## Rael, Rudy E.

**From:** Cherne, Curtis
**Sent:** Monday, August 25, 2014 1:41 PM
**To:** Rael, Rudy E.
**Subject:** FW: Flooding near Ospery Dr., El Moro LA, and Del Monte TRL
**Attachments:** Del Monte flooding issue.pdf

Please look at.

Curtis

---

**From:** Moretto, Paul A.
**Sent:** Tuesday, July 29, 2014 2:48 PM
**To:** Cherne, Curtis
**Subject:** Flooding near Ospery Dr., El Moro LA, and Del Monte TRL

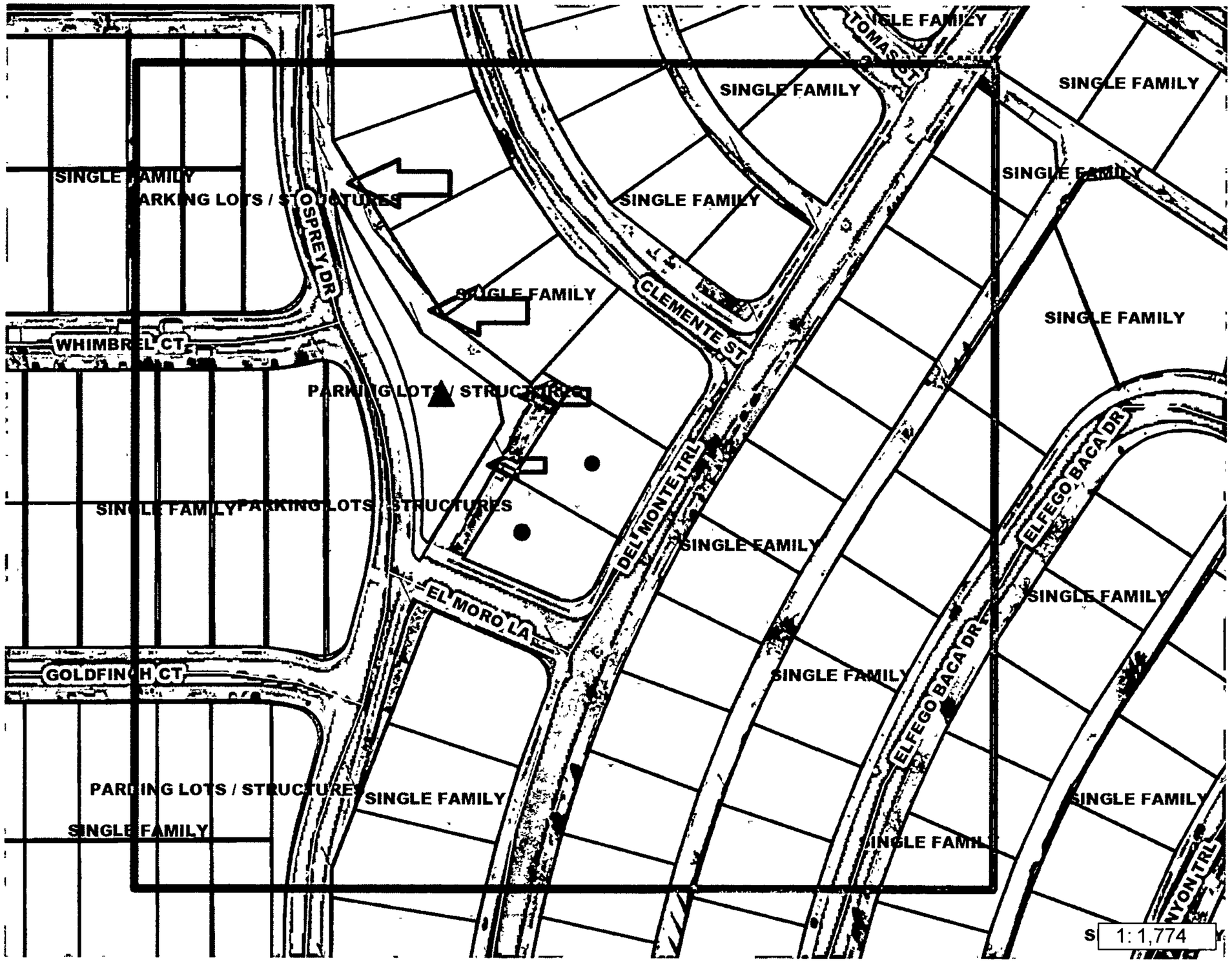
Hello,

My name is Paul from Council Services. I am working with a policy analyst Nancy Montano. A constituent contacted her about excessive flood on their property (1221, 1225 Del Monte TRL). There is a parcel of land owned by an Association that is near their property but is buffered by land that we cannot identify ownership. Attached is a map of the situation with arrows pointing to the feature in question.

We are wondering if you could identify ownership, confirm if there is a water, or water related, feature, and if there is a way mitigate flooding issues related to these properties and which party is responsible for any changes need.

Thank you for your help,

Paul Moretto
City of Albuquerque
Council Services




## Legend

- Bernalillo County Parcels
- Primary Streets
  - BN and SF Railroad
  - Freeway
  - Urban Principal Artenal
  - Urban Minor Artenal
- Other Streets
- City Parcels
- Land Use
  - SINGLE FAMILY
  - MULTI FAMILY
  - COMMERCIAL RETAIL
  - COMMERCIAL SERVICE
  - WHOLESALE / WAREHOUSING
  - INDUSTRIAL / MANUFACTURING
  - DRAINAGE / FLOOD CONTROL
  - PARKS / RECREATION
  - PUBLIC / INSTITUTIONAL
  - TRANSPORTATION / UTILITIES
  - PARKING LOTS / STRUCTURES
  - AGRICULTURE
  - VACANT / OTHER
- Drainage Features (AMAFCA)
- Parks

## Notes

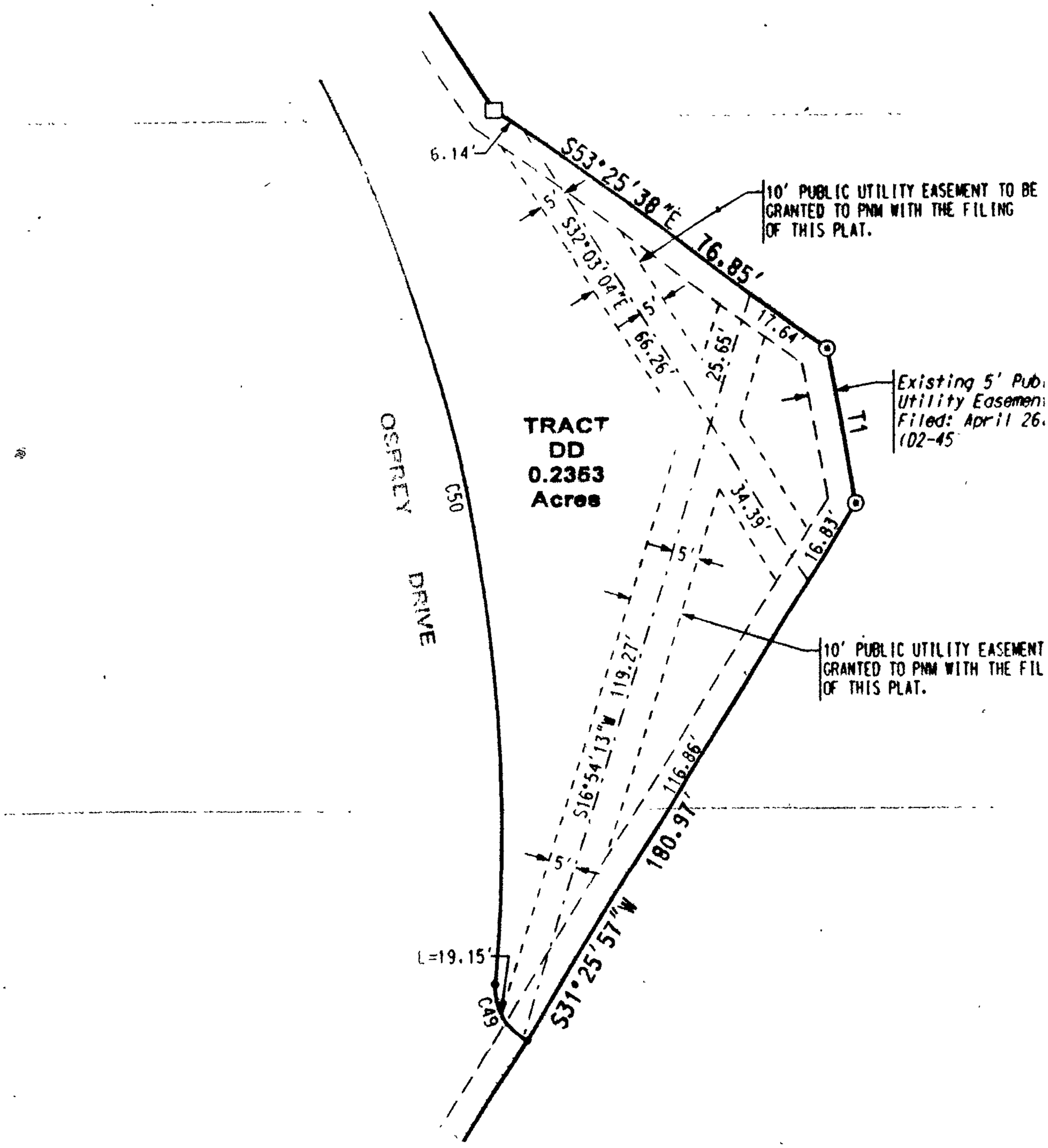
0 0 0 0.02 0.0 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
7/29/2014 © City of Albuquerque

This map is a user generated static output from www cabq gov/gis and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR LEGAL PURPOSES

SUBDIVIS
UNIT
ALBUQUERQUE, NE
APRIL, 20(

| Bearing |
|---|
| 35'06" W |
| 30'31" W |
| 36'46" E |
| 08'13" W |
| 39'48" W |
| 52'55" E |
| 55'06" E |
| 27'38" E |
| 39'37" E |
| 05'08" E |
| 05'45" W |
| 42'16" W |
| 40'05" E |
| 07'56" E |
| 13'38" E |
| 20'33" W |
| 52'17" W |
| 40'18" W |
| 15'27" W |
| 08'31" E |
| 47'13" E |
| 59'12" E |
| 26'18" W |
| 40'17" W |
| 01'28" W |
| 46'58" E |
| 01'02" E |
| 28'48" E |
| 03'47" E |
| 51'32" E |
| 00'45" W |
| 40'35" W |
| 02'11" W |
| 23'00" W |
| 25'01" W |
| 16'58" E |
| 31'03" E |
| 33'50" E |
| 07'44" W |
| 37'24" E |
| 36'42" E |
| 30'31" W |
| 44'13" E |
| 13'38" E |
| 20'33" W |




**DETAIL "A"**
SCALE: 1" = 30'

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

May 5, 2004

Mr. Rick Beltramo, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson St. NE
Albuquerque, NM 87109

**RE: TIMARRON WEST, UNIT 5 (M-08/D005B)**
**Engineers Certification for Release of Financial Guaranty**
**Engineers Stamp dated 06/27/2000**
**Engineers Certification dated 05/04/2004**

Dear Rick:

Based upon the information provided in your Engineer's Certification Submittal dated 05/04/2004, the above referenced plan is adequate to satisfy the Grading and Drainage Certification for Release of Financial Guaranty.

If you have any questions, you can contact me at 924-3982

Sincerely,

Arlene V. Portillo

Arlene V. Portillo
Plan Checker, Planning Dept.- Hydrology
Development and Building Services
BLD

C: Marilyn Maldonado, COA# 671682
file

Scan
Large document
that is bound
in this clip

**********
*** TX REPORT ***
**********

TRANSMISSION OK

| | |
|---|---|
| TX/RX NO | 1332 |
| CONNECTION TEL | 97987988 |
| SUBADDRESS | |
| CONNECTION ID | BOHANNAN HUSTON |
| ST. TIME | 05/06 10:30 |
| USAGE T | 00'33 |
| PGS. | 1 |
| RESULT | OK |

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

May 5, 2004

Mr. Rick Beltramo, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson St. NE
Albuquerque, NM 87109

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Sincerely,

Arlene V. Portillo

Arlene V. Portillo
Plan Checker, Planning Dept.- Hydrology
Development and Building Services
BLD

C: Marilyn Maldonado, COA# 671682
file

# DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/28/2003rd)

M8/D005B

PROJECT TITLE: Timarron West Unit 5 ZONE MAP/DRG. FILE # ~~L8/M8~~
DRB #: 1000475 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Tract 2-A of Timarron West Subdivision Unit 3
CITY ADDRESS: DeVargas Road

ENGINEERING FIRM: Bohannan Huston, Inc. CONTACT: Rick Beltramo
ADDRESS: 7500 Jefferson NE – Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: Centex Homes CONTACT: Norm Gregory
ADDRESS: 5120 Masthead NE PHONE: (505) 341-8505
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

ARCHITECT: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

SURVEYOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

CONTRACTOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

CHECK TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
____ ENGINEER'S CERTIFICATION (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ ENGINEERS CERTIFICATION (TCL)
____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
__X__ OTHER: *Grading and Drainage Certification*

CHECK TYPE OF APPROVAL SOUGHT:

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

WAS A PRE-DESIGN CONFERENCE ATTENDED:
____ YES
____ NO
____ COPY PROVIDED

RECEIVED
MAY 0 4 2004
HYDROLOGY SECTION

DATE SUBMITTED: May 3, 2004 BY: Rick Beltramo

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

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

**Bohannan ▲ Huston INC.**

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335
**www.bhinc.com**
**voice:** 505.823.1000
**facsimile:** 505.798.7988
**toll free:** 800.877.5332

# CLIENT/COURIER TRANSMITTAL

**To:** Brad Bingham
City of Albuquerque
Plaza Del Sol

**Requested by:** Nina Leung

**Date:** May 4, 2004

**Time Due:**
- ☐ **This A.M.**
- ☒ **This P.M.**
- ☐ **Rush** _____
- ☐ **By Tomorrow**

**Phone:**

**Job No.:**

**Job Name:** Timarron Unit 5

**DELIVERY VIA**

- ☐ Courier
- ☐ Federal Express
- ☐ Mail
- ☐ UPS
- ☐ Other

**PICK UP**

**Item:** _____

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Grading and Drainage Certification for Unit 5 |

**COMMENTS / INSTRUCTIONS**

RECEIVED
MAY 0 4 2004
HYDROLOGY SECTION

*REC'D BY:*_____ *DATE:*_____ *TIME:*_____

**ENGINEERING ▲**
**SPATIAL DATA ▲**
**ADVANCED TECHNOLOGIES ▲**

**Bohannan ▲ Huston** INC.

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

May 3, 2004

Bradley Bingham, P.E.
Hydrology Division
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Grading and Drainage Certification
Timarron West Unit 5 Subdivision, City Project No. 671682 (M8/D05B)

Dear Mr. Bingham:

Enclosed for your review is the DRB approved grading plan for Timarron West Unit 5 with as-built elevations. In addition, enclosed is an exhibit of the Timarron West Unit 4 pond with as-built elevations to be reviewed in conjunction with the Unit 5 subdivision grading and drainage certification. As you may recall, the Unit 4 pond was moved to be certified with Unit 5 to allow financial guaranty release of the Unit 4 subdivision. The Unit 4 pond has been adequately reconstructed to comply with the design as established with the approved drainage study.

The as-built survey was provided by Community Sciences Corporation. After reviewing these as-built elevations, it is my belief that the Unit 5 subdivision and the Unit 4 pond have been graded in substantial compliance with the approved grading plan. Your review and approval is requested for SIA/financial guaranty release of the Unit 5 subdivision.

I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

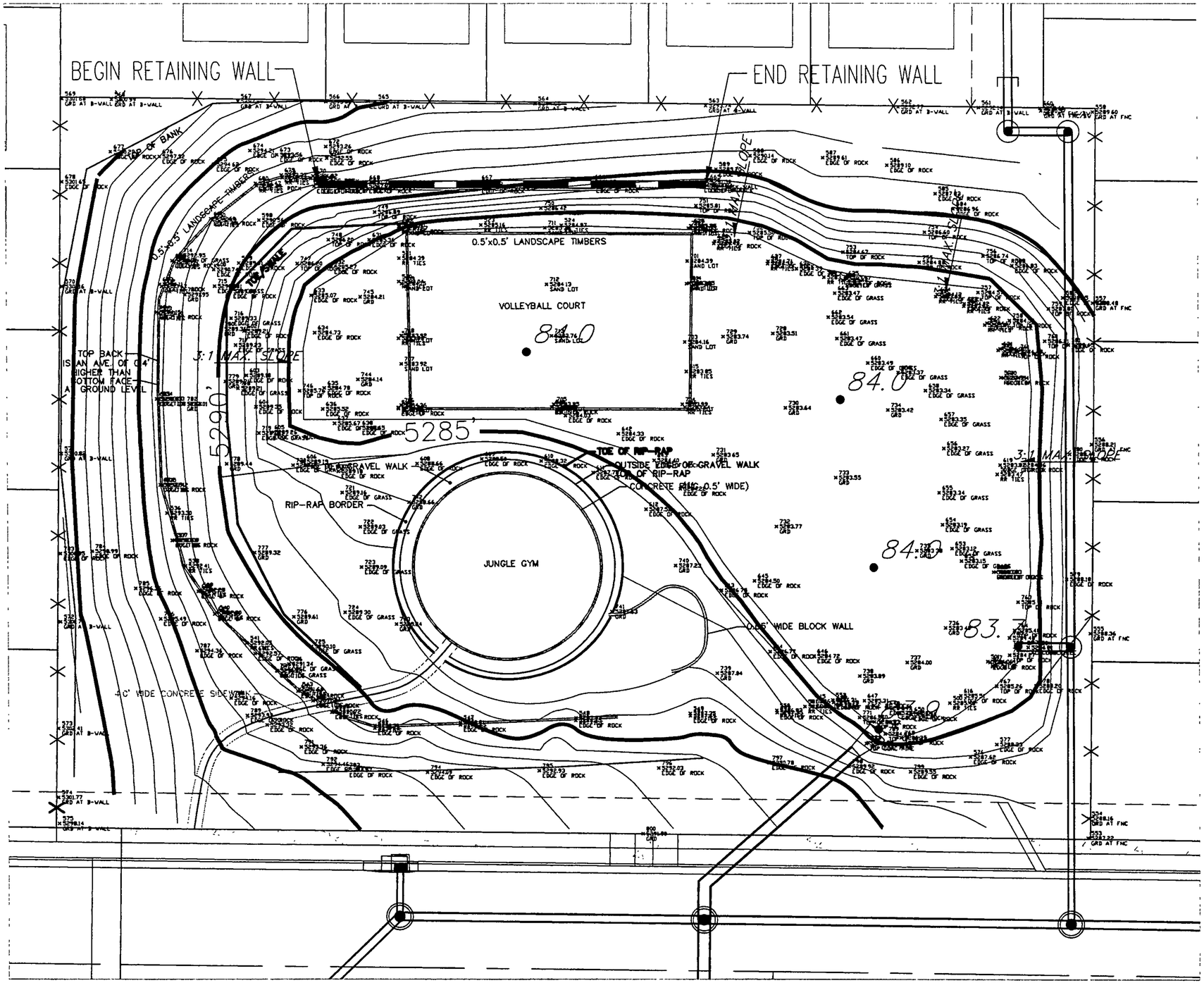
Sincerely,

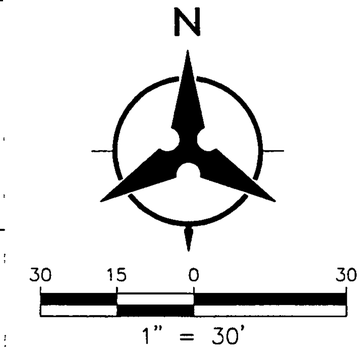
Rick Beltramo, P.E.
Vice President, Community Development
and Planning Group

Enclosure

RECEIVED
MAY 0 4 2004
HYDROLOGY SECTION

ENGINEERING ▲
SPATIAL DATA ▲
ADVANCED TECHNOLOGIES ▲




DRAINAGE CERTIFICATION

I, RICHARD LYNN BELTRAMO, NMPE #10596, OF THE FIRM BOHANNAN HUSTON INC., HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN (INCLUDING THE UNIT 4 POND) DATED 6/27/00. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY THOMAS W. PATRICK, NMPS #12651, OF THE FIRM COMMUNITY SCIENCES CORPORATION. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 03/10/04 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR SIA/FINANCIAL GUARANTY RELEASE.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

RICHARD LYNN BELTRAMO, NMPE #10596
DATE: MAY 3, 2004

RICHARD LYNN BELTRAMO
NEW MEXICO
10596
REGISTERED PROFESSIONAL ENGINEER

P:\99470\cdp\Corres\47-grdg_drng_cert_4\AsBuiltTim4Pond.dwg
May 04, 2004 - 11:16am

**Bohannan ▲ Huston** INC.

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335
**www.bhinc.com**
**voice:** 505.823.1000
**facsimile:** 505.798.7988
**toll free:** 800.877.5332

# CLIENT/COURIER TRANSMITTAL

**To:** Brad Bingham, P.E.
City of Albuquerque
Planning/Hydrology Dev Section
600 Second St NW – 2nd Floor

phone: 924-3986

**Requested By:** Rick Beltramo / am

**Date:** June 20, 2003

**Time Due:** ☒ **This A.M.** ☐ **This P.M.**
☐ **Rush ___** ☐ **Tomorrow**

**Job No.:** 99 470 29

**Job Name:** Timarron Subdivision Unit 5

**DELIVERY VIA**

☒ **Courier** ☐ **Federal Express**
☐ **Mail** ☐ **UPS**
☐ **Other** _____

**PICK UP**

**Item:** _____
_____

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Letter dated 6/19/03 re: Timarron Subd.Unit 5 Grading & Drainage Certification. |

**COMMENTS / INSTRUCTIONS**

RECEIVED
JUN 20 2003
HYDROLOGY SECTION

*REC'D BY:*_____ *DATE:*_____ *TIME:*_____

**ENGINEERING ▲**
**SPATIAL DATA ▲**
**ADVANCED TECHNOLOGIES ▲**

**Bohannan ^ Huston** INC.

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

June 19, 2003

Mr. Brad Bingham, P.E.
Hydrology Section
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87103

**Re: Timarron Subdivision Unit 5 Grading and drainage certification**
**City W.O. # 671682, Report M8 /D5B**

Dear Brad:

Submitted is the grading and drainage certification for Timarron Unit 5. The site grading and infrastructure improvements constructed to date adequately serve Unit 5 and therefore grading and drainage certification should be granted. Off-site ponds have been graded and are functional.

Transmitted with this letter is one copy of the certified grading plan and a drainage information sheet. Should you have any questions please call me at 823-1000, anytime.

Sincerely,
Bohannan Huston, Inc.

Rick Beltramo, P.E.
Community Development
and Planning Group

Attachments

P \99470\cdp\Corres\unit 5 g&d cert.doc

DRAINAGE INFORMATION SH. 1/28/03 rd

PROJECT TITLE: TIMARRON WEST UNITS 5 ZONE ATLAS/DRNG FILE # M8|D5B

DRB #: _____ EPC #: _____ WORK ORDER #: M-8|D5B

LEGAL DESCRIPTION: TRACTS 1&2, LANDS OF GREVEY/LIBERMAN

CITY ADDRESS: DE VARGAS ROAD

ENGINEERING FIRM: BOHANNAN HUSTON, INC. CONTACT: RICK BELTRAMO

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: (505) 823-1000

OWNER: CENTEX REAL ESTATE CORP. CONTACT: NORM GREGORY

ADDRESS: 6700 JEFFERSON NE-BLDG B, ABQ 87109 PHONE: (505) 761-9606

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

Vera BAL

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ FINAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

XX ENGINEERS CERTIFICATION Hydrology

___ OTHER

NO

PRE-DESIGN MEETING:

___ YES

X NO

___ COPY PROVIDED

Not a more step

CHECK TYPE OF APPROVAL SOUGHT:

X RELEASE OF FIN. GRAD.

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ S. DEV. PLAN FOR SUBD. APPROVAL

___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

___ SECTOR PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ BUILDING PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ GRADING PERMIT APPROVAL

___ PAVING PERMIT APPROVAL

___ S.A.D. DRAINAGE REPORT

___ DRAINAGE REQUIREMENTS

___ OTHER (SPECIFY)

DATE SUBMITTED: 6/20/03

BY: RICK BELTRAMO

RECEIVED JUN 20 2003 HYDROLOGY SECTION

P \99470\cdp\reports\DRAINAGE INFO doc

# CONSTITUENT CONTACT FORM

2-20-02

**PUBLIC WORKS DEPARTMENT**

**Councilor/Council District:**

**Zone Atlas Page:** M8

**Constituent/ Mayor Office:** AJ **Constituent Phone No:** 768-3047

**Address/Location:** 1315 Del Monte Trl.

**Date Received:** 2/12/02

**Received By:** R. J. Herbert/Janet Cunningham

**Description:** Complaint **X**, Inquiry , Request for information , other

The following was by R.J. Herbert in Planning: "Fred, I had received a call from 'A.J.' @ the Mayor's Office ( actually Janet got the call& referred it to me for research.) of blowing dust from the west, wanted to know what kind of dev. Was taking place there. After tracking down, the right proj. #, found, that it maybe Timarron West tract 2A. I understand the complaint from the lot indicated w/ an x. The ground west of there may or may not be Timarron West. Terry told me to refer the matter to you. Perhaps we need a report from the field. Thanx R.J. A.J.'s # is 768-3047"

According to A.J., he left a message with Rick at Bohannan regarding this Centex project.

**Referred to:** Carlos Montoya **Date Referred:** 2/13/02

**Investigation-Comments: Researched drainage files. Drainage plan was approved June 28, 2000 and subdivision approved for preliminary plat. Called Anita Gonzales on February 19, 2002, she related that the problem was the blowing dust from the new subdivision. I told her that I dealt with drainage but I would call Environmental Health and pass on this problem. I talked to Charles Aragon and he said that he would contact Ms. Anita Gonzales and work with the problem.**

**Follow-up:**

**Action Taken: Contacted Charles Aragon and related the dust control problem to him.**

**Any Other Information:**

**Resolved by: Carlos A. Montoya** **Date: February 19, 2002**

Engr stamp 6-27-00

DRAINAGE PLAN APPROVED JUNE 28, 2000

Subdivision approved for preliminary plat

1315 Del Monte TR SW 87121

Anita Gonzales

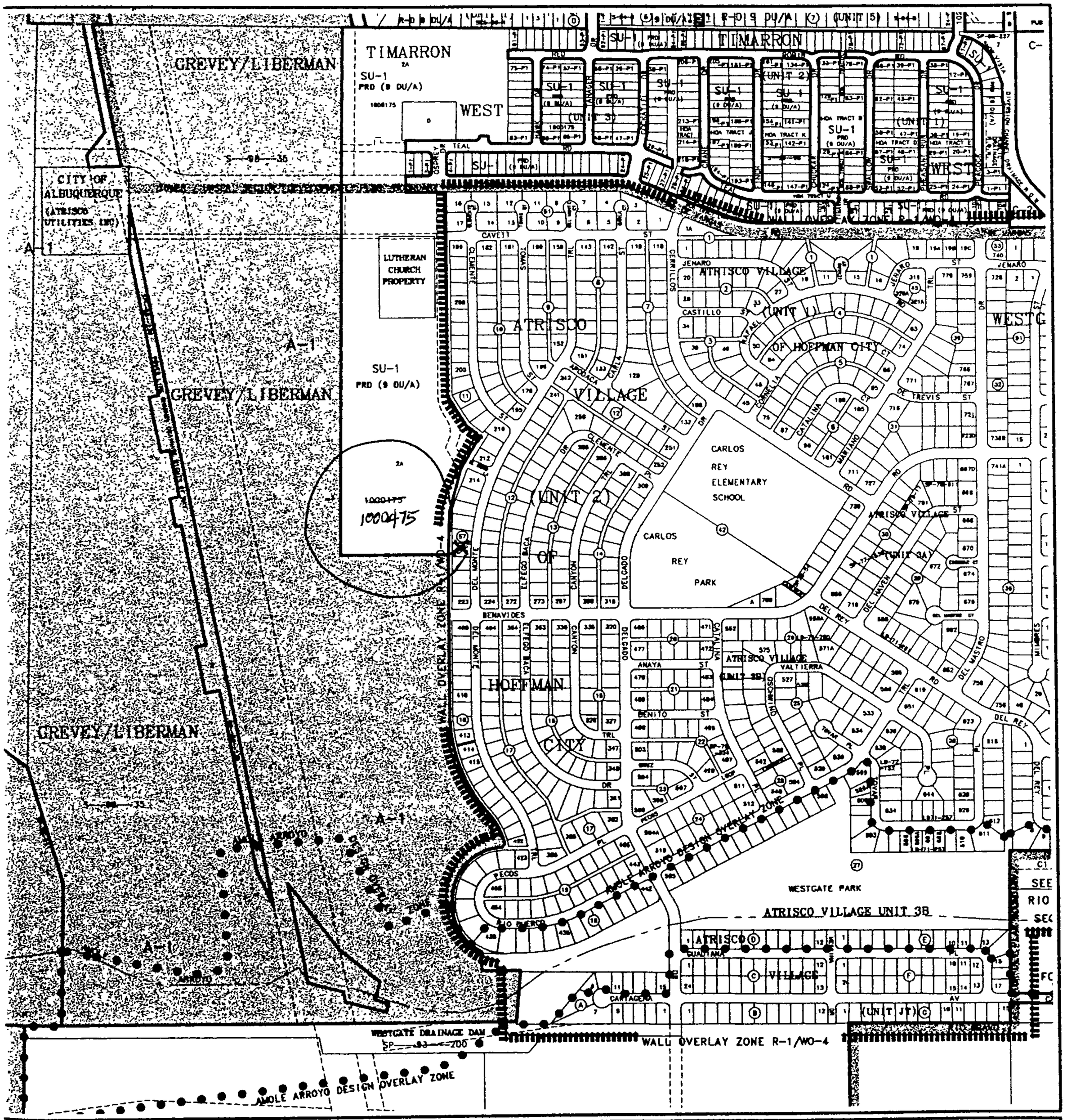
Annie & Rosendo 831-9620

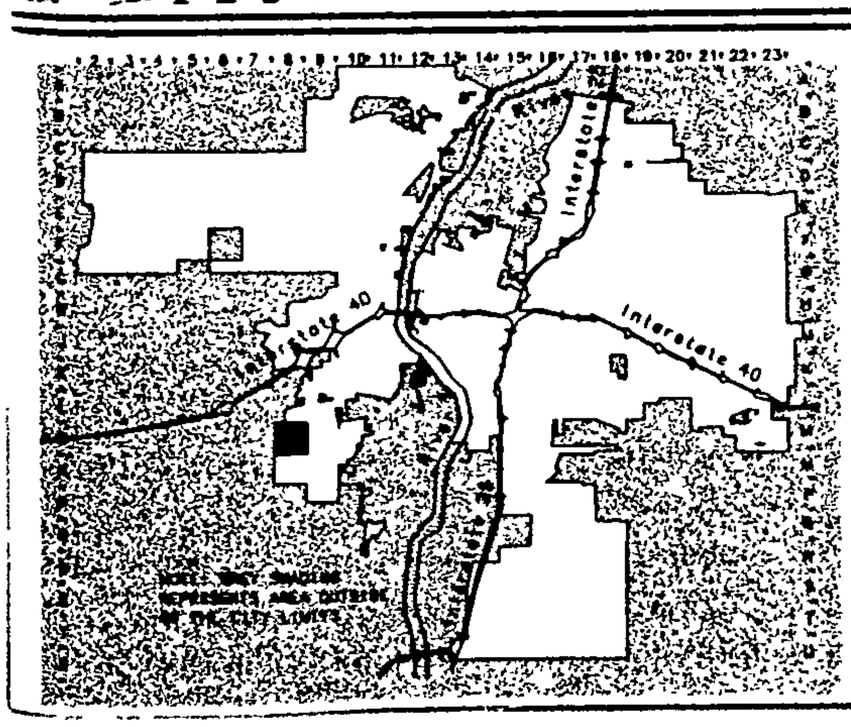
B-H Rick Beltrano

Title: Timarron West Unit 5

Dust summer

7683047




1315 Del Monte TRL

CITY OF Albuquerque

A Albuquerque G Geographic I Information S System

PLANNING DEPARTMENT

© Copyright 2001

GRAPHIC SCALE IN FEET

250 0 750 1000

# Zone Atlas Page

# M-8-Z

Map Amended through July 18, 2001

M8-D5 B

2-12-02 Am.

Fred,

I had received a call from 'A.J.' @ the Mayor's Office, (actually Janet! got the call & referred it to me for research.) of blowing dust from the west, wanted to know what kind of dev. was taking place there. After tracking down the right proj. # found that it ~~was~~ maybe Timarron West Tract 2A, I understand the complaint came from the lot indicated w/ an X. The ground west of there may or may not be Timarron West.. Terry told me to refer the matter to you. perhaps we need a report from the field. Thanx R.J.

A.J.'s # is 768-3047

Confidential

# CONSTITUENT CONTACT FORM

**PUBLIC WORKS DEPARTMENT**

**Councilor/Council District:**

**Zone Atlas Page:** M8

**Constituent/ Mayor Office:** AJ **Constituent Phone No:** 768-3047

**Address/Location:** 1315 Del Monte Trl.

**Date Received:** 2/12/02

**Received By:** R. J. Herbert/Janet Cunningham

**Description:** Complaint **X**, Inquiry , Request for information , other

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According to A.J., he left a message with Rick at Bohannan regarding this Centex project.

**Referred to:** Carlos Montoya **Date Referred:** 2/13/02

**Investigation-Comments:**

**Follow-up:**

**Action Taken:**

**Any Other Information:**

**Resolved by:** **Date:**

cc: Jay Czar, Chie Administrative Officer
James B. Lewis, Chief Operations Officer
Charles T. Asbury, Public Works Director

Form Revised:1/15/02

## ZONE GRID
No Features found.

## OWNERSHIP

| Rec | UPC CODE | OWNER | OWNER ADDRESS | OWNER CITY | OWNER STATE | OWNER ZIPCODE | PROPERTY CLASS | T DIS |
|---|---|---|---|---|---|---|---|---|
| 1 | 100805524930121001 | TIMARRON WEST HOMEOWNERS ASSOC INC | 6700 JEFFERSON ST NE BLDG B | ALBUQUERQUE | NM | 87109 | V | A1A |

## ZONING

| Rec | ZONING | DESCRIPTION |
|---|---|---|
| 1 | SU-1 | PRD (9 DU/A) |

## ZONE GRID

| Rec | ZONE ATLAS GRID |
|---|---|
| 1 | M8 |

## PARCELS

| Rec | NUMBER | NAME | DESIGNATION | QUADRANT | LOT | BLOCK | SUBDIVISION | PIN |
|---|---|---|---|---|---|---|---|---|
| 1 | 99999 | OSPREY | DR | SW | DD | 0000 | TIMARRON WEST UNIT 5 | ABQ185280 |

## ZONE GRID
No Features found.

## ZONE GRID
No Features found.

## NEIGHBORHOODS

| Rec | COASDE.AGIS.NEIGHBORHOODASSOCIATIONS.ASSOCIATIONNAME | COASDE.AGIS.NEIGHBORHOODASSOCIATIONS.ASSOCIATIONSTATUS |
|---|---|---|
| 1 | WESTGATE HEIGHTS | R |

## ZONE GRID
No Features found.

## COUNCIL

| Rec | COUNCILOR NAME | COUNCIL DISTRICT |
|---|---|---|
| 1 | Klarissa J. Peña | 3 |

## ZIPCODES

| Rec | ZIPCODE |
|---|---|
| 1 | 87121 |

## ZONE GRID
No Features found.

## ZONE GRID
No Features found.

## ZONING INSPECTOR AREAS

| Rec | COASDE.AGIS.ZONINGINSPECTORAREAS.DISTRICTNUMBER | COASDE.AGIS.ZONINGINSPECTORAREAS.COMMENTS | COASDE.AGIS.ZONINGINSPECTORA |
|---|---|---|---|
| 1 | 5 | Area Supervisor: Angelo Metzgar | Johnny Marrujo |

## Cherne, Curtis

**From:** Cherne, Curtis
**Sent:** Monday, August 25, 2014 4:14 PM
**To:** Moretto, Paul A.
**Subject:** RE: Flooding near Ospery Dr., El Moro LA, and Del Monte TRL

Paul,
The tract is owned by the Timarron West Homeowners Association, 6700 Jefferson St NE, Bldg B.
We looked at the grading plan for this subdivision that contains this tract as well as the subdivision to the east. Neither of the grading plans addressed this tract.

We looked at the tract in "Street View" in Google maps and the tract looks relatively flat. The site appears that it was graded some time ago and most of the surface is covered with gravel and artsy cobble stone "dry arroyo" type features. It does not look like an area that would cause a drainage problem.

The constituent should provide photos of drainage leaving the tract, prior to requiring mitigation efforts of the tract owner.

Curtis Cherne, P.E.
Principal Engineer
Hydrology, Planning Dept.
924-3986

---

**From:** Moretto, Paul A.
**Sent:** Tuesday, July 29, 2014 2:48 PM
**To:** Cherne, Curtis
**Subject:** Flooding near Ospery Dr., El Moro LA, and Del Monte TRL

Hello,

My name is Paul from Council Services. I am working with a policy analyst Nancy Montano. A constituent contacted her about excessive flood on their property (1221, 1225 Del Monte TRL). There is a parcel of land owned by an Association that is near their property but is buffered by land that we cannot identify ownership. Attached is a map of the situation with arrows pointing to the feature in question.

We are wondering if you could identify ownership, confirm if there is a water, or water related, feature, and if there is a way mitigate flooding issues related to these properties and which party is responsible for any changes need.

Thank you for your help,

Paul Moretto
City of Albuquerque
Council Services

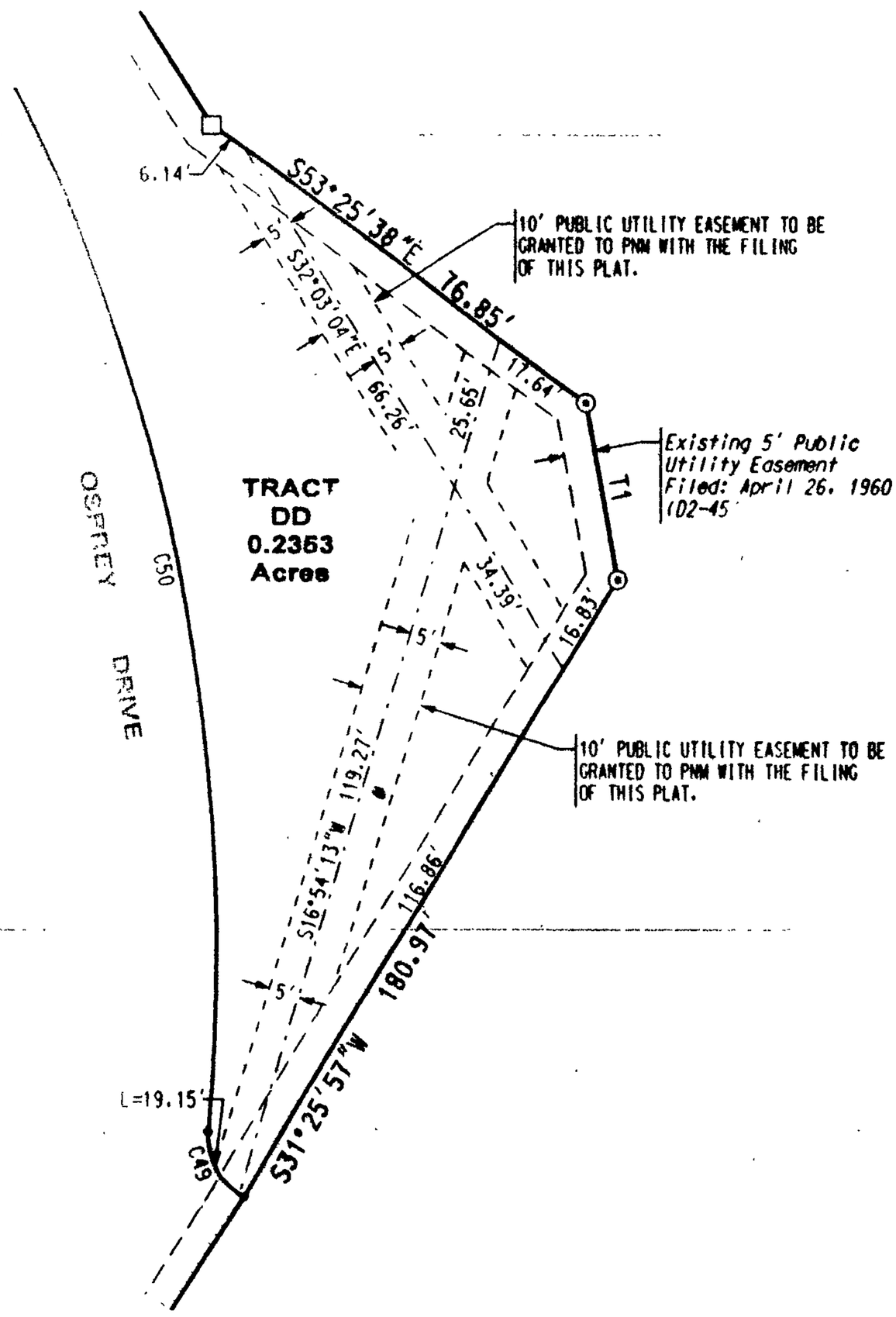
Final m-8

2002047416
3654479
Page: 6 of 6
04/12/2002 02:26P
Mary Herrera Bern. Co. PLAT R 32.00 Bk-2002C Pg-117

# PLAT OF
# TIMARRON WEST SUBDIVISION UNIT 5

ALBUQUERQUE, NEW MEXICO
APRIL, 2002

Homeowners Assoc.




**DETAIL "A"**
SCALE: 1" = 30'

Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

SHEET 6 OF 6

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

June 28, 2000,

Rick Beltramo, PE
Bohannan Huston, Inc
7500 Jefferson NE
Albuquerque, NM 87109

**Re: Timarron West Unit 5 Drainage Study**
**Engineer's Stamp dated 6-27-00, (M8/D05B)**

Dear Mr. Beltramo,

Based upon the information provided in your submittal dated 6-28-00, the above referenced Drainage Study is approved for Site Plan for Subdivision, Site Plan for Building Permit and Preliminary Plat action by the DRB.

This plan is also approved for Grading Permit release. As you are aware, a topsoil disturbance permit must be obtained prior to any grading on this site.

Prior to Final Plat sign-off, the Subdivision Improvements Agreement must be recorded. Please be advised that the Grading and Drainage Certification is required prior to release of the SIA for this project.

If you have any questions about my comments, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

C: file

# DRAINAGE STUDY FOR THE TIMARRON WEST SUBDIVISION UNIT 5

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823.1000

fax 505 821 0892

MAY 25, 2000

PREPARED FOR:

CENTEX HOMES
BUILDING B
6700 JEFFERSON NE
ALBUQUERQUE, NEW MEXICO 87109

RECEIVED
MAY 26 2000
HYDROLOGY SECTION

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

June 21, 2000,

Rick Beltramo, PE
Bohannan Huston, Inc
7500 Jefferson NE
Albuquerque, NM 87109

**Re: Timarron West Unit 5 Drainage Study**
**Engineer's Stamp dated 5-25-00, (M8/D05B)**

Dear Mr. Beltramo,

Based upon the information provided in your submittal dated 5-26-00, the above referenced Drainage Study cannot be approved until the following minor comments are addressed:

- Please provide a detail on the backyard ponds needed for the lots on the west side of Whimbrel Ct.
- Please provide a detail to describe what the curb opening in El Moro Lane looks like.
- Please label Osprey Lane on sheet 1. Also, please label all ponds and provide water surface elevations for them.

If you have any questions about my comments, you can contact me at 924-3986.

Sincerely,

Brad Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

C: file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: TIMARRON WEST UNIT 5 ZONE ATLAS/DRNG. FILE # ~~08~~/M8 / D005B

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

LEGAL DESCRIPTION: TRACT 2, LANDS OF GREVEY/LIBERMAN and LUTHERAN CHURCH PROPERTY

CITY ADDRESS: DE VARGAS ROAD

ENGINEERING FIRM: BOHANNAN HUSTON, INC. CONTACT: RICK BELTRAMO

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: (505) 823-1000

OWNER: CENTEX REAL ESTATE CORP. CONTACT: NORM GREGORY

ADDRESS: 6700 JEFFERSON NE-BLDG B, ABQ 87109 PHONE: (505) 761-9606

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT
_____ DRAINAGE PLAN
_____ FINAL GRADING & DRAINAGE PLAN
X GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEERS CERTIFICATION
_____ OTHER

PRE-DESIGN MEETING:

_____ YES
X NO
_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

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

RECEIVED
MAY 26 2000
HYDROLOGY SECTION

DATE SUBMITTED: 5-25-00

BY: ELIZABETH SMITH, E.I.

Elizabeth Smith

P \99470\cdp\reports\DRN INFO 5 doc

# DRAINAGE STUDY
# FOR THE
# TIMARRON WEST SUBDIVISION
# UNIT 5

**MAY 25, 2000**

PREPARED BY:

**BOHANNAN HUSTON, INC.**
**COURTYARD I**
**7500 JEFFERSON STREET N.E.**
**ALBUQUERQUE, NM 87109**

PREPARED FOR:

**CENTEX HOMES**
**BUILDING B**
**6700 JEFFERSON NE**
**ALBUQUERQUE, NM 87109**

RICH'RD LYNN BELTRAMO
NEW MEXICO
10596
REGISTERED PROFESSIONAL ENGINEER

**PREPARED BY:**

Rick Beltramo, P.E. 5/25/00
Date

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| V. | PROPOSED DEVELOPED CONDITIONS | 2 |
| VI. | CONCLUSION | 4 |


## APPENDICES


APPENDIX A AHYMO INPUT, OUTPUT AND SUMMARY FILES CONDITIONS

APPENDIX B STREET FLOW, INLET AND STORM DRAIN CALCULATIONS

APPENDIX C INFRASTRUCTURE LIST


## PLATES


PLATE 1 PRELIMINARY PLAT

PLATE 2 GRADING PLAN

PLATE 3 PROPOSED CONDITIONS BASIN MAP

PLATE 4 ATRISCO VILLAGE BASIN MAP

## I. INTRODUCTION

This Drainage Study will address the developed storm runoff and the necessary facilities to adequately convey the flow from the properties legally described as Tract 2, Lands of Grevey/Liberman and the Lutheran Church Property. This tract contains 63.0 acres are will be developed as Timarron West Units 4 and 5. Unit 5 is planned to contain 149 single-family homes on 26.3 acres.

Timarron West is located west of the Snow Vista Channel and north of DeVargas Road. Unit 5 is bounded to the north by Timarron West Unit 4 and to the east by Atrisco Village. The land to the west is undeveloped land called Tract 3, Lands of Grevey/Liberman. See vicinity map on the preliminary plat for location.

This study is necessary in order to obtain preliminary plat approval for the Timarron West Subdivision Unit 5. Prior to final plat and building permit approvals of this project, final grading plans and work order construction plans must be approved by the City of Albuquerque (CoA) and AMAFCA.

## II. METHODOLOGY

Existing and proposed site hydrological conditions were analyzed for the 100-year, 6-hour storm in accordance with the revised Section 22.2, Hydrology, of the Development Process Manual (DPM) for the City of Albuquerque, dated January 1993. Street capacities were analyzed using Manning's equation, consistent with the revised DPM Section 22.2. All data and calculations supporting this study are located in **Appendix B.** The new rational method hydrologic procedures identified within the revised DPM Section 22.2 are utilized to determine peak flow rates for design of the storm drainage improvements within the projects. The 100-year, 6-hour storm is used as the design event. The results are included in **Appendix A.**

The storm sewer system internal to the subdivision is analyzed using current DPM methods for gravity flow conditions. Inlet capacity computations, along with all hydraulic computations, are included in **Appendix B**.

## III. EXISTING CONDITIONS

Timarron West will be sited on undeveloped land that slopes west to east at approximately 3.5 percent. The existing basins to the west of Unit 5 are called Basin WN and Basin WS on the **Historic Conditions Off-site Basin Map** exhibit. Basin WN currently produces 15.6 cfs. The flow from this basin currently combines with undeveloped flow in Basin SN, the northern third of Unit 5, to produce 26 cfs. These combined basins currently drain into Cavett Street, through Atrisco Village, and into De Vargas Road. There are existing inlets in De Vargas Road at Cerrillos Road to accept the flow and convey it into Timarron West Unit 2. The **Atrisco Village Basin Map** shows the basins and the existing and proposed flows. The southern portion of Timarron West Unit 5 currently enters Atrisco Village at El Moro Lane. When Atrisco Village was built, there was no drainage report and no concern for offsite flow. Currently, 75 cfs enters the subdivision through El Moro Lane. Since there is no storm drain in the area, this 75 cfs currently flows in and floods the streets in Atrisco Village. This situation will be improved with the development of Timarron West Unit 5.

## IV. LAND TREATMENTS

The minimum lot dimensions are 45' x 105'. The percent impervious was determined using the following formula from Table A-5 of the DPM, Section 22.2.

$$\text{percent "D"} = 7 * \sqrt{((N*N) + (5*N))}$$

where N = units/acre.

## V. PROPOSED DEVELOPED CONDITIONS

The proposed development is a single-family, detached-unit residential subdivision with 149 lots on 26.3 acres, producing a density of 5.66 D.U. per acre. Proposed street configurations are shown on the Preliminary Plat. (See **Plate 1**). An AHYMO analysis, shown in **Appendix A,** was performed to determine the flows created by this subdivision and to model the ponds.

A detention/desiltation pond (Pond B) will be constructed on the west boundary of Unit 5 to detain and divert the offsite flow to one of two detention and desiltation ponds. Pond 'B' was designed to store

water as well as to convey it. It is 30' wide with 4:1 side slopes and a 10' bottom. The southern offsite basin and most of the southern two-thirds of Unit 5 will drain into Pond 'C' located at the south end of the subdivision. This pond will drain into El Moro Lane through a storm drain, which will daylight through a curb opening. The pond will release 2.3 cfs into El Moro Lane and store 2.4 acre-ft. The pond has one foot of freeboard and an additional 1.0 foot of retention to accommodate sedimentation. If the pond receives more than the 100-year flow, the water would exit through an emergency overflow weir and travel down Benevides Road. The freeboard and emergency overflow provide positive outfall and added protection for the Atrisco Village Subdivision. The second detention pond, Pond 'A', accommodates flow from the northern offsite basin. It has nearly one foot of freeboard and stores 0.3 acre-feet. This pond will drain 2 cfs into the existing pond west of Unit 4. The flow from these ponds combines with the flow from the northern third of Unit 5 and several basins in Unit 4. This flow will be routed through a detention/surge pond within Unit 4. This pond was designed to accept 23.3 cfs from Unit 5. The flow then travels through Units 4, 3, 2, and 1 to the Snow Vista Channel. The calculations for the storm drain, hydraulic grade line, street capacity, and pond design are in **Appendix B**.

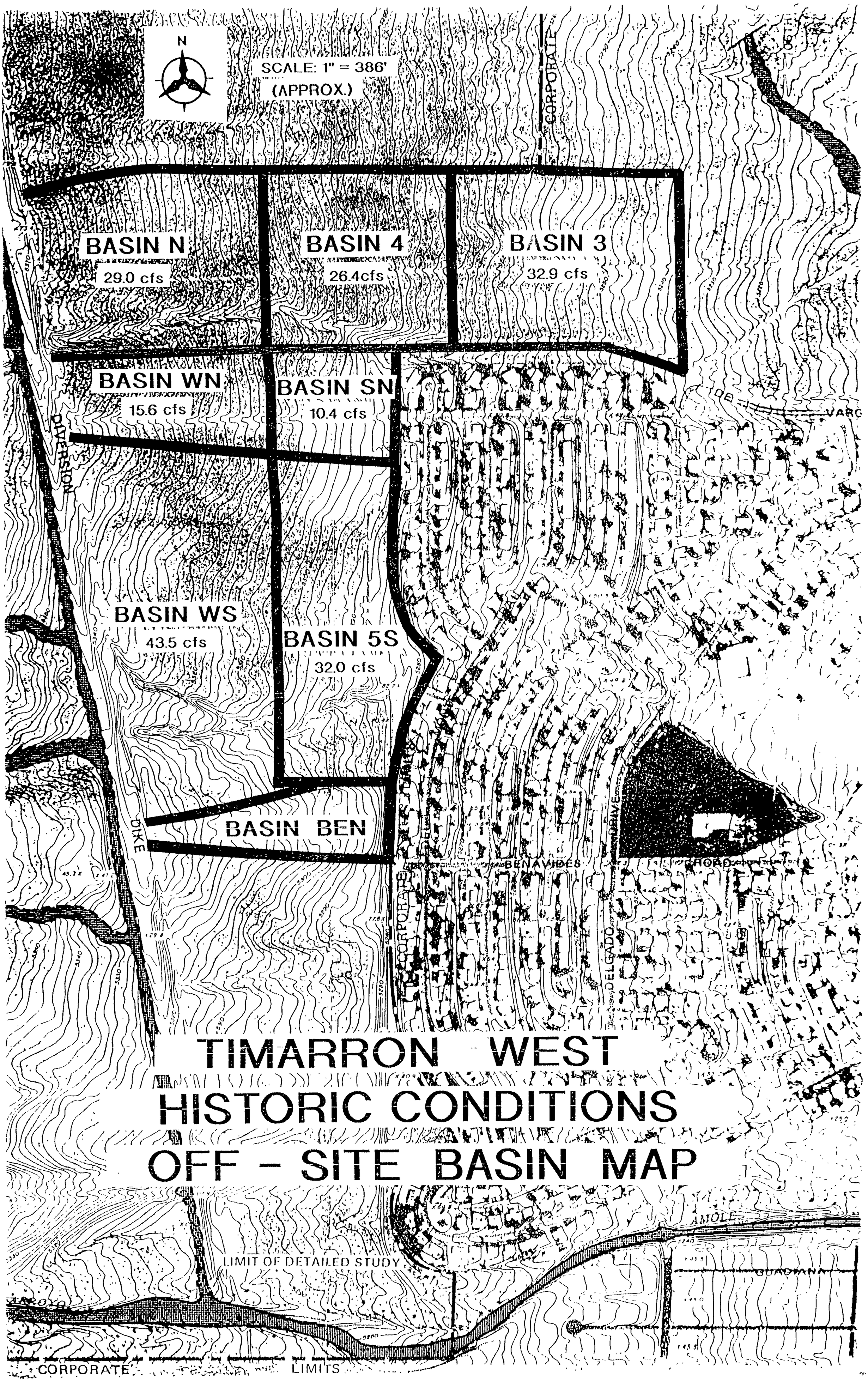
A portion of Unit 5 is too low to drain into detention pond 'C'. The flow from Basins 3 and 6 will surface flow to El Moro Lane. Even though these basins discharge freely into El Moro Lane, the flow entering Atrisco Village will decrease significantly from existing conditions. Currently, 75.7 cfs enters El Moro Lane. When Timarron West Unit 5 is built, 26.6 cfs will be released. An analysis of the streets in Atrisco Village was completed as part of this report. Atrisco Village was built in the 1950's. Apparently, no accounting for off-site storm water was made and therefore no storm drain facilities were provided. The only existing storm drain in the area was built to protect the Carlos Rey Elementary School and conveys the flow into the park/pond facility to the south. The **Atrisco Village Basin Map** shows the existing and proposed flow rates and the street slopes. The street capacity calculations and the inlet capacities are included in **Appendix B.** The main area of concern is intersection of Apodaca and Delgado just west of the elementary school. There are two type 'C' inlets at this intersection to intercept runoff. At worst case, if the water does not completely turn the corner onto Delgado, it may overtop the curb and sidewalk and enter the school site. The latest grading plan for the school shows an existing swale and inlet intended to divert the flow around the school building and into the pond/park. Based on a very approximate analysis, it is estimated that approximately 2 cfs overtops the curb and escapes the public right-of-way (see analysis in **Appendix B**). Flooding, if it should occur, is minimal. The existing swale and storm drain will adequately keep the storm water from the existing building. The ultimate impact

due to the planned development reduces runoff at this critical location by approximately 50 cfs, greatly improving the conditions.

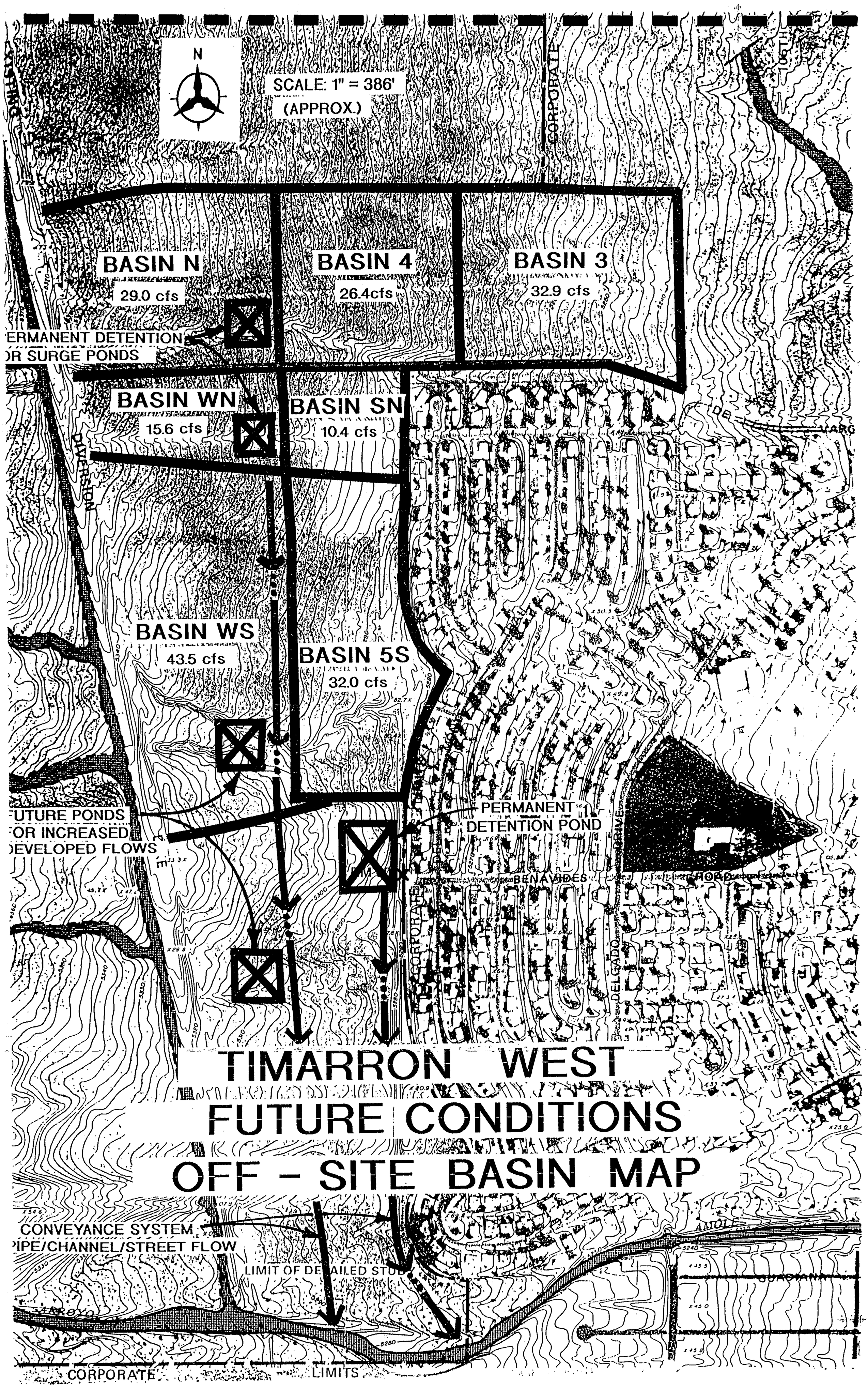
In the future, when the land to the west of Timarron West is developed, the offsite detention ponds could be removed. These future developments would be required to divert the water south through storm drains or channels to the Amole Arroyo. Alternately, permanent detention ponds could be constructed functioning in a similar manner as the proposed temporary ponds. The exhibit titled **Future Conditions Off-Site Basin Map** illustrates the direction of the future flow.

## VI. CONCLUSION

The development of Timarron West Unit 5 will result in an improvement in the drainage conditions for downstream areas. The flow rates entering the existing Atrisco Village Subdivision will decrease with the implementation of the detention ponds and storm drain system. Future developments have the option to use the established outfall or redirect runoff to the Amole Channel. This report includes a detailed study of the existing and proposed runoff, street capacities, and pond volumes. Attached are the preliminary plat, existing conditions basin map, proposed conditions basin map, and grading plan. This drainage plan maintains the overall drainage pattern and allows for safe management of storm runoff in the proposed development.




# TIMARRON WEST
# HISTORIC CONDITIONS
# OFF - SITE BASIN MAP


N
SCALE: 1" = 386'
(APPROX.)
BASIN N
29.0 cfs
BASIN 4
26.4cfs
BASIN 3
32.9 cfs
ERMANENT DETENTION
OR SURGE PONDS
BASIN WN
15.6 cfs
BASIN SN
10.4 cfs
DIVERSION
BASIN WS
43.5 cfs
BASIN 5S
32.0 cfs
UTURE PONDS
OR INCREASED
EVELOPED FLOWS
PERMANENT
DETENTION POND
BENAVIDES
CORPORATE
DELGADO
DRIVE
TIMARRON WEST
FUTURE CONDITIONS
OFF - SITE BASIN MAP
CONVEYANCE SYSTEM
PIPE/CHANNEL/STREET FLOW
LIMIT OF DETAILED STUDY
ARROYO
AMOLE
CORPORATE LIMITS

Appendix

# APPENDICES

APPENDIX A - AHYMO INPUT, OUTPUT AND SUMMARY FILES CONDITIONS

APPENDIX B - STREET FLOW, INLET, & STORM DRAIN CALCULATIONS

APPENDIX C - INFRASTRUCTURE LIST

# APPENDIX A

# AHYMO INPUT, OUTPUT AND SUMMARY FILES CONDITIONS

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =05/22/2000
INPUT FILE = U5.TXT USER NO.= BOHN_HNM.STE

| 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 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | PAGE = | 1 |
| *S TIMARRON WEST UNIT 5 SITE FLOW | | | | | | | | | | | |
| START | | | | | | | | | | TIME= | .00 |
| RAINFALL TYPE= 1 | | | | | | | | | | RAIN6= | 2.200 |
| *S GOES INTO SURGE POND IN UNIT 4 | | | | | | | | | | | |
| COMPUTE NM HYD | U4 | - | 1 | .01160 | 23.47 | .815 | 1.31698 | 1.500 | 3.161 | PER IMP= | 50.00 |
| COMPUTE NM HYD | 2.00 | - | 2 | .00340 | 6.89 | .239 | 1.31698 | 1.500 | 3.165 | PER IMP= | 50.00 |
| COMPUTE NM HYD | 3.00 | - | 3 | .00570 | 11.54 | .400 | 1.31698 | 1.500 | 3.163 | PER IMP= | 50.00 |
| COMPUTE NM HYD | 4.00 | - | 4 | .00360 | 7.29 | .253 | 1.31698 | 1.500 | 3.165 | PER IMP= | 50.00 |
| COMPUTE NM HYD | 5.00 | - | 5 | .00370 | 7.49 | .260 | 1.31698 | 1.500 | 3.165 | PER IMP= | 50.00 |
| *S BYPASS PONDS INTO EL MORO | | | | | | | | | | | |
| COMPUTE NM HYD | 6.00 | - | 6 | .00680 | 13.76 | .478 | 1.31698 | 1.500 | 3.162 | PER IMP= | 50.00 |
| COMPUTE NM HYD | 7.00 | - | 7 | .00390 | 7.90 | .274 | 1.31698 | 1.500 | 3.164 | PER IMP= | 50.00 |
| COMPUTE NM HYD | 8.00 | - | 8 | .00360 | 7.29 | .253 | 1.31698 | 1.500 | 3.165 | PER IMP= | 50.00 |
| *S ADD BASINS INTO STORM DRAIN TO SOUTH POND | | | | | | | | | | | |
| ADD HYD | 24.00 | 2& 4 | 20 | .00700 | 14.18 | .492 | 1.31690 | 1.500 | 3.165 | | |
| ADD HYD | 245.00 | 20& 5 | 21 | .01070 | 21.68 | .752 | 1.31690 | 1.500 | 3.165 | | |
| ADD HYD | 2457.00 | 21& 7 | 23 | .01460 | 29.57 | 1.025 | 1.31690 | 1.500 | 3.165 | | |
| ADD HYD | U5 | 23& 8 | 25 | .01820 | 36.87 | 1.278 | 1.31690 | 1.500 | 3.165 | | |
| *S OFFSITE FLOW INTO SOUTH POND | | | | | | | | | | | |
| COMPUTE NM HYD | WS | - | 27 | .04200 | 43.54 | 1.213 | .54156 | 1.500 | 1.620 | PER IMP= | .00 |
| COMPUTE NM HYD | BEN | - | 28 | .00950 | 9.85 | .274 | .54156 | 1.500 | 1.621 | PER IMP= | .00 |
| *S******ROUTE THROUGH WESTERN DETENTION/CHANNEL POND | | | | | | | | | | | |
| ROUTE RESERVOIR | WPOND | 27 | 10 | .04200 | 15.95 | 1.213 | .54156 | 1.750 | .593 | AC-FT= | .592 |
| *S ADD IN UNIT 5 FLOW TO POND | | | | | | | | | | | |
| ADD HYD | WS5S | 10&25 | 30 | .06020 | 45.33 | 2.491 | .77595 | 1.550 | 1.177 | | |
| *S ADD IN BENAVIDES OFFSITE FLOW TO POND | | | | | | | | | | | |
| ADD HYD | S | 30&28 | 31 | .06970 | 54.98 | 2.766 | .74400 | 1.500 | 1.233 | | |
| *S******ROUTE THROUGH SOUTHERN DETENTION POND | | | | | | | | | | | |
| ROUTE RESERVOIR | SPOND | 31 | 12 | .06970 | 2.32 | 2.764 | .74362 | 3.000 | .052 | AC-FT= | 2.362 |
| ADD HYD | WS | 12& 6 | 27 | .07650 | 15.10 | 3.242 | .79458 | 1.500 | .309 | | |
| ADD HYD | ELMORO | 27& 3 | 29 | .08220 | 26.64 | 3.642 | .83080 | 1.500 | .506 | | |
| *S***** ATRISCO VILLAGE ANALYSIS ********** | | | | | | | | | | | |
| COMPUTE NM HYD | AT1 | - | 1 | .01786 | 36.12 | 1.254 | 1.31698 | 1.500 | 3.160 | PER IMP= | 50.00 |
| COMPUTE NM HYD | AT2 | - | 2 | .01290 | 26.09 | .906 | 1.31698 | 1.500 | 3.161 | PER IMP= | 50.00 |
| COMPUTE NM HYD | AT3 | - | 3 | .01194 | 24.15 | .839 | 1.31698 | 1.500 | 3.161 | PER IMP= | 50.00 |
| COMPUTE NM HYD | AT4 | - | 4 | .01320 | 26.70 | .927 | 1.31698 | 1.500 | 3.161 | PER IMP= | 50.00 |
| COMPUTE NM HYD | AT5 | - | 5 | .02100 | 42.47 | 1.475 | 1.31698 | 1.500 | 3.160 | PER IMP= | 50.00 |
| ADD HYD | AT1 | 29& 1 | 30 | .10006 | 62.77 | 4.897 | .91758 | 1.500 | .980 | | |
| ADD HYD | AT2 | 30& 2 | 31 | .11296 | 88.86 | 5.803 | .96319 | 1.500 | 1.229 | | |
| ADD HYD | AT3 | 31& 3 | 32 | .12490 | 113.01 | 6.641 | .99701 | 1.500 | 1.414 | | |
| DIVIDE HYD | PIPE | 32 | 33 | .09266 | 27.60 | 4.927 | .99701 | 1.350 | .465 | | |
| | ST | AND | 34 | .03224 | 85.41 | 1.714 | .99701 | 1.500 | 4.140 | | |
| DIVIDE HYD | PIPE2 | 5 | 40 | .01573 | 17.60 | 1.105 | 1.31697 | 1.400 | 1.748 | | |
| | ST2 | AND | 41 | .00527 | 24.87 | .370 | 1.31697 | 1.500 | 7.378 | | |
| ADD HYD | AT5 | 34&41 | 35 | .03750 | 110.29 | 2.084 | 1.04194 | 1.500 | 4.595 | | |
| ADD HYD | AT4 | 4&35 | 36 | .05070 | 136.99 | 3.011 | 1.11354 | 1.500 | 4.221 | | |
| FINISH | | | | | | | | | | | |

```
*
*S TIMARRON WEST UNIT 5 SITE FLOW
START                RAINFALL BEGINS AT 0.00 HOURS
*                      100 YEAR RETURN PERIOD
*************************************************************************
*
*      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
*      ::                        MISC. DATA                            ::
*      ::        RAINFALL RETURN PERIOD_____________  100-YEAR         ::
*      ::        RAINFALL DURATION__________________  6-HOUR              ::
*      ::       ZONE 1                                          ::
*      ::        RAINFALL DEPTHS: 1 HOUR (P60)___   1.87 INCHES        ::
*      ::        (UNADJUSTED)     6 HOUR (P360)__   2.20 INCHES        ::
*      ::                        24 HOUR (P1440)_   2.68 INCHES        ::
*      ::                                                              ::
*      ::        RAINFALL DATA TAKEN FROM NOAA.                        ::
*      ::                                                              ::
*      ::                HYDROGRAPH METHODOLOGY                        ::
*      ::                                                              ::
*      ::        CITY OF ALBQ. DPM VOL. 2, SECTION 22.2 July, 1997     ::
*      ::        INITIAL ABSTRACTION - INFILTRATION METHOD             ::
*      ::        Tc CALCULATIONS PER C.O.A. DPM 22.2-B.4               ::
*      ::        AMAFCA AHYMO VERSION MARCH 20,1992                    ::
*      ::                                                              ::
*      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
*                              BEGIN  ANALYSIS
*************************************************************************
*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
                     RAIN SIX=2.20 RAIN DAY=2.68 DT=0.05
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 1  *********
*S GOES INTO SURGE POND IN UNIT 4
COMPUTE NM HYD       ID=1 HYD=U4  AREA=0.0116 PER A=0.0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=1   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 2 *********
COMPUTE NM HYD       ID=2 HYD=2  AREA=0.0034 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=2   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 3 *********
COMPUTE NM HYD       ID=3 HYD=3  AREA=0.0057 PER A=0.0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=3   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 4 *********
COMPUTE NM HYD       ID=4 HYD=4  AREA=0.0036 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=4   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 5 *********
COMPUTE NM HYD       ID=5 HYD=5  AREA=0.0037 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=5   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 6 *********
*S BYPASS PONDS INTO EL MORO
COMPUTE NM HYD       ID=6 HYD=6  AREA=0.0068 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=6   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 7 *********
COMPUTE NM HYD       ID=7 HYD=7  AREA=0.0039 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=5   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN 8 *********
COMPUTE NM HYD       ID=8 HYD=8  AREA=0.0036 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
```

```
PRINT HYD              ID=8   CODE=1
*
*****************************************************************
*S ADD BASINS INTO STORM DRAIN TO SOUTH POND
*****************************************************************
ADD HYD                ID=20  HYD=24  IDI=2  IDII=4
PRINT HYD              ID=20    CODE=1
*
ADD HYD                ID=21  HYD=245 IDI=20  IDII=5
PRINT HYD              ID=21    CODE=1
*
ADD HYD                ID=23  HYD=2457        IDI=21  IDII=7
PRINT HYD              ID=23    CODE=1
*
ADD HYD                ID=25  HYD=U5   IDI=23  IDII=8
PRINT HYD              ID=25    CODE=1
*
*S OFFSITE FLOW INTO SOUTH POND
*****************************************************************
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN WS UNDEVELOPED*********
COMPUTE NM HYD       ID=27 HYD=WS  AREA=0.042 PER A=50 PER B=50
                    PER C=0 PER D=0  TP=.133  RAINFALL=-1
PRINT HYD              ID=27   CODE=1
*
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN BEN UNDEVELOPED*********
COMPUTE NM HYD       ID=28 HYD=BEN  AREA=0.0095 PER A=50 PER B=50
                    PER C=0 PER D=0  TP=.133  RAINFALL=-1
PRINT HYD              ID=28   CODE=1
*
*DETERMINATION OF WESTERN POND:
*S******ROUTE THROUGH WESTERN DETENTION POND
ROUTE RESERVOIR     ID=10 HYD=WPOND INFLOW ID=27  CODE=1
                    OUTFLOW (CFS) STORAGE (AC FT) ELEV (FT)
               0       0       6
               15.12668245    0.488596578    7
               19.54798178    1.04822666     7.67
*
PRINT HYD           ID=10      CODE=20
*
*S ADD IN UNIT 5 FLOW TO POND
ADD HYD                ID=30  HYD=WS5S        IDI=10  IDII=25
PRINT HYD              ID=30    CODE=1
*
*S ADD IN BENAVIDES OFFSITE FLOW TO POND
ADD HYD                ID=31  HYD=S   IDI=30  IDII=28
PRINT HYD              ID=31    CODE=1
*
*DETERMINATION OF SOUTHERN POND:
*S******ROUTE THROUGH SOUTHERN DETENTION POND
ROUTE RESERVOIR     ID=12 HYD=SPOND INFLOW ID=31  CODE=1
                    OUTFLOW (CFS) STORAGE (AC FT) ELEV (FT)
               0       0       78
               0.945417653    0.178458555    79
               1.337022467    0.467898771    80
               1.637511409    0.824667236    81
               1.890835306    1.252555603    82
               2.114018139    1.755756692    83
               2.315790844    2.338656162    84
               2.501339995    3.0135943      85
*
PRINT HYD           ID=12      CODE=20
*
ADD HYD                ID=27  HYD=WS  IDI=12  IDII=6
PRINT HYD              ID=27    CODE=1
*
ADD HYD                ID=29  HYD=ELMORO      IDI=27  IDII=3
PRINT HYD              ID=29    CODE=1
*
```

```
*****************************************************************
*S***** ATRISCO VILLAGE ANALYSIS ************************
*****************************************************************
**** COMPUTE AND PRINT NM HYD DATA FOR BASIN O-2B *********
COMPUTE NM HYD       ID=2 HYD=AT1  AREA=0.01786 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=2   CODE=1
*
COMPUTE NM HYD       ID=3 HYD=AT2  AREA=0.0129 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=3   CODE=1
*
COMPUTE NM HYD       ID=4 HYD=AT3  AREA=0.01194 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=4   CODE=1
*
COMPUTE NM HYD       ID=5 HYD=AT4  AREA=0.0132 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=4   CODE=1
*
COMPUTE NM HYD       ID=6 HYD=AT5  AREA=0.0177 PER A=0 PER B=50
                    PER C=0 PER D=50  TP=.133  RAINFALL=-1
PRINT HYD              ID=6   CODE=1
*
ADD HYD                ID=30  HYD=AT1         IDI=29  IDII=2
PRINT HYD              ID=30    CODE=1
*
ADD HYD                ID=31  HYD=AT2         IDI=30  IDII=3
PRINT HYD              ID=31    CODE=1
*
ADD HYD                ID=32  HYD=AT3         IDI=31  IDII=4
PRINT HYD              ID=32   CODE=1
*
ADD HYD                ID=33  HYD=AT4         IDI=32  IDII=5
PRINT HYD              ID=33   CODE=1
*
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =05/18/2000
INPUT FILE = U4.TXT USER NO.= BOHN_HNM.STE



| 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 TIMARRON WEST UNIT 4 SITE FLOW | | | | | | | | | | |
| START | | | | | | | | | | TIME= .00 |
| RAINFALL TYPE= 1 | | | | | | | | | | RAIN6= 2.200 |
| *S GOES INTO SURGE POND IN UNIT 4 FROM UNIT 5 | | | | | | | | | | |
| COMPUTE NM HYD | U5 | - | 1 | .01150 | 23.27 | .808 | 1.31698 | 1.500 | 3.161 | PER IMP= 50.00 |
| COMPUTE NM HYD | A | - | 2 | .00273 | 5.53 | .192 | 1.31698 | 1.500 | 3.167 | PER IMP= 50.00 |
| COMPUTE NM HYD | B1 | - | 3 | .00498 | 10.07 | .349 | 1.31698 | 1.500 | 3.163 | PER IMP= 50.00 |
| COMPUTE NM HYD | C | - | 4 | .00198 | 4.02 | .139 | 1.31698 | 1.500 | 3.170 | PER IMP= 50.00 |
| COMPUTE NM HYD | D1 | - | 5 | .00160 | 3.25 | .112 | 1.31698 | 1.500 | 3.173 | PER IMP= 50.00 |
| COMPUTE NM HYD | E | - | 6 | .00320 | 6.48 | .225 | 1.31698 | 1.500 | 3.166 | PER IMP= 50.00 |
| COMPUTE NM HYD | F1 | - | 7 | .00136 | 2.76 | .096 | 1.31698 | 1.500 | 3.175 | PER IMP= 50.00 |
| COMPUTE NM HYD | G1 | - | 8 | .00160 | 3.25 | .112 | 1.31698 | 1.500 | 3.173 | PER IMP= 50.00 |
| COMPUTE NM HYD | H | - | 9 | .00440 | 8.91 | .309 | 1.31698 | 1.500 | 3.164 | PER IMP= 50.00 |
| COMPUTE NM HYD | I1 | - | 10 | .00170 | 3.45 | .119 | 1.31698 | 1.500 | 3.173 | PER IMP= 50.00 |
| COMPUTE NM HYD | J | - | 11 | .00320 | 6.48 | .225 | 1.31698 | 1.500 | 3.166 | PER IMP= 50.00 |
| COMPUTE NM HYD | K | - | 12 | .00130 | 2.64 | .091 | 1.31698 | 1.500 | 3.176 | PER IMP= 50.00 |
| COMPUTE NM HYD | L | - | 13 | .00160 | 3.25 | .112 | 1.31698 | 1.500 | 3.173 | PER IMP= 50.00 |
| COMPUTE NM HYD | OFFN | - | 14 | .02800 | 29.03 | .809 | .54156 | 1.500 | 1.620 | PER IMP= .00 |
| COMPUTE NM HYD | OFF5 | - | 15 | .01500 | 15.56 | .433 | .54156 | 1.500 | 1.620 | PER IMP= .00 |
| COMPUTE NM HYD | B2 | - | 16 | .00150 | 3.05 | .105 | 1.31698 | 1.500 | 3.175 | PER IMP= 50.00 |
| COMPUTE NM HYD | D2 | - | 17 | .00310 | 6.28 | .218 | 1.31698 | 1.500 | 3.166 | PER IMP= 50.00 |
| COMPUTE NM HYD | G2 | - | 18 | .00310 | 6.28 | .218 | 1.31698 | 1.500 | 3.166 | PER IMP= 50.00 |
| COMPUTE NM HYD | I2 | - | 19 | .00340 | 6.89 | .239 | 1.31698 | 1.500 | 3.165 | PER IMP= 50.00 |
| COMPUTE NM HYD | F2 | - | 50 | .00168 | 3.41 | .118 | 1.31698 | 1.500 | 3.173 | PER IMP= 50.00 |
| COMPUTE NM HYD | F3 | - | 51 | .00200 | 4.06 | .140 | 1.31698 | 1.500 | 3.170 | PER IMP= 50.00 |
| COMPUTE NM HYD | F4 | - | 52 | .00190 | 3.86 | .133 | 1.31698 | 1.500 | 3.170 | PER IMP= 50.00 |
| COMPUTE NM HYD | 114.00 | - | 53 | .00210 | 5.79 | .220 | 1.96760 | 1.500 | 4.305 | PER IMP= 100.00 |
| COMPUTE NM HYD | DV1 | - | 54 | .00190 | 5.24 | .199 | 1.96760 | 1.500 | 4.305 | PER IMP= 100.00 |
| COMPUTE NM HYD | DV2 | - | 55 | .00480 | 13.22 | .504 | 1.96760 | 1.500 | 4.302 | PER IMP= 100.00 |
| COMPUTE NM HYD | PND | - | 56 | .00202 | 1.67 | .047 | .43936 | 1.500 | 1.293 | PER IMP= .00 |
| COMPUTE NM HYD | L2 | - | 57 | .00433 | 8.77 | .304 | 1.31698 | 1.500 | 3.164 | PER IMP= 50.00 |
| COMPUTE NM HYD | OPEN | - | 58 | .00125 | 1.04 | .029 | .43936 | 1.500 | 1.296 | PER IMP= .00 |
| ADD HYD | 114O | 14&53 | 25 | .03010 | 34.82 | 1.029 | .64104 | 1.500 | 1.807 | |
| *S******ROUTE THROUGH OFFSITE POND WEST OF UNIT 5 | | | | | | | | | | |
| ROUTE RESERVOIR | POND5 | 15 | 22 | .01500 | 1.95 | .433 | .54155 | 1.900 | .203 | AC-FT= .311 |
| ADD HYD | COMBO | 22&25 | 26 | .04510 | 35.55 | 1.462 | .60789 | 1.500 | 1.232 | |
| *S******ROUTE THROUGH OFFSITE POND WEST OF UNIT 4 | | | | | | | | | | |
| ROUTE RESERVOIR | POND4 | 26 | 23 | .04510 | 2.12 | 1.459 | .60647 | 2.800 | .073 | AC-FT= .983 |
| ADD HYD | OFFA | 23& 2 | 24 | .04783 | 6.27 | 1.650 | .64701 | 1.500 | .205 | |
| ADD HYD | OAC | 24& 4 | 21 | .04981 | 10.28 | 1.790 | .67364 | 1.500 | .323 | |
| ADD HYD | B12 | 3&16 | 22 | .00648 | 13.12 | .455 | 1.31689 | 1.500 | 3.166 | |
| ADD HYD | BOAC | 22&21 | 23 | .05629 | 23.40 | 2.244 | .74764 | 1.500 | .650 | |
| ADD HYD | 5DEV | 1&54 | 24 | .01340 | 28.50 | 1.007 | 1.40919 | 1.500 | 3.323 | |
| ADD HYD | 5BOAC | 24&23 | 25 | .06969 | 51.90 | 3.251 | .87485 | 1.500 | 1.164 | |
| ADD HYD | POND | 25&56 | 26 | .07171 | 53.58 | 3.299 | .86258 | 1.500 | 1.167 | |

| 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 DETERMINATION OF SURGE POND: | | | | | | | | | | |
| ROUTE RESERVOIR | POND | 26 | 27 | .07171 | 1.60 | 2.953 | .77224 | 6.700 | .035 | AC-FT= 2.024 |
| ADD HYD | PE | 27& 6 | 30 | .07491 | 7.28 | 3.178 | .79551 | 1.500 | .152 | |
| ADD HYD | PED2 | 30&17 | 31 | .07801 | 13.56 | 3.396 | .81623 | 1.500 | .272 | |
| ADD HYD | GH | 18& 9 | 33 | .00750 | 15.19 | .527 | 1.31690 | 1.500 | 3.165 | |
| ADD HYD | PEDGH | 33&31 | 34 | .08551 | 28.75 | 3.922 | .86014 | 1.500 | .525 | |
| ADD HYD | IJ | 19&11 | 35 | .00660 | 13.37 | .464 | 1.31689 | 1.500 | 3.166 | |
| ADD HYD | IJL2 | 35&57 | 37 | .01093 | 22.14 | .768 | 1.31690 | 1.500 | 3.165 | |
| ADD HYD | EDGHIJL | 37&34 | 39 | .09644 | 50.89 | 4.690 | .91191 | 1.500 | .825 | |
| ADD HYD | FD1 | 7& 5 | 42 | .00296 | 6.01 | .208 | 1.31678 | 1.500 | 3.174 | |
| ADD HYD | BFDF2 | 42&50 | 44 | .00464 | 9.42 | .326 | 1.31680 | 1.500 | 3.173 | |
| ADD HYD | BF2DG | 44& 8 | 45 | .00624 | 12.67 | .438 | 1.31679 | 1.500 | 3.173 | |
| ADD HYD | BF3DG | 45&51 | 47 | .00824 | 16.73 | .579 | 1.31680 | 1.500 | 3.172 | |
| ADD HYD | BFDGI | 47&10 | 49 | .00994 | 20.18 | .698 | 1.31680 | 1.500 | 3.172 | |
| ADD HYD | BFDGIK | 49&52 | 60 | .01184 | 24.04 | .832 | 1.31680 | 1.500 | 3.172 | |
| ADD HYD | NORTH | 60&12 | 62 | .01314 | 26.68 | .923 | 1.31680 | 1.500 | 3.172 | |
| ADD HYD | NL1 | 62&13 | 63 | .01474 | 29.93 | 1.035 | 1.31680 | 1.500 | 3.172 | |
| ADD HYD | 34.00 | 63&39 | 64 | .11118 | 80.82 | 5.725 | .96559 | 1.500 | 1.136 | |
| ADD HYD | ALL | 64&55 | 65 | .11598 | 94.03 | 6.229 | 1.00706 | 1.500 | 1.267 | |
| FINISH | | | | | | | | | | |

1-Mar-00
**TIMARRON WEST UNITS 3,4, AND 5**
Job # 99470
5/16/00

WEST OF UNIT 4

| Elevation | Area ft^2 | Avg Area ft^2 | increment Vol ft^3 | Cum Vol ft^3 | Cum Vol ac-ft | H ft | Q cfs | d (ft)= | 0.7 |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 25783.9 | | 0 | 0 | 0 | 0 | 0 | | |
| 3 | 33735.1 | 29759.5 | 29759.5 | 29759.5 | 0.683181 | 1 | 1.85 | | |
| 4 | 41866.2 | 37800.65 | 37800.65 | 67560.15 | 1.550962 | 2 | 2.62 | | |

SURGE POND IN UNIT 4

| Elevation | Area ft^2 | Avg Area ft^2 | increment Vol ft^3 | Cum Vol ft^3 | Cum Vol ac-ft | H ft | Q cfs | d (ft)= | 0.5 |
|---|---|---|---|---|---|---|---|---|---|
| 87 | 26668.12 | | 0 | 0 | 0 | 0 | 0 | | |
| 88 | 29333.65 | 28000.885 | 28000.885 | 28000.89 | 0.642809 | 1 | 0.95 | | |
| 89 | 32128.89 | 30731.27 | 30731.27 | 58732.16 | 1.348299 | 2 | 1.34 | | |
| 90 | 35053.8 | 33591.345 | 33591.345 | 92323.5 | 2.119448 | 3 | 1.64 | | |

SOUTH OF UNIT 5

| Elevation | Area ft^2 | Avg Area ft^2 | increment Vol ft^3 | Cum Vol ft^3 | Cum Vol ac-ft | H ft | Q cfs | d (ft)= | 0.5 |
|---|---|---|---|---|---|---|---|---|---|
| 78 | 4369.2 | | 0 | 0 | 0 | 0 | 0 | | |
| 79 | 11178.17 | 7773.685 | 7773.685 | 7773.685 | 0.178459 | 1 | 0.95 | | |
| 80 | 14037.96 | 12608.065 | 12608.065 | 20381.75 | 0.467899 | 2 | 1.34 | | |
| 81 | 17043.83 | 15540.895 | 15540.895 | 35922.65 | 0.824667 | 3 | 1.64 | | |
| 82 | 20233.95 | 18638.89 | 18638.89 | 54561.54 | 1.252556 | 4 | 1.89 | | |
| 83 | 23605.1 | 21919.525 | 21919.525 | 76481.06 | 1.755757 | 5 | 2.11 | | |
| 84 | 27177.3 | 25391.2 | 25391.2 | 101872.3 | 2.338656 | 6 | 2.32 | | |
| 85 | 31623.54 | 29400.42 | 29400.42 | 131272.7 | 3.013594 | 7 | 2.50 | | |

NORTH WEST OF UNIT 5

| Elevation | Area ft^2 | Avg Area ft^2 | increment Vol ft^3 | Cum Vol ft^3 | Cum Vol ac-ft | H ft | Q cfs | d (ft)= | 0.7 |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 10703.1 | | 0 | 0 | 0 | 0 | 0 | | |
| 6 | 12813.34 | 11758.22 | 11758.22 | 11758.22 | 0.269931 | 1 | 1.85 | | |
| 7 | 15023 | 13918.17 | 13918.17 | 25676.39 | 0.589447 | 2 | 2.62 | | |

WEST OF UNIT 5

| Elevation | Area ft^2 | Avg Area ft^2 | increment Vol ft^3 | Cum Vol ft^3 | Cum Vol ac-ft | H ft | Q cfs | d (ft)= | 2 |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 10923 | | 0 | 0 | 0 | 0 | 0 | | |
| 7 | 31643.7 | 21283.35 | 21283.35 | 21283.35 | 0.488597 | 1 | 15.13 | | |
| 7.67 | 41125.2 | 36384.45 | 24377.5815 | 45660.93 | 1.048227 | 1.67 | 19.55 | | |

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*
*****************************************************************
*DETERMINATION OF WESTERN POND OFFSITE OF UNIT 5 :
*S******ROUTE THROUGH OFFSITE POND WEST OF UNIT 5
ROUTE RESERVOIR     ID=22 HYD=POND5 INFLOW ID=15  CODE=1
                    OUTFLOW (CFS) STORAGE (AC FT) ELEV (FT)
                         0       0       5
                         1.8530186       0.269930535    6
                         2.620564035     0.589446506    7

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 5.00 | .000 | .00 |
| .05 | .00 | 5.00 | .000 | .00 |
| .10 | .00 | 5.00 | .000 | .00 |
| .15 | .00 | 5.00 | .000 | .00 |
| .20 | .00 | 5.00 | .000 | .00 |
| .25 | .00 | 5.00 | .000 | .00 |
| .30 | .00 | 5.00 | .000 | .00 |
| .35 | .00 | 5.00 | .000 | .00 |
| .40 | .00 | 5.00 | .000 | .00 |
| .45 | .00 | 5.00 | .000 | .00 |
| .50 | .00 | 5.00 | .000 | .00 |
| .55 | .00 | 5.00 | .000 | .00 |
| .60 | .00 | 5.00 | .000 | .00 |
| .65 | .00 | 5.00 | .000 | .00 |
| .70 | .00 | 5.00 | .000 | .00 |
| .75 | .00 | 5.00 | .000 | .00 |
| .80 | .00 | 5.00 | .000 | .00 |
| .85 | .00 | 5.00 | .000 | .00 |
| .90 | .00 | 5.00 | .000 | .00 |
| .95 | .00 | 5.00 | .000 | .00 |
| 1.00 | .00 | 5.00 | .000 | .00 |
| 1.05 | .00 | 5.00 | .000 | .00 |
| 1.10 | .00 | 5.00 | .000 | .00 |
| 1.15 | .00 | 5.00 | .000 | .00 |
| 1.20 | .00 | 5.00 | .000 | .00 |
| 1.25 | .00 | 5.00 | .000 | .00 |
| 1.30 | .00 | 5.00 | .000 | .00 |
| 1.35 | .96 | 5.01 | .002 | .01 |
| 1.40 | 5.62 | 5.06 | .015 | .11 |
| 1.45 | 12.14 | 5.19 | .051 | .35 |
| 1.50 | 15.56 | 5.39 | .106 | .73 |
| 1.55 | 14.95 | 5.61 | .165 | 1.13 |
| 1.60 | 12.30 | 5.80 | .216 | 1.48 |
| 1.65 | 9.34 | 5.94 | .254 | 1.74 |
| 1.70 | 6.82 | 6.03 | .280 | 1.88 |
| 1.75 | 4.89 | 6.08 | .296 | 1.92 |
| 1.80 | 3.48 | 6.11 | .306 | 1.94 |
| 1.85 | 2.51 | 6.13 | .310 | 1.95 |
| 1.90 | 1.92 | 6.13 | .311 | 1.95 |
| 1.95 | 1.59 | 6.13 | .310 | 1.95 |
| 2.00 | 1.39 | 6.12 | .309 | 1.95 |
| 2.05 | 1.23 | 6.11 | .306 | 1.94 |
| 2.10 | 1.09 | 6.10 | .303 | 1.93 |
| 2.15 | .97 | 6.09 | .299 | 1.92 |
| 2.20 | .87 | 6.08 | .295 | 1.91 |
| 2.25 | .78 | 6.06 | .290 | 1.90 |
| 2.30 | .69 | 6.05 | .286 | 1.89 |
| 2.35 | .62 | 6.03 | .281 | 1.88 |
| 2.40 | .55 | 6.02 | .275 | 1.87 |
| 2.45 | .49 | 6.00 | .270 | 1.85 |
| 2.50 | .44 | 5.98 | .264 | 1.81 |
| 2.55 | .39 | 5.96 | .258 | 1.77 |
| 2.60 | .35 | 5.94 | .253 | 1.73 |
| 2.65 | .31 | 5.91 | .247 | 1.70 |
| 2.70 | .28 | 5.89 | .241 | 1.66 |
| 2.75 | .25 | 5.87 | .236 | 1.62 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 2.80 | .22 | 5.85 | .230 | 1.58 |
| 2.85 | .20 | 5.83 | .224 | 1.54 |
| 2.90 | .18 | 5.81 | .219 | 1.50 |
| 2.95 | .16 | 5.79 | .213 | 1.47 |
| 3.00 | .14 | 5.77 | .208 | 1.43 |
| 3.05 | .13 | 5.75 | .203 | 1.39 |
| 3.10 | .11 | 5.73 | .198 | 1.36 |
| 3.15 | .10 | 5.71 | .193 | 1.32 |
| 3.20 | .09 | 5.69 | .188 | 1.29 |
| 3.25 | .08 | 5.68 | .183 | 1.25 |
| 3.30 | .07 | 5.66 | .178 | 1.22 |
| 3.35 | .06 | 5.64 | .173 | 1.19 |
| 3.40 | .06 | 5.62 | .169 | 1.16 |
| 3.45 | .05 | 5.61 | .164 | 1.13 |
| 3.50 | .05 | 5.59 | .160 | 1.10 |
| 3.55 | .04 | 5.58 | .155 | 1.07 |
| 3.60 | .04 | 5.56 | .151 | 1.04 |
| 3.65 | .03 | 5.54 | .147 | 1.01 |
| 3.70 | .03 | 5.53 | .143 | .98 |
| 3.75 | .03 | 5.52 | .139 | .96 |
| 3.80 | .02 | 5.50 | .135 | .93 |
| 3.85 | .02 | 5.49 | .132 | .90 |
| 3.90 | .02 | 5.47 | .128 | .88 |
| 3.95 | .02 | 5.46 | .125 | .86 |
| 4.00 | .01 | 5.45 | .121 | .83 |
| 4.05 | .01 | 5.44 | .118 | .81 |
| 4.10 | .01 | 5.42 | .115 | .79 |
| 4.15 | .01 | 5.41 | .111 | .77 |
| 4.20 | .01 | 5.40 | .108 | .74 |
| 4.25 | .01 | 5.39 | .105 | .72 |
| 4.30 | .01 | 5.38 | .102 | .70 |
| 4.35 | .01 | 5.37 | .100 | .68 |
| 4.40 | .01 | 5.36 | .097 | .66 |
| 4.45 | .00 | 5.35 | .094 | .65 |
| 4.50 | .00 | 5.34 | .092 | .63 |
| 4.55 | .00 | 5.33 | .089 | .61 |
| 4.60 | .00 | 5.32 | .087 | .59 |
| 4.65 | .00 | 5.31 | .084 | .58 |
| 4.70 | .00 | 5.30 | .082 | .56 |
| 4.75 | .00 | 5.29 | .079 | .55 |
| 4.80 | .00 | 5.29 | .077 | .53 |
| 4.85 | .00 | 5.28 | .075 | .52 |
| 4.90 | .00 | 5.27 | .073 | .50 |
| 4.95 | .00 | 5.26 | .071 | .49 |
| 5.00 | .00 | 5.26 | .069 | .47 |
| 5.05 | .00 | 5.25 | .067 | .46 |
| 5.10 | .00 | 5.24 | .065 | .45 |
| 5.15 | .00 | 5.23 | .063 | .43 |
| 5.20 | .00 | 5.23 | .062 | .42 |
| 5.25 | .00 | 5.22 | .060 | .41 |
| 5.30 | .00 | 5.22 | .058 | .40 |
| 5.35 | .00 | 5.21 | .057 | .39 |
| 5.40 | .00 | 5.20 | .055 | .38 |
| 5.45 | .00 | 5.20 | .053 | .37 |
| 5.50 | .00 | 5.19 | .052 | .36 |
| 5.55 | .00 | 5.19 | .050 | .35 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 5.60 | .00 | 5.18 | .049 | .34 |
| 5.65 | .00 | 5.18 | .048 | .33 |
| 5.70 | .00 | 5.17 | .046 | .32 |
| 5.75 | .00 | 5.17 | .045 | .31 |
| 5.80 | .00 | 5.16 | .044 | .30 |
| 5.85 | .00 | 5.16 | .043 | .29 |
| 5.90 | .00 | 5.15 | .041 | .28 |

| | | | | |
|---|---|---|---|---|
| 5.95 | .00 | 5.15 | .040 | .28 |
| 6.00 | .00 | 5.14 | .039 | .27 |
| 6.05 | .00 | 5.14 | .038 | .26 |
| 6.10 | .00 | 5.14 | .037 | .25 |
| 6.15 | .00 | 5.13 | .036 | .25 |
| 6.20 | .00 | 5.13 | .035 | .24 |
| 6.25 | .00 | 5.13 | .034 | .23 |
| 6.30 | .00 | 5.12 | .033 | .23 |
| 6.35 | .00 | 5.12 | .032 | .22 |
| 6.40 | .00 | 5.12 | .031 | .21 |
| 6.45 | .00 | 5.11 | .030 | .21 |
| 6.50 | .00 | 5.11 | .029 | .20 |
| 6.55 | .00 | 5.11 | .029 | .20 |
| 6.60 | .00 | 5.10 | .028 | .19 |
| 6.65 | .00 | 5.10 | .027 | .19 |
| 6.70 | .00 | 5.10 | .026 | .18 |
| 6.75 | .00 | 5.09 | .026 | .18 |
| 6.80 | .00 | 5.09 | .025 | .17 |
| 6.85 | .00 | 5.09 | .024 | .17 |
| 6.90 | .00 | 5.09 | .023 | .16 |
| 6.95 | .00 | 5.08 | .023 | .16 |
| 7.00 | .00 | 5.08 | .022 | .15 |
| 7.05 | .00 | 5.08 | .022 | .15 |
| 7.10 | .00 | 5.08 | .021 | .14 |
| 7.15 | .00 | 5.08 | .020 | .14 |
| 7.20 | .00 | 5.07 | .020 | .14 |
| 7.25 | .00 | 5.07 | .019 | .13 |
| 7.30 | .00 | 5.07 | .019 | .13 |
| 7.35 | .00 | 5.07 | .018 | .12 |
| 7.40 | .00 | 5.07 | .018 | .12 |
| 7.45 | .00 | 5.06 | .017 | .12 |
| 7.50 | .00 | 5.06 | .017 | .11 |
| 7.55 | .00 | 5.06 | .016 | .11 |
| 7.60 | .00 | 5.06 | .016 | .11 |
| 7.65 | .00 | 5.06 | .015 | .11 |
| 7.70 | .00 | 5.06 | .015 | .10 |
| 7.75 | .00 | 5.05 | .014 | .10 |
| 7.80 | .00 | 5.05 | .014 | .10 |
| 7.85 | .00 | 5.05 | .014 | .09 |
| 7.90 | .00 | 5.05 | .013 | .09 |
| 7.95 | .00 | 5.05 | .013 | .09 |
| 8.00 | .00 | 5.05 | .013 | .09 |
| 8.05 | .00 | 5.05 | .012 | .08 |
| 8.10 | .00 | 5.04 | .012 | .08 |
| 8.15 | .00 | 5.04 | .012 | .08 |
| 8.20 | .00 | 5.04 | .011 | .08 |
| 8.25 | .00 | 5.04 | .011 | .07 |
| 8.30 | .00 | 5.04 | .011 | .07 |
| 8.35 | .00 | 5.04 | .010 | .07 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 8.40 | .00 | 5.04 | .010 | .07 |
| 8.45 | .00 | 5.04 | .010 | .07 |
| 8.50 | .00 | 5.04 | .009 | .06 |
| 8.55 | .00 | 5.03 | .009 | .06 |
| 8.60 | .00 | 5.03 | .009 | .06 |
| 8.65 | .00 | 5.03 | .009 | .06 |
| 8.70 | .00 | 5.03 | .008 | .06 |
| 8.75 | .00 | 5.03 | .008 | .06 |
| 8.80 | .00 | 5.03 | .008 | .05 |
| 8.85 | .00 | 5.03 | .008 | .05 |
| 8.90 | .00 | 5.03 | .008 | .05 |
| 8.95 | .00 | 5.03 | .007 | .05 |
| 9.00 | .00 | 5.03 | .007 | .05 |
| 9.05 | .00 | 5.03 | .007 | .05 |
| 9.10 | .00 | 5.02 | .007 | .05 |
| 9.15 | .00 | 5.02 | .007 | .04 |
| 9.20 | .00 | 5.02 | .006 | .04 |
| 9.25 | .00 | 5.02 | .006 | .04 |

| | | | | |
|---|---|---|---|---|
| 9.30 | .00 | 5.02 | .006 | .04 |
| 9.35 | .00 | 5.02 | .006 | .04 |
| 9.40 | .00 | 5.02 | .006 | .04 |
| 9.45 | .00 | 5.02 | .006 | .04 |
| 9.50 | .00 | 5.02 | .005 | .04 |
| 9.55 | .00 | 5.02 | .005 | .04 |
| 9.60 | .00 | 5.02 | .005 | .03 |
| 9.65 | .00 | 5.02 | .005 | .03 |
| 9.70 | .00 | 5.02 | .005 | .03 |
| 9.75 | .00 | 5.02 | .005 | .03 |
| 9.80 | .00 | 5.02 | .005 | .03 |
| 9.85 | .00 | 5.02 | .004 | .03 |
| 9.90 | .00 | 5.02 | .004 | .03 |
| 9.95 | .00 | 5.02 | .004 | .03 |
| 10.00 | .00 | 5.01 | .004 | .03 |
| 10.05 | .00 | 5.01 | .004 | .03 |
| 10.10 | .00 | 5.01 | .004 | .03 |
| 10.15 | .00 | 5.01 | .004 | .03 |
| 10.20 | .00 | 5.01 | .004 | .02 |
| 10.25 | .00 | 5.01 | .004 | .02 |
| 10.30 | .00 | 5.01 | .003 | .02 |
| 10.35 | .00 | 5.01 | .003 | .02 |
| 10.40 | .00 | 5.01 | .003 | .02 |
| 10.45 | .00 | 5.01 | .003 | .02 |
| 10.50 | .00 | 5.01 | .003 | .02 |
| 10.55 | .00 | 5.01 | .003 | .02 |
| 10.60 | .00 | 5.01 | .003 | .02 |
| 10.65 | .00 | 5.01 | .003 | .02 |
| 10.70 | .00 | 5.01 | .003 | .02 |
| 10.75 | .00 | 5.01 | .003 | .02 |
| 10.80 | .00 | 5.01 | .003 | .02 |
| 10.85 | .00 | 5.01 | .002 | .02 |
| 10.90 | .00 | 5.01 | .002 | .02 |
| 10.95 | .00 | 5.01 | .002 | .02 |
| 11.00 | .00 | 5.01 | .002 | .02 |
| 11.05 | .00 | 5.01 | .002 | .02 |
| 11.10 | .00 | 5.01 | .002 | .01 |
| 11.15 | .00 | 5.01 | .002 | .01 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 11.20 | .00 | 5.01 | .002 | .01 |
| 11.25 | .00 | 5.01 | .002 | .01 |
| 11.30 | .00 | 5.01 | .002 | .01 |
| 11.35 | .00 | 5.01 | .002 | .01 |
| 11.40 | .00 | 5.01 | .002 | .01 |
| 11.45 | .00 | 5.01 | .002 | .01 |
| 11.50 | .00 | 5.01 | .002 | .01 |
| 11.55 | .00 | 5.01 | .002 | .01 |
| 11.60 | .00 | 5.01 | .002 | .01 |
| 11.65 | .00 | 5.01 | .002 | .01 |
| 11.70 | .00 | 5.01 | .002 | .01 |
| 11.75 | .00 | 5.01 | .001 | .01 |
| 11.80 | .00 | 5.01 | .001 | .01 |
| 11.85 | .00 | 5.01 | .001 | .01 |
| 11.90 | .00 | 5.01 | .001 | .01 |
| 11.95 | .00 | 5.00 | .001 | .01 |
| 12.00 | .00 | 5.00 | .001 | .01 |
| 12.05 | .00 | 5.00 | .001 | .01 |
| 12.10 | .00 | 5.00 | .001 | .01 |
| 12.15 | .00 | 5.00 | .001 | .01 |
| 12.20 | .00 | 5.00 | .001 | .01 |
| 12.25 | .00 | 5.00 | .001 | .01 |
| 12.30 | .00 | 5.00 | .001 | .01 |
| 12.35 | .00 | 5.00 | .001 | .01 |
| 12.40 | .00 | 5.00 | .001 | .01 |
| 12.45 | .00 | 5.00 | .001 | .01 |
| 12.50 | .00 | 5.00 | .001 | .01 |
| 12.55 | .00 | 5.00 | .001 | .01 |
| 12.60 | .00 | 5.00 | .001 | .01 |

| | | | | |
|---|---|---|---|---|
| 12.65 | .00 | 5.00 | .001 | .01 |
| 12.70 | .00 | 5.00 | .001 | .01 |
| 12.75 | .00 | 5.00 | .001 | .01 |
| 12.80 | .00 | 5.00 | .001 | .01 |
| 12.85 | .00 | 5.00 | .001 | .01 |
| 12.90 | .00 | 5.00 | .001 | .01 |
| 12.95 | .00 | 5.00 | .001 | .01 |
| 13.00 | .00 | 5.00 | .001 | .01 |
| 13.05 | .00 | 5.00 | .001 | .00 |

PEAK DISCHARGE = 1.952 CFS - PEAK OCCURS AT HOUR 1.90
MAXIMUM WATER SURFACE ELEVATION = 6.129
MAXIMUM STORAGE = .3112 AC-FT INCREMENTAL TIME= .050000HRS

```
*DETERMINATION OF WESTERN POND OFFSITE OF UNIT 4 :
*S******ROUTE THROUGH OFFSITE POND WEST OF UNIT 4
ROUTE RESERVOIR     ID=23 HYD=POND4 INFLOW ID=26  CODE=1
                    OUTFLOW (CFS) STORAGE (AC FT) ELEV (FT)
                         0       0       2
                         1.8530186       0.683181448    3
                         2.620564035     1.550961578    4
```

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

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 2.00 | .000 | .00 |
| .05 | .00 | 2.00 | .000 | .00 |
| .10 | .00 | 2.00 | .000 | .00 |
| .15 | .00 | 2.00 | .000 | .00 |
| .20 | .00 | 2.00 | .000 | .00 |
| .25 | .00 | 2.00 | .000 | .00 |
| .30 | .00 | 2.00 | .000 | .00 |
| .35 | .00 | 2.00 | .000 | .00 |
| .40 | .00 | 2.00 | .000 | .00 |
| .45 | .00 | 2.00 | .000 | .00 |
| .50 | .00 | 2.00 | .000 | .00 |
| .55 | .00 | 2.00 | .000 | .00 |
| .60 | .00 | 2.00 | .000 | .00 |
| .65 | .00 | 2.00 | .000 | .00 |
| .70 | .00 | 2.00 | .000 | .00 |
| .75 | .00 | 2.00 | .000 | .00 |
| .80 | .00 | 2.00 | .000 | .00 |
| .85 | .00 | 2.00 | .000 | .00 |
| .90 | .00 | 2.00 | .000 | .00 |
| .95 | .00 | 2.00 | .000 | .00 |
| 1.00 | .00 | 2.00 | .000 | .00 |
| 1.05 | .00 | 2.00 | .000 | .00 |
| 1.10 | .00 | 2.00 | .000 | .00 |
| 1.15 | .02 | 2.00 | .000 | .00 |
| 1.20 | .16 | 2.00 | .000 | .00 |
| 1.25 | .61 | 2.00 | .002 | .01 |
| 1.30 | 1.35 | 2.01 | .006 | .02 |
| 1.35 | 4.17 | 2.03 | .017 | .05 |
| 1.40 | 14.26 | 2.08 | .055 | .15 |
| 1.45 | 28.15 | 2.21 | .141 | .38 |
| 1.50 | 35.55 | 2.40 | .271 | .73 |
| 1.55 | 34.07 | 2.60 | .411 | 1.11 |
| 1.60 | 28.33 | 2.78 | .534 | 1.45 |
| 1.65 | 22.25 | 2.93 | .632 | 1.72 |
| 1.70 | 17.21 | 3.03 | .706 | 1.87 |
| 1.75 | 13.34 | 3.09 | .762 | 1.92 |
| 1.80 | 10.52 | 3.14 | .803 | 1.96 |
| 1.85 | 8.51 | 3.17 | .834 | 1.99 |
| 1.90 | 7.25 | 3.20 | .859 | 2.01 |
| 1.95 | 6.50 | 3.23 | .879 | 2.03 |
| 2.00 | 5.97 | 3.25 | .896 | 2.04 |
| 2.05 | 5.52 | 3.26 | .911 | 2.05 |
| 2.10 | 4.97 | 3.28 | .924 | 2.07 |
| 2.15 | 4.44 | 3.29 | .935 | 2.08 |
| 2.20 | 4.04 | 3.30 | .944 | 2.08 |
| 2.25 | 3.75 | 3.31 | .952 | 2.09 |
| 2.30 | 3.52 | 3.32 | .958 | 2.10 |
| 2.35 | 3.32 | 3.32 | .963 | 2.10 |
| 2.40 | 3.14 | 3.33 | .968 | 2.11 |
| 2.45 | 2.98 | 3.33 | .972 | 2.11 |
| 2.50 | 2.82 | 3.34 | .975 | 2.11 |
| 2.55 | 2.67 | 3.34 | .978 | 2.11 |
| 2.60 | 2.53 | 3.34 | .980 | 2.12 |
| 2.65 | 2.41 | 3.34 | .981 | 2.12 |
| 2.70 | 2.29 | 3.34 | .982 | 2.12 |
| 2.75 | 2.18 | 3.35 | .983 | 2.12 |

| TIME | INFLOW | ELEV | VOLUME | OUTFLOW |
|---|---|---|---|---|

| (HRS) | (CFS) | (FEET) | (AC-FT) | (CFS) |
|---|---|---|---|---|
| 2.80 | 2.09 | 3.35 | .983 | 2.12 |
| 2.85 | 1.99 | 3.35 | .983 | 2.12 |
| 2.90 | 1.91 | 3.34 | .982 | 2.12 |
| 2.95 | 1.83 | 3.34 | .981 | 2.12 |
| 3.00 | 1.76 | 3.34 | .980 | 2.12 |
| 3.05 | 1.69 | 3.34 | .978 | 2.11 |
| 3.10 | 1.62 | 3.34 | .976 | 2.11 |
| 3.15 | 1.56 | 3.34 | .974 | 2.11 |
| 3.20 | 1.51 | 3.33 | .972 | 2.11 |
| 3.25 | 1.45 | 3.33 | .969 | 2.11 |
| 3.30 | 1.40 | 3.33 | .966 | 2.10 |
| 3.35 | 1.35 | 3.32 | .963 | 2.10 |
| 3.40 | 1.31 | 3.32 | .960 | 2.10 |
| 3.45 | 1.26 | 3.32 | .957 | 2.09 |
| 3.50 | 1.22 | 3.31 | .953 | 2.09 |
| 3.55 | 1.18 | 3.31 | .950 | 2.09 |
| 3.60 | 1.15 | 3.30 | .946 | 2.09 |
| 3.65 | 1.11 | 3.30 | .942 | 2.08 |
| 3.70 | 1.08 | 3.29 | .938 | 2.08 |
| 3.75 | 1.04 | 3.29 | .933 | 2.07 |
| 3.80 | 1.01 | 3.28 | .929 | 2.07 |
| 3.85 | .98 | 3.28 | .925 | 2.07 |
| 3.90 | .95 | 3.27 | .920 | 2.06 |
| 3.95 | .92 | 3.27 | .916 | 2.06 |
| 4.00 | .89 | 3.26 | .911 | 2.05 |
| 4.05 | .87 | 3.26 | .906 | 2.05 |
| 4.10 | .84 | 3.25 | .901 | 2.05 |
| 4.15 | .82 | 3.25 | .896 | 2.04 |
| 4.20 | .80 | 3.24 | .891 | 2.04 |
| 4.25 | .77 | 3.23 | .886 | 2.03 |
| 4.30 | .75 | 3.23 | .881 | 2.03 |
| 4.35 | .73 | 3.22 | .875 | 2.02 |
| 4.40 | .71 | 3.22 | .870 | 2.02 |
| 4.45 | .69 | 3.21 | .864 | 2.01 |
| 4.50 | .67 | 3.20 | .859 | 2.01 |
| 4.55 | .65 | 3.20 | .853 | 2.00 |
| 4.60 | .64 | 3.19 | .848 | 2.00 |
| 4.65 | .62 | 3.18 | .842 | 1.99 |
| 4.70 | .60 | 3.18 | .836 | 1.99 |
| 4.75 | .58 | 3.17 | .831 | 1.98 |
| 4.80 | .57 | 3.16 | .825 | 1.98 |
| 4.85 | .55 | 3.16 | .819 | 1.97 |
| 4.90 | .54 | 3.15 | .813 | 1.97 |
| 4.95 | .52 | 3.14 | .807 | 1.96 |
| 5.00 | .51 | 3.14 | .801 | 1.96 |
| 5.05 | .50 | 3.13 | .795 | 1.95 |
| 5.10 | .48 | 3.12 | .789 | 1.95 |
| 5.15 | .47 | 3.12 | .783 | 1.94 |
| 5.20 | .46 | 3.11 | .777 | 1.94 |
| 5.25 | .45 | 3.10 | .771 | 1.93 |
| 5.30 | .44 | 3.09 | .765 | 1.93 |
| 5.35 | .43 | 3.09 | .759 | 1.92 |
| 5.40 | .42 | 3.08 | .752 | 1.91 |
| 5.45 | .41 | 3.07 | .746 | 1.91 |
| 5.50 | .40 | 3.07 | .740 | 1.90 |
| 5.55 | .39 | 3.06 | .734 | 1.90 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 5.60 | .38 | 3.05 | .727 | 1.89 |
| 5.65 | .37 | 3.04 | .721 | 1.89 |
| 5.70 | .36 | 3.04 | .715 | 1.88 |
| 5.75 | .35 | 3.03 | .709 | 1.88 |
| 5.80 | .34 | 3.02 | .702 | 1.87 |
| 5.85 | .33 | 3.01 | .696 | 1.86 |
| 5.90 | .33 | 3.01 | .690 | 1.86 |
| 5.95 | .32 | 3.00 | .683 | 1.85 |
| 6.00 | .31 | 2.99 | .677 | 1.84 |

| | | | | |
|---|---|---|---|---|
| 6.05 | .30 | 2.98 | .671 | 1.82 |
| 6.10 | .29 | 2.97 | .664 | 1.80 |
| 6.15 | .27 | 2.96 | .658 | 1.79 |
| 6.20 | .25 | 2.95 | .652 | 1.77 |
| 6.25 | .24 | 2.95 | .646 | 1.75 |
| 6.30 | .23 | 2.94 | .639 | 1.73 |
| 6.35 | .22 | 2.93 | .633 | 1.72 |
| 6.40 | .22 | 2.92 | .627 | 1.70 |
| 6.45 | .21 | 2.91 | .621 | 1.68 |
| 6.50 | .20 | 2.90 | .615 | 1.67 |
| 6.55 | .20 | 2.89 | .609 | 1.65 |
| 6.60 | .19 | 2.88 | .603 | 1.64 |
| 6.65 | .19 | 2.87 | .597 | 1.62 |
| 6.70 | .18 | 2.87 | .591 | 1.60 |
| 6.75 | .18 | 2.86 | .585 | 1.59 |
| 6.80 | .17 | 2.85 | .579 | 1.57 |
| 6.85 | .17 | 2.84 | .574 | 1.56 |
| 6.90 | .16 | 2.83 | .568 | 1.54 |
| 6.95 | .16 | 2.82 | .562 | 1.52 |
| 7.00 | .15 | 2.81 | .557 | 1.51 |
| 7.05 | .15 | 2.81 | .551 | 1.49 |
| 7.10 | .14 | 2.80 | .545 | 1.48 |
| 7.15 | .14 | 2.79 | .540 | 1.46 |
| 7.20 | .14 | 2.78 | .535 | 1.45 |
| 7.25 | .13 | 2.77 | .529 | 1.44 |
| 7.30 | .13 | 2.77 | .524 | 1.42 |
| 7.35 | .12 | 2.76 | .518 | 1.41 |
| 7.40 | .12 | 2.75 | .513 | 1.39 |
| 7.45 | .12 | 2.74 | .508 | 1.38 |
| 7.50 | .11 | 2.74 | .503 | 1.36 |
| 7.55 | .11 | 2.73 | .498 | 1.35 |
| 7.60 | .11 | 2.72 | .493 | 1.34 |
| 7.65 | .11 | 2.71 | .487 | 1.32 |
| 7.70 | .10 | 2.71 | .482 | 1.31 |
| 7.75 | .10 | 2.70 | .477 | 1.30 |
| 7.80 | .10 | 2.69 | .473 | 1.28 |
| 7.85 | .09 | 2.68 | .468 | 1.27 |
| 7.90 | .09 | 2.68 | .463 | 1.26 |
| 7.95 | .09 | 2.67 | .458 | 1.24 |
| 8.00 | .09 | 2.66 | .453 | 1.23 |
| 8.05 | .08 | 2.66 | .449 | 1.22 |
| 8.10 | .08 | 2.65 | .444 | 1.20 |
| 8.15 | .08 | 2.64 | .439 | 1.19 |
| 8.20 | .08 | 2.64 | .435 | 1.18 |
| 8.25 | .07 | 2.63 | .430 | 1.17 |
| 8.30 | .07 | 2.62 | .426 | 1.15 |
| 8.35 | .07 | 2.62 | .421 | 1.14 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 8.40 | .07 | 2.61 | .417 | 1.13 |
| 8.45 | .07 | 2.60 | .413 | 1.12 |
| 8.50 | .06 | 2.60 | .408 | 1.11 |
| 8.55 | .06 | 2.59 | .404 | 1.10 |
| 8.60 | .06 | 2.58 | .400 | 1.08 |
| 8.65 | .06 | 2.58 | .395 | 1.07 |
| 8.70 | .06 | 2.57 | .391 | 1.06 |
| 8.75 | .06 | 2.57 | .387 | 1.05 |
| 8.80 | .05 | 2.56 | .383 | 1.04 |
| 8.85 | .05 | 2.55 | .379 | 1.03 |
| 8.90 | .05 | 2.55 | .375 | 1.02 |
| 8.95 | .05 | 2.54 | .371 | 1.01 |
| 9.00 | .05 | 2.54 | .367 | 1.00 |
| 9.05 | .05 | 2.53 | .363 | .99 |
| 9.10 | .05 | 2.53 | .359 | .97 |
| 9.15 | .04 | 2.52 | .356 | .96 |
| 9.20 | .04 | 2.51 | .352 | .95 |
| 9.25 | .04 | 2.51 | .348 | .94 |
| 9.30 | .04 | 2.50 | .344 | .93 |
| 9.35 | .04 | 2.50 | .341 | .92 |

| | | | | |
|---|---|---|---|---|
| 9.40 | .04 | 2.49 | .337 | .91 |
| 9.45 | .04 | 2.49 | .333 | .90 |
| 9.50 | .04 | 2.48 | .330 | .89 |
| 9.55 | .04 | 2.48 | .326 | .89 |
| 9.60 | .03 | 2.47 | .323 | .88 |
| 9.65 | .03 | 2.47 | .319 | .87 |
| 9.70 | .03 | 2.46 | .316 | .86 |
| 9.75 | .03 | 2.46 | .313 | .85 |
| 9.80 | .03 | 2.45 | .309 | .84 |
| 9.85 | .03 | 2.45 | .306 | .83 |
| 9.90 | .03 | 2.44 | .303 | .82 |
| 9.95 | .03 | 2.44 | .299 | .81 |
| 10.00 | .03 | 2.43 | .296 | .80 |
| 10.05 | .03 | 2.43 | .293 | .79 |
| 10.10 | .03 | 2.42 | .290 | .79 |
| 10.15 | .03 | 2.42 | .287 | .78 |
| 10.20 | .02 | 2.42 | .284 | .77 |
| 10.25 | .02 | 2.41 | .281 | .76 |
| 10.30 | .02 | 2.41 | .277 | .75 |
| 10.35 | .02 | 2.40 | .274 | .74 |
| 10.40 | .02 | 2.40 | .272 | .74 |
| 10.45 | .02 | 2.39 | .269 | .73 |
| 10.50 | .02 | 2.39 | .266 | .72 |
| 10.55 | .02 | 2.38 | .263 | .71 |
| 10.60 | .02 | 2.38 | .260 | .71 |
| 10.65 | .02 | 2.38 | .257 | .70 |
| 10.70 | .02 | 2.37 | .254 | .69 |
| 10.75 | .02 | 2.37 | .252 | .68 |
| 10.80 | .02 | 2.36 | .249 | .67 |
| 10.85 | .02 | 2.36 | .246 | .67 |
| 10.90 | .02 | 2.36 | .243 | .66 |
| 10.95 | .02 | 2.35 | .241 | .65 |
| 11.00 | .02 | 2.35 | .238 | .65 |
| 11.05 | .02 | 2.34 | .236 | .64 |
| 11.10 | .01 | 2.34 | .233 | .63 |
| 11.15 | .01 | 2.34 | .231 | .63 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 11.20 | .01 | 2.33 | .228 | .62 |
| 11.25 | .01 | 2.33 | .226 | .61 |
| 11.30 | .01 | 2.33 | .223 | .61 |
| 11.35 | .01 | 2.32 | .221 | .60 |
| 11.40 | .01 | 2.32 | .218 | .59 |
| 11.45 | .01 | 2.32 | .216 | .59 |
| 11.50 | .01 | 2.31 | .213 | .58 |
| 11.55 | .01 | 2.31 | .211 | .57 |
| 11.60 | .01 | 2.31 | .209 | .57 |
| 11.65 | .01 | 2.30 | .207 | .56 |
| 11.70 | .01 | 2.30 | .204 | .55 |
| 11.75 | .01 | 2.30 | .202 | .55 |
| 11.80 | .01 | 2.29 | .200 | .54 |
| 11.85 | .01 | 2.29 | .198 | .54 |
| 11.90 | .01 | 2.29 | .196 | .53 |
| 11.95 | .01 | 2.28 | .193 | .52 |
| 12.00 | .01 | 2.28 | .191 | .52 |
| 12.05 | .01 | 2.28 | .189 | .51 |
| 12.10 | .01 | 2.27 | .187 | .51 |
| 12.15 | .01 | 2.27 | .185 | .50 |
| 12.20 | .01 | 2.27 | .183 | .50 |
| 12.25 | .01 | 2.26 | .181 | .49 |
| 12.30 | .01 | 2.26 | .179 | .49 |
| 12.35 | .01 | 2.26 | .177 | .48 |
| 12.40 | .01 | 2.26 | .175 | .47 |
| 12.45 | .01 | 2.25 | .173 | .47 |
| 12.50 | .01 | 2.25 | .171 | .46 |
| 12.55 | .01 | 2.25 | .169 | .46 |
| 12.60 | .01 | 2.25 | .168 | .45 |
| 12.65 | .01 | 2.24 | .166 | .45 |
| 12.70 | .01 | 2.24 | .164 | .44 |

| | | | | |
|---|---|---|---|---|
| 12.75 | .01 | 2.24 | .162 | .44 |
| 12.80 | .01 | 2.23 | .160 | .43 |
| 12.85 | .01 | 2.23 | .159 | .43 |
| 12.90 | .01 | 2.23 | .157 | .43 |
| 12.95 | .01 | 2.23 | .155 | .42 |
| 13.00 | .01 | 2.22 | .153 | .42 |
| 13.05 | .00 | 2.22 | .152 | .41 |
| 13.10 | .00 | 2.22 | .150 | .41 |
| 13.15 | .00 | 2.22 | .148 | .40 |
| 13.20 | .00 | 2.21 | .147 | .40 |
| 13.25 | .00 | 2.21 | .145 | .39 |
| 13.30 | .00 | 2.21 | .143 | .39 |
| 13.35 | .00 | 2.21 | .142 | .38 |
| 13.40 | .00 | 2.21 | .140 | .38 |
| 13.45 | .00 | 2.20 | .139 | .38 |
| 13.50 | .00 | 2.20 | .137 | .37 |
| 13.55 | .00 | 2.20 | .136 | .37 |
| 13.60 | .00 | 2.20 | .134 | .36 |
| 13.65 | .00 | 2.19 | .133 | .36 |
| 13.70 | .00 | 2.19 | .131 | .36 |
| 13.75 | .00 | 2.19 | .130 | .35 |
| 13.80 | .00 | 2.19 | .128 | .35 |
| 13.85 | .00 | 2.19 | .127 | .34 |
| 13.90 | .00 | 2.18 | .126 | .34 |
| 13.95 | .00 | 2.18 | .124 | .34 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 14.00 | .00 | 2.18 | .123 | .33 |
| 14.05 | .00 | 2.18 | .121 | .33 |
| 14.10 | .00 | 2.18 | .120 | .33 |
| 14.15 | .00 | 2.17 | .119 | .32 |
| 14.20 | .00 | 2.17 | .117 | .32 |
| 14.25 | .00 | 2.17 | .116 | .32 |
| 14.30 | .00 | 2.17 | .115 | .31 |
| 14.35 | .00 | 2.17 | .114 | .31 |
| 14.40 | .00 | 2.16 | .112 | .30 |
| 14.45 | .00 | 2.16 | .111 | .30 |
| 14.50 | .00 | 2.16 | .110 | .30 |
| 14.55 | .00 | 2.16 | .109 | .29 |
| 14.60 | .00 | 2.16 | .107 | .29 |
| 14.65 | .00 | 2.16 | .106 | .29 |
| 14.70 | .00 | 2.15 | .105 | .29 |
| 14.75 | .00 | 2.15 | .104 | .28 |
| 14.80 | .00 | 2.15 | .103 | .28 |
| 14.85 | .00 | 2.15 | .102 | .28 |
| 14.90 | .00 | 2.15 | .101 | .27 |
| 14.95 | .00 | 2.15 | .099 | .27 |
| 15.00 | .00 | 2.14 | .098 | .27 |
| 15.05 | .00 | 2.14 | .097 | .26 |
| 15.10 | .00 | 2.14 | .096 | .26 |
| 15.15 | .00 | 2.14 | .095 | .26 |
| 15.20 | .00 | 2.14 | .094 | .26 |
| 15.25 | .00 | 2.14 | .093 | .25 |
| 15.30 | .00 | 2.13 | .092 | .25 |
| 15.35 | .00 | 2.13 | .091 | .25 |
| 15.40 | .00 | 2.13 | .090 | .24 |
| 15.45 | .00 | 2.13 | .089 | .24 |
| 15.50 | .00 | 2.13 | .088 | .24 |
| 15.55 | .00 | 2.13 | .087 | .24 |
| 15.60 | .00 | 2.13 | .086 | .23 |
| 15.65 | .00 | 2.12 | .085 | .23 |
| 15.70 | .00 | 2.12 | .084 | .23 |
| 15.75 | .00 | 2.12 | .083 | .23 |
| 15.80 | .00 | 2.12 | .082 | .22 |
| 15.85 | .00 | 2.12 | .081 | .22 |
| 15.90 | .00 | 2.12 | .080 | .22 |
| 15.95 | .00 | 2.12 | .080 | .22 |
| 16.00 | .00 | 2.12 | .079 | .21 |
| 16.05 | .00 | 2.11 | .078 | .21 |

| | | | | |
|---|---|---|---|---|
| 16.10 | .00 | 2.11 | .077 | .21 |
| 16.15 | .00 | 2.11 | .076 | .21 |
| 16.20 | .00 | 2.11 | .075 | .20 |
| 16.25 | .00 | 2.11 | .074 | .20 |
| 16.30 | .00 | 2.11 | .074 | .20 |
| 16.35 | .00 | 2.11 | .073 | .20 |
| 16.40 | .00 | 2.11 | .072 | .20 |
| 16.45 | .00 | 2.10 | .071 | .19 |
| 16.50 | .00 | 2.10 | .070 | .19 |
| 16.55 | .00 | 2.10 | .070 | .19 |
| 16.60 | .00 | 2.10 | .069 | .19 |
| 16.65 | .00 | 2.10 | .068 | .18 |
| 16.70 | .00 | 2.10 | .067 | .18 |
| 16.75 | .00 | 2.10 | .066 | .18 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 16.80 | .00 | 2.10 | .066 | .18 |
| 16.85 | .00 | 2.10 | .065 | .18 |
| 16.90 | .00 | 2.09 | .064 | .17 |
| 16.95 | .00 | 2.09 | .064 | .17 |
| 17.00 | .00 | 2.09 | .063 | .17 |
| 17.05 | .00 | 2.09 | .062 | .17 |
| 17.10 | .00 | 2.09 | .061 | .17 |
| 17.15 | .00 | 2.09 | .061 | .16 |
| 17.20 | .00 | 2.09 | .060 | .16 |
| 17.25 | .00 | 2.09 | .059 | .16 |
| 17.30 | .00 | 2.09 | .059 | .16 |
| 17.35 | .00 | 2.09 | .058 | .16 |
| 17.40 | .00 | 2.08 | .057 | .16 |
| 17.45 | .00 | 2.08 | .057 | .15 |
| 17.50 | .00 | 2.08 | .056 | .15 |
| 17.55 | .00 | 2.08 | .056 | .15 |
| 17.60 | .00 | 2.08 | .055 | .15 |
| 17.65 | .00 | 2.08 | .054 | .15 |
| 17.70 | .00 | 2.08 | .054 | .15 |
| 17.75 | .00 | 2.08 | .053 | .14 |
| 17.80 | .00 | 2.08 | .053 | .14 |
| 17.85 | .00 | 2.08 | .052 | .14 |
| 17.90 | .00 | 2.08 | .051 | .14 |
| 17.95 | .00 | 2.07 | .051 | .14 |
| 18.00 | .00 | 2.07 | .050 | .14 |
| 18.05 | .00 | 2.07 | .050 | .13 |
| 18.10 | .00 | 2.07 | .049 | .13 |
| 18.15 | .00 | 2.07 | .049 | .13 |
| 18.20 | .00 | 2.07 | .048 | .13 |
| 18.25 | .00 | 2.07 | .048 | .13 |
| 18.30 | .00 | 2.07 | .047 | .13 |
| 18.35 | .00 | 2.07 | .046 | .13 |
| 18.40 | .00 | 2.07 | .046 | .12 |
| 18.45 | .00 | 2.07 | .045 | .12 |
| 18.50 | .00 | 2.07 | .045 | .12 |
| 18.55 | .00 | 2.07 | .044 | .12 |
| 18.60 | .00 | 2.06 | .044 | .12 |
| 18.65 | .00 | 2.06 | .043 | .12 |
| 18.70 | .00 | 2.06 | .043 | .12 |
| 18.75 | .00 | 2.06 | .042 | .12 |
| 18.80 | .00 | 2.06 | .042 | .11 |
| 18.85 | .00 | 2.06 | .042 | .11 |
| 18.90 | .00 | 2.06 | .041 | .11 |
| 18.95 | .00 | 2.06 | .041 | .11 |
| 19.00 | .00 | 2.06 | .040 | .11 |
| 19.05 | .00 | 2.06 | .040 | .11 |
| 19.10 | .00 | 2.06 | .039 | .11 |
| 19.15 | .00 | 2.06 | .039 | .11 |
| 19.20 | .00 | 2.06 | .038 | .10 |
| 19.25 | .00 | 2.06 | .038 | .10 |
| 19.30 | .00 | 2.05 | .038 | .10 |
| 19.35 | .00 | 2.05 | .037 | .10 |
| 19.40 | .00 | 2.05 | .037 | .10 |

| | | | | |
|---|---|---|---|---|
| 19.45 | .00 | 2.05 | .036 | .10 |
| 19.50 | .00 | 2.05 | .036 | .10 |
| 19.55 | .00 | 2.05 | .035 | .10 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 19.60 | .00 | 2.05 | .035 | .10 |
| 19.65 | .00 | 2.05 | .035 | .09 |
| 19.70 | .00 | 2.05 | .034 | .09 |
| 19.75 | .00 | 2.05 | .034 | .09 |
| 19.80 | .00 | 2.05 | .034 | .09 |
| 19.85 | .00 | 2.05 | .033 | .09 |
| 19.90 | .00 | 2.05 | .033 | .09 |
| 19.95 | .00 | 2.05 | .032 | .09 |
| 20.00 | .00 | 2.05 | .032 | .09 |
| 20.05 | .00 | 2.05 | .032 | .09 |
| 20.10 | .00 | 2.05 | .031 | .09 |
| 20.15 | .00 | 2.05 | .031 | .08 |
| 20.20 | .00 | 2.04 | .031 | .08 |
| 20.25 | .00 | 2.04 | .030 | .08 |
| 20.30 | .00 | 2.04 | .030 | .08 |
| 20.35 | .00 | 2.04 | .030 | .08 |
| 20.40 | .00 | 2.04 | .029 | .08 |
| 20.45 | .00 | 2.04 | .029 | .08 |
| 20.50 | .00 | 2.04 | .029 | .08 |
| 20.55 | .00 | 2.04 | .028 | .08 |
| 20.60 | .00 | 2.04 | .028 | .08 |
| 20.65 | .00 | 2.04 | .028 | .08 |
| 20.70 | .00 | 2.04 | .027 | .07 |
| 20.75 | .00 | 2.04 | .027 | .07 |
| 20.80 | .00 | 2.04 | .027 | .07 |
| 20.85 | .00 | 2.04 | .027 | .07 |
| 20.90 | .00 | 2.04 | .026 | .07 |
| 20.95 | .00 | 2.04 | .026 | .07 |
| 21.00 | .00 | 2.04 | .026 | .07 |
| 21.05 | .00 | 2.04 | .025 | .07 |
| 21.10 | .00 | 2.04 | .025 | .07 |
| 21.15 | .00 | 2.04 | .025 | .07 |
| 21.20 | .00 | 2.04 | .025 | .07 |
| 21.25 | .00 | 2.04 | .024 | .07 |
| 21.30 | .00 | 2.04 | .024 | .07 |
| 21.35 | .00 | 2.03 | .024 | .06 |
| 21.40 | .00 | 2.03 | .023 | .06 |
| 21.45 | .00 | 2.03 | .023 | .06 |
| 21.50 | .00 | 2.03 | .023 | .06 |
| 21.55 | .00 | 2.03 | .023 | .06 |
| 21.60 | .00 | 2.03 | .022 | .06 |
| 21.65 | .00 | 2.03 | .022 | .06 |
| 21.70 | .00 | 2.03 | .022 | .06 |
| 21.75 | .00 | 2.03 | .022 | .06 |
| 21.80 | .00 | 2.03 | .021 | .06 |
| 21.85 | .00 | 2.03 | .021 | .06 |
| 21.90 | .00 | 2.03 | .021 | .06 |
| 21.95 | .00 | 2.03 | .021 | .06 |
| 22.00 | .00 | 2.03 | .020 | .06 |
| 22.05 | .00 | 2.03 | .020 | .05 |
| 22.10 | .00 | 2.03 | .020 | .05 |
| 22.15 | .00 | 2.03 | .020 | .05 |
| 22.20 | .00 | 2.03 | .020 | .05 |
| 22.25 | .00 | 2.03 | .019 | .05 |
| 22.30 | .00 | 2.03 | .019 | .05 |
| 22.35 | .00 | 2.03 | .019 | .05 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 22.40 | .00 | 2.03 | .019 | .05 |
| 22.45 | .00 | 2.03 | .019 | .05 |
| 22.50 | .00 | 2.03 | .018 | .05 |
| 22.55 | .00 | 2.03 | .018 | .05 |

| | | | | |
|---|---|---|---|---|
| 22.60 | .00 | 2.03 | .018 | .05 |
| 22.65 | .00 | 2.03 | .018 | .05 |
| 22.70 | .00 | 2.03 | .018 | .05 |
| 22.75 | .00 | 2.03 | .017 | .05 |
| 22.80 | .00 | 2.03 | .017 | .05 |
| 22.85 | .00 | 2.02 | .017 | .05 |
| 22.90 | .00 | 2.02 | .017 | .05 |
| 22.95 | .00 | 2.02 | .017 | .04 |
| 23.00 | .00 | 2.02 | .016 | .04 |
| 23.05 | .00 | 2.02 | .016 | .04 |
| 23.10 | .00 | 2.02 | .016 | .04 |
| 23.15 | .00 | 2.02 | .016 | .04 |
| 23.20 | .00 | 2.02 | .016 | .04 |
| 23.25 | .00 | 2.02 | .015 | .04 |
| 23.30 | .00 | 2.02 | .015 | .04 |
| 23.35 | .00 | 2.02 | .015 | .04 |
| 23.40 | .00 | 2.02 | .015 | .04 |
| 23.45 | .00 | 2.02 | .015 | .04 |
| 23.50 | .00 | 2.02 | .015 | .04 |
| 23.55 | .00 | 2.02 | .014 | .04 |
| 23.60 | .00 | 2.02 | .014 | .04 |
| 23.65 | .00 | 2.02 | .014 | .04 |
| 23.70 | .00 | 2.02 | .014 | .04 |
| 23.75 | .00 | 2.02 | .014 | .04 |
| 23.80 | .00 | 2.02 | .014 | .04 |
| 23.85 | .00 | 2.02 | .014 | .04 |
| 23.90 | .00 | 2.02 | .013 | .04 |
| 23.95 | .00 | 2.02 | .013 | .04 |
| 24.00 | .00 | 2.02 | .013 | .04 |
| 24.05 | .00 | 2.02 | .013 | .04 |
| 24.10 | .00 | 2.02 | .013 | .03 |
| 24.15 | .00 | 2.02 | .013 | .03 |
| 24.20 | .00 | 2.02 | .013 | .03 |
| 24.25 | .00 | 2.02 | .012 | .03 |
| 24.30 | .00 | 2.02 | .012 | .03 |
| 24.35 | .00 | 2.02 | .012 | .03 |
| 24.40 | .00 | 2.02 | .012 | .03 |
| 24.45 | .00 | 2.02 | .012 | .03 |
| 24.50 | .00 | 2.02 | .012 | .03 |
| 24.55 | .00 | 2.02 | .012 | .03 |
| 24.60 | .00 | 2.02 | .011 | .03 |
| 24.65 | .00 | 2.02 | .011 | .03 |
| 24.70 | .00 | 2.02 | .011 | .03 |
| 24.75 | .00 | 2.02 | .011 | .03 |
| 24.80 | .00 | 2.02 | .011 | .03 |
| 24.85 | .00 | 2.02 | .011 | .03 |
| 24.90 | .00 | 2.02 | .011 | .03 |
| 24.95 | .00 | 2.02 | .011 | .03 |
| 25.00 | .00 | 2.02 | .010 | .03 |
| 25.05 | .00 | 2.02 | .010 | .03 |
| 25.10 | .00 | 2.01 | .010 | .03 |
| 25.15 | .00 | 2.01 | .010 | .03 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 25.20 | .00 | 2.01 | .010 | .03 |
| 25.25 | .00 | 2.01 | .010 | .03 |
| 25.30 | .00 | 2.01 | .010 | .03 |
| 25.35 | .00 | 2.01 | .010 | .03 |
| 25.40 | .00 | 2.01 | .010 | .03 |
| 25.45 | .00 | 2.01 | .009 | .03 |
| 25.50 | .00 | 2.01 | .009 | .03 |
| 25.55 | .00 | 2.01 | .009 | .03 |
| 25.60 | .00 | 2.01 | .009 | .02 |
| 25.65 | .00 | 2.01 | .009 | .02 |
| 25.70 | .00 | 2.01 | .009 | .02 |
| 25.75 | .00 | 2.01 | .009 | .02 |
| 25.80 | .00 | 2.01 | .009 | .02 |
| 25.85 | .00 | 2.01 | .009 | .02 |
| 25.90 | .00 | 2.01 | .009 | .02 |

| | | | | |
|---|---|---|---|---|
| 25.95 | .00 | 2.01 | .008 | .02 |
| 26.00 | .00 | 2.01 | .008 | .02 |
| 26.05 | .00 | 2.01 | .008 | .02 |
| 26.10 | .00 | 2.01 | .008 | .02 |
| 26.15 | .00 | 2.01 | .008 | .02 |
| 26.20 | .00 | 2.01 | .008 | .02 |
| 26.25 | .00 | 2.01 | .008 | .02 |
| 26.30 | .00 | 2.01 | .008 | .02 |
| 26.35 | .00 | 2.01 | .008 | .02 |
| 26.40 | .00 | 2.01 | .008 | .02 |
| 26.45 | .00 | 2.01 | .008 | .02 |
| 26.50 | .00 | 2.01 | .007 | .02 |
| 26.55 | .00 | 2.01 | .007 | .02 |
| 26.60 | .00 | 2.01 | .007 | .02 |
| 26.65 | .00 | 2.01 | .007 | .02 |
| 26.70 | .00 | 2.01 | .007 | .02 |
| 26.75 | .00 | 2.01 | .007 | .02 |
| 26.80 | .00 | 2.01 | .007 | .02 |
| 26.85 | .00 | 2.01 | .007 | .02 |
| 26.90 | .00 | 2.01 | .007 | .02 |
| 26.95 | .00 | 2.01 | .007 | .02 |
| 27.00 | .00 | 2.01 | .007 | .02 |
| 27.05 | .00 | 2.01 | .007 | .02 |
| 27.10 | .00 | 2.01 | .007 | .02 |
| 27.15 | .00 | 2.01 | .006 | .02 |
| 27.20 | .00 | 2.01 | .006 | .02 |
| 27.25 | .00 | 2.01 | .006 | .02 |
| 27.30 | .00 | 2.01 | .006 | .02 |
| 27.35 | .00 | 2.01 | .006 | .02 |
| 27.40 | .00 | 2.01 | .006 | .02 |
| 27.45 | .00 | 2.01 | .006 | .02 |
| 27.50 | .00 | 2.01 | .006 | .02 |
| 27.55 | .00 | 2.01 | .006 | .02 |
| 27.60 | .00 | 2.01 | .006 | .02 |
| 27.65 | .00 | 2.01 | .006 | .02 |
| 27.70 | .00 | 2.01 | .006 | .02 |
| 27.75 | .00 | 2.01 | .006 | .02 |
| 27.80 | .00 | 2.01 | .006 | .02 |
| 27.85 | .00 | 2.01 | .006 | .01 |
| 27.90 | .00 | 2.01 | .005 | .01 |
| 27.95 | .00 | 2.01 | .005 | .01 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 28.00 | .00 | 2.01 | .005 | .01 |
| 28.05 | .00 | 2.01 | .005 | .01 |
| 28.10 | .00 | 2.01 | .005 | .01 |
| 28.15 | .00 | 2.01 | .005 | .01 |
| 28.20 | .00 | 2.01 | .005 | .01 |
| 28.25 | .00 | 2.01 | .005 | .01 |
| 28.30 | .00 | 2.01 | .005 | .01 |
| 28.35 | .00 | 2.01 | .005 | .01 |
| 28.40 | .00 | 2.01 | .005 | .01 |
| 28.45 | .00 | 2.01 | .005 | .01 |
| 28.50 | .00 | 2.01 | .005 | .01 |
| 28.55 | .00 | 2.01 | .005 | .01 |
| 28.60 | .00 | 2.01 | .005 | .01 |
| 28.65 | .00 | 2.01 | .005 | .01 |
| 28.70 | .00 | 2.01 | .005 | .01 |
| 28.75 | .00 | 2.01 | .005 | .01 |
| 28.80 | .00 | 2.01 | .004 | .01 |
| 28.85 | .00 | 2.01 | .004 | .01 |
| 28.90 | .00 | 2.01 | .004 | .01 |
| 28.95 | .00 | 2.01 | .004 | .01 |
| 29.00 | .00 | 2.01 | .004 | .01 |
| 29.05 | .00 | 2.01 | .004 | .01 |
| 29.10 | .00 | 2.01 | .004 | .01 |
| 29.15 | .00 | 2.01 | .004 | .01 |
| 29.20 | .00 | 2.01 | .004 | .01 |
| 29.25 | .00 | 2.01 | .004 | .01 |

```
   29.30        .00      2.01       .004       .01
   29.35        .00      2.01       .004       .01
   29.40        .00      2.01       .004       .01
   29.45        .00      2.01       .004       .01
   29.50        .00      2.01       .004       .01
   29.55        .00      2.01       .004       .01
   29.60        .00      2.01       .004       .01
   29.65        .00      2.01       .004       .01
   29.70        .00      2.01       .004       .01
   29.75        .00      2.01       .004       .01
   29.80        .00      2.01       .004       .01
   29.85        .00      2.01       .004       .01
   29.90        .00      2.01       .003       .01
   29.95        .00      2.01       .003       .01
 PEAK DISCHARGE =        2.118 CFS - PEAK OCCURS AT HOUR    2.80
 MAXIMUM WATER SURFACE ELEVATION =        3.345
 MAXIMUM STORAGE =         .9829 AC-FT      INCREMENTAL TIME=     .050000HRS

*
PRINT HYD           ID=23      CODE=1

                                        HYDROGRAPH FROM AREA POND4

    RUNOFF VOLUME =      .60647 INCHES     =       1.4587 ACRE-FEET
    PEAK DISCHARGE RATE =       2.12 CFS  AT   2.800 HOURS   BASIN AREA =   .0451 SQ. MI.


*
ADD HYD                         ID=24  HYD=OFFA                IDI=23  IDII=2
PRINT HYD                ID=24    CODE=1

                                        HYDROGRAPH FROM AREA OFFA

    RUNOFF VOLUME =      .64701 INCHES     =       1.6505 ACRE-FEET
    PEAK DISCHARGE RATE =       6.27 CFS  AT   1.500 HOURS   BASIN AREA =   .0478 SQ. MI.
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*DETERMINATION OF WESTERN POND:
*S******ROUTE THROUGH WESTERN DETENTION/CHANNEL POND
ROUTE RESERVOIR     ID=10 HYD=WPOND INFLOW ID=27  CODE=1
                    OUTFLOW (CFS) STORAGE (AC FT) ELEV (FT)
                         0       0       6
                         15.12668245    0.488596578    7
                         19.54798178    1.04822666     7.67

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 6.00 | .000 | .00 |
| .05 | .00 | 6.00 | .000 | .00 |
| .10 | .00 | 6.00 | .000 | .00 |
| .15 | .00 | 6.00 | .000 | .00 |
| .20 | .00 | 6.00 | .000 | .00 |
| .25 | .00 | 6.00 | .000 | .00 |
| .30 | .00 | 6.00 | .000 | .00 |
| .35 | .00 | 6.00 | .000 | .00 |
| .40 | .00 | 6.00 | .000 | .00 |
| .45 | .00 | 6.00 | .000 | .00 |
| .50 | .00 | 6.00 | .000 | .00 |
| .55 | .00 | 6.00 | .000 | .00 |
| .60 | .00 | 6.00 | .000 | .00 |
| .65 | .00 | 6.00 | .000 | .00 |
| .70 | .00 | 6.00 | .000 | .00 |
| .75 | .00 | 6.00 | .000 | .00 |
| .80 | .00 | 6.00 | .000 | .00 |
| .85 | .00 | 6.00 | .000 | .00 |
| .90 | .00 | 6.00 | .000 | .00 |
| .95 | .00 | 6.00 | .000 | .00 |
| 1.00 | .00 | 6.00 | .000 | .00 |
| 1.05 | .00 | 6.00 | .000 | .00 |
| 1.10 | .00 | 6.00 | .000 | .00 |
| 1.15 | .00 | 6.00 | .000 | .00 |
| 1.20 | .00 | 6.00 | .000 | .00 |
| 1.25 | .00 | 6.00 | .000 | .00 |
| 1.30 | .00 | 6.00 | .000 | .00 |
| 1.35 | 2.69 | 6.01 | .005 | .16 |
| 1.40 | 15.73 | 6.08 | .040 | 1.25 |
| 1.45 | 33.98 | 6.27 | .132 | 4.09 |
| 1.50 | 43.54 | 6.55 | .267 | 8.26 |
| 1.55 | 41.86 | 6.82 | .401 | 12.40 |
| 1.60 | 34.44 | 7.01 | .501 | 15.23 |
| 1.65 | 26.14 | 7.09 | .562 | 15.71 |
| 1.70 | 19.10 | 7.12 | .590 | 15.93 |
| 1.75 | 13.70 | 7.12 | .592 | 15.95 |
| 1.80 | 9.75 | 7.10 | .575 | 15.81 |
| 1.85 | 7.01 | 7.07 | .545 | 15.57 |
| 1.90 | 5.37 | 7.02 | .507 | 15.27 |
| 1.95 | 4.46 | 6.95 | .466 | 14.42 |
| 2.00 | 3.88 | 6.87 | .426 | 13.19 |
| 2.05 | 3.43 | 6.80 | .389 | 12.04 |
| 2.10 | 3.06 | 6.73 | .355 | 10.98 |
| 2.15 | 2.73 | 6.66 | .323 | 10.01 |
| 2.20 | 2.44 | 6.60 | .295 | 9.12 |
| 2.25 | 2.18 | 6.55 | .268 | 8.30 |
| 2.30 | 1.94 | 6.50 | .244 | 7.55 |
| 2.35 | 1.73 | 6.45 | .222 | 6.86 |
| 2.40 | 1.55 | 6.41 | .201 | 6.23 |
| 2.45 | 1.38 | 6.37 | .183 | 5.66 |
| 2.50 | 1.23 | 6.34 | .166 | 5.14 |
| 2.55 | 1.10 | 6.31 | .151 | 4.66 |
| 2.60 | .98 | 6.28 | .136 | 4.23 |
| 2.65 | .88 | 6.25 | .124 | 3.83 |
| 2.70 | .78 | 6.23 | .112 | 3.47 |
| 2.75 | .70 | 6.21 | .101 | 3.14 |

| TIME | INFLOW | ELEV | VOLUME | OUTFLOW |
|---|---|---|---|---|

| (HRS) | (CFS) | (FEET) | (AC-FT) | (CFS) |
|---|---|---|---|---|
| 2.80 | .63 | 6.19 | .092 | 2.84 |
| 2.85 | .56 | 6.17 | .083 | 2.57 |
| 2.90 | .50 | 6.15 | .075 | 2.33 |
| 2.95 | .44 | 6.14 | .068 | 2.10 |
| 3.00 | .40 | 6.13 | .061 | 1.90 |
| 3.05 | .35 | 6.11 | .055 | 1.72 |
| 3.10 | .32 | 6.10 | .050 | 1.55 |
| 3.15 | .28 | 6.09 | .045 | 1.40 |
| 3.20 | .25 | 6.08 | .041 | 1.26 |
| 3.25 | .23 | 6.08 | .037 | 1.14 |
| 3.30 | .20 | 6.07 | .033 | 1.03 |
| 3.35 | .18 | 6.06 | .030 | .93 |
| 3.40 | .16 | 6.06 | .027 | .84 |
| 3.45 | .14 | 6.05 | .024 | .76 |
| 3.50 | .13 | 6.04 | .022 | .68 |
| 3.55 | .11 | 6.04 | .020 | .61 |
| 3.60 | .10 | 6.04 | .018 | .55 |
| 3.65 | .09 | 6.03 | .016 | .50 |
| 3.70 | .08 | 6.03 | .014 | .45 |
| 3.75 | .07 | 6.03 | .013 | .40 |
| 3.80 | .06 | 6.02 | .012 | .36 |
| 3.85 | .06 | 6.02 | .011 | .33 |
| 3.90 | .05 | 6.02 | .010 | .29 |
| 3.95 | .05 | 6.02 | .009 | .26 |
| 4.00 | .04 | 6.02 | .008 | .24 |
| 4.05 | .04 | 6.01 | .007 | .21 |
| 4.10 | .03 | 6.01 | .006 | .19 |
| 4.15 | .03 | 6.01 | .006 | .17 |
| 4.20 | .03 | 6.01 | .005 | .16 |
| 4.25 | .02 | 6.01 | .005 | .14 |
| 4.30 | .02 | 6.01 | .004 | .13 |
| 4.35 | .02 | 6.01 | .004 | .11 |
| 4.40 | .02 | 6.01 | .003 | .10 |
| 4.45 | .01 | 6.01 | .003 | .09 |
| 4.50 | .01 | 6.01 | .003 | .08 |
| 4.55 | .01 | 6.00 | .002 | .07 |
| 4.60 | .01 | 6.00 | .002 | .07 |
| 4.65 | .01 | 6.00 | .002 | .06 |
| 4.70 | .01 | 6.00 | .002 | .05 |
| 4.75 | .01 | 6.00 | .002 | .05 |
| 4.80 | .01 | 6.00 | .001 | .04 |
| 4.85 | .01 | 6.00 | .001 | .04 |
| 4.90 | .00 | 6.00 | .001 | .03 |
| 4.95 | .00 | 6.00 | .001 | .03 |
| 5.00 | .00 | 6.00 | .001 | .03 |
| 5.05 | .00 | 6.00 | .001 | .02 |
| 5.10 | .00 | 6.00 | .001 | .02 |
| 5.15 | .00 | 6.00 | .001 | .02 |
| 5.20 | .00 | 6.00 | .001 | .02 |
| 5.25 | .00 | 6.00 | .000 | .01 |
| 5.30 | .00 | 6.00 | .000 | .01 |
| 5.35 | .00 | 6.00 | .000 | .01 |
| 5.40 | .00 | 6.00 | .000 | .01 |
| 5.45 | .00 | 6.00 | .000 | .01 |
| 5.50 | .00 | 6.00 | .000 | .01 |
| 5.55 | .00 | 6.00 | .000 | .01 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 5.60 | .00 | 6.00 | .000 | .01 |
| 5.65 | .00 | 6.00 | .000 | .01 |
| 5.70 | .00 | 6.00 | .000 | .00 |

PEAK DISCHARGE = 15.946 CFS - PEAK OCCURS AT HOUR 1.75
MAXIMUM WATER SURFACE ELEVATION = 7.124
MAXIMUM STORAGE = .5923 AC-FT INCREMENTAL TIME= .050000HRS

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*DETERMINATION OF SOUTHERN POND:
*S******ROUTE THROUGH SOUTHERN DETENTION POND
ROUTE RESERVOIR     ID=12 HYD=SPOND INFLOW ID=31  CODE=1
                    OUTFLOW (CFS) STORAGE (AC FT) ELEV (FT)
                         0       0       78
                         0.945417653    0.178458555    79
                         1.337022467    0.467898771    80
                         1.637511409    0.824667236    81
                         1.890835306    1.252555603    82
                         2.114018139    1.755756692    83
                         2.315790844    2.338656162    84
                         2.501339995    3.0135943      85

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
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| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 78.00 | .000 | .00 |
| .05 | .00 | 78.00 | .000 | .00 |
| .10 | .00 | 78.00 | .000 | .00 |
| .15 | .00 | 78.00 | .000 | .00 |
| .20 | .00 | 78.00 | .000 | .00 |
| .25 | .00 | 78.00 | .000 | .00 |
| .30 | .00 | 78.00 | .000 | .00 |
| .35 | .00 | 78.00 | .000 | .00 |
| .40 | .00 | 78.00 | .000 | .00 |
| .45 | .00 | 78.00 | .000 | .00 |
| .50 | .00 | 78.00 | .000 | .00 |
| .55 | .00 | 78.00 | .000 | .00 |
| .60 | .00 | 78.00 | .000 | .00 |
| .65 | .00 | 78.00 | .000 | .00 |
| .70 | .00 | 78.00 | .000 | .00 |
| .75 | .00 | 78.00 | .000 | .00 |
| .80 | .00 | 78.00 | .000 | .00 |
| .85 | .00 | 78.00 | .000 | .00 |
| .90 | .00 | 78.00 | .000 | .00 |
| .95 | .00 | 78.00 | .000 | .00 |
| 1.00 | .00 | 78.00 | .000 | .00 |
| 1.05 | .00 | 78.00 | .000 | .00 |
| 1.10 | .00 | 78.00 | .000 | .00 |
| 1.15 | .07 | 78.00 | .000 | .00 |
| 1.20 | .71 | 78.01 | .002 | .01 |
| 1.25 | 2.64 | 78.05 | .009 | .05 |
| 1.30 | 5.86 | 78.14 | .026 | .14 |
| 1.35 | 12.10 | 78.35 | .062 | .33 |
| 1.40 | 25.42 | 78.77 | .137 | .73 |
| 1.45 | 43.45 | 79.34 | .276 | 1.08 |
| 1.50 | 54.98 | 80.02 | .474 | 1.34 |
| 1.55 | 54.80 | 80.64 | .695 | 1.53 |
| 1.60 | 48.91 | 81.18 | .903 | 1.68 |
| 1.65 | 41.92 | 81.60 | 1.083 | 1.79 |
| 1.70 | 36.65 | 81.97 | 1.238 | 1.88 |
| 1.75 | 32.69 | 82.24 | 1.373 | 1.94 |
| 1.80 | 29.61 | 82.48 | 1.494 | 2.00 |
| 1.85 | 27.22 | 82.70 | 1.603 | 2.05 |
| 1.90 | 25.41 | 82.90 | 1.703 | 2.09 |
| 1.95 | 23.45 | 83.07 | 1.795 | 2.13 |
| 2.00 | 21.33 | 83.21 | 1.879 | 2.16 |
| 2.05 | 19.32 | 83.34 | 1.954 | 2.18 |
| 2.10 | 16.79 | 83.45 | 2.020 | 2.21 |
| 2.15 | 14.33 | 83.55 | 2.075 | 2.22 |
| 2.20 | 12.46 | 83.63 | 2.121 | 2.24 |
| 2.25 | 11.04 | 83.69 | 2.160 | 2.25 |
| 2.30 | 9.88 | 83.75 | 2.194 | 2.27 |
| 2.35 | 8.89 | 83.80 | 2.223 | 2.28 |
| 2.40 | 8.00 | 83.85 | 2.249 | 2.28 |
| 2.45 | 7.20 | 83.88 | 2.271 | 2.29 |
| 2.50 | 6.49 | 83.92 | 2.290 | 2.30 |
| 2.55 | 5.85 | 83.94 | 2.306 | 2.30 |
| 2.60 | 5.27 | 83.97 | 2.319 | 2.31 |

| | | | | |
|---|---|---|---|---|
| 2.65 | 4.75 | 83.99 | 2.330 | 2.31 |
| 2.70 | 4.29 | 84.00 | 2.339 | 2.32 |
| 2.75 | 3.87 | 84.01 | 2.347 | 2.32 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 2.80 | 3.50 | 84.02 | 2.352 | 2.32 |
| 2.85 | 3.17 | 84.03 | 2.356 | 2.32 |
| 2.90 | 2.87 | 84.03 | 2.359 | 2.32 |
| 2.95 | 2.59 | 84.03 | 2.361 | 2.32 |
| 3.00 | 2.35 | 84.03 | 2.362 | 2.32 |
| 3.05 | 2.13 | 84.03 | 2.361 | 2.32 |
| 3.10 | 1.93 | 84.03 | 2.360 | 2.32 |
| 3.15 | 1.75 | 84.03 | 2.358 | 2.32 |
| 3.20 | 1.59 | 84.02 | 2.355 | 2.32 |
| 3.25 | 1.45 | 84.02 | 2.352 | 2.32 |
| 3.30 | 1.31 | 84.01 | 2.348 | 2.32 |
| 3.35 | 1.19 | 84.01 | 2.344 | 2.32 |
| 3.40 | 1.07 | 84.00 | 2.339 | 2.32 |
| 3.45 | .98 | 83.99 | 2.333 | 2.31 |
| 3.50 | .89 | 83.98 | 2.328 | 2.31 |
| 3.55 | .82 | 83.97 | 2.322 | 2.31 |
| 3.60 | .75 | 83.96 | 2.315 | 2.31 |
| 3.65 | .69 | 83.95 | 2.309 | 2.31 |
| 3.70 | .63 | 83.94 | 2.302 | 2.30 |
| 3.75 | .58 | 83.93 | 2.295 | 2.30 |
| 3.80 | .54 | 83.91 | 2.288 | 2.30 |
| 3.85 | .50 | 83.90 | 2.281 | 2.30 |
| 3.90 | .46 | 83.89 | 2.273 | 2.29 |
| 3.95 | .43 | 83.87 | 2.265 | 2.29 |
| 4.00 | .40 | 83.86 | 2.258 | 2.29 |
| 4.05 | .37 | 83.85 | 2.250 | 2.29 |
| 4.10 | .35 | 83.83 | 2.242 | 2.28 |
| 4.15 | .33 | 83.82 | 2.234 | 2.28 |
| 4.20 | .31 | 83.81 | 2.226 | 2.28 |
| 4.25 | .29 | 83.79 | 2.218 | 2.27 |
| 4.30 | .28 | 83.78 | 2.209 | 2.27 |
| 4.35 | .26 | 83.76 | 2.201 | 2.27 |
| 4.40 | .25 | 83.75 | 2.193 | 2.27 |
| 4.45 | .24 | 83.74 | 2.184 | 2.26 |
| 4.50 | .23 | 83.72 | 2.176 | 2.26 |
| 4.55 | .22 | 83.71 | 2.168 | 2.26 |
| 4.60 | .21 | 83.69 | 2.159 | 2.25 |
| 4.65 | .21 | 83.68 | 2.151 | 2.25 |
| 4.70 | .20 | 83.66 | 2.142 | 2.25 |
| 4.75 | .20 | 83.65 | 2.134 | 2.24 |
| 4.80 | .19 | 83.63 | 2.126 | 2.24 |
| 4.85 | .19 | 83.62 | 2.117 | 2.24 |
| 4.90 | .19 | 83.61 | 2.109 | 2.24 |
| 4.95 | .19 | 83.59 | 2.100 | 2.23 |
| 5.00 | .18 | 83.58 | 2.092 | 2.23 |
| 5.05 | .18 | 83.56 | 2.083 | 2.23 |
| 5.10 | .18 | 83.55 | 2.075 | 2.22 |
| 5.15 | .18 | 83.53 | 2.066 | 2.22 |
| 5.20 | .18 | 83.52 | 2.058 | 2.22 |
| 5.25 | .18 | 83.50 | 2.049 | 2.22 |
| 5.30 | .18 | 83.49 | 2.041 | 2.21 |
| 5.35 | .18 | 83.47 | 2.033 | 2.21 |
| 5.40 | .18 | 83.46 | 2.024 | 2.21 |
| 5.45 | .18 | 83.45 | 2.016 | 2.20 |
| 5.50 | .18 | 83.43 | 2.007 | 2.20 |
| 5.55 | .18 | 83.42 | 1.999 | 2.20 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 5.60 | .18 | 83.40 | 1.991 | 2.20 |
| 5.65 | .18 | 83.39 | 1.982 | 2.19 |
| 5.70 | .18 | 83.37 | 1.974 | 2.19 |
| 5.75 | .18 | 83.36 | 1.966 | 2.19 |

| | | | | |
|---|---|---|---|---|
| 5.80 | .18 | 83.35 | 1.958 | 2.18 |
| 5.85 | .19 | 83.33 | 1.949 | 2.18 |
| 5.90 | .19 | 83.32 | 1.941 | 2.18 |
| 5.95 | .19 | 83.30 | 1.933 | 2.18 |
| 6.00 | .19 | 83.29 | 1.925 | 2.17 |
| 6.05 | .19 | 83.28 | 1.917 | 2.17 |
| 6.10 | .14 | 83.26 | 1.908 | 2.17 |
| 6.15 | .08 | 83.25 | 1.900 | 2.16 |
| 6.20 | .05 | 83.23 | 1.891 | 2.16 |
| 6.25 | .03 | 83.22 | 1.882 | 2.16 |
| 6.30 | .02 | 83.20 | 1.874 | 2.15 |
| 6.35 | .02 | 83.19 | 1.865 | 2.15 |
| 6.40 | .01 | 83.17 | 1.856 | 2.15 |
| 6.45 | .01 | 83.16 | 1.847 | 2.15 |
| 6.50 | .01 | 83.14 | 1.838 | 2.14 |
| 6.55 | .01 | 83.13 | 1.829 | 2.14 |
| 6.60 | .01 | 83.11 | 1.821 | 2.14 |
| 6.65 | .00 | 83.10 | 1.812 | 2.13 |
| 6.70 | .00 | 83.08 | 1.803 | 2.13 |
| 6.75 | .00 | 83.07 | 1.794 | 2.13 |
| 6.80 | .00 | 83.05 | 1.785 | 2.12 |
| 6.85 | .00 | 83.04 | 1.777 | 2.12 |
| 6.90 | .00 | 83.02 | 1.768 | 2.12 |
| 6.95 | .00 | 83.01 | 1.759 | 2.12 |
| 7.00 | .00 | 82.99 | 1.750 | 2.11 |
| 7.05 | .00 | 82.97 | 1.742 | 2.11 |
| 7.10 | .00 | 82.95 | 1.733 | 2.10 |
| 7.15 | .00 | 82.94 | 1.724 | 2.10 |
| 7.20 | .00 | 82.92 | 1.716 | 2.10 |
| 7.25 | .00 | 82.90 | 1.707 | 2.09 |
| 7.30 | .00 | 82.89 | 1.698 | 2.09 |
| 7.35 | .00 | 82.87 | 1.690 | 2.08 |
| 7.40 | .00 | 82.85 | 1.681 | 2.08 |
| 7.45 | .00 | 82.83 | 1.673 | 2.08 |
| 7.50 | .00 | 82.82 | 1.664 | 2.07 |
| 7.55 | .00 | 82.80 | 1.655 | 2.07 |
| 7.60 | .00 | 82.78 | 1.647 | 2.07 |
| 7.65 | .00 | 82.77 | 1.638 | 2.06 |
| 7.70 | .00 | 82.75 | 1.630 | 2.06 |
| 7.75 | .00 | 82.73 | 1.621 | 2.05 |
| 7.80 | .00 | 82.72 | 1.613 | 2.05 |
| 7.85 | .00 | 82.70 | 1.604 | 2.05 |
| 7.90 | .00 | 82.68 | 1.596 | 2.04 |
| 7.95 | .00 | 82.67 | 1.588 | 2.04 |
| 8.00 | .00 | 82.65 | 1.579 | 2.04 |
| 8.05 | .00 | 82.63 | 1.571 | 2.03 |
| 8.10 | .00 | 82.62 | 1.562 | 2.03 |
| 8.15 | .00 | 82.60 | 1.554 | 2.02 |
| 8.20 | .00 | 82.58 | 1.546 | 2.02 |
| 8.25 | .00 | 82.57 | 1.537 | 2.02 |
| 8.30 | .00 | 82.55 | 1.529 | 2.01 |
| 8.35 | .00 | 82.53 | 1.521 | 2.01 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 8.40 | .00 | 82.52 | 1.512 | 2.01 |
| 8.45 | .00 | 82.50 | 1.504 | 2.00 |
| 8.50 | .00 | 82.48 | 1.496 | 2.00 |
| 8.55 | .00 | 82.47 | 1.487 | 2.00 |
| 8.60 | .00 | 82.45 | 1.479 | 1.99 |
| 8.65 | .00 | 82.43 | 1.471 | 1.99 |
| 8.70 | .00 | 82.42 | 1.463 | 1.98 |
| 8.75 | .00 | 82.40 | 1.455 | 1.98 |
| 8.80 | .00 | 82.39 | 1.446 | 1.98 |
| 8.85 | .00 | 82.37 | 1.438 | 1.97 |
| 8.90 | .00 | 82.35 | 1.430 | 1.97 |
| 8.95 | .00 | 82.34 | 1.422 | 1.97 |
| 9.00 | .00 | 82.32 | 1.414 | 1.96 |
| 9.05 | .00 | 82.30 | 1.406 | 1.96 |
| 9.10 | .00 | 82.29 | 1.398 | 1.96 |

| | | | | |
|---|---|---|---|---|
| 9.15 | .00 | 82.27 | 1.390 | 1.95 |
| 9.20 | .00 | 82.26 | 1.382 | 1.95 |
| 9.25 | .00 | 82.24 | 1.374 | 1.94 |
| 9.30 | .00 | 82.22 | 1.366 | 1.94 |
| 9.35 | .00 | 82.21 | 1.357 | 1.94 |
| 9.40 | .00 | 82.19 | 1.349 | 1.93 |
| 9.45 | .00 | 82.18 | 1.342 | 1.93 |
| 9.50 | .00 | 82.16 | 1.334 | 1.93 |
| 9.55 | .00 | 82.15 | 1.326 | 1.92 |
| 9.60 | .00 | 82.13 | 1.318 | 1.92 |
| 9.65 | .00 | 82.11 | 1.310 | 1.92 |
| 9.70 | .00 | 82.10 | 1.302 | 1.91 |
| 9.75 | .00 | 82.08 | 1.294 | 1.91 |
| 9.80 | .00 | 82.07 | 1.286 | 1.91 |
| 9.85 | .00 | 82.05 | 1.278 | 1.90 |
| 9.90 | .00 | 82.04 | 1.270 | 1.90 |
| 9.95 | .00 | 82.02 | 1.262 | 1.90 |
| 10.00 | .00 | 82.00 | 1.255 | 1.89 |
| 10.05 | .00 | 81.99 | 1.247 | 1.89 |
| 10.10 | .00 | 81.97 | 1.239 | 1.88 |
| 10.15 | .00 | 81.95 | 1.231 | 1.88 |
| 10.20 | .00 | 81.93 | 1.224 | 1.87 |
| 10.25 | .00 | 81.91 | 1.216 | 1.87 |
| 10.30 | .00 | 81.90 | 1.208 | 1.86 |
| 10.35 | .00 | 81.88 | 1.200 | 1.86 |
| 10.40 | .00 | 81.86 | 1.193 | 1.86 |
| 10.45 | .00 | 81.84 | 1.185 | 1.85 |
| 10.50 | .00 | 81.82 | 1.177 | 1.85 |
| 10.55 | .00 | 81.81 | 1.170 | 1.84 |
| 10.60 | .00 | 81.79 | 1.162 | 1.84 |
| 10.65 | .00 | 81.77 | 1.155 | 1.83 |
| 10.70 | .00 | 81.75 | 1.147 | 1.83 |
| 10.75 | .00 | 81.74 | 1.139 | 1.82 |
| 10.80 | .00 | 81.72 | 1.132 | 1.82 |
| 10.85 | .00 | 81.70 | 1.124 | 1.82 |
| 10.90 | .00 | 81.68 | 1.117 | 1.81 |
| 10.95 | .00 | 81.67 | 1.109 | 1.81 |
| 11.00 | .00 | 81.65 | 1.102 | 1.80 |
| 11.05 | .00 | 81.63 | 1.095 | 1.80 |
| 11.10 | .00 | 81.61 | 1.087 | 1.79 |
| 11.15 | .00 | 81.60 | 1.080 | 1.79 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 11.20 | .00 | 81.58 | 1.072 | 1.78 |
| 11.25 | .00 | 81.56 | 1.065 | 1.78 |
| 11.30 | .00 | 81.54 | 1.058 | 1.78 |
| 11.35 | .00 | 81.53 | 1.050 | 1.77 |
| 11.40 | .00 | 81.51 | 1.043 | 1.77 |
| 11.45 | .00 | 81.49 | 1.036 | 1.76 |
| 11.50 | .00 | 81.48 | 1.028 | 1.76 |
| 11.55 | .00 | 81.46 | 1.021 | 1.75 |
| 11.60 | .00 | 81.44 | 1.014 | 1.75 |
| 11.65 | .00 | 81.43 | 1.007 | 1.75 |
| 11.70 | .00 | 81.41 | 1.000 | 1.74 |
| 11.75 | .00 | 81.39 | .992 | 1.74 |
| 11.80 | .00 | 81.38 | .985 | 1.73 |
| 11.85 | .00 | 81.36 | .978 | 1.73 |
| 11.90 | .00 | 81.34 | .971 | 1.72 |
| 11.95 | .00 | 81.33 | .964 | 1.72 |
| 12.00 | .00 | 81.31 | .957 | 1.72 |
| 12.05 | .00 | 81.29 | .950 | 1.71 |
| 12.10 | .00 | 81.28 | .943 | 1.71 |
| 12.15 | .00 | 81.26 | .936 | 1.70 |
| 12.20 | .00 | 81.24 | .929 | 1.70 |
| 12.25 | .00 | 81.23 | .921 | 1.69 |
| 12.30 | .00 | 81.21 | .914 | 1.69 |
| 12.35 | .00 | 81.19 | .908 | 1.69 |
| 12.40 | .00 | 81.18 | .901 | 1.68 |
| 12.45 | .00 | 81.16 | .894 | 1.68 |

| | | | | |
|---|---|---|---|---|
| 12.50 | .00 | 81.14 | .887 | 1.67 |
| 12.55 | .00 | 81.13 | .880 | 1.67 |
| 12.60 | .00 | 81.11 | .873 | 1.67 |
| 12.65 | .00 | 81.10 | .866 | 1.66 |
| 12.70 | .00 | 81.08 | .859 | 1.66 |
| 12.75 | .00 | 81.06 | .852 | 1.65 |
| 12.80 | .00 | 81.05 | .845 | 1.65 |
| 12.85 | .00 | 81.03 | .839 | 1.65 |
| 12.90 | .00 | 81.02 | .832 | 1.64 |
| 12.95 | .00 | 81.00 | .825 | 1.64 |
| 13.00 | .00 | 80.98 | .818 | 1.63 |
| 13.05 | .00 | 80.96 | .812 | 1.63 |
| 13.10 | .00 | 80.94 | .805 | 1.62 |
| 13.15 | .00 | 80.93 | .798 | 1.62 |
| 13.20 | .00 | 80.91 | .792 | 1.61 |
| 13.25 | .00 | 80.89 | .785 | 1.60 |
| 13.30 | .00 | 80.87 | .778 | 1.60 |
| 13.35 | .00 | 80.85 | .772 | 1.59 |
| 13.40 | .00 | 80.83 | .765 | 1.59 |
| 13.45 | .00 | 80.81 | .759 | 1.58 |
| 13.50 | .00 | 80.80 | .752 | 1.58 |
| 13.55 | .00 | 80.78 | .746 | 1.57 |
| 13.60 | .00 | 80.76 | .739 | 1.57 |
| 13.65 | .00 | 80.74 | .733 | 1.56 |
| 13.70 | .00 | 80.72 | .726 | 1.55 |
| 13.75 | .00 | 80.71 | .720 | 1.55 |
| 13.80 | .00 | 80.69 | .713 | 1.54 |
| 13.85 | .00 | 80.67 | .707 | 1.54 |
| 13.90 | .00 | 80.65 | .701 | 1.53 |
| 13.95 | .00 | 80.63 | .694 | 1.53 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 14.00 | .00 | 80.62 | .688 | 1.52 |
| 14.05 | .00 | 80.60 | .682 | 1.52 |
| 14.10 | .00 | 80.58 | .676 | 1.51 |
| 14.15 | .00 | 80.56 | .669 | 1.51 |
| 14.20 | .00 | 80.55 | .663 | 1.50 |
| 14.25 | .00 | 80.53 | .657 | 1.50 |
| 14.30 | .00 | 80.51 | .651 | 1.49 |
| 14.35 | .00 | 80.50 | .645 | 1.49 |
| 14.40 | .00 | 80.48 | .638 | 1.48 |
| 14.45 | .00 | 80.46 | .632 | 1.48 |
| 14.50 | .00 | 80.44 | .626 | 1.47 |
| 14.55 | .00 | 80.43 | .620 | 1.47 |
| 14.60 | .00 | 80.41 | .614 | 1.46 |
| 14.65 | .00 | 80.39 | .608 | 1.46 |
| 14.70 | .00 | 80.38 | .602 | 1.45 |
| 14.75 | .00 | 80.36 | .596 | 1.44 |
| 14.80 | .00 | 80.34 | .590 | 1.44 |
| 14.85 | .00 | 80.33 | .584 | 1.43 |
| 14.90 | .00 | 80.31 | .578 | 1.43 |
| 14.95 | .00 | 80.29 | .572 | 1.43 |
| 15.00 | .00 | 80.28 | .567 | 1.42 |
| 15.05 | .00 | 80.26 | .561 | 1.42 |
| 15.10 | .00 | 80.24 | .555 | 1.41 |
| 15.15 | .00 | 80.23 | .549 | 1.41 |
| 15.20 | .00 | 80.21 | .543 | 1.40 |
| 15.25 | .00 | 80.19 | .537 | 1.40 |
| 15.30 | .00 | 80.18 | .532 | 1.39 |
| 15.35 | .00 | 80.16 | .526 | 1.39 |
| 15.40 | .00 | 80.15 | .520 | 1.38 |
| 15.45 | .00 | 80.13 | .515 | 1.38 |
| 15.50 | .00 | 80.11 | .509 | 1.37 |
| 15.55 | .00 | 80.10 | .503 | 1.37 |
| 15.60 | .00 | 80.08 | .498 | 1.36 |
| 15.65 | .00 | 80.07 | .492 | 1.36 |
| 15.70 | .00 | 80.05 | .486 | 1.35 |
| 15.75 | .00 | 80.04 | .481 | 1.35 |
| 15.80 | .00 | 80.02 | .475 | 1.34 |

| | | | | |
|---|---|---|---|---|
| 15.85 | .00 | 80.00 | .470 | 1.34 |
| 15.90 | .00 | 79.99 | .464 | 1.33 |
| 15.95 | .00 | 79.97 | .459 | 1.32 |
| 16.00 | .00 | 79.95 | .453 | 1.32 |
| 16.05 | .00 | 79.93 | .448 | 1.31 |
| 16.10 | .00 | 79.91 | .442 | 1.30 |
| 16.15 | .00 | 79.89 | .437 | 1.30 |
| 16.20 | .00 | 79.87 | .432 | 1.29 |
| 16.25 | .00 | 79.86 | .426 | 1.28 |
| 16.30 | .00 | 79.84 | .421 | 1.27 |
| 16.35 | .00 | 79.82 | .416 | 1.27 |
| 16.40 | .00 | 79.80 | .411 | 1.26 |
| 16.45 | .00 | 79.78 | .405 | 1.25 |
| 16.50 | .00 | 79.77 | .400 | 1.25 |
| 16.55 | .00 | 79.75 | .395 | 1.24 |
| 16.60 | .00 | 79.73 | .390 | 1.23 |
| 16.65 | .00 | 79.71 | .385 | 1.22 |
| 16.70 | .00 | 79.70 | .380 | 1.22 |
| 16.75 | .00 | 79.68 | .375 | 1.21 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 16.80 | .00 | 79.66 | .370 | 1.20 |
| 16.85 | .00 | 79.64 | .365 | 1.20 |
| 16.90 | .00 | 79.63 | .360 | 1.19 |
| 16.95 | .00 | 79.61 | .355 | 1.18 |
| 17.00 | .00 | 79.59 | .350 | 1.18 |
| 17.05 | .00 | 79.58 | .345 | 1.17 |
| 17.10 | .00 | 79.56 | .341 | 1.16 |
| 17.15 | .00 | 79.54 | .336 | 1.16 |
| 17.20 | .00 | 79.53 | .331 | 1.15 |
| 17.25 | .00 | 79.51 | .326 | 1.15 |
| 17.30 | .00 | 79.49 | .321 | 1.14 |
| 17.35 | .00 | 79.48 | .317 | 1.13 |
| 17.40 | .00 | 79.46 | .312 | 1.13 |
| 17.45 | .00 | 79.45 | .307 | 1.12 |
| 17.50 | .00 | 79.43 | .303 | 1.11 |
| 17.55 | .00 | 79.41 | .298 | 1.11 |
| 17.60 | .00 | 79.40 | .294 | 1.10 |
| 17.65 | .00 | 79.38 | .289 | 1.10 |
| 17.70 | .00 | 79.37 | .285 | 1.09 |
| 17.75 | .00 | 79.35 | .280 | 1.08 |
| 17.80 | .00 | 79.34 | .276 | 1.08 |
| 17.85 | .00 | 79.32 | .271 | 1.07 |
| 17.90 | .00 | 79.31 | .267 | 1.07 |
| 17.95 | .00 | 79.29 | .262 | 1.06 |
| 18.00 | .00 | 79.28 | .258 | 1.05 |
| 18.05 | .00 | 79.26 | .254 | 1.05 |
| 18.10 | .00 | 79.25 | .249 | 1.04 |
| 18.15 | .00 | 79.23 | .245 | 1.04 |
| 18.20 | .00 | 79.22 | .241 | 1.03 |
| 18.25 | .00 | 79.20 | .237 | 1.02 |
| 18.30 | .00 | 79.19 | .232 | 1.02 |
| 18.35 | .00 | 79.17 | .228 | 1.01 |
| 18.40 | .00 | 79.16 | .224 | 1.01 |
| 18.45 | .00 | 79.14 | .220 | 1.00 |
| 18.50 | .00 | 79.13 | .216 | 1.00 |
| 18.55 | .00 | 79.11 | .212 | .99 |
| 18.60 | .00 | 79.10 | .208 | .98 |
| 18.65 | .00 | 79.09 | .204 | .98 |
| 18.70 | .00 | 79.07 | .199 | .97 |
| 18.75 | .00 | 79.06 | .195 | .97 |
| 18.80 | .00 | 79.05 | .191 | .96 |
| 18.85 | .00 | 79.03 | .188 | .96 |
| 18.90 | .00 | 79.02 | .184 | .95 |
| 18.95 | .00 | 79.00 | .180 | .95 |
| 19.00 | .00 | 78.98 | .176 | .93 |
| 19.05 | .00 | 78.96 | .172 | .91 |
| 19.10 | .00 | 78.94 | .168 | .89 |
| 19.15 | .00 | 78.92 | .165 | .87 |

| | | | | |
|---|---|---|---|---|
| 19.20 | .00 | 78.90 | .161 | .85 |
| 19.25 | .00 | 78.88 | .158 | .83 |
| 19.30 | .00 | 78.86 | .154 | .82 |
| 19.35 | .00 | 78.84 | .151 | .80 |
| 19.40 | .00 | 78.83 | .148 | .78 |
| 19.45 | .00 | 78.81 | .144 | .76 |
| 19.50 | .00 | 78.79 | .141 | .75 |
| 19.55 | .00 | 78.77 | .138 | .73 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 19.60 | .00 | 78.76 | .135 | .72 |
| 19.65 | .00 | 78.74 | .132 | .70 |
| 19.70 | .00 | 78.72 | .129 | .69 |
| 19.75 | .00 | 78.71 | .127 | .67 |
| 19.80 | .00 | 78.69 | .124 | .66 |
| 19.85 | .00 | 78.68 | .121 | .64 |
| 19.90 | .00 | 78.66 | .119 | .63 |
| 19.95 | .00 | 78.65 | .116 | .61 |
| 20.00 | .00 | 78.64 | .113 | .60 |
| 20.05 | .00 | 78.62 | .111 | .59 |
| 20.10 | .00 | 78.61 | .109 | .58 |
| 20.15 | .00 | 78.60 | .106 | .56 |
| 20.20 | .00 | 78.58 | .104 | .55 |
| 20.25 | .00 | 78.57 | .102 | .54 |
| 20.30 | .00 | 78.56 | .099 | .53 |
| 20.35 | .00 | 78.55 | .097 | .52 |
| 20.40 | .00 | 78.53 | .095 | .50 |
| 20.45 | .00 | 78.52 | .093 | .49 |
| 20.50 | .00 | 78.51 | .091 | .48 |
| 20.55 | .00 | 78.50 | .089 | .47 |
| 20.60 | .00 | 78.49 | .087 | .46 |
| 20.65 | .00 | 78.48 | .085 | .45 |
| 20.70 | .00 | 78.47 | .083 | .44 |
| 20.75 | .00 | 78.46 | .082 | .43 |
| 20.80 | .00 | 78.45 | .080 | .42 |
| 20.85 | .00 | 78.44 | .078 | .41 |
| 20.90 | .00 | 78.43 | .076 | .41 |
| 20.95 | .00 | 78.42 | .075 | .40 |
| 21.00 | .00 | 78.41 | .073 | .39 |
| 21.05 | .00 | 78.40 | .072 | .38 |
| 21.10 | .00 | 78.39 | .070 | .37 |
| 21.15 | .00 | 78.38 | .069 | .36 |
| 21.20 | .00 | 78.38 | .067 | .36 |
| 21.25 | .00 | 78.37 | .066 | .35 |
| 21.30 | .00 | 78.36 | .064 | .34 |
| 21.35 | .00 | 78.35 | .063 | .33 |
| 21.40 | .00 | 78.34 | .061 | .33 |
| 21.45 | .00 | 78.34 | .060 | .32 |
| 21.50 | .00 | 78.33 | .059 | .31 |
| 21.55 | .00 | 78.32 | .058 | .30 |
| 21.60 | .00 | 78.32 | .056 | .30 |
| 21.65 | .00 | 78.31 | .055 | .29 |
| 21.70 | .00 | 78.30 | .054 | .29 |
| 21.75 | .00 | 78.30 | .053 | .28 |
| 21.80 | .00 | 78.29 | .052 | .27 |
| 21.85 | .00 | 78.28 | .050 | .27 |
| 21.90 | .00 | 78.28 | .049 | .26 |
| 21.95 | .00 | 78.27 | .048 | .26 |
| 22.00 | .00 | 78.26 | .047 | .25 |
| 22.05 | .00 | 78.26 | .046 | .24 |
| 22.10 | .00 | 78.25 | .045 | .24 |
| 22.15 | .00 | 78.25 | .044 | .23 |
| 22.20 | .00 | 78.24 | .043 | .23 |
| 22.25 | .00 | 78.24 | .042 | .22 |
| 22.30 | .00 | 78.23 | .041 | .22 |
| 22.35 | .00 | 78.23 | .041 | .21 |

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

| | | | | |
|---|---|---|---|---|
| 22.40 | .00 | 78.22 | .040 | .21 |
| 22.45 | .00 | 78.22 | .039 | .21 |
| 22.50 | .00 | 78.21 | .038 | .20 |
| 22.55 | .00 | 78.21 | .037 | .20 |
| 22.60 | .00 | 78.20 | .036 | .19 |
| 22.65 | .00 | 78.20 | .036 | .19 |
| 22.70 | .00 | 78.19 | .035 | .18 |
| 22.75 | .00 | 78.19 | .034 | .18 |
| 22.80 | .00 | 78.19 | .033 | .18 |
| 22.85 | .00 | 78.18 | .033 | .17 |
| 22.90 | .00 | 78.18 | .032 | .17 |
| 22.95 | .00 | 78.17 | .031 | .17 |
| 23.00 | .00 | 78.17 | .031 | .16 |
| 23.05 | .00 | 78.17 | .030 | .16 |
| 23.10 | .00 | 78.16 | .029 | .15 |
| 23.15 | .00 | 78.16 | .029 | .15 |
| 23.20 | .00 | 78.16 | .028 | .15 |
| 23.25 | .00 | 78.15 | .027 | .14 |
| 23.30 | .00 | 78.15 | .027 | .14 |
| 23.35 | .00 | 78.15 | .026 | .14 |
| 23.40 | .00 | 78.14 | .026 | .14 |
| 23.45 | .00 | 78.14 | .025 | .13 |
| 23.50 | .00 | 78.14 | .025 | .13 |
| 23.55 | .00 | 78.13 | .024 | .13 |
| 23.60 | .00 | 78.13 | .023 | .12 |
| 23.65 | .00 | 78.13 | .023 | .12 |
| 23.70 | .00 | 78.13 | .022 | .12 |
| 23.75 | .00 | 78.12 | .022 | .12 |
| 23.80 | .00 | 78.12 | .021 | .11 |
| 23.85 | .00 | 78.12 | .021 | .11 |
| 23.90 | .00 | 78.12 | .021 | .11 |
| 23.95 | .00 | 78.11 | .020 | .11 |
| 24.00 | .00 | 78.11 | .020 | .10 |
| 24.05 | .00 | 78.11 | .019 | .10 |
| 24.10 | .00 | 78.11 | .019 | .10 |
| 24.15 | .00 | 78.10 | .018 | .10 |
| 24.20 | .00 | 78.10 | .018 | .10 |
| 24.25 | .00 | 78.10 | .018 | .09 |
| 24.30 | .00 | 78.10 | .017 | .09 |
| 24.35 | .00 | 78.09 | .017 | .09 |
| 24.40 | .00 | 78.09 | .017 | .09 |
| 24.45 | .00 | 78.09 | .016 | .09 |
| 24.50 | .00 | 78.09 | .016 | .08 |
| 24.55 | .00 | 78.09 | .015 | .08 |
| 24.60 | .00 | 78.08 | .015 | .08 |
| 24.65 | .00 | 78.08 | .015 | .08 |
| 24.70 | .00 | 78.08 | .014 | .08 |
| 24.75 | .00 | 78.08 | .014 | .08 |
| 24.80 | .00 | 78.08 | .014 | .07 |
| 24.85 | .00 | 78.08 | .014 | .07 |
| 24.90 | .00 | 78.07 | .013 | .07 |
| 24.95 | .00 | 78.07 | .013 | .07 |
| 25.00 | .00 | 78.07 | .013 | .07 |
| 25.05 | .00 | 78.07 | .012 | .07 |
| 25.10 | .00 | 78.07 | .012 | .06 |
| 25.15 | .00 | 78.07 | .012 | .06 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 25.20 | .00 | 78.07 | .012 | .06 |
| 25.25 | .00 | 78.06 | .011 | .06 |
| 25.30 | .00 | 78.06 | .011 | .06 |
| 25.35 | .00 | 78.06 | .011 | .06 |
| 25.40 | .00 | 78.06 | .011 | .06 |
| 25.45 | .00 | 78.06 | .010 | .06 |
| 25.50 | .00 | 78.06 | .010 | .05 |
| 25.55 | .00 | 78.06 | .010 | .05 |
| 25.60 | .00 | 78.05 | .010 | .05 |
| 25.65 | .00 | 78.05 | .010 | .05 |

| | | | | |
|---|---|---|---|---|
| 25.70 | .00 | 78.05 | .009 | .05 |
| 25.75 | .00 | 78.05 | .009 | .05 |
| 25.80 | .00 | 78.05 | .009 | .05 |
| 25.85 | .00 | 78.05 | .009 | .05 |
| 25.90 | .00 | 78.05 | .009 | .05 |
| 25.95 | .00 | 78.05 | .008 | .04 |
| 26.00 | .00 | 78.05 | .008 | .04 |
| 26.05 | .00 | 78.04 | .008 | .04 |
| 26.10 | .00 | 78.04 | .008 | .04 |
| 26.15 | .00 | 78.04 | .008 | .04 |
| 26.20 | .00 | 78.04 | .008 | .04 |
| 26.25 | .00 | 78.04 | .007 | .04 |
| 26.30 | .00 | 78.04 | .007 | .04 |
| 26.35 | .00 | 78.04 | .007 | .04 |
| 26.40 | .00 | 78.04 | .007 | .04 |
| 26.45 | .00 | 78.04 | .007 | .04 |
| 26.50 | .00 | 78.04 | .007 | .03 |
| 26.55 | .00 | 78.04 | .006 | .03 |
| 26.60 | .00 | 78.04 | .006 | .03 |
| 26.65 | .00 | 78.03 | .006 | .03 |
| 26.70 | .00 | 78.03 | .006 | .03 |
| 26.75 | .00 | 78.03 | .006 | .03 |
| 26.80 | .00 | 78.03 | .006 | .03 |
| 26.85 | .00 | 78.03 | .006 | .03 |
| 26.90 | .00 | 78.03 | .006 | .03 |
| 26.95 | .00 | 78.03 | .005 | .03 |
| 27.00 | .00 | 78.03 | .005 | .03 |
| 27.05 | .00 | 78.03 | .005 | .03 |
| 27.10 | .00 | 78.03 | .005 | .03 |
| 27.15 | .00 | 78.03 | .005 | .03 |
| 27.20 | .00 | 78.03 | .005 | .03 |
| 27.25 | .00 | 78.03 | .005 | .03 |
| 27.30 | .00 | 78.03 | .005 | .02 |
| 27.35 | .00 | 78.03 | .005 | .02 |
| 27.40 | .00 | 78.02 | .004 | .02 |
| 27.45 | .00 | 78.02 | .004 | .02 |
| 27.50 | .00 | 78.02 | .004 | .02 |
| 27.55 | .00 | 78.02 | .004 | .02 |
| 27.60 | .00 | 78.02 | .004 | .02 |
| 27.65 | .00 | 78.02 | .004 | .02 |
| 27.70 | .00 | 78.02 | .004 | .02 |
| 27.75 | .00 | 78.02 | .004 | .02 |
| 27.80 | .00 | 78.02 | .004 | .02 |
| 27.85 | .00 | 78.02 | .004 | .02 |
| 27.90 | .00 | 78.02 | .004 | .02 |
| 27.95 | .00 | 78.02 | .003 | .02 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 28.00 | .00 | 78.02 | .003 | .02 |
| 28.05 | .00 | 78.02 | .003 | .02 |
| 28.10 | .00 | 78.02 | .003 | .02 |
| 28.15 | .00 | 78.02 | .003 | .02 |
| 28.20 | .00 | 78.02 | .003 | .02 |
| 28.25 | .00 | 78.02 | .003 | .02 |
| 28.30 | .00 | 78.02 | .003 | .02 |
| 28.35 | .00 | 78.02 | .003 | .02 |
| 28.40 | .00 | 78.02 | .003 | .02 |
| 28.45 | .00 | 78.02 | .003 | .01 |
| 28.50 | .00 | 78.02 | .003 | .01 |
| 28.55 | .00 | 78.02 | .003 | .01 |
| 28.60 | .00 | 78.01 | .003 | .01 |
| 28.65 | .00 | 78.01 | .003 | .01 |
| 28.70 | .00 | 78.01 | .003 | .01 |
| 28.75 | .00 | 78.01 | .002 | .01 |
| 28.80 | .00 | 78.01 | .002 | .01 |
| 28.85 | .00 | 78.01 | .002 | .01 |
| 28.90 | .00 | 78.01 | .002 | .01 |
| 28.95 | .00 | 78.01 | .002 | .01 |
| 29.00 | .00 | 78.01 | .002 | .01 |

| | | | | |
|---|---|---|---|---|
| 29.05 | .00 | 78.01 | .002 | .01 |
| 29.10 | .00 | 78.01 | .002 | .01 |
| 29.15 | .00 | 78.01 | .002 | .01 |
| 29.20 | .00 | 78.01 | .002 | .01 |
| 29.25 | .00 | 78.01 | .002 | .01 |
| 29.30 | .00 | 78.01 | .002 | .01 |
| 29.35 | .00 | 78.01 | .002 | .01 |
| 29.40 | .00 | 78.01 | .002 | .01 |
| 29.45 | .00 | 78.01 | .002 | .01 |
| 29.50 | .00 | 78.01 | .002 | .01 |
| 29.55 | .00 | 78.01 | .002 | .01 |
| 29.60 | .00 | 78.01 | .002 | .01 |
| 29.65 | .00 | 78.01 | .002 | .01 |
| 29.70 | .00 | 78.01 | .002 | .01 |
| 29.75 | .00 | 78.01 | .002 | .01 |
| 29.80 | .00 | 78.01 | .002 | .01 |
| 29.85 | .00 | 78.01 | .002 | .01 |
| 29.90 | .00 | 78.01 | .001 | .01 |
| 29.95 | .00 | 78.01 | .001 | .01 |

PEAK DISCHARGE = 2.322 CFS - PEAK OCCURS AT HOUR 3.00
MAXIMUM WATER SURFACE ELEVATION = 84.034
MAXIMUM STORAGE = 2.3615 AC-FT INCREMENTAL TIME= .050000HRS

# APPENDIX B

# STREET FLOW, INLET, & STORM DRAIN CALCULATIONS

***Shaded cells require user input. Non-shaded cells cannot be edited.****

TIMARRON WEST UNIT 5
FLOW TO SOUTHERN POND
***** HYDRAULIC GRADE LINE CALCULATIONS *****

Manning's n = 0.013
for pipe

| Station | Structure | Diam. (in.) | Q (cfs) | Area | Vel. | K | Sf | Length (ft.) | MH Dia. (ft.) | JNCT Angle | Hf | Hb | Hj | Hmh | Ht | Total Losses | HGL-dn | HGL-up | Low Point | HV | EGL(dn) | EGL(up) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | OUTFALL | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | 84.03 | 85.00 | 0.42 | 84.45 | 84.45 |
| | | 36 | 36.9 | 7.07 | 5.22 | 667 | 0.0031 | 130.10 | | | 0.40 | | | | | 0.40 | | | | | | |
| 0.00 | INLET1 | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 84.43 | 84.51 | 86.59 | 0.34 | 84.85 | 84.85 |
| | | 36 | 33.2 | 7.07 | 4.70 | 667 | 0.0025 | 28.00 | | | 0.07 | | | | | 0.07 | | | | | | |
| 0.00 | INLET2 | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 84.58 | 84.65 | 86.59 | 0.27 | 84.92 | 84.92 |
| | | 36 | 29.6 | 7.07 | 4.18 | 667 | 0.0020 | 247.63 | | | 0 49 | | | | | 0.49 | | | | | | |
| 0.00 | INLET3 | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 85.13 | 84.99 | 86.01 | 0.42 | 85.41 | 85.41 |
| | | 30 | 25.6 | 4.91 | 5.22 | 410 | 0.0039 | 28.00 | | | 0.11 | | | | | 0.11 | | | | | | |
| 0.00 | INLET4 | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 85.10 | 85.22 | 86.01 | 0.30 | 85.52 | 85.52 |
| | | 30 | 21.7 | 4.91 | 4 42 | 410 | 0.0028 | 247.82 | | | 0.69 | | | | | 0.69 | | | | | | |
| 0.00 | INLET5 | | | | | | | | 4.00 | 45.00 | | 0.04 | 0.00 | 0.00 | 0.00 | 0.04 | 85.91 | 86.04 | 87.03 | 0.21 | 86 21 | 86.25 |
| | | 30 | 17.9 | 4.91 | 3.65 | 410 | 0.0019 | 36.88 | | | 0.07 | | | | | 0.07 | | | | | | |
| 0.00 | INLET6 | | | | | | | | 4.00 | 45.00 | | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 86.11 | 86.21 | 88.03 | 0.13 | 86.32 | 86.34 |
| | | 30 | 14.2 | 4.91 | 2.89 | 410 | 0.0012 | 247.85 | | | 0.30 | | | | | 0.30 | | | | | | |
| 0.00 | INLET7 | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 86 51 | 86.57 | 88.75 | 0 07 | 86.64 | 86.64 |
| | | 30 | 10.5 | 4.91 | 2.14 | 410 | 0.0007 | 28.00 | | | 0.02 | | | | | 0.02 | | | | | | |
| 0.00 | INLET8 | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 86.58 | 86 58 | 88.75 | 0.07 | 86.66 | 86.66 |
| | | 24 | 6.9 | 3.14 | 2.19 | 226 | 0.0009 | 247.87 | | | 0.23 | | | | | 0 23 | | | | | | |
| 0.00 | INLET9 | | | | | | | | 4.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 86.81 | 86.83 | 91.76 | 0.06 | 86.89 | 86.89 |
| | | 18 | 3.4 | 1.77 | 1.92 | 105 | 0.0010 | 35.40 | | | 0.04 | | | | | 0.04 | | | | | | |

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# TIMARRON WEST UNIT 5
# STREET FLOW & INLET
# ANALYSIS
# 5/24/00

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823 1000

fax 505 821 0892

## BASIN 1

PELICAN COURT

Q= 10.05 cfs

# lots = 20

Energy head = 0.58 < .85 no inlets required

Some standard curb is required.

E = 0.51 @ Q= 6.5 cfs.

at 6.5 cfs, the flow is too much for roll curb.

$$\frac{Q}{lot} = \frac{10.05 cfs}{20 lots} = 0.5 cfs/Lot$$

At 12.94 Lots, standard curb is required.

HORNBILL COURT

Q= 10.27 cfs.

# lots= 21 Lots.

$$\frac{Q}{lot} = \frac{10.27}{21} = 0.49 cfs/lot$$

Energy = 0.59 < .85 no inlets required

Standard curb required when

E > 0.51 @ Q= 7.2 cfs.

7.2/0.49 = 14.69 Lots

(2)

Osprey slopes to the north

Q = 23.47 cfs

E = 0.65 < 0.83 - will not flood the road

Add inlets to divert flow into unit 4 pond.

Have will have 6.2 cfs each -

Ex. need 4 inlets

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505 823 1000

fax 505 821 0892

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

□ MANNING'S N= .017 SLOPE= .0421

| □POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.51 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.80 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 1.05 | 0.94 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.28 | 1.25 | 0.03 | 0.07 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.48 | 1.56 | 0.03 | 0.08 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.67 | 1.88 | 0.04 | 0.10 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.86 | 2.19 | 0.05 | 0.12 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 2.03 | 2.50 | 0.06 | 0.14 |
| 0.09 | 0.09 | 0.13 | 0.3 | 2.96 | 2.19 | 2.81 | 0.07 | 0.16 |
| 0.10 | 0.10 | 0.16 | 0.4 | 3.29 | 2.35 | 3.13 | 0.09 | 0.19 |
| 0.11 | 0.11 | 0.19 | 0.5 | 3.62 | 2.51 | 3.44 | 0.10 | 0.21 |
| 0.12 | 0.12 | 0.23 | 0.6 | 3.95 | 2.66 | 3.75 | 0.11 | 0.23 |
| 0.13 | 0.13 | 0.26 | 0.7 | 4.28 | 2.80 | 4.07 | 0.12 | 0.25 |
| 0.14 | 0.14 | 0.31 | 0.9 | 5.15 | 2.75 | 4.93 | 0.12 | 0.26 |
| 0.15 | 0.15 | 0.36 | 1.0 | 6.03 | 2.75 | 5.79 | 0.12 | 0.27 |
| 0.16 | 0.16 | 0.43 | 1.2 | 6.91 | 2.79 | 6.65 | 0.12 | 0.28 |
| 0.17 | 0.17 | 0.50 | 1.4 | 7.79 | 2.86 | 7.51 | 0.13 | 0.30 |
| 0.18 | 0.18 | 0.58 | 1.7 | 8.67 | 2.94 | 8.38 | 0.13 | 0.31 |
| 0.19 | 0.19 | 0.66 | 2.0 | 9.54 | 3.03 | 9.24 | 0.14 | 0.33 |
| 0.20 | 0.20 | 0.76 | 2.4 | 10.42 | 3.13 | 10.10 | 0.15 | 0.35 |
| 0.21 | 0.21 | 0.87 | 2.8 | 11.30 | 3.23 | 10.96 | 0.16 | 0.37 |
| 0.22 | 0.22 | 0.98 | 3.3 | 12.18 | 3.34 | 11.83 | 0.17 | 0.39 |
| 0.23 | 0.23 | 1.10 | 3.8 | 13.06 | 3.45 | 12.69 | 0.18 | 0.41 |
| 0.24 | 0.24 | 1.23 | 4.4 | 13.93 | 3.56 | 13.55 | 0.20 | 0.44 |
| 0.25 | 0.25 | 1.37 | 5.0 | 14.81 | 3.67 | 14.41 | 0.21 | 0.46 |
| 0.26 | 0.26 | 1.52 | 5.8 | 15.69 | 3.79 | 15.27 | 0.22 | 0.48 |
| 0.27 | 0.27 | 1.68 | 6.5 | 16.57 | 3.90 | 16.14 | 0.24 | 0.51 |
| 0.28 | 0.28 | 1.84 | 7.4 | 17.45 | 4.01 | 17.00 | 0.25 | 0.53 |
| 0.29 | 0.29 | 2.02 | 8.3 | 18.32 | 4.12 | 17.86 | 0.26 | 0.55 |
| 0.30 | 0.30 | 2.20 | 9.3 | 19.20 | 4.23 | 18.72 | 0.28 | 0.58 |
| 0.31 | 0.31 | 2.39 | 10.4 | 20.08 | 4.34 | 19.59 | 0.29 | 0.60 |
| 0.32 | 0.32 | 2.59 | 11.5 | 20.96 | 4.45 | 20.45 | 0.31 | 0.63 |
| 0.33 | 0.33 | 2.80 | 12.8 | 21.84 | 4.56 | 21.31 | 0.32 | 0.65 |
| 0.34 | 0.34 | 3.02 | 14.1 | 22.71 | 4.67 | 22.17 | 0.34 | 0.68 |
| 0.35 | 0.35 | 3.25 | 15.5 | 23.59 | 4.78 | 23.03 | 0.35 | 0.70 |
| 0.36 | 0.36 | 3.48 | 17.0 | 24.47 | 4.89 | 23.90 | 0.37 | 0.73 |
| 0.37 | 0.37 | 3.72 | 18.6 | 25.35 | 4.99 | 24.76 | 0.39 | 0.76 |
| 0.38 | 0.38 | 3.98 | 20.3 | 26.23 | 5.10 | 25.62 | 0.40 | 0.78 |
| 0.39 | 0.39 | 4.24 | 22.0 | 27.10 | 5.20 | 26.48 | 0.42 | 0.81 |
| 0.40 | 0.40 | 4.50 | 23.9 | 27.98 | 5.31 | 27.35 | 0.44 | 0.84 |
| 0.41 | 0.41 | 4.78 | 25.9 | 28.86 | 5.41 | 28.21 | 0.45 | 0.86 |
| 0.42 | 0.42 | 5.06 | 28.5 | 28.88 | 5.62 | 28.21 | 0.49 | 0.91 |
| 0.43 | 0.43 | 5.35 | 31.1 | 28.90 | 5.82 | 28.22 | 0.53 | 0.96 |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 36.8 | 28.94 | 6.22 | 28.23 | 0.60 | 1.05 |
| 0.46 | 0.46 | 6.19 | 39.7 | 28.96 | 6.41 | 28.23 | 0.64 | 1.10 |
| 0.47 | 0.47 | 6.48 | 42.8 | 28.98 | 6.60 | 28.24 | 0.68 | 1.15 |
| 0.48 | 0.48 | 6.76 | 45.9 | 29.01 | 6.79 | 28.24 | 0.72 | 1.20 |
| 0.49 | 0.49 | 7.04 | 49.1 | 29.03 | 6.98 | 28.25 | 0.76 | 1.25 |
| 0.50 | 0.50 | 7.32 | 52.4 | 29.05 | 7.16 | 28.25 | 0.80 | 1.30 |
| 0.51 | 0.51 | 7.61 | 55.8 | 29.07 | 7.34 | 28.26 | 0.84 | 1.35 |



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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 59.3 | 29.09 | 7.51 | 28.26 | 0.88 | 1.40 |
| 0.53 | 0.53 | 8.17 | 62.8 | 29.11 | 7.69 | 28.27 | 0.92 | 1.45 |
| 0.54 | 0.54 | 8.45 | 66.5 | 29.13 | 7.86 | 28.27 | 0.96 | 1.50 |
| 0.55 | 0.55 | 8.74 | 70.2 | 29.15 | 8.03 | 28.28 | 1.00 | 1.55 |
| 0.56 | 0.56 | 9.02 | 74.0 | 29.17 | 8.20 | 28.28 | 1.04 | 1.60 |
| 0.57 | 0.57 | 9.30 | 77.8 | 29.19 | 8.37 | 28.29 | 1.09 | 1.66 |
| 0.58 | 0.58 | 9.59 | 81.8 | 29.21 | 8.53 | 28.29 | 1.13 | 1.71 |
| 0.59 | 0.59 | 9.87 | 85.8 | 29.23 | 8.70 | 28.30 | 1.17 | 1.76 |
| 0.60 | 0.60 | 10.15 | 89.9 | 29.25 | 8.86 | 28.30 | 1.22 | 1.82 |
| 0.61 | 0.61 | 10.43 | 94.1 | 29.27 | 9.02 | 28.31 | 1.26 | 1.87 |
| 0.62 | 0.62 | 10.72 | 98.3 | 29.29 | 9.17 | 28.31 | 1.31 | 1.93 |
| 0.63 | 0.63 | 11.00 | 102.6 | 29.31 | 9.33 | 28.32 | 1.35 | 1.98 |
| 0.64 | 0.64 | 11.28 | 107.0 | 29.34 | 9.49 | 28.32 | 1.40 | 2.04 |
| 0.65 | 0.65 | 11.57 | 111.5 | 29.36 | 9.64 | 28.33 | 1.44 | 2.09 |
| 0.66 | 0.66 | 11.85 | 116.0 | 29.38 | 9.79 | 28.33 | 1.49 | 2.15 |
| 0.67 | 0.67 | 12.13 | 120.6 | 29.40 | 9.94 | 28.34 | 1.54 | 2.21 |
| 0.68 | 0.68 | 12.42 | 122.6 | 30.44 | 9.87 | 30.30 | 1.51 | 2.19 |
| 0.69 | 0.69 | 12.72 | 124.7 | 31.49 | 9.80 | 31.34 | 1.49 | 2.18 |
| 0.70 | 0.70 | 13.06 | 125.1 | 33.45 | 9.58 | 32.39 | 1.43 | 2.13 |
| 0.71 | 0.71 | 13.39 | 127.8 | 34.50 | 9.54 | 33.44 | 1.41 | 2.12 |
| 0.72 | 0.72 | 13.73 | 130.6 | 35.54 | 9.51 | 34.48 | 1.40 | 2.12 |
| 0.73 | 0.73 | 14.08 | 133.6 | 36.59 | 9.49 | 35.53 | 1.40 | 2.13 |
| 0.74 | 0.74 | 14.44 | 136.7 | 37.64 | 9.47 | 36.58 | 1.39 | 2.13 |
| 0.75 | 0.75 | 14.81 | 140.0 | 38.68 | 9.46 | 37.62 | 1.39 | 2.14 |
| 0.76 | 0.76 | 15.19 | 143.5 | 39.73 | 9.45 | 38.67 | 1.39 | 2.15 |
| 0.77 | 0.77 | 15.58 | 147.2 | 40.78 | 9.44 | 39.72 | 1.39 | 2.16 |
| 0.78 | 0.78 | 15.98 | 151.0 | 41.83 | 9.45 | 40.77 | 1.39 | 2.17 |
| 0.79 | 0.79 | 16.40 | 155.0 | 42.87 | 9.45 | 41.81 | 1.39 | 2.18 |
| 0.80 | 0.80 | 16.82 | 159.1 | 43.92 | 9.46 | 42.86 | 1.39 | 2.19 |
| 0.81 | 0.81 | 17.25 | 163.4 | 44.97 | 9.47 | 43.91 | 1.39 | 2.20 |
| 0.82 | 0.82 | 17.70 | 167.9 | 46.01 | 9.49 | 44.95 | 1.40 | 2.22 |
| 0.83 | 0.83 | 18.15 | 172.5 | 47.06 | 9.50 | 46.00 | 1.40 | 2.23 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .04

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.49 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.78 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 1.03 | 0.94 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.25 | 1.25 | 0.02 | 0.06 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.45 | 1.56 | 0.03 | 0.08 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.63 | 1.88 | 0.04 | 0.10 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.81 | 2.19 | 0.05 | 0.12 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 1.98 | 2.50 | 0.06 | 0.14 |
| 0.09 | 0.09 | 0.13 | 0.3 | 2.96 | 2.14 | 2.81 | 0.07 | 0.16 |
| 0.10 | 0.10 | 0.16 | 0.4 | 3.29 | 2.29 | 3.13 | 0.08 | 0.18 |
| 0.11 | 0.11 | 0.19 | 0.5 | 3.62 | 2.44 | 3.44 | 0.09 | 0.20 |
| 0.12 | 0.12 | 0.23 | 0.6 | 3.95 | 2.59 | 3.75 | 0.10 | 0.22 |
| 0.13 | 0.13 | 0.26 | 0.7 | 4.28 | 2.73 | 4.07 | 0.12 | 0.25 |
| 0.14 | 0.14 | 0.31 | 0.8 | 5.15 | 2.68 | 4.93 | 0.11 | 0.25 |
| 0.15 | 0.15 | 0.36 | 1.0 | 6.03 | 2.68 | 5.79 | 0.11 | 0.26 |
| 0.16 | 0.16 | 0.43 | 1.2 | 6.91 | 2.72 | 6.65 | 0.12 | 0.28 |
| 0.17 | 0.17 | 0.50 | 1.4 | 7.79 | 2.79 | 7.51 | 0.12 | 0.29 |
| 0.18 | 0.18 | 0.58 | 1.6 | 8.67 | 2.87 | 8.38 | 0.13 | 0.31 |
| 0.19 | 0.19 | 0.66 | 2.0 | 9.54 | 2.96 | 9.24 | 0.14 | 0.33 |
| 0.20 | 0.20 | 0.76 | 2.3 | 10.42 | 3.05 | 10.10 | 0.14 | 0.34 |
| 0.21 | 0.21 | 0.87 | 2.7 | 11.30 | 3.15 | 10.96 | 0.15 | 0.36 |
| 0.22 | 0.22 | 0.98 | 3.2 | 12.18 | 3.26 | 11.83 | 0.16 | 0.38 |
| 0.23 | 0.23 | 1.10 | 3.7 | 13.06 | 3.36 | 12.69 | 0.18 | 0.41 |
| 0.24 | 0.24 | 1.23 | 4.3 | 13.93 | 3.47 | 13.55 | 0.19 | 0.43 |
| 0.25 | 0.25 | 1.37 | 4.9 | 14.81 | 3.58 | 14.41 | 0.20 | 0.45 |
| 0.26 | 0.26 | 1.52 | 5.6 | 15.69 | 3.69 | 15.27 | 0.21 | 0.47 |
| 0.27 | 0.27 | 1.68 | 6.4 | 16.57 | 3.80 | 16.14 | 0.22 | 0.49 |
| 0.28 | 0.28 | 1.84 | 7.2 | 17.45 | 3.91 | 17.00 | 0.24 | 0.52 |
| 0.29 | 0.29 | 2.02 | 8.1 | 18.32 | 4.02 | 17.86 | 0.25 | 0.54 |
| 0.30 | 0.30 | 2.20 | 9.1 | 19.20 | 4.13 | 18.72 | 0.26 | 0.56 |
| 0.31 | 0.31 | 2.39 | 10.1 | 20.08 | 4.23 | 19.59 | 0.28 | 0.59 |
| 0.32 | 0.32 | 2.59 | 11.3 | 20.96 | 4.34 | 20.45 | 0.29 | 0.61 |
| 0.33 | 0.33 | 2.80 | 12.5 | 21.84 | 4.45 | 21.31 | 0.31 | 0.64 |
| 0.34 | 0.34 | 3.02 | 13.7 | 22.71 | 4.55 | 22.17 | 0.32 | 0.66 |
| 0.35 | 0.35 | 3.25 | 15.1 | 23.59 | 4.66 | 23.03 | 0.34 | 0.69 |
| 0.36 | 0.36 | 3.48 | 16.6 | 24.47 | 4.76 | 23.90 | 0.35 | 0.71 |
| 0.37 | 0.37 | 3.72 | 18.1 | 25.35 | 4.87 | 24.76 | 0.37 | 0.74 |
| 0.38 | 0.38 | 3.98 | 19.8 | 26.23 | 4.97 | 25.62 | 0.38 | 0.76 |
| 0.39 | 0.39 | 4.24 | 21.5 | 27.10 | 5.07 | 26.48 | 0.40 | 0.79 |
| 0.40 | 0.40 | 4.50 | 23.3 | 27.98 | 5.17 | 27.35 | 0.42 | 0.82 |
| 0.41 | 0.41 | 4.78 | 25.2 | 28.86 | 5.27 | 28.21 | 0.43 | 0.84 |
| 0.42 | 0.42 | 5.06 | 27.7 | 28.88 | 5.48 | 28.21 | 0.47 | 0.89 |
| 0.43 | 0.43 | 5.35 | 30.3 | 28.90 | 5.68 | 28.22 | 0.50 | 0.93 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 35.8 | 28.94 | 6.06 | 28.23 | 0.57 | 1.02 |
| 0.46 | 0.46 | 6.19 | 38.7 | 28.96 | 6.25 | 28.23 | 0.61 | 1.07 |
| 0.47 | 0.47 | 6.48 | 41.7 | 28.98 | 6.44 | 28.24 | 0.64 | 1.11 |
| 0.48 | 0.48 | 6.76 | 44.7 | 29.01 | 6.62 | 28.24 | 0.68 | 1.16 |
| 0.49 | 0.49 | 7.04 | 47.9 | 29.03 | 6.80 | 28.25 | 0.72 | 1.21 |
| 0.50 | 0.50 | 7.32 | 51.1 | 29.05 | 6.98 | 28.25 | 0.76 | 1.26 |
| 0.51 | 0.51 | 7.61 | 54.4 | 29.07 | 7.15 | 28.26 | 0.79 | 1.30 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 57.8 | 29.09 | 7.32 | 28.26 | 0.83 | 1.35 |
| 0.53 | 0.53 | 8.17 | 61.2 | 29.11 | 7.50 | 28.27 | 0.87 | 1.40 |
| 0.54 | 0.54 | 8.45 | 64.8 | 29.13 | 7.66 | 28.27 | 0.91 | 1.45 |
| 0.55 | 0.55 | 8.74 | 68.4 | 29.15 | 7.83 | 28.28 | 0.95 | 1.50 |
| 0.56 | 0.56 | 9.02 | 72.1 | 29.17 | 7.99 | 28.28 | 0.99 | 1.55 |
| 0.57 | 0.57 | 9.30 | 75.9 | 29.19 | 8.16 | 28.29 | 1.03 | 1.60 |
| 0.58 | 0.58 | 9.59 | 79.7 | 29.21 | 8.32 | 28.29 | 1.07 | 1.65 |
| 0.59 | 0.59 | 9.87 | 83.6 | 29.23 | 8.48 | 28.30 | 1.12 | 1.71 |
| 0.60 | 0.60 | 10.15 | 87.6 | 29.25 | 8.63 | 28.30 | 1.16 | 1.76 |
| 0.61 | 0.61 | 10.43 | 91.7 | 29.27 | 8.79 | 28.31 | 1.20 | 1.81 |
| 0.62 | 0.62 | 10.72 | 95.8 | 29.29 | 8.94 | 28.31 | 1.24 | 1.86 |
| 0.63 | 0.63 | 11.00 | 100.1 | 29.31 | 9.10 | 28.32 | 1.28 | 1.91 |
| 0.64 | 0.64 | 11.28 | 104.3 | 29.34 | 9.25 | 28.32 | 1.33 | 1.97 |
| 0.65 | 0.65 | 11.57 | 108.7 | 29.36 | 9.40 | 28.33 | 1.37 | 2.02 |
| 0.66 | 0.66 | 11.85 | 113.1 | 29.38 | 9.54 | 28.33 | 1.41 | 2.07 |
| 0.67 | 0.67 | 12.13 | 117.6 | 29.40 | 9.69 | 28.34 | 1.46 | 2.13 |
| 0.68 | 0.68 | 12.42 | 119.5 | 30.44 | 9.62 | 30.30 | 1.44 | 2.12 |
| 0.69 | 0.69 | 12.72 | 121.5 | 31.49 | 9.55 | 31.34 | 1.42 | 2.11 |
| 0.70 | 0.70 | 13.06 | 121.9 | 33.45 | 9.34 | 32.39 | 1.35 | 2.05 |
| 0.71 | 0.71 | 13.39 | 124.5 | 34.50 | 9.30 | 33.44 | 1.34 | 2.05 |
| 0.72 | 0.72 | 13.73 | 127.3 | 35.54 | 9.27 | 34.48 | 1.33 | 2.05 |
| 0.73 | 0.73 | 14.08 | 130.2 | 36.59 | 9.25 | 35.53 | 1.33 | 2.06 |
| 0.74 | 0.74 | 14.44 | 133.3 | 37.64 | 9.23 | 36.58 | 1.32 | 2.06 |
| 0.75 | 0.75 | 14.81 | 136.5 | 38.68 | 9.22 | 37.62 | 1.32 | 2.07 |
| 0.76 | 0.76 | 15.19 | 139.9 | 39.73 | 9.21 | 38.67 | 1.32 | 2.08 |
| 0.77 | 0.77 | 15.58 | 143.5 | 40.78 | 9.21 | 39.72 | 1.32 | 2.09 |
| 0.78 | 0.78 | 15.98 | 147.2 | 41.83 | 9.21 | 40.77 | 1.32 | 2.10 |
| 0.79 | 0.79 | 16.40 | 151.0 | 42.87 | 9.21 | 41.81 | 1.32 | 2.11 |
| 0.80 | 0.80 | 16.82 | 155.1 | 43.92 | 9.22 | 42.86 | 1.32 | 2.12 |
| 0.81 | 0.81 | 17.25 | 159.3 | 44.97 | 9.23 | 43.91 | 1.32 | 2.13 |
| 0.82 | 0.82 | 17.70 | 163.7 | 46.01 | 9.25 | 44.95 | 1.33 | 2.15 |
| 0.83 | 0.83 | 18.15 | 168.2 | 47.06 | 9.26 | 46.00 | 1.33 | 2.16 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .005

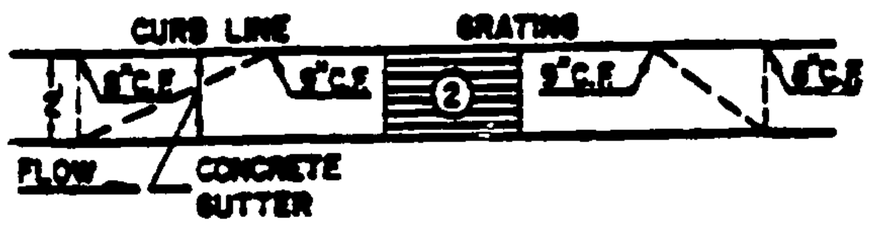
| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.17 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.28 | 0.63 | 0.00 | 0.02 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.36 | 0.94 | 0.00 | 0.03 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.44 | 1.25 | 0.00 | 0.04 |
| 0.05 | 0.05 | 0.04 | 0.0 | 1.64 | 0.51 | 1.56 | 0.00 | 0.05 |
| 0.06 | 0.06 | 0.06 | 0.0 | 1.97 | 0.58 | 1.88 | 0.01 | 0.07 |
| 0.07 | 0.07 | 0.08 | 0.0 | 2.30 | 0.64 | 2.19 | 0.01 | 0.08 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 0.70 | 2.50 | 0.01 | 0.09 |
| 0.09 | 0.09 | 0.13 | 0.1 | 2.96 | 0.76 | 2.81 | 0.01 | 0.10 |
| 0.10 | 0.10 | 0.16 | 0.1 | 3.29 | 0.81 | 3.13 | 0.01 | 0.11 |
| 0.11 | 0.11 | 0.19 | 0.2 | 3.62 | 0.86 | 3.44 | 0.01 | 0.12 |
| 0.12 | 0.12 | 0.23 | 0.2 | 3.95 | 0.92 | 3.75 | 0.01 | 0.13 |
| 0.13 | 0.13 | 0.26 | 0.3 | 4.28 | 0.97 | 4.07 | 0.01 | 0.14 |
| 0.14 | 0.14 | 0.31 | 0.3 | 5.15 | 0.95 | 4.93 | 0.01 | 0.15 |
| 0.15 | 0.15 | 0.36 | 0.3 | 6.03 | 0.95 | 5.79 | 0.01 | 0.16 |
| 0.16 | 0.16 | 0.43 | 0.4 | 6.91 | 0.96 | 6.65 | 0.01 | 0.17 |
| 0.17 | 0.17 | 0.50 | 0.5 | 7.79 | 0.99 | 7.51 | 0.02 | 0.19 |
| 0.18 | 0.18 | 0.58 | 0.6 | 8.67 | 1.01 | 8.38 | 0.02 | 0.20 |
| 0.19 | 0.19 | 0.66 | 0.7 | 9.54 | 1.04 | 9.24 | 0.02 | 0.21 |
| 0.20 | 0.20 | 0.76 | 0.8 | 10.42 | 1.08 | 10.10 | 0.02 | 0.22 |
| 0.21 | 0.21 | 0.87 | 1.0 | 11.30 | 1.11 | 10.96 | 0.02 | 0.23 |
| 0.22 | 0.22 | 0.98 | 1.1 | 12.18 | 1.15 | 11.83 | 0.02 | 0.24 |
| 0.23 | 0.23 | 1.10 | 1.3 | 13.06 | 1.19 | 12.69 | 0.02 | 0.25 |
| 0.24 | 0.24 | 1.23 | 1.5 | 13.93 | 1.23 | 13.55 | 0.02 | 0.26 |
| 0.25 | 0.25 | 1.37 | 1.7 | 14.81 | 1.27 | 14.41 | 0.02 | 0.27 |
| 0.26 | 0.26 | 1.52 | 2.0 | 15.69 | 1.30 | 15.27 | 0.03 | 0.29 |
| 0.27 | 0.27 | 1.68 | 2.3 | 16.57 | 1.34 | 16.14 | 0.03 | 0.30 |
| 0.28 | 0.28 | 1.84 | 2.5 | 17.45 | 1.38 | 17.00 | 0.03 | 0.31 |
| 0.29 | 0.29 | 2.02 | 2.9 | 18.32 | 1.42 | 17.86 | 0.03 | 0.32 |
| 0.30 | 0.30 | 2.20 | 3.2 | 19.20 | 1.46 | 18.72 | 0.03 | 0.33 |
| 0.31 | 0.31 | 2.39 | 3.6 | 20.08 | 1.50 | 19.59 | 0.03 | 0.34 |
| 0.32 | 0.32 | 2.59 | 4.0 | 20.96 | 1.53 | 20.45 | 0.04 | 0.36 |
| 0.33 | 0.33 | 2.80 | 4.4 | 21.84 | 1.57 | 21.31 | 0.04 | 0.37 |
| 0.34 | 0.34 | 3.02 | 4.9 | 22.71 | 1.61 | 22.17 | 0.04 | 0.38 |
| 0.35 | 0.35 | 3.25 | 5.3 | 23.59 | 1.65 | 23.03 | 0.04 | 0.39 |
| 0.36 | 0.36 | 3.48 | 5.9 | 24.47 | 1.68 | 23.90 | 0.04 | 0.40 |
| 0.37 | 0.37 | 3.72 | 6.4 | 25.35 | 1.72 | 24.76 | 0.05 | 0.42 |
| 0.38 | 0.38 | 3.98 | 7.0 | 26.23 | 1.76 | 25.62 | 0.05 | 0.43 |
| 0.39 | 0.39 | 4.24 | 7.6 | 27.10 | 1.79 | 26.48 | 0.05 | 0.44 |
| 0.40 | 0.40 | 4.50 | 8.2 | 27.98 | 1.83 | 27.35 | 0.05 | 0.45 |
| 0.41 | 0.41 | 4.78 | 8.9 | 28.86 | 1.86 | 28.21 | 0.05 | 0.46 |
| 0.42 | 0.42 | 5.06 | 9.8 | 28.88 | 1.94 | 28.21 | 0.06 | 0.48 |
| 0.43 | 0.43 | 5.35 | 10.7 | 28.90 | 2.01 | 28.22 | 0.06 | 0.49 |

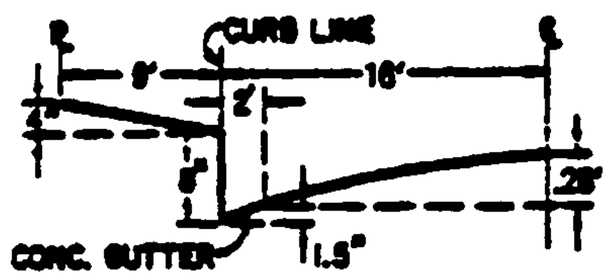
| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 12.7 | 28.94 | 2.14 | 28.23 | 0.07 | 0.52 |
| 0.46 | 0.46 | 6.19 | 13.7 | 28.96 | 2.21 | 28.23 | 0.08 | 0.54 |
| 0.47 | 0.47 | 6.48 | 14.7 | 28.98 | 2.28 | 28.24 | 0.08 | 0.55 |
| 0.48 | 0.48 | 6.76 | 15.8 | 29.01 | 2.34 | 28.24 | 0.09 | 0.57 |
| 0.49 | 0.49 | 7.04 | 16.9 | 29.03 | 2.40 | 28.25 | 0.09 | 0.58 |
| 0.50 | 0.50 | 7.32 | 18.1 | 29.05 | 2.47 | 28.25 | 0.09 | 0.59 |
| 0.51 | 0.51 | 7.61 | 19.2 | 29.07 | 2.53 | 28.26 | 0.10 | 0.61 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 20.4 | 29.09 | 2.59 | 28.26 | 0.10 | 0.62 |
| 0.53 | 0.53 | 8.17 | 21.7 | 29.11 | 2.65 | 28.27 | 0.11 | 0.64 |
| 0.54 | 0.54 | 8.45 | 22.9 | 29.13 | 2.71 | 28.27 | 0.11 | 0.65 |
| 0.55 | 0.55 | 8.74 | 24.2 | 29.15 | 2.77 | 28.28 | 0.12 | 0.67 |
| 0.56 | 0.56 | 9.02 | 25.5 | 29.17 | 2.83 | 28.28 | 0.12 | 0.68 |
| 0.57 | 0.57 | 9.30 | 26.8 | 29.19 | 2.88 | 28.29 | 0.13 | 0.70 |
| 0.58 | 0.58 | 9.59 | 28.2 | 29.21 | 2.94 | 28.29 | 0.13 | 0.71 |
| 0.59 | 0.59 | 9.87 | 29.6 | 29.23 | 3.00 | 28.30 | 0.14 | 0.73 |
| 0.60 | 0.60 | 10.15 | 31.0 | 29.25 | 3.05 | 28.30 | 0.14 | 0.74 |
| 0.61 | 0.61 | 10.43 | 32.4 | 29.27 | 3.11 | 28.31 | 0.15 | 0.76 |
| 0.62 | 0.62 | 10.72 | 33.9 | 29.29 | 3.16 | 28.31 | 0.16 | 0.78 |
| 0.63 | 0.63 | 11.00 | 35.4 | 29.31 | 3.22 | 28.32 | 0.16 | 0.79 |
| 0.64 | 0.64 | 11.28 | 36.9 | 29.34 | 3.27 | 28.32 | 0.17 | 0.81 |
| 0.65 | 0.65 | 11.57 | 38.4 | 29.36 | 3.32 | 28.33 | 0.17 | 0.82 |
| 0.66 | 0.66 | 11.85 | 40.0 | 29.38 | 3.37 | 28.33 | 0.18 | 0.84 |
| 0.67 | 0.67 | 12.13 | 41.6 | 29.40 | 3.43 | 28.34 | 0.18 | 0.85 |
| 0.68 | 0.68 | 12.42 | 42.2 | 30.44 | 3.40 | 30.30 | 0.18 | 0.86 |
| 0.69 | 0.69 | 12.72 | 43.0 | 31.49 | 3.38 | 31.34 | 0.18 | 0.87 |
| 0.70 | 0.70 | 13.06 | 43.1 | 33.45 | 3.30 | 32.39 | 0.17 | 0.87 |
| 0.71 | 0.71 | 13.39 | 44.0 | 34.50 | 3.29 | 33.44 | 0.17 | 0.88 |
| 0.72 | 0.72 | 13.73 | 45.0 | 35.54 | 3.28 | 34.48 | 0.17 | 0.89 |
| 0.73 | 0.73 | 14.08 | 46.0 | 36.59 | 3.27 | 35.53 | 0.17 | 0.90 |
| 0.74 | 0.74 | 14.44 | 47.1 | 37.64 | 3.26 | 36.58 | 0.17 | 0.91 |
| 0.75 | 0.75 | 14.81 | 48.3 | 38.68 | 3.26 | 37.62 | 0.16 | 0.91 |
| 0.76 | 0.76 | 15.19 | 49.5 | 39.73 | 3.26 | 38.67 | 0.16 | 0.92 |
| 0.77 | 0.77 | 15.58 | 50.7 | 40.78 | 3.25 | 39.72 | 0.16 | 0.93 |
| 0.78 | 0.78 | 15.98 | 52.0 | 41.83 | 3.26 | 40.77 | 0.16 | 0.94 |
| 0.79 | 0.79 | 16.40 | 53.4 | 42.87 | 3.26 | 41.81 | 0.16 | 0.95 |
| 0.80 | 0.80 | 16.82 | 54.8 | 43.92 | 3.26 | 42.86 | 0.17 | 0.97 |
| 0.81 | 0.81 | 17.25 | 56.3 | 44.97 | 3.26 | 43.91 | 0.17 | 0.98 |
| 0.82 | 0.82 | 17.70 | 57.9 | 46.01 | 3.27 | 44.95 | 0.17 | 0.99 |
| 0.83 | 0.83 | 18.15 | 59.5 | 47.06 | 3.28 | 46.00 | 0.17 | 1.00 |

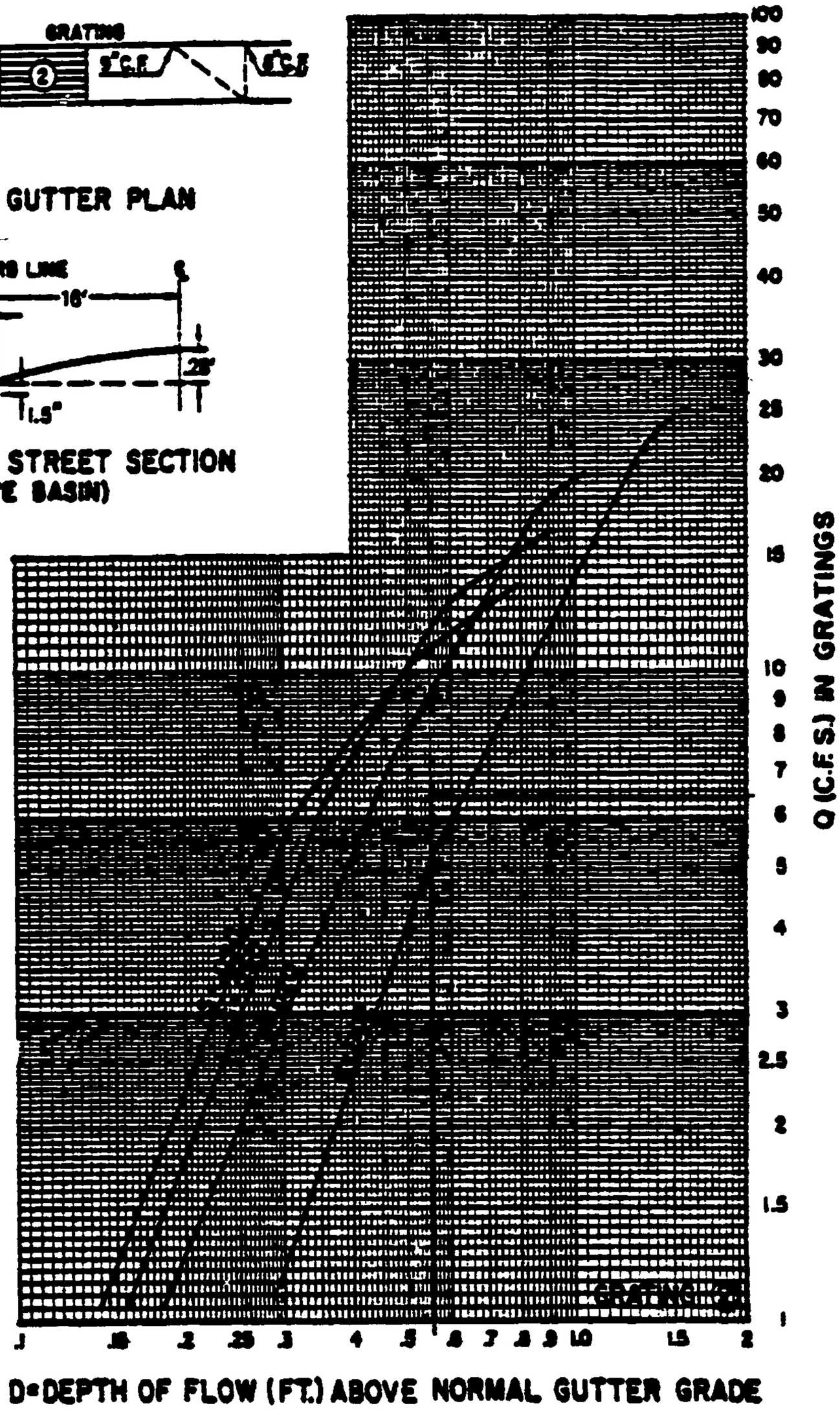
## GRATING CAPACITIES FOR TYPE 'A', 'C' and 'D'




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)




B-5

PLATE 22.3 D-5

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823 1000

fax 505 821 0892

IBIS ROAD - West half

Q = 6.89 cfs

S = 4.3%

$\varepsilon$ = 0.51 = 0.51 (max energy for roll curb)

Inlets required to divert flow to detention pond.

Grates take 3.5cfs each -

two grates installed

EGRET COURT - West half

Q = 7.29 cfs

S = 4.4%

$\varepsilon$ = 0.52 > 0.51 (max for roll curb)

install standard curb 1 lot before inlets

Inlets can handle 3.5cfs each -

install 2 inlets.

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .043

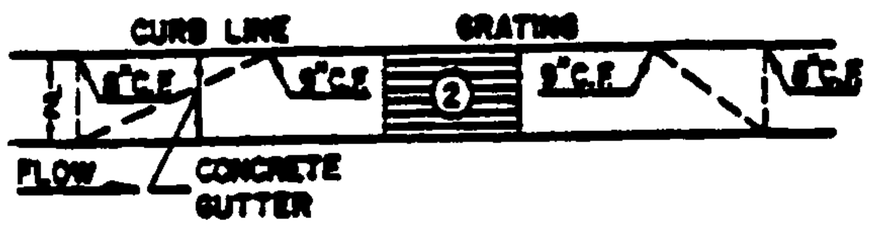
| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.51 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.81 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 1.07 | 0.94 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.29 | 1.25 | 0.03 | 0.07 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.50 | 1.56 | 0.03 | 0.08 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.69 | 1.88 | 0.04 | 0.10 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.88 | 2.19 | 0.05 | 0.12 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 2.05 | 2.50 | 0.07 | 0.15 |
| 0.09 | 0.09 | 0.13 | 0.3 | 2.96 | 2.22 | 2.81 | 0.08 | 0.17 |
| 0.10 | 0.10 | 0.16 | 0.4 | 3.29 | 2.38 | 3.13 | 0.09 | 0.19 |
| 0.11 | 0.11 | 0.19 | 0.5 | 3.62 | 2.53 | 3.44 | 0.10 | 0.21 |
| 0.12 | 0.12 | 0.23 | 0.6 | 3.95 | 2.69 | 3.75 | 0.11 | 0.23 |
| 0.13 | 0.13 | 0.26 | 0.7 | 4.28 | 2.83 | 4.07 | 0.12 | 0.25 |
| 0.14 | 0.14 | 0.31 | 0.9 | 5.15 | 2.78 | 4.93 | 0.12 | 0.26 |
| 0.15 | 0.15 | 0.36 | 1.0 | 6.03 | 2.78 | 5.79 | 0.12 | 0.27 |
| 0.16 | 0.16 | 0.43 | 1.2 | 6.91 | 2.82 | 6.65 | 0.12 | 0.28 |
| 0.17 | 0.17 | 0.50 | 1.4 | 7.79 | 2.89 | 7.51 | 0.13 | 0.30 |
| 0.18 | 0.18 | 0.58 | 1.7 | 8.67 | 2.97 | 8.38 | 0.14 | 0.32 |
| 0.19 | 0.19 | 0.66 | 2.0 | 9.54 | 3.06 | 9.24 | 0.15 | 0.34 |
| 0.20 | 0.20 | 0.76 | 2.4 | 10.42 | 3.16 | 10.10 | 0.16 | 0.36 |
| 0.21 | 0.21 | 0.87 | 2.8 | 11.30 | 3.27 | 10.96 | 0.17 | 0.38 |
| 0.22 | 0.22 | 0.98 | 3.3 | 12.18 | 3.38 | 11.83 | 0.18 | 0.40 |
| 0.23 | 0.23 | 1.10 | 3.8 | 13.06 | 3.49 | 12.69 | 0.19 | 0.42 |
| 0.24 | 0.24 | 1.23 | 4.4 | 13.93 | 3.60 | 13.55 | 0.20 | 0.44 |
| 0.25 | 0.25 | 1.37 | 5.1 | 14.81 | 3.71 | 14.41 | 0.21 | 0.46 |
| 0.26 | 0.26 | 1.52 | 5.8 | 15.69 | 3.83 | 15.27 | 0.23 | 0.49 |
| 0.27 | 0.27 | 1.68 | 6.6 | 16.57 | 3.94 | 16.14 | 0.24 | 0.51 |
| 0.28 | 0.28 | 1.84 | 7.5 | 17.45 | 4.05 | 17.00 | 0.25 | 0.53 |
| 0.29 | 0.29 | 2.02 | 8.4 | 18.32 | 4.17 | 17.86 | 0.27 | 0.56 |
| 0.30 | 0.30 | 2.20 | 9.4 | 19.20 | 4.28 | 18.72 | 0.28 | 0.58 |
| 0.31 | 0.31 | 2.39 | 10.5 | 20.08 | 4.39 | 19.59 | 0.30 | 0.61 |
| 0.32 | 0.32 | 2.59 | 11.7 | 20.96 | 4.50 | 20.45 | 0.31 | 0.63 |
| 0.33 | 0.33 | 2.80 | 12.9 | 21.84 | 4.61 | 21.31 | 0.33 | 0.66 |
| 0.34 | 0.34 | 3.02 | 14.3 | 22.71 | 4.72 | 22.17 | 0.35 | 0.69 |
| 0.35 | 0.35 | 3.25 | 15.7 | 23.59 | 4.83 | 23.03 | 0.36 | 0.71 |
| 0.36 | 0.36 | 3.48 | 17.2 | 24.47 | 4.94 | 23.90 | 0.38 | 0.74 |
| 0.37 | 0.37 | 3.72 | 18.8 | 25.35 | 5.05 | 24.76 | 0.40 | 0.77 |
| 0.38 | 0.38 | 3.98 | 20.5 | 26.23 | 5.15 | 25.62 | 0.41 | 0.79 |
| 0.39 | 0.39 | 4.24 | 22.3 | 27.10 | 5.26 | 26.48 | 0.43 | 0.82 |
| 0.40 | 0.40 | 4.50 | 24.2 | 27.98 | 5.36 | 27.35 | 0.45 | 0.85 |
| 0.41 | 0.41 | 4.78 | 26.2 | 28.86 | 5.47 | 28.21 | 0.46 | 0.87 |
| 0.42 | 0.42 | 5.06 | 28.8 | 28.88 | 5.68 | 28.21 | 0.50 | 0.92 |
| 0.43 | 0.43 | 5.35 | 31.5 | 28.90 | 5.89 | 28.22 | 0.54 | 0.97 |

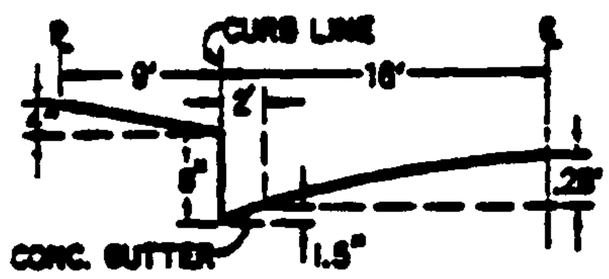
| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 37.2 | 28.94 | 6.29 | 28.23 | 0.61 | 1.06 |
| 0.46 | 0.46 | 6.19 | 40.1 | 28.96 | 6.48 | 28.23 | 0.65 | 1.11 |
| 0.47 | 0.47 | 6.48 | 43.2 | 28.98 | 6.67 | 28.24 | 0.69 | 1.16 |
| 0.48 | 0.48 | 6.76 | 46.4 | 29.01 | 6.86 | 28.24 | 0.73 | 1.21 |
| 0.49 | 0.49 | 7.04 | 49.6 | 29.03 | 7.05 | 28.25 | 0.77 | 1.26 |
| 0.50 | 0.50 | 7.32 | 53.0 | 29.05 | 7.23 | 28.25 | 0.81 | 1.31 |
| 0.51 | 0.51 | 7.61 | 56.4 | 29.07 | 7.42 | 28.26 | 0.85 | 1.36 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 59.9 | 29.09 | 7.59 | 28.26 | 0.90 | 1.42 |
| 0.53 | 0.53 | 8.17 | 63.5 | 29.11 | 7.77 | 28.27 | 0.94 | 1.47 |
| 0.54 | 0.54 | 8.45 | 67.2 | 29.13 | 7.95 | 28.27 | 0.98 | 1.52 |
| 0.55 | 0.55 | 8.74 | 70.9 | 29.15 | 8.12 | 28.28 | 1.02 | 1.57 |
| 0.56 | 0.56 | 9.02 | 74.8 | 29.17 | 8.29 | 28.28 | 1.07 | 1.63 |
| 0.57 | 0.57 | 9.30 | 78.7 | 29.19 | 8.46 | 28.29 | 1.11 | 1.68 |
| 0.58 | 0.58 | 9.59 | 82.7 | 29.21 | 8.62 | 28.29 | 1.15 | 1.73 |
| 0.59 | 0.59 | 9.87 | 86.7 | 29.23 | 8.79 | 28.30 | 1.20 | 1.79 |
| 0.60 | 0.60 | 10.15 | 90.9 | 29.25 | 8.95 | 28.30 | 1.24 | 1.84 |
| 0.61 | 0.61 | 10.43 | 95.1 | 29.27 | 9.11 | 28.31 | 1.29 | 1.90 |
| 0.62 | 0.62 | 10.72 | 99.4 | 29.29 | 9.27 | 28.31 | 1.33 | 1.95 |
| 0.63 | 0.63 | 11.00 | 103.7 | 29.31 | 9.43 | 28.32 | 1.38 | 2.01 |
| 0.64 | 0.64 | 11.28 | 108.2 | 29.34 | 9.59 | 28.32 | 1.43 | 2.07 |
| 0.65 | 0.65 | 11.57 | 112.7 | 29.36 | 9.74 | 28.33 | 1.47 | 2.12 |
| 0.66 | 0.66 | 11.85 | 117.3 | 29.38 | 9.90 | 28.33 | 1.52 | 2.18 |
| 0.67 | 0.67 | 12.13 | 121.9 | 29.40 | 10.05 | 28.34 | 1.57 | 2.24 |
| 0.68 | 0.68 | 12.42 | 123.9 | 30.44 | 9.97 | 30.30 | 1.54 | 2.22 |
| 0.69 | 0.69 | 12.72 | 126.0 | 31.49 | 9.91 | 31.34 | 1.52 | 2.21 |
| 0.70 | 0.70 | 13.06 | 126.4 | 33.45 | 9.68 | 32.39 | 1.46 | 2.16 |
| 0.71 | 0.71 | 13.39 | 129.1 | 34.50 | 9.64 | 33.44 | 1.44 | 2.15 |
| 0.72 | 0.72 | 13.73 | 132.0 | 35.54 | 9.61 | 34.48 | 1.43 | 2.15 |
| 0.73 | 0.73 | 14.08 | 135.0 | 36.59 | 9.59 | 35.53 | 1.43 | 2.16 |
| 0.74 | 0.74 | 14.44 | 138.2 | 37.64 | 9.57 | 36.58 | 1.42 | 2.16 |
| 0.75 | 0.75 | 14.81 | 141.5 | 38.68 | 9.56 | 37.62 | 1.42 | 2.17 |
| 0.76 | 0.76 | 15.19 | 145.0 | 39.73 | 9.55 | 38.67 | 1.42 | 2.18 |
| 0.77 | 0.77 | 15.58 | 148.7 | 40.78 | 9.54 | 39.72 | 1.41 | 2.18 |
| 0.78 | 0.78 | 15.98 | 152.6 | 41.83 | 9.55 | 40.77 | 1.41 | 2.19 |
| 0.79 | 0.79 | 16.40 | 156.6 | 42.87 | 9.55 | 41.81 | 1.42 | 2.21 |
| 0.80 | 0.80 | 16.82 | 160.8 | 43.92 | 9.56 | 42.86 | 1.42 | 2.22 |
| 0.81 | 0.81 | 17.25 | 165.2 | 44.97 | 9.57 | 43.91 | 1.42 | 2.23 |
| 0.82 | 0.82 | 17.70 | 169.7 | 46.01 | 9.59 | 44.95 | 1.43 | 2.25 |
| 0.83 | 0.83 | 18.15 | 174.4 | 47.06 | 9.61 | 46.00 | 1.43 | 2.26 |

## GRATING CAPACITIES FOR TYPE 'A', 'C' and 'D'




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)

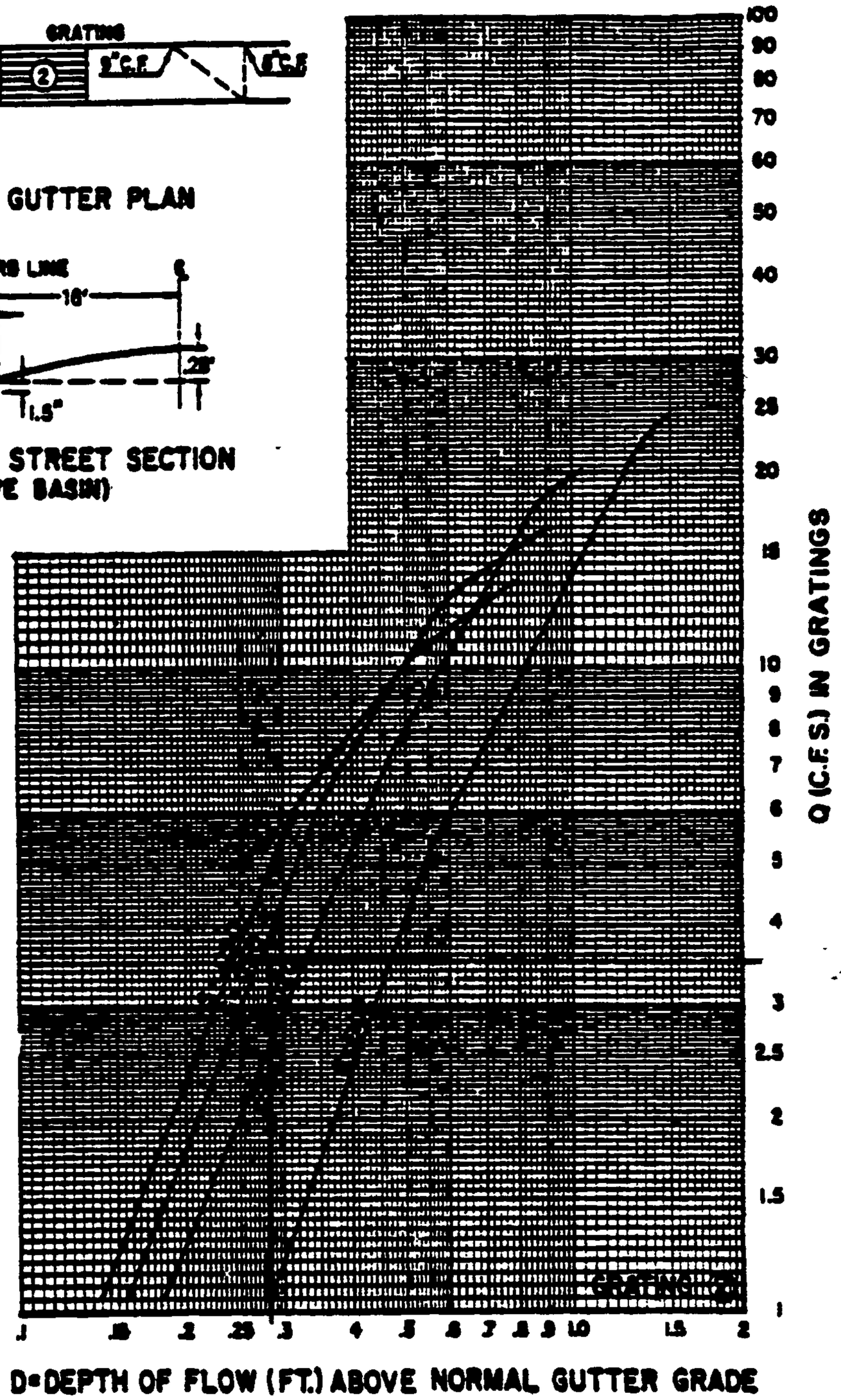



**PLATE 22.3 D-5**

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

□ MANNING'S N= .017 SLOPE= .044

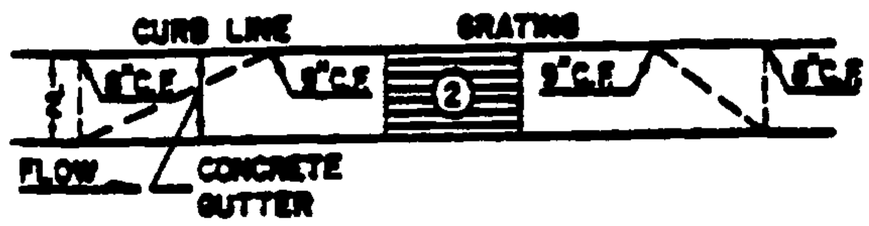
| □POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.52 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.82 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 1.08 | 0.94 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.31 | 1.25 | 0.03 | 0.07 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.52 | 1.56 | 0.04 | 0.09 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.71 | 1.88 | 0.05 | 0.11 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.90 | 2.19 | 0.06 | 0.13 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 2.07 | 2.50 | 0.07 | 0.15 |
| 0.09 | 0.09 | 0.13 | 0.3 | 2.96 | 2.24 | 2.81 | 0.08 | 0.17 |
| 0.10 | 0.10 | 0.16 | 0.4 | 3.29 | 2.41 | 3.13 | 0.09 | 0.19 |
| 0.11 | 0.11 | 0.19 | 0.5 | 3.62 | 2.56 | 3.44 | 0.10 | 0.21 |
| 0.12 | 0.12 | 0.23 | 0.6 | 3.95 | 2.72 | 3.75 | 0.11 | 0.23 |
| 0.13 | 0.13 | 0.26 | 0.8 | 4.28 | 2.87 | 4.07 | 0.13 | 0.26 |
| 0.14 | 0.14 | 0.31 | 0.9 | 5.15 | 2.81 | 4.93 | 0.12 | 0.26 |
| 0.15 | 0.15 | 0.36 | 1.0 | 6.03 | 2.81 | 5.79 | 0.12 | 0.27 |
| 0.16 | 0.16 | 0.43 | 1.2 | 6.91 | 2.86 | 6.65 | 0.13 | 0.29 |
| 0.17 | 0.17 | 0.50 | 1.4 | 7.79 | 2.92 | 7.51 | 0.13 | 0.30 |
| 0.18 | 0.18 | 0.58 | 1.7 | 8.67 | 3.01 | 8.38 | 0.14 | 0.32 |
| 0.19 | 0.19 | 0.66 | 2.1 | 9.54 | 3.10 | 9.24 | 0.15 | 0.34 |
| 0.20 | 0.20 | 0.76 | 2.4 | 10.42 | 3.20 | 10.10 | 0.16 | 0.36 |
| 0.21 | 0.21 | 0.87 | 2.9 | 11.30 | 3.31 | 10.96 | 0.17 | 0.38 |
| 0.22 | 0.22 | 0.98 | 3.3 | 12.18 | 3.42 | 11.83 | 0.18 | 0.40 |
| 0.23 | 0.23 | 1.10 | 3.9 | 13.06 | 3.53 | 12.69 | 0.19 | 0.42 |
| 0.24 | 0.24 | 1.23 | 4.5 | 13.93 | 3.64 | 13.55 | 0.21 | 0.45 |
| 0.25 | 0.25 | 1.37 | 5.2 | 14.81 | 3.76 | 14.41 | 0.22 | 0.47 |
| 0.26 | 0.26 | 1.52 | 5.9 | 15.69 | 3.87 | 15.27 | 0.23 | 0.49 |
| 0.27 | 0.27 | 1.68 | 6.7 | 16.57 | 3.98 | 16.14 | 0.25 | 0.52 |
| 0.28 | 0.28 | 1.84 | 7.6 | 17.45 | 4.10 | 17.00 | 0.26 | 0.54 |
| 0.29 | 0.29 | 2.02 | 8.5 | 18.32 | 4.21 | 17.86 | 0.28 | 0.57 |
| 0.30 | 0.30 | 2.20 | 9.5 | 19.20 | 4.33 | 18.72 | 0.29 | 0.59 |
| 0.31 | 0.31 | 2.39 | 10.6 | 20.08 | 4.44 | 19.59 | 0.31 | 0.62 |
| 0.32 | 0.32 | 2.59 | 11.8 | 20.96 | 4.55 | 20.45 | 0.32 | 0.64 |
| 0.33 | 0.33 | 2.80 | 13.1 | 21.84 | 4.66 | 21.31 | 0.34 | 0.67 |
| 0.34 | 0.34 | 3.02 | 14.4 | 22.71 | 4.78 | 22.17 | 0.35 | 0.69 |
| 0.35 | 0.35 | 3.25 | 15.9 | 23.59 | 4.89 | 23.03 | 0.37 | 0.72 |
| 0.36 | 0.36 | 3.48 | 17.4 | 24.47 | 5.00 | 23.90 | 0.39 | 0.75 |
| 0.37 | 0.37 | 3.72 | 19.0 | 25.35 | 5.10 | 24.76 | 0.40 | 0.77 |
| 0.38 | 0.38 | 3.98 | 20.7 | 26.23 | 5.21 | 25.62 | 0.42 | 0.80 |
| 0.39 | 0.39 | 4.24 | 22.5 | 27.10 | 5.32 | 26.48 | 0.44 | 0.83 |
| 0.40 | 0.40 | 4.50 | 24.4 | 27.98 | 5.43 | 27.35 | 0.46 | 0.86 |
| 0.41 | 0.41 | 4.78 | 26.5 | 28.86 | 5.53 | 28.21 | 0.48 | 0.89 |
| 0.42 | 0.42 | 5.06 | 29.1 | 28.88 | 5.74 | 28.21 | 0.51 | 0.93 |
| 0.43 | 0.43 | 5.35 | 31.8 | 28.90 | 5.95 | 28.22 | 0.55 | 0.98 |

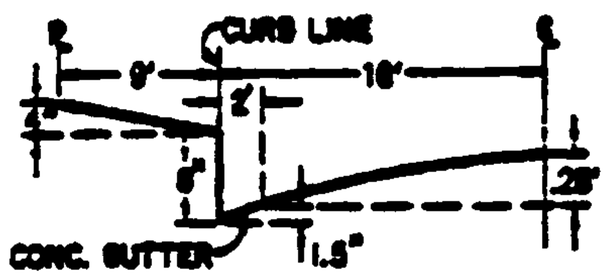
| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 37.6 | 28.94 | 6.36 | 28.23 | 0.63 | 1.08 |
| 0.46 | 0.46 | 6.19 | 40.6 | 28.96 | 6.56 | 28.23 | 0.67 | 1.13 |
| 0.47 | 0.47 | 6.48 | 43.7 | 28.98 | 6.75 | 28.24 | 0.71 | 1.18 |
| 0.48 | 0.48 | 6.76 | 46.9 | 29.01 | 6.94 | 28.24 | 0.75 | 1.23 |
| 0.49 | 0.49 | 7.04 | 50.2 | 29.03 | 7.13 | 28.25 | 0.79 | 1.28 |
| 0.50 | 0.50 | 7.32 | 53.6 | 29.05 | 7.32 | 28.25 | 0.83 | 1.33 |
| 0.51 | 0.51 | 7.61 | 57.1 | 29.07 | 7.50 | 28.26 | 0.87 | 1.38 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 60.6 | 29.09 | 7.68 | 28.26 | 0.92 | 1.44 |
| 0.53 | 0.53 | 8.17 | 64.2 | 29.11 | 7.86 | 28.27 | 0.96 | 1.49 |
| 0.54 | 0.54 | 8.45 | 67.9 | 29.13 | 8.04 | 28.27 | 1.00 | 1.54 |
| 0.55 | 0.55 | 8.74 | 71.7 | 29.15 | 8.21 | 28.28 | 1.05 | 1.60 |
| 0.56 | 0.56 | 9.02 | 75.6 | 29.17 | 8.38 | 28.28 | 1.09 | 1.65 |
| 0.57 | 0.57 | 9.30 | 79.6 | 29.19 | 8.55 | 28.29 | 1.14 | 1.71 |
| 0.58 | 0.58 | 9.59 | 83.6 | 29.21 | 8.72 | 28.29 | 1.18 | 1.76 |
| 0.59 | 0.59 | 9.87 | 87.7 | 29.23 | 8.89 | 28.30 | 1.23 | 1.82 |
| 0.60 | 0.60 | 10.15 | 91.9 | 29.25 | 9.05 | 28.30 | 1.27 | 1.87 |
| 0.61 | 0.61 | 10.43 | 96.2 | 29.27 | 9.22 | 28.31 | 1.32 | 1.93 |
| 0.62 | 0.62 | 10.72 | 100.5 | 29.29 | 9.38 | 28.31 | 1.37 | 1.99 |
| 0.63 | 0.63 | 11.00 | 104.9 | 29.31 | 9.54 | 28.32 | 1.41 | 2.04 |
| 0.64 | 0.64 | 11.28 | 109.4 | 29.34 | 9.70 | 28.32 | 1.46 | 2.10 |
| 0.65 | 0.65 | 11.57 | 114.0 | 29.36 | 9.85 | 28.33 | 1.51 | 2.16 |
| 0.66 | 0.66 | 11.85 | 118.6 | 29.38 | 10.01 | 28.33 | 1.56 | 2.22 |
| 0.67 | 0.67 | 12.13 | 123.3 | 29.40 | 10.16 | 28.34 | 1.60 | 2.27 |
| 0.68 | 0.68 | 12.42 | 125.3 | 30.44 | 10.09 | 30.30 | 1.58 | 2.26 |
| 0.69 | 0.69 | 12.72 | 127.5 | 31.49 | 10.02 | 31.34 | 1.56 | 2.25 |
| 0.70 | 0.70 | 13.06 | 127.9 | 33.45 | 9.79 | 32.39 | 1.49 | 2.19 |
| 0.71 | 0.71 | 13.39 | 130.6 | 34.50 | 9.76 | 33.44 | 1.48 | 2.19 |
| 0.72 | 0.72 | 13.73 | 133.5 | 35.54 | 9.72 | 34.48 | 1.47 | 2.19 |
| 0.73 | 0.73 | 14.08 | 136.5 | 36.59 | 9.70 | 35.53 | 1.46 | 2.19 |
| 0.74 | 0.74 | 14.44 | 139.8 | 37.64 | 9.68 | 36.58 | 1.46 | 2.20 |
| 0.75 | 0.75 | 14.81 | 143.2 | 38.68 | 9.67 | 37.62 | 1.45 | 2.20 |
| 0.76 | 0.76 | 15.19 | 146.7 | 39.73 | 9.66 | 38.67 | 1.45 | 2.21 |
| 0.77 | 0.77 | 15.58 | 150.5 | 40.78 | 9.66 | 39.72 | 1.45 | 2.22 |
| 0.78 | 0.78 | 15.98 | 154.4 | 41.83 | 9.66 | 40.77 | 1.45 | 2.23 |
| 0.79 | 0.79 | 16.40 | 158.4 | 42.87 | 9.66 | 41.81 | 1.45 | 2.24 |
| 0.80 | 0.80 | 16.82 | 162.7 | 43.92 | 9.67 | 42.86 | 1.45 | 2.25 |
| 0.81 | 0.81 | 17.25 | 167.1 | 44.97 | 9.68 | 43.91 | 1.46 | 2.27 |
| 0.82 | 0.82 | 17.70 | 171.6 | 46.01 | 9.70 | 44.95 | 1.46 | 2.28 |
| 0.83 | 0.83 | 18.15 | 176.4 | 47.06 | 9.72 | 46.00 | 1.47 | 2.30 |

## GRATING CAPACITIES FOR TYPE 'A', 'C' and 'D'




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)

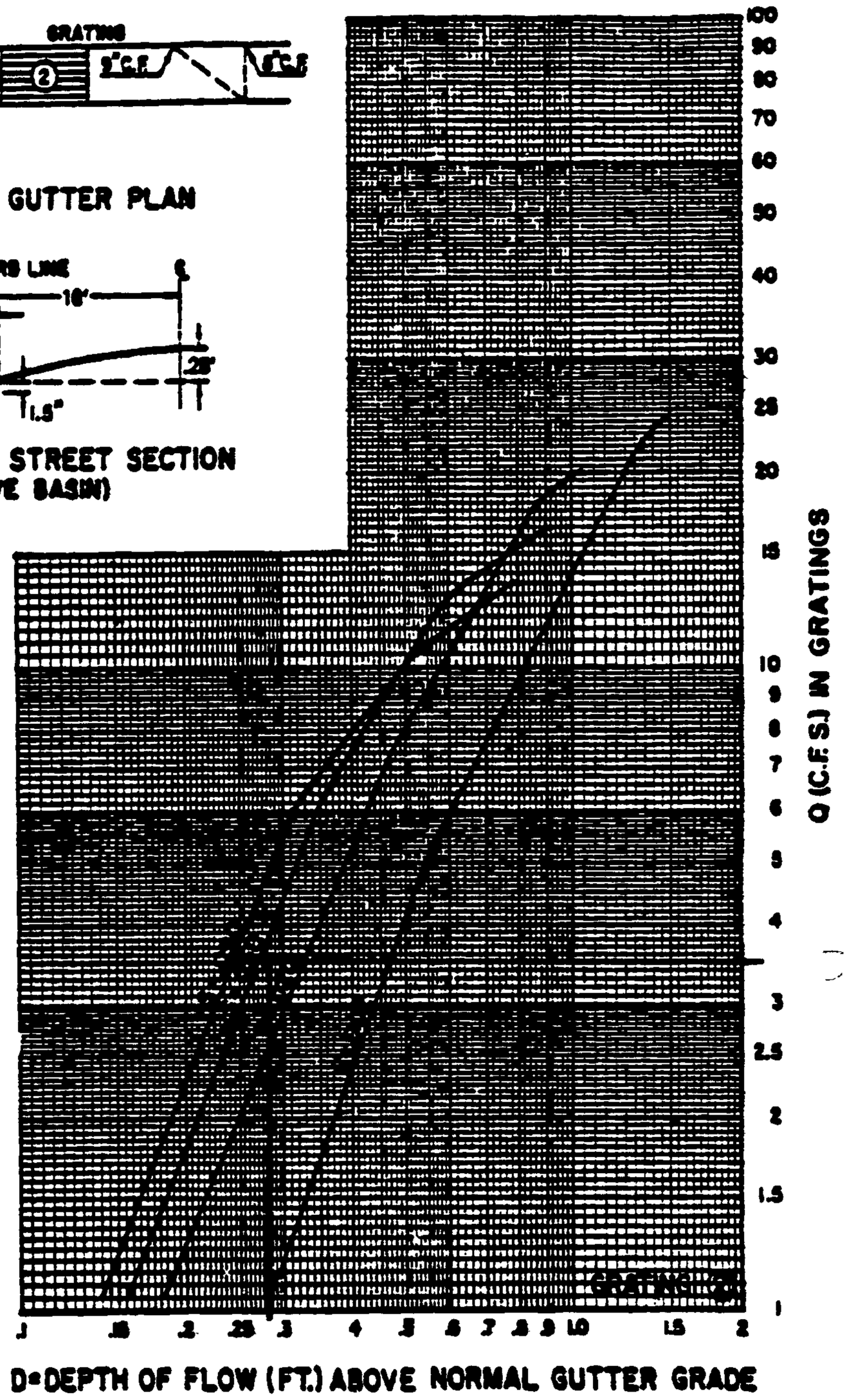



**PLATE 22.3 D-5**

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505 823.1000

fax 505 821 0892

Whimbrel Court - west half

Q = 7.49 cfs  15 lots

S = 4.21%

E = 0.53 > 0.51 (max for roll curb)

standard curb required when E = 0.51, Q = 6.5 cfs.

$\frac{Q}{lot} = \frac{7.49}{15} = 0.5$ cfs/lot

# of lots before std. curb = 6.5/0.5 = 13 lots.

Inlets take 3.5 cfs each, install two

Goldfinch CT - west half

Q = 7.9 cfs

S = 4.42%

E = 0.54 > 0.51 (roll curb max)

standard curb req'd at E = .51 Q = 6.6 cfs.

$\frac{Q}{lot} = \frac{7.9}{16} = 0.49$ cfs

$\frac{6.6}{.49} = 13.5$ lots accommodated by roll curb

Inlets take 3.8 cfs each, install two.

KING RAIL RD - west half

Q = 7.29 cfs

S = 4.26%

E = 0.51 = 0.51 roll curb sufficient

Inlets take 3.5 cfs each, install 2 inlets

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .0421

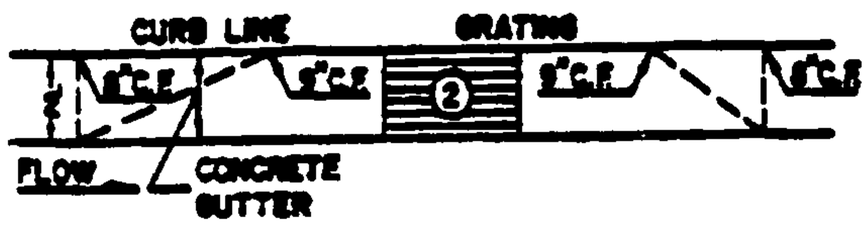
| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.51 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.80 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 1.05 | 0.94 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.28 | 1.25 | 0.03 | 0.07 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.48 | 1.56 | 0.03 | 0.08 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.67 | 1.88 | 0.04 | 0.10 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.86 | 2.19 | 0.05 | 0.12 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 2.03 | 2.50 | 0.06 | 0.14 |
| 0.09 | 0.09 | 0.13 | 0.3 | 2.96 | 2.19 | 2.81 | 0.07 | 0.16 |
| 0.10 | 0.10 | 0.16 | 0.4 | 3.29 | 2.35 | 3.13 | 0.09 | 0.19 |
| 0.11 | 0.11 | 0.19 | 0.5 | 3.62 | 2.51 | 3.44 | 0.10 | 0.21 |
| 0.12 | 0.12 | 0.23 | 0.6 | 3.95 | 2.66 | 3.75 | 0.11 | 0.23 |
| 0.13 | 0.13 | 0.26 | 0.7 | 4.28 | 2.80 | 4.07 | 0.12 | 0.25 |
| 0.14 | 0.14 | 0.31 | 0.9 | 5.15 | 2.75 | 4.93 | 0.12 | 0.26 |
| 0.15 | 0.15 | 0.36 | 1.0 | 6.03 | 2.75 | 5.79 | 0.12 | 0.27 |
| 0.16 | 0.16 | 0.43 | 1.2 | 6.91 | 2.79 | 6.65 | 0.12 | 0.28 |
| 0.17 | 0.17 | 0.50 | 1.4 | 7.79 | 2.86 | 7.51 | 0.13 | 0.30 |
| 0.18 | 0.18 | 0.58 | 1.7 | 8.67 | 2.94 | 8.38 | 0.13 | 0.31 |
| 0.19 | 0.19 | 0.66 | 2.0 | 9.54 | 3.03 | 9.24 | 0.14 | 0.33 |
| 0.20 | 0.20 | 0.76 | 2.4 | 10.42 | 3.13 | 10.10 | 0.15 | 0.35 |
| 0.21 | 0.21 | 0.87 | 2.8 | 11.30 | 3.23 | 10.96 | 0.16 | 0.37 |
| 0.22 | 0.22 | 0.98 | 3.3 | 12.18 | 3.34 | 11.83 | 0.17 | 0.39 |
| 0.23 | 0.23 | 1.10 | 3.8 | 13.06 | 3.45 | 12.69 | 0.18 | 0.41 |
| 0.24 | 0.24 | 1.23 | 4.4 | 13.93 | 3.56 | 13.55 | 0.20 | 0.44 |
| 0.25 | 0.25 | 1.37 | 5.0 | 14.81 | 3.67 | 14.41 | 0.21 | 0.46 |
| 0.26 | 0.26 | 1.52 | 5.8 | 15.69 | 3.79 | 15.27 | 0.22 | 0.48 |
| 0.27 | 0.27 | 1.68 | 6.5 | 16.57 | 3.90 | 16.14 | 0.24 | 0.51 |
| 0.28 | 0.28 | 1.84 | 7.4 | 17.45 | 4.01 | 17.00 | 0.25 | 0.53 |
| 0.29 | 0.29 | 2.02 | 8.3 | 18.32 | 4.12 | 17.86 | 0.26 | 0.55 |
| 0.30 | 0.30 | 2.20 | 9.3 | 19.20 | 4.23 | 18.72 | 0.28 | 0.58 |
| 0.31 | 0.31 | 2.39 | 10.4 | 20.08 | 4.34 | 19.59 | 0.29 | 0.60 |
| 0.32 | 0.32 | 2.59 | 11.5 | 20.96 | 4.45 | 20.45 | 0.31 | 0.63 |
| 0.33 | 0.33 | 2.80 | 12.8 | 21.84 | 4.56 | 21.31 | 0.32 | 0.65 |
| 0.34 | 0.34 | 3.02 | 14.1 | 22.71 | 4.67 | 22.17 | 0.34 | 0.68 |
| 0.35 | 0.35 | 3.25 | 15.5 | 23.59 | 4.78 | 23.03 | 0.35 | 0.70 |
| 0.36 | 0.36 | 3.48 | 17.0 | 24.47 | 4.89 | 23.90 | 0.37 | 0.73 |
| 0.37 | 0.37 | 3.72 | 18.6 | 25.35 | 4.99 | 24.76 | 0.39 | 0.76 |
| 0.38 | 0.38 | 3.98 | 20.3 | 26.23 | 5.10 | 25.62 | 0.40 | 0.78 |
| 0.39 | 0.39 | 4.24 | 22.0 | 27.10 | 5.20 | 26.48 | 0.42 | 0.81 |
| 0.40 | 0.40 | 4.50 | 23.9 | 27.98 | 5.31 | 27.35 | 0.44 | 0.84 |
| 0.41 | 0.41 | 4.78 | 25.9 | 28.86 | 5.41 | 28.21 | 0.45 | 0.86 |
| 0.42 | 0.42 | 5.06 | 28.5 | 28.88 | 5.62 | 28.21 | 0.49 | 0.91 |
| 0.43 | 0.43 | 5.35 | 31.1 | 28.90 | 5.82 | 28.22 | 0.53 | 0.96 |

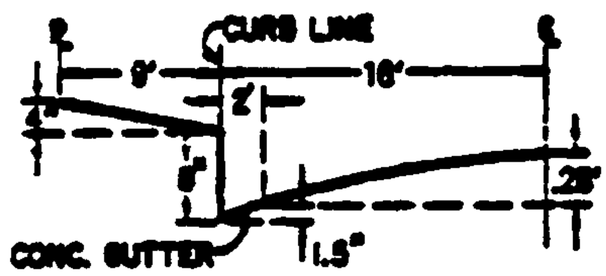
| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 36.8 | 28.94 | 6.22 | 28.23 | 0.60 | 1.05 |
| 0.46 | 0.46 | 6.19 | 39.7 | 28.96 | 6.41 | 28.23 | 0.64 | 1.10 |
| 0.47 | 0.47 | 6.48 | 42.8 | 28.98 | 6.60 | 28.24 | 0.68 | 1.15 |
| 0.48 | 0.48 | 6.76 | 45.9 | 29.01 | 6.79 | 28.24 | 0.72 | 1.20 |
| 0.49 | 0.49 | 7.04 | 49.1 | 29.03 | 6.98 | 28.25 | 0.76 | 1.25 |
| 0.50 | 0.50 | 7.32 | 52.4 | 29.05 | 7.16 | 28.25 | 0.80 | 1.30 |
| 0.51 | 0.51 | 7.61 | 55.8 | 29.07 | 7.34 | 28.26 | 0.84 | 1.35 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 59.3 | 29.09 | 7.51 | 28.26 | 0.88 | 1.40 |
| 0.53 | 0.53 | 8.17 | 62.8 | 29.11 | 7.69 | 28.27 | 0.92 | 1.45 |
| 0.54 | 0.54 | 8.45 | 66.5 | 29.13 | 7.86 | 28.27 | 0.96 | 1.50 |
| 0.55 | 0.55 | 8.74 | 70.2 | 29.15 | 8.03 | 28.28 | 1.00 | 1.55 |
| 0.56 | 0.56 | 9.02 | 74.0 | 29.17 | 8.20 | 28.28 | 1.04 | 1.60 |
| 0.57 | 0.57 | 9.30 | 77.8 | 29.19 | 8.37 | 28.29 | 1.09 | 1.66 |
| 0.58 | 0.58 | 9.59 | 81.8 | 29.21 | 8.53 | 28.29 | 1.13 | 1.71 |
| 0.59 | 0.59 | 9.87 | 85.8 | 29.23 | 8.70 | 28.30 | 1.17 | 1.76 |
| 0.60 | 0.60 | 10.15 | 89.9 | 29.25 | 8.86 | 28.30 | 1.22 | 1.82 |
| 0.61 | 0.61 | 10.43 | 94.1 | 29.27 | 9.02 | 28.31 | 1.26 | 1.87 |
| 0.62 | 0.62 | 10.72 | 98.3 | 29.29 | 9.17 | 28.31 | 1.31 | 1.93 |
| 0.63 | 0.63 | 11.00 | 102.6 | 29.31 | 9.33 | 28.32 | 1.35 | 1.98 |
| 0.64 | 0.64 | 11.28 | 107.0 | 29.34 | 9.49 | 28.32 | 1.40 | 2.04 |
| 0.65 | 0.65 | 11.57 | 111.5 | 29.36 | 9.64 | 28.33 | 1.44 | 2.09 |
| 0.66 | 0.66 | 11.85 | 116.0 | 29.38 | 9.79 | 28.33 | 1.49 | 2.15 |
| 0.67 | 0.67 | 12.13 | 120.6 | 29.40 | 9.94 | 28.34 | 1.54 | 2.21 |
| 0.68 | 0.68 | 12.42 | 122.6 | 30.44 | 9.87 | 30.30 | 1.51 | 2.19 |
| 0.69 | 0.69 | 12.72 | 124.7 | 31.49 | 9.80 | 31.34 | 1.49 | 2.18 |
| 0.70 | 0.70 | 13.06 | 125.1 | 33.45 | 9.58 | 32.39 | 1.43 | 2.13 |
| 0.71 | 0.71 | 13.39 | 127.8 | 34.50 | 9.54 | 33.44 | 1.41 | 2.12 |
| 0.72 | 0.72 | 13.73 | 130.6 | 35.54 | 9.51 | 34.48 | 1.40 | 2.12 |
| 0.73 | 0.73 | 14.08 | 133.6 | 36.59 | 9.49 | 35.53 | 1.40 | 2.13 |
| 0.74 | 0.74 | 14.44 | 136.7 | 37.64 | 9.47 | 36.58 | 1.39 | 2.13 |
| 0.75 | 0.75 | 14.81 | 140.0 | 38.68 | 9.46 | 37.62 | 1.39 | 2.14 |
| 0.76 | 0.76 | 15.19 | 143.5 | 39.73 | 9.45 | 38.67 | 1.39 | 2.15 |
| 0.77 | 0.77 | 15.58 | 147.2 | 40.78 | 9.44 | 39.72 | 1.39 | 2.16 |
| 0.78 | 0.78 | 15.98 | 151.0 | 41.83 | 9.45 | 40.77 | 1.39 | 2.17 |
| 0.79 | 0.79 | 16.40 | 155.0 | 42.87 | 9.45 | 41.81 | 1.39 | 2.18 |
| 0.80 | 0.80 | 16.82 | 159.1 | 43.92 | 9.46 | 42.86 | 1.39 | 2.19 |
| 0.81 | 0.81 | 17.25 | 163.4 | 44.97 | 9.47 | 43.91 | 1.39 | 2.20 |
| 0.82 | 0.82 | 17.70 | 167.9 | 46.01 | 9.49 | 44.95 | 1.40 | 2.22 |
| 0.83 | 0.83 | 18.15 | 172.5 | 47.06 | 9.50 | 46.00 | 1.40 | 2.23 |

## GRATING CAPACITIES FOR TYPE 'A', 'C' and 'D'




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)

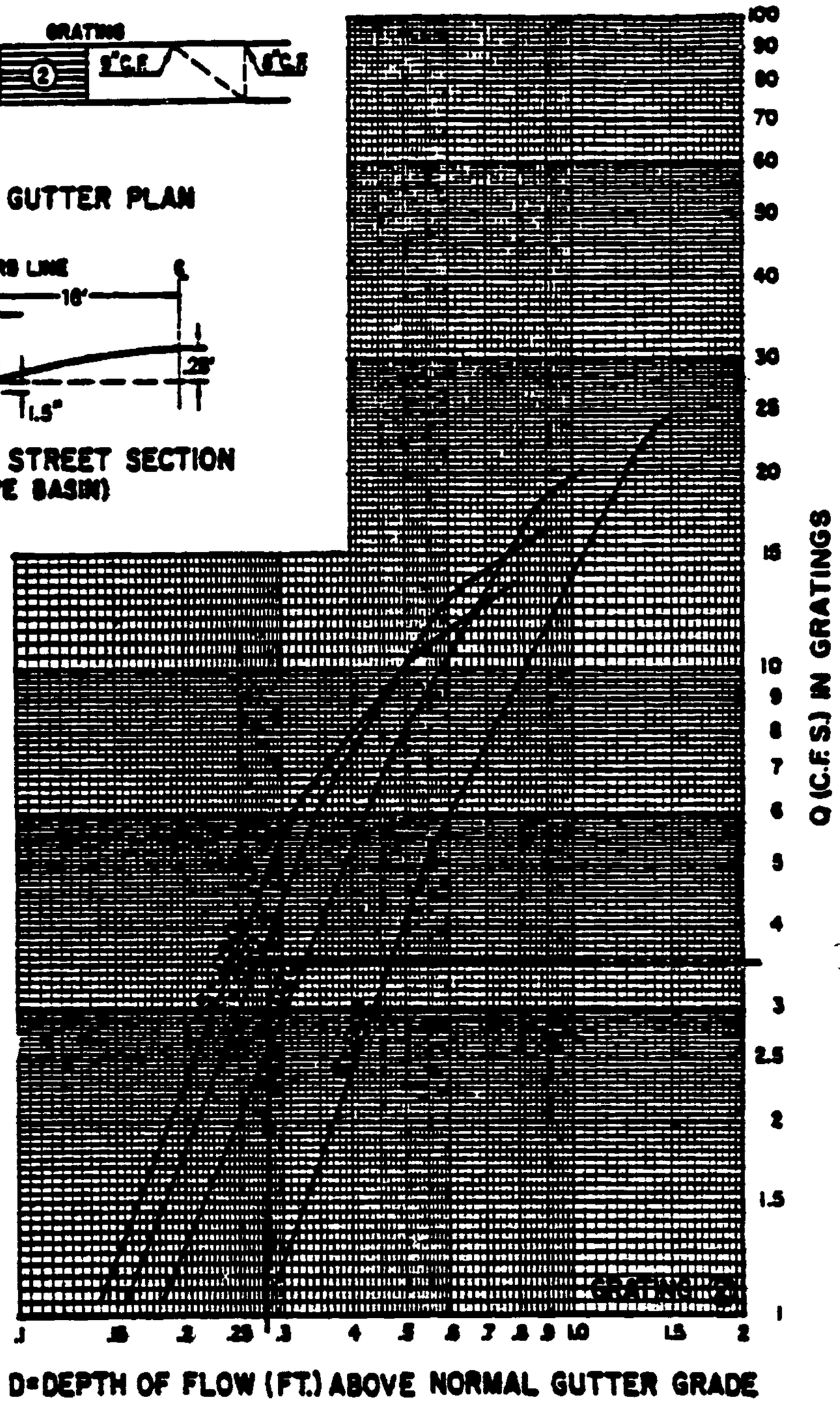



**PLATE 22.3 D-5**

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .0442

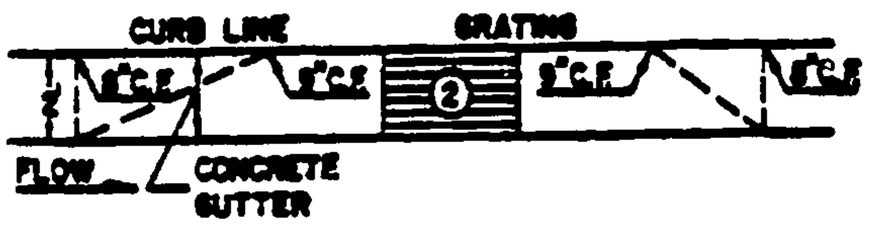
| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.52 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.82 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 1.08 | 0.94 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.31 | 1.25 | 0.03 | 0.07 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.52 | 1.56 | 0.04 | 0.09 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.72 | 1.88 | 0.05 | 0.11 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.90 | 2.19 | 0.06 | 0.13 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 2.08 | 2.50 | 0.07 | 0.15 |
| 0.09 | 0.09 | 0.13 | 0.3 | 2.96 | 2.25 | 2.81 | 0.08 | 0.17 |
| 0.10 | 0.10 | 0.16 | 0.4 | 3.29 | 2.41 | 3.13 | 0.09 | 0.19 |
| 0.11 | 0.11 | 0.19 | 0.5 | 3.62 | 2.57 | 3.44 | 0.10 | 0.21 |
| 0.12 | 0.12 | 0.23 | 0.6 | 3.95 | 2.72 | 3.75 | 0.12 | 0.24 |
| 0.13 | 0.13 | 0.26 | 0.8 | 4.28 | 2.87 | 4.07 | 0.13 | 0.26 |
| 0.14 | 0.14 | 0.31 | 0.9 | 5.15 | 2.82 | 4.93 | 0.12 | 0.26 |
| 0.15 | 0.15 | 0.36 | 1.0 | 6.03 | 2.82 | 5.79 | 0.12 | 0.27 |
| 0.16 | 0.16 | 0.43 | 1.2 | 6.91 | 2.86 | 6.65 | 0.13 | 0.29 |
| 0.17 | 0.17 | 0.50 | 1.5 | 7.79 | 2.93 | 7.51 | 0.13 | 0.30 |
| 0.18 | 0.18 | 0.58 | 1.7 | 8.67 | 3.01 | 8.38 | 0.14 | 0.32 |
| 0.19 | 0.19 | 0.66 | 2.1 | 9.54 | 3.11 | 9.24 | 0.15 | 0.34 |
| 0.20 | 0.20 | 0.76 | 2.4 | 10.42 | 3.21 | 10.10 | 0.16 | 0.36 |
| 0.21 | 0.21 | 0.87 | 2.9 | 11.30 | 3.31 | 10.96 | 0.17 | 0.38 |
| 0.22 | 0.22 | 0.98 | 3.4 | 12.18 | 3.42 | 11.83 | 0.18 | 0.40 |
| 0.23 | 0.23 | 1.10 | 3.9 | 13.06 | 3.54 | 12.69 | 0.19 | 0.42 |
| 0.24 | 0.24 | 1.23 | 4.5 | 13.93 | 3.65 | 13.55 | 0.21 | 0.45 |
| 0.25 | 0.25 | 1.37 | 5.2 | 14.81 | 3.76 | 14.41 | 0.22 | 0.47 |
| 0.26 | 0.26 | 1.52 | 5.9 | 15.69 | 3.88 | 15.27 | 0.23 | 0.49 |
| 0.27 | 0.27 | 1.68 | 6.7 | 16.57 | 3.99 | 16.14 | 0.25 | 0.52 |
| 0.28 | 0.28 | 1.84 | 7.6 | 17.45 | 4.11 | 17.00 | 0.26 | 0.54 |
| 0.29 | 0.29 | 2.02 | 8.5 | 18.32 | 4.22 | 17.86 | 0.28 | 0.57 |
| 0.30 | 0.30 | 2.20 | 9.5 | 19.20 | 4.34 | 18.72 | 0.29 | 0.59 |
| 0.31 | 0.31 | 2.39 | 10.6 | 20.08 | 4.45 | 19.59 | 0.31 | 0.62 |
| 0.32 | 0.32 | 2.59 | 11.8 | 20.96 | 4.56 | 20.45 | 0.32 | 0.64 |
| 0.33 | 0.33 | 2.80 | 13.1 | 21.84 | 4.68 | 21.31 | 0.34 | 0.67 |
| 0.34 | 0.34 | 3.02 | 14.5 | 22.71 | 4.79 | 22.17 | 0.36 | 0.70 |
| 0.35 | 0.35 | 3.25 | 15.9 | 23.59 | 4.90 | 23.03 | 0.37 | 0.72 |
| 0.36 | 0.36 | 3.48 | 17.4 | 24.47 | 5.01 | 23.90 | 0.39 | 0.75 |
| 0.37 | 0.37 | 3.72 | 19.0 | 25.35 | 5.12 | 24.76 | 0.41 | 0.78 |
| 0.38 | 0.38 | 3.98 | 20.8 | 26.23 | 5.22 | 25.62 | 0.42 | 0.80 |
| 0.39 | 0.39 | 4.24 | 22.6 | 27.10 | 5.33 | 26.48 | 0.44 | 0.83 |
| 0.40 | 0.40 | 4.50 | 24.5 | 27.98 | 5.44 | 27.35 | 0.46 | 0.86 |
| 0.41 | 0.41 | 4.78 | 26.5 | 28.86 | 5.54 | 28.21 | 0.48 | 0.89 |
| 0.42 | 0.42 | 5.06 | 29.2 | 28.88 | 5.76 | 28.21 | 0.51 | 0.93 |
| 0.43 | 0.43 | 5.35 | 31.9 | 28.90 | 5.97 | 28.22 | 0.55 | 0.98 |

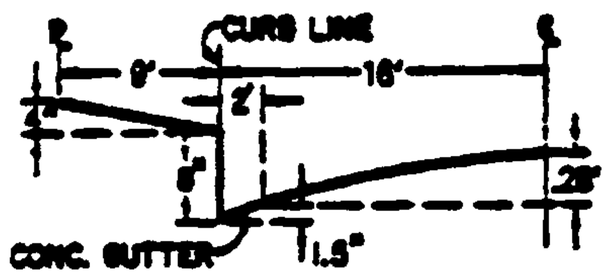
| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 37.7 | 28.94 | 6.37 | 28.23 | 0.63 | 1.08 |
| 0.46 | 0.46 | 6.19 | 40.7 | 28.96 | 6.57 | 28.23 | 0.67 | 1.13 |
| 0.47 | 0.47 | 6.48 | 43.8 | 28.98 | 6.77 | 28.24 | 0.71 | 1.18 |
| 0.48 | 0.48 | 6.76 | 47.0 | 29.01 | 6.96 | 28.24 | 0.75 | 1.23 |
| 0.49 | 0.49 | 7.04 | 50.3 | 29.03 | 7.15 | 28.25 | 0.79 | 1.28 |
| 0.50 | 0.50 | 7.32 | 53.7 | 29.05 | 7.33 | 28.25 | 0.84 | 1.34 |
| 0.51 | 0.51 | 7.61 | 57.2 | 29.07 | 7.52 | 28.26 | 0.88 | 1.39 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 60.7 | 29.09 | 7.70 | 28.26 | 0.92 | 1.44 |
| 0.53 | 0.53 | 8.17 | 64.4 | 29.11 | 7.88 | 28.27 | 0.96 | 1.49 |
| 0.54 | 0.54 | 8.45 | 68.1 | 29.13 | 8.06 | 28.27 | 1.01 | 1.55 |
| 0.55 | 0.55 | 8.74 | 71.9 | 29.15 | 8.23 | 28.28 | 1.05 | 1.60 |
| 0.56 | 0.56 | 9.02 | 75.8 | 29.17 | 8.40 | 28.28 | 1.10 | 1.66 |
| 0.57 | 0.57 | 9.30 | 79.8 | 29.19 | 8.57 | 28.29 | 1.14 | 1.71 |
| 0.58 | 0.58 | 9.59 | 83.8 | 29.21 | 8.74 | 28.29 | 1.19 | 1.77 |
| 0.59 | 0.59 | 9.87 | 87.9 | 29.23 | 8.91 | 28.30 | 1.23 | 1.82 |
| 0.60 | 0.60 | 10.15 | 92.1 | 29.25 | 9.08 | 28.30 | 1.28 | 1.88 |
| 0.61 | 0.61 | 10.43 | 96.4 | 29.27 | 9.24 | 28.31 | 1.33 | 1.94 |
| 0.62 | 0.62 | 10.72 | 100.8 | 29.29 | 9.40 | 28.31 | 1.37 | 1.99 |
| 0.63 | 0.63 | 11.00 | 105.2 | 29.31 | 9.56 | 28.32 | 1.42 | 2.05 |
| 0.64 | 0.64 | 11.28 | 109.7 | 29.34 | 9.72 | 28.32 | 1.47 | 2.11 |
| 0.65 | 0.65 | 11.57 | 114.3 | 29.36 | 9.88 | 28.33 | 1.51 | 2.16 |
| 0.66 | 0.66 | 11.85 | 118.9 | 29.38 | 10.03 | 28.33 | 1.56 | 2.22 |
| 0.67 | 0.67 | 12.13 | 123.6 | 29.40 | 10.19 | 28.34 | 1.61 | 2.28 |
| 0.68 | 0.68 | 12.42 | 125.6 | 30.44 | 10.11 | 30.30 | 1.59 | 2.27 |
| 0.69 | 0.69 | 12.72 | 127.8 | 31.49 | 10.04 | 31.34 | 1.57 | 2.26 |
| 0.70 | 0.70 | 13.06 | 128.2 | 33.45 | 9.82 | 32.39 | 1.50 | 2.20 |
| 0.71 | 0.71 | 13.39 | 130.9 | 34.50 | 9.78 | 33.44 | 1.48 | 2.19 |
| 0.72 | 0.72 | 13.73 | 133.8 | 35.54 | 9.75 | 34.48 | 1.47 | 2.19 |
| 0.73 | 0.73 | 14.08 | 136.8 | 36.59 | 9.72 | 35.53 | 1.47 | 2.20 |
| 0.74 | 0.74 | 14.44 | 140.1 | 37.64 | 9.70 | 36.58 | 1.46 | 2.20 |
| 0.75 | 0.75 | 14.81 | 143.5 | 38.68 | 9.69 | 37.62 | 1.46 | 2.21 |
| 0.76 | 0.76 | 15.19 | 147.1 | 39.73 | 9.68 | 38.67 | 1.46 | 2.22 |
| 0.77 | 0.77 | 15.58 | 150.8 | 40.78 | 9.68 | 39.72 | 1.45 | 2.22 |
| 0.78 | 0.78 | 15.98 | 154.7 | 41.83 | 9.68 | 40.77 | 1.45 | 2.23 |
| 0.79 | 0.79 | 16.40 | 158.8 | 42.87 | 9.68 | 41.81 | 1.46 | 2.25 |
| 0.80 | 0.80 | 16.82 | 163.0 | 43.92 | 9.69 | 42.86 | 1.46 | 2.26 |
| 0.81 | 0.81 | 17.25 | 167.4 | 44.97 | 9.70 | 43.91 | 1.46 | 2.27 |
| 0.82 | 0.82 | 17.70 | 172.0 | 46.01 | 9.72 | 44.95 | 1.47 | 2.29 |
| 0.83 | 0.83 | 18.15 | 176.8 | 47.06 | 9.74 | 46.00 | 1.47 | 2.30 |

## GRATING CAPACITIES FOR TYPE 'A', 'C' and 'D'




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)

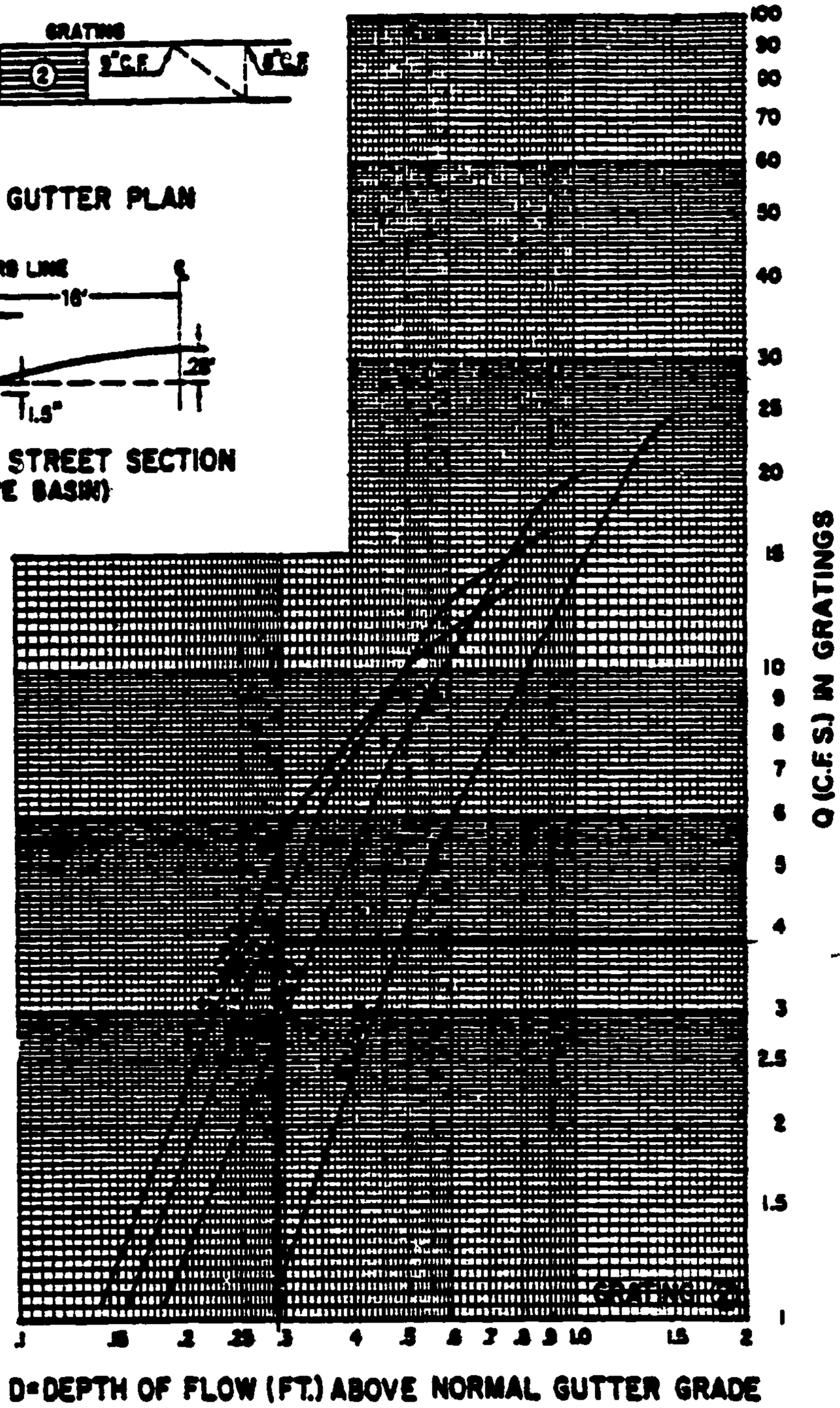



**PLATE 22.3 D-5**

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .0426

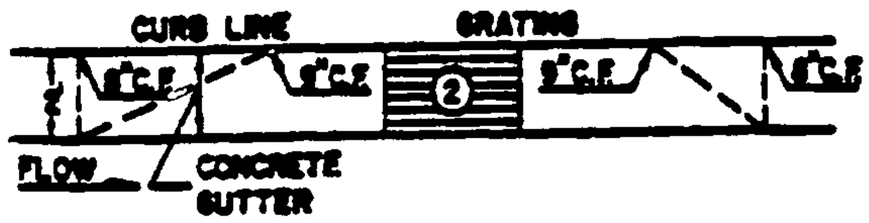
| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.51 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.81 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 1.06 | 0.94 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.29 | 1.25 | 0.03 | 0.07 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.49 | 1.56 | 0.03 | 0.08 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.68 | 1.88 | 0.04 | 0.10 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.87 | 2.19 | 0.05 | 0.12 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 2.04 | 2.50 | 0.06 | 0.14 |
| 0.09 | 0.09 | 0.13 | 0.3 | 2.96 | 2.21 | 2.81 | 0.08 | 0.17 |
| 0.10 | 0.10 | 0.16 | 0.4 | 3.29 | 2.37 | 3.13 | 0.09 | 0.19 |
| 0.11 | 0.11 | 0.19 | 0.5 | 3.62 | 2.52 | 3.44 | 0.10 | 0.21 |
| 0.12 | 0.12 | 0.23 | 0.6 | 3.95 | 2.67 | 3.75 | 0.11 | 0.23 |
| 0.13 | 0.13 | 0.26 | 0.7 | 4.28 | 2.82 | 4.07 | 0.12 | 0.25 |
| 0.14 | 0.14 | 0.31 | 0.9 | 5.15 | 2.76 | 4.93 | 0.12 | 0.26 |
| 0.15 | 0.15 | 0.36 | 1.0 | 6.03 | 2.77 | 5.79 | 0.12 | 0.27 |
| 0.16 | 0.16 | 0.43 | 1.2 | 6.91 | 2.81 | 6.65 | 0.12 | 0.28 |
| 0.17 | 0.17 | 0.50 | 1.4 | 7.79 | 2.88 | 7.51 | 0.13 | 0.30 |
| 0.18 | 0.18 | 0.58 | 1.7 | 8.67 | 2.96 | 8.38 | 0.14 | 0.32 |
| 0.19 | 0.19 | 0.66 | 2.0 | 9.54 | 3.05 | 9.24 | 0.14 | 0.33 |
| 0.20 | 0.20 | 0.76 | 2.4 | 10.42 | 3.15 | 10.10 | 0.15 | 0.35 |
| 0.21 | 0.21 | 0.87 | 2.8 | 11.30 | 3.25 | 10.96 | 0.16 | 0.37 |
| 0.22 | 0.22 | 0.98 | 3.3 | 12.18 | 3.36 | 11.83 | 0.18 | 0.40 |
| 0.23 | 0.23 | 1.10 | 3.8 | 13.06 | 3.47 | 12.69 | 0.19 | 0.42 |
| 0.24 | 0.24 | 1.23 | 4.4 | 13.93 | 3.58 | 13.55 | 0.20 | 0.44 |
| 0.25 | 0.25 | 1.37 | 5.1 | 14.81 | 3.70 | 14.41 | 0.21 | 0.46 |
| 0.26 | 0.26 | 1.52 | 5.8 | 15.69 | 3.81 | 15.27 | 0.23 | 0.49 |
| 0.27 | 0.27 | 1.68 | 6.6 | 16.57 | 3.92 | 16.14 | 0.24 | 0.51 |
| 0.28 | 0.28 | 1.84 | 7.4 | 17.45 | 4.03 | 17.00 | 0.25 | 0.53 |
| 0.29 | 0.29 | 2.02 | 8.4 | 18.32 | 4.15 | 17.86 | 0.27 | 0.56 |
| 0.30 | 0.30 | 2.20 | 9.4 | 19.20 | 4.26 | 18.72 | 0.28 | 0.58 |
| 0.31 | 0.31 | 2.39 | 10.5 | 20.08 | 4.37 | 19.59 | 0.30 | 0.61 |
| 0.32 | 0.32 | 2.59 | 11.6 | 20.96 | 4.48 | 20.45 | 0.31 | 0.63 |
| 0.33 | 0.33 | 2.80 | 12.9 | 21.84 | 4.59 | 21.31 | 0.33 | 0.66 |
| 0.34 | 0.34 | 3.02 | 14.2 | 22.71 | 4.70 | 22.17 | 0.34 | 0.68 |
| 0.35 | 0.35 | 3.25 | 15.6 | 23.59 | 4.81 | 23.03 | 0.36 | 0.71 |
| 0.36 | 0.36 | 3.48 | 17.1 | 24.47 | 4.92 | 23.90 | 0.38 | 0.74 |
| 0.37 | 0.37 | 3.72 | 18.7 | 25.35 | 5.02 | 24.76 | 0.39 | 0.76 |
| 0.38 | 0.38 | 3.98 | 20.4 | 26.23 | 5.13 | 25.62 | 0.41 | 0.79 |
| 0.39 | 0.39 | 4.24 | 22.2 | 27.10 | 5.23 | 26.48 | 0.43 | 0.82 |
| 0.40 | 0.40 | 4.50 | 24.1 | 27.98 | 5.34 | 27.35 | 0.44 | 0.84 |
| 0.41 | 0.41 | 4.78 | 26.0 | 28.86 | 5.44 | 28.21 | 0.46 | 0.87 |
| 0.42 | 0.42 | 5.06 | 28.6 | 28.88 | 5.65 | 28.21 | 0.50 | 0.92 |
| 0.43 | 0.43 | 5.35 | 31.3 | 28.90 | 5.86 | 28.22 | 0.53 | 0.96 |

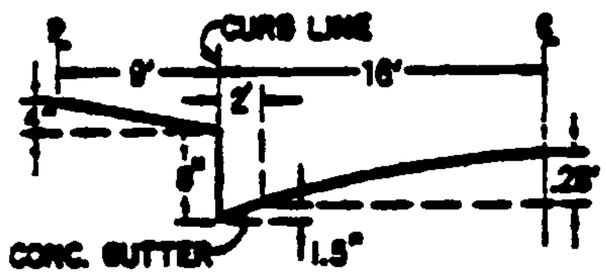
| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 37.0 | 28.94 | 6.26 | 28.23 | 0.61 | 1.06 |
| 0.46 | 0.46 | 6.19 | 40.0 | 28.96 | 6.45 | 28.23 | 0.65 | 1.11 |
| 0.47 | 0.47 | 6.48 | 43.0 | 28.98 | 6.64 | 28.24 | 0.69 | 1.16 |
| 0.48 | 0.48 | 6.76 | 46.2 | 29.01 | 6.83 | 28.24 | 0.72 | 1.20 |
| 0.49 | 0.49 | 7.04 | 49.4 | 29.03 | 7.02 | 28.25 | 0.76 | 1.25 |
| 0.50 | 0.50 | 7.32 | 52.7 | 29.05 | 7.20 | 28.25 | 0.81 | 1.31 |
| 0.51 | 0.51 | 7.61 | 56.1 | 29.07 | 7.38 | 28.26 | 0.85 | 1.36 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 59.6 | 29.09 | 7.56 | 28.26 | 0.89 | 1.41 |
| 0.53 | 0.53 | 8.17 | 63.2 | 29.11 | 7.73 | 28.27 | 0.93 | 1.46 |
| 0.54 | 0.54 | 8.45 | 66.9 | 29.13 | 7.91 | 28.27 | 0.97 | 1.51 |
| 0.55 | 0.55 | 8.74 | 70.6 | 29.15 | 8.08 | 28.28 | 1.01 | 1.56 |
| 0.56 | 0.56 | 9.02 | 74.4 | 29.17 | 8.25 | 28.28 | 1.06 | 1.62 |
| 0.57 | 0.57 | 9.30 | 78.3 | 29.19 | 8.42 | 28.29 | 1.10 | 1.67 |
| 0.58 | 0.58 | 9.59 | 82.3 | 29.21 | 8.58 | 28.29 | 1.14 | 1.72 |
| 0.59 | 0.59 | 9.87 | 86.3 | 29.23 | 8.75 | 28.30 | 1.19 | 1.78 |
| 0.60 | 0.60 | 10.15 | 90.4 | 29.25 | 8.91 | 28.30 | 1.23 | 1.83 |
| 0.61 | 0.61 | 10.43 | 94.6 | 29.27 | 9.07 | 28.31 | 1.28 | 1.89 |
| 0.62 | 0.62 | 10.72 | 98.9 | 29.29 | 9.23 | 28.31 | 1.32 | 1.94 |
| 0.63 | 0.63 | 11.00 | 103.3 | 29.31 | 9.39 | 28.32 | 1.37 | 2.00 |
| 0.64 | 0.64 | 11.28 | 107.7 | 29.34 | 9.54 | 28.32 | 1.41 | 2.05 |
| 0.65 | 0.65 | 11.57 | 112.2 | 29.36 | 9.70 | 28.33 | 1.46 | 2.11 |
| 0.66 | 0.66 | 11.85 | 116.7 | 29.38 | 9.85 | 28.33 | 1.51 | 2.17 |
| 0.67 | 0.67 | 12.13 | 121.4 | 29.40 | 10.00 | 28.34 | 1.55 | 2.22 |
| 0.68 | 0.68 | 12.42 | 123.3 | 30.44 | 9.93 | 30.30 | 1.53 | 2.21 |
| 0.69 | 0.69 | 12.72 | 125.4 | 31.49 | 9.86 | 31.34 | 1.51 | 2.20 |
| 0.70 | 0.70 | 13.06 | 125.8 | 33.45 | 9.64 | 32.39 | 1.44 | 2.14 |
| 0.71 | 0.71 | 13.39 | 128.5 | 34.50 | 9.60 | 33.44 | 1.43 | 2.14 |
| 0.72 | 0.72 | 13.73 | 131.3 | 35.54 | 9.57 | 34.48 | 1.42 | 2.14 |
| 0.73 | 0.73 | 14.08 | 134.3 | 36.59 | 9.54 | 35.53 | 1.41 | 2.14 |
| 0.74 | 0.74 | 14.44 | 137.5 | 37.64 | 9.53 | 36.58 | 1.41 | 2.15 |
| 0.75 | 0.75 | 14.81 | 140.9 | 38.68 | 9.51 | 37.62 | 1.40 | 2.15 |
| 0.76 | 0.76 | 15.19 | 144.4 | 39.73 | 9.50 | 38.67 | 1.40 | 2.16 |
| 0.77 | 0.77 | 15.58 | 148.0 | 40.78 | 9.50 | 39.72 | 1.40 | 2.17 |
| 0.78 | 0.78 | 15.98 | 151.9 | 41.83 | 9.50 | 40.77 | 1.40 | 2.18 |
| 0.79 | 0.79 | 16.40 | 155.9 | 42.87 | 9.51 | 41.81 | 1.40 | 2.19 |
| 0.80 | 0.80 | 16.82 | 160.1 | 43.92 | 9.51 | 42.86 | 1.41 | 2.21 |
| 0.81 | 0.81 | 17.25 | 164.4 | 44.97 | 9.53 | 43.91 | 1.41 | 2.22 |
| 0.82 | 0.82 | 17.70 | 168.9 | 46.01 | 9.54 | 44.95 | 1.41 | 2.23 |
| 0.83 | 0.83 | 18.15 | 173.6 | 47.06 | 9.56 | 46.00 | 1.42 | 2.25 |

## GRATING CAPACITIES FOR TYPE 'A', 'C' and 'D'




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)

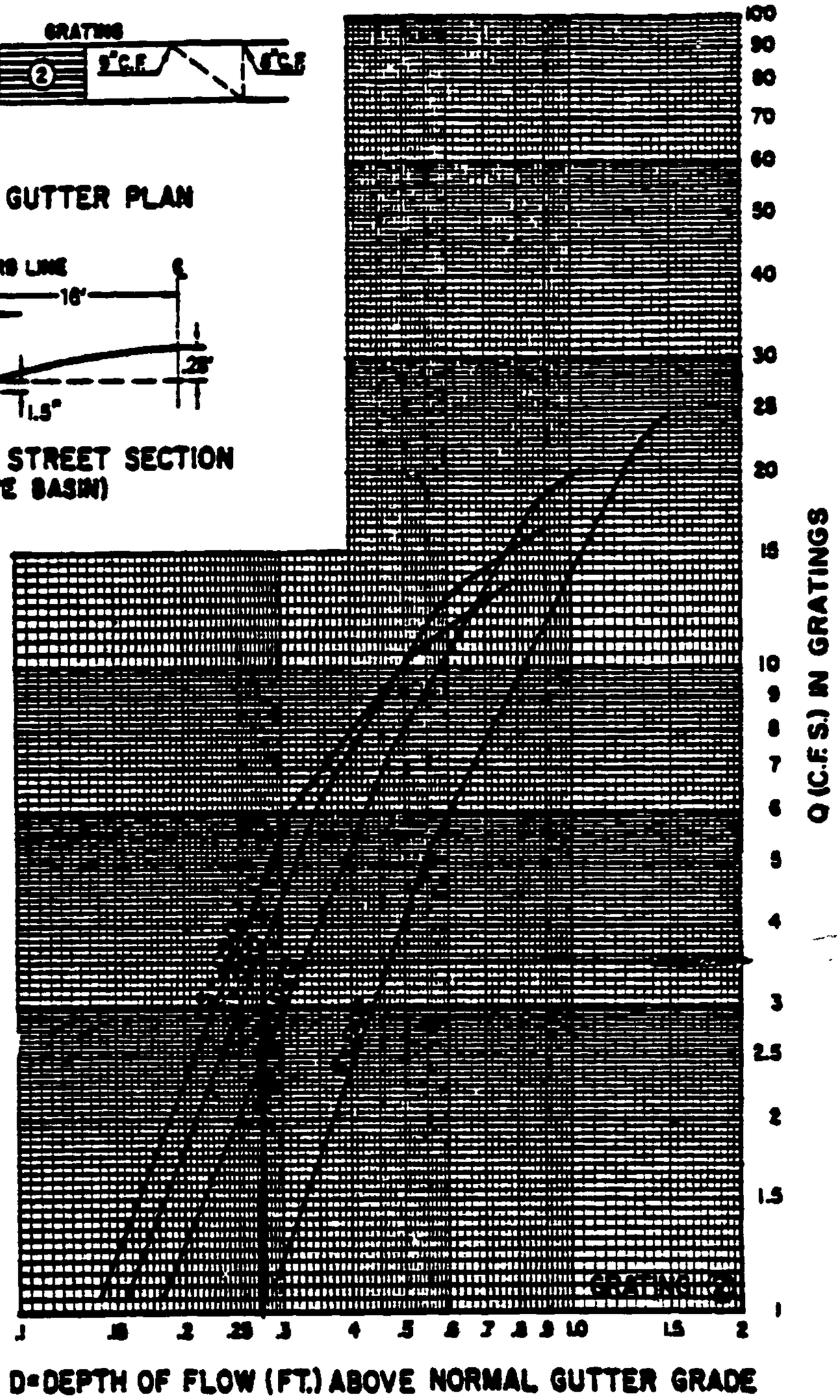



**PLATE 22.3 D-5**

Osprey Drive and East half of culde sacs

Osprey just North of Whimbrel CT.

Q= 11.54 cfs.
S= 3.27 %
E = 0.58 < 0.83 (max height for std curb)
No inlets are required to prevent flooding.

(PRINTOUTS for other slopes included as a check - no flooding at other slopes)

Osprey South of El Moro Lane (NEAR KING RAIN)

Q= 13.76 cfs
S = 1.91%
E = 0.56 < 0.83 standard curb sufficient

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505 823 1000

fax 505 821 0892

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

□ MANNING'S N= .017 SLOPE= .0289

| □POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.42 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.67 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.87 | 0.94 | 0.01 | 0.04 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.06 | 1.25 | 0.02 | 0.06 |
| 0.05 | 0.05 | 0.04 | 0.0 | 1.64 | 1.23 | 1.56 | 0.02 | 0.07 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.39 | 1.88 | 0.03 | 0.09 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.54 | 2.19 | 0.04 | 0.11 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 1.68 | 2.50 | 0.04 | 0.12 |
| 0.09 | 0.09 | 0.13 | 0.2 | 2.96 | 1.82 | 2.81 | 0.05 | 0.14 |
| 0.10 | 0.10 | 0.16 | 0.3 | 3.29 | 1.95 | 3.13 | 0.06 | 0.16 |
| 0.11 | 0.11 | 0.19 | 0.4 | 3.62 | 2.08 | 3.44 | 0.07 | 0.18 |
| 0.12 | 0.12 | 0.23 | 0.5 | 3.95 | 2.20 | 3.75 | 0.08 | 0.20 |
| 0.13 | 0.13 | 0.26 | 0.6 | 4.28 | 2.32 | 4.07 | 0.08 | 0.21 |
| 0.14 | 0.14 | 0.31 | 0.7 | 5.15 | 2.28 | 4.93 | 0.08 | 0.22 |
| 0.15 | 0.15 | 0.36 | 0.8 | 6.03 | 2.28 | 5.79 | 0.08 | 0.23 |
| 0.16 | 0.16 | 0.43 | 1.0 | 6.91 | 2.32 | 6.65 | 0.08 | 0.24 |
| 0.17 | 0.17 | 0.50 | 1.2 | 7.79 | 2.37 | 7.51 | 0.09 | 0.26 |
| 0.18 | 0.18 | 0.58 | 1.4 | 8.67 | 2.44 | 8.38 | 0.09 | 0.27 |
| 0.19 | 0.19 | 0.66 | 1.7 | 9.54 | 2.51 | 9.24 | 0.10 | 0.29 |
| 0.20 | 0.20 | 0.76 | 2.0 | 10.42 | 2.59 | 10.10 | 0.10 | 0.30 |
| 0.21 | 0.21 | 0.87 | 2.3 | 11.30 | 2.68 | 10.96 | 0.11 | 0.32 |
| 0.22 | 0.22 | 0.98 | 2.7 | 12.18 | 2.77 | 11.83 | 0.12 | 0.34 |
| 0.23 | 0.23 | 1.10 | 3.2 | 13.06 | 2.86 | 12.69 | 0.13 | 0.36 |
| 0.24 | 0.24 | 1.23 | 3.6 | 13.93 | 2.95 | 13.55 | 0.14 | 0.38 |
| 0.25 | 0.25 | 1.37 | 4.2 | 14.81 | 3.04 | 14.41 | 0.14 | 0.39 |
| 0.26 | 0.26 | 1.52 | 4.8 | 15.69 | 3.14 | 15.27 | 0.15 | 0.41 |
| 0.27 | 0.27 | 1.68 | 5.4 | 16.57 | 3.23 | 16.14 | 0.16 | 0.43 |
| 0.28 | 0.28 | 1.84 | 6.1 | 17.45 | 3.32 | 17.00 | 0.17 | 0.45 |
| 0.29 | 0.29 | 2.02 | 6.9 | 18.32 | 3.41 | 17.86 | 0.18 | 0.47 |
| 0.30 | 0.30 | 2.20 | 7.7 | 19.20 | 3.51 | 18.72 | 0.19 | 0.49 |
| 0.31 | 0.31 | 2.39 | 8.6 | 20.08 | 3.60 | 19.59 | 0.20 | 0.51 |
| 0.32 | 0.32 | 2.59 | 9.6 | 20.96 | 3.69 | 20.45 | 0.21 | 0.53 |
| 0.33 | 0.33 | 2.80 | 10.6 | 21.84 | 3.78 | 21.31 | 0.22 | 0.55 |
| 0.34 | 0.34 | 3.02 | 11.7 | 22.71 | 3.87 | 22.17 | 0.23 | 0.57 |
| 0.35 | 0.35 | 3.25 | 12.9 | 23.59 | 3.96 | 23.03 | 0.24 | 0.59 |
| 0.36 | 0.36 | 3.48 | 14.1 | 24.47 | 4.05 | 23.90 | 0.25 | 0.61 |
| 0.37 | 0.37 | 3.72 | 15.4 | 25.35 | 4.14 | 24.76 | 0.27 | 0.64 |
| 0.38 | 0.38 | 3.98 | 16.8 | 26.23 | 4.22 | 25.62 | 0.28 | 0.66 |
| 0.39 | 0.39 | 4.24 | 18.3 | 27.10 | 4.31 | 26.48 | 0.29 | 0.68 |
| 0.40 | 0.40 | 4.50 | 19.8 | 27.98 | 4.40 | 27.35 | 0.30 | 0.70 |
| 0.41 | 0.41 | 4.78 | 21.4 | 28.86 | 4.48 | 28.21 | 0.31 | 0.72 |
| 0.42 | 0.42 | 5.06 | 23.6 | 28.88 | 4.66 | 28.21 | 0.34 | 0.76 |
| 0.43 | 0.43 | 5.35 | 25.8 | 28.90 | 4.82 | 28.22 | 0.36 | 0.79 |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 30.5 | 28.94 | 5.15 | 28.23 | 0.41 | 0.86 |
| 0.46 | 0.46 | 6.19 | 32.9 | 28.96 | 5.31 | 28.23 | 0.44 | 0.90 |
| 0.47 | 0.47 | 6.48 | 35.4 | 28.98 | 5.47 | 28.24 | 0.46 | 0.93 |
| 0.48 | 0.48 | 6.76 | 38.0 | 29.01 | 5.63 | 28.24 | 0.49 | 0.97 |
| 0.49 | 0.49 | 7.04 | 40.7 | 29.03 | 5.78 | 28.25 | 0.52 | 1.01 |
| 0.50 | 0.50 | 7.32 | 43.4 | 29.05 | 5.93 | 28.25 | 0.55 | 1.05 |
| 0.51 | 0.51 | 7.61 | 46.2 | 29.07 | 6.08 | 28.26 | 0.57 | 1.08 |

D = 11.94 cfs

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 49.1 | 29.09 | 6.23 | 28.26 | 0.60 | 1.12 |
| 0.53 | 0.53 | 8.17 | 52.1 | 29.11 | 6.37 | 28.27 | 0.63 | 1.16 |
| 0.54 | 0.54 | 8.45 | 55.1 | 29.13 | 6.51 | 28.27 | 0.66 | 1.20 |
| 0.55 | 0.55 | 8.74 | 58.1 | 29.15 | 6.66 | 28.28 | 0.69 | 1.24 |
| 0.56 | 0.56 | 9.02 | 61.3 | 29.17 | 6.79 | 28.28 | 0.72 | 1.28 |
| 0.57 | 0.57 | 9.30 | 64.5 | 29.19 | 6.93 | 28.29 | 0.75 | 1.32 |
| 0.58 | 0.58 | 9.59 | 67.8 | 29.21 | 7.07 | 28.29 | 0.78 | 1.36 |
| 0.59 | 0.59 | 9.87 | 71.1 | 29.23 | 7.20 | 28.30 | 0.81 | 1.40 |
| 0.60 | 0.60 | 10.15 | 74.5 | 29.25 | 7.34 | 28.30 | 0.84 | 1.44 |
| 0.61 | 0.61 | 10.43 | 77.9 | 29.27 | 7.47 | 28.31 | 0.87 | 1.48 |
| 0.62 | 0.62 | 10.72 | 81.5 | 29.29 | 7.60 | 28.31 | 0.90 | 1.52 |
| 0.63 | 0.63 | 11.00 | 85.0 | 29.31 | 7.73 | 28.32 | 0.93 | 1.56 |
| 0.64 | 0.64 | 11.28 | 88.7 | 29.34 | 7.86 | 28.32 | 0.96 | 1.60 |
| 0.65 | 0.65 | 11.57 | 92.4 | 29.36 | 7.99 | 28.33 | 0.99 | 1.64 |
| 0.66 | 0.66 | 11.85 | 96.1 | 29.38 | 8.11 | 28.33 | 1.02 | 1.68 |
| 0.67 | 0.67 | 12.13 | 100.0 | 29.40 | 8.24 | 28.34 | 1.05 | 1.72 |
| 0.68 | 0.68 | 12.42 | 101.6 | 30.44 | 8.17 | 30.30 | 1.04 | 1.72 |
| 0.69 | 0.69 | 12.72 | 103.3 | 31.49 | 8.12 | 31.34 | 1.02 | 1.71 |
| 0.70 | 0.70 | 13.06 | 103.7 | 33.45 | 7.94 | 32.39 | 0.98 | 1.68 |
| 0.71 | 0.71 | 13.39 | 105.8 | 34.50 | 7.91 | 33.44 | 0.97 | 1.68 |
| 0.72 | 0.72 | 13.73 | 108.2 | 35.54 | 7.88 | 34.48 | 0.96 | 1.68 |
| 0.73 | 0.73 | 14.08 | 110.7 | 36.59 | 7.86 | 35.53 | 0.96 | 1.69 |
| 0.74 | 0.74 | 14.44 | 113.3 | 37.64 | 7.85 | 36.58 | 0.96 | 1.70 |
| 0.75 | 0.75 | 14.81 | 116.0 | 38.68 | 7.83 | 37.62 | 0.95 | 1.70 |
| 0.76 | 0.76 | 15.19 | 118.9 | 39.73 | 7.83 | 38.67 | 0.95 | 1.71 |
| 0.77 | 0.77 | 15.58 | 121.9 | 40.78 | 7.83 | 39.72 | 0.95 | 1.72 |
| 0.78 | 0.78 | 15.98 | 125.1 | 41.83 | 7.83 | 40.77 | 0.95 | 1.73 |
| 0.79 | 0.79 | 16.40 | 128.4 | 42.87 | 7.83 | 41.81 | 0.95 | 1.74 |
| 0.80 | 0.80 | 16.82 | 131.8 | 43.92 | 7.84 | 42.86 | 0.95 | 1.75 |
| 0.81 | 0.81 | 17.25 | 135.4 | 44.97 | 7.85 | 43.91 | 0.96 | 1.77 |
| 0.82 | 0.82 | 17.70 | 139.1 | 46.01 | 7.86 | 44.95 | 0.96 | 1.78 |
| 0.83 | 0.83 | 18.15 | 143.0 | 47.06 | 7.87 | 46.00 | 0.96 | 1.79 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .005

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.17 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.28 | 0.63 | 0.00 | 0.02 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.36 | 0.94 | 0.00 | 0.03 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.44 | 1.25 | 0.00 | 0.04 |
| 0.05 | 0.05 | 0.04 | 0.0 | 1.64 | 0.51 | 1.56 | 0.00 | 0.05 |
| 0.06 | 0.06 | 0.06 | 0.0 | 1.97 | 0.58 | 1.88 | 0.01 | 0.07 |
| 0.07 | 0.07 | 0.08 | 0.0 | 2.30 | 0.64 | 2.19 | 0.01 | 0.08 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 0.70 | 2.50 | 0.01 | 0.09 |
| 0.09 | 0.09 | 0.13 | 0.1 | 2.96 | 0.76 | 2.81 | 0.01 | 0.10 |
| 0.10 | 0.10 | 0.16 | 0.1 | 3.29 | 0.81 | 3.13 | 0.01 | 0.11 |
| 0.11 | 0.11 | 0.19 | 0.2 | 3.62 | 0.86 | 3.44 | 0.01 | 0.12 |
| 0.12 | 0.12 | 0.23 | 0.2 | 3.95 | 0.92 | 3.75 | 0.01 | 0.13 |
| 0.13 | 0.13 | 0.26 | 0.3 | 4.28 | 0.97 | 4.07 | 0.01 | 0.14 |
| 0.14 | 0.14 | 0.31 | 0.3 | 5.15 | 0.95 | 4.93 | 0.01 | 0.15 |
| 0.15 | 0.15 | 0.36 | 0.3 | 6.03 | 0.95 | 5.79 | 0.01 | 0.16 |
| 0.16 | 0.16 | 0.43 | 0.4 | 6.91 | 0.96 | 6.65 | 0.01 | 0.17 |
| 0.17 | 0.17 | 0.50 | 0.5 | 7.79 | 0.99 | 7.51 | 0.02 | 0.19 |
| 0.18 | 0.18 | 0.58 | 0.6 | 8.67 | 1.01 | 8.38 | 0.02 | 0.20 |
| 0.19 | 0.19 | 0.66 | 0.7 | 9.54 | 1.04 | 9.24 | 0.02 | 0.21 |
| 0.20 | 0.20 | 0.76 | 0.8 | 10.42 | 1.08 | 10.10 | 0.02 | 0.22 |
| 0.21 | 0.21 | 0.87 | 1.0 | 11.30 | 1.11 | 10.96 | 0.02 | 0.23 |
| 0.22 | 0.22 | 0.98 | 1.1 | 12.18 | 1.15 | 11.83 | 0.02 | 0.24 |
| 0.23 | 0.23 | 1.10 | 1.3 | 13.06 | 1.19 | 12.69 | 0.02 | 0.25 |
| 0.24 | 0.24 | 1.23 | 1.5 | 13.93 | 1.23 | 13.55 | 0.02 | 0.26 |
| 0.25 | 0.25 | 1.37 | 1.7 | 14.81 | 1.27 | 14.41 | 0.02 | 0.27 |
| 0.26 | 0.26 | 1.52 | 2.0 | 15.69 | 1.30 | 15.27 | 0.03 | 0.29 |
| 0.27 | 0.27 | 1.68 | 2.3 | 16.57 | 1.34 | 16.14 | 0.03 | 0.30 |
| 0.28 | 0.28 | 1.84 | 2.5 | 17.45 | 1.38 | 17.00 | 0.03 | 0.31 |
| 0.29 | 0.29 | 2.02 | 2.9 | 18.32 | 1.42 | 17.86 | 0.03 | 0.32 |
| 0.30 | 0.30 | 2.20 | 3.2 | 19.20 | 1.46 | 18.72 | 0.03 | 0.33 |
| 0.31 | 0.31 | 2.39 | 3.6 | 20.08 | 1.50 | 19.59 | 0.03 | 0.34 |
| 0.32 | 0.32 | 2.59 | 4.0 | 20.96 | 1.53 | 20.45 | 0.04 | 0.36 |
| 0.33 | 0.33 | 2.80 | 4.4 | 21.84 | 1.57 | 21.31 | 0.04 | 0.37 |
| 0.34 | 0.34 | 3.02 | 4.9 | 22.71 | 1.61 | 22.17 | 0.04 | 0.38 |
| 0.35 | 0.35 | 3.25 | 5.3 | 23.59 | 1.65 | 23.03 | 0.04 | 0.39 |
| 0.36 | 0.36 | 3.48 | 5.9 | 24.47 | 1.68 | 23.90 | 0.04 | 0.40 |
| 0.37 | 0.37 | 3.72 | 6.4 | 25.35 | 1.72 | 24.76 | 0.05 | 0.42 |
| 0.38 | 0.38 | 3.98 | 7.0 | 26.23 | 1.76 | 25.62 | 0.05 | 0.43 |
| 0.39 | 0.39 | 4.24 | 7.6 | 27.10 | 1.79 | 26.48 | 0.05 | 0.44 |
| 0.40 | 0.40 | 4.50 | 8.2 | 27.98 | 1.83 | 27.35 | 0.05 | 0.45 |
| 0.41 | 0.41 | 4.78 | 8.9 | 28.86 | 1.86 | 28.21 | 0.05 | 0.46 |
| 0.42 | 0.42 | 5.06 | 9.8 | 28.88 | 1.94 | 28.21 | 0.06 | 0.48 |
| 0.43 | 0.43 | 5.35 | 10.7 | 28.90 | 2.01 | 28.22 | 0.06 | 0.49 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 12.7 | 28.94 | 2.14 | 28.23 | 0.07 | 0.52 |
| 0.46 | 0.46 | 6.19 | 13.7 | 28.96 | 2.21 | 28.23 | 0.08 | 0.54 |
| 0.47 | 0.47 | 6.48 | 14.7 | 28.98 | 2.28 | 28.24 | 0.08 | 0.55 |
| 0.48 | 0.48 | 6.76 | 15.8 | 29.01 | 2.34 | 28.24 | 0.09 | 0.57 |
| 0.49 | 0.49 | 7.04 | 16.9 | 29.03 | 2.40 | 28.25 | 0.09 | 0.58 |
| 0.50 | 0.50 | 7.32 | 18.1 | 29.05 | 2.47 | 28.25 | 0.09 | 0.59 |
| 0.51 | 0.51 | 7.61 | 19.2 | 29.07 | 2.53 | 28.26 | 0.10 | 0.61 |
| 0.52 | 0.52 | 7.89 | 20.4 | 29.09 | 2.59 | 28.26 | 0.10 | 0.62 |
| 0.53 | 0.53 | 8.17 | 21.7 | 29.11 | 2.65 | 28.27 | 0.11 | 0.64 |
| 0.54 | 0.54 | 8.45 | 22.9 | 29.13 | 2.71 | 28.27 | 0.11 | 0.65 |
| 0.55 | 0.55 | 8.74 | 24.2 | 29.15 | 2.77 | 28.28 | 0.12 | 0.67 |
| 0.56 | 0.56 | 9.02 | 25.5 | 29.17 | 2.83 | 28.28 | 0.12 | 0.68 |
| 0.57 | 0.57 | 9.30 | 26.8 | 29.19 | 2.88 | 28.29 | 0.13 | 0.70 |
| 0.58 | 0.58 | 9.59 | 28.2 | 29.21 | 2.94 | 28.29 | 0.13 | 0.71 |
| 0.59 | 0.59 | 9.87 | 29.6 | 29.23 | 3.00 | 28.30 | 0.14 | 0.73 |
| 0.60 | 0.60 | 10.15 | 31.0 | 29.25 | 3.05 | 28.30 | 0.14 | 0.74 |
| 0.61 | 0.61 | 10.43 | 32.4 | 29.27 | 3.11 | 28.31 | 0.15 | 0.76 |
| 0.62 | 0.62 | 10.72 | 33.9 | 29.29 | 3.16 | 28.31 | 0.16 | 0.78 |
| 0.63 | 0.63 | 11.00 | 35.4 | 29.31 | 3.22 | 28.32 | 0.16 | 0.79 |
| 0.64 | 0.64 | 11.28 | 36.9 | 29.34 | 3.27 | 28.32 | 0.17 | 0.81 |
| 0.65 | 0.65 | 11.57 | 38.4 | 29.36 | 3.32 | 28.33 | 0.17 | 0.82 |
| 0.66 | 0.66 | 11.85 | 40.0 | 29.38 | 3.37 | 28.33 | 0.18 | 0.84 |
| 0.67 | 0.67 | 12.13 | 41.6 | 29.40 | 3.43 | 28.34 | 0.18 | 0.85 |
| 0.68 | 0.68 | 12.42 | 42.2 | 30.44 | 3.40 | 30.30 | 0.18 | 0.86 |
| 0.69 | 0.69 | 12.72 | 43.0 | 31.49 | 3.38 | 31.34 | 0.18 | 0.87 |
| 0.70 | 0.70 | 13.06 | 43.1 | 33.45 | 3.30 | 32.39 | 0.17 | 0.87 |
| 0.71 | 0.71 | 13.39 | 44.0 | 34.50 | 3.29 | 33.44 | 0.17 | 0.88 |
| 0.72 | 0.72 | 13.73 | 45.0 | 35.54 | 3.28 | 34.48 | 0.17 | 0.89 |
| 0.73 | 0.73 | 14.08 | 46.0 | 36.59 | 3.27 | 35.53 | 0.17 | 0.90 |
| 0.74 | 0.74 | 14.44 | 47.1 | 37.64 | 3.26 | 36.58 | 0.17 | 0.91 |
| 0.75 | 0.75 | 14.81 | 48.3 | 38.68 | 3.26 | 37.62 | 0.16 | 0.91 |
| 0.76 | 0.76 | 15.19 | 49.5 | 39.73 | 3.26 | 38.67 | 0.16 | 0.92 |
| 0.77 | 0.77 | 15.58 | 50.7 | 40.78 | 3.25 | 39.72 | 0.16 | 0.93 |
| 0.78 | 0.78 | 15.98 | 52.0 | 41.83 | 3.26 | 40.77 | 0.16 | 0.94 |
| 0.79 | 0.79 | 16.40 | 53.4 | 42.87 | 3.26 | 41.81 | 0.16 | 0.95 |
| 0.80 | 0.80 | 16.82 | 54.8 | 43.92 | 3.26 | 42.86 | 0.17 | 0.97 |
| 0.81 | 0.81 | 17.25 | 56.3 | 44.97 | 3.26 | 43.91 | 0.17 | 0.98 |
| 0.82 | 0.82 | 17.70 | 57.9 | 46.01 | 3.27 | 44.95 | 0.17 | 0.99 |
| 0.83 | 0.83 | 18.15 | 59.5 | 47.06 | 3.28 | 46.00 | 0.17 | 1.00 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

□ MANNING'S N= .017 SLOPE= .0327

| □POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.45 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.71 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.93 | 0.94 | 0.01 | 0.04 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.13 | 1.25 | 0.02 | 0.06 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.31 | 1.56 | 0.03 | 0.08 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.48 | 1.88 | 0.03 | 0.09 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.64 | 2.19 | 0.04 | 0.11 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 1.79 | 2.50 | 0.05 | 0.13 |
| 0.09 | 0.09 | 0.13 | 0.2 | 2.96 | 1.93 | 2.81 | 0.06 | 0.15 |
| 0.10 | 0.10 | 0.16 | 0.3 | 3.29 | 2.07 | 3.13 | 0.07 | 0.17 |
| 0.11 | 0.11 | 0.19 | 0.4 | 3.62 | 2.21 | 3.44 | 0.08 | 0.19 |
| 0.12 | 0.12 | 0.23 | 0.5 | 3.95 | 2.34 | 3.75 | 0.09 | 0.21 |
| 0.13 | 0.13 | 0.26 | 0.7 | 4.28 | 2.47 | 4.07 | 0.09 | 0.22 |
| 0.14 | 0.14 | 0.31 | 0.7 | 5.15 | 2.42 | 4.93 | 0.09 | 0.23 |
| 0.15 | 0.15 | 0.36 | 0.9 | 6.03 | 2.43 | 5.79 | 0.09 | 0.24 |
| 0.16 | 0.16 | 0.43 | 1.0 | 6.91 | 2.46 | 6.65 | 0.09 | 0.25 |
| 0.17 | 0.17 | 0.50 | 1.2 | 7.79 | 2.52 | 7.51 | 0.10 | 0.27 |
| 0.18 | 0.18 | 0.58 | 1.5 | 8.67 | 2.59 | 8.38 | 0.10 | 0.28 |
| 0.19 | 0.19 | 0.66 | 1.8 | 9.54 | 2.67 | 9.24 | 0.11 | 0.30 |
| 0.20 | 0.20 | 0.76 | 2.1 | 10.42 | 2.76 | 10.10 | 0.12 | 0.32 |
| 0.21 | 0.21 | 0.87 | 2.5 | 11.30 | 2.85 | 10.96 | 0.13 | 0.34 |
| 0.22 | 0.22 | 0.98 | 2.9 | 12.18 | 2.95 | 11.83 | 0.13 | 0.35 |
| 0.23 | 0.23 | 1.10 | 3.4 | 13.06 | 3.04 | 12.69 | 0.14 | 0.37 |
| 0.24 | 0.24 | 1.23 | 3.9 | 13.93 | 3.14 | 13.55 | 0.15 | 0.39 |
| 0.25 | 0.25 | 1.37 | 4.4 | 14.81 | 3.24 | 14.41 | 0.16 | 0.41 |
| 0.26 | 0.26 | 1.52 | 5.1 | 15.69 | 3.34 | 15.27 | 0.17 | 0.43 |
| 0.27 | 0.27 | 1.68 | 5.8 | 16.57 | 3.44 | 16.14 | 0.18 | 0.45 |
| 0.28 | 0.28 | 1.84 | 6.5 | 17.45 | 3.53 | 17.00 | 0.19 | 0.47 |
| 0.29 | 0.29 | 2.02 | 7.3 | 18.32 | 3.63 | 17.86 | 0.20 | 0.49 |
| 0.30 | 0.30 | 2.20 | 8.2 | 19.20 | 3.73 | 18.72 | 0.22 | 0.52 |
| 0.31 | 0.31 | 2.39 | 9.2 | 20.08 | 3.83 | 19.59 | 0.23 | 0.54 |
| 0.32 | 0.32 | 2.59 | 10.2 | 20.96 | 3.92 | 20.45 | 0.24 | 0.56 |
| 0.33 | 0.33 | 2.80 | 11.3 | 21.84 | 4.02 | 21.31 | 0.25 | 0.58 |
| 0.34 | 0.34 | 3.02 | 12.4 | 22.71 | 4.12 | 22.17 | 0.26 | 0.60 |
| 0.35 | 0.35 | 3.25 | 13.7 | 23.59 | 4.21 | 23.03 | 0.28 | 0.63 |
| 0.36 | 0.36 | 3.48 | 15.0 | 24.47 | 4.31 | 23.90 | 0.29 | 0.65 |
| 0.37 | 0.37 | 3.72 | 16.4 | 25.35 | 4.40 | 24.76 | 0.30 | 0.67 |
| 0.38 | 0.38 | 3.98 | 17.9 | 26.23 | 4.49 | 25.62 | 0.31 | 0.69 |
| 0.39 | 0.39 | 4.24 | 19.4 | 27.10 | 4.59 | 26.48 | 0.33 | 0.72 |
| 0.40 | 0.40 | 4.50 | 21.1 | 27.98 | 4.68 | 27.35 | 0.34 | 0.74 |
| 0.41 | 0.41 | 4.78 | 22.8 | 28.86 | 4.77 | 28.21 | 0.35 | 0.76 |
| 0.42 | 0.42 | 5.06 | 25.1 | 28.88 | 4.95 | 28.21 | 0.38 | 0.80 |
| 0.43 | 0.43 | 5.35 | 27.4 | 28.90 | 5.13 | 28.22 | 0.41 | 0.84 |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 32.4 | 28.94 | 5.48 | 28.23 | 0.47 | 0.92 |
| 0.46 | 0.46 | 6.19 | 35.0 | 28.96 | 5.65 | 28.23 | 0.50 | 0.96 |
| 0.47 | 0.47 | 6.48 | 37.7 | 28.98 | 5.82 | 28.24 | 0.53 | 1.00 |
| 0.48 | 0.48 | 6.76 | 40.5 | 29.01 | 5.99 | 28.24 | 0.56 | 1.04 |
| 0.49 | 0.49 | 7.04 | 43.3 | 29.03 | 6.15 | 28.25 | 0.59 | 1.08 |
| 0.50 | 0.50 | 7.32 | 46.2 | 29.05 | 6.31 | 28.25 | 0.62 | 1.12 |
| 0.51 | 0.51 | 7.61 | 49.2 | 29.07 | 6.47 | 28.26 | 0.65 | 1.16 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 52.2 | 29.09 | 6.62 | 28.26 | 0.68 | 1.20 |
| 0.53 | 0.53 | 8.17 | 55.4 | 29.11 | 6.78 | 28.27 | 0.71 | 1.24 |
| 0.54 | 0.54 | 8.45 | 58.6 | 29.13 | 6.93 | 28.27 | 0.75 | 1.29 |
| 0.55 | 0.55 | 8.74 | 61.8 | 29.15 | 7.08 | 28.28 | 0.78 | 1.33 |
| 0.56 | 0.56 | 9.02 | 65.2 | 29.17 | 7.23 | 28.28 | 0.81 | 1.37 |
| 0.57 | 0.57 | 9.30 | 68.6 | 29.19 | 7.37 | 28.29 | 0.84 | 1.41 |
| 0.58 | 0.58 | 9.59 | 72.1 | 29.21 | 7.52 | 28.29 | 0.88 | 1.46 |
| 0.59 | 0.59 | 9.87 | 75.6 | 29.23 | 7.66 | 28.30 | 0.91 | 1.50 |
| 0.60 | 0.60 | 10.15 | 79.2 | 29.25 | 7.81 | 28.30 | 0.95 | 1.55 |
| 0.61 | 0.61 | 10.43 | 82.9 | 29.27 | 7.95 | 28.31 | 0.98 | 1.59 |
| 0.62 | 0.62 | 10.72 | 86.7 | 29.29 | 8.09 | 28.31 | 1.02 | 1.64 |
| 0.63 | 0.63 | 11.00 | 90.5 | 29.31 | 8.22 | 28.32 | 1.05 | 1.68 |
| 0.64 | 0.64 | 11.28 | 94.3 | 29.34 | 8.36 | 28.32 | 1.09 | 1.73 |
| 0.65 | 0.65 | 11.57 | 98.3 | 29.36 | 8.50 | 28.33 | 1.12 | 1.77 |
| 0.66 | 0.66 | 11.85 | 102.3 | 29.38 | 8.63 | 28.33 | 1.16 | 1.82 |
| 0.67 | 0.67 | 12.13 | 106.3 | 29.40 | 8.76 | 28.34 | 1.19 | 1.86 |
| 0.68 | 0.68 | 12.42 | 108.0 | 30.44 | 8.70 | 30.30 | 1.17 | 1.85 |
| 0.69 | 0.69 | 12.72 | 109.9 | 31.49 | 8.64 | 31.34 | 1.16 | 1.85 |
| 0.70 | 0.70 | 13.06 | 110.3 | 33.45 | 8.44 | 32.39 | 1.11 | 1.81 |
| 0.71 | 0.71 | 13.39 | 112.6 | 34.50 | 8.41 | 33.44 | 1.10 | 1.81 |
| 0.72 | 0.72 | 13.73 | 115.1 | 35.54 | 8.38 | 34.48 | 1.09 | 1.81 |
| 0.73 | 0.73 | 14.08 | 117.7 | 36.59 | 8.36 | 35.53 | 1.09 | 1.82 |
| 0.74 | 0.74 | 14.44 | 120.5 | 37.64 | 8.35 | 36.58 | 1.08 | 1.82 |
| 0.75 | 0.75 | 14.81 | 123.4 | 38.68 | 8.33 | 37.62 | 1.08 | 1.83 |
| 0.76 | 0.76 | 15.19 | 126.5 | 39.73 | 8.33 | 38.67 | 1.08 | 1.84 |
| 0.77 | 0.77 | 15.58 | 129.7 | 40.78 | 8.32 | 39.72 | 1.08 | 1.85 |
| 0.78 | 0.78 | 15.98 | 133.1 | 41.83 | 8.32 | 40.77 | 1.08 | 1.86 |
| 0.79 | 0.79 | 16.40 | 136.6 | 42.87 | 8.33 | 41.81 | 1.08 | 1.87 |
| 0.80 | 0.80 | 16.82 | 140.2 | 43.92 | 8.34 | 42.86 | 1.08 | 1.88 |
| 0.81 | 0.81 | 17.25 | 144.0 | 44.97 | 8.35 | 43.91 | 1.08 | 1.89 |
| 0.82 | 0.82 | 17.70 | 148.0 | 46.01 | 8.36 | 44.95 | 1.09 | 1.91 |
| 0.83 | 0.83 | 18.15 | 152.1 | 47.06 | 8.38 | 46.00 | 1.09 | 1.92 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

MANNING'S N= .017 SLOPE= .0191

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.34 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.54 | 0.63 | 0.00 | 0.02 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.71 | 0.94 | 0.01 | 0.04 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.86 | 1.25 | 0.01 | 0.05 |
| 0.05 | 0.05 | 0.04 | 0.0 | 1.64 | 1.00 | 1.56 | 0.02 | 0.07 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.13 | 1.88 | 0.02 | 0.08 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.25 | 2.19 | 0.02 | 0.09 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 1.37 | 2.50 | 0.03 | 0.11 |
| 0.09 | 0.09 | 0.13 | 0.2 | 2.96 | 1.48 | 2.81 | 0.03 | 0.12 |
| 0.10 | 0.10 | 0.16 | 0.2 | 3.29 | 1.59 | 3.13 | 0.04 | 0.14 |
| 0.11 | 0.11 | 0.19 | 0.3 | 3.62 | 1.69 | 3.44 | 0.04 | 0.15 |
| 0.12 | 0.12 | 0.23 | 0.4 | 3.95 | 1.79 | 3.75 | 0.05 | 0.17 |
| 0.13 | 0.13 | 0.26 | 0.5 | 4.28 | 1.89 | 4.07 | 0.06 | 0.19 |
| 0.14 | 0.14 | 0.31 | 0.6 | 5.15 | 1.85 | 4.93 | 0.05 | 0.19 |
| 0.15 | 0.15 | 0.36 | 0.7 | 6.03 | 1.85 | 5.79 | 0.05 | 0.20 |
| 0.16 | 0.16 | 0.43 | 0.8 | 6.91 | 1.88 | 6.65 | 0.06 | 0.22 |
| 0.17 | 0.17 | 0.50 | 1.0 | 7.79 | 1.93 | 7.51 | 0.06 | 0.23 |
| 0.18 | 0.18 | 0.58 | 1.1 | 8.67 | 1.98 | 8.38 | 0.06 | 0.24 |
| 0.19 | 0.19 | 0.66 | 1.4 | 9.54 | 2.04 | 9.24 | 0.06 | 0.25 |
| 0.20 | 0.20 | 0.76 | 1.6 | 10.42 | 2.11 | 10.10 | 0.07 | 0.27 |
| 0.21 | 0.21 | 0.87 | 1.9 | 11.30 | 2.18 | 10.96 | 0.07 | 0.28 |
| 0.22 | 0.22 | 0.98 | 2.2 | 12.18 | 2.25 | 11.83 | 0.08 | 0.30 |
| 0.23 | 0.23 | 1.10 | 2.6 | 13.06 | 2.32 | 12.69 | 0.08 | 0.31 |
| 0.24 | 0.24 | 1.23 | 3.0 | 13.93 | 2.40 | 13.55 | 0.09 | 0.33 |
| 0.25 | 0.25 | 1.37 | 3.4 | 14.81 | 2.47 | 14.41 | 0.10 | 0.35 |
| 0.26 | 0.26 | 1.52 | 3.9 | 15.69 | 2.55 | 15.27 | 0.10 | 0.36 |
| 0.27 | 0.27 | 1.68 | 4.4 | 16.57 | 2.63 | 16.14 | 0.11 | 0.38 |
| 0.28 | 0.28 | 1.84 | 5.0 | 17.45 | 2.70 | 17.00 | 0.11 | 0.39 |
| 0.29 | 0.29 | 2.02 | 5.6 | 18.32 | 2.78 | 17.86 | 0.12 | 0.41 |
| 0.30 | 0.30 | 2.20 | 6.3 | 19.20 | 2.85 | 18.72 | 0.13 | 0.43 |
| 0.31 | 0.31 | 2.39 | 7.0 | 20.08 | 2.93 | 19.59 | 0.13 | 0.44 |
| 0.32 | 0.32 | 2.59 | 7.8 | 20.96 | 3.00 | 20.45 | 0.14 | 0.46 |
| 0.33 | 0.33 | 2.80 | 8.6 | 21.84 | 3.07 | 21.31 | 0.15 | 0.48 |
| 0.34 | 0.34 | 3.02 | 9.5 | 22.71 | 3.15 | 22.17 | 0.15 | 0.49 |
| 0.35 | 0.35 | 3.25 | 10.4 | 23.59 | 3.22 | 23.03 | 0.16 | 0.51 |
| 0.36 | 0.36 | 3.48 | 11.5 | 24.47 | 3.29 | 23.90 | 0.17 | 0.53 |
| 0.37 | 0.37 | 3.72 | 12.5 | 25.35 | 3.36 | 24.76 | 0.18 | 0.55 |
| 0.38 | 0.38 | 3.98 | 13.7 | 26.23 | 3.43 | 25.62 | 0.18 | 0.56 |
| 0.39 | 0.39 | 4.24 | 14.8 | 27.10 | 3.50 | 26.48 | 0.19 | 0.58 |
| 0.40 | 0.40 | 4.50 | 16.1 | 27.98 | 3.58 | 27.35 | 0.20 | 0.60 |
| 0.41 | 0.41 | 4.78 | 17.4 | 28.86 | 3.64 | 28.21 | 0.21 | 0.62 |
| 0.42 | 0.42 | 5.06 | 19.2 | 28.88 | 3.78 | 28.21 | 0.22 | 0.64 |
| 0.43 | 0.43 | 5.35 | 21.0 | 28.90 | 3.92 | 28.22 | 0.24 | 0.67 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 24.8 | 28.94 | 4.19 | 28.23 | 0.27 | 0.72 |
| 0.46 | 0.46 | 6.19 | 26.8 | 28.96 | 4.32 | 28.23 | 0.29 | 0.75 |
| 0.47 | 0.47 | 6.48 | 28.8 | 28.98 | 4.45 | 28.24 | 0.31 | 0.78 |
| 0.48 | 0.48 | 6.76 | 30.9 | 29.01 | 4.57 | 28.24 | 0.32 | 0.80 |
| 0.49 | 0.49 | 7.04 | 33.1 | 29.03 | 4.70 | 28.25 | 0.34 | 0.83 |
| 0.50 | 0.50 | 7.32 | 35.3 | 29.05 | 4.82 | 28.25 | 0.36 | 0.86 |
| 0.51 | 0.51 | 7.61 | 37.6 | 29.07 | 4.94 | 28.26 | 0.38 | 0.89 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.52 | 0.52 | 7.89 | 39.9 | 29.09 | 5.06 | 28.26 | 0.40 | 0.92 |
| 0.53 | 0.53 | 8.17 | 42.3 | 29.11 | 5.18 | 28.27 | 0.42 | 0.95 |
| 0.54 | 0.54 | 8.45 | 44.8 | 29.13 | 5.30 | 28.27 | 0.44 | 0.98 |
| 0.55 | 0.55 | 8.74 | 47.3 | 29.15 | 5.41 | 28.28 | 0.45 | 1.00 |
| 0.56 | 0.56 | 9.02 | 49.8 | 29.17 | 5.52 | 28.28 | 0.47 | 1.03 |
| 0.57 | 0.57 | 9.30 | 52.4 | 29.19 | 5.64 | 28.29 | 0.49 | 1.06 |
| 0.58 | 0.58 | 9.59 | 55.1 | 29.21 | 5.75 | 28.29 | 0.51 | 1.09 |
| 0.59 | 0.59 | 9.87 | 57.8 | 29.23 | 5.86 | 28.30 | 0.53 | 1.12 |
| 0.60 | 0.60 | 10.15 | 60.6 | 29.25 | 5.97 | 28.30 | 0.55 | 1.15 |
| 0.61 | 0.61 | 10.43 | 63.4 | 29.27 | 6.07 | 28.31 | 0.57 | 1.18 |
| 0.62 | 0.62 | 10.72 | 66.2 | 29.29 | 6.18 | 28.31 | 0.59 | 1.21 |
| 0.63 | 0.63 | 11.00 | 69.1 | 29.31 | 6.29 | 28.32 | 0.61 | 1.24 |
| 0.64 | 0.64 | 11.28 | 72.1 | 29.34 | 6.39 | 28.32 | 0.63 | 1.27 |
| 0.65 | 0.65 | 11.57 | 75.1 | 29.36 | 6.49 | 28.33 | 0.65 | 1.30 |
| 0.66 | 0.66 | 11.85 | 78.2 | 29.38 | 6.60 | 28.33 | 0.68 | 1.34 |
| 0.67 | 0.67 | 12.13 | 81.3 | 29.40 | 6.70 | 28.34 | 0.70 | 1.37 |
| 0.68 | 0.68 | 12.42 | 82.6 | 30.44 | 6.65 | 30.30 | 0.69 | 1.37 |
| 0.69 | 0.69 | 12.72 | 84.0 | 31.49 | 6.60 | 31.34 | 0.68 | 1.37 |
| 0.70 | 0.70 | 13.06 | 84.3 | 33.45 | 6.45 | 32.39 | 0.65 | 1.35 |
| 0.71 | 0.71 | 13.39 | 86.0 | 34.50 | 6.43 | 33.44 | 0.64 | 1.35 |
| 0.72 | 0.72 | 13.73 | 87.9 | 35.54 | 6.41 | 34.48 | 0.64 | 1.36 |
| 0.73 | 0.73 | 14.08 | 90.0 | 36.59 | 6.39 | 35.53 | 0.63 | 1.36 |
| 0.74 | 0.74 | 14.44 | 92.1 | 37.64 | 6.38 | 36.58 | 0.63 | 1.37 |
| 0.75 | 0.75 | 14.81 | 94.3 | 38.68 | 6.37 | 37.62 | 0.63 | 1.38 |
| 0.76 | 0.76 | 15.19 | 96.7 | 39.73 | 6.36 | 38.67 | 0.63 | 1.39 |
| 0.77 | 0.77 | 15.58 | 99.1 | 40.78 | 6.36 | 39.72 | 0.63 | 1.40 |
| 0.78 | 0.78 | 15.98 | 101.7 | 41.83 | 6.36 | 40.77 | 0.63 | 1.41 |
| 0.79 | 0.79 | 16.40 | 104.4 | 42.87 | 6.37 | 41.81 | 0.63 | 1.42 |
| 0.80 | 0.80 | 16.82 | 107.2 | 43.92 | 6.37 | 42.86 | 0.63 | 1.43 |
| 0.81 | 0.81 | 17.25 | 110.1 | 44.97 | 6.38 | 43.91 | 0.63 | 1.44 |
| 0.82 | 0.82 | 17.70 | 113.1 | 46.01 | 6.39 | 44.95 | 0.63 | 1.45 |
| 0.83 | 0.83 | 18.15 | 116.2 | 47.06 | 6.40 | 46.00 | 0.64 | 1.47 |

# ATRISCO VILLAGE

# STREET FLOW ANALYSIS

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

**el moro**

MANNING'S N= .017 SLOPE= .053

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 6 | 23.00 | 0.41 | 11 | 46.00 | 0.83 |
| 2 | 8.38 | 0.67 | 7 | 35.00 | 0.13 | 12 | 0.00 | 0.00 |
| 3 | 8.83 | 0.67 | 8 | 37.00 | 0.00 | 13 | 0.00 | 0.00 |
| 4 | 9.00 | 0.00 | 9 | 37.17 | 0.67 | 14 | 0.00 | 0.00 |
| 5 | 11.00 | 0.13 | 10 | 37.63 | 0.67 | 15 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.88 | 0.58 | 0.87 | 0.01 | 0.02 |
| 0.02 | 0.02 | 0.02 | 0.0 | 1.77 | 0.92 | 1.73 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.04 | 0.0 | 2.65 | 1.21 | 2.60 | 0.02 | 0.05 |
| 0.04 | 0.04 | 0.07 | 0.1 | 3.53 | 1.46 | 3.47 | 0.03 | 0.07 |
| 0.05 | 0.05 | 0.11 | 0.2 | 4.42 | 1.70 | 4.33 | 0.04 | 0.09 |
| 0.06 | 0.06 | 0.16 | 0.3 | 5.30 | 1.92 | 5.20 | 0.06 | 0.12 |
| 0.07 | 0.07 | 0.21 | 0.5 | 6.18 | 2.13 | 6.07 | 0.07 | 0.14 |
| 0.08 | 0.08 | 0.28 | 0.6 | 7.07 | 2.32 | 6.94 | 0.08 | 0.16 |
| 0.09 | 0.09 | 0.35 | 0.9 | 7.95 | 2.51 | 7.80 | 0.10 | 0.19 |
| 0.10 | 0.10 | 0.43 | 1.2 | 8.83 | 2.70 | 8.67 | 0.11 | 0.21 |
| 0.11 | 0.11 | 0.52 | 1.5 | 9.72 | 2.87 | 9.54 | 0.13 | 0.24 |
| 0.12 | 0.12 | 0.62 | 1.9 | 10.60 | 3.05 | 10.40 | 0.14 | 0.26 |
| 0.13 | 0.13 | 0.73 | 2.4 | 11.48 | 3.21 | 11.27 | 0.16 | 0.29 |
| 0.14 | 0.14 | 0.85 | 2.8 | 12.91 | 3.29 | 12.69 | 0.17 | 0.31 |
| 0.15 | 0.15 | 0.99 | 3.3 | 14.35 | 3.38 | 14.10 | 0.18 | 0.33 |
| 0.16 | 0.16 | 1.13 | 3.9 | 15.78 | 3.48 | 15.52 | 0.19 | 0.35 |
| 0.17 | 0.17 | 1.30 | 4.7 | 17.21 | 3.59 | 16.94 | 0.20 | 0.37 |
| 0.18 | 0.18 | 1.47 | 5.5 | 18.64 | 3.71 | 18.35 | 0.21 | 0.39 |
| 0.19 | 0.19 | 1.66 | 6.4 | 20.08 | 3.83 | 19.77 | 0.23 | 0.42 |
| 0.20 | 0.20 | 1.87 | 7.4 | 21.51 | 3.95 | 21.19 | 0.24 | 0.44 |
| 0.21 | 0.21 | 2.09 | 8.5 | 22.94 | 4.07 | 22.60 | 0.26 | 0.47 |
| 0.22 | 0.22 | 2.32 | 9.7 | 24.37 | 4.20 | 24.02 | 0.27 | 0.49 |
| 0.23 | 0.23 | 2.57 | 11.1 | 25.81 | 4.32 | 25.44 | 0.29 | 0.52 |
| 0.24 | 0.24 | 2.83 | 12.6 | 27.24 | 4.45 | 26.85 | 0.31 | 0.55 |
| 0.25 | 0.25 | 3.10 | 14.2 | 28.67 | 4.57 | 28.27 | 0.32 | 0.57 |
| 0.26 | 0.26 | 3.39 | 15.9 | 30.10 | 4.70 | 29.68 | 0.34 | 0.60 |
| 0.27 | 0.27 | 3.70 | 17.8 | 31.54 | 4.82 | 31.10 | 0.36 | 0.63 |
| 0.28 | 0.28 | 4.02 | 19.9 | 32.97 | 4.95 | 32.52 | 0.38 | 0.66 |
| 0.29 | 0.29 | 4.35 | 22.0 | 34.40 | 5.07 | 33.93 | 0.40 | 0.69 |
| 0.30 | 0.30 | 4.70 | 24.4 | 35.83 | 5.19 | 35.35 | 0.42 | 0.72 |
| 0.31 | 0.31 | 5.06 | 26.9 | 37.26 | 5.31 | 36.77 | 0.44 | 0.75 |
| 0.32 | 0.32 | 5.43 | 29.5 | 38.70 | 5.43 | 38.18 | 0.46 | 0.78 |
| 0.33 | 0.33 | 5.82 | 32.3 | 40.13 | 5.55 | 39.60 | 0.48 | 0.81 |
| 0.34 | 0.34 | 6.22 | 35.3 | 41.56 | 5.67 | 41.02 | 0.50 | 0.84 |
| 0.35 | 0.35 | 6.64 | 38.5 | 42.99 | 5.79 | 42.43 | 0.52 | 0.87 |
| 0.36 | 0.36 | 7.07 | 41.8 | 44.43 | 5.91 | 43.85 | 0.54 | 0.90 |
| 0.37 | 0.37 | 7.52 | 45.3 | 45.86 | 6.03 | 45.27 | 0.56 | 0.93 |
| 0.38 | 0.38 | 7.98 | 49.0 | 47.29 | 6.14 | 46.68 | 0.59 | 0.97 |
| 0.39 | 0.39 | 8.45 | 52.9 | 48.72 | 6.26 | 48.10 | 0.61 | 1.00 |
| 0.40 | 0.40 | 8.94 | 57.0 | 50.16 | 6.37 | 49.51 | 0.63 | 1.03 |
| 0.41 | 0.41 | 9.44 | 61.2 | 51.59 | 6.49 | 50.93 | 0.65 | 1.06 |
| 0.42 | 0.42 | 9.95 | 66.4 | 52.16 | 6.67 | 51.49 | 0.69 | 1.11 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.44 | 0.44 | 10.99 | 77.2 | 53.31 | 7.02 | 52.61 | 0.77 | 1.21 |
| 0.45 | 0.45 | 11.52 | 82.9 | 53.89 | 7.20 | 53.17 | 0.80 | 1.25 |
| 0.46 | 0.46 | 12.06 | 88.8 | 54.46 | 7.36 | 53.73 | 0.84 | 1.30 |
| 0.47 | 0.47 | 12.60 | 94.9 | 55.04 | 7.53 | 54.29 | 0.88 | 1.35 |
| 0.48 | 0.48 | 13.14 | 101.1 | 55.61 | 7.69 | 54.85 | 0.92 | 1.40 |
| 0.49 | 0.49 | 13.69 | 107.5 | 56.19 | 7.85 | 55.41 | 0.96 | 1.45 |
| 0.50 | 0.50 | 14.25 | 114.1 | 56.76 | 8.01 | 55.96 | 1.00 | 1.50 |
| 0.51 | 0.51 | 14.81 | 120.9 | 57.34 | 8.16 | 56.52 | 1.03 | 1.54 |
| 0.52 | 0.52 | 15.38 | 127.9 | 57.91 | 8.32 | 57.08 | 1.07 | 1.59 |
| 0.53 | 0.53 | 15.96 | 135.1 | 58.49 | 8.46 | 57.64 | 1.11 | 1.64 |
| 0.54 | 0.54 | 16.53 | 142.4 | 59.06 | 8.61 | 58.20 | 1.15 | 1.69 |
| 0.55 | 0.55 | 17.12 | 149.9 | 59.64 | 8.76 | 58.76 | 1.19 | 1.74 |
| 0.56 | 0.56 | 17.71 | 157.6 | 60.21 | 8.90 | 59.32 | 1.23 | 1.79 |
| 0.57 | 0.57 | 18.31 | 165.5 | 60.79 | 9.04 | 59.88 | 1.27 | 1.84 |
| 0.58 | 0.58 | 18.91 | 173.6 | 61.36 | 9.18 | 60.44 | 1.31 | 1.89 |
| 0.59 | 0.59 | 19.51 | 181.8 | 61.94 | 9.32 | 61.00 | 1.35 | 1.94 |
| 0.60 | 0.60 | 20.13 | 190.3 | 62.51 | 9.45 | 61.56 | 1.39 | 1.99 |
| 0.61 | 0.61 | 20.75 | 198.9 | 63.09 | 9.59 | 62.12 | 1.43 | 2.04 |
| 0.62 | 0.62 | 21.37 | 207.7 | 63.66 | 9.72 | 62.68 | 1.47 | 2.09 |
| 0.63 | 0.63 | 22.00 | 216.7 | 64.24 | 9.85 | 63.24 | 1.51 | 2.14 |
| 0.64 | 0.64 | 22.63 | 225.9 | 64.81 | 9.98 | 63.79 | 1.55 | 2.19 |
| 0.65 | 0.65 | 23.28 | 235.3 | 65.39 | 10.11 | 64.35 | 1.59 | 2.24 |
| 0.66 | 0.66 | 23.92 | 244.8 | 65.96 | 10.23 | 64.91 | 1.63 | 2.29 |
| 0.67 | 0.67 | 24.57 | 254.6 | 66.54 | 10.36 | 65.47 | 1.67 | 2.34 |
| 0.68 | 0.68 | 25.24 | 261.9 | 68.14 | 10.38 | 67.98 | 1.67 | 2.35 |
| 0.69 | 0.69 | 25.91 | 269.5 | 69.74 | 10.40 | 69.58 | 1.68 | 2.37 |
| 0.70 | 0.70 | 26.64 | 275.6 | 72.25 | 10.35 | 71.19 | 1.66 | 2.36 |
| 0.71 | 0.71 | 27.36 | 283.9 | 73.85 | 10.38 | 72.79 | 1.67 | 2.38 |
| 0.72 | 0.72 | 28.09 | 292.6 | 75.45 | 10.41 | 74.39 | 1.68 | 2.40 |
| 0.73 | 0.73 | 28.84 | 301.5 | 77.05 | 10.45 | 75.99 | 1.70 | 2.43 |
| 0.74 | 0.74 | 29.61 | 310.7 | 78.66 | 10.49 | 77.59 | 1.71 | 2.45 |
| 0.75 | 0.75 | 30.40 | 320.2 | 80.26 | 10.53 | 79.19 | 1.72 | 2.47 |
| 0.76 | 0.76 | 31.20 | 330.0 | 81.86 | 10.58 | 80.79 | 1.74 | 2.50 |
| 0.77 | 0.77 | 32.01 | 340.1 | 83.46 | 10.62 | 82.39 | 1.75 | 2.52 |
| 0.78 | 0.78 | 32.84 | 350.5 | 85.06 | 10.67 | 83.99 | 1.77 | 2.55 |
| 0.79 | 0.79 | 33.69 | 361.2 | 86.66 | 10.72 | 85.60 | 1.78 | 2.57 |
| 0.80 | 0.80 | 34.56 | 372.2 | 88.26 | 10.77 | 87.20 | 1.80 | 2.60 |
| 0.81 | 0.81 | 35.44 | 383.5 | 89.87 | 10.82 | 88.80 | 1.82 | 2.63 |
| 0.82 | 0.82 | 36.33 | 395.1 | 91.47 | 10.87 | 90.40 | 1.84 | 2.66 |
| 0.83 | 0.83 | 37.24 | 407.0 | 93.07 | 10.93 | 92.00 | 1.85 | 2.68 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

**del monte**

MANNING'S N= .017 SLOPE= .0136

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.29 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.46 | 0.63 | 0.00 | 0.02 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.60 | 0.94 | 0.01 | 0.04 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.73 | 1.25 | 0.01 | 0.05 |
| 0.05 | 0.05 | 0.04 | 0.0 | 1.64 | 0.84 | 1.56 | 0.01 | 0.06 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 0.95 | 1.88 | 0.01 | 0.07 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.05 | 2.19 | 0.02 | 0.09 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 1.15 | 2.50 | 0.02 | 0.10 |
| 0.09 | 0.09 | 0.13 | 0.2 | 2.96 | 1.25 | 2.81 | 0.02 | 0.11 |
| 0.10 | 0.10 | 0.16 | 0.2 | 3.29 | 1.34 | 3.13 | 0.03 | 0.13 |
| 0.11 | 0.11 | 0.19 | 0.3 | 3.62 | 1.43 | 3.44 | 0.03 | 0.14 |
| 0.12 | 0.12 | 0.23 | 0.3 | 3.95 | 1.51 | 3.75 | 0.04 | 0.16 |
| 0.13 | 0.13 | 0.26 | 0.4 | 4.28 | 1.59 | 4.07 | 0.04 | 0.17 |
| 0.14 | 0.14 | 0.31 | 0.5 | 5.15 | 1.56 | 4.93 | 0.04 | 0.18 |
| 0.15 | 0.15 | 0.36 | 0.6 | 6.03 | 1.56 | 5.79 | 0.04 | 0.19 |
| 0.16 | 0.16 | 0.43 | 0.7 | 6.91 | 1.59 | 6.65 | 0.04 | 0.20 |
| 0.17 | 0.17 | 0.50 | 0.8 | 7.79 | 1.63 | 7.51 | 0.04 | 0.21 |
| 0.18 | 0.18 | 0.58 | 1.0 | 8.67 | 1.67 | 8.38 | 0.04 | 0.22 |
| 0.19 | 0.19 | 0.66 | 1.1 | 9.54 | 1.72 | 9.24 | 0.05 | 0.24 |
| 0.20 | 0.20 | 0.76 | 1.4 | 10.42 | 1.78 | 10.10 | 0.05 | 0.25 |
| 0.21 | 0.21 | 0.87 | 1.6 | 11.30 | 1.84 | 10.96 | 0.05 | 0.26 |
| 0.22 | 0.22 | 0.98 | 1.9 | 12.18 | 1.90 | 11.83 | 0.06 | 0.28 |
| 0.23 | 0.23 | 1.10 | 2.2 | 13.06 | 1.96 | 12.69 | 0.06 | 0.29 |
| 0.24 | 0.24 | 1.23 | 2.5 | 13.93 | 2.02 | 13.55 | 0.06 | 0.30 |
| 0.25 | 0.25 | 1.37 | 2.9 | 14.81 | 2.09 | 14.41 | 0.07 | 0.32 |
| 0.26 | 0.26 | 1.52 | 3.3 | 15.69 | 2.15 | 15.27 | 0.07 | 0.33 |
| 0.27 | 0.27 | 1.68 | 3.7 | 16.57 | 2.22 | 16.14 | 0.08 | 0.35 |
| 0.28 | 0.28 | 1.84 | 4.2 | 17.45 | 2.28 | 17.00 | 0.08 | 0.36 |
| 0.29 | 0.29 | 2.02 | 4.7 | 18.32 | 2.34 | 17.86 | 0.09 | 0.38 |
| 0.30 | 0.30 | 2.20 | 5.3 | 19.20 | 2.41 | 18.72 | 0.09 | 0.39 |
| 0.31 | 0.31 | 2.39 | 5.9 | 20.08 | 2.47 | 19.59 | 0.09 | 0.40 |
| 0.32 | 0.32 | 2.59 | 6.6 | 20.96 | 2.53 | 20.45 | 0.10 | 0.42 |
| 0.33 | 0.33 | 2.80 | 7.3 | 21.84 | 2.59 | 21.31 | 0.10 | 0.43 |
| 0.34 | 0.34 | 3.02 | 8.0 | 22.71 | 2.66 | 22.17 | 0.11 | 0.45 |
| 0.35 | 0.35 | 3.25 | 8.8 | 23.59 | 2.72 | 23.03 | 0.11 | 0.46 |
| 0.36 | 0.36 | 3.48 | 9.7 | 24.47 | 2.78 | 23.90 | 0.12 | 0.48 |
| 0.37 | 0.37 | 3.72 | 10.6 | 25.35 | 2.84 | 24.76 | 0.13 | 0.50 |
| 0.38 | 0.38 | 3.98 | 11.5 | 26.23 | 2.90 | 25.62 | 0.13 | 0.51 |
| 0.39 | 0.39 | 4.24 | 12.5 | 27.10 | 2.96 | 26.48 | 0.14 | 0.53 |
| 0.40 | 0.40 | 4.50 | 13.6 | 27.98 | 3.02 | 27.35 | 0.14 | 0.54 |
| 0.41 | 0.41 | 4.78 | 14.7 | 28.86 | 3.08 | 28.21 | 0.15 | 0.56 |
| 0.42 | 0.42 | 5.06 | 16.2 | 28.88 | 3.19 | 28.21 | 0.16 | 0.58 |
| 0.43 | 0.43 | 5.35 | 17.7 | 28.90 | 3.31 | 28.22 | 0.17 | 0.60 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 20.9 | 28.94 | 3.54 | 28.23 | 0.19 | 0.64 |
| 0.46 | 0.46 | 6.19 | 22.6 | 28.96 | 3.65 | 28.23 | 0.21 | 0.67 |
| 0.47 | 0.47 | 6.48 | 24.3 | 28.98 | 3.75 | 28.24 | 0.22 | 0.69 |
| 0.48 | 0.48 | 6.76 | 26.1 | 29.01 | 3.86 | 28.24 | 0.23 | 0.71 |
| 0.49 | 0.49 | 7.04 | 27.9 | 29.03 | 3.96 | 28.25 | 0.24 | 0.73 |
| 0.50 | 0.50 | 7.32 | 29.8 | 29.05 | 4.07 | 28.25 | 0.26 | 0.76 |
| 0.51 | 0.51 | 7.61 | 31.7 | 29.07 | 4.17 | 28.26 | 0.27 | 0.78 |
| 0.52 | 0.52 | 7.89 | 33.7 | 29.09 | 4.27 | 28.26 | 0.28 | 0.80 |
| 0.53 | 0.53 | 8.17 | 35.7 | 29.11 | 4.37 | 28.27 | 0.30 | 0.83 |
| 0.54 | 0.54 | 8.45 | 37.8 | 29.13 | 4.47 | 28.27 | 0.31 | 0.85 |
| 0.55 | 0.55 | 8.74 | 39.9 | 29.15 | 4.57 | 28.28 | 0.32 | 0.87 |
| 0.56 | 0.56 | 9.02 | 42.0 | 29.17 | 4.66 | 28.28 | 0.34 | 0.90 |
| 0.57 | 0.57 | 9.30 | 44.2 | 29.19 | 4.76 | 28.29 | 0.35 | 0.92 |
| 0.58 | 0.58 | 9.59 | 46.5 | 29.21 | 4.85 | 28.29 | 0.37 | 0.95 |
| 0.59 | 0.59 | 9.87 | 48.8 | 29.23 | 4.94 | 28.30 | 0.38 | 0.97 |
| 0.60 | 0.60 | 10.15 | 51.1 | 29.25 | 5.03 | 28.30 | 0.39 | 0.99 |
| 0.61 | 0.61 | 10.43 | 53.5 | 29.27 | 5.12 | 28.31 | 0.41 | 1.02 |
| 0.62 | 0.62 | 10.72 | 55.9 | 29.29 | 5.21 | 28.31 | 0.42 | 1.04 |
| 0.63 | 0.63 | 11.00 | 58.3 | 29.31 | 5.30 | 28.32 | 0.44 | 1.07 |
| 0.64 | 0.64 | 11.28 | 60.8 | 29.34 | 5.39 | 28.32 | 0.45 | 1.09 |
| 0.65 | 0.65 | 11.57 | 63.4 | 29.36 | 5.48 | 28.33 | 0.47 | 1.12 |
| 0.66 | 0.66 | 11.85 | 66.0 | 29.38 | 5.57 | 28.33 | 0.48 | 1.14 |
| 0.67 | 0.67 | 12.13 | 68.6 | 29.40 | 5.65 | 28.34 | 0.50 | 1.17 |
| 0.68 | 0.68 | 12.42 | 69.7 | 30.44 | 5.61 | 30.30 | 0.49 | 1.17 |
| 0.69 | 0.69 | 12.72 | 70.9 | 31.49 | 5.57 | 31.34 | 0.48 | 1.17 |
| 0.70 | 0.70 | 13.06 | 71.1 | 33.45 | 5.45 | 32.39 | 0.46 | 1.16 |
| 0.71 | 0.71 | 13.39 | 72.6 | 34.50 | 5.42 | 33.44 | 0.46 | 1.17 |
| 0.72 | 0.72 | 13.73 | 74.2 | 35.54 | 5.41 | 34.48 | 0.45 | 1.17 |
| 0.73 | 0.73 | 14.08 | 75.9 | 36.59 | 5.39 | 35.53 | 0.45 | 1.18 |
| 0.74 | 0.74 | 14.44 | 77.7 | 37.64 | 5.38 | 36.58 | 0.45 | 1.19 |
| 0.75 | 0.75 | 14.81 | 79.6 | 38.68 | 5.37 | 37.62 | 0.45 | 1.20 |
| 0.76 | 0.76 | 15.19 | 81.6 | 39.73 | 5.37 | 38.67 | 0.45 | 1.21 |
| 0.77 | 0.77 | 15.58 | 83.6 | 40.78 | 5.37 | 39.72 | 0.45 | 1.22 |
| 0.78 | 0.78 | 15.98 | 85.8 | 41.83 | 5.37 | 40.77 | 0.45 | 1.23 |
| 0.79 | 0.79 | 16.40 | 88.1 | 42.87 | 5.37 | 41.81 | 0.45 | 1.24 |
| 0.80 | 0.80 | 16.82 | 90.4 | 43.92 | 5.38 | 42.86 | 0.45 | 1.25 |
| 0.81 | 0.81 | 17.25 | 92.9 | 44.97 | 5.38 | 43.91 | 0.45 | 1.26 |
| 0.82 | 0.82 | 17.70 | 95.4 | 46.01 | 5.39 | 44.95 | 0.45 | 1.27 |
| 0.83 | 0.83 | 18.15 | 98.1 | 47.06 | 5.40 | 46.00 | 0.45 | 1.28 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

**Apodaca**

MANNING'S N= .017 SLOPE= .034

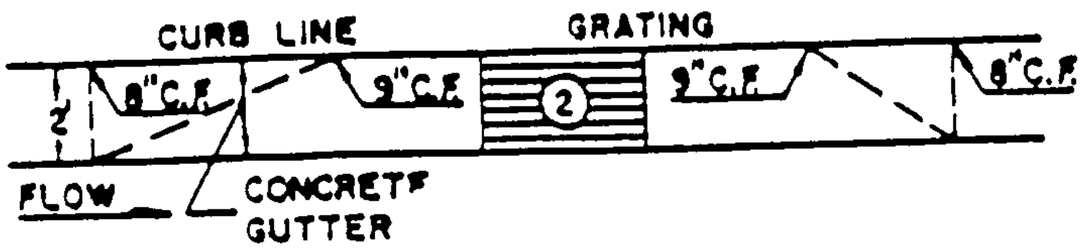
| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.46 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.72 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.95 | 0.94 | 0.01 | 0.04 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.15 | 1.25 | 0.02 | 0.06 |
| 0.05 | 0.05 | 0.04 | 0.1 | 1.64 | 1.33 | 1.56 | 0.03 | 0.08 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.50 | 1.88 | 0.04 | 0.10 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.67 | 2.19 | 0.04 | 0.11 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 1.82 | 2.50 | 0.05 | 0.13 |
| 0.09 | 0.09 | 0.13 | 0.2 | 2.96 | 1.97 | 2.81 | 0.06 | 0.15 |
| 0.10 | 0.10 | 0.16 | 0.3 | 3.29 | 2.12 | 3.13 | 0.07 | 0.17 |
| 0.11 | 0.11 | 0.19 | 0.4 | 3.62 | 2.25 | 3.44 | 0.08 | 0.19 |
| 0.12 | 0.12 | 0.23 | 0.5 | 3.95 | 2.39 | 3.75 | 0.09 | 0.21 |
| 0.13 | 0.13 | 0.26 | 0.7 | 4.28 | 2.52 | 4.07 | 0.10 | 0.23 |
| 0.14 | 0.14 | 0.31 | 0.8 | 5.15 | 2.47 | 4.93 | 0.09 | 0.23 |
| 0.15 | 0.15 | 0.36 | 0.9 | 6.03 | 2.47 | 5.79 | 0.10 | 0.25 |
| 0.16 | 0.16 | 0.43 | 1.1 | 6.91 | 2.51 | 6.65 | 0.10 | 0.26 |
| 0.17 | 0.17 | 0.50 | 1.3 | 7.79 | 2.57 | 7.51 | 0.10 | 0.27 |
| 0.18 | 0.18 | 0.58 | 1.5 | 8.67 | 2.64 | 8.38 | 0.11 | 0.29 |
| 0.19 | 0.19 | 0.66 | 1.8 | 9.54 | 2.72 | 9.24 | 0.12 | 0.31 |
| 0.20 | 0.20 | 0.76 | 2.1 | 10.42 | 2.81 | 10.10 | 0.12 | 0.32 |
| 0.21 | 0.21 | 0.87 | 2.5 | 11.30 | 2.91 | 10.96 | 0.13 | 0.34 |
| 0.22 | 0.22 | 0.98 | 2.9 | 12.18 | 3.00 | 11.83 | 0.14 | 0.36 |
| 0.23 | 0.23 | 1.10 | 3.4 | 13.06 | 3.10 | 12.69 | 0.15 | 0.38 |
| 0.24 | 0.24 | 1.23 | 3.9 | 13.93 | 3.20 | 13.55 | 0.16 | 0.40 |
| 0.25 | 0.25 | 1.37 | 4.5 | 14.81 | 3.30 | 14.41 | 0.17 | 0.42 |
| 0.26 | 0.26 | 1.52 | 5.2 | 15.69 | 3.40 | 15.27 | 0.18 | 0.44 |
| 0.27 | 0.27 | 1.68 | 5.9 | 16.57 | 3.50 | 16.14 | 0.19 | 0.46 |
| 0.28 | 0.28 | 1.84 | 6.6 | 17.45 | 3.60 | 17.00 | 0.20 | 0.48 |
| 0.29 | 0.29 | 2.02 | 7.5 | 18.32 | 3.70 | 17.86 | 0.21 | 0.50 |
| 0.30 | 0.30 | 2.20 | 8.4 | 19.20 | 3.80 | 18.72 | 0.22 | 0.52 |
| 0.31 | 0.31 | 2.39 | 9.3 | 20.08 | 3.90 | 19.59 | 0.24 | 0.55 |
| 0.32 | 0.32 | 2.59 | 10.4 | 20.96 | 4.00 | 20.45 | 0.25 | 0.57 |
| 0.33 | 0.33 | 2.80 | 11.5 | 21.84 | 4.10 | 21.31 | 0.26 | 0.59 |
| 0.34 | 0.34 | 3.02 | 12.7 | 22.71 | 4.20 | 22.17 | 0.27 | 0.61 |
| 0.35 | 0.35 | 3.25 | 13.9 | 23.59 | 4.30 | 23.03 | 0.29 | 0.64 |
| 0.36 | 0.36 | 3.48 | 15.3 | 24.47 | 4.39 | 23.90 | 0.30 | 0.66 |
| 0.37 | 0.37 | 3.72 | 16.7 | 25.35 | 4.49 | 24.76 | 0.31 | 0.68 |
| 0.38 | 0.38 | 3.98 | 18.2 | 26.23 | 4.58 | 25.62 | 0.33 | 0.71 |
| 0.39 | 0.39 | 4.24 | 19.8 | 27.10 | 4.68 | 26.48 | 0.34 | 0.73 |
| 0.40 | 0.40 | 4.50 | 21.5 | 27.98 | 4.77 | 27.35 | 0.35 | 0.75 |
| 0.41 | 0.41 | 4.78 | 23.3 | 28.86 | 4.86 | 28.21 | 0.37 | 0.78 |
| 0.42 | 0.42 | 5.06 | 25.6 | 28.88 | 5.05 | 28.21 | 0.40 | 0.82 |
| 0.43 | 0.43 | 5.35 | 28.0 | 28.90 | 5.23 | 28.22 | 0.43 | 0.86 |

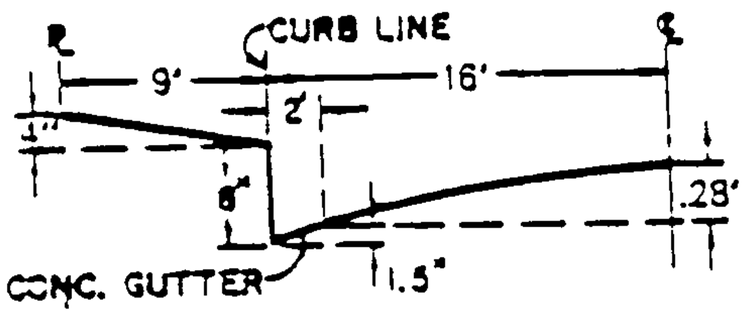
| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.45 | 0.45 | 5.91 | 33.0 | 28.94 | 5.59 | 28.23 | 0.49 | 0.94 |
| 0.46 | 0.46 | 6.19 | 35.7 | 28.96 | 5.76 | 28.23 | 0.52 | 0.98 |
| 0.47 | 0.47 | 6.48 | 38.4 | 28.98 | 5.93 | 28.24 | 0.55 | 1.02 |
| 0.48 | 0.48 | 6.76 | 41.2 | 29.01 | 6.10 | 28.24 | 0.58 | 1.06 |
| 0.49 | 0.49 | 7.04 | 44.1 | 29.03 | 6.27 | 28.25 | 0.61 | 1.10 |
| 0.50 | 0.50 | 7.32 | 47.1 | 29.05 | 6.43 | 28.25 | 0.64 | 1.14 |
| 0.51 | 0.51 | 7.61 | 50.2 | 29.07 | 6.59 | 28.26 | 0.68 | 1.19 |
| 0.52 | 0.52 | 7.89 | 53.3 | 29.09 | 6.75 | 28.26 | 0.71 | 1.23 |
| 0.53 | 0.53 | 8.17 | 56.5 | 29.11 | 6.91 | 28.27 | 0.74 | 1.27 |
| 0.54 | 0.54 | 8.45 | 59.7 | 29.13 | 7.07 | 28.27 | 0.78 | 1.32 |
| 0.55 | 0.55 | 8.74 | 63.1 | 29.15 | 7.22 | 28.28 | 0.81 | 1.36 |
| 0.56 | 0.56 | 9.02 | 66.5 | 29.17 | 7.37 | 28.28 | 0.84 | 1.40 |
| 0.57 | 0.57 | 9.30 | 70.0 | 29.19 | 7.52 | 28.29 | 0.88 | 1.45 |
| 0.58 | 0.58 | 9.59 | 73.5 | 29.21 | 7.67 | 28.29 | 0.91 | 1.49 |
| 0.59 | 0.59 | 9.87 | 77.1 | 29.23 | 7.81 | 28.30 | 0.95 | 1.54 |
| 0.60 | 0.60 | 10.15 | 80.8 | 29.25 | 7.96 | 28.30 | 0.98 | 1.58 |
| 0.61 | 0.61 | 10.43 | 84.5 | 29.27 | 8.10 | 28.31 | 1.02 | 1.63 |
| 0.62 | 0.62 | 10.72 | 88.4 | 29.29 | 8.24 | 28.31 | 1.06 | 1.68 |
| 0.63 | 0.63 | 11.00 | 92.2 | 29.31 | 8.39 | 28.32 | 1.09 | 1.72 |
| 0.64 | 0.64 | 11.28 | 96.2 | 29.34 | 8.52 | 28.32 | 1.13 | 1.77 |
| 0.65 | 0.65 | 11.57 | 100.2 | 29.36 | 8.66 | 28.33 | 1.17 | 1.82 |
| 0.66 | 0.66 | 11.85 | 104.3 | 29.38 | 8.80 | 28.33 | 1.20 | 1.86 |
| 0.67 | 0.67 | 12.13 | 108.4 | 29.40 | 8.94 | 28.34 | 1.24 | 1.91 |
| 0.68 | 0.68 | 12.42 | 110.2 | 30.44 | 8.87 | 30.30 | 1.22 | 1.90 |
| 0.69 | 0.69 | 12.72 | 112.1 | 31.49 | 8.81 | 31.34 | 1.20 | 1.89 |
| 0.70 | 0.70 | 13.06 | 112.4 | 33.45 | 8.61 | 32.39 | 1.15 | 1.85 |
| 0.71 | 0.71 | 13.39 | 114.8 | 34.50 | 8.58 | 33.44 | 1.14 | 1.85 |
| 0.72 | 0.72 | 13.73 | 117.3 | 35.54 | 8.55 | 34.48 | 1.13 | 1.85 |
| 0.73 | 0.73 | 14.08 | 120.0 | 36.59 | 8.53 | 35.53 | 1.13 | 1.86 |
| 0.74 | 0.74 | 14.44 | 122.9 | 37.64 | 8.51 | 36.58 | 1.12 | 1.86 |
| 0.75 | 0.75 | 14.81 | 125.8 | 38.68 | 8.50 | 37.62 | 1.12 | 1.87 |
| 0.76 | 0.76 | 15.19 | 129.0 | 39.73 | 8.49 | 38.67 | 1.12 | 1.88 |
| 0.77 | 0.77 | 15.58 | 132.3 | 40.78 | 8.49 | 39.72 | 1.12 | 1.89 |
| 0.78 | 0.78 | 15.98 | 135.7 | 41.83 | 8.49 | 40.77 | 1.12 | 1.90 |
| 0.79 | 0.79 | 16.40 | 139.3 | 42.87 | 8.49 | 41.81 | 1.12 | 1.91 |
| 0.80 | 0.80 | 16.82 | 143.0 | 43.92 | 8.50 | 42.86 | 1.12 | 1.92 |
| 0.81 | 0.81 | 17.25 | 146.9 | 44.97 | 8.51 | 43.91 | 1.12 | 1.93 |
| 0.82 | 0.82 | 17.70 | 150.9 | 46.01 | 8.52 | 44.95 | 1.13 | 1.95 |
| 0.83 | 0.83 | 18.15 | 155.1 | 47.06 | 8.54 | 46.00 | 1.13 | 1.96 |

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

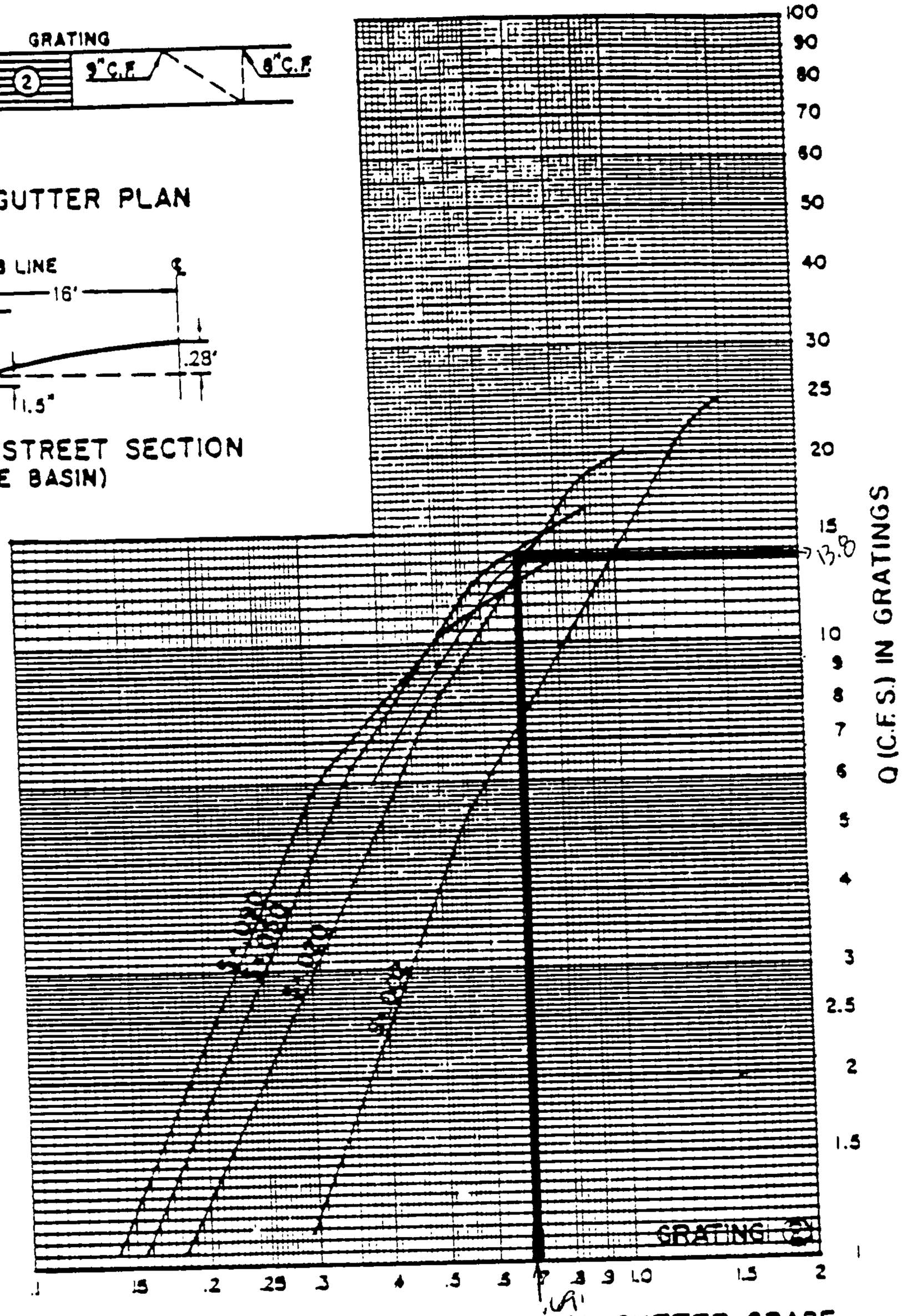
Apodaca




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)



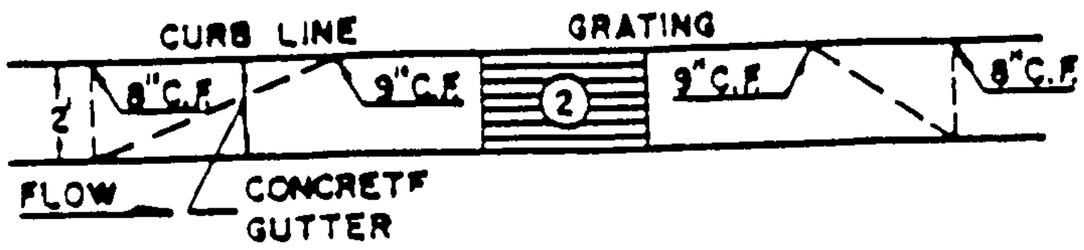

d = 0.
S = 3.4%
Q = 13.8 cfs in each grate

REV. 3/10

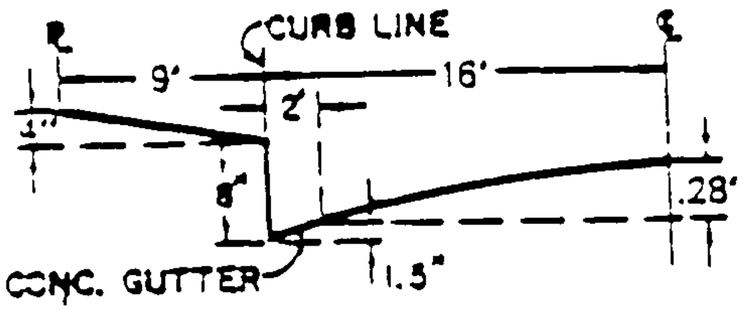
PLATE 223 D-5

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

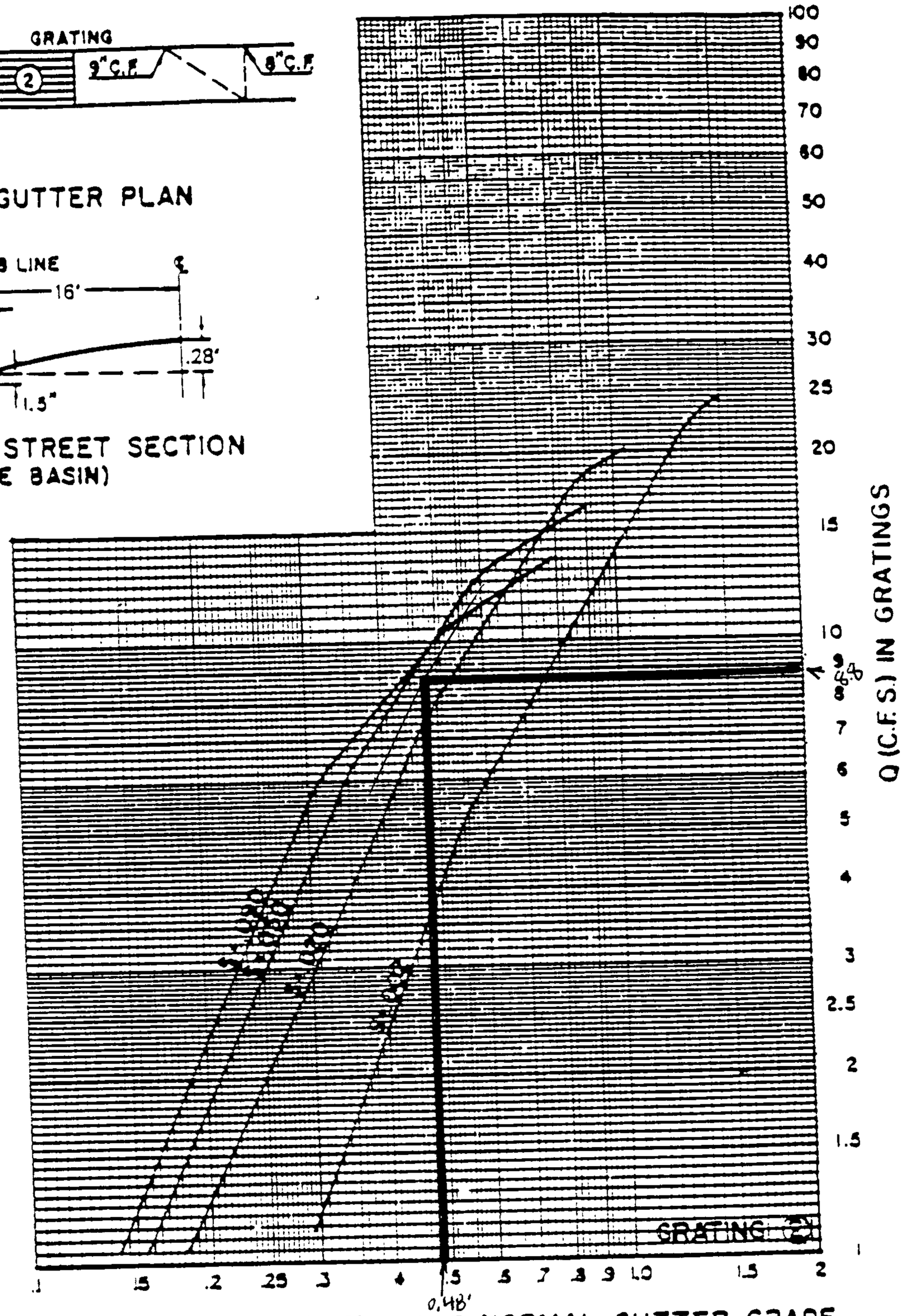
CLEMENTE




GRATING & GUTTER PLAN




TYPICAL HALF STREET SECTION
(ABOVE BASIN)




S = 3.4%

D = 0.48'

Q = 8.8 cfs / grate

REV. 3-75

PLATE 2223 D-5

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

**DELGADO**

MANNING'S N= .017 SLOPE= .0156

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 1.00 | 6 | 11.00 | 0.13 | 11 | 37.63 | 0.67 |
| 2 | 0.00 | 0.83 | 7 | 23.00 | 0.41 | 12 | 46.00 | 0.83 |
| 3 | 8.38 | 0.67 | 8 | 35.00 | 0.13 | 13 | 46.00 | 1.00 |
| 4 | 8.83 | 0.67 | 9 | 37.00 | 0.00 | 14 | 0.00 | 0.00 |
| 5 | 9.00 | 0.00 | 10 | 37.17 | 0.67 | 15 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.31 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.49 | 0.63 | 0.00 | 0.02 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.64 | 0.94 | 0.01 | 0.04 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.78 | 1.25 | 0.01 | 0.05 |
| 0.05 | 0.05 | 0.04 | 0.0 | 1.64 | 0.90 | 1.56 | 0.01 | 0.06 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.02 | 1.88 | 0.02 | 0.08 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.13 | 2.19 | 0.02 | 0.09 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 1.23 | 2.50 | 0.02 | 0.10 |
| 0.09 | 0.09 | 0.13 | 0.2 | 2.96 | 1.34 | 2.81 | 0.03 | 0.12 |
| 0.10 | 0.10 | 0.16 | 0.2 | 3.29 | 1.43 | 3.13 | 0.03 | 0.13 |
| 0.11 | 0.11 | 0.19 | 0.3 | 3.62 | 1.53 | 3.44 | 0.04 | 0.15 |
| 0.12 | 0.12 | 0.23 | 0.4 | 3.95 | 1.62 | 3.75 | 0.04 | 0.16 |
| 0.13 | 0.13 | 0.26 | 0.5 | 4.28 | 1.71 | 4.07 | 0.05 | 0.18 |
| 0.14 | 0.14 | 0.31 | 0.5 | 5.15 | 1.67 | 4.93 | 0.04 | 0.18 |
| 0.15 | 0.15 | 0.36 | 0.6 | 6.03 | 1.68 | 5.79 | 0.04 | 0.19 |
| 0.16 | 0.16 | 0.43 | 0.7 | 6.91 | 1.70 | 6.65 | 0.04 | 0.20 |
| 0.17 | 0.17 | 0.50 | 0.9 | 7.79 | 1.74 | 7.51 | 0.05 | 0.22 |
| 0.18 | 0.18 | 0.58 | 1.0 | 8.67 | 1.79 | 8.38 | 0.05 | 0.23 |
| 0.19 | 0.19 | 0.66 | 1.2 | 9.54 | 1.85 | 9.24 | 0.05 | 0.24 |
| 0.20 | 0.20 | 0.76 | 1.4 | 10.42 | 1.91 | 10.10 | 0.06 | 0.26 |
| 0.21 | 0.21 | 0.87 | 1.7 | 11.30 | 1.97 | 10.96 | 0.06 | 0.27 |
| 0.22 | 0.22 | 0.98 | 2.0 | 12.18 | 2.03 | 11.83 | 0.06 | 0.28 |
| 0.23 | 0.23 | 1.10 | 2.3 | 13.06 | 2.10 | 12.69 | 0.07 | 0.30 |
| 0.24 | 0.24 | 1.23 | 2.7 | 13.93 | 2.17 | 13.55 | 0.07 | 0.31 |
| 0.25 | 0.25 | 1.37 | 3.1 | 14.81 | 2.24 | 14.41 | 0.08 | 0.33 |
| 0.26 | 0.26 | 1.52 | 3.5 | 15.69 | 2.30 | 15.27 | 0.08 | 0.34 |
| 0.27 | 0.27 | 1.68 | 4.0 | 16.57 | 2.37 | 16.14 | 0.09 | 0.36 |
| 0.28 | 0.28 | 1.84 | 4.5 | 17.45 | 2.44 | 17.00 | 0.09 | 0.37 |
| 0.29 | 0.29 | 2.02 | 5.1 | 18.32 | 2.51 | 17.86 | 0.10 | 0.39 |
| 0.30 | 0.30 | 2.20 | 5.7 | 19.20 | 2.58 | 18.72 | 0.10 | 0.40 |
| 0.31 | 0.31 | 2.39 | 6.3 | 20.08 | 2.64 | 19.59 | 0.11 | 0.42 |
| 0.32 | 0.32 | 2.59 | 7.0 | 20.96 | 2.71 | 20.45 | 0.11 | 0.43 |
| 0.33 | 0.33 | 2.80 | 7.8 | 21.84 | 2.78 | 21.31 | 0.12 | 0.45 |
| 0.34 | 0.34 | 3.02 | 8.6 | 22.71 | 2.84 | 22.17 | 0.13 | 0.47 |
| 0.35 | 0.35 | 3.25 | 9.4 | 23.59 | 2.91 | 23.03 | 0.13 | 0.48 |
| 0.36 | 0.36 | 3.48 | 10.4 | 24.47 | 2.97 | 23.90 | 0.14 | 0.50 |
| 0.37 | 0.37 | 3.72 | 11.3 | 25.35 | 3.04 | 24.76 | 0.14 | 0.51 |
| 0.38 | 0.38 | 3.98 | 12.3 | 26.23 | 3.10 | 25.62 | 0.15 | 0.53 |
| 0.39 | 0.39 | 4.24 | 13.4 | 27.10 | 3.17 | 26.48 | 0.16 | 0.55 |
| 0.40 | 0.40 | 4.50 | 14.6 | 27.98 | 3.23 | 27.35 | 0.16 | 0.56 |
| 0.41 | 0.41 | 4.78 | 15.8 | 28.86 | 3.29 | 28.21 | 0.17 | 0.58 |
| 0.42 | 0.42 | 5.06 | 17.3 | 28.88 | 3.42 | 28.21 | 0.18 | 0.60 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.44 | 0.44 | 5.63 | 20.6 | 28.92 | 3.67 | 28.22 | 0.21 | 0.65 |
| 0.45 | 0.45 | 5.91 | 22.4 | 28.94 | 3.79 | 28.23 | 0.22 | 0.67 |
| 0.46 | 0.46 | 6.19 | 24.2 | 28.96 | 3.90 | 28.23 | 0.24 | 0.70 |
| 0.47 | 0.47 | 6.48 | 26.0 | 28.98 | 4.02 | 28.24 | 0.25 | 0.72 |
| 0.48 | 0.48 | 6.76 | 27.9 | 29.01 | 4.13 | 28.24 | 0.27 | 0.75 |
| 0.49 | 0.49 | 7.04 | 29.9 | 29.03 | 4.25 | 28.25 | 0.28 | 0.77 |
| 0.50 | 0.50 | 7.32 | 31.9 | 29.05 | 4.36 | 28.25 | 0.29 | 0.79 |
| 0.51 | 0.51 | 7.61 | 34.0 | 29.07 | 4.47 | 28.26 | 0.31 | 0.82 |
| 0.52 | 0.52 | 7.89 | 36.1 | 29.09 | 4.57 | 28.26 | 0.32 | 0.84 |
| 0.53 | 0.53 | 8.17 | 38.2 | 29.11 | 4.68 | 28.27 | 0.34 | 0.87 |
| 0.54 | 0.54 | 8.45 | 40.5 | 29.13 | 4.79 | 28.27 | 0.36 | 0.90 |
| 0.55 | 0.55 | 8.74 | 42.7 | 29.15 | 4.89 | 28.28 | 0.37 | 0.92 |
| 0.56 | 0.56 | 9.02 | 45.0 | 29.17 | 4.99 | 28.28 | 0.39 | 0.95 |
| 0.57 | 0.57 | 9.30 | 47.4 | 29.19 | 5.09 | 28.29 | 0.40 | 0.97 |
| 0.58 | 0.58 | 9.59 | 49.8 | 29.21 | 5.19 | 28.29 | 0.42 | 1.00 |
| 0.59 | 0.59 | 9.87 | 52.2 | 29.23 | 5.29 | 28.30 | 0.44 | 1.03 |
| 0.60 | 0.60 | 10.15 | 54.7 | 29.25 | 5.39 | 28.30 | 0.45 | 1.05 |
| 0.61 | 0.61 | 10.43 | 57.3 | 29.27 | 5.49 | 28.31 | 0.47 | 1.08 |
| 0.62 | 0.62 | 10.72 | 59.9 | 29.29 | 5.58 | 28.31 | 0.48 | 1.10 |
| 0.63 | 0.63 | 11.00 | 62.5 | 29.31 | 5.68 | 28.32 | 0.50 | 1.13 |
| 0.64 | 0.64 | 11.28 | 65.2 | 29.34 | 5.77 | 28.32 | 0.52 | 1.16 |
| 0.65 | 0.65 | 11.57 | 67.9 | 29.36 | 5.87 | 28.33 | 0.53 | 1.18 |
| 0.66 | 0.66 | 11.85 | 70.6 | 29.38 | 5.96 | 28.33 | 0.55 | 1.21 |
| 0.67 | 0.67 | 12.13 | 73.4 | 29.40 | 6.05 | 28.34 | 0.57 | 1.24 |
| 0.68 | 0.68 | 12.42 | 74.6 | 30.44 | 6.01 | 30.30 | 0.56 | 1.24 |
| 0.69 | 0.69 | 12.72 | 75.9 | 31.49 | 5.97 | 31.34 | 0.55 | 1.24 |
| 0.70 | 0.70 | 13.06 | 76.2 | 33.45 | 5.83 | 32.39 | 0.53 | 1.23 |
| 0.71 | 0.71 | 13.39 | 77.8 | 34.50 | 5.81 | 33.44 | 0.52 | 1.23 |
| 0.72 | 0.72 | 13.73 | 79.5 | 35.54 | 5.79 | 34.48 | 0.52 | 1.24 |
| 0.73 | 0.73 | 14.08 | 81.3 | 36.59 | 5.78 | 35.53 | 0.52 | 1.25 |
| 0.74 | 0.74 | 14.44 | 83.2 | 37.64 | 5.76 | 36.58 | 0.52 | 1.26 |
| 0.75 | 0.75 | 14.81 | 85.2 | 38.68 | 5.76 | 37.62 | 0.51 | 1.26 |
| 0.76 | 0.76 | 15.19 | 87.4 | 39.73 | 5.75 | 38.67 | 0.51 | 1.27 |
| 0.77 | 0.77 | 15.58 | 89.6 | 40.78 | 5.75 | 39.72 | 0.51 | 1.28 |
| 0.78 | 0.78 | 15.98 | 91.9 | 41.82 | 5.75 | 40.76 | 0.51 | 1.29 |
| 0.79 | 0.79 | 16.40 | 94.3 | 42.87 | 5.75 | 41.81 | 0.51 | 1.30 |
| 0.80 | 0.80 | 16.82 | 96.9 | 43.92 | 5.76 | 42.86 | 0.51 | 1.31 |
| 0.81 | 0.81 | 17.25 | 99.5 | 44.96 | 5.77 | 43.90 | 0.52 | 1.33 |
| 0.82 | 0.82 | 17.70 | 102.2 | 46.01 | 5.77 | 44.95 | 0.52 | 1.34 |
| 0.83 | 0.83 | 18.15 | 105.0 | 47.06 | 5.79 | 46.00 | 0.52 | 1.35 |
| 0.84 | 0.84 | 18.61 | 109.5 | 47.08 | 5.88 | 46.00 | 0.54 | 1.38 |
| 0.85 | 0.85 | 19.07 | 114.0 | 47.10 | 5.98 | 46.00 | 0.55 | 1.40 |
| 0.86 | 0.86 | 19.53 | 118.6 | 47.12 | 6.07 | 46.00 | 0.57 | 1.43 |
| 0.87 | 0.87 | 19.99 | 123.2 | 47.14 | 6.16 | 46.00 | 0.59 | 1.46 |
| 0.88 | 0.88 | 20.45 | 128.0 | 47.16 | 6.26 | 46.00 | 0.61 | 1.49 |
| 0.89 | 0.89 | 20.91 | 132.7 | 47.18 | 6.35 | 46.00 | 0.63 | 1.52 |
| 0.90 | 0.90 | 21.37 | 137.6 | 47.20 | 6.44 | 46.00 | 0.64 | 1.54 |
| 0.91 | 0.91 | 21.83 | 142.5 | 47.22 | 6.53 | 46.00 | 0.66 | 1.57 |
| 0.92 | 0.92 | 22.29 | 147.5 | 47.24 | 6.62 | 46.00 | 0.68 | 1.60 |
| 0.93 | 0.93 | 22.75 | 152.6 | 47.26 | 6.71 | 46.00 | 0.70 | 1.63 |
| 0.94 | 0.94 | 23.21 | 157.7 | 47.28 | 6.79 | 46.00 | 0.72 | 1.66 |
| 0.95 | 0.95 | 23.67 | 162.9 | 47.30 | 6.88 | 46.00 | 0.74 | 1.69 |
| 0.96 | 0.96 | 24.13 | 168.2 | 47.32 | 6.97 | 46.00 | 0.75 | 1.71 |
| 0.97 | 0.97 | 24.59 | 173.5 | 47.34 | 7.06 | 46.00 | 0.77 | 1.74 |

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

**cerrillos**

MANNING'S N= .017 SLOPE= .0297

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.83 | 5 | 11.00 | 0.13 | 9 | 37.17 | 0.67 |
| 2 | 8.38 | 0.67 | 6 | 23.00 | 0.41 | 10 | 37.63 | 0.67 |
| 3 | 8.83 | 0.67 | 7 | 35.00 | 0.13 | 11 | 46.00 | 0.83 |
| 4 | 9.00 | 0.00 | 8 | 37.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.01 | 0.01 | 0.00 | 0.0 | 0.33 | 0.43 | 0.31 | 0.00 | 0.01 |
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.68 | 0.63 | 0.01 | 0.03 |
| 0.03 | 0.03 | 0.01 | 0.0 | 0.99 | 0.89 | 0.94 | 0.01 | 0.04 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 1.07 | 1.25 | 0.02 | 0.06 |
| 0.05 | 0.05 | 0.04 | 0.0 | 1.64 | 1.25 | 1.56 | 0.02 | 0.07 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.41 | 1.88 | 0.03 | 0.09 |
| 0.07 | 0.07 | 0.08 | 0.1 | 2.30 | 1.56 | 2.19 | 0.04 | 0.11 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 1.70 | 2.50 | 0.05 | 0.13 |
| 0.09 | 0.09 | 0.13 | 0.2 | 2.96 | 1.84 | 2.81 | 0.05 | 0.14 |
| 0.10 | 0.10 | 0.16 | 0.3 | 3.29 | 1.98 | 3.13 | 0.06 | 0.16 |
| 0.11 | 0.11 | 0.19 | 0.4 | 3.62 | 2.11 | 3.44 | 0.07 | 0.18 |
| 0.12 | 0.12 | 0.23 | 0.5 | 3.95 | 2.23 | 3.75 | 0.08 | 0.20 |
| 0.13 | 0.13 | 0.26 | 0.6 | 4.28 | 2.35 | 4.07 | 0.09 | 0.22 |
| 0.14 | 0.14 | 0.31 | 0.7 | 5.15 | 2.31 | 4.93 | 0.08 | 0.22 |
| 0.15 | 0.15 | 0.36 | 0.8 | 6.03 | 2.31 | 5.79 | 0.08 | 0.23 |
| 0.16 | 0.16 | 0.43 | 1.0 | 6.91 | 2.35 | 6.65 | 0.09 | 0.25 |
| 0.17 | 0.17 | 0.50 | 1.2 | 7.79 | 2.40 | 7.51 | 0.09 | 0.26 |
| 0.18 | 0.18 | 0.58 | 1.4 | 8.67 | 2.47 | 8.38 | 0.09 | 0.27 |
| 0.19 | 0.19 | 0.66 | 1.7 | 9.54 | 2.55 | 9.24 | 0.10 | 0.29 |
| 0.20 | 0.20 | 0.76 | 2.0 | 10.42 | 2.63 | 10.10 | 0.11 | 0.31 |
| 0.21 | 0.21 | 0.87 | 2.4 | 11.30 | 2.72 | 10.96 | 0.11 | 0.32 |
| 0.22 | 0.22 | 0.98 | 2.7 | 12.18 | 2.81 | 11.83 | 0.12 | 0.34 |
| 0.23 | 0.23 | 1.10 | 3.2 | 13.06 | 2.90 | 12.69 | 0.13 | 0.36 |
| 0.24 | 0.24 | 1.23 | 3.7 | 13.93 | 2.99 | 13.55 | 0.14 | 0.38 |
| 0.25 | 0.25 | 1.37 | 4.2 | 14.81 | 3.09 | 14.41 | 0.15 | 0.40 |
| 0.26 | 0.26 | 1.52 | 4.8 | 15.69 | 3.18 | 15.27 | 0.16 | 0.42 |
| 0.27 | 0.27 | 1.68 | 5.5 | 16.57 | 3.27 | 16.14 | 0.17 | 0.44 |
| 0.28 | 0.28 | 1.84 | 6.2 | 17.45 | 3.37 | 17.00 | 0.18 | 0.46 |
| 0.29 | 0.29 | 2.02 | 7.0 | 18.32 | 3.46 | 17.86 | 0.19 | 0.48 |
| 0.30 | 0.30 | 2.20 | 7.8 | 19.20 | 3.55 | 18.72 | 0.20 | 0.50 |
| 0.31 | 0.31 | 2.39 | 8.7 | 20.08 | 3.65 | 19.59 | 0.21 | 0.52 |
| 0.32 | 0.32 | 2.59 | 9.7 | 20.96 | 3.74 | 20.45 | 0.22 | 0.54 |
| 0.33 | 0.33 | 2.80 | 10.7 | 21.84 | 3.83 | 21.31 | 0.23 | 0.56 |
| 0.34 | 0.34 | 3.02 | 11.8 | 22.71 | 3.92 | 22.17 | 0.24 | 0.58 |
| 0.35 | 0.35 | 3.25 | 13.0 | 23.59 | 4.01 | 23.03 | 0.25 | 0.60 |
| 0.36 | 0.36 | 3.48 | 14.3 | 24.47 | 4.10 | 23.90 | 0.26 | 0.62 |
| 0.37 | 0.37 | 3.72 | 15.6 | 25.35 | 4.19 | 24.76 | 0.27 | 0.64 |
| 0.38 | 0.38 | 3.98 | 17.0 | 26.23 | 4.28 | 25.62 | 0.28 | 0.66 |
| 0.39 | 0.39 | 4.24 | 18.5 | 27.10 | 4.37 | 26.48 | 0.30 | 0.69 |
| 0.40 | 0.40 | 4.50 | 20.1 | 27.98 | 4.46 | 27.35 | 0.31 | 0.71 |
| 0.41 | 0.41 | 4.78 | 21.7 | 28.86 | 4.54 | 28.21 | 0.32 | 0.73 |
| 0.42 | 0.42 | 5.06 | 23.9 | 28.88 | 4.72 | 28.21 | 0.35 | 0.77 |
| 0.43 | 0.43 | 5.35 | 26.2 | 28.90 | 4.89 | 28.22 | 0.37 | 0.80 |
| 0.45 | 0.45 | 5.91 | 30.9 | 28.94 | 5.22 | 28.23 | 0.42 | 0.87 |
| 0.46 | 0.46 | 6.19 | 33.4 | 28.96 | 5.39 | 28.23 | 0.45 | 0.91 |
| 0.47 | 0.47 | 6.48 | 35.9 | 28.98 | 5.55 | 28.24 | 0.48 | 0.95 |
| 0.48 | 0.48 | 6.76 | 38.6 | 29.01 | 5.70 | 28.24 | 0.51 | 0.99 |
| 0.49 | 0.49 | 7.04 | 41.3 | 29.03 | 5.86 | 28.25 | 0.53 | 1.02 |
| 0.50 | 0.50 | 7.32 | 44.0 | 29.05 | 6.01 | 28.25 | 0.56 | 1.06 |
| 0.51 | 0.51 | 7.61 | 46.9 | 29.07 | 6.16 | 28.26 | 0.59 | 1.10 |
| 0.52 | 0.52 | 7.89 | 49.8 | 29.09 | 6.31 | 28.26 | 0.62 | 1.14 |
| 0.53 | 0.53 | 8.17 | 52.8 | 29.11 | 6.46 | 28.27 | 0.65 | 1.18 |
| 0.54 | 0.54 | 8.45 | 55.8 | 29.13 | 6.60 | 28.27 | 0.68 | 1.22 |
| 0.55 | 0.55 | 8.74 | 58.9 | 29.15 | 6.75 | 28.28 | 0.71 | 1.26 |
| 0.56 | 0.56 | 9.02 | 62.1 | 29.17 | 6.89 | 28.28 | 0.74 | 1.30 |
| 0.57 | 0.57 | 9.30 | 65.4 | 29.19 | 7.03 | 28.29 | 0.77 | 1.34 |
| 0.58 | 0.58 | 9.59 | 68.7 | 29.21 | 7.17 | 28.29 | 0.80 | 1.38 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.59 | 0.59 | 9.87 | 72.1 | 29.23 | 7.30 | 28.30 | 0.83 | 1.42 |
| 0.60 | 0.60 | 10.15 | 75.5 | 29.25 | 7.44 | 28.30 | 0.86 | 1.46 |
| 0.61 | 0.61 | 10.43 | 79.0 | 29.27 | 7.57 | 28.31 | 0.89 | 1.50 |
| 0.62 | 0.62 | 10.72 | 82.6 | 29.29 | 7.71 | 28.31 | 0.92 | 1.54 |
| 0.63 | 0.63 | 11.00 | 86.2 | 29.31 | 7.84 | 28.32 | 0.95 | 1.58 |
| 0.64 | 0.64 | 11.28 | 89.9 | 29.34 | 7.97 | 28.32 | 0.99 | 1.63 |
| 0.65 | 0.65 | 11.57 | 93.7 | 29.36 | 8.10 | 28.33 | 1.02 | 1.67 |
| 0.66 | 0.66 | 11.85 | 97.5 | 29.38 | 8.22 | 28.33 | 1.05 | 1.71 |
| 0.67 | 0.67 | 12.13 | 101.3 | 29.40 | 8.35 | 28.34 | 1.08 | 1.75 |
| 0.68 | 0.68 | 12.42 | 102.9 | 30.44 | 8.29 | 30.30 | 1.07 | 1.75 |
| 0.69 | 0.69 | 12.72 | 104.7 | 31.49 | 8.23 | 31.34 | 1.05 | 1.74 |
| 0.70 | 0.70 | 13.06 | 105.1 | 33.45 | 8.05 | 32.39 | 1.01 | 1.71 |
| 0.71 | 0.71 | 13.39 | 107.3 | 34.50 | 8.02 | 33.44 | 1.00 | 1.71 |
| 0.72 | 0.72 | 13.73 | 109.7 | 35.54 | 7.99 | 34.48 | 0.99 | 1.71 |
| 0.73 | 0.73 | 14.08 | 112.2 | 36.59 | 7.97 | 35.53 | 0.99 | 1.72 |
| 0.74 | 0.74 | 14.44 | 114.8 | 37.64 | 7.95 | 36.58 | 0.98 | 1.72 |
| 0.75 | 0.75 | 14.81 | 117.6 | 38.68 | 7.94 | 37.62 | 0.98 | 1.73 |
| 0.76 | 0.76 | 15.19 | 120.5 | 39.73 | 7.94 | 38.67 | 0.98 | 1.74 |
| 0.77 | 0.77 | 15.58 | 123.6 | 40.78 | 7.93 | 39.72 | 0.98 | 1.75 |
| 0.78 | 0.78 | 15.98 | 126.8 | 41.83 | 7.93 | 40.77 | 0.98 | 1.76 |
| 0.79 | 0.79 | 16.40 | 130.2 | 42.87 | 7.94 | 41.81 | 0.98 | 1.77 |
| 0.80 | 0.80 | 16.82 | 133.6 | 43.92 | 7.94 | 42.86 | 0.98 | 1.78 |
| 0.81 | 0.81 | 17.25 | 137.3 | 44.97 | 7.95 | 43.91 | 0.98 | 1.79 |
| 0.82 | 0.82 | 17.70 | 141.0 | 46.01 | 7.97 | 44.95 | 0.99 | 1.81 |
| 0.83 | 0.83 | 18.15 | 144.9 | 47.06 | 7.98 | 46.00 | 0.99 | 1.82 |

TIMBERON UNIT 5

# APODACA/DELGADO INTERSECTION ANALYSIS

DETERMINE THE DEPTH OF FLOW AND THE POTENTIAL FLOODING ON THE ADJACENT CARLOS RAY ELEMENTRY SCHOOL SITE. CURRENTLY APPROXIMATELY 158 cfs OF STORM WATER FLOWS DOWN APODACA ST. AND REACHES DELGADO RD. WHERE THE FLOW IS FORCED TO TURN LEFT 90° AT THE INTERSECTION. UNDER THE PROPOSED PLAN THE FLOW RATE IS REDUCED 30% TO 110 CFS.

THIS APPROXIMATE ANALYSIS ASSUMES A VELOCITY OF 0 IN THE DIRECTION OF DOWNSTREAM DELGADO. A BROAD-CRESTED WEIR ANALYSIS IS USED TO DETERMINE THE FLOW DEPTH NECESSARY TO ACCELERATE THE FLOW IN THE DOWNSTREAM DIRECTION. THE WEIR ANALYSIS IS TAKEN AT THE END OF THE RETURN, A CONSERVATIVE ASSUMPTION.

THE STREET GEOMETRY CONSISTS OF A ~~60'~~ 40' WIDE, FACE TO FACE, SECTION (DELGADO) WITH 0.5' HIGH CURB AND AN ADDITIONAL 0.2' DEPTH TO THE BACKSIDE EDGE OF SIDEWALK.

INITIAL ANALYSIS SHOWS THAT SOME FLOW OVERTOPS THE EXISTING CURB AND SIDEWALK AND CAUSES FLOODING ON THE SCHOOL SITE. IN ORDER TO DETERMINE THE EXTENT OF FLOODING A SECOND WEIR ANALYSIS IS PROVIDED. THE COMBINED FLOW RATE DOWN DELGADO AND THE FLOW ACROSS THE SCHOOL IS EQUAL TO 110 CFS.

Bohannan ▲ Huston

PROJECT NAME Timberon Unit 5 SHEET 1 OF 4
PROJECT NO. 99470 BY [illegible] DATE 5/25/00
SUBJECT Intersection Analysis CH'D DATE

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

## WEIR 1 DELGADO

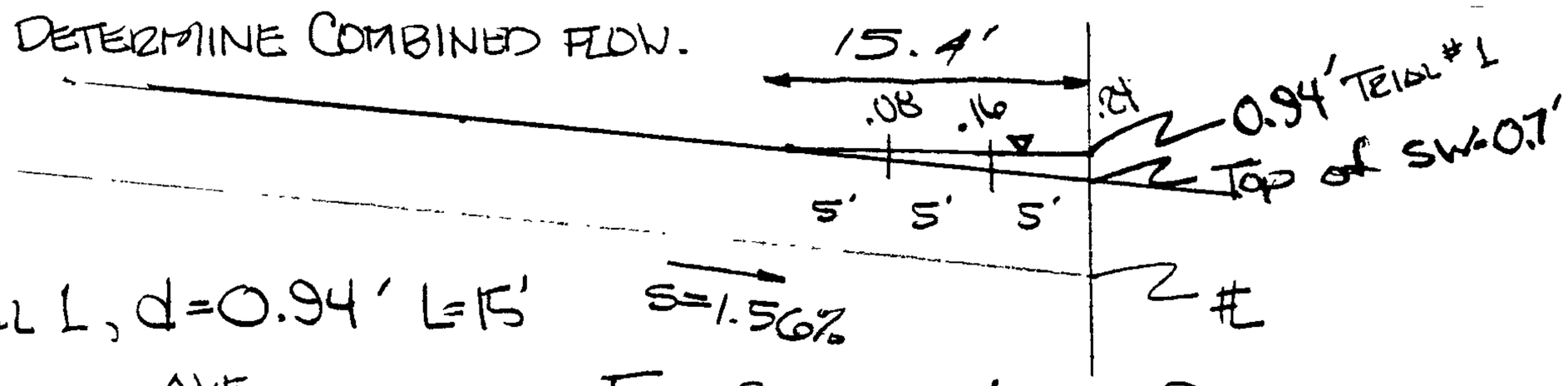
$$Q = CLH^{3/2} = 3.0 \times 40 \times H^{3/2} = 110\ cfs$$

$$H = \left(\frac{110\ cfs}{3 \times 40}\right)^{2/3} = \underline{0.94'}$$

0.94' > 0.7 ∴ WATER OVER TOPS CURB/SIDEWALK
0.90 Q = 102.5 cfs

## WEIR 2 SCHOOL SITE

THIS WEIR IS TRIANGULAR IN SHAPE AND WILL BE MODELED AS A RECTANGULAR BROADCRESTED WEIR. DIVIDED INTO 3 EQUAL SECTIONS. USE TRIAL AND ERROR TO DETERMINE COMBINED FLOW.

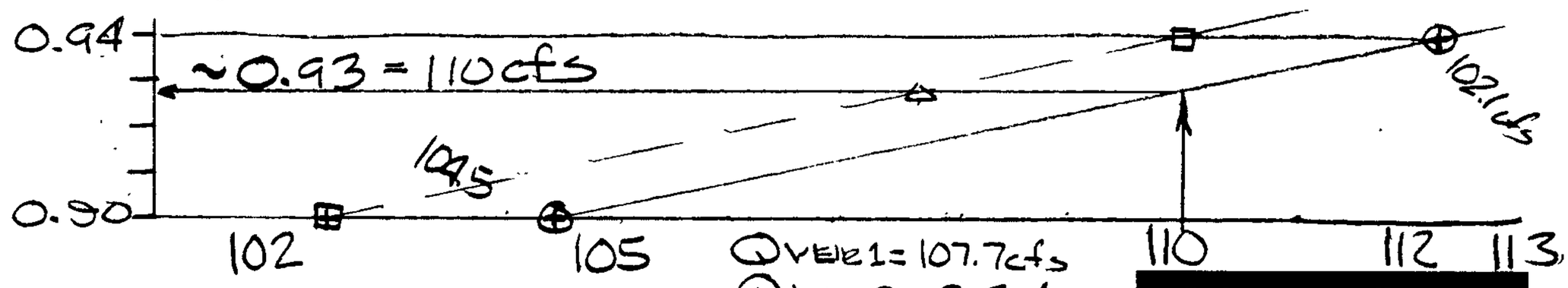



TRIAL 1, d=0.94' L=15'

| SECTION | AVE. DEPTH | Q |
|---|---|---|
| 1 | 0.20 | 1.3 |
| 2 | 0.12 | 0.6 |
| 3 | 0.04 | 0.1 |
| | | 2.1 cfs |

| TRIAL 2 d | AVE d | Q |
|---|---|---|
| 0.20' | 0.17 | 0.9 cfs |
| 0.133 | 0.10 | 0.4 cfs |
| 0.067 | 0.03 | 0.7 cfs |
| 0 | | 2.0 cfs |

TRIAL 2, d=0.90' L=12.8' WEIR 1=102.5 WEIR 2=2.0




Q WEIR 1 = 107.7 cfs
Q WEIR 2 = 2.3 cfs
110.0 cfs

Bohannan ▲ Huston

PROJECT NAME _____ SHEET 2 OF 4
PROJECT NO. _____ BY RLB DATE 5/25/00
SUBJECT _____ CH'D _____ DATE _____

ENGINEERS PLANNERS ENVIRONMENTALISTS SURVEYORS SOFTWARE DEVELOPERS

B-50

BASED ON THIS APPROXIMATE AND CONSERVATIVE ANALYSIS APPROXIMATELY 2.3 CFS LEAVES THE STREET AND CROSSES THE SCHOOL SITE. A MORE RIGOROUS ANALYSIS WOULD MOST LIKELY SHOW LESS FLOW. 2.1 CFS IS FAIRLY MINOR AND THE ON-SITE GRADING AND DRAINAGE IMPROVEMENTS SHOULD BE ADEQUATE.

IN CONCLUSION, THE PROPOSED DEVELOPMENT REDUCES RUNOFF TO THIS LOCTION BY 30% TO ACCEPTABLE LEVELS. CONSTRUCTION OF ADDITIONAL STORM PROTECTION FACILITIES BY TIMARRON UNIT 5 FOR THE SCHOOL SITE IS UNWARRANTED.

MULTI-PURPOSE FACILITY

# CARLOS REY ELEMENTARY SCHOOL

1215 CERRILLOS RD, SW
ALBUQUERQUE
NEW MEXICO

SHEET TITLE: GRADING PLAN

DATE: 12/19/95

SHEET NO: C5

SHT 4/4

B-52/-2

JEFFREY G MORTENSEN
NEW MEXICO
8547
REGISTERED PROFESSIONAL ENGINEER

12-21-95

Q = 107.7 cfs

WEIR 1

WEIR 2

110 cfs

2.3 cfs

MATCH EXISTING GRADE

TSW CULVERT @ 29.42

CONSTRUCT 6" ROOF DRAIN CULVERT BENEATH EXISTING ROOF DRAIN OUTLET PER TYPICAL SECTION

EXISTING BUILDING CLASSROOMS

BASIN B

CONSTRUCT 12" POOF DRAIN

EXISTING ROOF DRAIN

DELGADO DRIVE S.W.

CONCRETE DRIVEPAD

CONCRETE WHEEL CHAIR RAMP

MEDIAN TYPE CURB & GUTTER

CONSTRUCT 2'-0" SIDEWALK CULVERT PER TYPICAL SECTION SHEET C6

CONCRETE STEPS (SEE ARCHITECTURAL PLAN)

BASIN A

CONSTRUCT 2'-0" TRICKLE CHANNEL PER TYPICAL SECTION, SHEET C6

2'-0" WIDE 1 1/4" INV

3'-2" WIDE 4" INV

CONSTRUCT 1-SINGLE 'D' INLET PER TYPICAL SECTION, SHEET C7 GRATE @ 25.30 .51 INV @ 24.00 .16

CONNECT 3" CAST IRON ROOF DRAIN PIPE TO STORM DRAIN PIPE

INSTALL 12" PVC SDR-35 S=0.0150

NEW MULTI-PURPOSE BUILDING FF=5226.75 .68

ROOF DRAIN

ROOF DRAINAGE

NEW CONCRETE

EXISTING PORTABLE

EXISTING PORTABLE

INSTALL 1-12" 45° ELL INV @ 23.10

ELECTRIC DROP POLE

BASIN B1

B-52/-2

# APPENDIX C

# INFRASTRUCTURE LIST

DRB Case No
DRC Project No.
Prelim. Plat Approved:
Prelim. Plat Expires:

Date Submitted: 5-25-00

Figure 12

INFRASTRUCTURE LIST

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

## Timarron West Subdivision
## Units 5

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed for the above development. This listing is not necessarily a complete listing. During the SIA process and/or in the review of the construction drawings, if the DRB Chair determines those appurtenant items and/or unforeseen items have not been included in the infrastructure listing, the DRC Chair may include those items in the listing and related financial guarantee. Likewise, if the DRC Chair determines that appurtenant or non-essential items can be deleted from the listing, those items may be deleted as well as the related portions of the financial guarantees. All such revisions require approval by the DRC Chair, the User Department and agent/owner. If such approvals are obtained, these revisions to the listing will be incorporated administratively. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility will be required as a condition of project acceptance and close out by the City.

| Size | Type Improvement | Location | From | To |
|---|---|---|---|---|
| | **STREET** | | | |
| | 28' F-F RESIDENTIAL PVMT W/PCC C&G<br>*4' SW NORTH SIDE ONLY | PELICAN CT. | OSPREY DR. | STUB TERMINUS |
| | 28' F-F RESIDENTIAL PVMT W/PCC C&G<br>*4' SW NORTH SIDE ONLY | HORNBILL CT. | OSPREY DR. | CUL-DE-SAC TERMINUS |
| | 28' F-F RESIDENTIAL PVMT W/PCC C&G<br>*4' SW NORTH SIDE ONLY | IBIS RD. | OSPREY DR. | WEST BOUNDARY |
| | 28' F-F RESIDENTIAL PVMT W/PCC C&G<br>*4' SW NORTH SIDE ONLY | EGRET CT. | OSPREY DR. | CUL-DE-SAC TERMINUS |
| | 28' F-F RESIDENTIAL PVMT W/PCC C&G<br>*4' SW NORTH SIDE ONLY | WHIMBREL CT. | OSPREY DR. | STUB TERMINUS |
| | 28' F-F RESIDENTIAL PVMT W/PCC C&G<br>*4' SW NORTH SIDE ONLY | GOLDFINCH CT. | OSPREY DR. | CUL-DE-SAC TERMINUS |
| | 28' F-F RESIDENTIAL PVMT W/PCC C&G<br>*4' SW NORTH SIDE ONLY | KING RAIL RD. | OSPREY DR. | WEST BOUNDARY |
| | 56' F-F ARTERIAL PVMT W/PCC NORTH C&G<br>8' MEANDERING TRAIL WEST SIDE ONLY | OSPREY DR. | NORTH BOUNDARY | PELICAN CT. |
| | 32' F-F ARTERIAL PVMT W/PCC NORTH C&G<br>8' MEANDERING TRAIL WEST SIDE ONLY | OSPREY DR. | PELICAN CT. | KING RAIL RD. |
| | 25' F-F ARTERIAL PVMT W/PCC NORTH C&G<br>8' MEANDERING TRAIL WEST SIDE ONLY | OSPREY DR. | KING RAIL RD. | SOUTH BOUNDARY |

*SIDEWALK TO BE DEFERRED
STREET LIGHTS AS REQUIRED BY CITY OF ALBUQUERQUE DPM

## SANITARY SEWER

| | | | | |
|---|---|---|---|---|
| 8" DIA | SEWERLINE INCL MH'S & SERVICE LINES | PELICAN CT. | EX. SAS EASEMENT | STUB TERMINUS |
| 8" DIA | SEWERLINE INCL MH'S & SERVICE LINES | HORNBILL CT. | OSPREY DR | CUL-DE-SAC TERMINUS |
| 8" DIA | SEWERLINE INCL MH'S & SERVICE LINES | IBIS RD. | OSPREY DR | WEST BOUNDARY |
| 8" DIA | SEWERLINE INCL MH'S & SERVICE LINES | EGRET CT. | OSPREY DR | CUL-DE-SAC TERMINUS |
| 8" DIA | SEWERLINE INCL MH'S & SERVICE LINES | WHIMBREL CT. | EX. SAS EASEMENT | STUB TERMINUS |
| 8" DIA | SEWERLINE INCL MH'S & SERVICE LINES | GOLDFINCH CT. | OSPREY DR | CUL-DE-SAC TERMINUS |
| 8" DIA | SEWERLINE INCL MH'S & SERVICE LINES | KING RAIL RD. | OSPREY DR | WEST BOUNDARY |

## WATER

| | | | | |
|---|---|---|---|---|
| 10" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | PELICAN CT. | OSPREY DR. | WATERLINE EASEMENT |
| 6" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | HORNBILL CT. | OSPREY DR | WATERLINE EASEMENT |
| 6" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | IBIS RD. | OSPREY DR | WATERLINE EASEMENT |
| 6" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | EGRET CT. | OSPREY DR | WATERLINE EASEMENT |
| 6" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | WHIMBREL CT. | OSPREY DR | WATERLINE EASEMENT |
| 6" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | GOLDFINCH CT. | OSPREY DR | WATERLINE EASEMENT |
| 10" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | KING RAIL RD. | OSPREY DR | WATERLINE EASEMENT |
| 10" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | OSPREY DR. | PELICAN CT. | CAVETT |
| 6" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | OSPREY DR. | CAVETT | KING RAIL RD. |
| 10" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | OSPREY DR. | KING RAIL RD. | BENEVIDES |
| 10" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | WATER LINE EASEMENT | EX. 10" WL 175' NORTH OF HORNBILL CT. | KING RAIL RD. |
| 16" DIA | WATERLINE INCL FIRE HYDRANTS AND WATER VALVES | PARALLEL EX. 10" WATERLINE | WATER LINE EASEMENT | FRANSICAN RESERVIOR |

WATERLINES INCLUDE ALL APPURTENACES, HYDRANT, VALVES, FITTING, ETC. AS REQUIRED

C-2

## DRAINAGE

| | | | |
|---|---|---|---|
| 18-36" RCP STORM DRAIN SYSTEM INCL MH'S AND DROP INLETS | STORM DRAIN EASEMENT | IBIS RD. | DETENTION POND |
| 18-36" RCP STORM DRAIN SYSTEM INCL. MH'S AND DROP INLETS | OSPREY DR. | DETENTION POND TRACT 3 LANDS OF GREVEY/LIBERMAN | EL MORO |
| PERMANENT DETENTION PONDS W/ EASEMENTS, AGREEMENTS & COVENANTS | TRACT 3 LANDS OF GREVEY/LIBERMAN | | |

**GRADING/DRAINAGE CERTIFICATION REQUIRED FOR RELEASE OF FINANCIAL GUARANTEES**

Prepared by: Elizabeth Amat
Firm: Bohannan Huston

---

## Development Review Board Member Approval

New Mexico Utilities Date

Utility Development Date

Transportation Development Date

Parks and Recreation Date

City Engineer Date

AMAFCA Date

DRB Chair Date

## DRC REVISIONS

| REVISIONS | DATE | DRC CHAIR | USER DEPT | AGENT/OWNER |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |

# PLATES

PLATE 1 - PRELIMINARY PLAT

PLATE 2 - GRADING PLAN

PLATE 3 - PROPOSED CONDITIONS BASIN MAP

PLATE 4 - ATRISCO VILLAGE BASIN MAP

# PLATE 1

# PRELIMINARY PLAT

# PLATE 2

# GRADING PLAN

# DRAINAGE INFORMATION SHEET

APPLICANT'S NAME: Elizabeth Smith ZONE ATLAS/DRNG. FILE #: M-8/D-5B

DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION: Timarron West Unit 5

CITY ADDRESS:

ENGINEERING FIRM: Bohannan Huston CONTACT: Rick Beltrano

ADDRESS: 7500 Jefferson NE Building B PHONE: 823-1000

OWNER: Centex CONTACT: Norm Gregory

ADDRESS: PHONE:

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- ___ YES
- X NO
- ___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAT APPROVAL
- X PRELIMINARY PLAT APPROVAL
- X S. DEV. PLAN FOR SUB'D APPROVAL
- X 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
- ___ SUBDIVISION CERTIFICATION
- ___ OTHER _____(SPECIFY)

DATE SUBMITTED: 6-28-00

BY: Bohannan Huston
Elizabeth Smith

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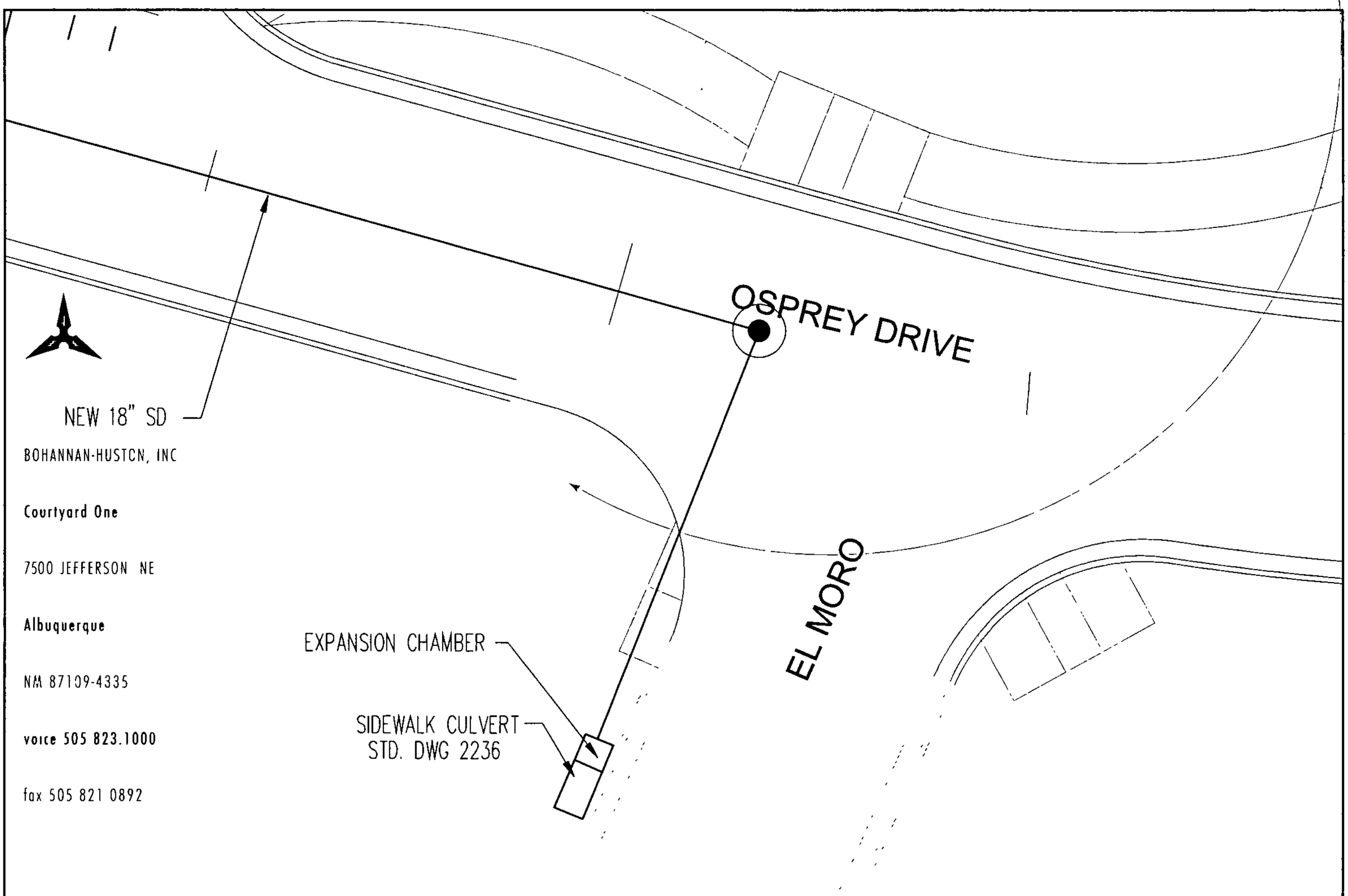
Revised 02/98




BOHANNAN-HUSTON, INC

Courtyard One

7500 JEFFERSON NE

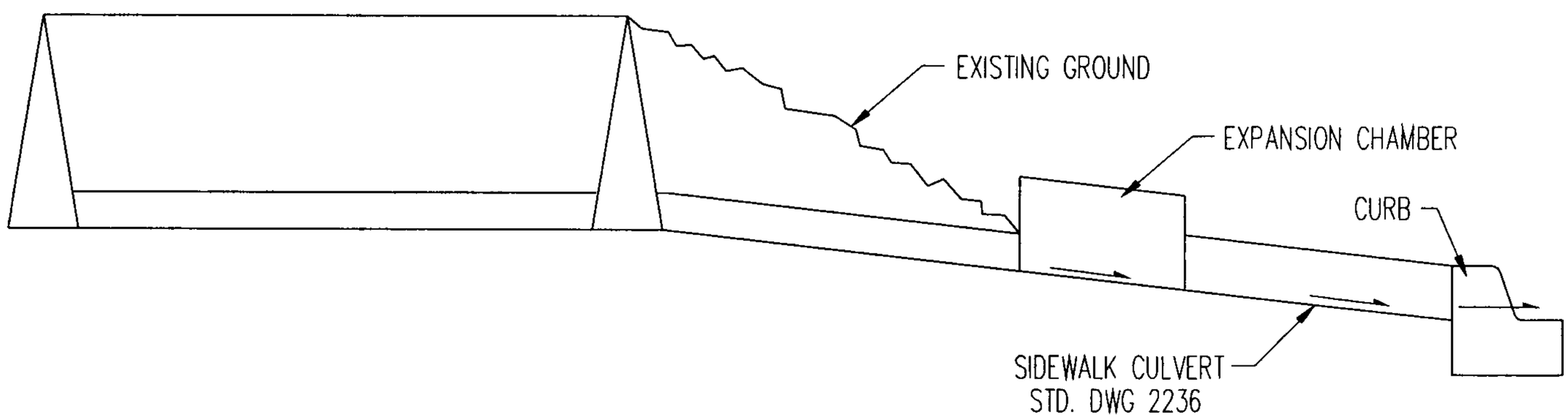
Albuquerque

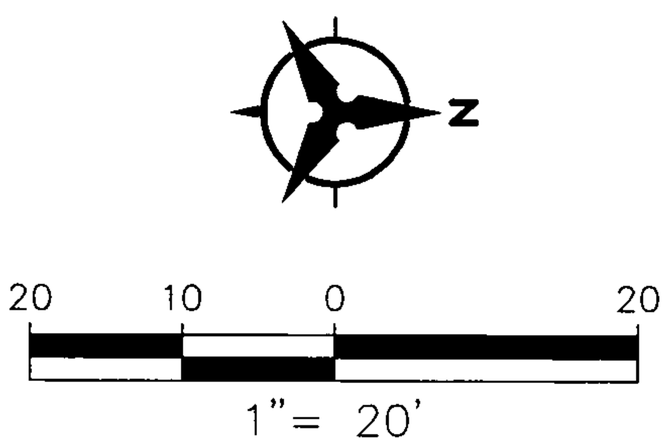
NM 87109-4335

voice 505 823.1000

fax 505 821 0892

PROFILE
N.T.S

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# STORM DRAIN CONNECTION TO EL MORO LANE DETAIL

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

D:\99470\CDP\GENERAL\UNIT5-EXHIBITS\8-5X17.DWG

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =06/23/2000
INPUT FILE = u5.txt USER NO.= BOHN_HNM.STE



| 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 TIMARRON WEST UNIT 5 SITE FLOW | | | | | | | | | | |
| START | | | | | | | | | | TIME= .00 |
| RAINFALL TYPE= 1 | | | | | | | | | | RAIN6= 2.200 |
| *S GOES INTO SURGE POND IN UNIT 4 | | | | | | | | | | |
| COMPUTE NM HYD | U4 | - | 1 | .01160 | 23.47 | .815 | 1.31698 | 1.500 | 3.161 | PER IMP= 50.00 |
| COMPUTE NM HYD | 2.00 | - | 2 | .00340 | 6.89 | .239 | 1.31698 | 1.500 | 3.165 | PER IMP= 50.00 |
| COMPUTE NM HYD | 3.00 | - | 3 | .00570 | 11.54 | .400 | 1.31698 | 1.500 | 3.163 | PER IMP= 50.00 |
| COMPUTE NM HYD | 4.00 | - | 4 | .00360 | 7.29 | .253 | 1.31698 | 1.500 | 3.165 | PER IMP= 50.00 |
| COMPUTE NM HYD | 5.00 | - | 5 | .00370 | 7.49 | .260 | 1.31698 | 1.500 | 3.165 | PER IMP= 50.00 |
| *S BYPASS PONDS INTO EL MORO | | | | | | | | | | |
| COMPUTE NM HYD | 6.00 | - | 6 | .00680 | 13.76 | .478 | 1.31698 | 1.500 | 3.162 | PER IMP= 50.00 |
| COMPUTE NM HYD | 7.00 | - | 7 | .00390 | 7.90 | .274 | 1.31698 | 1.500 | 3.164 | PER IMP= 50.00 |
| COMPUTE NM HYD | 8.00 | - | 8 | .00360 | 7.29 | .253 | 1.31698 | 1.500 | 3.165 | PER IMP= 50.00 |
| *S ADD BASINS INTO STORM DRAIN TO SOUTH POND | | | | | | | | | | |
| ADD HYD | 24.00 | 2& 4 | 20 | .00700 | 14.18 | .492 | 1.31690 | 1.500 | 3.165 | |
| ADD HYD | 245.00 | 20& 5 | 21 | .01070 | 21.68 | .752 | 1.31690 | 1.500 | 3.165 | |
| ADD HYD | 2457.00 | 21& 7 | 23 | .01460 | 29.57 | 1.025 | 1.31690 | 1.500 | 3.165 | |
| ADD HYD | U5 | 23& 8 | 25 | .01820 | 36.87 | 1.278 | 1.31690 | 1.500 | 3.165 | |
| *S OFFSITE FLOW INTO SOUTH POND | | | | | | | | | | |
| COMPUTE NM HYD | WS | - | 29 | .02700 | 28.00 | .780 | .54156 | 1.500 | 1.620 | PER IMP= .00 |
| COMPUTE NM HYD | BEN | - | 28 | .00950 | 9.85 | .274 | .54156 | 1.500 | 1.621 | PER IMP= .00 |
| *S******ROUTE THROUGH SOUTH-WESTERN DETENTION/CHANNEL POND | | | | | | | | | | |
| ROUTE RESERVOIR | WPOND | 29 | 10 | .02700 | 3.60 | .780 | .54156 | 1.900 | .208 | AC-FT= .563 |
| *S ADD IN UNIT 5 FLOW TO POND | | | | | | | | | | |
| ADD HYD | WS5S | 10&25 | 30 | .04520 | 38.09 | 2.058 | .85369 | 1.500 | 1.317 | |
| *S ADD IN BENAVIDES OFFSITE FLOW TO POND | | | | | | | | | | |
| ADD HYD | S | 30&28 | 31 | .05470 | 47.95 | 2.332 | .79948 | 1.500 | 1.370 | |
| *S******ROUTE THROUGH SOUTHERN DETENTION POND | | | | | | | | | | |
| ROUTE RESERVOIR | SPOND | 31 | 12 | .05470 | 2.07 | 2.332 | .79927 | 3.550 | .059 | AC-FT= 1.654 |
| ADD HYD | WS | 12& 6 | 27 | .06150 | 15.06 | 2.809 | .85651 | 1.500 | .383 | |
| ADD HYD | ELMORO | 27& 3 | 29 | .06720 | 26.60 | 3.210 | .89556 | 1.500 | .619 | |
| *S***** ATRISCO VILLAGE ANALYSIS ********** | | | | | | | | | | |
| COMPUTE NM HYD | AT1 | - | 1 | .01786 | 36.12 | 1.254 | 1.31698 | 1.500 | 3.160 | PER IMP= 50.00 |
| COMPUTE NM HYD | AT2 | - | 2 | .01290 | 26.09 | .906 | 1.31698 | 1.500 | 3.161 | PER IMP= 50.00 |
| COMPUTE NM HYD | AT3 | - | 3 | .01194 | 24.15 | .839 | 1.31698 | 1.500 | 3.161 | PER IMP= 50.00 |
| COMPUTE NM HYD | AT4 | - | 4 | .01320 | 26.70 | .927 | 1.31698 | 1.500 | 3.161 | PER IMP= 50.00 |
| COMPUTE NM HYD | AT5 | - | 5 | .02100 | 42.47 | 1.475 | 1.31698 | 1.500 | 3.160 | PER IMP= 50.00 |
| ADD HYD | AT1 | 29& 1 | 30 | .08506 | 62.72 | 4.464 | .98404 | 1.500 | 1.152 | |
| ADD HYD | AT2 | 30& 2 | 31 | .09796 | 88.82 | 5.370 | 1.02788 | 1.500 | 1.417 | |
| ADD HYD | AT3 | 31& 3 | 32 | .10990 | 112.97 | 6.209 | 1.05929 | 1.500 | 1.606 | |
| DIVIDE HYD | PIPE | 32 | 33 | .07964 | 27.60 | 4.499 | 1.05929 | 1.350 | .542 | |
| | ST | AND | 34 | .03026 | 85.37 | 1.710 | 1.05929 | 1.500 | 4.408 | |
| DIVIDE HYD | PIPE2 | 5 | 40 | .01573 | 17.60 | 1.105 | 1.31697 | 1.400 | 1.748 | |
| | ST2 | AND | 41 | .00527 | 24.87 | .370 | 1.31697 | 1.500 | 7.378 | |
| ADD HYD | AT5 | 34&41 | 35 | .03553 | 110.24 | 2.080 | 1.09749 | 1.500 | 4.848 | |

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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ADD HYD FINISH | AT4 | 4&35 | 36 | .04873 | 136.94 | 3.007 | 1.15694 | 1.500 | 4.391 |

CHANNEL NORTH-WEST OF UNIT 5

| Elevation | Area | Avg Area | increment Vol | Cum Vol | Cum Vol | H | Q | d (ft)= | 1.5 |
|---|---|---|---|---|---|---|---|---|---|
| | ft^2 | ft^2 | ft^3 | ft^3 | ac-ft | ft | cfs | | |
| 7 | 10334 | | 0 | 0 | 0 | 0 | 0 | | |
| 7.67 | 12856 | 11595 | 7768.65 | 7768.65 | 0.178343 | 0.67 | 6.96 | | |

CHANNEL SOUTH-WEST OF UNIT 5

| Elevation | Area | Avg Area | increment Vol | Cum Vol | Cum Vol | H | Q | d (ft)= | 1 |
|---|---|---|---|---|---|---|---|---|---|
| | ft^2 | ft^2 | ft^3 | ft^3 | ac-ft | ft | cfs | | |
| 6 | 17187 | | 0 | 0 | 0 | 0 | 0 | | |
| 7 | 34304 | 25745.5 | 25745.5 | 25745.5 | 0.591033 | 1 | 3.78 | | |
| 7.67 | 40016 | 37160 | 24897.2 | 50642.7 | 1.162592 | 1.67 | 4.89 | | |

# PLATE 3

# PROPOSED CONDITIONS BASIN MAP

# PLATE 4

# ATRISCO VILLAGE BASIN MAP

BOHANNAN HUSTON, INC.

Courtyard One

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NM 87109-4335

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fax 505.821.0892

Albuq. Repro

# DEVELOPMENT & BUILDING SERVICE CENTER
# ONE STOP SHOP
# 600 SECOND ST. N.W.
# ATTENTION: Brad Bingham
# 505-924-3900

**Records Withdrawal Form**

**Project No.** M81 D05B & A **Date:** 4-22-04

**Project Title:** Timaron West "Units 3&4" and "Unit 5"

a. File b. Mylars c. Redlines/Comments
d. Other Two Drainage Reports

**Requested by:** James D Hughes @ Mark Goodin **Phone No.:** 828-2200
Name and Company

**Comments:** Copy both Reports, do not bind copies.

**Anticipated Return Date:** 4-29-04

I hereby accept full responsibility for the security of the above noted records/plans until return receipt acknowledgement is completed. Records/plans will be returned to the Development and Building Services Center on or before the indicted anticipated return date.

**Delivery Picked Up By:**

**Name:** FRANK LUCERO **Organization:** ARG
Print

**Signed:** Frank Lucero **Date:** 4-26-04

---

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HYDROLOGY SECTION

**Return Acknowledged:**

**Received By:** Robin Dex **Date:** 4/27/04
Print RJ HERBERT

filed 4/27/04

Albuq. Repro

# DEVELOPMENT & BUILDING SERVICE CENTER
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