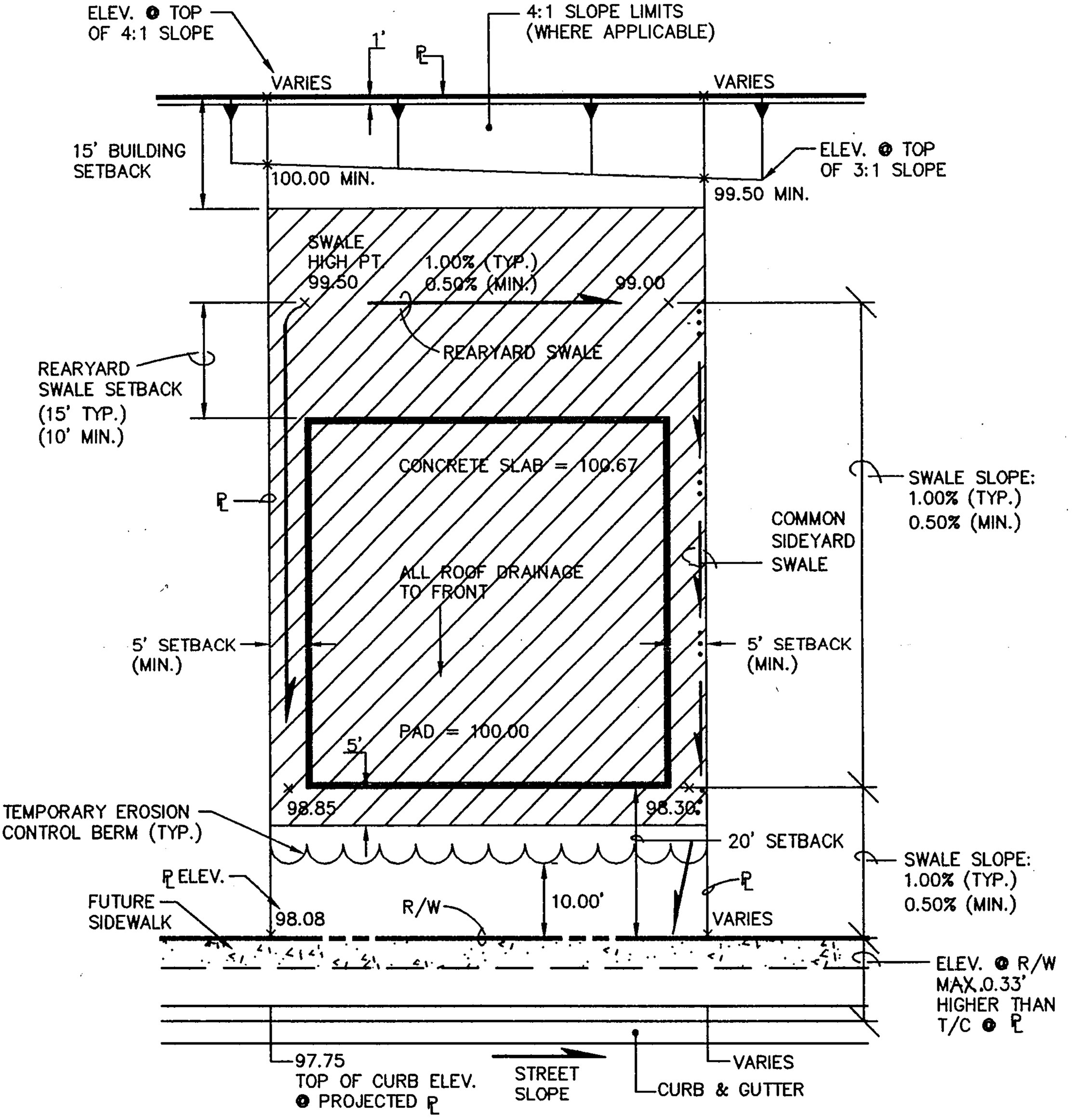


COMPACTION ZONE – CONTRACTOR SHALL COMPACT SOILS IN THIS AREA TO A MINIMUM OF 95% COMPACTION PER ASTM D698, FOR A DEPTH OF 12 INCHES.

TYPICAL LOT GRADING SHOWING COMPACTION ZONE

1"=20'

FIGURE 4

930FIG3.DWGems 7/24/97

CITY OF
Albuquerque

May 12, 1998

Fred C. Arfman, P.E.
Isaacson & Arfman
128 Monroe Street NE
Albuquerque, New Mexico 87108

RE: Grading and Drainage Certification for Desert Flower Subdivision Unit One, (M10/D5) , Engineer's Stamp Dated 4/30/98.

Dear Mr. Arfman:

The above referenced Engineer's Certification for Desert Flower Subdivision Unit One is adequate to satisfy the Grading and Drainage certification requirements per the Infrastructure List dated July 29, 1997, and revised on October 14, 1997, for the release of Financial Guarantees.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Terri Martin, DRB 96-532
Bo Johnson, Curb Inc.
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DESERT FLOWER SUBD, UNIT ONE ZONE ATLAS/DRNG. FILE#: M-10/D5

DRB # 96-532 EPC # WORK ORDER # 573981

LEGAL DESCRIPTION: DESERT FLOWER SUBDIVISION, UNIT ONE

CITY ADDRESS: N/A.

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: FRED ARFMAN

ADDRESS: 128 Monroe Street NE PHONE: 268-8828

CITY, STATE: Albuquerque, NM ZIP CODE: 87108

OWNER: CURB INC. / BOKAY CONST. (AGENT) CONTACT: BO JOHNSON

ADDRESS: 5905 AZUELO NW PHONE: 899-9656

CITY, STATE: ALBUQ., NM ZIP CODE: 87120

ARCHITECT: N/A. CONTACT:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

SURVEYOR: WALKER SURVEYING CONTACT: STEVE WALKER

ADDRESS: 424 SHIRK LN SW PHONE: 266-6209

CITY, STATE: ALBUQ. NM ZIP CODE: 87105

CONTRACTOR: SALLS BROS. CONST. CONTACT: FRED SALLS

ADDRESS: 3811 ATRISCO DR. N.W PHONE: 839-4117

CITY, STATE: ALBUQ., NM ZIP CODE: 87120

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

X ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

____ YES

____ NO

____ COPY PROVIDED

RECEIVED
APR 30 1998
HYDROLOGY SECTION

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

X OTHER (SPECIFY) GRADING CERT FOR WORK ORDER CLOSE-OUT PACKAGE

DATE SUBMITTED: APRIL 30, 1998

BY: FRED C. ARFMAN, P.E.
FOR ISAACSON & ARFMAN, P.A.

RoFg

CITY OF
Albuquerque

July 28, 1997

Martin J. Chávez, Mayor

Fred C. Arfman, P.E.
Isaacson & Arfman
128 Monroe Street NE
Albuquerque, New Mexico 87108

RE: Drainage Report and Grading and Drainage Plan for Desert Flower Subdivision, Unit One, (M10/D5) Submitted for Preliminary Plat and Work Order Approval, Engineer's Stamp Dated 7/3/97.

Dear Mr. Arfman:

Based on the information provided in the submittal of July 3, 1997, the above referenced Report and Grading and Drainage Plan are approved for Preliminary Plat action.

Prior to Work Order approval, the Agreement and Covenant for the temporary retention pond must be filed.

As you are aware, the grading and drainage plan which is approved by the DRB must be certified prior to release of Financial Guarantees for this Unit.

If you should have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan Calongne

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Fred Aguirre, DRB 96-532
Bo Johnson, Curb Inc.
File

FAX

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
DEVELOPMENT AND BUILDING SERVICES
CENTER (ONE STOP SHOP)

600 2ND STREET - PLAZA DEL SOL- 2ND FLOOR W
FAX NO. 924-3864

DATE: 7-25-97

TIME: _____

No. of Pages: 1
(Including Cover Page)

To: Fred Arfman

From: Susan Calongne

Comments: Desert Flower Unit One Infrastructure List: I talked to Fred Aguirre - he said to add:

** 54" Storm drain from Westend of Tract B to Amole del Norte

Temporary retention pond to be built through the Work Order process.

The As-Built information will be included with the grading and drainage certification

---

** To be deferred w/ separate bond (or something like that)

You can fix the wording
If you have any questions, call me at 924-3982

— S

DRB Case No. 96-532
DRC Project No.:
Date Submitted: 07-09-97
Prelim. Plat Approved:
Prelim. Plat Expires:

FIGURE 12
EXHIBIT "A"
TO SUBDIVISION IMPROVEMENT AGREEMENT
DEVELOPMENT REVIEW BOARD
REQUIRED INFRASTRUCTURE LISTING
DRB 96-532
TRACT F, ALBUQUERQUE SOUTH, UNIT ONE
BEING REPLATTED AS

DESERT FLOWER SUBDIVISION, UNIT ONE

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

UNIT ONE

SIZE	IMPROVEMENT	LOCATION	FROM	TO
24"	Waterline	Arenal Road	Arroyo del Norte Diversion Channel	Unser Blvd.
24"	Waterline	Unser Blvd.	Arenal Road	So. Boundary, Unit 1
24' FF	Art. Paving	"	Freshwater Road	"
12'	Decel. Lane	"	"	100' So. of Freshwater
STD	Curb & Gutter (east)	"	"	So. Boundary, Unit 1
TEMP. MED	PCC Curb (east)	"	"	"
10'	Asph. Trail	"	"	"
24"	Storm Drain	"	"	"
8"	Waterline	"	"	Kimela Drive (Exst. 10" WL)
30"	Storm Drain	"	"	Kimela Drive (Exst. 30" stub)
24' FE	Res. Paving	Freshwater Road	Unser Blvd.	Desert Springs Drive
STD	Curb & Gutter (south)	"	"	"
10'	Asph. Trail	"	"	Native Flower Road
8"	Waterline	"	"	"
4'	*PCC Sidewalk	"	Native Flower Rd.	Desert Springs Drive
28' FF	Res. Paving	Native Flower Dr.	Sagebrush Road	April Flower Road
MOUNT	Curb & Gutter (both sides)	"	"	"
8"	Waterline	"	"	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"

SIZE	IMPROVEMENT	LOCATION	FROM	TO
24' FF	Res. Paving	Native Flower Dr.	Freshwater Drive	April Flower Road
4'	*PCC Sidewalk (east only)	"	"	"
8"	Waterline	"	"	"
8"	Sanitary Sewer	"	Lot 19/Block A	"
24' FF	Res. Paving	Saltbrush Road (Stub)	Unser Blvd.	Native Flower Drive
4'	*PCC Sidewalk (north only)	"	"	"
8"	Sanitary Sewer	"	Lot 1/Block J	"
4"	Waterline	"	"	"
28' FF	Res. Paving	April Flower Road	Native Flower Drive	Desert Springs Drive
MOUNT	Curb & Gutter (both sides)	"	"	"
8"	Waterline	"	"	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"
28' FF	Res. Paving	Purple Cone Road	Native Flower Drive	Desert Springs Drive
MOUNT	Curb & Gutter (both sides)	"	"	"
6"	Waterline	"	"	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"
32' FF	Res. Paving	Purple Fringe Rd.	Native Flower Drive	Desert Springs Drive
MOUNT	Curb & Gutter (both sides)	"	"	Desertwood Drive
STD	Curb & Gutter (both sides)	"	Desertwood Drive	Desert Springs Drive
8"	Waterline	"	Native Flower Drive	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"
28' FF	Res. Paving	Desertwood Drive	Lots 8/9/Block E	Purple Fringe Road
MOUNT	Curb & Gutter (both sides)	"	"	"
6"	Waterline	"	"	"
4'	*PCC Sidewalk	"	"	"
24' FE	Res. Paving	Desert Springs Dr.	Lots 1/30/Block N	Freshwater Road
STD	Curb & Gutter (west)	"	"	"
8"	Waterline	"	"	"
4'	*PCC Sidewalk	"	"	"
8"	Sanitary Sewer	"	Exst. SAS 240' South of Purple Fringe Rd.	April Flower Road

* 54"

~~24"~~ S.D.

West of Tract Angle Dellwood

B

MISCELLANEOUS

Street lighting per DPM.

Grading & Drainage: Certification per DPM (prior to release of financial guarantees). To include private retaining walls as required on the approved Grading Plan.

All water to include fire hydrants, valves, and appurtenances per DPM.

*To be deferred under Sidewalk Deferral Agreement (both sides).

Storm drain to include all manholes, catch basins, and connector pipe per DPM.

Temp retention pond (to be certified) thru the U.D. process.
The AS-BUILT information will be included with the grad
Off site Storm drain to AMOLE 54" certi

Prepared By: Fred C. Arfman 07.09.97

Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.

Date

***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** *****

Development Review Board Member Approval

Transportation Development Division	Date
Utility Development Division	Date
Parks Design & Development/CIP	Date
City Engineer/AMAFCA	Date
DRB Chair	Date

Artman
fax 268-2632

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

Albuquerque, NM

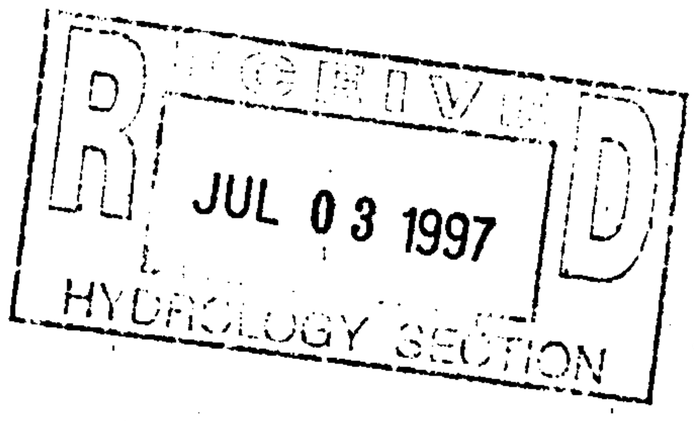
DRAINAGE REPORT

FOR

DESERT FLOWER SUBDIVISION
UNITS ONE

A 84 LOT SINGLE
FAMILY RESIDENTIAL SUBDIVISION

ALBUQUERQUE NEW MEXICO
JUNE 1997



Prepared by:

ISAACSON & ARFMAN, P.A.
128 Monroe Street, NE
Albuquerque, NM 87108
(505) 268-8828

07.03.97

Fred C. Arfman, P.E. **Date**

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

Thomas O. Isaacson, PE & LS • Fred C. Arfman, PE
Scott M. McGee, PE

FAX NO. (505) 268-2632

*** FAX COVER SHEET ***

TO: SUSAN COLONGNE DATE: 07.28.97
HYDROLOGY - P.W.D
FAX #: 924-3864

REFERENCE: DESERT FLOWER SUBD.

TOTAL NUMBER OF PAGES, INCLUDING THIS PAGE: 4

☐ Hard copy to follow via mail.

If you do not receive any of these pages, please call (505) 268-8828.

MESSAGE:

- AMENDED INFRAST. LIST.

FROM: FRED ARFMAN

128 Monroe St. NE • Albuquerque, NM 87108 • (505) 268-8828 • FAX (505) 268-2632

DRB Case No. 96-532
DRC Project No.:
Date Submitted: 07-25-97
Prelim. Plat Approved:
Prelim. Plat Expires:

FIGURE 12
EXHIBIT "A"
TO SUBDIVISION IMPROVEMENT AGREEMENT
DEVELOPMENT REVIEW BOARD
REQUIRED INFRASTRUCTURE LISTING
DRB 96-532
TRACT F, ALBUQUERQUE SOUTH, UNIT ONE
BEING REPLATTED AS
DESERT FLOWER SUBDIVISION, UNIT ONE

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee. If the items normally are Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

UNIT ONE

SIZE	IMPROVEMENT	LOCATION	FROM	TO
24"	Waterline	Arenal Road	Amole del Norte Diversion Channel	Unser Blvd.
24"	Waterline	Unser Blvd.	Arenal Road	So. Boundary, Unit 1
24' FF	Art. Paving	"	Freshwater Road	"
12'	Decel. Lane	"	"	100' So. of Freshwater
STD	Curb & Gutter (east)	"	"	So. Boundary. Unit 1
TEMP. MED	PCC Curb (east)	"	"	"
10'	Asph. Trail	"	"	"
24"	Storm Drain	"	"	"
8"	Waterline	"	"	Kimela Drive (Exst. 10" WL)
30"	Storm Drain	"	"	Kimela Drive (Exst. 30" stub)
24' FE	Res. Paving	Freshwater Road	Unser Blvd.	Desert Springs Drive
STD	Curb & Gutter (south)	"	"	"
10'	Asph. Trail	"	"	Native Flower Road
8"	Waterline	"	"	"
4'	*PCC Sidewalk	"	Native Flower Rd.	Desert Springs Drive
28' FF	Res. Paving	Native Flower Dr.	Salt Sagebrush Road	April Flower Road
MOUNT	Curb & Gutter (both sides)	"	"	"
8"	Waterline	"	"	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"

SIZE	IMPROVEMENT	LOCATION	FROM	TO
24' FF	Res. Paving	Native Flower Dr.	Freshwater Drive	April Flower Road
4'	*PCC Sidewalk (east only)	"	"	"
8"	Waterline	"	"	"
8"	Sanitary Sewer	"	Lot 19/Block A	"
24' FF	Res. Paving	Saltbrush Road (Stub)	Unser Blvd.	Native Flower Drive
4'	*PCC Sidewalk (north only)	"	"	"
8"	Sanitary Sewer	"	Lot 1/Block J	"
4"	Waterline	"	"	"
28' FF	Res. Paving	April Flower Road	Native Flower Drive	Desert Springs Drive
MOUNT	Curb & Gutter (both sides)	"	"	"
8"	Waterline	"	"	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"
28' FF	Res. Paving	Purple Cone Road	Native Flower Drive	Desert Springs Drive
MOUNT	Curb & Gutter (both sides)	"	"	"
6"	Waterline	"	"	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"
32' FF	Res. Paving	Purple Fringe Rd.	Native Flower Drive	Desert Springs Drive
MOUNT	Curb & Gutter (both sides)	"	"	Desertwood Drive
STD	Curb & Gutter (both sides)	"	Desertwood Drive	Desert Springs Drive
8"	Waterline	"	Native Flower Drive	"
8"	Sanitary Sewer	"	"	"
4'	*PCC Sidewalk	"	"	"
28' FF	Res. Paving	Desertwood Drive	Lots 8/9/Block E	Purple Fringe Road
MOUNT	Curb & Gutter (both sides)	"	"	"
6"	Waterline	"	"	"
4'	*PCC Sidewalk	"	"	"
24' FF	Res. Paving	Desert Springs Dr.	Lots 1/30/Block N	Freshwater Road
STD	Curb & Gutter (west)	"	"	"
8"	Waterline	"	"	"
4'	*PCC Sidewalk	"	"	"
8"	Sanitary Sewer	"	Exst. SAS 240' South of Purple Fringe Rd.	April Flower Road
** 48"-54"	Storm Drain	40' Offsite Storm Drain Easement	East Property Line Tracts B, D, F	Arnole del Norte Diversion Channel

MISCELLANEOUS

Street lighting per DPM.

Temporary storm water retention pond to be constructed through the work order process. As-built information will be included with the grading and drainage certification.

Grading & Drainage: Certification per DPM (prior to release of financial guarantees). To include private retaining walls as required on the approved Grading Plan.

All water to include fire hydrants, valves, and appurtenances per DPM.

*To be deferred under Sidewalk Deferral Agreement (both sides).
**To be deferred under separate Agreement and Financial Guarantee.

Storm drain to include all manholes, catch basins, and connector pipe per DPM.

Prepared By: _____ _____
Fred C. Arfman, P.E. Date
Isaacson & Arfman, P.A.

Development Review Board Member Approval

_____ _____
Transportation Development Division Date

_____ _____
Utility Development Division Date

_____ _____
Parks Design & Development/CIP Date

_____ _____
City Engineer/AMAFCA Date

_____ _____
DRB Chair Date

****
*** RX REPORT ***
****

RECEPTION OK

TX/RX NO	5849
CONNECTION TEL	505 268 2632
SUBADDRESS	
CONNECTION ID	
ST. TIME	07/28 09:21
USAGE T	01'52
PGS.	4
RESULT	OK

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DESERT FLOWER UNIT ONE ZONE ATLAS/DRNG. FILE #: M-10

DRB #: 96-532 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT A, DESERT FLOWER SUBD.

CITY ADDRESS: N/A.

ENGINEERING FIRM: ISAACSON & ARFMAN, P.A. CONTACT: FRED C. ARFMAN

ADDRESS: 128 MONROE ST. NE, 87108 PHONE: 268-8828

OWNER: CURB INC. CONTACT: BO JOHNSON

ADDRESS: 6301 INDIAN SCH. RD, STE. 680 PHONE: 881-9190

ARCHITECT: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: ALDRICH LAND SURVEYING CONTACT: TIM ALDRICH

ADDRESS: P.O. BOX 30701, 87190 PHONE: 884-1990

CONTRACTOR: N/A. CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION
- ____ OTHER

PRE-DESIGN MEETING:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SKETCH PLAT APPROVAL
- X 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
- X OTHER W.O. APPROVAL (SPECIFY)

DATE SUBMITTED: 07.03.97

BY: FRED C. ARFMAN

FOR: ISAACSON & ARFMAN, P.A.

RECEIVED
JUL 03 1997
HYDROLOGY SECTION

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

Thomas O. Isaacson, PE & LS • Fred C. Arfman, PE
Scott M. McGee, PE

June 30, 1997

Ms. Susan Calongne, P.E.
City/County Floodplain Administrator
Hydrology Division/PWD
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: Drainage Report and Grading Plan for Desert Flower Subdivision Unit 1 (M10/D5) Submitted for Preliminary Plat Approval, Engineer's Stamp Dated 4/24/97 and 4/25/97.

Dear Ms. Calongne:

This letter addresses some of the comments we received regarding the above drainage report dated May 19, 1997. Follows are the exact comments and solutions pertaining to them:

1. *It appears that this plan is part of a Master Drainage Plan, however, the above referenced report must be able to stand alone. This report must contain the pertinent information from the Master plan. Is free discharge allowed? It is my understanding that the Amole del Norte channel can only handle controlled discharge.*

   The Desert Flower Unit 1 Drainage Report is a stand alone report that follows the Master Drainage Report. Information pertaining to the discharge to the Amole channel is included, referencing from the Arenal/Unser Management Drainage Plan.

2. *What is the status of the Master Drainage Plan? Until the Master Plan is approved, this subdivision will not be approved.*

   The Master Drainage Report is updated and submitted.

3. *It appears that off-site flows from Basin 402 impact this site. How do you propose to intercept these flows in the interim and in the ultimate condition? Is a storm drain system proposed in Unser?*

128 Monroe St. NE • Albuquerque, NM 87108 • (505) 268-8828 • FAX (505) 268-2632

In the interim condition, discharge from Basin 402, future Sunrise Estates unit 3, enters a ditch on Unser Blvd. and travels north, not affecting Desert Flower Subdivision. In the ultimate condition, a storm drain line will be placed on Unser Blvd. to collect the flow.

4. *The report indicates that Unit 4 will include an outfall pipe from the subdivision to the Amole del Norte channel. This outfall pipe must be bonded with the first Unit. All public storm drain easements or right-of-way must be in place for this outfall pipe with Unit 1. The connection between the subdivision and the Amole must be identified at this time.*

The outfall pipe is bonded with Unit 1. The pipe connection is identified on the plan.

5. *The report states that developed flows from Unit 1 will enter a temporary surge/retention pond. Please show this pond, and all ponds, on the grading plans. The ponds must be within public drainage easements, and Agreement and Covenants will be required. Unless downstream capacity is addressed, these temporary ponds should be retention ponds. Retention ponds must be sized for the 100-year, 10-day storm. Provide the pond volume calculations.*

Retention pond and volumes have been added to the plan.

6. *Unit 3 proposes to pick up street flows from Unser and pond on the site. Is this pond temporary? Is a storm drain system required in the portion of Unser in the ultimate condition? Typically ponds do not discharge into the streets.*

Flow from Unser Blvd. at this section will flow onto Spring Flower Rd.

7. *The plan must identify all storm drain sizes. These must also be identified on the Infrastructure List. Provide drain capacity calculations.*

Storm drain sizes have been added to plan. Storm drain capacities are shown in Table 5.

8. Please reference the current FEMA flood maps. The 1983 flood maps are no longer valid.

Subdivision site is not in flood zone, see map no. 35001CO336D and 35001CO337D dated September 20, 1996.

9. Provide the typical street sections used in the capacity calculations.

Street cross-sections have been added.

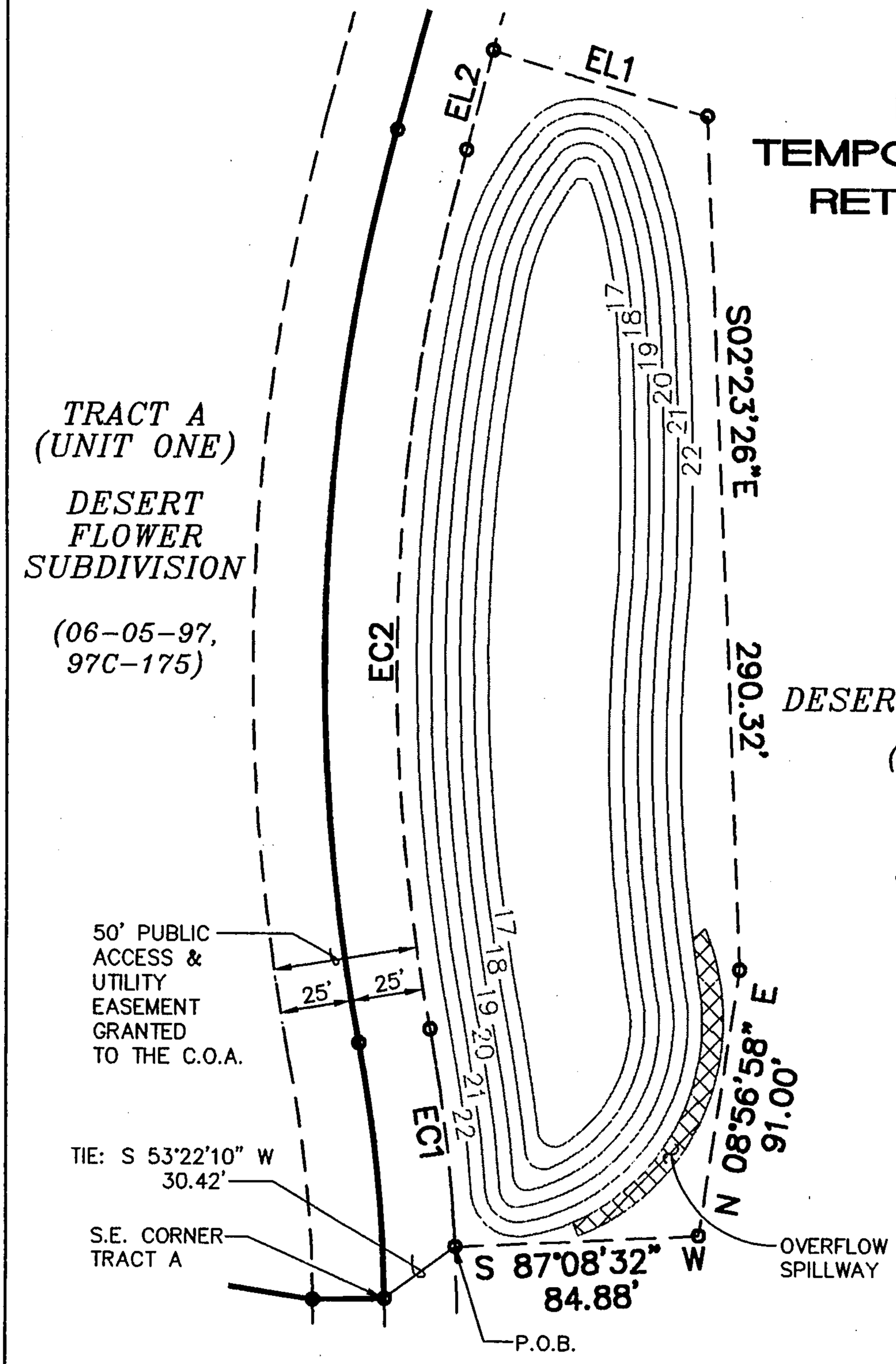
Very truly yours,

ISAACSON & ARFMAN, P.A.

Fred C. Arfman, P.E.

FCA/jsi

EXHIBIT 'A'
TEMPORARY OFF-SITE RETENTION POND



SCALE:
1"=60'

TRACT B
DESERT FLOWER SUBDIVISION
(06-05-97, 97C-175)

VOL=V_{10-DAY} OF 98,942 CU FT

ELEV	CU FT
17	0.0
18	13732.3
19	31101.8
20	52276.4
21	77410.5
22	106656.6

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
EC1	525.00'	74.34'	37.23'	74.27'	N 06°54'51" W	08°06'46"
EC2	650.00'	301.46'	153.49'	298.77'	S 02°18'58" W	26°34'23"

LINE	DIRECTION	DISTANCE
EL1	S 73°45'48" E	77.40'
EL2	S 15°36'09" W	34.86'

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque *New Mexico*

930EXH5.DWGems 07/24/97

TABLE OF CONTENTS

Introduction

Vicinity Map
II. Project Information
III. Site Characteristics

Conclusion & Recommendations

Summary Tables

Table 1 - Hydrologic Flow Parameters

Table 2 - Street Flow Characteristics

Appendices

Appendix A: Onsite AHYMO Summary & Detailed Output 100-Year Storm

Appendix B: Offsite AHYMO Summary & Detailed Output

Appendix C: Unser Blvd. 10-yr Dry Lane Study

Pockets

Figure 1: Master Drainage Plan of June 1997

Figure 2: Offsite Drainage Plan of June 1997

Figure 3: Unit One Grading Plan

Figure 4: Typical Lot Detail

TOWN OF ATRISCO GRANT

SU-1 CHURCH & REL FAC

SU-1 PRD 15 DU/A PERM C-1 USES INCL REST W/ FULL SERVICE LIQ

(UNIT 7)

R-D 9 DU/A

C-1

R-D R-1

ABQ SOUTH

ARENAL

GARCIA—JOSE F

AMOLE DEL NORTE DIVERSION CHANNEL

SAN JOSE DE ARMIJO CE

A-1

SAN JOSE ARENAL

SU-1 CHRCH & PVT SCHOOL

ARENAL RD

VISTA NUEVA

(UNIT NO 3)

MARY ANN BINFORD ELEMENTARY SCHOOL

ABQ SOUTH UNIT 1

VALLEY WEST

SU-1 PRD

SU-1 PRD

UNSER BLVD

TRACT F

SITE

SU-1 CHURCH & REL FAC

WESTGATE HEIGHTS

North

250 0 500 1000

Ldn 60

M-10-Z

A-1 SU-PERMIT MH PARK

M-1

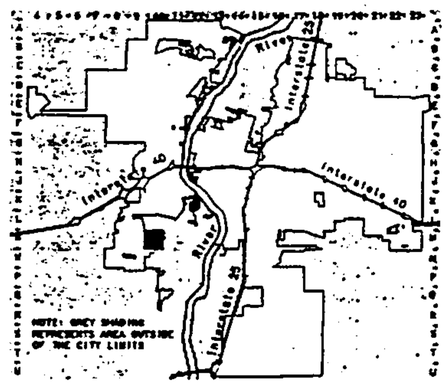
LOCUST

SCALE IN FEET

PHOTOCOPY--NOT TO SCALE

A Sequoya Geographic Information System

Map Amended through June 15, 1994



LEGAL DESCRIPTION

T10N

R2E

SEC 24

UNIFORM PROPERTY CODE

1-010-065

INTRODUCTION

Desert Flower Unit One development is the first phase of multiple phases of Desert Flower Subdivision proposed to be developed. Unit One will have 84 single family lots. The subdivision will be constructed with utilities, paving, and storm drainage improvements according to the City of Albuquerque Development Standards and Guidelines. This drainage report is part of the Desert Flower Master Drainage Report recently submitted, shall analyze the area with more in-depth drainage flow characteristics as they impact the site and offer solutions and recommendations to solve the hydrological and hydraulic conditions projected to occur in the event of the 100-year storm.

I. PROJECT INFORMATION

LEGAL DESCRIPTION: A parcel of land comprising of Tract F, Albuquerque South, Unit One (August 3, 1987, Volume C34, Folio 74).

ENGINEER: Isaacson & Arfman, P.A.
128 Monroe Street NE
Albuquerque, NM 87108
Attn: Fred C. Arfman, P.E.
(505) 268-8828

SURVEYOR: Aldrich Land Surveying, Inc.
Attn: Tim Aldrich, NMPLS No. 7719
(505) 884-1990

BENCHMARK: ACS Monument "1-M10" located at the southeast quadrant of Sage Road and Unser Blvd. SW.
Elevation: 5079.88

ZONING: RLT

NUMBER OF EXISTING TRACTS: 1

NUMBER OF PROPOSED LOTS:
Unit One: 84

TOTAL AREA: 15.8 AC
688,248 Sq. Ft.

II. SITE CHARACTERISTICS

FLOOD HAZARD: No part of this development is affected nor contributes to a flood hazard area as determined by Map No. 35001C0336D and 35001C0337D of the September 20, 1996 Edition of the F.E.M.A. Maps.

EXISTING CONDITIONS: This site is currently undeveloped and mostly undisturbed with native ground cover, typical of the City's west side (Land Treatment B). The site has a slope downward toward the east at slopes ranging from 1 to 2 percent. It abuts future Desert Springs Subdivision to the north, Unser Blvd. to the west, future Unit 2 to the east and future Unit 3 to the south. Storm water generated from the site flows east onto future Unit Two development and unplatted land, and then into the side of the Amole del Norte Channel. To the south of the site, flows from future Unit 3 development travel east

and join with the flow above before entering the channel. Offsite storm waters generated from Tract E and those from Unit Two and Three of Sunrise Estates currently are released to Unser Blvd. and are then conveyed by a combination of street flow and storm drain to an offsite detention pond. Flows are slowly released and are allowed to overland flow on to Basin 406 and 407, future Desert Springs Subdivision, then entrance to the side of the Amole del Norte Diversion Channel. Runoff from Tract 3, Land of Westland Development, flows southeast and does not affect the site.

PROPOSED CONDITIONS:

Unit One development will be developed with 84 lots and will not require storm drain construction. The Unit is divided into several subbasins: subbasins 108, 109, and 110. Subbasin 108 will release runoff onto April Flower Rd., subbasin 109 will discharge the flow onto Purple Cone Rd. and subbasin 110's runoff will enter Purple Fringe Rd. The flows from these streets will travel east and enter a temporary retention pond. The pond will be sized such that it's volume will exceed the subbasin's 100-year 10-day design storm discharge.

Unser Blvd.: Being adjacent and to the west of this phase is included as part of the development and will be analyzed for storm water flow

carrying capacity for both the 10-year and 100-year event. A dry lane must be preserved for the 10-year developed runoff.

Unit One will financially guarantee and obtain an easement for the storm drain line from Unit Four to the Amole del Norte Channel, however, the line shall be constructed as a required improvement with the first phase bordering on the east boundary of Tract B. A storm drain extension in Unser Blvd. from Sunrise Estates Unit 2 to Tract E, Albuquerque South, Unit 1 is required to accept storm waters generated by the street improvement and those generated when Tract E is developed. Only that portion of the storm drain fronting on Unit One of Desert Flower shall be constructed as part of Unit One.

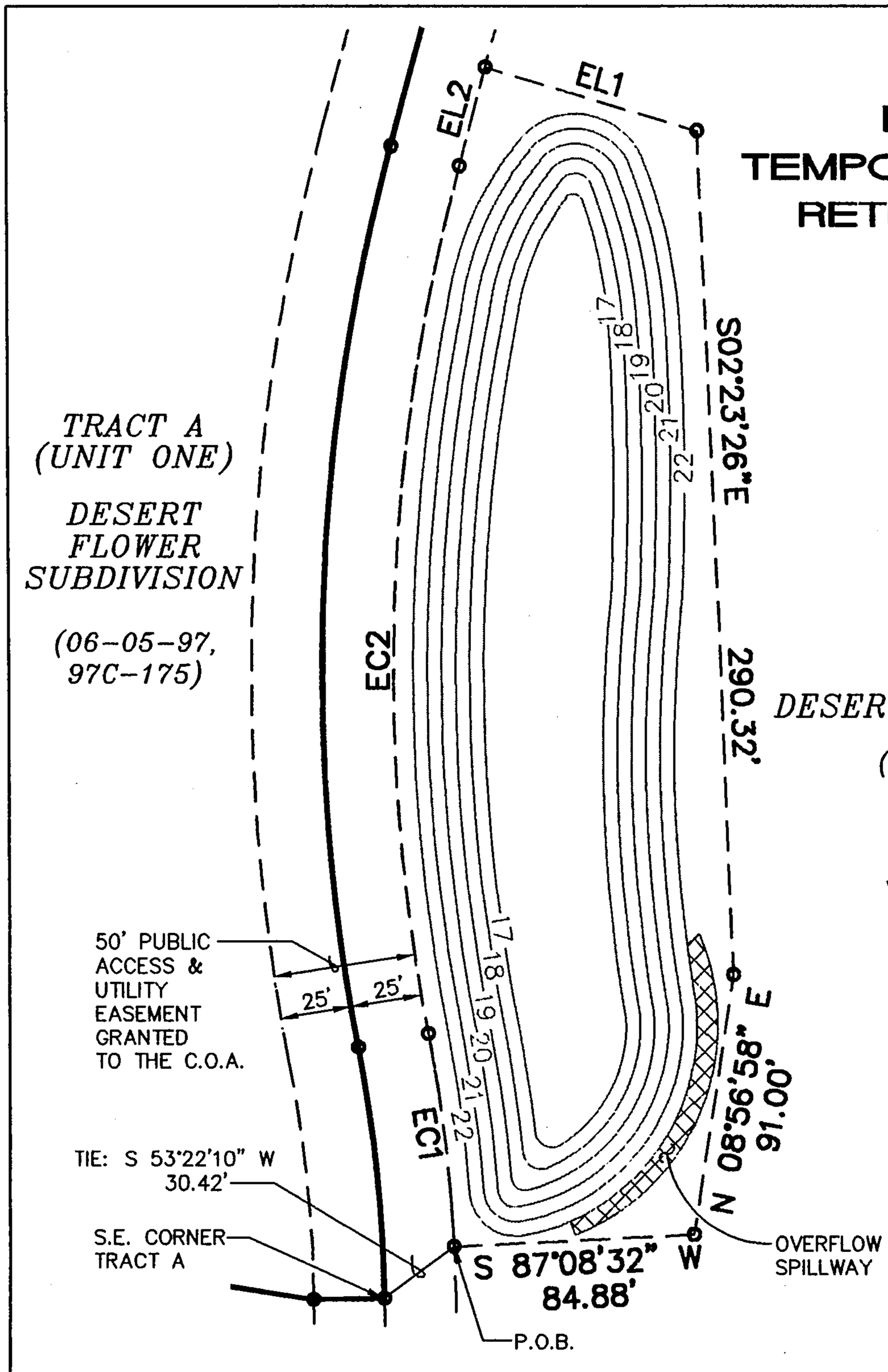
CONCLUSIONS & RECOMMENDATIONS

Desert Flower Unit One is proposed to be developed first from a multiple phases Desert Flower Subdivision. Onsite and offsite runoffs have been addressed as to how the subdivision will have a cohesive drainage solution. Tables 1 thru 3 give more in-depth and summarize the fundamentals of concern. Table 1 lists the onsite basins, areas, land treatment types and their discharges. Table 2 shows the street capacity in details at different locations. Table 3 gives storm drain capacities, sizes, and velocity at key locations. The appendices follows the

Table section, Appendix A contains the onsite AHYMO printouts for the 100-year storm and Appendix B contains the offsite AHYMO printouts. Summary and detailed outputs are within these sections. Appendix C analyses the Unser Blvd 10-year dry lane study. Pockets at the last part of this report contain master onsite and offsite drainage plans, Unit One grading plan and lot detail. The recommendations for Unit One construction are presented below:

- Retention pond is required at the downstream end of a unit where runoffs will be discharged onto future unit.
- Berms or swale points shall be graded around the developing unit so that offsite runoff will not affect this unit.
- Unit One lots running parallel to Unser Blvd. shall be graded to match Unser Blvd. future grades.
- The entire reach of the storm drain from Unit Four to the Amole del Norte Channel shall be financially guaranteed as part of Unit One and constructed as part of future phase improvements and should fall within the approved easement.
- No rear yard ponding shall be allowed in this portion of the development (see Typical Lot Grading Detail, pocket section, Figure 4).
- Adjacent lots may share a common lot line drainage swale (see Typical Lot Grading Detail).

EXHIBIT 'A'
TEMPORARY OFF-SITE RETENTION POND



SCALE:
1"=60'

TRACT B
DESERT FLOWER SUBDIVISION
(06-05-97, 97C-175)

$VOL = V_{10\text{-}DAY}$ OF 98,942 CU FT

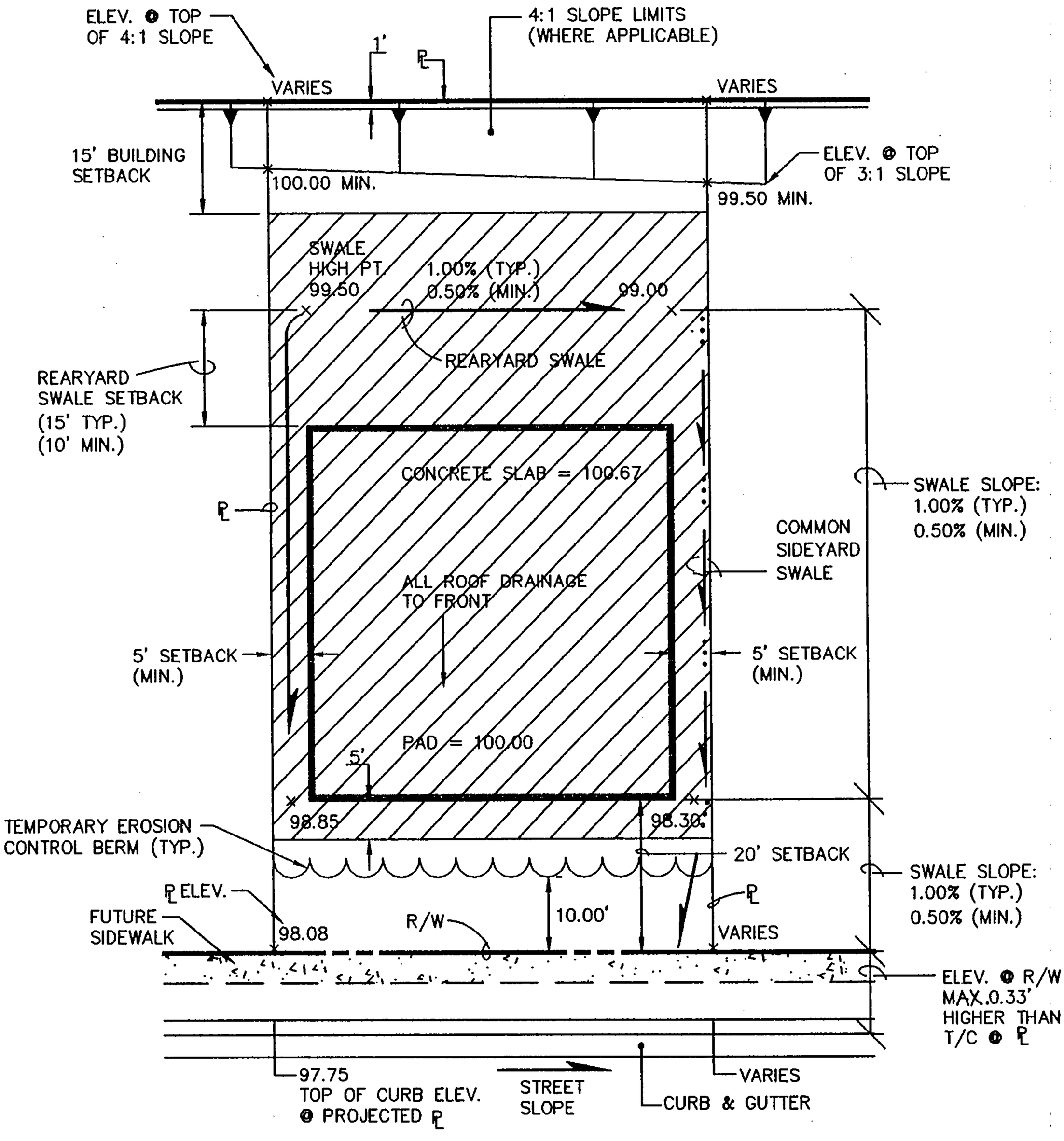
ELEV	CU FT
17	0.0
18	13732.3
19	31101.8
20	52276.4
21	77410.5
22	106656.6

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
EC1	525.00'	74.34'	37.23'	74.27'	N 06°54'51" W	08°06'46"
EC2	650.00'	301.46'	153.49'	298.77'	S 02°18'58" W	26°34'23"

LINE	DIRECTION	DISTANCE
EL1	S 73°45'48" E	77.40'
EL2	S 15°36'09" W	34.86'

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque *New Mexico*

930EXH5.DWGems 07/24/97



COMPACTION ZONE – CONTRACTOR SHALL COMPACT SOILS IN THIS AREA TO A MINIMUM OF 95% COMPACTION PER ASTM D698, FOR A DEPTH OF 12 INCHES.

TYPICAL LOT GRADING SHOWING COMPACTION ZONE

1"=20'

FIGURE 3

930FIG3.DWGems 7/24/97

SUMMARY TABLES

TABLE 1
ONSITE BASIN SUMMARY

Basin ID	Area (Sq. Mi.)	Contributing Basins	Cummula-tive Area (Sq. Mi.)	% A	% B	% C	% D	Basin Q (cfs)	Cummula-tive Q (cfs)
100	0.00608	100	0.00608	0	29	29	42	12.7	12.7
101	0.00432	100,101	0.0104	0	29	29	42	9.0	21.7
102	0.00728	101*,102	0.01768	0	29	29	42	15.2	36.9
103	0.00953	102*,103	0.02721	0	29	29	42	19.8	56.7
104	0.00470	103*,104	0.03191	0	29	29	42	9.8	66.5
105	0.00503	104*,105	0.03694	0	29	29	42	10.5	77.0
106	0.00390	105*,106	0.04084	0	29	29	42	8.1	85.1
107	0.00623	106*,107	0.04707	0	29	29	42	13.0	98.1
108	0.00738	108	0.00738	0	29	29	42	15.4	15.4
109	0.00672	108,109	0.0141	0	29	29	42	14.0	29.4
110	0.00844	109*,110	0.02254	0	29	29	42	17.6	47.0
111	0.00315	110*,111	0.02569	33	19	19	29	5.2	52.2
112	0.00292	111*,112	0.02861	0	29	29	42	6.1	58.3
113	0.00627	112*,113	0.03488	0	29	29	42	13.0	71.3
114	0.00737	107*,113*,114	0.08932	0	29	29	42	15.3	184.7

*Cumulative Q of basin

TABLE 2
FLOW CHARACTERISTICS AT KEY LOCATIONS

STREET	LOCATION (STA)	ST. WIDTH & CURB TYPE	% SLOPE	Q100 (cfs)	Dn	Dc	Vn	Vc	AREA	TOP WIDTH	EG	F	*POOL DEPT
April Flower Road	@ Spring Dr. Int.	28′ Mount	1.5	15.4	0.33	0.37	3.19	2.60	4.83	29.25	0.49	1.38	0.50
Purple Cone Road	@ Spring Dr. Int.	28′ Mount	2.5	14.0	0.30	0.36	3.62	2.52	3.87	28.96	0.50	1.74	0.48
Purple Fringe Road	@ Spring Dr. Int.	32′ Mount	2.8	17.6	0.32	0.39	3.97	2.60	4.43	31.01	0.56	1.91	0.52
Spring Drive	@ Flax Rd. Int.	32′ Stand	1.5	16.0	0.40	0.43	3.15	2.57	5.07	31.38	0.55	1.40	0.56

APPENDIX A

ONSITE AHYMO SUMMARY & DETAILED OUTPUT
100-YEAR STORM
10-YEAR STORM

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =06/30/1997
INPUT FILE = DESRT100.DAT USER NO.= ISCARFNM.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
*S	DESERT FLOWER SUBDIVISION - 100 YR POST DEVELOPMENT										
*S	DESRT100.DAT										
*S	REVISED BY: JMN 6/27/97										
START										TIME=	.00
RAINFALL	TYPE= 1									RAIN6=	2.200
*S	BASIN 100: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	100.00	-	1	.00608	12.66	.421	1.29860	1.500	3.253	PER IMP=	42.00
*S	BASIN 101: POSTDEVELOPMENT CONDITIONS WITH SIMGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	101.00	-	2	.00432	9.00	.299	1.29860	1.500	3.255	PER IMP=	42.00
*S	COMBINE BASINS 100 AND 101 TOGETHER										
ADD HYD	101.10	1& 2	3	.01040	21.66	.720	1.29854	1.500	3.254		
*S	BASIN 102: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	102.00	-	4	.00728	15.16	.504	1.29860	1.500	3.252	PER IMP=	42.00
*S	COMBINE BASIN 102 TO HYDROGRAPH NO 101.1										
ADD HYD	102.10	3& 4	5	.01769	36.82	1.225	1.29855	1.500	3.253		
*S	BASIN 103: POSTDEVELOPMENT CONDITIONS WITH SIMGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	103.00	-	6	.00953	19.83	.660	1.29860	1.500	3.251	PER IMP=	42.00
*S	COMBINE BASINS 103 AND HYDROGRAPH NO. 102.1 TOGETHER										
ADD HYD	103.10	5& 6	7	.02722	56.65	1.885	1.29855	1.500	3.252		
*S	BASIN 104: POSTDEVELOPMENT CONDITIONS WITH SIMGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	140.00	-	8	.00470	9.79	.325	1.29860	1.500	3.254	PER IMP=	42.00
*S	COMBINE BASIN 104 AND HYDROGRAPH 103.1 TOGETHER										
ADD HYD	104.10	7& 8	9	.03191	66.44	2.210	1.29855	1.500	3.253		
*S	BASIN 105: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	105.00	-	10	.00503	10.47	.348	1.29860	1.500	3.254	PER IMP=	42.00
*S	BASIN 106: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	106.10	-	11	.00390	8.13	.270	1.29860	1.500	3.255	PER IMP=	42.00
*S	COMBINE BASINS 106 AND 105 TOGETHER										
ADD HYD	106.10	10&11	12	.00893	18.60	.618	1.29853	1.500	3.254		
*S	BASIN 107: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	107.00	-	13	.00623	12.98	.432	1.29860	1.500	3.253	PER IMP=	42.00
*S	COMBINE BASIN 107 AND HYDROGRAPH NO 104.1 TOGETHER										
ADD HYD	107.10	13& 9	14	.03815	79.42	2.642	1.29855	1.500	3.253		
*S	COMBINE HYDROGRAPH NO 106.1 AND 107.1 TOGETHER										
ADD HYD	107.20	12&14	15	.04708	98.01	3.260	1.29855	1.500	3.253		
*S	COMBINE HYDROGRAPH NO 106.1 AND 107.1 TOGETHER										
ADD HYD	107.20	12&14	15	.04708	98.01	3.260	1.29855	1.500	3.253		
*S	BASIN 108: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	108.00	-	16	.00738	15.37	.511	1.29860	1.500	3.252	PER IMP=	42.00
*S	BASIN 109: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	109.00	-	17	.00672	13.99	.465	1.29860	1.500	3.252	PER IMP=	42.00
*S	COMBINE BASINS 108 AND 109 TOGETHER										
ADD HYD	109.10	16&17	18	.01410	29.36	.977	1.29855	1.500	3.252		
*S	BASIN 110: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	110.00	-	19	.00844	17.56	.584	1.29860	1.500	3.252	PER IMP=	42.00
*S	BASIN 111: PARK										
COMPUTE NM HYD	111.00	-	20	.00315	5.20	.169	1.00753	1.500	2.579	PER IMP=	29.00
*S	BASIN 112: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	112.00	-	1	.00292	6.08	.202	1.29860	1.500	3.257	PER IMP=	42.00
*S	COMBINE BASINS 111 AND 112 TOGETHER										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	112.10	20& 1	2	.00606	11.27	.371	1.14736	1.500	2.905	
*S BASIN 113: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	113.00	-	3	.00627	13.04	.434	1.29860	1.500	3.253	PER IMP= 42.00
*S COMBINE BASINS 113 AND 118 TOGETHER										
ADD HYD	113.10	3&18	4	.02037	42.40	1.411	1.29855	1.500	3.252	
*S COMBINE BASINS 113 AND 118 TOGETHER										
ADD HYD	113.20	3&18	5	.02037	42.40	1.411	1.29855	1.500	3.252	
*S BASIN 114: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES										
COMPUTE NM HYD	114.00	-	6	.00737	15.34	.510	1.29860	1.500	3.252	PER IMP= 42.00
*S COMBINE BASINS 110 AND 114 TOGETHER										
ADD HYD	114.10	19& 6	7	.01581	32.90	1.095	1.29856	1.500	3.252	
*S COMBINE HYDROGRAPH NO 113.2 AND 114.1 TOGETHER										
ADD HYD	114.20	5& 7	8	.03617	75.29	2.505	1.29856	1.500	3.252	
*S COMBINE HYDROGRAPH NO 107.2 AND 114.2 TOGETHER										
ADD HYD	114.30	15& 8	9	.08325	173.31	5.766	1.29855	1.500	3.253	
*S BASIN 120.1: OFFSITE: UNSER BLVD. (FROM MEDIAN CURB TO R/W)										
COMPUTE NM HYD	120.10	-	10	.00073	1.70	.059	1.50556	1.500	3.630	PER IMP= 60.00
*S BASIN 120.2: OFFSITE: UNSER BLVD. (FROM MEDIAN CURB TO R/W)										
COMPUTE NM HYD	120.20	-	11	.00281	6.49	.226	1.50556	1.500	3.606	PER IMP= 60.00
*S BASIN 120.3: OFFSITE: UNSER BLVD. MEDIAN AREA										
COMPUTE NM HYD	120.30	-	12	.00215	4.96	.172	1.50556	1.500	3.608	PER IMP= 60.00
FINISH										

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    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
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         INPUT FILE = DESRT100.DAT

*S                    DESERT FLOWER SUBDIVISION - 100 YR POST DEVELOPMENT
*S                    DESRT100.DAT
*S                    REVISED BY: JMN 6/27/97
*
START                 RAINFALL BEGINS AT 0.0 HRS
RAINFALL              TYPE=1 RAIN QUARTER=0 RAIN ONE=1.87
                      RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333HR

                  COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                  DT =     .033330 HOURS        END TIME =     5.999400 HOURS
                     .0000   .0016   .0033   .0050   .0067   .0085   .0103
                     .0122   .0141   .0160   .0180   .0201   .0222   .0243
                     .0266   .0289   .0312   .0337   .0362   .0388   .0415
                     .0443   .0472   .0502   .0534   .0567   .0601   .0637
                     .0675   .0715   .0758   .0809   .0865   .0924   .1050
                     .1334   .1771   .2398   .3254   .4379   .5814   .7600
                     .9780  1.1804  1.2649  1.3363  1.3997  1.4575  1.5106
                    1.5600  1.6061  1.6493  1.6900  1.7284  1.7646  1.7989
                    1.8314  1.8623  1.8915  1.9193  1.9456  1.9518  1.9576
                    1.9630  1.9682  1.9732  1.9780  1.9825  1.9869  1.9912
                    1.9953  1.9993  2.0031  2.0068  2.0104  2.0140  2.0174
                    2.0207  2.0240  2.0272  2.0303  2.0333  2.0363  2.0392
                    2.0420  2.0448  2.0475  2.0502  2.0528  2.0554  2.0580
                    2.0605  2.0629  2.0653  2.0677  2.0700  2.0723  2.0746
                    2.0768  2.0790  2.0812  2.0833  2.0855  2.0875  2.0896
                    2.0916  2.0936  2.0956  2.0976  2.0995  2.1014  2.1033
                    2.1051  2.1070  2.1088  2.1106  2.1124  2.1141  2.1159
                    2.1176  2.1193  2.1210  2.1227  2.1244  2.1260  2.1276
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                    2.1780  2.1792  2.1804  2.1817  2.1829  2.1840  2.1852
                    2.1864  2.1876  2.1887  2.1899  2.1910  2.1922  2.1933
                    2.1944  2.1956  2.1967  2.1978  2.1989  2.2000

*S BASIN 100: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD        ID=1 HYD NO=100.00 AREA=0.00608 SQ MI
                      PER A=0 PER B=29 PER C=29 PER D=42
                      TP=-0.1333 HR    MASS RAIN=-1

    K =   .072649HR     TP =   .133300HR     K/TP RATIO =   .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   10.082     CFS    UNIT VOLUME =     .9982        B =   526.28        P60 = 1.8700
    AREA =       .002554 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =   .118429HR     TP =   .133300HR     K/TP RATIO =   .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   9.3826     CFS    UNIT VOLUME =     .9991        B =   354.67        P60 = 1.8700
    AREA =       .003526 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330
```

```
PRINT HYD           ID=1   CODE=1

                              PARTIAL HYDROGRAPH   100.00

    RUNOFF VOLUME =     1.29860 INCHES      =         .4211 ACRE-FEET
    PEAK DISCHARGE RATE =      12.66 CFS  AT   1.500 HOURS   BASIN AREA =    .0061 SQ. MI.


*S BASIN 101: POSTDEVELOPMENT CONDITIONS WITH SIMGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD      ID=2 HYD NO=101.00 AREA=0.004321 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   7.1650    CFS   UNIT VOLUME =    .9978       B =   526.28      P60 = 1.8700
    AREA =      .001815 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   6.6681    CFS   UNIT VOLUME =    .9984       B =   354.67      P60 = 1.8700
    AREA =      .002506 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2   CODE=1

                              PARTIAL HYDROGRAPH   101.00

    RUNOFF VOLUME =     1.29860 INCHES      =         .2993 ACRE-FEET
    PEAK DISCHARGE RATE =       9.00 CFS  AT   1.500 HOURS   BASIN AREA =    .0043 SQ. MI.


*S COMBINE BASINS 100 AND 101 TOGETHER
ADD HYD             ID=3  HYD NO=101.1  ID=1  ID=2
PRINT HYD           ID=3  CODE=1

                              PARTIAL HYDROGRAPH   101.10

    RUNOFF VOLUME =     1.29854 INCHES      =         .7203 ACRE-FEET
    PEAK DISCHARGE RATE =      21.66 CFS  AT   1.500 HOURS   BASIN AREA =    .0104 SQ. MI.


*S BASIN 102: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD      ID=4 HYD NO=102.00 AREA=0.007284 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   12.078    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
    AREA =      .003059 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330
```

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 11.241 CFS UNIT VOLUME = .9993 B = 354.67 P60 = 1.8700
AREA = .004225 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=4 CODE=1

PARTIAL HYDROGRAPH 102.00

RUNOFF VOLUME = 1.29860 INCHES = .5045 ACRE-FEET
PEAK DISCHARGE RATE = 15.16 CFS AT 1.500 HOURS BASIN AREA = .0073 SQ. MI.

*S COMBINE BASIN 102 TO HYDROGRAPH NO 101.1
ADD HYD ID=5 HYD NO=102.1 ID=3 ID=4
PRINT HYD ID=5 CODE=1

PARTIAL HYDROGRAPH 102.10

RUNOFF VOLUME = 1.29855 INCHES = 1.2248 ACRE-FEET
PEAK DISCHARGE RATE = 36.82 CFS AT 1.500 HOURS BASIN AREA = .0177 SQ. MI.

*S BASIN 103: POSTDEVELOPMENT CONDITIONS WITH SIMGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD ID=6 HYD NO=103.00 AREA=0.00953 SQ MI
PER A=0 PER B=29 PER C=29 PER D=42
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 15.802 CFS UNIT VOLUME = .9987 B = 526.28 P60 = 1.8700
AREA = .004003 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 14.707 CFS UNIT VOLUME = .9995 B = 354.67 P60 = 1.8700
AREA = .005527 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=1

PARTIAL HYDROGRAPH 103.00

RUNOFF VOLUME = 1.29860 INCHES = .6600 ACRE-FEET
PEAK DISCHARGE RATE = 19.83 CFS AT 1.500 HOURS BASIN AREA = .0095 SQ. MI.

*S COMBINE BASINS 103 AND HYDROGRAPH NO. 102.1 TOGETHER
ADD HYD ID=7 HYD NO=103.1 ID=5 ID=6
PRINT HYD ID=7 CODE=1

PARTIAL HYDROGRAPH 103.10

```
    RUNOFF VOLUME =      1.29855 INCHES      =        1.8848 ACRE-FEET
    PEAK DISCHARGE RATE =       56.65 CFS  AT    1.500 HOURS    BASIN AREA =    .0272 SQ. MI.


*S BASIN 104: POSTDEVELOPMENT CONDITIONS WITH SIMGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD       ID=8 HYD NO=140.00 AREA=0.004699 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR   MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    7.7918     CFS   UNIT VOLUME =     .9978        B =    526.28       P60 = 1.8700
    AREA =       .001974 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    7.2515     CFS   UNIT VOLUME =     .9986        B =    354.67       P60 = 1.8700
    AREA =       .002725 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=8    CODE=1

                                PARTIAL HYDROGRAPH    140.00


    RUNOFF VOLUME =      1.29860 INCHES      =         .3254 ACRE-FEET
    PEAK DISCHARGE RATE =        9.79 CFS  AT    1.500 HOURS    BASIN AREA =    .0047 SQ. MI.


*S COMBINE BASIN 104 AND HYDROGRAPH 103.1 TOGETHER
ADD HYD              ID=9  HYD NO=104.1  ID=7  ID=8
PRINT HYD            ID=9  CODE=1

                                PARTIAL HYDROGRAPH    104.10


    RUNOFF VOLUME =      1.29855 INCHES      =        2.2102 ACRE-FEET
    PEAK DISCHARGE RATE =       66.44 CFS  AT    1.500 HOURS    BASIN AREA =    .0319 SQ. MI.


*S BASIN 105: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD       ID=10  HYD NO=105.00 AREA=0.00503 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR   MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    8.3407     CFS   UNIT VOLUME =     .9981        B =    526.28       P60 = 1.8700
    AREA =       .002113 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    7.7623     CFS   UNIT VOLUME =     .9988        B =    354.67       P60 = 1.8700
    AREA =       .002917 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330
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```
PRINT HYD            ID=10   CODE=1

                                PARTIAL HYDROGRAPH   105.00

    RUNOFF VOLUME =      1.29860 INCHES      =         .3484 ACRE-FEET
    PEAK DISCHARGE RATE =       10.47 CFS  AT    1.500 HOURS    BASIN AREA =    .0050 SQ. MI.


*S BASIN 106: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD       ID=11  HYD NO=106.10 AREA=0.0039 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR     TP =   .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   6.4669    CFS   UNIT VOLUME =    .9976       B =   526.28       P60 = 1.8700
    AREA =       .001638 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =   .118429HR     TP =   .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   6.0185    CFS   UNIT VOLUME =    .9982       B =   354.67       P60 = 1.8700
    AREA =       .002262 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=11   CODE=1

                                PARTIAL HYDROGRAPH   106.10

    RUNOFF VOLUME =      1.29860 INCHES      =         .2701 ACRE-FEET
    PEAK DISCHARGE RATE =       8.13 CFS  AT    1.500 HOURS    BASIN AREA =    .0039 SQ. MI.


*S COMBINE BASINS 106 AND 105 TOGETHER
ADD HYD              ID=12  HYD NO=106.1  ID=10  ID=11
PRINT HYD            ID=12  CODE=1

                                PARTIAL HYDROGRAPH   106.10

    RUNOFF VOLUME =      1.29853 INCHES      =         .6184 ACRE-FEET
    PEAK DISCHARGE RATE =       18.60 CFS  AT    1.500 HOURS    BASIN AREA =    .0089 SQ. MI.


*S BASIN 107: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD       ID=13  HYD NO=107.0  AREA=0.006234 SQ MI
                     PER A=0  PER B=29  PER C=29  PER D=42
                     TP=-0.1333 HR  MASS RAIN=-1

    K =   .072649HR     TP =   .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    10.337    CFS - UNIT VOLUME =    .9982       B =   526.28       P60 = 1.8700
    AREA =       .002618 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330
```

```
    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    9.6203     CFS    UNIT VOLUME =     .9991        B =    354.67       P60 = 1.8700
    AREA =       .003616 SQ MI     IA =     .42500 INCHES     INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=13  CODE=1

                                    PARTIAL HYDROGRAPH   107.00

    RUNOFF VOLUME =      1.29860 INCHES      =         .4318 ACRE-FEET
    PEAK DISCHARGE RATE =       12.98 CFS  AT    1.500 HOURS   BASIN AREA =    .0062 SQ. MI.


*S COMBINE BASIN 107 AND HYDROGRAPH NO 104.1 TOGETHER
ADD HYD              ID=14  HYD NO=107.1  ID=13  ID=9
PRINT HYD            ID=14  CODE=1

                                    PARTIAL HYDROGRAPH   107.10

    RUNOFF VOLUME =      1.29855 INCHES      =        2.6420 ACRE-FEET
    PEAK DISCHARGE RATE =       79.42 CFS  AT    1.500 HOURS   BASIN AREA =    .0381 SQ. MI.


*S COMBINE HYDROGRAPH NO 106.1 AND 107.1 TOGETHER
ADD HYD              ID=15  HYD NO=107.2  ID=12  ID=14
PRINT HYD            ID=15  CODE=1

                                    PARTIAL HYDROGRAPH   107.20

    RUNOFF VOLUME =      1.29855 INCHES      =        3.2604 ACRE-FEET
    PEAK DISCHARGE RATE =       98.01 CFS  AT    1.500 HOURS   BASIN AREA =    .0471 SQ. MI.


*S COMBINE HYDROGRAPH NO 106.1 AND 107.1 TOGETHER
ADD HYD              ID=15  HYD NO=107.2  ID=12  ID=14
PRINT HYD            ID=15  CODE=1

                                    PARTIAL HYDROGRAPH   107.20

    RUNOFF VOLUME =      1.29855 INCHES      =        3.2604 ACRE-FEET
    PEAK DISCHARGE RATE =       98.01 CFS  AT    1.500 HOURS   BASIN AREA =    .0471 SQ. MI.


*S BASIN 108: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD       ID=16  HYD NO=108.0  AREA=0.007383 SQ MI
                     PER A=0  PER B=29  PER C=29  PER D=42
                     TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   12.242     CFS    UNIT VOLUME =     .9984        B =    526.28       P60 = 1.8700
    AREA =       .003101 SQ MI     IA =     .10000 INCHES     INF =    .04000 INCHES PER HOUR
```

```
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442    SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   11.393    CFS   UNIT VOLUME =     .9993      B =   354.67      P60 = 1.8700
    AREA =       .004282 SQ MI    IA =     .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=16  CODE=1

                                PARTIAL HYDROGRAPH   108.00


    RUNOFF VOLUME =     1.29860 INCHES      =         .5113 ACRE-FEET
    PEAK DISCHARGE RATE =      15.37 CFS  AT    1.500 HOURS   BASIN AREA =    .0074 SQ. MI.


*S BASIN 109: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD      ID=17  HYD NO=109.0  AREA=0.00672 SQ MI
                    PER A=0  PER B=29  PER C=29  PER D=42
                    TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000    SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   11.143    CFS   UNIT VOLUME =     .9984      B =   526.28      P60 = 1.8700
    AREA =       .002822 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442    SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   10.370    CFS   UNIT VOLUME =     .9992      B =   354.67      P60 = 1.8700
    AREA =       .003898 SQ MI    IA =     .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=17  CODE=1

                                PARTIAL HYDROGRAPH   109.00


    RUNOFF VOLUME =     1.29860 INCHES      =         .4654 ACRE-FEET
    PEAK DISCHARGE RATE =      13.99 CFS  AT    1.500 HOURS . BASIN AREA =    .0067 SQ. MI.


*S COMBINE BASINS 108 AND 109 TOGETHER
ADD HYD             ID=18  HYD NO=109.1  ID=16  ID=17
PRINT HYD           ID=18  CODE=1

                                PARTIAL HYDROGRAPH   109.10


    RUNOFF VOLUME =     1.29855 INCHES      =         .9767 ACRE-FEET
    PEAK DISCHARGE RATE =      29.36 CFS  AT    1.500 HOURS   BASIN AREA =    .0141 SQ. MI.


*S BASIN 110: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD      ID=19  HYD NO=110.0  AREA=0.008436 SQ MI
                    PER A=0  PER B=29  PER C=29  PER D=42
```

```
                    TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   13.988     CFS   UNIT VOLUME =     .9985        B =   526.28       P60 = 1.8700
    AREA =       .003543 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   13.018     CFS   UNIT VOLUME =     .9994        B =   354.67       P60 = 1.8700
    AREA =       .004893 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=19  CODE=1

                                  PARTIAL HYDROGRAPH    110.00


    RUNOFF VOLUME =      1.29860 INCHES      =         .5843 ACRE-FEET
    PEAK DISCHARGE RATE =       17.56 CFS  AT    1.500 HOURS    BASIN AREA =    .0084 SQ. MI.


*S BASIN 111: PARK
COMPUTE NM HYD      ID=20  HYD NO=111.0  AREA=0.003149 SQ MI
                    PER A=33  PER B=19  PER C=19  PER D=29
                    TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    3.6054     CFS   UNIT VOLUME =     .9961        B =   526.28       P60 = 1.8700
    AREA =       .000913 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .139463HR     TP =    .133300HR     K/TP RATIO =  1.046235      SHAPE CONSTANT, N =  3.374403
    UNIT PEAK =    5.2171     CFS   UNIT VOLUME =     .9973        B =   311.05       P60 = 1.8700
    AREA =       .002236 SQ MI     IA =     .52958 INCHES     INF =    1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=20  CODE=1

                                  PARTIAL HYDROGRAPH    111.00


    RUNOFF VOLUME =      1.00753 INCHES      =         .1692 ACRE-FEET
    PEAK DISCHARGE RATE =        5.20 CFS  AT    1.500 HOURS    BASIN AREA =    .0031 SQ. MI.


*S BASIN 112: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD      ID=1  HYD NO=112.0  AREA=0.002915 SQ MI
                    PER A=0  PER B=29  PER C=29  PER D=42
                    TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    4.8336     CFS   UNIT VOLUME =     .9969        B =   526.28       P60 = 1.8700
    AREA =       .001224 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330
```

```
    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    4.4984     CFS    UNIT VOLUME =     .9975        B =    354.67       P60 = 1.8700
    AREA =       .001691 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=1  CODE=1

                                    PARTIAL HYDROGRAPH    112.00

    RUNOFF VOLUME =      1.29860 INCHES      =         .2019 ACRE-FEET
    PEAK DISCHARGE RATE =        6.08 CFS  AT    1.500 HOURS    BASIN AREA =    .0029 SQ. MI.


*S COMBINE BASINS 111 AND 112 TOGETHER
ADD HYD              ID=2  HYD NO=112.1  ID=20  ID=1
PRINT HYD            ID=2  CODE=1

                                    PARTIAL HYDROGRAPH    112.10

    RUNOFF VOLUME =      1.14736 INCHES      =         .3711 ACRE-FEET
    PEAK DISCHARGE RATE =       11.27 CFS  AT    1.500 HOURS    BASIN AREA =    .0061 SQ. MI.


*S BASIN 113: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD       ID=3  HYD NO=113.0  AREA=0.006265 SQ MI
                     PER A=0  PER B=29  PER C=29  PER D=42
                     TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   10.389     CFS    UNIT VOLUME =     .9982        B =    526.28       P60 = 1.8700
    AREA =       .002631 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    9.6681     CFS    UNIT VOLUME =     .9991        B =    354.67       P60 = 1.8700
    AREA =       .003634 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=3  CODE=1

                                    PARTIAL HYDROGRAPH    113.00

    RUNOFF VOLUME =      1.29860 INCHES      =         .4339 ACRE-FEET
    PEAK DISCHARGE RATE =       13.04 CFS  AT    1.500 HOURS    BASIN AREA =    .0063 SQ. MI.


*S COMBINE BASINS 113 AND 118 TOGETHER
ADD HYD              ID=4  HYD NO=113.1  ID=3  ID=18
PRINT HYD            ID=4  CODE=1

                                    PARTIAL HYDROGRAPH    113.10
```

RUNOFF VOLUME = 1.29855 INCHES = 1.4106 ACRE-FEET
PEAK DISCHARGE RATE = 42.40 CFS AT 1.500 HOURS BASIN AREA = .0204 SQ. MI.

*S COMBINE BASINS 113 AND 118 TOGETHER
ADD HYD ID=5 HYD NO=113.2 ID=3 ID=18
PRINT HYD ID=5 CODE=1

PARTIAL HYDROGRAPH 113.20

RUNOFF VOLUME = 1.29855 INCHES = 1.4106 ACRE-FEET
PEAK DISCHARGE RATE = 42.40 CFS AT 1.500 HOURS BASIN AREA = .0204 SQ. MI.

*S BASIN 114: POSTDEVELOPMENT CONDITIONS WITH SINGLE FAMILY RESIDENTIAL HOMES
COMPUTE NM HYD ID=6 HYD NO=114.0 AREA=0.00737 SQ MI
PER A=0 PER B=29 PER C=29 PER D=42
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 12.221 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 1.8700
AREA = .003095 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 11.373 CFS UNIT VOLUME = .9993 B = 354.67 P60 = 1.8700
AREA = .004275 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=1

PARTIAL HYDROGRAPH 114.00

RUNOFF VOLUME = 1.29860 INCHES = .5104 ACRE-FEET
PEAK DISCHARGE RATE = 15.34 CFS AT 1.500 HOURS BASIN AREA = .0074 SQ. MI.

*S COMBINE BASINS 110 AND 114 TOGETHER
ADD HYD ID=7 HYD NO=114.1 ID=19 ID=6
PRINT HYD ID=7 CODE=1

PARTIAL HYDROGRAPH 114.10

RUNOFF VOLUME = 1.29856 INCHES = 1.0947 ACRE-FEET
PEAK DISCHARGE RATE = 32.90 CFS AT 1.500 HOURS BASIN AREA = .0158 SQ. MI.

*S COMBINE HYDROGRAPH NO 113.2 AND 114.1 TOGETHER
ADD HYD ID=8 HYD NO=114.2 ID=5 ID=7
PRINT HYD ID=8 CODE=1

PARTIAL HYDROGRAPH 114.20

RUNOFF VOLUME = 1.29856 INCHES = 2.5053 ACRE-FEET
PEAK DISCHARGE RATE = 75.29 CFS AT 1.500 HOURS BASIN AREA = .0362 SQ. MI.

*S COMBINE HYDROGRAPH NO 107.2 AND 114.2 TOGETHER
ADD HYD ID=9 HYD NO=114.3 ID=15 ID=8
PRINT HYD ID=9 CODE=1

PARTIAL HYDROGRAPH 114.30

RUNOFF VOLUME = 1.29855 INCHES = 5.7657 ACRE-FEET
PEAK DISCHARGE RATE = 173.31 CFS AT 1.500 HOURS BASIN AREA = .0833 SQ. MI.

*S BASIN 120.1: OFFSITE: UNSER BLVD. (FROM MEDIAN CURB TO R/W)
COMPUTE NM HYD ID=10 HYD NO=120.1 AREA=0.00073 SQ MI
PER A=0 PER B=20 PER C=20 PER D=60
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 1.7292 CFS UNIT VOLUME = .9933 B = 526.28 P60 = 1.8700
AREA = .000438 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = .77692 CFS UNIT VOLUME = .9831 B = 354.67 P60 = 1.8700
AREA = .000292 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=10 CODE=1

PARTIAL HYDROGRAPH 120.10

RUNOFF VOLUME = 1.50556 INCHES = .0586 ACRE-FEET
PEAK DISCHARGE RATE = 1.70 CFS AT 1.500 HOURS BASIN AREA = .0007 SQ. MI.

*S BASIN 120.2: OFFSITE: UNSER BLVD. (FROM MEDIAN CURB TO R/W)
COMPUTE NM HYD ID=11 HYD NO=120.2 AREA=0.002814 SQ MI
PER A=0 PER B=20 PER C=20 PER D=60
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 6.6659 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 1.8700
AREA = .001688 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.9949 CFS UNIT VOLUME = .9958 B = 354.67 P60 = 1.8700

AREA = .001126 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=11 CODE=1

PARTIAL HYDROGRAPH 120.20

RUNOFF VOLUME = 1.50556 INCHES = .2260 ACRE-FEET
PEAK DISCHARGE RATE = 6.49 CFS AT 1.500 HOURS BASIN AREA = .0028 SQ. MI.

*S BASIN 120.3: OFFSITE: UNSER BLVD. MEDIAN AREA
COMPUTE NM HYD ID=12 HYD NO=120.3 AREA=0.002147 SQ MI
PER A=0 PER B=20 PER C=20 PER D=60
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.0859 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
AREA = .001288 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.2850 CFS UNIT VOLUME = .9948 B = 354.67 P60 = 1.8700
AREA = .000859 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=12 CODE=1

PARTIAL HYDROGRAPH 120.30

RUNOFF VOLUME = 1.50556 INCHES = .1724 ACRE-FEET
PEAK DISCHARGE RATE = 4.96 CFS AT 1.500 HOURS BASIN AREA = .0021 SQ. MI.

FINISH

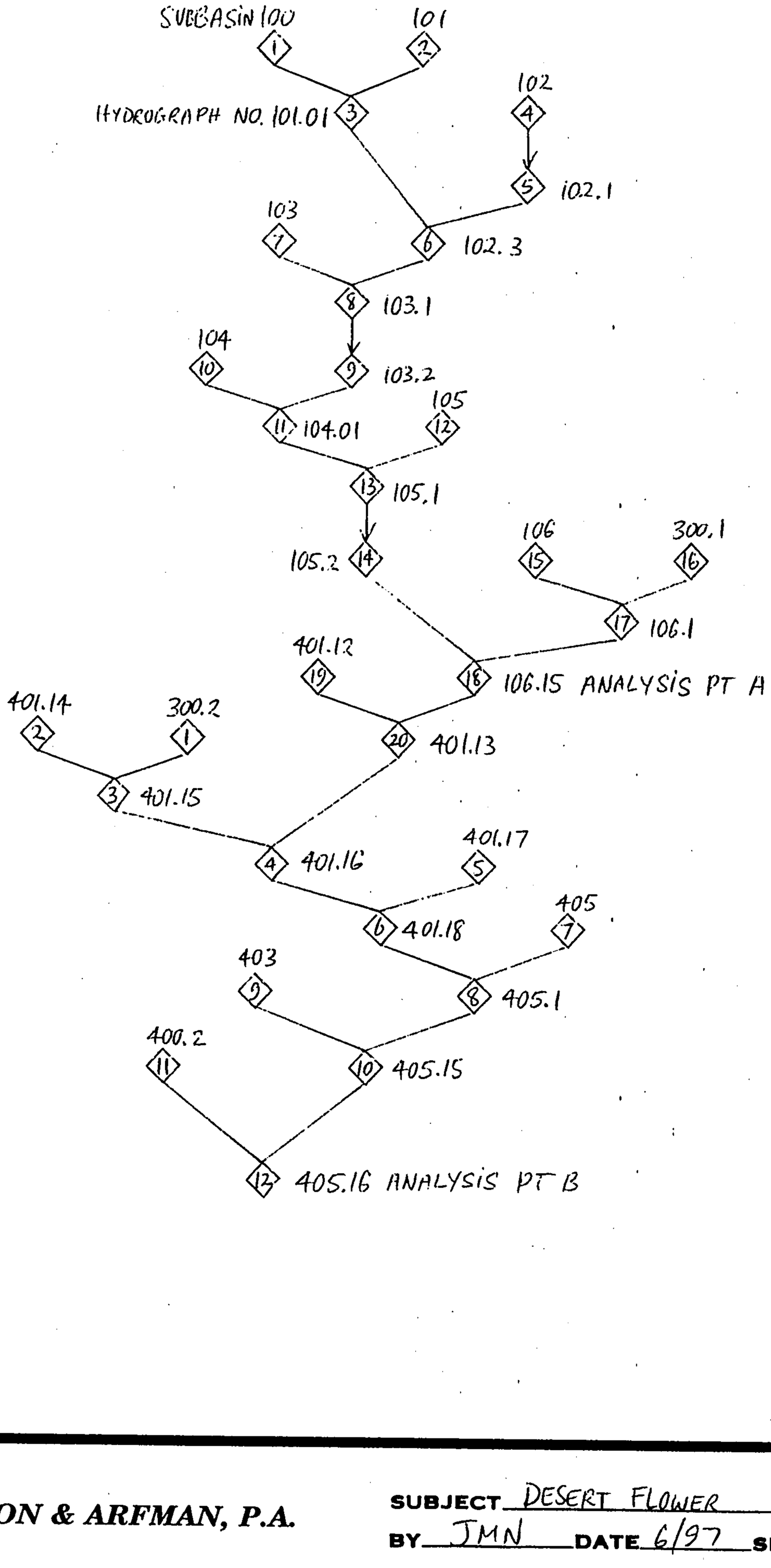
NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 13:21:35

APPENDIX B

OFFSITE AHYMO SUMMARY & DETAILED OUTPUT

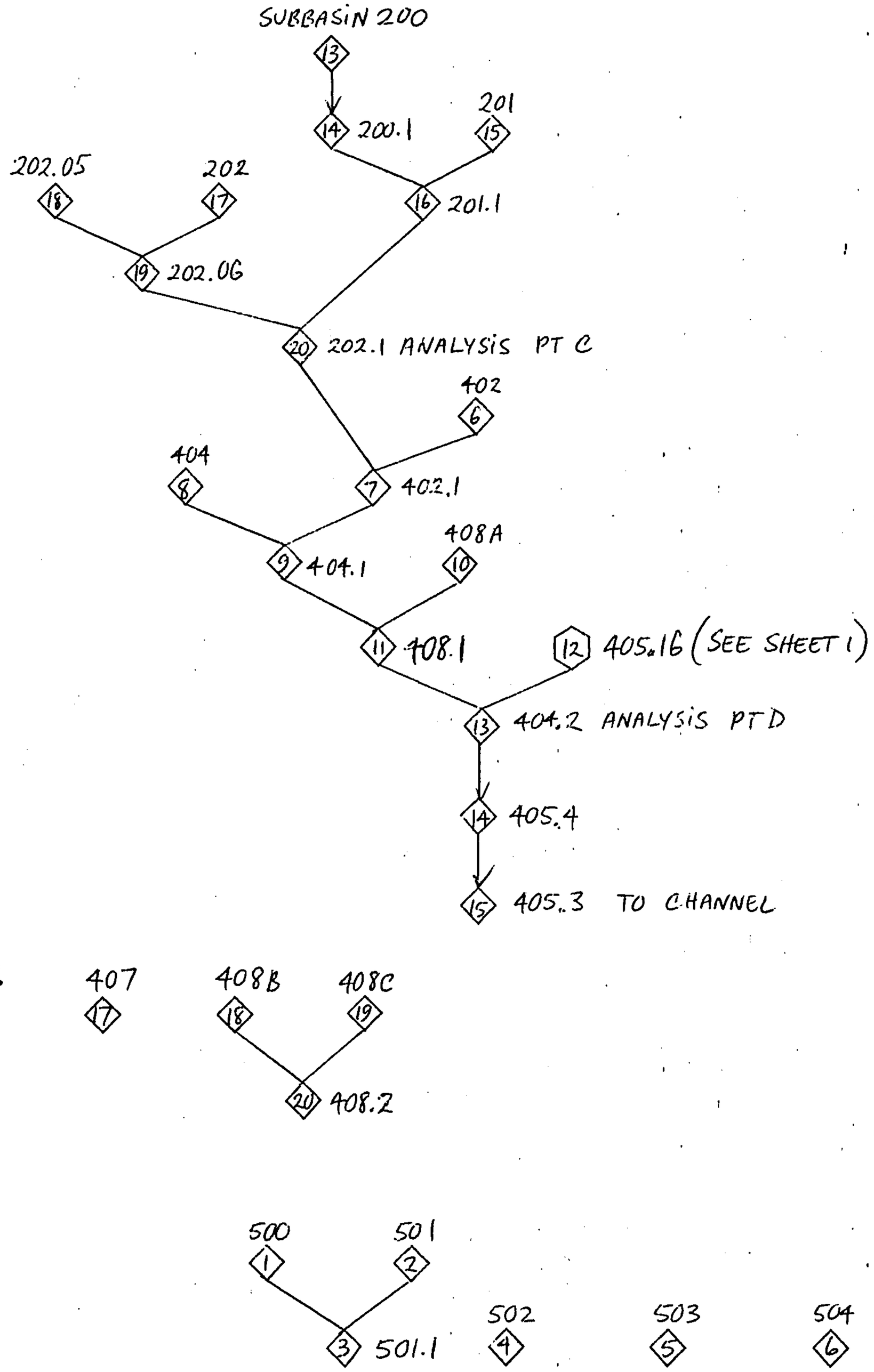
COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
*S	DESERT FLOWER SUBDIVISION - 100 YR POST DEVELOPMENT										
*S	REVISED BY: JMN 6/27/97										
*S											
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.200
*S BASIN 100 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL											
*S BE @ A DENSITY OF 4 DU/AC											
COMPUTE NM HYD	100.00	-	1	.07150	148.70	4.952	1.29860	1.500	3.250	PER IMP=	42.00
*S BASIN 101 IS FULLY DEVELOPED WITH SINGLE FAMILY RESIDENTIAL HOMES											
*S WITH A DENSTIY OF 4 DU/AC											
COMPUTE NM HYD	101.00	-	2	.03700	60.90	1.988	1.00753	1.500	2.572	PER IMP=	29.00
ADD HYD	101.01	1& 2	3	.10850	209.60	6.940	1.19933	1.500	3.018		
*S **AREA 102 IS A MIDDLE SCHOOL (ONSITE DETENTION TO REDUCE RUNOFF)											
COMPUTE NM HYD	102.00	-	4	.04000	33.21	.937	.43925	1.533	1.297	PER IMP=	.00
*S ROUTE THE SCHOOL'S RUNOFF IN A 28' F-F RESIDENTIAL STREET, S=2%											
*S ASSUME SECTION EXTENDS TO THE ROW LINE ON BOTH SIDES											
ROUTE	102.10	4	5	.04000	32.41	.937	.43927	1.567	1.266		
*S ADD THE ROUTED FLOW FROM 102 TO THE EARLIER TOTAL											
ADD HYD	102.30	3& 5	6	.14850	236.14	7.877	.99460	1.500	2.485		
*S **BASIN 103 IS COMPLETELY DEVELOPED											
COMPUTE NM HYD	103.00	-	7	.04400	72.42	2.364	1.00753	1.500	2.572	PER IMP=	29.00
*S ADD 103 TO TOTAL											
ADD HYD	103.10	6& 7	8	.19250	308.56	10.242	.99755	1.500	2.505		
*S **ASSUME FLOW IS ROUTED IN 28' STREET AS EARLIER											
ROUTE	103.20	8	9	.19250	293.93	10.242	.99756	1.533	2.386		
*S **AREA 104 IS FULLY DEVELOPED											
COMPUTE NM HYD	104.00	-	10	.04400	72.42	2.364	1.00753	1.500	2.572	PER IMP=	29.00
*S ADD THE FLOW TO THE TOTAL											
ADD HYD	104.01	9&10	11	.23650	364.94	12.606	.99941	1.533	2.411		
*S AREA 105 IS A PARK & COA WELL SITE											
COMPUTE NM HYD	105.00	-	12	.02100	29.05	.849	.75825	1.500	2.161	PER IMP=	7.00
ADD HYD	105.10	11&12	13	.25750	393.90	13.455	.97974	1.533	2.390		
*S ROUTE THE FLOW TO THE EXISTING END OF SAPPHIRE ST.											
ROUTE	105.20	13	14	.25750	364.47	13.455	.97974	1.567	2.212		
*S AREA 106 IS FULLY DEVELOPED											
COMPUTE NM HYD	106.00	-	15	.02177	35.84	1.170	1.00753	1.500	2.572	PER IMP=	29.00
*S BASIN 300.1 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE @											
*S A DENSITY OF 4 DU/AC											
COMPUTE NM HYD	300.10	-	16	.01560	32.45	1.080	1.29860	1.500	3.250	PER IMP=	42.00
*S **ADD THE FLOWS FROM BASINS 106 AND 300.1											
ADD HYD	106.10	15&16	17	.03737	68.29	2.250	1.12902	1.500	2.855		
*S **TOTAL FLOW IN SAPHIRE ST AT ANALYSIS POINT A											
ADD HYD	106.15	14&17	18	.29487	423.63	15.705	.99866	1.567	2.245		
*S **BASIN 401.12, 401.14, 401.17, 300.2 AND 400.2 DRAINS TO SAPPHIRE ST.											
*S **BASIN 401.12 IS PART OF SUNRISE ESTATES UNIT 1											
COMPUTE NM HYD	401.12	-	19	.01126	23.43	.780	1.29860	1.500	3.251	PER IMP=	42.00
*S **ADD THE FLOWS FROM HYDROGRAPH NO 401.12 AND 106.15											
ADD HYD	401.13	19&18	20	.30613	443.65	16.485	1.00969	1.567	2.264		
*S **BASIN 300.2 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE											
*S @ A DENSITY OF 4 DU/AC											

SUBBASINS FLOWCHART



ISAACSON & ARFMAN, P.A.

SUBJECT DESERT FLOWER JOB NO.
BY JMN DATE 6/97 SHEET NO. 1 OF 2



ISAACSON & ARFMAN, P.A.

SUBJECT _____ JOB NO. ____

BY _____ DATE _____ SHEET NO. 2 OF 2

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
COMPUTE NM HYD	300.20	-	1	.01180	24.55	.817	1.29859	1.500	3.251	PER IMP= 42.00
*S ** BASIN 401.14 IS PART OF SUNRISE ESTATES UNIT 1										
COMPUTE NM HYD	401.14	-	2	.01117	23.24	.774	1.29860	1.500	3.251	PER IMP= 42.00
*S **ADD FLOWS FROM HYDROGRAPH NO 401.14 AND 300.2										
ADD HYD	401.15	1& 2	3	.02297	47.79	1.591	1.29857	1.500	3.251	
*S **ADD FLOWS FROM HYDROGRAPH NO 401.15 AND 401.13										
ADD HYD	401.16	3&20	4	.32910	484.48	18.076	1.02985	1.567	2.300	
*S **BASIN 401.17 IS PART OF SUNRISE ESTATES UNIT 1										
COMPUTE NM HYD	401.17	-	5	.00661	13.76	.458	1.29860	1.500	3.252	PER IMP= 42.00
*S **ADD FLOWS FROM HYDROGRAPH NO 401.16 AND 401.17										
ADD HYD	401.18	4& 5	6	.33571	496.23	18.534	1.03514	1.567	2.310	
*S ** BASIN 405 DRAINS TO SAPPHIRE ST.										
COMPUTE NM HYD	405.00	-	7	.01393	29.33	.982	1.32159	1.500	3.289	PER IMP= 44.00
*S **ADD FLOWS FROM HYDROGRAPH NO 401.18 AND 405										
ADD HYD	405.10	6& 7	8	.34964	521.25	19.516	1.04656	1.567	2.329	
*S ** BASIN 403 DRAINS TO SAPPHIRE ST.										
COMPUTE NM HYD	403.00	-	9	.01480	30.79	1.025	1.29860	1.500	3.250	PER IMP= 42.00
*S **ADD FLOWS FROM HYDROGRAPH NO 405.1 AND 403										
ADD HYD	405.15	8& 9	10	.36444	547.55	20.541	1.05679	1.567	2.348	
*S ** BASIN 400.2 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE										
*S @ A DENSITY OF 4 DU/AC										
COMPUTE NM HYD	400.20	-	11	.03222	67.80	2.271	1.32159	1.500	3.288	PER IMP= 44.00
*S **ADD FLOWS FROM HYDROGRAPH NO 405.15 AND 400.2 TOGETHER TO GET THE FLOW										
*S IN SAPPHIRE ST. @ ANALYSIS PT B										
ADD HYD	405.16	10&11	12	.39666	607.35	22.812	1.07830	1.533	2.392	
*S**********										
*S**********										
*S **BASINS 200,201, & 202 DRAIN TO KIMELA DR										
COMPUTE NM HYD	200.00	-	13	.05300	87.23	2.848	1.00753	1.500	2.572	PER IMP= 29.00
*S **ROUTE FLOW TO THE END OF KIMELA DR.										
ROUTE	200.10	13	14	.05300	86.94	2.848	1.00753	1.533	2.563	
COMPUTE NM HYD	201.00	-	15	.02600	42.80	1.397	1.00753	1.500	2.572	PER IMP= 29.00
ADD HYD	201.10	15&14	16	.07900	128.91	4.245	1.00752	1.533	2.550	
*S **BASIN 202 IS AN ELEMENTARY SCHOOL (ONSITE DETENTION TO REDUCE RUNOFF)										
COMPUTE NM HYD	202.00	-	17	.00925	7.69	.217	.43925	1.533	1.298	PER IMP= .00
*S **BASIN 202.05 IS THE ELEMENTARY SCHOOL PARKING LOT THAT WILL DRAIN TO KIMELA										
COMPUTE NM HYD	202.05	-	18	.00375	10.49	.393	1.96548	1.500	4.373	PER IMP= 100.00
*S **ADD THE BASINS OF THE ELEMENTARY SCHOOL AND PARKING LOT										
ADD HYD	202.06	17&18	19	.01300	18.01	.610	.87913	1.500	2.164	
*S **ADD THE BASINS TOGETHER TO GET THE FLOW IN KIMELA DR @ ANALYSIS PT C										
ADD HYD	202.10	16&19	20	.09200	146.56	4.855	.98938	1.533	2.489	
*S**********										
*S**********										
*S **BASINS 402 THRU 404 ARE CURRENTLY UNDEVELOPED, FOR PURPOSES										
*S OF THIS REPORT, ASSUME ALL BASINS WILL BE BUILT OUT @ THEIR CURRENT										
*S ZONING										
*S **BASIN 402 IS UNIT 2 OF SUNRISE ESTATES										
COMPUTE NM HYD	402.00	-	6	.05200	108.14	3.601	1.29860	1.500	3.249	PER IMP= 42.00
*S **ADD BASIN 402 TO THE TOTAL FLOW @ THE END OF EXTENDED KIMELA										
ADD HYD	402.10	20& 6	7	.14400	251.21	8.456	1.10104	1.533	2.726	
*S **COMPUTE HYDROGRAPH FOR BASIN 404										
COMPUTE NM HYD	404.00	-	8	.01080	22.47	.748	1.29860	1.500	3.251	PER IMP= 42.00
*S **ADD FLOW TO THAT IN KIMELA DR										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	404.10	7& 8	9	.15480	272.95	9.204	1.11482	1.533	2.755	
*S **COMPUTE HYDROGRAPH FOR BASIN 408A										
COMPUTE NM HYD	408A	-	10	.01175	24.45	.814	1.29860	1.500	3.251	PER IMP= 42.00
*S **COMBINE FLOWS FROM HYDROGRAPH NO. 404.1 AND 408A										
ADD HYD	408.10	9&10	11	.16655	296.74	10.018	1.12778	1.500	2.784	
*S **ADD TO FLOW IN SAPPHIRE ST @ ANALYSIS PT D										
ADD HYD	404.20	11&12	13	.56321	903.96	32.829	1.09293	1.533	2.508	
*S DESIGN A RETENTION FACILITY TO REDUCE TO FLOW TO THAT WHICH WILL										
*S FIT IN A 48" RCP @ S=1.8%										
ROUTE RESERVOIR	405.40	13	14	.56321	192.06	32.829	1.09293	2.000	.533	AC-FT= 18.722
*S ROUTE FLOW FROM THE DETENTION POND TO THE AMOLE DEL NORTE CHANNEL										
ROUTE	405.30	14	15	.56321	192.05	32.829	1.09293	2.000	.533	
*S**********										
*S**********										
*S **CALC BASIN 406										
COMPUTE NM HYD	406.00	-	16	.05743	117.49	3.920	1.27968	1.500	3.196	PER IMP= 42.00
*S **CALC BASIN 407										
COMPUTE NM HYD	407.00	-	17	.05040	104.81	3.491	1.29860	1.500	3.249	PER IMP= 42.00
*S **CALC BASIN 408B										
COMPUTE NM HYD	408B	-	18	.09501	197.65	6.580	1.29860	1.500	3.250	PER IMP= 42.00
*S **CALC BASIN 408C										
COMPUTE NM HYD	408C	-	19	.05060	105.23	3.504	1.29860	1.500	3.249	PER IMP= 42.00
*S **COMBINE FLOWS FROM BASIN 408B AND 408C										
ADD HYD	408.20	18&19	20	.14561	302.87	10.085	1.29859	1.500	3.250	
*S**********										
*S**********										
*S **BASIN 500 IS UNIT ONE OF THE PROPOSED LONGFORD SD										
COMPUTE NM HYD	500.00	-	1	.02491	51.80	1.725	1.29860	1.500	3.250	PER IMP= 42.00
*S **BASIN 501 IS THE AREA PROPOSED AS FUTURE LONGFORD SD DRAINING										
*S **DIRECTLY TO THE AMOLE CHANNEL										
COMPUTE NM HYD	501.00	-	2	.03663	76.18	2.537	1.29860	1.500	3.249	PER IMP= 42.00
*S **COMBINE BASINS 500 AND 501 TOGETHER TO REPRESENT THE NORTHERN PART OF THE										
*S **LONGFORD SD										
ADD HYD	501.10	1& 2	3	.06154	127.98	4.262	1.29859	1.500	3.250	
*S **BASIN 502 IS THE SOUTHERN PART OF THE LONGFORD SD										
COMPUTE NM HYD	502.00	-	4	.05788	121.79	4.080	1.32159	1.500	3.288	PER IMP= 44.00
*S **BASIN 503 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE @										
*S **A DENSITY OF 4 DU/AC. THE DISCHARGE FROM THIS BASIN DRAINS TO THE AMOLE										
*S DEL NORTE CHANNEL AND DOES NOT AFFECT THE ARENAL/UNSER DRAINAGE MANAGEMENT										
*S SITE.										
COMPUTE NM HYD	503.00	-	5	.03752	78.03	2.599	1.29860	1.500	3.249	PER IMP= 42.00
*S**********										
*S **BASIN 504 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE @										
*S **A DENSITY OF 4 DU/AC. THE DISCHARGE FROM THIS BASIN TRAVEL ALONG SAGE RD.										
*S AND ENTERS THE AMOLE DEL NORTE CHANNEL, DOES NOT AFFECT THE ARENAL/UNSER										
*S DRAINAGE MANAGEMENT SITE.										
COMPUTE NM HYD	504.00	-	6	.03667	77.16	2.585	1.32159	1.500	3.288	PER IMP= 44.00
*S **BASIN 505 IS FULLY DEVELOPED AND DRAINS SOUTH TO BLAKE RD..DISCHARGE FROM										
*S THIS BASIN DOES NOT AFFECT THE ARENAL/UNSER DRAINAGE MANAGEMENT SITE.										
COMPUTE NM HYD	505.00	-	7	.02618	43.10	1.407	1.00753	1.500	2.572	PER IMP= 29.00
FINISH										

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 06/28/1997
         START TIME (HR:MIN:SEC) = 14:22:36     USER NO.= ISCARFNM.I01
         INPUT FILE = DESRTOFF.DAT

*S                  DESERT FLOWER SUBDIVISION - 100 YR POST DEVELOPMENT
*S                  REVISED BY: JMN 6/27/97
*S
START               RAINFALL BEGINS AT 0.0 HRS
RAINFALL            TYPE=1 RAIN QUARTER=0 RAIN ONE=1.87
                    RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333HR

                 COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                 DT =     .033330 HOURS       END TIME =     5.999400 HOURS
                    .0000   .0016   .0033   .0050   .0067   .0085   .0103
                    .0122   .0141   .0160   .0180   .0201   .0222   .0243
                    .0266   .0289   .0312   .0337   .0362   .0388   .0415
                    .0443   .0472   .0502   .0534   .0567   .0601   .0637
                    .0675   .0715   .0758   .0809   .0865   .0924   .1050
                    .1334   .1771   .2398   .3254   .4379   .5814   .7600
                    .9780  1.1804  1.2649  1.3363  1.3997  1.4575  1.5106
                   1.5600  1.6061  1.6493  1.6900  1.7284  1.7646  1.7989
                   1.8314  1.8623  1.8915  1.9193  1.9456  1.9518  1.9576
                   1.9630  1.9682  1.9732  1.9780  1.9825  1.9869  1.9912
                   1.9953  1.9993  2.0031  2.0068  2.0104  2.0140  2.0174
                   2.0207  2.0240  2.0272  2.0303  2.0333  2.0363  2.0392
                   2.0420  2.0448  2.0475  2.0502  2.0528  2.0554  2.0580
                   2.0605  2.0629  2.0653  2.0677  2.0700  2.0723  2.0746
                   2.0768  2.0790  2.0812  2.0833  2.0855  2.0875  2.0896
                   2.0916  2.0936  2.0956  2.0976  2.0995  2.1014  2.1033
                   2.1051  2.1070  2.1088  2.1106  2.1124  2.1141  2.1159
                   2.1176  2.1193  2.1210  2.1227  2.1244  2.1260  2.1276
                   2.1292  2.1308  2.1324  2.1340  2.1355  2.1371  2.1386
                   2.1401  2.1416  2.1431  2.1446  2.1460  2.1475  2.1489
                   2.1504  2.1518  2.1532  2.1546  2.1560  2.1573  2.1587
                   2.1600  2.1614  2.1627  2.1640  2.1654  2.1667  2.1680
                   2.1692  2.1705  2.1718  2.1731  2.1743  2.1756  2.1768
                   2.1780  2.1792  2.1804  2.1817  2.1829  2.1840  2.1852
                   2.1864  2.1876  2.1887  2.1899  2.1910  2.1922  2.1933
                   2.1944  2.1956  2.1967  2.1978  2.1989  2.2000

*S BASIN 100 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL
*S BE @ A DENSITY OF 4 DU/AC
COMPUTE NM HYD      ID=1 HYD NO=100.00 AREA=0.07150 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .072801HR    TP =   .133300HR    K/TP RATIO =   .546145     SHAPE CONSTANT, N =  7.087329
    UNIT PEAK =   118.36    CFS   UNIT VOLUME =    .9992       B =   525.38      P60 = 1.8700
    AREA =      .030030 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .118190HR    TP =   .133300HR    K/TP RATIO =   .886648     SHAPE CONSTANT, N =  4.001119
    UNIT PEAK =   110.52    CFS   UNIT VOLUME =    1.000       B =   355.24      P60 = 1.8700
    AREA =      .041470 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330
```

```
PRINT HYD           ID=1   CODE=1

                                PARTIAL HYDROGRAPH   100.00


    RUNOFF VOLUME =     1.29860 INCHES     =       4.9519 ACRE-FEET
    PEAK DISCHARGE RATE =     148.70 CFS  AT   1.500 HOURS   BASIN AREA =    .0715 SQ. MI.


*S BASIN 101 IS FULLY DEVELOPED WITH SINGLE FAMILY RESIDENTIAL HOMES
*S WITH A DENSTIY OF 4 DU/AC
COMPUTE NM HYD      ID=2 HYD NO=101.00 AREA=0.03700 SQ MI
                    PER A=33 PER B=19 PER C=19 PER D=29
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   42.363    CFS   UNIT VOLUME =    .9991       B =   526.28      P60 = 1.8700
    AREA =      .010730 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =   .139463HR    TP =   .133300HR    K/TP RATIO =  1.046235     SHAPE CONSTANT, N =  3.374403
    UNIT PEAK =   61.299    CFS   UNIT VOLUME =    .9998       B =   311.05      P60 = 1.8700
    AREA =      .026270 SQ MI    IA =    .52958 INCHES    INF =   1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=2   CODE=1

                                PARTIAL HYDROGRAPH   101.00


    RUNOFF VOLUME =     1.00753 INCHES     =       1.9882 ACRE-FEET
    PEAK DISCHARGE RATE =      60.90 CFS  AT   1.500 HOURS   BASIN AREA =    .0370 SQ. MI.


ADD HYD             ID=3 HYD NO=101.01 ID=1 ID=2
PRINT HYD           ID=3 CODE=1

                                PARTIAL HYDROGRAPH   101.01


    RUNOFF VOLUME =     1.19933 INCHES     =       6.9401 ACRE-FEET
    PEAK DISCHARGE RATE =     209.60 CFS  AT   1.500 HOURS   BASIN AREA =    .1085 SQ. MI.


*S **AREA 102 IS A MIDDLE SCHOOL (ONSITE DETENTION TO REDUCE RUNOFF)
COMPUTE NM HYD      ID=4 HYD NO=102.00 AREA=0.04000 SQ MI
                    PER A=100 PER B=0 PER C=0 PER D=0
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .163684HR    TP =   .133300HR    K/TP RATIO =  1.227936     SHAPE CONSTANT, N =  2.899764
    UNIT PEAK =   82.084    CFS   UNIT VOLUME =    .9995       B =   273.54      P60 = 1.8700
    AREA =      .040000 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=4   CODE=1
```

PARTIAL HYDROGRAPH 102.00

RUNOFF VOLUME = .43925 INCHES = .9371 ACRE-FEET
PEAK DISCHARGE RATE = 33.21 CFS AT 1.533 HOURS BASIN AREA = .0400 SQ. MI.

*S ROUTE THE SCHOOL'S RUNOFF IN A 28' F-F RESIDENTIAL STREET, S=2%
*S ASSUME SECTION EXTENDS TO THE ROW LINE ON BOTH SIDES
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1 MIN EL=100.00 MAX EL=101.00
CH SLOPE=0.02 FP SLOPE=0.02 N=0.017 DIST=48.0
DIST ELEV DIST ELEV DIST ELEV DIST ELEV
0 101.00 10.0 100.67 10.1 100.00 24.0 100.28
38.0 100.00 38.1 100.67 48.0 101.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
100.00	.00	.00	.00
100.05	.14	.15	5.26
100.11	.55	.95	10.52
100.16	1.25	2.80	15.78
100.21	2.22	6.03	21.04
100.26	3.46	10.94	26.30
100.32	4.92	18.84	27.99
100.37	6.39	29.08	28.01
100.42	7.87	41.00	28.03
100.47	9.34	54.46	28.04
100.53	10.82	69.37	28.06
100.58	12.30	85.66	28.07
100.63	13.78	103.24	28.09
100.68	15.26	119.89	28.96
100.74	16.87	132.52	32.13
100.79	18.64	147.34	35.31
100.84	20.59	164.39	38.48
100.89	22.69	183.72	41.66
100.95	24.97	205.41	44.83
101.00	27.41	229.56	48.00

COMPUTE TRAVEL TIME ID=5 REACH NO=1 NO VS=1 L=650 FT SLP=0.02

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.138	.15	.1670
.105	.554	.95	.1052
.158	1.246	2.80	.0803
.211	2.215	6.03	.0663
.263	3.461	10.94	.0571
.316	4.920	18.84	.0472
.368	6.394	29.08	.0397
.421	7.869	41.00	.0347
.474	9.344	54.46	.0310
.526	10.821	69.37	.0282
.579	12.298	85.66	.0259

```
                                .632       13.776       103.24       .0241
                                .684       15.261       119.89       .0230
                                .737       16.869       132.52       .0230
                                .790       18.644       147.34       .0228
                                .842       20.586       164.39       .0226
                                .895       22.695       183.72       .0223
                                .947       24.971       205.41       .0219
                               1.000       27.414       229.56       .0216
ROUTE                  ID=5 HYD NO=102.1 INFLOW ID=4 DT=0.0
PRINT HYD              ID=5 CODE=1

                                    PARTIAL HYDROGRAPH   102.10

    RUNOFF VOLUME =       .43927 INCHES     =         .9371 ACRE-FEET
    PEAK DISCHARGE RATE =      32.41 CFS  AT    1.567 HOURS   BASIN AREA =    .0400 SQ. MI.


*S ADD THE ROUTED FLOW FROM 102 TO THE EARLIER TOTAL
ADD HYD                ID=6 HYD NO=102.3 ID=3 ID=5
PRINT HYD              ID=6 CODE=1

                                    PARTIAL HYDROGRAPH   102.30

    RUNOFF VOLUME =       .99460 INCHES     =        7.8772 ACRE-FEET
    PEAK DISCHARGE RATE =     236.14 CFS  AT    1.500 HOURS   BASIN AREA =    .1485 SQ. MI.


*S **BASIN 103 IS COMPLETELY DEVELOPED
COMPUTE NM HYD         ID=7 HYD NO=103.00 AREA=0.04400 SQ MI
                       PER A=33 PER B=19 PER C=19 PER D=29
                       TP=-0.1333 HR   MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   50.377    CFS   UNIT VOLUME =     .9992       B =   526.28      P60 = 1.8700
    AREA =       .012760 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .139463HR    TP =    .133300HR    K/TP RATIO =  1.046235     SHAPE CONSTANT, N =  3.374403
    UNIT PEAK =   72.896    CFS   UNIT VOLUME =     .9999       B =   311.05      P60 = 1.8700
    AREA =       .031240 SQ MI    IA =     .52958 INCHES    INF =   1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD              ID=7   CODE=1

                                    PARTIAL HYDROGRAPH   103.00

    RUNOFF VOLUME =      1.00753 INCHES     =        2.3643 ACRE-FEET
    PEAK DISCHARGE RATE =      72.42 CFS  AT    1.500 HOURS   BASIN AREA =    .0440 SQ. MI.


*S ADD 103 TO TOTAL
ADD HYD                ID=8 HYD NO=103.1 ID=6 ID=7
```

PRINT HYD ID=8 CODE=1

PARTIAL HYDROGRAPH 103.10

RUNOFF VOLUME = .99755 INCHES = 10.2415 ACRE-FEET
PEAK DISCHARGE RATE = 308.56 CFS AT 1.500 HOURS BASIN AREA = .1925 SQ. MI.

*S **ASSUME FLOW IS ROUTED IN 28' STREET AS EARLIER
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1 MIN EL=100.00 MAX EL=101.00
CH SLOPE=0.02 FP SLOPE=0.02 N=0.017 DIST=48.0
DIST ELEV DIST ELEV DIST ELEV DIST ELEV
0 101.00 10.0 100.67 10.1 100.00 24.0 100.28
38.0 100.00 38.1 100.67 48.0 101.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
100.00	.00	.00	.00
100.05	.14	.15	5.26
100.11	.55	.95	10.52
100.16	1.25	2.80	15.78
100.21	2.22	6.03	21.04
100.26	3.46	10.94	26.30
100.32	4.92	18.84	27.99
100.37	6.39	29.08	28.01
100.42	7.87	41.00	28.03
100.47	9.34	54.46	28.04
100.53	10.82	69.37	28.06
100.58	12.30	85.66	28.07
100.63	13.78	103.24	28.09
100.68	15.26	119.89	28.96
100.74	16.87	132.52	32.13
100.79	18.64	147.34	35.31
100.84	20.59	164.39	38.48
100.89	22.69	183.72	41.66
100.95	24.97	205.41	44.83
101.00	27.41	229.56	48.00

COMPUTE TRAVEL TIME ID=9 REACH NO=1 NO VS=1 L=900 FT SLP=0.02

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.138	.15	.2312
.105	.554	.95	.1457
.158	1.246	2.80	.1112
.211	2.215	6.03	.0918
.263	3.461	10.94	.0791
.316	4.920	18.84	.0653
.368	6.394	29.08	.0550
.421	7.869	41.00	.0480
.474	9.344	54.46	.0429
.526	10.821	69.37	.0390

```
                                  .579       12.298        85.66        .0359
                                  .632       13.776       103.24        .0334
                                  .684       15.261       119.89        .0318
                                  .737       16.869       132.52        .0318
                                  .790       18.644       147.34        .0316
                                  .842       20.586       164.39        .0313
                                  .895       22.695       183.72        .0309
                                  .947       24.971       205.41        .0304
                                 1.000       27.414       229.56        .0299
    ROUTE                 ID=9 HYD NO=103.2 INFLOW ID=8 DT=0.0
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD             ID=9 CODE=1

                                     PARTIAL HYDROGRAPH   103.20


    RUNOFF VOLUME =      .99756 INCHES     =      10.2415 ACRE-FEET
    PEAK DISCHARGE RATE =     293.93 CFS  AT   1.533 HOURS   BASIN AREA =   .1925 SQ. MI.


    *S **AREA 104 IS FULLY DEVELOPED
    COMPUTE NM HYD        ID=10 HYD NO=104.00 AREA=0.04400 SQ MI
                          PER A=33 PER B=19 PER C=19 PER D=29
                          TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   50.377    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
    AREA =      .012760 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

    K =   .139463HR    TP =   .133300HR    K/TP RATIO =  1.046235     SHAPE CONSTANT, N =  3.374403
    UNIT PEAK =   72.896    CFS   UNIT VOLUME =    .9999       B =   311.05      P60 = 1.8700
    AREA =      .031240 SQ MI    IA =    .52958 INCHES    INF =   1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD             ID=10   CODE=1

                                     PARTIAL HYDROGRAPH   104.00


    RUNOFF VOLUME =     1.00753 INCHES     =       2.3643 ACRE-FEET
    PEAK DISCHARGE RATE =      72.42 CFS  AT   1.500 HOURS   BASIN AREA =   .0440 SQ. MI.


*S ADD THE FLOW TO THE TOTAL
ADD HYD               ID=11 HYD NO=104.01 ID=9 ID=10
PRINT HYD             ID=11 CODE=1

                                     PARTIAL HYDROGRAPH   104.01


    RUNOFF VOLUME =      .99941 INCHES     =      12.6058 ACRE-FEET
    PEAK DISCHARGE RATE =    364.94 CFS  AT   1.533 HOURS   BASIN AREA =   .2365 SQ. MI.
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*S AREA 105 IS A PARK & COA WELL SITE
COMPUTE NM HYD       ID=12 HYD NO=105.00 AREA=0.021 SQ MI
                     PER A=31 PER B=31 PER C=31 PER D=7
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   5.8036    CFS   UNIT VOLUME =    .9973       B =   526.28      P60 = 1.8700
    AREA =      .001470 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .133514HR    TP =   .133300HR    K/TP RATIO =  1.001607     SHAPE CONSTANT, N =  3.524575
    UNIT PEAK =   47.194    CFS   UNIT VOLUME =    1.000       B =   322.12      P60 = 1.8700
    AREA =      .019530 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=12   CODE=1

                                  PARTIAL HYDROGRAPH   105.00


    RUNOFF VOLUME =      .75825 INCHES     =        .8492 ACRE-FEET
    PEAK DISCHARGE RATE =      29.05 CFS  AT   1.500 HOURS   BASIN AREA =   .0210 SQ. MI.


ADD HYD              ID=13 HYD NO=105.1 ID=11 ID=12
PRINT HYD            ID=13 CODE=1

                                  PARTIAL HYDROGRAPH   105.10


    RUNOFF VOLUME =      .97974 INCHES     =      13.4550 ACRE-FEET
    PEAK DISCHARGE RATE =     393.90 CFS  AT   1.533 HOURS   BASIN AREA =   .2575 SQ. MI.


*S ROUTE THE FLOW TO THE EXISTING END OF SAPPHIRE ST.
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1 MIN EL=100.00 MAX EL=101.00
                     CH SLOPE=0.02 FP SLOPE=0.02 N=0.017 DIST=48.0
                     DIST  ELEV  DIST  ELEV  DIST  ELEV  DIST  ELEV
                      0   101.00 10.0 100.67 10.1 100.00 24.0 100.28
                     38.0 100.00 38.1 100.67 48.0 101.00

                                RATING CURVE VALLEY SECTION  1.0
                                  WATER       FLOW        FLOW        TOP
                                 SURFACE      AREA        RATE       WIDTH
                                  ELEV       SQ FT       CFS         FT
                                 100.00        .00         .00         .00
                                 100.05        .14         .15        5.26
                                 100.11        .55         .95       10.52
                                 100.16       1.25        2.80       15.78
                                 100.21       2.22        6.03       21.04
                                 100.26       3.46       10.94       26.30
                                 100.32       4.92       18.84       27.99
                                 100.37       6.39       29.08       28.01
                                 100.42       7.87       41.00       28.03
                                 100.47       9.34       54.46       28.04
                                 100.53      10.82       69.37       28.06
```

100.58	12.30	85.66	28.07
100.63	13.78	103.24	28.09
100.68	15.26	119.89	28.96
100.74	16.87	132.52	32.13
100.79	18.64	147.34	35.31
100.84	20.59	164.39	38.48
100.89	22.69	183.72	41.66
100.95	24.97	205.41	44.83
101.00	27.41	229.56	48.00

COMPUTE TRAVEL TIME ID=14 REACH NO=1 NO VS=1 L=1200 FT SLP=0.02

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.138	.15	.3083
.105	.554	.95	.1942
.158	1.246	2.80	.1482
.211	2.215	6.03	.1223
.263	3.461	10.94	.1054
.316	4.920	18.84	.0871
.368	6.394	29.08	.0733
.421	7.869	41.00	.0640
.474	9.344	54.46	.0572
.526	10.821	69.37	.0520
.579	12.298	85.66	.0479
.632	13.776	103.24	.0445
.684	15.261	119.89	.0424
.737	16.869	132.52	.0424
.790	18.644	147.34	.0422
.842	20.586	164.39	.0417
.895	22.695	183.72	.0412
.947	24.971	205.41	.0405
1.000	27.414	229.56	.0398

ROUTE ID=14 HYD NO=105.2 INFLOW ID=13 DT=0.0
TRAVEL TIME TABLE EXCEEDED
PRINT HYD ID=14 CODE=1

PARTIAL HYDROGRAPH 105.20

RUNOFF VOLUME = .97974 INCHES = 13.4550 ACRE-FEET
PEAK DISCHARGE RATE = 364.47 CFS AT 1.567 HOURS BASIN AREA = .2575 SQ. MI.

*S AREA 106 IS FULLY DEVELOPED
COMPUTE NM HYD ID=15 HYD NO=106.00 AREA=0.02177 SQ MI
PER A=33 PER B=19 PER C=19 PER D=29
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 24.925 CFS UNIT VOLUME = .9989 B = 526.28 P60 = 1.8700
AREA = .006313 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

```
    K =   .139463HR    TP =   .133300HR    K/TP RATIO =  1.046235     SHAPE CONSTANT, N =  3.374403
    UNIT PEAK =   36.067    CFS   UNIT VOLUME =    .9997       B =   311.05      P60 = 1.8700
    AREA =      .015457 SQ MI    IA =    .52958 INCHES    INF =  1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=15   CODE=1

                                PARTIAL HYDROGRAPH   106.00


    RUNOFF VOLUME =     1.00753 INCHES      =       1.1698 ACRE-FEET
    PEAK DISCHARGE RATE =      35.84 CFS  AT   1.500 HOURS   BASIN AREA =   .0218 SQ. MI.


*S BASIN 300.1 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE @
*S A DENSITY OF 4 DU/AC
COMPUTE NM HYD      ID=16 HYD NO=300.1  AREA=0.0156 SQ MI
                    PER A=0  PER B=29  PER C=29  PER D=42
                    TP=-0.1333 HR  MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   25.868    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.8700
    AREA =      .006552 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   24.074    CFS   UNIT VOLUME =    .9999       B =   354.67      P60 = 1.8700
    AREA =      .009048 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=16  CODE=1

                                HYDROGRAPH FROM AREA   300.10


    RUNOFF VOLUME =     1.29860 INCHES      =       1.0804 ACRE-FEET
    PEAK DISCHARGE RATE =      32.45 CFS  AT   1.500 HOURS   BASIN AREA =   .0156 SQ. MI.


*S **ADD THE FLOWS FROM BASINS 106 AND 300.1
ADD HYD             ID=17  HYD NO=106.1  ID=15  ID=16
PRINT HYD           ID=17  CODE=1

                                PARTIAL HYDROGRAPH   106.10


    RUNOFF VOLUME =     1.12902 INCHES      =       2.2502 ACRE-FEET
    PEAK DISCHARGE RATE =      68.29 CFS  AT   1.500 HOURS   BASIN AREA =   .0374 SQ. MI.


*S **TOTAL FLOW IN SAPHIRE ST AT ANALYSIS POINT A
ADD HYD             ID=18 HYD NO=106.15 ID=14 ID=17
PRINT HYD           ID=18 CODE=1

                                PARTIAL HYDROGRAPH   106.15
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```
    RUNOFF VOLUME =       .99866 INCHES     =      15.7052 ACRE-FEET
    PEAK DISCHARGE RATE =     423.63 CFS  AT    1.567 HOURS   BASIN AREA =    .2949 SQ. MI.


*S  **BASIN 401.12, 401.14, 401.17, 300.2 AND 400.2 DRAINS TO SAPPHIRE ST.
*S  **BASIN 401.12 IS PART OF SUNRISE ESTATES UNIT 1
COMPUTE NM HYD       ID=19 HYD NO=401.12 AREA=0.01126 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   18.671    CFS   UNIT VOLUME =     .9988       B =   526.28      P60 = 1.8700
    AREA =       .004729 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   17.376    CFS   UNIT VOLUME =     .9997       B =   354.67      P60 = 1.8700
    AREA =       .006531 SQ MI    IA =     .42500 INCHES    INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=19  CODE=1

                                        HYDROGRAPH FROM AREA   401.12


    RUNOFF VOLUME =      1.29860 INCHES     =        .7798 ACRE-FEET
    PEAK DISCHARGE RATE =       23.43 CFS  AT    1.500 HOURS   BASIN AREA =    .0113 SQ. MI.


*S  **ADD THE FLOWS FROM HYDROGRAPH NO 401.12 AND 106.15
ADD HYD              ID=20 HYD NO=401.13 ID=19 ID=18
PRINT HYD            ID=20  CODE=1

                                        HYDROGRAPH FROM AREA   401.13


    RUNOFF VOLUME =      1.00969 INCHES     =      16.4850 ACRE-FEET
    PEAK DISCHARGE RATE =     443.65 CFS  AT    1.567 HOURS   BASIN AREA =    .3061 SQ. MI.


*S  **BASIN 300.2 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE
*S  @ A DENSITY OF 4 DU/AC
COMPUTE NM HYD       ID=1 HYD NO=300.2 AREA=0.0118 SQ MI
                     PER A=0  PER B=29  PER C=29  PER D=42
                     TP=-0.1333 HR MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   19.567    CFS   UNIT VOLUME =     .9988       B =   526.28      P60 = 1.8700
    AREA =       .004956 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   18.210    CFS   UNIT VOLUME =     .9997       B =   354.67      P60 = 1.8700
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```
    AREA =       .006844 SQ MI    IA =     .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA   300.20

    RUNOFF VOLUME =     1.29859 INCHES      =         .8172 ACRE-FEET
    PEAK DISCHARGE RATE =      24.55 CFS  AT    1.500 HOURS   BASIN AREA =    .0118 SQ. MI.


*S ** BASIN 401.14 IS PART OF SUNRISE ESTATES UNIT 1
COMPUTE NM HYD      ID=2 HYD NO=401.14 AREA=0.01117 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   18.522    CFS   UNIT VOLUME =     .9988       B =   526.28      P60 = 1.8700
    AREA =       .004691 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   17.237    CFS   UNIT VOLUME =     .9997       B =   354.67      P60 = 1.8700
    AREA =       .006479 SQ MI    IA =     .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=2 CODE=1

                                        HYDROGRAPH FROM AREA   401.14

    RUNOFF VOLUME =     1.29860 INCHES      =         .7736 ACRE-FEET
    PEAK DISCHARGE RATE =      23.24 CFS  AT    1.500 HOURS   BASIN AREA =    .0112 SQ. MI.


*S  **ADD FLOWS FROM HYDROGRAPH NO 401.14 AND 300.2
ADD HYD             ID=3 HYD NO=401.15 ID=1 ID=2
PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA   401.15

    RUNOFF VOLUME =     1.29857 INCHES      =        1.5908 ACRE-FEET
    PEAK DISCHARGE RATE =      47.79 CFS  AT    1.500 HOURS   BASIN AREA =    .0230 SQ. MI.


*S **ADD FLOWS FROM HYDROGRAPH NO 401.15 AND 401.13
ADD HYD             ID=4 HYD NO=401.16 ID=3 ID=20
PRINT HYD           ID=4 CODE=1

                                        HYDROGRAPH FROM AREA   401.16

    RUNOFF VOLUME =     1.02985 INCHES      =       18.0759 ACRE-FEET
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    PEAK DISCHARGE RATE =     484.48 CFS  AT   1.567 HOURS   BASIN AREA =    .3291 SQ. MI.


*S **BASIN 401.17 IS PART OF SUNRISE ESTATES UNIT 1
COMPUTE NM HYD      ID=5 HYD NO=401.17 AREA=0.00661 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   10.961    CFS   UNIT VOLUME =     .9984       B =   526.28      P60 = 1.8700
    AREA =       .002776 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   10.201    CFS   UNIT VOLUME =     .9992       B =   354.67      P60 = 1.8700
    AREA =       .003834 SQ MI    IA =     .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=5 CODE=1

                                    HYDROGRAPH FROM AREA   401.17


    RUNOFF VOLUME =     1.29860 INCHES     =        .4578 ACRE-FEET
    PEAK DISCHARGE RATE =      13.76 CFS  AT   1.500 HOURS   BASIN AREA =    .0066 SQ. MI.


*S  **ADD FLOWS FROM HYDROGRAPH NO 401.16 AND 401.17
ADD HYD             ID=6 HYD NO=401.18 ID=4 ID=5
PRINT HYD           ID=6 CODE=1

                                    HYDROGRAPH FROM AREA   401.18


    RUNOFF VOLUME =     1.03514 INCHES     =      18.5337 ACRE-FEET
    PEAK DISCHARGE RATE =     496.23 CFS  AT   1.567 HOURS   BASIN AREA =    .3357 SQ. MI.


*S ** BASIN 405 DRAINS TO SAPPHIRE ST.
COMPUTE NM HYD      ID=7  HYD NO=405.0  AREA=0.013934 SQ MI
                    PER A=0 PER B=28 PER C=28 PER D=44
                    TP=-0.1333 HR MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   24.205    CFS   UNIT VOLUME =     .9989       B =   526.28      P60 = 1.8700
    AREA =       .006131 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   20.761    CFS   UNIT VOLUME =     .9998       B =   354.67      P60 = 1.8700
    AREA =       .007803 SQ MI    IA =     .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=7 CODE=1
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                                        HYDROGRAPH FROM AREA    405.00

    RUNOFF VOLUME =      1.32159 INCHES      =          .9821 ACRE-FEET
    PEAK DISCHARGE RATE =       29.33 CFS  AT   1.500 HOURS    BASIN AREA =    .0139 SQ. MI.


*S  **ADD FLOWS FROM HYDROGRAPH NO 401.18 AND 405
ADD HYD             ID=8 HYD NO=405.1  ID=6 ID=7
PRINT HYD           ID=8 CODE=1

                                        HYDROGRAPH FROM AREA    405.10

    RUNOFF VOLUME =      1.04656 INCHES      =       19.5158 ACRE-FEET
    PEAK DISCHARGE RATE =      521.25 CFS  AT    1.567 HOURS    BASIN AREA =    .3496 SQ. MI.


*S ** BASIN 403 DRAINS TO SAPPHIRE ST.
COMPUTE NM HYD      ID=9  HYD NO=403.0  AREA=0.0148 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   24.541    CFS   UNIT VOLUME =     .9989       B =   526.28      P60 = 1.8700
    AREA =       .006216 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   22.839    CFS   UNIT VOLUME =     .9999       B =   354.67      P60 = 1.8700
    AREA =       .008584 SQ MI    IA =     .42500 INCHES    INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=9 CODE=1

                                        HYDROGRAPH FROM AREA    403.00

    RUNOFF VOLUME =      1.29860 INCHES      =        1.0250 ACRE-FEET
    PEAK DISCHARGE RATE =       30.79 CFS  AT    1.500 HOURS    BASIN AREA =    .0148 SQ. MI.


*S  **ADD FLOWS FROM HYDROGRAPH NO 405.1 AND 403
ADD HYD             ID=10 HYD NO=405.15  ID=8 ID=9
PRINT HYD           ID=10 CODE=1

                                        HYDROGRAPH FROM AREA    405.15

    RUNOFF VOLUME =      1.05679 INCHES      =       20.5408 ACRE-FEET
    PEAK DISCHARGE RATE =      547.55 CFS  AT    1.567 HOURS    BASIN AREA =    .3644 SQ. MI.


*S ** BASIN 400.2 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE
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*S @ A DENSITY OF 4 DU/AC
COMPUTE NM HYD       ID=11  HYD NO=400.2  AREA=0.032215 SQ MI
                     PER A=0 PER B=28 PER C=28 PER D=44
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N = 7.106420
    UNIT PEAK =   55.962   CFS   UNIT VOLUME =    .9992       B =   526.28     P60 = 1.8700
    AREA =      .014175 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N = 3.992480
    UNIT PEAK =   48.000    CFS   UNIT VOLUME =    1.000       B =   354.67      P60 = 1.8700
    AREA =      .018040 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=11  CODE=1

                                    HYDROGRAPH FROM AREA   400.20

    RUNOFF VOLUME =     1.32159 INCHES     =       2.2707 ACRE-FEET
    PEAK DISCHARGE RATE =      67.80 CFS  AT   1.500 HOURS   BASIN AREA =   .0322 SQ. MI.


*S  **ADD FLOWS FROM HYDROGRAPH NO 405.15 AND 400.2 TOGETHER TO GET THE FLOW
*S IN SAPPHIRE ST. @ ANALYSIS PT B
ADD HYD              ID=12 HYD NO=405.16  ID=10 ID=11
PRINT HYD            ID=12 CODE=1

                                    HYDROGRAPH FROM AREA   405.16

    RUNOFF VOLUME =     1.07830 INCHES     =       22.8114 ACRE-FEET
    PEAK DISCHARGE RATE =     607.35 CFS  AT   1.533 HOURS   BASIN AREA =   .3967 SQ. MI.


*S**************************************************************************
*S**************************************************************************
*S **BASINS 200,201, & 202 DRAIN TO KIMELA DR
COMPUTE NM HYD       ID=13 HYD NO=200.00 AREA=0.053 SQ MI
                     PER A=33 PER B=19 PER C=19 PER D=29
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N = 7.106420
    UNIT PEAK =   60.682    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
    AREA =      .015370 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

    K =   .139463HR    TP =   .133300HR    K/TP RATIO =  1.046235     SHAPE CONSTANT, N = 3.374403
    UNIT PEAK =   87.807    CFS   UNIT VOLUME =    .9999       B =   311.05      P60 = 1.8700
    AREA =      .037630 SQ MI    IA =    .52958 INCHES    INF =   1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=13   CODE=1
```

PARTIAL HYDROGRAPH 200.00

RUNOFF VOLUME = 1.00753 INCHES = 2.8479 ACRE-FEET
PEAK DISCHARGE RATE = 87.23 CFS AT 1.500 HOURS BASIN AREA = .0530 SQ. MI.

*S **ROUTE FLOW TO THE END OF KIMELA DR.
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1 MIN EL=100.00 MAX EL=101.00
CH SLOPE=0.02 FP SLOPE=0.02 N=0.017 DIST=48.0
DIST ELEV DIST ELEV DIST ELEV DIST ELEV
0 101.00 10.0 100.67 10.1 100.00 24.0 100.28
38.0 100.00 38.1 100.67 48.0 101.00

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
100.00	.00	.00	.00
100.05	.14	.15	5.26
100.11	.55	.95	10.52
100.16	1.25	2.80	15.78
100.21	2.22	6.03	21.04
100.26	3.46	10.94	26.30
100.32	4.92	18.84	27.99
100.37	6.39	29.08	28.01
100.42	7.87	41.00	28.03
100.47	9.34	54.46	28.04
100.53	10.82	69.37	28.06
100.58	12.30	85.66	28.07
100.63	13.78	103.24	28.09
100.68	15.26	119.89	28.96
100.74	16.87	132.52	32.13
100.79	18.64	147.34	35.31
100.84	20.59	164.39	38.48
100.89	22.69	183.72	41.66
100.95	24.97	205.41	44.83
101.00	27.41	229.56	48.00

COMPUTE TRAVEL TIME ID=14 REACH NO=1 NO VS=1 L=800 FT SLP=0.02

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.138	.15	.2055
.105	.554	.95	.1295
.158	1.246	2.80	.0988
.211	2.215	6.03	.0816
.263	3.461	10.94	.0703
.316	4.920	18.84	.0580
.368	6.394	29.08	.0489
.421	7.869	41.00	.0427
.474	9.344	54.46	.0381
.526	10.821	69.37	.0347
.579	12.298	85.66	.0319
.632	13.776	103.24	.0297

```
                                .684      15.261      119.89       .0283
                                .737      16.869      132.52       .0283
                                .790      18.644      147.34       .0281
                                .842      20.586      164.39       .0278
                                .895      22.695      183.72       .0275
                                .947      24.971      205.41       .0270
                               1.000      27.414      229.56       .0265
ROUTE                ID=14 HYD NO=200.1 INFLOW ID=13 DT=0.0
PRINT HYD            ID=14 CODE=1

                                  PARTIAL HYDROGRAPH   200.10


    RUNOFF VOLUME =     1.00753 INCHES      =       2.8479 ACRE-FEET
    PEAK DISCHARGE RATE =      86.94 CFS  AT   1.533 HOURS   BASIN AREA =   .0530 SQ. MI.


COMPUTE NM HYD       ID=15 HYD NO=201.00 AREA=0.026 SQ MI
                     PER A=33 PER B=19 PER C=19 PER D=29
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   29.768    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.8700
    AREA =      .007540 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .139463HR    TP =   .133300HR    K/TP RATIO =  1.046235     SHAPE CONSTANT, N =  3.374403
    UNIT PEAK =   43.075    CFS   UNIT VOLUME =    .9997       B =   311.05      P60 = 1.8700
    AREA =      .018460 SQ MI    IA =    .52958 INCHES    INF =   1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=15  CODE=1

                                  PARTIAL HYDROGRAPH   201.00


    RUNOFF VOLUME =     1.00753 INCHES      =       1.3971 ACRE-FEET
    PEAK DISCHARGE RATE =      42.80 CFS  AT   1.500 HOURS   BASIN AREA =   .0260 SQ. MI.


ADD HYD              ID=16 HYD NO=201.1 ID=15 ID=14
PRINT HYD            ID=16 CODE=1

                                  PARTIAL HYDROGRAPH   201.10


    RUNOFF VOLUME =     1.00752 INCHES      =       4.2450 ACRE-FEET
    PEAK DISCHARGE RATE =     128.91 CFS  AT   1.533 HOURS   BASIN AREA =   .0790 SQ. MI.


*S **BASIN 202 IS AN ELEMENTARY SCHOOL (ONSITE DETENTION TO REDUCE RUNOFF)
COMPUTE NM HYD       ID=17 HYD NO=202.00 AREA=0.009253 SQ MI
                     PER A=100 PER B=0 PER C=0 PER D=0
                     TP=-0.1333 HR   MASS RAIN=-1
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    K =   .163684HR    TP =   .133300HR    K/TP RATIO =  1.227936     SHAPE CONSTANT, N =  2.899764
    UNIT PEAK =   18.988    CFS   UNIT VOLUME =    .9989       B =   273.54      P60 = 1.8700
    AREA =      .009253 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=17   CODE=1

                                  PARTIAL HYDROGRAPH   202.00


    RUNOFF VOLUME =      .43925 INCHES     =        .2168 ACRE-FEET
    PEAK DISCHARGE RATE =       7.69 CFS  AT   1.533 HOURS   BASIN AREA =   .0093 SQ. MI.


*S **BASIN 202.05 IS THE ELEMENTARY SCHOOL PARKING LOT THAT WILL DRAIN TO KIMELA
COMPUTE NM HYD      ID=18  HYD NO=202.05 AREA=0.003747 SQ MI
                    PER A=0  PER B=0  PER C=0  PER D=100
                    TP=-0.1333 HR  MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   14.793    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.8700
    AREA =      .003747 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=18  CODE=1

                                  PARTIAL HYDROGRAPH   202.05


    RUNOFF VOLUME =     1.96548 INCHES     =        .3928 ACRE-FEET
    PEAK DISCHARGE RATE =      10.49 CFS  AT   1.500 HOURS   BASIN AREA =   .0037 SQ. MI.


*S **ADD THE BASINS OF THE ELEMENTARY SCHOOL AND PARKING LOT
ADD HYD             ID=19  HYD NO=202.06 ID I=17  ID II=18
PRINT HYD           ID=19  CODE=1

                                  PARTIAL HYDROGRAPH   202.06


    RUNOFF VOLUME =      .87913 INCHES     =        .6095 ACRE-FEET
    PEAK DISCHARGE RATE =      18.01 CFS  AT   1.500 HOURS   BASIN AREA =   .0130 SQ. MI.


*S **ADD THE BASINS TOGETHER TO GET THE FLOW IN KIMELA DR @ ANALYSIS PT C
ADD HYD             ID=20 HYD NO=202.1 ID=16 ID=19
PRINT HYD           ID=20 CODE=1

                                  PARTIAL HYDROGRAPH   202.10


    RUNOFF VOLUME =      .98938 INCHES     =       4.8545 ACRE-FEET
    PEAK DISCHARGE RATE =     146.56 CFS  AT   1.533 HOURS   BASIN AREA =   .0920 SQ. MI.
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*S*************************************************************************
*S*************************************************************************
*S **BASINS 402 THRU 404 ARE CURRENTLY UNDEVELOPED, FOR PURPOSES
*S OF THIS REPORT, ASSUME ALL BASINS WILL BE BUILT OUT @ THEIR CURRENT
*S ZONING
*S **BASIN 402 IS UNIT 2 OF SUNRISE ESTATES
COMPUTE NM HYD       ID=6 HYD NO=402.00 AREA=0.052 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR    MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    86.225     CFS    UNIT VOLUME =     .9992        B =    526.28       P60 = 1.8700
    AREA =       .021840 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    80.246     CFS    UNIT VOLUME =     1.000        B =    354.67       P60 = 1.8700
    AREA =       .030160 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=6    CODE=1

                                        HYDROGRAPH FROM AREA    402.00


    RUNOFF VOLUME =      1.29860 INCHES      =        3.6014 ACRE-FEET
    PEAK DISCHARGE RATE =      108.14 CFS  AT    1.500 HOURS    BASIN AREA =    .0520 SQ. MI.


*S **ADD BASIN 402 TO THE TOTAL FLOW @ THE END OF EXTENDED KIMELA
ADD HYD              ID=7 HYD NO=402.1 ID=20 ID=6
PRINT HYD            ID=7 CODE=1

                                        HYDROGRAPH FROM AREA    402.10


    RUNOFF VOLUME =      1.10104 INCHES      =        8.4559 ACRE-FEET
    PEAK DISCHARGE RATE =      251.21 CFS  AT    1.533 HOURS    BASIN AREA =    .1440 SQ. MI.


*S **COMPUTE HYDROGRAPH FOR BASIN 404
COMPUTE NM HYD       ID=8 HYD NO=404.00 AREA=0.0108 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR    MASS RAIN=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    17.908     CFS    UNIT VOLUME =     .9988        B =    526.28       P60 = 1.8700
    AREA =       .004536 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR     TP =    .133300HR     K/TP RATIO =    .888442      SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    16.666     CFS    UNIT VOLUME =     .9997        B =    354.67       P60 = 1.8700
    AREA =       .006264 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330
```

```
PRINT HYD           ID=8   CODE=1

                                        HYDROGRAPH FROM AREA   404.00


    RUNOFF VOLUME =     1.29860 INCHES     =       .7480 ACRE-FEET
    PEAK DISCHARGE RATE =      22.47 CFS  AT   1.500 HOURS   BASIN AREA =   .0108 SQ. MI.


*S **ADD FLOW TO THAT IN KIMELA DR
ADD HYD             ID=9 HYD NO=404.1 ID=7 ID=8
PRINT HYD           ID=9 CODE=1

                                        HYDROGRAPH FROM AREA   404.10


    RUNOFF VOLUME =     1.11482 INCHES     =       9.2039 ACRE-FEET
    PEAK DISCHARGE RATE =     272.95 CFS  AT   1.533 HOURS   BASIN AREA =   .1548 SQ. MI.


*S **COMPUTE HYDROGRAPH FOR BASIN 408A
COMPUTE NM HYD      ID=10 HYD NO=408A AREA=0.01175 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   19.484    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.8700
    AREA =      .004935 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   18.133    CFS   UNIT VOLUME =    .9997       B =   354.67      P60 = 1.8700
    AREA =      .006815 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=10   CODE=1

                                        HYDROGRAPH FROM AREA 408A


    RUNOFF VOLUME =     1.29860 INCHES     =       .8138 ACRE-FEET
    PEAK DISCHARGE RATE =      24.45 CFS  AT   1.500 HOURS   BASIN AREA =   .0118 SQ. MI.


*S **COMBINE FLOWS FROM HYDROGRAPH NO. 404.1 AND 408A
ADD HYD             ID=11 HYD NO=408.1 ID=9 ID=10
PRINT HYD           ID=11 CODE=1

                                        HYDROGRAPH FROM AREA   408.10


    RUNOFF VOLUME =     1.12778 INCHES     =      10.0177 ACRE-FEET
    PEAK DISCHARGE RATE =     296.74 CFS  AT   1.500 HOURS   BASIN AREA =   .1666 SQ. MI.
```

```
*S **ADD TO FLOW IN SAPPHIRE ST @ ANALYSIS PT D
ADD HYD             ID=13 HYD NO=404.2 ID=11 ID=12
PRINT HYD           ID=13 CODE=1

                                    HYDROGRAPH FROM AREA   404.20


    RUNOFF VOLUME =     1.09293 INCHES     =      32.8291 ACRE-FEET
    PEAK DISCHARGE RATE =     903.96 CFS  AT   1.533 HOURS   BASIN AREA =    .5632 SQ. MI.


*S DESIGN A RETENTION FACILITY TO REDUCE TO FLOW TO THAT WHICH WILL
*S FIT IN A 48" RCP @ S=1.8%
ROUTE RESERVOIR     ID=14 HYD NO=405.4 INFLOW ID=13 CODE=1
                    OUTFLOW(CFS)   STORAGE(AF)   ELEV(FT)
                         0              0          0
                        46.2           0.77        0.5
                        104.75         1.91        1
                        120.95         3.93        2
                        135.23         6.06        3
                        148.14         8.30        4
                        160.00        10.66        5
                        171.05        13.14        6
                        181.43        15.74        7
                        191.24        18.47        8
                        200.58        21.33        9
                        209.50        24.32        10
                        218.05        27.44        11

* * * * * * * * * * * * * * * * * *

  TIME        INFLOW      ELEV       VOLUME     OUTFLOW
  (HRS)       (CFS)       (FEET)     (AC-FT)    (CFS)

   .00          .00         .00         .000        .00
   .03          .00         .00         .000        .00
   .07          .00         .00         .000        .00
   .10          .00         .00         .000        .00
   .13          .00         .00         .000        .00
   .17          .00         .00         .000        .00
   .20          .00         .00         .000        .00
   .23          .00         .00         .000        .00
   .27          .00         .00         .000        .00
   .30          .00         .00         .000        .00
   .33          .00         .00         .000        .00
   .37          .00         .00         .000        .00
   .40          .00         .00         .000        .00
   .43          .00         .00         .000        .00
   .47          .00         .00         .000        .00
   .50          .00         .00         .000        .00
   .53          .00         .00         .000        .00
   .57          .00         .00         .000        .00
   .60          .00         .00         .000        .00
   .63          .00         .00         .000        .00
   .67          .00         .00         .000        .00
   .70          .00         .00         .000        .00
   .73          .00         .00         .000        .00
   .77          .00         .00         .000        .00
```

.80	.00	.00	.000	.00
.83	.00	.00	.000	.00
.87	.00	.00	.000	.00
.90	.00	.00	.000	.00
.93	.00	.00	.000	.00
.97	.00	.00	.000	.00
1.00	.00	.00	.000	.00
1.03	.00	.00	.000	.00
1.07	.00	.00	.000	.00
1.10	.00	.00	.000	.00
1.13	-.04	.00	.000	.00
1.17	.77	.00	.001	.06
1.20	5.15	.01	.008	.51
1.23	16.56	.02	.035	2.09
1.27	36.33	.06	.097	5.81
1.30	66.30	.14	.213	12.75
1.33	114.81	.27	.411	24.63
1.37	201.14	.49	.750	44.99
1.40	342.69	.75	1.333	75.13
1.43	535.28	1.19	2.291	107.80
1.47	720.78	1.89	3.708	119.17
1.50	856.38	2.75	5.535	131.71
1.53	903.96	3.68	7.579	143.99
1.57	873.35	4.56	9.616	154.75
1.60	798.66	5.33	11.480	163.65
1.63	711.18	5.98	13.099	170.87
1.67	623.41	6.51	14.459	176.31
1.70	552.69	6.94	15.587	180.82
1.73	471.38	7.28	16.494	184.14
1.77	404.17	7.53	17.190	186.64
1.80	351.19	7.72	17.713	188.52
1.83	308.64	7.86	18.101	189.91

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
1.87	273.30	7.97	18.378	190.91
1.90	243.58	8.03	18.563	191.54
1.93	219.44	8.07	18.673	191.90
1.97	200.05	8.09	18.721	192.06
2.00	184.17	8.09	18.722	192.06
2.03	170.67	8.07	18.681	191.93
2.07	156.33	8.05	18.604	191.68
2.10	138.59	8.00	18.482	191.28
2.13	119.00	7.94	18.311	190.67
2.17	100.73	7.86	18.089	189.87
2.20	85.81	7.76	17.825	188.92
2.23	74.12	7.65	17.526	187.85
2.27	64.97	7.54	17.202	186.68
2.30	57.75	7.41	16.858	185.45
2.33	51.96	7.28	16.500	184.16
2.37	47.13	7.14	16.131	182.84
2.40	42.97	7.01	15.754	181.48
2.43	39.31	6.86	15.369	179.95
2.47	36.02	6.71	14.979	178.39
2.50	33.05	6.56	14.585	176.82
2.53	30.43	6.40	14.188	175.23
2.57	28.11	6.25	13.788	173.64
2.60	26.01	6.09	13.386	172.03

2.63	24.09	5.94	12.984	170.35
2.67	22.35	5.77	12.581	168.56
2.70	20.77	5.61	12.179	166.77
2.73	19.31	5.45	11.777	164.98
2.77	17.97	5.29	11.376	163.19
2.80	16.75	5.13	10.977	161.41
2.83	15.63	4.97	10.580	159.60
2.87	14.60	4.80	10.184	157.61
2.90	13.63	4.63	9.792	155.64
2.93	12.74	4.47	9.402	153.68
2.97	11.93	4.30	9.015	151.74
3.00	11.18	4.14	8.632	149.81
3.03	10.49	3.98	8.252	147.86
3.07	9.89	3.81	7.876	145.69
3.10	9.32	3.64	7.504	143.55
3.13	8.78	3.48	7.136	141.43
3.17	8.30	3.32	6.773	139.34
3.20	7.87	3.16	6.414	137.27
3.23	7.47	3.00	6.060	135.23
3.27	7.12	2.84	5.711	132.89
3.30	6.79	2.67	5.367	130.58
3.33	6.47	2.52	5.029	128.32
3.37	6.19	2.36	4.696	126.08
3.40	5.93	2.21	4.368	123.89
3.43	5.69	2.05	4.046	121.73
3.47	5.47	1.90	3.729	119.34
3.50	5.26	1.75	3.419	116.85
3.53	5.07	1.60	3.115	114.41
3.57	4.89	1.45	2.816	112.02
3.60	4.73	1.30	2.524	109.68
3.63	4.59	1.16	2.238	107.38
3.67	4.47	1.02	1.958	105.14
3.70	4.34	.91	1.696	93.77

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
3.73	4.21	.81	1.466	81.94
3.77	4.09	.72	1.266	71.67
3.80	3.99	.64	1.092	62.73
3.83	3.90	.57	.941	54.96
3.87	3.82	.52	.809	48.21
3.90	3.75	.45	.696	41.74
3.93	3.67	.39	.599	35.94
3.97	3.60	.34	.517	31.01
4.00	3.54	.29	.447	26.82
4.03	3.49	.25	.388	23.26
4.07	3.43	.22	.337	20.24
4.10	3.39	.19	.294	17.67
4.13	3.36	.17	.258	15.49
4.17	3.32	.15	.227	13.63
4.20	3.28	.13	.201	12.05
4.23	3.23	.12	.179	10.71
4.27	3.18	.10	.159	9.56
4.30	3.16	.09	.143	8.59
4.33	3.14	.08	.129	7.76
4.37	3.12	.08	.118	7.05
4.40	3.09	.07	.107	6.45
4.43	3.08	.06	.099	5.94

4.47	3.05	.06	.092	5.50
4.50	3.03	.06	.085	5.12
4.53	3.02	.05	.080	4.80
4.57	3.01	.05	.075	4.53
4.60	3.00	.05	.072	4.30
4.63	2.99	.04	.068	4.10
4.67	2.98	.04	.065	3.93
4.70	2.98	.04	.063	3.78
4.73	2.99	.04	.061	3.66
4.77	3.00	.04	.059	3.56
4.80	3.00	.04	.058	3.47
4.83	3.00	.04	.057	3.40
4.87	2.99	.04	.056	3.34
4.90	2.99	.04	.055	3.29
4.93	2.99	.04	.054	3.24
4.97	2.99	.03	.053	3.20
5.00	3.01	.03	.053	3.17
5.03	3.02	.03	.052	3.15
5.07	3.04	.03	.052	3.13
5.10	3.06	.03	.052	3.12
5.13	3.09	.03	.052	3.11
5.17	3.09	.03	.052	3.11
5.20	3.09	.03	.052	3.11
5.23	3.10	.03	.052	3.10
5.27	3.13	.03	.052	3.11
5.30	3.16	.03	.052	3.11
5.33	3.18	.03	.052	3.12
5.37	3.20	.03	.052	3.13
5.40	3.21	.03	.052	3.14
5.43	3.22	.03	.053	3.15
5.47	3.23	.03	.053	3.16
5.50	3.25	.03	.053	3.17
5.53	3.30	.03	.053	3.19
5.57	3.32	.03	.053	3.21

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
5.60	3.33	.03	.054	3.23
5.63	3.34	.04	.054	3.24
5.67	3.37	.04	.054	3.26
5.70	3.40	.04	.055	3.28
5.73	3.42	.04	.055	3.30
5.77	3.44	.04	.055	3.32
5.80	3.47	.04	.056	3.34
5.83	3.50	.04	.056	3.36
5.87	3.52	.04	.056	3.39
5.90	3.55	.04	.057	3.41
5.93	3.58	.04	.057	3.43
5.97	3.62	.04	.058	3.46
6.00	3.64	.04	.058	3.48
6.03	3.66	.04	.058	3.51
6.07	3.54	.04	.059	3.52
6.10	3.20	.04	.058	3.50
6.13	2.72	.04	.057	3.42
6.17	2.26	.04	.055	3.27
6.20	1.88	.03	.052	3.09
6.23	1.59	.03	.048	2.88
6.27	1.37	.03	.044	2.67

6.30	1.20	.03	.041	2.46
6.33	1.07	.02	.038	2.26
6.37	.96	.02	.034	2.07
6.40	.87	.02	.032	1.89
6.43	.79	.02	.029	1.73
6.47	.71	.02	.026	1.58
6.50	.65	.02	.024	1.44
6.53	.59	.01	.022	1.32
6.57	.53	.01	.020	1.20
6.60	.49	.01	.018	1.10
6.63	.44	.01	.017	1.00
6.67	.40	.01	.015	.91
6.70	.37	.01	.014	.83
6.73	.34	.01	.013	.76
6.77	.31	.01	.012	.69
6.80	.28	.01	.011	.63
6.83	.26	.01	.010	.58
6.87	.23	.01	.009	.53
6.90	.21	.01	.008	.48
6.93	.19	.00	.007	.44
6.97	.17	.00	.007	.40
7.00	.16	.00	.006	.36
7.03	.15	.00	.006	.33
7.07	.13	.00	.005	.30
7.10	.12	.00	.005	.27
7.13	.11	.00	.004	.25
7.17	.10	.00	.004	.23
7.20	.09	.00	.003	.21
7.23	.08	.00	.003	.19
7.27	.08	.00	.003	.17
7.30	.07	.00	.003	.16
7.33	.06	.00	.002	.14
7.37	.06	.00	.002	.13
7.40	.05	.00	.002	.12
7.43	.05	.00	.002	.11

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
7.47	.04	.00	.002	.10
7.50	.04	.00	.002	.09
7.53	.04	.00	.001	.08
7.57	.03	.00	.001	.08
7.60	.03	.00	.001	.07
7.63	.03	.00	.001	.06
7.67	.02	.00	.001	.06
7.70	.02	.00	.001	.05
7.73	.02	.00	.001	.05
7.77	.02	.00	.001	.04
7.80	.02	.00	.001	.04
7.83	.01	.00	.001	.04
7.87	.01	.00	.001	.03
7.90	.01	.00	.000	.03
7.93	.01	.00	.000	.03
7.97	.01	.00	.000	.02
8.00	.01	.00	.000	.02
8.03	.01	.00	.000	.02
8.07	.01	.00	.000	.02
8.10	.01	.00	.000	.02

8.13	.01	.00	.000	.01
8.17	.01	.00	.000	.01
8.20	.00	.00	.000	.01
8.23	.00	.00	.000	.01
8.27	.00	.00	.000	.01
8.30	.00	.00	.000	.01
8.33	.00	.00	.000	.01
8.37	.00	.00	.000	.01
8.40	.00	.00	.000	.01
8.43	.00	.00	.000	.01
8.47	.00	.00	.000	.01
8.50	.00	.00	.000	.01
8.53	.00	.00	.000	.00

PEAK DISCHARGE = 192.062 CFS - PEAK OCCURS AT HOUR 2.00
MAXIMUM WATER SURFACE ELEVATION = 8.088
MAXIMUM STORAGE = 18.7216 AC-FT INCREMENTAL TIME= .033330HRS

*S ROUTE FLOW FROM THE DETENTION POND TO THE AMOLE DEL NORTE CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLOPE=0.0180
DIA=4.0 FT N=0.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	1.01	1.78
.42	.69	4.39	2.44
.63	1.25	10.20	2.91
.83	1.90	18.35	3.25
1.04	2.60	28.65	3.51
1.25	3.36	40.88	3.71
1.46	4.15	54.76	3.85
1.67	4.96	70.02	3.94
1.88	5.79	86.31	3.99
2.08	6.62	103.30	4.00
2.29	7.45	120.60	4.00
2.50	8.27	137.80	4.00
2.71	9.06	154.44	4.00
2.92	9.82	170.03	4.00
3.13	10.54	183.98	4.00
3.34	11.20	195.59	4.00
3.54	11.77	203.89	4.00
3.75	12.24	207.31	4.00
4.00	12.57	207.31	4.00

COMPUTE TRAVEL TIME ID=15 REACH NO=1 NO VS=1 L=1150 FT SLP=0.018

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	1.01	.0789
.417	.695	4.39	.0506
.625	1.255	10.20	.0393
.834	1.898	18.35	.0330
1.042	2.604	28.65	.0290
1.251	3.358	40.88	.0262

```
                                1.459       4.146       54.76       .0242
                                1.668       4.960       70.02       .0226
                                1.876       5.788       86.31       .0214
                                2.084       6.621      103.30       .0205
                                2.293       7.451      120.60       .0197
                                2.501       8.267      137.80       .0192
                                2.710       9.062      154.44       .0187
                                2.918       9.823      170.03       .0185
                                3.127      10.539      183.98       .0183
                                3.335      11.195      195.59       .0183
                                3.544      11.773      203.89       .0184
                                3.752      12.243      207.31       .0189
                                4.000      12.566      207.31       .0194
ROUTE                ID=15 HYD NO=405.3 INFLOW ID=14 DT=0.0
PRINT HYD            ID=15 CODE=1

                                        HYDROGRAPH FROM AREA   405.30

    RUNOFF VOLUME =     1.09293 INCHES     =      32.8291 ACRE-FEET
    PEAK DISCHARGE RATE =     192.05 CFS  AT   2.000 HOURS   BASIN AREA =    .5632 SQ. MI.


*S*************************************************************************
*S*************************************************************************
*S **CALC BASIN 406
COMPUTE NM HYD       ID=16 HYD NO=406.00 AREA=0.057434 SQ MI
                     PER A=4 PER B=27 PER C=27 PER D=42
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   95.236    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8700
    AREA =      .024122 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .121550HR    TP =   .133300HR    K/TP RATIO =   .911856     SHAPE CONSTANT, N =  3.883611
    UNIT PEAK =   86.799    CFS   UNIT VOLUME =    1.000       B =   347.33      P60 = 1.8700
    AREA =      .033312 SQ MI    IA =    .44052 INCHES    INF =   1.08345 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=16   CODE=1

                                        HYDROGRAPH FROM AREA   406.00

    RUNOFF VOLUME =     1.27968 INCHES     =       3.9198 ACRE-FEET
    PEAK DISCHARGE RATE =     117.49 CFS  AT   1.500 HOURS   BASIN AREA =    .0574 SQ. MI.


*S **CALC BASIN 407
COMPUTE NM HYD       ID=17 HYD NO=407.00 AREA=0.0504 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   83.572    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
```

```
    AREA =       .021168 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    77.777    CFS   UNIT VOLUME =     1.000       B =   354.67      P60 = 1.8700
    AREA =       .029232 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD          ID=17   CODE=1

                                        HYDROGRAPH FROM AREA   407.00


    RUNOFF VOLUME =     1.29860 INCHES     =       3.4906 ACRE-FEET
    PEAK DISCHARGE RATE =     104.81 CFS  AT   1.500 HOURS   BASIN AREA =    .0504 SQ. MI.


*S **CALC BASIN 408B
COMPUTE NM HYD      ID=18  HYD NO=408B  AREA=0.09501 SQ MI
                    PER A=0  PER B=29  PER C=29  PER D=42
                    TP=-0.1333 HR  MASS RAIN=-1

    K =    .073200HR    TP =    .133300HR    K/TP RATIO =    .549137     SHAPE CONSTANT, N =  7.037955
    UNIT PEAK =    156.58    CFS   UNIT VOLUME =     .9993       B =   523.05      P60 = 1.8700
    AREA =       .039904 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .117566HR    TP =    .133300HR    K/TP RATIO =    .881962     SHAPE CONSTANT, N =  4.023900
    UNIT PEAK =    147.48    CFS   UNIT VOLUME =     1.000       B =   356.76      P60 = 1.8700
    AREA =       .055106 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD          ID=18  CODE=1

                                        HYDROGRAPH FROM AREA 408B


    RUNOFF VOLUME =     1.29860 INCHES     =       6.5802 ACRE-FEET
    PEAK DISCHARGE RATE =     197.65 CFS  AT   1.500 HOURS   BASIN AREA =    .0950 SQ. MI.


*S **CALC BASIN 408C
COMPUTE NM HYD      ID=19  HYD NO=408C  AREA=0.0506 SQ MI
                    PER A=0  PER B=29  PER C=29  PER D=42
                    TP=-0.1333 HR  MASS RAIN=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    83.904    CFS   UNIT VOLUME =     .9992       B =   526.28      P60 = 1.8700
    AREA =       .021252 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .118429HR    TP =    .133300HR    K/TP RATIO =    .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =    78.086    CFS   UNIT VOLUME =     1.000       B =   354.67      P60 = 1.8700
    AREA =       .029348 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
```

```
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330
PRINT HYD           ID=19  CODE=1

                                        HYDROGRAPH FROM AREA 408C

    RUNOFF VOLUME =     1.29860 INCHES      =       3.5045 ACRE-FEET
    PEAK DISCHARGE RATE =     105.23 CFS  AT    1.500 HOURS    BASIN AREA =    .0506 SQ. MI.


*S **COMBINE FLOWS FROM BASIN 408B AND 408C
ADD HYD             ID=20 HYD NO=408.2 ID=18 ID=19
PRINT HYD           ID=20 CODE=1

                                        HYDROGRAPH FROM AREA   408.20

    RUNOFF VOLUME =     1.29859 INCHES      =      10.0846 ACRE-FEET
    PEAK DISCHARGE RATE =     302.87 CFS  AT    1.500 HOURS    BASIN AREA =    .1456 SQ. MI.


*S*************************************************************************
*S*************************************************************************
*S **BASIN 500 IS UNIT ONE OF THE PROPOSED LONGFORD SD
COMPUTE NM HYD      ID=1 HYD NO=500.00 AREA=0.024905 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR   MASS RAIN=-1

    K =  .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   41.297    CFS   UNIT VOLUME =    .9991       B =   526.28      P60 = 1.8700
    AREA =      .010460 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   38.433    CFS   UNIT VOLUME =    1.000       B =   354.67      P60 = 1.8700
    AREA =      .014445 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD           ID=1   CODE=1

                                    OUTFLOW HYDROGRAPH RESERVOIR   500.00


    RUNOFF VOLUME =     1.29860 INCHES      =       1.7249 ACRE-FEET
    PEAK DISCHARGE RATE =      51.80 CFS  AT    1.500 HOURS    BASIN AREA =    .0249 SQ. MI.


*S **BASIN 501 IS THE AREA PROPOSED AS FUTURE LONGFORD SD DRAINING
*S **DIRECTLY TO THE AMOLE CHANNEL
COMPUTE NM HYD      ID=2 HYD NO=501.00 AREA=0.03663 SQ MI
                    PER A=0 PER B=29 PER C=29 PER D=42
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
```

```
    UNIT PEAK =   60.739    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
    AREA =       .015385 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   56.527    CFS   UNIT VOLUME =    1.000       B =   354.67      P60 = 1.8700
    AREA =       .021245 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2   CODE=1

                                OUTFLOW HYDROGRAPH RESERVOIR   501.00


    RUNOFF VOLUME =     1.29860 INCHES      =       2.5369 ACRE-FEET
    PEAK DISCHARGE RATE =      76.18 CFS  AT   1.500 HOURS   BASIN AREA =   .0366 SQ. MI.


*S **COMBINE BASINS 500 AND 501 TOGETHER TO REPRESENT THE NORTHERN PART OF THE
*S **LONGFORD SD
ADD HYD             ID=3  HYD NO=501.1  ID I=1  ID II=2
PRINT HYD           ID=3  CODE=1

                                OUTFLOW HYDROGRAPH RESERVOIR   501.10


    RUNOFF VOLUME =     1.29859 INCHES      =       4.2618 ACRE-FEET
    PEAK DISCHARGE RATE =     127.98 CFS  AT   1.500 HOURS   BASIN AREA =   .0615 SQ. MI.


*S **BASIN 502 IS THE SOUTHERN PART OF THE LONGFORD SD
COMPUTE NM HYD      ID=4 HYD NO=502.00 AREA=0.05788 SQ MI
                    PER A=0 PER B=28 PER C=28 PER D=44
                    TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   100.55    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8700
    AREA =       .025467 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   86.240    CFS   UNIT VOLUME =    1.000       B =   354.67      P60 = 1.8700
    AREA =       .032413 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=4  CODE=1

                                OUTFLOW HYDROGRAPH RESERVOIR   502.00


    RUNOFF VOLUME =     1.32159 INCHES      =       4.0796 ACRE-FEET
    PEAK DISCHARGE RATE =     121.79 CFS  AT   1.500 HOURS   BASIN AREA =   .0579 SQ. MI.
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*S **BASIN 503 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE @
*S **A DENSITY OF 4 DU/AC. THE DISCHARGE FROM THIS BASIN DRAINS TO THE AMOLE
*S DEL NORTE CHANNEL AND DOES NOT AFFECT THE ARENAL/UNSER DRAINAGE MANAGEMENT
*S SITE.
COMPUTE NM HYD       ID=5 HYD NO=503.00 AREA=0.03752 SQ MI
                     PER A=0 PER B=29 PER C=29 PER D=42
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =  62.215    CFS   UNIT VOLUME =    .9992      B =   526.28      P60 = 1.8700
    AREA =      .015758 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   57.901    CFS   UNIT VOLUME =    1.000      B =   354.67      P60 = 1.8700
    AREA =      .021762 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=5  CODE=1

                                OUTFLOW HYDROGRAPH RESERVOIR   503.00


    RUNOFF VOLUME =     1.29860 INCHES      =       2.5986 ACRE-FEET
    PEAK DISCHARGE RATE =      78.03 CFS  AT   1.500 HOURS   BASIN AREA =    .0375 SQ. MI.


*S**************************************************************************
*S **BASIN 504 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE @
*S **A DENSITY OF 4 DU/AC. THE DISCHARGE FROM THIS BASIN TRAVEL ALONG SAGE RD.
*S AND ENTERS THE AMOLE DEL NORTE CHANNEL, DOES NOT AFFECT THE ARENAL/UNSER
*S DRAINAGE MANAGEMENT SITE.
COMPUTE NM HYD       ID=6 HYD NO=504.00 AREA=0.036668 MI
                     PER A=0 PER B=28 PER C=28 PER D=44
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   63.698    CFS   UNIT VOLUME =    .9992      B =   526.28      P60 = 1.8700
    AREA =      .016134 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   54.635    CFS   UNIT VOLUME =    1.000      B =   354.67      P60 = 1.8700
    AREA =      .020534 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=6  CODE=1

                                OUTFLOW HYDROGRAPH RESERVOIR   504.00


    RUNOFF VOLUME =     1.32159 INCHES      =       2.5845 ACRE-FEET
    PEAK DISCHARGE RATE =      77.16 CFS  AT   1.500 HOURS   BASIN AREA =    .0367 SQ. MI.
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*S **BASIN 505 IS FULLY DEVELOPED AND DRAINS SOUTH TO BLAKE RD..DISCHARGE FROM
*S THIS BASIN DOES NOT AFFECT THE ARENAL/UNSER DRAINAGE MANAGEMENT SITE.
COMPUTE NM HYD       ID=7 HYD NO=505.00 AREA=0.02618 SQ MI
                     PER A=33 PER B=19 PER C=19 PER D=29
                     TP=-0.1333 HR   MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   29.974    CFS   UNIT VOLUME =    .9990     B =   526.28      P60 = 1.8700
    AREA =      .007592 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .139463HR    TP =   .133300HR    K/TP RATIO =  1.046235     SHAPE CONSTANT, N =  3.374403
    UNIT PEAK =   43.373    CFS   UNIT VOLUME =    .9997      B =   311.05      P60 = 1.8700
    AREA =      .018588 SQ MI    IA =    .52958 INCHES    INF =   1.33282 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=7   CODE=1

                                OUTFLOW HYDROGRAPH RESERVOIR   505.00


    RUNOFF VOLUME =     1.00753 INCHES      =       1.4068 ACRE-FEET
    PEAK DISCHARGE RATE =      43.10 CFS  AT   1.500 HOURS   BASIN AREA =   .0262 SQ. MI.


FINISH

NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 14:22:43
```

APPENDIX C

UNSER. BLVD. 10 YR DRY LANE STUDY

SUBJECT: **Unser Blvd. Dry Lane Analysis**

CRITERIA: 10-year Storm (AHYMO 1994)

SOLUTION: Storm drains shall be situated on the east side of Unser Blvd. for that portion of roadway from Freshwater Road to the end of Unit One Subdivision. A stub will be provided to collect storm water from Tract E, Albuquerque South Unit 1 when it is developed. Runoff onto the west and east lanes shall be based upon each lane having a contributing cross-section width of 50 feet. The 56-foot wide median shall be designed as having temporary storm water retention incorporated into the design (see attached exhibit). Storm drain inlet location shall allow for one "dry" lane in the event of the 10-year storm. The temporary median retention improvements may be abandoned when Unser Blvd. is expanded to six (6) lanes and the median is reconstructed with permanent improvements such as a paved surface and/or median landscaping. The "dry" lane is achieved on the median lane and the increase in storm water flows is carried by the original 25-foot wide driving lanes.

UNSER BLVD. DRY LANE STUDY

CRITERIA : 10 YR STORM
AHYMO (1994)

METHODOLOGY : USING CHART 3 AND 4 (ATTACHED)
"FLOW IN TRIANGULAR SECTIONS"

$Q = Q_S / (1 - E_o)$

WHERE $E_o = 0.44$ (CHART 4)

AND $Q_S = 2.6$ CFS

$\therefore Q = 2.6/(1 - 0.44) = 4.64$ cfs = CURB LANE STORM WATER CARRYING CAPACITY

DATA : AREA WITHIN BASIN 120.2
TOTAL LENGTH : 1650 FT
WIDTH (WEST R/W TO MED. CURB) = 50'

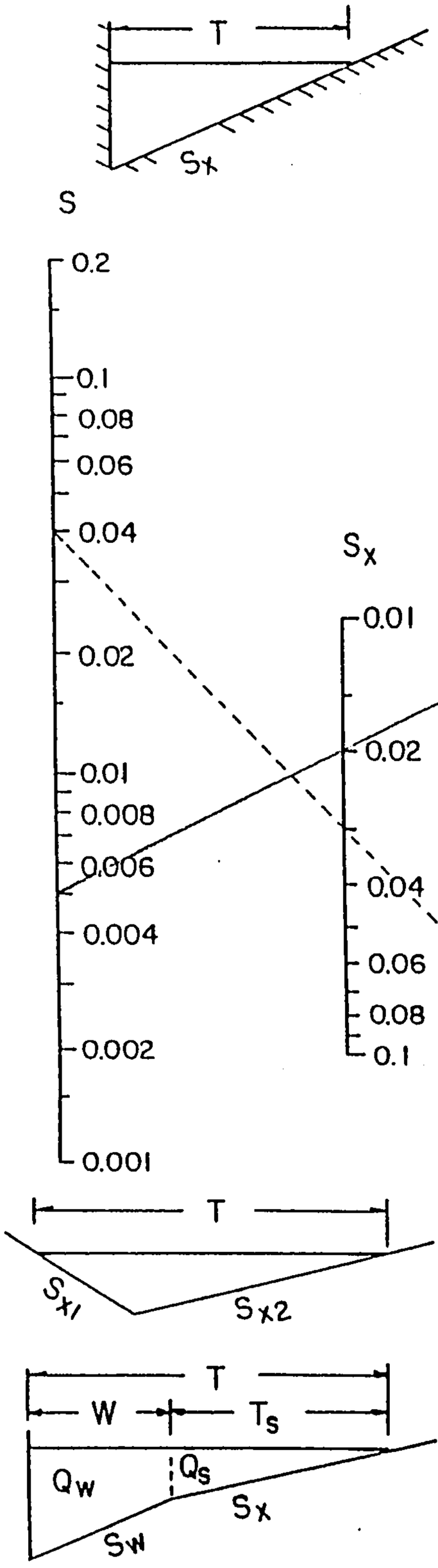
FROM AHYMO : $Q_{100} = 6.5$ cfs
$Q_{10} = 3.9$ cfs < 4.64 cfs ∴ O.K.
$d_{in} = 0.33$

Q_{10} CAPTURED FROM INLET = 1.9 cfs

Q_{10} BYPASS = 3.9 - 1.9 = 2.0 cfs

ISAACSON & ARFMAN, P.A.

SUBJECT UNSER BLVD. JOB NO.
BY DATE 6/97 SHEET NO. OF



$$Q = \frac{0.56}{n} S_x^{1.67} S^{0.5} T^{2.67}$$

EXAMPLE: GIVEN:
n=0.016; S_x=0.03
S=0.04; T = 6 FT

FIND:
Q = 2.4 FT^3/S
Qn = 0.038 FT^3/S

(for n=0.016)

1) For V-Shape, use the nomograph with $S_x = S_{x1} S_{x2} / (S_{x1} + S_{x2})$

2) To determine discharge in gutter with composite cross slopes, find Q_s using T_s and S_x. Then, use CHART 4 to find E_o. The total discharge is $Q = Q_s/(1 - E_o)$, and $Q_w = Q - Q_s$.

CHART 3. Flow in triangular gutter sections.

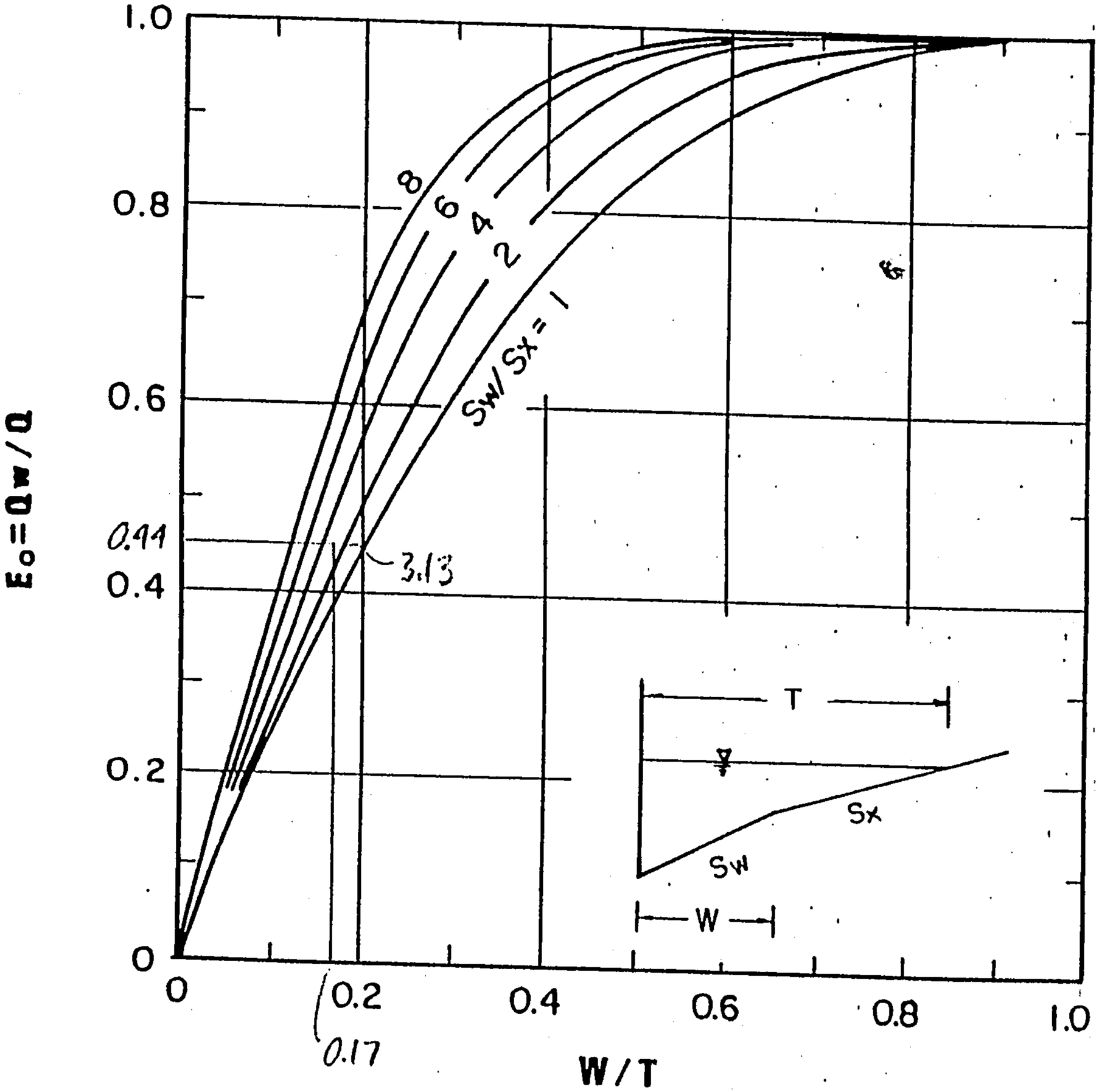
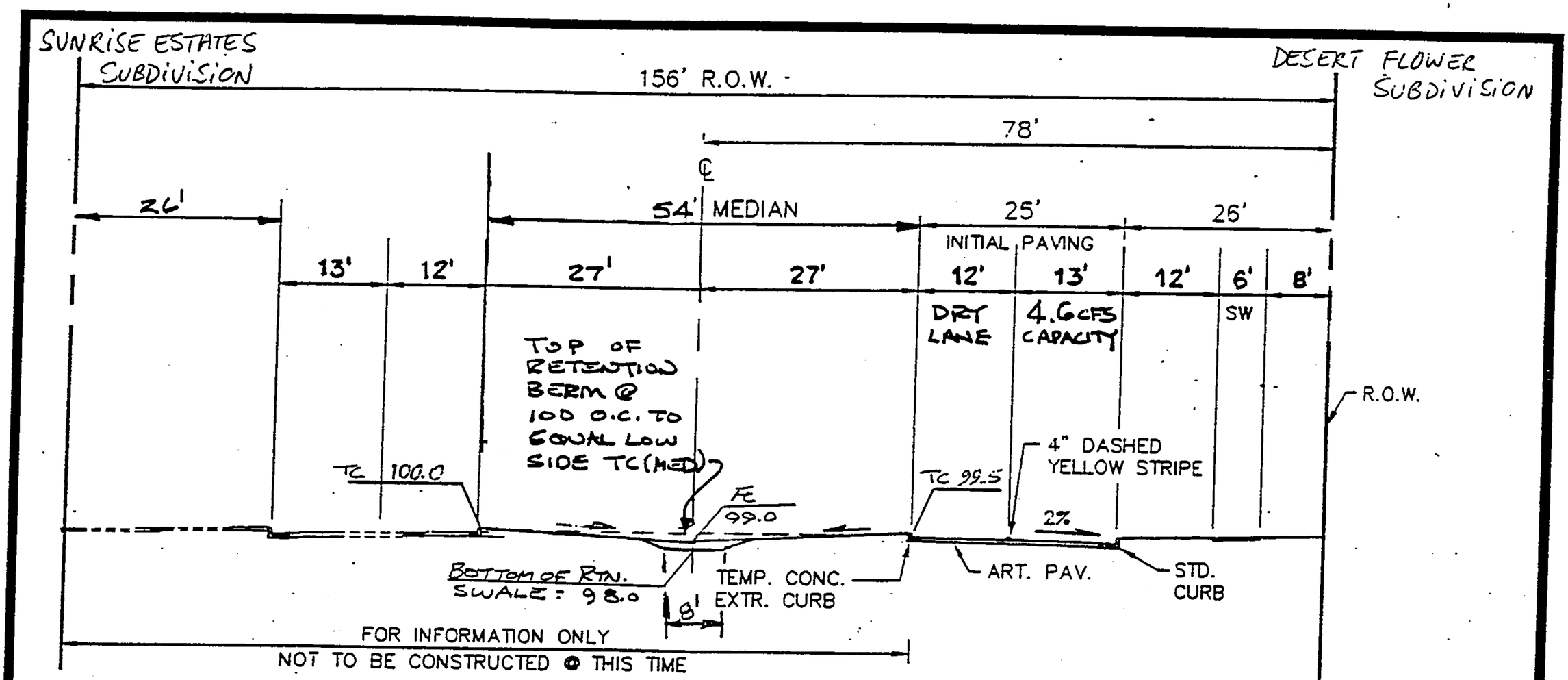


CHART 4. Ratio of frontal flow to total gutter flow.



INITIAL PAVING

SECTION

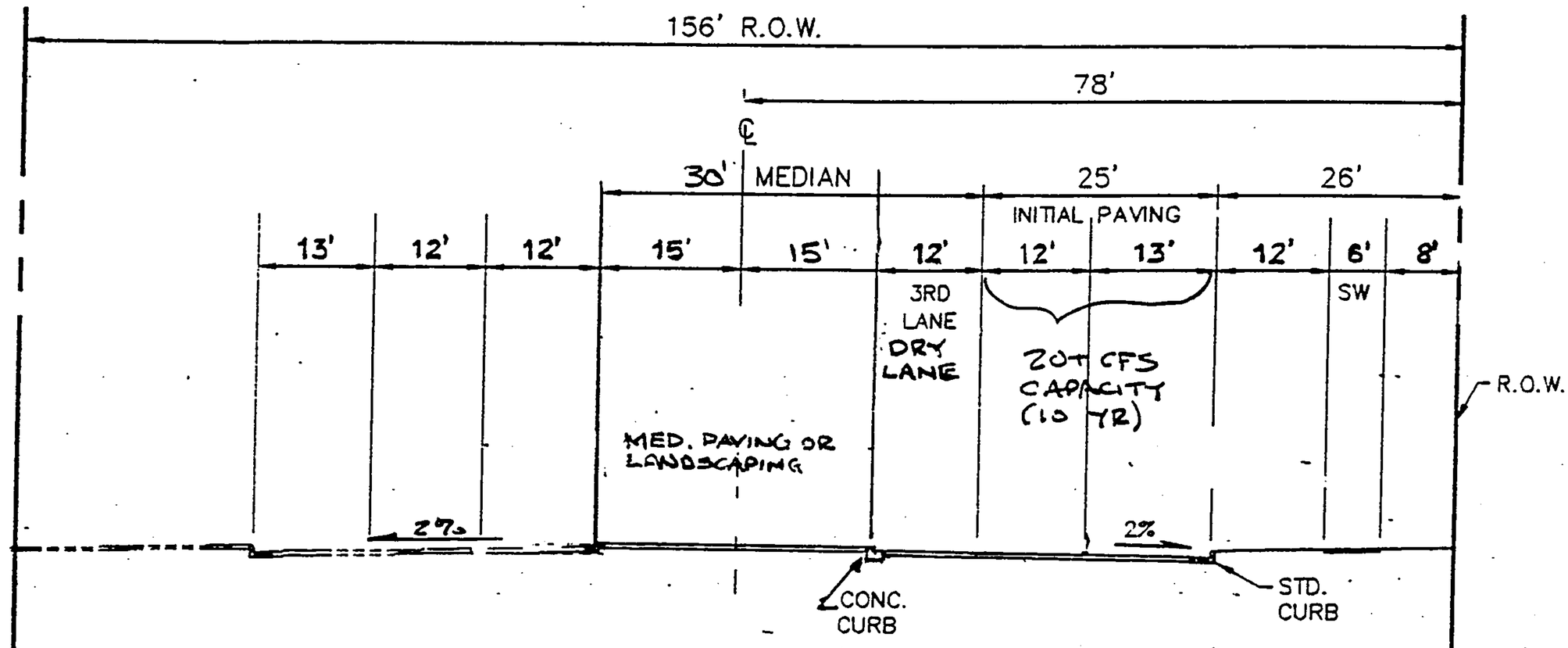
UNSER BLVD

SCALE: 1"=20'

ISAACSON & ARFMAN, P.A.

SUBJECT UNSER BLVD. JOB NO.

BY FCA DATE 6/97 SHEET NO. OF



ULTIMATE PAVING SECTION

UNSER BLVD

SCALE: 1"=20'

ISAACSON & ARFMAN, P.A.

SUBJECT_____

BY_____ DATE_____ SHEET NO.____OF____ JOB NO.____