-8529
FAX (801) 392-7544



November 1, 1991

Bernie J. Montoya, C.E.
City of Albuquerque
Engineering Group
Hydrology Section
P.O. Box 1293
Albuquerque, New Mexico 87103

**RE: SMITH'S FOOD AND DRUG CENTERS, STORE #427
(L-23/D15)**

Dear Mr. Montoya:

Enclosed are 2 Copies of the Drainage Report, Grading and Drainage Plan and Utility Plan. Also enclosed are 2 Copies of the Erosion Control Plan and Landscape Plan for your consideration.

The Utility Plan has been enclosed to provide detailed information of the piping network on site. A preliminary meeting has been held with DRC (Project No. 4361.90) and a detail of the Tramway East Drainage Channel Connection is being processed.

If you have any questions, please don't hesitate to call me.

Sincerely,

GREAT BASIN ENGINEERING, INC.

Mark E. Babbitt, P.E.
Project Engineer

Encl. (a/s)

MEB/1h



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 7, 1991

Mark Babbitt
Great Basin Engineering
Post Office Box 9307
Ogden, Utah 84405

RE: REVISED CONCEPTUAL DRAINAGE PLAN FOR SMITH'S #427
(L-23/D15) REVISION DATED SEPTEMBER 23, 1991

Dear Mr. Babbitt:

Based on the information provided on your resubmittal of September 25, 1991, the referenced site is approved for Site Development.

Please be advised that prior to Building Permit release, the following concerns must be addressed.

- ✓ 1. Location and direction of all roof drains
- ✓ 2. Hydraulics for the inlets and pipes.
- ✓ 3. Preliminary meeting with DRC for the connection into the Tramway East Channel should have been conducted prior to release of Building Permit.
- ✓ 4. Engineer's Certification per the DPM Checklist must be submitted prior to Certificate of Occupancy release.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj
(WP+2881)

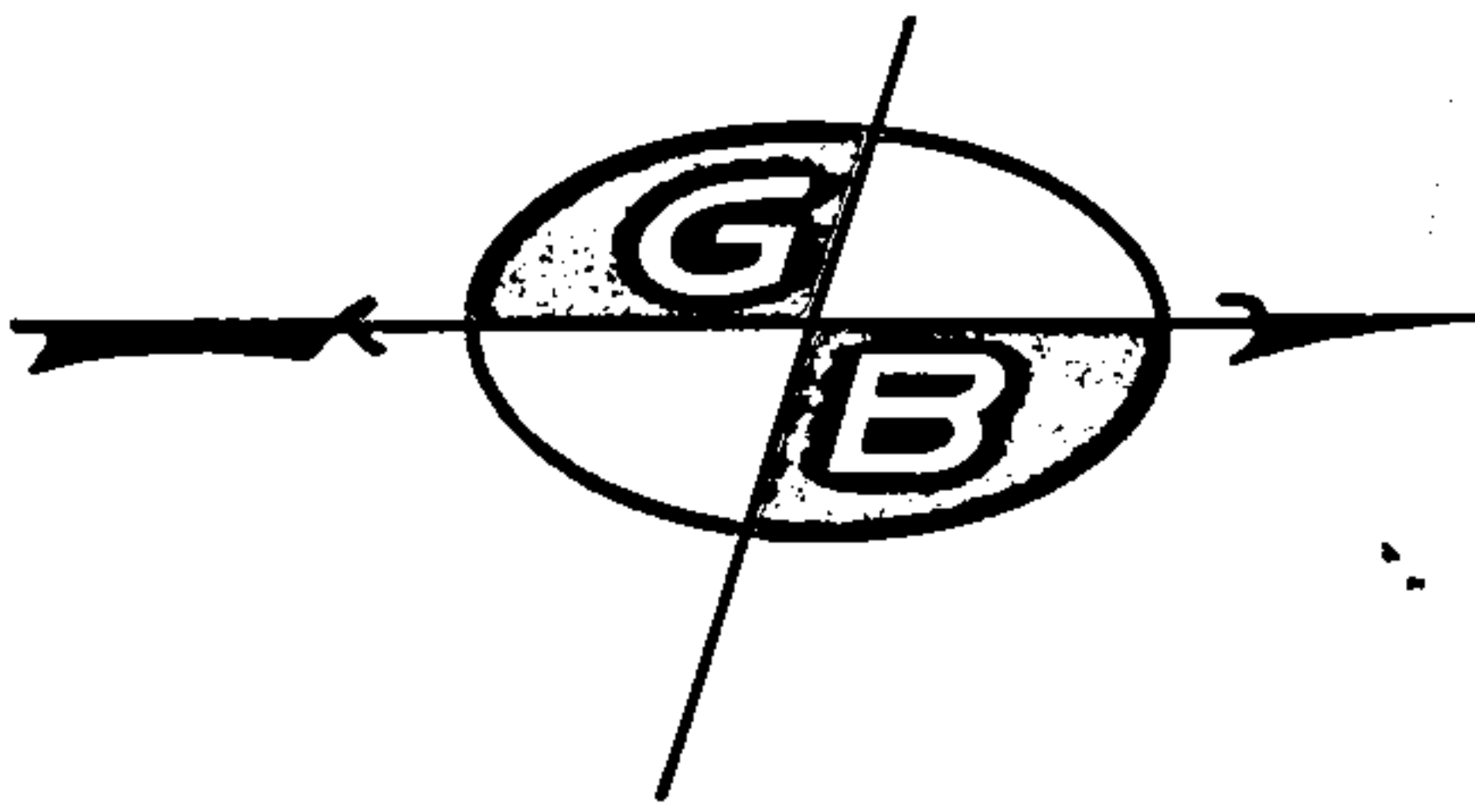
PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



GREAT BASIN ENGINEERING, INC.

Consulting Engineers and Land Surveyors

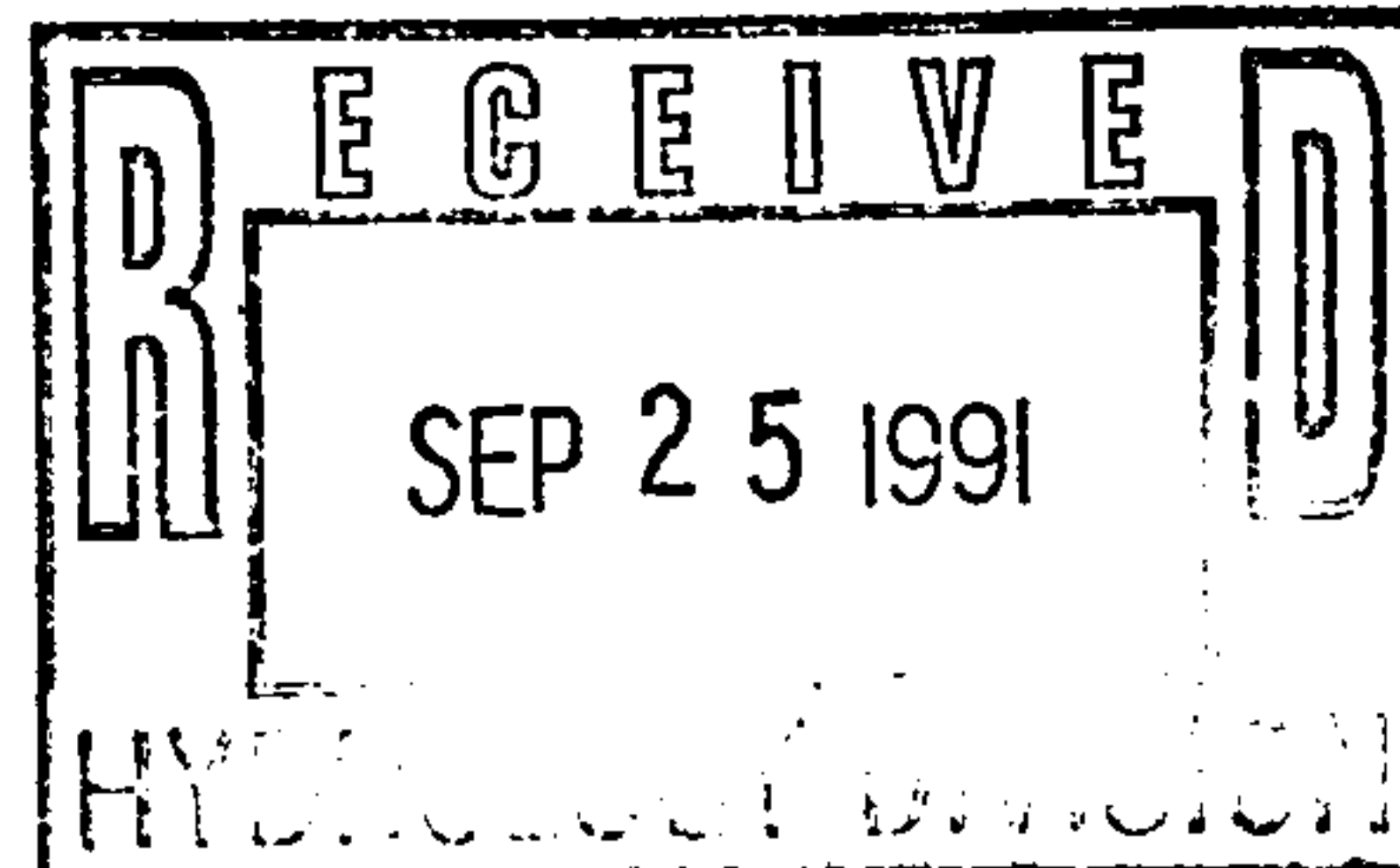
3544 Lincoln Ave., Suite 11
P.O. Box 9307
Ogden, Utah 84409

Ogden (801) 394-4515
Salt Lake (801) 521-8529
FAX (801) 392-7544



September 24, 1991

City of Albuquerque
Public Works Department
Engineering Group - Hydrology Section
P.O. Box 1293
Albuquerque, New Mexico 87103



Attention: Bernie J. Montoya C.E.

**RE: PRELIMINARY DRAINAGE STUDY
SMITH'S STORE #427
TRAMWAY BOULEVARD AND CENTRAL AVENUE
ALBUQUERQUE, NEW MEXICO**

Dear Mr. Montoya:

I have prepared a Preliminary Drainage Study quantifying the peak runoff for both the existing conditions and proposed construction of the Smith's Food and Drug Centers Site #427 located at the intersection of Central Avenue and Tramway Boulevard in Albuquerque, New Mexico.

The Study indicates that the development of the Smith's Site will undoubtedly increase the peak runoff from this site, however, we have redirected much of this runoff to the Tramway East Drainage Channel. The Proposed Development actually decreases the direct runoff onto the City's right-of-ways from 11.26 cfs to 0.62 cfs during a 100 year 6 hour storm.

Please review the attached Calculations and Drawings at your earliest opportunity. Please don't hesitate to call me if you have any questions or need additional information.

Sincerely,

GREAT BASIN ENGINEERING, INC.

Mark E. Babbitt, P.E.

Encl. (a/s)

MEB/lh

DRAINAGE INFORMATION SHEET

PROJECT TITLE: SMITH'S #427 ZONE ATLAS/DRNG. FILE #: C23/015

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: _____

CITY ADDRESS: _____

ENGINEERING FIRM: GIZEN BASIN ENGINEERING CONTACT: KIRK RANDALLADDRESS: P.O. BOX 9307 PHONE: 801-394-4515
OGDEN, UTAH 84409

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: HUGG SURVEYING CONTACT: CARZY HUGGADDRESS: _____ PHONE: 892-9800

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☒ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: SEP 25 1991BY: [Signature]



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 29, 1991

Kirk Randall
Great Basin Engineering
Post Office Box 9307
Ogden, Utah 84405

RE: CONCEPTUAL DRAINAGE PLAN FOR SMITH'S #427
(L-23/D15) RECEIVED AUGUST 12, 1991

Dear Mr. Randall:

Based on the information provided on your submittal of August 12, 1991, the following items must be addressed prior to approval for Site Development.

1. Legal Description within the plan drawing.
2. Legend: See DPM Manual Volume 2 tables 27.3a - 27.3d for recommended standard symbols.
3. Quantification and location of existing flow rates discharging into City's rights-of-way and or easements from the site.
4. Quantification and location of proposed flow rates discharging into the City's right-of-way or easements from the site.
5. Proposed retaining walls if any.
6. Finish floor elevation must be to full mean sea level designation.
7. Connection of the proposed system into the existing Tramway East Drainage Channel must be coordinated through DRC with Mr. Roger Green.

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

Kirk Randall
August 29, 1991
Page 2

8. Attached you will find a copy of the Drainage Report and Drainage Plan Checklist to assist you in preparing for building permit approval.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,


Bernie J. Montoya, C.E.
Engineering Assistant

Enclosures

BJM/bsj
(WP+2881)

DRAINAGE INFORMATION SHEET

PROJECT TITLE: SMITH'S #427 ZONE ATLAS/DRNG. FILE #: 123/1015

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: _____

CITY ADDRESS: _____

ENGINEERING FIRM: GIZZAT BASIN ENGINEERING CONTACT: KIRK RANDALL

ADDRESS: P.O. BOX 9307 PHONE: 801-394-4515
OGDEN, UTAH 84409

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: HUGG SURVEYING CONTACT: GARRY HUGG

ADDRESS: _____ PHONE: 892-9800

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

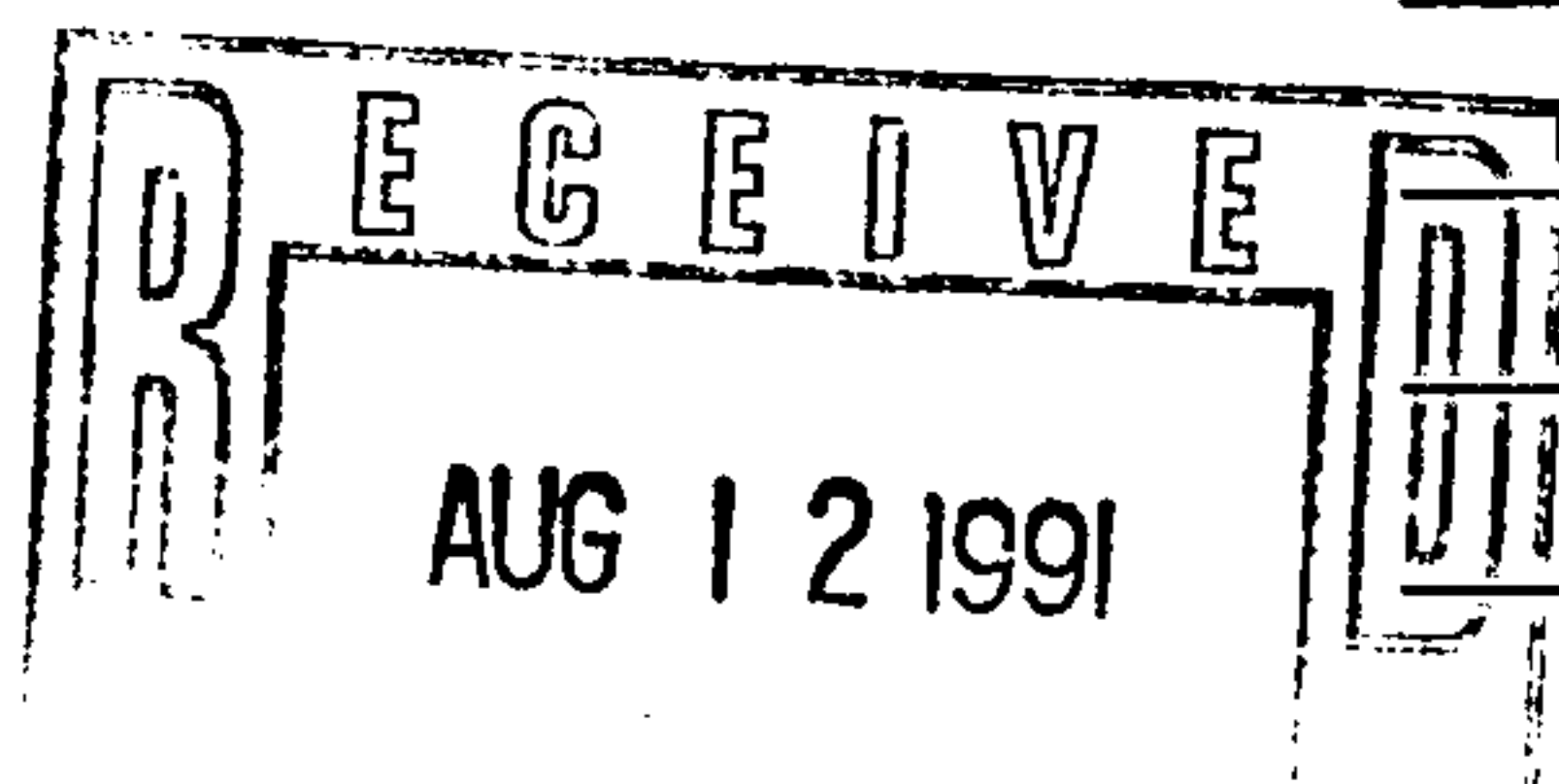
- ☐ DRAINAGE REPORT
- ☒ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
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- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- OTHER _____ (SPECIFY)



DATE SUBMITTED: August 12, 1991

BY: [Signature]



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

CERTIFICATE OF COMPLETION AND ACCEPTANCE

July 22, 1993

Mr. Kirk Randall
Smith's Food & Drug Centers, Inc.
1550 South Redwood Road
Salt Lake City, Utah 84104

RE: SMITHS FOOD & DRUG CENTER, PROJECT NO. 4361.80 (L-23)

Dear Mr. Randall:

This is to acknowledge that the terms and conditions set forth in your Agreement to Construct Subdivision Improvements of public/private infrastructure, between yourself and the City of Albuquerque for the above noted project have been met. Concurrently, these improvements have been certified by "City of Albuquerque Construction Management Division" as being constructed in compliance with the plans and specifications approved by the City. These improvements consist of;

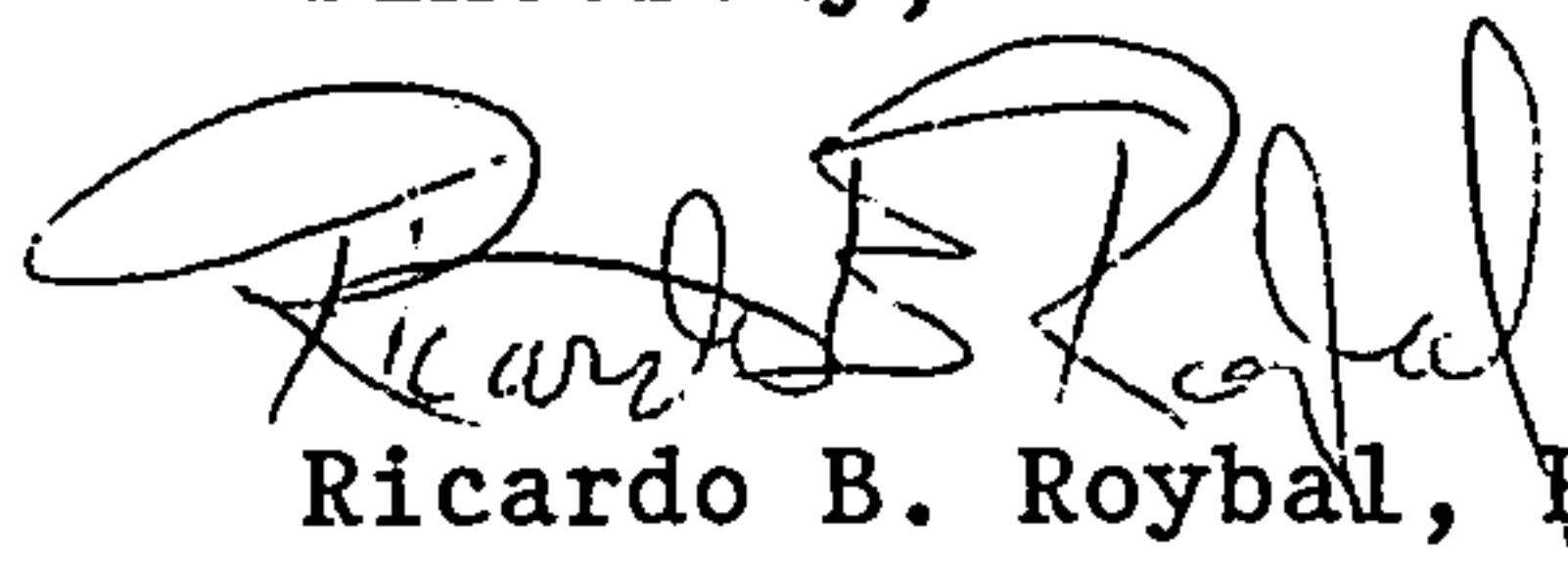
A new store was built on an undeveloped site. Construction required installing two (2) fire hydrant lines for fire protection, also water service to store. Drop inlets and storm drain lines were built for on site drainage. Contractor also provided sewer service. Contractor constructed turnbays off Tramway Blvd. and Wenonah Street S.E. for access to store, also included was a concrete cross walk across Tramway.

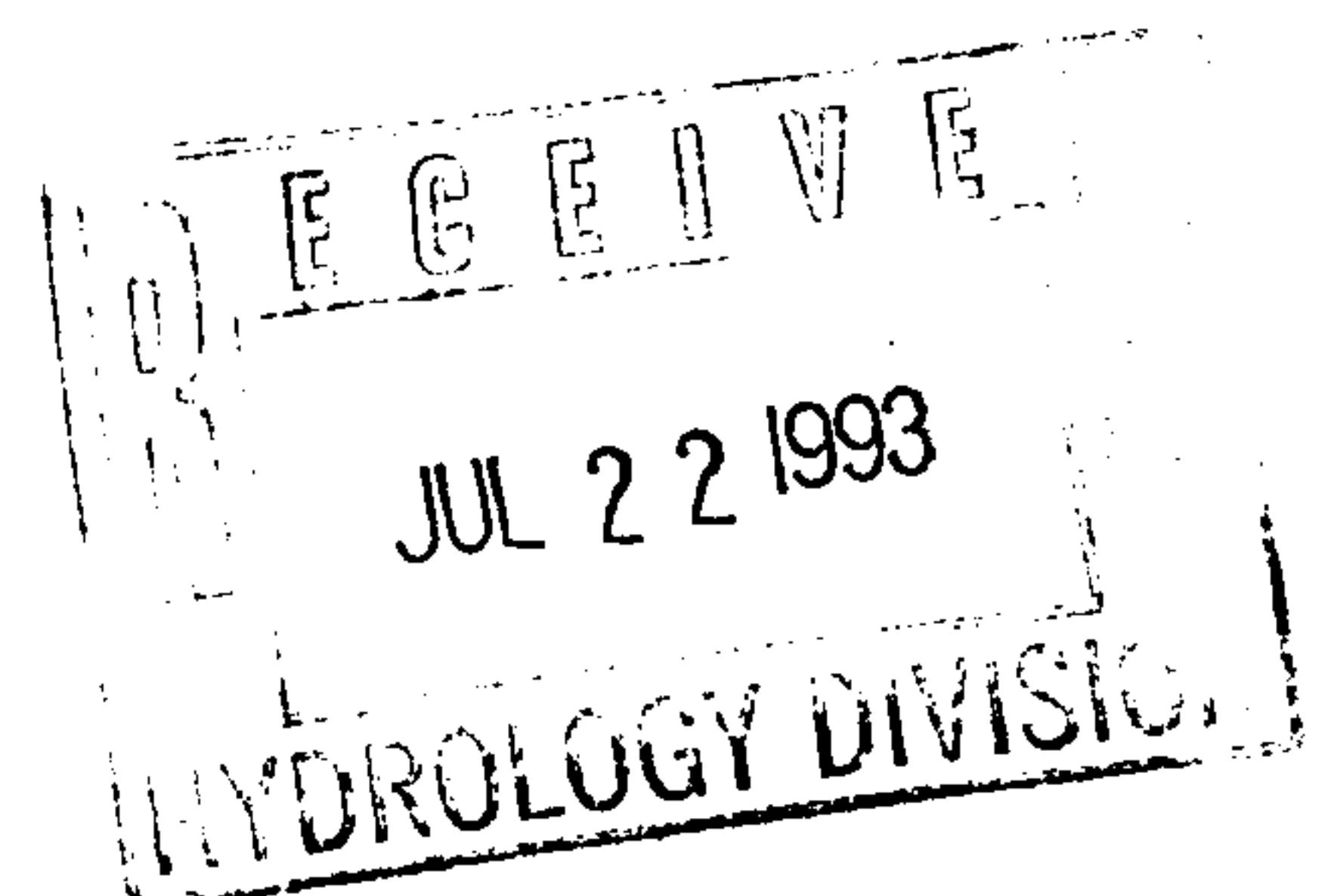
Installed curb & gutter around perimeter of parking lot and paved parking lot.

The Release of Agreement and Financial Guaranty are being processed at this time and a copy of the document will be forthcoming.

Should you have any further questions regarding this matter, please do not hesitate to contact LyndaMichelle DeVanti at 768-2515.

Sincerely,


Ricardo B. Roybal, P.E.
City Engineer
Public Works Department



DISTRIBUTION:

cc: LyndaMichelle DeVanti, City Project Administrator/PWD
Billy Goolsby, Project Review Section/PWD
[Fred Aguirre, Hydrology Division/PWD
Daniel Montano, City Surveyor/PWD
Richard Zamora, Maps & Records/PWD
Josie Gutierrez, New Meter Sales, Customer Services/PWD
Project File

RG/LMD/dss
(WP+124886.10)

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
PLANNING DIVISION

AGENDA NUMBER: 17
ENVIRONMENTAL PLANNING COMMISSION
AUGUST 15, 1991
Z-84-124-1

Z-84-124-1 Smith's Food and Drug Center, Inc., requests site development plan approval for Tract J, Four Hills Shopping Center and Apartment Complex Subdivision, zoned C-2 and located on the southeast corner of the intersection of Tramway Boulevard NE and Central Avenue East, containing approximately 8.335 acres. (L-23)

COMMENTS FROM OTHER DEPARTMENTS:

ENVIRONMENTAL HEALTH DEPARTMENT

Air Pollution Control Division

"The applicant failed to submit information for preliminary air quality review prior to application as required by City Council Ordinance 0-13, Enactment 12-1990 amending the Albuquerque Zoning Code, Article XIV, Chapter 7 R.O. 1974 for a retail grocery store. The information submitted within this request indicates that the project substantially exceeds threshold criteria set forth in the referenced code. Based on this information, the Air Pollution Control Division has determined that an air quality study is required."

FIRE DEPARTMENT/Planning

No comments received.

LAND RESOURCES & REGULATION DEPARTMENT

Real Property

No comments received.

Zoning Enforcement

"Free standing sign exceeds 150 sq. ft."

NEIGHBORHOOD SERVICES

"Singing Arrow Neighborhood Association and Gallagher Neighborhood Association (both recognized neighborhood associations) have been notified. Fourhills Village, Winterwood Park, Hidden Valley Neighborhood Association will also be notified."

PLANNING DEPARTMENT

Capital Improvement

No comments received.

PARKS AND RECREATION DEPARTMENT/Administration

"No adverse comments."

OFFICE OF OPEN SPACE

"No adverse comments."

POLICE DEPARTMENT/Planning

"No adverse comments."

SOLID WASTE MANAGEMENT DEPARTMENT/Refuse Division

No comments received.

PUBLIC WORKS DEPARTMENT

Hydrology

"A conceptual grading and drainage plan is required for site plan sign-off by the City Engineer and AMAFCA. However as of July 22, 1991, no drainage submittal has been made to this office for approval."

Transportation Planning

"The applicant should be advised that the segment of Tramway Boulevard south of Central Avenue is part of the Tijeras Arroyo Future Potential Corridor as found on the Long Range Major Street Plan. The earliest date identified for possible consideration of a roadway in this corridor is 1996."

"Also, see the Traffic Engineer's comments regarding the necessary right-of-way widths required for Tramway Boulevard."

Transportation Development

"A traffic analysis reflecting the proposed square footage and the proposed site is required. An analysis for an adjacent site was provided as part of Z-91-5, this study assumed a 75,000 square foot store with access to Four Hills Road. As a minimum that analysis should be updated to confirm adequacy of the system and the possible need for off-site improvements."

The site plan needs to be modified to include the following:

- The southernmost access point onto Tramway Boulevard should be consolidated with the main entrance and a deceleration lane be provided. This is required due to the current traffic volumes and speed, and curvature of the roadway.
- Provisions for future access from Central Avenue should be included in the site plan. Deceleration lanes will be required on any such entrances as they would have high traffic usage.
- 6 foot sidewalks are required on Tramway Boulevard, Central and Wenonah Avenues.
- Pedestrian access to the interior of the site should be provided from Tramway Boulevard, Central and Wenonah Avenues. Sidewalk grades should not exceed 6%.
- The minimum of 12 additional feet for a bicycle trail along Central Avenue will be retained upon the implementation of the Four Hills Phase III project, disposal of the excess right-of-way is under discussion.
- Placement of speed bumps in designated truck areas is undesirable."

Utility Development

"A water and sanitary sewer availability statement will be required prior to development. No off site improvements will be necessary. Financial guarantees may be required for on site improvements prior to site plan sign off by the DRB. This would include any relocation of existing facilities. The site plan shows an on site water line and hydrant at the northeast corner of the site

identified as 'abandon?'. The fire hydrant is public hydrant #52 as identified on current system map L-23-N. It is in service. Any relocation would have to go through the DRC/Public work order process."

TRANSIT DEPARTMENT

"The Transit & Parking Department requests that consideration be given by the developer to a joint-use park and ride facility."

COMMENTS FROM OTHER AGENCIES:

ALBUQUERQUE FLOOD CONTROL AUTHORITY

"The City of Albuquerque maintains the Tramway Channel which is at the east side of this site. See City Public Works, Hydrology comments."

ALBUQUERQUE PUBLIC SCHOOLS

"No adverse comments."

MIDDLE RIO GRANDE COUNCIL OF GOVERNMENTS

"No adverse comment."

PLANNING DIVISION COMMENTS TO THE ENVIRONMENTAL PLANNING COMMISSION, AUGUST 15, 1991

Request Summary:

This is a request for approval of a site development plan under the requirements of the shopping center regulations. The plan consists of a 85,000 sq. ft. building on a 8.33 acre site.

Applicable Plans and Policies:

The Comprehensive Plan identifies the larger area containing the site as Established Urban. The plan contains general land use and development policies that apply to this site:

- B.5.d. The location, intensity, and design of new development shall respect existing neighborhood values, natural environmental conditions and carrying capacities, scenic resources, and resources of other social, cultural, or recreational concern.
- B.5.e. New growth shall be accommodated through development in areas where vacant land is contiguous to existing or programmed urban facilities and services and where the integrity of existing neighborhoods can be ensured.
- B.5.g. Development shall be carefully designed to conform to topographical features and include trail corridors in the development where appropriate.
- B.5.j. Where new commercial development occurs it should generally be located in existing commercially zoned areas as follows:
 - in larger area wide shopping centers located at intersections of major arterial streets and provided with access to mass transit.
- B.5.l. Quality and innovation in design shall be encouraged in all new development; design shall be encouraged which is appropriate to the plan area.
- B.5.m. Urban and site design which maintains and enhances unique vistas and improves the quality of the visual environment shall be encouraged.

The project also lies on the boundary of the Sandia Foothills Area Plan. The plan boundary falls on the drainage right-of-way immediately east of the property line. The plan contains policies for site design, including height and grading limitations.

Area Characteristics and Zoning History:

The subject site was originally zoned C-2 when zoning was established in 1957. The Western Skies Motor Hotel was constructed on this site to meet the needs of the upscale traveler in the 1950's. During the 1970's the development ran into problems and in the late 1980's the hotel was removed. Since that time the site has remained vacant.

The zoning on the property to the east was originally C-2 and R-1. A change was approved to SU-1 for an Industrial Park in 1970 to allow the expansion of Gulton Industries. Gulton Industries did not develop this site but moved to another location. In January of 1991 the zoning was changed to C-1. This site is governed by shopping center regulations.

The zoning south of the subject property is C-2 and vacant. The property to the west of the request is zoned C-2. It has been developed with the Four Hills Shopping Center and a gas station. The shopping center contains the existing Smiths grocery store as well as a movie theater and a variety of small shops. This center currently serves both the immediate community and the entire east mountain area.

Analysis:

This is an important project. Over the last several years the development of the Four Hills Shopping Center with its entertainment facilities and shops has created a "place" in the community. The proposal will relocate a major feature of that development leaving a large space in the existing center. This may offer an opportunity for the addition of new uses to the area or it may continue to be vacant as many former grocery store spaces are. The new development should be designed to preserve and relate to the existing center.

As indicated above the commercial development of the Tramway and I-40/ Central intersection serves as a shopping and entertainment center for both the local residents and the east mountain area. The proposed development will either enhance the existing development by expanding and building on the themes currently in place or it will disrupt existing development with additional architectural styles, traffic, and confusing patterns of pedestrian and vehicle access.

The ability to recognize this development area as a single project area comprised of a series of parts is important. These perceptions start out at the visual level. In order to create relationships in a development such as the Smiths/Four Hills area it is not necessary to have complete visual access between all points on the site. Visual connections can be made through the use of common architectural and landscaping themes. In order for this to occur they must be strong and recognizable. This means that the architecture and the signage of the new Smiths store especially the material appearance and architectural detailing should resemble the existing development. This should be enhanced with a strong landscaping theme including connections for autos, pedestrians, and bicyclists. These connections should include urban design features such as special paving, bus benches, planters, and pedestrian lighting. The plan as submitted does attempt to achieve some of these goals but it does not go far enough.

The applicant has submitted a landscaping plan that is based on a substantial regrading of the site. The plan as presented eliminates all of the existing landscaping including some very large evergreens. The neighborhood has expressed concern over this and the Planning Department encourages the preservation of these features on all sites. Staff recommends that the plan be modified to recognize and preserve to a large extent the existing landscaping.

The Environmental Health Department has called for the applicant to submit information for a preliminary air quality study. At this time the applicant is putting that information together with a revised traffic study, as required by the Transportation Development Division.

The applicant has made a serious attempt at dealing with the design of the site, however, there are important elements of information that still need to be provided and the design issues involving the integration of this site with the existing Four Hills site to the west need to be addressed more fully. These problems are not insoluble nor will they require a major reorientation of the building. Staff, therefore, recommends deferral of this case.

Findings:

1. The proposed plan represents a serious attempt at dealing with the design issues of the site.
2. This project should become an integrated part of the existing shopping and entertainment complex at the intersection of Tramway and Central. This will require some redesign of the building, signage, and access.
3. A revised traffic study and an air quality assessment are necessary.
4. The existing landscaping should be indicated on the plan and the applicant should modify the plan in order to preserve a large percentage of it.

RECOMMENDATION:

DEFERRAL OF Z-84-124-1 is recommended based on Findings 2-4.



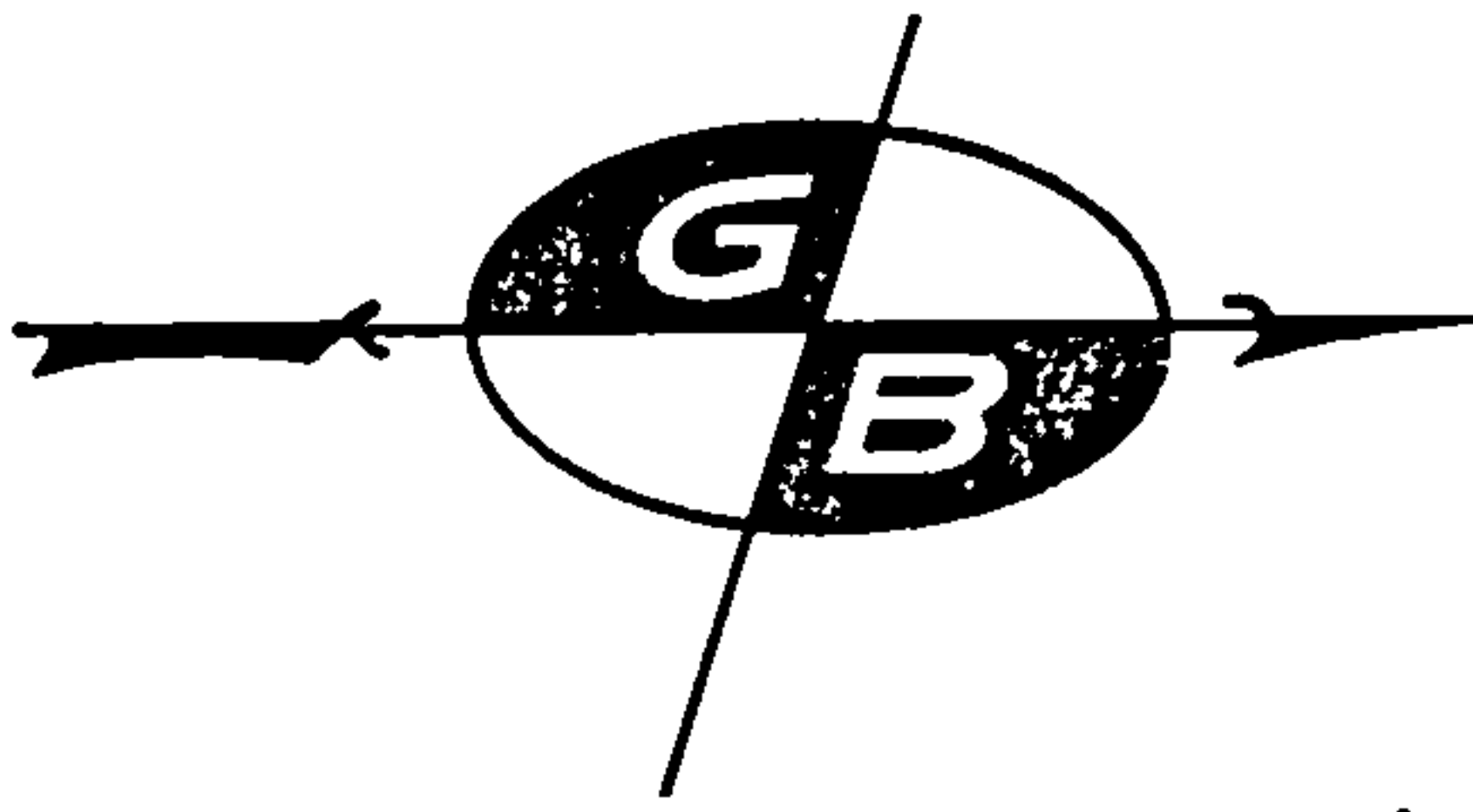
Dave Carlson
Planner

DC/lj

12559

cc: Smith's Food & Drug Centers, Inc., 1550 South Redwood Rd. Salt Lake City, UT; 84104
Singing Arrow Neighborhood Assoc., Philip York, 12614 Singing Arrow SE, Albuq., NM
Singing Arrow Neigh. Assoc., David Smith, 12536 Elyse Place SE, Albuq., NM
Galagher Neigh. Assoc., Jeannette Finci, 213 Zena Lona NE, Albuq., NM
Galagher Neigh. Assoc., Ken Carter, 212 Zena Lona NE, Albuq., NM

IT IS REQUESTED THAT THE APPLICANT/AGENT BE PRESENT AT THE HEARING.



GREAT BASIN ENGINEERING, INC.

Consulting Engineers and Land Surveyors

3544 Lincoln Ave., Suite 11
P.O. Box 9307
Ogden, Utah 84409

Ogden (801) 394-4515
Salt Lake (801) 521-8529
FAX (801) 392-7544



August 2, 1991

City of Albuquerque
Planning Commission
P.O. Box 1293
Albuquerque, New Mexico 87103

Attention: Barbara Seward; Chairman
c/o David Carlson, Associate Planner

**RE: PROPOSED SMITH'S FOOD AND DRUG CENTER AT
SOUTHEAST CORNER OF TRAMWAY BOULEVARD AND CENTRAL AVENUE**

Dear Ms. Seward:

Due to delays in acquiring the Environmental Health Department Air Quality Review and updating the Traffic Study for this Project. We request that this Project which is scheduled for the August 15, 1991 Environmental Planning Commission Meeting, Agenda Number 2-84-124-1, be deferred to the September 19, 1991 Environmental Planning Commission Meeting.

Thank You for your consideration.

Sincerely,

GREAT BASIN ENGINEERING, INC.

Kirk Randall
Project Manager

cc: Fred Urbanek
Roger Gough
Peter Barth
Bob Brase
Garry Hugg

KR/Th

Applicant's Name: SMITH'S FOOD & DRUG CENTERS, INC. requests

For Lot(s): J-1 Block(s): _____ in Subdivision/Addition FOUR HILLS VILLAGE SHOPPING CENTER
AND APARTMENT COMPLEX
Presently Zoned C-2 and proposed to be zoned as _____ located at: _____

Between CENTRAL Street and WENONAH Street

Total Land Area Covered by Application: Acres 8.335 Square Feet 363,062

Number of DU's Proposed _____ **DU's Per Gross Acre** _____ **DU's Per Net Acre** _____

Uniform Property Code Number: L-023-056-030-286-2-01-15
(18 diget property tax Number issued by County Assessor)

NOTE:Neighborhood Notification form must accompany application.

Applicant's Mailing Address: 1550 South Redwood Rd. **Phone:** (801) 974-1406

S.L.C., UT Zip Code 84104

Applicant's Proprietary Interest in Property OWNERS

Agent if any: _____ Phone: _____

Mailing Address: _____ **Phone:** _____
Zip Code: _____

_____ 210 CODE: _____

APPLICANT SIGNATURE: _____ Date: _____
(Owner or Trustee of Property)

List Reason For Request on reverse side or attach separate sheet,

FOR PLANNING STAFF USE ONLY

Application Received By: Allen J. Sullivan Date: 6-28-91

Fee: \$270.00 Paid: \$270.00 Method of Payment: check

Cross-Ref.: AX-_____ Z-_____ S-_____ Other:_____

No. of Signs Issued: 2 ZHE or EPC?

1 copy each to:
Research Analyst

Hearing Date: AUG 15, 1991

Applicant

Graphics

Z-84-124--1

Map Number: 4-23

NEIGHBORHOOD NOTIFICATION ADDENDUM TO APPLICATION

This certifies that I, Peter H. Barth have notified via certified mail, return receipt request, two representatives of the following Recognized Office of Neighborhood Associations, as furnished of Neighborhood Coordination Office* regarding our application for

☐ ZONE MAP AMENDMENT
☐ SITE DEVELOPMENT PLAN APPROVAL OR AMENDMENT
☐ ANNEXATION
☐ MAJOR SUBDIVISION
☐ VACATION OF PUBLIC RIGHT-OF-WAY
☐ PRIVATE SECTOR DEVELOPMENT PLAN

for property located at Southeast Corner of Central and Tramway, Albuquerque, NM

(legal description)

Singing Arrow Neighborhood Association
(Neighborhood Association)

Philip York
(Representative)
12614 Singing Arrow SE
(Address) Albuquerque

Singing Arrow Neighborhood Association
(Neighborhood Association)

(Phone)
David Smith

(Representative)
12536 Elyse Place SE, Albuquerque

(Address)

Galagher Neighborhood Association
(Neighborhood Association)

(Phone)
Jeannette Finci
(Representative)
213 Zena Lona NE, Albuquerque
(Address)

Galagher Neighborhood Association
(Neighborhood Association)

(Phone)
Ken Carter
(Representative)
212 Zena Lona NE, Albuquerque
(Address)

(Phone)

Certified by [Signature] not rec.
(Owner/Agent)

For SMITH'S FOOD & DRUG CENTERS, INC.
(801) (Owner)

Printed name of person signing Peter H. Barth Phone# 974-1495 Date 6/20/91

*The Neighborhood Coordination Office is located in the ~~Basement~~ of the Old City Hall Building, 768-3790
5th Floor



LEGAL DEPARTMENT

Michael C. Frei
Peter H. Barth

Smith's Food & Drug Centers, Inc.

1550 South Redwood Rd., Salt Lake City, Utah 84104 • P.O. Box 30550, Salt Lake City, Utah 84130
Telephone (801) 974-1494 • Telecopier (801) 974-1676

RECEIVED June 20, 1991

JUN 21 1991

SENT VIA CERTIFIED MAIL

Engineering

Mr. Philip York
Singing Arrow Neighborhood Association
12614 Singing Arrow S.E.
Albuquerque, New Mexico 87123

Re: Notice to Neighborhood Associations
For New Development Located at
Southeast Corner of Central & Tramway
Albuquerque, New Mexico

Dear Mr. York:

Pursuant to Ordinance 0-92 City of Albuquerque, Smith's Food & Drug Centers, Inc. ("Smith's") provides you notice of its plans to construct a new Smith's Food & Drug Store at the Southeast corner of Central and Tramway. This store will be located directly across the street from an existing Smith's. This new store would be a free-standing store with no shops or other development adjacent thereto.

There is a hearing before the Environmental Planning Commission scheduled August 15, 1991, regarding our application for this matter.

If you have any questions concerning our plans to develop this new store, please feel free to contact the undersigned at (801) 974-1495 or our Project Manager for this location, Roger Gough, at (801) 974-1529.

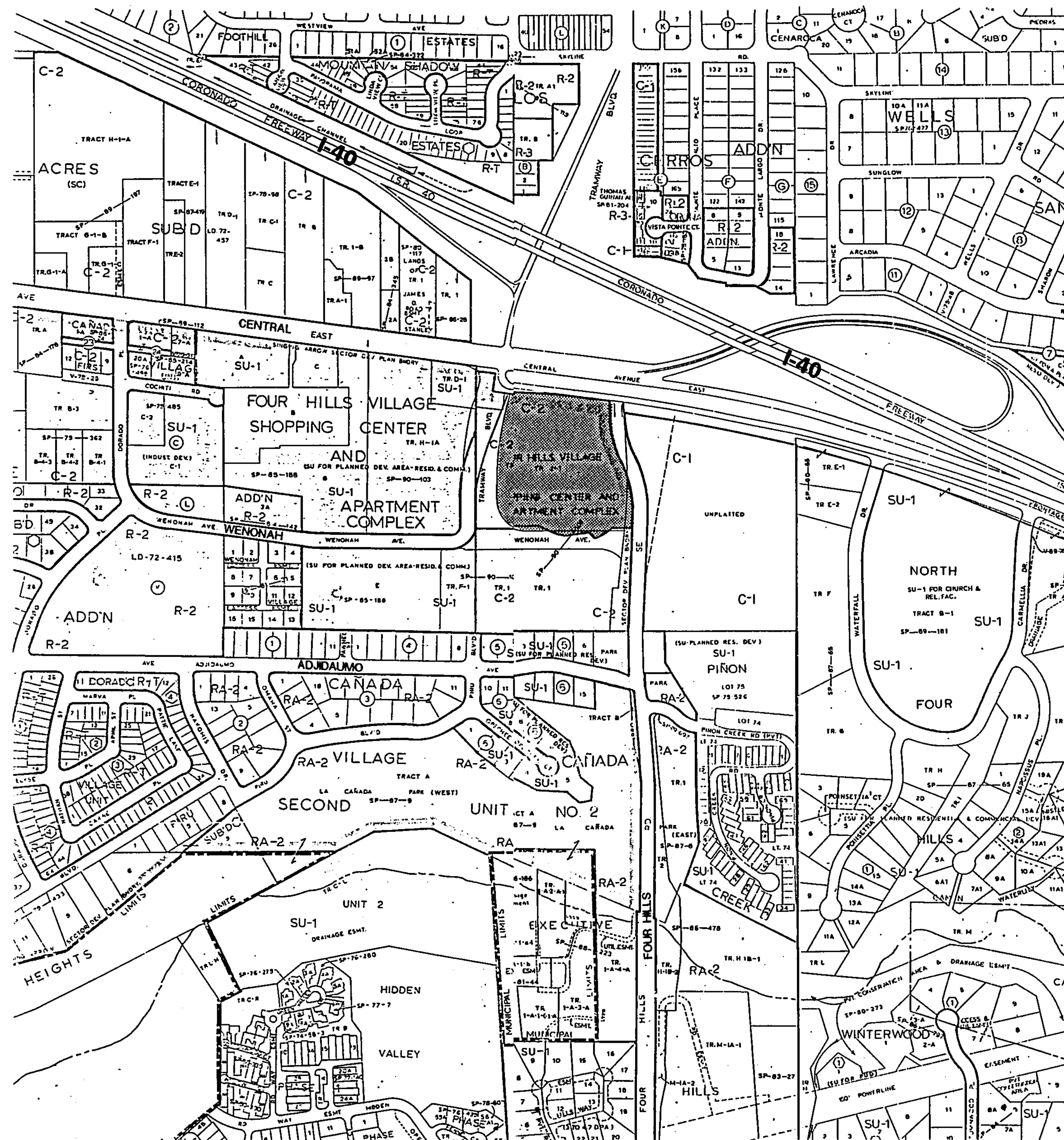
Very truly yours,

Peter H. Barth
Corporate Counsel

PHB/mjc

cc: City of Albuquerque

Roger Gough



Z-84-124-1

Z-84-124-1

Smith's Food and Drug Center, Inc., requests site development plan approval for Tract J, Four Hills Shopping Center and Apartment Complex Subdivision, zoned C-2 and located on the southeast corner of the intersection of Tramway Boulevard NE and Central Avenue East, containing approximately 8.335 acres. (L-23)

CASE ASSIGNED TO: (name)	
DAVE	
SKETCH REVIEWED AND APPROVED BY (case planner)	
RECOMMENDED APPROVAL BY:	
date	
date approved	
HEARING DATE	8-15-91
MAP NO.	L-22,23
FILE NO.	Z-84-124-1

Z-84-124-1 Smith's Food and Drug Center, Inc., requests site development plan approval for Tract J, Four Hills Shopping Center and Apartment Complex Subdivision, zoned C-2 and located on the southeast corner of the intersection of Tramway Boulevard NE and Central Avenue East, containing approximately 8.335 acres. (L-23)

COMMENTS FROM OTHER DEPARTMENTS:

ENVIRONMENTAL HEALTH DEPARTMENT

Air Pollution Control Division

"The applicant failed to submit information for preliminary air quality review prior to application as required by City Council Ordinance 0-13, Enactment 12-1990 amending the Albuquerque Zoning Code, Article XIV, Chapter 7 R.O. 1974 for a retail grocery store. The information submitted within this request indicates that the project substantially exceeds threshold criteria set forth in the referenced code. Based on this information, the Air Pollution Control Division has determined that an air quality study is required."

FIRE DEPARTMENT/Planning

No comments received.

LAND RESOURCES & REGULATION DEPARTMENT

Real Property

No comments received.

Zoning Enforcement

"Free standing sign exceeds 150 sq. ft."

NEIGHBORHOOD SERVICES

"Singing Arrow Neighborhood Association and Gallagher Neighborhood Association (both recognized neighborhood associations) have been notified. Fourhills Village, Winterwood Park, Hidden Valley Neighborhood Association will also be notified."

PLANNING DEPARTMENT

Capital Improvement

No comments received.

PARKS AND RECREATION DEPARTMENT/Administration

"No adverse comments."

OFFICE OF OPEN SPACE

"No adverse comments."

POLICE DEPARTMENT/Planning

"No adverse comments."

SOLID WASTE MANAGEMENT DEPARTMENT/Refuse Division

No comments received.

PUBLIC WORKS DEPARTMENT

Hydrology

"A conceptual grading and drainage plan is required for site plan sign-off by the City Engineer and AMAFCA. However as of July 22, 1991, no drainage submittal has been made to this office for approval."

Transportation Planning

"The applicant should be advised that the segment of Tramway Boulevard south of Central Avenue is part of the Tijeras Arroyo Future Potential Corridor as found on the Long Range Major Street Plan. The earliest date identified for possible consideration of a roadway in this corridor is 1996."

"Also, see the Traffic Engineer's comments regarding the necessary right-of-way widths required for Tramway Boulevard."

Transportation Development

"A traffic analysis reflecting the proposed square footage and the proposed site is required. An analysis for an adjacent site was provided as part of Z-91-5, this study assumed a 75,000 square foot store with access to Four Hills Road. As a minimum that analysis should be updated to confirm adequacy of the system and the possible need for off-site improvements."

The site plan needs to be modified to include the following:

- The southernmost access point onto Tramway Boulevard should be consolidated with the main entrance and a deceleration lane be provided. This is required due to the current traffic volumes and speed, and curvature of the roadway.
- Provisions for future access from Central Avenue should be included in the site plan. Deceleration lanes will be required on any such entrances as they would have high traffic usage.
- 6 foot sidewalks are required on Tramway Boulevard, Central and Wenonah Avenues.
- Pedestrian access to the interior of the site should be provided from Tramway Boulevard, Central and Wenonah Avenues. Sidewalk grades should not exceed 6%.
- The minimum of 12 additional feet for a bicycle trail along Central Avenue will be retained upon the implementation of the Four Hills Phase III project, disposal of the excess right-of-way is under discussion.
- Placement of speed bumps in designated truck areas is undesirable."

Utility Development

"A water and sanitary sewer availability statement will be required prior to development. No off site improvements will be necessary. Financial guarantees may be required for on site improvements prior to site plan sign off by the DRB. This would include any relocation of existing facilities. The site plan shows an on site water line and hydrant at the northeast corner of the site

identified as 'abandon?'. The fire hydrant is public hydrant #52 as identified on current system map L-23-N. It is in service. Any relocation would have to go through the DRC/Public work order process."

TRANSIT DEPARTMENT

"The Transit & Parking Department requests that consideration be given by the developer to a joint-use park and ride facility."

COMMENTS FROM OTHER AGENCIES:

ALBUQUERQUE FLOOD CONTROL AUTHORITY

"The City of Albuquerque maintains the Tramway Channel which is at the east side of this site. See City Public Works, Hydrology comments."

ALBUQUERQUE PUBLIC SCHOOLS

"No adverse comments."

MIDDLE RIO GRANDE COUNCIL OF GOVERNMENTS

"No adverse comment."

PLANNING DIVISION COMMENTS TO THE ENVIRONMENTAL PLANNING COMMISSION, AUGUST 15, 1991

Request Summary:

This is a request for approval of a site development plan under the requirements of the shopping center regulations. The plan consists of a 85,000 sq. ft. building on a 8.33 acre site.

Applicable Plans and Policies:

The Comprehensive Plan identifies the larger area containing the site as Established Urban.. The plan contains general land use and development policies that apply to this site:

- B.5.d. The location, intensity, and design of new development shall respect existing neighborhood values, natural environmental conditions and carrying capacities, scenic resources, and resources of other social, cultural, or recreational concern.
- B.5.e. New growth shall be accommodated through development in areas where vacant land is contiguous to existing or programmed urban facilities and services and where the integrity of existing neighborhoods can be ensured.
- B.5.g. Development shall be carefully designed to conform to topographical features and include trail corridors in the development where appropriate.
- B.5.j. Where new commercial development occurs it should generally be located in existing commercially zoned areas as follows:
 - in larger area wide shopping centers located at intersections of major arterial streets and provided with access to mass transit.
- B.5.l. Quality and innovation in design shall be encouraged in all new development; design shall be encouraged which is appropriate to the plan area.
- B.5.m. Urban and site design which maintains and enhances unique vistas and improves the quality of the visual environment shall be encouraged.

The project also lies on the boundary of the Sandia Foothills Area Plan. The plan boundary falls on the drainage right-of-way immediately east of the property line. The plan contains policies for site design, including height and grading limitations.

Area Characteristics and Zoning History:

The subject site was originally zoned C-2 when zoning was established in 1957. The Western Skies Motor Hotel was constructed on this site to meet the needs of the upscale traveler in the 1950's. During the 1970's the development ran into problems and in the late 1980's the hotel was removed. Since that time the site has remained vacant.

The zoning on the property to the east was originally C-2 and R-1. A change was approved to SU-1 for an Industrial Park in 1970 to allow the expansion of Gulton Industries. Gulton Industries did not develop this site but moved to another location. In January of 1991 the zoning was changed to C-1. This site is governed by shopping center regulations.

The zoning south of the subject property is C-2 and vacant. The property to the west of the request is zoned C-2. It has been developed with the Four Hills Shopping Center and a gas station. The shopping center contains the existing Smiths grocery store as well as a movie theater and a variety of small shops. This center currently serves both the immediate community and the entire east mountain area.

Analysis:

This is an important project. Over the last several years the development of the Four Hills Shopping Center with its entertainment facilities and shops has created a "place" in the community. The proposal will relocate a major feature of that development leaving a large space in the existing center. This may offer an opportunity for the addition of new uses to the area or it may continue to be vacant as many former grocery store spaces are. The new development should be designed to preserve and relate to the existing center.

As indicated above the commercial development of the Tramway and I-40/ Central intersection serves as a shopping and entertainment center for both the local residents and the east mountain area. The proposed development will either enhance the existing development by expanding and building on the themes currently in place or it will disrupt existing development with additional architectural styles, traffic, and confusing patterns of pedestrian and vehicle access.

The ability to recognize this development area as a single project area comprised of a series of parts is important. These perceptions start out at the visual level. In order to create relationships in a development such as the Smiths/Four Hills area it is not necessary to have complete visual access between all points on the site. Visual connections can be made through the use of common architectural and landscaping themes. In order for this to occur they must be strong and recognizable. This means that the architecture and the signage of the new Smiths store especially the material appearance and architectural detailing should resemble the existing development. This should be enhanced with a strong landscaping theme including connections for autos, pedestrians, and bicyclists. These connections should include urban design features such as special paving, bus benches, planters, and pedestrian lighting. The plan as submitted does attempt to achieve some of these goals but it does not go far enough.

The applicant has submitted a landscaping plan that is based on a substantial regrading of the site. The plan as presented eliminates all of the existing landscaping including some very large evergreens. The neighborhood has expressed concern over this and the Planning Department encourages the preservation of these features on all sites. Staff recommends that the plan be modified to recognize and preserve to a large extent the existing landscaping.

The Environmental Health Department has called for the applicant to submit information for a preliminary air quality study. At this time the applicant is putting that information together with a revised traffic study, as required by the Transportation Development Division.

The applicant has made a serious attempt at dealing with the design of the site, however, there are important elements of information that still need to be provided and the design issues involving the integration of this site with the existing Four Hills site to the west need to be addressed more fully. These problems are not insoluble nor will they require a major reorientation of the building. Staff, therefore, recommends deferral of this case.

Findings:

1. The proposed plan represents a serious attempt at dealing with the design issues of the site.
2. This project should become an integrated part of the existing shopping and entertainment complex at the intersection of Tramway and Central. This will require some redesign of the building, signage, and access.
3. A revised traffic study and an air quality assessment are necessary.
4. The existing landscaping should be indicated on the plan and the applicant should modify the plan in order to preserve a large percentage of it.

RECOMMENDATION:

DEFERRAL OF Z-84-124-1 is recommended based on Findings 2-4.

ACTION TAKEN BY THE ENVIRONMENTAL PLANNING COMMISSION ON AUGUST 15, 1991:

THEREFORE BE IT RESOLVED THAT **Z-84-124-1**, be deferred for thirty days to the September 19, 1991 public hearing.

MOVED BY COMMISSIONER FINDELL
SECONDED BY COMMISSIONER FANNING

MOTION CARRIED UNANIMOUSLY

ADDITIONAL STAFF COMMENTS TO THE ENVIRONMENTAL PLANNING COMMISSION ON SEPTEMBER 19, 1991:

The applicant has submitted a revised site plan and landscaping plan. In the previous report staff suggested that the applicant address the design of the building, the existing landscaping, and integration the with existing shopping center. The applicant has discussed these items with staff.

The applicant has indicated a that the materials and elevations will be modified to be consistent with the existing Four Hills Shopping Center, however, revised elevations have not been received as of 9/10/91.

The site plan has been redesigned to provide a significant pedestrian access at the entry to the parking lot. This was done in an attempt to provide convenient access between the existing shopping center and this site. The connection is located at the main vehicle entry on Tramway. This is a compromise location. The Planning Staff would like the location separated from the vehicle access with a larger refuge area in the median. This would require a mid-block location. The Transportation Development Division feels that mid-block access point can provide pedestrians a false sense of security because these crossing locations are not recognizable as pedestrian crossings by motorists. Given the traffic speed and the location of the curve staff will support the proposed location.

The landscaping plan in general meets the intent and requirements of applicable City plans and policies. The landscaping plan has been modified to include several large pine trees representative of the species currently on site. These Ponderosa Pines are 14 to 16 feet in height, the existing trees are 30 to 40 feet in height. These trees represent a compromise solution to maintaining the existing landscaping. Staff recommends that the replacement trees be a minimum of 20 feet in height in order to achieve their purpose. Staff has discussed this with the applicant and there is agreement. The site plan contains no identified cart return areas. In most developments these are located in parking spaces and their design is unattractive. Staff discussed this with the applicant and they will be incorporated into the landscaping plan. The plan utilizes many ornamental trees within the parking lot. In most cases these trees should be changed to large shade trees to provide; a high enough canopy for pedestrian clearance, vehicular shade, and consistency with the plan for Four Hills. Ornamental trees should be limited to areas that contain other large trees or near building where they will act as accent.

The proposed plan for circulation and access is generally acceptable. The parking spaces adjacent to the building on both the north and south sides of the entrance should be changed to handicapped parking. This will provide better access for the handicapped as well as shoppers when these spaces are not occupied.

The plan for freestanding signs is not consistent with the plan for signage approved on the adjacent shopping center development. Those signs are designed to fit into the architecture of the buildings and are less than 100 square feet in size. The proposed signs should be similar in scale and design incorporating architectural elements in the design. There are no dimensions on the building mounted signage, these should be provided.

Findings:

1. The revised plan generally complies with all applicable plans and policies.
2. Revisions to the elevations are necessary to achieve consistency with existing adjacent development.
3. Minor revisions are necessary to the plan for signage, the landscaping plan, and the parking lot layout.

RECOMMENDATION:

APPROVAL OF Z-84-124-1 is recommended based on the above Findings and subject to the following conditions:

Conditions:

1. The building elevations shall incorporate materials of the same appearance as the existing Four Hills Shopping Center. These modifications shall be approved by Staff.
2. Freestanding signage shall be similar in scale and design as the existing Four Hills Shopping Center. Dimensions of the building mounted signage shall be provided and they shall not exceed those areas indicated on the plan elevations.
3. The 5 Ponderosa pines that will serve as replacements for the existing trees on sites shall be a minimum of 20 feet in height.
4. Ornamental Purple Leaf Plum trees within the parking area shall be used only to accent other trees, shade trees shall be used as substitutes in most locations. Cart racks shall be incorporated into landscaping features in the parking lot.

5. The parking spaces on the north and south sides of the building entry shall be designated as handicapped parking.


Dave Carlson
Planner

DC/lj

12559

cc: Smith's Food & Drug Centers, Inc., 1550 South Redwood Rd. Salt Lake City, UT; 84104
Singing Arrow Neighborhood Assoc., Philip York, 12614 Singing Arrow SE, Albuquerque, NM
Singing Arrow Neigh. Assoc., David Smith, 12536 Elyse Place SE, Albuquerque, NM
Galagher Neigh. Assoc., Jeannette Finci, 213 Zena Lona NE, Albuquerque, NM
Galagher Neigh. Assoc., Ken Carter, 212 Zena Lona NE, Albuquerque, NM

IT IS REQUESTED THAT THE APPLICANT/AGENT BE PRESENT AT THE HEARING.

**APPLICATION FOR ZONE MAP AMENDMENT
AND/OR DEVELOPMENT PLAN**

INSTRUCTIONS: PRINT OR TYPE IN BLACK INK ONLY. Use additional sheets, if necessary. Thirty (30) copies (Annexation, forty copies) of all attachments must be submitted with the application and, after folding, shall not exceed 8 1/2 by 14 inches.

Applicant's Name: SMITH'S FOOD & DRUG CENTERS, INC. requests

☐ Zone Map Amendment

☒ Development Plan Review
Type of Plan

☐ Annexation

For Lot(s): J-1 Block(s): _____ in Subdivision/Addition FOUR HILLS VILLAGE SHOPPING CENTER AND APARTMENT COMPLEX

Presently Zoned C-2 and proposed to be zoned as _____ located at:

Street Address (No. if any): TRAMWAY BOULEVARD

Between CENTRAL Street and WENONAH Street

Total Land Area Covered by Application: Acres 8.335 Square Feet 363,062

Number of DU's Proposed _____ DU's Per Gross Acre _____ DU's Per Net Acre _____

Uniform Property Code Number: L-023-056-030-286-2-01-15
(18 digit property tax Number issued by County Assessor)

NOTE: Neighborhood Notification form must accompany application.

APPLICANT INFORMATION:

Applicant's Mailing Address: 1550 SOUTH REDWOOD RD. Phone: (801) 974-1406

SALT LAKE CITY, UT

Zip Code 84104

Applicant's Proprietary Interest in Property OWNED

Agent if any: _____ Phone: _____

Mailing Address: _____ Zip Code: _____

APPLICANT SIGNATURE: [Signature] Date: _____
(Owner or Trustee of Property)

List Reason For Request on reverse side or attach separate sheet.

FOR PLANNING STAFF USE ONLY

Application Received By: Allen J. Sullivan Date: 6-29-91

Fee: \$270.00 Paid: \$270.00 Method of Payment: Check

Cross-Ref.: AX- _____ Z- _____ S- _____ Other: _____

No. of Signs Issued: 2 ZHE or EPC?

1 copy each to:
Research Analyst Hearing Date: AUG. 15, 1991

Applicant

Z- 84-124-1

Graphics

Map Number: L-23

NEIGHBORHOOD NOTIFICATION
ADDENDUM TO APPLICATION

This certifies that I, Peter H. Barth have notified via certified mail, return receipt request, two representatives of the following Recognized Office of Neighborhood Associations, as furnished of Neighborhood Coordination Office* regarding our application for

 ZONE MAP AMENDMENT
 SITE DEVELOPMENT PLAN APPROVAL OR AMENDMENT
 ANNEXATION
 MAJOR SUBDIVISION
 VACATION OF PUBLIC RIGHT-OF-WAY
 PRIVATE SECTOR DEVELOPMENT PLAN

for property located at Southeast Corner of Central and Tramway, Albuquerque, NM

(legal description)

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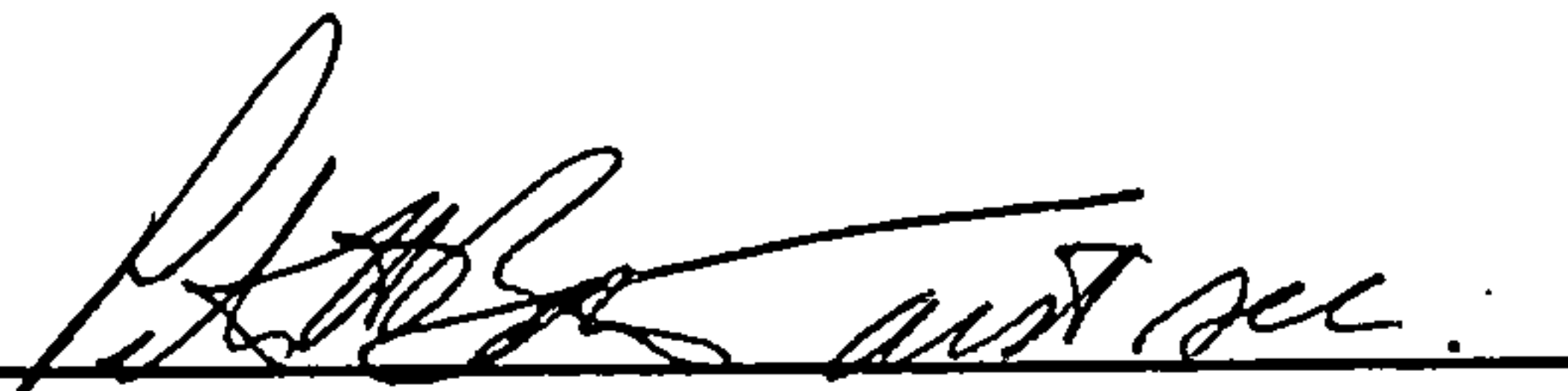
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(Neighborhood Association)

(Phone)
Ken Carter
(Representative)
212 Zena Lona NE, Albuquerque
(Address)

(Phone)

Certified by 
(Owner/Agent)

For SMITH'S FOOD & DRUG CENTERS, INC.
(801) (Owner)

Printed name of person signing Peter H. Barth Phone# 974-1495 Date 6/20/91

*The Neighborhood Coordination Office is located in the ~~Basement~~ 5th Floor of the Old City Hall Building, 768-3790



LEGAL DEPARTMENT

Michael C. Frei
Peter H. Barth

Smith's Food & Drug Centers, Inc.

1550 South Redwood Rd., Salt Lake City, Utah 84104 • P.O. Box 30550, Salt Lake City, Utah 84130
Telephone (801) 974-1494 • Telecopier (801) 974-1676

RECEIVED June 20, 1991

JUN 21 1991

SENT VIA CERTIFIED MAIL

Engineering

Mr. Philip York
Singing Arrow Neighborhood Association
12614 Singing Arrow S.E.
Albuquerque, New Mexico 87123

Re: Notice to Neighborhood Associations
For New Development Located at
Southeast Corner of Central & Tramway
Albuquerque, New Mexico

Dear Mr. York:

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There is a hearing before the Environmental Planning Commission scheduled August 15, 1991, regarding our application for this matter.

If you have any questions concerning our plans to develop this new store, please feel free to contact the undersigned at (801) 974-1495 or our Project Manager for this location, Roger Gough, at (801) 974-1529.

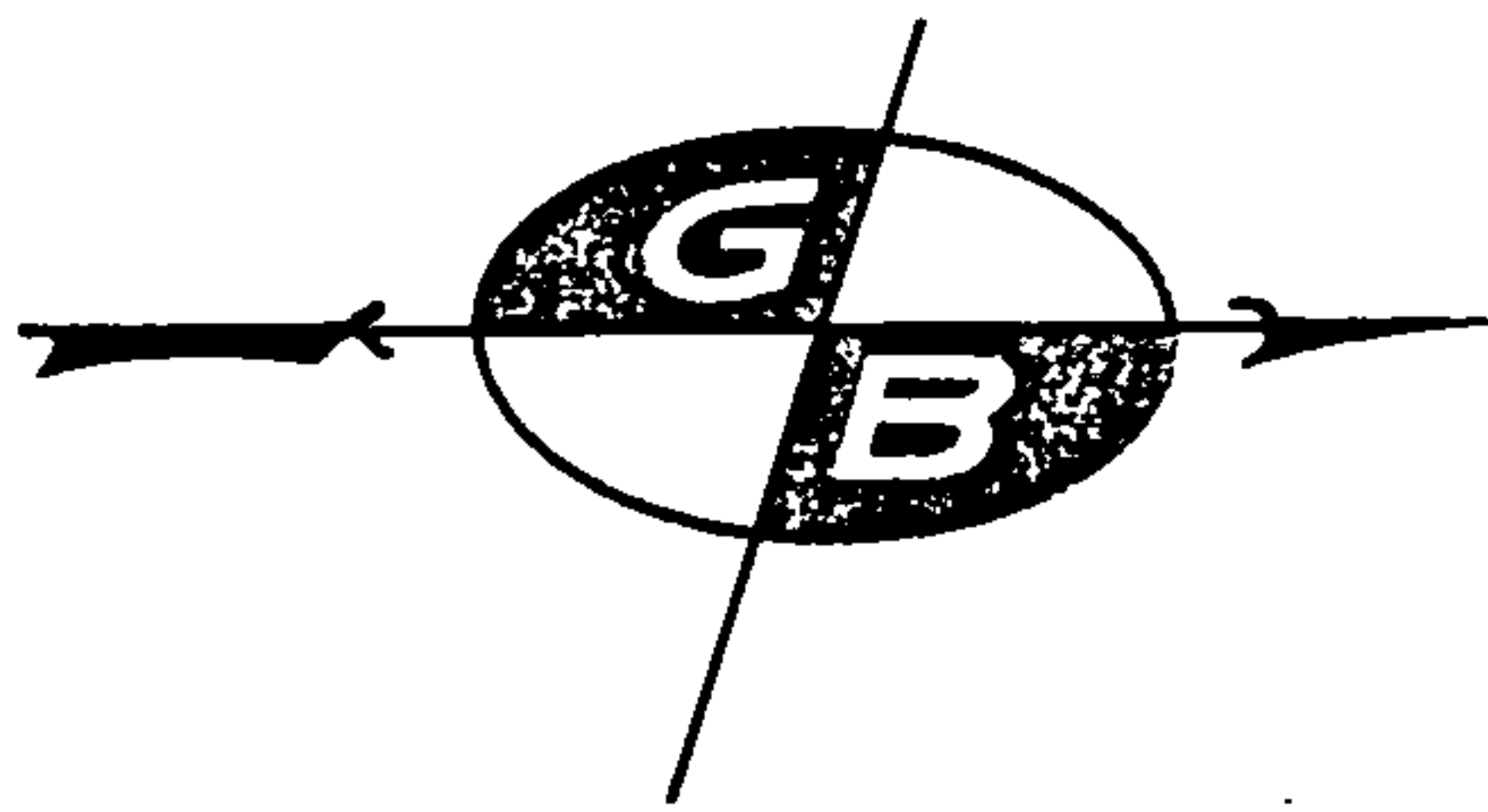
Very truly yours,

Peter H. Barth
Corporate Counsel

PHB/mjc

cc: City of Albuquerque

Roger Gough



GREAT BASIN ENGINEERING, INC.

Consulting Engineers and Land Surveyors

3544 Lincoln Ave., Suite 11
P.O. Box 9307
Ogden, Utah 84409

Ogden (801) 394-4515
Salt Lake (801) 521-8529
FAX (801) 392-7544



August 2, 1991

City of Albuquerque
Planning Commission
P.O. Box 1293
Albuquerque, New Mexico 87103

Attention: Barbara Seward; Chairman
c/o David Carlson, Associate Planner

**RE: PROPOSED SMITH'S FOOD AND DRUG CENTER AT
SOUTHEAST CORNER OF TRAMWAY BOULEVARD AND CENTRAL AVENUE**

Dear Ms. Seward:

Due to delays in acquiring the Environmental Health Department Air Quality Review and updating the Traffic Study for this Project. We request that this Project which is scheduled for the August 15, 1991 Environmental Planning Commission Meeting, Agenda Number 2-84-124-1, be deferred to the September 19, 1991 Environmental Planning Commission Meeting.

Thank You for your consideration.

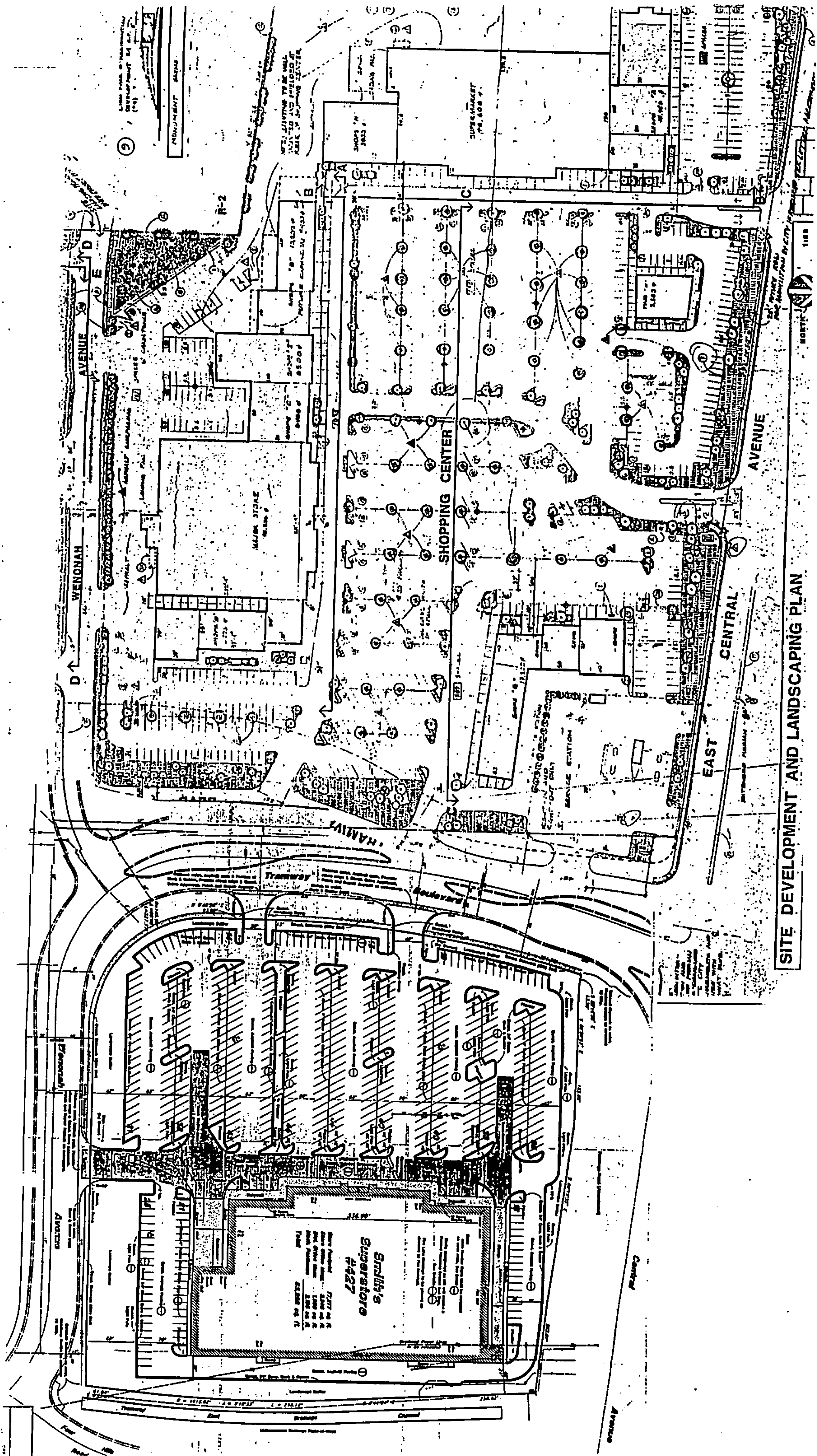
Sincerely,

GREAT BASIN ENGINEERING, INC.

Kirk Randall
Project Manager

cc: Fred Urbanek
Roger Gough
Peter Barth
Bob Brase
Garry Hugg

KR/1h



SITE DEVELOPMENT AND LANDSCAPING PLAN



Z-84-124-1

Z-84-124-1

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CASE ASSIGNED TO: (name)

DAVE

SKETCH REVIEWED
AND APPROVED BY (case planner)

RECOMMENDED APPROVAL BY:

date

date approved

HEARING
DATE

8-15-91

MAP
NO.

L-22,23

FILE NO.

Z-84-124-1

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

RECEIVED

SEP 25 1991

JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 1

CALCULATED BY MEB

CHECKED BY

SCALE

OF

DATE

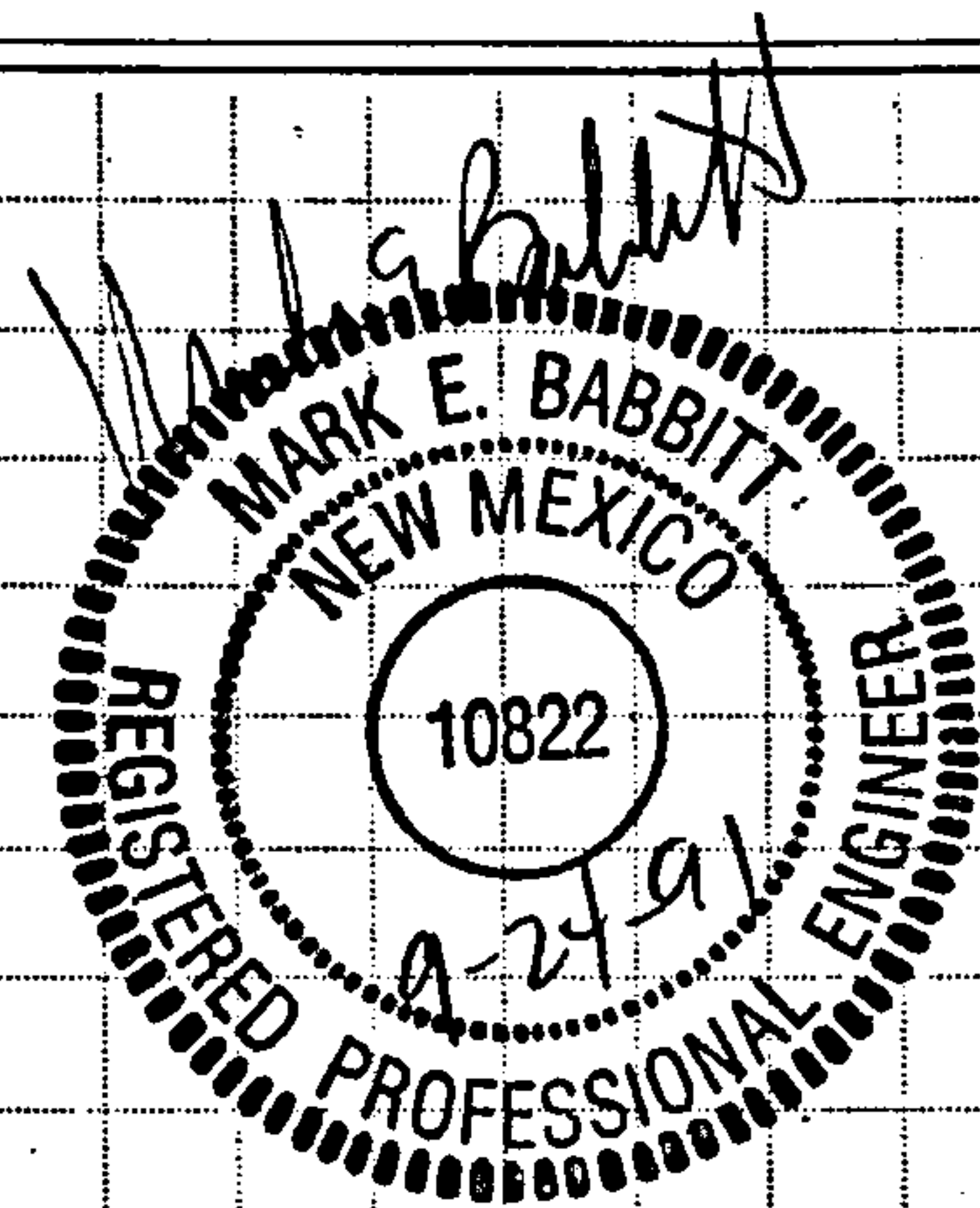
DATE

23 Sept. 1991

STORM WATER STUDY

Site:

SMITH'S STORE #427
Central & Tramway
Albuquerque, New Mexico



EXISTING CONDITIONS

23 Sept 1991

Drainage Areas - See Attached Drawing "Topographical Survey"

Area #1 - 4.03 ac.

Area #2 - 3.27 ac.

Area #3 - 0.38 ac.

Area #4 - 0.57 ac.

Area #5 - 0.08 ac.

Area #6 - 0.55 ac.

8.33 ac.

- offsite draining onto Smith's site

Coefficient of Runoff (Plate 22.2 C-1)

Soils are silty, slightly gravelly sands
(SCS Soils Group A)

Area #1 (73% impervious)

C = 0.60

Area #2 (7% impervious)

C = 0.20

Area #3 (44% impervious)

C = 0.39

Area #4 (4% impervious)

C = 0.18

Area #5 (5% impervious)

C = 0.19

Area #6 (0% impervious)

C = 0.16

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB SMITH'S STORE #427 - Albuquerqu

SHEET NO. 2 OF

CALCULATED BY MFB DATE 23 Sep 1991

CHECKED BY DATE

SCALE

Time of Concentration

Plate 22.2 B-1

Area #1 - 50'± over bare ground @ $S = 8.8\% \pm$ $V = 3.0 \text{ fps}$ $t_c = 0.3 \text{ min.}$
 120'± over paving @ $S = 2.3\% \pm$ $V = 2.1 \text{ fps}$ $t_c = 0.95 \text{ min.}$
 645'± over bare ground @ $S = 1.5\% \pm$ $V = 0.72 \text{ fps}$ $t_c = 14.95 \text{ min.}$
 $t_c = 16.2 \text{ min.}$

Area #2 - 60'± over bare ground @ $S = 6.7\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.4 \text{ min.}$
 68'± over paving @ $S = 2.0\% \pm$ $V = 1.92 \text{ fps}$ $t_c = 0.6 \text{ min.}$
 370'± over bare ground @ $S = 4.2\% \pm$ $V = 1.15 \text{ fps}$ $t_c = 5.4 \text{ min.}$
 $t_c = 6.4 \text{ min.}$

Area #3 - 190'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 1.2 \text{ min.}$

Area #4 - 50'± over bare ground @ $S = 30\% \pm$ $V = 6.0 \text{ fps}$ $t_c = 0.1 \text{ min.}$

Area #5 - 15'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.1 \text{ min.}$

Area #6 - 210'± over bare ground @ $S = 3.8\% \pm$ $V = 1.12 \text{ fps}$ $t_c = 3.1 \text{ min.}$

Assume Minimum t_c of 10 minutes for small Drainage Areas

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22.2 D-2
for 100 year, 6-hour rainfall

@ $t_c = 10.0 \text{ min}$ $i = 5.38 \text{ in/hr}$

@ $t_c = 16.2 \text{ min}$ $i = 4.20 \text{ in/hr}$

@ $t_c = 30.0 \text{ min}$ $i = 3.05 \text{ in/hr.}$

@ $t_c = 60.0 \text{ min}$ $i = 2.06 \text{ in/hr}$

@ $t_c = 120.0 \text{ min}$ $i = 1.48 \text{ in/hr}$

@ $t_c = 180.0 \text{ min}$ $i = 1.20 \text{ in/hr}$

@ $t_c = 240.0 \text{ min}$ $i = 1.04 \text{ in/hr.}$

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JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 3 OF

CALCULATED BY MEB DATE 23 Sept 1991

CHECKED BY DATE

SCALE

Peak Flows - Use "Rational Method" $Q = CiA$

Area #1 -	$Q = CiA = (0.60)(4.2)(4.03) =$	10.16 cfs
Area #2 -	$Q = CiA = (0.20)(5.38)(3.27) =$	3.52 cfs
Area #3 -	$Q = CiA = (0.39)(5.38)(0.38) =$	0.80 cfs
Area #4 -	$Q = CiA = (0.18)(5.38)(0.57) =$	0.55 cfs
Area #5 -	$Q = CiA = (0.19)(5.38)(0.08) =$	0.08 cfs
Area #6 -	$Q = CiA = (0.16)(5.38)(0.55) =$	0.47 cfs

Comments:

- Areas #1, #5 & #6 drain to an existing Storm Water Collection System at the intersection of Tramway Blvd and Wenonah Ave.
- Areas #2, #3 & #4 drain into the Tramway East Drainage Channel
- Area #1, #4, #5 & #6 drain into the City's Right-of-Ways and are collected as mentioned above.
Peak Runoff during a 100 year - 6 hour storm entering R.O.W. is 11.26 cfs.

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SHEET NO. 4 OF

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CHECKED BY DATE

SCALE

STORM WATER STUDY (cont)

PROPOSED CONDITIONS

Drainage Areas - see Attached Drawing "Conceptual Plan - Grading & Drainage"

Area A -	2.75 ac	}	8.33 ac.
Area B -	4.53 ac		
Area C -	0.28 ac		
Area D -	0.23 ac		
Area E -	0.44 ac		
Area F -	0.10 ac.		
Area G -	0.55 ac	- offsite	

Coefficient of Runoff (Plate 22.2 C-1)

Soils are silty, slightly gravelly sands
(SCS soils Group A)

Area A	(95% impervious)	C = 0.85
Area B	(90% impervious)	C = 0.74
Area C	(67% impervious)	C = 0.53
Area D	(0% impervious)	C = 0.16
Area E	(13% impervious)	C = 0.22
Area F	(5% impervious)	C = 0.19
Area G	(0% impervious)	C = 0.16

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JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 5 OF

CALCULATED BY MFB DATE 23 Sept. 1991

CHECKED BY DATE

SCALE

Time of Concentration

(Plate 22.2 B-1)

Area A - 610 ft[±] over paving @ S = 2.9% V = 2.59 fps t_c = 3.9 min.

Area B - 25' ± over grass @ S = 3.0% ± V = 3.8 fps t_c = 0.1 min
715' ± over paving @ S = 2.3% ± V = 2.05 fps t_c = 5.8 min
t_c = 5.9 min.

Area C - 50' ± over grass/bareground @ S = 8.2% ± V = 2.0 fps t_c = 0.4 min
250' ± over paving @ S = 3.0% ± V = 2.38 fps t_c = 1.8 min
t_c = 2.2 min.

Area D - 60' ± over grass @ S = 3.3% V = 1.08 fps t_c = 0.9 min

Area E - 60' ± over grass @ S = 8.3% ± V = 2.0 fps t_c = 0.5 min

Area F - 15' ± over grass @ S = 6.8% ± V = 2.6 fps t_c = 0.1 min

Area G - 210' ± over grass @ S = 3.8% ± V = 1.12 fps t_c = 3.1 min.

Assume Minimum t_c of 10 minutes for small Drainage Areas

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22.2 D-2
for 100 year, 6-hour rainfall

@ t _c = 10.0 min	i = 5.38 in/hr.
@ t _c = 15.0 min.	i = 4.38 in/hr.
@ t _c = 30.0 min	i = 3.05 in/hr.
@ t _c = 60.0 min	i = 2.06 in/hr.
@ t _c = 120.0 min	i = 1.48 in/hr.
@ t _c = 180.0 min	i = 1.20 in/hr.
@ t _c = 240.0 min	i = 1.04 in/hr.

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JOB SMITH'S STORE #421 - Albuquerque

SHEET NO. 6 OF

CALCULATED BY MEB DATE 24 Sept. 1991

CHECKED BY DATE

SCALE

Peak Flows - Use "Rational Method" $Q = CiA$

Area A -	$Q = CiA = (0.85)(5.38)(2.75) =$	12.58 cfs
Area B -	$Q = CiA = (0.74)(5.38)(4.53) =$	18.03 cfs
Area C -	$Q = CiA = (0.53)(5.38)(0.28) =$	0.80 cfs
Area D -	$Q = CiA = (0.16)(5.38)(0.23) =$	0.20 cfs
Area E -	$Q = CiA = (0.22)(5.38)(0.44) =$	0.52 cfs
Area F -	$Q = CiA = (0.19)(5.38)(0.10) =$	0.10 cfs
Area G -	$Q = CiA = (0.16)(5.38)(0.55) =$	0.47 cfs

Comments:

- Areas E & F drain into the City's Right-of-Ways and area collected by existing storm drainage collection in Tramway Blvd and Wenonah Ave.

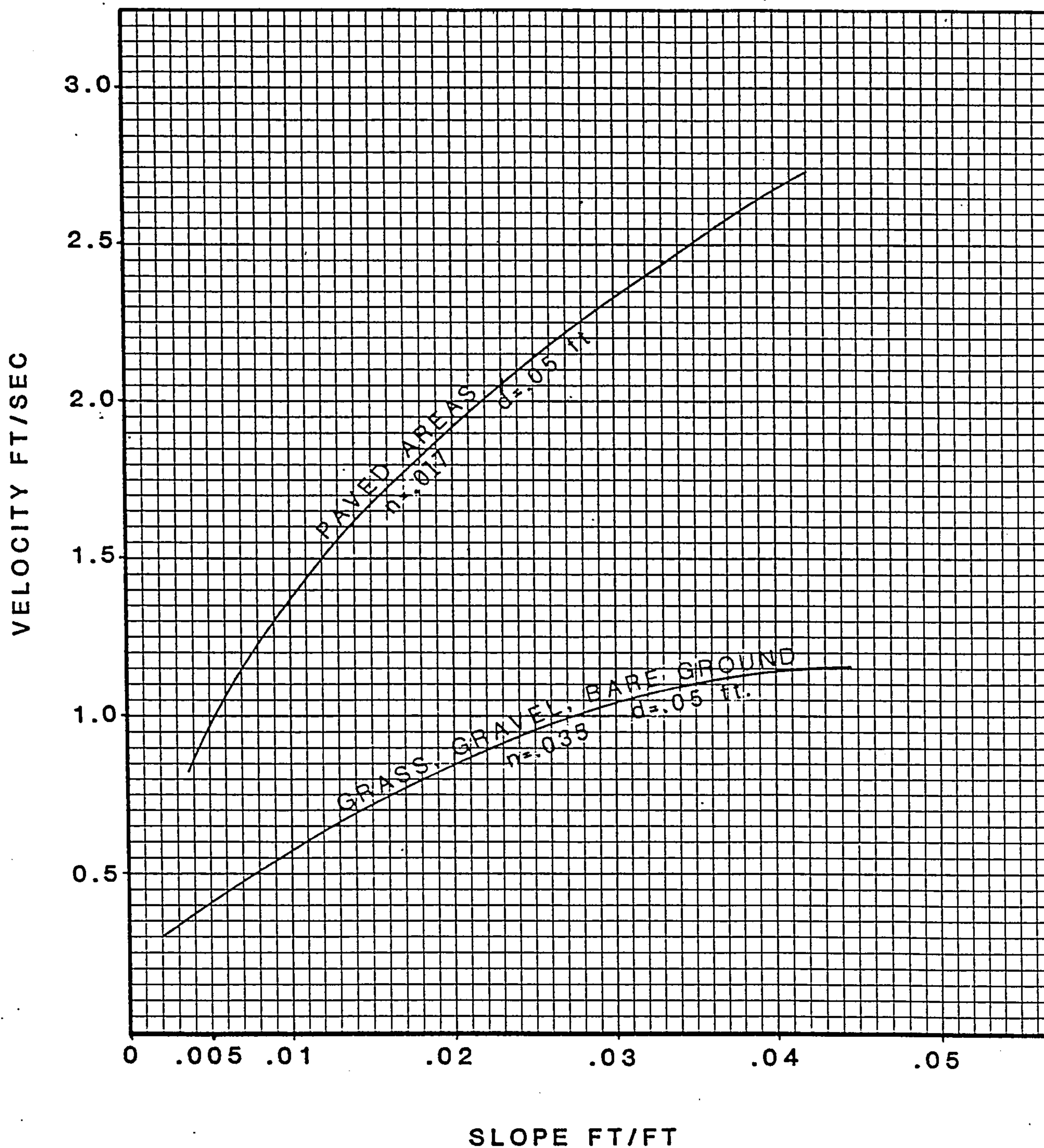
Peak Runoff during 100 year - 6 hour storm entering R.O.W. is 0.62 cfs - considerably less than the 11.26 cfs that currently enters the R.O.W.

- Areas A, B, C & G are collected by storm drainage pipe and discharged into the Tramway East Drainage Channel

- Peak Runoff during 100 year - 6 hour storm is 31.88 cfs

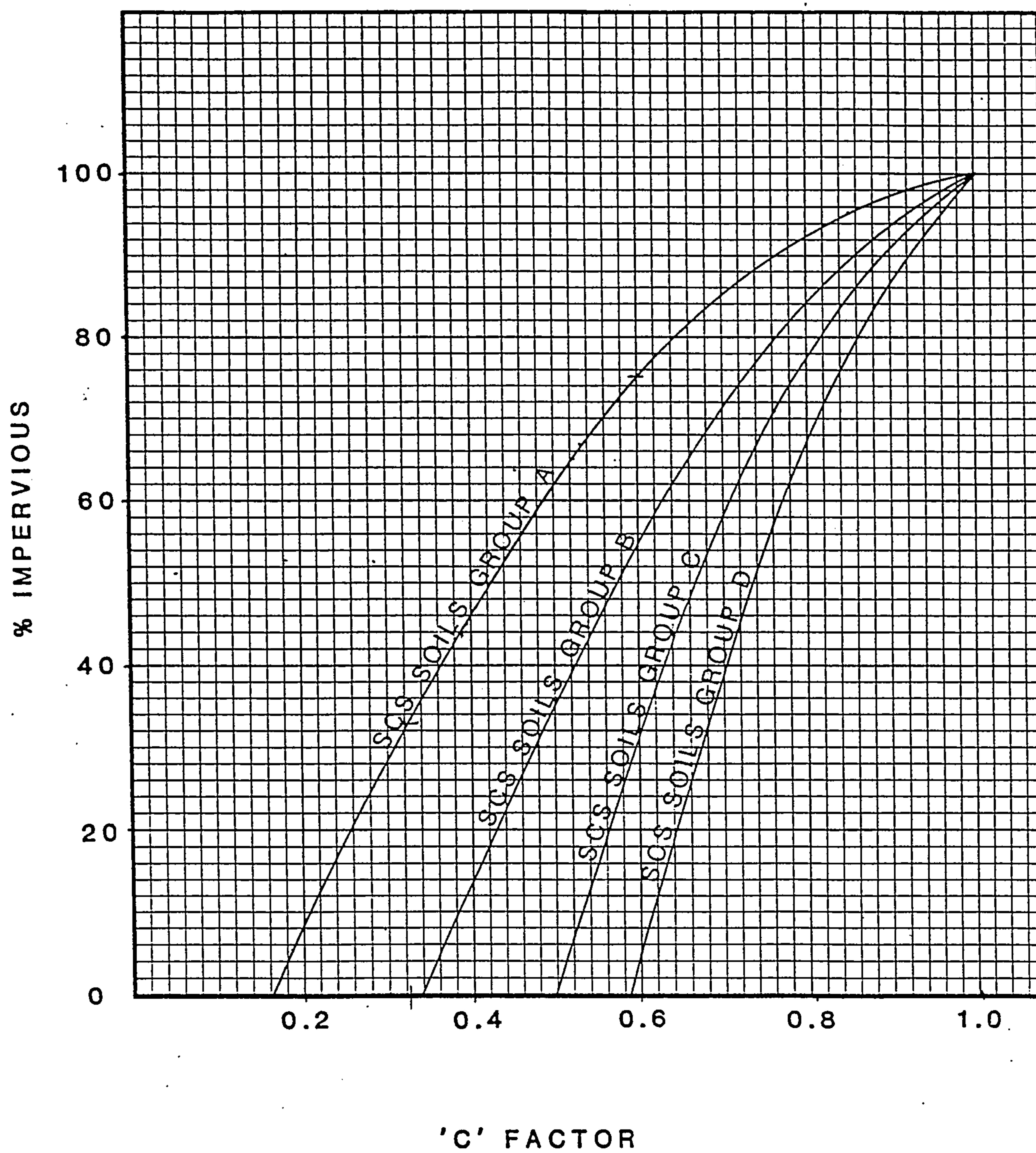
- Area D sheet flows directly into the Tramway East Drainage Channel (only 0.20 cfs)

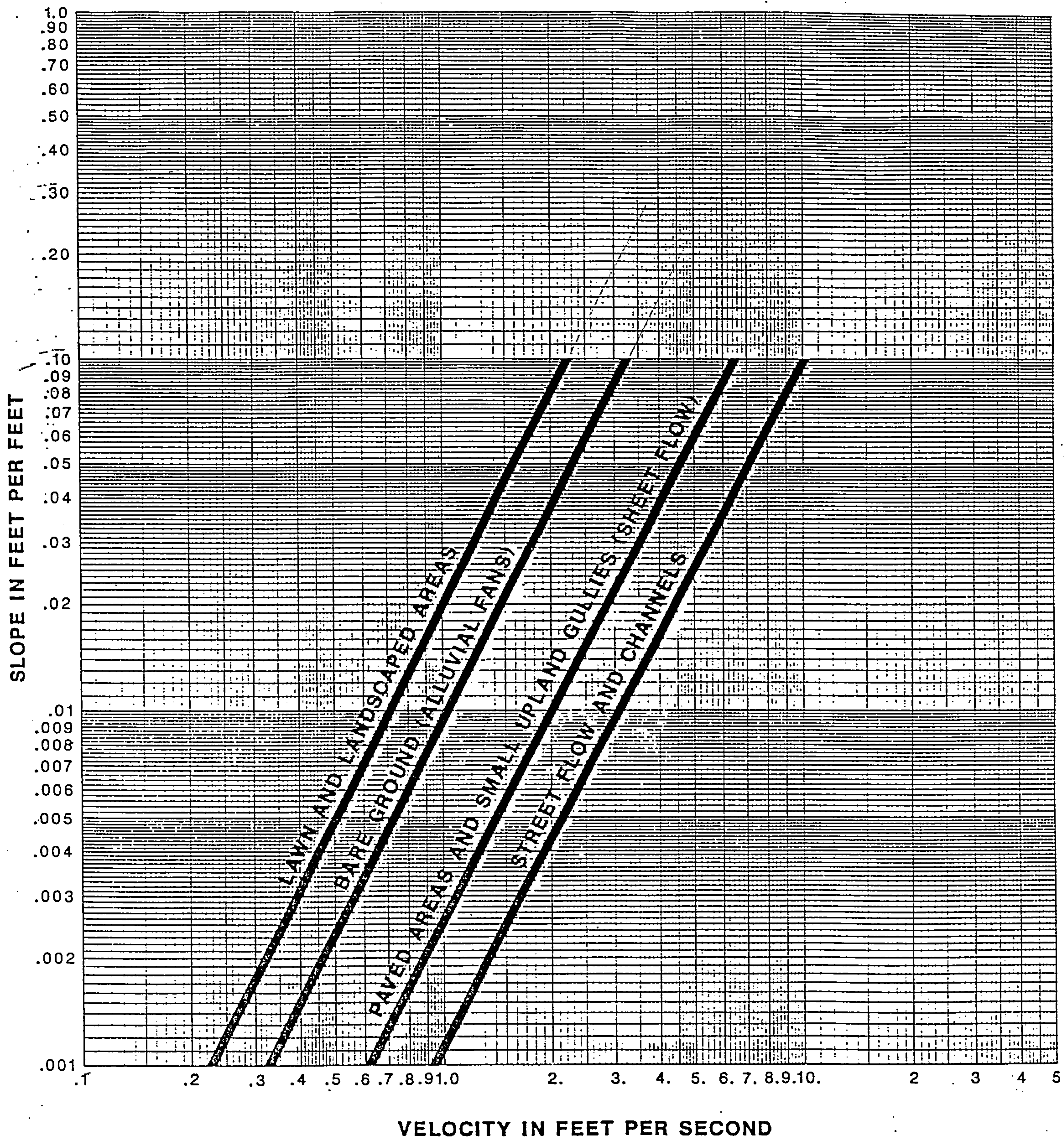
OVERLAND FLOW SEGMENTS

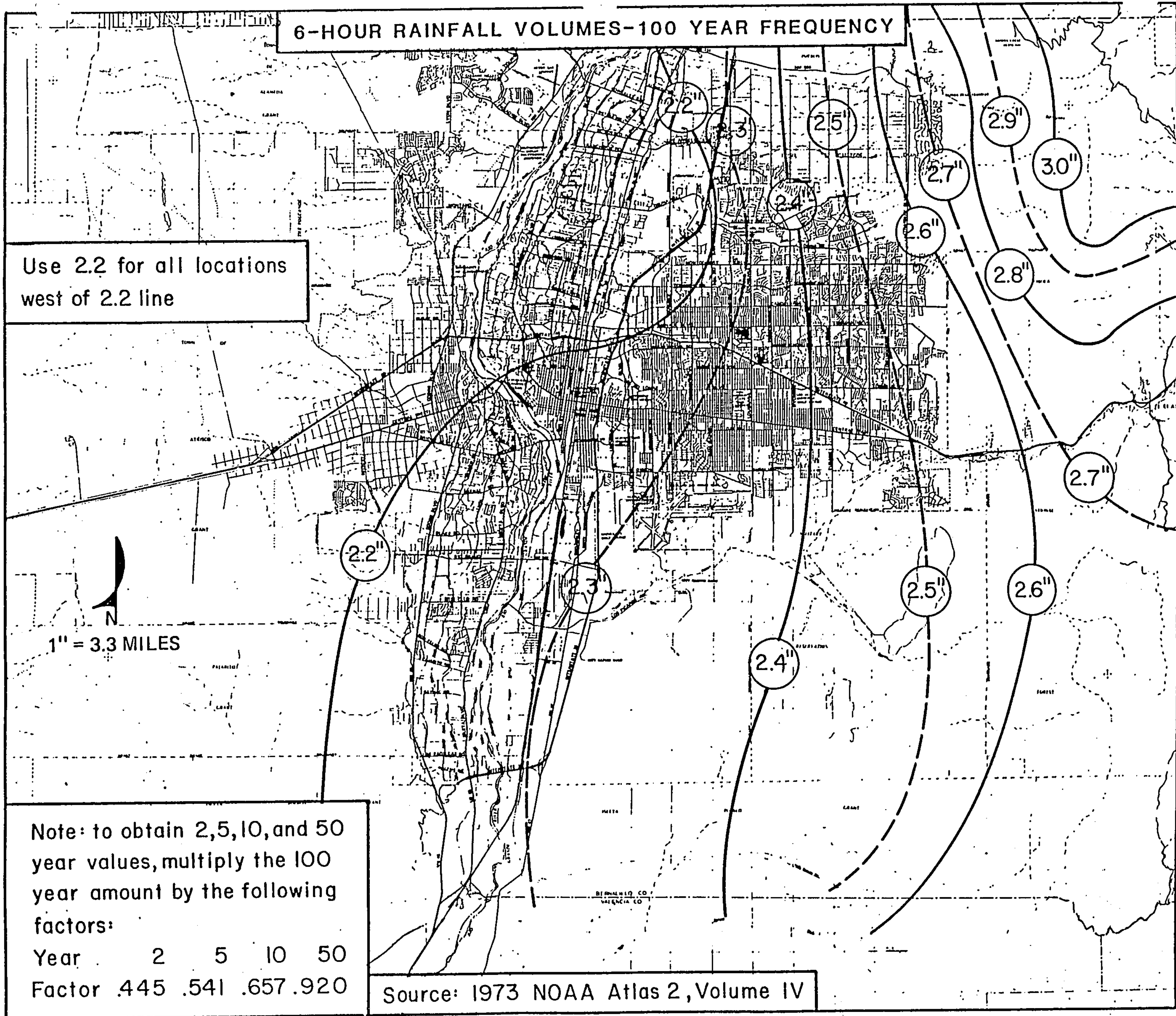
VELOCITY DETERMINATIONS FOR T_c CALCULATIONS

DRAINAGE CRITERIA

DETERMINATION OF RATIONAL FORMULA 'C' FACTOR

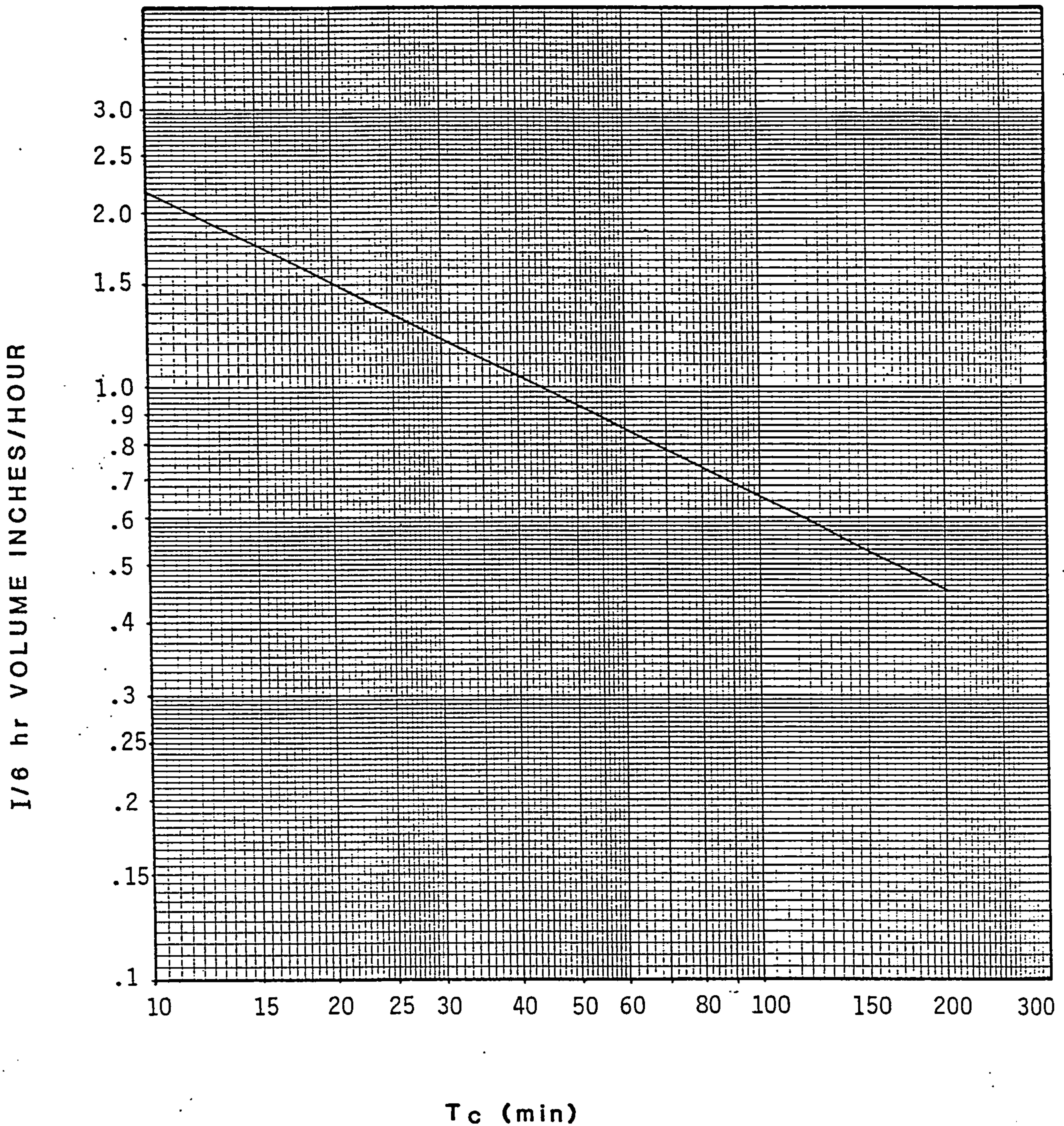






DIMENSIONLESS RAINFALL INTENSITIES

$$I = (6\text{-hr. rain}) 6.84 t_c^{-0.51}$$



note: To get actual intensities, multiply rainfall volume from plate D-1 by value from curve. Use reduction factors on Plate D-1 for other than 100-yr.

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SEP 25 1991

JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 1

OF

CALCULATED BY MEB

DATE 23 Sept. 1991

CHECKED BY

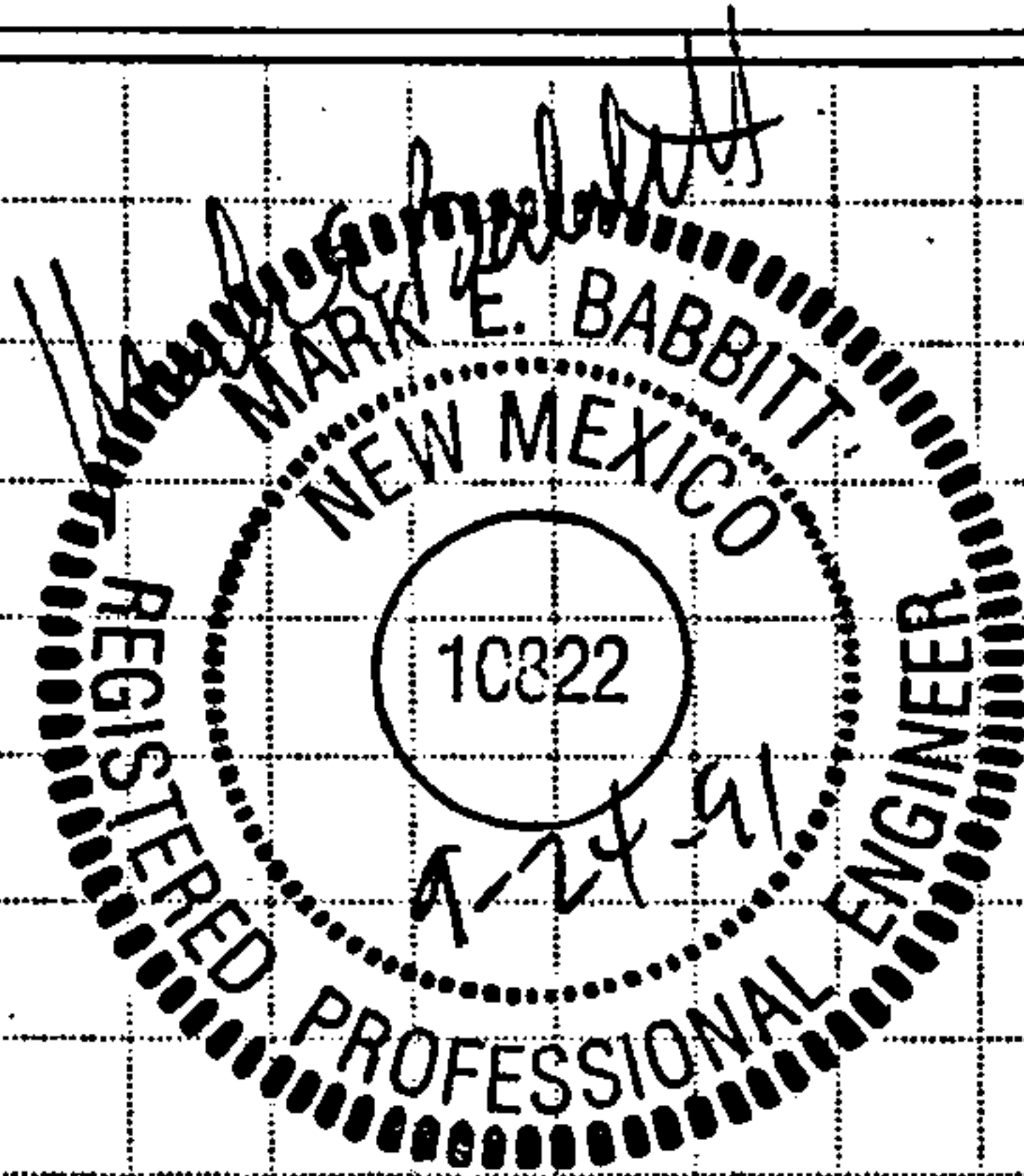
DATE

SCALE

STORM WATER STUDY

Site:

SMITH'S STORE #427
Central & Tramway
Albuquerque, New Mexico



EXISTING CONDITIONS

23 Sept 1991

Drainage Areas - See Attached Drawing "Topographical Survey"

Area #1 - 4.03 ac.

Area #2 - 3.27 ac.

Area #3 - 0.38 ac.

Area #4 - 0.57 ac.

Area #5 - 0.08 ac.

Area #6 - 0.55 ac.

8.33 ac.

- offsite draining onto Smith's site

Coefficient of Runoff (Plate 22.2 C-1)

Soils are silty, slightly gravelly sands
(SCS Soils Group A)

Area #1 (73% impervious)

C = 0.60

Area #2 (7% impervious)

C = 0.20

Area #3 (44% impervious)

C = 0.39

Area #4 (4% impervious)

C = 0.18

Area #5 (5% impervious)

C = 0.19

Area #6 (0% impervious)

C = 0.16

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JOB SMITH'S STORE #427 - Albuquerque
SHEET NO. 2 OF _____
CALCULATED BY MFB DATE 23 Sept 1991
CHECKED BY _____ DATE _____
SCALE _____

Time of Concentration

Plate 22.2 B-1

Area #1 - 50'± over bare ground @ $S = 8.8\% \pm$ $V = 3.0 \text{ fps}$ $t_c = 0.3 \text{ min.}$
120'± over paving @ $S = 2.3\% \pm$ $V = 2.1 \text{ fps}$ $t_c = 0.95 \text{ min}$
645'± over bare ground @ $S = 1.5\% \pm$ $V = 0.72 \text{ fps}$ $t_c = 14.95 \text{ min}$
 $t_c = 16.2 \text{ min}$

Area #2 - 60'± over bare ground @ $S = 6.7\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.4 \text{ min.}$
68'± over paving @ $S = 2.0\% \pm$ $V = 1.92 \text{ fps}$ $t_c = 0.6 \text{ min}$
370'± over bare ground @ $S = 4.2\% \pm$ $V = 1.15 \text{ fps}$ $t_c = 5.4 \text{ min.}$
 $t_c = 6.4 \text{ min}$

Area #3 - 190'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 1.2 \text{ min.}$

Area #4 - 50'± over bare ground @ $S = 30\% \pm$ $V = 6.0 \text{ fps}$ $t_c = 0.1 \text{ min}$

Area #5 - 15'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.1 \text{ min}$

Area #6 - 210'± over bare ground @ $S = 3.8\% \pm$ $V = 1.12 \text{ fps}$ $t_c = 3.1 \text{ min.}$

Assume Minimum t_c of 10 minutes for small Drainage Areas

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22.2 D-2
for 100 year, 6-hour rainfall

@ $t_c = 10.0 \text{ min}$ $i = 5.38 \text{ in/hr}$

@ $t_c = 16.2 \text{ min}$ $i = 4.20 \text{ in/hr}$

@ $t_c = 30.0 \text{ min}$ $i = 3.05 \text{ in/hr.}$

@ $t_c = 60.0 \text{ min}$ $i = 2.06 \text{ in/hr}$

@ $t_c = 120.0 \text{ min}$ $i = 1.48 \text{ in/hr}$

@ $t_c = 180.0 \text{ min}$ $i = 1.20 \text{ in/hr}$

@ $t_c = 240.0 \text{ min}$ $i = 1.04 \text{ in/hr.}$

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JOB SMITH'S STORE #427 - Albuquerque
SHEET NO. 3 OF
CALCULATED BY MEB DATE 23 Sept 1991
CHECKED BY DATE
SCALE

Peak Flows - Use "Rational Method" $Q = CiA$

Area #1 -	$Q = CiA = (0.60)(4.2)(4.03) =$	10.16 cfs
Area #2 -	$Q = CiA = (0.20)(5.38)(3.27) =$	3.52 cfs
Area #3 -	$Q = CiA = (0.39)(5.38)(0.38) =$	0.80 cfs
Area #4 -	$Q = CiA = (0.18)(5.38)(0.57) =$	0.55 cfs
Area #5 -	$Q = CiA = (0.19)(5.38)(0.08) =$	0.08 cfs
Area #6 -	$Q = CiA = (0.16)(5.38)(0.55) =$	0.47 cfs

Comments:

- Areas #1, #5 & #6 drain to an existing Storm Water Collection System at the intersection of Tramway Blvd and Wenonah Ave.
- Areas #2, #3 & #4 drain into the Tramway East Drainage Channel
- Area #1, #4, #5 & #6 drain into the City's Right-of-Ways and are collected as mentioned above.
Peak Runoff during a 100 year - 6 hour storm entering R.O.W. is 11.26 cfs.

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JOB SMITH'S STORE #427 - Albuquerque
SHEET NO. 4 OF _____
CALCULATED BY MEB DATE 23 Sept 1991
CHECKED BY _____ DATE _____
SCALE _____

STORM WATER STUDY (cont)

PROPOSED CONDITIONS

Drainage Areas - see Attached Drawing "Conceptual Plan - Grading & Drainage"

Area A -	2.75 ac	}	8.33 ac.
Area B -	4.53 ac		
Area C -	0.28 ac		
Area D -	0.23 ac		
Area E -	0.44 ac		
Area F -	0.10 ac.		
Area G -	0.55 ac	- offsite	

Coefficient of Runoff (Plate 22.2 C-1)

Soils are silty, slightly gravelly sands
(SCS Soils Group A)

Area A	(95% impervious)	C = 0.85
Area B	(90% impervious)	C = 0.74
Area C	(67% impervious)	C = 0.53
Area D	(0% impervious)	C = 0.16
Area E	(13% impervious)	C = 0.22
Area F	(5% impervious)	C = 0.19
Area G	(0% impervious)	C = 0.16

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JOB SMITH'S STORE #427 - Albuquerque
SHEET NO. 5 OF
CALCULATED BY MEB DATE 23 Sept. 1991
CHECKED BY DATE
SCALE

Time of Concentration (Plate 22.2 B-1)

Area A - 610 ft[±] over paving @ S = 2.9% V = 2.59 fps t_c = 3.9 min.

Area B - 25' ± over grass @ S = 3.0% ± V = 3.8 fps t_c = 0.1 min
715' ± over paving @ S = 2.3% ± V = 2.05 fps t_c = 5.8 min
t_c = 5.9 min.

Area C - 50' ± over grass/bareground @ S = 8.2% ± V = 2.0 fps t_c = 0.4 min
250' ± over paving @ S = 3.0% ± V = 2.38 fps t_c = 1.8 min
t_c = 2.2 min.

Area D - 60' ± over grass @ S = 3.3% V = 1.08 fps t_c = 0.9 min

Area E - 60' ± over grass @ S = 8.3% ± V = 2.0 fps t_c = 0.5 min

Area F - 15' ± over grass @ S = 6.8% ± V = 2.6 fps t_c = 0.1 min

Area G - 210' ± over grass @ S = 3.8% ± V = 1.12 fps t_c = 3.1 min

Assume Minimum t_c of 10 minutes for small Drainage Areas

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22-2 D-2
for 100 year, 6-hour rainfall

@ t _c = 10.0 min	i = 5.38 in/hr
@ t _c = 15.0 min	i = 4.38 in/hr
@ t _c = 30.0 min	i = 3.05 in/hr
@ t _c = 60.0 min	i = 2.06 in/hr
@ t _c = 120.0 min	i = 1.48 in/hr
@ t _c = 180.0 min	i = 1.20 in/hr
@ t _c = 240.0 min	i = 1.04 in/hr

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SHEET NO. 6 OF

CALCULATED BY MEB DATE 24 Sept. 1991

CHECKED BY DATE

SCALE

Peak Flows - Use "Rational Method" $Q = CiA$

Area A	-	$Q = CiA = (0.85)(5.38)(2.75) =$	12.58 cfs
Area B	-	$Q = CiA = (0.74)(5.38)(4.53) =$	18.03 cfs
Area C	-	$Q = CiA = (0.53)(5.38)(0.28) =$	0.80 cfs
Area D	-	$Q = CiA = (0.16)(5.38)(0.23) =$	0.20 cfs
Area E	-	$Q = CiA = (0.22)(5.38)(0.44) =$	0.52 cfs
Area F	-	$Q = CiA = (0.19)(5.38)(0.10) =$	0.10 cfs
Area G	-	$Q = CiA = (0.16)(5.38)(0.55) =$	0.47 cfs

Comments:

- Areas E & F drain into the City's Right-of-Ways and area collected by existing storm drainage collection in Tramway Blvd and Wenonah Ave.

Peak Runoff during 100 year - 6 hour storm entering R.O.W. is 0.62 cfs - considerably less than the 11.26 cfs that currently enters the R.O.W.

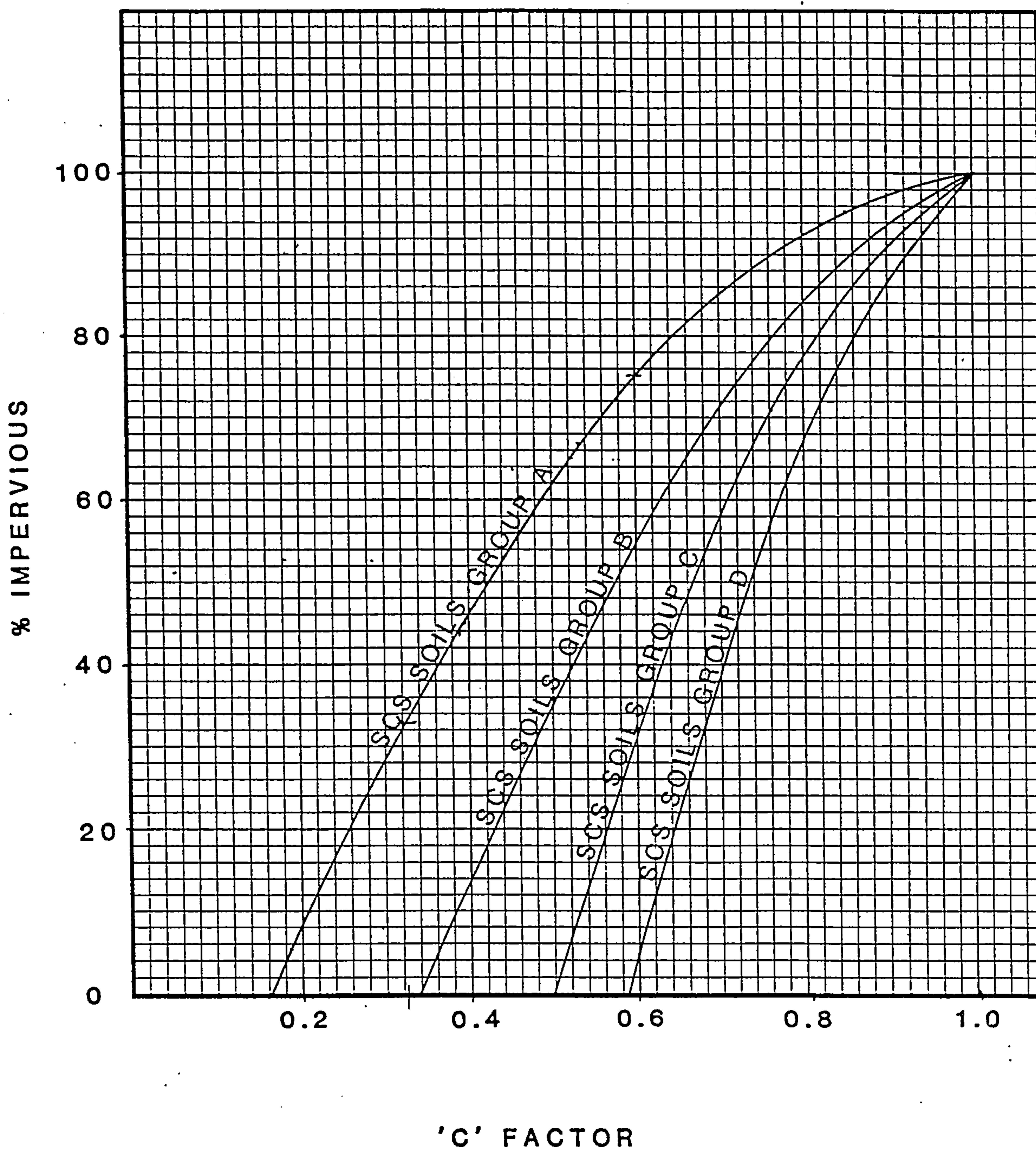
- Areas A, B, C & G are collected by storm drainage pipe and discharged into the Tramway East Drainage Channel

- Peak Runoff during 100 year - 6 hour storm is 31.88 cfs

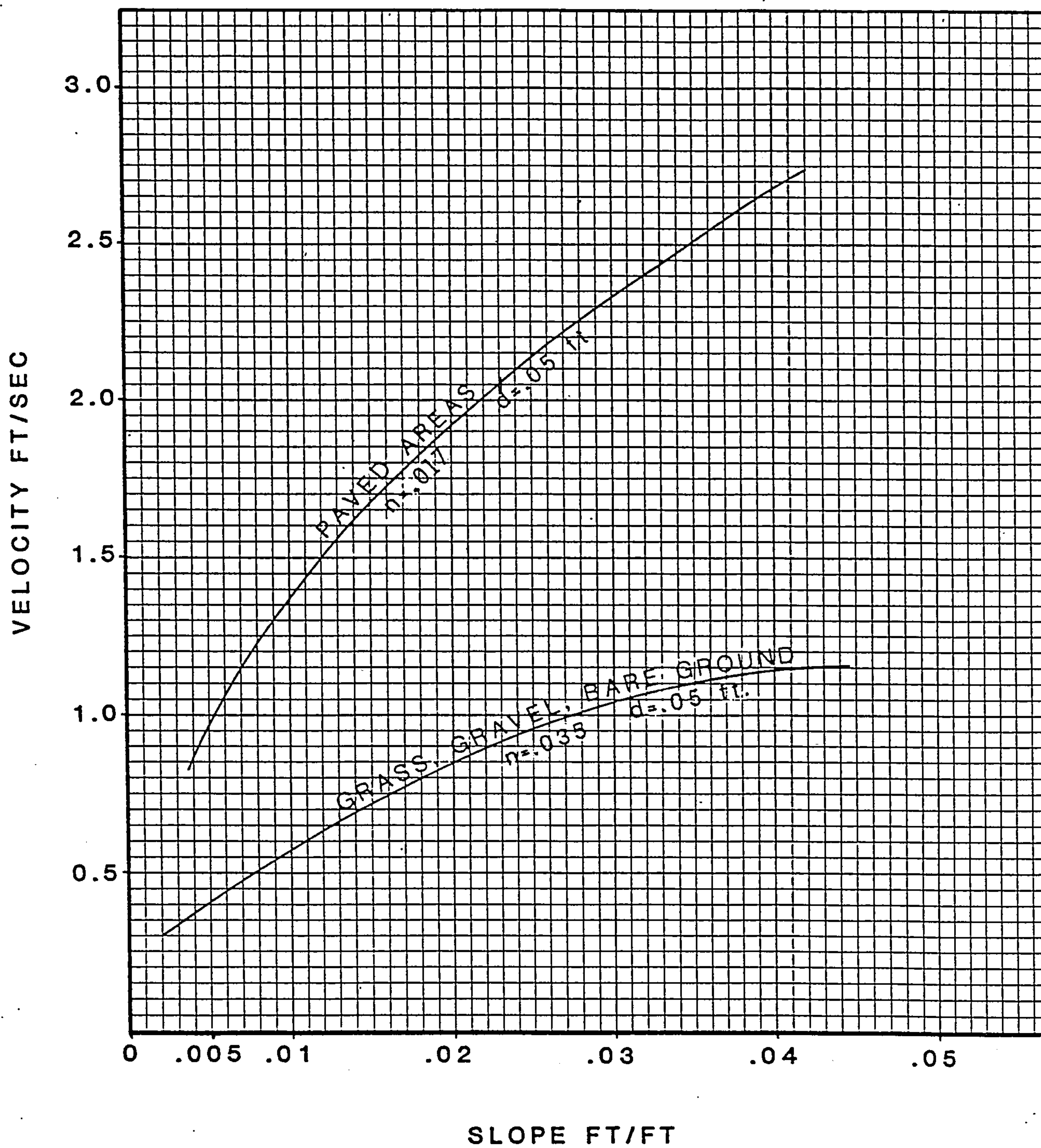
- Area D sheet flows directly into the Tramway East Drainage Channel (only 0.20 cfs)

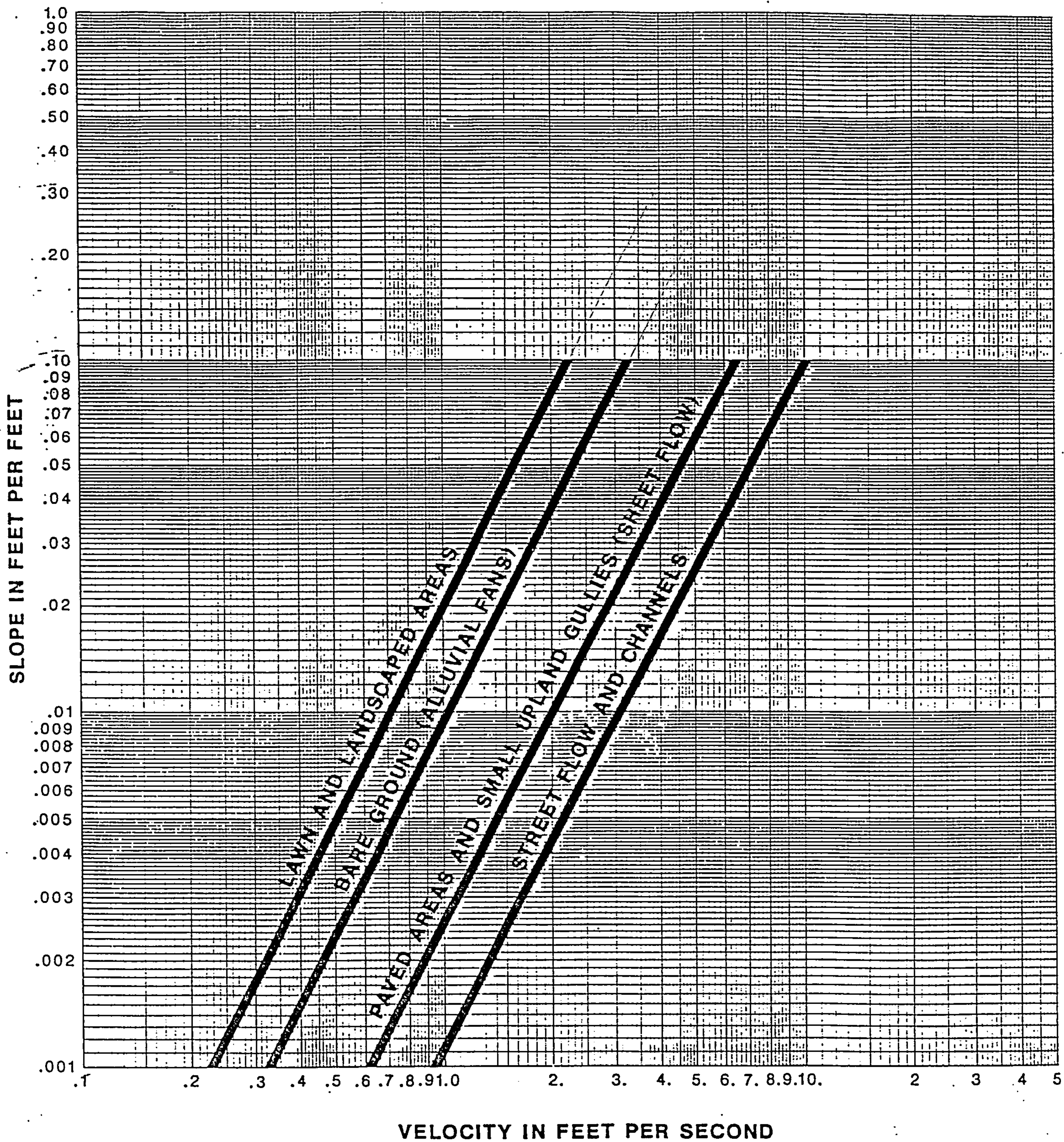
DRAINAGE CRITERIA

DETERMINATION OF RATIONAL FORMULA 'C' FACTOR



OVERLAND FLOW SEGMENTS

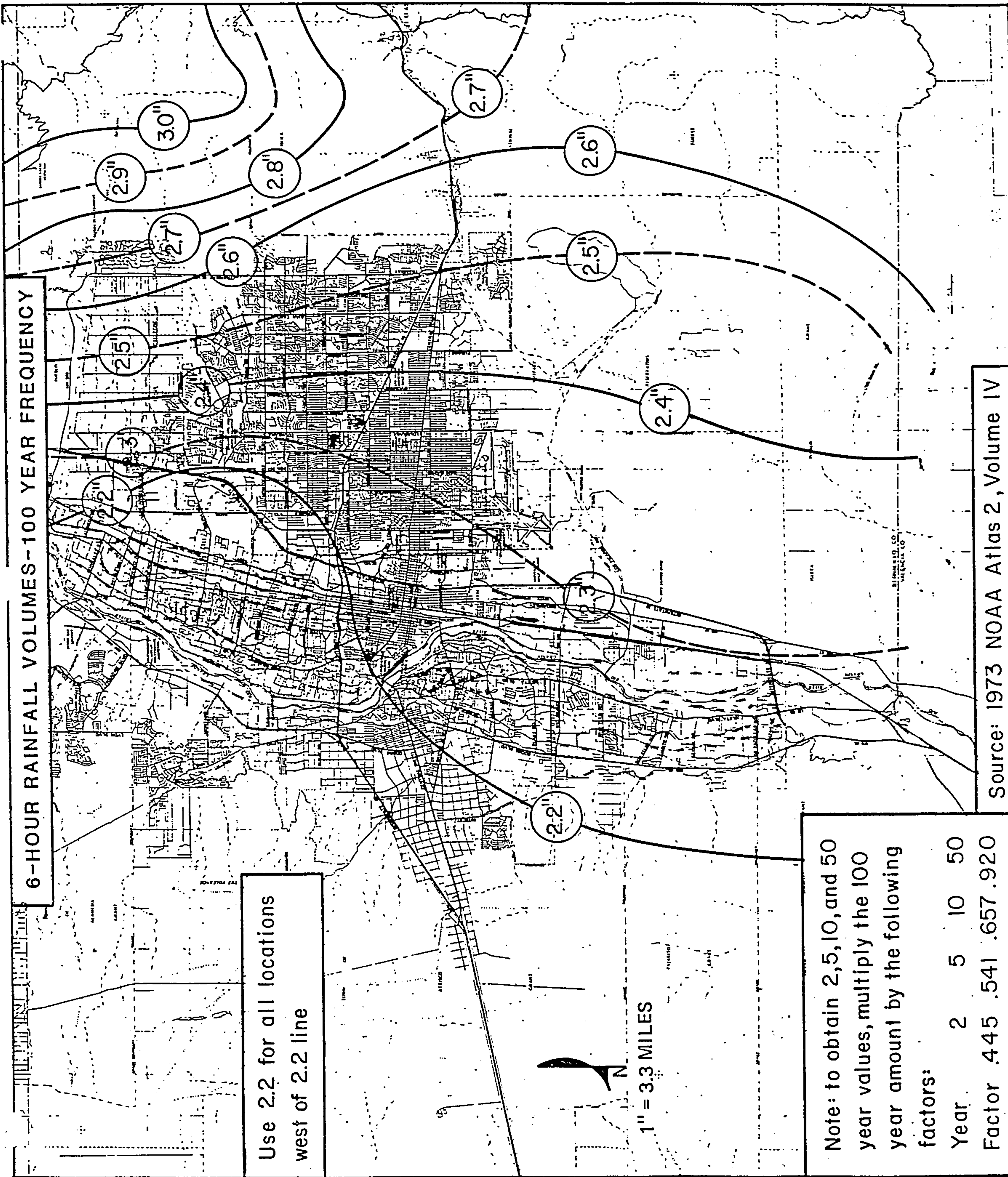
VELOCITY DETERMINATIONS FOR T_c CALCULATIONS



VELOCITIES FOR UPLAND METHOD OF ESTIMATING T_c

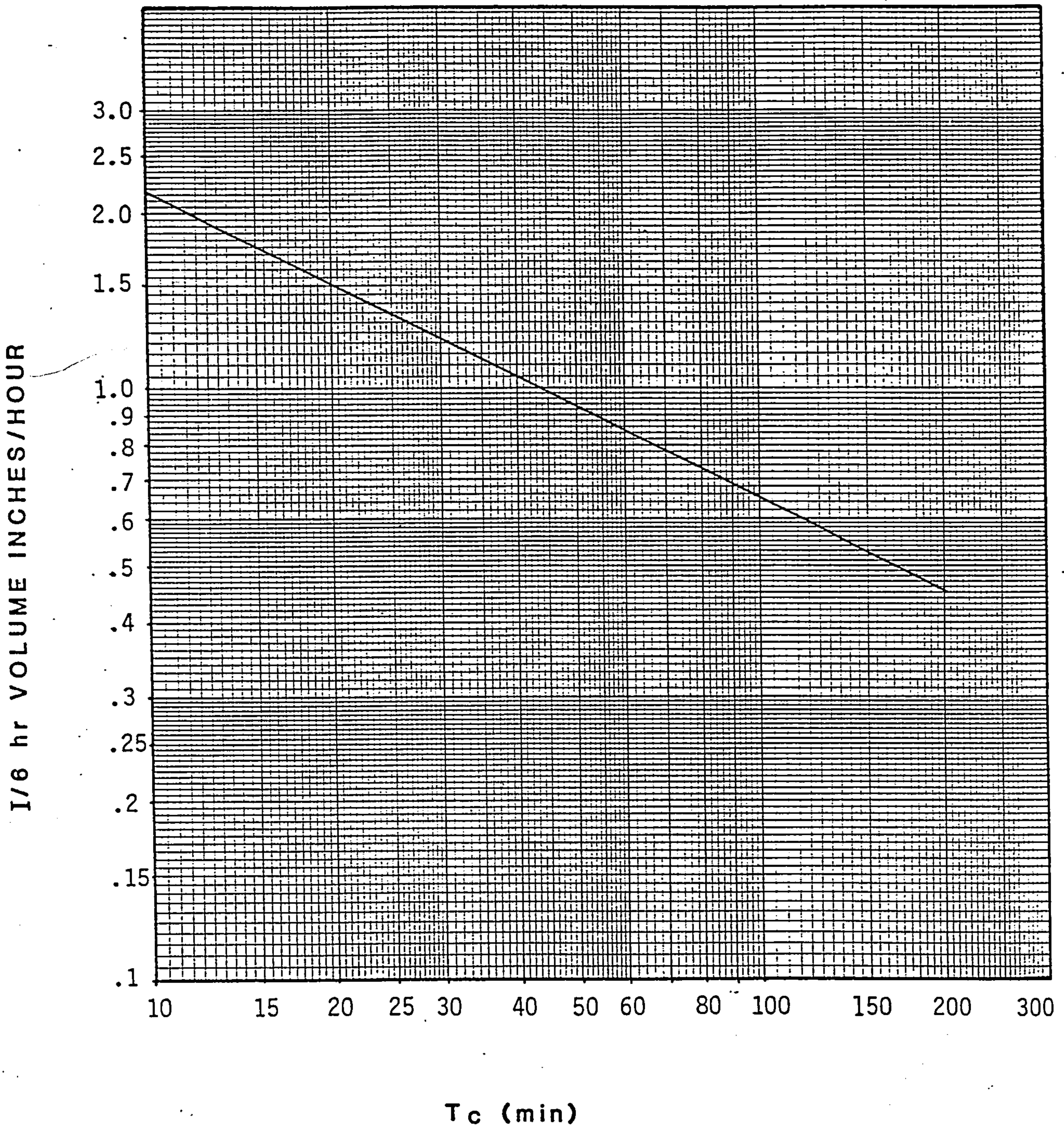
Plate 22.2 B-1

5/88



DIMENSIONLESS RAINFALL INTENSITIES

$$I = (6\text{-hr. rain}) 6.84 t_c^{-0.51}$$



note: To get actual intensities, multiply rainfall volume from plate D-1 by value from curve. Use reduction factors on Plate D-1 for other than 100-yr.

**DRAINAGE REPORT
FOR
SMITH'S STORE NO. 427
CENTRAL AVENUE AND TRAMWAY BOULEVARD
ALBUQUERQUE, NEW MEXICO**

October 23, 1991

Prepared By:

Great Basin Engineering, Inc.

for

Smith's Food and Drug Center's, Inc.

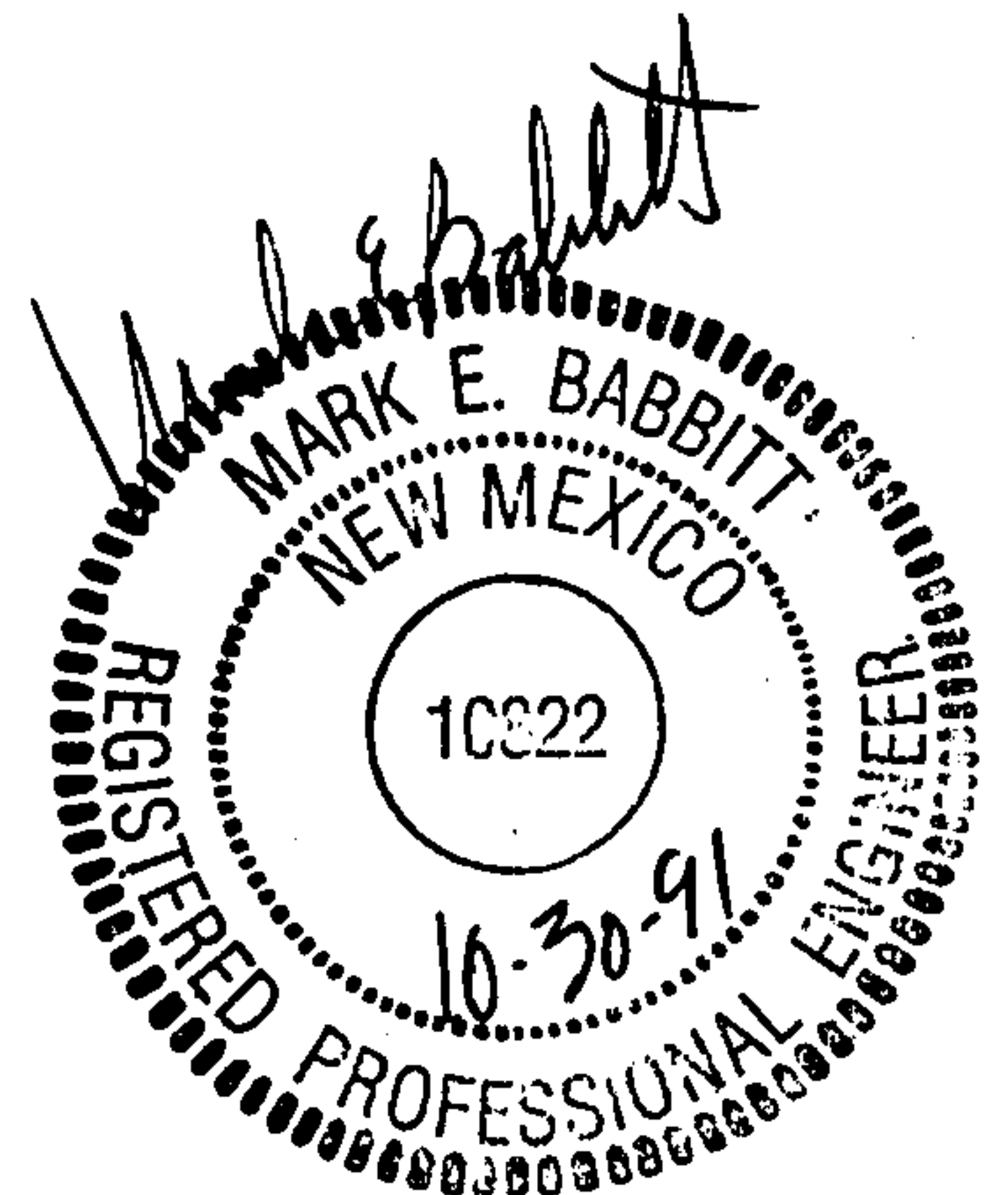
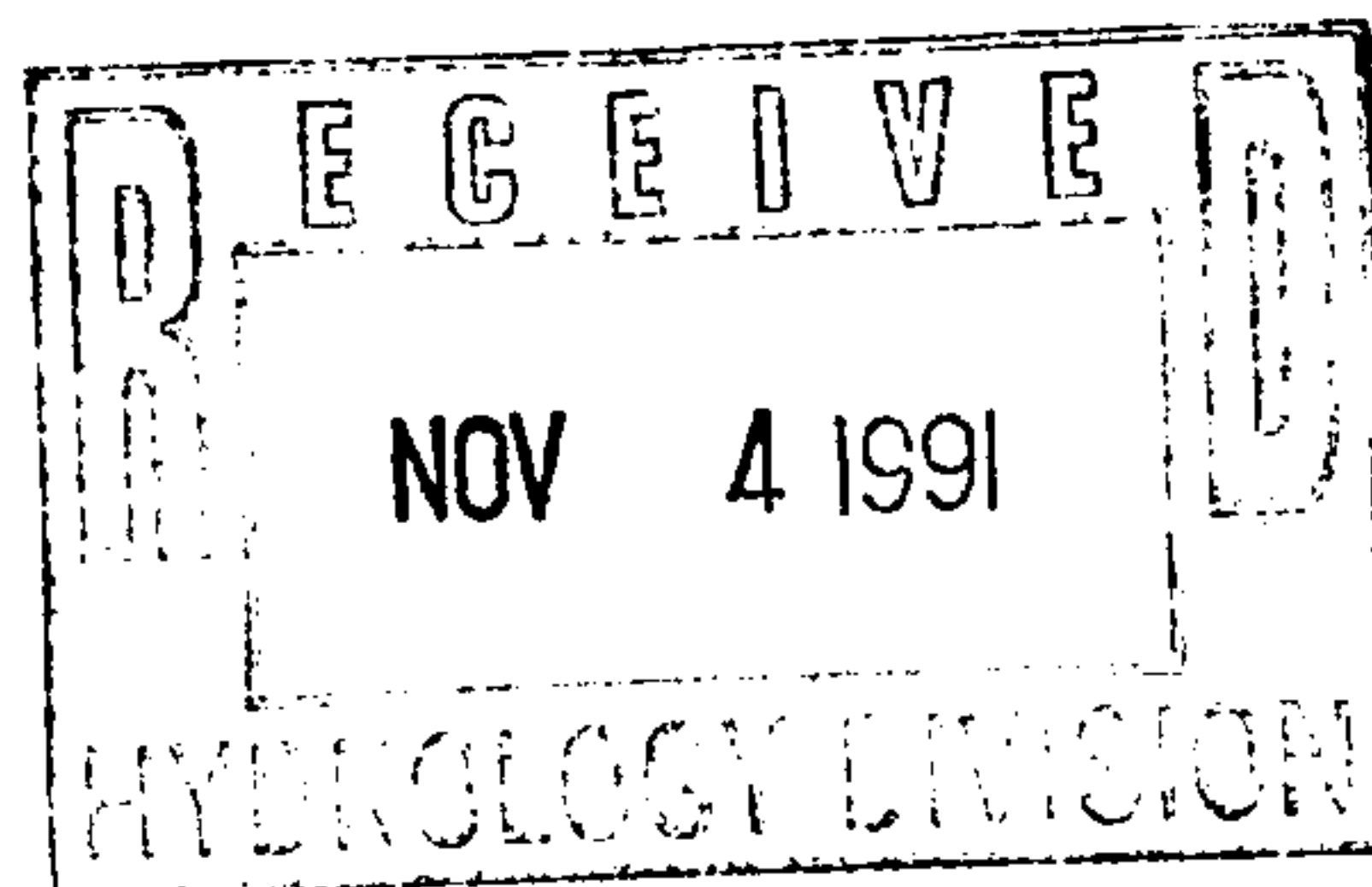


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**DRAINAGE REPORT FOR SMITH'S STORE NO. 427
ALBUQUERQUE, NEW MEXICO**

INTRODUCTION

Smith's Food and Drug Center's Inc., is developing a Super-Market in Albuquerque, New Mexico. The Store is located on the East side of Tramway Boulevard bounded by Central Avenue on the North and Wenonah Avenue on the South, the Tramway East Drainage Channel runs from North to South along the Property's East boundary.

The Property was previously the Site of a Hotel, which has been razed. However, many of the on site improvements such as curb, gutter, concrete sidewalks and asphalt paving still remain. These existing improvements will be demolished and removed from the site. The site contains 8.33 Acres and the proposed construction will consist of a 77,877 square-foot Grocery Store with 440 parking stalls and approximately 63,765 square-feet of landscaping.

General

Currently, about 52% of the existing site drains to the Southwest Corner of the Site and the City's Storm Drainage System collects the runoff and conveys it to a storm drain flowing South within Tramway Boulevard. Approximately 41% of the existing site drains directly into the Tramway East Drainage Channel.

The Proposed Design will require a considerable amount of excavation and soil removal (average excavation of about 5 feet required over the entire site). This design will provide several inlets in each of Drainage Areas 'A', 'B', and 'C' accounting for 97.5% of the peak runoff generated from the site, which will be directed into the Tramway East Drainage Channel. Area 'D' consists entirely of Landscaping and sheet flows directly into the Tramway East Drainage Channel. Area 'E' consists primarily of Landscaping with only a small amount of hard surfacing (the driveway onto Wenonah Avenue), which sheet flows into the curb and gutter within Wenonah Avenue. Similarly, Area 'F' contains a small portion of the driveway onto Tramway Boulevard with the remainder of the area in landscaping, which sheet flows into the Tramway Boulevard Right-of-Way.

The relative elevations of the finished development will still be significantly higher than the adjacent properties, with the exception of the area to the North (Central Avenue), which only allows a small area (Area 'G' - 0.55 Acres) to drain onto the project site. Area 'G' has been accounted for in the overall drainage study.

The Proposed Design will significantly reduce the amount of runoff directed to the storm drainage system within Tramway Boulevard, while increasing the flow in the Tramway East Drainage Channel.

The flows from the site are unrestricted and the designed drainage system has the capacity to convey the peak flows from a 100 year, six-hour duration storm through the drainage system, with no on-site detention.

DESIGN INFORMATION

In accordance with the Development Process Manual (DPM) for the City of Albuquerque, the "Rational Method" was used to calculate the peak flows for each Drainage Area for a 100 year return period with a 6-hour storm duration. The site was evaluated in its existing condition (see Sheets 1, 2 and 3 of Calculations) and for the proposed development (see Sheets 4, 5 and 6 of Calculations). Coefficients of Runoff were established from Plate 22.2 C-1 at the DPM for silty, slightly gravelly sand (SCS Soils Group A). Time of Concentrations were determined from Plat 22.2 B.1 of the DPM. The Rainfall Intensities were determined from Plat 22.2 D-1 and Plate 22-2 D-2 of DPM.

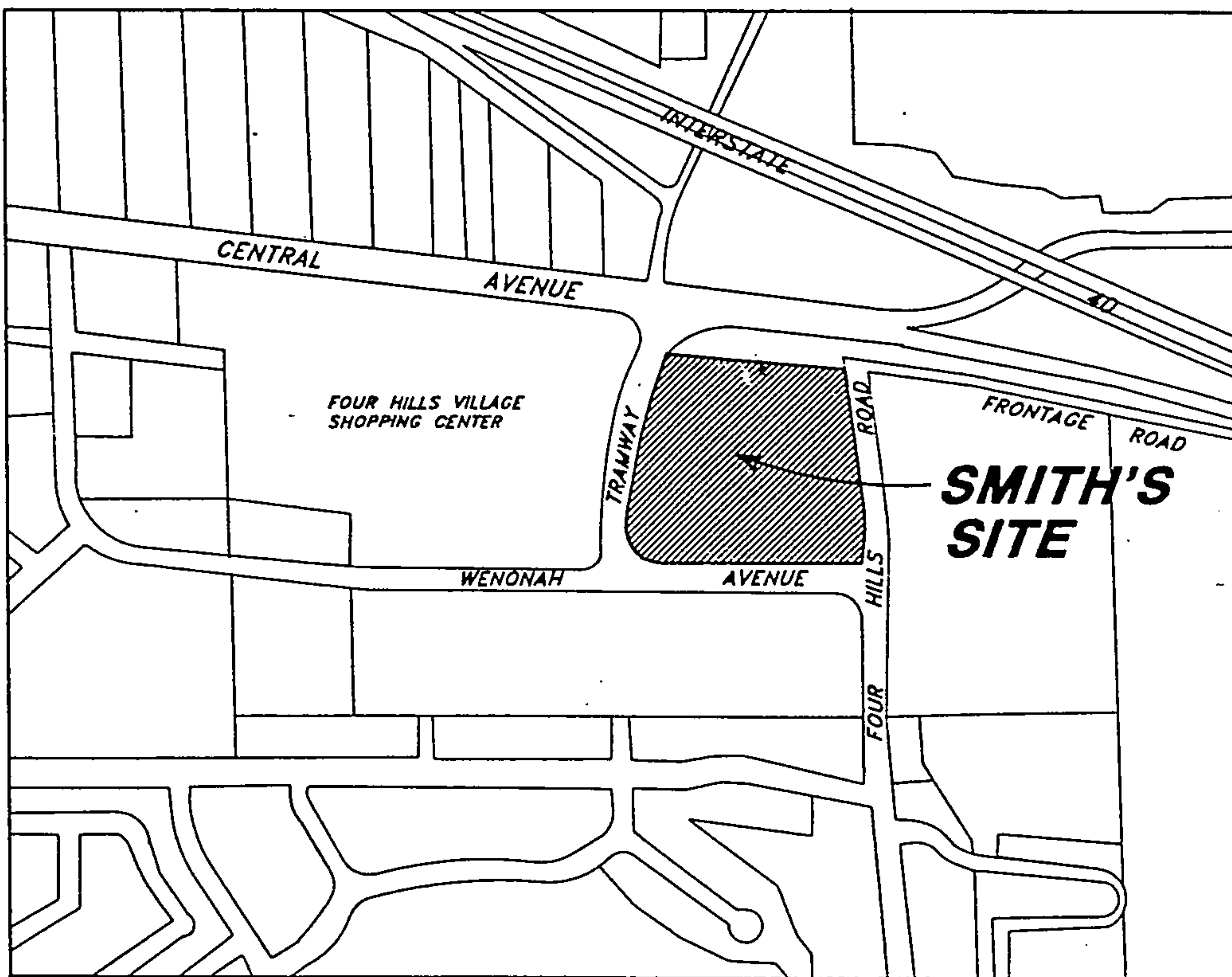
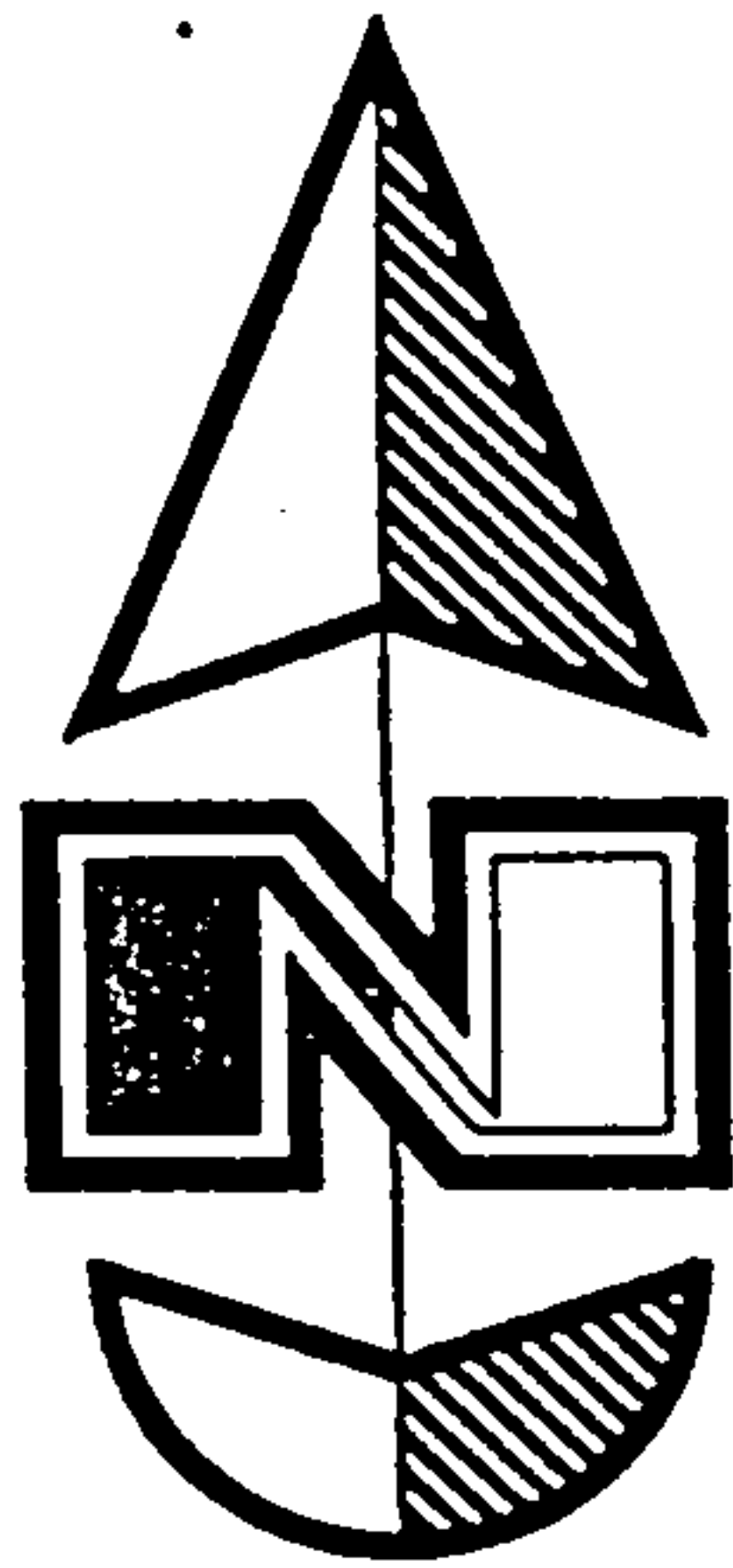
The finished development will generate a higher peak flow than the site left in it's existing condition (32.70 cfs vs 15.58 cfs). However, as mentioned earlier, 97.5% of the post-development peak flow (31.88 cfs) will be collected and piped directly to the Tramway East Drainage Channel, which significantly reduces the flow onto Tramway Boulevard.

Piping has been sized using "Mannings Equation" for a full flowing pipe with no head (see Sheet 7 of Calculations). Each on site catch basin was evaluated for it's grate capacity using Plat 22.3 D-5 of the DPM (see Sheet 8 of Calculations).

SUMMARY

The Storm Drainage System has been designed to collect virtually all the Storm Water runoff generated by the construction of the Smith's Store during a 100 year, 6-hour storm and convey the runoff to the Tramway East Drainage Channel. The Design does increase the over peak runoff from the site, but significantly reduces the direct runoff onto the City's Right-Of-Ways (11.26 cfs to 0.62 cfs). All piping has been designed to carry the 100-year peak flows without head on the system. The catch basins and grates have been designed to collect the surface runoff with virtually no surface ponding.

All Calculations were prepared based on Guidelines from the City of Albuquerque's Development Process Manual - Volume 2 (Design Criteria).



Vicinity Map

Zone Atlas Map No. L-23

11/11/11

APPENDIX 'A'

GREAT BASIN ENGINEERING, INC

3505 Grant Avenue
P.O. Box 9307
OGDEN, UT 84409
(801) 394-4515

JOB

SMITH'S STORE #427 - Albuquerque

SHEET NO.

1

OF

CALCULATED BY

MEB

DATE

23 Sept. 1991

CHECKED BY

DATE

SCALE

STORM WATER STUDY

Site:

SMITH'S STORE #427
Central & Tramway
Albuquerque, New Mexico

EXISTING CONDITIONS

-

23 Sept 1991

Drainage Areas - see Attached Drawing "Topographical Survey"

Area #1 - 4.03 ac.

Area #2 - 3.27 ac.

Area #3 - 0.38 ac

Area #4 - 0.57 ac

Area #5 - 0.08 ac

Area #6 - 0.55 ac

8.33 ac.

- offsite draining onto Smith's site

Coefficient of Runoff (Plate 22.2 C-1)

Soils are silty, slightly gravelly sands
(SCS Soils Group A)

Area #1 (73% impervious)

C = 0.60

Area #2 (7% impervious)

C = 0.20

Area #3 (44% impervious)

C = 0.39

Area #4 (4% impervious)

C = 0.18

Area #5 (5% impervious)

C = 0.19

Area #6 (0% impervious)

C = 0.16

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JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 2 OF

CALCULATED BY MFB DATE 23 Sep 1991

CHECKED BY DATE

SCALE

Time of Concentration

Plate 22.2 B-1

Area #1 - 50'± over bare ground @ $S = 8.8\% \pm$ $V = 3.0 \text{ fps}$ $t_c = 0.3 \text{ min.}$
 120'± over paving @ $S = 2.3\% \pm$ $V = 2.1 \text{ fps}$ $t_c = 0.95 \text{ min.}$
 645'± over bare ground @ $S = 1.5\% \pm$ $V = 0.72 \text{ fps}$ $t_c = 14.95 \text{ min.}$
 $t_c = 16.2 \text{ min.}$

Area #2 - 60'± over bare ground @ $S = 6.7\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.4 \text{ min.}$
 68'± over paving @ $S = 2.0\% \pm$ $V = 1.92 \text{ fps}$ $t_c = 0.6 \text{ min.}$
 370'± over bare ground @ $S = 4.2\% \pm$ $V = 1.15 \text{ fps}$ $t_c = 5.4 \text{ min.}$
 $t_c = 6.4 \text{ min.}$

Area #3 - 190'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 1.2 \text{ min.}$

Area #4 - 50'± over bare ground @ $S = 30\% \pm$ $V = 6.0 \text{ fps}$ $t_c = 0.1 \text{ min.}$

Area #5 - 15'± over bare ground @ $S = 6.8\% \pm$ $V = 2.6 \text{ fps}$ $t_c = 0.1 \text{ min.}$

Area #6 - 210'± over bare ground @ $S = 3.8\% \pm$ $V = 1.12 \text{ fps}$ $t_c = 3.1 \text{ min.}$

Assume Minimum t_c of 10 minutes for small Drainage Areas

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22.2 D-2
for 100 year, 6-hour rainfall

@ $t_c = 10.0 \text{ min}$ $i = 5.38 \text{ in/hr}$

@ $t_c = 16.2 \text{ min}$ $i = 4.20 \text{ in/hr}$

@ $t_c = 30.0 \text{ min}$ $i = 3.05 \text{ in/hr}$

@ $t_c = 60.0 \text{ min}$ $i = 2.06 \text{ in/hr}$

@ $t_c = 120.0 \text{ min}$ $i = 1.48 \text{ in/hr}$

@ $t_c = 180.0 \text{ min}$ $i = 1.20 \text{ in/hr}$

@ $t_c = 240.0 \text{ min}$ $i = 1.04 \text{ in/hr}$

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JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 3 OF

CALCULATED BY MEB DATE 23 Sept 1991

CHECKED BY DATE

SCALE

Peak Flows - Use 'Rational Method' $Q = CiA$

Area #1 -	$Q = CiA = (0.60)(4.2)(4.03) =$	10.16 cfs
Area #2 -	$Q = CiA = (0.20)(5.38)(3.27) =$	3.52 cfs
Area #3 -	$Q = CiA = (0.39)(5.38)(0.38) =$	0.80 cfs
Area #4 -	$Q = CiA = (0.18)(5.38)(0.57) =$	0.55 cfs
Area #5 -	$Q = CiA = (0.19)(5.38)(0.08) =$	0.08 cfs
Area #6 -	$Q = CiA = (0.16)(5.38)(0.55) =$	0.47 cfs

Comments:

- Areas #1, #5 & #6 drain to an existing Storm Water Collection System at the intersection of Tramway Blvd and Menorah Ave.
- Areas #2, #3 & #4 drain into the Tramway East Drainage Channel
- Area #1, #4, #5 & #6 drain into the City's Right-of-Ways and are collected as mentioned above.
Peak Runoff during a 100 year - 6 hour storm entering R.O.W. is 11.26 cfs.

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JOB SMITH'S STORE #227 - Alhambra
SHEET NO. 4 OF
CALCULATED BY MEB DATE 23 Sept 1991
CHECKED BY DATE
SCALE

STORM WATER STUDY (cont)

PROPOSED CONDITIONS

Drainage Areas - See Attached Drawing "Conceptual Plan - Grading & Drainage"

Area A -	2.75 ac	}	8.33 ac.
Area B -	4.53 ac		
Area C -	0.23 ac		
Area D -	0.23 ac		
Area E -	0.44 ac		
Area F -	0.10 ac.		
Area G -	0.55 ac		- offsite

Coefficient of Runoff (Plate 22.2 C-1)

Soils are silty, slightly gravelly sands
(SCS Soils Group A)

Area A	(95% impervious)	C = 0.85
Area B	(90% impervious)	C = 0.74
Area C	(67% impervious)	C = 0.53
Area D	(0% impervious)	C = 0.16
Area E	(13% impervious)	C = 0.22
Area F	(5% impervious)	C = 0.19
Area G	(0% impervious)	C = 0.16

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JOB SMITH'S STORE #427 - Albuquerque
SHEET NO. 5 OF
CALCULATED BY MFB DATE 23 Sept. 1991
CHECKED BY DATE
SCALE

Time of Concentration (Plate 22.2 B-1)

Area A - 610 ft[±] over paving @ S = 2.9% V = 2.59 fps t_c = 3.9 min.

Area B - 25' ± over grass @ S = 3.0% ± V = 3.8 fps t_c = 0.1 min
715' ± over paving @ S = 2.3% ± V = 2.05 fps t_c = 5.8 min
t_c = 5.9 min.

Area C - 50' ± over grass/hareground @ S = 8.2% ± V = 2.0 fps t_c = 0.4 min
250' ± over paving @ S = 3.0% ± V = 2.38 fps t_c = 1.8 min
t_c = 2.2 min.

Area D - 60' ± over grass @ S = 3.3% V = 1.08 fps t_c = 0.9 min

Area E - 60' ± over grass @ S = 8.3% ± V = 2.0 fps t_c = 0.5 min

Area F - 15' ± over grass @ S = 6.3% ± V = 2.67 fps t_c = 0.1 min

Area G - 210' ± over grass @ S = 3.8% ± V = 1.12 fps t_c = 3.1 min.

Assume Minimum t_c of 10 minutes for small drainage areas

Rainfall Intensities

Use data from Plate 22.2 D-1 & Plate 22.2 D-2
for 100 year, 6-hour rainfall

@ t _c = 10.0 min	i = 5.38 in/hr.
@ t _c = 15.0 min.	i = 4.38 in/hr
@ t _c = 30.0 min	i = 3.05 in/hr
@ t _c = 60.0 min	i = 2.06 in/hr
@ t _c = 120.0 min	i = 1.48 in/hr
@ t _c = 180.0 min	i = 1.20 in/hr.
@ t _c = 240.0 min	i = 1.04 in/hr.

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JOB SMITH'S STORE #427 - Albuquerque

SHEET NO. 6 OF

CALCULATED BY MEB DATE 24 Sept. 1991

CHECKED BY DATE

SCALE

Peak Flows - Use "Rational Method" $Q = CiA$

Area A	-	$Q = CiA = (0.85)(5.38)(2.75) =$	12.58 cfs
Area B	-	$Q = CiA = (0.74)(5.38)(4.53) =$	18.03 cfs
Area C	-	$Q = CiA = (0.53)(5.38)(0.28) =$	0.80 cfs
Area D	-	$Q = CiA = (0.16)(5.38)(0.23) =$	0.20 cfs
Area E	-	$Q = CiA = (0.22)(5.38)(0.44) =$	0.52 cfs
Area F	-	$Q = CiA = (0.19)(5.38)(0.10) =$	0.10 cfs
Area G	-	$Q = CiA = (0.16)(5.38)(0.55) =$	0.47 cfs

Comments:

- Areas E & F drain into the City's Right-of-Ways and area collected by existing storm drainage collection in Tramway Blvd. and Wenonah Ave.

Peak Runoff during 100 year - 6 hour storm entering R.O.W. is 0.62 cfs - considerably less than the 11.26 cfs that currently enters the R.O.W.

- Areas A, B, C & G are collected by storm drainage pipe and discharged into the Tramway East Drainage Channel

- Peak Runoff during 100 year - 6 hour storm is 31.88 cfs

- Area D sheet flows directly into the Tramway East Drainage Channel (only 0.20 cfs)

APPENDIX 'B'

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JOB SMITH'S STORE No. 427 - Albuquerque

SHEET NO. 1 OF

CALCULATED BY MEB DATE 17 Oct. 1991

CHECKED BY DATE

SCALE

HYDRAULIC ANALYSIS

Pipe Sizing

Use Manning's Equation for a Full Flowing Pipe
(No Head):

$$Q = \frac{1.486}{n} A R^{2/3} S^{1/2}$$

$n = 0.013$ for Conc &
PVC Pipe.

Pipes have been designed to be at or below
their full flowing capacity with No Head.

Pipe Segment	Pipe Size	Pipe Slope	Pipe Capacity	Required Capacity	Comments
A-B	12" RCP	3.0%	6.17 cfs	0.60 cfs	okay ✓
B-C	12" RCP	1.25%	3.98 cfs	0.80 cfs	okay ✓
C-D	18" RCP	1.0%	10.51 cfs	10.25 cfs	okay ✓
D-E	24" RCP	0.75%	19.59 cfs	18.30 cfs	okay ✓
E-F	12" RCP	2.2%	5.28 cfs	0.50 cfs	okay ✓
G-H	8" PVC	2.13%	1.76 cfs	0.10 cfs	okay ✓
H-I	8" PVC	2.66%	1.97 cfs	0.10 cfs	okay ✓
I-J	24" RCP	0.75%	19.59 cfs	19.40 cfs	okay ✓
J-K	24" RCP	1.0%	22.62 cfs	22.66 cfs	okay ✓
L-M	12" RCP	0.5%	2.52 cfs	2.33 cfs	okay ✓
M-N	15" RCP	2.56%	10.34 cfs	9.22 cfs	okay ✓
N-O	30" RCP	0.61%	32.03 cfs	31.88 cfs	okay ✓

ALL PIPES HAVE THE CAPACITY TO CARRY THE
DESIGN 100-YEAR STORM RUNOFF OF THEIR
RESPECTIVE DRAINAGE AREA WITH NO HEAD ON THE PIPES.

HYDRAULIC GRADE LINE IS BELOW SOFFIT OF EACH PIPE

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OGDEN, UT 84409
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JOB SMITH'S STORE No. 427-Albuquerque

SHEET NO. 8 OF

CALCULATED BY MEB DATE 17 Oct 1991

CHECKED BY DATE

SCALE

Inlet Grate Capacities

All grates to Catch Basins have been designed to accommodate a 100-year 6-hour storm.

<u>Inlet Box</u>	<u>Design Flow</u>	<u>Grate Capacity</u>	<u>Comments</u>
A	0.6 cfs	3.4 cfs	① [A] S = 2.8%
B	0.2 cfs	3.5 cfs	① [A] S = 3.0%
C	9.45 cfs	9.75 cfs	② S = 2.0%
D	8.05 cfs	9.75 cfs	② S = 2.0%
E	0.5 cfs	4.0 cfs	① [A] S = 4.0%
F	0.5 cfs	4.0 cfs	① [A] S = 4.0%
I	3.0 cfs	4.0 cfs	① [B] S = 1.0%
L	Negligible	3.8 cfs	① [A] S = 3.6%
M	0.8 cfs	3.8 cfs	① [A] S = 3.6%
K	Negligible	2.4 cfs	① [A] S = 1.1%

① Grate size and type similar to Albuquerque Type 'A' Catch Basin with Type 2 grating. Use Plate 22.3 D-5 of DPM Vol. 2.

[A] Assume Depth of Flow of 0.3 feet and Slope of gutter as shown in Comments.

[B] Assume Depth of Flow of 0.4 feet (which is still below Top of Curb ≈ 0.5 feet)

② Grate size for Inlets C & D are 36" x 46" approximately 50% larger than a standard Type 2 grate. Use Plate 22.3 D-5 for Type 2 grates with capacities adjusted proportionately for larger grate and assume a flow depth of 0.45 feet

APPENDIX 'C'



LOCATION MAP

Four Hills Road

CHANNEL

DRAINAGE

EAST

TRAMWAY

Wenonah Avenue

Wenonah

Drainage Area Map "EXISTING"



#427

Smith's Food & Drug Center, Inc.
City of Albuquerque,
Bernalillo Co., New Mexico

Topographical Survey

GREAT BASIN ENGINEERING, INC.
1000 N. 1st St., Suite 100, Bldg. 100
Albuquerque, N.M. 87102



AREA #6
0.55 ac.

AREA #1
4.03 ac.

AREA #3
0.38 ac.

AREA #2
3.27 ac.

AREA #4
0.51 ac.

AREA #5
0.08 ac.

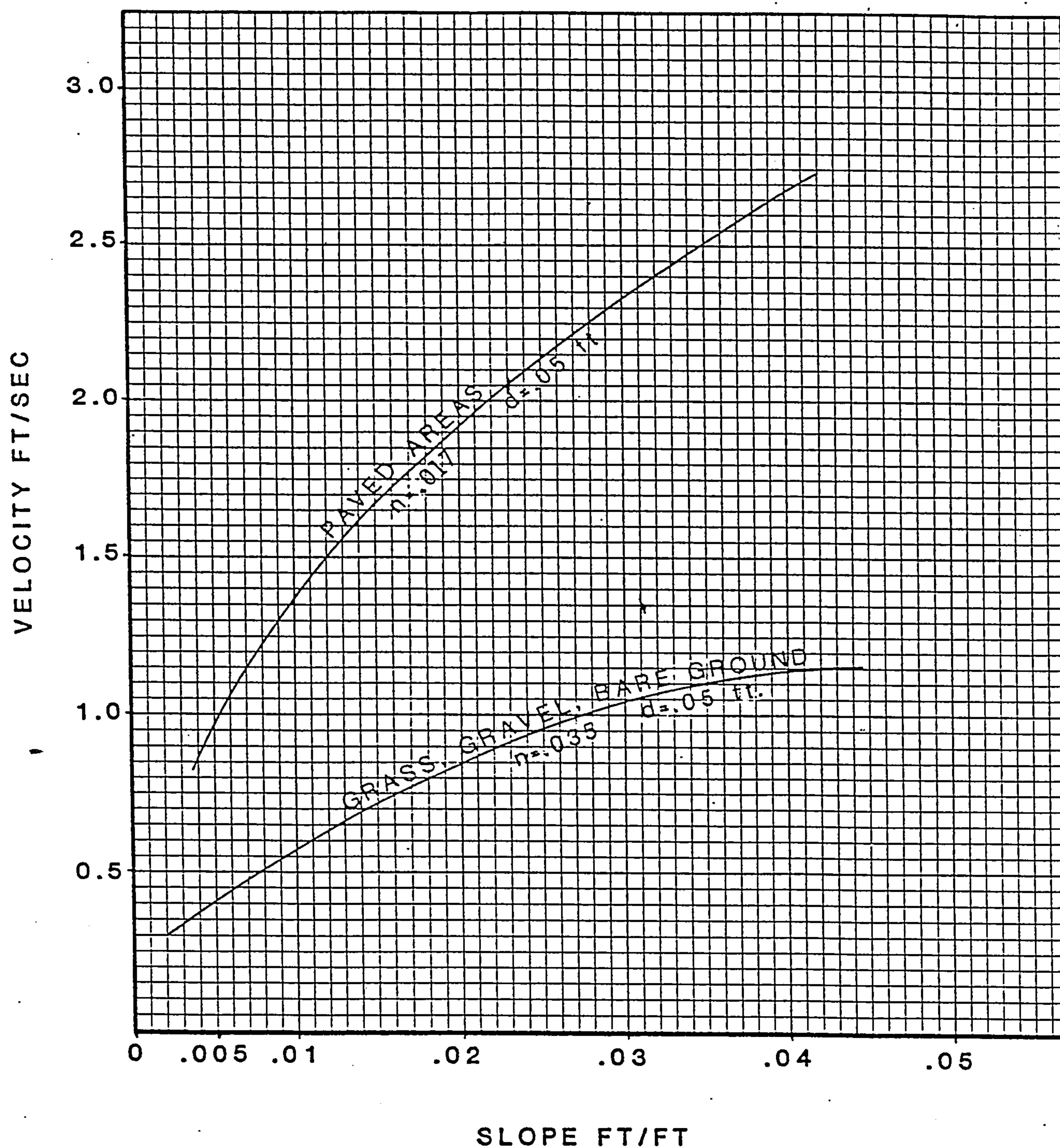
TRAMWAY

BOULEVARD

SE

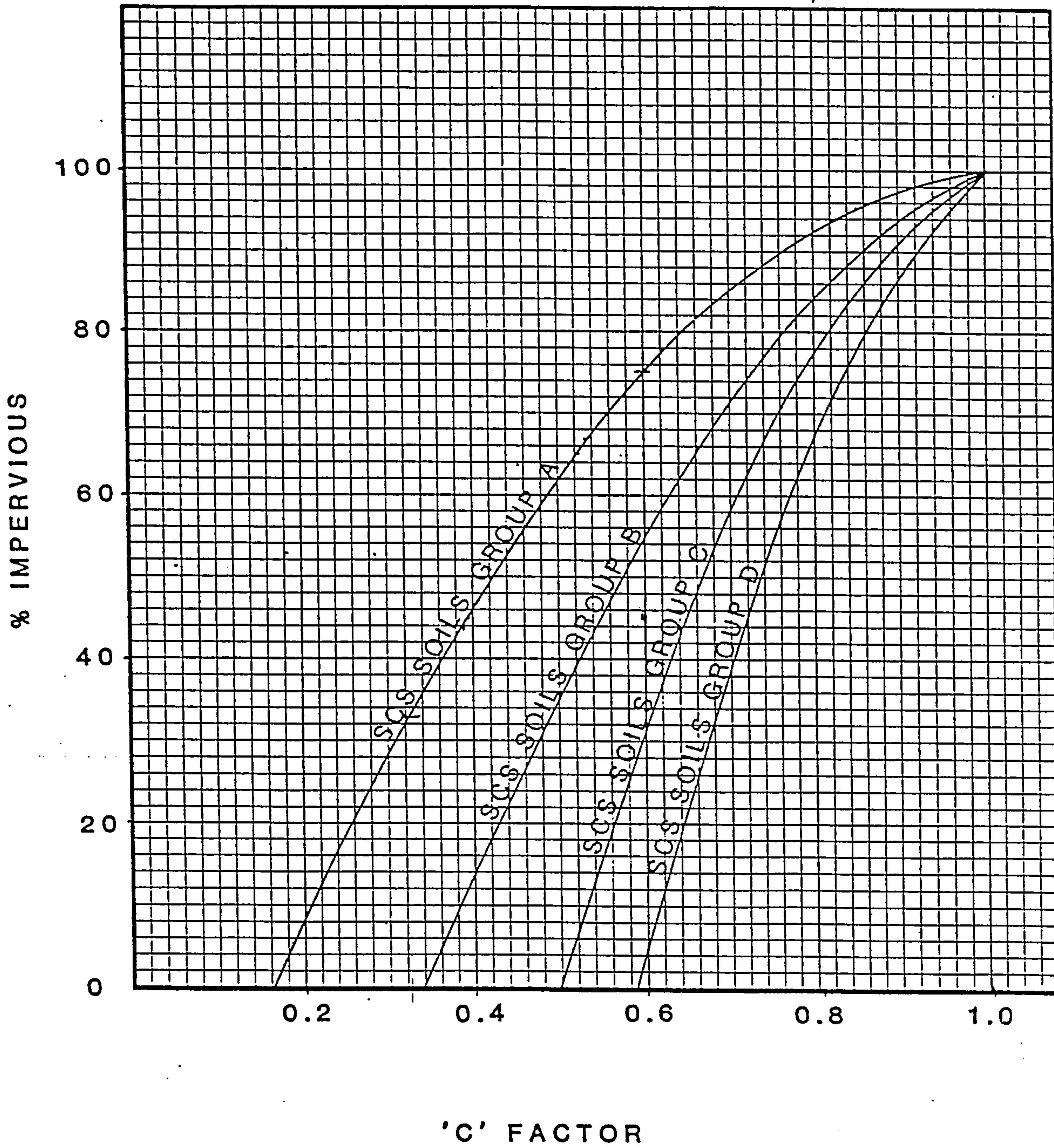


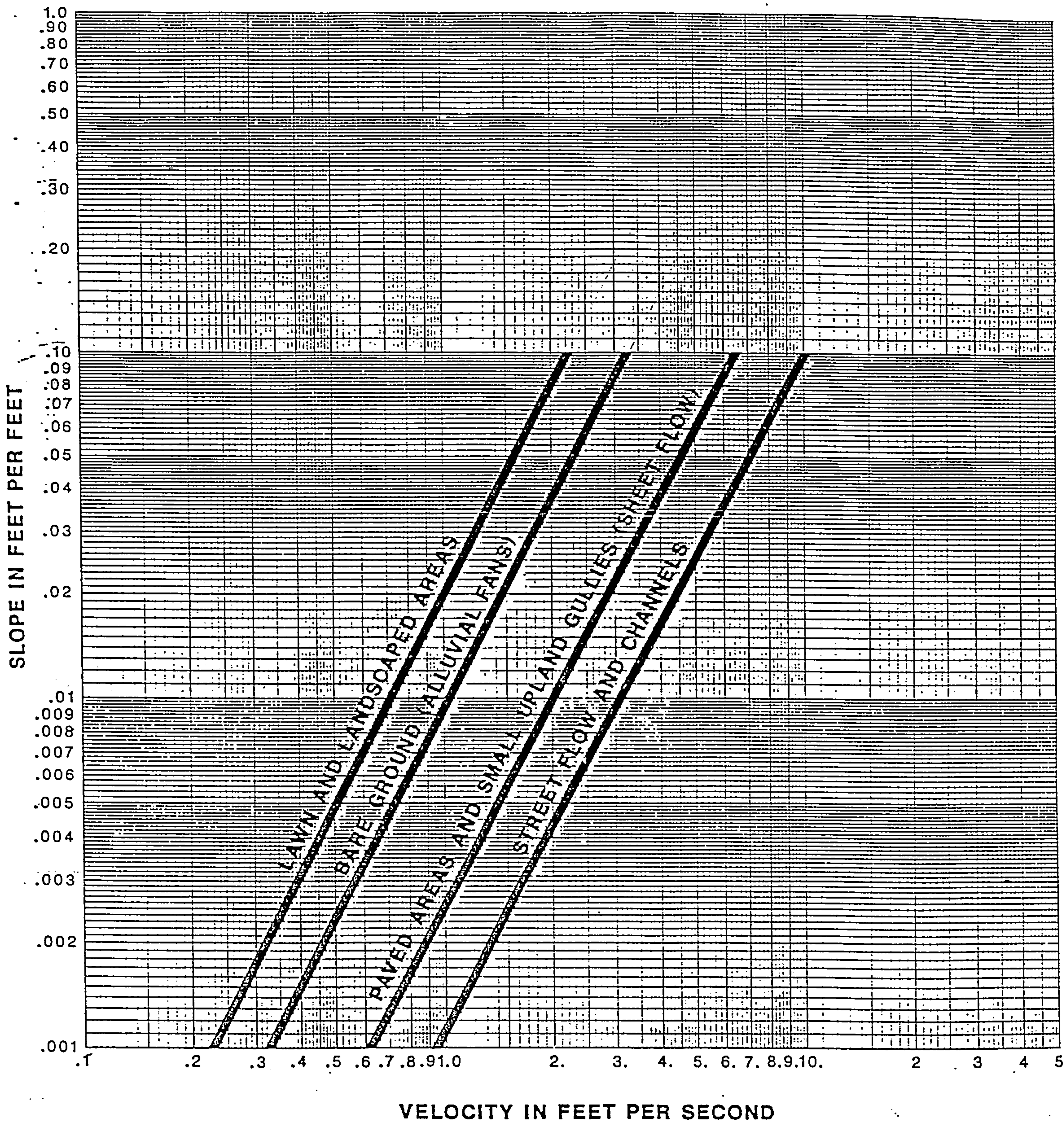
OVERLAND FLOW SEGMENTS

VELOCITY DETERMINATIONS FOR T_c CALCULATIONS

DRAINAGE CRITERIA

DETERMINATION OF RATIONAL FORMULA 'C' FACTOR

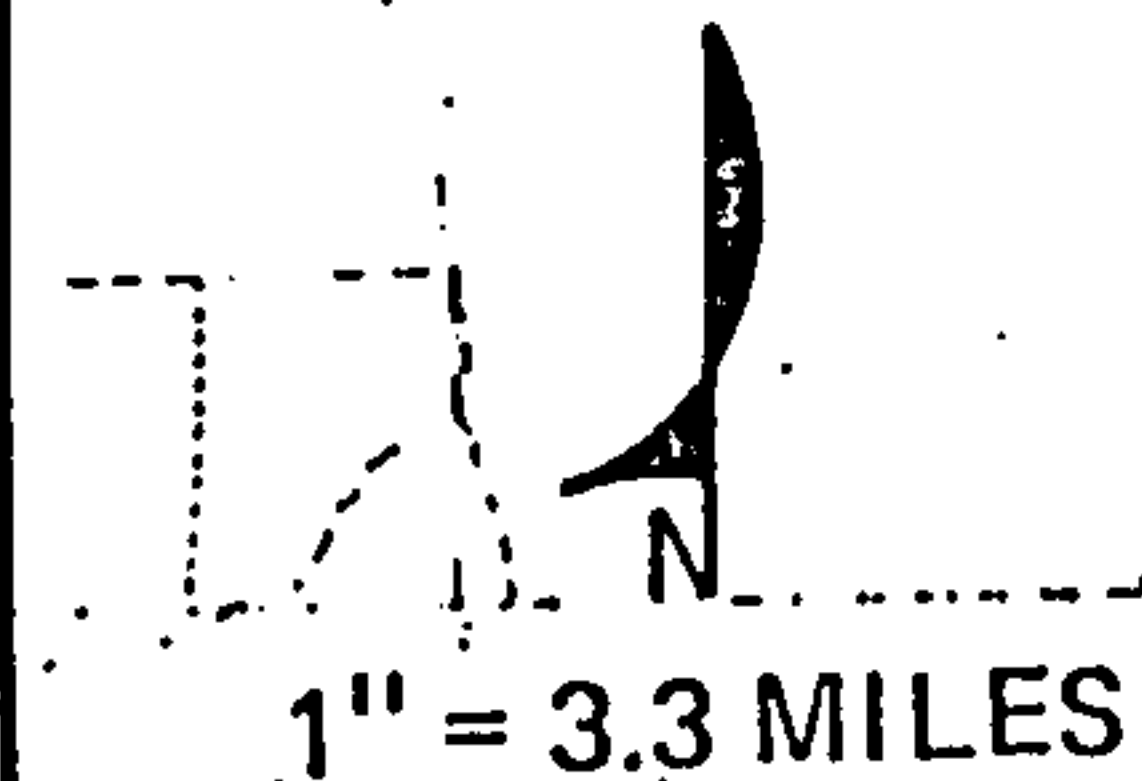




VELOCITIES FOR UPLAND METHOD OF ESTIMATING T_c

6-HOUR RAINFALL VOLUME - 100 YEAR FREQUENCY

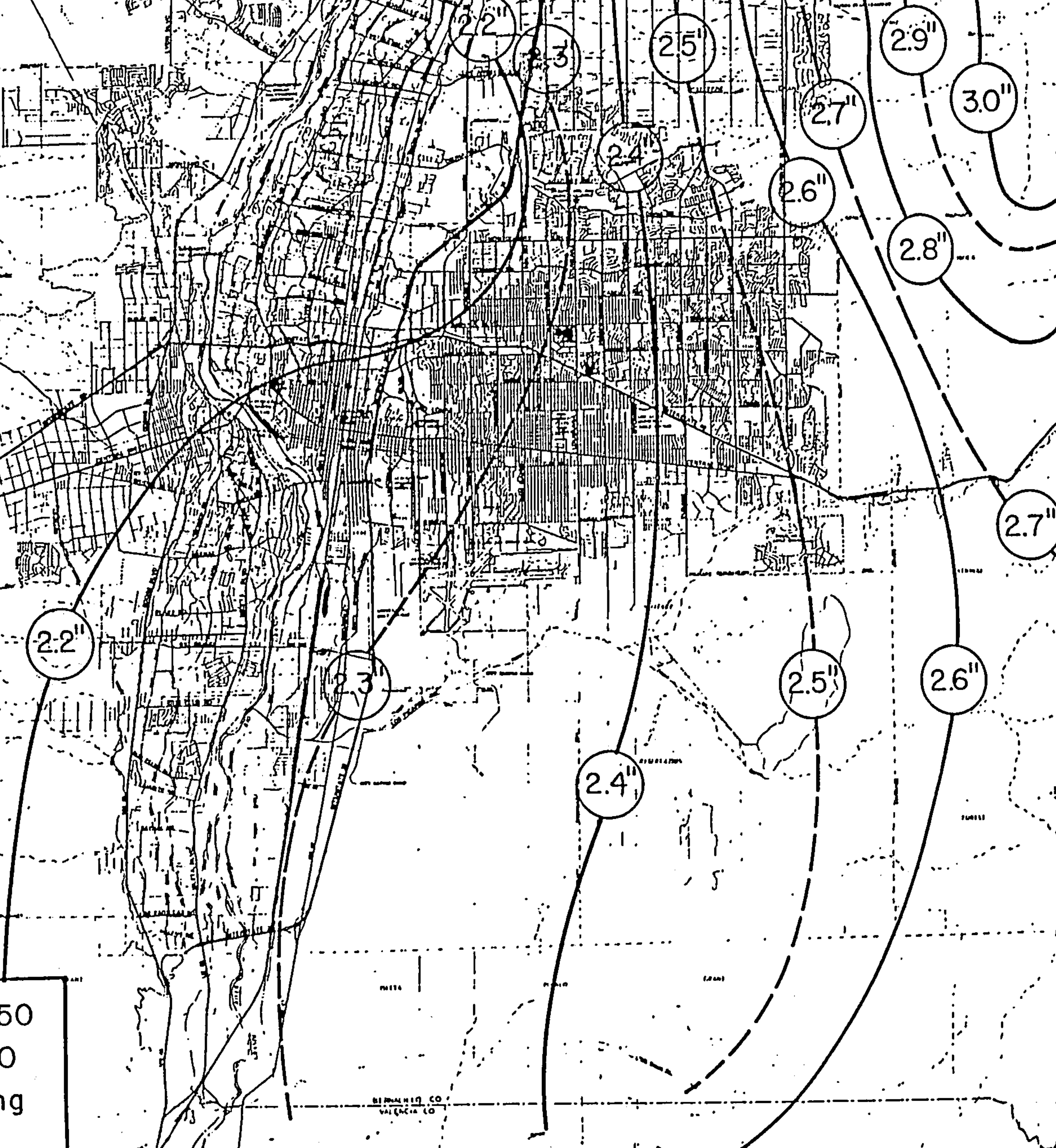
Use 2.2 for all locations west of 2.2 line



Note: to obtain 2,5,10, and 50 year values, multiply the 100 year amount by the following factors:

Year	2	5	10	50
Factor	.445	.541	.657	.920

Source: 1973 NOAA Atlas 2, Volume IV



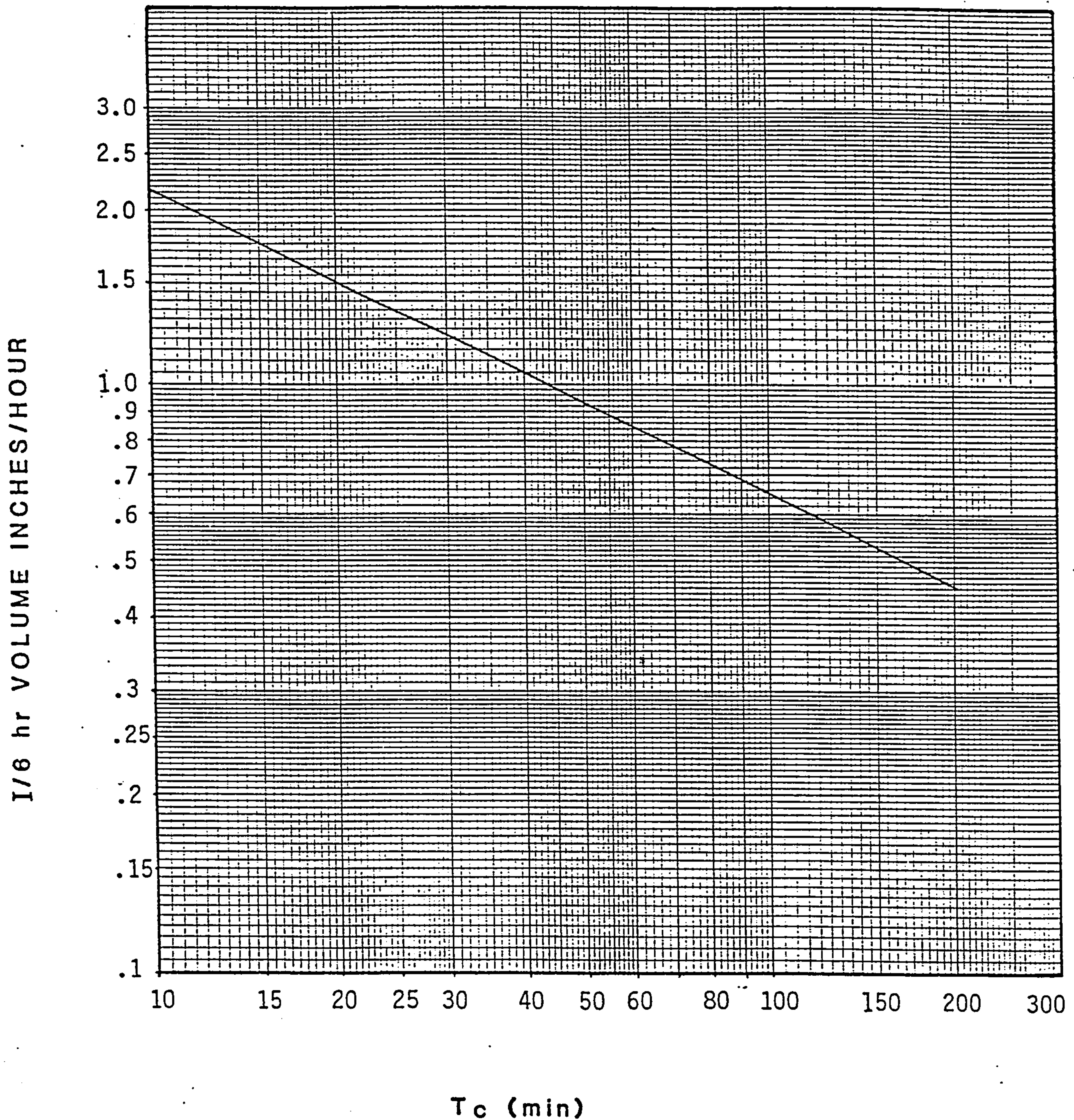
13

PLATE 22.2 D-1

22.2

DIMENSIONLESS RAINFALL INTENSITIES

$$I = (6\text{-hr. rain}) 6.84 t_c^{-0.51}$$



note: To get actual intensities, multiply rainfall volume from plate D-1 by value from curve. Use reduction factors on Plate D-1 for other than 100-yr.

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JOB _____

SHEET NO. _____

OF _____

CALCULATED BY _____

DATE

18 Jan 1990

CHECKED BY _____

DATE _____

SCALE _____

PIPE FLOWS

Mannings Equation

$$"n" = 0.013$$

SIZE	AREA (ft ²)	PERIMETER (ft.)	HYDRAULIC RADIUS	Flow Rate
2"	0.0218	0.5236	0.0416 ✓	0.299 S ^{1/2} ✓
4"	0.0873	1.0472	0.0834 ✓	1.905 S ^{1/2} ✓
6"	0.1964	1.5708	0.1250 ✓	5.612 S ^{1/2} ✓
8"	0.3491	2.0944	0.1667 ✓	12.086 S ^{1/2} ✓
10"	0.5454	2.6180	0.2083 ✓	21.909 S ^{1/2} ✓
12"	0.7854	3.1416	0.2500 ✓	35.628 S ^{1/2} ✓
15"	1.2272	3.9270	0.3125 ✓	64.599 S ^{1/2} ✓
18"	1.7672	4.7124	0.3750 ✓	105.05 S ^{1/2} ✓
21"	2.4053	5.4978	0.4375 ✓	158.45 S ^{1/2} ✓
24"	3.1416	6.2832	0.5000 ✓	226.22 S ^{1/2} ✓
27"	3.9761	7.0686	0.5625 ✓	309.70 S ^{1/2} ✓
30"	4.9087	7.8540	0.6250 ✓	410.16 S ^{1/2} ✓
36"	7.0686	9.4248	0.7500 ✓	666.98 S ^{1/2} ✓
42"	9.6211	10.9956	0.8750 ✓	1006.09 S ^{1/2} ✓
48"	12.566	12.566	1.0000 ✓	1436.39 S ^{1/2} ✓
54"	15.904	14.137	1.1250 ✓	1966.44 S ^{1/2} ✓
60"	19.635	15.708	1.250 ✓	2604.43 S ^{1/2} ✓
66"	23.758	17.279	1.375 ✓	3357.99 S ^{1/2} ✓
72"	28.27	18.856	1.500 ✓	4234.44 S ^{1/2} ✓

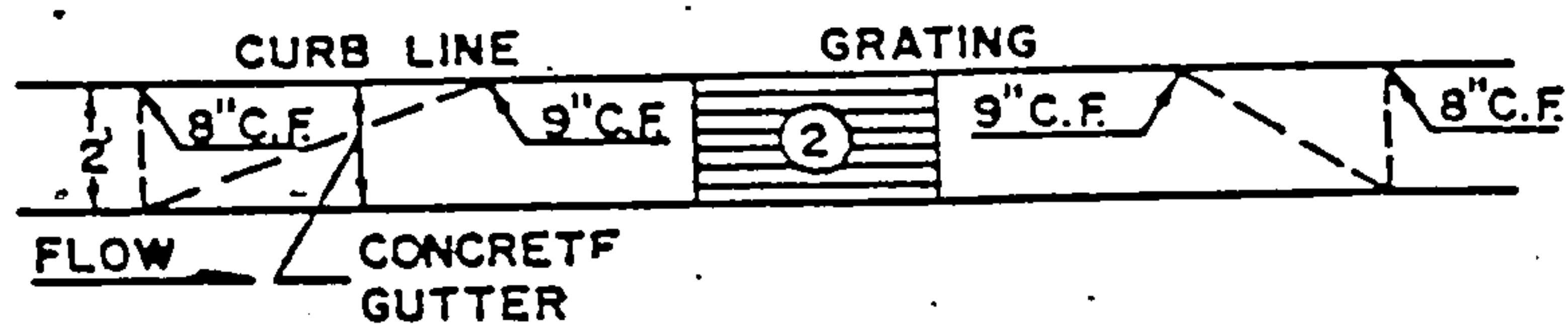
$$Q = \frac{1.486 A R^{2/3} S^{1/2}}{n}$$

$$R = A/P$$

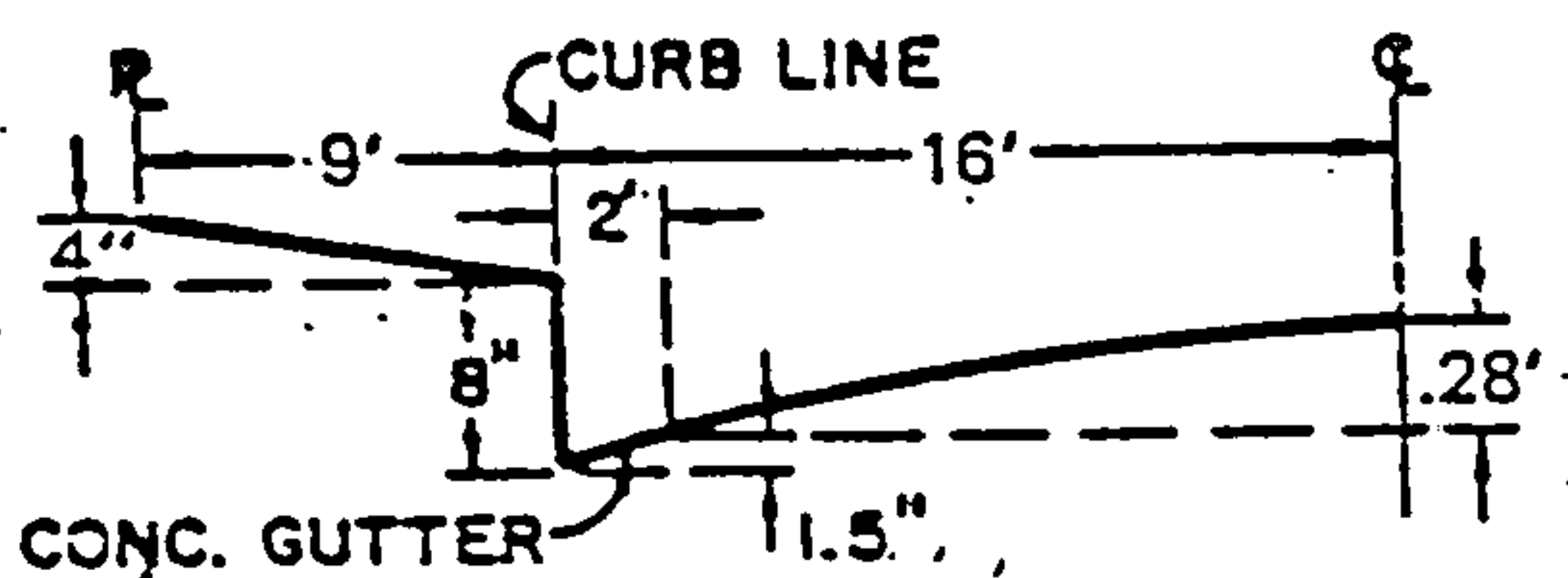
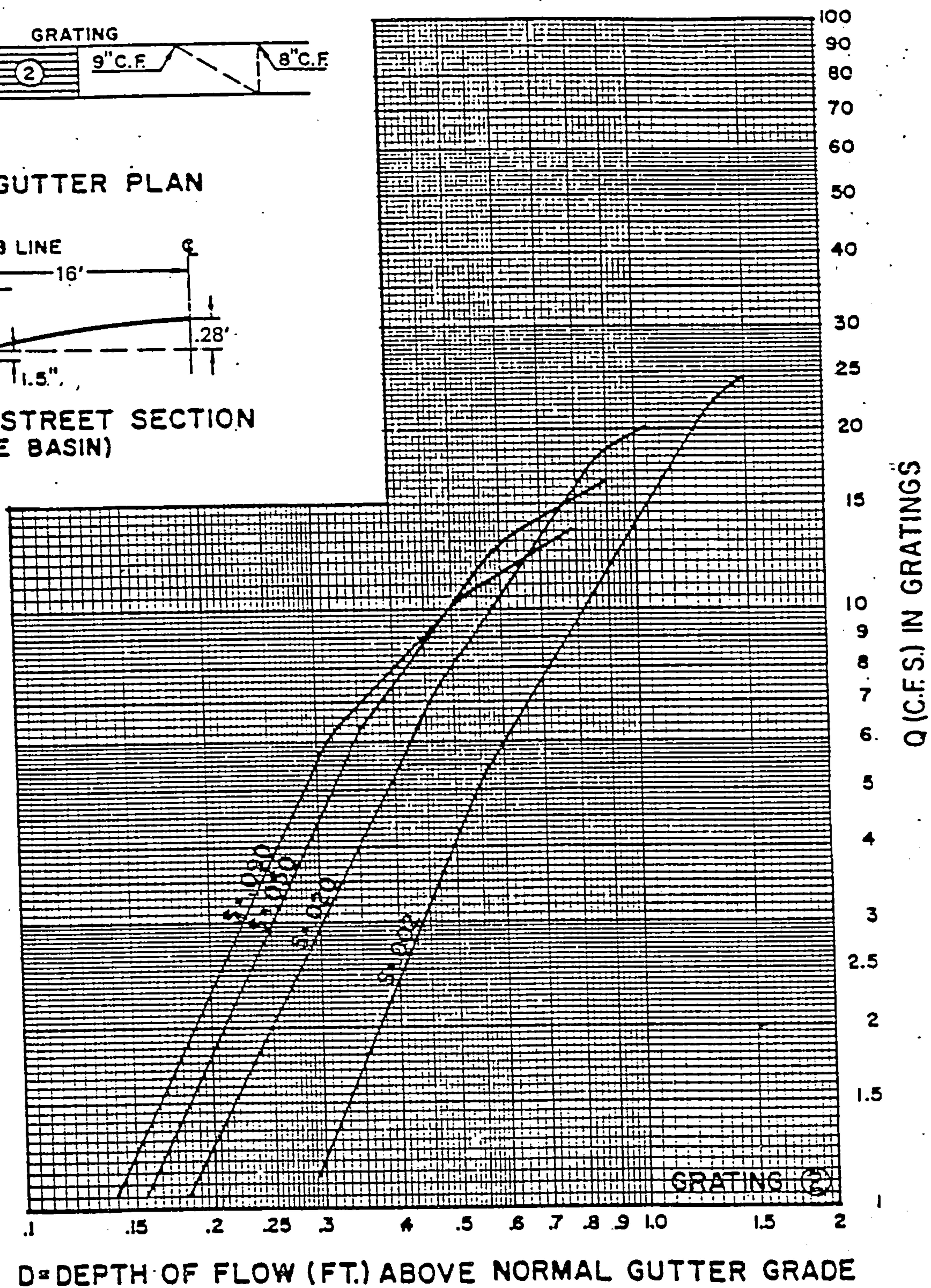
$$A = \pi r^2$$

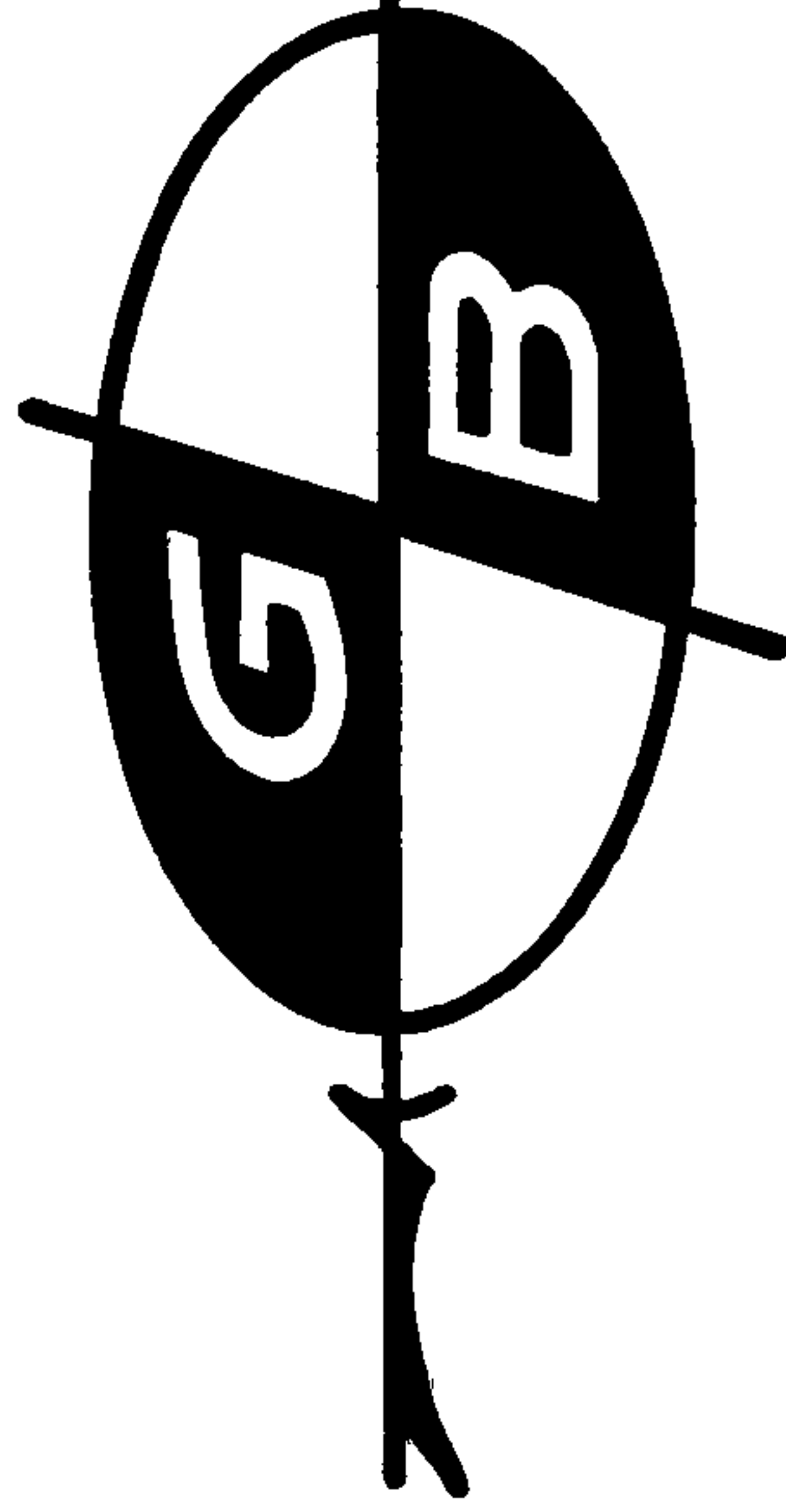
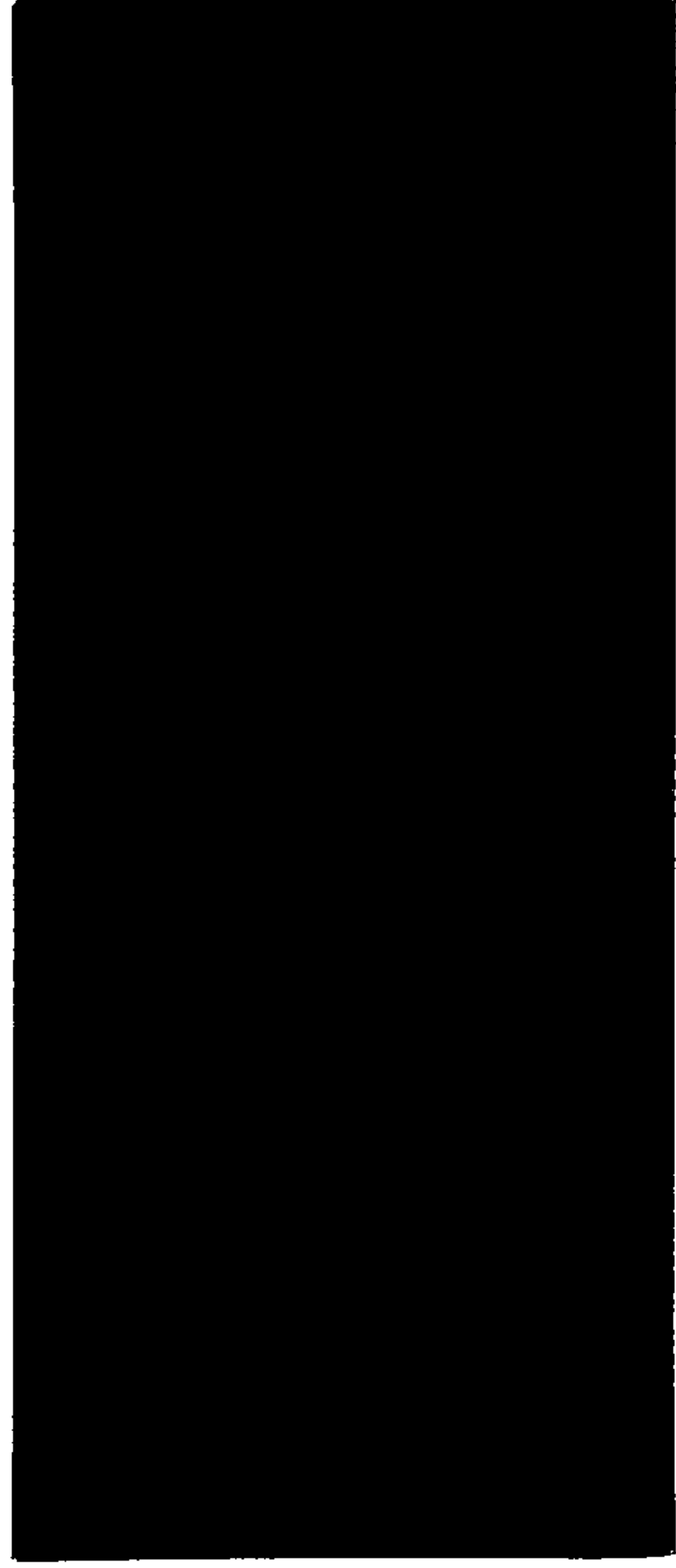
$$P = 2\pi r$$

GRATING CAPACITIES FOR TYPE "A", "C" and "D"



GRATING & GUTTER PLAN

TYPICAL HALF STREET SECTION
(ABOVE BASIN)



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